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CHARLES LOUIS TAYLOR.

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An Address

ON

THE TREATMENT OF CHRONIC BRIGHT'S DISEASE.

DELIVERED AT THE ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION, JUNE, 1910.

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CHRONIC diffuse nephritis appears in many forms and degrees. The easiest way of dealing with its treatment is to present to you certain typical cases which have occurred to me in the course of practice, and to discuss in connexion with each of them the principles upon which I have acted.

Diffuse nephritis is a disease of every age, but I shall draw all my examples from the young, because in later life it is so often complicated by or grafted upon chronic interstitial nephritis that I could not guarantee any case occurring after 40 as typical of the disease which I now wish to consider.

Take first the mildest form.

About four years ago a young lady aged 23 was sent to me with the history that three and a half years earlier albumen had been discovered in her urine while she was under treatment for some trivial complaint. No haematuria, lumbar pain, oedema, or other symptom of an acute attack had ever been noticed. She had never had scarlatina. Her mother thought that she had sometimes been rather puffy about the eyes in childhood.

In passing I will ask you to notice the insidious character of the onset. I do not know how it is in Canada, but in England true acute nephritis is a rare disease. Looking through 955 male cases of all ages in my wards I find 56 cases of diffuse nephritis, and of them only 6 were acute first attacks.

Of these 6 cases:

2 in little boys were after scarlatina.
1 in a man of 43 occurred as part of severe septicaemia.
1 in a man of 34 occurred as part of septic endocarditis.
1 in a boy of 14 was unexplained.
1 in a man of 26 was caused by falling into a dock in a fog. The patient was a constable, and a lifelong teetotaler.

The last is the only case of primary *nephritis a frigore* that I have seen in the last four years.

It is far commoner in cases of albuminuria to get no history of acute nephritis. The great majority of them begin insidiously without any period of severe or acute symptoms.

Now to return to the patient under discussion.

She was a well-grown, well-nourished girl, weighing 135 lb. (61 kilos), and rather pale. There was a slight fullness about the eyelids, and I could by prolonged pressure make a slight dent in the legs.

The retinae were natural. The heart's apex was in the nipple line; there were no murmurs. The second aortic sound was not accentuated, the blood pressure was not increased, and the radial wall was not thickened.

I examined the urine several times. It was passed in normal quantity, and was normal in appearance. The specific gravity was 1018, and in twenty-four hours she passed—

Urea	... ...	22 grams
Cl	... ...	6.5 ,,
P_2O_5	... ...	2.8 ,,

which was natural for the diet she was taking.

There was always a small quantity, about ½ per cent., of albumen, and sometimes a few casts.

I heard of her the other day. She is still passing a small amount of albumen, but is not materially worse than when I saw her four years ago. She has certainly had albuminuria for over seven years, and probably much longer.

No one can doubt that a patient like that has kidneys that have suffered a certain amount of damage, and we know from microscopic examination that these are cases of a diffuse inflammation in which both the glomeruli and the tubes are as a rule affected, and also there is some infiltration of round cells into the interstitial tissues.

What is the prognosis?

Experience tells us that in acute cases occurring after the ordinary zymotics recovery is, especially in children, the rule. A good many children, also, in whom albuminuria is found unexpectedly, and the onset is undetermined, lose the albuminuria and recover entirely. But this rarely happens after childhood is over. If we can exclude albuminuria of adolescence and similar conditions, and can say definitely that the patient has structural alteration in the kidneys, we do not expect the albuminuria to disappear, or the kidneys to return to a state of perfect health.

It is not difficult to understand this inability to recover if we look at the alterations that disease has made.

The exact place in the renal system at which albumen escapes is not known for certain. But it appears probable to me, and I think to most people, that it is in the glomeruli. We believe that these bodies are rather filters obeying laws of pressure than glandular bodies secreting and excreting with laws of their own. Albumen cannot be considered an excretion; its presence must be due to the damage of some structure which should be able to hold it back, and it seems reasonable to think that the glomeruli which in health allow the water of the blood to drain off, but not the albumen, when damaged allow albumen to leak through as well.

If we bear that in mind the changes that we see in the diseased glomeruli account without much difficulty for the permanence of albuminuria. We cannot suppose that they can easily be removed.

But unfortunately albuminuria is not the only symptom, nor inflammation of the glomeruli the only lesion, in a case like this. We can see, besides, that in certain areas of the kidney the epithelium of one part or another in the length of the tubules is affected, and also that the interstitial tissue is infiltrated with an effusion of small round cells. And in some way or other, we do not know exactly how, these lesions in the kidney lead to the secondary anaemia and the slight tendency to oedema which I noticed in this patient and every such patient presents.

But the most serious effect of all is the delicacy of the kidney, and the great risk which the patient runs of further extension of the disease.

It is upon these two lines that treatment must be based. We cannot promise to restore to health the parts of the kidney which have become diseased, but we can do a

good deal to prevent these parts from getting worse, to prevent other parts becoming affected in a similar way, and to improve the symptoms that the already existing lesions produce.

In our efforts at treatment, however, we are handicapped to begin with by our ignorance of the exciting cause of such cases.

When a patient gets nephritis from scarlatina or influenza, or septicaemia, we at any rate know that it is due either to the infecting microbe itself, or to a toxin produced by it. When he gets nephritis from a chill we can form a shrewd guess that the chill has so far lowered his general resistance as to render his organs an easy prey to attacks of microbes that they would have successfully repulsed before.

But we are quite in the dark as to the cause of these insidious cases which have no definite onset. Some will say they are due to an infectious fever that has escaped notice, or to a chill that has been forgotten. Others will suppose that the patient is somehow poisoning himself, either by a chemical product of his metabolism, or by an infection from the microbes of his intestine.

These are pure guesses. They perhaps comfort the patient, and they evidently comfort the doctor. But they do not give us any certain principle of treatment, and except the last, they do not explain the tendency which the disease has to recur and to extend.

We are driven to much more general principles of common-sense.

Such patients are in the first place like a town in which part of the drainage system has been put out of order. They are unable to cope with the same amount of fluid or solid excreta as before. They must be regarded as permanently on a lower plane. They can no longer overeat and overdrink themselves as other people do. They must spare their kidneys.

This applies first to quantity of food. Without arguing that half rations are better for healthy men than the usual amount, it seems at any rate certain that health and weight can be preserved on them. The old Italian Cornaro, who wrote on long life and spare diet, declares that he on his 14 oz. a day had much better health than when he lived freely, or than his contemporaries had.

It applies also to quality. It is generally believed that the nitrogenous parts of the food, excreted as urea, uric acid, and the like, throw more work on the kidney than the hydrocarbons and carbohydrates. Chittenden has shown that health can be maintained on about half the amount of proteid usually allowed, and since we can safely diminish it, we can probably spare the kidney a great deal of wear and tear by so doing.

I do not believe, however, that there is any good reason for restricting the patient to fish or poultry, still less to milk and vegetable proteids.

I have repeatedly in my wards estimated the daily amount of albumen excreted under various diets, in order to show the students that a change from milk diet to fish, and from fish to poultry or to butcher's meat, does not increase albuminuria. On the other hand, I am sure that such patients do badly on a milk diet, and are much benefited by the addition of flesh.

But if flesh is allowed it not infrequently happens that the patient is told that he must only take fish, or perhaps fish and poultry. There is an ill-defined idea that butcher's meat contains some principles irritating to the kidneys which white meat, poultry, and fish do not. There is, however, no foundation for this belief. Neither in purin bodies nor in extractives is there any difference sufficient to warrant us in discriminating between the forms of flesh.

On the other hand, the different constitution of their fibres makes some white fish more easily digestible than meat, and mutton more easily digestible than beef. Some patients, again, can digest poultry better than red meat. Since many patients with renal disease have a weak digestion, it is important to notice these differences, but it is for the sake of their stomachs, not of their kidneys. And in every case we must recollect that nothing helps digestion so much as pleasure or appetite. We must attend to a patient's taste quite as much as to his kidneys. We need not, therefore, greatly restrict the variety of food, but we must reduce the quantity, especially of nitrogenous food, to that of strict moderation.

When we come to things which are not foods—and these include all the fluids which are pleasant to drink—we have to be more rigid.

No one would wish to prescribe alcohol in such cases. It has long been the general belief that alcohol is a common cause of all kinds of nephritis, and although some time ago physicians at St. George's Hospital produced statistics opposed to this, it remains the common opinion still. It certainly is mine. Yet even in this we have to temper justice with mercy. Men who have been accustomed to alcohol sometimes lose appetite altogether if it is withheld, and a small amount has to be allowed with meals.

Tea, coffee, and cocoa all contain principles which stimulate the kidneys, and must, therefore, be taken in moderation. All condiments contain essential oils, which may irritate the kidneys, just as turpentine certainly does, and even common salt appears to be excreted with some difficulty, and must be taken sparingly.

Since chill is certainly capable of causing nephritis, these patients must guard against it by careful clothing, and especially by a warm belt round the loins. They do better in dry air, which allows free evaporation from the skin, and so spares the kidneys some labour.

With these precautions such patients may live for many years. I knew very well a man who from the age of 18 had copious albuminuria, and who was the subject of severe gout. His fingers were covered with small chalk-stones. Yet he lived the arduous life of a farmer till close upon 50, when he died.

In the next grade of chronic diffuse nephritis come those cases, of which we see many in hospital, in which the albumen is at first rather copious, but can be reduced to a small amount by appropriate treatment.

A. R., aged 19, was admitted on April 5th, 1907, with the following history. He had never had scarlatina, was a tee-totaler, and had had no chill recently. He had no recollection of any acute attack of nephritis, and had been in his usual health until three days earlier, when he had noticed a certain amount of swelling of his face and legs, with some tightness on the chest.

When he was admitted there was slight oedema of the face and legs, which soon disappeared. The heart's apex was in the fifth space, in the nipple line, and the rhythm was cantering, but there were no murmurs. The radial artery was not thickened, and the blood pressure was normal. The retinae were natural.

The urine had a specific gravity of 1024, and contained much albumen, blood, and casts. At first it was rather scanty, but the amount soon rose, and as this was one of the cases in which I recorded the amount of albumen under different diets I give the results week by week:—

First week:
Milk diet, average 33 oz. per diem; much albumen.

Second week:
Fish diet, average 84 oz. per diem; urea 13 grams.

Third week:
Milk diet, average 55 oz. per diem; albumen 0.35 per cent., blood, and casts.

Fourth week:
Fish diet, average 61 oz. per diem; albumen 0.15 per cent., blood.

Up to this time he had much lumbar pain, and the blood was in considerable amount. Six leeches to the loins completely removed the pain and greatly lessened the amount of blood.

Fifth week:
Fish diet, average 69 oz. per diem; albumen 0.13 per cent., trace of blood, no casts.

Seventh week:
Meat diet, average 66 oz. per diem; less albumen, Cl 12.9 grams (full amount).

Eighth week:
Meat diet, average 73 oz. per diem; albumen 0.05 per cent., trace of blood.

When discharged he was in the same condition.

The abundant excretion of urine in this case was pretty conclusive evidence that there was some fibrosis of the kidneys, and therefore that the condition was one of chronic nephritis with a fresh attack of inflammation. In these patients the urine is at first usually scanty, and the first aim of treatment is to increase its quantity. For whatever be our theory of the final state of self-poisoning which we call uraemia, no one can doubt that the elimination of the poison is aided by the free excretion of urine. Often milk is the only diuretic needed, and under its use the urine increases rapidly.

But if it is not successful alone we have recourse to diuretics. These drugs are of three classes:

The first is composed of the alkaline salts, the acetates,

tartrates, citrates, and bicarbonates of soda, potash, and ammonia. They probably act upon the renal epithelium. The slight excess of saline constituents in the blood stimulates the renal epithelium to excrete them, they draw with them a certain amount of water, and the flow is increased.

The second class comprises the cardiac tonics—digitalis, squill, and strophanthus. They can be given either in the solid form as the pill, containing a grain each of powdered digitalis, powdered squill, and pil. hydrargyri, with 2 grains of the extract of hyoscyamus to prevent griping, or in one of the liquid forms. Sometimes the infusion of digitalis is effective when the tincture fails. Digitalis acts directly upon the muscle of the heart and arteries, and increases the flow of urine by quickening the flow of blood through the kidney. It is specially of use when the blood pressure is low, or the heart failing before resistance which is too high for it.

The third class is that of the alkaloids of tea, coffee, and cocoa, caffeine and theobromin. They stimulate both the heart and the renal cells. Pharmacologists report that under the conditions of their experiments theobromin is the more powerful diuretic of the two. I can corroborate that from the side of therapeutics. I rely far more on diuretin, which is theobromin sodium salicylate, than on caffeine and its citrate. There are other salts of theobromin and its allies. Agurin, which I have not used, is an acetate of theobromin with two atoms of sodium. Theophyllin and theocin, which is used as theocin sodium acetate, are allied to theobromin. I have used the theocin salt, but have not found it superior to diuretin.

You will find it sometimes sufficient to give these alkaloids in the natural beverage. A teacup of tea, or of black coffee, or of cocoa, each contains about a grain of caffeine and theobromin respectively. But to produce the diuretic effect use that one of them to which the patient is unaccustomed. To a man who drinks coffee tea is a diuretic though he may be tolerant of coffee.

Apocynum and scoparium have been recommended as diuretics. I have had no success with either of them.

Those are the three great classes of diuretics, and they are all of them of value. In cases in which the scantiness of urine is dependent on cardiac failure the two last groups are the best to use. Where the condition of the kidneys is the main cause I always begin with the simple alkaline salts. We do not, as a rule, like to irritate diseased structures, and therefore I prefer to try these mild drugs before using caffein or theobromin. Imperial drink, which is a drachm of acid tartrate of potash and half a lemon in a pint of boiling water, cooled, strained, and sweetened to taste, is an excellent way of giving them.

The second aim of treatment in such a case as this must naturally be to stop haematuria.

To do this completely is sometimes impossible. Usually the blood ceases of itself as the other symptoms improve. But sometimes in cases which are improving in other respects haematuria to a greater or less extent obstinately persists.

Acting on the idea that it may be due to congestion I have tried the prone position, but it is unbearable. Leeches sometimes, as in this case, have a marked effect if the haematuria is considerable.

But often the blood is in slight amount, and yet goes on in spite of most of the drugs we use. I have never found any preparation of iron of the least use, nor gallic or tannic acid. Hamamelis is recommended, but I do not remember that I have found it useful. Ergot has answered occasionally, and in one or two cases oil of turpentine in 10 or 15 minim doses has succeeded where other things had failed.

It is worth remembering that occasionally haematuria—and a copious haematuria—may be the first symptom of renal tubercle, just as haemoptysis is sometimes the earliest sign of phthisis. I have seen two or three such cases.

There is not much to add to what I have already said on diet. These patients are almost always suffering from an acute exacerbation of a chronic disease. So long as it is acute they must be treated with the milk diet. But this need not be continued when the urine has begun to increase and the other acute symptoms to diminish. From that time the diet should be the same as that recommended for the slighter cases.

I should warn you, however, that if you make daily estimations you may find that albumen increases for a day or two after a change of diet. It quickly falls again, and I have seen the rise take place on changing from meat to fish, and from fish to milk, as well as when the change was in the other direction. Of course no estimations are of any value unless based on the total excretion of twenty-four hours.

These, however, are only the two first stages of the disease. Its further progress takes one of two directions. Epithelial degeneration is the chief factor in the one case, fibrosis in the other. The first results in the large white kidney, the second in the contracted kidney. These two are not consequent the one to the other. They are, on the contrary, divergent. Each is the terminal form of a special morbid evolution. In the earliest stage of diffuse nephritis the inflammation of the parenchyma is combined with infiltration of the interstitial tissue by round cells. Just as in phthisis one case proceeds by a continuously spreading bronchopneumonia with softening, while another tends to fibrosis, so one case of renal disease will differ from another in its course. It may be that the infection is of a different quality, it may be that the difference lies in the tissues of the host. We cannot tell. But the clinical symptoms and the *post-mortem* appearances of typical cases are so wide apart that they might be two different diseases. Their unity of origin is, however, proved by intermediate forms.

In the case of the large white kidney there is great dropsy, little or no arterial sclerosis or retinal change, and the patients die by gradual asthenia. In the contracted kidney there is no dropsy, great arterial sclerosis and retinal disease, very high blood pressure, and death by uraemia. The latter is much the commoner.

The following is an example of the first form:

A. M., 19, single, was admitted in March, 1906, for severe general dropsy. There was no history of an acute onset, or of scarlatina at any time.

There was no retinitis, and no thickening of the radial. The blood pressure was a little raised, but fell to normal towards the end. The heart's apex was 4½ in. from the middle line. There were no murmurs. The bases of the lungs were oedematous. The urine was always scanty, had a specific gravity of 1010, and was loaded with albumen.

She improved sufficiently to be sent to the Convalescent Home at the end of April, but she returned worse in a fortnight, and died on May 23rd. During the last fortnight she had some vomiting and a little headache, but no coma or convulsions. She died of gradual asthenia.

The kidneys were very large, pale, and smooth, the cortex whitish-yellow. Under the microscope there was everywhere an infiltration of the interstitial tissue with small round cells, but nowhere a definite fibrosis. The arterioles were natural. In the area examined the glomeruli were comparatively little affected, only 10 out of 150 showing inflammatory changes. This was probably an accident. In other similar cases the glomeruli have been greatly diseased. The tubes were typical of catarrhal nephritis, and the epithelium was fatty. There was also fatty degeneration of the muscle of the heart, and of the liver.

In this form of chronic nephritis there seems to be a general tendency to fatty degeneration, which causes death by failure of the heart and oedema of the lungs.

As one might expect from the condition of the parenchyma it is almost impossible to increase the amount of urine. All that we can do is to attempt to relieve the oedema through the skin. But very often the patients are not fit to bear hot packing or artificial diaphoresis by pilocarpin. The least dangerous method is to drain the skin by capillary cannulas under strict antiseptic precautions. In this degree the disease is hopeless. Severe general oedema in chronic nephritis means an early death. But in slighter cases it is sometimes useful to remove all salt from the diet. French physicians have made many observations on this subject, and lay great stress upon the excretion of chlorine as a guide to prognosis and treatment.

I do not hesitate to say that I look upon the excretion of chlorine as more important for prognosis than that of urea. I cannot speak quite so strongly of the value of the treatment based upon it.

The serous fluid of oedema contains chlorides. The urine always contains some chlorides also, and if they are cut off from the food, they are drawn from the store in the body, and take with them a certain proportion of fluid.

A few cases have been published in which dropsy occurring without any disease of the kidneys or of the heart has been cured by the removal of salt from the diet.

But to carry out the treatment it is necessary that the bread and butter should be made without salt, and that, if flesh or vegetables are taken, the cooking should also be quite free from salt.

I must add, however, that in my experience this treatment is less useful in renal dropsy than in ascites.

The other terminal form of chronic diffuse nephritis is the commoner. The following is an example:

Mary Ann G., 37, was admitted on June 26th, 1907. She had never had an acute attack, nor, indeed, did she appear to have had any symptoms until five months ago fits began. Two months ago the eyes and the feet swelled for a time. One month ago nausea and morning sickness came on.

When admitted she was dull, and a little indistinct in speech. She complained of violent frontal headache. There was no paralysis and no oedema. She had very severe albuminuric retinitis with many haemorrhages. The heart's apex was in the nipple line, the second aortic sound much accentuated. There were no murmurs. The radial artery was not particularly thick, but the blood pressure was very high, and was repeatedly estimated at over 240 mm. Hg, which was the highest that the instrument I then used would register.

The urine was scanty from the first, usually between 30 oz. and 40 oz. a day, specific gravity 1005 to 1010; from 0.1 to 0.2 per cent. of albumen.

She had a severe fit directly after admission, and was bled to 10 oz. The fits ceased for the time. On July 15th the fits recommenced. She was again bled, but her general condition did not warrant the removal of more than 7 oz. Hot air baths were given during the next few days, but without improvement; she became delirious, had more fits, and died on July 19th.

Necropsy.—The heart weighed 15 oz., the left ventricle was hypertrophied. There was great arterial degeneration in the aorta, carotids, subclavians, and cerebral vessels, though the radial and posterior tibial, which I examined under the microscope, showed little if any disease. The kidneys were contracted.

Such cases nearly always have violent headache. A history of convulsions and vomiting in addition leads every one naturally, as it led me in this case, to suspect a cerebral tumour. But you have only to put your finger on the pulse, when the extreme height of the blood pressure will give you the clue which the retinae and the urine will confirm.

For the headache I have never found any drug so good as cannabis indica. It is better than any of the coal-tar compounds for this particular form. I generally combine it with small doses of iodide and bromide of potassium.

There are two other great symptoms which we have to consider—the high blood pressure and the uraemic convulsions.

The blood pressure reaches in these comparatively young patients, whom I have seen die at any age from 16 to 40, a height greater than is usually seen in later life. In some of them it runs up to over 300 mm. of Hg.

At first we think that a great danger. But is it so? I am almost tempted to ask, Is high blood pressure ever anything but a way of escape from greater dangers still? Is it not always the result of a peripheral resistance which the heart must overcome if the circulation is to continue?

This need not be always, or in any case entirely, due to organic changes in the arterioles. It may be that the blood is in some conditions more viscid and more difficult to drive through its channels, and it may at times contain some substances which stimulate the arterioles to contract. A substance, for instance, has been extracted from kidneys which raises blood pressure by constricting the walls of the arterioles.[2]

But in some of these cases which I am describing the changes in the peripheral arterioles, of the kidneys at any rate, are so extreme that, though these may themselves be due to high pressure, they probably in turn do much to increase resistance.

The results of treatment lead me to the same conclusion. In some of these cases I have tried to dilate the peripheral vessels by nitrite of amyl, by nitroglycerine, and by erythrol nitrate, which paralyse the muscles of the arterioles, but have failed to produce any effect upon the pressure.

Whatever the cause, I have come to regard high blood pressure as a conservative effort. In older people, no doubt, it brings dangers of its own, especially of cerebral haemorrhage from rupture of the vessels. But the patients whom I am describing are at an age when the vessels are much less likely to break. Endarteritis is not the same thing as, is not even a cause of, fragility. That is due to changes in the media which depend chiefly on age.[3] Accordingly, these patients stand a blood pressure which older patients could not bear, and, as a matter of fact, seldom die of cerebral haemorrhage.

We are not, then, obliged to regard their high blood pressure as a serious danger. Rather it is an effort to maintain not only the general circulation, but also the flow of blood through the kidneys, which is of the last importance to postpone uraemia.

What uraemia is we none of us know. But we know two or three things which it is not. It is not the retention in the blood of any of the known constituents of the urine. That has been repeatedly proved by experiment and observation. It is not the failure of excretion, for it does not occur in obstructive suppression of urine when the ureters are blocked. It does not necessarily follow the cessation of secretion, either internal or external, for cases have been recorded by Rose Bradford and by myself in which after pregnancy a general thrombosis had taken place in the arterioles of the kidneys, with entire suppression of urine lasting for a week or more before death. Yet uraemia did not develop, though the kidneys must have been completely inactive.

I am myself inclined to regard it as due to the absorption of some product of renal cells destroyed in the progress of the disease, and to compare it to the condition called cholaemia in which many cases of hepatic cirrhosis terminate. The symptoms of each are not unlike, and the morbid process is similar also.

But, whatever be the cause of uraemia, the maintenance of a copious flow of urine is the natural and the most effective way of draining off the poison from the blood, and the failure of the flow is of the gravest augury.

What, then, are we to do when the urine becomes scanty? It may seem madness to employ digitalis when the pressure is already excessive. But I have given reasons for believing that the danger in this direction is not so great as we think, and the circumstances are desperate. Accordingly, while endeavouring to lighten the task of the kidneys by means of the skin, while using hot packs, hot air baths, and even injections of pilocarpin nitrate in order to secure the removal of some water and salts by perspiration, we must at the same time by digitalis and diuretin try to raise the blood pressure and recover the level of excretion. If the uraemia manifests itself, as it sometimes does, rather by dyspnoea than by convulsions, the inhalation of oxygen is an additional aid.

These means sometimes succeed, and I have known a patient in whom convulsions had begun recover under this treatment sufficiently to get up and to leave the hospital.

Should, however, the fits continue, relief must be given by bleeding. The symptoms are probably the result of long accumulation, and only occur when the total poison oversteps the limit of tolerance. It is easily conceivable that half a pint of blood may just make the difference. By removing it we may reduce the total poison below the lethal dose, and for the time save the patient's life.

Of course it must and will accumulate again. But the process is slow. Indeed, of all the wonderful phenomena of renal disease, the most wonderful is not that these patients die, but that they live so long.

Which of us has not seen in the *post-mortem* room kidneys weighing less than 3 oz. the pair? Does not that give us cause for thought? What can it mean but, on the one hand, that we start life with a great surplus of renal tissue, and, on the other, that in a slow disease of the kidneys the poison absorbed from the degenerating tissue is answered by a gradually growing tolerance; that just as by repeated vaccination of a poison from without, immunity is slowly produced, so, too, on repeated absorption of a poison from within, the body seems to have the power to form an antidote, to establish a tolerance, and only after a long resistance yields?

It may be that along these lines some advance may be made in the treatment of chronic Bright's disease, but I have tried to show that even now we can by careful dealing delay and weaken the attack, give time to the patient to prepare and strengthen his natural defence,

and, if we cannot finally conquer, at least prolong for years a life which unaided would have rapidly been sacrificed.

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THE "PANCREATIC REACTION" IN ABDOMINAL DISEASE.

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IN no department of internal medicine is accurate differential diagnosis so called for in the interest of the patient as in diseases and disorder of the abdominal viscera.

This general proposition is, I think, fully accepted by my surgical colleagues, for the immature period of the exploratory laparotomy has been succeeded by a desire for accurate diagnosis, so that the abdomen may not be opened unless the prospect can confidently be entertained that the symptoms which justify surgical interposition will be removed. That this highly desirable accuracy in differential diagnosis has not yet been universally attained may be assumed from some recent writings. It surely, however, does not ask for unattainable skill on the part of the physician that an accurate differential diagnosis should be made between primary and secondary gastric symptoms, between disturbances of gastric function and duodenal ulcer, and between gastric catarrh and appendicitis.

In view of the importance to be attached to accurate differential diagnosis in the abdomen, all new aids claiming to further this object demand to be carefully tested and examined. It was with this object in view that, some eighteen months ago, I, for the second time, took up the examination of the urine by Cammidge's method to ascertain whether it would facilitate differential diagnosis in abdominal cases.

The claim of the author of this test was that, with certain reservations, the reaction was indicative of the existence of pancreatitis. This was not merely a new test for a hitherto unrecognized product in the urine, but the presence of this product was claimed to indicate the presence of a certain condition in the pancreas, which condition, in its turn, was placed in the position of a common and serious disease, and recognized as such for the first time. We were, in fact, brought face to face with what was practically almost a new disease. We had before this recognized necrotic, haemorrhagic, and purulent pancreatitis; the metastasis of mumps to the pancreas; of cases of diabetes associated with atrophic cirrhosis of the gland: and the contentions relating to the islands of Langerhans were well known. But here was a condition suggested to be common and important, which had hitherto escaped notice, the test of its existence being the presence of a urinary reaction.

The Cammidge reaction claimed to be a pancreatic reaction. With such reservations as are usually applicable in clinical work, a positive reaction was to be regarded as strongly suggestive of the existence of pancreatitis.

If this is not to be the claim based upon the reaction, the performance of the test can at best merely be the demonstration of a chemical vagary in the individual; while, if the claim be abandoned, and at the same time the value of the reaction be asserted, we get into a region somewhat outside either the pale of scientific medicine or of logical thinking. The reaction cannot both be and not be a sign of pancreatitis.

In approaching this subject it is necessary to bear in mind that, although the pancreas and the liver are so closely associated anatomically that their ducts may have a common opening in the duodenal wall, their functions are totally dissimilar.

The liver is a great excretory gland, through its biliary function; it is indirectly the same in virtue of the chemical syntheses effected by its cells in the formation of urea; it protects the body from the action of various toxins in virtue of its detoxicating powers; and by virtue of its glycogenic function it is a centre of stored energy-producing material. Its influence through the bile on digestive processes is relatively insignificant.

The pancreas, on the other hand, is a great secretory gland; it performs no such functions as the liver performs; it is comparable to the salivary glands, not to the liver. Its disturbances affect the value of its secretion, either internal or external. There is nothing else to be disturbed.

The liver, in virtue of the scope of its functions, is exposed to injurious influences vastly more numerous than the pancreas. In neither is injury by extension from the duodenum along the ducts common. Injury to the liver by way of the blood or lymph is common from acute parenchymatous inflammation ending in abscess to slow interstitial hyperplasia ending in cirrhosis.

In the pancreas acute necrotic and haemorrhagic inflammation is known as a highly mortal malady, but it has not been shown that these conditions arise from duct infection; while the cirrhoses of this organ have no known clinical significance apart from the production of diabetes in some instances. Apart, indeed, from the severe forms of inflammation, it may be fairly postulated that other pathological changes in the gland can hardly be expected to do more than influence its secretory function.

Of the internal secretion and its modifications we are still in comparative ignorance, although much suggestive work has been done on this highly subtle question; while as regards the external secretion, diminution or increase in quantity of one or other or of all its ferments can be thought of only as affecting the processes of digestion in the intestine.

There is no failure in excretory function to consider, as such failure has to be reckoned with in hepatic disorder.

Any absorption from the gland must be the absorption of some of its secretion, or of an altered enzyme; and the enzymes are protein bodies, not carbohydrate bodies, and presumably cannot, therefore, be the source of the substance in question.

The clinical pathology of the two glands is thus fundamentally different, and care has to be taken that clinical contentions regarding the pancreas are not based upon an imaginary pathology of the organ.

In the investigation undertaken I confined myself to the examination of the urine in patients with abdominal symptoms, or definite abdominal lesion, as my aim was to ascertain whether any assistance was to be obtained from the presence or absence of the reaction in making a differential diagnosis. Cases were selected in which it was thought that the reaction might be helpful in one or other direction.

I have tabulated 78 cases which are fairly representative of the types of abdominal cases met with. They are as follows:

TABLE A.—*Marked Positive Reaction (4 Cases).*

Name and Sex.	Diagnosis.	Reaction.	Remarks.
Veitch (m.)...	Necrotic pancreatitis	Positive, marked	Abdomen opened; died. Decoction of the pancreas gave marked reaction. No other organ similarly tested.
Hay (m.) ...	Necrotic malignant ulcer, size of florin, posterior gastric wall; extensive infarction, and growths in liver	Positive, marked; crystals appeared in ten minutes	Gastric symptoms not marked; patient developed profound intoxication suggestive of severe pancreatic disease. Pancreas showed neither macroscopic nor microscopic change.
Guthrie (m.)	Hyperchlorhydria	(1) Positive, marked; appeared immediately. (2) Positive, medium	Relieved by medical treatment; returned 6 months later with symptoms of gastric ulcer, for which a gastro-enterostomy was done.
Hoggan (f.)...	Pain in abdomen, with profound intoxication (cause unknown)	Positive, marked, and rapidly appearing	Died soon after admission. No *post-mortem* examination.

TABLE B.—*Hepatic Cirrhosis; Gall-Stone Colic; Catarrhal Jaundice (12 Cases).*

Name and Sex.	Diagnosis.	Reaction.	Remarks.
Welsh (f.) ...	Cirrhotic liver and ascites	Positive	Died.
Greig (m.) ...	Cirrhotic liver and ascites	Positive	Ascitic fluid positive.
McKay (f.) ...	Cirrhotic liver and ascites	Positive	Died; ascitic fluid positive.
	Result: 3 positive and ascitic fluid positive in 2.		
Keddie (f.) ...	Gall-stone colic	(1) Positive (2) Negative	Operated on second time and stones removed.
Cairns (f.) ...	Gall stone colic and tender gall bladder	Positive	Operated on, stones removed.
Slater (f.) ...	History of gall-stone colic	Negative	Improved.
McGruer (f.) ...	History of biliary colic and constipation	Positive	Cured.
Henderson (f.)	Gall-stone colic	Positive	Left hospital.
Henderson (f.)	Readmitted	Negative	Stone removed.
Private (f.) ...	Hepatic colic	Positive	Latent case.
Hanley (f.) ...	Gall-stone colic	Positive	Stones found in faeces.
	Result: 6 positive, 5 negative.		
Traill (f.) ...	Catarrhal jaundice	Positive	Cured.
Leveson (f.) ...	Catarrhal jaundice	Positive	Cured.
	Result: 2 positive.		

TABLE C.—*Gastro-intestinal Cases with Negative Reaction (26 Cases).*

Name and Sex.	Diagnosis.	Reaction.	Remarks.
Davidson (f.) ...	Constipation and chorea	Negative	Cured.
Johnstone (f.) ..	Constipation	Negative	Cured.
Forest (f.) ...	Constipation	Negative	Cured.
Kennard (f.) ...	Gastric symptoms, tenderness and constipation (? pancreatitis)	Negative	Cured.
Cameron (f.) ...	Obstinate vomiting	Negative	Cured.
Burrel (f.) ...	Gastric symptoms	Negative	
Waiting-room Case	? Pancreatitis	Negative	
McKean (f.) ...	Sent in as gastric ulcer; constipation	Negative	Cured.
Rennie (f.) ...	Dyspepsia	Negative	Cured.
Paris (f.) ...	Constipation and hyperchlorhydria	(1) Negative (2) Doubtful	No iodoform reaction with Sahli's capsules; faeces gave tryptic reaction on serum plate.
Rooney (f.) ...	Vomiting and diarrhoea; pernicious anaemia	Negative	Improved.
Lambert (f.) ...	Recurring diarrhoea	Negative	Cured.
McGovern (f.) ..	Sent in as duodenal ulcer	Negative	
Gunn (f.) ...	Constipation; migraine	(1) Positive, small; (2) Negative	Cured.
Johnstone (f.) ..	Gastralgia	Negative	Suggested gastric adhesions; abdomen opened, nothing abnormal found.
Davidson (f.) ...	Gastric symptoms; severe nausea	Negative	Cured.
Vincent (f.) ...	Pain in abdomen: neurasthenic	Negative	
Weddle (f.) ...	Enlarged liver and glycosuria	Negative	Died after leaving hospital.
Hunter (m.) ...	Hyperchlorhydria; suspicion of duodenal ulcer	Negative	Cured.
Russell (f.) ...	Sent in as duodenal ulcer with history of melaena	Negative	Symptoms disappeared.
Robinson (f.) ...	Gastroptosis	Twice negative	Gastro-enterostomy; cured.
Gillies (m.) ...	Gastric symptoms	Negative	Improved.
Lawson (f.) ...	Tuberculous stricture duodenum	Negative	Died.
McBeath (f.) ...	Tuberculous stricture caecum	Negative	Died.
Private (m.) ...	Duodenal ulcer	(1) Negative (2) Positive small	Cured.
Private ...	Gastric symptoms	Negative	

TABLE D.—*Gastro-intestinal Cases with Positive Reaction (18 Cases).*

Name and Sex	Diagnosis.	Reaction.	Remarks.
Todd (f.) ...	Gastric symptoms and constipation	Twice positive, small	Cured.
Fox (f.) ...	Indigestion and constipation	Positive	Cured.
Alexander (f.)	Gastric symptoms and constipation	Positive	Cured.
Reid (f.) ...	Gastric symptoms	Positive	Cured.
Private case (f.)	Great nausea and skin irritation	Positive	
Brown (f.) ...	Obstinate vomiting, neurotic	Positive	Cured.
Mack (f.) ...	Obstinate vomiting, neurotic	Twice positive	Cured.
Knowles (f.) ...	Gastric symptoms	Positive	Improved.
Turnbull (f.) ...	Gastric symptoms, previous appendicitis	Positive	Improved.
Lees (f.) ...	Gastric symptoms, sent in as ulcer	Positive	Cured.
Christie (f.) ...	Gastric symptoms	Positive	Former gastrectomy, died.
McDonald (f.)	Duodenal ulcer	Twice positive, small	Gastro-enterostomy, cured.
Allen (f.) ...	Gastric symptoms	Positive	Old gastro-enterostomy.
Gillies (m.) ...	Constipation, tender abdomen, temperature 100	Positive	Sent in as pneumonia; cured colon lavage in 24 hours.
Coupland (m.)	Gastric symptoms, no free HCl	Positive	Cured.
Rodger (f.) ...	Obstinate vomiting, no free HCl	Positive	Cured.
McKenzie (m.)	Hyperchlorhydria	Positive	Appendix been removed, cured.
Private (m.) ...	Moderate constipation	Twice positive, small	General health good.

TABLE E.—*Additional Abdominal Cases (11 Cases).*

Name and Sex.	Diagnosis.	Reaction.	Remarks.
Cookie (f.) ...	Tuberculous peritonitis	Positive	Improved.
Patterson (m.)	Addison's disease	Positive	Improved.
M'Pherson (m.)	Localized empyema, right base	Positive	Question whether above or below diaphragm; cured.
M'Lennan (m.)	Bacilluria	Positive	Cured.
Gordon (m.) ...	Retroperitoneal sarcoma	Positive	Abdomen opened; died later.
Young (m.) ...	Gastric cancer, fundus	Positive	Abdomen opened; died later.
Gilhooley (f.)	Tuberculous stricture, caecum	Positive, small	Operated on successfully.
Robertson (f.)	Anaemia and septicaemia	Positive, small	Cured.
Honeyman (f.)	Diabetes	Positive	Improved.
Private (m.) ...	History, attack of appendicitis	Twice positive	Health good, but appendix removed as going abroad.
Private (m.) ...	Subacute appendicitis and dyspepsia	Positive	Appendix removed.

TABLE F.—*Cases in which Several Examinations were made (3 Cases).*

Name and Sex	Diagnosis.	Reaction.	Remarks.
Private (m.) ...	Slight gastro-intestinal trouble	Twice negative Twice positive, medium Thrice positive, small	Previously operated on for liver abscess and for cholecystitis, both successful.
Private (m.) ...	Localized colitis	Twice negative, Thrice positive, medium Once doubtful	Cured.
Private (m.) ...	Hyperchlorhydria with gastric dilatation	Once negative, 4 times positive, small	Cured.

TABLE G.—*A Few Checks (5 Cases).*

Name and Sex.	Diagnosis.	Reaction.	Remarks.
Male	Arterio-sclerosis	Thrice positive Once negative	Pancreas normal on *post-mortem* examination.
Physician (K).	Normal state	Thrice positive	
Physician (D).	Normal state	(1) Positive (2) Negative	
Physician (R).	Normal state	Twice positive, slight	
Female ...	Subacute rheumatism	Thrice positive	

In Table A there are 4 cases in which the reaction was not only positive, but marked in amount and in the promptness of its appearance. One case was a case of necrotic pancreatitis, which died, as these cases die, of a profound toxic asthenia. Part of the interest in this case was that the reaction was obtained from a decoction of the gland. Unfortunately the liver was not tested in the same way. This case represents the positive reaction with definite pancreatic lesion, and taken by itself would be very impressive. The second case, however, entirely counteracts this impression. It was the case of a man with not very definite gastric symptoms, who shortly after admission developed a condition of toxic asthenia, and whose urine deposited Cammidge crystals copiously after ten minutes. This patient passed one or two motions involuntarily which contained altered blood, as shown by chemical examination. I discussed this case in a clinical lecture before the patient died, and pointed out the patient's toxic condition as due to some abdominal lesion, which, were the Cammidge reaction to be depended upon, ought to be pancreatitis. The occurrence of melaena, however, was against such a diagnosis, and I suggested that the toxic state was probably due to a condition not even thought of. At the autopsy there was found a small malignant growth on the posterior wall of the stomach which had become a slough, while the liver presented an extraordinary appearance from the presence of not only secondary growths, but extensive necrosis from infarction. The pancreas presented no abnormal change.

Even one such case as this throws out the contention based on the Cammidge reaction; in this case the pancreas was not inflamed, but the condition of the liver and our knowledge of liver function are available readily to explain the presence of any unusual substance present in the urine. If disturbance of liver function can lead to a marked Cammidge reaction, there ceases to be any reasonableness in associating the urinary finding with pancreatic disease.

In Table B there are 3 cases of cirrhotic liver which gave a positive reaction. With the ascitic fluid from two of the cases a positive reaction was also obtained. Two cases of catarrhal jaundice gave a positive reaction. Seven cases of gall-stone colic gave 6 positive reactions and 3 negative.

In Tables C, D and E are tabulated 55 cases, most of them hospital cases, with symptoms referable to disordered gastro-intestinal function, sufficiently severe to require hospital treatment, or with definite lesion. These constitute a series of almost consecutive cases, in many of which it was thought the reaction might be found to be of some diagnostic significance. In 26 of them the reaction was negative, in 29 it was positive; the numbers are thus fairly evenly divided. When the details of these tables are examined it will be understood that in spite of my earnest attempt to find some value in the test I entirely failed to get any indication from it of the existence of a pancreatic inflammation, or even any sure light and guidance as to the state of pancreatic secretion, or of pancreatic digestion.

In Table F there are 3 private patients who were more fully examined and in whom the reaction was of no clinical assistance whatever.

In Table G are given 5 check cases in persons with no abnormal symptoms: one, a case of arterio-sclerosis with normal pancreas, gave three times a positive reaction and once a negative; another, a woman suffering from subacute rheumatism, gave three times a positive reaction. Seven observations made on three of the staff (including myself) gave six positive reactions and one negative, and, so far as we knew, we were all in excellent health at the time.

From these results it is seen that a positive Cammidge reaction may be obtained from the urine of persons in good health; that it may be obtained from the urine of persons suffering from a great variety of abdominal disorder or disease; that it may be present in other diseased conditions; that it may be present when autopsy shows that the pancreas is not the seat of any anatomical change. All this to the physician and to the pathologist definitely excludes pancreatitis as the cause of the Cammidge reaction.

That the reaction is a reliable guide to the condition of the pancreas has not been borne out by our observations; in fact, they seem to negative such a contention.

Even putting pancreatitis out of account, it might still be contended that the substance found in the urine was absorbed from the pancreas; but, as has been said, the pancreatic enzymes are proteid substances, and the substance in question is a carbohydrate. But even were such absorption the source of the substance, we should require to recognize that the absorption took place in so many different conditions, is so variable in amount, and so apparently erratic in the times of its appearance, that its presence as an aid to abdominal diagnosis is entirely negligible, and if depended on may be wholly misleading.

It may ultimately be found that the reaction is of some value as an index to the state of intestinal digestion, but, so far, we have not been able definitely to establish any such relationship.

The substance is probably a pentose, and therefore suggests a carbohydrate source. Its composition does not *a priori* suggest the pancreas as its source, but leads rather to the consideration of intestinal processes and of the hepatic functions. In the intestine there is carried on the transformation of carbohydrates into a variety of products, still imperfectly known, and the absorption of products of fermentation and putrefaction; while there is the possibility of there being more of any one substance than the liver can deal with efficiently, and consequently of leakage into the systemic blood. In this region it seems to me we are on sounder ground when seeking a source for this new urinary constituent.

Passing to the investigations which have been made in Germany, France, and America, one is struck partly with the variety of result obtained in the examinations of a series of cases, but in all it is noted that the reaction is obtained in diseases other than pancreatitis, while others found the reaction absent in pronounced cases of that disease. Some observers set the reaction aside almost with contempt; others are sanguine that it is of value while failing to define its significance. I cannot occupy space with even a summary of the papers published on the subject, but I append a list of those I have looked into. The most excellent paper by a surgeon which I have seen is that by Kehr of Halberstadt. With his conclusions as to when to operate in cholelithiasis I am in complete accord until he decides that the presence of the Cammidge reaction is to determine operation when otherwise he would not operate. This is because he so readily accepts the view that the reaction indicates pancreatitis. When on operating he finds the pancreas large and hard, the necessity for the operation seems to him to have been established. Schumm and Hegler, on the other hand, deny that a pancreas being large and hard indicates pancreatitis, for they claim to have often convinced themselves by histological examination that a very hard pancreas showed a completely normal structure and no increase of fibrous tissue. Going through the literature, one is impressed by the efforts made to belittle the significance of a positive reaction in many cases; to explain away its absence when it would be more convenient were it present; and to depend upon it in other cases as if it never occurred in but one condition, and was an absolute proof of a particular pathological state.

I have no doubt that chemical pathology will determine the source of the substance, and the precise alimentary conditions which lead to its appearance in the urine. Meanwhile the reaction is one of a number of urine reactions which may accompany alimentary error. To claim for it any higher position in the field of diagnosis or of prognosis is not warranted; and from our knowledge of physiological and pathological chemistry, the claim has

the appearance of being devoid of reasonable support. Practically tested, as I have endeavoured to test it, it signally fails.

I am glad to express my indebtedness to my Resident Physicians, Drs. Krause, Deuchars, and Lang Todd, for the careful help they have given me in this investigation.

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ON THE RESULTS OF THE "PANCREATIC REACTION,"

AND ON THE DIAGNOSTIC VALUE OF AN ANALYSIS OF THE FAECES IN DISEASES OF THE PANCREAS.

By P. J. CAMMIDGE, M.D.Lond.

In a paper which I read before the Royal Medical and Chirurgical Society on March 13th, 1906, I described an improved method of performing the so-called "pancreatic" reaction in the urine, and gave my experience of the reaction with 100 specimens derived from 94 cases. I now have records of over 1,500 samples of urine derived from 1,475 cases. The large majority were sent to me by medical men in various parts of the country for diagnostic purposes, and it is owing to their kindness in furnishing me with the results of operations and the after-histories of their cases that I am able to compare my analytical findings with the clinical conditions present in most of them. I take this opportunity of thanking them for their courtesy and ready response to my letters of inquiry.

The cases may be divided into eight main groups:

I.—Acute Pancreatitis.

All the 13 cases in this group gave a positive pancreatic reaction; 6 were operated on, and the pancreas was found to be acutely inflamed in all, with disseminated fat necrosis in 5. The diagnosis was confirmed by *post-mortem* examination in 3. Gall stones were discovered in the common bile duct of 2. One had a history of repeated attacks of jaundice with spasm, and had probably suffered from common duct cholelithiasis, but there was no jaundice at the time of the analysis. In 3 the pancreatitis was the sequel of an attack of mumps, but in 4 other cases of the same disease the urine gave no reaction. Two cases gave a history of indigestion and abdominal discomfort extending over several months previous to the attack. Three of the patients operated on died, and 3, including the 2 in which gall stones were found, recovered. All the patients not operated on died, except the 3 in which the pancreatitis followed mumps.

II.—Chronic Pancreatitis.

Chronic pancreatitis is rarely, if ever, a primary disease, but when once it is established it is liable to steadily progress, and may seriously interfere with the metabolic processes of the body, eventually leading to glycosuria in some cases. To merely make a diagnosis of chronic pancreatitis is not enough, the primary cause of the condition must be determined if a successful line of treatment is to be pursued, and by considering the clinical condition together with the results of an analysis of the excreta this can generally be done.

The causes of chronic pancreatitis are numerous, but many of these are rare. I have divided my cases into the following classes:

1. *Associated with Gall Stones or Local Malignant Disease.*

I have examined specimens of urine from 264 cases in which gall stones were found at operation, and of these 149 (56 per cent.) gave a positive reaction. In 183 cases the gall stones were in the common bile duct, and of these 131 (69.6 per cent.) gave a positive and 57 (30.4 per cent.) a negative pancreatic reaction—percentages which correspond fairly closely with the proportions of cases in which the common bile duct lies embedded in the pancreas (62 per cent.) and runs in a groove on the surface of the gland (38 per cent.) On dividing these cases into groups according to whether bile was or was not detected in the urine, it is found that out of 128 with jaundice 91 (71 per cent.) gave a positive pancreatic reaction, and out of 60 non-jaundiced cases 40 (66.6 per cent.) gave a positive result.

A more or less marked reaction for urobilin is a most useful indication of the probable presence of gall stones in the common bile duct, especially when they are "floating." In this series of 188 cases it was met with in 123 (65.4 per cent.), being more common where the calculi did not give rise to jaundice, namely, 47 cases (78.3 per cent.), than in those in which there was obstruction of the bile flow, namely, 76 cases (59.3 per cent.). A deposit of calcium oxalate crystals was met with in 69 per cent. of those cases in which there was evidence of pancreatitis. Nine of the cases in this group which had given a positive pancreatic reaction during life were examined *post mortem* and the diagnosis of chronic pancreatitis confirmed microscopically. Specimens of urine were obtained after operation in 24 cases, 20 having previously given a positive reaction. In 14 the reaction was found to have disappeared at intervals varying from one to four weeks after the operation, but in 6 it still persisted when the last analysis was made.

Thiroloix and Maugerot[1] have maintained that cholecystitis is a common, if not the commonest, cause of pancreatitis, the inflammation spreading by way of the lymphatics from the inflamed gall-bladder to the head of the pancreas. My experience does not confirm this, for out of 76 cases in which gall stones were found in the gall bladder or cystic duct at operation only 18 gave a positive pancreatic reaction and were stated to have pancreatitis; 58 gave a negative result, as did also 17 cases diagnosed clinically as cholecystitis, 6 of which were operated on, that I have included in the miscellaneous group. Bile pigment was found in the urines of 11, including 9 of those that gave a positive pancreatic reaction: 15 gave a reaction for urobilin, and of these 10 gave a pancreatic reaction. Calcium oxalate crystals were met with in the deposit from the urines of all those that gave a positive pancreatic reaction, and in 4 of those with which no reaction was obtained.

A positive pancreatic reaction was given by the urines of 2 out of 8 cases of malignant disease of the common bile duct, and 2 of growth at the ampulla of Vater. Only 1 of the 10 cases in this group gave a reaction for urobilin, and in this the liver was being invaded by the growth.

2. *Secondary to Intestinal Disease and Gastric or Duodenal Ulcer.*

Chronic pancreatitis is, I believe, most commonly secondary to diseases of the intestine. In most cases there is probably an infection of the pancreatic ducts by direct extension from the duodenum, the pancreatitis being primarily of the catarrhal type. This group includes 403 cases in which the clinical symptoms and results of the analysis of the urine and faeces pointed to there being disease of the intestine other than a malignant growth. Of these the urines of 211 (52 per cent.) gave a positive pancreatic reaction.

The explanation of the presence of a pancreatic reaction in about two-thirds of the cases of intestinal catarrh or enteritis I have examined is, as I have explained, probably an inflammatory condition of the pancreas due to an extension of the catarrh of the intestinal walls along the pancreatic ducts. A similar explanation also probably holds good for those cases of colitis and appendicitis in which a reaction was obtained, for in many instances these conditions are associated with a more or less marked pathological state of the entire length of the intestinal tract. A considerable number of the cases which I have included under the heading of "intestinal catarrh" had in addition some colitis, as an analysis of the faeces showed, but the disease was evidently not very marked clinically, as it was not mentioned in the reply I received to my letter of inquiry. Hyperchlorhydria, as I pointed out some time

ago,[2] is a possible cause of pancreatitis. The constant excessive stimulation of the pancreas by the secretin formed by the excess of hydrochloric acid is likely to bring about abnormal physiological activity of the gland, to be followed by degenerative changes if the over-stimulation is long continued. Such I believe to be the explanation of the positive reaction with the 13 cases diagnosed as hyperchlorhydria.

The high proportion (64 per cent.) of cases in which indicanuria was a symptom is interesting, for it has been claimed by some observers that a pathological excess of indican in the urine is an important sign of pancreatic disease, while others have stated that a marked diminution is the rule. My own experience is, however, that neither the one nor the other can be relied upon as a symptom of pancreatitis; but I think that a pathological excess indicates rather the condition of the intestine, and suggests that any pancreatitis that may be present is probably the result of an ascending infection from the duodenum, while the absence of indicanuria points to some other cause. The association of urobilinuria with indicanuria and a positive pancreatic reaction, which occurred in 52 cases, indicates that the infection involved the bile as well as the pancreatic ducts. Twenty-seven of the cases in this group were operated upon, and in 25 the pancreas was said to be enlarged and harder than normal. A positive pancreatic reaction had been obtained with the urines of all. Seven were examined *post mortem*, and pancreatitis found microscopically in 4 which had given a urinary reaction during life; the other 3 had given no reaction, and the pancreas appeared normal. I have not included in this group a number of cases of glycosuria in which there was marked indicanuria, as I propose to deal with the subject of diabetes, and the application of the pancreatic reaction to the examination of urines from such cases, subsequently; but I may now state that I am convinced, from the observations I have made, that diabetes is a very common result of long-continued intestinal catarrh slowly inducing changes in the pancreas.

Catarrhal jaundice is generally assumed to be due to an inflammatory process in the duodenum extending into the ampulla of Vater, which is closed either by a swelling of the mucosa or by a thick plug of mucus. Virchow described such a case, and Osler, among others, has observed a similar condition. However this may be, it may be taken for granted that catarrhal jaundice is usually, if not always, associated with gastro-intestinal disorders, and that, owing to the close relation of the bile and pancreatic ducts, the latter will probably suffer along with the former, so that there is likely to be some pancreatitis.

A diagnosis of catarrhal jaundice was made in 53 of the cases I have examined, and in 42 of these a positive pancreatic reaction was obtained, suggesting that in rather over 79 per cent. the condition was associated with some active degenerative changes in the pancreas. Fifteen of the cases giving a positive reaction were submitted to operation because of the persistence of the jaundice, and in all of these the pancreas was found to be enlarged and harder than normal.

Occasionally one meets with chronic pancreatitis due to direct extension of an inflammatory process from a neighbouring organ, such as the stomach or intestines, but more commonly the pancreatitis in gastric and duodenal ulcer appears to be due to the associated gastro-intestinal catarrh extending to the pancreatic ducts and setting up a catarrhal pancreatitis. I have examined specimens of urine from 50 cases of ulcer of the duodenum and 47 of gastric ulcer, all of which were confirmed by operation; 27 (54 per cent.) of the former and only 5 (10.6 per cent.) of the latter gave a pancreatic reaction. In 2 of the cases of gastric ulcer and 1 of duodenal ulcer the ulcer was said to be eroding the pancreas. In 20 out of the 27 cases of duodenal ulcer there was indicanuria, and in 4 of the cases of gastric ulcer an excess of indican was also found, pointing to abnormal putrefactive changes in the contents of the upper part of the intestine, and suggesting that the pancreatitis was due to a catarrhal condition spreading from the duodenum to the pancreatic ducts. The comparatively high proportion of cases of duodenal ulcer in which a pancreatic reaction was obtained and its rarity in almost exactly the same number of cases of gastric ulcer lends support to this view. The pancreas was examined *post mortem* in one of the cases of adherent gastric ulcer, and advanced cirrhotic changes were found spreading a considerable distance into the substance of the gland.

Two other diseases in which I have obtained evidence of pancreatitis, and in which it is probable that the condition is due to an ascending infection from the duodenum, are sprue and pernicious anaemia. The former is well recognized as a disease of the intestine of microbic origin, and many cases of so-called pernicious anaemia are, I believe, dependent upon an abnormal intestinal flora with autointoxication and blood destruction. Out of the 13 cases of sprue, 8 gave a positive reaction, and in 2 of these *post-mortem* examination showed pancreatitis; 4 out of the 6 cases diagnosed as pernicious anaemia gave a pancreatic reaction. In 1 of these examination after death revealed chronic inflammation of the pancreas and an ulcerated condition of the duodenal mucous membrane. Operation on 2 also tended to confirm the diagnosis of chronic pancreatitis.

Chronic pancreatitis in tuberculous cases may arise from deposits of tubercle bacilli carried by the blood stream to the pancreas, but Carnot, Opie, and others have described chronic inflammation of the gland without any specific lesion, and Carnot has experimentally proved that such changes may follow the injection of tubercle bacilli and their toxins into the duct and parenchyma. I have not been able to obtain a necropsy in either of the two cases of tuberculosis of the intestine that gave a positive pancreatic reaction. Six others diagnosed as tuberculosis of the intestine gave a negative reaction, as did also 3 of pulmonary tuberculosis.

The pancreatitis that is occasionally met with as a sequel of typhoid fever is possibly due to a specific infection travelling up the ducts, and I have, therefore, included in this group 8 cases in which typhoid was present at the time of the examination, or the history suggested that it was probably connected with the symptoms of which the patient complained. Six gave a positive pancreatic reaction.

Nearly all observers are agreed that the pancreas is frequently affected in cirrhosis of the liver. Klippel and Lefas have concluded, as the result of their observations, that the two are due to the same etiological factor, but that the pancreatic condition is independent of, and not secondary to, the lesion in the liver. As alcohol is generally acknowledged to be a common exciting cause of cirrhosis of the liver, and its use to excess gives rise to disturbances of the gastro-intestinal tract, it is not a very far cry to assume the possible dependence of the associated inflammatory changes in the pancreas upon an ascending infection from the duodenum along the pancreatic ducts, at least in some cases. I have, therefore, included 21 cases in which there was said to be cirrhosis of the liver and pancreas in this group. Fourteen of these gave a positive pancreatic reaction. In all of these the state of the liver and pancreas was determined at operation, and in 1, which had given a positive result, a *post-mortem* examination was made. I may also add 7 cases of cirrhosis of the liver that gave no reaction, but were not examined on the operating table or in the *post-mortem* room.

In the large majority of cases already mentioned the results of the pancreatic reaction were borne out by the clinical condition and observations made at operation or in the *post-mortem* room; but I now come to a group of 11 in which, although I am assured that the pancreas was enlarged and hard, no pancreatic reaction was obtained. These I have put down as cirrhosis of the pancreas, as I believe they were cases in which, although there was more or less cirrhosis the result of past inflammation, no active degenerative changes were going on in the gland substance at the time the urine was examined. To these may be added the 5 cases with gall stones in the common bile duct in which no pancreatic reaction was obtained, but the pancreas was found to be enlarged and thickened at operation, and the 5 cases in which there was cirrhosis of the liver and pancreas with a negative reaction mentioned above.

3. *Associated with Diseases of the Heart, Vessels, or Lungs.*

Basing his conclusions on the *post-mortem* records of Guy's Hospital, Hale White is of opinion that disturbances

of the circulation are much commoner than other causes of "congestion, cirrhosis, and hardening of the pancreas"; but in my experience circulatory disturbances are relatively uncommon causes of pancreatic troubles. Fleiner and Hoppe-Seyler both state that arterial diseases cause nutritive changes in the parenchyma, which degenerates and is replaced by fibrous tissue. I have, however, only met with 10 cases giving a positive pancreatic reaction in which it was stated that the pancreatitis which was suspected to be present was probably dependent upon arterio-sclerosis. Long-standing difficulties of venous flow, due to chronic disease of the heart, liver, or lungs, may cause fibrosis of the pancreas, as of other organs, but Opie is of opinion that passive congestion is an unimportant factor in the production of chronic pancreatitis. I have examined the urine from 6 cases in which chronic pancreatitis was said to be associated with heart disease, and obtained a positive reaction in all of them.

4. *Secondary to Metastatic Deposits.*

In common with other organs of the body, the pancreas is liable to be the seat of metastatic deposits of growth from malignant disease occurring in other tissues, and it may also be invaded by growths situated in the stomach, duodenum, and neighbouring organs. The resulting inflammatory changes are usually local, but give rise to alterations in the urine, which can be recognized by the pancreatic reaction. I have examined the urine from 92 cases of malignant disease, and obtained a positive pancreatic reaction in 34 (37 per cent.). Sugar was found in the urine of 2 of these cases. One of these is of particular interest, for it demonstrated very clearly the dependence of the pancreatic reaction on degenerative changes in the pancreas and its disappearance with the destruction of the gland when advanced glycosuria has been established. The patient was first seen in December, 1906. There was then an abdominal tumour, which it was thought might be pancreatic, but an examination of the urine gave no pancreatic reaction, and there was at that time no sugar. An exploratory operation was performed by Mr. Mayo Robson, and a growth of the first part of the duodenum found, but it was said to be quite free from the pancreas. On January 18th a second specimen of urine was examined and found to be free from sugar, but it gave a well-marked pancreatic reaction, suggesting that the pancreas was then involved in the disease. At the request of the patient's friends, the abdomen was reopened a few days later, and it was then found that the growth had invaded the pancreas. In the early part of May examination of the urine showed 5·25 per cent. of sugar, and a modified pancreatic reaction gave a positive result. A month later the sugar had increased to 7 per cent., and a much less marked pancreatic reaction was obtained. In July the urine contained 7·25 per cent. of sugar, and the pancreatic reaction gave only a few crystals. In August 7·5 per cent. of sugar was present, and no crystals were found on carrying out the modified pancreatic reaction. In October the urine contained 9·5 per cent. of sugar, and the pancreatic reaction was negative. The patient died deeply jaundiced on November 5th.

In 63 cases the urine gave a positive pancreatic reaction, but I have not received any reply to my inquiries as to the final diagnosis and subsequent course of the case, and so cannot say whether there was clinical evidence of pancreatitis or not.

III.—PANCREATIC CALCULI.

Pancreatic calculi are exceedingly rare. In 1903 Oser was only able to collect 70 recorded cases. The calculi probably arise as a consequence of morbid changes in the pancreatic secretion consequent upon inflammatory alterations in the glands and ducts.[3] It has been supposed that, like gall stones, they are the result of infection of the ducts by micro-organisms. I have had the opportunity of examining the urine from 3 cases in which pancreatic calculi were discovered at operation, and 1 in which they were found *post mortem*. Three gave a positive pancreatic reaction, and 1 in which there was a large amount of sugar, and the whole pancreas appeared to be represented by fibrous tissue, gave a negative result.

IV.—PANCREATIC CYSTS.

Chronic pancreatitis is present in many cases of simple cyst of the pancreas, and there is no doubt, both on experimental and clinical grounds, that it is a frequent, and probably the most common, cause of the condition.[4] Cysts are, however, only likely to occur in the later stages of the disease when a considerable amount of fibrous tissue has formed. This, by its contraction, may cause constriction of the ducts in some places, while other parts are pulled upon and dilated, the pancreatic secretion will then tend to accumulate in the dilated portions and undergo chemical changes by which its physical characters are altered and its absorption interfered with. It is unlikely, therefore, that a cyst of the pancreas will be associated with a positive pancreatic reaction unless active degenerative changes are going on in the gland as the result of the pressure effects it may produce in the remainder of the organ or the cause of the pancreatitis still persists. Of the 4 cases of pancreatic cyst that I have examined the urines of 2 gave a positive pancreatic reaction and in 2 it was negative. One of the latter had, however, been operated on and the cyst drained for some three months before I saw him, when he still had a fistula. I had the opportunity of examining the urine and faeces from one of the cases giving a positive result three years after the first analysis. The urine then contained 4·5 per cent of sugar, although it had been quite free before. A positive pancreatic reaction was still obtained, suggesting that the active degenerative changes associated with the presence of the cyst in the first instance were still progressing and were likely to bring about still more marked glycosuria. In one case, which was diagnosed clinically as a pancreatic cyst, but the urine of which gave no pancreatic reaction, the tumour proved at operation to be a mass of tuberculous glands pushing forward the pancreas, and in another a hydatid cyst of the liver, which had been similarly diagnosed, caused no pancreatic reaction in the urine.

V. PANCREATIC INFANTILISM.

I have examined the urine and faeces from one case diagnosed as pancreatic infantilism,[5] and obtained a positive pancreatic reaction with the former.

VI.—MALIGNANT DISEASE OF THE PANCREAS.

The difficulty of successfully diagnosing cancer of the pancreas from chronic pancreatitis on the clinical data alone, especially when the latter is associated with obstruction of the common bile duct, is generally acknowledged to be very great. In the large majority of instances the laboratory analyses furnish information which is more conclusive than can be obtained in any other way. In cases of primary malignant disease of the pancreas the urinary pancreatic reaction is usually negative, but in a certain percentage a positive result is obtained, owing probably to the inflammatory reaction set up in the adjacent gland tissue by the irritation of the growth and the blocking of the duct. Of the 73 cases diagnosed as cancer of the pancreas that I have examined, the urines of 24 (33 per cent.) gave a positive reaction, and 49 (67 per cent.) a negative reaction. The diagnosis was confirmed by operation in 18, and by *post-mortem* examination in 7. Two of the latter had given a positive result and 5 a negative reaction, which corresponds with the proportions diagnosed clinically and at operation, which had given a positive and negative result respectively. Bile was present in the urines of 67, usually in large quantities, but only 5 gave a reaction for urobilin, which contrasts markedly with the cases in which the obstruction of the bile ducts was due to gall stones. It will be seen from these results that while the pancreatic reaction in the urine is of value as showing the presence or absence of pancreatitis in a case of persistent jaundice, it does not differentiate between those in which the inflammation is the result of malignant disease and those in which it is of simple origin. To attain this end the whole of the results secured by a complete qualitative and quantitative analysis of the urine and faeces must be considered, and these again be checked by a consideration of the clinical signs and symptoms.

VII.—MISCELLANEOUS.

In a miscellaneous group of 467 cases 461 gave a negative pancreatic reaction. Many of these were sent to me because it was thought, from the clinical condition, that there was some inflammation of the pancreas, but subsequent observation tended to disprove this and support the opinion based upon the urinary analysis in about one-third of the

cases. In the remaining two-thirds I have not received any reply to my letters of inquiry. Of the 6 cases that gave a positive reaction, 3 were suffering from diffuse peritonitis, 1 from pneumonia, 1 was a case of abscess of the liver, and 1 had pyaemia. It is possible that the pancreas was also affected in these cases, for in diffuse peritonitis and pyaemia involvement of the gland is not improbable, while in pneumonia histological changes have been observed by Chauffard and Ravaut,[6] and Trevor,[7] but the destruction of an excess of neucleo-proteid containing material might also conceivably account for the positive urinary reaction.

VIII.—NORMAL.

In the last group are specimens of urine from 50 presumably healthy individuals, none of which gave a positive pancreatic reaction.

On bringing forward the results of my observations on the urine in diseases of the pancreas in 1904 I stated that "a much more extended experience dealing with a considerably larger number of cases than it has been possible so far to obtain, will be necessary before the exact value of the test can be determined," and I think that I can now safely say that this has been done. My results during the five years since this was written, which I have collected in this paper, confirm the claim I then made that the reaction is "clinically useful," especially in its improved form. I have repeatedly, and from the first, stated that I do not believe that the "pancreatic reaction" is pathognomonic, or that taken alone it will enable a correct opinion to be formed in every instance, but I do think that when the results of an examination of the urine are considered in conjunction with the clinical symptoms and an analysis of the faeces a trustworthy diagnosis is capable of being arrived at in nearly every case of pancreatic disease. I lay considerable stress on the analysis of the faeces, for from the information so obtained one can infer the extent, and often the nature, of the pancreatic mischief, and also obtain confirmatory indications as to the cause.

With regard to the pancreatic reaction itself, my clinical experience and the results of the experiments I have carried out point to its being due to the destruction of substances with a glyco-nucleo-proteid content which yield a pentose in hydrolysis with acids, and, since the percentage of pentose in the dry weight of the pancreas is nearly five times as great as in any other organ of the body and it is more loosely combined and more readily set free than the corresponding sugar in other tissues, the reaction is obtained with very much greater frequency and more constantly in lesions involving active degenerative changes in that organ than in others. A single positive reaction cannot be accepted as a conclusive indication of a pancreatic affection, but is strong corroborative evidence of clinical signs pointing in that direction. The affections that are likely to give rise to a positive reaction are usually so readily differentiated from pancreatic disease clinically that there is little or no chance of confusion on that account. Cirrhosis of the pancreas will not give rise to a reaction unless there is also some active inflammation going on at the same time, and that is probably why a negative result is sometimes obtained when the gland is found to be enlarged and hard at operation. So, too, in cancer of the pancreas there is usually no reaction, for no destruction of gland substance takes place to set free the glyco-nucleo-proteid content of the cells unless the pressure of the growth or obstruction of the duct sets up a secondary inflammation.

ANALYSIS OF THE FAECES.

The assistance in diagnosis that may be gained by an analysis of the urine in cases of suspected pancreatic disease has been acknowledged for some time by a number of independent observers, but the importance of an examination of the faeces in such cases is not generally recognized. This is partly due to a natural disinclination to undertake such examinations, but is probably also contributed to by the somewhat conflicting statements of different authors who have made such analyses. I shall endeavour to explain the causes of these differences, and to prove that, when taken in conjunction with the clinical symptoms and the results of an analysis of the urine, and particularly the "pancreatic" reaction, a quantitative and qualitative analysis of the faeces may help in the diagnosis of affections of the pancreas and also indicate their nature and cause.

The points to which I wish particularly to draw attention are the following:

Appearance.

The frequent, bulky, soft, white motions of advanced pancreatic disease are very typical, and to an experienced eye present characters differing from those seen in biliary obstruction, tabes mesenterica, and other disorders with which they might be confused. They are usually whiter, more glistening, and have a peculiar odour, resembling that of rancid bacon. Such typical stools are, however, rare; first, because there is very frequently an associated obstruction of the bile flow, which alters their characters, and secondly, disease of the pancreas sufficiently advanced to give rise to such typical stools is comparatively uncommon. In the majority of cases of pancreatic disease, apart from those associated with biliary obstruction, the faeces show no characteristic change to the naked eye even when chemical analysis reveals considerable alteration in their composition.

Reaction.

The reaction of the normal faeces is amphoteric, faintly alkaline or faintly acid. A strongly alkaline or acid reaction is pathological. As a rule the stools in pancreatic disease are acid, the intensity of the reaction depending upon the degree to which the digestive functions of the gland are interfered with. I have met with two cases with markedly acid stools in which the irritation of the lower bowel was so great that it had to be washed out several times a day to allay the discomfort. In some cases the reaction is either amphoteric or alkaline, occasionally strongly alkaline, but in these the pancreatic disease is associated with biliary obstruction, in which the stools are usually alkaline, or is secondary to an intestinal catarrh, which generally gives rise to faeces with a markedly alkaline reaction.

Microscopical Examination.

Microscopical examination of the bulky white stool of advanced pancreatic disease shows numerous fat globules, fatty acid crystals, and undigested muscle fibres. Muscle fibres, provided that the patient is not an excessive meat eater and the digestive functions of the stomach are being normally carried out, are particularly characteristic, and are best and most frequently seen in cases of malignant disease of the pancreas. Fat in the form of undigested globules is also fairly characteristic, but it must be remembered that fatty stools are also met with in biliary obstruction, apart from disease of the pancreas; in diseases of the intestinal tract where absorption is interfered with, such as sprue, tuberculosis, or malignant disease of the intestine where the retro-peritoneal lymph glands are involved and there is blocking of the lymph flow; and in persons on a milk diet, or who are taking much cod-liver or olive oil. The earlier stages of diseases of the pancreas produce little or no change in the microscopical characters of the stools.

Chemical Analysis.

Since the preparation of fats for absorption by the intestine is peculiarly a function of the pancreatic juice, it is to an investigation of the undigested fat in the faeces that attention has been chiefly directed in searching for signs of disease of the pancreas. The method I employ is that which I first described in 1905.[8]

Total Fat.

The percentage of total fat in the dry weight of the faeces in cases of disease of the pancreas has been found to vary very much by different observers. This has been partly due to their investigating different forms and stages of pancreatic disease, and to their not making allowance for the cause of the disease and the modifications that it may bring about in fat digestion and absorption. I have endeavoured to overcome this difficulty by arranging my cases in groups according to the cause as far as possible.

Very wide variations in the percentage of total fat have been met with in my cases, not only in different forms of pancreatic disease, but also in patients suffering from the same disorders. The average percentage has, however, been abnormally high in nearly every class.

The highest percentage has been encountered in malignant disease of the pancreas, an average of 71.3 per cent. of total fat being found in my 38 cases. Chronic pancreatitis appears in severe cases to interfere with fat digestion and absorption almost as much as malignant disease of the gland, the average in 52 cases of chronic pancreatitis associated with gall stones in the common duct and jaundice being 56 6 per cent., and in 8 cases of cirrhosis of the pancreas 36 2 per cent. Müller has attributed the steatorrhoea in pancreatic cases with jaundice entirely to absence of bile.[9] A very considerable increase of fat in the stools may result from simple biliary obstruction, but the increase is usually greater when there is an associated affection of the pancreas. Although the average of total fat in my cases was nearly always abnormally high in every group in which disease of the pancreas was present, and the highest readings obtained were very markedly in excess of the normal limit of about 25 per cent., the lowest were not infrequently much under the normal limit of about 15 per cent. This is at first sight contrary to what might be expected, but the explanation is that these were cases in an early stage where as yet the secretion of the pancreatic ferments had not been interfered with, but was, in all probability, rather increased: for just as in the early stages of parotitis there is an increased flow of saliva, so in catarrhal pancreatitis there is probably also an increased flow of pancreatic juice, so that fat digestion is rather increased than diminished. In support of this supposition, it may be pointed out that the lowest readings were obtained in cases of intestinal catarrh, duodenal or gastric ulcer, and catarrhal jaundice, in which it is probable that the pancreatitis was due to catarrhal inflammation spreading from the duodenum along the pancreatic ducts. In these cases, however, the abnormal activity of fat-splitting bacteria in the intestine has also to be taken into account, and may afford an additional explanation.

Relation of Unsaponified to Saponified Fats.

The presence of an excess of unabsorbed fat in the faeces is suggestive of pancreatic disease, but a normal and even a subnormal proportion does not exclude it, especially in the early stages of a catarrhal inflammation. As I have already mentioned, steatorrhoea is also met with in other diseases, so that alone it is not of very great diagnostic value. The relation existing between the percentages of unsaponified and saponified fats is much more important, and even when an abnormally low percentage of total fat is present in the stool, a disturbance of this relation may help to confirm a diagnosis of disease of the pancreas. In normal faeces the unsaponified and saponified fats are present in approximately equal amounts, and any marked change in this relation is indicative of a disturbance of digestion. The effect of interference with the functions of the pancreas is, as might be supposed from a consideration of its work in digestion, to increase the proportion of unsaponified fat, while obstruction of the bile flow and intestinal catarrhs tend to raise the percentage of saponified fat.

The change produced by coexistent pancreatic disease and biliary obstruction depends upon the relative extent and standing of the two conditions. In cancer of the pancreas, where, as a rule, there is complete blocking of the common bile duct and serious interference with the functions of the pancreas, since the growth is most commonly situated in the head of the gland, the proportions of unsaponified and saponified fat are frequently nearly equal. Chronic pancreatitis, due to the presence of gall stones in the common bile duct and associated with obstructive jaundice, gave an excess of unsaponified fat in 29 of my cases and an excess of saponified fat in 21. Here, again, very wide variations in the percentages of each were met with, depending apparently upon the extent to which the bile flow was interfered with and the amount of damage of the pancreas.

I have examined the faeces from 7 cases of growth of the common bile duct. In 5 of these there was no evidence of involvement of the pancreas, and the saponified fat was found to be considerably in excess of the unsaponified fat. Of the two in which the pancreas was involved in the growth, and the urine gave a well-marked pancreatic reaction, one showed an excess of saponified and the other of unsaponified fat, but as the last-named was on an entirely milk diet the results are not strictly comparable with the others, since the experiments of Abelmann[10] have shown that in depancreatised animals from 30 to 53 per cent. of a natural emulsion, such as milk, is absorbed, and that when a portion of the gland has been left as much as 80 per cent. may be digested.

Another factor which plays an important part in determining the relation between the unsaponified and saponified fats in the faeces is the distribution and activity of the intestinal flora. Owing to the defensive action of the stomach juices and the rapid passage of the chyme through the upper intestine in a healthy person comparatively few bacteria are met with until within a foot or two of the colon. In this region, and in the large intestine, a certain amount of fat saponification normally goes on from the action of bacteria of the colon group. In acute and chronic pathological conditions of the gastro-intestinal tract the altered state of the secretions allows an ascent of micro-organisms above the level of their normal habitat,[11] and, owing to their increased number and probably also to alterations in their chemical activities, the saponification of fats is more energetically carried out, so that in cases of gastro-intestinal catarrh it is the rule to find a more or less marked excess of saponified over unsaponified fat in the faeces. Even when pancreatitis is present and there are other indications that the digestive functions of the gland are interfered with, the excess of unsaponified fat that might be expected is often replaced by an abnormally high percentage of soaps owing to the fat-splitting action of the intestinal bacteria.

It is obvious that when there is interference with the functions of the pancreas from cirrhosis consequent on past inflammatory changes and also an abnormal activity of the fat-splitting bacteria of the intestine the relation between the saponified and unsaponified fats will vary with the relative intensity of the two, and no hard and fast rule can be laid down—each case must be judged on its merits and the indications to be obtained by other methods of analysis and examination.

The varying relations found in my cases of duodenal and gastric ulcer are examples of this, and the same explanation probably holds good for the cases of sprue and pernicious anaemia that I have examined. Stones in the common bile duct and gall bladder have frequently not been found to be associated with a disturbance in the relation between the saponified and unsaponified fats in the direction that might theoretically be expected, especially when there has been no obstruction of the bile flow, and I am inclined to think that this may be due to the abnormal activity of fat-splitting bacteria, for in such cases there is generally evidence of cholangitis, and this, as well as the gall-stone formation, is probably consequent upon invasion of the biliary tract by intestinal organisms which have ascended beyond their normal limit to the level of the common bile duct.

In the early stages of catarrhal pancreatitis there is probably an increased flow of pancreatic juice, and in such cases it is the rule to find that the saponified are in excess of the unsaponified fats, often very markedly so, even when there is no evidence of abnormal bacterial activity in the intestine. This is probably due to the excess of pancreatic juice causing a higher proportion than normal of the fats to undergo saponification; and, although much of this is absorbed, leading to a low total fat reading, a higher proportion than usual appears in the faeces.

Inorganic Ash.

The excretion of calcium and magnesium salts appears to take place mainly by way of the intestinal mucous membrane, and particularly through the large intestine. Normally the proportion of inorganic ash in the faeces lies between 10 and 15 per cent., but when from any cause there is a catarrh of the intestinal walls this percentage is increased, and I have met with readings as high as 45 and 46 per cent. These have usually been cases where there has been well-marked chronic colitis. The occasional association of intestinal sand with muco-membranous colitis, and more rarely with diarrhoea, was pointed out by Dieulafoy, but I believe I was the first to show that an increase in the proportion of inorganic ash occurs in all cases of colitis.[12] Such an increase was found in each of the 30 cases of colitis that I have examined, the average for the 30 being 25.3 per cent. In appendicitis, intestinal

catarrh, and growth of the intestine, particularly of the colon, a similar, although less marked, increase has usually been met with, probably because in these too there is some colitis. For although clinically the disease may appear to be more or less localized in some particular part of the intestine, it is not unlikely that other regions are also involved to a less extent; and that this is so is suggested by the occasional association of pancreatitis, as indicated by the urinary reaction, with appendicitis, and of chronic colitis with enteritis or duodenal ulcer. An excess of inorganic ash in the faeces is therefore indicative of an intestinal catarrh and more particularly of a catarrh of the colon. In such cases the stools are usually strongly alkaline in reaction.

Bile Pigment.

Bile is the chief ingredient that takes any considerable part in furnishing the colour of the stools. Its chief pigment as excreted is bilirubin. A part of this is promptly oxidized, either in the bile passages or soon after it reaches the intestine, into biliverdin and allied bodies, and, under the influence of bacteria and enzymes in the intestine, these are reduced to hydrobilirubin (stercobilin), which constitutes the normal yellowish-brown pigment of the faeces. Bile pigment, as such, never appears in the normal faeces, and in health is not met with below the caecum. Interference with the bile flow is therefore an important factor in producing alterations in the colour of the faeces, the well-known "clay-coloured" stools of biliary obstruction being the result. Since many cases of pancreatic disease in which white stools exist are associated with more or less complete blocking of the common bile duct by gall stones or growth in the head of the pancreas, the lack of bile pigment is without doubt a frequent contributory cause in their production. I have, however, met with cases of pancreatitis with white stools where there was no jaundice or biliary obstruction, and in which a chemical examination of the stools showed a well-marked reaction for stercobilin, also others in which it was demonstrated that a return of the biliary secretions to the intestine by means of a cholecystenterostomy was not sufficient to bring about a return of the normal colour when the pancreatic juice was still absent. Both in these and the clay-coloured faeces of simple biliary obstruction the large excess of unabsorbed fat is an additional and important cause of their abnormal physical characters.[13] The whiter, more glistening appearance of the faeces in typical cases of pancreatic disease is, I believe, to be attributed to the existence of the fat largely in the form of free fatty acid crystals, which act upon light in the same way as snow and other finely crystalline substances that appear white in mass. Another factor which must not be overlooked, that also plays an important part in the production of the pseudo-acholic stools met with in other conditions where there is no icterus and possibly also no interference with fat digestion and absorption, is the action of bacteria on the faecal pigments. A certain amount of the hydrobilirubin of the faeces frequently, and perhaps always, undergoes further reduction to a colourless body, called by von Nencki "leuco-urobilin," through the action of bacteria, and it is probable that under pathological conditions this reduction may be so marked that little or no coloured pigment remains.[14] I have shown by a series of experiments that the bacteria present in the white stools of pancreatic disease have the power of decolorizing normal brown stools when grown under anaërobic conditions,[15] and I believe that it is to the abnormal activity of such bacteria that the absence of colour is due to a considerable extent in such cases.

It is obvious from these considerations that mere inspection of the stools is not a reliable guide as to the amount of bile pigment that is reaching the intestine, and for purposes of diagnosis this is most important to determine. Hydrobilirubin gives the same chemical reactions as the urinary pigment urobilin, with which it is closely allied, and it is only by applying these chemical tests that the presence of complete biliary obstruction can be determined with certainty.[16]

A more or less marked reaction for hydrobilirubin was obtained in all my cases, except 22 of malignant disease of the pancreas and 1 of cancer of the common bile duct, even when the faeces were quite white to the naked eye. In those where there was biliary obstruction from gall stones the intensity of the reaction varied with the degree of jaundice, but traces at least were found in every one, and in all but 10 a fairly well-marked reaction was obtained, showing that rarely, if ever, does impaction of gall stones in the common bile duct produce absolute blocking. On the other hand, out of 38 cases of cancer of the pancreas complete obstruction of the duct was met with in 22, traces of hydrobilirubin were met with in 13, and in 3 only was a well-marked reaction obtained, and in these 3 the growth was situated in the tail or body of the gland. As a rule, malignant disease of the common bile duct and gall bladder does not produce the complete blocking of the bile flow usually associated with cancer of the head of the pancreas, probably because the growth in these cases is of a soft character and allows a certain amount of bile to percolate through it.

Occult Blood.

In the last few years considerable attention has been devoted to the examination of the faeces for occult blood, that is to say, for traces of blood too small to be recognized by other than chemical means, and for this purpose the guaiac, aloin, and benzidine tests have been chiefly employed. The guaiac and aloin tests are about equal in sensitiveness, both responding to dilutions of 1 to 25,000, and are useful as controls for the simpler and more sensitive benzidine test, which reacts with 1 part in 200,000 of blood. If the benzidine test is negative, it may be concluded that no blood is present, and it is not necessary to proceed further, but if it is positive, it is advisable that the result should be controlled by the aloin or guaiac test. If these are also positive, the presence of occult blood is indicated, but if, on the other hand, they are negative, the presence of occult blood should be regarded as doubtful, and a further examination be made on a future occasion. Hence, a positive benzidine test shows nothing unless corroborated by one or both of the other tests, but a negative benzidine test is proof positive of the absence of occult blood.[17]

I have examined 579 specimens of faeces with these tests, and obtained evidence of the presence of blood in 89. It has been said that occult blood is found in the faeces constantly in malignant disease of the gastro-intestinal tract, whereas in simple ulceration it is only met with at intervals. My experience would tend to confirm this, for out of 25 cases of malignant disease of the intestine I found it in 22, in 23 of growth of the stomach it was present in 18, but in 21 cases of duodenal ulcer a positive result was only obtained in 5, and in 16 cases of ulcer of the stomach in 5. In several of the cases of simple ulcer a series of five or six examinations on succeeding days was made before a trace of blood was found. Cancer of the pancreas is very frequently associated with the presence of occult blood in the stools. In 25 of my 38 cases a positive result was obtained. The haemorrhagic tendency that is known to be present in chronic pancreatitis is sometimes shown by the presence of blood in the faeces, and in advanced cases serious haemorrhage may take place from the intestinal and other mucous membranes; in 2 of my cases such haemorrhage was the cause of death. This haemorrhagic tendency was the probable explanation of the positive reaction for blood given by the stools of 2 of my cases of chronic pancreatitis associated with jaundice and the presence of gall stones in the common duct, and 4 cases of pancreatitis in which there was no biliary obstruction. I was able to detect blood in the faeces of 4 out of the 7 cases of malignant disease of the gall bladder, and in 2 out of the 6 cases of growth of the common duct that I have examined.

Pancreatic Insufficiency Tests.

Early in the year 1908 Schlecht[18] described a method of estimating the functional activity of the pancreas, based upon the observation of Müller,[19] that it was possible to detect the presence of trypsin in the faeces by its action on a serum plate. I have employed this test in a number of cases and have found that, on the whole, it is satisfactory, but the necessity for using a serum plate is a drawback. I have therefore been using lately a modification introduced by Gross,[20] which is based upon the fact that pure casein, which is readily soluble in an alkali, is promptly precipitated by acetic acid from such a solution, in contrast to its digestion products. I have employed

this test in about 60 cases of suspected pancreatic disease, and find it a useful additional aid in diagnosis.

More recently Heiberg[21] has introduced a modification of Gross's test, in which a series of progressive dilutions of the faecal extract are incubated for a fixed time with the same quantity of casein solution. This method has the merit of frequently shortening the time of the examination, and also enables the various samples to be examined together and compared. I have made use of this test, along with Gross's method, in the last 30 specimens that I have examined, and I find that the results compare very well. For the reasons I have mentioned, I think that Heiberg's method is to be preferred.

It must be remembered that these insufficiency tests only indicate very gross changes in the digestive functions of the pancreas, and so are only of limited value when taken alone, but when considered in conjunction with other methods of examining the faeces and urine they certainly assist one in arriving at a more reliable opinion as to the condition of the gland.

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GALL STONES: ACUTE PANCREATITIS: RECOVERY.

BY CHARLES E. SALTER, M.D., B.S.LOND., F.R.C.S.ENG.,

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THE following case appeared at the time to be one of great obscurity, and was not made clear until a laparotomy was performed.

On September 20th, 1909, I was called to a married woman, aged 35, who complained of acute spasmodic pain in the upper part of the abdomen and of constant retching and vomiting of all foodstuffs.

Previous History.

Her previous history gave evidence of a gouty diathesis with a disposition to asthma and muscular pains. Two years ago she had had an acute attack of abdominal pain, attributed to appendicitis, which entirely cleared up. She had a similar attack in the spring of 1909, which also cleared up. She stated that for several months she had had a constant dull pain under the right lower ribs, as if "there were something to come away," that she had had daily effortless vomiting of food, bringing up simply acid gastric contents, never any blood; that the bowels had always been constipated, requiring daily aperients. She had never been jaundiced, had had frequent attacks of distension of the abdomen, with flatulent eructations and rapid pulse-rate. She had always suffered from menorrhagia, and had had two children, the younger being 18 months old; at the last confinement she had phlegmasia dolens in both legs and pleurisy on the right side. Latterly she has fallen into very poor health.

Present Illness.

The present illness began with acute pain in the upper part of the abdomen, coming on spasmodically, leaving in the intervals a dull pain in the epigastrium; vomiting and retching was continuous; the bowels had not been moved for two days. The temperature was 99.6°, pulse 110, respirations 18; the abdomen was generally distended and tender all over, but tenderness on pressure was more marked over a point to the right of the umbilicus and a point in the epigastrium midway between the umbilicus and the right costal arch. There was no jaundice, the skin perspired freely, the heart, lungs, and urine were normal. She was ordered an opium mixture, which was vomited, and fluid nourishment.

Course.

On September 21st I found that vomiting continued, though a little fluid nourishment had been retained. Temperature normal, pulse 90; the distension of the abdomen continued, also the tenderness over the areas mentioned. The bowels freely moved with a cascara mixture. This attack subsided in three days; solids were taken easily, though occasionally vomited, and she was able to get up on a couch, but a certain amount of distension of the abdomen and the tenderness at the painful spots remained.

On September 30th she was again attacked with the same symptoms, and next day the symptoms were more severe, the abdomen more distended and more tender; temperature 99.6°; pulse 110. The bowels had been relieved by aperients and she was given morphine ⅓ grain. She had no sleep for two nights.

Mr. Moynihan, of Leeds, saw her in consultation on October 3rd. The abdomen was very distended but moving slightly with respiration; the painful areas to the right of the umbilicus and in the right of the epigastrium were very tender. Temperature 100°; pulse 114 to 120; respiration normal. There was also a sensation of great soreness over the lower ribs on both sides. Mr. Moynihan considered the condition one of appendicitis primarily, complicated with gall stones, and advised waiting for the acute symptoms to pass and an operation in a quiet interval.

The same night the patient became very ill. The temperature on the morning of October 4th was 100.2°; pulse, 130. She had had a sleepless night, with great pain in the abdomen, so much so that ½ grain of morphine was injected. The knees were drawn up, and the abdomen was much distended, very painful to touch, though still moving slightly with respiration. All food by the mouth was stopped, and nutrient enemata with saline solution given by the rectum. The patient developed the facies abdominalis, and for the first time was slightly jaundiced. An operation was again considered, but rejected, it being thought advisable to wait for the subsidence of the acute symptoms.

For two days this condition continued, when the symptoms began to subside, first fluids and then solids being taken by the mouth. The temperature varied from 98.4° to 100.2°, and the pulse from 100 to 128.

On October 6th the patient complained of acute pain over the lower ribs on the left side and just about the splenic area. The skin was acutely painful to the touch; a thin layer of fluid was made out over the base of the left lung. Firmly applied strapping relieved the pain and enabled the patient to breathe comfortably.

On October 10th the patient was taking soft solids; temperature normal and pulse 100. The jaundice had disappeared but the pain in the left side continued; the abdomen had subsided, but became suddenly distended at times, the distension being invariably relieved by turpentine enemata; the beforementioned painful areas still remained tender.

This condition continued until October 21st, when all the symptoms returned with full force—retching, copious vomiting, and hiccough—with the same peristaltic pain and distension in the abdomen; pulse 110 to 126, temperature 100.2°. Her aspect was that of acute illness—dusky lips and dusky patch on each cheek, the legs were drawn up, and pain was complained of with the slightest movement, though the abdomen still moved slightly with respiration.

Operation.

This condition continued until October 23rd, when a laparotomy was performed by Mr. Moynihan. An incision was made in the right linea semilunaris from the costal border to just below the umbilicus. The appendix was first searched for; the caecum was pulled up and the appendix removed; there were some adhesions about its base, and it was long and of a small lumen. There was no other change. It was noticed that the whole of the large intestine was much distended. The gall bladder was next examined; small gall stones were felt in it. A general survey of the abdomen was then made; some adhesions were discovered about the tail of the pancreas, and on separating these several ounces of blood escaped, showing that there had been a recent haemorrhage about the pancreas at the splenic end. Patches of fat necrosis were then found scattered about the omental and mesenteric fat, more marked in the neighbourhood of the haemorrhage; there was a patch on the mesentery of the removed appendix; on gently examining the whole pancreas it was found very much swollen, but there were no further haemorrhages. The gall bladder was then opened, and some dozen or so small rounded gall stones removed; the bile ducts were explored and found free from stones; the ampulla of Vater was found empty. A large rubber tube was then inserted into the gall bladder, which was drained in the usual way. The pulse-rate during the operation rose to 150.

After-History.

The patient made an uneventful recovery; the gall bladder was drained for three months, and then allowed to close.

MISS ELLEN ELIZABETH BOND, of Lancaster, who died last May, has set aside the residue of her estate, amounting to about £10,000, on trust for the erection of a sanatorium for the relief and cure of consumptives. There is a proviso that if a more beneficial cure has in the interim been found than the open-air treatment, then the money shall go to a home for incurables. She desires the home shall be erected in the neighbourhood of Lancaster, and that the residents of the latter borough shall have first claim; further, that the sanatorium be called "The James Bond Sanatorium for Consumptives," and that rooms be called after her brothers, John Bond and Edward Thomas Bond. The testatrix makes certain suggestions to the trustees, but specifies that they are not binding, the trustees having absolute discretion in the matter.

CASE OF IMPACTED GALL STONES IN CYSTIC DUCT: OPERATION: RECOVERY.

By CLAUD F. FOTHERGILL, M.B., B.C.CANTAB.

THE following case was so atypical, and presented a train of symptoms so unlike one's expectations, that I think it sufficiently interesting to record.

A lady aged 24, married three years, no children, one miscarriage, gave a history of frequent so-called "bilious attacks," dating from the age of 12, when she had an attack of jaundice. The attacks consisted of headache, nausea, and some vomiting, and usually lasted a day, occurring at intervals of several months.

In August, 1909, she was seized with what seemed to her to be a bilious attack of unusual severity. At the time of onset she was on a trip to Norway, and happened to be in harbour. In addition to the usual symptoms there was abdominal pain, mostly in the upper portion of the abdomen. The ship's surgeon diagnosed the condition as "gastritis." The attack passed off in a day, but the patient felt very sore in the abdomen for the next three days.

In September, 1909, she had another attack much the same as the last and treated herself. I was first called to her on December 13th, 1909. An attack had started at 6 a.m., accompanied with headache and diarrhoea; she was vomiting bile-coloured material at frequent intervals and had moderately severe abdominal pain, worst around McBurney's spot, but there was also pain along the costal margin on both sides. The abdomen moved freely in respiration, there was no hyperaesthesia or anaesthesia; no tumour or thickening could be felt. The appendicular region was distinctly painful on pressure. The pulse and temperature were both normal.

Next morning, after the vomiting had ceased and the patient had become distinctly better, I arrived at the diagnosis of intermittent appendicitis, partly from the previous history but chiefly as the pain was worst in McBurney's area, although most other symptoms and physical signs were absent. She rapidly recovered, and I recommended an exploratory operation with a view to locating the trouble and probable removal of the appendix in the quiescent period, believing that further attacks were all but inevitable.

My advice, however, was not followed, and on the morning of April 18th, 1910, another attack occurred. At 11 a.m. the patient was almost incessantly vomiting muco-bilious material, without any trace of blood; there was considerable abdominal pain, quite acute around McBurney's spot on deep palpation. The pain was also severe on the left side, and she complained of pain in the back. She had no pain radiating into the shoulder, arm, or leg. The abdomen moved quite freely in respiration and appeared rather empty. There was no hyperaesthesia. The temperature was 98° and pulse 74.

At 5 p.m. her condition in spite of starvation remained much the same, with frequent vomiting.

At 9 p.m. I called Dr. C. M. Pennefather in consultation. He diagnosed "acute gastritis;" a soap enema was ordered and an opiate.

The vomiting ceased about 3 a.m. on April 19th, and the pain became decidedly better. On palpation it was worst one inch above and two inches external to the umbilicus on the right side. The left side was free from pain, even on deep palpation. She had five hours' sleep during the night, and at 11 a.m. on April 20th there was no pain except on deep palpation (in the same situation as on the previous day).

At 9 p.m. I was sent for urgently, and found the vomiting had restarted at 5 p.m., and was more frequent than before. Since 5 p.m. there had been frequent micturition, but no blood in the urine. The pain in the abdomen at the time of my arrival was so acute at McBurney's spot that I injected ½ grain of morphine hypodermically, having decided on immediate operation.

Operation.

Mr. R. P. Rowlands very kindly came down after midnight, and decided on an exploratory operation. The incision was made through the sheath of the right rectus, and we found the cause of the trouble to be a gall bladder tightly distended with muco-purulent fluid, and much enlarged, containing three large faceted gall stones, and two more (in all five) so tightly impacted in the cystic duct that the one was only removed whole with extreme difficulty, and the other had to be removed piecemeal with even greater difficulty. The gall bladder and cystic duct were involved in many adhesions. The incision into the gall bladder was closed, with a rubber tube sewn in with catgut as drain, and the bladder sewn to the anterior abdominal wall, the whole being carefully packed off with gauze.

The gauze was removed on the third day, the tube came out on the fourth, and the biliary fistula had completely closed by May 2nd (less than twelve days), and the patient made a straightforward recovery afterwards.

The interesting features of the case were: (1) Absence of positive symptoms and physical signs, and there was nothing which could be honestly styled biliary colic until a short time before the operation. (2) The difficulty of diagnosis between a simple acute gastritis, appendicitis, biliary colic, and in a lesser degree renal colic. (3) The pulse never rose above 90, nor the temperature above 100°. (4) Are some of the so-called "bilious attacks" to which a good many women are prone (and fewer men) really due to gall stones?

A CASE OF DERMATITIS ARTEFACTA, AND ITS SEQUEL.

By R. O. ADAMSON, M.D.,
GLASGOW.

DR. NORMAN WALKER'S interesting paper in the JOURNAL of June 18th recalls to me the only case of the kind that, so far as I know, I have met with, and its brief recital may interest some of your readers. The patient developed at a later period further factitious illnesses, which I shall also shortly refer to. As such cases bring mortification and worry to all concerned, by no means excepting the medical attendant, and as every practitioner may meet with an example, they are of some importance. Needless to say, a prompt diagnosis is amply rewarded; but, as Dr. Walker points out, it is one thing to diagnose the cause, another thing to prove it.

My patient was a young lady of more than usually attractive appearance, in whom I had detected, in a professional acquaintance of some years, nothing that might have suggested the morbid tendencies she came to exhibit.

STAGE I.

Her illness began with the unexplained development of some patches of "weeping eczema" on her face. It may be that the first patch was genuine. However that may be, there continued to appear on the cheeks, forehead, nose, neck, arms, and, later, thighs and legs, areas of the same type of cutaneous disorder, despite incessant treatment, and often these areas appeared in places covered with dressings and bandages.

The crop never failed for many months, sometimes better, sometimes worse. In the earliest stage of a patch there was an acute erythematous flush, like a scorch, which rapidly became moist, suppurated, and eventually healed by "crust." Their shape was often square, or linear, sometimes round. This linear element was an important clue in the final diagnosis. There was no difficulty in getting any one diseased area to heal, though it sometimes promptly relapsed. The feature of the illness was the endless succession of diseased areas; their number and situations, and the necessary—as it seemed—applications, kept the patient a prisoner in the house for many months, unpresentable to her friends, almost in isolation. This was borne, on her part, with remarkable patience.

I need not detail the consternation of the family or the worry sustained by myself. I confess that the idea of the complaint being factitious never occurred to me. Those who have met with such cases for the first time may understand this want of imagination. I was also, I must say, supported in my sympathy for my patient by a skin specialist, who diagnosed "dermatitis herpetiformis." Naturally, no good resulted, and I was absolutely sure that, whatever it was, it was not that. In time the lady went to a well-known spa for treatment, and two, if not three, doctors saw her and treated her, with no benefit. Again the diagnosis of dermatitis herpetiformis was made, why, I cannot say, as the condition did not seem to me to bear any resemblance to that disease.

Finally, after many months, I regret to say, the whole story was laid before a well-known dermatologist, who, after hearing and seeing all, promptly diagnosed dermatitis artefacta. I felt he was right, and will not detail my own reflections.

And now for the sequel, to bear out what Dr. Walker says as to the trouble these can give and the tact needed. The attitude of the family was frankly unbelieving. The patient was not, of course, told anything, and treatment was continued as before. A nurse was sent into the house, to be with the patient all day, to sleep in her room at night, and her instructions from me were to detect the artifice. In two weeks nothing had been detected, numerous fresh areas of disease had developed, often under most carefully applied bandages, and the nurse, an excellent one, and all on my side at first, became convinced we were entirely on the wrong track. I was surrounded with an atmosphere of distrust and

approaching discredit. But it was clear that one nurse could not watch night and day, so trusting to the dermatologist and the conviction he had inspired, I insisted, as a last card, on the patient's removal to a nursing home, in which the lady's guardians, being fortunately reasonable people, at length acquiesced. There the patient was never left alone, night or day, and was never allowed to leave her room for any purpose, and the nurses knew well their duty; yet three days elapsed before a movement under the bedclothes led to the detection of the lady's hand holding most unsuspiciously a handkerchief, but in the handkerchief was a small ragged piece of pumice-stone! and thereupon this protracted case came quickly to a complete cure. I am ashamed to say that I understand no little "kudos" accrued to me from an undiscriminating public, which considered that at long last my patient efforts had restored a young lady's good looks and health.

STAGE II.

A year or two later this patient developed gastric pain, vomiting of blood, etc., and her guardians were much alarmed. Not to go into detail, I could detect nothing, and was conscious of some unreality in the matter; while the blood, of which there was plenty in evidence, had clearly not been in the stomach, despite its presence in vomited matter. For instance, it lay as a pinkish layer at the bottom of a vessel of vomited milk, and the milk was tinged pink. The patient's symptoms were clearly recounted, and her attitude seemed to be one of entire bona fides. What course my treatment would have run without my previous experience of her I know not, but after some days' careful observation I was certain her illness was feigned, and told her so, and there was an end of the matter. What her artifice was she did not disclose, nor, indeed, would she admit or confess anything, but her symptoms promptly ceased.

STAGE III.

Again, a year or more afterwards, she developed "obstruction of the bowels," that is, the bowels never moved, despite most drastic remedies administered before I was called in. Her guardians suspected nothing, and were much concerned about her condition. However, I presently told them that, in my opinion, the illness was feigned, and though they scouted the idea they promised me their help, and as far as they possibly could watched her night and day, and acted loyally to me, I believe, seeing that she took medicine and food, and so forth. The patient looked well, had no other symptoms, no distension, and enemata failed to produce any result. I ordered some pills which should have been cruelly effectual. These and other medicines she was seen to swallow. I cannot explain it, for I never obtained the information from her, but it is a fact that she was never known to have the bowels moved by those watching her for fully a month. Perhaps her friends weakened in the resolve to watch her constantly and everywhere. The patient, at any rate, never faltered in her statement that no action took place, and described her discomforts accordingly. I mention these facts to show the hopelessness of treating such patients at home, for the general public simply cannot realize this kind of case at all.

I was not disturbed about my patient, but sure that she was hoodwinking those around her, and to put an end to the farce I insisted on her going into a home, and again she was put under the care of two nurses, and strictly confined to her room. I wonder at her mental attitude in allowing herself to be taken so far to certain detection. She received in the home some active aperients of simple nature, and a full dietary, with a result as entirely satisfactory to me as it ought to have been ignominious to her. If it was, she did not show it. She was sent home immediately, cured, after an interview with me which I am hopeful was the means of keeping her well till now—that is, for several years. I regret I never examined the sensitiveness of her palate.

In other respects this patient is a bright and pleasant girl, and no one would, I think, suspect her of these "hysterical" tendencies. Of the many strange things met with in practice, I regard my experiences with this young lady as amongst the strangest.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SNUFFED POWDERS IN CORYZA EX FENO.

As Bristowe recited, the great Dr. Elliotson, in the earlier part of the last century, suggested the pollen of various grasses as the cause of "hay fever," and Mr. Blackley, himself a sufferer from that troublesome malady, published a book on the subject, in which after many researches and observations the conclusion is reached that Dr. Elliotson's suggestion is verified. Blackley thought that the local effects of the pollen were partly mechanical and partly chemical; to the eyes, conjunctivitis; to the nose, coryza; and to the bronchial tubes an irritative asthma.

As to coryza ex feno, may I suggest to my brethren a seasonable local medicament?

Of all iamatology, of all discourses on remedies for diseases, precise magistral formulae are the best for the busy medical practitioner. Here is a very useful one, of my devising and frequent using, and opportune at this time when grasses flower and susceptible persons suffer from their annual catarrh:

℞ Pulv. pimentae bac. ... ... ʒj
Ol. eucalypti ... ... ♏iij
Misce; fiat pulvis. To be used frequently as a snuff.

This mixture of allspice and eucalyptus carries not the intention of a sternutatory, ptarmic, or sneezer, but, rather, is an errhine, producing a substitutive discharge of healthy pituitary mucus, in which *materies morbi* are killed and washed away.

In the present preparation the pimento is a local stimulant and antiseptic, and the latter quality is accentuated by the co-operation of the eucalyptus.

Experto crede. Long ago I discovered allspice as a virtuous succedaneum for snuff of tobacco and as an excellent medium for the local exhibition of certain other medicaments.

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A CASE OF DIVERTICULUM OF THE UPPER PART OF THE BLADDER WITH A PATENT URACHUS.

MRS. B., aged 33, mother of two children, was admitted to the Adelaide Hospital on March 1st, 1910. She complained of inflammation of the bladder, which gave her great pain on micturition, and obliged her to pass urine very often. She also complained of umbilical hernia. Her bladder trouble seems to have begun about four years ago during her first pregnancy, when she had some difficulty in micturition, and for a time passed most of her urine by the umbilicus. She has micturated naturally since the birth of her child, but the act has become increasingly painful. The urine now is alkaline, and contains pus.

She is a thin woman, with obvious asthmatic breathing. On examining the bladder the sound could be insinuated into a cavity at the top of the viscus, and it could then with some difficulty be got into a further passage, and appeared under the umbilical scar. The patient was anaesthetized, and an incision about 3 in. long was made in the middle line below the umbilicus. A broad band containing dilated veins, and having the appearance of a varicocele, was found adhering to the parietal peritoneum. In this band the dilated urachus was contained. The peritoneum was opened on either side, and the incision prolonged downwards to the pubis. When the bladder was exposed it was found to have a large diverticulum at the top with the urachus attached to the apex. The appearance of the bladder, with its diverticulum, reminded me very much of an hour-glass stomach. The narrow neck between the diverticulum and the true bladder was clamped and divided, and then the urachus, together with the whole area of abdominal wall which comprised the umbilical bulging was removed. The opening in the bladder, which was about 2½ in. long, was then stitched up with a double row of catgut sutures, taking care not to penetrate the actual mucous membrane. A small drain was fixed in the lowest part of the bladder incision, so as to reduce to a minimum the risk of leakage.

But for an acute attack of asthma, the patient made an excellent recovery. The bladder drainage tube was taken out in eight days, and the urinary sinus closed in a fortnight; the woman is now free from all bladder symptoms, and has been cured of her umbilical hernia.

For the notes of this rare case I am indebted to Mr. H. Dunstone, one of my clinical clerks.

C. E. TODD,
Surgeon, Adelaide Hospital, South Australia.

NOTES ON A CASE OF EXTRAUTERINE PREGNANCY.

MRS. E., aged 28 years, was a strong, healthy woman, and mother of four children, the youngest aged 2 years. She had always been quite regular; previous labours had been normal, and she had had no miscarriages.

She stated that when about fourteen days over her usual time she began to have cramp-like pains in the lower part of the stomach, and felt as if she was going to have a miscarriage. On the morning of June 1st, about 3 a.m., she woke up with very severe pains, which continued at intervals for two or three hours. She then got out of bed rather suddenly to open a door, when the pain became very much worse, and she fainted. When I saw her at 8 a.m. she was very pale, with an anxious expression; the pulse was 80, regular, and rather soft. She complained of severe pain over the lower abdomen, particularly to the right side of the uterus, where it was extremely tender; there was no distension. There was no haemorrhage, and nothing could be made out by vaginal examination, owing to the extreme tenderness. The temperature was normal. She was removed five miles into the Lithgow Hospital, and during the afternoon her pulse rose gradually to 100°, and the abdomen became distended, at first on the right side, and later generally. In consultation with my colleagues, Drs. Kirkland and Gibbes, a diagnosis of ruptured extra-uterine pregnancy was made, and it was decided to open the abdomen as quickly as possible.

An incision was made in the middle line, and on reaching the peritoneum it was seen to be bluish and evidently distended with blood. On incising it an enormous quantity of blood gushed out; the right tube was seized and brought out of the wound, when a small ragged perforation was discovered in the middle of it, opening directly into the peritoneal cavity. The tube and ovary were ligatured *en masse* as quickly as possible, cut off, and all clots, etc., removed. Placental tissue was found, but no fetus. By this time the patient was collapsed and quite pulseless; she rallied immediately when the abdominal cavity was flushed out with a gallon of hot saline solution, most of which was left. A pint was also injected subcutaneously into the axillae. The wound was closed with through-and-through sutures, the condition of the patient precluding any idea of layer suturing. The operation lasted about thirty minutes. Afterwards she slowly improved, although her condition was critical for the first two days. The convalescence was gradual but sure, and at no time did the temperature rise above 100°. The pulse-rate remained rapid for about a fortnight, and then sank to normal. The wound healed *per primam*.

The points of interest in this case seem to be: (1) The early date of the rupture; (2) at no time was there any discharge of blood or decidua from the vagina, except a slight stain on the morning following the operation; (3) the patient being a well-nourished and muscular woman, it is improbable that her condition would have been discovered by careful pelvic examination at so early a stage; and (4) finally, the absence of any history of previous pelvic trouble.

H. R. RICE,
Hon. Surgeon, Lithgow District Hospital.
Lithgow, New South Wales.

ON the occasion of the International Exhibition of Brussels the Belgian Society of Ophthalmology has organized a meeting which will take place on September 24th and 25th. Papers will be read by MM. Axenfeld, Hess, Hirschberg, Jessop, Landolt, Motois, Straub, and others. Those who desire to take part in this friendly gathering are asked to communicate with Professor van Duyse, 65 rue Basse-des-Champs, Ghent, Belgium, before August 15th.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

AUCKLAND HOSPITAL, NEW ZEALAND.

A CASE OF CEREBELLAR TUMOUR.

(By G. GORE GILLON, Honorary Surgeon to the hospital.)

THE patient in the following case, a girl aged 15, was admitted to hospital on April 22nd, 1908. Her family history was good, and her personal to the effect that she had been vomiting almost daily for six months past, and suffered from headache and dimness of vision. Headache, at first occipital, had begun nine months previously. There was also some stiffness of muscles at the back of the neck. The headache was now frontal, and almost constant. Vomiting came on after the headache, and was independent of meals. Her vision had been dim for twelve months, and had been getting worse. She had giddiness, and had lost weight (on admission her weight was 7 st. 4 lb.). She had been treated before coming to the hospital for stomach disease.

Condition on Admission.

The skull was quite symmetrical everywhere; intelligence and cerebration good. The stomach was tested, and showed nothing abnormal.

She staggered slightly to the left side when walking, and walked with irregular, uncertain gait. She swayed when standing up, and, when the eyes were shut, fell always to the left side. There was slight inco-ordination on this side. She showed dysdiadokokonesis in the left arm, and the grip of its hand was weaker than that of the right.

The reflexes varied; the knee-jerks were absent; the epigastric reflex present. The plantar reflex on the left side was sometimes absent. There was no Babinski sign.

The left eye could not move into the left outer canthus, and there was slight nystagmus when the eyes were directed to the left. Sensation was slightly impaired over the left naso-orbital area supplied by left fifth nerve.

Optic neuritis being suspected, the Honorary Ophthalmic Surgeon, Dr. Pabst, was asked to examine and report on the patient's eyes. He reported that there was right convergent strabismus, combined with paralysis of the left external rectus; that fixation was performed by the left eye owing to its superior visual acuity; that there was double optic neuritis, more marked on the right side (pupils equal, but with sluggish reactions), and the eyes were hypermetropic.

Diagnosis.

On these findings a diagnosis of cystic tumour of the left cerebellum (possibly due to hydatids) was made.

Treatment.

On May 2nd—eleven days after admission—Mr. Gore Gillon trephined over the left cerebellar region, in the presence of Drs. McDowell, Sweet, Inglis, Pabst, and Thomson, Dr. Aickin assisting and Dr. Closs giving the anaesthetic. The whole of the bone covering the left posterior occipital fossa was removed. The membranes were bulging. Clear fluid (about 3 oz.) was found in a cyst in the left side. No hooklets were found.

After-Progress.

The following notes show the progress of the case during convalescence:

May 3rd. The patient vomited once.

May 4th. Drainage tube removed. Large amount of cerebro-spinal drainage.

May 5th. Iodoform packing removed.

May 7th. Vomited once.

May 13th. Complained of frontal headache, and vomited.

May 20th. The patient much better; no vomiting; no headache; eyesight improving. There is a protrusion at the site of the wound.

May 27th. Eyes examined. The optic neuritis is much less—almost disappeared.

June 5th. Wound painted with alcohol.

June 10th. Vomited once and complained of headache. (After each of these attacks of vomiting and headache the temperature rises to 100° F. for a day, otherwise the temperature and pulse normal throughout.)

July 4th. Red lotion applied to the cerebellar hernia.

July 10th. Pot. iod. given for three days only. Protrusion is granulating over.

By the end of July the patient was able to walk long distances; she did not stagger, and there was no swaying when her eyes were shut; the squint had disappeared, and the grasp of her hands was equal; pulsation had

ceased; in fact, all her previous symptoms had disappeared. She was again examined by the honorary ophthalmic surgeon, who reported:

Optic neuritis quite gone in left disc, which is pale and atrophic. Some slight swelling in right disc.

$$\text{V.A.} = \text{R. with } \frac{+ 2 \text{ sp.}}{- 50 \text{ Eg.}} \quad \text{vert.} = \frac{6}{24}$$

$$\text{L. with } \frac{+ 2 \text{ sp.}}{- 50 \text{ Eg.}} \quad \text{vert.} = \frac{6}{36}$$

Depreciation of vision due to consecutive atrophy. Had not trephining been done blindness would have resulted before now.

A few days later—namely, on August 5th—the patient was discharged, her weight then being 8 st. 9½ lb.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

YORKSHIRE BRANCH: LEEDS DIVISION.

Leeds, Tuesday, June 14th, 1910.

Dr. J. NIGHTINGALE in the Chair.

Idiopathic Acidosis in Children.

DR. GORDON SHARP read a paper on this subject. He said that in private practice this condition appeared to be more frequently met with among children than among adults.

Symptoms.—The odour of the breath was sweet and easily recognizable as soon as one entered the bedroom. The respirations were frequent, the skin hot and dry, the cheeks were flushed, and the temperature might range from 99° F. to 103° F. The patient was often drowsy or semi-comatose, only rousing up when the vomiting came on. Everything was rejected, even a drink of water—some time after it was taken. There was not, as a rule, vomiting of large quantities, only a mouthful or two at a time of clear fluid. As soon as the vomiting was over the child fell back into the drowsy state. It would thus appear that the poison was excreted by the stomach as well as by other channels. The urine was often scanty, but always contained acetone and gave Legal's reaction. It was never safe to say that acetone was present or absent unless the urine was distilled. To the distillate a small crystal of sodium nitro-prusside should be added, dissolved, and then half a drop of potassa or soda solution. These gave a maroon-red colour, which would increase in depth after adding an excess of strong acetic acid if acetone were present; but should there be no acetone in the distillate, the maroon-red would be discharged. The bowels were often constipated, and when they moved freely and spontaneously, Dr. Gordon Sharp looked upon this as a hopeful sign. In the fatal cases the coma increased, the sweet odour of the breath often disappeared, the temperature rose to 103° F., or even higher, before the end; clonic contractions of muscles, or even convulsions, followed; the vasomotor centres failed, as evidenced by the profuse sweating and varying red and pale hues of the skin. Towards the end the breathing was often of the Cheyne-Stokes type. The description of the abdominal symptoms he had purposely left till the end. There was no violent pain in the abdomen, but there was some tenderness and slight pain. The tenderness was always high up in the three uppermost areas, as if the spleen, pancreas, and liver were affected. In the cases which got well the drowsiness or coma passed off, the patient passed water more frequently, the vomiting ceased, and a long draught of fluid was taken and retained, and the bowels might move. During the past three years more particularly Dr. Gordon Sharp had seen many cases, but so mild that they got well in forty-eight or fifty-six hours at the outside. A purgative of the saline type appeared to put them all right. He had at present two severe cases whose history he had watched from two and a half to three years in many attacks; and he had had two fatal cases within the same period. This was not a new disease or collection of symptoms, for doubtless it was formerly included amongst the ptomaine poisonings, meningitis, intestinal obstructions, and so on.

Names given to the Condition.—It was sometimes called "cyclical vomiting" because of one prominent symptom, vomiting, and because it appeared in cycles like a bilious attack. It was called "acetonuria," because acetone was detected in the urine. It was also named "acetonaemia" because acetone was supposed to be present in the blood. This was now believed to be contrary to fact; the acetone did not appear in the blood but in the urine. Perhaps, after all, the name "acidosis" was the best. This was the name given by Naunyn, as would be seen in the next paragraph.

Etiology and Pathology.—Although he was not qualified to discuss this authoritatively, yet a non-expert might have common-sense views on technical points. It was well known that many, if not all, of the symptoms of acidosis might be met with in the course of other diseases—such as fevers, diabetes, locomotor ataxy, nervous diseases, intestinal obstruction due to many causes, after the exhibition of morphine and the belladonna alkaloids and after ether and chloroform anaesthesia. It was important to remember in this connexion that acetone often appeared in the urine of a patient before operation, being secondary to the disease he was suffering from, and that after the anaesthetic had been given he might appear to die of a new disease—namely, acidosis. Acetone was found in the urine in health to the extent of ¼ grain, or 16 mg., daily, and it was said to be derived from the fats, and to be increased in amount when there was a deficiency of carbohydrates in the dietary. Naunyn, who had had special opportunities of studying the subject, said the acetone was not derived from the fats, but was derived from disintegrated protein tissue, or, rather, that acetone was derived from β-oxybutyric acid, and that β-oxybutyric acid was derived from disintegrated protein tissue.

Pathological Chemistry.—Naunyn then said acidosis was an acid intoxication of the blood and other tissues, and this acid, he believed, was β-oxybutyric acid, which was eliminated in the urine, not free but in combination, and that acetone (as well as diacetic acid) was merely a derivative of this β-oxybutyric acid. Of course, free acetone did appear in the urine. But what would cause all this? Dr. Gordon Sharp thought it was quite reasonable to suppose that a shock or strain to the nervous system might so send it out of action that the tissues were unable to make use of carbohydrates, just in the same manner as shock or strain might cause diabetes, and the extent of the shock or strain would determine whether the damage done to the nervous controlling centre was temporary or permanent. The shock or strain might be various, such as an acute disease or an anaesthetic or other cause acting on a susceptible nervous system. When one considered that fats had to be rendered soluble by hydrolysis into soaps, and proteins had to be made by a like process of hydrolysis into (1) soluble peptones and (2) later into amino-acids, and that carbohydrates had to be converted into sugars—that all this had to take place before the substances named could be absorbed, then one did not wonder that a breakdown took place now and then. But this was only a part of the analytical side of metabolism, and besides, there was a synthetical side, for the amino-acids had to be reconverted into insoluble proteins, the soluble soaps into insoluble fats, and the soluble sugars into insoluble carbohydrates.

Treatment.—Mild cases needed no treatment beyond a saline purgative and plenty of cold water freshly drawn from the tap, or aërated soda water—not simple aërated water—and the withholding of all food till the child asked for it; but in that part of the world the bottle of medicine was all-powerful, so he prescribed a mixture made up of 36 grains of heavy carbonate of magnesium, 24 grains of sodium bicarbonate, 3 grains of powdered tragacanth, 2 fluid drachms of glycerine and peppermint water to 3 fluid oz. Dose: Two teaspoonfuls every one or two hours with or without water or aërated water. In the severe cases he prescribed the same mixture to be given as often as the child roused to pass water or to vomit, and to be given in about the same quantity of aërated soda water; or, if the child refused the aërated water, then in plain water. In order to get as much alkali into the tissues as possible, he asked the nurse or mother to add about 10 grains of sodium bicarbonate to each tumblerful of aërated soda water, that was, to each half-pint. If the child refused this reinforced aërated water, he told the nurse to try the addition of a tablespoonful of milk to each tumblerful of fluid. This masked the taste

of the sodium bicarbonate. As they all knew, children often refused this, and many other things that were prescribed, and then one must give that most glorious of all beverages —freshly drawn cold water. He never aroused the child, for the outbreaks of vomiting were frequent enough to enable one to administer medicines and drinks. Occasionally the vomiting recurred so frequently that the child got no rest, and then he gave 1 minim of tincture of opium, 10 minims of compound tincture of cardamoms and the same of glycerine, with water to 1 fluid drachm, every hour till rest was obtained. He had seen a child sleep for five or six hours after a few doses of this mixture, and awake refreshed, and he knew that the plague had ceased.

ILLUSTRATIVE CASES.

Fatal Cases.

1. Boy, aged 3½, was brought for advice in February this year. As soon as he came into the room Dr. Gordon Sharp recognized the characteristic odour, and asked the mother if he had continuous vomiting, to which she replied in the affirmative. He then asked if she observed the sweet odour of the breath, but she said she did not. He prescribed the usual remedies, but they were of no avail, and the boy died in eight days. It was unnecessary further to detail the history of the case, for it was from his breath that Dr. Gordon Sharp had drawn the clinical picture of the affection—except to say that earlier in the winter the boy had had influenza.

2. Girl, aged 7. Nearly three years ago he was called to see this child. The weather was very warm and the door and window were open, and the child was on her mother's knee. As soon as he entered the door he recognized the sweet odour, but although he asked the father and mother if they perceived it, they said they did not. The history was that everything was rejected, not large quantities, but simply a mouthful or two of clear fluid. The skin was hot, but the temperature was only 99° F. There was some tenderness high up in the abdomen on deep palpation, but there was no swelling suggestive of pus or obstruction, and really the girl did not look so ill as if she would die. The urine contained acetone. Dr. Gordon Sharp prescribed the magnesia and bicarbonate mixture. Next day the child was no better: the vomiting continued as it had done. The following day he left for his holiday, and the case came into the charge of a fellow practitioner, who called in a consulting physician, and the latter suggested that the abdomen should be opened. This was done, and he understood that nothing was found to account for the persistent vomiting, and the child died in a week's time from being first seen.

Cases Severe in Character under Observation for Two Years or Over.

1. Girl of 4½ years. This child began, when she was a little over 2, to suffer from intermittent attacks, but lately they had been less frequent. From babyhood she had suffered from nettle-rash of a severe type. The first attack was diagnosed as acidosis because of the severe vomiting, the sweet odour of the breath, and the presence of acetone in the urine. Nearly all the attacks had been severe in type. In one she was semi-comatose for fifty-six hours, only rousing up to vomit small quantities of a clear fluid. During this period almost no urine was passed. In one of the attacks the vomiting was so persistent and frequent that the opium mixture was prescribed with the best results. After a moderately severe attack, lasting not more than three days altogether, the muscles had been wasted, the skin dry and shrunken, and, on attempting to cross the room, the little thing tottered like a very old man, the wasting and debility being far in excess of that to be expected from mere want of food.

2. Boy, now aged 7, with a history of mild rickets. Within a period of rather less than three years he had had no fewer than ten attacks, and nearly all of them had been severe. As a rule he had headache for the first day, but not severe, for he could lie down and doze. On the second day he had some pain in his "belly" as he called it, high up, and with this vomiting began. The vomiting lasted two days and in between he lay in a drowsy state, till suddenly he wanted to vomit, and he roused up. On the fourth day the symptoms passed off and he took a "drink of tea," as his mother said. The longest and most severe attack he had ever had lasted for ten days. Had it not been for the odour of the breath and the acetonuria one might have looked upon them as attacks of megrim or sick headache; but in cases of acidosis there was never the severe headache of megrim, and, again, in true megrim there was never the drowsiness of acidosis.

Scorbutus.

Dr. ALLAN read notes of cases of scorbutus admitted to the Leeds Union Infirmary during twelve years.

Vote of Thanks.

A vote of thanks to the managers of the Leeds New Maternity Hospital, where the meeting was held, was passed, for the use of the board room and for their hospitality, also to Dr. Ursula Chaplin, who showed members round the hospital.

Reports of Societies.

THE ROYAL SOCIETY.

Thursday, June 23rd, 1910.

Mr. A. B. KEMPE, Vice-President and Treasurer, in the Chair.

The Blood Volume of Mammals.

DR. GEORGES DREYER and Mr. WILLIAM RAY, B.Sc.Oxon., M.B.Adelaide, contributed a paper on the blood volume of mammals as determined by experiments on rabbits, guinea-pigs, and mice. They pointed out that, though the blood volume of animals had for many years been the subject of numerous investigations, as was but natural considering its great importance for the study of disease, yet the results obtained were very discordant. They had determined the blood volumes of rabbits, guinea-pigs, and mice by Welcker's method, washing out the circulatory system and following the percentage fall of haemoglobin after bleeding. The experiments had given the following results:

1. The blood volume of living mammals can be determined very accurately by bleeding the animal (about 20 per cent. of its original blood volume) and determining the percentage fall of haemoglobin at the moment when equilibrium is reached. This method gives results remarkably concordant with those obtained by washing out the circulatory system. In employing this method it is absolutely essential that the animals should not have been bled before.

2. In normal healthy mammals (rabbit, guinea-pig, and mouse) the blood volume is satisfactorily expressed by the following formula $B = W^{\frac{2}{3}}k$, where B is the blood volume in cubic centimetres, W the weight of the individual in grams, and k a constant to be ascertained for each particular species of animal. This formula indicates that the smaller animals of any given species, which have a relatively greater body surface than heavier ones, have also a relatively greater blood volume. That is to say, that the blood volume can be expressed as a function of the surface area. It is therefore misleading to express the blood volume as percentage of the body weight, as has hitherto been invariably done.

3. The constant k, by means of which the blood volume in cubic centimetres can be calculated from our formula $B = W^{\frac{2}{3}}k$ when the weight of the animal in grams is known, is approximately, for—

Rabbit	1.58
Guinea-pig	3.30
Mouse	6.70

Autotoxaemia and Infection.

Dr. E. C. HORT read a paper the object of which was to show that fever, loss of weight, and changes in the antitryptic values of the blood serum, three phenomena common to bacterial and protozoan infection in man, can be reproduced in animals by the subcutaneous injection of small quantities of distilled water. Elaborate controls were set up throughout, and absence of sepsis repeatedly proved by autopsy and by microscopical sections.

Fever.—Sixty guinea-pigs received single injections of boiled distilled water in quantities varying from 1 to 10 c.cm. Fever resulted in fifty. Thirty guinea-pigs received multiple injections, always followed by fever except when the injections were too closely crowded, or too large, when subnormal temperatures resulted. Twelve rabbits received single injections varying from 10 to 60 c.cm. Fever followed in all. Ten rabbits received multiple injections. All showed fever. Fever after each injection was always rapid in onset, abrupt and fugitive in both guinea-pig and rabbit. By appropriate spacing of injections continuous fever could be produced, ceasing with the injections. Hypersensitization was frequently observed. Establishment of a constant between weight of injection, animal injected, and degree of fever induced had been so far impossible.

Weight.—The effect of small single injections was inconclusive. Multiple injections always produced marked loss, recovery ensuing on discontinuance of injections if few in number.

Antitryptic Values.—Multiple injections produced marked rise in values, strikingly parallel in gross effect to the rise produced in the same species of animal by single injections of diphtheria toxin, or of emulsions of living bacteria.

From these experiments the author drew the conclusion that however great the share taken by bacteria and protozoa in initiating the disease-complex of infection, the net result was, perhaps to a large extent, a state of true auto-intoxication. The results obtained suggested that such auto-intoxication was in part directly due to absorption of derivatives of the infected cells themselves, and only indirectly to the absorption of bacterial products. The paper was illustrated by magic lantern slides, and

Dr. Hort concluded by saying that the experiments indicated that in many infective diseases the true goal of all immunization procedures was not merely the acquisition by the host of antibacterial strength, expressed in terms of bacteriolysins, antitoxins, opsonins, and so forth; but in something much more subtle and important, namely, an increased stability of tissue, in virtue of which the body cells declined to discharge these pyrogenic and other auto-intoxicative substances whatever the provocation offered to them under the ordinary conditions of infection outside the laboratory.

OXFORD MEDICAL SOCIETY.

Friday, June 17th, 1910.

Dr. JAMES NEIL, President, in the Chair.

Diet in Training.

DR. H. T. GILLETT, in a paper on diet in training, said that the majority of Oxford rowing men consumed on the average at least 169 grams of protein daily. This was only a rough estimate, but they probably exceeded Atwater's standard of 150 grams daily for those doing severe muscular work. Liebig taught that the oxidation of proteins was the sole source of muscular energy; hence the diet formerly consisted largely of flesh, but now carbohydrates and fats were recognized as sources of energy, so that a high protein diet was unnecessary, and possibly harmful. Atwater and Bryant, in their dietary studies in university boat crews, estimated that the average amount of protein consumed daily was 155 grams. They did not show that it was necessary to take so much, but they said that the diet best suited to training had not been decided upon, and varied according to the ideas of special trainers. Chittenden, on the other hand, did not follow the ideas of trainers or tradition, but proved that athletes could keep in good condition and compete favourably with others on as little as 55 grams of protein daily for a man weighing 69.2 kg. These figures were the average for his athletes. In order to ensure nitrogenous equilibrium it might be safer to allow 1 gram of protein for each kilogram of body weight. Any excess of protein was broken down in the lining membrane of the gut; the carbamate of ammonia passed to the liver, where it was changed to urea and so excreted. Excess of protein must mean unnecessary work for the digestion, liver, and kidneys. The purins might cause symptoms of general malaise and irritability, and throw extra work on the organs of excretion. Toxaemia might result from decomposition of protein and cause a high blood pressure and consequent strain on the heart, in addition to the strain due to rowing. Atwater and Bryant mentioned the beneficial effects of fairly large quantities of sugar in training.

Cases.

Dr. COVENTON showed a young man whose case had previously been brought before the society. He had had tuberculous abscesses from early youth and had practically never been free from discharging sinuses. A large number of operations had been performed in order to rid him of the infecting foci. In Dr. Coventon's hands he had been treated with vaccines of staphylococcus and streptococcus and tuberculin T.R. This treatment has been continued for three years and for the last six months the patient had been entirely free from any discharge and had been able to lead an ordinary life. Mr. A. P. DODDS-PARKER related a case sent into the Radcliffe Infirmary as one of gastric ulcer. From a child the patient, a young woman, had hardly ever been free from pain in the abdomen, which at times was so bad as to make her vomit. The diagnosis was not certain, but at the urgent wish of the patient, an operation was undertaken. The first thing discovered was the presence of coils of small intestine in the lesser sac of the peritoneum; a complete examination of the whole of the contents of the abdominal cavity revealed a hernia of a large portion of the small intestine through a hole in the transverse mesocolon into the lesser sac. The hernia was reduced, the hole in the mesocolon sewn up and the abdomen closed. The patient made an uninterrupted recovery and had remained well ever since.

Reviews.

ARTERIAL TENSION AND ARTERIO-SCLEROSIS.

IN all schools of medicine the study of arterial and vascular tension has of late years been vigorously pursued, and it is not unreasonable to expect that some tangible results should be forthcoming of practical use to the clinician. The medical school of Lyons has put forth many notable contributions to the common stock of knowledge, and we have within the past few years had occasion to call attention to the happy combination of scientific observation with clinical utility that has been characteristic of these writings. Once more we have to welcome a sound piece of work from the pen of a physician of the Lyons school, in which the much debated question of vascular tension is thoroughly examined and its clinical usefulness as a means of early diagnosis and as indicative of successful lines of treatment appraised. In the earlier part of his book on the clinical interpretation of arterial tension[1] Dr. GALLAVARDIN gives a clear description of some of the best forms of apparatus that have been devised for observation and record, most of which he has himself employed, but his list is not by any means exhaustive. Improvements in recording instruments are of almost daily appearance, many of them aiming at simultaneous tracing of different parts of the circulation, but the difficulty of applying such elaborate machines to the person of a suffering patient is great, and thus far they have mainly yielded results when employed for physiological, rather than pathological, studies. An instrument bearing such a comprehensive title as "sphygmomanometroscope" ought to supply a fund of information if the tracings that it affords can be rightly interpreted, but here arises a further difficulty from the clinical point of view. Even where similar tracings have been obtained by skilled observers, it has not always happened that their interpretation has been agreed upon. Hence it follows that the diagnostic usefulness of pressure tracings has not kept pace with the progress of ingenuity in obtaining them, and when put to the test of a summing up the verdict must still, in many instances, be "not proven." For general clinical use, the Riva-Rocci instrument seems to be preferred in Lyons, giving, as it does, a fairly accurate measure of the arterial tension. Especially useful as affording indications of increased pressure at an earlier stage than is recognisable by the finger, it may be the first clinical signal of insidious disease, and may thus lead to the discovery of latent mischief that might otherwise escape detection until too late for effective treatment. The oscillations of the compressed vessel wall, the relations of respiratory movements to these oscillations, and the varying influences of vasomotor reflexes, have all to be taken into consideration, but the difficulties attending their interpretation are very great, and it cannot be said that any final agreement has yet been reached. In the later part of his work the author endeavours to indicate the value of arterial tension in the diagnosis of disease, both general and special, but his conclusions do not add much to the sum of previous knowledge and opinion. Increase of pressure indicates an increase of peripheral resistance, but the cause of that resistance must be sought by other means. Decrease of pressure will at once call the attention of the observer to the condition of the heart. Ingenious devices have been used to estimate the degree of diastolic pressure and the rate of the blood current, but their practical utility has yet to be proved. The outcome of this very careful study of the whole subject is thus somewhat disappointing, but the investigation will doubtless be vigorously pursued in the near future, and the work that has been done will lead to further discoveries, which cannot fail to bear practical application at last. We can cordially commend Dr. Gallavardin's book to the notice of all who are working upon the subject.

Professor AUFRECHT's monograph on the pathology and treatment of arterio-sclerosis[2] is the work of an experienced

[1] *La tension artérielle en clinique; sa mesure—sa valeur sémiologique.* By Dr. Louis Gallavardin of Lyons. Paris: G. Steinheil. 1910. (Med. 8vo, pp. 206; 70 figs. Fr. 4).

[2] *Zur Pathologie und Therapie der Arteriosklerose.* Von. Professor Dr. E. Aufrecht, in Magdeburg. Wien und Leipzig: Alfred Holder 1910. (Sup. roy 8vo, pp. 47. M. 1.20.)

clinician. After a summary of the history of the subject he gives his own conclusions, which are that arterio sclerosis commences as an inflammatory disease of the vasa vasorum. These changes lead to the process in the middle and inner coats of the vessels supplied by them; he calls this "arteriitis" (inflammation starting from the vasa vasorum), and he compares it with nephritis originating in the smallest renal vessels. With regard to its etiology, he says that recent examinations by Wassermann's reaction have given positive results in only 7 out of 45 cases, yet syphilis is the only well established etiological factor. He is inclined to think that tubercle may have something to do with it, but admits that this is no more than an impression. He can say nothing definite about gout or lead, while tobacco and alcohol, he thinks, only favour the rapid development or the aggravation of a pre-existing disease. He does not believe in the preliminary functional disturbance or increased blood pressure theory of Huchard, as in the early stages of arterio-sclerosis the capillary pressure is low; moreover, in arterio-sclerosis the difference between the minimum and maximum pressure is greater than in health, whereas if the increase were due to increased peripheral resistance the arteries would empty themselves slowly, and there would be a corresponding slow fall in the pulse pressure. Further, a man at work shows less rise of the minimum than of the maximum pulse pressure, as the former may not rise at all or be lower than in health. He believes that loss of elasticity and greater distensibility are the first and universally observed features of arterio sclerosis and that there is no true increased tension of the wall of the vessel, but only compensatory expansion. As the artery does not present its normal resistance to the force of the heart, this loss of tone causes the fullness and hardness of the pulse. With the disappearance of the elasticity of the wall an important propelling force is lost, and if the mass of the blood remains the same the heart must hypertrophy to maintain the circulation. In this way a vicious circle is created which tends to maintain and increase the hardness and fullness of the pulse. Enlargement of the heart is therefore usually found to be one of the earliest signs of arterio-sclerosis. With this there is often disappearance of the apex beat, and he has noted undue mobility of the heart shown by its shifting with the movements of the body, so that when the patient lies on his left side the apex beat may be felt in the anterior axillary line or beyond it. The aortic second sound is louder than the pulmonary, and this he attributes to dilatation of the aorta. He speaks of swelling above the clavicles as an indication of the crowding of the mediastinal space from the dilatation of the aorta, and states that with the *x*-ray screen the aorta may be seen to be dilated, and that systolic and diastolic murmurs may be present. Another early sign is that the subclavian artery can be felt either above or below the clavicle. His treatment is not very remarkable or new; he recommends rest for body and mind and absence of worry, moderation in alcohol or total abstinence, "which is often the only way of ensuring this"; the same rule applies to tea, coffee, and tobacco, the last being especially bad. He counsels a moderate quantity of food, and that the evening meal should be light; he forbids smoked meats, high game, and over-ripe cheese, and quotes Huchard's odd opinion that the excessive use of caviare, quite as much as the abuse of alcoholic drinks, is a cause of the frequency of arterio-sclerosis in Russia! He condemns extracts of meat, and recommends a vegetarian or lacto-vegetarian diet with little meat. He thinks potassium iodide useful only at the end of the first and the beginning of the second stage of the disease. He agrees with Huchard that in advanced cases it does more harm than good. He condemns the use of Trueneczek's serum, mineral waters, and the so-called Terrain-kur, or hill-climbing. He recommends pills of reduced iron and sodium carbonate with digitalis. He does not mention either sodium nitrite, trinitrine, or erythrol tetranitrate, and only names amyl nitrite casually for the relief of anginal pains, relying chiefly on morphine. He recommends 15 grains of antipyrin or the same quantity of aspirin for sleeplessness, or morphine if this fails. The best part of the book is undoubtedly the summary of the pathology of the subject.

THE DIAGNOSIS OF CARDIAC FUNCTION.

DURING the past decade, and more especially during the last years of it, the attention of experimental physiologists has been more than ever drawn to the problems of the circulation, and a good account of all that has been attempted or achieved in this line of research will be found in a monograph by Dr. W. JANOWSKI, of Warsaw, in which the critical as well as the descriptive element has its due place.[3] Perusal of the book, while it puts the reader in possession of a very comprehensive idea of the work that has been done, will probably also leave upon the mind a sense of despair of ever arriving at a satisfactory elucidation of the complex difficulties of the subject. The writer has not spared himself in the endeavour to collect his evidence. No less than 731 references bear witness to his labours, and, if in the multitude of counsellors there is wisdom, such an array of contributors is entitled to respect. The function of the heart is to maintain the circulation, and, while the effect of the coarser cardiac lesions upon the function of the organ are fairly well recognized, it is by study of the circulatory phenomena that the failure or vigour of the heart's action can best be determined, and instrumental observation has long since come to the assistance of the less sensitive methods of palpation. By the newer methods the powers of the heart as a whole may be gauged, and the recognition of the fact that the individual parts of the organ must work in harmony has led to a closer investigation of the conditions under which this harmony is disturbed.

The lessons of the sphygmograph under varying conditions of cardiac irregularity, and the means by which venous pulsation may be interpreted, are discussed in detail. The contractions of the right auricle are to some extent capable of investigation, but hitherto the left auricle has been left unstudied, until the introduction of an apparatus into the œsophagus to the point where the left auricle lies in relation with it has established a recognizable curve which, within certain limits, may be taken as normal. The determination of a maximum and minimum blood pressure during systole and diastole respectively has become possible by means of the oscillatory method of observation, but of the clinical value of this proceeding Dr. Janowski is evidently sceptical. The application of the sphygmomanometric system of observation has achieved a good deal, but the very different results obtained by competent observers rob it as yet of the character for accuracy which it may some day acquire. New methods, such as the graphic recording of the sounds of the heart and the interpretation of electro-cardiographic tracings, have been added to the already considerable number of diagnostic and prognostic weapons which the researches of the laboratory have placed at the disposal of the clinician.

A summary of the aid that may reasonably be expected from each of these brings the monograph to a close, but in many instances we have still to look to the future for their confirmation. Dr. Janowski's laborious compilation and his shrewd critical observations may be commended to the notice of all who are wrestling with these problems, many of which are still so far from solution.

DISEASES OF CHILDREN.

THE volume on *Diseases of Children*[4] in the Modern Clinical Medicine series is a translation from the German under the supervision of Dr. Julius Salinger, edited by Dr. Abraham Jacobi. The work consists of twenty-three sections, by eighteen contributors. As amongst these eighteen contributors are included Escherich, Neumann, Soltmann, Hochsinger, Henoch, Heubner, and Baginsky, it will be seen that the list contains most of the best known German authorities on children's diseases. The work is written on the commendable plan of crediting the reader with a knowledge of diseases ordinarily occurring in adults, and only dealing with such complaints as are mainly restricted to children, or with those points of other diseases that are modified or have special

[3] *Die Functionelle Herzdiagnostik.* By Dr. med. W. Janowski, of Warsaw. Berlin: August Hirschwald. 1910. (Sup. roy. 8vo, pp. 160, 44 figures in the text. M. 4.)

[4] *Modern Clinical Medicine. Diseases of Children.* An authorized translation from *Die Deutsche Klinik*, under the general editorial supervision of Julius L. Salinger, M.D. Edited by Abraham Jacobi, M.D. New York and London: D. Appleton and Co. 1910. (Roy. 8vo, pp. 828, 34 illustrations. 25s.)

characteristics when occurring in childhood. Even with these limitations, however, there are as many of the ordinary complaints of children omitted as are dealt with. The work, then, can in no sense be regarded as a complete treatise on children's diseases. It is in reality a series of excellent monographs on the more important of these diseases, each one by a capable and recognized authority. The opening section, on diseases of the newborn, by Dr. Keller, is both concise and complete, and excellent in all respects. That on the feeding of children by Dr. Czerny is also concise, occupying only fifteen pages, and is noteworthy because many of the views expressed in it are totally at variance with those at present held by many other authorities. According to him, the view that the unsatisfactory results from the use of cow's milk in artificial feeding are due to the difficulty in the digestion of the casein is mistaken, for both the digestion and absorption of that substance, in healthy or sick children, are sufficient; and it is only its retention that is at fault. Five, and at the most six, feeds, he considers, are sufficient for even the youngest infant in twenty-four hours, and restlessness between meals is an indication for a prolongation, rather than a shortening, between the feedings. More than once he lays emphasis on the dangers of "hypernutrition." What his precise interpretation of this term may be is not quite clear, but it apparently refers to the unsatisfactory condition of the preternaturally fat infants so often resulting from the use of some of the patent foods. Dr. Czerny believes that the value of sterilization has been overestimated, and that "the practical results of Pasteurization do not show a noteworthy influence upon the morbidity or mortality of infants." Percentage methods of feeding he dismisses in a single sentence as being unnecessary. He allows starch to infants from the age of four months, and at six months advises a meal a day of soup thickened with grits. That Dr. Czerny's views sound sufficiently novel may be admitted, but his methods at any rate have the advantage of simplicity. That he has been selected to write in such company is a proof that he is an accepted authority on his subject, in Germany at least, and there is internal evidence in his article that his methods have been deemed successful and are receiving extended trial. The article on chorea, by Dr. Bendix, is the least satisfactory one in the work. His view of the complaint, upon which he repeatedly lays stress, that it is a "true infectious disease" is difficult of comprehension. His statement, too, that "it is a well-known fact that chorea commonly occurs during childhood while rheumatism is a disease of adults," is an astounding one for any writer on children's diseases. It is noteworthy, moreover, that rheumatism is only mentioned incidentally in connexion with other complaints, and has not been deemed worthy of a separate section to itself. This is only one of many notable omissions of important subjects in the work that could be instanced. Henoch writes on pneumonia of children and its treatment, and his article is claimed by the editor as a "masterpiece." He deals in detail with the essential differences between croupous pneumonia and bronchopneumonia, and rightly insists upon the frequency of the first disease in childhood. But whilst statistics he quotes would only place the cases of croupous pneumonia under the age of 3 years at 22 per cent. of the whole, statistics of other authorities would place them at a much higher figure. That most cases of pneumonia complicating such complaints as measles, typhoid fever, and whooping-cough are of the catarrhal variety is undoubted, but a minority occur with all the characteristics of the croupous form, and Henoch directly states that croupous pneumonia is not infrequent in the course of the diseases named. The editor's admiration does not restrain him from a trenchant adverse criticism of much of the treatment advocated in the "masterpiece." Other notable contributions to the volume are the exhaustive articles by Heubner on measles and scarlet fever, and that on diphtheria by Baginsky. In dealing with some of the severer pulmonary complications of measles, Heubner advises the employment of the mustard pack. Of its extreme value as a life-saving expedient in many urgent conditions in children no one acquainted with the procedure and its immediate results will entertain a doubt. The remedy, however, is severe and trying, and to carry it out according to Heubner's directions would be, in our opinion, to court undesirable blistering of the skin in many cases. The editor, Dr Jacobi, has not been chary of interpolating comments, in brackets, throughout the whole of the work. Most of these add to its interest, but many are complaints as to the doses of drugs advised by the authors. Drugs, he writes, should not be trifled with, and by those acquainted with his own writings it will readily be surmised that the amounts he advocates do not err on account of their smallness. In the preface he complains of the neglect of German writers of references to American medical literature. The same complaint might be made as regards writers on this side of the Atlantic, as in a list of some eleven hundred authors quoted in the book there are barely half a dozen British names to be noted. Infantile scurvy, even, is described as Möller-Barlow's disease. In the face of this neglect of British writings, it is to be hoped that the editor will credit them with an equal "high degree" of "honourable modesty and cosmopolitan erudition, which are characteristic of a host of American medical publications." The translation is uneven, for whilst most of it is excellent we occasionally come across sentences that are incomprehensible. In spite of its limitations and shortcomings the work is extremely interesting and valuable, and a welcome addition to the literature on children's diseases.

The work of DR. RALPH VINCENT on *The Nutrition of the Infant*[5] has reached a third edition. From its dedication to Dr. Rotch it will be surmised that the author is an advocate of the percentage methods of infant feeding. The usual claims are made for the superiority of these methods over others, in that they are "scientific." Percentage feeding has now received abundant trial at many hands, and is now abandoned by most authorities with requisite experience as being unnecessarily elaborate and undesirable in other respects. It would be well if the persistent advocates of it, in the place of mere dogmatic assertions, would furnish some valid evidence of the advantages of employing it. No such evidence, statistical or otherwise, is at present forthcoming. On the other hand, a recent American writer, Dr. Brennemann, "believes that an overwhelming mass of evidence has appeared in the last few years that discredits the fundamental principles of the percentage feeding of infants." Dr. Vincent illustrates his text by numerous "typical" cases, but it may be said that the typical cases are even more unconvincing than the text itself. As an instance we would cite the cases given on pp. 234–5, which the author claims as being of "especial interest," and a "striking demonstration of the scorbutic condition." The patients were twins, 3 months old, who had been suckled satisfactorily for six weeks, then fed with milk and Mellin's, and finally with milk and barley water. We are not told whether the milk used during the six weeks of hand feeding was given raw or had been heated in any way. Beyond the fact that both were wasted, the only information afforded is as regards one twin: "Motions pasty; vomiting frequent; stomatitis and severe excoriation of the buttocks were present." And, as regards the other: "Motions like putty; much vomiting; buttocks raw and eczematous." We can see nothing in either the history of the feeding or the reported condition of either infant suggestive of any degree of scurvy, and the fact that each improved after taking a couple of teaspoonfuls of orange juice a day is inadequate proof that the condition really existed. For such conditions of infants we gather that the author, in his first edition, suggested the term "scorbutoid," but we cordially agree with him that the symptoms he would have included under that designation "are not limited to scorbutus." The only feature of such cases (he writes) "at all characteristic is the cry, which is of a whimpering, unhappy character, and is seldom vigorous." There are few, we would imagine, beyond the author who would recognize anything "characteristic" in the cry described. That scurvy can be detected in many infants before the onset of such distinctive features as periosteal and other haemorrhages is true, but the main symptoms of such cases are progressive anaemia, marked fretfulness, and tenderness on handling or moving, none of which the author mentions. Many of the author's illustrative cases are of a nature equally as

[5] *The Nutrition of the Infant*. By Ralph Vincent, M.D. Third edition. London: Baillière, Tindall, and Cox. 1910. (Demy 8vo, pp. 354; 26 illustrations, 1 coloured plate. 10s. 6d.)

unsatisfactory as those we have quoted. The etiology of zymotic enteritis has, it would appear, been the subject of investigation by Dr. Vincent for some years. We doubt, however, whether the conclusions he arrives at will be generally accepted, or are indeed warranted from established facts. "Zymotic enteritis," he writes, "is in no sense of the word an infectious disease, and it cannot be conveyed by contagion." Without necessarily going so far as this, it may be conceded that the power of infection of the disease in question has been grotesquely exaggerated by several authorities. According to the author, the first essential in the production of the disease is the use of milk that has been heated, or treated in some other way, so that the lactic acid organisms have been destroyed. These organisms, he contends, are in a sense protective, and their destruction permits of the development of other organisms of a virulent type. As a part of his argument he instances the fact that atrophic infants in hospitals, and breast-fed babies in slums, can lie next to cases of zymotic enteritis without contracting the complaint. His explanation of this fact is that the atrophic infants and breast-fed babies are protected by the use of a "pure *raw* milk." But surely a more natural, and a more readily acceptable, explanation would rest in his contention that the complaint is in no sense a contagious one. Granted the truth of his contention, no other explanation of the non-incurrence of the complaint by the infants he mentions is necessary. His theory is ingenious, but negatived by easily obtainable and verifiable evidence that countless thousands of cases of zymotic enteritis, of the most virulent and fatal type, have occurred in the past, and occur in the present, with the requisite atmospheric conditions, where the milk has not been heated or doctored in any way. Moreover, recent experience would tend to prove that the complaint is much less frequent than formerly amongst the infants of the well-to-do, and this in consequence of the more prevalent practice of heating the milk as a first step in its proper storage during the summer weather. Many would agree with the author in his preference for raw milk as a routine diet for infants at most seasons of the year, but the acceptance of his theory as to the etiology of zymotic enteritis, and action consequent on deductions from it, would, in our opinion, prove disastrous in the extreme.

We expressed a favourable opinion of Dr. KERLEY'S work, *Treatment of the Diseases of Children*[6] on its first appearance. That its merits have been recognized is evidenced by a second edition having been called for in the space of less than two years. As the author states, the book is intended for the practising physician, and not for the senior student or the specialist in diseases of children. In a volume of its size, dealing with both the medical and surgical diseases of children, it is evident that the amount of space allotable to any one complaint must be strictly limited. In accordance with the expressed scheme of the work, too, so much of the space is taken up with treatment that the description of the main symptoms of each complaint is somewhat meagre. In this section, indeed, there are numerous important omissions. Treatment, however, is dealt with at length, and with a commendable attention to detail. The whole work, moreover, gives the impression of having been founded on the author's personal experience. In addition to those dealing with the separate diseases, there are chapters on such subjects as temperature in children, vaccination, therapeutic measures, gymnastic therapeutics, and others likely to be of service to the busy practitioner.

Dr. HOLT'S work, *The Diseases of Infancy and Childhood*,[7] has reached a fifth edition, and is rapidly attaining to the dignity of a classic. In the latest edition the chapters on general tuberculosis, tuberculous meningitis, cerebro-spinal meningitis, and acute poliomyelitis have been thoroughly revised and some entirely rewritten. Criticism of a book so well known is superfluous. In spite of the evidence founded on recent experimental research, it may be noted that Dr. Holt still refuses to believe that cow's milk has any large share in the causation of tuberculosis in infants and children, and the same view is, perhaps, finding increased support on the part of many with the widest clinical experience of the complaint.

Dr. DAVID FORSYTH'S book, *Children in Health and Disease*,[8] is written for two classes of readers, medical men and educationalists. As he justly says, in the present growth of a wide-spreading interest in the conditions of child-life, it is well that the former should possess a more general knowledge of childhood than is implied in an acquaintance with its diseases. In the greater prominence, too, given to the medical aspect of school life, the educationalists should not regard the health of their scholars as being outside their province, but should possess some knowledge of the physiology and psychology of children. It is to further these objects for the advantage of physicians and school authorities that the present work has been devised. It was an ambitious and difficult task that Dr. Forsyth set himself, but it can be said that he has accomplished his intended design with no small success. The work, however, is uneven, the beginning and end parts, in our opinion, being much inferior to the rest. The author might fairly have credited every medical man with a knowledge of most of the elementary physiology contained in his early chapters, and we fail to see how the laymen could be expected to profit by it without further details than those afforded. The last four chapters might have been either omitted or largely modified. The medical matters contained in them are to be found treated in a more adequate manner in most of the ordinary textbooks on children's diseases. The layman, too, is hardly likely to be interested in, or edified by, sections on a rectal examination, urine, sputum, vomiting, and faeces, and numerous others. Moreover, the medical subjects, discussed in the most cursory fashion, would seem to have been selected on no systematic plan, and might, as far as we can see, have been replaced with equal advantage by others that the author has omitted. Of the remaining portions of the work we can generally speak in terms of commendation. The chapters on the psychology of children are well written, and the subject-matter well selected. The gradual development of the intelligence, and the growth of the nervous, muscular, and other systems, from the comparative blank of earliest infancy to the conditions obtaining in later childhood, are matters outside the province of the ordinary medical textbooks. A knowledge of them, however, cannot fail to add to the interest of the medical man in even his purely professional work. The layman, too, will find no difficulty in following the descriptions by Dr. Forsyth, and it may well be that the perusal of his work may lead to the intelligent co-operation of parents and others, and so to further observations on a subject that is far from completely worked out. The rest of the work is occupied with chapters on hygiene of school and school life, medical inspection and supervision of school children, the training of children, idiots and feeble-minded children, infant mortality, and the conditions of infant life. Thus the field traversed by the author is a wide one, and, within the limits at his disposal, he has dealt with each of these subjects judiciously and well. Dr. Forsyth writes clearly and fluently, and, as far as its somewhat condensed nature permits, his book makes pleasant reading.

NOTES ON BOOKS.

THE twenty-fifth volume of the *Transactions of the American Climatological Association*[9] relates to the meeting of this body just a year ago at Fortress Monroe, Virginia, under the presidency of Dr. C. E. Quimby, of New York, who, in his address, took a somewhat depressed view of the future of medicine. Among other evil presages, men in practice attach too little weight to their own experience, and accept as a working basis for treatment any theory of disease which the latest scientist may put forward.

[6] *Treatment of the Diseases of Children.* By Charles Gilmore Kerley, Professor of Diseases of Children in the New York Medical School and Hospital, etc. Second edition. Philadelphia and London: W. B. Saunders Company. 1909. (Roy. 8vo, pp. 629; 78 figures. 21s.)

[7] *The Diseases of Infancy and Childhood.* By L. Emmett Holt, M.D., Professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York, etc. Fifth edition. New York and London: D. Appleton and Co. 1909. (Cr. 8vo, pp. 1174. 25s.

[8] *Children in Health and Disease: A Study of Child-Life.* By David Forsyth, M.D., D.Sc., Physician to the Evelina Hospital for Sick Children, Assistant Physician to Charing Cross Hospital. London: John Murray. 1909. (Med. 8vo, pp. 382. 10s. 6d.)

[9] *Transactions of the American Climatological Association.* Vol. xxv. Philadelphia. Printed for the Association. 1909. (Roy. 8vo, pp. 311.)

especially if supported by formulae. They lack the true critical faculty. In addition to this address, the volume contains some twenty-six papers, but only a few are of a climatological character. In one, Dr. F. J. Pottenger emphasizes the diagnostic value of rigidity of the chest muscles in cases of pulmonary tuberculosis, and in another states that the outline of solid organs, and the existence of inflammatory processes in the lungs and pleura, may be detected merely by the feel of the skin lying over them. It conveys a sense of resistance to the palpating finger.

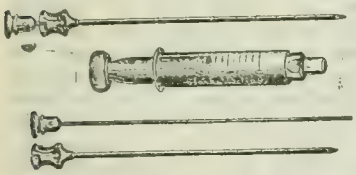
The little volume called *New and Non-official Remedies*,[10] published by the American Medical Association, contains descriptions of the articles which have been accepted by its "Council on Pharmacy and Chemistry." It is expressly stated in a prefatory note that acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the council. The first of these rules is that the composition shall be declared, while another excludes articles concerning the therapeutic value of which misleading or exaggerated statements are made; the book, therefore, becomes a sort of "white list," as well as a convenient collection of notes on the composition, use, dosage, etc., of the substances included. Most of the new compounds which synthetic chemistry has added to the resources of medicine are to be found here, as well as some mere mixtures of older drugs to which proprietary names have been given; a good many of the latter, however, have not been thought worthy of a place in the body of the book, but are briefly dealt with in an appendix. While it would not be difficult to find a good deal of ground for criticism, this book is a record of a most important endeavour to deal with the evils surrounding the prescribing of proprietary preparations; and it is a compilation likely to be of much use to prescribers in this country.

[10] *New and Non-official Remedies, 1910.* Chicago: Press of the American Medical Association. (Post 8vo, pp. 256; 50 cents.)

MEDICAL AND SURGICAL APPLIANCES.

A Syringe.

THE syringe here illustrated has two metal nickel-plated needles, each 10 cm. in length and 1.5 mm. in diameter, and the barrel, of 2 c.cm. capacity, is all glass and made in three parts, which can be taken asunder for sterilization. Within the needles are fitted blunt stilettes, the points of which project slightly beyond the sharp end of the needles. The latter are marked in centimetres up to 5, so as to indicate the depth penetrated during operation. These markings are cut only half-way round the circumference of the needles, which are therefore stronger than the usual type, and there is less risk of a portion of the needle being nipped off by the sudden closure of the patient's jaws when operating in the vicinity of the foramen rotundum and foramen ovale. By means of a bayonet catch, the needle and stilette are securely kept home whilst penetrating the deep structures, thus obviating the necessity of using a finger to retain the stilette in position. When the desired area is reached, the catch is released and the stilette withdrawn, so that the glass syringe filled with solution can be plugged on to the needle mount and the injection made. On one side of the plug of each needle is stamped an arrow, which corresponds to the position of the extreme sharp point at the distal end. The instrument is especially fitted for Schlosser's method of treating trigeminal neuralgia, but can also be employed with advantage in the treatment of other neuritic conditions, such as sciatica, peripheral facial paralysis, and lumbago. It is also suitable for intramuscular injections and lumbar puncture. It can be employed as an aid to diagnosis for exploring in cases of suspected deep-seated collections of fluid. Finally, as an instrument for producing spinal anaesthesia it is simple, safe, and easy to manipulate. The instrument as modified has been made by Messrs. John Clarke and Co., Limited, Belfast.



THE Veterinary College of Munich has obtained the right of granting the degree of Doctor of Veterinary Medicine.

THE Royal Dental Hospital, Leicester Square, has received a legacy of £250, duty free, under the will of the late Miss Emma Brandreth.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR THE YEAR 1909.*

DURING 1909 no laws were passed directly affecting the Factory Department of the Home Office. The Education (Scotland) Act, the provisions of which were discussed in the previous annual report, came into force on January 1st, 1909, and the White Phosphorus Matches Prohibition Act, of the same year, nominally took effect only on January 1st, 1910.

Phosphorus Poisoning.

Phosphorus poisoning and phosphorus necrosis are almost things of the past, and yet one case of amorphous phosphorus poisoning is mentioned in the report. This is the second case which has come under the notice of the Home Office during recent years. Before the Act just mentioned came into force, nearly all of the factories under the Special Rules had given up the use of white phosphorus. It is interesting to know that in consequence there has been no dislocation of the match industry, and that lucifers tipped with the harmless sesquisulphide have quite fulfilled all expectations. The sale of white phosphorus matches is not illegal until January 1st, 1911.

Lead Poisoning.

The report of the Potteries Committee appointed in May, 1908, is still anxiously awaited. It is gratifying to know that in the manufacture of pottery the returns of lead poisoning have fallen from 117 in 1908 to 58 in 1909. Mention is made of the interesting inquiry conducted by Dr. Monckton Copeman into the dangers attendant upon the transport and storage of ferrosilicon, and also of the work done by Mr. Vernon Harcourt, F.R.S., and Mr. Duckering, H.M. Inspector of Factories, in regard to the suppression of dust.

It is a sign of the times that allusion is made to aeroplanes and their motors. The manufacture of motor cars is becoming an important industry. In the Midlands it is pleasing to note that in the construction of the cars a greater amount of non-poisonous or leadless paint is being used than formerly, especially for chassis and metal work where body is not so important. Some firms have discarded ordinary lead paints entirely.

Other Dangerous Trades.

Regulations concerning dangerous trades, such as those in which East India wool is used, also concerning the process of vitreous enamelling and the uses of electricity, came into force in 1909, while those for brass came into force last New Year's Day. Other trades are specified and Orders mentioned. The preliminary report of the Humidity Committee was published in March, 1909; in it are foreshadowed a statutory limit for the reading of the wet bulb thermometer and a simplification of the requirements as to the minimum difference between the wet and dry bulb readings. These will necessitate the introduction of a simple yet accurate form of hygrometer which can be read by even unskilled persons.

Accidents.

For the first time for the last few years the number of accidents has been lower than usual, but this is not the result of any special action on the part of the Home Office. It was the result of the wave of industrial depression which passed over this country and the consequence of trade disputes. Comparing the Accident Tables of 1909 and 1908 the fatal accidents were 946 as against 1,042; the non-fatal accidents reportable to the certifying surgeons 39,020 as against 40,849, while the minor accidents notifiable to the inspectors only were 77,534 compared with 80,253 for the previous year. For both sexes there is a continuous rise of the daily totals of accidents throughout the week from a minimum on Monday to a maximum on Friday; it is continued into the comparable hours of Saturday morning. The largest number of accidents occurs between 10 and 12 in the forenoon. There are fewer accidents in the afternoon working hours, especially among females.

In the cotton districts machinery accidents rose from 3,358 in 1908 to 3,587 in 1909, while the fatal accidents fell

* Messrs. Wyman and Sons, Limited, Fetter Lane, E.C. 1910. Price 2s. 6d.

from 28 to 24. There was nothing to show that overcrowding of machinery was a cause of accident. Flying shuttles, notwithstanding the use of guards, are still a cause of loss of eyesight, although, in consequence of the guards, the injuries are now more confined to the lower parts of the body than formerly. Despite all warnings, nearly 30 per cent. of the accidents in cotton mills are due to cleaning machinery when in motion. Saturday is the cleaning day, and although only a half day yet the accidents on Saturday are twice as frequent as on the other days of the week.

Electricity claimed four victims, and was the cause of 54 non-fatal accidents in electrical generating stations. Most of the accidents occurred at switchboards, and in connexion with live conductors.

Reports of the Medical Inspectors.

To the reports of the medical inspectors, Dr. T. M. Legge and Dr. Collis, we always turn with considerable expectation. An interesting feature in the report is the analysis of 6,638 notifications of lead poisoning during the last ten years by Dr. Legge. The total number of cases of plumbism in the decennium really equals 6,762, and of these 725 were fatal. White lead is responsible for 1,295 cases and 31 deaths. During 1909 the deaths from white lead and in the pottery trade were fewer. Allusion is made to the interesting experimental work by Drs. Goadby and Goodbody, whose main conclusions in regard to lead poisoning are that the lung rather than the stomach is the principal channel of absorption and that microscopical evidence of the presence of lead can be found in the pulmonary alveoli. The work of these two gentlemen is a valuable contribution to the subject of plumbism generally. In some of their experiments there were found in the nervous system minute microscopical haemorrhages, by which may be explained some of the pathological findings and obscure clinical symptoms observed by physicians.

Report of the Lady Inspectors.

Attention is directed by the lady inspectors to the lack of good mess arrangements, cloak-rooms, drinking water, and lack of seats, especially in trades where the women have to travel long distances from and to their homes. Meals are often eaten under great discomfort. In laundries there were 331 accidents to females and 78 to males—a decrease over the previous year. Many of the injuries were severe; hands and arms suffered most. There is a want of control and supervision inside laundries, which calls for attention. The institution of first aid and ambulance work has done much to mitigate suffering. In factories where no person is familiar with the necessary and immediate steps for treatment life may be lost through haemorrhage.

Miss Meiklejohn's article on "Truck in the Shetlands" is interesting. The materials produced include lace and underclothing, and are of fine character, owing to the Shetland wool being soft and tenacious. Most of the crofters own from six to forty sheep. The carding, spinning, and knitting of the wool is done in the winter evenings at home, for during the summer the female population is employed in cutting and setting up the peat. Hand spinning is a decaying industry in the Shetlands. The use of mill-spun wool is increasing—a circumstance to be regretted.

International Congresses and Foreign Exhibitions.

It is pleasing to note that at last the British Government has awakened to a sense of its duty in regard to international congresses and foreign exhibitions. Hitherto it has kept itself too much aloof from them. The Factory, Mine, and Explosives Departments of the Home Office are sending exhibits of the recent advances made in these departments to the Brussels International Exhibition. In these exhibits are included models, apparatus for the removal of dust, methods of determining lead in finished pottery and of measuring the quantity of dust in air, hygrometers, etc. It is hoped that these will become the nucleus of an industrial museum of safety and other appliances similar to the museums found in many large cities on the Continent.

The annual report for 1909 quite maintains the reputation of the Home Office for hard work and attention to details.

EPSOM COLLEGE.

SIR HENRY MORRIS, the Treasurer of Epsom College, presided at the fifty-seventh annual general meeting of the Governors, which was held at the office on Friday, June 24th. There was a large attendance, and the report of the council submitted to them was satisfactory in all respects. It stated that the extension of the buildings and the various improvements at the college had been completed at a cost of close upon £20,000. These, whilst allowing of an extension and improvement of the old chemical laboratory and theatre, included a new building providing further class-rooms and a room for day boys, together with the "Markham Skerritt" laboratories, which are well equipped for the teaching of physics and biology; a new gymnasium, fitted up with all requisite modern appliances; new music rooms for class teaching, and a concert hall; a new carpenter's workshop; a new armoury for the rifles of boys belonging to the training corps for officers; a block of buildings containing a new box room, a new lavatory, and an extension of the latrines; the provision of a hot water supply, together with heating by the "Reck" circulator system, throughout the college; the extension, levelling, and asphalting of the college quandrangle; and a covered way which goes round the quadrangle and connects all the buildings. These additions and improvements had given great satisfaction to all at the college. The council were enabled to build the block containing the "Markham Skerritt" laboratories mainly through the generosity of the late Mrs. Markham Skerritt, who advanced a sum of £5,000 to the college on very favourable terms. Since the last annual general meeting the munificent legacy to the endowment fund of £51,076 5s. 4d., under the will of the late Dr. Henry Fearnside, had been received. This bequest was reported to the governors at the annual general meeting in 1897, and became payable on the decease of Mrs. Fearnside in 1908. The approximate income which will be derived from this legacy is £1,690 a year, and it was very largely owing to this fact that the council decided, on the recommendation of the Works Committee, and after most deliberate and careful consideration, to proceed with the extensive and much-needed additions to the college buildings. A considerable part of the money required for these extensions had been temporarily advanced by the bankers, and the council were hopeful that help would be forthcoming so as to enable them to expedite the repayment of this loan. In spite of past contributions to the endowment fund, it was necessary to emphasize the fact that a sum of nearly £5,000 must be obtained by annual contributions if the council were to continue to maintain the full number of fifty pensionerships and fifty foundation scholarships.

The report further stated that the general work and the discipline of the school had been most satisfactory. Cricket, football, and hockey had been played regularly, and the usual school institutions were in a most flourishing condition. Last year the Anstie Memorial Scholarship was awarded to J. A. Davies; the Da Silva Exhibition to C. K. Bowes; the Doncaster Gift Scholarship to R. A. F. Eminson; the Forest Exhibition to C. A. Mallam; the Haviland Exhibition to W. R Wilson; the Jenks Memorial Scholarship to P. D. Scott; and the Harvey Owen Scholarship to R. H. Leigh. The Hospital Scholarships were awarded as follows: St. Bartholomew's, R. H. Simpson; Charing Cross, T. W. Pailthorpe; King's College, R. H. Leigh; London, H. G. Winter; St. Mary's, D. R. Alexander; Middlesex, C. E. Procter; St. Thomas's, O. D. Brownfield; University College, and the Carr Exhibition (which goes with it), J. H. Sewart; and Westminster, J. S. Ranson. Thirteen boys passed the whole or a part of the first examination for medical degrees of the University of London; 10 boys passed the matriculation examination of the same university; 9 boys gained the higher certificate of the Oxford and Cambridge Schools Examination Board, and 25 gained the lower certificate.

In moving a resolution in regard to the adoption of the report the Chairman referred to some of the items mentioned therein, and stated that although a large sum of money had been expended on the new buildings and other improvements at the college, further expenditure was needed to provide an isolation building for the reception of patients suffering from any infectious disease, in order that the sanitary and hygienic arrange-

ments at the college might be more complete, especially when there was an epidemic of any infectious disease. He further drew attention to the necessity of providing a suitable entrance to the quadrangle from the general grounds of the college, which would necessitate structural alterations, but stated that no funds were available at present for either of these purposes. He emphasized the point that the recent extensions and improvements were not a new feature, but a continuation of the progress at the college since Sir Constantine Holman was elected Treasurer in the year 1887. He referred in detail to the improvements which were made during the nineteen years Sir Constantine Holman was in office as Treasurer, and said the meeting would be glad to hear that the total of Sir Constantine Holman's collection in aid of the Royal Medical Foundation Fund had just reached £10,000. He was sure that the Governors would agree that such achievements were not only a splendid piece of work for a friend of the college, but were also a most brilliant record for any treasurer to be able to show. In dealing with the general work of the school, the Chairman said that although the boys were successful in their sports they were not satisfied with their pavilion, and as a consequence the council was being frequently reminded by satirical comments in the *Epsomian* that a new pavilion in the playing fields was necessary, in order that the boys might have a suitable place to show hospitality towards those who came in friendly rivalry to play matches against them. As the council had no funds to meet the expense of such a building, it would be very gratifying to the boys, as well as to those who had the interests of the boys at heart, if some generous friend of the college would come forward with a donation for the express purpose of providing a new pavilion.

The successful candidates for pensionerships and foundation scholarships were reported by the scrutineers —Dr. Clement Godson, Sir Constantine Holman, and Mr. W. A. Propert—to be as follows:

PENSIONERS.

	Votes.
1. Bury, Fanny H.	8,081
2. Ryan, Caroline R.	4,617

FOUNDATION SCHOLARS.

	Votes.
1. Haythorne, Edmund	8.984
2. Lightfoot, Harold P....	8.279
3. Bessley, P. Bernard C.	7.970
4. Steele, Basil L.	6.791
5. Keay, Melville L.	5.835
6. Senior, Geoffrey	5.748
7. King, George	5,346

The SECRETARY reported that an additional foundation scholar would be elected by the council that day, namely, Cecil A. Lawrence, to fill a vacancy which occurred after the voting papers were printed.

Mr. Purnell Purnell was elected a vice-president in recognition of his having collected the sum of £1,000 in aid of the Royal Medical Foundation Fund, and the usual formal business was transacted.

Among those present were: Sir Wm. S. Church, Bart., Sir Constantine Holman, Surgeon-General Sir Lionel Spencer, Dr. Robert Boxall, Mr. J. Paul Bush, C.M.G., Dr. Francis Charlesworth, Mr. Andrew Clark, Dr. W. Collier, Dr. Charles Drage, Dr. J. P. A. Gabb, Dr. Clement Godson, Dr. L. Grant, Dr. F. de Havilland Hall, Mr. H. W. Kiallmark, Mr. H. E. H. Matthews, Mr. John H. Morgan, C.V.O., Mr. W. A. Propert, Dr. Guthrie Rankin, Dr. St. Clair B. Shadwell, and Mr. Percival Turner.

THE "Macnair" automatic water sterilizer is a simple and ingenious apparatus for sterilizing water. It consists essentially of a cylindrical steam-tight vessel, on the top of which is fitted a cylindrical reservoir. The two are connected by a pipe down the centre. The lower portion is filled with water and placed over a fire to boil. The boiled and sterilized water is forced into the upper portion of the apparatus by the steam generated. The cost of the apparatus, which has a capacity for two gallons, is £2 10s., and a collapsible and more portable form, holding one gallon, costs £2 15s. The apparatus is manufactured by Messrs. Allen and Hanbury.

Nova et Vetera.

CRABBE ON DOCTORS.

CRABBE, whose pedestrian muse was perhaps never very popular, suffered almost complete eclipse after his death in 1832, and the volumes containing his poems were generally relegated to those higher and less accessible shelves of the library—

> Where all the rage of controversy ends
> And rival zealots rest like bosom friends.

During the last few years, however, he has begun to experience once more some of that public favour which his pictures of country life and denunciation of all forms of pretence and imposture fully merit.

Crabbe, who was the son of a collector of salt duties at Aldeburgh in Suffolk, was for a time errand boy to Mr. Page, surgeon, of Woodbridge; afterwards his father sent him to London "to pick up a little surgical knowledge," and on his return to Aldeburgh the young man became assistant to a surgeon there. When his master left Crabbe set up for himself but was not very successful. He then went to London and succeeded in publishing some poems which, though they brought him little money, earned for him the generous help of Burke. He took orders in 1781, became chaplain to the Duke of Rutland, and finally settled down as a country parson.

The clergyman and the doctor have always been closely associated in country life, and apart from his personal experience as an apothecary, Crabbe had plenty of opportunities of becoming familiar with the various phases of medical practice in company with those men "of serious words and sober style," whom he refers to as "friends with whom we seldom smile." He learnt to appreciate the devotion of

> Men who suppress their feelings, but who feel
> The painful symptoms they delight to heal.

A devotion, moreover, which he asserts with conviction to

> . . . spring from nobler motives than a fee.

Their's to receive the shamed confessions of misguided youth,

> For transient vice bequeaths a lingering pain
> Which transient virtue seeks to heal in vain.

Their's:

> To ease the victim no device can save
> And smooth the stormy passage to the grave.

or, under happier auspices, to enable them to "life's short lease on easier terms renew."

But it is when he deals with "the young physician" that he becomes genuinely entertaining, so pleasant is it to hear the whip crack over another's back. He is very sarcastic about the men who achieve, or seek to achieve, fame without good hard work, or who seek to implant themselves in public esteem by mere book-making:

> . . . young physicians write
> To set their merit in the clearest light.

A very legitimate ambition, one might retort, but he adds:

> With them a treatise is a bait that draws
> Approving voices—'tis to gain applause,
> And to exalt them in the public view
> More than a life of worthy toil would do.

Some there are, he regretfully admits, who "Have, without learning, found a road to fame," by more or less commendable means, for instance,

> He may a system broach, or, if he please,
> Start new opinions of an old disease.

a practice which evidently long antedates the present generation. An even easier plan is that by which

> He may some simple in the woodland trace,
> And be its patron—till it runs its race.

which inevitably makes one think, *inter alia*, of violet leaves and cancer.

But, after all,

> It weighs not much on what their powers be shown
> When all his purpose is to make them known.

In fact, their one object is to show

> That they have genius, and they hope mankind
> Will to its efforts be no longer blind.

His diatribe against young aspiring authors is, indeed, a running commentary on Chaucer's lines—

> This noble example to his sheep he gaff,
> That first he wrought and afterwards he taught.

in contrast with the enterprising young practitioners aforesaid.

None will care to gainsay that

> To show the world what long experience gains
> Requires not courage, though it calls for pains.
> But at life's outset to inform mankind
> Is the bold effort of a valiant mind.

True merit does not always come by its own, for

> Merit sighs to see a fortune made
> By daring rashness or by dull parade.

But this is all genial persiflage, because one feels all along that, at heart, our author loves those whom for the nonce he presumes to criticize. He is vastly less indulgent to those of his cloth who, "coldly profane and impiously gay," bring discredit on their sacred calling. All this time our author has been getting up steam for his final attack. The artful little tricks by which medical men, less mindful of their hallowing duties than of immediate pecuniary success, hurry on the road to fame; these, he admits, are "trifling evils" as he girds up his loins for a vigorous onslaught on one in particular "which walks unchecked and triumphs in the sun," *videlicet* the Quacks, with a capital "Q," who

> . . . play
> With craft and skill to ruin and betray,
> With monstrous promise they delude the mind
> And thrive on all that tortures human kind.

This is very good for a beginning, but he surpasses himself when he comes to deal with their methods in detail. "Tincture or syrup, lotion, drop, or pill," how the virtues of the nostrum are pushed on the authority of

> . . . twenty names of cobblers turn'd to squires,
> And the bold language of these blushless liars.

> . . . Men snatched from graves, as they were dropping in
> Their lungs cough'd up, their bones pierced through their skin,
> Their liver all one scirrhus, and the frame
> Poisoned with evils which they dare not name;

—who, after a course of the nostrum, "Are now as roaches sound and all as brisk as bees."

How many of us have been painfully surprised "That men of parts are dupes by dunces made," and

> That creatures Nature meant to clean our streets
> Have purchased lands and mansions, parks and seats.

Not one of the infamous tricks of the quack escapes his ireful pen. Then, as now—

> . . . the young are tenderly addressed.
> Much danger hinted, much concern expressed;
> They dwell on freedoms lads are prone to take.
> Which make the doctors tremble for their sake.

Then for a gibe at the soothing syrup, which might have been indited yesterday, Nature's sweet restorer, dear to the "good nurse" worried by her baby's cries—

> . . . who, had she borne a brain
> Had sought the cause that made her babe complain.

Instead of which she "gives the powerful sweet without remorse." Well may we

> . . . sigh
> To think what numbers from these causes die.

Incidentally he delivers himself of a diatribe against one Rock, apparently the introducer, possibly the inventor, of "oxymel of squills":

> . . . Yes, the idle fool
> The butt, the robber of the lads at school,
> Who then knew nothing, nothing since acquired,
> Became a doctor, honour'd and admired.

Rock, according to Crabbe, was consulted by the great and the wise, for he tells us—

> Nay, men of skill, of apprehension quick,
> Spite of their knowledge, trusted him when sick.

In fact he admits as a *ne plus ultra* that "Sir Isaac Newton might have gone to Rock":

> Hence sums enormous by these cheats are made,
> And deaths unnumbered by their dreadful trade.

Crabbe, like others before and since, hopes that the Legislature may put an end to this infamous traffic:

> Perhaps there may, by law,
> Be method found these pests to curb and awe.

But he concedes that "In this land of freedom law is slack," and it is too much to expect private individuals to incur the cost and odium of a prosecution. He is driven to trust to science, which

> Can their falsehoods and their frauds disclose,
> All their vile trash detect, and their low tricks expose.

He would have been an interested reader of *Secret Remedies*,[1] and would have rejoiced to know that over 60,000 copies of that book, only published a few months ago, are already in circulation.

SCIENCE NOTES.

THE *Journal of Infectious Diseases* for March contains an elaborate paper on venom haemolysis by Preston Kyes. The subject of snake poisons has been of interest for many years, and the considerable amount of work which has been done has thrown much light on the action of toxins in general and on the whole subject of immunity. These poisons or venoms possess much resemblance to bacterial toxins. Thus they have the property of stimulating the production of antitoxin, and so leading to immunity. Also they can by suitable treatment be converted into toxoids, which, although non poisonous, yet retain the power of stimulating antitoxin production. Kyes has worked with over a dozen different venoms, and has studied their action on a large number of animals. With regard to their action on red blood corpuscles which have been washed free of serum, he finds that venoms vary in haemolytic power according to the species from which they are extracted. Cobra venom is the most powerful. Further, each venom possesses the power of dissolving the red corpuscles of certain species of animals, but not those of others. In this respect again cobra venom occupies the most prominent place. A large number of animals—including man, dog, guinea-pig, mouse—are susceptible to cobra poison. On the other hand, the corpuscles of the ox, sheep, and goat are not affected by any dose of cobra venom, however large. Moreover, those of the sheep were unaffected by any of the venoms experimented with. At the other end of the series the guinea-pig is the most susceptible of animals, its corpuscles being dissolved by all but one of the venoms. This curious variation in susceptibility is referred to the presence or absence within the corpuscles of an endo-complement which activates the venom. If cobra venom be added to ox corpuscles no haemolysis takes place, but if guinea-pig corpuscles be added complete haemolysis occurs, not only of the guinea-pig corpuscles but also of the ox corpuscles. In this case the corpuscles of the guinea-pig supply the endocomplement which is lacking in those of the ox. Further, it was found that all serums, when heated at a temperature of 65° to 100° C., have the power of activating cobra venom; this fact, indicating that the activating substance was a common constituent of all serums, directed attention to lecithin, and it was found that this latter substance, both from animal and vegetable source, possesses a high degree of activating power. From further observations it is shown that this action of lecithin is not restricted to snake venoms, but bears a relation to toxins in general, at least to those of animal origin. Lecithin itself is not a haemolysin, although commercial samples may be found to produce a certain amount of haemolysis. Kyes arrives at the further conclusion that the reaction between the haemotoxin and lecithin is essentially a chemical one resulting in the formation of a complete lysin, and that this latter is a true toxin in that it stimulates the production of a specific antitoxin. One curious feature which has been frequently observed before, and which yet lacks satisfactory explanation, is the fact that large doses of venom may fail to effect haemolysis in cases where much smaller doses produce complete haemolysis. From various considerations the phenomenon appears to be of extreme complexity, and to require much more quantitative experimentation before justifiable conclusions can be drawn.

[1] Published by the British Medical Association, and to be obtained through any bookseller, or direct from the Financial Secretary and Business Manager, 429, Strand London, W.C., post free, 1s. 3d.

Professor H. E. Armstrong and E. F. Armstrong made recently a third communication to the Royal Society on the origin of osmotic effects. This part deals with the function of hormones in stimulating enzymic change in relationship to narcosis and the phenomena of degenerative and regenerative changes in living structures. It is found that when a cherry-laurel leaf is exposed to an anaesthetic, hydrocyanic acid is liberated, and as this can be readily detected, its presence yields a delicate indication of the occurrence of enzymic change in the leaf. This action, however, is not confined to anaesthetics, for many other, indeed most, organic vapours, appear to possess the same power. Thus toluene, volatile alcohols, ethereal salts of acetic acid and other acids of that series, ammonia, and carbon dioxide, all determine the breakdown of the cyanogen-containing glucoside in the cherry-laurel leaf, and the consequent liberation of hydrocyanic acid. In the case of solutions it is found that the simpler organic acids, corrosive sublimate, sodium fluoride, etc., all pass into the leaf, but solutions of inorganic acids, alkalies, and salts do not. From these preliminary considerations it is proposed to divide substances, other than colloids, into two classes according as they do or do not pass into the cherry-laurel leaf, and to the former class the term "hormones" is applied. Now the changes caused by these hormones is due largely, but not entirely, to the alterations which they produce in the concentration of the fluids within the leaf. It is shown also experimentally that the hormone takes in some water with it, and that not only is hydrocyanic acid liberated and water absorbed, but the amount of reducing sugar is increased. The theory is put forward that when substances which do not attract water are introduced into the living cell, the effects which they exercise are primarily of a mechanical nature. Molecules of the hormone are interposed between the molecules in the cell and the activity of the medium is raised by the change in the osmotic state, so that there is a flow of water from other parts. In this way degenerative changes are brought about which increase as the products of these changes set up similar changes. Gradually enzymes are set free which attack the various hydrolytes stored in the cell. From the process in the cherry-laurel leaf an analogy is drawn with the phenomena in muscle and nerve tissue, the phenomena of narcosis, the regulation of respiration, and the physiological effect of alcohol and other drugs. The hypothesis may at the same time afford an explanation of some recent observations on plant metabolism, as, for instance, the effect of carbon dioxide and ammonia in stimulating plant growth. The injurious effect of grass growing over the roots of fruit trees may be due to the removal by the grass of ammonia and the consequent withdrawal of the stimulus which this hormone exerts on the roots of trees.

The world, it has often been said, is a very small place, but it is a little surprising to be told that there are good grounds for the opinion that there may be an organic connexion between the annual or seasonal total rainfall in Western Europe and the Nile floods. The idea is not new, for in 1882 Professor Balfour Stewart gave reasons for claiming such a connexion between the flood of the Nile and the flow in the Thames. More recently Colonel H. E. Rawson has indicated a connexion between the weather in South Africa and that in Africa north of the equator, and in particular the Nile flood. Other observers have gone still further afield. Dr. G. T. Walker has found a connexion between the monsoon rainfall in India and pressure six months previously in Argentina, and Sir Norman Lockyer has proved the existence of an inverse barometric relationship between India and Argentina. Dr. W. N. Shaw has also drawn attention to certain correspondences between the velocity of the wind at St. Helena and the intensity of rainfall in the South of England, and pointed out that in the steady current of the south-east trade wind we may expect to find evidence of the throbbing of the aërial pulse consequent on the greater or smaller supply of solar radiation that reaches the earth and is transformed into kinetic energy. The improved organization of the Meteorological Service in Egypt during the last few years has enabled Mr. J. I. Craig, of the Egyptian Survey Department, to test the theory of the existence of some relation between the Nile floods and the rainfall in Western Europe. He reported his results recently to the Royal Meteorological Society in a paper entitled, England, Abyssinia, the South Atlantic: A Meteorological Triangle. Mr. Craig finds that there is a distinct tendency for the south-east trade wind of the South Atlantic to divide into two branches, the first continuing the general northward movement, and the second turning to the right and moving across into the interior of Africa. He concludes that the moisture for the Nile flood comes from the South Atlantic, and that an increase in the velocity of the current will show itself in a proportional increase of the flood. There are too many gaps in the velocity records for the summer months to allow of a statistical test being applied, but it is not improbable that an intensification of the trans-African current is connected with a similar intensification of the south-east trade wind of the Atlantic, which, as Dr. Shaw has shown, is not improbably connected with an increase of rainfall in the South of England.

LITERARY NOTES.

IN the JOURNAL of March 26th of the present year, p. 765, we gave some examples of medical folklore in Normandy, collected in the course of his own practice by Dr. Masqueray. Dr. E. Escomel, of Arequipa, Peru, in a recent number of the *Journal de médecine et de chirurgie pratiques*, gives some other examples from that country. The curious skin discoloration known as *pinta* or *carates* is treated by female healers by making the patient drink every Tuesday and Friday a liqueur glass containing a preparation of the placenta of a primipara, which has been dried, torrefied, and pulverized, and placed in brandy with a few grains of powdered solanum nigrum. In order to bring back the wandering affection of a faithless lover it is believed to be sufficient to give him in chocolate, without his knowledge, dried powder of the menstrual blood of the deserted lady, together with powder of cantharides. It may be mentioned, by the way, that menstrual blood plays a large part in medical folklore.

The Marquis d'Argenson, from whose *Mémoires* some extracts are given by Pierre Pic in *Les heures libres* (t. 1), a book expressly compiled *ad usum Medici*, relates a curious story as to the cure of scrofula by the royal touch. Under the date 1723, he says that at the coronation (Louis XV) at Rheims a man from Avesnes, who was frightfully afflicted with the King's Evil, had himself touched by the Royal hand. He was, we are told, completely cured. D'Argenson, hearing of the matter, like a good courtier at once proceeded to make an inquiry into the man's previous condition and his state after the cure. The report was drawn up in proper legal form, and the proofs of the "miracle" were sent to M. de la Vrillière, Secretary of State for the Province. D'Argenson hoped to receive great praise for the zeal he had shown in the vindication of the royal prerogative. All he got, however, was a dry letter in which he was informed that nobody doubted that the kings of France had the gift of healing. He was evidently very sore about the official indifference with which his loyal efforts had been treated, more especially as he says he knew that his report had been read to the King, who, though still a child, was pleased to hear that he had wrought this miracle. One scarcely knows which to wonder at most in this story—the abject obsequiousness of an unbelieving courtier, or his simplicity in expecting that any recognition from royalty would be forthcoming. We think he thoroughly deserved the dry answer which he got for what was evidently regarded as a piece of impudent officiousness.

In the July number of *Travel and Exploration*, Dr. A. H. Keane gives an interesting account of the various tribes of Wadai, "the last of the Sudanese Sultanates." Though nominally under French protection—it is the latest of the French Protectorates in Africa, and officially known as "French Equatorial Africa"—the greater part of the region is absolutely unexplored. The curious customs of the witch doctors, or "root-doctors," are graphically described. Dr. Keane says that among these heathens the "medical profession," intimately associated with magic, witchcraft, and other preternatural

devices, is strongly represented. There is especially a class of so called "root doctors," of whom strange things are told. Their business is to collect certain roots in the forests, of which they have the secret and which they preserve in rams', goats', or ox horns. These roots are credited with various properties, some being efficacious as love philters, others influence great people in your favour, and others, again, induce parents to relent and lower the amount of a dowry to a mere trifle. Some are even poisonous, and can cause the death of an enemy, which is brought about by burying the root at a place where the intended victim's shadow is likely to fall. Then inflammation of the brain ensues, or else he is seized with vertigo, loses consciousness, and is doomed unless some antidote can be promptly administered. Thieves also procure a horn filled with such roots, and when they break into a house at night, three crosses with the horn will throw everybody into a sound sleep, so that they hear and see nothing of what is going on around them. The *Macalyts*, another class of sorcerers, are supposed to have the power of changing into hyaenas, cats, and dogs, and the *temurkehs* into lions, and three days after their death these "changelings" come out of their graves to visit other lands, where they marry again and start a new life.

Dr. W. Ainslie Hollis (Hove) writes:

I read with much interest your short article in the JOURNAL of June 4th, page 1370, upon the life of Fabricius, the anatomist and surgeon. I wish to draw attention to one statement which to my mind seems to show that this great man was behind the times! Fabricius, it seems, was born 350 years ago, and in your interesting epitome of his life there is an anecdote which, I consider, clearly proves my contention. In the note it is stated that: "In his wife he had a helpmate most suitable to a surgeon," etc., and a story is then given, related by Fabricius himself, concerning the removal of the thigh in a man of 40 years. The sick man began to roar out apparently as soon as the knife and cauteries were applied to peccant member, and the wife had to assist in holding the patient down. I do not wonder at this excitement on the part of the man, but I wish to draw attention to the fact that this excitement might have been avoided if Fabricius had read his Decameron. Boccaccio, who lived some centuries before the anatomist, in his tenth novel gives an account of a Salernian leech, Master Mazzeo della Montagna, "most eminent in surgery," but who foolishly married, in his extreme old age, a young and skittish damsel with the usual consequences. I need not give details: suffice it to say, there was a gallant in the case, a man of bad repute, who had a halt in one of his legs. It chanced he was placed under the leech's care. "The leech saw what was amiss with him, and told his kinsfolk that, unless a gangrened bone that he had in his leg were taken out, he must die or have the whole leg amputated; . . . whereupon the relatives assented that the bone should be removed, and left the patient in the hands of the leech; who, deeming that *by reason of the pain* 'twas not possible for him to endure the treatment without an opiate, caused to be distilled in the morning a certain water of his own concoction whereby the patient drinking it might be ensured sleep during such time as he deemed the operation, which he meant to perform about vespers, would occupy." I need not continue the tale, which any one may read for himself. Montagna was evidently as far advanced of his age as our anatomist appears to have been behind his.

It is of course well known that various drugs and "drowsy syrups" were used in antiquity and in the Middle Ages to deaden sensibility during surgical operations or painful forms of death. The Egyptians employed Indian hemp and poppy juice for the purpose; Sir James Simpson conjectured that the "wine of the condemned" mentioned by the prophet Amos, was a preparation of cannabis indica. In the Talmudic writings there are several passages which seem to show that it was the custom to ease the pain of torture and death by stupefying the sufferers. Thus: "If a man is led forth to death, he is given a cup of spiced wine to drink, whereby his soul is wrapped in night." Pliny, in his *Natural History*, says that a decoction of madragora was used in preparing a patient for surgical treatment. Dioscorides gives a number of prescriptions for the same purpose. Middleton, in his play, *Women, Beware Women*, writes:

> I'll imitate the pities of old surgeons
> To this lost limb, who, ere they show their art,
> Cast one asleep, then cut the diseased part.

Major Freeman, R.A.M.C. (retired), writes:

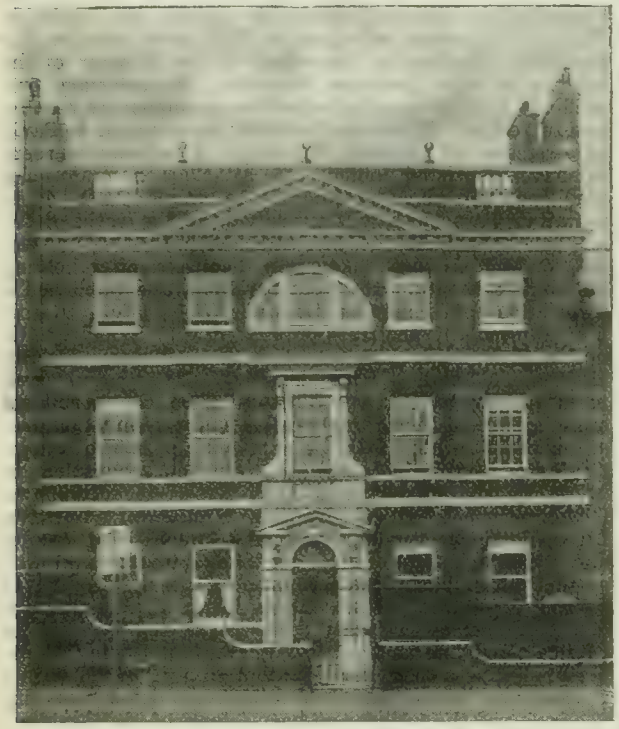
I have a medal of Giovanni Rasori, who was born at Parma, 1766, died at Milan, 1837. The obverse bears the club and snake of Aesculapius, and is inscribed, "Al Reformatore della Medicina Gli Ammiratori." I should be much obliged for some information as to Rasori.

Giovanni Rasori was born at Parma in 1767. He was the son of an artisan, but showed such an aptitude for learning that he was educated at the college of his native town by some benevolent persons. His progress was so satisfactory that the Duke of Parma sent him to study at Florence, Pavia, and afterwards in England, paying all his expenses during seven years. On his way home Rasori passed through Paris, and became an ardent revolutionary. He had become a fanatical adherent of Brown's famous theory, and he determined to teach the system in Italy. His protector gave him the opportunity of doing this by appointing him to the Chair of Internal Pathology at Pavia in 1794. He published an Italian translation of Brown, which gave rise to lively controversy in Italy. His unorthodox doctrines made it necessary for him to resign his chair at Pavia. On the arrival of the French in Italy Rasori went to Milan, and threw himself wholly into the political fray. He established a journal which he called *L'Amico della Libertà e dell' Uguaglianza* (The Friend of Freedom and Equality). In his invectives against "tyrants" he did not spare his patron, the Duke of Parma; his former colleagues of Pavia were also roughly handled. He became Secretary to the Minister of the Interior of the Cisalpine Republic; his arbitrary proceedings in this capacity made him so unpopular that he had to resign. At the end of 1797 he returned to Pavia as Professor of Clinical Medicine. His lectures seem to have consisted chiefly of attacks on traditional medicine and its professors; he would have liked to imitate Paracelsus, who publicly burnt the works of the ancients. Naturally he was attacked in turn, and on the petition of his own pupils he was dismissed after holding his chair a month. He went to Milan, and published a translation of Erasmus Darwin's *Zoonomia*. Rasori now abjured the doctrines of Brown, and conceived the notion of founding a new system of medicine. Taking Hoffmann's axiom *Omnis dolor agit ut stimulus* as a basis, he taught that all diseases were the result of stimulation. He accordingly called his system "Counter-stimulation," which may be summed up in the axiom, *Contraria contrariis curantur*. On the occupation of Milan by the Austrians in 1799, Rasori took refuge at Genoa, then occupied by the French of Massena. An epidemic of typhoid broke out among the troops, and Rasori found a field for the application of his system. He published an account of his results, which was severely criticized. Returning to Milan, Rasori was appointed *Protomedico* of the Government, and Professor of Clinical Medicine in the great hospital of Santa Corona. He published a periodical entitled *Annali di Scienza e Lettere;* as before, he made many enemies by his invectives, and the futility and harmfulness of his "system" were exposed by Dr. Ozanam, a French physician, who had attended his lectures for fifteen months. The Minister of the Interior thereupon ordered the register of deaths of the hospital to be examined, and having satisfied himself that Rasori's practice was distinctly homicidal in its results, dismissed him from his office. Rasori became mixed up in political conspiracies, and was condemned to imprisonment in the citadel of Mantua. There he was confined for two years. He returned to Milan and resumed medical practice. During an epidemic of cholera which visited Milan in 1836 Rasori showed much zeal in the care of the sick. He died after two days' illness in 1837. Notwithstanding his bitterness as a controversialist, and his eccentricities as a medical practitioner, he was much regretted, and it was proposed to erect a monument to his memory at Parma. Rasori's writings were remarkable for their literary quality; he was a poet as well as a writer on medicine and politics. He was a man of ready wit. Scarpa and he were colleagues at Pavia, but there was no love lost between them. It is related that one day Scarpa, after his lecture, was standing with some students under the portico of the university. Rasori, who happened to pass at the time let fly a gibe at his brother professor. Scarpa replied: "Some time or other the *razor* must lose its edge." To which came the retort from Rasori: "It will always be sharp enough to cut a *shoe*" (*scarpa*). A complete edition of Rasori's works was published at Florence in 1837.

THE NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

The new house of the Nottingham Medico-Chirurgical Society was opened by Dr. Osler, Regius Professor of Medicine at Oxford University, on the evening of Tuesday, June 28th.

The society was established October 30th, 1828, as a book society. The late Dr. Howitt was President, but there are no records to show where the society met then. It first met at the General Hospital in 1832, and later in the same year at the offices of the *Nottingham Journal*, now the *Daily Express*. In 1835 the meetings were held at the General Dispensary. In 1843 the name of the society was changed from "A Medical Book Society" to "The Medico-Chirurgical Book Society for the Reading of Papers and the Establishment of a Medical Library." The minute book of that period consisted chiefly of recommendations from the Library Committee concerning fines to members for keeping books beyond the specified time. In fact, the library committees of these early days seem to have laboured under the same difficulties as the present committees. In 1843 there were twenty-one members. It is curious to note a minute of April 30th, 1852, which reads as follows: "Dr. W. H. Ransom's resolution prohibiting members from advertising in the public journals was withdrawn." From 1866 to 1879 the meetings became more and more rare. In 1881 they were held in the various members' houses in rotation. In 1883 the society was resuscitated, and thirty-three members were present at a meeting at the General Dispensary. Since that date the society has steadily progressed until to-day it rejoices in the fact that it has 170 names on its books. Meetings are held regularly during the winter session, and the papers read are of a very high standard.



New Premises.

After 1883 the meetings were held in the board room of the General Dispensary, but this arrangement was never regarded as entirely satisfactory, for the accommodation was limited, and at crowded meetings proved insufficient. The society's capital had been allowed to accumulate until the funds would enable it to have premises of its own. At an extraordinary meeting, held on November 3rd, 1909, the society empowered the Council to take steps to secure and furnish suitable premises. This has been done, and the society now has a lease of the premises at 64, St. James Street. The position is very central, being only two minutes' walk from the Market Place, where all the tram lines meet. The building has been thoroughly repaired and altered to suit the society's requirements. On the ground floor a large room is sub-let to a sister society—the Society of Nottingham Architects. The first floor consists of a large and well-appointed lecture room capable of holding over 130 members a comfortable library with an office for the secretaries, and a large cloak-room. The top floor is sub-let at a nominal rent to the Nottingham Medico-Chirurgical Club, a social off-shoot of the parent society. Members of this club must be members of the society; here the rooms consist of a large billiard room and a card room. The capital of this club has been guaranteed by various members, and it is hoped that the guarantors will be repaid when it is proposed to hand the club and its belongings over to the parent society as a going concern.

At the meeting on Tuesday evening after the President, Mr. Adam Fulton, had conducted Dr. Osler over the buildings, an interesting little ceremony took place. At the request of the President, Professor Osler presented Mr. Smithurst with a handsome piece of silver in recognition of his services as assistant librarian to the society during the long period of fifty-five years.



Lecture Room.

Professor Osler then declared the new premises open and delivered an address.

MOTOR CARS FOR MEDICAL MEN.

Licence and Registration Fees.

W. A.—(1) A licence would be necessary for a lad employed in cleaning a motor car and doing odd jobs in the garden, unless he were bona fide engaged to serve his employer for a portion only of each day and did not reside in his employer's house. (2) A county council is entitled to require payment of the full registration fee for the new car.

We have received the latest edition of a catalogue issued by Mr. C. H. F. Muller (35, Hatton Garden, E.C.) giving particulars of *x*-ray tubes made by him and which have had a high reputation since the beginning of radiography. Various new models, chiefly designed for heavy currents and the Sabouraud treatment, find a place in this issue, and much useful information is included with regard to the care and regulation of tubes. There is also a section dealing with *x*-ray protective material, but we cannot think that the grim pictures of the masked figure in a kind of diving suit are calculated to reassure the public mind, already prejudiced by newspaper exaggeration, as to the dangers of the *x* ray.

British Medical Journal.

SATURDAY, JULY 2ND, 1910.

THE SPECIAL REPRESENTATIVE MEETING.

THE Special Representative Meeting, which met in London on Tuesday last, was well attended, and was occupied with the consideration of the special business before it from 3 to 7.30 p.m. The business was twofold: first, to consider alterations in the Articles of Association and By-laws of the Association as they exist to-day, and secondly, to consider a recommendation of the Council that in order to obtain the extended powers which are considered necessary for the due fulfilment of the general object of the Association it has become advisable to form a new company under the title of the British Medical Association, and incorporated in the same manner as the existing company, but with a Memorandum of Association providing for all the objects detailed in the Draft Charter.

In July, 1903, a year after the adoption of the new Constitution, the Council took into consideration the question of obtaining certain extended powers for which seven years earlier it had been decided to apply to the High Court. On getting to close quarters with the subject, the Association was advised by legal authorities that an application to the High Court to obtain this sanction for the desired extension of powers might not improbably fail of success, and one of the counsel consulted, Sir F. Beaufort Palmer, recommended that the Association should apply for a Royal Charter. This advice was accepted, and after long discussion through all the constitutional bodies of the Association, the Council, being authorized thereto by the Representative Body, submitted a Draft Charter, with Ordinances and By-laws, to the Privy Council in December, 1908. It is not necessary here to discuss the grounds of the opposition offered by various corporate bodies, and by certain Branches and members of the Association, for the definite fact with which the Special Representative Meeting had to deal was that the grant of the Charter had been refused. The Annual Representative Meeting last year had provided for this emergency by instructing the Council, should the Charter be refused, to prepare such alterations of the Articles and By-laws as might be necessary to bring all the regulations of the Association into accordance with those which had been approved by the Association in the Draft Charter. It was the result of the deliberations of the Organization Committee, subsequently approved by the Council, which was brought before the Special Representative Meeting on Tuesday. The Cardiff Division suggested one new provision—namely, that the Representative Meeting as a body should have the right to elect four members of Council, and the Council itself suggested certain modifications which were really of the nature of drafting amendments. The amount of discussion, as was to be expected in the circumstances, on this part of the business was not great, and the draft Articles and By-laws, with the inclusion of the Cardiff amendment, and with the inclusion also of the altered clauses suggested by the Council, were adopted by 94 votes to 2. Thus the decision of the Representative Meeting at Belfast embodied in Minute 217 was carried out.

The meeting then proceeded to the consideration of the second part of the special report of the Council dealing with the measures which should be taken to obtain an extension of the powers of the Association so as to bring them into accord with the provisions contained in the second clause of the Draft Charter. After giving very full consideration to the means by which the object in view could best be attained, the Council, acting on the advice of the Organization Committee, which had discussed the matter in its legal bearings with the legal advisers of the Association, came to the conclusion that the simplest and most satisfactory course to adopt would be to arrange for the formation of a new company with a Memorandum of Association covering all the objects which the Association desired to be in a position to undertake. The Association at present is hampered by the limitations of its Memorandum of Association, and in drafting the new Memorandum it is desired to give it a sufficiently wide scope to empower the Association in the future to undertake any of the matters set out in the Draft Charter (SUPPLEMENT of this week, pp. 10, 11, and 13). The adoption of such a Memorandum would not necessarily imply that the Association would be bound immediately to undertake to do all the things therein set forth; that would be a matter for the consideration of the constituted bodies of the Association in the future, but in arriving at a decision they would not be hampered as they are to-day by the limitations of the present Memorandum. The recommendation of the Council to proceed to the formation of the new company was accepted and confirmed by the Representative Meeting *nemine contradicente*, with an addition moved by Dr. Fothergill on behalf of the Wandsworth Division. This addition consisted of several parts, the most important, in the form eventually adopted, being probably that which would give the Association power, if at any time the members should decide that it was desirable, to establish, organize, or manage a system of insurance of members of the community against the cost of medical treatment for themselves, their families, and dependents. It is desired to take this power in connexion with the possibility of the institution of some system of insurance for medical benefits, a subject now under the consideration of the Special Poor Law Committee.

At the Extraordinary General Meeting of the Association held on Wednesday morning, June 29th, the regulations, that is to say the Articles and By-laws approved by the Representative Meeting on the previous day, were submitted, and were adopted as the regulations of the Association in substitution for the existing regulations by a large majority (200 votes to 5). This decision will, in accordance with the Companies Acts, be brought before an Extraordinary General Meeting, which will be held in the Council Chamber, Guildhall, on Friday, July 22nd.

THE NEW MEDICAL PEER.

THE elevation of Sir Walter Foster to the peerage is a well deserved reward for a strenuous career in which from first to last he has with single-minded endeavour striven for the welfare of the people and for the benefit of the medical profession. In congratulating the new peer on the dignity that has been conferred

upon him, we also congratulate the House of Lords on the addition to its members of a man who will bring to its counsels the knowledge of affairs and the statesmanlike breadth of view that can be gained only in a long experience of public life. In delighting to honour Sir Walter Foster the King has honoured the profession of which he is a distinguished member. The announcement is therefore a source of particular satisfaction to his profesional brethren. The purely political part of the new peer's career does not concern us here. But we may be allowed to point to his success as a politician as a proof that a medical training, so far from moulding a man only for a special groove of intellectual activity, tends by its broadening effect on the mind, its quickening of the sympathies, and its cultivation of the power of accurately adjusting means to the end that is aimed at, to fit a man to deal with many of the problems of government in a larger spirit than those who look upon statecraft as nothing more than a mechanism for the retention of power in their own hands.

The new peer has been so long before the public that any detailed account of his life is unnecessary. We need only recall the fact that he was born near Cambridge in the year 1840, and educated at Trinity College and the Medical School of the Royal College of Surgeons, Dublin. There he was appointed Senior Prosector of Anatomy, his colleague being Professor Alexander Macalister, now of Cambridge. Nearly fifty years ago he migrated to Birmingham, with which he has ever since remained closely connected. It was not long before he won a foremost place there as a physician. He embodied the fruits of his experience in many valuable works, which made his name familiar to the medical world. In the press of his professional engagements he found time to take a leading part in the public life of Birmingham. In 1878 he was elected President of the Medical Benevolent Society. In 1883–1884 he was President of the Birmingham and Midland Counties Branch of the British Medical Association, and in 1884 he was elected President of Council, an office in which he displayed great zeal for reform and for the better organization of the Association. In 1885 he was elected M.P. for Chester, but was defeated by a narrow majority when he sought re-election after the great split in the Liberal Party in the following year. In 1887 he was elected by a large majority for the Ilkeston Division of the County of Derby, which he continued to represent till quite recently. At the last General Election he was returned by one of the largest majorities recorded. Soon afterwards he resigned the seat in favour of a member of the Ministry who on being appointed had failed to secure re-election.

The new peer, on whom the honour of knighthood was conferred in 1896, and who was made a Privy Councillor in 1906, is a striking example of the possibility of combining professional work with political activity. In the House of Commons, while faithful to his political constituency, and loyal to his party, Sir Walter Foster never forgot that he represented a larger constituency of his professional brethren. He has taken a prominent part in the discussion of all questions affecting, directly or indirectly, the interests of medical practitioners. He rendered invaluable service in the passing of the amended Medical Act of 1886, and he was largely instrumental in obtaining an increase in the direct representation of the profession on the General Medical Council. As the advocate of the redress of various grievances of medical officers he earned the gratitude of the Army Medical Department. In connexion with the Public Health (Scotland) Bill, the Midwives Bill, and the Poor Law Officers' Superannuation Act, he showed vigilance in safeguarding the interests of medical practitioners. He became Parliamentary Secretary to the Local Government Board in 1892, and in that capacity he proved himself a first-rate administrator and did excellent service in periods of difficulty, notably in the strengthening of the system of defence of the country against cholera in 1892 and 1894. Here, too, he lost no opportunity of improving the position of medical officers of health and parochial medical officers, and increasing the influence of the profession. In 1893 he presided over the Select Committee on Death Certification, but the Ministry to which he belonged went out of office in 1895, before an opportunity for legislation on the lines recommended by the Committee occurred. As a further proof of his manifold activity it may be mentioned that Sir Walter Foster was Chairman of the National Liberal Federation from 1886 to 1890, President of the Allotments and Small Holdings Association in 1892, and President of the Land Law Reform Association from 1889 to 1908.

Sir Walter Foster's political work alone would have been sufficient for most men who take a prominent part in public life. But it must not be forgotten that as a Direct Representative of the profession on the General Medical Council he fought for ten years the battle of reform against the apathy or active opposition of that body. The British Medical Association showed its appreciation of his services by the award of the Gold Medal of the Association in 1897. His address on the Political Powerlessness of the Profession, published so long ago as 1883, did much to arouse the members of the profession to a feeling that if it was ever to be a force with which politicians had to reckon they must organize themselves into a united body.

We are glad to welcome back to the sphere of active political life a man who has rendered such service to his profession. In the House of Lords he will have many opportunities of continuing his work and of influencing legislation in the direction of the social and hygienic reforms for which he has always striven. For this reason, if for no other, we hope that what Lord Cromer the other day called the "menaced Chamber" may be allowed to live for some time longer. We may be allowed to express the conviction that its chances of prolonged life will be greatly increased by the addition to its members of several more representatives of the medical profession. Now that the door of the gilded chamber has been thrown open to a doctor—for Lord Lister is so far above the din and dust of political strife that he can scarcely be quoted as a precedent—it is to be hoped that in the interest of the nation the ranks of the peerage will continue to be recruited from among the profession which can furnish men with the special knowledge the lack of which among legislators has been a serious obstacle to progress.

In the meantime we wish the first physician in this country who has been called upon to exchange the doctor's cap for a coronet length of days to enable him to enjoy the dignity which he has so well earned, and to work for the reforms in the furtherance of which he has spent so large a part of his life.

AUTO-TOXAEMIA IN INFECTIVE DISEASE.

IN a former article[1] attention was directed to the work of Dr. E. C. Hort on immunization and response in infective diseases. Dr. Hort predicates that whereas the production and maintenance of immunity to infection are generally considered to be questions of protection against the invading parasites and their products only, this conception ignores factors such as autolysis and other anomalies of cell metabolism, and the toxic products of those anomalies.[2] A portion of the disease "complex" in an infective disease is, therefore, due, according to Dr. Hort, to auto-intoxication by *somatic* products which result from the degeneration and disintegration of the cells and tissues of the host. To this part of the infection the term "auto-toxaemia" is applied. In a paper[3] read before the Royal Society on June 23rd, Dr. Hort adduces further evidence in support of this hypothesis. In the investigations outlined in this paper the object in view was to attempt to obtain, by means of a simple agent of non-parasitic origin, some of the phenomena, such as fever (that is, rise of temperature), loss of weight, and alteration of the antitryptic index, which are so characteristic of the action of bacterial products—for example, diphtheria toxin. Injections of sterile distilled water were found admirably to fulfil the purpose desired.

The investigation involved the frequent handling of, and numbers of thermometric observations on, the experimental animals (rabbits and guinea-pigs), and careful control experiments were therefore first conducted to ascertain (1) the mean temperature of these animals, and (2) the effect of these procedures on the temperature. The thermometers were of guaranteed accuracy and were frequently retested during the course of the work, and the temperatures were taken in the rectum by inserting the thermometer, well oiled, with the utmost gentleness nearly to its full length, and retaining it in position for a full minute. It was found that the mere handling of the animals and the thermometric observations caused no appreciable alteration of the temperature, provided no abrasion were produced; even a slight wound of the rectal mucous membrane, however, was followed by well-marked fever from septic absorption. In 135 guinea-pigs retained for the experiments, the temperature ranged between 100° F. and 102.2° F., giving a mean of 101.4° F. The mean average temperature of the rabbit is 103° F., according to many observers, and this figure was accepted, though the average of 50 rabbits was actually found to be 102.4° F.

Having thus found that the experimental procedures, if carefully carried out, caused no appreciable disturbance, the effect of the injection of sterile distilled water subcutaneously into rabbits and guinea-pigs was studied. The water was given in single, or multiple, doses of varying amounts, and the effect was invariably to produce fever. Single injections of from 1 c.cm. to 10 c.cm. in the guinea-pig were always followed within three to five hours by a rise of temperature of from 0.5° F. to 2.5° F. In one instance 1 c.cm. of water caused a rise of temperature in a guinea-pig weighing 304 grams from 101.4° F. to 103.9° F. four hours later. Moreover, the temperature curve produced by the injection of distilled water proved to be almost exactly parallel with that obtained by the injection of ¼ to 4 minimal lethal doses of diphtheria toxin. In one guinea-pig weighing 460 grams three injections of 5 c.cm. of distilled water given on the first, third, and eighteenth days caused a rise of temperature from 100.6° F. to 102.0° F., 101.0° F. to 103.0° F., and 102.4° F. to 105.7° F. respectively. It will be noted that the last injection, though equal in amount to the two previous ones, caused a much more marked effect, and this result was repeatedly observed. Moreover, it was found that an injection of 10 c.cm. subsequent to two injections of 5 c.cm. each might produce a much greater rise of temperature than ever followed a single injection of 10 c.cm. This appears to indicate that "sensitization" is induced by a previous injection, that is to say, the animal becomes more sensitive to the injections; this view receives confirmation from the fact that the phenomenon is equally apparent whether the second injection is given three hours or ten days subsequent to the first. The fever in the case of a single injection, or of multiple injections with a definite interval between them, is transient, the temperature reaching the normal a few hours after the injection, but if multiple injections were given at shorter intervals a more or less continuous fever might be produced, very similar to that of a bacterial infection.

If multiple injections were given at short intervals of one to two hours, it was found that instead of a rise, a well-marked fall of temperature might be produced. Multiple injections likewise caused a loss of weight, irrespective of whether fever was produced or no. An exactly comparable effect was produced by multiple sublethal doses of diphtheria toxin. Another change induced by the injection of distilled water was a rise in the antitryptic value of the serum, which also has its counterpart in diphtheria-toxin intoxication.

Many other details of interest were given in the paper, but the salient facts brought out by the work are that by means of injections of sterile distilled water, even in so small an amount as $\frac{1}{300}$ of the body weight, fever is induced in the guinea-pig, and that by properly spaced multiple injections a condition is caused exactly comparable to that produced by intoxication with bacterial products. Careful control experiments were made to ascertain that sepsis was absent, and it was found that neither injections of sterile air (up to 10 c.cm. in volume) nor of sterile olive oil in doses of 3 c.cm. to 5 c.cm. produced fever. Injections of physiological salt solution induced only slight fever, far less than that caused by a similar injection of distilled water.

The question naturally arises, How does an injection of distilled water act in producing fever and the other changes noted? Distilled water, as is well known, is a protoplasmic poison, and the treatment of isolated living cells, such as ciliated epithelium, leucocytes, protozoa, and unicellular algae, with distilled water brings about degeneration, visible under the microscope, and ultimately death. It can hardly be imagined that a small local injection of distilled water (for example, $\frac{1}{300}$ of the body weight) produces fever by any direct action on thermotactic nerve centres (even if they exist), for long before the water reached the nerve centre it would no longer be distilled water but would have taken up salts, etc., and have become incorporated with the blood and lymph. As experiment showed that injection of physiological salt solution produces only a small

[1] BRITISH MEDICAL JOURNAL, 1909, vol. i, p. 1139.
[2] *Proc. Roy. Soc. Med.*, June, 1909, and *Rational Immunization* (Balc, Sons and Danielsson, 1909).
[3] See page 19.

effect, it appears legitimate to assume that if the salt solution could be made absolutely isotonic no effect at all would follow. Sepsis also may be ruled out, because (*a*) it could not be found; (*b*) every care was taken to prevent it; and (*c*) when it was deliberately produced by wound of the rectal mucous membrane, the fever followed some twenty-four hours later and not within three to five hours, as was the case with the injection of distilled water. The conclusion, therefore, seems inevitable that "in bacterial and protozoan infection some of the clinical signs of intoxication—such as fever, loss of weight, and variation in the antitryptic value of the blood and serum—are partly, at least, due to absorption of autogenous products from the tissues of the host, owing their liberation to bacterial or protozoan action."

Additional evidence in support of this conclusion might be obtained if it could be shown that cellular degeneration and disintegration are produced at the site of inoculation, followed later by degenerative changes in distant organs, and this seems to be a promising field for further investigation, though obviously one of some difficulty. Moreover, such a conception as this is suggestive in many directions. For example, it enters into the practice of vaccine-therapy, and uraemia and other intoxications, the poisons of which have so far eluded isolation, may well be due to subtle toxic substances the products of cellular degeneration and disintegration.

LEGISLATION ON THE CARE OF THE FEEBLE-MINDED.

THE urgent necessity of legislation upon the lines of the Report of the Royal Commission on the Care and Control of the Feeble-minded is being prominently brought under the notice of the public, and, we trust, also that of the Government, by influentially-signed letters in the *Times* and other papers. Amongst these we notice communications from the Bishop, University, and corporate authorities of Birmingham, from the Lord Mayor and other representative personages of the cities of Liverpool and of Leeds, and from medical experts on the subject in Newcastle. It seems high time that a matter of such far-reaching social importance, so thoroughly threshed out by a Royal Commission which devoted nearly four years to its investigation and issued its report as long ago as July, 1908, should be seriously considered by our legislators. If, as we all hope, the "truce of God" which has been brought about by the lamented death of King Edward should result in a period of conciliation in place of party controversy, surely a Government pledged to social reform could find no more fitting subject for legislative settlement than that of the care of the feeble-minded. The ramifications of the evil affecting the very vitality of the nation in the multiform manifestation of congenital mental defect, not only in feeble-mindedness and insanity, but in the production of recidivists and inebriates, of youthful offenders and weak-minded criminals, render the problem very complex; it affects more than one of the administrative departments of the State, and this no doubt is a difficulty in the way of framing a thoroughly comprehensive measure. There seems no reason, however, why at least a beginning should not be made in tackling the problem, on the principle that "half a loaf is better than no bread." In this direction we venture to offer a few suggestions as to the recommendations of the Commission which appear most urgent.

By the original Royal Warrant the duty imposed on the Commission was that of considering existing methods of dealing with the several classes of mentally defective persons not certified under the Lunacy Laws, and of reporting, in the interests of such persons and the community at large, as to amendments in the law or other measures which, with due regard to economy, it was deemed desirable to adopt in their treatment. Subsequently, the scope of the reference was enlarged to include inquiry into the working of the Lunacy Commission and of lunacy authorities in England and Wales. Whether or not the questions included in the original reference are, as some think, those that press most urgently for settlement, there can be no doubt that they form a well-defined department of the whole. Society suffers from a mode of dealing with children found mentally defective under the Education (Defective and Epileptic Children) Act of 1899 which is admittedly imperfect. Where the Act has been adopted these children are expensively trained till the age of 16, and are then, at a critical period of their lives, let loose upon the community, in many cases unfortunately only to work out their own perdition. The Act, however, has at least done this amount of good, that it has demonstrated the necessities of the case; and the experience of ten years has proved that it is sadly inadequate to meet them. The first point for legislation would, therefore, seem to be such an amplification of the provisions of the Act as would render it universally operative in the detection of mental defect in the school population.

The question whether the Board of Education or a newly constituted authority for the supervision of all mentally defective persons (including lunatics) should be responsible for the training of such children during school age—a matter upon which there is considerable divergence of opinion—may be regarded as of secondary importance.

The second point for legislation, upon which there is a general concurrence of opinion, is the absolute necessity for increased powers of detention of feeble-minded persons beyond school age whose conduct, considered apart from "facts indicating insanity," such as would form the basis of a lunacy certificate, proves their incapacity for managing themselves and their affairs with ordinary prudence, thus rendering them a danger to themselves and the community. Under this category would fall the feeble-minded girls who, as "ins-and-outs," are recurrent visitors to the maternity wards of workhouses to give birth to illegitimate children, and others whose retention in industrial homes is obviously the only safeguard against their getting into similar trouble. It would also include criminal mental defectives not certifiable as insane. The mental condition must, of course, be vouched for by medical certificate, and a simple form for this, following the precedent of the Idiots Act, 1886, has been recommended by the Royal Commission for use in certain cases.

The reconstitution of the Board of Commissioners in Lunacy, strengthened by the Lord Chancellor's Visitors and additional medical Commissioners, under the title of the Board of Control, and the appointment of eight assistant District Commissioners and of local Statutory Committees to supervise arrangements for mental defectives, may prove to be a necessary part of the machinery of legislation for this class; but on this point it is not necessary to enlarge here. There are other questions, such as the expediency of

including under the common designation of "mentally defective" not only those originally defective, but all who have manifested symptoms of insanity in after-life, and of the compulsory notification of all weak-minded children under training from home who are not a charge on the community, which are, perhaps, debateable; but we repeat that there is general agreement on a sufficient number of points not only to justify legislation, but to render early action imperatively necessary.

In conclusion, we may say that we miss in the recommendations of the Commissioners any special provision for facilitating the treatment in private residences of "unconfirmed" cases of mental disorder on the lines advocated by a joint committee of the British Medical and Medico-Psychological Associations, which was made the subject of a Bill to amend the Lunacy Act presented by the Attorney-General in 1905.

AID TO THE SICK AND WOUNDED OF THE TERRITORIAL FORCES IN WAR.

THE answer which Lord Lucas gave the other day in the House of Lords to Lord Dartmouth's question on the subject of efficient aid to the Territorial Forces in time of war suggested that all was not going smoothly in the proposed Voluntary Aid Detachment scheme. That scheme involved the harmonious working together of the British Red Cross Society, which was to form and train the detachments; the Ambulance Department of St. John of Jerusalem, which was to give the preliminary training; and the County Territorial Associations, which were to control the scheme, under the general approval of the War Office. In this scheme, therefore, the preliminary training of candidates for the Voluntary Aid Detachments—that is, the bearers and the nurses—was to be the special charge of the Ambulance Department of St. John of Jerusalem, whose experience in that matter is as widely respected as it is firmly established. Now, one great feature of the ambulance work of the Order of St. John is that the Order will recognize no teaching of bearer or nurse which has not been given by a duly-qualified and registered medical practitioner, being convinced that only in this way could the standard of efficiency of its pupils be kept up. Amongst medical men there can be no two opinions as to the correctness of that conviction. The British Red Cross Society, however, is now claiming that unless "much more liberal facilities" are offered to the public, there may be difficulty in raising the desired number of Voluntary Aid Detachments; though, so far as is known, little effort has as yet been made to secure the services of the enormous number of men and women who have successfully passed through the classes of the St. John Ambulance Association and are already holding its certificates. But, acting on the supposition that such difficulty does actually exist, the Red Cross Society is demanding that it should no longer be required that the instruction and examination of women training for qualification as nurses shall be conducted by medical practitioners, but that it should be left in the hands of trained nurses. It is quite conceivable that in time of war such a relaxation of the old-established regulations of the St. John Ambulance Association might be called for, but in time of peace the advisability of giving away of such an important principle cannot be open for discussion. If it were approved, the effect upon the standard of efficiency of the Territorial nurses would be disastrous. Indeed, it is a lowering of this standard that the Red Cross Society would seem to wish to bring about in its demand that "much more liberal facilities" should be offered to the public. The St. John Nursing Certificates have hitherto been highly appreciated for the reason that for their attainment a serious effort has been required, both on the part of the practitioners who have given the lectures, and of the candidates who have had to go through the definite but not unreasonable amount of theoretical and practical work necessary to obtain them. The Order of St. John is insisting that it is only by leaving the instruction and the examinations in the care of medical practitioners that the value of nursing certificates can be maintained, and firmly sets its face against the suggestion that the time has arrived when the medical profession can approve of the class-instruction being handed over to nurses, who shall themselves be the examiners of their pupils. There is, of course, plenty of work for the trained nurse to do in the way of demonstrating to industrious candidates the practical details of their work, but the general instruction of the classes must still remain under the charge of the medical practitioner, who, by his many years of study, training and teaching is alone qualified for rendering women fit to supply efficient aid in time of war. The work of the nurse must always be—to use a somewhat fashionable word—ancillary to that of the medical practitioner, and it is not in the true interest of the nurse that she should be encouraged to lay claim to a range of work which up till now has been efficiently and thoroughly well done only by her superior officer.

THE BIRTHDAY HONOURS.

IN addition to the peerage conferred upon Sir Walter Foster, to which we have referred elsewhere, the birthday honours list contains the names of a number of medical men. The honour of a baronetcy was conferred upon Dr. F. H. Champneys, Lecturer on Midwifery and Physician Accoucheur to St. Bartholomew's Hospital and Chairman of the Central Midwives Board. Dr. James Porter, C.B., Director-General of the Medical Department, R.N., was promoted to K.C.B., an honour which will be a matter of congratulation to the service of which he is the able head, and to his many friends in all ranks of the profession. The honour of knighthood was conferred upon Dr. Arthur Henry Downes, Senior Medical Inspector for Poor Law purposes to the Local Government Board, and a member of the recent Royal Commission on the Poor Laws and Relief of Distress; on Mr. John Fagan, F.R.C.S.I., Consulting Surgeon to the Belfast Royal Hospital; on Dr. George Hastings, formerly Physician to the Westminster Dispensary; on Mr. John Lentaigne, who as President of the Royal College of Surgeons in Ireland during the last two years took a prominent part in urging upon the Government the claims of the College School; on Dr. H. S. Lunn, who, after acting for some years as a medical missionary in India, interested himself in arranging international gatherings and organizing foreign tours; on Dr. D. C. McVail, Crown Representative for Scotland on the General Medical Council, and late Physician to the Glasgow Royal Infirmary; on Dr. R. M. Simon, Physician to the Birmingham General Hospital, and Chairman of the Birmingham Medical Benevolent Society, and formerly President of the Birmingham Branch of the British Medical Association, and on Surgeon-Lieutenant-Colonel W. R. Crooke-Lawless, C.I.E., M.D., Surgeon to the Viceroy of India. The Companionship of the Bath was conferred on Surgeon-General A. T. Sloggett, C.M.G., Principal Medical Officer in India; on Surgeon-General O. E. Pennefather Lloyd, V.C., Principal Medical Officer in South Africa, and on

Colonel M. W. Kerin, A.M.S., whose services during the operations in the Zakka Khel country on the North-West Frontier of India in 1808 were mentioned in dispatches. The Companionship of the Order of St. Michael and St. George was conferred upon Dr. A. D. Percival Hodges, Principal Medical Officer Uganda Protectorate, in recognition of services in the suppression of sleeping sickness. The Companionship of the Order of the Star of India was conferred on Surgeon-General C. P. Lukis, M.D., F.R.C.S, Director-General Indian Medical Service, and an additional member of the Council of the Governor-General for India. The Companionship of the Indian Empire was conferred on Colonel Roderick Macrae, I.M.S. (retired), late Inspector-General of Civil Hospitals, Bengal. The Kaisar-i-Hind Gold Medal was conferred on Colonel Robert McCarrison, M.D., I.M.S., Agency Surgeon, Gilgit; and on Dr. T. L. Pennell, a medical missionary of the Church Missionary Society at Bannu, North-West Frontier of India. For the first time the services of the medical department of the Territorial Force have been recognized by honorary appointments to the King, and we congratulate Colonel Andrew Clark, F.R.C.S., so well known to members of the British Medical Association as formerly Chairman of the Council and now of the Organization Committee, on his appointment to be Honorary Surgeon to the King in recognition of his services as Administrative Medical Officer, 2nd London Territorial Division; and Colonel Joseph W. Blandford, Administrative Medical Officer, Northumbrian Territorial Division, on his appointment to be Honorary Physician to the King.

INHERITANCE OF DISEASE.

THE new part of the *Treasury of Human Inheritance*[1] is of even greater interest than its predecessors. The subjects dealt with in this issue comprise harelip and cleft palate, deaf-mutism and congenital cataract. Dr. Rischbieth, who is responsible for the section dealing with harelip and cleft palate, has produced a monograph of high scientific value. The anatomical features of the different forms of harelip and cleft palate are clearly and concisely described, the illustrations, which are beautifully reproduced, being very helpful. Seventy-six pedigrees are reproduced, the notes on each being sufficiently full to enable the reader to judge of its importance. In discussing the origin of these malformations, the author makes the following very sensible remarks: "Harelip or cleft palate seems to be only the alpha or omega of some symbolic writing; though it can be deduced that these symbols signify physical degeneracy, it is mainly from knowledge derived from other sources that this can be done. In order to understand the sentence the whole language must first be learnt. This at present we do not know, and study has largely taken the form of asking without that knowledge how alpha and omega came into use, a question which, under such circumstances, cannot accurately be answered. It is only by the study of a large number of complete family histories, in which all members, normal as well as deformed, are included, that any advance in the knowledge of the mode of production of congenital deformities and the mode of action of hereditary influence can be made." Dr. Rischbieth's article is followed by a first instalment of pedigrees of deaf-mutism, collected by the staff of the Galton Laboratory, and the work concludes with a monograph on congenital cataracts by Mr. Bishop Harman. Mr. Harman's article is so lucid that any educated layman would have no difficulty in following his account. Most writings on ophthalmological topics are very technical, and Mr. Harman deserves special commendation for the success he has achieved. Of the pedigrees brought together in this section, many, particularly those collected by Mr. Nettleship and by Mr. Harman himself, are strikingly full. In noticing previous issues of this work, we have expressed a high opinion of its value. The present number entirely confirms our former judgements and redounds to the credit of all concerned in its production.

[1] *Treasury of Human Inheritance*. Part IV, with 9 plates of pedigrees and 7 plates of illustrations. London: Dulau. 1910. 10s.

INCOME TAX ASSESSMENTS ON SALARIES FROM APPOINTMENTS.

OUR attention has from time to time been drawn to what would seem unnecessary and somewhat annoying trouble inflicted on practitioners holding appointments under various public bodies, schools, societies, clubs and other institutions, by the methods of assessment to income tax adopted by the authorities. Not only may a medical man be subject to a special application for a separate return for each appointment he may hold, but he may be required to fill up each such separate return, which requires him to show the expenses incurred in carrying out the duties of each appointment. Moreover, unless he is careful to make a note on each form that he is entitled to "abatement" or the "relief" allowed on earned income, and to say in what form he has made his claim, the probability is that he will be led into correspondence with the surveyor and perhaps be required to appeal. It would appear that until recently the tax charged on an appointment was not always applied for by the collector to whom the special return was made, but frequently by the collector who collected the ordinary tax on profits under Schedule D. Again, such application was frequently made after the Schedule D tax was paid, and made on a demand note that did not explain the source of the income to which the particular tax related. The practice seems to have changed recently, and the collectors to whom the separate returns have been made usually now apply for the duty on the respective appointments coming within their area, a course that frequently involves the payment of the tax in several instalments. The business of making separate returns and paying separate sums for income tax in respect of what are in many cases petty receipts introduces an element of complication into a medical man's income tax affairs that is particularly irksome, and one that it should not be impossible to avoid. There is nothing in the nature of the fees received for work done under the terms of an appointment or contract that is so essentially different from the fees received for visiting or receiving ordinary patients as to call for exceptional treatment of the former fees for income tax purposes. The remuneration is in each case received in the course of the practitioner's exercise of his ordinary profession, and the general expenses of the practice are applicable no less to one description of income than to the other. It is in practice almost impossible accurately to arrive at the amount of the expenses pertaining to each appointment, and the confusion introduced into the accounts of a man who has not had a training in bookkeeping by the necessity for differentiating between the various items of receipt and expenditure in his books, leads not infrequently to the inclusion in the general return under Schedule D of fees received in connexion with appointments, the fact that such fees have been separately treated and assessed under Schedule E being overlooked. We can understand that in the case of a medical man who derives his income entirely or mainly from an appointment, the proper method of assessment of his remuneration may be by a separate assessment under Schedule E; but where, as so frequently

happens, the duties of appointments are undertaken as a matter subsidiary to the practitioner's ordinary practice, there would seem to be no valid reason why one general return should not be made of the whole of the profits without distinction. If the receipts from appointments were included in the general return, no loss would arise to the Inland Revenue, but the practitioner would be spared not only the troublesome calculations necessary in order to arrive at the various returns, but also the disadvantage of being required to pay his income tax in various sums, the accuracy of which it is difficult for him to check. There are many respects in which the income tax bears heavily on the medical man; some are common to all professional men, while others, such as the far from sufficient allowance for the cost of maintaining his social position and the absence of allowance for the saving necessitated by the constant risks attendant on the performance of his duties, apply to him exclusively or in a very special manner. In the circumstances it is not too much to ask that the business of making his return and of meeting his liability to income tax may be made as simple as any administrative arrangements or concessions can make it. We are informed that chartered accountants, who, most of all men, are in a position to render proper accounts and returns to the Inland Revenue, are not required to keep distinct in their income tax statements the fees they receive for acting as accountants to public bodies, but are permitted to make one return of all their profits, whether derived from private clients or from appointments. In the circumstances, we hope that, on representations being made to the Board of Inland Revenue, they will recognize the extreme inconvenience and undesirableness, from the point of view of the practitioner, of the present method of dealing with salaries from appointments, and will allow him the opportunity of making his income tax return in future in one sum, to include all fees, whether received from private patients or for services performed in connexion with appointments. Such a concession would be welcomed by the medical profession, and would remove a difficulty from the path of the practitioner who desires to make an accurate return of his income.

THE RADIOGRAPHIC PICTURE OF THE STOMACH.

IF we had realized that we were being seriously asked or commanded to give up as obsolete and erroneous the belief in the saccular form of the stomach, and to adopt in its place the conception of that organ as an almost vertical tube, widest above, and tapering to a point below—the so-called cow's horn stomach of Holzknecht—we think we should have been roused to protest, and perhaps we have hardly taken the matter seriously enough; at any rate, we sympathize with the spirited protest made by Professor Stiller, of Budapest,[1] which is provoked by the too dogmatic manner in which German radiologists have claimed for the shadow picture of the bismuth-filled stomach the title to be considered without appeal and indisputably the correct shape and appearance which the organ has under normal conditions within the body. It is in the writings of the radiologists, Holzknecht and Jonas, that Professor Stiller finds the principal statements that have aroused his indignation and stimulated his pen. According to these authors the normal stomach is a tube that in health is never more than three fingerbreaths in width, lies vertically in the abdomen, with the pylorus as its most depending part, and tapers from above downwards. Holzknecht's views were criticized by Dr. M. Simmonds in a monograph reviewed three years ago.[2] He pointed out that the *x*-ray method does not always show the actual shape of the organ, and his photographic results, while proving that there is great variation in the form and position of the stomach, yet on the whole support the traditional view. According to him, the most important landmark is the pylorus, which is covered normally by the right lobe of the liver, and commonly the great curvature is lower than the pylorus. Moreover, Schmieden and Hartel, whose excellent work, published in the *Berliner klin. Wochenschrift*, was reviewed in a leading article last year,[3] made no exaggerated claims for their bismuth shadows, but admitted that the information may be misleading, as the stomach assumes varying shapes, and if watched on the screen the changes may be seen to follow one another with great rapidity, so that an instantaneous photograph may be, as Professor Stiller says, only a caricature of the stomach, and no more a faithful portrait than would be an instantaneous photograph of the face of a person eating. Professor Stiller points out that the bismuth meal acts in a quite peculiar way upon the stomach and is mainly responsible for its unusual shape. It has been noticed that the bismuth meal passes slowly from the cardia to the pylorus, in consequence of the state of contraction or hypertonicity induced by the contact of the bismuth with the walls of the stomach. This hypertonicity is also manifested by the small quantity which can be taken; according to Groedel the stomach holds only 400 c.cm. of a bismuth meal! It should also be remembered that the *x*-ray pictures have always been taken in the vertical position, whereas our traditional conception of the stomach has been derived from examination, clinical or anatomical, with the body horizontal. But Professor Stiller says, with reason, that these peculiar results of the bismuth meal should not be claimed as final data upon the shape and capacity of the normal stomach, nor ought we to be asked to supersede our traditional notions on the subject in favour of the *x*-ray picture as that which alone affords trustworthy information upon which the clinicist can rely.

[1] *Kritische Glossen eines Klinikers zur Radiologie des Magens.* Berlin, 1910.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.

ALMOST the first term which meets us in the new section of this great *Dictionary*[4] is a medical one, albeit an obsolete one; it is *sauceflemc*. Like most of the words which fell obsolete before or about the time of the appearance of the Authorized Version of the Bible, it is spelled in many ways—for example, *sawceflcem*, *sausfleame*, *salseflegme*, etc. It is adopted from the Old French *sauseflemc*, a semi-popular adaptation of the mediaeval Latin *salsum flegma*, salt phlegm; and Dr. Bradley (who is editing this volume of the *Dictionary*) defines it as "a swelling of the face accompanied by inflammation, supposed to be due to salt humours." There is an illustrative quotation from Gerarde's *Herbal* (1597), stating that "cucumber . . . doth perfectly cure all manner of sawceflegme and copper faces"; Chaucer uses the word, and a writer of the year 1639 employs it in an adjectival sense in the expression "a sausfleame face, old or new." The scope and thoroughness

[2] BRITISH MEDICAL JOURNAL, August 31st, 1907, p. 527.

[3] Ibid., July 3rd, 1909, p. 37.

[4] *A New English Dictionary on Historical Principles.* Edited by Sir James A. H. Murray. Sauce—alone—Scouring. Vol. VIII. By Henry Bradley, Hon. M.A Oxon, Hon. Ph.D.Heidelberg. Oxford: At the Clarendon Press. London, Edinburgh, Glasgow, New York, Toronto, and Melbourne: Henry Frowde. Double section, price 5s. July 1st, 1910.

of the editorial work of this Section is shown not only by the management of such rare terms as *saucefleme* but also by the inclusion of the special meanings of ordinary words. For instance, the medical meanings of *save* are enumerated and include "to rescue from a sickness which threatens to prove mortal" and "to keep a thing from damage or loss"; an illustrative quotation is got from Thackeray's *Vanity Fair* ("Her own little boy was saved, actually saved, by calomel, freely administered, when all the physicians in Paris had given the dear child up"), and another is taken from Wiseman's *Wounds* (1672), namely, "If the toes with part of the foot was shot off, cut off the lacerated parts smooth, but with care to save as much of the foot with the heel as you can." *Savin*, the medicinal plant (*Juniperis sabina*), has an evil reputation for procuring abortion which is fully brought out in the illustrative quotations; it has a more legitimate use as an anthelmintic in veterinary practice. *Sawbones* is defined as a surgeon, but has the lexicographer's condemnation, "slang," attached to it; the originating quotation from Dickens's *Pickwick Papers* (1837) is given: "'What! don't you know what a Sawbones is, sir?' inquired Mr. Weller; 'I thought everbody know'd as a Sawbones was a surgeon.'" Miss Broughton is shown to be guilty of making a nonce word—*sawbones-ing*—in her novel, *Red as a Rose* (1870). The word *saxifrage* has an interesting note attached to it by Dr. Bradley: "The Latin name (=rock-breaking) was probably given because many species are found growing among stones and in the clefts of rocks. Pliny preferred to derive it from the supposed lithontriptic virtue of the plant (*H. N.*, xxii, . . . *calculos e corpore mire pellit frangitque*), and this view has had great currency; but *saxum* is far from being synonymous with *calculus*." Other words with interesting etymologies are *scab*, *scabics*, *scald*, *scall*, *scalpel*, *scarify*, *scarf-skin*, and *scar*. *Scarlatina* has the semi-medical warning note attached to it: "Popularly often misapprehended as denoting a milder form of the disease than that designated by the vernacular term"; a new difficulty in diagnosis is introduced by the quotation (from one of Miss Braddon's novels), "She looks as if she were going to a ball, or going to have the scarlatina." This section of the *Dictionary* deals also with the mysterious *schindylesis*, the irregular *sclerema*, and the unpleasant *scatology*, and with a host of other terms which will well repay the industrious reader many hours of wandering through its closely packed folio pages.

THE BIOMETRIC AND EUGENICS LABORATORIES.

Professor and Mrs. Karl Pearson and the staff of the Biometric and Galton Eugenics Laboratories were "at home" last week in University College. The laboratories were open, and there was a striking display of the various activities in which Professor Pearson and his staff busy themselves. Remarkable looking instruments, instructive charts, diagrams and models, photographs and prints, living animals, dead animals and parts thereof, human skulls, eyes and hair, types illustrative of every variety of the normal and the abnormal combined to form a really wonderful exhibition. During the course of the evening Dr. Charles Goring gave a short address on some of the "Physical Characteristics of the Criminal." Perhaps a more apt title would have been "Cesare Lombroso Exposed," for quite two-thirds of the lecturer's remarks were devoted to a discussion of the errors with which the late celebrated but unscientific alienist of Turin has permeated the modern science of criminology, and perverted the minds of an unsuspecting and over-credulous public. In his researches Lombroso showed a lack of scientific aptitude, and his conception of criminal types is little more than an imaginative fiction having no basis in fact. He was content to study things from a distance, and to rely more on impressions than on intimate observations. To this we owe his ideas of the criminal stigmata, the bulging brows, the flat forehead, the receding chin, the protruding ears, the bushy eyebrows, the high palate, and so forth. Lombroso enumerated a much more lengthy list than this, and it would be difficult to find a normal individual in whom one or more of these stigmata were not apparent. From a patient and exhaustive examination of the matter, conducted according to the most approved anthropometric methods, Dr. Goring and his fellow-workers are in a position to show that no such entity as a criminal type exists, and that the measurements from a large series of criminals correspond exactly to those from a similar series of normal individuals. This was graphically shown in a couple of charts constructed from the two series. The one practically coincided with the other.

MEDICAL PICTURES AT THE ANNUAL MEETING.

As has already been announced on several occasions, arrangements are being made to hold during the Annual Meeting of the Association in London an exhibition of prints and black and white drawings having reference to the medical profession and medical men. The number of such pictures is very large even if we confine our attention to British drawings and such periodicals in the English language as *Punch* and some of the other illustrated papers. There is no doubt that the collection will prove extremely interesting, but there is still room for additions, and Dr. Rice-Oxley, who is arranging the collection for the Museum Committee, will be glad to receive further drawings, prints, or cartoons of which every possible care will be taken. Original paintings respecting medical men or matters will also be acceptable. As the time is now short it is hoped that members willing to contribute to the collection will communicate with Dr. Rice-Oxley, 5, Kensington Square, W., at the earliest possible opportunity.

ADDITIONS TO THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS, ENGLAND.

As has been the custom in former years, the specimens added to the museum of the Royal College of Surgeons, England, during the previous twelve months will be exhibited on the day of election of new members to the Council (Thursday, July 7th) and on the two following days. The specimens are shown in the Council Room of the College, Lincoln's Inn Fields, and are open to inspection from 10 to 5 on Thursday and Friday, and 10 to 1 on Saturday. The additions for the present year number 345 specimens, 102 of which are for the Pathological, 105 for the Physiological, and 33 for the Teratological Sections of the museum. Visitors will find the pathological specimens particularly worthy of notice, the majority of them illustrating pathological processes which bear directly on surgical procedure, and are intended for the series illustrating general pathology. This section of the museum is now being extended and recatalogued by Mr. Shattock. Many of these specimens have been presented by the authorities of the metropolitan hospitals, particularly by those of University College, St. Thomas's and the London and Great Northern Hospitals. The dissections of the human tongue,

tonsils, and pharynx and the series illustrating the comparative anatomy of the tonsils (presented by Mr. Seccombe Hett) illustrate recent anatomical discoveries. A welcome feature of the present exhibition is the liberal representation of tropical diseases and of the insects concerned in their transmission. For these additions the college is indebted to Colonel Giles, Professor Nuttall, Dr. G. A. Finlayson, Captain A. Whitmore, and Dr. R. D. Keith. Those interested in the evolution of man will be able to examine many specimens which illustrate the osteology of the men of England and of the Continent during paleolithic times.

THE Victoria Jubilee Cullen Prize for the greatest benefit done to practical medicine, which is awarded by the Royal College of Physicians of Edinburgh once in four years, has this year been awarded to Dr. R. W. Philip, M.D., F.R.C.P.E., for his work on tuberculosis.

AT its meeting on Wednesday last the Council received an invitation, presented by Mr. Albert Lucas, Honorary Secretary of the Birmingham Branch, asking the Association to hold its Annual Meeting next year (1911) in Birmingham, and nominating Professor Saundby to be President-elect. The Council unanimously resolved to recommend the Annual General Meeting to accept the invitation. A communication from Dr. Grossmann, Honorary Secretary of a meeting of the local Division of the British Medical Association in Liverpool, was received inviting the Association to hold its Annual Meeting in Liverpool in 1912. This letter was cordially received by the Council, and was directed to be entered upon the minutes for the information of the Council which will be in office next year. Mr. Larkin, who presented the letter, added that the name of Sir James Barr would be suggested for election as President in 1912.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

The Census Bill.

THE Census Bill was in Committee last week, and occupied most of one sitting in the discussion of amendments, the first of which proposed to limit the bill to England and Wales, and have a separate bill for Scotland. This amendment was rejected, and then one was moved to alter the date to May 28th instead of April 2nd. This was negatived after a long discussion, and then the question of a religious census being taken was raised. Mr. Burns opposed it, and it was rejected by 135 to 38.

Mr. Rawlinson moved the omission of the paragraph relating to marriage, its duration, and the number of children.

Mr. Burns said that the reason why this new question was being put was because all the countries of the world were confronted with a remarkable diminution in the birth-rate, though there was not a similar diminution in the marriage-rate, which was almost stationary. Doctors and others interested in this problem, not for inquisitorial or improper reasons, thought that if the number of children issuing, not from previous but from existing marriages, were tabulated, in answer to a question in the schedule, much interesting information might be obtained and might throw some sidelights on a question which was increasingly engaging the attention of all communities. Certain of the self governing colonies had already done this, and knowledge gained had induced the English and Scottish Registrars-General to ask for similar information. It might interest the Scottish members to know that a similar thing was done in 1851 in Scotland, where the most reliable data that we had in the United Kingdom were secured by Dr. Matthews Duncan, and everybody agreed that the fertility statistics secured in 1855 in Scotland were of great use to the statisticians and medical officers of that day.

Sir F. Banbury and Mr. Rawlinson opposed the paragraph as inquisitorial and unnecessary.

Mr. Burns replied that the questions were framed to elicit information as regards infant mortality. There were parts of Kensington where of all children born 70 to 100 per 1,000 died in the first year, but in another part of the same borough the deaths were 250 to 350, and in one year were 503 per 1,000. In these days, when the care of the feeble-minded was the subject of so much consideration, it was important to have facts that would help to explain why in some parts of Battersea the deaths of infants were 60 or 70 per 1,000 born, while in other parts of the borough, where the proportion of working women was much larger, the deaths were from 200 to 280 per 1,000. After further criticisms had been made,

Dr. Addison said that many inquiries on these lines had been carried out, and it was a subject of great regret that it was not possible to extend their inquiries. By, for example, ascertaining the occupation of the families, it was quite easily possible to classify the rate of infant mortality according to the occupation of the parents, and a very great deal of light was thrown upon the causes of infant mortality through such a classification. So far as delicacy was concerned, the time had arrived when we might abandon points of this kind in regard to questions which vitally concerned the national well-being. It was exceedingly important, surely, that when we lost 120.000 infants every year, we should be possessed of the fullest possible information on all matters relating to this grievous waste of life! We knew, for example, in the case of the Potteries, and some districts in Lancashire, and in some cities—Birmingham, for instance—that the rates of infant mortality varied exceedingly according to the housing conditions, the occupations of the mothers. He strongly opposed Lord Hugh Cecil's suggestion to omit the questions.

Mr. Burns afterwards said that the cost of this inquiry would not be more than £2,000 to £3,000. The Statistical Society and the Society of Medical Officers of Health attached great importance to it. The question of illegitimate births had been raised. The proportion of illegitimate children in this country was not so large as was assumed by a number of speakers. The illegitimate birth-rate in this country was slowly dropping down. It was less than 4 per cent. of the total births. While we had from 36 to 40 per 1,000 of our total births illegitimate, some of the European countries go as high as 250 to 300 per 1,000.

Finally the questions relating to marriages and children were retained on division by 151 to 61, and after another division the Committee was adjourned.

When the Committee stage was resumed on Friday last, Mr. Rawlinson again brought up this question by proposing to leave out the words "and the number of children born of the marriage," but after an assurance from Mr. Burns that there would be a report stage he withdrew his amendment. Several other amendments were afterwards rejected, and the Committee stage was finished, and the bill reported.

Medical Inspection in Elementary Schools.—Mr. Charles Bathurst asked the President of the Board of Education whether the Board had now received reports from every county in England and Wales showing the results for a complete year of the medical inspection of the children in the elementary schools; whether such reports disclosed the fact that over 40 per cent. of such children were suffering from some physical defect, and that over 20 per cent. required, and should receive, some medical treatment; and whether, both in the interests of the national physique and to avoid the serious waste of public money consequent upon

the attempt to educate children who were more or less physically incapable of receiving education, the Board proposed to take any, and, if so, what, steps to remedy the condition disclosed by the above reports. Mr. Runciman replied that with reference to the first part of the question the Board had received reports for the year 1909 from about two-thirds of the local authorities concerned. It was not possible to state the facts revealed by the reports which had been received in the form suggested in the second part of the question. The report of the chief medical officer, based upon the reports received from the local education authorities, would be prepared in due course, and would deal fully with the conclusions which could reasonably be drawn from the results of the medical inspection for the year in question. As regards the third part of the question, the honourable member was no doubt aware that local education authorities had the power, with the approval of the Board of Education, under Section 13 (1) (*b*) of the Education (Administrative Provisions) Act, 1907, to make arrangements for attending to the health and physical condition of the children educated in public elementary schools. This power was being exercised in various ways by many authorities. The report of the medical officer would contain an account of the disorders from which the children suffer.

County Medical Officers of Health.—Mr. Lloyd Morgan asked the President of the Local Government Board whether county councils had hitherto been unable to appoint a medical officer of health under the Housing, Town Planning, etc., Act, 1909; whether the reason was that such councils were unable to fix the salary of the medical officer until they were in a position to specify the duties of the office; and whether he would state when he proposed to issue the General Order setting forth the duties of county medical officers under the said Act. Mr. Burns answered that the power of a county council to appoint a medical officer of health was contained in Section 17 of the Local Government Act, 1888, and many county councils had already exercised the power. As regards the last part of the question, he might state that the General Order prescribing duties was in an advanced state of preparation, and that he hoped to issue it shortly.

Testing Eyesight for Railway Service.—Mr. James Thomas asked the President of the Board of Trade whether the circumstances responsible for the Committee recently appointed to consider alterations in the method of testing the eyesight of persons entering the merchant service were also applicable to the railway service; and whether, having regard to the public service rendered by railway servants, he could extend the terms of reference of such Committee, so as to include the various and impracticable tests now enforced by railway companies, with a view of a uniform and practical test being adopted. Mr. Buxton replied that the sight tests in the mercantile marine were carried out by the Board of Trade, whereas in the railway service the responsibility rested with the companies. The circumstances were consequently not the same, and he did not think he could usefully extend the terms of reference to the Committee in the manner suggested. Any recommendations which might be made by the Committee would, no doubt, receive full consideration from the railway companies.

Board of Trade Sight Testing.—On June 15th Sir William Collins asked the President of the Board of Trade whether Dr. Edridge-Green was employed as expert adviser to the Board in regard to sight tests, and, if so, when he ceased to act in that capacity and on what grounds; whether the President was satisfied with the method of testing for colour blindness at present employed by the Board; on whose advice it was adopted; and whether the adoption of an alternative system was under consideration. The President of the Board of Trade replied that Dr. Edridge-Green was appointed a member of the International Code of Signals Committee in May, 1889, when the question of colour blindness was referred to it. In view of the report of the Royal Society's Committee on colour vision, issued in April, 1892, the subject was withdrawn from the consideration of the Signals Committee, of which Dr. Edridge-Green then ceased to be a member. The present system of tests was based on the report of the Royal Society's Committee.

Vaccination Act (Conscientious Objection).—Mr. Wiles asked the President of the Local Government Board if his attention had been drawn to the fact that Mr. A. Barson, of Islington, had made a declaration under the Vaccination Act, 1907, before a commissioner for oaths, before his child was 4 months old, and sent it to the vaccination officer within seven days; and whether he could state if Mr. Barson was now being pressed by the vaccination officer and public vaccinator to have his child vaccinated. Mr. Burns answered that from information he had received from the vaccination officer, he found that the fact that a declaration of conscientious objection had been made was inadvertently overlooked in this case. He gathered that since the error was discovered no attempt had been made to press for the vaccination of the child.

Postmen and Infectious Diseases.—Last week, in answer to a question put by Captain Faber, the Postmaster-General said, as regards postmen going on duty who had members of their families ill from infectious diseases, that in the case of certain specified diseases a postman was placed off duty immediately, and was not allowed to resume until instructions had been received from the chief medical officer to the post office. In the case of other diseases, the postman remained on duty, but the case was at once reported to the chief medical officer, who advised whether it was necessary that the employee concerned should absent himself. Absence from duty with full pay was insisted on if there was considered to be any risk of conveying the infection, whether to the local post office staff, or to the public generally.

Zymotic Diseases at Naval College, Osborne.—Mr. Douglas Hall asked the First Lord of the Admiralty if he would explain why, in the official returns of zymotic diseases sent to Captain Christian, the head of the Royal Naval College at Osborne, the returns with regard to West Cowes were omitted; whether he was aware that in the official returns of East Cowes sent to Captain Christian measles, chicken-pox, whooping-cough, and German measles were not mentioned; had Captain Christian called the attention of the Admiralty to these omissions; and whether, in the interests of the general health of the college, he would take steps to ensure that outbreaks of all such diseases in the neighbourhood of the college should in future be reported to the head of the college. The First Lord of the Admiralty said that he understood that it rested with the local authorities to decide whether their own statistics of notifiable diseases should be included in the weekly returns issued by the Local Government Board. The answer to the second and third parts of the question was in the affirmative. As regards the last part of the question, it would not be possible for the Board of Admiralty to ensure that local authorities did more than fulfil their statutory obligations in the matter; but the Fleet Surgeon of the College was instructed to make private arrangements with the local medical practitioners for the interchange of information regarding cases of infectious disease.

Fever in the Royal Navy.—Mr. Chancellor asked the number of cases and of deaths from Malta fever and simple continued fever respectively in the navy at Malta for the year 1909. Mr. McKenna replied that there were 11 cases of Malta fever and 69 simple continued fever. No deaths occurred.

India.

[*FROM OUR SPECIAL CORRESPONDENT.*]

SUGGESTION FOR A MEDICAL MEMORIAL TO THE LATE KING.

AT a recent meeting of the Asiatic Society of Bengal a suggestion was made that a portion of the sum to be raised for memorials to the late King Emperor might very fittingly be expended either on the provision of sanatoriums for the treatment of tuberculosis, or on a tropical school of medicine in connexion with the Medical College, Calcutta, and the matter was referred to the Medical Section for their opinion. In view of the great interest displayed by the late King in the Midhurst Sanatorium, and very recently in the Canadian one, taken with the fact that only last year this Medical Society strongly urged on the Government of India the urgency of the provision of a sanatorium in a suitable climate for the adequate treatment of phthsis, it is probable that the weight of professional opinion will be in favour of this proposal as of primary importance, and peculiarly suitable as a memorial to Edward VII. Owing to the vast area of India, several such sanatoriums will be required so as to be within comparatively easy reach of as many patients as possible Every province does not possess a suitable place, but as a beginning one at least should be started in the Himalayas for the North of India, one in the Nilgeries for the South, while the appalling prevalence of tubercle in Lower Burma, pointed out at the recent meeting of the Burma Branch of the British Medical Association, reveals the necessity of a third for that province. A considerable sum of money could well be spent on such institutions, which will be of imperial importance and at the same time appeal to all races and religions without distinction. If further funds are available, the second suggestion, of providing more accommodation for research work on tropical diseases in the capital of India, is well worthy of consideration. It was, however, pointed out in a recent article in this JOURNAL that the essentials for such work already exist to a very large extent, and what is now required is a proper organization for their fuller utilization, together with an increase of highly qualified workers, to allow of more extensive investigations being undertaken. In short, it is not so much bricks and mortar as additional brains which are necessary, together with arrangements for post-graduate study in tropical diseases for European service and civilian European practitioners who have had little or no opportunity for studying tropical diseases in their training in English schools of medicine. An institution to supply such a want would not appeal to all classes of subscribers in India in the way that sanatoriums for tubercle would.

THE KASAULI PASTEUR INSTITUTE.

The annual meeting of the council of this institute recently met in Simla, under the presidency of Surgeon-General Lukis, to receive the yearly report. The cases treated included 156 Europeans; the total number of cases treated was higher than in previous years, in spite of the existence of the South of India Institute at Coonoor. A number of cases in which wounds or small sores were licked by a dog suspected of rabies are included. The percentage of failures was 0.57, which is lower than the average of previous years, although somewhat higher than in the last year and in European institutes, which receive their patients with less delay. It is to be regretted that the cases are not classified, so as to show the results in cases bitten by dogs proved to be suffering from hydrophobia, as in the Paris Institute, but there is greater difficulty in India in accurately verifying cases. Steps are being taken to provide more residential accommodation for patients near the Institute, which is especially needed for Indians, who now form relatively such a small part of the patients in proportion to the population.

THE WALKER HOSPITAL, SIMLA.

An appeal has recently been issued for subscriptions to this institution, which is a paying hospital for private patients, and one of the best of its kind in India. Last year the funds fell so low that the hospital had to be closed during the cold weather months, greatly to the inconvenience of the station. The building is placed on a spur to the north of Jakko, and rather a long distance from the main part of Simla, but it makes up for this disadvantage by the comfort of the rooms and the skilled treatment and nursing provided at low rates. Under the management of the popular and trusted civil surgeon recently placed in charge, it may confidently be expected that the Walker Hospital will soon be again in a flourishing state.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

COMPULSORY IRISH AT THE NATIONAL UNIVERSITY.

WE understand that at a meeting of the Senate of the National University held in Dublin on June 23rd it was decided that for the year 1913 Irish should be an essential subject for matriculation. The matter was brought forward by Dr. Hyde, who proposed that after the expiration of two years all students, except those who shall have been in residence outside Ireland for three years previous to their matriculation, shall be required to pass an examination of approved standard in the Irish language and in Irish history before admission to the university. What the effect of this decision will be the future will decide, but the sharpness of division of opinion on the subject may be gathered by the fact that at the same meeting the Senate received a memorial signed by 151 graduates, undergraduates, and members of the teaching profession in Cork, including 20 professors and lecturers of University College, Cork, stating their belief that the making of Irish a compulsory subject would be calculated to prevent students graduating in the National University. The memorialists also pointed out that in some of the professional schools, notably those of medicine and engineering, the enforced study of Irish would add another subject to courses already expanded to the limit of the average student.

MEMORIAL TO THE LATE PROFESSOR DANIEL JOHN CUNNINGHAM.

The model for the memorial which was entrusted to Mr. Oliver Sheppard, R.H.A., is now completed, and it is hoped that the bronze portrait panel will have been cast and placed in the Medical School of Trinity College, Dublin, in time for the opening of the coming winter session. It will be remembered that the fund subscribed by the friends and former pupils of the late professor will be used to defray the cost of this portrait and to provide a memorial medal and prize to be awarded annually in anatomy. As it is proposed shortly to close the subscription list it is hoped that friends and pupils of Professor Cunningham, who desire to contribute, will communicate with the Honorary Treasurer or Honorary Secretaries of the Cunningham Memorial Fund, Trinity College, at an early date.

ROYAL SANITARY INSTITUTE.

At a sessional meeting of the Royal Sanitary Institute held on June 24th in Trinity College, Dublin, under the chairmanship of Colonel Lane Notter, two important papers on the water supply of Irish towns were read. Mr. J. H. Swiney dealt with the maintenance and working of water supplies for small towns. He said that the problems peculiar to the water supply of towns in Ireland arose from a low rateable valuation and from the indifference of public boards. The first cause often limited the expenditure to the barest necessities of supply, while the second led to a neglect utterly destructive of the benefits that should result from such works. To obviate these difficulties he believed that the Local Government Board should

have power to make several districts combine, and that it should exercise direct supervision over the upkeep of water works. As regards quantity and source of supply, he considered 20 gallons a head a day ample for smaller towns, and was strongly in favour of upland supplies as against springs and rivers. Owing to the difficulty and expense of efficient upkeep he was not in favour of filtration.

Professor McWeeney, who dealt with bacteriological standards of potable waters, emphasized the importance of bacteriological analysis, and of the care which should be exercised in the collection and forwarding of samples for such an examination. He hoped that a standard method of examination would soon be established which would permit of results being compared, and gave reasons for his own opinion that a search for specific disease producing organisms was unnecessary. As regards the presence of *B. coli* he thought that in Ireland upland surface and shallow well water might be regarded as safe if no colonies were obtained from 1 c.cm. A discussion on the points raised in the two papers ensued and the proceedings terminated.

Midwives Act and Ireland.

The following memorandum has been issued by the Board of Governors of the Rotunda Hospital:

We beg to draw attention to the serious disabilities under which Irish midwifery nurses are now placed owing to the limitation of the scope of the Midwives Act of 1902, which applies only to England and Wales.

As this Act at present stands it is quite possible for the Central Midwives Board to frame rules which will preclude Irish trained midwives from practising in England, and will largely lessen their chances of employment in the Colonies. That this is not hypothetical is proved by the fact that rules actually were framed which had this result; moreover, under the Act, Irish trained midwives can practise in England only by a special concession from the Central Midwives Board, a concession which may at any time be withdrawn by the vote of a bare majority of that Board.

Since the establishment of a State registration for midwives, it has been an almost universal requirement in advertisements for appointments in the Colonies that the State degree must be held; unless, therefore, an Irish midwife is prepared to go to the expense and inconvenience of crossing to England, remaining there for ten days and spending money for a diploma, thus contributing to the support of the English Board, she is practically debarred from receiving a Colonial appointment. Further, the military authorities at the Curragh, when advertising for a midwife in this the very centre of Ireland, require that she should hold a diploma from the Central Midwives Board.

Thus the Act is a one-sided and inequitable measure of protection, for while English midwives can practise in Ireland, Irish midwives are prohibited from practising in England. An unmerited stigma is thus cast on Irish midwives, and this, too, in spite of the fact that the time devoted to their training is longer than that required by the Central Midwives Board, and the standard of excellence exacted from them will bear favourable comparison with any in the United Kingdom. To meet this injustice it is only necessary to extend the scope of the existing Act so as to include this country, giving it adequate representation on the Central Midwives Board, with a branch council to hold examinations in Dublin, Belfast, and Cork, and to grant diplomas.

This extension of the Act has the unqualified support of the Royal College of Physicians, of the Academy of Medicine, and of the other medical bodies in Ireland. It would also contribute largely to the discontinuance of the employment of unqualified women throughout the country districts, and in this way effect for our country what the Act of 1902 has done for England and Wales.

Skin and Cancer Hospital, Dublin.

The action which has for some time been pending between Dr. T. B. White and Another on the one part, and the Committee of Management of the Skin and Cancer Hospital, Great Brunswick Street, Dublin, on the other, was brought to a satisfactory termination last week by means of the friendly arbitration of Mr. Justice Ross. The dispute, which originated three years ago, had reference to an arrangement by which the Hospital Committee had agreed to purchase from Dr. C. B. O'Brien, Physician to the hospital, certain *x*-ray and other apparatus, the sum agreed upon to be paid by instalments.

Mr. Justice Ross, in giving judgement, expressed a high opinion of the value of the hospital and of the obligation the hospital was under to Dr. O'Brien. He did not think that he was treating Dr. O'Brien harshly in deciding that he must bring in the sum of £280, and as regards the committee, though of opinion that its members had made considerable mistakes, as they were engaged in administering a charity, he would allow their costs to be borne by the funds of the hospital. The plaintiff also, he thought, should be allowed his costs from the hospital funds. Mr. Justice Ross added that he understood that lately subscriptions had been held back from the hospital on account of the legal proceedings, but he hoped that now that the institution had been put on a proper footing public subscriptions would come flowing in, and that there would soon be ample funds to carry on its useful work.

Dublin Hospitals Tuberculosis Committee.

A quarterly meeting of the Dublin Hospitals Tuberculosis Committee was held on June 17th, with Sir John Moore in the chair. Reports were received from Dr. Daniel, from the Dublin Tuberculosis District Nurses, and from a nurse engaged in special work amongst tuberculous cases in Terenure. The honorary secretary stated that the inspector of the Queen Victoria Jubilee Institute for Nurses had reported that the work of the two special tuberculosis nurses supported by the Women's National Health Association continued to be carried on most successfully, and that it was encouraging to note the amount of improvement in patients, even under the most unfavourable conditions. After the consideration of the above-mentioned reports the following resolution was unanimously adopted, and the honorary secretary was directed to send it to the Public Health Committee, and to the Cleansing Committee of the Dublin Corporation.

> That this Committee is of opinion that a large proportion of the number of chest affections leading to tuberculous disease in the City of Dublin is due to the excessive amount of dust in the streets, the inadequate watering thereof, and the faulty method of sweeping the streets. The Committee notes with regret that the plague of dust is especially prevalent in the poorer quarters where little or no attempt is made to lay it by watering and subsequent removal.

Gratuities from Hospital Patients.

The board of guardians of Edenderry had under consideration lately a letter from the Local Government Board with reference to certain charges made by a patient, who had been in the workhouse infirmary, against Dr. Kinsella, the workhouse medical officer. The main charge was that Dr. Kinsella had demanded from the patient a sum of three guineas for services rendered to the patient while in the workhouse infirmary. Dr. Kinsella denied this, and stated that the fee demanded was for medical attendance outside the infirmary. The Local Government Board after inquiry came to the conclusion that the fee asked for and received was given for services, not as a private, but as an infirmary patient, and in consequence stated that they had no option but to require Dr. Kinsella to resign his position. The board of guardians was, however, inclined to take a more favourable view of the circumstances, and suggested that a reprimand for any technical irregularity that had occurred might meet the case. The board asked the Local Government Board to reconsider the matter.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Edinburgh Royal Maternity and Simpson Memorial Hospital.

The report submitted to the annual meeting of the subscribers to this institution stated that the year 1909 was likely to prove memorable. The number of patients taking advantage of the benefits of the hospital was 1,914, more than double what it was five years ago. For this reason, and for those associated with it or arising from it, namely, the increased nursing staff, the serious strain on the resources and appliances of the hospital and the like, the directors had been led to the consideration of the making of radical changes in the institution to meet its

present and prepare for its future needs. They proposed to appeal for a sum sufficient to enable them to carry on the object they had in view—namely, the provision of a hospital which should meet all the requirements of the best modern obstetric practice. The smallest number of patients in any month was 142 in January, and the largest 184 in August. The income amounted to £1,825 and the expenditure to £2,522. The great increase in the number of patients again accounted in a large manner for the excess of expenditure.

Lady Beatrice Montgomerie, who along with her father, the Earl of Stair, while he was in Edinburgh as Lord High Commissioner to the General Assembly of the Church of Scotland, paid a visit to the hospital, writes, in the *Scotsman* of Monday, June 27th, to press "the urgent necessity of something being done to improve the condition of the Maternity Hospital in Edinburgh." She says:

> I had occasion to visit the hospital a few weeks ago, and was shocked to find it old-fashioned in many ways, and not nearly large enough. Although the hospital is far too small, there is no possibility of adding to it on the present site, as it is very much shut in and overlooked by other buildings. It appears to me that as Glasgow now has one of the finest and most up-to-date maternity hospitals in the world, Edinburgh should make an effort to follow Glasgow's example. I am told that medical students from Edinburgh now go in large numbers to Dublin and Glasgow for their maternity instruction. This is surely rather a disgrace to Edinburgh, which used to be regarded as the finest medical school in the world. There have already been numerous suggestions made as to the form a memorial in Edinburgh to King Edward should take. Having regard to the great interest His late Majesty always took in hospitals, surely a new and up-to-date maternity hospital would be the most fitting memorial the city of Edinburgh could erect.

This is what some members of the staff of the hospital, many members of the medical profession in Edinburgh and elsewhere, as well as many members of the public, have been saying for several years.

EDINBURGH ROYAL INFIRMARY RESIDENTS' CLUB.

The annual meeting and dinner of the club, on June 24th, brought together about sixty residents. Dr. Byrom Bramwell, president of the club, was in the chair, and had round him his present and many of his past house-physicians, besides a representative gathering, which included Dr. Ramsay of York, Dr. Muir of Selkirk, Lieutenant-Colonel K. M. Downie, Professors Caird and Alexis Thomson, Drs. Alexander Bruce, Maxwell Ross, Burn Murdoch, and George M. Robertson. Sir W. Watson Cheyne, Bart., was elected the next President of the club, and Dr. R. W. Johnstone was elected Secretary, in place of Dr. Edwin Bramwell, who has held that office for six years, and who received the hearty thanks of the club for his excellent services to it. The President, in proposing the toast of "The Residency," gave a most interesting account of the Infirmary as he had known it forty years ago, and of the men who were the chiefs and those who were his contemporaries when he was a resident. The work of residents was perhaps not so hard then as it is now, but the risks were greater in days when typhus fever was one of the dangers to which they were exposed and to which they not infrequently had succumbed. He recalled some amusing incidents which were the outcome of the fierce jealousy which existed between some of the famous men who had done so much to make great the name of the Edinburgh school; and he contrasted the teaching of his student days with the medical teaching of the present time. A pleasant feature of the evening was the recitation by Dr. Muir, of Selkirk, of Sir Douglas Maclagan's poem, "The Saumon," and Dr. H. P. Thomson did yeoman service as a singer, while Dr. J. M. Darling played the piano, Dr. Claude Ker recited, and Mr. Scot Skirving told a tale. The President, on behalf of members of the club, presented a fine antique clock to Dr. Macrae Taylor, in acknowledgement of his work in preparing the List of Residents of the Royal Infirmary, 1839–1909; and Dr. Ramsay, a resident of 1867, felicitously proposed a vote of thanks to Dr. Byrom Bramwell for presiding and for his delightful address.

England and Wales.

FROM OUR SPECIAL CORRESPONDENTS.

LONDON.

LONDON COUNTY COUNCIL.

Epileptic School Children.

THE Special Schools Subcommittee reported to the Education Committee of the London County Council on June 29th as to the necessity for more frequent medical examination of children in the schools for the mentally defective. The subcommittee stated that the regulations of the Board of Education provided that examination by a suitably qualified medical man must be made at least once a year, in order to ascertain whether any of the children were fit to attend an ordinary school, or if any were so defective as to be incapable of profiting by education of any kind. The parent, however, was entitled to claim re-examination of a child every six months, and this period had been set up as the standard period of re-examination, although it had never in fact been attained. The number presented for medical examination, with a view to admission to special schools, during 1909 was 7,479, and the roll in December, 1909, was 6,839. Owing to the considerable increase in the numbers it was only possible to provide on the average for examination once in twelve months. A prolonged and thorough examination taking half an hour or more would enable an almost certain diagnosis of a child's condition to be obtained, but the extended time would add considerably to the cost, and if each child admitted were re-examined within three months it would be necessary to make 231 additional visits—practically the work of a half-time officer. The subcommittee was of opinion that more frequent examinations were desirable, and recommended that two additional quarter-time assistant medical officers (education) should be appointed for the purpose. This was agreed to.

Suggested Reorganization of School Medical Services.

The Board of Education has drawn the attention of the London County Council to the number of temporary medical examiners approved from time to time under the Elementary Education (Defective and Epileptic Children) Act, 1899, and has suggested the desirability of permanent rather than temporary officers for the purpose of the Act. The Board stated that in its opinion the Council would do well to consider the question of organizing the arrangements for the diagnosis of defective children and other work in connexion with special schools as a special branch of the school medical service; that, in view of the exceptional character of the work, it would be a distinct advantage to entrust it to selected members of the permanent staff; and that prima facie the arrangement by which a number of officers of the temporary staff are employed appeared to be of doubtful expediency. The Board pointed out that these officers, under the terms of their appointment, devoted only a very small portion of their time to special work (at most two and a half hours a week); that they might be associated only for a limited period with school medical work, either in ordinary or special schools, and be replaced after a short experience by other officers new to the work. Such an arrangement appeared to the Board to involve a risk that the efficiency of this branch of the school medical service might suffer.

A reply to these criticisms has been drawn up, stating that of thirteen doctors actually engaged in the examination of special school children, ten were permanent officers. With regard to the other three, it was necessary to obtain the recognition by the Board of the two medical men responsible for two of the open-air schools, and the third was an old officer of the Council, who would soon retire.

Medical Treatment in Woolwich.

The Education Committee of the London County Council, on June 29th, accepted an offer from the governing body of the Miller General Hospital, Greenwich, to provide treatment for one year for 500 children suffering from affections of the eye, and 500 children suffering from ear, nose and throat ailments, in addition to the 50 ringworm cases for which provision had already been made at the hospital. The terms were similar to those agreed upon in the case of other hospitals.

THE BRITISH RED CROSS SOCIETY.

The County of London Branch of the British Red Cross Society is busily engaged in spreading over London a network of divisions to assist it in fulfilling the duties delegated to it by the County of London Territorial Force Association. It is hoped eventually to have a complete division in every metropolitan borough, thus enabling those who have relatives and friends in Territorial regiments to keep in touch with the unit in which they are interested by joining their borough division. The general work which the society has to do is to fill in the gap between the trained Territorial medical services in the field and the general hospitals in London. The objects of the association can be assisted either by monetary contributions or by personal service, those capable of rendering the latter including individuals of both sexes and most classes. Leaflets setting forth in full the work to be done and the way in which it may be helped on can be obtained on application to the County Secretary, British Red Cross Society, County of London Branch, Craig's Court, Whitehall, S.W.

SMALL-POX IN LONDON.

Two cases of small-pox have just been reported in London. In one case the patient was an infant who was exposed to infection in China, and having travelled to Europe with its mother by the Trans-Siberian Railway, was observed to have the eruption on its arrival in London. In the other case the source of infection could not be traced. Until these cases were notified London had been free from small-pox since February 3rd, 1910.

BIRMINGHAM.

OPEN-AIR SCHOOL.

BIRMINGHAM has held an advanced position in the matter of educational facilities for the elementary school child, in that special measures have been taken for many years to provide for the physically and mentally defective children. But no open-air schools have been established, such as are found in London, Bradford, Sheffield, Halifax, and Norwich. The need of such schools has become increasingly manifest since the medical inspection of school children, and in order to meet this growing necessity Mr. and Mrs. Barrow Cadbury have offered five acres of land opposite Uffculme, King's Heath, for the purpose of an open-air school. They have also offered to contribute £400 to cover the cost of equipment of the school, and are prepared to place at the disposal of the Education Committee, for use in the winter, the buildings at Uffculme which are at present used as refreshment rooms. At a meeting of the Education Committee on June 24th, this gift was enthusiastically accepted, and a vote of thanks was passed to Mr. and Mrs. Barrow Cadbury for their generosity. It has been estimated that this gift will enable 60 to 100 children to be taught in the open-air school. Very little money will be required to be spent upon buildings, as the instruction will be carried on out of doors as far as the weather will allow. The site is about 500 ft. above sea level, with an open view. It has a gravel subsoil and good trees for shade. The King's Heath trams from Birmingham pass the gates. The school will be used for debilitated and backward children. With regard to the feeding of the children, a similar system to that in the schools for physically defective and mentally deficient children will probably be adopted, as it has been found to be self-supporting. A large number of the children, however, would be those who are already having free meals in the ordinary schools, and in their cases there would not be much increased cost to the Education Authority. Assistance in the matter of clothing will when necessary be given by the Education Committee, and it has full power to give it where the school is sanctioned under the Education (Defective and Epileptic Children) Act. There are, however, voluntary means by which clothing can be supplied. Under this Act a higher capitation grant is obtained from the Board of Education than is the case with the ordinary school, and this may fairly be set against any increased cost involved in the maintenance of an open-air school, by the necessity to pay for food and the tram fares of the children.

COUNTY OF DURHAM.

SOCIETY FOR THE PREVENTION AND CURE OF CONSUMPTION.

THE eleventh annual meeting was held on June 25th in the society's sanatorium for men at Stanhope. Mr. J. A. Hyldyard presided, in the absence of the President, Lord Barnard. After the reading of the various reports, the Chairman of the Committee (Dr. W. Robinson of Sunderland), in moving their adoption, stated that the death-rate from tuberculosis in the county had fallen from 2.13 in 1897 to 1.7 in 1908, and said that this was due in the main to improvement in general sanitation, and to the disease being arrested in many cases by the modern rational treatment of the disease in sanatoriums and elsewhere; in spite of this the toll of lives from the disease was still enormous, and the cost to England and Wales alone was not less than £7,000 000 a year. He urged that the time had come for statesmen and local authorities to put in force those special preventive measures advocated by the society, which would eliminate the disease in a generation. He invited the friendly societies to send their cases of consumption early, so as to prevent the depletion of their funds; this they could do by giving a subscription of 1s. a year per man, as many thousand men in various works and yards in the country already did. Of the 298 patients who had applied for admission during the year, 225 were admitted; local authorities had sent 101 and paid £1,407, and subscribing workmen had sent 71 patients and paid £1,068; the ordinary subscriptions were only £200. He regretted that only one-fourth of the cases admitted were in an early and curable stage, in spite of the most careful selection. In the Stanhope Sanatorium for men the average daily number of patients was 42 4, the weekly cost of each patient was 19s. 10½d., and the average stay in the sanatorium was 15.4 weeks. The total cost of stimulants was £1 0s. 6d.; 75 per cent. of the men in an early stage of the disease had been apparently cured. The new diet adopted a year ago was such as working people could also obtain at home, and had resulted in an increased gain of 3 lb. a week on an average in early cases over that of the previous year. At the Wolsingham Sanatorium for women and children the average daily number of patients was 18 6, the weekly cost of each patient was £1 1s. 3d., and the average stay 16 4 weeks. The total cost of stimulants was £1 1s. Exercise and graduated work had been more systematized at both places. The ordinary income of the society had been £3,877, and the ordinary expenditure £3,339. He regretted that the appeal to the income tax authorities had been unsuccessful. He concluded by praising the salaried staff.

The resolution was seconded by Mr. C. E. Thompson and supported by the Bishop of Richmond, who emphasized the successful work accomplished by the sanatoriums, the need for cases to be sent in in an earlier stage, and the great value of the regulated work which was carried on by the patients.

Councillor Elliott, of Gateshead, said that the local authorities generally were doing a great deal of work in the improvement of sanitation, and were only held

back from doing more by the outcry of the ratepayer against higher rates: he praised the work of the sanatoriums, and said that every patient who left became a missionary in the cause of good food and the open window.

WALES.

SWANSEA HOSPITAL.

AT a meeting of the Board of Management of the Swansea General Hospital on June 22nd the Finance Committee's report showed £2,568 due on general account, and £159 on building to the treasurer. The total receipts for the past twelve months amounted to £12,155, compared with £14,318 in the previous year. The honorary medical staff submitted a recommendation for the maintenance of a bacteriological and pathological laboratory at the hospital conjointly with the town. The basis of the scheme is:

1. Appointment of a medical officer of health for the borough as honorary bacteriologist and pathologist to the hospital, and director of the laboratory.
2. Appointment of a whole-time assistant bacteriologist and pathologist.
3. Location of the laboratory at the hospital and utilization of the existing building.
4. A proposal that the laboratory should serve West and Mid-Wales as well as the hospital, Swansea district thereby being in part self-supporting.

Drs. T. D. Griffiths, Arnallt Jones, Trafford Mitchell, and Nelson Jones attended as a deputation to emphasize the necessity for such a laboratory; and, after they had explained their views, the chairman said the Board of Management was fully alive to making the hospital as efficient as possible in the modern branches of medical science, and had had the subject of establishing such a laboratory as was suggested in view for years. Dr. Lancaster, who proposed the adoption of the recommendations outlined in the scheme, said that the hospital already had a pathological laboratory and most of the necessary apparatus, but the work had grown to such an extent that it was becoming impossible for a man with other duties to devote sufficient time to it. He therefore suggested a bigger laboratory and a whole-time expert to attend to it. Dr. J. T. Roberts seconded. Colonel Morgan thought such a laboratory should be started by the sanitary authority. He objected to dual control and the expenditure of public money on a commercial enterprise. Dr. Elsworth thought local men would be willing to work as honorary officers, but this suggestion was vigorously contested by Dr. Brooks. Eventually the matter was allowed to stand adjourned for a fortnight.

GLANDERS.

As far as can be gathered, the inspection of the collieries under the Ebbw Vale Company is taking a very serious turn. The inspection was brought about by the allegation of the medical officer of health that some deaths of workmen employed underground were due to "farcy" contracted by the conditions under which they worked in the mines. Dr. J. W. Davies, M.O.H., was refused admission to make an examination of the conditions prevailing below the surface, although the Ebbw Vale Company were not adverse to a full inspection being made by Government inspectors or other experts. Eventually the Local Government Board appointed a committee to investigate and an inspection has been going on for weeks. During its course signs of glanders were observed among the horses and several animals were destroyed. It is said that many horses in the Old Pit, Waunlwyd, where the inspection is now proceeding, are more or less affected, and that forty or fifty will probably have to be destroyed. The whole of that colliery, which is one of the largest under the Ebbw Vale Company, was idle on June 20th and 21st, and the position is one of extreme gravity. In the course of his report on June 21st Dr. Davies dwells upon the necessity of legislation to extend the duties of medical officers of health and of sanitary inspectors to the supervision of the sanitary conditions prevailing underground, and of appointing veterinary mine inspectors to ensure the isolation of horses suffering from glanders, infective wounds, or other infectious conditions; Dr. Davies suggested that a copy of his report should be sent to the member of Parliament for the constituency and also to the Home Office. This was put to the meeting, but an amendment to defer the question until a report was received from the Commission was seconded and carried. Two cases of glanders are reported from the Pontypool district, and both animals have been destroyed.

Special Correspondence.

BERLIN.

The Wassermann Reaction: Ehrlich's New Remedy for Syphilis.—The Ashes of Robert Koch.—A Case of Cholera at Berlin.

FIRST Wassermann, then Ehrlich! The last two meetings of the Berliner medicinische Gesellschaft (June 15th and June 22nd) had been looked forward to with exceptional interest, and on both occasions the members mustered in full force. On June 15th a long, animated, and extremely subtle discussion on Wassermann's serum-reaction for the diagnosis of syphilis took place, in the course of which the method was subjected to much criticism. Taking it altogether, it may be said that the majority of purely scientific experimenters and diagnosticians recognize Wassermann's reaction as a valuable aid; but they lay great stress on certain theoretical reasonings, which must be gone through in each single case, and without which the results of the reaction cannot be rightly estimated. The practitioners, on the other hand—to speak generally—declared themselves against it. Fired by Wassermann's publicly proclaimed absolute faith in the reliability of his method, they have made use of it, but have again and again found it at fault, and they are hardly inclined to seek fresh encouragement in, or even pay much attention to, these complicated and purely theoretical trains of thought.

As for Ehrlich's new syphilis remedy, it was introduced to the society at the meeting of June 22nd by four referees — Professors Wechselmann, L. Michaelis, Alt, and Schreiber. Wechselmann (Berlin) is head of a skin and venereal disease department in the Rudolph Virchow Hospital; L. Michaelis (Berlin), well known for his researches on cancer and on agglutination of blood, has syphilis cases in sufficient number at disposal; Alt (Uppspringe) is an alienist of note, and Schreiber (Magdeburg) is an eminent dermatologist in general practice. All of these men are at home in the purely scientific, as well as the practical, side of their specialities, and each one of the four had the same report to give—a unanimity as rare as welcome—namely, improvement in all cases treated with the new remedy, and no disagreeable by-effects. The question of relapse cannot, of course, be answered with anything like confidence for years to come; as yet, no relapse has been observed. Wechselmann exhibited a number of syphilitic patients treated, together with wax models of their previous condition. In general, a single injection had sufficed to produce disappearance of the symptoms, showing (he said) that Ehrlich was at least on the road towards achieving his great aim, which was to find a method of radical cure by complete destruction of the pathogenic cause—a *Therapia sterilisans magna*. The new remedy is an arsenic preparation similar in its nature to atoxyl, but said to be free from the noxious by-effects of that drug. Its chemical name is dioxydiamidoarsenobenzol, but Ehrlich has christened it "Haka," after his fellow-worker, a Japanese, and it is also known as No. 606. The feeling of lively interest which prevailed among the listeners at the beginning of the meeting deepened to wrapt attention as the reports proceeded. Here were legitimate grounds for the hope that the new remedy would mark a great step forward in the history of therapeutics; and when, towards the close, Ehrlich himself stood up to express his thanks to the men who had devoted so much skill, energy, and patience to putting his researches into

practice, a storm of such genuine and long-continued applause broke forth as has hardly ever been heard in this matter-of-fact and sceptical society.

The urn containing Robert Koch's ashes is to be transported to the Berlin Institute for Infectious Diseases, where a special "Koch Museum" is in course of arrangement.

In Ruhleben, the special station for Russian emigrants, near the outskirts of Berlin, a fatal case of cholera has occurred. The diagnosis could not be quite certainly made at first, since the patient—poor wretch!—had fed on tainted sausage-meat during his journey, and the initial symptoms might have been those of meat poisoning. Nevertheless, on the chance of its turning out to be cholera, and thanks to the admirable arrangements always at hand on the spot, all proper precautions were taken immediately, and there seems no reason to fear that infection has been carried further. However, the nurses and other persons who came into contact with the patient are still in quarantine.

Correspondence.

ON THE INFLUENCE OF SANATORIUM TREATMENT OF TUBERCULOSIS.

SIR,—I regret very much, both for the sake of the medical profession and the lay public, the line taken by Dr. Latham and Mr. Garland in their letter (June 25th, p. 1578). They fully admit what they term their "most unfortunate misreading of one of Dr. J. E. Pollock's tables," but this misreading has occurred, not only in a paper intended for specialists by Dr. Latham, but in a book intended for the public by Dr. Latham and Mr. Garland, and, still more recently, in a letter to the public press by Mr. Garland. If the error arose from an "unfortunate misreading" of Dr. Pollock, then these authors have to admit that they not only misread a single table, but that they have not read before writing on the subject the text itself of Dr. Pollock's book. To those who know the conditions of the Government service in Germany under the new invalid system there is only one table in Dr. Pollock's book which is really comparable with the returns from the Prussian and Hessian State railway sanatoriums; that is the table on p. 155, showing the duration to which 286 cases of phthisis in the first stage had already attained when last seen.* Of this Dr. Pollock writes:

> In the above, as in some other tables given [this includes the 3,566 cases table to which Dr. Latham and Mr. Garland recur], I state the *observed duration* only. Each case had, in other words, already lasted the period named from the earliest symptoms of the illness which could be ascertained. None had died under observation, and all were seen and diagnosed by myself. Reckoning from a former table, the average *observed* duration of each case of this class was 49·48 months. It is obvious, however, that this falls far short of the real duration of such cases, reckoning up to the time of death. At the close of the period during which they remained under observation, 140, or about one-half, were still in a stationary condition—that is, neither better or worse—and therefore likely to last for a still longer time, and this class must, obviously, much raise the duration to be assigned to phthisis, all forms taken together.

It would be of interest to know whether Dr. Latham and Mr. Garland had read those lines or not. If they had not read them, what right had they to quote, or rather "unfortunately misquote," Dr. Pollock's chronic first-stage cases as illustrating the difference between post- and pre-sanatorium treatment of phthisis? If they had read and forgotten them, how is the medical profession or the public to trust them as writers of weight on this subject?

In the next place Dr. Latham and Mr. Garland draw a distinction between what they term their "argument" and their "illustration." I can find no argument bearing on this point in their three writings to which I have referred but their illustration from Dr. Pollock. They state that they had only space for "one illustration in support of what we thought was accepted as a true statement by all who have any first-hand knowledge of the subject." Are the public for whom the "illustration" was intended supposed to have this "first-hand knowledge of the subject"? Or do Dr. Latham and Mr. Garland claim themselves to have that knowledge? Have they had to deal with large numbers of patients from pre-sanatorium days, or can they bring forward data or large numbers of such patients who have not followed any modern treatment, and who have been kept under continuous observation to day? If so, those data, and not their single and erroneous illustration, should have appeared in their published writings on this topic.

As a matter of fact, Dr. Latham and Mr. Garland probably know as well as I do that this is not a subject for the untrained statistician at all. It is one of the most complex and difficult problems that can possibly be set to the trained actuary. No better illustration of this can be placed before the medical world than Dr. Latham and Mr. Garland's letter in your last issue. They cite Pollock's 129 cases (out of the 3,566 cases they up to the present had slaughtered!), carefully observed till death,† Flint's 212 similar cases, Dr. Pollock's 505 less carefully observed *hospital* cases, Wilson Fox's 90 fatal *hospital* cases, as if these were in the least comparable with the Prussian and Hessian railway sanatoriums data. Is this part of the material by which they might have illustrated their "argument?" I believe that the great bulk of the profession realize that *hospital* cases under the old system can give no actuarial data comparable with chronic first-stage cases of modern sanatorium treatment. Hence I think Dr. Latham and Mr. Garland are not trying to confuse the issue by comparing such selected cases with the Prussian and Hessian data. I feel confident that in their exuberant enthusiasm for a new cult they have not in the least realized the grave difficulties of a true judgement on the problem before them. If all the "illustrations" and opinions they cite in their letter, from Laënnec to Bodington, had been added to their *Conquest of Consumption*, they would, in my opinion, have made not *one* but *eight* "unfortunate misreadings."

Dr. Latham and Mr. Garland say I do not appear to question the truth of their "argument." There is no argument to question the truth of; there is only a very flagrant misuse of statistics to be corrected. I can only repeat here what I said in my last letter—that the *Conquest of Consumption* ought to be withdrawn from circulation until rewritten, and that Mr. Garland ought now to correct the statement he has recently made in the public press. I believe that medical opinion will be on my side on this point.

As to my own views on the advantages of modern sanatorium treatment, *I have none whatever.* It is precisely one of those questions which cannot be settled either by opinions or by statistics superficially or erroneously handled. It is one that needs the combined action of impartial medical man and highly-trained actuary. I myself am waiting to form a partial opinion on work that I know is in progress. I say partial opinion, because probably no final opinion can be possible until we have before us data collected in a manner suitable to actuarial reduction. Cards for recording such data have been issued by the Biometric Laboratory, but at the present rate of return it may be years before material necessary for a definite opinion is available. The table by Mr. W. Palin Elderton, a well-known actuary, published by Dr. Noel Bardswell in his recent book (cited in their letter by Dr. Latham and Mr. Garland) might have indicated to them, as it does to me, the need for more restraint and less dogma in our opinions at present as to the advantages of modern sanatorium treatment. Sanatorium treatment was a right experiment to make, but the conclusions to be drawn from the experiment are not yet ascertainable.—I am, etc.,

Biometric Laboratory, University College, W.C., June 26th. KARL PEARSON.

SIR,—Dr. Latham asks Professor Pearson to endorse the truth of an argument based upon wholly false premisses. Whether Professor Pearson will acquiesce or not I cannot tell; but as one who has constantly attacked the hollowness of the sanatorium statistics of England, I shall proceed to show that Dr. Latham has blundered, not only in his illustration, but in his general argument.

Dr. Latham seems to be the champion of sanatorium methods because in specially selected cases 50 per cent.

* It is a portion of these cases cited from Dr. Pollock's big table on which Dr. Latham and Mr. Garland based their 83 per cent of deaths.

† Note that not one of these 129 cases fall into the material comparable with the Prussian and Hessian data!

still retain full working capacity for at least five years from the *commencement* of treatment. I have quoted Dr. Latham's words. As it is the rule to calculate the duration of the result from the date of discharge from the sanatorium, I wish to know whether this is another inaccuracy of Dr. Latham's. Further, does Dr. Latham know what "full working capacity" means in the class of workmen—railway employees—who are treated at the sanatorium which has been selected out of a great number to furnish the figures for Dr. Latham's argument?

Dr. Latham draws his statistics from the contingent that is *allowed* to enter sanatoriums. Early mild and favourable cases are selected, and cases with fever or great loss of weight or bad appetite or rapid pulse or laryngeal or other complications are forthwith rejected. Moreover, many cases pass through a period of probation before they are admitted to sanatoriums. By this process of exclusion the selected cases probably do largely represent the cases that would remain well for five years *without any treatment at all.* It has therefore to be remembered that the material upon which Dr. Pollock based his conclusions was not selected, nor had the patients passed through a period of probation before they were selected for statistical purposes. Yet if one compares the observations of Dr. Pollock with the carefully compiled statistics of Engelmann and Weicker, the pioneer of the Volks-sanatorium in Germany, sanatorium treatment among the poor presents a grim picture. Engelmann[1] says: "In six months after discharge from the sanatorium not quite four-fifths (80 per cent.) were still fit to work; in three and a half to four years, on the other hand, four-fifths (80 per cent.) were dead or quite unfit for work." I admit that in many cases the duration of treatment was not longer than three months. This grim failure was revealed by the system of after-examinations introduced in order to learn to what degree permanent results were achieved. Our English statistics on this point are utterly untrustworthy, as I asserted many years ago, and in 1908 Dr. Bulstrode, in his report to the Local Government Board, had to make the same sad confession.

But Dr. Latham, in order to prove the value of sanatorium methods in England, goes out of his way to compare the statistics of Dr. Pollock in 1865 in England with the statistics of one sanatorium in Germany. The only statistics that really apply to Dr. Latham's argument are Weicker's statistics concerning the results in the Volks-sanatorium at Goerbersdorf and elsewhere, which were so disappointing that Dr. Weicker lost all faith in sanatoriums till he began to use tuberculin. Now, I ask, why should Dr. Latham and others claim for sanatoriums results that are due to tuberculin?

I do not think that any one attacked the great problem from the point of view of tuberculin till I examined it, and the results of my examination, which are fully stated in my book, *Treatment of Consumption*, seem to prove that sanatorium treatment may save 20 per cent. more cases than Nature unassisted can save—let us say, 50 per cent. in all recover by sanatorium treatment. Naturally sanatorium treatment will also save those cases that need no treatment. Next, I have proved in my own experience that tuberculin alone saves 90 to 100 per cent. of the early cases. It is equally obvious that sanatorium treatment combined with tuberculin treatment can do this.

But I ask why we should adopt sanatorium treatment at all in the early cases when tuberculin alone can do all that is wanted. For early cases tuberculin treatment is the treatment *par excellence*, and sanatorium treatment is an unnecessary luxury. Since, however, Dr. Latham and Dr. Theodore Williams have lately been urging the public to spend £40 a year upon every case treated and about £80 upon every case that remains well for five years, I simply ask whether their request is reasonable if a better result can be achieved by tuberculin dispensaries at one-twentieth the cost? Surely it is better to spend £40 in saving a dozen lives than in half curing one case?

It is therefore my duty to warn the public against spurious sanatorium statistics based upon an artificial selection of cases that gives an utterly false impression of the value of sanatorium methods and direct public attention to tuberculin dispensaries which can reach the multitude not in hundreds but in many thousands, and bring forth fruit some thirtyfold, some sixtyfold, some hundredfold. Tuberculin dispensaries will solve this great problem for the multitude, which sanatoriums can never reach. If tuberculin has again and again succeeded where sanatoriums have utterly failed, why should tuberculin fail where sanatoriums have succeeded?—I am, etc.,

W. CAMAC WILKINSON, M.D., F.R.C.P.

London, W., June 27th.

[1] *Arbeiten aus dem K.K. Gesundheitsamte*, p. 158.

SIR,—I have read Professor Karl Pearson's letter in the BRITISH MEDICAL JOURNAL of June 18th and the reply by Dr. Latham and Mr. Garland (June 25th) on the above important subject. I am not in a position to criticize the method employed by sanatorium physicians in compiling their statistics, but I am curious to know how they are compiled. I have had numerous cases treated in sanatoriums, a few successfully and the majority unsuccessfully, but have never been asked by the physicians of sanatoriums for the after-history of those cases. I do not believe my experience is unique. It is obvious that we will never reach the truth unless there is co-operation between the sanatorium and the family physician. I have had several patients who, after leaving sanatoriums with a hopeful prognosis, but with no signs of any improvement (save the gain of several pounds of useless adipose tissue), succumbed in a few months or weeks to a haemorrhage. How are such cases recorded?

I would suggest that no cases be included in statistics which did not reveal tubercle bacilli in the sputum. I believe this point to be important. I am aware that phthisis exists without revealing tubercle bacilli in the sputum, but such cases are comparatively rare. A large number of cases, especially in children up to the age of puberty and young adults, after an attack of influenza are pronounced tuberculous merely on the presence of certain physical signs in the chest, and are removed to sanatoriums or some Swiss resort. The cases I have in view never show tubercle bacilli in the sputum, but invariably large numbers of pneumococci. These I believe to be cases of chronic bronchopneumonia, and recover, but I suppose figure in statistics as recoveries from phthisis.

Dr. Latham and Mr. Garland in their letter quote Dr. Bardswell's conclusions—"the average duration of consumption, etc., in pre-sanatorium days was eight years; the average duration, etc., is certainly now considerably longer," etc. This statement is, I think, a little vague, but if it be that a consumptive's life is merely extended three years, or even five, I ask—Is it worth while? I should like to know the amount of money spent annually in erecting sanatoriums and the amount spent on their upkeep. The amount must be very considerable. Are the results worthy of the expenditure? The majority of sanatorium medical officers will, no doubt, answer in the affirmative, but I venture to differ, and would affirm that we would get nearer the solution of this great problem if the vast amount of money spent annually were diverted to other channels. I may be accused of vagueness in this statement, but I can merely hint that probably 60 per cent. of all cows are tuberculous; that inspection of dairies, meat markets, etc, is a farce, owing to the impossibility of the present staff of inspectors overtaking their work; that breeding grounds are being erected annually in every city of the empire. These are a few of the channels which could be cleansed with considerable benefit, and I would suggest to those who are recognized as authorities, and whose words have power, that it is useless extending sanatoriums for the treatment of the tuberculous poor, who after a few months' treatment are sent back to their insanitary surroundings.—I am, etc.,

Edinburgh, June 25th. FREDERICK PORTER.

NATIONALIZATION OF MEDICAL SERVICE.

SIR,—My short article in the JOURNAL for June 4th has evoked a considerable amount of somewhat adverse criticism, and raised certain questions to which I desire, with your permission, to reply.

Two correspondents ask for my authority for the statement that the average income of the profession is well below £200 a year, one adding that he has met the statement before and is astonished at it. The figure is not due to any original research on my part, and may, for aught I know, be entirely erroneous, but I am quite certain it is

one which I have often seen quoted. Such average incomes always do seem surprisingly low; that which one often sees quoted for the Anglican clergy of less than £150 a year is lower still. It is obvious that such figures can only be approximate. If the average income could be obtained with any approach to accuracy it would be exceedingly interesting to ascertain it, as also the averages for medical practitioners working for fee payments and those engaged upon work paid for by Government or municipalities at fixed stipends. The exact figure does not matter materially to the argument of my paper, for if men engaged and publicly paid in the national service were not remunerated at quite as high a rate as those still remaining in private practice the national service could not be manned.

My critics appear to think the scheme for a National Medical Service is chimerical; in my opinion, so far is this from being the case, that within twenty years we shall see it practically established. The cost is by no means prohibitive. On the basis of 1,000 of a population to each medical man employed by the State, and supposing there is an average payment of only twopence a week per person, the average income of the State-paid medical officer works out at £433 6s. per annum, a figure which may please my critics better, and is unquestionably higher than the present average; or, let us suppose that a thorough system of attention to the treatment of disease and the public health of the community is at least as important as the schooling of the children, and equally well worth paying for at a rate equal to the school rate of about 1s. 2d. in the pound, then, in a city such as Liverpool, for example, the amount raised would be approximately £250,000, capable of yielding an average annual income of £425 to six hundred medical men. This would mean better pay, more men employed on this type of work, and a better condition of public health than at present.

To an artisan and his family, paying through his rent, this means a cost of about ten to twelve shillings a year, or less than threepence a week for the household; to a ratepayer of the middle classes living in a house valued at £60 a year it means about £3 10s. a year.

Surely all this is not outside the bounds of possibility if the great advantages of such a broadcast system of tackling disease were placed before the public by our profession.

Turning to the specific details raised by my critics, Dr. Pendred states that were I in practice I "would soon learn that a large proportion of patients avoid payment entirely. . . . Few of us anticipate less than 15 per cent. of bad debts, and 25 per cent. is no uncommon experience." Now, it is precisely from such losses as these that I am trying to safeguard Dr. Pendred and his brother practitioners by converting them into State medical officers instead of involuntary philanthropists. Incidentally, I also free him and the public from the gentleman in his neighbourhood who pretends to attend to 5,000 people, probably with the help of two underpaid assistants.

Dr. Pendred also thinks that Britons never, never, will allow their healths to be looked after by inquisitorial methods, and wonders what will become of the endowments of the hospitals when the State takes them over and puts an end to hospital abuse and false philanthropy. I would refer him, on both these matters, to the school board system of free education. The Briton has to send his child to school whether he wants to or not, and the rubbish and nonsense we are living through, and slowly living down, about denominational schools of all kinds is an example of what we have to get through in the future with charity-endowed hospitals, which, having served their purpose in years gone by, are now becoming a drag on medical advance in the country and a curse to the medical profession.

Dr. Bunting's suggestion is most valuable—that the Association should set to work to obtain proper conditions of appointment to the new posts about to be instituted for men now in the profession and working among the poorer classes. Such men are exactly the men required for the work indicated under either Majority or Minority report. It is not D.P.H. students who are wanted for such work so much as men accustomed to working among working-class people, and when effective legislation comes such men will all be wanted.

Dr. Greenwood deplores nationalization, and yet recommends that portion of the profession which I suggested might still remain in private practice to get State appointments as soon as possible. There Dr. Greenwood and myself are agreed. The man for whom there will be little room under any scheme of nationalization is the man who makes a good thing out of several public part time appointments, and at the same time squeezes as much as he can out of private practice. This, at present, lucky person has my sympathy during the transition, but the world must move on after all.—I am, etc.,

Liverpool, June 23rd. BENJAMIN MOORE.

FAITH HEALING.

SIR,—I have read with much pleasure the address o Dr. James Rorie on the interactions of mind, body, and soul, which appeared in the JOURNAL on June 18th.

The deep problems which surround the transformation of nerve force into mental energy we are still compelled to recognize as ultimate facts which at present admit of no analysis. Metaphysicians formerly regarded the human mind as a sort of compound of different faculties presenting some likeness to an organic compound, and consisting of several members each discharging its own appropriate function; but during recent years a great change has taken place in the ideal forms of physiological psychology.

The mind is now described as current energy, and capable of passing into various states of intellect and emotion which admit of very little experimental investigation as to their essential nature. We may, however, be sure that psychic force will never be explored by rummaging in the dark, and that the only possible way of knowing anything of the real nature of mind is by bringing it into contact with the objects addressed to its various feelings and faculties in the regions of experience and life, by which alone they can be brought into living play.

Like all modern psychologists, Dr. Rorie "begins at the other end by gradually working up from the stimuli or physical forces operating on the nerve-end organs especially provided for the conversion of these into the nerve current—a vito-neural energy, and its transmission as such to the cerebral nerve cells. How mind acts on matter and how matter acts on mind still remain as great a puzzle as before to all investigators." What interesting and insolvable problems surround the very beginning of human life! We can watch the evolution, but the visible manifestations which are presented to us admit of no analysis into their constituent elements. The vibrations of the nerve ends of the special senses and other organs are mysteriously converted into neural currents, which become the incipient excitants of the neurons and nerve cells, and then follow the primitive and spontaneous movements which indicate the first conscious awakenings and the actual beginnings of mental life. Without these stimuli from the outer world there could be no evolution of the higher faculties.

The recognition of the pneuma in man appears to me to be imperative in every point of view. The brain is only a part of the machinery of the mind; for although a large part of the current forces of mental action are within the head, other parts equally indispensable extend throughout the body. Scientific research has brought to light many great advances in neurology, but what has cerebral localization done to decipher the material centres of consciousness, intellect, and emotion? It is true that no mental life can be carried on, and that no thought or emotion can be sustained, without the normal intercommunications between the brain and the rest of the body. But how can these facts be utilized to construct a theory that mind is only a functional part of the material organization? Is not emotion of the most exalted kind the accompaniment of our severest and most abstract mental exercise? How can the blending of the greatest of the powers of the intellect with the highest and most vivid of the emotions be reconciled to the hypothesis of only functional activity, and that the combination can be resolved into vital and neural energies? Surely the highest forms of mental activity are something more than the products of mere molecular forces?

I am glad to know that a reaction is going on to-day against the materialistic monism which is still enunciated by some physiologists, with the intention of practically obliterating the distinction between material and non-

material neurology. Dr. James Rorie clearly states his opinion in these words: "If we are to arrive at a correct analysis of man's mental constitution, the spiritual element cannot be set aside and disregarded."

Now, in this opinion I entirely agree; at the same time, I am not a member of the Psycho-Physical Society, and I feel sure that the personal experiences of its members are not likely to unlock the secrets of mental science, and that their singular experimental researches, which are carried on by some with sincerity, only tend to excite morbid disturbances of the senses and to produce visual and aural hallucinations. In many cases I know that these so-called spiritual studies have resulted in serious consequences to both the physical and mental health.

In conclusion, I desire to advance another step forward, in which I feel confident Dr. Rorie will cordially agree. It is my firm conviction that mind is clearly superphysical, for Nature is so conservative that she never wastes a single atom or a particle of power. Mind, from its essential nature, is an independent force, and, for all its higher manifestations, our nervous organization is the temporary seat of that mysterious union where spirit meets with matter and evolves all the elements of its high and hidden processes.

Man is a distinct order of being by his mental capacity, and is separated from all other beings more by psychical differences than physical structure. His distinguishing attributes defy experimental investigation, and in his organic formation there is not the faintest indication of his intellectual and moral power—of that "still, small voice," the regulator of all the insurgent and inferior principles of Nature, and of that hope which calmly sees in the decay and disintegration of this present materialism the complete emancipation of the spirit and the dawn of a higher life.—I am, etc.,

Southsea, June 27th. JOHN WARD COUSINS.

SIR,—I write to call attention to a few fallacies in natural philosophy which still cling tenaciously to the scientific mind and language, which lurk hidden in several of the articles in your series on Faith Healing, which are carefully avoided by Sir Clifford Allbutt, and which come into prominence in the paper by Dr. Claye Shaw.

1. The vibration theory is a mere hypothesis, and it is unscientific to regard it as explaining anything. As Professor Karl Pearson has been at so much pains to point out, it is only a summary in a mathematical sense of certain phenomena. It should not be regarded as an explanation of causes, and it cannot rightly be used as a premiss upon which to base any conclusion, but only to resume phenomena investigated and detected by other means. The postulation of the ether is necessary for the understanding of the vibration hypothesis, but the ether is a concept and not a medium, and it is wrong to attempt the explanation of any phenomenon by conceiving the real existence of a medium called the ether.

2. Dr. Claye Shaw speaks of an "actual emanation of force" and of latent force becoming objective. This would attach to force an existence, giving to it a personality differing only in name from the spirits of things in the demonology of the ancients. Such an anthropomorphic idea can have no place in the physical science of to-day. It seems necessary to go back upon the foundations of physics and to state that force is merely the name given to a process of equalization which takes place through certain interposed resistances between bodies in a state of relative inequality, this tendency to equalization being a primal quality of matter. Force is a process having velocity or relation with time and space, but in regard to which no question of quality, amount, objectiveness or latency, is relevant. This is no doubt a surprising remark, but it is nevertheless true. Who has measured the quality, amount, objectiveness, or latency of force, otherwise than in terms of the inequality between substances?

3. "Can living matter affect other living matter at a distance by means of a change in the medium between the two, apart from the agency of known conductors?" This brings up the old controversy about action at a distance. How can a thing act where it is not, is the question asked. Of course it cannot, is the answer. We must assume the existence of a connecting link between the interacting substances and call it a conductor. I now make the statement that there are no conductors, as usually understood, conveying particular kinds of force from one substance to another. Every interposed substance between interacting bodies is a resistance which impedes, and does not assist, a reaction. Of course, a body cannot transfer its own motion to another unless it touches it, and the transmission of motion is the only form of conduction. It is this fact which has given rise to the erroneous statement that all physical states are modes of motion. Conduction has been assumed—a medium has been imagined, and the theory "motion" has been arrived at. A conclusion based upon two assumed premisses. Can it be good? These and many other false conclusions which now pass as the facts of physics require deep and thoughtful reconsideration. This is neither the time nor the place for me to attempt to substantiate an indictment against the false phraseology and erroneous ideas to which I desire merely to call an opportune attention.—I am, etc.,

London, W., June 24th. W. B. PARSONS.

INFLUENCE OF POSTURE IN PHYSICAL EXAMINATION.

SIR,—I regret I could not reply to Dr. Morison last week. I have now read Dr. A. Abrams's paper, and can deal with it also.

My critics fall into two classes—those who regard my conclusions as "new but not true," and those who look on them as "true but not new."

For clearness sake, before answering them, let me restate my point, which, I think, some of them have not quite seen. It is not that the position of the heart in the chest, that the degrees of or the reasons for the heart's displacements, lateral or sagittal, or that the heart's dimensions, under any circumstances, are this or that. It is that to ordinary digital percussion the width of the cardiac dullness differs in the upright and recumbent positions to a clinically important degree, being greater in the upright position.

"True but not New."

Dr. Morison evinces a quite mediaeval humility in his desire to destroy his own claim to originality. But truth is better than self-abasement, and I must insist on his priority. His historical researches have been singularly unfruitful. For what have Skoda's, Hope's, or Walshe's remarks to do with my point? Skoda and Hope, in the passages referred to, do not even allude to dullness, and Walshe, in the quotation given, expressly refers only to "position" of dullness—quite another matter.

Indeed, what has been said about "ancient history," facts which "have long been well known," rediscoveries of the "archaeological," and so forth, seem to me in the absence of any references both a little unfair and a little absurd. How many of us have ever heard of these well-known facts handed down from a remote antiquity?

Speaking for myself, I know what I have described was never pointed out to me in my student days—and I sat at the feet of no mean clinical teachers—nor since then by any one; it is not in any regular textbook of my acquaintance, although, far from being an "archaeological" curiosity, it is an important clinical fact; it is ignored in every description of a heart case I have ever come across (except Dr. Morrison's, which I quoted); and when I read my paper in London five years ago it had to be verified as new.

I repeat it has been overlooked, and, whether new or not, I am glad that at last I have succeeded in drawing attention to it.

"New but not True."

Thanks to Dr. Auld, I have obtained Dr. Abrams's paper, and can now more fully understand Sir James Barr's letter. But this "new but not true" criticism is of two sorts. Sir James, as I have pointed out, is talking of a quite different thing, namely, the true area of the heart which he can delineate with the plexímeter; so mapped out my conclusions would be incorrect, because the true cardiac area is shown by the radiograph to be rather wider in recumbency. But my method is that of digital percussion, and to this his remarks do not apply.

Dr. Abrams, however, makes quite another statement—one so astonishing that I at first actually misread it and thought he had anticipated my observation. In the

American Journal of the Medical Sciences of 1904, at p. 128, he writes: "If the lower sternal region—that is, the sternum contiguous to the heart—is first percussed in the standing and then again in the recumbent posture, one may appreciate a decided alteration in the percussion tone; in the former attitude it is resonant, or even hyperresonant, in the latter it is dull or flat."

That is the exact reverse of my statement which Sir James Barr says is untrue and every one else seems to think so true that it must have been recorded in cuneiform. Clearly either Dr. Abrams or I must be badly wrong. Which?

I am, Sir, yours faithfully,

Exeter, June 18th. W. GORDON.

SIR,—The facts alluded to in my previous letter as "long well known" should have been stated to be those bearing upon the mobility of the heart as a whole and of its right border, and in the matter of examination those bearing upon the accessibility of the right border to accurate localization, even without any such help as that of R. Godlee's prone percussion hammock or of the less extreme postures which from time to time have been suggested and used by other observers. But speaking without the support of an adequate bibliographical inquiry, it is my impression that, at the time of its publication, Dr. W. Gordon's valuable study was, in point of method and of clinical observation, not only original but novel.

With reference to the general question, to be plain in a matter fraught with responsibilities far beyond the academical, criticisms from cardiologists upon much that has been published as to the variations in the size and in the site of the heart may have been largely discouraged by a keen sense of their own inadequacy to an accurate solution of the problems involved, and by the less manifest sense of the inherent difficulties underlying many statements which have appeared, more particularly in connexion with cardiac dilatation.

For a genuine estimation of the size of the heart an accurate determination of its three diameters is indispensable. The best of percussions can only determine two of them, the *sagittal* diameter being beyond its reach. The credibility of startling conclusions based upon two diameters only is hopelessly weakened when one of these is passed *sub silentio*; and when the other, the *transverse* diameter, is estimated in linear units of enormous cubic significance, and, moreover, on a fluctuating basis of two standards, the actual diameter and the apparent diameter, the first of which is unhappily taught to be normally unascertainable, and the latter is a personal equation of those so taught. At the best the plexigraphy of the heart supplies an incomplete measurement. For what it may be worth, it could only be fit for strict discussion when the *vertical* diameter had been established on the most accurate determination of the two upper levels of the diaphragm, or practically speaking, of the liver (in the absence of ptosis), and when the *actual* transverse diameter had been accurately ascertained at the start as well as at the finish, irrespective of any postural obscuration of the right border and of any inconvenient degree of pulmonary overlapping.—I am, etc,

London, S.W., June 19th. WILLIAM EWART.

P.S.—The title selected for this correspondence opens a field too vast for me to attempt, but as Dr. Auld has mentioned me in connexion with the percussion of the spleen, it may be opportune to refer to a paper on "The Diagnostic Uses of Percussion of the Vertebral Spines, with general remarks on Pleximetric Bones and Viscera,"[1] in which the occurrence of a "boxy" percussion note of the spleen and also of the liver is described in its connexion with the question of diagnosis of suspected gas in the peritoneum.

ENVIRONMENT AND HEREDITY.

SIR,—The great importance of the issues raised in your article on environment and heredity, in the JOURNAL of June 4th, prompts me to take the earliest opportunity available of pointing out a possible source of error in the conclusions reached in the second pamphlet you then placed under review. The pamphlet emanates from the Francis Galton Laboratory, and is entitled, *A First Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring.* In order to determine the effect of parental alcoholism on the next generation, the necessary data are largely derived from an account of the children in the special schools in Manchester, supplied by Miss Mary Dendy. Miss Dendy has so frequently stated in public her conviction that alcohol has nothing to do with feeble-mindedness, that the results to be obtained from her statistics are more or less a foregone conclusion.

In the interesting introduction to the memoir, the difficulties of the problem of intemperance are pointed out, and also the importance of starting an inquiry without any bias as to its result. It is also explained that lay statistics are employed owing to the dearth of any similar statistics collected by medical men. It is a little difficult to reconcile the latter statement with the fact that the report of the Royal Commission on the Care and Control of the Feeble-minded, which was published nearly two years ago, and also such textbooks as Shuttleworth's and Tredgold's, contain definite information in regard to the connexion between alcoholism and congenital mental defect.

Miss Dendy's records show that only in about 8 per cent. of mentally defective children is a history of alcoholism to be found in the parents. They are, therefore, in marked contrast to the findings of nearly all medical investigators. Fletcher Beach and Shuttleworth found a history of parental intemperance in 16·38 per cent.; I found one in 41.6 per cent., and Tredgold did so in 46·5 per cent.; while other reliable authorities, such as Forel, have recorded even higher percentages. The higher figures found by Tredgold and myself are sometimes considered to be partly explained by the fact that each of us made a careful house-to-house visitation, seeing the parents and examining them if necessary; the earlier investigators, as a rule, had not done this. With these and other sets of figures available, it is a little unfortunate that in an investigation which seeks to be without bias that set should have been selected which comes almost at the extreme end of the scale. It is true that Looft in Norway found a history of alcoholism in the parents in only 3.7 per cent. of the mentally defective, but no other figures that I can find in the literature of the subject are at all comparable with Miss Dendy's.

It is important to remember that the memoir of the Eugenics Laboratory only traces the relation between alcoholism in the parents and intelligence in the child, and is, therefore, an incomplete study of the effect of alcoholism on the race. Those who have studied congenital mental defect have often noticed that the source of the mischief is to be found in the grandparents rather than in the parents; it is not an uncommon experience for the children of drunkards to show nothing unusual. When they have grown up, however, they sometimes tend to be eccentric, and fail to attain the success one would expect from their training and original position in life; they may even become teetotal cranks. Then, if any of their offspring turn out to be feeble-minded, as they sometimes do, it may be stoutly asserted that alcohol has nothing to do with the case. I have several times seen patients in whose families such a sequence of events could be traced. As a matter of fact, the relation of alcoholism to mental defect is a most difficult and intricate problem, especially as the intellectual weakness can seldom be attributed to a single factor, but is due rather to a combination of unfavourable elements. I made an exhaustive review of the subject in a paper on the relation of alcohol to feeble-mindedness, which was published in the *British Journal of Inebriety* for January, 1909. The conclusions I was then able to draw were that "the evidence is not clear that alcoholism, by itself, in the father will produce amentia; but it is quite plain that in combination with other bad factors it is a most unfavourable element, while maternal drinking, and drinking continued through more than one generation, are potent influences in mental degeneracy."—I am, etc.,

W. A. POTTS,
Late Medical Investigator to the Royal Commission on the Care and Control of the Feeble-minded.

Birmingham, June 19th.

SIR,—Will you allow me to make a short statement concerning the recently issued memoir by Miss Elderton *apropos* of the leader in your issue of June 4th? I fear

[1] *Lancet*, vol. ii, 1898, p. 23.

that people may think that I was responsible for the correctness of the data supplied by me to Professor Karl Peterson. In the eyes of some people this might, perhaps, lessen their value. My share in the matter (and it was a long piece of work) consisted in copying out the particulars in a form suitable to be used at the Galton Laboratory. These particulars were, in almost all instances, collected under the direct observation of the late Dr. Henry Ashby, who took great pains to see that they were correct. In the majority of cases the medical particulars were written on the case papers by himself, and the other particulars were checked by him. It is unnecessary for me to say how accurate he was and how he insisted upon the accuracy of those who had the honour of working under him. He would take any trouble to get at facts, and he took special interest in family histories; but he would not allow anything to be entered on the papers on hearsay evidence—for example, where there was no direct evidence as to drink or sobriety nothing was filled in. In those cases in which the parents of the child were put down as sober, there was good evidence that this was the case. As the thousand cases which Professor Pearson desired to have could not quite all be obtained in Manchester, Dr. Crowley, then at Bradford, kindly supplied me with a certain number. He also was very careful in making his entries. In no case has any paper been used which was not signed by the medical man who examined the child.

May I add that the conclusions drawn by Miss Elderton only corroborate my own experience? It even corroborates the assertions of ardent teetotallers, who have lately been offering, as evidence that drink in the parents produces weakness of mind in the offspring, the statement that 41 per cent. of feeble-minded children have drunken parents. It would be as reasonable to say that sobriety produces weakness of intellect because 49 per cent. of feeble-minded children have sober parents. The fact is that the two troubles are not connected as cause and effect, except inasmuch as feeble-minded people tend to drink as they tend to do every other weak and foolish thing that comes in their way. If this memoir arouses people to a consideration of the terrible injustice we are inflicting upon generations to come in leaving degenerate people at large and even protecting them from their own weakness of body in such a way as to make it possible for them to hand on their defects, it will have done splendid service. That this is so there can be no doubt. The great efforts that are being (most properly) made to improve the conditions of all children are resulting in the keeping alive of very many who are not merely weak physically, but weak mentally also.

We are fighting against natural selection and keeping the unfit alive. I am quite prepared to admit that we are bound to do this, but it should be done in such a way as to protect the future generations from any evil that may result from our action.—I am, etc.,

MARY DENDY,
Honorary Secretary, the Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded.

Manchester, June 19th.

TETANUS AND THE MOTOR CAR.

SIR,—The suggestion that the increase in the number of deaths from tetanus is due to the dust raised by motor cars is interesting, but I think I shall be able to show that the facts are all against the suggestion, and I think the cause of this increase will have to be sought for elsewhere.

Taking the period 1889 to 1901 the total deaths from tetanus numbered 501, giving for those years an average of 38.5 deaths per annum (28 for males and 10·4 for females). In 1902 the deaths from tetanus were suddenly quadrupled, rising to 201. This high figure was practically maintained till 1908, the last year for which figures are available.

During the period 1902 to 1908—that is, that with the high number of deaths from tetanus—the total deaths from tetanus were (Registrar-General's Report) 1,623 (1,233 males and 390 females). Of this number, no fewer than 504 were deaths in children under 3 months of age. These deaths alone give an average of 72 per annum for this period. Now, it is in the highest degree improbable that infants of this age are in the least exposed to motor car dust. But, in addition, of these infants, 325 were males, and only 179 females. Are we to suppose that motor-car dust would be twice as fatal to male babies as to female ones?

If we examine the other age periods for these seven years we get the following figures:

Deaths from Tetanus at Various Age-Periods, 1902–8—Both Sexes.

	Under 5 Years.	5–25.	25–45.	45–65.	65 on.
Male	389	301	273	217	53
Female	202	70	57	42	19

Here the discrepancy between the sexes is greater still, being in the following proportions:

	Under 5 Years.	5–25.	25–45.	45–65.	65 on.
Male	1·9	4·3	5	5	3
Female	1	1	1	1	1

If motor cars are the *fons et origo mali*—more or less—why do males suffer five times more than females between the ages 25 to 65?

The same discrepancy appears when we examine the next table (Registrar-General's Report, 1908):

Crude Annual Death-rate from Various Causes, at All Ages, to a Million Living, 1889–1908: Tetanus.

	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Male	9	12	12	11	12	10	8
Female ..	3	4	4	3	3	3	2

But there is a further totally different objection. The quadrupling of the tetanus deaths occurred in 1902, and at this date the motor car was still in its infancy. It was only in 1896 that cars were freed from the attendance of "the man with the red flag." It was not till 1904 that the first taxicab appeared on the London streets, and then only to the number of two. The following table shows the number of cabs, etc., licensed between 1904 and 1908 at New Scotland Yard (Annual Reports of Chief Commissioner, Metropolitan Police):

	Two Wheel.	Four Wheel.		Omnibus.		Tram Car.	
		Animal.	Motor.	Animal.	Motor.	Animal.	Motor.
1909 ...	3,299	3,263	3,956	1,771	1,180	239	2,198
1908 ...	4,826	3,649	2,805	2,155	1,133	323	2,003
1907 ...	5,952	3,866	723	2,557	1,205	404	1,768
1906 ...	6,648	3,844	96	2,964	783	905	1,396
1905 ...	6,996	3,935	19	3,484	241	786	1,124
1904 ...	7,137	3,920	2	3,551	31	928	810

This table shows that even in 1906 there were fewer than 100 taxicabs in London streets—quite a negligible quantity. Nor were private cars numerous at this date—1902. From 1904 onwards all cars had to be "registered," and in London this duty fell to the London County Council. The following table shows the number of cars registered in London by the London County Council each year, but it should be remembered that in 1904 all cars, including old ones, were first registered:

	1903–4 (3 months)	1904–5	1905–6	1906–7	1907–8	1908–9
Motor cars registered, including heavy cars, commercial lorries, etc.	2,702	3,102	4,024	4,961	6,254	7,196

One more point: Professor McQueen, of the Royal Veterinary College, informs me that there has been no increase in tetanus among horses. The horse—and sheep—are both susceptible to tetanus. If the motor car is the offender, how comes the horse to escape?—I am, etc.,

E. G. HAMILTON WILLIAMS.

Ombersley, near Droitwich, June 1st.

"LORD CROMER AS A MEDICAL EXPERT."

SIR,—I was quite aware that Lord Cromer, as your leader writer says, "expressly repudiated the character of a medical expert" in his speech at the Research Defence Society's meeting, but I was also amused to notice that his lordship proceeded forthwith to deliver himself of medical apothegms; he therefore did, as a fact, assume the mantle he professed to discard, and when your industrious leader writer accuses me of "incurable and apparently constitutional tendency to inaccuracy," because I insist on adorning the blushing pro-consul with the robe he repudiates, he is merely being dull.

I am not concerned with the testimony of Dr. Keen or Sir Victor Horsley on their own exploits in brain surgery. I remember the interesting case not long ago, when a most brilliant brain operation of the latter was described in the papers for the confusion of all antivivisectionists, but before the shouting had quite subsided a simple and ingenuous country practitioner added the illuminating item of information that the patient was dead.

What I have asked for are the figures at the Hospital for the Paralysed and Epileptic showing the death-rate within three months of operation in the cases of brain surgery credited to Sir Victor Horsley's hand, whose dexterity is claimed to have been informed by vivisection. I am met with persistent evasion. I claim to apply the ordinary principles of evidence to the question of the value of brain surgery founded on vivisection. But those principles are not to the taste of Sir Victor Horsley and his friends. I take leave to surmise that if the figures for which I have asked supported the vivisectors' claims I should long ago have been thumped with them in public.

Lord Cromer having said that vivisection "had made possible a cure in nearly all cases of hydrophobia," and Dr. Osler having said that "the disease is hopelessly incurable," I placed these statements in juxtaposition for the entertainment of your readers; whereupon your confused leader writer says it is "a glaring instance of Mr. Coleridge's peculiar controversial tactics" that I do not quote some other long passage in which Dr. Osler says the disease can be "prevented."

This ponderous rebuke is wrongly addressed; it should have been sent to Lord Cromer. It was he and not I that confused "cure" with "prevention."

If Lord Cromer had spoken of "prevention" instead of "cure" I should not have quoted Dr. Osler to confute him. But I suppose we must not expect from his lordship such delicacy of distinction as divides "prevention" from "cure," as he is not a man of science nor even a lawyer. —I am, etc.,

London, S.W., June 27th. STEPHEN COLERIDGE.

*** Mr. Coleridge as a controversialist reminds us of Falstaff's recruits. Like Shadow, "he presents no mark to the enemy; the foeman may with as great aim level at the edge of a penknife." And like Feeble, the woman's tailor, he is excellent for a retreat; how swiftly he runs off! Certainly he of all men has the least right to complain of being "met by evasion." There is only one point in his letter that calls for any comment. The "delicacy of distinction" which he implicitly claims for himself as a lawyer is apparently insufficient to enable him to appreciate the force of Dr. Osler's words, that hydrophobia is hopelessly incurable "*when once established.*" These words form the governing clause of the isolated sentence which he quotes, although he finds it convenient to pass them over in his airy way as though they had no particular meaning. What the Pasteur treatment does is to prevent the disease becoming established—in other words, it destroys the poison before it has time to work its baleful effect. This is equivalent to the cure of a disease which may remain latent in the system for two or three months. Lord Cromer, therefore, was fully justified in speaking of the "cure" of hydrophobia, and it can only be by forensic chicanery or by ignorance of the plain meaning of words that Professor Osler's statement can be cited against him. Mr. Coleridge's mental confusion on this subject, whether wilful or not, makes us doubtful whether the application by him of "the ordinary principles of evidence to the question of the value of brain surgery founded on vivisection" would serve any useful purpose. Such questions cannot be settled by quibbling, suppression of material context, distortion of statements, and misrepresentation of facts.

SIR,—In Mr. Coleridge's letter in the BRITISH MEDICAL JOURNAL of June 25th on the subject of hydrophobia, he quotes and advises that the *last* edition of Professor Osler's book on the *Principles and Practice of Medicine* be read. Now I happen to have a copy of the fourth edition, published in 1901, in which both his picked quotations appear, only on pp. 227 and 229 instead of pp. 255 and 257; *but* Dr. Osler *also* remarks that the incubation period of hydrophobia is on the average six weeks to two months, so that every person after being bitten by a mad dog is quite capable of undergoing inoculation and therefore warding off the disease (the statistics from the years 1886 to 1894 being a mortality of 0.5 per cent. in 13,817 persons treated). Dr. Sandwith says,[1] in regard to hydrophobia, "Up to twenty years ago we were utterly helpless to avert this dreadful suffering; the victim of a bite from a rabid dog saw death in its most horrible shape staring him inevitably in the face." Mr. Coleridge picks out paragraphs that certainly look well in print, but it has been proved that if inoculation is resorted to immediately following the bite there is practically no risk of the development of hydrophobia, so that hydrophobia need not occur if proper precautions have been taken, and all these precautions are due to experimentation on animals, so that it would perhaps be better if Mr. Coleridge did not pick paragraphs, but when quoting an article quoted it a little more fully, and did not use every means in his power to change the meaning of other men's works.—I am, etc.,

Scarborough, June 25th. CHAS. A. ADAIR DIGHTON.

AUSCULTATORY PERCUSSION.

SIR,—There is one point about auscultatory percussion which I rather wonder has not been alluded to by your correspondents.

I was told of this method or read of it somewhere in 1896, and had at that time a case of malignant growth in connexion with the liver, the outlines of which I used to trace by this new method with great satisfaction to myself. One day, however, this outline failed to correspond with that obtained by ordinary percussion. I then found that when percussing gently with the end of a stylo pen, the note was very loud until one reached a point about 2 in. from where the chest piece of the stethoscope was placed, when the note became suddenly and markedly fainter. This happened equally when percussing the lung and the quadriceps extensor femoris.

No doubt a difference can be detected when the percussing agent passes from a dull to a resonant surface, but I think the phenomenon I have referred to must make the method unreliable.—I am, etc.,

GEORGE A. BALLINGALL, M.D.

St. Leonards-on-Sea, June 22nd.

SIR,—Orthodiagraphy is, of course, a special care of proportional representation, and has been pretty thoroughly threshed out. It is a theoretically beautiful, but practically cumbrous method, involving most complicated apparatus and a prolonged sitting, nor is it devoid of fallacies of its own. There is very little in the results that cannot be obtained by simpler means in the manner I have suggested in making ordinary radiograms.

In the establishment of the prima facie case of the existence of a real disproportion of particular organs in a series of cases where the individuals are of different size, the simpler method I have suggested in my previous letter would be found convenient and handy, preliminary to an orthodiagraphic examination of the really disproportioned organs later on.

[1] *Practitioner*, December, 1909.

A radiogram for this purpose is regarded not as a collection of shadows, but as a collection of outlines, and might legitimately be pencilled round.

The matter is highly technical, and I can only refer Dr. Shenton and others to a paper of mine on the Principle of Proportional Representation in Clinical Radiography, in the *Practitioner* for March, 1909.—I am, etc.,

Bristol, June 25th. WILLIAM COTTON, M.D.

SIR,—I have been much interested in this correspondence, especially where it concerns the stomach, as last autumn I was engaged at the Liverpool Royal Infirmary in making some observations on this point, under the direction of Dr. Thurstan Holland. Some of the cases examined were normal and others suffering from disease—for example, carcinoma, pyloric stenosis, and duodenal ulcer—as was verified afterwards either in the operating theatre or *post-mortem* room.

As Dr. Hertz says, the stomach resonance after a bismuth meal does not accurately coincide with the shadow on the screen, but in our cases the relative size and shape of the organ corresponded closely. In the empty stomach by ordinary percussion a small area can be marked out, which might be called the "superficial gastric resonance"; in most cases this has a distinct relation to the larger area obtained by auscultatory percussion, and after inflation the two practically correspond.

The line obtained by auscultatory friction lies somewhere between the two, though in two cases by its aid it was possible to predict pyloric adhesions subsequently found. By any of the three methods it is quite easy to demonstrate the way in which the stomach contracts down on a meal.

In the JOURNAL of June 18th, Dr. Cotton gives a very pretty and scientific explanation of the discrepancies in Dr. Hertz's results, which, judging by our experience, seem to have been unfortunate. The stomachs seen in the *x*-ray room and those on the operating or *post-mortem* table are under entirely different conditions, as in the former the organ has contracted down on a very viscid substance, whereas in the latter it is practically empty. I have, however, a photograph of the stomach of a man, who died of cardiac trouble, where formalin was injected within five hours of death, and this shows the typical J shape as seen by the rays. It must, however, be rare for a medical man to percuss a stomach under such conditions, and the results of auscultatory percussion on the empty organ as regards the right and left margins and the lower border, as verified by inspection, were very accurate.

In conclusion, surely all such methods of examination are relative and, to some extent, personal; if a man can satisfy himself where the normal resonance should be for himself, and finds this increased or lessened, then he should be on the look-out for something pathological.—I am, etc.,

Rhyl, June 20th. G. F. R. SMITH.

GOLF COMPETITION FOR THE ULSTER CUP.

SIR,—May I remind my fellow members of the Association that entries for this must reach me not later than Friday, July 15th, in order that proper arrangements may be made for the competition itself?

As regards other arrangements for golf at Burhill on Friday, July 29th, I have had a long interview with Mr. McCaul, and Mr. Lawson, the secretary of the Club, and have great pleasure in acknowledging the extreme kindness and hospitality that these gentlemen have offered to the golfing members of our Association. May I ask you to insert the following particulars in your columns:

1. They have offered to make all our members temporary members of the club for the Wednesday, Thursday and Friday of our meeting.

2. They have in the name of the Burhill Club offered one if not two extra prizes for objects to be determined later.

3. There will be an unlimited putting competition during the Friday, cards 6d. each, the pool to be divided in proportions to be determined later.

4. They have placed at our disposal the catering establishment of the club so that those who wish to do so can dine there in the evening at a reasonable cost.

5. There are two courses at the club, so that possibly foursomes can be played after the competition proper is finished, or even simultaneously with it.

6. There is ample accommodation for ladies, who can, at any rate, take out as many cards as they like for the unlimited putting competition, or, indeed, arrange one for ladies only.

7. The winners of any event, including the cup, must, of course, in the interests of all concerned, provide a certificate of their handicap, signed by their club secretary.

8. Further details will be published at the Reception Room during the meeting of the Association. These details will include a starting time, which must be strictly adhered to.—I am, etc.,

138, Harley Street, W., June 26th. FRED. J. SMITH.

THE HABITS OF SEAMEN.

SIR,—I am greatly indebted to Mr. T. W. Moore, the Secretary of the Imperial Merchant Service Guild, for pointing out to me a most unfortunately worded sentence in my paper on The Futility of the Official Tests for Colour Blindness. The paragraph in question most certainly suggests that seamen as a whole are addicted to excess in the use of alcohol. Such a general insinuation against the morals of a body of men whom I admire and respect was far from my thoughts. I wished merely to express the idea that in isolated cases there was a temptation to drink more than was conducive to health, and that this might easily occur upon long voyages in sailing ships and tramps. The idea of absolute drunkenness was not in my mind. It is the constant slight excess in alcohol and tobacco which causes toxic amblyopia.

Mr. Moore is in error in thinking that I am totally unacquainted with the duties and responsibilities of a sea life. I have acted as surgeon to one of our most important lines of steamers; I have been medical officer to a harbour board; and have made several long voyages in both tramps and liners; and in consequence I can fully corroborate what Mr. Moore says about the temperate habits of seaman as a whole. In my official capacity I never noticed any intemperance whatever, and as a passenger I only know of a very few isolated cases, although these were sufficiently serious. Under the circumstances, I most freely and heartily apologize to seamen as a whole for a carelessly-worded sentence which conveyed a meaning which was neither true nor intended by me.—I am, etc.,

Kenilworth, June 27th. T. HARRISON BUTLER, M.D.

THE MEDICAL SICKNESS SOCIETY.

SIR—The provincial members of this society, and therefore the great majority, must be grateful to Dr. Dickinson, whether his views are in all respects correct or not, for having caused some of the members of the committee to enter upon a correspondence.

As I never have been a member of the committee and am only one of the "scratch lot," by which contemptuous term the treasurers include all the rest of the profession outside the circle of the committee, I cannot, of course, express any opinion as to the question of a "one man government." But Dr. Dickinson's plea that the management of the society is too stereotyped, and that more elasticity is desirable, certainly appeals to me, and I trust that this discussion will bear fruit in that direction.

First of all it might be worth while for the committee to have additional actuarial advice, as Dr. Dickinson suggests. The science of the actuary is not an exact science: it is concerned with probabilities just as the science of medicine, and that there is great difference of opinion amongst them is quite evident, if one compares the surrender values given for life assurance policies by the Colonial and American companies with those given by the home offices, which are almost always inferior in amount. Of course, I am aware that sickness insurance is a totally different thing, but there are lapses also here which must be of great use to the society if no surrender value is allowed. This seems inequitable; unless a certain lapse ratio was counted on at the formation of the tables. Was it?

After all, as Dr. Dickinson pointed out in his letter published on June 18th, no answer has been suggested by members of the committee to the main question—What can be done to make the society more popular in the

profession? Something ought to be done, and I commend Dr. Pickett's suggestion of local agencies and work at the annual meeting of the Association. The latter should be in the hands of a man conversant with insurance solicitation, and then it might produce good results.

Would it not be possible also for the society to endeavour to attract policy holders by formulating additional tables? The Century has tables giving return of premiums in event of death or arrival at a certain age. Why should the society not also put forth something of the kind in the hope of a larger membership?

At any rate, the welfare of the profession requires that a much larger proportion of its members should be really adequately insured against sickness and accident, and I think a larger amount of the 10 per cent. reserved for management expenses should be absorbed in this work. In this connexion I was sorry to see you, Sir, advocating the merits of a certain £7 policy on page 1503 of the JOURNAL of June 18th, which covers accidents and a certain amount of specified diseases, and which is not a permanent contract. I fear members of the Association may be led to think from your mention of them that these policies are as good as those of the Medical Sickness Society, whereas they are not really insurance policies at all, but a form of gambling, which is all right if people are properly insured first, but certainly is not to be recommended in the first place.

There are certain categorical questions that I should like to have answered, unless I am told that it is not to the society's interest that they should be.

1. What is the interest-rate earned on its funds? And, arising out of that, could it not be greater?

2. What is the average age of the members, and is it increasing or otherwise?

In conclusion, I should like to say that my confidence in the future fortunes of the society is unimpaired. The society has practically been the pioneer of sickness insurance, and its figures have been used by other insurance companies to formulate their rates. I only desire, in the interest of the profession at large, a little more variety and energy in its methods. The society is all right itself upon the present lines, but the profession most certainly is not.—I am, etc.,

Birmingham, June 25th. E. D. KIRBY.

SIR,—As Dr. Herman and Mr. Swinford Edwards evidently think they know better what I did and said than I do myself, I am quite willing to leave it to the chairman to say whether it is not and has not always been the custom to submit every proposal to him prior to bringing it before the committee. When last year I suggested that members should have the right to submit proposals without this censorship, the matter was discussed and it was decided to continue the present system. This, however, is a purely domestic matter. The object of this correspondence is to ascertain whether means can be found to create a greater interest in this society both among its existing members and in the profession generally. To this object the apologists for the committee make not the slightest reference. I see that only ten members attended the last annual meeting. As an example of the stereotyped and ultraconservative methods to which I alluded, I may point to the reports of the monthly committee meetings which appear in your columns. Except for the alteration of names and figures these are precisely the same as they were ten or twenty years ago, and never contain anything likely to attract the least interest.—I am, etc.,

Portishead, June 25th. W. G. DICKINSON.

TREATMENT OF SYPHILIS.

SIR,—The report of my remarks in the discussion on syphilis and its treatment before the Royal Society of Medicine, on June 14th (published in the BRITISH MEDICAL JOURNAL, June 25th, 1910, p. 1547), is misleading. What I insisted on was as follows: "That syphilis should be treated for *at least* four years, vigorously during the first two, then less so for another two; after that the patient should have further courses of mercurial treatment at intervals." (Italics mine.) Moreover, I did not say that after four years' treatment it should be *completed* by a *last* course about the seventh year. The treatment of syphilis is not so simple as that, and one cannot be dogmatic as to when treatment is "completed" (a word I never used), and as to which is the last course. In referring to further treatment about the seventh year, as a matter of routine, I mentioned the fact that Fournier, analysing his cases of general paralysis, noted that 65 per cent. developed between the sixth and twelfth year, and advocated another year's treatment about the seventh or eighth year, which seems rational enough.—I am, etc,

London, W., June 27th. GEORGE PERNET, M.D.

NASAL CAUTERIZATION IN ASTHMA.

SIR,—Mr. H. T. Butlin, in an article, "Remarks on Spiritual Healing," in the current number of the BRITISH MEDICAL JOURNAL (June 18th, 1910), says:

> There are cases having all the characters of severe asthma which are cured or relieved by a single application of the galvano-cautery to the nose, or by the use of an inhaler for a few days. When a medical man claims to have cured nearly 200 cases of asthma out of 400 which he treated by the application of the galvano-cautery to an apparently sound mucous membrane, it is only reasonable to expect that some of these sufferers might have been cured as completely by faith without the cautery, as by faith in addition to the cautery.

As far as the patient is concerned it matters little whether it is by faith or other means that he is cured as long as he gets relief, and I should not seek to trouble you now with reference to the matter, only that a very important therapeutic measure is involved, the curative effect of which is capable of indefinite extension in the treatment of all the vasomotor neuroses, while these remarks coming from such an authority as Mr. Butlin, tend to retard its proper investigation and developement.

I am aware that in some few cases the results in asthma are so sensational that at first one cannot help feeling much must be due to suggestion, but there is strong evidence against its playing any part in the treatment. Thus:

1. Many of the best results are obtained in the most incredulous patients.

2. Good results are obtained in children who are too young to know the object of the treatment.

3. In some cases good results are obtained after prolonged treatment when the patients have given up all hope.

4. Some operators who are unsuccessful at first, become proficient when they have mastered the details of the technique.

5. If suggestion were the chief factor, one would expect immediate complete but temporary relief, whereas in the majority of cases the improvement is gradual and permanent, while in many it is great but incomplete.

6. Frequently relief is obtained by the lightest touch, although the patient had been previously cauterized severely without any benefit.

There is no doubt that nasal cauterization has a profound effect upon the vasomotor system, and this effect depends upon the manner in which and the spot where the cautery is applied. What we need to do is properly to investigate the phenomenon, and not merely pass it over with the sneer of "suggestion" because we cannot understand it.—I am, etc.,

London, W., June 18th. ALEXANDER FRANCIS.

A MEANS OF RESCUE IN TIDAL DROWNING.

SIR,—With regard to Dr. Jones's letter hereon, may I point out that a bicycle pump is nearly always available. If the tube from one of these be passed into the bucket and the pump (the larger the better) kept working continuously, the removal or change of bucket is obviated, and the process may be continued almost indefinitely.

It is, of course, advisable that a short code of signals, by means of a piece of string or otherwise, should be arranged before the water rises.—I am, etc.,

East Malling, Kent, June 20th. ARTHUR D. PARR-DUDLEY.

THE PATHOLOGY OF "PERNICIOUS" ANAEMIA.

SIR,—In his clinical lecture on a case of pernicious anaemia having changes in the spinal cord, Dr. W. Hale White states that: "As so much free iron is found in the

liver, I suggest that the destruction of red cells and haemoglobin takes place somewhere in the portal area, and the free iron is consequently deposited chiefly in the liver."

It hardly seems necessary to point out that this theory was advanced by Hunter in 1888, and it is curious and interesting to find the same hypothesis put forward by Dr. Hale White without the slightest reference to Hunter's work.

The question of whether the site of deposit of iron is any clue to the site of haemolysis has, however, received varying answers. Thus Cabot (in Osler and McCrae's *System*) says: "It has been shown, however, that when haemolytic agents are introduced through the blood stream itself, these iron deposits occur in the same way as in pernicious anaemia of the ordinary type. We have no reason, therefore, to find in the hepatic iron deposits an evidence that the haemolytic process takes its origin from the gastro-intestinal tract."

In two cases of typical pernicious anaemia in the Bristol Royal Infirmary—one in 1901 under Dr. Shaw, and the other in 1906 under myself—it was found that no iron deposits stainable by ferrocyanide and hydrochloric acid occurred in the liver, whilst very numerous iron granules were present in the convoluted tubules of the kidneys. In the latter case the findings were verified by microscopic examination. Insomuch as no analysis of the total amount of iron in these organs was made, and as Hopkins states that the intensity of staining by ferrocyanide and hydrochloric acid is not proportional to the total amount of iron present, the cases referred to cannot be considered as showing that iron may be exclusively stored outside the portal circulation in this disease, but they suggest that such cases may be found.

Dr. Hale White says that, "any changes in the spinal cord are uncommon in pernicious anaemia." But this is surely not true. Thus Cabot says that, "Lesions have been found in 82 cases (84 per cent.) of those examined, while in only 14 was the cord examined and found to be normal."—I am, etc.,

Clifton, Bristol, June 12th. F. H. EDGEWORTH.

SHIP SURGEONS.

SIR,—The note on ship surgeons, published in the JOURNAL of May 21st (p. 1257), merits a wide publicity among the travelling public, who are as vitally interested in the subject as the profession; but, in fairness to the majority of shipowners, exception must be taken to the statement contained therein: ". . . And making additions to the medical and surgical outfit of the ship of things he may consider necessary, but which are not officially approved. . . ." "Surgeons' extras" are the rule in most companies—in some on quite a liberal scale. The matter of washing bills, too, can hardly be said to depend upon anybody but the surgeon's own sense of personal cleanliness and decency.

Steamship companies, however, are hardly compelled to make their choice of medical officers from the sections of the profession as outlined in the article. Should they so desire it, they could very easily make their respective services attractive to the best members of the profession—those in whom a real liking for the sea was coupled with clinical keenness. Nobody can for a moment deny the existence of a vast clinical field in the modern leviathan of to-day, to say nothing of a form of specialism essential to satisfactory service in ships engaged in the trade between England and the United States.

Shipowners cannot be looked upon as philanthropists to provide positions for sea-loving medicos. They are purely commercialists, governed by the universal law of commerce—supply and demand. As long as the supply is to be obtained at current rates, why should they be expected to provide higher ones? Apparently the shipowners, and incidentally the law, are perfectly satisfied with the manner in which their ships are "doctored"; they are therefore not likely to alter the existing order of things solely for the benefit of their medical employees.

That such a change is eminently desirable cannot be denied for a moment, especially so from the point of view of the travelling public, who are real sufferers for the present system. There is no reason to believe that they would not be willing to pay for medical attendance if called upon in the routine way; many, as it is, evidence this willingness unasked. The general opinion of the travelling public in regard to ship surgeons as a class is unfortunately not very high. The reason for this is not far to seek; the vicious circle of poor pay and prospects gives rise to poor practitioners and practice.

As previously mentioned, the shipowner individually cannot be expected, and is certainly not likely, to improve conditions. The solution of the matter rests entirely with the medical profession. There is but one way and one word for this end—combination.

The sooner a combination of ship surgeons is formed under the auspices of the British Medical Association the sooner will such desirable changes be brought about. Until this is done, there is nothing much to be hoped for. That such a combination will be very difficult to effect is evidenced by the very nature of ship surgeons' work—they are here to-day, gone to-morrow, always difficult to get into communication with when scattered all over the world, and sailing from so many various home ports—London, Liverpool, Southampton, Glasgow, etc.

However, a scheme for the furtherance of this object is under consideration at present. Details will be published later, when it is hoped that all seagoing members of the British Medical Association will respond. In so doing they will demonstrate once again that in matters medical, as in others, "Union is strength."—I am, etc.,

MEDICUS NAUTICUS.

TRACHEOTOMY DURING ADMINISTRATION OF NITROUS OXIDE GAS.

SIR,—I have been much interested in the case recorded by Messrs. Relph and Rood in the JOURNAL of May 28th, p. 1287, of an accident during the administration of nitrous oxide gas, death being averted only by the performance of tracheotomy. While the authors are to be congratulated upon the promptness and success of their interference, I venture to suggest that the choice of anaesthetic was unfortunate.

A simple classification of the conditions which contra-indicate the use of nitrous oxide is as follows: First, cases in which an asphyxial condition is already present; and, secondly, those in which the patient is suffering from any condition which will be aggravated by the supervention of any degree of asphyxia. At first sight, the case in question might appear to fall into neither of these two groups. But it seems not unreasonable to suppose that when the temporo-maxillary joints are so severely affected that the mouth can only be opened for the distance of one-third of an inch, the relations of surrounding parts may be considerably altered, and that the root of the tongue, the epiglottis, and the ary-epiglottidean folds may be normal neither in texture nor mobility.

A patient who develops obstructed breathing while under an anaesthetic undoubtedly enters a vicious circle. The obstruction leads to an asphyxial condition of the blood; through its irritant action upon the cerebral centres this leads to exaggerated respiratory efforts, with resulting swelling of the lining of the upper air passages, and also to a widespread muscular spasm—both of which materially increase the the obstruction of the airway.

Bearing these facts in mind, it would appear that no person in whom the tissues of the neck are altered, either in their texture or relations, in such a manner that the slightest suspicion of respiratory embarrassment can be entertained should have gas—nor, indeed, any closed anaesthetic.

I would suggest that for this class of case no anaesthetic can compare with chloroform, given carefully and with a free supply of oxygen.—I am, etc.,

J. STUART ROSS,
Anaesthetist to the Edinburgh Dental Hospital; Anaesthetic Instructor in the wards of the Royal Infirmary, Edinburgh.

THE PSYCHOLOGY OF THE CONSUMPTIVE.

SIR,—Your excellent leading article on the Psychology of the Consumptive, together with the various contributions on Faith and Mental Healing by eminent medical men, are significant signs of the times, and would mark the beginning of a new era in the evolution of therapeutics. The Occident is so thoroughly materialistic that

it is quite refreshing to see you emphasize the psychological aspect of disease and its treatment. The main aim of my recent book on pulmonary tuberculosis was to insist that consumption, in common with other diseases, should be viewed and treated from all sides of man's life—physical, mental, and spiritual.

The open-air treatment has been a distinct advance on the old régime. Regulated exercise and manual work went a step further than the treatment by mere fresh air, feeding, and rest. Now we see that we must go further still if we are to treat consumption with any measure of success. I was considered a heretic when I pointed out that tubercle bacilli play only a secondary part in the etiology of consumption when compared to the mental condition of the patient, and that the undermining of the nervous system by worry and anxiety is the main cause that determines the starting-point and the progress of the disease. I am glad that the medical profession is now coming round to the view that man is more than the body, and that psychic treatment is as important, if not more than, the physical treatment in the cure of disease.

If disease be a discord, health can only be restored by bringing harmony and peace between the various elements of which man is composed. This is why we read that the great Master healed the body by bringing peace to the inmost soul. The ancient Brahmins of India combined in their persons the offices of physician, philosopher, and priest, which represent the functions of the body, the mind, and the spirit The personality of the doctor, his enthusiasm, genial surroundings, set in motion currents in the higher plane of the patient, inspiring his faith and exerting a healing influence over his lungs. To treat consumption successfully the sanatorium physician should recognize the psychic forces and conditions of the patient, and constantly endeavour to create a stimulating atmosphere of faith, hope, and courage, and in a variety of ways appeal to the higher planes of the mind and the spirit to bring about healing.—I am, etc.,

Wells, June 25th. C. MUTHU.

FOOD AND ENERGY.

SIR,—I have read with interest the review of a book by Dr. Rabagliati in the JOURNAL of June 25th, p. 1552. I have not yet had an opportunity of reading the book, but from the perusal of a pamphlet by the same author, published in 1907, I am familiar with his views.

I wish to draw attention to the proposition contained in the book referred to, that food is not the source of the energy of the body. This is, as your reviewer moderately puts it, an inversion of the generally accepted view, and in the nature of things it is at present inevitable that the seeds of such an idea should, for the most part, fall upon stony ground.

Dr. Rabagliati tells us that the idea was suggested to him by an American layman, and, indeed, it is not new. One modern seer has expressed the same thought when he says: "It is not the food that you eat that has to vivify you but you that have to vivify the food." While another writer has said: "Food meets a normal demand; not to add more life, but to furnish material for life's outward expression."

What I wish to suggest is that we should—for a brief space, at any rate—entertain the idea, treat it kindly, and examine it, that we may see if it holds for us any possibilities of truth. I am impelled to suggest this partly because, to my unorthodox mind, there is much that is fascinating in the theory, but chiefly because, if perchance it should prove to possess truth, the practical deductions are of extreme and far-reaching importance.

Chittenden, in his book, *The Nutrition of Man*, says that "the energy by which the vital machinery is maintained in ceaseless activity comes from the breaking down of food materials, by means of which, as the saying goes, the body is nourished." This, I take it, is the accepted view of physiologists to-day. Is the evidence in support of this incontestable, or have we grown accustomed to accepting the statement without examining the evidence on which it is based? The taking of food under proper conditions is capable of unlocking our stores of energy. Energy is required for the work of digestion, and must be already present in the body before digestion can commence. Food shares with other things—ideas, for instance—this power of unlocking energy; but the question at issue is whether the stored energy originally came from the breaking down of food materials taken at previous meals.

If energy is not produced in this way, where, then, does it come from? We may speculate on the answer, but I think we must be content, in the meantime, to say with Emerson, "Our being is descending into us from we know not whence."

I am not concerned at present to discuss the practical results of accepting this proposition, but that it would modify our food habits in the direction which Dr. Rabagliati suggests is, I think, fairly certain. Regarding these suggestions, your reviewer says that they would require for their realization "not only a new heaven and a new earth, but also a new race of men." Well, Sir, is it not the hope of these things, vague and undefined though it be, together with an instinctive belief in the possibility of their realization, that unlocks the energy which impels us forward?—I am, etc.,

Edinburgh, June 25th. H. TORRANCE THOMSON.

Public Health AND POOR LAW MEDICAL SERVICES.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Reigate Borough.—The population, at the middle of 1909, as estimated by Dr. A. E. Porter, the medical officer of health, was 29,000. The birth-rate was 19 per 1,000 and the adjusted death-rate 11 per 1,000. The infantile mortality-rate, which has only once been above 100 during the past ten years, was equal to 86 per 1,000 births. At the middle of last year Dr. Blackler was appointed school medical officer and assistant medical officer of health of the borough, so that very complete co-operation has been possible with respect to administrative measures concerned with infectious diseases. There occurred during the year 40, all non-fatal, cases of diphtheria. This number is less than those recorded in previous years, a fact due in some measure to the energy which Dr. Porter displayed in searching for contacts among school children. He examined bacteriologically material taken from the throats and noses of all the children in an affected school whose appearance was suspicious. Antitoxin was provided gratuitously by the corporation in necessitous cases, both for prophylactic and curative purposes. There were treated in the hospital 27 cases, and no patient was discharged until three successive bacteriological examinations had given negative results. There are 14 private slaughter-houses scattered over the borough; effective supervision must, therefore, be difficult of attainment.

DELAY IN CLAIMING PAYMENTS.

THE medical officer of a rural district who has an arrangement with the guardians entitling him to make a special charge for "expensive drugs" omitted to send in his account for the quarter ending March, 1909, until the following September. He has been informed that the guardians cannot pay him without an order from the Local Government Board, and that the Board has refused to make the necessary order. He asks whether he can now claim.

*** We are afraid our correspondent will find his claim to be of too long standing to be recoverable at law, as under 22 and 23 Vict., c. 49, Sec. 1, any debt which may be lawfully incurred by any board of guardians shall be paid within the half year in which the same shall have been incurred or become due, or within three months after the expiration of such half year, *but not afterwards*. The Local Government Board may by order, if it see fit, extend the time within which such payment shall be made for a period *not exceeding twelve months* from the date of such debt. We take it that the debt in question became due on March 25th, 1909, and, if so, a period of fifteen months has now elapsed since the liability was incurred.

CAPTAIN LEONARD BOUSFIELD, M.D., Royal Army Medical Corps, has received the Royal permission to accept the Imperial Ottoman Order of the Medjidieh, Fourth Class, conferred upon him by the Khedive of Egypt, in recognition of valuable services rendered by him.

Obituary.

CLAUD MUIRHEAD, M.D., F.R.C.P.E.,

EDINBURGH.

WE regret to record the death, in his 75th year, of Dr. Claud Muirhead, one of the senior members of the medical profession in Edinburgh. Although evidences of failing strength had recently been noticed by some of his friends, Dr. Muirhead was fully occupied with all his professional activities up to the time of his death, which took place during sleep early in the morning of June 22nd. By his death Edinburgh loses one of its most eminent and esteemed medical men.

The son of the late Mr. Claud Muirhead, proprietor of the *Edinburgh Advertiser*, and a well-known citizen, Dr. Muirhead was educated with the view of entering the Church, but during his college course altered his plans, and took to the study of medicine. He graduated M.D. at the University of Edinburgh, in 1862. After a lengthened period of study in the medical schools of Berlin, Vienna, and Paris, Dr. Muirhead returned to Edinburgh and obtained the post of House Physician in the Royal Infirmary, in the wards of Dr. Warburton Begbie, with whom he came to be on terms of the warmest friendship, which continued up to the time of Dr. Begbie's lamented death. He was also for a short period associated with Dr. (afterwards Sir Douglas) Maclagan as assistant in his practice. He became a Fellow of the Royal College of Physicians, Edinburgh, in 1865.



Photograph by CLAUD MUIRHEAD, [illegible]

In 1869 Dr. Muirhead was elected, along with Dr. (now Sir Thomas) Fraser, an Assistant Physician to the Edinburgh Royal Infirmary, chiefly to take charge of the fever wards, and it was during his tenure of this office that he published in the *Edinburgh Medical Journal* "An Account of Relapsing Fever in Edinburgh in 1870," which attracted considerable attention at the time and has often since been referred to in works on the subject. In 1876 Dr. Muirhead was promoted to be an Ordinary Physician to the Infirmary, and during the fifteen years he held this appointment made for himself an excellent reputation both as a physician and teacher of clinical medicine. He was especially strong in therapeutics. After the expiry of his term of office he was appointed a Consulting Physician to the Infirmary.

For several years Dr. Muirhead was Physician to Chalmers's Hospital, and he held the honorary appointments of Consulting Physician to Leith Hospital, to the Deaconess' Hospital, and to the New Town Dispensary.

In 1893 Dr. Muirhead joined the Board of Management of the Royal Infirmary, and held this office for ten years. As Convener of the Committee of Medical Managers he rendered important and much appreciated service to the institution.

Dr. Muirhead was for many years prior to his death the Chief Medical Officer of the Scottish Widows' Fund, and in this capacity he published a valuable monograph on *The Causes of Death Among the Assured, 1874–1894*.

In his early hospital years Dr. Muirhead had to deal with several epidemics of small-pox, typhus, and enteric fever, and the experience he then gained was turned to good account when later on he held the post of Visiting Physician to the City Fever Hospital.

As a physician Dr. Muirhead was a keen observer, and was gifted with a sound clinical judgement and abundant therapeutic resource. He long had an extensive practice, and was often employed as a consultant. Although of a somewhat retiring disposition, he possessed a genial spirit and great kindness of heart. By his patients he was greatly esteemed, and his encouraging presence and words had an inspiring effect upon them.

Early in his career a great sorrow overtook him, after a short married life, in the death of his wife and afterwards of his only child. A man of high Christian character and generous nature, Dr. Muirhead's benefactions to the poor and suffering were manifold, but his alms were done in secret.

The tidings of the death of their beloved "chief" will be lamented by his former residents in many parts of the world.

Dr. NORMAN WALKER writes: I first met Muirhead when I was a clerk with Joseph Bell. Occupying the posts respectively of Senior Ordinary Physician and Surgeon to the infirmary, these two "consulted" each other when necessary. It was in this capacity that I first saw Muirhead, and his manner of dealing with patients so impressed me that I decided there and then to learn my clinical medicine from him. In the summer of 1885 I had the privilege of acting as his House-Physician, and the intimate relations then established have been maintained ever since.

Dr. Muirhead's connexion with the Royal Infirmary was close and long. He was Resident Physician in 1864; he was appointed Assistant Physician in 1869, and served in this capacity for seven years. As Senior Assistant Physician he had charge of the fever wards in the old infirmary, and it was there that he laid the foundations of his reputation. In 1876 he was promoted to the full physiciancy, and became one of the regular clinical teachers. He was never a very popular teacher in the sense of attracting huge crowds of students to his wards, but those who followed him derived much benefit from observing his shrewd management of each individual patient.

His chief interests were in pulmonary and skin diseases. Of the latter he had a considerable museum of wax casts, which he brought with him from Baretta's Museum in Paris; some of them are in the Skin Department to-day. In the treatment of acute lung disease he was specially expert, and his therapeutic readiness and resource tided many an anxious pneumonia over the crisis. He was a firm believer in stimulants, and bad pneumonias received absolute alcohol in liberal doses. During the later years of his physiciancy he enjoyed an extensive consulting practice, but after leaving the hospital this fell away, and he quietly and contentedly took up his general visiting practice again. All his life he was active in connexion with the College of Physicians. For many years he was a member of its Council, and he died one of its trustees. His shy, retiring nature caused him to decline the presidency, which was more than once pressed upon him.

He was above all things a practitioner. Brought up under Begbie, whose assistant he was, it was to the

practical side of things that his attention turned. He was always ready with some useful suggestion in an anxious case, and though his manner was very different from Begbie's, he had the same knack of inspiring a confidence which helped to pull many a patient through.

Shortly after his retirement from the active staff he was appointed a manager of the infirmary, and he served in this capacity for ten years, during most of which time he was Chairman of the Medical Committee. He made an excellent manager, he was trusted both by his lay and medical colleagues, and his ready tact smoothed away many difficulties. In the difficult duty of electing to the staff he took altogether exceptional trouble to find out which was really the most suitable of the applicants, and it was always for him that Muirhead's vote was cast.

His private life was sad. His wife, a Miss Torrie, died a year after their marriage, and their only child soon followed her mother to the grave. A little marble bust standing in his consulting room was all that remained to him of family life. But he never grew soured, and though he went little into society, he always welcomed old friends who went to see him, and his interesting conversation usually made the visit much longer than was intended. Though outwardly shy and gentle, he was a man of very strong convictions, and when he was convinced of the justice of a cause he spared no pains to achieve its success. Many a young man in Edinburgh owes more to Muirhead than he will ever know. He died as he would have wished, in harness; his life was tranquil, and his end was peace.

The funeral, which took place on June 27th at Warriston Cemetery, was attended by a large assembly of mourners, including Dr. John Playfair, Vice-President of the Royal College of Physicians of Edinburgh; Sir William Turner, Principal of Edinburgh University; and Mr. W. Mure, C.B., representing the Scottish Widows' Fund Life Assurance Society. The managers of the Royal Infirmary, who were also represented at the funeral, at their meeting on the same day unanimously adopted, on the motion of Dr. Affleck, a resolution which concluded in the following terms:

> His intimate acquaintance with, and interest in, the affairs of the infirmary, together with his practical sagacity and calm judgment, were ever a source of strength in the counsels of the board, while his uniform urbanity and kindness of heart won for him the regard and affection of his colleagues. The managers lament the loss of one who proved so worthy and generous a friend to the infirmary, and they desire to place on record their grateful and heartfelt tribute to his memory.

JOHN EDGAR, M.A., B.Sc, M.B., C.M.,

SENIOR SURGEON, SAMARITAN HOSPITAL FOR WOMEN, GLASGOW.

The intimation of the death of Dr. John Edgar at the early age of 48 came as a great shock and surprise to his many friends and professional brethren in the West of Scotland. We understand that the cause of death was a gangrenous appendix. He had experienced slight threatenings of abdominal trouble on several occasions, but in the past these had readily yielded to treatment. The fatal attack began somewhat in the same way, but when surgical aid was called in the condition was found so serious that little help could be held out, and within three days of the operation the end came.

Dr. Edgar received his medical training at Glasgow University where he had already obtained the degree of Master of Arts. His college career was distinguished by many appearances in the prize lists, and he was awarded the medal in Practical Pharmacy. In 1886 he graduated B.Sc., and an year later took the degrees of M.B., C.M.

From the first he seems to have formed the intention of devoting himself to women's diseases, and to further his plan he attended post-graduate classes abroad, and studied at Vienna and Berlin.

Early in his career he acted as resident surgeon and physician, and as clinical gynaecological assistant in the Royal Infirmary. Subsequently he became attached to the Maternity Hospital, and obtained valuable clinical experience, first as resident surgeon and later as a district physician. He rose to be assistant physician, and met with the reward of strenuous diligence when, in 1896, he was appointed visiting surgeon to the Samaritan Hospital for Women. This post he filled with great distinction, and retained till the end of his life, when he had become the senior surgeon on the staff. Popular with his professional friends and his patients, he soon built up a large practice, and in later years his services as a consultant were in great demand.

In addition to his clinical work, Dr. Edgar was prominent as a teacher. In 1896 he succeeded Dr. W. L. Reid in the chair of midwifery and gynaecology at Anderson's Medical College, and the successive generations of students benefited by his clear teaching. Previous to this appointment he had acted as assistant to the professor of midwifery at St. Mungo's College.

Dr. Edgar became a Fellow of the Faculty of Physicians and Surgeons in 1896. He was a prominent member of the various local medical societies, and held office in many of them. He was an ex-vice-chairman both of the Obstetrical and Gynaecological Society and of the Medico-Chirurgical Society. His contributions to these societies were numerous, and he was a frequent participator in the debates. Many of his contributions appear in the *Transactions* of the Obstetrical Society, but in addition he contributed many valuable papers to the leading medical journals.

Apart from his medical work, Dr. Edgar took a prominent part in the religious sphere. He held strong views. His well-known lecture on *Where are the Dead?* has reached a circulation of over 40,000, and has been delivered all over Great Britain. His interests in religious matters led him quite recently to undertake a trip to Palestine and Egypt, and we understand that there is a book in the press dealing with certain researches which he and his brother carried out in the East.

Medico-Legal.

ACTION AGAINST DENTAL HOSPITAL, DUBLIN.

In our issue of February 19th (page 482) we reported the result of an action taken by a Mr. Myles Keogh against the Incorporated Dental Hospital, Dublin, for an alleged libel contained in the resolution, "That Mr. Keogh cannot be accepted as a student at this hospital, the committee having the right by their by-laws to refuse any student without assigning cause," which was forwarded to the plaintiff in response to his request to be admitted as a student at the Dental Hospital. It was further contended that the alleged libel had been made public owing to the fact that in the plaintiff's absence the letter containing a copy of the resolution had been opened and read by his clerk. Judgement was given for the defendants, but a motion was entered for a new trial. This motion has now been refused and the previous judgement confirmed by a decision in the King's Bench Division that the resolution was not in itself libellous, and that the alleged publication was one for which the defendants were in no way responsible. The court was of opinion that the by-law authorizing the committee to refuse any student without assigning a cause was a wise rule, and that compliance with it did not involve an imputation of a defamatory character on a particular candidate for admission.

DEATH AFTER EXTRACTION OF TEETH.

An inquest was held at Bandon, co. Cork, on June 23rd, touching the death of a girl aged 19, who had died the previous day from haemorrhage following the extraction of six teeth by an unregistered dentist. Evidence as to the cause of death was given by Dr. Bennett, who stated that in his opinion the patient had been in an unfit condition to undergo the extraction of so many teeth. The dentist, a Mr. Tuff, was present during the inquiry, but, after consultation with his solicitor, determined not to give evidence. The coroner spoke strongly on the present state of the law, which permits men to go about the country exacting fees and endangering the lives of the people with impunity, and told the jury that if they believed the death to have been caused by the operation they ought to say so. The jury found that the deceased died from haemorrhage caused by the extraction of six teeth while she was not in a fit physical condition to be operated on, and added a rider condemning the action of unqualified dentists going round the country doing the work of qualified dentists.

WORKMEN'S COMPENSATION ACT.

Suspensory Awards.

When a man who has been in receipt of compensation has recovered, it has been the recognized practice in England to make an award of a nominal amount—for example, 1d. a week—in order that if incapacity should again supervene he may apply again for compensation. The Scottish court, however, has refused to adopt this practice. In a recent case (Court of Session, June 3rd) it appeared that a medical referee had been asked to examine an injured workman. In his report he stated that the man was not incapacitated, and was able to do his ordinary

work; but that while certain ruptures caused by the accident did not prevent his working at present they might, and probably would, become more marked as time went on, and so prove detrimental to him. The sheriff substitute made a suspensory award, but the Court of Session held that he had no power to do so. The Lord President said that he declined to follow the practice of the English courts, for which he could find no sanction in the Act itself. There being no evidence of actual incapacity at the time, the sheriff substitute should have ended the compensation.

Advantage of Employing a Medical Assessor.

In a case at Ilkeston (May 27th) a colliery company applied for the termination or reduction of the compensation paid to a workman.

Evidence was given that the respondent was injured while working at the Cossall Colliery, and that he was paid 16s. 2d. per week compensation. He then tried to resume work, but complained he could not carry out his duties.

Dr. Anderson, of Nottingham, said he examined respondent. He could not say he was not fit to do ordinary colliery work. He could not make him out.

Dr. J. J. Tobin, of Ilkeston, said respondent was suffering from weakness of the spine, and witness did not think he could do any work involving bending. He was a typical neurasthenic.

His Honour suggested that respondent should be examined by Dr. Court (who was sitting as medical assessor), and this took place in an ante-room. At the conclusion His Honour said he had come to the conclusion that respondent was not fit to resume his old occupation, and the application would be dismissed with costs.

Loss of an Eye.

In a case at Sheffield (May 26th), a machinist had met with an accident which caused him to lose the sight of one eye. He received weekly compensation for some time, but the employers then applied to have the payments terminated on the ground that the man could resume his old work. It was proved, however, that the work required the keenest of eyesight, the tools of the machine having to be adjusted to a sixty-fourth part of an inch. After trying to do this work for some time the man found it hopeless. In the event, the county court judge refused to terminate the award. This case may be compared with one which was decided recently by a London county court judge. He held that, in the case of a domestic servant one eye was, for all practical purposes as good as two, and he made a suspensory award of 1d. a week.

Osteo-myelitis.

In a case at Rotherham (May 27th) it appeared that a collier had had his wrist crushed between two corves on February 8th. Various operations having been performed, the arm was amputated on March 3rd. According to the medical evidence adduced on the part of the applicant, he was suffering from osteo-myelitis, it being contended that this disease was caused to assert itself by the blow on the arm. On behalf of the employers an affidavit was read in which Dr. Bell, late of the Rotherham Hospital, expressed the view that the organism had entered the system from a carbuncle between the shoulders. The learned judge, who was assisted by Dr. Cuff as medical assessor, made an award in favour of the applicant of 9s. 1d. a week.

CONTRACTS NOT TO PRACTISE.

DELTA writes: (1) Several years ago A. sold his practice to B. under an agreement not to practise in the district for ten years. It is now desired to extend this period, and A. is willing to sign an agreement for such extension without any consideration whatever; but he has been told that such an agreement would not be binding without some consideration. (1) Is it usual for agreements not to practise to be for limited periods, or without limit as to time?

*** (1) Unless the agreement be by deed, some consideration is necessary on the principle *nuda pactio non parit obligationem*, but the consideration need only be nominal. Where the agreement is by deed, no consideration is necessary. (2) It is usual for such agreements to be for limited periods of time. Such covenants are technically known as "covenants in restraint of trade," and will not be enforced by the courts unless they can be shown to be reasonable. A covenant not to practise in a district for an unlimited period of time might in some circumstances be considered unreasonable.

AN International Congress of Forensic Medicine will be held this year at Brussels from August 4th to 10th. The programme of discussions is not restricted to forensic medicine, but will include psychological medicine, bacteriology, toxicology, and legislation in relation to legal medicine. Governments, academies of medicine, universities, and associations of chemists and toxicologists have been invited to send delegates. An exposition of apparatus and medical instruments will be held in connexion with the congress. All information will be supplied on application to the General Secretary, Dr. C. Moreau, Rue de la Gendarmerie, 6, Charleroi; or the Treasurer, Dr. Héger Gilbert, Place Jean Jacobs, No. 9, Brussels.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examination indicated:

FINAL M.B., B.C. (*Part II*).—H. L. Attwater, T. R. H. Blake, L. S. T. Burrell, N. L. Clarke, C. N. Coad, A. E. Cullen, M. E. Dellschaft, G. W. Dryland, W. H. F. Eales, D. Embleton, J. T. Fox, S. Gordon, R. H. P. Hick, R. F. Higgin, J. S. Jobson, K. T. Khong, G. C. Lim, C. G. H. Moore, E. E. Paget-Tomlinson, W. M. Penny, L. Powell, F. E. W. Rogers, L. M. Routh, H. C. Snell, E. R. Stone, R. J. Vernon, C. StA. Vivian, W. E. Wallis, T. A. Weston, M. H. Whiting, N. S. Williams, H. B. Wilson.

Degrees.

The following degrees have been conferred:

M.D.—S. A. Henry, Trin.: H. Ackroyd, Gonv. and Cai.

B.C.—C. W. Archer, Trin.

The Raymond Horton-Smith Prize for 1910 has been awarded to R. W. S. Walker, M.D., of Trinity College, for a thesis entitled Clinical Observations on Congenital Diseases of the Heart.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—*†J. Cree, *W. H. Hooton, *†W. E. North-Smith.

MEDICINE.—*A. C. Dickson, *†E. M. E. Hall, *†W. H. Hooton, *M. S. Jevons.

FORENSIC MEDICINE.—W. J. Gibson, W. H. Hooton, G. Meyer, C. J. Thompson.

MIDWIFERY.—N. B. Darabsett, A. Y. Massey, T. F. O'Mahony, C. Pyper.

*Section I. †Section II.

The Diploma of the Society has been granted to Mr. J. Cree.

Medical News.

THE Queen has become Patron of the Chelsea Hospital for Women.

THE Queen has sent a donation of £100 and an expression of her best wishes for the success of the endeavour of Prince Francis of Teck to raise £20,000 for the Middlesex Hospital.

THE Poplar Borough Council, at its meeting last week, recommended that ophthalmia neonatorum should be added to the list of diseases which must be notified compulsorily under Section 55 of the Public Health (London) Act.

THE *London Gazette* of June 24th announces the appointment of Sir Frederick Treves, Bart., G.C.V.O., C.B., to be a member of the Royal Commission on Divorce and Matrimonial Causes, in the room of Sir R. D. Isaacs, K.C., resigned.

ON Monday, June 27, a medical Rose Croix Chapter was duly consecrated by the M.P.S. Grand Commander, the Right Hon. the Earl of Dartrey, 33°, and Ill. Bro. George Frederick Rogers, M.D., 31°, was installed as the first M.W.S.; Ill. Bro. A. W. Oxford, M.D., 32°, to whose initiative the foundation of the Chapter is mainly due, is Recorder.

A PRELIMINARY meeting was held on June 23rd at the St. Marylebone General Dispensary for the purpose of founding a new society with the title, Society of Officers of "Infant Consultations." The purposes of the society are to bring together those engaged in preventive and hygienic work of the kind; to co-ordinate their work, and to help in promoting similar institutions. The meeting, which was well attended, elected a provisional executive committee and officers. The first general meeting to confirm the resolutions, will be held in October next. The honorary secretaries *pro tem.* are Dr. Ronald Carter, 11, Leonard Place, Kensington, W., and Dr. J. Claypon, Belgrave Hospital for Children, to whom enquiries may be addressed.

THE National League of Physical Education, founded at Brussels in 1907, is organizing an International Congress of Gymnastics, to be held in that city on August 4th, 5th, and 6th. The object of the congress will be the study of the various methods of physical education from the educational and military, as well as from the medical and aesthetic point of view. The work of the congress will be distributed among five sections: (1) Paedagogic gymnastics (President, Professor L. M. Torngren, of the Royal Central Institute of Gymnastics of Stockholm); (2) sports, military training, etc. (President, M. Knudsen, of Copenhagen, Inspector of Gymnastics in Denmark; Lieutenant Grenfell, Inspector of Gymnastics in England, is one of the vice-presidents); (3) rhythmical gymnastics and callisthenics (President, M. Jaques-Dalcroze, Professor in the Conservatoire of Geneva); (4) medical and special gymnastics (President, Dr. Edgar F. Cyriax, of London); (5) gymnastic physiology and psychology, hygiene of movement

(President, Professor Dr. Schmidt, of Bonn). Information as to the congress may be received on application to the Secretarial Office, rue de Chasseurs, 16, Woluwe-St.-Pierre, Brussels.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, W.C., on Friday, June 17th, Dr. de Havilland Hall in the chair. The two most noticeable features of the year, so far, have been the comparatively small number of claims experienced as against the expectation and the great increase of members wishing to secure a larger weekly amount of sickness benefit. This fact seems a proof of the satisfaction of members and their confidence in the Society. That this is so is doubtless due to the prompt settlement of their claims and the large reserves which have been accumulated since the foundation of the Society in 1884. A letter was read at this meeting from a member expressing thanks and gratification to the Committee after an illness lasting 470 weeks, and for which he has received in sickness pay over £800. The total amount paid away in sickness pay is now over £160,000, and many thousands of this have gone to those cases of practically permanent breakdown of which the above is a typical example. Prospectuses and all information can be obtained from Mr. F. Addiscott, Secretary, 33, Chancery Lane, W.C.

AT Sale sessions recently a man was convicted for neglecting his infant child in a manner likely to cause it unnecessary suffering, and was sentenced to six months' hard labour. He alleged that he had difficulty in finding any one to take care of the child; but evidence was adduced that he was addicted to drink, and had lost employment on that account. The infant was left with a woman who expressed her willingness to take care of the child until the father could find some suitable person. She was warned that she would be held responsible, and on May 3rd the infant was seen by a doctor, who advised its removal to the Manchester Eye Hospital, as it was in danger of losing its sight; but the father did not take it there, stating that he had no money. Two days later the inspector of the National Society for the Prevention of Cruelty to Children found the infant in a pitiable condition, with pus exuding from the eyes. Dr. Adolphe Renshaw was called to see it, and it was removed to Knutsford Workhouse. Dr. Renshaw stated that when admitted it weighed 8 or 9 lb., whereas it ought to have weighed 16 lb. The infant became very ill. The father was warned on May 7th, but did not go to see the child until May 10th, when he arrived drunk. The infant died four days later, and at the inquest the jury found that death had been accelerated by neglect. The case would appear to have been, as the chairman of the bench said, an extremely bad one, and is further proof of the need for the continued existence of the National Society.

THE annual meeting of the Society for Training Teachers of the Deaf on the Pure Oral System was, by the kind invitation of Mrs. Herbert Fletcher, held at 20, Devonshire Place, W., on June 22nd. The chair was taken by the Rev. H. A. Cumberlege, Vicar of St. Andrews, Wells Street. The report for 1909 (read by the Rev. Arthur S. Thompson, Honorary Secretary), was adopted. The Chairman gave a brief account of the year's proceedings, showing the useful work the society had done, on small resources, in training qualified teachers of the deaf on the pure oral system. It had done good service in furnishing teachers to elementary school special classes for the deaf throughout the country, and deserved more assistance from the State than so far it had obtained. The London Education Committee had been approached with the view of obtaining increased support. The report stated that the society were gratified to have taken part in the creation of a Joint Examination Board for teachers of the deaf, which had during the last year held its first examination, and had received the approval of the Board of Education. The students at the college and school had had the privilege of visiting and learning practical methods in the London County Council schools for the deaf, as well as in the society's own practising school at Ealing. Mr. Macleod Yearsley, F.R.C.S., had kindly lectured to the students on anatomy and physiology, and also acted as examiner in these subjects under the authority of the Joint Examination Board. His Majesty's Inspector had reported favourably upon the management of the school, and upon the careful individual teaching which each pupil had received. Unfortunately the finances of this society again showed a balance on the debit side, and an appeal was made for increased support on the part of subscriptions. Pupils are received on moderate terms at the residential school of the society, 47, Eaton Rise, Ealing, where also student teachers are trained under the principal and secretary, Miss Hewett.

Letters, Notes, and Answers.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

CARPUS asks for references to any publication in which the diagnosis of St. Paul's "thorn in the flesh" is discussed from the medical point of view, and inquires whether glaucoma is considered to be a probable diagnosis.

ANSWERS.

PITCAIRN ISLAND.

STAFF SURGEON, R.N., writes: I visited Pitcairn Island in June, 1907, in H.M.S. *Torch*, and if you have no later information the particulars given below may be of service to "Aero," who inquired the number of inhabitants at the present day (BRITISH MEDICAL JOURNAL, June 18th).

Age:	80–90	70–80	60–70	50–60	40–50	30–40	20–30	10–20	Under 10	Total.
Males ...	1	2	2	4	4	8	12	21	19	73
Females	—	1	3	1	10	11	12	14	19	71
Totals ...	1	3	5	5	14	19	24	35	38	144

I cannot vouch for the statement that the inhabitants are not vaccinated, but as the only medical men they ever see are those of men-of-war, and as the small ships that make this trip have no means of preserving lymph, it is extremely unlikely that they are.

LETTERS, NOTES, ETC.

MEDICAMENTS APPLIED TO UTERUS TASTED IMMEDIATELY.

DR. ALEXANDER DUKE (London) writes: Some time since, whilst making an application of Churchill's tincture of iodine on cotton wool to the cervical canal, the patient said, "I know what you are using, Doctor"; on asking her "What?" she said, "Iodine, for I can taste it in my mouth." Doubtful of her statement I substituted carbolic the next visit, and she at once said, "That is not the same drug you used last time, as it has quite a sweetish taste." I have several times since tested the truth of her statement with regard to immediate recognition by taste of the medicament applied on other patients, and find as a general rule they can guess the character of the drug used almost immediately by taste alone. I should very much like to know how the sense of taste can be called into action so rapidly, or if such has been noticed by other gynaecologists?

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An Address
ON
CERTAIN SUBJECTS OF SURGICAL INTEREST.

DELIVERED BEFORE THE ANNUAL MEETING OF THE SEVENOAKS DIVISION OF THE BRITISH MEDICAL ASSOCIATION.

BY HERBERT F. WATERHOUSE,
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THIS address will deal with subjects and methods many of which I have learnt from others, and my only claim to present them for your consideration is that I have given them an honest and critical trial, and can therefore speak concerning them from personal observation.

I crave indulgence if you consider that my observations be too elementary, and deal with matters quite familiar to you. My remarks are addressed not to the experienced surgeon but to the general practitioner, to whom surgical work comes as a part only of his daily routine. If it be considered that my conclusions are too dogmatic, I would plead that an experience of more than twenty years as a teacher of surgery has taught me that the more definitely and distinctly a statement is made the more it impresses the hearer. The student of to-day—and we are all students and always must be—has no confidence in the teacher who is not sure of his own statements. It is probable that some of the statements that I make will, in the near future, be proved erroneous; but I would urge that the man who never made a mistake never made anything, and I prefer to state my own views, whether they prove to be right or wrong, clearly and without hesitation, and to leave it to you to put them to the searching test of practical experience.

A.—STERILIZATION OF THE SKIN BY ALCOHOLIC SOLUTION OF IODINE.

This is a method that I can cordially recommend, as it is, in my opinion, the safest and easiest way to obtain sterilization of the skin prior to undertaking surgical intervention. A paper on this subject, by Mr. W. S. Fenwick, M.S., and myself, was published in the *Lancet* of April 16th, and to it I would refer anyone desirous of obtaining more detailed information than I have time to give here. Suffice it to state that in 150 operations, in some of which the conditions for the avoidance of sepsis were not easy, for example, a strawberry tumour of the umbilicus with marked eczema of the surrounding skin, union by first intention was obtained in 149, and in one case only was there slight suppuration, which was only noticed on the tenth day. The method is simplicity itself. The solution that I now invariably employ is 2 per cent. of iodine in rectified spirit. I have given a trial to various other solvents and strengths of iodine, and have found all inferior in one or other respect to this. Care must be taken that the solvent used be rectified spirit. In cases in which in error methylated spirit, and by design, acetone, were used in place of rectified spirit, intense conjunctival irritation was caused to the operator and his assistants by the fumes of iodine given off after application to the skin. This serious objection is never met with when rectified spirit is used. It is of prime importance that the skin be not washed with soap and water shortly prior to the employment of the iodine solution, for this would defeat the object in view—namely, to enable the alcoholic solution of iodine to penetrate as deeply and easily as possible between the various epithelial elements of the skin. In my earlier cases I had no success with the iodine solution, as I did not realize that the water used for washing the skin caused the epithelial cells to swell, and thus prevented the antiseptic from penetrating deeply between them and into the ducts of the sebaceous and sweat glands. So soon as this fact was recognized the success of the method was instantaneous.

I may perhaps best illustrate the employment of the method by describing, first, a typical out-patient operation, and, secondly, one to be performed upon an in-patient in a hospital ward. Let us imagine a man with a painful hammer toe, who seeks relief from his trouble. The house-surgeon paints the offending toe and the skin at its base with the 2 per cent. iodine solution, and then repaints the area of operation a quarter of an hour later. As soon as the iodine pigment has dried he amputates the toe with fair confidence that an aseptic healing will result.

Let us take as an example of an in-patient operation a woman suffering from carcinoma of the breast. In such a case, supposing that the operation is to be performed at 3 p.m., the patient has a bath the previous evening. Early next morning the axilla is shaved. At 1 p.m. the operation area is painted with the iodine solution, special attention being given to the axilla owing to its numerous sweat and sebaceous glands. The operation area is then covered with a sterilized towel. Allow me to remark that this matter is frequently an unnecessary difficulty to the practitioner. Many times have I received a letter from the patient's doctor stating, "I have no dry sterilizer." None is needed. If a towel be boiled for twenty minutes, and then after removal from the saucepan baked dry in the open oven or even dried before the fire, it will answer all my requirements as a sterilized towel. On the operating table the towel is removed and the operation area again painted with the iodine solution. As soon as this has dried the operation may be safely proceeded with, in the confident hope that, provided no error in the aseptic or antiseptic technique be committed during the operation, union *per primam* may be anticipated.

The alcoholic solution of iodine is, in my opinion, the easiest and most reliable method, and as such I ask you to give it a careful and searching trial. Almost daily I receive letters from hospital surgeons informing me that they have employed the method with great satisfaction.

B.—INDUCED HYPERAEMIA, WITH SPECIAL REFERENCE TO TUBERCULOUS DISEASE OF THE TARSUS.

Nearly two years ago I had the honour of delivering a surgical address to the South Midland Branch of the British Medical Association, under the presidency of my friend, Dr. H. T. Wickham. This address was published in the BRITISH MEDICAL JOURNAL of July 18th, 1908, and to it, or, better, to the translation of Professor Bier's book, I would refer those who wish for more detailed information than it is possible for me to give on this occasion. I will content myself with the statement that the more I practise Professor Bier's method the more highly I value it as a therapeutic agent, especially in tuberculosis of bones and joints of the extremities in young subjects. During the past four years I have performed no amputation for disease of the carpus and tarsus. I will take as an example tuberculous disease of the tarsus, and will cite two cases.

E. B., a girl, 11 years of age, was sent to me at Charing Cross Hospital by her medical attendant, who was formerly on the surgical staff of one of the largest hospitals in Scotland. The child had extensive tuberculous disease of the tarsus with an abscess pointing on the outer aspect of the dorsum of the foot. Amputation of the foot had been recommended at two large London hospitals. I confess that at first I considered this to be sound advice. As, however, the medical attendant and the mother implored me to save the foot if possible, I determined to give a fair trial to Bier's treatment combined with injections of sterilized iodoform glycerine emulsion (10 per cent.). This treatment was continued for several weeks, and in spite of the fact that the needle of the injection syringe passed through the tarsus without any resistance, and that two abscesses required incision on the dorsum of the foot, an excellent result was obtained, chiefly owing to the devoted care and attention of my then house-surgeon, Mr. W. S. Fenwick, M.S.Lond., F.R.C.S., now surgical registrar to Charing Cross Hospital. I may mention that the elastic bandage has in this case been continued for two years, and that it is worn at night applied just above the knee. I saw this child a week ago at the hospital, and had the opportunity of showing how well she walked to my clinical class.

The second case concerns a young lady, 20 years of age, the daughter of a medical man, seen in consultation with Dr. J. H. C. Fegan, of Welwyn, Herts. The condition, course, and result of Bier's treatment were in all respects nearly identical with the above case, and I need not, therefore, weary you with details.

I may add that not merely cases of tuberculous disease are thus benefited by Bier's treatment. I have on several occasions seen a gentleman, aged 43 years, suffering from a sinus, associated with recurring pyogenic osteomyelitis, who on his first visit to me requested that his troublesome foot should be amputated. Now, after many months of Bier's treatment, under the careful supervision of Dr. Duke Turner, of Purley, the sinus has healed, and an almost perfect result has been obtained. I have no hesitation in saying that ten years ago I, and I think every other surgeon, would have amputated all three feet! It is not easy to dogmatize regarding this complex subject, but I may briefly state my experience that the younger the subject and the more peripheral the lesion, the better the prognosis; that the bandage must be applied so as to cause definite congestion, but no pain, and that in general three hours on and three hours off is a useful rule to follow. It is true that in the majority of my cases Bier's treatment has been combined with injections of sterilized iodoform glycerine emulsion, but in many instances it has been employed alone, and has given me entire satisfaction.

C.—Heat in the Treatment of Shock, especially after Severe Burns.

I believe that the method I am about to bring under your notice is quite novel; I am convinced that it is of real value as a means of life saving, and I wish to make it clear that I can lay no claim to the merit of having introduced it. The whole credit is due to my excellent ward sister at the Victoria Hospital for Children, Miss Alexandra Gray. I may perhaps best describe the method if I relate the story of its origin. A few months ago, when I was making my ward visit at that hospital, I was shown a child 2 years of age who had sustained a truly awful burn. The child was pulseless and collapsed, and I remarked to the senior resident medical officer, Mr. A. C. D. Firth, M.B., B.C.Cantab., one of the most able and experienced resident officers I have ever known, "That child will die before midnight." Mr. Firth agreed with my opinion. I left the poor child to die as an entirely hopeless case. My ward sister, however, felt—and all honour to her—that she would, as I had abandoned hope, endeavour to save the tiny life. She had, she subsequently told me, noticed that children in intense collapse after burns, are invariably cold and restless, and that warmth soothes and quiets them. She therefore dressed the burns with my usual lotion, a 1 per cent. solution of aluminium acetate, and covered the small body with a single blanket. Then she placed a cradle over the child, and inside the cradle inserted a 32 candle power electric lamp, covering the cradle with a blanket. A thermometer inserted inside the covering blanket enabled the temperature to be maintained at an average of 103°; the temperature was never allowed to fall below 100° or to exceed 105.° To cut a long story short, the child made an excellent recovery, and in my opinion owes its life to Miss Gray's care and ingenuity. Since this case every burn has been thus treated.

Mr. Firth kindly wrote me in answer to my inquiry, "We have had this year seven severe burns. The oldest child was only 4 years of age, and in every case the shock was very marked. All seven children recovered." I am convinced that Sister Gray's discovery will have far-reaching results, and will prove of life-saving value in the treatment of profound shock. In a case of gastro-enterostomy performed for congenital pyloric stenosis in an infant 9 weeks old, both Mr. Firth and I consider that the infant's recovery from grave shock was largely due to the application of this heat treatment. I purpose in future to make extended use of this treatment, of whose efficacy I am convinced, as it has been frequently employed at the Victoria Hospital with excellent results in the case of children suffering from severe shock due to many causes.

D.—Solution of Aluminium Acetate in the Treatment of Wounds.

Above I have made mention of the fact that burns are treated in my wards with dressings wet with a 1 per cent. solution of aluminium acetate. For certain surgical purposes I consider this to be the best antiseptic solution, and yet it is unknown to the great majority of practitioners and surgeons. One reason for the neglect of this excellent antiseptic is that it finds no place in the *British Pharmacopoeia*. I have employed it with most satisfactory results for more than fifteen years, and can only marvel that it is not officinal. Of the 1 per cent. solution of aluminium acetate I can state with assurance that it is an antiseptic solution of proved merit, and that it alone among germicidal solutions is entirely non-toxic, non-irritant, and markedly astringent. Of its action in preventing the growth of pyogenic organisms there can be no doubt. Far be it from me to suggest that it is a perfect antiseptic. I never employ it in surgical operations, as it spoils steel instruments. I make use of the solution solely in cases of wounds which are either certainly infected or probably unclean. I employ it as the antiseptic for moist fomentations or as the medicament for a bath in which to place an infected hand or foot for continuous irrigation. This solution is used with satisfaction in every Continental clinic with which I am acquainted, in place of the comparatively impotent boric acid solution which is in general use in this country.

The solution I invariably employ is one of a drachm of the liquor alumini acetatis of the German pharmacopoeia (a 7½ per cent. solution) to 1 oz. of water. I admit that this solution is only a mild antiseptic, and that its employment is chiefly to be recommended in infected wounds, burns, washing out of suppurating cavities, and cases in which continuous irrigation of damaged parts has to be carried out for days, or even weeks. From large personal experience I can testify that there is no danger of poisoning even when a crushed arm or leg is bathed in the solution for a month. I am confident that by the employment of continuous irrigation by means of a bath of the 1 per cent. solution of aluminium acetate I have been enabled to save pyogenically infected hands and feet which, but for the action of this solution, would have called for amputation. In dermatitis, whatever be its cause, in suppurating open wounds, and in cutaneous erysipelas, I know no treatment comparable with fomentations of the 1 per cent. solution of aluminium acetate. One objection may be mentioned, namely, that after three weeks of continuous irrigation of a member in such a bath the tissues assume a ligneous hardness, and can hardly be cut with a knife. Twenty-four hours' immersion of the damaged part in a warm normal saline (℥j to the pint) solution largely removes this indurated state of the tissues.

I take it that one of the most frequent operations that the practitioner is called upon to perform is circumcision in the case of infants. I ask you to recall the results of this simple operation. Can any one of you honestly state that they have been in all cases satisfactory? In how many cases has there been haemorrhagic effusion under the sutures, sepsis, or some other troublesome complication? May I, with the experience gained from many thousands of circumcisions, state how I advise that this operation should be performed? Half an hour prior to the operation the entire penis is painted by the nurse with the 2 per cent. solution of iodine in rectified spirit. As the child is being anaesthetized the organ is repainted. The prepuce is now removed distal to a Kocher's artery forceps applied obliquely from above downwards and forwards. The inner lining of the prepuce having been slit up along its dorsal aspect is cut short, only about one-eighth of an inch being left. Two sutures are now inserted. One suture connects the skin and inner lining (wrongly termed the mucosa) in the region of the fraenum, another the two above on the dorsum of the penis. A Turkey towelling sponge, 4 inches square, is now perforated in its centre in order to allow the penis to pass through the opening. This ensures the penis being kept in a fairly vertical position. A couple of feet of double zinc cyanide ribbon gauze are now rolled loosely round the incision, and are wetted with the 1 per cent. solution of aluminium acetate, and the nurse is instructed to keep the dressing wet by moistening it hourly with this solution. If you observe during the performance of the operation ordinary aseptic precautions, I shall be surprised if your results do not give, under this method, at least 96 per cent. of instances of healing by first intention.

E.—Wiring of Simple Fractures.

This is a question concerning which the practitioner has the right to demand from the hospital surgeon a clear and unhesitating answer to his inquiry, "Is it advisable in cases of simple fracture to convert the subcutaneous fracture into a compound one, in order to use wire, screws, or plates after rectifying the deformity, to ensure that the fractured ends of the bones shall be as far as possible maintained in perfect apposition?" This is a question that has been put to me many times during the past few years. In many cases I have found it by no means easy to answer. Some of the ablest surgeons seem to teach that almost every simple oblique fracture should be transformed into a compound fracture in order that the fractured surfaces of bone may be placed in perfect apposition. Other surgeons of equal, and perhaps greater, experience urge that a simple fracture had best not be operated upon, as the incision into lacerated tissues necessary for the performance of the fixation operation entails a danger that is very real. It is difficult to lay down definite rules of guidance in all cases. In this instance, however, as in most cases, the *via media* is the sound practice. After the publication of 150 cases of operation in which union *per primam* was obtained in 149, I think I may claim to be as capable as most surgeons of keeping an operation wound aseptic, and yet I never operate upon a simple fracture without the feeling that I am introducing, by my operation, an element of danger (infinitesimal though I admit it to be) which was not present prior to my operation. Vividly impressed upon my mind are two cases in which, as the result of wiring of simple fractures of the humerus and tibia by surgeons of the first rank, disarticulation at the shoulder and knee joints was necessitated owing to septic osteomyelitis of humerus and tibia. I have always felt that if such tragedies can occur to surgeons abler and more experienced than I am, am I justified in advising my patients to submit to operative treatment for simple fractures? After much careful thought I have arrived at certain conclusions which I venture to submit to you.

In the first place, distinction must be made between fractures of the upper and of the lower extremity. There is no comparison between the after-results of an oblique fracture of the humerus and of the femur, with, let us suppose, in each instance 2 in. of shortening. In the former case no real disability results. One's tailor is the only person who notices the fact that one arm is 2 in. shorter than its fellow. In the latter case the shortening of 2 in. causes a limp in the gait perceptible to that intelligent person, the man in the street. I therefore have formulated for my guidance the rule not to intervene, generally, in cases of fracture with marked shortening of the upper limb, but to have no hesitation in operating upon oblique fractures of the femur and tibia in which marked shortening, which cannot be overcome by the application of splints and extension, makes it certain that, when union of the fragments has been secured, definite shortening of the affected limb will result with a noticeable limp in walking. May I briefly mention three cases bearing upon this point?

Some years ago a medical man brought a boy aged 6 years to me at Charing Cross Hospital. The child had been run over by the doctor's brougham and an extraordinarily oblique fracture of the femur had been sustained. On careful measurement my then house-surgeon, Mr. E. D. Davis, found that even in this small child 4 in. of shortening of the limb could be demonstrated. Here there was no room for hesitancy. An incision was made on the outer aspect of the thigh under anaesthesia. Traction was made by my dressers, the shortening was entirely reduced and the fractured extremities wired and screwed in position. The result was a complete success, and the child left the ward seven weeks later with lower extremities of equal length.

In the second case I was summoned by my friend Dr. von Bergen of Leatherhead to wire a very oblique fracture of the tibia and fibula sustained by a young married lady whilst skating. I found, as Dr. von Bergen had informed me, that there was 3½ in. of shortening and that the lower end of the upper fragment of the tibia had all but penetrated the skin. I had no hesitation in agreeing with Dr. von Bergen that this was a case in which operative treatment was called for. I therefore wired and screwed the tibial fragments and had the satisfaction of hearing from Dr. von Bergen a few months later that the patient was able to dance as well as before the accident. I fully admit that in both the above cases the shortening was quite unusual. This fact, however, serves to emphasize the point that the greater the shortening the more urgent the call for operative interference. I would, however, add one word of warning. Do not promise the patient that if a simple fracture be fixed by wire, screws, or plating, the result will be perfect. A case exemplifying this warning has recently occurred in my wards at Charing Cross Hospital. A large, very muscular man, who must have weighed nearly 18 st., was admitted suffering from an oblique fracture of the femur. The shortening amounted to 3½ in. I therefore recommended operative treatment. At the operation I had to ask the anaesthetist, Mr. Munro Anderson, to press the anaesthetic to the utmost degree, and had to engage the services of no less than four strong assistants to make extension and counter-extension. In spite of the combined strenuous efforts of these gentlemen I only succeeded in getting the fragments in apposition by the employment of the leverage of a strong periosteal elevator introduced between the fragments. At last I succeeded in getting the bony ends in what I conceived to be perfect apposition. They were fixed *in situ* by wires and screws. Union *per primam* resulted, and I was delighted with the operative success until my house-surgeon, Mr. R. H. Jolly, M.B., B.S.Lond., demonstrated to me that there remained 1 in. of shortening of the affected limb.

While I am chary of converting a simple fracture into a compound one, I have no hesitation in advising the fixation by means of wire, screws, or plate of every compound fracture in which shortening of the limb is a noticeable feature. In such cases I am accustomed to paint the whole wound surface and the surrounding skin with the 2 per cent. solution of iodine in rectified spirit, and this method of preventing sepsis in presumably infected wounds I recommend with confidence.

F.—Intussusception and its Treatment.

I desire to make a few remarks on the subject of intussusception, for the twofold reason that this is the most frequent cause of intestinal obstruction in children under 12 years of age, and that it is a not infrequent experience for me to be called to a case of intussusception only at a time when reduction by operative treatment is a matter of difficulty, if not an impossibility. By intussusception we mean a condition in which one segment of the intestine is telescoped into another, and the direction has, in my experience, invariably been a downward one. On recalling the results of my cases of intussusception, which have been very numerous, I am appalled at the mortality. I venture to think that I am hardly responsible for this serious death-rate. So far as I can remember, no case operated upon by me within twenty-four hours of the onset of the condition has died, and the average time at which I have been summoned to intervene surgically has been about sixty hours subsequently to the occurrence of the first symptoms. I think I am justified in considering that the high mortality has been due rather to the failure of the practitioner to diagnose the condition than to the incapacity of the surgeon in performing the operation. I would lay it down as an axiom that rectal inflation of air should be employed in every case of *suspected* intussusception within twelve hours of the onset of symptoms, and that should this measure fail the invagination should be at once reduced by manipulation after opening of the abdomen. Were this teaching once recognized, I am confident that intussusception would show a trivial, in place of the present terrible, mortality.

I regard intussusception as a malady affecting chiefly children between the ages of 3 months and 15 years. I cannot recall a single case occurring in a patient between the ages of 20 years and 50 years. In old people I have never found intussusception except in association with a neoplasm, usually malignant, of the intestine. Certainly more than 80 per cent. of my cases have occurred in patients under 12 years of age. Examples of invagination of the intestine group themselves clinically into (1) the acute and (2) the chronic. The former are in my experience the more frequent.

What symptoms should put the practitioner on his guard concerning the diagnosis of intussusception? Surely the occurrence of intestinal obstruction in children under 12 years of age unassociated with a rise of temperature. In 7 cases out of 10 the obstruction is not at first complete, so that flatus and sometimes liquid faeces can be passed through the not completely obstructed lumen of the invaginated gut. In such cases—and they are the rule—tympanitic distension of the abdomen does not occur, at least in the early stages of the malady. The most reliable diagnostic sign is the feeling of the typical sausage-shaped tumour; but I would beg you to notice that this lump is only to be felt in some 60 per cent. of all cases of intussusception. It may, further, be palpable at one time and not at another. Let me instance a striking example of this.

I was called a year ago to the child of a medical friend. On my arrival the father informed me that he and his partner had felt a tumour in the caecal region. Two hours later it was in the middle of the ascending colon. On my arrival I could feel no tumour, even under anaesthesia; and I confess that, as the child seemed so well, I doubted the diagnosis. I therefore advised a few hours' delay. Four hours later I felt a typical sausage-shaped tumour in the middle of the transverse colon. I then prepared to operate. On the operation table the lump could not be made out by palpation, even under deep anaesthesia. After opening the abdomen it was discovered in the splenic flexure of the colon. Other factors of great moment in the diagnosis are the presence of blood-stained mucus in the rectum and the information obtainable by rectal inflation, especially with reference to the position of the invagination. Exaggerated peristaltic movement of the intestine above the site of the invagination is also, when it can be made out, a valuable diagnostic sign. You will observe that I have said the presence of blood-stained mucus in the rectum. I have found that in cases of intussusception blood-stained mucus is present in the rectum just above the sphincters some hours before it is voided per anum. This point is worthy of attention in a condition in which hours count largely in the prognosis.

I have no intention to attempt to discuss the treatment of intussusception, a subject so extensive that it could hardly have been adequately dealt with had I devoted to it the whole of my remarks. Time will only allow me to mention three points: (1) Manipulation; (2) injection (rectal) of air; and (3) means to prevent recurrence of the invagination.

1. *Manipulation.*—In spite of the fact that many cases of intussusception have, during the past twenty years, come under my care, I confess that my knowledge of the value of manipulation without opening the abdomen is of very recent date. Hardly more than a month ago I was called by Dr. F. E. Easton to see with him a male infant, 13 months of age, suffering from intussusception. The history was clear and the diagnosis certain. At 6.30 p.m. the infant was seized with intense abdominal pain and vomiting. The pain recurred about every ten minutes. Dr. Easton saw the child at 9 p.m., and immediately telephoned to me to come to a case of intussusception. On my arrival shortly after 10 p.m., that is, three and a half hours after the onset of symptoms the child was anaesthetized by Dr. Easton. A lump was clearly to be felt in the caecal region, and with one finger in the rectum to steady the mass and the other hand on the abdominal wall, I, by massage and manipulation, succeeded in reducing the intussusception. I confess that I for some time felt uncertain about the reduction, but immediate improvement in the infant's condition, the entire absence of any subsequent symptom, and the uninterrupted recovery of the patient, convinced me that manipulation had indeed succeeded in reducing the invagination.

A second case occurred a fortnight later, in which, under very similar circumstances, I was able to reduce a caecal intussusception in the 4-year-old child of a friend which had been invaginated for about six hours.

2. *Rectal Injection of Air.*—My knowledge of this valuable method of reducing recent invaginations of the intestines is largely due to my friend, Dr. G. Phillips of Ealing. Several years ago he related to me a case in which he had succeeded in reducing an intussusception by means of rectal inflation of air, employing an ordinary bicycle pump for the purpose. Acting upon his suggestion, I have thrice succeeded in reducing an invagination by the employment of air, using a Higginson's syringe, a bicycle pump, and the kitchen bellows. In all these cases the invagination was of less than twelve hours' duration. The two above simple measures—namely, manipulation and rectal inflation of air—should be carried out under deep anaesthesia, and the air is to be pumped in slowly and steadily whilst an assistant prevents the escape from the anus by firm pressure.

3. *Means to Prevent Recurrence of the Invagination.*—There is always a tendency for an intussusception to recur even after complete reduction. This accident I have known to take place on six occasions. In order to prevent the recurrence of the invagination, I have for some time past, after reduction of the intussusception by opening the abdomen, kept the bowel taut and sutured the extremities of the reduced invagination, or, in the cases in which many inches of intestine have been involved, the bowel on either side of the most damaged segment to the parietal peritoneum by means of catgut sutures. Since adopting this precautionary measure no instance of recurrence has come under my notice.

MODERN TREATMENT OF FRACTURES.*

By F. N. G. STARR, M.B.(TORONTO),

TORONTO, CANADA.

IT has occurred to me that, as general practitioners and as surgeons, we should begin some careful process of house-cleaning with regard to the treatment of fractures. Mr. Clinton T. Dent,[1] Surgeon to the Metropolitan Police of London, after a careful study of the end-results in fractures of the leg, and of the thigh in particular, makes the statement that:

> Recovery, from the point of view of the surgeon and that of the patient, does not always coincide in date. The standard of efficiency is high in the police, the class of men principally under consideration. The work demands fair activity: thus, for two periods of four hours, or for one tour of eight hours, a man must be continually on his legs day after day, though with frequent short spells of leave. Judged by this standard, and desirous of keeping well within the mark, my estimate is that at least 30 per cent. fail to attain this standard after simple fracture of both bones of the leg—very few regain it under six months. . . . Fractures of the leg, involving the knee or ankle joints, or fractures of the femur, uniformly lead to permanent unfitness for the work which devolved on these men. Fractures occurring in the neighbourhood of these joints nearly always have the same result. I can hardly recall a case of Pott's fracture or a Dupuytren's fracture where recovery has been complete enough to enable a man to resume police work. . . . My experience with regard to fractures of the leg has led to the expression of rather gloomy, perhaps pessimistic, views.

Think of it, 30 per cent. of cases of simple fracture of both bones of the leg fail to attain to a perfect standard of fitness for police duty! In Pott's fracture, or fracture through or near a joint, he can hardly recall a case where recovery has been complete enough to enable a man to resume police work! Mr. W. Arbuthnot Lane's[2] experience and study make him endorse Mr. Clinton Dent's opinion.

Are we to improve our methods as far as the police are concerned and let the average citizen carry an unnecessary deformity to the grave? Are we to go on in the same blundering, haphazard manner? Are we to sentence a labouring man to three, six, or twelve months' disability, with the limp of his injury ever with him—like the stain on the character of the felon who has been under sentence—simply because he was so unfortunate as to break his leg? Or must we, when he breaks one leg, advise him to turn also the other leg in the way of danger, in order that both may be of the same shape and length?

How often has the blush come to the cheek when, in shaking hands with an old case of Colles's fracture, the patient trifles with his sleeve, so that one may see the result of one's labours! True, there may be perfect mobility of the wrist-joint if the method of Just Lucas-Championnière or of others has been followed, but what of the deformity if the fractured surfaces were never in apposition—as they rarely are—after so-called reduction by the usual methods?

* Read at the Section in Surgery, Canadian Medical Association, Winnipeg, August, 1909.

Malgaigne,[3] many years ago, wrote, "The treatment of fractures can be summed up in two great indications—Reduce the fracture and keep it reduced until consolidation is complete." Ah! that is the trick—reduce the fracture.

Before the days of the *x* ray most authors told us to reduce the fracture and bring the fractured ends into accurate apposition and keep them there by means of some "cunningly-devised" apparatus, but nowadays the same author, if living, tells us to get them in as good position as possible and keep them there, which usually means that the fractured surfaces are rarely, if ever, approximated.



Fig. 1.—Fracture in the lower third of femur after the fifth attempt at reduction by means of extension, counter-extension, and manipulation.

The whole question seems to me to sum up into two ideas—the one, skeletal deformity with or without a working functional result; the other, a perfect anatomical result with perfect function and a short convalescence. Which are we to take?

Before I go further, however, let me say this—if one cannot have his patient in a hospital with the best of hospital surroundings, instruments suitable for the purpose, and a perfect aseptic and antiseptic technique, together with a capable assistant and a skilled anaesthetist, by all means aim to get as good a limb as possible under the circumstances, but do not on any account expose damaged bone and damaged soft parts to the possibility of septic infection, because such damaged soft parts are infinitely more susceptible to infection than even the peritoneum.



Fig. 3.—Fracture of the upper end of ulna after several ineffectual attempts at reduction. The patient was a doctor's son, and would therefore require to earn his own living.

Asburst and Newell,[4] give us the end results in 61 cases of fracture of the femur traced, as follows:

28 cases with perfect functional result;
21 cases with no disability but a limp (would not do for police duty);
8 cases with marked impairment of function;
4 cases incapacitated;

and they conclude that with such remarkably good results there can be no excuse for the open operation.

Gentlemen, will you be satisfied with one cripple out of every two cases treated? Personally, I think these surgeons are easily satisfied.

Scudder[5] gives the end results in 35 cases of fracture of the femur:

In children (14 cases, average age 7½)—4 cases have slight pain; 3 of these have stiffness of knee-joint; 10 cases have good functional result.

In adults (16 cases, ages 18 to 48)—5 perfect results; 11 cases, limited knee-joint movement, aching in thigh, pain after movement, pain in wet weather, weakness and slight lameness in walking. In 5 cases, average age 58, reported two to six years after, no case has even a functionally perfect result.

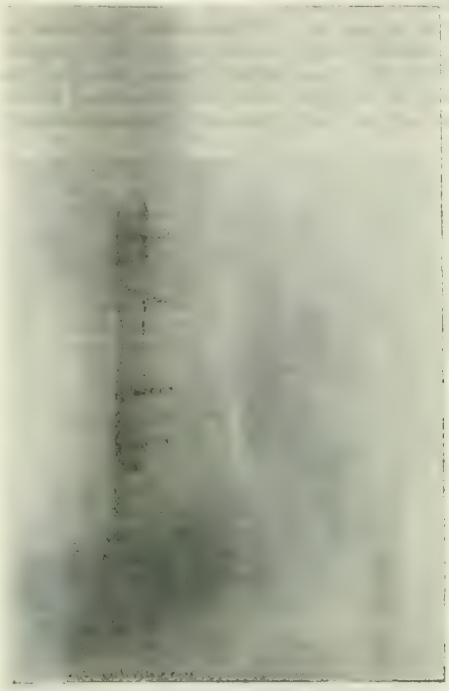


Fig. 2.—The same bone after plating.

Must we continue to have 2 cases of imperfect result out of 3 cases treated in adults, and *every* case bad after fifty years of age, or must we improve?

Then, again, take cases of Pott's fracture with the common displacement[6] of the tendon of the tibialis posticus forward, resulting from rupture of the annular ligament—the tibialis posticus forms the chief support of the arch of the foot—are we to condemn our Pott's fracture cases to flat foot, for this we must do unless the tendon is replaced, and it cannot be replaced unless the open operation is done? No wonder Clinton Dent can hardly recall a single case of Pott's fracture able to resume regular police duty.



Fig. 4.—The same after plating.

Take fractured clavicle, if you like. Does the subsequent *shoulder-droop* never cause qualms of conscience, or are we unconsciously so accustomed to making excuses for our own shortcomings that we do not see our patients as others see them?

The gentleman who opened the discussion at the 1900 meeting of the British Medical Association,[7] speaking of the open method, quotes from an anonymous number of surgeons, and says: "They think it meddlesome and dangerous, or because they think it unnecessary if fractures are treated with 'brains'"! It seems to me that if I were unfortunate enough to require treatment for a fracture, I should desire something a little more stable than the grey matter of that surgeon's brain. He then goes on to decry the open method with "septic infection," "troublesome screws," and what not,

apparently losing sight of the fact that no advocate of the open method advocates the introduction of sepsis.

No modern surgeon of to-day will deny that practically all fractures of the patella and of the olecranon should, under proper precautions, be subjected to the open method of treatment. In the face of such statistics as I have quoted, can any one deny the advantage of the open method for most fractures of the femur?

Then we come to the leg. When either the tibia or fibula is broken usually there is not much displacement, and the one bone serves a useful fulcrum whereby the broken ends may be brought into good position. Under such circumstances, therefore, it frequently is not necessary to do the open operation. When, however, we come to a fracture of both bones, with a deformity that cannot be overcome, or to a Pott's, with the tearing of the internal malleolus and its associated laceration of the annular ligament, with displacement forward of the tendon of the tibialis posticus, I think operation by the open method is imperative, in view of the end-results in fracture of both bones of the leg examined in from one and a half to ten years after.



Fig. 5.—Compound comminuted fracture of the lower end of humerus.

Out of 35 cases in the Massachusetts General Hospital,[6]
13 cases reported the injured leg "as good as the other";
22 cases showed a leg permanently impaired, some with deformity, some with flat feet, etc.

About one good result out of every three cases treated; I really think it time for some change in method.

In all fractures implicating a joint—with the possible exception of fracture of the neck of the femur—surely patients will prefer the risk of the open operation, done with proper precautions, to the certainty of permanent crippling.

In the space of time at my disposal it is quite out of the question for me to go into detail in all classes of fractures, and some I am omitting, for example, depressed fracture of the skull, and fractures of the spine giving rise to pressure symptoms, for in these there can be no two opinions as to the proper procedure, for even a Lucas-Championnière or a Sir William Bennett would be unable to elevate the depressed fragments by massage.

Having spoken of the risks, I shall briefly outline some of the advantages to be gained by the open method:

1. The mechanism of the skeleton is left unimpaired, and the patient therefore has a perfect anatomical and functional result.
2. The period of incapacity is shortened.
3. The pain is relieved in a few hours.

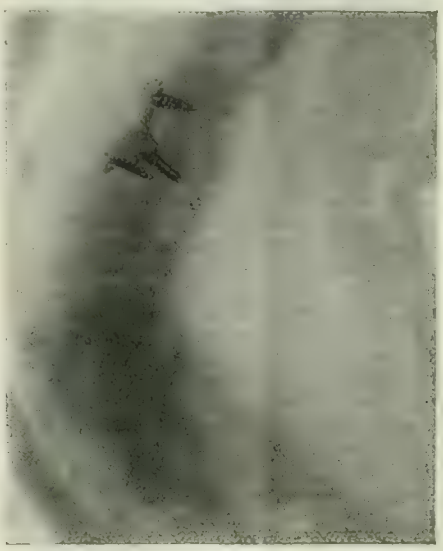


Fig. 6.—The same after plating. This patient was able to leave the hospital on his bicycle three weeks after operation.

4. There is no risk of muscle fibre being left between the bones to favour non-union.
5. The surgeon can see what he is doing and can accurately approximate the fragments.
6. There is immediate relief from the tension, etc, from extravasation.

In 1903 I read a paper on "The Open Method of Treating Fractures"[9] before this Association, and it seems to me appropriate that I should contribute to the same Association any further light that I have found upon the subject after a prolonged and painstaking study of all the methods now in vogue, on a large series of cases, both in private and hospital practice. I am more convinced than ever, as a result of my observations, that there are now many cripples going about our streets who might have had a perfect skeletal mechanism had the open method been adopted.

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ACCURACY IN THE DIAGNOSIS OF URINARY DISEASE.*

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THE difficulties met with in attempting a diagnosis from the symptomatology of urinary disease may be grouped under three main headings:

1. The symptoms of the various diseases which affect a particular part of the urinary tract often mimic one another so closely as to render their differential diagnosis difficult.
2. Reflex or transferred symptoms may throw suspicion on the wrong part of the tract.
3. The very absence of symptoms in certain cases, whose only complaint is the passage of blood or pus in the urine, makes it difficult to localize the site of the lesion.

Let us consider more in detail each of these difficulties.

* Abstract of a paper read before the Worcester Branch of the British Medical Association.

DIFFICULTIES OF DIAGNOSIS.

A.—*Due to Mimicry.*

It has been the custom for years past to look upon such a group of symptoms as increased frequency of micturition, pain at the end of the penis after micturition, and the passage of blood in the urine towards the end of micturition, all perhaps made worse by exercise, as pathognomonic of a stone in the bladder. Now this group of symptoms is the immediate expression of cystitis and the symptoms are due to an inflammation of the bladder mucous membrane.

The *pain* is caused by the muscular wall of the bladder contracting down on and squeezing its inflamed and sensitive lining, and is therefore worst when the bladder is empty and contracted.

The *blood* in the urine at the end of micturition is explained as follows: The veins from the mucous membrane of the bladder run between the muscular fibres of its wall to reach the large venous plexuses situated outside, so that when these muscular fibres contract the veins are compressed and the tension of the blood within them is raised, and if their walls are thinned by ulceration or are only

feebly supported like those of a villous growth, they give way and bleeding results. This also occurs towards the end of micturition when the muscular fibres are most tightly contracted and therefore produce the greatest amount of obstruction to the flow of blood through the veins.

The *increased frequency* of micturition is accounted for by the lessened distensibility of the bladder owing to the inflammatory infiltration of its mucous membrane, so that the call to urinate occurs more frequently than normal. This latter fact is often of use in practice, for from the knowledge of how often a patient passes his urine a very accurate idea may be formed of how much lotion his bladder will hold. A satisfactory cystoscopic examination cannot be made with a distension of less than 6 oz.

All diseases of the bladder sooner or later cause cystitis, and as inflammation is a necessary part of most diseases of this viscus, the symptoms of cystitis—pain, frequency, and blood—will mask those due to the individual disease. Such diverse diseases of the bladder as stone, cystitis, ulceration simple or tuberculous, growths, and even inflammatory affections of the prostate, often cause identical symptoms. The routine use of the cystoscope has impressed this very strongly on me during the last few years.

CASE I.

A few weeks ago I saw a child, who had twice had his bladder opened suprapubically by two different surgeons for the group of symptoms we are now considering. Both expected to find a stone, but both were disappointed. This child I proved, by cystoscopic examination and the finding of tubercle bacilli in the urine, to be suffering from a tuberculous cystitis secondary to a similar disease in one kidney.

CASE II.

D. G., aged 52, was sent to me at the hospital with a diagnosis of enlarged prostate and stone in the bladder. For the last nine months he had suffered with increased frequency of micturition, pain at the end of the penis after the act, and often blood at the same time. His urine had been thick throughout that period and he had several times passed pieces of grit. His doctor had sounded him and thought that he felt a stone. Once he had quite a free attack of haematuria which lasted for a day, the blood being intimately mixed with the urine. His condition when I saw him was as follows: Frequency of micturition every hour and a half by day and four times at night: pain was of two kinds, a dull aching more or less constant pain above the pubes relieved by micturition, and a sharp stabbing pain at the end of the penis after emptying the bladder; he also complained of difficulty in starting and a loss of force in the stream, and he more or less constantly passed a few drops of blood at the end of a clear urine.

Rectal examination proved to me that his prostate was not enlarged, but I thought that there was some increased resistance on the left side of the bladder base. Cystoscopy showed an irregular, infiltrating, sessile growth, with raised edge situated on the left side of the base and posterior wall of the bladder, and surrounding the left ureteric opening. The surface of this growth was coarsely papillated and densely covered with phosphates, and this it was which accounted for the sensation of stone obtained with the sound.

I need not multiply instances of this kind; but as a further example let me take two diseases of the kidney—tuberculosis and stone. For the differential diagnosis of these diseases certain rules have been laid down. It is said that with stone the pain is severe, renal colic the rule, and haematuria free, all being increased by exercise and relieved by rest; but if the pain is more of a dull ache, colic being absent, the haematuria slight, and both are unrelieved by rest, that you should diagnose tubercle. But how often in practice do we see these actually reversed! A stone may exist in a kidney for years, particularly if embedded in its substance, without producing any symptoms noticed by the patient; on the other hand, tubercle may cause the most typical attacks of renal colic. The severity of the pain is no accurate guide, neither is the amount of the haematuria; the relation of both to exercise is, however, often a help, but is not to be relied on. I saw a boy a little time ago, 12 years of age, who had suffered on and off for five years with dull aching pain in his left loin, accompanied by the constant passage of thick urine. He was subject to exacerbations of pain about once a month, but the pain was never acute, and his parents had never noticed any blood in his urine; the microscope, however, showed both blood and pus. When the attacks were on they lasted day and night, and were not increased by exercise. On *a priori* grounds, therefore, we should have been justified in diagnosing tubercle. But repeated examinations of his urine for tubercle bacilli proved negative, and the *x* rays showed that he had a stone in that kidney, removal of which cured him.

Growth of the kidney may cause symptoms which are often indistinguishable from those of stone or tubercle.

CASE III.

W. P., aged 54, sent to me by his doctor, was suddenly seized four years previously with a sudden acute attack of pain in his right iliac fossa, radiating thence to the loin, and accompanied by vomiting. The attack lasted for eight hours, during which time he had to pass his urine every half-hour, but there was no blood in the urine at this time. He was free from any pain or other sign of disease for eighteen months, when a similar attack occurred, but this time accompanied by blood in the urine, which was intimately mixed; the pain lasted eight hours and the blood twenty-four hours. At the end of twelve months he had another and exactly similar attack. During the three months before I saw him, and whilst he was under my observation, he had attacks every fortnight; the pain was chiefly in the loin, and acute while it lasted, was made worse by exercise, and usually occurred towards the end of the day, each attack being accompanied by a moderate amount of bleeding; but nothing more than I have seen in several cases of renal stone. Just before he was about to be operated upon, however, a free haematuria occurred without pain, and continued for several days, and this, together with the fact that the *x*-ray examination was negative, suggested to me that in all probability the cause of this man's symptoms was a growth, and not a stone. This was confirmed at the operation, when I removed a large growth involving the upper two-thirds of the kidney, which microscopically proved to be a carcinoma.

Then, again, such perversions of metabolism as lead to the excretion of calcium oxalate and uric acid crystals, or excess of phosphates in the urine, may give rise to attacks of renal pain, even accompanied by haematuria, and have in the past been the cause of many needless operations.

It will be clear then, I think, from these cases, that it is not by a study and analysis of the symptoms, however close, that we can arrive at a reliable diagnosis. It is only by making use of the several methods of examination at our command that we can elucidate them.

B.—*Due to Reflex Symptoms in other Parts of the Urinary Tract.*

I.

It is well known that diseases of the kidney may cause bladder symptoms, but it is not so well recognized that these secondarily induced symptoms may be so severe as to mask those of the primary disease in the kidney. In some cases the bladder irritation is purely reflex; in others it is due to the secretion of an unusually acrid urine by the diseased kidney; in others, again, it is due to an actual ulceration of the bladder mucous membrane resulting from the constant passage of infected urine from the kidney. This last condition is so constantly seen in tuberculosis of the kidney that it may almost be said to be the rule.

When such a transference of symptoms as this occurs it is almost certain that we shall be misled by them to diagnose a primary bladder affection unless a further examination is made, and of these cystoscopy is the quickest and the surest. In such diseases of the kidney as tuberculosis, pyelitis, and stone this transference of symptoms is by no means uncommon.

The following is a very extreme instance of a case of suppurative pyelitis of the kidney, producing and keeping up cystitis for twenty-two years, with recurrent formation of stones in the bladder which had been repeatedly crushed, the underlying disease in the kidney not having been suspected.

CASE IV.

A man, aged 54, since the year 1883 had constantly passed thick urine and had suffered from cystitis with the usual symptoms of increased frequency of micturition and pain and blood after the act. Between the years 1883 and 1905 he had had twenty-five operations for stone in the bladder, litholapaxy twenty-one times, suprapubic cystctomy three times, and on one occasion he had his bladder drained through the perineum continuously for three months. When I first saw him, in November, 1905, he was suffering from one of his periodical six-monthly exacerbations of symptoms which told him that he had more stones in his bladder, and a cystoscopic examination showed two phosphatic calculi lying on the base of that viscus. It was not possible, however, at that time to wash the bladder sufficiently clear of pus to make a satisfactory examination of the ureteric orifices. An attempt was made to crush these stones, but failed owing to the presence of a pouch in the bladder wall, into which they disappeared; they were therefore extracted through a perineal incision with a view to a subsequent continuous drainage. After a few weeks' drainage, the urine became somewhat clearer, and, after prolonged washing, I cleared the bladder sufficiently of pus to make a satisfactory cystoscopic examination, the instrument being introduced through the

perineal wound. The following are the notes I made at the time: "There is a general cystitis, but no ulceration of the mucous membrane: the left ureteric orifice is widely dilated and rigid, with raised and scarred edges. As it was being watched a long, worm-like string of thick, putty-like pus was slowly extruded from its orifice and coiled up on the base of the bladder, filling several shallow sacculi; no urine was emitted. The right ureteric orifice was small and healthy in appearance, and jets of clear urine were being rapidly extruded as if from a hypertrophied kidney." Obviously, then, this man had a left kidney full of pus, which was not only of no functional value to him, but was keeping up a cystitis with the formation of secondary phosphatic stones in his bladder. It was afterwards shown that he had a stone in his left kidney, which had probably existed for over twenty years, finally causing a complete disorganization of that organ, but without giving the patient any symptoms sufficiently severe to direct his attention to it.

Another equally instructive case is the following:

CASE V.

A man aged 29 was sent to me suffering from increased frequency of micturition to twelve times by day and four to five times at night, accompanied by pain at the end of the penis after the act; the urine, which had frequently been tested by his doctor, always contained pus and occasionally blood. His history was that three months previously the attack had started with a rigor and frequent half-hourly micturition, but without blood at that time. On careful inquiry, however, I elicited the fact that he had for several years previously suffered on and off from slight lumbar pains, and that his urine had frequently been thick. Repeated soundings for stone had proved negative, and he had therefore been treated as a case of cystitis. There were no tubercle bacilli in the urine. I cystoscoped him during an attack of haematuria, and found that the right ureteric orifice was dilated and redder than normal, and that every now and then jets of bright red blood were thrown out from it. The left orifice was healthy and exuding clear urine, and the specimen of urine drawn off from this kidney by the ureteral catheter was perfectly normal. I subsequently removed a stone from the right kidney.

It is by no means uncommon for a diseased kidney to cause reflex pain in the opposite organ, which may also be tender on palpation. When this happens in a kidney which is compensatorily enlarged owing to advanced disease of its fellow, one is particularly liable to be misled by this combination of facts to diagnose disease in what is a healthy organ, and if, as sometimes happens, the primarily diseased kidney has not caused any symptoms, the reflexly affected one is in a very precarious position if it happens to come under the care of a surgeon who is content to explore a kidney without making use of the various methods of functional diagnosis now at his command.

A much rarer reflex manifestation of kidney disease is pain in one testicle, and when this is the only symptom of which the patient complains it is not surprising that clinicians are led astray by it. The following case quoted by Newman is a good instance of this fallacy:

The patient, aged 35, had been operated upon for varicocele, and removal of the left testicle had been suggested to him for the relief of severe pain in that organ. He consulted Dr. Newman, who, finding that the testicle was healthy, suggested cystoscopy, which was consented to, and he found as follows: There was a very marked hyperaemia of the mucous membrane around the left ureteric orifice, from which frequent small shoots of pale urine were escaping. The shoots from the right healthy ureter were about one a minute, whereas those from the left side were one every fifteen seconds. This, together with the irregularity in the size of the shoots, was taken as evidence of undue irritation of the left kidney. X-ray examination showed a small stone in the lower part of the left ureter, which was removed, after which the pain completely disappeared.

II.

Certain bladder diseases may cause reflex symptoms in the kidneys. This transference of symptoms from the bladder to the kidneys is much rarer than vice versa; in fact I have only known it to be misleading in growths of the bladder situated close to one or other ureteric orifice. Slight lumbar pains are frequent in obstructive conditions of the bladder, but are obviously secondary. However, in the cases to which I am now referring (three in number) the symptoms were—profuse attacks of haematuria accompanied by pain in one kidney, and in each case a diagnosis of kidney bleeding had been made; in two the bleeding was thought to depend on a growth of the kidney, and in the third, owing to the severity of the pain, it was thought to be due to a stone. In one case the patient was actually on the operating table ready for exploration of the kidney for a supposed growth, when an examination with the cystoscope revealed a growth of the bladder close to the ureteric orifice corresponding to the kidney in which he had the pain. In the third case, which I will briefly relate, a study of the patient's symptoms had led his doctor to make a diagnosis of stone in the kidney.

CASE VI.

A man, aged 52, had been seized six years before with a sudden acute attack of pain in the left lumbar region accompanied by profuse haematuria, and on and off since then he had been subject to attacks of bleeding with frequent kidney pain, which was always worse towards the end of the day. From these symptoms his medical attendant thought that he had a stone in his kidney, and he was sent to me with a view to having it removed. On close cross-examination, however, I found out that he occasionally passed a spot of pure blood at the end of micturition, without any pain, and that he suffered from slightly increased frequency of micturition to every two hours by day. On cystoscopic examination, I found a small pedunculated smooth growth of the bladder above and to the inner side of the left ureteric orifice (the side in which he had the kidney pain). This growth, then, was the cause both of his haematuria and of the referred kidney pain, for his symptoms completely disappeared after I removed the growth of his bladder.

I have only noticed this referred kidney pain, unaccompanied by bladder symptoms, in growths of the bladder situated close to one of the ureteric orifices. Whether it is a truly reflex pain or is caused by the growth dragging on and obstructing the ureteral outlet, I am not at present quite convinced; but in each of the cases above quoted, so far as I could see, there was no distortion of the ureteric orifice.

C.—*Due to the Absence of Symptoms pointing to the Locality of the Disease.*

In such cases as these the patient seeks advice for recurrent attacks of haematuria, or says that he constantly passes thick urine, which on examination proves to contain pus, otherwise he remains in perfect health. He is quite free from any symptoms from which conclusions can be drawn as to the part of the urinary tract from which the blood or pus is coming. Such cases may be most puzzling, yet it is in such cases that an early diagnosis is of the utmost importance, for in many, if we wait for the development of further symptoms, it may be too late for successful treatment; the cystoscope is our only hope. This so-called symptomless haematuria is moderately common, and may have either a vesical or a renal source. Cystoscopy has shown that growths of the bladder, especially when situated away from the sensitive trigone, may, and often do, exist for months without producing symptoms other than haematuria. This bleeding is often profuse and intimately mixed with the urine, and not characteristically distributed at the end of micturition. Symptomless haematuria of renal origin may occur in such diverse diseases as growths, tubercle, stone, and last, but by no means least, chronic granular nephritis. Let me impress upon you that this latter condition may give rise to profuse attacks of bleeding. It may be recognized, if suspected, by examining the urine for albumen and casts between the attacks of bleeding. The following is a case in point:

CASE VII.

A few weeks ago I was asked by her doctor to see a lady who had been subject to profuse attacks of haematuria for ten years. The bleeding used to come on without any warning, was generally profuse at first, and gradually subsided in the course of a week or ten days. This was absolutely the only symptom, and there was nothing in the history to enable us to decide whether the blood was coming from the bladder or the kidneys. She was unable to say if the blood was evenly distributed throughout urination or not, but from the large amount present it probably was. After washing the bladder as clear as possible of blood, I introduced the cystoscope, and found an extremely widespread growth, covering almost the whole surface of the bladder. In parts this growth still had the appearance of an innocent papilloma, but for the most part it was sessile and infiltrating the mucous membrane, and had undoubtedly become malignant.

Pyuria without other symptoms is rarer, and usually denotes some affection of the kidney. It may result from a simple pyelitis, tuberculosis, or stone. The fact that pus in the urine may be the only sign of a chronic prostatitis, the remains of an old attack of gonorrhoea, must, however, not be lost sight of. I have found pus threads present in the urine as long as ten years after the acute attack had subsided, the patient believing himself long since cured.

METHODS OF ACCURATE DIAGNOSIS.

1. *The Cystoscope in the Differential Diagnosis of Bladder Diseases.*

Accuracy in diagnosis can only be attained by a careful and methodical use of all the methods of investigation at our command; no one of them should be omitted, each has its appointed place, and each is more or less dependent on the others for its success.

Cystoscopy is that which gives the most accurate and extensive information. With the perfecting of the cystoscope by Nitze in 1887 the foundation of modern urinary surgery may be said to have been laid. It completely revolutionized our ideas and enabled us to study the pathology of disease in the living subject. The result has been seen in the enormous strides which this branch of surgery has made in the last few years, the only parallel to which is to be found in the sudden advance in our knowledge of diseases of the eye that followed the invention of the ophthalmoscope.

Various modifications and extensions of this instrument have been made, the most important of which is the catheterizing cystoscope, which renders possible the passage of catheters up the ureters from the bladder, and the direct collection of urine from each kidney separately. There are many other modifications, such as operating and photographing cystoscopes.

Tuberculosis, stone, simple cystitis, growths, and foreign bodies, although they may produce almost identical symptoms, can readily be differentiated by the cystoscope, for each gives a characteristic picture to the experienced eye. The cystoscope also affords invaluable data in treatment and prognosis. Not only is it easy to see stones in the bladder, but their number, size, probable composition, the accompanying state of the bladder and whether or not it is pouched, all important points in deciding whether we shall crush the stones by litholapaxy or remove them through an open incision, can be ascertained.

In growths of the bladder we can determine their size and extent, their innocency or malignancy, their situation, whether on the anterior wall of the bladder, where they can be easily and safely resected, or growing from the base close to or surrounding the openings of the ureters, in which case their removal might mean a serious and risky operation and necessitate transplantation of the ureters. Tuberculosis, simple ulceration, and cystitis each gives its its own picture.

The Cystoscope in the Localization of Disease.

The normal ureteric openings are oblique slits in the bladder mucous membrane with pouting lips, situated on a raised bar at the upper end of the trigone. If one watches them steadily one notices that from time to time the bar to the outer side of them swells up and then suddenly the lips separate and a stream of urine is projected into the bladder, where it diffuses in the lotion like a drop of glycerine in water.

By observing the appearance of these orifices, whether they are inflamed, oedematous, ulcerated, gaping, fixed, or movable, and by counting the number of times the urine spurts out from them in a minute (frequent emissions point to either an irritated or a hypertrophied kidney on that side), and by carefully watching the urine for blood or pus as it diffuses in the clear lotion with which the bladder is filled, we may draw inferences (the accuracy of which increases with one's experience) as to the state of the corresponding kidney.

Then again, a fair knowledge of the working value of the kidneys may be obtained by watching the ureteric orifices in the bladder through the cystoscope and noticing how soon and in what quantity methylene blue first appears and continues to be secreted in the urine after its injection into the muscles of the buttock (chromo-cystoscopy). The blue should appear within fifteen minutes, and any delay beyond this time suggests some interference with the function of that kidney. This method is chiefly of value in those cases in which catheterization of the ureters and the direct collection of the urine from the kidneys is not available.

Those cases included under our third group of difficulties, in which either blood or pus is passed without any accompanying symptoms to guide us to its origin, are rapidly cleared up by simple inspection with the cystoscope. If it originates in the bladder its source can hardly escape our notice; if in the kidneys, blood or pus may be seen coming out of one or other ureteric orifice.

By cystoscopy, then, diseases which it is difficult to localize owing either to referred symptoms or to the absence of symptoms pointing to the diseased area, can be easily and accurately localized by a simple examination without cutting, without pain, and with only a minimum amount of inconvenience under local cocaine anaesthesia. What an advance on the old method of exploratory operation!

2. *Cystoscopy combined with Catheterization of the Ureters.*

Catheterization of the ureters is rendered possible by an addition to the ordinary cystoscope of a channel for the passage of a catheter and a movable flange by means of which the point of the catheter may be altered in direction, and so guided into the mouth of the ureter.

This method enables us to draw off the urine from the kidneys separately, and thus gives us a direct indication as to their health or otherwise. It enables us to say definitely whether a kidney which we suspect to be diseased is so or not, and thus places in our hands an infallible way of determining whether deductions drawn from an inspection of the ureteric orifices and their efflaxes were correct. It may be made use of also for sounding the ureters in a case of suspected stone, special metal-tipped bougies being made for this object.

But the greatest value of ureteral catheterization lies in the power it gives us of estimating the functional value of the kidneys.

We may get some idea of this by estimating the quantity of urea excreted by a kidney compared with that secreted by its fellow, though this is for several reasons not always reliable, and we shall gain more trustworthy information by comparing the activity of the two kidneys in excreting methylene blue after its injection into the muscles of the buttock, or by comparing the amount of sugar secreted by each kidney after the injection of phloridzin (phloridzin diabetes). Both of these processes depend on the activity of the renal epithelium, so that we have in them methods by means of which we can estimate directly the amount of work which each kidney is doing.

The value of this knowledge lies in the power it gives the surgeon of estimating the working value of the other kidney when he is about to remove or seriously interfere with its fellow. Previously a surgeon was obliged to start an operation on a kidney knowing full well that the opposite organ might be more diseased than the one he was attacking, or even absent altogether; in either of which cases his patient would die of uraemia.

That this fear is no myth can be proved by looking up the statistics of kidney operations, especially nephrectomy, in any large hospital. The mortality of nephrectomy, even in the hands of surgeons with world-wide reputations, was until recently as high as 20 or 33 per cent. Israel reports that in his last series of nephrectomies—97 in number—he lost 9 out of 47 before he employed ureteral catheterization, but since employing this method systematically he has only lost 2 out of his last 50 cases—that is, he has reduced his mortality from 19 to 4 per cent. The drawings taken from specimens collected from the *post-mortem* room during the last twelve months illustrate the point very well. Some of them are completely disorganized kidneys which became so without their late owners' knowledge, and were only found by chance during the examination after death. They will serve to impress upon you the fact that it is by no means uncommon for a kidney to reach an advanced stage of disease without producing symptoms. In this lies the danger of kidney surgery.

Fig. 1 shows a kidney so completely filled with a large branching stone that the remaining kidney parenchyma measures little more than a quarter of an inch in thickness, and is so degenerated from pressure and inflammation that it could not possibly have been functionally of much use. Yet it was found accidentally in the course of a *post-mortem* examination, and, although it must have existed for years, had caused no symptoms during life.

Fig. 2 shows a maldeveloped and lobulated kidney not more than one-fourth the size of the normal organ, the pelvis of which is filled with and blocked by a large stone. The patient in whom this was found at the necropsy

had suffered during life from acute symptoms in the opposite kidney, which was so disorganized from the results of a large stone that it was removed. This kidney was thought to be healthy because it had caused no symptoms. The patient died of suppression of urine and uraemia. It is by no means uncommon for stones to be present in both kidneys at the same time, and the absence of symptoms is no certain indication that a kidney is healthy.

Fig. 3 shows a kidney completely disorganized by caseous tubercle. It, again, was found *post mortem* in a woman who had died from some disease entirely unconnected with her kidneys, and who had never suffered from any symptoms referable to those organs.

Then, again, it is by no means uncommon to find kidneys that have never reached their full development. During the last eighteen months I have come across no fewer than five instances of this kind, varying from complete absence of any trace of one kidney in one case to organs one-fourth the size of the normal. The kidney shown in Fig. 4 is no larger than a walnut, and consists mostly of fat. In such cases, and also when one kidney is in a state of advanced disease, the opposite kidney is enlarged to compensate for the small amount of secreting tissue in the other; and if for any reason it becomes necessary to explore the hypertrophied organ, its very size may lead to its removal and the death of the patient.



Fig. 1.—Shows a kidney completely disorganized by a large branching stone. It was found during the course of a *post-mortem* examination, its existence being entirely unsuspected because it had not caused any symptom during life.

Since kidney disease is frequently bilateral, especially in stone and tubercle, and since a kidney may be the subject of advanced disease without symptoms sufficiently severe to call the patient's attention to it, it is obviously our duty to estimate the functional capacity of the other kidney before operating on one. This can only be satisfactorily done by means of catheterization of the ureters.

I have purposely omitted any description of segregation of the urine by means of the urine separator, for the reasons that it is unreliable, very painful to the patient, and extremely liable to cause bleeding. Unless used in conjunction with cystoscopic examination it is often absolutely misleading.



Fig. 2.—Shows a maldeveloped lobulated kidney with a large stone completely filling and blocking the pelvis. It had caused no symptoms during life and was therefore thought to be healthy, the opposite kidney being removed with disastrous consequences.

3. *Radiography of the Kidneys and Ureters.*

As experience with this method of investigation has increased and as the instruments employed have been improved the results have become increasingly more reliable year by year. Some operators claim to give a correct diagnosis by this means in as large a proportion of cases as 95 per cent. This is certainly more sanguine than is warranted by my own experience. The introduction of enormously powerful coils and tubes, with the correspondingly diminished time of exposure necessary to obtain a good negative, has undoubtedly increased the reliability of this method of examination, but it still lacks anything approaching certainty.

One may be misled by it into committing two errors of diagnosis: (*a*) Errors of omission, in that we may fail to obtain a shadow of a stone when one is present; and (*b*) errors of commission, when we mistake for stones shadows on the negative which are not due to stones at all.

The first fallacy—that in which, although a stone is present in the kidneys or ureters, no shadow appears on the negative—may be due either to the composition of the stone being such that the rays pass through it too easily (uric acid is the least opaque, calcium oxalate most opaque, and the phosphates come in between), or the stone may be so small that its shadow is lost in that of other objects.

The second fallacy depends on shadows thrown by objects opaque to the rays other than stones, and which, although they are not situated in the kidneys or ureters, yet throw their shadows in what we judge to be the line of those structures. Such things as calcified mesenteric glands, concretions in the appendix, and hardened faeces, may be mistaken for stones in the kidney; and calcified phleboliths in the uterine or prostatic veins may throw shadows which will be mistaken for stones in the ureter.

We overcome these difficulties by first of all passing up the ureters bougies which are opaque to the rays or contain metal stylets, and then taking a radiograph. The shadow of the bougie will tell us the line of the ureter and pelvis of the kidney, and unless the shadows on the plate are in that line it is obvious that they cannot be in the ureter.

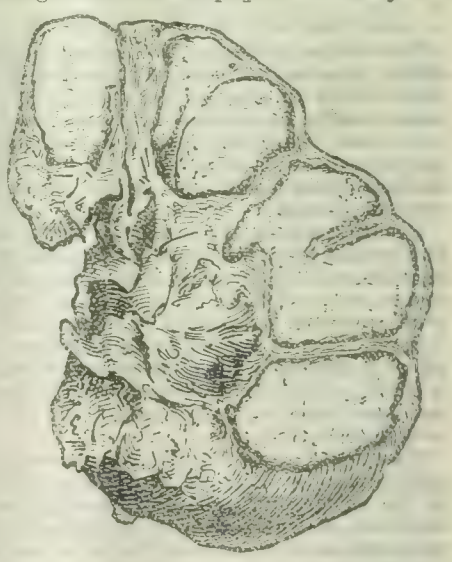


Fig. 3. — Shows a kidney completely disorganized by caseous tubercle which had caused no symptoms during life.

Despite these obvious sources of fallacy, radiography has helped the urinary surgeon considerably, and should always be made use of in a routine examination of the kidney. It should always include both kidneys and the whole length of both ureters, for we know that stones may exist in both kidneys, although the symptoms are one-sided; and stones in the ureter often cause symptoms indistinguishable from those of stones in the kidney. A good skiagram should show the outline of the psoas muscle and the shadow of the kidney, and as faeces throw shadows, it is essential that

the bowels should be very thoroughly emptied beforehand.

4. *Other Methods of Examination.*

These investigations—cystoscopy and its adjuncts and radiography—can only be carried out by those who have the necessary instruments and the experience to use them. There are other methods of investigation, however, from which much may be learnt that is indispensable in the interpretation of urinary disease. One of the most important of these is the chemical and microscopical examination of the urine. The significance of the constant or periodical presence of small quantities of blood, pus, or casts in the urine cannot be exaggerated. A naked-eye examination of the urine for blood or pus is not sufficient; microscopical search of the centrifugalized urine must be insisted on.

The bacteriology of the urine, especially the search for tubercle bacilli, must be carried out very thoroughly and exhaustively, and repeated several times if negative and tuberculosis be suspected. Care must be taken not to mistake the smegma bacillus for that of tubercle. It is an acid and often spirit-fast bacillus, which in appearance and staining reactions almost exactly resembles the tubercle bacillus. It enters the urine by contamination from the urethra and foreskin or labia during micturition. It may be eliminated, therefore, by examining only catheterized specimens. It is by no means uncommon to



Fig. 4.—A full size drawing of a maldeveloped kidney. This is one of five found in the *post-mortem* room during the last eighteen months.

find it in urines, especially of females; and to condemn a patient to a diagnosis of urinary tuberculosis because he happens to have smegma bacilli in his urine would be an awful mistake and one which might have far-reaching consequences. In women I always insist on a catheterized specimen, but in men in whom the passage of a catheter is a more serious undertaking, I find that specimens obtained after thorough cleansing of the glans and foreskin, with rejection of the first few ounces of urine passed, and the collection of the remainder without contact with the foreskin, are reliable.

The tuberculin tests, Calmette's conjunctival reaction, and von Pirquet's skin reaction, are of negative value only, for it must be borne in mind that tuberculosis of the urinary organs is never the primary deposit in the body: there is always some other focus from which they become infected via the blood stream.

Such methods of examination as sounding and washing out the bladder are not so reliable as cystoscopy, and should therefore only be employed in conjunction with it, or when it is not available.

One method of examination yet remains to be mentioned: it is I am afraid a much neglected and by no means pleasant one, but it is one from which very often conclusive evidence may be obtained—I refer to rectal examination. With a finger in the rectum, the prostate, seminal vesicles, lower end of the ureter, and the base of the bladder, may be thoroughly examined, and from information thus obtained I have often been able to clear up what were otherwise puzzling cases.

THE Jessop Hospital for Women, Sheffield, will receive £2,000 under the will of the late Mr. J. E. Cutler of that city.

THE Yorkshire Automobile Club members' competition for four-cylinder touring cars brought together a good number of 15-h.p. vehicles. The order of finish in the opening heat was Sunbeam, Argyll, Talbot, Arrol-Johnston. The Argyll made its first appearance in a race. The car was a standard 15 h.p., and weighed fully a ton.

ON THE EARLY DIAGNOSIS AND TREATMENT OF TUBERCULOUS KIDNEY.*

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OUT of a recent series of 400 cases of all sorts of bladder and renal complaints requiring the use of the cystoscope for diagnosis of which I have more or less extensive notes, 24—that is, 6 per cent.—were cases of tuberculous kidney, and as most of them have been seen in the course of private practice, enabling me to follow up their subsequent history, it has occurred to me that an analysis of them might be of some interest to the members of this society. In 13 of these the diagnosis was confirmed by operation, 9 having been operated on by myself and 4 by other surgeons. In a few, other tuberculous foci were found in other parts of the body—for example, lymphatic glands, epididymis, testicle, prostate, or lungs—but these associated lesions were entirely overshadowed by the renal or vesical condition. In the large majority the bladder was secondarily involved. I may remark, in passing, that I have not been able to satisfy myself that I have yet seen tuberculous disease limited to the latter organ. In most cases the kidney has been involved, and in the remainder the epididymis, testis, or prostate. From my own small experience, I believe that the most frequent cause of tubercle of the bladder is descending infection from the kidney.

Sex.

Eleven cases occurred in the male sex and 13 in the female. This shows a slight preponderance in the female, which accords with the general experience of genito-urinary surgeons.

Age.

The youngest patient was a boy aged 11 years. The case was an undoubted one, tubercle bacilli having been found in the urine, with enlargement of the left kidney, and characteristic ulcers in the bladder, chiefly on the same side. Another case was that of a girl aged 12 years. One was a boy, aged 17, who had, in addition, signs of early phthisis at the apex of the right lung. Eight occurred between the ages of 20 and 30, eight between the ages of 30 and 40, and three between the ages of 40 and 50. The general experience of surgeons is that the most susceptible age is between 20 and 40, and this is well borne out by the statistics I have just quoted, nearly 70 per cent. of my cases having been met with at this period of life.

Family History.

In 8 cases I was able to elicit a distinct history of tubercle in the immediate relations. In all but one of the remainder a family history of all forms of tubercle was denied. In one case I failed to find any note on this point. In about 33 per cent., therefore, there was a distinct family history of tubercle. In one case with, however, a history of pulmonary tubercle on the maternal side, the onset of the disease was attributed to the patient having had in her house for a year a parlourmaid in an advanced state of pulmonary phthisis.

Side Affected.

In 11 cases the right kidney was affected, as revealed by clinical methods; in 11 the left; in 1 both kidneys were obviously diseased, and in 1 the second kidney was suspected.

I am aware that it is impossible to say that a kidney is unaffected with tubercle even if the urine coming from its ureter shows no abnormality. Tubercles may be present in the kidney and give no sign of their presence. I shall return to this point at a later stage.

Presence of Tubercle Bacilli in the Urine.

I regret that the search for tubercle bacilli in the urine of these patients was not carried out so frequently or so persistently as I could have wished. They were found in 11 cases. In some of the remainder the diagnosis seemed so obvious that the search was not persisted in. I am satisfied that a prolonged search on many successive occasions is often necessary before the bacillus is found.

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* Read at a meeting of the Ulster Medical Society.

It was not found in some of the cases of operation in which a typical tuberculous kidney was removed.

Symptoms.

The discovery of unsuspected tubercle in the kidneys after the patient had died from other causes proves that he may have the condition I am describing, at any rate for a time, without any symptoms whatever. I recently operated on a gentleman whose right kidney showed a tuberculous abscess in its upper pole walled off by thick fibrous walls in which calcareous material had been deposited, and which had evidently been present for many months if not years. His symptoms were of very recent date and were due to the fact that, starting probably from this old focus, a large number of recent tubercles had become scattered throughout the organ involving finally the pelvis and ureter. I have been struck in looking over my notes to find how often I have recorded the fact that the general health of the patient appears to have been perfect. Even in fairly advanced cases, in which the bladder has been extensively involved, I have several times noticed that the patient has appeared to be robust and strong. This accords with my experience of other local forms of tubercle, notably tuberculous glands in the neck in children. The appearance of perfect health, therefore, is no guarantee that the patient is not suffering from tuberculous bladder or kidney. In other cases, however, the general health is obviously affected. In a young lady on whom I operated a couple of years ago, no complaint was made at first of kidney or bladder. She was losing flesh, easily tired, and felt that she was not well without being able to ascribe a reason. Routine examination by her medical attendant disclosed the fact that there was pus in the urine, and tubercle bacilli were subsequently discovered. At the operation, which was carried out a few months later, we found that the right kidney was extensively diseased. Fever may be entirely absent. When present it is usually of the intermittent hectic type. The local symptoms fall under two heads: first, those referable to the kidney and ureter, and secondly, those referable to the bladder and lower urinary organs.

The symptoms referable to the kidney are pain and soreness in the lumbar region, which may extend along the course of the ureter and so closely simulate renal colic due to calculus that a diagnosis of the latter is often made. In Case XIV, a policeman aged 25, apparently in good health, there was a history of seven or eight attacks of typical renal colic on the left side, attended with haematuria and frequency of micturition. Operation disclosed a tuberculous kidney with several abscess cavities involving the upper two-thirds of the organ. In some cases the kidney is enlarged and tender, with thickened ureter as felt per vaginam or per rectum. Too much stress must not, however, be laid on enlargement of the kidney or thickening of its ureter. I have seen an enlarged kidney condemned until ureteral catheterization proved it to have been actually the healthy organ, the other being the diseased one. Again, a girl, aged 25 years, had had symptoms of severe cystitis for about eight years. She had no localizing signs on either side, except that the ureter on the left side could be felt per vaginam to be thickened. On cystoscopic examination I could not find the orifice of the right ureter. Indigo-carmine appeared in the efflux from the left in twenty-five minutes after injection into the gluteal muscles, the patient being under an anaesthetic, but nothing came from the right. On exploration, the right kidney was found to be converted into a series of cysts, and the ureter was atrophic. The thickening of the left ureter was due to the fact that it carried the urine from the only functionating kidney, and had to perform a double duty. In 11 of my cases there was no localizing sign in the renal region when first seen, in the form either of pain or swelling. The diagnosis was made by the cystoscope and ureteral catheter. In Case XI there was pain in the right kidney. The ureteral catheter proved that the left was the offending organ, and this was duly confirmed by subsequent operation.

Symptoms Referable to the Lower Urinary Organs.

In almost every case of tubercle of the kidney symptoms of vesical irritation supervene sooner or later. This is not to be wondered at when one considers how frequently the bladder is involved; but even in cases in which there is no evidence of involvement of the latter, beyond perhaps changes at the orifice of the ureter of the affected kidney, vesical symptoms are present. In a few of my cases there was no obvious involvement of the bladder itself, but in the great majority that viscus was secondarily affected. In almost every case some frequency of micturition was present from the very first. This was accompanied or followed by smarting on micturition, and pain in the meatus in the female, or at the point of the penis in the male. Some passed a few drops of blood at the end of micturition, and in one case very severe haemorrhage occurred from an ulcer on the floor of the bladder. In addition, some complained of pain in the suprapubic or perineal regions. When the bladder becomes involved in this disease the symptoms are frequently progressive until the unfortunate patient is in a most pitiable condition from smarting, pain, frequency, and general urinary distress. He is often worse at night, sometimes having to rise every few minutes, until he is worn out by want of sleep. The symptoms are thus those of a very aggravated form of cystitis, and are frequently attributed by the patient or his attendant to the presence of stone in the bladder. Any attempt to wash out the latter is usually attended with violent spasm and pain, and if the bladder is forcibly distended bleeding is very apt to take place. Consequently, these patients are very hard to examine. In some cases, indeed, the attempt is hopeless, even under an anaesthetic. It is also not unattended with danger, especially if there is a mixed infection. One sometimes sees the temperature run up and the symptoms become aggravated by injudicious attempts to irrigate in cases of this sort. It is a matter of common observation that irrigation with nitrate of silver in weak solution has not the beneficial effect in this affection that it has in ordinary cases of cystitis. Indeed, the patient is often made worse rather than better by this treatment.

Most Striking Cystoscopic Appearances.

I have already alluded to the difficulty of examining these patients, and it will be readily understood, therefore, that the view obtained of an irritable bladder in a struggling patient, especially when there is attendant bleeding, is in many cases most unsatisfactory. Even under an anaesthetic the examination is not always easy. It is important, therefore, to have these cases cystoscoped early before the bladder is extensively involved, as it is only then that a safe and satisfactory examination can be made. It is not enough to diagnose tuberculous bladder. The primary focus in the genito-urinary tract must be sought for if possible, and this will be found most frequently in one or other kidney. Even in an early case there are usually changes at the orifice of the ureter of the affected kidney. Various authors—notably Mr. Hurry Fenwick—have described characteristic changes at the ureteral opening from which the nature and extent of the involvement of the kidney may be diagnosed; but there are few observers who are willing to stake their reputation upon a prediction from ureteric meatoscopy, especially when the patient is shortly to be operated on, as to what the surgeon will actually find when the kidney is explored. It is enough to be able to feel certain that the kidney is diseased, and I think this can be done by the cystoscopist with a moderate amount of practice. The chief change in my cases was, I think, an orifice which instead of being a slit had become converted into a circular opening. The surroundings of this opening, instead of being pale and flat like the healthy bladder, were congested, swollen and oedematous. In some cases there was evident ulceration of and around the orifice. In one or two the ureter opened like a pit on the summit of a little mound formed by the swollen mucous membrane of the bladder at the point of entrance. In Case XV, already referred to, I could not find the ureter on one side on account of degeneration of the corresponding kidney. In Case I the ureter of one side has after many years become dry, and the corresponding kidney has much diminished in size. When first examined I found pus discharging from its orifice. In Case XVIII one ureter squeezed out at intervals thick inspissated pus which formed a collection on the floor of the bladder like a worm cast. In Case VI the orifice of the affected ureter seemed to recede and approach during expiration and inspiration respectively. This I attributed to

the kidney with its rigid ureter being forced down during inspiration by the descent of the diaphragm and receding during expiration. Mr. Fenwick's dragged out orifice is a valuable sign in some very chronic cases.

In addition to the changes at the ureteral orifice of the affected side, and in many cases completely overshadowing them, are the appearances seen on the walls of the bladder. If the beginner sets out to find typical grey and yellow tubercles scattered over the bladder wall he will be doomed to disappointment. No doubt tubercles occur on the bladder wall, but the cases in which they can be seen by the cystoscope are not very frequent. The earliest appearances are red areas, which have been compared to footprints in the snow. These occur around the ureteral orifice, but may be widely scattered. They are submucus deposits, the mucous membrane over which will presently be shed, giving rise to tuberculous ulcers. The intervening areas of the bladder walls are quite healthy looking, at any rate at first. When ulceration is present it is usually more marked on the affected side, but this is by no means always so, as in Case VI, in which there was more ulceration on the side of the apparently healthy kidney. I have been struck with the frequency of ulceration and patches of redness on the anterior wall of the bladder. The explanation is probably that when the badder is empty the anterior wall is in contact with the trigone and adjoining portion of the bladder, and therefore easily infected therefrom. In Case XV the chief feature was the large oozing ulcer on the anterior wall. In addition to ulceration, and indeed when this is as yet absent, one often finds well marked cystitis, due probably to a mixed infection. In Case XXI this was so marked that I at first thought that I was dealing with a case of rather severe cystitis. Tubercle bacilli were, however, found in the urine. After washing the bladder out with a weak solution of protargol, the symptoms almost entirely disappeared, and I was able to make a much more satisfactory examination. I believe this patient had a mixed infection, and that the protargol relieved the cystitis. The walls of the bladder on the second occasion were almost healthy, but the surroundings of the left uterer were dull red and swollen. This was the only indication of the side affected. After ureteral catheterization I removed a kidney in the early stage of tuberculosis. I believe the supervention of other microorganisms upon the tuberculous infection contributes largely to the terrible distress from which these patients suffer in the later stages. In this very rough sketch of the most striking cystoscopic appearances seen in my cases, I fear I have given a very imperfect idea of the conditions found, but the time at my disposal is limited, and my paper must necessarily be short.

Information Obtained by the Ureteral Catheter.

I am aware that many authorities strongly deprecate the use of the ureteral catheter in cases of tubercle of the kidney and bladder, on the ground of liability to infection thereby of the sound kidney through abrasions of its ureter. I hope and believe that this is a theoretical objection if proper precautions be taken, as the information supplied by this means is so valuable that personally I should be very sorry to have to return to the older methods. I have not had in my own practice any accident with the ureteral catheter, though I have used it in all sorts of cases over 160 times. In none of the cases of tuberculous kidney—18 in number—in which I used it has there been any trouble attributable to its use. I have heard of surgeons opening the peritoneum and passing the hand across the abdomen to attempt examination of the opposite kidney, deeply situated behind the colon and peritoneum of the opposite side. If they are satisfied that such an examination can give them reliable information as to the condition of the kidney I have nothing more to say. In my own practice I have occasionally had some difficulty in pronouncing an opinion on the condition of a kidney lying bare on the loin until I had made an incision into it. Case XXI was one of this sort. Indeed, a bystander was sceptical that there was anything wrong with the kidney until it was opened and a tuberculous abscess disclosed in the lower pole.

Segregators of all kinds I have discarded long ago. I prefer more reliable and accurate methods. Whether they may be of service to those unaccustomed to the use of the cystoscope seems to me doubtful. One is working in the dark, and the slightest leak from one side to the other vitiates the whole examination. The chief use of the ureteral catheter in my hands has been to ascertain the condition of the second kidney if present. In all but 4 of the 18 cases in which this method was used the second kidney has given urine of a specific gravity of 1015 or over, free from pus and albumen—in a few cases a mere trace of albumen was found. I do not say that this is sufficient evidence of the integrity of the gland, but it is surely a great step in advance on the older methods. Personally, after one very severe lesson, I do not intend to remove any kidney, no matter how apparently diseased it may appear, till I have satisfied myself that the other kidney is moderately sound. If the opposite kidney secretes the usual quantity of urine, of a specific gravity of 1015 or over, and is free from albumen, pus, and casts, and if in addition it allows colouring matter like indigo-carmine to come through in from fifteen to twenty-five minutes, I have very little hesitation personally in removing the manifestly diseased one. Chromocystoscopy has served me very well, and I believe it is a good test of the functional capacity of the kidney. Cryoscopy, the phloridzin test, and the estimation of urea are more troublesome and difficult to carry out, but one or all of them ought not to be neglected if there is any doubt that the second kidney will be equal to the demands about to be made upon it by the removal of its fellow. Of the four exceptional cases in which the condition of the second kidney did not satisfy me, one, Case XXIII, had catheters in both ureters for an hour or more, but indigo-carmine did not appear on either side during the examination, which had to be conducted under chloroform. In fact, the colouring matter did not appear till the next day. Both kidneys were enlarged, and both were probably tuberculous. In Case X there were a few pus cells in the urine from the presumably healthy side. No operation was undertaken. In Case XII, a girl of 12 years, the urine on the presumably healthy side was normal, except for the specific gravity, which was low—1005. I was afraid to operate without further examination. In Case XXIV the urine from the presumably healthy side had a specific gravity under 1005, and contained a fair quantity of albumen, but no pus. I have not yet decided what to do with him.

In addition, however, to the use of the ureteral catheter for the purpose of investigating the condition of the opposite kidney, I have found it of inestimable value in enabling me to decide with certainty which was the affected side. I have, of course, seen marked changes at the ureteral orifice and alteration in the character of its discharge, but there are cases in which I cannot say that I should sacrifice the kidney solely on account of the appearances seen on meatoscopy. The changes at the orifice may be slight, and the amount of pus may be so small as to be invisible with the cystoscope. Besides, it is more definite and conclusive to obtain by catheter purulent urine from one side and normal urine from the other. I lay particular stress, as I have stated in previous papers, on the specific gravity of the urine obtained from each side, and also on the quantity obtained from each side in the same time. For this purpose a double catheterizing instrument must be used, and the patient ought not to have had any fluid for three hours. I am of opinion that purulent urine of *low* specific gravity coming in increased quantities from a ureter indicates early disease in the corresponding kidney, whereas similar urine coming in drops only indicates extensive disease. For instance, in Case VI purulent urine came in very small quantities from the affected side. I found on exploration that most of the kidney substance was destroyed by the disease. In Case XX, on the other hand, there was abundant urine of low specific gravity, containing pus, from the affected side. Operation disclosed an early stage of the disease. In short, tubercle in the early stage, like renal calculus, acts as an irritant, causing increased flow of limpid urine of low specific gravity.

In the later stages it destroys the kidney substance, so that the urinary salts are not secreted by the tubules and only a small quantity of fluid is filtered off by the remains of the gland structure. In 10 cases urine was obtained from both sides by the ureteral catheter. In no less than 9 the urine of the affected side had a specific gravity of

1005, as against 1015 to 1025 on the sound side. In the tenth the specific gravity on the affected side was 1010, as against 1025 on the sound side. In every case, therefore, there was a diminution on the affected side as compared with the sound side. In none of these 10 cases was there any pus on the opposite side. A trace of albumen was found in one or two. In 16 out of the 18 cases, in some of which I only catheterized the sound side, the urine from the latter was free from pus or any other definite evidence of tubercle. So far as it goes this evidence is in favour of the unilaterality of the lesion. I am aware, as I stated earlier in this paper, that tubercle may have been present in the apparently unaffected kidneys, but I record the observations for what they are worth. Finally, I have sometimes noticed that the ureteral catheter is with difficulty advanced into the affected ureter. I attribute this to the thickening and rigidity of the latter which is so characteristic of this disease.

Treatment.

In an affection of such a chronic nature as tubercle of the kidney, it is hard to apportion the due amount of credit to any particular line of treatment. It is important to consider what Nature does in these cases. I have reason to believe that in Case I the disease in the kidney is becoming quiescent after having lasted for at least nine years. There is still, however, ulceration of the bladder, and the patient had a few days ago a severe attack of haematuria. The kidney has apparently become obsolete, and the redness around the ureter has disappeared. The ureter is dry, no efflux being visible, even after injection of indigo carmine into the gluteal region. The colour is seen in less than twenty minutes from the ureter of the healthy side. It is interesting to note that the latter is still apparently free from infection. The affected kidney has diminished greatly in size, and is almost free from tenderness. The treatment has been almost exclusively injection of tuberculin by Dr. Houston. In Case XV I failed after very careful examination to find the ureteral orifice on the right side. I explored the corresponding kidney, and found it diminished in size. The capsule was adherent, and on section the pelvis was found to be filled with fibrous tissue. The cortex contained numerous smooth-walled cysts, most of which were filled with clear fluid; the remainder showed, in addition, a few flecks of pus. A probe introduced into the upper part of the ureter from below showed that the latter had become impervious. The pathologist who examined the specimen was of opinion that the condition was a hydronephrosis. The ureter was not thickened. On microscopical examination, a large amount of fibrous tissue replaced much of the kidney substance. The glomeruli and tubules remaining showed colloid degeneration. The arteries were greatly thickened. The condition was thought to be due to an old chronic inflammation, the cause of which was not determinable by section. As the patient's urine contained tubercle bacilli, and the bladder showed rather extensive ulceration, I am of opinion that the primary focus was the kidney just described. It is now nine and a half years since the onset of the patient's symptoms, and it would appear as if an attempt had been made by Nature to limit or cure the disease. In Case XX, already referred to, there was an old abscess cavity, in the walls of which calcareous material had become deposited —an effort at spontaneous cure. Fresh infection took place, however, evidently from the old focus, and I had to remove the affected kidney. These cases are the only ones in my series in which any attempt has been made by Nature to cure the disease. I shall be pleased to have particulars of any authentic cases in the practice of others. These facts in my own practice, in a more or less carefully observed series of 24 cases, have led me to believe that operation affords the best chance for the patient in the large majority of cases, and I have further evidence, apparently sufficient to justify me in urging early interference. In Case XX, just mentioned, the progress of the case from the onset of the symptoms of recrudescence was so rapid that in a month's time a large ulcer had formed in the previously healthy bladder. In Case XVII, ulceration of the bladder proceeded so rapidly that I was forced to interfere early, in the hope of relieving the progressively increasing urinary distress. In this case there were no cavities in the kidney, but scattered through it were numerous small tubercles. Tubercles undergoing caseous change were found in a somewhat dilated pelvis. The ureter was much thickened. In Case VI, also, the ulcers increased rapidly in number in a few weeks' time, and this in spite of tuberculin injections by an expert. I could give further instances of this progressive downhill course until arrested by operation, but those I have mentioned will suffice. Though I have seen ulceration disappear after nephrectomy, as in Case VI, and presume that it has disappeared in Cases IX and XI operated on by other surgeons, and now quite well, I am bound to say that, once started, it is most difficult to cure. In the two cases of long standing, previously referred to as tending to spontaneous cure, there is still ulceration of the bladder which shows very little disposition to disappear. As a broad rule, therefore, I would advise early nephrectomy, especially in those showing a tendency to become progressive, before ulceration of the bladder has taken place, and before the kidney has become fixed by extensive adhesions, or a perinephritic abscess has had time to form, provided, of course, that the other kidney is efficient and the patient is otherwise healthy. I have no experience of partial operations, never having seen a case in which the disease was so limited as to allow of any portion of the kidney being preserved. In suitable cases I am in favour of tuberculin injections, and I think these are especially indicated after nephrectomy, when the main focus has been removed, in the hope that any residual tubercle may be destroyed thereby. As regards palliative treatment, I have found very little benefit from irrigation of the bladder, or injections into it. In a few cases protargol in weak solution seems to have benefited a coexisting cystitis. Weak solutions of perchloride of mercury may do some good, and plain sterilized water will occasionally relieve by washing away some of the irritating matter. Nitrate of silver is absolutely contraindicated. It irritates the tuberculous bladder, and is greatly resented by patients. Ordinary hygienic treatment must, of course, be followed out, and opium or morphine may have to be given to relieve pain.

I have not time or space to describe the various pathological appearances found in the kidneys removed. They represented practically every stage of the disease, and corresponded with the descriptions found in works on this subject. When the kidney had become intimately adherent to its surroundings I had the greatest difficulty in removing it, as in Case XVIII, in which a perinephritic abscess had formed. This patient died six weeks after operation from sepsis. Early operation would have been advisable, before the abscess had formed and before dense adhesions had made removal almost impracticable.

Results.

In 9 cases I removed the affected kidney; 1 died, as above mentioned, six weeks after operation. Case IV lived for a year, making an apparently good recovery for a while, but succumbed later from pulmonary phthisis. Case VIII developed tuberculous epididymitis shortly after nephrectomy, and I had to remove the affected epididymis with the testicle. He still has nodules in his prostate, and is occasionally troubled with a small sinus over the position of the stump of the divided vas. In spite of this he is now in excellent health, being 3½ st. heavier than he was at the time of his operation two and a half years ago. Case VI, whose vesical ulcers had disappeared when examined four months after nephrectomy, is still keeping well three years later. The others are so far doing well. In 4 cases the affected kidney was removed by other surgeons. Two of these, operated on respectively by Messrs. R. J. Johnstone and John Campbell, are quite well more than two years after. A third, under the latter surgeon, is only a few months done. The fourth case was operated on by Mr. H. Stevenson, and died a few days later. I understand that the operation was, as in my case (No. XVIII), attended with the greatest difficulty on account of adhesions. This gives an operative mortality of about 15 per cent., but the cases dying after operation were undertaken almost too late to expect a good result, so that one can, I think, look forward to a death-rate in early cases of not much more than that of gastro-enterostomy or appendicectomy, provided, of course, that the corresponding organ on the opposite side has been found to be efficient. Of the cases not operated on, one (Case VII) died

four years after the onset of symptoms, from epileptiform convulsions, two have been lost sight of, and the others are living in a more or less miserable condition, with the exception of Case I, in which, as I have already stated, an attempt at natural cure has taken place.

CASE I.—Female, aged 42. Family history of tubercle present; right side. Early symptoms: Renal colic, frequency of micturition: there were both pain and swelling in the affected kidney; tubercle bacilli were found in urine. On cystoscopic examination: Purulent urine from right ureter, orifice of which was enlarged and rounded; area around orifice congested. Right ureter not catheterized: urine from left, specific gravity 1015, normal. Treatment: Tuberculin injections. Result, so far as known to date: Slow but steady improvement; when seen lately, four years after first cystoscopy, and nine years after onset of symptoms, right ureter dry.

CASE II.—Male, aged 33. Family history of tubercle present; right side. Early symptoms: Frequency of micturition, etc.; neither pain nor swelling. No tubercle bacilli found in urine. On cystoscopic examination: Neighbourhood of right ureteral orifice red and oedematous; urine from right, specific gravity 1010, contains pus; urine from left, specific gravity 1025, normal. Treatment: Medical. Result so far as known to date: Able to drive out occasionally, provided with a urinal; general health air; report three years after first cystoscopy.

CASE III.—Male, aged 22. Family history of tubercle present; left side. Early symptoms: Frequency of micturition, etc.; no swelling or pain until late, then swelling in left kidney; tubercle bacilli found in urine. On cystoscopic examination: Left ureteric orifice obscured; red patches and streaks on bladder walls. Treatment: Tuberculin injection at a late stage; nephrectomy by another surgeon: died a few days after operation, six years after onset of symptoms.

CASE IV.—Female, aged 25. Family history of tubercle probable; right side. Early symptoms: Slight frequency and scalding; at first neither pain nor swelling, later right kidney enlarged; tubercle bacilli found in urine. On cystoscopic examination: Orifice of right ureter enlarged and rounded with a number of small vessels around it; urine from right, specific gravity 1005, contained pus; urine from left, specific gravity 1020, normal. Treatment: Nephrectomy and tuberculin injections; died a year after operation from pulmonary phthisis and tuberculous meningitis, a year and a half after onset of symptoms.

CASE V.—Female, aged 20. Family history of tubercle absent; left side. Early symptoms: Frequency of micturition and pain in meatus; neither pain nor swelling; no tubercle bacilli found in urine. On cystoscopic examination: Ulcers behind left ureteral orifice, on anterior wall, and on right side of bladder wall. Treatment: Medical. Result, so far as known to date: Rather worse, two years after cystoscopy.

CASE VI.—Female, aged 36. Family history of tubercle absent; right side. Early symptoms: Scalding in urethra after micturition; right kidney enlarged: no tubercle bacilli found in urine. On cystoscopic examination: Right ureteral orifice dilated, with redness round it; sucked in and out during inspiration and expiration; several large ulcers on bladder wall, especially *left* side of base, and on trigone: urine from right, 1035, with pus; urine from left, 1015, normal. Treatment: Nephrectomy and injections of tuberculin. Result, so far as known to date: Patient quite well, three years after first cystoscopy and three years and a half since onset of symptoms; all the ulcers have disappeared.

CASE VII.—Female, aged 30. Family history of tubercle absent; left side. Early symptoms: Left renal colic, frequency of micturition, and smarting; no swelling; no tubercle bacilli found in urine. On cystoscopic examination: Several ulcers and haemorrhagic patches. Treatment: Injections of tuberculin; died with epileptiform convulsions, about four years after onset of symptoms.

CASE VIII.—Male, aged 47. Family history of tubercle absent; right side. Early symptoms: Pain in bladder, which travelled up to right kidney; no swelling, but pain in right kidney; tubercle bacilli found in urine. On cystoscopic examination: Orifice of right ureter surrounded by, and somewhat obscured by, a number of polypoid processes; urine from right, pale, with flakes of pus; from left side clear and normal. Treatment: Nephrectomy, and injections of tuberculin. Result, so far as known to date: Epididymis on affected side became tuberculous, and was removed with testis; sinus occasionally leaks in upper part of wound over stump of vas; otherwise quite well, two and a half years after operation and three years since onset of symptoms. Has gained over 3 st. in weight since operation.

CASE IX.—Female, aged 20.—Family history of tubercle absent; right side. Early symptoms: Severe pain in right kidney; later, scalding and frequency. Pain and swelling both present in affected kidney. No tubercle bacilli found in urine. On cystoscopic examination: Ureteral orifice enlarged and open; several well-marked ulcers on right side of bladder; right ureter not catheterized; urine from left normal. Treatment: Nephrectomy by Mr. R. J. Johnstone. Result, so far as known to date: Is now, two and a half years after operation, and three and a half years after onset of symptoms, quite well. No frequency, and no pain anywhere.

CASE X.—Male, aged 36. Family history of tubercle absent; left and ? right side. Early symptoms: Frequency of micturition; neither pain nor swelling. Tubercle bacilli found in urine. On cystoscopic examination: Left ureteral orifice surrounded by swollen mucous membrane, which was oozing; ulceration on left side. Urine from right contains a few pus cells and gives a perceptible ring with HNO_3; left not catheterized. Treatment: Injection of tuberculin. Result, so far as known to date: Keeping fairly well; frequency still very troublesome, but bleeding less: report two and a half years after cystoscopy, and about three years after onset.

CASE XI.—Female, 31. Family history of tubercle absent: left side. Early symptoms: Pain in right (or presumably healthy) kidney: none in left. Left kidney enlarged. No tubercle bacilli found in urine. On cystoscopic examination: Left ureteral orifice obscured by raised, swollen, and oedematous mucous membrane. Urine from right, 1020, normal; urine from left, 1005, contains pus in abundance. Treatment: Nephrectomy by Dr. John Campbell. Report, December, 1909, states that patient had given birth to a fine baby three months before; patient quite well two and a quarter years after operation and three and a quarter years after onset.

CASE XII.—Female, aged 12. Family history of tubercle absent; left side. Early symptoms: Frequency of micturition and suprapubic pain; neither pain nor swelling; no tubercle bacilli found in urine. On cystoscopic examination: Left ureteral orifice dilated; bladder walls inflamed and ulcerated; dull red and black patches; urine from right, 1005, otherwise normal; from left, 1005, contains pus. Treatment: Medical. This is a doubtful case of tuberculous kidney; she still, two years after cystoscopy, and two and a half since onset of symptoms, suffers much from frequency of micturition and foul-smelling urine.

CASE XIII.—Male, aged 11. Family history of tubercle absent; left side. Early symptoms: Frequency of micturition, etc.; left kidney enlarged: tubercle bacilli found in urine. On cystoscopic examination: Several ulcers, chiefly on left side. The patient was lost sight of.

CASE XIV.—Male, aged 25. Left side. Early symptoms: Left-sided renal colic and frequency of micturition; both pain and swelling in affected kidney; no tubercle bacilli found in urine. On cystoscopic examination: Left ureteral orifice looked like a mound, with slit-like opening at apex. Treatment: Nephrectomy. Result, so far as known to date: Had when last seen (about a year after operation) a little sinus in loin; otherwise quite well.

CASE XV.—Female, aged 25. Family history of tubercle absent; right side. Early symptoms: Frequency of micturition; neither pain nor swelling; tubercle bacilli found in urine. On cystoscopic examination: Right ureteral orifice invisible, even after intramuscular injections of indigo-carmine; ulcers right side and anterior wall of bladder: right ureter could not be found; left, urine, specific gravity 1015, with a trace of albumen, but no pus. Treatment: Nephrectomy; kidney atrophied and cystic. Result, so far as known to date: Doing well two months after operation and about nine and a half years after onset of symptoms.

CASE XVI.—Male, aged 17. Family history of tubercle absent; left side. Early symptoms: Frequency of micturition, etc.: neither pain nor swelling; no tubercle bacilli found in urine. On cystoscopic examination: Left ureteral orifice open and round: surrounded by a good deal of redness; red and haemorrhagic patches at base of bladder; urine from right, specific gravity 1025, normal: left, specific gravity 1005, with a few pus cells. The patient, who had signs of early phthisis at the apex of right lung, was lost sight of.

CASE XVII.—Male, aged 40. Family history of tubercle present: right side. Early symptoms: Frequency of micturition, etc.; pain in right kidney a year previously, which went away. No tubercle bacilli found in urine. On cystoscopic examination: Orifice of right ureter dark, irregular, and ulcerated, walls of bladder inflamed and ulcerated over a wide area; urine from right, specific gravity 1005, contained pus cells; left, 1020, with a trace of albumen. Treatment: Nephrectomy and injections of tuberculin. Result, so far as known to date: Improving slowly when last seen (January 10th), about nine months after operation, and one year and nine months after onset of symptoms.

CASE XVIII.—Male, aged 36. Family history of tubercle present; left side. Early symptoms: Typical renal colic in left side; no bladder symptoms; both pain and swelling; a perirenal abscess. No tubercle bacilli found in urine. On cystoscopic examination: Orifice of left ureter dark red, round, and projecting at intervals threads of pus; left side, no urine; right, urine, specific gravity 1020, normal. Treatment: Nephrectomy, dealing at same time with a huge perinephritic abscess. Died six weeks later from exhaustion. Wound became septic and made no attempt to heal; this was three and a half years from first onset of symptoms.

CASE XIX.—Female, aged 36. Family history of tubercle absent; right side. Early symptoms: Right renal pain and frequency of micturition; right kidney enlarged; no tubercle bacilli found in urine. On cystoscopic examination: Several ulcers at base and on anterior wall of bladder. Treatment: Medical. Result, so far as known to date: No improvement twelve months after onset of symptoms.

CASE XX.—Male, aged 38. Family history of tubercle absent: right side. Early symptoms: Frequency of micturition and smarting; neither pain nor swelling; tubercle bacilli found in urine. On cystoscopic examination: Right ureter somewhat patulous; urine from right, specific gravity, 1005, with pus cells; left, specific gravity, 1015, normal. Treatment: Nephrectomy, and injections of tuberculin. Result, so far as known to date: Doing well (three months after operation and about a year after onset of symptoms).

CASE XXI.—Female, aged 24. Family history of tubercle absent; left side. Early symptoms: Frequency of micturition,

etc.; neither pain nor swelling; tubercle bacilli found in urine. On cystoscopic examination: Dark red swollen mucous membrane round orifice of left ureter; urine from right, specific gravity 1020, normal; left, 1005, containing pus. Treatment: Nephrectomy, and injections of tuberculin. Result so far as known to date: Doing well (three months after operation).

Case xxii.—Female, aged 28. Family history of tubercle present; left side. Early symptoms: Frequency of micturition, etc.; neither pain nor swelling; tubercle bacilli found in urine. On cystoscopic examination: Left ureteral orifice surrounded by swollen, woolly-looking mucous membrane; patches of redness on left side of bladder; urine from right, specific gravity 1020, normal; left, specific gravity 1005, containing pus. Treatment: Nephrectomy by Dr. John Campbell. Result so far as known to date: Doing well (two months after operation).

Case xxiii.—Female, aged 31. Family history of tubercle absent; both kidneys affected. Early symptoms: Left-sided renal colic, and frequency of micturition; both kidneys enlarged; no tubercle bacilli found in urine. On cystoscopic examination: A large irregular ulcer at base of bladder; left ureteral orifice buried in this; right orifice just at edge of ulcer; under CHCl$_3$ with catheters in ureters, no urine; even after injection of indigo-carmine none could be seen flowing into bladder. Result so far as known to date: *In statu quo;* had anuria for twenty-four hours after examination.

Case xxiv.—Male, aged 23. Family history of tubercle present; right side; Early symptoms: Right-sided renal colic; right kidney enlarged; tubercle bacilli was found in urine. On cystoscopic examination: Right ureteral orifice round, red and dilated; red patches in neighbourhood; right ureter not catheterized; left, specific gravity under 1005, containing albumen. Treatment: Medical. Result so far as known to date: Going progressively downhill.

SUPRAPUBIC DRAINAGE OF THE BLADDER AS AN ALTERNATIVE TO PROSTATECTOMY AND AS A RELIEF OPERATION.

By J. B. PIKE, M R C S Eng.,
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Prostatectomy in selected cases, performed by an operator who has ample experience, is doubtless a satisfactory measure. If a large margin of risk had not to be allowed for no surgeon would condemn a patient to the inconveniences of catheter life. Suprapubic drainage is a middle course, and in many things a middle course, avoiding Scylla and Charybdis, is advisable. In cases of cancer of the bladder radical removal is a thing to be aimed at, but how often does it succeed? The bladder is removed and the ureters are transplanted, either in the abdominal wall or the rectum. In both methods the result is very doubtful, even though at first a good result may appear to have been gained. There are, however, some cases in which removal, either of the growth or the organ, seems hopeless, and here as a relief measure suprapubic drainage appears to have a valuable place. The two following cases illustrate these remarks:

Case i.

J. M., a farmer, of good physique, aged 69 years, was admitted to the Loughborough Hospital on October 25th, 1904. He was suffering from acute retention, due partly to enlarged prostate and partly to a very tight traumatic stricture of the membranous portion of the urethra. Catheterism was unsuccessful, and aspiration gave temporary relief. On the following day a puncture was made above the pubes with a trocar, and a Jacques catheter inserted through the cannula. The patient managed somehow to get this out in the night, and thus rendered cystotomy imperative under somewhat unfavourable conditions. The bladder was stitched to the edges of the wound and a large tube inserted.

The question of prostatectomy was brought before the patient in consultation with Mr. Bond of Leicester, and the operation was not pressed. The patient decided against it. In about six weeks he returned to his home and drained the bladder with some sort of rubber tube for about two years.

Having allowed the sinus to close he came to the hospital with retention in March, 1907. Relief was given by aspiration, and he passed water by the natural channel with increasing difficulty until November, 1907, when he sent for me to visit him. The only thing to do was to reopen the bladder, and this was done through the scar tissue, partly by incision, partly by trocar, the cannula being retained. We made various experiments with silver tubes, and at last got one to our liking. Since that time there has been very little trouble with the water, and the general condition has for the most part been good, his life having been quite active for a septuagenarian.

Case ii.

This was a case of multiple papilloma above the trigone. An exploratory cystotomy was done by Mr. Bond. Owing to the multiple nature and situation of the growth, it was decided that nothing further could be done. As I felt persuaded that the frequent micturition would become very painful if the wound closed, I kept a rubber tube permanently in the bladder. The cystotomy was done in March, 1909, and for many months great relief was obtained.

In these very painful cases the alternative is a poor thing at best, but slight relief is something to the good, and it may be desirable that life should be prolonged. I think these cases may be taken in evidence of the value of suprapubic drainage of the bladder.

THE INCIDENCE OF TUBERCULOSIS IN CHILDHOOD.*

By Priv. Doz. Dr. FRANZ HAMBURGER,
Vienna.

In conjunction with R. Monti, I have endeavoured, by extensive investigation, to determine the incidence of tuberculosis among the children of Vienna. We adopted the method of examining only children who were suffering from acute infectious diseases (scarlatina and diphtheria). In this way we obtained material which represented fairly accurately the real state of child-life in Vienna. All the children were first tested by Pirquet's cutaneous reaction. Those reacting negatively were, after two days, subjected to a subcutaneous tuberculin injection of 1 mg. Those of the children who showed a distinct inflammatory reaction at the injection point of at least three days' duration, were looked upon as tuberculous, as well as those showing a positive reaction.

In this way Monti and I found that out of 532 patients suffering from diphtheria or scarlatina 271 reacted positively—that is, about 50 per cent.

Out of	25	children in the	1st	year	0	reacted—	0	per cent.
,,	45	,, ,,	2nd	,,	4	,,	9	,,
,,	56	,, ,,	3rd	,,	11	,,	20	,,
,,	75	,, ,,	4th	,,	24	,,	32	,,
,,	50	,, ,,	5th	,,	26	,,	52	,,
,,	63	,, ,,	6th	,,	32	,,	51	,,
,,	46	,, ,,	7th	,,	28	,,	61	,,
,,	30	,, ,,	8th	,,	22	,,	73	,,
,,	35	,, ,,	9th	,,	25	,,	71	,,
,,	26	,, ,,	10th	,,	22	,,	85	,,
,,	29	,, ,,	11th	,,	27	,,	93	,,
,,	19	,, ,,	12th	,,	18	,,	95	,,
,,	17	,, ,,	13th	,,	16	,,	94	,,
,,	17	,, ,,	14th	,,	16	,,	94	,,

These results show how the frequency of tuberculosis in childhood increases from year to year† When childhood is divided into six periods, the following percentages with regard to the frequency of the disease are obtained:

1. First year	... ...	2 per cent.‡
2. Second year	... ...	9 ,,
3. Third to fourth year	... ...	27 ,,
4. Fifth to sixth year	... ...	51 ,,
5. Seventh to tenth year	... ...	71 ,,
6. Eleventh to fourteenth year	...	94 ,,

It follows that nearly all persons in Vienna of over 14 years of age are already "tuberculous." This fact appears extraordinary and almost incredible. It is only appreciated when we investigate the fact further, and consider that tuberculosis in childhood is a relatively harmless disease. It runs its course commonly without giving rise to any symptom. This explains the fact why so many children give a positive tuberculin reaction without at the same time developing any stronger symptoms of disease. It may even be said that the majority of children who are only affected by tuberculosis after the fifth or sixth year show no signs, or at least very few signs, of disease. That is the result of the constant increase of the frequency of tuberculosis on the one hand and the decrease of the tuberculous morbidity with increasing age on the other. This is further demonstrated by Pollak's clinical observations.

It must be fully understood that tuberculous infection and tuberculous morbidity are two conceptions which it is difficult to separate. While in the first, and also in the second, year the majority of children infected with tuber-

* Read at the Tuberculosis Conference, Edinburgh, July, 1910.

† The percentage for the first year is not reliable, because the number of children examined (23) is too small. The real incidence of tuberculosis in this age, according to Sperk, is about 2 per cent.

‡ Corrected figure, according to Sperk.

culosis give also clinical manifestations of disease, older children overcome the primary tuberculous infection, the more probably the older they are at the time of the infection, without showing more pronounced symptoms of disease.

The prognosis of tuberculosis developed in the several years becomes better from year to year. According to an approximate calculation, the mortality from fresh tuberculosis in the several periods is as follows:

1. First year	70 per cent.
2. Second year	10 ,,
3. Third to fourth year	7 ,,
4. Fifth to sixth year	2 ,,
5. Seventh to tenth year	2 ,,
6. Eleventh to fourteenth year ...	1 ,,

It is, therefore, clear that tuberculous morbidity decreases from year to year, although the incidence of tuberculous infection increases from year to year.

The statistics regarding the incidence of tuberculosis among the children of Vienna obtained by means of tuberculin reaction are confirmed by *post-mortem* results in recent years. Since the autopsy of children of over 6 years has been made with special attention to the probable existence of a tuberculous focus, an almost equally great frequency of tuberculosis in Vienna has been determined by autopsy as by the tuberculin test on the living patient. If in former years the statistics obtained by autopsy as to the incidence were much lower, this is explained by the fact that the examination was not sufficiently searching.

It must be specially emphasized that the figures obtained by Monti and myself refer only to the poorer population of Vienna. Probably in the wealthier population a much lower percentage of positive tuberculin reaction would be obtained than is the case in the poorer classes. In the case of the well-to-do open pulmonary tuberculosis—the only source of tuberculosis in childhood—is not only much more rare than in the case of the poor, but the wealthy protect themselves much more carefully from every infection.

The question now is whether the figures obtained by Monti and myself in Vienna are applicable to other towns as well. I think they are. If Ganghofer obtained lower figures in Prague than Monti and myself in Vienna, this is explained by the fact that the cutaneous reaction does not reveal all tuberculosis. The "Stich" reaction—that is, the local subcutaneous reaction—must also be employed if every case of tuberculosis is to be detected. That the frequency of tuberculosis is approximately as great in other large towns as in Vienna is supported by a recent publication by Nothmann, who gives almost the same figures for Düsseldorf as Monti and myself for Vienna. One may assume the same figures with regard to the incidence of tuberculosis in childhood in all the larger towns as I now present with regard to Vienna. In the country the incidence is probably rather less, and above all more irregular, than in the town.

Since the majority of persons develop tuberculosis in childhood we cannot be surprised that tuberculous symptoms are so common in childhood. Indeed, tuberculosis in children usually offers very different symptoms to those of adults.

CONCLUSIONS.

1. The majority of persons become infected by tuberculosis in childhood.
2. The frequency of tuberculous infection increases from year to year, whilst tuberculous morbidity—that is, the frequency of manifest tuberculous disease—decreases from year to year.
3. Tuberculosis is very commonly latent, producing no symptoms; this is especially so if the infection dates from the third or fourth year.
4. The prognosis of tuberculosis in childhood becomes more favourable the older the person is at the time of the first infection.

THE extra-parliamentary commission which is drawing up administrative regulations under the French old age pensions law will not report before November, so that the law cannot come into force until this time next year. It is estimated, however, that £1,800,000 will be required in 1911—that is to say, about one-third of the total estimated expenditure for a year.

ADDRESS ON
THE PREVENTION OF MORTALITY FROM PELVIC OPERATIONS.*

BY H. MACNAUGHTON-JONES, M.D., M.CH., M.A.O.,
PRESIDENT OF THE OBSTETRICAL AND GYNAECOLOGICAL SECTION OF THE ROYAL SOCIETY OF MEDICINE.

[ABSTRACT.]

[DR. MACNAUGHTON-JONES discussed the increased responsibility attached to operative interference through the perfection of modern preventive methods in diagnosis, preoperative measures, technique, and the post-operative management of the patient, entering separately into several points in each. The pernicious effects of delay in diagnosis were emphasized, as also the incalculable harm done by the present-day resort to boomed remedies, involving the postponement of seeking professional advice, and the danger arising from the reliance on the part of the public on popular medical literature which takes the form of some indispensable Household Medical Cookery Book, compiled on the "Every Man His Own Lawyer" principle. The exceptions in which a difficulty was found in making an early diagnosis were summarized. The pleading was not so much for a definite differentiation of the nature of conditions, as an early recognition of an abnormality, which, in the great proportion of cases, either at the time requires, or in the near future will demand, surgical interference. Vain temporizing, or the lulling of a patient into a sense of false security added in various ways to the magnitude, complications, and consequent risks of the future operation.]

How (he asked) is not life lost and operative risk increased by dallying with appendical disease, ectopic gestation, tuberculous and gonorrhoeal salpingitis, ovarian blood cysts, adnexal carcinoma, streptococcus and *B. coli* abscess of the tube or ovary, early carcinoma of the portio, exhausting haemorrhages, fibromitis, degenerations, adhesions, and the renal and cardiac complications of myoma of the uterus? The delusions that the ovaries are not frequently invaded by malignant disease; that myomata are not often the sources of fatal degenerations, or that the menopause is a time when expectancy is justified, and which explains various pathological conditions, of which the patient will be relieved when the climacteric has ceased, are myths of the past. Now we know that just in proportion to the years after 50 the risks and fatality from myomata are increased by necrosis and malignant degenerations.

The immediate antecedents of an operation might well be divided into the surroundings, and the preparation of the patient. Either we are ourselves the dupes of a fanciful, faddish system, and a Will-o'-the-wisp hunt after an impossible ideal, or we are striving to secure on scientific and assured grounds the greatest immunity from risk of those who place their lives in our hands. If we are justified in the steps we insist on as essential to effect the latter in our public hospitals and their costly theatres, with the refinements of aseptic precautions in tiled walls, mosaiced floors, with special drainage, filtered air, temperature regulators, sterilizers, pedalled sinks and dressing holders, airtight cases and glass operating tables—ought we not to come as near them as possible in our cottage hospitals and nursing homes?

There are cases in which, short of letting the patient die from her ignorance, we should absolutely refuse to operate, or before consenting, by the plainest speaking place the responsibility on her and her friends. It is not for us to condone a line of conduct which we believe increases enormously the risk to life.

There might be in every large town self-supporting sanatoriums, so furnished and equipped as to meet the requirements of the better-off classes, or the more modest or unpretentious demands of the poorer, and the charges should be regulated accordingly. The control might be municipal, but this need not exclude the right of private enterprise in the erection and conduct of the institution. Each sanatorium would have at least two operating theatres, and the necessary preparation, anaesthetizing, photographic, and radiographic rooms, with one general

* Delivered to the Maidstone Division of the South-Eastern Branch of the British Medical Association, June 23rd, 1910.

sterilizing department. Built on the corridor principle with lifts, the patients could be easily carried from the bed to the theatre with the least possible disturbance or exposure. They would have their own private medical attendant and select their own consultants. Each sanatorium would be under the immediate control of a medical director and assistant, and a joint medical and lay committee be responsible for the administration. All might be subject to State inspection. This is but a skeleton idea. It is the principle on which Loeve's Sanatorium in Vienna was conducted when I visited it. The details are easily worked out. It has these advantages —there is no mixing up of charity and legitimate expenditure of public money for the poor, with the indirect use of the same by those who are not ashamed to avail of it, and who have no right to it; it obviates the dislike of many who, shrinking from availing of a hospital, yet cannot afford the luxury of the private home; it leaves the medical attendant free to operate himself if he elect to do so, and to attend his patient.

[The questions of preoperative rest, attention to the bowel, mouth, teeth, and diet, were each separately discussed. The scopolamin-morphine-chlorcform method of anaesthesia (with or without oxygen) administered by the Harcourt regulator was advocated in certain cases. The advantage of ether over chloroform as an anaesthetic in secondary operations for sepsis, or in acute suppurative septic states, he considered was established by the results recorded by Harold Stiles and Beesley of acetone production, and the experiments on anaphylaxis by Besredka. Spinal anaesthesia and infiltration anaesthesia had each its proper place.]

With regard to asepsis, quite apart from scrupulous attention to surroundings, appliances, the precautions of the operator, assistants, nurses, the sterilization of the clothing of the patient, and the material and the appliances used, as well as the final toilet and subsequent dressings, there were other matters quite as important in the effort to arrive at an ideal asepsis. This included the careful dealing with imprisoned septic fluids and exposed tissues, or any accidental bowel communications, the complete arrest of haemorrhage, and the use when absolutely necessary, and only then, of drainage. Operation by the clock was to be deprecated. There were exceptional occasions when time came in as the most important element for consideration. But a modern pelvic operation, in complete haemostasis, the anticipation of future perilous adhesions by careful covering of pedicles and raw surfaces, the examination of suspicious tissues or organs, entirely exclude any justification for "hurry," a word we should not at any cost admit into our surgical vocabulary.

In an instance of a large collection of putrid pus involving a probable septic infection of an extensive wound, after closure of the peritoneum and the application of formalin solution (1 in 1,000) to the infected surfaces, he had resected the edges for their entire length, also inserting a suprapubic rubber drain, with a most successful result. Paquelin's cautery might be used instead of the formalin. The rubber drain is preferable to the gauze, save in the case where a Mikulicz pack is required, or in vaginal drainage. Saline flushing of the pelvis and abdominal cavity, save in very exceptional cases, is better avoided. Careful and gentle mopping out with gauze, wet with weak formalin solution, is preferable. It were well to remember the immediate and remote dangers arising from overlooking residual septic products in cases of arrested pregnancy when the uterus was emptied by ovum forceps or curettage. Such are easily overlooked, and hence the necessity for douching while maintaining dilatation of the canal, and repeating the curettage if the temperature and nature of the discharge called for it.

Shock, either during or after operation, is not so often heard of now with our present technique and the improved administration of anaesthetics. The recent advances in the employment of continuous saline irrigation of the rectum, or proctoclysis (J. B. Murphy), the employment of "infundibulin" by intramuscular injection (Blair Bell), and the use of the principle "tyramine" obtained from ergot, afford most important means of dealing with shock, paresis of the bowel, and haemorrhage. The Fowler position, aided by proctoclysis and suprapubic drainage, was an invaluable adjunct to the treatment of post-operative peritonitis. Cyllin is a highly valuable remedy in gastro-intestinal complications. It is a most powerful bactericide, especially of the *B. coli;* is well borne, assists in checking sickness and in the disinfection of the bowel. I have used it habitually for some years as a post-operative remedy in these cases.

No hard and fast rule can be laid down for the resort to morphine. The administration of a nightly dose of atropine $\frac{1}{100}$ m and $\frac{1}{6}$ m of morphine has often an admirable effect in controlling sickness and inducing a restful night. It may be stated as a general rule that morphine is better avoided, but a woman's temperament is a powerful asset in her recovery account, and an important item either on the credit or debit side of our operative balance sheet. As to diet and movement, I do not believe in preoperative starvation. We do not now follow the old practice of Lawson Tait, and give nothing save hot water for so many hours after operation, nor do we keep any longer the patient on her back for days; still, *in medio tutissimus ibis* and *festina lente* are good surgical mottoes, and we are safest in feeling our way, first with fluid, and then with light, easily assimilable nourishment, and not too soon taking the risks of movement out of bed and walking.

ON THE PRESENCE OF SUGAR IN HEALTHY URINE AS A SOURCE OF THE OSAZONE REACTION.

BY

F. W. PAVY, M.D., LL.D., F.R.S., and H. W. BYWATERS, D.Sc., PH.D., F.I.C.

The communication of Dr. William Russell in the British Medical Journal of July 2nd, p. 5, on "The 'Pancreatic Reaction' in Abdominal Disease," has led us to send for publication the subjoined notes, drawn from an unpublished paper written about two years ago, and founded upon experimental work.

The question of the presence of sugar in normal urine was, at a period now long since past, the subject of a warm and somewhat prolonged discussion, in which one of us (F. W. P.) took an active part on the affirmative side. It was contended that the cupric oxide reducing power, recognizable by means of the ammoniated cupric test, was due, at least in part, to the presence of free sugar, and this free sugar was, as a matter of fact, found to be susceptible of separation by precipitation with lead acetate and ammonia, and afterwards to undergo alcoholic fermentation in contact with yeast.

The introduction of the phenylhydrazine test by Emil Fischer has since furnished the means of forcibly corroborating the conclusion previously arrived at. An osazone is always readily obtainable from the extracted sugar derived from a moderate quantity of urine; and, further, as will be seen from what follows, the preliminary separation of the sugar is, in many cases, unnecessary, inasmuch as the amount of it that is present in normal urine is sufficiently large to permit of osazone crystals being obtained by direct treatment with phenylhydrazine.

It is advantageous, however, to treat the urine in the first place with lead acetate to remove certain of the urinary constituents which seem to prevent the osazone from assuming a crystalline form; 20 c.cm. of the urine are shaken with 5 c cm. of a 25 per cent. solution of neutral lead acetate and the resulting precipitate removed by filtration. The excess of lead is then got rid of by adding 2 grams of powdered sodium sulphate, boiling, cooling in a stream of cold water, and filtering off the precipitated lead sulphate; 15 c cm. of the filtrate are now added to 2 grams of sodium acetate, 0.8 grams of phenylhydrazine hydrochloride, and 1 5 c cm. of acetic acid (*B.P.*), contained in a small flask, and the mixture is boiled under a reflux condenser for fifteen minutes. The liquid is filtered while still hot into a test tube and allowed to stand for some hours. The small deposit which collects at the bottom of the tube will, in most cases, be found on microscopic examination to consist of the characteristic sheaves and rosettes of osazone crystals.

The same results follow if the neutral lead acetate be replaced, as in Cammidge's pancreatic reaction, by 4 grams of powdered tribasic lead acetate, provided sufficient acetic acid be added to give an acid reaction to the mixture. In

the absence of free acid the larger portion of the sugar is precipitated by the basic lead salt in the same manner as happens in the case of a pure glucose solution, and hence from the filtrate no osazone may be obtained.

The form of osazone crystal obtained is dependent on the varying conditions of concentration, rate of cooling, presence of foreign matter, etc.; and by suitably altering these conditions the same osazone may be made to separate out in different forms—as, for example, in ill-defined aggregates, feathery masses or sheaves of fine hairlike crystals, or needles grouped in sheaves or in starlike clusters. Urines of low specific gravity may require to be concentrated, whilst those of high specific gravity may require dilution before the characteristic crystalline osazone deposit is obtainable. It has often been found that boiling with the phenylhydrazine for a longer time (thirty minutes) led to the deposition of well-defined crystals where amorphous masses had otherwise been previously obtained.

The sugar present in normal urine is not solely, nor even chiefly, glucose. In a communication on the nature of the sugar present in normal blood, urine, and muscle, by F. W. Pavy and R. L. Siau, published in vol. xxvi of the *Journal of Physiology*, 1901, attention was drawn to the existence of a disaccharide—isomaltose—in association with the glucose. As isomaltosazone is more soluble than glucosazone, it follows that a larger quantity of osazone crystals will be yielded by a specimen of urine if the isomaltose is converted, prior to the treatment with phenylhydrazine, into glucose by hydrolysis with a mineral acid.

In Cammidge's pancreatic reaction, hydrolysis constitutes one of the essential features, and hence the conditions are such as to favour the production of osazone crystals from the sugar normally present in the urine. Adopting the method of hydrolysis described by Cammidge, it has been found that, after treatment with lead carbonate, basic lead acetate, and phenylhydrazine, most of the specimens of healthy urine examined have yielded a deposit of characteristic osazone crystals.

Besides normal human urines, the urines of horses, cats, and rabbits have been submitted to experimental treatment, and in almost all cases have been found to yield typical osazone crystals.

Although a sort of reluctant assent is now generally given to the statement that normal urine contains sugar, there nevertheless still seems to exist a tendency to minimize its significance. The quantity, however, although the urine may not give a reaction with Fehling's solution on account of the inhibiting effect of certain of its constituents, may be in reality considerable, amounting, for instance, as a general condition, to 2.5 or more per 1,000. It is therefore to be looked upon as nothing more than a natural occurrence that osazone crystals should be obtainable from normal urine, and it all depends upon incidental circumstances whether they are obtained or not.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CALCIUM CHLORIDE IN RHINORRHOEA.

IT will be conceded even by the most experienced rhinologists that the treatment of that exceedingly annoying and distressing symptom, rhinorrhoea, is, to put it mildly, unsatisfactory.

It is considered, and has been considered for a long time, that rhinorrhoea is a symptom of a vasomotor rhinitis. All the remedies recommended for its relief had their basis in the idea that this symptom was an evidence of a neurosis. Personally I had felt for a long time quite helpless in the matter of treatment. There appeared only one other source for the trouble, and that was the blood. Consequently, some two years ago I first tried the effect of calcium chloride, giving 30 to 45 grains a day for two weeks. With scarcely an exception this objectionable symptom was completely removed; sometimes it recurred at long intervals, always to yield again; and, so far, no case of rhinorrhoea has proved absolutely unresponsive, though one was very intractable.

The real pathology of the condition I have not attempted to elucidate, but the amount of chloride in the blood may yield a hint as to the causative factor, probably merely excessive osmosis.

I have not employed the salt so far in spasmodic sneezing, hay fever, or asthma, but it might possibly be of use here also.

London, W. RICHARD LAKE, F.R.C.S.Eng.

A CASE OF SELF-PRODUCED ALOPECIA.

A MAN aged 30 is at present a patient in Northumberland County Asylum suffering from chronic mania. On admission three years ago he had a thick crop of hair and a heavy brown moustache. Some months since he began to pluck the hairs out of his scalp and face. Epilation has been carried out so extensively that except for a slight downy covering, he has no hair on his scalp, eyebrows, or face. He has also removed all hair from the axillae and pubes.

Though this form of self-mutilation is by no means uncommon amongst the insane, I have seen no other case in which epilation has been so persistent and complete. I have at present under my care another man who has in time past indulged in this insane practice. He has several whitish patches on his scalp, where the hair has grown again after epilation, but with a change in colour.

G. R. EAST, M.B., D.P.H.

Northampton County Asylum, Morpeth.

INJURY OF EAR BY HATPIN.

THE following case, as illustrating the dangers of the large hatpin, is, I think, worth recording:

On April 9th I received an urgent message to see a lady who was said to have run a hatpin into her ear.

On arrival, I was informed that the patient, in trying to fix on her hat with a large pin before the mirror, had inadvertently run the pin into her ear instead of the hat. She immediately suffered from giddiness and collapse, and nearly fainted.

On examining the ear, I could find no perforation of the tympanic membrane, but close to the drum the floor of the meatus showed a scratch. She complained of giddiness and tinnitus, but no pain, and was deaf to the watch and tuning-fork.

Under careful antiseptic dressing the wound healed without any discharge, the deafness and tinnitus remaining.

On May 13th I asked Dr. Stevenson, of Liverpool, to see her as to prognosis of recovery of the hearing. He reported: "I could not see any wound in the membrana tympani, but I think there is no doubt she has partially dislocated the stapes from its vestibular attachment, or, at any rate, altered its position. I think she will slowly improve."

Under politzerization—absorbent drops and mild counter-irritation to the mastoid—she has at the present date somewhat improved, but considerable deafness and tinnitus remain.

Chester. ALFRED MANN, M.D.

URINE REACTION IN LOBAR PNEUMONIA.

I SHOULD like to call attention to a urine reaction in cases of lobar pneumonia which is not mentioned in any books on urinology or clinical medicine as far as I can discover.

The reaction is obtained by using Heller's test for albumen. A dense-white or dirty-white ring, or perhaps only a haze, appears above the junction of the acid and the urine. In albuminuria it is at the junction of the two fluids. Sometimes it only appears after the treated specimen has stood for an hour or more, whilst in others it appears immediately. If the urine is turbid it must be filtered, and the reaction will appear in the clear filtrate.

In all cases in which the reaction appears day after day the prognosis is favourable; if it disappears before the crisis or immediately after the crisis unfavourable symptoms are experienced. From my observations the quantity of precipitate appears to bear a distinct relation to the severity of the pneumonia and to the eventual recovery or otherwise. I have only known it to appear in one fatal case, and in this case three distinct rings were visible.

It is found most plentifully in those cases of pneumonia which have no abnormal temperature, or where the condi-

tion is discovered by accident. Cases of double pneumonia which have recovered without showing the reaction have had severe diarrhoea at the crisis.

The reaction is only found in fresh urines, and it may have completely disappeared in twenty-four hours. I have on three occasions sent specimens to be analysed, and in each case have had the reply that nothing in the nature I have described was present, and that there was no albumose; hence it is apparent that the substance is not one of the known albumoses.

I have used Heller's test systematically in all urine examinations since the reaction was first brought to my notice in July, 1903, at the Victoria Hospital, Burnley, and up to the present have failed to find this peculiar reaction in any other urines than those of patients suffering from some form of pneumonia.

The difficulty in collecting urine from infants has prevented me from placing any reliance upon the test as far as they are concerned, and the results are from those who were able to pass urine into an ordinary urine glass.

Southport. R. C. Holt, M.D.Durh., M.R.C.P.Lond.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

Medical Section.

Tuesday, June 28th, 1910.

J. Mitchell Bruce, M.D., F.R.C.P., President, in the Chair.

Auscultatory Sphygmometry.

Dr. George Oliver gave a demonstration of this method, being a combination of tactile and auscultatory methods of reading the systolic and diastolic blood pressure. An ordinary Riva-Rocci band was applied to the arm, and the artery below was auscultated during the increase of the pressure by the armlet. At a certain pressure a "thud" became audible, and persisted till it disappeared on the maximum systolic pressure being reached. The middle of the period during which the thud was audible represented the diastolic pressure. Auscultation of the artery was effected either by a stethoscope or by a specially arranged phoneudoscope attached by a bracelet to the front of the elbow below the band.

Dorsal Percussion of the Thorax and of the Stomach.

Dr. William Ewart made a communication on this subject in which he first reviewed our present knowledge of the systematic dorsal percussion and plexigraphy of the viscera, both before and after the advent of radioscopy, incidentally describing the results of spinal percussion, and then described his results obtained in the dorsal examination of the stomach, particularly what he called the gastric nucleus of resonance—a circular area of resonance under 3 in. in diameter below the angle of the left scapula. This sign was claimed as new, and for its demonstration, as well as for successful dorsal percussion generally, the use of a suitable pleximeter was strongly advocated.

The eighth International Physiological Congress will be held in the Physiological Institute of the University of Vienna from September 27th to 30th, under the presidency of Professor Sigmund Exner. Among the communications promised are the following: Dr. Edridge-Green (London): Demonstration of method of testing colour perception spectometer; demonstration of lantern test for colour blindness. Dr. A. S. Grünbaum (Leeds): On the changes produced by radium in normal cells. Drs. F. S. Lee and M. Morse (Woodstock): The summation of stimuli. Communications in regard to the Congress should be addressed to Professor O. v. Fürth, Physiologisches Institut, Wien IX, Währingerstrasse 13. From September 26th to October 1st an exhibition of physiological apparatus will be held.

Reviews.

THE SPECIAL SENSES.

We are indebted to Mr. M. Greenwood for an excellent book on the *Physiology of the Special Senses*.[1] Students of experimental psychology who study this book in conjunction with Professor C. Myer's admirable treatise issued in the same style and by the same publishers will gain a thorough knowledge of their subject, for the one book fills in and completes the other. Mr. Greenwood has set out to give the advanced student of physiology a more detailed knowledge of this part of the subject than can be obtained from the general textbooks. He assumes that the student has studied in the textbooks the anatomy and histology of the sense organs, and is acquainted with the rudiments of physiological optics and acoustics, and gives him a summary of inquiries into the original sources of information—the monographs of the best researchers in Europe, which time and difficulties of foreign languages hardly permit the student to make much use of. In the first chapter he deals with the "laws" of Müller, Weber, and Fechner, and concludes that "the experimental basis of Weber's 'law' is not firm enough to permit our attaching much importance to the formula itself." Measurements only have a meaning when the unit is clearly and uniquely defined—or, under very special circumstances only, when its existence can be inferred. In the case of sensations, no such scale has been given. To say that one body has twice the mass of another is intelligible because the unit of mass can be defined; to say that one sensation is twice as intense as another means nothing until the unit is fixed. It seems doubtful, then, whether we are in position to measure sensations at all, and until we are, the formulation of a quantitative law is hardly justifiable. In the following three chapters the author deals with the physiology of cutaneous sensations, and we note the interesting observation of von Frey that identical pressure sensations are produced by deforming the skin by pulling it out or by pushing it in: "The end organ is excited by a change in the existing pressure relations of end organ and superficies, whether the change be positive or negative, increase or decrease." In connexion with pain he discusses the evidence for the existence of special pain points in the skin which von Frey thinks are the intraepithelial nerve endings. According to Lennander, increased peristalsis, set up by an inflammatory condition of the gut, acts as a mechanical stimulus exerting traction on the peritoneum. Traction alone is an effective stimulus for the parietal peritoneum.

All organs innervated by the sympathetic or by the vagus below the origin of the recurrent laryngeal are insensitive; thus pain is not excited by stimulation of the anterior wall of the vagina, the uterus, ovaries, and Fallopian tubes. Certain stimuli applied to the viscera are capable of eliciting pain, but the pain is not localized in the viscera; it is referred to some cutaneous surface, and the area of reference is often hyperaesthetic (Head). The author might well have given a little more space to the interesting and important subject of referred pain. Chapter IV is devoted to an excellent summary of Head and River's work on protopathic and epicritic sensibility. Mr. Greenwood considers their theoretical conclusions to hold good in spite of the recent experiments and criticisms of Trotter and Davis. The researches of Theodore Thompson seem to have established that the ascending intraspinal paths are three in number—one carrying up painful and thermal impulses of all forms, a second conveying tactile impulses, and a third those connected with the sense of position. "The distinction between protopathic and epicritic systems is therefore definitely subspinal." We are not yet convinced that there are these two forms of sensations, and think the protopathic type of sensation may be due to imperfect conduction, in spite of the curious agreement of the first returning sensations in the paralysed part with those normal in the penis. In the fifth chapter, which deals with taste and smell, some ingenious experiments of Paulsen are noted; he placed squares of red litmus

[1] *Physiology of the Special Senses.* By Major Greenwood, jun., M.R.C.S., L.R.C.P., F.S.S. London: E. Arnold. 1910. (Med. 8vo, pp. 247. 8s. 6d.)

paper over the mucous membrane of the nasal cavity of a cadaver, and by drawing through ammonia vapour from the trachea proved that no air thus reaches the olfactory mucous membrane. A sniff is necessary to set up vortices and stimulate the olfactory nerve. If 2 per cent. acetic acid is led up one nostril and 1 per cent. ammonia up the other, no odour at all may be perceptible. Several such antagonistic smells are known—for example, musk and oil of bitter almonds, caoutchouc and paraffin, volatile oils and iodoform. Mr. Greenwood recalls some curious old experiments of Magendie, who destroyed the olfactory nerves in a dog right down to the lamina cribrosa, and yet the animal unhesitatingly picked out packets of paper containing cheese from others: he notes also that Claude Bernard once in performing an autopsy on a woman found she had no olfactory bulbs and an imperforate lamina cribrosa, yet she had had normal powers of smell.

Chapters VI and VII deal with the sense of position and movement. "The actual dimensions of the semicircular canals are such that no actual streaming of the liquid can be supposed to occur." But at each positive and negative acceleration there is a change in the existing fluid pressure relation, and we should therefore expect accelerations to be perceived, but not uniform movements. Experiment shows that this is so. "The sense of position as distinct from movement is *perhaps* referable to the end organ of the utricle." The author mentions some interesting experiments of Exner on the homing instinct of pigeons. The pigeons were taken 30 miles or so by rail in a dark basket; some were rotated, some anaesthetized all the way. They were liberated in a place strange to them and separated by mountains from Vienna. Most of them, and especially the old birds, reached home safely. Visual experiences were evidently the guide here.

Deep anaesthesia abolishes the local sense of position almost entirely; cutaneous anaesthesia does not. The passage of a faradic current through the joint at which movement occurs disturbs, completely or to a large extent, the accuracy with which the movement is judged. It is interesting to note that the "merry go round" illusion (that the vertical is inclined) is not found in many deaf mutes; also rotatory vertigo does not in many of them occur.

In the next two chapters the author deals with hearing, and gives in the first one an historical sketch. Helmholtz's theory, he says, "accounts satisfactorily for a greater number of facts than any of the others, but at the same time the difficulties in the way of its full acceptance are so numerous that we must not regard it as an established proof." The main objection to the theory is the extreme difficulty, in view of the histological structure, of understanding how the basilar membrane can vibrate in the way postulated by Helmholtz. A condition studied by Jacobsen, and dignified with the awe inspiring name of "diplacusis binauralis dysharmonica," in which the patient hears with one ear a greater or smaller portion of the musical scale falsely; this condition and most of the secondary phenomena of compound tones can be explained well by Helmholtz's hypothesis. "Two tones near each other in pitch should excite a zone of fibres, and so lead to variations of intensity of the nature of beats."

The last eleven chapters are devoted to vision, and the reader will find in them an accurate and philosophic treatment of the comparative physiology of vision, of retinal processes, visual adaptation and peripheral vision, trichromatic vision, and dichromatic vision of the colour-blind, after-images or successive induction, contrast and the physiology of space, together with an account of the historical theories of vision, and a discussion of modern views. Two distinct visual mechanisms exist, according to Paranaud and von Kries; "of these, one is concerned in the elaboration of chromatic and achromatic stimuli, and is represented in the retina by the cones; the other mechanism deals with achromatic responses only, and is represented by the reds and visual purple. The former mechanism is the only one which can act in bright light, and its responsiveness is little, if at all, increased by resting in darkness; the latter is brought into play when the eye has been shielded from stimulation, being the sole or chief agency for twilight vision; it is characterized by special responsiveness to ethereal vibrations of short wave length." The importance of dark adaptation comes home to one when making a "screen" examination with the Roentgen rays. The totally colour-blind has the twilight vision only; night blindness (a family defect transmitted through generations) is due to lack of the mechanism for twilight vision.

Mr. Greenwood has thoroughly studied and given us the best of the German and French authorities.

ROENTGEN RAYS AND PEDIATRICS.

IN the preface to his book on *Living Anatomy and Pathology*, or, as the subtitle more accurately puts it, on the *Diagnosis of Disease in Early Life by the Roentgen Method*, Dr. ROTCH[2] says that the book is devoted to diagnosis, and is intended to provide a means by which a fair knowledge of the Roentgen method may be acquired. It is far more than this, for it includes a suggestive discussion of the differences between anatomical and physiological and chronological age in the child and of development in general, and of the State laws regarding child labour. After considering and illustrating by means of *x* radiographs the normal anatomy of childhood from the intrauterine period up to the age of puberty, the author goes on to discuss the question of the frequent discrepancies between the age of the child as measured by time and its age as shown by its stage of development as compared with the average. He is strongly of opinion that "some standard index, such as the changes in the epiphyses, is more reliable than the usually accepted standard of months and years," and he pleads for the classification of all school children according to the state of the development of the bones at the wrist. Dr. Rotch draws a rather gloomy picture of the results of the present system of classification by age alone in American schools. How far this picture may be true for those schools we will not venture to judge, but we do not think that in this country such narrow limits of age are respected, but we believe that children of school age are classified according to their abilities, and that the experience and common sense of teachers enable them to discriminate quite as well as a radiograph could. In many States legislation concerning child labour in factories is behindhand. In a number of them children are still allowed to work at the tender age of 10 years. As Dr. Rotch points out, in some cases, either wilfully or from ignorance, the parents overstate the ages, and we may surmise that children of 8 or 9 years are working in factories in the United States, in some cases for long hours daily. Dr. Rotch's suggestion that age by years should be disregarded in such cases, and only the evidence of the *x* radiographs of the epiphyses be accepted, although it may be but a counsel of perfection, is sound, provided that enough observations are made to establish a standard. In this respect the average dates of the appearance and union of the epiphyses as given in works of anatomy require correction on the evidence of *x* rays, as Mr. John Poland has already shown in his standard work. Dr. Rotch is careful to emphasize the need of many more observations before a trustworthy standard can be set up. The greater part of the book consists of sections describing the diseases of infancy and childhood, and at the end of each section are grouped reproductions of radiographs, each one having its legend opposite it—a most convenient arrangement. None of the pictures has been retouched, so that they show only what may be observed in the originals and are not mere diagrams, which might mislead. As Dr. Rotch has paid so much attention to the bones of the wrist and forearm, it is curious that he makes no mention of the cupping of the diaphyses, especially of the lower end of the ulna, which has been recorded by some English observers as characteristic of rickets as well as of some less common conditions. Some of Dr. Rotch's plates show the condition clearly. Traumatic affections, except foreign bodies, are not included in this work, but there are a number of plates showing the development of the teeth. Paper, print, and the general appearance of the book are excellent.

[2] *Living Anatomy and Pathology. The Diagnosis of Diseases in Early Life by the Roentgen Method.* By Thomas Morgan Rotch, M.D., Professor of Pediatrics, Harvard University. Philadelphia and London: J. B. Lippincott Company. (Cr. 4to, pp. 221; plates 264, illustrations 303. 25s.)

TEXTBOOKS OF PATHOLOGY.

As Professor WOODHEAD's useful and well-known textbook on *Practical Pathology* has been out of print for many years, the appearance of a new edition (the fourth) is particularly welcome.[3] The book has been thoroughly revised, but the general plan remains the same as in previous editions. Its purpose, as concisely defined by the author, is to serve as a guide to the practical work involved in the study, preparation, and examination of morbid tissues. Professor Woodhead is nothing if not business-like, so he begins, as we should expect, by introducing the student to the source of his material in the *post-mortem* room. His description of the way in which a complete autopsy should be performed bears the impress of lengthy, practical experience in minute attention to detail; if only the work were performed at all hospitals with the thoroughness which he seeks to inculcate, the statistical value of their records would be greatly enhanced. The technique of preparing histological specimens is very fully described in Chapter II. The most useful feature in this chapter is the lengthy account of special staining devices, including many of the most recent, for the differentiation of features which are of particular interest to the advanced histologist. The instructions for special methods of staining bacteria are less complete. Two methods (Neisser's and Nicolle's) for staining the diphtheria bacillus are given, but, curiously enough, Cobbett's method, which is simpler and better than either, is not mentioned. Amongst the chapters devoted to the pathological histology of special organs, that on the liver is particularly good. Owing to the compact nature of hepatic tissue and the distinctive characters of the parenchymatous cells, this organ is particularly useful for demonstrating deviations from the normal, and for studying the characteristic structural and degenerative attributes of various morbid processes. The chapters on the kidney and the lungs are also excellent. When the medical student takes up pathology he has already passed through the hands of his physiological teachers, and is therefore assumed to have a working acquaintance with normal histology. But medical teachers frequently find that this assumption is not to be relied upon, and that the student's recollections of what normal tissues look like under the microscope are more or less vague and confused. Wisely preferring not to take too much for granted, Professor Woodhead commences each chapter with a concise account of the normal histology of the tissue to be dealt with. This procedure, whilst not adding much to the bulk of the volume, greatly facilitates the teacher's task of building up pathological knowledge on a sound foundation. The chapter on the nervous system is too short to come up to the standard of thoroughness which is attained in the greater part of the volume. The book is profusely illustrated with good reproductions of excellent coloured drawings.

Professor MCFARLAND'S *Textbook of Pathology*,[4] which has now reached a second edition, might with advantage have been reduced in bulk by the omission of much elementary information which every medical student may be assumed to possess. Why insult the reader's intelligence by telling him that "contact with wild animals may be followed by serious results to man. Aside from their ability to do physical harm because of size, structure, irritability, etc., certain animals are provided with devices for introducing poisons . . ."? Or, again, is it necessary to explain that "diarrhea (*sic*) is a condition in which the bowel movements are too frequent and the feces (*sic*) too soft"? Perhaps these are extreme instances of "padding," but the book, as a whole, gives us the impression that more time and care might have been bestowed upon it.

FARM AND GARDEN PATHOLOGY.

A BOOK which ought to meet with a ready welcome from more than one section of the community is Mr. GEORGE MASSIE'S *Diseases of Cultivated Plants and Trees*.[5] The present volume is intended to take the place to some extent of an earlier work by the same author, published about ten years ago. So rapid has been the advance and so enormous the increase in knowledge in this subject that it was felt advisable to write an entirely new book instead of endeavouring to recast the original. Mr. Massie, as might have been expected from his previous reputation, has dealt with the subject in quite an excellent fashion, and if we find fault with the somewhat curtailed treatment of certain matters, it is to be attributed to the difficulty of reducing a very voluminous mass of information to a manageable bulk. The arrangement of the book in ill-defined sections might have been improved upon; some consist of only two or three pages, and one of over 400. The introductory pages deal with the nature and causation of plant diseases, and it is insisted that the primary cause of the diseases is not the parasite, fungus, or other organism which attacks the plant, but rather the conditions which render the plant susceptible to attack. Thus, plant diseases depend essentially on bad climatic conditions or bad methods of cultivation—another evidence of the far-reaching importance of the predisposing factor in disease. The section on epidemics might readily be transposed to a textbook on the infectious diseases of man. The nature of the matter and the method of dealing with it are practically identical in both. Another analogy might be drawn in the case of wounds. Plants run the same risks in this connexion as we do, but with them fungi take the place of cocci. Extremely interesting is Mr. Massie's conclusion, drawn from original observation, that several plant diseases are caused by the bites of insects and are also spread through their agency. One feels almost tempted here to draw a parallel with mosquitos and malaria. There is even a closer resemblance between the chlorosis of plants and anaemia. In plants the term is applied to the destruction and disappearance of the chlorophyll, and, remarkably enough, the disease can be cured by the administration of salts of iron. The greater part of the book—three-quarters, in fact—is devoted to the systematic consideration of the parasitic fungi. These are responsible for a very large proportion of plant diseases. The most curious thing about them is that almost every plant has its own particular fungus, which attacks that plant and no other, although in a number of cases its near relations may also be attacked. Thus, wheat-rust may infect certain kinds of grass. This excessive specificity involves the knowledge of an extraordinary number of different forms, and that number, it may be added, is continually being increased. The question of obtaining strains of plants immune to infection is discussed. Experiments in this connexion have already been tried. These have consisted in altering the morphological character of the plant in certain respects—such as thickening the cuticle—but in every case they have failed, and Mr. Massie is inclined to the belief that they will only be successful when we have a more accurate knowledge of the inner nature of plants and of the chemotactic processes upon which the growth of parasitic fungi depends. This evidently implies a theory of immuno-therapy in plants in the near future.

The subject of bacteriology as applied to agriculture has not yet received such intensive study as medical bacteriology, but its problems are of growing importance. In the second edition of his small book on *Agricultural Bacteriology*[6] Professor CONN has dealt with a difficult and intricate subject in rather an admirable manner. Within a small compass he has succeeded in treating intelligibly the most important relations of bacteria to agricultural industries, and he has not shirked the task of grappling with hitherto unsettled problems and attempting a lucid explanation or interpretation. In some cases, naturally, the result is not entirely satisfactory, and the matter dealt with might, for the sake of clearness, have been omitted, but on the whole his judgement has been sound. As evidence of the rapid advances which have been made in the subject, the book has had to be entirely recast. The chief items dealt with are the bacteria in soil and water; in dairy products, especially milk; and tuberculosis and other diseases of stock. The chapters

[3] *Practical Pathology*. By G. Sims Woodhead, M.A., M.D., LL.D. Fourth edition. London: Henry Frowde, and Hodder and Stoughton. 1910. (Med. 8vo, pp. 820; 275 coloured illustrations. 31s. 6d.)

[4] *A Textbook of Pathology*. By Joseph McFarland, M.D. Second edition. Philadelphia and London: W. B. Saunders Co. 1910. (Medium 8vo, pp. 856; 437 illustrations, some in colours. 21s.)

[5] *Diseases of Cultivated Plants and Trees*. By George Massie. London: Duckworth and Co. 1910. (Post 8vo, pp 614. 7s. 6d.)

[6] *Agricultural Bacteriology: A Study of the Relation of Germ Life to the Farm*. By H. W. Conn, Ph.D. Second edition. London: Bebman, Ltd. 1909. (Demy 8vo, pp. 341. 9s.)

concerned with the nitrogen cycle in the life of plants are particularly interesting, and, although almost every part of the process is still *sub judice*, the author has given an account which could hardly have been improved upon in the few pages at his disposal. Of faults the book has many, but not of such a nature as seriously to impair its value. Perhaps the gravest is the introduction of controversial matter in regard to the generic designation of bacteria. A distinction is drawn between *bacillus* and *bacterium*, the former being applied only to motile rods; thus, we find *Bact. tuberculosis* and *Bact. diphtheriae*. This separation, however, is not maintained throughout the book, and it is evident that the author is either not fully convinced of or familiar with the distinctions which he draws. In the classification, too, we find such unnecessary words as *lophotrichic* and *peritrichic*, which are out of place in a work of the size; at the same time, no mention is made of the staphylococci. The statement that infantile diarrhoea is due to milk bacteria is one that will not generally be accepted.

FORENSIC MEDICINE.

IN our criticism on the first edition of Professor GLAISTER'S *Textbook of Medical Jurisprudence, Toxicology, and Public Health*, we expressed some doubts as to the wisdom of including so much in one volume, and we are glad to see that Professor Glaister has separated public health from the other subjects in this, the second, edition. By this omission the work under review[7] has gained a great deal, in that the space so saved has been used for more detail in critical examination of other important matters—some of the chapters have been largely rewritten or remodelled, many have received substantial additions, and all have been carefully re-edited with very manifest improvement to the work as a whole. To choose one section for special commendation, "the identity of the person by finger prints" strikes us as the most clearly expressed exposition of the subject that has come under our notice. The author suitably acknowledges his indebtedness to Sir E. Henry and Dr. Garson, and then proceeds by means of diagrams and actual reproductions of prints to put the matter so clearly as to make the reader think he could rapidly qualify as an expert—a delusion, but a pleasant one, due to Professor Glaister's genius for seizing salient points. We do not like Professor Glaister's definition of "wound," for he elevates the skin and mucous membranes of the body to a position which they assuredly do not deserve in this connexion, but he does justice to the more common-sense rulings of Denman, Parke, and other judges; nor do we quite agree with his conclusion, on p. 271, that wounds produced by glass have always special peculiarities of their own. His remarks on wounds are illustrated by cases of extreme interest and value, because they are, many of them, related from his own personal experience—a feature too often lacking from manuals of forensic medicine. Speaking of the book in general, it strikes us as in every way an admirable textbook, worthy of an author of Professor Glaister's reputation, and can strongly recommend it both to students and practitioners, especially in Scotland, where details of procedure differ considerably from those in England.

On Dr. W. G. AITCHISON ROBERTSON'S *Manual of Medical Jurisprudence, Toxicology, and Public Health*[8] we have the same criticism to make as on the first edition of Professor GLAISTER'S larger work, namely, that it tries to compress into one volume subjects which demand two separate works; apart from this, however, the book obviously has fulfilled a want in the education of the Scottish medical student, for it is barely two years since the appearance of the first edition—a fact that speaks most eloquently in the book's favour. The manual gives certainly everything that the average student may be expected to know, and thus fulfils the claims of the author, but obviously the limitation of space prevents Dr. Robertson from entering into much discussion of disputed points; this is not altogether to be regretted, for when once principles are laid down decisions must turn on the facts of cases which are endless in their combinations, rendering general discussion almost useless. We very much like the phrase "agonal injuries," which hits off in the happiest manner those indefinite wounds and conditions produced in the few moments preceding death. The woodcuts are good of their kind, but we think that in this, as in Professor Glaister's work, the space they occupy might be better utilized, except in the section of Dr. Robertson's work dealing with public health, where they serve a most useful purpose.

[7] *A Textbook of Medical Jurisprudence and Toxicology.* By John Glaister, M.D., Professor of Forensic Medicine, Glasgow University. Edinburgh: E. and S. Livingstone. 1910. (Demy 8vo, pp. 803, illustrations 130. 14s.)

[8] *Manual of Medical Jurisprudence, Toxicology, and Public Health.* By W. G. Aitchison Robertson. Second edition. Edinburgh: John Currie. 1910. (Cr. 8vo, pp. 572; illustrations 39. 8s.)

NOTES ON BOOKS.

WE are glad to see that the *Territorial Year Book*,[9] which first appeared in 1909, has again been published. The book has been considerably curtailed, all matters not strictly territorial being omitted, as well as the maps and illustrations. Most of these omissions are an advantage, but we think it is a pity that the hints for camps and manœuvres, on health and first aid, and on the care of horses have not been included. As we mentioned last year, these hints are of special value to recruits, and if minor ailments were guarded against camp training would often be more efficient.

In *The Shadow of a Titan*[10] is to be found a neat sketch of a well-known character, the man who on the strength of a sketchy notion of the bare elements of a science is prepared to supply its professors with a solution of all problems. Otherwise Mr. A. F. WEDGWOOD'S book makes no special appeal to medical men. Nevertheless, many of them will esteem it well worth reading, more especially those who like to discern a possibly coming man, and to assess the influences to which he has hitherto been subjected. Saturation in Meredith will possibly suggest itself. The duplication of plots and the multiplicity of characters and literary allusions may possibly stand in the way of the novel's popularity, but there are such constant evidences of ability as may lead many readers to form an opinion that some day its author will produce a novel of the highest quality. At present he is labouring under the defects of his qualities, and makes the mistake of letting all his characters show equal skill in paradox and elusive epigram. But the publishers did well to accept Mr. Wedgwood's work, and when he has learnt to economize his material the high expectations created by the present volume are likely to be fulfilled.

The appearance of a second edition of Sir E. RAY LANKESTER'S *Science from an Easy Chair*[11] within a month after the first may be taken as evidence that the book has met a popular demand. The volume is a selection from a series of articles contributed to the *Daily Telegraph* during the years 1908–9. Its scope is all-embracing, and there is included some tit-bit from almost every one of the sciences, but, as might be expected, natural history provides the greater number. A certain proportion of the topics are of a fundamental nature, such as "Protoplasm," "Life and Death," "About the Stars," "The Heart's Beat." Many of them deal with matters which are of constant daily discussion; others are of a less ambitious cast. The subjects are all interesting to a reader of a scientific disposition, but they are treated in such a way as to appeal to and enlighten the general public. There is thus necessarily an extreme simplicity of style; as occasional reading, however, the individual articles may well form the source of many interesting and up-to-date ideas. Any article bearing the signature of Ray Lankester is certain to arrest attention and to invite perusal. A similar scientific article by most other men would be contemptuously ignored by the majority of daily readers. Herein undoubtedly lies the *motif* of the series of contributions. It has ever been the aim of Sir Ray Lankester to promote the claims of science, not of one particular branch, but of science in general, to insist on its position as the leader and not the slave of other departments of modern activity, and to stimulate interest in a public ready enough to accept the benefits conferred by science but prone to ignore the benefactors. Perhaps no one could have been found more fitted to attempt this difficult task. His established position in science and his

[9] *The Territorial Year Book, 1910.* London: Hodder and Stoughton. (Cr. 8vo, pp. 194. 1s.)

[10] *The Shadow of a Titan.* By A. F. Wedgwood. London: Duckworth and Co. 1910. (Post 8vo., pp. 528. 6s.)

[11] *Science from an Easy Chair.* By Sir E. Ray Lankester, K.C.B., F.R.S. London: Methuen and Co. 1910. (Post 8vo, pp. 436; 84 illustrations. 6s.)

experience of public affairs form a most effective combination. We may thus expect that this series of articles will reach a class of readers hardly likely to be touched or influenced by general works of science.

MEDICINAL AND DIETETIC ARTICLES.

Lodal.

Messrs. Burroughs, Wellcome and Co. (Snow Hill, London, E.C.) have introduced an alkaloidal salt which has been named Lodal. It is intended for use in cases of uterine haemorrhage, and is the hydrochloride of a derivative of isoquinoline, made by the oxidation of laudanosine—one of the minor alkaloids of opium—in a manner analogous to the production of cotarnine from narcotine. It is stated that it produces tonic contractions in the pregnant and non-pregnant uterus, but has more action on the heart than cotarnine, slowing and strengthening the beat and causing a rise in blood pressure. A specimen submitted for examination was in the form of sugar-coated tabloids, each containing 1 grain; the alkaloidal salt was a pale yellow, bitter substance readily soluble in water, yielding a slightly fluorescent solution. In the form of the coated tabloids it is of course taken without the bitterness being perceived.

Rubinat-Llorach Water.

We have received samples of Rubinat-Llorach natural mineral water, the proprietors of which are Messrs. Arger and Co. (135, Boulevard Sebastopol, Paris). Examination showed it to contain no less than 10.3 parts of anhydrous salts in 100 parts by measure, the principal constituent being sodium sulphate; magnesium sulphate, sodium chloride, and calcium sulphate were present in much smaller quantity. The detailed analysis supplied with it represents the dissolved salts as follows (grams per litre being here converted into grains per fluid ounce):

Sodium sulphate	42.16 grains
Potassium sulphate	0.10 ,,
Magnesium sulphate	1.45 ,,
Calcium sulphate	0.85 ,,
Sodium chloride	0.90 ,,
Silica, alumina, iron, etc.	0.02 ,,

In one fluid ounce.

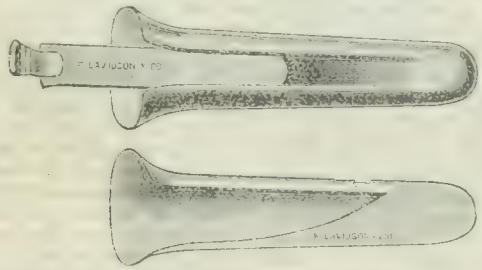
(42.16 grains of anhydrous sodium sulphate represents 95.7 grains of the usual crystallized salt, or "Glauber's salt")

In view of the large amount of purgative salts present, a comparatively small dose suffices, a wineglassful—more or less—being recommended as a satisfactory aperient. The water is bright, with a strong saline taste, and appears to merit a place among natural mineral waters.

MEDICAL AND SURGICAL APPLIANCES.

Improved Rectal Speculum.

Dr. J. Searson (London, W.) writes: For rectal examination, combined with the injection treatment of haemorrhoids, as practised by Dr. Eugene Hoyt, of New York, the speculum ordinarily used in this country is Hilton's, with Bryant's modification. In withdrawing this speculum, however, the piles tend to catch on the more or less sharp edges, causing much pain to sensitive patients. Messrs.



F. Davidson and Co., of 29, Great Portland Street, W., have, at my suggestion, manufactured a speculum by which this difficulty is overcome. As shown in the accompanying picture, the improved speculum is cone-shaped, with a sliding piece, which on partial withdrawal causes the piles in the exposed area to appear. The slope in the wall of the speculum is very gradual, with smooth and rounded edges. The sharp and more or less cutting edges peculiar to the old form are avoided, so that the withdrawal of the instrument is quite easy and painless.

POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

The annual meeting of this association took place on Friday, July 1st, in the council chamber of the Town Hall of Halifax, under the chairmanship of Surgeon-General Evatt, C.B., President of the Association. A hearty welcome was offered to the members by the Mayor and Mayoress of Halifax.

Report of Council.

The council stated that, while it was difficult to forecast what direction Poor Law reform would take, it was not probable that the present state of things would remain without considerable modification. As any change would profoundly affect the Poor Law medical service, the council had been in communication with nearly all the Poor Law associations of the country with a view to a common union of all Poor Law officers for mutual protection, and it had received from all assurances of their willingness to assist in concerted action. A deputation from the council had had a conference with the Poor Law Reform Committee of the British Medical Association. The council had sent to every member of the Poor Law medical service (outdoor) a series of questions, the answers to which had been tabulated (British Medical Journal, May 7th, 1910, p. 1148). Guided by these answers, the council had passed certain resolutions which would be submitted to the general meeting.

The financial statement presented by the Treasurer (Dr. Napper) showed a balance in hand of about £153.

Surgeon-General Evatt was re-elected President, Dr. Napper, Treasurer, and Dr. Major Greenwood, Honorary Secretary, and the former members of the council were also re-elected for the ensuing year.

Poor Law Medical Reform—What it should Aim at.

Dr. Major Greenwood said that while the Poor Law Commission was sitting the Poor Law medical officers had not been without hope that when every investigation had been made the service might be freed from many of the burdens and difficulties that for so long had oppressed it, but when the Commission published its report, the critical position of the service became evident. They had been dreaming of reform, but it was revolution that was organized. He saw no reason for modifying the views he had expressed in London last year; on the contrary, the danger was wider and more extensive than he then thought, and the medical proposals of both the Majority and the Minority reports had threatened, not only to disintegrate their service, but to bring about ruinous changes in the whole profession of medicine.

The great majority of the Poor Law medical officers were part timers, and had to rely on private practice, as the emoluments derived from their fees were altogether insufficient. They did not desire a whole-time service, even though their remuneration might be on a more liberal scale, as it was illusory to imagine that their salaries as whole-timers would better their position. The almost certain result of a whole-time service would be that the greater number of present medical officers would be compelled to retire, and their places would be taken by younger men, who might regard as satisfactory a payment which the present medical officers would regard as inadequate. It would be better for the poor, for the public, and for the Poor Law medical officers themselves that any service should be a part-time service. For the country as a whole a strong and independent medical profession was of vital importance, and the attempt in certain quarters to promote a nationalization of medicine on the lines of the educational system was to be condemned. For the sick State poor it would be more satisfactory that they should be treated by the same doctors as the rest of the community, rather than have their medical care delegated to juniors and beginners. For the medical profession it was equally important; already practice was intrenched on and undermined by the multiplication of means for free treatment of the poorer classes, and a part-time system would best check the loss that was constantly accruing to the profession, while a unified medical service chiefly composed of whole-timers would increase this loss, and would strike a blow at private practice throughout the

country. He commended this side of the question to all general practitioners, some of whom seemed to think that the Poor Law medical officers were thinking only of their own interests.

It would be a bad day for all if the medical proposals of either the Majority or the Minority were forced upon them. Happily there was a *tertium quid* in the proposals of Mr. Charles Booth. These were supported by Sir Arthur Downes, who was the only representative of the profession on the Commission, and who possessed a real knowledge of the merits and demerits of the present Poor Law medical service. They proposed a reform, not a break up, of the present system, and this offered a much greater chance of success. Judging from the debate on the Prevention of Destitution Bill in the House of Commons, opinion in the country was so divided that no revolutionary change had much chance of success. He thought, therefore, that compromise and reforms based on our present system should be attempted rather than the introduction of new principles, which, however fascinating they might appear to a certain class of reformers, were only based on theories and hopes that, according to an authoritative lay journal, were contrary to all practical experience. Whether the inordinate increase in gratuitous medical attendance on the poor was good for the nation was a question that admitted of much difference of opinion, but he had no hesitation in affirming that it was not good for the medical profession.

Dr. Greenwood then drew attention to the resolutions which had been formulated by the council of the Poor Law medical service (see below) from answers received through an inquiry addressed to every member of the outdoor Poor Law medical service. He thought that as the whole service had been consulted they were entitled to lay down certain principles with which proposed reforms should not conflict. In the first place, though they objected to the Poor Law medical service being amalgamated and swallowed up in the sanitary service, he saw no reason against a proper co-ordination of the two services. The administration of the Vaccination Acts might be transferred to the sanitary authorities, and all public institutions for infectious disease might also be in their hands. Infectious diseases needed to be treated on different principles from ordinary diseases, and the public safety demanded that the immediate and efficient dealing with dangerous epidemic disease should not be hampered with tests and safeguards for protecting the pockets of the ratepayers, which were necessary when dealing with ordinary diseases. The registration of births and deaths might also be in the hands of the sanitary authorities. On the other hand, old age pensions should be part of the Poor Law or public assistance system, as it was impossible to draw any logical distinction between, for instance, two brothers over 70 years of age, one receiving an old age pension and the other the same weekly sum from the guardians as outdoor relief. It was inequitable to consider one case more deserving than the other. Because the Poor Law system had got a bad name, instead of attempting reform, an endeavour had been made to mitigate the evil by creating new Poor Law machinery under another name. The argument was that Poor Law work done by a Poor Law authority carried with it a stigma, but when done by another authority the stigma promptly disappeared. That argument would not satisfy everybody, for many people would reasonably say that the stigma was the consequence of accepting any personal State aid at the expense of the taxed industry of others, which it was generally considered to be the duty of the individual to provide for himself. The Majority Commissioners were right in recommending the repeal of some recent legislation, and when there was a properly organized Poor Law authority the provision of school dinners and medical attendance on school children should be a part of the function of that authority. That was a practical way of getting rid of much overlapping, and the increased work thrown on the Poor Law medical service would not be objected to if the salaries of medical officers were increased accordingly.

As for the co-ordination of the sanitary and Poor Law medical services, much more might be done under the present organization than had been attempted. At all events, in large towns the medical register of the district medical officers was open to the inspection of the medical officer of health, and the district medical officer might record the sanitary condition of the patients' homes. Sanitary inspectors, too, might in the course of their daily work take note of cases of illness not receiving attendance and report them to the Poor Law authority. Co-ordination with regard to tuberculosis had already been established, and all cases of phthisis were notified to the sanitary authority, and no doubt before long the same would be done in the case of whooping cough and measles.

Dealing with purely Poor Law medical reform, Dr. Greenwood said that the provisions of the Metropolitan Dispensaries Order should be applied to the whole country; drugs and other medical appliances needed for State patients should be provided by the State, and there should be revision of the scale of extra payments for special operations. The performance of these operations by rural district medical officers at a distance from suitable Poor Law hospitals should be encouraged. There should be no difficulty in obtaining the service of anaesthetists, and reasonable fees for assistance at operations should be allowed to all Poor Law medical officers. "There must," he said "be no obstacle, as at present, to prevent the prompt attendance of the district medical officer in midwifery cases. He must no longer be dependent on the relieving officer as to whether he is or is not entitled to his fee. If, in his official capacity, he has attended on a poor lying-in woman, a reasonable fee must be guaranteed to him, it being left to the Poor Law authority to recover the fee, or part of it, at a later period, if the financial position of the husband warrants such recovery." If these reforms in the present service were carried out it might meet all the needs of the destitute sick and might do good work under any Poor Law authority that Parliament might create, whether it were the authority proposed by the Majority Report, or better still, under an *ad hoc* authority on the lines of Mr. Booth's proposals. "I only protest," said Dr. Greenwood in conclusion, "against the policy of the Minority Commissioners, the break-up system, and I do so because I believe that, if attempted, it would largely fail in accomplishing even its professed objects; that by largely familiarizing the whole community with the idea of State assistance it would tend to the destruction of individual independence and thrift; and that by greatly curtailing the field of private practice among the poor, it would be ruinous to a large number of the members of our profession."

THE MEDICAL PROFESSION AND POOR LAW REFORM.

Dr. J. C. MCVAIL said that some of his remarks had been written before he had seen the council's report, and he found that one section of the report was in condemnation of what he had come to advocate. Still he would proceed in the hope that he might possibly modify their verdict. After expressing the opinion that it might be taken as absolutely certain that Poor Law reform was coming, and as almost certain that its coming would not be very long delayed, Dr. McVail continued: The State is suffering seriously owing to the defective physical condition of many of its members. It is suffering both financially and morally, both nationally and internationally. The defects are to a large extent remediable, but remedy on wrong lines might bring in its train evils as serious as those which it is sought to remove. It is essential that the sense of individual and family responsibility and independence be maintained, and, where it has already lapsed, that it be restored. The State, whilst doing its own duty, must make it part of that duty to see that the individual does his. It is along this path that reform should travel, and the medical profession ought to be in the reform movement. It should be so as a matter of public duty; it should be so also in order to protect its own legitimate interests. If, in respect of the medical aspects of the question, the profession were to lag behind, if it were by any chance to forget for a brief time what we all recognize, that the patient is not made for the doctor but the doctor for the patient, then in the eyes of the world we would be discredited and condemned.

The defects requiring to be remedied include those relating to (1) medical charities, (2) the Poor Law medical service, and (3) club and friendly society practice. The sufferers in each of these three classes include both the patients and the doctors.

(1) *Medical Charities.*

The patients suffer by that insufficiency of attention which frequently it is alone practicable to give to individual cases in crowded dispensaries and outdoor departments of hospitals, and by the moral deterioration which inevitably results from the acceptance of charity by persons who do not require it, but who are tempted to ask it because of the fact that it is so easily obtainable. The doctors suffer by the deprivation of fees which rightly belong to them and which they badly need, and by the sore and rankling knowledge of the injustice under which they labour.

(2) *The Poor Law Medical Service.*

The defects of the service as they appear to this association were brought before the Royal Commission by Dr. Major Greenwood. The rubric of his statement contains as its first item "inadequacy of salaries of Poor Law medical officers and dangers therefrom." The dangers referred to are public dangers. As the statement points out—"If the Poor Law medical service is underpaid, the sick poor will, sooner or later, suffer from the inadequacy of the salaries paid to the district medical officers in many parts of the country." In this meeting it is unnecessary to labour that argument. It is, indeed, easy to understand Dr. Greenwood's evidence that "it has been the desire of the Poor Law medical service that they should come under some central authority rather than be, as it were, at the mercy of many boards of guardians." Any of you who may have read my own report to the Commission must know how strongly I hold that the present system is defective alike as regards the Poor Law medical officers and the poor themselves.

(3) *Club and Friendly Society Practice.*

Concerning the third class of defects, they are essentially similar and need not be dilated upon, since many of my audience must be acquainted with them by actual daily experience.

The Remedy.

You agree with me that reform is needed. What is to be the nature of the reform, and how is it to be achieved? The bad features in respect of medical charities, Poor Law medical relief, and friendly society practice being essentially one and the same, shall the efforts at improvement be correspondingly unified, or shall each of the three groups of men affected take its own separate course as to reform, and very likely in so doing more or less neutralize the action of the others; and shall this be the case in presence of the fact that many doctors belong to the whole of these three groups, being general practitioners holding Poor Law and club appointments? In short, in the approaching crisis in the fortunes of the profession, shall discord rule as it has done too often in the past, or shall a new spirit be the guide—a spirit of wisdom and concord which in its operation will be profitable alike to the patient and to the doctor?

I have no hesitation in saying that a common policy, beneficial to all and covering the whole field of reform, is practicable.

The policy is the establishment throughout the country of a system of medical provident institutions, open, on the one hand, to all medical men whose own conduct does not render them unworthy of the service, and, on the other hand, to all the wage-earning and poorer classes. Having well considered the details, the profession ought to adopt and organize such a system, as being the method under which any man belonging to the classes in question could, for himself and his dependants, be assured of medical attendance whenever it might be required. The terms and conditions would, of course, have to be reasonable, otherwise the whole machinery would remain inoperative. The necessary annual contributions would be made either directly by the beneficiaries or partly or wholly by others, who might be private individuals, or charitable organizations, or public authorities. All who make whole or partial contribution on their own account would have a choice of doctor, but if the contribution were entirely by a public authority, then it, and not the beneficiary, would have the choice.

Unless the State were to make a definite offer to contribute, the scheme would have to be organized by the medical profession. There would be a central committee in general control, but local committees would have a very large measure of autonomy, as details would have to vary according to circumstances. If there were a State subsidy, paid out of either rates or taxes, then the State would have a share in the management.

As regards the amount of annual contribution required on behalf of each insured person, the decision would be with the local medical committee, subject to central approval, the organized medical men being simply in the position of stating to the public on what terms they would provide attendance through the institution. Age at entry would be one factor in deciding the amount; the condition of health would be another. Any special or additional services would have to be the subject of special additional payment. In my view parents ought not, as a general rule, to be allowed to select only certain of their children for entry; all up to a given age should be included, but this might be subject to exceptions, according to circumstances. There would be a wage limit, varying to some extent according to the number and earnings of a man's family. To prevent illegitimate competition for patients by the excessive prescription of needless bottles of medicine, all medicines should be supplied at wholesale price from a dispensary belonging to the institution, and should be paid for by the patient. Doctors guilty of touting or unethical conduct would be liable to expulsion by the committees.

An important question is, How will a poor labourer be able to pay the contributions for himself and his family? The answer is twofold. Private benevolence and organized charity would find a much better field in paying part, or occasionally the whole, of such contributions as are required for a man's wife and children, than in subscribing to charitable dispensaries which are so largely abused by the apparently well-to-do. And as regards the labourer himself, there is every prospect of the early establishment of a great national scheme of invalidity insurance, under which contributions would be made partly by the State, partly by the employer, and partly by the workman. In my own view, indeed, the contribution of the State ought to extend not merely to the workman but to his wife and family. The country should bear some share of the burden in the interests of national health, but the individual should also bear a share in the interests of personal and family health. There should be mutual outlay for mutual benefit, and the results would include diminution of chronic pauperism due to ill health, so that the State would be remunerated in this as well as in other directions for its expenditure.

Medical Objections.

What now are the medical objections which have been raised to such a scheme? I can only refer to a few of them.

1. There is the financial question. It is urged that, if the scheme were largely adopted, the loss of private practice amongst the poorer classes sustained by medical men would be greater than their gain in provident institution practice. The reply is that that would altogether depend on the terms of the service, and these terms would be fixed by the profession itself. Naturally the charges would not be so high as to debar entrants desirous of obtaining the benefits of the system. But neither ought they to be so low as to result in loss to the doctors. Fundamentally the scheme should be not charitable but provident. It is to promote insurance against the serious liability to illness involving heavy costs for medical attendance. It is to prevent the patient from being harassed in sickness and hampered in convalescence by the fear of doctors' bills. It is to prevent the doctor from being worried in mind and crippled in means by bad debts or long delayed payments. A properly adjusted scheme would pay both doctors and patients. If it were to fail as regards the former, it would be the profession's own fault in not fixing a reasonable scale of payment. Common sense would determine in each locality what the charges should be, and how they should be levied. Of course a man who in any year had an excessive amount of illness in his home would pay less than if he had not been insured, and the doctor would have got more from him as a private patient. But that is of the very essence of the scheme. All the gain is not to go to the doctor nor all the loss to the patient. Please let me insist on your realizing the essential distinction between

charity and insurance. A fire or life insurance society is a valuable organization, but it is not a charity. It is valuable both to the proprietors or shareholders, and to the insured. The latter are protected from a danger against which they cannot guard by personal savings—a danger which might ruin them—and they get a financial security and a mental ease which are more than worth the money. At the same time the proprietors or shareholders receive interest on their investment. There is no charity on either side, but the arrangement pays both. That is what should be aimed at by medical provident institutions, and the medical profession have just the same right to fix their terms as the insurance societies have. In fixing these terms, let me say again that it will not profit them to charge either too much or too little, as in the one case they will drive away custom and in the other they will punish themselves.

2. It has been alleged that the scheme would involve a great increase in gratuitous medical work. That is perhaps the most surprising of all the charges that have been made against it. One of its main objects would be to minimize such work, and I believe it is calculated to effect that end. It will always be open to the medical man to exercise voluntary charity towards the needy and unfortunate whose condition may appeal to his sympathies, but the scheme ought to cause a very great diminution in the involuntary gratuitous work done by the exploitation of the services of medical men in public dispensaries, and in the semi-gratuitous work done for friendly societies and clubs.

3. The scheme has been denounced as equivalent to a great extention of contract practice. But in that connexion I beg you not to be led away by mere words. In the House of Commons Mr. Balfour and Mr. Asquith heartily agreed in denouncing "labelling" as counterfeit coin for reasoning. Contract practice is good, bad, or indifferent, according to circumstances. In fact, it has been mainly bad, because of individual bargaining between either the doctor and the club, or the doctor and the guardians, or the doctor and the provident dispensary under lay management. And such contract practice will go on indefinitely unless the medical profession unite to stop it.

These remarks on contract practice bring me to the question which must specially interest the Poor Law Medical Officers' Association—namely, the relation of such medical provident institutions to the existing Poor Law service. Of the ten questions submitted by your council, the fifth was, "Are you in favour of a public assistance medical service based on provident dispensaries subsidized by the State and contract practice generally?" And by an overwhelming majority—by 83 per cent. to 12 per cent.—you have replied in the negative. If this decision were irrevocable, further discussion would be unavailing so far as the Poor Law Medical Officers' Association is concerned, but, as it still requires confirmation, I would venture to urge on your attention the view that Poor Law practice could be improved by being conducted through the medium of medical provident institutions.

In the first place, as regards safeguarding the interests of the existing district medical officers, it is to me inconceivable that the profession as a whole would approve of any scheme which did not fully protect the 3 500 doctors who are already engaged in district work. If local Poor Law authorities, whatever they may be, were to enroll in the provident institutions all paupers on their permanent lists, they would still employ the present district medical officers, not directly, but through the institutions. As the generation gradually dies out each local authority would exercise its judgement as to appointing a single successor, or from time to time making a choice from the list as they might deem best. Security of tenure of the present officers would, under any just scheme, in no way be effected. Looking to the exact terms of the question submitted to you, I trust the council will not think me trespassing on their courtesy if I suggest that the last four words, "and contract practice generally," rather tend to confuse the issue. Give a dog a bad name and you may as well drown him. Contract practice has, under bad conditions, obtained a bad name, and the reference to it in the question may possibly have prejudiced the answer. Also, I am not quite clear how the question, as it stands, is to be construed. Is it to be read as "a public assistance medical service based on provident dispensaries subsidized by the State, and based also on contract practice generally?" If so, how could it be based on both at once? The State contribution would be precise in amount, and the whole contract would be not general but perfectly specific. Or, if the objection is to "a public medical service based on contract practice generally," is not every one of you already paid by contract with the guardians, the contract being an annual salary for your work? If so, the choice would be between two sorts of contract whose comparative merits would depend on their terms; and the doctors themselves would manifestly have a much greater say in fixing terms under a medical provident system than they have in individual negotiation with the guardians. You yourselves know and have complained to the Royal Commission of your difficulties on that score. As a third alternative, it seems out of the question to suggest that there are two separate queries under the one heading: (*a*) Are you in favour of a public assistance medical service based on provident dispensaries subsidized by the State? and (*b*) Are you in favour of contract practice generally? If that were so, then the two queries would, of course, have to be put separately. Anyhow, it does seem possible that if the question had ended without including its last four words, the majority might have been less than 83 to 12.

Next, I trust I shall be pardoned for commenting on part of the council's fifth resolution (see below). No one will deny the axiomatic statement that what is done for the State should be paid for by the State "*at an equitable rate*." Manifestly it ought, but why assume that the State would not contribute equitably? If it is replied that present State payment to the Poor Law medical service is inequitable, then that is a reason against the present system, but not against any other. Nor is it justifiable to assume that the payments now accepted at provident dispensaries will be accepted under any new scheme. That is the very argument which has been used against a medical provident system applied to the wage-earning classes independently of the Poor Law. It has been urged that club practice is bad—that doctors are sweated and patients sometimes neglected—and therefore, it is alleged, provident dispensaries are not the remedy. But, once more, it is for the profession to determine on what terms it would insure people under a new system. Another assumption in the resolution is that under the suggested scheme there would be no difference in the charges for ordinary members and for paupers. But both age and health would be considered in the case of every ordinary applicant, and the same principle would apply to paupers. They would often be paupers because of their ill health, and manifestly these could not be accepted as healthy. If, in addition to ordinary medical attendance, the State were to wish, as I personally trust would be the case, periodical medical inspection independently of illness, that work would have to be paid for. And if the local Poor Law authority were to insist on the absurd amount of clerical work which the district medical officer is at present called on to perform, that also would have to be thought of in fixing the terms as compared with cases involving no such duty.

Look also at Resolution 6, and observe how well it would be fulfilled under a medical provident scheme. Your council is of opinion "That a system of 'part time' is better for the interests of the sick poor. That it is better for the latter to be attended by the same doctors as the rest of the community, rather than by officials appointed to attend only on the poor." Manifestly that would be exactly the effect of the system which I have been advocating. In short, I venture to think that the answers to Question 5, and the resolution giving effect to these answers, are based on serious misconception. I am most sorry to disagree with you. It would be much easier and pleasanter to concur or be silent, but you have asked me to address you, and I am bound to express what I so strongly believe. To do otherwise would be unjust, both to yourselves and to me. The fundamental importance of union on the part of the medical profession in respect of this great subject is manifest, and I ask you to pause before committing yourselves to the resolution.

In conclusion, Dr. McVail alluded to the important statement of the Chancellor of the Exchequer in his

Budget speech, that he hoped next year to introduce a great scheme of invalidity insurance to apply to thirteen millions of male and female workers, or well on to a third of the total population of the United Kingdom. Contract practice seemed to be coming whether they liked it or not. The question was—Would the profession be prepared to meet this crisis by having an organized and reasonable scheme of medical insurance ready to be submitted to the Government when the time came, or would each section take its own course, and throw the Government's scheme into the hands of the sick clubs as being the only bodies in a position to deal practically with the new problem? If the latter, then the last state of the general practitioner would be worse than the first. He begged them to unite in this, the crisis of the fortunes of the profession, to endeavour to secure that any change should be in the interests of the public and at the same time not detrimental to the medical profession.

Discussion.

The following resolutions of the council were then presented for consideration:

1. That it is not desirable that there should be a "break-up" of the present Poor Law system. That proper reform of existing institutions would be better for the welfare of the sick poor and the good of the nation. That the proposals of Mr. Booth and Dr. Downes constitute the best basis for a suitable reform.
2. That any system in which *free* medical relief is given subject to no other condition than the *subsequent* recovery of the cost from all able to pay would be pauperizing to the nation and ruinous to the interests of all medical practitioners in poor districts.
3. That except in urgent cases some *test*, such as the present medical order, should be required of *all* applicants for State medical relief.
4. That there are no logical grounds for drawing any distinction between medical and other relief when granted by the State.
5. That the medical treatment of paupers, or State patients, by provident institutions is strongly to be condemned. That what is done for the State should be paid for by the State *at an equitable rate*. That the payments accepted at provident dispensaries in order to encourage individual thrift cannot form any sound basis for State payment for the medical charge of the destitute.
6. That a system of "part time" is better for the interests of the sick poor. That it is better for the latter to be attended by the same doctors as the rest of the community, rather than by officials appointed to attend only on the poor. That a system of "part-time" medical officers lessens the distance that has to be traversed by applicants for medical relief—a matter of great importance in country areas.
7. That the Poor Law medical service, however it may be co-ordinated with the sanitary medical service, should be kept separate from the latter.

Dr. Major Greenwood, in moving the first of these resolutions, said that 82 per cent. of the replies received from Poor Law medical officers were in favour of reform of the present system, and only 11 per cent. in favour of the break-up policy of the Minority Report. If the scheme of the Minority were adopted there would be no separate Poor Law medical service. The district medical officers would simply be officers of the sanitary authority, and the tendency would be to make only whole-time appointments.

Dr. Drury, of Halifax, formally seconded the resolution. He did not, however, feel sure that Mr. Booth's scheme should be declared to be the best; and, after some discussion, it was agreed to omit the last sentence of the resolution.

Dr. J. Smith Whitaker (Medical Secretary of the British Medical Association) said that on many of the matters before the meeting the British Medical Association had not declared any policy. Its evidence before the Commission was concerned largely with the present system, whereas the Commission had dealt with a far wider range of subjects. Three sets of questions ought to be kept distinct: (1) The actual terms of employment of the medical officers; (2) the bearing of the question on the interests of the medical profession as a whole; and (3) broad questions of social policy, some of which hardly concerned them as a profession. He counselled the Poor Law Medical Officers' Association against dealing with questions of social policy which it was for the nation to decide. For instance, the question of thrift had nothing to do with the medical profession as such. The medical profession must not set itself up against public opinion, for if it did it would be brushed aside. The profession had no right to say that the State should not create a new system, but it had a right to say that it would only work for the State on certain terms. As for the break-up of the Poor Law, it was not certain that the Minority scheme would involve all whole-time medical officers. If it did, there would be compensation, and any abolition of the present medical officers would have to be equitably carried out. It had been said that the part-time system was better for the public, but not very profitable for the profession, and that the public got more out of the part-time men. If that were so, it suggested that part time men were getting a bad bargain. The Poor Law Committee of the British Medical Association had taken time before coming to decisions owing to the difficulties of the subject; if premature decisions were arrived at there would be great danger of divided action and a tendency of sections to work for themselves. On this account there should be careful examination of every question so as to arrive at harmonious conclusions.

The President thought that the replies of the Poor Law medical officers to the questions sent out ought to be taken with a grain of salt. For himself, he was not in the least afraid of the State. In the Poor Law, as in the army, there would have to be both full-time and part-time men. The Poor Law medical officers and the sanitary authority must come together and work together, and some day the Poor Law medical service and the sanitary service would almost certainly be united under the same committee. He did not think they ought to commit themselves to such an ironclad resolution as that proposed.

Dr. Bateson, of Bradford, was opposed to the break-up of the Poor Law, but thought there was some indecision owing to it not being known exactly what was intended. He thought it would be a retrograde step to abolish the guardians, who had done good service. District medical officers were to-day very largely charity officers. They were not properly paid, and were only attracted by the bait of vaccination. If that were separated district medical officers could not be got. They were only holding on at present in the hope of some change.

Dr. Holder, of Hull, thought it was too early to come to any decision on the questions in the resolution. There were many complaints from all over the country about the guardians not acting fairly. They had been fighting the guardians for years, and the Commission had come to the conclusion that their service had been improperly dealt with. They had now a chance of altering the guardians and bringing them under a larger governing body. He thought they ought to hold their hands somewhat, and, while taking no side, to press forward for justice. He therefore moved that at the moment it was inadvisable to express an opinion on the subject of the resolution.

This amendment was seconded, and after some discussion it was agreed to postpone further discussion of the question for the present. As the time at the disposal of the meeting was almost gone, Dr. Drury proposed that consideration of the other resolutions of the council should also be postponed to the meeting to be held on July 29th in the Council Chamber of the British Medical Association, 429, Strand. This was seconded by Dr. Greenwood and agreed to.

After the meeting, the Mayor and Mayoress of Halifax held a reception in the Mayor's Parlour. Many of the members afterwards proceeded by special car to visit the Poor Law Infirmary at Salterhebble.

Annual Dinner.

The annual dinner of the association was held in the evening, at the White Swan Hotel, Halifax. The President, Surgeon-General Evatt, was in the chair, and was supported by the Mayor and Mayoress of Halifax, the Venerable Archdeacon Norris, and the Rev. Prebendary Burn, and the company included a considerable number of ladies.

After the usual loyal toasts, the Rev. Prebendary Burn proposed the "Poor Law Medical Officers' Association," and Dr. Major Greenwood, in responding, said he could not see how any scheme of Poor Law reform could be profitable to the nation that tended to discourage thrift or to encourage dependence. He believed the Poor Law was now much better than it was a generation ago, though it was still capable of improvement.

The toast of the "Mayor and Mayoress and Corporation of Halifax" was proposed by the PRESIDENT, who, in the course of an impassioned address, spoke of the duty of the municipality towards women and children, and expressed the opinion that the guardians should be brought into more direct contact with the municipal authority, so that there might be a unification of authorities with one head in the town. In responding to the toast the MAYOR appealed to medical men to "think less of chemicals" and drugs and more of sanitation, preventive measures, and the environment of the people. The MAYORESS, in a few well-chosen words, welcomed the association to Halifax.

Dr. DRURY then proposed the toast of "The Guests," linking with it the names of Mr. J. W. Miller, Chairman of the Halifax Guardians; Mr. J. Smith Whitaker; and Mr. P. H. Bagenal, Local Government Board Inspector for Poor Law purposes. Mr. MILLER, in reply, said that the guardians owed a debt of gratitude to the district medical officers for their unstinted services. He thought that if the medical profession would only let its wants be better known it would have far fewer causes for complaint. Mr. J. SMITH WHITAKER urged on the Poor Law Medical Officers' Association the necessity of approaching the Poor Law problem step by step, as the slower progress would probably be the safer. It was of material interest to the whole community to see that proper medical attendance was promptly available for every member of the community that might need it, whether he could afford to pay for it or not. Mr. P. H. BAGENAL said it was admitted by all that the district medical officers did their work with the greatest generosity, in spite of the inadequate salaries they obtained. The medical profession had itself largely to blame for the inadequacy of the salaries. It was a strange fact, and one which needed explanation, that they competed with one another for posts which were so poorly paid, and only complained of the salaries after they had been elected.

Dr. HOLDER of Hull proposed the toast of "The President," which was most heartily received. During the dinner selections of music were rendered, and later in the evening songs by Mrs. Drury, Mr. J. Needham, and Mr. Leeming were highly appreciated.

EXPERIMENTS ON LIVING ANIMALS.

THE return showing the number of experiments on living animals during the year 1909 under licences granted under the Act 39 and 40 Vict., c. 77, has just been issued.

ENGLAND AND SCOTLAND.

Professor Thane's report contains the names of all "registered places." Seven new places were registered for the performance of experiments, and three places were removed from the register during the year. All licensees were restricted to the registered place or places specified on their licences, with the exception of those who were permitted to perform inoculation experiments in places other than a "registered place," with the object of studying outbreaks of disease occurring in remote districts or under circumstances which render it impracticable to perform the experiment in a "registered place." The names of all the persons who held licences during 1909 are given. The total number of licensees was 483. The reports furnished by the licensees show that 135 licensees performed no experiments. The numbers given above include 17 licensees whose licences expired on February 28th, 1909, and who returned no experiments in 1909. The number and nature of the experiments returned by each licensee are also stated. The experiments are, as usual, set forth in a table (IV), which is divided into two parts, A and B, for the purpose of separating experiments in which anaesthetics were used.

Number of Experiments.

The total number of experiments included in Table IV (A) is 3,888. Of these there were performed:

Under Licence alone	1,980
,, Certificate C	196
,, Certificate B	1,385
,, Certificate B + EE	319
,, Certificate F	8

Table IV (B) is devoted entirely to inoculations, hypodermic injections, and some few other proceedings, performed without anaesthetics. It includes 82,389 experiments, whereof there were performed:

Under Certificate A	81,566
,, Certificate A + E	595
,, Certificate A + F	228

The total number of experiments was 86,277, being 2,357 less than in 1908; there was an increase in the number of experiments included in Table IV (A) of 1,037, while in Table IV (B) there was a diminution of 3,394.

The Use of Anaesthetics.

The larger part of the experiments included in Table IV—namely, all performed under licence alone, under Certificate C, and under Certificate F (without A or B), 2,184 in number—come under the provisions of the Act that the animal must be kept under an anaesthetic during the whole of the experiment, and must, if the pain is likely to continue after the effect of the anaesthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anaesthetic.

In the experiments performed under Certificate B, or B linked with EE, 1,704 in number, the initial operations are performed under anaesthetics, from the influence of which the animals are allowed to recover. The operations must be performed antiseptically, so that the healing of the wounds shall, as far as possible, take place without pain. If suppuration occurs, the animal must be killed. After the healing of the wounds, the animals are not necessarily, or even generally, in pain.

In the event of a subsequent operation being necessary in an experiment performed under Certificate B, or B linked with EE, a condition is attached to the licence requiring all operative procedures to be carried out under anaesthetics of sufficient power to prevent the animal feeling pain; and no observations or stimulations of a character to cause pain are allowed to be made without the animals being anaesthetized.

In no case has a cutting operation more severe than a superficial venesection been allowed to be performed without anaesthetics.

The experiments included in Table IV (B), 82,389 in number, were all performed without anaesthetics. They were mostly inoculations, but a few were feeding experiments, or the administration of various substances by the mouth or by inhalation, or the abstraction of blood by puncture or simple venesection. In no instance has a certificate dispensing with the use of anaesthetics been allowed for an experiment involving a serious operation. Inoculations into deep parts, involving a preliminary incision in order to expose the part into which the inoculation is to be made, must be performed under anaesthetics.

Professor Thane goes on to say:

It will be seen that the operative procedures in experiments performed under Certificate A, without anaesthetics, are only such as are attended by no considerable, if appreciable, pain. The certificate is, in fact, not required to cover these proceedings, but to allow of the subsequent course of the experiment. The experiment lasts during the whole time from the administration of the drug, or injection, until the animal recovers from the effects, if any, or dies, or is killed, a period possibly extending over several days, or even weeks. The substance administered may give rise to poisoning, or set up a condition of disease, either of which may lead to a fatal termination. To administer to an animal such a poison as diphtheria toxin, for example, or to induce such a disease as tuberculosis, although it may not be accompanied by acute suffering, is held to be a proceeding "calculated to give pain," and therefore experiments of the kind referred to come within the scope of the Act 39 and 40 Vict., c. 77. The Act provides that, unless a special certificate be obtained, the animal must be kept under an anaesthetic during the whole of the experiment; and it is to allow the animal to be kept without an anaesthetic during the time required for the development of the results of the administration that Certificate A is given and allowed in these cases.

It must not be assumed that the animal is in pain during the whole of this time. In cases of prolonged action of an injected substance, even when ending fatally, the animal is generally apparently well, and takes its food as usual, until a short time before death. The state of illness may last only a very few hours, and in some cases it is not observed at all.

In a very large number of the experiments included in Table IV (B) the results are negative, and the animals suffer no inconvenience whatever from the inoculation. These experiments are therefore entirely painless.

In the event of pain ensuing as the result of an inoculation, a condition attached to the licence requires that the animal shall be killed under anaesthetics as soon as the main result of the experiment has been attained.

Cancer Investigation Experiments.

During the year 1909, 45,182 experiments were performed at five institutions in the course of cancer investigations. Of these 534 are in Table IV (A), and 44,648 in Table IV (B). The latter were almost entirely inoculations into mice.

Experiments for Government and Public Bodies.

A large number of experiments, almost wholly simple inoculations and similar proceedings contained in Table IV (B) were performed either on behalf of official bodies, with a view to the preservation of the public health, or directly for the diagnosis and treatment of disease. Several county councils and municipal corporations have their own laboratories in which bacteriological investigations are carried on, including the necessary tests on living animals; and many others have arrangements by which similar observations are made on their behalf in the laboratories of universities, colleges, and other institutions. A sewage farm is registered as a place in which experiments on living animals may be performed in order that the character of the effluent may be tested by its effects on the health of fish. The Board of Agriculture and Fisheries has a laboratory which is registered for the performance of experiments having for their object the detection and study of the diseases of animals. In other places experiments have been performed on behalf of the Home Office, the Naval Medical Service, the War Office, the Army Medical Advisory Board, the Army Veterinary Service, the Local Government Board, the Metropolitan Asylums Board, the Royal Commission on Tuberculosis, the Advisory Committee for Plague in India, the Tropical Diseases Committee of the Royal Society, and the Grouse Disease Committee. Sixty-three licensees return over 16,000 experiments which were performed for Government departments, county councils, municipal corporations, or other public health authorities; 1,126 experiments were performed by three licensees for the Royal Commission on Tuberculosis; and fifteen licensees performed 6,386 experiments for the preparation and testing of antitoxic serums and vaccines, and for the testing and standardizing of drugs.

Inspections.

During the year the usual inspections of registered places were made by Professor Thane and by Sir James Russell. They saw numerous animals under experiment, both of those coming into Table IV (A) and of those coming into Table IV (B); they everywhere found the animals suitably lodged and well cared for, and the licensees attentive to the requirements of the Act, as well as to the conditions appended to their licences by the Secretary of State.

Irregularities.

The irregularities which occurred during the year were few, and all arose from misunderstanding or inadvertence with respect to the extent or application of certificates. They were as follows:

One licensee performed two inoculation experiments at a registered laboratory for which his licence was not available.

One licensee holding Certificate C performed a demonstration experiment before persons who were not specified in the certificate.

Two licensees holding Certificates A authorizing experiments without anaesthetics made use of procedures which were not indicated in their certificates—in one case the administration of substances by feeding, and in the other the subjection of animals to inhalation of gases.

One licensee holding Certificate B for certain experiments on monkeys performed a similar experiment on a rabbit.

One licensee holding Certificate B EE for the excision of a certain organ performed an experiment consisting in the excision of another organ which was not specified in the certificate.

One licensee holding Certificate B for certain experiments on rabbits performed an operation which was not authorized by the certificate.

By direction of the Secretary of State, a suitable admonition was addressed to each of these licensees, and in the last case he has refused to renew the licence.

IRELAND.

Sir W. Thornley Stoker reports that in 1909 there were in Ireland 15 registered places; in 2 of them no person was licensed to perform experiments during the year 1909. Twenty-one licences were in force during the year, of which 19 were in existence at the beginning of the year, and two were new licences issued during the year.

Number of Experiments.

The experiments performed were 284 in number—4 under licence alone, and 280 under certificates. Eighteen licensees performed experiments. Twenty one licensees held 44 certificates, of whom 18 performed experiments, namely:

Under Certificate A	242
,, Certificate C	32
,, Certificate F	6

Animals Used.

The animals experimented on were as follows: Guinea-pigs, 75; rabbits, 75; mice, 55; swine, 17; cattle, 12; frogs, 12; horses, 6; dogs, 4; sheep, 2; fowls, 2; pigeons, 2; cat, 1; goat, 1.

Nature of Experiments.

The experiments were very various, 78 having been physiological, 37 therapeutical, and 169 pathological. The greater number consisted of hypodermic injections and inoculations. The principal were, investigations of the gases of blood and blood pressure; the movements of respiration, functions of heart and nervous control of heart; intestinal movements in connexion with respiration; uterine contraction; nervous and chemical control of digestive glands; the study of x rays; study of calf vaccine lymph; of medico-legal investigations; of the intravenous injection of drugs in disease; of the study of the tubercle bacillus and of the pneumococcus; of the pathogenicity of lumbar puncture; of the actions of the kidney; of the action of adrenalin and an antimeningococcus. Much good work was done in connexion with study of the pathology of diseases of the lower animals, for instance, anthrax, fowl cholera, swine fever, swine erysipelas, Johne's disease, and the pathological organisms in milk and lard.

No Abuse.

The work done in Ireland under the Act was, in the inspector's opinion, free from abuse, and was sincere and well intentioned. The increase in the number of licensees and their experiments is to be attributed to the pursuance of new investigations connected with the treatment of disease by means of antitoxins, serums and vaccines, and is, therefore, says the inspector, of high therapeutic and pathological value, as tending to the development of a new and most important knowledge of disease and its treatment.

THE Commissioner-General of the British Section of the Brussels Exhibition states that though there is only one exhibit of British surgical instruments it is sufficiently representative, Messrs. Down Brothers showing a large selection of surgical instruments, hospital furniture, and sterilizing apparatus. The collection consists exclusively of new ideas or modifications and improvements of existing models, carried out by the firm for or under the direction of leading British surgeons. There are sets of operating instruments in cases, consisting of knives forged entirely by hand from solid steel, and other instruments with metal handles, etc., all constructed so as to be sterilized by boiling. Such are the sets designed for His Majesty's army and navy, etc. Lighting for examination and working purposes is provided in many new and convenient designs in electric and other lamps on standards and brackets. There are also compactly fitted bags for surgeons, physicians, nurses, etc., designed for all occasions and emergencies. The "First Aid," as designed for His late Majesty King Edward VII, intended principally for motorists, consists of a neatly contrived flat box, which will go easily under the seat of a motor car. Within, in partitions, are arranged in the order of their use requisites for stopping bleeding, cleansing, dressing, and bandaging wounds, and a brandy flask.

Nova et Vetera.

THE HUNGARIAN PYGOPAGOUS TWINS.

IN the JOURNAL of May 28th, p. 1313, we related the remarkable accouchement of Rosa, the pygopaga, at Prague last April, after a full report in the *Semaine Médicale*. Reference was then made to Judith-Helena, the twins who lived when our grandsires lived, as we now live, under a good King George. This case has been so often quoted at second hand that, as great interest has recently been aroused by the event at Prague, we turn attention to the original report in the *Philosophical Transactions*. It will be found in the fiftieth volume, issued in 1757, and it was read on May 23rd, 1751. The cause of six years' delay in publication is explained in the report, which is entitled, *Observationes Anatomico-Medicae de Monstro bicorporeo Virgineo, A. 1701 die* 26 Oct. in Pannonia *infra* Comaromium *in possessione* Szony, *quondam Quiritum* Bregetione, *in lucem edito, atque* A. 1723, die 23 Febr. Posonii *in Caenobio Monalium.* S. Ursulae *morte functo ibidemque sepulto. Authore* Justo Johanne Torkos, M.D., *Soc. Regalis Socio.* The report includes an "Extract of a Letter of William Burnet, Esq., F.R.S., eldest son of Dr. Gilbert Burnet, Lord Bishop of Salisbury, to Dr. (afterwards Sir) Hans Sloane, dated at Leyden, May 9, 1708, N.S."

Sir,—I send you enclosed the print of a wonderful union of two twin sisters, who are at this time to be seen at The Hague. I saw them, and observed all that I could think tended to explain the appearance. They are Hungarians, as the lines under the print will show you. There is an exact description of their condition; only I may add that in Fig. 1 the urinal passage is between the two foremost thighs as they are in the print. The same is true of the anus in the 2d figure, in such manner that the situation of these parts is the same to outward appearance as naturally, with this difference, that they are between two different bodies here, whereas in the course of nature they are between the two parts of the same body. It seems probable that their parts are distinct, but that the most remote labia of each are outwardly visible, and the two contiguous ones are within. There seems to be no cheat in the thing; and the skin where they are joined is perfectly smooth, without any scar. They are now about six years old. They speak French and High German. They are very full of action and talk, one more than the other. When one stoops to take up anything, she carries the other quite from the ground; and that one of them often does, being stronger as well as more lively than the other. They have not their feeling common anywhere but in the place of their conjunction. This is all I can say about it. If you think it worth while, you will do me an honour in giving the print, and the substance of this account to the Society; to which, though an unworthy member, I would be proud to be capable of any service.

The drawings to which W. Burnet refers are published—re-engraved, as we are informed—in Torkos's paper. The sisters were publicly exhibited in England shortly after Burnet's report, and Dr. Wilbraham, F.R.S., and Paris du Plessis also described them as they saw them in London. "The urinary and faecal vessels were so united as to have one issue for the urine and another for the excrements between both (twins)."

Torkos's original report is entirely in Latin, and its publication was delayed by the illness and death of the President of the Royal Society, Martin Folkes, who had kept it in his library. The sisters had menstruated from the age of 16. They died from an attack of a pulmonary disease in Judith. She had always been the weaker after at attack of some paralytic affection at the age of 6. Helena's viscera were found healthy. The uterus, Fallopian tubes, ovaries, and upper part of the vagina were distinct in each twin; the lower part of the vagina was common. Although the vaginal orifice was common to both; the clitoris, nymphae, or internal labia, and meatus urinarius were distinct; the labia majora were also separate. The description given is: "*Alae seu labia utrinque ad perinaeum concurrentia fossulam navicularem densiorem constituerant.*" The lower part of the rectum was common: "*Os sacrum ad secundam divisionem concretum erat, et unum corpus efformando, in imo utrique ossi sacro communi, osse coccygis terminabatur.*" Torkos adds two drawings of the twins in adult life, and appended to the paper is a second report in Latin about Judith-Helena. The ecclesiastical authorities ultimately put a stop to the exhibition of the twins, who were placed in a convent. This precaution saved them from the danger of experiencing the unfortunate, though highly interesting, fate of their living homologues. In conclusion, no more minute record of the anatomy of the external organs and anal region is to be traced beyond that above noted. Altogether, however, Torkos appears to have been a very careful anatomist. The distinct internal organs were noted in this case as in the Prague twins, but in the latter there was absolute fusion of the clitoris, labia minora, and meatus urinarius, whilst in Torkos's twins they were distinct.

The two-headed nightingale, Millie Christine, was or were born of coloured parents in North Carolina in 1851. They appeared in London, though not for the first time, in the spring of 1871, and were described in the JOURNAL of May 27th in that year under the heading, "Freaks of Nature" (p. 562). "Miss Millie Christine," our reporter wrote, "the intelligent and even accomplished individual or individuals now in London, are, however, more remarkable in many respects than either of the Siamese twins or any of the recorded instances described and figured in Sir James Simpson's lecture (JOURNAL, March 16th, 1869). Millie Christine sings with great taste and skill a duet with herself in a soprano and contralto voice, and dances with four legs or two with equal animation. These united twins are fused in the pelvic region, the sacral bones being completely fused and the circumference of the union being twenty-seven inches. They resemble greatly Judith and Helena, the Hungarian sisters, who died in the convent of Presburg in 1723." Our reporter refers to a short note on Judith and Helen in Sir James Y. Simpson's lecture on the "Siamese and other Viable United Twins," in the JOURNAL of March 13th, 1869, p. 229. Simpson informs us in his lecture that he examined Millie Christine and exhibited the twins at a meeting of the Obstetrical Society of Edinburgh in 1856, when they were 5 years old. Simpson found that "the coccyges and lower sacral vertebrae were fused together, but placed somewhat sideways or obliquely. As in Helena and Judith, there was one anal orifice. It opened above into a single large cavity, but the origin of the two intestinal tubes could not be reached. The single coccyx was felt projecting into this rectal cavity. The call to open the bowel was by no means contemporaneous in each, and so with the act of micturition. There was an appearance of only a single elongated vulva; but within it were two vaginal and two urethral orifices and two clitorides." Thus they differed from Rosa-Josepha, where there was absolute unity of the labia minora, clitoris, and meatus.

In Treyling's case of pygopagous twins, the girls, born in Carniola, were operated on when 4 months old, with, as might be expected, fatal results. The operation was performed in 1700. A necropsy showed that all parts of each sister were distinct except the sacra, which were fused by their outer surfaces and bore a common coccyx. The anus was also common. Ahlfeld, in his *Missbildungen des Menschen*, quotes this case, and it appears that Treyling did not report the condition of the vulva. Walter's twins were infants: like Judith-Helena, they were born in Hungary, but it is not stated whether they were Slavs or Magyars. One point about this case of Treyling's is worth noting. Behind a common perineum there were two anal orifices divided by a septum. In all the other pygopagous twins the anus was common. The vagina, it is interesting to remember, was also double-barreled—that is, there were two vaginae, separated by a septum. Lastly, Captain D. G. Carmichael, R.A.M.C., reported an interesting case of female pygopagous twins in the BRITISH MEDICAL JOURNAL of June 4th, 1910, p. 1352.

MEDICAL PRACTITIONERS AND RECIPROCITY IN ITALY.

WE are indebted to the courtesy of the President of the General Medical Council for a copy of a dispatch from His Majesty's Ambassador at Rome enclosing a report by Mr. Loraine on recent legislation affecting the position of foreign medical practitioners in Italy. In his covering letter Sir Rennell Rodd points out that under the new law British medical practitioners will in future, in virtue of the reciprocity granted by Great Britain, enjoy unrestricted freedom of practice in Italy instead of the limited rights hitherto extended to them of only practising among foreigners.

Report.

A bill to create institutions for the legal representation of medical practitioners has recently been passed by the Italian Legislature, and only awaits the Royal sanction before becoming law. The provisions of the bill considerably modify the position of foreign practitioners in Italy.

A summary of the articles that affect foreigners is annexed to this report. It will be seen that—

1. Those foreign practitioners whose countries grant reciprocity of medical practice to Italy are favourably affected, since instead of the limited right they now exercise of practising only among foreigners they will henceforth enjoy unrestricted freedom of practice. As matters now stand, this concession only benefits British practitioners, Great Britain being the only country that grants reciprocity to Italy. This reciprocity was accorded in 1901, when on March 9th an Order in Council was issued putting in force the second part of the Medical Act of 1886.[1]

2. Those foreign practitioners who are settled in practice in Italy, and have paid income tax for two years or more, have the privilege of practice provisionally continued to them, but only among foreigners.

3. Foreign practitioners, not already settled in Italy and qualified by the payment of income tax, are altogether excluded from practice in Italy unless they belong to a country which grants the latter reciprocity, or unless they become naturalized Italian subjects and take an Italian diploma.

Article 1.

"Orders" are created in each province; each order possesses a register, in which are inscribed the names of all physicians, surgeons, veterinary doctors, and chemists.

Article 2.

Any applicant for registration must be in the enjoyment of civil and political rights, and in possession of a professional diploma from any institute in the Italian Kingdom authorized to issue such diploma.

Women who enjoy civil rights and have a professional diploma may be registered.

Italians or foreigners who have obtained in a regular manner a professional diploma in an institute in a foreign State which has accorded reciprocity for the exercise of their profession to Italian subjects who have obtained diplomas in Italy may also be registered.

Foreigners who are in the enjoyment of civil rights and have obtained a diploma from a recognized Italian institute may be registered.

No one who has been suspended from the exercise of his profession by a judicial sentence can be registered so long as the sentence remains in force.

Article 3.

Registration is required as a condition of free practice in the Italian Kingdom, its Colonies, and Protectorates.

Article 10.

(Provisional arrangement). Foreigners who have obtained their diplomas abroad may continue to practise if for more than two years they have been registered as tax-payers, and have paid income tax on their professional earnings.

Rome, June 13th, 1910.

BRITISH MEDICAL BENEVOLENT FUND.

AT the June meeting of the committee twenty-one cases were considered, and grants amounting to £153 made to sixteen of the applicants. Appended is an abstract of the cases relieved:

1. Widow, aged 62, of L.R.C.P., L.R.C.S.Edin. No income and dependent on children, who cannot give much help. Voted £5.

2. Daughter, aged 53, of late L.R.C.P., L.S.A. Unable to obtain a situation on account of delicate health and dependent on the uncertain help of friends. Voted £5.

3. L.S.A., aged 67. Qualified late in life, and was obliged to dispose of a practice in London on account of ill health. Has endeavoured to establish one at a seaside resort, but has exhausted his means, and does not yet cover his expenses. Children only able to give slight help. Voted £10.

4. Daughter, aged 59, of late M.R.C.S., L.S.A. Has maintained herself by teaching for many years, but is no longer able to obtain pupils. Voted £12.

5. M.R.C.S., L.S.A., aged 70. Has suffered from impaired vision for many years, and is now nearly blind and quite unable to support himself. Voted £18.

[1] See *London Gazette*, March 9th, 1901.

6. Widow, aged 32, of M.D.Lond. Quite unprovided for at recent death of husband, and endeavours to support herself by keeping poultry. Three children, whom it is hoped to get to institutions. Voted £5.

7. Daughter, aged 69, of late L.R.C.P.Edin. Has been a governess for many years, but now only earns a few shillings a week. Voted £12.

8. Widow, aged 50, of M.B., C.M.Edin. Supplements a very small income by taking boarders, but has had two very bad seasons, and is in delicate health. Seven children, aged 19 to 12; none at present self-supporting. Relieved eleven times, £126. Voted £12.

9. Widow, aged 63, of L.R.C.P., L.R.C.S.Edin. Is in delicate health, and entirely dependent on a daughter who teaches in an elementary school. Relieved three times, £34. Voted £5.

10. Daughter, aged 67, of late M.R.C.S., L.S.A. Supported herself for many years, and assisted several younger members of the family, by keeping a school, but has been obliged to give it up owing to ill health, and is now practically incapacitated. Relieved once, £12. Voted £12.

11. Daughter, aged 53, of late L.R.C.P.Edin. Is a chronic invalid, and dependent on her sisters, who can ill afford to help. Relieved five times, £46. Voted £10.

12. Widow, aged 40, of M.R.C.S. Has a situation as a working housekeeper, but requires help for the holiday and other expenses of her two children, one of whom is in very delicate health. Relieved six times, £45. Voted £10

13. Daughter, aged 59, of late M.R.C.S., L.S.A. Was fairly provided for, but lost everything by lending her capital to a friend on security which proved valueless. Relieved six times, £80. Voted £12.

14. Widow, aged 60, of M.D., M.R.C.S. No income; earns a precarious living by letting lodgings; children unable to help. Relieved six times, £72. Voted £12.

15. Deserted wife, aged 39, of L.R.C.P.Edin. Receives a home in return for services, and is given a little help by two of her children. Asks for a little assistance on behalf of the youngest daughter, who is a candidate for an institution. Relieved twice, £8. Voted £3.

16. Daughter, aged 54, of late M.R.C.S., L.S.A. No income, and unable to undertake laborious or continuous work, owing to ill health. Relieved four times, £40. Voted £10.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole Street, London, W.

SCIENCE NOTES.

THE difficult hydrodynamical question of the action of the screw propeller on water was recently discussed in *La Nature* in the light of some interesting experiments which have lately been made by Professor Flamm, of Charlottenburg. It is remarkable how very little is actually known on this important matter in spite of the considerable amount of time and money which has been spent on its investigation. Theoretically it ought to be possible to determine the optimum size and speed of a propeller with which to fit a ship of given displacement, but practically this is only ascertained by trial. The difficulty is due to lack of knowledge of the conditions under which the propeller actually works. Flamm's experiments are not by any means conclusive, but they throw light on one or two points. They were conducted with a small torpedo-shaped model driven by a screw. The model was rigidly attached to a carriage moving on rollers on the edges of a large tank. Weights were attached to various parts of this carriage, and power was supplied from a small motor also on the carriage. The tank was illuminated by a strong beam of light from one side, and on the other a camera was placed so that a continuous photographic record could be obtained. When the propeller was set in motion the first feature noticed was the formation of a depression at the surface of the water, with its deepest part just over the screw, and extending in front of and behind it. This is attributed to an aspirating action of the screw. The second, and possibly most important, point is that the column of water thrust back by the propeller maintains a cylindrical form for some distance, and that no centrifugal tendency appears, as is generally believed. Of further interest is the presence of a narrow column of air extending straight back from the centre of the propeller. This is supposed to be due to the fact that the water is not able to fill this space quick enough and that its place is taken by air. The space is not a vacuum, but it can be expanded by blowing air through a tube introduced into it. Up to a certain speed the water which is thrust back by the propeller is immediately replaced by water from in front, but beyond that speed the latter is unable to get back quick enough, so that a cavity is formed behind the

propeller, and it is by the breaking up of this cavity by the back-rushing water that the foam from a propeller is caused. This is the generally accepted idea, but Flamm puts it in a somewhat different way, and maintains that the aspirating action of the propeller, already demonstrated, draws air from the surface, and that this forms the cavity behind the propeller. He demonstrated this by placing a thin plate on the surface of the water over the propeller, with the result that the foaming ceased. The practical employment of such a method of improving the action of the screw, however, is not without its drawbacks, for the plate impedes the flow of water to the screw. The conclusions which Professor Flamm draws is that the dimensions of the propeller ought to be such as to produce the maximum thrust at a speed just below that at which cavitation is produced.

Many and wonderful are the tales told of the remarkable habits of ants. No less interesting, though hardly so well known, are those of termites—"white ants" as they are sometimes called. A trait which certain species share in common is that of acting as fungus farmers. This curious habit has recently been discovered among some termites from Madagascar by Jumelle and Périer de la Bâthie. On the outskirts of a forest these insects build large dome-shaped nests about 3 ft. or 4 ft. high. Within this edifice, which is built of earth, there are a number of small chambers, about twenty or so, of irregular shape. These are mostly stocked with food materials, which have been shaped into pellets by the simple process of being passed through the termite's intestine. The habit of eating its own dejecta is one of the most characteristic and best-known customs of these strange creatures. On these pellets there grows a fungus in great profusion. If the termites are made to abandon their home the fungus soon overgrows the whole nest, but this never occurs when the termites are in possession, and it is thus evident that they exercise a restraining control on the growth of the fungus. How they do this is a matter of conjecture, but one thing is certain—that it is the workers who look after the fungus farm, for if they are removed and the other inhabitants left, the fungus overcomes its former masters and kills off the whole colony. From experiment it has been shown that the fungus serves as nourishment for the larvae only. They are fed on the mycelial threads and the spores by the workers, and later they are able to eat the spores themselves. They grow and thrive on this food, whereas the adults find it absolutely insufficient. The fungus, however, has the additional effect of rendering the rest of the pellet more palatable to the adults.

LITERARY NOTES.

IN the *Progrès Médical* of June 25th, M. G. Paul-Boncour gives an account of magic belts in the treatment of disease. All doctors of large experience, he says, have seen people with such belts, which are worn next the skin and adorned with medals. The custom runs through the whole of society, from the highest to the lowest, the only difference being that whereas the wealthy have belts of finer stuff, the poor are often contented with a thick cord knotted here and there. These belts have either touched the tomb of a healing saint or have been dipped in a well supposed to possess healing properties. Sometimes they are made of a substance believed to have a special influence against a particular affection. The custom is as old as the world, and Christianity only adopted it, as it did other things, from the paganism of Greece and Rome, contenting itself with substituting some form of Christian ceremony for the original pagan rite. The idea of connecting diseases with evil spirits, by which they were supposed to be caused, was very widespread in early times. It was for a long time expressed by a magic bond; then came a magic rite. At Valenciennes there is a Notre-Dame du Saint Cordon, which worked a miracle in which this notion of the bond is manifest. The plague was devastating the city, and the Blessed Virgin appeared holding in her hand an immense red cord with which she surrounded the city as with a protective belt. The epidemic ceased. In the fourteenth century the Consuls at Montpellier decided to burn in the Chapel of St. Sebastian, one of the saints who was most generally credited with healing powers, a roll of wax long enough to surround the walls of the city. It was the custom also to encircle churches during epidemics; families gathered together near the church, each bringing wrappings which, placed end to end, surrounded the edifice and so bound the disease. In certain districts churches consecrated to St. Leonard were frequently encircled with an iron chain often carrying old horseshoes. The explanation which Dr. Paul-Boncour gives of this is that St. Leonard's speciality was the cure of horse diseases; it seems to us more likely that the explanation is to be found in the widely-diffused belief in the efficacy of horseshoes as amulets against witches and evil spirits. In former days when epileptics were looked upon as possessed, they had a girdle put round them which was intended to chain up the devil who was causing the disease. Even at the present day, the writer says that among epileptics coming from all parts of France he finds marks of magic belts being worn. The idea of binding pain, or to be more precise, the demon causing it, is met with in the practices intended to facilitate delivery. Belts made of serpent's skin are especially credited with this property. It may be that this belief has some connexion with the snake who tempted Eve in the Garden of Eden with the result that she brought upon herself the curse "In sorrow thou shalt bring forth children." In Bulgaria and other places it is the custom to encircle the belly of a woman in labour, or her house, with a thread that has been blessed. Another form of encircling is seen in processions round churches. Dr. Paul-Boncour has seen in the Berry district magical manœuvres intended to cure toothache which have no religious character. The operator pushes a nail into the trunk of an oak, thus repeating the Celtic rite whereby misfortune was averted by digging a dagger into the sacred tree. Then he makes a circle round the patient, at the same time uttering mysterious words. This also seems to be an example of the rite intended to imprison and disable the agency-producing disease. In all magic the circle plays a large part, and these medical applications would seem to have their origin in the circles within which none dare walk but the sorcerer.

MOTOR CARS FOR MEDICAL MEN.

THE COST OF RUNNING.

WE have received the following communication from the De Dion Bouton Company: The cost of running a car is always an interesting subject. Figures when given generally refer to new cars, and are therefore, for obvious reasons, misleading. The following statement shows the expenses incurred by a doctor during the past twelve months in running a De Dion Bouton car which has been in use since 1903:

	£	s.	d.
Petrol	14	1	6
Lubrication	1	2	6
Ignition (including repairs to accumulators) ...	2	4	1
Tyres	13	10	11
Repairs (after heavy snowstorm work)	7	12	11
Lamps	0	10	9
Livery (additional)	1	7	5
Grooming and furnishing	0	17	1
Tools (additional)	0	4	10
	£41	12	0

MOTOR CAR LICENCES.

G. E. M. (Scotland) wishes to know whether he can recover excess paid for motor car licence in February of this year, and how.

*** If the duty paid in February were greater than that payable under the new scale with the allowance of the rebate of one-half made to medical men, repayment of the balance can be claimed. As our correspondent resides in Scotland, his claim should be made through the local officer of Customs and Excise; but inasmuch as the licences issued early in the current year ceased to have effect on June 30th, it is probable that a communication will be received from the office within a few days. This communication might well be awaited before taking any steps in the matter.

A. C. G. (England) inquires whether he is entitled to a rebate of £1 off his licence of £2 paid in January last; he uses his car chiefly, but not strictly, for professional purposes.

*** The extent of the repayment due in this case will be the amount by which the £2 paid in January exceeds one-half the sum payable under the Finance Act. The full current rate is £2 2s. for cars not exceeding 6½ h.p., and £3 3s. for cars exceeding 6½ but not exceeding 12 h.p. The test of the title to repayment is not whether the car is used exclusively for professional purposes, but whether the car is kept for the purpose of the profession. There should be no difficulty in establishing the claim on this ground. Application should be made to the Clerk to the County Council.

HARROGATE.

Extension of Bath Establishment.

On July 2nd the new buildings in connexion with the mineral springs and medicinal treatment of Harrogate were opened by the Mayor. The Corporation has already expended £230,000 on the wells and baths, and the additional buildings, by photographs of which this report is illustrated, have cost £10,000.



The Baths.

Special rooms have been arranged for the nasal douche, throat spray, etc., which will render possible the simultaneous treatment of sixteen patients in the way followed at Bad Ems. Some of the mineral waters at Harrogate have a soothing, others a stimulating, effect upon the mucous membrane of the respiratory passages. The apparatus provided includes the Duplex, provided with a movable pulverizing or spray tube, which can be inclined in various directions, for affections of the post-nasal space and larynx; the Unikum, exceedingly fine spray, specially adapted for the lower part of the trachea and lungs, pulverized water being sprayed at any desired temperature; the Hochdruch, an atomizer, worked by compressed air, and discharging a more powerful and copious spray than the Unikum; and the Solo, a fine vaporizer, used specially either through the nose or throat in catarrhal affections of the pharynx; with this instrument oils as well as watery fluids can be vaporized and inhaled. A fresh mouthpiece is supplied for each person.



New Wing.

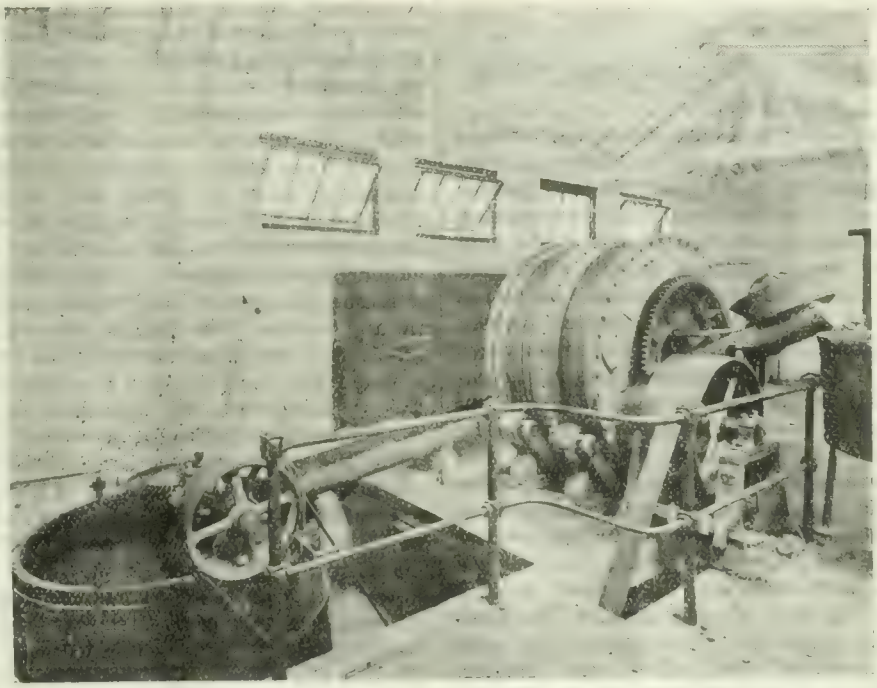
Peat treatment will also be given in the new wing. The peat, which is obtained from the Yorkshire moors, consists of peaty earth, richly charged with organic acids, and containing a small proportion of iron. The peat is first cut, broken up, and mixed in a mechanical mixer, as shown in one of the illustrations, to the consistency of a thick pulp; it is then placed in the bath and raised to the required temperature by superheated steam. The temperature varies from 98° F. to 104° F., and the duration of the bath from fifteen to twenty minutes. Four kinds of peat baths are used—ordinary peat; "mineral peat," to which sulphur water is added; the "brine peat," to which brine is added; and the "electric peat," with the sinusoidal and faradic current. In place of the immersion bath taken afterwards for cleanliness on the Continent, needle baths have been placed in each room, which will not only remove the coating of peat from the patient, but also have a tonic and invigorating effect.

The building for the so-called Plombières treatment of muco-membranous colitis was erected a short time ago, but, owing to the increase in the number of patients, the establishment has been enlarged, the number of treatment and dressing rooms previously available being doubled. The treatment comprises an internal douche for washing out the bowel with any prescribed mineral water, and an immersion bath with an external "Tivoli" or "submassive" douche to the abdomen given under water in the form of a spray at a raised temperature. Certain of the mineral waters of Harrogate are well adapted to this treatment, and successful results have been obtained, not only in muco-membranous colitis, but in simple colitis, chronic appendicitis and peritonitis, chronic constipation, and dilatation of the colon.

Cataphoresis and tonic medication are provided for by the four-cell Schnee bath and granulated carbon electrodes. By the use of this apparatus such ions as those of lithium, iodine, and sodium can be introduced into the

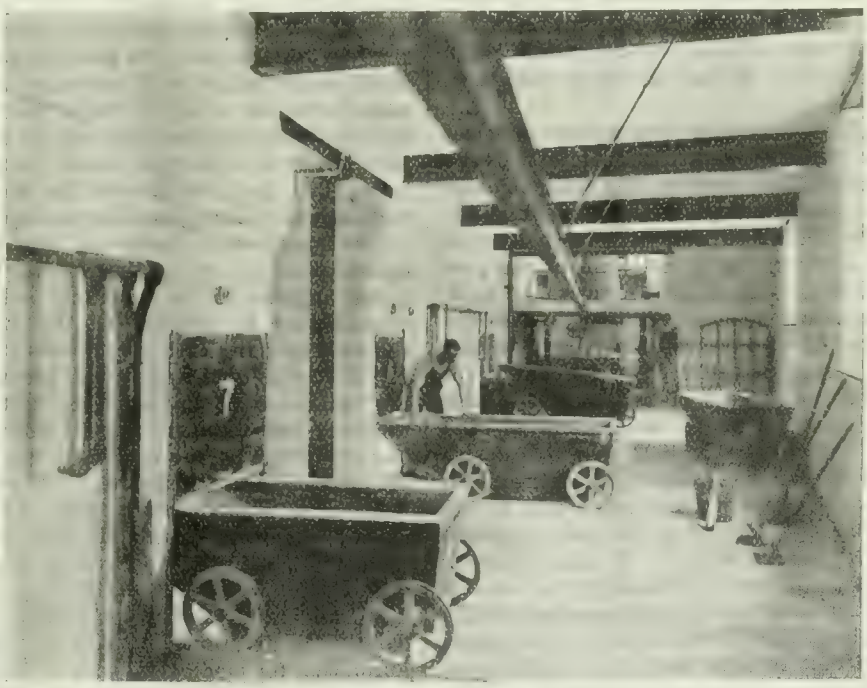
body in measured doses, and the treatment has proved of great value in various forms of neuritis, sciatica, lumbago, neuralgia, and gouty and rheumatic arthritic conditions.

The staff of trained nurses, attendants, and masseurs numbers nearly 200, and in the height of the season about 2000 treatments are administered daily, and no fewer than 2500 glasses of one kind or another of mineral water served out before 9 a.m.



Peat Bath Mechanical Mixer.

The opening ceremony was of a simple character. A reception, which was attended by a large gathering, including medical men from all parts of the country, was held at 2.30 p.m. by the Mayor and Corporation in the Winter Gardens, when Alderman Milner sketched the rapid development of the town. At 3 p.m. an ornamental master key was presented to the Mayor, Councillor A. D. Boyd-Carpenter, who entered the new building and formally declared it open. In the course of a short address he gave an account of the enterprise which the municipality had shown in adding not only to the facilities for treatment, but to the general amenity of the town. Sir THOMAS OLIVER, in seconding the vote of thanks to the Mayor, which had been proposed by the Hon. E. Wood, M.P., said that he was present at the inauguration of the baths thirteen years ago, and after the lapse of that time it was a particular pleasure for him to take part in the opening of the new wing, and to know that the prosperity of Harrogate continued. Fashions changed and methods of treatment also, and it was, he considered, creditable to the municipality of Harrogate, and showed the foresight of the Harrogate Medical Society, that it should be found necessary to spend no more than a few thousand pounds on a new wing.



Preparing a Peat Bath.

Afterwards the visitors made a tour of inspection, when the Royal Baths and modes of treatment were explained by Mr. G. H. Buckland, the general manager.

In the evening a banquet was given by the Harrogate Corporation and the Harrogate Medical Society in the Hotel Majestic, under the presidency of the Mayor. After the usual loyal toasts, that of "The Navy, Army, and Auxiliary Forces" was given by Mr. E. C. MEYSEY THOMPSON, M.P., and acknowledged by Major-General BULLOCK, C.B. The toast of "The Mayor and Corporation of Harrogate" was given by Sir DYCE DUCKWORTH, who said that he believed no spa in Europe could compare with Harrogate in the completeness and excellence of its arrangements for treatment by mineral waters and other physical means. After the toast had been acknowledged by the MAYOR, Sir MALCOLM MORRIS proposed the toast of "The Harrogate Medical Society," and referred to the difficulty often encountered in persuading English patients to visit English spas instead of going abroad. He was convinced, however, that if the virtues of the waters and the excellent equipment of the baths at Harrogate were better known, people in this country would not be so eager to fly to the uttermost ends of the earth to seek restoration to health. The toast was acknowledged by Dr. D'OYLY GRANGE, president of the society, and thereafter Mr. Councillor MARSHALL gave the toast of "The Guests," which was acknowledged by Mr. J. S. R. PHILLIPS, editor of the *Yorkshire Post*, Mr. MAYO ROBSON, and Mr. GUY ELLISTON, Financial Secretary and Business Manager of the British Medical Association. After dinner an orchestral concert was given in the Kursaal.

British Medical Journal.

SATURDAY, JULY 9th, 1910.

THE ASSOCIATION AND PARLIAMENTARY ELECTIONS.

"It is always a calamity to a State when any learned and respectable class of its citizens abstains from the exercise of political functions. It is a greater calamity when they do so in the face of law making on which they are capable of wise counsel." So said Sir Walter Foster in an address on "The Political Powerlessness of the Medical Profession," delivered to the Birmingham and Midland Counties Branch of the British Medical Association twenty-seven years ago, when his own political career had not commenced, and when the profession was still waiting for the amending Medical Act which was not to be passed until 1886. In discussing the causes and limits of this powerlessness, he said that they were of two kinds—one due to the nature of the medical institutions of the country, and the other depending upon members of the profession as individuals. He said that as a profession we were then rapidly becoming, if we had not already become, the most broadly educated class of the community, and quoted Mr. Gladstone, who, six years earlier, had asserted that there was "an opportunity for the medical profession to exercise increased knowledge, and a greater share in the leadership of thought," and consequently predicted for the profession a growing social influence. That prophecy was made thirty-three years ago; it would be pessimistic to say that this prediction had not been in part fulfilled, but it would be as optimistic to assert that it had been fulfilled to the extent which Mr. Gladstone expected to be achieved within a generation.

With regard to the other cause to which our political powerlessness was to be attributed—the defects of the medical institutions of the country—Sir Walter Foster asserted that on all great questions our influence is less than the character and intellectual force possessed by those who spoke in the name of the profession should make it. "Now, as I read it," he said, "the cause is this: our leaders act and speak only as individuals, or as the representatives of small bodies of the profession; there is no power of numbers behind them." Part of the motive power which brought about the reconstitution of the British Medical Association in 1902 was the desire to find a remedy for this state of things. In 1905 at its Annual Meeting in Leicester, the Representative Body resolved, in view of the then expected general election, that in order to obtain a proper recognition of the reforms advocated by the medical profession, an effort must be made to secure uniformity of action throughout the British Medical Association in Great Britain and Ireland and to enlist the sympathy and co operation of the entire profession. The meeting therefore instructed the Medico-Political Committee to draft a series of questions dealing with matters of special interest to the medical profession, to be submitted to parliamentary candidates, and to issue copies of these questions to the Divisions, inviting them to submit the questions to the local candidates, to obtain if possible a personal interview with these gentlemen, and to report the result. These instructions were carrie out, and in many cases interviews took place between the local Divisions and candidates, with satisfactory results. In the following year, at the meeting in Caxton Hall, the Medico-Political Committee reported further upon the matter, with the advantage of the experience gained at the previous general election. After considering the report of the Committee, the Representative Meeting decided that in all Parliamentary elections a series of questions for candidates, together with a statement of all available information as to the action of candidates, should be supplied to the Committee of each Division, and advised that every Division should be ready to take prompt action in any election in its areas, and should invite candidates at all parliamentary elections to consult and co-operate with the Divisions of the British Medical Association in any matter that might come up in Parliament affecting the medical profession or public health.

When the last General Election was approaching the memorandum of questions to parliamentary candidates was revised and issued to the Divisions, with the request that they should bring them to the notice of local candidates. A good many Divisions did not see fit to take any action, none of the Divisions in Ireland, for instance, moved in the matter, but a great deal of useful work was done in others. The net result was that reports have been sent in by honorary secretaries of Divisions showing that replies were received from 149 successful candidates—76 Liberal, 60 Unionist, 12 Labour, and 1 Nationalist (Mr. T. P. O'Connor, Scotland Division of Liverpool).

The first matter submitted in the questions drawn up by the Association for the last general election was as to the amendment of the Medical and Dental Acts; considerably more than half of those who replied were generally in favour of reform of the nature desired by the Association. All, with one possible exception, answered in favour of the appointment of a Royal Commission. On the next point, the reform of death registration and coroners' law, the majority were in favour of legislation of the character desired by the Association, but it must be noted that though the Coroners' Law and Death Certification (Amendment) Bill, introduced into the House of Commons this session, would give effect to the recommendations of the Association, including that providing for the certification of stillbirths, it would continue and, indeed, aggravate the injustice under which medical men labour in respect of the fact that they are required to give death certificates without a fee. The injustice would be aggravated because under the bill the practitioner giving the certificate would be required personally to inspect and identify the body as that of the person named in his certificate. This, of course, is a matter against which the medical profession must protest, and the fact that some seventy members of the present House of Commons have expressed their approval of the proposals of the Association, which include the payment of a fee, will materially facilitate the action which must be taken. To the third point, security of tenure and superannuation for medical officers of health and sanitary inspectors in England and Wales, seventy-one members returned a categorical answer in the affirmative; one was equally categorical in the negative; the answers of the remainder were in general terms, the writers being unwilling to commit themselves until the text of the bill was before them. On

the fourth point, the payment of fees to practitioners called in under the requirements of the Midwives Act to assist midwives in emergency, fifty-nine members answered in the affirmative; many, however, failed to answer, probably because they had not previously considered the matter. But the point was provided for in the Midwives Act Amendment Bill introduced a month or two ago into the House of Lords; the bill was withdrawn by Earl Beauchamp when he became President of the Council the other day, but it is understood that it will shortly be reintroduced in an amended form. To the fifth question, asking whether the candidate would support the bill for the State registration of nurses on the general lines of the recommendations of the Select Committee of the House of Commons, but with the alteration in the Central Nursing Board desired by the Association, fifty-nine members answered in the affirmative, while four, including Mr. Mackinnon Wood and Mr. Herbert Samuel, drew attention to the division of opinion which at present exists in the ranks of the profession and amongst nurses.

The general result, then, is satisfactory, even from the statistical aspect, but the result of the action taken cannot be wholly regarded from that point of view. In many cases interviews took place between candidates and deputations representing the Divisions of the Association; in this way the medical men in the district got into touch with their future member, and such interviews were productive of great good, the candidate in many cases gladly undertaking to consult and co-operate with the Division in any matter coming before Parliament affecting the medical profession or public health.

In one respect the profession is in a more favourable parliamentary position than when Sir Walter Foster spoke in 1883: at that time no English constituency was represented by a medical man, but to day there are a considerable number of members of the medical profession in the House of Commons, the majority of whom have been actively engaged in practice. There is reason to believe that all these members are in sympathy with the political aspirations of the Association, and in the case of some of them, who were not approached by the Divisions, direct communications were received by the central office which were generally of a favourable character.

POOR LAW MEDICAL OFFICERS AND MEDICAL REFORM.

IT is, perhaps, somewhat unfortunate that the time at the disposal of the annual meeting of the Poor Law Medical Officers' Association did not allow of any discussion of the two important papers read by Dr. Major Greenwood and Dr. J. C. McVail (see p. 84), nor of the resolutions submitted by the council as embodying the results of the recent referendum. The only resolution considered, and that but briefly, was the first on the list, which was against the break-up of the Poor Law and in favour of reform of existing institutions, and a strong feeling was expressed that the time was not opportune to make any definite declaration on the subject. It is, no doubt, a fine question to decide as to how far the profession or any section of it ought to go in expressing as a body any opinion on matters that are to some extent questions of social politics. It is of course essential that bodies organized for professional purposes should altogether abstain from anything approaching party politics. At the same time, the mere presence of a political element in any question will not and ought not to prevent such bodies expressing their opinions provided that the opinion expressed is based on professional considerations. Beyond this broad generalization it is hardly possible to give any rule, and every question must be taken on its merits when the advisability of passing a resolution is considered. The Special Poor Law Committee of the British Medical Association has not thought fit to express any definite opinion on some of the matters on which the Poor Law Medical Officers' Association were invited by their council to pass rigid resolutions. The Committee has gone on the principle of dealing only with matters suggested by the Royal Commission that most immediately concern the profession, and simply keeping a watching eye on other matters until it is proved that they affect the interests of the profession. *Sutor ne supra crepidam* is no bad motto in these matters.

The principal subject on which the Committee has felt that it had a distinct mandate is that dealt with very fully by Dr. McVail—that is, the question of a provident medical service. On this subject the council of the Poor Law Medical Officers' Association submitted a resolution laying it down "that the medical treatment of paupers or State patients by provident institutions is strongly to be condemned, that what is done for the State should be paid for by the State at an equitable rate, and that the payments accepted at provident dispensaries in order to encourage individual thrift cannot form any sound basis for State payment for the medical charge of the destitute." With the last two sentences of this every one will agree, but Dr. McVail argued very strongly that in the postal referendum to district medical officers the query on this subject was put in such a form that the replies could hardly warrant the declaration condemning the medical treatment of paupers or State patients by provident institutions. The query was, "Are you in favour of a public assistance medical service based on provident dispensaries subsidized by the State and contract practice generally?" The answers were, Noes 83 per cent. and Ayes 12 per cent., but Dr. McVail held that the last four words of the question entirely prejudiced the remainder, which ought to have been put separately. It is clear that there is much force in this contention. The two questions are separate and distinct, and two separate and distinct answers are necessary; if only one answer is to be given, it is extremely probable that the undoubted and fully-justified antipathy of most medical men to ordinary club practice, which is what is generally understood by contract practice, would entirely overshadow the rest of the query and prompt the answer "No." Yet it would be perfectly reasonable to oppose contract practice generally and at the same time to support Dr. McVail's scheme for a provident medical service for what may be called State patients. In view of this consideration, and of the questionable policy of expressing in formal resolutions opinions on other subjects which are rather of social and political character than of medical import, the Poor Law Medical Officers' Association was undoubtedly well advised to postpone this and the other resolutions for the present.

There is another reason why the postponement commends itself, and that is the absolute necessity of harmonious action between all sections of the profession. The British Medical Association has many interests to reconcile which at first sight appear to be conflicting, and the work of the Poor Law Committee,

the difficulties of which can hardly be realized except by its members, may be made more difficult still by premature decisions of sections of the profession. This applies not only to Poor Law medical officers but to any section that may be tempted to press forward resolutions which it might be difficult to recall, or even to modify.

It is evidently most necessary at the present time to recognise the distinction between contract practice, as generally understood, and what may better be described as the provident medical insurance scheme of Dr. McVail, especially as in some important particulars Dr. McVail's scheme agrees with that which the Special Poor Law Committee will probably present for the consideration of the Divisions. It would be disingenuous to attempt to transfer to medical insurance the taint that attaches to club practice on the plea that both involve a contract. It is quite impossible to avoid a contract of some sort, but while in ordinary clubs the fees and all the conditions of the contract are fixed by an unsympathetic lay body, on the other hand, in the medical insurance schemes referred to the doctors fix the fees and other conditions of the contract. This difference alone is so fundamental that it will mark off medical insurance quite sharply and distinctly from club practice.

But there is another consideration which has been brought closely home to us within the last fortnight by the remarks of Mr. Lloyd George in his Budget speech. Speaking officially as Chancellor of the Exchequer, he said: "Next year, if the taxes fulfil their promise . . . and if we return to a normal naval expenditure, we can see our way now to start a great national scheme of insurance for unemployment and invalidity—a scheme on a contributory basis with a liberal State subsidy, a State subsidy twice as liberal as that given by Germany for the same purpose, which will insure 2½ millions of workmen employed in precarious trades against the evils of unemployment, and 13 millions of workmen and workwomen against the distress that comes from sickness and premature breakdown of the breadwinner, and the setting up of sanatoria for the curing of workmen." A little later in the debate he also said: "If the present Government is in power next year, I venture to say that by the first of January of the following year there will be 15 millions of persons insured under the Government's scheme."

It is interesting to note that Mr. Lloyd George's figure of 13 million persons to be insured for sickness and invalidity is what some time ago we estimated to be the number of persons that would be insured if the wage limit of £100 a year were taken, as it is in Germany. It would hardly be justifiable to assume that this amount will be adopted as a fixed wage limit, as it is possible that, in certain circumstances—for instance, for men engaged in peculiarly dangerous trades—a higher limit may be taken. There may, in fact, be a variable wage limit, though it would appear to be intended that as an average persons earning less than about £2 a week will have to be insured for sickness.

But at the present juncture the important fact must be faced that insurance for sickness and invalidity is now definitely a matter of social politics. The Liberal Government is distinctly pledged to it, and there is ground for believing that the Conservative party will support the principle. For the medical profession now to oppose it would simply be not so much impolitic as suicidal, and we sincerely hope that no section of the profession, misguided by the evil connotation which has come to be attached to the term "contract practice," will attempt to frustrate what is most plainly a tendency of the age, recognized as beneficent by both political parties.

CORONERS' LAW AND DEATH CERTIFICATION.

A BILL to amend the law relating to coroners and the certification and registration of deaths and burial has been introduced in the House of Commons by Sir William Collins. It is backed by Colonel Lockwood, Sir Philip Magnus, Sir Luke White, Dr. Hillier, Dr. Chapple, and Mr. O'Grady. The bill, which is printed in the SUPPLEMENT (p. 90), applies only to England and Wales. It is said to be intended to "give effect to many of the recommendations of the Departmental Committee of 1908, and of the Death Certification Committee of 1893."

The law relating to coroners is at present a chaos of practices which had become established by tradition, and of statutes intended to meet contingencies of one kind or another as they arose, and enacted at different times extending over a period of more than six centuries. The Coroners Act, 1887, did little more than gather these scattered fragments into a *rudis indigestaque moles*. Naturally the result was a chaos of legislation which in certain important respects left coroners free to follow whatever light they might have, or choose, to lead them. That light was not always kindly to the medical profession, and to an opinionated or prejudiced man it afforded opportunities of exercising authority in a manner dangerous to the safety of the public for the security of which the office was created. The diversity in the modes of appointing coroners, the want of proper definition of the extent of their jurisdiction, the uncertainty in regard to many things having a direct bearing on their functions—for example, the interpretation of "misbehaviour" justifying removal from office—all these gave rise to the anomalies which have made "crowner's quest law" a byword and a reproach.

Although this reproach has to a considerable extent been removed since medical men have been eligible for the office of coroners, the law urgently needs amendment. As a preliminary to this a Departmental Committee was appointed at the end of 1908 to inquire into the law relating to coroners and coroners' inquests, and into the practice in coroners' courts. That Committee in its report made a number of recommendations, of which only the principal of those directly interesting the medical profession need be referred to here. In regard to qualification for the office, the Committee expressed the opinion that having regard to the nature of a coroner's duties, in future no one should be eligible who was not a barrister, a solicitor, or a medical man; that compulsory retirement at the age of 65 should be enforced, and that in cases where the coroner devoted his whole time to the work, the office should be pensionable. It was further recommended that the coroner should, without holding an inquest, have power to order and pay for a *post-mortem* examination in cases of sudden death where the cause was unknown and there was no reason to suspect that the death was unnatural or violent. When juries return perverse verdicts such as the following: "The man died from stone in the kidney, which stone he swallowed while lying on a gravel path in a state of drunkenness"; or "a child three months old found dead, but no evidence to show whether born alive"—the coroner, who under the existing law is

bound to accept the verdict, should be empowered, if necessary, to apply to a judge in chambers to set the verdict aside and authorize a new jury to be summoned. With regard to the question of fees to medical witnesses at inquests, the Committee expressed the opinion that the scale of fees at present allowed was inadequate, and that, in addition to having power to order a *post-mortem* examination to be made by an expert pathologist, if this were considered necessary, the coroner should have power to summon and pay, in addition to the expert, the medical practitioner or practitioners having clinical knowledge of the case. The Committee recommended that every coroner should be empowered to call such medical witnesses as might be necessary to the proper determination of the case, and that the practice in English courts should be assimilated to that of Scotland, where the Procurator Fiscal has a much freer hand as regards medical costs. In the first place he gets a formal written report from the medical practitioner in attendance, for which one guinea is paid. "This very often disposes of the whole case without requiring the medical practitioner's attendance." If a *post-mortem* examination is judged to be necessary, the Procurator Fiscal can order any one he likes to make it, and can pay him two guineas. In respect of medical officers of public institutions, the Committee recommended that they should be placed on the same footing as other practitioners in regard to fees for giving evidence at inquests and for making a *post-mortem* examination.

Sir William Collins's Bill makes no reference to several of these recommendations, while in its adoption of others it shows a minimizing tendency which must make it unacceptable to the profession. Thus, though it is provided that every coroner shall cease to hold office on reaching the age of 65, the granting of a pension is left to the discretion of the local authority which appointed him. The medical profession has too good reason to know how this power may be abused. The coroner who has faithfully discharged the duties of his office should not be left, when he is past work, at the mercy of bodies who are not always just or reasonable. Another serious defect in the bill is in Clause 5, where it is provided that a medical practitioner shall not be eligible for the office of coroner unless he is also a barrister or a graduate in law of a university in the United Kingdom. That the medical coroner has been a success is shown by the number who have been appointed since Thomas Wakley won the battle for the profession. Why should a legal qualification be required of a doctor, while no medical qualification or even proof of elementary medical knowledge is required of the barrister or solicitor? It is well for a coroner to have some knowledge of law, but it is still more important that he should have a knowledge of medicine. We welcome the provision that any county or borough council may appoint one or more medical investigator or pathologists in each coroner's district to assist him in his inquiries and inquests, and to make *post-mortem* examinations. We think, however, that a restriction should be placed on the liberty, often capriciously exercised, of coroners to exclude clinical evidence, without which, as the Departmental Committee points out, "a *post-mortem* examination made by a skilled pathologist will often give no result."

But the most serious objection to the bill, from the medical point of view, is that, while it adds to the burden already placed on the medical practitioner in respect of certificates of death, it makes no provision for remuneration. The form of certificate proposed is a somewhat elaborate document which the doctor has to fill up under penalty of a fine; why should he be compelled to discharge, without fee or reward, a duty imposed upon him wholly in the interest of the public safety?

On the general subject of death certification in this country it may be said here that it is very unsatisfactory in several respects. Its defects have long been manifest, and in 1893 a Select Committee, of which Sir Walter Foster, Dr. (now Sir) Charles Cameron, and Dr. Farquharson were members, made an inquiry into the whole matter, and presented a report. For the last seventeen years that report has mouldered in some official pigeon-hole, and nothing has been done to remedy the admitted evils of the system, except in the case of bodies disposed of by cremation. The present procedure of certification for burial affords facilities for the concealment of crime; it tends to vitiate the statistics of the Registrar-General, and thus makes the deductions from these as to the prevalence of particular diseases untrustworthy from a scientific point of view. Moreover, the system, such as it is, is carried out with such laxity that in a large number of cases the formality of certification is evaded. In 1907, for instance, over 8,000 bodies were buried in England and Wales without any medical certificate whatever, and in 1908 the number of uncertified deaths was 7,477. All this constitutes a serious danger to the public, besides retarding the advance of knowledge of vital importance to the common weal. Even when the letter of the law is complied with, its provisions are too often rendered nugatory by culpable negligence on the part of the certifying practitioner.

Among the certified deaths the Select Committee reported that many were to be found in which the certificate had been given by medical practitioners who had not seen the patient for weeks or months before death; and deaths in which the true cause was suppressed in deference to the feelings of survivors. Such cases, said the Committee, are numerous, but in addition evidence was given as to cases accidentally brought to light of deaths registered, with a view to insurance or other frauds, of persons afterwards discovered in some cases to have been murdered and in other cases to be still alive; deaths registered under circumstances suggestive of fraud, regarding which it was not known whether the subjects had or had not died, and coffins buried alleged to contain corpses, the deaths of which had not been registered, and concerning which all that was known was that no such persons alleged to have been buried had resided at the address given to the burial authorities. Evidence of this kind was forthcoming in such abundance as to force upon the Committee the conviction that vastly more deaths occur annually from foul play and criminal neglect than ever come to light. The statements suggest that sensational novelists in search of a thrilling plot might find what they want near at hand in the unpromising pages of a Blue Book. The Committee recommended, among other things, that in no case should a death be registered without production of a certificate of the cause of death signed by a registered medical practitioner, or by a coroner after inquest; that in each sanitary district a registered medical practitioner should be appointed as public medical certifier of the cause of death in cases in which a certificate from a medical practitioner in attendance

is not forthcoming; that a medical practitioner in attendance should be required before giving a certificate of death personally to inspect the body, but if, on the ground of distance or for other sufficient reason, he was unable to make this inspection himself, he should obtain and attach to the certificate of the cause of death a certificate signed by two persons, neighbours of the deceased, verifying the fact of death; that medical practitioners should be required to send certificates of death to the registrar instead of handing them to the representatives of the deceased; and that stillbirths which have reached the stage of development of seven months should be registered upon the certificate of a registered medical practitioner, and that it should not be permitted to bury or otherwise dispose of the stillbirth until an order for burial had been issued by the registrar. The Select Committee pointed out that a medical man, though required by law to give a certificate of death for the public purposes of registration, was not legally entitled to any payment out of public funds for his services in this respect; and it expressed the opinion that the precedent of the Infectious Disease (Notification) Act, 1889, should be followed, and that a fee of 2s. 6d. should be payable to a medical man out of public funds for every death certificate issued by him.

The Departmental Committee also called attention to the laxity of the present system, and said that "the present law of death certification offers every opportunity for premature burial and every facility for the concealment of crime." It expressed the opinion in connexion with the law of coroners that two amendments would effect a great improvement. "First, a death certificate should not be accepted from a medical practitioner unless it states that he has, by personal inspection of the body, satisfied himself as to the fact of death." At present he may certify merely on the information given by the relatives, and the report states that the Committee had received evidence that many certificates were carelessly, even recklessly, given. Secondly, it was suggested that in every case in which a medical certificate is not given, the death should be reported to the coroner. Under the instructions of the Registrar General, it is usual now for registrars to report uncertified deaths to the coroner, but the Committee recommended that this should be made a statutory duty.

In Sir William Collins's bill these recommendations are virtually adopted. The proposed measure is undoubtedly a step in the right direction. But legislation must go further if the public is to be properly protected against the evils and dangers pointed out by the Select Committee in 1893. It is a disgrace to both sides in Parliament that legislation on matters so vitally affecting the welfare of the community should have been so long delayed. We cannot help adding that it is a matter for regret that, now when it is proposed to do something, the scheme of reform should in so many points be inadequate.

THE SPECIAL CHLOROFORM COMMITTEE'S FINAL REPORT.

IN the SUPPLEMENT to this issue will be found the voluminous report of the Special Chloroform Committee of the British Medical Association. It is arranged in sections dealing with the history of the whole question of chloroform administration and the methods which have been pursued from time to time, although especially from the point of view of giving chloroform in known percentage strength. The view adopted by the Committee is that a system of definite percentages of chloroform vapour in air given from an accurate dosimetric inhaler is the safest for general adoption; for although the Committee demonstrates that other methods may be so conducted as to minimize danger, yet the danger is always present, and its avoidance is dependent not only upon the individual skill and experience of the administrator but upon all the circumstances environing the case being favourable. That chloroform is productive of benign or dangerous effects exactly in proportion to the strength of the vapour, whether below or above a certain limit, is the contention of the sections which review very fully the physiological behaviour of tissues towards chloroform, and epitomize the knowledge concerning dosage of chloroform which has accrued since the days of Paul Bert. To arrive at any just understanding of the problem involves, of course, a consideration of a large number of methods and all the apparatus employed with the object of giving exact percentages of chloroform. These are set forth in another section, which ranges from Snow's inhaler, invented in 1847, to that of Dr. Alcock, the latest claimant for favour. Mr Vernon Harcourt's dosimetric inhaler, which was employed by the Committee in its investigations, is carefully described. The investigations comprised experiments on animals and the study of dosimetry for human beings. The report deals not only with the researches undertaken by members of the Committee, which have been embodied in appendices published as SUPPLEMENTS to the JOURNAL at yearly intervals, but includes a great deal of work undertaken by persons outside the Committee, so that it is practically a review of the whole subject of the dosage of chloroform considered from a very wide standpoint, and should initiate a valuable discussion in the Section of Anaesthetics at the coming Annual General Meeting. The ultimate conclusions at which the Committee arrived with regard to dosage of chloroform are: That a 1 per cent. vapour is generally insufficient to induce surgical anaesthesia in an adult, at all events within the limits of time ordinarily available; that a 2 per cent. vapour of chloroform in air is sufficient to induce full surgical anaesthesia; that in pathological conditions, such as depraved blood states, some diatheses, and grave pathological states, the safety dose or percentage is below 2 per cent., and must be determined in each case; that the dosage for the maintenance of anaesthesia is of as much importance as that of the induction period, and that the failure to recognize this has caused many deaths, and constantly delays convalescence, and that while no definite limit of safety can be fixed for this dose, it is in most cases 1 per cent. at first, and must be lowered as time goes on.

PHARMACOPOEIAL REVISION.

THE appearance of a second report of the Committee of Reference in Pharmacy to the Pharmacopoeia Committee of the General Medical Council[1] is an indication that the work of revising the *British Pharmacopoeia* is proceeding steadily, if somewhat slowly. The present report embodies the results of work accomplished in the thirteen months ending December 16th, 1909, together with supplementary

[1] Second Report of the Committee of Reference in Pharmacy to the Pharmacopoeia Committee of the General Medical Council embodying the results of work accomplished in connexion with the revision of the *British Pharmacopoeia*, from November 18th, 1908, to December 16th, 1909, together with recommendations supplementary to those contained in the report of 1908. Printed, published, and sold for the Medical Council by Spottiswoode and Co., Ltd., 5, New Street Square, London. 1910. Price 1s.

recommendations on matters dealt with in the report of 1908. The first part deals with preparations included in that portion of the *Pharmacopœia* which is bounded by the letters E and L, the first and last preparations concerning which recommendations are made being respectively Extractum belladonnae liquidum and Liquor magnesii carbonatis. Many of the proposed alterations consist in substituting improved methods of assay of those compounds which are standardized in strength, and include more accurate determination of the alkaloidal strengths of preparations of belladonna, ipecacuanha, nux vomica, and aconite; the Committee is strongly of opinion that the present standard of 5 per cent. of strychnine in extract of nux vomica should be adhered to as against the 16 per cent. of total alkaloids adopted by the Brussels International Agreement, to which this country was a party with certain reservations, and medical men will doubtless favour a constant proportion of strychnine rather than of a mixture of strychnine and brucine, in which either may preponderate. Stringent requirements as to the maximum amounts of arsenic permissible in various chemicals are recommended in many cases, though it would appear that the views of the Committee on this matter have been influenced to some extent by what is found to be commercially practicable, since it is proposed to allow 200 parts of arsenic in a million parts of reduced iron but only 1 part in a million parts of ferrous sulphate. The proposal to lower the requirement as to percentage of resin in jalap from the present value of "not less than 9 nor more than 11 per cent." to "not less than 7 or more than 9 per cent." is no doubt due to a similar consideration, jalap containing 9 per cent. or more of resin having been extremely scarce in the market for some years. The second part of the report consists of further notes on some of the recommendations of the previous report, and is practically only concerned with tests.

HEALTH IN THE POTTERY TRADES.

THE report of the Departmental Committee appointed by the Home Office in 1908 to inquire into lead poisoning and other forms of injury to health in the pottery trades[1] was published on July 5th. The Committee, of which Sir Ernest Hatch was chairman, and which included among its members Dr. George Reid (M.O.H. Staffordshire), Mr. John Ward, M.P., Mr. Vernon Harcourt, F.R.S., and Miss Gertrude Tuckwell, as well as representatives of the trade on the side both of employers and employed, visited a large number of pottery works, met delegates from manufacturers' and workmen's associations, and examined 71 witnesses, including factory inspectors, factory surgeons, and other medical men practising in the districts concerned, and numerous experts, manufacturers, and operatives. It appears that there are 550 pottery works employing 63,000 persons; of these, 329, employing 48,000 persons, are situated in the towns in North Staffordshire, commonly known as "The Potteries," and recently amalgamated into the county borough of Stoke-on-Trent. The remaining 221 works, employing 15,000 people, are scattered in different parts of England and Scotland. In addition, there are some 500 other works of a kindred or subsidiary character employing about 11,000 persons but not at present under special rules; the Committee recommends that they should be classified and placed under suitable regulations with regard to the use of leadless glaze. The general conclusion of the Committee is that of all classes of pottery ware, whether of best, medium, or common quality, a great many kinds can be manufactured in a very high state of perfection with leadless glaze; that in certain classes of common ware the cost of production is inappreciably increased, and that in the commonest of all, such as jam pots, it may even be reduced. On the other hand, in certain wares of the best or medium classes leadless glaze, owing to the excessive number of seconds, can only be used at such increased cost or such a sacrifice of quality as possibly to entail the loss of important markets. The Committee points out that only in Holland have rules been introduced against the use of raw lead, and that even there it has been found necessary to suspend them, although the employment of women and young persons is restricted, and provisions are in force with regard to medical examinations, cubic space, lavatories, cleaning of floors, and supply of overalls. In Belgium there are rules as to ventilation and cleanliness, and special rules may be made in particular cases; but in Germany and in the United States there are no special rules. Owing to the difficulty of reproducing accurately old patterns, colours, or methods of decoration certain kinds of ware cannot at present be made without the use of lead. It was suggested to the Committee that a schedule of articles should be issued in the manufacture of which the use of lead should be prohibited, but the Committee advise that such a course is impracticable. It makes a number of recommendations, of which we can now refer to two only. The first is that it is proposed that workers in scheduled processes other than those involving contact with lead—that is to say, practically, workers engaged in dusty works—should be examined every twelve months by the certifying surgeon of the district, who should have power of suspension, but the Committee does not make any recommendation with regard to compensation of workpeople so suspended. The other is that all women under 45 years of age should be excluded from employment in the most dangerous lead processes.

[1] Report of the Departmental Committee appointed to inquire into the Dangers attendant on the Use of Lead and the Danger or Injury to Health arising from Dust and other Causes in the Manufacture of Earthenware and China, and in the processes incidental thereto, including the making of Lithographic Transfers. (Cd. 5219.) 1s. 5d.

SOME SCARE HEADLINES.

A RATHER amusing discussion took place at a recent meeting of the London Education Committee with reference to a leaflet entitled "Health Hints to Parents." The text had been prepared by Dr. Kerr, and was a model of terseness, knowledge, and common sense. It opened with the following short sentences, which for pithiness in the expression of a comprehensive policy could hardly be excelled: "No child must suffer from going to school. There is nothing worse for a clean child than to be brought into contact with a dirty child. The London County Council is resolved to protect the clean child. Fresh air, light, play, and plenty of sleep and good food are essentials for health." The leaflet contained here and there some striking phrases, and it was on these that some members of the Committee fastened. Not that they objected to them—far from it; but they wanted to make them a little stronger and to put them in larger type, for, said Miss Susan Lawrence, "in these days of sensational halfpenny newspapers you must talk like that to make an impression." So the Committee set to work, and the leaflet, of which half a million copies are to be issued, will go out with scare headlines such as "No scholarships for dirty children." Dr. Kerr had written, "Children with vermin or nits will not be allowed in school, nor will they be granted scholarships." A wise paragraph on the care of the teeth was given the heading, "As good as Five

Shillings a Week for Life," and for this perhaps Dr. Kerr ought to take the responsibility. "Windows are made to Open" was made the heading of a section about ventilation and the evils of dust, but the Committee did not succeed in finding an effective headline for a paragraph about eyes, perhaps because it contained the statement, as to sore eyes, that "cleanliness always, and golden ointment often, does good"; possibly the Committee doubted the propriety of giving too much prominence to the prescription of a mercurial ointment; the wisdom of its inclusion is open to doubt, but there can be no doubt about the next sentences: "Spectacles may be wanted, but should only be worn when they have been prescribed by a doctor. They should never be obtained from an optician or 'eyesight specialist,' unless they have been prescribed by a doctor." Then we come to the scare line, "Shut your Mouth and Save your Life," for which the Committee is wholly responsible, since Dr. Kerr did not go beyond the apophthegm, "Those who cannot keep their mouths shut should see the doctor." Certain members of the Committee seem to have felt an apprehension that some of the people to whom the leaflet is to be given might look upon it as an insult to their intelligence and resent it, but those who knew most about London parents did not take this view; and so, taking its courage in both hands, the Committee wrote in one more headline, declaring that its leaflet was "worth its weight in gold." Dr. Kerr had written, more accurately perhaps: "The condition and habits, the character, and the future prospects of a child depend mainly on its mother, and there are occasions in every family when knowledge of some of the facts in this paper may be worth untold gold. Therefore, please keep it safely where it can be found when wanted." The discussion was amusing, but it was also instructive as illustrating the kind of way in which the experienced and instructed layman and laywoman thinks health aphorisms should be put forth. No doubt the expert is often hampered by his knowledge, and, knowing all the qualifications by which every medical assertion is hedged around, unconsciously uses expressions which may hint a doubt. Not that Dr. Kerr seems to us to have erred in this direction, for on a moot point which just now much disturbs celestial minds he expressed a very definite opinion—"Consumption is the result of lowered health, and infection by germs."

DENTAL PAYING CLINICS.

Some particulars have already been given in the Journal[1] as to the scheme by which an unnamed capitalist proposed to found dental paying clinics in London and other centres, for the benefit of the middle and poorer classes of the community willing to pay small fees for dental treatment and appliances, but unable to pay the usual fees of dentists. The scheme was propounded on April 11th in the *Times*, and on July 6th our contemporary stated that an experimental clinic would be opened on the following day in Shaftesbury Avenue, London, W.C. The only qualification for treatment, it was stated, will be ability to pay self-supporting fees, and inability to pay the ordinary fees of dentists. This statement was, however, immediately qualified by the further statement that it is proposed to establish a benevolent fund, for which it is hoped to obtain generous public support, to assist those patients who are unable to pay even the low fees which the new organization will demand. It is added that this fund will be administered by "a practical working committee composed of members nominated by the Charity Organization Society and similar bodies." It is further stated that it is proposed to give free treatment and artificial appliances only in special cases, and that preference will be given to those able to pay part of the expenses, in approved cases by instalments. We may add that it should be understood that the offer of the unnamed capitalist was not made to the British Dental Association, and the representative board of that association decided last May that until the scheme was presented to it in a definite form, it could not express any opinion upon it. The British Dental Association, therefore, is not at present responsible either for the organization or the administration of the clinic, but now that the work has been commenced it may be expected that it will not refrain from expressing its views upon the advantages and possible drawbacks of this commercial enterprise and of its benevolent side. There was once a company—it may still exist—formed by members of the Church of England to build churches "to the glory of God and 5 per cent."

[1] April 16th, 1910, p. 949, and May 7th, p. 1133.

ALCOHOL AND MOUNTAINEERING.

The results of an inquiry as to the habits and experience of members of Alpine clubs in respect of alcohol were published some time ago by Dr. L. Schnyder, of Berne, and an English translation has now been issued in a pamphlet bearing the odd alliterative title, *Alcohol and Alpinism*.[1] The information it contains will possess some interest both for those who are devoted to the pastime of mountaineering, and for those who are in doubt as to the value of alcoholic beverages in fatigue. The work is based upon the answers given to a series of questions addressed by the author in 1903 to 1,200 members of Alpine clubs. Of those who replied to the queries, 78 per cent. stated that they consumed alcoholic beverages habitually, 72 per cent. that they carried some form of alcoholic liquor in case of need, 44 per cent. that they were unfavourable to, and 56 per cent. that they were more or less favourable to the use of alcohol in mountain climbing. The habits of Swiss guides in the matter of alcohol must be a continual source of wonderment to their patrons; nearly all take alcohol while at their work, some a good deal more than seems wholesome. They have, too, a whole code of rules, a sort of folk medicine about the sort of wine which should be taken, and when; white wine is refreshing, they say, by which, apparently, they mean a good thirst quencher, which is hardly the Britisher's experience; red wine is better as a restorative in fatigue, brandy to give courage at a pinch, while hot red wine is a cure for nearly all the minor illnesses. But one may observe that when the wine has to be paid for by themselves, and not their employers, they will go long distances and endure much fatigue without touching it. As a substitute for alcohol the following substances are suggested by various "Alpinists": Fruits, fresh or dried; pure water; lemonade; tea; coffee; cocoa; and kola. The deductions which Dr. Schnyder draws from the answers he received are: (1) That alcohol should never be taken before, or at the commencement of, a climb with the object of increasing the climber's strength; (2) that alcohol should be proscribed during the effort of climbing; (3) that alcohol, in moderation, is useful to lessen the sense of fatigue, to encourage the appetite, or to act as a medicinal stimulant to the heart and nervous system. On the whole, the general outcome of the inquiry seems to be that alcohol, though best left alone as a beverage, may be useful as a restorative, and that the wise

[1] *Alcohol and Alpinism: Results of an Inquiry made among Alpinists.* By Dr. L. Schnyder, Berne. Authorized Translation by E. G. Richards. Edinburgh and London: William Green and Sons. 1910. (Cr. 8vo, pp. 83. 2s.)

mountaineer is he who always indulges in it with great moderation and only at times when the fatigue induced by work laboriously accomplished cries out for relief. The book is discursively and pleasantly written, and no small amount of its merit to the English reader lies in the fluent and happy translation made by Mr. E. G. Richards.

THE TRANSMISSION OF LEPROSY.

THE suggestion has recently been made that biting insects may have something to do with the transmission of leprosy. It is believed by Noc that mosquitos may be culpable, and that this may explain the great variability which exists in the contagiousness of leprosy in members of the same family. Professor Ehlers, of Copenhagen, who studied the subject during an expedition to the Danish West Indies in 1909, is also of opinion that some biting insect is the carrier of the infection. Bugs, fleas, and mosquitos were all experimented on. It is quite possible that the hypothesis may be confirmed, but direct proof must necessarily be difficult owing to the long incubation period of the disease. Granted even a success, criticism would at once say that the patient had been living in the endemic area and might easily have acquired the disease by some other means. A specially interesting point brought out is that the Wassermann reaction is completely positive in some cases of leprosy and partially so in others. It is just possible, of course, that some of these individuals had had syphilis previously, but, on the other hand, it may mean that leprosy is a disease that also gives this reaction.

AT the meeting of the Canadian Medical Association last month, the Dominion Registration Bill, in the promotion of which Dr. T. G. Roddick, President of the British Medical Association when it met in Montreal in 1897, has taken so large a part, was accepted by representatives of all the provinces, so that there is good reason to expect that within a year it will be placed upon the Statute Book.

THE first meeting of the newly constituted Advisory Committee to facilitate the working of the scheme for the organization of Voluntary Aid Detachments in connexion with the Territorial Force was held at the War Office last week. The members present were Surgeon-General W. L. Gubbins, C.B., Director-General of the Army Medical Service (Chairman); Lieutenant-Colonel F. S. Maude, C.M.G., Assistant Director of the Territorial Force; Sir Richard Temple, Chairman of the Worcestershire Territorial Association; Colonel R. B. Colvin, Chairman of the Essex Association Sir Frederick Treves, member of the Territorial Force Advisory Council and of the Executive Committee of the British Red Cross Society; Mr. A. A. Bowlby, member of the Executive Committee of the British Red Cross Society; Colonel Sir G. Beatson, Administrative Medical Officer Lothian Division, and a member of the Executive Committee of the British Red Cross Society; with Lieutenant-Colonel E. Eckersley, R.A.M.C., Deputy Assistant Director-General, Army Medical Service, as Secretary.

THE Mayor of Battersea has summoned a meeting at the Town Hall on Wednesday, July 13th, to discuss a proposal to establish in Battersea a dispensary for the treatment and prevention of consumption. The meeting will be addressed by, among others, Dr. J. J. Perkins, honorary secretary of the National Association for the Prevention of Consumption, and Dr. D. G. Williamson and Miss McGaw, medical officer and honorary secretary respectively of the Paddington Dispensary for the Prevention of Consumption.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

The Budget.

Decreased Consumption of Alcohol.

IN introducing the Budget on June 30th, the Chancellor of the Exchequer said that there had been a drop in the consumption of spirits of 5 per cent. between 1907 and 1908, taking the true revenue of the latter year, that is to say, eliminating the forestalments. Taking the whisky-drinking parts of the country—that is to say, those parts where whisky and not beer was the customary beverage—drunkenness dropped immediately the tax was put up; in Scotland during the last three quarters of 1909 and the first quarter of 1910, there was a drop of 33 per cent. in the convictions for drunkenness. In May, 1909, when the increased duty came into force, there was in Glasgow a drop in the convictions for drunkenness from 1,100 to 800, and the number had remained about that figure ever since. The admissions to Edinburgh Gaol from April to December had fallen as compared with 1908 by nearly 2,000, and this, in the opinion of the governor of the prison, and the recent chairman of the Prison Commissioners, was entirely due to the increased tax on whisky; further, the total number of prisoners in the calendar of the Edinburgh police court was the lowest on record. In Ireland, also, there had been a very appreciable reduction of drunkenness, ranging from 35 per cent. to as much as 70 per cent. in some districts. In England the reduction in the number of convictions for drunkenness and offences connected with drunkenness had gone down by something like 18,000 in the course of last year. Summing up, he said that 10,000,000 gallons of highly alcoholized liquor had been withdrawn from consumption, and on that ground alone he was adhering to the whisky duty, which also from the financial point of view had been an unqualified success; and having regard to the fact that forestalments had been eliminated, he estimated the increase in the amount to be derived from the revenue by the spirit duty at something like £1,800,000. A most extraordinary fact about the diminution of the consumption of whisky was that people did not seem to have been driven to the consumption of beer or wine or any other form of alcohol: there had been a diminution all round.

When the discussion of the Budget was resumed on Monday, Mr. Austen Chamberlain criticised the Chancellor's statement. He did not believe in the increased revenue of £1,800,000. The Chancellor had accelerated the decline in consumption of alcohol which was already going on, and the result was, taking his own figures, that instead of having gained £1,600,000, as he hoped last year, from his Spirit Duty, or £1,800,000, as might be inferred from his statement, he had only got £500,000 to bless himself with. He did not think it was worth while for such a sum to have created so much disturbance and ruin. As to the blessings coming from a lessened consumption of whisky, he was sceptical about the permanent and enduring effects of this increase of duty, and about the fairness of the comparison which the Chancellor of the Exchequer made in his Budget speech. He took the figures of a far too short period, and with regard to particular instances alone; but although particular individual trade interests were very suggestive and interesting, to be conclusive of anything much wider and more experience was wanted to justify the broad fabric of speculation which the Chancellor built upon this very shallow foundation. Mr. Dillon strongly attacked the whisky tax, and regarded the views of the Chancellor as to its effects in reducing drunkenness as speculation and not founded on facts. The lessened drinking was due to other causes.

Old Age Pensions.

Mr. Lloyd George said that the Government had given a statutory pledge, which they intended now to fulfil, to remove the pauper disqualification for old

age pensions. The disqualification affected 270,000 old people, who were just as needy and as deserving as others who were now entitled to receive old age pensions. The scheme would come into operation on January 1st, 1911, and no additional charge would be imposed upon the local authorities; they would only be asked to pay the sum by which the rates would be relieved by the transfer of the paupers to the pension list. It was difficult to compute the cost, because there were a good many persons disqualified from pensions not now actually in the receipt of Poor Law relief, but who had resorted at some period to such relief. The whole burden of this class would fall upon the Exchequer, and the guardians' contribution would be in respect only of those persons who were actually in their charge. It was difficult to compute how many would leave the workhouses, but he estimated that next year something like £2,500,000 would be added to the burdens of the Exchequer, and for the last quarter of this year the amount would be £450,000. As to the contributions from local authorities, it was really a question of bookkeeping between them and the Exchequer.

In the discussion on Monday, Mr. Austen Chamberlain confessed that after the experience of the initiation of old age pensions, he distrusted all estimates of the cost of anything to do with old age pensions. When the Prime Minister brought in his proposals he thought that they would involve an ultimate burden on the taxpayer of £6,000,000. We were now within sight of £12,500,000, if the Chancellor's estimates of future expenditure, which he himself did not lay much stress on, were as correct as the Prime Minister's were wrong. Surely there had been a lesson with old age pensions of the rashness of starting schemes lightly without making sufficient provision for their cost, and he thought it was regrettable that the Chancellor of the Exchequer should not merely repeat that same procedure, beginning his removal of the pauper disqualification with a margin of £400,000 or so, but should do so without knowing what other calls were going to be made upon him next year, and knowing that if this call involved him in the least possible deficit he would have to find at least a further £2,000,000 next year. And not content with that, he went on to say what he would do if he was spared to grace the position he now occupied on January 1st, 1912, by introducing his scheme of insurance against unemployment and invalidity.

Unemployment and Invalidity Insurance.

Mr. Lloyd George said that next year if the taxes fulfilled their promise—and as a matter of fact the new taxes, with three exceptions, had exceeded anticipations—and if the country was able to return to the normal naval expenditure in the following year, he thought it would be possible to start on a new great national scheme of insurance for unemployment and invalidity, a scheme on a contributory basis with a liberal State subsidy, a State subsidy twice that given by Germany for the same purpose, that would insure 2,500,000 workmen employed in precarious trades against unemployment, and 13,000,000 working men and working women against the distress that came from sickness and the premature breakdown of the bread-winner, and would provide for the setting up of sanatoriums for the cure of illness.

In the debate on Monday Mr. Snowden argued against delay in bringing forward the insurance scheme. The Chancellor was postponing until next year the fulfilment of the Government pledge to deal with what he believed to be the gravest of social problems—namely, the problem of unemployment, of infirmity, and of invalidity. He asked if there was any reasonable hope that next year the Chancellor would be in a better position to redeem that pledge. He could not redeem it next year except by imposing additional taxation. Why, therefore, could not he do it this year? There was no reason why he could not. The cost of this insurance was £1,250,000. A halfpenny on the income tax would do it. Surely it was far better, from the point of view of the welfare of the community, that 5,000,000 of men should be supported in their privations, extremity, and misery, than that a halfpenny in the pound should remain in the pockets of the rich.

The discussion was interrupted at 8.15 and resumed later, Mr. J. D. Miller praising the effect of the whisky duty in lessening drunkenness in Scotland, and the debate was adjourned at 11.

Experiments on Living Animals.—Mr. Greenwood asked the Secretary of State for the Home Department what was the nature of the operation not authorized by the certificate which was performed by a licensee holding Certificate B, as recorded by the inspector in the return showing the number of experiments on living animals during the year 1909; what was the name of the licensee in question; whether there was any reason why such licensee should not be prosecuted under the Cruelty to Animals Act, 1876; and whether he would give his assent to such prosecution as by that Act required. The Secretary of State for the Home Department said that the operation consisted of oöphorectomy of two rabbits, of course under anaesthetics. It was brought to the notice of the Home Office by the licensee sending a paper published by him in which the experiments were described. Even had it been a case for prosecution it was then too late, the statutory period of six months within which any proceedings must be taken having expired. He did not wish to minimize the seriousness of the offence, but he might mention that the licensee in question held certificates in previous years authorizing this very experiment, and, as he explained, failed to notice that his certificates, at the time when he performed the operation, were so worded as not to include it. He was a distinguished man of science, to whom the refusal of a licence would be a very severe penalty, and he thought the House would agree that in these circumstances he was not called upon to disclose his name. Mr. Greenwood asked whether the right hon. gentleman was aware that under Certificate B the animal, although put under an anaesthetic, was allowed to come out of it, and have its life prolonged, that the effect of the experiment might be watched after the anaesthetic had ceased to operate; and was there any other department, mines or factories, where, if the inspector detected an offender against the law, he kept the name of the offender concealed, or did the conspiracy of silence apply to this alone. Mr. Churchill said his hon. friend had answered his own question: but, so far as concerned his expression "conspiracy of silence," he could not admit any conspiracy of silence, and he thought he was fully justified in this case in not disclosing the name.

Officers' Training Corps (Medical) Examinations.—Dr. Addison asked the Secretary of State for War if he could state why Whit Monday was fixed as a day for the written examination for Certificate A of the Officers' Training Corps (Medical); and whether, in view of the fact that many candidates were prevented attending because of the day fixed, he could see his way to appoint another day, so that candidates might have an opportunity of taking Certificate A in time to enter for the examination for Certificate B in November. Mr. Haldane replied that examinations for Certificates A and B of the Officers' Training Corps were held simultaneously in all contingents upon dates which were arranged, after consultation with the university and public school authorities, to suit the convenience of the greatest number. It was understood that the last examination, held on Whit Monday, interfered but little with the ordinary work of the universities. The proposal to hold an extra examination in medical subjects would involve a similar concession as regards all the other subjects, and, in view of the extra labour and expense involved, was not regarded as practicable.

The Shop (No. 2) Bill was introduced by Mr. Churchill on Monday last. He said that the bill was the same as that of last session. It had been proved that shop

assistants could not secure by their own action the reform necessary as to leisure and labour, and the shopkeepers could not do it by agreement. The bill affected nearly one million shop assistants and about half a million shopkeepers. The bill, in certain general provisions, did not touch the small shops which were served by the occupier alone, or by the occupier and his family. It did not touch those except in certain general provisions. In the main it dealt with the hours that shop assistants might work, and with the hours that shops might remain open. It provided that the shop assistant should not be worked for more than sixty hours in any week; that he should not be worked after 8 o'clock on more than three afternoons—subject to exemptions and restrictions—and that he should have proper time for meals. These were the main proposals, and they were the new proposals of the legislation of this character. But, further, the bill provided for a universal half-holiday. It provided for the closing of shops on Sunday, subject to the necessary provisions for Sunday trading, which wese rather complicated in themselves. It enabled the local authorities to retain the power of making further closing orders, with a view to remedying excessive hours in particular districts or particular trades at the demand of a two-thirds majority. The bill also contained provisions with regard to ventilation and the provision of sanitary convenience, and it re-enacted and carried on the legislative provision which secured seats for female shop assistants, without which undoubtedly they suffered injury during the long hours they were standing.

Compulsory Vaccination (Prussia).—Mr. Black asked the President of the Local Government Board, with reference to the report on the preparation and storage of glycerinated calf lymph in Berlin and other places abroad, contained in the Supplement to the Twenty-sixth Annual Report of his Department, whether in the three years 1906–7–8 there had been in England, with a great decrease in vaccination, 43 deaths from small-pox, while in Prussia, with approximately the same population, there had been 134 deaths from that disease in the same period; and whether there was any reason to suppose that the rigorous enforcement of compulsory vaccination had been at all relaxed in Prussia in the three years referred to. Mr. Burns replied that during the three years 1906–7–8 there were 107 deaths from small-pox in Prussia according to the official reports of the Imperial German Central Health Department, and not 134 as stated in the question. On the information before him, he had no reason to believe that any relaxation in the enforcement of vaccination had taken place in Prussia. He might add that the 107 deaths from small-pox were derived from 690 notified cases; and that of this number 219, or nearly one-third, were foreigners, chiefly from Russia, where there was no compulsory vaccination, and where during the period in question small-pox had been widely epidemic.

The Medical Inspection of School Children.—Mr. Runciman, answering Mr. Ramsay Macdonald, said the Board of Education decided to postpone the operation of the requirement that school children should be medically examined at the age of 7 in order to enable local education authorities to perfect their organization and to systematize the work they are at present doing. A number of authorities were undertaking or proposed to undertake the medical inspection of children of all ages suffering from particular ailments, and the Board was unwilling to interrupt this work, which it hoped would be attended with fruitful results. It had not been necessary up to the present to withhold grants on account of inefficient medical inspection. The Board had received complaints from some local education authorities that in consequence of medical inspection children were being kept from school, and it was giving careful consideration to the representations made.

Petrol Tax (Medical Profession).—Mr. Courthope asked the Chancellor of the Exchequer whether members of the medical profession who desired to claim the rebate of 1½d. per gallon upon the petrol used by them in their practice were required to attend at the office of an officer of Customs and Excise in order to sign the requisite declaration and produce the proofs necessary to satisfy the officer; and whether he would consider the possibility of allowing the rebate to be claimed in a less inconvenient manner. Mr. Hobhouse replied that as a general rule it was thought desirable that applications for rebate of motor spirit duty should be signed in the presence of an official of the Customs and Excise Department, but officers were instructed not to insist upon this requirement in any case in which it would entail inconvenience to a claimant and where there was no doubt as to the correctness of the claim. Notice of this had not yet been given, but he would undertake that it should be circulated at a very early date.

Royal Navy (Medical Department).—Lord C. Beresford asked the First Lord of the Admiralty when the report upon the Medical Department of the Navy would be presented to the House. Mr. McKenna replied that there were financial considerations involved which the Admiralty could not settle without further authority. When this had been obtained, it was hoped at no distant date that the preparation of a Blue Book, containing such portions of the report as could properly be published, would be proceeded with.

Deaths from Tuberculosis (Ireland).—Mr. Hugh Barrie asked the Chief Secretary how many deaths from tuberculosis occurred in Ireland last year: what was the rate per 1,000 of the population: and the corresponding figures for 1906, 1907, and 1908? Mr. Birrell said that the following table showed the number of deaths from all forms of tuberculous disease registered in Ireland during each of the four years 1906–9, with the respective rates per 1,000 of the estimated population represented thereby:

Year.	Deaths from all Forms of Tuberculous Disease.	
	Total Number.	Rate per 1,000.
1906	11,756	2.7
1907	11,679	2.7
1908	11,293	2.6
1909	10,594	2.4

Waterford Lunatic Asylum.—In reply to Captain Craig, who asked a question with regard to the illness and working hours of attendants at the Waterford District Lunatic Asylum, Mr. Birrell said that he understood that most of the attendants who were ill at the time of the report had now recovered, and that any attendant who was deprived of Sunday liberty, owing to illness amongst the staff, was allowed an equivalent number of hours in the following week. As he had already informed the hon. member, the question of the hours and conditions of work of attendants of asylums was one for the local committees of management.

Infection Carried by Bread.—In reply to Earl Winterton, the President of the Local Government Board said his attention had been drawn to certain newspaper paragraphs suggesting that infection had been carried through bread sold in chandlers' shops and on insanitary and disease-infected premises, or through exchanged bread, and that he proposed to make some inquiry respecting the allegations.

Invalidity and Unemployment Insurance.—On Tuesday, in answer to Mr. James Hope, who asked when the proposals of the Government with regard to invalidity and unemployment insurance would be laid before the House, the Prime Minister said that he was unable to make any statement on this subject. In answer to a further question, he said the proposals were quite ready.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EDINBURGH CONFERENCE ON TUBERCULOSIS.

The Exhibition.

IN connexion with the Conference of the National Association for the Prevention of Consumption and other Forms of Tuberculosis which began on Monday, July 4th, there was opened, on the afternoon of Friday, July 1st, by the Countess of Aberdeen, an exhibition bearing on the subject of the fight now being carried on against this disease. There was a large gathering, including many delegates from different parts of the country. In the historical department of the exhibition are found many old, rare, and valuable books, and portraits of the writers of these, and of other early doctors. Drawings of a Grecian temple of health of the fourth century B.C. were shown, copies of the works of Hippocrates, one of the first writers on phthisis; of Celsus, who urged a change of air from Rome to Alexandria in his treatment of phthisis; of Galen, who prescribed milk and honey and a change to Upper Egypt; of Halyabbas, an Arab writer, who first recognized the contagious nature of the disease; of the earliest English book on the subject by Bald in the time of King Alfred; of John Browne, Physician to King Charles II, who gave an account of the 92,000 persons whom he touched for the "King's Evil." There was a picture also of the first sanatorium set up at Sutton Coldfield, in Warwickshire, by Dr. George Bodington about the year 1840. The exhibition contained a pathological department; photographs and diagrams relating to the Royal Victoria Hospital for Consumption, and of many other hospitals and sanatoriums throughout the country; photographs of rooms in the slums of London, found to be hotbeds of the disease; shelters used in the little back yards or gardens of poor dwellings in London; tables illustrating the results of over-crowding furnished by St. Thomas's Hospital, the Brompton Hospital, by Liverpool, and Brighton. The Jewish Sanatorium at Daneswood was figured; a large table illustrating the remarkable reduction in the death-rate from phthisis in Edinburgh and London during the twenty years was displayed, and one, prophetic in a way, in which Dr. Sims Woodhead showed that if the same progress be continued, phthisis ought to be eliminated by the year 1940. The work of the National Health Association of Ireland, founded in 1907, with the Countess of Aberdeen as President, was fully illustrated. Outside were models of a one-roomed house in a sanitary and in an insanitary state, and a shelter used at the Royal Victoria Hospital.

The Royal Victoria Hospital Farm Colony.

The Springfield Farm Colony, established in connexion with the Royal Victoria Hospital for Consumption, was formally inaugurated on July 2nd, in the presence of fully 800 visitors. Sir Alexander Christison presided at the opening ceremony, which took place in a large marquee. Sir George McRae, Vice-President of the Local Government Board for Scotland, congratulated Dr. Philip on his methods. Like a wise general, he first of all established his base in the dispensary. Next came the hospital and sanatoriums, and now to complete the campaign the colony. The dispensary at Lauriston was well organized and skilfully conducted. Last year the nurse had paid some 3,500 visits, and the dispensary doctor some 2,100 visits to patients in the city of Edinburgh. It was a military maxim that if they wished to be successful in any battle they must first of all find out the enemy's movements. That was what the dispensary was doing. It was finding out the weak spots in their social system; it was giving advice in regard to open windows and the like; the farm colony was for cured cases for bracing and toning them before returning to thier ordinary work. In 1870, of the three countries in the United Kingdom, Scotland had the highest death-rate from consumption. Now Scotland took the second place and Ireland the first; but in both countries there had been a steady and gratifying diminution in the number of deaths from this cause. In 1906 the deaths from phthisis numbered 6,800; in 1909 they were reduced to 5,700. In 1906 there was not a single municipality in Scotland which had adopted compulsory notification of consumption as an infectious disease. Now the latest returns showed that seventy-four municipalities had put the Act into operation, so that at the present moment 48 per cent. of the population was under compulsory notification. But that was only the machinery part, and those of them connected with the Central Government were urging on local authorities to do something more, and to do it inexpensively, for inexpensive buildings were all that was necessary. He thought the results attained through the agency of the Victoria Hospital had been very great, but they would place no limit to what was before them, and he should say that to the consumptive the vista of hope was bounded by no horizon so long as earnest men and women were applying themselves to the solution of this problem. Behind this great movement in Scotland and in Ireland, and he might even say in America, was a man, patient, strenuous, and heroic; no discouragements could discomfort him, and he thought he should be wanting in his duty as representing the central authority in Scotland that day if he did not convey to Dr. Philip their congratulations and their sense of thankfulness for the work he had done in connexion with this great matter. After all, this colony was only an outpost of what might yet be a *Philipian* Empire, and that by and by they would find a whole chain of block-houses stretched all over these islands, which would be a protection to what had been so hardly won, and would consolidate what had been already achieved.

Lady Dunedin then addressed the visitors, and concluded by declaring the Springfield Farm Colony open. Votes of thanks to Lady Dunedin and Sir George McCrae were moved and carried.

Annual Meeting of the Royal Victoria Hospital.

The annual meeting of the Royal Victoria Hospital for Consumption was held on July 1st. The annual report submitted by the Honorary Secretary stated that the chief event of the past year had been the completion of the scheme by the establishment of a farm colony at Springfield. The number of patients at the dispensary continued to increase; as many as 107 had attended in one day. In the laboratory the diagnosis was confirmed by bacteriological examination in 409 cases. Of these, 364 were notified to the Medical Officer of Health of Edinburgh, and 52 to the Medical Officer of Health of Leith. Up to date 1,688 resident patients had been under treatment in the hospital, and there had to be added 267 visitant patients who were under the régime of the hospital during the greater part of the day but returned home to sleep. The annual capitation cost had been reduced by £5 12s. There was an excess of ordinary expenditure over income of £880. The Lord Provost was in the chair, and in moving the adoption of the report referred to the great loss the association had sustained by the death of King Edward, the Patron of the hospital. The death of Sir Arthur Mitchell also removed a devoted friend of the hospital. He was glad to say that the Corporation had arranged with Dr. Philip and the executive committee to work together for the common good.

Dr. Herman Biggs (New York), in seconding the motion, said that he had known of the Royal Victoria Hospital and its work for many years, but it was a special privilege that day to see one portion of the work which they were doing, and doing so well. Edinburgh was very fortunate in possessing in one of its citizens a man of rare insight, who grasped the significance of the work, who saw what it meant, and was prepared to meet it in a practical way. Dr. Philip might be said to have initiated the movement for the prevention of tuberculosis by the establishment of the Tuberculosis Dispensary here twenty-three years ago. From that they in Edinburgh had gradually

elaborated a scheme which might now, he believed, be considered the most complete in the world. That had been done to a very large extent through the voluntary efforts of Dr. Philip and his co-workers, and those who had so generously contributed to the work. What they had done in America had not been done in that way. It had been through official action. But now, with the completion of the organization—the union of the work with the medical officer of health of the city and the institution of the farm colony—it seemed to him that Edinburgh had the best and most comprehensive scheme which existed. It was often the case that work of this sort was appreciated abroad more than it was at home. Edinburgh's work in this direction had a great influence in America, where there was still one great want which Edinburgh had just supplied in the working farm colony.

The report was adopted.

The Rev. Dr. Kelman, of St. George's United Free Church, in moving a resolution to the effect that the Royal Victoria Hospital for Consumption in its various departments was worthy of the most liberal support from all classes of the community, said that the work Dr. Philip and his associates were doing was of immense service to humanity. Consumption had hitherto been regarded as a doom, now they looked on it as a challenge.

Dr. Stafford, C.B., of the Local Government Board for Ireland, who seconded, said that the Royal Victoria Hospital was intensely practical in every way, and was an institution of which the people of Scotland ought to be proud.

Sir Halliday Croom moved votes of thanks to the Medical Staff and the Committee of Management, as also the re-election of certain of its members. Colonel Warburton seconded.

The Countess of Aberdeen said it was a great gratification to join in congratulating Dr. Philip and his colleagues on their work of the past twenty years—that pioneer work which had done so much for the campaign against tuberculosis. She referred to the work being done in Ireland, and the beneficial results that were already manifest all over Ireland now the windows were open. They thought that a very good result in itself. In Ireland in the last two years there had been a decrease of 1,085 deaths from tuberculosis. She read the following telegram from Lord Aberdeen, whose official duties prevented his being present:

Viceregal Lodge, Dublin, July 1st, 1910.—Warmest good wishes and greetings on occasion of inauguration of enterprise fraught with defensive and beneficent instruction, but also with the bright hope and confident expectation with which the whole of this glorious campaign is inspired and endowed.—ABERDEEN.

Popular Lectures and Addresses.

The first of a series of popular lectures arranged in connexion with the conference and exhibition was delivered in the Rainey Hall on Friday evening, July 1st, by Professor McWeeney (Dublin). The chair was taken by Sheriff Crawford (Aberdeen, Banff, and Kincardine). Professor McWeeney's subject was "Consumption: What it is, and how it can be prevented." He gave a rapid summary of the progress of knowledge. The disease had been shown to be very largely a social evil, and popular attention had been successfully called to the conditions upon which its prevalence depended, such as overcrowding, bad food, and bad housing. With regard to institutional treatment, at least three kinds of institutions were wanted—the dispensary for tracing the cases, and affording immediate relief or necessary advice: the sanatorium for curing the early cases; and the hospital for the reception and care of the advanced and incurable. In respect of these Edinburgh was a pattern to his own and other cities. Under the influence of Dr. R. W. Philip these institutions had sprung up, and were doing magnificent work, which had gained for Edinburgh the reputation of being the best provided city in that respect in the entire kingdom.

On the motion of Dr. Leslie Mackenzie, Professor McWeeney was thanked for his address.

The second popular lecture was given by Dr Halliday Sutherland, Physician-Superintendent of Westmorland Sanatorium. Sir James P. Gibson, Bart., M.P., presided over a large audience. The subject of the lecture was "The White Plague."

On Saturday morning, July 2nd, addresses on the prevention of consumption were delivered to teachers and senior pupils in six of the Edinburgh Board and public schools, and it is estimated that some 3,000 teachers and pupils were present. The addresses were given by the Countess of Aberdeen; Professor E. J. McWeeney, Dublin; Dr. A. Charles Gray, London; Dr. J. E. Squire, London; Professor Sims Woodhead, Cambridge; and Dr. Jane Walker, London.

Religious Service.

On Sunday afternoon a service for visitors and for students was held in the McEwan Hall. The Rev. Dr. Norman Macleod, Edinburgh; the Rev. Dr. Kelman, St. George's United Free Church, Edinburgh; and the Very Rev. Dean Skinner Wilson, of St. Mary's Cathedral, Edinburgh, conducted the religious and devotional part of the service; and Professor Osler, of Oxford, gave an address on the final conquest of Nature out of which had come man's redemption of man. After the address, Chopin's Funeral March was played on the organ in memory of the late Dr. Robert Koch, Berlin, and addresses on Koch's contributions to medical science were given by Dr. Hermann M. Biggs, Professor Sims Woodhead, and Dr. R. W. Philip.

The Avenues of Infection.

At the first meeting of the Conference on July 4th, when the President, Professor Osler of Oxford, took the chair, Professor Sims Woodhead opened a discussion on the avenues of infection in tuberculosis. More was expected of experimental investigation, he said, than was reasonable. In experiment it frequently happened that there was a maximum dose of infection, far in excess of what was necessary to produce infection under ordinary conditions. Further, the experiments were made on animals in whom the resistance was far greater than it would be in man under the conditions in which tuberculosis was seen in practice. *Post-mortem* cases were advanced conditions of the disease, and were by that the more misleading. The human subject was infected by the minimum dose. Tuberculosis was far more common at some periods of life than was at one time suspected. Some asserted that 90 per cent. of those who continued to live on to 45 had been infected with tuberculosis. He believed the proportion was even higher, and that in all probability tubercle bacilli found a foothold at some period of life in almost everybody. The lungs were far more frequently affected than the alimentary canal, and the majority of cases were the result of inhalation, though in a certain number infection occurred by way of the alimentary canal. If a sufficiently large number of tubercle bacilli reached the alimentary canal, it was pretty sure that some would pass—it might be in very small numbers—into the lymphoid tissue of the alimentary canal, and once there might pass into the glands surrounding the alimentary canal.

Professor Adami (Montreal) thought the subject was one about which it was difficult, if not impossible, to dogmatize. It was easy to state what were the potential avenues, as experiment had given ample data. But it was not possible to apply the knowledge so gained to the individual case in man, to determine and to state with confidence the mode of infection in the particular individual, and lay down the relative frequency with which the different channels of entry of the bacillus were involved. Opinion had veered round so much during the course of the last few years that it was the part of the wise man to walk warily. The data pointed most convincingly to post-natal infection as the usual event. If infants were brought up away from their infected mothers they showed no signs of the disease. Last autumn he had made an inspection, along with others, of the children at one of the schools subsidized by the Canadian Government for Red Indian children. There were some 150 children, boys and girls, varying in age from 7 to 16 years, and

evidence was convincing that practically every Indian child was already infected before entering the schools in the North-West; but if so, then in the majority of cases the disease lay latent or very slowly progressive for ten years or more before assuming the acute stage. Not one of these children had been fed on cow's milk. All were cases of human infection, herein resembling the Japanese, Chinese, and many of the Hindoo children. So far, then, it could safely be said that the vast majority of cases of tuberculosis were of post-natal origin, that in a few cases there was convincing evidence of aërogenic infection, and in rare cases of cutaneous infection.

Professor McWeeney (Dublin) said he was an adherent of the view that in most cases of pulmonary phthisis infection was by the lungs.

Dr. James Ritchie (Edinburgh) agreed with the attitude of caution towards animal experimentation. The great majority of human beings were on the borderland of immunity, and that was not true of the experimental animals, at least of the smaller experimental animals: it was very difficult to estimate the natural susceptibility of the animal, and compare it with that of man. He did not think that all the work that had been done hitherto had really taken away anything from the old-established pathological doctrine that the bacillus produced its earliest effect on the tissues nearest to the point at which it entered. It was only by collecting a large series of observations that the importance of exceptions to such a rule could be properly appreciated.

Professor Bartel (Vienna) said that in spite of the still existent divergency of opinion regarding the frequency of the different modes of infection in tuberculosis, there was no such difference of opinion regarding the method of prevention.

Dr. Philip (Edinburgh) suggested to his clinical brethren that perhaps they might take a little more definite part in relation to observation in this matter. It chanced that some fifteen or twenty years ago the idea occurred to him that it would be well to watch the gradual progress of infection, not merely from month to month, but from year to year, in relation to the large amount of clinical material at the dispensary and hospital in Edinburgh. The net result of his observations was that he had come to the conclusion that, while the whole stretch of the mucous membrane was vulnerable, perhaps the most vulnerable point was the tonsillary region. It seemed to him that in this matter there was a laboratory larger than the laboratory within four walls. The laboratory was to be found in every man's practice, in every school, and every institution, and if graduates—men with a reasonable life expectation—would only start sufficiently early to make the kind of observations which he had made they should be able to get very convincing proof.

Professor Tendeloo (Leyden) urged that too much stress should not be laid on animal experimentation. The frequency of the different channels could only be determined by direct examination of man. Primary pulmonary tuberculosis was aëro-lymphogenous in by far the greater number of cases. This meant that it was nearly always caused by contagion from man to man. But they were not justified in ignoring other means of infection.

Edinburgh Harveian Festival.

The 128th Harveian Festival, which was postponed on account of the death of King Edward, was held in the hall of the Royal College of Physicians on July 1st, when the President, Dr. Strachan of Dollar, delivered the Harveian Oration on "Cell-life and the Life-cell in Animal Physiology." The animal body, he said, might be regarded as a commonwealth of cells variously grouped or organized into tissues and individually differentiated, in form and function, to the special work with which they were severally entrusted. In every commonwealth the fundamental principle of management must be the well-being of the individual; thus, in the animal body each cell of every organ, tissue, and other structure must live in the full sense of the term before it could be available for any special function. The essentials of life must, therefore, exist in, and be provided to, each and all. The first and invariable essential in all life was the presence of protoplasm, which could, by analysis, be broken up into its elements, and these accurately measured and weighed so that the proportion of each was known, but the vital principle which united them was something altogether beyond the resources of science—perhaps an electrical state. For active and continued animal life it was essential that there should be added the dynamic force from chemical change. There must be a sufficient supply of food. Generation must be carried on. Very early in development the cells showed differences from one another, and these differences rapidly increased as development proceeded. The whole body became a collection of tissues arranged according to morphological laws. Certain functions were performed by tissues differentiated for that purpose. In the tissue cell the entire vital energy was required for special function. Dr. Strachan discussed the vital principle, the modes of nutrition, and the differential treatment accorded to the fat in the digestive and assimilative process of food transformation. In brief, the orator's thesis was that the functions he ascribed to fibrin and to red corpuscles seemed to be the necessary complement to the general differentiation of the tissue cells to their own particular functions. This, to be complete, must entail sacrifice of the powers of self-support, and the necessary conditions of life must be otherwise provided. On the motion of Sir Alexander Simpson, a vote of thanks to the orator was adopted. At 7.30 the annual dinner was held, when forty Harveians sat down. There were four toasts. The first and second, "The King" and "The Imperial Forces," were given by the President. To the latter, Colonel George A. Gibson, M.D. (Territorial Forces), replied. "The Immortal Memory" was also given from the Chair, and "The President" was given by Dr. Clouston. Stories were told by Sir Alexander Simpson and Dr. Urquhart, and Mr. Urquhart gave a song. *Floreat Res Medica* closed a pleasant evening.

Housing and Town Planning Act, 1909.

The Local Government Board for Scotland has issued the First Series of Procedure Regulations with respect to the preparation or adoption of town planning schemes within the terms of Sections 54 to 56 inclusive of the Housing and Town Planning Act. The Series regulates generally the procedure anterior to, and for the purpose of, applications to the Board for authority to prepare or adopt a scheme, as prescribed by Article 1 on the fifth schedule of the Act. A further Series, dealing with the subsequent procedure for the Board's final approval of a scheme, will be issued shortly. The full development of the details of a scheme might, the Board considers, be reserved until after the preliminary stage is passed, whether the proposed scheme be prepared by the local authority themselves or by any landowners with a view to its adoption by the local authority. If it is thought that at any stage prior to the submission of a scheme for their approval the assistance or advice of any of the Board's experts might tend to facilitate agreements with owners concerned or to save labour or expense, the Board will be ready to arrange for such assistance or advice being given. The Regulations will be placed on sale, so that copies will shortly be purchasable from Messrs. Oliver and Boyd, Tweeddale Court, Edinburgh (the price is not mentioned).

Aberdeen Branch of the British Medical Association.

The summer meeting of the Branch was held in the Gordon Arms Hotel, Huntly, on June 16th. There was a fair attendance of members, and Dr. Patrick Mitchell, Old Rayne, the President, occupied the chair. The minutes of the annual meeting were read and approved of. The Senior Secretary, failing whom the Junior Secretary, was authorized to attend the annual meeting of the Association in London. It was referred to the Council of the Branch to make arrangements for the next annual meeting, to be held in October. Dr.

John Gordon, local secretary and treasurer of the Benevolent Fund, made a statement regarding this charity, and drew the attention of members to the inadequate support it was receiving from the members of the Branch as a whole. The President referred in fitting terms to the loss the Branch had sustained by the death of Dr. J. J. Y. Dalgarno, who was a member of the Branch Council, and had formerly for several years acted as treasurer of the Branch. The Secretary was instructed to send a copy of the minute to Mrs. Dalgarno. Dr. J. F. Christie, of Aberdeen, was elected a member of council in room of Dr. Dalgarno. The members afterwards lunched together, and in the afternoon a golf match was played with members of the Huntly Golf Club, resulting in a win for the local team. Generous hospitality was provided at the club-house by the Huntly members of the Branch and the officials of the golf club. In the evening the members dined together, and Dr. Thomas Milne, Aberdeen, voiced the feeling of the meeting in proposing a vote of thanks to the Huntly members for the excellent arrangements they had made, and the very successful meeting which had resulted. Photographs of the gathering were taken by Dr. Mackenzie Booth, Aberdeen, who has kindly sent a copy to each member present.

PROPOSED NEW NURSING HOME IN EDINBURGH.

At a meeting of the council of the Edinburgh Charity Organization Society on June 30th, Dr. Chalmers Watson submitted a statement on behalf of the Edinburgh Medical Practitioners' Association regarding the proposed new nursing home in Edinburgh. He said the scheme was not a new one, the principle, briefly stated, being the establishment of a nursing home not run for profit, and conducted on a self-supporting system, adapted for patients of limited means, unable to pay expensive fees for maintenance and nursing. The principle, it was pointed out, had already been carried into practice in the past few years in the Rutland Nursing Home; but this institution, successful as it had been, was unable to supply the demands made upon it. The present scheme aimed essentially at providing an increase of the facilities which were afforded by that home, not only by supplying a larger number of beds at the present moderate rates, but making provision for the first time for a very deserving class of patients who were not able to pay more than one guinea weekly for maintenance and nursing. The general features of the scheme would be explained by reference to the aims and objects of the Rutland Home, and to the experience derived from its conduct. The home was started some years ago with the object of supplying nursing facilities in times of serious illness to patients who were not able to pay the rates then charged by existing nursing homes, and who were reluctant to become the objects of charity in a public or endowed institution. It had been run on a non-commercial basis under the general supervision of a board of medical men, the general business arrangements and management being in the hands of a qualified accountant. The rates charged ranged from 30s. to three guineas weekly, those paying the latter rate having a single room. The present scheme aimed at providing a nursing home of 50 beds; 18 would be at the rate of one guinea, 18 at two guineas, and the remainder at three guineas weekly. Those paying the latter rate would have a single room. It was intended that the home should be managed by representatives appointed equally by the Edinburgh Medical Practitioners' Association, the Edinburgh Branch of the British Medical Association, and the Charity Organization Society. It was intended to ask assistance from the public towards defraying the initial cost. The home would be open to all registered medical practitioners, and it would be run on self-supporting lines. As one guinea was the maximum that many patients could be asked to pay, and as that was below the minimum cost, some system of regulation of admission at the lowest rate would be necessary in order that the privileges of the home were not abused. The scheme in its general features had been very fully considered by the medical profession at the instance of the Edinburgh Medical Practitioners' Association, and as a result of a plébiscite taken by that body it was found that 173 were in favour of this scheme, and 12 were opposed to it. In the course of the deliberations the opinion of the executive of the Charity Organization Society had been sought, and at a conference between representatives of the Practitioners' Association, the British Medical Association, the managers of the Royal Infirmary, and the society's executive, the scheme in its general features was approved. Members of the medical profession had since intimated their willingness to contribute £800 towards defraying the initial expenses. The sum of £10,000 might be required to start the home free of debt, and to defray this initial cost an appeal to the public was contemplated in the near future.

Lord Ardwall said if the scheme was to raise £10,000 just now for the erection of a building he thought they ought to pause before they embarked on it with a light heart. As far as the poor were concerned, the extension of the Maternity Hospital was a much more crying necessity than the starting of a home of this kind.

Miss S. E. S. Mair pointed out that the home was intended for the class that was just above the poor.

The Chairman (Professor Lodge) said the essential point was as to the need of the home. The very poor were already well provided with medical help. What was felt was that the class above the poor who would wish to pay for medical treatment should be provided for, so that they could avoid the publicity of the Royal Infirmary and the inconveniences of the teaching carried on there. He assured Dr. Chalmers Watson that the executive would gladly give any assistance they could.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

THE EPIDEMIC OF MEASLES IN BELFAST.

AT the monthly meeting of the City Corporation held on July 1st, the Medical Superintendent Officer of Health reported that the death-rate was 22.6 as compared with 17.6 in the corresponding period of last year; this was due to an epidemic of measles, the death-rate from which was 5.3. The number of deaths registered from zymotic diseases was 244; in the corresponding month of 1909 it was 41; as—with the exception of a slight increase in scarlatina, of which 41 cases were notified, as compared with 15 of last year—the other items remained much as before, it was clear that there had been a heavy mortality due to this epidemic. The increase in pneumonia during this season of the year from 62 for last year to 91 for this year was palpably due indirectly also to measles.

A deputation from the board of guardians informed the Public Health Committee that 376 cases of measles had been admitted to the guardians' hospital; 41 died, and this gave a rate of mortality half that of affected children remaining in their homes; but as measles was not notifiable it was clearly impossible to establish the point. The Chairman of the Public Health Committee (Councillor Dr. Thomson) said he could not accept offhand the resolution of the board of guardians that measles should be notifiable and treated on the same lines as small-pox and scarlatina.

This friendly controversy raises once more the reconsideration of the Notification Act. The most urgent attention has been drawn to it from time to time, and the notification of measles, whooping-cough, and infantile diarrhoea has been repeatedly urged, or the adoption of some means to stay the massacre of the innocents. In 1899, 146 deaths occurred from measles; in 1900, 242 from measles, 439 from whooping-cough, and 882 from diarrhoea; in 1901, 694 deaths occurred from these three non-notifiable affections, but only 57 cases of typhus, puerperal fever, and small-pox taken together were notified. It is surely little comfort to parents that the cause of death was non-notifiable, although probably preventable. It was

then asked why this terrible infant mortality should be allowed to continue without decided effort to check it. In 1902, typhus, puerperal fever, small-pox, and relapsing fever, all notifiable, showed a total of 55 cases and 4 deaths; measles, whooping-cough, and diarrhoea had 761 deaths registered to their credit. One case of relapsing fever has been notified since the Act was introduced; 349 cases of measles died in the one year 1902. In 1903 the notifiable affections caused 222 deaths; measles (125), whooping-cough (168), and diarrhoea (277) caused 570 deaths. During the last ten years the endemic and epidemic typhoid that disgraced Belfast has been slowly and, let us hope, permanently reduced to more reasonable proportions; consumption and tubercle in general are undoubtedly also diminishing, and this incidence of measles is worthy of the energies and ability of the new chairman of the Public Health Committee. A bold policy, even although it cost money, would have the support of the profession and the citizens.

PROVISION FOR ADVANCED PHTHISIS.

At the annual meeting of the Royal Hospital for Incurables held lately in Dublin, the Chairman (Mr. William Fry) was able to make the important announcement that the Board of Directors had decided to increase the accommodation for advanced tuberculosis by the erection of a suitable pavilion in the hospital grounds. During the last few years upwards of forty consumptive patients have been constant inmates of the general wards of the hospital, and it was now intended, by the removal of these cases to more suitable surroundings, greatly to increase the total number of beds in the hospital. Rumours concerning the action of the board had been widely circulated prior to the annual meeting, and opposition to the establishment of the tuberculosis pavilion was threatened by some of the householders neighbouring to the hospital grounds. As, however, the so-called new departure only consists in providing more hygienic accommodation for consumptive cases, who have already been housed for years in the main hospital, it is anticipated that no further opposition or criticism need be expected in the carrying out of a work which in the course of time should greatly diminish the incidence of tuberculosis in Dublin, by removing advanced tuberculous cases from the houses and streets of the city.

MIDWIVES ACT AND IRELAND.

We understand that at a recent conference, at which representatives of almost all the important medical corporations and societies in Ireland were present, a unanimous decision was arrived at in favour of the extension of the Midwives Act to Ireland.

WATER SUPPLY OF LABOURERS' COTTAGES.

The Rev. W. Sherlock, Archdeacon of Kildare, has accused the Local Government Board of allowing labourers' cottages to be built on sites which in many cases are devoid of a proper water supply, so that their inhabitants have either to drink polluted water from ditches or ponds, or to carry water long distances. The only remedy offered is to compel the local authorities to provide a supply where necessary; but this, he points out, is a process so tedious and difficult as to be nearly impracticable for a poor man. It is to be hoped that now that public attention has been called to the matter the Local Government Board will take steps to remedy existing deficiencies, and will direct their inspectors to be more careful in future in the approval of building sites. In the past it is probable that inspectors have been misinformed and misled when making inquiries, and that the fault has lain as much with the officials of the rural district councils and with the applicants as with them.

DOCTOR AND POOR LAW FEES.

At the last Enniskillen Quarter Sessions, Dr. J. Wilson sued the Enniskillen Board of Guardians for the sum of £3 13s. 6d. for professional services. Dr. Wilson said that his claim was for attendance for a period of three and a half hours at Blacklion Dispensary on behalf of Dr. Tate, who had met with an accident. He considered 3 guineas a reasonable fee, with car hire allowance half a guinea. The guardians offered 2 guineas, which they regarded as quite adequate, but this fee was refused. His Honour Judge Craig, in giving a decree for 3 guineas, said that, having been a professional man himself, he had sympathy with professional men. He did not think that Dr. Wilson was asking too much, and he regarded the fee as quite reasonable, but he would not allow the car hire.

IRISH TECHNICAL CONGRESS.

Following upon a paper on the Recognition of Technical Schools by the Irish Pharmaceutical Society, read by Mr. O'Shaughnessy at a meeting of the Irish Technical Congress, the congress passed a resolution urging upon the Pharmaceutical Society the necessity for extending recognition of those technical schools where it could be shown that adequate provision was made for the teaching of all or any of the subjects required. Already applications for recognition had been made on behalf of some technical schools, but the Pharmaceutical Society had either refused or postponed their consideration. The whole question of extension of recognition to classes in technical schools is full of difficulties, with which any one conversant with the problems of any branch of scientific education is familiar. In the interests of the public we hope that if recognition is accorded in the present instance arrangements for periodic inspection of all recognized schools will be made.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

MANCHESTER AND DISTRICT.

THE MANCHESTER AND SALFORD PROVIDENT DISPENSARIES ASSOCIATION.

ACCORDING to the annual report of the Manchester and Salford Provident Dispensaries Association there has been during the last year a decrease of 124 in the number of paying members of the nine dispensaries scattered over Manchester and Salford, three showing an increase and six a decrease. The total number of paying members on the books on December 31st, 1909, was 15,224, there having been 2,446 new members and 2,570 withdrawals. At one time there were over 21,000 members, and the decrease has been going on almost continuously for some years. In a letter to the annual meeting one of the medical officers suggested that as the Majority Report of the Poor Law Commission recommended the provident dispensaries system, the experience gained of the system in Manchester and Salford might be placed at the service of the President of the Local Government Board. It might be as well if the figures given below as to the remuneration of the medical officers were also placed before the President of the Local Government Board, as they are calculated from the official report of the association. As there are some distinctive features about the association, the following particulars may be of interest, especially in view of the possible formation of a centrally organized provident medical service.

It is important to note that the Provident Dispensaries Association is a branch of the District Provident and Charity Organization Society, and an endeavour is made to secure co-operation of the various medical charities of the district; for instance, some of the hospitals refer cases which are not suitable for free treatment to the provident dispensaries. The general council of the association has on it representatives of the charitable hospitals of each branch dispensary and of the District Provident Society. Each dispensary is managed by a local committee, elected by the members, on which the medical officers are represented, though in every case the medical men actually number less than one-fourth of the whole committee. Thus the management is

almost entirely in lay hands. The members are artisans and others "approved by the committee." No married person is accepted unless all the members of the family under 18 years of age also join. The subscription is one penny a week for adults and for children over 14 years old and under 18, while the subscription for all children under 14 years old in any one family must never exceed a total of twopence a week. There is an entrance fee of 6d. for individuals and 1s. for families. A penny is charged each time a member receives a bottle of medicine, and if more than one article is supplied at one time the charge is not to be over a penny. Applicants "actually suffering from illness" are admitted on paying an entrance fee of 5s., and they are considered to have been suffering from illness and have to pay the 5s. if they apply for treatment within a month of admission. Also the whole family must join at the same time and pay one month's subscription in advance. Out-patients have to attend at the dispensary at stated times, and calls for visits must be sent in before 9 a.m. or the visits will not be made till the following day. In case of sudden illness, calls may be sent in any other time to any of the medical officers, but the one who attends may then charge 1s. "if he think desirable," though if patients think they have reason to complain of this charge they may appeal to the committee. Female members may be attended for confinements at a charge of 15s., which may be paid in instalments, but the payment must be complete one month before the expected confinement. Where the services of a medical officer are required for any serious complication arising from confinement within a month of delivery, the medical officer may charge 10s. 6d. if he has not himself attended the confinement. In case of premature confinement, the payment of the fee must be completed within a month after the delivery. Fines are imposed if the subscriptions are in arrear more than a fortnight, and members who are in arrear more than two months are struck off the books, and can only be readmitted on paying a fine of 5s., which may be remitted if the local committee thinks fit. Every member may have the services of a dentist at fees fixed by the committee, and members removing to another district where the association has a dispensary may be transferred free of charge. Sick clubs may be admitted on terms to be approved by the local committee. Members may select from the dispensary staff any medical officer by whom they may wish to be attended, but no change shall be made during an illness without the consent of the committee. No medical officer is at liberty to refuse to attend a patient who chooses him, nor may he discontinue his attendance on a member during illness without the consent of the committee. Each local committee may, with the consent of the council, make such arrangements as it thinks fit for the appointment of the medical officers, and each dispensary has several medical officers. No medical officer shall have over 1,500 families on his list. Three months' notice on either side is needed to determine an appointment. The remuneration of the medical officers consists of one-half of the "ordinary members' fund," which is divided according to the number of members on each doctor's list, but payments for confinements and medicines are not considered to be part of the "ordinary members' fund." A dispenser is appointed and drugs are supplied by the dispensary. The only special fees are those for confinements, which are paid to the medical officer attending, and cases requiring hospital treatment are recommended to the hospital suited to their needs. The balance of members' payments, together with other receipts, goes towards management expenses, and if any sum be left after defraying such expenses at least two-thirds of it is distributed to the medical officers in proportion to the amount already received by each. Each dispensary has honorary members, who subscribe from a guinea to £10 a year, but without having the privileges of ordinary members, except the right to vote at annual meetings and to serve on the local committees.

The total actual income of the dispensaries was £4,039, of which £3,182 was from ordinary members' subscriptions, sick fees, and entrance fees, and £798 was received in payments for medicines, cards, etc. The total amount divided among the medical officers was £1,729, which is much under one-half of the total income, the whole of the remainder going towards defraying expenses. The larger items of expenditure were £1,118 for drugs, bottles, and dispensing, £504 for collectors, £343 for rent, rates, and taxes, £101 for coal and gas, and the remainder for general expenses. As there were 15,224 paying members, exclusive of honorary members, on the books at the end of the year, and the total amount received by the doctors was £1,729, exclusive of confinement fees, the doctors received about 2s. 3½d. for each member—that is, about ½d. a week. In the previous year they received £1,794, which was 2s. 4d. per member. The Pendleton Dispensary paid the doctors best, averaging 2s. 10d. a member, though the previous year it was 3s.; and the Gorton and Openshaw Dispensary paid least, averaging only 1s. 11½d. a member. The total number of prescriptions dispensed was 132,573, which is an average of 8.7 for each paying member. In one branch the members averaged 12 8 prescriptions each, while in another the average was only 5.2 prescriptions.

The actual number of visits and consultations made by the medical officers is only given for one branch—that in Lower Broughton, which has 1,022 members. In this branch the medical officers made 4,888 visits and consultations, of which 2,220 were visits at the homes of members and 2 668 consultations at the dispensary. For this they received £104 19s. 8d., which is under 5½d. for each visit or consultation. The figures show that at this dispensary the doctors received an average of 2s. 0½d. per member for the year. The number of prescriptions given was 6,055, which is far greater than the total visits and consultations.

Although drugs are provided by the dispensaries, it is not correct to say that none of the cost falls on the medical officers, as the patients only pay 1d. for each prescription, whereas the actual cost of each is nearer 2d., and the excess must be taken as a deduction from the amount that would otherwise be available for the medical officers.

Mr. J. B. Parkinson, the president of the association, said at the annual meeting that at various times they had had difficulties with the medical men, who thought they were treating people who were able to pay. The council could only reply that if anybody was a member who was not entitled to be, his name ought to be removed from the list, as the dispensaries were established only for those who, whilst not able to pay the full charges of doctors, were able to make some small payment, and who, therefore, ought not to go to the free charities. He believed the dispensaries had shown their benefits to the community by having relieved the hospitals of a great many improper applicants.

There may be some grain of truth in this, but it is poor consolation to general practitioners if one form of abuse is partly replaced by another, for there is no doubt in the minds of the great bulk of practitioners in Manchester and Salford that the dispensaries themselves are abused by persons who could well pay ordinary fees, and in many districts practitioners are constantly losing good paying patients who have been admitted to the dispensaries. Again, the cost of management is excessive. Exclusive of the amount paid to the medical officers (£1,729) and the expenditure on drugs, bottles, and dispensing (£1,118), what may be called the purely managing expenses amount to over £1,100, though the total income from all sources is under £4,100. This is about 27 per cent. of the income for managing expenses, which is nearly three times as much as in the great friendly societies, half as much again as in most trades unions, and is only exceeded in some of the collecting societies whose members are able and willing to pay heavily for conveniences. In the public medical service conducted by the Norwich Division of the British Medical

Association the working expenses for 1908 were 16.25 per cent. of the income, and the relations of the medical officers with their patients were far more satisfactory and more resembling the relations with private patients than in the Manchester and Salford dispensaries, where the management is mostly in lay hands. In short, the provident dispensaries of Manchester and Salford are exploiting medical men who are weak enough to submit, are damaging the private practice of other practitioners, and, though they possibly assist a certain number of the deserving working classes, they are encouraging others who could pay ordinary fees to take advantage of a system intended solely for the poorer classes. It might be well for their working to be explained to the Government, as suggested; they would afford a good example of what a public medical service ought *not* to be.

A Rider to a Verdict.

An inquest was held recently in Manchester on a man who was taken to the Manchester Infirmary suffering from broken ribs. He was treated and allowed to go home in the early hours of the morning, but subsequently had to be taken to the Withington Workhouse Hospital, where he died, and it was shown that injury had been done to the lung by the broken ribs. The coroner's jury passed the following opinion, which they claimed to be their verdict: "We are satisfied that the cause of death was accident, but the jury do not feel satisfied that the treatment received at the infirmary was altogether right. They do not think that a man in his condition ought to have been told to go out at such an early hour in the morning, seeing that he was not able to walk and knowing that he had broken ribs. To turn him out and tell him to walk they do not think was humane treatment at all." The coroner ruled that the first portion of this was the complete verdict in itself and refused to allow the remainder to be recorded as part of the verdict. The foreman of the jury has sent to the press a letter of protest against this ruling, signed by every member of the jury, and giving as reasons for the protest, first, that the coroner ought not to have pleaded with them for a period of four minutes "to be generously disposed in their verdict towards the medical men of the Manchester Royal Infirmary": secondly, that they had no opportunity of hearing the evidence of Dr. Jones, the doctor who was reported to have said that "it was a shame to turn the patient away from the Infirmary in such a condition"; and, thirdly, that they had had no opportunity of questioning any of the medical men reported to have attended the case when at the Infirmary, the coroner having said that he did not think it necessary. The members of the jury insist that their conviction was "that death was in some measure due to inadequate attendance, which may have been inadvertent, on the part of some person or persons at the Manchester Royal Infirmary." They further say that "our true verdict failed to be recorded through our not having adequate legal knowledge to word our verdict in such a manner that it would have been impossible for part to be accepted and part rejected." To do any such thing would be an attempt to usurp a right of expressing private opinions in an official way, and it is hoped that the coroner will insist that a jury has finished its duty when it has recorded its verdict in a legal manner. It might perhaps have been as well if there had been an opportunity of questioning any medical man who had attended the case at the Infirmary, but as the coroner did not consider that necessary, common justice ought to suggest to the jury that to pass a rider which was practically a serious censure on medical men who had not full opportunity of defending themselves was most unfair. The coroner, in refusing to regard it as part of the verdict, was not only within his legal right, but was teaching a lesson not simply in law, but in justice and equity, which the jury evidently needed to learn. The Report of the Departmental Committee on Coroners' Law recognizes the right of a coroner to refuse to record riders, but says that such "refusal might lead to unseemly disputes with the jury." The report continues: "It would be better, we think, that riders should be required to be separated from the verdict, and endorsed on the back of the inquisition, and the coroner should be at liberty to record his dissent from the jury's rider, and his reasons for so doing." It may be questioned whether there would be any less likelihood of "unseemly disputes" if the coroner took such a course, and the Manchester (South) Division of the British Medical Association considers that by far the better course would be "to oppose to the uttermost in future legislation any right of the jury to add a rider." A motion to this effect by the Division is on the agenda paper of the Representative Meeting.

Jamaica.

[*FROM OUR SPECIAL CORRESPONDENT.*]

Fees of District Medical Officers.

The Government of Jamaica has published amended rules in connexion with the district medical service. The colony of Jamaica is divided into districts of varying size and population, to each of which a medical officer is attached. The duties of these medical officers include medical charge of the paupers, hospital, almshouse, or prison; attendance upon the constabulary, the exercise of a general control and superintendence over the Government dispensaries of their districts; to vaccinate; and advising the Government and parochial authorities on questions affecting the public health. For such public services no fees are receivable by them. For these various duties the fixed salaries range from £100 to £150 per annum.

The district medical officers are at liberty to take private practice. This is estimated at from £150 to £600, exclusive of court and inquest fees and vaccination fees. After twenty years' service pensions are allowed, calculated at the rate of one-sixtieth of the salary for each year's service.

District medical officers are required to regulate their fees in accordance with the following tariff:

1. Advice and medicines at the district medical officer's house or private or Government dispensary, 4s.; each subsequent visit, 2s.
2. Each visit in town, within a radius of one mile from the centre of the town, 6s.; over this distance at the rate of 1s. 6d. a mile.
3. Night visits, one half fee extra.
4. Consultation with another medical man, 21s.
5. Medical certificate, 21s.; medical certificate, if attending patient, 10s. 6d.
6. Ordinary cases of midwifery, £2 2s. and mileage; instrumental cases extra.
7. Minor surgical operations, 10s. 6d.; major operations according to agreement.

This tariff does not apply to any but bona fide residents in the island.

Correspondence.

THE ANNUAL MEETING: NOTIFICATION AND REGISTRATION.

SIR,—May we make another appeal to the members of the Association with regard to the Annual Meeting in London this month, as to which many particulars will be found in the SUPPLEMENT, pp. 83–89?

1. Will all members who can possibly afford the time endeavour to take part in the meeting, even if they are only able to come to London and return on the same day?

2. Will all those who can arrange to attend, whether they are resident in London or the provinces, notify the Local Secretaries upon the form to be found in former issues of the JOURNAL and again at pages 9 and 10 of the advertisement sheets this week?

3. Will all those who are coming watch carefully the columns of the SUPPLEMENT to the JOURNAL for important notices and communications that may require attention *before* arrival in London?

4. Will all those who come to the meeting make it their

first duty to attend at the Reception Room, University of London, South Kensington, in order to register?—We are, etc.,

E. W. GOODALL,
W. GRIFFITH,
LAURISTON E. SHAW,
London, W., July 5th. Honorary Local Secretaries, 1910 Meeting.

SHIP SURGEONS.

SIR,—The subject of the organization of ship surgeons into some corporate body for the amelioration of existing conditions of the medical service at sea is by no means new, and has recently been opened up by means of correspondence between the undersigned and the Medico-Political Committee of the British Medical Association. That there exists a necessity for some such organization to watch over and deal with the various questions affecting ship surgeons is well known to all who are in any way connected with the Marine Medical Service.

There must be many members of the British Medical Association afloat at the present time, who, through being constantly at sea, do not obtain the same benefits from their membership as are enjoyed by their brother practitioners ashore. This is principally owing (1) to the fact that there is no organized representation of ship surgeons as such, and (2) to the fact that the constitution of the British Medical Association does not allow of the formation of a "Ship Surgeons Division or Branch" in the constitutional sense of the word.

To obviate this difficulty, however, the Medico-Political Committee of the Association has suggested the formation of a subcommittee of that Committee, including in its membership representatives of ship surgeons, as affording a means of communication with ship surgeons and for the exchange of views between them. As a preliminary step to the formation of such subcommittee, it has been agreed that the undersigned should form a provisional committee with a view of inquiring into the whole matter and ascertaining whether sea-going members of the profession are desirous of this proposed representation.

Briefly stated, the aims of such a subcommittee, if appointed, would, in the opinion of the undersigned, be:

(*a*) A minimum wage with progressive increase for length of service.
(*b*) The right to demand fees for attendance on saloon passengers according to a fixed minimum scale.
(*c*) A definite status of ship surgeons.
(*d*) Better living and working quarters than are usual.
(*e*) Shore pay or, at least, full sea pay while the ship is in home ports.
(*f*) Adequate hospital accommodation on board for all classes, including members of the crew, and facilities for the performance of surgical operations.
(*g*) Revision of the existing official Board of Trade scale of drugs and appliances.

As a further development of representation the following points offer themselves for consideration:

(*a*) The system of "passage worker."
(*b*) Appointment of medical superintendents for all large steamship companies.
(*c*) Life insurance or bonus schemes.
(*d*) The formation of a Royal Naval Reserve of Surgeons.

Members in favour of this movement are earnestly requested to forward their names (not necessarily for publication, unless desired) to the undersigned Acting Secretary to the provisional subcommittee. Ex-ship surgeons who are in sympathy with the movement are cordially invited to lend their support to the scheme.

The future action of the Medico-Political Committee of the Association in this matter will probably depend largely upon the support accorded to the provisional subcommittee in these preliminary stages.

The members forming the provisional subcommittee are Drs. J. F. Elliott, G. Metcalfe Sharpe, and Vavasour Elder.—I am, etc.,

JOHN F. ELLIOTT,
Rostrevor, co. Down, Ireland, July 4th. Acting Secretary.

FAITH AND HEALING.

SIR,—I have been much interested in the important articles and correspondence on this subject in the JOURNAL. There is one form of faith healing which seems to commend itself to the writers—a man must not only have faith in himself but he must also get his patients to have faith in him. This is largely practised by successful practitioners of medicine, and is always profitable to the practitioner and advantageous to the patient, unless when a mistake is made. In the latter case the patient always suffers, and the practitioner only runs the risk of a little discredit when the mistake is found out.

A case illustrating the effects of this form of treatment was sent to me yesterday by my friend, Dr. Robert Turner, who had only recently become the patient's medical attendant.

The patient is a well-made, muscular man, aged 39 years. He is a clever veterinary surgeon, who takes an intelligent interest in his own condition. In order to keep himself in good condition, at the end of 1908 he began a course of Sandow's exercises, and these he continued—he thinks with decided advantage—for eleven months. One day last September, when engaged at a stooping exercise, he felt something give way in his chest, his face became purple, and the veins of his upper extremities were engorged. These effects were also noticed by his wife. From this time he felt very uncomfortable; he consulted a medical man in the town in which he was residing. He did not get any relief, and he then placed himself under the care of another medical man, who treated him for three or four weeks with potassium iodide without benefit, and then sent him to one of the most popular physicians in England. At this time the oppression in his chest was so great that he could not bend forwards to take his meals, and it was impossible for him to stoop without causing a feeling as if his head were going to burst, and the congested condition of his head and neck was visible to any one. The physician, after a very careful examination, could find nothing to account for the symptoms, and assured him that he would get all right. He felt comforted, but his faith was not sufficient to cure him. He got no better, and after some time consulted the physician again. He had an *x*-ray picture taken which showed nothing abnormal. The physician assured him that he had no aneurysm and would get quite well. To strengthen his faith he offered to pass him for £10,000, and then by way of emphasis he made it £20,000. He was again much comforted, and so also was his brother, a medical man, who was present at the consultation. I was now anxious to know if it were the physician who was taking on this large line on the patient's life, but it seems it was an insurance company that was going to be asked to back up this cheery optimism. I know that this faith-inspiring practice is not uncommon with some physicians, but what view the insurance companies would take under such circumstances, if they only knew, I am not certain. The possibility of there being something else besides an aneurysm, something which would not be visible by the *x* rays so long as the pressure was not sufficient to cause any deflation of the lungs, does not seem to have occurred to any one.

After that the patient went to Lincolnshire. He got what he considered an attack of influenza, and since then he has had a rise of temperature from 100° to 103° for a few days every three or four weeks. He lately took up his abode in this city, and about a month ago came under the care of Dr. Turner, who was not satisfied with the condition of his chest. He first sent him to a throat specialist, who found nothing in the larynx, and he then sent him to me, as he thought the faith-healing process had spent its energy. The patient maintains that he is better than he was six months ago, as he can now bend forward to take his meals without any discomfort, and he can stoop without causing any suffusion of his head and upper extremities. However, there is the same hard, ringing cough which he has had from the first, and his general health is failing. There is now a new growth in his mediastinum, at least the size of a couple of large oranges, and there is also considerable pressure on his trachea. What was the size of this growth six months ago I cannot say, but from the symptoms it cannot have been much smaller than it is at present. At any rate, six months of valuable time has been lost because an eminent physician, not finding anything, concluded that there was nothing, and so tried his cheery optimism. The rule of Charlton Bastian, never to put down any case as hysteria unless you cannot find another name for it, is a very good one.

Patients are certain to drift to the qualified or unqualified charlatan who promises to cure them. A chronic disease like consumption, where the patient is very hopeful, readily lends itself to this method of treatment. There is scarcely a town in the kingdom where there are not a few medical men proclaiming from "the house-tops" the curability of phthisis, so one really marvels why any one should die of this very curable disease. "Hope springs eternal in the human breast; Man never is, but always to be, blest." The disease usually runs a chronic course, so that the man who has promised a cure has plenty of opportunities of beating a hasty retreat if anything unfavourable should occur—only for the unfortunate occurrence of haemorrhage the patient would have recovered, or after all the patient did not come soon enough, or he has had his life prolonged two or three years by the treatment. Those who are constantly dinning the sanatorium treatment into the public ear are not content with their advocacy of this method of cure, but they are also loudly professing that it will prevent the disease. It does not seem to matter about the breeding ground so long as you segregate the affected. You must catch your hare and eat it, and then there will be no more hares. Consumption is not hereditary, so you can keep on breeding the unfit; never mind immunity, but trust in faith that you will soon exterminate the tubercle bacilli. The faith of some medical men is really marvellous.

It is not so long ago that if a medical man wrote a book for the public, with the title, "The Conquest of Consumption," he would have been ostracized by his professional brethren, but in the present day we are moving so quickly from the region of truth and fact into that of fiction and faith that it is difficult to say what a man may or may not do. Personally I must express my thanks to Professor Karl Pearson for his illuminating criticism of present-day methods—methods which are by no means confined to the writers of the work in question. Honest faith healers had better confine their prayerful attentions to the nervous system and leave well-defined organic disease alone.—I am, etc.,

Liverpool, July 3rd. JAMES BARR.

MIND AND BODY.

SIR,—The extremely interesting discussion which is taking place in the JOURNAL regarding the correlations and interactions of mind and body is pervaded by certain fallacies, or rather fallacious assumptions, which vitiate the whole argument. The chief of them are:

1. *Spurious Unification.*—The fictitious unities which appear in the various papers and letters are "the" mind, spirit, soul, psyche, pneuma, and so forth—entities endowed with absolutely separate existence and special attributes.

2. *Materializing Imaginary Entities.*—The postulated unities are practically treated as substrata of an absolutely special description, manifesting energies, if not of autogenous origin, certainly of unique character.

3. *Transmission of the Special Energies of these Entities Unaltered through Space.*—This assumption is fundamentally opposed to the well-established doctrine of correlation and reciprocal transmutation of forces according to substratum and conditions.

I might elaborate these terse statements, but it will suffice to present equally tersely what I conceive to be the true premisses on which thought and research on these matters ought to proceed.

1. Mind or purpose or design is a universal feature of all phenomena. To unify mind or to confine it to any particular class of phenomena is to ignore and do violence to a universal fact.

2. Mind is unknowable except in association—intimate, indissoluble, and necessary association—with energy and matter or substratum. We know nothing of mind except as manifested by energy emanating from matter and acting to ends.

3. Phenomena of every description are the outcome of this association—of the triune operation of these elements, incapable of dissociation in existence but capable of being distinguished in cognition.

4. The great object of psychological study is not mind only but man in all his aspects and relations, corporeal, dynamic, mental, and spiritual—man the highest product of evolution, the most exalted and complex unit among all the myriad coexisting and successive unities of existence. A comparative study of lower organisms is also very helpful.

5. The key to the discovery of the interrelations between body and mind and the efficacy and *modus operandi* of so-called faith healing is the conception of the unit man—the whole man—as the object of study, implying a rigid avoidance of splitting up the human unit into several temporarily or accidentally connected units differing from each other in nature and activity, origin and destiny.

6. A curious but, I believe, essential homology exists between the physical doctrine of a triune mind energy and substratum sublying phenomena and the fundamental doctrine of the most advanced theology.

Finally, I submit that no profitable addition to knowledge is to be gained by the creation of fictitious entities or the postulation of imaginary energies proceeding from unknown substrata.—I am, etc.,

West End, Hants, July 2nd. K. MACLEOD.

SIR HENRY MORRIS AND CHRISTIAN SCIENCE.

SIR,—The BRITISH MEDICAL JOURNAL of June 18th contains a criticism of Mrs. Eddy by Sir Henry Morris. I think, therefore, you will permit me to explain that Sir Henry, like many other critics, has made the signal mistake of forming an estimate of Mrs. Eddy's character upon works based on fundamental antagonism not only to her but to her teaching. It is true that the writer states that it is possible to form a picture of Mrs. Eddy from Miss Wilbur's biography, which is not an antagonistic book, but it is a manifest certainty that his almost lurid summing up of her character was not arrived at from a study of that book.

It is no exaggeration to say that the picture he has drawn is that of a woman whom no decent person would care to associate with. Yet in spite of this Mrs. Eddy is one of the most respected citizens of the United States, and is surrounded by a large company of friends and workers, who have enjoyed opportunities for forming an opinion on very much sounder ground than Sir Henry Morris, who has never seen or spoken to her, but who has accepted all the criticisms of those most bitterly antagonistic to her teaching and most absolutely without sympathy for her ideals.

For fifteen years Mrs. Eddy lived in a little house on the outskirts of Concord, N.H. This very modest dwelling was represented in the public press, by people who gained their information like Sir Henry Morris, as a palace. The people of Concord had, however, during these fifteen years an opportunity of forming an opinion of their fellow townswoman much superior to that enjoyed by Sir Henry Morris. That opinion is recorded in their farewell address to her, when, in January of 1908, she moved to Boston. This address was passed unanimously by the City Council, and recorded: "(1) Its appreciation of her life in its midst; (2) its regret over her departure; and (3) the hope that though absent she will always cherish a loving regard for the city, near which she was born, and for its people, among whom she has lived so many years." This resolution was introduced by Alderman Cressy, who declared that he considered it a profound honour to give expression to the town's regret for the departure of one of its "most beloved citizens," and that he did so "with the profound belief that there would not be a single dissenting vote, for we all—yes, every one—believe in its every section, expressing our esteem and love of her as a citizen." It is an extraordinary fact that biographies which produce the village gossip of seventy years ago have not unearthed the resolution of the city of Concord passed in the 1908.

There is another witness to the character of Mrs. Eddy whom the BRITISH MEDICAL JOURNAL may hear with peculiar respect. In all America there is perhaps no doctor with a higher reputation than Dr. Allan McLane Hamilton, of New York. In the year 1907 Dr. Hamilton was called to see Mrs. Eddy in connexion with the lawsuit, mentioned by Sir Henry Morris, which afterwards collapsed, owing to its own inherent futility. Dr. Hamilton had every opportunity of studying Mrs. Eddy at first hand, and of judging the sort of person she was. I would like, if it were not far too long, to quote the document in which he sets out his opinions on the subject. As it is, I must

confine myself to the little note he wrote, the following Christmas, in sending her a book as a remembrance: "The past year has been full of annoyances for you from the nexters and other designing people, but I am sure you have already cast aside your annoyances. It is the lot of every one who is in earnest in this life to have rivals and sometimes calumniators, and you have certainly had your share. May 1903 be full of peace for you."

Is it any wonder, in the light of this, that the *New York American*, edited by Mr. Arthur Brisbane, than whom there is perhaps no more representative editor in America, should have written recently in his editorial columns: "The public is tired of the hue and cry against Christian Science, and is not a little sympathetic with the dignified lady who presides over the councils of that church"?—I am, etc.,

London, W.C., June 30th. FREDERICK DIXON.

HYPNOTISM AND SUGGESTION.

SIR,—There is so much to be said on the subject of "faith healing"—as suggested by your deeply interesting series of articles—that the limits of a letter will hardly allow adequate discussion of any single aspect of the matter; at the same time, where suggestion, with and without hypnotism, is in these days becoming so increasingly practised by qualified medical men in all countries, one may perhaps venture to dissent from Sir Henry Morris's pronouncement under this section of his able and delightful paper. His conclusion is that the profession is justified in holding aloof from the practice of hypnotism, and that experience in the past should prove an effective discouragement to any attempt to return to it in the future. Surely, Sir, the profession, far from discouraging hypnotic suggestion as a therapeutic method, is now disposed to look upon this mode of treatment with kindly eyes, as is evidenced by the number of men engaged in advising or actually personally adopting its use in appropriate cases. As a student some years ago one never heard the words hypnotism or suggestion mentioned at one's hospital, nor did they occur in the accredited textbooks; nowadays this treatment is not only mentioned but advocated by leading authorities for many forms of functional disease. New works on this special subject are frequently appearing wherein are to be found records of cases whose results scarcely suggest that the treatment employed should be "discouraged." On the contrary, experience has shown that hypnotic methods have effected relief and cure when all other means have failed.

Sir Henry says: "Its successful employment has for the most part been limited to disorders of the nervous system, the relief of pain, the cure of dipsomania, and the production of anaesthesia." Is it to be discouraged, then, because of its limitations? Again, Sir Henry opines: "It has invariably fallen back again into disfavour owing to the uncertainty of its action and its failure on a large scale as a therapeutical agent." I doubt this assertion of "failure on a large scale" when the treatment is in competent hands and the cases are suitable; but even if it be so, may not the same be said of many other approved therapeutic agents? For instance, what kind of results do we get from the usual treatment of a large number of cases of drink and drug manias?

In conclusion, may I ask Sir Henry's authority for the statement that "it has been found too dangerous for general use in medical practice"? My information from authorities and practitioners of hypnotic suggestion is that these "dangers" have not been met with by those who are qualified by study and experience to employ this method as a therapeutic agent for the relief of suffering.

There is no doubt that medical men in general are inclining to ascribe successful issues in a considerable proportion of their cases less and less to the action of material remedies and more and more to the power of suggestion—suggestion with hypnotism or without hypnotism as the case demands, suggestion with drugs and other adjuvant measures or without. The thanks of the profession are due to you, Sir, for presenting so admirable a collection of articles from the pens of the leaders of our profession—articles which cannot fail to give your readers much food for reflection.—I am, etc.,

London, W., June 28th. STANLEY NOBLE.

AID TO THE SICK AND WOUNDED OF THE TERRITORIAL FORCES IN WAR.

SIR,—Under the above heading, you have sounded a timely warning against countenancing the "much more liberal facilities" demanded by the British Red Cross Society, if by that pious wish is meant the lowering of the standard of this ancillary scheme. It would be a grievous mistake at this stage to concede any facilities for replacing qualified medical men and women by the unqualified nurse-lecturer, and especially as there is not the remotest need for such a false step.

To those interested in this question and who may be working under difficulties the experiences of this remote Red Cross Division may help to guide them and clear up the path. Our lady chairman having been appointed by the Lady Lieutenant of the county, the initial difficulty was the formation of a divisional committee, consisting of annual subscribers of one guinea, and of associates paying five shilling subscriptions to the parent society. This depleted all local charity to this cause; then we were confronted with the ways and means for carrying on the several objects of the society, with no hope of help from head quarters. The local Division of the British Medical Association had previously passed a resolution to the effect that no member should in future undertake a course of ambulance lectures without adequate fee, which put an end to gratuitous services. To meet this I wrote to the county director of the society to place before the Education Committee of the County Council the patriotic necessity for stimulating the ambulance and nursing courses of the winter evening technical instruction classes within their jurisdiction by relaxing some of the present restrictions on the number of pupils enrolled and the average attendance in the classes, according to the varying circumstances of congested or scattered areas. This suggestion has been favourably received, and is likely to be acted upon in the arrangements to be made this autumn for the forthcoming winter programme; and there seems no reason why other county and borough councils should not encourage these courses of lectures on identical lines. In towns the winter obstacles to numbers and averages are not so great as in the countryside, where frost and snow, rain and flood, are more possible and actual impediments. Sickness and accident, vouched for by medical certificate, should be as valid a plea for non-attendance, and for not nullifying the grant, as in the case of day pupils. By a give-and-take in this way on the part of the Education Committees of the land, it is hoped that these evening ambulance and nursing classes may revive and become quite general for years to come, and be the means of filling up gaps as they arise in voluntary aid detachments; all this without the least occasion to revert to those retrograde measures you have so forcibly and justly denounced.

In this little village in the past I happen to have conducted some thirteen courses of lectures respectively for men and women, and out of those who hold their St. John certificates we have a sufficient number left to start two half detachments of women and one half detachment of men. Three medical neighbours are taking command of these half detachments; but as many of the women have only first-aid certificates they will require a course of home nursing next winter to qualify; and as another half detachment of men needs to be raised, a course of first aid must also be held in the winter. Under existing conditions of payment of lecturer's fees it might have been a matter of years finding the requisite twenty guineas, together with the other necessary incidental expenses, unless the county Education Committee stepped in to relieve our divisional committee of the task.

Although, as an old Volunteer officer and a present-day Territorial officer, our services as lecturers, instructors, medical examiners, and what not, always were and are honorary, I, nevertheless, believe in the wisdom of the commercial resolution above mentioned as tending to ultimate efficiency and as being a sound investment of public money. One can with safety predict that if the Red Cross Society desires "much more liberal facilities" in order to usurp the medical practitioner its foundation will crumble and the fabric will fall; but if its ambitions are for financial facilities it can easily be much more liberal to its divisions, inasmuch as with charity, as with a cake, it cannot both eat it and keep it.—I am, etc.,

July 4th. O.C. 3RD WELSH FIELD AMBULANCE.

SICKNESS AND INVALIDITY INSURANCE.

Sir,—In view of the Chancellor of the Exchequer's announcement that next year the Government intend to introduce a measure dealing with sickness and invalidity insurance for the workers of this country, and as there is every probability that even if the present Government should not continue in office the then Government will adopt a similar course, it behoves us, or at least those of the medical profession who are likely to be affected by such a measure, to consider carefully our position in regard to it, and to decide what action, if any, we should take.

In the first place, I trust I am right in believing that we medical practitioners are all agreed to the *principle* of sickness and invalidity insurance for our workers and their dependants, and, provided that the scheme introduced deals equitably with regard to the payment of the medical men employed, we shall be prepared to welcome it, and to give it our heartiest approval and support. Obviously any scheme of sickness insurance which did not deal justly with the medical men employed would be both unpractical and unstatesmanlike, and would be surely condemned to early failure. We do not yet know how far the Government intend to go, that is, whether they mean merely to provide sick pay in lieu of wages during the period of sickness and incapacity, or whether they purpose including the cost of medical attendance in their insurance scheme.

A State insurance which included only "sick pay," and did nothing towards counteracting sickness, would soon prove itself unsatisfactory. What is wanted is not to keep men sick, but to restore them as quickly as possible to health and efficiency. This is only possible by providing for efficient medical treatment. If no medical attendance were provided, most of the sick pay would undoubtedly be absorbed in fees, drugs, etc., and the medical treatment would still be unsatisfactory, whilst the dependants in the household would be little better off than at present. Moreover, much additional unpaid work would be thrown upon the medical profession; for there can be little doubt that, apart from the certificates of "inability to work," or "ability to resume work," in declaring "on" and "off" the funds, which would certainly be required of us, the actual amount of medical attendance would be increased, and would, as at present, go largely unpaid.

Such a half-measure of sickness insurance would, indeed, be of little real service, and would rather tend to encourage sickness than to help towards efficiency: in fact, it would be economically unsound. The illness of the worker is not only a loss to himself, his family, and, in most cases, the employer, but is also a loss to the community. He is no longer an earner but a drainer of funds, and in many cases the maintenance of the family also falls upon the community. It is, therefore, to the community's interest to see that the sick man is treated as promptly and efficiently as possible with a view to restoring him to his wage-earning capacity at the earliest moment. This is both sound sense and sound economy.

Again, all moneys paid by the State towards providing efficient medical attendance for sick workers may be regarded as an investment which will show a favourable return in the increased efficiency and productiveness of the workers. Such a return may not be expressible in percentages, but it is none the less real and substantial. The loss which is at present entailed upon the community by sickness, although it does not figure in our annual budgets, must be greater than any other item of expenditure there included,* and it must be remembered that whatever is saved from the *debit* side of the account goes to enhance the value of the *credit* side—that is, the spender becomes not only a non-spender, but an earner as well.

But probably the economic soundness of the step is most convincingly shown by the fact that most civilized countries have now adopted State-aided sickness insurance, and already the results have proved highly satisfactory.

I have dealt so far chiefly with the economic aspect of the question, because I wish it to be clear that sickness insurance is essentially, as our American friends would say, a "business proposition." I need hardly dwell here upon the humanitarian aspect. Evidently it carries benefits to suffering humanity which cannot be assessed in mere £ s. d.

None know better than we medical men what a terrible handicap sickness is amongst the working and poorer classes. Health is the poor man's capital, and as soon as health fails he is on the verge of bankruptcy. Illness is always an expensive matter; apart from the loss of wages, there is invariably the increased cost of nursing and treatment to be considered. Few workers are able, however willing, to save sufficient from their earnings to provide adequately against such expense, with the result that a sickness of any magnitude, to which they may be at any time liable, lands them in crippling debts from which they may be subsequently unable to free themselves. Again, despite our costly hospitals, our numerous dispensaries, sick clubs, and other charities, there is little doubt that sickness is far from being completely dealt with at present; only too often help is not sought until too late, and the most deserving people are often those who suffer most from the postponement of proper medical treatment. Nor is the herding of patients in crowded out-patient departments and dispensaries conducive to the best medical and surgical diagnosis and treatment.

A proper system of sickness insurance which would cover the cost of adequate medical attendance and treatment for all workers and their dependants is by far the best plan of meeting all these difficulties, and if the insurance is made contributory, and inducements are offered towards keeping well and expediting recovery—for example, by a "bonus" or "deposit" plan—it should have an elevating instead of a demoralizing influence upon the individual.

A proper system of State-aided sickness insurance must, as I have said, provide for the just and reasonable remuneration of the medical men employed, or it could not be an enduring success. Probably the chief practical difficulty will be in deciding what is "a just and proper fee" for medical attendance under sickness insurance. I would suggest that the best way of surmounting this difficulty would be to hold a conference between responsible representatives of the medical profession on the one hand and the Government on the other, to discuss the question of fees and other essential details which will seriously affect the medical profession. I feel certain an understanding could be arrived at. The points which the medical representatives should insist upon are:

1. Payment according to work done, with extra fees for special work, all payments to be made direct to the medical man from the insurance fund.
2. Choice of medical attendant by the sick worker (or his friends) from those medical men in the district who are willing to act.
3. Provision of medicines, dressings, apparatus, etc., out of the insurance fund quite apart from the fees paid for medical services.
4. Adequate representation of medical men on the local and central committees of management.
5. Provision for future conferences between the responsible representatives of the medical profession and the Government for readjusting the scale of fees, or discussing other matters bearing upon medical attendance under State sickness insurance.

I further suggest that the British Medical Association is the proper body to take these matters up on behalf of the medical profession. I know that the Special Poor Law Committee has been giving considerable attention to the subject, and I should like them to prepare a scheme to be submitted to the Divisions at the earliest date, so that the opinion of the profession may be gauged. Arrangements could be made for inviting non-members of the Association to the Divisional meetings at which the matter is discussed, so that the results could be made as comprehensive as possible. If, as I hope, a practically unanimous vote of the profession is cast in favour of payment according to work done, and authorizing representatives of the profession to confer with the Government as to fees and other essential conditions, it should carry overwhelming weight, and there need be little fear that we shall be treated with injustice or contumely.

In conclusion, I would strongly urge the advisability of forming a strong and influential deputation of the medical profession to wait upon the Government at the earliest opportunity—the occasion of the Annual Meeting of the Association in London a few weeks hence is an excellent one—to state our views and to ask for a formal

* Dr. Latham computes that the cost to the community of tuberculosis alone is upwards of 20 millions sterling per annum.

conference such as I have suggested, to discuss fees and other details. Such a deputation might proceed somewhat as follows:

1. Express to the Government our hearty approval and loyal support of the principle of State-aided sickness and invalidity insurance for the workers of this country.

2. Point out to the Government that in any such scheme it is essential—

(*a*) That the cost of efficient medical attendance and treatment should be included.

(*b*) Such attendance and treatment should, in the first instance at least, be carried out by the duly qualified and registered medical practitioner selected by the sick man (or his agent).

(*c*) Payment for such attendance should be made directly to the medical man, and upon a reasonable but adequate scale.

3. To request the Government to inaugurate a conference between duly appointed representatives of the profession and the Government to discuss the conditions of medical attendance under a proposed scheme of sickness and invalidity insurance, particularly with regard to the fixing of a scale of fees and other details already outlined.—I am, etc.,

Bowdon, July 4th. P. R. COOPER.

SIR,—In your leading article of June 25th you say that State insurance "would involve some right of supervision of the medical service by the insurance department," and that "to condemn this as officialism is not practical politics." Now, I think it will be generally admitted that it is in the interest of the medical man and his patient that the relation between them should be direct and that there should be no outside interference. This was evidently the intention of Bismarck and others who framed the State Insurance Bill for Germany, and in many parts of Germany there has been no interference till recently when an attempt has been made by insurance officials to prescribe what medical men should practise in a district and to prevent the patient's absolute freedom of choice. Happily this is being strenuously resisted, and of the 24,000 or thereabouts of medical men enrolled in the Leipzig Union over 98 per cent. have definitely resolved, even at the risk of rupture and strike, to oppose the new bill which, if passed, would place medical men to some extent under the authority of State officials.

In England it is otherwise. Many medical men seem to have no great objection to submitting themselves to the authority of county councils and lay bodies, and if this is to become universal the result must necessarily be that there will be a scramble for appointments, and scientific and medical work will be regarded as of less value than the cultivation of political and other interests. That official supervision is not a necessary element of State insurance, and that when attempted it can be strenuously resisted, must be evident to any one who has studied its development in other countries, and it does seem strange and rather pitiful that when so splendid a fight is being made for independence in other countries so many among ourselves should be ready to sacrifice their independence and submit to officialism.

In the same article you mention the proposals for a referendum on various subjects. There is one which you do not mention, and it is certainly not unimportant. Nothing was more clearly brought out by the Poor Law Commissioners than the fact that there are in this country a large body of people who are not paupers, but who cannot afford to pay for adequate medical attendance. In these circumstaces is it not time, and more than time, that the British Medical Association should appeal to Government, and plainly say that, as there is a large body of people not paupers who cannot afford to pay for attendance, adequate attendance cannot be given without a subsidy from the employer and the State? If this is not asked for it will certainly not be granted. At the present moment this matter seems to be of vastly more importance than any attempt to decide whether payment should be made by a fixed sum or according to the illness or number of visits, the decision depending, as it must, in the long run, necessarily do, on the widely different methods of practice prevailing in large towns and in sparsely populated districts.—I am, etc.,

Greenwich, June 28th. J. H. KEAY.

HEREDITY AND ENVIRONMENT.

SIR,—Owing to what our psychical friends will doubtless consider some phase of thought reading, Miss Dendy has most effectively answered Dr. Potts at the very instant when he was assailing, not her, but Dr. Ashby's data. Having had both Dr. Ashby's and Dr. Potts's material before me, I have no doubt, as a statistician, as to what is the relative weight to be given to them. Birmingham schedules for somewhat less than 300 mentally defective children were for some time in my laboratory, and at my suggestion, because no mere statement of the percentage of alcoholism in the parents of mentally defectives is by itself of any value, a sample of normal children was investigated from the same environment. The parentage showed practically the same high percentage of alcoholism, and on my pointing this out, I was told that probably the whole district investigated consisted of a degenerate population. In the circumstances it was difficult to use the material for our investigations, because according to the recorders they now held the "normal sample" sent to me not to be a normal sample. The schedules could not be used for any other investigation, because from internal statistical tests, familiar to the statistician, they did not possess the degree of reliability which we consider essential to our work here.

I have refrained hitherto from criticizing Dr. Potts's conclusions as contributed to the Royal Commission on the Care and Control of the Feeble-minded, or in the *British Journal of Inebriety*, because my aim is not to attack inconclusive results, but to induce investigators to adopt better methods, and I believed that owing to a conversation I had with Dr. Potts, he saw the statistical fallacy of his methods and the defects of his material.

As he has chosen to attack the late Dr. Ashby's far more cautious and careful work, I have felt called upon to give at any rate one statistician's views on his Birmingham material.—I am, etc.,

Eugenics Laboratory, University College, July 3rd. KARL PEARSON.

THE RECENT SPECIAL REPRESENTATIVE AND SPECIAL GENERAL MEETINGS.

SIR,—The correctness of Mr. Ballance's ruling at the Special Representative Meeting that he could accept no amendments of which two months' notice had not been given would appear to be open to very grave doubt, and that gentleman's manner quite suggested that he had been placed in a very improper position by whoever advised those entrusted with the drawing up of the agenda and the fixing of the date of the meeting.[1]

This meeting was called "*for the consideration of new Articles and By-laws.*"[1] I elicited from Mr. Andrew Clark that they were only passed by the Council on April 27th—that is, two months and one day before the Special Representative Meeting. They were only issued to Divisions on May 28th, exactly one month before that meeting.

Mr. Ballance took shelter behind a resolution passed at Belfast instructing the Council to draw these Articles and By-laws; but it must be obvious to the simplest mind that amendments could not be proposed to an unissued agenda. It would have been impossible to refer to the Articles or By-laws to which an amendment was proposed to be moved.

It is true that the new Articles and By-laws are stated to be in accordance with the provisions of the Charter, and that they have, therefore, already been approved. I admit this, and therefore did not vote against them, since one has no wish to attempt to hinder the progress of the Association.

It is, however, to be more than hoped that the authorities of the Association will never again place themselves and the Chairman of the Representative Meeting in a position capable of such grave misinterpretation.

I should like whilst writing to take the opportunity of explaining why, whilst refraining from voting at the Special Representative Meeting, I voted in the minority at the Special General Meeting.

I intended neither to speak nor vote at this meeting, since, although points which the Division I represent desires were not conceded in the new Articles and By-laws, I quite realize that these leave things much as at present.

[1] See paragraph 1 of Order of Business.

and therefore our position can only be one of regret that generous treatment of Colonial wishes is looked upon with more favour than a similar treatment of some of the oldest Branches in the United Kingdom. Not only had I intended to refrain myself, but I had, I believe, also persuaded another Representative sitting near me to take a similar course. My neighbour's mind and my own were completely changed by Sir Victor Horsley's speech. That member of the Association seems to ascend the rostrum with the deliberate intention of stirring up strife, and of insulting those who differ from him.

There is a story of a recent archbishop who confessed that his idea of a satisfactory committee was one of three members, of whom one should be habitually absent, the second a good listener, and the third himself. Similarly, Sir Victor Horsley seems to consider that an ideal Representative Meeting should consist of three classes—that is, those who vote with him, those who do not vote against him, and himself.

I know Sir Victor Horsley, and personally like and respect him greatly, but I can only say that both my personal liking and my respect for his great abilities disappear entirely when I listen to such speeches as he delivered on June 29th. It is, in all the best interests of the Association, greatly to be regretted that he adopts such a tone.—I am, etc.,

Exeter, July 5th. RUSSELL COOMBE.

REPRESENTATION IN THE ASSOCIATION.

SIR,—It was with a feeling of relief and pleasure that I read your leader of June 25th, which shows that there is still an open mind upon the present vexed questions before the medical profession. It was with a feeling of apprehension and regret that in the JOURNAL of July 2nd I saw that many so-called representatives were already elected.

The man who needs representing is the man who looks after the public—the man in whose hands are the care of the weakly, the sick, the infirm, and the young, and on whose advice the individual health of the country's men, women and children is maintained. These men are the general practitioners who are scattered from one end of the country to the other, and who, by the very nature of their occupation, have no opportunity of studying the medico-political questions which seem likely to swamp them, nor yet to learn what are the views, aims, objects, and sympathies of those who are put forward as representatives.

The general practitioners form a body of men who are not represented. If a man has time to attend an odd meeting of his Division (it means to many of them at least half a day), he knows very little of what is going on, and the real work is done by committees, and their minutes are passed without comment or protest, and are taken as the voice of the Division, even if there is barely a quorum to pass questions of moment.

The retort that men ought to read the JOURNAL and learn what is going on, and that it is their duty to attend meetings, is all very well; but a man's first duty is to earn his bread and cheese, and the SUPPLEMENT takes a desperate lot of reading, and even then one is apt to miss the kernel in the nut. How many general practitioners realized that when unqualified assistants were taken from them under the pretext that unqualified practice could not be dealt with while doctors themselves employed them, that practically the whole of the midwifery could be given into the hands of unqualified persons?

I do not want to belittle the work of officials, or "representatives," and give them credit for hard work and the effort to improve the status and pay of the general practitioner according to their lights, but what I do fear is, that the "representatives" are too much drawn from the classes of medical men who are not general practitioners, for it is obvious that no general practitioner can be a representative whose sole income is derived from his practice, and therefore one fears that in the assembly of "representatives" the general practitioner will not be sufficiently represented, and the result of it all tend to drive him out of an association which is doing that which is to his detriment and thus splitting up the "unity" of the profession.

I must apologize for the length of this letter, and will conclude by saying how greatly I hope that Dr. A. Walker's speech as reported in the SUPPLEMENT of July 2nd (page 16), will be read by every general practitioner in the country, and also that an excellent rule for any Representative Meeting would be, not to consider any resolution for "advancing" the interests of the profession which does it by depriving some portion of their body, however small, of their "job."

It is often said in medical politics, "the world must move on after all," but, of course, the man who is "squeezed out," "has our sympathy"! All, I ask is, if that is medical policy, how does it square with the golden rule which we were taught should regulate medical etiquette, namely, "Do unto others," etc.?—I am etc.,

Northwich, July 3rd. HENRY EDWARD GOUGH.

THE PATHOLOGY OF "PERNICIOUS" ANAEMIA.

SIR,—I am sorry Dr. F. H. Edgeworth has misunderstood me. The lecture from which he quotes was delivered to students and taken down in shorthand. When I said, "I suggest," etc., I used the word to indicate that I wished to place before the minds of my hearers the view that the destruction of red cells took place in portal area. I did not claim any originality. I was well aware that the author of it was Dr. Hunter, and that objections had been raised to it. But it was impossible to include everything about my subject in an hour's lecture, therefore I sacrificed these and other interesting matters.

With regard to the changes in the spinal cord, it would have been better to have put the word "gross" before changes, but as, when speaking, I was handing sections of the cord round to the audience, I intended it to be understood that I meant naked-eye changes.—I am, etc.,

London, W., July 4th. W. HALE WHITE.

INFLUENCE OF POSTURE IN PHYSICAL EXAMINATION.

SIR,—I greatly appreciate Dr. Ewart's kind remarks in your last issue. His letters have given me much valuable food for thought, for which I am very grateful.—I am, etc.,

Exeter, July 4th. W. GORDON.

Universities and Colleges.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on June 15th.

Amendment of Regulations for the M.D. Degree.

It was resolved that the regulations for the M.D. degree be amended by the addition of the following words after the word "Examination" at the end of the first paragraph on pages 167 and 222 of the Red Book and Blue Book respectively:

> In every branch, should the thesis or published work be judged of sufficient merit by the examiners, a candidate who has passed the M.D. examination not less than ten years previously may be exempted from the paper or papers, as the case may be, on medicine.

The Physiological Laboratory.

Mr. Frederick L. Golla, M.A., M.B., B.Ch., has been appointed honorary demonstrator of chemical pathology and pharmacology in the Physiological Laboratory.

The course of eight lectures on the rate and conditions of chemical change, delivered by Dr. V. H. Veley, F.R.S., in the Physiological Laboratory during the second term of the current session, has been recognized by the Senate as a course of advanced lectures which a candidate at the B.Sc. (Honours) examination in physiology may name for part of his practical examination.

Recognition of College Hall.

College Hall, Byng Place, W.C., has been recognized as a students' hostel.

UNIVERSITY OF DUBLIN.

Degrees.

THE following degrees were conferred on June 30th:

M.D.—Madeleine S. Baker, J. F. Clarke, M. A. Diemont, St. G. Gray, W. Leggett.

M.B., CH.B., B.A.O.—E. P. Allman-Smith, H. de L. Crawford, J. G. Dods, H. R. M'K. Ferguson, V. M. Fisher, W. H. Hart, C. D. Hanan, A. A. Louw, B. A. Molyneux, V. W. T. M'Gusty, H. S. Millar, J. D. Murphy, R. P. Pollard, S. R. Richardson, J. W. Tomb, L. Trichard, J. H. Woodroffe, E. W. G. Young.

A BED has been endowed by Mr. and Mrs. Peter Brock in the Royal Infirmary, Glasgow, in memory of the late Mr. James Gilchrist, the brother of Mrs. Peter Brock.

The Services.

ROYAL ARMY MEDICAL CORPS (TERRITORIALS).

FIRST LONDON DIVISION.

R.A.M.C. Training.

THE medical units of the 1st London Division, headed by their excellent band, proceeded by march route to Philip's Farm, Hendon, N.W., under the command of the Administrative Medical Officer, Colonel P. B. Giles, V.D., F.R.C.S., on Saturday, July 2nd.

Nothwithstanding the inclement weather the corps paraded in good strength; the units present being 1st, 2nd, 3rd Field Ambulances, 1st and 2nd General Hospitals, and the Sanitary Company. Advanced parties had been sent on in the morning to pitch tents, make arrangements for water supply and prepare rations. On Sunday Divine Service was held, after which the men were instructed in their special duties. The Field Ambulances were exercised in tent pitching and transport duties. The Sanitary Company attracted considerable attention by reason of its practical work, consisting of the preparation of latrines of various types and urine pits. Several forms of destructor were shown, some of the latter being of the square or round furnace type, others of the high, pyramid shape. This was proved last year to be capable of completely destroying in an hour and a half the contents of a latrine used by 180 men for twenty-four hours. The method of construction was lucidly explained by Captain A. R. Owst, F.R.C.S. During the fifteen days' divisional training at Bordon in August, the sanitary company will send details to each combatant unit to supervise sanitation. The Administrative Medical Officer expressed his satisfaction at the good muster and the work done, noting especially the improvement in the transport sections. The corps returned to London on Sunday, July 3rd, by march route, under the command of Lieutenant-Colonel R. R. Sleman. The weather was still inclement.

AMBULANCE COUNTY COMPANIES.

THE St. John Ambulance Association has issued details of a scheme for ambulance county companies to be formed by the territorial branch of the Association in each county. In case of war companies would be offered to the War Office for the service of the sick and wounded of the Territorial Force. If county companies join the St. John Ambulance Brigade they will form separate brigade companies. In their formation the general principles of the St. John Ambulance Association will be followed, candidates being required to attend classes in first aid, home nursing, home hygiene, and sanitation. The members of a company must be either registered medical practitioners, pharmacists, trained nurses, or persons who have obtained a St. John Ambulance Association certificate in first aid as regards men, and in first aid and home nursing as regards women. Provision will be made for the training of a full complement in first aid and special military duties. Any person may form and maintain a county company, which will be recognized by the St. John Ambulance Association so long as all the regulations are complied with. Every officer and member of the company will be required to enter into an obligation to serve with the Territorial Force in the county in case of war.

Medico-Legal.

DIVIDEND DUE TO INSANE PERSON.

"WARRANT" inquires whether (1) a lady of unsound mind can legally sign her own dividend warrant, and (2) whether the signature should be given by the husband or by the son who pays for her treatment.

*** The committee of a person of unsound mind is the proper person to sign the dividend warrant. The husband or son would not be entitled to receive the lady's income otherwise than under the authority of the court.

Obituary.

ALFRED FRANCIS THOMPSON, M.B., CH.B.VICT.,

SENIOR ANAESTHETIST, ROYAL INFIRMARY, MANCHESTER.

AT a meeting of the Board of Management of the Manchester Royal Infirmary last week, the chairman, Sir Wm. Cobbett, referred to the lamentable death of Dr. A. F. Thompson, the senior anaesthetist at the Infirmary, who was killed in a motor car accident, on Saturday, June 25th. He said that Dr. Thompson, who was in the prime of manhood, had given every promise of a successful career as a surgeon. He was expert and skilful as an anaesthetist, and in the present day, when the administration of anaesthetics played so important a part in surgery, the services of skilful men in that branch of medical science were most valuable. He moved a resolution recording the board's sense of the loss the infirmary had sustained by Dr. Thompson's death, and expressing to Mrs. Thompson and the members of the family deep sympathy in the great sorrow which had fallen upon them. The resolution was seconded by the Lord Mayor of Manchester and passed.

It appears that when the accident occurred in which Dr. Thompson was killed he was himself driving the car with the chauffeur at his side, and at the inquest the chauffeur said they were not going more than ten miles an hour. As they neared a crossing they saw a taxicab approaching, and had almost cleared the crossing when the taxicab struck their hind wheel. Their car was overturned, and Dr. Thompson was thrown out, apparently alighting on his head. The chauffeur escaped by clinging to the car, and immediately went to the assistance of his master, who lay with his feet under the steering wheel. There was no hope for him from the first, though medical assistance was soon available. The coroner said that there was no evidence of criminal negligence on the part of the driver of the taxicab. As to what was done by Dr. Thompson there was no clear evidence, and the jury would probably never know whether he failed to realize the danger until it was too late. The facts pointed to a pure accident. The jury returned a verdict that death was the result of an accident, and recommended that a danger signal should be put at the crossing. The coroner expressed the sympathy of the jury with the relatives of Dr. Thompson.

Dr. Thompson, who was a student of Owens College, graduated M.B., Ch.B.Vict., in 1903. He had held the offices of House-Surgeon to the Royal Infirmary and of Third Anaesthetist and Assistant Anaesthetist before promotion to the post which he held at the time of his death. He was also Honorary Anaesthetist to the Victoria Dental Hospital and the Skin Hospital and Assistant Anaesthetist to the Ear Hospital, Manchester.

The funeral took place at Brooklands Cemetery with military honours, as Dr. Thompson held a commission as major in the R.A.M.C. An escort of the members of the corps attended under Major Woolley, and there was a large gathering of medical men and other friends.

Medical News.

THE KING has graciously consented to become Patron of the Royal Institution of London.

WE are asked to state that no meeting of the Obstetrical and Gynaecological Section of the Royal Society of Medicine will be held during July.

HER MAJESTY THE QUEEN has been graciously pleased to become Patron of the Invalid Children's Aid Association (London). Her Majesty has long been interested in this association, and gave her patronage as Princess of Wales.

THE Secretary of State for Scotland has under the Prisons (Scotland) Act, 1909, appointed thirty-five ladies to be additional members of the visiting committees of the prisons of Edinburgh, Glasgow, Aberdeen, Inverness, Dundee, Dumfries, and Greenock. Among the ladies so appointed is Dr. Anne Mercer Watson, of Aberdeen.

AT a provincial sessional meeting of the Royal Sanitary Institute to be held in Cambridge, at 11 a.m. on July 16th, a discussion on the sterilization of water by chlorine and ozone will be opened by Professor G. Sims Woodhead. Further information can be obtained from Dr. Bushell Anningson, Walt-Ham-Sal, Barton Road, Cambridge.

DR. G. ELLIOT SMITH, Professor of Anatomy in the University of Manchester, and formerly Professor of Anatomy at the Cairo School of Medicine, has received the King's permission to accept the Third Class of the Imperial Ottoman Order of the Osmanieh, conferred upon him by the Khedive of Egypt, in recognition of valuable services rendered by him.

THE British Universities Students' Congress, which met this week in Birmingham, was attended by about fifty delegates representing all the universities in the United Kingdom except Oxford and Cambridge. The International Academic Committee reported that representatives had been appointed in Switzerland and the United States, and that it had been successful in securing for British degrees greater recognition and privileges in some of the universities in Switzerland. In concert with the Foreign Office it was endeavouring to induce the German authorities to withdraw a recent regulation abolishing privileges previously given to British graduates offering themselves for German degrees.

Letters, Notes, and Answers.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

H. G. would be glad to know of a good method of making brown hair grey in a man.

HOME FOR CRIPPLE.

C. C. L. desires to hear of an institution which would take in a hopelessly crippled infant; the parents could pay a small amount towards maintenance.

*** Application might be made to Mrs. Kirk, lady superintendent of the Cripples' Nursery, 29, Park Road, Regent's Park, N.W.

PREVENTION OF SYPHILITIC ALOPECIA.

SECONDARIES asks for suggestions of measures to stop the loss of hair in a case of secondary syphilis. The patient, a young man, has had syphilis six months, and has been on hydrarg. c. creta (from 4 to 8 grains a day) all the time. He has been on 7 grains a day for several weeks lately, and seems to bear it very well, but, in spite of that, the hair continues to fall off rapidly; slight sore throat is complained of, and an enlarged gland is still to be felt in the neck. No rash at any time.

INCOME TAX.

Wear and Tear of Car.

CHARTERED ACCOUNTANT writes: In your issue of April 23rd last you had an article entitled, "The Medical Man and his Income Tax Return," and in the course of such article, under the heading "Expenses," you state that the cost of a car bought to replace a worn-out car may be claimed as a proper deduction from gross earnings for the purposes of income tax assessment. I have been contesting the point with a surveyor of taxes, and he has informed me that the Board has issued a circular in which it is definitely pointed out that such a deduction as you mention is not allowable, and the grounds upon which they base this decision are that, as a doctor is not in "trade, manufacture, or adventure or concern in the nature of trade," he is not entitled to an allowance for wear and tear (or depreciation), and that therefore he is not entitled to what amounts to the same thing, to be allowed the cost of replacing a motor car.

*** It may not be easy at first sight to resist the contention that the Income Tax Acts, if strictly construed, do not admit of allowance being made for wear and tear or depreciation of a motor car, inasmuch as the allowance for wear and tear is specifically provided for only in regard to the assessment of "the profits and gains of any trade, manufacture, adventure or concern in the nature of trade," and these words as used in the Income Tax Acts exclude the profits of a profession. On the other hand, there can be no doubt that the cost of replacing a car is clearly an expense for the "supply or repairs or alterations of any implements, utensils, or articles employed for the purpose of a trade or profession," and as such is clearly deductible in arriving at the balance of profits and gains chargeable under Schedule D. The contention of the Surveyor of Taxes that as the medical man may not be entitled to an allowance for wear and tear of "plant and machinery," he is therefore not entitled to the cost of replacing a motor car, is clearly based on a misapprehension of the position, for while the section of the Act that relates to wear and tear may be read as excluding professions, the section providing for the cost of replacements is specifically made applicable to professions by the Income Tax Act of 1842 (third rule of second case of Schedule D). It is not to be supposed that any Board of Commissioners would refuse to allow the cost of replacing a car as a necessary expense in a practitioner's accounts if an appeal were made to them.

India or England?

J. S. (Persia) writes that income tax is deducted from his salary as a member of a Government department (Indian), and from his pay while home on leave, and that the only rebate he is allowed is for the premium on his life assurance policy.

*** Without fuller particulars of our correspondent's income it is impossible to say whether he is rightly charged, but it will probably be found that the tax deducted from his salary whilst residing abroad in the pay of the Indian Government is the Indian and not the British income tax.

ANSWERS.

ST. PAUL'S "THORN IN THE FLESH."

DR. E. MORTON (Clifton) writes: "Carpus" will find the question as to the diagnosis of St. Paul's "thorn in the flesh" more or less fully discussed in one of the appendices to Farrar's *Life of St. Paul*, especially the evidence in favour of the two more common diagnoses of epilepsy (old Irish name, "in galar Poil") and acute ophthalmia.

MR. W. T. CLEGG, F.R.C.S.Ed. (Liverpool), writes: The query by "Carpus" reminds me that I have discussed with friends from time to time the probability of St Paul's thorn in the flesh being either a granular conjunctivitis with pannus, or more likely still chronic glaucoma, for the following reasons: (1) St. Paul was a strong man physically, and a man of the highest ideals. (2) His affliction was such that he could glory in overcoming it, and would not refer to sensual temptation, etc. (3) It distressed him, for thrice he besought the Lord that it might depart from him. The physician St. Luke seemed to attend him. (4) Saul journeying to Damascus, becomes, in his honest energetic way, convinced of the error of his present conduct. The mental distress consequent is followed by the temporary impairment of vision premonitory of glaucoma—lasting some three days. During this time he fasted. This may, of course, have been sun-blindness from the bright light from heaven if this be taken literally. (5) Later on his sight had failed and he required to look steadily at any one—a peculiarity noticeable enough to be mentioned in at least two places. (6) When preaching to the churches of Galatia he was evidently, more than ordinarily, suffering and felt that it detracted from the influence of his personal address. He said (1 Galat. iv. 13): "I bear you record that if it had been possible ye would have plucked out your own eyes and have given them to me." (7) The sight later on has failed very much, as evidenced on the occasion mentioned (Acts xxiii). St. Paul received a blow on the mouth, and, burning with indignation, shouted to Ananias, who was probably personally known to St. Paul and would be prominently placed and robed, "God shall smite thee, thou whited wall." Those standing by said, "Revilest thou God's high priest?" St. Paul answered, "I knew not, brethren, that he was the high priest." Evidently he could not even see him well enough to guess that it was he. (8) How could such a man have passed into oblivion in those days more surely than by age and total blindness?

LETTERS, NOTES, ETC.

MERCURY IN SMALL-POX.

DR. DENNYS J. DRAKE (Narayanganj, E. Bengal) writes: I notice in the *Medical Annual* of 1910 that Captain V. B. Nesfield, I.M.S., has treated cases of small-pox with mercury. During the last two years I have treated ten cases with hyd. c. creta gr. x three times a day. Seven of these have been of the confluent type. In the cases so treated the result has been surprisingly good. The mercury appears to abort the disease, and produces no ptyalism. All my cases recovered unusually rapidly. As in Nesfield's cases, the patients were all Indians.

ALTITUDE FOR CHEST CASES IN SOUTH AFRICA.

F. E. writes: A recent experience suggests that the degree of altitude desirable for chest cases sent to South Africa is a matter of importance when there is a marked tendency to bronchial catarrh. The idea usually is to get up country, and, unless there is haemoptysis, the higher the better. I thought so, too, presuming on a partial knowledge of the country while in South Africa ten years ago. In January last my wife and I, both suffering from bronchial catarrh, left England, improved on the voyage, still more so in my own case while at East London for a few weeks, but on leaving the coast for Bloemfontein, and without contracting any fresh cold, we both experienced a great increase in the quantity of sputum. This has continued, and is undoubtedly due to the low pressure at the altitude of over 4,000 ft. Probably the Karroo (2,000 ft.) would be better. May I add that South Africa is now painfully overdoctored?

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
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An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *postes Restante* letters addressed either in initials or numbers.

Presidential Addresses

TO THE

BRANCHES OF THE BRITISH MEDICAL ASSOCIATION.

METROPOLITAN COUNTIES BRANCH.

THE TRUE AIM OF A UNITED MEDICAL PROFESSION AND THE HANDICAP OF THE TRADE UNION BOGEY.

By LAURISTON E. SHAW, M.D., F.R.C.P.,
Physician to Guy's Hospital.

By what is no doubt a useful rule, you are accustomed to elect your President more than twelve months before the day when, entering upon his office, he is afforded an opportunity of thanking you for the honour you have conferred upon him. Whatever may be the advantages of this custom, it is open to the possible objection that before the official meeting with your President takes place you may have repented of your choice, while your President, having opportunities of becoming fully acquainted with the duties of his office, may be confirmed in his belief that he is unable to fulfil them efficiently. To-day I hope I may take for granted the continuance of your confidence, whilst on my part I desire to assure you that, conscious as I am of my many shortcomings, I will do my best to fill the honourable post to which last year you kindly elected me. For I am indeed grateful to you for giving me this further opportunity of serving the British Medical Association. As each year of my professional life passes, my conviction becomes stronger that some organization to bind the profession together is an absolute necessity, and that there is no existing body in any way fitted for this purpose except our great democratic Association. This being my conviction, I have decided to take the opportunity of my presidential address to consider with you some of the objects that must be constantly before us in our efforts to secure a united medical profession, and some of the obstacles that must be overcome before our project can be achieved.

What is the true aim of the medical profession? I am conscious of the difficulty of submitting a definition of our true aim which will immediately obtain general acceptance. Recently I had the pleasure of listening to an address by a colleague upon a matter connected with professional organization, who stated that the main object which led a medical practitioner laboriously to acquire his expensive technical education was that he might thereby be enabled to "earn a living." The confusion of thought here appears to me to be analogous to that of the great philosophers who maintain that "man lives to eat." No man can fulfil his proper destiny unless he eats. No profession can secure its proper aim unless its members earn livings. Certainly, however, the true aim of our profession is not "to eat."

I will venture to define the true professional aim as threefold: First, to seek out the causes, the methods of prevention, and the means of cure of man's physical infirmities; secondly, to disseminate this knowledge amongst all branches of the profession; and, thirdly, to ensure that every possible advantage of professional knowledge shall be available for all those who could be benefited by it. The particular class of professional work a man is doing may lead him to regard one or other of the divisions of this threefold aim as the more important, but most will agree that not one of these branches can be omitted from the definition of our general professional aim. Roughly, but more concisely, we may define our aim thus—to seek out, to spread, and to make use of medical knowledge. But I am not concerned to-day with the minutiae and technicalities of definitions. Sufficient for my purpose if it be agreed that the work which is set before us is one of extraordinary difficulty and complexity, hard enough to stimulate the enthusiasm of the most ambitious of men and complicated enough to call for the highest qualities of organization and co-operation. I do not know that our profession has much cause for complaint as to lack of enthusiasm and ambition in its individual members. We have our due share of great men, and from time to time they make their mark upon our science or our art. While constant advances are thus made by individuals, it must be admitted that as a profession we are slow to secure by co ordination that their potential benefits shall be speedily applied to those who most need them. Perhaps it is the opportunities in our constantly progressing science that each one sees lying at his hand of rendering individual service that makes so many regard with disfavour attempts at concerted action. For it cannot be doubted that it is not only apathy in the case of many of our profession, but downright antipathy, that stands in the way of promoting united action.

This antipathy to concerted action frequently shows itself when professional organization is being discussed amongst us by the introduction of what appears to the speaker to be the absolutely conclusive argument, "Oh, that's trade unionism." The use of the term "trade unionism" for the purpose of denouncing any proposal for concerted action becomes equivalent, as I have indicated in the title of my address, to the introduction of a "bogey," and is a serious handicap to the full attainment of our professional aim. I am aware that in even referring to trade unionism I run the risk of shocking some of my hearers. I cannot help recognizing, however, that the growing habit amongst some of us of proudly using trade unionism as our battle cry, and amongst others of attaching it as an opprobrious label to any concerted movement to which we object, has already done harm to our true aim, and is likely, unless checked, to do more harm as time passes.

I would make here, therefore, a double appeal. To the enthusiasts on one side I would urge that they commend to our notice such schemes of organization and co-ordination as they may have at heart, not on account of any analogy there may be to what seem to them the best features of trade unionism, but solely on the ground of their actual advantages to the public and the profession. Whilst to the enthusiasts on the other side I would urge that they should recognize that however detrimental to the true interests of the community some features of trade unionism may appear to them to be, there are other features that are common to trade unionism and to all other schemes of united effort, and are indeed essential to all progress, and that to rule these out because in some hands they may have been used improperly is not only to handicap but to paralyse all advance.

Looking at the question in the abstract, none can deny that a number of men are more likely to secure their common aim the more thoroughly they are united and the more perfectly they are organized. When one finds amongst a body of men in whom a common aim is beginning to develop individuals resisting union, whatever may be the explanation on their lips, one is bound to suspect either that they doubt the beneficent aim of the body to which they belong, or that they deny the primary principle that union is strength.

One not uncommonly comes across medical men who agree that their own professional aim and the professional aims of the majority of the members of the profession with whom they are acquainted is a high and noble one, and yet seem perfectly convinced, from what they regard as the analogy of trade unionism, that if these various aims were combined quite a different and an ignoble aim would be secured. One can only understand this attitude by imagining that these men are unconsciously allowing themselves to assume a moral superiority to the bulk of their professional colleagues, or else, from a want of logical training, they have permitted themselves to believe that the sum of many forces acting in one direction may possibly lead to a result in a different direction.

Is it not possible for us to dismiss from our controversies arguments based on these false analogies, and recognizing that the reputation for unselfishness that our profession has secured and maintained from remote ages is well deserved, can we not unite our forces in confidence that the greater our power, the greater will be our honourable service to the public? Unless the majority of medical men are tradesmen it is impossible by any amount of union to create a medical trade union. A union of professional men must be a professional union, and the

more perfect the union the more possible will it be to maintain in each of its units the highest traditions of the profession.

I have ventured to deal at some length with this main obstacle to a united profession because it appears to be a real stumbling-block to many active members of the profession and of our Association. In the pursuit of our true aim we need the help of all, and cannot allow an illogical attitude to deprive us of the services of useful friends. By various means we must endeavour to attract both the apathetic and the antipathetic. For those members of the profession who stand aloof because they are so busy struggling against adversity or amassing unnecessary fortunes, we must endeavour to provide time for public duties by attempting to adjust those anomalies of professional remuneration which at either end of the scale are so detrimental to the best scientific work. To those who are merely apathetic and doubtful of the possibility of securing co-operation where competition has hitherto been so predominant, we must show what valuable steps have already been taken in this direction. To the man who honestly disbelieves in the honesty of the aim of the majority of the profession we must try, by enlarging his acquaintance with his brethren, to prove that what he knows to be the main motives of himself and of the majority of his intimate acquaintances are also the main motives of the majority of the profession. With the man who believes that when many men with a high aim combine together their aim becomes low, we must patiently reason and endeavour to show him the fallacies of his logic.

I turn now from the "bogey" to the main subject of my address. Our threefold professional aim I have defined as—to seek out, to spread, and to make use of medical knowledge, and I propose to indicate briefly in each of these three divisions of our aim the directions in which united as opposed to individual effort may be expected to be of special value.

The seeking out of medical knowledge which it is now fashionable to call "research" has always had a fascination for the most original minds in the profession—minds which, because of their originality, often do not lend themselves readily to united effort. No more disastrous step for medical progress could be taken than to attempt to chain our geniuses to organizations or associations for research. But it is almost equally detrimental to progress to assume that research is the sole prerogative of geniuses, and that those engaged in this occupation must be untrammelled by attempts to systematize their efforts. Rather should we recognize that in each of us, if we were only reasonably educated, there lies a definite if limited power of seeking out knowledge, and that by encouragement and wisely directed united effort this power could be utilized to the benefit both of ourselves and of the profession generally. As a student I had the great advantage of working with Dr. Mahomed, whose early death was a real loss to the profession. Some of you may remember his energetic organization of the Collective Investigation Committee—an organization whereby he believed it might be possible to link the profession together in a common effort at making medical knowledge whilst engaged in the daily routine of ordinary practice. Had he lived it seems possible that his project might have borne good fruit, but deprived at the very outset of the stimulating enthusiasm of its founder, it too met an early death. I venture to hope that some such valuable means of making use of the innumerable scientific observations of private practitioners may yet be resuscitated, though its chances of permanent success are small until medical education frees itself from the dominance of the examination system. Here and there a Pasteur, a Lister, or a Koch will single-handed wrest for us the vital secrets of Nature, but even such men will find their work easier if they have as their colleagues a profession banded together in a constant effort to see and record for the common good the facts that lie before them. If it be said that the profession is not well enough educated or well enough paid to be able or to afford to adopt research as a daily routine, let us by united action secure better education and better pay.

Better education brings us to the second division of our aim, which is to spread medical knowledge. On other occasions I have strongly maintained that the provision of medical education is a concern and duty of the general community. But, with or without public aid, it is clearly our duty as professional men to hand on our knowledge to others. Here I am not speaking of medical education in its usual narrow sense. It is not only our duty to secure that the five years which are technically regarded as a medical man's period of education shall be utilized to the full, but as a profession we should see to it that the whole of each member's medical career should from start to finish be educative in the true sense of the word.

A united profession might well be expected to secure that hospitals should be a bond of union instead of a bone of contention amongst its members, and that the experience gained within their walls should be the privilege of the many rather than the prerogative of the few. It might also arrange that co-operation instead of competition between general practitioners and specialists should distribute more widely the common fund of knowledge.

Turning to education in its narrower sense—the five years' curriculum—about the reform of which we read so much in the medical press, is it not probable that its control by a limited section of the profession, instead of by the profession as a whole, is largely responsible for the need of reform? Constant changes have been one of the most striking features of the curriculum in the last twenty years, but the men responsible for these changes have been drawn too much from one class, and that a small class of the profession; so that it is not suprising that complaints are made that the curriculum becomes less and less suitable for the education of the profession generally. It indeed seems necessary to invoke the aid of the united profession before we can secure that anything like a proper proportion of the whole curriculum shall be given to those clinical studies which are the very basis of our professional work. A united profession would never have allowed the teachers of the preliminary subjects to absorb three-fifths of an all too limited period of study.

If it is not possible for a united profession to control medical education in any official sense, it is at least possible to provide opportunities for representatives of all branches of the profession to discuss general principles. I would venture to suggest to those whom it may concern that at the annual meeting of the Association next year, which it is anticipated will take place in Birmingham, a section dealing with the subject of medical education be instituted. Here there would meet together on equal grounds, as members of the profession, the teachers and the taught, and much might be done towards forming a sound opinion on certain principles of education. The taught might bring home to the teachers that teaching is an art that might well be learnt by those who propose to practise it. The medical teacher's faith in examinations as a means of education might in such open discussion be advantageously shaken. Birmingham, as the centre of one of our most progressive universities, would be a suitable centre in which to inaugurate a Section of Medical Education. Those responsible might be encouraged in this step by remembering that education, which is one of the youngest, if not the youngest, scientific subjects dealt with by the British Association, forms already one of the most popular sections at its annual meetings.

And now I come to the third branch of our professional aim—to make use of medical knowledge for the common good. To many it may appear at first sight that this is the only real practical aim of the profession to which the sections already dealt with are merely preparatory. But we must by no means allow a strictly utilitarian view of our profession to take too prominent a place either in our own or in the public estimation. To limit our researches or our education to those forms of knowledge which are immediately applicable to the common good would have an evil effect both on research and education, and ultimately on our practice. Let us be sure that such knowledge as we possess shall be made use of, but never let us limit our search for what in our restricted wisdom we might regard as useful knowledge.

Whilst confident that we must maintain each branch as an essential of our threefold aim, it has often occurred to me that it might be for the advantage of humanity if the profession, for a space at least, arrested its efforts to increase and spread medical knowledge, and brought the full force of its energy to bear upon the question of securing that such knowledge as we now possess

should be made instantly available to all those who could be benefited by it. True, our knowledge is very imperfect and limited, and is distributed among us in an irregular manner, but, such as it is, it is capable of being made infinitely more use of than is at present the case. One must admit at once that this is not altogether a question of professional organization. To a large extent the failure is due to defects of general social organization, such as poverty and ignorance. Even so it is only by the help of the profession that the community can devise methods of securing adequate medical assistance for those deprived of it by lack of sense or lack of means. Never was united professional action more needed than now, when a strenuous effort is being made to reorganize our Poor Law medical service, which, despite the recognition on all sides of the unselfish devotion of the individual medical officers, is generally condemned as unsuitable to our present stage of civilization. The need for united action is so urgent because all who have considered the question of Poor Law reform are convinced that no adequate reform is practicable unless it is accompanied by drastic changes in our chaotic system of medical charity.

Now, it is one of the most salient features of medical charity in this country that it is in almost all cases exercised at the cost of the medical profession. If a philanthropist builds a church or founds a school he knows that he must somehow make due provision for the parson or the teacher to be paid, but in all medical charities the absolutely essential part of the charity—namely, the medical service—is expected to be provided by medical men free of charge. I am not at the moment criticizing this arrangement, although I hold it to be entirely wrong, but I am drawing attention to it because it throws upon the profession practically the entire responsibility for the conduct of medical charity. It makes it necessary for us, indeed, either to give a satisfactory denial to the charge that the present condition of medical charity blocks the way to absolutely necessary reforms or else to make a frank attempt to co-operate with those who are working towards a better system.

While the reform of medical charity in the interests of the sick poor calls for the united efforts of the profession, the abuse of charity to the detriment of large numbers of medical men is one of the gravest causes of medical disunion. The exercise of medical charity in our great voluntary institutions has become the prerogative of a small privileged class of the profession who, themselves not needing to earn their living by ministering to any except the wealthy classes, become indifferent to the immense numbers of all other classes who resort to our out-patient departments for free treatment. When roused to take notice of the question, this privileged class assert that these immense numbers of out-patients (one-half of the total population of our great cities attend these departments it is said) are necessary in order to provide adequate instruction to their medical students, or alternatively that the general practitioner is incapable of affording adequate treatment for the majority of these cases. We thus have the extraordinary spectacle of our students treating for nothing the very people whom they are supposed to be learning medicine in order to treat, and when they are qualified being told by the leaders of their profession that the next batch of students under the guidance of their teachers are more competent than they to undertake such treatment. Our united efforts are indeed required to set right some of the topsy-turveydoms of medical charity.

Another matter of professional organization more within our own control, though of considerable interest to the public concerned to secure for themselves the best results from our knowledge, is the relationship of specialists and consultants to other medical practitioners. This relationship is admittedly unsatisfactory to both sides, and it can hardly be said that any serious attempt has been made to meet the position created by the quite extraordinary multiplication of specialisms during the last generation. In some foreign countries the matter is attracting the attention of the Government, and practitioners are required to give evidence of special experience or even to pass further examinations before being allowed to pose as specialists. Thus equipped the specialist will probably be allowed to make a direct appeal to the public, whose members will be expected to decide for themselves which particular specialism is best suited to their case. Personally, it appears to me that this question could more effectively be dealt with by a scheme of professional organization analogous to that which prevails amongst lawyers in this country. In the legal profession specialization is almost confined to barristers who make no direct appeal to the public, but rely that their special powers shall be made available for their clients through the intervention of solicitors. The establishment of a special class of medical consultant conducting his practice like a barrister, and dealing with patients only in co-operation with a general practitioner, would provide a basis for an arrangement which, while securing ample scope for all necessary specialisms, would safeguard the public from the risk of being deprived of the undoubted benefits of specialism, or being treated by specialists whose claims to the position are recognized by none but themselves.

The reform of medical charity, and its co-ordination with provident agencies and with departments of the State dealing with medical destitution or with invalidity insurance, is a problem of immense complexity. It deals with the vested interests of the wealthy privileged classes of the profession, as well as of the economically depressed members who are dependent on the utterly inadequate payment of competing private clubs. For good or evil, it is certain that different parliamentary parties will before long put before us their programmes for the reform of State medical assistance, which must profoundly affect existing charitable arrangements. In the settlement of these problems it is doubtful whether we ourselves or the outside bodies with which negotiations must be carried on will be more conscious of the need of a united profession to voice our requirements or to accept their proffered terms. It is certain that without the help and co-operation of a united profession no State, however wise and however powerful, can make suitable arrangements for the great task that lies before us. No scheme can be of lasting value which does not recognize our true professional aim and seek by judicious compromise to meet the conflicting claims of the varied interests involved.

Those members of the profession who are already engaged in the difficult task of formulating schemes to make our knowledge available for those who need it, and under existing circumstances do not get it, may perhaps feel some sympathy with the view I just now expressed that all other work in the profession might for a time be stopped while we concentrate on this. Such a proceeding is, of course, not really possible or advisable, but if those who are working on these lines may not have the actual help of the scientists and educationalists who are busy in their own departments, they may at least appeal for a sympathetic recognition of their efforts. Too commonly has it seemed to me do men working to make and spread knowledge regard with contempt the medico-political work of those who are striving to get this knowledge used. Each section of our aim is useless without the other two.

Having indicated thus in general terms some of the directions in which united effort is needed to secure each of the three divisions of our professional aim, I would turn for a moment to the possible agencies through which such united effort might be secured. A first place amongst such agencies must be given to the medical press. The pioneer of modern medical reform, Thomas Wakley, was well aware of the value of a public pen when he founded and became first editor of the *Lancet*. An initial step in all attempts at union is to promote a desire for reform and a discontent with the unsatisfactory conditions that need to be abolished. For this purpose in modern times there is no more efficient instrument than the press. For many of the more gross and scandalous medical abuses in Wakley's time publicity was enough to secure reform. The *Lancet* and its valuable contemporary, the BRITISH MEDICAL JOURNAL, have always continued Wakley's fearless policy of free ventilation of all conditions detrimental to the best interests of the profession. Thus there is maintained a healthy professional opinion and a spirit ready to take advantage of opportunities of reform. The press alone, though absolutely essential as a means of promoting and directing united effort, does not, of course, provide the necessary machinery for putting it into action.

Many look to the General Medical Council as the body to direct professional policy and protect professional interests. No greater mistake could be made. The

General Medical Council is a body set up by the State, with strictly limited powers, specifically directed to safeguarding the public from the evil doings of the profession. It is most desirable that the profession should waste no time in trying to convert the General Medical Council into a body through which it can hope to secure its professional aim. It is merely our Scotland Yard, and not a very efficient police department at that, for it has no powers to take anybody into custody unless he has already been convicted by some other authority, and can deal with no unconvicted delinquent unless he is haled before the judgement seat by an amateur policeman. For our particular purpose it is quite useless.

What, then, can be said for our Royal Colleges of Physicians and Surgeons? Surely they who grant us our diplomas will be useful bodies to assist us to gain our proper aim. The government of these institutions is for the most part in the hands of a small select body who have strenuously resisted all attempts to admit to their counsels representatives elected from the general body of their licentiates. Like other privileged bodies, they are no doubt convinced that their action in this matter is in the best interests of all concerned. They are satisfied that they know better than the unprivileged member of the profession what is good for him, and feel certain that the presence of representatives of any less exalted class of practitioner would do harm to the dignity of the profession. But this attitude renders them unfit bodies to deal with the organization and development of the profession as a whole, whilst their uncompromising resistance to any extension of their franchise has led to a feeling of injustice amongst the body of general practitioners which has been very detrimental to professional unity.

Whether on account of their want of sympathetic co-operation with the bulk of their diplomates, or because there are separate Colleges jealous of each other's privileges and powers in each division of the kingdom, these ancient and in many respects useful bodies are not fitted for the duty of promoting our united professional aim. They have done great service in the cause of medical education in the past, and, although a great deal of their present work is destined to be taken from them by the numerous universities springing up in our great cities, most people recognize that there remains for them a very useful future as the constituents of the State Examining Board which will no doubt before long be established as the single gate of entrance through which all practitioners will be required to pass in order to secure a legal qualification.

Apart from this truly public work, the Royal Colleges of Physicians and Surgeons in the various divisions of the United Kingdom should, so long as their present methods of government prevail, regard themselves as colleges of *consulting* surgeons and *consulting* physicians, and as representative of these limited classes of the profession, just as the Societies of Medical Officers of Health and of Poor Law Medical Officers represent special classes of workers in other spheres. It should be the recognized duty of the Colleges to look after the welfare of these small classes, and to protect such of their interests as are not antagonistic to the welfare of the general public. This salutary object cannot be achieved by resisting the development of, and holding aloof from, bodies representative of the profession as a whole, but by each sectional body encouraging those whom they represent to take a full share in the work and organization of the wider institutions.

What are the essential features of the organization through which the aspirations of a united profession may have a reasonable chance of being realized?

In the first place, it must be an entirely voluntary organization. The idea that one could by the aid of Parliament set up an association coterminous with the entire profession, through which the aim of the profession could be voiced or carried into effect, is, in my opinion, quite illusory. On the one hand no Parliament would confer on such an organization the necessary powers, and on the other there would certainly be lacking in the members of such a State-established body the feelings of *esprit de corps* and pride of service which are essential if anything more than obedience to the strong hand of the law is to be achieved.

The organization must recognize that its very existence depends on its making an effective appeal to the patriotism which is a common feature of all professions and on its not putting too great a strain on the loyalty of its individual members. It must have an entirely democratic constitution. In these days of universal liberty it is useless to expect the members of any profession to submit to the control of an authority in the selection of which they have no voice. But, far more important than this, it is impossible to secure the intelligent interest of a member in questions of professional policy and action unless he is given an equal opportunity with his colleagues of framing such policy and dictating such action. Granted these primary features of voluntaryism and a democratic constitution, without which success is impossible, the actual measure of success will depend on details of organization. The more perfect the mechanism for discovering the real wishes of the members and the closer the touch between the executive and the electorate, the greater will be the loyalty and discipline of the members upon which in a last resort all progress will depend.

Progress to be real must be gradual, but it must be constant. In all communities there are two parties—those who want to go too fast and those who do not want to go fast enough. The united policy is the mean of these two forces. Exactly in so far as the organization which we are seeking manages to steer a median course, not frightening from its ranks members of one party by excessive action nor disgusting members of the other party by doing nothing, it may be regarded as representing the united profession.

Moving forward and gaining ground each day, our organization must have a well-equipped ambulance department. In the profession's stern fight with disease and ignorance there must be many casualties amongst its members. The ranks must be closed, but due provision must be made for those who fall out. No organization can be successful which, in the keen pursuit of a common aim, neglects the call of humanity on behalf of its individual workers.

Looking round for an organization constituted on these lines, I have thought I have found it in the British Medical Association.

To say that there are defects in the constitution of this Association is only to admit that it is and must be managed by human beings. But it complies with the two essentials of being a voluntary organization, and being worked on a democratic basis. Every member of the profession who thinks he can make it better has an equal opportunity with every one of his colleagues of securing attention to his views. The Association is no respecter of persons. No academic distinctions, no privileges of wealth or aristocracy, receive consideration. The Association welcomes to its service all those who are willing to help it to secure the truly beneficent aim of a united medical profession.

But my appeal to-day is not on behalf the British Medical Association; I am appealing to you to support professional union. Assured that the aim of the profession is an absolutely unselfish one, I desire to see its members cast from them, as a guide to conduct in their mutual relations, the miserable doctrines of the struggle for existence and the survival of the fittest, and, working shoulder to shoulder, build firm the foundation of a great professional brotherhood.

YORKSHIRE BRANCH.

PRINCIPLES OF PRACTICE IN RELATION TO OUR PATIENTS.

By R. J. PYE-SMITH, CH.M., F.R.C.S.

[AFTER some introductory remarks relative to the history of the Branch and to the aims and objects of the Association and of the medical profession, the President said:]

The relations between doctor and patient differ somewhat in private practice and in hospital, club, and Poor Law practice; but in all cases the essential relationship must exist of willing mutual acceptance of each other as doctor and patient. This relationship gives the patient, on the one hand, a right to the doctor's best services, in such reasonable measure and manner as is good for the patient without being detrimental to the doctor or to the public; whilst, on the other hand, it gives the doctor a right to the confidence, respect, and reasonable obedience of the patient, as well as to the hire of which every labourer is

worthy. Time, thought, and skill must always be at the service of the patient, whilst sympathy and a generous consideration of his needs will often involve the acceptance of such other duties as relieving anxiety, or procuring nursing, change of air, consultations, expert assistance, or other means for the restoration of health, or for preventing an illness, a confinement, an accident, or an operation from bringing more risk, pain, and anxiety than are inevitable.

To fulfil wisely such complex duties involves, of course, much consideration and some experience, and at times we owe it to our patients to withhold information and opinions they may ask for, quite as much as at other times to furnish them.

Etiology.

Thus in the matter of etiology, it is not, I think, generally wise to be too explicit as to the part played in the causation of the patient's ailment by heredity, by former habits, or by the approach of old age. It is doubtless well that people should want to get at the causes of things. How difficult it is to do so is perhaps paralleled only by the ease with which a false cause so often seems to satisfy the inquiring patient. He cannot understand that there can be much difficulty in ascertaining the cause of cancer, but he is usually quite satisfied with the assigning of "weakness," or being "highly strung," as the efficient cause for any symptoms from which his wife or child may be suffering, or with attributing any breakdown on his own part to his being "sadly in need of a holiday."

There is, however, an aspect of etiology in which it behoves us to be as exact and explicit as possible, not only in our own minds, but also in the opinions we give to patients or claimants, or to those rightfully interested in their condition and prospects. I refer to such cases as we have to deal with under the Workmen's Compensation Act. Here, in spite of the tendency of recent legal decisions to minimize the distinction between disease and accident, it is still of serious importance that we should distinguish between the natural results of a definite injury —whether in the way of trauma or of disease—and conditions that cannot be reasonably attributed to it. The conditions present must be carefully investigated and analysed in order to assign the whole or each part to the injury inflicted by an alleged accident or to other causes, previous or subsequent to the accident, such as disease (independent of, consequent upon, aggravated by, or aggravating the trauma), lack of exercise or of effort (voluntary or enforced) pain (incapacitating or negligible), self-deception or hysteria, malingering and fraud.

Diagnosis.

Patients always look for a diagnosis of some sort on the doctor's part, and not without reason. Whether we can ascertain the cause of the symptoms presented by the case or not, and whether or not we may think it right to tell the patient anything of what we know in that direction, we cannot, as a rule, expect to retain his confidence nor to secure his intelligent co-operation without telling him something reasonably definite as to the conditions we find. It is, however, so easy to be misunderstood that it is well, in the interests of all concerned, to enter into as little technical detail as possible. Medical words are sometimes absurdly mistaken. A diabetic patient in hospital, being asked by a visitor if he was taking his food well, replied, "Oh, yes; I have a tremendous appetite, and the doctors have ordered me glutton bread." At a first interview and in the early stages of disease it is, of course, often impossible to make a full diagnosis, and it is generally wise not to go far beyond what is immediately ascertainable. "Such and such symptoms," we may say, "are present, and the picture is like that of such and such a well-known condition or disease, but some characteristic features are at present wanting, and certain further investigations will be required before sufficient facts are available for the formation of a complete diagnosis." Such an attitude is in many cases eminently reasonable, and will generally be appreciated by a sensible patient. How often one may fancy one recognizes an acquaintance in the distance, but it is not till a nearer approach that there is good ground for feeling sure whether it is really he or not. A work of art may require more than one examination before its genuineness or identity can be established. So it is with our powers of recognizing other objects, including the features of disease. A doctor can have little self-respect who gives at once and on the scantiest data such a diagnosis as "threatened" pneumonia or typhoid, and then accepts credit for having averted the dreaded disease by a bottle of medicine!

On the other hand, there are cases of the most anxious character—of which suspected appendicitis, or cancer, are prominent and constantly recurring examples—in which it is essential that a definite diagnosis should be reached at the earliest possible moment. Here it becomes the imperative duty of the medical attendant either to give a definite diagnosis, on which he must stake not only his own reputation but also the welfare, and often the life, of his patient, or else to ask for a consultation. Such cases illustrate the rule that it is the special duty of the doctor in attendance to be early in diagnosis, at least to the point of recognizing a grave suspicion of some such lesion as may need early and expert treatment, whilst the special duty of the physician or surgeon called into consultation is to be exact in his diagnosis, at least to the point of deciding on, and helping to carry out, the most appropriate treatment.

There is, of course, an art in expressing a diagnosis in which few of us attain perfection. On one occasion a little old lady was sent to me for an ailment which involved a somewhat detailed examination, after making which I had told her what I thought and advised. As she reached the door to leave my room she hesitatingly turned back and asked, in the most naïve tone, "I suppose, sir, you haven't any idea what is the matter with me?"

Treatment.

If our patients are justified in expecting from us a diagnosis, still more have they a right to receive appropriate treatment at our hands. It is our obvious duty to advise them as to diet, rest, nursing, exercise, fresh air, and all other personal hygienic measures, quite as much as with regard to medicines or operations. How truly valuable to a patient is this multifarious and detailed advice on questions of healthy and unhealthy living; how large a part it must play in his recovery and well-being; but how much its efficacy depends on the general equipment and personal character of the adviser!

As the efficiency of treatment not infrequently depends largely on its promptitude, it is surely important not only that the surgeon and the obstetrician should have his bag in constant readiness, but also that all practitioners should adopt some method by which, when on their daily rounds, they may be found as quickly as possible in case of emergency. I have been surprised how often one finds that a doctor is said to be out, but no information can be obtained as to his whereabouts and but little as to the time of his expected return.

In certain cases the interests of the patient call for our declining to treat him. This may be so where he persistently or grossly disregards our advice, but I refer more especially to cases in which we know we could not do such justice to the case as could be easily done by some colleague. Hence arises the duty, which attaches to the consultant and the expert in any special branch, just as much as to the general practitioner, to refer such cases to those whose special line of practice enables them to render the most efficient help in the particular case, or to call such an one into consultation.

Prophylaxis.

The subject of treatment includes prophylaxis, and it is a natural duty at the end of an attendance to give the patient some special or general rules with the object of guarding him against sequelae or recurrence. But it does not seem fair to the practitioner that he should be expected to give detailed advice as to the prevention of the spread of disease to other members of the household without due remuneration.

Though our ardour in preventive medicine proves our readiness, as a profession, to put our own interests after those of our patients and the public, it is happily the case that in most of our mutual relations there is a very real community of interests. Thus it is as much to the interest of the patient as of the doctor that the latter should receive such remuneration as will enable him to devote sufficient time to his cases, to obtain the best books and instruments, and to be free from the abstractions of impecuniosity. On the other hand, it is as much to the interest of the doctor as of the patient that the latter should

expect from him as much time, attention, and consideration as will best conduce to his recovery, since it is by such means and results that a doctor's reputation is increased and his practice extended. Or, again, it is equally to the advantage of the public and the profession that the public should be protected from ignorant pretenders and the profession purged of disgraceful members.

Prognosis.

Prognosis is one of the most difficult, but also most highly valued, acquirements of the physician or surgeon, especially in private practice and among well-educated people. Anxiety is a human attribute, and is apt to increase with the development of our nervous organization.

> We look before and after,
> And pine for what is not.

Many a man attaches great value to an expert's prognostication as to events of momentous interest to him in his family relations. But in this matter we are under no obligation, legal or moral, to tell "the whole truth." Our prognosis is not of the nature of a witnessing to facts, but is an opinion which we are as much bound to keep to ourselves—in some cases and in some stages of illness—as, in others, we are bound to let our patients or their friends have the advantage of its expression.

In favourable cases the communication of a good prognosis is helpful to all. In bad cases, also, it is sometimes a real kindness to lift for the friends the veil that hides our forebodings. But the patient whose life is in grave danger generally knows it sooner than others are apt to think, and it can rarely fall properly to the lot of the medical attendant, even in answer to a direct question, to point out to his patient the approaching shadow of death.

Hope is man's sheet-anchor in times of uncertainty and dread. To cut its cable is to remove the chief incentive to effort, and the only barrier against despair. Hope is the master-key that can open the door of the darkest dungeon. It is the opsonic index for all "the ills that flesh is heir to," and to raise it and keep it high is ever one of the most valuable functions of the medical attendant. If the dictum *de mortuis nil nisi bonum* be a proper one to act on, still more is it a rule with regard to the sick *de futuro nil nisi bonum dicere*. Happily, in all branches of our work, a correct diagnosis is much more frequently favourable than the reverse.

But, whilst we must be wary of so speaking or acting as to lessen a patient's hope, it is often to his interest to be told something as to the probable length of time his case may occupy, or to be warned of possible unavoidable results. Without alarming him with regard to the dangers of any proposed operation, it is unfair, I think, except sometimes in urgent emergencies, not to tell him that, of course, there is a certain degree of risk about this as about every operation, however small; but we may add that no one can avoid all risks—we all run risks every hour of every day, and we must be content to take the right course; moreover, we can usually assure him that the course proposed is attended with less risks and drawbacks on the whole than any other.

Professional Secrecy.

We are often asked for information about a patient, and particularly as to prognosis, by persons outside his immediate and confidential family circle, persons who may take an interest in his case from motives of friendship, of pecuniary responsibility, or of mere curiosity. I need hardly say that no such persons have any claim to our opinion, or that, without the patient's consent, we have no right whatever to give it. Many an action for damages would be avoided if doctors always remembered that they may never disclose professional confidences, except when, in the interests of justice, required to do so either by a court of law or in the prevention or detection of crime.

In all these professional relationships our guiding principle should be the consideration of the true interests of the patient, but with due regard also to the just claims and interests of his family, of his medical and other attendants, of his doctor's other patients, and of society.

Choice of Medical Attendants and Consultants.

That in private practice patients should exercise the right of choosing their medical attendant none, perhaps, would question, though we must remember that the choice is of the nature of an invitation which, for good and sufficient reasons, we are at liberty to decline. This freedom of choice, however, appears to be threatened by the recent movement in the Association for the recognition of a special class of consultants and for the prescribing by the Association of regulations for the conduct of the practice of such a class. The result of such proposed regulations, debarring that class from all practice other than that introduced by a general practitioner, would be, almost inevitably, to deprive the patient and his friends of any real voice in the selection of a second opinion.

A consultation may be desired with either of two somewhat different objects in view. One object is that of discussing the case generally, a true consultation, or conference, at which two doctors meet on equal terms to investigate and talk over the case in reference to any points of difficulty or doubt, most usually with regard to diagnosis and treatment. The other object, more limited and definite, is that of obtaining expert assistance in the case. In the former kind of case, especially in country districts, it appears to me undesirable that the scope for the choice of a consultant should be limited by ruling out the neighbouring general practitioners, many of whom might have all the qualifications for the object in view. Yet, since it is proposed that the "recognized" class of consultants are never to be allowed to see a patient except when called upon to do so by a general practitioner, it would be hard indeed if, when a consultation was required, they were passed over. In the other kind of case the choice of a consultant is, by the nature of the requirements, restricted to those who are experts in the special department concerned, and skilled in the use of methods and instruments of diagnosis and of treatment, whether medical, surgical, or pathological. And here it must be vastly more important (at all events to the patient) that the consultant should be competent and trustworthy than that he should be the possessor of a badge of class "recognition."

Whatever may be the main object in view, the consultation may be asked for either by the doctor in attendance or by the patient and his friends. If the suggestion be made by the doctor, he no doubt should have the main say in deciding on the consultant, and it is one of his duties to know to whom to turn for help in the various needs that may at any moment arise in his practice. If his choice should fail to satisfy his patient, he has his remedy in deciding to do without a consultation. But when, on the other hand, it is the patient and his friends who suggest the consultation, it is surely not unreasonable that they should be allowed some voice in the decision as to who should be called in. The consultation is for their satisfaction, and satisfaction in such a case is often a matter of personal confidence. Should the doctor be dissatisfied with their choice and unable to alter it, he has his remedy in retiring from the case. But if it were known that no approach to the consultant could be made except through the general practitioner in attendance, it is obvious that the medical attendant would be in a position to coerce his patient in the matter of selection.

It has been said that on this question we should take a lesson from the legal profession. But the two professions are essentially different, both in subject and in methods. Our work is apt to be hampered rather than helped by authority and precedent, and it flourishes best when free from the influence of obsolete theories and from restrictions on the acquisition of experience. To protect or to curtail, by the red tape of interprofessional etiquette, the sphere of practice of any group of registered medical practitioners would constitute a precedent dangerous to the rights of all the rest.

Again, would not an absolute rule preventing the consultant from receiving any patients except from his colleagues in general practice put him at the mercy of the general practitioner, and drive him either to cut himself off to a large extent from social intercourse with them, or to lay himself open to the charge of touting for patients? For the code which regards it as generally improper for a doctor to call on or entertain neighbours who are not his patients (*qui facit per alium facit per se*), lest he should attract them to his practice, would regard it as equally unsuitable for a "recognized" consultant to show

like hospitality to any colleagues in general practice, unless they were his habitual supporters. In fact, what is now a delicate position, which must be left to the good taste and generous motives of those concerned, would be in danger of becoming the source either of scandal or of enforced unsociability. It is one thing for a man with a large consulting practice to make restrictive rules for himself, and I think there are cases where both he and the public may gain thereby; it would be quite another thing for this Association to introduce such arrangements for the convenience of the practitioner rather than for that of the public, who, indeed, could hardly be expected to tolerate them.

But, after all, what most nearly concerns alike the public and the profession is that consultants, as a class and individually, should possess such real fitness as to be fairly entitled to assume that position with the greatest attainable advantage to all concerned. Distinctions we must have in every walk of life, but, to be valuable, they should be the distinctions of endowment, of training, of opportunity, of experience, not such as may be arbitrarily manufactured by the mere "recognition" of an artificial and self-formed group, especially if the "recognition" is to be in the hands, not of a legally constituted medical authority, but of a voluntary Association like ours.

Whatever views we may hold with regard to this and other controversial subjects now agitating the Association, it must, I fear, be admitted on all sides that there are signs of grave dangers confronting us, as a result of the proposed alterations in the Memorandum and Articles of Association. Let us face these dangers fairly, and remember that even if this Association, after a successful career of over three score years and ten, should be threatened with disaster, the fate of the medical profession is not involved in that of any organization, however great or good. As long as we are faithful to the true objects of our profession, jealous of the purity of its motives, steadily progressive in its practice, and loyal to its honourable traditions, we may be confident that it will continue to command the devotion of its members, and to be of ever-increasing value to society.

SOUTH-EASTERN BRANCH.

FIFTY YEARS OF MEDICAL AND SURGICAL PROGRESS AND THE PART PLAYED IN IT BY EXPERIMENTAL RESEARCH.

By C. H. ALLFREY, M.D., M.R.C.P., F.R.C.S., D.P.H.,
Consulting Physician to the East Sussex Hospital, Hastings; and Consulting Physician to the Chislehurst and Cray Valley Hospital.

IT is forty-seven years since I became a member of the Association, joining this Branch when I commenced practice in Kent. That was nearly half a century ago, and it is three years more than the half-century since I commenced the study of medicine in 1857.

This carries the memory back to the dark ages, as it were, of medicine and surgery. Since that time there has been remarkable progress in both, though, of course, it has been more striking and self-evident in surgery.

It would be difficult, I think, for a twentieth century student to realize the state of surgery in the nineteenth.

The recent introduction of chloroform by Sir James Simpson had no doubt done much to minimize the horrors of an operation and to reduce the anguish, bodily and mental, of the patient and, I may say, of the surgeon as well. Of course, also, the surgeon had no longer to operate against time. But even then, I fancy, that if a capital operation, as performed in those days, could be reproduced, say cinematographically, it would appear to the modern student to be, with all its rough and ready methods, something very nearly akin to butchery. The modern student would hardly realize that it was the fashion for house-surgeons and dressers to carry their needles, sutures and ligatures stuck into and threaded into the front of their coats, the same coats that they wore in the wards and in the *post-mortem* room. That was the smart thing to do.

It would hardly be an exaggeration to say that it was the exception rather than otherwise for the subject of a capital operation to get well; and then it was generally after a tedious convalescence, during which he ran the gauntlet of the risks of the too frequent complications, such as secondary haemorrhage, erysipelas, hospital gangrene, and pyaemia, which attended the then normal processes of granulation and suppuration, with the copious effusion of what we used to call "laudable" pus. Now all this is changed. It is the exception when a patient dies, and a clean case now runs a rapid and uncomplicated course to recovery, the wound healing by first intention; more than that, the surgeon now ventures with impunity into regions that he would formerly have approached at his peril. All this we owe to the brilliant researches of Pasteur, and to the genius and keen insight of Lister, who recognized their import, continued the experiments, and applied the principles deduced therefrom for the benefit of humanity.

The progress in the case of medicine may not be so striking and self-evident as in that of surgery; but, especially if we include the important department of preventive medicine, it is probable that at least as many lives have been saved by it to the community, whilst the conditions of life have been improved and the term of natural life has been lengthened by it.

Medicine had, it is true, made a great step at the time of which I am speaking, in that indiscriminate bloodletting and depletion had been given up, though there was danger for a time that it would fall into the opposite error of over-stimulation. Our knowledge had also recently been much extended by Bright's recognition of albuminuria as connected with disease of the kidneys, followed by the discovery of its grave import from a prognostic point of view. Addison had also pointed out the coincidence of bronzing of the skin with disease of the suprarenal capsules. But even then medicine was at the best but a rudimentary and empirical art, and the equipment of the physician was very inferior to what it is now.

We had the stethoscope, but we had no clinical thermometer. The ophthalmic surgeon had the ophthalmoscope, but the physicion had not conceived the possibility of its use for the diagnosis of conditions within the cranium.

We had, of course, the microscope, of which much use was made, but we had (or at all events used) no higher power than a quarter; we had no immersion lenses, nor any of the modern methods of hardening specimens, making sections, and staining them. We had no laryngoscope, nor any of the various forms of endoscope now in use; and of course we had no *x* rays and no radium. Electricity was not in general use, and never employed as an aid to diagnosis—for the recognition, for instance, of the reaction of degeneration.

The vaginal speculum had been introduced into practice by Dr. Henry Bennett, but it was thought to be almost improper to use it, and at that time gynaecology had not been established as a distinct department of medicine.

I am not sure, however, that, much as medicine has benefited by all these methods and instruments of precision, the physician may not have lost something. I am not sure that the modern physician, if he will forgive me for saying so, possesses that rapid, intuitive insight into the meaning of symptoms, and that refined sense of touch (*tactus eruditus*) that his predecessors had, and which they acquired by the necessity of depending upon their own faculties without adventitious aids. For there were, without doubt, "giants in those days."

Our knowledge of medicine is, indeed, very different to what it was fifty years ago. Take, for instance, our knowledge of nervous diseases and the methods employed in their diagnosis—an entirely new field has been opened out. Beyond the recognition of some of the grosser lesions which gave rise to symptoms that we roughly diagnosed as hemiplegia or paraplegia, for instance, and some palpable lesions affecting special nerves, we knew next to nothing about nervous diseases, and our treatment was crude, empirical, and often no doubt erroneous. We recognized, of course, general inflammatory conditions of the brain and spinal cord and their membranes, and, of course, we were familiar with epilepsy as a convulsive disease attended by unconsciousness, but we did not even make a guess at the seat of the mischief in the brain, and by the way, we knew nothing of the use of the bromides in controlling and alleviating the convulsions of epilepsy.

We were taught that the action of potassium bromide

was similar to that of potassium iodide, but without its beneficial influence in tertiary syphilis.

I doubt very much whether any of our up-to-date students have ever seen a typical case of rheumatic fever running its normal course as we used to see it before Dr. Maclagan initiated the use of salicin and salicylic acid, and their combinations and derivatives were employed in its treatment. Now, although we cannot cure or probably materially shorten the course of the disease, we are able to control the pyrexia and alleviate the local inflammation and pain at will.

Our knowledge of disease has, of course, been revolutionized by the discovery of the part so widely played in its causation by living organisms, which has given us clues to its prevention, relief, or cure. New ground in this fertile field is being continually broken up.

In preventive medicine the advance has been very remarkable. The mortality from consumption has been reduced by at least one half owing to the general improvement in sanitary knowledge and to the better understanding of the physiology of health, and more lately owing to the precautions against infection that our newly acquired knowledge of the bacterial origin of the disease has dictated.

Typhus fever, of which I saw a great deal as a student in London and in Edinburgh, and which was found to be especially favoured by overcrowding and filth, is now practically extinct; whilst cholera, enteric fever, and other waterborne diseases are now, comparatively speaking, under control. Snow had already demonstrated the connexion between cholera and impure water, but it was not until many years after that that his conclusions were confirmed by the discovery of the specific bacillus.

The treatment of diphtheria by antitoxin has been very striking in its reduction of the mortality from that disease. No one who has had much experience of that fell disease, both before and after the introduction of the antitoxin treatment, can have any doubt as to its favourable influence, and especially when tracheotomy, previously so fatal, has been resorted to. The inoculation treatment of anthrax and hydrophobia proved to be most effective in Pasteur's hands, and, if not yet so successful in enteric fever and plague, is full of promise.

Fraser's work in connexion with snake poisons, conducted on similar lines, has been most instructive, although his conclusions have not had quite the practical value that he had hoped, owing to each species of snake having its own venom; but his experiments led him to the valuable discovery of the power of potassium permanganate to oxidize and destroy the poison in them all when promptly and freely employed locally.

Perhaps it is in the case of tropical diseases that the preventive saving of life has been most notable—as, for instance, in the prevention of malaria, yellow fever, and sleeping sickness by the discovery of the peccant organisms, and that these are conveyed to the human subject by insects, such as the mosquito and tsetse fly; and very noteworthy has been the practical extinction of Malta fever among our troops by Bruce's discovery that the organism is conveyed to the human subject by the milk of goats. I cannot do more than refer to the valuable work which is now being energetically prosecuted in the study of immunity, opsonins, and the general use of vaccines (so-called), which, although still in its infancy, promises such a rich harvest.

Now, to what has this phenomenal advance been due?

There are, of course, more factors than one; but I say without hesitation that none of them alone or conjointly could have availed to any extent had it not been for experimental research as practised on living animals —"vivisection," as its opponents nickname it; but the term is misleading and I shall avoid it. Surgery, as I have already said, owes its present position entirely to Listerian methods. That those methods were the outcome of Lister's experiments on animals we need no further evidence than that of the master himself. In Lister's evidence before the Royal Commission (1875) he said it had been through experiments on living animals that he "had been gradually led to the development of his plan of treatment now known as the antiseptic system."

Among the more brilliant of surgical triumphs are the successful operations on the brain. These would never have been attempted, even with Listerian precautions, had it not been for the experiments on the brains of monkeys of Fritsch, Hitzig, Ferrier, and others, that made diagnosis possible.

It would hardly be correct, perhaps, to say that the discovery of the use of chloroform as an anaesthetic was owing to experiments on animals, unless the story told by Lauder Brunton be true—though he did not vouch for it—that Sir James Simpson's dog accidentally sampled a bottle of chloroform which it had upset, and thus practised an involuntary experiment on itself, of which his master took advantage; but it is certain that we should not have attained to such an accurate knowledge of the properties and action of chloroform on the cardiac and respiratory centres as we now possess had it not been for the more recent experiments on animals. Hence also has arisen the movement for making special instruction in the administration of anaesthetics obligatory.

As I have said, we had no clinical thermometers fifty years ago, nor would they have been introduced had it not been for experiments that had been made on animal heat. Previously to its introduction the treatment of symptoms now known to be due to hyperpyrexia was haphazard and empirical.

But the whole foundation of modern medicine rests on experimental research; for medicine is based on physiology—the "institutes of medicine," as the Scotch call it. Professor Starling, in his evidence before the Royal Commission, said: "Practically the whole fabric of physiology is the resultant of experiments on animals." All the textbooks on physiology teem with references to experiments on animals on which their teaching is founded. It will suffice to recall the experiments made by the immortal Harvey, which led up to the discovery of the circulation of the blood, supplemented as they have since been from the time of Hales (with his haemodynamometer) downwards, by experiments which have thrown light on the causes and conditions regulating vasomotor action and arterial tension. The experiments of Sir Charles Bell led up to the location of the centres for respiration and circulation. We owe our knowledge of the function of the spinal and sympathetic system of nerves very much to the experiments of Claude Bernard and Brown-Séquard, and, as I have said, the localization of cerebral function to those of Fritsch, Hitzig, and Ferrier. Working on their foundations, men like Hughlings Jackson and Gowers have opened up the whole wide field of nervous pathology.

Experiments on the action of drugs have been very fruitful; by them many false ideas have been exploded, and useless drugs discarded. For instance, lead, on which we used to rely as our sheet anchor in haemorrhage (though generally given with opium, to which it probably owed its reputation), has now been shown to be absolutely inert as an arterial constringent.

Digitalis has been put upon a scientific basis. Formerly it was given empirically as a cardiac sedative, and later as a diuretic. Its true place has now been determined, and, owing to our acquired knowledge as to its action in increasing arterial tension, we have learnt when to avoid it, and to substitute for it a more suitable heart tonic like strophanthus. The action of strophanthus was discovered, in the first instance, accidentally by Fraser, when investigating the properties of the poison of an arrow that had been sent to him. By his experiments with the poison he was able to establish the value of the drug as a useful remedy in heart disease.

Caffeine has been shown by experiment not to deserve its reputation as a cardiac tonic, and has been relegated to its true position as a valuable diuretic.

It was by experiments on animals that Rutherford and Gamgee discovered the action of amyl nitrite and the nitrites generally in relaxing arterial tension. This led Lauder Brunton to the discovery of its value and that of nitroglycerine for the relief of anginal spasm.

Hosts of new remedies, good, bad, and indifferent, but some of which have come to stay, have been discovered—coal-tar derivatives and substitution products—like, for instance, antipyrin, acetanilide, and phenacetin, etc.; valuable narcotics like chloral, paraldehyde, sulphonal, veronal, etc., and local anaesthetics like cocaine, eucaine, novocain, stovaine, and which have lately proved to be so valuable in the hands of the surgeon. In every case,

these drugs, when discovered by the chemist, have had to be tried on animals, their actions ascertained, and their limits of safety determined, as they are all more or less poisonous. It is by such experiments that vegetable drugs have been standardized, for many of our older galenical preparations have been found to vary enormously in strength and even sometimes to be absolutely inert.

The valuable properties of adrenalin as an arterial constringent were discovered as the result of Oliver and Schäfer's experiments with suprarenal capsules. Thyroid extract was brought into use for myxoedema and cretinism in the same way. Gull and Ord had, it is true, noticed the coincidence of those conditions with thyroid disease; but it was not until Victor Horsley had made his experiments by the removal of that gland from animals that Murray was able to bring the theory of the treatment by the extract to successful practice.

Now, gentlemen, this is a very sketchy and far from exhaustive outline of the progress of medical science during the past fifty years, and of the part played in it by animal research; but it will, I hope, suffice for my purpose, which is to bring home to your minds what a great danger there is that the tide of scientific progress may be set back—in England at least—by the "antivivisection" craze which has taken such a firm hold of the more emotional section of the community. This craze is the outcome of that sentimentality of which Mr. Roosevelt said the other day that "of all broken reeds, it was the most broken reed for righteousness to lean on." Sentimentality is begotten of ignorance, and for ignorance the only remedy is education. It is no use to attempt to tackle it in any other way, certainly not by entering into acrimonious controversy with personal recriminations, as some of our doughty champions are inclined to do.

I once had a very gratifying experience of the efficacy of the more peaceful method. I was asked by a young friend to introduce a discussion on vivisection at a working men's club in which he was interested. He told me that I should have a hot time, as the club was a very hotbed of antivivisection views. Well, I girded my loins and went into the fray; but, like David of old, conscious of the strength of my cause, armed only with a sling and a stone. I entered into no controversy; I simply taught my audience the truth, as I have to-day reminded you of it. I won the day, and had the satisfaction of carrying a resolution to the effect that "experiments on living animals were justifiable" by a unanimous vote. My hearers got up one after the other and said that they had never had the truth of the matter put before them like that before. They were converted to a man. Now, I venture to think that if Sir Victor Horsley—than whom no man living was more qualified to speak from the personal part he had taken in experimental research—had adopted a similar line in his famous duel with the late Bishop Barry at the Folkestone Church Congress, he would have had a signal and a bloodless victory. Instead of that, I am afraid that the discussion rather tended to advertize and popularize the heresy.

The recently formed Research Defence Society will no doubt do much to enlighten the public and I dare say that the great names that are associated with it will carry weight with a certain type of mind.

The most convincing line to take is, I think, to endeavour to make the public realize that the medical advisers, to whom they so readily have recourse when ill and in whose skill they for the most part place such implicit confidence, would be powerless to help them, were it not for knowledge which has been acquired from such experiments as those that they decry. They should be made to realize that in even such a simple and everyday operation as feeling a pulse, their doctor is availing himself of knowledge so gained; as again in the case of the clinical thermometer, of which they make such frequent use as a danger signal. It might even be unkindly suggested to them that they owe the immunity with which some of them dose themselves with fashionable tabloids and patent preparations, to the experiments on animals by which the safe doses of those often very poisonous drugs have been ascertained.

Now who so well qualified or has such frequent every-day opportunity to undertake this task of education of the public as the trusted family doctor?

It is with this feeling that I have brought the subject before you, the members of this important Branch of our great Association. We can all do our part, and I hope that we shall not fail to take advantage of the opportunity which will soon present itself when the publication of the final report of the Royal Commission again brings the subject prominently before the public. If we do not avail ourselves of it, there is great danger that the agitators may succeed in forcing fresh legislation through Parliament and adding to the already sufficiently restrictive regulations.

WEST SOMERSET BRANCH.

AFTER TEN YEARS.

BY W. H. MAIDLOW, M.D., F.R.C.S.,
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[ABSTRACT.]

I PROPOSE to address you on those changes, progressings, and decisions which I have marked, or have been reached by me, after some ten years of general practice.

I venture to think few generations of medical men have lived amidst greater developmental changes than have we who, qualified in the Nineties, have seen the developments of those oft-told stories of antiseptics, anaesthetics, and bacteriology.

I must confess to having made no proper study of the new Poor Law suggestions, but the various tendencies which have brought matters to a head have come to a climax during this period, and it seems to me many of us will live to see the parish medical officer a self-respecting, efficient, and properly paid man merged into some sort of district medical officer, working with the medical officer of health, and a specialist for school clinics; partly State paid, and partly by a contribution per head at a properly graduated figure. It is possible we may be more heckled and have more reports to write, but very much will depend on our own assertiveness and efficiency. We are bound to justify our existence now more than ever, and face the keen scrutiny which is increasingly brought to bear on our work, like that, indeed, on other workers.

"The new nurse" is at present depriving us of a good deal of work, and of some remuneration, too. She is doing most of the ordinary midwifery; she dresses many cases, even does a little minor surgery, and thinks she should decide whether a doctor is necessary. She is, in fact, a new order of practitioner. Those of us who like to do our own work rather resent the intrusion of what we consider an insufficiently trained rival, who has had no such expensive education as ourselves, and naturally feel aggrieved. Yet if she can do the work and we are not necessary (and it seems to me her mistakes and disasters are by no means numerous), we shall have to bow to the inevitable and adapt ourselves. The committees consider she *is* a new order of doctor, and if she refuse to attend without a doctor the subscribers of poorer classes will not pay. If as now existing we are not wanted we shall disappear, and the output of medical men must in some way be made to meet the demand. She, like other things we once considered evil, but now recognize as wholesome fixtures, has come to stay, whether we like it or not. We older ones are rather apt to take the *laissez-faire* attitude, knowing how night work and rough-and-ready work knocks us up, and we enjoy the increased leisure, which, if we cannot afford now, we never shall.

As regards clubs there is no great alteration to mention. The club member is apt to feel himself slighted and he in return is apt to slight us. He has never considered himself under the least obligation; and, to my mind, rather reasonably says, "If you do not mean to do your best why did you take on the contract?" The condition is entirely our own fault; we have only to stick together, insist on having a voice in such matters as the position which entitles applicants to admission to clubs, draw up a code detailing what are to be "extras," and insist on some proper fees worked out by some good accountant. Things at present are managed in a slipshod way, and we muddle along apparently fearing to come to close quarters. I think it probable that if eventually the district medical officer is paid partly by State and partly by capitation contributions, the friendly societies will become some sort of sick insurance arrangement.

No one can fail to observe the increasing importance attached by the State to medical science. The general practitioner may be regarded with less confidence than he was ten years ago—unjustly, I think—but the school inspection work, medical officer of health, the Territorial surgeon, the advisers to the Local Government Board, form a class whose influence, although unseen, is everywhere felt, and that influence seems destined to increase. Not so long ago the prime mover and arbiter of things seemed the parson; now religious dogmas, in spite of their political importance, are becoming replaced by the religion of health. I fully realize the value of psychic treatment, but I cannot fail to see how far more often we succeed by tackling the mind through the body. How much is made of the few successes of Christian Science, faith healing, and so forth! If we were less diffident and cared to take the trouble, we should have no need for co-operation of spiritual healers. But we know so much and are so afraid of being humbugs.

Another example of our power behind the scenes is exemplified in the new movement of the British Red Cross Society, for without us the movement would be impossible. We need not hesitate to accept a proper remuneration, for not only are we already heavy ratepayers, but, like those we teach, we also are ready to act in cases of emergency, and many of us, if fit, are already Territorials. What we are now asked to give is our special knowledge at personal expense of time, no more to be given gratuitously than the services of the bootmaker, officer, carpenter, or clothier.

Ten years have brought home to me some definite rules for conduct:

1. Life must be saved under all conditions, even the criminal's.

2. Life must be prolonged, even if it be with cancer of the tongue.

3. Pain must be eased without killing.

4. The ways of Providence—its apparent injustice—have nothing to do with us in our everyday life, however we may reflect in private, and the less we talk about such things the better advisers we are.

There are three or four great tendencies which seem to affect us more or less directly:

1. The realization on the part of the masses that the classes may be moneyed and may have pleasure, but that they need not necessarily rule.

2. There is a levelling up and a demand for more adequate contributions from the rich, which they on their part strenuously seem to resist.

3. A desire to meet true socialism half way.

4. A tendency to the better sort of imperialism.

5. With general increased knowledge, including that of us and our methods, more criticism and a lessened will to give us a free hand, more care and knowledge is expected of us.

I suppose most will agree that the *vaccine* treatment of disease is the most notable new treatment. In some cases the results seem little short of marvellous; nor have I seen any harm apart from what the opsonic index says! This reminds me how painful are some of the things a modern patient has to suffer at the hands of a modern physician whilst his case is obscure. It is perfectly conceivable the same patient may have to undergo lumbar puncture, one or two blood counts, a Widal test, a few tuberculin tests, an *x*-ray examination, and an examination of some sort under an anaesthetic.

As to the *organic extracts*, the estimate of the value of thyroid seems to have increased, that of others distinctly to have decreased. *Adrenalin* is the greatest, I should say, of the drug discoveries during the ten years, and calcium chloride appears to be increasing in importance. *Sour milk*, when the present boom is over, will take its place amongst useful methods of treatment; it seems very decidedly useful in some cases of depression traceable to gastro-intestinal disturbances and conditions due to arterio-sclerosis. As regards neurasthenia, I have learnt to expect vicious circles of two sorts: (1) Something physical, inducing a mental result, which keeps up and aggravates the physical disorder; or (2) something mental which leads to something physically wrong, which keeps up the disordered mentality.

The great thing is to tackle one of the links, and here work with the Church, or some sort of psychotherapeutists, might be expected to be more valuable than in point of fact it is.

Of clinical instruments used in general practice I have come to rely greatly on the Riva-Rocci sphygmomanometer, which affords a just principle for treatment in that group of cases labelled "arterio-sclerosis." Its stages are rationally treated under (1) toxins, (2) high blood pressure, (3) high blood pressure leading to arterio-sclerosis with its sequence of evils. We can treat all these stages with some benefit.

It is becoming more and more obvious that surgical operations, apart from those of emergency, can have but a small part in the work of the general practitioner who is not fresh from the schools. With no branch is it harder to keep abreast, and the modern aseptic plans have much increased the initial expense, and are difficult to carry out logically. Amongst the most remarkable events, from the general practitioner's point of view, of the last ten years I would group the following:

1. Indiarubber gloves, which I myself use rather for the preliminary details than during the operations, when I discard them.

2. Bier's method of passive congestion.

3. The surgery of the prostate, which was hardly dreamt of as possible in such subjects twenty years ago; and the surgery of the pancreas, on which so much light has been shed by Robson and Cammidge. There is no doubt in my mind that in a few years we shall hear much more of operations on the pancreas for a certain number of cases of diabetes due to pancreatitis.

4. Then the immediate treatment of *fracture* by open methods has been placed on an absolutely firm basis.

There is no hesitation in operating on appendicitis as early as possible, and in fact there is a tendency for patients to ask for and expect operative treatment even earlier than we are prepared to advise it, and the realm of medicine is becoming more and more limited.

Ten years ago the rules were: Gas for minor operations in adults, chloroform for the extremes of life, ether in all cases except under certain contraindications. But now with the introduction of oxygen and the open method of giving ether the subject is much more complex. A few years ago it looked as if gas was to be superseded by ethyl chloride for minor surgery. This seems now relegated to the position of a preliminary to one of the others, while both it and gas have been very extensively superseded by local anaesthetics. I have given novocain as a spinal analgesic in eight cases, with success as far as the injection was concerned in all but one. I do not quite see where its chief use lies; there is probably not much less risk than in chloroform, and it certainly needs watching. Its chief sphere of utility is in operations done single-handed on people who would die if left alone, and for those who like to know (and they are rare) what is going on.

The chief events in the obstetric world which seem to me worthy of mention are:

1. Removal from our hands of much of what I call lower-class midwifery by the "new nurse," a point already discussed.

2. The birth-rate, if we may judge by statistics, seems to be decidedly falling, and I feel pretty certain this is not due to sterility or late marriages, but rather to methods of prevention and abortions.

3. With the advent of the "new nurse" there has been a diminution, and we may expect a still further decrease, of methods designed to kill the child and an increase of those to save its life for the State; and I can conceive a time when the doctor's chief work will be to do Caesarean section when the nurse has failed with forceps or version, with or without our help, and even then with proper examination and improved methods of rearing premature children this might be avoided.

4. A wordy fight has been often waged between those who wait and watch, giving no chloroform till the very end, and with reluctance apply forceps, and those who, rather than wait, give chloroform, dilate the cervix if it is dilatable, and very readily deliver the child and make a good job of the inevitably torn perineum. Women in the upper circles fall in very readily with the last plan, of which I am a disciple, but I have a disquieting suspicion that the argument from saving time and distress is not rather biassed, and that those attended by the expectant school have rather lower *post-partum* morbidity.

5. Scopolamine-morphine injection seems distinctly useful when chloroform is contraindicated and in the earlier stages. It relieves the pain and does not stop labour, is a useful substitute for opium or chloral in relieving spasm and inducing sleep, although for this condition I think a sterilized preparation of eucaine applied to the cervix is best.

In *electro-therapeutics* we are surrounded by all sorts of quacks and institutions anxious to have our patients. It behoves us to see that this form of treatment is put into proper hands, and it would be well if these "proper hands" could see their way to adapt their fees to the means of those who are not of the hospital class.

Massage is another branch of treatment which is increasing in popularity, and we have learnt much from the bonesetters as regards early movement in sprains, etc., and that more disability may arise from early and prolonged rest than we were taught. Despite the undoubted harm some of these men do, I am rather inclined to think that, on the whole, the occasional harm done by their methods, and even their disasters, are probably not much greater than the harm we have done by more orthodox methods, although, of course, our methods of caution never spell the disaster which happens to the bonesetter who disturbs diseased structures.

Are we justified in handing cases over to Christian Science with its absurd philosophy, even granting that it can show good results? Or shall we encourage the clergy to act with us in treating the mind, which so often is an important link in the chain of nervous disorders? Can the clergy do anything by their present methods for those who have not the Faith? and is not lack of faith the great reason why so many people have resorted to Christian Science? Is not some method pertaining more to humbug and magic rather than that of orthodox Christianity the great cause of cure for those nervous disorders which we know so well? It seems impossible for us, brought up as we are on physical lines and only exerting our mental influence subconsciously, to be of much use in these cases, and it seems to me we are bound to put many of them in the hands of some clean and wholesome influence which can only be obtained from honest and enthusiastic clergy, rather than let them drift into the hands of the quacks of philosophy, whose influence appears to me to tend only to mysticism and decadence. Hypnotism, of course, has its value, but what I know of it seems to have a tendency to damage will power and to make its subjects dependent on an influence they cannot always get. In any case, our sphere is the physical, and it behoves us to realize the something more, which, if we cannot tackle ourselves, we must see is tackled by those who can. I daresay we can realize that our medicines are no good to a girl in love, and treat her accordingly, but what can we do for a man whose digestion is deranged because he has begun to lose his faith, or has embezzled, or has committed some other folly which confession and help from a good churchman will do much to remove, and so help us? We, on our part, are apt to assume that most mental disorders can be put right by attention to some bodily cause—for example, a toxaemia, shock, dyspepsia—and to overlook the points of the opposite school, which, on the other hand, errs in not realizing to how large an extent mental deviation is influenced by bodily ills. The latter will not recognize that, after all, the body (Brother Ass of St. Francis of Assisi) has much to answer for. What is wanted is the broad, tolerant view which sees that both are at fault in most cases, or that there exists some such vicious circle as body, mind; mind, body—for instance, indigestion, depression; depression, indigestion.

So much, then, for the present and immediate past—what of the future? May we not dimly forecast for our patients a perfection of vaccines, massage, and electricity; still greater perfection of public health, including eugenics, segregation of the infected and mentally deficient, sanatoriums for any one who will go to them, nurses and health teachers, and mental therapeutics brought to such a state in this new Utopia that the ordinary practitioner in medicine, *as now known*, will have but small scope? It seems to me he will be a properly paid district medical officer, whose supply will be adapted to a properly investigated demand, and whose character will be chosen for the character of the place he has to occupy, not as now, where a well-qualified cultured man has to moulder in a colliery district or a back slum of a big provincial town.

In conclusion, gentlemen, sometimes so hopeless do we feel when we behold the suffering and injustice around us, so much distasteful work from which we may not shrink, so intensely do we realize how little we know and how futile are our efforts, that we are inclined to bend our heads too low, and join in that chorus of pessimism which we hear when several of us are gathered together. Yet may we not, and do we not, in our private hearts sound the note of hope? Let us remember we are units in the great work of evolution started by some Great Force. Our very existence is a sign of our utility; in this present state of unrest and transition there is really nothing more stable and more necessary than our art to the public, and for ourselves no better means of avoiding boredom, nor better opiate nor antidote to sorrow than is our work. Is not the rudeness or ingratitude or misunderstanding of one patient completely counteracted by the bright smile at the next place we visit? Consolation comes if we think more of the nice people and our undoubted successes.

No one who studies the progress of medicine, even as exemplified by my experience in the past ten years, can fail to be impressed by the steady gleam of her lamps, by the tramp of her measured footsteps in the world of events, with the banners of sanity and thoughtfulness floating above.

SHROPSHIRE AND MID-WALES BRANCH.

THE COUNTRY PRACTITIONER OF TO-DAY.

By S. HALE PUCKLE, B.A.CAMB., M.B., C.M.EDIN.

IAN MACLAREN, in his book *Beside the Bonny Brier Bush*, has described in a charming collection of short stories, life in an agricultural district somewhere in the Scottish Lowlands. All the stories are good, but in none are humour and pathos so exquisitely blended as in "A Doctor of the Old School." If there is any one who can peruse the simple story of William Maclure without experiencing what is popularly known as a lump in the throat, or can read it aloud without a tremor in his voice, all I can say is I never met that man. The picture of the rugged, quaintly dressed figure enclosing the tenderest of hearts; the days and nights of unceasing toil in all weathers, on the back of his old grey pony, kept up for forty years without a day's cessation, gives us an idea of what a country practice might be, and often was, fifty years ago.

There is no doubt that as regards physical wear and tear we are better off than our predecessors in Maclure's day. Better roads and means of transport, and also the fact that our proportion in relation to population is greater, tend to lighten the physical strain. We do not feel, as our friend must have done, that it was either he or no one to stand between the patient and death. Nowadays, when areas then deemed barely able to support one medical man often maintain, in presumable affluence, three or four, it is impossible that any one should perish for want of medical attendance. In common with the rest of the community we have a clearer knowledge of the limitations of the human frame, and therefore are not so likely to commit the errors in eating, drinking, and living into which our forerunners so often fell. The limitations of the healing art in those days must also be taken into consideration. Diseases which we now attack with the assurance of success were then deemed hopeless; thus would be increased that mental strain and worry which every true physician must feel. To pronounce the grim verdict, "No hope," must have been a far more common experience then than now. So much for country practice in its broader sense.

What shall we say of the professional life in our own day? I think the advantages lie with us in this way. Owing to the fact that improved methods of science have given us a much better mental equipment in every department, we have, and know that we have, a better chance in the struggle against disease than ever before. A fight in which the odds are not overwhelmingly on the other side is infinitely more interesting than one in which we have no chance from the first. We do not lose heart. Again, we are able nowadays to keep more in touch with what goes on in the medical world, and have more opportunities of exchanging ideas with each other

than formerly, being helped thereto by Branch Association meetings and other gatherings of a similar nature. We are not so isolated as was the case in years gone by.

These things increase our interest and make for efficiency in our work.

As regards our social life, apart from our professional work, we have moved onwards with the times. The days, not so long ago in this country, when the doctor whose professional duties entailed spending a night under the roof of some local magnate was relegated to the servants' hall at meal times are past. The country doctor is now a welcome guest at social gatherings. The standard of general culture in our profession is now, thanks to public school and university training, much higher than formerly, and our status in the eyes of the laity has risen in proportion.

We can now interest ourselves in matters outside the beaten track of our profession. We have asserted ourselves as members of various public bodies. All this has tended to widen our views, and has made us more acceptable and accessible to our neighbours.

Undoubtedly we have our hardships as compared with our suburban colleagues; but the compensations which country life has to offer are also well realized by all who have enjoyed them. As a matter of fact the hardships are less and the compensations are greater now than they were fifty years ago.

In comparing the country practitioner of to-day and of fifty years ago, I have so far dealt with the credit side of the ledger. How does the debit side stand? Disadvantages there certainly are, both unavoidable and external and avoidable and internal—the one caused by the attitude of the outside public, the other by faults existing within our profession.

The demands of the public are far more exacting than they used to be. They expect more for their money from the doctor, that is to say, a higher standard of professional skill. More than ever is it the case that a doctor's mistake is never condoned. His is the one profession which is never allowed to make them. Seeing to what an extent the healing art has developed of late years, this is more or less to be expected. At the same time it increases the strain for us all. It implies our keeping more than ever in touch with what is being done towards advancing professional knowledge. Thus journals have or ought to be read, new editions have to be bought and when possible absorbed. How often does one feel that "So-and-so's" latest edition should be in our hands instead of the daily paper, when at the end of a strenuous day we find ourselves with an hour or two to spare! Not only has the standard of professional outfit been raised: more is expected of us in the way of accessories, such as our turn-outs, be it a horse and gig or a motor; also in our very clothes. Neither William Maclure's old grey pony nor "his checked breeks thrust into unpolished riding boots" would pass muster nowadays.

However, it must be done if we, whose student days are further off than we care to remember, intend to hold our own against the hundreds of younger men yearly turned out by the schools, who, theoretically at least, are so much better equipped than we are. Again, I do not think we have the same hold over our patients. Improved means of communication with the larger towns is a factor in the case. I doubt if any one has yet realized how we are affected by motor cars. The better class patient has a tendency to think that his or her case can only be diagnosed by a specialist, or at least a consultant—blessed word. Nowadays there are specialists in every conceivable ailment. The patient avails himself of a high-powered car to rush off to the nearest large town—a feat which would not have been possible ten years ago. As likely as not he does not seem to think it worth while to inform his local doctor. The next thing you hear is, "Oh, I was up in such a town the other day, and dropped in to see Dr. A.," naming some one whom you may probably only have met as a pure consultant, "and he gave me a prescription," and so on. I am relating an experience which must at some time or other have fallen to the lot of us all. People are apt to think that occurrences of this kind are mere trifles, hardly worth mentioning. They are trifles, but it is a case of "the little more and how much it is!" It would have been better if the celebrity in question had refused to treat the patient at all except through the medium of the ordinary medical attendant, and had sent his professional opinion and his prescription to him. Such a course would prevent friction, and would be only common etiquette, besides being helpful to his less experienced colleague.

The motor car which takes our patients away to large towns also brings into our practice the town medico in his capacity as general practitioner, not, as he has hitherto been in relation to us, as a consultant.

Another disadvantage under which we labour more acutely than the rest of the profession is overcrowding. I can say more acutely, because the stream of population tends *to* the towns and away *from* the rural districts. Thus areas which twenty-five years ago maintained one or two doctors now boast of twice or thrice that number, regardless of the fact that the census has in that period shown a reduction of hundreds in the population.

Now, one result of this plethora of medical men is that it enables the public to exploit the profession, to play one off against the other, and, I fear, with a certain amount of connivance on our part. This is done chiefly from the £ s. d. point of view. It makes it possible for people to say, "Oh, Doctor So-and-so only charges so much, whereas your fee is such and such."

Again, this is seen, but in a more acute form, in club and parish work. If the remuneration in many—nay, in most—cases does not amount to sweating, then the English language has no meaning. Again, why is it that insurance companies I could mention, boasting of their millions of reserve, dare to come and offer us half a crown for work which, if conscientiously done, is worth at least half a guinea? Simply because our profession is overcrowded, and moreover one in which the principle of combination, so successful in other professions and trades, is practically unknown. The other day an intimate acquaintance of mine had a visit from an agent who, as if conferring a royal favour, offered him the lucrative post of medical referee, naming the fee I have mentioned. To his evident surprise the bait was refused, and he said, with a fine air of sarcasm, "I suppose this is an example of that sturdy British independence which we are all taught to admire," or words to that effect. My friend simply remarked, "That is exactly it," and bowed him out.

If we would only as a body combine against that sort of thing—and it can be done with absolute certainty of success if we are but loyal to each other—we should raise ourselves in the estimation of the world at large. Our profession would be deemed none the less noble and self-sacrificing because we refused to prostitute it at the bidding of the wealthiest organizations of their kind that the world has ever known. Before leaving this subject I recommend to your thoughtful notice the address by Dr. D. J. Williams, entitled "Hercules and the Wagoner," published in the Journal for July 24th, 1909.

There are other adverse factors against which we have to contend of which our forerunners were blissfully ignorant. Under this head come the prescribing chemist, the compressed drug manufacturer, and the patent medicine vendor. The first affects the poorer class of our patients, who form the chief *clientèle* of herbalists, bone-setters, *et hoc genus omne*, the lineal descendants of the "wise women," witches, and wizards of bygone days. Compressed drugs, on the other hand, affect the better class among our patients, and are a more serious grievance still. Thanks to the fact that many daily papers and magazines are full of articles on popular medicine, in many cases signed by members of the profession, the public have, or think they have, a sort of nodding acquaintance with most ailments and their remedies. Now comes the chance of the compressed drug, which, by the way, is generally labelled "As the physician directs." He very seldom gets the chance. A peep into the family medicine cupboard would help us to realize the effect of the compressed drug on our incomes. It is no use grumbling; it is one of those facts which must be taken "lying down."

Thirdly, we have the quack remedies whose composition as shown by the recent articles in the Journal, now published in book form (*Secret Remedies*), is a striking testimony to the credulity of all classes in anything that they read.

The tendency of the present day is, as of old, still to seek to tell and to hear some new thing. It is an age of fads, and in the healing art the fad has its apotheosis in

Christian Science, which, whatever may be said against it, is a sign of the times in which we live, and has come to stop.

I have briefly and I fear inadequately outlined our position nowadays as contrasted with that of our forerunners in the last generation. The net result can be tersely summed up thus: Increasing expenses, decreasing incomes. In many cases the causes are unavoidable, the results natural, and the remedies yet to seek. We are powerless against overcrowding in the profession except so far as we can advise our sons not to follow in our steps. We are equally helpless against the prescribing chemist, the compressed drug and the quack medicine. These simply represent demand and supply.

As regards the treatment meted out to us by private patients and public bodies, we can, I think, do something. That something lies in the direction of an altered relationship between the members of the profession from top to bottom, whether consultants, specialists, or general practitioners. We talk glibly of the golden rule; how often do we act upon it? Is it not sometimes a case of, "Do unto others as you *think* they would do unto you, but do it first"? We are sometimes lacking in a spirit of loyalty to each other. It is the fashion in the pulpit, on the platform, and in the press to speak of "the noble profession of medicine." At the same time I am bound to say that the treatment sometimes meted out to us would be tolerated by no other profession. And I am also bound to say that in a great measure the fault is ours. I give an instance that came under my notice a short time ago. A colleague of mine, in order to hasten an undoubted but tedious convalescence, sent a patient to a well-known spa to complete the cure, directing him to put himself in touch with one of the medical men there. In due course the patient returned home cured, and informed his acquaintances far and near, on the strength of the doctor's statement, that my friend's diagnosis had been entirely wrong, his treatment equally at fault. Now even if this statement were true, which it certainly was not, it was an act of disloyalty towards a professional brother, and injurious to the reputation of a man who, to put the case in its most sordid light, had put indirectly a substantial fee into the other's pocket. Now this I mention as an illustration of what ought not to be, and I fear others can out of the treasure house of their experience give parallel instances of disloyalty. I have alluded to the tendency people have to play us off one against the other to their own advantage. It is cases like this that lead them to think they can do so with impunity, and enables them so to do.

By the universal consensus of public opinion ours is deemed—and we believe rightly—a noble profession. The term connotes our attitude to suffering humanity; let us see to it that it also defines our relation to each other. From the moment that absolute loyalty and confidence become the guiding motive in our dealings with our professional brothers, our position is assured.

Why does it so often happen that those professional colleagues with whom we are on the most friendly and intimate terms are to be found outside the ten-mile radius?

Professions, like individuals, are taken at their own valuation, and once prove to the world that any injustice in word or act inflicted on an individual will meet with no favour from his colleagues, then, and only then, shall our profession have arrived at the true measure of its nobility.

The moral of all this is the need for hearty and unselfish co-operation and combination within our ranks as being the only way of successfully confronting the numerous forces attacking us from without. It is useless for a few to make a stand against encroachment on our right to a place in the sun at the hands of private patients and public bodies, if within our ranks are to be found those who are willing to accept what others with the true interests of the profession at heart indignantly reject. It is no use presenting a bold front to the common foe if you know that you will probably be stabbed in the back by a so-called friend.

We must live, and, when all is said, the labourer is worthy of his hire. Surely, therefore, in the common interest it should be possible, say, for neighbouring colleagues to put a stop to underselling, by mutually agreeing on a scale of charges suitable to each district, and based on occupation and mileage, and loyally keeping to it. That is one line our combination might take, and, although more or less a sordid detail, is none the less an important one.

That "union is strength" has been true for all ages, and, now that the struggle for existence is daily growing fiercer and fiercer, has passed beyond the region of platitude.

In conclusion, in the words of the Book of Common Prayer, "let us lay to heart the great dangers we are in by our unhappy divisions." If we once realize that, we shall surely find a way of promoting that union and concord which can alone make our profession a truly noble one.

MIDLAND BRANCH.

ON THE WORKING OF THE WORKMEN'S COMPENSATION ACT OF 1906.

By W. H. B. BROOK, M.D., F.R.C.S.,

President of the Branch; Surgeon, Lincoln County Hospital, and Coroner for the Lincoln (North) District.

THE great majority of cases for compensation under the Workmen's Compensation Act are of a fairly simple nature; a man loses his life or a limb or an eye, or sustains a definite injury or disability which incapacitates him for a longer or shorter time. Others, however, may present the greatest difficulty, all the more sometimes because of their apparent simplicity, and we have to be on our guard lest we only perceive that difficulty when in the witness-box. It may be that, simple as the case appears from the medical point of view, it may present some complication to the legal mind, and we have to remember that it is the legal mind upon which we as medical witnesses have to make an impression.

Among these more difficult cases I would place:

1. Hernia.
2. Appendicitis.
3. Strains of muscles, tendons, and ligaments.
4. The after-effects of fractures and dislocations.
5. The effects of accident or occupation upon those predisposed to or suffering from disease, for example:
   - (*a*) The tuberculous tendency.
   - (*b*) Syphilis and venereal disease generally.
   - (*c*) Haemophilia.
   - (*d*) Varicose veins.
   - (*e*) Renal calculus.
6. The increased risk of accident to those suffering from certain defects or disorders, for example:
   - (*a*) Visual defects, namely, loss of binocular vision, whether due to the actual loss of an eye or to amblyopia; uncorrected disorders of refraction, such as myopia or astigmatism.
   - (*b*) Epilepsy and other nervous affections which would cause risk of falling.
   - (*c*) Lameness, which would also cause increased risk of fall.
   - (*d*) Injuries such as a stiff finger, which would be apt to get in the way.
7. That large and important group typified by the so-called "railway spine."

Hernia.

In order to constitute valid ground for a claim to compensation it must be proved that the hernia has been due to sudden strain caused by the actual work at which the man was employed.

The Departmental Committee on Compensation for Industrial Diseases in its report dated May, 1907, was very clear on this point, saying:

> Hernia is only very rarely due to a sudden strain, in which case, if caused by the employment, it would be the subject of compensation. What usually happens is that some cough or particular strain brings down a little further a hernia, which has been slowly developing, so as first to make it prominent and attract attention. Hernia is never the result of a series of strains undergone in the course of employment, and cannot be regarded, among workmen in any trade, either as an industrial disease or as an injury, not being an accident, due to their employment.

In these circumstances the Committee held that hernia cannot be included in the schedule. We find, therefore, that in order to obtain compensation for hernia the workman must prove that it was caused by a sudden strain in the course of his employment, and it must not have been present in the slightest degree previously; if it was so present, there is no claim.

But these are not the only problems presented by hernia. It has been decided by a judge of one of the county courts that, even in a case where a workman has a good claim to

compensation for hernia, he may be required to undergo an operation for the radical relief of that disability, and if he refuses to submit to such operation he loses all claim to compensation. This is a decision of far-reaching effect.

In connexion with this another point arises: A workman who has never knowingly suffered from hernia suddenly develops one as the alleged result of a severe strain. He undergoes a radical operation, in the performance of which the hernia is found to have taken place into an unobliterated processus vaginalis. Should this fact be taken as a proof that the man had a previously existing hernia, latent or potential, if not actually present, and should he therefore be debarred from any claim to compensation? We have to look at this from a broad point of view and be just to both sides; my own opinion is that if the workman had not been aware of the existence of any hernia previous to its appearance after a sudden strain, he should be entitled to compensation.

Appendicitis.

Appendicitis is not in the schedule of industrial diseases, but a case came to my knowledge in which a workman claimed compensation for an attack of appendicitis, which was, he alleged, due to a strain whilst at work. In this instance, however, the man recovered with medical treatment, and the case was settled without going into court.

My own impression is that muscular exertion or injury would not cause appendicitis in a man whose appendix was healthy; there must be a predisposition, and this disease will therefore fall into the same category as hernia.

Strains and the After-Effects of Fracture.

Strains of muscles, tendons, and ligaments and the after-effects of fractures and dislocations may be considered together. These injuries often give rise to a class of case which is very apt to drift on, the chief difficulty being to decide when the workman has really recovered. In the majority of cases men are genuinely anxious to return to work as soon as fit, but now and again instances occur in which a man states that he cannot do any work which involves strain on the injured ligament, muscle, or bone, and may claim heavy damages. It may be extremely difficult to disprove the man's statement, and in the majority of cases the decision of the court would go for him. A malingerer has learnt by experience the movements that caused pain originally, and might say that the pain still continues on movement—a statement very hard to disprove, generally only by catching the man unawares. Fortunately, these fraudulent cases do not often occur.

Influence of Accident or Occupation on Predisposition.

The tuberculous tendency considerably increases the risk of accident. For example, a man in the course of his work received a blow on the testicle, which became inflamed, and the case proved to be one of tuberculous disease, which became general. Or, again, a man the subject of an old and presumably healed tuberculous caries of the spine falls and hurts his back, lighting up the tuberculous focus. Undoubtedly in these cases the accident had something to do with the result, but the chief factor was the tendency to disease.

Syphilis is chiefly of importance on account of the arterial degeneration to which it so often gives rise, resulting in thrombosis and aneurysm. Thrombosis is not, perhaps, of industrial importance, but aneurysm is distinctly so, especially when we consider a case lately decided in the Court of Appeal. A man the subject of aneurysm died from rupture of the aneurysm whilst engaged in tightening a nut with a spanner. The Court awarded his family compensation. The case suggests several points. For example: Ought a man the subject of aneurysm to be allowed to do any laborious work? How would the compensation be affected if it could be shown that the disease existed previously to entering upon the employment in the course of which death occurred? In such an instance, supposing that it could be shown that the aneurysm was due to the strain of an earlier occupation, would the former employer be brought into the damages? If it could be proved that the arterial degeneration was definitely due to syphilis, would this be considered as lessening the amount of compensation? Surely such a case points to the importance not only to the employer, but also to the workman, of a routine medical examination, for it would not only have saved the former from having to pay, but it would have warned the latter of his danger, and have enabled him to take such precautions as would have prolonged life. But syphilis also is of grave importance in cases of injury to the eye. A man receives an injury to the cornea or a blow on the sclerotic, and immediately develops interstitial keratitis; he shows the stigmata of congenital syphilis; has his accident really anything to do with the keratitis? A man whilst at work received a blow on the testicle which inflamed and swelled; he was found to be suffering from an uncured gonorrhoea; the patient soon returned to work, but if the case had gone into court it would have caused some difficulty.

Haemophilia.—The probability is that no marked instance of this tendency would be met with at work, but it is by no means uncommon to meet with men who bleed to an unusual extent after comparatively slight injuries.

Varicose veins may be a source of great danger to those who have to stand for a long time, a strong argument for the routine medical examination of employees.

Renal Calculus.—Where an accident is complicated by some disease we have to take care to distinguish clearly between any disability due to the accident and that which is due solely to the disease. For example, a man received a blow over the hypogastrium, and subsequently passed blood in the urine. It was only when the haematuria recurred at intervals with pain in the loin that it became evident that it was due to the presence of a calculus, and that the accident had nothing to do with the trouble. On the other hand, it might be held that although the accident had not caused the calculus, nevertheless by moving the stone it had caused the haematuria.

Increased Risk of Accident Due to Defects or Disorders.

Visual Defects.—It cannot be denied that there is a serious risk of accident in the case of men employed amongst machinery who have not binocular vision, whether due to actual loss of one eye or to unilateral amblyopia. Such a man would be apt to misjudge the distance of moving machinery, with possibly fatal result. To a less extent this applies to those suffering from uncorrected myopia or astigmatism, especially in the case of chauffeurs.

Epilepsy.—An extreme case would be that of a man who had had an epileptic attack; in a subsequent fit he might fall into fire or water or into machinery, and sustain a serious or fatal injury.

Previous Injury.—A less extreme case would be that of lameness, which would cause increased risk in going up ladders, or an injury leading to stiffness might lead to a finger being caught in machinery.

Traumatic Neurasthenia.—There is another class of case which gives rise to considerable trouble—namely, those in which the injured man shows an extraordinary inability to throw off the effects of his injury, or passes into a condition of nervous breakdown, similar to that met with in cases of so-called "railway spine," a condition which has received the name of "aboulia," from the loss of will power that is characteristic of these cases. Some are malingerers, in which case they either give themselves away on being watched, or else recover marvellously after the case is settled. It must be borne in mind, however, that this may happen in a genuine case, no improvement occurring until the patient's mind is set at rest by the settlement. Sometimes the injury is of the most trivial nature, a trapped finger or toe, a splinter in the hand, or a sprained ankle. It is generally not difficult to tell when there is deliberate imposture or malingering; these form a class to themselves and need special care lest they pass into a condition of chronic invalidism.

Contracting Out: Medical Examination.

It will appear as though the difficulties have been simply dealt with from the point of view of the employer; this, however, is not the case. The fact is that in actual practice the workman has no great difficulty in making good his claim; the odds are immensely in his favour; it is on the employer that the onus falls of disproving an exorbitant, or possibly even fraudulent, claim. This condition of things, however, in the long run will affect the workman adversely, for there is a natural tendency on the part

of employers to look askance at an applicant for a job who suffers from any physical defect, or who is advanced in life, a tendency which will be increased if, as I believe is the case, insurance offices refuse to insure workmen over 45 years of age.

We have seen that in the case of hernia, in order to form a valid ground for compensation, it must have been caused by a *sudden* strain in the course of employment. If it were present in the slightest degree previously, there is no claim. It seems as though a principle were introduced here which ought logically to have been extended in its application by the framers of the Act; if the presence of a hernia, however small, debars the workman from setting up a claim should a subsequent strain increase the rupture, then surely the presence of a disability, or definite tendency to some accident, ought largely to modify that claim if the disability or accident should occur. In short, it ought to be possible for the employer and workman to "contract out" of the Act so far as regards the result of any definite disability or liability to injury from which the man may have been suffering at the time of his entering on his employment.

This brings us to a second point—how are these defects in workmen to be ascertained? Obviously, there is only one way of accomplishing this—namely, by the routine examination of all workmen, not only on entering employment, but also at regular intervals; a procedure which is all the more necessary now that insurance offices are, as I understand, discriminating between those workmen who have and those who have not undergone a medical examination.

The adoption of these two remedies—namely, medical examination and permission to "contract out"—would, I am sure, be of the greatest benefit to both workman and employer; the former would be assured of greater fixity of tenure of his employment, and the latter would be safeguarded from any unusual risk due to physical defect on the part of the workman.

There is, however, another aspect of the working of this Act which demands our serious consideration, for it is a matter which affects us seriously, and which, moreover, at present rests entirely in our hands.

How far are accidents occurring during employment cases for charity, and ought they to be treated at the general hospitals? This is a large question, but it is one that will sooner or later have to be dealt with. It affects our whole well-being, and in dealing with it it behoves us to present a united determination.

We none of us grudge the time and trouble spent on genuine cases of charity, but there is a growing feeling that when these "compensation cases" come for treatment at a hospital as objects of charity, or because the employers subscribe some small sum to the funds of the institution, the profession as a body is being exploited. Such cases as a rule are not objects of charity; the expense of treating accidents has now to be borne by the employers; it is to their interest to see that their workmen are restored to health as quickly as possible. Why, then, should we as a profession do this work without remuneration?

I do not wish to imply that the members of hospital staffs should alone be remunerated, but that all cases of accident should be treated by the profession generally, only the more severe cases being sent to a hospital.

This is a subject which is constantly coming to the front in our hospital administration, and it is one that we ought to discuss and consider seriously, for it will before long be a matter of vital importance to us all.

SOUTH-WESTERN BRANCH.

THE DOCTOR AND THE PUBLIC.

By S. NOY SCOTT, M.R.C.S., L.R.C.P., D.P.H.

DR. NOY SCOTT said the majority of doctors were probably interested in the material as well as the scientific aspect of their work, but unfortunately a somewhat ungrateful public were apt to fancy, or their actions suggested it, that the majority of doctors had no necessity to consider the financial side at all. Generally speaking, a very large section of the public seemed to consider that the doctor was amply repaid for his services by the gratification he experienced when he successfully diagnosed and cured the disease. The question of what was a satisfactory fee was one of considerable difficulty, especially as the universal custom of the profession was to fix fees according to the supposed capacity of the patients to pay. That custom seemed to be too firmly fixed to be altered, but, on the other hand, he did not think it impossible for the medical men of each particular neighbourhood to agree on some scale which could be approximately uniform. If this were the recognized rule, they would get rid once and for all of the disturber of the peace, the man who undersold. He did not very much care what fee was agreed upon, so long as it was locally the standard; for he did not blame the practitioner whose lot was thrown among the poor industrial classes of our great towns, and who accepted the humble fee of one shilling, for it must not be forgotten that in those districts he was thrown into severe and often unfair competition with charitable organizations, such as hospitals, which, under pretence of charging something for medicines and dressings, were mean and undignified enough to accept a few pence for the services which were given to the hospitals by the members of the staff. If a hospital could not be run entirely on charitable lines, it should be converted into a provident dispensary, to which only members should be admitted, and the staff of which should be chosen by the subscribing members. The out-patient department of the hospital was the great offender, and, although there was much pretence of inquiry into the ability of the patients to pay, yet he had very little belief in the completeness of such inquiry. He had much sympathy with those who recommended the abolition of all out-patient work except for emergencies and accident; and even for them he would limit the attendance to the actual day on which they occurred. The way in which large employers of labour posed as philanthropists simply because they made an annual contribution to the hospital funds, in return for which they had the right of sending their employees to the hospital for treatment, was little short of scandalous. What would be the result of the abolition of the out-patient department? First, a considerable monetary saving to the hospital. Figures taken from the annual statement of a local hospital showed that out of a total expenditure on the out-patient department of £227, only £54 was spent in surgery and dispensary, so that it appeared that to properly expend £54 in medical treatment it was first necessary to spend £173. The further result of such abolition would be that the patients who at present crowded the out-patient department would immediately divide themselves into (1) those who could consult the general practitioner; (2) those who would resort to the Poor Law medical officer; and (3) those who would go to the provident dispensary. By this arrangement the periodical and justifiable complaints as to hospitals underselling and unfairly competing with local medical men would at once cease.

Another form of competition which was most undesirable and undignified was that concerned with contract or club practice. On this matter, whatever their politics, he thought they were unanimous in desiring a measure of Tariff Reform, for the present rate of payment was absurd if it was looked upon as any adequate return for services rendered. Some would say that club practice was simply a semi-charitable service. That might have been so at one time, but the working men nowadays refused to allow it, and said it was a simple business arrangement, by which payment for the many covered work done for the few. It would be better for the profession to agree to this statement, and then proceed to put such payment on an equitable basis. Medical men held the trump card, and by a little combination among themselves could obtain from benefit societies something like a reasonable remuneration for their services; and, further, they might with great prospect of success insist on some wage-earning limit by which members of benefit societies who had reached a high earning capacity should automatically cease to receive medical attendance at club rates. He himself had had the annoying experience of having to attend a club patient who was receiving between £6 and £7 a week from various benefit and accident insurance societies, and that whilst he was only paying a doctor at the rate of 4s. a year. In some districts in England he believed it was as low as 2s. 6d. or 3s. per year. This system could be abolished if

the profession liked, and he was of opinion that with a little pressure, which, however, must be universal, they might obtain from every member of a club a payment of 10s. per year. It was, unfortunately, almost beyond hope that the club system would ever be abolished. Indeed, as time went on it seemed to be becoming more and more an axiom that for a certain large section of society no other means of paying a medical man would be possible, for whether by benefit societies, provident dispensaries, or the scheme adumbrated by the Majority and Minority reports of the late Poor Law Commission, it was obvious that payment during health was to be the means of providing medical fees during illness. He took it there could be no serious objection to such a method if it did not result in the doctor becoming a sweated and underpaid official. This untoward result could only be avoided by absolute unanimity in the profession. "Forewarned is forearmed" must be their watchword. Let them by some means or another get the opinion of all, and present it to the country as the united opinion of men who knew what they were asking for, and were determined to accept nothing less. Then they would create in time a body of practitioners who would have not only sufficient remuneration, but time to enable them to contribute valuable opinions on many of the disputed problems of disease and heredity.

How many men were there at present in active country work who had sufficient time or energy after a hard day's work to record the facts which each day's work brought to light? What he would like to see was a race of men who should have the opportunity to be lifelong medical students. The proper treatment of disease did not only mean the use of certain drugs, but the widest use of all the influences which they could bring to bear upon their patients and their temperaments and idiosyncrasies. It was in that particular line that the power of the general practitioner could be shown, for the longer he lived and the greater his experience of his patients and their diseases the more successfully did he treat them. What valuable contributions the general practitioner could make to such important matters as the early symptoms of grave organic disease, the real effects of the more common drugs, the vexed question of the heredity of disease, or the more difficult one of the origin of all the infectious diseases! He had been frequently amused by the poorness of the evidence brought forward at some of their meetings for or against the particular subject which was being discussed. He did not think it would be unfair to characterize much of it as mere statements of opinion rather than deductions from observed facts. Whether a disease manifested itself because it was inherited or because the predisposition to it was, the practical question which wanted solution was as to how its manifestations should be prevented, and here was a very wide and valuable field for the general practitioner. No one, however enthusiastic, could with any hope of general adoption put forward a scheme by which men and women with inherited predisposition to a particular disease could be prevented from propagating their species, for at present they were, generally speaking, quite ignorant of how to detect such inherited predisposition. The easier course, therefore, was to direct their energies towards the more important question of early detection of the disease. With regard to whether infectious diseases ever arose *ne novo*, Dr. Scott emphasized the need of avoiding the absolute adoption of theories which would mean a refusal to investigate the possibility of *de novo* origin. If they did refuse so to investigate they ran the risk of becoming cramped and warped in their methods, and were simply taking the line of least resistance. Was there not in disease a place for the doctrine of evolution? The processes of evolution were eternally recurring. He could not understand the attitude of a man who, being an upholder of the doctrine of evolution, at the same time denied the possibility of the *de novo* origin of infectious disease. All, he supposed, were ready to grant that every phenomenon of life, in health and disease, was the resultant of the forces of environment. That being so, it required no great imagination to frame such a combination of circumstances as would conduce to or actually produce a particular disease. Let them contrast the so-called infectious diseases with the so-called industrial diseases. In the latter it was manifestly easy to prove that circumstances and not germs produced the disease, and they were certainly on the right tack in their warfare against industrial disease when they attacked those circumstances and endeavoured to alter the environments which produced them. He thought it would be wiser if some of the energy at present given to the study of germs was diverted to the study of environment.

Dr. Scott proceeded to discuss possible developments in the control of hospitals which might occur in the future. He remarked that there was an apparent tendency towards making them less and less charitable institutions and more and more State-aided, and as a necessary development more or less State-controlled. Personally, he hoped never to see our hospitals State-controlled. Let our present hospitals continue as they were, the homes of the grandest philanthropy which the world had ever seen; the fields for the noblest efforts of purely voluntary workers against disease; the proper and legitimate resort of people not rich enough to pay for skilled medical or surgical treatment; and let there also be such a development of the Poor Law infirmaries as would enable them to deal first with such cases as only required skilled nursing and proper food, and secondly with all applicants who were proper recipients of Poor Law or State relief. Side by side with these, there might be a gradual growth of private nursing homes. In conclusion, the President expressed himself as emphatically in favour of the resolution of the Salford Division:

> That in every form of public medical service a system of part-time appointments of medical practitioners should be maintained, as far as such appointments can be made consistently with the requirements of the service; and that all public medical officers should be protected in carrying out their duties, should be secured from capricious dismissal or reduction of salary, and should be allowed to participate in any superannuation scheme approved by the Local Government Board.

It appeared to him that the proper solution was to obtain for the present holders and for their successors such salaries as they would consider worth working for, and throw all their endeavours towards obtaining a better co-ordination of their work with that of the county medical officer of health.

THE FUTURE PROSPECTS AND POSITION OF THE MEDICAL PROFESSION UNDER POOR LAW COMMISSION REPORTS AND PROPOSALS, AND A PUBLIC MEDICAL SERVICE.

Being an Introduction to a Discussion at the Annual Meeting of the Edinburgh Branch of the British Medical Association.

By MICHAEL DEWAR, M.D.

In reviewing the present legislative tendency in its medical aspects, and the probable prospects and position of the profession in the near future, I am not altogether an optimist, believing that everything will come right, and that we will muddle through some way, and I am not a pessimist, fearing that, while the profession under some of the schemes may be badly hurt, it will be entirely ruined as an income-earning profession. But in order to make the best of things, and protect our interest, I hold that we must be up and doing, that we must realize accurately what is going on, that we must be more united, and by expressed opinion and resolution give a lead as to what is best for the community and the profession. We cannot go on as in the past, and expect laymen to do for us what should in a great measure be done by ourselves. I am sorry to say that the old fine feeling of the sentimental relationship between medical men and their patients is passing away as the times have altered; the public in these more strenuous and utilitarian days have given up these feelings, and the connexion has practically come to be a simple matter of pounds, shillings, and pence—to get the cheapest medical service possible. I know that some of the older practitioners still cling to the old sentiment, and try to believe that it is still existent. But my experience tells me another story. We apparently must do likewise, and adopt a better business attitude as a principle of self-protection. Our first

duty in these times, in view of the present legislative tendency, is to help ourselves, by standing shoulder to shoulder, by avoiding jealousies and underselling. We must be loyal to one another, take a greater individual interest in medico-sociological matters, be less apathetic, demand a fair remuneration for good work done; let the governing authorities and the public realize that we are no longer to be exploited, and every one of us will be in a better position, and the status of the profession, which is gradually being lowered in the minds of the public, owing to the poor remuneration so many receive, will be raised.

The Royal Poor Law Commission appointed on December 4th, 1905, was appointed to

1. Examine the working of the laws relating to the relief of poor persons in the United Kingdom.
2. Look into the various means which have been adopted outside the Poor Laws for meeting distress arising from want of employment, particularly during periods of severe industrial depression.
3. Consider and report whether any, and if so what, modification of the Poor Laws, or changes in their administration, or fresh legislation for dealing with distress, are advisable.

After three years' sittings the Commission issued its report on February 17th, 1909, in the form of a Majority and Minority Report. It is impossible in a short paper to enter fully into the question raised. It is only possible to touch the fringe of the subject.

Both parties alike advocate the destruction of the present Poor Law system, the abolition of the workhouse, and the abandonment of the principles of the 1834 Act. While doing so they condemn the system alone and not the work of the Poor Law officers.

For administrative purposes the Majority suggest the formation of a central authority within an enlarged area, partly elected and partly co-opted, to be called the Public Assistance Authority, supervising the committees to be known as the County Medical Assistance and the Local Medical Assistance Committees.

The Minority recommend a county or county-borough central council, supervising a county medical service formed by the union of the new Poor Law medical service and the existing public health services, which in turn would control four committees—education, health, asylum, and pension. It will be seen that for administrative purposes the two suggestions are much alike in character, only differing a little in detail.

Without entering into the various items of the two schemes for carrying out the purposes indicated, it will be sufficient to say that the main proposals are as follows:

The Majority Report.

1. The establishment of provident dispensaries to provide medical assistance for all persons under a certain wage limit, who will pay a small contribution, and for the destitute, whose subscriptions will be paid by the Public Assistance Authority.
2. A free choice of doctor.
3. All registered practitioners to be eligible for the work.
4. No disfranchisement for benefits received.

The Minority Report.

1. A unified State medical service open to all.
2. Whole-time medical officers to be paid by the State.
3. The State to have power to recover charges from patients who are able to pay.

Before proceeding to criticize these proposals, I may allude to Dr. McVail's report and the Scottish report in a few words. Dr. McVail condemns the Poor Law medical service, on the ground that it is immoral to confer personal benefits without any requirements as to good order and obedience. If the Poor Law is to be reformed, the policy must be changed. He makes two alternative recommendations:

1. If the guardians are to remain, the Local Government Board must exercise much greater authority, and should have the power and the will to enforce its rules and regulations.
2. He advises and prefers reconstruction under an authority with power to give medical relief in destitution, and also to take charge of all other public medical duties, with the primary object of the preservation of bodily and mental health, and the prevention and cure of disease; in short he would place everything under the public health authority.

He also condemns a free medical service, but approves of medical provident institutions subsidized by the State for which all practitioners would be eligible, and subscribers to have a free choice of doctor. He believes that under such a scheme friendly societies would discontinue the provision of medical attendance and medicines, and that the abuse of hospital out-patient departments would disappear.

The Commissioners also issued a Majority and Minority Report on Scottish Poor Law reform very much on the same lines as the English report. Both parties draw attention to the abuse of medical charities in medical relief in Scotland, and express their surprise and think it remarkable that, in spite of the vaunted Scottish thrift and independence, there should not exist in any of the large towns of Scotland a single provident dispensary or public medical service on a provident basis, such as exist in many English towns. They are of opinion that the chief advantage of a public medical service is the effect produced on the national character, since it enables the working classes to preserve a spirit of independence instead of resorting to the Poor Law service or charity. They are also surprised that hospital abuse by those able to pay should exist to such an extent in Scotland, and think that it is most illogical that, while the patient in a Poor Law hospital is subjected to the stigma of pauperism, liable to disfranchisement, and that he or his relatives may be called upon to refund the cost of treatment in whole or part, the patient who accepts voluntary hospital relief is entirely exempt from all these liabilities. They both recommend that in Scotland there should be a better supply of hospital accommodation, based on the needs of each public authority area, and that a united effort should be made to prevent hospital abuse. In addition, the Majority recommend, in connexion with the administration of the Poor Law in Scotland, that the Local Government Board should continue to be the central authority with greater powers as regards administration and supervision; that they should have greater powers of initiative and guidance in matters of principle; that the status of the Board should be raised, and that the salaries of the members and chief officers should also be raised. In other respects the proposals are similar to those for England.

To summarize, the Majority recommend huge dispensaries subsidized by the State, for which there should be no special officers, but that the work should be distributed among all medical practitioners who are willing to act.

The Minority recommend the creation of a unified State medical service, in which the officers would give their whole time to the duties, and their salaries be paid by the State.

It is fairly evident that the Poor-Law medical service for the destitute should be under the control and administration of one local authority in each area; that the area should be a county or borough county, thus doing away with the petty interferences and tyranny of some members of small boards over the district medical officer, as have been experienced in the past in all small and outlying parishes. The evidence taken by the Commission clearly proved that under the present system district medical officers have been very badly used and much underpaid, and have not been encouraged to put out their best efforts. In no case do the reports blame the district medical officer; on the contrary, both of the reports speak of them in terms of the highest praise, and attribute any defects to the system under which they are compelled to carry out their duties

Provident dispensaries as proposed by the Majority would apparently offer a large measure of free medical relief without any adequate safeguard either to the profession or to the ratepayer. The dispensaries established by the enrolment of the lower working classes on a small contributory basis, and of the destitute paid for by the State, would be provident in name only, and the offer of free institutional relief could not be met in urban centres without largely augmenting the present accommodation. This would be very expensive. It appears as if the policy of the Majority Report might in practice lead to a multiplicity of small whole-time appointments at £250 a year and less—a condition which would not be to the interests of the public health, and certainly not to those of the profession. The Majority Report is much like the Minority Report in this respect. In fact, the Majority Report offers a continuance of the existing conditions

with miserable pay, and an extension on the lines of the lowest club practice. From the conflicting statements made in both reports, it is difficult to get any clear idea as to the exact relations that are proposed between the State and the dispensaries. It may be superficially attractive to some general practitioners that a system should be established whereby all persons below a certain wage limit should be members of a great dispensary system, the medical staff consisting of all practitioners who are willing to act, lured by the off-chance that there would be fewer bad debts incurred among the working classes. But would this be all it is painted? I think not. I believe that the efficiency of provident dispensaries for medical service, if established at all, will depend on the management being kept entirely in the hands of the medical profession. Club practice, as we know it, is a form of medical charity, whatever may be the view of the public or the friendly societies, wherein the advantage to the patient is out of all proportion greater than the advantage to the doctor, and the difference is pure charity. Therefore, control of the medical service ought to be from our point of view in the hands of the profession. Could proper control and efficiency be retained if the provident dispensary became partly a State service? I fear not. Certainly the Majority Report does not propose that the dispensaries should be completely absorbed into a State service, but experience has taught us that any connexion with the State means State control. The State is to pay the subscription for the aged and widows with young children. Will its function cease with the payment of these fees? No; it will more than likely lead to various other matters, such as inspection, records of attendance and treatment, and consequent expense. It will also lead to fresh complications on the question of food and medical extras, so that if there is the free choice of the doctor, the number of State patients that any doctor would get on his list would depend on the way in which the doctor ordered extras, and closed his eyes to bad personal habits and hygiene. Further, in a few years all the poor would probably become members of the provident dispensary, thus doing away entirely with the district medical officer. This result might or might not follow; as it would depend very much on one chief factor. In some districts the Public Assistance Authority, with strong ideas of the value of deterrence, would give very few paupers the privilege of the dispensary, and the district medical officer would be retained. In other districts, with a desire on the part of the authorities to do away with the stigma of pauperism, all paupers would be enrolled in the dispensary, and the district medical officer would be of no further use. In short, a similar result would be produced as under the Minority scheme, where none but whole time medical officers are intended. The wage limit would also cause disagreements between the authorities, who are always ready to favour the public, and the profession, who are not united enough to resist exploitation, because a uniform limit cannot be fixed owing to the different conditions in different areas, and we would possibly find the public authorities even harder tax-masters than the friendly societies. For these and other reasons, which cannot now be mentioned, a huge State dispensary as recommended by the Majority would be a calamity, both to the community and the profession. On the whole, however, the recommendations of the Majority, except the medical service scheme, seem to be superior to those of the Minority proposals, inasmuch as they recognize the necessity of a destitution authority.

The Minority Report has been described by more than one critic as a fairy fabric, built up specially for district medical officers on very unstable foundations. The apparent intention of the Minority scheme is to pave the way to a free medical service for all comers, as there are repeated allusions to arrangements for legal assessments to be made by the Registrar of Public Assistance, and that the proposed unified State service does not necessarily involve "gratuitous treatment for all comers." The real meaning of the Minority Report is gratuitous service in the end. Dr. Vipont Brown, a strong supporter of this scheme, says that under the Majority scheme the profession would be handed over body and soul to be the slaves of the provident dispensary; whereas under the Minority scheme those of us who do not choose general practice would be transformed into self-respecting civil servants, acting under the Medical Officer of Health. I quite agree with him in his remarks on the slavery of the provident dispensary, but join issue with him in his second statement. Dr. Brown adds, What does it matter whether or no the scheme involves gratuitous treatment for all applicants provided we are well paid? That is the rub. Dr. Brown must have great faith in the State as paymasters. The Minority Report supporters, if you read between the lines, consider £250 a year a very handsome salary. Mr. Sidney Webb says the medical man in a thing of this kind counts for nothing, the general public is everything. Mr. John Burns before he came into office estimated no man's work worth more than £500 a year. As a further illustration of the way in which certain people endeavour to do away with payment to doctors for services rendered, I may allude to the memorandum[1] issued recently by the National Committee for the Prevention of Destitution, of which the Dean of Norwich is President, and Mrs. Sidney Webb one of the vice-presidents, objecting to Clause 17 of the Midwives Bill on the ground that payment of a fee to a doctor, who may be called in by a midwife to assist her in an emergency, would pauperize the patient. The committee would prefer, as usual, to exploit the doctor rather than run any risk of placing the patient under the supervision of the local supervising authorities. Yet the committee has not a word to say against Clause 16. Of two evils I would choose what I would consider the least—better to trust to the generosity of the public than the State. It will be a poor day for the public when the natural independence of the medical profession is exchanged for any system of nearly universal officialism. At the present time the great evil is the amount of gratuitous work given to the public. The Minority propose to increase the gratuitous work, and to pay the general practitioners by making many of them State officials. The result would be the ruin of the independent general practitioner, since all persons could obtain free attendance. In order to get a living the 6d. doctor would become the 3d. doctor, and so on till it reached the vanishing point. The Minority, indeed, proposes that every person shall have the right to demand immediate medical assistance at all times, subject to no test, and with no liability beyond the mere possibility of being asked to pay the cost at a later period, if it can be proved in a court of law that he or she is able; also that the poor should not be left to themselves to apply for medical assistance, but that the sick and infirm should be sought out and encouraged to apply for early treatment at the public cost. This looks like pure Socialism, as it means the granting medical and other relief to every applicant without test or deterrent, which to my mind sufficiently condemns the Minority Report.

I agree with many medical men that a considerable amelioration of the present Poor Law system might be obtained by the judicious use of what is good and the lopping off of what is bad in the system, so that, instead of breaking up the whole system, it might be reformed and remodelled to suit the needs of the present time. Such a reformed service would meet the wants of the destitute—that is, those who are unable to support themselves or pay for medical relief; but when we come to consider the needs of the class above the destitute—the casual wage-earning and the steady small wage-earning public—we meet with the greatest difficulties and the most diverse opinions. That we must look ahead and be prepared to offer some capable and workable system of providing medical assistance for this class of people is evidenced by some of the speeches in the debate on the Prevention of Destitution Bill, when Mr. Churchill declared that in the forefront of the Liberal Government's programme must be the policy of national insurance—State-aided insurance against unemployment, sickness, invalidity, and provisions for widows and orphans. Mr. Asquith also said that we have still to deal with invalidity, sickness, and other hazards of industrial life. Mr. Balfour spoke in the same strain. For this purpose some propose that the German invalidity and sickness insurance system should be taken as a basis for this country. In Germany the workpeople pay two-thirds of the sickness premium, while the employers pay one-third of the sickness premium and one-half of the invalidity premium, the other half being paid by the State. This necessitates two funds—one for the individual sick and one for communal interests in the shape of sanatoriums,

sanitary dwellings, baths, and so on. In 1905 the workpeople contributed for sickness insurance (in round numbers) 4 million pounds, and received in benefits nearly 8 millions, but the total income of the funds for sickness and invalidity from workpeople, employers, and the State, together with interest on accumulated funds, was 12½ millions. The German workpeople claim the whole of this money, perhaps with some justification, but not altogether, for on adding together the 8 millions given in benefits, ¾ million for administration, and 1 million for reserve, there still remain 2¾ millions, which, they assert, is not devoted to the personal interests of the insured, but is diverted to other more general purposes, giving rise to the complaint that the State, whose subsidy does not nearly amount to the 2¾ millions, yet contrives to divert more than it contributes to general purposes. It seems probable that any such system would give rise to similar dissatisfaction in this country, therefore matters should be so arranged that there could be no appearance of making the working classes contribute to a fund which is partly for the benefit of others who do not contribute. In Germany there are difficulties also about the overlapping between the sickness and the accident insurances. The victims of accidents are thrown on to the sickness insurance for thirteen weeks, though the employers are supposed to be liable for the results of accidents at work, which is not fair to the workmen, who pay two-thirds of the sickness premium.

It is not likely, however, that these difficulties would occur in this country, owing to the provisions of the Workmen's Compensation Act, and as old age pensions are already provided, only sickness, premature invalidity, and provision for widows and orphans remain to be dealt with. All German workpeople earning up to £100 a year are compelled to insure, and there is at present a proposal that all earning up to £150 should be included. It has been suggested that in Great Britain the wage limit should be £160, that is to say, up to the amount on which income tax is charged. In round numbers, 1 million people in this country pay income-tax, so according to actuarial reports 16 millions would be liable to compulsory insurance, and if £100 were the limit something like 13 millions would be insured. This means that if the limit be £100, 70 to 80 per cent. of the adult working class would cease to be private patients, while if the limit be extended to £160, all private practice among the working classes would be at an end.

Further, the British Medical Association has proposed the establishment of a public medical service for the class indicated, on a contributory basis and on a higher scale than that of the friendly societies, to be staffed by all medical practitioners who care to undertake the work; to be under the complete control of a medical committee in each city, town, or rural area, and therefore independent of either State, municipal, or council interference, and to have a wage limit according to the conditions of each area. Subscribers would have the choice of doctor. Special services would be arranged for at special rates. All persons above the wage limit would be attended medically, as at present, in the ordinary way. The medical men, under this scheme, would be paid by the subscription, less the proportion of working expenses, of the persons on his list for the year. Practically, this is simply an extension of contract practice, but without some of its disadvantages.

In considering this scheme, it is assumed that the friendly societies will cease to provide medical attendance and medicines for their members. But would this result follow? We must remember that the friendly societies are strongly opposed to a wage limit as regards their membership, and the same opposition would hold good in the case of their members applying for enrolment in the public medical service. Their reasons against a wage limit are: (1) "That the societies will not permit the profession to dictate who shall and shall not be admitted to ordinary membership." (2) "That a friendly society cannot constitutionally exclude any member from any benefit which the society offers."

In answer to No. 1, which is autocratic and dictatorial, it may be said that the profession has never made any such claim, but the profession ought to be equally determined to resist dictation and retain its independence.

As regards No. 2, it is well known that in many districts some friendly societies do not provide compulsory medical attendance, the contribution for that service being optional. Moreover, some societies, such as the Hearts of Oak, do not provide medical attendance at all, so that an extension of the distinction between medical and other benefits already recognized by some friendly societies would open a way to the solution of the wage limit. To further this suggestion, medical men all over the country should meet and address the various lodges in their districts on the advantages which the members would receive under the improved medical service proposed. That there is some truth and reason in this suggestion or assumption is evidenced by the remarks of Mr. Burnes, Secretary of the Hearts of Oak Society, at the conference in February, 1909. He maintained "that friendly societies had not yet been approached in a proper way by medical men, and when they were approached in a proper manner for a proper remuneration the doctors would get that remuneration. If doctors wanted proper treatment, all they had got to do was to ask for it, and he was absolutely certain they would get it from friendly societies." The leaders of the friendly societies freely admitted that the medical officers were underpaid, and exploited very much to the societies' gain, but they frankly said that they were not going to pay higher remuneration so long as they could get more medical men than they wanted at a low rate. It is simply a case of supply and demand. They know too well the weakness of the profession in matters of business.

Another scheme has been put forward, which is based on the fact that on a wide average each club member receives four to five visits and consultations a year—the payment per visit system. Allowing 2s. to 2s. 6d. for each attendance, this would mean a subscription of 10s. a year by each member. This proposal would be a great advance on the 3s. to 4s. club, and, under compulsory insurance, when the employers and the State would be paying part, the sum would not be excessive. Expenses of administration would not be great, as the portion paid by the insured would be deducted from the wage, and, along with the employers' and the State's portions, handed to the local medical committee. The scheme seems quite feasible, and would be good for the public and the profession.

Whatever system of medical service may be adopted in the future, there are four principles which should be enforced in the interests of good service to the public and justice to the profession:

1. Any duly registered medical practitioner should be eligible for the work.
2. A free choice of doctor.
3. Adequate remuneration for work done.
4. Control of the service by a local medical committee.

As I have already mentioned, the benefits proposed by any insurance scheme will be medical attendance, sick pay, invalidity pensions, and provisions for widows and orphans. We are only concerned with medical service. We must resist any continuance or extension of the club system for medical attendance as exists at present under the friendly societies. Before any bill is introduced into Parliament, the medical men of the country should agree on some system, and all the organization and influence of the British Medical Association should be made use of to put forward the principles of that system. The general terms and conditions of the service should be arranged and fixed by agreement between the British Medical Association and the Government Insurance Department, and no beating down or underbidding should be allowed. Whatever wage limit is fixed by Parliament, there will not likely be the same trouble as occurs in the provident dispensaries and friendly societies of to-day, as it will be to the interests of the employers, who will have to subscribe part of the premium, and the State, who will give a subsidy, to see that only those persons are admitted who are legally eligible. Certainly the average sick pay and medical remuneration will have to be higher than in Germany, and, in like manner, the contributions from the insured and the employers.

We are coming to the parting of the ways; we are coming to a crisis in the history of the medical profession in this country, and it behoves us to keep a clear look-out

ahead. Our position is one of grave anxiety, and may be likened to that of a nut and a nutcracker. We are threatened with being caught between the arms of a huge nutcracker, one of which is the State, and the other the public dispensary system—an exaggerated contract practice system. If we become entrapped between these forces, then our state is perilous depending on the vigour with which the arms are approximated. It is for us, by union, combination, and speaking out as one man, to escape such a climax, for it will not only affect the general practitioner directly, but also the consultant indirectly. Self-preservation is one of the first laws of Nature, and it is our duty to bestir ourselves, and to let the State and the public know and understand that it is not by starving the profession, but by properly and adequately remunerating its members, so as to free them from financial worries, and to give them the necessary time for rest and mental improvement, that the best service can be secured for the community.

Reference.

[1] British Medical Journal, June 11th, p. 1446.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE SURGICAL TREATMENT OF VARICOSE VEINS.

In the British Medical Journal of April 16th (p. 921) Dr. H. D. O'Sullivan describes an operation for the excision of varicose veins which he terms "treatment by avulsion." As a similar procedure has been practised at the Ashton District Infirmary for the last two years, I may be permitted to make a few supplementary observations. The method, in the first place, is not new. I myself was surprised to see it described in a recent American publication,[1] edited by J. B. Murphy, and attributed by him to Kellar. W. W. Babcock has also devised a very ingenious operation on similar lines.

The plan described by Dr. O'Sullivan is unnecessarily elaborate, not sufficiently thorough, and somewhat unsafe, as it entails previous mapping out of veins, the use of tourniquets, multiplicity of incisions, interference with the blood supply of the limb, profuse haemorrhage, contact of a foreign body with blood which is either circulating or which will pass into the circulation, with the attendant dangers of sepsis—local or general—thrombosis, and shock. Again, the process described is not, strictly speaking, "avulsion," because the vein is not torn or pulled out, but removed by being turned inside out, a fact which may have escaped Dr. O'Sullivan's notice. "Inversion" or "invagination" would be the more accurately descriptive terms.

The procedure followed by me is as follows: The prepared limb is elevated to empty the veins. A small, preferably transverse, incision is made high up in the thigh, over the saphenous opening, the long saphenous secured and divided between two forceps, and the proximal stump ligatured close to the femoral vein. At this stage traction on the distal end makes the vein prominent all along its course. A small cut is now made on the inner aspect of the knee, the vein exposed and severed between two haemostats. The forceps on the upper segment being removed, a long probe, eye end up, is introduced through the lumen of the vein and pushed up till it comes out in the first incision. Next, a ligature is passed through all the coats of the vessel, penetrating the vein twice, and at the same time through the eye of the probe, and is tied firmly. By pulling on the distal extremity of the probe the vein is extracted in a few seconds, turned inside out.

All the prominent veins of the leg can be dealt with in similar fashion. If they are very tortuous, a gum-elastic catheter of small calibre should be used instead of the probe. The method is not applicable to cases of general or cirsoid varicosities, which is not infrequently the case in the leg, and which can be more effectively treated on Schede or Friedel lines. In the technique described there is no mapping out of veins; no tourniquet is employed; the probe passes into a vein which is empty, being disconnected at both ends, and the lateral branches probably kinked by the vein being kept taut; and, finally, there is scarcely any haemorrhage, as the tributaries get twisted and sealed during extirpation.

Kellar's method differs from the above in the use of a thread instead of a probe. In Babcock's hands the vein, specially when adherent, yielded frequently at the seat of ligation, and so he was led to devise his "vein extractor," which is simply a very long pliable probe with a bulb at each end, "just like a double-ended bougie *à boule*," one end being small enough to pass through the lumen of veins and the other sufficiently large to prevent its passage. This instrument is introduced into the long saphenous vein at its termination, and the small bulb guided down till it is felt near the ankle, where it is exposed by a small incision and traction made upon it. By this means the vessel is removed throughout its whole length, two minute wounds only being necessary. The "extractor," needless to point out, does not produce an intussusception, as the vein comes out closely gathered up against the upper larger end. In Murphy's opinion, Babcock's operation is "one of the simplest and most expeditious thus far devised."

Ashton-under-Lyne. M. Mamourian, M.B.

[1] *General Surgery*, 1908.

TRIPLETS: MUMMIFIED MALE TWINS AND LIVE FEMALE CHILD.

On Whit Monday I was called to attend a case of labour, a primipara aged 28 years. I found presenting outside the vulva the foot and leg of a fetus. I was able to deliver quickly and easily a male mummified fetus of about six months' development. On further examination I felt a bag of membranes bulging at the os uteri, and the head of a child presenting. The os being fully dilated, I ruptured the membranes, and in about an hour delivered the patient of a living female child of about eight and a half months' development. I then placed my hand upon the abdomen to express the placenta, and, after waiting some time with no result, I again examined the patient. The uterus had contracted firmly, but I could feel protruding through the os the foot of another fetus. This was gripped by the contracted uterus, and the patient, although uneasy, was having no pains. After waiting an hour, I examined again, and found the os uteri dilating, and the leg as well as the foot of a fetus presenting. Gentle traction seemed to bring on pains, and in about twenty minutes I had delivered the woman of another fetus (male, mummified) of about four months' development. The placentae were removed with difficulty. The two male fetuses were attached to one placenta, whilst the living female child had a separate one—apparently two ova, one of them double.

The retention of dead twin fetuses until a third fetus had reached to nearly nine months' development is, I think, sufficiently rare to warrant publication.

Geo. Aldridge, L.M.S.S.A Lond., M.O.H.

Sheerness-on-Sea.

Reports

on

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

WEST HERTS HOSPITAL, HEMEL HEMPSTEAD.

A CASE OF VERONAL POISONING.

(By George S. Sowden, M.A., M.B., Ch.B.Edin., House-Surgeon.)

The following notes of a case of veronal poisoning with a subsequent recovery may prove interesting, both from the magnitude of the dose taken and from the symptoms which developed. The dose taken (100 grains) is nearly four times larger than any recorded for that particular drug, and the symptoms are totally unlike those described in any of the cases I can find in the literature of the subject.

H. J., aged 48, commercial traveller and a foreigner, was found in bed in a local hotel in a comatose condition, from which he was with difficulty temporarily roused. Two hours before he was found he had replied to a knock at his bedroom door. On seeing his condition the landlord at once called in a doctor, who suspected poisoning by some drug, and ordered the patient's removal to hospital.

On admission the patient was in a very drowsy, stupid condition. The temperature was 97.6°, the respirations 22, and the pulse 88. The skin was clammy and cool, the tongue furred and tremulous, and the breath very foul. The pupils were normal in size, but responded very sluggishly to light. Shortly after admission he passed urine and faeces involuntarily. There was no rash.

When an inventory of his clothing was being made two phials were found; one contained tablets of aspirin (5 grains), the other had contained twenty-five tablets of veronal, but there were only five remaining, each contained 5 grains of the drug. I suspected that the man's condition was due to the latter drug; he was given $\frac{1}{30}$ grain of strychnine, and kept warm by hot bottles.

The necessary moving of the patient roused him somewhat, and he was able to answer certain questions. He gave his name, age, and occupation quite distinctly in English. His utterance was slow, but whether that was due to his using a foreign language or to his condition I cannot say. He further gave the information that he had taken that morning twenty tablets of veronal (that is, 100 grains of the drug) from the phial found on him.

An attempt to pass a stomach tube was strongly resisted. A simple emetic was swallowed easily, but with no result. Apomorphine was not administered owing to the shabby nature of the pulse. He said he had no headache. He was further given a cupful of strong black coffee with brandy. This was repeated several times during the night. He was kept awake all night by various means.

Next morning he was not so drowsy, though his mind was still confused. He again repeated his story as to the quantity of the drug he had taken, and told me where he had purchased the drug, and that he had not taken one tablet till the morning of admission to hospital. He had been taking aspirin for six years previously for rheumatism.

During the morning it was noticed that there was a most marked nystagmus in both eyes, and also that, in attempting to convey food to his mouth, the patient put the spoon to the point of his chin and to his upper lip before he succeeded in getting it into his mouth. Further investigation revealed absence of all reflexes in arms and legs. Bladder and rectal controls were still absent and there was polyuria; control was recovered towards evening, when the stupor and drowsiness had considerably diminished, and he was able to converse freely, though his speech was still slow. From that day the patient made an uneventful and complete recovery. The nervous phenomena passed gradually away, till on his discharge, six days after admission, co-ordination was perfect, nystagmus gone, and tendon reflexes regained, though still somewhat sluggish.

In all the cases I find recorded, the largest dose of veronal which had occasioned any untoward symptoms was 30 grains.[1] This produced a stupor, which was more or less prolonged, an erythematous rash, and gastro-intestinal symptoms. Still another observer[2] records vertex headache and anuria. Further, haematoporphyrinuria is given as a distinct sign of overdosage of veronal and its allied soporific drugs by some authorities.[3] In our case examination of the urine showed traces of blood by the guaiac and ozonic ether test. No spectroscopic examination was made for haematoporphyrinuria, but the colour of the urine did not suggest its presence. It is interesting to note the different actions the drug has had on the kidneys. Several writers record anuria, but in our case it was polyuria, the urine being pale at first, but as it decreased it became dark. The absence of the rash in our case is also noteworthy, as it has been, along with gastro-intestinal disturbance, one of the leading signs of overdosage of veronal.

[1] BRITISH MEDICAL JOURNAL, 1904, vol. ii, pp. 1679, 1734, 1786.
[2] Ibid., 1910, vol. i, p. 552.
[3] Glaister, *Medical Jurisprudence, Toxicology, and Public Health*, p. 469.

Reports of Societies.

ROYAL SOCIETY.

Thursday, June 30th, 1910.

Sir ARCHIBALD GEIKIE, K.C.B., President, in the Chair.

Uncles and Cousins.

A PAPER by E. C. SNOW, communicated by Professor KARL PEARSON, F.R.S., discussed the values which should hold for the correlations between (*a*) siblings, (*b*) uncle and nephew, and (*c*) first cousins, on the Mendelian hypothesis of "unit-characters." The correlations both for gametic and somatic characters were found. For the former, values independent of the distribution of the dominant and recedant characters among the population were obtained. These were (*a*) 0.500, (*b*) 0.250, and (*c*) 0.250. In the case of the somatic correlations, however, the results depended upon the relative numbers of the population possessing the dominant and recedant attributes before crossing. By varying this proportion different values of the correlations could be obtained, but these were always less than the corresponding gametic ones stated above. The investigation had brought out the important point that on the Mendelian theory of heredity the similarity between first cousins was quite as close as, or closer than, those between uncle and nephew. Biometric results previously reached had pointed to the same conclusions. This was of great interest from the medical point of view. In medical diagnosis a man's uncles and aunts, but not his cousins, were generally considered. But the results of the present paper showed that his cousins, usually more numerous, gave just as good a knowledge of his constitutional tendencies as his uncles and aunts.

Relation of Light Perception to Colour Perception.

Dr. F. W. EDRIDGE-GREEN said that it might easily be shown that light perception and colour perception were quite distinct. Cases of colour-blindness could be divided into two classes according as the defect was: (*a*) one of light perception, or (*b*) one of colour perception or differentiation without any defect in light perception. Both defects might be present in the same individual. The investigation of these two classes of defective vision was much facilitated by the use of a spectrometer he had devised for the purpose. It was so arranged as to make it possible to expose to view in the eye-piece the portion of a spectrum between any two desired wave lengths. Tested with this instrument a normal individual would, as a rule, name six distinct colours, namely, red, orange, yellow, green, blue, and violet, and would mark out by means of the shutters about eighteen monochromatic patches. A few individuals had a greater power of differentiating hues; to them, as to Newton, there was a distinct colour between the blue and violet, which Newton called indigo. Such individuals would mark out a greater number of monochromatic patches, from twenty-two up to twenty-nine. Those who had defective light perception for certain rays, with normal hue perceptions, behaved exactly in the same way as a normal sighted person to those rays removed or reduced to the same intensity, and not as if a light-perceiving substance which was sensitive to rays from a considerable range of the spectrum had been removed. Those with defective hue perception marked out with the spectrometer a smaller number of monochromatic patches than the normal, and said that there were five, four, three, two, or one colour instead of the normal six. They behaved in every way as if their colour sensations were correspondingly limited. Therefore, if the normal be designated hexachromic, then pentachromic, tetrachromic, trichromic, dichromic, or monochromic correctly described their colour vision.

Theobromine and Caffeine.

Mr. V. H. VELEY, F.R.S., and Dr. A. D. WALLER, F.R.S., contributed a paper on the comparative toxicity of theobromine and caffeine as measured by their direct effects upon the contractility of isolated muscle. They had shown by measurements of the contractility of isolated muscle that the toxicity of theobromine, the base of cocoa,

was greater than that of caffeine, the base of coffee and tea, in the proportion of 3 to 2. The introduction of a second methyl group into the oxypurine residue—namely, the formation of caffeine from theobromine—thus diminished the toxic value, a result which was the converse of that observed in the case of the paraffinoid alcohols. The toxic effects of coffee and tea extracts were studied also, and it was found that the effect of the former was mainly due to the caffeine contents and not to the tannic acid.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Friday, July 8th, 1910.

Dr. G. A. BERRY, President, in the Chair.

Endothelioma of the Choroid.

DR. GEORGE MACKAY read a note on an interfascicular endothelioma of the choroid situated at the optic disc. At the beginning of the year the patient had a momentary loss of power in his leg, and fell while smoking. A fortnight later he fell while rising from his chair, and lost consciousness momentarily. A week later he discovered that weakness of vision was due to a defect in the right eye. A neurologist found nothing abnormal in his fundi, and ordered potassium iodide and abstinence from tobacco and stimulants. When Dr. Mackay saw him he was a full blooded man of 60 years of age, and was said to have had no cardiac trouble nor kidney disease. There was no specific history. In his youth he had been noted for his feats of strength. His pupils reacted to light and to convergence, the right a little less than the left. The media were clear and the tension normal. From his shooting experience the patient knew his right eye had good sight until four years ago. Recently he had occasionally had a sensation as if a long hair was touching his eye, and he had also colour sensations in the right eye. The left fundus was normal. The disc of the right eye presented a curious appearance, difficult to define until the pupil was dilated with homatropine. That showed the surface of the disc to be elevated by a tumour substance, with adherent vascularization. The veins disappeared in the disc substance. It was possibly a congenital abnormality. There was a narrow, dark ring of pigment, especially towards the macular side. Potassium iodide, which had been discontinued, was advised to be recommenced, but a month later there was no appreciable alteration. He did not note any dimness of vision. In the test types he missed those to the left of the mid-line. Dr. Berry then saw the patient and confirmed the diagnosis, but desired to see him again in six weeks' time. Mr. Collins was also asked to see him, and he said there was a new growth in the right eye involving the optic nerve. Mr. Collins advised that the eye should be removed, and as soon as possible. Since the excision the tumour was found to be a mixed spindle-celled and round-celled sarcoma, but extending only a short distance into its sheath. Mr. TREACHER COLLINS described the pathological appearances, and exhibited slides by means of the epidiascope. Mr. J. B. LAWFORD read a further note on the case of optic atrophy and oculo motor palsy due to intracranial new growth. The patient was a man, aged 40, who died in St. Thomas's Hospital on May 7th, 1910. There had been a gradual increase of proptosis on both sides, and a large growth between the eyeball and the nasal bone on the right side. The tumour also appeared in the left temporal fossa, and the movements of the lower jaw became restricted. A new growth developed in the roof of the mouth. A few weeks before death the right cornea began to slough from exposure, and the right fifth nerve became almost completely paralysed, showing how extensively it had spread. There was headache and a low delirium, followed by coma, which terminated fatally. On autopsy the day after death it was seen that the growth had extended all over the skull and nasal cavity. The olfactory lobe and the optic nerve were involved. The specimen showed a large glistening tumour, lobulated, smooth on the surface, and covered by dura mater. Mr. SHATTOCK examined the growth, and reported that it was a rapidly growing chondroma. The vision began to fail twelve months before death.

Reviews.

DIETETICS.

DR. HALL justifies the publication of his book on *Nutrition and Dietetics*[1] by saying that he can find no concise text-book which covers the whole field of his subject. However this may be, as he has had ten years' experience in teaching he has earned the title to express his views, and his book may be judged on its merits without comparing it with numerous works of a similar kind published during the last few years on both sides of the Atlantic. He divides it into four parts. In the first he describes the various kinds of food; in the second he explains how they are utilized in the body, while the third and fourth discuss diets in health and disease. He has placed in appendices a few cookery recipes, some classified tables that may be useful to teachers, and the details of elementary class experiments on the chemistry of foodstuffs such as would seem to be more suitable for a technical school than for medical students or practitioners. This remark also applies to the second part of the book, which deals with very elementary physiology. As Dr. Hall mentions in his preface that he lectures to nurses as well as to undergraduates in medicine, it is probable that these parts of the book are intended for them, but we do not know that there is much need to require a nurse to demonstrate that bread contains starch in an unconverted form, or that acid fruits contain an acid which affects litmus paper, or the diffusibility of peptone, while all this work for a medical student would be making him repeat again what he has already learnt, or should have learnt, elsewhere. We are glad to see that the author speaks of contaminated milk in Chicago as a thing of the past, although we do not know how much importance to attach to such an expression as that "One has not much to fear in the use of milk from reputable dealers." We should be glad to believe, as he certainly implies, that milk as sold in Chicago is now free from risk of conveying tubercle or typhoid fever. He accepts Chittenden's protein standard, but would, we think, have done wiser to have stated it at so much a pound or kilogram of body weight, and not as 60 grams, especially as he shows that he entirely appreciates the need for varying the amount of food taken with the size of the body to be nourished. He gives model menus for different persons—for the student, the athlete, and the growing child—but he omits to give quantities, an omission for which we can find no explanation. The additional food which he recommends to be given to a breast fed baby at nine months is, according to our ideas, excessive. Dr. Joseph Bennemann has written the chapter on infant feeding in disease; it is a good article, but his methods are needlessly elaborate. In this country we have never adopted the American plan of making up babies' foods as if they were bottles of medicine. It may be that in our climate it is easier to feed infants artificially than in countries where the average summer temperature is so much higher. In the remarks on rectal feeding the capacity of the colon to absorb fat, when given in the form of emulsions, is underestimated. Koester has shown that 50 to 80 per cent. of cream may be absorbed when emulsionized with pancreon (BRITISH MEDICAL JOURNAL, May 29th, 1909, p. 1304). We do not know why febrile albuminuria should indicate a "strictly liquid diet," or why "pastry and puddings" are prohibited in chronic nephritis. It seems hard on many sufferers from gout to speak of it as "a disease of luxury and intemperance," and the section on the diet for renal calculi lumps all stones together as if due to the same cause, the subject being discussed in a short paragraph. On the other hand, the directions for the dieting of diabetes are distinctly good, giving more information of a useful kind than is always to be found in books which deal specially with the subject. From what we have said it will be gathered that Dr. Hall's book is in our opinion somewhat unequal, and would not replace a standard work on dietetics.

Under the somewhat specious title of *Que faut-il manger?*[2] Dr. GOURAUD has written a book which is

[1] *Nutrition and Dietetics.* By Winfield S. Hall, Ph.D., M.D. New York and London: D. Appleton and Co. 1910. (Demy 8vo, pp. 315. 7s. 6d.)

[2] *Que faut-il manger?* Par Dr. F. X. Gouraud. Paris: Jules Rousset. 1910. (Post 8vo, pp. 327. F. 3 50.)

obviously intended for the medical profession, and contains, in an easily written style, a great deal of the information accumulated in recent years respecting diet, dietetics, and the various regimens which are talked about so much among the public; in fact, it tells medical men much that they ought to know if they would satisfy the inquiries constantly made by their patients. There is little reference to other writings, save to those published in France, but the book is, perhaps, more easy to read on this account. The opinions expressed are moderate and commendable; the importance of meat diet is recognized, though the author considers that the tendency nowadays is to consume it to excess; but while he admits the value of vegetarianism, he points out in what respect a mixed diet, in which meat occupies its proper position, is superior to one purely vegetarian, or even to lacto-vegetarianism, which includes milk, butter, eggs, and cheese. He discusses these questions first with reference to health and disease, and he takes the various articles of diet one by one—meat, fish, eggs, butter, cheese, milk, vegetables, fruits, and cereals—giving their chemical composition, caloric value, and dietetic qualities. He opposes the use of fine white bread, for, although the coarser kinds are not so well absorbed, this disadvantage may easily be overcome by consuming a proportionately larger quantity, while in other respects the advantage remains with the coarser bread, of which he recommends a particular kind, called Monteuuis's "modern brown bread." He points out, under each article of diet, whether it does or does not contain xanthine bases. The book will be found useful by any practitioner who wishes to construct a dietary for any purpose, and the cautions and recommendations contained in it are sound.

The author of *Health's Highway*[3] is a journalist and the writer of books on motoring and cycling, something of an athlete, and well known to votaries of those sports in the sister island. He believes that he has a message to deliver, and holding the methods of the medical profession in slight esteem, he has published his better way of maintaining health. That he entertains no exalted opinion of our profession is shown by the following passages:

> The present work does not pretend to be in the nature of a medical or scientific treatise; its object is not to offer advice regarding the treatment of disease by means of drugs; I hold to the opinion that such treatment is often detrimental, and in a certain degree based on the hide-bound conservatism of a profession the majority of whose members are too often enmeshed by red tape and trammelled by professional etiquette (p. 7).
>
> Any medical man, whether he believes in drugging or not, will admit the importance of the cardinal principles of health laid down in this book, although he may not advocate them in his practice lest his patients go elsewhere (p. 9).

Having no desire to imitate the author's style, we have read his book carefully and deal with it on its merits. There is nothing original or novel either in the doctrine Mr. MECREDY preaches or in his manner of presenting it. He believes, as we all do, in fresh air, sunshine, exercise, and wholesome food, but when he says that "these are within the reach of most people" (p. 8), he must either refer to the limited class which possesses cycles and motor cars, or he is mistaken. Were it true, there would be a marked improvement in the public health, for those who are able to obtain these good things generally do so, though perhaps not so fully as Mr. Mecredy would advise. He says he advocates "no extreme measures," but as he and his family "sleep in three-sided canvas huts all the year round" and are vegetarians, he is a long way from the centre. His claim that he can prolong life may be deferred for, say, twenty years, as Mr. Mecredy is now only 48, but we hope sincerely that he may be successful; he may not know that during the middle period of life it is the rule for men to enjoy better health than during that of growth or decay. On p 5 he writes: "I hold that there is no disease which could not be prevented if only one knew how"—a very important proviso, which makes the assertion look rather silly and scarcely worthy of a person who claims to instruct the public. On the next page we read:

> But why do not doctors preach this gospel of prevention? my readers may ask. Many have learnt the science of curing by drugs, but are hopelessly ignorant of advanced forms of treatment calculated to prevent disease, or are influenced by the fact that in adopting such methods they would have the majority of this very conservative profession against them.

And as if this were not sufficiently foolish, he adds (p. 7):

> There is a still larger class, however, who do not preach the gospel of prevention simply because they recognize the hopelessness of it and *have their livings to make.*

Now it appears that Mr. Mecredy has a wife who has given him some trouble to convert; in fact, for some years he gave her up as hopeless. He might therefore be more modest and remember that we doctors have to deal with people over whom we have less influence and power than he had over Mrs. Mecredy, and far less time and opportunity to persuade. As he allows that the London specialist whom he consulted for her gave good advice, his ill natured references to the medical profession have not even the poor justification that he had been unfortunate in his choice of a medical adviser. The greater part of the book contains an account of his open-air life padded with stories of the camp and of talks with Irish peasants; it is illustrated by photographs. His general advice is in the right direction, and as it comes not from a medical practitioner, but from an athlete, a class held in far greater popular esteem, it is probable that it will do good; but it is to be regretted that it should not have been possible for Mr. Mecredy to write his book without indulging in stupid disparagements of the medical profession.

The *Medical Diet Charts* prepared by Dr. H. D. ARNOLD of Boston[4] contain in a very small compass a great deal of information respecting the chemical and calorific value of different kinds of food contained in 100 grams and in various common measures, as well as indications as to dieting under varying conditions. The spaces for recording observations are necessarily small, and we confess to having grave doubts whether the trouble and time expended upon filling up such charts would be repaid by the results apart from any special investigation that might be carried out. Looked at as epitomes of information they are useful, and the practitioner who carried one in his pocket might find it convenient for reference.

THE BEGINNINGS OF THE POOR LAW AND OF VOLUNTARY HOSPITALS.

THE first part of Mr. G. C. PEACHEY'S *History of St. George's Hospital*,[5] which is to be issued in twelve serial parts, begins with a useful epitome of the provision made for the sick poor in England in the early ages. The author states that even before there were any kings of England gilds existed in nearly every town, which undertook the duties now performed by hospitals and guardians. Later still, as is well known, the monasteries set special apartments aside for use as an infirmary, while almshouses for the aged and infirm were mostly private endowments. In the eleventh and succeeding centuries the religious revival prompted the foundation, by private persons as well as by civic and parochial authorities, of hospitals for lepers and for the sick and infirm in general. As early as the reign of Henry V measures had to be taken to prevent hospital abuse, owing to the increasing number of vagrants who encroached on the rights of the sick and needy. Provision for the impotent poor, adopted at first as a religious virtue, was afterwards accepted as a civic duty, and the first Act that recognized the impotent poor as a separate class was passed in the reign of Richard II. Under Henry VIII municipal authorities were for the first time ordered to provide medical relief for the poor, and shortly afterwards all the monasteries, including 100 hospitals, were dissolved. It was then that Sir Richard Gresham, Lord Mayor of London, sent a petition to Henry VIII, asking that the hospitals or spytells of St. Mary's (Bethlem), St. Bartholomew's, and St. Thomas's should be transferred to the citizens. This was done some years later, and St. Bartholomew's and St. Thomas's were set apart for the sick and lame, Christ's for the education of fatherless

[3] *Health's Highway.* By R. G. Mecredy. London: Yellon, Williams and Co.; Dublin: Mecredy, Percy and Co. 1909. (Cr. 8vo, pp. 186. 2s. 6d.)

[4] *Tuft's Medical Diet Charts A and B.* By H. D. Arnold, M.D. Philadelphia and London: W. B. Saunders and Co. (2½d. each, 12 for 2s. 3d., 50 for 8s. 6d.)

[5] *The History of St. George's Hospital.* By George C. Peachey. London: John Bale, Sons, and Danielsson, Limited. 1910. (Imp. 8vo, pp. 48. 2s. 6d.)

children, Bethlem for lunatics, and Bridewell as a house of correction, the two first being the only hospitals in London for medical and surgical treatment until nearly the end of the seventeenth century, when Chelsea and Greenwich were founded for disabled soldiers and seamen.

In 1714, John Bellers, a Quaker philanthropist, pointed out that nearly half the persons who died in London and Westminster probably succumbed to curable diseases, and he argued that the State should bear some part of the expense of providing medical assistance for the poor. Among other things he advocated the erection of both general and special hospitals, and the appointment by the overseers in every parish of a physician and surgeon to visit the sick poor; the provision of a hospital at each of the two universities, with facilities for *post-mortem* examinations; and the establishment of a public laboratory for the discovery of new medicines and the study of diseases. He further suggested that the College of Physicians and Company of Surgeons should be subsidized by the State to give advice to practitioners in difficult cases. Mr. Peachey points out that though the suggestion of general hospitals endowed by the State has not been carried out, the provision of workhouse infirmaries and Poor Law medical officers has followed on the lines laid down by Bellers nearly two hundred years ago. In response to Bellers's appeal a great hospital movement began, and many charitable societies were formed for the provision of relief to the sick and needy. The author gives interesting particulars of the early work of the Westminster Charitable Society, founded in 1715–16; it was in consequence of a secession from the Westminster Public Infirmary in 1733 that St. George's Hospital was founded near Hyde Park Corner.

Mr. Peachey has evidently taken a wide view of the scope of his work, as is shown from this brief summary of his introductory chapter. He throws some valuable side-lights on the state of medicine in the eighteenth century, as well as on the relations that existed between the medical and surgical staffs of the hospitals, and the connexion between private and public provision for the sick. Altogether, apart from the history of St. George's Hospital itself the book promises to be a valuable addition to the history of the provision of hospital treatment for the sick poor

VAGRANCY.

MR. W. H. DAWSON approaches the subject of *Vagrancy*[6] from the standpoint of repression, and the earlier chapters of the book are based on a paper read by him to a meeting of the British Medical Association in 1900, in which he made some practical proposals founded on a study of Continental methods of dealing with tramps, loafers, and the work-shy. The problem which the author thinks has to be faced is, that while showing more consideration for the unfortunate poor, measures, at once deterrent and remedial, should at the same time be taken to stamp out the social parasite of every kind. For several generations, it is said, we have "done little but pet and coddle the loafer," and have surrounded him "with a nimbus of maudlin sentimentality." Casual wards are simply convenient houses of call and are responsible for the present perplexities of the vagrancy problem. Very varying estimates are given as to the number of vagrants in the country. The Departmental Committee estimated the genuine work-seekers at about 3 per cent. of all the casual paupers, and believed that independently of trade fluctuations there is "always an irreducible minimum of from 20,000 to 30,000 persons with no settled homes and no visible means of subsistence." The mean of all the estimates is about 50,000, which the author thinks is below rather than above the actual number in normal times, but the number of vagrants in any one district is in exact proportion to the comfort or otherwise of the casual wards of the district, for there is nothing like uniformity in the treatment meted out by different boards of guardians.

As to the remedies for vagrancy, short periods of imprisonment are shown to be useless. The experience of Germany and Switzerland proves that for genuine work-seekers who are provided with "way tickets" and papers of identification, relief stations and hostels are the best, while for professional loafers and tramps detention is necessary in strictly conducted forced labour houses where they are treated not as criminals, but as persons needing detention on account of their mode of life. It is argued that county councils, not the State, are the proper authorities to undertake the responsibility of providing such labour colonies. The author sees signs of a new spirit in public opinion, and hopes that the first steps in the reform of public relief will be "the subjection to wholesome systematic restraint of the parasitic sections of the population which now abuse public and private charity." Only when that is done will it be possible to view in its true relationships the obligation of the community to the unemployed and helpless poor.

It is rightly claimed that the value of the book consists largely in the description given of disciplinary institutions for tramps in Belgium, Germany, and Switzerland, where methods, whose feasibility England is only now discussing, are actually being carried out on a large scale and with great success. Full details, with statistics, are given of the chief of these institutions, and in this respect the book will be a valuable work of reference.

IMPROVISATION IN FIELD MEDICAL WORK.

IN a preface to his recent handbook on improvisation in field service[7] WESTPHAL points out that in the conditions of modern warfare a medical officer cannot reasonably expect to have at all times a sufficient supply of medical requisites available just when he happens to require them, and that it is therefore of the greatest importance that he should have a good knowledge of how to improvise surgical appliances, shelters, fit up ambulance trains, etc., by making use of articles which can be obtained from local resources or from the equipment of the troops. At the suggestion of v. Schjerning, Director-General of the Prussian Army Medical Service, Westphal has therefore compiled this work with the object of providing a concise description of the many expedients which have been devised by surgeons in the field to meet pressing wants in an emergency. The matter has been mainly obtained from reports by German medical officers employed in the late campaign in South-West Africa, but other sources have also been drawn upon.

The contents are arranged in nine sections, with a good bibliography. The first three sections are short introductory ones dealing with the scope and necessity for improvisation, the materials suitable for this purpose, and temporary arrangements which it may be necessary to adopt when on the line of march.

The fourth section deals with first aid for the wounded on the battlefield. After a short reference to the probable number of wounded, the variety of wounds which may be met with, and the importance of bearers and medical officers not exposing themselves needlessly during an engagement, the writer proceeds to discuss what a wounded man can do to help himself pending the arrival of skilled medical assistance. Some practical directions are given; for example, to reach a position of safety with the minimum exposure, a wounded man should lie on his back, draw up one or both legs till his feet can obtain some purchase to work against, and in this way push himself along the ground.

The next portion of the chapter describes emergency appliances—for example, tourniquets, arm-slings, etc., which bearers should know how to improvise, as also various methods for carrying the wounded off the battlefield in the absence of proper stretchers. Some useful hints are then given as to the selection and preparation of a site for the dressing station and the kind of work to be undertaken there.

The fifth section discusses the important subject of evacuating wounded, with special reference to the impro-

[6] *The Vagrancy Problem: The Case for Measures of Restraint for Tramps, Loafers, and Unemployables: With a Study of Continental Detention Colonies and Labour Houses.* By Wm. Harbutt Dawson, author of *The Evolution of Modern Germany*, etc. London: P. S. King and Son. 1910. (Cr. 8vo, pp. 285. 5s.)

[7] *Behelfsvorrichtungen beim Sanitäts-dienste im Felde.* By Dr. Westphal, Oberarzt beim Garde-Füsilier-regiment. Bibliothek v. Cober v. Schjerning. Band xxix. Berlin: Hirschwald. 1910. (Demy 8vo, pp. 169; 99 illustrations. M. 5.)

visation of all kinds of carriage for disabled men. The section begins with the description of a number of contrivances by means of which, failing stretchers, severely wounded men may be carried in the sitting-up or lying-down position. One of the most ingenious of these is Blau's cavalry blanket stretcher, formed by attaching three stirrups to each side of a blanket. To do so a loop of blanket is pulled through the opening in the foot-piece of the stirrup, the ball from a soldier's helmet is placed within the loop, which is then drawn tight, so that the blanket firmly grips the ball against the foot-piece of the stirrup. By using the stirrup leathers as shoulder slings, four men can with ease carry a patient in the lying-down position. For mountain warfare the Tyrolese "Kraxe," or back seat, on which a wounded man is carried pickaback by a comrade, is recommended. Some such apparatus, carried by a Hazara hillman, should prove most useful in our Indian frontier expeditions. The carriage of wounded on pack animals or by travois is fully discussed and well illustrated, but Westphal thinks that this mode of conveyance will only be found to give satisfaction in exceptional cases. The important subject of adapting ordinary carts and waggons for the transport of wounded is well described, as is also the formation of ambulance trains from ordinary goods waggons. This portion of the work merits most careful study on the part of British voluntary aid detachments.

The sixth section describes the erection of temporary shelters for the wounded. These are well illustrated, mainly with drawings and photographs of huts constructed of sun-dried bricks and brushwood by the German troops in the South-West African campaign; they are consequently more suitable to colonial than to European conditions.

The seventh section is devoted to the adaptation of existing buildings when taken over for hospital purposes; it deals more particularly with the questions of ventilation, warming, lighting, and the provision of bedsteads.

The eighth section is reserved for hints on hospital management and the improvisation of surgical appliances and ward necessaries—for example, splints, extension apparatus, baths, douches, irrigators, etc.; it also contains notes on dieting, cooking, baking bread, and the fitting up of an emergency *x*-ray room.

The ninth section is on sanitation, with special reference to the protection of water supplies, the construction of emergency filters and other sanitary appliances.

The work is concisely written, well illustrated, and although much of it is not new, it is well worth reading by all army and Territorial medical officers as well as instructors of our voluntary aid detachments. As the author points out, any one with common sense when suddenly faced by an emergency would no doubt think out contrivances to meet his wants, but to do so wastes much valuable time, whereas if he is acquainted with what others have worried out previously in similar circumstances, he can get straight to work and in addition save himself much avoidable labour and worry.

OVARIAN GRAFTS.

Les greffes ovariennes[8] is the work of a writer whose recent labours have been noticed in the EPITOME for March 19th, paragraph 165, where we referred not to this pamphlet, but to Dr. SAUVÉ'S *Note sur les greffes ovariennes expérimentales*, read last November at a meeting of the *Société Anatomique de Paris*. In the *Note*, practically embodied in the publication under consideration, drawings as well as text, Dr. Sauvé turned attention to facts all the more important because they remain to a great extent unexplained. Hypertrophy of the corpora lutea was marked in his grafts six months after they had been fixed on the pelvic peritoneum. Why should there be hypertrophy? What is the full effect of this hypertrophy alone independent of any effects due to other elements in the graft? Lastly, are we sure we know much about the real uses of lutein in the normal ovary? These questions remain to be solved.

The technique of experimental grafts, noticed in our abstract, is given in full in this pamphet. The surgeon and gynaecologist will study with interest Dr. Sauvé's abstracts of cases of ovarian grafting in women. Morris of New York removed the appendages in a married woman aged 26 subject to double salpingitis. He cut away a healthy portion of one of the ovaries and grafted it upon the stump of the right tube. This, the first operation of its kind, was undertaken in 1895. A month after convalescence the patient became pregnant, but aborted at the third month. In 1900 she was in good health and the period was quite regular. Sauvé has collected 48 cases in which general observations were recorded. He adds 5 in which proof of the effects of the graft was more precise. Thus, Morris grafted a piece of each ovary excised from a woman aged 33 in the course of an operation for prolapse. He placed the grafts in serum at 100° F. and at once operated on another woman aged 21, removing the ovaries by means of an angiotribe. The grafts were fixed in such a manner as to allow the ova they contained to enter the Fallopian tube. The patient, let it be remembered, was troubled with flushings a few months after the operation, and the periods were irregular for nearly two years; nevertheless, four years after the operation she was delivered of a female child, weighing 7½ lb. It would be interesting, adds Dr. Sauvé, to know whom this child resembles, so as to be sure of its true mother! This question is quite pertinent in respect to these "heterografts," as they are termed. The author is, however, a little sceptical about this case; there might have been a supernumerary ovary, and pregnancy has followed removal of both appendages without grafting. Lastly, 2 cases, in which histological proof was at hand, are included in the pamphlet. Pankow operated in 1905 on a woman subject to mollities ossium, transplanting her ovaries into the vesico-uterine pouch, with that temporary benefit so familiar to us in the records of new operations. But the mollities soon began rapidly to advance; therefore Pankow operated again in 1908, removing the uterus and the grafted ovaries. The "autografts," or grafts of the patient's own ovaries, were found in this case to be histologically identical with the normal ovary. Sauvé regrets that the report is incomplete, for the structural integrity of the ovaries in this instance is contrary to the experience of others.

The author then turns to his own observations in a case of grafting in the human subject. Tuffier removed the ovaries in May, 1907, but grafted a piece of ovary under the abdominal integuments. The patient was a woman, aged 25, subject to double salpingitis. Complete amenorrhoea, with bad flushings, followed the operation, and the graft made the abdomen so tender that the patient could not bear the pressure of her clothes. Nine months after the first operation the graft was excised and carefully prepared for examination. It showed all the signs of degeneration, disappearance of the follicles, and also destruction of the epithelial elements, save in a few tracts, being marked. This experience is the contrary to Pankow's, which clinically was similar, since the "autograft" proved a failure. We leave the reader to study the statistical summary, for Dr. Sauvé adds that it is not on these 59 collected cases that we can rely, though 20 are reported as favourable, but he adds "the authors have only published cases of interest." He quotes the admissions of several of the same operators who have related cases in full. Morris, Mauclaire, Pankow, and Delagenière allow that they have done many more ovarian graftings than those which they committed to print. We know that others must have been even more reticent about "uninteresting" cases—failures in fact. At least, however, the writers here quoted have been candid, and Dr. Sauvé in treating of so grave a problem, such a step into the dark as ovarian grafting, is right in publishing the working of the sum as fully as possible. He finds that autoplastic grafts, if skilfully made, succeed perfectly, as far as fixation and vascular nutrition are concerned, whilst heteroplastic grafts usually fail. But true success, that is, benefit to the patient, is never easy to calculate, as she may do well in spite of the graft, or because of its reduction by degenerative changes to nullity. "Few patients seem to have derived any appreciable advantage," writes Dr Sauvé, who deserves great credit for his impartial analysis of his subject, considered, as set forth in the title of his essay, from a surgical standpoint.

[8] *Les greffes ovariennes envisagées au point de vue de la pratique Chirurgicale.* Etude critique expérimentale et clinique. Par le Docteur Louis Sauvé, Prosecteur à la Faculté. Paris: G. Steinheil. 1910 (Roy. 8vo, pp. 95, 4 microscopic drawings. Fr. 3.50.)

NOTES ON BOOKS.

FOR the web of his story, *Sahib-Log*,[9] Mr. JOHN TRAVERS has taken the misunderstandings liable to arise between couples united without real knowledge of each other's character. Medical men in family practice often see them; in fiction they commonly dispose the reader to wish to incarnate the principals and beat them for their stupidity. However, Mr. Travers's hero and heroine behave fairly sensibly and their story is told pleasantly. But much better than the web is the woof of the tale; this consists of incidents serving to contrast Eastern and Western lines of thought and the habits of Europeans in towns in Great Britain and at Indian stations respectively. There is, too, an excellent account of a fight, the whole conveying a good idea of life on the Indian frontier. Incidentally a light is thrown on the fashion in which British authority in India is being undermined, and English women are shown how they might strengthen the hold of Great Britain on the esteem of the natives of India instead of playing the part of casual uninterested visitors. If, however, the novel has a purpose, it is so skilfully concealed as to keep the book well within the percentage of published novels which make really pleasant reading.

In her latest novel, *The Bounty of the Gods*,[10] Lady HELEN FORBES deals with the fortunes of three boys, half Spanish, half English in parentage, and takes the reader first to England, next to Spain, and finally to Italy. In each phase the social atmosphere as well as the climatic environment is changed, and their joint influence carefully brought out. Her real hero, puzzle as he proves to his friends, will seem to most readers a very human person; unattractive as he is in many ways, they are likely to conceive for him sufficient affection to make them regret that his history has not been traced just a few years longer. The hero's character is not, however, by any means the only one of interest in the book. In her sketches of a good many social classes, the authoress includes detailed pictures of characteristic members of them: several convey the impression of being drawn from real life. In respect of the three boys the book is in effect a study of mental heredity, and leaves the impression that the hypotheses put forward are probably correct despite the fanciful guise in which they appear. As a novel the interest of the book is sustained to the end.

[9] *Sahib-Log*. By John Travers. London: Duckworth and Co. (Post 8vo, pp. 318. 6s.)
[10] *The Bounty of the Gods*. By Lady Helen Forbes. London: Duckworth and Co. 1910. (Post 8vo, pp. 340. 6s.)

MEDICAL AND SURGICAL APPLIANCES.

A Bicycle Stand.

AN appliance recently put on the market under the name of the "Nicura" is designed to enable a bicycle rider to leave his machine standing anywhere he pleases, and at the same time prevent its being moved or taken away. It consists of two light steel stays ending in a horizontal foot-piece, the whole being attached to the axle of the back wheel, on which it can be turned through a half circle. When in use it is turned downwards to the ground; it then locks automatically in the vertical position, and the bicycle, with its back wheel slightly off the ground, stands perfectly steady by itself. The annexed engraving shows this position. When not in use it is turned upwards so as to rest against the back of the seat pedestal; it is then scarcely visible, and can be placed in this position even if the bicycle is fitted with a carrier. When the device has been turned down it cannot be turned upwards except by the owner with his key. Two such keys are supplied, and as they are made in a very large number of different combinations no one but the purchaser is likely to have one of appropriate shape. Nor is the owner likely to leave his key at home because he has to unlock the stand himself before he uses his machine. At home the back wheel can be revolved freely for cleansing and the bicycle left in a passage or room without risk of damage to paper or paint. The price of the appliance is 6s., and can be obtained of the "Nicura" Patents Co., 110, Fenchurch Street, E.C.



A Milk Pasteurizer.

One objection which is raised to most of the machines for the pasteurization of milk is that it is difficult to provide that all the milk treated shall be raised to the required temperature. The inventor of the "Evergator," Baron A. T. Pfeiff, of 266, Vauxhall Bridge Road, S.E., claims that this objection is overcome by the construction of his apparatus. Steam is the heating medium used, and by an ingenious arrangement thin layers of milk are sandwiched between copper-lined cavities containing the steam. The temperature of the milk is raised to about 200° F., and after passing through a cooling apparatus is cooled to about 60° F. The unpleasant taste which is associated with sterilized milk is entirely absent from that which has been "Evergated." Experiments which have been carried out by Swedish Bacteriologists have shown that the Evergator is capable of destroying tubercle bacilli, diphtheria bacilli, and *B. typhosus*. A small apparatus, capable of dealing with 50 quarts an hour, and which can be used like a kettle over an ordinary fire, costs about £4, and a larger one, which deals with 300 quarts hourly, and which requires a special steam-producing installation, costs about £17.

LEGISLATION FOR THE FEEBLE-MINDED.

PERSEVERING efforts are being made to impress upon the Government and the Legislature the importance, in the national interest, of early legislation upon the lines of the Report of the Royal Commission on the Care and Control of the Feeble-minded. A sort of propagandist mission in support of eugenic doctrine visited the House of Commons recently, and before a numerous audience of members (Mr. Masterman presiding). Dr. WHETHAM laid stress upon the necessity in future legislative measures of considering not merely the improvement of environment, but the problem of selection as regards parenthood—at least in a negative sense. It had, he said, been shown that the average fertility of the families furnishing feeble-minded children exceeded that of the normal in the ratio of about 7.3 to 4.

Dr. LANGDON DOWN pointed out that 1 in every 250 of the population, 1 in 5 of the inmates of prisons, and 2 out of 3 of those in inebriate institutions, are feeble in mind, and that feeble-mindedness was strongly hereditary, and a permanent condition.

Dr. SLAUGHTER referred to the connexion of feeble-mindedness with pauperism, and argued that a complete scheme for the segregation of the feeble-minded would in the long run be a true economy, by checking the alarming increase of feeble-minded progeny.

A discussion followed amongst the members present, including Sir WILLIAM COLLINS, Sir PHILIP MAGNUS, Mr. NOEL BUXTON, and others.

Last week a conference was held, at the invitation of the Charity Organization Society, of representatives of institutions and organizations interested in the care of the feeble-minded throughout the country. Lord SHUTTLEWORTH presided in the morning, and a paper was read by Dr. H. B. DONKIN, a member of the Royal Commission, on the need of establishing a single supervising authority for the care of the feeble-minded. He urged that the constitution of the supervising board should be predominantly medical, owing to the predominantly medical character of its work, which called for a high degree of medical knowledge and skill. The inspection of institutions for mental defectives throughout the country would need to be carried out by well qualified and experienced medical men distributed in different localities and reporting to a central board in London. Mr. HELME, M.P., Chairman of the Lancashire Asylums Board, opened the discussion, which was carried on by Mrs. HUME PINSENT, who drew attention to the confusion, injustice, and even cruelty caused by the inefficient methods now in vogue, owing to the fact that the feeble-minded were dealt with by four independent authorities—the Board of Education, the Local Government Board, the Home Office, and the Lunacy Commissioners—whose regulations were not in accord. The Lunacy Commissioners alone took a comprehensive view of the question, but continuity of control was essential in

the management of the feeble-minded. Dr. MERCIER deprecated the modern tendency to coop up as large a proportion of the population as was possible in institutions. He drew attention to the risk to the liberty of the subject of a certificate such as was proposed by the Royal Commission, and to the danger of the breaking up of home life and family responsibility entailed by some of its recommendations—a view which was supported by Colonel SKINNER, Chairman of the London County Council Special Schools Committee.

Lord RICHARD CAVENDISH, Chairman of the Royal Albert Institution for Feeble-minded (Lancaster), moved a resolution pressing upon the Government the urgent necessity of introducing legislation next session to provide for the continuous supervision, care, and control of the feeble-minded upon the lines laid down by the Royal Commission, and asking the Home Secretary to receive a deputation on the subject. This was seconded by Sir WILLIAM CHANCE, Chairman of the National Association for the Feeble-minded; and, after some remarks by Lord SHUTTLEWORTH, was unanimously adopted.

At the afternoon meeting, at which the BISHOP of LICHFIELD presided, a paper "On the Practical Results of the Colony Treatment of the Feeble-minded" was read by Miss MARY DENDY, M.A. (Manchester). The work carried on at the Lancashire and Cheshire Society's Colony at Sandlebridge, and by Dr. Fernald at the colonies at Waverley and Templeton in the United States, was described. At least five such colonies were needed in England, and might very well grow out of the existing asylums for imbeciles if these could be remodelled. After remarks by Mr. W. G. WELCH (Lancaster) and Mr. C. S. LOCH, Secretary of the Charity Organization Society, the meeting terminated.

SCIENCE NOTES.

THE struggle for water between living organisms and their environment forms the subject of a note by A. Müntz in the *Comptes rendus de l'Académie des Sciences* of May 30th. As is well known, moisture is indispensable for the development of all living things; desiccation may not actually kill, but it certainly arrests all processes of growth. The unequal distribution of water over the surface of the earth accounts for the presence of large tracts of desert on which neither animal nor vegetable life can exist. The atmosphere always contains a certain amount of aqueous vapour, but it is almost entirely from the earth that organisms obtain their supply of moisture. With regard to plants, it is not only the presence of a certain amount of water that is necessary, but of amount of *available* water. As has already been shown by the author, part of the water in the soil is in intimate combination with it, and is accordingly not available for plant life. It is almost entirely in humus and in clay that this affinity for water exists, and thus the amount of water bound up in the soil varies with the amount of these constituents. Absolutely dry earth, however, does not exist in Nature, any more than does absolutely dry air. Living organisms possess this specific affinity for water to the same degree as humus and clay, but the amount of moisture imbibed in this way is quite insufficient to support life. This can be shown experimentally, for if soil, which contains water up to its saturation point of 2 per cent., be sown with seeds of corn, in which the corresponding saturation point (15 per cent.) has been reached, no exchange of water takes place and no growth occurs, for the seeds require 36 per cent. of moisture before germination can take place. If, however, the same soil contains 3 per cent. of water, it yields the excess to the seeds. In the same way if a soil, whose saturation point is 18 per cent., is watered to that extent and sown with the same seeds, no growth takes place, even although the soil contains 3 per cent. more moisture than the seeds. If, however, an additional 1 per cent. be supplied to the soil, this is available for the seeds and enables them to grow. Conversely, if seeds are sown into a soil which has not reached its limit of saturation the seeds dry up, even although the soil may actually contain a large amount of water. It is thus evident that the relation between plants and their supply of moisture is not such a simple matter as might at first sight appear. The same principle applies to micro-organisms, and in particular to those which are parasitic. Thus, mildew will not grow on vine leaves containing 65 per cent. of water (their limit of saturation), but if the amount be increased to 75 per cent. the mildew grows rapidly and easily. The suggestion is further advanced that some such factor may also play an important rôle in determining the growth of pathogenic bacteria. The suggestion is of some value, and the matter would be worth investigating.

The tuatara or sphenodon is a remarkable reptile, which has long figured as a zoological curiosity. Not the least interesting of its peculiarities is the possession of an exceptionally well-developed pineal complex. This forms the subject of a paper read by Professor Dendy before the Royal Society on June 30th. He has reinvestigated the structure and development of this organ and the adjacent parts of the brain, and has attempted a morphological interpretation of the various parts. In *Sphenodon* the pineal complex consists of a dorsal sac, paraphysis, pineal sac, pineal eye, pineal nerves and their central connexions. The dorsal sac is covered by a well-marked choroid plexus. The paraphysis is a compound tubular gland, with a special blood supply, differing in histological structure from the choroid plexus. The epithelium which lines it forms a syncytium. From its histological structure the pineal sac appears to have a sensory rather than a glandular function. Its wall is essentially similar in structure to the retina of the pineal eye, consisting of radial fibres, sense cells, ganglion cells, and nerve fibres, and pigment may even occasionally be deposited in it. In the retina of the pineal eye the pigment is not lodged in the sense cells or in the supporting fibres, but is brought in by wandering pigment cells. The granules of pigment escape from these and stream inwards between the radially arranged elements. The developing lens of the pineal eye increases in size partly as a result of mitotic divisions in a marginal zone of undifferentiated cells. Approaching the centre these cells elongate, and some degenerate into a sort of mucus, which is secreted from the inner surface of the lens into the cavity of the eye, where it takes part in the formation of the vitreous. This process continues in the adult. Developmentally the nerve of the pineal eye is seen to be primarily connected with the left habenular ganglion, which, even in the adult, has a different shape from that on the other side. These investigations strongly support the view that the pineal sac and the pineal eye are respectively the right and left members of a primitive pair of sense organs, serially homologous with the lateral eyes. From the fore and mid brain six pairs of processes are given off—the cerebral hemispheres, the optic vesicles, the *recessus thalami prenucleares*, the pineal sense organs, the *recessus geniculi*, and the optic lobes. These are probably all serially homologous, and each may indicate a separate neuromere.

LITERARY NOTES.

AMONG recent literary announcements, one of the most interesting is that of a library edition in two volumes of *Marius the Epicurean*, by Walter Pater. Messrs. Macmillan and Co are the publishers. Every one who has not read this entrancing work should do so without fail. It brings the old world, when Christianity was still struggling for the mastery, most vividly before the mind's eye. Our readers may remember a description of the treatment in one of the old temples of Aesculapius which was quoted in the BRITISH MEDICAL JOURNAL of June 18th.

The Hygiene Commission of the International Dental Federation, of which the president is Mr. W. B. Paterson, of London, comprises the national committees of twenty civilized countries. The need of an organ to make known the results of its investigations on matters relating to the hygiene of the mouth having made itself felt, the *Internationale Archiv fur öffentliche* has been founded for the purpose. Contributions will be published in German, English or French. It is edited by the President of the Committee, Professor Ernst Jessen, of Strassburg; Dr. George Cunningham, of Cambridge; Professor William H. Potter, of Boston; Professor Carl Christensen, of Copenhagen; Mr. Albin Lenhardtson, of Stockholm; Dr. Williams Donnally, of Washington; Dr. A. Siffre, of Paris; and Mr. A. Steffen, of Cuxhaven. The *Archiv*,

which is published at Stuttgart, will appear at irregular intervals.

There is always plenty of good reading to be found in the pages of *L'Hygiène*, and the May number contains more than one interesting article. The widely differing subjects are chosen with careful attention to the varying needs and tastes of the public. The same watchful care which is displayed in the selection of subject matter is likewise exercised over the form under which it is presented, and editors and contributors alike seem to combine to make it acceptable and comprehensible to the average reader as well as strictly scientific in quality. Dr. A. Kermogant's excellent account of malarial fever is a case in point. The author, whilst avoiding all superfluous details, has managed to set forth all that is necessary for a proper grasp of the subject. After a slight sketch of the various experiments made in recent years with the object of discovering the origin of this terrible disease (in which he acknowledges the prominent part played by British investigators), Dr. Kermogant gives a brief but comprehensive description of the causes of infection, the insects which convey it, the best methods of cure, and the most effective means of prevention. The article is profusely illustrated with photographs and diagrams. Other articles of interest in this number are "Les Hôpitaux de Paris," by G. Mesureur, who advocates the destruction, or at any rate the total reconstruction, of every hospital building in Paris which has stood for over fifty years; the "Eau potable et Eaux de table," by Dr. Carrou de la Carrière" and "Les Exercises respiratoires chez les enfants," by Dr. Marage. The illustrations, which include Hobbema's exquisite "Promenade," are quite up to the usual high standard.

To the July number of the *Contemporary Review* Sir James Crichton-Browne contributes a very interesting article on the marks of the impress of Shakespeare that are visible throughout the writings of Scott. He discusses particularly the analogies and similarities which exist between *Hamlet* and *The Bride of Lammermoor*. Of all Shakespeare's plays, he says, *Hamlet* has most of the amplification of the novel; and of all Scott's novels, *The Bride of Lammermoor* is most dramatic in its treatment, and both these great works have exactly the same tragic touch.

> In both there is the same fierce conflict of vengeance and remorse, love, hatred, with supernatural terror brooding over all. In both the action sweeps on, and one feels it from the first like a torrent, hurrying on in its dark and resistless course all the personages concerned, the good and the wicked, towards a catastrophe not brought about by human will, but dug by destiny.

Sir James Crichton-Browne traces the similarities between the two works in convincing detail. The point of greatest interest to medical readers is his account of the circumstances in which *The Bride of Lammermoor* was written. It was composed, says Sir James, in April, 1819, while Scott was passing through an acute attack of an intensely painful and prostrating malady from which he suffered at intervals for years. The disease was called at the time cramp of the stomach, or spasms, but Sir James Crichton-Browne says that, looking on it now in the light of modern experience, there is no difficulty in recognizing it as gall stones, a malady which did not finally carry Scott off, but which caused him the utmost distress, and must have absolutely disabled any man of less buoyant temperament and less resolute will. His sufferings could now have been promptly relieved. He was emaciated and broken down, with scarcely strength enough to hold himself upright, lying on a sofa, sick, and often turning on his pillow with a groan of anguish. In this condition Scott dictated *The Bride of Lammermoor*. His sentences were sometimes interrupted by cruel pangs, but when an animated dialogue was in progress he rose from his couch and walked up and down the room, acting the part. A very remarkable consequence of the mental effort made in such conditions is that Scott, when the book was put into his hands on his recovery, which was after its publication, did not recollect a single incident, character, or conversation it contained. He remembered the facts on which the story was founded, but of his own writing nothing. For a long time, he says, he felt very uneasy in reading the book lest he should be startled by meeting something altogether glaring and grotesque. Sir James Crichton-Browne says it is clear that Scott's mind was in a state of abnormal exaltation when he wrote *The Bride of Lammermoor*. He wrote himself at the time that he began to have some doubts whether the mischief was not getting at his mind. He wrote again that he had had another of his attacks, and felt as if a phantasmagoria was going on around him. He had been taking large doses of opium, and Sir James Crichton-Browne thinks it may well have been that in the phantasmagoria in which he was involved the mind not only failed to register its processes, but was inundated by figures and images rising spontaneously from the mysterious depths of memory, "affinitive impressions and reminiscences in the guise of new conceptions. It may well have been that as Scott, in sore travail, stitched the glorious tapestry of *The Bride of Lammermoor* some old Shakespearean threads that came to him got mixed up with it." In any case the composition of such a literary masterpiece during the throes of so painful a disease as gall stones is a marvellous instance of the triumph of mind over matter.

Nova et Vetera.

SOME ROYAL DEATH-BEDS.

(Continued from vol. i, p. 1560.)

MARY II.

QUEEN MARY, the wife of William III, died of malignant small-pox at the end of 1694. An epidemic raged in London that winter, causing thousands of deaths. Bishop Burnet, in his *History of His Own Times*, says that the prevalence of the disease "gave a great apprehension with relation to the Queen; for she had never had them." The mention of this fact shows how exceptional it was in that day for any one to escape small-pox. Sir Thomas Millington, who was Physician-in-Ordinary to the King, gave it as his opinion that the Queen was suffering from measles, but Radcliffe pronounced her ailment to be small-pox. As Macaulay says:

> That disease, over which science has since achieved a succession of glorious and beneficent victories, was then the most terrible of all the ministers of death. The havoc of the plague had been far more rapid; but the plague had visited our shores only once or twice within living memory; and the smallpox was always present; filling the churchyards with corpses, tormenting with constant fears all whom it had not yet stricken, leaving on those whose lives it spared the hideous trace of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to the lover. Towards the end of the year 1694 this pestilence was more than usually severe. At length the infection spread to the palace, and reached the young and blooming Queen. She received the intimation of her danger with true greatness of soul. She gave orders that every lady of her bedchamber, every maid of honour, nay, every menial servant, who had not had the smallpox should instantly leave Kensington House.

The Queen shut herself up in her closet for a time, burning many papers and putting others in order. For a day or two her illness seemed to be only a transient indisposition, for which she took a cordial which she was accustomed to use. There was much difference of opinion among her physicians as to the nature of the malady. Burnet's account of its course is worth quoting; on it Macaulay's is evidently to a large extent founded:

> On Christmas day the smallpox sunk so entirely, and the Queen felt herself so well upon it, that it was for a while concluded that she had the measles, and that the danger was over . . . before night all was sadly changed. It appeared, that the smallpox were now so sunk, that there was no hope of raising them. The new archbishop attended on her; he performed all devotions, and had much private discourse with her: when the desperate condition she was in was evidently beyond doubt, he told the King, he could not do his duty faithfully, unless he acquainted her with the danger she was in: the King approved of it, and said, whatever effect it might have, he would not have her deceived on so important a matter. And, as the archbishop was preparing the queen with some address, not to surprise her too much with such tidings, she presently apprehended his drift, but shewed no fear nor disorder upon it. She said she thanked God she had always carried this in her mind, that nothing was to be left to the last hour; she had nothing then to do, but to look up to God, and submit to his will; . . . she seemed to desire death rather than life; and she continued to the last minute of her life in that calm and resigned

state. She had formerly wrote her mind in many particulars, to the King: and she gave order, to look carefully for a small scrutoir that she made use of, and to deliver it to the King: and, having despatched that, she avoided the giving her self or him the tenderness which a final parting might have raised in them both. She was almost perpetually in prayer; the day before she died, she received the sacrament, all the bishops who were attending being admitted to receive it with her: we were, God knows, a sorrowful company . . . she followed the whole office, repeating it after the archbishop; she apprehended, not without some concern, that she should not be able to swallow the bread, yet it went down easily. When this was over, she composed herself solemnly to die; she slumbered sometimes, but said she was not refreshed by it; and said often, that nothing did her good but prayer; she tried once or twice to have said somewhat to the King, but was not able to go through with it. She ordered the archbishop to be reading to her such passages of scripture as might fix her attention, and raise her devotion: several cordials were given, but all was ineffectual; she lay silent for some hours; and some words that came from her showed her thoughts began to break.

Mary died on December 28th, about one in the morning, in the 33rd year of her age, and the sixth of her reign. John Evelyn says in his *Diary* under the date March 8th, 1694:

I supp'd at the Bp. of Litchfield and Coventry's, who related to me the pious behaviour of the Queene in all her sicknesse, wch was admirable. . . . On opening a cabinet a paper was found, wherein she has desir'd that her body might not be open'd, or any extraordinary expense at her funeral, whenever she should die. This paper was not found in time to be observed.

Radcliffe was greatly blamed, and Burnet echoes the general gossip of the time when he says "The physician's part was universally condemned" and the Queen's death was imputed to his negligence or unskilfulness. "He was called for; and it appeared but too evidently that his opinion was chiefly considered and was most depended on. Other physicians were afterwards called; but not till it was too late." Radcliffe, on the other hand, maintained that he was called too late, and that no remedies that could then be tried had the least chance of doing good.

It may be stated that the "slight remedy" which Burnet says the Queen took before the disease had fully declared itself was a spirituous concoction which the Queen usually took in large doses when ill. Her physician, Dr. Walter Harris, had repeatedly warned her against this practice of drugging herself with a cordial far stronger and more heating than the usual strength of brandy, pointing out that such draughts "for a person of her corpulence and sanguiferous complexion were like to be fatal, in case of eruptive diseases." Miss Strickland, in her *Lives of the Queens of England*, quotes a letter written by Dr. Harris "on Queen Mary's Case of Smallpox united with Measles." He attributes the fatal termination of the Queen's illness to the cordial which was her favourite remedy in all cases of indisposition. Once or twice before, he says, it had nearly cut short her life; he supposes that she took a double dose of it after her relapse, and thus rendered her case desperate.

The queen's mind wandered very wildly the day before she expired. The hallucinations with which she was disturbed were dreary, and the nature of them certainly indicates that somewhat remained on her mind, of which she had not spoken. Her majesty mysteriously required to be left alone with archbishop Tennison, as she had something to tell him, and her chamber was cleared in consequence. The archbishop breathlessly expected some extraordinary communication. The dying queen said, "I wish you to look behind that screen, for Dr. Radcliffe has put a popish nurse upon me, and that woman is always listening to what I want to say. She lurks behind that screen; make her go away, That woman is a great disturbance to me" (Ralph's *History*, vol. ii, p. 540). The popish nurse, which the queen fancied that her Jacobite physician, Dr. Radcliffe, had "put upon her" was but an unreal phantom. . . . Her father's friends, who were more numerous in her palace than she was aware of, fancied that, instead of describing this spectre to Archbishop Tennison, she was confessing her filial sins to him. . . . "The story . . . of the phantom nurse that perplexed queen Mary's last moments, was told by Archbishop Tennison himself to the historian, Bishop White Kennet" (MS. in the Bibliothèque de Roi, Paris, No. 1715).

Queen Mary breathed her last between night and morning, on the 28th of December, 1694,* in the sixth year of her reign, and the thirty-third of her age.

* This is old style. The French date her death January 7th, 1695.

THE IMPROVEMENT OF THE RACE.

MR. J. F. TOCHER, B.Sc., not long ago delivered a lecture before the Eugenics Education Society on the necessity for a national eugenic survey of school children. He said the conditions of life in England and Scotland had changed most markedly since the days when both were independent kingdoms. Then there was no luxury, no great wealth, no nursing of the weak in mind and body—in other words, natural selection played a greater part than it did to-day. If it was true, as was averred, that high proportions of men of ability had sprung from certain areas of Scotland to-day, it was because only physically and mentally powerful stocks could have survived the ordeal Scotland had to pass through in more than one stage of her chequered history. They could scarcely imagine that, during all the centuries of the separate existence of either kingdom, conditions were favourable to the unfit stock as against the fit. It appeared, as Darwin long ago pointed out, that there was now a reversal of this condition in process, due to the kind action of a benevolent State. How far this suspension of natural selection had taken place they were, through the labours of Sir Francis Galton and Professor Karl Pearson, only now learning to appreciate. If the published results, which related to certain populous centres, and, in other cases, to samples gathered from the whole country, were true as applied to the whole kingdom, then it was high time that a remedy should be sought for and applied. In order to confirm or otherwise the truth of certain important deductions, and to ascertain whether results from local areas were applicable to the whole country, Mr. Tocher advocated the institution of a national eugenic survey. This survey would be complementary to medical inspection, and would extend to the physical and mental characters of the school children of the entire United Kingdom, together with an inquiry as to their home conditions, and, as far as possible from existing data (registers of births, etc.) and from new data, a concurrent inquiry respecting certain specific facts bearing on the more immediate ancestry of the children. Referring to the possible argument that medical inspection really covered all that was wanted, Mr. Tocher said medical inspection from the parent's standpoint was a home interest; in the eyes of the medical officer and the local authority it was the health of the school; and in the eyes of the State it was the rising generation. The question was, Would all the improved conditions of body and surroundings of the present school child have a real, lasting, beneficent effect on their offspring in the next generation, when the present improved school child had reached parenthood? If it had, the transmission of acquired characters by the parent to the immediate offspring would be established. On the other hand, the achievements of medical inspection would be restricted if, after all, the improvement of offspring due to better environment of the parents was negligible compared with the improvement of offspring due to the denial of parenthood to undesirables and to the mating of fitter stock—that was to say, to a selection of the parents. Medical inspection supplied necessary information as to the general health of the school child, and the direct means to improve the health and physique of those who were so unfortunately born as to have transmitted to them poor physique, or had been reared in unfavourable surroundings, or both. But it did not ascertain the best means of securing the birth of children of good physique in the most favourable surroundings, and their rearing under the best conditions in each case. This the National Eugenic Survey would do—a survey which should be medical in part, sociological in part and anthropological in part. Referring to the work of Miss Elderton, Miss Barrington, Mr. Heron, and Professor Pearson, Mr. Tocher drew attention to the conclusion that there was little or no connexion between alcoholism in the parent and defect in the immediate offspring. By means of a national survey the relative proportions of bad stock in every local area in the kingdom would be definitely ascertained. They would also be able to institute a grading of stock, for all stock was not equally good or equally bad. Speaking of the phenomena of inheritance, he said that in Scotland he had found that physical characters differed as one passed from one part of the country to another. This

knowledge was important, for they might find, for instance, a certain low standard of town life associated with high proportions of myopia among children, or of low stature among adults, and be apt to conclude that the low standard of life was responsible for these conditions. A study of the other physical characters might reveal that the eye defect or low stature was characteristic of certain races, and that they were thus examining a non-homogeneous group. Again fair-haired children might be found in larger proportions in rural districts than in towns, and they might conclude that town life was severe on blondes. But another explanation was possible. It might happen as in Glasgow and London that people belonging to dark-haired races migrated to British towns, thus depressing the proportion of blondes when compared with rural districts. Mr. Tocher next dealt with the aid which could be given by furnishing information as to immediate ancestry, and incidentally suggested the furnishing of surnames to the third generation. It was part of the English character to trace ancestry to Norman times. The clan system in Scotland was capable of being utilized for the promotion of good stock, which he believed was prevalent among the industrial and middle classes everywhere. He advocated not only the formation of local associations, as suggested by Sir Francis Galton, but also their functioning as sept unions. Mr. Tocher concluded by saying that they were giving a free pass to the most fertile, whether of good or bad stock. The situation was accentuated by the constant emigration of a vigorous, if not a more vigorous, class to other shores, where virile stocks of British descent were making unconscious experiments for future eugenists to study and unravel.

THE LATE KING EDWARD VII.

At the first meeting of the New South Wales Branch of the British Medical Association, held at Sydney, after the announcement of the late King's death, it was unanimously agreed to send the following letter to Lord Chelmsford, the State Governor of New South Wales:

Your Excellency,—I have the honour in duty to express the profound and respectful sorrow of the members of the New South Wales Branch of the British Medical Association at the lamented death of His Most Gracious Majesty King Edward VII, and at the same time to convey the sincere sympathy of the members with the Queen Mother and the Royal Family in their bereavement. I have the honour also in duty to express the loyal allegiance of the members of the New South Wales Branch of the British Medical Association to His Most Gracious Majesty King George V, together with their humble prayer that he may be spared to enjoy a long, prosperous, and peaceful reign.

(Signed) James Adam Dick, President.

At the first meeting of the Executive Committee of the Australasian Medical Congress after the announcement of the King's death, the following resolution was passed by the Committee, and forwarded by the President, Dr. Antill Pockley, to the State Governor:

The President and Executive Committee of the Australasian Medical Congress, representing the medical profession in Australasia, desire to convey to Her Majesty the Queen Mother Alexandra and the members of the Royal Family their sincere sympathy on the occasion of the death of His late Majesty King Edward VII. The late King having been an Honorary Fellow of the Royal College of Physicians of London, and of the Royal College of Surgeons of England, they desire especially to express their sense of the great loss of so distinguished an ornament of the profession.

In connexion with a proposed Australian memorial to the late King, the following letter has been written by Mr. Fisher, Prime Minister of Australia, and Mr. A. Deakin, the Leader of the Opposition:

Melbourne, May 30th, 1910.

To the People of Australia.—With great diffidence, under a sense of public obligation, we venture to suggest to the people of Australia that the time has arrived for the submission of a proposal on a subject which has no doubt been uppermost in their minds since the death of our late Sovereign King Edward VII—that is, an appropriate Australian memorial which would suitably commemorate his reign.

While in no way seeking to set aside other projects, State or local, for which there is abundant room, it appears to us that the Australian Bush Nursing Scheme, distinctively national in character, would undoubtedly confer great benefits upon the whole Commonwealth. In the most conspicuous manner inaugurated last year by Lady Dudley, and warmly commended by the late King and supported by Queen Alexandra during Her Excellency's recent visit to London, it comes to us with the highest approval. In inviting your generous consideration to the large financial requirements of a scheme designed to cope with the needs of the least populous districts of this great Continent, we take this opportunity of impressing upon you the strictly federal character of Her Excellency's immense undertaking.

HEALTH IN THE PHILIPPINES.*

Dr. Victor G. Heiser, the director of health, is able to record satisfactory progress throughout the islands, and the death-rate among Government employees has in consequence fallen as low as 8.62 for the year. Manila has been provided with an additional supply of excellent mountain water, so that 100 gallons per head are now provided for the daily needs of the population, besides some eighty artesian wells which have been sunk by the Public Works Department or by provincial authorities. Nearly two million persons were vaccinated during the year, and in those districts where small-pox is not concealed by the natives for superstitious reasons, the figures show noteworthy improvement—for instance, in the Province of Oriental Negros the deaths from small-pox have diminished from 127 in 1906 to 2 in 1909. For the last five years systematic efforts have been made to isolate the lepers on Culion Island, but a wise law provides that any leper shall have the benefit of microscopical proof before he is subjected to segregation, and the great majority of Philippine lepers and their friends cheerfully submit to isolation on the island, which has an area of 800 square miles. The lepers cultivate gardens, build houses, and are provided by the Government with cattle and implements for farming. Leprosy in the Philippines is sometimes thought to be arrested by *x*-ray treatment, or by the prolonged use of crude chaulmoogra oil, aided by liberal diet, hot baths twice a day, and regular doses of strychnine.

A campaign against hookworm disease was initiated, and of the first thousand townsfolk examined, it was found that 10 per cent. were suffering from uncinariasis, while 95 per cent. harboured one or more species of intestinal parasites! Crusades are also being waged against infant mortality, tuberculosis and malarial mosquitos, while two hospitals, providing 420 additional beds, were opened during the year.

Two provinces suffered in June from a severe outbreak of bacillary dysentery, apparently due to contaminated ice. Cholera was the chief disease which the sanitary authorities had to fight, and their daily output of disinfectants reached 75 tons of lime and about 700 gallons of carbolic acid, or a similar quantity of creoline, trikresol, or formalin. In September there were 3,160 cases of cholera in one province, but the disease was stamped out in December by energetic measures. The usual accompaniments of epidemic cholera in a very ignorant population were not absent. Placards were posted on the churches and public buildings to the effect that the disease was not cholera, but was the result of poison introduced by the Americans under the guise of disinfectants! "When a Filipino falls ill, all the neighbours will, either through interest or through curiosity, crowd into the house. Upon discovery or upon decision of the householder or doctor to report the case, these people promptly scatter, go to their meals without washing their infected hands, eat their rice with these same infected hands, and even carry with them from the infected houses, mats, articles of clothing, food and drink, to save them from the all-destroying disinfectors."

Popular education and a campaign conducted from the pulpit and in the schoolroom may some day bring improvement, but, in the meantime, the health officers have to discover the cholera carriers, who are found in some districts to number more than 7 per cent. of apparently healthy individuals; all such cases had to be removed to hospitals, where they were detained until the comma bacilli had disappeared from their stools.

Plague has been absent from the city of Manila since 1906, when a special system of rat destruction was introduced into sections of the city proved to harbour infected rats. It is claimed for this system "that the cost is only a small fraction of that of general rat examination." The report shows commendable activity in many directions, and the sanitary officers seem to be well supported by executive powers and by a necessary expenditure of Government money.

* Annual Report of the Bureau of Health for the Philippine Islands, July 1st, 1908, to June 30th, 1909. Manila. 1909.

British Medical Journal.

SATURDAY, JULY 16TH, 1910.

A PLEA FOR PROFESSIONAL UNION.

IN his Presidential Address to the Metropolitan Counties Branch, which is printed in this issue of the JOURNAL, Dr. Lauriston Shaw makes a vigorous and convincing appeal for professional union. He describes the true professional aim as being to seek out, to spread, and to make use of medical knowledge. Dr. Lauriston Shaw's ideal of the profession is a high and noble one. He might echo, with a more modern expression, that fine passage in Sir Thomas Browne's *Religio Medici*: "I feel not in me those sordid and unchristian desires of my profession; I do not secretly implore and wish for plagues, rejoice at famines, revolve ephemerides and almanacks in expectation of malignant aspects, fatal conjunctions and eclipses. I rejoice not at unwholesome springs nor unseasonable winters; my prayer goes with the husbandman's; I desire everything in its proper season, that neither men nor the times be out of temper. Let me be sick myself if sometimes the malady of my patient be not a disease unto me. I desire rather to cure his infirmities than my own necessities. Where I do him no good, methinks it is scarce honest gain, though I confess 'tis but the worthy salary of our well-intended endeavours. I am not only ashamed but heartily sorry that, besides death, there are diseases incurable; yet not for my own sake or that they be beyond my art, but for the general cause I apprehend as mine own."

The last sentence implicitly contains the essence of Dr. Lauriston Shaw's definition of the true aim of the medical profession. It should take the common cause of humanity as its own. The relief of suffering and the prolongation of life are the real reasons of its existence. In the discovery of more efficient means towards the achievement of this end, advances not dreamed of by Sir Thomas Browne and those who came after him during two centuries have been made. A vast number of diseases which were looked upon as incurable till comparatively recent times have now been brought well within the reach of medical art. The knowledge gained by research and observation has been made easily accessible by the great development of medical literature in the form of journals and books. Matthew Arnold said that the function of a good review was to make known the best that was thought and said throughout the world. This the BRITISH MEDICAL JOURNAL does its best to do, and the Association has recently taken a further step in the same direction by offering to its members the opportunity of borrowing periodicals and scientific reports and documents dealing with matters of medico-sociological importance. The endeavour to make the increase of professional knowledge available to all who stand in need of the power for good which it gives the practitioner, is the natural corollary of research and the dissemination of the results obtained thereby. Every member of the profession takes one or other of these different fields of work for his province; each one, in Voltaire's phrase, "cultivates his own garden." Hence the workers tend to become to a greater or less degree wrapped up in their chosen department of activity, and lines of cleavage are formed separating the general body of the profession into sections which lose the cohesion necessary to give the fullness of strength it should possess as an organic whole. Against this disintegrating tendency Dr. Lauriston Shaw most opportunely utters a note of warning which we hope will resound throughout the profession and lead to its closing up its ranks and concentrating its energies against the evils that hamper it in the fulfilment of its true aim.

One of the greatest obstacles to union is the apathy of a large proportion of the profession in regard to everything but what very obviously concerns their own immediate interests. To this apathy is due our political powerlessness, the ignominious thraldom in which many are held by Bumble and by friendly societies, and the injustice and scant consideration we often meet with from the public. But, as Dr. Lauriston Shaw points out, there is something worse than apathy: within our own household there is not a little positive antipathy to the idea of combination. Efforts to strengthen the profession by organization are denounced as "trade unionism." Now of trade unionism may be said what Mr. Balfour not long ago said of socialism, that it is simply a "label." Much of the misapprehension and confusion in men's thoughts about public affairs arises from mistaking a label for an argument. The opponents of organization would do well to follow the advice of Dr. Johnson and clear their minds of cant. What is this monster of trade unionism when it is looked fairly and frankly in the face? Properly understood, it means simply the combination of the members of a class for the protection of their common interests. It is a fundamental precaution dictated by the instinct of self-preservation. The principle of trade unionism may indeed be applied in practice in a manner detrimental to the public weal; for illustrations of this statement we need go no further than the medical corporations which have so long ruled the profession, sitting aloft like the Gods of Olympus, and looking down on the struggles of mankind without helping them in their difficulties. But the abuse of trade unionism does not in any way affect the soundness of the principle. As for the General Medical Council it cares for none of these things. Nor need we look for help to Parliament—unless we can bring to bear upon it the influence of a united body of highly educated men discharging functions of the highest importance to the State as well as the individual. "Who would be free themselves must strike the blow."

As Dr. Lauriston Shaw says, the remedy for the evils from which the profession suffers is to be found only in voluntary association. Such an organization already exists in the British Medical Association, to whose efforts many great reforms are due. Of these we need only mention the Amendment of the Medical Acts in 1886, the addition of Direct Representatives to the General Medical Council, and the improvement in the status and pay of the medical officers of the army and navy. Not to mention the redress of many cases of private grievance, the Association also did much for the reform of abuses in the

Poor Law system, notably in the administration of workhouse infirmaries. To its credit also must be placed a considerable share in the improvement of medical education and the consequent raising of the social position of the profession from the "'potecary" whom mid-Victorian ladies of 'ashion "used," to the practitioner of the present day. As Wordsworth said, the child is father of the man; and one has only to glance at the medical student as drawn by John Leech, who had been one himself, and to his analogue as portrayed by Du Maurier, to see what a difference there is between the new and the old.

That there is still much to be done before the profession attains its rightful position is unquestionable, but it is already being done, and surely if slowly. Success can result, however, only from combined effort, and it certainly will not be won if men hold aloof from the British Medical Association because they fear to let the phantom of trade unionism come between the work and their nobility. In combined effort, for which the British Medical Association alone supplies the mechanism, is to be found the means of creating a united medical profession and achieving the high aims which Dr. Lauriston Shaw puts before us. Without union the advance of science, the dissemination of knowledge gained by research, and the application of the benefits of such knowledge to all who are in need of it, must all fall short of the fullness and efficiency that may justly be expected from them. To those who say, like the French *émigré* nobleman, who was met by a former acquaintance trundling a wheelbarrow, *Faut vivre*, it may be pointed out that this object, too, will be more effectually attained in the long run by combination than by selfish isolation. In solidarity lies not only safety—and the practitioner is threatened in one way or other by the schemes of various social reformers—but the hope of a brighter future in which the medical profession may be able to discharge its beneficent mission with the fullest advantage. We commend Dr. Lauriston Shaw's thoughtful address to the serious attention of all members of the profession, especially such as still remain outside the fold of the British Medical Association.

THE TUBERCULOSIS CONFERENCE AT EDINBURGH.

IT is little more than ten years since the National Association for the Prevention of Consumption and Other Forms of Tuberculosis was inaugurated by the late King Edward, then Prince of Wales. Since then good work has been effected by the association. By the circulation of literature and by lectures public opinion has been educated considerably, and influence brought to bear on Parliament, local authorities, and other public bodies on matters relating to the prevention of tuberculosis.

Last year a further development in one direction took place, mainly owing to the initiative of Dr. Theodore Williams, the vice-chairman of the association, who took a very active part in the proceedings. A tuberculosis exhibition was instituted; it was opened at Whitechapel, and since then has visited several centres in England, and has attracted many visitors. Horace says:

> Segnius irritant animos demissa per aurem,
> Quam quae sunt oculis subjecta fidelibus.

There can be no doubt that the tuberculosis exhibition has already been a powerful educational force, and its effects cannot fail to be felt more and more as it reaches larger sections of the population.

This year a further departure was made by the holding of the annual meeting of the association in a new centre. It was natural that Edinburgh should be chosen in view of the forward state of antituberculosis endeavour in the northern capital. The invitation to meet in Edinburgh was issued by the Committee of the Royal Victoria Hospital for Consumption. When it was accepted it was arranged to hold a conference on tuberculosis and a tuberculosis exhibition. The city and medical authorities co-operated to the fullest degree. The result has been a most interesting and influential gathering. The conference was attended by nearly 400 delegates and guests, in addition to the local medical profession. The varied programme, to which reference has already been made in the JOURNAL, was followed with close interest throughout. The results of the deliberations cannot fail to be of far-reaching influence.

The organizers of the conference recognized the advantage of focussing opinion on certain definite aspects of the tuberculosis problem, and they were fortunate in their selection. Each of the discussions was handled by men of eminence, and the interest never slackened.

The first subject was "The Avenues of Infection," introduced by Professors Woodhead and Adami. Dr. Theodore Williams made a valuable contribution to the debate. The immense value of clinical observation was largely dwelt on. The special features of tuberculosis which separate it from other acuter infections were dealt with, and the risk of deduction from animal experimentation, where a maximum dose was commonly given within a short period, was emphasized. The prevailing feeling was in favour of post-natal infection as much the commonest event, and the respiratory passages as the most frequent channel. The view that the whole stretch of the mucous membrane, from the nostril to the alveolus, and from the lips to the anal orifice, was vulnerable, but that certain points such as the tonsillar region were especially so, obtained considerable acceptance. Attention was especially drawn to the slow progressive character of the infection, and to the bearing of the ebb and flow of the lymph circulation on the spread of the disease. Man was especially infected by man, and in the largest number of cases the infection was aërolymphogenous. The relatively infrequent occurrence of bovine infection was admitted by most speakers.

The subject of "Administrative Control of Tuberculosis and Preventive Measures" was introduced by Dr. Hermann M. Biggs of New York, who paid most generous tribute to Edinburgh methods. He described the Edinburgh antituberculosis scheme as the most complete in the world. He detailed in graphic fashion the significance of the dispensary, the sanatorium, the working colony, and the hospital for advanced cases, and showed the need for a thoroughly organized and co-ordinated plan. The New York methods were fully explained, and the smooth working and satisfactory results of compulsory notification were reported. Dr. Leslie Mackenzie showed how amply the subject of tuberculosis was dealt with in existing public health legislation, declaring that, in Scotland at least, no further legislation was needful. What the Local Government Board desired to see was the gradual elaboration in each district of a scheme of operations similar to that which they had the

opportunity of studying in Edinburgh. The Board had adopted the system as a model for the rest of the kingdom. There was a general consensus of feeling in favour of compulsory notification. It was remarkable that not a single dissentient voice was raised on the other side. It was shown how in 1906 compulsory notification had not been admitted in Scotland, and how this year more than 50 per cent. of the entire population was under the measure. Similarly satisfactory references to compulsory notification were made by medical officers of health for Edinburgh, Glasgow, and Sheffield.

The frequency of tuberculosis among children was reviewed in an interesting fashion. The advanced position as to the extreme frequency was represented by Dr. Hamburger of Vienna and Dr. Philip. The former concluded, as a result of both clinical and *post-mortem* evidence, that nearly all persons in Vienna of over 14 years of age are already tuberculous. It was shown that tuberculosis in childhood was commonly slow in advance and relatively harmless. With advancing age the frequency of tuberculosis increased, while the morbidity of the infection lessened. The prognosis of tuberculosis was more favourable the older the individual was at the date of first infection. The discussion tended to wander a little from the main thesis of "The Incidence of Tuberculosis in Childhood"; the net result was the freer admission than in most previous discussions of the view that tuberculosis is, for the most part, acquired during childhood, thereafter remaining dormant, or advancing slowly, and often breaking out into activity in adolescent or early adult life. The significance of the continuous unhealthy environment of the child from infancy onwards was emphasized. If this could be satisfactorily modified there would be much less risk of infection. The most hopeful line of prevention lay in the improvement of such *milieu*.

The last subject for discussion was "The Working Man in Relation to Tuberculosis." There was insistence by several speakers that the issues raised were so wide, and the aspects of the problem so varied, as to call for a definite scheme of State intervention with a view to the erection of hospitals, sanatoriums, and dispensaries throughout the United Kingdom. An attempt was made to show that voluntary measures had proved insufficient. On the other hand, the opinion was most freely advanced that such intervention was both unnecessary and undesirable. It was a highly questionable policy to legislate specifically against a particular disease. The prevention of tuberculosis should be approached from the wider public health standpoint. The prevention of tuberculosis involves especially the housing question, the regulation of occupation, and other hygienic provisions. It was with these latter that the State as such should concern itself. The State might safely leave the development of more definite antituberculosis measures to local and voluntary effort, of which they had an object lesson in the now successfully completed Edinburgh scheme, where voluntary effort and local authority each played so important a part. The general sense of the conference was voiced against special legislation for tuberculosis, and in favour of the inclusion of tuberculosis in the scheme of insurance against invalidity and unemployment which had been promised by the Government.

Advantage was freely taken by the delegates and guests to visit the various institutions which are included in the Edinburgh scheme—namely, the Royal Victoria Dispensary, the Royal Victoria Hospital, the Royal Victoria Farm Colony, and the hospital for advanced cases. The exhibition included not only the exhibition of the National Association, but also a most representative pathological museum and literary and historical collection. Both the latter were extremely well organized, as was also the system of demonstration by qualified persons.

It would seem as if the National Association for the Prevention of Consumption had, thanks largely to the energy of Dr. Theodore Williams, entered on a new lease of life. It is earnestly to be hoped that the example so successfully afforded will be followed up by similar annual congresses both in London and other centres. The National Association of Great Britain ought to have as wide an outlook on the whole question as the younger national associations of other countries.

ACCIDENT TO DR. DAWSON WILLIAMS.

WE regret to announce that Dr. Dawson Williams, the Editor of the BRITISH MEDICAL JOURNAL, was on Saturday last the victim of a motor accident which might have had disastrous consequences. He was badly bruised about the shoulders and the front of the chest, and there was some slight concussion of the spinal cord. As exaggerated accounts have appeared in certain quarters we think it well to state that Dr. Williams was unconscious only for a very short time after the accident. He has since been in full possession of his senses. Owing to the enforced immobility due to the pain of the bruises, some hypostatic congestion of the lungs occurred. This has now cleared up. The nervous shock was, of course, considerable, but we are pleased to be able to state that the spinal injury is not considered severe, and that Dr. Williams's condition is improving. He is under the care of Dr. Reginald Jamison, of Horsham. We feel sure that all members of the British Medical Association and of the medical profession generally will join with us in wishing Dr. Williams a complete and speedy recovery.

BIRD'S-EYE VIEWS OF THE MEDICAL PROFESSION.

IN the six or seven addresses of Presidents of Branches published in this issue medical mankind is surveyed, if not from China to Peru, in nearly all the variety of conditions in which it does its work in this country. They are all the deliverances of men of long experience of medical life and who have attained a certain eminence among their colleagues. They were all prepared for an occasion of importance in the speaker's career and they are all free from the reproach of being academic homilies; even when they discuss abstract considerations these are dealt with from the standpoint of practical politics. But here the resemblances almost end, for the main subjects treated are all different, and when they occasionally overlap, each speaker in his treatment of them has naturally been influenced by the environment in which the bulk of his experience has been acquired. This environmental difference is itself of interest. It shows the width of the field from which the Presidents of Branches are drawn, and helps to give the papers as a whole something of the nature of a conspectus. Thus Dr. Lauriston Shaw, a pure physician, deals with the general aims of the medical profession and the value of organization; his address is separately dealt with elsewhere. Then Mr. Pye-Smith, a professor of surgery in one of the younger universities, discusses the general principles underlying the purely

professional relations of medical men and patients, and neatly suggests *De futuro nil nisi bonum* as a good working rule in respect of prognosis. Dr. Allfrey, who has had a very long experience of practice at a fashionable health resort, shows how great has been progress in the past forty-five years, and how impossible it is for the most fanatic antivivisector to avoid taking advantage of the knowledge gained in the laboratory. His picture of the house-surgeon's jacket acting as a store for sutures and needles is almost suggestive of the Middle Ages, while his statement that both the clinical thermometer and the safety of self-drugging tablet-swallowers are due to animal experimentation may be commended to the attention of the opponents of research by that method. Dr. Maidlow, a practitioner in a country town doing a good deal of public health work, forecasts the early future on the basis of the changes of the past ten years, and shows that the doctor has taken the parson's place as the power behind the public throne. Dr. Puckle, who lives in a Shropshire village not out of reach of large towns, shows how greatly modern facilities for getting about and other causes have altered the work of men in like case, and that while the social position of medical practitioners has much improved, infinitely more is expected of them. He also gives reason for believing that if the medical profession is to hold its own as an attractive occupation there must be not only combination, but moral co-operation. Dr. W. H. Brook, of Lincoln, a general practitioner who does a good deal of surgery and holds office as coroner, deals mainly with the difficult problems created by the Workmen's Compensation Act of 1906, and shows that patients who are claimants for compensation are entitled to gratuitous treatment at the hands neither of hospital surgeons nor private practitioners. Finally comes the address of Dr. Noy Scott, of Plymstock, a town which, though small in itself and situated in Devonshire, apparently renders grappling with the problems of contract practice not less necessary than in large industrial areas. He would like to see minimum local tariffs established, and yearns for a time when medical men engaged in private practice may be real students as well as practitioners of medicine. If any general conclusion whatever can be drawn from addresses so various in origin and contents, it would seem to be that there is the fullest recognition on all sides of the fact that medicine as an occupation is undergoing at the present time a very rapid evolution, and that in some degree it rests in the hands of the profession to guide its course. Nor would the probable net outcome seem to be regarded with very grave misgivings. Hopeful anticipations, however, if justified, are but little consolation to those, and they are many, who are suffering financially and in many other ways from changes already more or less complete.

CIVIL LIST PENSIONS.

THE official list of those to whom pensions were awarded during the recently terminated financial year, under the Civil List Act of 1901, will have been read with mixed feelings by those connected with medicine. It is certainly a matter for congratulation, and possibly a hopeful sign of the times, that the claims of medical science should by no means have been overlooked by those responsible for making the awards in question. Indeed, the success of four candidates of a medical order in a total list of fifteen awards must be considered a decidedly high proportion. But on the other hand, it is depressing to have the fact that the pursuit either of applied or pure science is a very ill paid occupation so trenchantly demonstrated. However, there can be few practitioners of medicine to whom this fact will be novel, and every one will be glad that, since circumstances unfortunately require it, Mr. Thomas Bryant, Consulting Surgeon of Guy's Hospital, should have received a pension of £100 a year. Born in 1828, Mr. Bryant during the active part of his career played a very prominent part in the medical world, being President of the Royal College of Surgeons, of the Medical, Hunterian, and Clinical Societies of London, a member of the General Medical Council, and Surgeon-in-Ordinary to His late Majesty King Edward VII. Above and beyond these and other distinctions his is a name pleasantly reminiscent of their student days to many men still in practice, for Bryant's *Practice of Surgery* was in its time one of the most popular of textbooks. The late Arthur Gamgee, whose widow receives a pension of £70, died only last year, and during his lifetime was a notable example of the difficulties of converting pure science into bread-and-butter. Excellent and original minded physiologist as he was, he had on two occasions to abandon his researches and endeavour to build up a practice. The other recipients of £70 pensions are a daughter of the late Professor Edward William Murphy, M.D., in consideration of the services rendered by him in furthering the use of chloroform; and Mrs. Joanna Calder Fraser, in recognition of the value of the investigations in anatomy and embryology of her husband, the late Professor Alexander Fraser.

VACCINATION EXEMPTION: IRREGULARITIES.

SINCE the irony of electoral fate silenced the voice of Mr. Arnold Lupton in the House of Commons little has been heard in the House of the subject of vaccination. It will be remembered, however, that a few weeks ago, when the vote on the increase in the salary of the President of the Local Government Board was under discussion, Mr. Chaplin availed himself of the occasion to call attention to the national danger arising out of the increased exemption from vaccination since Mr. Burns's Act came into force, providing easy facilities for obtaining exemption. Before this Act the exemptions had averaged a little over 4 per cent. of the births. Since then an increase has taken place, until at the present time the exemptions amount to about 20 per cent. of the births. Mr. Burns in his reply pointed out that not a single death has been registered in London during the past year from small-pox—a comment which elicited from Dr. Hillier, M.P., the remark, "a happy coincidence." It is somewhat surprising to find Mr. Burns boasting thus of the harmlessness of the Act at such an early stage of its operation. He told the House that he does not share the fears of some people regarding the results of the Act. He was convinced that the fears of the pro-vaccinists and the hopes of the antivaccinists had not been justified in the last two years. This allusion to the hopes of the antivaccinists is significant, and is doubtless based on actual knowledge that leading antivaccinators, however much they may exult over the increase in exemptions recorded, are greatly disappointed to find the increase considerably smaller than they anticipated and by no means commensurate with the gigantic and almost frantic efforts exerted by their league. Under the old Act frequent complaints were made by the antivaccinators against magistrates who desired to be satisfied, as the Act then required, that applicants had a conscientious objection, and their action was strongly resented as being irregular. We have heard no protests from the same quarter against undoubted irregularities on the part of certain magistrates. At a recent meeting of the Bridlington Board of Guardians attention was

called to the fact that a prominent resident who had been until November 9th, 1909, an *ex officio* magistrate, had since that date signed a number of exemption certificates. At the Clerkenwell Police Court the vaccination officer complained to the stipendiary that some of the defendants had secured exemption orders from local justices of the peace after the children had attained the age of 4 months, and that the practice was causing him considerable trouble. Instances of irregularities could be easily multiplied. The attention of the Home Office should be drawn to such practices without delay.

THE DEATH SENTENCE.

FROM time to time there is an outcry against the pronouncement of the death sentence upon offenders to whom there is every good reason to believe that the prerogative of mercy will be extended as a matter of course. By an Act passed in 1861, the judge is bound to pass sentence of death upon any one convicted of murder. He has no option; he cannot even wait until next morning to consider the matter. All those who have taken human life in such a way as to be guilty of murder must be treated in like fashion. The man who forges a will and poisons the alleged testator so that he may the sooner come into his inheritance; the armed burglar who shoots the master of a house who is trying to protect his property, is guilty of murder. If two people agree to commit suicide, and only one of them succeeds in doing so, the survivor is guilty of murder. Finally, an unfortunate girl who kills her illegitimate child after undergoing the agonies of parturition is a murderess according to law. In all these cases the same ghastly ceremony is gone through. The usher cries, "Silence in court!" the judge assumes the black cap and pronounces sentence in solemn form, and the Sheriff's Chaplain says "Amen." Where the prisoner has been guilty of atrocious crime none but those who are opposed to capital punishment altogether will be heard to object to the sentence itself, or to the recognized method of pronouncing it. But what of the poor creature whom the jury have been reluctant to find guilty at all; whom they strongly recommend to mercy, and who can never in all human probability suffer the extreme penalty of the law? Might not the learned judge, in such cases, be allowed to "trim mercy's trembling balance with a tear"? Not long ago a girl who had been sentenced to death for child murder about eighteen months earlier was released from penal servitude. Her sentence of death had been commuted to penal servitude for life, and penal servitude was not allowed to continue for more than eighteen months. The punishment was ordered to fit the crime; but the order was issued eighteen months too late. The judges have long protested against having to inflict the cruel sentence of death upon a person who does not deserve it and who will never suffer it. Some of them have been strong enough to reduce the ordeal as far as possible to a mere matter of form. Lord Brampton once had to pronounce the death sentence in a case of this kind. He writes in his autobiography: "I was about to pronounce sentence in accordance with the law, which it was not possible for me to avoid, however much my mind was inclined to do so, when the pompous old High Sheriff, all importance and dignity, said: 'My lord, are you not going to put on the black cap?' 'No,' I answered, 'I am not. I do not intend the poor creature to be hanged, and I am not going to frighten her to death.' Addressing her by name, I said: Don't pay any attention to what I am going to read; no harm will be done to you. I am sure you did not know in your great trouble and sorrow what you were doing, and I will take care to represent your case so that nothing will harm you in the way of punishment.' I then mumbled over the words of the sentence of death, taking care that the poor creature did not hear them much, no doubt to the chagrin of the High Sheriff and to the lowering of his high office and dignity. Nothing so enhances a sheriff's dignity as the gallows." But Sir Henry Hawkins was a giant of the legal profession; and it is only the strong man who can take a strong course. There are signs, however, of reform in the air. A bill which was introduced in the House of Commons this session provides that no woman is to be indicted for murder in respect of infanticide at birth or within one month, but that she may be sent to penal servitude for any term not exceeding ten years, or imprisoned with or without hard labour, or may be detained during His Majesty's pleasure. The bill also classifies murders in two degrees. Murder in the first degree can only be returned by a jury when they find as a fact that the homicide was deliberately committed with express malice aforethought. It is only in such cases that the death sentence is to be pronounced. Murders in the second degree would entail penal servitude for life or for such less term as the court might award, or imprisonment for two years. Whether and how far this measure will be advanced in the present state of politics remains to be seen.

MOTOR CAR LICENCES.

THE new form of carriage licence applicable to automobile vehicles other than those used for commercial and industrial purposes came into force on the first of this month, and, in accordance with an anticipation which we expressed last year, the fees to be paid will be determined in ordinary cases by applying to each car the formula $D\,2 \times \frac{N}{2.5} = \text{h.p.}$ To be taxed *secundum artem* and by mathematics will probably be a new experience to most people, and to those of scientific mind possibly a source of consolation for new outlay. The formula was devised for its own use by the Royal Automobile Club several years ago, and, though based on very abstruse calculations, is in itself sufficiently simple, "D" representing the diameter of the cylinder of a car in inches and "N" their number. On various grounds objections have been taken to this formula, which commonly results in a car being classed at something under its nominal horse power; but this is a point in favour of the taxpayer, while the Treasury has closed up certain loopholes which the formula leaves open for cars of certain makes to get into classes far below those to which they properly belong. For instance, in the case of engines having single acting cylinders with double pistons the divisor will be, not 2.5, but 1.3 and in the case of a double acting cylinder with single pistons 1.25. There is also a special formula for cars whose engines have an exceptionally long stroke. In respect of steam cars with more than one cylinder, each cylinder is treated as a separate unit, and the total horse-power obtained by adding together the power attributed to each cylinder. Cars depending upon electricity as a motor force would all seem necessarily classed as from 12 to 15 horse-power. However, no car owner need trouble himself to apply any of the formulas, for at the cost of one penny he can obtain a card issued by the *Motor Car Journal* and find thereon a list showing the price of a licence for cars with all known combinations and widths of cylinders. From this list it is clear that many medical men will pay only a guinea

and a half for their carriage licences, and few more than three guineas, for the latter sum will, in the case of cars kept for professional purposes, cover any car, whether single, double, or four-cylindered, up to 25.6 horse-power. On the other hand, there is balm in the card for persons of a socialistic turn of mind; they will find that those who indulge in six-cylinder cars, with a calculated horse-power of between 63 and 102, will have to pay forty-two guineas a year, not for the pleasure of driving them, but for the mere satisfaction of permission to do so.

HISTORICAL RESEARCH AND THE PROBLEMS OF DISEASE.

A SOMEWHAT new departure in the history of disease is promised by K. Sudhoff of Leipzig and G. Sticker of Bonn, the first parts of whose new periodical, *Zur historischen Biologie der Krankheitserreger*, have just appeared. It is to be the combined product of numerous authorities, all of whom are in agreement with the point of view elaborated by Sudhoff in his introduction, *Historik und Seuchenforschung*. The aim is to enlist the aid of historical research in dealing with questions of disease, its causation, spread, prevention, and cure. While admitting the wonderful advances made by bacteriology in elucidating the etiology of disease, Sudhoff maintains that there are signs of stasis, and that further progress is to be hoped for more from the side of historical inquiry than from laboratory experiment or clinical observation. Sticker puts it more strongly and says: "The endeavour to gauge by means of trivial laboratory experiments the problems of epidemics, the origin, effects, and consequences of which extend over thousands of years, is but a childish amusement." The biological investigations on the germs of disease in the bacteriological laboratory, under the microscope, on artificial media, in experimental animals, and in the human subject have doubtless served a useful purpose, but there remains a hitherto ignored factor, namely, the careful examination of bygone records of disease, of the history of epidemics in former ages, in which it may be presumed the conditions were different, more favourable or less so than at present. "Shall the idea of evolution, which has such a hold on the rest of biology, have no significance in epidemiology?" is the question which Sudhoff next asks. Are these lowly organisms, which we now recognize as the germs of disease, to be regarded as having remained unaltered throughout the centuries, and in particular are we to consider them as having retained their pathogenic peculiarities unmodified from year to year, a matter of fundamental importance not only for pathology but for the whole doctrine of evolution? Further advantages we may expect to derive from this historical method are as follows: We shall obtain information as to the appearance of new diseases, and the first occurrence of certain acute and chronic affections, the period at which they arose, and the physical and cultural conditions prevailing at that time. We shall have the impressions of the physicians of antiquity to compare with the present day picture; and finally there are the skeletons and mummies of Egypt, Peru, and elsewhere to provide a wealth of pathological information; we have, in fact, the nucleus of a veritable science of palaeo pathology. In his concluding remarks, Sudhoff assures us that we may expect in this new periodical contributions dealing with general principles, some of a historico-clinical nature, others historico-etiological, together with important documents bearing on the history of disease. Their common characteristics will be absolute reliability of the historical material, avoidance of unnecessary historical and statistical ballast and terse method of treatment. We need hardly remark that the method is not so strikingly novel as Sudhoff in his somewhat florid introduction would have us believe, and that it has already been used to good purpose by quite a number of investigators. The merit of the idea lies in its general application. The severe strictures passed on modern laboratory investigations are quite unjustifiable, for whatever results Sudhoff and his collaborators may derive from their historical researches will have to be ultimately referred to present bacteriological and epidemiological data, in the light of which alone the historical method will be rendered possible.

THE AMATEUR TRAMP.

WHEN Greenwood wrote *The Amateur Casual* he attacked a system for which public bodies were responsible, and his exposure of the unnecessary filth and degradation of the casual ward of a London workhouse led to reform, but we are not sure that the Vicar of Crossens, who has spent four days on the road as a tramp, in company with tramps, sleeping in common lodging-houses, but apparently avoiding the casual wards, and has written a pamphlet on his experiences, to which the Rector of Birmingham has supplied an introduction, should be congratulated upon anything more than having come safely through a disagreeable experience. Probably he would not claim any literary merit for his booklet, but he must have intended to be convincing, and in this he has failed. He might have told his readers what he did, relating a plain story of his experiences; but though he begins by so doing he ends after the first night, and the rest is mainly a poor sermon. His pages are filled with such passages as: "Time was when life was as bright to them as 'tis to you, when hopes were high of noble, happy manhood. Then they were thrown out of work; they sought work, but their country refused it to them and let them drift on the road." "Were they always what they are now? No; they were once bright, smart, quick young fellows with good characters, with the young man's usual ambitions and hopes." "The city clocks strike eleven: soon the streets are full of expensively dressed men and women with heavy gold chains, gold rings, gold bracelets, and ornaments." The vicar who sees people walking about the streets decorated in this way is prepared to find excuses if some half-starved beggar knocks one of them down and relieves him of his golden ornaments. When he went to the parish church at Bolton he was received politely, given a place in the free seats, supplied with a book, and spoken to kindly as he left, which was fortunate or he might have become a dissenter. His main point is that tramps have not always been tramps; that in the beginning many are honest men who take to the road in search of work, who sink into this hopeless mode of life when their efforts to obtain work fail, and then become incapable, and even unwilling, to make any effort to rise above it. In one place he says that the majority of the men on the road are professional beggars and thieves, but on page 25 he is sufficiently optimistic to say, "I believe that 80 per cent. of the vast army of vagrants can be redeemed." With his plea for labour colonies most people will sympathize, but it would seem that they are not easy to administer, for hitherto most attempts in this country have ended in failure. Sentimentality, in which the vicar's pamphlet abounds, is the chief obstacle to the successful administration of labour colonies. When the men sent to a labour colony are

provided with billiard tables and pocket-money, and allowed to get drink, and cost on an average 30s. a week each, the experiment evidently is on wrong lines. The Swiss labour colony was a success from the first, partly because local circumstances favoured it, but mainly owing to the choice of a good director, who was given practically a free hand. Is the sentimental author of this pamphlet or the sentimental public he addresses likely to afford the necessary support to a system of labour colonies based on the principle that if a man will not work neither shall he eat? The statement that a respectable young man who is seeking work must under existing conditions become a tramp and frequent doss-houses ignores the various agencies public and charitable that exist in every town for helping those who wish to help themselves.

THE TOXINS OF FATIGUE.

THE toxic factor of disease is nowadays so thoroughly realized that those of us whose recollections of professional opinion carry them back to a time, not so very long ago, when this was far from being the case, may well feel that something like a revolution has been effected. Probably, the pioneer work of Bouchard, the English version of whose *Lectures on Auto-intoxication* appeared in 1894, may claim to have had a good deal of influence. One of his most suggestive discoveries was that the urines of sleep contain convulsive and those of the waking hours narcotic substances. "The poisons of the day period and the poisons of sleep are not only different as regards intensity and quality, they are antagonistic: the one is the antidote of the other." Bouchard was one of the first investigators who attributed the fatigue and other subjective symptoms of dyspepsia to absorption of the products of intestinal putrefaction. Sir Lauder Brunton has recently called attention to the frequent association of a constant feeling of tiredness with the existence of chronic colitis.[1] On the strength of Weichhardt's experiments on fatigue-producing toxins, Sir Lauder Brunton attributes the symptom of fatigue in colitis to the toxic products of micro-organisms rather than to the absorption of peptones or albumoses from the alimentary canal. Many vaccines and antitoxins produce a sense of exhaustion, and "the *Bacillus coli* appears to have the particular power of producing a fatigue toxin. The production of this is likely to be greatly increased in cases of chronic colitis." Fatigue toxins resemble others in respect of the power of causing the production of antitoxins. The stimulating and recuperative effect of beef-tea is ingeniously attributed by Sir Lauder Brunton to its containing fatigue antitoxins, for Weichhardt found such antitoxins in the muscles of slaughtered animals, together with small amounts of the fatigue toxin. The toxin, in contrast with the antitoxin, is not dialysable, hence, if present in the infusion, would presumably not be so readily absorbed from the intestinal canal.

OPTIC NEURITIS IN CHLOROSIS.

ONE of the most marked cases of choked disc which have ever been seen was in a young anaemic girl who had come up to Moorfields from the country because her sight was bad. The most careful examination failed to reveal any other cause but extreme anaemia. Such cases are probably far from uncommon, although only about twenty have been fully recorded. Dr. Possy, of Philadelphia, has recently published an example of this complication of chlorosis in the *Archives of Ophthalmology*, September, 1909. A Jewish girl, aged 21, was examined at the Wills Eye Hospital, and found to have fully developed optic neuritis, with unusual congestion of the veins. The appearances are made clear by two beautifully coloured plates of the fundi oculi painted by Miss Washington. The right vision was reduced to counting fingers at 1 ft.; the corrected vision of the left equalled $\frac{6}{9}$. An examination of the blood gave: Haemoglobin, 60 per cent.; red cells, 4,790,000; white cells, 11,100. A diagnosis of chlorosis with slight mitral stenosis and insufficiency was made. A week later, after appropriate treatment of the chlorosis, the ocular condition had greatly improved. Cases of this kind can very easily be confused with brain tumours, for the optic neuritis may be accompanied by severe headache, vertigo, vomiting, and convulsions. Even paralysis of the external rectus has been present in these chlorotic cases. Stölbing believes that there is always sclerosis of the cavernous sinus in chlorosis, which may account for the occasional occurrence of sixth nerve paralysis. Hawthorn believes that sinus thrombrosis alone can account for the simultaneous appearance of optic neuritis and adducens paralysis, and his view is adopted by Gowers.

THE ETIOLOGY OF IRITIS.

THE diagnosis of iritis is generally easy, but a determination of its etiology is often essential to a rational treatment. Syphilis is by far the most important factor in hospital cases. C. W. Jennings, who examined the records of 500 cases of iritis treated at the Wills Eye Hospital, Philadelphia, found[1] that 25.4 per cent. of all cases were recorded as "rheumatic," and only 5.2 per cent. were due to gonorrhoea. According to Beaumont of Bath, rheumatic iritis is almost unknown in his practice, most of the cases classed as rheumatic being really gonorrhoeal in nature. This is probably an extreme view, but we cannot help feeling that the figures the Wills Hospital err in an opposite sense. The history of rheumatism given by many patients will, if carefully examined, be found typical of gonorrhoeal rheumatism, and many others will admit that at some period they had gonorrhoea, which may or may not have been complicated with rheumatism. In a recent case the actual gonorrhoea had been contracted twenty years before, and had been followed by a typical gonorrhoeal arthritis. Twenty years later a severe and intractable iritis appeared on both sides. In another very similar example the iritis appeared ten years after the gonorrhoea. The gonorrhoeal etiology of iritis is often overlooked, the magic word "rheumatism" being capable of divers interpretations. Other causes given by the author are: Influenza, 1.4 per cent.; exposure, 1.4 per cent.; tuberculosis, 1.2 per cent.; and malaria, 1.2 per cent. Under 1 per cent. each of the cases were due to "childbirth," typhoid fever, intrauterine inflammation, diabetes, gout, pneumonia, cerebro-spinal meningitis, measles, lead poisoning, and poisoning with *Rhus toxicodendron*. No mention is made of autointoxication, which is a very potent factor in uveal inflammation, whether it be due to an oral or a gastro-intestinal sepsis. A very severe iritis may subside at once after a tooth with an abscess at its root has been extracted. Tuberculo-toxaemia certainly accounts for more than 1.2 per cent. of all cases. Many patients suffering from recurrent iritis react to injections of tuberculin, and are greatly benefited by treatment with new tuberculin (T.R.). Deductions drawn from hospital reports are often very erroneous, unless the details have been carefully and

[1] *St. Bartholomew's Hospital Reports*, 1909, vol. xliv, pp. 1-3.

[1] *Ophthalmology*, 1909.

fully taken by an expert, or, better still, are personal notes. In many hospitals elaborate notes are taken by the dresser. They are useful to educate the student who takes them, but often have little other value unless they are revised by his chief.

The annual meeting of the General Committee of the Imperial Cancer Research Fund will be held on Wednesday, July 20th. The Right Honourable Arthur J. Balfour, M.P., will preside.

The annual luncheon of the Continental Anglo-American Medical Society will be held on Thursday, July 28th, at the Café Royal, 68, Regent Street. Professor StClair Thomson, Honorary President, in the chair. Members of the Society who intend being present are requested to communicate as soon as possible with Dr. Charles G. Jarvis, Honorary Secretary, 81, Boulevard Malesherbes, Paris.

A number of medical men who are in general sympathy with the scheme of the Minority Report of the Poor Law Commission have arranged a meeting, to be addressed by Mr. and Mrs. Sidney Webb, on Wednesday, July 27th, at 4 30 p.m., at the Caxton Hall, Westminster. Invitations will be issued to all those attending the annual meeting of the British Medical Association. Dr. Herbert Manley will take the chair, and will be supported by Dr. Christopher Addison, M.P., Dr. Dudley Buxton, and others. Discussion and questions will be welcomed. The speeches will be preceded by a reception at 4 p.m., when tea, etc., will be served.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

The Budget.—The general discussion on the Budget resolutions was concluded on Friday in last week, and during the course of the discussion Mr. Lloyd George returned again to the subject of invalidity insurance, and said, after an earnest denunciation of the cruelty of holding out false hopes of social reform: "We can see our way to start a great scheme of invalidity insurance next year, started, I think, on fair and liberal terms, but I trust the committee will not press us to go beyond that for the moment till we see how these resources develop. I am glad to say that the new taxes show every tendency to be fruitful and to produce sums of money which will undoubtedly in future enable us to finance, and to finance generously, these great schemes of social reform. I agree with what fell from the hon. member for Blackburn, and in an equally interesting speech from the hon. member for East Birmingham, that the problem of invalidity insurance is in many respects more urgent than old-age pensions. I said so last year. After all, when a man breaks down in the prime of life with the responsibility of a family upon him, and, in addition to his own poverty, has the distressing anxiety of seeing the starvation and suffering of those dear to him, there is far more urgent cause to provide for such a case. I think it can be done, and it ought to be done. We have got our scheme prepared, but I ask the committee in considering all this finance to support us against claims which, though good in themselves and pressed undoubtedly by their constituents, would, if we were to listen to them, break into our progress and induce us to fritter away our resources and leave nothing to show at the end." Mr. Bonar Law, in a critical reply to the Chancellor, specially referred to the whisky tax. The defence which the Chancellor of the Exchequer made of that tax had placed our whole fiscal system on an entirely new basis. He practically admitted that from the point of view of revenue the Exchequer had gained nothing by this increased duty, and that the return would have been just as large if the duty had been left at the lower level. But he justified it on the ground of the social and moral advantages arising. That was an entirely new departure, entirely inconsistent with what everybody had regarded as an axiom in honest taxation—namely, that one set of people should not be taxed more severely than another. Even if they admitted that this duty had produced all the advantages which were claimed, he did not think there was any answer to the argument put by his hon. friend the member for Chelmsford, that, if society was going to benefit in that way, society ought to pay. The whole burden should not be put on a small section of the community. He was not prepared to go the length of saying that under no circumstances were social advantages to be taken into account in a case of this kind. It was put in a Ministerial paper this week in this way: "Suppose you found people were beginning to eat opium; would you not be justified in taxing that out of existence if you could?" He said at once that if he were responsible he should try to tax it out of existence, but he was bound to add that he would have some hesitation in doing even that if he found that all his colleagues were themselves eaters of opium, and that the form in which they proposed to tax it out of existence was a form which would not touch the particular kind of opium they ate. He considered drunkenness so great an evil that he would be very glad to see it removed even by methods he did not approve of, though he would not himself be responsible for them. But he did not believe that the Government were doing the smallest good to temperance by this form of taxation. After two divisions on income tax amendments the Budget resolutions were passed and ordered to be reported.

The Census Bill in the Lords.—When the Bill came on in Committee on Tuesday, Lord Newton moved an amendment providing for the insertion of a column for the statement of religious profession. The Bishop of St. Asaph supported the amendment on the ground that the object of the census was to give all information on the well-being of the people in the broadest sense. Lord Beauchamp opposed and said that the Conservative Governments of 1890 and 1900 had refused to accept the proposal. It would serve no useful purpose. Lord Lansdowne supported the amendment, citing the examples of other countries, and especially referring to Ireland; that the returns were made there to enumerators, mostly the Irish Constabulary, he regarded as no argument against the proposal, as the average Briton would be less inclined to divulge a confidential matter to a policeman than to the head of the house in which he lived. If the return could serve no useful purpose why was it collected in other countries? It was too late to object to the proposal as inquisitorial; most of the legislation in these days was inquisitorial. The Archbishop of Canterbury regretted that the Government had refused a perfectly reasonable request, and argued in favour of the value of the statistics which could be obtained. Lord Crewe opposed the amendment, and said that they must assume that on the last two occasions a strong opinion was held on both sides that this change was not desirable. If the late Lord Salisbury had taken the view that the change ought to be made, he would have made it, as he had complete command of both Houses in 1900. The arguments of the right reverend prelates were before the Government of that day, and the fact that they were not persuaded to make the change ought to be noted. In considering questions of this kind Governments had to ask whether the people generally wished the change to be made, and if it was made, whether it would serve any useful purpose. What the noble lord who moved the amendment, and

the right reverend prelates who had spoken asked for was a referendum in Wales on the question of disestablishment, and they hoped to obtain it by the insertion of the question in the Census. He thought a religious census would be thoroughly unpopular in England, and the information supplied comparatively useless. In answer to Lord Lansdowne, he said further that he thought it might be assumed that if the amendment was carried it would not be accepted by the House of Commons. On a division, the amendment was carried by 38 to 31. A further amendment was then made that no person should be subject to penalty for refusing to state his religious profession. The bill as amended was reported to the House. The Irish Census Bill was passed without amendment.

Invalidity and Unemployment Insurance.—The Chancellor of the Exchequer replied to a series of questions on Tuesday, and said that the basis on which he estimated that 15 million persons would benefit by the proposals of the Government, was the basis of the 1901 Census, with due allowance for the growth of the population from that date. He said that it was not desirable to give information as to the Government's contribution for the first year until the scheme was submitted to the House. He had the figures of how many would benefit on an average under unemployment and under invalidity, but should not like to give them from memory. The estimates included members of friendly societies in respect of invalidity, and his hope was to be able to work through friendly societies. The amount to be asked as a contribution from the insured was an essential part of the scheme. He hoped to have a consultation with the friendly societies, for it was important to carry them along with the Government in whatever scheme was adopted.

The Parliamentary Franchise (Women) Bill occupied the first two days of the week, and the debate was generally of high class and excited great interest. The bill was discussed and voted on irrespective of party, and the second reading was carried by a majority of 109. It was understood, however, that the Government were not in favour of the bill being pushed forward this session, and consequently it was not sent to a standing committee, but referred to a Committee of the whole House. On this division the majority was 145.

Invalidity and Old Age Pensions (Germany).—Mr. Lewis Haslam asked the Chancellor of the Exchequer whether he would state the approximate number of persons in Germany of 70 years of age and over who were in receipt of invalidity pensions, and the approximate number under 70 years of age in receipt of such pensions, and the number of persons of 70 years of age and over who were in receipt of old age pensions. Mr. Lloyd George answered that the latest figures in his possession related to 1908, when there were 852 824 persons in receipt of invalidity pensions, and 112,096 persons in receipt of old age pensions. Those in the latter category were all of 70 years of age and over. As regards the former, he had no figures to show what proportions were over and under 70 years of age respectively.

Foot and Mouth Disease (Vaccine Lymph).—Mr. Lehmann asked, in view of the fact that outbreaks of foot and mouth disease in the United States of America had been traced to vaccine farms, whether the Board of Agriculture proposed to recommend that the importation of vaccine lymph into this country be prohibited; or, if not, what steps the Board proposed to take to guard against the introduction of foot and mouth disease in this country through the medium of contaminated vaccine lymph. Mr. E. Strachey replied that the Board were aware of the inquiry instituted in the United States, and the matter was now under consideration.

The Cost of the Dairies and Cowsheds Order (Ireland).—In answer to Mr. Kerr-Smiley, Mr. Redmond Barry stated last week that the cost of administering the Order was about £10,000 a year. Recoupment of a portion of this cost could be obtained from the Local Taxation Account under certain conditions, which he had explained in a reply to a question asked on April 6th last. He was not in a position to state the net cost to the ratepayers.

The Medical Inspection of Factories (Govan).—Mr. Watt asked whether it was proposed to divide the office of Medical Inspector of Factories for the Govan division of Lanarkshire at present vacant by death; and if so into what districts the territory would be divided. The Home Secretary said he had been asked to reply It was proposed to divide the district by adding Govan, which lies south of the river, to the district of the Certifying Surgeon for South Glasgow, which almost surrounds Govan on its other sides, and by adding the portion which lies north of the river (that was, Partick and part of the civil parish of Renfrew) to the adjoining district of the Certifying Surgeon for North-West Glasgow. The change was made in the interests of efficiency and convenience of administration.

Soldiers' Washing and Infected Bedding.—Mr. Nannetti asked whether the washing of ordinary bedding, etc., of troops was being done at the Royal Infirmary laundry, Dublin, in common with the bedding used in cases of contagious diseases; whether repairs to such bedding were being carried out there contrary to a War Office Order of some years past; whether the Fair Wages Resolution was observed regarding the wages paid to the women employed; and at what age it was intended to retire the superintendent of the laundry referred to. Mr. Haldane replied that all infected bedding and clothing was disinfected before being sent to the laundry, where it was washed by a special woman, and was boiled separately from the other bedding. Infected bedding and clothing was disinfected and washed before being repaired at the Government laundry. No such order as that alluded to in the question could be traced. The rates of wages paid in the Government laundry compared favourably with wages paid to similar employees in civil laundries in Dublin. The present superintendent, who was 58 years of age, could be retained until the age of 65, provided that he was capable of efficiently performing his duties until he attained that age.

The Royal Military Infirmary, Phœnix Park.—In reply to Mr. Nannetti on Monday last, Mr. Haldane stated that the building would cease to be used as a military hospital when the new hospital at Arbour Hill had been completed, but it was impossible to say at present whether it might not be required for some other military purposes. Should it be available for disposal, the suggestions made as to its future use as an industrial museum and bureau of Irish industry should be duly considered.

Broadmoor Asylum (Mrs. Hannah Smith).—Mr. Clough raised by question the detention of Mrs. Hannah Smith, and the Home Secretary said that he had received an application in the case of Mrs. Hannah Smith, and he was fully aware of the circumstances which led to her being found insane and sent to Broadmoor Lunatic Asylum. The case had from time to time received careful consideration from his predecessors, but her condition had hitherto been such that she could not safely be discharged, and even the last annual report received—that for the year ended April 30th last—was unfavourable. Since then, however, there had been a noticeable improvement in her condition, and if this continued for a few months, and her friends were able to make provision for her being properly cared for at home, he hoped to be able to consider favourably an application for her conditional discharge.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EDINBURGH CONFERENCE ON TUBERCULOSIS.

IN our report of the discussion on the Avenues of Infection, held on Monday, July 4th, and published in the JOURNAL of July 9th, pp. 107–108, the speech of Dr. Theodore Williams, M.V.O., which followed the opening addresses of Professor Woodhead and Professor Adami, was by an unfortunate accident omitted. We are now in a position to supply the omission. Dr. Williams said:

I feel it a presumption to say much after these two excellent addresses. I should like to draw attention to one point that ought to be taken into consideration, and that is the infection through the skin and mucous membrane. It is ancient history, and it is mentioned in most of our textbooks that it is possible to get tuberculosis through the skin. There is the case, for example, of the maidservant who was waiting on a consumptive patient; she unfortunately broke his spittoon, which contained a large quantity of tubercle bacillus-laden sputum, and her hand became inoculated. She eventually died from tuberculosis contracted through that wound. The sputum has to be destroyed by one of several methods; but the great thing is to be quite sure that those people who handle the sputum take proper precautions, for they are in considerable peril, and we have to take great care to protect them. Everything is done for them, but unfortunately the precautions laid down are very often put aside. Sputum is best dealt with by passing through it high-pressure steam, which breaks it up and sterilizes it completely. We have had some very sad cases at the Brompton Hospital. We have had some two or three porters who have been attacked by tuberculosis in this way, and in hardly a single case has the skin been affected; there might have been a slight scratch, but the poison seems to have been drawn through the skin in some way. One case was that of our sputum porter, who had been at the hospital some years. He got careless, and he thought he was quite safe, did not take precautions, and became affected, but he was admitted as a patient, and soon recovered, though he had a considerable lung lesion. Another was the pathologist's assistant, who held the office twenty-one years, grew careless of precaution and became infected, recovered, and is now on a pension, and, as with all pensioners, is likely to live a very long time. I examined him the other day and did not find any active disease. With regard to what has been said as to proportionate infection by the lungs and by the intestines, I have very little to say—only that I am watching. I have had the pleasure of seeing the preparations of Dr. Cobbett. I met him at the Oxford meeting, when our tuberculosis exhibition went there, and Dr. Cobbett allowed me to see his preparations, and I was very much pleased with them. I must confess, however, that when I consider the men who have taken up the line of intestinal infection—such men as Calmette, Guerin, Vansteenberghe and Grysez, Whitla and Symmers—I cannot help thinking that there must be something in it. I read their evidence, and it seemed to be exceedingly good. I do not consider that the point is quite settled yet. With all due deference, it is, I think, a question how much infection there is from ingestion and how much there is from the lungs. Many years ago I made a number of experiments in inhalation. I was anxious to know whether anything got into the system through the lungs, and I tried a number of experiments with drugs, injected hypodermically and by the mouth. I was very anxious to know really whether it was useful to give inhalations—whether you could get drugs into the system by this path or not. Take, for instance, iodine. I have given stated quantities of iodine to patients, made them inhale from chambers, for different purposes, and I have gone on for hours and yet detected no iodine in the system. When I have given a dose by the stomach I detected it in the urine within three or five minutes. By hypodermic injection it passes into the urine at once, but inhalation I have tried over and over again in vain. There are one or two other drugs I could introduce in that way, but very few. All I can say is as regards the evidence of tuberculosis and the best way of keeping the bacilli out of the system, I shall watch the experiments of the two schools that are going on and certainly arrange my methods of treatment accordingly.

The Administrative Control of Tuberculosis.

Professor Osler again took the chair in the afternoon, when Dr. Hermann Biggs, New York, opened the discussion on this subject. He said that in Edinburgh and New York preventive measures had been organized on a comprehensive plan, but the problem had been attacked from different points of view. While in Edinburgh the work began with the dispensary, and from that there had been elaborated a scheme for administrative control, in New York the sanitary authorities had taken the initiative. In 1881 the first action was taken by registering houses in which tuberculous deaths took place. In 1897 compulsory reporting of all cases of tuberculosis was adopted. A squad of sanitary police was assigned from the police department to the Board of Health for the purpose of enforcing sanitary ordinances. Peculiarly favourable conditions existed for the development of the progressive scheme for dealing with any infectious disease, but there were special difficulties in New York. There was the extreme density of the population. Large districts had populations running from 600 to 1,000 persons to the acre. There were districts occupied by foreigners who did not speak English. The foreign population of New York numbered about 1½ million. Last year 42,000 cases, about 28,000 of which were new cases, were reported. The educational measure consisted of issuing circulars of various kinds to reach all classes of the population, organizing lectures, and permanent exhibitions. The disinfection and renovation of apartments in which tuberculous cases had been found was provided for, and, when necessary, the apartments were placarded forbidding occupation until renovation had been effected. Owners of tenement houses had become so thoroughly educated in the matter that the authorities had very little difficulty, and voluntary renovation was to a large extent practised. A corps of medical inspectors visited patients in their homes, and about 170 trained nurses were engaged in work in tenement houses. About thirty tuberculosis cliniques were maintained in the city, sixteen by the municipality. To each clinique a definite district was assigned. There was an admission bureau under the Department of Health. Through the bureau passed all the cases which came into the public hospitals or sanatoriums, and there it was decided what institution was best fitted for the respective patients. Every transfer or discharge from an institution must be reported to the bureau before it was effected. Nurses or inspectors were sent from the bureau to the addresses of patients whom it was proposed to discharge, and if the sanitary conditions of the home were reported upon unfavourably, the patient was not permitted to leave the hospital. Day camps had been established, and patients who were working during the day came to the camp at night. In connexion with these camps, out-of-door schools were maintained for tuberculous children. An open-air school had been established for children who had no manifest lesion of tuberculosis, and an institution was maintained for children in tuberculous families who were in bad physical condition, and might become tuberculous if left in their environment. There were two kinds of hospitals for advanced cases—one class under city control, the other private institutions receiving compensation for all tuberculous cases received by them. Sanatoriums were maintained for the care of early cases, and in the municipal sanatorium which was being erected it was proposed to accommodate 1,000 patients. The buildings were of a simple type, the average cost per bed being about £100.

In reply to a question, Dr. Biggs said the mortality due to tuberculosis in New York had decreased by about 40 per cent. since 1894.

Dr. Leslie Mackenzie, medical member of the Local Government Board for Scotland, said that as the basis of a national scheme for realizing the ends of the Public Health Act in regard to the disease, the Local Government Board had adopted the tested system developed by Dr. Philip in Edinburgh. As the result of the Act of 1907 it could be said that the full resources of the Public Health Act in Scotland could be brought to bear on every variety of pulmonary phthisis, without unnecessary hardship to individuals. The policy of the Board during the last eight years had been, not the hasty application of doctrinaire ideas to a problem of great complexity, but the well-considered policy of skilled statesmen, moving slowly and deliberately in response to social demands. Before notification became popular a great deal was heard about the probable hardships to individuals, social ostracism, and similar difficulties. Yet no Act worked more smoothly than the Notification Act. The exaggerated fear that the resources of any local authority would be overwhelmed by the claimants for treatment had been contradicted by experience. They were long past the stage when they stopped at general improvement of the environment. They were well into the stage when they must deal with the individual case and his individual environment. That was why notification was important. It was the desire of the Local Government Board to see every local authority equipped with the triple organization of dispensary, sanatorium, and hospital, or their functional equivalents. The treatment of phthisis was a heavy burden to place on the shoulders of the Poor Law authorities. So far as Scotland was concerned the Local Government Board had taken the view that the treatment of phthisis was the duty not of the parish council, but of the town council or county council. That view would, no doubt, ultimately be realized. The transfer from Poor Law to public health administration was rapidly taking place, and would continue until all cases of the disease were within the control of the preventive medical authority. While it was considered right and necessary for the public health authority to deal with the individual patients in the cases of small-pox, typhoid, and scarlet fever, many maintained with regard to pulmonary phthisis that the patient himself should be left alone, and the environment only should be dealt with. It was alleged that the death-rate was going down of itself. The death-rate was going down, but not fast enough, and it was going down, not of itself, but because it was being put down. So long as in Scotland alone nearly 6,000 people died annually of phthisis the pressure of administrative measures should never slacken, and so long as he had an administrative breath to draw they would not. In Scotland no more legislation was required for the moment; they needed first to work for all it was worth the legislation they now possessed. He referred in terms of appreciation to the enthusiastic and never-failing support given to the crusade against tuberculosis by Lord Pentland, Lord Balfour of Burleigh, Lord Dunedin, and the late Marquis of Linlithgow.

Mr. T. J. Stafford, C.B., medical member of the Local Government Board for Ireland, said that a campaign of education in Ireland must precede anything that was done by administration. It was, therefore, important not to take the movement out of the hands of voluntary workers. No public department, with its clumsy methods, could do the work in the way in which a properly constituted voluntary association could.

Dr. Hope, M.O.H. Liverpool, said that, as a result of the methods adopted in that city, the death-rate from phthisis had decreased from 2.1 per 1,000 among males in 1895, and 1.5 per 1,000 among females, to 1.8 among males and 1.1 among females in 1909. The rehousing of the very poor people in sanitary houses had definitely checked the death-rate from tuberculosis.

Dr. Maxwell Williamson, M.O.H. Edinburgh, spoke of the importance of making notification of phthisis compulsory throughout the country. Over 51 per cent. of deaths from phthisis in Scotland occurred where there was no notification. The fear that compulsory notification of phthisis must carry with it a subsequent interference with the liberty of the subject, which would be intolerable, was absolutely groundless. He had never known a case in which the person affected was other than kindly disposed and grateful for the tactful assistance given by the officers who were selected for that delicate work. Old houses, unfit for occupation, should be ruthlessly closed.

Dr. H. Scurfield, medical officer of health for Sheffield, said that a comprehensive scheme for dealing with recognizable human infections should include: (1) Compulsory notification, and as an aid to it, free examination of the sputa. (2) Home visiting of notified cases by visitors on the look-out for other cases among the "contacts"; visiting of workplaces where necessary, and as a result of these visits, disinfection and removal of defects. (3) Suitable hospital accommodation for the various stages of the disease. In Sheffield the home visiting was done primarily by a special inspector who obtained the history of the case, left printed "advice," gave an order for a pocket spittoon, disinfected if necessary, saw that nuisances or defects in the house were dealt with, enquired as to the occupation and place of work, etc. Much of the subsequent visiting was done by Queen Victoria District Nurses in return for a subscription from the corporation. Each sent a weekly report, noting more particularly the rooms requiring disinfection; cases desiring removal to the Corporation Hospital; cases removed, or which ought to be removed, to union hospitals; changes of address; cases in overcrowded or dirty houses; failure to comply with instructions; other occupants of houses showing symptoms. Arrangements were made for examining "contacts," this meaning in Sheffield the examination of the members of about 700 families annually. It was a moot point whether it was advisable to have a medical examination of all "contacts," and how often it should be repeated. Possibly it was sufficient for the nurse to keep the family "on the alert," and to "rub in" the necessity of all "contacts" or other members of the family leading healthy lives. Most "contacts" apparently succeeded in grappling successfully with infection, because each victim to consumption seemed to bequeath, on the average, a fatal legacy to one person only. It was hoped that part of the grant allocated to sending consumptives to sanatoriums would shortly be utilized for sending delicate "contacts" to convalescent homes. In dealing with actual cases, the Sheffield arrangements included educative stays in hospitals, these being, apart from other advantages, more educationally effective than home instruction. Cases deemed suitable were subsequently sent to sanatoriums; as for advanced cases, endeavours were made either to secure them separate bedrooms at home or persuade them to enter the consumptive wards of the union hospitals. Cases on return from hospitals or sanatoriums continued to be visited by the nurses, and the Guild of Help did what it could to find them suitable work. In Sheffield a tuberculosis dispensary would be no advantage. Its part was played by a subdepartment of the office of the medical officer of health, which did everything a dispensary could do. The out-patient departments at the local hospitals co-operated. It was not desired that consumption should be regarded as a thing to be shelved on to a special dispensary. Hospitals, district nurses, patients, friends and Poor Law guardians should all feel that the prevention of consumption was their business and become allies in the campaign. A weak spot in this scheme, and all schemes, was that the breadwinner of the family remained at work until the disease was past the curable stage. There should everywhere be insistence on abstention from spitting, thus making a consumptive a less marked man. Further inquiry into the effect of occupation on health as distinct from prevention of accidents was very desirable.

Annual General Meeting.

The eleventh annual general meeting was held on the evening of July 4th in the hall of the United Free Church. Lord Balfour of Burleigh, Chairman of Council, who presided, spoke of the interest of King

Edward in the work of the association, and asked authority to request King George to take his father's place as Patron of the association. He laid stress on the fact that without compulsory notification they were working in the dark.

Sir George Macrae spoke of the death-rate from phthisis in Scotland.

Mr. J. Patten MacDougall, C.B., Dr. Theodore Williams, M.V.O., Professor Sims Woodhead, and Councillor MacPherson spoke.

Incidence of Tuberculosis in Childhood.

On Tuesday, July 5th, the second day of the annual conference of the National Association for the Prevention of Consumption and other Forms of Tuberculosis, Dr. Theodore Williams, M.V.O. (London), presided over a large audience. The incidence of tuberculosis in childhood was the subject of discussion at the morning session. This was to have been opened by Dr. Hamburger, of Vienna, but unfortunately he was unable to attend the conference owing to illness, and his paper was read by Dr. R. W. Philip (Edinburgh).

"Nearly all persons in the city of Vienna at the age of 14 years were already tuberculous," he said. That might appear to them extraordinary and all but incredible. It was only appreciated when they investigated the fact further, and considered that tuberculosis in childhood was a relatively harmless disease. It ran its course without giving rise to symptoms. This explained the fact that so many children gave a positive tuberculous reaction without at the same time developing grave signs or symptoms of the disease. It might even be said that the majority of children were only infected by tuberculosis after the fifth or sixth year, and showed no signs, or at least few signs, of the disease. That was the result of the constant increase of the frequency of tuberculosis on the one hand, and the decrease of tuberculosis morbidity with increasing age on the other. It should be fully understood that tuberculous infection and tuberculous morbidity were two conceptions which it was difficult to separate. The question was whether the figures obtained in respect of the city of Vienna were applicable to other towns as well. He thought they were. The results of his investigations went to show that the majority of persons became infected by tuberculosis in childhood. The frequency of tuberculous infection increased from year to year, whilst tuberculous morbidity—that was, evidence of manifest tuberculous disease—decreased from year to year. Tuberculosis was very often latent, producing no symptoms. That was specially so if the infection dated from a later period than the third or fourth year. The prognosis of tuberculosis in childhood became more favourable the older the person was at the time of the first infection.

Dr. J. E. Squire, C.B. (London), referred to the incidence of tuberculosis among children of school-age. The wide discrepancies in the published statistics of the proportion of children who were tuberculous—ranging from about 5 per 1 000 to 95 per cent.—was to some extent due to the differences in the object of inquiry, and to some extent to the method of investigation. They would find among the children who were undoubtedly tuberculous some who, for their own good, should be removed from school, and some who would be better at school than at their homes, for the hygienic condition of the school was often immeasurably better than that of the home. Some also must be excluded from school in the interests of the other children, whom they might infect with the disease, though "open" tuberculosis was not common in childhood. What proportion of children were affected with tuberculosis? There were two recognized methods of conducting an inquiry into this matter—first, by ordinary clinical examination alone, and, secondly, by employing the tuberculin test in one of the various methods in use. By the first mode of investigation they could only determine the number of children in whom tuberculous infection had resulted in some actual morbid changes in the organs. The second mode of investigation by itself could only indicate, at the most, the existence of tuberculosis, without determining its site. It must, therefore, be combined with physical examination. The employment of the various tuberculin tests had resulted in some extraordinary estimates of the prevalence of tuberculosis among children. He did not think that they could accept the results of the tuberculin test as evidence of the prevalence of tuberculosis. In the first place, there was no consensus of opinion as to the reliability of any one of these tests. Tuberculin was not even a certain test of susceptibility. Disregarding, as he thought they might do, the figures obtained by the tuberculin test, Dr. Squire examined the results got by clinical examination, which, he said, varied so much in different reports that it seemed impossible to explain the difference by variations in incidence of tuberculosis due to local conditions, or to the social status of the children examined. He had quite recently examined the 672 children of a school in a poor part of London. He found less than 1 per cent. with signs which he considered indicative of tuberculosis of the lungs, though about 9 per cent. had signs in the lungs which were not quite normal. As the result of an examination of 47 girls of from 8 to 13 years of age in one school, all of whom were said to be consumptive, he found 3 only who presented signs that he recognized as indicative of pulmonary tuberculosis, and 3 others with slight abnormal signs in the lungs which were suspicious of tuberculosis but not distinctive. In 32 he was unable to detect any abnormal signs whatever in the chest. He was convinced after the examination of several thousands of school children that pulmonary tuberculosis was not a frequent cause of serious ill-health in children of school age. There was, unfortunately, a tendency to consider a child always tuberculous when once the disease had been diagnosed, and to include among the actively tuberculous those who had recovered. It was in the home and not in school that they would find the conditions which determined the onset of the disease, and which favoured its advance.

Dr. Douglas Stanley (Birmingham) said that the condition in which children were wrapped up when they had developed a cold, especially among the poorer classes, was most favourable to tubercle and most unfavourable to improvement.

Dr. Shennan (Edinburgh) said that during his twenty-one years' connexion with the Royal Edinburgh Hospital for Sick Children 1,085 autopsies were conducted, and of these 420 were for tuberculosis, and the children who had died from tuberculosis were 38.8 per cent. As to the incidence at different ages the largest number occurred in the second year. Then there was a rapid drop to the fifth year; there was a slight rise in the sixth year; and there was a continued drop to the twelfth year. An important point was the great number of cases in which the lymphatic glands were affected, the number being 308 out of 420. He was absolutely convinced there was such a thing as bovine infection among children.

Dr. Woodcock (Leeds) thought that children of the towns or town races were much more resistant to phthisis than children of the country races.

Dr. Dingwall Fordyce (Edinburgh) thought that the subject, so far as Edinburgh was concerned, was a particularly practical one. Nowhere in the civilized world were the figures for abdominal tuberculosis so high as in Edinburgh or Glasgow. About 35 per cent. of the women in Edinburgh attending the dispensaries fed their children with the bottle from the beginning, or nursed them at the breast for less than six months. It was therefore obvious that the milk supply of the town was extremely important. For the babies of the poorer classes who attended the dispensaries in towns there should be a possibility of obtaining clean milk at a cheap price. That was one of the most important steps in the fight for the prevention of

tuberculosis, and the fight for the development of a healthy manhood and womanhood. He thought that they in Edinburgh, with their immense incidence of abdominal tuberculosis, and their great mortality from all forms of tuberculous infection, were specially interested in seeing to it that in the near future they were closely connected with the International Union for the Protection of Child Life, and that it might be possible for the poor children of Edinburgh to have a pure and cheap supply of milk.

Dr. Carnegie Dickson (Edinburgh) said that of the cases that came within his sphere in the Royal Hospital for Sick Children, more than three-fourths died of tuberculosis, and the majority of these were abdominal cases. He thought that far too much attention, so far as children were concerned at least, had been concentrated on the discussion of pulmonary phthisis. He took it that most of the cases that came to them at the Hospital for Sick Children were due to the infection of milk. Edinburgh and Glasgow were perfect plague spots of tuberculosis so far as infantile mortality was concerned. Of course it was only cases that died that came under his cognizance, but he thought that those two cities should be ashamed of themselves and should see to it that the supervision of the milk supply was improved.

Dr. R. W. Philip (Edinburgh) thought that they had wandered a good deal from the subject under discussion. He believed that tuberculosis was essentially a disease begun in childhood; it was the tuberculosis of the child that made the tuberculosis of the adult in the great majority of cases. In the child, however, the manifestations were often of the slightest character, and he could not help feeling that it was because of the very slightness of the manifestations that this aspect of the case had been too often lost sight of. The antituberculosis scheme in Edinburgh, which had been taken up and recommended by the Local Government Board for Scotland as a likely serviceable means for controlling this evil, was not limited to any one consideration.

Dr. Charles McNeil (Edinburgh) said that Dr. Squire had attacked the validity of the cutaneous reaction, and had said that a positive von Pirquet reaction might be present though tuberculous infection was absent. If that were true, Hamburger's statistics and the results based on them fell to the ground. But the specific nature of the cutaneous reaction was backed by strong evidence. Escherich, of Vienna, had made *post-mortem* examination of 300 children in whom the reaction had been positive. Of these, 297 revealed some visible focus of tuberculosis, while of the remainder, injection of tissues into guinea-pigs in the case of two demonstrated a latent tuberculous infection. That was incontrovertible evidence of the specificity of the cutaneous reaction, and supported Hamburger's conclusions so far as they were based on that reaction.

Dr. Ronaldson (Haddington), Dr. Gray (London), Dr. Carnegie Dickson, and Dr. Scurfield (Sheffield) spoke, and Dr. Squire, replying at the close of the discussion, said that when he expressed doubts as to the reliability of the local tuberculin reaction as tests of the presence of tuberculosis, he was aware he was saying what few of them dared to whisper at the present moment, but which he believed they would soon be shouting from the housetops.

The Working Man in Relation to Tuberculosis.

At the afternoon meeting Professor Osler presided, and there was again a large attendance of delegates. "The Working Man in Relation to Tuberculosis" was the theme for discussion, and it was opened by Mr. Charles Garland (London) who began by saying that the abolition of consumption presupposed the abolition of poverty. Science had now found the method: it was for society now to find the money. Consumption could be stamped out if they had the money to do it with. The question therefore was an economic one. The three things to be aimed at in tackling the problem of consumption were the education of the whole body of the population in the essentials of prevention, the curative treatment of early cases, and the segregation of advanced cases. The educational agency was starved for funds, and the same thing was truer of the curative agencies. The early curable case was converted into an advanced incurable case by delayed treatment, and the advanced case remained, scattering infection, because there was neither machinery nor institutions to deal with it. Existing curative institutions were largely wasted because of their receiving quite unsuitable and belated cases, or because economic pressure prevented the patient coming soon enough or staying long enough for adequate treatment. With a consumptive population of 300,000 to 350,000, and 60,000 new cases per year, the accommodation for treatment (four months' stay) was: Hospitals and sanatoriums, 4,000 beds, providing for 12,000 cases per year: and in Poor Law institutions, 3,350 beds, providing for 10,000 cases per annum: or a total of 7,350 beds, providing for 22,000 cases per annum. He gave figures of the operations of the friendly societies in regard to sick benefit, and said, in view of the low basis of his calculation, he would be within the mark in saying that the working classes of England and Wales lost about two millions annually in wages and increased home expenses on account of consumption. On the same basis, Scottish workers lost £400,000 and Irish workers £450,000—a gross total of nearly £3,000,000. The wage-earning class were particularly helpless in the fight against consumption. But if the consumptive population could produce the money, where was the treatment to be found?

He was no believer in home treatment, except as a palliative. Institutional treatment was at once more useful socially and more effective to the patient. The existing machinery, even if used to its fullest effect, was absurdly inadequate. To tackle the problem effectively, they wanted more than the whole of the present accommodation for advanced cases, 30,000 beds must be added for curable cases, and they must supply a system of antituberculosis dispensaries in every town and village. The dispensary system, at a low estimate, would cost nearly £100,000 a year to cover the whole kingdom. The erection of sanatoriums would cost at least £3,000,000, and maintenance and interest would cost £2,000,000. Care of the families of wage-earners under treatment would cost £1,250,000 annually—a total of £3,350,000. Maintenance of hospitals and infirmaries for the care and isolation of advanced cases would cost not less than £3,000,000. To cope efficiently and directly with the problem about £6,500,000 would be required annually, and a heavy capital expenditure at the beginning of the campaign.

One turned to the State as being the only effective organization likely to tackle the problem completely, effectively, and cheaply. Advocacy of State intervention had been dubbed Socialism. To-day, when Collectivism was gaining ground everywhere, the wise man or the wise party sought to get whatever advantage there was in it. State intervention in the cure and prevention of tuberculous disease seemed to him a natural development of the process that now protected us from acute infectious disorders, and had established the public health service. With Dr. Latham, he had shown that a State scheme which would be efficient and effective, and which could not only supply diagnosis and treatment to day, but would go far to rid future generations of the disease, could be carried out at an annual cost of about 3s. per head of population. Such a scheme, which, to be effective and cheap, must be universal, seemed to him to be only possible to the State. It was to State intervention that he looked for a final and effective solution of the problem, not only of working-class consumption, but of consumption in general in Great Britain and Ireland. For such intervention and its consequent taxation he believed the working class to be largely prepared, and willing to bear their proportion.

Dr. McVail (Glasgow) said phthisis caused pauperism in one generation and pauperism caused phthisis in the next. In respect of the working man, the prevention of phthisis was infinitely more profitable than

the cure of phthisis. In the proposed scheme of invalidity insurance for the working classes, if it took due cognizance not merely of relief during invalidity but of the prevention of invalidity, a tremendous step would have been made towards the eradication of consumption. The scheme would involve medical attendance during illness. It ought also to involve an annual or biennial visit by the medical attendant apart from illness.

Dr. T. D. Lister (London) said the general labourer, who represented one twenty-fifth of the working-class male population, had no less than one-ninth of the consumption of the country to bear on his shoulders.

Sir Thomas Oliver (Newcastle) thought they must guard against the danger of driving the infective theory too far. Tuberculosis was something more than the presence of the tubercle bacillus. The malady must be attacked at its origin by improving the ventilation of factories, purifying industrial trades, and seeing to overcrowded houses. The potent influence for harm of alcohol should not be overlooked.

Dr. N. Raw (Liverpool) believed that the working classes in his city lost about £300,000 a year because of consumption. The disease was one of the common causes of pauperism. About 50 per cent. of the respectable working classes with whom he came in contact had to seek Poor Law relief because of consumption. If they diminished the disease they would diminish pauperism. The treatment must be collective—that is, by combined effort on the part of the State and the workers themselves.

Mr. Wareham (London) supported the case for State intervention. Compulsion was absolutely necessary.

Dr. A. C. Gray (London) said if the State undertook the responsibility for the disease, they would inevitably be driven to undertake the maintenance of all the patients' friends. Then a cured patient could not be allowed to return to an unhealthy occupation, and there would be an enormous army of phthisical pensioners, who would be morally deteriorating without the useful stimulus of work and the need for seeking a livelihood.

Mr. Duckworth (London) said there was ample room for private work, and in the end for State effort, but the time for the latter was not yet.

Councillor Macpherson urged local authorities to adopt the Notification Act.

Mr. Thoms Stops (London) said the members of the friendly society which he represented were of opinion that it was absolutely necessary for the Government to take immediate steps to cope with the evil.

The Question of Insurance.

Dr. Chalmers, Medical Officer of Health for Glasgow, moved:

> That this Conference, in view of the magnitude of the financial issues involved in any comprehensive scheme for the eradication of consumption—implying as it does the prolonged treatment of the consumptive, and when he is the bread-winner, the maintenance of his family—recommends the Council of the N.A.P.C. to represent to His Majesty's Ministers the desirability of considering a scheme of national insurance against the disease.

Sir J. C. M'Vail moved as an amendment that the special attention of the Chancellor of the Exchequer, Government, and Parliament be called to the importance of giving the prevention and treatment of phthisis a prominent place in the proposed scheme of invalidity insurance.

Dr. Philip (Edinburgh), in seconding the amendment, which, on a division, was carried, said the principle of legislation, so far as the health of the people was concerned, should be in the direction of measures applicable to public health as a whole. He had grave objections to the preamble of Dr. Chalmers's motion.

Mr. Garland having replied to the discussion, Professor Osler declared the Conference closed. He said that through the liberality of a friend a scheme was before the association for the expansion of its usefulness. It had come out very clearly at the Conference that they had to consider the great importance of the abdominal line of infection. His own idea was that the great prevalence of tuberculosis in children was due to bovine infection through milk. Personally he was strongly opposed to any interference on the part of the State such as had taken place in regard to non-contributory old age pensions, as it tended to undermine and sap the independence of the working man, which was his most valuable single asset. He thanked Dr. Philip and those associated with him for the arrangements which had been made for the Conference. On the motion of Dr. Leslie Mackenzie, Professor Osler was thanked for his services as Chairman.

What the Tubercle Bacillus Does.

In the evening, Professor Sims Woodhead (Cambridge) gave a lantern lecture on "What the Tubercle Bacillus Does" to a large audience. Dr. Leslie Mackenzie, medical member of the Local Government Board, presided. Sir David Paulin moved a vote of thanks to the lecturer, and Dr. Philip one to the Chairman.

Popular Lectures and Demonstrations.

On Wednesday evening Dr. N. Raw (Liverpool) gave a popular lecture, illustrated by lantern views, in connexion with the Tuberculosis Congress. On the same evening, Mr. C. H. Garland, Chairman of the Benenden Institution, in which the Post Office Sanatorium Society hold thirty-five beds, addressed a meeting of workers in the General Post Office.

On Thursday evening Professor Gerald Leighton, of the Royal (Dick) Veterinary College, gave a popular lecture on "Animal Tuberculosis and Animal Infection" to a large audience in the Assembly Hall of the United Free Church. Councillor Macpherson, Convener of the Public Health Committee of the Edinburgh Town Council, presided. On Friday evening, Dr. Shennan, pathologist to the Royal Infirmary of Edinburgh, gave a popular lecture on "Natural Susceptibility and Natural Resistance." The lecture was well attended and was listened to with close attention by the large audience.

The Medical Officer of Health for the City of Edinburgh (Dr. Maxwell Williamson) on Saturday evening, July 9th, gave the last of the present series of popular lectures under the auspices of the National Association for the Prevention of Consumption. His thesis was, "The Edinburgh Outlook on Tuberculosis."

Mr. Charles E. Price, M.P., presided over a large audience, and said he rejoiced to notice that more than one of the speakers at the conference, and the meetings in connection with it, spoke of Edinburgh as in the van of progress in this matter. He had been frequently asked in the House of Commons by members of Parliament to give them information regarding the procedure in Edinburgh in regard to phthisis. These inquiries showed that Edinburgh occupied a very advanced position. The stamping out of phthisis was of great importance to the working classes, as they in one sense were more subject to it because of the houses in which they lived. So far as Edinburgh was concerned, he thought they might do still more than they were doing to stamp the disease out of cattle, particularly in the way of byre, dairy, and milk inspection. A great deal remained to be done by the people themselves.

Dr. Williamson, speaking of the evils of dark bed-closets, said it was an astonishing fact that, at this time of day, despite what science taught, their use was common in the very class of houses where phthisis abounded. He hoped that there would speedily be such legislature as would prevent any such places being built in new tenement houses, and requiring all the existing ones to be promptly thrown open. He next discussed the absolute necessity for disinfecting houses occupied by phthisis cases, and the dangers from infected milk. He felt very strongly that the danger of infection by milk was such a real one as to cry very loudly for State control and inspection of the whole milk supply, chiefly of that coming from rural scattered districts. On the question of hospital treatment Dr. Williamson said that whatever might be the opinion held in regard to the duties of a municipality so far as early cases of the disease were concerned, there could not possibly be

two opinions in regard to their bounden duty in cases in which the disease was far advanced; the patient unable to observe the necessary precautions, the expectoration profuse and teeming with tubercle bacilli, the accommodation limited, and the risk of the spread of the disease beyond doubt. Where these conditions were present it seemed absolutely essential that hospital accommodation of some description should be provided. It was, of course, obviously desirable in the public interest that as large a proportion as possible of phthisis patients in the late stages of the disease should be treated in an institution in preference to at home, and the only possible way by which that end could be attained seemed to be through the hospital provision made by the municipality being rendered of an attractive and satisfactory nature. In order to prove a success it seemed perfectly evident that the portion of the hospital set apart must hold out all the advantages and attractions of a hospital or sanatorium in which curative methods were employed, and nothing in the nature of compulsion must be brought to bear on any of the inmates. In Edinburgh these principles were so prominently kept in view that, in addition to the built pavilion, several excellent open-air shelters were provided. The effect of providing such attractive and hope-inspiring hospital accommodation for persons in the latest stage of the disease had been most successful. The demand for admission had frequently exceeded the available accommodation. During the past four years nearly 300 persons who had died there spent their last few months in comfort, and removed from surroundings in which they certainly would have formed dangerous foci for the spread of infection. They found that practically 3 out of every 5 admitted died in hospital, and that 73 per cent. died within three months of admission. It was a much more delicate question when they came to consider the duty of a municipality in connexion with early curable cases of phthisis. It seemed clear, however, that though no curative responsibility rested upon them the duty of adopting preventive measures did, and it was clear that even in an early case tubercle bacilli might be present in large numbers and the surroundings and home conditions might be such as to necessitate the adoption of some measures by the constituted authorities. It was just for such selected cases that it appeared essential for a local authority to have access to or control over a few beds in a suitable hospital, where a short educative course during a few weeks might transform a disease-disseminating focus into a harmless member of society, who might safely return to his or her work and continue to be for some time, at any rate, a member of the household without causing undue danger for the others. In order to accomplish such a desirable end the municipality of Edinburgh had recently agreed to co-operate with the directors of the Victoria Dispensary and Hospital, by which the vast resources of the former and a few beds in the latter would be placed at its disposal, and it was confidently expected that a combination of voluntary and municipal efforts would succeed still further in dealing effectively with the ravages of phthisis in this city. Under the new arrangement the Victoria Dispensary and the Public Health Department would co-operate, and ten beds in the hospital would be at the disposal of the medical officer of health for the isolation of early cases. As to the outcome of the active crusade which Edinburgh had carried out, Dr. Williamson said that a short time must elapse before results of a definite, statistical nature could be tabulated. Even thus far it was satisfactory that results of an extremely hopeful nature, such as would well repay the effort, had been obtained. Five years ago the phthisis death-rate in the city was 146 per 1,000; last year it was 120, or 7 per 100,000 less than the rate for all Scotland.

During the week lantern demonstrations have been given in the Exhibition each afternoon by Mr. Stanley Bates, in the course of which the lecturer has given an interesting account of modern sanatorium treatment and practical suggestions of special value to the working man for the continuation of open-air methods at home.

Exhibition.

In consequence of representations from the School Board and other bodies the executive committee arranged with the National Association that the Tuberculosis Exhibition, which was to have been closed on Saturday, July 9th, should remain open until the evening of Wednesday, the 13th. In the first week it was reported to have been visited by over 16,000 persons, and more and more interest is being taken in it.

Luncheon at the Royal College of Physicians.

A number of the members were entertained at luncheon by the Royal College of Physicians of Edinburgh in the Hall at Queen Street. The President of the College presided.

Reception by the Lord Provost.

A reception was given by the Lord Provost and the Corporation of the City of Edinburgh in the Royal Scottish Museum to some 1,300 guests. Lord Provost and Mrs. Brown received the guests. Later, the Lord Provost made a short speech of welcome to the guests and Dr. Theodore Williams (London) replied on their behalf.

THE WORKING OF THE CHILDREN'S ACT, 1908.

A supplementary report of the Inspector of Poor to the Glasgow Parish Council indicates certain defects in this valuable Act, particularly as regards the farming-out of infants. It has been found that certain midwives have found two ways of evading the object of the Act. Unfortunately the section of the Act providing for due notice being given to the authorities is in so far defective that the midwife is not required to give any such notice respecting infants whose adoption is arranged, provided the infant is not kept by the midwife for longer than forty-eight hours. Thus by handing over the infant within a few hours of its birth to the person adopting it the obligation to notify the adoption is avoided, and the authorities have no legal power to enter the midwife's house to ascertain what is being done with the child. The other method of avoiding the obligations of the Act lies in the fact that many children are adopted in this fashion without any money payment, which prevents the transaction coming within the scope of the Act. Thus by these two loopholes there are still many farmed-out infants not notified to the parish council.

LOCAL GOVERNMENT BOARD OF SCOTLAND.

As mentioned in the JOURNAL of July 9th, p. 108, the Local Government Board is issuing Procedure Regulations in connexion with the Housing, Town Planning, etc., Act, 1909. The first series deals with the regulations prescribed by the Local Government Board for Scotland for regulating generally the procedure anterior to, and for the purposes of, an application for authority to prepare or adopt a town planning scheme, in terms of Sections 54–56 of the Housing, Town Planning, etc., Act, 1909.

Before making the applications for preparing a town planning scheme the local authority shall give notice of their intention to make such application by advertisement in the newspapers. Then a plan or map of the land proposed to be included in the scheme must be deposited at a place convenient for inspection.

Special notices must be sent to other local authorities interested, commissioners of works if the proposed scheme is situate in the neighbourhood of any of the Royal palaces or parks. The Board of Trade and Light Railway Commissioners must be notified where any land proposed to be included on which tramways or light railways are constructed. Before making application to the Board the local authority must arrange to have a conference with objectors. These formalities having been gone through, the application may be forwarded to the Board along with a plan giving in detail full particulars of the land required in the proposed scheme. Besides the plan certain documents have to be forwarded, such as a

copy of all objections made against the scheme, the reasons why the local authority wish to carry out the scheme, information as to the area, population, rates, debt, etc., and the estimated cost.

These instructions having been carried out the Board will then consider the application. A further series of regulations dealing with the subsequent procedure for the Board's final approval of a scheme is promised later on.

These series of instructions become very necessary on account of the fact that many of the sections of the original Act have been repealed by subsequent measures. Like the various Acts in connexion with public health it would have been much more desirable could there have been a new Housing and Town Planning Act which would embrace all previous legislation on this subject.

American Surgeons in Edinburgh.

A party of some thirty American surgeons, who are on a visit to the surgical schools of Great Britain, were in Edinburgh on Wednesday, July 6th. In the morning they were conducted over the surgical side of the Royal Infirmary, and in the afternoon they paid a visit to the Royal Hospital for Sick Children. In the evening they were entertained at dinner by the Royal College of Surgeons in their hall, the President (Mr. J. M. Cotterill) taking the chair. They came from London by way of Liverpool. On Thursday morning they left for Newcastle. They intend to visit Leeds and perhaps other schools before leaving for New York.

Honorary Degrees at Edinburgh University.

On Friday, July 8th, the honorary degree of LL.D. was conferred on Chief Scout Lieutenant-General Sir Baden-Powell, Lord Hugh Cecil, Emeritus Professor John Chiene, C.B., Professor Matthew Hay, of Aberdeen, and Professor William Henry Perkin, of Owens College, Manchester.

Increase of Pauperism in Glasgow.

The Local Government Board Report for Scotland during 1909 was issued as a Blue Book on July 8th. There has been, owing to depression in trade, an increase in pauperism in Glasgow of 827. It is pointed out that the distress in Glasgow from unemployment was very acute during a great part of the year.

Bleached Flour as Food.

Among the public health items included in the report of the Local Government Board for Scotland, attention is drawn to the subject of artificial bleaching of flour and the effect of this on flour as a food. The Glasgow Flour Trade Association brought the matter under the notice of the Board, and expressed the desire that an investigation should be made so as to ascertain whether the sale of such flour was not a contravention of the Food and Drugs Act. The Board learnt, however, that the Local Government Board for England were making investigation into this matter, and have decided to await the result of this inquiry before proceeding further.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Coroners' Law Amendment.

THE Public Control Committee, in a report to the London County Council on July 12th, stated that the recommendations of the Departmental Committee on Coroners' Law Amendment embodied substantially the proposals made by the Council through a deputation to the Lord Chancellor and the Home Secretary in October, 1906, when the Council had the support also of the Medico Legal Society. There were only three points on which the Departmental Committee disagreed with the Council. The Council thought that so far as London was concerned the office of deputy coroner should be abolished. It had happened, the Public Control Committee stated, that coroners had received large salaries, had left much of their work to deputies, and had paid them an almost nominal sum for doing it. Under the revised organization suggested by the Departmental Committee deputy coroners would be unnecessary; during the illness or absence of the coroner arrangements might be made such as existed at present in the case of the metropolitan police magistrates. Whereas the Departmental Committee had expressed the opinion that a view of the body by the jury should be dispensed with except in special cases in which the coroner thought it necessary, the Public Control Committee thought the question should also depend upon the wish of the majority of the jury. The Committee agreed with the Departmental Committee "that coroners should be given a wider discretion as to costs in respect of medical examinations and evidence," but, inasmuch as the Council on November 5th, 1907, had passed a resolution to the contrary, it was opposed to the Departmental Committee's recommendation:

> That Section 22 (2) of the Coroners Act, 1887, which provides that officers of medical institutions shall not be paid a fee for giving evidence or making *post-mortem* examinations, should be repealed.

With these exceptions the Public Control Committee thought the proposals of the Departmental Committee would result in valuable reforms of the existing law, and recommended that the Lord Chancellor and the Home Secretary be so informed, and be asked to promote legislation to give effect to the recommendations.

Public Health Committee of London County Council.

The Public Health Committee reported to the London County Council on July 12th with regard to the administration during the year ended June 30th, 1910, of Part IV of the London County Council (General Powers) Act, 1907, under which samples of milk coming into London are examined at the various railway termini. In the twelve months 2,432 samples had been taken, and 2,247 of these had been examined by the Lister Institute. The number found to be tuberculous was 199, or 8.9 per cent. There were 10,723 cows examined on 419 farms in the midland and western counties, and 142 of the cows, or 1.3 per cent., were found to have tuberculous udders. In the previous year, 1,217 samples of milk were examined, 157, or 12.9 per cent. were found to be tuberculous, and 262 cows out of 10,103 inspected, or 2.6 per cent., were found to have tuberculous udders. The cost of the administration of the Act this year was £1,896, and last year £990.

The Status of the Medical Officer (Education).

The London County Council has been asked by the Board of Education to name a "school medical officer" for the purposes of the Education Code. In regard to this, the General Purposes Committee reported on July 5th that it was very desirable that the position and privileges of the medical officer of health for the county (Sir Shirley Murphy) should be conserved, and that he should be kept fully acquainted with all matters connected with the public health service. The Committee was of opinion, however, that the medical officer (Education), Dr. Kerr, should be named as school medical officer, and should discharge those duties, Sir Shirley Murphy not being expected to accept responsibility for any action taken by Dr. Kerr in his capacity of school medical officer. It would be understood that Dr Kerr would furnish to the medical officer all information necessary for the discharge of his duties as medical officer of health for the county.

MANCHESTER AND DISTRICT.

HOPE HOSPITAL.

THE Salford Board of Guardians is again in difficulties about the Union Infirmary, better known as Hope Hospital. It was only on March 23rd that they appointed Dr. Hindshaw, late of Ebbw Vale, to the newly created post of Medical Superintendent of the hospital, and he has been in residence less than three months. On July 3rd he sent the guardians three months' notice of his intention to resign the position, saying in his letter of resignation that, "owing to the rapid progress of a spinal trouble, I feel I cannot much longer fulfil my duties satisfactorily, and, in fact, will have to give up entirely my medical career." It is impossible not to express sincere regret at such an ending to a professional career. The fact that Dr. Hindshaw, while at Ebbw Vale, found himself in opposition to all his professional brethren, who keenly resented his action in connexion with the Ebbw Vale Workmen's Doctors' Fund Committee, cannot be allowed for a moment to interfere with the sympathy that is felt with him now on account of an illness which he himself evidently regards as so serious. Mr. Bratherton, in proposing that the resignation be accepted, and that the guardians express regret at the cause, said it was the saddest duty he had ever had to perform as chairman of the Infirmary Committee. The guardians had, of course, no option but to accept the resignation, and it was further resolved to again advertise the post. The salary now attached to it is £350 a year, rising by yearly increments to £500, together with an allowance for rent and rates of a house close to the hospital. The number of patients is at present 670, but this is abnormally low, the average being over 800, and there are two assistant resident medical officers. The post is by no means an easy one, but, provided that the guardians lend sympathetic assistance, a medical man of experience will have ample scope for good work.

MANCHESTER MIDWIVES SUPERVISING COMMITTEE.

The vacancy caused by the resignation of Dr. Margaret Merry Smith, who for several years had been executive officer and inspector of midwives under the Midwives Supervising Committee, has just been filled up by the appointment of Miss Barbara M. Cunningham. Dr. Cunningham holds the M.B., B.Ch. of Edinburgh, the L.M. of the Rotunda, Dublin, and D.P.H. of Cambridge. Since qualifying in 1901 she has held posts of resident medical officer at Wycombe Abbey School, the Royal Hospital for Sick Children at Edinburgh, and the Victoria Hospital for Consumption, Edinburgh. She has also had charge of one of the Dufferin Hospitals in India, and administrative control of hospitals at Nagpur and Delhi. Her predecessor, Dr. Merry Smith, has set a high standard of efficiency, and Dr. Cunningham's experience in the training and duties of midwives ought to stand her in good stead.

MANCHESTER EDUCATION COMMITTEE AND MEDICAL CERTIFICATES.

In discussing the report of the Education Committee presented to the City Council, Mr. Chantler said there were 7,688 children in the schools under 5 years of age, which is before the age for school attendance. These children were not examined by the medical officers, because there was no obligation to do so, and they developed rickets and other weaknesses through attending school at such an early age. He thought that the schoolroom was no place for babies. Dr. Chapman said the medical inspection of children had been of the highest service, and he hoped the work would be extended. There was one thing, however, on which he felt very strongly—namely, the fear and dread which prevailed of the visits of the school attendance officer. Over and over again it had been his unfortunate lot to be called in to attend children suffering from serious illness, which might have been prevented if the children had been permitted to remain at home for a day or two. The dread of the attendance officer often caused children to be sent to school with disastrous results to health, and the bottom of the whole matter was the system of grants for attendance. Sir T. T. Shann (Chairman of the Education Committee) said exemptions from school were always granted when the applications were proper, but some of the excuses were very remarkable, and if they listened to all of them there would be a poor attendance at school. He agreed that if the Board of Education gave a lump sum for carrying out the work it would be better than the present system. The young children to whom Mr. Chantler referred were often better off at school than in the gutter. Dr. Fletcher asked whether in future a medical certificate that a child was unfit to attend school would be considered sufficient ground for exemption. Sir T. Shann said he would be prepared to accept a proper certificate, but certificates could be obtained for sixpence, whether the child were ill or not. Dr. Fletcher said he most heartily and thoroughly protested against that suggestion on behalf of the medical profession. Sir T. Shann replied that such was the information given to him from time to time by Mr. Wyatt, the Director of Education, that certificates were received that were doubtful. Dr. Skinner also protested against the statement.

Sir T. Shann, on being questioned later, said that he intended to make further inquiries. He explained that he had not referred to reputable members of the medical profession, but to what were called "sixpenny doctors." He agreed to Dr. Fletcher's suggestion that the committee would accept medical certificates, and where necessary would arrange for the attendance officers themselves procuring them from the doctors. It is evident from Sir T. Shann's explanation that he had no intention of making any general reflection on the medical profession as a whole, but the matter cannot be considered to have been left in a satisfactory way. The position ought to be made perfectly clear, that general practitioners will not submit to having their certificates questioned by school attendance officers. The mere questioning may convey a charge of giving false certificates, and even a "sixpenny doctor," who for reasons altogether different may not be recognized professionally by other medical men, ought not to be charged with an act which if proved would lead to his name being erased from the *Medical Register* or to even more serious results. There must be numerous cases where there is room for reasonable difference of opinion as to whether a child should attend school or not, and the school authorities will be running very serious risks of legal action if it is shown that any harm has resulted to a child through disregard of the certificate of any registered medical practitioner.

CHORLTON BOARD OF GUARDIANS.

A problem in outdoor Poor Law relief, which will have to be faced in any reform of the Poor Laws, came up before the Chorlton Guardians last week. One of the guardians drew attention to a rule in force which gave relief committees power to refuse home relief where the home surroundings were detrimental to the moral or physical welfare of the inmates, and he proposed that the rule be rescinded on the ground that it was not qualified in any way as to whether the conditions were voluntary or unavoidable. He thought it would be cruel to refuse out-relief where it could be proved that the home surroundings were bad owing to no fault of the people who applied for relief. The commonest of the working classes wished to have a home of their own, and, though the relieving officers often had to report "home dirty," "overcrowding," "sexes sleeping together," and so on, he failed to understand why they should refuse relief to people in distress, even though they were not overclean. The other conditions were questions for the sanitary authorities to deal with, and the bulk of the people had to submit to overcrowding because of their poverty. Several other guardians

supported the proposal on the ground that the conditions were often quite unavoidable owing to want of money. Mr. O'Loughlin opposed the motion, and said it was utterly impossible to give out-relief where unmarried men and women were sleeping in the same room, even though they were too poor to provide separate accommodation for themselves. It had been admitted by both sets of commissioners of the recent Royal Commission that it was objectionable and should not be permitted. The motion to rescind the rule was lost by eleven votes to five, and the guardians will have to face the only solution which they have in their own power—that is, to see to it that out-relief given is adequate to enable proper accommodation to be procured. If persons relieved then fail to fulfil all conditions demanded in the interests of the community, the relief committees will be fully justified in refusing out-relief.

BIRMINGHAM.

Health of Warwickshire School Children.

Dr. Bostock Hill, medical officer to the Warwickshire Education Committee, has issued his report on the inspection of school children during 1909. There were 9,388 children examined during the year. It was found that in 332 cases the clothing was insufficient, in 7,955 cases it was considered to be all that was necessary, while in 1,101 cases it was described as passable. As regards the condition of the teeth, in 287 cases there were over seven teeth in the mouth carious. In 1,513 cases from four to seven teeth were carious, and in 3,413 cases one to three teeth required dental aid. Taking the standard decided upon in the previous year—namely, four carious teeth, out of 9,388 children examined, 1,800 had four or more carious teeth. This gives a percentage of 19.1, as compared with 17.6 in 1908. The percentage among the boys and girls is very nearly the same, the figures being for the boys 19.5, and the girls 18.9. It was observed that a larger number of children with carious teeth were found in the Southern Division than in the Northern. As regards intelligence, 152 children were described as medium, 341 as dull, and 57 as defective. There were 543 children excluded from school on account of being infectious, or because they were incapable of receiving education. Of these, 342 were suffering from ringworm, 34 from impetigo, and 44 from scabies. The importance of the medical inspection is shown by the fact that a large number of children have been found to be suffering from hitherto unsuspected defects, which not only prevent them receiving a reasonable amount of enjoyment in life, but which hinder them also from becoming capable wage-earners and citizens, and tend to make them, in many instances, drift into the ranks of those for whom it is necessary to provide public assistance. Dr. Bostock Hill says:

> We have definitely found that most parents are eager to assume their responsibilities when defects in the health of their children are explained to them. I have heard it stated that the following up of cases, such as I have endeavoured to bring about, is an entirely unnecessary proceeding, as the maternal instinct would be sufficient stimulation for the ameliorative work. In a proportion of the cases this is so, but in many instances prejudice and carelessness dominate the parents, and unless constant stimulation is effected nothing is done to remove conditions which will of necessity set their seal upon the future career of the child.

The University of Birmingham.

Professor R. Saundby has been elected to represent the University on the General Medical Council for a further period of five years. Professor Bostock Hill will represent the University at the Conference on School Hygiene, to be held in Paris on August 7th next. Dr. Thomas Wilson has been appointed Lecturer in Midwifery and Diseases of Women.

The annual degree congregation on July 9th was held for the first time in the great hall at the new buildings of the University at Edgbaston. Among the official degrees conferred was that of Doctor of Medicine on Sir Robert M. Simon, Professor of Therapeutics, and Mr. Peter Thompson, Professor of Anatomy. Of the ordinary degrees conferred there were fourteen recipients for the degree of Master of Science, forty-eight for the degree of Bachelor of Science, and seven for the degrees of Bachelor of Medicine and Bachelor of Surgery.

NEWCASTLE-UPON-TYNE.

Visit of American Surgeons.

The American surgeons who are at present on a visit to this country honoured Newcastle-on-Tyne with their presence, and were received by Professor Rutherford Morison. They were conducted over the Royal Victoria Infirmary, and were much gratified with all they saw there.

Professor Crile's Lecture on Transfusion of Blood.

On July 7th Professor George W. Crile, of Ohio University, Cleveland, U.S.A., gave a lecture in the College of Medicine, under the auspices of the local Branch of the British Medical Association, the subject chosen being The Direct Transfusion of Blood. The medical theatre was filled to overflowing. In a few appropriate remarks, the Chairman, Dr. J. S. McCracken, introduced the lecturer, who had been good enough to break into his holiday to comply with their invitation. After a brief account of the history of transfusion of blood, Professor Crile told the story of how he was led to adopt the method he now followed of passing the blood directly from the artery of a donor into the vein of a receiver. The steps of the operations were fully described and amply illustrated by lantern slides. To be effectual transfusion must be done early in severe haemorrhages, as after numerous prolonged faintings and, practically speaking, almost empty carotid arteries, structural changes are set up in the cerebral cells as the result of the acute anaemia, and these militate against the success of the operation. It is thus, too, with surgical shock when too prolonged. Professor Crile did not find transfusion useful in pernicious anaemia, for the haemolysins which destroy the blood of the patient attack with even greater readiness the blood transfused from a donor. By means of lantern slides the degenerations which occur in the motor cells of the cortex of the brain and in Purkinje's cells of the cerebellum were shown, and their relation to fatigue, poisoning, and anaemia demonstrated. Professor Crile is a clear and lucid expositor. His lecture was eagerly listened to and closely followed by the large audience, whose appreciation was shown by the warmth and length of the applause at its termination. On the motion of Dr. Hume, seconded by Professor Rutherford Morison, a vote of thanks to the distinguished American was proposed and carried.

Durham University Graduates' Association Dinner.

On July 8th the University of Durham Medical Graduates' Association held its annual banquet in the College of Medicine, under the presidency of Dr. Thomas Beattie. The College authorities kindly allowed the use of the beautiful council room, a favour much appreciated by the fifty-one gentlemen who sat down to dinner. There was a short toast list. After "The King," from the President, "The University of Durham" was proposed by Dr. A. Mantle, of Harrogate, and responded to by Sir Thomas Oliver. "The Medical Graduates' Association" was given by the Rev. Dr. Gee, Master of University College, and acknowledged by the President. It was a pleasant reunion.

Granting of Medical Certificates and Infirmary Patients.

The question of the giving of medical certificates to sick and injured workmen for their benefit societies is again being raised by the trade unions of the district, and by the working men on the Committee of the Royal Victoria Infirmary. The honorary staff is quite willing to give, free of charge, ordinary certificates

announcing that a particular patient is ill and unable to follow his occupation, but when the request is for a fuller certificate as to the nature of the illness, its causation, and probable length of the disablement, a certificate, in fact, which may be made use of under the Workmen's Compensation Act, then it is maintained that for the ultra certificate payment should be made. It is hardly likely that the honorary staff will give way upon the point.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

SOUTH DUBLIN UNION MEDICAL OFFICER.

THE following notice of motion was handed in at the last meeting of the guardians of the South Dublin Union, and will come up for consideration at their next weekly meeting:

> That having considered the admirable report from Dr. F. J. Dunne, visiting medical officer, on the working of the workhouse consumption hospitals and the results attained under the tuberculin treatment which was introduced into the union in 1904 by Dr. Dunne, we are of opinion that exceptionally good work has been done in fighting this terrible disease and at an unusually low figure, and we think that the guardians should take this opportunity of recompensing Dr. Dunne for the great attention and zeal he has shown for the past five years. We accordingly propose to grant Dr. Dunne a bonus of £100, and request the Local Government Board to sanction the same.

The tuberculin treatment referred to is that of Denys of Louvain, with which, we believe, Dr. Dunne has had remarkable success.

TUBERCULOSIS SANATORIUM AT RATHDRUM.

At a recent meeting of the Rathdrum Board of Guardians it was decided to convert the fever hospital attached to the workhouse into a consumption sanatorium. Fever cases in the district are rare, and the building has apparently been lying almost unused for years. The present example is one that might be followed with advantage elsewhere throughout Ireland.

KING'S PROFESSOR OF PRACTICE OF MEDICINE.

At a special meeting of the President and Fellows of the Royal College of Physicians in Ireland, held on Friday, July 8th, Dr. James Craig was elected King's Professor of Practice of Medicine in the School of Physic, Ireland.

ANOMALIES OF NOTIFICATION IN BELFAST.

Some statistics comparing the number of deaths in Belfast from non-notifiable zymotic diseases with the number from notifiable zymotic diseases were given in last week's issue. These figures came up to the year 1903. In a table on p. 26 of Dr. Bailie's annual report for 1908 we find the total number of deaths from zymotic diseases during the last five years. They stand as follows:

Disease.	No. of Deaths.	
Small-pox	9	
Scarlet fever	99	
Diphtheria	172	
Enteric fever	468	
Typhus fever	23	
Simple continued fever	27	
Total	——	798
Whooping-cough	816	
Epidemic diarrhoea	1,394	
Measles	839	
Total	——	3,049

In old times the first six of this list were looked upon as inevitable; gradually one by one they have been proved to be preventable. Why should not a strenuous effort be made to attack the whooping-cough, measles, and diarrhoea triad? Would it not be more logical to make the last three notifiable and the first six non-notifiable than to let it remain as it is? These 3,049 deaths also would be much increased if we had any means of knowing the numbers of cases registered as dying of bronchitis which began as measles or whooping-cough.

COMPLIMENT TO DR. JAMES GRAHAM.

On July 4th Dr. Graham, H.M. Coroner for the City of Belfast, was presented by a number of his patients with an exceedingly handsome motor car. The ceremony took place in one of the committee rooms of the City Hall. There was a large number present, and as the chairman (Mr. H. M. Pollock, J.P.) said, there was a profound and sincere feeling of esteem and affection in all present. The address expressed the high appreciation of his long and devoted services to his patients, and Dr. Graham returned his most heartfelt thanks. The profession will join in the hearty wishes of Dr. Graham's many patients.

The car, which is a Daimler with a Limousine body, was on view in the courtyard, and was much admired. A fine photograph of it was handed to the doctor when the presentation was made.

ABBEY SANATORIUM.

At the meeting of the Belfast Board of Guardians on July 5th Dr. Hall reported that during the half year ending March 29th, 516 patients had been under treatment; 265 were still in the sanatorium. Of those discharged, 18 men and 8 women were greatly improved; 63 men and 37 women were improved; 20 men and 10 women were not improved; 40 men and 31 women had died; the rest were too short a time under treatment. The average age of the men was 33, and of the women 26. The average stay was, for the greatly improved, 269 days; for the improved, 203; for the not improved, 119; and for the dead, 138. It was agreed that a verandah should be put round the hospital block, so that patients could sleep out, as in the pavilions.

CORK SANATORIUM FOR CONSUMPTION.

A special meeting of the Conjoint Hospital Board was held at the Court House, Cork, to consider a communication from the Local Government Board with reference to the payment of travelling expenses and for outfit of patients to be sent to the sanatorium. The Local Government Board wrote saying it was unable to find any statutory provision which would enable the travelling expenses and cost of outfit of patients sent to the sanatorium to be defrayed out of the rates of the several sanitary authorities concerned. After much discussion, it was proposed that all the travelling expenses to and from the sanatorium must be paid by the patient or by the contributing body sending the patient, and that all cases suitable should be admitted in order of application, cases of incipient phthisis to receive first consideration. Her Excellency the Countess of Aberdeen had signified her willingness to open the sanatorium in August, and it was decided to make arrangements for the opening on August 4th, as that date suited Her Excellency.

YOUGHAL BOARD OF GUARDIANS.

The salaries of the various dispensary doctors in this union, which have been under discussion at the meetings of the board for a considerable time past, have been arranged on a graded scale, making the initial salary £120, and giving £1 a year increase for each year in office, the maximum increase not to exceed £30. After a service of thirty years, a dispensary doctor in this union might hope to reach the lordly annual sum of £150. Truly, a magnanimous offering for long service!

THE scientific tour of the "E.M.I." (*Enseignement Médicomutuel International*) has been fixed this year for August 8th to 27th. The itinerary is as follows: Lille, Ostend, Middelkerque, Blankenberghe, Bruges, Ghent, Brussels (Exposition), Louvain, Antwerp, Rotterdam, The Hague, Leyden, Amsterdam, Isle of Marken, Utrecht, Liége, Spa, Borgoumont, Luxembourg, Strassburg, Schlucht, Gérardmer, Vittel. Communications, prestamped for replies, should be addressed to the office of *L'Enseignement Médicomutuel International*, 12, Rue François-Millet, Paris, XVIe.

Correspondence.

THE RECENT SPECIAL REPRESENTATIVE MEETING AND SPECIAL GENERAL MEETING.

SIR,—It has been so far decided, subject to the mere approval by a bare majority at the meeting to be held on July 22nd—which approval will, of course, be granted—that new regulations and ordinances shall govern the procedure of the British Medical Association. So far so good. It is, however, further proposed that, in order to obtain these increased powers, it will be necessary to alter the existing "Memorandum of Association," and that, under the Companies Act, in order to effect this, we must wind up the old "company" and initiate a new one.

May I ask whether it is absolutely necessary, in winding up the present company, that we should have to place our Association once again under the Companies Act, with all its attendant legal and other disabilities? We are not a trading company associated for the purpose of pecuniary gain—I hope we never shall be—and it appears to me that it would be wiser to hesitate before placing ourselves again under the trammels of a limited company.

Surely it would be possible for us to gain all the necessary authority to organize medical practitioners and to do all the things which are included within the four corners of the new regulations, just passed for the undoubted benefit of the profession, by forming an association, such as the Royal Society of Medicine and other professional organizations, without utilizing the Companies Act and limiting our powers under an Act of Parliament. Surely neither a "Charter" nor a "Company" is necessary in order to perfect our organization of a purely professional character. It would, in my humble opinion, raise the tone and character of the Association were it placed outside the area of the Companies Act. The leading organizations of other professions are not limited companies, as far as I know, and if it be possible to effect such associations in the law and the Church and in other "professions," why should we be ironbound and shackled to the Companies Act? It is true that under the present system we do not have to use the word "Limited," but legally our designation is the "British Medical Association, Limited," and in the future, if we are still under the Act, the effect will be the same.

Will the Council kindly answer this question before the meeting is held for the purpose of winding up and reconstituting the present company?

If there are legal impossibilities, the sooner we know these the better, and of course then we can only do our best to make the future "limited company" a greater help to the members than even it has been in the past.—I am, etc.,

London, W.C., July 11th. A. G. BATEMAN.

THE FUTURE OF THE ASSOCIATION.

SIR,—The letter of Mr. Russell Coombe and that of Mr. H. E. Gough in last week's JOURNAL draw attention, from different points of view, to the decrease in the power retained by the individual members of the Association which is steadily taking place. This is one of the great dangers which some of us consider to be threatening the very existence of the Association, and the chief reason why so much importance is attached by us to an effective postal referendum.

Another danger is to be seen in the increasing power taken to itself by the Representative Body, at the expense of the members in general, of the Branches, and of the Council. Since the publication of the Draft Charter two years ago (SUPPLEMENT, May, 1908), the Representative Body has repeatedly increased its own representation on the Council; it has, on the question of a Referendum, practically doubled the voting power of its Representatives on the Council by requiring a two-thirds majority, at the same time raising the quorum; and it has at last specifically taken to itself "the general control and direction of the policy and affairs of the Association." In view of such continuous changes in the balance of power, the statements of Dr. Buist and Mr. Verrall at the recent General Meeting, that the new regulations in no way alter the situation, seem scarcely correct.

One would have thought that the experience of the Organization Committee in losing the Charter, by refusing to allow due influence to a conservative and perfectly reasonable minority of the Branches and members of the Association, and allowing insufficient weight to the opposition of numerous corporate bodies, would have acted as a warning to them in reference to the procedure for the proposed new company, but the warning does not seem to have been taken. In the Report of Council (SUPPLEMENT, May 1910, p. 260), it is stated (No. 51):

> The Organization Committee submitted to the Privy Council an amended draft Charter giving effect to those concessions to various opposing bodies which were approved by the Representative Meeting.

Yet, instead of taking the draft Charter as thus finally amended as a basis for the new company regulations, Minute 217 of the Representative Body at the Belfast meeting was reverted to, and the regulations are drawn "in accordance with those which have been approved by the Association in the draft Charter." (SUPPLEMENT, July 2nd, 1910, p. 4.) This is what I referred to at the extraordinary general meeting as unfair and unwise, and I consider such a policy to constitute another danger.

And now it is recommended in the Supplementary Report of Council (SUPPLEMENT, July 9th, 1910, p. 41) that the new and extended Memorandum, the most important document of the Association, should be finally settled "in accordance with the replies of the Divisions," without any possible reconsideration by the members either in meeting or otherwise. Again I submit that the pace is dangerous in the best interests of the Association.—I am, etc.,

Sheffield, July 11th. R. J. PYE-SMITH.

REPRESENTATION IN THE ASSOCIATION.

SIR,—Dr. H. E. Gough's letter, which you publish in the JOURNAL of July 9th, p. 118, so exactly describes my own experience, both as a general practitioner in the country and as later on Secretary to the Torquay Division, that I feel I should be betraying the interest of the profession were I to remain silent.

Leaving London after some few years of active life there, I found myself in a country village, my interests absolutely in my work, my social duties requiring what spare time remained to me. Beyond recording in the JOURNAL a matter of interest, the Association was an unknown quantity. As late Secretary to the Torquay Division, the other side of the letter is fully substantiated. The Division consists of between eighty and ninety members. If when I called a meeting and obtained from four to six members I felt that I was honoured.

Seeing that all must agree that it is seldom possible for the country practitioner to find time to attend meetings, cannot the matter be done by letter?

Most men could find time to answer the Agenda by letter, and what in this way was lost by the absence of discussion would be made up by the much more complete answer of the Division; and I think it is open to question whether discussion is always advantageous. The answers unopened would be submitted by the Secretary to the Executive Committee. In this way better business would be done, and the opinion of all could be most easily obtained.—I am, etc.,

Paignton, July 10th. GRIFFITH C. WILKIN.

SIR HENRY MORRIS AND CHRISTIAN SCIENCE.

SIR,—If your correspondent Mr. Frederick Dixon, whose letter under the above heading appears in the JOURNAL of July 9th, would make himself acquainted with the books he professes to know, he probably would not put forward baseless assertions as to the sources of another person's information.

The alternative to his ignorance of the matter he wishes us to think he knows appears to be a deliberate design to hoodwink and mislead his readers; but as I know nothing personally either good, bad, or indifferent about Mr. Dixon, I hesitate to attribute to him such a design, although his letters to the press from time to time seem sufficiently disingenuous to run him perilously near to exposing himself to such an imputation.

When, therefore, Mr. Dixon asks you, Sir, to permit him "to explain that Sir Henry Morris, like many other

critics, has made the signal mistake of forming an estimate of Mrs. Eddy's character upon works based on fundamental antagonism not only to her but to her teaching"; when he says, "Sir Henry Morris has accepted all the criticisms of those most bitterly antagonistic to her teaching and most absolutely without sympathy for her ideals"; and further, when he adds—in referring to Sibyl Wilbur's *Life* of Mrs. Eddy, which he admits is not an antagonistic book—that "it is a manifest certainty that his" (Sir Henry Morris's) "almost lurid summing up of her" (Mrs. Eddy's) "character was not arrived at from a study of that book," I can only say that he shows crass ignorance of what that book really contains.

I here reaffirm what I have stated in that section of my paper, in the BRITISH MEDICAL JOURNAL of June 18th, which deals directly with Mrs. Eddy's career—namely, that the facts upon which my own criticisms are based were derived exclusively from Sibyl Wilbur's *Life of Mary Baker Eddy*, and from Mrs. Eddy's autobiography, *Retrospection and Introspection*.

Not until after my paper was published did I meet with Georgine Milmine's *History of Christian Science*. It is clear that this authoress has most thoroughly studied her subject. Her work certainly cannot be said to be "based on fundamental antagonism" to Mrs. Eddy and her teaching. It is a discriminating and an unbiassed review written apparently in a spirit of aloofness from animus or prejudice, and founded largely on Mrs. Eddy's own writings, on sworn affidavits, on law court reports, and on other reliable sources of information.

Had I at the time of writing my article for the JOURNAL known the contents of Georgine Milmine's book I should have had to make the number of indictments against the founder of Christian Science more numerous, and my "summing up" of her character more "lurid" still.

Mr. Dixon may feel assured that I was aware of the resolution of the Mayor and City Council of Concord, N.H., and also of Mrs. Eddy's reply thereto which Mr. Dixon does not mention. Moreover, I have been glad, on every occasion, to read those expressions of the kindly relations which existed between Mrs. Eddy as a resident and the Town Council of Concord, and that too without questioning how much of the civic appreciation of Mrs. Eddy was due to the retirement and seclusion of her life at Concord.

But is it possible that a resolution passed in honour of a lady in the 87th year of her age, and after living in such seclusion, can wipe out from the biographical records of one who for so many years loved, and sought, and lived in publicity and notoriety, all the most striking, salient, and important features of her life? Can a resolution of appreciation received by Mrs. Eddy at the age of 87 from the Mayor and City Council of Concord, or a kindly Christmas greeting from a New York physician, wishing her, at the age of 86, peace and freedom from annoyance in the coming year, annihilate or efface, as Mr. Dixon seems to imply they ought to do, the established and verified facts of seventy earlier years of her life?

In contrast with her departure from her residence—"Pleasant View," Concord—in January, 1908, take Mrs. Eddy's final departure in the winter of 1882, when 61 years old, from Lynn, after an active life there of twelve years. This was, according to Georgine Milmine, "distinctly in the nature of a retreat," because Mrs. Eddy "at last despaired of conquering the prejudice that had arisen in Lynn against her and her religion": because the people of Lynn regarded her many lawsuits as discreditable to her; and because the public feeling there became unfavourable to "a group of people teaching a new religion and professing to overcome sin and bodily disease through their superior realization of Divine love, and yet were constantly quarrelling and bickering among themselves, accusing each other of fraud, dishonesty, witchcraft, bad temper, greed of money, hypocrisy, and finally of a conspiracy to murder." Can a resolution of appreciation and a letter of Christmas greeting and good wishes for the New Year alter the fact that mesmerism became "the dominating conception of Mrs. Eddy's life"; that she moved from place to place under "a constant and terrifying sense of evil"; and was perpetually attributing her misadventures to the "*malicious animal magnetism*" of her seceding students?

A controversialist who makes assertions without foundation for them, and who suggests that two subordinate incidents should overshadow the main features of a person's character when one is forming an estimate of her public career, merits the distinction of being left uncontradicted and in the pious enjoyment of his own arguments. I therefore apologize to Mr. Frederick Dixon for disturbing his preconceptions and correcting his misconceptions, and beg to assure him that I have said my last word in reply to any statement of his.

Mr. Stanley Noble, in a letter in the same issue of the JOURNAL, asks me, in courteous terms, to give him my authority for stating that hypnotism "has been found too dangerous for general use in medical practice." In addition to what I have stated in my paper, let me refer him to the writings of such authorities as Charcot, Richet, and Heidenhain.

Charcot's theory of hypnotism was that it is a *morbid condition allied to hysteria*; is this not in itself a danger? Charcot, after a prolonged study of hypnotism, abandoned its employment, not, as was said, out of jealousy and without making it known "why," but because he found it increased the intensity of disorders of the nervous systems.

Dr. Rudolf Heidenhain, the Professor of Physiology in the University of Breslau, whose name is indelibly associated with the "inhibition" theory of hypnotism, gives expression in his book to several strong warning notes. For instance, he cautions against repeated subjection of the same person to prolonged hypnotism, and against the risks of the great increase of reflex irritability induced by the hypnotic state. He mentions cases in which the hypnosis began with general convulsions, and adds, "such a spectacle might easily deprive the experimenter of the presence of mind necessary to put an immediate end to the experiment." He also tells of persons in whom an attack of convulsions constantly accompanied every hypnotic experiment.

M. Richet, whose work in the Salpêtrière under Charcot is well known, though he says, "Je n'ai jamais rien vu souvenir de grave," refers to troublesome nausea and to marked nervous irritability lasting twenty-four hours after awakening from the hypnotic condition.

Heidenhain states that some persons exhibit nervous irritability after every experiment; that the degree of irritability increases as the experiments are repeated; and that, in consequence, involuntary hypnosis has ultimately occurred. He alludes to a case in his own practice of accidental hypnosis as a result.

Another less important inconvenience which has been recorded is a feeling of intense fatigue in the limbs for several hours after hypnosis. Nor is it possible to entirely ignore the reports of troubles which have arisen from hypnotized women becoming possessed with a passion for the physician who hypnotized them.

Dr. J. G. McKendrick, one time Professor of Physiology in Edinburgh, and in 1876 appointed Professor of the Institutes of Medicine in the University of Glasgow, writes: "It is also clear that the perverted condition of the nervous apparatus in hypnotism is of a serious character. . . . Nervous persons may be seriously injured by being subjected to such experiments; more especially if they undergo them repeatedly. . . . The medical profession has always been rightly jealous of the employment of hypnotism in the treatment of disease, both from fear of the effects of such operations on the nervous systems of excitable people, and because such practice is in the borderland of quackery and imposture."

It probably will not be denied that a method affecting the nervous system so powerfully as hypnotism does may be "too dangerous for general use in medical practice," even if in the hands of those specially skilled and experienced the risks are not unduly great, or only very slight.—I am, etc.,

London, W., July 9th. HENRY MORRIS.

FAITH HEALING AND PHENOMENA OF THE OCCULT.

SIR,—In the JOURNAL of July 2nd Dr. W. B. Parsons criticizes my remarks on the vibration theory, and says that it is unscientific to regard it as explaining anything; he adds, moreover, that the ether is a concept and not a medium. He may be correct. Ether cannot be demonstrated, but its existence and the vibration theory have

been generally accepted as the most plausible way of explaining many of the physical phenomena around us; and it seemed to me that in following the views of, among others, Tyndall, K. Clifford, Helmholtz, Crookes, and Norman Lockyer I was working upon as solid ground as was obtainable. The statement of the actual existence of ether may involve a fallacy—for that I am not responsible—but it involves a hypothesis which serves us best at the present time; and my object in introducing it was to bring prominently forward the way in which certain things are said to come about, leaving to the future the correction of false hypotheses and the discovery of the true ones.

Dr. Parsons complains because I speak of an actual emanation of force and of latent force becoming objective. I was alluding at the time to what we see in the emissions of radium, and to the properties which exist in a magnet made visible by the approach of a piece of iron, and I think that most people would interpret the remarks as a fair expression of what we see does occur. Dr. Parsons gives his own definition of force—namely, that it is "merely a name given to a process of equalization." This strikes me as being a transcendental mode of expression which may in the abstract be correct, but as he goes on to call it a "process having velocity," I am quite willing to accept this "process" as an actual entity. A "process" must be a process of something, and it is surely relevant to speak of it as having spatial dimensions. I was speaking of force as being something—itself probably subject to control—which is capable of influencing as a cause—as when, for example, equilibrium is produced between a light and a heavy substance the power which brings about that equilibrium is a "force." Surely a "process having velocity"—to use Dr. Parsons's words—is something more than an abstract; there must be some truth of quality and amount about it! Nor do I consider the question of latency to be irrelevant. Processes may be held up under stronger influences—the ordinary phrase, "pent-up energy," expresses what I mean—and their existence may be unsuspected until the release of the controlling agency allows them to show convincing results.

In his third objection—that there are "no such things as conductors, but that every interposed substance between reacting bodies is an impeding resistance"—I cannot quite follow Dr. Parsons. Rays from the sun which would not affect my hand in ordinary circumstances would cause a severe burn if a lens were interposed, though the lens touches neither the sun nor my hand—and Dr. Parsons says that a body cannot transfer its own motion to another unless it touches it. I was discussing the question of the possibility of telepathy in the absence of proved direct intercommunication by some material agency, and my conclusion was that I could not conceive how such intercommunication could occur, and I suppose that Dr. Parsons and myself are here in agreement, since he postulates that there are no conductors conveying particular kinds of force from one substance to another.

My object was to arouse speculation, and to show that many accepted theories are still open to doubt, but that we must not close our eyes to some reported deductions because they do not fit in with our present theories, which may not even be hypotheses, whilst in reality they are fallacies.—I am, etc.,

London, W., July 5th. T. CLAYE SHAW.

THE CORONERS' LAW AND DEATH CERTIFICATION (AMENDMENT) BILL.

SIR,—The above bill in its present form never ought to be permitted to pass through the House of Commons. If all the influence of the medical profession in the country is powerless to protect its members from so gross a legislative imposition, it seems to me that combination among ourselves is utterly useless. In my opposition to the Notification of Births Act I pointed out that it would not be long before other gratuitous work would be foisted on to the profession, though I little thought it would be attempted by an eminent member of our own profession.

Clauses 17 and 19, in their present form, must be met with uncompromising opposition. You, Sir, in your editorial in the issue of July 9th, have drawn attention to some of the injustice likely to be inflicted by the former clause, and the latter, for other reasons, is equally to be condemned. In the first place, in many cases it would be physically impossible to visit and inspect the body in the required time; and, further, there is grave doubt as to the desirability of compelling the certification of death with such precipitancy. In my opinion, the public safety would be better insured by forbidding a death certificate to be given *earlier* than twenty-four hours after death, except in special cases, than by hurrying the judgement of the practitioner, and compelling him to take a step which he may repent later when the certificate has been given. Such a procedure is playing into the hands of evildoers criminally interested, it may be, in the death of his patient. They would welcome an enactment throwing the onus upon the doctor of certifying the death within twenty-four hours, unless prepared to notify his suspicions to the coroner.

As a constituent of Sir Philip Magnus I have written to him protesting against these clauses, and would ask all medical graduates of the University of London to signify their disapproval in the same manner. The following is the text of the letter:

"As one of your constituents, and a medical practitioner, I strongly protest against Clauses 17 and 19 of Part 2 of the Coroners' Law and Death Certification (Amendment) Bill.

"With regard to the former clause, it throws on the medical practitioner an additional and very onerous obligation without any remuneration. The obligation of giving a death certificate without fee has always been considered inequitable by the profession, and this very serious addition will be an intolerable injustice which I have little doubt will meet with the general opposition of all bodies in any way representative of professional feeling.

"When it is considered that long distances will often have to be traversed in all kinds of weather to carry out this obligation without any payment, the injustice must be obvious to any fair-minded person.

"With regard to Clause 19 it is altogether impracticable, and would often be opposed to public policy. Nothing could be more ill advised than to force a medical practitioner under a penalty to give a death certificate within twenty-four hours of death, when all experienced practitioners know how necessary it often is to allow a little delay to take place before giving a certificate in order to take into consideration other matters besides the purely medical ones. In many cases certificates would be given which under the present law are rightly withheld.

"In the case of country practice it would often be physically impossible to make the required inspection of the body in the time laid down by the bill, and the only portion of the community likely to gain any advantage from this precipitate certification of deaths would be the criminal portion, that would be enabled to carry out its nefarious designs with much greater facility than at the present time."

—I am, etc.,

MAJOR GREENWOOD.
London, N.E., July 9th. Barrister-at-Law.

SIR,—In the leading article on Coroners' Law and Death Certification, in the JOURNAL of July 9th, with which most members of the profession will be in complete agreement, no reference is made to a point which seems to me to be of the greatest importance—namely, the breach of professional secrecy at present involved in death certification. So long as the patient lives, no medical man would supply details of the diagnosis of his case to a third person without the permission, expressed or implied, of his patient, and one might suppose that on the death of the patient his representatives would be entitled to similar consideration; but a copy of the death certificate, based upon information supplied in confidence to the practitioner, is in fact at the disposal of anyone who will pay the Registrar half a crown for it, and this facility is commonly made use of by insurance companies to the detriment of the estate of the deceased patient.

When I first became a "registered medical practitioner" I made a practice of filling in certificates of death, including the duration of the disease, with the most scrupulous care; within a few months I had occasion to certify the death of a child from chronic otitis media and septic meningitis, and the parents on careful cross-examination thought they remembered a slight temporary discharge from the ear some four years previously; I accordingly certified that "to the best of my knowledge and belief" the otitis media was of four years' duration. The insurance company concerned inspected my certificate and refused to pay, on the ground that the otorrhoea (which the parents stated—I believe quite truly—they considered a matter of no importance) had been present at the time of the signing of the contract. The indignant parents

complained to me that as a result of my action they had no money to bury the child, and it was only after legal threats that the money was paid. Since then I have never certified the duration of the disease, and I have fallen into line with other practitioners in occasionally omitting, out of consideration for the relatives, some portion of the diagnosis which from the statistical point of view might be of great importance.

I suggest that each form should be divided into two parts, numbered identically; that the one part, containing (compulsorily) a certification of the fact of death, and (optionally, and to be disregarded for statistical purposes) of the cause of death, should be handed as at present to the relatives; and that the other, for which, of course, a small fee should be paid, should contain full details of the cause of death, should be forwarded direct to the Registrar, and should be regarded as a strictly confidential communication between the practitioner and the Registrar-General.—I am, etc.,

London, N., July 11th. J. NORMAN GLAISTER.

SIR,—Sir William Collins's bill for the amendment of coroners' law and death certification affords matter for serious consideration.

It seems a small matter, at first sight, to insert the words "and that I have examined the body" into the forms issued for death certification, but what does it entail for a general practitioner in a country district? His patients do not all live within a stone's throw. Is he to make a special journey—in some cases of six or eight or more miles each way—to view a body for—nothing? Surely a fee and reasonable mileage should be allowed?

At present the giving of a death certificate takes a few minutes. The time required to supply the proposed certificate may be as many hours.—I am, etc.,

Wisbech, July 12th. RUPERT BUTTERWORTH.

THE RELATION OF CLOTHING TO PHTHISIS.

SIR,—At the Congress of the National Society for the Prevention of Consumption, recently held at Glasgow, Dr. Stanley, of Birmingham, said that the way in which ailing children were often wrapped up, especially among the poorer classes, was "most favourable to tubercle and most unfavourable to improvement." After giving an amusing instance of this, he added that such children "often had a couple of yards of muffler round their throats," according to the *Standard*.

From my own experience, I should say that this muffling up the throat is not entirely confined to the poor, nor to children. In the pamphlet I recently published on Tight Neck Clothing and its ill effects, I said I thought it possible that phthisis might sometimes be due to this cause, preventing the proper development of the neck, and consequently of the trachea, and thus restricting inflation of the lungs, especially during growth.

Being no longer in practice, I do not see many cases of phthisis, but in the last six months I have seen six cases. Two were in a comfortable position in life. Five were very incipient cases; one was much advanced. In each case the small neck, much constricted by clothing, was most marked. One had greatly dilated pupils that became normal when this was relaxed. Indeed, nearly all at once gladly accepted this change when the reason for it was explained, and expressed themselves as relieved by it.

One was a child of 11, brought to the office of a charity with which I am connected while I was present. She was attending a hospital. The three ladies of the office remarked that she could hardly breathe. I told them that if they would carefully undress her they would soon find the cause for this, and how children were *prepared* to take consumption. They soon found the girl to be half throttled.

To save time it is not unusual to have suffering children or young people undressed before a doctor examines them; but I suggest that a great deal more could be learnt if they were sometimes observed while the clothing is being removed. It will then often be found that the person is wearing clothing on both neck and chest which cramps respiration and development, and favours tuberculosis, and that attention to this at an early stage may do far more than at any later period, or any sanatorium.—I am, etc.,

London, N.W., July 9th. WALTER G. WALFORD.

THE SURGICAL TREATMENT OF GLYCOSURIA.

SIR,—Some of your readers are interested in my letter, and have reminded me that it would be useful to have more details with respect to the estimation and occurrence of lactates. Administration of chloroform and oxygen, a lowered function of liver, a congestion of liver, excessive muscular work, injections of spermin, the lactic acid treatment,[1] high-frequency current, are all connected with urinary changes, which may concern a test which at least mimics in an artificial way the great physiological oxygenation of the various organs of the body. In the practical use of the test we know that the lactates evolve their heat the first minute, glucose during seven or eight minutes, the gravamen being about the fifth minute, lactose more slowly; alcohol, organic salts, glycerine, albumens, all furnish heat and may be estimated by the test; salicylates, carbolic and cresylic acids afford extraordinary temperatures.

A normal urine may give one or two degrees of temperature Fahrenheit; if we, for convenience of reading, use 5 c.cm. of urine, the temperature is nearly threefold that obtained by 1 c.cm. The initial temperature is marked down, having noted *possible* lactates, we simply leave the thermometer in the phial and await the maximum. The factor for glucose is about the same as that for lactic acid—namely, 0.3 or 0.34; phial and thermometer vary and must be standardized. Suppose the urine affords a temperature of 10° F., the maximum heat evolution attained in seven minutes, then there is 3 per cent. of glucose, less the value of the possible lactate. Suppose 1 c.cm. of lactic acid (specific gravity 1210) is diluted to 25 c.cm. with water. The carbohydrate test affords with 1 c.cm. of such dilution 9° F., then $0.34 \times 9° = 3$ per cent. absolute lactic acid, or as 0.4 c.cm. of such neutralized 5 c.cm. lime water we may reckon 4.5 per cent. of official lactic acid. For urine analysis especially I use lime water for acidity; winter and summer it varies scarcely at all. Using 5 c.cm. in a graduated test tube and a trace of phenolphthalein, we obtain at all times the *apparent* acidity of urine or the actual acidity of weak acids. The constant dividend is the molecular weight, in milligrams, divided by 100. Morning urine 2 c.cm. decolorized, then 0.63 per cent., *as* oxalic acid—that is, 1.26 ÷ 2; day urine 5 c.cm. (equal volumes of lime water and urine) decolorized, then 0.25 per cent., as oxalic acid, *normal acidity*. Again, a 1 per cent. solution of lactate of zinc, 1 c.cm. gave with the carbohydrate test 2° F., 5 c.cm. 6° F. Now with the lactic acid and with the lactate when we use 1 c.cm. *the heat evolution is over in one minute*. Initial temperature 67°, first fifteen seconds 68°, second 68¾°, third 69°, fourth stationary; diminution of half a degree at the end of the second minute.

A sample of glycosuric urine, associated with gouty symptoms, and storms of gravel previously, indicated by the copper test 2.5 per cent. of sugar. There was 0.5 per 1,000 uric acid. Examined before and after oxidization, as described in my former letter, the former gave 10°, the latter 7½°, the former 2⅜° the first minute, the latter 1½°. Although lactates are immediately acted upon by the carbohydrate test, as described, they are by no means oxidized by the addition of the 1 per cent. permanganate solution. The 1 per cent. zinc lactate treated with an equal volume of permanganate, and allowed to stand some time, gave with water and a trace of iron perchloride the canary yellow colour. In urine we have a very persistent acidity left, after the precipitation of nearly all the phosphates by the oxidizer; it amounts to less than normal acidity, about half in some cases; the deposit of the lime water in the centrifuge is less than by phosphates. Is it the *actual* acidity of the urine? Is it carbonic acid?

The patient who furnished the glycosuric urine was put upon the usual diet, and Metchnikoff's tablets given to her for a week, when her urine was again examined, a sample of the twenty-four hours.[1] The sugar had disappeared, the urates were 0.3 per 1,000. The carbohydrate test gave 1½° the first minute and another quarter of a degree during six minutes. As regards the estimation of urates by the copper hyposulphite test in the centrifuge, it is the same solution introduced some years ago, which I have described in my *Quantitative Analysis* as useful when used *by precipitation*; the data are there given, and, of course, the precipitated urate is four times more bulky than that obtained by the centrifuge. As used by Arthand and Butte, 20 c.cm. urine are taken, 5 c.cm. of 1 in 10 sodium carbonate solution added, and the solution filtered or decanted. Here the centrifuge helps us in obtaining the removal of the alkaline phosphates. Of such clear filtrate I put 6¼ c.cm. in tube of centrifuge, and read off *the deposit as per 1,000*. With my machine such deposit has not a level top, and the amount is difficult to read off with accuracy. My routine plan is to pour 5¼ c.cm. of clear urine into each tube, make up to 7 with 1 in 10 sodium carbonate solution, and shake the contents; make up to 10 c.cm. or more with the copper hyposulphite solution in one tube, and omit it from the other. Deduct the phosphate deposit from the phosphate urate deposit, and the remainder is the *per thousand*. Precipitation may be carried out in a similar way, using other data.

Gautrelet's test is simple and rapid, but the end reaction is not well marked.

[1] Bacilli to be found in urine under sour milk treatment.

In normal urine the possible urate (that is, all oxidizables in urine which deoxidize acidulated permanganate reckoned as uric acid) is in relation with colour and acidity. To this possible urate the actual urate is nearly as 1 to 6. I prefer the nitrogen factor (6½) for certain definite biological harmonies which I have discussed elsewhere, and which pertain to the function of albumen as oxidizable in association with the less oxidizable carbohydrates in nature and in food.[1] It is only when the acid permanganate is boiling that lactic acid affects it, in the short time of thirty seconds required by the test. So that in urine examination we have several distinct methods of oxidation, each denoting, more or less clearly, differentiation, group, genus, and species.—I am, etc.,

London, S.E., June 25th. J. BARKER SMITH.

MATRICULATION AT THE LONDON UNIVERSITY.

SIR,—It is asserted by some, and denied by others, that the character of the matriculation examination at the London University is the barrier that prevents a due proportion of London medical students from attaining a degree. You have in the past adduced evidence that the character of this examination is a barrier, and further evidence is given by an examination paper that was set last month, by the examiners for the matriculation examination, for a school examination, equivalent to matriculation, and accepted instead of it. To give the whole of the questions, and to comment on the slipshod English, the vagueness of expression, the impracticable character and the general preposterousness of them all, would occupy too much of your space; but perhaps I may give one example from the history paper and one from the geography paper:

Trace the growth of popular feeling and legislation on the subjects: (*a*) Of slavery; (*b*) of factory supervision.

I pass the preliminary difficulty of tracing a growth; in each of the questions a guess must be made at the meaning the examiners intended to express, and in this case it is to be presumed that by "trace" they mean "describe." I pass the difficulty of describing the growth of a popular feeling. What the examiners must be presumed to mean is the increase in the manifestations of the feeling. I pass the want of indication of the country or the age in which the growth is supposed to have taken place. The paper is headed "History," not "English" or "British history," and, for aught that appears, the growth referred to may be the growth of feeling and legislation in the United States, or any of them, or in Russia or in ancient Egypt. I pass these preliminary difficulties, and I ask how the growth of the manifestations of a popular feeling is to be described. The only way, as it seems to me, is to give the numbers and size of public meetings, the numbers and length of debates in legislative and other bodies; of articles in newspapers and magazines; of books, pamphlets, and other publications dealing with the subject; and to show a gradual increase of unanimity, and perhaps of vehemence of expression. Does any human being possess such a knowledge of the subjects of slavery and factory supervision in a form available for expression in the examination room? The "growth of legislation" cannot be "traced" except by citing successive statutes and showing an increase in their scope and stringency; and again I ask if any human being, let alone a lad or a girl of from 16 to 18, possesses such knowledge? These are but two subjects out of a multitude that are available for examiners to choose from, and this question implies a demand by the examiners that the examinees shall have a corresponding knowledge of the growth of feeling and legislation in all of those subjects. Such a demand is outrageous beyond expression. It would be the work of a lifetime to acquire the knowledge necessary to make sure of answering this one question.

One of the questions in geography is as follows:

Describe as fully as you can the relief of the eastern margin of Australia south of the tropic, and point out any influence it has had on the industrial development of the area.

I pass the fact that the examiners ask for the influence of the tropic, though presumably they mean the influence of the relief of the margin; I pass the difficulty of pointing out an influence; I pass the difficulty of describing the industrial development of an area; and I draw attention to the fact that, unless the candidates were warned, which I am told they were not, that they would be examined on the relief of certain selected margins, they must be required by the examiners to know the character, whether flat, hilly, or mountainous, of the sea border of every country in the world that has a coast line. Such knowledge is not possessed by any human being. Such knowledge would take many years to acquire, and would be wellnigh useless when attained.

The questions are sufficiently astonishing, but what is truly amazing is that some of the candidates actually pass these examinations! When I expressed my astonishment at this result to the teacher who showed me the examination paper, I was told that it would, of course, be impossible for any candidate to pass, were it not that the same questions recur at intervals of a few years, and that preparation for the examination is made by cramming the answers to the questions in previous examinations.

A Royal Commission is now investigating the constitution of the London University. It is to be hoped that its investigations will include inquiry into the system which allows the appointment of examiners who can set such questions in the matriculation examination as those given above.—I am, etc.,

July 8th. M.D.LONDON.

NASAL CAUTERIZATION IN ASTHMA.

SIR,—With reference to Mr. Butlin's remarks in paragraph 4 in the JOURNAL of June 18th, p. 1467, and the letter from Dr. Alexander Francis (July 2nd, p. 54), I am desirous to testify to the following facts: For many years past I have suffered from what may be termed "hay asthma," the attacks coming on usually towards the end of May and lasting right through the summer months, so that I looked forward to this period with considerable apprehension, being quite unable to enjoy the best months of the year in our variable climate. The only relief obtained (which was temporary only) was by taking large doses of potassium iodide, pushed to iodism.

One of my friends, a well-known London physician, a little over three years ago suggested my seeing Dr. Francis and trying the effect of nasal cauterization. I did so, although no one could be more sceptical than myself as to the result.

The effect even of the first application was astonishing, my breathing, which was carried on with difficulty, being immediately relieved, and after a few applications, repeated at intervals of about a week, it became quite normal. Last year I anticipated the recurrence by having the "cauterization" applied during the whole of the May weeks with a perfectly satisfactory result; and, more extraordinary still, this year without any "cauterization" whatever, I have been perfectly free from spasmodic asthma up to the present date.

As to how the treatment acts, I leave to others better qualified to judge, but that *suggestion* does not enter into the question is proved by my utter faithlessness in the remedy before submitting myself to it, and my best thanks are due to Dr. Francis for the measure of relief so happily and unexpectedly afforded.—I am, etc.,

London, July 4th. RICHARD FEGAN.

THE PSYCHOLOGY OF THE CONSUMPTIVE.

SIR,—Having had some experience of sanatoriums, may I endorse very heartily the letter of Dr. Arthur Brock in your issue of June 18th? Your leader of May 21st gives a somewhat severe indictment of the character of the consumptive, and the suggestion of Dr. Brock, that the characteristics are due less to the disease than to the modern treatment of the disease, is one that cannot fail to have occurred to any thoughtful observer of sanatorium life. In the old days, when the diagnosis was in many cases synonymous with the death warrant, the psychology of the patient must have been a comparatively simple affair. In these days of early diagnosis and prolonged treatment the majority of consumptives are told that there is hope of a cure; but when the months pass by into years, and still the cure delays, is it any wonder that the hope deferred brings its inevitable result, with the accompaniment of neurasthenia and self absorption?

That sanatorium life is valuable, both as an educative and curative factor, in the first months of the disease, few will deny—but that a mental and moral deterioration is often

[1] *The Scalpel*, 1898-1900.

observed as the result of a prolonged course of such treatment, few also will deny. The responsibility of each superintendent towards the patients in this respect is a real one, and may be expressed by a significant sentence in Dr. Harrington Sainsbury's work, *Drugs and the Drug Habit* (p. 140): "We may not usher out of life less of humanity than came under our care." If for "life" be substituted "the sanatorium" its application to the present subject is obvious.

The curative value of what Dr. Brock describes as "work which allows of self expression," can be observed in any working colony such as Frimley, Ventnor, or Maitland Sanatorium. From Dr. Carling's report of the latter the following extract is taken:

> The condition of muscular fitness which has always been aimed at is now reached, not by long aimless walks repeated day by day, rain or fine, *ad nauseum*, but by an organized system of graduated work, begun as soon as a period of rest and observation has furnished the necessary data as to the patient's state.

In this respect the poorer classes fare better than the well-to-do. In the working-class sanatorium the work is accepted as part of the treatment, and therefore has the loyal co-operation of the patients, but in the average "private patient" sanatorium this result has not yet been attained, owing, perhaps, to the extreme repugnance of human nature, when paying four or five guineas a week, to "being made use of." The patients will submit to walking exercise, however monotonous, as part of their cure, but if gardening, housework, carpentering, etc., be substituted, the suspicion of being exploited for the good of the establishment is at once aroused, and any possible advantage is cancelled by the mental attitude taken up.

As a remedy would it not be possible for some of the more expensive sanatoriums to make it a rule of admission that, in every suitable case, the patient must put in so many hours of "productive work" a day, regulated of course under strict supervision exactly as walking exercise is at present? (Under productive work can be classed such extreme instances as half an hour each day in crocheting woollen garments for the poor—an effort which in the case of one patient was simultaneous with a marked improvement in both the neurasthenic and the chest condition—and a daily task of felling trees, which is at present the treatment of an idle youth of my acquaintance.)

If some such plan were evolved, it would soon be considered no more derogatory to "work" under orders than it is at present to walk or lead the simple life under orders, while the improvement in the mental condition would probably be marked. Because some of our patients can unfortunately afford to be idle, are we justified in withholding from them the healing factor of work, which has produced such wonderful results in the now firmly established working colonies?—I am, etc.,

CONSTANCE COLLEY, M.D.
Kingwood Sanatorium, Peppard Common, Oxon.,
July 4th.

SIR,—The JOURNAL of July 2nd contains correspondence not only on the psychology of the consumptive, but also on sanatorium treatment, on the sources of vital energy, and on faith healing. These subjects are all closely allied, and I desire to say a word or two on their mutual relationship, especially as they affect our views on the treatment of tuberculosis.

Dr. Muthu well says that the importance of the bacillus in this disease has been greatly over-estimated. In future the soil will have at least as much attention bestowed upon it as the seed. Efforts will now be more definitely directed towards heightening the vital, the defensive, powers of the individual—towards unlocking, that is, his stores of potential energy, and enabling him himself to resist the inroads of disease. In his letter discussing your criticism of Dr. Rabagliati's book, Dr. Torrance Thomson mentioned that "food shares with other things—*ideas, for instance*—this power of unlocking energy." My contention is that, treatment by food and other physical means having failed to prove an infallible resource, it is time we were directing our attention more towards the possibilities of the idea as a therapeutic agent in tuberculosis. Now, while any cheerful idea is known to have a vivifying and helpful influence in disease, it is indisputable that the most potent idea of all is that generally known by the term "faith." Faith is not, as many suppose, the perquisite only of those who happen to be adherents of the orthodox religion; it is a universal experience, the outcome—the reward, one might say—of leading the natural or physiological life; to gain this experience it is necessary, in Stoic phraseology, to live in conformity with Nature. Now, the object of life is doing, not thinking; only in keeping this object always before us can we be said to live according to Nature. And the reward of such living is faith. "Allez en avant," says a French thinker, "et la foi vous viendra!"

This therapeutic agent, faith, then, will be conjured up by action rather than by meditation. The first step, moreover, towards reaching this faith is to secure faith in one's self, and how can a man get faith in himself unless an opportunity be given him of realizing himself through work? Hence the danger of too much "rest cure" in the treatment of consumption, and hence the necessity of as far as possible giving the patient congenial employment. This is, roughly, the rationale of that method of treatment which, in my last letter, I was bold enough to christen "ergotherapy."

It is true that sanatorium treatment is still largely tentative and ineffectual, but in future the sanatorium will become more definitely a place of re-education. The patient, whose disease is largely the result of a loss of equilibrium between the two sides of his nature (physical and mental), will come to the sanatorium in order to have this balance restored. Treatment in future will be more definitely directed towards making the patient once more a useful member of the community. The system of training to which he will be subjected, while no less physical than before, will become also increasingly "moral."—I am, etc.,

Edinburgh, July 3rd. ARTHUR J. BROCK.

THE TREATMENT OF HAY FEVER.

SIR,—The memorandum by Sir James Sawyer on the treatment of hay fever, in the JOURNAL of July 2nd, reminds me of a passage in the classical work of the late Morell Mackenzie on that subject. Alluding to the periodic recurrence of the symptoms, he says:

> This limitation is so evident, that even the literature of the disease participates in it, and bursts into bloom yearly with the flowers and grasses, fading away again with them, and dying with "the last rose of summer."

The present contribution, with its interesting references to such early pioneers as Elliotson and Blackley, might have been left to flourish in its season like so many other items in the vast literature of the disease but for the suggested treatment. It is with extreme diffidence I find myself obliged to dissent from anything recommended by an authority so well known and of such great experience in the field of general medicine as Sir James Sawyer. I feel, however, that those who have given special attention to the subject of hay fever will agree with me that it is in the interests of the sufferers to point out that the suggested local treatment by allspice and eucalyptus is likely to prove anything but beneficial in the vast majority of at all established cases. It would be out of place here to attempt to discuss the nature of the disease, but the investigations of a long series of patient workers since the days of those referred to by Sir James Sawyer have conclusively shown that there is a special idiosyncrasy, if not a neurosis, which renders some persons more susceptible to the local stimulation of the recipient surface: conjunctiva or, most commonly, nasal mucous membrane.

This being the case, it is obvious that further irritation of already inflamed nerve endings—for example, by spices and strong volatile oils—is only too likely to increase the reflex phenomena. That this effect is not merely a probability is a common experience of those who have much to do with those sufferers who have previously tried remedies of this class. The exhibition of an errhine in such cases can only be an error, while any detergent effect can be more easily and safely obtained by bland, unirritating lotions and sprays. As a palliative during the attacks I have found great benefit from the use of mildly alkaline nasal sprays and collyria combined with

sedatives, for example, menthol and, in some cases, morphine. Cocaine I have given up for several years, as I find weak solutions of adrenal preparations more permanently beneficial besides being free from objections as to "habit." Where the conjunctivae are much affected carefully fitted goggles should be worn during the period of exposure. In the long intervals usual between the attacks patients are apt to forget their troubles and to take no steps to guard against their recurrence. This is the time, however, in which every effort should be made to free the nose of all observed possible starting-points of reflex irritation, and, by improving the general condition, to diminish the idiosyncrasy or neurosis. —I am, etc.,

London, W., July 4th. JAMES DONELAN.

ON THE PRESENCE OF SUGAR IN HEALTHY URINE AS A SOURCE OF THE OSAZONE REACTION.

SIR,—Dr. Pavy has always been a strong supporter of the view that healthy urines contain sugar, and, although it is now generally conceded that this view is correct, most observers hold that the quantity is exceedingly small, very much smaller than is stated by Drs. Pavy and Bywater in their paper. The most recent observations on this point, carried out by Schöndroff[1], place the average amount at 1 in 10,000, a quantity which requires special methods for its demonstration. With healthy people on a richly carbohydrate diet,[2] and others where there is imperfect carbohydrate metabolism, a larger amount may be met with, the quantity depending partly upon the nature of the carbohydrate. Food materials containing pentoses and pentosans most readily give rise to such an alimentary "glycosuria," hence the urines of herbivorous animals (for example, horses and rabbits) often give a phenylhydrazin reaction, especially after hydrolysis. In order to avoid the errors likely to arise from these causes, I have repeatedly pointed out that it is necessary to perform a control experiment, as described in the BRITISH MEDICAL JOURNAL, May 19th, 1906, before commencing the "pancreatic" reaction. This is a point which most critics of the method appear to have overlooked.

I was not able to find isomaltose, as described by Pavy and Siau, in a number of normal urines that I examined some years ago, and I came to the conclusion, arrived at by Flückiger,[3] that the increase in reducing power in most urines produced by boiling with an acid is due to glycuronic acid. This has since been confirmed by Neuberg and P. Mayer,[4] and others. The osazone crystals obtained, both before and after hydrolysis, with some normal urines appear to be a phenylhydrazin compound of glycuronic acid, and it was to remove this and the excess met with in some pathological urines that the tribasic lead acetate stage was introduced into the "pancreatic" reaction. That the crystals obtained in the reaction are not glucosazone, as suggested by Drs. Pavy and Bywater, is shown by their melting point and nitrogen content, as well as by the chemical reactions of the substance from which they are derived.[5] They more closely correspond to a pentosazone.

Every one who has had experience of practical work in the laboratory is well acquainted with the fact that the circumstances under which a reaction is carried out are often an important determining factor in the result, and it is to variations, intentional or accidental, in the details of the "pancreatic" reaction that the conflicting statements made by some as to their results are no doubt due, for others have published results that agree with my own. That normal, and even pathological, urines which give a negative control do not yield a positive "pancreatic" reaction in even the majority of cases, if the test is properly applied, is shown by my experience during the past five years,[6] for out of 1,475 urines 949 gave no osazone crystals, a proportion which is most unlikely if a positive reaction were due to a normally occurring sugar in the urine.

Very few, if any, laboratory methods give results which can be absolutely relied upon as diagnostic of a particular pathological state, and to this the "pancreatic" reaction is probably not an exception. No one would think of diagnosing diabetes simply because the urine of a patient reduced Fehling's solution, yet many appear to suppose that I contend that a single positive "pancreatic" reaction is indubitable evidence of pancreatitis. I think it is presumptive evidence of interference with the functions of the pancreas, but it must be confirmed by the clinical symptoms and an analysis of the faeces.

In spite of the experimental work of Klippel, Carnot, Opie, and Flexner, and the clinical observations of Fitz, Körte, Mayo Robson, Kehr, Terrier, Desjardins, and many others in the last ten years, there is still a disposition on the part of many members of the profession to look upon chronic pancreatitis as a figment of the imagination; but the labours of these observers have shown that it is a very real disease, and is often associated with a variety of symptoms which have hitherto been set down as "gastric" or "intestinal."—I am, etc,

London, W, July 11th. P. J. CAMMIDGE.

[1] *Pflüger's Archiv*, 1908, cxxi, p. 572.
[2] Ibid.
[3] *Zeit. f. phys. Chem.*, 1885, ix, p. 323.
[4] Ibid., 1900, xxix, p. 256.
[5] *Proc. Roy. Soc.*, B. 81, 1909.
[6] *Proc. Roy. Soc. of Med.*, June, 1910.

THE MEDICAL SICKNESS SOCIETY.

SIR,—In answer to Dr. Dickinson's appeal, I have to state that any proposals sent in between the meetings of the committee have been submitted to me, but that at the meetings of the committee any member could give notice for a proposal to be discussed at a subsequent meeting, provided his motion were seconded.—I am, etc.,

F. DE HAVILLAND HALL,
Chairman of the Medical Sickness Society.

London, W., July 7th.

SEASIDE EXCURSIONS FOR POOR CHILDREN.

SIR,—May I venture to call your attention to the want of common sense on the part of persons who get up excursions to the seaside for poor East-end children? You can at Herne Bay, for instance, witness the arrival of hundreds of poor, delicate children. They make a rush for the beach to invest their scanty coppers on purchasing Herne Bay rock, penny ices, and a delicious (?) sweet compound contained in large bottles. After that sustaining repast they take off their shoes and stockings to wade in the sea. You can see them in the water for hours at a time. I watched some intelligent women holding a screaming baby's legs in the cold water for a quarter of an hour—the legs were not even dried afterwards. Protest would have been useless, for hundreds of others receive the same treatment. Showers of rain deluge the poor brats but no place of shelter awaits them. They then march back to the train which awaits them for return to London, having derived great benefit from their trip to the seaside (?). The remedy is easy to suggest. We need call in no architects; it is useless to spend thousands to erect monuments with splendid chambers for matrons and expensive decorations. A few corrugated iron huts, plenty of fresh hay to sleep on, a large barn to play in during showers; plenty of milk, eggs and bread, and if possible the supervision of a committee composed of ladies and gentlemen who are blessed with common sense, and have no axes to grind.—I am, etc.,

July 9th. PATERFAMILIAS.

ON THE INFLUENCE OF THE SANATORIUM TREATMENT OF TUBERCULOSIS.

SIR,—To speak or write about the "conquest of consumption" is surely hardly correct. How many general practitioners would agree that the conquest of consumption was to be found in sanatorium treatment? Dr. Latham may consider that consumption is conquered in a patient after leaving a sanatorium who for five years has remained at full working capacity. What would he say of cases with well-marked and advancing pulmonary tuberculosis remaining at work for years, and only giving up work a few weeks before their death and undergoing no sanatorium treatment? Cases of this kind are by no means rare, and I am sure many medical men would agree with me in this statement.

That sanatorium treatment has done good, and great good, no one would deny, but I submit the chief value of it is that it teaches patients how comfortably they can live in what they term "draughts." As to the other methods of treatment used in these institutions, Professor Pearson

is, in my humble opinion, correct when he says: "Conclusions to be drawn from the experiments are not yet ascertainable." In other words, sanatorium treatment has so far only helped to prove the correctness of the old idea—that is, that no glass (in windows) would mean much less tuberculosis.—I am, etc.,

Lisburn, co. Antrim, July 4th. J. L. RENTOUL.

THE COLLEGE OF SURGEONS' DISSECTIONS AND SURGERY.

SIR,—I have taken deep pleasure in, and gained much by, the study of the *Edinburgh Stereoscopic Atlas of Anatomy*, issued by Dr. David Waterston. It would be increasing manyfold the usefulness of the magnificent specimens of dissections in the London College of Surgeons Museum if they might also be stereoscopically photographed. Those of the orbit, cranium, and face would be particularly valuable in view of the progress of modern surgery. Can the College be moved to this step? An eminent gentleman says, "For once we English would then have an advantage over our German friends." I should consider it a privilege to subscribe.—I am, etc.,

Liverpool, June 27th. WALTER T. CLEGG.

A DEFINITION OF INFLAMMATION.

SIR,—In spite of the many attempts which from the time of Celsus have been made to establish an exact definition of inflammation, yet the oldest with which we are all familiar, and which distinguishes it as characterized by redness, heat, swelling, and pain, still holds its sway. Daily, however, we observe reactionary phenomena which are essentially inflammatory in character, and in which one or more of the aforesaid classic signs are wanting, consequently a more accurate definition would be welcome. The late Sir J. Burdon-Sanderson gave us a definition which has met with much support. It is the following: "The process of inflammation is the succession of changes which occurs in a living tissue when it is injured, provided that the injury is not of such a degree as at once to destroy its structure and vitality." This definition undoubtedly includes too much, and is not explicit enough. To meet these objections, and to include that variety of inflammatory reaction noted in association with the evolution of an ectopic pregnancy, I would suggest the following definition:

Inflammation is reaction of a structure or tissue to alien irritation, whether physiological or not, or to injury which does not annihilate responsive power.—I am, etc.,

London, W.C., June 30th. JAMES OLIVER.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have been approved at the examinations indicated:

FIRST B.M., B.CH. (*Organic Chemistry*).—W. H. Bleadon, Brasenose; B. A. Bull, Jesus; J. J. Conybeare, New College; J. M. Guilfoyle, Brasenose; C. W. Littlejohn, New College; T. E. Micklem, New College; H. M. Oddy, Christ Church; K. R. Pilcher, University; H. A. B. Whitelocke, Christ Church; C. D. Wood, Queen's.

FIRST B.M., B.CH. (*Anatomy and Physiology*).—T. B. Batchelor, University; F. W. Brown, Wadham; E. W. Carrington, Keble; C. Dean, Trinity; H. T. Evans, Jesus; R. A. Fawcus, Oriel; W. J. Hart, Queen's; R. St. A. Heathcote, New College; S. Hibbert, University; E. W. N. Hobhouse, New College; W. R. Reynell, Balliol; E. Scott, St. John's; A. H. Southam, Christ Church; A. B. Thompson, New College; W. W. Waller, New College; C. W. Wheeler-Bennett, Christ Church; Syer B. White, Keble.

SECOND B.M., B.CH. (*Medicine, Surgery, and Midwifery*).—M. B. Baines, Exeter; C. N. Binney, Corpus; R. F. Bridges, University; G. N. Hunt, Christ Church; G. E. Neligan, Exeter; A. F. Sladden, Jesus; B. A. W. Stone, Brasenose; A. E. Taylor, Trinity.

SECOND B.M., B.CH. (*Pathology*).—C. F. Beevor, Magdalen; A. R. Chavasse, Hertford; A. W. Donaldson, Hertford; H. J. B. Fry, Magdalen; T. B. Heaton, Christ Church; N. S. Lucas, New College; E. O'Connor, Lincoln; W. J. Oliver, Oriel; H. W. Scott-Wilson, Queen's; C. J. G. Taylor, University; G. H. Varley, St. John's; W. E. Waller, University; R. C. Wingfield, Trinity; J. A. Wood, University.

SECOND B.M., B.CH. (*Forensic Medicine and Hygiene*).—F. A. Aldridge, Magdalen; C. F. Beevor, Magdalen; A. W. Donaldson, Hertford; C. Newcomb, St. John's; E. P. Poulton, Balliol; A. S. Roe, Balliol; B. A. W. Stone, Brasenose; A. E. Taylor, Trinity.

SECOND B.M., B.CH. (*Materia Medica*).—A. W. Cooke, Worcester.

D.P.H. (*Part I*).—G. Finch, Rachel E. W. Mackenzie, J. E. Spenser, F. Griffith, J. F. Windsor. *Part II.*—C. V. Asreppa, J. B. Mama, W. F. J. Whitley, F. Griffith, J. F. Windsor.

Prizes.

The *Welsh Prize* for 1910 for proficiency in anatomical drawing has been awarded to Charles Milwyn Burrell, Scholar of University College; the *Theodore Williams Scholarship* in anatomy to Arthur Hughes Southam, B.A., Christ Church; and the corresponding scholarship in physiology to Reginald St. Alban Heathcote, Scholar of New College.

UNIVERSITY OF BIRMINGHAM.

THE following candidates have been approved at the examinations indicated:

FIRST M.B., CH.B. (*Physics, Chemistry, and Biology*).—R. G. Abrahams, J. E. Foley, H. G. Langdale-Smith, Malati Madgavkar, O. Parkes, L. D. Roberts, C. G. Teall, K. H. Gill, K. B. Pinson, C. A. Raison, C. M. Stubbs.

SECOND M.B., CH.B. (*Anatomy and Physiology*).—Elizabeth L. Ashby, J. L. A. Grout, J. H. Ritchie.

THIRD M.B., CH.B. (*Pathology and Bacteriology and Materia Medica and Pharmacy*).—*†G. E. Elkington, ‡E. F. Buckler, ‡H. C. Nickson, ‡P. T. Priestley, ‡H. Sheasby, ‡A. A. Wilkinson, ‡C. C. C. Court.

FOURTH M.B., CH.B. (*Forensic Medicine and Toxicology and Hygiene and Public Health*).—*†O. M. Holden, ‡J. H. Bampton, ‡R. B. Coleman, ‡C. C. C. Court, ‡E. Davies, ‡C. C. Jones, ‡R. D. Nelson, ‡P. A. Newton, ‡C. E. Salt, ‡A. C. Tibbits.

FINAL M.B., CH.B.—J. L. Ritchie, C. Walker, H. A. Whitcombe.

D.P.H.—Part II.: H. S. Gettings, P. J. Mason.

* Queen's Scholarship. † Class I. ‡ Class II.

GUY'S HOSPITAL.

THE annual garden party and distribution of prizes at Guy's Hospital took place on July 7th, Viscount Goschen, the new treasurer of the hospital and president of the medical school, presiding. Before calling on the Dean to read his annual report he expressed the general regret at the retirement of his predecessor, Mr. Bonsor. The report read by the Dean, Dr. Eason, drew attention to the wide field from which Guy's Hospital attracts students. Of 509 students now attached to the school 239 come from within a radius of thirty miles from the university, 202 come from parts of the United Kingdom outside the university radius, 47 come from British Dominions, excluding the United Kingdom and India, and 14 from foreign countries. In the dental school the entries show a considerable increase over those of last year, while the medical school has to congratulate Mr. H. I. Janmahomed on obtaining the university gold medal in the examination for the M.D.London. It was also mentioned that, in accordance with the advice of a committee appointed to consider the whole subject of specialism and its relation to medicine and surgery, the governors have decided to create new special departments for diseases of the genito-urinary system, nervous diseases, and diseases of children. They also determined that the departments for diseases of the throat and ear should be placed in the charge of pure specialists, and not, as formerly, of assistant-surgeons on the general staff. To the department of diseases of the nervous system has been appointed Dr. Hertz; to the aural department, Mr. W. M. Morrison; and the genito-urinary department, Mr. A. R. Thompson. The new out-patient department, which was opened last year, has proved of great benefit, and it is hoped that the new chemical and physiological laboratories now being built will be ready for use during the course of the coming academic year. The prizes were handed to the successful competitors by Professor Howard Marsh, of Cambridge, the special feature of the distribution being the award of the Astley-Cooper prize to Professor E. H. Starling, F.R.S. This prize, of the value of £300, is awarded triennially for an essay on a given subject; on this occasion it was the physiology of digestion. By the terms of Sir Astley-Cooper's will the essay must represent original experiments and observations, and be illustrated so far as the subject permits by preparations and drawings. Competition for it is not confined to Guy's men, who, indeed, should they be officers either of Guy's or St. Thomas's Hospitals, or related to such officers by blood or affinity, are ineligible. On such grounds an essay sent in some years ago for the same prize by Professor Starling, though deemed the best of those received, was not awarded the prize, because at that time he was connected with the school as a lecturer. The proceedings terminated with a vote of thanks to Professor Marsh, the company present then joining those assembled for the garden party in the quadrangle and other grounds of the hospital and school.

SOCIETY OF APOTHECARIES OF LONDON.

WE are informed that a question having recently been raised as to the eligibility of persons holding the Assistants' or Dispensers' Certificate of the Society of Apothecaries to hold the office of Dispenser under the Metropolitan Asylums Board under the existing regulations, the matter was referred to the Local Government Board. The Board, after consideration, have informed the Society that, while it is of opinion that, on a strict interpretation of the existing regulation, a person holding the Society's certificate would not be qualified, yet, as the qualification has been elsewhere recognized by the Local Government Board, it thinks it desirable that the regulations on the subject should be uniform, and accordingly proposes to issue an order amending the existing order so as to provide for the inclusion

of the holders of the Assistant's qualification among the classes of persons eligible for the office of Dispensership under the Metropolitan Asylums Board.

Examinations.

The following candidates have been approved in the subjects indicated:

Biology.—A. U. L. Bennet, C. Gilroy-Jones.
Chemistry.—C. Gilroy-Jones.
Materia Medica and Pharmacy.—P. McGinnis, J. G. Reidy.
Anatomy.—P. R. Cross, G. E. Cuttle, R. Fowle, T. H. W. Idris, J. A. Prendergast, H. G. Steel.
Physiology.—H. H. Fairfax, T. H. W. Idris, J. E. Kitchen, J. A. Prendergast, H. G. Steel.

The Services.

ROYAL ARMY MEDICAL CORPS (TERRITORIALS).

Lowland Mounted Brigade Field Ambulance.

This unit, under the command of Lieutenant-Colonel R. T. Halliday, was encamped during the last fortnight of June at Biggar, Lanarkshire, as part of the Lowland Mounted Brigade, during brigade training. The brigade consisted of four yeomanry regiments with the transport and supply column and field ambulance, and some very interesting field training resulted. During the first week the field ambulance practised corps exercises, and received instruction in sanitation, field cooking, water duties, and transport of wounded. During the second week the brigade was engaged in manœuvres over a large tract of territory, including night operations. The field ambulance took part each day in these manœuvres, sending light wagons to the front and leaving the heavy wagons stationed well in rear of the fighting line. The officers present with Lieutenant-Colonel Halliday were Major Wright Thomson, Major Arch. Young (of the 1st Lowland Field Ambulance), Captain J. Bruce, Captain R. Yuill Anderson, and Captain R. B. Carslaw. The unit was inspected on June 20th and 21st by General Babington, Brigade Commander: during the operations by Colonel Hunter Weston, Chief of Staff, Scottish Command; on June 23rd by Colonel Sir James Clark, Bart., C.B., Inspector of Medical Services; on 28th by Colonel Sir G. T. Beatson, K.C.B., Administrative Medical Officer, Lowland Division; and on 29th by General Allenby, the Inspector-General of Cavalry. This is the first time that a field ambulance has been employed on such prolonged and extensive manœuvres in Scotland, and the unit was highly complimented on its mobility and on the excellence of its work. The light wagon proved a most serviceable vehicle as it was able to keep well to the front and cover ground almost impossible for the heavier and more slowly moving vehicles. The unit was at camp practically at full strength.

COURTESY CALLS ON MEDICAL OFFICERS.

Disgusted writes: Some time ago, being appointed to a ship at one of the larger naval ports at home, I called, with my wife, upon the naval commander-in-chief and wrote our names in the visitors' book. A few days later we paid a similar courtesy to the military governor. The latter returned the call within a week, the A.D.C. leaving cards. The naval commander-in-chief ignored our call entirely. I refrain from any comment, but would merely observe that in my opinion slights of this nature will continue until relative rank is made, as in the army, actual rank. It is, I think, contrary to the spirit of the medical man to be saddled with an executive title, but until these titles are given to the civil branches I do not think that we can hope to be treated with even common politeness.

Medico-Legal.

ALLEGED MANSLAUGHTER.

On June 26th, at the Tynemouth Police Court, Ernest Arthur Robinson, a drug store dealer, was charged "that he did feloniously kill and slay one Patrick Henry on May 20th, 1910."

The town clerk (Mr. E. B. Sharpley) prosecuted; Mr. Edward Clark, of Newcastle, defended.

It appeared that the deceased, a licensed victualler, was suffering from pains in the legs and body on May 22nd. His wife sent to Mr. Robinson's shop for an embrocation, and he sent a medicine to be taken every two hours. A few days later the defendant called to know how he felt. On Friday, 27th, the patient got worse, and on the 28th his wife called in Dr. Fraser, who examined the patient's heart, and prescribed a medicine. As there was no improvement, the wife sent her daughter to see Dr. Fraser, who said that the dose should be doubled. Later in the evening Mr. Robinson was sent for. He came down and said that if the patient had a rest it would improve his condition. Mr. Robinson then sent down a draught, half of which was given to the patient, who died at 5.30 a.m. on the following morning. Mrs. Henry said that it was because Dr. Fraser did not come she sent for the accused. Dr. Fraser said that he first saw Henry on the morning of Saturday, May 28th. He then showed all the signs of commencing delirium tremens. He (the doctor) came to the conclusion that the man had been drinking, and that he had had Bright's disease for some time; that his liver was enlarged, and probably in a condition of cirrhosis. He prescribed bromide of potassium. In his view the man might have got better. At the *post-mortem* examination, which he made with Dr. Tindle, they found that the man had been a heavy drinker, that he suffered from cirrhosis of the liver. They also came to the conclusion that a recent attack of influenza had brought on delirium tremens. During the illness the man had taken a draught of opium, which had produced coma and caused death.

In cross-examination Dr. Fraser said he did not think the man's condition to be so bad as to necessitate another visit. To an unskilled man the condition might not appear bad at all; but what he needed was natural rest, not rest induced by opium. It would have surprised him very much if the patient had died in so short a time without the drug. He had not been expressly asked to pay a second visit, or he would certainly have gone.

For the defence it was urged that the accused had done what any one else would have done in the circumstances. He sent a tincture of laudanum to induce sleep. That drug would have done no harm in an ordinary case; but the defendant knew nothing about the condition of the man's liver. Could he be held guilty of manslaughter because he had done his best? It might be something for the Pharmaceutical Society to take notice of, but it was a long way from manslaughter.

The Bench held that there was not sufficient evidence to justify them in putting the accused on his trial, and he was discharged.

Public Health
AND
POOR LAW MEDICAL SERVICES.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Herefordshire Combined District.—The report of the medical officer of health for this district, Dr. Herbert Jones, relates to six sanitary areas with a combined population estimated at 50,993. It appears to have decreased by some 2 per cent. since the Census of 1901. Its distribution last year in the six areas ranged from 0.09 to 0.2 persons per acre. The combined birth-rate of the district, calculated per 1,000 of population, was only 20.7, as against 25 6 in rural England and Wales. Represented in ratio to the number of women living in the district and aged not less than 15 nor more than 45 the births work out better, but still not well, the legitimate rate being lower, and the illegitimate rate higher than in England and Wales as a whole. The infantile mortality-rate, on the other hand, is decidedly satisfactory—84 per 1,000 registered births. As we have pointed out in connexion with previous reports, Dr. Herbert Jones makes special and very successful efforts to keep mothers instructed in the care of young infants, with the result that the infant mortality figure in this district is habitually comparatively low, even among illegitimate children. The general mortality-rate is also good, standing, when corrected for age and sex distribution, at 12.6 per 1,000 as compared with 13.6 per 1,000 in rural England and Wales. The phthisis death-rate was only 0.93; suspected sputum of phthisis is examined at the public cost. The number of cases of notifiable infectious diseases—174—was higher than in the previous year, but considerably below the average of past years. Three of the areas are provided with adequate accommodation for isolation. In respect of house accommodation there is nowhere any crowding of houses, and only exceptionally is there overcrowding of persons in particular dwellings. There are no building by-laws in practically any part of the district, and adoption of Sections 25 and 34 of the Public Health Acts Amendment Act (1907) is recommended. In only four parishes is there any combined system of sewerage, and endeavours are being made to extend the use of earth closets in place of privies and like arrangements. In respect of water supply it is recommended that under the Public Health Water Act of 1878 a "reasonable distance" between a new dwelling and its water supply should be much less than 200 yards. No one, it is pointed out, would think of erecting a house at a rental of £25 or £30 a year if water had to be carried in buckets a distance of 200 yards, and the occupier of a cottage dwelling is entitled to the same consideration. A clearly written and useful summary of the conditions which serve to promote healthiness of dairy stock and purity and good quality of milk is included in the volume. At its end comes a report on the Bromyard Urban District, which has a population estimated at 1,728 distributed over 194 acres, or at the rate of about 8 persons an acre. The corrected death-rate last year was 15.2, and the birth-rate per 1,000 of population 24.8. Calculated in relation to the female population at fertile ages the number of legitimate births is much higher than in the combined district. Complete sewerage of the township is in prospect.

Obituary.

DR. JOSEPH FARRAR, whose death in Gainsborough has been recently recorded, had been in practice in that town for well over two decades. He was in his 69th year, and had been in failing health for some months, but practically died in harness, since he only gave up work two or three days previous to his end. A Bradford man by birth, and a Glasgow student, he became L.R.C.P. and L.R.C.S. of Edinburgh in 1870, and fourteen years later received the M.D. of the University of St. Andrews. Before settling down at Gainsborough he had been in practice for a year or two at Bradford, and for some thirteen years at Morecambe. His career in Gainsborough he commenced as a partner of Dr. Draper Mackinder, and on the retirement of the latter to Brighton, where he is still living, succeeded to the whole of the practice, including several appointments. To these he added others, those which he held at the time of his death including the posts of Consulting Physician to Gainsborough Dispensary, Medical Officer and Public Vaccinator to the Gainsborough District of the Union, to the Post Office and the Great Northern Railway; he was also Certifying Factory Surgeon, and medical referee to a number of insurance companies. In private life Dr. Farrar was a man of literary tastes, and in the earlier portion of his career contributed a good many notes to the medical journals on points of interest encountered by him in practice; he was also the author of *Baths and Bathing*, and of a freely engraved work, *The Construction of the Organs of the Human Voice: Their Diseases and Treatment*. He took, too, considerable interest in the organization of the medical profession, and had been President of the Lincoln Division of the British Medical Association and of the Lincolnshire Branch of the Poor Law Medical Officers' Association. He was a man of kindly disposition, equally attentive to patients of all classes, and the affection and esteem in which he was held was amply evidenced by the number of wreaths laid upon his coffin. They included one from the inmates of the workhouse. Dr. Farrar was predeceased by his wife some three years ago, but is survived by a son, Dr. Watt Farrar, of Misterton, Nottinghamshire.

INSPECTOR-GENERAL GORDON JACKSON, R.N. (ret.), L.R.C.S.I., died recently at West Norwood, aged 78. He entered the Royal Navy as Surgeon, July 1st, 1854; became Staff Surgeon, September 30th, 1864; Fleet Surgeon, August 24th, 1876; and Deputy Inspector-General, November 24th, 1882. He retired, with the rank of Inspector-General, February 5th, 1885. In the Baltic campaign, in 1854, he was Assistant Surgeon of the *Royal William*, receiving a medal, and was in medical charge of Russian prisoners during a severe outbreak of cholera. In 1855 he was Assistant Surgeon of the *Teazer* in the expedition up the River Mellicorrie, West Coast of Africa, and was left on shore to attend the wounded. In 1856 he landed to attend wounded Monrovians at Sinov, West Coast of Africa. He was Senior Assistant Surgeon in the expedition up the Scarcies River in 1857. In 1865 he was on the staff of the Duke of Connaught during his educational tour in the East. He acted as Colonial Surgeon at Mahe, East Indies, in 1866, and was Staff Surgeon of the *Vigilant* during the Abyssinian war, for which he received a medal; he was also in the *Vigilant* during the operations against Bahrein, in the Persian Gulf, and against Muscat; and had charge of the wounded of the *Columbine* in the boat action with dhows in 1872. He was Staff Surgeon of the *Valorous* during its service within the Arctic Circle. In 1905 he was awarded a Greenwich Hospital pension.

SURGEON-GENERAL PATRICK GERALD FITZGERALD, M.D., late of the Madras Medical Service, died on June 26th at Bournemouth at the advanced age of 90. He entered the department as an Assistant Surgeon, March 20th, 1846, and became Deputy Surgeon-General, May 16th, 1875, retiring from the service, July 1st, 1880. He served in the Indian Mutiny campaign in 1857–9, and was present at the action at Cawnpore, at the defence of the Alumbagh, at the capture of Lucknow, with the Sarun Field Force, including the action near Tolsepore, and with the Saugor Field Force. He received a medal with two clasps.

Medical News.

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—A dinner of the association will be held at the Garden Club, Japan-British Exhibition, on Tuesday, July 19th, at 7.45. Tickets 7s. 6d. (not including wine). The annual meeting and banquet will be held at the Brussels Exhibition, on Saturday, August 6th, at 7.30. Tickets 10 francs (not including wine). The Honorary Secretary will be glad to receive the names of members who wish to be present at either or both these dinners. A seventeen-day excursion return ticket via Dover-Ostend to Brussels by any train, including saloon on steamer, costs £2 8s. 4d. Agents: Dean and Dawson, 84B, Piccadilly. The head quarters in Brussels during the meeting will be the Wiltshires Hotel, Boulevard de Waterloo, where a book will be kept for members to write their names and addresses as soon as they arrive. All foreign graduates will be welcome. A party will leave London on Friday, August 5th, for Brussels. Applications should be addressed to the Honorary Secretary of the Brussels Medical Graduates' Association, Dr. Arthur Haydon, 23, Henrietta Street, Cavendish Square, W.

SIR ALFRED DOWNING FRIPP, K.C.V.O., C.B., has been appointed an Honorary Surgeon-in-Ordinary to the King. Sir Alfred Fripp was Surgeon-in-Ordinary to the late King Edward.

MR. JOSEPH PEARSON, D.Sc., Chief Demonstrator and Assistant Lecturer in the Zoological Department of the University of Liverpool, has been appointed Director of the Museum at Colombo, Ceylon, in succession to Dr. Arthur Willey, now Professor of Zoology at McGill University.

THE Education Committee of the London County Council has decided to request the Home Secretary to receive a deputation to urge the need for legislation to enable provision to be made for the care of sane epileptics on the lines recommended by the Royal Commission on the Feeble-minded.

AT a provincial sessional meeting of the Royal Sanitary Institute, to be held at Torquay on Friday, July 22nd, papers will be read on the water supply and the sewage disposal of Torquay by the water engineer and the borough engineer respectively, and on the climatic conditions of Torquay by Dr. T. Dunlop, Medical Officer of Health.

A MATINÉE in aid of the fund now being raised on behalf of the Middlesex Hospital by Prince Francis of Teck is announced for July 28th. The entertainment will include some light French pieces which have proved very successful in France, and some piano-playing by Max Darewski. The Boudoir Theatre, at which the matinée will take place, is small, so early application to the Secretary, 12B, Pembroke Gardens, W., is necessary by those who desire seats.

A DINNER of the Edinburgh University Club of London will take place at the Criterion Restaurant on Friday, July 22nd, at 7.30, the Right Hon. Sir Robert Finlay, G.C.M.G., K.C., M.P., in the chair. Colonel the Hon. Frederick Gordon, D.S.O., Colonel G. W. Greig, M.P., the Editor of the BRITISH MEDICAL JOURNAL, the Editor of the *Lancet*, the President of the Royal College of Physicians, the President of the Edinburgh University Club of Manchester, and the President of the Edinburgh University Club of Birmingham have accepted the invitation of the council to be present on that occasion.

WE record with much regret the death of Mr. H. W. Cox on July 9th. The circumstances of his long and exceedingly painful illness have been recorded from time to time in this JOURNAL, and must be familiar to most readers. It began some eight or nine years ago, at a time when the need for caution by those engaged in working with *x* rays was not appreciated, and when the means by which all risks can practically be avoided had not been evolved. Mr. Cox, in his work as a scientific instrument maker, contributed a good deal to improving *x*-ray tubes, and in conjunction with Dr. Hall-Edwards, a sufferer of almost equal severity, worked out a useful method of locating the precise position of a bullet. Last year he was granted from the Royal Bounty Fund a sum of £200, and early this year we were happy to be able to take part in the promotion of the success of a public appeal made on his behalf by Sir William Treloar. It resulted in the collection of a sum of £2,600.

Letters, Notes, and Answers.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

J. H. J. has omitted to enclose his card.

THE writer of the letter relating to the Civil List pensions has omitted to enclose his card.

A. B. B. would like to know if there is any recognized treatment for the cure of the habit of cigarette smoke inhalation.

DR. CHARLES F. ROUTH (Southsea) desires to know if it is possible to obtain a goat which has undergone thyroidectomy.

EDINA asks for information regarding the milk cure as practised in Switzerland—for example, districts, cost, etc. His patients are ladies.

PD. wishes to know of a remedy to relieve the sense of burning and inability to bear the weight of either body or bed clothes in a man, aged 75 years, who had a severe attack of herpes over the lower posterior lumbar nerves. There was considerable loss of tissue, but the lesions healed three months ago. The usual local sedatives have no effect.

M.D.LOND. has a patient who has suffered from duodenal and jejunal ulcers, and has had three gastro-enterostomies performed without relief to his symptoms. The patient has heard of some one suffering from a gastric ulcer who has derived much benefit from electrical treatment in Paris. He is unable to find out what the treatment is, and will be grateful for any information. The patient is himself a medical man.

TRANSVAALER would be glad of suggestions as to the most suitable district in England where a patient aged 33, who has suffered from "apical phthisis" and lived in the Transvaal for six years, can take up permanent residence. The disease is now apparently in a quiescent state, but there is a troublesome chronic gastric catarrhal condition with constipation resisting treatment. Is it advisable to select some district situated at as great an altitude as possible, or would the south coast or Isle of Wight be more favourable?

ANSWERS.

D.P.H.DUBLIN.—It is, of course, impossible for us to state whether our correspondent would succeed in securing such an appointment as he wishes. We have no hesitation, however, in saying that both his qualifications and his experience seem to us amply sufficient for such a post.

TUBERCULIN.

DR. W. CAMAC WILKINSON (London, W.) writes in answer to "Tubercle": I wish to say that tuberculin cannot be used in any case in routine fashion. Every case must be treated on its merits. If your enquirer lives near London, a visit to my Tuberculin Dispensary on Wednesday or Saturday, 9 to 11.30, will teach him more than a dozen answers.

ELECTRICALLY-LIT OPHTHALMOSCOPES.

OPHTHALMOSCOPE.—The difficulty with these ophthalmoscopes is essentially one of the battery. The ophthalmoscopes are right enough, and no better one exists than that made by Messrs. Curry and Paxton, of 195, Great Portland Street, and which for years has been applied to the "Juler" ophthalmoscope. The ophthalmoscope and its attachment is quite satisfactory, but no really reliable battery has yet been devised which will work after having been put aside for a time. If the instrument is in daily use, and a relay of batteries is always available, well and good; if not, the battery is sure to be found run down if it has not been used for some little time.

PREVENTION OF SYPHILITIC ALOPECIA.

H. E. K. writes: The hair loss is generally cured by the influence of specific treatment alone. "Secondaries" might try the effect of the following adjuvants to the general treatment. Night and morning brush the scalp with a tooth-brush dipped in a stimulating lotion, such as:

Mercury perchloride	3 gr.
Acetic acid	5 m.
Alcohol (90°)	8 oz.

and in addition apply the following pomade each evening:

Calomel	15-30 gr.
Vaseline	1 oz.
Lanoline	1 oz.
Salicylic acid	8 gr.

ST. PAUL'S "THORN IN THE FLESH."

DR. GEORGE JONES (Lee) writes: With reference to Mr. Clegg's remarks as to St. Paul's thorn in the flesh being glaucoma, may I refer to Galatians vi, 11: Ἴδετε πηλίκοις ὑμῖν γράμμασιν ἔγραψα τῇ ἐμῇ χειρί? (Look in what large letters I write in my own handwriting.) Not as in the Authorized Version "how large a letter." Bishop Lightfoot was inclined to think that this is not a reference to the large hand written by one with defective eyesight, but in the note at p. 186 of his edition of this Epistle he gives the ancient tradition known to Tertullian that St. Paul suffered from violent headaches, "Dolorem auriculae vel capitis" (*De Pud.*, sec. 15). On what grounds Mr. Clegg suggests St. Paul's disappearance in his old age perhaps he would say. The Roman tradition of his martyrdom seems constant, and the tendency of modern research has been to confirm these traditions. It is curious that all ancient pictures represent him as bald over the forehead, and thus agree with ancient accounts (Lucian, *Philopatics*, 12). Is it right to connect this with presenility or headaches?

THE CANARY ISLANDS.

RUSTICUS would be obliged to any member who would give him information as to the prospects and conditions of practice in the Canary Islands, the cost of living in them, and their healthiness, especially in respect of liability to epidemics of typhoid fever.

*** The foreign population of the Canary Islands, consisting as it does mainly of tourists and visitors, is of a very fluctuating character, and one would imagine that the five or six medical men holding registrable English qualifications already established there would fully meet its needs. Strictly speaking, the laws of Spain necessitate the possession of a Spanish qualification by those who practise in the Canary Islands, but the extent to which the law is applied varies greatly.

LETTERS, NOTES, ETC.

THE RESULTS OF APPENDICITIS.

DR. ALEXANDER DUKE (London) writes: Would it not be both interesting and instructive to determine (if possible) what the high mortality "after an operation for appendicitis" is really due to? We can hardly take up a daily paper and read the long list of deaths without finding one (at least) from the above cause! The various registrars would probably supply (on application) the cause as appearing in certificate, and it would be interesting to contrast the mortality found after operation with that of perityphilitis where no operation had been performed. In how many cases has the death been due to the effect of operation itself alone? It is high time some reply were forthcoming to these questions.

THE ANNUAL MEETING AND SOUTH AFRICAN MEMBERS.

WE are requested to state that Dr. G. W. Bampfylde Daniell, of Lancaster, through the kind permission of the Club Committee, will be glad to put up any medical men from South Africa attending the Annual Meeting who are known to him, as honorary members of the Junior Conservative Club, 43 and 44, Albemarle Street, Piccadilly, for one month free of charge. They will, of course, have all the privileges of an ordinary member during that time. There are some twenty bedrooms in the club. Address: Junior Conservative Club.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *postes Restante* letters addressed either in initials or numbers.

A Clinical Lecture
ON
DUODENAL ULCER.

DELIVERED AT THE LONDON SCHOOL OF CLINICAL MEDICINE.

BY GUTHRIE RANKIN, M.D., F.R.C.P.,
PHYSICIAN TO THE DREADNOUGHT AND ROYAL WATERLOO HOSPITALS.

So much attention has been directed recently to ulcerative conditions of the duodenum that the opportunity seems favourable for discussing with you a disease which has hitherto somewhat eluded accurate clinical observation, because its symptomatology has been but imperfectly described.

Modern surgery has now introduced methods of treatment, the advocacy of which makes the early recognition of duodenal ulceration more than ever a question of primary importance. Tuberculous and cancerous ulcers of the duodenum are not included in the following summary, which applies only to ulcers of a simple or non-specific type. Duodenal ulcer occurs more frequently in men than in women, and, though it may be met with at any age, it is most common at or about middle life.

In most instances the ulcer is situated in the first part of the duodenum, above the entry of the common bile duct and close to the pyloric ring. It is usually circular in shape, but may be oval or elliptical, and has a punched-out appearance, with inflammatory changes at the borders very similar to what we find in the more common gastric cases. From the situation of the ulcer at that portion of the duodenum between the pylorus and the bile-duct papilla, which is the only part of the intestinal canal subjected to contact with the acid gastric contents before they are mixed with and neutralized by the secretions of the liver and pancreas, it seems not unlikely that the projection of this acrid fluid against a vulnerable spot may play an important part in causation. Bacterial infection probably also enters largely into the etiology.

Duodenal ulcer may be met with either in an acute or in a chronic variety, but it must be remembered that, though acute conditions such as haemorrhage or perforation may be the first definite manifestations of the disorder, yet the ulcer may have existed in a chronic form for a long time previously without giving rise to any definite symptoms. It has been estimated that about one-fifth of all the cases observed are latent over a longer or shorter time, sometimes many years, before they produce signs and symptoms sufficiently characteristic to admit of their definite diagnosis.

The leading and characteristic features of duodenal ulcer are deep-seated and localized pain in the right hypochondrium; dyspeptic symptoms occurring several hours after a meal and relieved by taking more food; and malaena or haematemesis. The pain is of varying intensity, and is situated to the right of the ensiform cartilage about the level of the tip of the eighth rib, whence it frequently radiates through to the back and reveals itself by a tender spot to the right of the last dorsal vertebra. On deep pressure the right rectus muscle stands out with more or less firm resistance. This local tenderness, accompanied by rigidity of the rectus muscle, is so striking that, without its presence, the diagnosis of duodenal ulcer must always be doubtful. The subjective pain, which is of a burning, gnawing character, comes on from three to four hours after a meal, is usually associated with acid eructations, and is always relieved by the ingestion of food. The pain gradually increases until it reaches a climax and is accompanied by a sense of distension in the stomach, which is temporarily relieved by eructations of gas. It comes on earlier after a light liquid meal than after one that is more substantial. It not uncommonly wakes the patient out of his sleep about 2 or 3 o'clock in the morning. The descriptive title of "hunger pain" has been suggested because it is usually first complained of when the patient is beginning to feel hungry. Its commencement is often heralded by a copious secretion of saliva. The appetite is generally excellent. Vomiting is the exception rather than the rule, and, when it occurs, fails to relieve the pain so completely as it does in gastric ulcer. The general health is not seriously interfered with, and the disorder is subject to long remissions, during which the patient is both subjectively and objectively apparently perfectly well. Melaena, when it occurs, may be so slight as to be unperceived, or it may occur profusely once only after a sudden feeling of faintness accompanied by colicky pain. In some instances a copious haemorrhage from the bowel is the first intimation of serious illness, but as this occurrence may result from many other affections besides duodenal ulcer, an accurate diagnosis can be arrived at only by a process of elimination of other possible explanations. In the most serious group of cases perforation occurs as the first event; it reveals itself in the usual way by sudden acute pain, which is often referred to the right iliac fossa, and is quickly followed by rigid abdominal muscles, vomiting, small rapid pulse, subnormal temperature, sweating, and all the other well-known evidences of collapse.

A duodenal ulcer may continue over a very long period of time and be so obscure that it is unsuspected until narrowing of the duodenum from cicatricial changes produces a train of developments, including dilatation of the stomach, similar to those met with in stenosis of the pyloric orifice, from which they may be indistinguishable. Or, if the ulcer happens to be situated over the orifice of the common bile duct, its cicatrization may cause obstruction to the discharge of bile into the bowel and so be the cause of a persistent jaundice similar to that met with in cases of impacted gall stone. In cases of long duration, in which dyspeptic symptoms have been more or less continuous, there may be very considerable loss in weight; and, if there has been active haemorrhage, anaemia may be a striking feature of the condition. Apart from actual cicatricial contraction, another not uncommon result of continued irritation from a chronic inflammatory process is the formation of adhesions, which may involve not only the duodenum itself, but the neighbouring gall bladder or stomach as well, and so give rise to a confused series of symptoms, which it is often difficult to explain. The urine may be normal, but it sometimes shows a trace of albumen, sometimes has an excess of bile, sometimes contains indican, and not infrequently gives a positive pancreatic reaction.

In the diagnosis of duodenal ulcer the conditions with which it is most liable to be mistaken are gastric ulcer, neurasthenic gastralgia, gall colic, and the gastric crises of locomotor ataxia. In gastric ulcer the pain comes on immediately or shortly after food, according to its situation, and is at once relieved by vomiting; the local tenderness, if any, is situated in the epigastrium; the appetite is poor, and whatever slight desire there may be for food is checked by the dread of the pain that will follow its ingestion, it being a point of some diagnostic importance that the degree of pain is frequently in direct ratio to the quality and quantity of the food taken; when bleeding occurs it is generally, in the first instance, in the form of haematemesis. In gastralgia the pain comes on suddenly at any time and irrespective of food, by which it may be even relieved; pressure over the epigastrium or the eructation of wind generally relieves the discomfort; haematemesis or malaena never occurs; the patient is usually of the neurasthenic type. In gall colic the onset of the pain is more acute, and its intensity is more severe; it is always accompanied by nausea or vomiting, and often, though not always, followed by jaundice; the liver is frequently enlarged, and there is tenderness on pressure over the gall bladder; there may be a history of previous attacks, and of the recovery of gall stones from the faeces. Cases have been recorded of duodenal ulcer, confirmed by operation, in which the attacks of pain so closely resembled biliary colic, that they necessitated the patient being put to bed with hot bottles and the administration of morphine. In the gastric crises of locomotor ataxia their true nature will be determined by the presence of ocular symptoms, a history of previous lightning pains and the absence of knee-jerks. Gastric and duodenal ulcers originate in much the same way and present similar anatomical characters. Their symptoms may resemble one another so closely as to make a definite diagnosis impossible in many instances, while, as has been already pointed out, the complexity of the symptoms which may arise when the morbid condition is one of such a nature as to involve the gall bladder or pyloric end of

the stomach as well as the duodenum itself, is such as to make definite differentiation a matter of impossibility. And yet, despite this uncertainty, there are not wanting at the present day those who advocate an abdominal section in the sure confidence of finding a duodenal ulcer if the patient presents the following symptoms: Sudden haematemesis or melaena; a history of recurrent gastralgic attacks with intervals of apparent good health; pain in the stomach region coming on three or four hours after a meal and relieved by food; flatulence and regurgitations of acid fluid from the stomach; tenderness and increased resistance to pressure in the right hypochondrium.

Such a combination of symptoms no doubt affords strong presumptive evidence in favour of duodenal ulcer, but does not justify the wholesale condemnation of every patient presenting such a picture to the operating table. One surgical authority goes the length of saying that it is "not necessary to the attaining of an accurate diagnosis that any examination of the patient be made." The meaning of this statement presumably is that the patient's own statement of his sensations is sufficient to warrant the opening of his abdomen without the formality of any physical examination. This same authority states, of a patient who was sent to him because of an inguinal hernia: "As he entered my room I was struck with his blanched appearance, and my diagnosis of duodenal ulcer was made before he reached a chair." To the ordinary observer such a process of lightning diagnosis is, to say the least of it, startling.

The following case well illustrates some difficulties that are not uncommonly met with:

A robust, energetic, full-blooded, gouty man of 54 years of age, had never been ill throughout the length of a busy and over-strenuous life, except for a mild attack of enteric fever which he went through when between 20 and 30 years of age. From the time of that illness he suffered every now and again from attacks of what he believed to be indigestion, which he ascribed to more work than usual, and from which he always recovered if he gave himself mental and physical rest, and curtailed the supplies of food, alcohol, and tobacco. He had been a free liver, he smoked to excess, indulged daily in three large meals, dealt generously with himself in the matter of alcohol in all its varieties, and seldom went to bed before the early hours of the morning. He was distinctively of the neurotic type, and flattered himself that he was able to keep his health in perfect order by physical exercises of one sort and another, and by periodic courses of energetic and even violent massage. The only evidence of organic disease he presented to physical examination was a marked diminution in the area of liver dullness, a tendency to haemorrhoids, and an occasional trace of albumen with a persistency of phosphate in the urine. He slept perfectly at night, digested everything he took between the times of his gastralgic attacks, increased gradually in weight, and had no tenderness either in hypogastrium or epigastrium on the deepest pressure. His gastralgic attacks recurred at varying intervals, and, when he allowed them to be medicinally treated, were always rapidly relieved by citrate of caffein, phenacetin, and codeia. On a certain Saturday he overtired himself on a golf links, took a large luncheon between his games, and in the evening indulged in an abundant dinner. After going to bed he found himself unable to sleep, and, feeling his stomach uncomfortably overloaded, he proceeded to subject himself to severe physical exercises and deep abdominal kneadings. This produced faintness, which was followed during the night by a moderate haematemesis and the following day by considerable melaena. He became sufficiently alarmed to take proper care of himself, rapidly became well, and has remained so ever since. Here is a picture which at first sight seemed to justify the advice given him to have a gastro-enterostomy done without delay, as beyond all doubt he was suffering from a duodenal ulcer, which, to permit of such an amount of haemorrhage, must be deep, and therefore more than likely to perforate. But there is another side to the story, and before committing such a case to the risks of an operation which might well enough prove to be unnecessary the following points are worthy of attention: The patient is a man of the distinctive neurotic type; the history of his life, and such physical signs and symptoms as he presented, all pointed to the existence of a slow cirrhotic process, which had mostly affected his hepatic tissues; his attacks had been so far typically gastralgic, and had yielded at once to antineuralgic remedies; the haemorrhage he had suffered from could be fully explained by the state of his liver, *plus* excessive exertion, *plus* too much food and drink, *plus* unwise manipulation of his abdomen; there had been a complete absence of hypogastric tenderness or muscular resistance to pressure over the duodenal region; the gastralgic attacks had only occurred after—and not impossibly in consequence of—unusual and excessive physical and mental strain; there was an entire absence of dilatation of the stomach, or of other evidence of cicatricial contraction of the duodenum, such as might reasonably have been expected if, over so many years, he had been suffering from an ulcerative process. All these considerations surely afford good reasons for patience and further observation, and, to my mind, justify an attitude of scepticism as to the urgency, or even necessity, for surgical intervention at the present juncture of affairs. Such an attitude of reserve is fortified by the consideration of yet another case: A gentleman of 51 years of age had suffered for many years from indigestion and pains in the abdomen, which were ascribed by different doctors to duodenal ulcer, gastralgia, gall stone, and simple gastric catarrh. He was treated on many plans, and underwent the usual cure at Carlsbad, but though he got better for a time his discomforts always returned. Eventually he was operated upon in the belief that the true cause of his symptoms must be gall stones. The gall bladder and ducts were, however, found to contain no stones, though he was told that many adhesions had been found round and near the gall bladder. After his operation he was better for a time, but soon he began to experience nausea, heartburn, and pain in his stomach, which always came on three or four hours after a meal or during the early hours of the morning, was accompanied by acidity, and was immediately relieved by food or a dose of bismuth and soda. He had recently lost fully a stone in weight. There was no tenderness in his right hypochondrium, but he had definite though slight dilatation of his stomach, and his conjunctivae were suspicious of a mild degree of icterus. The urine was found to give a marked pancreatic reaction to Cammidge's tests, but contained neither sugar nor albumen. On further inquiry it transpired that at the time of the operation the adhesions were found to be the accompaniment of a mass of glands which were regarded as probably tuberculous, and which, spreading from the root of the mesentery, involved the head of the pancreas. Here again is a case where the symptomatology was so obscure that a definite diagnosis was impossible, and where the operation revealed an unexpected explanation in the discovery of glands which so interfered with the normal activity of the pancreas as to set up a mild form of pancreatitis. Incidentally it may be remarked that this case bears witness to the value of Cammidge's tests, the positive reaction they afforded being fully confirmed by the surgical history, which was only obtained subsequently. It further raises the important question of how far the symptoms which are now attributed to duodenal ulcer may not frequently be, in some degree, the result of pancreatic insufficiency. A distinguished physician has put it on record that "the pancreatic C reaction has been found in all my cases of duodenal ulcer demonstrated at the operation in which it has been looked for, and in the majority of those in which a duodenal ulcer was inferred from the symptoms." And an equally distinguished surgeon has confirmed this experience and has stated that the pancreatic test "is common both to duodenal ulcer and to cholelithiasis, both of which are associated with duodenal catarrh." We are still without any well-defined clinical picture of the subjective phenomena which result from a chronic pancreatitis. Cammidge's tests applied to the urine and faeces, even if taken alone are of the highest suggestive value, though they only become essential links in the chain of evidence when they confirm clinical observation; they then convert a tentative into a definitive diagnosis. The pancreas, when disturbed only by a chronic process, may be quite impalpable, and may yield no sensations of pain, either subjective or objective; the sclerotic changes which have invaded its interstitial tissue

may not have encroached upon the islands of Langerhans, and the urine may therefore give no positive reaction to Fehling's test, such as would arouse our suspicions; the appetite may remain vigorous, and any digestive disturbance complained of may be apparently entirely unassociated with the intake of food or drink; and, to outward appearance, the patient may look well and hearty. But may it not be true that many cases which are now regarded as due to suppressed gout, inactive liver, gastralgia, acid dyspepsia, or duodenal ulcer, are really instances in which the pancreas is either wholly or partially responsible for the disturbance of health, which, though definite, is too ill-defined to admit of a positive diagnosis?

Let me quote yet another striking case in support of such a hypothesis:

An active man of 52, of the gouty type himself and belonging to a family many members of which had suffered from acute gout, who had worked hard and lived abstemiously, and whose only previous illness of consequence was a mild attack of enteric fever fifteen years previously, had suffered periodically over some years from recurrent attacks of what were regarded as gastro-hepatic catarrh due to gouty disturbance. These attacks were always of the same type; they came on after unusual work or worry, were characterized by nausea, anorexia, headache, somnolence, pronounced mental depression, slight icterus, colicky pains in the upper region of the abdomen, and a profuse discharge of lithates in urine containing an excess of bile. They lasted over several days and cleared up under the influence of rest, a semi-starvation diet, and alterative medicines. A final attack, however, supervened in which to the same train of symptoms there was added a marked and gradually deepening jaundice with pains which were more severe than any he had experienced on previous occasions, and with a nausea that went the length, several times, of active sickness. Remedies failed to afford relief, and eventually he developed pyrexia to the accompaniment of a succession of mild rigors. Under the impression that he must be suffering from gall stones, with a superimposed cholecystitis, his abdomen was opened. No gall stones were found, but his pancreas was hard and swollen though not apparently haemorrhagic. His gall bladder was drained and he made a satisfactory recovery. Since the date of his operation he has resumed active work, and kept well, but he still has occasional attacks similar to, though less severe than, those he previously suffered from, and he has developed a mild glycosuria which is kept in check by careful attention to diet, etc.

It is of interest to mention, in passing, that in the case of this patient, his attacks, when they occur, are now speedily remedied by the administration of colchicum and alkalis, together with repeated small doses of rhubarb and blue pill. This raises the very significant possibility of his pancreatic troubles being possibly, even probably, gouty. And why should not the poison of gout lay siege to the interstitial tissues of the pancreas as readily as to those of the liver or kidneys? Indeed, why not even more readily, when it is remembered what an important part the digestive juices and internal secretions of the pancreas play in the processes of active metabolism? Is it not conceivable that what, for want of a better or more accurate name, we call suppressed gout may not in time prove to have for its etiological foundation active changes in the pancreatic tissues—changes which, though of minor and passing importance at first, gradually end in the establishment of cirrhosis of a more or less widespread distribution? May it not even ultimately turn out that true sthenic gout itself is closely related to active pancreatic changes in the first instance? As bearing upon such a possibility, I need hardly remind you of the frequency with which glycosuria develops in later life among men who in their earlier years have suffered from gout, and how it is apt to be associated with a minor degree of albuminuria—suggestive evidence surely of interstitial changes in the pancreas analogous to similar changes of an interstitial type in the kidneys!

It is admitted that ulcer of the duodenum is sometimes a multiple lesion; that it is often associated with gastric ulcer, and with ulcerations elsewhere in the course of the gastro-intestinal tract. In view of this fact, may not the ordinary duodenal ulcer turn out to be a mere local expression of some dyscrasia, gouty or other, and not a disease entity at all? From such a standpoint it is not surprising that duodenal ulcers tend to recur, nor that operation, even if temporarily ameliorative, is often inefficient as a measure of permanent cure.

In an illuminating lecture delivered at the London Hospital in February last, the author, who is one of the physicans to the hospital, expresses the opinion that "gastric or duodenal ulcer is what we commonly term a diathesis, that is, a natural proneness of the body to a given disease, and that the actual visible ulcer itself is an acute, usually virulent attack of the disease or outbreak of the diathesis, just as an acute attack of gout or rheumatism is an acute outbreak or attack of gout or rheumatism in a person prone to these diseases."

Without the evidence afforded by operation many such cases must obviously remain obscure, but it seems to me that we have not yet arrived at sufficient accuracy of diagnosis to justify certain claims that have been made for surgical interference. In some cases such as the last I have related, surgical assistance is essential; and there may be others, less acute than this, in which draining the gall bladder and bile ducts, or the performance of a gastro-enterostomy, may prove a preventive measure, so far especially as the pancreas is concerned, of the utmost value; but to insist that every patient presenting symptoms of a certain type and sequence, which may or may not be caused by ulceration of the duodenum, should be forthwith exposed to the risk of an abdominal section is going too far. And I am clear, from personal observation, that the symptomatology of duodenal ulcer is by no means so definite as some of the protagonists of this modern surgical method of treatment would have us believe. In the first case I have mentioned to you the patient may, or may not, have a duodenal ulcer, but, to my way of thinking, his case is one to be carefully watched, but not to be interfered with surgically until more precise indications arise, or until his comfort and health are becoming so seriously impaired as to render operation imperative. In the second case operation only brought to light an unexpected explanation of the symptoms, but failed to do more than afford such relief as came from breaking down some adhesions. I do not suggest that, in this case, operation should have been declined; under the circumstances it was the one course left open which was likely to be of use; my contention is that the symptoms which are so confidently regarded by some authorities as indubitably due to duodenal ulcer may occur in, or be so closely simulated by, other pathological conditions as to make such cocksure certainty in diagnosis unreliable.

In the course of a recent discussion at the Royal Society of Medicine, one of the speakers related the case of a patient on whom he operated who had all the characteristic symptoms of duodenal ulcer, "including periodicity of attacks, and hunger pain, etc., and yet no duodenal ulcer was present."

He also referred to others in which, in his experience, the same result had been met with. An infection originating in the upper part of the gastro-intestinal tract must, one would imagine, often find its way up the ducts to the gall bladder and liver on the one hand and to the pancreas on the other, and more especially would this seem likely to happen in conditions where the duodenum had become functionally disturbed even before the process of ulceration was an accomplished fact. Not only has operation often failed to reveal the ulcer whose existence was confidently predicted beforehand, but many cases have been published which prove that operation, even in admitted cases of the disease, have failed to afford relief: notably in a paper communicated to the BRITISH MEDICAL JOURNAL of this year, the writer tabulates five cases of duodenal and three of gastric ulcer, in all of which the results, so far as symptoms were concerned, were so unsatisfactory that the condition of the patient was no better after than before surgical intervention was resorted to. Until differential diagnosis enables us to eliminate many possible sources of fallacy, it will be most in the interests of patients suffering from suspicious symptoms to keep them under careful observation, and within reach of skilled surgical assistance, but to allow them to exhaust the possibilities of medical treatment before adding to the risks of their condition that of a major operation.

As regards treatment, it must be borne in mind that if an ulcer actually exists its healing must be a slow and

somewhat tedious process, and that, if it be a mere dyscrasial phenomenon, it is liable, even if wholly or partially healed, to recur on every renewal of dyscrasial activity. The way in which many cases of supposed duodenal ulcer become well when carefully managed makes it seem likely that in some instances either no accomplished ulceration, or ulceration of modified extent only, is present. We are all familiar with the difficulties met with in the diagnosis of stomach ulceration, and of the large proportion of cases at first labelled "ulcer" which get completely well under rest, regulated diet, and suitable medicinal treatment. It would require some courage to advocate the opening of the stomach on the provocation only of a set of symptoms that might, but also that might not, be the result of an ulcer somewhere on its mucous surface, and yet nothing less than this is the procedure which the duodenal enthusiast asks us to adopt. In suspected cases the patient should limit for the time being his active work, and must carefully avoid all exercises or active games that throw special stress on the abdominal muscles. In the event of a haemorrhage having occurred, the rest obviously must be complete and in bed. Under such circumstances the food should be bland, easily digested, and given at stated intervals in limited quantity. A semi-starvation diet is recommended by some authorities; but though this may be advisable in acute cases for a few days, it need never be pushed the length that is sometimes found necessary in gastric cases, because ingestive discomfort is comparatively slight and unimportant.

After the first acute phase of the illness is over the diet may be reasonably generous, but it is well to remember that tea, stimulants, uncooked vegetables or fruit, and sugar are best done without, and that starchy food should be taken in moderation. The following plan of dietary will be found to suit many cases: A cupful of hot water to be slowly sipped before breakfast every morning; for breakfast, café-au-lait sweetened with saxin, toasted protein, or caseoid bread with butter, eggs poached, boiled or scrambled, or white fish. During the forenoon a cupful of thin clear meat soup, which it is advantageous to thicken with about half an ounce of gelatine. For luncheon well-cooked fresh veal, mutton, or lamb, cooked green vegetables, preferably in the form of a purée; stewed fruit, sweetened with saxin; some form of starchless bread or biscuit, thickly spread with sour milk or lactic acid cheese; Perrier, Bilin, Gieshübler, or other natural alkaline water. In the afternoon boiled milk, or cocoa infused from the nibs; toasted bread and butter, simple tea-cake. For dinner, fish, plainly cooked and without rich sauce; egg entrée, sweetbread or calf's head, chicken or other form of bird, a small quantity of potato in the form of chips or ribbons, a simple omelette or a savoury. A small quantity of brandy or whisky, if desired, with the meal, and a cup of black coffee after it. Farinaceous puddings, bread, other forms of meat, etc., may be gradually added to the dietary as improvement takes place.

It is of elementary importance to make sure that the buccal cavity is clean, and to this end all decaying stumps should be removed and carious teeth cleaned and stopped. An antiseptic mouth and throat wash should be used freely at least twice a day, both as a gargle and also to brush the teeth with.

As regards medicines, my experience is that most cases are speedily relieved by a combination of bismuth and carbolic acid, to which, if the pain is at all severe, a suitable dose of morphine may be added. The following is a useful formula: Carbonate of bismuth, 40 grains; pure carbolic acid, 2 grains; solution of hydrochlorate of morphine, 15 minims; mucilage of acacia, *quantum sufficit;* compound infusion of gentian to make up 1 oz. To be taken in water from two to three hours after every meal.

To counteract the constipation which usually results from large doses of bismuth, the following or some such pill should be given at bedtime; Calomel, $\frac{1}{2}$ grain; extract of rhubarb, 2 grains; extract of cascara sagrada, 1 grain; capsicine, $\frac{1}{4}$ grain.

When all active symptoms have been subdued, the bismuth mixture may be replaced by such a tonic as this: Finkler's papain, 2 grains; carbolic acid, 2 grains; strychnine, $\frac{1}{30}$ grain; codeia, $\frac{1}{4}$ grain; and extract of rhubarb, $\frac{1}{4}$ grain. To be put in a capsule and taken after meals three times a day. And the aperient pill may be replaced by a morning dose of Carlsbad salts, when required. When haemorrhage has occurred, it is usually an indication for the administration of iron when the tonic stage is reached.

Treatment by sterile horse serum, together with a dry and mostly meat diet, has been advocated recently, but, though I have not resorted to it in cases of suspected duodenal ulcer, I have given it a fair trial in gastric ulceration, but without any result sufficiently striking to confirm the claims advocated for serum as the most valuable of all methods of management.

The leading indications for surgical interference would seem to be: The occurrence of perforation; repeated melaena or haematemesis, especially if associated with pain and resistance to pressure over the right hypochondrium; cicatricial contraction of the duodenum, causing dilatation of the stomach; resistance of the symptoms to all forms of medical treatment; and recurrent attacks of cholecystitis, accompanied by evidences of pancreatitis.

TUBERCLE BACILLI IN THE FAECES IN TUBERCULOSIS.

BY

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IT has been commonly supposed and taught that the discovery of the tubercle bacillus in the stools is diagnostic of tuberculous enteritis. Until recently it had hardly been conceived that the tubercle bacillus might be found in the faeces of persons suffering from other forms of tuberculosis. The observations which follow show how frequently they occur in the faeces of patients affected with pulmonary tuberculosis. Their occurrence in the stools would indeed seem to be much more constant than in the expectoration.

It may be recalled that last year Rosenberger[1] described the presence of tubercle bacilli in the blood in different forms of tuberculosis. More recently Willson and Rosenberger[2] announced that they had found tubercle bacilli in the stools of 100 tuberculous patients, including early cases, and in 21.5 per cent. of 1,033 clinically normal persons. According to these observers, the bacilli obtain access to the blood stream and are carried from the affected focus to the intestinal wall, through which they are excreted, and so are finally discharged in the stools. Klose[3] has likewise found that in almost every case where tubercle bacilli were found in the expectoration they were also found in the faeces.

The significance of the constant discharge of tubercle bacilli from the alimentary tract is immense, both from the point of view of clinical medicine and of public health. On this account it seemed to us desirable to make further observations on the subject, and these are now recorded.

Uhlenhuth and Xylander[4] have recommended the use of "antiformin," a mixture of alkali hypochlorite and alkali hydrate, for the purpose of distinguishing acid-fast from other bacteria in sputum. Acid-fast bacteria can resist this disinfectant when diluted to 20 per cent. for two to five hours, while other bacteria and organic matter generally are speedily dissolved. Uhlenhuth mixed sputum with antiformin in sterile Petri dishes. We used instead conical precipitating glasses. A small piece of faeces, about a cubic $\frac{1}{2}$ in. in size, is placed in a conical glass, and to this some 20 c.cm. of antiformin, which has been diluted with water to 15 per cent., is added. The faecal matter is well broken up and mixed with the fluid, and thereafter as much again of the dilute antiformin solution is added. This is further mixed, and allowed to stand for about an hour. A white curdy precipitate appears on mixing, and in the course of an hour settles into a white layer which varies in breadth. Beneath the white layer some unchanged faecal matter remains, and above the white layer the fluid is of a clear yellow or brownish colour. A residue, including tubercle bacilli, which have been set free by the destruction of the other

constituents of the faeces, appears to be gathered into the white layer by a process of sedimentation. During the precipitation and sedimentation of the organic matter the bacteria are carried down, perhaps in some degree agglutinated. This concentration of the organisms makes up for the disadvantage caused by the initial dilution of the material.

For microscopic examination a drop is then taken from the white curdy layer by means of a pipette and placed at the end of a slide, along with a drop of albuminous water from a mixture containing 1 part of egg albumin to 10 of distilled water and 1 per cent. of formalin, and 90 per cent. of distilled water is added. A film is made in the usual way by drawing out the fluid with a second slide along the surface of the first. The albumin, which is recommended by Seeman,[5] helps to produce a better film and prevents the film from being washed off.

As to the strength of antiformin to be used, we have found that 15 to 20 per cent. is most suitable. The use of a stronger solution, say 50 per cent., is apt to lead to separation of the film. The time during which the action of the antiformin may be continued does not require very strict limitation; although Seeman says that the bacilli cannot stand its action for twelve hours, we have not been able to determine any deterioration of staining properties of the bacilli after twenty-four hours' action when use is made of the 15 to 20 per cent. dilution. The action of the antiformin seems to be chiefly exerted during the first hour, so that there seems no reason to continue the process for more than that time. Indeed, if the white layer has formed well within half an hour, the film may be prepared then. Even when the curdy layer does not become quite white, but remains of brownish tint and small in amount, our experience is that little is to be gained by waiting longer than an hour. The excess of brownish coloration is commonly dependent on an excess of faecal matter, or, perhaps, on the presence of iron taken as medicine. The prepared slides are fixed by heat and stained in the usual way by carbol-fuchsin and methylene blue, being decolorized with both acid and alcohol. As the tubercle bacilli are commonly sparse, it is advisable to prepare two or three films from each specimen.

Microscopically the film is found to consist entirely of a blue-stained residue. Here and there tubercle bacilli are conspicuous by their reddish colour. In most instances they require much searching, as their total number is small. Only in two of the considerable series of specimens examined by us could they be said to be abundantly present.

Some doubt might be suggested as to the identity of the bacilli. Willson and Rosenberger were able to distinguish the bacilli in the stools examined by them by means of prolonged exposure to Pappenheim's stain. Other acid-fast bacteria, with the exception of the bacillus of Johne's disease, lost their carbol-fuchsin stain in twenty minutes. Tubercle bacilli retained it for one hundred and sixteen days.

Our slides were decolorized with alcohol as well as acid. Bacilli were not present in the faeces from the normal cases examined. The bacilli in both sputum and faeces possessed the same characters. One case with short, thick bacilli in the sputum had short, thick bacilli in the faeces.

We attempted to make cultures from the faeces, but a large number of resistant spores occur in faeces, and we were unable to destroy them without also destroying the tubercle. While it is possible to obtain pure cultures of the tubercle bacillus from sputum, faeces present greater difficulties, and so far our attempts have proved unsuccessful.

The results obtained by us may be summarized as follows. Altogether 109 different specimens were examined. Of these, 99 were from patients suffering from pulmonary tuberculosis, in different stages of the disease, in the Royal Victoria Hospital for Consumption. None of the patients had intestinal tuberculosis. The others were from patients in the Royal Infirmary, one from a case of tuberculous peritonitis, and the others from patients without a suspicion of tuberculous infection.

Of the 109 persons, only 34 had sputum in which tubercle bacilli had been discovered; 42 had sputum in which no bacilli were found, and 24 had no sputum whatever.

Of the 100 tuberculous cases examined 79 were found to yield tubercle bacilli, and only 21 were negative. Of the 9 specimens from presumably normal subjects none yielded tubercle bacilli.

Of the tuberculous patients, all those with bacilli in their expectoration, with one exception, presented tubercle bacilli in the faeces. Of the 42 cases in which bacillary examination of the sputum was negative, 29 gave tubercle bacilli in the faeces. Of the 24 cases without sputum 17 showed bacilli in the stools.

These results are striking, and are suggestive in regard to clinical diagnosis, and to the larger aspect of preventive medicine. Thus it may be stated with absolute certainty that the occurrence of tubercle bacilli in the faeces is independent of the presence of an intestinal lesion. Indeed, their presence has little reference to abdominal tuberculosis. They were actually absent from the only case of tuberculous peritonitis which was examined.

The remarkable frequency of their occurrence in relation to pulmonary tuberculosis, not only in cases where tubercle bacilli were determinable in the sputum, but also in cases where either bacilli were absent or there was no sputum whatever, would seem to afford an important addition to our means of diagnosis in doubtful cases of pulmonary tuberculosis.

From the public health point of view, the almost unfailing presence of tubercle bacilli in the faeces—the presumption is that in some of the negative cases in the present series more minute examination would have discovered them—raises questions as to the need for disinfection of stools, more especially in the case of bedridden individuals, such as has hitherto not been thought necessary. Further, if, in the Royal Victoria Hospital where swallowing of sputum is carefully guarded against, tubercle bacilli are found to occur so constantly in the stools of the patients, whether expectorating bacilli or not, it may be assumed that in the great proportion of untreated cases, where swallowing is often the rule, the number of tubercle bacilli discharged in the faeces will be vastly greater.

It may be added that the technique necessary for the clinical detection of the bacilli is not difficult or lengthy, and that the process of faecal examination, which is apt to be repellent to some observers, has most of its unpleasantness removed by the method which has been described.

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THE EXPERIMENTAL EVIDENCE FOR THE THEORY OF THE NEUROGENIC CO-ORDINATION OF THE HEART IMPULSE.*

BY

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IN an abstract of the work of Cohn and Trendelenburg in the *Centralblatt f. Physiol.*, 1910. No. 5, p. 183, doubt is cast upon the observations, made many times in the Hallerianum Berne, which speak for the neurogenic nature of the conduction of the heart impulse. The authors have obviously not had time to study the work on this subject, and yet pronounce the opinion that the fundamental experiments of Paukul were carried out "with entirely insufficient methods." In August, 1907, Paukul communicated and demonstrated his experiments to the Seventh International Physiological Congress in Heidelberg.[1] Not one of the experts present doubted the result.

The myogenic theory does not explain how it is that the ventricles can fibrillate while the auricles pulsate, and vice versa; or why a thrust in the right spot into the intraventricular septum brings the heart into fibrillation; or why, what is easier, paraffin injected into the peripheral twigs of the coronary arteries produces a like

* See Appendix D, pp. 224-227, in Sir Lauder Brunton's *Therapeutics of the Circulation* (John Murray), 1908.

effect.[2] Under these circumstances, according to this theory, we must suppose that one part of the auriculo-ventricular bundle is fibrillating and the other beating.

On March 18th, 1884, I found in the dog's heart, close under the descending branch of the left coronary artery, a nervous bridge, the ligaturing of which immediately destroyed the co-ordination of the beat between auricles and ventricles. The auricles maintained their frequent beat (160 per minute), while the ventricles beat only 40 to the minute. Professor His examined the ligatured bridge and pronounced it to be a nerve bundle and a group of ganglion cells.[3]

In the rabbit Lomakina saw the auricles and ventricles beat quite independently after separate ligations had been made of the aorta and pulmonary artery.[4] In a dog a ligature applied 4 mm. above the sulcus produced fibrillation of the left auricle, a quickened beat of the right auricle, and a less frequent beat of the ventricles. After loosening the ligature, co-ordination again returned. When the aorta and pulmonary artery were again ligatured, the auricles beat more quickly, the ventricles more seldom. Ligation of the whole heart above the auricles caused these to cease beating, while the ventricles continued. In another dog the right and left auricular appendices were clamped. Both auricles stopped, the ventricles beat. A strong tetanic current upon the left auricular appendix induced 132 beats a minute in the auricles, 104 a minute in the ventricles; strong vagus stimulation, 184 beats in auricles, 80 in ventricles. In a rabbit ligature of the root of the pulmonary artery caused 148 auricular beats, 92 ventricular beats; later 140 auricular to 72 ventricular. Heating the nerve plexus at the base of the great arteries acted even more intensely than ligation; one or both auricles ceased to beat, while the ventricles either continued to beat or fibrillated. After injury or destruction of the plexus situated at the base of the left auricle, we observed entirely different movements of both ventricles to those produced by the ligation experiments. Distant effects were also obtained, for after coagulation of the nerves at the root of the pulmonary artery the base of the *left* auricular appendix beat before its apex.

Professor Busch (Buffalo) found in the Hallerianum[5] that the apex of the rabbit's heart no longer pulsated if it were cut away from the ventricular base until connected only by a moderately broad bridge of tissue. The extirpated dog's heart beat if perfused through the left descending coronary artery with blood half diluted with saline. It tetanized it fibrillated only during the period of stimulation. If normal dog's blood were used for the perfusion and the beating heart was then tetanized, the fibrillations became lasting, but could be removed by the perfusion of diluted calf's blood. A strip of ventricle connected to the base by muscle and the coronary vessels beat more seldom than the rest of the heart. If fibrillations were induced in the heart the strip participated, but began to beat when the vessels were ligatured. In one case the bloodless strip fibrillated also.

Dr. Imchanitzky-Ries proved microscopically in 1905 that quickly fixed pieces of the *pulsating* ventricles showed an equidistant transverse striation everywhere, whereas pieces of the *fibrillating* heart showed fibres in different stages of contraction.

The phase of contraction, therefore, does not pass beyond the bounds of the fibre. Inside one fibre also the transverse striation can be different.

This discovery proves that the muscle fibres possess no direct functional connexion. As in the *beating* heart the fibres all show the same phase, the connexion must be independent of the muscle—that is to say, through the nerves.[6]

At Palermo I found with Spaletta in the heart of the turtle a nervous bridge running on the outer side from the auricles to the ventricle. Section of this bridge destroyed co-ordination.[7] In hibernating animals (rectal temperature of 5° to 8° C.), with the heart beating 12 to the minute, the strongest induction shocks did not produce increase in the rhythm, whereas moderate shocks in the awakened warm-blooded animal would produce fatal fibrillary contractions;[8] consequently the muscle is not directly excitable.

Paukul in a series of experiments carefully ligatured the auriculo-ventricular bundle (the bundle of His). Microscopic examination confirmed the crushing by the ligature. Nevertheless, the auricles and ventricles continued to beat with the normal rhythm. Coloured plates of the sections of the bundle have been published. Ligature of the whole heart between auricles and ventricles induced allorhythmia. In one case, too, the introduction of the needle near the bundle without ligaturing produced the same effect. Of this the curves and microscopic evidence have been published.

Cohn and Trendelenburg have cut the auriculo-ventricular bundle in very exact fashion in cats, rabbits, dogs, apes, and goats; they find always that co-ordination was abolished. But these experiments were made not on the *living* but on the perfused or *surviving* heart. Langendorf found that perfused cats' hearts will still beat after they are cooled to 6° C. The *living* dog's heart ceases to beat at 25° C.

It is not necessary to perfuse the coronary arteries of the fibrillating or resting heart with blood to make it pulsate again. Cutting out, as I showed in 1884, suffices; then it pulsates as a whole or in sections either spontaneously or on stimulation.

Our results apply to the *living intact heart.*

Imchanitzky-Ries found in the lizard (*Lacerta ocellata*) that the chief nervous connexion between auricles and ventricle is situated on the dorsal side exteriorly. It contains also many ganglion cells. Ligature of this plexus destroys the co-ordination of the auricular and ventricular beat.[9]

From these observations it follows that the co-ordination of the different parts of the heart is brought about through a nervous channel. Even if the surmise of Cohn and Trendelenburg were correct, that Paukul had not cut all the fibres of the auriculo-ventricular bundle when he saw the auricles and ventricles beating in co-ordinate fashion, both his observations and ours of the inco-ordinated rhythm induced without any interference with the bundle prove that the *auriculo-ventricular bundle is not necessary for co-ordination or does not suffice.*

In this paper I have given only the observations made by myself or my collaborators.

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NOTES ON TWENTY-EIGHT CASES OF MONGOLIAN IMBECILES:

WITH SPECIAL REFERENCE TO THEIR OCULAR CONDITION.

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THE following characteristic features were observed in the study of 28 cases of Mongolian imbecility at present resident at Earlswood Asylum. Before discussing them it should be noted that, as judged from 50 consecutive cases, the lives of Mongolians are comparatively short. At Earlswood, the average age at death has been 14 years 7 months for boys, and 14 years 6 months for girls, as judged from 21 consecutive cases. Death was due to the tubercle bacillus in nearly 100 per cent. of the cases. This is clear from the following table:

Cause of Death.	Males.	Females.
Pulmonary tubercle	29	12
General tubercle...	8	5
Tabes mesenterica	5	2
Acute miliary tubercle	1	1
Pneumonia	4	—
Bronchopneumonia	1	1
Morbus cordis	1	—
Erysipelas	1	—
	50	21

It is more than probable that the tuberculous element may have been overlooked in some of the cases, as the records go back a considerable time. One case was complicated with status epilepticus, but this is the only mention we have of a Mongolian ever suffering from epilepsy.

The average age of the 20 males at present in residence is 16½, and of the 8 females 13 and 7 months, but of the males 30 per cent. are over 20. This means, we hope, that in the future the average age at death will rise, owing to the better ventilation and steam heating of the present day, and already it is noticed that the chilblains on their hands and feet do not cause so many of them to be kept almost permanently in bed in the infirmary through the winter months.

At a more advanced age the Mongolian seems to be liable to pass away suddenly with acute miliary tubercle; whilst the younger cases contract pulmonary tubercle, and at death general tubercle is found.



Fig. 1.—To illustrate the rounded head and profile.

MENTAL CHARACTERISTICS.

With regard to education little is to be said; under the most favourable conditions their mental ability is of the lowest order, consequently the most interesting lesson fails to gain their attention. Generally speaking, they are inert, apathetic, give very little trouble, and are quite content to pass their time in an aimless, desultory manner.

Though all Mongolians share the foregoing characteristics, certain among their number are lively in disposition and appear to be altogether more intelligent; but this apparent increase in ability is, with some exceptions, directed more or less to mischievous ends.

Great perseverance on the part of the teacher and scholar results in some progress being made in writing, in simple manual occupations, and other work of a mechanical nature.

Imitation is the most strongly marked capability; and this power and love of imitation makes many small children most useful in house work and helping with others, though at school they can be taught nothing.

Almost every one of them is very fond of music, and will beat time correctly all through an hour's performance of the band, and will often imitate the conductor accurately, and be perfectly happy playing imaginary violins, drums, and trombones.

They are most affectionate, and extremely fond of being taken notice of. As a rule they are rarely addicted to the curse of the imbecile, self-abuse, and, if spiteful, seem to do things to the other children for amusement to themselves, and not on purpose to give pain.



Fig. 2.—Case 16. Shows the fissured tongue.

PHYSICAL CHARACTERISTICS.

A typical Mongolian has certain well-marked characteristics. The percentages of these characteristics will be given in a small summary at the end of the paper.

He is of short stature, usually under 5 ft., and compared to his height is generally heavier than normal, this being accounted for by the fact that the spine is longer in comparison to the length of the lower extremities.

The shape of the head is usually brachycephalic; the hair is usually scanty, also dry and wiry.

The face is round and has a reddish flush extending from the malar bone to the lower jaw; the lips are transversely fissured and the lower lip sometimes protruded, giving the face the appearance of being underhung. The tongue is markedly fissured (Fig. 2). The mouth is sometimes kept open, but this is generally not the case, as they have usually a well developed posterior naso-pharynx. It has been stated that Mongolians always have a contracted posterior naso-pharynx; this is not so, and among our cases we have not a single one suffering from post-nasal deafness or aural discharge.

The ears are small, rounded, and devoid of dependent lobes.

The nose has a depressed and broad base to the bridge, and is thus short and squat, generally the nostrils look slightly forward.

The profile is characteristic on account of the usually short and squat nose with ill-defined bridge, thick pursed lips, and tendency to prominence of lower jaw which gives a slightly bulldog aspect to the face, and this must be coupled with the usually poorly developed occipital protuberance (Fig. 1).

An atypical type of case shows the long in contradistinction to the round face, and the dolichocephalic in contradistinction to the brachycephalic head.

The next most characteristic feature is the hands (Figs. 3 and 4); these are "podgy," with short and squat fingers, of which the distal phalanx is nearly as broad as the proximal, and square-ended. The little finger is incurved, and does not reach the last joint of the ring finger, and the skin of the hand is coarse, transverse wrinkles prominent, and sometimes only two well-marked palmar lines are seen.

Another feature is the cleft between the big toe and the rest of the toes (Fig. 5). Knock-knee and flat-foot are almost typical, as is also the very characteristic way of sitting cross-legged like a tailor.

The skin is dry and rough, and sometimes has a downy growth on forehead and nape of neck; the voice also has a distinctive character, a kind of guttural inflection, and a tendency to lalling in which the patients cannot properly pronounce certain consonants—for example, they say "fumb" for "thumb," "yabbitt" for "rabbit," "lellow" for "yellow," "belvet" for "velvet," "tissors" for "scissors."

The teeth, though not showing any originality in shape, are usually badly formed, loosely set in their sockets, irregular in their position, prone to decay, and are generally lost early; the eruption of the teeth seems to take place at the normal periods. The occlusion of the jaws is generally bad; out of 23 cases examined 16 showed inferior protrusion, 5 were practically normal, whilst 2 showed superior protrusion. The typical palate has been well described as "a contracted vault with the sides sloping more steeply in front, so that an anterior plateau is formed, usually rigid in the median line."

OTHER PHENOMENA.

The Mongolian smile is often in great contradistinction

to their usual placid look, and comes and goes instantaneously.

The blood examination of the cases showed:

Red corpuscles	5,600,000
White corpuscles	8,300
Percentage of reds	112
Percentage of haemoglobin	118
Colour index...	1.05
Differential—	
Small lymphocytes	30
Large lymphocytes	6.8
Polymorphonuclears	56
Eosinophiles	4
Mast cells	2.8

The urine showed specific gravity 1018. It was acid, and contained no abnormal constituents.



Fig. 3.—To illustrate the transverse markings of the hand.

The knee-jerk, tendo Achillis jerk, abdominal and cremasteric were normal; ankle clonus and Babinski absent.

In only two cases—one male and one female—were there any congenital heart lesions, and except for bronchitis, no



Fig. 4.—To illustrate the incurved little finger and stumpy hands.

other abnormal physical signs were detected in the others, except one male who has tuberculous glands in both inguinal regions, and one male with tuberculous glands of the neck.

OCULAR CONDITION.

In examining the ocular condition of these children, one is struck at once by the large number who have some eye defect, either squint, nystagmus, ectropion, or defective vision, but so far there has not been noted any constancy in the ocular condition, and we should like to draw attention to the frequency with which a definite form of cataract is found to be present.

Among our cases, 28 in number, 19 have lens opacities in some form or another, and 18 have a form of cataract of a particular type. This form is seen fully developed in several of the older patients, and it is present in what is probably an earlier, that is, a less mature form, in some of the others, but it is not found under the age of 9 years in any of the patients we have examined.

In the least-marked varieties the opacities consist of small dots in the cortical portion of the lens, deep to the capsule, and nearer the anterior than the posterior surface (Fig. 6, Nos. 5 and 6). These dots are best seen by focal illumination, and are so small that they are invisible when seen by transmitted light. In the mature cases the opacities consist of two layers enclosing a clear nucleus, the posterior lamella being concave forwards, and corresponding in curve with the posterior surface of the lens, the anterior lamella being much flatter and situated about midway between the centre of the nucleus and the anterior surface of the lens. The opacities do not reach to the equator of the lens in any direction. The lamellae consist of dots, numerous, small, and discrete.

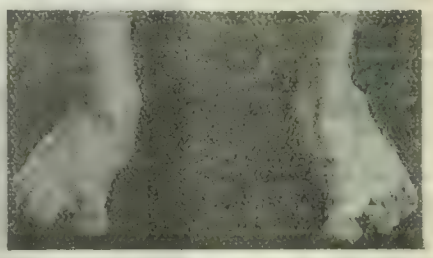


Fig. 5.—To illustrate the gap between the big toe and the rest of the toes.

The posterior pole of the cataract, which appears to correspond with the posterior pole of the lens, is often marked by a star-shaped opacity. The anterior pole of the cataract, which does not correspond with the anterior pole of the lens, often has a similar opacity to mark its position (Fig. 6, Nos. 3 and 4). The more fully developed might be described as lamellar cataracts, the slighter as congenital "dot" cataracts. Very young Mongolian idiots, however, do not exhibit this change, and the fact that it seems to be better marked in the older cases suggests that it is a late development.

It remains to be seen whether in the cases in which slight opacities are found to-day an increased number of dots appear later, or, in other words, whether the cataract is a progressive as well as a partial one. It is probably a partial and progressive cataract, developed as the result of changes taking place in the lens after its formation.

Though the teeth of these patients are defective they do

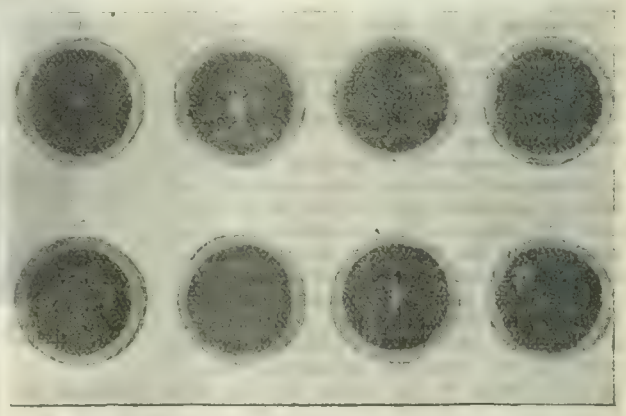


Fig. 6.—To illustrate the cataracts. Nos. 1, 2, 3, 5, 6, and 7 are "dot" cataracts with more marked changes at the poles. No. 4 has only a Y-shaped change at anterior and posterior poles. No. 8 is atypical.

not show the "honeycombed" condition found so frequently in cases of lamellar cataract, but the hair and skin show characteristic changes.

We are unable to record accurately the visual acuity of these children, and they are not sufficiently controllable to be entrusted with glasses.

The ectropion found in so many cases is due to a superficial contraction of the skin of the lower lid, which is

Table showing the Ages and Ocular Changes in the Twenty-eight Cases Described.

Number.	Initials.	Age	Direction of Interpalpebral Fissure.	Nystagmus.	Squint.	Inflammations of Lids.	Epicanthus.	Cataracts.	Remarks.
Males:									
1	A. A.	24	Up and out	Yes	—	Yes	Yes	Yes	Both eyes have well marked lens changes.
2	A. P.	12	Up and out	—	—	—	Yes	Yes	Both eyes have cataracts; slight fundus change.
3	C. J.	14	Up and out	—	—	—	—	Yes	Both eyes hypermetropic astigmatic.
4	H. S.	14	Up and out	—	—	—	Yes	Yes	Both eyes cataractous.
5	G. J.	20	Up and out	Yes	—	—	Yes	Yes	Both eyes cataractous.
6	D. R.	9	Up and out	—	Yes	Yes, ectropion	—	Yes	Both eyes Y-shaped, slight; left eye defective vision.
7	A. R.	23	—	—	Yes	—	—	Yes	Corneal opacity left eye.
8	P. J.	21	—	—	—	—	—	Yes	Very fine.
9	C. W.	21	—	—	—	—	—	Yes	Right eye, typical; left eye, iritis; synechiae and cataract.
10	W. W.	14	—	—	—	Ectropion	—	Yes	Myopic changes in fundus. Left eye, complete cataract, with iritis.
11	F. K.	14	Up and out	—	—	Yes; ectropion	—	Yes	Slight, both eyes.
12	B. S.	18	—	—	—	Yes	—	Yes	Both eyes cataractous.
13	T. W.	11	—	—	—	Yes	—	Yes	One eye only—right eye.
14	H. T.	16	—	—	Yes	Yes	—	—	Disseminated choroiditis both eyes.
15	R. O.	30	—	—	—	—	—	—	No changes.
16	S. L.	43	Up and out	—	—	Yes	—	Yes	Well marked changes in lenses.
17	L. P.	12	Up and out	—	Yes	—	—	Yes	One eye only—right eye.
18	B. A.	8	Up and out	—	Yes	—	—	—	No change.
19	M. G.	5	Up and out	—	Yes	—	—	—	No change.
20	C. B.	15	—	—	—	—	—	—	Hypermetropic astigmatism, normal.
Females.									
21	E. B.	17	—	—	—	Yes	—	Yes	Both eyes cataractous.
22	E. H.	12	Up and out	—	—	—	—	—	Has patches of choroidal atrophy at each macula.
23	G. H.	9	—	—	—	—	Yes	Yes	One eye. Right eye, hard, atypical.
24	W. C.	13	—	—	—	—	—	—	Quite normal.
25	C. D.	31	—	—	—	—	—	Yes	Old iritis and cyclitis, both eyes.
26	G. N.	6	Up and out	—	Yes	—	Yes	—	No changes in lenses.
27	F.	22	—	—	—	Yes	—	Yes	Fine fringe of opacities at equator.
28	E. D.	11	Up and out	—	—	—	—	—	Hypermetropic astigmatism.

Table showing the Percentage Occurrence of the Characteristics Noted in the Twenty-eight Cases Described.

	Males.	Females.
Tongue sucking	30	0
Tongue protruded	5	12.5
Tongue fissured	90	75
Enlargement of papillae	70	75
Mouth kept open	65	75
Lips transversely fissured	35	62.5
Lower lip protruded	30	25
Ears small and round	60	75
Of simple type	85	87.5
If devoid of pendent lobes	55	75
Nose short and squat	75	62
Nostrils look slightly forwards	55	37.5
Flush on cheeks	55	85.5
Face round	50	62.5
Face depressed as a whole	15	12.5
Lower part of forehead on plane posterior to upper	15	0
Occiput in direct line with neck	45	37.5
Profile characteristic	90	85.5
Adenoids	45	
Posterior nares contracted	40	

	Males.	Females.
Hands typical	85	62.5
Incurving of little finger	25	50
Little finger does not reach last joint of third	80	100
Ulnar deviation of hand	30	62.5
Thumbs small	35	37.5
Three lines on hand	85	100
Hyperextension of fingers	95	100
Knock-knee	65	100
Flat foot	65	75
Cleft toe	70	62.5
Hyperextension of knee	50	50
Skin dry and rough	80	100
Skin covered with fine hairs	40	12.5
Extremities cold	75	100
Nasal catarrh	65	62
Bronchitis	49	62.5
Cracked lips	60	50
Lalling	50	? (only a few will talk to order)
Deep reflexes normal	100	100
Sits cross-legged	90	100

rough, glazed, and dry, and the marginal blepharitis is probably in the first instance the result of infection from the hands, which are frequently used to rub the eyes with, and is kept up by the ectropion, error of refraction, and dirty habits of the patient.

The number of patients examined was 28, corresponding to 56 eyes.

	Per cent.
19 patients have lens changes	67.8
18 patients have typical lens changes ...	64.3
35 eyes have cataract changes of some sort ...	62.5
33 eyes have typical changes in the lens ...	58.9
10 patients have some inflammation of the lids	35.7
7 patients have squint	
4 patients have choroidal changes	
2 patients have nystagmus.	

The age of the youngest patient is 5 years and the oldest is 43.

The youngest showing cataract is aged 9, and the oldest patient has a well-developed typical cataract of the kind described.

Fourteen patients have the interpalpebral fissure directed upwards and outwards.

We wish, in conclusion, to offer our best thanks to Dr. Caldecott, the Medical Superintendent of Earlswood Asylum, who has given us every facility for investigating these cases.

SOME EXAMPLES ILLUSTRATING CASES OF CHRONIC TOXAEMIA AT VITTEL.

BY

H. J. JOHNSTON-LAVIS, M.D., D.CH., M.R.C.S., ETC.

PERHAPS in the whole history of the growth of a spa or hydro-mineral station none can compare with the remarkable rapidity with which Vittel has jumped into fame. Ten years since it was known to comparatively few physicians, and ranked as a fourth or fifth rate station so far as its resources and number of visitors were concerned. It now stands in the very first rank.

I have practised there seven seasons, and done two cures there myself annually, and may, therefore, claim to speak with some experience. I propose to select a few of my cases from one season's (1909) practice, and to point out the results as an illustration of the beneficent action of the cure in somewhat varied ailments. The cases of "*physiological disequilibrium*" and ailments that are relieved by Vittel treatment, of however varied facies, may all be summed up as the result of *chronic toxaemias* due to either perverted nutrition, defective metabolism, or incomplete elimination. This condition, which we English physicians denominate as "goutiness" and the French medical man as *arthritique*, is ill expressed by such terminology. All originate in an excess of one or more of the normal constituents of the blood or the presence of abnormal ones. When we look at these different *disturbances of the physiological balance* we shall all the more clearly appreciate the close association of many different ailments. We shall also be able to comprehend how a cure such as Vittel is one of the most effective and rational methods of restoring *physiological equilibrium*.

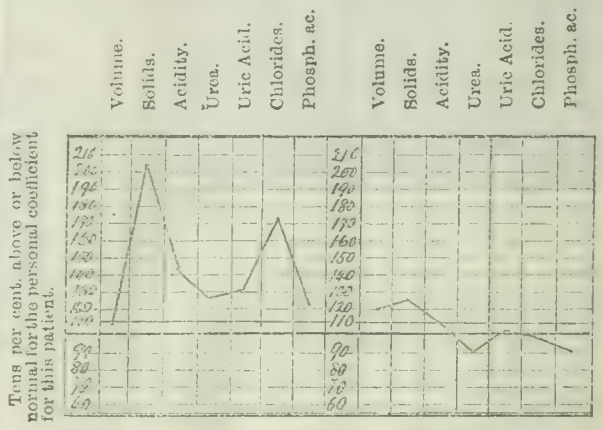
Who can draw the border line between acute and chronic gout, calculosis, some forms of nephritis, arterio-sclerosis, neurasthenia, asthma, chronic bronchitis, some dyspepsias and entero-colitis, many skin diseases, neuritis, some rheumatisms, etc.?

When I have at other times sustained this thesis, critics have held me up to ridicule. My answer has been, Think over it, and tell me why we so often find several such states associated in the same individual at once or alternating with each other, and why the same cure with suitable modifications is so efficacious in relieving or curing these troubles.

All the analyses are of the entire and carefully collected quantity of twenty-four hours. They are made in my own private laboratory, fitted with the most modern and approved apparatus by my analyst, Dr. Burrais, of the Pasteur Institute. He knows nothing of the cases, and is therefore quite free from any personal equation modifying the result. All the results are calculated on the personal equation of each individual based on weight, height, and age. Where extraordinary results are obtained, both of us repeat the determination. All calculations are based on the personal coefficient. I have much pleasure in thanking him for his valuable and skilful assistance.

J. M., a highland chief, aged 58, 6 ft., weight 77 kilos, sent by the late Dr. Radcliffe Crocker. Has suffered for years from eczema on neck, fingers, toes, and fork of legs. He complained of feeling stiff in his movements, lacking energy, and always tired. Has also patches of psoriasis on knees. Two fingers and one toe suppurating around nails, the region of which is red, swollen, and angry. There is no syphilitic history. The son is a fine specimen of an officer in the Guards, wife in good health. Patient has always been temperate, has fairly good digestion, but takes an aperient every morning, "which keeps him all right." His skin acts freely. He is a strong, otherwise healthy man. He has been twice to Homburg, and three times to Schinznach, with little benefit.

On July 18th, day after arrival, had a mean blood pressure of 135 mm. His urine is represented in the following diagram, which is remarkable by the enormous amount of solids, composed of all the elements of the urine, but specially chlorides, which were 75 per cent. in excess. His urea-uric acid coefficient is sensibly normal, but both are increased nearly thirty per cent. above what they should be.



J. M., July 20th, 1909.

Traces of some reducing material (? glucose). Slight traces of true and modified biliary pigments and of scatol. Abundant deposit of urates and some pavement epithelium. Purins 0.518 per 24 hours.

August 9th, 1909.

True biliary pigments in traces, as also faint reaction of scatol. Urates and cells much less. Purins 0.689 per 24 hours.

After a few days he was drinking 1,800 c.cm. of Grand Source before breakfast, and 900 c.cm. in the afternoon. The skin was kept active with baths at 36° C., and a low semivegetarian diet ordered, excluding salt as much as possible.

Another twenty-four hour urine analysis, made on August 9th, one day after the cure was stopped, shows a remarkable change. The curve has the same general form, but approaches quite near to the normal line. Solids have fallen from 204 to 125 per cent., acidity from 144 to 110 per cent., urea from 128 to 90 per cent., uric acid and chlorides to normal, and phosphates to 9 per cent. below normal.

Simultaneously with this all his feelings of stiffness, loss of energy, etc., have disappeared, and all his skin lesions are rapidly healing.

I think we have here a case of excessive assimilation which led up to a state of autointoxication in which the skin was most affected, but he was on the verge of an outbreak of joint, muscular, and nervous trouble.

The lixiviating effect of a rapidly absorbable and rapidly excretable non-chloride-bearing waters is striking.

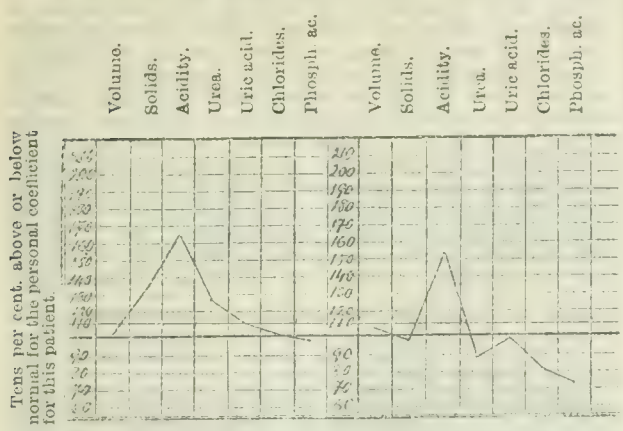
The purin bodies as a whole seem to have increased at the end of the cure. Whether we can interpret this as increased production or increased excretion of a retained stock could only be determined by ulterior analyses, which unfortunately could not be obtained.

The following three cases I have chosen because they consist of father, mother, and adult daughter living under sensibly the same conditions, and furthermore that, as they enjoyed Vittel so much, they stopped on for some weeks after their cure, and the second urine analysis was made at a considerable interval after their "cures" had stopped. These are rare opportunities, and I think worthy of study.

Dr. Curgenven, who sent them to me, says:

"Mr. S. had an attack of cardiac weakness and irregularity about two years ago—a very irregular pulse, high arterial tension, a tendency to dyspnoea, and a dilated stomach; this was caused, I think, by living at too high a pressure, and too

generous a diet. With rest and careful dieting he soon improved. A year ago he had a mild attack of basal pneumonia, and he has occasional attacks and threatenings of lumbago."



Mr. C. S., July 25th, 1909.

Modified biliary pigments fairly abundant; indican marked; scatol slight traces. Purins 0.798. Abundant crystals of uric acid and urates, and also oxalates. Some epithelial cells.

August 23rd, 1909.

Modified biliary pigments normal; indican fairly marked; scatol traces. Purins 0.717. Urate of soda, very few oxalates, and epithelial cells.

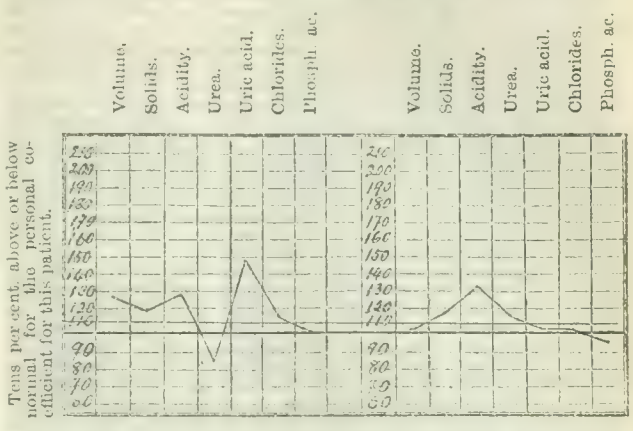
The patient, Mr. C. S., is a hale and hearty looking man, aged 60. His digestion is fairly good, except for a little flatulence; the bowels regular. Cardiac area faintly increased when the heart is working at its normal rhythm. When I made my first examination, on July 23rd, his pulse was running at an almost uncountable rate. After various attempts and dodges I made it 192. While making notes of this and other observation, occupying about three minutes, I returned again to feel the pulse, when to my astonishment it was a steady, vigorous beat of 72. His mean blood pressure was 140 mm. He himself attributed his cardiac condition to extra smoking, he having filled in all the time of travelling by doing it. He was suitably dieted, and alcohol, tobacco, tea and coffee restricted. At the end of three weeks all his cardiac symptoms had disappeared, his digestion was all right; he expressed himself as feeling quite well. His pulse was still at 72, but his blood pressure had fallen to 115. Several days after stopping the cure this favourable state persisted.

The urine analysis anterior to the cure shows a large excess of nutritive substances and their waste products that the organism was making a great effort to excrete. In the urine analysis after the end of the cure we see that the solids, which were 133 per cent., have fallen to just below normal. The acidity has been but little reduced, only amounting to 12 per cent. less. Urea was reduced from 127 to 89 per cent., and uric acid to normal. Before the cure urea was much higher than the uric acid, whereas after the ratio was reversed, showing the great utility of the waters in restoring the proper ratio of these two bodies; in fact, this is almost universal, and clinically I have always found that when marked benefit has accrued this has been the case, and where absent the cure has been of less use.

The chlorides and phosphates had fallen considerably below normal. Diet will explain the former but the latter is more difficult to interpret.

Here we have an illustration of four distinct elements leading to chronic toxaemia—excessive smoking, alcoholism, feeding, and mental activity. This led to general circulatory spasm, in which both arteries and heart were affected. That true arterio-sclerosis had set in is disproved by the rapid fall of blood pressure under treatment, but no doubt a continuance of the patient's mode of living will soon lead to irreparable artery and heart changes.

Mrs. S., wife of the last patient, aged 45, of slim build, is congenitally partially deaf; is a very nervous woman, partly due to that defect; gets bad rheumatic pains, especially in shoulders, and stiff neck, which are specially excited by champagne and strawberries. She has occasional bad headaches but is a great cigarette smoker, and has marked arcus senilis. Heart sounds normal except that aortic valves closed with a slight clang. Has had several children living, and two bad miscarriages and fibroids. Menopause at 42. Digestion is good but has to take cascara. Sleep moderate, perspiration very free. Takes plenty of exercise—golf, etc. Urine analysis at commencement of cure shows solids and acidity too high, urea 15 per cent. below normal and uric acid 47 per cent. above—a very great disproportion. Besides the cure she had some general massage with Vigorax, a dietary in which fats and oxalate-bearing foodstuffs were excluded. The result of this was a vast improvement in her health—she became less nervous, her pains disappeared as well



Mrs. S, July 25th, 1909.

Traces of true and modified biliary pigments. Scatol reaction very marked. Purins 0.922. Fair quantity of urates, oxalates, and pavement cells.

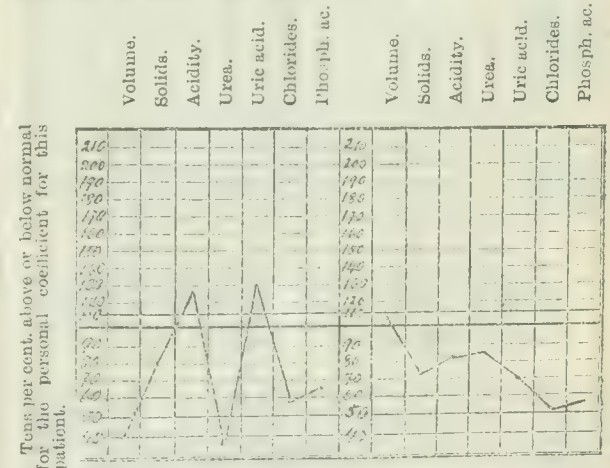
September 3rd, 1909.

Traces of true and modified biliary pigments, and traces of scatol. Purins 0.206. Urate of soda fairly abundant; only a very few oxalates. Pavement epithelium cells and rhomboidal cells.

as her headaches. A second analysis made some time after the cure terminated shows that both the quantities and ratio of uric acid and urea have been readjusted to practically normal.

In this case we have a chronic toxaemia due to incomplete metabolism, urea being replaced by an excessive production of uric acid and oxalates. The cure has resulted in the rise of urea to above normal, coincident with the fall of uric acid to normal and the almost total disappearance of the oxalates. The purins as a whole fell to less than a quarter of what they were before treatment. How much of this was due to the food consumed it is difficult to say, yet both husband and wife were following much the same menu at the hotel.

Miss S., the daughter, aged 25, weighed 79 kilos, and is for her height and age obviously obese, so differing from her parents and also a younger sister who accompanied the family. As a girl she was always anaemic, has some dysmenorrhoea, but loses little. Had measles five years ago, and gets a delicate throat and is hoarse when tired or cold, which she attributes



Miss S., July 25th, 1909.

Both true and modified biliary pigments abundant; no indican, but scatol abundant. Purins 0.244. Urates abundant, large crystals of uric acid and some small oxalates and numerous pavement cells.

September 1st, 1909.

True and modified biliary pigments slight traces, and traces of scatol only. Purins 0.664. Urate of soda, rare crystals of uric acid, no oxalates.

to that disease. Suffers at times from facial neuralgi Mumps three years ago; has facial neuralgia since. Thre years ago suffered from rheumatic pains. Leads a very active life. Digestion is good; the bowels, once troublesome, are now all right. She is a small eater and deep sleeper. Mean blood pressure 130 and an arrhythmic pulse of 80. Physical examination showed no apparent cause for this.

The twenty-four hour urine analysis at the beginning of the cure is very interesting. The volume is 60 per cent. below normal, due, I believe, to the stupid superstition that privation of fluids helps to thin people. This old and unscientific doctrine still has a hard and dangerous hold upon the public, and I am sorry to say is still a fetish of many medical men. Only those who have constantly to diet people can appreciate the difficulties in overcoming popular prejudices when one has to directly traverse the orders of one of one's colleagues.

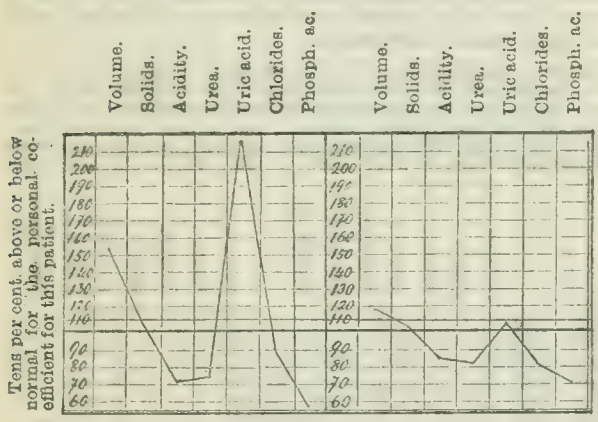
The patient's excretion of solids is 20 per cent. below normal, due in great part to an insufficiency of the vehicle water, but also to the low chloride assimilation. Acidity is 26 per cent. above normal, whilst urea is only a little above one-third of the normal amount, whilst uric acid is 30 per cent. above normal. The patient is a small salt eater, probably in harmony with a defective assimilation of salt. The phosphates are also 34 per cent. below normal. The urine is burdened by urates, uric acid, oxalates, biliary pigments, scatol, etc.

The second analysis, made some time after the cure had finished but with the patient otherwise living under exactly similar conditions, shows a curve much more approaching the straight line representing normal, though still showing defective assimilation, but to a much less marked extent. Biliary pigments and scatol had markedly diminished, but strangely the purin bodies were nearly tripled, probably from some exogenous source. The further diminution in chlorides was probably partly due to diminished intake and considerable losses by the skin, as the patient was doing several hours of tennis besides being massaged.

During the cure her weight fell from 79 kilos to 77.450, and continued to diminish, but I have no record of what it really was on her departure from Vittel. She declared herself perfectly well, much more capable of energy, and all her functions in good order.

In this case we have another example of perverted assimilation and defective metabolism where the part most assailed seems to have been the adipose tissues.

Miss B., aged 24, had malaria as a child, but has had no traces for many years. As a big girl had eczema very badly, but that has gone long since. Four years since had "neuritis" in the right arm, supposed to be due to tennis. No other region was involved. She is nervous, neuralgic, rheumatic, has some fullness of the eyes not amounting to exophthalmos, but no other thyroid symptoms. Her digestion is described as perfect, bowels fairly regular, and general health very good.



Miss B., July 31st.

Traces of true and modified biliary pigments, and also very slightly of scatol. Purins, 0.380. Urate of soda. Great numbers of epithelial cells.

August 20th, 1909.

Biliary pigments, true and modified, very abundant, as also scatol. Purins, 0.904. Urates and epithelial cells abundant.

The urine analysis before the cure proved to be one of the most remarkable I have come across. The solids were *en masse* about normal though the volume was 54 per cent. above. Acidity was 39 per cent. below normal and urine 36 per cent. below, whilst the amount of uric acid reached the astounding figure of 116 per cent. above normal, chlorides only just 10 per cent. below, and phosphates 41 per cent. below.

In the second analysis, a day or two after the cure was finished, the urinary curve approaches sensibly to that of normal, acidity is now only *minus* 24 per cent., and urea 18 per cent. below normal, a gain of 18 per cent. Uric acid has fallen practically to normal—*plus* 8 only. Still, it is too high for the amount of urea, and I think another week or ten days' cure would have been advisable.

Strangely, with this enormous output of uric acid her blood pressure was but 120 mm., with a capillary reflex of 3/4, and pulse of 80. At the end of the cure, with the enormous debacle of uric acid, her blood pressure was reduced to 115, which I look upon as normal for my apparatus.

At the end of the cure she described herself as perfectly well and vigorous—fit for any undertaking.

The great increase of purins is again an illustration of the inscrutability of their amount in relationship to other physiological processes.

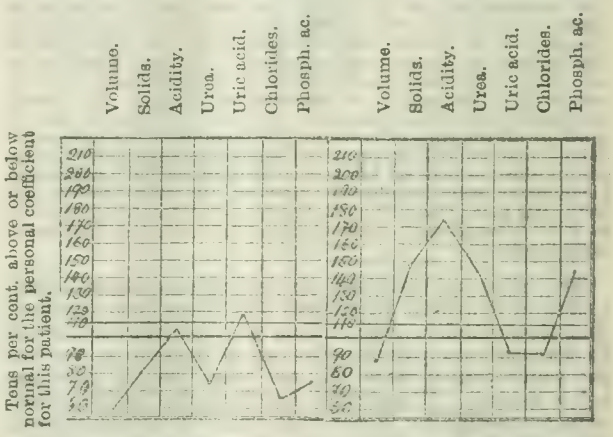
The next example I propose to put before you is interesting from several points of view. He is a typical example of that fat form of Frenchman that the English caricaturist delights in; secondly, he is mayor of the town, and has never drunk any other water but Vittel, though that appears to have been a most rare occurrence; lastly, he has been and is a most intense brain worker, always living under high pressure. He is a big and rapid eater, could not be called intemperate, but drinks heartily and takes no physical exercise. I have known him for years, and foresaw what was coming. He is jovial, good tempered, with his enormous charge of work as a busy lawyer, administrator of the town, and magistrate.

Mons. H. G. rises at 5 a.m., writes at his desk till 8 a.m., then takes café-au-lait one cup and a roll. He continues the work at his office till midday and then eats a good lunch with wine followed by black coffee.

In the afternoon does either office work or goes in his motor car to different clients of the region for business, and takes during the afternoon a black coffee and two or three glasses of beer.

At 7 p.m. he dines, usually with a soupe-au-lait, with much bread, nouilles, rice, and other farinaceous food. After dinner plays cards or other house amusements; during the season goes almost nightly to the theatre. Most of my consultations with him were in the *entre-actes*. He is a good sleeper, seven to eight hours, but a small smoker, and a great lover of sweets.

On June 22nd he consulted me at my house, having come to the end of his tether. He has been getting daily stiffer, less capable of exertion, gets sleepy and incapable of concentrating his mind, is always tired, and is rapidly increasing in weight—



Mons. G., June 27th. 1909.

Evident traces of glucose after defaecation with a lead salt. Biliary pigments, true and modified, well marked. Indican abundant. Scatol very abundant. Purins 1.147. Urate of soda very abundant, forming almost the totality of the deposit; a few cells, uric acid crystals in rosettes rather numerous and oxalate of lime fairly abundant.

September 6th, 1909.

No traces of glucose. True biliary pigments very slight. Modified biliary pigments well marked. Indican fairly abundant. Scatol abundant. Purins 0.770. Urate of soda, uric acid and oxalates but a fraction of what was found in first analysis.

he now weighs 103 kilos, his height being 1.68 metres, and his age 50. The family history is good, but several of his relations were fat.

His blood pressure was only 130 mm., but his heart muscle obviously failing. His capillaries are much dilated, giving him a very flushed and congested appearance.

The urine analysis is remarkable as showing the fluid starvation, the relatively high acidity, urea 26 per cent. below normal, uric acid 19 per cent. above, insufficient chlorides, and phosphates 25 per cent. below normal, the latter, no doubt, due to imperfect phosphatic assimilation, with the resultant failing brain activity.

He was ordered to do the cure, take either walking, cycling, or physical training exercise in the mechanotherapeutic institute. He was ordered a diet chiefly of meat, fish, and fowl, green vegetables, except the oxalate-bearing ones, fresh fruit and in compôte sweetened with saccharine, with the exception of grapes, bananas, figs, and other fruits of this kind. A little dry wine was allowed. Milk, butter, fats, farinaceous foods, sweets, disallowed.

For the first month, though fairly obedient for his dietary, he took his waters irregularly and did no exercise. His general state improved, but there was little diminution of weight. He bore badly electric light baths, feeling faint; but with shorter ones, and at a lower temperature, was able to continue.

Girths and Weights.

Date.	Chest.	Waist.	Hips.	Weights.
	Cm.	Cm.	Cm.	Kilos.
June 24th ...	112	116	117	105
July 4th	112	113	117	105
July 25th ...	109	105	113	101
September 8th...	104	106	107	95

The result in general health was remarkable; he has gained all his elasticity of movements, his mental activity and promptness, and describes himself as feeling much younger. His circulation is better, his blood pressure has fallen 5 mm.; his pulse is now 48, but strong and vigorous.

The urine analysis of September 6th is a curious study, but is, I believe, partly due to the large amount of animal food he was taking.

I have not given any example of a large number of cases of renal calculus and other renal and bladder troubles. These cases usually show marked improvement, and often their symptoms disappear for years or entirely, whilst others only show temporary advantage. I do not consider that these cases should be reported till two or three years after manifestations have disappeared.

Chronic nephritis and arterio-sclerosis are two groups of maladies that show marked improvement. Professor Huchard, who has devoted so much attention to arterio-sclerosis and subsequent heart failure, sends many dozens of patients here, with marked advantage. He and others who hold the toxi-alimentary view as to the main causation of that disease explain the action of the waters as being what I will call *vehicular*, or, in other words, their flushing effect. I quite agree that is an important element of their eliminating mechanism, but I think that there are two others that apply to both kidney and arterial degeneration. First, these non-chloride bearing waters lixiviate the excess of that salt out of the system in a dilute form, and by so relieving the kidneys of a heavy secretory work allow them time and energy to expel the toxic substances that their excessive chloride work prevented them from performing. In the next place the assimilable lime salts, to which so much attention has been drawn of late, may also take a therapeutic share in the effect.

Of neurasthenia I have always personally held the toxaemic view, and in all the cases of that disease treated by these waters I have had unfailing success. The group of ailments which we call neurasthenia is so polymorphous and requires such a long probation time to be declared as cured, that they are difficult to give striking examples of. This is all the more so that in most cases beyond the nervous and mental instability there are other organic disturbances requiring accessory treatment, and then the problem of which did the work becomes a very involved one. Such diseases as so-called gouty bronchitis as well as asthma, obviously two toxaemic diseases, show remarkable improvement and often cure, but here again the probation period should be not less than a year.

During several years' practice I have had a few young epileptics who came to accompany their parents. I was asked whether the cure would do them good, to which I replied that unquestionably for their general health it would be. In three cases my astonishment was great at seeing their fits diminish in number and disappear without bromides; in two others this drug became much more effective. In several other cases only slight improvement accrued.

What is the meaning of this? Is it due to the removal of toxic substances, to the presence of which many authors attribute the epilepsy, or is it due to the lixiviation of the sodium chloride, which Vidal and others have shown to bear some relation to these explosive motor storms?

I am sorry that the few opportunities of observing this disease at Vittel prevents any useful study of the effect of the cure in these cases. It would be well worth the while to send any such cases which might open up a valuable method of treatment for this troublesome disease.

UNDER the will of the late Baron Schroder, head of the banking firm of J. H. Schroder and Sons, Leadenhall Street, the German Hospital, Dalston, receives a bequest of £10,000.

SCARLATINA MALIGNA.

By ARNOLD GREGORY, M.R.C.S., L.R.C.P.,
LONGSIGHT, MANCHESTER.

THE malignant or toxic form of scarlet fever is seldom met with nowadays, and a perusal of the literature in which it is described has convinced me that cases, such as came under my notice, are sufficiently rare to justify their publication. They occurred in the same family, and most of the other members suffered more or less severely from scarlet fever. The family consisted of seven children, with father and mother, who lived in a cottage in Selby. They were not robust, but much of the ordinary type met with in the working class districts of any town. The father and mother, both of whom nursed the children, escaped, as did also the eldest brother, who lodged outside; and a woman who assisted in the nursing was also unaffected. The remaining six children all suffered from scarlet fever, four of them in a severe form, three from the malignant type.

I was called on August 29th, 1905, to see the youngest child, Fred. T., aged 2 years. The illness had commenced two days previously, and I found him with mild degree of fever, slight sore throat, and a papular rash on the abdomen and limbs. The pyrexia lasted several days; some glandular enlargement developed in the neck, and later the tongue appeared somewhat to resemble the "strawberry" type. Improvement took place slowly with a considerable degree of anaemia and the development of numerous petechiae at the end of the third week. He eventually recovered completely. No strict isolation was carried out, as the diagnosis of scarlatina was not made until further developments made it quite clear.

On the evening of September 3rd Stanley T., aged 9 years, commenced suddenly with vomiting, abdominal pain, and diarrhoea. Twenty-four hours later, when I first saw him, he was acutely ill. The temperature was 104°, the pulse very rapid and feeble; there was great delirium; the tongue was thickly coated; urine and faeces, which were yellowish, watery, very frequent, and offensive, were passed under him. Death took place twenty-four hours later—forty-eight hours after the onset—without any rash being visible.

On the evening of September 4th Frank T., aged 14, began similarly with vomiting, diarrhoea, and great delirium. The tongue, at first thickly coated, became dry and very red and raw. On September 8th a typical scarlatinal rash appeared on the front of the chest, and on the following day it had spread to the abdomen. Melaena was also noted. The mouth remained very sore for long. The patient was so extremely ill when I first saw him that recovery seemed impossible. Contrary to expectations, however, he gradually improved and made a good recovery, desquamation occurring as usual.

Thomas T., aged 11, fell ill on September 5th, about mid-day. The onset, as in the two previous cases, was sudden, and the boy was prostrated and extremely ill from the start, with vomiting, abdominal pain, profuse diarrhoea, violent delirium, and high fever. The tongue, at first thickly coated, quickly became red and dry. The patient seemed absolutely overwhelmed by the poison, and succumbed on September 7th, after about thirty-eight hours' illness, no rash having appeared.

On September 11th, Beatrice Alice T., aged 16, commenced more typically with headache, vomiting, sore throat, and diarrhoea. The temperature was 102.4° when I first saw her, and a slight rash was visible on the chest; the tonsils and fauces were inflamed. The case ran rather a mild course, with desquamation.

Grace T. was the last to suffer. She had a fairly severe attack. Vomiting, diarrhoea, and a slight rash occurred in her case; after the subsidence of the diarrhoea the illness ran a fairly normal course.

Although the house contained several rooms, proper isolation was impossible. Stanley, Frank, and Thomas were attacked so suddenly and with such intensity, and when I first saw them they were so dangerously ill, that removal even to another room was not to be thought of, and they had to be nursed in the rooms in which they were at the time of onset. At that period, too, there was no hospital for infectious diseases in the neighbourhood to which the others, who were less severely affected, could be removed. The nursing, always unsatisfactory in infectious diseases when the services of properly trained nurses cannot be procured, had to be performed under most disadvantageous conditions.

Henoch, in his lectures on diseases of children, published in 1889, remarks that few medical men have not occasionally met with cases of malignant scarlet fever which have succumbed within ten or twelve hours from the commencement of the illness. The published statements of medical men in this country—at any rate, in recent years—do not bear out this view, but it must not be

forgotten that there is a tendency for the type of scarlet fever to become milder.

Dr. Foord Caiger, in his article on scarlet fever in *Allbutt's System of Medicine*, states that in London malignant scarlet fever is very rare. On the other hand, Dr. Claude Buchanan Ker points out that toxic cases formed approximately 0.6 per cent. of the total cases of scarlet fever admitted recently into the wards of the Edinburgh City Hospital. As, however, he includes in these statistics cases which die as late as the fifth day after admission, it seems probable that the majority are not of the same degree of malignancy as the cases already described. So far as the proportion of malignant to the total number of cases of scarlet fever is concerned the statistics of hospitals for infectious diseases are of little value, for of the most toxic cases many must succumb before it is possible to make the diagnosis and take steps to have them removed, while many others must be too ill to permit of their removal.

Dr. Ker* describes three varieties of toxic scarlet fever:

1. The fulminant type is very rare. Patients die with extreme rapidity, usually within twenty-four hours from the onset; cases are said to have occurred in which death resulted after a few minutes' illness. The attack commences very acutely and suddenly with intense headache, persistent vomiting, and profuse diarrhoea. The temperature is often high at first, perhaps sinking below normal in the later stages. The rash is absent, having scarcely time to make its appearance.

2. The ataxic form is not quite so severe as the fulminant, but in other respects is similar. Vomiting, diarrhoea, and delirium are severe, and the temperature keeps high. The rash appears late, or is atypical in character and distribution. The patient succumbs in from two to four days.

3. In the adynamic type the heart and circulatory symptoms are more prominent than the nervous. In this form also both vomiting and diarrhoea may be severe. The pyrexia is moderate in degree, and the rash may be well marked and possibly petechial. Death usually takes place on the fourth or fifth day.

In the forms just described the case is malignant from the beginning, but in other cases malignancy supervenes on an apparently simple attack.

Both of my cases which ended fatally belong to the first rather than the second group, while the case which recovered—and recovery is quite the exception—presented features more characteristic of the ataxic than the adynamic form.

It is undoubtedly true that in scarlet fever family susceptibility plays a part which is not evident in the other acute exanthemata. This fact is well illustrated in the series of cases narrated. Henoch, in the lectures previously referred to, remarks that "striking to me appeared the fact, noted undoubtedly by many other physicians, that if scarlet fever breaks out in a family and one of the children dies of the malignant form, very frequently also a second and a third child are taken off under similar conditions, and in this way whole families die out." It is worthy of note that in my cases the three patients so severely affected were all boys, who were nearest of age to one another, and were attacked with most startling suddenness on successive days. The child first affected, who evidently spread the infection, suffered from a mild form of the disease. It seems most probable, therefore, that the infection was not of great virulence but rather that the older boys possessed very slight powers of resistance, and were at once overwhelmed.

After puberty the susceptibility to infection diminishes. This fact also is well demonstrated in this series of cases. All the children who came into contact with the disease suffered, and most of them in a severe degree, while the mother and father and the nurse all escaped, in spite of the fact that the whole house was infected, and that they must have been constantly in the closest possible contact with the infection for many weeks.

Among other points of interest may be noted the late appearance of the rash in Frank's case. His illness commenced on September 4th, and it was not till September 8th that the rash appeared. Till then the nature and cause of the illnesses had not been clear. The diagnosis of scarlatina had been excluded when Fred's illness commenced, and ten days elapsed before the nature of the mysterious sequence of cases was made manifest, both deaths having occurred several days before. Most authorities agree that a definite diagnosis of scarlet fever is almost impossible before the rash appears. When the first toxic case was seen, ptomaine poisoning was at first suspected, and the help of the medical officer of health was sought. The absence of any source of such poisoning, and the occurrence of the other two cases on successive days sufficed to negative this condition.

It is only fair to say that I had had then only a small experience of scarlet fever. On looking back I feel that the first case should at least have been regarded with suspicion, and promptly isolated.

I desire to tender my thanks to Dr. G. D. Todd, of Selby, whose assistant I was at the time, for permission to publish the cases.

* In his textbook on *Infectious Diseases*.

RECURRENT MONSTRIPARITY.

BY

E. NAPIER BURNETT, M.D., M.R.C.P.ED., F.R.C.S.ED.,

NEWCASTLE-ON-TYNE.

MRS. G., aged 35, a strong, healthy woman, gave birth to a full-time female child having a large cephalocele presenting from the vertex. The first pregnancy went to term, when a normal male child was born. The second pregnancy ended in abortion at the end of the third month; the fetus was anencephalic. The third pregnancy ended in abortion at the fifth month; the fetus (male) was anencephalic. The fourth pregnancy concluded at term, and is the subject of the present note.

On May 20th, 1910, when in her thirty-eighth week of pregnancy, the patient had a slight uterine bleeding which lasted a few hours. On vaginal examination no placenta could be felt, and the haemorrhage ceased with rest in bed.

The first stage of labour was somewhat protracted, the presenting part being high up and difficult to reach. The membranes could be felt as if being pushed to one side of the os by the presenting part, and on their being ruptured the presenting part progressed with each pain.

The second stage was delayed, no further progress being noticed, although the pains were vigorous.

I was asked to see the case in consultation. After the patient was anaesthetized and the bladder emptied I found it impossible to make out the nature of the presentation—it was a large soft rounded mass, the size of a fetal head.

At first I suspected the case to be one of ovarian dermoid obstructing labour, but the abdominal examination did not support this view. With the whole hand in the vagina I was able, on getting behind the mass, to recognize a vertex presentation with the tumour attached to it. Labour being still delayed, I incised the presenting mass and emptied out a large quantity of brain tissue, which showed both cerebral and cerebellar structure within the sac; the walls were ¾ in. in thickness. My fingers could now reach the cranial vault, and through an opening in the vertex I could insert three fingers into what appeared a normal cranial cavity containing brain tissue. There was no evidence of hydrocephalus either in the supernumerary cerebral structure or within the cranium. The labour terminated as a difficult forceps case.

The child was of female sex, with very large shoulders and short neck. The eyes were protruding and the nose flattened. There was very little liquor amnii, otherwise there was no associated malformation. The child lived about half an hour after delivery.

The third stage was completed normally, the placenta and membranes showed nothing unusual and there was no evidence of any adherent amnion.

The cephalocele was situate in the usual position of such tumours—namely in the mid-line in the region of the posterior fontanelle; the parietal bones were widely separated as if the two fontanelles were one.

Cephaloceles are comparatively rare, much more so than the anencephalic fetus. Ballantyne quotes Trélat as having had three cases in 12,900 labours, and in his own series of 325 specimens of antenatal deformity there were only eight cases of cephalocele, in contrast with forty-six of anencephaly.

There was nothing in the mental or physical condition of the patient throughout the whole of pregnancy to lend any support to the theories of external or internal maternal traumatisms.

Morgagni's theory, which seeks to account for these cephaloceles as being due to increased intracranial tension, especially in the form of hydrocephalus, seems every now and again to take on a fresh wave of popularity with the profession. In this case there was no evidence of such causation.

Examination of the specimen shows that it was of the nature of an accessory brain formation, lying outside, and distinct from, the intracranial cerebral tissue. Ballantyne[1] observes that

> we must not think of intracranial parts being pushed out at cranial apertures and so becoming extracranial; we must imagine parts of the anlage of the brain (that is, the cerebral vesicles and the undifferentiated membranes) lying originally outside what is to be the cranium and developing in their ectopic position: if it be asked what is the cause of the accessory part, we have no satisfactory answer, but the idea of a purely germinal (pre-embryonic) factor suggests itself.

A further interesting feature to be noted is the deficiency of brain tissue (anencephaly) in the two previous fetuses, and in the present case Nature seems to have gone to the other extreme in providing cerebral tissue much in excess of the normal.

REFERENCE.

[1] Ballantyne, *Antenatal Pathology and Hygiene*, vol. ii, 1904, p. 359.

TURPENTINE ENEMATA IN THE TREATMENT OF ENTERIC FEVER.

BY W. J. J. ARNOLD, M.B., B.CH. R.U.I.,
CIVIL SURGEON, ST. HELENA.

IT is probably not incorrect to say that none of the various methods of treatment have hitherto been successful in definitely controlling the course or limiting the duration of enteric fever.

The supreme importance of early recognition of the disease, the value of skilled nursing, regulation of diet, and attention to oral hygiene, must be accepted as first principles. In the further treatment, a measure employed at the Civil Hospital, St. Helena, during the past four or five years has resulted in a distinct shortening of the average duration of illness, and in a remarkable amelioration of all the symptoms. This particular measure consists in the administration, by the bowel, of turpentine and olive oil *from the first day of treatment*, and its regular use at stated intervals until the temperature has been normal for at least ten days. When the case first comes under observation, an enema of turpentine ʒj and olive oil Oj is given by a funnel and tube; and, the foot of the bed being well raised, the emulsion is allowed to find its way slowly up the bowel. On the next day, or the day after, the same quantities are repeated. In most instances the amount of turpentine may then be reduced to ʒss with olive oil ʒxv; this is administered on alternate days throughout the whole course of the disease, and continued until convalescence is fairly established.

A preliminary thorough cleansing of the bowel by a dose, or preferably small divided doses, of calomel, followed by castor oil, prepares the ground for the action of turpentine. The dose may be repeated more than once if necessary, alternating with the enemata. The average intestinal tract contains an enormous amount of toxic matter, and after this has been got rid of it should not be permitted to reaccumulate. The turpentine and olive oil effectually prevent any accumulation. Under the influence of turpentine abdominal fullness is perceptibly reduced, and very soon the abdomen presents a hollow surface, especially in the region of the iliac fossae and hepatic and splenic flexures. It should be our aim to maintain this condition. With such physical signs we may be sure that bacillary activity and toxin manufacture is at its minimum, and this opinion is confirmed by the entire absence of unfavourable symptoms. Headache is never complained of after the second day; the tongue cleans early and remains moist, and patients, as a rule, express themselves as feeling quite well, their most serious trouble being an early desire for "something to eat."

It is very rare to meet with diarrhoea in the type of enteric occurring here. In an epidemic amongst troops stationed in St. Helena in 1902 constipation was the rule. At that time a simple enema of soap and water was given every other day; quinine, gr. ij, in solution was given by the mouth every three hours. Delirium was frequently present, and in over a hundred cases the mortality was about 10 per cent. I was then doing duty as a civil surgeon at the military hospital. Since I have used turpentine in the way described I have never once seen delirium in enteric fever, though formerly it was rather the rule than the exception amongst the island inhabitants. I have for many years invariably given quinine gr. ij or gr. iij, dissolved in hydrochloric acid, by the mouth, and believe firmly in its value both as a heart tonic and a bactericide. Amongst the last 30 cases treated as I have outlined there was one death.

The patient was a boy aged 17, one of four cases which came from the same house. He had a sharp haemorrhage the day before his admission to hospital, when I first saw him, and had been on ordinary diet up till that time. His abdomen was much distended, and though he improved markedly in the interval, he died some days after from perforation.

I regret that calomel—though in small doses—was given in this case, and I would not advocate its use when the disease is thought to have gone beyond the first week.

The two charts are (1) of a brother and (2) a sister of this boy. The girl stated that she had only felt ill for two days before admission. She was very drowsy, and had severe headache, but next day this had disappeared. This chart (2) shows clearly the beneficial influence of turpentine in the course of the disease. The case promised from the initial condition to be a severe one; yet, though no sponging or antipyretics were used, the temperature came steadily down. Quinine was given in all cases, but in small doses is not an antipyretic.

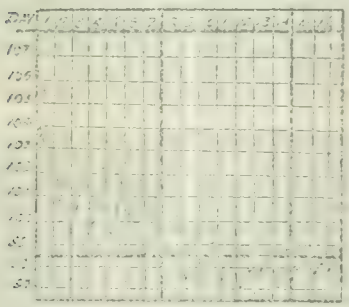


Chart 1.—G. T., aged 20. Ill some days before admission. A, On admission.

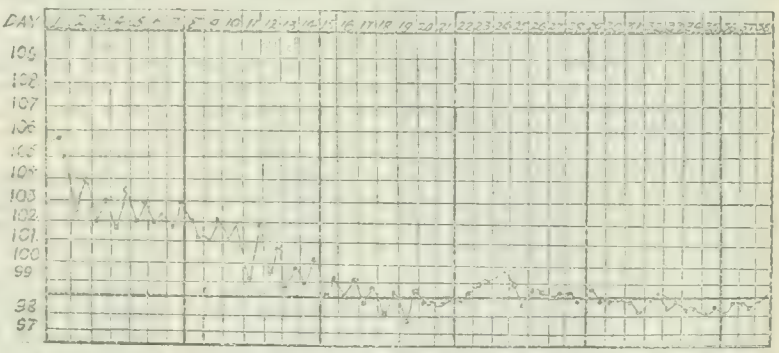


Chart 2.—S. T., aged 22. Ill two days before admission.

The longest duration of fever was seventeen days; many cases touched normal in a week from the commencement of treatment, with no subsequent rise, and the average was about twelve days. There were no relapses, and alcohol was not indicated in any instance.

Vaccines may some day supersede other treatment. Until then, I recommend a well-known drug, used on a new plan, the adoption of which enables one to treat the disease with a confidence other methods fail to impart.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A FATAL CASE OF HAEMOPHILIA.

A boy of 4 was brought to the hospital, and handed in by a drunken father without any history. Blood was running freely from the mouth, and when this was opened it was seen that there was a cut on the front of the right side of the tongue, about one-third of an inch long, and not very deep. I put a stitch in to draw the edges of the wound together, but as this did not stop the bleeding I had the child put under chloroform, and caught the cut ends of the bleeding vessel with pressure forceps. This seemed to stop the haemorrhage, but on putting two or three stitches in free oozing took place from the needle punctures. The bleeding went on uninterruptedly till a few hours before death, which took place about forty-eight hours after admission. We tried to get a continuous pressure on the tongue, but found this impossible on account of the resistance of the child. Calcium chloride in large doses was given. It was suggested that the carotid should be ligatured, but this was held to be inadmissible on account of the necessity of making a fresh wound, where there would be fresh haemorrhage to control.

We could not get much in the way of a history from the parents, but they said the two other children, both boys, were "bleeders." The child who died had had two previous attacks of severe haemorrhage, one from a tiny cut in the finger, which had nearly proved fatal.

This short note illustrates one or two well-known points in connexion with the disease. Thus about 90 per cent. of the cases occur in males, and over 50 per cent die before they reach 7 years of age. The tendency usually appears early in life, and the first haemorrhage rarely kills.

L. A. Parry, M.D., F.R.C.S., B.S.,
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ARTIFICIAL RESPIRATION IN NEW-BORN INFANTS.

The writer was rather sorry to see on page 1194 of the British Medical Journal, May 14th, 1910, a description, with figures, of the dirty and risky method introduced by Schultze in 1871; and he would like to call attention to a note on the subject by Dr. R. C. Buist, of Dundee, which appears in the *Transactions of the Edinburgh Obstetrical Society*, vol. xx, p. 77, 1894–5. Buist says, "Standing in a well-cleared space in the midst of a small room, whose other denizens were withdrawn into the corners, my feet planted well apart and arms extended, I taught the neonatus to perform a series of grand circles, while the meconium distributed itself in trajectories for which the room and its inmates, including the physician, formed a comprehensive recording surface. Another like experience reduced my traditional devotion to Schultze's method, until I found that all its characteristic advantages can be got in a less impressive way, of which, however, the onlookers cannot relate that 'The bairn was so bad 'at the doctor had to throw't o'er his head.'"

Apart from the inconvenience indicated, Schultze's method is not free from risk. When Ahlfeld himself was demonstrating it one day, with a presumably healthy infant, the child suddenly died. Runge recorded "Haemorrhages in Lung and Pleura and in Adrenals" (*Charité Ann.*, 1882). Winter described "Blood in Peritoneum. Fracture of Rib, Rupture of Liver, and Dislocation of Spleen (enlarged)" (*Deutsch. med. Woch.*, 1888, p. 595). Gebhard attributed a traumatic haematothorax to the method.[1] Buist himself records a fractured clavicle. The writer once produced paralysis of one arm which lasted for two years in a child upon which he did "Schultze" off and on for one and a half hours, and has several times seen the slippery infant shoot from the hands of midwives who were attempting this method. If all the accidents which have occurred had been recorded the Schultze method would probably have been given up long ago. Silvester's method has the disadvantage of employing two persons, for one is required to fix the feet while another moves the arms. Buist's own method he describes as follows:

I place the child face downward on the palm of my left hand with the head away from me. The upper and lower parts of the body and the limbs are thus dependent over the edges of the hand. I then roll the child over, and at the same time transfer



Fig. 1.—Buist's method—position of expiration.



Fig. 2.—Buist's method—position of inspiration.

it with a slight throw to my right hand in the dorsal position, the legs and arms being again dependent. It is then again retransferred to the left hand in the first position and the whole movement is repeated twelve to sixteen times a minute.

The efficiency of this method was proved to be very high by experiment with a dead cat in whose trachea was a cannula connected with a Marey's tambour, which recorded the inspiratory and expiratory movements on a revolving cylinder.

The writer has used and taught Buist's method for many years and has found it effective, clean, and free from risk. It is easily learnt and can be continued for a long time without causing fatigue. The attached photographs taken at St. Mary's Hospital, Manchester, well illustrate the method.

Manchester. W. E. Fothergill.

FOREIGN BODY IN INFANT'S THROAT.

On May 24th, 1910, a mother consulted me regarding her child, 11 weeks old. The history was that on May 1st, while the infant was being nursed by a sister aged 10 years, it suddenly had a fit of coughing and choking which lasted for over an hour. The child then fell asleep, but from this time the child had what the mother termed "something peculiar about its breathing," and sometimes vomited its food. She sought advice in the interval, and was told that the child was all right, as it could not live so long with a foreign body in the throat. A few days before I saw the child a shining object was noticed at the root of its tongue, which the mother thought was a "bubble."

On examining the throat the guard of a safety pin was just visible a little below the uvula, protruding from behind the tongue. While getting my instruments the pin disappeared; but on inverting the child and vigorously shaking it was again brought to view. I put the child lightly under chloroform, and with the aid of a pair of dressing forceps and the index finger of the opposite hand was able to extract a very rusted, open safety pin, a little over 1 in. in length. The pin formed a triangle, of which the apex was in the larynx. The base of this triangle was $\frac{7}{8}$ in. long. The point of the pin was on the left side.

Is it possible that this pin could have been in the child's throat for three weeks with so little discomfort? The little sister could give me no light, and all the mother knew was that she had had two similar pins in the child's clothing, one of which was lost some time before. I state the facts for what they are worth. The pin being open prevented its going further down; and for a child of this age to cough it up was out of the question. Moreover, the point may have been caught in the pharyngeal wall, as the glands in the left anterior triangle were enlarged. I have seen the child at intervals since, and it seems nothing the worse.

Accrington. George W. Knipe, M.B., B.Ch.

[1] *Zeits. f. Geb. u. Gyn.*, 1884, Bd. xxx, 2.

FRATERNAL PSEUDO-HYPERTROPHIC PARALYSIS.

WHEN I was working in Natal some three years ago I observed three interesting cases in the same family of pseudo-hypertrophic muscular paralysis with its sequelae. On September 1st, 1907, when I was medical officer at Stanger, an Indian asked me for medicine for a friend who had not walked for years, adding that the man had two brothers, one of whom could just walk and the other could not. He also remarked spontaneously that at one time their leg muscles had been very large, but at the same time of little use. Next day I made a special journey of about thirty miles to Glen Dale Valley.

CASE I.—Chinnia, aged about 22, said that for five years he had been unable to move from his seat, and that the disease had been coming on since childhood. He had an enormous goitre on both sides; the isthmus also was greatly enlarged, and there was a firm nodule, about the size of a marble, in its centre. This goitre, he said, gave him no trouble. Looking at him generally, he appeared to consist of nothing but skin and bone. He apparently had no deltoid or upper or lower arm muscles except in the slightest degree. His legs were flexed and fixed with the knees in front of the axillae, and looked more like sticks than limbs; apparently all the leg muscles were atrophied, the flexors of the knee less than the extensors. The muscles of his shoulder girdles were atrophied, so that when lifted up his body appeared to drop through his shoulders. The abdominal muscles in proportion were slightly affected. Reflexes were absent. Sensation and the functions of the bladder and rectum were normal. He could just waggle his feet a few inches forwards and backwards on the ground, could move his arms a few inches, and could grasp my hands feebly; the hand muscles were in a better condition than those elsewhere. He was very cheerful and perfectly sensible. The bones were very tender to percussion, especially near the joints, no doubt on account of the loss of muscular covering. There was tuberculosis of the left lung. He died a few weeks later.

CASE II.—Madara was the next brother, aged about 18, and he said he had not walked for three years, and that the disease had been advancing since he was an infant. His condition was practically the same as that of his brother, with perhaps a little less atrophy; there was no goitre.

CASE III.—Muthukarappau, the youngest brother, walked with his legs crossed one in front of the other and with a definite shuffle. He lay down with a rush, and when asked to get up again turned over on his stomach and performed the classical feat of climbing up himself. He had enormous calf muscles, exceedingly hard; his thighs also were large, but not in the same proportion. His arms were small and weak and his grasp feeble. There was no enlargement of the thyroid; reflexes were absent; sensation and the function of the bladder and rectum normal. He complained of nothing but his inability to get about easily, and, in fact, he was a very bright specimen of an Indian boy. There was marked tendency to foot-drop; the peronei showed no apparent wasting. The several neighbours round reiterated the statement that later on he would be just like his brothers, and that they were once like him.

I could obtain no history of any other members of the family being so afflicted. The father died some years before either from pneumonia or phthisis. The mother was quite healthy, and there had been no other children. I intended to go and see them again, but was unable, and I do not know what has since become of them.

CHARLES J. BATTLE, L.R.C.P., M.R.C.S.

Boksburg, Transvaal.

DISLOCATION OF THE NECK DURING SLEEP.

IN January, 1910, while in Nubia in connexion with the Archaeological Survey of that country, I was asked by a native to examine his son's neck, as it had recently become twisted and painful. The boy, about 8 years of age, had a very thick, short neck; his head was tilted to the right, and also rotated in the same direction. Any attempt to turn the head was accompanied by pain; the muscles on the left side of the back of the neck were extremely tender, and there was a definite lump, which I took to be contracted muscles, slightly to the left of the middle line. The father said the condition had lasted about two weeks. A liniment was given, with directions as to how to rub the tender part.

Soon after this episode I received the *Medical Review* (January), in which was an article on a paper by F. M. Sherman (*Journal of the American Medical Association*, June), entitled Dislocation of the Neck during Sleep. Sherman had seen altogether five cases of this condition, and suggested that some of the cases diagnosed as stiff neck may be examples of it.

About three weeks later I found the father and son waiting for me. The father said that the "medicine" was of no use, as he had rubbed it on every day, but with no effect. The boy was examined again, and I then remembered the article. The torsion of the neck was, if possible, more marked than previously, and the tender lump of muscles was still present, but on palpating deeply over this lump I thought I could feel some bony irregularity in the neighbourhood of the articular processes on the left side of the neck. I could not feel the spines of the cervical vertebrae at all, owing to the fatness of the neck, and also probably on account of the boy's age, but judged the displacement, if such it was, to be about the middle of the cervical series of vertebrae. The head was quite immovable, and the attempt to bring it into the middle line caused great pain. I explained to the father that perhaps one of the bones of the neck had got slightly out of place, and that it would be necessary to give the boy chloroform. He agreed, and on being asked if he knew how it might have happened, he replied in Arabic, "Who knows? perhaps it came while he was asleep."

Having ascertained that the boy had had no food for some hours, he was placed on a table in a tent, and when fully under the anaestbetic he was dragged to the end of the table so as to allow his head to hang over the edge. Four native sailors were then requisitioned to hold him, and, placing one foot against a leg of the table, I pulled strongly and steadily backwards, keeping the head still in the twisted position, and then rotated it into the middle line, as described in the article. The boy was pushed back on to the table, and it was then found that the lump had entirely disappeared in the neck, and that the head could be turned easily to the left. He was kept lying down for an hour to recover from the anaesthetic, and was seen again before he went home. He could then turn his head at will quite easily to either side without pain, and did not even complain of pain when the originally tender muscles were palpated.

DOUGLAS E. DERRY, M.B., Ch.B.,

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OEDEMA FROM CARDIAC DISEASE.

THE annexed photograph is a somewhat imperfect representation of the legs of a patient seen by me shortly before his death. The extent to which these legs were swollen would hardly perhaps be gathered from the picture. The left leg, which was the more swollen of the two, measured at its thickest part 33 in. in circumference, while the dorsal surface of the foot was so oedematous as almost to conceal the toes. Both legs were red and inflamed-looking. The patient died a few days after I first saw him, and meantime a large amount of fluid had oozed out of the tissues of his legs. He was a man, aged 32, who had been an imbecile from his birth, and when I saw him the oedema of the legs had been increasing steadily for some six months. It was localized to the legs, the rest of the body being entirely free. Its primary cause was cardiac disease, but a secondary cause of importance was that, owing to his mental condition, the patient could not be persuaded to lie down. Hence, any fluid with which the heart was unable to deal gravitated into his legs; this accounts for the immense swelling in this locality and the absence of dropsy elsewhere. I have to thank Dr. Duncan Clay of Brockley, in whose charge the patient was, for permission to put on record this curious outcome of combined cardiac and mental disease.



F. R. PROCTOR-SIMS, M.R.C.S., L.R.C.P.

London, S.W.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ENGLISH PRESBYTERIAN MISSION HOSPITAL, SWATOW, CHINA.

(By G. DUNCAN WHYTE, M.B.Edin., D.T.M. and H.Cantab.)

IT is rare to meet with three cases such as those hereinafter described in the course of a single morning, but, to those familiar with conditions of work in the Far East, it will not seem so strange that this occurred in China and in a mission hospital.

1. *False Aneurysm.*

A man, aged about 25, received a bullet wound in the left side of the neck; the bullet had penetrated till it lay under the skin on the right side. Almost immediately after the accident a "soft swelling" formed on the right side of the neck, but under native treatment by local applications, internal remedies, and rest for three or four days this subsided, and he resumed his duties as a farmer. After a few days the swelling again became noticeable, and continued to increase in size, but he paid no attention to it. Three weeks later, when it had spread to the left side of the neck, he came to Swatow for advice.



Fig. 1.—A, Entrance of bullet; B, position of bullet.

On admission he was found to be suffering from an aneurysm. The photograph shows the general form of the swelling, as well as the position of the bullet, and of the scar of the entrance wound. The swelling exhibited well-marked expansile pulsation. The pulsation of the left carotid above the aneurysm was quite clearly marked, while on the right side it could only with difficulty be made out. One felt justified, therefore, in concluding that the bullet on entering had missed the carotid on the left side, but had lacerated the wall of the right carotid. The patient's too early resumption of work caused the freshly-formed cicatrix in the arterial wall to give way, with the results depicted.

The patient was unwilling to allow the aneurysm to be operated upon, but wished the bullet to be removed. This was successfully done by my colleague, Dr. Lyall, and the wound healed by first intention.

2. *Dextrocardia.*

This patient was a little girl, to whom my colleague's attention was originally directed on account of cyanosis of the ears, nose, and finger-tips. The first thing I noticed on examining her was the condition of dextrocardia, but auscultation revealed the presence of a patent ductus arteriosus.

In South China, where in hot weather fully 50 per cent. of the population are coatless, it should not be difficult for one to discover cases of dextrocardia, yet in spite of the fact that I have been especially interested in this condition ever since my student days, and have looked for the apex beat on every exposed chest I have seen for six years in China, this is the first time I have met with this condition.

It is interesting to note a further singularity in this case. It is not a case of "transposition of the viscera," but of dextrocardia. Cases I have seen at home both *intra vitam* and *post mortem* have shown transposition of all the viscera—spleen, liver, stomach all being reversed. In this case only the heart (and lungs?) were transposed. Carpenter[1] says of this condition: "Not only is it rare, but it must be viewed with suspicion, because the diagnosis has been made on some few occasions, and has not been confirmed by autopsy." Because of this "rarity" and "suspicion" I was glad to have my opinion confirmed not only by my colleague, but also by Drs. Morland and Mansell. The picture shows the cardiac and liver dullness, also the outline of stomach and spleen. The positions of the apex beat and of the area of maximum intensity of the murmur associated with the patent ductus arteriosus are also shown.



Fig. 2.—Dextrocardia.

3. *Macrodactyly.*

The photograph speaks for itself. At birth the toes were fused and somewhat enlarged but the fused toes have grown much more quickly than the rest of the foot.



Fig. 3.—Macrodactyly.

Similar cases of macrodactyly have been met with before in this region; some have been operated upon, but this patient refused operation.

Reports of Societies.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

W. WARD-SMITH, F.R.C.S., President, in the Chair.

Tuesday, June 21st, 1910.

MR. PHILLIPS showed an anencephalic monster. Dr. S. LODGE reported a case of *Suppuration in the middle ear*, complicated by extradural abscess and thrombosis of the lateral sinus. The patient had had a discharge from the right ear for two years, and at the end of May had influenza. Since then he had been drowsy and irritable and had daily rigors. The ear discharged profusely, but there was no tenderness over the mastoid or jugular vein. The mastoid was opened and pus found; also from the lateral sinus. The middle cranial fossa was then explored, and found to contain an extradural abscess. The internal jugular vein was then exposed and divided; 40 c.cm. of antistreptococcus serum were then injected. The patient made steady progress to recovery. Mr. GOYDER, in a paper on the *Treatment of hare-lip*, said that the ordinary operation left much to be desired. A straight scar was to be avoided, since it was obvious that a hare-lip operation

[1] Wightman Lecture, BRITISH MEDICAL JOURNAL, October 16th, 1909.

had been performed. Almost any irregularity of the suture line was preferable to this. In all cases, even when the cleft was partial, particular attention was to be directed to the nostril, and the suture line in this region would be stronger if it did not correspond with that of the lip. Accurate apposition at the red margin of the lip was to be obtained, and allowance was to be made for subsequent contraction of the scar without, if possible, leaving an unsightly result at the time. Each case should be treated on its own merits, some modification of Owen's operation being perhaps the most generally applicable. The chief fault of most operations was that the free edge of the upper lip was much shorter than that of the lower. Much ingenuity was required to prevent this. The author had elaborated several methods for dealing with this difficulty, but time did not permit of their description.

Reviews.

TREATMENT OF FRACTURES BY MASSAGE AND MOVEMENT.

THE concise summary of the treatment of fractures by massage and movement,[1] in which LUCAS-CHAMPIONNIÈRE reviews his many previous publications on the subject, will be read with great interest both by the many already familiar with his method and his claims, and also by the even greater number who have been forced into uneasy disquiet by the revelations of radiography and the somewhat rude reflections of law-court statistics upon the efficiency of time honoured means of treating broken bones. To a remarkable degree the ideas for which the author has stood these twenty five years have gained sway. It cannot be said, however, that in its entirety, his method has been accepted by the surgical world. Of the paramount importance of early passive movements of the joints, and of preserving the nutrition of the muscles, there are not two opinions. Few will deny that a great many cases of fracture do not imperatively require rigid immobilization; many, perhaps most, surgeons acknowledge by their practice that impaction with a minimum of deformity is better left alone. Is it only because of their very general lack of personal familiarity with the technique of massage that they do not find their cases of severe deformity amenable to the soothing and relaxing influence of effleurage? If simple stroking movements of the facile hand have the potent analgesic influence, the swift quiescent effect upon contracted muscles that seems to be the case with Lucas-Championnière and his immediate pupils, how is it that half the world has not adopted the method with a whole heart? The surgical world was never more eager for a new thing. At least none can plead ignorance in extenuation any longer. Here, in three hours, with a minimum of trouble, one can roam the entire field of fractures and find instruction even in some detail. Two hundred and fifty pages suffice for history, theory, and practice of the method. It will be found, quaintly enough, that the author does not mean quite all he says. When he answers his own question as to what fractures are suited to his method by the laconic "all," he means "all with a good many exceptions." Then, of course, though he does not reduce his deformities with brutal violence and rivet his splints into rigidity, he does cajole his fragments into line, and he does support the injured part on a ghostly splint. Every reader of this book will find himself to some extent a convert in advance, and whatever the reservations, most readers will subscribe a great many of the tenets when they reluctantly lay down the volume.

Mr. ALBERT J. WALTON'S book on *Fractures and Separated Epiphyses*[2] is not one that would recommend itself to Lucas-Championnière, but it must be confessed that it affords an excellent account of actual practice in a large London hospital to-day. The author is fully conversant with the methods of the great French surgeon, and represents his views very fairly, but he relegates the exclusive use of mobilization and massage to the same extremist category he reserves for the exponents of unashamed universal operating. For students who are presenting themselves for examinations, and for those about to take up a resident post in a hospital, this is an excellent little book. The general remarks about fractures, their pathology, and their complications, are an echo of everyday teaching in the wards. The account of individual fractures is clear, concise, and adequate; there is just enough about prognosis, and the directions for treatment are sound. The lesions are well illustrated by good radiograms of cases under the care of members of the London Hospital staff. If anything is wanting, it is a little more detail about the preparation and application of plaster-of-Paris, gutta-percha, poroplastic, and other media for moulded apparatus. In a book that deals with separated epiphyses one might expect more than passing mention of the deformities likely to result after displacement of such an epiphysis as that at the lower end of the tibia. It would be easy to find a few points of disagreement with the author. For example, it surely cannot be seriously contended that it is a satisfactory plan to rely, for preventing the leg being pulled down the Liston long splint by the extension, on "the pressure of the end of the splint in the axilla," even if the body roller does take part of the stress. Such blemishes, however, are few and far between, and we can confidently predict that this book will be very popular with students. It should be mentioned that fractures of the skull and spine are not included in the text.

PROTOZOOLOGY.

IN the preface to his treatise on *Protozoology*[3] Professor CALKINS states that interest in the protozoa has of late centred mainly in the practical side, until, to many biologists and to most medical men, protozoology implies the science dealing with pathogenic protozoa. The author points out, however, that protozoology has a broader scope than this, and states it to be one purpose of his book, "to check, if possible, the limiting tendency, and to point out again the important part that the protozoa play in the problems of modern biology." After reading this statement the medical man may think that this is a book in which his special requirements receive little attention; but a glance at the list of contents shows that this is not the case, since of the ten chapters composing the entire book, the fifth deals with parasitism and the last five chapters with pathogenic protozoa solely. The first four chapters, on the other hand, are occupied with the discussion of the organization, activities, and general biology of protozoa, and so form a useful introduction to the current knowledge of these matters, making the reader acquainted with the significance and application of the terms used in the more special parts of the book.

The five chapters which Professor Calkins devotes to the pathogenic protozoa deal respectively with spirochaetes, trypanosomes, other pathogenic flagellates, haemosporidia, and rhizopoda. The spirochaetes are regarded as "an intermediate group between the bacteria and the protozoa, but leaning more toward the latter." The parasites of kala-azar and oriental sore are referred by the author to the genus *Herpetomonas*, under the specific names *H. donovani* and *H. tropica* respectively. The chapter dealing with the trypanosomes gives a general review, necessarily brief, of our knowledge of this important group of parasites. The author does not share in the scepticism which has grown up with regard to Schaudinn's famous researches upon the blood parasites of the little owl (*Athene noctua*), and more especially with regard to his conclusion that the halteridium and the trypanosome of this bird are two phases in the life-cycle of the same organism; but the statement that Schaudinn's work was "fully confirmed" by the brothers Sergent is hardly correct. Nevertheless, Calkins does not go so far in his conclusions as the neo Schaudinnian school, and considers it premature to separate the haemosporidia from the sporozoa in order to place them amongst the flagellata.

[1] *Précis du traitement des fractures par le massage et la mobilisation* Par le Dr. Just Lucas-Championnière. Paris: G. Steinheil. 1910. (Cr. 8vo, pp. 271. Fr. 3.50.)

[2] *Fractures and Separated Epiphyses.* By Albert J. Walton, Surgical Registrar, London Hospital. London: E. Arnold. 1910. (Demy 8vo, pp. 238; illustrations 101; 10s. 6d.)

[3] *Protozoology.* By G. N. Calkins, Ph.D., Professor of Protozoology in Columbia University, New York. New York and Philadelphia: Lea and Febiger; and London: Baillière, Tindall, and Cox. 1909. (Roy. 8vo, pp. 349; 125 text figs., 4 coloured plates. 15s.)

Professor Calkins's chapter on the pathogenic haemosporidia gives an account of the genus *Babesia* (*Piroplasma*) and of the malarial parasites, the latter illustrated by three coloured plates. The author favours the view of Wilson and Chowning that Rocky Mountain spotted fever is due to an organism named by these investigators *Piroplasma hominis*, and believed to be transmitted by ticks. Under the heading Rhizopoda, first the amoebae and their relation to dysentery are discussed, then the problematic parasites of rabies ("*Neuroryctes hydrophobiae*") and small-pox ("*Cytoryctes variolae*"). Much interest attaches to the account given of these parasites, of which the nature and even the existence is in dispute. Calkins formerly studied the small-pox problem in great detail in collaboration with Councilman and others, and described as phases of a parasitic life-cycle certain cell enclosures which others have regarded as of secondary nature, mere products of the degeneration of the cells and their nuclei. A coloured plate and a number of text figures are given in illustration of these bodies, and the author states his strong conviction that both the Negri bodies (*Neuroryctes*) and the Guarnieri bodies (*Cytoryctes*) are of protozoan nature and show affinities with *Entamoeba* and other rhizopods. The chapter on parasitism (Chapter V), after a general account of protozoan parasites, pathogenic or otherwise, and their life-cycles, concludes with a discussion of the cancer problem in relation to protozoa, with figures of cell inclusions in human cancer. The author is of opinion that while the cell inclusions in question "cannot be interpreted as organisms, it does not follow that real organisms are not present"; and considers that there is no reason for abandoning the hypothesis of the parasitic causation of cancer, not at least until we know more about the still invisible organisms of yellow fever and many other diseases.

Enough has been said to show that medical men will find plenty to interest and instruct them in Professor Calkins's book, though written mainly from a zoological standpoint. The numerous illustrations are very well drawn and executed, and constitute a very useful and attractive feature of the book.

Dr. F. O. STOHR went to the Katanga as Assistant Medical Officer to the Union Minière, and on the expiration of his contract undertook some travelling and observing on his own account, the results of which are described in his *Notes on Human Trypanosomiasis in Katanga*.[4] He gives two maps to indicate as accurately as possible in the present state of knowledge the regions free from, and infested with, tsetse flies, and, in the latter case, the areas in which sleeping sickness is endemic, and those in which the disease has not yet appeared. Unfortunately the greater part of the country has not been surveyed from this point of view, and the author comments on the false economy which has prevented the proper mapping of the fly and the disease, and complains that the Administration has allowed sleeping sickness to spread unchecked. In addition to the survey of the distribution of the tsetse fly and of sleeping sickness, a number of interesting data are given concerning the habits of the fly and the symptoms and diagnosis of the disease. The apathy of the natives, even when infected, makes it very difficult to get patients, or to carry out preventive measures except under compulsion. It is remarked, with regard to gland palpation, that trypanosomes are often to be found in glands which, without puncture, would not even be marked as doubtful. In one case in which a young woman had on one side a very hard "bean," on the other a very elastic "pea," the bean proved to be an old fibrous gland without cells in the juice, while "the pea had trypanosomes half a dozen to the field"; the blood in this case showed no trypanosomes. Auto-agglutination of the blood was not found in patients seemingly healthy, but in gland juice containing trypanosomes mixed with blood, clumping of the red cells was sometimes observed when blood drawn from the finger showed the normal arrangement of the corpuscles. The clumping is stated not to be noticeable unless trypanosomes are easily found, hence the phenomenon is not likely to assist diagnosis. The author is to be commended for the energy which has prompted him to undertake an exploration of this kind without aid or remuneration, and his investigations have yielded a number of interesting and important results.

[4] *Notes on Human Trypanosomiasis in Katanga*. By F. O. Stohr, M.B., B.Ch.Oxon. Published privately. (Demy 4to, 16 pp.; 2 maps.)

HYGIENE IN THE WEST INDIES.

THE reputation of Sir RUBERT BOYCE as an expert in pathology and as one of the protagonists in the crusade against insect-borne disease in the tropics, invests his last book, *Health Progress and Administration in the West Indies*[5] with a special interest. We may say at once that a cordial reception is sure to await this captivating volume, not only on account of its author's eminence, but also because of its own inherent worth. It is the outcome of a visit paid to the West Indies in 1909, and records the progress of sanitation and hygienic administration in many of those important islands. The story which the author unfolds constitutes a brilliant testimony to the efficacy of the preventive methods which have been adopted as the outcome of the scientific investigations of many well-known pioneers in the domain of tropical disease, and relates triumphs in the battle against sickness and death which are unsurpassed in the history of medicine.

Sir Rubert Boyce may well say that "there is a strong flavour of romance and fascination about the history of yellow fever in the West Indies and on the Spanish Main," because, whereas in former times the disease swept off within a few weeks multitudes of men, women, and children living in the area of its prevalence, it is now possible, by suitable measures, to lessen its ravages to such an extent that it is legitimate to-day to regard yellow fever as a preventable and languishing malady. Yellow fever depends wholly upon the intervention of the *Stegomyia*, just as malaria can only be propagated by the intermediary of the *Anopheles*. The complete triumph of man over insect pests, not only in the West Indies but throughout all tropical countries, would make them ultimately safe and healthy for human habitation by freeing them from the risks of epidemic diseases which it is now certain are conveyed by no miasmatic or climatic influence, but by the bloodthirsty habits of germ-carrying insects. Sir Rubert Boyce gives detailed accounts of the means taken to deal effectively both with these undesirable insects and their larvae in Barbados, Grenada, St. Vincent, St. Lucia, Trinidad, British Guiana, Nassau, and British Honduras, and particularly directs attention to some of the factors which have conspicuously contributed to making the West Indies healthier. He refers to the difficulties that have been encountered in surmounting prejudices which still maintain a strong hold on the minds of many local authorities; he calls attention to the uncertainty that often attends the diagnosis of early and mild cases; he submits convincing evidence to prove that yellow fever, like all other communicable diseases, follows the line of trade routes; and he advocates the necessity of disseminating knowledge of the method of transmission of insect-borne diseases by teaching in the schools, organizing public lectures and demonstrations, invoking the assistance of the press, and generally using every legitimate means for bringing home to the various classes of society the principles of the modern doctrines of sanitation and the need for the destruction of mosquitos and other germ-carriers. In Chapter IX the author gives a graphic account of the outbreak of yellow fever in Barbados in 1907–1909, which he investigated on the spot. As regards the *Stegomyia calopus*, which is the carrier of yellow fever, he points out that, as compared with the malarial-carrying *Anopheles*, it is essentially a town and not a marsh dweller. It breeds in the clean water tanks in the yards of houses, and is therefore often spoken of as the "cistern mosquito." It also breeds in tins, shells, or other receptacles capable of holding water, such as are commonly found in rubbish heaps, badly-kept yards, etc., and its larvae may even make their appearance in flower glasses in dwelling-rooms

[5] *Health Progress and Administration in the West Indies*. By Sir Rubert W. Boyce, M.B., F.R.S., Professor of Pathology, University of Liverpool; Dean of the Liverpool School of Tropical Medicine, etc. London: John Murray. 1910. (Med. 8vo, pp. 343. Illustrations 47; map 1; appendices 11; 10s. 6d.)

if the water in them is allowed to remain undisturbed for a few days.

From beginning to end the book is full of interest, and its perusal may be warmly commended, not only to members of the medical profession, but to all who, for purposes of business or pleasure find themselves from time to time called upon to visit the tropical outposts of the Empire. It is conspicuous, from the bookman's point of view, for the attractiveness of its style, the beauty of its illustrations, and the skill which weaves into the texture of a solemn scientific record the golden thread of a fairy tale.

NOTES ON BOOKS.

THE eleventh edition of a little book, entitled *Sanitation and Health*,[6] by Lieutenant-General Sir REGINALD CLARE HART, V.C., K.C.B., K.C.V.O., R.E., is written in simple language, and points out how illnesses may be prevented by a little thought and attention on the part of individuals. It shows that many diseases are due to putrefaction produced by microbes, and how easily they may be prevented by the exercise of a little care. The best way of dealing with various kinds of poisoning is described, and the proper first aid to render in cases of loss of consciousness. Stress is laid on the importance of efficient ventilation and the duty of seeing that sanitary arrangements are up to date; and several pages are devoted to simple methods of determining the wholesomeness of the more important foods.

To his or her novel, *The Crimson Gate*,[7] its author, G. COLMORE, has given the form of an autobiography, the principal and practically only character being a woman whose doings, thoughts, and experiences are traced through childhood, girlhood, motherhood and widowhood, up to the dawn of a second marriage with her first sweetheart. She is a wearisome young woman at times, but, on the whole, her account of herself is worth perusing, since she is made to represent the evolution of a type of character very common among the less unintelligent supporters of antivivisection and anti-most other-thing societies. She begins life as one of those children who are the despair of such "grown-ups" as are insufficiently sympathetic to appreciate the tumult aroused in them by anything susceptible of interpretation as injustice towards either human beings or animals. She grows up a self-willed but rather weak-willed young woman, given to introspection, but incapable of looking far beyond the surface of anything; fond of her friends, but quite ready to condemn them on very little evidence, and ready to tilt at any one who does not guess in which direction her latest sympathies lie. As time goes on, her tendencies accentuate, and the fashion in which she confuses names with things is cleverly brought out. Though she might easily have done so had she wished, she never visits a laboratory to see what "vivisection" really means, and how far most "operations" interfere with the animals' well-being. Still less does she stop to consider that if animals are never to be used for human purposes, she must eat no food in the production of which they have played a part, neither drive nor ride, and refuse to accept medical treatment of any kind, since it is all more or less directly based on animal experimentation. Despite her experience as a nurse, she does not remember that every form of treatment, to whomever applied, be it merely the administration of a dose of castor oil to a baby, is an experiment so far as the individual is concerned, and she writes down everything which by any conceivable use of language can be called an experiment as something necessarily brutal, unjust, and wrong. Anybody who takes a more normal view is, however normal their life, suffering from a species of mental disorder. Specially lifelike is the way in which the heroine is made to accept as necessarily true anything about vivisection appearing in papers like the *Morning Leader* and its congeners.

The title of *Wrack*,[8] applied by Mr. DRAKE to his novel, is appropriate in that its hero is a seafarer and a wanderer. But he is by no means, as might possibly be suggested by the title, a failure in life from causes outside his own control, nor yet a "waster," to use a modern expressive term. On the contrary, despite a mid-career accident which, by setting up a somewhat dubious disease of the knee, forced him to abandon his early plans, he achieves the position of a member of Parliament. Lest any one should be disposed to sniff at this evidence of success in life, it should be added that he is elected in his absence and on the strength of a novel and other writings which serve to draw attention to the hardships undergone by seamen physically and the unfairness of their position politically. He positively manages to persuade people that if a man's occupation prevent him from taking an active part in politics and make it difficult for him to attend when votes are to be lodged, that is a reason not for depriving him of a vote altogether, but for making arrangements really fitted to his case. In respect of the main theme of the book, it may be said that if Rudyard Kipling painted the poetry of the marine engine, Mr. Drake has painted its prose. Medical men who, by having been to sea as ship surgeons, have had greater opportunities of seeing things than other passengers will probably agree that he has done it exceedingly well, and that on that account the book is well worth reading.

[6] *Sanitation and Health.* By Lieutenant-General Sir Reginald Clare Hart, V.C., K.C.B., K.C.V.O., R.E. London: William Clowes and Sons, Limited. 1910. (Demy 16mo, pp. 58; 3 illustrations. 6d.)

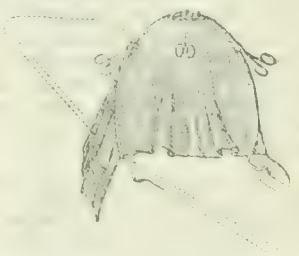
[7] *The Crimson Gate.* By G. Colmore. London: Stanley Paul and Co. (Post 8vo, pp. 320. 6s.)

[8] *Wrack.* By M. Drake. London: Duckworth and Co. 1910. (Post 8vo, pp. 331. 6s.)

MEDICAL AND SURGICAL APPLIANCES.

An Operating Screen.

THE sketch shows an operating screen introduced by Mr. EDWIN MAYNARD, F.R.C.S., while at the Bristol General Hospital; it is intended to shut off operation areas from contamination by the patient's expirations or apparatus used in maintaining anaesthesia. It can be used for operating on any site below the chin. It consists of a piece of spring steel of circular section and of ¾ in. diameter, shaped as shown.



It fixes itself to an operating table with rounded edges, and holds firmly in position by virtue of its shape and resiliency. A sterilized operating sheet of thick honeycomb towelling thrown over the screen and the operating table below it is held in place on the screen by two or three pairs of Lane's tissue forceps, and the central slit in the operating sheet exposes only the operation area. It is made by Messrs. Down Bros.

Abdominal Binder.

We have received from Messrs. Acle and Co., 1, Hustlergate, Bradford, a new abdominal belt made by them. It is closely fitted to the body by tapes and buttons, and contains no steel or bone busks. It is prevented from riding up by strips passing round the thighs, instead of the common indiarubber perineal bands. We have no doubt there are patients who will be much pleased with it.

MEDICINAL AND DIETETIC PREPARATIONS.

"Veda" Bread.

AN important place among predigested foods must be assigned to a bread, half the dry substance of which consists of soluble matter; such a bread is that supplied by the Veda Food Company, Limited (65, Castle Street, Edinburgh), as "Veda" bread, samples of which we have recently examined. This bread is of a brown colour, but shows no particles of bran or other tissue like an ordinary brown bread. It causes no irritation of the bowels. It is slightly sweetish, light and porous, free from pastiness though a little sticky, and highly palatable; it remains moist and fresh after several days' keeping, even when cut and exposed to the air. A portion of a loaf consisting of crust and crumb in the same proportions as in the whole loaf, was found to yield 48.8 per cent. of its dry weight to cold water; of this, 2.4 was found to be protein, leaving 46.4 per cent. for the soluble carbohydrates. Such a bread should be easy of assimilation and of considerable value in various conditions of impaired digestion. It has already won for itself the good opinion of several leading members of the profession.

POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

A council meeting of this association was held at 34, Copthall Avenue, E.C., on Thursday, July 14th. Dr. Balding was in the chair, and was congratulated by the members present on his recovery from his recent accident.

A notable instance of the inequitable manner in which district medical officers are frequently treated by the guardians came up for consideration. A member of the association had been notified by his board that it proposed to put on to his district, without additional remuneration, a portion of his colleague's, who had applied for an increase of salary on account of great increase of work. The guardians recognized the justice of this claim, but, instead of acceding to their officer's request, decided to relieve him at the expense of his colleague. The latter's work had also increased, but not in the same proportion, but he was now doing much more work than in former times, and his salary was the same as it had been during the last thirty years. The council advised an appeal to the Local Government Board if the redistribution were insisted upon, and resolved to use all the influence of the association in the member's behalf.

Agenda for Special Meeting.

The Council next considered the agenda for the special meeting of the association, arranged for Friday, July 29th, at 4 p.m., in the Council Chamber of the British Medical Association. After some discussion, it was decided that the time should be devoted to the following resolutions, the consideration of which was adjourned from the annual meeting at Halifax on July 1st to a subsequent meeting of the association:

1. That it is not desirable that there should be a "break-up" of the present Poor Law system. That proper reform of existing institutions would be better for the welfare of the sick poor and the good of the nation.

2. That any system in which *free* medical relief is given subject to no other condition than the *subsequent* recovery of the cost from all able to pay would be pauperizing to the nation and ruinous to the interests of all medical practitioners in poor districts.

3. That, except in urgent cases, some *test*, such as the present medical order, should be required of *all* applicants for State medical relief.

4. That there are no logical grounds for drawing any distinction between medical and other relief when granted by the State.

5. That the medical treatment of paupers, or State patients, by provident institutions is strongly to be condemned. That what is done for the State should be paid for by the State *at an equitable rate*. That the payments accepted at provident dispensaries in order to encourage individual thrift cannot form any sound basis for State payment for the medical charge of the destitute.

6. That a system of "part time" is better for the interests of the sick poor. That it is better for the latter to be attended by the same doctors as the rest of the community, rather than by officials appointed to attend only on the poor. That a system of "part time" medical officers lessens the distance that has to be traversed by applicants for medical relief, a matter of great importance in country areas.

7. That the Poor Law Medical Service, however it may be co-ordinated with the Sanitary Medical Service, should be kept separate from the latter.

The estate of the late Dr. Florence Nightingale Boyd, M.D., of whom an obituary notice appeared in our issue for June 25th, has been declared at the value of £19,008. In addition to a number of small legacies for various purposes and to several of her friends among women doctors, she bequeathed £100 to the New Hospital for Women, £50 to its Pathological Department, and £100 to the London School of Medicine for Women.

The International Food Reform Association has now published its second annual report. We gather that its objects are making satisfactory progress. A copy and list of the society's publications, which include books of recipes, can be obtained on application to the secretary, 178, St. Stephen's House, Westminster, in return for three penny stamps.

ACADEMIC COSTUMES.

Every one is aware that the term "academic costume" implies a kind of uniform worn on official occasions by members of certain learned bodies, including all universities, and most people are acquainted more or less accurately with the official costume of the owners of a particular status at some particular institution. But there can be few persons who, finding themselves in the midst of a heterogeneous assembly of academically attired individuals, would be prepared to designate the regiment and rank, so to speak, represented by each of the costumes to be seen.

Any one who professed his ability to do so would be a somewhat bold person, since of academic costumes prescribed for their members by different university and other like bodies in Great Britain and Ireland there must be not less than three hundred at a moderate computation. The professed expert might find himself faced by each and any of these at great assemblies, such as those of the British Medical Association at its annual meetings. His difficulties, too, might be further increased by the presence of academic costumes proper to graduates of foreign universities, for, apart from visitors, there are a good many medical men resident in this country who are holders of foreign degrees.

On the whole, however, his difficulty would lie less in the number of costumes than in the close resemblance of most of them—in fact, their identity, except in point of colour. That the costumes should be alike is not peculiar; those worn by members of certain universities being the attire of their predecessors for many centuries, while other costumes, though only recently devised, are faithful reproductions of garb of the same period. All, therefore, have a common origin.

These statements require, however, some degree of qualification, since there is considerable obscurity in the history of academic costumes, and it cannot be stated how far the robes now worn are identical in cut, material, and colour with those of early times. In the case of ecclesiastical dress the illuminations to be found in theological books, the statues and other sculptures, including monumental brasses, scattered throughout the churches of the country and dating back to very early periods, afford fairly accurate knowledge of what were the costumes worn by ecclesiasts of one rank and another many hundred years ago. Moreover, ecclesiastical robes are often worn by many generations of ecclesiasts in succession.

But in the case of academic robes there is much less in the way of assured knowledge, and there is reason to believe that as robe makers have died and manufacturers of cloth and silk have changed their processes there have been more or less marked alterations, all tending to diminish the number of differences and thus increase the difficulty of telling one costume from another.

Fortunately, however, the vast majority of the academic costumes to be seen at annual meetings of the British Medical Association represent degrees in faculties of medicine and surgery, and to distinguish accurately between them becomes a fairly possible task if the observer is possessed of a good memory and an eye for shades of colour.

The essential constituents of an academic costume are three—the cap, the gown, and the hood—and by way of establishing a rough differential diagnosis on entering a room the first named is, perhaps, of the greatest utility.

The Cap.

Since the cap is not invariably worn on the head, but often carried in the hand, it exists for the observer neither as a constant complication in diagnosis nor its converse. When visible it is a friend rather than a foe, for observation of its shape will serve to make possible a rough-and-ready classification of the owner's status—a diagnosis mainly of a negative kind. Thus, for instance, if a man otherwise academically attired is wearing not the headpiece commonly called a mortar-board or trencher, but one of some other shape, it can at once be asserted that he is not a graduate still nominally in process of evolution, but one who has reached the highest grade in his faculty. In other words, he must be a doctor, and not a bachelor. On the other hand, the fact that he was wearing a mortar-board would not necessarily write him down a bachelor, for at many universities this headpiece is common to all

	Cap.	Gown.			Hood.		
		Colour.	Material.	Facing.	Foundation.	Lining.	Edging.
Oxford M.D.	Beefeater	Scarlet	Cloth	Crimson	Scarlet	Crimson	—
,, M.Ch.	—	—	—	—	—	—	—
,, M.B.	Trencher	Black	Stuff	—	[illegible]	—	White fur.
Cambridge M.D.	Beefeater, gold cord	Scarlet	Cloth	Dark cherry	Scarlet	Dark cherry	—
,, M.C.	Trencher	Black	Silk	—	Black	White	—
,, M.B.	Trencher	Black	Stuff	—	Black	Dark cherry	—
London M.D.	Black beefeater	Scarlet	Cloth	Violet	Scarlet	Violet	—
,, M.S....	Trencher	Black	Silk	—	Black	Violet	—
,, M.B.	Trencher	Black	Stuff	—	Black	Violet	—
Durham M.D.	John Knox	Scarlet	Cloth	Palatinate purple	Scarlet	Purple	Scarlet.
,, M.S.	Trencher	Black	Silk	—	Rose	Purple	—
,, M.B.	Trencher	Black	Stuff	—	Scarlet	P. purple	White fur.
Birmingham M.D. ...	Beefeater, gold cord	Scarlet	Cloth	Cardinal	Scarlet	Cardinal	—
,, C.M. ...	Trencher	Black	Silk	—	Black	Cardinal	—
,, M.B. ...	Trencher	Black	Stuff	—	Black	—	Cardinal.
Leeds M.D.	Scarlet beefeater	Scarlet	Cloth	Green	Scarlet	Green	—
,, M.Ch.	Trencher	Black	Silk	—	Green	White	Green.
,, M.B.	Trencher	Black	Cloth	—	Green	Green	—
Manchester M.D.	Trencher	Scarlet	Cloth	Yellow	Old gold	Yellow	—
,, M.S.	Trencher	Black	Silk	—	Black	Red	—
,, M.B.	Trencher	Black	Silk	—	Black	—	Red.
Liverpool M.D.	Trencher	Scarlet	Cloth	Lavender	Scarlet	Lavender	—
,, Ch.M.	Trencher	Black	Silk	Lavender	Black	Lavender	—
,, M.B.	Trencher	Black	Stuff	Lavender	Black	Lavender	White fur.
Sheffield M.D.	Velvet trencher	Scarlet	Cloth	Green	Crimson	Red	—
,, M.Ch.	Trencher	Black	Silk	—	Red	—	White fur.
,, M.B.	Trencher	Black	Stuff	—	Green	White fur	Red.
Bristol M.D....	Velvet trencher	Scarlet	Cloth	Salmon	Red	Salmon	—
,, Ch.M.	Trencher	Black	Silk	—	Red	White	—
,, M.B.	Trencher	Black	Stuff	—	Black	Light red	—
Edinburgh M.D.	John Knox	Scarlet	Cloth	Crimson	Black	Crimson	—
,, Ch.M.	Trencher	Black	Silk	—	Black	Golden	—
,, M.B.	Trencher	Black	Stuff	—	Black	Crimson	White fur.
Aberdeen M.D.	John Knox	Scarlet	Cloth	Crimson	Scarlet	Crimson	—
,, M.C.	Trencher	Black	Silk	—	White	Crimson	—
,, M.B.	Trencher	Black	Stuff	—	Black	Crimson	—
Glasgow M.D.	John Knox	Scarlet	Cloth	Scarlet	Scarlet	Scarlet	—
,, C.M.	Trencher	Black	Stuff	—	Black	Scarlet	Scarlet.
,, M.B.	Trencher	Black	Stuff	—	Black	Scarlet	Scarlet.
St. Andrews M.D.	Biretta	Crimson	Cloth	Crimson	Crimson	White	—
,, M.C.	—	—	—	—	—	—	—
,, M.B.	Trencher	Black	Stuff	—	Crimson	—	White fur.
T.C.D. M.D.	Velvet trencher	Scarlet	Cloth	Crimson	Scarlet	Crimson	—
,, M.Ch.	Trencher	Black	—	—	Green	Blue	Crimson.
,, M.B.	Trencher	Black	Stuff	—	Black	Crimson	—
R.U.I. M.D.	Trencher	Scarlet	Cloth	Scarlet	Scarlet	Scarlet	—
,, M.C.	Trencher	Black	Silk	—	Red	White	Blue.
,, M.B.	Trencher	Black	Stuff	—	Black	Olive	—
Belfast M.D....	Trencher	Scarlet	Cloth	Scarlet and blue	Scarlet	Scarlet	Blue.
,, M.Ch.	Trencher	Black	Silk	—	Red	White	Blue.
,, M.B....	Trencher	Black	Stuff	—	Black	Scarlet	Blue.
National M.D.	—	—	—	—	—	—	—
,, M.C.	—	—	—	—	—	—	—
,, M.B.	—	—	—	—	—	—	—
F.R.C.S.	Trencher	Black	Cloth	Broad crimson	—	—	—
M.R.C.S.	Trencher	Black	Cloth	Narrow crimson	—	—	—
L.S.A.	Trencher	Blue	Silk	Gold	—	—	—

grades, though M.D.'s of Trinity College, Dublin, Liverpool, Sheffield and Belfast have their trenchers covered with black velvet.

Finally, the shape of the headpiece, if it be not a trencher, at once reduces the number of bodies to which the wearer can possibly belong. If it be one of the kind worn by Yeomen of the Guard—the flat round cap known as "beefeater"—its wearer must be either an Oxford, Cambridge, London, Birmingham, or Leeds man. But if, on the other hand, it be a cap of the kind familiar in pictures of Nonconformist celebrities of the seventeenth century—the soft, flat, square cap, known as the "John Knox"—its wearer must be either a Scottish graduate or one from Durham.

Gowns.

There are certain differences in the cut of all gowns, but they are so minute as to be indistinguishable except on very close examination. Practically they are only susceptible of two main classifications. All gowns are either scarlet or some shade thereof, or black, and the wearers of all gowns of scarlet or shades thereof may be written down forthwith as doctors of the faculty to which they belong. On the other hand, all wearers of black gowns must not be written down as bachelors, for masters of surgery always wear black gowns, and at many universities the black gown is the proper attire, even of an M.D., unless he is also a member of Convocation.

Here, however, the question of facing comes to the rescue, for facings are only worn by those of a rank superior to bachelor, except at Liverpool. The Liverpool M.B. is easily distinguishable, however, since the facing of his black gown is of lavender and his hood is edged with white fur.

Apart from ordinary gowns, there may occasionally be seen dresses of somewhat different character, as, for instance, a kind of sleeveless tunic worn over a black silk gown. This is the Convocation habit of the Oxford M.D., whose scarlet gown also differs from those commonly worn; it fits more closely and has silk sleeves.

Hoods.

The final diagnosis of the status and university of the wearer of an academic costume perhaps depends more on the nature of his hood than on anything else: but there is such an extreme variety of hoods that to classify them in a simple fashion is a matter of great difficulty. Moreover, they are not invariably worn.

The colour and material of the main foundation of a hood is generally that of the gown with which it is worn, but either its lining or its edging is different, and as these are the parts which chiefly show they are of the most importance. Of the various hood colours to be seen the least common is old gold.

Except for the fact that the L.S.A. London has a facing of old gold to his gown, this colour would be absolutely diagnostic of the M.D. Manchester, whose hood is old gold lined with pale yellow. Green is another uncommon colour. By itself it is worn solely by the Leeds M.B., whose hood is of dark green silk, lined with a paler shade of the same colour. M.D.'s of the same university have their scarlet gowns faced with green, as also has the Sheffield M.D., but the two can be distinguished from one another by the fact that the Sheffield M.D.'s hood is of two shades of scarlet, while the Leeds M.D. hood is lined with green.

Shades of violet are also comparatively rare. True violet is absolutely peculiar to London University, while a dark violet or "palatinate" purple is peculiar to Durham, and a very light violet or lavender colour is distinctive of Liverpool.

As for blue, it is also a rare colour. When it appears in a very dark shade as the foundation of a hood edged with white fur it is distinctive of the Oxford M.B. The only other university which uses this colour is Belfast, whose M.D. and M.B. graduates have their scarlet-lined hoods bound with pale blue. In addition, blue is also the colour of the L.S.A. gown, but it has no hood, and as already mentioned it is faced with old gold.

As for shades of red, the possibilities of confusion are considerable unless the observer has both an excellent memory and can differentiate instantly between scarlet, cherry colour, crimson, and pink. If so, the following details may be useful to him:

Scarlet hoods lined with scarlet and without any other colour are peculiar to the M.D., R.U.I., and the M.D. Glasgow, but their wearers can be distinguished by the fact that the Glasgow M.D. wears a "John Knox" cap.

Scarlet and crimson with no other colour is peculiar to the M.D. of Oxford, of Trinity College, Dublin, and of the University of Aberdeen; but the Dublin man wears a velvet trencher and the other two beefeater and John Knox caps respectively.

The scarlet and cherry colour of the Cambridge M.D. hood can only be confused with that of the M.D. Sheffield; they are otherwise easily distinguishable partly because the Cambridge gown has a cherry silk facing, partly because the Cambridge M.D. wears a beefeater cap and the Sheffield M.D. a velvet trencher. It is perhaps easier to mix up the Sheffield and the Birmingham M.D., but the lining of the latter's scarlet hood is the dark crimson known as cardinal and its material watered silk.

There are two other reds which can be distinguished with fair ease, that of the St. Andrews M.D., lined with white satin, and of the St. Andrews M.B., edged with white fur. So far as their hoods alone are concerned, it is difficult to distinguish between the wearers of other red-lined hoods, for black hoods and scarlet linings of one shade or another are common to the M.B. of Cambridge, T.C.D., Edinburgh, R.U.I., Manchester, Glasgow and Aberdeen, Belfast and Bristol. The Cambridge red, however, is a dark cherry, and the Edinburgh hood has a fur edging, and the Belfast a blue edging.

To the foregoing diagnostic points readers may perhaps be able to add others with the help of the table on page 203. Most of the statements contained are based on information kindly supplied by Messrs. Ede, Son, and Ravenscroft, the university robe makers, supplemented by inquiries to university authorities, who, quaintly enough, do not invariably seem perfectly certain what the robes proper to their various classes of graduates really are.

History.

As has been stated, the history of academic costume is somewhat obscure; but there are certain points on which knowledge is fairly assured, and indication of them may help to render the recollection of differences more easy.

Perhaps the only universities which can be said to have developed their own robes are Oxford and Cambridge. Most of the Scottish universities adopted those of the foreign universities on whose model they themselves were founded. Thus, for example, the cap of a St. Andrews M.D. can any day be seen in the law courts of Paris, being part of the official dress of graduates in the university of that city, and as such worn by members of the higher bar when pleading.

Taken as a whole, academic costumes may be regarded as representing a mixture between the ecclesiastical and ordinary dress of the thirteenth and fourteenth conturies. The general shape, for instance, is that of an alb, while the facing of the gowns of masters and doctors is clearly a survival from the stole or narrow scarf, originally called the "orarium." The hood much resembles the monastic cowl, and might be so regarded were it not that similar garments were commonly worn at that date by the middle classes and lower orders by way of head covering in cold weather. It is for this reason that bachelors, who originally had no cap, had their hoods lined with white rabbit fur, which as an edging still survives on many of them.

But the ecclesiast's robes and the ordinary dress of the period in question both reach back to the East, though by different routes. Soldiers returning from the crusades seem to have brought with them a custom of wearing the loose voluminous garments common even nowadays in Syria and Arabia, whence also the Church derived its alb, originally made in white linen. But these again may be carried back to the chiton of classical times. This was merely a sack-like garment, loosely fastened across the shoulder, the arms protruding though the unsewn upper part of the sides. The bunching-up on each side of the neck of the superfluous fabric naturally formed a kind of sleeve, which gradually developed in length. There is a trace of this origin in the fact that, until recent times, the armhole of a gown was merely a vertical slit instead of an horizontal opening. Those of junior grade among members of universities originally had very short sleeves, and their gowns hardly reached below their knees. Wearing their

gowns at all times, they commonly required in those not too peaceful days to have their arms quite free and their legs untrammelled. Only their revered seniors could afford to wear gowns reaching the ground and long sleeves.

IMPERIAL CANCER RESEARCH FUND.

THE annual meeting of the Imperial Cancer Research Fund was held at the Royal College of Surgeons of England, Lincoln's Inn Fields, on Wednesday, July 20th, the Right Hon. ARTHUR J. BALFOUR, M.P., Vice-President, in the chair. Among those present were Sir William Church, Bart., Sir R. Douglas Powell, Bart., Sir Henry Morris, Bart., Lord Cromer, Sir Henry Howse, Sir Charles Morrison-Bell, Bart., Mr. Pearce Gould, Professor Sims Woodhead, Dr. Arthur Newsholme, Mr. H. T. Butlin, F.R.C.S., Mr. J. A. Mullens, Mr. Edmund Owen, Sir Francis Lovell, Dr. Andrewes, Dr. T. H. C. Stevenson, Mr. Gerard Fiennes, Mr. S. Leeke, Mrs. Yates, Mr. G. Maudsley Williams, Mr. Shattock, Miss Grimes, Dr. J. A. Murray, Dr. M. Haaland, Dr. Woglom, Professor Higuchi, Dr. H. Takaki, Dr. Snapper, Dr. Rosenthal, Mr. Cowell, Dr. E. F. Bashford (General Superintendent), and Mr. F. G. Hallett (Secretary).

Annual Report.

The eighth annual report (1909–10) of the Executive Committee was presented. After recording the events of the year, it stated that the very important question of the provision of future laboratory accommodation had engaged the attention of the Committee. There was now considerable hope that the Royal Colleges might be able to provide adequate and suitable laboratories in their new Examination Hall for the use of the Fund. Whilst it was not to be expected that this new accommodation would be provided free of all expense, it would be gratefully recognized that this generous action of the Royal Colleges would involve the Fund in a comparatively small expenditure. The cost of the equipment of the new laboratories, as well as the expense of moving, would, however, be considerable, and would have to be provided for during the next two years. Regret was expressed at the loss of the services of Dr. Magnus Haaland, who had been appointed Director of the Pathological Institute at Bergen. The Committee also regret that two voluntary workers under Dr. Bashford had terminated their connexion with the laboratories, but it was with much satisfaction that the Committee had heard that they had received the recognition of their work by being invited to fulfil important appointments; Dr. Medigreceanu was offered an appointment in Bucarest, but had preferred to accept another appointment in New York; whilst Dr. Da Fana had been appointed First Assistant in the Pathological Institute at Groningen, Holland. Mr. A. G. Wells had been appointed Assistant in the laboratories in place of Mr. Bowen, resigned.

The Lord President of the Privy Council having requested the Executive Committee to recommend a fit and proper person to represent His Majesty's Government at the International Conference on Cancer to be held in Paris in October next, Dr. Bashford was unanimously recommended for this office, and the nomination had been accepted. A list of the papers and communications which had been issued from the laboratories during the year was read.

Report of the General Superintendent.

Dr. Bashford's report stated that the more general aspects of the study of cancer had continued to receive attention, although the period when such investigations chiefly occupied the energies of the workers ended with the publication of the Second Scientific Report. Since then specialized studies had been undertaken and continued during the past year.

An account of the more salient features of statistics tabulated from the data of 13,000 cases of cancer collected from hospitals had been published; attention had been directed to the bearing of the statistics upon the diagnosis of the disease, upon the interpretation of mortality statistics and upon the alleged increase of cancer, as well as upon the anatomical distribution of the disease and its association with irritation. With the continued support of the Foreign, India, and Colonial Offices, further information had been obtained on the occurrence of cancer in native races in outlying parts of the empire. In this connexion the importance of the association of chronic irritants with cancer had continued to claim chief attention.

Cancer of the tongue in the human subject was important because of the minute size of the lesions which can be recognized. A plaque on the surface of the tongue not more than a twentieth of an inch in its longest axis might exhibit all the features of malignant new growths; with plaques not more than a fourth of an inch in longest axis extensive infiltration of the walls of the veins and muscles of the tongue also might be present. The histological examination of these early lesions, and also of others that had been neglected or "under observation" till they had become of very much greater size, has convinced the workers that any local lesion of the tongue in an elderly person, the cancerous nature of which could not be definitely excluded, should be removed and submitted to microscopical examination. This examination should be made by sectioning the entire growth and examining all the sections in order. A single section was quite valueless for diagnosis when picked out haphazard unless it gave a positive result.

The methods suggested during the past year, by various workers, for the serum diagnosis of cancer had not yielded positive results in the hands of Dr. Bashford and his colleagues, and reliance must continue to be placed on the examination of the anatomical lesion. Much additional information had been obtained on the occurrence of cancer in lower vertebrates. Particular attention had been devoted to the incidence of the disease in cattle and in mice. While in mice the phenomena were presented in miniature even in their most advanced stages, in cattle they were demonstrated on a magnified scale as compared with man, although the universal minuteness of the early stages was independent of the size of the animal. In the course of the past six months 90 cases of malignant new growths in cattle were obtained from a single abattoir. The histological types comprise the majority of the forms met with in man. The frequency of primary carcinoma of the liver associated with cirrhosis, and of primary malignant growths of the suprarenal was of interest. The study of these growths had thrown light on the circumscribed origin of malignant new growths, their occasional multiplicity, and on the phenomena of dissemination. During the year, 166 mice bearing spontaneous tumours were examined, 139 of which had malignant new growths. It had been demonstrated that practically all mammary carcinomata of the mouse could be transplanted; therefore, of the 139 malignant tumours, only 22 were transplanted, and these were selected because microscopical examination had shown them to be of exceptional nature. The tumours comprised carcinomata of the preputial and sebaceous glands, 8 cancroids, a hypernephroma, a spindle-celled sarcoma, and 5 lymphomata, of which two were accompanied by leukaemia. Two squamous celled carcinomata involved the jaw, invading it extensively. Other tumours of interest have been found in the uterus, ovary, liver, lungs, and heart.

The advantages of using short-lived animals for studying the possible influence of heredity was pointed out in 1903. The breeding experiments which had been in progress for five years have yielded a material of nearly 2,000 animals of known age and ancestry. Of these 700 females attained the age of 6 months or over. In them 75 cases of cancer of the mamma had appeared spontaneously. Analysed so as to bring out the liability to cancer according as the young were born before or after it appeared in the mother, the figures showed a higher incidence in those born before the mother developed the disease. Since the conditions necessary for contagion were present the opposite result would have been obtained had any analogy existed between cancer and the recognized infective diseases.

A diminution had been effected in the number of mammary growths propagated in the laboratory. Only 45 mammary carcinomata were being propagated as against 60 last year. Of others remaining under propagation, 6 exhibited horny changes in varying degrees, 2 are adeno carcinomata of sebaceous glands; in addition there is an adenoma of the preputial glands, an osteo-chondro-sarcoma, a spindle-celled sarcoma, and a round celled

sarcoma. Several strains of spindle and polymorphous-celled sarcoma that had arisen under experimental conditions were being propagated. A carcinoma and sarcoma of the rat were being propagated. Tumours of the guinea-pig, dog, and frog are also under observation.

The general results of the study of the large number of tumours which have been under observation were summarized as follows:

Three years and four months represents the maximum length of life observed for mice kept in our laboratory. One tumour strain has been growing for nine years and has now passed through 166 successive batches of mice, and 16 tumour strains are still growing freely after three years. It is thus demonstrated that the duration of the growth of cancer has no limitations set to it comparable to the length of life of the animal in which it arose.

The relations of a tumour to the organism primarily attacked and the nature of cancer had been further elucidated by the following experiments:

The transplantation of a spontaneous tumour into the same animal, either subcutaneously or intraperitoneally, is almost invariably successful, although transplantation into other animals of the same species may fail in extreme cases in as many as 500 attempts. This difference obtains whether the other animals are normal (young or old), or are exactly comparable by being naturally cancerous, and of the same stock and same age. Thus of 55 reinoculations of animals with their own tumours 54 were positive, whereas of 77 inoculations of spontaneous tumours in other spontaneously affected mice only 5 were positive. If transplantation of a spontaneous tumour be practised under the most favourable conditions, as described in published papers, the percentage of success rarely reaches 30 per cent., and on the average is only 12 per cent. From such observations we must conclude that animals naturally the subject of cancer do not suffer from it because they present a soil uniformly favourable for the disease. On the contrary, the circumstances associated with the appearance and the growth of cancer are in each case peculiar to the individual attacked, and need not be similar to that obtaining in any other individual. Further, these experiments would go a long way to prove that the cancer cell, although highly dangerous to the individual in which it arises, is relatively innocuous to other individuals. This conclusion is not vitiated by the ease with which other tumours after artificial adaptation to propagation can be made to grow in all mice inoculated. In their case also it has been demonstrated that the risk of natural transference is non-existent.

Both for spontaneous tumours and for propagable tumours it had been shown that young animals afford a more suitable soil for transplantation than old animals, although the latter were much more prone to the natural development of cancer. The fact that transplantation was more readily successful in young than in old animals showed that, although senescence was intimately bound up with the origin of cancer, it was inimical to its continued growth. In each case of spontaneous cancer this inimical influence was neutralized by the perfect adaptation of the cells to their parent and host. The view which had been widely accepted that cancer arose in old animals in parts of the body which retained the normal avidity for food while that of the rest of the body was diminishing, had been disproved by the results of elaborate cross-inoculations of spontaneous tumours into the animals in which they arose and into other cancerous and normal animals, as well as by transplanting propagable tumours in cancerous and normal animals.

In former years it had been pointed out that an increase in the rate of growth or in the percentage of successful inoculations did not necessarily imply a fundamental biological alteration finding expression in an accelerated rate of proliferation of the tumour cells, but might be explained by the selection of particular cells adapted to the conditions of growth, and consequently the survival and proliferation of a larger number of such cells. In other words, these two phenomena might be explained by an increase in the dose of the cells able to grow. The evidence for the acquirement of new properties by tumour cells was very much stronger when one observed the occurrence of morphological alterations which became of relative constancy, such as the disappearance—or latency—of their typical characteristics in the case of squamous-celled carcinoma, the disappearance of acinous structure in the case of glandular carcinoma, the derivation from cubical epithelium of epithelial cells which, if their previous history had not been known, could not have been distinguished from those of a spindle-celled sarcoma. In other cases the change was made manifest by the alterations taking place in the supporting connective tissue and blood vessels, so that tumours which at one time exhibited dilated blood vessels lose this character.

Of the 29 tumours of the mamma that had been propagated in the laboratory for over two years, as many as 16 had shown departures from the features they exhibited at the outset, these departures affecting the degree and nature of the histological differentiation, the percentage of successful inoculations, the rate of growth of the resulting tumours, the relative proportions of progressively growing tumours and of tumours which undergo spontaneous absorption after transitory growth, the susceptibility of the tumour to method of transplantation, to dose, to race, to age, and to the influence of induced immunity. Thirteen tumours had shown a relative constancy of their structural and biological characters. Of the 16 variable tumours, 9 had varied from the primary condition in both respects. Two had shown biological variations without histological change, and 5 had altered in microscopical characters without noticeable modification of their biological behaviour. On the whole, therefore, histological character was less constant than biological behaviour.

Dr. Bashford proceeds:

The relative constancy but still more the variability which the tumour cells exhibit, during propagation, throws indirect light of the most suggestive kind upon the nature and the manner of the development of cancer. The variability in a constant environment, during propagation, allows one to infer that corresponding variations may take place, while the cells are under the influence of the particular environment provided by the animal in which the tumour developed spontaneously. The environment of the cell will depend on the individuality of the animal, and, with the progress of life, distinctions between one animal and another may become more and more marked. This inference accords with what has been said above on the ease with which auto-transplantation is effected, and the difficulty with which transplantation can be effected to another individual, and therefore also with the fact that all cancerous mice do not exhibit an equally suitable soil for tumours in general.

These spontaneous variations of the parenchyma cells of tumours during propagation suggest that we have here a repetition, in a minor degree, of the cellular processes responsible for the primary transformation of non-cancerous into cancerous tissue; just as cellular changes occurring during propagation may transform within a brief space of time an acinous growth into a solid one, or a slow-growing tumour into one rapidly proliferating, so in the tissues prior to the development of a malignant new growth the responsive proliferation of cells may pass into the progressive, independent proliferation of cancer.

Experiments bearing on the metabolism and biochemistry of cancer had been conducted on a larger scale than formerly. An exhaustive investigation had been made into the relative sizes of the organs of rats and mice being transplanted and spontaneous tumours. The most important result had been the discovery of an enlargement of the liver in animals bearing carcinomata and sarcomata, whether transplanted or naturally arising. Up to a certain point the hypertrophy was proportional to the weight of the tumour. There could be no doubt that this hypertrophy of the liver was associated with the metabolism of the tumour. It was being further investigated as an important clue to the bio-chemical relations of a tumour to the organism bearing it. Careful investigation showed that it was not to be explained by animals bearing tumours taking up more nourishment than do normal animals.

It had been found that less nitrogen was required to build up a given weight of tumour than was needed to build up an equal weight of normal tissue of the host, cancerous tissue containing not more than three-fourths as much nitrogen as normal tissues weight for weight. In animals with transplanted tumours, at a period before excessive growth had led to exhaustion, nitrogen was stord up in proportion to the increase in size of the tumour. The nitrogen for the tumour was obtained by a "sparing action" on the protein metabolism and not at the expense of the host tissues. This explains why, with the increase of the tumour, the animals did not eat more. Control experiments on pregnant animals had shown a parallel condition to exist in them.

A large proportion of the work had been devoted to the reactions conferring resistance to the transplantation of cancer, to those responsible for the disappearance of transplanted tumours, and to the rarer phenomenon of

the natural cure of spontaneous malignant new growths. The most varied means of disintegration or modification of cells were being employed to attempt to rob tumour tissue or normal tissue of its powers of growth while retaining its powers of inducing resistance, but as yet without success. Resistance could still be induced only by the employment of living tissue.

The possession of a large series of tumour strains showing all gradations in the percentages of tumours disappearing after transitory growth had made it possible to study the reasons for their disappearance under favourable circumstances, because the series comprised some tumour strains with the maximum speed of growth, while others present all gradations to the minimum. Advantage had also been taken of those alternations in the biological properties of tumour cells to which attention had so frequently been directed in previous years.

The report continues:

It is now possible, under given experimental conditions, to prevent a secondary transplantation—that is, artificial metastasis, taking place for certain tumour-strains. This result has been obtained by inserting between the primary and secondary transplantations an inoculation of a very rapidly growing tumour showing only transitory growth, as the following sample experiment shows. Of 12 mice, already bearing progressively growing tumours and treated in the manner described, the secondary inoculation was successful in 3 only, and then the tumours were very much smaller than in the control consisting of 13 mice, of which 10 developed new progressively growing tumours on secondary inoculation. A similar result can be obtained by the implantation of tumours growing much more slowly and liable to spontaneous absorption, as well as by an inoculation of normal mouse-tissue. By similar methods the growth of the primary transplanted tumour may be greatly hindered, can be brought to a standstill and the animal cured, in circumstances under which the disease would certainly have progressed, and where the possibility of the occurrence of spontaneous cure can almost certainly be excluded. Thus the control of *transplanted* cancer has been brought within the region of probability.

These achievements must not be confounded with successful vaccination against spontaneous cancer arising, or against infectious disease. Animals perfectly protected against the repeated inoculation of cancer might develop tumours of their own—an observation often confirmed. Still more emphatically did Dr. Bashford warn against applying to the human subject the methods which after long perseverance have enabled us to arrest the growth and even to cure animals of transplanted tumours that were well established, and also to render animals resistant to a secondary inoculation, that is, to dissemination and metastasis formation. He says:

The immunity reactions to transplanted cancer are throughout clearer and more easily studied than are those of spontaneous cancer. The problems presented by spontaneous tumours are more delicate and elusive. The methods effectual in normal animals against primary inoculation with transplantable tumour, which, as mentioned above, also arrest the growth of growing transplanted tumours and prevent successful reinoculation under suitable circumstances, have been without action on the continued growth of the twenty-five spontaneous tumours on which they have been tested, have failed to prevent recurrence or dissemination, and have not yet prevented a successful reinoculation of the spontaneously affected animal with its own tumour. The investigations must go on until a higher degree of resistance can be obtained in this way, or it may be that an entirely different method must be sought. The expectation of ultimate success seems a fair inference from the results obtained with transplanted tumours which reproduce all the phenomena of growth and dissemination of spontaneous tumours, and from the rare but undoubted cases in which temporary arrest of growth, or total disappearance, have occurred in spontaneous tumours.

The prospect is made the more hopeful by the discovery of a method whereby an animal can be immunized by means of one of its own tissues against a primary inoculation of a tumour transplanted from another animal. This, again, is a very different matter from immunizing an animal against its own tumour. Nevertheless, it illustrates how much that was previously unsuspected is being revealed, as step by step advances are made into yet unexplored regions. Inquiries into the effects which the several tissues of the body may have, either singly or in combination, in inducing protection are being made.

Dealing with chronic irritation and cancer, Dr. Bashford says:

A practical result arises out of the association of various forms of irritation with the development of cancer in sites where more obscure influences can be excluded, especially from what has been ascertained on the incidence of cancer in native races practising peculiar customs, and on the incidence of cancer in some animals. Experiment has emphasized this relation and has thrown light upon the mechanism which makes the irritation effective, leading to similar consequences although the irritants themselves have nothing in common. Recent legislation is thereby justified in the interest of workers employed under circumstances exposing particular parts of the body to chronic irritation of peculiar kinds. In 1903–4 the feasibility of obtaining more accurate information of the incidence of cancer in different occupations was before the Statistical Subcommittee. The progress made since renders such an investigation still more urgent to-day. It must not be supposed, however, that cancer has been proved to be always the result of irritation. The *mediate* influence of irritation has only been defined more closely than ever before.

It was added that preparations were being made for the issue of a fourth scientific report.

Report of Honorary Treasurer.

The report of the Honorary Treasurer stated that the actual expenditure on the research work and the incidental expenses connected therewith, during the year 1909–1910, amounted to £5,782 13s. 7d. The actual income from invested capital during the same period was £4,159 7s. 8d. The contributions received during the year towards the General Fund reached a total of £3,150 16s. 5d.

After deducting from these contributions £1,623 5s. 11d. to meet the deficiency of income as compared with expenditure for the year, and £703 11s. 10d. for repayment of the overdraft of the preceding year, there remained the unexpended balance of £823 18s. 8d. to be carried to the General Fund. In addition to these contributions a further sum of £6,000 had been contributed towards the Endowment Fund. The invested capital had therefore been increased by this amount during the year, and the total now stands at £132,222 19s. 3d.

Mention was made of the munificent gift to the Endowment Fund of £5,000 from "A Friend," one of the first and most liberal contributors and one of the most earnest and hopeful of the wellwishers of the research into the difficult problems connected with cancer and morbid growths in general. The donation of £1,000 (being the fourth of a similar amount) from the Duke of Bedford was a further evidence of the interest in and the enthusiastic encouragement to the cause which His Grace had shown ever since the initiation of the Fund. Mr. James Wilcocks had given the handsome contribution of £1,000 to the Endowment Fund. Another donor, "Anonyma," who had previously contributed on several occasions to the Fund, had this year made the substantial gift of £100. In regard to this gift Sir Henry Morris says:

Knowing as I well do the amount of self-sacrifice and the many self-denials which such a donation from a lady of very moderate income means, I desire on behalf of the Executive Committee to thank her publicly through the channel of this report, and at the same time to assure her—a gentle and tender-hearted woman and a lover of animals as she is—of our appreciation of her repeated efforts to correct and counteract prejudices which on the ground of vivisection it has been attempted to arouse against the Fund. Such attempts she with righteous indignation has from time to time taken trouble to show have a tendency, if they have any influence at all, to throw difficulties in the way of scientific research and to frustrate the aims of humanity.

The Honorary Treasurer concluded by repeating that the annual expenditure greatly exceeded the income derived from investments, and pointed out that this expenditure could not be reduced, but, on the contrary, was quite sure to increase in the next few years. Next year a fourth scientific report, which would be issued, must make a very heavy demand upon the Fund, and the considerable expenses attaching to removal and to the equipment of laboratories in a new building will shortly have to be found. It was most essential, therefore, that there shall be no falling off in the coming years of the contributions to the working expenses of this Fund.

Sir WILLIAM CHURCH, Chairman of the Executive Committee, moved that the report be adopted.

This was seconded by Professor SIMS WOODHEAD and carried.

APPOINTMENT OF PRESIDENT.

Sir WILLIAM CHURCH then moved:

That His Grace the Duke of Bedford, K.G., be appointed President of the Imperial Cancer Research Fund.

The motion was seconded by Sir HENRY MORRIS, Bart., and carried.

Vote of Thanks to Executive Committee.

The Chairman (Mr. Arthur Balfour) moved:

That the thanks of this meeting be given to the Chairman and members of the Executive Committee, the Subcommittees, the Honorary Treasurer, and others who have assisted in the work of the Fund during the past year.

He said: It is now seven years since I had the great honour of presiding at the annual meeting of the Fund, and I am given to understand—I think by Sir William Church himself—that critics have been found who think that the work of the Fund should have shown greater and more direct results in the course of these early years of its existence. I confess that, looking back over the seven years which have elapsed since I last took this chair, it seems to me that a precisely opposite conclusion ought to be drawn from the various reports that we have had laid before us, and not least from the summary of the work of the Fund which Sir William Church has just given. I suppose there were persons who imagined that you had only to start a fund with a large number of competent workers to be able to find some immediate method of dealing with the great scourge of cancer—a scourge the magnitude and severity of which, though not apparently increasing, is being more and more brought home to us by the improvements of statistics and the improvements of medical diagnosis. But, surely, those expectations of an immediate discovery of some external remedy, so to speak, some accurate and active remedy for this disease, did not take sufficient account of the only means by which we can readily deal with these great therapeutical problems, which must be dealt with as part of a great biological whole. If anybody considers, for instance, what has been done in dealing with that enormous class of diseases which we now know to be due to microbic invasion, they will see that it was not done by any method analogous, for instance, to the accidental discovery of quinine as a prophylactic against certain kinds of fever; but, on the contrary, all our discoveries are due to a broad scientific outlook which has produced unexpected conclusions and results in every kind of different field, apart even from human pathology. Whoever would have suspected, only within the lifetime of myself and others who are listening to me, that we should see some kind of common cause in such utterly different things as the production of alcohol, the production of pearls, and the production of whooping-cough; and yet, I suppose, our knowledge of how all those very different results have come about is really due to investigations into the actions of microscopic organisms in various fields acting in very different ways. The public ought to remember that all that has been done in tropical medicine, in vaccine therapy—all the triumphs which have been won, and the much greater triumphs which are going to be won—are based upon this broad investigation into great scientific issues. Well, I imagine one result of the investigations of the Fund is to show that we are now dealing with quite a different set of phenomena from those with which ordinary infectious diseases are concerned. I gather that the results of the scientific investigations of the Fund are to show that while these infectious diseases are due to external invasion tumours are due to domestic rebellion, and they are entirely different; therefore, as I understand the results which have been arrived at by Dr. Bashford and his colleagues in their cause, and must be looked at from an entirely different point of view. But, accepting that fact, and admitting that the enormous progress of our knowledge with regard to bacteriology will give us but little direct assistance in dealing with the problem of tumours, surely it is true that already the investigations of the Fund have given birth to great and important generalizations, which may be the foundation of a somewhat hopeful outlook as to the future. I will only mention two, which appeal to me very greatly. One is the investigations of the Fund with regard to the hereditary character of cancer. Now, let it be noticed that without our being able to observe relatively short-lived animals, it is almost impossible—in fact, it is quite impossible—to arrive at any conclusion as to the influence of heredity. The staff who carry out our investigations have set systematically to work to make these investigations into heredity in connexion with short-lived animals, and the result, surely, is of the utmost importance, for I gather that they have arrived at the conclusion that the question of heredity in connexion with cancer is almost negligible. I do not know that I may put it higher than that. At all events, nothing has so far clearly come out of the experiments conducted on a large scale which should lead us to believe that heredity plays a large part. That, I think, is a fairly safe statement, is it not? (Hear, hear.) If that statement be not unduly incautious, it points—it indicates, at all events—that it may prove that as these malignant tumours are not due mainly to hereditary influences, they are due to what we may very roughly, and sufficiently accurately for this purpose, describe as the accidents of life, or to causes which, at all events, are not inherent and innate in the organism at birth; and certainly the investigations of the Fund go to show that there are causes which undoubtedly do produce cancer even in the best behaved tissues, even in tissues which in the case of people leading the ordinary normal life never show, or hardly ever show, any malignant growth at all. Well, that surely must be an indication that something can be done to prevent or to diminish cancerous growth. I do not wish in the least to put it too high. I know Dr. Bashford is listening to me with nervous anxiety lest I should give too sanguine a view of the conclusions he has arrived at, and I wish to cut down my statements to the narrowest limits and put them in the most cautious way. But I do not think that even Dr. Bashford, with all his caution, will deny that the investigations made by the Fund into the manner in which chronic irritation unquestionably produces cancer may enable us materially to diminish as our knowledge increases the causes by which cancer is produced. If, then, we turn to the other—the more difficult, the more critical, and the more important problem of how malignant growths when they are present have to be dealt with—I think it would be a cruel kindness to suggest that we are even within sight of anything that can be called a new remedy for cancer. Yet surely we ought to draw encouragement from those remarkable series of investigations in which it has been shown that the growth and the spread of implanted cancer can be checked. It is quite true that no experiments hitherto made upon original tumours have given the same satisfactory results, but we cannot doubt—at least, I should think it is difficult to doubt—that there must be a difference only of degree, not of kind, between the original growth and the implanted growth, and it is, therefore, surely not unduly sanguine to say that, if in certain circumstances it has been found possible to deal successfully with the implanted growth, we need not abandon hope that by further extending our researches we may be able to deal also with the more virulent and refractory form of the original growth. At all events, that is the way in which it seems to strike the lay mind, and I hope Dr. Bashford will not think that I have gone too far in indicating those hopes, which, whatever he may say to the contrary, I individually entertain, but whether I shall live to see them bear fruit I really cannot say. Now surely, if I have not overstated the case, here are two great lines of investigation which we have attained, or are within sight of, conclusions of the utmost value and importance. And let no man think, let none of the lay observers and sympathizers with our work for one moment think, because that work is of great extent, because its foundation has to be laid on a broad basis of scientific experiment, and because the work of the Fund does not merely consist of taking up one after another particular suggestions which are thrown out, very often by quite competent people, in respect of special modes of dealing with cancer—let no man think that because that is not the main work of our Fund, the main work of our Fund is on that account other than the only possible method of working which is going to produce great and permanent results for the good of humanity. (Applause.) I apologize for having occupied so much of your time and for having spoken with so much fullness on a question on which after all every single man I am addressing is far more competent to say something to me than I am to say something to them, but it is not without its value that an outsider and a layman should give quite candidly his impressions of the work which has been done

and is being done, by this Fund. It may appeal to people to whom the technical reports which we issue from time to time make little appeal, and it may serve to encourage them in giving us that assistance without which even the most admirable scientific work must be brought to a premature conclusion. I do not think I need add anything more. I have already read the resolution which I am moving, and it is only necessary for me now to ask Sir Henry Howse to second the motion which I have the honour to propose.

The motion was seconded by Sir HENRY HOWSE, and carried.

Various Resolutions.

Mr. H. T. BUTLIN, President of the Royal College of Surgeons, moved:

That Sir Richard Douglas Powell, Bart., K.C.V.O., be appointed a member of the General Committee, and that Sir Watson Cheyne be re-elected a representative of the General Committee on the Executive Committee.

Mr. PEARCE GOULD seconded this motion, which was carried.

Mr. EDMUND OWEN moved:

That the Honorary Treasurer of the Fund be in future *ex officio* a member of the Executive Committee.

Mr. GERRARD FIENNES seconded this motion, which was carried.

Sir HENRY MORRIS moved:

That a cordial vote of thanks be accorded to the Right Hon. A. J. Balfour, M.P., for presiding at this meeting.

Dr. ARTHUR NEWSHOLME seconded the motion, which carried by acclamation.

LITERARY NOTES.

Malaria e Malattie Affini is the title of a new journal published in Rome. It is the organ of the National Anti-Malaria League. It is under the honorary direction of Professors Baccelli, Camillo Golgi, and Giovanni Battista Grassi. The actual directors are Professors Umberto Gabbi and B. Gosio. The editors are Drs Giuseppe Tropeano and Giuseppe Montoro. The editorial offices are at 62, Via Farini, Rome.

The "Notes and Queries" column, which for the last two years has been a special feature of the *Aberdeen Weekly Journal*, is a most interesting portion of that paper; when published in book form the material makes volumes of miscellaneous reading well worth possessing. Readers of the *Aberdeen Journal*, therefore, will welcome the appearance of the second volume, containing the "Notes and Queries" for 1909, which has been published quite recently (*Aberdeen Daily Journal* Office). The book, which is neatly bound and well printed, is a veritable treasure-house of all sorts of out-of-the-way scraps of knowledge, odds and ends of Scottish history, literature, and folk-lore, old songs, and half-forgotten legends. Its speciality, however, seems to be family history, more especially the history of families belonging to Aberdeenshire and Deeside; many of the genealogical tables and extracts from old church registers, family papers, and the like, which abound in this volume, are published in reply to questions from descendants or offshoots from the main branch settled in some distant colony. A great deal of curious information may be gathered from these pages. For instance, there is a quaint story concerning the "far-famed Chalybeate of St. Kentigern," a healing well which at one time enjoyed a certain amount of reputation in Buchan, but which owed its glory to nothing more nor less than a successful practical joke. The following is the story as told by a contributor: J. M. and H. W., two New Deer worthies of a bygone generation—one of them practically interested in the Aesculapian art, and the other so much of a hydropathist that he went year after year for a long period to recruit his health at Macduff, at that time a favourite watering-place—were wont to take a stroll on fine Sunday afternoons along a rather unfrequented road leading from the village of New Deer to Auchmaleddie. About a mile from the village along this road was a common, and in the hollow of this common a spring of water with a peculiar taste. Sitting down by it to rest one sultry afternoon, their talk turned upon the advantage it would be financially to the village were it possible to attract visitors by the announcement of the discovery of the chalybeate qualities of the spring. The conclusion they arrived at, however, was that, unless something out of the common could be associated with, or given as a reason, for the starting of a movement to have it housed, there was no use making the attempt. At this juncture the two recumbent worthies happened to see approaching A. F., the local weaver, and one of them, remembering that he had a recently acquired musical snuff-box, then locally unheard of, in his pocket, thought it would be a good joke to set it so that it should begin to play shortly after the weaver had joined them. The weaver having seated himself beside them, they continued their talk as to the desirability of erecting a house in connexion with the newly discovered spa; the only element of uncertainty about the proposal was whether or not the patron saint of the parish, St. Kentigern, would smile on the undertaking. Presently the muffled music of the hidden musical box was heard by the weaver; all, of course, were, or appeared to be, awestruck. There could be no doubt about it! It was the sweet strain of unearthly music—Heaven's benison on the proposal. There was no sleep for the weaver, worthy man, that Sunday night; nor could he rest next day till he had told the news in all the shops and smithies in the village. The two principal actors were too much overcome by the incident to say much about it, except that there was no doubt whatever about the music having been heard, and that the hearing of it must be taken as a clear indication that it was the duty of the district to see the well, thus indicated to be a holy one, properly housed. Actuated by these things the villagers set to work with a will. A notice appeared in the *Aberdeen Journal* of June 25, 1845; subscriptions came in; a square unpretentious house was built, sufficiently large to enable the weaver to sell ginger-beer and ginger-bread to the pilgrims, who, for a time, frequented it in fairly large numbers. But with the demise of the weaver and his associates, and the dawn of the new era in therapeutic science, the place fell into disuse, became dilapidated, and was finally removed about 1890, nothing now remaining to mark the ruins of the projector's ambition and hopes. As can be seen from this narrative, the Scottish peasant of former days, nurtured in superstition, was not hard to deceive in matters relating to medicine, and therefore it is not surprising that a lonely village should be the happy hunting ground of a quack doctor. The "Prophet of Bethelnie," as he was called, had for many years quite a flourishing practice, thanks to the credulity of his ignorant neighbours. A brief account of his career is given in "Notes and Queries," and is worth quoting. "Adam Donald (born 1703, died 1780) was a deformed and eccentric native of the old parish of Bethelnie, who acquired the familiar local titles of "Satey," "Prophet," and "Doctor." Little attention was then paid to medical training or university degrees, and Adam was permitted to pose as a duly qualified doctor. His ointments and medicines, prepared from herbs gathered by himself, were believed by the credulous to be a remedy for every ailment under the sun. As a necromancer he frequented the lonely graveyard, professing to hold communion with departed spirits. When an article disappeared, or misfortune or loss occurred, nobody was so capable to reveal the secret or to prescribe the remedy as the redoubtable prophet! When so consulted he took care to give cautious general answers, capable of various interpretations, and whatever way the matter turned out he could invariably truthfully declare, "I told you so!" With the fishing population he was extremely popular, and his wonderful cures and still more wonderful revelations were retailed and multiplied by that body to an extraordinary extent. His customary consultation fee was sixpence, and, small as this sum may seem, he made money and won a wife. A daughter foolishly divulged the secrets of the imposition, and Adam fell into indigent circumstances. A picture of him was painted, and he expressed a desire that the following lines should be placed at the foot of it:

Time doth all things devour,
And time doth all things waste;
And we waste time,
And so we are at last!

A rough portrait of this old-world "sixpenny doctor" has been reproduced at the head of this account, and is one of the most interesting illustrations in the book. It should be added, however, that the illustrations, though not numerous, are all above the average in interest, especially the various portraits of Marschal Keith and his brother. It is safe to predict that "Notes and Queries," owing to the diversity of its contents, will appeal to a wide circle of readers, and it possesses also another and somewhat rarer merit: one is able to read it with pleasure from cover to cover. This alone should ensure for it the success it so thoroughly deserves.

SCIENCE NOTES.

THE second part of the new epidemiological publication, *Zur historischen Biologie der Krankheitserreger*,[1] contains an important contribution by Professor G. Sticker on the significance of the history of epidemics for modern epidemiology. In the first part of the same work Sticker had previously given an indication of his views in a short article on parasitology and loimology. These views have already been discussed in this JOURNAL,[2] and are to the effect that the present system of laboratory experiments and academic efforts (Schulversuche) is totally inadequate in the administrative treatment of epidemic diseases. Sticker begins with a short reference to the metazoan parasites, and the influence which a knowledge of their life history and mode of infection had upon the later study of bacteria. Now here at the very outset is an instance bearing directly against Sticker's views. The relatively larger size and simpler life conditions of the metazoan parasites render them easier to follow throughout their various phases. The simple, but at the same time comprehensively accurate laboratory experiments of Leuckart did more in a few years to illuminate our knowledge of the diseases caused by these parasites than as many previous centuries of philosophical and historical research had done. Of all epidemic diseases, those due to metazoan parasites are probably dependent on the least involved factors, and it is this comparative lack of complexity which enabled us to elucidate them thus early. Following the same lines, but with greater experience and more laborate methods, it is not too much to expect that xperimentation will eventually solve all the problems of epidemiology, and that in a more rapid and conclusive manner than the most acute and painstaking historical research. Sticker, however, does not linger on the metazoan parasites, but passes immediately to the diseases due to bacterial and protozoan infection. He proceeds to give a detailed history of plague, on which he is a recognized authority. The account is extremely interesting, but one is inclined to wonder that the author, after collating such a historical record, could have had any doubts left as to the inestimable value of laboratory and clinical methods. For at least 3,000 years man is known to have been afflicted with this terrible scourge. It was early recognized as infectious, but it is not so very long ago since its connexion with animals was hardly more than suspected. The long array of administrative regulations, all misdirected and utterly futile, demonstrate the absolute unreliability of public opinion on matters of observation, while the harsh and unnecessary laws framed by quavering sceptics, and the vindictiveness of the populace against those bold enough to dispute their superstitious beliefs, form another striking instance of man's terror of the unknown. It is only sixteen short years since the plague bacillus was discovered, and yet Sticker is already impatient; he would have us refer to the wearisome tale of the bygone ages to hasten matters on a bit. Further short notes are added on the other principal infectious diseases, and several statements are made which are rather beside the point. For instance, in connexion with malaria, he says: "The present formula for the disease runs, 'alternation of generations of *Plasmodium malariae* restricted to man, and a definite mosquito, *Anopheles claviger*.' Epidemiology has thankfully received this formula, but at the same time asks, Does this cover the whole effective cycle? The scholastic view is . . . that all epidemiological facts must fit in with this formula. The history of malaria teaches otherwise it teaches that in malarial localities and in epidemics of malaria, besides men affected with the disease, the animals—cows, goats, sheep, horses, dogs—also suffered." Now this, as Sticker himself admits, is a matter which has been disputed and otherwise interpreted. It is, moreover, a matter of observation which can be confirmed or disproved by actual experiment, and it assuredly does not necessitate the aid of any special research into the history of malaria. Much the same remarks with regard to animals are made in the case of Malta fever. It seems hardly necessary to point out that, as has indeed been shown, there may be other diseases simulating or even closely allied to Malta fever, or in fact any disease for that matter of it, and that biologically we have no reason for believing that animals are not subject to diseases similar to those afflicting man. We are hardly prepared to admit, however, that modern epidemiologists are so very strongly tied down to restricted epidemiological formulae as Sticker would have us believe. It is, we take it, the essence of experimental investigation that no possibility should be approved or dismissed until it has been subjected to the most rigorous and far-reaching examination, and that any formulation of results is merely tentative. The experimental method has stood the test in all the sciences, and it is hardly likely that it will fail us in epidemiology. In speaking thus strongly against Sudhoff and Sticker's views we must not be understood to see no virtue in them. It is universally recognized that the history of a disease forms a most important guide to experimental work bearing on it, and Sudhoff and Sticker have done well in endeavouring to impress this more strongly. Historical research, however, can only be an aid and guide to, and and not a substitute for, experimental research, and it is to its claims in the latter respect that we take exception. What is at fault is not the laboratory method but the administrative use of experimental results, and it is here, if anywhere, that history has something to teach us.

In the *Archives Italiennes de Biologie* for last year there is an article by Sacerdotti on the blood platelets of mammals and an antiplatelet serum. By means of sodium citrate the platelets can be separated from the heavier elements in the blood, and, if the platelets from the blood of a dog are injected into a rabbit, the serum of the latter acquires a special activity against the platelets of the dog. This can be demonstrated both by agglutination methods and by injecting the serum of a prepared rabbit into a dog; this causes the platelets in the dog's blood to almost entirely disappear. They reappear gradually after the experiment, and in about three or four days their number is almost normal again. This occurs even in cases where the spleen has been previously extirpated. The blood platelets can be caused to disappear by injecting peptone or some heterogeneous serum, but in this case the disappearance is transitory, and they reappear rapidly. The antiplatelet serum obtained as above described is specific, and it exercises no action on the erythrocytes. From this it would appear that the platelets are not derived directly from the red blood corpuscles, or, if there is a connexion between them, it can only be allowed on the supposition that the derivative—namely, the blood platelet—is a body possessing distinctly different biological characters from the parent corpuscle.

UNDER the will of the late Mr. Richard Peyton of Edgbaston, the following Birmingham institutions benefit to the amounts stated against their names; The General Hospital and the Free Hospital for Sick Children, each £3,000: the Queen's Hospital and the Hospital for Women, each £2,000; the General Dispensary, the Institute for the Blind, the Institute for the Deaf and Dumb, and the Sanatorium, Blackwell, each £1,000.

MESSRS. SALT AND SON, of Cherry Street, Birmingham, have succeeded, we are informed, in adapting the principle of their patent kidney belt to a corset for women sufferers from floating kidney. As the corset also plays the ordinary part of such article of attire, the inconvenience of wearing both belt and corset is avoided. The belt itself has an inflated pad placed diagonally about 1 in. below the costal margin, and about 2 in. to one or other side, as the case may be, of a line drawn perpendicularly through the umbilicus. Pressure of the pad in the right direction is secured by a spring, while straps and buckles prevent the rising of the belt out of position.

[1] Edited by Karl Sudhoff, Leipzig, and Georg Sticker, Bonn. Heft 2, pp. 44. 1910. Giessen: Alfred Töpelmann. (M. 1.40.)
[2] BRITISH MEDICAL JOURNAL, July 16th, 1910, p. 156.

British Medical Journal.

SATURDAY, JULY 23RD, 1910.

MEDICAL ATTENDANCE UNDER STATE SICKNESS INSURANCE.

IT is of prime importance from an actuarial point of view that as accurate an estimate as possible should be made as to the amount of medical attendance that will be required by persons insured under State sickness and invalidity schemes. Equally important is it from a professional point of view to know what would be reasonable remuneration. The suggestion has been made that medical attendance should not be included in the list of benefits provided by the insurance, and that patients should be left to arrange as they choose. But it must be recognized that a proportion of the working classes, even when in receipt of full wages, much less when on reduced sick pay, could not afford to provide for themselves adequate medical attendance in the ordinary way. The omission of a provision for medical attendance from State insurance would doom the whole scheme to failure from the beginning, as it would be wanting in what the working classes would regard as one of the most important benefits of insurance.

Assuming, then, that medical attendance will be one of the benefits of State insurance, any estimate of the cost must regard several factors in a different way than the friendly societies regard them. In the first place, the friendly societies only admit healthy persons, and generally refuse all above a certain age. But neither of these two limitations could be maintained under a State insurance. To exclude a man suffering from early phthisis or heart disease would be tantamount to refusing to accept any contribution from him while he was able to work, and it would be cheaper for the State to accept him at only a slightly higher premium than to refuse him, with the probability of being compelled later to support him altogether out of the poor rates. The question of age will only need considering during the first few years after the insurance is established, as all persons liable to be insured will have to enter on attaining a certain age, say about 18. In ordinary insurance the premiums are, of course, higher in proportion to age at entrance, but it may not be considered advisable in State insurance fully to insist on this, and specially favourable terms may be given for the first few years after the insurance is established to persons already advanced in years. It should, however, be clearly understood that any loss from such favourable terms should be borne by the State department. It is important to recognize how greatly sickness incidence increases with age. This is well shown in the tables prepared by the Manchester Unity of Oddfellows for the years 1893–7, which give the rates of sickness in weeks per year for each member on the books.

For ages under	20	the sickness-rate was	0.92	weeks per year.
,,	from 20 to 30	,,	,,	0.95	,,
,,	,, 30 to 40	,,	,,	1.27	,,
,,	,, 40 to 50	,,	,,	1.99	,,
,,	,, 50 to 60	,,	,,	4.02	,,
,,	,, 60 to 70	,,	,,	10.59	,,

Thus a person 50 years of age has more than double the amount of sickness that a person of 20 has, while one of 70 has nearly a dozen times as much. The differences probably account for the varying reports given as to the amount of medical work done in different sick clubs. Newly established clubs consist almost entirely of young persons with little sickness, while older clubs have a varying proportion of aged members who require more attendance. If, then, the State department thinks fit, in order to make sickness insurance attractive, to offer favourable terms to those already advanced in years when the insurance is established, it ought not to be done at the expense of the medical profession, as the difference in the amount of work would be very considerable.

Again, in actuarial calculations of that part of the premium which is to cover medical attendance, we must include several items under the general term "medical attendance." These items may be grouped under three heads: (1) Hospital treatment; (2) special treatment, such as confinements and operations; and (3) ordinary medical treatment at patients' homes and doctors' surgeries. For some time probably hospital treatment for the insured will be obtained by payments out of the insurance funds to existing hospitals, but eventually it is likely that the insurance department will provide its own hospitals and sanatoriums.

It is not to our present purpose to estimate what the cost of this may be. What more nearly concerns general practitioners is that some fairly accurate estimate should be formed of the amount of work involved in such treatment as is given at patients' homes and at surgeries. Very little assistance can be got from the reports furnished to the Chief Registrar of Friendly Societies. It appears that the friendly societies do not render separate accounts for their expenditure on medical attendance, and inquiry at the Chief Registry has elicited the reply that "There is no information at present available as to the aggregate amount expended by friendly societies in providing medical assistance for their members, the cost of medical aid having hitherto been included with expenditure for sickness pay." Many of the societies, however, give an average sickness incidence per member on their books as far as sick pay can show it. From the Directory of the Ancient Order of Foresters for 1910 we find that the Order had at the end of 1909 about 610,858 adult male benefit members in Great Britain and Ireland. Of these, 182,153 received sick pay during the year, averaging a little over fifty-eight days each, which is three days a year more than in 1908. Spreading this over the whole of the members, there were 10,569,705 days' sickness recorded in the year, which is an average of 17.05 days' sickness for each member on the books. In the year 1899 the average was only 12.75 days, so that the sickness incidence has increased 4.3 days in the last ten years. This increase is characteristic of practically all the friendly societies, and is going on uniformly and continuously. One cause is probably the rise in the average age of members as the societies themselves grow older, but there is a tendency of late years for the members to take more advantage of the benefits, and they seem readier to "declare on" the club than formerly. The Foresters have also 123,000 juvenile members from 1 to 18 years of age in Great Britain and Ireland, and these had a total of 324,472 days' sickness, which is an average of just over 2½ days' sickness per member per year. This is only about one-seventh as much as the sickness

among the adult male members. The sickness among the female members is not given. Figures not much different are given by the Manchester Unity of Oddfellows, where on an average each adult benefit member received about 2½ weeks' sick pay per year. In the Hearts of Oak the average is about 16 days.

It is important to note that what is called the average sickness of sixteen or seventeen days per year is in reality only the time during which sick pay has been given. The figures are in fact misleading if we wish to know the actual amount of sickness experienced, for it often happens that members are ill for a few days, and may even stay away from work without declaring on the club. In addition, they often consult the club doctor for temporary illness without staying from work, and the societies have no record of all this. The actual sickness incidence is, in fact, considerably more than seventeen days. Indeed, some of the medical men who replied to the questions issued by the British Medical Association considered that the odd consultations given to members not actually on sick pay constituted the greater part of the work. There is, at any rate, little doubt that such casual consultations do form a considerable part of the club doctor's work. On the other hand, it sometimes happens that sick members prefer to pay a private doctor, though they have a right to the services of the club doctor. Allowing for all this, it will probably not be far wrong to say that in the three large friendly societies every member is under the care of the club doctor for about three weeks per year, and, if two visits or consultations were allowed for each week of sickness, every member on the books would receive six attendances per year. This is somewhat at variance with the figures given by Dr. Gosse in the BRITISH MEDICAL JOURNAL for June 4th for the National Deposit Friendly Society. It is stated that in the year 1909 this society had 201,849 members, and the "medical pay" was £32,138, which is only 3s. 2½d. per member, while in the previous year it was slightly under 3s. 2d. It would appear from this as if the income to medical men from this society were even less than from the ordinary 4s. club; and as the society pays 2s. 6d. per visit and 1s. 6d. per consultation with medicine, there would seem to be an average of less than one visit and one consultation per member per year. But it is impossible to rely on the figures given until it is ascertained whether this amount of 3s. 2d. is only what the society paid out of its own funds, or whether it also includes what was paid out of the members' private deposit funds. If the latter is not included, the total amount received by the doctors would be much more than 3s. 2d.; and, considering that in the three large friendly societies above mentioned the members on an average have about three weeks' sickness per year, it is almost incredible that there should be so much less sickness in the National Deposit Friendly Society as only to require one or two medical attendances per member per year.

But by far the most reliable statistics as to the amount of work done for club patients are those obtained by the British Medical Association in its inquiry into the conditions of contract practice. The number of clubs of which accurate particulars were obtained was 269, with 40,893 adult male members. These received 167,405 visits and consultations in the year, which is an average of 4.1 per member on the books. This is probably somewhat below the actual number, as visits and consultations which did not coincide with supply of medicine have often not been recorded. We have already seen that the average sickness incidence of members of the friendly societies is about three weeks per year, and, putting the two facts together, it cannot be far wrong to estimate that each person insured will require about five visits or consultations per year. As the average annual fee of the 269 clubs referred to was 3s. 7½d., it will be seen that the remuneration was about 10½d. per attendance with medicine. If we assume that the visits and consultations were about equal in number, and if 2s. 6d. had been allowed for each visit with medicine and 1s. 6d. for each consultation with medicine, as is done in the National Deposit Friendly Society, a slight calculation will show that the annual fee would have been about 8s. 2d., or, making a little allowance for the attendance given but not recorded, it may be said that a subscription of 2d. a week would have allowed of the doctors receiving about 2s. 6d. per visit and 1s. 6d. per consultation. But it is necessary to note that this only refers to ordinary medical attendance at the patients' homes and the doctors' surgeries. It takes no account of operations, confinements, anaesthetics, fractures and dislocations, for which some clubs at present rightly make special provision, and which, even in the absence of special provision, are often understood not to be covered by the ordinary club fee. There would undoubtedly be an advantage from a public point of view in having as few extras as possible, or even in arranging one general fee to cover everything. But in the case of operations there are practical difficulties against including them under any general contract fee, as they may often be better referred to specialists than to the regular medical attendant. To include some of the other items which are very irregular but which entail so much extra work when they do occur, must materially increase any inclusive fee. The addition of regular medical inspection of persons not on the sick list, as Dr. McVail suggests, would also make a difference. On the other hand, if medicines were supplied by recognized pharmacists or at dispensaries belonging to the insurance department, some deduction might be made. Special arrangements, too, would have to be made for persons advanced in age or suffering from illness at the time when they were accepted for insurance.

Thus it would be altogether premature to name any contract fee until the requirements of the service are known. The relative merits of payment per head and payment for work done are a different question which the Association has under consideration, and the object has here been only to show what amount of work may have to be done by the medical men. Only when that is known can the insurance premiums be actuarially fixed at such an amount as will allow of reasonable remuneration for medical services, whatever system be adopted. It would seem as if this had not been properly done in Germany, or, if it were, part of the amount calculated and which ought to have been ear-marked for medical attendance has been diverted to increase the other benefits or to augment the funds available for the establishment of sanatoriums, workmen's sanitary dwellings, baths, and so on. All these are excellent objects in themselves, but an unflinching opposition ought to be made to any attempt to increase the other benefits of the insurance at the expense of the medical profession. All that the profession demands is that the actuarial calculations for fixing the insurance premiums should make due allowance for reasonable fees for medical attendance.

CANCER AND DIABETES DEATH-RATES.

DR. G. D. MAYNARD, who is rapidly winning for himself a high place among the small but enthusiastic body of trained medical statisticians, publishes a memoir of great interest in the current number of *Biometrika*.[1] He has worked on the statistics of various cities and districts in the United States, and finds that the increased death-rates of cancer and diabetes which have been observed in recent years do indicate real differences in the prevalence of the diseases, the evidence being most striking in the case of cancer. The age curve of diabetes indicates special peculiarities which have not yet been fully examined. The various sources of error in the material are discussed in a clear and convincing manner. It is customary for opponents of modern statistical methods to assert that conclusions are invalidated by various sources of error, without taking the trouble to inquire as to the exact effect which such errors if demonstrated would exert. Dr. Maynard's treatment of the problems which arise affords a refreshing contrast to this obscurantist method.

Dr. Maynard also finds a high correlation between the death-rates from cancer and diabetes, and between both these death-rates and the insanity rates. On the other hand the cancer death-rate is not appreciably correlated with any meteorological conditions. Dr. Maynard justly remarks that whatever theory as to the causation of cancer is adopted, some explanation of the remarkable correlations between cancer, diabetes, and insanity is required. As a provisional explanation, he suggests that conditions of modern life, acting on physiologically unsound material, may account for the statistical inter-relationships of the three disease groups. The matter is of such interest that we hope Dr. Maynard will continue his researches.

In connexion with this paper a discussion has arisen as to the interpretation of indices. Some years ago Professor Karl Pearson pointed out[2] that if ratios or indices a/b and c/b are formed from three entirely independent variables, a, b, and c, then a "spurious" correlation will be found between the two ratios, a correlation not necessarily indicating any organic relationship. Evidently when death-rates are correlated such "spurious" correlation necessarily arises. Dr. Maynard was aware of this fact, and applied the necessary correction, but the same source of uncertainty was reintroduced when the populations were corrected for age differences in the ordinary way, and it was a matter of difficulty to make appropriate allowances in this case. In the May number of the *Journal of the Royal Statistical Society*[3] Professor Pearson published an ingenious method of estimating the amount of "spurious" correlation due to age adjustment, and his corrected results do not differ substantially from those reached by Dr. Maynard. Mr. C. Udny Yule has published[4] a note in which he argues that Professor Pearson's correction is unnecessary, and that his interpretation of "spurious" correlation is erroneous in the case of death-rates. Mr. Yule writes: "All the causes in which we are interested—the nature of which we wish to elucidate—determine directly the *death-rate*, not the number of deaths. The number of deaths is determined mainly by the population of the district. It is clearly the *ratio* of deaths to population which is directly influenced by the sanitary character of the district and the physical character of the individuals living therein. . . . There is not, it seems to me, any question whatever of a 'spurious correlation' due to variations in the magnitude of population alone. To enforce the point, we may note that, within the limits of sampling, the death-rate of a district will be precisely the same whether we deal with the whole population or with a random sample of it of any given size. We may then take from every district a sample of constant size, and obviously no question of spurious correlation can then be raised; but the correlation will, within the limits of sampling, be the same as before." Mr. Yule then proceeds to argue that in these cases it is the correlation between the absolute values of the variables which is the "spurious" or misleading correlation.

Mr. Yule's objections are worthy of close attention, but it is not easy to accept his contention that the factor of absolute size can be dismissed in this way. An elaborate unpublished investigation of certain mortality statistics, relative to a disease not directly communicable from man to man, shows that absolute size has an important bearing on the death-rate, and further that the correlation between absolute size and number of deaths is of a peculiar kind, being in all probability not a linear relation. There are, indeed, many reasons why absolute size should be regarded as an important factor the evaluation of which is absolutely necessary. The influence of absolute size on the number of deaths cannot be properly shown by, for instance, correlating death-rate and population, owing to the introduction of "spurious"—or, perhaps, it would be better to say "arithmetical"—negative correlation, which might lead the importance being underrated of the relationship, unless the absolute correlation has been separately determined.

The whole subject of the proper use of ratios is of particular importance in connexion with medical statistics, and requires further study. In certain practically interesting cases the ordinary method of treatment is inapplicable, because the variables from which the ratios are formed do not conform to the condition upon which the classical theory depends—that is, that deviations from the mean values are so small that the higher powers of their ratios to the mean can be neglected. A general treatment of the problem is not free from mathematical difficulties. The importance of this matter in connexion with medical statistics, which mainly deal with ratios, is so obvious that we have thought it worth while to call attention to what is rather an abstruse point in the technique of statistical inquiries.

[1] *Biometrika*, vol. vii, pp. 276–305.
[2] *Proc. Roy. Soc.*, lx. 483.
[3] *Journ. Roy. Stat. Soc.*, lxxiii, 534.
[4] Ibid., lxxiii, 644.

THE RATIONAL PUERPERIUM.

MEYER and Von Alvensleben have, within the last few years, strongly urged early rising in normal puerperal cases. Their statistics were based on 100 cases apiece, not a very large number, but sufficient to show that 100 cases, more or less carefully treated and more or less carefully watched, were rather the better than the worse for early rising.

Last year Dr. F. W. N. Haultain advocated a "Rational Puerperium" in a communication read before the Obstetrical Society of Edinburgh.[1] He believed, after much experience, that most other obstetricians had lived and practised in error when they held that the conduct of the puerperium ought

[1] "A Plea for a Rational Puerperium," BRITISH MEDICAL JOURNAL, August 7th, 1909, p. 307.

not to be merely the management of the sequel of a normal function, but rather the treatment of convalescence from a severe illness. He had for long held that theory and practice to be based on error, and therefore was not surprised to find that Von Alvensleben[2] urged the advantages of a "rational puerperium." Dr. Haultain at once gave the practice a trial. His conclusions, based like those of his predecessors on 100 cases, were favourable to the innovation, but we must once more remember that the patients were carefully treated and carefully watched under favourable conditions not usually possible of attainment in general practice. He found that septic inflammation, uterine displacements, subinvolution, and pulmonary thrombosis and embolism were not favoured by early rising in childbed. Only 3 per cent. of his cases suffered from any complication developed after rising, 2 patients showing a trifling rise of temperature. A woman subject to varicose veins suffered a little, but not nearly so badly as in her seven previous confinements. In reply to Dr. Haultain, Dr. J. W. Ballantyne read before the same society an eloquent address, which also appeared in full in our columns[3] and led to an active debate.[4] Dr. Ballantyne showed great caution in expressing his own opinions. He favoured systematized exercises in the horizontal position, but insisted that they were very frequently contraindicated; yet they proved safe and beneficial when rising on the third day was unjustifiable. His conclusions, however, ended with the words, "I should not otherwise alter the ordinary management of the puerperium in private practice." By "otherwise" he meant that strict maintenance of the dorsal posture need not be insisted on.

Madame Darcanne-Mouroux has recently read, before a meeting of a French society, an important record of her experiences in Brittany,[5] where the female population is for the most part healthy and free from certain prejudicial influences prevalent in great centres of civilization. The Breton peasant woman considers that, as a matter of honour and duty, she should rise between the second and eighth day of the puerperium. Yet Madame Darcanne-Mouroux, who was an *interne des hôpitaux* in Paris, having carefully watched 100 cases in the Department of Ile et Vilaine, came to the conclusion that the Bretonne is actually the worse for her practice of early rising after delivery. In only 27 per cent. were the pelvic organs quite healthy at a fair interval of time after convalescence. It is true that phlebitis was observed in only one case; old-fashioned doctors would have expected a higher percentage, but there were 22 cases of metritis associated with subinvolution, 20 of prolapse in the second degree, and 13 of retroversion. "Exaggerated anteversion" was registered in 6, advanced colpocele in 6 and inflammation of the appendages in 5. These results seem highly unfavourable. In the discussion which followed the reading of this communication, Doléris, after dwelling on the fact that Breton peasants are very different from most women in urban and suburban districts, said that he had given a fair trial to the practice of early rising in the Tenon Maternity, but that the results were unsatisfactory, and he had given it up. Pinard and Siredey were of the same opinion.

The prolapse question is closely associated with the limitation of the puerperium. Doléris found that displacements depended much on the individual. Women who had borne over a dozen children and taken no care of themselves might remain free from any form of displacement, whilst others acquired disagreeable infirmities of this type after the first or second labour. Subinvolution, very common in these cases from Brittany, has a distinct relation to lactation. This question was alluded to by Pinard. We may observe that no statistics about lactation in the 100 cases were reported, that some of the patients worked at factories, and ought, therefore, strictly speaking, to have been excluded, and lastly, that Madame Darcanne-Mouroux had no case with febrile complications to report. This last fact will no doubt be taken into account by the advocates of early rising after the removal of large uterine and ovarian tumours. Dr. Haultain, as we observed, found very little trouble from rise of temperature in his series.

The general conclusion would seem to be that the puerperium was and still is artificially prolonged, but how far it may be shortened with benefit to the patient remains uncertain. Scientific obstetricians will demand a far larger series of statistics than are at present at their disposal before the limits of the "rational puerperium" can be defined.

RESEARCH DEFENCE SOCIETY.

WE call the special attention of all readers of the BRITISH MEDICAL JOURNAL to the particulars concerning the Research Defence Society which appear at p. 37 of our advertisement columns. We have on many occasions described the work of this society, and it is not necessary to dwell on it at great length here. During the short time it has been in existence it has done an immense amount of good in clearing the mind of erroneous notions concerning animal experimentation and exposing the misrepresentations sedulously propagated by the antivivisection societies. The society has organized a counter propaganda for the enlightenment of persons not conversant with scientific matters as to the incalculable benefits which this method of research has conferred not only on men but on animals—our "poor relations" who suffer like ourselves. The society answers all questions addressed to it on the subject of experimental research through the able and devoted Honorary Secretary, Mr. Stephen Paget. It distributes leaflets and pamphlets in which the results of such research are set forth in their true light; it makes arrangements for addresses and lectures illustrated by lantern slides. Founded only two and a half years ago, the society already has a membership of 3,370 not including 160 Associates. Among its members are many men of the highest distinction in various spheres of intellectual activity. We believe it has a great and important future before it, but it is still only in its vigorous infancy. More branches must be formed so as to include the whole country within the scope of the society's operations. We think it well to lay stress on the fact that its work has a personal concern for every medical practitioner. It is only by experimental research that the art of healing can be transformed into an exact science. The more truly scientific medicine becomes, the greater will be the power for good of those who practise it, and the greater, too, will be their influence with the people and their status in the community. In this way the profession will accomplish its beneficent mission more and more effectively; it will gain

[2] *Das Aufstehen des Wochnerinnen in der ersten Tagen der Wochenbetts.*
[3] "An Address on the Rational Puerperium," BRITISH MEDICAL JOURNAL, January 1st, 1910, p. 4.
[4] Ibid., January 22nd, p. 201.
[5] "Note sur le lever précoce des accouchées," *Comptes rendus de la Soc. d'Obstét. et de Gynéc. et de Pédiat. de Paris*, April, 1910, p. 188.

in this way, too, that high place which Mr. Gladstone foretold for it. The prosperity of the Research Defence Society, therefore, closely concerns the whole medical profession; and we venture to think it is the duty of every medical practitioner to become a member. This entails no onerous obligations; the annual subscription for members is only five shillings; for undergraduates and students of medicine it is half that amount. Members who attend the forthcoming Annual Meeting will do well to visit the stall in the Museum which has been allotted to the society. This will enable them to see for themselves the kind of work which the society undertakes and the means by which it is carried out. The exhibit should appeal with particular force to all who are interested in the work and progress of science, which is the foundation stone of rational medicine. We earnestly hope that one of the results of the London meeting will be a large increase in the membership of the Research Defence Society.

QUACKERY AND CRIME.

As there are some businesses which it is almost worse to own than to serve, we deem it a duty to the missing "Dr." Crippen to mention that he was not the owner, but merely the hired employé of the aural remedy business associated with his name. That business figures in *Truth's* "Cautionary List" of medical quack undertakings, and its real owner has hastened to point out that as soon as he became aware that his "consulting expert" had been accused of murder his name was removed from the premises. He added that on being bereft of his expert's services, he had carried on the business as best he could. It sounds a bad look-out for the patients, but, knowing the lines on which treatment at such institutions is commonly afforded, it may safely be assumed that the results are likely to be neither better nor worse than before. But, while being fair to "Dr." Crippen, it would be improper not to be equally fair to reputable medical schools in America, so we add that at present it has not been shown that this individual owns a diploma from any of them. With very few exceptions, all reputable medical diploma granting bodies in America belong to an association formed a few years ago under the title of the Association of American Medical Schools and Colleges. It was created for the purpose of raising the standard of medical education in America, and to do something towards protecting respectable schools from bogus teaching and diploma-selling institutions. The present incident adds one more to the number of instances in which persons actively engaged in quackery of a medical order have been implicated in criminal charges having no direct connexion with their occupation as quacks. The number of quacks, of course, is legion, but the proportion of them who have come into the law courts in some other connexion is too large to be simply coincidental. That there should be a demonstrable sequential relation would not be altogether surprising. There may be a certain number of quacks who are merely self-deceivers, and, therefore, so far as their personal convictions go, perfectly honest persons, but the average quack conducts his purse-opening practices far too skilfully to be regarded as a fool, and, living as he does by fraud, it is scarcely peculiar that he should frequently fall into the nets which sooner or later entrap most persons of criminal tendency. Besides, for that matter, there are murders—though the Holloway tragedy would not seem to be one of them—which are less of a moral crime than offences of an ostensibly minor order. But among the latter we should not be disposed to class deliberate quackery. The results to the patients are too serious. Apart from spending sums of money often far beyond their means, they are led to refrain from resorting to well-considered advice until their disease has gone too far to be susceptible of material relief and still less of cure.

NURSING ASSOCIATIONS AND POOR LAW REFORM.

AT a recent conference of associations affiliated to Queen Victoria's Jubilee Institute for Nurses, Dr. Arthur Shadwell, a sociologist of long experience, endeavoured to forecast the effect on voluntary nursing associations of the Poor Law reform schemes now in the air. He first classified current thought on the subject as being represented by the Minority Report, Majority Report, and independent reformers. The latter held that present defects in dealing with the poor could be made good by introducing certain reforms in administration without destroying existing institutions of long standing or abandoning well tried principles. It was the views of such thinkers which were most likely to prevail. In that case he thought there would be no interference with nursing associations. The Majority Report, on the other hand, proposed the formation of certain health committees, which would take over the chief responsibility for the medical treatment and nursing of the sick poor in their own homes or elsewhere. Such committees would require to know exactly what nursing associations were doing and how they were doing it. It would be part of their duty to find this out, and from that to directing them, supplementing them, and eventually supplanting them, was but a short step. Moreover, it was a step which would inevitably be taken, however little it might be desired or intended. The position would be still worse if advocates of the Minority Report won the day. In that case nursing associations might put up their shutters forthwith. That report proposed to give to local health committees the power and the duty to search out all cases within their area needing medical or nursing assistance, and furnish whatever was necessary. Nursing associations were not mentioned in the report; the authors probably knew and cared nothing about their work. It was enough that they were voluntary agencies, and one of the leading principles of the scheme was to supersede voluntary agencies. It was true that the report proposed to enlist voluntary workers, but only as the unpaid servants of the local authorities. They were to do nothing on their own initiative and their own responsibility; they were to have none; and this meant that as voluntary agencies they would cease to exist. All the responsibility was to rest with the public authority, and its duty was to prevent destitution. These were cardinal points in the scheme. Now district nursing was a great agency—perhaps the greatest in existence—for the prevention of destitution, because it gave help at the right time, of the right sort, and in the right place. But every one knew what happened to voluntary efforts when public authorities with a bottomless purse entered the same field and proceeded to do the same work. The voluntary efforts expired of inanition; people would not pay for both.

CONDUCT AND INSANITY.

AT the last quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland, Dr. Mercier raised a question as to whether the syllabus laid down by the Association for its diploma in psychiatry is of a sufficiently comprehensive kind, or

whether it should not include and place in the foreground the systematic study of conduct as an index of insanity. It is a point which those who belong to the Association are obviously best able to determine for themselves, and no one aware of the dangers of interposing between the hammer and the anvil would venture an opinion thereon. Out of the indeterminate discussion of this question, however, there arose an issue of interest alike to alienist and non-alienist practitioners. At its base lies the view which should properly be taken of the inter-relations of conduct and insanity. Since the mind is not open to direct observation, it is clear that its condition must chiefly be inferred from the conduct of the individual. It would also seem equally clear that since conduct is largely a question of environment (including in that term age, customs, and class), insanity of mind can scarcely be inferred from conduct with assurance until minute search for a reasonable, even if totally immoral, motive for any disorderly or unusual conduct has proved futile. But although this is generally admitted, there would seem to be a tendency among a certain number of alienists to set aside these considerations and to write down any departure from accepted codes of conduct or belief as *ipso facto* evidence of an insane mind, and then to take that insane mind as a perfect explanation and excuse for all forms of disorderly conduct, especially those which bring the individual into contact with the law. This being the case, there would seem to be plenty of room for discussion on two points. One is, What term should be applied to persons whose mental processes are not those of their fellows and who are the subjects of delusions, but whose conduct from beginning to end of their life differs in no material fashion from that of those among whom they live? The second question would be, What forms of disorderly conduct might rightly be attributed to, or reasonably be expected to result from, various forms of admitted mental disorder? A deliberate attempt to settle these two questions on an authoritative basis might conceivably lead indirectly to a narrowing of the gulf that has always existed between alienists and lawyers on the subject of insanity, and entirely close the rift, of which there has been some evidence of late years, between the opinions of alienist and ordinary medical men on the same subject. The same debate might also either show that there is no difference scientifically between certifiable and non-certifiable insanity or determine the grounds on which such a distinction should be drawn in any given case.

THE PHIPPS INSTITUTE.

THE University of Pennsylvania is, we learn from the New York *Medical Record*, preparing to carry on the work of the Henry Phipps Institute for the Study, Prevention, and Treatment of Tuberculosis, for which Mr. Phipps already has provided more than £1,000,000. Ground has been acquired in Philadelphia for a hospital, and the donor and the trustees have approved the report of a committee appointed to outline the policy of the Institute. There will be three general departments, each with a director. Dr. Paul Lewis, of the Rockefeller Institute for Medical Research, will be the director of the laboratory; Mr Alexander M. Wilson, of the Boston Association for the Relief and Control of Tuberculosis, will be in charge of the sociological, and Dr. H. R. M. Landis of the clinical department. There will be a board of eight directors, and in addition an advisory council has been created which will meet once a year. The following are members of the council: Dr. Samuel G. Dixon, of Harrisburg, Pa.; Dr. S. McC. Lindsay, of New York; Dr. William H. Baldwin, of Washington, D.C.; Dr. Hermann M. Biggs, New York; Dr. William H. Welch, of Baltimore; Dr. Theobald Smith, of Boston; Dr. Gideon Wells, of Chicago; Dr. Simon Flexner and Dr. James A. Miller, of New York; Dr. Laurison Brown, of Saranac, N.Y.; Dr. Henry Baird Favell, of Chicago; and Dr. James Pratt, of Boston.

THE DANGERS OF FLANNELETTE.

AN important series of tests on the inflammability of certain textile materials has been carried out by the British Fire Prevention Committee, and a full account of the tests, with the suggestions of the Committee for legislation on the subject, is published in book form as No. 148 of the "Red Books" of the Committee.[1] The test which is proposed for adoption as a standard is that a square yard of the material shall be ten times washed with soap and water and ironed, and it being then dry and suspended vertically from one edge, that a standard flame shall be applied to the bottom edge for from fifteen to thirty seconds; if then not more than one-twentieth of the whole area of the fabric is burnt within sixty seconds, the material shall be classed as non-flaming. It is suggested that material which cannot be so classed should have woven or printed into every yard of the selvedge the words "burns rapidly," or, if sold in the form of ready-made garments, the words should appear twice on the principal band or inner hem; that any such material or garments sold as non-flaming should be marked in a similar manner with the words "non-flaming"; that no flannelette made abroad should be admitted unless it is non-flaming and bears the maker's name; that any firm selling union or flannelette not marked as described, or selling as non-flaming a material not complying with the test, should be liable to prosecution as for an offence under the Sale of Food and Drugs Acts; that parents and guardians should be specifically responsible for death or injury by fire to children wearing union or flannelette marked "burns rapidly"; and, finally, that local authorities should issue warnings on the subject. There can be no doubt that legislation more or less on these lines is urgently needed, and would do much to prevent the many deaths which occur through the heedless use of flannelette. The Committee's experiments included tests of ordinary flannelette, flannel, "union" (a mixture of wool and cotton), and "non-flam" flannelette both unwashed, and washed five, ten, and twenty times; and it is satisfactory to notice that their results entirely confirm the results of tests made for this JOURNAL some time ago with regard to the last-named.[2] Ordinary flannelette burnt with the greatest rapidity, being in many cases entirely consumed in sixty seconds and being more inflammable after washing than before; "union" proved very inflammable, especially when washed, half the sample of washed material being consumed, on the average, in sixty seconds. Flannel and "non-flam" flannelette were alike in that they did not carry flame, and only the portion within the power of the flame was affected by it; there was no difference of importance between the material unwashed and washed once or twenty times. Tests with garments were also made and the results, of which many photographs are given, were no less striking.

[1] *Fire Tests with Textiles.* "Red Books" of the British Fire Prevention Committee. No. 148. Edited by the Executive London, 1910. Published at the Offices of the British Fire Prevention Committee, 1, Waterloo Place, Pall Mall, London, S.W.

[2] BRITISH MEDICAL JOURNAL, July 20th, 1907, p. 150, and April 17th, 1909, p. 982.

A DENTAL FORECAST.

IN a recent issue of *Public Health*, Mr. R. Denison Pedley, President of the School Dentists' Society, states that a search through the papers set at the final examinations of the Conjoint Board of England and London University during the past fifteen years reveals that during the period not a single question bearing upon dental disease has been set. He seems to foresee, however, a time when a very different state of affairs will obtain, medical students being taught from the very first to inquire into the condition of their patients' teeth, and to assess its effect on their general health. Gradually they will realize that, apart from other points of resemblance, the surgeons and physicians of the future equally recognize that the purest air must be tainted when it passes through a mouth loaded with pathogenic bacteria; that every carious tooth is a cup containing its quantum of septic material which, when churned up in mastication, will taint the best of food; and that defective teeth are a constant source of irritation. In the operating department he will note that not only the hands but also the mouths of operators and their assistants are carefully cleansed, and that if he desires to join the white-robed throng around the operating table his mouth likewise must be the object of the same attentions. He will find, in short, that the gospel of cleanliness is a reality, and that so far as are concerned cleanly mouths, it is being preached not alone by specialists in dentistry, but in ordinary textbooks on surgery and medicine. As regards the present, we gather that he attributes a good deal of the existing prevalence of dental decay and dental disease to the widespread use of "patent" or artificial foods. A food commonly put forward by its manufacturers and accepted and prescribed by medical men as a "most nutritious food" is usually one which overlooks the function of mastication and assumes that digestion commences in the stomach and not in the mouth. Indeed, the benefits of exercising the muscular coats of the stomach and intestines are often lost sight of equally, it would seem. Some of the responsibility for this state of affairs he lays on the shoulders both of medical practitioners and the writers of textbooks. As regards the latter, he foresees a philosopher of some future age saying, "Ah! these were evidently written for the guidance of people who had no teeth."

SIR WALTER FOSTER will take the title of Lord Ilkeston of Ilkeston in the county of Derby. In view of his long connexion, extending over nearly a quarter of a century, with the constituency, there is a peculiar appropriateness in the choice of the new peer's title.

WE are glad to be able to report that Dr. Dawson Williams continues to make satisfactory progress. His medical advisers think it likely that he will be able to leave his bed in ten days or a fortnight.

AT the annual meeting of the Southern Branch, held on July 14th at Salisbury, Mr. L. S. Luckham in the chair, it was resolved on the motion of Dr. J. Ward Cousins, of Southsea, seconded by Dr. Willcox, of Warminster:

> "That a vote of sympathy be sent to Dr. Dawson Williams, the Editor of the BRITISH MEDICAL JOURNAL, on account of the injuries he recently sustained in a motor accident, and the best wishes of the meeting for his speedy recovery."

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

Midwives (No. 2) Bill.—In moving the second reading of this bill on Tuesday, Earl Beauchamp said that it amended the Act of 1902 on the lines of the report of the Departmental Committee. The first clause in the bill altered the constitution of the Central Midwives Board by adding representatives of the Local Government Board, the Association of Municipal Corporations, the Society of Medical Officers of Health, and the British Medical Association, and the second clause enabled that constitution to be afterwards revised if necessary. Clause 17 dealt with the payment of the fees of medical practitioners called in on the advice of midwives. The difficulty which arose in this matter was due to the absence of secure expectation of payment. In some cases medical men had refused to attend unless their fees were paid beforehand. The evidence taken before the Departmental Committee was conclusive that some intervention by the State was necessary to assure the payment of the fee if it could not be obtained from the patient or her relations, and the Local Government Board had expressed a strong opinion in favour of putting this responsibility on boards of guardians. That particular provision of the bill was subjected to severe criticism in its original form. The present bill contained alterations which he hoped would be a considerable improvement. The payment of fees was not to be considered a ground for any pauper disqualification. He had endeavoured to make the measure as little contentious as possible, avoiding the large issues connected with the subject. In regard to the omission from the bill of any reference to Ireland, he pointed out that this was an amending measure, and as Ireland was not brought within the scope of the Act of 1902 it was not desirable in an amending bill to introduce any new principle or such a great change as the inclusion of Ireland would be. Moreover, a different system of certification was followed in Ireland. If any noble lord would introduce a bill relating specifically to Ireland, the Government would place at his disposal all the information which they had concerning the subject. A discussion followed on the desirability of extending the bill to Ireland, after which the second reading was passed.

Instruction in Hygiene.—Under the ten minutes rule on Tuesday Dr. Addison introduced a bill "to require that in public elementary schools instruction shall be given in hygiene, and to girls in the care and feeding of infants." He said that under the code instruction of this character to senior girls was compulsory, but he believed it would be necessary to undertake extended education on simple lines to all children in the manner provided in the bill if they were to deal adequately with what was the greatest of all the causes of national physical degeneracy. Something like one-third of the waste of child-life was due to improper feeding and ignorance on the part of those who had the care of children. An improvement had been effected since the adoption of the Notification of Births Act, but in the last thirty years, notwithstanding the general decline in the death-rate of adults, there had been an actual increase in the death-rate of children under the age of 12 months. It was necessary to begin this instruction with the girls at school. The instruction was simple, and it might well displace some of the subjects which engaged a good deal of attention in some schools at the present time. It would mean that these girls, when they came to be mothers in the next generation, would at least know that a baby should have no other food artificially than milk. This knowledge, if it were acted upon, would diminish the rate of infant mortality by at least 25 per cent. Leave having been given, the bill was brought up and read a first time.

The Census (Great Britain) Bill.—On the report stage of this bill in the Lords on Tuesday a lively debate arose on the motion of Lord Eversley to omit the words put in to allow a religious census. Lord Newton and Lord Lansdowne, with the Bishop of St. Davids, opposed the motion, which was supported by Lord James and by Lord Beauchamp on behalf of the Government. On a division, the words allowing the religious census were retained by a majority of 3.

Education (Physical Training) Bill.—Viscount Hill, in moving the second reading, said the bill was drawn up by the National Hygiene League, and raised the age for physical training to 16 years, and required the teachers to have a sound knowledge of physical culture. Violent exercise was not aimed at, but proper instruction in standing and breathing—the latter, indeed, was the basis of the whole matter. Lord Meath pointed out that, as a result of a bill of his, which had been incorporated in the Code, physical exercise was taught in many schools. He sympathized with the general purpose of the bill, but regretted the prohibition of the use of warlike weapons. Lord Beauchamp said the bill as it stood was not acceptable to the Government, though he approved of the principle of the bill. The work of physical training in the schools had been only lately reorganized, and remedies in work of this kind could not take effect at once. The first thing was to train teachers, and that work was already in hand. With regard to military training, whatever might be thought of its benefits it certainly ought to be preceded by some system of physical training. He believed that recruits before joining the army were now generally trained by a system of Swedish drill and not with the help of war weapons. The Marquis of Londonderry sympathized with the object of the bill, but physical training alone would not suffice to improve the condition of the unfortunate children who were to be seen in the streets. The children owed their condition in some measure, perhaps, to overcrowding in their homes, to lack of proper nourishment, and to the failure of their parents to grasp the laws of health. It would be a dangerous innovation to make physical training compulsory in all elementary schools by legislative enactment, and to leave all other subjects of instruction at the disposition of the Board of Education by means of the Code. If physical training in continuation schools was made compulsory, there should be a special exemption for boy scouts. Lord Ridley suggested that, in face of the criticisms from both sides of the House, it would be well to postpone the bill and reintroduce it next year with modifications. The Earl of Crewe supported this suggestion, and it was accepted by Lord Hill, and the bill withdrawn.

Spirit Used in Medicine.—Mr. Primrose asked the Chancellor whether he would be willing to allow a drawback of the duty on spirit used by medical practitioners, chemists, and druggists. Mr. Lloyd George replied that he had given sympathetic consideration to this matter, but the practical difficulties were very serious, and he was afraid he could not undertake to grant such a drawback.

Measles and Whooping-Cough in London.—Sir William Collins asked the President of the Local Government Board whether, in view of the large aggregate mortality from measles and whooping-cough in London, he would be prepared to approve of the utilization of such hospitals of the Metropolitan Asylums Board as might not be required for notifiable diseases for the voluntary admission and treatment of children suffering from measles and whooping-cough. Mr. Burns replied that the question of the practicability of utilizing the spare accommodation in the institutions under the control of the managers of the Metropolitan Asylum District for diseases other than those with which they were at present empowered to deal was under consideration, and he understood that a proposal on the subject was coming before the managers at their next meeting. He should not lose sight of the matter.

Workshop Inspection (Ireland).—Mr. Devlin asked the Home Secretary last week whether his attention had been called to a report by the Chief Lady Inspector, in which she alleged that a medical officer of health refused to require the walls and ceiling of a workshop to be limewashed, although it was admitted that no cleaning of this kind had been done for nearly seven years, and stated that the workshop in question was no dirtier than his own consulting room; would he state whose was the workshop, and who the medical officer referred to; and what action had been taken in the matter by the Home Office. Mr. Churchill replied that he was aware of the case referred to in the question. It would not be in accordance with the usual practice in these matters to furnish the names of the occupier or the medical officer, and no useful purpose would, he thought, be served by doing so in the present case. The limewashing of workshops was not required to be done at fixed intervals, as in the case of factories, but the local authority had a discretion to require it when it was considered necessary for the health of the workers, and the Department could only intervene when there had been default on the part of the authority. The question of taking proceedings in this case in default of the local authority was carefully considered; but it was decided that the circumstances were not such as to make this course advisable.

Public Health (Health Visitors) Bill.—On Monday Mr. Burns presented this bill to enable local authorities to appoint health visitors under the Notification of Births Act, 1907. The bill was ordered to be printed and put down for second reading. If it passes the provincial authorities will be able to appoint health visitors as is done in London. The women health visitors will visit the homes of the poor and advise them on the rearing and feeding of infants, with the object of lessening the present excessive infant mortality.

Mr. Cox's Death and the Civil List.—Mr. Bottomley asked the Prime Minister whether he was aware of the death of Mr. H. Cox, after a long period of suffering, as the result of injuries received in the course of his duties in connexion with the application of *x* rays; and whether, having regard to all the circumstances of the case, he would recommend the widow for a Civil List pension? The Prime Minister replied that he was aware of the sad circumstances of Mr. Cox's death. As regards the second part of the question, it was impossible for him to express any opinion until he was furnished in the usual manner with such information as was required in the case of all applications for relief from Civil List funds.

Vivisection Act (Inspections).—In answer to Mr. Douglas Hall, the Home Secretary stated that the number of inspections made under the Vivisection Act in 1909 were as follows:

	Visits.	Experiments Witnessed.	
		Table IV (A).	Table IV (B).
Dr. Thane	135	28	44
Sir J. Russell	154	11	60
	289	39	104

Each place at which experiments were being performed was visited at least once during the year, and the majority of places were visited three, four, or more times. Almost all visits were by surprise.

Antivivisection.—On Monday last Dr. Addison asked the Home Secretary whether, in view of the fact that the operation of spaying two rabbits under an anaes-

thetic by a skilled operator without his licence being in order had been declared a contravention of the Cruelty to Animals Act, 1876, he proposed to take any action in regard to the corresponding operation which was performed in numbers of cases on young pigs and on young male cattle and sheep in this country every year by unqualified persons, and without an anaesthetic. Mr. Churchill replied: No, sir. The operation on the rabbits, being "an experiment calculated to give pain" and performed without the necessary authorization, was a breach of the Cruelty to Animals Act, 1876. The other operations referred to did not come within that Act: and he was advised that there was nothing illegal in them if carried out bona fide for commercial or domestic purposes and without causing unnecessary suffering. He had no evidence that the existing law with regard to them required amendment. Dr. Addison then asked whether the Home Secretary would say if this operation on rabbits performed by skilled operators and without pain to the animal was considered an offence under the Cruelty to Animals Act, why persons were allowed to perform, perfectly untrained, the same operation on other animals without skill and with the infliction of pain. Mr. Churchill said that he did not know that this operation was ever performed on rabbits bona fide for medical purposes. Obviously, an operation of a character that was performed already was one that would come within the scope of the Act. Mr. Gibson Bowles then asked was it prohibited for one class of animals and not for another. Mr. Churchill answered that the law of the country had been framed in order to restrict and regulate operations upon animals for the purposes of scientific investigation, but it had not hitherto restricted the ordinary actions which were taken for commercial purposes in regard to certain animals. Mr. Charles Bathurst then asked whether it was suggested that these operations on young farming animals were conducted by unqualified persons, and that if performed by properly qualified persons they constituted cruelty. Mr. Churchill answered that they did not come within the scope of the Act in his opinion.

Milk and Dairies Bill.—Sir Francis Channing asked the President of the Local Government Board whether, having regard to the fact that no legislation to secure purity of milk was contemplated this session, he proposed to adopt any further administrative steps this year for that object. Mr. Burns said that he regretted that it was not possible to reintroduce the Milk and Dairies Bill this session, and he was afraid that, pending the reintroduction of the bill, administrative action in the direction of preventing the introduction of impurities into milk must necessarily be of limited scope. Certain inquiries had been and were being made by inspectors into other aspects of the matter, such as the addition of preservatives to milk, and when these inquiries were complete he would carefully consider what administrative action could be taken. Pending legislation, it was to be hoped that the local authorities would exercise to the full such powers as they at present possessed.

The Medical Inspection of School Children in the Western Highlands.—In answer to Mr. Weir, on Tuesday week, the Lord Advocate stated that the scheme for the medical inspection of school children which had been formulated by the Secondary Education Committee for Ross-shire, and which had received the Department's approval, provided for the present for the following staff: The medical officer of health for the county, a subordinate medical officer for the mainland section of the county, a second subordinate medical officer for the Island of Lewis.

The Registration of Births, Deaths, and Marriages (Scotland) Amendment Bill was read a second time on Friday in last week. The Lord Advocate explained that the bill simply enabled the Scottish Registrar-General to certify extracts from his books by means of a seal without requiring him to sign his name, just as the Irish and English Registrars-General had been able to do for generations.

Invalidity Insurance.—Last week Mr. Bathurst asked whether the present members of friendly societies would enjoy under the proposed scheme additional benefits commensurate with the amount of their financial interest in their respective societies; and the Chancellor of the Exchequer said that every care would be taken to safeguard the interests of the great friendly societies and of their members, but he could not at the present stage lay before the House the details of the proposed scheme. In answer to a question by Mr. James Hope, the Chancellor of the Exchequer stated that it was estimated that 2,250,000 persons would contribute to the scheme for insurance against unemployment, and about 15,000,000 to the scheme for insurance against sickness, invalidity, etc. He was not yet in a position to state what would be the amount of their contributions.

Indian Medical Service.—Mr. Kelly asked the Under Secretary for India whether the Secretary of State had yet received from the Government of India a report on the medical service of India; whether he was aware of the belief among Indian doctors that the delay was the outcome of the desire and intention of the Indian Government to reserve the higher grades of the medical service to people of this country, without regard to efficiency, expenditure, or justice to the people of India; and what steps did he propose to take to bring the highest posts within reasonably easy reach of all medical men without distinction of nationality. Mr. Montagu replied that the answer to the first part of the question was in the negative; as regards the second part of the question, the Secretary of State found it difficult to imagine that any such belief existed. The Secretary of State could not now formulate proposals.

Use of Anaesthetics (Coroners' Committee Report).—Mr. Marshall Hall asked the Prime Minister whether, having regard to the report of the Coroners' Committee upon the use of anaesthetics and the decision of the Court of Appeal in Bellerby *v.* Heyworth, he would consider the advisability of at once introducing legislation to protect the interests of the public at the hands of unqualified medical and dental practitioners. Mr. Churchill answered that the recommendations of the Coroners' Committee were now under consideration, and he hoped, when time permitted, to propose legislation with regard to them. As regards the question of unqualified practitioners, he understood that, in reply to a circular issued at the instance of the Lord President by the Local Government Boards of England, Scotland, and Ireland, a large body of information had been collected from medical officers of health which would, it was hoped, be published at no distant date as a Parliamentary Paper. When this information was available the Government would be in a better position to consider what action was desirable.

The Shops (No. 2) Bill.—In answer to Mr. Seddon, the Prime Minister said that the second reading of this bill would be taken when the House reassembled after the adjournment.

The Course of Public Business.—According to the Prime Minister's statement of last week, after the Appropriation Bill is read a second time this week, and the Regency and Civil List resolutions passed, next week will be occupied by the report of the Budget resolutions and the third reading of the Appropriation Bill. The Indian Budget will be taken on Tuesday, and the rest of the week will be devoted to the Accession Declaration Bill and the Civil List Bill. If the Government's hopes are realized the House will meet some day early in the first week of August for the adjournment motion and to hear the Royal Assent to the various measures.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

DENTAL TREATMENT OF LONDON SCHOOL CHILDREN.

AT the meeting of the Education Committee of the London County Council on July 20th—within a week of the adjournment of the Council for the summer recess—the Children's Care Subcommittee presented a report on the provision necessary to be made in the metropolis for the dental treatment of school children. The consideration of this question was postponed in May, 1909, for six months, and in November, 1909, for a further six months, but owing to the subcommittee's dilatoriness the second six months will have become almost twelve before the Council can take any definite action.

The report opened by emphasizing the magnitude of the task of dealing satisfactorily with the teeth of three-quarters of a million children, and went on to state that any attempt to arrive at an immediate and complete settlement of the question would be undesirable. Only by accumulating experience of the best methods could any degree of success be secured. The Council would be obliged to learn from its own difficulties, inasmuch as the information available as to what was being done in the great cities of this country and abroad afforded but little guidance so far as London was concerned. The Special Committee which reported in 1908 (BRITISH MEDICAL JOURNAL, December, 1908) came to the conclusion that existing accommodation in the hospitals and dispensaries for even simple dental examination and treatment was wholly inadequate. The need for such treatment was generally recognized by all authorities dealing with questions of public health. There was, however, considerable lack of appreciation of the danger to health involved in the neglect of the teeth, and the public would require to be educated in order to ensure that accommodation provided for dental treatment was fully utilized. Unless there was actual suffering the need for treatment was not at present generally recognized.

The basis of the scheme for dental treatment being not merely the relief from pain but the conservation of the teeth with a view to the improvement of the general health, provision should be made for the instruction of teachers, parents, and children in dental hygiene. The subject of the care of the teeth had been introduced in a few schools already by means of toothbrush drill, and clubs and toothbrushes were now added to the requisition lists. Advice on the care of the teeth was included in the pamphlet recently issued dealing in popular language with questions of health (BRITISH MEDICAL JOURNAL, July 9th, 1910, p. 101).

Courses of six lectures to teachers on the personal care of the children, with reference to eyes, ears, and teeth, had been arranged; and the subcommittee hoped it would be possible to give dental hygiene a larger place in the curriculum of training colleges, to provide lectures to mothers, and further education on the subject of the school children themselves. Educational methods, however, would be wasted unless at the same time provision was made to enable treatment to be obtained where the need was recognized.

From the experience gained at Cambridge and elsewhere it appeared that the number of salvable carious teeth decreased as the children advanced in age, and that treatment for children in the last year of school life was much more serious and expensive than in earlier years. Some children secured permanent teeth when 5 years of age, while others did not get them until they were 8 years of age or even later. Not more than 3 per cent. of children were without any permanent teeth between 7 and 8 years of age. It seemed that a very serious increase in the number of children with carious permanent teeth took place between 7½ and 8½ years of age. These were important considerations in favour of the provision, in the first instance, for the dental treatment of children between the ages mentioned. The subcommittee proposed that a beginning should be made by providing treatment for these children, accepting the experience of Cambridge that 73 per cent. of children between those ages required attention. Within the prescribed age limit there were about 80,000 in round numbers attending London elementary schools, and apparently 60,000 of them needed treatment.

The subcommittee had been in communication with the British Dental Association as to whether provision for dental treatment could be undertaken by committees formed by local associations of qualified dentists either in premises provided by them as in the case of the committees of local medical practitioners, or in premises provided and equipped by the Council. The reply received was that there were in London only two branches of the British Dental Association, and that it would not be possible, therefore, for this association to undertake dental treatment for the Council. The subcommittee was considering the desirability of arranging for the work to be done by private dentists in their own surgeries. In addition communications were being sent to the governing bodies of hospitals with a view to ascertaining whether special provision could be made for dental treatment at the hospitals. In the meantime two offers had been received, which, if accepted, would enable the Council to obtain experience of two methods of dealing with the problem—at a hospital and at a local dental surgery. The Poplar Hospital for Accidents, East India Dock Road, was willing to provide treatment on terms similar to those agreed with hospitals in respect of other ailments, namely, £50 a year for each dentist working one half-day a week and 2s. for each case. There were three rooms at the hospital which were quite suitable for the purpose and would be available every afternoon. A grant of £60 would be required to equip them. On the basis of present knowledge each dentist could treat ten new cases a half-day. The facilities afforded Poplar would therefore secure treatment for 2,200 children a year, and the cost would be £470 plus the £60 grant. An offer had been made also by a local committee in Deptford, consisting of representatives of Children's Care (School) Committees, which was prepared to provide treatment at a local surgery on two half-days a week, without charge to the parents for the treatment in accordance with the Council's scale. The Deptford committee was willing also to provide treatment on additional half-days if the Council gave a subsidy as in the case of hospitals. Assuming that 3,500 cases a year could be taken, the cost to the Council would be £750 a year.

These two schemes would secure treatment probably for 5,700 children for approximately 4s. a case. On this basis, 60,000 cases would cost £12,000 a year, exclusive of grants for equipment. The subcommittee recommended that advantage be taken of these offers, and that for the present the selection of the children for treatment should be made by the school doctors.

A reorganization of the system of medical inspection in London is in prospect, by which children will be examined at three, instead of two, age-periods, each school to be visited by a doctor not less than once a term. The increased work will make necessary the appointment of two additional full-time assistant medical officers at a salary of £500 a year each, and twenty-eight additional quarter-time assistant school doctors.

LIVERPOOL.

UNIVERSITY OF LIVERPOOL.

ON July 9th a congregation of the University of Liverpool was held at St. George's Hall to confer degrees. In the Medical Faculty ten men received the degree of Doctor of Medicine; seven received the degree of Bachelor of Medicine and Surgery. In the absence of the Chancellor, Lord Derby, the degrees were conferred by the Vice-Chancellor, Dr. Dale. Dr. Dale

spoke of the loss the university had sustained by the death of King Edward, who was Visitor, and of Dr. Campbell Brown, who had been Professor of Chemistry. Dr. Dale also alluded to the retirement of Professor MacCunn. An appeal was made for £8,000 to complete the buildings of the Students' Union, an object of the utmost importance in the life of a non-residential university.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

The medical officer's report to the Education Authority of the City of Liverpool for the year 1909 contains many interesting statements. There are 133,000 children on the rolls of the elementary schools. Of these, 20,876 have been inspected as new admissions or on leaving school, and in addition there were 2,000 special examinations made at the request of teachers. This work, with the inspection and reporting on school premises and other matters, occupies four school medical officers, devoting their whole time to the services of the committee. In their work they have the aid of nineteen female assistant sanitary inspectors, who visit such of the children at their homes as the medical officers consider desirable, and put in force the powers possessed by the Corporation for dealing with verminous children. These sanitary inspectors also record the heights and weights and vision at the dictation of the medical officers, prepare the children for inspection, and re-dress them after it. In addition, four nurses give their whole time during school hours to the committee; these render first aid in cases of minor injuries and sores, and make systematic examination into the cleanliness of the children. The report states that the head and assistant teachers have rendered much valuable and cordial assistance in the work of inspection, even when it has been at their own considerable inconvenience. Parents are invited to attend at the inspection of their children, and in the case of girls 11.6 per cent. of the parents have been present. Unfortunately the parents of the neglected children are just those who do not attend these inspections.

The inspection occupied, on an average, six minutes for each child, and brought out many interesting points. There is a growing tendency to escape vaccination owing to increased facilities to conscientious objectors. The numbers of the unvaccinated children in the Toxteth Union has more than doubled in the last eight or nine years and amounts to over 13 per cent. of the children examined on admission. Rather more than half the children inspected are inadequately clad.

Boys have a great advantage over girls in cleanliness of their heads, owing to short hair, but girls suffer less than boys from ringworm of the scalp, probably owing to the hair protecting the scalps and to the boys using dirty caps promiscuously. The report deplores the lack of possibilities for cleanliness, and suggests that facilities for school baths should be obtained (a suggestion which has long been present to the minds of some); a bath and clean clothes for each child would make school life much more wholesome. Less than 10 per cent. of the children leaving have all their teeth sound, and it is noticed that, generally speaking, the amount of sepsis and number of decayed teeth are in inverse proportion to the cleanliness and better social conditions of the children. Nearly 20 per cent. of the children inspected have enlarged tonsils or adenoids and about 8 per cent. enlarged glands.

About 8 per cent. of the children leaving school have some external eye trouble, and about 8 per cent. have defects in vision in one eye, and 18 per cent. have defects in both eyes, the girls being affected more than the boys, possibly owing to sewing. The report states that in the matter of treatment of the defects probably 90 per cent. of the children who get treatment for eye trouble obtain it at one or other of the eye hospitals, and a very similar tale is told as to throat troubles; the majority have gone to one or other of the hospitals, very frequently at the suggestion of their usual medical attendant. The majority of those treated for dental troubles have gone to the Dental Hospital or one of the dispensaries. The report points out that ringworm is a cause of loss of time among the children, many cases taking very long periods to cure; it seems there is only one expeditious method of getting rid of the disease, and that is by *x*-ray treatment.

BIRMINGHAM.

THE HEALTH OF THE CITY.

IN the report of the Health Committee for the six months ending June 30th it is stated that the general health of the city has been exceptionally good. The birth-rate has continued to decline, having been only 27.0, as compared with 31.1, the mean rate in the ten preceding years. The general death-rate was 14.3 per 1,000, as compared with 17.7 for the same period last year, while the average death-rate during the first six months of the previous ten years was 18 4. The death-rate of 14.3 per 1,000 is the lowest ever recorded in the first half of the year.

The deaths from infectious diseases were as follows:

	1910.	Average 1900-09.
Small-pox	0	1
Measles	3	164
Scarlet fever	48	52
Diphtheria	34	51
Whooping-cough	181	173
Typhoid fever	7	33
Diarrhoea	33	64

The number of cases notified under the Infectious Diseases (Notification) Act was as follows:

	1910.	Average 1900-09.
Small-pox	0	30
Scarlet fever	1,259	1,115
Diphtheria	302	351
Typhoid fever	31	160
Puerperal fever	10	15
Erysipelas	271	302

HOSPITAL SATURDAY FUND.

The result of this annual collection to date is £19,428, as compared with £18,889 on the corresponding date last year, being an increase of £539. The contributors numbered 2,027, as compared with 2,013 last year. The increase in the number of contributors is expected to be maintained, and, as the average contribution showed an increase of 4s. over the average contribution this time last year, there is every indication that the £20,000 will be exceeded by £200 or £300. Of the collection, £10,000 is divided annually among the hospitals and nursing societies, while the subscribers provide with the remainder convalescent home treatment for such of their numbers as are in need of it. The number of patients admitted to the fund's convalescent homes during the half-year ending June 30th was 1,583, as against 1,374 last year. This is an increase of 209, and is the largest number ever recorded during the first half of the year. The numbers were distributed as follows: At the Tyn-y-Coed men's home, 645 patients; at the Marle Hall women's home, 671 patients; at the Red House children's home, 267 patients.

The work which has been receiving the most serious attention of the committee has been the treatment of patients suffering from phthisis. A project which has been before the committee for a considerable time has been to obtain means to acquire a home of their own, and that it should be established as a memorial to the late Sir William Cook, who was for so many years the Chairman o fthe Hospital Saturday Fund. A site has now been chosen on the borders of Great Farley Wood, on Romsley Hill, which is situated between the Lickey Hills and Clent Hills, at a point about ten miles distant from the city. The site is from 700 ft. to 800 ft. above the sea level, facing south, commanding very beautiful views, and is suitable in every way for the purpose. It has also been arranged that twenty-five acres of land can be acquired. The owner of the site, who prefers to remain anonymous, has offered it as a gift to the fund, and this is

equivalent to a presentation of £1,250. A subcommittee has already been appointed to go into the question of plans (which will include the provision of fifty beds), with the view of bringing a full scheme before the committee at the earliest possible date. A fresh appeal will be issued, and in the meantime a fair start has been made with regard to funds, for, including private donations, paid or promised, contributions received from the workshops and the gift of the land, about £5,000, out of the £12,000 which will eventually be required, has been provided.

MEDICAL INSPECTION OF DUDLEY SCHOOL CHILDREN.

The school medical officer for the borough of Dudley (Dr. J. H. Wilkinson), in his annual report, states that the total number of children examined during last year was 1,789—namely, 884 boys and 905 girls. About 10.8 per cent. of the children examined had four or more defective teeth, but this probably does not represent the actual percentage. Only 37 children were discovered with some morbid condition of the lungs, as compared with 51 in the previous year. Most of these children were under treatment. A serious outbreak of typhoid fever occurred in the autumn, the disease being introduced into the town about the middle of October by persons who had been hop picking. Both diphtheria and typhoid had been previously introduced by the hop pickers. The medical officer points out that until there is some assurance of proper sanitary supervision at the hopyards the present policy of the Education Committee of closing the schools in September and October, in order to allow as many children as possible to attend the hop-picking, must be considered as a dangerous error. With regard to dirty and verminous children, the percentage was 11.9 as compared with 14.6 for the previous year. Mr. B. H. St. Clair Roberts, ophthalmic surgeon, reports that 33 of the children had conditions of the eye requiring operation, and that 151 received prescriptions for spectacles. In his report he considers it regrettable that the resources of the Eye Infirmary, which were, unfortunately limited, should have been called upon to supply the necessitous cases with spectacles. He suggests the establishment of a voluntary fund for the provision of spectacles in cases where parents are unable to buy them. The school nurse, Miss Gunning, reports having made 394 visits to schools and 1,445 to the homes of scholars, and sending 64 circulars to parents concerning the cleanliness of their children, which is a great decrease on the previous year.

MANCHESTER AND DISTRICT.

INFANT BIRTH AND DEATH-RATES IN SALFORD.

THE position of Salford with regard to infant mortality is still far from enviable, though there has been a considerable improvement during the last year. The medical officer of health, Dr. Tattersall, estimates the population of the borough in the middle of 1909 at 241,950, the excess of births over deaths being 2,409. The marriage and birth-rates are the lowest on record for the borough, the marriage-rate being 14.8 and the birth-rate 28 per 1,000. There were 6,778 births registered during the year, of which 244, that is 3.6 per cent., were illegitimate. In spite of a reduction in the birth-rate of 1.5 per 1,000, Salford is still above the average of the seventy-six large towns, which have a birth-rate of 25.7. The Notification of Births Act has not been adopted, "owing largely," as the report says, "to the feeling of opposition by medical practitioners who object to being made responsible for notification and yet receiving no payment." Enquiries from the registrars at cemeteries show that 261 stillborn children have been buried, of which midwives notified 139. There are 51 midwives practising in the borough, and of the 6,778 births, 4,905 or 72.4 per cent., were attended by midwives and 1,873, or 27.6 per cent., by medical practitioners. Of 26 cases of puerperal fever notified during the year, 10 were in the practice of midwives. In two of these cases ex-midwives were concerned, one whose name had been removed from the Midwives' Roll. They were brought before the magistrates and each was fined 21s. and costs. Medical practitioners were called in to the assistance of midwives in 515 cases, and as the Midwives Supervising Committee has refused to be responsible for medical fees in these cases, and the guardians impose almost impossible conditions, there is no doubt that in many cases the medical men have had the greatest difficulty in obtaining payment for their services.

Some interesting statistics are given showing to what a great extent infant mortality depends on the feeding during the first six months of life. The health visitors, who are partly paid by the Ladies' Public Health Society and partly by the Corporation, have had under observation 3,526 infants born in 1908, and the infant mortality among these was 153.7 per cent. Of the total, no less than 2,880 were fed entirely on the breast for the first six months with a mortality of 113.9 per 1,000, and the following table shows the mortality among the remainder:

	Mortality per 1,000.
Breast and other food from birth	285.7
Breast one month and other food five months ...	300 0
Breast two months and other food four months ...	285.7
Breast three months and other food three months	250.0
Breast four months and other food two months ...	150.0
Breast five months and other food one month ...	125.0
Breast alone for the first six months	113.9
Other food entirely for the first six months ...	314.9

The contrast between the last two figures is most noteworthy, as is also the definite rise in the mortality the earlier other food than the breast is given. The principal causes of infant deaths were: Lung disease, 32 per 1,000; debility and atrophy, 28.6; diarrhoea, 24.3; premature birth, 15; tuberculous disease, 7.9; convulsions, 6.8; measles 5.3; and other causes, 33.8; giving a total of 153.7 for infants born in 1908. During the year 1909 there were 959 deaths of infants, which is a death-rate of 141 per 1,000—a great improvement on the previous year and considerably under the average of the previous five years, which was 159 per 1,000. The decrease was greatest for deaths from zymotic diseases and from atrophy and debility; while there was an increased mortality from bronchitis and pneumonia. Compared with the thirty-three great towns, Salford is twenty-ninth on the list, the only four having a higher rate being Swansea 159, Liverpool 144, Nottingham 150, and Burnley 157. In Manchester the infant mortality was 134, and thus both Manchester and Salford compare very badly with the five towns which are lowest on the list—namely, Croydon 80, Huddersfield and Portsmouth 95, and Brighton and Halifax 97.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

DUBLIN DEATH-RATE.

AT a recent meeting of the Public Health Committee of the Dublin Corporation the Secretary drew attention to the satisfactory decrease in the death-rate during the first half of this year. During the past month especially the decrease was most striking, and was at one period 5.2 below the mean rate for the past ten years. The committee attribute the change to the new main drainage scheme, and to the improved and more expeditious methods of removal of house refuse and of cleansing. Of late years also disinfection of premises after removal of infectious cases has been more prompt and efficient, and it is likely that the clearing out of insanitary areas—a work which is still being pushed on in various parts of the city—is now beginning to have some effect in improving the general health of the more congested districts.

PRESENTATION TO DR. GOFF.

Dr. Stevens Goff of Dundrum was presented last week by a number of his patients and friends with a handsome silver bowl and a cheque for £250. Over

200 of the residents in the district attended the function, which was presided over by the Rev. W. M. Gibbon. Dr. Gibbon, in his introductory remarks, expressed the high esteem in which Dr. Goff was held by his friends and acquaintances, and referred to the obligations which were owed by the public to the medical profession and to the services rendered by it to the poor of the community.

PRESENTATION TO SIR G. P. O'FARRELL.

In the Privy Council Chamber, Dublin Castle, Sir George P. O'Farrell, M.D., was made last week the recipient of a handsome presentation on his retirement from the post of inspector of lunatic asylums. The presentation consisted of a handsome eighteenth century Sheraton table, and of silver ornaments, and was made by his co-workers as a mark of their appreciation of his efficiency and humanity as a lunacy administrator. The list of subscribers included the Lord Chancellor, the ex Chancellor (Lord Ashbourne), Lord Rathmore, Lord Killanin, Mr. J. H. Campbell, the President of the Royal College of Surgeons, and many others. The Lord Chancellor, who presided, referred to the great changes for the better that had been effected during the past twenty years in the care and treatment of lunatics, and said that these improvements in Ireland had been largely brought about by the efforts of Sir George O'Farrell and his colleague, Dr. Courtenay.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

SCOTTISH BOARD OF LUNACY: RETIREMENT OF DR. JOHN FRASER.

ALL interested in the care of the insane in Scotland will hear with regret of the retirement under the age limit, after a service of thirty-two years, of Dr. John Fraser, Commissioner in Lunacy. Dr. Fraser, after a distinguished University career at Edinburgh, took the degree of M.B., C.M. in 1870. He soon afterwards became Assistant Medical Officer in the Fife and Kinross District Asylum, and in 1873, on the retirement of Dr. (now Sir John) Batty Tuke from that asylum he succeeded him as Medical Superintendent. In 1877 he received the appointment of Deputy Commissioner in Lunacy in succession to Dr. George A. Paterson. His duties as Deputy Commissioner were mainly concerned with the insane under private care, and into this work he entered with heart and soul, and with a determination to develop and perfect yet more the system of which Sir Arthur Mitchell, the first Deputy Commissioner attached to the Board, had been the founder and apostle. The energy and enthusiasm which Dr. Fraser brought to bear upon this work could not fail to be without effect. He gained the entire confidence and respect of inspectors of poor and other parochial officials, and animated many of them with his convictions as to the advantages of the system both to the ratepayer and as a measure of justice to the many insane who under slight supervision are capable of enjoying the liberties and pleasures of a natural home life. The inculcation of these views led to the removal to private care of many unrecovered patients who, but for his efforts, would have remained indefinitely as inmates of asylums, and in this way the congestion of asylums was relieved, and the necessity for enlargement in many cases averted. He became a Commissioner on the retirement of Sir Arthur Mitchell in 1894, and in his new capacity he soon gained the entire confidence and esteem of medical superintendents and others connected with asylums. He was regarded by them less as an official critic than as a friendly and outspoken adviser whose great experience and knowledge was always at their service, who listened with sympathetic interest to all their difficulties, and who was ever ready to do all in his power to assist them both with kindly counsel and active support whenever that could properly be given. There was no method of treatment of recognized merit which did not receive his warm approval and which he did not do his utmost to teach and spread, and he thus became a very real and active force in promoting the most advanced views of what is regarded as best in the care and treatment of the insane. In the performance of his duties he spared himself no labour, and the country has lost in him an able, zealous, and faithful public servant. His retirement will be greatly regretted by all with whom he came officially in contact, and his numerous friends everywhere will wish him a long and happy life now that the cares of office have been laid aside.

MEDICAL COMMISSIONER IN LUNACY FOR SCOTLAND.

The King has been pleased, on the recommendation of the Secretary for Scotland, to approve the appointment of Dr. Hamilton Clelland Marr as Medical Commissioner in Lunacy for Scotland in place of Dr. John Fraser, who has retired on attaining the age limit. Dr. Marr graduated M.B., C.M. at Glasgow University in 1892, and three years later took his M.D. degree. He went to Woodilee Asylum as an Assistant, subsequently became Assistant at the Crichton Institution at Dumfries. A few years later he returned to Woodilee as Senior Assistant, and in December, 1901, he became Medical Superintendent of that asylum, which is under the control of the Glasgow Parish Council. At the last report there were 1,034 patients in the asylum, which is recognized as one of the foremost institutions of the kind in the country. Dr. Marr has for some years acted as Secretary to the Scottish Division of the Medico-Psychological Society of Great Britain.

MEDICAL INSPECTION OF EDINBURGH SCHOOL CHILDREN.

In a report by Dr. James for session 1909–10 on the Edinburgh Merchant Company Schools, a number of interesting facts are mentioned. In regard to 736 girls attending the Edinburgh Ladies' College, it was found that "affections of the throat were as usual very frequent, being present in 254 cases. Enlargement of the tonsils was present in 226 cases in varying degree; in 28 adenoids were probably present in addition. The cervical and submaxillary glands were found to be enlarged in 48 cases. Again, as a rule, the enlargement was only slight, but probably due to the condition of the throat or teeth. Including even slight errors, abnormalities of vision were found in 191 cases (24.5 per cent.). With the exception of 5, all of these were due to errors of refraction. Abnormalities of hearing are very much less frequent, being present in only 39 cases (4.9 per cent.). True deformities were almost entirely absent; postural deformities and defects of attitude were, however, only too common, as has always been the case. Practically all these defects were due to faulty habits of standing or sitting at work, and so permit of remedy by suitable exercises and the abandonment of the habit. A forward stoop with flattening of the chest, projection of the scapulae, was found in 149 cases. All these faults of attitude were more prevalent in the girls from 10 to 15 years of age, the younger children and the older girls being comparatively exempt."

In the case of the boys, of 429 in one school 3 per cent. were classed as showing distinct abnormalities, and of 982 in another school 2 per cent. were so classed.

"As regards the practical value of the information derived from these medical inspections in the health and educational aspects . . . it was obvious in the great majority of cases any defects reported had been already known to the family. It will further be obvious that with the family doctor being the examiner, any defects not previously known will have been at once brought before the notice of the parents or guardians. As regards the value of these inspections from the scientific point of view, there is no doubt that from them in time much valuable information as regards growth and development may be obtained."

UNIVERSITY OF EDINBURGH: CAMERON PRIZE LECTURE.

Professor Bier of Berlin gave the Cameron Prize Lecture on Local Anaesthesia with Special Reference

to Venous Anaesthesia in the Theatre of the Anatomical Department of the University of Edinburgh on Wednesday, July 20th, at 4 o'clock.

EDINBURGH ROYAL INFIRMARY.

The managers have agreed to continue Dr. George Mackay, Senior Ophthalmic Surgeon, in office for an extra period of two and a half years as from September next, when he will have completed fifteen years' service as a full surgeon in his department. Dr. W. G. Sym, Junior Ophthalmic Surgeon, has been reappointed for a second period of five years as from the same date.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

The sixty-ninth annual meeting of this association will be held on Thursday and Friday, July 21st and 22nd, 1910, at Edinburgh, under the presidency of Dr. John Macpherson, the Senior Commissioner in Lunacy.

MENTAL OBSERVATION WARDS, GLASGOW EASTERN DISTRICT HOSPITAL.

The half-yearly report of the Glasgow Parish Council contains, among other medical reports, an account of the work done in the mental observation wards of the Duke Street Hospital. It will be remembered that the Glasgow Parish Council was the pioneer in this movement to establish observation wards for acute mental cases which are likely to recover or require more individual attention than is possible in an asylum. The mental observation wards have been very successful in minimizing the number of new admissions going on to the permanent lunacy list; and Glasgow's example has now been followed by Edinburgh, while London is considering a somewhat similar scheme. The working of the observation system is well shown by the last six months' report to the Glasgow Parish Council. Of 383 cases under treatment, 120 recovered, 53 improved, and only 125 were sent to asylums; 10 cases were boarded out and 29 died.

APPOINTMENT OF MEDICAL OFFICER FOR THE COUNTY OF FIFE.

The County Council of Fife has appointed Hugh A. McEwan, M.B., Ch.B.Glasg., D.H.P.Lond. and Camb., Assistant Medical Officer of Health for the County of Cumberland, to be Medical Officer for the County of Fife, in succession to Dr. T. F. Dewar, who has received an appointment on the Local Government Board. The salary is £611.

Sydney.

[*FROM OUR SPECIAL CORRESPONDENT.*]

DEATH OF DR. JOHN GIBSON.

DR. JOHN GIBSON, who practised at Windsor, New South Wales, for the past twenty-two years, died from chronic Bright's disease and uraemia off the coast of New Guinea during a cruise for the benefit of his health on May 5th. He was in his 54th year. He was born in the Orkney Islands on November 17th, 1857. He entered the University of Edinburgh, where he studied for two years in the Faculty of Arts. He then proceeded to the study of medicine, and after a distinguished career graduated M.B., C.M., in 1879. He at once proceeded to Evie, in the Orkney Islands, where he engaged in private practice. He was there appointed medical officer to the parochial board of the parish of Ronsay and Egilshay. After six and a-half years' residence there he resigned his position and returned to the University of Edinburgh, where he entered on special studies in pathology and bacteriology. There Professor Greenfield secured his assistance in carrying on some original researches on behalf of the Fishery Board of Scotland. For two years he held the position of second assistant in the pathological department, under Professor Greenfield, and during that time he prosecuted some researches on waxy and hyaline degeneration, and for his thesis on this subject he received a gold medal on graduating M.D., 1887. He came to Sydney in 1888, and was appointed acting house-surgeon at the Prince Alfred Hospital, Sydney. This position he resigned after three months to take up private practice at Windsor, where he resided for the rest of his life. At Windsor he was appointed honorary medical officer to the Hawkesbury Benevolent Asylum and Hospital, and also Government medical officer for the Windsor district; both these appointments he held at the time of his death. For some years after he went to Windsor he did a good deal of pathological work, especially microscopic examinations of specimens of cancer and tuberculosis in cattle for the New South Wales Government. At the Intercolonial Medical Congress in Sydney, in 1892, he read a paper on certain "worm nests" or "worm knots" occurring in the cellular tissue of the brisket of cattle. The "worm nests" contained parasitic worms and filaria ova; these filaria have subsequently been named *Filaria gibsoni*. In 1897 he was appointed medical officer to the Hawkesbury Agricultural College, a position which he held up to the time of his death. He laboured hard on behalf of the Hawkesbury Benevolent Asylum and Hospital, but he did not live to see the completion of the new buildings, for the erection of which he helped very largely to secure the necessary funds. The committee and subscribers of the Benevolent Asylum and Hospital, in recognition of his distinguished services, elected him President in 1909.

FRIENDLY SOCIETIES IN NEW SOUTH WALES.

The twenty-first annual report of the Friendly Societies' Association of New South Wales states that the membership of the friendly societies at the end of the year 1908 was 123,297, an increase of 6,312 on that at the end of the previous year. The amount of funds was £1,258,023, an increase of £86,680 during the twelve months. During 1908 there were 21,869 persons sick for an aggregate term of 127,807 weeks, at a total cost in sick pay of £100,252. The total male members exposed to risk for sick pay numbered 95,050; consequently, 22.2 per cent. of members entitled to sick benefits became claimants, or, in other words, about 2 in every 9 of the members were relieved, the average period of sickness being 5.9 weeks, during which sick pay amounting to £4 13s. 2d. per case was received, equivalent to 15s. 11d. per week of illness. The Council of the New South Wales Branch of the British Medical Association was asked to meet a special committee from the association with a view to endeavouring to remove the necessity of the inclusion of the wage-limit clause in the proposed agreement issued by that body, but a reply was received stating:

> The question of establishing an income limit for members of friendly societies entitled to medical benefits having been settled, and the limit itself fixed by the Australasian Medical Congress held in Melbourne in 1908, and also by a unanimous vote of the New South Wales Branch at a general meeting, the Council considers that it is no longer in its power to consent to the income-limit clause not being included in the agreement referred to. The Council is of the opinion, therefore, that a conference having the object specified by you in your letter must necessarily be unavailing.

On receipt of this letter the special committee held a meeting, and it was unanimously decided to recommend to the association:

> That a Friendly Societies Medical Institute be formed for the whole State of New South Wales.

This was endorsed by the association, and the special committee was instructed to draft a scheme. This committee held a number of meetings, and unanimously agreed to it; and, in accordance with the decision arrived at, the scheme has been forwarded to the executive of each society, requesting them to place the matter before their delegates at their respective annual sessions, and to notify the result of such consideration to the association as early as possible.

INVITATION TO THE BRITISH ASSOCIATION TO AUSTRALIA.

A deputation representing the scientific societies in Australia waited on the Prime Minister, Mr. Fisher, to ask that a grant of £10,000 might be made by the Government towards the expenses connected with an invitation to the British Association for the Advancement of Science to hold the next meeting about 1913 in Australia. The deputation, consisting of Professor Masson, Professor Spencer, and Dr. McFarland, informed Mr. Fisher that they had waited on the previous Prime Minister, Mr. Deakin, some months ago, and that he had promised to place the proposal before his colleagues with his strongest personal approval. Mr. Fisher subsequently informed the deputation that he was in entire agreement with the proposal, and thought that from every point of view the holding of the meeting in Australia would be a great benefit to the Commonwealth, and that it would be well worth the money. He promised to place the request before his colleagues, and if they agreed he would bring the proposal before the Federal Parliament so that the invitation might reach Sheffield before August next.

PORTRAIT OF PROFESSOR LIVERSIDGE.

When Professor Liversidge resigned the Chair of Chemistry in the University of Sydney and left Australia to take up his residence in England, a number of his friends subscribed for a portrait to be presented to the university. The portrait has been painted by the Hon. John Collier, and has now been placed in the great hall of the university. Recently the subscribers met the Chancellor in the great hall for the purpose of handing over the portrait to the university. Professor David and Mr. J. H. Maiden referred to Professor Liversidge's devotion to the cause of science, his great interest in the Royal Society, and in the Australasian Association for the Advancement of Science, of which he was the founder, his services to the community as a member of the Technical Education Board, and in other capacities. The Chancellor, Sir Normand MacLaurin, accepted the portrait on behalf of the university.

Correspondence.

"THE FUTURE OF THE ASSOCIATION."

SIR,—At first I thought it scarcely worth while to correct so palpable a misstatement as that in the letter of Mr. Pye-Smith in the JOURNAL of July 16th, p. 170. But I do not like any one to suppose I could have asserted that "the new regulations in no way alter the situation." That these changes do affect the taking a Referendum is obvious.

What I did say, however, had nothing to do with "the balance of power," and is correctly reported in the JOURNAL of July 2nd, as follows:

> Was it necessary once more to say that the position of the Association for getting such things as a postal vote or obtaining a Referendum by postal means was exactly the same whether this resolution was passed or not?

In the future, as now, it will be necessary, in pressing for any such change, to convince the Representative Meeting. This can be done by returning Representatives pledged to the change.

I was wrong in saying the position with regard to postal votes was not altered.

One postal vote would by the new regulations be legal in the United Kingdom, which is at present only legal for constituencies formed outside the said area.

I mean that the election of Representatives could in all cases be done (if the constituency so decide) by voting papers. So that, in fact, this change is one on the lines favoured by Mr. Pye-Smith and his friends.

I may casually add that the removal of all laws governing the election of Representatives from the Articles to the By-laws is also a point in favour of the same party. All these remarks deal with very simple matters, but I find that no matter is so simple that it cannot be missed.

The pith of Mr. Pye-Smith's letter is to be found in the first paragraph, where I read:

> The decrease in the powers retained by the individual members of the Association which is steadily taking place . . . is one of the great dangers which some of us consider to be threatening the very existence of the Association, and the chief reason why so much importance is attached by us to an effective postal referendum.

My memory, Sir, goes back to the time when the government of the Association practically rested with the Council, to the exclusion of the "individual member."

It was thought by some that this also "threatened the very existence of the Association." At any rate, there was a very full and very vigorous gathering at Exeter Hall which altered many things.

I am not going to argue whether this was a wise step or the reverse, whether danger was averted thereby, or other and greater dangers raised. For my own part I have nothing to regret, nothing to fear. But if Mr. Pye Smith hopes to put back the clock to the other side of that meeting, I think he sighs in vain.

He may believe that the vote at the Freemasons' Hall does not fairly represent the feeling of the Association at large; if so, let him and those who think with him bestir themselves.

Exeter Hall may teach him that a real and strong cause need fear no failure. On a celebrated occasion the crowd shouted "Great is Diana of the Ephesians!" for a considerable time, till it was reasonably pointed out that the constitutional mode of seeking redress was open to the malcontents, and more effective than shouting. Let those who feel sore and sceptical as to that 200 to 5 vote cease crying "Great is the individual member," and set the existing machinery to work. It will record any real life in the alleged grievance.—I am, etc.,

Bath, July 16th. T. JENNER VERRALL.

SANATORIUM TREATMENT OF TUBERCULOSIS.

SIR,—Without attempting in any way to express an opinion upon the particular points at issue between Professor Pearson and Drs. Latham and Garland, may I be allowed to say a few words generally upon the sanatorium question, in order to put the case fairly from the standpoint of an unbiassed observer, which I think I may fairly claim to be, having given up practice twenty years ago, having no financial interests at stake, and only being desirous of doing the best thing possible for the consumptives of this country? During the years 1882 to 1890 I had the opportunity, in a large suburban general practice, of coming into touch with dozens of phthisical patients, most of whom I knew well, and whose progress there was no difficulty in following up. I regret that I have not a complete record of all the cases, but I have a very vivid recollection of what happened to the majority of them. I never omitted to examine the sputum microscopically, when Koch's discovery of the bacillus made this possible. The conclusion at which I arrived in those days was that, given the presence of bacilli in appreciable numbers, there was but a very slender chance of recovery. The course of such cases amply justified that conclusion. I think it was the recollection of this highly unsatisfactory state of things which made me welcome the first announcement of "open-air" methods in this country, and anxious to join with Dr. W. R. Parker, of Kendal, in the establishment of a sanatorium for the consumptive poor of the county of Westmorland.

We opened our sanatorium early in 1900, near Grange-over-Sands, upon a modest scale, with accommodation for 16 patients. It is now a thriving institution with 60 beds, and we are just about to open another building for 25 "advanced cases."

About three-fourths of our sanatorium patients are now from outside the county (North of England and South of Scotland), and it has not been found possible to follow up the progress of these patients after discharge. We still adhere, however, to the rule originally adopted of keeping

in close touch with our own Westmorland patients, and at the close of each year our secretary, Dr. Parker, finds out exactly what is the state of health and capacity for work of every patient who has been with us since the institution was opened in 1900. This is not very difficult, as the members of our committee, representing all parts of the county, are able to provide the desired information.

It may here be stated that any sanatorium which does not report progress of cases for some years after discharge is guilty of a serious omission, and naturally lays itself open to grave criticism.

In speaking of results, I may say that we have given up tabulating the very advanced cases which have occasionally been admitted, a fatal termination being almost invariable; also any cases complicated by some other serious complaint—for example, heart disease.

The results are as follows: Of 75 "early cases" (slight amount of disease, Class A), 90 per cent. are in excellent health, and have been doing well through the whole period since the institution was opened, and there has only been one death during the ten years. I am aware that the usual objection may be advanced, namely, that probably many of these cases were not consumptive at all, and would have recovered without "open-air" treatment. I am ready to admit that of a small percentage this may be true, and also that bacilli are not to be found in these "early cases"; but I would ask, who expects to find them, seeing that in many instances they only find their way into the air cells, and appear in the sputum, when considerable damage has been done in the lung? Besides, surely it is wiser to commence an approved treatment when there are highly suspicious symptoms and physical signs of the disease (even if the diagnosis be not absolutely certain), than to wait for a destructive stage, the recovery from which may be far more tedious and uncertain.

However, as a concession to our opponents, let us for the moment ignore these cases, and confine our attention to Class B in our report—that is, "severe cases." About two-thirds of these correspond with the second group as suggested in the Local Government Board classification, the remaining third being of the third group. Bacilli were found in most of these cases. The subjoined table is a condensed form of our statement issued in January, 1910, except for the omission of the 1909 patients, which are purposely excluded as being too recent. It therefore covers a period of nine years, and the total number dealt with is 111. The patients are grouped under four headings—namely, "quite well," "fair," "frail," and "dead," according to their condition at the close of 1909. It will thus be seen that when our last report was issued (January, 1910) there were 7 patients alive and well treated nine years ago, 8 patients treated eight years ago, and so on, until we arrive at a total of 73 at the close of 1908, who are now quite well, unless there has been any death during the last few months. The succeeding columns show that 12 are in "fair" health, 4 "frail," whilst there have been 22 deaths, a percentage of 20 (22 out of 111); those "quite well" number 65 per cent., "fair and frail" taken together about 15 per cent.

CLASS B.—*"Severe Cases," Corresponding with the Second and Third Groups in the Local Government Board Classification. Number of Patients (111) and their Condition at the close of 1909.*

Year of Treatment, with Number of Years that have since elapsed.	Quite Well.	Fair.	Frail.	Dead.
1900 (9 years ago) ...	7	1	1	3
1901 (8 years ago) ...	8	—	—	6
1902 (7 years ago) ...	7	—	—	7
1903 (6 years ago) ...	5	—	—	1
1904 (5 years ago) ...	8	1	—	1
1905 (4 years ago) ...	7	4	—	—
1906 (3 years ago) ...	6	2	—	1
1907 (2 years ago) ...	10	2	1	3
1908 (1 year ago)	15	2	2	—
Total	73 (T.B. in 37)	12 (T.B. in 6)	4 (T.B. in 4)	22 (T.B. in 18)

If we exclude the last four years, as being somewhat recent, and confine ourselves to those who were under treatment *five years or more ago*, we still get a total of 35, out of 56, recorded as "quite well," namely, a percentage of 62 cases which may reasonably be described as "recoveries," since the best available evidence records them as quite well at a period varying from five to nine and a half years after their treatment in the sanatorium. I ought to mention that the words "quite well" include the capacity for regular work, and these patients have for the most part either returned to their usual trades or been put to some employment believed to be more suitable for them. I am aware that these numbers are not very large, but if we had 1,000 cases to present, there is no reason why there should not be precisely the same result.

I do not know what the experience of others may have been under the old system of twenty-five or thirty years ago; but if those who speak disparagingly of sanatorium treatment can assure me on good evidence that they obtained anything like such good results from the old methods as are indicated in the above table, I should be very pleased to know how it was done. I can honestly say that nothing in the whole range of medical practice has impressed me so much as the contrast between the impotent, not to say injurious, treatment of consumptives in the old days, and the hopeful and satisfactory results of the present "open-air" methods wisely carried out.—I am, etc.,

WM. S. PAGET-TOMLINSON, M.D Lond.,
Honorary Treasurer, Westmorland Sanatorium
Kirkby Lonsdale, July 13th. for Consumption.

SIR,—With reference to Dr. Latham and Mr. Garland's recent book on the *Conquest of Consumption*, might I as one more or less an "outsider," offer a few criticisms?

In my student days the whole tendency of the teaching on tuberculosis was that the seed was everything, the inherited soil hardly counted. When I went out into practice, however, I got rather a shock to find (and I expect a similar experience has fallen to the lot of most young medical men) that my consumptive patients and the families to which they belonged were not, either physically or mentally, average samples of the community from which they were drawn. My experience had been so contrary to my teaching, that often in discussing things medical with my fellow practitioners I have asked the question, Do you think the tendency to tuberculosis inherited? I have never once received a reply in the negative.

It is very doubtful if the idea that the tendency to tuberculosis was not inherited would ever have arisen had it not been evolved originally by a class of men who were enthusiasts, and who, however accurate their knowledge of the tubercle bacillus, had little or no knowledge of "man." They were practically in the position of the mathematician dealing with medical subjects; they required the guidance of the general practitioner, the man with the all-round knowledge of medicine, and, what is very important, the man with a "family" knowledge of medicine, to avoid coming to erroneous conclusions.

Tuberculosis, insanity, idiocy, etc., have all been shown to have an excessive incidence on the "elder"-born members of a family. Further, in the case of idiocy, the parents tend to show the same distribution in the family—that is, they tend to be "elder"-born members. But when one comes to work out the distribution of tuberculosis in the parental generation (in the case of the idiot) one finds that there is a distinct "cutting out" on the elder-born members. In other words, many an imbecile owes his existence to the fact that his parents failed to die of tuberculosis. Now, this may seem an unkind thing to say, but in Nature there is neither kindness or unkindness. Nature is "intellectual, not moral."

Again, as regards insanity, the authors themselves estimate that, roughly, one in every eight consumptives is likewise insane. This tendency to consumption among the insane they explain by the lowered resistance of the soil during the attack of insanity. This may be so, but it is certainly not the whole story. While, during the last fifty or sixty years, the death rate from tuberculosis has steadily diminished, we are, on the other hand, faced with a very ugly rise in our insane rate. Since the insane show such

a marked tendency to tuberculosis, it is not improbable that the diminishing death-rate from tuberculosis has played a considerable part in the increase of insanity.

Let us take the case of the idiot. The death-rate among idiots is about ten times that of the normal population at the same age. Further, of deaths of idiots about 80 per cent. are due to tuberculosis. Now an idiot has not even the resisting power necessary to die of phthisis. He dies of acute tuberculosis, death taking place in from three to six weeks from the onset of the illness. Surely here there is some inherited lowering of the soil. There are some 150,000 (estimated) of these defectives in England and Wales, and for every "defective" there are from six to a dozen of his relatives only a shade better than himself. Practically the same holds for insanity, yet we are asked to believe that a man cannot inherit a soil which will remain during his lifetime permanently below the average in resisting power. The question does not require any great statistical knowledge. It is one simply of common sense.

It would be a fair inference by a layman, after having read *The Conquest of Consumption*, that there could be no reasonable objection to a man marrying into a family in which tuberculosis abounded, provided there had been no recent opportunity for infection. If the authors really mean this, then the teaching ought to receive the whole-hearted condemnation of the profession. Until we have some restriction on the marriage of undesirables the elimination of the tubercle bacillus is not worth aiming at. It forms a rough but on the whole a very serviceable check on the survival and propagation of the unfit.

This world is not a hothouse, and a race which owed its survival to the fact that the tubercle had ceased to exist, would on the whole be a race hardly worth surviving.

Personally I am of opinion, and I think such opinion will be shared by most medical men who have been behind the scenes and have not allowed their sentiments to blind them, that if to-morrow the tubercle bacillus were non-existent, it would be nothing short of a national calamity. We are not yet ready for its disappearance.—I am, etc.,

D. W. HUNTER.

Royal Albert Institution, Lancaster, June 26th.

SIR,—The truth here is particularly difficult to arrive at, as some points arise the value of which is hard to estimate. In pre-sanatorium days it was known that many patients who died from causes other than phthisis showed at *post-mortem* examination healed lesions of pulmonary tuberculosis. I speak now from memory, but I think the late Professor Coates used to put the figure at about 40 per cent. Again, the diagnosis of pulmonary tuberculosis is now, I believe, made much earlier than it would have been twenty years ago, and so many cases which are now sent to sanatoriums would then have been sent into the country for "a change of air." The result in many cases would have been similar, only now in the cases which recover the sanatorium gets the credit.

These two points alone—and others might be mentioned—make it very difficult to arrive at the exact value of the so-called sanatorium treatment. After a considerable experience here in what is one of the largest sanatoriums in the kingdom, I feel that the curative effects of a term of residence in these institutions have been unfortunately greatly magnified. In my annual report for the year 1908 I used these words: "I am becoming more and more convinced that the true value of the sanatorium is not curative, but educative." This statement, however, never reached the ears of the public, nor the profession, being apparently considered "not expedient."

In the same report I gave some figures, which I quote in the accompanying table, which throw a little light on this interesting question. The figures are unsatisfactory for two reasons. First, the returns are from the patients themselves, and from these I had to conclude what the state of health then was. Secondly, there is an enormous proportion untraced which, of course, vitiates the result.

Amongst those who are returned as "well" there are many who would have done quite well had they never seen a sanatorium. Others, from a medical point of view, are not well. Others have doubtless gained permanent benefit. There is no doubt whatever that a certain proportion of the cases do ultimately recover, but what that percentage is I fear cannot be arrived at by the present mode of making statistics.—I am, etc.,

Year.	No. of Patients	Well.	Relapsed.	Dead.	Untraced.
1900 & 1901	223	41 or 18.0%	3 or 1.3%	72 or 32.0%	107 or 48.0%
1902	227	34 or 15.0%	3 or 1.0%	60 or 26.4%	130 or 57.0%
1903	192	38 or 19.3%	5 or 2.6%	57 or 29.0%	92 or 47.0%
1904	159	20 or 12.5%	3 or 2.0%	51 or 32.0%	85 or 53.4%
1906	141	51 or 36.2%	8 or 5.0%	51 or 36.2%	31 or 22.0%
1907	199	67 or 33.6%	13 or 6.4%	74 or 37.2%	45 or 22.6%
Total ...	1,141	251 or 22.0%	35 or 3.0%	365 or 32.0%	490 or 43.0%

JOHN GUY, M.D., D.P.H.Camb.,
Glasgow, July 5th. Medical Superintendent.

MENTAL AND NON-MENTAL.

SIR,—The terseness with which Dr. Macleod states his own views and those he opposes[1] is certainly in sharp contrast with the discursive method which the great thinkers on the subject he touches suppose necessary. Our notion, that is, our knowledge, of a thing, Leibnitz says, is clear and obscure, distinct and confused, adequate and inadequate, intuitive, symbolical, perfect. Note that the conjunction is *and*, not *or*. My notion of a rose is clear and perfect when I am conscious alone of giving the same name to an idea and a thing; I know the name at least. The notion or knowledge is, however, confused when I use the name to identify a common nature in the idea and thing. I am clear again when I say that the name is symbolical, and in that sense adequate to express two distinct things. I become clear, however, by shelving the question of the nature of the idea and thing, and affirming the adequacy of the name as an expression for both. I find now that I can expand the expression, without losing the precious quality of clearness, so as to make it one for the British Museum with all the heterogeneous articles in it, including the most heterogeneous of them, the studious minds in its reading room. I can, in fact, put "universe" as an expression for everything I know and do not know, or know in a confused, obscure, and inadequate way. Similarly I can put any random assemblage of things, connoting a complex of ideas, under the form of an expression ignoring the nature of thing and idea; I can speak of millions without knowing or caring to know any particular millions of objects.

"British Museum," "universe," are stated as collective expressions; "rose" as a concrete expression. But whether we state the rose as a creation of sensation or of qualities in a thing the sense is collective, and not merely in the positive but negative sense; the expression "rose" connotes what is not a rose; a botanist would be nowhere if he had only *Rosaceae*. This gives the argument for Mind as an independent, non-physical entity. When we exclude from the rose as a physical thing or object in sentience, any expression we can form for the excluded element is one for an abstraction, a pure mental form. In cursory common thought it seems enough to say that the rose is not a lily, but neither is it a star nor a stone; the true negative expression is one for any mentally formed collection apart from the individual rose in question. The botanist takes an order near *Rosaceae* for his negative expression just as we take 100 distinct from 99 or 101, the true negative being all the numbers below or above 100, cypher or infinity.

We have clear knowledge only as we hold that the expressions "mental" and "non-mental" exclude each other. When I write down 1 or 100, although I use a physical form of expression, I know that the symbolical or mental sense excludes the physical or non-mental sense; the expression is one for nothing that can be said to be non-mental. But the non-mental occurs in such a form that I can apply the expression to it; I can speak of one or one hundred stars, trees, or human beings, provided the expression excludes all other objects and other numbers of them.

[1] BRITISH MEDICAL JOURNAL, July 9th, p. 114.

The mental form or idea as the antecedent creates for itself the name, expression, or ideograph. Thus, an ideographic point is a geometrical one—that is, one through which any number of lines in any direction can be drawn. Under physical conditions such a point is impossible, but the point, as physically expressed, describes no physical fact *in esse*, is only a symbol in sense, a name for the two different objects in thought, the idea and thing. The physical point, like the word point, is not the mental or ideographic point, but an expression or symbol for it. Mathematics would be mere nonsense if it was a theory of physical points and rows of unequal points or physical lines.

As "Mind" is a subject of inductive reasoning, it appears to us under the form of an aggregate of individual minds, and it can be determined as an unity or entity by determining common factors in the aggregate. But the induction appears also to bring in differential factors, logically forcing us to identify one individual mind by characteristics not in it, as we identify a rose or a physical point by characters not in rose or point. An occultist would say that one mind is more dematerialized than another, or can dematerialize itself as another cannot. Another supposition made is that a man knows what is outside of him because the limits of his body and sense organs are not the limits of mind. Another is that the matter of one's body is in respect of mind as a stick, stone, or steam engine outside of him; our bodies are not self-conscious or self-knowing, but known as external objects are. The "ideas" of Plato and Plotinus are of this kind, forms in nature not ourselves; we only express them by physical symbols particular in respect not of their original nature but conditioned to our physical nature by form of expression. We have clear knowledge of the form of expression and its general application to idea and thing, but the nature of what is expressed remains in the regions of obscure and confused knowledge where it always has been, and rejects reduction to terse and explicit statement. The proof of this is given by the vast array of confused and contradictory statements in the historic field of thought.—I am, etc.,

Newry, July 12th. W. R. MACDERMOTT, M.B.

"FAITH HEALING AND PHENOMENA OF THE OCCULT."

SIR,—Allow me to thank Dr. Claye Shaw for having noticed my letter so courteously. He would not have lost anything of the high respect to which his attainments entitle him if he had passed it over in silence, since it did not even remotely call in question the main theme of his paper. Indeed, I owe him an apology for having chosen his paper as an excuse for my criticisms, and I humbly tender it.

As Dr. Claye Shaw's object was to "arouse speculation and to show that many accepted theories are still open to doubt," mine was to arouse independent thought, untrammelled by authority, and to point out a few from among the many preconceived errors which hamper the real progress of Natural Philosophy.

Newton wrote in his *Principia:*

> But hitherto I have not been able to discover the causes of those properties of gravity from phaenomena, and I frame no hypotheses; for whatever is not deduced from the phaenomena is to be called an hypothesis; and hypotheses, whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy.

We could not assist Newton if he were alive to-day; probably because we have not profited by his warnings.

I have already touched upon three points, and they are sufficient for a beginning. From the position I have taken up I cannot retreat.

We are all agreed that the vibration hypothesis is a very useful and convenient means of service at the present time, but when it is used for the purpose of sustaining a new hypothesis it is necessary to disclose the truth in regard to it, namely, that it is entirely dependent upon a postulate—the ether—and the whole is an elaborate mathematical exercise devoid of a single prop from experimental philosophy, with as much or as little reality as zero or infinity.

In regard to force I will admit that if force were anything at all there would certainly be some truth of quality or amount about it, and such a phrase as "conservation of energy" would have the meaning assigned to it in most books on the subject. In natural philosophy force is nothing at all, and simply does not exist. Every natural phenomenon which has been explained may be explained without the introduction of the word force, or energy, or other synonym.

"To every action there is always opposed an equal reaction; or the mutual actions of two bodies upon each other are always equal and directed to contrary parts" (Isaac Newton).

A hot body will heat a cooler body exactly in proportion as it is cooled by the latter. There is no need to assume the passage of force from one to the other. The bodies interacting are themselves the agents; they tend to equalization. So with electricity, magnetism, and every other physical affection.

We may speak of the force of a reaction, meaning its velocity, and it is in this sense that I spoke of force as having velocity. We are not justified in introducing force as an entity, and assigning to it dimensions, qualities, and moods which are the attributes of substances. The ordinary phrase "pent-up energy," when used in reference to living beings, I believe has a deep significance; but when used in reference to material things expresses to us the same idea and the same superstition as the phrase "bottled-up devil" might have expressed to the ancients. Force and energy are twentieth century sylphs, naiads, gnomes, and salamanders.

I am not surprised that Dr. Claye-Shaw is unable to follow my third objection. It is so much at variance with orthodoxy, that it is only by divesting the mind of preconceived ideas that it is possible to look upon so-called conductors as in truth resisting reactions rather than assisting them. This is a fact which I could demonstrate if called upon to do so by repeating one of the experiments of Tyndall.

I am not quite clear as to whether the example Dr. Claye Shaw gives is intended to refute my statement that "there are no conductors as ordinarily understood" (in the sense of assisting the passage of force from one body to another), or to refute the statement that "a body cannot transfer its *own* motion to another unless it touches it."

The interposed lens between the rays of the sun and the hand surely impedes these rays, for they are partly reflected from the surface of the lens and do not reach the hand undiminished. They are merely concentrated upon a smaller area. He cannot mean that the interposition of the lens transfers the motion of the sun to his hand, thereby causing his hand to move. He has obviously overlooked the word "own," which is now printed in italics. The fact that one body does influence another in such a way as to cause it to move towards the first is a primal law of Nature upon which innumerable phenomena depend.

An accurate, clear, and independent conception of the truths of physics divorced from speculative hypotheses and mathematical equations is as much a need of medical scientists as of any other, and if my remarks have caused any to ponder they will have served my purpose.—I am, etc.,

London, W., July 18th. W. B. PARSONS.

ON THE PRESENCE OF SUGAR IN HEALTHY URINE AS A SOURCE OF THE OSAZONE REACTION.

SIR,—The JOURNAL of July 16th contains a letter from Dr. Cammidge relating to the article from us with the above heading that was inserted in the JOURNAL of the previous week. Dr. Cammidge admits that it is now generally conceded that healthy urines contain sugar, but states that "most observers hold that the quantity is exceedingly small, very much smaller than is stated by Drs. Pavy and Bywaters in their paper." It is to this point that we desire to call attention, believing that the question is one of much importance, regarded alike from a physiological and a pathological standpoint. We will proceed to give the foundation for the view expressed by us and then refer to the work of Schöndorff put forward by Dr. Cammidge in opposition to it.

To begin with, a positive reaction is susceptible of being

obtained from the products derived by appropriate procedures from healthy urine by all the varied tests for sugar, including fermentation. The cupric oxide reducing power of the sugar is one of the properties that is more generally than any other turned to account for both qualitative and quantitative test purposes. The ammoniated cupric (Pavy's) test solution is in extensive use for the quantitative determination of sugar in diabetic urine, and its sensitiveness is such as to render it applicable to healthy urine. No preliminary evaporation, precipitation, or other operation is needed. It suffices for the urine to be titrated straight off with the test solution. In every instance it gives evidence of the existence of a reducing agency, and the quantity can be read off with as much facility as when the reducing agency is in larger quantity, as in diabetic urine. Of course it does not distinguish one reducing agency from another, but the reducing agents belonging to normal urine have been defined as consisting of creatinine, uric acid, and sugar. The reducing power of both creatinine and uric acid is known, and upon the strength of the amounts of these bodies ordinarily present in urine only a small fraction, namely, about one-fifth, of the reducing power ordinarily met with is attributable to them.

As a further point, the reducing agency belonging to normal urine shows itself to be susceptible of undergoing a marked increase on subjection to the hydrolyzing influence of boiling with a mineral acid. This increase of cupric oxide reducing power cannot arise from creatinine or uric acid. It can only come from conversion of a lower into a higher cupric oxide reducing sugar, or from the liberation of a sugar from a glucoside or compound into which it is incorporated. The increase is thus restricted to origin from carbohydrate, and plenty of evidence exists to show that a maltose type and other even lower cupric oxide reducing types of sugar are present in healthy urine. This being the case, the figures given previous to hydrolysis fall short of expressing the actual amount of carbohydrate present to the extent that they stand below the figures given after hydrolysis. In a group of twelve examples, for instance, the actual average figures were found to stand at 2.79 per 1,000 before hydrolysis and 4.63 after. The relation between these figures being as 60 is to 100, it follows that the figures obtained before hydrolysis represent only 60 per cent. of the carbohydrate actually present. Moreover, the difference between these figures, namely, 1.84 per 1,000, must be regarded as representative of carbohydrate put into an altered state by the hydrolysis. As regards glycuronic acid, if considered to exist in normal urine, it is looked upon by authoritative observers as only present to a minute extent—an extent of too infinitesimal a nature to have any bearing of significance in relation to the actual figures represented above. Its presence as an incidental ingredient is outside the question that is being considered.

That sugar should be present in normal urine is only in accord with what is to be reasonably expected. Sugar belongs to the group of bodies that find their way from the blood into the urine. It is known that bodies of a diffusible nature, on in any manner reaching the circulation, pass off with the urine. The phenomena of diabetes show that sugar escapes with the greatest facility. There is no dispute about the existence of sugar normally in the blood. A certain standard amount, varying within certain limits, is present, irrespective of feeding and fasting. From this standard amount a source exists for the presence of sugar in normal urine. It would be contrary to the order of things observed to prevail if sugar, under the circumstances, did not find its way into the urine. Any increase upon the standard amount in the blood, in whatsoever manner produced, immediately shows itself by a proportionate addition to the normal urinary sugar, so that the state of the urine comports itself according to the state of the blood. They run concurrently together, independently of whether the quantity is large or small.

We have been struck with some surprise that Dr. Cammidge should have adduced Schöndorff's results, obtained as a worker in Pflüger's laboratory, in support of his views. Schöndorff, working with Worm-Müller's test (a modification of Fehling's), states that out of 334 specimens of urine passed by soldiers, he obtained a positive reaction of sugar in 316, and in none after the urine had been subjected to fermentation. In the case of 53 specimens of urine passed by students, 8 of them only, he says, gave a positive reaction. Knowing what we do about the inhibiting influence of constituents of the urine upon the copper test, nothing short of amazement can be created at what he subsequently gives as the quantity of sugar present. In Dr. Cammidge's words upon the matter, "The most recent observations on this point, carried out by Schöndorff, place the average amount at 1 in 10,000—a quantity which requires special methods for its demonstration." In the special methods employed by Schöndorff we find mention made of treatment with mercuric nitrate, and then with caustic soda until nearly neutral. The precipitate is filtered off and washed with mercuric nitrate solution, and the filtrate and washings, after adding a few drops of nitric acid and strongly acidifying with acetic acid, treated with sulphuretted hydrogen to throw down the excess of mercury. The volume of the filtrate is said to be now sometimes 10 to 15 litres, after having started with from 1 to 2 or 3 litres of urine. After removal of the mercury sulphide precipitate, the liquid is evaporated on the water bath (a process said to often take one to two days) until salts begin to separate out. The hot salt-saturated liquid is now poured into five to ten volumes of alcohol to precipitate the salts and, after filtration, the alcohol driven off again by evaporation. The treatment with alcohol is repeated, if necessary, the residue being then dissolved in hot water and the polarimeter or Fehling's solution employed to estimate the sugar present —We are, etc.,

F. W. PAVY,
H. W. BYWATERS.

London, W., July 19th.

THE EXCURSION TO BATH ON JULY 30TH.

SIR,—I crave the indulgence of a space in your columns to reply to some correspondents relative to the excursion to Bath after the Annual Meeting, more especially with regard to what we have to show our visitors who honour us by coming. The Mayor and Corporation and the local members of the Association have co-operated to try and make the visit a pleasant and interesting one.

It is, I believe, sixteen years since an official visit was last paid to Bath by an excursion from an annual meeting, and since then much mineral water—to be precise, three thousand million gallons—has flowed into the Avon. The ancient baths have been uncovered to a greater extent, and we now boast the finest old Roman Thermae north of the Alps. The foundations are as good as they were 2,000 years ago; the stones worn by the tread of patricians and plebeians remain unchanged; the lead lining the bottom of the baths is uncorroded, and still serves the purpose for which it was used in the days of Constantine, whilst the water enters and leaves by the self-same Roman culverts. With regard to our modern baths the Corporation hope to show a part—there will not be time to show all—of what we believe to be the finest suite of baths in the world, supplied daily by Nature with half a million gallons of mineral water, heated to a temperature of 120° F. in Nature's own cauldron, as occurs nowhere else in the United Kingdom. It is proposed to show the baths in actual use, demonstrating the methods by douches and massage, etc. And last, the city and the profession want to give ocular and corporeal proof to the Association that Bath is less than two hours' journey from London on the best laid railway in the country, and that it is in direct communication with every part of the United Kingdom.

The Queen City of the West offers a genial greeting and a warm welcome to the British Medical Association.—I am, etc.,

W. M. BEAUMONT,
Honorary Secretary, Bath and Bristol Branch.

July 17th.

SICKNESS AND INVALIDITY INSURANCE.

SIR,—Having read the correspondence that has taken place on this subject since I last wrote, and also the leading article in the JOURNAL of June 25th, I think that it is clear that the majority of the correspondents were in favour of the payment for work done system.

The leading article in the JOURNAL suggests that there are difficulties. There may be difficulties, but such could be easily overcome by modern insurance methods. It would be a slight on those engaged in insurance work to say that it is not possible.

If a society like the National Deposit Friendly Society, which is worked on the payment for work done system, has almost doubled its membership from the years 1903–9, from 103,735 to 201,849, as Dr. Gosse states, I think that is proof enough that the system works, and that it is popular among the working classes. There is a slight risk of the deposit running out (Dr. Gosse says in his district less than 0·5 per cent. per year); that risk could easily be covered by insurance.

If the British Medical Association has made up its mind to a contract system, ignoring the opinion of the vast body of the medical profession, it is, of course, a different matter; I cannot believe that such can be the case.

I already suggested a referendum, and Dr. Fothergill has proposed certain questions.

Could the Association not draw up questions suitable to the case, and I think both Dr. Fothergill's questions are very suitable, and submit these to the whole body of the profession, members or not? That is, I believe, the only means that would enable the general practitioner to have his opinion in those matters properly stated.

Could the British Medical Association not draw up a scheme based on the payment for work done system and submit it also?

When this all has been done the Association will be able to approach the Government armed with the necessary information, and also will be able to speak as the representative of the entire profession. If a referendum is not taken it can speak with no sure authority.—I am, etc.,

Long Eaton, July 18th. ERNEST MILLIGAN.

SIR J. Y. SIMPSON'S CENTENARY.

SIR,—On June 7th, 1811, there was born in Bathgate, which lies about midway between Edinburgh and Glasgow, the man who was to become the professor of midwifery in the University of Edinburgh, who was to introduce into obstetric practice the priceless boon of anaesthesia in the form of ether, and who was later to discover the anaesthetic properties of chloroform, and so to make possible many of the great advances which have taken place in surgical and medical work. With the near approach of Sir James Simpson's centenary, it may interest many to know that the Edinburgh Royal Maternity Hospital, which bears also the name "Simpson Memorial," and which, according to the *Dictionary of National Biography*, vol. lii, p. 273, is "his chief monument in Edinburgh," is in need of extension and alteration to enable it to cope with the increased demands made upon it, and to come abreast with modern advances in obstetrics.[1] It would appear to be singularly appropriate if the first year of the reign of His Majesty King George V and the centenary year of Sir James Young Simpson should be marked by the extending and worthily equipping of the "*Royal* Maternity and *Simpson* Memorial Hospital."—I am, etc.,

Edinburgh, July 15th. J. W. BALLANTYNE.

POST-CHLOROFORM VOMITING.

SIR,—I observe that a discussion on chloroform vomiting took place at the meeting of the Edinburgh Obstetrical Society on June 8th.[2] The discussion included vomiting occurring during the actual administration of the anaesthetic, and also that coming on afterwards. I propose only to deal with this last.

It is only in a small percentage of cases that post-chloroform vomiting is really difficult to deal with, but occasionally cases are met with so severe and obstinate, that the term "malignant" might almost be applied to them.

Many years ago I was sometimes bothered with cases of this kind, and have been at my wits' end to know what to do with them. Now, I had found that chloroform itself was occasionally an effectual remedy in some forms of obstinate vomiting; I had also noticed that confirmed "spreeërs" were mostly aware that the vomiting succeeding an alcoholic debauch was often most effectually treated by small doses of alcohol, and usually adopted this method, even where the spreeing impulse had passed away, and a return to temperance was desired. It occurred to me that in this, and in post-chloroform vomiting, the vomiting might be due to the sudden withdrawal of the drug rather than the actual presence of it in the system, and so I determined to try the administration of chloroform in small doses frequently repeated. I recommended the sufferer to pour two or three drops of chloroform on a lump of sugar and suck it whenever the desire to vomit come on. I have not seen a really bad case of post-chloroform vomiting for very many years, but my recollection of the brilliant results in some cases attained by this treatment is still so vivid that I feel justified in adding my small mite of experience to the general stock, knowing that, if my experience was exceptional, and consequently my deductions from it unreliable or misleading, the method will soon receive its due appraisement at the hands of those whose opportunities are so much larger than mine ever were.—I am, etc.,

Blackpool, July 1st. WM. HARDMAN.

[1] See BRITISH MEDICAL JOURNAL, July 2nd, p. 43.
[2] BRITISH MEDICAL JOURNAL, June 18th, p. 1511.

THE HABITS OF SEAMEN.

SIR,—It affords me pleasure to corroborate the statements made by Mr. T. W. Moore, Secretary of the Imperial Merchant Guild, regarding "The Habits of Seamen."

I speak from considerable experience, for I have sailed as ship surgeon on voyages to the United States, India, China, the Arctic regions, and Peru. I have seen a good deal of our seafaring folks, and I have no hesitation in saying that it would be unfair to brand them as a drunken class.

No doubt when the sailor gets ashore after a voyage he is apt to indulge too freely, and there is no denying the fact that the fireman frequently starts on a voyage suffering from the effects of deep potations, and celebrates the end of it with a very free indulgence in liquor. But they do not drink at sea, and, taking the years round, they consume less alcohol than the same class ashore.

It is to be deplored that the foolish fellows look upon a "spree" as the legitimate solace for the hardships of a long voyage, or the broiling heat of the stokehold in the tropics. As to the captain and officers of our mercantile marine, there is no class for whom I have greater respect, sympathy, and goodwill. I have often thought that the public and shipowners do not quite realize what they owe to these men.

Ship officers as a rule are poorly paid, and they have very heavy responsibilities. At sea there are the watches on the bridge ("Mount Misery")—it may be in the bitter cold gales of the North Atlantic, with the spindrift lashing into the face and eyes over the "dodger"; it may be under the dazzling glare of the tropical sun; it may be on pitch-dark nights, peering through driving rain to "pick up lights." No wonder the eyes get strained and bloodshot. In port the ordeal is perhaps more exhausting. Standing on deck for weary hours tallying cargo under the blaze of an Indian sun, with the constant din of rattling steam winches and the yelling of human voices, is rather wearing to the nerves.

I am tempted to say more of the physical strain and mental worries to which these men are subjected in their arduous avocation; but I have said enough to show that there is no need to call in alcohol as an explanation of mischief occurring in eye or nerve, though doubtless in some cases it may be a factor.

In my experience the officers of our mercantile marine are a sober, well-conducted class of men, devoted to the faithful discharge of their onerous duties. And well is it for the public and for shipowners that it is so.

As to tobacco—it is the great solace for these poor fellows when relieved from duty; but I fear that in some cases it is indulged in too freely.

It has given me pleasure to bear testimony on behalf of my old shipmates; but at the same time I am sure that Dr. Harrison Butler never meant to brand the officers of our mercantile marine as an intemperate class of men.—I am, etc.,

Lanark, June 25th. JAMES W. ALLAN, M.B., C.M.

THE VALUE OF THE PANCREATIC REACTION IN ABDOMINAL DISEASE.

SIR,—Will you allow me to suggest that Dr. William Russell does not by any means make out his case in his paper on p. 5 of the JOURNAL of July 2nd? He is, of course, literally correct in stating "That the reaction is a reliable guide to the condition of the pancreas has not been borne

out by our observations." Unfortunately, the said observations, from their omission to take into consideration the amount of total, saponified, and unsaponified fat in the stools, like most of the recorded work on the same subject, are of little or no value for the purpose for which they were undertaken. In fact, they go far to prove the opponent's case. There is nothing whatever to show that in all the cases in which the reaction was positive and the patient afterwards improved or was cured disease of the pancreas was not present. As a matter of fact, I should say that chronic pancreatic catarrh or chronic pancreatitis *was* probably present in the whole of the cases under Table D. We know that this condition is most frequently met with in intestinal catarrh and in ulcer of the duodenum, and that it is cured in most cases soon after the original affection improves under treatment. The positive reaction in cases characterized by "gastric symptoms, constipation, indigestion," would suggest the presence of pancreatic catarrh in the absence of more definite information as to the gastric condition really present or the condition of the fat digestion. I notice that Dr. Russell does not mention whether he has used the improved C reaction or the obsolete A and B tests.—I am, etc.,

London, W., July 4th. GEORGE HERSCHELL.

OPTIC NEURITIS IN CHLOROSIS.

SIR,—May I suggest that the writer of the annotation on this subject in your issue of July 16th should publish the facts on which he rests certain of the conclusions he there announces? Perhaps the proposition that cases of optic neuritis in chlorosis are "probably far from uncommon" is the one to which this claim particularly applies, as, at least to some interested in this subject, such a statement must be somewhat surprising. Sir Clifford Allbutt, for example, writes that "optic neuritis is discovered occasionally in chlorosis"; and Dr. Byrom Bramwell, after a review of 314 cases of the disease, says that "in a small proportion of cases of chlorosis optic neuritis occurs."

So far as my own experience on this point goes, I may say that I have made it a rule for many years to examine the fundus oculi of every patient who has come under my observation, yet I cannot number more than six instances of the association of optic neuritis with chlorosis. Again, your contributor—unfortunate, alas! in his attempt correctly to spell my name—credits me with the belief that "sinus thrombosis alone can account for the simultaneous appearance of optic neuritis and adducens paralysis," while a few lines earlier he states that "paralysis of the external rectus has been present in these chlorotic cases." This seems to imply that I have restricted the suggestion of intracranial thrombosis as the cause of optic neuritis and ocular paralysis to those cases in which the paralysis affects the inward-rotation movement of the eyeball, whereas, as a matter of fact, I have in this association written of "ocular paralysis" in general, though in the cases I personally have recorded the paralysis was in each instance one affecting the external rectus muscle.

Finally, the annotation states that Sir Wm. Gowers has "adopted" this view. Now here particularly a quotation of time and place would be welcome, as a reference to the *Ophthalmological Society's Transactions* (vol. xxii) will show that a paper on Intracranial Thrombosis as the Cause of Double Optic Neuritis in Cases of Chlorosis, which I read before that society in 1902, received from Sir William the courteous but faithful criticism of which he is an acknowledged master.—I am, etc.,

Harley Street, W., July 19th. C. O. HAWTHORNE.

EPIGASTRIC PAIN AS A COMPLICATION IN MUMPS.

SIR,—We have recently been experiencing an epidemic of mumps, and in connexion therewith I wish to draw attention to a symptom or sequela which does not seem to have been previously sufficiently noticed—namely, epigastric pain and vomiting. Out of about a dozen cases of mumps that I have seen during the past few months it has been present in six cases. It has generally occurred about the time that the swelling of the parotid glands has subsided, sometimes three or four days after. In most of the cases I have only been consulted on account of the pain and vomiting, and have elicited on inquiry that the patient was just recovering from an attack of mumps, which may have been slight. The duration of the vomiting has generally been about two days, but in one case lasted for five or six. In one case it was so severe as to have suggested intestinal obstruction if the history of mumps had not indicated the cause.

Very probably the symptom has been observed before, but that sufficient attention has not been paid to it is evident from the fact that in all the authorities that I have consulted—Osler, Bristowe, Yeo, Carter, and the article in *Quain's Dictionary of Medicine*—no mention is made of it. I have thought it, therefore, of sufficient importance to record my experience. As to the cause I am inclined to think, from the partial resemblance in function between the salivary and pancreatic glands, that it is due to some "metastatic" affection of the pancreas, similar to the affection of the testicle which sometimes occurs.

I have not found medicines of much use, as the usual drugs, such as bismuth mixtures, were vomited, and I have obtained most relief by counter-irritation, as by means of a mustard plaster over the pit of the stomach.—I am., etc.,

HORACE P. GODFREY,
Melbourne, June 10th. M.B.Melb., F.R.C.S.Eng.

ETIOLOGY OF IRITIS.

SIR,—Your editorial on this raises some very important points. The subject has interested me greatly, and, with your permission, I will summarize the results of my own observations:

Syphilis	70 per cent.
Gonorrhoea	20 ,,
Oro-alimentary, uterine, and tubal infection	9 ,,
Tuberculous	1 ,,

Of double iritis the cause is almost certainly syphilitic.

The "rheumatic" iritis of the textbooks I do not know the meaning of. I have never known or heard of iritis as a complication of rheumatic fever.

Surely it is time we revised our terminology! I know of nothing more difficult than to satisfy oneself of a history of syphilis. Nor, indeed, is this to be wondered at. The "hard" sore is painless; it may be hidden under the prepuce or inside the urethra; it rarely lasts more than six weeks, and often leaves no scar. In the case of a woman the ordinary medical man can hardly ever succeed in finding it, as its detection requires the keen eye of the expert. Moreover, "secondaries" are often very slight. What does a working man trouble about a transient non-irritating rash or a mild sore throat? Hence, many patients conscientiously repudiate all knowledge of infection. Let me cite a not uncommon experience: A fat man with iritis comes for advice. The usual inquiries are made and a stout denial is given. At a subsequent visit the other eye is found to be attacked—a circumstance that makes you feel almost absolutely certain that syphilis is present. You insist upon the patient stripping, and you find a copper-coloured rash on the lower abdomen, which the patient had not noticed on account of his corpulence.—I am, etc.,

London, W., July 16th. KENNETH CAMPBELL.

HEREDITY AND ENVIRONMENT.

SIR,—Professor Karl Pearson, in his letter in the BRITISH MEDICAL JOURNAL of July 9th, seems to have misunderstood the point of my criticism of the Galton Laboratory memoir on alcoholism. I merely pointed out that one set of statistics used for this work differed considerably in one respect from those of certain medical investigators I named, and suggested that possibly this might be partly due to the fact that the house-to-house visitation necessary to collect them was not made by a medical man. I have always understood that in the Manchester investigation the late Dr. Ashby did not himself visit the homes of the children concerned. If Professor Pearson can state that Dr. Ashby did so, my objection falls to the ground; if not, I shall still maintain that the conclusions would have been more convincing if this part of the work

had been done by some one with a medical qualification rather than by lay helpers, however careful and conscientious.

With regard to Miss Dendy, I am extremely sorry if there has been any misunderstanding of my meaning. I said that Miss Dendy's theory about the relation of alcoholism to congenital mental defect was already known. Her ideas seemed to me to be based on the statistics she had helped to collect in Manchester a few years ago, and I therefore suggested that those statistics when made use of by the Galton Laboratory could not throw any new light on what is evidently a controversial question. My remark was not intended to apply to any fresh information Miss Dendy might have collected.

As regards the sample of normal children referred to by Professor Pearson, I found that the parentage did not show "practically the same high percentage of alcoholism," but only about half as much.—I am, etc.,

Birmingham, July 11th. W. A. Potts.

AUSCULTATORY PERCUSSION.

Sir,—May I be permitted, as one in daily touch with the problems of the stomach, to contribute to this correspondence? In the case of the normal stomach the area of resonance, as marked out by auscultatory percussion with the patient lying on the couch, has no relation, unless by chance, to the shape of the stomach as shown by a bismuth meal. The normal stomach usually takes the form of a rather narrow tubular organ, placed vertically on the left side of the abdomen, and turning inwards somewhat sharply at its lower end, at about the level of the umbilicus. The resonant area marked out by auscultatory percussion usually passes horizontally across the abdomen at a higher level. This area may frequently be seen on the fluorescent screen as an area of increased transradiancy. It usually consists largely of transverse colon, though in some cases a portion of the cardiac end of the stomach is included in this clearer area. These are matters of daily observation, and any one who denies their accuracy practically admits, by so doing, that he has not had opportunities of observing them himself. Mechanically, we have only to consider the ready way in which the various coils glide over one another in accordance with the demands of the law of gravity to realize that air-containing viscera must rise to the surface as far as they are free to do so. In this way an air bubble of varying size is constituted, and though usually of composite origin it acts as a single resonance chamber.

The above remarks have reference to the normal stomach, though they apply equally to a great many abnormal conditions.

The fallacies which would arise from faulty projection, due to the circumstance that the bismuth meal falls to the most dependent part while the air bubble rises to the surface, are corrected at every examination by reducing to a small size the aperture through which the *x* rays emerge, and moving the *x*-ray tube in its box around the margins of the stomach, marking these margins upon the fluorescent screen as they appear in view. This is the routine application of the method of orthodiagraphy mentioned by Mr. Shenton in the Journal of June 25th, p. 1579.

In the case of the greatly dilated stomach, however, the condition of affairs is somewhat different. It is impossible to give a bismuth meal sufficiently large to fill the stomach, and consequently the bismuth meal occupies the most dependent parts of the stomach, whose real outlines cannot always be marked out, as they can in the case of a stomach of moderate size. A dilated stomach distended with gas forms a resonance chamber of its own, and its borders can readily be marked out, even by ordinary percussion, without fear of adding the colon resonance to it, for in this case the colon is far less tensely filled, and emits a different note.

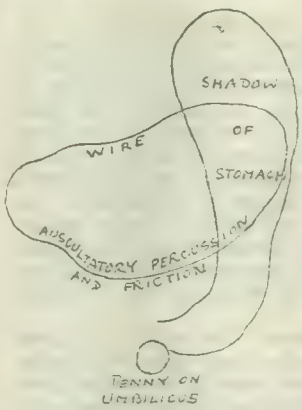
When the patient is examined in the vertical position that portion of the air bubble which is due to air in the stomach rises to the top and is seen close under the diaphragm, while that portion which is due to gas in the transverse colon usually separates into two portions, occupying respectively the splenic and hepatic flexures.

With regard to the interpretation of anomalies of the stomach by the bismuth method, the evidence in many cases is sufficiently definite to lead to a reliable diagnosis, though every man of experience in the method will admit that he has occasionally misinterpreted the appearances. A great safeguard is to have the patient previously prepared by a thorough evacuation of the bowels, and a still greater safeguard is to insist, in every doubtful case, on a second examination.

It is to be hoped that with increased experience the fallacies which still exist will be gradually eliminated, but even at present the *x*-ray examination is found to be an extremely valuable aid to diagnosis in a large proportion of stomach cases, and it will undoubtedly soon become a matter of routine, as it has already become in the practice of many leading physicians.—I am, etc.,

London, W., June 28th. Alfred C. Jordan, M.D.Camb., Medical Radiographer, Guy's Hospital.

Sir,—I am surprised to find that auscultatory percussion can still find such an ardent supporter as Dr. Auld. I am the more surprised on discovering that the only evidence which he can bring in support of his belief that it is "a most valuable diagnostic aid" and "the only form of percussion reliable as regards the stomach" is that he has used it for at least eight years. He will find in Mr. Shenton's letter an explanation, which will, I am afraid, remove his satisfaction that any "fallacies" in my arguments have been exposed by Dr. Cotton. It must have been clear to anybody, who had the slightest familiarity with *x*-ray work, that I would have taken care to avoid the fallacy to which Dr. Cotton referred. It was to avoid this fallacy that I have generally contented myself with screen examinations instead of taking ordinary skiagrams, in which, of course, there must always be a considerable amount of distortion. But I am sure that Dr. Cotton will be the first to admit that such distortion is quite insufficient to account in any way for what is shown in the accompanying skiagram,[1] which has been accepted as a convincing argument against auscultatory percussion by a gentleman who was formerly a strenuous advocate of the method, but was sufficiently open-minded to be willing to put it to the proof.



Half a pint of bread and milk with 2 oz. of bismuth oxychloride was eaten by the patient, who then lay down on the *x*-ray couch. The expert in auscultatory percussion now marked out the stomach by this method with a dermograph on the patient's skin, keeping his eyes closed. A believer in auscultatory friction then did the same, and an almost identical outline was obtained. Finally, with my eyes closed, I marked out exactly the same area by auscultatory percussion. A metal wire was then fixed by strapping over the outline marked on the patient's skin, and a skiagram was at once taken by Dr. A. C. Jordan. It will be seen that the outline obtained by auscultatory percussion and friction does not bear the remotest resemblance in size, shape, and position, to the stomach shadow.—I am, etc.,

London, W., July 5th. Arthur F. Hertz.

P.S.—The area of "superficial gastric resonance" described by Dr. G. F. R. Smith is of very small importance, as anybody who read Dr. Lauriston Shaw's letter in your issue of June 25th must admit. When compared with the shadow seen with the *x* rays it occupies a relatively small area, which is generally confined to a portion of the upper half of the stomach. As Dr. Smith accepts Dr. Cotton's "pretty and scientific explanation" of *x*-ray discrepancies, I presume that his results must have been vitiated by the fallacy which Dr. Cotton has pointed out, although that is surprising in one who had the advantage of working under such a distinguished radiologist as my friend Dr. Thurstan Holland. Even allowing for fallacies, the fact

[1] Unfortunately the skiagram could not be satisfactorily reproduced for publication, although the shadow of the stomach and the wire were perfectly clear in both the negative and print. An outline tracing from a print has therefore been substituted.

that he obtained satisfactory outlines with auscultatory percussion and friction does not make the method generally trustworthy, as I have not myself yet found an exponent of either method who could mark the outline of the uninflated stomach with any degree of accuracy.

A DEFINITION OF INFLAMMATION.

SIR,—The interesting letter of Dr. James Oliver pays a just tribute to the two definitions of inflammation upon which reliance can be placed.

No. 1, "Redness and swelling with heat and pain," written by Celsus in the first century A.D., he truly says still holds its sway, as well it may, on account of its comprehensive brevity; and, even if not perfect, it is quite satisfactory so far as it goes, and can never be abolished.

It is quoted everywhere, and nowhere more appreciatively than in the article by John Simon which opens the first volume of Holmes's *System of Surgery*. In the second edition of that work, of which the first four volumes came out in 1870, this eminent author prepares the way for the completion of his essay by Burdon-Sanderson in the fifth volume, issued in 1871, p. 729. Here the subject is dealt with in the light of microscopical research, and is introduced by that remarkable and most exact definition quoted by Dr. Oliver as follows:

No. 2, "The succession of changes which occurs in a living tissue when it is injured, provided that the injury is not of such a degree as at once to destroy its structure and vitality."

I consider Burdon-Sanderson's definition perfectly explicit, and embracing every idea that any one can include in the definition. No doubt it is capable of abbreviation in words, and in my lectures I have for over thirty years ventured to curtail it, after first stating it in full, thus: "The effects of injury on the living tissues." If the tissues are killed the effects on them cannot be inflammatory, and the brief sentence just given seems to me sufficient to fix the attention of beginners, and of others trying to learn the subject.

The definition suggested by Dr. Oliver, "Inflammation is reaction of a structure or tissue to alien irritation, whether physiological or not, or to injury which does not annihilate responsive power," does not to my view express anything different, or make the case any clearer.

But my object in writing is not to cavil at Dr. Oliver, whose interest in the matter deserves sympathy, and whose object, like my own, is to try to simplify our comprehension of the principles.

I do not think that any definition of inflammation, except that of Burdon-Sanderson, has gone to the root of the matter in the language of modern science, but even so it is merely a definition, which by itself is not of much use until some insight into the process is acquired, and for this it is necessary to turn to Lister's work on

> "The early stages of inflammation," including
> "The aggregation of the corpuscles of the blood,"
> "The structure and functions of the blood-vessels,"
> "The effects of irritants upon the circulation," and
> "The effects of irritants upon the tissues"; supplemented by
> "The parts of the nervous system which regulate the contractions of the arteries" and
> "The cutaneous pigmentary system of the frog";

read by Joseph Lister at the Royal Society, June 18th, 1857, published in the *Philosophical Transactions*, Part II, 1858.

These are all reprinted in the *Collected Papers of Lord Lister*, Clarendon Press, 1909.—I am, etc.,

RUSHTON PARKER,
Professor of Surgery in the University of Liverpool.

Liverpool, July 17th.

SIR,—Referring to Dr. James Oliver's letter in the BRITISH MEDICAL JOURNAL for July 16th, I would suggest that we can have no better and more brief definition of inflammation than that used by Burdon-Sanderson himself in 1891 (*Lancet*, November, 1891): "The reaction of living tissue to injury."

Of course, such injury may be mechanical, microbic, chemical, or physical.—I am, etc.,

MARCUS M. BOWLAN.

London, July 18th.

MEDICAL BRANCH OF THE NAVY LEAGUE.

SIR,—As a member of the Provisional Committee of the Medical Branch of the Navy League, I am writing to ask you if you will be so good as to permit me in a few lines to announce to members of the British Medical Association that a meeting of the Branch will be held at the London University, South Kensington, on Friday, July 29th, at 12.45 p.m. The Provisional Committee hope that this time and place will prove convenient, and that many members of the British Medical Association will attend and lend the support of their presence to the work of the League. Sir R. Douglas Powell has kindly consented to become the first President of the Medical Branch of the Navy League.—I am, etc.,

E. D. MACNAMARA.

London, W., July 19th.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.B., B.C.—J. D. Barris, C. N. Coad, K. T. Khong, H. Lee, G. B. Wainwright.
M.B.—R. Burgess, W. Harmens, O. Heath.
B.C.—N. L. Clarke, W. H. F. Eales, G. C. Lim, W. M. Penny, L. Powell, F. E. W. Rogers, M. H. Whiting, N. S. Williams.

UNIVERSITY OF ABERDEEN.

Summer Graduation Ceremony.

THE ceremony in connexion with the summer graduation at Aberdeen University took place on July 13th, Principal George Adam Smith presiding. In former years the summer graduation ceremony has usually seen the capping of medical students mainly with a few science and law graduands. The change, however, in the arts curriculum, and particularly the introduction of the three term session, has brought up an increasing number of arts graduates, and it would appear that in a short time the summer graduation will take the place of the spring graduation as the most important academic meeting of the year. Professor Cash, who has succeeded Professor Finlay as Dean of the Medical Faculty, introduced the graduates in medicine, who were as follows:

M.D.—†W. Brander (Sheffield), †J. E. Kesson (Aberdeen), *J. E. Mitchell (Carlisle), J. J. Johnson (London), R. McRae (Mintlaw), T. Taylor (Herne Hill), J. I. P. Wilson (Royal Waterloo Hospital).
M.B.—‡R. Semple, J. B. Anderson, R. M. L. Anderson, J. S. Annandale, J. A. Macarthur, C. A. McDonald, A. J. McLeod, J. J. A. Neil, J. J. du Preez, E. L. Reid, J. Ritchie, J. D. Robertson, C. K. Smith, H. E. Smith, M.A., J. W. Stephen, W. Taylor, H. J. Thomson, W. M. Tough.

* Commendation for thesis. † Highest honours for thesis.
‡ Second class honours.

On the same occasion diplomas in Public Health were distributed to the following:

Williamina, Abel, A. D. Brunwin, R. R. Duncan, K. Ross, M.A., A. J. W. Stephen, ‖G. A. Williamson, M.A.

‖ With credit.

At the conclusion of the capping ceremony the Principal referred to the work of the year, noting that beyond its ordinary routine the administrative work had been chiefly occupied with the preparation of two new ordinances, one in conjunction with the other Scottish universities for graduation in law, and the other, not yet completed, with the medical curriculum and the degrees to which it leads; secondly, with the discussion in conference with the other universities of the whole system of the preliminary examinations, and certain proposals for their improvement; thirdly, with the consideration of a scheme by a Committee of the General Council for the restoration of the tomb of their founder, Bishop Elphinstone, which had received the approval of the University Court, and for which subscriptions were now being asked. It was a happy omen for the success of their endeavours to do justice to the memory of the great statesman who was Chancellor of Scotland as well as the first Chancellor of their university in the only Scottish college known as King's that the first subscription should have come from his present Majesty, King George V, and he felt certain that the graduates of the University and the citizens of Aberdeen would not fail to follow the lead thus royally given to them. Fourthly, there had been the preparation of plans for the extension of King's College; and fifthly, the completion of a new financial arrangement between the University and the Aberdeen and North of Scotland College of Agriculture. He wished to emphasize the need of new class-rooms, especially for English literature and history, of an examination hall, and of the extension of the library at King's College. Plans for these were being drawn by Dr. Marshall Mackenzie, the architect of the University, and he appealed to wealthy friends of the University for funds to enable them to make these urgently required additions worthy of the history of the college, and especially of the ancient chapel to which they must stand in such close connexion. The Principal then announced that Lord Strathcona, the Chancellor of the University, had munificently gifted £10,000, to be devoted to the endowment of a Chair of

Agriculture. This, the Principal indicated, was the first real step towards the establishment of a separate Faculty of Agriculture. The new Faculty would have the new Professor as its Dean, and among its members the Professors of Botany and Zoology, the possible Professor of Political Economy, and the holders of such Chairs in Agriculture and Forestry as might be ultimately instituted.

University Prizes.

The John Murray Medal and Scholarship for the most distinguished M.B. graduate of the year was awarded to Robert Richards, M.A., and the Struthers Medal and Prize in Anatomy to J. D. Fiddes, M.A., B.Sc., for a preparation showing the relations of duodenum, pancreas, and spleen of male adult.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examinations indicated:

FIRST M.B., B.C., *Part I.*—C. N. Gover, C. S. P. Hamilton, C. Jacobs, L. Magee, R. Sells, K. I. S. Smith, H. G. Sparrow.
Part II.—C. Armstrong, I. G. Cummings, G. B. Egerton, L. W. Hearn, F. Metcalfe, E. C. G. Parker, Jane Penman, H. A. P. Robertson, D. C. Scott, J. C. Spence, A. C. Taylor.
Part III.—A. C. Freeth, F. W. Harlow, J. D. Johnston, Grace W. Pailthorpe, C. T. G. Pearce, H. L. P. Peregrine, E. K. Ryan.

SECOND M.B., B.C. (*Anatomy, Physiology, and Materia Medica*).—*R. L. Kitching, *E. Phillips, E. Bramley, G. Carse, C. Duncan, L. H. W. Iredale, A. G. McFarlane, Nora Murphy, C. A. B. O'Neill, A. Patterson, J. L. Pringle, E. Ritson, F. S. Rood, C. O. Shackleton, J. S. Soutter, G. E. Stephenson, A. Sutcliffe, G. S. Woodman.

* Second Class Honours.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

QUARTERLY Council, July 14th, Mr. H. T. Butlin, President, in the chair.

Election of Members of Council.

The four Fellows elected to fill the vacancies occasioned by the retirement in rotation of Mr. Morgan, C.V.O., and Mr. Lockwood, by the death of Mr. Clutton, and the resignation of Mr. Wright (Mr. Morgan not offering himself for re-election) were:

	Number of Votes.	Plumpers.
Mr. Charles Barrett Lockwood	... 532	... 58
Mr. Bilton Pollard	... 514	... 38
Mr. John Bland-Sutton ...	... 499	... 63
Mr. Charles Alfred Ballance, M.V.O.	484	... 19

The late King Edward.

A letter from the Secretary of State for Home Affairs was read conveying the King's thanks for the loyal and dutiful address of the College on the occasion of the lamented death of His late Majesty King Edward VII.

King George and the Honorary Fellowship.

The President reported that His Majesty the King had graciously consented to continue to be an Honorary Fellow of the College.

Museum and Library.

It was determined that a collection of medico-legal specimens should be formed in connexion with the College Museum.

Gifts of Books.

The best thanks of the Council were given to Sir John Tweedy for his gift of books, including some rare editions of the fifteenth century; and to Mr. Stephen Paget for presenting the late Sir James Paget's notes of lectures and various MSS.

Removal of Members.

Two members were removed from being members of the College on account of misconduct, and they were called upon to return their diplomas of membership.

British Medical Association Meeting.

The President stated that, with the permission of the Council, the Conservator of the Museum and the Pathological Curator would conduct members of the British Medical Association over the museum on Wednesday, July 27th, between 4 and 6 o'clock.

Election of Officers and Lecturers for the Ensuing Year.

Mr. H. T. Butlin was re-elected President for the ensuing year, and Mr. Clement Lucas and Mr. Mansell Moullin Vice-Presidents.
Arris and Gale Lecturer.—Grafton Elliot-Smith.
Erasmus Wilson Lecturer.—Samuel George Shattock.
Arnott Demonstrator.—Arthur Keith.
Hunterian Professors.—Arthur Keith, Frederick William Edridge-Green, Walter d'Este Emery, Kenneth Weldon Goadby, Benjamin Moore.

Next Council Meeting.

The next Council meeting will be on Monday, July 25th.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

King's Professorship of Medicine.

AT a special business meeting of the President and Fellows of the Royal College of Physicians of Ireland held on Friday, July 8th, the following resolution was unanimously adopted:

Resolved: That the College cannot permit Dr. J. Magee Finny to retire from the King's Professorship of the Practice of Medicine without expressing their warm sense of the zeal and ability with which Dr. Finny discharged the duties of the professorship, including that of physician to Sir Patrick Dun's Hospital, for a period of twenty-eight years.

Before the meeting concluded Dr. James Craig was elected King's Professor of the Practice of Medicine in succession to Dr. J. Magee Finny, resigned.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE (*Part IV: Practical Pharmacy*).—C. B. Alexander, H. P. Ashe, J. H. Baldwin, W. M. Binning, A. Bishara, H. G. B. Blackman, T. R. Bowen, E. Catford, W. L. Cockcroft, S. W. Coffin, A. G. W. Compton, E. S. Cuthbert, E. I. Davies, R. M. de Mowbray, C. K. G. Dick, W. A. Easton, D. T. Evans, L. E. Forster, J. W. Gilbert, H. C. Godding, F. C. Greig, H. J. Hacker, P. D. Hamilton, C. B. Hawthorne, C. L. Herklots, A. H. Hilmy, L. C. D. Irvine, R. B. Johnson, C. G. G. Keane, N. S. Koch, J. Lakeman, C. de C. W. Langdon, B. H. C. Lea-Wilson, C. C. Ling, P. A. Mackay, W. K. McKay, K. H. McMillan, L. A. Malik, R. C. Matson, C. C. Messiter, H. N. Morgan, R. S. Morshead, H. G. Moser, H. F. Overend, W. J. Paramore, G. M. Parker, H. Parker, M. G. Perera, S. V. P. Pill, T. B. B. Price, W. R. Pryn, B. Pyman, A. F. Rook, G. F. Rowcroft, H. A. Rowell, G. D. Shann, J. P. Shaw, F. R. B. Skrimshire, F. L. Spalding, T. S. Stafford, G. Stiell, F. Sykes, M. C. Thavara, E. M. Townsend, A. R. Upton, W. E. Wade, J. R. N. Warburton, G. W. Watson, G. H. D. Webb, E. P. W. Wedd, E. T. Willans, N. J. Willans, T. M. Wood-Robinson, E. J. Wright.
SECOND COLLEGE (*Anatomy and Physiology*).—C. W. Armstrong, E. R. Bailey, R. A. Banbury, B. Barnett, H. J. Bates, J. C. Bharucha, P. D. Bhiwandiwalla, S. I. Blairmann, W. H. Blakemore, R. C. Briscoe, M. H. Cane, E. R. Chambers, R. C. C. Clay, G. Cock, J. R. Davies, R. W. Davies, J. D. Driberg, W. J. I. Dwyer, R. S. Fawsett, G. Garland, A. O. Gray, D. M. Hanson, W. S. Herman, J. S. Higgs, F. T. Hill, J. I. F. Knight, J. L. Lauder, P. E. Lones, A. Lowndes, C. V. N. Lyne, G. N. Martin, G. S. Mather, J. Millard, W. Morris, H. H. P. Morton, F. H. Mosse, L. Page, J. R. Payne, J. A. Perera, A. S. Plant, F. P. Pocock, G. A. Pratt, S. J. S. Reid, I. Ridge-Jones, J. E. Rivera, A. E. Schokman, E. J. Staddon, T. J. Taunton, H. Topham, D. S. Twigg, A. S. Wakely, W. L. Webb, L. G. White.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—R. C. Marston, Edith M. Hewlett, J. R. C. Gordon, J. Gilchrist, G. L. Neil, J. Crawford, Amy B. R. A. Perriton, Madeline MacWilliam, W. L. Paterson, A. Crawford, J. A. Smith, G. Thomson, J. W. Cowie, J. Berry, J. Corcoran.
SECOND COLLEGE.—E. E. Owens, Amy B. R. A. Perriton, W. Bannatyne, W. Ashworth, J. G. Morrin, W. Laird, A. M. Robertson, A. S. Mackenzie, G. L. Clark.
THIRD COLLEGE.—D. W. Woodruff, G. W. Mason, F. W. Grant, A. L. Edwards, Padamji A. Dastoor, M. V. Walsh.
FINAL.—R. J. Helsby, Jane H. Filshill, K. Nath, A. D. C. Rob, J. A. Irwin, Z. A. De Cruz, J. Sullivan, T. Walsh, M. M. Daru, A. R. H. Harrison.

The Services.

ROYAL ARMY MEDICAL CORPS.

EXAMINATION FOR PROMOTION.

Home Stations, 1910.

THE following is the list of successful candidates at the May Examination for Promotion of Majors of the Royal Army Medical Corps in Technical Subjects:

Major H. E. WINTER, Sanitation and Epidemiology; already passed in (*d*) ii, in Army Medical Organization in Peace and War, and in Medical History, etc. Major F. W. HARDY, M.B., Army Medical Organization in Peace and War; .8; already passed in (*d*) ii, in Sanitation and Epidemiology, and in Medical History, etc. Major L. A. MITCHELL, M.B., Medical History, etc; already passed in (*d*) ii, in Army Medical Organization in Peace and War, and in Sanitation and Epidemiology. Majors C. B. LAWSON, M.B., and H. W. H. O'REILLY, M.B., Sanitation and Epidemiology; already passed in (*d*) ii, in Army Medical Organization in Peace and War, and in Medical History, etc. Major G. S. MANSFIELD, M.B., (*d*) ii, and in Army Medical Organization in Peace and War; already passed in Sanitation and Epidemiology, and in Medical History, etc. Major C. W. PROFEIT, M.B., Technical Subjects; has yet to pass in (*d*) ii. Major G. E. F. STAMMERS, (*d*) ii; .75; has yet to pass in Technical Subjects. Majors M. MACG. RATTRAY, M.B., and J. MCD. MCCARTHY, M.B., (*d*) ii; have yet to pass in Technical Subjects. Capt. A. L. SCOTT, (*d*) ii; .75; already passed in (*h*). Capt. F. ASHE, (*d*) ii; already passed in (*h*). Capts. L. W. HARRISON, M.B., C. C. CUMMING, M.B., and J. F. MARTIN, M.B., (*d*) ii; .75; already passed in (*h*). Capts. C. S. SMITH, M.B., and F. M. PARRY, M.B., (*d*) ii; already passed in (*h*). Capts. D. O. HYDE, M.B., and G. J. HOUGHTON, (*d*) ii; .75; already passed in (*h*). Capt. C. H. CARR, M.D., (*d*) ii; already passed in (*h*). Capt. F. W. LAMBELLE, M.B., (*d*) ii; .75; already passed in (*h*). Capt. H. ROGERS, M.B., (*d*) ii; already passed in (*h*). Capt. M. G. WINDER, (*d*) ii, .75; already passed in (*h*). Capt. S. E. LEWIS, M.B.,

(*d*) ii; has yet to pass in (*h*). Lieut. B. A. ODLUM, (*d*) ii, and in (*h*); has yet to pass in (*b*). Lieut. F. WORTHINGTON, M.B., (*h*) i and ii; has yet to pass in (*b*); already passed in (*d*) ii and (*h*) iii. Lieuts. D. S. BUIST, M.B., and A. M. POLLARD, (*d*) ii and in (*h*); have yet to pass in (*b*). Lieut. G. G. COLLET, M.B., (*h*); has yet to pass in (*b*) and (*d*) ii. Lieut. C. CLARKE, M.B., F.R.C.S., (*d*) ii and in (*h*); already passed in (*b*). Lieut. A. R. WRIGHT, M.B., (*d*) ii and in (*h*); .75 in (*d*) ii; has yet to pass in (*b*). Lieut. S. McK. SAUNDERS, (*d*) ii and in (*h*); already passed in (*b*). Lieut. T. J. MITCHELL, M.B., (*d*) ii and in (*h*); .8 in (*h*); already passed in (*b*). Lieut. F. H. SOMERS-GARDNER, M.B., (*d*) ii and in (*h*); has yet to pass in (*b*). Lieuts. G. S. PARKINSON, H. GALL, and C. H. O'RORKE, M.B., (*d*) ii and in (*h*); already passed in (*b*). Lieut. J. STARTIN, (*d*) ii and in (*h*); has yet to pass in (*b*). Lieut. C. G. SHERLOCK, M.D. (*d*) ii; has yet to pass in (*b*) and in (*h*). Lieut. H. H. LEESON, (*d*) ii; has yet to pass in (*h*); already passed in (*b*). Lieut. S. W. KYLE, M.B., (*d*) ii, and in (*h*); .8 in (*h*); already passed in (*b*). Lieut. J. W. LANE, M.D., (*d*) ii, and in (*h*); .75 in (*d*) ii; already passed in (*b*). Lieuts. W. G. WRIGHT, M.B., and A. T. J. MCCREERY, M.B., (*d*) ii, and in (*h*) ii and iii; have yet to pass in (*h*) i; already passed in (*b*).

N.B.—With reference to Army Order 216 of 1909, Majors of the Royal Army Medical Corps who have not fully qualified by December 31st, 1910, in Subjects i. ii, and iii of Appendix XIV, Part I (written), will, after that date, be required to pass an examination in Part II (Medical Staff Tour), in addition to any outstanding subject or subjects of Part I, in order to be considered fully qualified for promotion to the rank of Lieutenant-Colonel.

ROYAL ARMY MEDICAL CORPS (TERRITORIALS).

LOWLAND DIVISION FIELD AMBULANCES.

THE three field ambulances of the Lowland Division went into combined camp at Gailes on July 16th, under the command of Lieutenant-Colonel A. Dryden Moffat, M.D., Second Lowland Field Ambulance, Glasgow. The First Lowland, also from Glasgow, is under the command of Major Edington, and the Third Lowland, from Edinburgh, under Lieutenant-Colonel A. A. Ross. It was originally expected that these units would be encamped with other troops, but the Glasgow Brigades have this year been sent for annual training to Denny and Stirling, and no other troops but the medical units are on the training ground at Gailes. The total number of men is about 600. The usual field training will take place, but sections of the ambulances will be sent north next week to take part in the extensive manœuvres on both sides of the Firth of Forth.

Captain H. Ellis Rowell, Fifth Battalion Norfolk Regiment, at the recent examination held at Colchester passed (*d*), i, ii, iii, and iv, and is qualified for Symbol "Q" in the Army List.

GRANT OF AFRICA GENERAL SERVICE MEDAL.

AN Army Order just issued states that the King has been pleased to approve of the Africa General Service Medal, with clasp inscribed "West Africa, 1908," being granted to the forces employed in the undermentioned military operations, provided that the claims of the officers and soldiers are approved by the Army Council. The medal and clasp will be granted to all officers and men of the forces under the command of Lieutenant-Colonel G. F. A. Whitlock, Royal Engineers, Chief Commissioner Anglo-German Boundary Commission; Captain C. E. Heathcote, the King's Own (Yorkshire Light Infantry), Commanding Anglo-German Boundary Commission Escort; and Lieutenant (now Captain) H. L. Homan, Middlesex Regiment, respectively, who took part in the fighting in and near the Sonkwala Valley on December 11th, 1908, and between December 24th and 31st, 1908, both dates inclusive. Those already in possession of the Africa General Service Medal will receive the clasp only. The grant to officers of the Regular and Auxiliary Forces will be confined to those who had official sanction to be present.

HEALTH OF OUR EUROPEAN ARMY IN INDIA.

To those officers of the Army Medical Service who in former years by their constant plaint for organized sanitary effort in the army were as prophets preaching in the wilderness, it must be gratifying to see the results of the enlightened policy which evidently animates the military administration in India in the present day. In a circular just issued by the Commander-in-Chief attention is drawn to the notable reduction in disease prevalence, mortality, and invaliding in the European army of India. The facts show a progressive and very marked diminution both in the total number of cases coming under treatment and the deaths from all causes, as well as from the chief preventable diseases to which the soldier is liable. Thus among British troops we find the death-rate per 1,000 in 1909 was only 6.23 as compared with 9.1 in 1908 and 17.18 in the decade 1894–1903; similarly the number of men constantly sick has been reduced from 5,374 in the same period to 2,879 for last year. These two sets of figures mean a saving of some 600 lives annually and an addition to the fighting strength of the British garrison of about 2,400 men. Enteric fever between 1894–1903 caused, on an average, 1,476 attacks and 380 deaths yearly; in 1909 there were only 636 cases with 113 deaths. Similarly the amount of dysentery has been reduced to one-half, of malaria to two-thirds, and of "specific" diseases to one-fifth. In corroboration of these facts we find that the number of invalids sent home has fallen considerably; thus, as compared with five years ago, the number of officers invalided has dropped from 119 to 40, of women and children from 276 to 50, of non-commissioned officers and men from 2,105 to 534, and of insanes from 75 to 50.

These facts are eminently encouraging, and must be reassuring to all those who have relatives among the officers and men of the British garrison. If we seek for causes which have led to this remarkable amelioration in the sanitary state of the European army in India, we must give foremost place to the whole hearted acceptation by all ranks of the principles of wholesome living in wholesome surroundings, so long urged by those whose technical knowledge made it clear that radical changes were necessary. In no sphere of activity do we note greater changes for the general good than in the condition of barracks and lines, where the rigid enforcement of a wet conservancy system has revolutionized sanitary effort; also, there is evidence of improved cantonment administration, and indirectly much of the present good health of British troops must be credited to the sustained co-operation which is manifest between commanding officers, medical officers, and the cantonment magistrates. The figures we have quoted not only warrant the anticipation that the high standard now attained will be improved upon, but prove that it is not too sanguine to hope for even better returns. The figures for last year relating to the Indian Army are not yet available, but we have reasons to believe that in that important branch the effects of better knowledge and wider activities in the direction of sanitary effort will show corresponding reductions in both disease incidence and mortality.

Public Health

AND

POOR LAW MEDICAL SERVICES.

METROPOLITAN ASYLUMS BOARD HOSPITALS.

THE Metropolitan Asylums Board, at their meeting on July 16th, adopted, after a brief discussion, recommendations in regard to a change of their hospital system, brought forward by the General Purposes Committee as the result of a report made by Sir Arthur Downes for the Local Government Board. Briefly stated, the matter under consideration was whether the large margin of unoccupied beds which frequently exists in the fever and small-pox hospitals could be beneficially used for providing for additional classes of patients, and for meeting the growing demands on other departments, such as those for children and imbeciles. There was an alternative proposal to close some of the fever hospitals at slack times, but this was not recommended, as it would mean the dismissal of trained officers whom it might be impossible to get together again when required. A subcommittee, which had gone exhaustively into the matter, were responsible for the recommendations in question, the most important of which was that the Local Government Board be informed that the managers are willing to arrange for the reception, tentatively, of measles and other approved diseases in their fever hospitals, provided the Local Government Board can empower them to admit selected cases from the poorer classes for which no accommodation is now available. This last part of the recommendation was due to the report of Dr. Cuff, the medical officer for general purposes, who states that there is adequate accommodation in the metropolitan workhouse infirmaries for pauper cases of measles; what is wanted is accommodation for cases from the poorer classes, not necessarily paupers. As to the feasibility of treating measles and whooping-cough in the same hospital with other infectious fevers, Dr. Cuff states that in his opinion this can be done without any risk of interchange of infection between the different wards. He reports: "The danger to diphtheria patients is at least as great now from scarlet fever as it would be from measles or whooping-cough. Such, at any rate, is the experience of those fever hospitals in the provinces and in Scotland which admit all these diseases. Dr. Ker, of the City Hospital, Edinburgh, where over 1,000 cases of measles were treated last year, writes: 'Measles is never carried by the staff.' Dr. Rundle, of the City Hospital, Liverpool, says: 'We have had under treatment here probably a thousand cases of measles, and I have never known the disease to be carried to other wards. I am convinced that measles is almost entirely a personal infection, and that the third factor does not exist.' With whooping-cough there is no risk at all." Dr. Cuff adds that he considers the measures of disinfection required would be simple and inexpensive, while apparently the only alteration in the internal arrangements of the hospitals would be the allocation of separate receiving rooms.

The Asylums Board also adopted the committee's recommendation to make arrangements for the reception of certified cases of puerperal fever in their hospitals. The committee state they are advised that cases of puerperal fever can be safely admitted to the same hospital with other infectious diseases, and are in some hospitals treated in the same wards as cases of enteric fever, while there is no difficulty in the way of receiving non-pauper cases. They state that the weight of testimony is that the reception of these cases into hospitals would be advantageous to the patients themselves and remove a possible source of danger to others. On the subject of treating pulmonary tuberculosis the committee say they agree with Sir A. Downes, who had stated that in his view the Asylums Board had no spare accommodation which could without serious difficulties be turned over to this class of case, either in the early or advanced stages.

Long Reach Hospital and the shore buildings adjacent to it are to be permanently reserved for small-pox cases, and the additional accommodation for small-pox at the Joyce Green and Orchard Hospitals is to be done away with. The committee say that experience has so fully established the fact that high numbers of small-pox correspond with low numbers of scarlet fever and vice versa that it is safe to make use of this additional small-pox accommodation for fever purposes whenever the numbers under treatment so require. The Park Hospital is to be reserved for sick and debilitated children. This was the only point on which discussion arose at Saturday's meeting, some members holding that the Brook Hospital was more suitable for this purpose. An amendment to substitute the Brook for the Park was, however, lost by twenty votes to fifteen. A member remarked that flowers grew well in the Park Hospital grounds, and a doctor had told him that where flowers flourished children would thrive.

In an appendix to the committee's report, Dr. Cuff deals with a suggestion made by Sir Arthur Downes that the length of stay in hospital by scarlet fever patients might be shortened. Dr. Cuff points out that during the last three years the average length of stay of scarlet fever patients in the Board's hospitals has been 63 days, and compares as follows with other large hospitals: Leeds City Hospital, 63 days; Liverpool City Hospital, 49 to 56 days; Belvedere Hospital, Glasgow, 55.3 days; Ruchill Hospital, Glasgow, 54.4 days; Edinburgh City Hospital, 48.6 days; Monsall Fever Hospital, 56 days. At some of the smaller hospitals the period of detention is much less, and at Southampton during the last six years has averaged only 30 days, while the "return" case-rate was only 1.9 per cent., which is much lower than the same rate for the Asylums Board's hospitals. No recommendation on this matter was, however, brought up by the committee.

As to the isolation of measles and whooping-cough in hospital, Dr. Cuff says it is impossible not to believe that it must result in a great saving of life, and he quotes Dr. Ker, of the City Hospital, Edinburgh, who is confident that it is justified as a means of saving the lives of the poor. In accordance with the desire of the subcommittee, Dr. Cuff addressed a circular letter on the subject to the medical officers of health of 21 of the largest towns in England and Scotland. Of the replies he received in time for use in the report, 13 were in favour of isolation and 5 against. Of these 5, only one, Dr. Tattersall of Salford, had seen the isolation of measles practised for a time and abandoned on account of its spreading to wards occupied by other diseases.

Medico-Legal.

ALLEGED FRAUD ON A HOSPITAL.

IN a case heard by Mr. Hutton at Clerkenwell on June 25th, it appeared that John Levison, a cabinet maker, was charged on remand with unlawfully and knowingly, by means of certain false pretences, obtaining medical care and attention from the Governors of the Royal Free Hospital, with intent to cheat and defraud. On June 13th Dr. Harold Coombs received a telephone message, and afterwards the prisoner came bringing a letter. He was admitted to the hospital as a patient, and was examined on the following day. He complained that he had had an accident, and was suffering from headache, dizziness, deafness, and double vision. He remained in the care of the hospital until Thursday. In the doctor's view there was nothing the matter with the man. A detective stated that the prisoner had been in and out of hospitals for the past three years under false pretences. There was nothing the matter with him. Those hospitals, however, were not prosecuting. Mr. Hutton held that there was not sufficient evidence to convict the prisoner, and discharged him.

WORKMEN'S COMPENSATION CASES.

A Victim of the Compensation Act.

THAT the Workmen's Compensation Act occasionally presses hard on deserving poor folk was made plain at the meeting of the Gainsborough Urban Council (June 17th). Mr. Judson, Chairman of the Finance Committee, pointed out that some difficulty had arisen in consequence of the refusal of an insurance company to take any risk in respect of a workman who was subject to illness. They were attempting to get another company to cover the man, but, if that company would not do so, the Finance Committee did not care to take the risk. The man and his family were quite willing to take the risk of accident, but this they were not permitted to do; and unless the committee could cover the man by insurance, he was afraid they had no option but to discharge him, and he would be a victim of the Compensation Act.

Capacity of a One-eyed Man.

The different county court judges appear to take different views of the capacity of the one-eyed man to work at his trade. In a case at Stourbridge, a man who worked for a firm of anvil makers lost the sight of one eye, and claimed compensation as for total incapacity. The judge held that with practice the man could swing a hammer, and that as he could judge colours as well as a man with two eyes, his capacity was not diminished by the accident. In another case, which was heard at Workington, the county court judge held that a one-eyed blacksmith could never be regarded as entirely recovered, and made an award of £1 a week.

A False Claim.

A case at Chesterfield shows how careful the practitioner should be in dealing with the claimant for compensation who alleges that his eyesight has been impaired. A man claimed to have lost the sight of one eye. A doctor who was called on behalf of the employer said that when he endeavoured to examine the eye the claimant made it almost impossible. At one part of the interview the sun came in at the corridor, and he noticed that the applicant screwed up his right eye. Asked why he did this, the victim of accident said he could not bear the light! After this evidence the county court judge found for the employer.

WORKMEN'S COMPENSATION ACT.

"LEX" writes that, in a case under the Workmen's Compensation Act, in which he certified disablement of the workman, the matter was referred to a medical referee, who disagreed with his opinion. On the case being appealed to the county court, the medical referee called by the judge agreed with our correspondent's diagnosis. He wishes to know from what date the workman is entitled to receive compensation.

*** The workman is entitled to receive compensation from the date of the disablement.

BONDS BETWEEN ASSISTANT AND PRINCIPAL.

DOMINIC writes that he is engaging an assistant, and wishes to know whether there are any suitable printed forms to be had for drawing up bonds between assistant and principal.

*** We do not know of any printed forms for this purpose, but Barnard and Stocker's book on *Medical Partnerships* gives some excellent examples of such forms.

FEES FOR MEDICAL EVIDENCE.

SOLUS writes that he has received a subpoena to give evidence in a civil case at the forthcoming assizes. He asks: (1) What fee ought to be paid him, as he lives three miles from the assize town? (2) Can he demand his fees before being sworn?

*** (1) One guinea a day, with mileage threepence a mile each way. (2) A witness may ask for security that his legal fees shall be paid before being sworn, but not after.

HERNIA AND COMPENSATION.

M.D. asks for opinions on the following: He has recently given evidence in a county court on behalf of a labourer who had been admittedly ruptured in the service of a railway company and was seeking compensation. He gave it as his opinion that no one should do heavy manual labour when ruptured, even though he had a truss; that such a man lived in perpetual menace of strangulation with its manifold dangers; that there should be a radical cure or no hard labour. He disapproves of the evidence of a professional brother on the other side, "That a well-fitting truss was perfectly secure. That no amount of heavy work would bring down the hernial contents."

*** There is no doubt some difference of opinion in the profession on this subject, but it is very generally held that a man with a well-fitting truss is as well able to do manual labour, and with as little risk, as one unruptured.

MIDWIFERY PRACTICE BY PARISH NURSES.

A MEDICAL PRACTITIONER OF THIRTY YEARS' STANDING complains that "partly trained parish nurses" are taking almost all the midwifery cases out of the hands of medical men, are allowed in extreme cases to introduce their hand into the uterus, are undertaking minor surgery, and carrying about with them and administering drugs, and that they defend themselves by asking who else is to do it if the patients refuse to have a doctor.

*** All this is, of course, unqualified practice of the worst sort, some of which, unfortunately, cannot be prevented at present by any legal process. There is nothing to compel any person to have a doctor and nothing to prevent unqualified persons medically treating any one who desires it, except the risk of action for damages and even of charge of manslaughter if a patient dies, when the fact of being unqualified would tell seriously against them. In the case of midwifery, however, since April 1st of the present year it has been distinctly illegal for any one not a qualified medical practitioner and not a trained and certified midwife "to attend women in childbirth habitually and for gain," and breach of this law renders one liable to a fine not over £10. "Partly trained parish nurses" would certainly come under this law, and a complaint sent to the Local Supervising Authority or to the Central Midwives Board would receive attention. A certified midwife is bound in certain conditions to advise that a doctor be called in, but if the patient refuses, "the midwife will not incur any legal liability by remaining on duty and doing her best for her

patient." As for administering drugs, a midwife is bound to note in her Register of Cases "each occasion of administering any drug other than a simple aperient, the dose, and the time and cause of its administration" (Rules of Central Midwives Board). The question of medical treatment by district nurses has received much attention by the District Nurses and Midwives Subcommittee of the Medico-Political Committee, which has drawn up model rules for nursing associations. These have been provisionally agreed to by the Queen Victoria Jubilee Institute for Nurses, to which many local nursing associations are affiliated, and they are to be considered by the Representative Meeting. They strongly discountenance anything in the way of medical or surgical treatment by nurses beyond first aid in emergencies, and any breach of these rules by nurses belonging to the institute would be severely dealt with. In the case of parish nurses going beyond their proper sphere, representations made to the board of guardians by the local Division have on several occasions proved effective in preventing them undertaking medical and surgical work, while, as stated above, for irregular midwifery severe penalties can be enforced.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

SUPERSESSION.

J. TURTON.—We should advise "A." to speak to "C." on the subject.

ADDRESSES IN MEDICAL DIRECTORY.

J. H. B.—It is quite usual for practitioners to put two addresses in the *Medical Directory*, and we cannot see that there is any ethical objection to the practice.

THE COURTESY CALL.

DUBIUS.—The etiquette of the profession is for the newcomer to call upon those already established in practice in the place. In large towns it is usual to call only upon those within a certain radius of the newcomer's house.

UNQUALIFIED DISPENSERS IN HOSPITAL.

R. H. F. R.—The staff should draw the attention of the committee to the disadvantages and possible dangers of employing an unqualified dispenser in the hospital, and suggest that the present holder of the office should be allowed a reasonable time in which to obtain a dispenser's qualification, or resign.

ELECTION OF MEDICAL OFFICERS OF HEALTH.

FAIRPLAY.—Whatever connexion there may have been between the letters, there was no connexion between the answers to which our correspondent refers, as they were contributed by different referees. The answer to "Enquirer" deals only with the general proposition, and by recommending that the case should be brought before the local Division of the Association suggests the investigation which our correspondent asks for.

Obituary.

JOHN BART ROUS, M.B., B.S.LOND.,

LONDON.

WE record with deep regret the death on July 11th of Dr. Rous of Ealing and the editorial staff of our contemporary the *Lancet*. It took place suddenly at Westgate-on-Sea, where he had been staying for some little time in the hope of staving off a nervous breakdown.

Dr. Rous was a popular and very loyal old student of St. Mary's Hospital, where he became M.R.C.S., L.R.C.P. in 1903, and two years later graduated M.B., B.S. at London University taking honours in medicine. Meantime he had held office as House-Physician at his own hospital, as House-Surgeon at the East Sussex Hospital, and as Resident Medical Officer at Hampstead Hospital just before the apotheosis of the small but very efficient original undertaking on the East Heath into the present ambitious institution on Haverstock Hill. Since then he had been engaged solely in literary work.

John Bart Rous was young as a medical man and younger still as a journalist; but even if he had not been, as he was, a singularly agreeable companion and a pleasant straightforward colleague, it would be impossible not to regard his early death with something more than the degree of regret usually experienced on such occasions.

He was one of a band of men whose very limited number is kept up with difficulty, and none of whom can fall out of the ranks without definite loss to the medical profession. Of men who with excellent general or special knowledge combine some degree of journalistic instinct and a capacity for writing pleasant English, there are plenty, but of those who to such qualities have added the strenuous training essential to the taking of a responsible part in the conduct of a newspaper, the number is much smaller. In this respect the general newspaper world is perhaps fairly well off, but it is otherwise in the narrower field of medical journalism. Few men who have gained a qualification in medicine, and some experience of its practice, are disposed to go to school again for two or three years, and learn a new profession.

Bart Rous was one of the exceptions, and having completed an apprenticeship under excellent masters, was well fitted to fill a responsible post on a medical journal with credit to himself and benefit to the profession, whenever occasion should demand. His death, therefore, is a real loss to every one.

AFTER an illness of some years' duration which had necessitated his being invalided from the medical service of the navy, MOYLE BRETON, Surgeon, R.N., on the retired list, died on July 16th at a nursing home in Guildford at the comparatively early age of 41. He received his medical education at St. George's Hospital, and was a distinguished athlete, being especially proficient in putting the weight. He was also a champion pistol shot at Bisley. His long illness, which must have been extremely trying to a man of such an active physique, was borne without a murmur.

DR. ALFRED BENTLEY SIGISMUND POWELL, of Southbourne, Hampshire, and of the West African Medical Staff, died while on duty at Forcados from an attack, apparently, of yellow fever. Dr. Powell, who was the eldest son of the Rev. F. G. Montagu Powell, of Foxlease, Southbourne, was educated at the University of Edinburgh, and became L.R.C.P. and S. in 1898. Subsequently he held a number of appointments at various institutions, including the Morningside Asylum, Edinburgh, and the District Asylum, Inverness, at both of which he was Assistant Physician, and at Edinburgh City Hospital, where he was Resident Physician. Later on he fulfilled a corresponding office at a private asylum in Roehampton, and then went to South Africa, where he worked as Assistant at the Grahamstown Asylum, and as Resident Medical Officer at the Native Location at Port Elizabeth. His tenure of office as a Medical Officer of the West African Medical Staff had been comparatively brief.

INSPECTOR-GENERAL ROBERT GRANT, C.B., M.B., R.N. (retired), died at Ballindalloch, Banffshire, on July 14th at the age of 68. He was a son of the late Robert Grant, of Blairnamarrow, Banffshire, was educated at Aberdeen University, and entered the Royal Navy as Surgeon, May 7th, 1868; became Staff Surgeon, June 7th, 1879; Fleet Surgeon, April 29th, 1888; Deputy Inspector-General, April 10th, 1897; and Inspector-General, May 23rd, 1901; retiring from the service in August, 1902. He served with the 88th Regiment during the Kaffir war in 1877, and specially promoted for services when in charge of small-pox patients of *Boadicea*, 1879. During the Zulu war he accompanied the Naval Brigade to Port Durnford (mentioned in dispatches, medal); Staff Surgeon of *Orion* during Egyptian war, 1882 (medal, Khedive's bronze star), and during the operations in the Eastern Soudan, 1884, and was present in the action at Tamanieb (mentioned in dispatches for his admirable arrangements for the sick and wounded, clasp). He was appointed C.B. (Civil), June 26th, 1902; was J.P. for Banff; and Deputy Lieutenant for Banff, 1908.

YET another Indian Mutiny veteran has passed away in the person of Colonel LESLIE OGILBY PATTERSON, who died recently in London. He was a son of the late Dr. James Patterson, of Melbourne, Australia, and qualified as a member of the Royal College of Surgeons of England in 1851. He entered the Army Medical Service as an

Assistant Surgeon in June, 1854, retiring in 1880 with the honorary rank of Brigade Surgeon. He had medical charge of a field force in Burma in 1856, being present in six engagements. He also served in India during the Mutiny in 1857–8, had medical charge of the Arrah Field Force from June to October, 1858, and was present in actions at Sirthooa (where he was wounded), Julpoora, Brahminagunge, Rampore, Perowra, Jumaon, Karrisath, and Jugdespore. He volunteered to overtake Sir Henry Havelock and take medical charge of his cavalry, and was present with them at the action of Neemadee, and again with the field force in the last action at Mahoolan and in various minor engagements. He was three times mentioned in dispatches, and received the Mutiny medal.

Medical News.

A MEETING has been convened at Caxton Hall on Wednesday, July 27th, by a number of medical men who are in general sympathy with the scheme of the Minority Report of the Poor Law Commission. A reception will be held at 4 p.m., when tea will be served. At 4.30 p.m. Mr. and Mrs. Sidney Webb will address the meeting. Discussion and questions will be welcomed. The chair will be taken by Dr. Herbert Manley, who will be supported by Dr. Christopher Addison, M.P., Dr. Dudley Buxton, and others. Invitations will be issued to all those attending the Annual Meeting of the British Medical Association.

A HOSPITAL entirely devoted to cancer and nervous diseases is to be established in Philadelphia.

THE Astley Cooper Prize for 1910 has been awarded to Professor E. H. Starling, F.R.S., for an essay upon the physiology of digestion, gastric and intestinal.

WE are informed that the Board of Education has approved the Wandsworth scheme for the treatment of school children found on medical inspection to be defective.

MR. ROBERT BRUDENELL CARTER, Knight of Justice, Deputy-Chairman of the British Ophthalmic Hospital, Jerusalem (a foundation of the Order), and formerly its Honorary Consulting Surgeon, has been appointed an Honorary Commander of the Order of the Hospital of St. John of Jerusalem in England.

ON Friday, July 29th, at the Central London Throat and Ear Hospital, Gray's Inn Road, from 3 to 5 p.m., there will be an exhibition of microscopical specimens pertaining to the throat, nose, and ear, and also a demonstration of interesting cases. The medical staff extend a cordial invitation to members of the Association to be present.

THE title of the Women's National Health Association of Great Britain has been altered to the Women's Imperial Health Association of Great Britain. The President is Muriel, Viscountess Helmsley. All information regarding the work of this Association can be obtained at the office, 3, Princes Street, Hanover Square, W.

A NEW institute for medical research, bearing the name of the Otho S. A. Sprague Memorial Institute for the Scientific Investigation of the Causes of Disease has been established in Chicago. Provision for establishing the institute was made in the will of O. S. A. Sprague, a Chicago merchant, who died last year. It has an immediate endowment of £200,000.

AT the Surrey Assizes on July 11th the grand jury threw out a bill of manslaughter against Surgeon-Major E. Farmar-Bringhurst, late of the Army Medical Staff. When charged subsequently under a coroner's warrant, the Chief Justice directed the jury to return a verdict of not guilty, saying that there was no evidence which would justify the defendant being put on his trial.

ARRANGEMENTS have been made at the Royal Dental Hospital for a series of six post-graduate lectures during the autumn. The first will be given at 6 p.m. on October 18th, and the rest on succeeding Tuesdays at the same hour. The lectures are free to internal students of London University and to past and present students of the hospital; to others the fee is two guineas.

THE gold medal offered for competition in connexion with the International Congress on Ophthalmology at Naples last year has been carried off by an English competitor, Dr. Thomson Henderson, of Nottingham. The prize was for the best essay on the subject of glaucoma. Dr. Henderson's paper was entitled, "The Rationale of Iridectomy in the Treatment of Glaucoma: an Anatomical, Physiological, and Pathological Research." Dr. Henderson's success will be especially welcomed by those who heard or read the papers on the same subject presented by him to the Section of Ophthalmology at Sheffield and Exeter.

DR. J. R. LUNN, the well-known Medical Superintendent of St. Marylebone Infirmary, was the recipient on July 6th of an inscribed chiming clock and a silver inkstand, presented to him by past and present members of the staff of the infirmary, and a few friends. Dr. Lunn has been associated with the infirmary since the day of its opening nearly thirty years ago, and his recent retirement is the subject of very general regret.

A SERIES of demonstrations on certain medical subjects are to be given at the London Hospital, at 2 p.m. on each week day, other than Saturday, from August 8th until the end of September. On Mondays the subject will be diseases of the lungs: on Tuesdays, those of the kidneys; on Wednesdays, children's diseases and those of the digestive system; on Thursdays, diseases of the nervous system; and on Fridays, those of the heart and vessels. The demonstrations are free to members of the medical profession on presentation of their card.

FROM an advance programme relating to the entertainment of members of the British Medical Association by the Corporation of the City of Bath next Saturday, July 30th, we gather that the arrangements in view include an expedition to the Cheddar Caves and Cliffs on Sunday. These caverns are famous for the variety and colour of their stalagmites. Those who take advantage of the special terms offered by the leading hotels for the week-end should give notice on registering and they will then be given a week-end ticket, travelling down by the special train which the Corporation has provided for the transport of its guests from and to London, and returning by any train they please on Monday.

THE foundation stone of the building to be erected as an annexe to the Middlesex Hospital and as an institution for cancer treatment and research, was laid by Prince Francis of Teck at a semi-private ceremony on July 14th. The cost of building, furnishing, and endowment, are to be met by the trustees of the late Henry Barnato, who left £250,000 for the erection of a memorial of some medical character to his brother Barnett Barnato and his nephew Woolf Joel. The building will have a frontage of 90 ft. in Nassau Street, and, in addition to other accommodation for various purposes, will provide two twenty-bed wards, and an out-patient department with a number of special treatment rooms and seating accommodation in the waiting hall for about 115 persons. Prince Francis of Teck stated that Her Majesty Queen Mary, who was to have laid the foundation stone, had promised to open the building on its completion next year.

AN open meeting of the Medical Library Association of Great Britain and Ireland will be held in the Mechanical Lecture Theatre (Old School of Science), South Kensington, on Wednesday and Thursday, July 27th and 28th, at 9 a.m. On Wednesday the president, Professor Osler, will deliver an address, and Mr. Victor G. Plarr will read a paper on the Catalogue of the Royal College of Surgeons of England, of which he is librarian. On the Thursday the following papers will be read: Mr. C. R. Hewitt, librarian, Royal Society of Medicine, on the Organization of a Medical Library; Mr. H. M. Barlow, assistant librarian, Royal College of Physicians in London, on the Medical Library Association — a few Observations; Mr. A. L. Clarke, assistant editor and cataloguer, Royal Society of Medicine, on Abstracts and Extracts in General and Professional Literature. An exhibition of rare and interesting books, papers relating to medical libraries, etc., will be held from Wednesday, July 27th, until Friday, July 29th.

A QUARTERLY court of the Society for Relief of Widows and Orphans of Medical Men was held on July 15th, Dr. Blandford, President, in the chair. Twenty directors were present. Four medical men were elected members of the society. The sum of £1,350 10s. was voted for the payment of the half-yearly grants to the annuitants of the charity. A widow of one of the members applied for relief; her husband had paid in subscriptions £21, and left his widow with an income of £20 per annum. The court voted that a grant at the rate of £50 per annum be made. Membership of the society is open to any registered medical practitioner who at the time of his election is resident within a twenty-mile radius of Charing Cross. The annual subscription is two guineas, but a member may become a life member by paying one sum, the amount of which is fixed by the by-laws of the society. The next election will be on October 12th, and application forms must reach the Secretary on or before September 21st. The invested moneys of the society now amount to £100,550. Full particulars and application forms for membership may be obtained from the Secretary at the offices of the society, 11, Chandos Street, Cavendish Square, W.

Letters, Notes, and Answers.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

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2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DR. COLIN CAMPBELL (Southport) writes: Can any of your readers very kindly inform me where I can obtain a goat in kid?

F. C. would be glad of information as to method of using ethylate of soda in facial naevus. Should it be painted on, or applied on cotton-wool and pressed on? What area can be done at once, and how often? etc. Inquirer can find no description of method in the ordinary textbooks.

ANSWERS.

FEES FOR AMBULANCE LECTURES.

H. B.—The London County Council pays for ambulance lectures one guinea a lecture of one and a half hours (including practical work of bandaging, etc.). This seems a reasonable payment, and has been adopted by other county councils.

INCOME TAX SCHEDULE A.

D. F.—The income tax Schedule A is charged on the house, and is payable whatever be the conditions of letting or of occupation. In the case in question the best course would be for our correspondent to ask the collector to apply to the clerk to the council or body owning the house. In the event of payment being refused there will be no alternative but for our correspondent to pay, inasmuch as the collector's remedy in default of non-payment is by distraint on the premises. The question whether in the last resource an action would lie against the employers for breach of contract is a matter that depends entirely on the precise terms of the agreement.

INCOME TAX.

TAX inquires whether in the event of his receiving a sum of £500 at the age of 60 as the result of an endowment assurance with a life assurance company, he will be required to return the amount for assessment to income tax.

*** No; the sum does not represent income, and is not chargeable with income tax. On the other hand, the annual payments made as premium on the policy are proper deductions to be claimed under the head of "life assurance premiums" on the income tax form.

REBATE OF PETROL DUTY.

W. McC. states that he has claimed repayment of petrol duty at 3*l*. in the £1 on petrol used before January 1st, 1910, and has been informed by the local officer of excise that only one-half is due.

*** If our correspondent is able to certify that the motor spirit has been used for the purpose of supplying motor power to a car kept by him while being used for the purpose of his profession, and is able to furnish the necessary vouchers from the person supplying the spirit to prove that the full duty has been paid, it is clear that he is entitled to repayment of the whole amount of duty paid on the spirit, so far as it has been used before January 1st, 1910. The officer of customs and excise should be referred to Sec. 85 (2) of the Finance (1909-10) Act, 1910.

THE DRUG HABIT: TOBACCO.

DR. N. A. BUTTERFIELD (Knoxwood, Harding, Natal, S.A.) writes in reply to "M. Y. S." (BRITISH MEDICAL JOURNAL, April 30th, p. 1091): (1) Let him take "soured milk" (South African name is "Maas") as recommended to "L. O. S." on same page of BRITISH MEDICAL JOURNAL, April 30th. It is a grand physic, in shape of food, for "neurasthenia," and both a bowel and systemic cleanser. I have ten years' experience of it, personally and professionally. (2) A daily, good, healthy action of the bowel is absolutely essential—a mercurial at bedtime and saline in the morning, only "si opus sit" very occasionally. If bowel does not act, and aperient not needed, a glycerine enema is the thing. The last portion of bowel failing in sluggish liver, bowel neurasthenia, they go together, and, starting the rectum, the rest follows. It is "wheels within wheels." (3) Smoke a pipe—clean, medium strength tobacco—in moderation, not at all times of day and night. Do not inhale; do not smoke cigarettes; and do not suck a pipe on an empty stomach. He must know that tobacco is a potent depressor of the sympathetic nervous system, with all its train of symptoms from the effects of abuse and indiscretion—neurasthenia, depression, loss of power, restlessness, insomnia—accumulation of morbid products, etc., all the cause and effect—and must first study the cause. (4) Warm bath at night. (5) Fresh air and regular exercise are all called for. (6) R. Combination of belladonna, henbane, and xanthoxylum (prickly ash)—an American drug.

CIGARETTE SMOKE INHALATION.

DR. CHAS. LLOYD TUCKEY (London, W.) writes: In answer to "A. B. B.," I have found hypnotic suggestion efficacious in curing the cigarette habit in several cases. The most recent case is that of a well-known authoress, who could only compose and write when smoking or inhaling. The association habit was corrected in three or four sittings. In each case the patient wished for a cure but was quite unable to effect it unaided.

CLIMATE FOR LATENT PHTHISIS.

M.D. writes: "Transvaaler, whose patient suffers from latent phthisis and from constipation, would probably be wise in selecting, as a place of residence, some place on the S. or S.W. coast, avoiding (1) a place frequented by tuberculous patients, (2) a place where the drinking water is drawn from the chalk.

E. S. writes: I may mention that I have suffered from "apical phthisis" for many years. Have spent several years near the border of the Orange River Colony, S.A.; and after testing different parts of Scotland and the South Coast find the downs at the north of Brighton most beneficial, particularly the neighbourhood of Withdean; best altitude here is 300 to 400 ft. above sea level. My age is 43.

ELECTRICAL TREATMENT FOR DUODENAL ULCER.

DR. W. F. SOMERVILLE (Glasgow) writes in reply to "M.D.Lond.'s" query about electrical treatment of duodenal ulcer, which appeared in the JOURNAL of July 16th: It is well known that high-frequency currents have a curative effect over superficial ulcers. In the BRITISH MEDICAL JOURNAL of February 4th, 1905, I published notes of a case of scrofulous ulcers of the legs (Bazin's malady) permanently cured by high-frequency currents, where all the usual remedies had previously failed—for example, rest in bed for more than two months, malt and cod-liver oil, etc., internally, while, in addition to scraping of the ulcers, a great variety of dressings had been employed externally without beneficial results. It is also known that sinuses that refuse to heal will close up satisfactorily when treated by high-frequency currents through a water-cooled glass electrode. Further, it has frequently been found that by means of an electrode applied to the tongue and another introduced into the rectum, these currents can be passed from mouth to anus with healing effect in cases of mucous colitis. It is reasonable, therefore, to infer that duodenal ulcers may heal if treated by this painless and safe method. Only a qualified medical expert should be entrusted with the carrying out of the treatment.

LETTERS, NOTES, ETC.

THE BRUSSELS GRADUATES' ASSOCIATION.

WITH reference to the note on this subject published last week, we are informed that those who proceed to Brussels on August 5th for the annual meeting of the association will arrive in time for the International Congress of Forensic Medicine, which, as already stated in the JOURNAL, will be held there from August 4th to 10th. Full information can be obtained on application to the Secretary, Dr. Arthur Haydon, 23, Henrietta Street, Cavendish Square.

GOITRE IN MOTHER AND CHILD.

DR. HOWARD G. PESEL (Thornton-le-Dale, near Pickering) writes: During the last month I was called to attend a girl of 18 in her first confinement. The first thing noticeable on entering the room was that the patient was slightly chronically obstructed in her breathing by a goitre with marked right, left, and middle lobe, causing a mild degree of stridor and bronchial expectoration. Goitres are by no means uncommon in this limestone district of Yorkshire. The labour was accomplished without much difficulty. On examining the newborn infant I noticed that it also had a well-marked goitre, with similar lobar enlargement to that of the mother. At my last visit the goitre of the child seemed less prominent; it was, of course, very plainly visible.

ANATOMY HOOKS.

A STUDENT of the Hong Kong Medical College has forwarded us a sketch of an appliance which he and some of his fellows are now using in place of the triple hook commonly supplied in cases of dissecting instruments. He points out that this triple hook is a dangerous appliance, and that there can be hardly a student but has anchored himself unwittingly at

some time or other by its means. The substituted appliance is a single hook attached to a chain about 30 in. long, at the extremity of which is a weight of about ½ lb. This hook is attached to the part of the subject to be tightened, and the weight hanging over the edge of the table secures the necessary tension. The idea seems sound: we are, therefore, happy to give it publicity. So far as we have been able to ascertain, such a hook is nowhere in use in this country.

THE INCOME OF MEDICAL PRACTITIONERS.

DR. C. STENNETT REDMOND (Tottenham) writes: A correspondent in a recent issue of the JOURNAL traversed the accuracy of the statement made by a writer in a previous issue, that the average income of the general practitioner was estimated at £200 to £250 per annum, and asked for the authority on which it was made. This I am now able to give from p. 14 of *Res Medica, Res Publica*, by William Ewart, M.D., being the inaugural address delivered by him at St. George's Hospital on October 1st, 1907, on "The Profession of Medicine: its Future Work and Wage." "Let me quote from the BRITISH MEDICAL JOURNAL of September 7th and 14th: 'The average income of the British practitioner has been variously estimated at £200 to £250 a year.' The chances of being able to save even to the extent of the return of the capital expended on education are, in a large proportion of cases, slight, while reasonable provision for old age, after family expenses are met, is difficult, and too often impossible."

ST. PAUL'S "THORN IN THE FLESH."

DR. F. D. WELCH (London) writes: As I am both a medical practitioner and also a firm believer in the events recorded in the New Testament, I should like to say a few words in friendly discussion as a reply to the opinion expressed in your paper by a correspondent that St. Paul's "thorn in the flesh" was an eye disease—probably glaucoma. In support of his opinion your correspondent mentions the journey to Damascus recorded in Acts, chapter 9, and St. Paul before the high priest recorded in Acts, chapter 23; and in dealing with the subject it is, of course, necessary to look at it from a spiritual as well as from a medical view. I have had to go into details to explain my interpretation of the two passages, and I cannot see that either account affords any evidence whatever that St. Paul suffered then from eye diseases—glaucoma, iritis, optic neuritis, or anything else.

First, to deal with the journey to Damascus (Acts, chapter 9). Saul of Tarsus having persecuted the church of Christ is journeying to Damascus, apparently in good bodily health, with a view to making more havoc amongst the Christians. Suddenly he is overcome by a great light from heaven, and he "fell to the earth. When his eyes were opened he saw no man, but they led him by the hand and brought him into Damascus, and he was three days without sight." From this account it is apparent that as soon as he rose from the earth his sight was completely gone—taken away suddenly, and I find it quite impossible to believe that this sudden loss of vision was an attack of acute glaucoma. The restoration of his sight by Ananias the disciple shows clearly it was not. The account says: "Immediately there fell from his eyes as it had been scales, and he received sight forthwith." And during my experience of eye diseases—acute or chronic as known to us in these days—I have never seen or heard of any case being cured so suddenly in this way. It is a well-known thing that deficient eyesight is a terrible drawback in every kind of work, and as St. Paul was to preach the gospel of Christ crucified and risen from the dead in Jerusalem, Ephesus, Corinth, Rome, and other cities, I cannot for a single moment believe that Christ would strike his servant with defective eyesight at the beginning of his preaching. At the present day we often come across patients who have, in the early stages of some acute eye disease—iritis, glaucoma—either had no treatment or been treated wrongly by some chemist. Later on the patient goes to a doctor, who diagnoses the case and treats it correctly, and even then the vision is often found, after the attack is over, to be worse than before the attack. I am quite certain that in St. Paul's time the vision, after an acute eye disease, was far more defective than in these days of accurate diagnosis and treatment. To my mind it is quite apparent that the sudden complete blindness of St Paul at Damascus was no disease that we know about in these days, but was what I may call a special act of Christ, intended to impress on St. Paul the fact that, although he could kill the followers of Christ, he (St. Paul) was perfectly powerless against Christ Himself, and that Christ could do with him as He pleased. It has always struck me as curious that St. Paul was blind for three days, during which time he apparently repented of his past life and made good resolves for the future, and that Christ was on the cross for three days, during which time the disciples thought over the past and their own weakness, and also considered the future.

Secondly, Paul before the high priest (Acts, chapter 23). In the first verse we read: "Paul, earnestly beholding the council, said . . ." Now, these words do not at all suggest defective eyesight. I do not think St. Paul's words, "I wist not that he was the high priest," are any evidence whatever that he could not see the high priest distinctly, and he follows this with, "For it is written, 'Thou shalt not speak evil of the ruler of thy people.'" This latter remark reveals the whole meaning of St. Paul's words previously uttered, and I suppose he referred to a passage in the book of Exodus: "Thou shalt not revile the gods, nor curse the ruler of thy people." I understand the high priest accepted the Old Testament and preached the same, and ought to have set a good example to others as a God-fearing man, and to have practised what he preached. In giving orders to smite Paul on the mouth he had offended against God and Christ by striking their servant, and by so doing the high priest had laid himself open to attack from Paul, and the apostle at once saw and seized his opportunity to give the high priest a very hard knock indeed in words in return. His reply, "I wist not," etc., was made in contemptuous defiance of the high priest, and St. Paul meant that the high priest's conduct was completely unworthy of one claiming to act as a servant of God. If the words, "I wist not," etc., were used meaning that St. Paul could not see the high priest distinctly, it would have amounted to an apology to the high priest, and a confession from St. Paul that he himself was in the wrong. The apostle and high priest had a severe battle of words, and the apostle gave a very hard blow to the high priest which took considerable effect.

In conclusion, I may say the word "blindness" used in the Epistles may, of course, be used to mean other than defective vision—as, for instance, blind to faults, blind to the luxuries of this world, etc. The "thorn in the flesh," if it was a bodily disease, was most likely the severe headaches mentioned, or possibly some disease of thoracic or abdominal viscera, and I do not see there is any reliable evidence of its being defective eyesight. I am, however, quite agreeable to be converted to this latter view by any one if it can be proved from the New Testament.

THE CAUSATION OF SEX.

DR. H. P. GODFREY (St. Kilda, Melbourne, Victoria) writes: In the JOURNAL of April 23rd appears a letter on that ever interesting subject, "The Causation of Sex." Without offering any theories of my own, I wish to put on record the following case which recently came under my notice for the information of any who are working at the subject: Mrs. S., aged 27, is one of a family of thirteen, who are all girls (there is no boy in the family). Seven of the girls are married, with the following results as regards the sex of their children: No. 1, aged 40, has six girls (no boy); No. 2, aged 38, has seven girls (no boy); No. 3, aged 30, has three girls (no boy); No. 4, aged 29, has two girls (no boy); No. 5 (Mrs. S.) has one girl (no boy); No. 6, aged 22, has two girls (no boy); No. 7, aged 20, has one girl (no boy). Here, then, in one branch of a family we have a run of thirty-two girls without a boy. I have been unable to obtain the history of any other branches of the family beyond the fact that Mrs. S.'s mother was one of a family of three (all girls). As opposed to the theory of the writer of the letter of April 23rd I may say that Mrs. S.'s husband, who consulted me for neurasthenia, complained of absence of sexual desire and partial impotence, so that in that case one would have expected a boy. It seems that the question is not such a simple one as "right or left ovary" or relative sexual vigour, but that there are other factors of a hereditary nature—using the term in its widest significance—that at present we have not yet fathomed.

THE SAD CASE OF THE LONDON PHYSICIAN.

CROESUS writes: I think it only right that attention should be drawn to the pitiable condition of the "London physician," as revealed by a letter received by me lately, of which the following is a copy: "Sir,—I am sending you herewith P.O. value 2s. 6d. in settlement of your account dated 25th ult. The amount you charge—namely, 3s. 6d.—is excessive for the services rendered. You only saw me once, and then hurriedly, and I was afterwards required to purchase my own medicine, which cost about 4s., and this for an ordinary sore throat. I can get attendance and medicine from a London physician at 1s.; so you will understand I do not feel inclined to pay 3s. 6d. for your services.—Yours faithfully, ———." I need hardly say that I returned the postal order, fearing that, if I did not do so, the London physician in question might have to further reduce his fees.

A GRATEFUL PATIENT.

A CORRESPONDENT sends us the following lines which he received, together with a cheque, from a grateful patient:

> How much a doctor's patients demand when they are ill,
> And still demand his patience when he demands his bill;
> With such we have no patience, but, recognizing skill,
> We pay as should all patients, remaining patients still.
>
> F. W.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *postes Restante* letters addressed either in initials or numbers.

President's Address

DELIVERED AT THE

SEVENTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION,

BY

HENRY T. BUTLIN, D.C.L., LL.D.,

PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE EVOLUTION OF THE ASSOCIATION AND ITS WORK.

At almost every meeting of the Association the President may choose for the subject of his address anything in the heavens above, in the earth beneath, or in the waters that are under the earth. But this year the subject of the President's Address is strictly prescribed by the circumstances of his election. You might have chosen a man far more distinguished in his profession, of greater fame, with title or riband, but you have deliberately taken, in preference, a less distinguished person for the sole reason that he has worked for the Association and that you know that he has the interests of the Association at heart. You have, as it were, said to him: "Thou good and faithful servant, take thou the presidential chair." And the only way in which he can repay you for the honour you have done him is to speak of the Association, to tell what it has done in the past and what it now is, and, perhaps, what it may yet do. If it were not my duty it would be my pleasure to do this, for it is good now and again to look back into the past and ponder over the lessons which it teaches, and to see how and to what extent they can be applied to the present and the future; and it is also good, in a great city like this, where there are foreign visitors and distinguished guests and special delegates from our Branches oversea, to give them some idea of the work of their and our Association.

Annual Meetings.

I could not, of course, give a history of the Association in this address; indeed, I would not if I could, for a large part of it would have no interest for many of my audience. But I would deal with certain features of the Association, and would illustrate them with word-pictures where that is possible. And, first, of the annual meetings, at which every one knows there is a good deal of eating and drinking and giving of toasts, without which no civilized country seems able to conduct its business. But you shall soon see that the meetings are not for the sole purpose of feasting and junketing. For that purpose go back to the meeting at Plymouth nearly forty years ago (1871), where the Address in Surgery is read by an English surgeon practising in Edinburgh, to which he has recently been transferred from Glasgow. His name has been during the last two or three years in the mouth of many persons, and there is a good deal of difference of opinion on the value of the doctrines which he professes. As you see him now he is a man some forty years of age, rather above the middle height but not tall, of stately presence, with a broad brow and a face which betokens earnestness and amiability, but scarcely, perhaps, that determination of which he gave such signal proof in the course of the next five-and-twenty years. He is very neatly clothed in garments of a sombre hue (indeed, I think he belongs to the sect of Quakers), and his address is slow and without the attraction of eloquence, and he describes his methods with such detail and exactitude as must have been tedious to many of his audience, most of whom do not profess his principles and few of whom follow his practice. Yet this is none other than the great Lord Lister, as yet almost an unknown surgeon, and he is telling to probably the largest number of persons he has hitherto addressed the principles of antiseptic surgery. And thus he finishes:

> For, sure I am that, however much the means of carrying out the antiseptic principle may come to vary from those which we now use, the principle itself will certainly be ultimately recognized as the most important of all those that shall guide the practice of surgery; and the sooner our profession is aware of this, the better it will be for suffering humanity. (*Collected Papers*, 1909, vol. ii, 198.)

Now visit with me the town of Worcester eleven years later where the Association is celebrating its fiftieth anniversary (1882). And enter the town hall a little late, as I did, for the commencement of the Address in Surgery. This time the speaker is a tall Irishman (Sir William Stokes), and at the very moment you enter he is supporting the antiseptic principles with the true eloquence of his countrymen; and well he may do so, for only three years previously, at a meeting of the Association at Cork, the principles had received a nasty blow from my eloquent and gifted colleague, Mr. Savory. The orator's head is thrown back, his chest well forward, and he is in the full swing of his address, assisting the effect of his words by the grace of his action. He is dressed in a tweed suit, if I see aright, and I really believe that the strap of a field-glass hangs over one shoulder. But he is not, on that account, the less in earnest, and his address is a right-down good address.

And now take six years ago, when a Scotchman occupies the platform at Oxford, tall and stately, a man amongst men (Sir William Macewen), who speaks in grave terms befitting the speaker and the subject. He speaks also, like the others, on sepsis and antisepsis, but the principles have long since been accepted, and it is only questions of detail which occupy the attention of the meeting.

There is only one other address to which I would conduct you—that on Pathology at the Cambridge Meeting thirty years ago, where my revered master, Sir James Paget, is the speaker. His eloquence is such that had he been blind he would still have been a leader of men; and the genius of his mind looks forth so clearly through his eyes, that had he been speechless he might still have commanded many persons to his will. He is speaking on a subject hitherto but little dealt with—"the consequences of injury and disease in the structures of plants." Until that moment there were few people who were aware that he had ever studied it; but, as he spoke of it, it seemed as if it had been the one great study of his life. You can hear him now, as he says:

> Is there in all the range of natural history a more marvellous group of facts than may here be studied? If you would like to work out a problem in evolution, find how it has come to be a part of the ordinary economy of Nature that a gall insect compels some part of a plant to grow in a manner which, while injurious to the plant, becomes useful to one insect not yet born and to another who will, in due time, invade the gall and kill and feed upon its occupant, and then may itself be invaded and eaten by a third. (*Memoirs and Letters*, 1901, page 304.)

Such have been the men and of such a kind have been the subjects that have occupied the attention of large audiences at our annual meetings. And although I cannot promise you that the meeting of 1910 will bring forth any great discovery in medicine or change the whole face of surgery, I can confidently promise that the scientific part of the meeting, with its twenty-one Sections, each presided over by a distinguished person, and that the Addresses in Medicine and Surgery will be worthy of so great an occasion.

Public Measures.

From its very foundation the Association showed great interest in matters in which the public or the State and the profession were involved. In the first half-dozen years it had appointed committees to consider vaccination, the condition of parochial registers, Poor Law medical relief, medical relief of persons who are poor but not paupers, the suppression of quackery, the sale of arsenic, and other matters, and there was no reason to doubt the existence of that "zeal and alacrity" on the part of the members which had been recommended by Dr. Hastings in his first address at Worcester. They seemed full of energy and enthusiasm. There can be no question that the Association did influence legislation on many of these matters in which the interests of the public and of the profession are involved. But I thought I should like to be able to tell you to-night the history of some one instance, at least, in which the influence of the Association was paramount, and was acknowledged by the public as well as

by the profession. My own knowledge did not supply me with any such example, so I turned to my friends, the Editor of the JOURNAL (Dr. Dawson Williams), and the Financial Secretary (Mr. Elliston, whose father was a valued member for many years, and President ten years ago at Ipswich), and begged them to help me. Although neither of them could give me exactly what I wanted, they nevertheless did put me on the track of what I wanted, and I followed up the track, as you shall presently see.

In order fully to understand the term "medical reform," I must take you back to the early years of the last century, when a man might practise every branch of medicine and surgery on a qualification obtained by a single examination in either surgery or medicine, to the time of Bob Sawyer and Ben Allen; when the examinations of the various qualifying bodies in Great Britain and Ireland varied remarkably in severity, and there was no central authority which could influence them to alter the terms of their examinations; when there was no registration of legal qualifications, and it was difficult for the public, or even for the profession, to discover what men were qualified and what men were practising without a qualification. The condition of affairs was so unsatisfactory, that, in 1834, a Royal Commission was appointed to "inquire into and consider the laws, regulations, and usages regarding the education and practice of the various branches of the medical profession in the United Kingdom." Three years later, at its fifth annual meeting, the Association appointed what may be called its first Medical Reform Committee, with the somewhat wide instruction "to watch over the interests of the profession at large."*

In 1840 a bill was introduced into the Commons by Messrs. Warburton, Wakley, and Hawes, which contained provision for the establishment of a central council and for the direct representation of the profession on it.

In 1842 the Council of the Association presented to Sir James Graham, the Secretary for the Home Department, a memorial explaining the principles of medical reform which were advocated by the Association: a uniform and efficient primary qualification; representation of the profession on the governing bodies of the corporate institutions or on the proposed central council; and the registration of legal qualifications. The Association desired to wait upon the Home Secretary by deputation, but Sir James Graham would not consent either in that year or in the following year to receive a deputation.

He, however, introduced a bill into Parliament in the year 1844 which contained a scheme of registration.

In 1846 Messrs. Wakley and Warburton again introduced a bill for the "Registration of the Legally Qualified Practitioners in Great Britain and Ireland." Although this was only a small part of what the Association desired, it nevertheless presented a petition in favour of the bill, on the principle that the gain of a little is better than the loss of the whole. In the course of this year a deputation was actually received by the Home Secretary, Sir George Grey, who advised that the Association should approach such other of the medical bodies as were in favour of medical reform, and thus obtain stronger influence to bear upon the Houses of Parliament. The advice was accepted and acted on, but without success, and the Association was left to fight the battle alone.

Nothing seems to have been done for the next five years, when the Association, wearied by long waiting, directed its Medical Reform Committee to draft a bill on its behalf (1851).

In 1853 a deputation was received by Lord Palmerston, who was then Home Secretary, and even by the Prime Minister, the Earl of Aberdeen, whose grandson is one of our honorary members at this moment. Both these noblemen expressed sympathy with the views of the Association.

In 1854 Mr. Craufurd introduced a bill, but it was soon lost, and a memorial was sent up to Lord Palmerston.

In 1855 a deputation waited on Sir George Grey, who was again Home Secretary, and a bill was introduced into Parliament by Messrs. Headlam, Brady, and Craufurd, but was abandoned at the second reading.

In 1856 Headlam's Bill, which provided for a central council of which one-third of the members should be direct representatives of the profession, was again introduced into the Commons. It was supported by Lord Palmerston, and petitions were sent up by many Branches of the Association in favour of it. But it fell through, and so did a second Medical Reform Bill which was introduced during the same session of Parliament.

It was in this year that the Association changed its name, and to some extent its character, for it ceased to be the Provincial Medical and Surgical Association and became the British Medical Association. I do not know whether it was on that account or for other reasons, but sure it is that a very remarkable circumstance occurred in the course of the next year—

1857, when the Home Secretary (Sir George Grey), instead of being pursued by the Association, actually was himself the pursuer. He sent for Sir Charles Hastings to hear his views once more and to discuss with him the measures which should be taken. Finally, in

1858 Lord Elcho introduced the bill which became, in the course of that session, the Medical Act of 1858. It provided for the establishment of a General Medical Council and for the registration of medical qualifications. The influence and work of the Association were recognized by the appointment on to the first Medical Council of Sir Charles Hastings, the founder of the Association.

And now it might be thought that the Association, triumphant after many years of strenuous labour, would have been content with its achievement. But, alas! very little had really been accomplished. There was no minimum uniform and efficient primary qualification, and a young man might practise medicine on a surgical qualification, or the reverse, while there was no obligatory examination in midwifery. Registration was therefore little more than a farce. Again, there was no direct representation of the profession on the new Council, and the action of the Crown in its appointments did not fulfil the hope which had been cherished by the reform party. Only those persons who have for years devoted themselves to public affairs and whose whole heart has been in the struggle to carry a particular measure through can understand the terrible disappointment of the reform party. They had wrought for three times seven years for Rachel, and it was the hand of her sister Leah which they had at length obtained. To many zealous men these failures of a public measure are more bitter than the failure of their own private affairs. Their vigour is apt to be impaired, their health to be broken. I should have been but little surprised if the Association had, from this time, made up its mind never again to meddle with bills in Parliament. And certainly it did seem that its strength was spent. For, like some great animal heavy and sore from the wounds of a long and deadly combat, it lay prostrate for nine years. Then, as it were, it slowly lifted up its head, and, looking round, perceived that, not only was there no direct representation of the profession on the General Medical Council, but that, now that Sir Charles Hastings was dead (1866) there was not even a representative of the Association. Nevertheless, feeling that the new Council which it had helped to create knew what it had desired, and, therefore, hoping that it would be likely to join with it in attempting to obtain reform, the Association sent a deputation to the General Medical Council in the course of the year—

1868. But the reply was that, "under present circumstances, it would not be expedient for the Council to consider the propriety of attempting to obtain a change of constitution," and it was thus found that, instead of a friend and ally, this new body was likely to prove a serious obstacle to reform.

In 1869, therefore, the Association began afresh. A deputation waited on the Lord President of the Privy Council (Earl de Grey and Ripon), who, in the following year—

1870, introduced a bill into the Lords, but it contained no provision for direct representation, and the Association would have none of it. A deputation was again sent up to the Lord President, and to the Vice-President of the Privy

* Most of the information contained in this account of the doings of the Association in relation to medical reform is taken from Dr. Alexander Henry's "Historical Sketch" in the JOURNAL of 1882, vol. ii, page 847. The latter part of the account is picked up from the reports of the Medical Reform Committee in the JOURNAL and from other sources. Dr. Henry's "Historical Sketch" is profoundly interesting to every person who cares for the past and present of the Association, and I strongly recommend its perusal to all those who are now engaged in the work of the Association.

Council, and the bill fell through owing to pressure of business.*

In 1873 our old ally, Mr. Headlam, came to the assistance of the reform party, and introduced a bill, which was also lost through press of business.

In 1877 history was repeated, for, wearied of long waiting, the Association directed its committee to draft a bill.

In the course of the next session—

1878, the bill of the Association was introduced by Messrs. Mills and Childers, and another bill was introduced into the Lords by the Government, but both bills were lost; they were again introduced in the course of

1880, passed the second reading, and were referred to a Select Committee. I suppose, as the consequence of this, in

1881, a Royal Commission was appointed to consider the working of the Medical Act. The Commission was not long in reporting, and in

1882 the Reform Committee expressed satisfaction with the terms of the report, and sent up a deputation to the Lord President of the Council. It is a mark of the growing influence of the Association that this deputation was introduced by no less a person than the Duke of Westminster. During that session a bill was presented to the Lords by the Lord President, but it was lost in the Commons from lack of time.

In 1884 the bill was again introduced, was accepted by the Lords, and made a Government measure in the Commons; but it met with such strong opposition on the part of bonesetters, cancer-curers, herbalists, and the like, and from one or two of the corporations, that it was lost, in spite of the evident desire of the Government to carry it through.

In 1885 a less ambitious measure was introduced, but a change of Government took place, and the measure was abandoned.

In 1886 the Medical Reform Committee urged the importance of reform so firmly on the new Government that a measure was passed through the Lords by the Lord President of the Council (Earl Spencer), and through the Commons by Sir Lyon Playfair, and became the Medical Act of 1886. It provided for direct representation of the profession on the General Medical Council, and that a legal qualification to practise should only be obtained by those persons who had passed an examination in medicine, surgery, and midwifery.†

Thus, after nine-and-forty years of labour, the Association had been successful, not to the full extent of its desires, but to a very large extent. And it had every reason to be proud. You see that I have taken the trouble to learn all these details in order to narrate to you what you may deem a very tedious story. And you may be sure that I did not learn them easily. And you may ask why I was at such pains to make myself master of a story so full of tedium. It was on that very account I did it. I would have every member of the Association learn the story as I have learned it—particularly every young member. I would have it printed in large type and set up in every building which is devoted to the service of the Association, that all men may find in it an object-lesson of what can be done by patience and perseverance, by determination and tenacity of purpose.

So I would have the names of all those members of the Medical Reform Committee who took an active part in its work handed down: of Hastings of Worcester, Barlow of Bath, Crosse of Norwich, Southam of Manchester, Stewart of London, Waters of Chester, Ernest Hart, and many others. They are all gone, and there remain only a very few of those who took part even in the promotion of the second Medical Act—Dr. Bruce Goff and Dr. Hugh Ker, who are still working for the Association, and Sir Walter Foster, now Lord Ilkeston, who was one of the first direct representatives of the profession on the reformed Medical Council. I am proud that we have these three members with us this week.

Scientific Grants and Scholarships.

Now, take quite another phase of the work which we have done. In the Seventies of the last century there was not so much talk of original research as there is in these days, and but little money was then supplied for research. In those days, as in these, there were many men, for the most part young men, who were waiting about the hospitals for a place upon the permanent staff, or were hoping to get into private practice. They were just able to maintain themselves (for few of them had much private income) by teaching and minor posts and appointments. They often had time on their hands, and, being above the average of young medical men in intelligence and education, were willing and glad to seek occupation and perhaps a name in original research. They were often able to find a work-bench in one of the hospital laboratories, and aid and counsel from the professors and lecturers. But the researches were, in many instances, expensive, and they had not the means to meet the expense of material and apparatus. When the Association began to find itself in funds, it was suggested to the Council, I believe by Mr. Ernest Hart, that a certain sum of money should be awarded every year to research workers to assist them to obtain the material and apparatus which they could not procure for themselves. In the year 1874 the Scientific Grants were founded; £165 were granted that year, and I am sure it will be a matter of interest to some of the members here to-night to learn that the first grant out of that sum which appears on the minutes was a grant of £50 to Mr. Hicks for "Researches on Alcohol." I do not know how many grants have been made or how many researchers have benefited by the Scientific Grants, but I do know that from £300 to £400 has been awarded every year, and that such men as Washbourne, Bayliss, Starling, Rose Bradford, Kanthack, Halliburton, Gaskell, and many others quite as distinguished, have been recipients of grants, and that a large number of researches have been made possible by the liberality of the Association.

Ten years later (1884) two Research Scholarships of £150 each were founded, to enable men to devote their whole time to particular researches. Since that time there have been some fifty scholars of the Association, and it will suffice to tell you that Sir Watson Cheyne, Dr. Sidney Martin, Dr. Stockman, Dr. Copeman, of the Local Government Board, Professor Haycraft, and Professor Starling have been scholars of the Association to prove to you the pains which have been taken to select persons fitted to pursue original research.‡

It has been my lot to speak both for and against the Scientific Grants on more than one occasion. As Treasurer of the Association, I have had to restrain the ardour of the Committee and to prevent it dipping its fingers too deep into the purse of the Association. As a member of the Committee, I have had to defend the grants from the platform at the annual meetings. There have always been members of the Association who have grumbled that the money devoted to scientific purposes was not applied to the defence of members and to the suppression of illegal practice. And, even of those who approved of the grants, there were always some who grumbled at the nature of the investigations, and wished to see the money applied to investigations which were likely to find a certain and immediate practical application.

* Many years later (1889) I was present at the dinner of the Association at the annual meeting at Leeds, when Lord de Grey, then Marquis of Ripon, referred to this matter. Part of his speech ran thus: "He was bound to say he had occasionally found in those departments (the War Office, the Admiralty, and the Privy Council) men of ultra-official views who were so irreverent as occasionally to speak in terms not altogether of admiration or respect for the British Medical Association. He once, indeed, had to suffer from the action of the Association. When he was Lord President, he endeavoured to deal with the subject of the constitution of the General Medical Council, and he introduced a bill which he thought was a very good one, and most of the provisions of which had since become law. It did not, however, contain one provision greatly desired by the British Medical Association, and they so effectually pleaded for delay at a fatal moment towards the end of the session that they defeated the bill, and stranded him altogether until he was carried away in the wrong direction by the rising tide of opposition. He was bound to say—and he made the confession very frankly—that he was now convinced that the Association was right and he was wrong. He was, perhaps, on that occasion—it was a rare occasion in his public life—somewhat too conservative."

† The Association had fought for many years for eight direct representatives on a Council of twenty-four persons. The bill only provided for five—three for England, one for Scotland, and one for Ireland. Only in the course of last year (1909) was the representation increased by the action of the General Medical Council itself.

‡ Sir Watson Cheyne, Bart., Surgeon to King's College Hospital and Surgeon-in-Ordinary to His Majesty the King; Dr. Sidney Martin, Physician to University College Hospital and Professor of Pathology; Dr. Ralph Stockman, Professor of Materia Medica at Glasgow and Physician to the Western Infirmary; Dr. Copeman, Medical Inspector to the Local Government Board and Lecturer on Public Health to Westminster Hospital Medical School; Dr. Starling, Professor of Physiology at University College; Dr. Haycraft, Professor of Physiology at University College, South Wales, etc.

I confess that these latter grumblers have sometimes had my sympathy. Researches on pulse curves and researches on biliary secretion seem a long way from practical medicine. Yet I would not, on any account, interfere with or appear to despise any research, however little it might seem likely to be useful to the practice of medicine and surgery, provided it is in the hands of a competent worker, and is likely to provide new knowledge. The last time I spoke in favour of the grants was, I think, at Cheltenham, where I directed the attention of the meeting to the vast commercial and industrial use which had been made of Faraday's discoveries of the relations of magnetism to electricity. The discoveries seemed to belong to the purest realms of science, and nobody could have foreseen their practical application. And it was not Faraday himself who made the application. He would never touch that side of the question, as he believed that to do so would damage his powers of research. Tyndall speaks particularly of this,* and I am sure that some discoveries which have appeared to have no practical bearing have resulted in greater advantage to the practice of medicine than some of those researches which have been undertaken from the purely utilitarian point of view.

At the present moment it is the fashion to say that things are better managed in Germany; as people said in my young days, "They do these things better in France." Although I do not at all admit this as a general proposition, I think it is to some extent true when it is applied to the relative value which English and German business men attribute to scientific research. I am informed that some great industrial concerns in Germany build and equip large laboratories in which fifty to a hundred chemists are continually employed at varying salaries according to their position, and that they are directed by the most distinguished chemist the industry can procure. These chemists are not only permitted but are encouraged to prosecute research, and the researches are not limited to the possible utility to the industry, but may take any direction which seems good to the worker and the director. The object of the industry is to encourage chemical and physical research, with the full confidence that in a series of years the industry will derive enough benefit to pay the cost of the laboratory, and will probably derive more benefit than it would do by limiting the nature and scope of the researches to the possible service of the industry. Only the other day I was looking through the *Collected Papers of Lord Lister*, and noticed that the earliest researches which he made were on muscular and elastic tissue. Suppose that he had been dissuaded from these researches on the ground that they seemed to have little or no practical bearing, he might have been so far discouraged as never to have undertaken original research. What a lamentable thing that would have been! What a loss to human beings! No, the taste and faculty for research need to be encouraged in a likely worker, even if the objects of his researches give no hope of immediate practical value.

Nevertheless you may fairly ask me whether I am not able to show something of value to practical medicine and surgery which has resulted from the money which the Association has devoted to science. Yes, I could give you several instances if I had time to do so, but one must suffice. In 1883, in consequence largely of an observation made by my old friend Sir Felix Semon, the Clinical Society of London appointed a committee to consider the nature and relations of myxoedema. The work of the committee was divided into several parts, to which competent persons were assigned. The experimental part was chiefly under the charge of Professor Horsley. It was essential to the completion of the work of the committee but it was costly, and the Clinical Society had not made any grant towards it. This part might have fallen through, and the report of the committee might have been seriously prejudiced and its value profoundly lessened, had not the Association come to the aid of the committee with a substantial grant, which was supplemented after an interval by further sums towards an inquiry into the physiology and pathology of the thyroid gland. To this work may be attributed thyroid-therapy and a wide knowledge of the relations of the thyroid gland to health and disease. And indirectly it may be said that this was the beginning of all the knowledge which has since been gained on the physiology and pathology of other of the ductless glands.

One matter to which the Association has largely contributed is the study of chloroform.

Several committees have been appointed on this very important subject. The last committee has only just published its report.† I have read it carefully through, and have formed the opinion that the £700 which has been devoted to this committee is a very small sum in comparison with the practical value which the work of the committee is likely to have. At least £1,500 have been given to the various committees which have worked on this subject for the Association.

There is one grant which was made by the Scientific Grants Committee eighteen years ago, and actually paid over to the applicant, but I am sorry to say it was never used. It was made to a certain Surgeon-Captain David Bruce to assist him in the investigation of Malta fever. Other arrangements were made for Captain Bruce, so the money was returned to the Association, otherwise we should have had the credit of having assisted that distinguished military officer in the very early days of his researches. What a satisfaction that would have afforded every member of the Association!

I can only further tell you that, including grants to the Jenner Institute, to the Therapeutic and other committees, the Association has provided more than £33,000 for scientific purposes since the year 1873.

Benevolence.

Just now I spoke of the dissatisfaction of some of the members of the Association that our revenues are devoted to scientific purposes instead of to the needs of the profession. It seems to have been determined very early in the life of the Association that its income should not be applied to the benefit of the members. When the Association was incorporated under the Companies Acts in 1874 it was expressly stated in the Memorandum that the members of the Association should not be entitled to benefit from the income of the Association.

But from the very first the members were mindful of the material necessities of the profession. At the first annual meeting in 1833 Dr. Barlow, of Bath, presented proposals for the establishment of a benefit fund. The proposals were ordered to be printed and circulated among the members. At the third annual meeting it was recommended that a society be formed, to be called the Provincial Medical Benevolent Society, and that a fund be accumulated by subscriptions and donations. It is quite pathetic to read in the report of the Benevolent Society two years later that the committee had been enabled to bring the fund into operation, and to afford relief in two cases of distress!

For many years the Benevolent Fund reported each year to the Annual Meeting of the Association, which took the greatest interest in its affairs, and which has continued to interest itself in them from that time to the present. The pages of the Journal have always been open to official communications, to letters and articles in favour of the Fund, and even the machinery of the Association has been used, by the kind permission of the Association, for collecting subscriptions and donations towards it, with such success that last year the Fund was able to boast that since its establishment it had distributed about £76,000 in annuities and the same amount in grants, and now administers about £4 500 a year; that out of the income derived from investments it supports 126 annuitants, who must be over 60 years of age, and that the annual subscriptions and donations form a fund out of which grants are made to deserving cases not eligible for annuities.

I am not exaggerating when I say that the British Medical Benevolent Fund owes its origin, its first successes, and its present position to our Association.‡ It has probably done better as an independent body than if it had been, as was intended in the first instance, a part of, and dependent on, the Association. I doubt whether it would have received anything like so large a sum in donations and legacies as it has actually done. On the other hand, its relations with the Association have been throughout of such value to it that the good influence which the

* *Faraday as a Discoverer*. London. 1870.

† British Medical Journal, Supplement, July 9th, 1910.

‡ See British Medical Journal, 1905, vol ii, p. 1655.

Association has exercised over its affairs cannot be too highly estimated.

To those persons who are disposed to complain that the Association has never done anything for the material welfare of its members or of the profession this account of the British Medical Benevolent Fund is my answer, and I trust I shall never again hear the complaint.

PAST HISTORY AND GREAT OFFICIALS.

Although I am not going to furnish a history of the rise and development of the Association, there are certain matters in its past which will interest the members here to-night. It was founded, as you know, in the year 1832, when there were but few railways, when the lesser roads were not too good, when it took days, not hours, to reach the metropolis from many parts of the country, and when perhaps more doctors rode on horseback than went in wheeled vehicles to see their patients. Yet, even then, Dr. Hastings, who founded the Association, said, in his address in the board room of the Worcester Infirmary, "The facilities of communication between distant towns . . . had become so much greater that distance would afford but a slight barrier to the undertaking."* At the first annual meeting in 1833 about 200 of the total 316 members were present. But the Association made but slow progress in the course of years. In 1874, when it was incorporated under the Companies Acts, it only numbered between 5,000 and 6,000 members. And as to its finances in the early years, they were deplorable. Four and-twenty years (1856) after its foundation it was £2 000 in debt, and the members had to put their hands into their pockets to help it out.

Although it met in different large towns in the United Kingdom, it was not until the thirty-eighth meeting, nearly forty years ago, that its presence was officially recognized by the appearance of the Mayor, Sheriff, and Under-Sheriff of Newcastle-on-Tyne at the opening meeting in their robes of office. The scientific business of the annual meetings was only divided up into sections just before that time (1867), when four sections were established—Medicine, Surgery, Physiology, and Midwifery. Indeed, the progress which was made during the first half of its life (of seventy-eight years) would never have justified an observer in predicting its present numbers and importance. It was just about thirty-eight years ago that it began distinctly to advance; and, as usual, it was not measures, but men, that caused the advancement. Indeed, there has never been any question in my mind on this point. Nor have I ever had the least doubt of the particular men to whom the Association owes more than to any other men, dead or living. They were both officials of the Association, and each of them remained in its service for more than thirty years.

The first was a little sallow-faced Jew, with clean-cut features and piercing eyes, active in mind and body, clear-headed and as keen as men are made. The reputation of our JOURNAL when Mr. Ernest Hart became its editor in 1866 was none too good, and only in the previous year a proposal had been made to the annual meeting to replace it by a less expensive journal.

From the moment Mr. Hart took it in hand its future was ensured. His wide knowledge of all matters connected with his profession, private and public, professional and general, and his skill in writing, would have enabled him easily to perform all the editorial work which was then needed or was likely to be needed for many years to come. But that was not his idea of editing. He gathered to his aid every man who had a special knowledge of any subject which appeared in the pages of the JOURNAL, and persuaded him to give his opinion on the value of the communication, and even to write unsigned articles and annotations upon it. I was very much surprised the first time I signed the quarterly cheques to discover the large number and the position of the contributors to the JOURNAL. Each man was paid for his contribution, but while a good deal was paid away each year, no one person received much more than a trifling sum. This was, I believe, an expensive way of conducting it, but in a very few years it had made the reputation of the JOURNAL. When Mr. Hart became our editor the number of members was only between 2,000 and 3,000, and when he resigned, after thirty-four years' service, it was 17,000. The work of editing would have been quite enough for most men; it was only a small part of what was done by Mr. Hart. There was no question of public health which he did not deal with or attack. And his interest in all that concerned or might concern the Association in the future was truly remarkable. I believe the foundation of the Scientific Grants and Scholarships was largely due to his influence. I *know* that the library owed its actual origin to him, although it had been considered at the very first meeting of the Association. The Medical Sickness Society was, Dr. Hall tells me, his idea. His mind teemed with fertile thoughts, and they were always at the service of the Association if they were likely to be useful to it.

The other official was Mr. Francis Fowke, not known to the members as the Editor was, and really only understood and esteemed by those persons who were closely associated with him in business affairs. He was our General Secretary and Manager, and to him fell the charge of all matters connected with the printing and publishing of the JOURNAL, the advertisements, the collection of subscriptions, the arrangements for the annual meetings, and I know not what else.

He it was who advised the removal of the offices of the Association to that great artery of traffic, the Strand; who gradually took over the printing of the JOURNAL, the provision of the paper on which the JOURNAL is printed; who studied various methods of improving the illustrations in the JOURNAL; who devoted his attention to every little business detail with such success that the surplus income of the Association, which was £38 when he became its Manager in 1871, was nearly £5,000 when he resigned his post in 1902. No wonder that successive Treasurers placed their confidence in Mr. Fowke, and supported him one after another in the schemes which, with great caution and after long pondering, he put forward for some improvement in one or other of our business methods.

It would be difficult to find two men less like each other than the Editor and the General Secretary and Manager. Mr. Fowke was gouty and asthmatical, nervous and apprehensive, constantly apologetic, slow of speech, and slow to form a judgement, particularly in matters relating to finance. No wonder his brilliant colleague looked upon him with a feeling almost of contempt. But there is no use denying it. In spite of what was said in some of the obituary notices of the Editor's financial abilities, and in spite of his nationality, he was really a very indifferent financier. And this was appreciated fully by the Manager, who repaid the feeling of contempt for himself by the strongest expression of distrust of the financial schemes of the Editor. It may easily be imagined that there were no feelings of cordial friendship between two such men. This was quite well known to many persons interested in the Association, and during the years I was Treasurer it was several times suggested to me to do my best to heal up the dissensions between the two great officials. But I would not listen to such suggestions. No lasting peace was possible between them; and my own opinion was that the safety of the Association was better secured by their hostility to one another than it would have been by their friendship. Each kept a watch upon the other useful in the interests of the Association. Had they combined, there might possibly have been mischief. Had there been two Harts, the Association would probably have been swiftly borne to that great personage to whom the beggar on horseback is said to ride. Had there been two Fowkes, it might have gone to sleep. Peace be to the ashes of these two men, and let us be thankful that their places are so excellently filled by our present Editor and Financial Secretary (Dr. Dawson Williams and Mr. Elliston).

THE FUTURE.

I fain would speak of many other matters—of the Library, of our new premises in the Strand, of the formation and growth of the Branches, of the extension of the Association beyond the seas, of our JOURNAL, etc. But I have been warned not to trespass on your patience by speaking at too great length, and the warning is full of wisdom. I must therefore devote the few minutes which are left to me to the present and future of the Association. What is this great Society to do with its

* BRITISH MEDICAL JOURNAL, 1832, vol. i, p. 847.

22,000 members, its numerous Divisions and seventy Branches, its Council and Representative Parliament, its great Standing Committees, its Medical Secretary's department, and its large revenues? Well, since its reconstitution eight years ago it has devoted its attention very largely to the defence of its members and of the profession generally against the attempts which are made with cruel frequency against them by many sections of the community. Whilst extolling the nobility and generosity of our profession as a whole, it is notorious that public and private bodies, municipalities, corporations, clubs, medical aid institutions, charities, vie with each other in their attempts to use our services without reward, or for the smallest compensation which is possible; and it is equally clear that the only chance which the rank and file of the profession—those men who perform the most and the best of its work—have to repel these attacks is the support of a great and powerful body like our Association. Medical men talk of these things as if they belonged only to modern times; as if, until recently, we had been fairly treated, and no attempt had been made to impose on our good nature. I would ask them to read a certain report of the first committee which the Association appointed to consider the question of Poor Law medical relief, presented seventy-five years ago (1835).

> Your Committee are aware that the vast amount of gratuitous medical assistance that has been at all times afforded to the needy by all grades of the profession throughout the country (an amount that could not be conceived by those who were not informed on the subject) has been productive at least of one very injurious effect: it has induced the unthinking portion of the public to conclude that there was some sort of conventional, if not legal, obligation on the medical profession to attend, without reward, to the ailments of the poor.

The words of the Committee can be applied with even greater truth to-day, and there has never been a time in the last three-quarters of a century when they might not have been truthfully applied. Years ago, during the time that I took an active part in the work of the Association, we made attempts from time to time to assist medical men in repelling these attacks, and with more or less success. Now the Association is dealing with this part of its work with much greater vigour and with the intention to do its best to help the oppressed members of the profession. And, as the result, in these last years I believe the body of the profession look with greater hope and confidence upon the future than they have ever done within my recollection. This side of our work has my hearty wish for its success. My mind is frequently saddened by the hard cases of some of those practitioners whom I have known as well-educated, industrious, and intelligent, and who have been cruelly ill-treated by public bodies and societies. But I am afraid there is no side of our work which needs greater tact or more delicate handling than this. An expression of undue force on the one hand, an exhibition of weakness on the other hand, and the amount of mischief which may follow is incalculable. I cannot remember any period of our history when our affairs required more skill and sagacity than the present. Every one naturally turns to watch what the governing bodies of the Association will do. I watch, like the rest, and I have studied the men who are entrusted with the guidance of our state. I have mixed with the members of the Council and, to some extent, with the members of the Representative Body in this last year, and I have come to the conclusion that, although their task is grave and difficult, they are the men to undertake it with success.

THE International Medico-Psychological and Psychotherapeutic Association will hold its first annual meeting on August 7th and 8th, immediately after the Congress of French-speaking Alienists, which is to be held at Brussels.

MR. ROBERT NEWSTEAD, lecturer in economic entomology and parasitology of the Liverpool School of Tropical Medicine, who was recently sent to Malta, with the co-operation of the Colonial Office, to investigate the bionomics of the sandfly, writes that he has completed a general survey of the more important centres in Malta, chiefly military, where sandflies are most prevalent and cause great annoyance to both troops and civilians. He next proposes to investigate the bionomics of this pest at Citta Vecchia.

Address in Medicine

DELIVERED AT THE

SEVENTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION,

BY

J. MITCHELL BRUCE,
M.A., LL.D.ABERD., M.D.LOND., F.R.C.P.LOND.,
CONSULTING PHYSICIAN, CHARING CROSS HOSPITAL, AND BROMPTON HOSPITAL FOR CONSUMPTION.

THE DOMINANCE OF ETIOLOGY IN MODERN MEDICINE.

MR. PRESIDENT, LADIES AND GENTLEMEN,—My first duty, and to me the most pleasant of my duties, on this occasion is to thank Mr. Edmund Owen for the high compliment that he paid me in inviting me on behalf of the Council to deliver the annual Address in Medicine. I do thank him heartily, for I appreciate the special importance and distinction attaching to the office when the Association meets in London. I have felt only too keenly in the preparation of my Address the difficulty of justifying the selection of me as spokesman for Medicine before you, and before a public that is always ready to interest itself in our proceedings. And I have also become keenly aware of the difficulty of finding a fresh line of thought along which to lead a learned audience like mine, and maintain their interested attention for a whole hour—an audience of whom many have listened year after year on similar occasions to my distinguished predecessors.

RECENT ADVANCES.

The annual Address is traditionally expected to include a chronicle of the advances that have been made in the science and art of Medicine since the last meeting of the Association. Not a year goes by but there is abundant reason for mutual congratulation on this account. The past twelve months are no exception to this experience. And if I were to recount to you our gains during the whole of the fifteen years that have elapsed since we last met in London we should indeed find cause for satisfaction. I will spare you such a trial of your patience. Our weekly EPITOME and our year-books keep us up to date in this information, which we scarcely ought to require if we have done our best to assimilate new facts and take advantage of clinical and therapeutical improvements as they are announced. Therefore I will content myself, and no doubt satisfy my audience, with a very brief record of the additions to our knowledge of disease, and of the improvements in our means and methods of diagnosis and treatment, of the first magnitude only. I will then ask you to survey with me what I consider the principal line of progress in Medicine during this interval, the position that has been won, the prospect lying before us of further advance, and the need and the call for it. It is right that this address should reflect, however imperfectly, the spirit and aspirations of the time.

First of the great events to which my record of the period will be limited comes the discovery of the spirochaete of syphilis; of the part played by the mosquito in malaria and in yellow fever, and by the goat in the diffusion of Malta fever; of the connexion of a trypanosome with sleeping sickness, of the Leishman-Donovan body with kala-azar, and of the *Diplococcus intracellularis meningitidis* with cerebro-spinal fever. The existence of typhoid carriers has been fully demonstrated, as well as the dangers of other typhoid products than the stools. Investigation has been pushed forward during the same period into the relation of human to bovine tuberculosis, and stringent regulations have been framed in respect of milk and meat as articles of food. The effects of oral sepsis have been worked out, and prove to be so widespread, so multiple, and frequently so grave, as to make us ashamed of our previous blindness to a common source of blood infection staring us in the face all those years. Autointoxication proper has attracted professional—and only too much public—attention, and led to the introduction of a great variety of dietetic and medicinal "cures." Of improved methods of observation and diagnosis,

blood examination in the many forms of its development and in its many applications deserves first mention; and special interest and importance attach to the Widal reaction in typhoid and to the Wassermann reaction in syphilis. Radioscopy, which was coming into clinical use in 1895, has been greatly improved and extended, more particularly in its applications to the investigation of gastric and intestinal disorders and diseases; and the orthodiagraph must be mentioned in this connexion. A great impetus has been given to the study of cardiac irregularity, and the sphygmomanometer is now generally employed. A real advance has been made in the introduction of lumbar puncture as a means of diagnosis in cerebro-spinal diseases.

During these fifteen years several new methods of treatment of the first rank have been either introduced or perfected. Chief of all comes serum-therapy and vaccine-therapy, of which I shall have more to say presently. Part of the development of the thyroid treatment of myxoedema and cretinism falls within this period, and with this may be coupled the introduction of preparations of the supra-renal gland into the materia medica. Of great importance is the employment of spinal analgesia as a substitute for general anaesthesia, the dangers of which have been closely investigated in relation to the status lymphaticus, as well as to post-anaesthetic acid intoxication. Other powerful means of treatment have been discovered in radium, in the Roentgen rays, and in the Finsen light. Of a different order, but full of promise, is the use of graduated labour as an element of sanatorium treatment in pulmonary tuberculosis. Of new drugs proper the most important are synthetic compounds with hypnotic and analgesic actions.

Inroads of Surgery.

When we consider how great are these gains, both in themselves and in their possible applications, we may be well satisfied with what has been accomplished within a relatively short period in the history of Medicine—of Medicine, I mean, in its comprehensive, original sense, the Healing Art. But if I had interpreted my position to-day as that of a representative of pure Physic in the limited sense of sister art of pure Surgery, I should have had to speak less cheerfully. I should have had to introduce my reference to the outstanding events in the history of Medicine during the last fifteen years by lamenting the striking change that has occurred in its scope and in its immediate interests through the many losses that it has suffered at the hands of the surgeon. One after another the great viscera in their pathological and therapeutical relations, as objects of treatment and of clinical study and demonstration—and, I might add, as subjects of physiological investigation and interest in the medical wards and hospital laboratory—have been taken over in good measure by him. This is one of the revolutions brought about by the epoch-making work of Pasteur and Lister. The graver diseases of the stomach, the duodenum, the liver and gall-bladder, the appendix, the colon in its whole extent, the pancreas, the kidneys, the lungs and pleura—even the heart, the brain and the spinal cord—have, one after another, been gradually passing out of the hands and experience of the physician. Consider the loss that this means to Medicine—to what the Germans call *innere Medizin!* The physician may well be anxious about his position now and in the future. The field of practice contracts before his eyes. He may be forgiven if he feels a twinge of soreness and even of jealousy pass across his mind when he watches the steady sap of his position by his operating colleagues. But this is only a passing grudge! I associate myself on the present occasion with Medicine in the wider sense, with Medicine as it concerns, not the consulting physician, but the family practitioner, who in his daily work disproves, with Sir Clifford Allbutt in a recent correspondence in the *Times* on this very subject, the necessity of "halving the understanding and management of individual diseases between two sets of persons." Medicine heartily congratulates Surgery on the brilliant advances that she has made, and rejoices with her in them, although many of them have been at her own expense. Has she not gained as much as she has lost by the inroads of Surgery? Surgery has not only effected in treatment much that Medicine failed to do and never could attempt; she has greatly increased our knowledge of the diseases of the viscera, and, indeed, not of their diseases only, but of their disorders, and even of their condition and functions in health, all as the result of direct observation of them *intra vitam*, intelligently employed, and of the effects of operative treatment. Surgery has assisted Medicine in Medicine's own methods; has furnished Medicine with fresh suggestions and fresh means of investigation; and Medicine, never slow nor too proud to learn, has availed herself of Surgery's findings and conclusions to perfect her proper knowledge for her own uses.

The Modern Doctrine of Causation.

This reference to the direction in which Surgery has advanced into the domain of Medicine, and the doctrine of infection on which this advance is based, introduce us to the greatest of the changes that have passed over Medicine since we last met in London.

The discovery of phagocytosis, and the appreciation of its significance as a provision for meeting the causes of acute disease, extended the seat of interest in the processes of infection from wounds to the blood and tissues, and to the immunizing properties or provisions discovered in the plasma. Anatomical pathology gradually gave place in great measure to bacteriological and chemical pathology, and therewith Medicine—practical medicine, as well as medical science—has taken a great step forward from the study of lesions to the investigation of processes, of the causes in which they originate, and of the circumstances by which they are controlled.

It is on this development of Medicine that I desire to address you mainly to-day—on the dominant position in Medicine which the doctrine of causation has come to occupy in the course of the last quarter of a century, and to occupy more and more securely during the period that has elapsed since the last meeting of the Association in London in 1895. For the truth of this thesis I have only to refer you in the first place to my brief record of advances these fifteen years. With a few exceptions they have been in the field of etiology—the discovery of essential causes of diseases, such as the spirochaetes and the trypanosomes; of media which bring these into relation with man, like the blood-sucking insects and domestic vermin; and of new methods of investigating infective processes, particularly in the blood. The triumphs of Surgery have taught the practitioner of Medicine to appreciate the fundamental place that etiology fills in pathology, and the significance of the essential, the predisposing, and the incidental elements respectively of the causation of disease. A remarkable change has been, and still is, passing over the character of Medicine. Etiology, which always had been regarded as one of the foundations of rational Medicine, has developed with extraordinary rapidity as a subject of investigation in the bacteriological laboratory, and as a subject of clinical inquiry at the bedside. This is an event in Medicine which more than any other appears to me to deserve historical recognition on the present occasion as a subject of interest not to the profession only, but to the public as well.

When we make a comprehensive survey of the whole field of Medicine during the past fifteen years, we cannot fail to be struck by the amount of time and labour that has been devoted to the study of etiology and by the abundant results that have been secured by it in the form of accurate knowledge of the causes of disease, the manner of their incidence on the body, the reactions of the body to them, and the circumstances that modify disease in its course. Following, as I have said, in the wake of Surgery and its investigations on the infectious processes on the surface of wounds, Medicine now conducts a methodical investigation into the bacteriological relations of infective processes in the blood and tissues—that is, into the essential cause—in every instance of acute febrile disease. How much has already been done and how much is daily being done in this attractive and promising field of observation, and how encouraging is the success that attends the application of this newer knowledge in practice, was revealed to us a few weeks ago in the brilliant discussion on the use of vaccines at the Royal Society of Medicine, with which many of you, no doubt, are acquainted. It is true that the usefulness of serum-therapy and vaccine-therapy is still far from being settled. Diphtheria, typhoid fever, the pathological effects of the *Bacillus coli*, and certain diseases of the skin yield to the method, and acute

pneumonia does so in some instances; but the medical septicaemias, tetanus, and even tuberculosis, after all the time and labour that have been devoted to the investigation of tuberculin, only too often do not, unless it be in tuberculosis of the skin and the bladder. We ask ourselves the meaning of this relative failure of the internal applications of our knowledge of the infections—our failure as compared with the successful results of aseptic Surgery. The question introduces us to the elements of the doctrine of infection and of the associated doctrine of causation.

INFECTION AND IMMUNITY.

Medical treatment of the infectious processes is relatively disappointing, mainly because we do not enjoy the incomparable advantage which presents itself to Surgery of dealing with the infection in advance of its action, by employing aseptic measures to prevent the contact of it with the blood and tissues. Before the practitioner is required to deal with the germ and its effects on the body, it has already reached the field of its operations and commenced its pathogenetic action. What is to be done? Observation demonstrates that even then it may not be too late to interfere. In a number of instances, as we have just seen—unhappily too few—successful resistance can be offered to intruding micro-organisms and to their toxic products. An antibody or an antiproduct may be introduced into the blood, or developed in it, in time to establish immunity.

This discovery, for which we have to thank Pasteur and Metchnikoff in particular, and their spirited and devoted followers, is after all but a scientific confirmation of the correctness of two well-established observations and a time-honoured conclusion founded upon them. The first of these observations was that whilst a large proportion of individuals fall victims to the infectious or contagious diseases, a considerable proportion do not. The older observers did not fail to be struck by the fact that this liability, proclivity, susceptibility, of certain persons as compared with others to be infected, or greater disposition to suffer severely from the disease or to die of it, was met with in the delicate and weak, and they formulated the doctrine that such delicacy or weakness is a "predisposing cause" of acute disease. We have come to express the same conception of the etiological relations of acute disease in other terms. We say that all individuals possess in some degree a provision of protection or resistance to the actions of pathogenetic organisms, which is to be regarded as natural, that is, as a normal or physiological safeguard against infection. Our blood and tissues have acquired this faculty of immunity or of developing immunity in the struggle for existence; they exercise it when provoked by the presence of infection; but in many individuals it is defective and fails because of some present personal circumstance, or of some remote family or racial weakness.

The second observation is that even those individuals who resist the action of invading organisms, who, for instance, harbour germs in their tissues without local damage or constitutional disturbance, may at any time under certain circumstances—that is, under changed conditions of life—lose their power of resistance. The germs that have been lying inactive within them suddenly manifest evidences of vitality in themselves, with disorder or disease in their host as the result. This is a fact of the first importance. It proves that there may be yet another element in the causation of acute disease; that there are three factors to be reckoned with. First, there is the cause which we call essential, the specific infection, an extrinsic influence, the element without which in the particular instance, and in every other instance, the disease would not have occurred. Secondly, there is the patient's resistance to the specific infection, an intrinsic element. Thirdly, there may be incidental or concomitant circumstances or associations which are not essential, because not present in every instance of the disease, but which, by occurring incidentally in particular instances, either favour the essential influence directly in its invasion of the body, or, on the other hand, lower resistance and thus indirectly contribute to the production of the disease.

INCIDENTAL CIRCUMSTANCES IN CAUSATION.

It is of this third element of etiology that I desire to speak to-day, with respect more particularly to its nature and forms, and with respect to the opportunities that it affords the practitioner, not only to forecast, prevent, treat or otherwise control disease, but to take part in the advance of medical science.

These concomitant circumstances are of great variety, both in kind and in the manner of their incidence on the body. When they act immediately, they are commonly known as the exciting, precipitating, determining "causes" of disease; for instance, a street accident that introduces the tetanus bacilli into the blood; the summer season, which produces the essential cause of hay fever; the hour of the day that determines an attack of ague; the emotional shock or the gastric catarrh that lays a person open to invasion by the germ of cholera; the drinking bout that precipitates acute pneumonia; the measles that determines an outbreak of tuberculosis; the different climates that favour the life and activity of different parasites; and also the different media—particularly food, drink and air—that serve to convey the essential, extrinsic cause into the victim. And these are but one group of the incidental circumstances that share in the production of disease, that may contribute to its causation in different cases, but are not an invariable factor of it. In a large number of instances the connexion is remote. It is found in the circumstances and life-history or record of the individual, or of his parents—insanitation, unwholesome occupation, dissipation, misfortune, privation, or disability left behind by previous illness, which have been slowly and steadily sapping constitutional resistance, and have reduced it to a state of inefficiency by the time that the struggle with infection or other morbid influence comes. I repeat that the outstanding feature of the Medicine of the present time is the study and practical applications of this doctrine of general etiology from the two sides—from the second as well as from the first side, that is, with respect not only to the nature and incidence of the specific causes of disease, but also to the nature of immunity and the circumstances under which it fails. Whilst the pathologist in our public institutions, in hospitals, and in private laboratories, investigates the biology of germs, and the immunizing value of the blood by means of the opsonic index and otherwise, the practitioner estimates, as he has done from time immemorial, with more or less intelligence and success, the value of what he calls his patient's constitution. He does this in part by ascertaining his patient's present bodily condition in respect of structural soundness and absence of functional disorder. But he pushes his inquiries on the subject much farther. He obtains his patient's entire record, family and personal. He informs himself of the circumstances under which his patient has been born, has lived, and is living, being assured that, after all, what we dignify with the name of natural resistance is but the product, the embodiment as it were, of all the influences that have fallen on the man—racial, congenital and personal.

The knowledge thus acquired by the practitioner he turns to practical account in two directions. First, he uses it as a guide in the immediate management of the case. Since he cannot prevent the inroad of germs, nor remove them, and since he can but seldom destroy them within the body, he may enable the patient to resist them. He protects the blood and tissues from the action of the infections by maintaining natural resistance at a high level—the method practised in sanatoriums for tuberculosis by means of fresh air, abundant feeding, and graduated exercise. Or—which is an object of far more frequent and far more extensive concern—he promotes personal and public hygiene in anticipation of disease, and succeeds in restoring, cultivating, and maintaining or increasing the natural resistance of the individual, the community and the race against the time when infection may fall upon them.

But, secondly (and here I crave your particular attention), in devoting attention to these other elements of causation, the practitioner contributes his share of the materials of which the doctrine of etiology is being constructed. Not all of us, indeed but few of us, can work at the higher pathogeny. In respect of infections, we can but admire the skill and perseverance of our bacteriologists, assimilate as much as possible of their conclusions, and seek their help in the diagnosis and treatment of this class of diseases. Bacteriological investigation is

too delicate and too difficult, and depends too much for its usefulness, and even for its safety, in practical Medicine on correctness of conclusions based on skilled observation, to be conducted by the practitioner himself unless in a few cases. But we can all take a share in the cultivation of knowledge of the other branch of etiology. After all, the pathological laboratory is not the natural field of operation and observation of the action of the infections, excepting in those instances, unhappily not uncommon, where the worker himself falls a victim to the disease that he is investigating. A knowledge of the patient's constitution, based on his record, is the peculiar privilege and possession of the family practitioner who takes full advantage of his opportunity. Living in the society of his patients, born and bred, as he may have been, in their midst, he knows or he ought to know the conditions of inheritance and life, good and bad, under which their constitutional resistance to acute disease has been and is being shaped. If he has made proper use of this opportunity, the family practitioner is in as good a position as the most skilled pathologist to give an opinion on the prospect of successful resistance—that is, of recovery—in a case of typhoid fever or of pulmonary tuberculosis.

Common Causes and Common Diseases.

Let me now take another step forward, and remind you that the acute infections are but one of the many kinds of pathogenetic agents. The countless influences around us, intimately associated with our daily life, constitute a group of possible causes of disorder and disease almost too familiar to receive attention from the modern pathologist, occupied with the investigation of micro-organisms. To the practitioner of Medicine, in the routine of his daily work, these and the respective and relative modes of their incidence and actions on the body are of equal or even greater moment; and from him they are receiving more and more attention. I refer to our manner and habits of living; the amount and pressure of our occupations; the forms and seasons of our occasional relaxations, our pleasures and amusements; the condition of the atmosphere in which we work; our food and the associated luxuries of alcohol and tobacco; simple physical stresses, whether in labour or in sport; the animals and plants with which we are closely associated—common media of transference of disease; climate and weather; and the many influences known as "nervous," which fall upon the brain in education, in business, and in the social and domestic spheres, which are intimately bound up with our personal happiness, and which may produce intellectual and emotional strain, anxiety, grief, and other unfavourable effects. And doubtless there are other causes of disease at work in our midst still to be discovered. It was not until a few years ago that the pathogenetic properties of germs were known. Consider what the state of etiology, pathology, and medicine as a whole would be to-day if this portion of what is now common knowledge had been overlooked. How long was not the mosquito unsuspected, the rat, the bug, the flea, the common house-fly? The search in this direction is being steadily pursued in the spirit of patient enthusiasm and hopefulness that stimulated and sustained Pasteur. If you seek for evidence of that pursuit and of that spirit you have only to turn to the work that is being done in Tropical Medicine, where a very romance of pathology is being daily unfolded.

Side by side with these agents we have the common or everyday disorders and diseases, more numerous than the infectious, many of them as often fatal as the other class, although unrecorded in the published weekly death-rate: many of them also productive of disablement or at least of relative disability, or in the young insidiously ruining the constitution; all of them fruitful sources of indisposition, suffering, and waste of work, and time and means, and therefore the common concern of Medicine and the State. Such are, for example, gastric catarrh, gastric and duodenal ulcer, appendicitis, gall stones, hepatic cirrhosis, emphysema, asthma, gout in its many forms, obesity, arterial sclerosis and Bright's disease, with their intimate associates separately named, including angina pectoris, apoplexy, uraemia; and such are the almost countless disorders of the different systems—the nervous system more especially—which I need not attempt to enumerate. Here is a list of but a few of the more familiar cases with which we meet in practice, and the causes of which it is as important—as necessary—to discover and understand and appreciate, in themselves and in the manner of their incidence on the body, as the causes of the acute febrile processes.

The Practitioner as a Naturalist.

Is it possible to trace what I have called common diseases to the common influences around us with scientific correctness? It is most difficult to say how far each of these influences acts directly, how far indirectly or incidentally only—that is, by interfering with resistance on the one hand, or by assisting essential causes on the other hand, as we saw in our consideration of acute specific diseases. The problem of the causation of many of the common diseases, when it comes to be faced practically, proves to be one of extreme complexity. It is rendered still more complex and difficult by the fact that the same influence may in one instance be an essential cause, in another instance an incidental circumstance only. A high atmospheric temperature is the essential cause of heat-stroke, but on the same day it acts as an incidental precipitating circumstance, only, of cholera infantum by favouring the development of a specific bacterion in milk. Extreme cold is the specific cause of frostbite and of death from exposure, but far more often it contributes to disease by incidentally depressing bodily resistance. This complexity of the causation of disease is so great that it might well discourage attempts to disentangle the different elements of it in the routine examination and treatment of our patients. Taken together, the three factors concerned in the production of disease constitute nothing less than the total relations of the individual and of the community to their environment. But if Medicine is to attain success as a genuine art—that is, as a pursuit that aims at doing the very best in the very best way—we must make an attempt to discover each element and to give it its proper weight. Here we have found a great opportunity, each of us individually, as extensive as our practice, and all of us collectively as a profession, of advancing Medicine; and here, as much as in connexion with the acute infections, the active pursuit of etiology is to be seen which characterizes present-day Medicine. Let me try to impress upon you the consideration that here the practitioner has the field in great measure to himself. He is prepared to seek the assistance of the pathologist when it is calculated to be useful, but in the great majority of cases the inquiry rests with himself, since the causes of which he is in search are other than micro-organisms, and indeed are not always material. The immense extent of the field of observation and inquiry does not discourage him, but the reverse. The practitioner has come to make it the first step of the diagnosis of his cases to search for the cause of the disease in every instance. He divests his mind for the time of the traditional or authoritative names or labels attached to diseases, and approaches each case in the spirit of a naturalist. Acute tonsillitis is no longer a single disease for him. He is not satisfied until he has determined by bacteriological examination which of the common infections is at work. He knows that sore throat is but a manifestation of the place of entrance of a specific organism into the blood. His way of regarding many of the common affections of the bowel has now come to be in respect of the kind and activity of the bacteria, normal and abnormal, that flourish within it; and on this consideration he bases his views of auto-intoxication, and his use of certain diets and intestinal antiseptics and purgatives. When he meets with a case of gall-stones, and plans preventive measures, he starts from purely etiological considerations—the cure and prevention of chronic biliary catarrhs in which bacteria flourish. Diabetes is to the practitioner not a hard-and-fast disease, but a disorder which he tries in each instance to refer to some part or other of the absorbent and assimilative systems in which a particular ferment or enzyme has failed. A case which a few years ago he would have been satisfied to call "pyelitis"—using a purely anatomical term—he now investigates forthwith by searching for the *Bacillus coli*, or for the tubercle bacillus, or for other organism. A case of haematuria, with fever and dropsy, is not nowadays regarded offhand as "acute nephritis," and

nothing more done in the way of diagnosis: the observant physician is aware that these are but phenomena due to the passage from the body by the kidneys of the pneumococcus, the typhoid bacillus, or other specific organism which he may not yet be able to differentiate more closely than as the germ of "septicaemia" or of "infective endocarditis." Consider how bacteriological examination of the sputum has furnished a ready method of diagnosis of diseases of the lungs and pleura, acute and chronic—a method only too "ready," indeed, for us to regard it as a sufficient guide to prognosis and treatment. If we turn to diseases of the heart, and the present-day study of the more common kinds and form of them for practical purposes, do we not find that the consideration which chiefly guides our prognosis and treatment is their origin: whether valvular disease is a result of rheumatism, or of syphilis or of mechanical stress; whether the "fatty heart" of former days is not degeneration due to alcohol, or to gout, or to sedentary living; whether the "idiopathic enlargement" of the last generation is not a mechanical and physiological outcome of the abuse of athletics? When we meet with aortic aneurysm, do not our thoughts travel at once to the *Spirochaeta pallida*, and from it to the physical stress that completed the damage of the aortic coats which it infests? What are tabes dorsalis and general paralysis, and a multitude of other forms of nervous affections which were formerly regarded as independent diseases, but acknowledged manifestations of the actions of a single cause—syphilis and its products? The name "anaemia," useful enough as a title, now conveys to our minds an idea that prompts us to examine the mouth for sepsis, and to ascertain the condition of the alimentary canal, of the genito-urinary organs, and, indeed, of all the mucous surfaces. A complaint of headache in a child at school at once suggests an examination of the eyes. And when a youth of poor physique and constitution is brought to us, our minds turn naturally to want of physical exercise and other unwholesome influences under which he has been reared in a town.

In these instances, which are but illustrative instances, and I believe I may say in most of our professional work, we appreciate the line of the principal and most promising advance at the present time, as compared with earlier but still comparatively recent periods. Physical examination, which was developed so remarkably in the first half of the last century, is still being advanced, particularly in the direction of exactness, by means of apparatus and the introduction of skiagraphy. Clinical chemistry also has been and is being steadily improved and extended. By these and other means, including examination of the blood, the actual pathological condition of affected parts can be investigated with far greater accuracy than before. But we do not rest now at this stage, which might be called the "anatomical" stage of diagnosis. We are not satisfied until we have pressed our inquiry a stage deeper, and done our best to discover in what the anatomical change of the affected organ originated. The minds of the profession will not rest until the cause of cancer has been found.

Incidental Influences on Disease in its Course.

From this somewhat lengthy discussion of the three orders of influences concerned in the causation of disease let me pass on to consider how its *course* may be shaped by influences of the same orders respectively, particularly by those influences which I have called incidental.

When we commence practice, inspired by the study of pathology, we are all disposed to regard illness, a disease in progress under our observation, as a manifestation of the actions of the essential cause of it only—of the tubercle bacillus, for example, of alcohol, of the spirochaete of syphilis. It is not long before we come to recognize abundant evidences of spontaneous relief, repair and recovery in the symptoms of the case, just as we recognized natural resistance in the origin of it. But it may require years of intelligent observation and consideration on our part to enable us to realize how large a part is played in every illness by altogether casual conditions and events.

A considerable proportion of the so-called "symptoms" of a disease are not strictly phenomena of the morbid process itself, that is, are not present in every instance of it, but are manifestations of some passing influence. The same remark applies to the phases of an illness, known as complications, relapse, and recurrence: they may usually be referred to extrinsic disturbances, possibly insignificant enough in themselves, which have afforded the essential cause—infective or not—a fresh opportunity to display its action. The food or feeding, the patient's room, his nurse, his relatives about him, the state of his bowels, the provisions for sleep, rest and occupation of mind, fatigue, a passing chill, and surely the medicinal treatment as well—all these are as much influences in determining the course of his case as was the original cause of it. There is no better test of a good practitioner than the possession and exercise of a faculty of observing and judging with correctness the effects of these incidental circumstances on the patient. The experienced doctor, as contrasted with the beginner fresh from hospital, knows that every passing event affects a case for good or for bad, and he never fails to give it its proper value in estimating the condition and prospects of his patient. He knows that, by keeping critical watch and firm control on the patient's surroundings, he may be able to modify favourably the progress of a case that appears altogether unpromising when regarded solely from the side of its essential nature. He has learned that it is with a patient, not with a disease, that he is concerned; with a process, not with a lesion. An attack of paroxysmal dyspnoea in the course of chronic Bright's disease he does not interpret as directly due to increase of the renal lesions in degree or in extent, but to careless indulgence on the part of the patient in meat or wine. He is prepared to find that return of pyrexia during convalescence from typhoid fever has been caused by a visit from friends, and is not a true relapse from reinfection. And it is because of his experience of the actions of extrinsic incidental influences in modifying the course of disease that the practitioner cautions the subjects of chronic quiescent appendicitis against exposure to cold and wet and fatigue.

Prognostic and Therapeutic Applications.

This consideration helps us to realize the bearing of the circumstances and events of our patient's life upon prognosis and treatment. In estimating the future we direct our attention to the diseased or damaged organ, but by no means to it alone. We ascertain and consider as correctly as we can the conditions under which the man's life will be spent, knowing that these will in great measure determine the course and termination of his case. As the prognosis of acute disease is largely based on the patient's past and on his present state, so the prognosis of a case of chronic disease is in practice mainly an intelligent forecast of the circumstances under which the subject of it will live. Take as an instance a case of valvular disease of the heart in a patient of fifteen. We are required to foretell the patient's future; in particular what is to be expected of him in respect of capacity for work, and the value of his life in terms of years. In framing our estimate of the patient's prospects we naturally take into account the form, situation and severity of the valvular lesion and the condition of the cardiac walls—all purely anatomical elements of prognostic value. But experience has taught us that a score of patients starting on equal terms in this respect, at the age of 15, have many different futures before them; and this not because of the actual disablement of the heart, which is the same in all, but because of the different influences which will fall upon the respective individuals. If we are to give useful advice to the boy with aortic disease, we must project our view of his case into the next ten years, and picture our patient surrounded by companions devoted to games and exercise in every form; and we estimate as nearly as we can the control of the lad's disposition in that direction that can be exercised over him. Next we anticipate the importance on the duration of his life of the choice he may make of a profession—laborious or sedentary, full of nervous stress or the reverse; for on this in great measure will depend the maintenance of cardiac compensation. We see him during the same period of early manhood exposed to the familiar temptations of social life, with alcohol, syphilis, and the other elements of irregular conduct and habits all ready to fall upon the damaged heart unfavourably. A little later we know that his reserve of strength will be tested by the concerns of his professional and domestic life, as well as by the many

sources of anxiety in connexion with his home and with making sufficient provision for his family. And when the question of the actuarial value of the patient's life is put to us—that is, in respect of the prospect of his survival to middle age and beyond it—our principal prognostic consideration relates to the position which the man will have won for himself by that period of his life, the conditions under which he may be expected to be working, the habits which from his present disposition, and judged by his inheritance, breeding, and upbringing, he will probably have developed, and the liability to early degeneration which may be learned in part from his family history.

This is but an illustrative statement, but it may serve to bring home to our minds the extent as well as the character of the interest that attaches to prognosis when it is based on an appreciation of something more than the findings of the *post-mortem* room and even the symptoms and signs present in our patient. The different influences that will surround our patient, and will tell on him for good or for evil, are forecasted, and, let me add, forestalled if possible, for in the proper appreciation of the prognostic conclusion lies the opportunity as well as occasion for preventive treatment. And this, let me repeat, is what the best type of family doctor understands and practises, passing his days amongst his patients, whose careers he helps to shape and to guide and to control by advice, by encouragement, by warning, by reproof if necessary, as well as by means of dieting and drugs.

Public Appreciation of the Doctrine of Causation.

Thus the practitioner of to-day has come to concern himself more and more with the constitutional soundness as well as with the present health of the persons under his care, and with the whole environment in which they live. One of the principal demands made on Medicine in these days is for an opinion—not in the individual case only, but in respect also of the community and the race—on the effect for good or for evil of modern civilization, as it may be studied and ought to be modelled, especially in our great cities. Even if the stimulus of the recent successes in general etiology and pathology, which I have attempted to put on record to-day, had been wanting, the force of public opinion at the present time would itself move the profession to search for the relations between disease and the common circumstances of the life of the people. Neglect of physical culture, overpressure in education, the wear and tear of professional and commercial life, insufficient attention to the nourishment and care as a whole of children, intemperance and debauchery, and the insanitary and otherwise unwholesome conditions in which the community often have to live and work, as their parents lived and worked—these, in their bearings on disease and degeneration, have come prominently to the front in connexion with eugenics, and, indeed, with many of the political controversies of the present hour. A cry has been raised, and is loud and clamant in this country, that we are the victims of modern civilization, which penalizes health and soundness, that the nation is degenerating, that the environment is ruining our constitutions. The practitioner of Medicine is expected to extend his active interest in health and disease, and in the influences that determine them respectively, beyond the strictly professional field. He is required to ascertain and to furnish for public information in the public service the materials of which our sanitary laws and regulations may be constructed.

In conclusion, let me say that I shall not consider that I have been justified in my selection of the subject of this Address, nor that I have done justice to it, unless I have convinced you that, much as has been done in the past, satisfactory as is the position that has been reached by Medicine in its progress along the line of investigation of causes of disease, much, far more, remains to be accomplished, and that a great part of it is waiting to be done by the family practitioner. Conviction of the importance of etiology must carry with it a sense of duty. We must not rest content with mutual congratulations on past achievements. There cannot but be many influences around us unfavourable to health and life remaining to be discovered by patient inquiry and observation. No doubt causes of disease lie concealed in many common things, and are associated with many common events. There is a natural disposition at the present time to leave investigation of this character to the bacteriologist. This is altogether unfair to him. I have already asked you to consider that it is unreasonable to expect the pathologist in his laboratory to solve other than certain classes of etiological problems. The remainder rests with ourselves. General practice is the most fruitful and promising field for the study of the natural history of disease in the living body. We who deal directly and immediately with the individual and with the community have opportunities which must not be neglected. What is more, we have that particular kind of opportunity which the scientist eagerly desires to command. We can vary the circumstances of our people's lives in the direction of improvement, and watch the experiment, and carry out a strictly scientific observation whilst effecting real personal and public benefit. And, over and above all this, who but the family practitioner can find and furnish the material from which the great problem of inheritance in relation to the causation of disease is to be solved? The student of eugenics collects such material laboriously, and laboriously works out results. The practitioner studies not the dead figures, but the living individuals in action. He sees the delicate, the unsound, the drunkard marry. He brings into the world children born of such parents. He has medical charge of the new generation throughout the earlier years at least of its precarious existence, and is often in a position to observe the event in its full development. Opportunities like these of connecting influences, direct and indirect, personal and inherited, with results, are afforded him only too abundantly throughout the community in which his practice lies.

The Association and Public Health.

Besides employing individual opportunity and individual effort, we may and we do advance this work collectively. The profession occupies a position, has contracted responsibilities, and acquired an influence in the country vital to the highest interests of the country. The British Medical Association as a body has never ceased to prove its concern for the national health and soundness, and has done its full share in discovering and dealing with the causes that underlie the inefficiency and degeneration of portions of the people. It employs the exceptional advantages afforded by its organization in the promotion of this object. We have a Standing Committee on Public Health. At the annual meetings, as on the present occasion, there is a Section of State Medicine. Every question, every public movement bearing on the subject of the health of the people, is examined closely in the JOURNAL. By these means and otherwise the Association takes an active interest in the pressing social problems of the time. I need mention only the medical examination and care of school children, physical training, the use and abuse of athletics, temperance, mental stress in education and in daily work, and the public provision of regular and sufficient relaxation and wholesome amusements for the people. Several of my predecessors in the honourable office which I occupy to-day have delivered themselves of clear and striking opinions on one or other of these subjects.

Thus, in the objects and achievements of our Association itself we see at work the spirit of the Medicine of to-day which I have attempted to unveil to you in this Address. Surely it is a spirit that is worthy of encouragement and support, whether it possess and move those of our number who devote so much of their time and powers to the organization and administration of this great Association, the enthusiastic pathologist in his laboratory, the physician in the wards, or the laborious practitioner in the remotest corner of the country or of the colonies.

AT a meeting of the Surrey County Council, held on July 26th, the resignation of Dr. Edward C. Seaton of the post of Administrative County Medical Officer of Health was accepted with regret and many kind and appreciative remarks. Dr. Thomas Henry Jones, Assistant County Medical Officer of Health and Education Medical Officer, was appointed in his place. Dr. Seaton was unanimously appointed Consulting County Medical Officer of Health.

Address in Surgery

DELIVERED AT THE

SEVENTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION,

BY

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PROFESSOR OF SURGERY IN THE UNIVERSITY OF BIRMINGHAM; SURGEON TO THE GENERAL HOSPITAL.

ON MALIGNANT DISEASE.

Mr. President,—My first duty to-day is to tender to the Council of the British Medical Association my thanks for the honour conferred on me by the invitation to give the Address in Surgery at this great meeting in the metropolis of the empire. I should indeed be vain did I not realize that the Council by their invitation desire to honour not myself as an individual but rather the good work done by provincial men in advancing the science and art of surgery, a generous recognition for which I desire on behalf of my colleagues to express grateful appreciation. That I personally should have been chosen instead of others far abler for the duty imposed upon me is due, I feel, to the accident that I practise in the Midlands, the nursery in which this Association was born.

When one's mind is roving over the field of surgery, after the manner of those in labour with such a task as mine, naturally the first thing one has to grapple with is the difficulty of choosing a subject suitable for such an occasion as this. We have a gathering composed only in part of those who confine themselves to the practice of surgery, and largely of others occupied in different fields of special or general medical work. Under these circumstances it appears to me desirable to take some subject of general interest and deal with it in broad outline. Such a subject I hope I have found in Malignant Disease.

The great era founded on the genius of Pasteur and Lister, which has robbed surgery of so many of its anxieties and terrors, which has enlarged and illuminated our work in all directions, has extended its splendid influence over our knowledge and treatment of malignant disease. The revelation of bacterial and allied infections as the cause of so many diseases inspired the hope—indeed, I may say the expectation—that the origin of cancer would soon be laid bare. The veil is still unrent, the secret is yet hidden, and the world waits with painful interest for the revelations of the future. But whilst we realize our ignorance of the absolute cause, we must appreciate that our knowledge of the processes of malignant disease, of the struggle of the living organism against it, and of the means by which we may relieve or cure cancer, has advanced and is advancing in a most hopeful manner. Our position to-day is in marked contrast to that which obtained a comparatively few years ago; then the predominant view was that cancer was a systemic disease of which the tumour was the local manifestation, and removal of the evident growth was rarely regarded as anything more than palliative. This conception of the nature of cancer provided a disastrous example of the influence of bad theory on practice. It led in most cases to totally inadequate removal of the disease, the speedy return of which *in loco* was held to substantiate the belief that it was due to a blood dyscrasia. By clinical observation, by patient pathological investigation, and, more recently, by laborious observation and experiment on some of the lower animals, we have obtained, and are still obtaining, knowledge which is pregnant with power and which is far in advance of that in the hands of our immediate predecessors. We can only fully appreciate this when we review our position from the three sides—experimental, pathological, and clinical. In the time at my disposal I cannot hope to deal exhaustively with the huge field open to me, but must be content to address myself to three main considerations. Briefly, these are:

1. What experiment has taught us as to the growth of transplanted carcinoma and the methods by which immunity can be conferred on inoculated animals.
2. Our knowledge of resistance to malignant disease in the human subject.
3. The means available for its successful treatment.

Results of Experimental Investigations.

Appeal to experiment has given information to be obtained in no other way; interrogation of living tissues had become essential to supplement our knowledge of the mere histology of malignant structures, and incidentally has provided interesting parallels between the results of experiment and conditions exhibited in the human tissues. Experimental observations have been carried on in all civilized countries, but nowhere with greater ingenuity, or with more scientific acumen, than by workers under the Imperial Cancer Research Fund in this country. To the director of that research, Dr. Bashford, and to his colleagues, I should like to express my feelings of indebtedness and appreciation.

Let us first consider what we know of the growth of cancer. If portions of a carcinoma from one mouse are grafted into several other mice of a similar strain, a certain number of these grafts, but not all, develop and form malignant growths indistinguishable from the primary tumour, and will eventually determine the death of the inoculated animals. If the growth of these new tumours be investigated from day to day several points can be clearly shown. First, that the tiny nodule introduced grows by multiplication of its own epithelium and not by conversion of the cells of the host into carcinoma cells. Whilst the epithelial cells introduced are the source from which all others are formed, the part played by the tissues of the receiving host is of the utmost importance. The inoculated fragment consists of epithelium supported by a varying stroma of connective tissue, the two being blended in different proportions and on different patterns, producing carcinomas of varying type as we find in human beings. The fate of the epithelial cell I have already mentioned. What happens to the connective tissue of the stroma? It degenerates, dies, is removed by phagocytosis, and is replaced by proliferation from the connective tissue cells of the host, which new tissue speedily becomes vascularized, and so provides the intruded epithelium with nutrition. If this new production of stroma from the host does not occur, the epithelial cells die, and the inoculation of cancer fails. Thus we learn that experimental carcinoma is a parasite, the essential element the epithelium, living its own life, and using its host as a provider of nutrition through the new stroma and its accompanying blood vessels. But we learn also that, not content with exciting a production of new stroma and blood vessels to supply its needs, the epithelial cell so impresses the tissues in which it is implanted that a stroma is produced exactly similar to the stroma in the primary growth, be it of great amount or little, be it of one pattern or another. If the stroma of the primary tumour be highly vascular so that the growth is of the haemorrhagic type, this will be exactly reproduced by successful inoculation.

The interest of the experimental observations I have just related, intrinsically great as it is, is enhanced when we recall that this parasitism and this almost fastidious production of the new stroma finds a parallel in human pathology. In one of the most remarkable tumours of the human subject, chorion-epithelioma, we have an example of parasitism almost experimental in its nature. Chorionic epithelium derived from the tissues of the fertilized ovum—that is, from a new generation—grows into and transplants itself into the tissues of the mother, a being of a preceding generation. The primary growth in the uterus, and its metastases scattered widely by the blood stream through the body, determine the death of the host which the parasitic tumour has invaded. In the ordinary metastases of malignant tumours we have a process closely resembling that of experimental transference, particles of the primary growth swept into the lymph or blood stream, carried by one of these to any or all parts of the body and producing exact facsimiles in the metastases. If the primary tumour is a columnar-celled carcinoma of the intestine a replica of it may be produced in the brain, or if an ossified spindle-celled sarcoma of the femur, an exact bony reproduction of it may be grafted in the heart.

If the experiment of transplanting carcinoma from one mouse to another be repeated sufficiently often another phenomenon may arise—a no less remarkable occurrence than the production of a new form of malignant growth, namely, sarcoma, which develops side by side with and is closely blended with the introduced carcinoma. When

this curious observation was first described close criticism was naturally directed to it; the result was attributed to careless experiment, to the introduction of a mixed tumour into the new host, to confusion between malignant growth and the infective granulomata. The experimental production of sarcoma has now, however, been repeated so often and by such critical investigators that we must absolutely accept the fact of its occurrence. When a portion of carcinoma is transplanted the only tissue in it which survives is the epithelial cell, and we are driven irresistibly to the conclusion that the cell itself, or something contained within it, possesses such properties as to induce a malignant growth of different nature, of a new type, derived from the connective tissues amongst which the graft lies. Only very exceptionally is sarcoma thus produced, and this suggests that the connective tissues are not easily provoked to malignant growth, an observation which is in accord with clinical experience. Not only may sarcoma be produced by experimental transference of a pure carcinoma, but if the tumour of mixed strains be in turn transplanted the carcinomatous element may die out and a pure sarcoma eventually be propagated, or the sarcoma may prove the more agressive of the two as shown by its invasion and destruction of the carcinomatous tissue. An added interest is provided by the occasional occurrence in the human subject of mixed malignant growths, that is, sarcoma and carcinoma occurring in the same part or organ. A few such have now been placed on record, and they have this in common with the experimental mixed growths—that the sarcomatous element may prove the more active and malignant of the two as shown by its invasion and eventual destruction of the associated carcinoma.

Mr. President, in my earlier remarks I pointed out that experimental inoculation in some mice failed, although the animals were under exactly the same conditions as their fellows in which success was attained. We naturally inquire what this failure means, and from the experience of various investigators it seems possible only to attribute it to higher resistance on the part of certain mice, or, to put it in other words, to a degree of natural immunity. This being recognized, experiments were devised to determine if this natural resistance could be increased with the ever-present hope of being able to throw light on the problem of treatment in cancer of human beings. The results of these experiments show clearly that it is possible to increase the resistance to inoculation of malignant growths in mice and allied species. By repeatedly inoculating mice with a particular tumour a very high degree of immunity to that tumour can be attained, but this immunity does not apply to other malignant growths, at all events in the same degree. Protection against inoculation may also be provided by other materials than those derived from malignant tumours—for example, by a mixture of tissues such as an emulsion of mice embryos, or, better still, by using an emulsion of the skin of mice embryos or emulsion of spleen, both of which appear to give a high degree of protection, or by using blood the active powers of which have been shown to reside in the corpuscles and not in the serum. When we scan these experimental results closely it is evident that protection can be given only within narrow limits. The tissues used must be derived from the same species, or at least from those very closely allied; so with the blood—blood from the rat or rabbit does not protect mice. Again, the highest degree of protection is provided from tissues of a similar histogenesis—as, for instance, an emulsion of mouse skin provides the maximum immunity to inoculation of squamous-celled carcinoma in the mouse. In the endeavour to learn what produces immunity minute investigation has been made of the changes which occur in and around the grafted material, and though some of the details are still in dispute the following appear to be the essential points. Similar changes in the immune and in the normal mouse can be traced up to a certain time, that is, about the third day. In each case there is degeneration of the introduced stroma, and some necrosis of the central area of epithelium. Two views have been advanced as to what happens in the immune later than about the third day. According to the one, we find failure in the production of the new stroma and its accompanying capillaries, and according to the other, a new vascularized stroma does form. But whichever view is correct—and possibly both are in varying degrees of immunity—a few days later still a well marked reaction is established in the adjacent connective tissues. These tissues become infiltrated by young cells which surround, penetrate, and eventually strangle the implanted graft. This reaction of the areolar tissue, with the formation of scar tissue which destroys the implanted epithelium, is similar to the changes produced by the exposure of transplanted growths to the action of radium, to which I will refer later. It is also comparable to the destruction of cancerous emboli in blood vessels owing to the formation of scar tissue by proliferation from the endothelium, a process which has been observed not only in the lower animals but also in man. By whatever means immunity is induced, at the end of about two or three weeks the graft has disappeared by the activity of phagocytes.

Immunization by radium has at this time a special interest, and needs rather fuller consideration. If a portion of mouse carcinoma be exposed to the action of radium for a period insufficient to produce any structural change, gross or microscopic, and this fragment be subsequently inoculated into other mice, the inoculation fails, no growth takes place. The same result may be obtained in other ways, as, for instance, by breaking up the fragment of growth in a mortar, or by exposing it to a temperature of 98.6° F. for twenty-four hours. In mouse carcinoma which has been already established by inoculation exposure to radium causes some of the tumours to disappear, others continue to develop normally, and a few, perhaps, flourish more actively. Sections taken from the disappearing tumours may show haemorrhage where the radium had exercised its influence, but the most noticeable change is an active proliferation of the connective tissues, especially at the margin, and an invasion of the parenchyma of the tumours by young fibroblasts. As these complete their development they contract on, strangle, and destroy the epithelial cells they embrace. We have no evidence here of a direct specific effect on the epithelium of the growth which is found to be still actively proliferating. Some experimental observations made for me by Mr. Percival Mills show that similar changes may be induced by exposing the liver of a healthy mouse to the action of radium. The liver cells, as the carcinoma epithelial cells, undergo slight changes, which disappear in a comparatively short time. The connective tissue round the vessels and the endothelium of the vessels show marked activity and proliferation, which remain long after the hepatic cells have returned to their normal condition. We have, then, after the application of radium to implanted carcinoma only a formation of scar tissue such as may be observed in human lymphatics and blood vessels invaded by cancerous epithelium, and such as is seen in mice, in whom immunity to inoculation has been induced. Further experiments with radium have shown that cure of an inoculated growth exposed to its rays gives immunity to subsequent inoculations of carcinoma similar to that which is obtained from treatment with blood, skin, or other tissues. This immunity is not confined to the particular area involved by the tumour, but extends to the whole body. The quality of immunity thus induced may have its value in increasing the resistance of the body when once a process of cicatrization of a malignant growth has been set up in the human tissues by treatment with radium.

Immunity in general terms may be ascribed either to failure on the part of the introduced epithelium to produce its specific action on the living tissues in which it is embedded, or to a change in the connective tissues, which now fail to respond, owing to the action of the immunizing agent. This quality of immunity to inoculation has not been transmitted by heredity—the mice born of parents rendered immune are as liable to successful inoculation as are other mice—the mother mouse does not convey any protection through her milk to her offspring—no anti-cancerous serum can be obtained from the immunized animal.

As part of the whole picture I wish to place before you, I have endeavoured briefly to concentrate attention on some of the more important conclusions derived from the interrogation of living tissues by experiment on animals. Experiment has told us much of the growth of cancer, and of the means by which inoculated tumours may be

inhibited and cured, but it has nothing yet to tell us of the origin of cancer.

HUMAN RESISTANCE TO MALIGNANT DISEASE.

I would now turn to the second part of my theme, from experimental to pathological and clinical knowledge, both of which afford evidence of the struggle in the human subject between the tissues of the host and the parasite cancer. It is perhaps not clearly recognized that such a struggle exists; the tendency is rather to look upon cancer as a constantly progressive disease, neither halting nor wavering in its course. But there is evidence, both pathological and clinical, that the tissues do resist, that between them and the disease is a real struggle which occasionally ends in spontaneous cure. Striking evidence of this is afforded in the process of lymphatic permeation and subsequent lymphatic fibrosis, graphically described and illustrated by Handley in carcinoma of the breast and elsewhere. The tendency of breast cancer is to spread centrifugally from the primary growth into the lymphatics of the deep fascia around. The cancerous epithelium is observed pushing its way into the lymphatic vessels and extending more or less radially along them, not probably from any inherent attraction by those vessels, but because it finds in them the lines of least resistance. This is lymphatic permeation. With the growth of the epithelium the lymphatic becomes more and more distended until its walls rupture; a little haemorrhage may occur, and some reaction of the surrounding tissue. As a result fibrous tissue is produced, contraction follows, and the cancerous epithelium is strangled. This is lymphatic fibrosis. Unfortunately, whilst this reparative process is occurring at one part, with resulting formation of a mere fibrous thread, the distal point of the invading epithelium is thrusting still further along the lymphatic, and we have the picture of active invasion at the periphery, with recession and recovery at the proximal part of the lymphatic vessel. Similar resistance may be found in the blood vessels when cancerous particles become embolized into them, as is most easily demonstrated in the lungs. There tiny emboli may be found free in the blood stream or enclosed in a thrombus, which in part or entirely occludes the vessel. From the intima young connective tissue develops which surrounds the thrombus, penetrates it, and finally contracting, destroys the cancerous epithelium, remnants of which may in places be found in the thrombotic mass. Occasionally one of the cancer emboli may survive and grow through the vessel wall into the lung tissue around, producing there a metastasis; but this appears to be quite exceptional. Very large numbers of partially destroyed cancer emboli may be found in lungs when no metastasis visible to the naked eye can be discovered, and a perusal of M. B. Schmidt's work on this subject leads to the conclusion that this destruction of cancer emboli is not a mere accident, not an occasional happening, but a frequent occurrence, multitudes of metastases being thus cut short and prevented. Observations on mouse cancer have shown a similar secluding and destructive process inside the blood vessels of the lung, another illustration of the close similarity between the processes found in man and those produced experimentally in animals. What a curious comment on the old idea of cancer as a blood disease is provided by the destruction of cancer emboli in the blood vessels owing to the endothelial reaction set up by their presence! Or, again, by the immunity against successful cancer inoculation conferred by the injection of blood into a mouse.

The facts just related, together with the blood and lymph vascular arrangements in malignant tumours and the *post-mortem* findings in patients dead of these diseases, point clearly to the prevention of a large proportion of possible secondary malignant formations owing to the failure of particles separated from the primary tumour to graft themselves on to the tissues in which they are eventually stranded. Did this destruction not occur metastatic formations would be found earlier and in much greater profusion than *post-mortem* records show in the large majority of cases.

As we pass from microscopic to clinical evidence, we find resistance to cancer quite as clearly shown. Who amongst us has not felt sore disappointment at the ultimate recurrence of disease in a patient who by lapse of time, say from three to ten years, has been regarded as cured by operative measures? Some of these late recurrences may be examples of the development of new and entirely independent growths, but this explanation will not apply to others. The locality of the late development, the position it occupies with regard to the operation wound, the microscopic examination of the recurrence, practically leave no doubt as to the relationship between the original tumour and the cruelly disappointing appearance of the sequel. It is hardly possible to avoid the conclusion that minute foci of cancerous growths may lie latent in the tissues for long periods, not dying out entirely, not developing until favourable conditions arise of the nature of which we are at present ignorant. The most striking example of latency in my own experience was provided by a patient whose breast and axillary lymphatic tissue had been removed for carcinoma. Many years of freedom from recurrence appeared to give absolute security; yet eleven years after the operation, when the patient was in advanced age, she returned to show me a mass of carcinomatous glands, some below, others above, the clavicle. The patient was certainly free from evident gland infection at my last examination six years previously, and entertained no doubt as to the development of the gland mischief as late as ten years subsequent to her operation. The only possible explanation of such late recurrence appears to lie in a struggle between minute particles of cancer left at the operation and the tissues in which they are implanted. Resistance is sufficient to prevent development, but not to destroy the minute cancerous focus. Since cancer cells can thus be held in check for years, finally to become active, their eventual destruction in other and more fortunate cases is, to say the least, highly probable. I might, if time allowed, amplify the evidence of resistance to malignant growth by referring to the repair of spontaneous fracture in bones the seat of metastases, or to the disappearance of pressure symptoms when the spinal cord is involved by secondary growths, and so on; but this would not really carry the argument much farther. I suppose that every one who has closely observed the progress of malignant tumours has been struck by variations in the rate of development, at one time rapid, at another slow, the growth receding in one place, advancing in another.

If the evidence of struggle between the human host and cancer were to end here the story would indeed have a disappointing conclusion, as we should have to acknowledge final defeat. Happily we can carry the matter further and are able to claim an occasional victory on the part of the tissues over cancer. The occurrence of spontaneous recovery is perhaps oftener cited than verified, but after the most rigid scrutiny not a few cases remain which appear to be conclusive. If we submit these to analysis one of the most striking results is the frequency of recovery in chorion-epithelioma. This tumour is as intensely malignant as any which affects human beings; it may produce extensive local infiltration and widespread secondary growths, it may destroy life in a few months. If we examine the records of chorion-epithelioma reported to have recovered they appear to satisfy every requirement: portions of the growth were examined microscopically by competent observers, incomplete removal of the primary manifestation was acknowledged, the clinical evidence of secondary formations in the lungs was complete as shown by physical signs, by haemoptysis, and by dyspnoea. Yet spontaneous restoration to vigorous health followed with complete and prolonged absence of all signs of growth either in the primary or the secondary localities. Speculation on the cause of spontaneous recovery from chorion-epithelioma inevitably recalls to one's mind that it is really an implanted cancer and not one arising primarily in the maternal tissues. It provides, therefore, a parallel to inoculated cancer in mice, which in not a few cases may grow for a time and then disappear without treatment of any kind, whereas spontaneous recovery in mice the subject of carcinoma arising *de novo* is very rare.

Perhaps no more interesting example of apparent spontaneous recovery from cancer is recorded than the classic case observed by Pearce Gould. A woman with recurrent breast cancer, extensive gland infection, nodules in the skin, growth in one femur with spontaneous fracture, and signs of growth in the chest, reduced to death's door by her disease, is found four years later to have lost all signs of malignant growth save shortening of her femur from

the spontaneous fracture. Similar examples of complete recovery are recorded of malignant growths in the abdomen and other parts, but I must not trespass on your indulgence by referring to them in detail.

I would rather draw your attention to a very interesting question relating to patients who show high resistance to, and more or less spontaneous recovery from, carcinoma—this is, Have they acquired an immunizing power capable of being transferred to others the subject of cancer? This point, as far as I know, was first raised by Hodenpyl of New York, whose untimely death we have to deplore. He had under observation a patient the subject of carcinoma of the breast with extensive secondary formations. All the lesions disappeared spontaneously, and at the end of four years an extensive chyliform ascites alone remained. Hodenpyl hoped to find in the body fluids of this patient an immunizing agent transferable to other human beings. The ascitic fluid was first used experimentally on mice in which inoculated tumours are reported to have disappeared under the influence of the treatment. This led to the tentative use of the same fluid in carcinoma of the human subject, and a preliminary report speaks hopefully of the results attained. The full report will be awaited with interest, but one obvious criticism can hardly fail to be made. Experimental immunity has so far been obtained within very narrow limits, and the alleged successful treatment of mouse carcinoma by a fluid from the human subject appears to contradict practically all that has been hitherto demonstrated with regard to experimental immunity.

Of the absolute nature of the resistance to malignant disease at present we know little if anything. We cannot recognize the factor which heightens or lowers it, whether it be a chemical variation in the tissues or an influence produced through the nervous system, stress or anxiety perhaps exaggerating or exaltation diminishing the activity of the growth.

I think, however, we can recognize one striking feature in the destruction of the cancerous epithelium which is common to the experimental production of immunity, to the disappearance of growths under radium, to spontaneous recessive processes in the human body. This is the active part played by the connective tissues; we have an irritative overgrowth, with hyperplasia and subsequent contraction, which appears to determine the death of the epithelial cell.

TREATMENT OF MALIGNANT DISEASE.

I turn now to the third part of my subject, and trust, Mr. President, that I shall be pardoned for the demands I have made on the attention of the meeting in thus dwelling on experimental and natural processes in cancer. A just recognition of these appears essential for a sound judgement on the value of our methods of treatment and equally of importance in guiding us to future advances.

When considering the means available for the cure or the amelioration of malignant growths, certain modes of treatment by cancer serums, by drugs, and by enzymes may be disregarded as futile. The *x* rays have a real field of usefulness in relieving pain, in reducing the activity of inoperable growths, in healing rodent ulcers, if we are justified in including these amongst malignant formations. When, however, we examine the absolute curative value of this method of treatment, disappointment awaits us; personally, I have never known an unequivocal malignant growth absolutely disappear under the influence of *x* rays, though apparently others have occasionally been more fortunate.

Turning to another side of radio-therapy as provided by radium, it is necessary to speak haltingly, to avoid too enthusiastic hopefulness on the one hand, on the other too niggardly an acknowledgement of what radium as yet appears to have effected. We may clear the ground somewhat by immediately accepting radium as curative in rodent ulcer, with this reservation, that the permanence of cure must be certified by longer period of time than has yet elapsed in most of the cases treated. This reservation is absolutely necessary from our experience of late relapse after what has appeared to be cure by excision. If we scrutinize the results of treating growths which are undoubtedly malignant, as shown by progressive local invasion and by secondary formations in lymphatic glands or other parts, we find much that is promising but little that is conclusive. A profound impression is produced in many instances; malignant tumours of large extent and depth may disappear or much diminish. But the improvement and the apparent recovery is apt to be deceptive, and subsequent return of the growth which progresses to the death of the patient appears to be a not infrequent experience. Further, instead of recession, a more rapid evolution of the growth with generalization is not unknown. The difficulties in the way of treating malignant formations by radium are only truly appreciated when we recall the life-history and the methods by which malignant tumours invade local and distant parts. How can we with present methods hope to pursue these successfully with radium? If a patient is the subject of an inoperable tumour, we are grateful for the benefit radium may give in the relief of pain, in the cessation of discharge, in the cicatrization of an open sore, and we should rejoice if cure seems probable. But when called upon to treat patients with operable malignant growths, are we justified in advancing radium as a substitute for excision? Personally I would not at present take this responsibility. My main objection to the use of radium, even tentatively in such cases, is the constant danger of lymphatic and vascular dissemination which may occur in the period occupied by the treatment. My conclusion would for the present limit radium to the treatment of the least hopeful conditions until much wider experience has been obtained. I believe this will be best in the interest of our patients. It would also be of advantage, for the present, if treatment by radium were left in the hands of the few rather than the many. The cost of a really useful supply of the material, the uncertainty at present of the best methods of application, the real possibilities of doing harm as well as good, all combine to enforce the wisdom of this course. To those who have the means and opportunity, I would appeal for the fullest information possible. We need to know their final as well as their immediate results; we want such a description of the minute anatomy of the growth itself and of any secondary infections, together with illustrations if possible, as will leave no doubt in the minds of others as to the nature of the disease treated.

A brief time must be given to consideration of the treatment advocated by Dr. W. B. Coley, especially for sarcoma. His method was based on observation of the occasional cure of ulcerated malignant tumours by an attack of erysipelas. From this Coley has evolved his treatment by the toxins of the streptococcus of erysipelas intensified by an addition of toxins derived from the *Micrococcus prodigiosus*. I suppose that many of us have administered Coley's fluid during the last few years, personally I must confess to having done so in a rather half-hearted way; but Dr. Coley's recent visit to this country, and an opportunity of personal discussion with him, stimulated me to further interest in the matter, and for the past few months I have given his most recent preparation of the toxins a fairly extensive trial, mainly for inoperable sarcoma. Those who have read Dr. Coley's communications, and have met him personally, will, I am sure, agree with me in regarding him as absolutely honest in the presentment of his case, but the use of the mixed toxins in this country has not given such results as those attained by the originator of the treatment. Cure of sarcoma is occasionally recorded, the microscopic and clinical evidence being such as to demonstrate the malignant nature of the growth, but I am bound to say that such experience as I have made, whilst partially substantiating, does not yet fully confirm the optimistic views presented by Dr. Coley. I have used the toxins prepared under his directions and have endeavoured faithfully to follow his instructions for its use. As far as my observations go no harm has befallen any of the patients treated, though the treatment makes considerable demands on their courage and persistence. In the majority of my cases no improvement has been effected, but in others I can speak of improvement which promises cure if further lapse of time confirms the results at present attained. With such experience as I have made, I could not advise any patient with an operable sarcoma to adopt Coley's treatment, and I would dissuade him from it as a substitute for operation; but if operation were refused, or the growth were inoperable, I would certainly advise the use of the toxins, with the expectation that some patients would be greatly benefited, though at present I am unable

to discriminate and say which will benefit and which will not.

With every desire to use all means available which may relieve patients of the distress, anxiety, and possible mutilation which operation inflicts, with the belief that time will provide happier and gentler means than we now possess, I am compelled to say that at the moment we have to rely upon operative measures as the great remedy for malignant disease. Our limitations may be frankly acknowledged. Sometimes owing to inaccessibility, at others to the vital nature of the parts involved, often because of the fact that malignant disease is essentially the disease of advancing age, we are powerless, and sorrowfully have to recognize our impotence. But when all this is accepted, a great and expanding field is open to the surgeon. What are the results to which we can point? These may be considered, as they concern the patient's life, and as they promise cure of the disease. First, owing to the teaching of Lister and the constant improvement in technique, the mortality following operation in almost every region of the body has been, and is being, reduced in the most substantial degree. If we consider as an example the removal of the cancerous breast, which we may take as a type of the modern operation for cancer, what do we find? With the very extensive removals now effected, a mortality which ought not to be higher than 2 to 3 per cent., and has been by some operators reduced materially below this. If we consider the mortality after removal of carcinoma of the tongue, of the intestine or stomach, or after amputation of the extremities for sarcoma, we find a parallel reduction.

But what concerns us most closely is this—if the patient survives operation has he a fair prospect of being permanently relieved of his disease? Without relying upon Volkmann's teaching that three years' freedom from recurrence implies cure, we may recognize the infrequency of later return of the disease, and, if we assign five years as the period after which recurrence very rarely takes place, we may absolutely accept the curability of cancer by operation.

In cancer of the breast there is ample evidence of the truth of this statement, not from the results of one but from those of many operators, some of whom can show that from 40 to 50 per cent. of the cases submitted to operation are cured.

The results are not so satisfactory in other regions. If we take, for instance, cancer of the rectum, cure may be attained in a ratio of from 20 to 40 per cent., varying with the experience of the operator and the care with which he selects cases suitable for excision. Unfortunately, only a small proportion of the cases of carcinoma of the rectum is suitable for excision; the large majority at present can only be treated by palliative measures. In epithelioma of the tongue the results are not so good, though a much larger proportion of the cases is submitted to operation.

One could pursue this possibility of cure in practically every region of the body, but I am here only concerned to show in a general way that cure can be effected by operation—a fact not yet, I believe, so fully accepted as it should be by the members of our own profession, and certainly not by the public at large. This at once raises the question, If cure is attained in some cases, why not in many or in all? What are the factors responsible for failure? or, to put the question in another way, What are the resources we may adopt to better our present results? We need an increased knowledge of the life-history of the various forms of malignant growth and the exact method of extension of each in the various regions of the body. Thus we shall learn whether gland infection is early or late, on which groups of lymphatics to concentrate our attention, which tissues in the locality of the growth must be most widely extirpated. We need also to make our operations as thorough as the conditions permit. Only one real opportunity of cure is offered—it is at the first operation, and this should be pressed to its fullest extent. For instance, in carcinoma of the breast a palliative operation may occasionally be performed for an ulcerated or bleeding growth, but with this exception nothing excuses, in an otherwise healthy patient, a mere excision of the breast for carcinoma without simultaneous extirpation of the lymphatic area which has been shown to be specially liable to invasion. Amputation of the tongue, even in the earliest stage of epithelioma, without extirpation of the appropriate gland area, either at the time or immediately after, is a dereliction of a plain duty. Amputation at the shoulder-joint for a sarcoma high up the humerus, instead of an interscapulo thoracic amputation, is a positive invitation to local recurrence.

But when we have learnt all that there is to know of the life-history and extension of malignant growths, when we have adapted our operative measures to the most thorough extirpation possible, we still have left a third factor, more important than either in its bearing on the cure of cancer—early recognition of the disease. In that direction is our great hope for the future. In the earlier stages, before it has interfered with the functions of organs, cancer is generally a silent disease. This is at present our genuine excuse for failure to recognize the disease at its beginning, but the excuse often does not apply. Who amongst the operating surgeons here to-day has not frequently to deplore the time wasted between the first observation of a suspicious symptom—swelling or ulcer—and the removal of the disease, which has been postponed to a time when the expectation of cure is reduced to shadowy proportions? The responsibility for delay falls partly upon us as a profession—we are not penetrated by the firm belief, the certain knowledge, that cancer is curable by operation, and that the early and not the later stages of the disease provide the great opportunity. We fail to urge special methods of investigation by instruments of precision, by radiography, by exploratory incision, or even by prophylactic excision. The responsibility for delay is, however, only partly ours. The public, in dread of a diagnosis of disease for which they still think there is no real remedy, often conceal their fears and their disease until what they dread has come about—a stage of malignant growth almost or quite hopeless of cure. Or, in ignorance of the great benefit which surgery can confer on them, they submit themselves to vampires, who prey upon their credulity, and exploit them in the most cruel manner.

Nothing is more mortifying to the surgeon than to find, after the successful local extirpation of the disease, that his patient is doomed by secondary growths in other parts of the body. Take, as examples, two very diverse conditions—epithelioma of the tongue and periosteal sarcoma of the femur. In the first case the patient remains free of disease in the mouth to die of gland invasion in the neck; in the second the amputation flaps are free from recurrence, but the patient dies of secondary growths in the lung. The explanation is, of course, the same in both cases—surgical interference has arrived too late. A few months, a few weeks, or even a few days earlier, the secondary invasion might have been anticipated and a successful local removal converted into a complete and permanent cure of the disease.

I believe it is literally true that if all malignant growths could be excised at a certain stage in their development all could be cured. I have mentioned our great difficulties in the pursuit of this counsel of perfection. For the sake of our suffering race we pray, we hope, that our present limitations will be removed, that means for interrogating the body as to the presence of malignant disease in its early stage will be provided by the ever-increasing band of devoted workers in biological chemistry. Finally, we look forward to a time when the distress and anxiety inflicted by resort to operative measures may be substituted by gentler means provided by the sciences of biology, physics, and chemistry, to which we owe an ever-increasing debt of gratitude.

UNDER the will of the late Right Rev. Edward King, D.D., Bishop of Lincoln for twenty-five years, Lincoln County Hospital receives a bequest of £500.

PROFESSOR HENOCH, who for many years was at the head of the department of children's diseases at the Berlin Charité, celebrated the completion of his 90th year on July 16th.

THE Congress of German Scientists and Medical Practitioners will hold its eighty-second annual meeting this year at Königsberg. A novel feature will be an excursion, starting from Swinemünde on September 5th, going on to Wisby, Stockholm, Helsingfors, Wyborg, St. Petersburgh, and Riga, and ending at Pillau on September 18th.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE OEDEMA OF THE LUNGS TREATED WITH BELLADONNA.

F., a carpenter, aged 47, spare, abstemious, and somewhat gouty, had his last attack of gout, not very acute and of the classical big-toe kind, about a year ago; it followed some influenzal symptoms, which had left him with a quickened heart, but with no obvious dilatation or bruit. The rapidity subsided, after a few months, sufficiently to allow of his resuming work, though with misgivings on my part.

At 11.45 p.m. on March 11th I was summoned urgently and I found him apparently *in extremis*. The friends stated that he had been quite well throughout the day, and had done his day's work as usual, only complaining once or twice of a slight and transient shortness of breath. Acute shortness of breath and cough, with no localized pain, had seized him less than two hours before sending for me. He was pale and in a cold sweat, with rapid respiration; the accessory respiratory muscles were in action, and he was sitting up and leaning forward, evidently suffering from severe dyspnœa. The pulse was uncountable at the wrist, the heart beat 125, counted with difficulty. On making such hurried examination as his state allowed, I found moist râles everywhere over the chest, back and front, such râles as one might find in laryngeal obstruction, but this could be excluded by the absence of stridor. No proper examination of the heart was possible, partly owing to these râles, partly to the patient being unwilling to abandon his leaning-forward position. Percussion over the left back did not reveal any dilatation of the ventricle.

From time to time the man coughed up a peculiar, fine-bubbled froth of a pinkish colour. The froth resembled the "head" on a glass of ale, and this association recalled to my mind a clinical note in the *Lancet* of July 18th, 1908, page 158, by Mr. Charles E. Denning, who narrated an almost exactly similar case, but of greater severity, and terminating in death. Dr. Denning was especially struck by the characteristic froth, "exactly like beer froth." He refers to a paper by Dr. Leonard Williams in the *Lancet* of December 7th, 1907, page 1606, on "Acute Pulmonary Oedema." It was this froth, and the benefit of Mr. Denning's note, which gave one the key to the diagnosis of acute pulmonary oedema, a conclusion fraught with scant comfort as I recalled the end of the case just mentioned.

Having some liq. strych. with me, I injected 8 minims hypodermically, made up a mustard plaster and applied it over the root of the lungs, and applied frequently changed fomentations over the praecordium. Meanwhile messengers were dispatched for an oxygen cylinder which happened to be in the village, but which turned out to be nearly empty. Several drachms of brandy were given every ten minutes, and hot bottles packed about the patient.

No improvement, but steady worsening, was observable after an hour of this, when another strychnine injection was given. There was no appreciable benefit; and, indeed, his state was so alarming that the friends asked me to draw up a form of will for him to sign, which I did. It still awaits probate.

The use of belladonna in checking pulmonary secretion then occurred to me. The man was rapidly going downhill, and I felt that time would not allow of the exhibition of the drug in repeated doses; what was given must be almost toxic in dose. I returned to my house, taking advantage of this to look up the "lowest fatal dose," and subsequently injected hypodermically 20 minims of a glycerinated tincture, fearing that the alcoholic tincture might cause abscess. As after half an hour no toxic effects had developed, and there seemed, if anything, a slight improvement and a lessening of the frothy spit, taking my courage in both hands and concluding that the patient would bear large doses of the drug, I injected 15 minims more. In another half-hour the breathing was obviously quieter and the man more easy, the froth being much lessened. The improvement was steadily maintained.

The only prominent effect of the belladonna as regards toxicity was dryness of the mouth, but even this was not extreme. Cycloplegia was very slight, the patient recognizing features close to him the next day. (His exhaustion forbade testing with types.) The tincture was made from a standardized extract; indeed, it had set up mild delirium not long before when used in 5-minim doses in a susceptible subject.

In six weeks he was back at his work, though the heart was not free from suspicion of dilatation. I examined him on June 2nd, 1910. The lungs were clear of adventitious sounds. The heart showed decided signs of dilatation; outer dullness ¾ in. outside nipple line, blowing systolic murmur at base, conducted down sternum and over the apex-beat region, which latter showed a diffused impulse; murmur inaudible in axilla or at angle of scapula; blood pressure, two estimations, about 100.

I venture to record this case owing to the effect of the belladonna in the treatment of the condition.

Histon, Cambs. L. GWILLIM DAVIES, M.D.Cantab.

THE VALUE OF CELLULOID IN CERTAIN SURGICAL PROCEDURES.

LATELY I have used celluloid for certain surgical conditions for which its suitability seems to be overlooked. To my mind it seems superior in many cases to silver wire or metal structures, and as time goes on it may have a more extended sphere of application and usefulness. The celluloid employed is the sheet form used by photographers for glazing prints. A plate of this material, riddled with punch holes, is readily prepared, and forms an excellent filigree for the radical cure of large inguinal and ventral herniae, as well as for insertion in trephine holes in place of the excised bone. The following cases illustrate its use:

CASE I.—This was the first in which I employed it. The patient was a boy with recurrent appendicitis. He had been operated on by another surgeon six months previously for appendicular abscess. The abscess had simply been drained, and no search made for the appendix. At the site of the subsequent scar there was some bulging and marked thinning of the abdominal wall. The offending organ was removed, and in the process of sewing up the wound I inserted between the internal and external oblique muscles a perforated celluloid plate so as to cure the commencing ventral hernia. The patient made a good and perfect recovery. Examination six months later showed that the plate had undergone little if any absorption.

CASE II.—This patient was a man aged 57, who had been troubled with a very large inguinal hernia for many years. Here two plates, one over the other, were placed in the inguinal canal, the cord being passed down a linear cut in the plates to a central ring for its reception, so that it passed from the internal ring straight through these barriers, and lay on their anterior surfaces for the rest of its course. Progress here was excellent and uneventful, and the patient was discharged from the Kimberley Hospital three to four weeks after operation. His condition was excellent, and in every way satisfactory when seen again two months later.

In a third case celluloid was successfully utilized for bridging the gap of a trephine hole. Here a piece of the material cut so as to fit the hole firmly, and containing a small central aperture for drainage purposes, was securely fixed in the gap and pressed down close to the dura mater. The plate was cut so as to accurately fill the gap, being gripped by the cut free margin of the inner table, and just level with the inner aspect of the calvarium, so that the internal surface of the skull again presented a smooth surface.

The patient was a man, aged 40, who received a skull injury whilst working in the De Beers Wesselton Diamond Mine. The bone was extensively fractured, and the membranes and brain lacerated. A large piece of depressed bone was removed from the substance of the brain. After suturing the dura almost completely the celluloid plate was inserted in place of the excised piece of bone. Healing by primary union followed, and, after recovery from the anaesthetic, the patient had an uneventful and rapid convalescence. Within three weeks he was discharged from hospital, and is now working again as though nothing had happened.

No pulsation whatever could be felt over the wound, and, as was also evident, good protection was afforded the subjacent brain.

I certainly think that celluloid could be used to replace bone after trephining operations with great advantage in many ways in suitable cases. Other spheres of usefulness may also occur. Perhaps it might be utilized, for instance, in plastic operations on the nose to form a rigid basis for the formation of a new nose.

Kimberley, S.A. G. S. THOMPSON, M.R.C.S., L.R.C.P.

LEUCODERMA AND PALAEOGENESIS.

IN the BRITISH MEDICAL JOURNAL of April 23rd Sir Jonathan Hutchinson explains the dappled skin of leucodema as a revelation of a pigment pattern pre-existing in the skin. Both to medical men and to biologists his explanation will be of great interest. The curious mottled appearance may well be accepted as atavistic; but the complete truth appears to be much more wonderful than that.

Biologists have taught that every animal in the course of development climbs up its own genealogical tree; indeed, the leucodermic "patient" climbs both up and down it, if one claim him as a reversion to ancestral type. The human embryo exhibits the gill clefts of a long-vanished fish ancestor; in the early stages there is little difference between the fetus of a lizard and that of a mammal. Each of us has a larynx dimpled by the ventricles of Morgagni—the last remnants of a howling organ; the occasional presence of a scansorius muscle recalls the epoch when climbing was a necessary accomplishment. Similarly, the dusky skin of primitive man reappears in leucoderma; in some instances the ingestion of arsenic appears to "develop" a sepia-coloured "eruption" on a clear skin as a negative is developed on a photographic plate. The *white* areas of leucoderma appear capable of a still more singular explanation.



Eimer's theory. Transformation of body stripes into indefinite lines and mottling, as seen in the quagga in the Artis Museum, Amsterdam. The degeneration progresses from before backwards.

In mammals which are variegated when young, self-coloured in maturity, a remarkable sequence of coloration has been traced by Eimer. The stages appear to be: (1) Longitudinal stripes, which break up into (2) rows of spots. These spots develop (3) cross stripes, which fuse to constitute a mottled network. (4) Self-colour is then obtained by the interstices of the network becoming suffused with the superposed colour, thus drowning the ground tint.

According to the theory of palaeogenesis, the dusky areas of leucoderma are atavistic; they represent the skin of primitive man. According to the colour theory of Eimer, the white areas correspond to the rows of spots of mammals, which will eventually—speaking in a phylogenetic sense—entirely replace the pigment, so that the dusky skin becomes white. Two objections to these explanations may be advanced. In the first place, the orderly, well-defined spots of mammals bear little resemblance to the blotches of leucoderma; in the second place the intensified, blackish pigment round the white patches shades off into the normal skin, also wholly unlike any animal variegation. Let us deal with these objections.

1. Mammalian pigment is remarkably constant in character, consisting of various forms of melanin—probably derived from the haemoglobin of the blood. Now melanin occurs in the Malpighian layer of the skin; it also occurs in the cortex of mammalian hair. Pigment of skin and of hair are, in fact, identical; any properties conceded to one must be granted to the other, pigmentation of skin or of hair following the same laws. The same also applies to failure of pigmentation.

In animals of mutable colouration the winter coat is always white. In man freckles appear in summer, to fade in autumn (= failure of skin pigmentation). In Arctic animals the fur is coloured in summer, white in winter (= failure of hair pigmentation). The white coat of the Arctic fox is caused by whitening of the hair-tips, the change gradually creeping downwards until the grey hairs, at first white-tipped only, are at last entirely blanched. But all the foxes do not turn white in winter; grey patches are mixed freely with the white—the animal becomes blotched, "dappled," even (zoologically speaking) leucodermic. The white fur is irregular and patchy, like the white areas of leucodermic skin.

2. Dealing with the second objection, the irregular intensification of the pigment, it should be noted that, although the genealogical tree may be duly climbed, some of the stages are apt to be compressed or slurred over. In cases assumed, like the present, to be reversions to type, imperfection of execution is almost to be expected. The evolutionary clock, rusted and worn, not only makes a sudden circuit, but makes it *backwards:* little wonder if the type of pigmentation differs somewhat from the original. Even amongst mottled and dappled mammals now living, one finds enormous variation within the limits of a single species—dogs and horses for example. The accompanying figure may be of interest as showing the gradual transition of the striping of the quagga into indefinite lines and spots to eventually form a mottled pattern. The photograph was taken by kind permission of Dr. Kerbert.

Manchester. GRAHAM RENSHAW, M.B.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

SEAMEN'S HOSPITAL, GREENWICH.

A CASE OF LATERAL SINUS THROMBOSIS IN WHICH THE KLEBS-LOEFFLER BACILLUS WAS PRESENT.

(By GEORGE NIXON BIGGS, M.B., B.S.Durh., Assistant Surgeon Ear, Nose, and Throat Department; Surgeon-in-Charge of Ear and Throat Department, Evelina Hospital.)

THE patient in the following case, a child aged 10, was admitted to hospital on March 1st. She was brought with a history of having been ill for some weeks, and of having had continuous vomiting and rigors for four days. There had been discharge from the right ear for many years but never any pain or vertigo.

State on Admission.

The child was obviously very ill, and if disturbed cried out; the mental condition was, however, quite clear, all questions being answered without hesitation. The head was slightly retracted, and there was stiffness of the posterior group of neck muscles, movements of the head causing much pain. The abdomen was retracted, but there was no palpable enlargement of the spleen. Reflexes were quite normal, and there was no paralysis nor loss of power, spasm or twitching of the extremities, no *tache cérébrale*, no inco-ordination on rapid rotation of the hands. The chest on examination revealed no physical signs of disease. No headache was present, but there had been severe occipital headache a week previously. The temperature was 103°, pulse 100, rapid and rather soft. The pupils were equal and reacted to light; no squint nor nystagmus. Mr. Bickerton, who kindly examined the discs, reported both to be hazy on the inner side, but vessels were normal in size, and probably there was no neuritis.

Special Examination.

The right ear showed bulging of the posterior superior meatal wall, and the middle ear was seen to be full of cholesteatoma. There was no swelling or tenderness over the mastoid process, but just over the mastoid emissary vein there was slight oedema which extended back over the sinus for about ⅜ in. There was no tenderness on percussion over temporal region, but this was present just behind the mastoid process. The superficial veins

were not distended, and there was no tenderness or swelling along the course of the internal jugular vein.

Operation.

An immediate operation was decided on, and as soon as the ear had been turned forward and the outer shell of the mastoid process removed a large mass of cholesteatoma came into view, which on being removed was seen to be the size of a small plum. The mastoid process had been completely hollowed out by this mass, and the middle ear was also found to be full of the same material; no ossicles could be found—in fact, the disease had almost performed a complete mastoid operation, only the "bridge" being left; this was removed.

The middle fossa was extensively exposed, but the dura mater was quite normal, and there was no bulging; posteriorly the lateral sinus was exposed, and the wall was white and very unhealthy looking. The inner wall of the middle ear was quite intact. There was no caries of the external semicircular canal.

As from the condition of the wall of the sinus and the history of the case (rigors, vomiting, and high temperature) the child was obviously suffering from lateral sinus thrombosis, the jugular vein was tied in the neck before any treatment of the sinus itself was undertaken. The sinus was then opened and the clot removed, and the bleeding from upper end controlled by packing. The post-auricular wound was left open, the wound dressed, and the patient sent back to bed.

A culture was taken in order that a vaccine might be prepared in case any pyaemic symptoms developed, and as a precautionary measure, as the preparation of the vaccine would take some time, the child was given 1 c.cm. of polyvalent vaccine, *S. aureus* and *albus* (1 c.cm. = 200,000,000).

After-progress.

After the operation the temperature came straight down to 97.6°, and remained about normal until the child's discharge from the hospital.

Result.

The patient made a rapid recovery, and left the hospital at the end of six weeks, with the mastoid cavity almost healed, the post-aural wound having been closed about ten days after the first operation.

REMARKS.

This case illustrates what is, I think, the most important point in the treatment of lateral sinus thrombosis—that is, the ligaturing of the internal jugular vein, or if the thrombus extends below the junction of this and the common facial vein, the ligaturing of both, before any attempt is made to deal with the sinus itself. The insertion of a needle is not only most dangerous, but it gives most unreliable results, for the following reasons.

1. Where the thrombosis is limited to the wall of the sinus, and does not completely obstruct the lumen, it is quite possible for the needle to be passed through the clot and to draw off fluid blood.

2. The insertion of the needle may detach pieces of clot, and produce the very condition which the prompt treatment of these cases is supposed to prevent—namely, pyaemia.

3. If the symptoms are due simply to absorption from an abscess round the sinus, then the insertion of the needle into the sinus has opened it into a septic cavity, and it is almost certain to become infected.

Palpation of the sinus is also, I am sure, a very dangerous procedure, as it will often cause pieces of clot to become detached and carried away as emboli.

In cases of doubt, where the appearance of the sinus wall and the symptoms make it impossible to distinguish between a case of thrombosis and a case where the patient is simply suffering from absorption from an abscess round the sinus, it is better to watch the case carefully (when the occurrence of a rigor or a high remittent temperature are indications for the ligature of the jugular vein and the opening up of the sinus) than to open the sinus as an exploratory operation before ligature of the vein.

A very interesting point is the fact that the culture taken revealed the presence of the Klebs-Loeffler bacillus in almost pure culture; the child was therefore isolated and the usual treatment with injections of antidiphtheritic serum was carried out.

THE Society of Members of the Royal College of Surgeons of England held a successful meeting on July 26th at its head-quarters, 1, Upper Montague Street, Russell Square, W.C. Besides the subscribers to the Society, other Fellows and Members attended on the invitation of the President (Dr. Joseph Smith). Short addresses were given on the history and objects of the Society by Drs. Joseph Smith, Brindley James, and others. Opportunity of this occasion was taken to present to Dr. W. G. Dickinson an illuminated address recording the Society's high appreciation of his fifteen years' devoted service as Hon. Secretary.

Reviews.

SANITARY LAW.

THERE are few literary tasks more difficult than the intelligible condensation of an Act of Parliament. In stripping the text of the Act of what may appear to be the redundancy of the parliamentary draughtsman, there is always a danger of omitting that which is essential. Although this defect is not very apparent in Dr. MCDONNELL's little *Manual of Sanitary Law*,[1] we cannot say that he has carried out the object which he appeared to have in view with entire success. If his book were intended for those who administer, or desire to administer, the Public Health (Ireland) Act, 1878, it would serve its purpose admirably, but he does not seem to have compared the Irish Act with the Public Health Act, 1875, and has thus fallen into many pitfalls. To give two examples only: The 1875 Act says that a sanitary authority "may" provide a carriage for the conveyance of persons suffering under any infectious disorder, whereas the Irish Act says that such a conveyance "shall" be provided. Among the circumstances under which the English Act provides for the removal of an infected person to an isolation hospital are that the patient is "lodged in a room occupied by more than one family," whereas the wording of the Irish Act is "lodged in a room occupied by other persons not so suffering." In neither case has the author mentioned the difference in the two Acts. On page 3 it is stated that a new house cannot be occupied as a dwelling-house until it has been properly drained to the satisfaction of the sanitary authority. This is quite true with respect to an urban district, but it is incorrect, both in England and Ireland, as regards a rural district. The author has fallen into the too common mistake of asserting that an infected person under certain circumstances can be "forcibly" removed to an isolation hospital. This is not the case on either side the Irish Channel. We think it worth while to call attention to these defects, as the arrangement of the work is so excellently conceived that it would be of great and more general value if the author would call in to his assistance some medical officer of health who is as well acquainted with the English Public Health Laws as he himself is with those of Ireland.

OBSTETRICS AND GYNAECOLOGY.

THE *Abhandlungen*,[2] edited by the distinguished Hungarian gynaecologist, Professor TAUFFER, consist of treatises or monographs of some weight, and include an important communication on skopolamin-morphine in labour, according to the experience of the obstetricians in the clinic at Budapest. The author, Dr. Joseph Frigyesi, compares this experience with the conclusions of other authorities, dwelling on their objections to the new anaesthetic agent. After duly studying its effects at first hand he is able to speak with unqualified praise of skopolamin-morphine, as he finds that its use entails no bad sequelae, nor has it any evil effect on the child either during labour or in the course of lactation. He admits, however, that all reports on this subject, his own included, are based on hospital work, so that the question how far the anaesthetic may prove safe and serviceable in private practice remains unanswered. Professor Tóth heads this contribution with another communication of much weight, the subject being hebosteotomy, and it is of the same type as that we have just noted. Scipiades, von Herff, and other authorities are quoted and discussed, and the author concludes that hebosteotomy is suitable in a limited class of cases. He is clearly not enthusiastic about it, for while he admits that the child's life is saved when the operation is performed on a woman with contracted pelvis, he does not feel sure that the patient will have better future labours, and he speaks more forcibly about its questionable adaptability for private work than does Dr. Frigyesi

[1] *A Manual of Sanitary Law, specially arranged for Public Health Qualifications.* By Robert P. McDonnell, D.P.H., F.R.C.S. Dublin: Edward Ponsonby. 1910. (Fcap. 8vo, pp. 103. 2s 6d.)

[2] *Abhandlungen aus dem Gebiete der Geburtshilfe und Gynäkologie: Mittheilungen aus der Zweiten Frauenklinik der König. Ung. Universität zu Budapest.* Herausgegeben von Professor Dr. W. Tauffer, Direktor der Klinik. Band I, Heft 2. Berlin: S. Karger. 1909. (Sup. roy. 8vo, pp. 141. M. 5.)

in respect to the new anaesthetic. Both writers tell the medical public just what they expected to hear about these novelties, yet it is very advisable that experts should let the practitioner know how much the success of a new method depends on trained surgeons and well-drilled operation-room assistants. The establishment of cottage hospitals and the great increase in the number of trained nurses is an encouragement to the practitioner to adopt methods at first only safe in great hospitals. The two remaining essays dwell on matters depending more on the moral duty of the surgeon and his dexterity than on the circumstances and surroundings of the patient, for hysterectomy is widely performed and the ureter may be wounded, and therefore demand repair, in the course of operations, whether undertaken in the palace, the hovel, or the cottage, in the city, the distant moor, the mountain valley, or the desert. Dr. Paul von Kubinyi discusses the technique of difficult abdominal hysterectomies, using the plural in his title, as he speaks of several operations and methods and reviews their merits. He rightly points out that the great progress in aseptic surgery, marked even since the last years of the nineteenth century, must modify our reasoning and our practice. Not only are many methods then perilous now safe, but it does not follow that because they are safe they are necessarily the best procedures. He concludes that Kelly's, Chrobak's, and Doyen's operations all indicate how the uterus should be amputated under different circumstances, but no special method is the best for every case. He quotes Reverdin's saying: *L'homme a toujours eu cette étrange manie: Il faut une formule à son petit génie.* Unfortunately the gynaecologist has always had a strange mania for relying on an authority's name as guaranteeing the excellence of an operation. Dr. Scipiades contributes a paper on the management of wounds of the ureter inflicted during abdominal section—ugly complications most trying to the operator; nephrectomy appears to be the safer course when the injury has been overlooked and the patient has recovered, as plastic operations on the ureter and bladder may aggravate the complication. In conclusion, we may say that this instalment of Professor Tauffer's *Abhandlungen* may be read with profit by the British medical public for reasons which we have endeavoured to explain in this notice.

Without doubt the *Atlas zur mikroskopischen Diagnostik der Gynäkologie*, edited by Dr. JOLLY,[3] is excelled by none of the other similar publications issued recently in Germany. The editor has chosen for his publishers the firm which is at present undertaking the fine *Enzyklopädie der mikroskopischen Technik*, edited by Ehrlich, Krause, and other eminent teachers, the second edition of which is now appearing in parts. The work under review is of a similar character, save that it is essentially for instruction whilst the *Enzyklopädie* is for reference. This atlas is published in book form, the illustrations not being relegated to a portfolio. They appear in colours on paper with a black border, and are pasted, in pairs, on stouter paper, opposite the explanatory paragraphs. In order to avoid an inconvenience familiar to those who study from atlases, those paragraphs are in nearly every case confined to the side of the sheet opposite the illustration, so that the reader need not turn over a page whilst inspecting it. The introduction consists of directions for the preparation of sections; it is terse and clear, but presupposes a general knowledge of the use of the microscope on the part of the reader. The illustrations are clear, and the colouring highly successful. Such is especially the case with the series illustrating adenoma, cancer, and chorion-epithelioma of the uterus. A good section of the uterine mucosa, where some of the glands have been divided obliquely, is included to show how their cells may appear as though malignant changes were in progress; this deceptive appearance, as Dr. Jolly remarks, is to be seen where endometritis has occurred, and involutions of portions of the walls of the enlarged glands into their own lumen has developed. The coloured lithographs of sections displaying the changes of the endometrium in different forms of endometritis are undoubtedly instructive, and the author very properly heads the uterine series with a high and a low power representation of a section of normal endometrium. We may observe that it would have been well had he added similar illustrations demonstrating the normal appearances of the epithelial covering of the vagina and vulva and the subjacent tissues. Dr. Jolly impresses on the reader, both in the explanatory text and in his preface, the importance of studying abrasions and worse destructive processes under the microscope. For her drawings the artist, Mrs. Ehlers, deserves the graceful recognition awarded her by the author. British publishers might inspect with profit Dr. Jolly's *Atlas*, as well as certain American pathological works, especially of the Baltimore school, and compare them with English publications of the same class, which, to say the least, hardly excel their foreign equivalents.

[3] *Atlas zur mikroskopischen Diagnostik der Gynäkologie nebst einer Anleitung und erläuterndem Text.* By Privat Dozent Dr. Rudolph Jolly, Oberarzt der Königl Universitäts—Frauenklinik zu Berlin. Berlin and Vienna: Urban und Schwarzenberg. 1910. (Sup. roy. 8vo, pp. 91; 52 farbigen Lithographien und 2 Abbildungen. M. 17.50.)

SURGERY.

General Surgery[4] is the title of a little book edited by J. B. MURPHY, of Chicago, for the ten annual volumes in the Practical Medicine Series on the preceding year's progress in medicine and surgery. Other works of the same class are numerous enough, but this series need not fear its rivals overmuch. It has the advantage of small compass possible only where the various departments of practice are published in separate sections. The editor has aimed, not at the production of a literary masterpiece, but at sifting current literature for the benefit of busy surgeons, and enabling them to keep abreast of the times without the expenditure of unnecessary time and labour. It is surprising how thoroughly the work has been done, and with what discrimination the inevitable selecting had been carried out. Naturally, such a piece of work as Mayo's on resection of the colon obtains much space; a new sign like that of Moszkowicz for determining the extent of arterial obliteration appeals to the editor's passion for exact diagnosis; Keetley's arguments in favour of preserving the vermiform appendix are fully set forth; McGavin's filigree method of dealing with the radical cure of large herniae is described in detail; new operations such as that of Shoemaker for reconstitution of the sphincter ani of course find a place; work on the pancreas, the parathyroids, on vascular surgery, and so on; these and a thousand other matters are reported, very often in the actual words of the original articles. An extremely valuable little book for every surgeon's constant reference. The author's brief introduction contains sanguine anticipations of great advances in the near future by the development of serum and organo-therapy, and the recognition of hidden sources of septic infection as the origin of many disease processes now regarded as primary perversions of function.

[4] Practical Medicine Series, 1909. vol ii: *General Surgery.* Edited by J. B. Murphy. Chicago: Year Book Publishers. 1910. (Cr. 8vo, pp. 614. Illustrated. 8s.)

NOTES ON BOOKS.

Remedia-Hoechst is a volume of nearly 800 pages, giving (in German) information concerning about fifty chemical products and a dozen serums made by the firm Farbwerke vorm. Meister, Lucius, and Brüning, who publish the book, and whose London house is 51, St. Mary Axe, London, E.C., inform us that they will send a copy free of charge to any medical man writing for it. The information given in the book for each substance falls mostly under the heads of method of preparation, chemical and physical properties, tests for identity and purity, pharmacology, and therapeutics; the last, under the heading "Klinisches," makes up the greater part of the matter, and consists of extracts from papers published chiefly in the Continental and American medical journals.

SLEEPING SICKNESS.

Bulletin No. 18 of the Sleeping Sickness Bureau,[5] by Dr. BAGSHAWE, contains an interesting paper on the transmission in nature of *Trypanosoma gambiense*. In Rhodesia and Nyasaland during the last twelve months, trypanosomiasis has been detected in twenty-eight persons, some of whom had certainly never visited a *palpalis* area. Two areas or valleys seem to be implicated, and Dr. Bagshawe believes that one is not justified in assuming that *Glossina morsitans* or *fusca* are doing the mischief there. It is possible that some other agent of which we are unaware is the cause, a tick or mosquito, for example.

[5] London: Sleeping Sickness Bureau, Royal Society, Burlington House, W.

Experiments only can decide the matter, and all will agree with the author of the paper that these should be put in hand without delay.

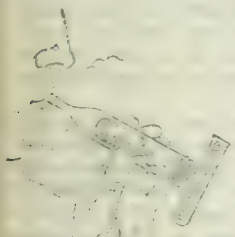
Lieutenant-Colonel A. BUCHANAN, I.M.S., has just published in pamphlet form his well-known views on "cats as plague preventers."[6] The description of the village of Mirla is very striking, and there is not the slightest doubt that, if there are plenty of hungry cats about, there will be very few rats. According to the author, it does not follow that because an animal is subject to plague it therefore spreads the disease; and he also states that the cat flea does not carry plague as the rat flea does. The cat can, of course, catch the plague, but the disease usually takes the form of chronic plague, attacking the glands of the neck, which become swollen. If the assertion that "a cat will not kill a rat that is suffering from plague" is true, then this will necessarily limit the chances of infection of the former, and on the whole there is no definite reason to believe that the cat will spread plague or help in its spread. One agrees with Lieutenant-Colonel Buchanan that the cat is a valuable means of keeping down the rat, and that its presence will therefore act as a preventive of plague.

[6] *Cats as Plague Preventers.* By Lieutenant-Colonel A. Buchanan, M.S., Civil Surgeon, Amrasti. Copyright. Printed at the Pioneer Press. Allahabad. 1909.

MEDICAL AND SURGICAL APPLIANCES.

Ammonium Chloride Inhaler.

ANOTHER inhaler has been added to the many varieties already upon the market, under the title of "Vaporole" Ammonium Chloride Inhaler. It is introduced by Messrs. Burroughs Wellcome and Co., and has the advantage over other appliances we have seen that there are no bottles containing acid to be carried about. The requisite quantities of acid and alkali are made up in separate glass cylinders similar in construction to the well-known amyl-nitrite capsules. The whole apparatus, box included, can be carried in the pocket practically ready for use. The quantities of acid and alkali in each capsule are arranged so that a perfectly neutral vapour is obtained. The volume of ammonium chloride obtained is, however, hardly as full and free as one would wish.



Vulsellum Catch Forceps for the Removal of Imbedded Tonsils.

Dr. HERBERT TILLEY, F.R.C.S. (London), writes: The accompanying illustration depicts the forceps which Messrs. Mayer and Meltzer have made to my design for assisting in the removal of large tonsils which do not project beyond the level of the faucial pillars. Even when



pressure is applied from without, the "guillotine" will only succeed in removing slices of the tonsils, and will not get rid of the upper portion, which is intimately associated with the supratonsillar fossa, a region in which many of the acute and most of the chronic inflammations of the tonsil take their origin. By means of these forceps the enlarged gland can be securely seized and drawn inwards and forwards, while with scalpel or scissors the faucial pillars may be freed from the gland substance, its capsule entered and the tonsil more or less turned out of its bed. When thoroughly freed from surrounding structures, the ordinary guillotine or tonsil snare may be slipped over the forceps and the tonsil completely enucleated. The advantages of the instrument are that it is slightly curved towards the claws, so that the surgeon's view is not obstructed, as is the case with a straight instrument, and that once the tonsil is securely grasped it is not released until the operation is completed—a great advantage over the old vulsellum forceps with scissor handles.

THE ROYAL COMMISSION ON THE POOR LAWS AND RELIEF OF DISTRESS.

THE CARE OF PAUPER CHILDREN IN SCOTLAND.

THERE has just been issued the twenty-third appendix volume to the Report by the Royal Commission on the Poor Laws and Relief of Distress on the condition of the children who are in receipt of the various forms of Poor Law relief in certain parishes in Scotland.

This supplementary report[1] has been prepared by Dr. C. T. Parsons, Medical Superintendent of the Fulham Infirmary, and Medical Officer of the Fulham Workhouse, assisted by Mary Longman and Marion Phillips, B.A., D.Sc. (Econ.). The parishes dealt with included Edinburgh, Glasgow, Govan, Dundee, and a typical rural parish in Lanarkshire.

The investigator was instructed to make inquiry in the parishes mentioned, and to report in regard to the health, clothing, condition, and circumstances of children boarded out within and without the parish, and children whose parents or guardians are in receipt of outdoor relief as widows, widowers, single unmarried women, or deserted women. He was further instructed on completion of this part of his inquiry to compare the results so obtained with the results obtained by the examination of a selected number of children in receipt of relief in poorhouses, poorhouse hospitals, and institutions in which Poor Law children are maintained.

Dr. Parsons and his assistants carried out these instructions most thoroughly; their report (including appendices) extends to 236 pages.

In an introductory chapter Dr. Parsons states that the total child pauperism in these parishes was 7,400, and that 1,060 cases were personally investigated, the houses they lived in were visited, the parish records and offices were seen, and any general information which appeared to throw light upon the cases collected.

The Causes of Chargeability.

Dr. Parsons presents two tabulated statements as to the causes of pauperism which he says make it clear that in the far greater number of cases—in from 76 to 95 per cent.—pauperism is due to the death of the father, the chief breadwinner. Indeed, with the exception of 3 per cent. of the cases, all the pauperism investigated was due to illness or death. But there were certain local variations in the proportions of one class of case to another. Thus, in Glasgow there are fewer sick fathers, whether away or at home, than in any other parish. The difference is too great to be accounted for by local causes or the small number of cases. Indeed, the difference is as great between Glasgow and Govan as between Glasgow and Edinburgh, though Glasgow and Govan are contiguous and the social conditions are precisely the same. It appeared to the investigators that the difference was due to a difference in administration, and that in Glasgow it is much harder for the sick man to get relief for his children than in other parishes. There is, however, nothing to show that the invalids in Glasgow are fewer or their families richer than elsewhere.

The variations in the number of deserted wives are also noticeable for the high proportion in Edinburgh and the low rate in Dundee. This certainly reflects the sound conditions of these particular towns, for in Edinburgh the sense of marital and parental responsibility (shown, for example, by the number of fathers who died of illnesses

[1] Report to the Royal Commission on the Poor Laws and Relief of Distress on the Condition of the Children who are in Receipt of the Various Forms of Poor Law Relief in Certain Parishes in Scotland. By C. T. Parsons, M.D.Lond., assisted by Mary Longman and Marion Phillips, B.A., D.Sc. (Econ.). Printed for His Majesty's Stationery Office by Wyman and Sons, Fetter Lane, London. (Cd. 5075.) Price 2s.

due to drunkenness) seemed particularly weak, while in Dundee the woman is so often the chief wage earner as to offer the husband a very good reason for remaining with his family. In both towns the facts were not influenced by any particular Poor Law policy.

In those cases in which pauperism was due to illness or death the nature of the illnesses of the fathers were ascertained and the facts tabulated to show the duration of the illness and the class of disease to which it belonged. The former classification shows that in 59 per cent. of the cases a long illness—an important factor in all pauperism—preceded death or was still continuing. In 14 per cent. the father had been taken suddenly without warning, and in 27 per cent. had died after a short illness.

Pauperism may therefore be attributed simply to the loss of the breadwinner. In a few cases, relief to the father, or, if he was from home, to the mother, may have preceded his death, but in far the majority resort was had to the Poor Law during the year which followed it. In Glasgow, however, in thirteen cases from one to five years intervened. In two of these cases the father had been ill since the former date, but had not received relief at once. In one case, the wife had been deserted for eleven years, and had first received relief in 1901. In two cases there was compensation money; in two, some savings. In two others the widows struggled along until the payment of rates became too heavy, and, applying for release from them, was advised that she had better ask for aliment also. The families whose circumstances were investigated were, therefore, those of the working class, pauperized by illness or death and sufficiently long in receipt of relief for any effects it may have to have become marked.

Administrations of Outdoor Relief.

A comparison of the methods of giving relief in each of the four burghal parishes show that in one only, that of Glasgow, is a system adopted allowing full weight to be given to the circumstances of each case and full supervision exercised over the work of each assistant inspector. The system followed in Govan is better than that of Edinburgh, and that of Dundee better than Edinburgh, but in Dundee the control exercised by the inspector on first applications by interviewing the applicants, seemed to the investigators a very illusory one. The inspector's knowledge of cases was so very small as to suggest that the interview is a perfunctory formality. The great power which rests in the hands of the assistants is the more dangerous, as it was invariably found that in these parishes where it was greatest, their knowledge of the people was least.

The results of a careless system of administration, when compared with the efforts made in a thoroughly administered parish such as Glasgow, appeared to the investigator to consist in this: In the former children may be left in evil surroundings for an indefinite period, and may never be rescued from them until the parent or parents are brought within the scope of the criminal law. In Glasgow there are bad cases now on the roll and there are children living in unsuitable houses, but these cases are mostly under observation. It is known that they are bad, and after attempts had been made by cautions, reprimands, advice, and reduction of relief, to improve the conditions, the case against the parent will have been so carefully built up, that the parish will be able to take possession of the children and send them to good homes elsewhere. The inspector has succeeded in impressing upon the minds of the mothers that they have to fulfil their parental responsibility and that the parish council will watch to see that they do. The present staff is, however, neither large enough nor of the kind required to do all the watching necessary.

The investigators did not find that any particular benefit accrued from the parish undertaking to give a clothing dole once a year to the children on the books. In Glasgow even a thrifty mother cannot depend upon it, and, while sometimes it is given apparently as a reward for virtue, at other times it is given because a careless, neglectful mother declares that she cannot send her children to school unless she get clothes for them. In any case, it is either a charity dole or a confession that the relief already given is inadequate. A large parish could clothe the children at less cost than the individual mother. To realize this economy, however, the yearly dole should be replaced by a definite clothing allowance to be reckoned in deciding upon the amount of relief.

Outdoor medical relief is easily obtained in all the parishes investigated, but, though there were very few complaints made of the doctors, there was great reluctance to ask for their attendance, and sometimes an express desire to have women doctors instead.

Attention is called to the fact that no one of the councils has dealt on any definite principle with the question of illegitimate children. In no parish does the widow who bears one illegitimate child necessarily lose relief. Amongst the assistant inspectors it seemed to be considered an event that must occasionally be expected, and was in need of no excuse when the father of the child was a lodger. It could not be found that any parish council had ever considered that for a young inexperienced widow in the first troubled years of adapting herself to poorer circumstances than she had known during her husband's lifetime, a male lodger was a very great danger. This is considered particularly surprising in Glasgow, where the council and the inspector are, in general, both humane and thoughtful in regard to the widow's welfare. Nevertheless, the widows on the special roll, who are younger than the majority of those on the other rolls, are encouraged to add to their income by lodgers because the work need not take them away from their homes.

The amount of relief given is uniformly higher than that given in England. For the urban districts investigated the medium is 7s., and the prevailing scale is 2s. to 2s. 6d a child. Between the different towns, however, the variations are considerable, chiefly because in Glasgow and Govan relief is proportionate to income, and in Dundee and Edinburgh the relation of income to the family's needs is much neglected. Thus in Scotland, as in England and Wales, the treatment of the widows and their children varies less with their needs than with their settlement.

The policy in Glasgow has been not to reduce the number of cases, but to keep up the standard of those who apply and are given maintenance from the rates. The parish of Glasgow does not seek to narrow the limits of its responsibilities as does, for instance, the union of Bradford, but to organize its activities in order to obtain for those who have suffered economic ruin by death or illness a condition of life not incompatible with efficient citizenship. This is the main tendency of the policy, and it is therefore important to see in what directions the administration falls short of this aim.

Criticism is directed here along two main lines. In the first place there is the conflict of principles, on the one side the desire based on sound economy to produce efficient citizens, on the other hand the Poor Law requirements of destitution or "impotence," and the value of uncertainty in income as an encouragement to thrift. Thus, relief being a legal right where destitution is proved, the council cannot lay down a simple statement of conditions of hygienic sanitation and good conduct as an invariable continuance of relief. They must, therefore, content themselves with a statement, such as they make on their leaflet on cleanliness and care of children—avoiding the imperative mood and confining themselves to expectations. But this principle also leads to the short-sighted refusal to grant relief when any sum remains over from club or insurance money—a refusal made in Glasgow although not in all other parishes. A departure from this has, indeed, been advised by the Scottish Local Goverment Board.

It is, however, in the second direction—the fitness of the inspectorate to carry out the duties of supervision necessary if the children are to be well brought up—that the failure of the administration is most patent. Roughly speaking, the needs of the children are sanitary housing, clean and properly furnished homes, well cooked and sufficient food, comfortable clothing, attention to health by means of medical inspection, and the careful carrying out of doctors' orders, and, finally, education, not only in school, but by the moral and mental training of their home life. For the duty of seeing that these needs are supplied, the parish provides as assistant inspectors a number of men chiefly between the ages of 23 and 30 who have graduated for their work by the ordinary routine of office clerks.

For such duties young men are not well fitted. The first is a duty which could only be carried out by the sanitary authority, with its trained inspectors responsible to a still more highly trained official chief. As to the second, the cleanliness and comfort of the home, the inspection of the Poor Law official is almost useless. He may be relied on to discover cases of extreme filth, but it is not enough to discover these. Nor is it enough to recognize the real condition of the children's homes. Advice, admonition, and instruction must necessarily follow. These officers are obviously unable to give such advice, and the women should be the first to recognize that fact if they attempted to do so. Of questions relating to food and clothing the same may be said. As to the children's health, the need of trained inspection is too patent to require further comment.

Finally, there are the mental and moral needs of the child. The assistant inspector cannot deal adequately with these, for he is in no way fitted by age, training, or education for such duties. Here and there an assistant inspector may be suited for such work. This suitability, however, would be a mere matter of chance, and the number of such a kind thrown up by the changes of office routine and promotion would necessarily be small.

The real stumbling-block appears to be that in whatever direction the Poor Law authority sets out, and whatever may be its intention, it is tied by the test of destitution, which was the basis of the present organization.

HOUSING CONDITIONS.

(a) *Burghal Parishes.*

All the families visited in the burghal parishes, with one exception, lived in flats in tenement houses. The flats consisted of one to four rooms, and opened by their own front door from the landings of the common stairs.

The active sanitary authority of Glasgow does much to secure that the closes and stairways should be kept clean, and requires some light and ventilation on the common stair. The worst feature of housing in Glasgow is the farmed-out house and the back land. This is peculiar to Glasgow. It is a row of tenement houses entered through pend or close from the main street, but placed at the back of the houses forming the frontage. The back land is often placed too close to the first row, and is dark, ill-ventilated, and insanitary. The farmed-out houses usually consist of single tenements in houses converted from larger flats, and therefore lacking in sufficiency of sanitary arrangements and conveniences. These houses, being let for short periods, attract poorer tenants, and are usually inhabited by a low class.

The measurements made by the sanitary department of Glasgow of the houses occupied by the Poor Law cases showed some very interesting results. The Corporation have what are called "ticketing" powers over houses with a cubic space up to 2,600 ft. These powers signify that on the lintel of these houses they may place a disc giving the cubic contents and the number of adults who may be accommodated without overcrowding. An adult is any person over 10 years of age, and is equal to two children.

In dealing with the Glasgow cases, 31 houses on the special roll and 122 on the ordinary roll were measured; 8 of the houses on the special roll and 52 on the ordinary roll fell within the ticketing limit and had less than 2,600 cub. ft. of space. The medical officer stated that the impression gained in measuring the homes occupied by these people is that they are "respectable people, for the most part living in comparatively favourable surroundings." Some flats lacked through ventilation; some houses lacked sufficient space around them; in many cases the sanitary arrangements were badly placed or badly looked after, and in many the repair of the rooms and staircases were defective. On the whole, however, the housing, apart from overcrowding, was satisfactory.

In Edinburgh a low level is reached, and the crowded districts of the Old Town have an unenvied notoriety for their picturesque squalor. Even in the newer parts of the town, where the flats are not in themselves bad, the stairs and closes are kept less clean than in Glasgow.

The housing in Dundee in the cases visited was almost universally bad. The rooms are very small and ill-ventilated, the sanitary arrangements are unsatisfactory, and the repair very faulty.

(b) *Rural Parishes.*

The housing conditions of the Poor Law families in Lanark were found to be almost wholly bad. The houses are small, crowded together, and badly built and repaired, and the sanitary arrangements with one exception bad.

CONCLUSIONS.

An account of the children at work brings to an end the report on the homes of the children whose parents are in receipt of outdoor relief. The reporters conclude this portion of the report as follows: While finding that the children in Scotland compare favourably with those in England, it cannot be said that their condition is altogether satisfactory. It remains, therefore, to bring together the chief unsatisfactory conditions which we have observed which are sufficiently tangible to be expressed numerically. Putting aside the one rural parish of Lanark, where the numbers are insignificant though the conditions are bad, we found in the four burghal parishes:

1. That the number of houses which are insanitary by reason of insufficient ventilation is 15 per cent. of the whole.
2. That the number of houses which are insanitary by reason of insufficient internal ventilation is 11 per cent.
3. That the number of houses which are insanitary by reason of bad sanitary accommodation is 29 per cent.
4. That the number of houses which are insanitary by reason of a bad state of repair is 21 per cent.
5. That the number of people living in one room is 13 per cent.
6. That the number living in overcrowded conditions is 78 per cent.
7. That the number living in courts or passages is 14 per cent.
8. That the number living among the lowest kind of population is 6 per cent.
9. That the number living in dirty houses is 13 per cent.
10. That the number who have insufficient (that is, poor or very poor) furniture is 16 per cent.
11. That the number of families living on less than 20s. a week is 50 per cent.
12. That the number of children badly fed is 30 per cent.
13. That the number of bad mothers is 24 per cent.
14. That the number of mothers with poor or bad health is 48 per cent.
15. That the number of mothers away from their homes for four or more days a week is 31 per cent.; and that
16. The percentage of sons in skilled work is 26, whereas the percentage of fathers in skilled work is 48.

While these simple facts express the worst features, we have invariably found that all these families which have been brought to apply for outdoor relief are marked off from the rest of the population as unfortunates, doomed to a long struggle with poverty. Where the father has been a waster or a drunkard, the position of the family may indeed have been improved by his death. But such cases are the exception. For the majority, the loss of the father has meant economic ruin and has led to a deterioration in the comfort and material well-being of the family. Thus, not only is the condition of these people to be deplored as a fact of the present, but in their circumstances to-day there is to be seen a social retrogression.

Boarded-out Children.

The general impression formed by the reporter by going from one house to another was that the boarded-out children lived in homes of precisely the same type as the ordinary out-relief children, with the same standard of living, but in general exhibiting, in each aspect considered, a slightly higher achievement, better furniture, more space, more clothes, more food, and more pleasures.

Physical Condition of the Children Examined.

The schedule used in the examination of each child was very comprehensive, and dealt with measurements, general appearance, cleanliness, condition of different organs of the body, deformities, hours of sleep, etc.

Dr. Parsons in nearly every instance took the heights, weights, and chest girths measurements himself. The

heights were taken without boots, the weights in ordinary indoor clothes, without boots, and the chests horizontally round the naked chest, at the level of the nipples, the child being directed to stand erect with the arms by the side, and to count ten whilst the measurement was being recorded. The height and weight measurements used were tested in each instance before the examination was begun.

The average measurements of the Poor Law children examined compare very badly with those of the standard averages. At practically all stages the average weight, height, and chest girth are much below what they should be. On the other hand, the measurements in some of the groups compare rather favourably with the very low average obtained by Dr. Leslie Mackenzie and Captain Foster as the result of the measurement of children drawn from some of the poorest quarters of Glasgow. In order to show this comparison between the averages obtained by measuring these Poor Law children and the averages of the Anthropometric Committee, and of Dr. Mackenzie and Captain Foster, Dr. Parsons constructed the following table:

The numbers express the percentage of cases in which the averages obtained by Dr. Parsons for each age and sex fall below (1) the averages of the Anthropometric Committee; and (2) the averages obtained by Dr. Mackenzie and Captain Foster.

(1) *Comparison with the Anthropometric Committee's Averages.*

	Children in Poor Law Institutions	Out-relief Children in Towns.	Boarded-out Children in Towns.	Boarded-out Children in Country.	Out-relief Children in Lanark.
Percentage of age-groups in which the average weight is less than the Anthropometric Committee's average	100	94	75	94	100
Percentage of age groups in which the average height is less than the Anthropometric Committee's average	100	100	100	94	100

(2) *Comparison with Dr. Mackenzie's and Captain Foster's Averages.*

Percentage of age-groups in which the average weight is less than Dr. Mackenzie's average		11	25	56	16
Percentage of age groups in which the average height is less than Dr. Mackenzie's average	85	5	12	75	16

These figures all point to one conclusion—that in these children we have a very low type of development. It has been pointed out that the cause of the pauperism of the children examined was the death or illness of the father in 76 to 95 per cent. of the cases. Exact particulars as to the ages of the fathers at death were not obtained, but in most cases the father's death occurred at a comparatively early age. This suggests that some of the children come from a debilitated stock—at any rate on one side. It is therefore safe to assert that this type of development is the product of two adverse influences which tend to react upon and increase the effect of each other—one the insanitary environment and insufficient food resulting from poverty, the other the heritage derived from parents whose vices or ill health have led to such poverty. The serious nature of the problem presented by these children is intensified by the fact that even when brought under the influence of good sanitary conditions and good food, as in the Smyllum Orphanage, the training-ship *Empress*, and the Poor Law institutions visited, the children do not regain the ground they have lost.

It must be remembered, however, that the worst children, mentally and physically, tend to collect in the poorhouses from the impossibility of boarding them out. Similarly, the boarded-out children have, as a rule, a worse hereditary taint than those children who are living with their parents, since, in the case of the boarded-out children, both parents are dead, or are not fit to be trusted with the care of the children. This probably explains why the outdoor relief children come out rather better than the other groups as regards the children's measurements. The percentages of the country-bred children living in Lanark must be used with caution, the numbers examined being very small. As regards nutrition, the country-bred children in Lanark were the best, and the children in Poor Law institutions and those boarded out in the country slightly better than those living with their parents in towns. The percentage of unhealthy-looking children is very high amongst the Lanark group, and is lowest in the case of children in Poor Law institutions. In this respect there is surprisingly little difference between the children boarded out in the country and those living in towns.

The amount of dental decay is very large, but it is considerably less amongst the children boarded out in the country, and the same remark applies to the amount of defective eyesight. The amount of conjunctivitis and corneal disease is highest amongst the institution children. The lack of personal cleanliness was very great, and the country children—both those boarded out and those living with their parents—were as dirty as, and sometimes dirtier than, the town children. The clothes, however, were distinctly cleaner in the case of boarded-out children. The number of dull children is very high in institutions. This is undoubtedly, in part, due to the fact that many feeble minded children are kept in these institutions owing to the difficulty of boarding them out; but it is also due, to a certain extent, to the deadening effect of institutional life the tendency of which is to deprive the children of initiative and of individuality.

RECOMMENDATIONS BY DR. PARSONS.

Looking back over his examination of these Poor Law children, the following are the points on which reform seemed by Dr. Parsons to be needed most:

1. The absolute necessity of a more rigid system of medical examination and observation of these children. Even in the institutions visited the children were not receiving, and the present medical and nursing staff of these institutions is insufficient to allow them to receive the individual care and attention which children of this poor type require. In the case of the outdoor children there was practically no system of medical inspection. I cannot help thinking that every child which receives relief from the Poor Law should at the outset be medically examined, and a record kept of its condition and of its chief measurements, and that this examination should be repeated at least twice in the year to test the child's progress. This work will be done to a certain extent for the Poor Law children living out of institutions under the system of medical school inspection now coming into force, and it should be possible to arrange that a copy of the schedule filled in, in the case of each Poor Law child, should be sent to the chief medical officer of the parish. The work in the institutions should, of course, be carried out by the medical staff of the institutions, which would, in most cases, require increasing for the purpose. The system which I think would work best would be one in which the whole of the medical arrangements of the parish would be in the hands of the medical superintendent of the Poor Law infirmary or hospital. This officer should be entitled to receive any information possessed by the Public Health Department or the School Board as to the health of any of the children or adults in receipt of Poor Law relief. Similarly, it would be his duty to transmit to the Public Health Department and the School Board any information he possessed which would be of advantage to them. This officer would then be in a position to arrange the medical work of the parish to the best advantage, decide which of the children it would be advisable to admit to the Poor Law hospital, which could be better treated at home, and which would require other special treatment. He would be able to follow the progress of each child in comparison with the general progress of the children, would be in a position to form an opinion as to which children were not flourishing as they should, and form a tolerably correct opinion as to whether the children boarded out and those living with their parents were receiving the full advantage of the money allotted for them.

2. I formed the opinion that the boarding-out system was in most cases far better for the child than bringing it up in institutions. The poorhouse is a most undesirable

nvironment for a child to grow up in, and it is impossible to condemn too strongly those cases in which the hild lives and attends school within the poorhouse and ever mixes with children outside. Quite apart from the nnatural conditions under which the child grows up and ts lack of knowledge of the world, the staffing of these nstitutional schools is usually so small that the child nust suffer considerably in its ordinary education. Receiving homes should be provided for children whom t is not desirable for any reason to board out or who re not likely to be long chargeable. These receiving omes should be quite separate from the poorhouse, nd the children in them should attend the local chools.

3. Two special results of my investigation struck me ery forcibly. One was the amount of dental decay resent in these children. When one remembers how nuch the health and nutrition of the child may be affected y the presence of badly decayed teeth, I think it is abunantly plain that the medical Poor Law service of every arish should include a dentist. The second result was he large amount of uncorrected visual defect found. Even n the institutions visited no provision seemed to be made or the detection and correction of visual defect. One-hird of the children examined in the Poor Law nstitutions showed some visual defect ($\frac{6}{12}$ or worse), nd this proportion would no doubt have been increased f the eyes had been tested separately. The serious results f this visual defect are shown by the fact, remarked upon arlier in the report, that many of these children with efective sight are distinctly duller and more stupid than imilar children without such defect. Every Poor Law hild's eyesight should be tested periodically as a matter f routine, and proper correcting glasses supplied if ecessary.

4. I paid particular attention to those children who were employed out of school hours. On the whole I did ot see any reason to believe that this employment preudicially affected them. On the contrary, I formed the pinion that these children were often brighter and more elf-reliant than the other children. In some cases, however, these children did not seem to be getting so much leep as they should, owing to the early hour at which hey started work, and the demands made by this mployment upon the physical and mental capital of the ounger children is likely to be felt prejudicially later on n life. It seems to me desirable that the employment in his way of children, so young as nine, ten or eleven years ld, should be prohibited and certainly this ought be so in he case of boarded-out children, the foster parents of hom should not be allowed to make a profit from them in his way.

5. The question of the dietary of these children is one hich appeared to me hardly to receive the attention should, even in the institutions visited. The food pplied to the children in the poorhouses, so far s I saw it, seemed to be good and wholesome, and he quantities allowed by the diet scales to be sufficient, ut the dietaries lack the variety which it is so important hey should possess, and are deficient in some of the rticles of diet which specially appeal to children's tastes. hese badly developed and poorly nourished children equire individual dietary so as to suit their special likes nd dislikes, and careful supervision to ensure that sufficiency of food is eaten. It would be easy to range for a much more varied diet without any addition to the cost. It is curious to observe that such a valuable rticle of diet as fish appears in only one of the dietaries; acon, which is valuable as a palatable means of increasing he amount of fat consumed, does not appear in any of the letaries; and eggs, fresh fruits, and cake are also not entioned.

To the report is added no less that twenty-three appenices giving statistics regarding the houses in the different arishes visited, employment of children who have left chool, incomes of the families in receipt of parochial elief, a table of illustrative cases showing particulars of ach family and of the home surroundings, and the most mportant results of the medical examinations of those embers of the family who were examined.

The report is a most exhaustive one, and will be of conderable help to those who are specially interested in the uestion of boarding-out children.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE sixty-ninth Annual Meeting of the Medico-Psychological Association of Great Britain and Ireland was held in Edinburgh on Thursday and Friday, July 21st and 22nd, under the presidency of Dr. John Macpherson, the Senior Commissioner in Lunacy for Scotland. On Wednesday, July 20th, there were meetings of the Parliamentary and Educational Committees in the Royal College of Physicians. In the evening, at 9.30, Dr. and Mrs. Macpherson gave a reception in the Hall of the Royal College of Physicians which was a select and highly enjoyable function. On Thursday morning, at eleven o'clock, the serious business of the meeting began with reading of minutes, election of officers and Council, and various other items of business. In the afternoon the President presented prizes and medals that had been awarded during the year, and then gave his presidential address. Thereafter papers were read by Dr. Ford Robertson on "Infective Foci in General Paralysis and Tabes Dorsalis"; by Dr. John Carswell on "The Treatment of Incipient Insanity in Observation Wards"; by Dr. J. P. Sturrock on "Certain Form of Insanity in the Criminal Class"; and by Dr. R. M. Marshall on "Periodic Attacks of Mental Excitement and Depression in the Chronic Insane."

In the evening the annual dinner was held at the Caledonian Station Hotel, when about 108 gentlemen were present.

On Friday morning, July 22nd, papers were read by Dr. A. R. Urquhart "On Lunacy Administration in Scotland"; by Dr. Lewis C. Bruce on "The Deviation of Complement in Connexion with the Diseases known as Mania"; three papers by Drs. Hamilton Marr, Ivy McKenzie, and Browning on "Arsenical Treatment of Protozoal Diseases"; and a paper by Dr. C. T. Ewart on "Eugenics and Degeneracy." After this, by the kindness of Dr. G. M. Robertson and the Board of Managers of the Edinburgh Royal Asylum, luncheon was served to the members of Craig House, Morningside. At the afternoon session, in the large hall at Craig House, Dr. George M. Robertson opened a discussion on "The Treatment of States of Mental Excitement in the Insane." Then followed papers by Dr. Leonard D. H. Baugh on "A Clinical Study of Anaesthesia, Mental Confusion, and Moods in Epilepsy, Confusional Insanity, and Hysteria"; by Dr. R. Dods Brown on "The Viscosity of the Blood in Mental Diseases"; by Dr. G. Rae Gibson "On the Treatment of Dementia Praecox by Increasing the Blood Tension"; by Dr. Alice Babington on "A Note on the Opsonic Index in Insane Persons"; by Dr. G. Scott Williamson on "A Further Contribution to the Study of the Cerebro-spinal Fluid"; by Dr. Winifred Muirhead on "The Wassermann Reaction in the Blood and Cerebro-spinal Fluid and the Examination of the Cerebro-spinal Fluid in General Paralysis and Other Forms of Insanity"; by Dr. H. Morton on "The Chemistry of the Cerebro-spinal Fluid"; by Dr. Gilmour on "The Wassermann Reaction and a More Reliable Technique"; and by Dr. C. G. A. Chislett on "Syphilis and Congenital Mental Deficiency."

At 5 p.m. there was to have been a garden party at the Craig House, but as the weather was unkindly, it became a reception in the large and beautiful hall of the Craig House. The guests were received by Dr. Geo. M. Robertson, and despite the adverse weather a very enjoyable afternoon was spent. On Saturday, July 23rd, there was an excursion to Bangour Village Asylum, where Dr. Keay, the Medical Superintendent, read an account of the Segregate System as exemplified by Bangour Village. After luncheon an inspection of the Village Asylum by the members took place, followed by tea at Dr. Keay's house.

UNDER the will of the late Mr. Alfred Shipley of Bristol the following medical institutions connected with the city of Bristol receive bequests of the amount stated against their names: The General Hospital, £1,500; the Royal Infirmary, £500; the Royal Hospital for Women and Children, £500; the Winsley Sanatorium, £500; the Eye Hospital, £200; the Orthopoedic Hospital, £100. A sum of £1,000 is left to the University.

THE ASSOCIATION OF BRITISH POSTAL MEDICAL OFFICERS.

THE annual dinner of this Association was held in the Whitehall Rooms, Hotel Metropole, London, on July 14th. The President, Dr. GEORGE MASON, M.A.Cantab., Marylebone, London, was in the chair. Amongst those who accepted invitations were: The Right Hon. Herbert Samuel, M.P., Postmaster-General; Sir Matthew Nathan, G.C.M.G., Secretary to the Post Office; the Right Hon. C. E. Hobhouse, M.P., Financial Secretary to the Treasury; Sir R. Morant, K.C.B., Secretary, Board of Education; the Right Hon. Eugene Wason, M.P., Sir Joseph Walton, Bart., M.P.; Sir Dyce Duckworth, Bart.; Sir Robert Burnet, Physician to His Majesty's Household; Sir Robert Hunter, C.B., the Solicitor to the Post Office; Sir Edward Troup, K.C.B., Permanent Under-Secretary, Home Office; Surgeon-General Gubbins, C.B., M.V.O., Director-General Army Medical Service; Sir Alfred Keogh, K.C.B.; Lieutenant Colonel Munkhouse Wilson, C.B., C.M.G., D.S.O.; Colonel W. Price, C.M.G.; Captain J. Mulligan, A.M.S.; Sir William Collins, M.P.; Mr. T. Wiles, M.P.; Messrs. E. W. Farnall, M. J. Ogilvie, and A. H. Norway, Assistant Secretaries to the Post Office; Mr. E. P. Redford, C.B., Secretary to the Post Office, Edinburgh; S. F. T. Swayne, Assistant Accountant, General Post Office; Messrs. W. T. Rushton, I.S.O., and J. P. Barnard, Surveyors to the Post Office; and several members of the Staff in the Secretary's Office at St. Martin's-le-Grand, and many Postmasters. Dr. John Matheson (London) the President-elect.

The following vice-presidents and members of the association were also present: Drs. L. Adeney, J.P., Tunbridge Wells; Walton Browne, LL.D., Belfast; R. Paramore, London; W. Hallowes, Newark-on-Trent; A. Roberts, Reading; C. Moore, Leicester; R. Emmett, Portsmouth; W. Malcolm, London; P. Jackson, London; H. Hall, Hertford; T. Angior, Wigan; H. Brabant, London; K. Lund, London; E. Greenwood, London; A. Campbell, J.P., Dundee; W. Berridge, Redhill; J. Walters, Reigate; E. Mapleton, Goudhurst; C. Graham Grant, London; Coode-Adams, London; G. Hovenden, London; Thoresby-Jones, London; W. Morris, Cardiff; R. Giddings, Nottingham, Honorary General Secretary, and many others.

After dinner, the loyal toasts having been drunk, Sir JOSEPH WALTON, Bart., M.P., proposed "Our Imperial Forces." Surgeon-General GUBBINS, C.B., responded.

Sir DYCE DUCKWORTH gave "The Houses of Parliament," and Sir WILLIAM COLLINS, M.P., replied. The health of the Postmaster-General was proposed by the CHAIRMAN in happy and well-chosen terms, and it was drunk with musical honours in the most hearty manner. Mr. SAMUEL, in replying, after having expressed his appreciation of the opportunity these annual gatherings of the officially recognized associations afforded him of meeting the various sections of his staff, observed that there was no branch of the department which had expanded more remarkably within the last few years than that of his medical officers. Only some five years ago they numbered between five and six hundred, whereas to-day they totalled nearly three thousand medical officers, and he thought, therefore, that the medical profession ought to be very grateful to the Post Office. He referred to his recent official connexion with the Home Office, and to the part he had played in having telegraphist's cramp scheduled as one of the diseases of occupation under the Workmen's Compensation Act. He voiced his profound regret that there should be any possibility of "diseases of occupation" under our modern social system, and stated that he had appointed a Departmental Committee to fully investigate the subject of telegraphist's cramp, not with a view to the question of how they could compensate those becoming afflicted with it, but with a view to securing, if possible, its total prevention. He further referred to the departmental inquiry which was being held into the alleged excessive illness amongst operators in telephone exchanges, and stated that he would be glad to receive from that association as early as possible any information or suggestions on either of these subjects, if, perchance, its members held any ideas regarding them which they would like to bring under notice. He mentioned the prevalence of tuberculosis amongst the Post Office staff, and, touching upon the sanatorium treatment, observed that in a few weeks' time he was looking forward to being present to open the new pavilion at the Benenden Sanatorium, which has been erected for the exclusive use of postal employees. He considered that every postal official should contribute towards its maintenance; that at present only a small proportion did so; and that each postal medical officer in his individual sphere could do much to influence the staff in this direction, and he earnestly hoped that they would never lose an opportunity of doing so.

Subsequently Mr. WASON, in proposing "The Association of British Postal Medical Officers," remarked upon the strongly representative character of the association, how it extended from the Shetlands to the Channel Islands and from east to the extreme west of the United Kingdom. They had heard from the Postmaster-General of the large increase in the number of postal medical officers throughout the country within the last few years, still he knew that this association comprised in its membership the postal medical officers of all the principal London postal establishments outside the head office staff. The medical officers in all the large provincial cities and industrious centres and in very many of the smaller towns and also many of the recently created country subdistricts whereby the postal employees of the villages are grouped together in the country under one of the practitioners of the district. It was there he understood the bulk of the non-members were to be found, and he hoped that as time went on they would be induced to join the association also. He expressed the great pleasure it always gave him to attend these dinners which he had done for many years under many Presidents, but under none more delightfully genial than their present one, Dr. George Mason. The connexion between the legislative and the medical profession was, in his opinion, a far-reaching one, and it was of the utmost importance that a cordial relationship should exist between them. He knew no medical association that extended such generous hospitality to the Legislature and its men of distinction in science and affairs as did that association, and he considered it was highly satisfactory to the Legislature and very advantageous to the profession, whence the association had its being. Year after year he had been present, and had always met many distinguished members of the Legislature and many distinguished permanent public officials. He wished every success to the association, and that it might long continue on its present lines.

Dr. JOHN MATHESON, the President-elect, briefly replied.

Sir EDWARD TROUP, K.C.B., Permanent Under Secretary, Home Office, in proposing "His Majesty's Post Office," referred to the blank created by Mr. Samuel's withdrawal from the Home Office, and how much the Post Office had gained by being brought under his rule. Mr. Samuel had reminded them how grateful the medical profession ought to be to the Post Office for the large number of its members that were employed by it, but he thought he could justly claim an equal share of gratitude for the Home Office, because they availed themselves of the services of an enormous number of medical men as certifying factory surgeons, prison surgeons, etc.

Sir MATTHEW NATHAN having ably replied, "Our Guests" was gracefully toasted by Dr. WALTON BROWNE, LL.D., and happily responded to by Mr. A. H. NORWAY.

A most enjoyable programme was then closed by Sir MATTHEW NATHAN, in the most genial tones, voluntarily asking the company to drink the health of their Chairman.

The pleasures of the evening were greatly enhanced by an exceptionally fine selection of songs and music, which were interspersed with the toasts, and which had been arranged through the kindness of Dr. Graham Grant, London.

THE Keith gold medal of the Royal Society of Edinburgh has been awarded to Dr. Wheelton Hind, Consulting Medical Officer of the Union Infirmary, Stoke-on-Trent, and Surgeon to the North Stafford Infirmary and Eye Institute. His paper dealt with the Lamellibranch and Gasteropod fauna found in the Millstone Grit of Scotland. The Keith prize was founded in honour of John Napier, the inventor of logarithms, and is awarded biennially. Only on two previous occasions has it been awarded to anyone other than a mathematician or a physicist.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

The Home Office Vote.—Last week, when the vote for the Home Office came on in Committee of Supply, a very interesting discussion was opened by Sir Charles Dilke, who made a general criticism of the work of the department. He first complained of the need of more women inspectors, and pointed out that there had been some cessation of advance in this respect. While the work had enormously increased the strength had been one inspector below the limit, and for half a year there had been 16 instead of 17. After discussing the working of the Truck Acts, he said progress had been made as regards industrial diseases, except in the case of lead poisoning. Phosphorus necrosis had been lessened, but there had been an outbreak of one of the old cases, which made for a suspicion that all was not yet quite well. As regards lead in the tinning processes, there was a falling off in the figures last year—a matter for congratulation—but there had been a total increase again this year, and it was a very notable fact that while Dr. Whitelegge explained the falling off of cases by the fact of the official inquiry, Dr. Legge pointed out that it was too notable a fall to be due to scientific measures and improved ventilation. In the Potteries, in regard to China and earthenware, the cases had increased this year to 41 as against 24 in the six months of last year, and the deaths had also increased. These figures caused some doubt as to the working of the certifying surgeon and medical referee system. In these cases of industrial poisoning one wanted some appeal to a competent scientific or medical authority. He regarded with disfavour the policy of giving up the prohibition of the use of dangerous materials for ventilation, which he believed was ineffective. As regards the system of certifying surgeons and medical referees, he called attention to the fees, which were different in Ireland to what they were in England. They were five times as high in case of an action for compensation as in the same action taken under the dangerous trades provisions, so that a man had to pay in one case 5s. for a certificate which he could get for 1s. in the other case. He also referred to the abuses of young female labour in some districts, and the neglect to carry out the proper rest period in childbirth cases. Mr. Hills, who seconded Sir C. Dilke's amendment to reduce the vote, pointed out that the lead poisoning cases were about 400 in 1896, in 1900 they had fallen to 100, since 1901 the figures had been stationary, but they showed a substantial increase this year. The death-rate was about 1 in 1,000. Lord Henry Bentinck called attention to the excessive weights carried by young persons in some trades, and Mr. Gill spoke strongly of the evils caused by dust in cotton mills. In one instance of 130 men, whose average age was 45, only 32 were sound, and in another case of 136 men examined 78 per cent. suffered from lung trouble. Mr. Masterman, in his reply, said that in three years they had increased the number of lady inspectors from ten to eighteen, and he thought no definite promise had been made to go beyond that number. Still he admitted there ought to be more lady inspectors. With regard to lead poisoning, he rejoiced at the improvement shown in last year's report, showing the diminution in the Pottery district by nearly one-half, and he regretted deeply the bad return for the first six months of this year. The fact was that the trade had been more active, and this was reflected in the increase in the number of cases of lead poisoning. He did not agree with Sir Charles Dilke in his criticisms of the report of the Departmental Committee, and he thought it would be fatal to start another committee or initiate a rival policy at present. As regards the use of phosphorus, the use of yellow phosphorus had been stamped out under an International Convention, but they had no such convention as regards lead; if they had, the position would soon change. If within a reasonable time it became evident that they could not get rid of lead poisoning by special rules and self-inspection, he thought notice should be given to the masters that other action would be taken. In reference to certifying surgeons, he agreed that the position was not satisfactory, and action would probably be taken. Sooner or later a committee would have to be appointed to consider the working of the Compensation Act, and the question of certifying surgeons and medical referees would have to be included. As to the divergence of fees: The fee of 1s. was supplemented under the Factory Act of 1901 by an additional amount given by the Home Office, but the fee of 5s. under the Workmen's Compensation Act for a complete examination could not be supplemented. He did not feel much inclined to deplore the small fee paid for a thorough examination. What should be pressed for was not a reduction of the fee of 5s., but the power to supplement in one case as the other the fee paid to the doctor. As regards infantile mortality, they had called for special reports from medical officers of health. These reports were now being considered, and would, he hoped, lead to some definite guidance. He defended the action of the Home Office as regards the work of florists, and assured the member for Bolton that the dust in the carding rooms of cotton factories was admitted to be a serious problem, and no time would be lost in adopting better methods of prevention. Several other members raised other questions, and among them Sir William Collins called attention to the action of the Home Office as regards the Asylum Officers' Superannuation Act passed last year. It was the duty, under Clause 1, of the Visiting Committee to classify the established officers into two classes for the purposes of pensions. He complained that a circular issued from the Home Office prejudiced the position of certain officers, and he contended that the Act never meant the Home Office to advise on the question of classification. Mr. Masterman assured the Committee that the Home Office had consistently taken up the position that it had no jurisdiction in this matter, and if a circular such as that described had been sent out it was a misleading one. Sir Charles Dilke then withdrew his amendment, and the Committee went on to discuss the expenditure on prisons.

Provision of Meals for School Children.—Mr. James Parker introduced last week a bill to amend the Education (Provision of Meals) Act, 1906, by making it legal for local authorities to provide meals for children attending elementary schools during the period of vacation as well as during the time of attendance at school. Several local authorities in the constituency represented by Mr. Parker had been surcharged for doing so by the district auditor, and he wanted to prevent this in future, as he argued it was necessary to feed necessitous or ill-fed children during the holiday time in order to maintain their health and prevent physical degeneracy. Mr. Ashley criticized the proposal, but the bill was brought in and read a first time It is backed by Mr. Parker, Mr. Barnes, Mr. Clynes, Mr. George Roberts, Mr. Chas. Duncan, Mr. Tyson Wilson, Mr. Shackleton, and Mr. William Thorne.

Vivisection Experiments.—Mr. Greenwood asked the Secretary of State for the Home Department whether his attention had been called to an account of certain operations of oöphorectomy performed by Mr. S. G. Shattock upon two rabbits on October 12th and November 5th, 1908, respectively, and published in the Proceedings of the Royal Society of Medicine, vol. iii, No. 2, issued in December last, after which operations the animals were allowed to recover from the effects of the anaesthetic administered, and were kept alive for observation, as part of the experiments, until April 10th and October 11th, 1909, respectively; and whether Mr. Shattock held a certificate authorizing these experiments at the time when he performed them. The Under Secretary said that Mr. Greenwood

was no doubt aware that Mr. Shattock was the licensee referred to in the Home Secretary's reply of July 5th. The facts were as stated in the question, and the renewal of the licence was refused in consequence. The Home Secretary regretted that, after what he had said in his previous reply, the hon. member should have thought it necessary to bring forward the name of the licensee.

Malta Fever and its Cause.—There was quite a discussion on this subject recently by way of question and answer begun by Mr. Chancellor, who asked the Under Secretary of State for the Colonies if he would instruct the new Commission appointed for the purpose of investigating the origin of Mediterranean fever to reconsider the question from a sanitary and statistical standpoint in relation to the military, naval, and civil populations, respectively, especial regard being paid to the sudden decline of the disease in the army six months prior to the prohibition of goat's milk, the gradual decline in the navy since the dredging operations in the Grand Harbour were commenced and the stoppage of sewage deposit therein, the uniformly lower rate of attack among the civil population compared with the military and naval populations, and the greatly decreased incidence among the civil population in those portions of the island of Malta where extensive sanitary improvements had been recently effected; would he see his way to appoint upon that Commission at least one medical gentleman from this country holding broad sanitary views who might assist the Commission in determining factors other than those of a bacteriological nature; and would he be prepared to add the name of Dr. P. P. Agius, B.A., M.D., Ph.D., of Malta, in view of his scientific attainments, to those of the members of the Commission. Colonel Seely replied that it was not proposed that the new Commission should concern itself with any other question than the manner in which goats became infected, which was the only matter in connexion with the causation of Malta fever which remained obscure. The elected members of the Council of Government were only prepared to concur in the appointment of the committee on the condition that this question was made the special object of their inquiry. The Secretary of State had agreed to the proposal of the elected members that they should be allowed to nominate an independent local practitioner to be a member of the Commission. It was not yet known whom they would choose. Mr. Chancellor asked whether the inquiry would consist of experiments on animals for the purpose of curing a disease from which they did not suffer. Colonel Seely answered that that rather prejudged the question. Of course, the inquiry would not be confined to experiments on animals. The question was how far and how they became affected, and that was a very proper subject of inquiry. Sir J. Randles then suggested that insanitary conditions had much to do with the prevalence of this fever; and Colonel Seely said it was rather difficult to discuss this highly technical matter by means of question and answer. Of course, every sanitary improvement tended to reduce disease. Speaking for himself, having inquired into the matter as much as he could, he thought there was no doubt whatever that goat's milk was the principle cause. Mr. Greenwood then asked if a perfectly adequate case had not been made out against any connexion between goat's milk and Malta fever, and Colonel Seely said that was a matter of opinion. He thought—and he could only speak for himself—that the reply he gave some days ago (see British Medical Journal of June 18th), showing the enormous reduction in Malta fever since measures had been taken on the assumption that it was caused by goat's milk, was a conclusive proof. Lord C. Beresford asked was it not the case that after goat's milk was entirely stopped in the Naval Hospital, the entries for fever were reduced from 30 to 1 per month, and eventually to none. Colonel Seely said he could not charge his memory with the precise facts, but what the noble lord said represented more or less the facts. The figures with regard to the army were even more startling.

Tuberculosis (Medical Research Work).—Mr. Lynch asked the President of the Board of Education whether, in making grants to medical schools this year, he would pay special attention to that branch of medical research which was directed to combating tuberculosis; and whether, in view of the far-reaching importance of the original research which had been carried out at St. Mary's Hospital bacteriological department, he would remove the financial embarrassment which threatened to impede the development of that work. The President replied that the Board's grants to such institutions as medical schools were made in respect of organized courses of instruction and not in respect of particular subjects or departments.

Scientific Research.—Mr. Lynch asked the Prime Minister whether, in view of the extension of higher education in neighbouring countries of recent years, and also in view of the vastness of the industrial results which have had their origin in scientific research, he would consider what means could be taken to give a stimulus to scientific research in this country; and whether, in particular, he would raise the office of the President of the Board of Education to the level of importance of that of any other great Department of State. The Prime Minister answered that the Government always had in view the objects advocated by the hon. member. He did not see how they would be promoted by the suggestion made in the second part of his question.

Cottage Nursing.—In reply to Mr. E. Jardine, who asked that an order should be issued empowering boards of guardians to contribute towards the cost of cottage nursing, Mr. Burns stated last week that boards of guardians were already empowered under Section 10 of the Poor Law Act, 1879, with the consent of the Local Government Board, to subscribe towards associations for providing nurses, and the Board had sanctioned many subscriptions under this enactment. In the recent circular on outdoor relief he drew attention to the importance to guardians of being in a position to supply nurses in case of need, and expressed the opinion that nurses were generally best provided through the agency of local nursing associations. At the same time, he intimated willingness to continue to sanction subscriptions for this purpose.

Small-Pox Epidemic (Bombay).—Sir Maurice Levy asked the Under Secretary of State for India whether an epidemic of small-pox had recently occurred in Bombay; whether records were kept as to the vaccinal condition of the cases in hospitals; and, if so, whether the Government had any information as to the causes of the severity of the outbreak. Mr. Montagu answered that small-pox in an epidemic form was prevalent in Bombay City from the middle of February last to the middle of May. The Secretary of State understood that the practice in Indian hospitals was to keep a record of the vaccinal condition of every patient suffering from small-pox, but he had no information as to the data thus obtained in the recent epidemic in Bombay or as to the light thereby thrown on the causes of the outbreak. According to statements in the Bombay newspapers, the severity of the epidemic was largely due to cases imported by pilgrim ships returning from Jeddah and other ports in the Red Sea.

Mental Diseases (International Committee).—Sir William Collins asked the Secretary of State for Foreign Affairs whether it was proposed again to send official representatives from Great Britain to the meeting of the International Committee on the Causes and Prophylaxis of Mental Diseases to be held this year, at Berlin, in October; and whether the Italian

Government, with whom the formation of the Committee originated, had approached His Majesty's Government in the matter or had propounded any scheme for the future working of the International Committee. Sir E. Grey replied that the answer to the second part of the question was in the negative, and the question of the participation of His Majesty's Government in the meetings of the Committee had, therefore, not yet been considered.

Children Boarded Out (Deaths).—Mr. Staveley Hill asked the President of the Local Government Board whether, in the case of the deaths of children boarded out under the provisions of the Within Union Orders of May, 1899, and December 31st, 1909, and the Beyond Union Order of 1905, the funeral expenses of such children fell on the foster-parents or should be discharged by the guardians. Mr. Burns replied that the prescribed form of agreement between boards of guardians and boarding-out committees contained an undertaking on the part of the guardians to pay the funeral expenses in the case of the death of a child who was boarded out.

Sanatoriums for Consumptives.—Mr. Edmund Harvey asked the President of the Local Government Board whether he was prepared favourably to consider a scheme for making use of some of the vacant hospital accommodation under the control of the Metropolitan Asylums Board for the provision of sanatoriums for consumptives, if the Metropolitan Asylums Board would submit such a scheme. Mr. Burns replied that the whole question of utilizing the spare accommodation in the institutions under the control of the managers of the Metropolitan Asylums District was under consideration. He might say, however, that the question of using such accommodation for consumptive patients was one involving special difficulties.

Grants to Scottish Universities.—Last week, in answer to Mr. Duncan Millar, the Chancellor of the Exchequer said that he was not prepared to propose any additional grants to the Scottish universities during the current financial year beyond the sum of £21,000 included in the supplementary estimate issued on the 13th instant; but as regards the future he had expressed willingness to sanction, subject to certain conditions, a further addition to the existing grants provided that suitable schemes of expenditure could be submitted by the authorities of the several institutions concerned. For the current financial year the total grants in aid to Scottish universities and their allocation would be:

	Grant under Universities (Scotland) Act, 1889.	Grant under Education and Local Taxation Account (Scotland) Act, 1892.†	Grant from Votes, Class IV., Subhead I.	Supplementary Estimate.	Total.
	£	£	£	£	£
St. Andrews	6,300	4,500	—	4,000*	14,800
Dundee University College	—	—	1,000	—	1,000
Glasgow	12,180	8,700	—	6,250	27,130
Aberdeen	8,400	6,000	—	4,500	18,900
Edinburgh	15,120	10,800	—	6,250	32,170
	42,000	30,000	1,000	21,000	94,000

* Includes £1,000 for Dundee University College.
† Payable from the Local Taxation (Scotland) Account.

Payment would be made before March 31st next, but the date would depend upon the receipt of schemes from the universities for the expenditure of the additional sums allocated to them.

Anthrax (Disinfection of Ships).—On Monday Sir E. Strachey informed Mr. Orde Powlett that the question of the disinfection of ships and trucks used for the purpose of conveying hides and bones to this country, and subsequently used for the conveyance of feeding stuffs, was engaging the attention of the Board of Agriculture. A notice on the subject was issued to shipowners in 1908, of which many thousands of copies had since been distributed. The Board were considering the advisability of making further representations on the subject to those concerned.

Motor Spirit Duty and the Medical Profession.—The Chancellor of the Exchequer stated on Monday, in reply to Mr. Courthope, that the Commissioner of Customs and Excise would be prepared, for the present, to consider claims for repayment of petrol duty in the case of medical men owning motors for professional purposes.

Naval Sick Berth Staff.—Lord Charles Beresford asked the First Lord of the Admiralty if there was a serious shortage of numbers in the sick berth staff of the Royal Navy; whether the mobilization of the Fleet for the manœuvres had thrown a heavy stress upon the organization, owing to the nursing staffs in naval hospitals being seriously undermanned; how many men were enrolled in the Royal Naval Sick Berth Reserve; whether any of these Reserve men had ever been to sea; and whether he could see his way to forming a Reserve of men who had served in the Royal Navy as sick berth stewards and left on completion of their first period or on taking their pensions. Mr. McKenna said that the reply to the first part of the question was in the negative. The numbers voted were being worked to without difficulty. With regard to the second part, he was not aware of any particular stress beyond what must ordinarily occur when ships were completed for manœuvres. The reply to the third part was 731 by latest returns. As to the fourth part of the question, the Royal Naval Auxiliary Sick Berth Reserve was composed of men of the St. John Ambulance Brigade. Two hundred and seventy-four men had been through a "man-of-war" course of seven days on board a ship, 155 through a seven-days' course at a naval hospital. It was not considered necessary to incur the expense involved in the proposal made in the last part of the question.

Medical Degrees and Diplomas.—Mr. Lynch asked the Secretary of State for the Home Department whether his attention had been called to the disparity in the value of medical degrees and diplomas which entitled their possessors to practise medicine in this country; and whether he would take steps, by legislation or otherwise, towards establishing a fair standard of examination qualifying for medical practice. Mr. Churchill replied that it was the statutory duty of the General Council of Medical Education to inspect and report on all qualifying examinations, and if it appeared to them that the standard of proficiency required at the qualifying examinations held by any of the licensing bodies was insufficient, to make a representation to that effect to the Privy Council, who were empowered, if they thought fit, after due inquiry, to order the withdrawal from medical authorities of the right to hold qualifying examinations.

Death at Brompton Hospital (Mrs. Keane).—Mr. Pointer asked the Secretary of State for the Home Department if his attention had been called to the circumstances attending the death of Mrs. Keane in the Brompton Hospital, London, on June 26th last, whereby knowledge of her death was kept from her husband for twenty-eight hours; if he was aware that a necropsy was performed without the husband's knowledge and consent; and whether he would order a public inquiry. Mr. Churchill replied that his attention had been drawn to this case, and he had made inquiry of the hospital authorities. They informed him that Mrs. Keane died early on the morning of

ne 26th. and a telegram was sent to her husband Mexborough the same morning; but. the day being nday, it was not delivered to him till early on onday. They had already written to him expressing treme regret that a *post-mortem* examination was ld under the mistaken belief that he had given his nsent, it being their rule not to make such examina- ns without the consent of the relatives. He did not ink that any further action was called for.

The Midwives (No. 2) Bill.—On Tuesday there was ite an animated debate in the Lords when the mmittee stage of this bill was taken. On Clause 2 onstitution of Central Board) Lord Ampthill moved amend Subsection C by giving the Institute of Mid- ves and the Royal British Nurses' Association power elect as representatives other persons than mid- ves as laid down in the bill. He regarded the ion to appoint a medical practitioner instead of a dwife as of the greatest advantage to those bodies. e amendment was accepted as regards the Midwives' titute, but it was opposed as regards the British rses' Association: but on a division 32 voted for the endment, and only 26 against it. On Clause 13, ich gives power to contribute to the training midwives. Lord Ampthill sought to add power make grants to aid in the maintenance of lwives. This was opposed by Lord Beauchamp, l negatived without a division. On Clause 17 there s a spirited debate, as Lord Ampthill proposed to stitute the local supervising authority of the nty or county borough for the board of rdians. He wished in the interests of the r to separate the administration of the Act m all connexion with the Poor Law. Lord Shef- d sharply criticized this attack on the Poor Law, described it as socialistic and expensive. He roved of the deterrent effect of the provisions of bill. and objected to the amendment as a breach privilege, inasmuch as it shifted the burden of ense from one authority to another. Lord Lytton ported the amendment, which was opposed by d Beauchamp and Lord Donoughmore, and finally ated without a division. The bill then passed ugh the Committee stage, and was ordered to be orted.

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validity Insurance.—On Monday Sir Henry Kimber ed the Chancellor of the Exchequer whether the posals of the Government for invalidity insurance uded any provision for obtaining necessary medical ndance during invalidity; whether any recognized y representative of the medical profession had been sulted as to the proposals of the Government, and ther he would be prepared before formulating the ernment's proposals for invalidity insurance to ive a deputation or representations from such a y upon the subject. The Chancellor replied: I e already stated that I do not think that it is rable at this juncture to lay before the House her particulars with reference to the Government's posal; but I can assure the hon. baronet that le opportunity will be given to interested parties tate their views before the proposals are laid before House.

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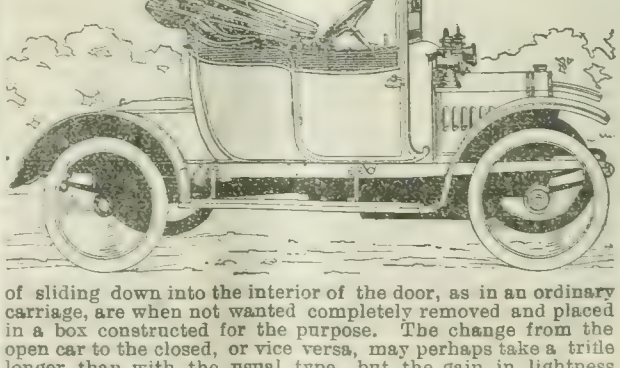
ouse of Commons (Ventilation of Members' Rooms).—Mr. er asked the First Commissioner of Works ether he would take steps to provide a better em of ventilating the reading room and tea room n the one prevailing at present, which, by the rush vind through the perforations, caused much incon- ience to members. Mr. Harcourt replied that he been trying experiments on members—with a y to their greater comfort. He had lately reduced at the hon. member called the rush of wind, and waiting to see if he appreciated the decrease of tilation.

LITERARY NOTES.

THE opening pages of the June number of *L'Hygiène* should be of especial interest to its English readers. In his article on "*L'Hygiène et la Vie*," Dr. Maurice de Fleury pays a very sincere and graceful compliment to the English system of public health administration and the prompt and efficacious methods of the public health officials to prevent the spread of infection. Dr. Fleury speaks from experience, for he has been in England and has seen the public health officer at work. Three years ago, he tells us, he witnessed the prevention of an outbreak of scarlet fever in an English seaside town by the prompt removal and isolation of the first case; and he is full of admiration for the calmness and promptitude with which the whole business was carried out, from the arrival of the medical officer of health within an hour of the diagnosis to the lines upon which the local fever hospital was run. Dr. de Fleury seems inclined to look upon such methods as characteristically English and therefore somewhat difficult to introduce into France, where the complete isolation from family and friends would be repugnant to the majority of his countrymen. This cordial and unstinted praise, so generously accorded, should be doubly gratifying to the English reader when it comes from one as well qualified to pronounce judgement as Dr. de Fleury. It is a real pleasure to find the name of Georges Vicaire included in this month's list of contributors. M. Vicaire has taken as his hero Grimod de la Reynière; and, needless to say, he has sketched the life of that famous epicure with all his usual charm. Other contributors include Dr. Carron de la Carrière, who has written on "La Médication Hydrominérale et les Eaux Minérales Françaises"; M. Paul Strauss, who discusses the hygiene of infant life; H. Valleé, Dr. J. Chompret, and Dr. Marcel Labbé, whose short dissertation on aesthetic cure of obesity should be of interest to many who now vainly echo the wish uttered by Hamlet. There is also an interesting account of the career of Robert Koch, whose portrait forms the frontispiece of the number.

MOTOR CARS FOR MEDICAL MEN.

THE De Dion Company have introduced a type of body which is in certain respects novel and may be of interest to our readers. It is a great comfort in bad weather to have full protection, whilst at the same time in fine weather an open car is much to be preferred. Although there are many forms of body upon the market which meet these requirements, they are open to the objection that they are heavy, and every motorist of experience is aware that added weight means additional cost in the heaviest item of expenditure—namely, the wear of tyres; consequently, many content themselves with the incomplete protection afforded by a hood and wind screen. The De Dion Company have devised a two-seated body which is but little heavier than an open tonneau with hood, but which when closed affords complete enclosure of the driving seat and that beside it, whilst it opens out fully. This was effected by having a special form of hood and high side doors and windows, which latter, instead



of sliding down into the interior of the door, as in an ordinary carriage, are when not wanted completely removed and placed in a box constructed for the purpose. The change from the open car to the closed, or vice versa, may perhaps take a trifle longer than with the usual type, but the gain in lightness enables the new form to be used on cars of low power, to which the ordinary heavy landaulette body is hardly appropriate. Whilst speaking of De Dion cars it may be mentioned that the Marquis De Dion has for some time been experimenting with the sliding sleeve type of valves (such as the "silent Knight" type), but so far does not consider them to have such advantages as would lead him to adopt them. At present only the Daimler and certain types of Minerva cars have adopted them as a standard form.

British Medical Journal.

SATURDAY, JULY 30TH, 1910.

THE PRESIDENT'S ADDRESS.

IN Mr. Butlin the Association is fortunate in having a President of quite exceptional fitness for the post. Not only is he a man whose professional distinction adds dignity to the high office to which he has been elected, but he is one who brings to the councils of the important body over which he presides a judicial temper of mind and a statesmanlike breadth of view in practical affairs that must be of the greatest value at the present critical time in the history of its development. He has in various capacities taken a very active part in the work of the Association; in particular, he discharged the responsible duties of Treasurer with such conspicuous success that he was re-elected to a second term of office. When not on the active list of the officers of the Association he has been a close and sympathetic onlooker, and proverbially onlookers see more of the game than those in the thick of the contest. No man has a more intimate knowledge of the machinery of the Association, or a larger experience of its working. No man has taken a keener interest in its efficiency and prosperity, or shown a greater zeal in furthering the objects for which it was founded. In every sphere of its manifold activities Mr. Butlin's influence has been felt, and that influence has always been used in the most unselfish spirit for the increase of the usefulness of the Association and for the promotion of reforms required to give the profession as a whole the place of power and dignity it should have in the State, and to help the individual practitioner in his struggles against official tyranny and private injustice. In honouring Mr. Butlin the Association has honoured itself, and has recognized the great services which he has rendered to it and to the profession.

Mr. Butlin's Presidential Address, which is printed at p. 241, has a peculiar interest, for it is a general review of the history of the Association, which is especially appropriate as coming from a man who can say of many of the phases in that history within the last thirty years, *Quarum pars magna fui*. His story of what the Association has accomplished for the medical profession is made all the more impressive by its moderation and impartiality. The story is told with simplicity and directness, and in places with an unconventional frankness which clothes the dry bones of the narrative with flesh. We might well leave it to speak for itself, but we may be allowed to call special attention to a few points, for the story is an old one, and probably almost unknown to most of our readers. The poet truly says that the good men do "is oft interrèd with their bones." It is well, therefore, to be reminded of the past, if only that justice may be done to the memory of the men who built up the Association in the face of great difficulties, and who raised it to the position of a power which statesmen who undertook to handle medical matters had to reckon with, and which made possible the larger developments of usefulness th a have followed and are still to come.

Dealing with the scientific work of the annual meetings, Mr. Butlin recalls addresses which mark epochs in the advance of surgery. He illuminates these allusions with pen sketches of the orators which add piquancy to his narrative. He quotes the memorable pronouncement of Lister at the Plymouth meeting in 1871, in which the great surgeon, then comparatively unknown, said that "however much the means of carrying out the antiseptic principles may come to vary from those we now use, the principle itself will certainly be ultimately recognized as the most important of all those that guide the practice." We commend this utterance to the attention of those who persistently seek to rob Lord Lister of the credit due to him for the unexampled advance in surgery with which his name is associated by laying stress on the changes in detail which he himself so clearly foresaw some forty years ago. The gradual acceptance of the Listerian principle is briefly alluded to, and reference, in which the note of personal affection can be detected, is also made to Sir James Paget's address on pathology at Cambridge, where he spoke in a most suggestive manner of the consequences of injury and disease in the structures of plants.

Passing to that part of the work of the Association which consists in the promotion of reforms intended for the benefit of the public and the profession, Mr. Butlin points out that from the very first this object was steadily kept in view. In the first half-dozen years of its existence the Association had appointed committees to consider vaccination, the condition of parochial registers, Poor Law medical relief, the medical relief of persons who are poor but not paupers, the suppression of quackery, and other matters. The subjects cover a wide field of activity directed towards the furtherance of the welfare of the public and the interests of the medical profession. Although the Association was then a small and obscure body, such was its zeal and energy that it was able to influence legislation. One instance of its successful efforts is to be found in the passage of the Vaccination Act in 1840. Very soon after its foundation the Association appointed a committee to consider the question of Poor Law medical relief. It is interesting to note how similar were the conditions with which the Association was confronted in 1835 to those against which it is struggling in 1910. The committee called attention to the "vast amount of gratuitous medical assistance that has at all times been afforded to the needy by all grades of the profession throughout the country," and pointed out that this had been productive at least of one very injurious effect: "It has induced the unthinking portion of the public to conclude that there is some sort of conventional, if not legal, obligation on the medical profession to attend without reward to the ailments of the poor." That this notion still prevails not only among the unthinking portion of the public, but among persons who should know better, may be gathered from reports of inquests, letters from correspondents and editorial comments which appear at frequent intervals in the public press and in the columns of the JOURNAL. Indeed, the doctor is generally looked upon as one whose gratuitous services may be claimed as a matter of right on behalf of any sick person in whom one or other of the individuals or bodies whose notion of philanthropy

is that somebody else should do something for the relief of distress may happen to be interested. The abuses of medical relief are still with us in as acute a form as they were with our forerunners seventy-five years ago. The Association has, from time to time, endeavoured to get these abuses remedied, with some amount of success. Now, as Mr. Butlin says, the new organization of the Association has given it a more effective equipment for the achievement of these objects and for carrying on more strenuously and with greater hope of success the struggle for the redress of the grievances from which the profession has so long suffered.

Perhaps the most interesting part of the Presidential Address is the recital of the long struggle for medical reform in which the Association took a leading part. But for it, indeed, it is too probable that the movement would have come to nothing. At the annual meeting in 1837 the Association appointed a committee "to watch over the interests of the profession at large." That somewhat nebulous instruction soon took definite shape in a series of organized efforts to bring pressure to bear on the Government to reduce the anarchy that had previously prevailed in the profession into order by establishing a uniform standard of qualification and a register that should give a medical practitioner the stamp of legal recognition. These proposals were, as is usual, made the battledore and shuttlecock of political parties. In 1851, weary with hope deferred, the Association took the course of drafting a bill of its own. But it was not till 1858 that the Medical Act was placed on the Statute Book. By this measure the General Medical Council was established, and the influence of the Association in securing this reform was acknowledged by the appointment of Sir Charles Hastings, the founder of the Association, as a member of the Council. This was, however, only a first step, and many years of struggle were required before the further advance was made. In 1885, again owing mainly to the persevering efforts of the Association, a new Act was passed which contained the very important provision that the profession should be directly represented on the General Medical Council, and making the conditions entitling a man to admission to the *Medical Register* more stringent than they had previously been. Thus, after nearly half a century of strenuous work for reform, the Association had gained a hard won victory, of which, we think all will agree with the President, it had every reason to be proud. We can only refer in the briefest way to the energy and perseverance with which the Association laboured for the redress of the just grievances of the officers of the Naval and Military Medical Services.

Much as has been effected, however, far more remains to be done. To carry to its full completion the work which has been done by those who have gone before us is the task the Association has now, with far better machinery, undertaken. The confidence expressed by the President in the capacity of the men who are now doing the work to achieve success in their difficult undertaking will be shared by all who know their ability, their determination, and the self-sacrifice which they devote to the work.

One moral of Mr. Butlin's address must not, however, be lost sight of. Reform in the realm of medicine, as elsewhere, cannot be effected by the waving of a magician's wand, but by hard unremitting and self-sacrificing labour. To those who may ask, What has the Association done for the profession? we may point to the story unfolded in Mr. Butlin's address. Those, on the other hand, who may chafe at the slowness with which the goal of our aspirations is reached, we would remind that progress is like the tide: there are times of slack water and times when it even may seem here and there to recede. But gradually it comes in stronger and faster. We have got to a point when we may say, in the famous words of Gladstone, that the flowing tide is with us.

> For while the tired waves, vainly breaking,
> Seem here no painful inch to gain,
> Far back, through creeks and inlets making,
> Come silent, flooding in, the main.

THE ADDRESS IN MEDICINE.

As year follows year, the various orators at the successive meetings of the Association are necessarily faced with increasing difficulties in their choice of a subject which shall possess not only a general interest for the profession of Medicine and even for the general public, but also—and more imperatively—a direct and practical application which may be expected to command the intelligent appreciation of the individual practitioner and stimulate him to a greater enthusiasm in his work.

In taking Etiology for the text of this year's oration, Dr. Mitchell Bruce may be congratulated upon the felicity of his selection no less than upon the lucid and comprehensive discourse—one with which those who heard as well as those who read his wise reflections and practical suggestions have reason to be well satisfied.

The opening references made by Dr. Mitchell Bruce to the advances which have taken place in Medicine since the Association last met in London fifteen years ago recall vividly the vast strides that have been made in many directions, most notably in bacteriology, which is now established as an integral and vital department of the healing art. By its aid a great light has been shed upon the cause and development of many disorders; it has also brought others within the scope of curative and preventive methods of management; while so generally recognized have many of its results become that instances are familiar to us all in which diagnosis is not regarded as completely trustworthy until it is clinched by a confirmatory report from the laboratory. But Dr. Mitchell Bruce very opportunely warns us against the risk of regarding bacteriological investigations as instruments in the elucidation of disease problems which can be handled by any and every practitioner. Such minute researches are, as a rule, too complex and delicate to be reliably conducted except in a laboratory and at the hands of experts who have been specially educated to interpret accurately the results of technical observations as well as their clinical application. He does not regard the bacteriologist as the competitor of the physician, but rather as a complement whose existence is a product of the development of science, and whose assistance clinical medicine can no longer dispense with. No instance could be quoted in which specialization is so justified, and none in which collaboration between physician or surgeon and specialist is so essential. It requires, indeed, no great gift of prophecy to foretell the creation of a custom which, in certain obscure and difficult cases, will establish the bacteriologist, not only as a laboratory

expert, to whom specimens are submitted for an abstract opinion, but as a clinical colleague who will become, conjointly with physician or surgeon, as the case may be, responsible for the bedside manangement of the patient. Such inroads in the domain of Medicine are inevitable, and in the progress of scientific advance must be regarded as evidence of a wise adaptation of practice to modern necessities.

Furthermore, it is not in the field of bacteriology alone that part of the daily work of the clinical physician is being borne by newcomers; Surgery too is encroaching upon his preserves and taking out of his hands an ever-increasing number of cases which the great work of Pasteur, Lister, Simpson, and others has enabled the surgeon to deal with effectively and with ever-increasing safety. In the name of Medicine Dr. Mitchell Bruce congratulates Surgery on the brilliant progress of recent years, and points out that though so many surgical triumphs have been won at the expense of Medicine, the general effect has been to increase the sum total of knowledge and to further the welfare of humanity.

While this is true, difficulties have arisen, and will further arise, in defining the limits of the surgeon on the one hand and of the physician on the other. If the surgeon continues to absorb the work of the physician at the present rate, it is possible that, in self-defence, the day will come when the physician may be tempted to undertake many of his own operations. It seems not unreasonable to advocate a closer union between the two leading branches of the profession in the management of cases which require an operation for the recovery of health. The diminution in the field of the physician's practice is principally due to the steady increase of surgical operations. Rather than perish, he may some day cultivate surgery as well as medicine, and this, in our opinion, would be inimical to the best interests of the profession as well as to those of the sick public.

To vaccine-therapy, which is yet another encroachment on the territory of Medicine, Dr. Mitchell Bruce refers in that spirit of cautious reserve which is known to characterize him as a clinician of the conservative and safe type. That there is a promising future for this most recent branch of therapeutics may be frankly admitted, but there is a risk of allowing enthusiasm to outrun discretion in the claims which its advocates urge in its favour. And here again it may be pointed out that "the opsonic index man" is a product of modern medicine, to be regarded as a specialist who cannot replace, nor be replaced by, the physician, but who is destined, in the fulfilment of his mission, to be the co-worker who will bring to bear on many difficult problems of diagnosis and treatment, these special inoculative measures which are calculated to stimulate phagocytosis and thereby accentuate the resisting powers of the tissues, but which are capable of efficient exhibition only by those competent to estimate results in the light of special training.

The whole tenor of the address is, in fact, a judicial and judicious plea for the conservation of energy, and for such prudent amalgamation of our increasing armoury against disease as shall enable practitioners, by wise co-operation, to fight successfully the common enemy, rather than to give him the advantage that must always accrue when the other side is weakened by internecine conflict, whether of jealousy or self-interest.

In the combat against disease the orator tells us that there are three important factors to be reckoned with: The extrinsic cause, whatever it be, without which the illness would not have occurred; the intrinsic cause, upon which depends the patient's powers of resistance; and the incidental circumstances which either favour the essential influence or by lessening the intrinsic powers of resistance, contribute to the activity of the disease process.

Stress is laid upon the dominant position which Causation has come to occupy in the evolution of Medicine, and it is insisted upon that the most important latter-day achievements have been recorded in the field of etiology. The discovery of micro-organisms hitherto unknown; the recognition of the media by which these are brought into relation with man; the power of estimating the effects of infective processes on the various tissues and fluids of the body, are cited as illustrative examples of progress in etiological science.

The incidental circumstances by which etiology is influenced gives Dr. Mitchell Bruce his opportunity of bearing testimony to the important position which the family practitioner still maintains in the ranks of those whose life-work is devoted to the conquest of disease. It is not very unusual to hear the general practitioner slightingly referred to as one who has been driven by the circumstances of fate into a professional position which demands so much knowledge of many things that it is almost impossible for him to be up to date and thoroughly well informed on any one subject. It is beyond human power for the man in general practice to be a specialist in every department of his profession, but his outlook on disease is, in many respects, more comprehensive than that of the man whose whole life is devoted to perfecting himself in the technique and minutiae of one subject to which he gives all his energy and time. Both types of workers are necessary in these days, but it is becoming more and more fashionable for the public to seek the opinion of so-called specialists, no matter what the ailment may be; they require one man for the liver another for the stomach, a third for the lungs, and indeed a man for every organ and almost for every tissue of the body. To balance this extravagance of specialism, it is well the public should be reminded that human organs are not parcelled out into so many pigeon-holes to be dealt with individually, but that they each form an integral part of a great and complex mechanism, any portion of which going wrong necessarily inevitably throws the whole machinery out of gearing. The general practitioner possesses powers of perspective in disease entirely denied to the specialist, and he must, in the nature of things and despite all criticism to the contrary, remain not only the most useful and encyclopaedic working unit of the profession, but also the member of it to whom, at least in the first instance, the public, in their own interest, should apply for relief to their ailments. The opportunities which he has of seeing his patients repeatedly for minor disorders as well as for serious illnesses; the intimate knowledge he acquires of their idiosyncrasies; his acquaintance with their family history, habits of life, and social circumstances; his experience of the disease tendencies to which they have been born; and a hundred other details which are acquired only after long and confidential intercourse with his clients, make the general practitioner, of all medical men, the most important. It is he who is called upon to lay the basis of diagnosis, prognosis, and treatment, and to him

should be left the suggestion for special advice when, in his judgement, the interests of his patient will be well served by collaboration with one who is an authority on the particular disorder from which he chances to be suffering. We entirely agree with Dr. Mitchell Bruce when he says that "general practice is the most fruitful and promising field for the study of the natural history of disease in the living body."

This year's Address in Medicine is full of stimulating, thoughtful, and suggestive ideas on etiology as an important scientific factor in the growth and development of disease; on the essential need for its more careful and searching study: and on the opportunities such investigations afford to us all, but especially to those engaged in general practice, to extend the bounds of knowledge and increase the stock of human wisdom. If these considerations bring home to the general practitioner the important part that he plays, and should continue to play, in the great search for truth in which all medical men are engaged, the profession will owe a lasting debt of gratitude to the gifted author, and the general public will not withhold its meed of praise from one who, discerning the signs of the times, has pointed out one of the main roads along which we must travel if we are to extract from Nature those secrets which are concerned with disease in its preventive and curative, as well as in its etiological, aspects.

THE ADDRESS IN SURGERY.

In his study of malignant disease, which forms the subject of the Address in Surgery, we are glad to find that Mr. Barling takes a hopeful outlook. Though the main problem of cancer is still unsolved, and the methods of attacking it are necessarily slow and very laborious, we are, he considers, gaining ground. Not long ago it was commonly held that cancer was a systemic disease, the tumour being merely the local manifestation, and its removal nothing more than palliative. Owing to this conception, operations for removal of the growth were in most cases totally inadequate, and the speedy reappearance of malignant nodules was thought to substantiate the belief that cancer was due to a blood dyscrasia. Fortunately we adopt more hopeful and more radical methods nowadays, and by contrasting the ideas prevalent at that time with our present status of knowledge one can realize that we have indeed made substantial progress.

Turning to experimental investigations on the transplantation of mouse carcinoma, the lecturer attaches particular importance to the fact that the transplanted tumour depends for its nutrition and growth on the connective tissue cells of its host, which provide for it a new stroma and a new vascular system. "Thus we learn that experimental carcinoma is a parasite, the essential element the epithelium living its own life, and using its host as a provider of nutrition." The human subject provides, in chorion-epithelioma, a remarkably close parallel to this parasitism. Chorionic epithelium derived from the tissues of the fertilized ovum transplants itself into and grows into the tissues of the mother—a being of a preceding generation. And in the ordinary metastases of malignant tumours we have again a process closely resembling experimental transference. Particles of the primary growth are swept into the lymph or blood stream and thereby carried to distant parts, where they produce metastases which are exact facsimiles of the original tumour.

Experimental research has also been useful in increasing our knowledge of the action of radium upon malignant tissue. If a portion of mouse cancer be exposed to the action of radium for a period insufficient to produce any structural changes in it, it is rendered incapable of development when transplanted into other mice: and when a tumour has been successfully established in a mouse, exposure to radium sometimes, but not always, causes the growth to disappear. In such cases, when the tumour is studied in the retrogressive stage, the most noticeable change is an active proliferation of the connective tissues at the margin, and an invasion of the tumour parenchyma by young fibroblasts, which, as they complete their development, "contract on, strangle, and destroy the epithelial cells they embrace." In this connexion Mr. Barling states that experimental observations made for him by Mr. Percival Mills show that somewhat similar changes may be induced by radium in the liver of a healthy mouse. The liver cells undergo slight changes, from which they soon recover, but the connective tissue round the vessels and the endothelium of the vessels show marked activity and proliferation, which remain long after the parenchymatous cells have returned to their normal condition.

Passing on to the consideration of cancer in the human subject, Mr. Barling points out that we have a struggle between the tissues of the host and the parasitic cancer, and that the resisting powers of the former possess an importance which is not always clearly recognized. Though the host generally succumbs in the end, the disease is a real struggle, and in exceptional cases the resistance may be completely effective. Spontaneous cure of cancer is rare, but it has been well established that it does occur. And in the ordinary cases, where the cancerous tissue ultimately triumphs, a study of the invasive process along the lines of the lymphatics shows that there is a resistive reaction. Fibrous tissue is produced, contraction follows, and the cancerous epithelium is strangled, though, unfortunately, this process of repair does not keep pace with the invasive processes which are going on in other parts of the field. There is also well-marked evidence of resistance offered by the blood vessels. This is best seen in the lungs, where minute emboli of cancerous material may be found in the vascular system. A reaction is set up; young connective tissue develops from the intima, surrounds the invading material, penetrates it, contracts upon it, and finally destroys it. This destruction of cancer emboli, Mr. Barling maintains, "is not a mere accident, not an occasional happening, but a frequent occurrence, multitudes of metastases being thus cut short and prevented." Strong clinical confirmation of this view is afforded by certain well-authenticated cases of chorion-epithelioma, where the presence of secondary formations in the lungs was indicated by physical signs, haemoptysis, and dyspnoea. Yet spontaneous recovery followed, with complete and prolonged absence of all signs of growth either in the primary or in the secondary localities.

As to the precise nature of this resistance to malignant disease very little is known, and the lecturer is not prepared to say what are the factors which heighten or lower it, or to decide how far chemical variations in the tissues may be at work, or whether the influence of the nervous system plays any part in

the process. But one feature of the resistive and curative process, he thinks, is clearly recognizable. "This is the active part played by the connective tissues; we have an irritative overgrowth, with hyperplasia and subsequent contraction, which appears to determine the death of the epithelial cell."

In the concluding part of his address Mr. Barling discusses the all-important question of treatment. He dismisses as futile "certain modes of treatment by cancer serums, by drugs, and by enzymes." The *x* rays are useful in relieving pain, reducing the activity of inoperable growths, and healing rodent ulcers. But he is sceptical as to the absolute curative value of this method of treatment: "Personally, I have never known an unequivocal malignant growth absolutely disappear under the influence of *x* rays, though apparently others have occasionally been more fortunate." Radium appears to cure rodent ulcer, but in many of the cases treated it is too early to state with confidence that the cure has been permanent. Examining the results obtained by radium with the more serious forms of malignant disease, he finds "much that is promising but little that is conclusive." A large tumour may disappear or greatly diminish, but the subsequent reawakening of the disease is a not infrequent experience. Hence, in a case of operable cancer, he would not take the responsibility of advising treatment with radium as a substitute for excision, owing to the risk that during the time occupied by the administration of radium the disease may pass from the operable to the inoperable stage. Mr. Barling has given a fairly extensive trial of Coley's fluid in the treatment of sarcoma, but only with a limited degree of success. "In the majority of my cases no improvement has been effected, but in others I can speak of improvement which promises cure if further lapse of time confirms the results at present attained."

Operation still remains the most reliable remedy for malignant disease, and the author firmly believes that when malignant growths are excised at a sufficiently early stage of their development the cure is permanent. Results already attained, particularly with carcinoma of the breast, are highly promising; and cancer in other regions of the body would be more amenable to treatment than it is at present if it could be diagnosed in its earlier and silent stage. The difficulty of establishing a sufficiently early diagnosis is the great stumbling-block, and in the efforts to remove this obstacle, Mr Barling thinks, lies our great hope for the future. He therefore looks forward with special interest to the future achievements of the workers who are attacking the problem along the lines of biological chemistry.

We congratulate Mr. Barling on his method of reviewing this extremely difficult and obscure subject. Avoiding alike the errors of unjustifiable optimism and needless pessimism, he presents us with a level-headed and temperate consideration of the facts as they are. The success of the surgeon in dealing with cancer is increasing, and it will be greater still when scientific research has established better means for establishing early diagnosis; and we hope, with Mr. Barling, that cancer research will eventually accomplish much more, and that the time will come when the surgeon's knife is replaced by "gentler methods provided by the sciences of biology, physics, and chemistry."

THE KING AS PATRON OF THE ASSOCIATION.

AT the first assembly of the Annual General Meeting a communication from the King was read in which His Majesty stated that he was graciously pleased to become Patron of the British Medical Association. This announcement was received with loud and general cheering, testifying to the appreciation felt by the members of the prestige which the King's patronage confers on the Association. We may be allowed to express the satisfaction felt by the members of the Association that George V shows the same interest in it that was displayed by his illustrious father.

THE ANNUAL MEETING.

THE CHURCH SERVICES.

Westminster Cathedral.

IN connexion with annual meetings there is a custom thoroughly in accord with the sentiments of most members of the British Medical Association and approved by all—it is that of arranging for the holding, early in the course of the meeting, of a religious service in one or more of the principal churches of the city in which it is taking place, and for the attendance thereat in academic costume of the principal officers of the Association and as many of its members as possible. The event is a way of testifying that, whatever may be said to the contrary by individuals, medical men as a body see no essential inconsistency between science and religion. This year the services took place on Wednesday, the day on which work in the Sections commenced. The service for those who belong to the Church of Rome was held in the Westminster Cathedral, the largest modern sacred edifice in the country and so recently consecrated that probably many of those who attended High Mass at 10.30 a.m., had had no previous opportunity of taking part in a service within its walls. In spite of the fact that at the hour mentioned work in the Sections was proceeding, upwards of 150 members, many of them accompanied by their wives, were among the congregation. Before entering the cathedral they assembled at the house of Dr. Finucane, of Ashley Place, by whom the arrangements for this service had been made, and, after donning academic dress, proceeded in a body to the cathedral. On the conclusion of the service a meeting—originating in a suggestion made by Surgeon-General Maunsell—was held at Dr. Finucane's house for the inauguration of a Catholic Guild of St. Luke. The scheme put forward met with the approval of those present, and this guild is now in process of definite formation.

Westminster Abbey.

The other service was held at Westminster Abbey, and as the hour, 3 p.m., did not clash with any work in the Sections, the attendance was very large. Nearly all of those present were in academic costume, and the choir and many of the outer aisles were crowded.

The sermon was preached by the Very Reverend W. Page-Roberts, D.D., Dean of Salisbury, who chose as his text verse 11, Psalm lxxiii: "Tush, say they, how should God perceive it: is there knowledge in the Most High?" First noting the excellent moral conduct to be witnessed among members of all denominations of Christianity, and that moral excellence and philanthropic zeal distinguished many who held themselves aloof from all the Churches, Dr. Page-Roberts said that, if the question, "Does it matter what a man believes?" were asked

by one who, like Nietsche, held that "In Christianity neither its morality nor its religion are in touch with reality—it has nothing but imaginary foundations," it would probably be put in a tone which required a negative answer. But in those not disposed to say there is no truth whatever in Christian doctrines, a temper of mind which flippantly and with a shrug asked the same question was neither very admirable nor even respectable mental disposition. It was the sceptical temper, and scepticism and impotence were synonymous. Moreover, such a temper could not in its influence be confined to one department of character. It must encroach on and enfeeble the whole mind. But there were people of heavier calibre than those who were nevertheless averse to theological reflection. They had practised it, and had put it aside, not becauee they were indifferent, but because they were hopeless of reaching any certain conclusion. Such persons were not infected with the malaria of a shallow scepticism. They had potentialities of faith which might yet be realized. If the question indicated were asked seriously and not sceptically, it should be borne in mind that there were doctrines and truths both in science and theology which were essentially of a nature likely to make them ineffective so far as concerns actual conduct. They might be established as universally accepted truths; but they made no perceptible modifications in the daily life of any one. It was, for instance, certain that the earth moved round the sun, but those living in the present day were as indifferent to the motion of the earth as was the Hebrew poet who said of the earth that it is "so sure that it cannot be moved." Auguste Comte was certain that the constituents of the stellar bodies would never be known. The spectroscope has revealed them. But the discovery had made no perceptible difference in the ordinary conduct of affairs, nor even produced the company exploiter with a prospectus of their mineral treasures and alluring rising dividends. Thousands of things might be true, but for practical life they were ineffective, or, in technical terms, non-functional. After illustrating this point by considerations arising from the Nicene and other creeds, the preacher added that while certain doctrines were non-functional so far as in the present state of human knowledge they failed to cause differences of conduct among those holding or not holding them, and therefore might be regarded as pragmatical equivalents, yet it could not truly be said to be a matter of indifference what a man believed. It was culpable to be indifferent to truth, and a positive duty for individuals to hold fast that which commended itself to them as such and to diffuse it as opportunities arose. The dilettante sceptic who tolerated all creeds and believed in none was useless to the world and a quantity with which it could profitably dispense. Dr. Page-Roberts then turned to a consideration of Christian doctrines which were efficient in respect of their influence on action, including the belief that each man owed his neighbour brotherly service—not seeking only his own welfare, but seeking and serving the welfare of others. No one could deny that such teachings were of a nature to be effective, or that there must be a marked difference between those who lived in accordance with them and those who ignored them. It would seem that all who realized these practical teachings in themselves must be very much like each other—however different might be their non-effective, non-functional doctrines, they must have a family likeness. Thus it was that Christians of various and conflicting denominations were alike in piety, alike in the grace of an indwelling Holy Ghost.

After showing the great part these practical teachings of Christianity had played in the development of modern civilization, the preacher quoted Stuart Mill as saying, "The value of religion to the individual, both in the past and present, as a source of personal satisfaction and of elevated feelings, is not to be disputed," and then discussed the Naturalism, or unrestrained animalism, taught by Nietsche. Nevertheless, Nietsche did not spend the mental strength of a lifetime in hurling it against the Christian system of morals, because he regarded a man's beliefs as a matter of indifference, but the very contrary. Success for Nietsche's teaching would, however, be fatal to everything now regarded as moral. It was immoralism, and the preacher did not doubt that his hearers shared this opinion. Whatever theories medical men might entertain as to the miracles attributed to Jesus, the ineffaceable impression He left upon His contemporaries, as also upon subsequent ages, was that of a healer of sickness, a consoler of the sorrowful. He was called at times the Great Physician, and by their redeeming work medical men were His disciples. Whatever else they might think of Him, they, like Him, devoted their lives to save those who were perishing, for often, with little of this world's rewards, in secluded villages, shut up in their solitary intellectual lives, like Christ, they were healing ministers. "It is the man in you, not the beast, the Christ and not this shameless 'immoralism,' not lust but sacrifice, which is supreme, and you also have your own heroic martyrs of practice and research." It was well to remember "that retrogressive variations tend to predominate over progressive variations." Loss of Christian faith must tend to release the forces which were capable of effecting the demoralization and dissolution of a nation.

Certainly it mattered what a man believed: were such a wild-beast morality as that of Nietsche to supplant the morality of Christ, it would supplant, too, the medical man's mission of mercy. "Will you renounce your healing art and Christ-like work and adopt this new Evangel of Immoralism, this bride Force with its unfettered lusts, and teach it to your wives and sisters, your sons and daughters? Shall we tell them to be strong and shameless and glut their appetites and crush the weak, or use them for their pleasure, and scoff at the God of Heaven and the 'aforesaid Jesus'? Or shall we abide in the old faith and make it more effective?"

Prolegomena.

This is a week when the foundations of scientific beliefs are being probed by no less than twenty-one distinct groups of medical men. So there must be some hazard in assuming that even a theory so ordinary as that "everything must have a beginning" still remains unshaken. Doctrinally it may be unsound, but, so far as these notes on the Annual Meeting are concerned, it is a practical and somewhat serious fact. The first problem is where they should begin, and by way of cutting the knot, both appropriately and in accordance with precedent, the religious services have been placed first, though they were by no means the first occurrences in point of time. Another conundrum, which would be differently solved by different people, is, What was really the beginning of the meeting? Nominally it began last Friday, when a formal General Meeting followed in the afternoon by an Extraordinary General Meeting, took place. Both were very brief, and thereafter followed an official vacuum in the Annual Meeting's existence. It lasted until Tuesday, when things started again with the installation in the afternoon of

the new President, Mr. Butlin. But the worst of air-pumps could scarcely provide a less real vacuum, for throughout its nominal duration things—to speak *more Americano*—were humming. Members began to assemble much earlier than is usual, and even so soon as ten o'clock on Monday morning the reception room officials were fully at work and the registration tables thronged. The interval had also been a busy one for the Representatives of Divisions, whose official doings are fully recorded elsewhere. In this place, however, it may be mentioned that in its treatment of the Representatives, the Metropolitan Counties Branch—the hosts for the year—made a new and happy departure. On the termination of the first day's work on Friday, the Representatives met at the Waldorf Hotel at a dinner organized by the Branch, which, in addition, arranged for their benefit some expeditions to cover the week-end, and reduce any tension created by four strenuous meetings. One of these expeditions was to Folkestone and thence across the water to tea with the Mayor of Boulogne, the other to Henley. Neither was favoured by good weather, but both, by all accounts, fully met their intention in a pleasant easy-going way. For those who preferred to spend Sunday in town, the Branch secured tickets for the Zoological Gardens. Sunday is an especially favourable day to visit these Gardens, since none but those possessed of Fellows' tickets are usually admitted, so there is never any crowding. All these arrangements which were in charge of Mr. H. D. Ker, as Chairman, and Dr. E. R. Fothergill, as Honorary Secretary, seem to have been greatly appreciated both by Representatives and also by the various Colonial delegates and other visitors invited to take part as guests.

THE FIRST GENERAL MEETING.

THE Annual General Meeting was opened in the Court of Common Council Chamber, Guildhall, London, on Friday, July 22nd. The members were welcomed by the Acting Lord Mayor, Sir Horatio Davies, who formally opened the meeting. A vote of thanks to him was proposed by the Chairman of Representative Meetings, who happily described the Annual Representative Meeting as the Parliament of the Medical Profession. That day the Medical Parliament celebrated its seventh birthday. The motion was carried by acclamation.

PRESIDENT ELECT'S DINNER.

ON Monday, July 25th, Mr. Butlin, President-elect of the British Medical Association, entertained the Representatives and others at dinner at the Hotel Cecil. Among those present were Lord Ilkeston, Sir William Church, Sir Henry Morris, Sir T. Lauder Brunton, Sir F. H. Champneys, Sir John Tweedy, Sir Victor Horsley, Sir William Collins, M.P., Sir James Barr, Mrs. Butlin, Dr. Lucas-Championnière (Paris), Mr. Edmund Owen (Chairman of Council), Dr. Charles Williams, Dr. Sinclair, Professor Crile, Dr. Cardenal, Professor Baümler, Dr. W. Collier, Dr. Norman Moore, Dr. Mitchell Bruce, Dr. Ford Anderson, Dr. de Havilland Hall, Dr. Theodore Williams, the Master of the Apothecaries' Company, Dr. Depage, Mrs. Scharlieb, M.D., Mr. C. Mansell Moullin, Sir R. Havelock Charles, Sir Anderson Critchett, Sir Watson Cheyne, Professor W. Thompson, Mr. Donald Armour, Dr. Edwin Rayner, Professor Starling, Professor Elliot Smith, Surgeon-General Branfoot, Professor A. H. White, Dr. Bashford, Dr. Murray, Dr. E. J. Maclean (Chairman of the Ethical Committee), Dr. J. A. Macdonald (Chairman of the Medico-Political Committee), Mr. Guy Elliston Financial Secretary), and Mr. Smith Whitaker (Medical Secretary). Mr. Butlin proposed the toast of "The King," and also the toast of "Queen Alexandra, the Prince of Wales, and the rest of the Royal Family." Lord Ilkeston, who was received with loud and prolonged applause, said that when he entered the room an important official of the Association informed him that there were to be no speeches—an announcement which he received with the most complete satisfaction; but, the same gentleman hastened to add, they could not, in an assembly like the present, let the proceedings go on very long without expressing to the President-elect their best wishes for a happy year of office. He desired, as one of the oldest members of the Association, and one who some twenty years ago first induced Mr. Butlin to take the office of Treasurer of the Association, to say how they all rejoiced that he was their President for the ensuing year. During Lord Ilkeston's long memory of the Association there had been few men more capable of filling the office of President with grace, with eloquence, with dignity, and with business-like aptitude, and he was sure that they one and all, from the humblest member of the Association to the wife of the President-elect, who was present that evening, wished him long life and happiness, and a most successful and happy year of office. He gave them the toast of "The Health of the President-elect of the Association—their host that evening." The toast was received with loud applause, and was followed by the singing of "For he's a jolly good fellow." Renewed applause greeted Mr. Butlin when he rose. He said that, although it was contrary to the order of the night that there should be any speeches, he could not restrain his old friend, whom he formerly knew as Sir Walter Foster, from getting up to propose his health. He hoped to be able to carry through the business of the congress to the satisfaction of the Association which had elected him to be its President. For himself he would have felt more comfortable if the toast had been proposed on the following Friday than that evening, but he accepted their kind wishes, and was very grateful indeed. To Lord Ilkeston he tendered his special thanks. When he first became a member of the Council, Lord Ilkeston was one of the most prominent members of the Association: and when the other day he (Mr. Butlin) had been asked at the Council if he would propose a vote of congratulation to Lord Ilkeston on his elevation to the Peerage he did so with the greatest pleasure. He was called upon at a moment's notice to write down the terms of the vote of congratulation, and he wrote down a number of things, but even then he found that he had forgotten more than half that Lord Ilkeston had done for the Association. Lord Ilkeston had done, he thought, more than any living man for the British Medical Association, and for the public measures which had been brought before Parliament by the Association and by the profession. Mr. Butlin had no hesitation in saying that there was no person in the medical profession better fitted to represent its members in the House of Lords than Lord Ilkeston. They might, of course, have found many men distinguished in their profession, and they might also have found men who had given a great deal of attention to measures connected with public health, and they might also have found men who had done a great deal of municipal work, and have found men who had worked hard for the Association, but he was sure that there was no person in their profession at the moment who combined all those qualities in the way that Lord Ilkeston did. In conclusion, he begged to offer Lord Ilkeston his heartiest congratulations that night before the assembly on the honour which had been done him, and the honour which had been done to the

profession, and they ought to congratulate themselves upon the advantage likely to accrue to the country, the House of Lords, and to the profession from the fact that Lord Ilkeston had been raised to the peerage. (Loud applause.)

DINNER OF THE REPRESENTATIVE MEETING.

UNDER the presidency of their Chairman, Mr. Ballance, the Members of the Representative Meeting, to the number of 160, dined together in the Waldorf Hotel, after the conclusion of the first day's business, on Friday, July 22nd. The attendance was conveniently grouped around small tables with due regard to geographical distribution. The only toast was "the King," after which the Meeting acquired a mobility previously impossible, and listened to a varied and lively programme of song, anecdote, and recitation, to which Dr. Macfie of Bolton, Dr. Graham of Carlisle, Dr. Harvey Hilliard of London, Dr. Wynne of Leigh, Dr. Metcalfe of Bradford, Dr. Drummond Morier, Dr. Drury of Halifax, Dr. Trotter of Perth, Dr. Maclean of Cardiff, Dr. Grant Davie of Manchester, and Dr. Sansom of West Bromwich contributed.

The following was a "topical" song by Dr. Buist of Dundee:

When Association duty's to be done,
The Secretary's lot's a happy one.

I

When the anxious-minded junior's not inquiring
The multitude of things he'd like to know,
And the much experienced senior's not aspiring
In his genial little way to run the show:
In short as soon as ere the meeting's over
The Secretary's "minutes" measure hours,
And the time he'd like to smoke and feel in clover,
Is a fume of motions, riders, rulings, powers.

II

At a meeting when the quorum's long a-coming,
Or the Treasurer's report has missed the post,
Or the business of the evening's not a-humming,
There's the Secretary's bacon still to roast.
He makes meetings for the men who don't attend 'em,
And he learns the weekly SUPPLEMENT by rote,
He must give the apathetic referendum
And explain why they don't have a postal vote.

III

He hears haughty voices sneering at "Trades Union"
When his Branch is busy battling with the "Clubs,"
Or a doctor who's less often in communion
Than he is, let's say, for instance, in the pubs;
He must study up the actions and reactions
Of the algebraic quantity "Rule Z,"
It's the nearest thing to telling truth to fractions,
And would worry even a wig right off its head.

IV

And when the annual dinner's nearly done,
And toast and song and story follow free,
Throwing chestnuts at his head is pretty fun—
So they double every year his salaree.
But at last when all emotion's ripe and mellow,
Though they dearly love to chaff him now and then
They sing in hearty round, "He's a good fellow,"
And he knows that he's a man with other men.

When Association duty's to be done
The Secretary's lot's a happy one.

Dr. MacLaurin of Sydney acted with great skill and good nature as accompanyist to the singers.

THE SIZE OF THE MEETING.

AMONG the contents of the first issue of the *Daily Journal*, dated Tuesday, were passages amply, if silently, indicative of the added difficulty of arranging a meeting in a town so vast and, from a social point of view, so peculiarly constituted as London. The information given as to business arrangements showed that the authorities of the Metropolitan Counties Branch, with Mr. Butlin at their head and Drs. Lauriston Shaw, W. Griffith, and E. W. Goodall as general secretaries, had had to divide their labours among as many as twenty-eight committees and subcommittees. A rough calculation shows that their members numbered altogether some 200 persons. Many of them would seem to have doubled their parts, and all of them must presumably have done some very hard work. We have the best of reasons, namely, personal observation, for stating this was emphatically true in the case of several of them. The Ladies' Reception Council, which has the Countess of Aberdeen as its President, Mrs. Butlin as Vice-President, Dr. Mary Scharlieb as Chairman, and Dr. Ethel Vaughan-Sawyer as Honorary Secretary, numbers about a hundred members, all being ladies and a larger proportion of them women doctors. It has subdivided its work among four committees, one taking charge of the evening entertainments for ladies, and another of the excursions, intended to while away the time during the morning of those who have accompanied members to the meeting but cannot join in the work of the Sections. There is also a very useful committee which receives ladies on their arrival in the reception room. At no previous meeting have we seen the resources and energies of all engaged in the conduct of matters executive and administrative so thoroughly taxed. One reason for this circumstance is supplied by the same first issue of the *Daily Journal*, which at the end contains a list of the members who notified their intention to attend. It covered fifty pages, averaging fifty names on a page, so that, apart from ladies accompanying members of the Association, the meeting started life, so to speak, with about double the highest number of members registered in any previous year.

ANNUAL MEETING LITERATURE.

THOSE who have frequented Annual Meetings during the last few years have grown accustomed to receiving a book descriptive of the place in which the meeting is being held. Some of them must have wondered if this custom would be maintained in connexion with the present meeting, and if so, in what fashion a guide book to a place such as London could possibly be constructed. The booklet placed in their hands on presenting themselves at the registration office answered both questions in very satisfactory fashion. It was a neat octavo, not too heavy to carry, giving succinct accounts of the principal objective features of medical life in London, of the museums connected therewith, of such public buildings as are likely to interest attendants at scientific meetings, and information as to present methods of locomotion—tubes, trains, and motor omnibuses—taxi-cab regulations and distances from various parts of London to the Imperial Institute. There are several features in the book which would make it worth preserving independently of its value as a memento. In addition to the letterpress it contains some portraits of medical celebrities, a view of the buildings devoted to the University of London, two or three clear maps, and a coloured engraving of the badge presented by the Metropolitan Counties Branch to be worn by each successive President. It is a thoroughly useful book, and the subcommittee, headed by Dr. H. D. Rolleston, which was responsible for its production, is to be congratulated on the outcome of its labours. In the same connexion may well be mentioned the usual member's admission card, for even so essentially humdrum a production has been treated on artistic lines. The space on the front page for the member's name has above it a neat

engraving of the Association's new premises, the whole being framed in an heraldic design, whereon can be found the coat of arms of each of the colonies in which Branches of the Association are established. Another volume which was received by those not so unwise as to overlook the Medical Museum was a catalogue of nearly 400 pages, relating to several thousand specimens, each described at sufficient length to meet the needs of most visitors. To have compiled such an excellent pathological catalogue in connexion with an exhibition which, unfortunately, can only remain open for a few days, is a distinct achievement, and one for which Mr. Armit the Honorary Secretary of the Museum Committee, is entitled to much credit. Included in the catalogue is a list of pictures and other like objects of medical interest which were got together by Dr. A. J. Oxley, and form a separate exhibition.

THE PRESIDENT'S ADDRESS.

THE success of the General Meeting at the new St. James's Hall on Tuesday evening was somewhat marred by the regretted absence, through illness, of Major George Lamb, Director of the Pasteur Institute in India. He was to have received in his capacity of Senior Member of the Plague Research Commission the Stewart Prize as a mark of recognition by the Association of the value both of his own work and that of each of those who have shared his labours on the Commission in question. Otherwise everything went off in the happiest possible fashion. The Hall proved well suited to its purpose; most of the members present had complied with the request as to academic costumes, and Mr. Butlin, who delivered his address without a single note, was in excellent voice. Before he commenced, the Right Hon. Walter Long, formerly President of the Board of Agriculture, one of the Honorary Members elected earlier in the day, was introduced, and acknowledged the honour conferred upon him in a happily-worded speech, an account of which will be found elsewhere. In accordance with precedent, there were also introduced such of the delegates to the meeting from Oversea Branches and Divisions as were present on the occasion. There were an unusually large number of them, the list containing some seventy-two names. Branches situated within the borders of the Indian Empire sent fourteen, Egypt four, Gibraltar two, Ceylon one, Hong Kong and China five, Natal and South Africa three, Canada fifteen, New Zealand four, and Australia twenty-four. The names of the delegates, as also of the foreign visitors similarly introduced, will be found in the matter relating to this meeting in the SUPPLEMENT (p. 223).

SOCIAL FUNCTIONS.

MANY members of the Metropolitan Counties Branch have foreign and other guests staying with them, and a great deal of hospitality in the way of dinners, luncheons, "at homes," and the like, has been and still is in progress. The first, and in some respects the most important, of these functions was the dinner party given on Monday night by Mr. Butlin, of which some account has already been read. Though Mr. Butlin invited his guests in the capacity of President-elect, the entertainment was in all essentials a private dinner party. As such it must have been one of the largest on record, for the assembly numbered upwards of 350 persons. On Wednesday Mr. and Mrs. D'Arcy Power received at tea a very large party which they had previously taken on an exploring expedition to St. Bartholomew's Priory Church and the Barbers' Hall, a place rarely thrown open to inspection. On the same day the President and Council of the Royal Sanitary Institute were "at home" at their excellent new premises in Buckingham Palace Road, and the Society of Medical Officers of Health was ready to refresh all visitors between 4 and 5 in the afternoon. In the evening the Society of Apothecaries gave a dinner party in the ancient hall of the guild in Water Lane, Blackfriars, and a civic reception, which upbore the traditions of the City of London, took place at the Guildhall. Meantime there had been two garden parties in progress, one at St. Bartholomew's Hospital, following the luncheon in honour of Mr. Butlin, and the other at Bethlem Royal Hospital. The fact that the weather broke the July record by being quite fine made these assemblies all the more enjoyed, but there is so much to see at both the institutions in question that guests were fairly independent of atmospheric conditions. At Bethlem Royal Hospital the guests were received by Sir George Faudel Phillips and the Hon. Mrs. Tufton, and tea was served in the grounds to the strains of the band of the Coldstream Guards. Those who desired it were given an opportunity of going over what is in many respects a unique institution, a place which for many years past has been conducted by Dr. Hyslop on the lines of a hospital for the mentally ill and not as an asylum for the insane. Among the guests were some of the foreign visitors to the meeting and the Commissioners in Lunacy, and many of the governors of the hospital.

ST. BARTHOLOMEW'S HOSPITAL.

AS is well known, the new President, Mr. Butlin, is Consulting Surgeon to St. Bartholomew's Hospital, and until a few years ago played a very active part in connexion with its medical school. It was natural, therefore, that there should be a desire to seize the present opportunity of doing him special honour, and of emphasizing the direct relation established between this leading medical school and the Association. It took the form of a luncheon party on Wednesday in the Great Hall of the hospital, and one on a large scale. The chairman was the Senior Physician of the Hospital, Dr. Norman Moore, and the hundred guests included Professor Robert Saundby of Birmingham, Sir William Church, late President of the Royal College of Physicians; Professor Howard Marsh, the friend and teacher of several generations of St. Bartholomew's students, but now of Cambridge; Sir Lauder Brunton, Mr. Harrison Cripps, Sir Francis Champneys, Chairman of the Central Midwives Board; Professor H. Meyer, Dr. Mary Scharlieb, President this year of the Section of Gynaecology and Obstetrics; Dr. Lucas-Championnière of Paris, Professor T. Kocher of Berne, Mr. Anthony Bowlby, Sir Victor Horsley, Dr. Barany of Vienna, Dr. R. W. Philip of Edinburgh, Professor C. Baumler of Freiburg, and many other of the foreign visitors whose names appear in the list of those introduced to the President on Tuesday evening. The Vice-Chairmen were the Dean of the School (Dr. T. W. Shore), Dr. H. Morley Fletcher, Mr. H. J. Waring, and Mr. McAdam Eccles. It need scarcely be said that the toast to Mr. Butlin, proposed by the Chairman after the usual loyal toasts had been duly honoured, was drunk with enthusiasm, and accompanied by very sincere good wishes. In acknowledging it Mr. Butlin mentioned that the British Medical Association had now chosen London as the place for its Annual Meeting on four occasions, and that of those who presided thereat there now stood two to the credit of St. Bartholomew's. On the conclusion of the luncheon proceedings, the guests broke up into separate groups, which visited different

departments and wards of the hospital. Much the same course was followed by many of those attending the garden party which subsequently took place.

Other Associations.

As usual, a number of bodies which are more or less connected with the Association, but are organized on a separate basis, have been taking advantage of the assembly of so many medical men to hold special meetings. The list of them, which is unusually long, includes the Society of Members of the Royal College of Surgeons of England, which held a meeting on Tuesday evening at Upper Montague Street, with Dr. Joseph Smith, its president, in the chair; and the Medical Libraries Association, an admirable body which started about the time of the Belfast meeting last year what we hope will be a very successful existence. It held a formal annual meeting on Tuesday, and on Wednesday commenced in one of the rooms of the Imperial Institute the reading of sundry papers on special points in what may be regarded as a new art—the organization and utilization of libraries mainly medical in point of contents and object. On Wednesday the Irish Medical Schools' and Graduates' Association held a meeting, followed by a luncheon party, at the Holborn Restaurant, and on Thursday the National Temperance League gave its annual breakfast, followed by short addresses; it has for long past been a familiar feature of all annual meetings, and a popular one as well, despite the painfully early hour of rising imposed on those who attend it. This year the president was Mr. Pearce Gould, and the principal speaker the Bishop of Kensington. The same day the Continental Anglo-American Medical Society assembled at luncheon at the Café Royal, and extended its hospitality to a good many members of the British Medical Association who are not qualified by virtue of their place of residence for membership of this semi-foreign body. Other meetings which have still to be held are those of the Poor Law Medical Officers' Association, of the Association of Medical Officers of Health, and of the United Kingdom Police Surgeons' Association. All three are to take place in the Council Chamber at 429, Strand, at different hours on Friday this week. Further references to the occurrences at these different meetings will be made at a later date.

The Regalia of the Association.

The regalia of the Association are growing apace, there having been two additions this year to the Association's possessions of this order. The first is a hammer presented to the Representative Body by its members at the special meeting last June. It is a gift which may be taken as equal evidence of just recognition of the importance and dignity of the office held by the Chairman of this body, and of the fact that there might conceivably be occasions when order would require to be kept firmly. From either point of view the hammer presented would seem an equally effective gift. It is of solid ivory, with a gilt serpent twining round the handle, the handle and head being further enriched with silver mounts, and the head bearing an inscription of suitable kind. The serpent is, of course, intended to suggest the staff of Aesculapius. The other gift is a badge of office presented to the Association, on Tuesday afternoon, by Dr. Ford Anderson, on behalf of the Metropolitan Counties Branch, to be worn by each successive president. It is a gold and enamel plaque attached by four flat buckles to the ends of the ribbon-collarette. Two of these flat gold buckles, or links, bear in red enamelled letters the names Great Britain, Canada, India, Australia: the others Ireland, West Indies, South Africa, New Zealand. These are attached to the badge by an open-work shield with the monogram of the Association as its centre. As for the badge, this bears a figure of Hygeia clad in the loose garments commonly known as classic, and holding in her hand a cup and a snake. The latter looks very much alive, and would probably be described as rampant by an heraldic expert. Around this centre-piece are floral emblems indicative of the principal British Overseas Dominions; a maple for Canada, a sugar-bush tree for Africa, a lotus for India, a wattleflower for Australia, and the tree-fern for New Zealand. At the top angle of the outside frame is to be found the rose of England, at the bottom the thistle of Scotland, on the left side the shamrock of Ireland, and at the right side the leek of Wales. Those hide-bound by tradition, and hypercritical in such matters, might possibly look learnedly askance at certain features of the badge, but no one can deny that the general effect is excellent, and that the badge is worthy of its high purpose. It is intended that a reproduction of it on a smaller scale shall be presented to each president as a personal gift and memento of his labours during his year of office.

The Medical Museum.

There have been excellent collections of pathological specimens at most of the Annual Meetings during the past few years, and several of them have been of a very successful and useful kind; but the like exhibition opened this week transcends all previous efforts in this direction. It is so large and covers so much new ground as practically to represent a new departure. In view of the extension of *terrain* the adjective officially applied to it this year is not "pathological," but "medical," and for corresponding reasons the term "museum" might itself also have received some addition. It is not a heterogeneous collection of valuable specimens, but a museum carefully divided up into various sections, each under the care of an expert honorary curator. Moreover, an element of life, as distinct from morbidity and death, has been introduced by most of the curators, who, not contenting themselves merely with showing specimens, have made an endeavour to bring home to visitors how those specimens were prepared. In this way the collection of specimens ceases to be what is commonly called a museum, and fulfils a double purpose. It furnishes instructive object lessons in the latest methods employed in clinical laboratories for the purpose of diagnosing disease and determining the treatment to be followed, and also displays those used in the annexes of museums, where specimens are examined with a view to acquiring knowledge of disease processes, and thus opening a way to the solution of etiological problems. In one sense, of course, the valuable character of the museum need cause no surprise, since the Museum Committee has been able to draw on nearly all the medical schools in London, as well as on the Museum of the Royal College of Surgeons, and on the pathological treasures of many private individuals. But the same facilities might have been offered with very different results. Specially interesting to many visitors is proving the section devoted to the subject of anaesthesia, which was organized by Dr. Ada Browne, of the Chelsea Hospital for Women, and includes the series of quaint documents on which is founded the claim of Dr. Crawford Long, of Georgia, U.S.A., to be regarded as the originator of surgical anaesthesia. There is also a kind of annexe to the museum in the form of a series of pictures illustrative of the doctrine of palaeogenesis as supported by the coloration of

animals. This separate exhibition was supplied and arranged by Sir Jonathan Hutchinson. A technical account of the museum and its contents commences elsewhere in this issue.

ENTERTAINMENTS.

THE relaxations provided this year are on a scale corresponding to the magnitude of the meeting and of so varied a character that it is difficult even to classify them either succinctly or very clearly. Before the meeting commenced there were those who deemed the preparations made too extensive, and prophesied that on many of the expeditions in view and entertainments organized an adequacy of guests would be lacking. But these Cassandras have been pleasantly disappointed. For many entertainments a shortage in tickets set in quite early, and for all the demand has been so great as almost to exceed the possibility of meeting it. In a measure this result may be due to a change made this year in the method of distributing tickets, namely, that of asking members to apply in advance. If so it is a plan which should again be adopted, for it is always greatly to be regretted when pipers play but dancers fail to respond. On this occasion the plan has, in some respects, not perhaps worked to universal satisfaction, because many were not aware, it seems, that previous application was necessary, and failed of success at the second ballots for tickets, which have taken place. However, there has been, and still is, so much going on that few, if any, members can have been altogether disappointed. There has also been London itself to fall back on, and practically every general hospital in London has made special arrangements to show visitors everything of which each institution is most proud. For the less scientifically minded, there are visits to great London residences, such as Apsley and Stafford House, special arrangements for visiting the Mint, the Royal Stables, a great number of premises where interesting manufactures are carried on, golf matches, luncheon and dinner parties, garden parties at Ranelagh and elsewhere, conversaziones—in short, almost every kind of entertainment which the wit of man has devised for his hours of ease. At the time we are going to press there is in progress at the Connaught Rooms the Annual Dinner of the Association, and also the Dinner and Reception at the Lyceum Club organised for ladies by the Committee appointed *ad hoc*. On Friday follow, among other things, an expedition to St. Albans on the invitation of its medical Mayor, Dr. E. H. Lipscomb, and the reception given by the Metropolitan Counties Branch at the Natural History Museum. On Saturday there are as many as four excursions in view—to Bath, to Alton, Eastbourne, and Brighton respectively.

JOHNSONIAN HAUNTS.

ON Tuesday afternoon there was an entertainment of quite a unique character—an exploration of Johnsonian haunts. It was organized and conducted by Dr. Withers Green, who has the lore of the eighteenth century and historical London in general at his fingers' ends. He proved an admirable cicerone, and his accounts of the various places visited were greatly appreciated. By a happy thought he used a megaphone, and thus every one was able to hear without difficulty—a rare circumstance on like occasions. The party met at his house in Wardrobe Place, Doctors' Commons, a locality whose name is itself reminiscent of the past. There the ladies of the party took tea, while the gentlemen were similarly engaged at an adjoining restaurant. Dr. Withers Green had on his list no less than forty places associated with his subject, and managed to give temporary life to the dry bones of practically all of them.

The expedition will be repeated to-day, Friday afternoon, at 4.30 p.m., and will doubtless be well attended by those who have not escaped the fascination of a peculiarly interesting period of English history. It is one with which every one is more or less acquainted, but to which no readily get-at-able book is specifically devoted. Still less is there any adequate guide book, even if any guide book ever written could be as effective and illuminating as clearly-worded verbal accounts, coupled with a view of what vestiges of the past remain.

THE NEW HONORARY MEMBERS

THE honorary membership is the highest honour that the Association has in its power to confer, and the fashion in which the Council has exercised it is sure to be welcomed this year. Both Lord Crewe and the Right Honourable Mr. Walter Long are so well known to the general body politic of medicine that their names would certainly have been sent in had nominations for the honour been left to the ordinary members of the Association. Throughout his service with the present Government Lord Crewe has been conspicuous for his disregard of red-tape methods and for his readiness to endeavour to appreciate the medical side of public questions. As for Mr. Long, his great work in applying the teachings of science to the extinction of rabies in these islands, is too well known to require more than mere mention.

THE ANNUAL EXHIBITION.

THAT no one would be able to examine everything to be seen at the Annual Exhibition of this year goes without saying, but it may even be doubted if, at the end of the meeting, any one will be able to boast that he really visited each separate stall. There are nearly 180 of them, and on practically every one there are things calculated to make most visitors linger. This year the radiographical and other electrical appliances have been housed in a separate room, with a view to the *cognoscenti* being able to examine the exhibits undisturbed by the *x*-ray unlearned. It is a plan which seems to have worked well, and has certainly been appreciated both by exhibitors and visitors. The rest of the exhibition has also been divided into two parts, but merely by way of securing adequate room for each exhibitor. Never have the latter had such magnificent rooms placed at their disposition. They doubtless share the gratitude felt by the members of the Association at the kindness of the authorities of London University and other bodies concerned in allowing the Royal College of Science and the home of the university to be used for the general purposes of the meeting. Possibly, however, they would have been still more obliged if the authorities in question had rubbed some scientific Alladin's lamp and transported the whole of the buildings for the occasion to Trafalgar Square. We hope we are mistaken in this belief, for it would be a great pity if it were found that, owing to the necessity of reaching more central parts of London, members had hastened away from the Section work at South Kensington too quickly for the attendance at the Exhibition to be proportionate to its great scale. This regret, which we hope will prove unfounded, would be generally shared were it known what an immense amount of fatigue and expenditure of energy these Exhibitions entail upon all concerned. To members they offer the supreme advantage of being able to see without difficulty or fear of importunities

to make purchases, everything which is new in the way of instruments, books, hospital and surgical appliances, chemical preparations, and all other things intended to facilitate medical and surgical practice in all its branches. An account of some of the more attractive items will be commenced in the SUPPLEMENT next week.

AT a meeting of the Council held on Wednesday, July 27th, Dr. J. A. Macdonald was elected Chairman in succession to Mr. Edmund Owen. Dr. Macdonald's large experience of the work of the Association, his administrative ability, his tact and geniality in dealing with men, and his statesmanlike breadth of mind, make his election to this most important post a happy augury for the future of the Association.

THE success with which Dr. Rayner has managed the finances of the Association during the past three years—a task which owing to the expansion in various directions of the activities of the Association has become one of heavy responsibility and difficulty—was shown by the fact that he received the rare honour of re-election for a further term of office. The proposal, which was moved by Sir Victor Horsley and seconded by Mr. Straton, was received with loud applause.

THE total number of members registered as present at the meeting up to the time of going to press is 2,500.

ANNUAL REPRESENTATIVE MEETING.

NOTES.

THE Representative Meeting held its Annual Meeting this year in the Guildhall, kindly lent for the purpose by the Corporation of the City of London. Mr. H. A. Ballance was in the chair, and 146 Representatives and 30 Members of Council were present on the first day. The attendance was maintained with very slight diminution throughout the sittings. The meeting lasted four days, beginning on Friday, July 22nd, and ending on Tuesday, the 26th. On Friday the proceedings began at 10 a.m., and were continued, with intervals for luncheon and tea, till 6.30. On Saturday the meeting continued its deliberations from 9.30 a.m., with an interval for luncheon, until 5 p.m. On Monday it assembled at 10.15 a.m., and sat, with the usual adjournments, till 6.30 p.m. On Tuesday it began work at 9.30 a.m., and after a brief interval for luncheon completed its labours at 4 p.m.

THE amount of business which the meeting dealt with was large in volume and complex in details; the discussions were throughout animated, and were marked not only by practical knowledge, but by remarkable debating power. In the Annual Representative Meeting of the Association the medical profession has a vigilant and intelligent guardian of its interests. The successful manner in which the meeting got through its work was largely due to the tact and ability shown by Mr. Ballance in managing the assembly; whenever the debate showed a tendency to wander he brought it back to the right track with firmness tempered by perfect courtesy.

IT was with great regret, therefore, that the meeting heard Mr. Ballance's statement that he would be unable to continue to discharge the duties of Chairman of Representative Meetings. There was only one nomination to the post vacated by Mr. Ballance, and Dr. Maclean, Chairman of the Central Ethical Committee, was accordingly declared duly elected. In acknowledging his election, Dr. Maclean made graceful reference to the honour done him in his being chosen to succeed such men as Sir Victor Horsley, Dr. Macdonald, and Mr. Ballance. He felt very keenly the responsibility placed upon him of having to preside over the deliberations of a meeting which represented the true hopes and aspirations of the profession at a time when it was passing through an economical crisis without precedent in its history. But he assured the meeting that he would spare no effort to carry out as effectually as he could the duties of the position to which he had been elected.

A VOTE of thanks to Mr. Ballance was proposed by Dr. J. A. Macdonald, who expressed the sentiments of the meeting when he spoke of the sorrow with which they heard that Mr. Ballance had come to the decision not to accept office for another year. He paid a well-merited tribute to the ungrudging manner in which Mr. Ballance had devoted himself to the conduct of the affairs of the Association. The motion was seconded by Dr. Maclean, who in alluding to the fact that during the past year Mr. Ballance's civil state had altered, took the opportunity of wishing Mrs. Ballance and him long life and every happiness. The motion was carried by acclamation. Mr. Ballance, in acknowledging it, said he had sometimes thought that as he had been Chairman of the Contract Practice Subcommittee for two or three years, that perhaps might have had something to do with the fact that he had lately entered into another contract. Throughout this part of the proceedings there was a ring of geniality and personal friendship which may be taken as a proof of the harmony with which the high officials of the Association work together.

LATER it was announced that Mr. T. Jenner Verrall had been elected to the post of Deputy Chairman. The announcement was received with loud applause.

ON Friday the Treasurer, Dr. Rayner, read a letter from Dr. Dawson Williams in reference to his accident, mention of which has been made in the JOURNAL. In it he stated that he had been kindly and skilfully attended by Mr. Jamison of Horsham, the Honorary Secretary of that Division of the Association, and had had the advantage of the opinions of Dr. Howard Tooth and Mr. Robert Jones of Liverpool. Dr. Rayner suggested that the meeting should send Dr. Dawson Williams an expression of sympathy with him in his misfortune, together with an expression of hope for his complete recovery. This was unanimously agreed to with great cordiality. On Monday the Treasurer read a further letter from the Editor, expressing his heartfelt gratitude for the sympathetic resolution adopted by the Representative Meeting. Dr. Rayner added that Dr. Williams's progress was considered satisfactory, an intimation which was received with pleasure by the members.

THE most important business done by the meeting was the adoption of the Draft Memorandum of Association of the proposed new Company. It was fully discussed, clause by clause, and, after some amendment, it was moved and resolved *nemine contradicente*, "That the Council should proceed forthwith to take the steps necessary to the formation of a new Company, incorporating in the same manner and having the same Articles of Association and By-laws as the present Company as constituted at the time of application." Many other matters directly

affecting the welfare of the public and vitally concerning the future of the profession were discussed. Among these may be mentioned the question of the reform of the Poor Law, State registration of nurses, rules of nursing associations, the ethics of consultation, medical ethics, prescribing by chemists, the relation of the Association to homoeopaths, ambulance lectures, and the position of practitioners examining on behalf of interested persons. A full report of the proceedings is given in this week's issue of the SUPPLEMENT. The report, it may be stated, is considerably longer than any that has appeared in former years.

THE following twelve Representatives were elected by the meeting to the Council: Dr. J. Macdonald (South Shields), Mr. T. W. H. Garstang (Altrincham), Dr. W. A. Carline (Lincoln), Dr. H. Jones-Roberts (North Wales), Dr. E. W. Goodall (City), Dr. H. R. Ker (Wandsworth), Mr. C. E. S. Flemming (Bradford-on-Avon), Dr. J. J. Macan (Croydon), Dr. M. Dewar (South Edinburgh), Dr. J. Grant Andrew (Glasgow), Professor A. H. White (Dublin), and Dr. C. E. Shaw (Belfast).

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

THE character and scope of the work of the different Sections will appear from the following short summary of the proceedings. A full report of the discussions and of the various papers read in the Sections will be published in due course.

Wednesday, July 27th, 1910.

SECTION OF ANATOMY.

PROFESSOR ARTHUR KEITH presided over this Section, which was numerously attended. After a few words of welcome, the President initiated a discussion on the question of supply of anatomical material. Two resolutions were submitted and agreed to: (1) That it was now desirable that concerted action be taken by the representatives of all the medical schools in the country; and (2) that the licensed teachers present at the meeting of the Section of Anatomy be asked to constitute themselves a committee to consider the supply of material for anatomical and operative surgery teaching throughout the United Kingdom and Ireland. Professor Symington, F.R.S., gave a communication on the pharyngeal tonsil. By means of sagittal sections and dissections he showed the form and position of this structure in fetuses, young infants, and children. Placed in the roof and on the posterior wall of the naso-pharynx, it began quite close up to the nasal septum and extended backwards as far as the middle of the basi-occipital element, and where it ended the superior constrictor began. From the point of view of removal by the surgeon in diseased conditions, it was important to remember its relation to the nasal septum, and, further, that it did not extend downwards so far as it was usually represented. Professor Symington discussed the question of enlargement of the pharyngeal tonsil, and expressed the view that rarely did it interfere with nasal breathing or produce deafness. In such cases the hypertrophy involved the whole of the mucous membrane of the naso-pharynx, and not simply the pharyngeal tonsil. Moreover, he believed that normally the tonsil atrophied after 9 or 10 years of age, though it might persist into adult life. The discussion was continued by Professor Elliot Smith, Professor Fawcett, Professor Keith, and Mr. P. T. Crymble; and afterwards Professor Symington replied. Mr. J. E. S. Frazer gave a paper describing the mode of development of the Eustachian tube and the tympanum. This paper was illustrated by a large number of models made by the wax-plate method of Born, and also by means of diagrams. Mr. Frazer found that the Eustachian tube and tympanum were formed out of the "Eustachian recess," a lateral extension of the pharyngeal cavity, with which the first and second pouches were connected. The fossa of Rosenmüller was a secondary depression unconnected with the second pouch. Mr. Frazer also sketched the development of the naso-pharynx and the palate. Professor A. C. Geddes discussed the inter-relation of the size of the antrum of Highmore and the position of the permanent teeth. From a consideration of two eunuchoid skulls, in one of which the expansion of the antrum was very small, and in the other altogether absent, he had come to the conclusion that the moving of the teeth into position was not dependent on the development of the antrum of Highmore, except possibly the two posterior molars. Professor Geddes also demonstrated six interesting abnormalities from the dissecting room. Dr. William Wright gave a demonstration on the anatomy of the trigonum vesicae. Among the interesting points raised was the continuity of the fibro-muscular tissue of the prostate with the fibres of the trigonum vesicae and with those of the detrusor. After removal of the prostate the continuity was destroyed, and the bladder was emptied by abdominal pressure. Professor A. Robinson, Professor Peter Thompson, Mr. P. T. Crymble and others took part in the discussion which followed, after which the Section adjourned.

SECTION OF BACTERIOLOGY.

THE President of the Section, Dr. C. J. Martin, having addressed a few words of welcome to those present, called on Dr. A. C. Houston to open the discustion on recently acquired knowledge concerning the bionomics of pathogenic organisms, and its bearing on the spread of disease. The speaker dealt with the relative importance of (*a*) the passive accidental transmitters and (*b*) the living manufactories of disease, and the importance of trying to bridge over the gap which links together in some mysterious fashion successive epidemics. In an interesting and detailed account of general views and of the author's own experience, particularly with the bacteriological examination of water, he came to the conclusion that there was a danger of exaggerating the influence of the merely passive transmitters and of under-estimating that of the living carriers of disease germs. Professor Lentz, of the Institut für Infektionskrankheiten, Berlin, followed with a lucid account of the typhoid campaign which has been in operation in south-west Germany since 1903, and the marked effect that the combined efforts of epidemiologists and bacteriologists have had in lowering the incidence of typhoid fever in that district. A great part of his paper was taken up with the importance of the carrier question. Dr. Savage dealt with the question of bovine streptococcus carriers. He emphasized the biological differentiation of the two types (bovine and human). As a rule the streptococci of human origin did not persist long in bovines, while bovine streptococci when inoculated upon the human throat rapidly died out. Dr. Savage found that while the bovine streptococci were not generally pathogenic to man, it was quite possible that pathogenic human streptococci might infect the teats of cows, owing to the filthy habits of certain milkers, the cows thus becoming passive transmitters of human streptococci. The question of dysentery carriers, paratyphoid carriers, diphtheria carriers, was fully dealt with by Drs. Macalister and Menzies, Drs. Bainbridge and O'Brien, and Dr. Arkwright respectively. Dr. Petrie also gave a lucid account of the mode of transmission of *B. pestis*. Further speakers were Professor McWeeney (Dublin), and Dr. Buchanan (Glasgow), who also discussed typhoid and meningococcus carriers. Dr. Houston, in summing up the discussion, commented on the practical unanimity of opinion with regard to the thesis put forward in his opening paper.

Section of Dermatology.

The discussion on modern methods in the diagnosis and treatment of syphilis was opened by Dr. Feibes (of Aachen), who summarized the present position and deprecated the action of newspapers publishing all sorts of premature statements with regard to new drugs in the treatment of syphilis, drugs that were still on their trial. Mr. Ernest Lane insisted on the importance of dealing with cases on their merits, and advocated no single method of treatment to the exclusion of others. Dr. Wild (of Manchester) touched specially on the later manifestations of syphilis, and considered that treatment by the mouth was sufficient. Dr. George Pernet emphasized the fact that syphilis as a subject was not properly taught in this country. Every case should be taken on its individual merits as regards treatment. He did not consider that pills were an efficient treatment. Intramuscular injections had certainly given good results and were extremely valuable. Mr. McDonagh read some remarks on his experience of Wassermann's reaction. Dr. Stopford Taylor (of Glasgow) was in favour of intramuscular injections of grey oil, and pointed out that syphilis was badly taught in this country. Dr. Tomkinson (of Glasgow) favoured soluble injections, and Dr. Griffith considered the pill method was a good one. Dr. Eddowes was of opinion that local treatment of syphilides by a mercurial ointment was useful. Dr. Douglas Heath (of Birmingham) denied that inunction treatment was valuable in bad cases of syphilis. Dr. Feibes, in reply, remarked that pill treatment was inefficient.

Section of Diseases of Children.

The President opened the proceedings with a few words on the growing importance of children's diseases, and outlined the work lying before the Section. Dr. J. A. Coutts then opened the discussion on the diagnosis and treatment of non-tuberculous joint diseases in children. He dwelt on the elusive character of rheumatic arthritis in children, and the need for most careful scrutiny of the past history of any patient suspected of rheumatism; he deprecated as unworkable the classification of such cases as acute, subacute, or chronic, and was inclined to regard as non-rheumatic any arthritis in a child that did not yield to moderate doses of salicylate. He noted the occasional occurrence of chronic arthritis—probably a Charcot's joint—in anterior poliomyelitis; and in the arthritis of purpura advised the use of polyvalent antistreptococcal serum given by the mouth. Remarking that rheumatoid arthritis is fortunately rare in children, he briefly considered the joint troubles that occur in Still's disease, in congenital syphilis, in pneumococcal infections, and in enteric and scarlet fever. Mr. E. M. Corner discussed the surgical aspects of the matter, laying stress on the streptococcal and staphylococcal joint infections that may so closely resemble tuberculosis as to deserve the name "pseudo-tuberculous." He also noted that secondary coccal infections may occur in tuberculous joints, and believed such infections to be not infrequent. He had hopes that vaccine-therapy would do something for these joint disorders, and render surgical interference unnecessary. Mr. J. Keogh Murphy quoted cases of pneumococcal arthritis and periarthritis, also drawing attention to the rarity of gonococcal arthritis in the children of this country. Mr. H. Tyrrell Gray divided cases of pneumococcal arthritis into three classes, and could not agree with the statement that mixed infection is fairly common in tuberculosis of the joints. Dr. J. McCaw (Belfast) emphasized the importance of minute inquiry into the histories of children suspected of rheumatism; children with growing pains, he said, should always be treated as if they had rheumatism. Mr. R. C. Elmslie believed that many cases labelled "chronic rheumatism" were in reality instances of painless tuberculosis: he deprecated early surgical interference in patients with tuberculous joints, and found it hard to credit that the diseased joints sometimes met with in anterior poliomyelitis could be instances of Charcot's joints. Mr. W. Essex Wynter noted the good effects of camphor in certain cases of pneumococcal arthritis. Dr. M. Parry Jones (Derby) referred to the slightness of the symptoms evinced by many rheumatic children, and to the danger of producing dilatation of the heart by giving salicylate in excessive doses. Dr. Coutts and Mr. E. M. Corner replied briefly to various questions raised. About seventy members attended the discussion. The next business was a paper by Dr. H. J. Gauvain on the conservative treatment of tuberculous cripples, in which he outlined the methods employed at the Cripples' Home and College at Alton, and emphasized the importance of training the nurses to educate, as well as to nurse, the patients. Lantern slides were shown to illustrate the various points of the paper. Mr. W. B. Parsons congratulated Dr. Gauvain on the success with which the 70-years old principles of treatment advocated by Chance were being applied at Alton. The morning's work ended with a paper on the diagnosis of affections about the hip-joint in children, by Mr. W. B. Parsons, in which it was shown how closely prevertebral inflammation can simulate hip disease. He laid great stress on the importance of local treatment, of whatever kind may be necessary, in dealing with tuberculous arthritis; the more so because in these days the tendency was to give general treatment only, with the idea of reinforcing Nature's methods of healing.

Section of Gynaecology and Obstetrics.

On the assembling of this Section, the President, Mrs. Mary A. D. Scharlieb, after a few remarks on the order of debate, welcomed the foreign visitors, Professor D. Döderlein, of Munich, and Professors S. Gottschalk and W. Nagel, of Berlin, and alluded to the unfortunate absence of Professor von Herff, of Basle, owing to the illness of his son. A discussion on dysmenorrhoea was then opened by Dr. Herman, who defined the disease as spasms of uterine colic occurring at menstruation, the pains, though perhaps lasting but a short time, being so severe as sometimes to cause vomiting or even fainting. The term was sometimes loosely applied to any kind of pain occurring during menstruation, but this was a mistake, nor could he admit such forms as obstructive or membranous dysmenorrhoea; membranes were in some instances expelled from the uterus every month without any pain. As regards the cause of dysmenorrhoea, we possessed, he said, no criteria. The condition was most commonly found in neurotic people. Its spontaneous cure was very rare and its sole natural cure was pregnancy. Every case could be cured, but the remedy might be worse than the disease. To relieve pain morphine might be given, at the risk of establishing a morphine habit. The tar products, phenacetin and others, did less harm, but were not always successful. Good food, rest, and fresh air might do much good, and, of all drugs, guaiacum seemed the most reliable. Dilatation of the cervix was undoubtedly beneficial in many cases, and was best effected with metal bougies, up to the size of No. 14, but not larger. He condemned the use of instruments for rapid dilatation, and disliked tents, but, if such were used, two slender ones were better than one thick one. For a radical cure, ovariotomy might be performed, especially in women having to maintain themselves and losing their situations owing to being disabled every month. Hysterectomy was also at their disposal. Professor Gottschalk made special mention of the nasal treatment of dysmenorrhoea, introduced by Fliess, and to intermediate pains (*Mittelschmerz*), true and false, the former due to intermediate irritation, the latter to the commencement of the menstrual wave. Professor Nagel also spoke on *Mittelschmerz*. Dr. Curtis Webb, who had had much satisfaction in the use of guaiacum and hot alcoholic abdominal compresses, agreed that true dysmenorrhoea depended on uterine spasm, and held that, consequently, the benefit of electrical treatment was to be logically expected and had been practically demonstrated. Dr. R. J. Johnstone, of Belfast, had found it necessary, not

merely to dilate the cervix, but to lacerate or divide the muscular tissue, and even in some cases to perform Dudley's operation. Dr. Inglis Parsons, after dilating the cervix, introduced a glass stem for fourteen days, the patient remaining in bed. Dr. Frederick Edge attributed much of the dysmenorrhoea of English girls to their being badly fed between the ages of 9 and 17. Dr. Blair Bell said there were many forms, some due to structural congenital conditions, others to acquired conditions; with others he strongly insisted on hysterectomy rather than ovariotomy for radical cure. Professor Murdoch Cameron and Dr. Frances Ivens also spoke, and after a few remarks from the President (Mrs. Scharlieb), Dr. Herman replied. Professor Döderlein then read a paper on the origin and prevention of puerperal fever, in which he brought conclusive proof that it is better for parturient women not to be submitted to vaginal irrigation, and insisted on the use of india-rubber gloves in making the vaginal examinations that are clinically necessary. This paper gave rise to a very spirited discussion by Dr. Ballantyne, Dr. Purslow, Dr. Herman, Dr. Munro Kerr, Dr. Kirkby Gomes, Dr. Blair Bell, Dr. Frederick Edge, Dr. Hastings Tweedy, Dr. Thomas Wilson, and the President, mostly in entire accordance with Professor Döderlein. Dr. Herman, however, held that as good results had been obtained without as with gloves; and Mrs. Scharlieb said the hands should be as carefully disinfected as if gloves were not about to be used, while the gloves should be as carefully treated and worn as if the hands were infected. Dr. John Campbell (Belfast) then read an interesting paper on air embolism during labour, which was followed by one on rupture of the uterus by Dr. Munro Kerr (Glasgow), and one by Dr. James Young (Edinburgh) on the structure of the stroma of the uterine mucous membrane and its bearing on menstrual changes, which was illustrated by many photomicrographs and beautiful coloured drawings.

SECTION OF LARYNGOLOGY.

MR. TILLEY, President of the Laryngological Section, opened its proceedings at 10 a.m. with a few remarks on the growth of knowledge in this branch of medicine. He feelingly referred to the loss that medicine had sustained by the death of the late King. He also expressed the regret felt at the death of Cresswell Baber, who had been the personal friend of many of those present. He offered a hearty welcome to all visitors, and spoke in eulogistic terms of Professor von Eicken. He spoke of the increased knowledge of the accessory sinuses of the nose and the improved methods of operating upon the septum which had been developed of late, together with other advances — for example, improvement of facial deformities as a result of paraffin injections, which, however, had not been as successful as was hoped. He thought that the recognition of persistent hoarseness as an early symptom in laryngeal cancer was a matter for congratulation. Though it might seem that the field for investigation was being limited by the great advances that had been made in recent years, there was yet a large field for inquiry. Immunity offered a wide scope, as did also the portals of infection. He concluded his address with the following quotations that "the knowledge of to-day may prove to be the foolishness of to-morrow." "to travel hopefully is better than to arrive," and "the true success is to labour." Dr. von Eicken then read his paper on the technique of the direct examination of the oesophagus and lower air passages, before a larger assembly than has been seen at these meetings for some years. It was a paper full of interest and was amplified by an exhibition and description of the various instruments he used in this relationship. He spoke of the different methods of illumination, dealt with the methods of fixation of the lamp, and advocated the latest type of Kirstein mirror. The importance of passing all instruments during illumination, and with the aid of the eye, was insisted upon, as also the value of a thorough knowledge of the anatomy of the bronchi, trachea, and surrounding parts. He discussed the advantages of the lateral, dorsal, and sitting postures, and the various difficulties and dangers met with in different pathological conditions. He strongly reprobated the use of force in any of the manipulations. With reference to the use of anaesthetics, he preferred chloroform to ether, using at the same time a local anaesthetic. The paper was completed by an exhibition and demonstration of the uses of the various instruments referred to. Dr. Paterson (Cardiff) dealt rather with oesophageal illumination, mentioning its priority over tracheal from the point of view of time. Dr. W. Hill then gave a short paper dealing with his special modifications of instruments, which he also exhibited, and which deserve considerable attention as they mark an advance over their predecessors in many respects. The tubes are specially modified so as to give increased manipulative power to the operator. Many of those present joined in the discussion, and gave their personal experiences upon the subject. Drs. von Eicken, Paterson, and Hill replied to questions raised, and the proceedings terminated with the reading of a paper by Mr. J. S. Fraser on congenital atresia of the choanae.

SECTION OF MEDICAL SOCIOLOGY.

THE new Section on Medical Sociology deserved a better beginning than it received, in view of the vast importance to the profession of the subjects down for discussion, the careful preparation of the programme, and the fact that the inaugural meeting was postponed from last year to this. The session was held in the old College of Science, and possibly many persons were prevented from attending by the difficulty of finding the place. Dr. Macdonald, the President, opened the proceedings at 10.30 a.m., with a very small audience. After briefly relating the history of the development of the Section, he stated that it might seem that Medical Sociology did not come, properly speaking, within the purview of the Association, whose function was the furtherance of medicine and the allied sciences. The subject of the Section, however, while not actually an allied science of medicine, was of considerable importance to the medical profession, and it was right that it should be possible to discuss it in a separate Section. He would have liked to have defined the word "sociology," and for this purpose appealed to a member of the Sociological Society, but without success. A definition had been suggested, namely, that medical sociology is a science dealing with all those subjects which would be discussed in the Section. Politics, however, would be precluded. The subject of the economic basis of hospital management was opened by Professor Benjamin Moore of Liverpool. In his speech and in those that followed, certain points were uniformly agreed upon, but others formed marked bones of contention. Briefly epitomized, the Moore-Burdett scheme is that charity is unworkable as an efficient basis of administration of hospitals; that the patient should be admitted if the treatment can be better applied in the hospital than in the home; that the patient should be forced to insure against sickness, and the insurance company should contribute to the hospital when the patient cannot afford to pay himself; that the staff should not give gratuitous service; that the administration should be largely medical; and, lastly, that there should be uniform co-ordination of all the elements of hospital life. Professor Moore deprecated the idea that modern hospitals are charitable institutions. They should be regarded as places where disease is studied and advances in medicine are made; where the embryo physician and surgeon are developed; and where steps are taken to improve the public health. He, in common with several subsequent speakers attacked the present principles of hospital organization. He believed that there should be grades in the service of the medical staff, and that a house-surgeon should be able, by promotion, to work his way through all the greater hospital appointments.

Insurance was coming, and with it, he believed, the municipalization of hospitals. Sir Henry Burdett followed in a different tone, but more or less to the same effect. The present system, he believed, was bad for the hospitals and worse for the profession—to the extent of £60,000 a year. It seemed to him that the taking over of the hospitals by the Government was almost an accomplished fact. Hospital abuse and bad administration were dealt with in no uncertain terms, and the speaker contrived to drive his arguments home in an effective manner. Dr. Heron followed with a criticism on the Hon. Sydney Holland, who was said to have stated in public that he was tired of hearing of the philanthropic work of doctors. Dr. MacIntosh believed in a uniform system, and drew lessons from the practice of fever hospitals, which nearly every one applied to. He wished the reform to move more slowly than the others appeared to desire. Dr. Luckham spoke of the details of administration, while Dr. Morrison dealt with principles, or, as he termed it, the radical question. His remarks were more or less moderate acceptances of the scheme of reform put forward by Professor Moore. Mr. Kershaw, the Secretary of the Central London Throat and Ear Hospital, speaking from the lay point of view, wished to correct the assumption that abuse was rampant. He set forth his experience in percentages. Professor Saundby advocated a modified ticket system for admission into hospital, and gave amusing instances of glaring abuse. He objected strongly to the demand that every person should have a right to go to the hospital. Dr. Ker referred to the Bolingbroke Hospital, and Dr. Buist expressed his belief that the charitable aspect of the question must be gradually curtailed. Dr. Major Greenwood objected to the payment of the medical staff of hospitals.

SECTION OF MEDICINE.

AFTER some opening remarks by Dr. R. W. Philip, President of the Section, Professor D. L. Edsall, of Philadelphia, opened a discussion on the pathogenesis, prophylaxis, and treatment of acidosis. While there was an important distinction between acidosis and acid intoxication, there was, from the clinical as well as from the pathological standpoint, another equally important distinction between the forms of acidosis, sometimes severe and sometimes mild, that were due to lack of carbohydrates or inability to utilize them, as in diabetes, and those forms which were incidental to severe disease which was most commonly situated in the liver. Even in the latter forms, however, diet at times played an important part in treatment as to alkalies, probably less through checking the direct effects of acidosis than through controlling secondary effects, perhaps an autolysis. While it was not certain that acid intoxication was the prime cause of the violent toxic symptoms in diabetes, it was highly probable that it was the main cause, as well as in the occasional cases of coma of the same type in non-diabetic persons. The manner in which the severe symptoms were produced was not clear. The relation of the loss of inorganic salts to the production of symptoms, and the possible relation of the same salts to the production of acidosis, needed further study. It was not improbable that these salts had some relation to the symptoms in the earlier course of diabetes before severe toxic symptoms came on. It seemed probable that the addition of other bases besides sodium in the treatment of acid intoxication might help better than sodium alone in postponing a fatal issue. Alcohol had a marked influence in controlling acidosis, and should be administered in generous quantities; glycerine-aldehyde was another substance having a controlling effect, and it, unlike alcohol, had no toxic influence. The more a patient obtained the power of protecting himself in regard to carbohydrates the greater was the power he had of avoiding acid intoxication. Dr. E. I. Spriggs thought the distinction between different forms of acidosis and between those which showed obvious degenerative changes in the liver and those which did not unimportant. He referred to observations made several years ago by Dr. Pembrey, Dr. Beddard, and himself, especially as showing that acidosis might be produced by excess of carbohydrates or by starvation, or even by a too rapid diminution of carbohydrates. To prevent acidosis the patient should have precisely the amount of carbohydrates that he could assimilate. The chief treatment was by sodium bicarbonate, but that was only palliative. Dr. Langdon Brown held that starvation was the chief cause of acidosis, especially in regard to carbohydrates, but it might be due to oxygen starvation. He looked upon oxybutyric acid as an evidence of severe tissue destruction rather than as a cause of the acidosis. In prophylaxis it might be found that certain carbohydrates could be tolerated more easily than others. Potassium citrate was a valuable adjunct to the sodium bicarbonate in treatment. Dr. A. P. Beddard discussed the effect of exercise on acidosis and to its treatment by alkalis. Dr. Leonard Guthrie discussed the question of post-anaesthetic intoxication, and said he thought all children the subjects of cyclical vomiting were potential victims. Dr. M. S. Pembrey said that acidosis was really a question of physiology, in which the law of excitation came into play. The sudden changes were the serious ones in its production. Dr. J. H. Ryffell alluded to the influence of severe exercise in producing acidosis, and thought lactic acid was the effective poison when so produced. Professor Edsall, in reply, said the failure of the administration of alkalis in many cases of acidosis was a strong argument used by the opponents of the view that the acid factor was the sole cause of acidosis. Dr. Leonard Hill gave a demonstration of improved methods of giving oxygen, with an account of the influence of air in treatment.

NAVY, ARMY, AND AMBULANCE SECTION.

THE work of the Navy, Army, and Ambulance Section commenced on Wednesday, July 27th, with the deliverance by the President of the Section, Colonel Andrew Clark, A.M.S.(T.F.), of an address of welcome. In the course of it he referred to the relation of the British Medical Association to the Services, saying that the Territorial Force, consisting as it did of civil members of the profession in special and general practice, came into more direct contact with the bulk of the members of the Association at home than did the members of the regular army. This served to a considerable extent to bind the Services to the Association at home. As the Association now extended all over the empire, its Oversea Branches, which were continually increasing in number, were much helped in carrying on the work of the Association, both professional and social, by the officers of the army and navy who were from time to time stationed abroad, and they were able to inform the executive of the requirements of various localities, which varied very much. One of the main reasons that determined the Association to seek a Royal Charter, giving more extended powers than those of a limited liability company, was to benefit the Oversea Branches. A Charter was not possible at present, but the speaker hoped and believed other means would be found to afford the facilities required. Of late years representatives of the Services had served on the Executive Council of the Association, and this had been the means of bringing the services and their requirements, as well as the Oversea Branches, into touch with the Association. The formation of the Territorial Force gave the opportunity of completely reorganizing the medical services of the Yeomanry and Volunteers, and of forming a medical corps capable of enabling the Force to be independent in its medical organization in case of mobilization, and Colonel Andrew Clark rightly claimed that representations made by the British Medical Association had helped to effect this result. Major C. G. Spencer read a paper on local and spinal analgesia in relation to active service. This was followed by a paper on hypodermic injections in "action," containing suggestions for simplifying their administration, by Fleet Surgeon A. G. Wildey. An interesting communication from Colonel P. Broome

Giles, dealing with the training of the Territorial Royal Army Medical Corps, was read by Major Arthur M. Connell, R.A.M.C.(T.), of Sheffield, one of the Honorary Secretaries of the Section. An important paper followed, which was read by Lieutenant-Colonel E. M. Wilson, R.A.M.C., on medical requirements in war for assisting the Royal Army Medical Corps on mobilization.

SECTION OF ODONTOLOGY.

MR. J. HOWARD MUMMERY, President of the Section, delivered a short opening address, special reference being made to the recent more intimate association of the dental with other branches of medicine, and the benefit accruing thereby, both to specialists and the medical profession generally, and the world at large. The special discussion on the prevention of dental caries was opened by Dr. Sim Wallace, who dealt with the effect of various foodstuffs, and referred particularly to the arrangement and selection of meals. The meals, he said, should be arranged in such a way that there would be in each a sufficiency of hard food to stimulate the pleasurable activity of efficient mastication, together with its excellent concomitant effects on gums, jaws, teeth, and alimentary canal generally, and should be terminated with foods of a detergent nature, so that sticky carbohydrates would be cleaned from the teeth. He gave diets suitable for meals which would not produce caries. Dr. Harry Campbell, Mr. Underwood, Dr. Wheatley, Mr. Maggs, Mr. Hopewell-Smith, and Dr. Sydney Davies joined in the discussion. Mr. A. S. Underwood followed, taking the influence of climate as his subject. He read a most interesting paper embodying the results of a careful examination of an extended series of skulls of various races and various epochs. He showed that cleanliness and uncleanliness did not suffice as a cause of dental disease or its converse. He concluded by stating that prevention of dental caries could be best attained by: (1) A return as far as possible to the simple life; (2) a return as far as possible to maternal breast-feeding; (3) a universal habit from early childhood of cleansing and rinsing the mouth after every meal, and especially at bedtime. Mr. Frederick Bennett, Mr. Dolamore, Dr. Harry Campbell, Mr. Maggs, Dr. Wheatley, Dr. Chowry Muthu, Mr. Howkins, Professor Elliot Smith, and Dr. Sim Wallace took part in the discussion. In the discussion Dr. Harry Campbell estimated that in this country there must be 200,000,000 carious teeth, and much the same number of root abscesses and pyorrhoea abscesses. Mr. F. Bennett, Dr. Wheatley, and Mr. Kenneth Goadby took part in the discussion; and Mr. Sim Wallace replied. Dr. Hector Mackenzie discussed the care of the mouth during general disorders. He urged very strongly that an elementary knowledge of diseases of the teeth should be imparted to all medical students, and should be required of them when they presented themselves for the final examinations. He stated that dental caries was a preventable disease, and that it never arose without neglect of oral hygiene. He laid great stress on the neglect of oral hygiene during illness; as in case of fevers, "Read," he said, "the descriptions of these illnesses in the medical textbooks, and you find sordes filth from neglect which have been allowed to collect on teeth and lips mentioned as a usual symptom."

SECTION OF OPHTHALMOLOGY.

In his opening address, the President, Mr. Chas. Higgens, sketched the progress of ophthalmology as he had seen it during his experience of forty years. In some things they had advanced greatly; in others they had made no real advance so far as treatment was concerned. In the second of these classes he would put trachoma, glaucoma, and uveal inflammation. Of trachoma, they knew more of its histology and something of its pathology, and they had dropped its old name; but in treatment they had made no advance. In glaucoma much of interest had been discovered as regards its pathology, but of its treatment no more could be said than that a "bad" iridectomy—that is, one with a leaking scar—was the most desirable of all results. In other branches of treatment there had been real advantage gained in his time. The treatment of squint had been revolutionized by the extensive use of glasses. The correction of ametropia, the prescription of glasses, and the making of lenses had not only been simplified, but made certain and accurate. He could not say that great advances in instruments were marked, except perhaps it were in the introduction of Haab's giant magnet, but this was more for hospital than private practice. One matter of note was the great increase in the number of ophthalmic surgeons. In his early days they were a handful; now they counted hundreds. He hoped that competition would not tend to demoralize them, but that they would always strive after a high ideal. Lastly, he referred to the British Medical Association and its work; he desired greatly that its operations should be emphasized by an increase in its trade-union aspect, more power to deal with abuse both within and without the profession. Dr. G. A. Berry (Edinburgh) opened the discussion on the future of ocular therapeutics. Advances, he said, were possible in two ways: (1) By experimental treatment based on clinical observation. (2) On indications derived from new pathological discoveries. Of the two, the clinical side of advance had been the more fruitful hitherto, notwithstanding the fact that our knowledge of pathology had advanced out of all proportion to our knowledge of therapy. Part of this difficulty arose from the great difficulty of applying theoretical knowledge in daily practice. Of treatment he recognized two forms: (1) local, (2) general. Each form had had particular vogues in remote times and places. Of the two, the former presented the great continuity of adherence; the latter often fell into disrepute owing to excessive usage by enthusiasts. Dr. J. W. H. Eyre developed the discussion from the side of bacteriology. The first point he wished to emphasize was the necessity for accurate diagnosis if any advantage from bacterial treatment was to accrue. Nature was careful in her reparative processes and not prodigal; an antibody prepared for one micro-organism had no inhibitory effect on another. Serumtherapy and vaccine-therapy constituted the two modes of attack. Of the former, antidiphtheritic serum had alone proved of real use in eye work. Vaccine-therapy showed great promise; tuberculin T.R., antistreptococcic and antistaphylococcic, had each proved of the greatest value when properly used, and in cases where specific diagnosis was made. He emphasized the necessity for the ophthalmic surgeon and bacteriologist working together if the best results were to be obtained. Continuing the discussion, three papers on new modes of treatment were read. Mr. Arnold Lawson and Dr. Mackenzie Davidson (London) read a paper on radium-therapy in ophthalmology. The method of application was described, and some indications gathered from their experiences were given in regard to dose, length of exposure, and frequency of sittings. The immediate and remote effects of exposing the eye to radium were discussed and the results of treatment detailed. The report was of an encouraging nature, indicating that cornual ulcers in particular are very susceptible to this method. It seems also a certain cure for "spring catarrh." A tabulated report of cases treated was presented. Dr. H. M. Traquair (Edinburgh) read a paper on the treatment of purulent keratitis by ionotophoresis. This method depended upon the electrical deposit of zinc into the tissues to be treated. He had confined his work to hypopyon ulcers, of which twenty-one had been treated, some with marked success. He showed the apparatus used. Mr. Bishop Harman and Dr. E. R. Morton (London) read a paper on the use of carbon dioxide snow in eye work. The usage of this form of caustic had been proved to have the highest advantage in capillary naevi of the skin; a single application for forty seconds was enough to effect a cure. Recently, papilloma of the lids and rodent ulcer had been subjected to treatment with results that must be seen to be believed. A single application of the snow

to the abnormal surface for forty seconds caused complete disappearance of the growths. Its use had been experimented upon in trachoma; four cases were under treatment. Brief and repeated applications—fifteen seconds gradually increased to thirty seconds, once a week—were used. The method was almost painless, and with all reserve they were inclined to think the snow had a future before it for the relief of this chronic disease. Dr. A. MacGillivray (Dundee) said he felt that some of the opening papers had been unduly pessimistic; if they had not attained to all their expectations, they had made some sure advances. Dr. R. A. Reeve (Toronto) spoke of the use of deonine; it had been discredited because wrongly used; the powder itself should be applied to the lids, and not a solution. Dr. G. S. Ryerson (Toronto) commented on the use of radium in epithelioma of the orbit. Mr. Hill Griffith (Manchester) cited the usefulness of tuberculin in tubercle of the conjunctiva. Mr. A. W. Ormond (London) confirmed this view in an experience of four cases of grave tuberculous periostitis. Mr. Leslie Paton (London) cited as an advance his method of reduction of detached retina; it was not only necessary to relieve the detachment but also to secure the retina, and this the cautery would do. Dr. Montague Harston (Hong Kong), Major Gidney, I.M.S., and Major Fink, I.M.S., continued the discussion. Dr. Berry and Dr. E. R. Morton replied.

SECTION OF OTOLOGY.

THE proceedings in this Section were opened by the President, Dr. Edward Law, who gave a brief address, in the course of which he touched upon the importance of more attention being paid to the condition of the nose and the naso-pharynx to reach the source of origin of deafness and ear disease. He also emphasized the importance of the early treatment of school children as at present being carried out by the London County Council. The omission in the valuable report of Dr. James Kerr of any mention of "aural tuberculosis in children" fully justified, he considered, the action of the officers in selecting "aural tuberculosis in children" as a fit and proper subject for one of the discussions. This discussion was opened by Dr. William Milligan (Manchester). Dr. Milligan dealt with the frequency of aural tuberculosis in children, and discussed the usual routes of infection. He insisted upon the importance of recognizing the disease as of primary origin in the middle-ear cleft in a large proportion of cases. The main symptoms of the disease were considered, and the various methods of establishing a definite diagnosis were described. Suggestions were made for dealing with cases of aural tuberculosis in school children with a view of preventing dissemination of the disease. Mr. R. Lake (London) stated that in his own hospital experience the disease was very rare indeed. He advocated absolute eradication by operative measures. Mr. F. H. Westmacott (Manchester) also criticized the remarks of Dr. Milligan as regards the frequency of the disease. Mr. Westmacott had had exceptional opportunities in the Children's Hospital in Manchester of investigating the matter, and of 1,500 children examined, only 2 per cent. had aural tuberculosis. Mr. Sidney Scott (London) referred to specimens in the medical museum of the Association which had a bearing upon the discussion. Dr. R. Bárány (Vienna) cited a case in which a large cholesteatoma was associated with aural tuberculosis; he also advocated radical treatment by operation. Dr. Dundas Grant (London) mentioned methyl violet as an antiseptic that might be tried in the disease. Dr. Jobson Horne (London) considered the disease had a definite morbid anatomy, that its origin was in the mastoid and petrous portion of the ear, and that it was essentially a bone disease in children, and in early life was commonly primary in origin. Dr. Horne suggested radiography as an aid to diagnosis in the earliest stages of deposition of tubercle in the bone. Mr. Mark Hovell (London) supported a rigid inspection of the milk supply. Mr. Hunter Tod (London) attributed the appearances of the tympanic membrane to a double infection. Mr. C. E. West (London) criticized Dr. Milligan's statistics as excessive. Dr. Edward Law thanked Dr. Milligan for his paper; and the latter in his reply stated that he knew that his statistics would be challenged. Dr. H. S. Birkett (Montreal) gave a demonstration illustrated by radiograms of the mastoid process.

SECTION OF PATHOLOGY.

THIS Section met under the Presidency of Mr. Shattock who, in his introductory remarks, pointed out that the main principle of these meetings was the interest of the general practitioner. He dwelt on the part the practitioner himself might play in recording observations, and hoped that he might in future be encouraged to contribute to the proceedings, suggesting certain subjects that might come under his ken, for example, histories, *quâ* alcohol, of people over 80, cancer and cancer houses, and, of great import, the construction of medical pedigrees. He touched upon his work with Dr. Dudgeon on the fatal effects of drying on the cancer cell, a fact which reduces the possibility of the air-borne infection of cancer. Dr. Mott then described the histological changes occurring in the nervous system in certain cases of chronic alcoholism, illustrating his remarks with lantern slides. He discussed the varying susceptibility to alcohol and idiosyncrasies, and pointed out that the effects that could be definitely ascribed to alcohol on the nervous system were not often seen, even in large asylums. Photographs of chronic alcoholics supported his view (corroborating that of Dr. Branthwaite) that many were congenitally defective. Cirrhosis of liver was touched upon, as he had found that advanced cirrhosis with ascites was very rare in alcoholics. Alcohol might, he said, be taken for many years in excess in certain individuals without producing insanity. He discussed heredity in alcoholism, and pointed out that the combination of insanity with alcohol appeared to be certainly the worst combination and produced the worst stock. The excess of rural insanity over urban he ascribed to the migration of the better stock from the country. Alcohol was, he said, an important factor in crime production—it killed off the degenerates, but led to fertility because of carelessness; this, however, was counteracted by the sterilizing effects of venereal diseases. He then gave illustrations of the mental effects of alcohol, and laid down the doctrine that often the effects in such conditions as puerperal mania were due to alcohol associated with microbic affections, this from histological and bacteriological examinations of the pelvic tissues. The paper concluded with a graphic account of the histological changes found in alcoholics, the slides being contrasted with others from normal brain tissues. Sir Clifford Allbutt, in discussing this paper, expressed the view that the immense body of writings on this subject had served its purpose, and should now be reduced to scientific order. Drs. Mackie Whyte, MacVicar (Dundee), Pasmore (Croydon), and others having commented on the paper, Dr. Mott briefly replied. Dr. Willcox and Dr. Collingwood (Dublin) then demonstrated a method of administering oxygen with alcohol vapour, by the use of which they had produced much better results than with oxygen alone, the mixture having an increased marked stimulating effect on the circulatory system. Physiological evidence supported the therapeutic results, and Dr. Willcox was justified in pointing out that whilst realizing the dangers of alcohol, as exemplified in Dr. Mott's paper, it was necessary not to lose sight of the good effects it may have under certain conditions in small quantities—for example, in pneumonia with cardiac failure, in shock after operations, especially abdominal, etc. It had been tried with success in St. Mary's Hospital for a long time. Dr. Ch. Achard (Paris), after being introduced by the President, then read a brief note on the investigation of dead leucocytes by the

neutral red test. He had found that living leucocytes remained uncoloured or contained red-stained intraprotoplasmic granules or vacuoles, but dead leucocytes showed a red-brown nucleus but no cytoplasmic staining.

SECTION OF PHARMACOLOGY AND THERAPEUTICS.

THE Section met at 10 a.m. on Wednesday, July 27th, in the Basement of the Imperial College of Science. Professor A. R. Cushny, F.R.S., occupied the chair. Without any opening address, he called upon Dr. O. F. F. Grünbaum (London) to open the discussion upon treatment with lactic acid organisms. Dr. Grünbaum said that the Section must do its best to forget the numerous untruths which were circulated in the press by those interested in the manufacture of lactic acid preparations. He proposed to direct the discussion into three channels: (1) The theory of the action of the lactic acid bacilli. (2) The method of administration. (3) The diseases likely to benefit by the administration. The great advantage of the lactic acid bacillus over other intestinal antiseptics was that it formed lactic acid where it was wanted. Antiseptics given by the mouth were little likely to be effective in the intestines. It was well to select the *Bacillus bulgaricus* as the organism which was to be relied upon to produce the lactic acid. Lactic-acid-forming streptococci were less active and could not be distinguished by the microscope from other streptococci which were accidental contaminations. During the first four days of treatment he put his patients upon a special diet, mainly carbohydrate with a fair quantity of malt extract. The milk should be given at the stage when it had just curdled, and a pint taken daily in three doses. He had met with no unfortunate results. He had used it in mucous colitis, in uraemia, in diabetes, and in all forms of imaginary illness with great benefit. Professor Tanner Hewlett (London) did not regard all the named varieties of lactic-acid-forming organisms as distinct species. The variations were inconstant and insufficient to base a differentiation upon. While the majority of sugars were attacked by the *Bacillus bulgaricus*, saccharose and maltose were not attacked. It would, therefore, appear useless to add cane sugar to the diet of those taking soured milk in the hope of increasing the formation of lactic acid. The *B. bulgaricus* did not attack fats. The lactic-acid-producing streptococci could not replace the *B. bulgaricus*. They aided its action only by producing an acid environment. A better mixed and more uniform curd resulted when the streptococci accompanied the *B. bulgaricus*. If inoculation from soured milk to fresh milk were carried on from day to day, the streptococci tended to outgrow the bacillus. Whey was an excellent medium for the growth of the *B. bulgaricus*, and could be used where the nutritive and fattening qualities of the milk were not wanted. Tablets, as a rule, were inefficient "starters" for preparing soured milk, and with them the production of lactic acid was small. Dr. Alexander Bryce (Manchester) urged that two marked disadvantages of the soured milk treatment were that constipation frequently resulted, and that acid dyspepsia was produced, or at any rate aggravated, if present. He believed that the lactic acid was apt to produce rheumatic pains, such as sciatica, lumbago, muscular rheumatism, and even effusion into a joint. Of this he had had some personal experience. Professor Vaughan Harley (London) detailed experimental chemical work which had convinced him that lactic bacilli taken by the mouth were successful in reducing alimentary putrefaction. After a course of soured milk the faeces lost their alkalinity, and no longer gave Schmidt's fermentation test. The indican and the ethereal sulphates in the urine were reduced in amount, although these substances were normally present in such small amounts as to render conclusions based on quantitative estimation uncertain. Professor Sahli (Berne), speaking in German, said that he had had good results in conditions of an acidosis—in pernicious anaemia for example—and in typhoid fever. Bacteriological differences he did not regard as essential. The good effects were in part due to the lactic acid, however formed. Dr. Hertz's (London) experience was that so far from always producing constipation, lactic acid organisms were capable of producing severe diarrhoea. Many patients claimed that their constipation had been benefited by soured milk. In infective colitis the treatment was very effective, and in cases under his care he had had demonstrated the disappearance of the pathological organisms from the faeces. Such bacteriological control, he thought, was necessary. Dr. Robert Hutchison (London), Professor Bradbury (Cambridge), Dr. F. T. Bond (Gloucester), Mr. C. Revis (London), Dr. Johnstone (Bolton) also discussed the paper, and Professor Hewlett replied.

SECTION OF PHYSIOLOGY.

THE meeting of this Section was opened by some introductory remarks by the President, Professor W. H. Thompson (Dublin), in which he referred to the progress made in physiology since the Association last met in London. He went on to speak of the teaching of science in secondary schools, and the need of practical instruction. Lady Aberdeen's movement—the Women's National Health Association—in Ireland had, in his opinion, done a great deal of good. He then spoke of the special subjects for discussion in the Section, referring particularly to the necessity of drawing up standards for protein, carbohydrate, and fat intake. Lieutenant-Colonel Melville read a paper on the dietary standards for soldiers during hard work. In the experiments which he carried out two different diets were used, each for six days. The diet of the first week was made up as follows: Protein, 190 grams; carbohydrate, 510 grams; and fat, 58 grams; and that of the second week: Protein, 145 grams; carbohydrate, 450 grams; fat, 110 grams. The effect of the work on the soldiers on these diets was at first a steady rise, then a fall in body weight. The rise was explained either by retention of water or of protein. The loss of weight was, of course, due to the diet being insufficient for the work done. As regards the protein intake, he thought that 190 grams was ample, if not, indeed, generous, but that 145 grams, on the other hand, was to be regarded as the minimum. One point he emphasized was that the nature of the protein was much more important than the amount. As regards the carbohydrate, he thought the form in which it was given was of importance. It was found that the men could eat more bread and biscuit than the officers. The officers had a craving for sugar, which lasted for a week after the close of the experiment. He held that in the diet of the first week there was too little fat, and that even in the second week the supply could not be called lavish. Both officers and men had a craving for fat. The problem he set the Section at the conclusion of his paper was whether the balance of a diet for work should be made up of carbohydrate or of fat. A very interesting discussion followed, in which the question of the low and high protein intake raised by Chittenden was dealt with. The majority of the speakers were against the Chittenden standards, more particularly against the low calorie intake advocated by this worker.

SECTION OF PSYCHOLOGY AND NEUROLOGY.

THE great interest taken in the important matters to be discussed at the meetings of this Section was well shown by the large numbers who gathered at the opening meeting. Generally somewhat sparsely attended, to-day the room was packed. The address of the President, Dr. Theodore B. Hyslop, was listened to with the profound attention of all present. Dealing in the main with the connexion of brain and mind, the President handled this most difficult of all problems with masterly ability, not so much, however, with the intention of exposing the fundamental metaphysical conceptions on which any explanation must rest as of criticizing those conceptions from the point of view of

psychological medicine. The address was so broadly philosophic that it should be read, when published, in full. Dr. Savage opened a discussion on marriage and insanity. Prefacing his remarks by saying that the problem appeared at present beyond practical legislation, he said that the general opinion, lay as well as medical, was clearly against the marriage of all who had been insane. He, himself, however, considered that the general denial of matrimony was too broad and dogmatic, and that out of his own experience he could recall many cases where the individuals had undergone brief psychoses, had married and had children, without begetting insane offspring. The type of the insanity should be considered, and as absolute bars to matrimony he mentioned: Insanity with definite delusions or hallucinations; secondly, persons with a history of marked periodical mental disturbances, particularly occurring at the period of adolescence; thirdly, epilepsy with mental disorder—in fact, he doubted whether any person who had had epileptic attacks ought to marry. Incidentally he referred to the inadvisability of the subjects of syphilis or diabetes being permitted to marry, and stated as a matter on which there could be no doubt that no one should marry under the belief that this would act as a relief for either temporary mental disorder, hypochondria, or neurasthenia. Dr. Shuttleworth agreed with Dr. Savage that the time was not ripe for legislation, though he agreed that the marriage of the congenitally defective should be stopped. Dr. Shuttleworth was followed by Dr. Robert Jones, who, after discusssing the bearing of Mendelism upon the heredity of insanity, said that the supporters of Mendelian laws were too prone to take an exclusive cognizance of the parent, he himself denying the existence of gametic purity. Direct heredity, he maintained, was not so important as was generally presumed in the causation of insanity, other environmental factors, and particularly syphilis, alcohol, and tubercle being more important. Finally, he referred to recent statistics showing in persons not insane an heredity of insanity or epilepsy in as much as 55 per cent. Dr. Risien Russell, speaking from the point of view of the neurologist, discussed the marriage of epileptics, those with syphilitic disease of the central nervous system, and the impotent; and, whilst agreeing that as a general rule the epileptic should be advised against marriage, there were cases in which he should depart from that rule; so, also, he would distinguish between a tabetic, for example, and a case of syphilitic myelitis, as the latter, if properly treated, might marry without any resulting harm. Also he would distinguish between congenital or permanent and a transitory impotence. Many others, including Drs. Barker Smith, Shore, Fletcher Beach, Greenlees, Mills, Barnes, and Draper, the latter of whom pointed out that the preclusion of marriage might possibly have the effect of greatly increasing illegitimate unions, with still more disastrous effects than there were at present. A most interesting discussion was brought to a close by a resolution by Dr. Greenlees, seconded by Dr. A. Douglas, in favour of legislation prohibiting the marriage of those of unsound mind. This resolution, however, was withdrawn for further deliberation. Dr. Leonard Baugh then read an interesting paper on paranoidal symptoms at the female climacteric, in which he pointed out that the marked feature was the systematization of delusions, but which differed from true systematized delusional insanity in that the typical slow and steady evolution of the delusions was wanting. Dr. Baugh's paper was briefly discussed by Dr. R. H. Steen and the President.

SECTION OF RADIOLOGY AND MEDICAL ELECTRICITY.

AMONG the distinguished visitors at the opening of this Section were Lord and Lady Aberdeen, who remained during the greater part of the proceedings. Mr. J. Mackenzie Davidson (the President) devoted his address from the chair chiefly to the subject of radiumtherapy. He thought that radium had only a limited utility in the treatment of malignant diseases, but that it was potent in superficial conditions, while its value in external affections of the eyes and eyelids was such as to make it likely to take a high place in the ophthalmic therapeutics of the future. Sir J. J. Thomson, F.R.S. (Cambridge), then delivered an important address on radiation. Speaking as a physicist, and disclaiming any special medical knowledge, he said that the deleterious effects with x rays, of which there had been so many instances, and the curative effects also, were due really to the soft rays—rays which were most readily absorbed. When using Roentgen rays for purposes of exploration, it was important to get rid of these soft rays, but for purposes of curing disease it was evident that it was this absorption of energy which was required. Therefore, he thought they should develop any method that offered itself for producing and making effective these very soft rays. To produce them directly from a Roentgen tube was a matter of very great difficulty, but some recent experiments by a former pupil of his, Professor Barkla, suggested that secondary radiation under certain conditions would produce a definite softness of ray. When a piece of metal, or any substance, was struck by Roentgen rays, that substance gave out a special quality of ray. Iron, copper, or silver, whatever the quality of the rays that struck them, gave out a constant kind of Roentgen radiation. They had in this way a perfectly definite means of producing Roentgen rays of a specific type, and he asked whether it would be possible to use for medical purposes the radiation given out by these and other metals instead of trying to produce soft radiation by specially constructed Roentgen bulbs. A demonstration in radium therapeutics was then given by Drs. Dominici and Warden (Paris). Eight of their patients had even braved the Channel crossing in order to attest the reality of their cure. The cases in which radium had proved of great value in Dominici's hands included lymphadenoma of the parotid—a case which was considered inoperable by three surgeons—sarcoma of the mucous membrane of the upper jaw, epithelioma of the roof of the mouth, and malignant tumour of the testicle with metastatic growths in the pelvis and abdomen. Mr. R. J. Godlee and others took part in the discussion. Dr. Lewis Jones brought to the attention of the Section the value of the zinc ion in the arrest of a form of corneal ulceration which is known as Mooren's ulcer of the cornea. Zinc ions have been introduced at small ulcerated spots, a current of about one milliampère used for one, two, or three minutes, and the success has been definite. Mr. Thurstan Holland (Liverpool) showed a model of a screen for x-ray examination in the upright position, the idea being to afford protection to a large number of people standing in front of an x-ray tube at the same time, such as a class of students. Dr. Reginald Morton (West London Hospital) read a note on some curious bony changes which were observed in a case of chronic x ray dermatitis. It appeared as though the two processes of destruction of bone and of repair were going on at the same time, and the progress of the disease contained other points of interest. Mr. Hall-Edwards (Birmingham) said that in his own case, at the part of the hand where the bones had eroded, there was no sore at all, and that, instead of the hand being enlarged, as generally happened in malignant conditions of the bone, the portion of the finger over the most deeply eroded part was smaller than normal. The final paper was read by Dr. W. Y. Somerville (Glasgow). It was a plea for a revival of high-frequency treatment, and a summary of the conditions in which high frequency currents were of service. He urged their value in neuralgic pains, in the pain that exists in fracture or sprain, as well as in various affections of the skin and in neurasthenia.

SECTION OF STATE MEDICINE.

THE opening meeting of this Section was held in the Senate room of the London University. Lord Ilkeston presided, and in his introductory remarks referred to the extreme gravity of the subjects which the Section

had to discuss. He said that for years past prominent and influential members of the Association had been sowing the seeds of social reform, and no body of men were more capable of giving advice to Parliament on such questions, for they spent their lives amongst those where reform was most urgently needed. He considered that the country was on the eve of great social reforms, which must of necessity follow the grant of old age pensions and the feeding and medical inspection of school children. The medical profession must take its part in the measures which had been promised for altering the existing Poor Law system, and dealing with insurance against sickness, inability, and unemployment. The profession must stand shoulder to shoulder so as to maintain public respect, efficiency, and independence. If, on the other hand, they pursued an individual petty policy, and allowed the intrusion of ordinary considerations unconnected with the profession, then disaster would follow. Mrs. Sidney Webb read a paper on the relation of Poor Law Reform to public health administration. She said that the recent Royal Commission on the Poor Law almost unanimously agreed that the Poor Law medical service should be drastically revolutionized. They found that the defects revealed did not arise from any shortcomings on the part of the Poor Law medical officers. The principal deficiencies were as follows: (1) The failure to provide any medical treatment at all for many cases, and to reach the others at the incipient stage; (2) the "deterrent" effect of the relieving officer and of the whole Poor Law system; (3) the adverse influence on treatment of inadequate remuneration and unsatisfactory conditions of the service, especially the burdening of the district medical officer with the cost of drugs—these shortcomings seemed to be connected with the subjection of a medical service to a non-medical administration; (4) the failure to provide for nursing, appropriate nourishment, and convalescence; (5) the lack of connexion between the domiciliary and the institutional treatment; (6) the inadequacy of the general mixed workhouse as a hospital; (7) the lack of suitable provision for phthisis measles, whooping-cough, and venereal diseases. The question raised by the Poor Law Commission and now being considered by statesmen was whether something more generally effective in the way of prevention of disease and more in the way of universally guaranteed treatment of disease at the early stages must not be required. The position was complicated by overlapping of rival rate-supported medical agencies—municipal hospitals, "health visitors" giving hygienic advice, organization of domiciliary nursing, active supervision of midwives, "milk dispensaries," medical inspection and treatment of school children, "school clinics," the placing of phthisis under the sphere of the public health authority—all these were rapidly encroaching on the domain of the private practitioner, and bringing about a hopeless confusion of principle as to what was the public and what the personal responsibility for sickness. There were three courses open: (1) To maintain the *status quo*, decorated with a few obvious reforms. But that way would lie destruction for the poor private practitioner. (2) The Majority Report, based on extension of the provident system and contract practice. This would not stop the overlap, and would leave both the Poor Law and Public Health Services to develop at the cost of the private practitioner. (3) The Minority Report, which proposed unity of administration, not rivalry or overlapping. It proposed that the existing Poor Law Medical Service with its infirmaries, and the Public Health Service with its isolation hospitals, should be merged, without interfering with the emolument or position of any existing officer, in a united new County Medical Service, with a properly distributed and adequately remunerated staff of clinicians and sanitarians, with general and special hospitals and sanatoriums, the whole under the supervision of the Health Committee of the local county or borough council, under the direction of a central department or Minister of Health, concerned exclusively with health administration. Private practice would be safeguarded by enforcing payment from those who could afford a small fee, and free choice of doctors would be strictly reserved for those who paid a fee, or provided in advance by provident insurance. Mrs. Webb's paper was followed by an interesting discussion. The majority of the speakers were in favour of the views and recommendations of the Minority Report, but there were a few dissentient voices. Dr. Ford Anderson, while not in favour of the *status quo*, was convinced that the Minority Report, if applied, would, as far as medical practice was concerned, lead to superficiality of treatment, deterioration of character, and enslavement of the medical profession. He approved of a scheme of provident medical service, with free choice of doctors. Dr. J. F. J. Sykes (M.O H., St. Pancras) outlined the model rules for a public medical service as recommended by the British Medical Association, and expressed himself as strongly in favour of these proposals, rather than those of the Minority Report. Dr. Keay also spoke against the Minority Report. Dr. Lyster (M.O.H. Hampshire) advocated as a temporary measure the combination of the existing Public Health Service with the Poor Law Service. Dr. Manley (West Bromwich), Dr. Cooper Pattin (M.O.H. Norwich), and Dr. Holder (Hull) spoke in favour of the proposals of the Minority Report. Mr. F. E. Fremantle (M.O.H. Herts) advocated a more complete organization of the Public Health Service into four grades—(1) Local Government Board and inspection, (2) county M.O.H., (3) district M.O.H., (4) Poor Law medical officers, with promotion from lower grades to the higher ones. Dr. Rowland Fothergill (London) advocated the taking up of invalidity insurance by the medical profession. Dr. Bygott was in favour of amalgamation, and he considered that the Poor Law medical officer should be the colleague of the medical officer of health. Mrs. Sidney Webb briefly replied to the remarks of the various speakers, and the meeting then adjourned.

SECTION OF SURGERY.

AFTER a few words from the President (Sir Victor Horsley) indicating the arrangements for the work of the Section, Mr. Arbuthnot Lane opened a discussion on the principles which should govern the operative treatment of simple fractures. His general thesis—that to secure complete restoration of function and wage-earning capacity, perfect apposition, and perfect fixation of the fragments is essential, and that in the majority of cases this can be attained only by open operation—is well known. He intimated that the real question at issue is not what cases should be operated upon, but what valid contraindications are there to operation. The only negative indication he cited was such a texture of the fragments as would not permit a wire or screw to hold. The condition was met with in badly crushed bones in feeble old people and in alcoholics; the soft bones of rachitic children fell into the same category. The criteria of success in operating, are absolute asepsis, absolute immobilization and absolute adaption of the plates. Professor Lucas-Championnière, while admiring the excellent work of Mr. Lane, thought his method not one for adoption by every practitioner. He himself was satisfied with other treatment in most cases, but did not hesitate to operate on the patella, on fractures in the neighbourhood of the ankle, and in other specially difficult cases. He believed that he had constantly obtained perfect functional results without resort to operation, and without any heavy apparatus, in spite of some persistent deformity. Deformity was very largely the expression of muscular contracture which could be overcome by massage and movements. In the case of simple fractures, operation must never involve risk to life, and therefore must be in the hands of very experienced surgeons. Mr. Gilbert Barling pointed out that the vexed question of the proper treatment of simple fractures was one which lent itself satisfactorily to collective investigation, and that the time was ripe for some

such action. What was wanted was not only a careful selection of the surgeon to operate, but also careful selection of cases for operation. He referred to the very inaccurate conception, held in days before radiography, of the condition of parts beneath the skin in the proximity of even a simple fracture, and to the modification made by more recent knowledge in the attitude of surgeons towards operative measures for securing perfect reduction and apposition. It was not an easy matter to decide exactly which cases required operation as a *sine qua non* of successful healing, but at any rate it argued bad judgement to be forced to operate eight or ten weeks after a fracture, for the lapse of time enhanced the difficulties enormously, and jeopardized the chances of a perfect result. The great desideratum, however, was, not a pretty bone, but a useful limb. Mr. Deanesly said it was not fair to compare the results of the older methods with the operative, unless in the hands of men equally skilful and equally experienced. It must not be imagined that even operative reduction was an easy matter. He would reserve operation for certain special cases, such as those in the vicinity of joints. Professor Willems, of Ghent, thought more attention ought to be given to the proper employment of recent complicated but efficient apparatus, by the help of which many operations could be avoided. He used the open wound for reduction of the deformity in a good many cases, but inserted no foreign bodies, and relied upon plaster-of-Paris to maintain correct apposition. Mr. W. G. Spencer, whilst admitting the propriety of operating on old-standing fractures, believed that, at any rate in the case of the shaft of the femur, of which Mr. Lane had shown many operative examples, sufficient weight extension was efficient; that in the fractures near the elbow in children, the extreme-flexion position was satisfactory, and that not many Pott's fractures needed operation if the tendo Achillis were divided when there was difficulty in reduction. Mr. Whitelocke said he had found absorbable material, such as kangaroo-tendon or catgut, superior to plates and screws in many instances. Mr. Paterson made an eloquent plea for routine operation, declaring the risks minimal and the results infinitely superior to those obtainable by any other means. Mr. C. J. Morton, who illustrated his remarks by *x*-ray pictures of successes and failures, and Mr. Shenton, both spoke from the point of view of the radiographer. The former came to the conclusion that many cases could be treated not only without operation but even without splints, whilst the latter was a whole-hearted adherent of the Lane method. Mr. Hey Groves advocated the use of bone pegs for insertion into the medullary cavity of long bones, and referred also to operations upon the lower jaw. Mr. Fullerton maintained that in a very large percentage of cases of Colles's and Pott's fractures it was quite possible to get excellent results, if only proper care were exercised, without operation. The risks of operation were certainly not negligible. Mr. Fagge said what should be aimed at was a "perfect" result, and was obtainable only by operation. However, the operator and the conditions of operation must leave nothing whatever to chance, and it was not therefore a method open to all and sundry. Mr. A. S. Barling asked—was the meeting of opinion that a surgeon would be justified in urging stoppage of compensation in the case of a man refusing to submit to operation as the best available means of restoring his wage-earning capacity? Mr. Heygate Vernon, Mr. Crawford Renton, and Mr. Huggins all supported the view that operation was desirable in at least a proportion of cases. Sir Victor Horsley wished to emphasize the importance of examination of fractures on the fluorescent screen in enabling one to estimate the degree of efficiency of manipulative reduction of deformity, and to gauge the necessity for operation. Mr. Lane, in replying, remarked upon the change of attitude of surgeons towards his proposals, saying that he had never before met with sympathy, which now, however, seemed almost universal amongst the younger men.

Section of Tropical Medicine.

The President, Dr. Fleming M. Sandwith, in his opening address, drew attention to the advances in tropical medicine since the Section of Tropical Medicine was first formed at the meetings of the British Medical Association. Sir David Bruce, F.R.S., opened a discussion on sleeping sickness. Since 1904, when the subject was last discussed at the meetings of the Section, many of the beliefs then held have had to be modified. The *Glossina palpalis* continues to be regarded as the sole means by which trypanosomes are conveyed to man, although other species are suspected of doing so. There is no proof that *Trypanosoma gambiense* passes through any metamorphosis in *Glossina palpalis*. The following took part in the discussion: Dr. Andrew Balfour (Khartoum), Dr. John H. Cook (Uganda), Dr. G. C. Low (London), Dr. Wm. J. Prout, C.M.G. (Liverpool), and Dr. L. W. Sambon (London). Lieutenant-Colonel J. R. Roberts, I.M.S., contributed a paper on some features of tuberculosis in India. Mr. J. Cantlie, F.R.C.S. (London) read a paper upon liver abscess. Mr. Cantlie also discussed the use of lactobacillin (Metchnikoff) in tropical diseases of the alimentary canal. Dr. Andrew Duncan, Dr. R. Row (Bombay), and the President joined in the discussion.

DEATH CERTIFICATION.

At the annual meeting of the Yorkshire and Derbyshire Registrars' Association, held recently, the following resolution was unanimously passed: "That this annual meeting of the Yorkshire and Derbyshire Registrars' Association warmly congratulates Sir Walter Foster upon his elevation to the peerage. The association has fully recognized for many years past the great value to the nation of his manifold services; and especially does it value to the fullest extent his extraordinary services and work on behalf of a better and sounder system of death certification." The hope was further expressed that the recommendations of the Departmental Committee of 1893 on Death Certification might speedily become the law of the land. The resolution concluded with the expression of a wish that Lord Ilkeston may be spared many years in which to enjoy the well-earned honour he had received from the King.

INTERNATIONAL CONGRESS ON THE CARE OF THE INSANE, BERLIN, OCTOBER 3rd TO 7th, 1910.

We are asked to state that the following have been nominated to serve as a Committee for the United Kingdom to assist in arrangements for the Congress: Sir George O'Farrell, Dublin, and Dr. John Macpherson, Edinburgh (*ex officio* as members of the Permanent Committee for International Congresses); Dr. Bevan Lewis, Wakefield; Dr. M. J. Nolan, Downpatrick; Dr. Percy Smith, London; Dr. C. H. Bond, Epsom; Dr. W. R. Dawson, Finglas, Dublin; and Dr. J. H. Macdonald, Govan Asylum, Hawkhead, Paisley. Applications for membership of the Congress are to be addressed as early as possible to Herr Kalkulator Mietzner, 5, Prinz Albrechtstrasse, Berlin, S.W. The fee for membership is £1 (20 marks), and for a lady's ticket 10s. (10 marks).

His Majesty the King has graciously consented to become Patron of the Royal Sanitary Institute. The Institute was founded in 1876, and is carrying on a large work in teaching and examining in hygiene and sanitary science, both in the United Kingdom and in other parts of the Empire. It maintains in London a permanent Museum of Sanitary Appliances, open free to the public. Its members and associates number nearly 4,000.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

THE MEDICAL INSPECTION OF LONDON SCHOOL CHILDREN.

THE Education Committee of the London County Council has issued a report with reference to a reorganization of the system of medical inspection which it is proposed should take effect from January 1st, 1911.

In a review of the question the committee stated that medical inspection prior to the passing of the Education (Administrative Provisions) Act, 1907, was limited in London to the annual testing of the vision of all children in senior departments of elementary schools, supplemented by the general medical examination of specially selected children from all departments. The Act required the inspection of all children upon admission to the schools, "and on such other occasions as the Board of Education may direct." The Board had decided that all children expected to leave during the year must also be inspected, and that a detailed record of each case must be kept. The medical and nursing staffs engaged on the partial inspection already in force were quite inadequate for this additional work, but, recognizing the magnitude of the task imposed on the Council, the Board of Education accepted a modified scheme, which provided for gradual compliance with the requirements of the Board during a period of three years. The staff of doctors rose from 40 in 1908–9 to 56 in 1909–10, and the number for ensuing years was to be 72. The scheme provided for the continuance of the original system of inspection in the majority of schools and for the examination of "entrants" and "leavers" in a limited number of schools during the first year, and for the gradual increase of the number of schools visited as additional doctors were appointed. The arrangements for the educational year 1909–10 provided for the continuance of these two types of inspection, but the Board was informed that in consequence of the arrangements for medical treatment, and in order to make the information in respect of each school more complete, it was probable that the doctors would examine during the year all the children in the schools inspected by them.

Board of Education's Criticism.

In reply, the Board of Education stated that it would find great difficulty in expressing satisfaction with an authority's arrangements for medical inspection unless:

1. Provision were made for the regular inspection of children entering school and children about to leave school.

2. A staff of inspecting officers adequate for this purpose was employed.

The Board further stated that the restriction of inspection of "entrants" and "leavers" to selected schools was obviously inconsistent with the provisions of the Act. Even if the scheme were rearranged with a view to examining all "entrants" and "leavers," the staff of inspecting officers employed was not adequate, the number of children in the two groups being estimated at 148,000. Even when the staff obtained its full prospective growth, on September 1st, 1910, there would be only seventy-two quarter-time officers available for this work. As a portion only of the "quarter-time" was actually devoted to medical inspection, the staff now engaged could not be regarded as equivalent in effect to fourteen whole-time inspectors, and when the full prospective strength was obtained the working power available for "detailed" inspection would be less than that of eighteen full-time inspectors. In order to complete the inspection of the two groups of "entrants" and "leavers" in London by a staff of fourteen whole-time officers, it would be necessary for each officer to inspect on the average 10,500 children in the year, and with eighteen whole-time inspectors each officer would have to inspect 8,400 children. Even in the most favourable circumstances the Board thought it would not be reasonable to expect an officer working full time at inspection to undertake the examination of more than 5,000 children. But, even if 7,000 children was adopted as the measure of the absolute maximum working power of a whole-time inspector, the Board stated that the existing provision of inspecting officers must be regarded as showing a deficiency to the extent of at least 50,000 children in the two groups—or more than one-third of the total requiring inspection—and the prospective appointments would still leave a deficiency on this basis of at least 22,000 children. In practice the Board had no doubt the deficiencies would be much greater. Accordingly the Board was very dubious as to whether the Council had, in fact, made provision for medical inspection in accordance with Section 13 (1) (*b*) of the Act of 1907. It was obvious that the Council's arrangements did not purport to be in accordance with the requirements of Article 58 (*b*) of the code, which required the examination of *all* "entrants" and "leavers," and not merely those in selected schools. The Board stated in conclusion that it was unable at present to regard the Council's scheme as satisfying the conditions of Articles 25 (*c*) and 58 (*b*) of the Code, and asked for the Council's observations on the various points raised.

The Education Committee's Reply.

The Education Committee, dealing with this communication, said it was recognized at the time of the adoption of the modified scheme of inspection that the staff sanctioned for the purpose would be the minimum required, and the possibility of additional appointments was foreshadowed. Since the introduction of the modified scheme, inspection of selected children had been abandoned, and every child in the schools visited by doctors had been examined. Whereas each school doctor could examine, on an average, only fourteen children a session under the schedule of the Board of Education, twenty children per session could be examined under the Council's modified scheme. It would take nearly five years to complete the inspection of the whole of the London elementary school children with the staff of 72 quarter-time doctors, which would be at work from September 1st, 1910. It was clearly the intention of Parliament that every child should be brought under inspection at particular stages of its school life, and that each school should be visited at least once a year by the school doctor. The system whereby children selected by the teachers as ailing alone were examined obviously did not satisfy the requirements of the Act. In place of this the Committee had come to the conclusion that provision should be made for the examination of the children of all schools at three age-periods, and had considered as to the most suitable ages at which inspection should be made.

The first period was fixed by statute as the first year of school life. With regard to the second period, the Committee thought children between 8 and 9 years of age should be examined, this being an important period in the life of a child from the health point of view. The third age-period should be at 12 years—this to take the place of the examination of children about to leave school.

Difficulty was experienced in dealing with children who attended the hospitals with which the Council had agreements without the necessary "voucher" card, and who were referred back by the hospitals to obtain the card. Such cases occurred, as a rule, in schools in which inspection had not been carried out; they would be reduced by the inspection of children of three ages in all schools, and by arranging that each school was visited not less than once a term. The work could be so distributed that, without requiring the children to travel unreasonable distances, it would be possible for those appearing to need urgent treatment to attend the nearest school at which inspection was in operation. The dates of the visits of the school doctors and nurses would be announced in the *London County Council Gazette*.

Calculation of the Staff Required.

There were some 220,000 children attending the elementary schools of the three ages at which the Committee proposed to arrange for inspection. In determining the staff which would be required, a sufficient margin should be allowed for special inquiries, the examination of urgent cases, and work connected with open air schools, playground classes, and other matters affecting the health of pupils and teachers, which the Board of Education regarded as part of the work of the school doctors. One-fifth of the time of the school doctors would be required for this work. The staff should be increased, therefore, to 100, by the addition of 28 assistant school doctors. If each doctor gave three sessions weekly for forty-four weeks of the year, this staff would correspond to 13,200 sessions annually. Deducting the one-fifth as above, there remained time equal to 10,560 sessions. As 20 children a session could be examined by each doctor, 211,200 children would be inspected in a year, a deficit of about 9,000, which would be covered by the inevitable leakage from illness or other cause of absence. The proposed increase of staff would not permit of the three years' rota agreed upon by the Council in regard to appointments of school doctors. A four years' rota must be substituted, the doctors who commenced duty on or since September 1st, 1908, being made eligible for a fourth year of service.

In consequence of the increased responsibility and supervision involved in this large staff, and in order to enable adequate attention to be given to special inquiries, the permanent staff would require to be strengthened by substituting two full-time assistant medical officers for one half-time assistant and one quarter-time assistant. Consideration had been given to the present system of dividing the inspecting staff into two grades in order to provide supervision—that is, school doctors at £150 a year and assistant school doctors at £120 a year, but the Committee had decided that more effective supervision would be secured if a full-time assistant medical officer were appointed, and there were only one grade of school doctor at a salary of £120 a year for three sessions a week. The saving on the salaries of school doctors would be £480 a year, and the salary of the full-time assistant medical officer would be £500 a year. These proposals would be adequate for the medical inspection of elementary school children for at least three years, but not of those at technical, secondary, and special schools. The ultimate expenditure involved would be £5,730 per annum.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

EDINBURGH DENTAL HOSPITAL AND SCHOOL.

THE annual "At home" of the Edinburgh Dental Hospital and School was held on Tuesday evening July 19th, when T. S. Clouston, M.D., LL.D., F.R.C.P.E., distributed the prizes and gave an address. He congratulated the dental profession on the brighter outlook that was now before it. The importance of good teeth was being realized not only by individuals but by public bodies. It was, he thought, merely a question of time when all schools would have a dental surgeon attached, and certainly in the army we should follow the example of our German brethren and have one or two dental surgeons attached to each regiment. All specialists were in danger of forgetting the claims and needs of the whole body. The organism was always greater than any of its parts. The law of unity and solidarity of the whole must never be forgotten by any specialist. The nervous system was the great bond of unity, and, through that, disease and disturbance of function in any one organ, even the least, might upset the working of mind and body; and nowadays, when the population was becoming more of a city one, the nerves got more keen, and in that way the whole body suffered greater disturbance from any local disease. The dental profession, having to do with the first and most important processes—namely, with digestion and nutrition—would always be one of the most important of the special departments of medicine. The body could not thrive, and there could not be a general feeling of health and comfort, if the teeth were wrong and the digestion bad in consequence. Even the mental working of the brain would be most seriously disturbed through the effects of no dentistry or bad dentistry. It was now known that very serious poisons (toxins) were generated through bad teeth, which had the power of disturbing both mind and body, and therefore impairing the power of work.

The President of the Royal College of Physicians moved a vote of thanks to Dr. Clouston for his address.

The Dean of the Dental Hospital and School (Dr. William Guy) reported a year of excellent work and progress. There were seventy-two names on the roll, and thirty-one students had obtained the diploma of L.D.S.

PROPOSED EDINBURGH SCHOOL FOR TUBERCULOUS CHILDREN.

Dr. R. W. Philip, of the Royal Victoria Hospital for Consumption, Craigleith, has sent a letter to the Edinburgh School Board, asking consideration of a scheme for the establishment in connexion with the hospital of a school for tuberculous children, under the Defective Children's (Scotland) Act, 1906, and the Education (Scotland) Act, 1908. Dr. Philip proposes that he should provide the School Board with a site for a school within the grounds of the hospital, and that the Board should build and staff the school. Probably about half the children, it is understood, would come from the Victoria Hospital, and to these meals would be provided at the cost of the institution. It is thought that accommodation required to be provided would not exceed 100 pupils in all, and that a couple of teachers would be sufficient, while the buildings would not be of an expensive type.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

AWARD OF ROYAL HUMANE SOCIETY MEDAL TO A NURSE.

AT their last meeting in London the committee of the Royal Humane Society awarded their bronze medal to Miss Eva Lindsay, a nurse at the Military Hospital, Dublin, for her attempt to save the life of a lady who was carried out of her depth while bathing. Miss Lindsay went to the lady's help, but on account of the strong current was unable to reach shore, and both were carried out to sea. After keeping her companion afloat for half an hour Miss Lindsay lost consciousness, and was ultimately picked up by a boat half a mile from shore, the other lady having sunk.

CHARGE OF MANSLAUGHTER.

In the BRITISH MEDICAL JOURNAL of July 2nd (p. 58) there was reported the result of an inquest held at Bandon, co. Cork, touching the death of a girl aged 19, who had died from haemorrhage following the extraction of six teeth by an unregistered dentist, named John Taffe. Taffe since then was charged with manslaughter, and the case came before Mr. Justice Boyd on Saturday, July 16th. The case for the prosecution was that the deceased was in an unfit physical state at the time she went to the dentist to undergo an operation, and that the accused, in administering cocaine and extracting six teeth, was grossly negligent and, therefore, criminally responsible for the patient's death. After deliberation it was announced that the jury were unable to agree, and they were accordingly discharged.

Correspondence.

THE WORKING OF THE WORKMEN'S COMPENSATION ACT.

SIR,—What appear to me some very extraordinary statements are made by Dr. W. H. B. Brook in an article on the working of the Workmen's Compensation Act of 1906 in last week's JOURNAL. I should like to make a brief comment on two. Under the heading "Hernia" Dr. Brook says:

> In order to constitute valid ground for a claim to compensation it must be proved that the hernia has been due to sudden strain caused by the actual work at which the man was employed.

As a matter of fact and every day's experience in the courts, it is just as impossible for the workman to prove this as it is for the employer to disprove it, and the invariable rule through the courts is to give it in favour of the workman. Further, Dr. Brook says:

> It has been decided by a judge of one of the county courts that, even in a case where a workman has a good claim to compensation for hernia, he may be required to undergo an operation for the radical relief of that disability, and if he refuses to submit to such an operation he loses all claim to compensation.

I am sure there are a great many employers of labour in the country who would be deeply indebted to Dr. Brook if through the JOURNAL he will give the name of the judge who gave this extraordinary decision. The Court of Appeal has laid it down that if a workman can bring one medical man as a witness to say that he would be unwise to submit himself to operation, he is not bound to do so. I was myself not long ago a witness in a case where four medical witnesses, amongst them an operating surgeon of high standing, were opposed by one general practitioner. The judge was obviously reluctant to do so, but decided in favour of the man. This decision was upheld by a unanimous Court of Appeal.—I am, etc.,

JOHN T. HISLOP,
Medical Examiner for the North Wales Employers' Indemnity Company.

Wrexham, July 19th.

TRADE UNIONS AND SENTIMENT.

SIR,—As the son of a medical man in general practice, nothing struck me more on entering St. Bartholomew's than the absolute ignorance of the staff in general of all that appertained to the general medical practitioner. One member alone, and he at that time only an assistant demonstrator of anatomy, appeared to grasp the fact that some 95 per cent. of students would become general practitioners. He preached, in season and out, that men were entering the profession to make a living, and his advice as to how that living was to be made was based on practical experience. Judging by the inaugural and other addresses delivered by members of the staff of big hospitals, the same ignorance of the conditions under which general practitioners earn their living seems to prevail now. Medicine may be a profession, but where does the difference lie between a profession and a trade? We read these inaugural addresses, and are told that we are a band of noble philanthropists, whose aim is to benefit the rest of the world at our own expense. When we come to practice we find that what we do is at our own expense, and that the public gives us no credit for our philanthropy. Can you blame the public? They have instilled into them by the leaders of the profession that general practitioners are always willing to carry out their noble work, at a price if they can get it, but for nothing if they cannot. There is only one remedy for this. General practitioners must combine in such a way that their combination is effective. Whether this can be done by the British Medical Association as it stands at present is very doubtful. The only way is to form something resembling a trade-union in every district. At present the British Medical Association (except in a few well organized towns) has very little moral effect. As honorary secretary to a country Division I know this well. If I try to get recruits or to get members to attend meetings, etc., I am asked, "What is the good of it all? What does it do for us?" I can only offer a few problematical advantages. But if I could say, "You can, by joining, belong to a close corporation, that can effectually deal with all branches of professional etiquette, that can enforce scales of fees and prevent underselling," then there would be no trouble in enrolling a very big percentage of the profession, and we could easily deal with those who would not join. At the present time we may pass what ethical rules we like. If we enforce them and turn the offender out of the British Medical Association, he is not a penny the worse for it.

The point of view taken by the members of hospital staffs (or most of them) and that of the general practitioner is well illustrated by the addresses of Dr. Lauriston Shaw and Mr. Noy Scott published in the BRITISH MEDICAL JOURNAL of July 16th. Dr. Shaw has got hold of the right idea—the union of the profession. But how does he propose to bring it about? Had he the least idea of the difficulties of general practice, he would know that a sentimental union, such as he proposes, would be useless. Does he suppose that the man who deliberately undersells me, who sneaks my patients by underhand methods, or who advertises himself in objectionable ways, will be influenced by any appeal to his conscience? Of course, he won't. The nobility of the true aims of the profession is nothing to him. He is out to make a living, and finds that he can make a better one by unfair than by fair means. This is the sort of man we want a union to control, and such a union must be a strong one. There will be no room in it for sentimental twaddle.

Now turn to Mr. Noy Scott's address. He hits the nail on the head at once. We are a set of silly people, who allow ourselves to be sweated and underpaid, that we may pose as philanthropists and call on the public to admire our noble self-abnegation. And we have to do all this because we have no organization for the profession as a whole.

I do not think it would be very difficult to get such an organization if we start in the right way. The beginning must be made with the medical student. Let it be drilled into him that the medical profession, from his point of view, exists for one end, and for one end only—that he should make a living and make it honourably, and that the only way he can do this is by belonging to some organization which will really help him—help him to earn his own living by guaranteeing him fair pay for his work, and help him by preventing that living being taken away by men using unfair means. At the present time it does not pay a man to play fair; he can do much better for himself and his family by dirty means. If the student knows that as soon as he is qualified he can join a society which will protect him, so long as he behaves himself, and will drop on him heavily, so that he suffers material loss, and not "moral damages" if he doesn't, he will join promptly. At present, with only some 60 per cent. of the profession in the British Medical Association, membership of the Association is only a moral asset to any one.

I may seem to be bitter, but, as Honorary Secretary of a Division, I know that whenever I meet fellow medical men the sum total of their conversation is complaints of the conduct of their brethren. And at present we have no redress. The Model Ethical Rules put forward by the Association are excellent if we could enforce them, but we cannot, and the blacklegs know it only too well. Ethical questions are of as much importance to the ordinary general practitioner as scientific ones. Yet in the JOURNAL we may get columns of flapdoodle and a paragraph of ethics. Sentimental union has failed. Let us try a trade-union.—I am, etc.,

Helston, Cornwall, July 25th. MARK R. TAYLOR.

ON THE PRESENCE OF SUGAR IN HEALTHY URINE AS A SOURCE OF THE OSAZONE REACTION.

SIR,—Much of the controversy with regard to the nature and amount of the reducing substances occurring in normal urines has arisen from the difficulty in defining what is a "healthy" urine. As Drs. Pavy and Bywaters mention in their letter of the 23rd inst., "bodies of a diffusible nature, in any manner reaching the circulation, pass off with the urine," and its composition is therefore an expression of the metabolism of the body. If the chemical process of the organism and its environment are perfect a "healthy" urine will result, but if metabolism is imperfect in any way, or abnormal substances find their entrance into the circulation, the composition of the urine will be correspondingly altered. Modern conditions of life are not, as a rule, conducive to perfect

hygiene, particularly in towns, and the results of imperfect oxidation, a relative excess of food, a more or less inactive life, and, in some instances, the disturbances of digestion which result, are reflected in the urine, most commonly by the appearance of compounds of glycuronic acid. For it is by forming compounds with this substance that the body most regularly seeks to protect itself against toxins and other poisonous products, in much the same way as plants make use of calcium. In an investigation of 100 urines from apparently healthy people by the phenylhydrazin test some years ago, I found that 6 gave a reaction before and 13 after hydrolysis with hydrochloric acid, the reaction in each case being apparently due to glycuronic acid. The series, on being divided into a set of 43 derived from persons living in the country with an abundance of fresh air and exercise and a set of 57 obtained from city dwellers who lived under less favourable hygienic conditions, showed that none of the former gave a reaction until the urine had been boiled with the acid, and then only 3 yielded a crystalline compound, but that 6 of the latter gave a positive result before treatment with the acid and 9 after. One of these gave no reaction after a fortnight of open-air life at the seaside. The influence of diet, even in apparently healthy people, is illustrated by the series of examinations made by Schöndorff, to which reference has previously been made, for, whereas only 8 out of 53 students gave a reaction for sugar, 316 out of 334 specimens derived from soldiers in the garrison of Bonn gave a positive result, and it was found that the soldiers were taking over 700 grams of carbohydrate a day! In view of such facts, it seems to me essential that we should have much more definite information as to the environment, conditions of life, and real state of health of persons from whom "healthy" urines are derived before accepting conclusions from the results of their analysis as a standard.

I cannot agree with Drs. Pavy and Bywaters that glycuronic acid in the urine "is an incidental ingredient, outside the question that is being discussed." The amount and nature of the combinations in which it exists vary very much, with corresponding alterations in its reactions with reagents, but in my opinion it is the chief ingredient upon which the difference in reducing powers of urines depend, more especially in town dwellers, and it is to the liberation of glycuronic acid from some of its compounds that the increased reduction after hydrolysis is due. The sensitiveness of the ammoniated cupric test, which "renders it applicable to healthy urines," is in my experience one of the drawbacks to its clinical use, and the same applies to some methods of performing the phenylhydrazin test. For the latter I therefore employ Williamson's or Kowarsky's modification, both in the routine examination of urines for sugar and in the so-called "pancreatic" reaction. With regard to the latter, I may mention that out of a consecutive series of forty-seven urines submitted to me for examination during the past fortnight, twenty-seven have given a negative result—a very different proportion to what might be expected if the contention raised by Drs. Pavy and Bywaters in their paper of July 9th were correct.—I am, etc.,

London, W., July 24th. P. J. CAMMIDGE.

SHIP SURGEONS.

SIR,—The JOURNAL has recently published correspondence dealing with the conditions of medical work in the mercantile marine. It cannot be doubted that the conditions of such service, the same in these days of big ships and largely increased travelling as in the old days of small things, are at present not less unsatisfactory to the travelling public than to the medical officers at sea.

The Board of Trade require all ships carrying more than a certain number of souls to carry a duly registered medical practitioner, to whose services, free of charge, all members of the crew and all third class passengers are entitled by law. But there is no legal obligation to supply medical attention to "saloon" (that is, first and second class) passengers without charging them the same professional fees which they would pay were they residing in their own homes or at some hotel or boarding-house. A ship nowadays is just a travelling hotel. The ships thus required by law to carry a medical man may be divided into two classes. In one class should be included those small ships carrying a small crew and but few passengers, on which the medical work would undoubtedly be light and of small importance; probably on such vessels the usual pay of £10 a month *plus* board and lodging would be a sufficient remuneration, and the work such as would not put too great a demand on the medical officer in search of health or with a desire to see the world. But things are very different in a second class of ship which would include the great liners running regular services all over the world. These big ships carry large crews and great numbers of passengers, and it is well to remember that included among the latter are usually many people of important social or business standing. A ship with a crew of 400 or 500, and carrying between 1,000 and 3,000 passengers, engaged in a week's voyage to America, or a six weeks' journey to Australia, must, it is obvious, form a large "practice" for a medical man, even were the average of health as good as would obtain ashore among an equivalent number. But, as a fact, the health average on a ship is a low one; the work of the crew is hard and confining, certainly not conducive to health; while there is an added risk of accident. The passengers, feeding too much and exercising too little, are a ready prey for the minor maladies, and include among their number, in all classes, a large proportion travelling "for their health." But, in addition to the purely medical work of looking after all these people, the ship surgeon has usually to arrange all the *details* of the special attention and diet required by his patients, and to act as his own dispenser. In addition, an effective ship surgeon must act as an energetic medical officer of health; has often an enormous amount of vaccination to perform; is expected to keep an eye on the food supplied; and, last but not least, has to obey the behests, often unreasonable, of various quarantine authorities. At sea he is alone; there is no local medical officer of health to call in for a doubtful case of infectious disease, and he cannot send his patients to this or that specialist. It would be easy to enlarge under this head, but enough has been said to show that the popular idea, both of the public and the medical profession, that a ship surgeon has little work to do on board, and that any "slacker" is good enough for the job, is a very erroneous one. It would be easy to prove from my books that, both as to number of attendances and variety of cases, my practice on an Australian mail liner is far and away larger than that of an average general practitioner.

To perform the duties required of him properly a sea surgeon should be, in his way, a specialist, and the last person to fill a position of such isolated responsibility should be the just qualified and entirely inexperienced young man or the man, who from reasons of health or moral habits, is not dependable. The medical service of our mercantile marine should be in the hands of men trained to the work, remaining in the work and adequately remunerated, and there can be no doubt that the time has come when, both in the interest of the public, the owner, and the medical profession, this service should be put on such a basis as will permit one who adopts the sea to regard his service as a permanent employment. Such is the case in the Royal Navy. By comparison the medical work in the mercantile marine is far harder and more responsible. Personally, I am of opinion that everything is ripe for reform, but as the alteration of the established is always difficult, and old customs are not easily uprooted, any agitation for an improved condition of service must be conducted with consideration and tact. While we know that shipowners have to some extent "farmed" the medical profession, we must remember that we have ourselves acquiesced in the position, and that while the remuneration given is an absurdly inadequate return for a conscientious discharge of duty, it has, in very frequent cases, been excessive for the services actually rendered. Owners, as business men, will buy in the cheapest market. Further, we have to remember that their medical service brings no grist to the owner's mill. On the other hand, in these days of strict quarantine, the owner realizes that an effective medical service will pay him, but competition is such that I appreciate the fact that he cannot really afford to pay an adequate salary for a service which brings no money return. But the solution is an easy one. Let the owners continue to pay a small salary for the treatment of crew and emigrant and permit the surgeon to practise, as he would ashore, among the first and second class passengers.

I believe that this matter could be arranged very easily if the British Medical Association were to take the question up with some of the important lines. The Association should act as father to the whole of the profession, and I see no reason for any association of ship surgeons—by nature of the work, an utter impossibility—or for a committee who will represent only their individual selves. Without any fuss or friction, the thin end of the wedge of improvement has already been inserted by private effort, and, given a good start, the good work will go on.

The "aims" of Dr. John F. Elliott's Committee, as set forth in the JOURNAL of July 9th, are rather large—let us remember that the surgeon exists for the ship, not the ship for the surgeon. It is not reasonable to expect the owners to provide great hospital accommodation or special "facilities for the performance of surgical operations." It is only a rare case of urgency that demands operation before the ship reaches the next port. The "status" of a ship surgeon is usually, as elsewhere, what he makes it himself.

As the senior medical officer of a well-known line, and with the experience of some nine years, it is not without a full knowledge of all the conditions of medical work at sea that, while in complete sympathy with a reform of the service desired by Dr. Elliott and his friends, I regret the somewhat dictatorial terms of his manifesto as calculated to embarrass a friendly adjustment of the interests at stake—that is, those of the public, the owner, and the sea practitioner.

In my opinion, there is no necessity for a warlike committee. Let the discussion of the matter by the surgeons concerned be encouraged in the medical press, and let the already constituted authorities of the British Medical Association, in discharge of their duties as representative of each and every branch of medical work, enter into friendly negotiation with the managers of our great steamship lines. Such action will undoubtedly bear fruit.

But if a more or less unrepresentative committee attacks the shipping companies with demands (*a*), (*b*), (*c*), (*d*), (*e*), (*f*), and (*g*), they will be told, more or less politely, to allow the managers to manage their own affairs.—I am, etc.,

Moraston House, Ross, July 23rd. P. HEYWOOD HADFIELD.

Universities and Colleges.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examination indicated:

THIRD M.B., B.C. (*Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology*).—*S. K. Young. *T. C. Storey, E. C. Abraham, F. E. Chapman, Evelyn A. Constable, F. J. H. T. Frere, N. Hodgson, J. Kerr, E. Kidd, G. E. W. Lacey, F. J. Lidderdale, J. G. Ogle, F. Phillips, B.A.

* Second-class honours.

UNIVERSITY OF EDINBURGH.

The Retirement of Dr. Clouston.

AT the June meeting of Edinburgh University Court the following minute was adopted:

"The University Court have received with much regret the intimation of Dr. Clouston's resignation of the Lectureship in Mental Diseases. The Court record with gratitude their appreciation of the valuable services rendered by Dr. Clouston during the thirty-seven years in which he has been a teacher of the subject in the university, first in connexion with the classes of Practice of Physic of Professors Laycock and Sir Thomas Grainger Stewart, and since 1879 as the holder of the University Lectureship in Mental Diseases, which was instituted in that year.

"During this long period Dr. Clouston has proved himself a singularly successful and able teacher. His great reputation as a specialist in mental diseases and his eminence as a worker and writer on the subject have exerted an inspiring influence upon the large numbers of students who have attended his classes. They, as well as the University Court, have fully realized the great advantages of having as the Lecturer on this subject a distinguished pioneer in the scientific study of disorders of the mind and one of the first and most active of the promoters of the benevolent reforms in the care and treatment of the mentally afflicted which have signalized the latter half of the previous century."

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—*E. E. Doyle, R. E. Illingworth, N. R. Whitaker, C. Cosgrove, B. A. Young, A. F. D'Souza, W. S. O'Loughlin, L. C. Mascarenhas, T. E. Lawson, Rose Moskovitch, W. M. Sebet, K. Fraser, C. Mallikarjunarao, P. de Montagnac, W. C. Fraser, S. Jesudason, H. J. Henderson, G. Hardie.

SECOND COLLEGE.—W. P. Over, L. Lazarus, S. Wright, G. W. Fleming, *C. C. Forsyth, E. I. Parry, J. W. Craig, C. J. L. Patch, E. E. Doyle, J. Bourke, F. G. Gibbs, J. I. Arnold, L. E. L. Coghlan.

THIRD COLLEGE.—A. Jonathan, F. M. H. Sanderson, J. H. Appoo, W. A. Reardon, C. M. Willmott, G. I. Secluna, R. Eyton-Jones, J. Hegarty, N. S. Williams, P. M. Carroll, Amy B. R. A. Perriton, N. P. Vaid, C. J. Lacayo, R. H. Thomson, W. F. Gibb, W. J. Moore.

FINAL COLLEGE.—J. J. O'Grady, A. E. Tughan, T. N. Usher, I. R. MacLeod, A. D. Turnbull, H. E. K. Fretz, R. W. D. Hewson, R. B. Sephton, H. D. Stewart, C. W. Kay, H. G. Chouler, M. J. O'Shea, E. Thorpe, T. B. Johnstone, T. N. Sinha, V. D. Nimbkar.

* With distinction.

Medical News.

HIS MAJESTY THE KING has been graciously pleased to become Patron of King's College Hospital.

ON Wednesday of this week a case of much interest to medical men was heard before the Bench of Magistrates of Acton. It is a district in which the Notification of Births Act has been adopted, and a medical man who had been in attendance during a confinement was summoned for failing to give notice in writing of the birth of the child within the statutory thirty-six hours. The medical man in question had directed a fully qualified nurse, also in attendance on the case, to give notice or to see that the father did so, and she replied that it would be done. The notice, however, was not given, and the local council contended that the defendant ought to have taken steps to see that his orders were carried out. The defendant was represented by Mr. Schwabe as counsel, instructed by Mr. Hempson on behalf of the Medical Defence Union. It was argued that the medical man had reasonable ground for believing that notice would be given by some person, and that under the Act this was a complete answer to the charge. The Bench took the same view, dismissed the case, and allowed five guineas costs.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Friday, July 15th, Dr. de Havilland Hall in the chair. During the last month the claims have shown signs of steady increase, and are now nearly up to the normal expectation. The new proposals show a tendency to fall off and are fewer in number than for the corresponding period last year. It does not seem to be generally known that dental surgeons are eligible for membership of the society. In order to clear up any doubts about this, it may be as well to point out that all duly registered dental surgeons are eligible to join. The rates charged by the society are considerably less than those charged by any other insurance company for similar benefits, and it is hoped that members of the medical and dental professions will soon recognize the expediency of joining a society which can offer such liberal terms and excellent security, and which is and has been run entirely and solely for their benefit for just over twenty-six years. Prospectus and all information can be obtained from the Secretary, Mr. F. Addiscott, 33, Chancery Lane, London, W.C.

Obituary.

LIEUTENANT-COLONEL G. HERBERT ROWE,

LEEDS.

IT is with feelings of the greatest regret that we have to record the death at the comparatively early age of 53, of Lieutenant-Colonel G. Herbert Rowe. He was the son of the Rev. George Rowe, Principal of the Diocesan Training College at York, and entered as a student of medicine at Leeds in 1874. From that time, with the exception of a short period after obtaining his qualifications, during which he held resident appointments at Wolverhampton, Worcester, and Scarborough, his life's work was identified with Leeds, where he commenced practice in association with his father-in-law, the late Mr. C. G. Wheelhouse. Colonel Rowe held many public appointments during his professional life. Among these may be mentioned that of Surgeon to the Public Dispensary, a position to which he was appointed in 1884. In the work of this institution he took the greatest interest, and his colleagues will always

remember his valuable leading in considering the requirements to be met in planning the new buildings, and the tact he displayed in smoothing over difficulties in connexion with the establishment of the dental department. He acted as Demonstrator of Anatomy for seven years, and his influence with the students was excellent.

For many years Colonel Rowe took an active part in the management of the West Riding Medical Charitable Society. He was associated with Mr. Wheelhouse as co-secretary for a long period, and became thoroughly imbued with all Mr. Wheelhouse's enthusiasm for the welfare of the society. When Mr. Wheelhouse died there was no doubt in the mind of any one as to who should be his successor, and Colonel Rowe will always be held in grateful recollection by his professional brethren as one who was unsparing in his work for the welfare of this most admirable charity. For a good many years Colonel Rowe acted as Warden of Lyddon Hall, which is one of the residential halls of the University. In that capacity he has done admirable work, and the University has also appreciated his services as Honorary Marshal. At the time of his death Colonel Rowe was the Commanding Officer of the 8th Battalion West Yorkshire Regiment (Leeds Rifles), and it is probably as an enthusiastic soldier that he will be best remembered in Leeds. As has been well pointed out in the local press, his enthusiasm in all matters relating to the army was intense, and Leeds never turned out a better soldier, and we cannot do better, in touching on his military career, than quote as follows from the *Yorkshire Post*:

Volunteering to him was never a mere hobby; it was a serious duty, and his conception of his duty showed itself in many ways, from the moment he joined the Volunteers while yet in his teens up to his last official act as commanding officer Enrolled as a Volunteer in the York Rifles in 1872, he became Sub-Lieutenant four years later and Lieutenant in 1878, and he had only three more years to wait for his Captaincy. His connexion with the Leeds Rifles began in 1883, when he joined the regiment as Captain. In 1891 he became Honorary Major, and three years later Substantive Major, and his promotion to the rank of Honorary Lieutenant-Colonel came in 1896. The Volunteer Officers' Decoration, which was conferred upon him in 1895, was a distinction that was well earned and highly prized.

Under Colonel F. W. Tannett Walker, Colonel Rowe was for many years second in command of the Leeds Rifles—7th Battalion West Yorkshire Regiment. How, when the Territorial Force came into existence, the regiment developed into two battalions is now a matter of history. The chief feature of the rearrangement was the formation of a new battalion on the south side of the River Aire. To Colonel Rowe was entrusted the task of raising the new unit. Many doubted the possibility of getting together sufficient men in that part of the city to constitute a separate battalion. It was here, however, that Colonel Rowe's enthusiasm had full play. Calling together meetings of the artisans employed in the engineering sheds and factories of South Leeds, he spoke to them with an earnestness that kindled their zeal, and it was not long before the 8th Battalion became an accomplished fact, with Colonel Rowe in command. With what success he carried out the undertaking may be gathered from the fact that the battalion has now attained its full strength of 1,005. Colonel Rowe was an active member of the Yorkshire Territorial Association, and was vice-chairman of the Finance Committee.

On Wednesday, July 20th, with full military honours, and with many manifestations of sympathy on the part of the general public, the institutions which he served, and his professional brethren, there was laid to rest in Lawnswood Cemetery the body of one who will long be missed, and whose memory will be for many years kept green by the good work which he has accomplished in and for Leeds.

CAPTAIN E. D. SIMSON,

INDIAN MEDICAL SERVICE.

It is with much regret that we have to announce the death on July 22nd at Nowshera, India, of Captain Simson. His death was due to cholera. Educated at Merchiston Castle, Edinburgh, Captain Simson studied medicine at Edinburgh University, graduating M.B., Ch.B. in 1906. He then entered the Indian Medical Service. All old Rugby football players will learn with deep regret the death of "E. D.," as he was known to Edinburgh football players. While at school he was a long way ahead of the rest of the team, and afterwards, when at Edinburgh University, he at once became a famous half-back. He was a great power in the university football club, of which he was at one time captain, and in many other branches of student life he made his influence felt, and always for good. It was in 1902, just after leaving Merchiston, that he gained his first "cap" for Scotland. That was against England, and he never missed an international game thereafter, until, having got his degree, and having passed into the Indian Medical Service, he gave up the game and went abroad. He held a record for international matches, having played in seventeen, including that against the New Zealand "All Blacks."

One sad feature in connexion with his death was the fact that his marriage had been fixed for September, his passage home having been actually taken. Captain Simson was a son of the late Mr. Robert Simson, Bengal Civil Service, and his early death at the age of 28 leaves a blank in the Indian Medical Service which will be difficult to fill. As Dr. Kelman said in referring to his death, "Clean, strong, and simple, with no show and all reality, he played the game always, in life as in athletics, and played it magnificently." A well-deserved tribute.

The Services.

THE MEDICAL CONSULTATIVE AND MEDICAL EXAMINING BOARDS.

The following appointments to the Medical Consultative Board and the Medical Examining Board, on their reconstitution, have been made at the Admiralty:

Medical Consultative Board.—President: The Medical Director-General of the Navy. Civilian Members: Sir Watson Cheyne, D.Sc., M.B., Sir Dyce Duckworth, M.D., LL.D., and Professor W. J. R. Simpson. Naval Member: Inspector-General H. J. McC. Todd.

Medical Examining Board.—President: The Medical Director-General of the Navy. Members: Mr. James Galloway, M.D., and Mr. H. D. Rolleston, M.D., for Medicine; Mr. G. L. Cheatle, C.B., and L. A. Dunn, M.B., for Surgery. Secretary: Fleet Surgeon J. L. Smith, M.B., M.V.O.

ROYAL ARMY MEDICAL CORPS (TERRITORIALS).

Lowland Division Medical Units.

The 1st, 2nd, and 3rd Lowland Field Ambulances completed their annual training at Gailes Camp this week. Much of the training was handicapped by the broken weather, and by the departure of a fully-equipped section from each unit for the manœuvres on the shores of the Firth of Forth. During peace each ambulance is provided with the equipment for a section only, for instructional purposes, and the order to send a section fully equipped for service with the troops on manœuvres leaves the remainder of the units without equipment of any kind. During the training fortnight, however, officers, non-commissioned officers, and men have been thoroughly grounded in all the branches of field training as far as circumstances would permit. Lectures were delivered daily, and practical work in tent-pitching, preparation of bivouacs and shelters, first field dressing, sanitation, preparing of destructors and latrines, water duties, etc., undertaken in addition to the stretcher and wagon exercises. Combined sports were held on July 21st, before the departure of the eight-day men. The three sections left at the beginning of the week for the manœuvre area, the section of No. 1 under Major G. H. Edington, No. 2 under Major J. McKie, and No. 3 under Major McIntosh. Lieutenant-Colonel A. D. Moffat, commanding No. 2, was Director of Medical Services for the Defending Force, while Lieutenant-Colonel A. A. Ross, 3rd Lowland, and Major P. F. Shaw, 2nd Lowland, acted as Administrative Medical Officers. The Raiding Force was composed mainly of Regulars, the Director of Medical Services being Colonel Yarr, R.A.M.C. Lieutenant-Colonel R. T. Halliday and Major H. Wright Thomson, of the Mounted Brigade Field Ambulance, were Administrative Medical Officers of the Southern and Northern Divisions of the Raiding Force respectively.

The 3rd and 4th Scottish General Hospitals, under Lieutenant-Colonel D. J. Mackintosh, M.V.O., and Colonel A. Napier, V.D., had their training at Woolwich, as last year, and return to Glasgow on July 30th.

The Manœuvres in Fifeshire.

The medical arrangements in connexion with the manœuvres were very thoroughly organized by Colonel Wodehouse, the P.M.O. of the Scottish Command. As over 35,000 troops were to be engaged either on the Fife coast or on the southern shore of the Firth of Forth, and as this was the first attempt in Scotland to carry out manœuvres on such an extensive scale, the task of providing the requisite medical services was no light one. Detailed instructions were issued for the combatant officers and men taking part, insisting on the importance of keeping fit, attending to sanitation, the care of the feet, the wearing of woollen under-garments, the necessity of keeping warm and dry in bivouacs, etc. Instructions were also given in detail as to the procedure to be followed in the case of sick from the various centres of the manœuvre area, and their removal to home or hospital. Though short, the training should be valuable in preparing all ranks for service conditions.

Medico-Legal.

EVASION OF THE VETERINARY ACT BY COMPANIES.

THE Court of Chancery on July 19th heard an action in which the Attorney-General claimed an injunction restraining the defendants (a company and an individual), their servants or agents, from taking or using any name, title, addition, or description implying that they were specially qualified to practise the art of veterinary surgery, or from holding out the company as being qualified, or as being conducted by persons who were qualified, to practise the said art, or from receiving fees for the practice of the veterinary art, or from practising the said art, or from performing any acts usually performed by veterinary surgeons for rewards.

It was stated by counsel that the company had upon its premises a signboard bearing the words "Churchill's Veterinary Sanatorium. Dogs and Cats Boarded. James Churchill, M.D., U.S.A., Specialist and Managing Director. Advice Gratis." It had also published an advertisement running "Churchill's Veterinary Sanatorium, King Street, Richmond. 'Home from Home for all Animals.' Where they can be received as boarders, or under treatment for all complaints. Ladies' pets are under a lady's care, and are properly looked after and fed. Separate kennels for large dogs and cats. Write for terms to the Managing Director." The only director of the company was the defendant, James Churchill, and as such he was the manager of the business. It was added that he was not and never had been qualified to be on the Register of Veterinary Surgeons, and that he had been successfully prosecuted for breach of the Veterinary Act, Section 17, and that on his moving in succession to other places further prosecutions had been withheld owing to his giving a signed undertaking to discontinue the use of the words of which complaint was made. Finally, when he found he could not carry on his veterinary business without risk of prosecution he formed himself into a joint stock company.

Mr. Justice Neville, in giving judgement, said the Veterinary Act contained nothing to prevent a company calling itself Churchill's Veterinary Sanatorium, Limited, but such a company to describe an unqualified member or agent as a practitioner of veterinary surgery was contrary to the provision of Section 17 of the Veterinary Act. The company had done and was doing this, and he would therefore grant the injunction sought. It would be one restraining the defendants from using any description of Churchill indicating that he was a veterinary surgeon, or a practitioner of veterinary surgery, or any branch thereof.

In the course of his judgement, Mr. Justice Neville dismissed one by one the arguments by which it was attempted to show that the signboard used did not imply that the defendants were specially qualified to practise veterinary surgery, or that they received fees for such practice. He also remarked that the whole difficulty in cases of this kind arose from the fact that the House of Lords had held that a person did not include a company. When an offence consisted in the taking of a name, he could not conceive why a company should not be as guilty of it as an individual.

WORKMEN'S COMPENSATION.

Alleged Milk Poisoning.

IN this case (Birmingham, June 17th) the question was, "Does a man employed to milk cows who gets blood poisoning owing to milk congealing under his finger nails come within the meaning of the Compensation Act?" The applicant was employed as a cowman by the respondent, and continued to discharge his duties until May 4th. It was stated to be a well-known fact amongst cowmen that in milking cows the fluid might get under the nail, and in the course of a few hours would harden. If the milking was continued the hard substance beneath the nail irritated the flesh and abraded it. Milk was one of the most common media for microbes; and it was suggested that in the course of later milking the applicant contracted septic poisoning. The applicant had to leave his work owing to his hand swelling up, and he was treated at the hospital for blood poisoning. He now claimed compensation at the rate of 11s. 6d. per week—half his wages. Medical evidence was given to the effect that the poisoning might have come by the process suggested by the applicant. On behalf of the employer it was contended that there was no accident at any time. The condition leading up to the poisoning had come by gradual process. His Honour found against the applicant, holding that it was impossible to say at what particular time the act which caused the poisoning occurred. It was a case of gradual formation of disease.

CONTRACTS NOT TO PRACTISE.

MR. J. G. WILLIS (Barrister-at-Law, Bishop Auckland) writes to point out an inaccuracy in the answer to "Delta," under the above heading, in the JOURNAL of July 2nd, 1910, p. 59. He says: "The answer states that where the agreement is by deed no consideration is necessary. This is quite true, but contracts in restraint of trade form an exception to the general rule. A contract in restraint of trade requires consideration, even though the contract is by deed." We regret that by inadvertence we overlooked the exception to the general law about contracts in restraint of trade. It should have been stated that when the agreement is one in restraint of trade, although it be by deed some consideration is necessary.

We have received a letter on the same subject from Mr. Percival Turner in which he says "that in cases of the sale of medical practices it is the almost invariable custom to restrain the outgoing party for all time. In the course of thirty-five years' experience, and having had some thousands of such contracts pass through my hands, I have never consented to a time limit. It has been upheld in the courts of law that a perpetual injunction within reasonable limits is valid. To take an instance that often may and does occur: A. sells his practice to B. with the usual perpetual restriction; at the end of, say, ten years B. dies and B.'s representatives can dispose of the practice to C.; but if there had been a time limit and B. had died just at the end of it, B.'s representatives would be utterly unable to sell at all, seeing that A. could return and would be in no way legally restricted from practice."

To this we reply that although Mr. Turner does not himself consent to "time limits" in agreements which he draws, and the courts may frequently uphold them, the law distinctly requires these limits to be reasonable, that is, to be not more than is necessary to protect the party on whose behalf the restraint of trade is made. We are advised that it is not necessary in all cases to restrain the outgoing party for all time, and if in any case the court did not think such a restriction necessary it would not enforce it. A solicitor, to whom the case was recently put, said that it was certainly not usual in most businesses to insist on a restraint for all time, and that it should not be done except in cases where it was absolutely required; that no doubt the court would enforce it.

AMBULANCE LECTURES AND MEMBERSHIP OF PARISH COUNCIL.

KAPPA writes that he is a member of a parish council, and on some four or five occasions during the last ten years he has been requested to give a course of ambulance lectures for which he has been paid by the clerk in due course. Recently the legality of this payment has been questioned. He wishes to know: (1) Is the appointment of ambulance lecturer "an office of profit"? (2) If so, does he become disqualified as a member of the parish council by accepting payment? (3) If disqualified, how can he be reinstated?

*** (1) Such an appointment would probably be regarded as an "office of profit." (2) Our correspondent might become disqualified by accepting such payments, but whether he has actually become so could only be ascertained by taking a legal opinion based on all the circumstances of the case. (3) If disqualified, he could be reinstated only by being re-elected by the ratepayers if the disqualification shall have voided his office. Whether or not this is the case may also be a legal point only to be decided by an exact inquiry into all the facts of the case. It should never be forgotten that the general law is that no member of a public authority can accept payment from the same for official services so long as he continues a member.

CLUBS AND UNSTAMPED RECEIPTS.

A CORRESPONDENT writes that he is a club surgeon (Foresters), and has recently had an unstamped receipt returned to him by the club secretary, who states that the auditor declines to receive it without a stamp. He wishes to know the authority for the statement on p. 1270 of the BRITISH MEDICAL JOURNAL that such receipts did not require a stamp.

*** Our authority is the Friendly Societies Act, 38, 39 Vict., Ch. 60, S. 15 (2) (b).

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

THE PUFFING OF HEALTH RESORTS.

FELIXSTOWE DOCTOR.—The medical officer of health of a health resort could hardly refuse to help the local authorities by contributing a short article on the climate and water supply for the local guide, and we can see nothing to take exception to in what he has written or in his article being prefaced by his name and degrees.

MIDWIVES AS ASSISTANTS TO PRACTITIONERS.

INQUIRER.—We think there would be a serious ethical objection to the suggested arrangement whereby the doctor and midwife are to act in a sort of partnership. We see none, however, to the practitioner retaining the services of the midwife as his assistant. The practitioner's name should not appear on the same plate as that of the midwife as suggested.

NEWSPAPER PUFFS.

ETIQUETTE.—There is a clear distinction between the newspaper puff of a young man entering on practice and the account that may appear in a newspaper, laudatory, it may be, of a practitioner retiring from practice. While the former is, from an ethical point of view, improper, we think most persons would disagree with our correspondent in thinking the other open to the same censure.

Letters, Notes, and Answers.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

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ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

J. L. D. desires to hear of a good boarding school for the daughters of medical men where moderate inclusive fees are charged.

J. P. writes: Will any reader oblige me with a diagnosis and prognosis of the following case? Child, male, aged 14 months, fat and well nourished, expression placid; hands, fingers clenched and drawn to ulnar side of palm, tips of fingers rather wasted; toes drawn up; child also seems to have stiffness of back, and when sitting on the floor usually falls on back of head. The unusual part of the case is the history. The child was born with the hands so tightly clenched that the fingers left deep pits in the palms of the hands. The condition seems to be improving, but the child can neither walk nor talk. The hands can now be opened flat, but soon close again. The mother, who seems to be a healthy young woman, slipped and fell sitting about a month before her confinement. Confinement seems to have been normal, and fairly easy for a first one.

ANSWERS.

RADIATOR.—(1) Application should be made to the local officer of Customs and Excise for a form, No. 232 B, on which to claim repayment of the full tax paid on petrol used up to January 1st, 1910, and one-half the tax on that used subsequently. The claim should be accompanied by certificates from the dealer showing that the tax has actually been paid on the petrol. (2) If the car is used to any considerable extent for such professional purposes as those named a deduction would clearly be due in respect of the cost of maintenance of the car and the insurance premium. The proportion of the total expense that would be admissible would depend upon the relative extent to which the car is used for professional purposes. There is no reason why our correspondent should not deduct what he considers to be an appropriate amount in arriving at the sum to be returned as his profits.

COLOUR BLINDNESS AND THE BOARD OF TRADE.

IT is difficult to say why "C. H. J.'s" patient was rejected as colour blind by the Board of Trade. The tests applied by the Board are so obsolete and inadequate, and are employed with so little special skill, that it sometimes happens that persons with normal vision fail to pass the examination, while not a few dangerously colour blind men satisfy the examiners. It is essential that a seaman should have perfect vision in both eyes, and that he should be able rapidly to recognize red and green under all possible circumstances. Any one showing the slightest hesitation in naming colours, whether in the shape of coloured wools or lights, or who fails to match colours, should be unhesitatingly rejected. "C. H. J." should examine his patient with the Edridge-Green colour perception lamp; the ordinary wool tests are quite futile. The whole question will shortly be considered by a commission of experts appointed for the purpose by the Board of Trade.

LETTERS, NOTES, ETC.

THE CAUSATION OF SEX.

DR. T. DUNCAN NEWBIGGING (Abington, Lanarkshire) writes: I would like with your permission to point out some errors made by "T. W. B." in your issue of June 11th. He says (p. 1452) that the queen bee lays her eggs "one in each cell *indiscriminately* in all available cells." I can assure him the queen does nothing "indiscriminately." Only under certain conditions will she lay in drone or queen cells, for example, when the "spirit of the hive" has decided on swarming. He says further, "These eggs, of course do not differ in composition." Now why "of course?" especially when it is an undoubted fact that these eggs *do differ in composition.* Queens and workers are raised from fertile eggs. Drones are raised from unfertile eggs. The queen having control over this matter, when she lays in drone cells (I am speaking of a fertile queen), she prevents the spermatozoa escaping from her spermatheca, an infertile egg is laid; this becomes a drone. When she lays in worker or in queen cells she permits union of the male and female elements. According to the quality and quantity of the food fed to the larvae from these eggs, and according to the size of the cells in which they grow, they becomes queens or workers. Again, he says, "but I do not agree with the theory held by so many of my fellow bee-keepers that the so-called bee jelly feeding accounts for her sex"? I cannot think any bee keeper holds any such theory. Both queens and workers are female, the queen being a fully-developed female and the worker an undeveloped female—a female with undeveloped ovaries. Many workers are so far developed females as to be able to lay eggs, while not sufficiently developed as to be capable of being fertilized by the drone (the male bee); such laying-worker eggs hatch out drones, no matter in what size of cell they are laid. The sex is not therefore determined by the food fed to the larvae, although the food fed to the larvae undoubtedly has an influence in the full development of the female organs. In fact the food fed to mature queens decides whether they will lay at all or not. "T. W. B.," in fact, states this. Now, that "T. W. B." is wrong in his opinion "that according to the size and formation of the cells will the sex be, according to the moulds in which the ova are *deposited*," will be clear from two facts: (*a*) That unfertile eggs, whether laid by a queen or by a laying worker will hatch out drones, *no matter in what size of cells they are laid;* (*b*) that a worker egg may be allowed to hatch and grow as a worker larva for some days, but on being lifted out of the worker cell and put into a queen cell it will be fed and raised by the bees *into a queen*, a queen, moreover, as big and strong, as prolific and long-living as any other queen raised all along in a queen cell. I will show "T. W. B." this transference being carried out almost weekly in my apiary. By the way, 5,000 bees would not make a "strong colony"; 3,500 bees weigh 1 lb.; 70,000 bees would be a strong colony in summer; no less.

TINCTURE OF PYRETHRUM FOR INSECT STINGS.

DR. ARTHUR W. THOMAS (Boscombe) writes: It may interest your readers to know that, owing to much rain in the spring and early summer, the larvae of gnats and mosquitos have been exceptionally plentiful this year. *Culex, Corethra, Chironomus aedes*, etc., abound. The stings of these pests are always irritating, and sometimes cause unpleasant symptoms, and, as they undoubtedly feed on any decomposing matter, their lancet-like suction apparatus is anything but aseptic. If exposed to their unpleasant attentions, there is only one remedy of any use as a preventive, and that, as I have mentioned before in your columns, is tincture of pyrethrum applied to hands, face, and exposed parts. Prevention is better still by emptying or covering all water-butts and cisterns, and, if possible, treating ponds and ditches in the neighbourhood of a house with a thin layer of petroleum.

A SOLID FACT.

A CORRESPONDENT sends the following dialogue:—M.D.: "I have examined the patient's urine, and find it to be solid with albumen." Elderly G.P. (called in consultation): "*Solid!* How could he pass it then?"

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	5
A whole column	2	13	4
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NOTE.—It is against the rules of the Post Office to receive *postes Restante* letters addressed either in initials or numbers.

An Address

ON

THE ETHICS OF INSANITY.

Delivered before the Norwood Division of the British Medical Association.

BY

T. DUNCAN GREENLEES, M.D.Edin., F.R.S.Edin.,

LONDON.

Perhaps there is no subject in the whole range of medicine of more interest, and, to the general practitioner, of greater difficulty, than insanity. The very nature of its symptoms and the difficulties experienced in their management renders a case of mental disease, as occurring in our general practice, one of great worry and anxiety. Such cases are outside, as it were, the general practitioner's sphere; and, accordingly, they are usually relegated to a separate department of medical science, and this was done long before specialism in medicine became so fashionable as it is in these days. Cases of mental disease are gratefully left by the general practitioner to men who, from their special training, are supposed to be more able to cope with the symptoms. As the education of the medical man advances the gap between the alienist and the general practitioner is steadily diminishing.

If there can be advanced one argument in favour of specialism in medicine surely the care and treatment of mental diseases is that argument, for they demand special education and training, such as can only be obtained by a long residence in institutions where the insane, on account of their symptoms, are congregated.

It is not to be expected that the general practitioner can even pretend to more than a rudimentary knowledge of psychological medicine, or the modern methods of the treatment of insanity. On the other hand, no one would credit the alienist with an intimate knowledge of the routine work of general practice, or with the various methods adopted to humour the sane sick, so necessary to the success of the general practitioner.

I purpose in this address to deal with several matters concerning insanity, regarding which the general practitioner, especially if he is of the "family physician" type, may be called upon to express an opinion, or even act promptly, for often so much depends upon his decision. For example, promptness of action is imperative in dealing with a case of acute insanity in a private house. The doctor has to decide, and this regardless of possible legal contingencies, whether his patient should be "certified" and removed to a public institution. Again, he may be asked to give an opinion on the delicate question of marriage between persons of insane or neurotic diathesis; the care and education of children of such unions; the testamentary capacity of persons of idiosyncrasic tendencies, or suffering from gross nerve lesions, or even some of the vague symptoms suggestive of the borderland of insanity; and finally, there are many legal questions which may have to be answered by the family physician, with results entailing, perhaps, the gravest consequences to the persons concerned.

It is admittedly rare that a case of acute insanity can be successfully treated in a private house, and the first difficulty that faces the family medical adviser is the determined objections of many persons to the removal of the patient to a public institution if this should entail "certification." Twenty years ago, and more, the public were intensely prejudiced against "certification," "lunatics," and "asylums," and this prejudice is as keen to-day as it ever was. Only the other day I had the greatest difficulty in convincing a lady, whose husband I had advised removal to an asylum, that the attendants neither beat nor starved the patients. It is one of the saddest blots on our so-called civilization that these terms "certification," "lunatic," and "asylums" should still spell *opprobrium* to the general public, even although they are better educated, and our asylums are, if possible, better administered, than they were twenty years ago. As medical men, and in the best interests of patients suffering from this sad disease, I consider it is our bounden duty to inquire into this prejudice, and, having found the cause, to suggest a remedy.

It has always seemed to me that the general practitioner himself is not altogether irresponsible for the dread the public have of the only rational treatment for their insane relatives; perhaps this is a sin more of omission than commission, but, nevertheless, they do not make themselves conversant with the working of our public asylums, and are, accordingly, not in a position to combat the absurd arguments of their patient's friends, whose sole source of information may possibly be the usual halfpenny daily paper, whose circulation depends upon well-worked-up scandals referring to our public and philanthropic institutions. If the doctor successfully combated these unreasonable prejudices, I am sure we should hear less of them, and possibly many mental lives, which are now lost, would be saved.

But there is another reason for the prejudice the public have against "certification" and "asylums," and this is the existence of a law called "the Lunacy Act," for no one can be treated in an asylum without coming under its ban, and the curse of the law is "certification"—that is, the person is duly pronounced a "certified lunatic." To the educated this is merely a play of words, but to the ignorant or prejudiced it spells disgrace; it means loss of social and domestic rights, deprivation of all civil rights, separation from wife, family, and home, and, if—I had almost said unfortunately—the patient does recover, he is for ever afterwards branded, "He was once a lunatic"; he is shunned, and perhaps feared, by his friends, and possibly never again attains the social position he lost when he was "certified."

It is true there is a little clause in the Lunacy Act, which comprises only 342 sections and 146 rules and regulations, which provides for the "voluntary" treatment of mental diseases, but this section only applies to persons who know what they are doing; but what about the poor patient who, from the duress of his affliction, does not know what he is doing? It is the sick who have need of a physician; they who are well need no physician; these latter have to wait until they are so ill that the doctor "certifies" them, and they are then "lunatics."

After-care associations are needed for the poor mortals who are liberated from these asylums; they want a protecting hand to guide them until they are fit to guide themselves; does it not seem strange that we hear of no "after-care associations" in connexion with our hospitals? And this is what we call the twentieth century treatment of the saddest disease that can befall our race! The treatment may be, and is, all right, but it is the means to obtain this treatment I object to. If we are to progress, if we are to be of any real use to suffering humanity, then our business should be to place our patients under treatment with as few obstacles as are met with when we send a patient with a broken leg to the hospital. In fact, our asylums should be hospitals, not in name alone, but in very deed, and there is no more logical reason for the law to step in and offer definitions of insanity, and interfere with its prompt treatment, than that it should regulate the terms upon which a case of pneumonia shall be admitted to the hospital.

Possibly the reason why the law regulates the treatment of the insane is the fact that they are deprived of their liberty, but surely, if the deprivation of liberty is essential for the treatment of this disease, some other method could easily be found without the necessity of branding the patient a "lunatic." If it is found impracticable deleting the present antiquated and cumbrous Lunacy Act from the Statute Book—and no doubt many objections to this would be advanced by interested parties—then it should be replaced by another Act, with another name, and treating of the insane more like sick persons than "lunatics," and our asylums more like hospitals than "places of detention."

In view of these facts it is reasonable your patient's friends should prefer to have him treated at home; your arguments, which perhaps you only half believe yourself, failing to overcome his prejudices, you submit; but, after months of nursing, you are forced to either give the ultimatum—removal to an asylum, or else you threaten to give up the case altogether. Meantime the delay has not benefited your patient; it is likely he has now lost his best chances of recovery, for it is a well known fact

that early treatment in most cases of acute insanity gives the best prospects of recovery.

Apart from this possible delay, the question arises, "At what stage of the disease are you justified in certifying a case?" The "powers that be" are generally anxious to make the existence of a delusion the main factor in your certificate. But a person with delusions is not necessarily "certifiably" insane; it is only when some practical manifestation of the delusion occurs that you are justified in granting a certificate. For example, a patient may tell you his soul is lost, and he must die; the natural outcome of such delusions is self-destruction, or an attempt at such. Then "certification" comes too late in the majority of cases; it would almost seem as if certification were resorted to not so much for the purpose of obtaining treatment for the delusion as to prevent possible self-destruction, and this is contrary to the primary tenets of rational medicine, for, in our treatment of disease, we deal with the cause, not the consequent or symptom.

The next question that arises is, "When should a patient be sent to an asylum?" If the case is likely to be one of long duration—say any time over a month—then the sooner he is sent the better for him. It is a great mistake, but one often made by doctors, to keep their patients at home until some serious symptom arises—until, in fact, the patient becomes "dangerous to himself or others"; they seem to forget that an asylum is not only a place for care but also a place for treatment, and many cases in our asylums now could have been cured had they been taken in time and the proper treatment applied.

Finally, in this matter, if the law has to be complied with, it is better that medical men should study a little more closely the certificates they sign when consigning a patient to that unfortunate class, "certified lunatics." We are constantly finding mistakes in the medical certificates; these are more frequently mistakes of omission rather than commission, but it should not be forgotten that they are legal documents of very great importance, and it is not creditable to an educated profession to find careless composition, misspelt words, or necessary clauses left out altogether. Such carelessness is not characteristic of the average doctor's other dealings with his patients.

The doctor, especially if he is at the same time family physician and confidential adviser to his patients, is sometimes consulted in matters pertaining to the marriage of individuals where a tendency exists to mental or nervous disease, either in the ancestry or in the individuals themselves, and this is perhaps one of the most delicate questions which it is our duty to deal with.

Persons often get married without any sense of responsibility for the miseries they entail upon those who will be heirs of their imprudence—indeed without regard to anything but their own personal gratification. Many a man suffering from a hereditary disease for which he certainly is not to blame has cursed the day his parents married. As Maudsley says, one is driven to think that man is not the pre-eminently reasoning and moral animal which he claims to be, or else there is in him an instinct which is deeper than knowledge. He has persuaded himself, rightly or wrongly, that in his case there is in the feeling of love between the sexes something so sacred and mysterious as to justify disregard to the consequences in marriage.

Whether the marriage of cousins results in a degenerate stock is even yet a moot question. Maudsley is of opinion that unless a fault exists in the nervous structure on both sides no harm is likely to accrue. Rather, such unions often produce geniuses, who, after all, may be considered as degenerates, and within the borderland of insanity itself; should there be a fault on either side, then this fault is liable to be intensified in the progeny.

Clouston does not advise the marriage of persons with a neurotic taint, and considers the occasional birth of a genius does not justify the risks of generating a stock of idiots and imbeciles as well. He advises a man with a neurotic strain, if he *will* marry, to marry a woman fat and lethargic. He says "there seems to be a special tendency for members of neurotic families to intermarry, and an affective affinity amongst such that tends towards love and marriage."

While it would be wrong to advise marriage in cases where a hereditary taint existed, at least until the person was well advanced in years, and had kept free from mental or nervous symptoms, it would be just as wrong to oppose marriage to a person who had once been insane, but whose insanity was due to some preventable cause not likely to occur again, such as post-febrile or traumatic insanity.

It is interesting to note that, with the advance of education and civilization, this question of marriage is receiving more and more attention. It is utterly absurd that we should devote more attention to the mating of our horses and pigs than we do to that of our sons and daughters. We are certainly all agreed that "Love is blind"; only it is sad to think how much suffering might be avoided if the bandages were occasionally removed from Cupid's eyes, and men were allowed to exercise the same care in the selection of their mates as they do when breeding their cattle. If such a plan were adopted, although there might be fewer geniuses and idiots, there would at least be a healthier and happier race.

If love is closely allied to insanity, as some aver, then it may be due to some bacillus, and it is possible an antidote may yet be discovered which in the hands of the family physician will effectually prevent the awful calamities that are likely to befall some unions.

In such a delicate matter as this no medical man is doing his duty, either to his own conscience or to the best interests of his clients, if he refrains from warning them of the grave risks they run in being "unequally yoked"—these risks are not necessarily to the persons themselves, but to their yet unborn progeny. How much untold suffering would be avoided if the "natural law of selection," as found in the lower animals, and even plants, were universally followed. We trust the time is not far distant when no marriage will be considered lawful without a clean bill of health on both sides, and the minister or magistrate who marries "uncertified" couples dealt with as a criminal.

Of the various diseases which are considered as typically hereditary, insanity stands out pre-eminently—upwards of one-third of all our admissions to asylums exhibiting an admitted hereditary taint. Under the law of heredity, it does not necessarily follow that insanity must beget insanity; rather the types of disease, known as the neuroses, and of which insanity is only an example, may produce any of the other types in the offspring. For example, the drunken father may beget the idiot, or the epileptic mother a drunken son.

By careful "selection" it might be possible to ultimately and entirely eliminate the neurotic diathesis, but this fact does not yet trouble the ardent wooer of Cupid's favours, who, regardless of consequences, persists in satisfying his animal passions, which perhaps he considers too holy a flame to have cold water thrown upon it in this way!

Should it happen that, in spite of our advice, our patients insist upon getting married, our next care will be their children; and here we generally find the parents more amenable to reason—the ardour of love having by this time partly died out, and been replaced by common sense. When it is represented to them that health, and perhaps life itself, depends on the way in which the children are brought up and educated, it is rare indeed the parent will turn a deaf ear to the advice of the doctor.

In considering this subject we should recollect one of the great laws of heredity—namely, that it is not the disease itself which descends to the child, but merely a predisposition or tendency to it. Savage defines a "neurotic" as a person possessing a nervous system too delicate for his surroundings, and liable to be upset in various ways; the development of the "neurotic" is the natural outcome of highly specialized modes of living, and the condition, according to him, embraces two groups—(1) those who react very rapidly and delicately to their surroundings, among whom we find geniuses, and (2) those who are unstable without being brilliant—reacting destructively to their surroundings. Certain additional influences, acting upon the neurotic temperament, may produce insanity in one or other of its various forms; for example, the undeveloped brain, associated with the neurotic tendency, may result in idiocy; and the critical periods of life—puberty, the puerperium, and the climacteric period—may, in cases where the neurotic predisposition exists, produce the forms of insanity characteristic of these crises.

In the children of neurotic parents to produce the same condition we require similar, if perhaps not quite so severe, influences as those which originally induced the disease in the parents. It is not the disease, but a predisposition to it, that is hereditary; so it is with the neuroses, but in this case the predisposition is much more intense than in the case of many other diseases possessing a hereditary predisposition, for we are here dealing with a much more delicate and unstable organ—the brain.

Such considerations as these should guide us in advising our neurotic patients as regards the schooling, dieting, climatic and social surroundings of their children. Our advice should have as its main object the reducing to a minimum risks of exposure to such influences as we know are likely to unbalance a mind already unstable from hereditary taint. As regards education, it is obviously a mistake to cram a neurotic child's brain either too early or too much. The simplest schooling possible, and this without competitive tests, is all that should be permitted. His food should be of the plainest, and all the luxuries of the table strictly denied him. His life should be, so far as is practicable, an open air one; Clouston advises that such cases should lead the "natural life"; that is, they should throw off all the trammels of civilization and live healthy lives in the open. Such treatment is more effective in developing and strengthening the mental and physical systems than the administration of physic with close confinement, whether it be in the school or in the office.

The last subject to which I shall refer on this occasion is that of the testamentary capacity of cases of mental disease, and of persons suffering from somatic conditions affecting their mental powers. These are subjects usually decided in courts of law, and medical evidence is generally adduced on both sides; it would be a good plan if in these cases the medical witnesses on both sides should have the opportunity offered them to consult together, as was discussed at one of our meetings a few years ago. If this were more frequently done there would be less often seen that humiliating exhibition of medical men swearing differently on the same subject—a laughing-stock of both judges and barristers. Not only may insanity raise doubts as to the validity of a will, but also many nerve diseases, such as lesions of the speech centre. And yet a man may be insane and, at the time he makes his will, know perfectly well what he is doing. In such a case if the court is satisfied the testator knew the value of his property and how he was disposing it, no matter how eccentric he may have been, or how deluded he may be, the will will be declared valid.

Bodily disease, or brain disease, such as paralysis, may so affect the mind as to render the subject incapable of making a will, but in these cases it is for the objectors to prove incapacity before a court of law will upset the wishes of the testator, and therefore much will depend upon the medical evidence one way or another.

In the remissions of mental disease, whether these be of long duration or only ephemeral, a will may be drawn up by a patient which will be upheld by the court; and even in cases of insanity, should the tenor of the will show no indications of the disease from which the testator suffered, it will be declared valid.

The question may arise whether mere eccentricity would affect the validity of a will; legal authorities say that if only eccentricity can be proved, the courts will not interfere; but, then, who is able to decide where eccentricity ends and insanity begins? There is no sharp line of demarcation separating sanity from insanity; we are here on the threshold of mental disease, and in any such case the courts are likely to obtain very little assistance from the medical evidence, for each medical witness is liable to be biassed according to the side upon which he is retained; and perhaps his opinions are influenced, unconsciously it may be, by the spirit of contradiction inherent in us all.

In conclusion, these are only a few of the many questions that are liable to arise in the general practitioner's experience, but they prove the close union there is between general practice and the work of the alienist; they prove, likewise, that, however we may specialize in our separate spheres of work, we still belong to that great profession of medicine whose sole aim is to educate the people, relieve suffering, and to prevent disease.

A Clinical Lecture

ON

RHEUMATOID ARTHRITIS.

BY

CHARLES J. MACALISTER, M.D., F.R.C.P.,

HONORARY PHYSICIAN TO THE ROYAL SOUTHERN HOSPITAL AND TO THE ROYAL LIVERPOOL COUNTRY HOSPITAL FOR CHILDREN; CONSULTING PHYSICIAN TO THE HOME FOR INCURABLES, ETC.

Next to cancer one of the most distressing diseases which we have to deal with, especially in institutions devoted to the treatment of patients suffering from so-called "incurable maladies," is the one which for purposes of general description might be styled "arthritis deformans." This term, however, must be clearly understood to denote not a disease but a series of conditions which have the common characteristic that they are associated with changes in the joints and other parts which lead to deformity and crippling. To attempt to deal exhaustively with this subject in the limits of a short address would be an impossible task, and I must content myself by directing attention to the fact that, like the so-called rheumatic diseases, this disorder is becoming more and more capable of differentiation, and its future classification will, if I mistake not, depend less upon clinical features than upon etiological factors.

All of the cases, to whatsoever category they belong, probably result from toxins or infections of one kind or another, sometimes being due in all probability to actual organisms in the blood—such as, for instance, the pneumococcus, which has undoubtedly proved the starting point of the disease in some cases—but more often depending upon the introduction of toxins into the blood from local seats of infection, as I pointed out about nine years ago in a paper published in the Royal Southern Hospital Clinical and Pathological Reports.

In addition to these factors, one has to remember the cases which may be regarded as secondary to such diseases as true rheumatism and gout.

There are two great classes into which cases of arthritis deformans may be primarily placed, depending upon the facts that in one of them the synovial structures and the periarticular tissues are mainly affected, the cartilaginous and bony parts being only secondarily involved, if involved at all; whereas in the second class we have to place quite a distinct series of cases, characterized by an initial disease of the articular cartilages and of the bony structures, the change which takes place being firstly hypertrophic in character but subsequently leading to atrophy and destruction.

The cases which I am going to refer to on this occasion belong mainly to the first class, and they constitute the condition which we know as rheumatoid arthritis, so called because of its resemblance to rheumatism—in fact, in its acute variety it is so often mistaken for acute rheumatism that patients are generally sent into our hospitals as suffering from that disease.

I shall not at once speak about this acute variety, because I wish to direct attention to the chronic variety of the disease which we so commonly come across, and which causes such a lot of trouble among comparatively young people.

The incidence of the disease, it is needless to say, is greatest among females. Out of a series of 150 cases of both sexes recorded by Llewellyn Jones, 24 occurred between 15 and 20 years of age, 37 between 20 and 30, and 24 between 30 and 40 years of age. The cases among males of the same ages being only 1, 6, and 11 respectively.

Although the joint symptoms are the ones which undoubtedly arrest the attention of the patient in the first instance on account of the pain and crippling which they occasion, there is no doubt that the toxin responsible for this disease produces premonitory symptoms which sometimes exist for a long time before the joints are definitely attacked.

These prodromata mainly affect the vasomotor portions of the nervous system, and, as I pointed out in a paper which I read in 1902 at the Liverpool Medical Institution,

the symptoms often exist for a long time before the joints become affected. They consist of certain Raynaud-like phenomena which I then described, and which were at about the same time independently described by my friend, Dr. Llewellyn Jones, of Bath, and are manifested chiefly by the dead, grey-blue looking fingers and numbness of the extremities, which lead up to the periarticular swellings which herald the classic symptoms of the disease. Tinglings and numbness are very common, and shooting pains along the lines of the nerves, and if the case can only be got hold of in this stage I feel convinced that an enormous amount might be done to stay its course, and to prevent the terrible crippling which it brings in its train at a later period. It has to be remembered that these conditions are not *only* connected with rheumatoid arthritis, and it is interesting to note that this disease and gastric ulcer, which are both so common in young women, have each this type of premonitory trouble; in fact, my belief is that gastric ulcer depends upon a Raynaud-like vascular spasm in the vessels of the gastric mucosa and wall, and I have no doubt that it is also due to the absorption of toxins so far similar in their effects to those which give rise to rheumatoid diseases. Another interesting set of symptoms which we must bear in mind are those which were long ago pointed out by Trousseau, namely, muscular spasms which give rise to cramp-like contractions in the hands and feet, and which sometimes show themselves before the joints become much affected, and indeed they continue all through the course of the articular affections and long after they have ceased to be the seat of pain. Like the vasomotor spasms to which I have referred, these cramps tend to be symmetrical; they flex the fingers and toes painfully, and occasionally the calf muscles or even those of the thighs and abdomen. They are evidently very painful, for one has heard patients cry out in agony when they occur. In one case that I remember, the act of micturition started this cramp in the abdominal muscles, and caused severe pain.

Another evidence of the early influence of the poisons of this disease upon the nervous system is to be found in the muscular weakness which so often precedes the joint affection. It need not be constant—indeed, as Spender pointed out, it is often quite transient in its duration, giving rise to the slipping of articles from the fingers, and leading the patients to complain that they have lost the power of performing fine muscular actions with their hands, and that they get very easily tired when they write letters or play the piano. In young girls this latter indication, associated with the others that I have named, is one never to be lost sight of. Only a few weeks ago I came across a case where the child, who had been a brilliant little pianist, lost the power in her wrists in this way, and shortly afterwards began to suffer from rheumatic pains in her hands and feet, symptoms which could not be disregarded in view of what I have told you. These feelings of weakness are sometimes associated with distinct muscular weakness, and some authors have described fibrillary twitchings of the muscles suggestive of the onset of some of the organic diseases associated with atrophic myopathy. In many cases of the disease the joints become affected, so to speak, paroxysmally—that is, a given joint does not become affected and then progress steadily from bad to worse, but it becomes the subject of a series of attacks of inflammation with periarticular swellings, and at last becomes the subject of chronic change. In some cases, however, after an insidious onset, the disease gradually (though not invariably) progresses in a centripetal way, spreading from the smallest joints of the hands to the wrists, elbows, and shoulders, and similarly from the feet upwards, and it is characteristic that the temporo-maxillary articulations and those of the cervical spine are rarely spared.

You are familiar with the spindled-looking swellings of the fingers found in this disease, and how the skin over them looks grey-blue. The joint fluctuates or feels boggy, and in all the joints, both great and small, it depends upon thickening of the synovial membrane *plus* a certain amount of fluid in the joint, but largely also is this due to villous overgrowths in the synovial fringes which are almost universally present, and it is to the presence of these that the creaking sounds so characteristic of the disease are mainly due. Occasionally they become very large and, getting between the articular surfaces, cause sudden intense pain, with limitation of movement in the knee-joints, followed by an acute attack of synovitis.

I want, while I remember it, to direct your attention to the fact that the early deformity in many cases of rheumatoid arthritis is less due to the arthritic condition than to the extreme muscular irritability which is present. The cramps (as well as the vasomotor phenomena, including sweating of the soles and palms) continue, and if you press back the flexed hands and fingers you will find that they manifest clonic contractions, indicative of the irritable state of the neuro-muscular system. The ulnar flexion is in part due to the same thing, always remembering the stronger pull of the interossei towards the ulnar side.

I need hardly refer to the other phenomena belonging to this disease beyond mentioning that the occasional attacks of pyrexia, accompanied by fresh joint infections, the tachycardia, the more than occasional involvement of the thyroid gland, the mottling of the skin and its pigmentation, and the changes in the teeth and nails, all denote that a general poison is at work, and that we call the trouble by the name we do only because the joint symptoms are the ones which seem predominant, and by their painfulness resemble rheumatism, and lead the patient to think that she has a rheumatic disease.

All of these conditions belong to the disease in its active stage, which may last for years, and after the poison is got rid of the unfortunate patient is left crippled with flexed wrists, all her joints flexed, being no longer swollen but atrophied and even dislocated, and, as I have pointed out elsewhere, the fingers hanging like tassels, but painless and remarkably useful. The skin of the hands is now dry and thin and atrophied, and if evidence of the loss of nervous tone is required we find it in the tendency which now exists to the formation of patches of tissue necrosis, sometimes over seats of pressure, sometimes not, but which, if they once occur, almost invariably lead to death from septic infection.

The ultimate purpose which I have in my mind in this lecture is to speak about some clinical facts which I have unearthed during recent years, and which I venture to think have altered considerably the prognosis in quite a number of cases of rheumatoid arthritis, and there are one or two points in treatment also which may prove interesting. Before proceeding to illustrate these points to you, however, I must shortly say something of the pathological changes which are found in the joints of a well established case, say one which has caused the patient to be bedridden, with flexed and painful joints, and with evidence that the trouble is still progressing. It is not often that we have the opportunity of examining such a joint, because in the vast majority of cases the patients outlive the disease and reach the period of atrophy and deformity to which I have alluded. I have made three or four *post-mortem* examinations of the joints, but mostly at a late stage of the disease, when secondary changes have occurred—such as degeneration of the cartilages with rarefaction of the subjacent bones—but it seems evident that when actively causing crippling it is the synovial membranes and periarticular structures which are mainly thickened and inflamed, the cartilages remaining for the most part intact, and the adhesions which take place have much to do with the fixation and ankylosis of the parts, which is so common a feature of the disease.

I do not, in the present stage of my knowledge of rheumatoid disease, think that there is any one organism associated with it; but I have no reason for altering my conviction, long ago expressed, that the seat of infection is commonly one or another of the mucous surfaces, and we cannot get away from the impression that, being so common in the female and so comparatively rare in the male, attention must be directed to those mucous tracts which are associated with the former sex. We know how occasionally the colon bacillus finds its way into the female bladder and gives rise to very serious symptoms, probably by infecting the urine, and giving rise to a cystitis which is associated with constitutional symptoms. No doubt the infection takes place through the urethra. In cases of rheumatoid disease for some considerable period I have had vaginal swabs taken, not because any symptoms or signs have particularly

directed attention to these parts, because, as in the case of nasal infections provocative of the disease, it is not necessary to have them. A chronic rhinitis with pocketing of the secretions in which the toxins become generated is not necessarily so troublesome as to make the patient think much about it, and so, even with no symptomatic indications, organisms may and do produce toxins in the utero-vaginal passages which are certainly related to the disease. Through the kindness of Dr. Moore Alexander, a considerable number of swabs have now been examined in rheumatoid cases, and the *B. coli* has been found, and the examination of a large number of controls has proved that it is not present normally. In one or two instances staphylococci have been found (a recent case presented a large number of these organisms), but this organism is associated with osteo-arthritis rather than the rheumatoid form.

Now in treating these cases it is obvious that several distinct lines have to be followed. In the first place, the local condition must be attended to by systematic douching and cleansing. Secondly, steps must be taken to favour the elimination of poisons already in the blood; and, thirdly, the local joint trouble must be treated.

In connexion with the second of these essentials one must again refer to an observation which I made a good many years ago, and which is now becoming recognized pretty generally concerning the perverted thyroid secretion which is so often present. Quite a number of the patients get enlarged thyroids, and it is noteworthy that the glands sometimes diminish in size when thyroid substance is given moderately, and that the general symptoms of the disease improve under this remedy. I take it that the enlargement of the gland in these cases is a result of its endeavour, by drawing more blood through itself, so to speak, to supply the tissues with the normal secretion which it fails to produce, and that the giving of thyroid reduces the necessity for its attempts in this direction. There is no doubt that in many cases thyroid extract is of great value, especially in those cases where the patients tend to put on flesh and have no tachycardia. It must be borne in mind that Raynaud-like symptoms and cramps in the extremities are themselves symptoms of athyroidea. Regarding other drugs, I have found most benefit from quinine salicylate with salol. Where the colon bacillus infection is derived from a chronic colitis, in a way presently to be described, one of the most effective remedies is ox gall, given in 10 to 15 grain doses (in cachet) several times daily.

But now about the joints. I have explained how they become fixed by fibrous adhesions and by fibroid thickenings of the synovial and periarticular tissues, and I have not the slightest doubt that fibrolysin is a most valuable remedy which helps to release them and render them flexible, and another most useful application is the oleate of mercury (10 per cent. in oleic acid), having hydrochloride of morphine mixed into it in the proportion of ½ grain to the drachm. I have had a number of cases of rheumatoid diseases in girls and children who have been treated on the lines which I have indicated—cases which have been crippled and bedridden for years, but which have become quite well, and able to take their places as workers and as useful members of society.

There is just one other class of cases to refer to here, namely, those in which a chronic colitis is the local seat of absorption. Recently I had under my care a very intractable case in a girl who had been bedridden for years. Her joints were flexed and fixed, and were progressively getting worse. She had no pathogenic organisms in her genito-urinary mucous tract, but she had a troublesome colitis. After getting her considerably improved in the hospital I sent her to the Mineral Water Hospital in Bath, where Dr. Preston King kindly carried out the Plombières line of treatment (which consists in irrigation of the colon), with the result that she came back able to use her arms and hands freely and to walk fairly well, although unfortunately her feet and ankles have remained rather stiff and painful. I believe that Still's disease in children, which is a rheumatoid disease associated with large spleen and lymphatic glands, is only another variety of the toxic class, and that, sooner or later, the source of infection will be discovered and become capable of being treated. It is possible that it follows upon one of the mysterious colon bacillus infections which we meet with from time to time in young children, the origin of which is not yet fully understood. Chronic rheumatoid arthritis, as I have said, often follows upon an acute attack, for a description of which I must refer you to my paper in the Royal Southern Hospital Reports for 1902, and to a post-graduate lecture published in the *Lancet* of 1904. It is nearly always regarded as having been a prolonged case of rheumatic fever, and this has given rise to the impression that the disease under consideration is a rheumatic one. It is best to call the antecedent acute disease rheumatoid fever, and its later stage rheumatoid arthritis.

One word about osteo-arthritis, and I have finished. I merely name it in order to differentiate it from the diseases of which we have been speaking. This is the disease in which the cartilage undergoes hyperplasia, then disappears, leaving the eburnated bony surfaces in contact, and in which overgrowth takes place in the bones, giving rise to outgrowths. With rare exception, this disease begins during or after middle life, and a variety of it constitutes the arthritis of advanced age. It certainly occurs in young people, but much more rarely than the rheumatoid arthritis, and I have seen three cases in children, one of them quite recently. An *x*-ray plate of his hands demonstrated that cartilaginous destruction has taken place. The deformities are more marked in this disease than in the other, owing to the bony outgrowths, and it is in this disease alone that surgical interference is warranted.

CATS AS PLAGUE PREVENTERS.

BY

LIEUTENANT-COLONEL ANDREW BUCHANAN, I.M.S., M.A., M.D.

It is now about three years and a half since I first endeavoured to show that the best way to prevent plague in India is by keeping cats, and although considerable progress has been made, and many people have now come to realize the advantage of keeping cats, there are still some who hesitate to give the keeping of cats first place in the list of preventive measures. I should like now to reply to some of the objections that have been made regarding the cat; secondly, to consider some of the circumstances which have tended to retard the proper appreciation of the cat; and thirdly, to give some additional evidence in favour of the cat, and particularly to draw attention to the very valuable evidence from Professor Koch, who for some years, quite independently, advocated the employment of cats for preventing plague, and also to the evidence which Dr. Gimlette has supplied from Malay.

Objections to the Cat.

It has been stated that the Indian cat is not a sufficiently good rat killer to justify the expectation that cats will prevent plague, and here I must admit that there are many ways in which the activities of the cat can be defeated. For example, a lady informed me that although there were two or three cats in her compound (the enclosure in which the bungalow and outhouses stand) still there were several rats. It was found that about fifty old packing cases were stored in one outhouse, and as most of these packing cases contained old books, papers, straw, or rubbish, the rats had made holes in many of them, and so were able to escape from the cats. When these boxes were cleared out and the rubbish was burned we heard no more about rats in that place. Occasionally we found that a person who had a cat in his own house would complain that rats were frequently coming in, but on making inquiries it would be found that there were many servants' houses in which rats were abundant because there were no cats in them. It is particularly desirable that the servants should be made to keep cats. Early last year I made the following experiment: Eight cats and seventeen rats were let loose in a room with glass doors, so that we were able to watch the result. In a few minutes all the rats were killed; one small cat ended up with four dead rats in its mouth, another had three, and another had two. The cats were ordinary

village cats, and had not been specially selected. The editor of the *Indian Medical Gazette* was among those who at first doubted whether plague could be prevented by cats, but after hearing the subject fully discussed at the Bombay Medical Congress he wrote as follows:

"Conversation with many men after the meeting convinced us that very many were coming round to Colonel A. Buchanan's views that the cat is the natural enemy of the plague rat, and that it is one of the measures of plague prevention dictated by their Scriptures to Mohammedans and Hindus alike, and which will therefore be acceptable to all. We certainly agree that more attention should be paid to this simple method of prevention."

It is essential that a reasonable chance should be given to the cat. Where there are grain stores and mud walls more cats are required; where there is little food for rats and the walls are built with stone and lime a smaller number of cats will suffice.

Is Plague Infectious?

One writer has attempted to show that plague pneumonia is common, and that this form of plague is directly infectious from person to person. If that view is correct, then rat destruction can only be partially successful, and the employment of cats would not necessarily check the disease. In order to prove that plague pneumonia is infectious directly from person to person it would be necessary to exclude the possibility of infection having taken place in the house in which the first case occurred, or by a flea which may have been concealed in the clothes of the person who was suffering from pneumonic plague. If plague pneumonia is common, and if pneumonic cases are directly infective, we should expect to find epidemics among the attendants in a plague camp, but Browning Smith a few years ago drew attention to the prevalent opinion that one of the safest places during a plague epidemic is a plague camp, and that has been the experience of most medical men in India. Now we do occasionally hear of a nurse who has been attending on a plague patient getting an attack of plague, and Dr. Gimlette reports from Malay the case of a patient who was in hospital for rheumatism, volunteering to attend on a plague patient who had been brought to the hospital, and getting an attack of plague. But such cases can be explained on the supposition that a rat-flea had been concealed in the clothes of the first case. If the infection were conveyed direct we should expect to hear of a second, third, and fourth cases, but such an instance has not come to my notice. Ten years ago I accepted as a working theory—it was before the rat-flea theory had been proved—that plague pneumonia is directly infectious, but when a pneumonic case has been admitted to a plague hospital, or accidentally to the wards of a general hospital, I have always been agreeably surprised to find that no cases occurred among the hospital attendants. I do not say that direct infection never occurs, but I have never been able to find any clear and definite proof that it does occur. The point is one of great practical importance for many reasons, but all that we need concern ourselves with at present is that the commonly accepted view, that plague is mainly due to rats, is not upset by the statements of the writer referred to.

Is Plague Dying Out?

One reason why there has been so much delay in appreciating the value of the cat is the idea which is prevalent in many parts that plague is dying out; and the recent events in Nagpur may be referred to by way of illustration. The population of the city is about 120,000. In the years 1903–4 there was a severe epidemic with a mortality of 14,374. In 1906 there was a mortality of 5,165, and after that for a period of three years there was an absence of severe epidemics. Rat-catching was carried out for some time with considerable vigour, and frequently about 500 rats were caught in one day. A census of cats taken last year showed that the percentage of tamed cats to houses was only four—that is, one to twenty-five houses. The annual report of the municipality, which was issued about July, 1909, contained the words, "plague, like all epidemics, appears to have exhausted itself." A scheme for the introduction of kittens had been started, but it was too late. In August and September plague spread rapidly through the city and the mortality rose to the unprecedentedly high figure of 205 in one day, and 3,900 in one month. When, then, we see it stated that plague is dying out it would be advisable to inquire on what basis this opinion is founded. Rat destruction by traps and poison may succeed for a time, but the only permanent way to keep the numbers down in India, where there are, and for many centuries likely to be, so many houses with mud-built walls, is by the employment of cats. If the number of cats is sufficiently increased we can say for certain that plague is dying out. But plague might die out from one of two causes—one by a diminution in the number of rats, and the other by a diminution in the virulence of the plague germ. If the plague germ is less virulent we should expect to find the intensity of the symptoms less, but there was certainly not any diminution in the intensity of the symptoms, for it was the general opinion among the medical men in Nagpur that they had never seen, especially in the earlier days of the epidemic, so many cases die before there was time for the buboes to appear.

Cats versus Inoculation.

Probably nothing has more retarded progress in the acceptance of the cat theory in India than inoculation. It is now generally admitted that inoculation with Haffkine's serum is a good thing. During the fifteen months prior to my departure from India, I inoculated close on 10,000 persons, and I could give many illustrations to show the great advantage of inoculation. In Amraoti all the policemen were inoculated except one man, and that man was the only policeman who died. The forest officer's servant Kishen, Kishen's wife, and their two children lived in the same house. Kishen and his wife were not inoculated, and both died; the children were inoculated, and neither took plague. In Nagpur all the city police, a force of about 190, were inoculated except two men, and these two were the only men in the force who died from plague. In the Empress Mills, where over 5,000 hands are employed, we inoculated nearly all the workpeople. Among the uninoculated 90 died, whereas among the inoculated only 7 died, and most of these 7 were inoculated in the incubation period. Here are the results in eight houses in which some of the workpeople lived: There were 63 persons; cases occurred in each of the eight houses; of 36 persons who were inoculated, none died, while of the remaining 27 only 4 escaped. I could give many similar instances to show the great value of inoculation, and I fancy there are few men who have better reason for appreciating the greatness of Haffkine's discovery than I have, but I think it is better to try and prevent plague by getting rid of rats. A fire engine is good for preventing a conflagration, but it is better to prevent the risk of a conflagration by getting rid of the inflammable materials. Haffkine himself is a strong advocate of rat destruction, and I had recently* an opportunity of discussing the subject at Berlin with Professor Koch, who said: "You cannot stop plague by inoculation of man, for plague is a disease of rats, and if you want to get rid of plague you must attack the rat." There are some who seem to think that we should rely mainly on inoculation, but my view is that if in the intervals between epidemics efforts are made to instruct the people in regard to the necessity for keeping cats, and if facilities are afforded for the distribution of cats, the necessity for inoculation would rapidly diminish. Prevention is better than cure, and distal prevention by rat destruction is better than proximal prevention by inoculation. I have inoculated as many as 523 persons in one day, and it is perhaps only when one has done large numbers of inoculations that we begin to realize fully what a difficult task it would be to inoculate the enormous population of India—not once or twice, but every year when an epidemic comes. The Hon. W. Chitnavis, Chairman of the Nagpur Municipality, and also member of the Viceroy's Council, in a letter written last month, says that "the Nagpur people have come to realize the truth of your teaching, and I am sure they have even now showed ready keenness to possess cats. I know every time there is 'a breeding' of cats in my house I find that somebody steals them away. That in itself is a proof that cats are not despised, but that there is a demand for them."

* This letter was written prior to the late Professor Koch's fatal illness.

Rat Destruction by Traps and Poison.

Another thing which has tended to retard the due appreciation of the cat is the comparative success which has attended the efforts to remove rats by traps and poison. There are, however, many Hindus who object very strongly to the use of traps and poison, but even in the European quarter in Nagpur, where no such objection was met, it was found that, although rats could be cleared out by traps and poison, within a few weeks other rats would come in. It was only in those houses in which cats were kept that the rats could be kept permanently away. When plague began to spread in Nagpur we started what may be called the rat-hole inspection scheme. A number of inspectors were employed to go to each house, thoroughly inspect every nook and corner of the bungalows, and especially of the servants' houses, and to lay poison at the rat holes. After a few days the rat holes would be closed up, and if new holes were found poison would be laid again. As an emergency scheme this was very successful, but it is expensive.

Professor Koch's Views.

Professor Koch has been for some years recommending the employment of cats for preventing plague, and in accordance with his suggestion the use of the cat is now being advocated by Kitasato in Japan. In the Public Health Reports of Japan (September, 1908), Kitasato gives a summary of Koch's views, and the following is an abbreviated extract from his report:

"The use of artificial methods like mechanical devices and poisonous drugs must prove laborious, expensive and at the same time comparatively inefficient; the limited powers of man are far inferior to the boundless resources of Nature. Examples: The *lantana*, a plant with pretty flowers, was introduced into the Hawaiian Islands, and after a few years caused great damage to agriculture. A small species of fly (*Agromyza*), which deposits its eggs within the seeds of the *lantana*, was introduced from Mexico, and in a few years the *lantana* showed signs of diminution. Second example: The sugar cane pest, a species of leaf hopper, in the Hawaiian Islands caused a loss amounting to several million dollars; an ant-like animal parasitic within the egg mass of the leaf hopper was introduced in 1904 and the sugar-cane pest was checked. Koch had experimented with the ichneumon of Egypt, the mongoose of India, and the common European ferret, but he found the cat most fitted for the task. The most useful things are often to be found among the most commonplace. An outline is given of a scheme for encouraging the keeping of cats, and attention is drawn to the necessity for providing holes, large enough to admit cats into rooms in which rats are likely to be found."

Professor Koch came to the conclusion that the cat is the best plague preventer in Africa, and his conclusion, taken with the fact that there is such a strong religious feeling, both among Mohammedans and Hindus, in favour of keeping cats, must surely strengthen very considerably the grounds for holding the view that the cat is the best plague preventer in India.

Cats in Malay Peninsula.

Dr. Gimlette, in the *Journal of Hygiene* (April, 1909), refers to the fact that there has been very little plague in further India, and states that on this account considerable interest attaches to the small outbreaks which occur from time to time. "The keeping of cats," he says, "is a national convention which is common to other Mohammedan people, but in Malay the influence of folk-lore has an additional significance. The ancient superstitious faith of the Malays before their conversion to Mohammedanism seems to survive in the everyday treatment of their cats. In 1907 plague broke out among a gang of imported Javanese coolies who had been working on the Duff Development Concession. There happened to be no cats on the company's rubber estate, a fact which is interesting as giving negative support to Colonel Buchanan's hypothesis."

Cats in Other Countries.

It would be interesting to know how far the failure of plague to get a hold in other countries could be accounted for by the presence of cats. Kitasato had a census of cats taken in various parts of Japan, and found that the percentage of cats to houses varied from 4 in Tokio to 49 in the Yamanashi district, where cats are kept specially to protect the silk industry from rats. Now in Tokio, after 4½ million rats had been destroyed, it was found that rats were still numerous. At the Bombay Congress Professor Shiga informed me that plague could never get a hold at Yamanashi. I think, then, that inquiries conducted on these lines would afford valuable evidence as to why one country or part of a country should escape, while another suffers from repeated epidemics of plague. Since plague began, the medical inspection of ships coming from India is gradually developing into a sort of tyranny, and the sooner people come to realize that a good supply of cats at the port towns and a few cats on ships are all that is required for preventing the spread of plague at seaports, the sooner will the discomfort which arises from the present system of inspection be abolished.

Conclusion.

Some time ago I ventured to predict that "a few years hence we shall look on the neglect of the cat as one of the most extraordinary things in the whole history of our inquiries into plague and its prevention," and already there are indications that this prophecy is beginning to come true, for we frequently hear people saying something like this: "If plague is a disease of rats, it is only plain common sense to check it by keeping cats." There are, however, still many parts of India where the value of the cat is not fully understood, and there is a tendency among some to think that plague is dying out. One of two courses is now open—one to trust to luck and to soothe our minds with the idea that plague is dying out; the other to leave nothing to chance, but to endeavour by every means to reduce the number of rats, and to impress on the people that of all the methods that have been employed for killing rats, and for keeping them away, there is none that can be compared with the rat-destroyer which has been provided by Nature—namely, the cat.

VICIOUS CIRCLES ASSOCIATED WITH DISORDERS OF THE URINARY ORGANS.

By JAMIESON B. HURRY, M.A., M.D.,
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Amongst the complications of disease with which the physician is called upon to deal, vicious circles play an important part. Chronic disease becomes more chronic in the presence of this complication, and acute disease more acute; while the territory over which morbid processes play havoc is apt to be indefinitely enlarged. Indeed, it is not too much to say that a lethal exitus is frequently accelerated by, if not wholly due to, the reciprocally acting factors that have been called into action.

Although vicious circles are of such consequence in determining the duration as well as the issue of an illness, they have almost wholly escaped attention. No lexicographer appears to have defined what is meant by a "vicious circle" in medicine, and yet the complication meets us at every turn, and has to be taken into account in prognosis as well as in treatment.

Among the great systems of the body, the urinary system is of special interest, owing to the number and variety of circles met with. Illustrations of the mechanical, neurotic, chemical, organic, and symptomatic forms may be found in abundance, many of them possessing great importance.

The following topographical classification will be found convenient, although it cannot always be strictly adhered to:

I. Circles associated with the bladder and prostate.
II. Circles associated with the kidneys.
III. Circles associated with the ureters and urethra.

I.—*Circles Associated with the Bladder and Prostate.*

A striking example is presented by retention of urine caused by prostatic hypertrophy. The venous plexuses surrounding the prostate are always of ample size and undergo further dilatation in elderly men. This explains how it is that when, from some cause or other, congestion

of the prostate takes place, very considerable swelling of the gland results, sufficient in many cases to cause complete retention of urine. The accumulated urine in turn aggravates the venous engorgement, these two factors thus acting reciprocally on each other.

Desnos and Minet thus describe the mechanism of retention due to prostatic congestion:

On comprend dès lors comment la rétention s'opère: le volume des lobes latéraux augmentant brusquement les amène au contact; toute la glande elle-même est comprimée par les plexus périprostatiques: enfin et surtout la muqueuse congestionnée et oedématiée vient faire un bourrelet qui obstrue le col de la vessie; la muqueuse, plus friable, saigne au moindre contact d'une sonde. Pendant ce temps, l'urine s'accumule en arrière de ce bourrelet, distend la vessie. La pression du liquide dans ce reservoir augmente encore la stase veineuse, et l'oblitération cervicale devient invincible.[1]

Another circle may be caused by the retention in the bladder of residual urine occupying the region of the trigone. This residual urine often sets up vesical irritation and congestion, which aggravate each other. Thus Mansell Moullin writes:

The presence of residual urine and the straining and effort caused by the disadvantage at which the muscular coat of the bladder is placed do not allow the congestion to subside. A vicious circle is established, the irritability causing increased frequency, and the increased frequency making the congestion and irritability worse.[2]

Again, the muscular wall of the trigone is apt gradually to yield under the continual pressure, giving rise to a thin-walled post-prostatic pouch. When once formed, this pouch leads to further retention of urine, and this in turn to further bulging. Occasionally the pouch has attained such dimensions as to reach the perineum. In women a cystocele may be formed in much the same way.

In some forms of prostatic hypertrophy the enlarged lobe takes the shape of a valve which falls over and closes the vesical orifice as soon as the bladder begins to contract. The more vigorous the contraction the more tightly is the orifice closed; the tighter the closure the greater the contraction.

Sir Henry Thompson draws attention to a circle that is frequently present when catheterism, although imperatively demanded by an incapable and inflamed bladder, aggravates the inflammation.

The cystitis on the one hand, and the catheterism on the other, exercise mutually inimical influences, and the patient becomes the victim of a vicious circle of actions, in which an absolutely indispensable remedy, the catheter, aggravates the inflammation of the bladder, which therefore, in its turn, demands the instrument with increasing frequency.[3]

Where retention of urine has led to atony of the bladder, another reciprocal condition is set up, as pointed out in Keen and Da Costa's *Surgery*:

Prolonged or repeated retention, with overstretching of the organ, from any cause whatever, results in weakening of the detrusor muscles, reducing their contractibility and producing the condition called atony; while, on the other hand, atony itself contributes to further retention by reason of the inability of the weakened muscles to expel the urine. Thus is established a vicious circle that forms the intimate relation between the two conditions.[4]

Guyon draws attention to correlations that were common in earlier days when lithotrity was prolonged over several sittings. The cystitis called for lithotrity, while the resulting fragments of crushed stone increased the cystitis.

Autrefois lorsqu'on avait recours aux séances courtes et multiples sans chloroforme, . . . on abandonnait dans la vessie les débris de la pierre qu'on avait broyée. Ces débris plus ou moins anguleux étaient parfois d'un volume assez considérable. Aussi, à l'irritation que provoquaient directement les manœuvres et que n'atténuait aucune tentative d'anesthésie, s'ajoutait bientôt celle du contact de ces fragments, contact beaucoup plus offensif on le conçoit, que ne l'était auparavant celui du calcul tout entier. Ainsi se produisaient des poussées de cystite d'autant plus difficiles à prevenir et à combattre qu'elles étaient précisément provoquées par le véritable traitement curateur, et que ce traitement exigeait toujours un nombre plus ou moins considérable de séances. On était donc inévitablement condamné à tourner dans un cercle vicieux.[5]

Fürbringer describes a vicious circle present in acute prostatitis, the abdominal straining to pass water increasing the pressure on the urinary tract, and thus leading to a greater obstruction and straining.

Die in Folge der Dysurie angestrengte Bauchpresse übt einen unheilvollen Druck auf die entzündete Drüse, die ihrerseits die Harnröhre nur noch mehr comprimirt und die Qualen der Strangurie erhöht. Es können durch diesen Circulus vitiosus die Patienten . . . der Verzweiflung nahe gebracht werden.[6]

Some interesting reciprocal relations are established during the growth of a vesical calculus, whether such calculus descended from the kidney or was primarily formed in the bladder. If a small nucleus slips into a healthy bladder, provided that no infection occurs, just enough irritation may be provoked to surround the calculus with an envelope of mucus in which successive layers of crystals are deposited. The growth of the stone then proceeds in an acid medium, the film of colloid being ever ready to attract fresh crystals of uric acid or other substance out of the urine by molecular coalescence, while the enlarging stone keeps up the irritation and causes more and more mucus to be secreted.

Sooner or later, however, bacterial infection generally takes place, leading to cystitis and the precipitation of phosphates. Then the film of mucus becomes a nidus for the deposit of phosphatic accretions, and the growth of the calculus proceeds in an alkaline medium. The growing calculus increases the irritation, while the irritation leads to further deposits of phosphates and adds to the size of the concretion. A very similar vicious cycle of events is present when the concretion is *ab origine* a vesical one resulting from the deposition of phosphates.

Where bacterial infection supervenes in connexion with a calculus or otherwise a further circle is established, since the micro organisms provoke ammoniacal fermentation and increased cystitis. Fresh pabulum is thus supplied to the invaders, adding to their powers of multiplication. Moreover, the alkaline salts formed during cystitis constitute a further source of irritation, as Skene points out:

The irritant effect of these salts, really deposits of foreign bodies, on the inflamed mucous membrane completes the vicious circle, the effect now aiding the original cause.[7]

A neurotic circle is occasionally met with in which impaired tone results from and also produces an irritable bladder. Reginald Harrison speaks of persons who, in view of an imaginary inconvenience they may be temporarily exposed to during a long railway journey, go on for days previously micturating every few minutes. They thus acquire a habit which becomes established.[8]

A somewhat similar neurosis due to exaggerated reflex irritability is met with in nocturnal enuresis. Some temporary derangement sets up nocturnal incontinence, and this, if frequently repeated, may so act on the impressionable nervous system of a child as to form a habit which may persist even after the removal of the exciting cause. Many such habit circles are met with in medicine.

II.—*Circles Associated with the Kidneys.*

The reciprocal correlations existing between the kidney and its fellow organs are so intimate that it is no wonder that vicious circles are readily established when disease attacks the system. A few examples will serve as illustrations.

When the blood is unduly charged with deleterious matters it impairs the nutrition and efficiency of the renal epithelium. Impaired nutrition and efficiency in turn keep the blood impure and so complete the circle. Adami describes the condition:

Functional inadequacy of the kidneys is not without its effect upon the composition of the blood. The quantity of water eliminated may deviate considerably from the normal, and waste products may be retained instead of excreted. The quality of the blood is thus depreciated, and, being laden with toxic substances, it in turn exerts an irritating and deteriorating effect upon the kidneys. In this way a vicious circle is set up, as a result of which the condition of the patient goes rapidly from bad to worse.[9]

Similar correlations involve the nervous, the digestive, and the vascular systems. Thus, the retention of toxic matters that should be eliminated by the kidneys injuriously affects the nervous system, and such disorder in turn increases the renal inadequacy. Or a lowered activity of the nervous system may be the primary factor, and induce a sluggish condition of the kidneys and other excretory organs, with a further reaction on the nervous condition. The digestive system may be affected in much the same way.

Again, in cardiac disease the kidneys may be gravely involved, and "the conditions form a vicious circle," as Brunton points out:

The disordered circulation disturbs the functions of other organs, and these in turn make the circulation worse. . . . The disordered circulation interferes with the functions of the lungs, liver, stomach, intestines, and kidneys. On account of the difficulty of breathing, exercise becomes impossible, and thus all the accessory aids to circulation given by the muscles and fasciæ during movement are done away with. Appetite becomes lessened and flatulence increases; the elimination of waste products by the kidneys is interfered with, and distension of the abdomen either by flatulence alone or by flatulence with ascites, presses the diaphragm up, encroaches upon the breathing space in the lungs, and tilts the heart up, thus still further increasing its difficulties.[10]

Chronic renal disease associated with arterio-sclerosis is frequently complicated by a circle, although the exact part played by the kidneys cannot as yet be accurately defined. Modern pathologists regard arterio-sclerosis as a widespread process affecting both the renal organs and the arterio-capillary system generally, causing increased resistance to the flow of blood through the capillaries, and compensatory hypertrophy of the left ventricle followed by increased arterio-sclerosis.

Mott thus describes the process:

Arterio-sclerosis affecting a number of vessels must lead to an increase of arterial pressure, which, reacting on the heart, causes hypertrophy; the two are progressively reciprocal, and although the cardiac hypertrophy is a necessary physiological compensation to overcome the increasing peripheral resistance, yet the high arterial pressure which it engenders leads to an increasing strain upon the walls of the aorta and arterio-capillary system generally. The arterial tension may then be both the cause and effect of the hypertension.[11]

As Oliver expresses it: "It is not improbable that, in the manner of a vicious circle, persistent rise of the arterial pressure may perpetuate itself."[12]

A bio-chemical view has recently been suggested—namely, that destructive changes in the renal epithelium cause an excess of an internal secretion from the kidneys (renin) to be cast into circulation and in turn to damage the renal tissues. Chauffard and Laederich write as follows:

Quoi qu'il en soit, il n'est pas douteux que les altérations ces cellules rénales peuvent être l'origine de substances toxiques, qui vont contribuer à entretenir ces altérations et créer à proprement parler un cercle vicieux, dont la résultante sera une prolongation plus ou moins indéfinie de la néphrite.[13]

A similar condition has been suggested as a possible cause of uræmia. Thus Garrod, in discussing the theories of that disease, says:

It has been suggested that the tendency to chronicity in renal diseases is due to the establishment of a vicious circle, and that the nephrolysins formed as a result of the renal lesions aggravate the morbid condition in the kidneys.[14]

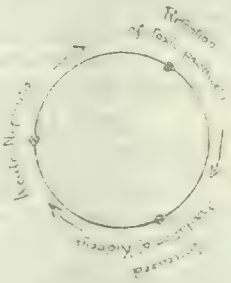
Both hydronephrosis and pyonephrosis may be complicated by reciprocally progressive conditions. An example occurs where undue mobility of the kidney is accompanied by twisting or kinking of the ureter, causing some obstruction to the escape of urine. As the renal pelvis and calyces become distended the whole kidney increases in size and weight and descends further in the abdomen, thereby aggravating the kink or twist and completing the circle.

Again, the insertion of the ureter into the hilum may be so high as to leave a pouch lying below the point of insertion and always full of urine. Cases are on record in which such pouch compressed the ureter, causing further distension and further compression. Valvular folds and other abnormalities may also at times lead to reciprocal conditions.

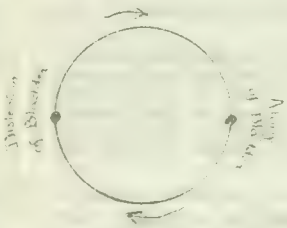
Shattock describes a circle in which hydronephrosis and polyuria are associated with idiopathic dilatation of the bladder, the obstruction arising not from organic changes but from disordered innervation. After discussing alternative theories he says:

Far more probably the polyuria results from the hydronephrosis, and there being a persistent obstruction a vicious circle arises, in which the hydronephrosis brings about polyuria and the resulting polyuria brings about a further increase in the hydronephrosis.[15]

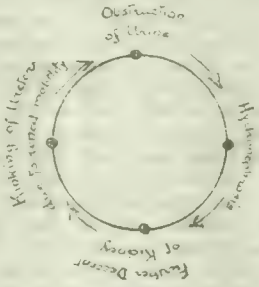
In neurasthenic women a vicious circle is often established by a movable or floating kidney. The oversensitive nervous system renders the sufferer unduly conscious of the abnormal mobility, while the persistent ache keeps the nervous system weak and sensitive and further weakens it.[16] Osler thus expresses the idea: "It is well never to tell a patient that a kidney is movable; the symptoms may date from a knowledge of the existence of the condition."



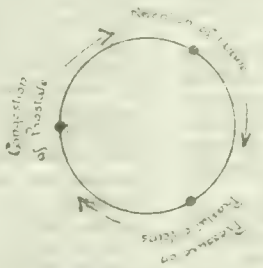
Renal Circle.



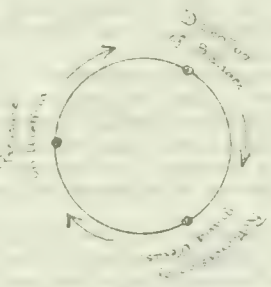
Vesical Circle.



Ureteral Circle.



Prostatic Circle.



Urethral Circle.

Diagrams showing how vicious circles may be resolved into their constituent factors.

Similar reciprocal conditions may be established in connexion with renal as with vesical calculi. The renal calculus is believed to originate with the deposition in the urinary passages of some colloid or albuminous matter such as mucus, pus, blood, or albumen. Within the meshes of this organic framework uric acid (or other substance) is entangled, and agglutinated into a nucleus. Such a nucleus, when once formed, provokes irritation. The irritation leads to further exudation of the colloid substance, and this in turn attracts fresh deposits and causes fresh irritation. Secondary renal calculi, on the other hand, result from an infective process in the kidney, generally associated with stagnation of the urine. Under such conditions phosphates are readily precipitated, the resulting concretion forming the nucleus of a calculus. This nucleus in turn causes irritation of the mucous membrane and the exudation of muco-pus, and this readily gathers about itself fresh phosphates. Renal infection often leads to a primary renal calculus at a later stage being incrusted with phosphates.

An accumulation of urine in the bladder, if at all considerable, may affect the renal secretion, as a result partly of reflex action, partly of mechanical tension. The accumulation of urine increases the renal secretion, which increase in turn aggravates the accumulation.

In severe cases of ascites a mechanical circle is sometimes formed. The pressure of the ascitic fluid in the kidneys and renal vessels diminishes the secretion of urine. This diminution in its turn aggravates the ascites.

III.—*Circles Associated with the Ureters and Urethra.*

The ureters and urethra have already been referred to more than once as co-operating with the bladder and kidneys in the formation of circles. But there are times when the ureters or urethra play the principal part.

The Ureters.

For example, the opening of the ureter into the bladder may be abnormally small, impeding the flow of urine, and

giving rise to a sacciform dilatation. This dilatation may in turn further diminish the opening, and thus complete the circle.

Again, a renal calculus in its progress towards the bladder may lodge in and block the ureter, leading to inflammation and ulceration of the mucous membrane. This may aggravate the obstruction, and, owing to stagnation of urine, cause an increase in the size of the stone.

Matthews Duncan draws attention to a curious condition in which obstruction of the ureters due to polyuria provokes frequent micturition, and this in its turn increases the obstruction.

Frequent urination, he says, leads to obstruction of the ureters at their vesical orifices, and partial obstruction of the ureters leads to excessive secretion; the excessive secretion requires frequent emptying; the frequent emptying produces obstruction of the ureters; and the obstruction of the ureters leads to excessive secretion, and so on.[18]

The Urethra.

The obstetrician at times meets with a circle caused by a retroverted gravid uterus pressing on the urethra, and thus leading to retention of urine and increased retroversion. At other times the retention of urine is the primary and the retroversion the secondary factor. Pouliot thus describes the circle:

La rétroversion, une fois constituée, apporte un obstacle à l'émission de l'urine si bien que dans la majeure partie des cas un cercle vicieux se trouve formé. La vessie en ne se vidant point, projette l'utérus en arrière; celui-ci se prolabant dans le cul-de-sac de Douglas s'oppose à la miction et seule une évacuation artificielle de la vessie peut mettre un terme aux accidents.[19]

In acute gonorrhoea the urethral mucous membrane may be so inflamed as to lead to retention of urine. Such retention in turn aggravates the congestion of the lower urinary tract and increases the urethral obstruction. The more prolonged the retention the greater the swelling of the mucous membrane, and vice versa. The severe straining associated with tight strictures and with retention sets up a similar hyperaemic condition of the urethra and aggravates the stricture.

Again, with congenital or other strictures of the urethra it is not uncommon to find extensive retro-strictural dilatations. These dilatations contain decomposing urine, and sometimes a calculus, and may be so situated as to further press on the strictured urethra, or to provoke dysuria. Thus the dysuria is both cause and result of the dilatation.

The accompanying illustrations show how vicious circles may be represented diagrammatically, the number of factors varying with the complexity of the condition.

Conclusion.

It is interesting to note that many circles arise from a failure of those beneficent powers with which the body is provided for the purpose of counteracting disease.

Thus in cases of chronic prostatic obstruction the walls of the bladder undergo considerable hypertrophy with the obvious intention of overcoming the obstruction. Such hypertrophy is compensatory and beneficent. But if the demands are excessive, the limit of compensation is reached and the hypertrophy is replaced by degeneration and atrophy. In this case the advantage becomes disadvantage and a vicious circle is established.

In cases of cystitis associated with the presence of a calculus the formation of ropy mucus and the deposit of phosphates is probably a conservative process intended to encase the irritating calculus and thus to shield the vesical walls from injury. But the opposite effect often follows, since the deposited colloids and phosphates lead to the growth of the calculus and thus increase, instead of lessening, irritation.

Where a heavy hydronephrotic kidney takes up a lower position in the abdomen, the constant ache that resulted from the dragging on the ligaments may be relieved and the movements become less irritating. But if such descent leads at the same time to kinking of the urethra, the benefit vanishes, since the displacement causes the hydronephrotic kidneys to increase in size and to cause more and more disturbance.

Lastly, where in cases of obstruction to the passage of urine renal secretion is increased, owing to reflex action, the increased flow is probably intended to wash away the obstacle, much as a foreign body lodged in the cornea calls forth increased lacrymation. But if the increased flow of urine fails to remove the obstacle, its effect is but to increase the accumulation of urine and thus intensify the mischief.

Although the list of vicious circles is far from exhausted, sufficient illustrations have been given to show the importance of being on the *qui vive* for this possible complication, and of breaking the circle by any means whatsoever. The appropriate treatment will be found in every textbook, but as a general rule vigorous measures are called for, in view of the increased gravity of disease when complicated by a vicious circle.

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TREATMENT OF SMALL-POX IN RED LIGHT AND IN THE DARK:

SOME PRACTICAL REMARKS.

By C. H. WÜRTZEN, M.D.

(From the Medical Department (Professor Feilberg) Øresundshospital, Copenhagen.)

Finsen in his pioneering works from 1893[1] [2] lays down his method for the treatment of small-pox by exclusion of the chemical rays of daylight, and in January and February, 1894, a slight small-pox epidemic gave Feilberg[3] the opportunity of using it in my country. The method has later been used in the Øresundshospital on every occasion.

As is known, one tries to carry through the method generally by arranging a red room. This is done either by covering all windows with several layers of red stuff (bookbinder-shirting, flannel, blankets, and the like) or by furnishing the windows with red glass or by combining both proceedings. If the stuff is closely woven, the layers not too few, and if the hangings fit closely to all sides, all demands will be fulfilled; but in this case little light passes, and in consequence the room will be rather dark. The strongly subdued light is, however, more often a comfort to the patients at the beginning of the illness, nor is one justified in objecting that the dark or the red light interferes with the examination of the patients, because the physician must get used to judging the eruption by the peculiarities in appearance which are due to the light.

Red panes set in loose frames may be hung outside—or, having regard to the durability of the colour, preferably inside; these panes have the advantage that for the greater part of the day there is sufficient light in the room to allow the patient to read. But the panes of glass present in themselves a danger. Red glass in strong sunshine does not always exclude the green rays, and only glass which on spectroscopic examination has been proved to be faultless in every way should be employed; to choose glass whose colour is as intensive and as dark as possible will give little or no guarantee that it is satisfactory. Spectroscopic examination is absolutely necessary. It must also be noted that red glass which at one time was correct fades when kept, even if it has been used only for a comparatively short time and has been kept in a rather dark store-room, with the single frames placed close together. This is not surprising, since there is only a very thin layer of colour on common glass. Durability would be increased if glass through which the colour is diffused were used, but the price is so much higher that in practice it is necessary to make use of the cheaper ware. I cannot say how long the latter retains its good qualities, as there is no date on the hospital panes of an earlier period showing when they were procured. After having examined the whole stock of panes—which, for the moment, consists of 45, and of which some were in use—I found only 24 faultless. Of the remainder, 8 allowed a very small quantity of green rays to pass, but this

even if it be inadmissible from a theoretical point of view (cf. Bie[4]), is of a very little practical importance, whilst 13 also allowed other colours of the spectrum to pass, and were therefore useless. The examination was made in the beginning of February in bright sunshine. In future it will be necessary to examine the stock at shorter intervals. It would seem, therefore, that the Finsen treatment with red panes must be reserved for hospitals which are always able to have their supplies in order. Where the arrangements are on a smaller scale the use of stuff will be advantageous. Or still better, one might advance another step by carrying on treatment in the dark. This idea is far from being new. From 1867 and 1871 we have reports on cases of small-pox treated in the dark (Black,[5] Waters,[6] Barlow[7]). Finsen based his opinion of the special inflammatory qualities of the chemical rays in variola on the fact that the most numerous and the deepest scars are generally found on the face and hands—that is, on the parts most accessible to light—and treatment in the dark only differs from treatment in red light by the fact that all other rays are excluded as well as the chemical. No objection can be made against treatment in the dark based on the idea that there is any positive advantage in the use of red light, either in its influence on the eruption or on the general condition. This treatment in the dark, as well as its results, were not unknown to Finsen, and he quoted and found support for his views in the above-named English authors.

Finsen[8] pointed out that some people seem to have an aversion to red light, and added: "I wish, moreover, to draw attention to the fact that now when the method (that is, the red light) has everywhere stood the test, it ought to be the doctor's first duty, as soon as he has diagnosed small-pox, to see that the windows of the sick room are covered, and that there is a light. Seeing that the treatment may be so easily arranged, it is really indefensible to expose the patients to daylight until they can be exposed to red light in the hospital. This indication, which specially concerns the early time, can be prolonged during the whole period, that is, until the vesicles dry up, etc., and it may be taken for granted that patients who have had a severe attack, and especially those whose eyes are affected, will not feel this treatment as particularly rigorous."

It may not be out of place to draw attention to certain conditions which must always be present if the treatment is not to disappoint expectations.

In the first place, the arrangements ought not to be limited to the sick room, but account should be taken also of the adjoining rooms, passages, etc., so that no great quantity of injurious daylight should be thrown on the patient in opening the door of the sick room. All sources of artificial light must be covered with red lamp-glasses, such as photographers use, and when doctors and nurses in their rounds think it necessary to use ordinary light, it ought only to come from a stearine candle, of which the flame contains so few chemical rays that no harm is done if used only for a short time. It therefore follows as a matter of course that even for a short time, and in order to see the exanthem better, daylight ought not to be admitted freely.

Finally, there is the question as to how the red light affects the patients—apart from their illness—and the staff generally. Nothing is known of its remote effects, but the reaction to it seems to be somewhat different. Some do not seem to be appreciably influenced, while others find it rather unpleasant in the long run, and some get an absolute aversion to it. It often produces a feeling of heaviness and headache, and it is always found exhausting and tiring for reading; on the other hand, we have not noticed any mental excitement or increased sensuality, as is said to have been the case elsewhere. Naturally the red light produces a strong sensitiveness in the retina to ordinary daylight. This hypersensitiveness is very troublesome and confusing to the nurses, who of course are obliged to go backwards and forwards between the red-room and the daylight. To mitigate these drawbacks—and in a red-room the light on bright days is very intense—coloured spectacles may be used with advantage. Green and blue glass each in their own way considerably modify the light and produce different shades, of which some will prefer one, others another; and with smoked glasses a chiaroscuro is obtained, which gives great relief. Contrary to what might be expected, neither the blue, the green, nor the smoked glass, provided they are not very dark, cause any considerable weakening of the light in a red-room.

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RECOVERY FROM APPARENT ARTERIAL SCLEROSIS.

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I saw the patient first on August 6th, 1909.

Previous History.

The patient, aged 60, was manager of a large commercial concern, and in this position had led a strenuous life for twenty-seven years, having been at sea before that for eleven years. He had always been strong and healthy up to twelve months before his present illness, except for slight attacks of bronchitis in the winter, which did not lay him up for more than a few days. He had met with an accident to his legs in 1905, which had laid him up for a fortnight. There was no history or sign of syphilis, and he had always been moderate in the use of alcohol and tobacco. His family history was good.

History of Present Illness.

The first sign he had that there was anything wrong was a sudden feeling of breathlessness and palpitation while running for a train in the autumn of 1908; after that he took care not to overexert himself physically. In the spring of 1909 he had a severe attack of bronchitis, which he was unable to shake off completely, and after it he found he could not exert himself at all without palpitation and breathlessness. He consulted a specialist, who diagnosed cardio-sclerosis and ordered him a sea voyage. He went to Las Palmas, where he unfortunately had a severe attack of dysentery, and returned home in a very weak state.

Condition on Examination.

He was a tall, spare man, and complained of feelings of exhaustion and pain over the heart and palpitation and dyspnoea on exertion, of tenderness of the eyeballs, and of a feeling of weight or pressure across the top of his head. He was in the habit of wearing one pair of pince-nez for reading large print or for writing, supplementing them by a second pair for reading small print. He suffered much from flatulence, and had feelings which he described as waves of pins and needles passing down his back and limbs which could be induced by a deep inspiration or by yawning. He also described "bubbling" sensations in various parts of his body which were caused by localized series of contractions of bundles of fibres of a muscle. The lower sternum was depressed (funnel breast). The apex beat, in the sixth interspace and nipple line, was somewhat heaving. There was also marked epigastric pulsation. The first sound was softened, the second a little accentuated. His radial pulse was soft and the artery wall not more thickened than was to be expected in a man of his years. There was marked acceleration of the pulse-rate on deep inspiration and slowing on deep expiration. Capillary pulsation was observable. The breath sounds were normal. There was a line of dilated venules along the margin of his ribs. The urine was normal in quantity, rather high coloured, contained a large amount of urates, and a trace of albumen, but no sugar.

As his general symptoms, especially the feeling of weight across the top of his head and soreness of the eyeballs, were typical of a case of neurasthenia due to errors of refraction, I sent him to Mr. Claud Worth, from whom I received the following report:

"The patient has 4 D. of presbyopia in the right eye, 4.5 in the left. Retinal arteries are very small and tortuous. Central light streak very wide. Where an artery crosses a vein the latter is so compressed as to be apparently interrupted. No retinal oedema. No haemorrhages."

Treatment.

The errors of refraction were suitably corrected, and on Trunecek's hypothesis that arterio-sclerosis is due in some cases to nutritional disturbances in the artery wall, partly owing to exhaustion of the vasomotor nervous system and partly to lowering of the food-carrying and eliminative powers of the blood from a diminution of its salt content caused by auto-intoxication, he was given the salts of Trunecek's serum, slightly modified. They were dispensed in the form of tablets, each containing sod. chlor. 0.4 gram, sod. sulph. 0.04 gram, sod. carb. 0.016 gram, sod. phos. 0.012 gram, mag. phos. 0.016 gram, calcium glycerophos. 0.012 gram. He took two tablets three

times a day, and also took miol, a combination of olive oil, iodine, and glycerophosphates. The iodine in this would relieve arterial spasm, and the olive oil, besides being a good fattening food, would tend to dissolve out any cholesterin, which has been said to be deposited in the arterial walls in arterio-sclerosis. The glycerophosphates would act as a nerve food. He had a strong brine bath every morning and an occasional dose of sodium sulphate before breakfast.

He gained rapidly in weight and strength under this régime and gradually became able to extend his daily walks without undue fatigue or cardiac distress. At the end of ten weeks he was able to go for a long walk and to climb a stiff hill. The miol had then to be stopped for a time owing to the iodine in it causing swelling of the eyelids and congestion of the conjunctivae. He returned to work at the end of three months.

Early in January, 1910, he again saw Mr. Worth, who reported as follows: "Retinal arteries are larger and have lost the 'silver wire' appearance. The appearance of interruption of the veins is much less marked." In fact, he told me that the arteries appeared about normal for a man of the patient's years.

The patient continued the treatment on and off for some months and now takes sour milk, which he finds has greatly diminished his flatulence. He is now (June) in good health and able to do his work without undue fatigue. The trace of albumen entirely disappeared.

One could hardly have expected such an excellent result; the arrest of the sclerosis was all that could have been reasonably hoped for.

The question is, what stage of hardening had the retinal arteries reached? The stages of hardening of the wall of an artery are roughly as follows: First, hypertrophy of the media; secondly, small round-celled infiltration, especially between the endothelium and internal elastic lamina; and thirdly, degeneration of the newly-formed elements and their replacement by fibrous tissues with deposits of lime salts, etc.

It is conceivable that the vessels might recover from the first two stages—that is, that the small round-celled infiltration might disappear and the amount of muscle in the media might be reduced, but it is inconceivable that the vessels could recover if the change had gone beyond this. It is therefore probable that the retinal arteries of the patient were in this second stage. Whether the arteries of the other organs—for example, those of the heart and kidneys—were in the same state it is, of course, impossible to say.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANEURYSM OF THE BASILAR ARTERY.

The case which the accompanying photograph illustrates is, I think, of sufficient rarity and interest to merit a brief note.

The specimen was taken from a British soldier, aged 27, who was brought into hospital dead on April 5th. At the inquest it was stated that on the morning of that day he





complained of headache, and obtained permission to leave his work and return to barracks. Nothing abnormal in his gait or demeanour had been noticed by his comrades. It would appear that he left barracks to return to duty about an hour later; but he never reached his post, and was found dead by a native, who at once reported the occurrence.

The following is a brief extract of my *post-mortem* notes:

The body is that of a well-nourished and muscular male, and shows no evidence of any violence. The lower third of the front aspect of the left thigh is the seat of a number of shallow, circular, punched-out confluent ulcers, varying in size from a sixpence to a five-shilling piece. There is both cicatrization and pigmentation, but healing is sound. Two other similar ulcers are present on the front of the right forearm and several on the back.

Thorax.—Heart, coronary arteries, and aorta are normal.

Abdomen.—Nothing abnormal.

Cranial Cavity.—The right cortex is the seat of an extensive recent subpial haemorrhage, which is also present to a lesser degree over the left, where it has not quite reached the vertex. The pia mater has not been ruptured.

The interpeduncular space is bathed with recently-exuded blood, and on removing this the basilar artery, just behind the point where it bifurcates into the posterior cerebral arteries, is seen to have expanded into an aneurysmal sac the size of a hazel nut. The sac is empty, and a small probe can be passed into the puncture at its anterior extremity. The left half of the pons which it underlies shows slight flattening.

The other cerebral arteries are normal. Both ventricles are full of blood.

The medical history sheet states that the man contracted syphilis in Ireland in 1902, and was treated in hospital there. As recently as January and February of the current year he was treated here for tertiary cutaneous manifestations, but refused to go on the register for a complete course of treatment, as he was time-expired and about to return to England.

Rawal Pindi, Punjab. H. C. Semon, M.R.C.P., I.M.S.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ST. GEORGE'S HOSPITAL.

RHEUMATIC NODULES ON THE EXTERNAL EARS.

(By H. D. Rolleston, M.D., F.R.C.P., Senior Physician to the Hospital.)

A man, aged 21, who had had rheumatism, pleurisy, and pneumonia nine years before, was admitted on March 10th, 1910, with pains in the joints of three weeks' standing and signs of mitral regurgitation.

After a few days he showed signs of pericarditis with effusion, followed by double pleurisy with effusion; these signs persisted. On May 26th he had pericardial pain, and on May 30th well-defined rheumatic nodules were noticed on the outer and posterior surface of the helix of the left ear, near the position of Darwin's tubercle. They were painless and not tender, but the patient said he had noticed them as rather irritating pimples six weeks before. A nodule was also noticed on the helix of the right ear. On June 3rd two additional nodules were noted on the right ear and three nodules over the occipital bone, and a number of nodules over the extensor tendons on the back of the hands. On June 4th two additional nodules were noted on the helix of the left ear and also a nodule on the external condyle of the right humerus. During this time the patient was perspiring freely, but there was no rise of temperature.

On June 10th the nodules were diminishing in size.

Remarks.—The occurrence of rheumatic nodules on the ear is evidently rare, as it is not mentioned in the articles on rheumatic fever in two contemporary systems of medicine. Dr. John Thomson, however, figures rheumatic nodules on the auricle. In their tabular statement of 27 cases of rheumatic nodules Sir Thomas Barlow and Dr. Warner describe one case, in a boy aged 15, with three rheumatic nodules, each the size of a hemp seed, on the posterior surface of the pinna of the right ear; there were

no nodules elsewhere. They also refer to a case, reported by Troisier and Blocq, in a man aged 45, who, in a third attack of rheumatic fever accompanied by double pleural effusion, had, two months after admission, pericarditis followed by a nodule in each ear. This case resembled mine in several respects; in both the patient was an adult, in whom rheumatic nodules are less often seen than in children, and in both the nodule occurred in a prolonged rheumatic attack which was characterized by double pleurisy with effusion and pericarditis. The association of visceral complications strongly suggests an anatomical lesion in the serous membranes similar to the subcutaneous rheumatic nodules. It is noteworthy that



The external ears, showing rheumatic nodules.

these rheumatic nodules appear on the outer and posterior surface of the pinna, and so differ from gouty tophi, which usually affect the inner surface of the helix. For the illustration I am much indebted to Mr. W. E. Waller, B.A.Oxon.

Probably rheumatic nodules on the ears would be more commonly noted if systematically looked for. I have lately seen a nodule on the posterior surface of the left ear of a boy, aged 5 years, admitted to the Victoria Hospital for Children with chorea and pericarditis. There were numerous nodules on the back of the head and over the left elbow. The child died, but a necropsy could not be obtained.

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Thomson, J.: *Clinical Examination and Treatment of Sick Children*, Fig. 145, p. 506, 2nd edition.
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Reviews.

DR. WOODS HUTCHINSON is an American who has already many friends in this country, and the number of these should be indefinitely increased by his delightful book on *Instinct and Health*.[1] Dr. Hutchinson seems, in George Moore's beautiful phrase, "to blow a horn on the hillside to call comrades together." His book is like the call of a hearty man in a land filled with the cackle of quacks and faddists, and the querulous pulings of professional invalids. His main thesis is that on the whole "instinct," which after all has been at work for unknown millions of years in developing the human species, is still what Bishop Butler called probability—"the very guide of life." Instinct, he tells us, "hasn't been crystallizing for five million years for nothing. Reason was only hatched yesterday, and has the boundless confidence of youth. It is always trying to improve upon Nature—sometimes successfully, sometimes not." It is only fair to our author to mention that this remark is made in connexion with diet, and is not meant to be applied quite generally. The first chapter is a glorification of the human physique, and is full of familiar things put so freshly and vividly that they seem almost to be new discoveries. Thus we are shown the fallacy of supposing that because man has not the speed of the deer, the strength of the horse, or the teeth and claws of the tiger, he is a feeble and inferior sort of animal. On the contrary, it is to this very avoidance of specialism that he owes his position in Nature, for "man has kept nearly all his teeth, all his toes, all his fingers, instead of losing from one-third to two-thirds of them, as other animals have, in order to develop specially those that are left." At the same time he has developed an adaptability to climates and a power of assimilating almost any kind of food, which has given him a "range of distribution" on the earth with which that of no other animal can compare. Developing this theme, Dr. Hutchinson proceeds to the demolition of all sorts of cherished beliefs, among others the physical superiority of the savage to the civilized man, and of the rural dweller to the town dweller (not slum dweller). Much of this carefully elaborated efficiency is now, Dr. Hutchinson says, being threatened by our self-consciousness, our fears, and our fads. "Health will take care of itself, disease must be cured at once. A healthy man doesn't know that he has such a thing as a stomach, a dyspeptic doesn't know that he has anything else." For the rest the author runs an exhilarating tilt against fads and superstitions, quackery and cultivated invalidism, leaving the reader convinced and refreshed, even if sometimes a little out of breath. His arraignment of the abuse of patent foods, of vegetarianism, and all forms of "freak-feeding," is based on an array of well marshalled facts, and the chapters on sleep are full of wisdom. Incidentally Dr. Hutchinson, following out a suggestion made in this JOURNAL a good many years ago, questions whether early rising is after all a virtue. He might, however, follow out the subject a little further, for to him it is merely a survival from "hard-fisted agricultural ancestors, whose work had to be done in the daylight." Not the least charm of the book consists in the fact that it contains so much from which each individual reader will differ. But no one will read it without a sense of healthy stimulation and the opening up of new tracts of thought.

[1] *Instinct and Health.* By W. Hutchinson, A.M., M.D. New York: Dodd, Mead and Co. 1908. (Post 8vo, pp. 334. $1 20.)

NOTES ON BOOKS.

Malaria and Mosquitos,[2] by Major R. J. BLACKHAM, D.P.H., R.A.M.C., should prove of value to the laity, soldiers or civilians, in India. It was written at the request of Lieutenant-General Sir James Willcocks, and was expanded from a lecture on malaria and mosquitos delivered before the officers, non-commissioned officers, and men of the First Peshawar Division. The pamphlet is written clearly and simply, and it should prove of value not only to people in India, but in other parts of the world as well. A good account of the phlebotomus or sand-fly is given, and the crucial points in regard to malaria are fully entered upon. It is only by pamphlets of this kind that we can hope to get at the great mass of non-scientific people residing in our tropical dependencies, and Major Blackham's brochure is therefore welcome and can be thoroughly recommended.

[2] *Malaria and Mosquitos.* By Major R. J. Blackham, D.P.H.Lond., R.A.M.C., Barrister-at-Law, Divisional Sanitary Officer. With a Preface by Lieutenant-General Sir James Willcocks, K.C.M.G., C.B., D.S.O., Commanding the First (Peshawar) Division, Indian Army. Lahore: Printed at the "Civil and Military Gazette" Press by Samuel T. Weston. 1910.

MEDICAL AND SURGICAL APPLIANCES.

A Safety Razor.

THE Durham-Duplex safety razor differs from other safety razors which have recently come so extensively into use, inasmuch as the detachable blade is carried on an arm mounted in a handle of the same form as in the ordinary or old-fashioned razor. The Durham-Duplex razor is well guarded, so that an accidental cut seems almost impossible, while to many who have been in the habit of shaving themselves for years it will present the advantage that it can be used in the way to which they are accustomed in rounding corners and negotiating wrinkles. It will be also useful in preparing patients for operation, for while it will shave closely, there is little risk of an accidental wound. It is supplied by the Durham-Duplex Razor Company, Cecil Chambers, 86, Strand, London, W.C.

SEVENTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.

in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, 29th, and 30th.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

Section of Anaesthetics.

The proceedings were opened by Dr. Frederic Hewitt, the President, who said he believed that the inauguration of the Section had taken place at an opportune moment, marked by the commencement of a new era in anaesthetics, the era of precision. A discussion on the dosimetric method of the administration of chloroform was introduced by Dr. Dudley Buxton, who in the course of his remarks emphasized the importance of a known definite percentage of chloroform for the induction of surgical anaesthesia, the safe limits lying between 1 and 2 per cent. of chloroform vapour in air. Professor Waller, in an interesting speech, contrasted the efficiency of the various forms of apparatus designed for the administration of definite percentages of chloroform. He said that it was necessary to have at heart as an object the diminution of the death-rate under anaesthetics, whatever the method employed. Mr. Alexander Wilson, Dr. Scharlieb, and others spoke of the advantage of a method by which a known percentage of chloroform was administered.

At the second meeting of the Section Mr. H. Bellamy Gardner read a paper on the open method of the administration of ether. He laid stress upon the value of the method in suitable cases, and hoped that enthusiasm for a novelty would not cause it to be adopted in unsuitable cases, and so bring the method into general discredit. Dr. Flemming thought "open ether" very useful, and also described a "two-bottle" method by which ether and chloroform in separate drop bottles were administered upon the same mask. Mr. H. J. Paterson spoke highly of "open ether" from a surgeon's point of view. Other speakers differed on points of detail, but were generally agreed that the method was a safe and useful one. Mr. Rowell opened the discussion on surgical shock. He pointed out the advantage of ether as a preventive of shock, and contrasted it with chloroform. Professor Crile and Mr. Lockhart Mummery spoke on the surgical aspect of the prevention of shock; while Professor Leonard Hill treated the subject from the physiological point of view.

At the third meeting Dr. Blumfeld opened the discussion on spinal analgesia, and spoke of the advantages attached to this form of analgesia under certain circumstances; he also quoted a large number of statistics bearing upon the relative safety of the method. A paper by Mr. Canny Ryall was read; Mr. Tyrrell Gray spoke of the advantage of the method in children; and Professor Morison quoted a number of cases. The question as to the advisability of legislation with regard to the administration of anaesthetics was introduced by Dr. Hewitt. Mr. Digby Cotes-Preedy discussed the matter from a layman's point of view; while Sir William Collins pointed out that there was a close relation between unqualified practice generally and the unqualified administration of anaesthetics. Finally the President proposed the motion:

> That this Section approves the resolution of the General Medical Council and of the Departmental Committee of the Home Office respectively, and recommend the Council of the British Medical Association, on behalf of the Association, to take such steps as they may think desirable to represent to the Privy Council and to the Home Secretary the need for the proposed legislation in the interest of the public safety.

This was carried unanimously, and the proceedings terminated.

Section of Anatomy.

Thursday, July 28th, 1910.

Dr. R. J. Gladstone showed (1) a fetal lamb in which there was a median cyclopian eye, fusion of the two external ears across the middle line, and absence of the lower jaw. The thoracic and abdominal viscera were normal. (2) An anencephalus with facial cleft, meningocele with elongated pedicle, and cleft palate. Professor Fawcett and Mr. Frazer took part in the discussion which followed. Dr. Ivy Mackenzie gave an account of some researches on the anatomy of the bird's heart. The speaker pointed out that Dr. Jane Robertson, working on the heart of the reptile, bird, and mammal, had found that the electrical reactions in the bird's heart were different from those in the reptilian and mammalian heart. Dr. Mackenzie's researches showed that, from the standpoint of structure, the heart of the bird again presented certain important points of difference. These were briefly summarized as follows: (1) There was no auriculo-ventricular bundle of His; (2) that situated round the aorta and pulmonary artery there were certain nerves which terminated in glomerular masses, end organs, which were non-ganglionic; (3) that round the bases of the auriculo-ventricular valves there was a continuous mass of ill-developed muscle fibre which, it was suggested, might be the remains of the bulbus cordis. Dr. Rutherford demonstrated by means of lantern slides an interesting case of absence of the transverse meso-colon. Mr. P. T. Crymble gave an account of some researches on the muscle of Treitz, based on observations of twenty-three subjects. It consisted of three parts: (1) A lower part composed of smooth muscle attached to the termination of the duodenum; (2) an intermediate part or tendon, fibro-elastic in structure; and (3) an upper part proceeding to the right crus or to the diaphragm at the lower part of the oesophagus, but never to the left crus, composed, like the diaphragm, of striated muscle. The so-called "ligament of Treitz," better named the plica duodeno-jejunalis, enclosed the muscle of Treitz. An interesting discussion followed, in which Professor Symington, Dr. W. Wright, Professor Keith, Professor Waterston, and Dr. Rutherford took part. Professor Ramstrom of Upsala read a paper on Emanuel Swedenborg as an anatomist. A discussion next took place on methods of preservation of anatomical material, in which Professor Reid, Professor Waterston, Professor Symington, and Mr. F. G. Parsons took part. After the suggestion that the different methods advocated by the various speakers and other anatomists should be collated and submitted to a committee had been made, the discussion was adjourned to Friday morning, and Dr. Scanes Spicer read a paper on the normal orthograde posture. Drawing attention to the importance of posture in connexion with physical drill, voice production, singing, etc., Dr. Spicer endeavoured to fix a normal axis of the body which should be absolutely vertical, slanting neither forwards nor backwards. The paper was criticized by Professor Keith, Professor Robinson, and Professor Peter Thompson, after which the Section adjourned.

Section of Dermatology.

Thursday, July 28th, 1910.

[A reference should have been made to the address of the President (Dr. P. S. Abraham) on the opening day, when he reviewed the work to be done and welcomed the members of the Section and the visitors.] On Thursday Dr. Bulkley of New York opened the discussion on the influence of diet in diseases of the skin. His paper, which went into numerous and minute details, cannot very well be summarized here. It may be said that he showed himself a firm believer in the beneficial results of diet. Dr. Unna of Hamburg had no experience of the effects of diet, for patients who came under his care had gone through diet treatment and wanted something more. Dr. Hartzell of Philadelphia did not lay great stress on diet, and did not agree with Dr. Bulkley. Dr. Wild of Manchester went very fully into the matter, and, although agreeing with many points

In the opener's paper, he could not follow him as to psoriasis. He was followed by Dr. Walsh, who laid special stress on his views relating to excretory irritation. Dr. Knowsley Sibley referred to the importance of internal treatment and of dietetics. Dr. Pernet was of opinion that as far as psoriasis was concerned little was to be obtained by diet in the way of improvement. Dr. P. S. Abraham, President of the Section, reminded it that the question of diet in dermatology was an old question, which was much to the fore forty years ago. Dr. Duncan Bulkley replied. The next item was a demonstration by Dr. Morton on the use of carbon dioxide. This was followed by demonstrations by Dr. Hall-Edwards, of Birmingham, and by Mr. Willmott Evans and Dr. Meachen on the same subject. Then Mr. Dawson read a paper on diphtheria of the skin, on which Dr. Pernet offered some remarks. In the afternoon Dr. Louis Wickham, of Paris, dealt with radium in a joint meeting with the Sections of Laryngology and Surgery.

Friday, July 29th, 1910.

This Section has been extraordinarily well attended, and the President, Dr. P. S. Abraham, and the Secretaries are to be congratulated on the result achieved. A number of interesting and unusual cases have been exhibited before the meeting each morning. The demonstrations attracted large audiences. Among the visitors may be mentioned Professor Unna of Hamburg, Dr. Duncan Bulkley of New York, Dr. Hartzell of Philadelphia, and Dr. Feibes of Aachen, and they either read papers or offered remarks on those of others. The first Sectional meeting was opened by a paper by Sir Jonathan Hutchinson on palaeogenesis as illustrated in certain affections of the skin, a number of drawings being exhibited. This was followed by Dr. Hunch on vaccine treatment in certain skin diseases. Dr. Dally then read a paper on favus in London and its treatment. Papers on pityriasis rubra pilaris, by Dr. Tomkinson (Glasgow); on an unusual toxic dermatitis, with remarks on symmetrical eruptions, and on a case of pemphigus vegetans, with remarks on treatment, by Dr. George Pernet; the treatment of ray burns, by Dr. A. Eddowes; lily rash of the Scilly Islands, by Dr. Walsh; on some points in electrolysis in hirsuties, by Mr. Evans; on some cases of actinomycosis, with special reference to treatment with iodide of potassium, by Dr. Wild (Manchester); and notes on a variety of molluscum contagiosum, by the President of the Section (Dr. P. S. Abraham). The success of the Section was marked, and the amount and quality of the work done has rarely been equalled in any previous Annual Meeting.

[In the short report of the first day's work of the Section of Dermatology, published in the JOURNAL of July 30th, page 284, Mr. Stopford Taylor was erroneously described as of Glasgow, instead of Liverpool. It was also said that Dr. Douglas Heath, of Birmingham, denied that inunction treatment was valuable in bad cases of syphilis, while it should have been stated that he strongly advocated the inunction treatment for the so-called malignant cases of the disease, as being much more rapid and certain than pill treatment, and as being free from many of the objectionable features of injection treatment.]

Section of Diseases of Children.

Thursday, July 28th, 1910.

Dr. C. R. Box opened a discussion on the diagnosis and treatment of infections of the urinary tract by the *bacillus coli*. Remarking that girls were more often affected than boys, he pointed out that the condition might be either acute or chronic, and might show a great variety of symptoms, generally appearing as cystopyelitis. The acute forms were most often seen in infants; the chronic in older children, and these might end in uraemia. Diagnosis was often difficult, and must ultimately depend upon the results of careful examination of the urine; the main symptoms, if local, were often misleading, and if general might give rise to no suspicion of cystopyelitis. In treatment, Dr. Box recommended that potassium citrate should be given; the results of antiseptic treatment he described as most disappointing in the chronic cases. Mr. J. Pardoe dwelt on the comparative rarity of these infections in children as compared with adults. He described the symptoms and signs that may be met with, emphasizing the difference between those exhibited by children and those shown by adults. He regarded the prognosis in the chronic cases as bad, so far as cure was concerned; in the acute instances children showed far greater powers of recovery than adults. Complete rest in bed on a simple or milk diet, with decoction of *Triticum repens* and preparations of sandal-wood oil, were indicated in the acute cases; instrumentation of any sort was strongly contra-indicated. He had seen no cure of *coli* bacilluria by vaccine treatment. Dr. J. Porter Parkinson divided the patients into three classes, according to the severity or distribution of their symptoms, and spoke of the disappointing results of vaccine therapy. Dr. E. Cautley distinguished between the cases of *coli* bacilluria in otherwise healthy children presenting no symptoms at all, and those in whom local or general symptoms of greater or less severity occurred. Dr. J. Graham Forbes described the bacteriology of *coli* bacilluria, pointing out the predominance of *coli* over other microbic urinary infections, and also detailed the *post-mortem* appearances seen in fatal instances. No very great cultural uniformity characterized the strains of *B. coli* grown from the various cases of bacilluria. Mr. W. M. Jeffreys described a number of cases of *coli* and *proteus* bacilluria, again drawing attention to the intractable nature of the chronic cases. Dr. J. McCaw quoted an example of *coli* bacilluria in which potassium citrate given per rectum produced great improvement, and emphasized the importance of rest and milk diet in the treatment of the condition. Good results from the vaccine treatment were quoted by Dr. J. S. Dick. Dr. J. H. Thursfield described the condition as met with in the out-patient department, and characterized the prognosis as far less hopeless than the remarks of previous speakers would have led him to believe. The President drew attention to the uncertainty so often attaching to statistics appearing to indicate great disparity of incidence of disease in the two sexes. Dr. Box, in replying to a number of questions, noted the frequency with which *coli* bacilluria may be met with in patients with diphtheria or scarlet fever. Mr. Pardoe also replied. Dr. T. Zangger read a paper on the therapeutics of whooping-cough, recommending quinine, or preferably euquinine, in doses of 2 or 3 grains given three or four times a day, as the best drug. He also spoke highly of hydropathic treatment, the cool pack. Dr. Essex Wynter spoke of the admirable results obtained by the use of chloretone in whooping-cough. Professor A. D'Espine gave a summary of his paper on the diagnosis of tuberculosis of the bronchial glands; on auscultation at the level of the last cervical and first dorsal spine, vocal resonance, he said, was increased if the bronchial glands were enlarged, and the breath sounds there (and in adjoining regions often) were increased. This glandular enlargement was not necessarily tuberculous, but might be a sequela of measles or whooping cough. He added that he attached great value to von Pirquet's reaction, especially when it was negative. Mr. F. W. Goyder commented upon the paper. About sixty members were present at the meeting.

Friday, July 29th, 1910.

Dr. J. McCaw opened the proceedings with a paper on a case of acetonaemia. The patient was an otherwise healthy and properly fed girl of 3, subject to periodical attacks of severe vomiting. The respirations were usually much embarrassed during these attacks, which had been diagnosed indifferently as bronchitis, pneumonia, and indigestion. The breath, vomit, and urine all smelt strongly of acetone; much relief was obtained by the administration of sodium bicarbonate by the mouth. Dr. R. Hutchison commented on the interest of the marked respiratory symptoms in Dr. McCaw's case, and discussed the general pathology of acetonaemia. Dr. F. W. Langmead proposed to divide cases of acetonuria into three categories: in some no symptoms of acid intoxication might occur, in others cyclical vomiting might be a

prominent feature. He had met with numerous cases in which alkalis had been given freely without any improvement. Dr. Essex Wynter attributed delayed chloroform poisoning to suboxidation, and quoted a case in which thyroid extract had done good. The President threw grave doubts on the whole theory of acidosis as held at present. He agreed with Dr. Hutchison in holding that cyclical vomiting might be the result of many causes. Dr. E. Pritchard discussed the relation of carbohydrate starvation to acetonuria. Dr. McCaw made a brief reply. Mr. J. Keogh Murphy next read a paper on the results of radical treatment of tubercle in the tarsus and ankle-joint in young children. He dwelt on the many misconceptions with which the subject was involved in books, and described the general surgical measures he had employed. The paper was illustrated by skiagrams and lantern slides. The results were satisfactory in all the cases, and left nothing to be desired in 7 out of 9. Mr. D'Arcy Power discussed the propriety of amputation in these cases. Mr. F. W. Goyder complimented Mr. Murphy on the admirable results he obtained. In replying, Mr. Murphy gave some details of his operative technique. Dr. Olive Elgood then read her paper on human milk and breast feeding. The methods of collecting the milk and of analysing it were described. It was shown that while the percentage of fat might vary widely from month to month in any given case, the percentage of solids not fat remained remarkably constant. From the point of view of the nutrition of the infant, the fat appeared to be the most important constituent of the milk. The President and Dr. F. W. Langmead asked questions arising out of the paper, and to these Dr. Elgood replied. Mr. H. Tyrrell Gray next read a paper on lesions of solitary appendices in hernial sacs. The application of taxis in these instances he particularly deprecated; the literature appeared to contain 58 such cases, and an analytical table of these was handed round. The differential diagnosis of the condition was very fully detailed. Mr. R. Campbell quoted cases in which appendicular trouble arose in hernial sacs from injudicious use of trusses. Mr. R. B. Wade gave an account of a case seen in a child only 2 years old. Mr. Gray made a few remarks in conclusion. Dr. Eric Pritchard read his paper on the value of banana flour in infant feeding. He mentioned the importance of accustoming the artificially-fed infant to cow's milk; the particular advantage of banana flour lay in the fact that it formed a good emulsion in a few minutes' time. An ounce of the crude flour (which he preferred to the more refined or patent bleached forms) boiled for only five minutes with a pint of water gave a decoction thoroughly suitable for mixing with an equal volume of cow's milk. He advised the substitution of the crude banana flour for the expensive proprietary foods so often recommended in the artificial feeding of infants. Dr. McCaw, the President, and Dr. J. H. Thursfield asked questions as to the practical application of banana flour in feeding infants. Dr. Pritchard replied that it might be used tentatively in infants only a few weeks old; he had never known intestinal sand passed by children taking banana flour. The session of the Section was attended by about seventy members, and was closed by the President in a few felicitous words.

Section of Gynaecology and Obstetrics.

Thursday, July 28th, 1910.

A discussion on the treatment of fibromata complicating pregnancy—a subject of equal interest to gynaecologists and medical practitioners—was opened by Dr. Walter Tate, who gave as essential points to be considered: (1) The unfavourable changes that may occur in fibroids during pregnancy; (2) the frequency of miscarriage, and any special dangers from this accident; (3) the increased risk of labour, whether due to *post-partum* haemorrhage, septic infection, suppuration, or sloughing of the fibroid. In regard to enlargement, which was the first change to be considered, the speaker held that, if the fibroid was moderate in size before pregnancy, it would probab not cause any serious trouble from its size alon Conception, however, might occur in a uterus wi a tumour so large that serious symptoms might ari from pressure on the diaphragm in the latter half pregnancy. Necrobiosis might cause serious pe sistent pain and necessitate interference. When t tumour was situated partly or entirely in the true pelv serious pressure symptoms might undoubtedly aris Albuminuria, however, was more likely to be due the ordinary toxaemia of pregnancy than to pressu on the renal veins. Torsion of the pedicle of fibroid during pregnancy had been met with, but rarely as not to be regarded as a practical dange The frequency of miscarriages was little, if at al greater in pregnant women with fibroids than others. A fibroid might cause extreme difficulty removing retained portions of placenta, and sapraem might supervene; in this exceptionally rare complic tion, if the retained products could not be remove the removal of the uterus, if not too long delaye would cure the patient. A fibroid situated in t pelvis is bound to obstruct labour and perhaps lead rupture of the uterus if suitable treatment be n adopted. Such dangers were more probable when t presence of the tumour was not known to the patie or her medical attendant, and indicated the propri of systematic examination of pregnant women. T risk of *post-partum* haemorrhage is serious, and speci care should be exercised in managing the third sta of labour. During the puerperium a fibroid mig be extruded and present in the vagina; it would th slough and sapraemic symptoms follow. Puerpe necrobiosis of a fibroid might cause pain and tend ness over the tumour and pyrexia. True suppurati of a fibroid was rare, and, as it was invariably due imperfect asepsis, was avoidable. The treatme of fibroids during pregnancy depended upon th situation, upon whether they would certain possibly, or certainly not, obstruct delivery. In t first case, if mobile, they might be pushed up abo the pelvic brim; if too firmly impacted for this to done without undue force, abdominal section a enucleation were safer; if there were no pressu symptoms it was better to wait till near term, a perform Caesarean section and enucleation, or pe hysterectomy. Small cervical fibroids and poly might be removed per vaginam near the expect term. In the second group were included ca in which the fibroids were multiple and one or m of them encroached on the lower uterine segme In such the speaker held an expectant attitude to best for mother and child. In the third class, t fibroids were entirely abdominal, and in the absence severe symptoms operative interference he regard as unwarrantable. Serious symptoms might com interference, abdominal enucleation, or hysterecton enucleation was the operation of choice. The ind tion of abortion sacrificed the pregnancy and did relieve the patient of her tumour; it was an impro proceeding. This admirable introduction by Dr. T led to an animated discussion, in which Dr. Ame Routh, Dr. Cuthbert Lockyer, Mr. Alban Doran, Christopher Martin, Dr. J. Nigel Stark, Dr. Hub Roberts, Professor Murdoch Cameron, and Furneaux Jordan took part. There was gene agreement against too hasty interference, and t enucleation was the operation of choice, and genera with the introduction as a whole. Dr. Herb Spencer insisted especially on the rarity with wh operation was necessary; he mentioned puerpe inversion of the uterus as sometimes caused fibroid. Dr. A. J. Wallace exhibited an enorm fibroid enucleated from the uterus of a woman of at the fifth month: the wound in the uterus w 4 in. by 5 in., and exposed placental tissue, but woman recovered and had a live child at term. Arnold Lea and Dr. Lloyd Roberts thought dangers of the complication were underrated, and Arthur Giles contrasted the risk of patients ordinary private, perhaps country, practice with t of those under the care of skilled operators obstetricians. Of the former, he thought one-

suffered from serious complications. Professor Gottschalk, of Berlin, read a paper on two cases of obstructed bowels by the retroverted uterus; Dr. Frances Ivens (Liverpool) one on localized necrosis in an adenomatous right tube associated with left tubal mole; and the day's proceedings terminated with a paper on the causal treatment of dystocia in cases of pelvic contraction, by Professor von Herff, of Basle; in the enforced absence of the author this paper was read by Dr. Hedley, Honorary Secretary.

Friday, July 29th, 1910.

Professor W. Nagel, of Berlin, in a paper entitled "Is it justifiable, when removing a proliferating papillary ovarian cyst, to leave the other ovary if it appears unchanged?" quoted various statistics, reported two cases of his own, and concluded that in papillary cystoma the extirpation of the other healthy ovary is not, as laid down by Pfannenstiel and others, necessary. Even in carcinoma, after the removal of the primary tumour, the same affection of the remaining ovary is not frequent, and as Hofmeier has said, the danger of a possible second operation is in a young woman outweighed by the advantage of preserving the other ovary. This paper was very fully discussed by Professor Gottschalk, Professor Kynoch, Dr. Munro Kerr, Dr. Herbert Spencer, Dr. Walter Tate, Dr. Blair Bell, Dr. Louise McIlroy, Dr. Felix Meyer (Melbourne), Dr. Heywood Smith, and the President, Mrs. Scharlieb. The general feeling seemed to be that no healthy ovary should be removed, that ovarian papillomata were very common, that they were of most various degrees of malignity, but that really malignant growths were generally bilateral, that when suspicion demanded the removal of the second ovary, especially in women approaching the menopause, the uterus should be removed also. It was also pointed out that to make sections and a microscopical examination at the time of operation was perfectly feasible. Professor Nagel admitted that nearly 50 per cent. of papillomatous ovarian tumours were carcinomatous, and concurred as to the removal of the uterus. In her paper on the surgical treatment of fibrosis of the uterus, Dr. A. Louise McIlroy said that the term "fibrosis" applied to the uterus denoted an increase in the fibrous stroma of the organ, which might be associated with hypertrophy of the muscular tissue and thickening of the outer coats of the vessels. Clinically it was the cause of haemorrhage and dysmenorrhoea, pelvic pain, and general discomfort. As it was mostly found in women in the child-bearing age, and was unrelieved or but temporarily relieved by drugs or curetting, and as ventrisuspension when there was retroversion did not permanently cure, surgical measures had often to be adopted. She related four cases: in two in young women ventrisuspension and curetting gave some relief, but only for a time; in the third case removal of both sets of appendages gave relief from the haemorrhage, but not from the pelvic pain; in the fourth a complete cure was obtained by hysterectomy. A lively discussion followed, and there was a general agreement that hysterectomy was—especially in women who had to support themselves—sometimes absolutely necessary, but, as Dr. McIlroy herself admitted, only as a last resource. Dr. Comyns Berkeley suggested that Kelly's wedge-shaped excision might sometimes be substituted for hysterectomy: Dr. Herbert Spencer concurred, and also suggested Dührssen's excision of a portion of the uterine mucosa, moreover he confirmed the statements of Dr. Hastings Tweedy as to the beneficial effect of atmocausis. Dr. Blair Bell said that the uterus, except when it had been infected (gonorrhoea), was never the seat of fibrosis in women who had not borne children. Its causes were infection, subinvolution, or climacteric change. He had connected some cases provisionally with hyperthyroidism. Dr. Curtis Webb spoke strongly in favour of electrical treatment, and received support from others. Dr. Walter Tate, Dr. Purslow, Professor Kynoch, Dr. Kirkby Gomes, and the President (Mrs. Scharlieb) also spoke. Professor Gottschalk recommended sterilized injections of glycerine to control haemorrhage. Dr. Döderlein exhibited some drawings illustrating his methods of performing subcutaneous hebosteotomy and extraperitoneal Caesarean section. Exception was taken by Dr. Tweedy and Dr. Munro Kerr to this method being called subcutaneous (the finger being inserted between the bone and the bladder through a small incision above the os pubis). Dr. Tweedy eulogized Bumm's really subcutaneous method, which he said might be practised by any well-trained practitioner—a statement from which Dr. Kerr differed decidedly. As regarded the extraperitoneal Caesarean section, the only advantage Dr. Kerr saw in it was less liability to rupture of the uterus in a subsequent labour; while Dr. Spencer, who had often delivered a child by the classical operation in little if anything over a minute, thought that the delivery of the child by this method would be much delayed; Professor Döderlein said that the child was delivered in about five minutes from the first incision. Dr. A. J. Wallace then read a paper on intraperitoneal haemorrhage in cases of fibroma uteri; Dr. C. Nepean Longridge one on the involution of the puerperal uterus; and Professor Gottschalk gave a lantern demonstration of the microscopic appearances of erosions of the cervix, prior and subsequent to malignant change. It was pointed out to Professor Gottschalk that the term "erosion" does not to the British gynaecologist imply any adenomatous growth as it seems to do in Germany. With enthusiastic votes of thanks to the President (Mrs. M. A. D. Scharlieb), for her conduct of the meeting, and to our German colleagues for their presence and co-operation in the proceedings the meeting terminated.

Section of Laryngology.

Thursday, July 28th, 1910.

The proceedings of this Section commenced at 10 a.m. with a short explanatory address by the President as to the order and limitation of the subjects. Dr. Birkett of Montreal then read his paper on vasomotor rhinitis, and referred to the limitation of our knowledge of the etiology of the condition. For example, the factors of inheritance, external irritation, and neurotic temperament all remained to be worked out. It was certain that there were special exciting causes in some individuals, and he discussed pollen, actinic rays, and in this connexion dealt with the various theories of different authorities. He summed up the causes under three headings—a neurotic temperament, a local morbid condition of the nasal mucous membrane, and some irritant. He referred to the presence of sympathetic nerve filaments in cerebro-spinal nerves, and which were frequent in the fifth, irritation of which was a possible cause of the trouble. He thought that the symptoms might be divided into three main groups. With reference to treatment, one would have to consider both local and general conditions. Mr. Waggett, continuing the discussion, read a suggestive paper as to lines of future investigation of the subject. He reviewed the facts that certain individuals were attacked by the symptoms of spasm, while others were unaffected. He discussed this peculiar idiosyncrasy, and thought that the constitution of the blood was a very important factor that required investigation. In this relationship he dealt with the features of urticaria in its relationship to a deficiency of calcium salts in the blood, and laid great stress upon the importance of a thorough investigation into the chemistry of the blood. This should clarify a very vexed problem. Dr. A. Francis gave some interesting details of the effect of light touching of the nasal cautery upon varying portions of the nasal mucous membrane. The results he had obtained in children showed that the effects could not be due to suggestion in such cases at least. The more normal the nose the better his results. He then showed the varying effects upon blood pressure caused by the application of the cautery to various portions of the mucous membrane, some causing a rise and other points causing a fall of pressure, which latter

effect was more easily produced. The discussion was continued by Mr. Stuart Lowe, who objected to the title of the discussion, which was unsatisfactory and conveyed no knowledge of its pathology. He thought that there was too little mucous secretion in such cases, which left the membrane more exposed to external irritants. Dr. StClair Thomson suggested the use of the term "spasmodic rhinorrhoea" as a better title. Dr. Watson Williams thought a large proportion of the cases were due to biochemical changes in the blood affecting the bulbar centres, and that the main treatment was general. Dr. Luc thought that many cases were due to a degeneration of the mucous membrane under the middle turbinate, and that attention should be directed to this condition. The discussion was fairly general, various opinions being expressed. Dr. Haring considered that the catarrh present was not an essential part of the trouble. He classed the trouble with migraine, epilepsy, and other nerve lesions. He divided treatment into two classes—those with nasal lesions, which should be appropriately attended to, and those without, when suggestion was useful, which he considered to be the action of the cautery. Drs. Birkett, Waggett, and Francis replied after the President had summed up. Dr. W. Camac Wilkinson then read his paper on tuberculin in the treatment of laryngeal tuberculosis, based on his Australian experiences. He instanced several cases showing the results of his treatment. The paper was discussed by Dr. Watson Williams, who welcomed any method which would give better results than those they now obtained. He considered it essential to begin well by small doses of tuberculin. Dr. Waggett had found most benefit in chronic cases, when a balance had been established between the bacillus and the patient. Dr. Donelan had given up the tuberculin treatment for some years, preferring the silence method and galvanic cautery when suitable. Drs. Permewan and Birkett joined in the discussion, and Dr. Wilkinson briefly replied.

Friday, July 29th, 1910.

Dr. Seccombe Hett, in a paper on the anatomy of the capsule of the tonsil and its significance in the treatment of diseases of the tonsil, reviewed the comparative anatomy of the organ, illustrating his remarks with some excellent specimens, together with a few microscopic sections, which showed the supratonsillar fossa. He discussed the characters and indications for removal of different varieties of tonsil in cases of inflammation and new growth, and the relationship of these conditions to the capsule of the gland. Dr. Dan McKenzie then read his paper on enucleation of the tonsil. He discussed the *pros* and *cons* of enucleation *versus* a tonsillotomy, and considered that in tubercle the former should be the procedure, even though the organ was smaller than normal. The same treatment he accorded to the hidden tonsil. He described enucleation of the tonsil, showed the instruments he used, and referred to some difficulties in its removal, discussing also some of its dangers. Dr. StClair Thomson demonstrated several tonsils removed in their capsule by the guillotine, illustrating his remarks by diagrams, and showing the instruments he used, the calibre of the ring being very much smaller than the tonsil it removed, and finished his remarks by stating that both methods of guillotine and dissection were useful. The subject was then generally discussed by Dr. J. S. Bryan, who advocated the use of hydrogen peroxide for haemorrhage, but pointed out the danger of asphyxia resulting from the foam produced. Dr. Luc supported the cold-snare method of removal of tonsils, and mentioned the Vacher's rigid form of instrument made by Collins of Paris. Dr. Donelan chiefly used Mackenzie's form of guillotine as modified by himself. Dr. Watson Williams asked if it were advisable to completely remove the tonsil, and thought it an open question until the functions of the tonsil were more definitely known. Dr. Syme was not convinced that enucleation should be the routine method, and thought that the deep anaesthesia required was an added risk in children. Dr. Lack preferred the guillotine, excepting in cases of diseased tonsils. Dr. Stuart Lowe advocated enucleation in adults in certain forms of hypertrophy, but the guillotine for children. The President summed up in a few words, and the readers of the papers replied. Dr. Hemington-Pegler read a paper on headaches in association with obstruction in the nasal passages. It was illustrated by diagrams with a scheme of referred head pain and reflex action. He instanced cases which bore upon his thesis where intranasal treatment had improved and cured the headaches. He objected to the term "tubercle of the septum," preferring that of "cushion." Dr. Scanes Spicer then read a paper on cancer of the throat, with special reference to its site in relation to the bony, cartilaginous, and ligamentous framework of the endo-skeleton. He instanced that cancers were never found amongst the invertebrates, and argued that they only occurred where hard tissues, as bone or cartilage, came into contact with soft parts. Dr. Watson Williams demonstrated his special method of operation upon the frontal sinus for suppurative conditions in this neighbourhood, showing a living case in support of his thesis. Mr. Butlin, the President of the College of Surgeons, was present during part of the proceedings, and was thanked by the President of the Section for the personal interest he had taken in the work of the Section.

SECTION OF MEDICAL SOCIOLOGY.

Thursday, July 28th, 1910.

THE discussion on the provision of medical attendance by means of a State sickness insurance and the relation of this insurance to the public health and to the medical profession occupied the attention of the Section on Thursday morning. Mr. Smith Whitaker opened the debate by a communication in which he criticized the present conditions underlying private medical practice, contract practice, and the charitable services, regarded from the point of view of the economic maintenance of the public health. He then explained the advantages of a public medical service, laying emphasis on the necessity of preserving the provident element in such a service. The co-operation of the medical profession must be voluntary, and the profession must be regarded as the natural adviser of the Government, and as one of the contracting parties the profession should have a right to bargain as far as terms were concerned. The bargain, he contended, must be as between the profession as a whole and the community as a whole. Dr. J. Pearse attacked the Minority Report of the Poor Law Commission, and especially criticized some misstatements on which the recommendations contained in it were based. In speaking of the introduction of a State insurance scheme, he called attention to what is known in Germany as "*Rentensucht*," or desire on the part of the insured to live on their insurance money without proper cause. Mr. C. S. Loch, of the Charity Organization Society, read a paper in which he set forth the reasons why he disapproved of the present methods of contract practice and advocated a scheme of a new classification associated with either the dispensary system or that of State insurance. He appeared to be opposed to a very sudden radical introduction of the German system of insurance. Dr. Keay made an attack on the London Hospital methods, and then dealt in general terms with the German State insurance. He adduced evidence to prove that the effect of the introduction of Bismarck's reform had been highly beneficial to the economic conditions of the people, and dealt with the question of the free choice of doctor in the service under an insurance scheme. Mr. H. W. Armit contended that any system of compulsory sickness insurance, to be adequate, must be based on a full record of the population—in other words, a police registration must precede the introduction. He attempted to show that the hardships associated with registration were imaginary and not real. The conditions in Germany proved conclusively that compulsory sickness insurance, associated with police registration, had improved the conditions of the masses materially, and had at the same time effected a change for the better in the

medical profession. With regard to *Rentensucht*, he believed that this was exaggerated. He spoke of the forms of true neuroses which occurred after accident, and which had to be differentiated from malingering by a special system. Dr. Major Greenwood thought that it was necessary for a public medical service to be instituted before the Government presented its insurance bill. He regarded the abolition of destitution as visionary. Dr. Holder advocated the adoption of a scheme on the lines of the National Deposit Friendly Society's scheme, and Dr. Bygott defended the position of the medical officer of health. He regarded the scheme of State insurance on German lines as advisable in many points, but did not think that the British people would stand it. Dr. Muir spoke of the independence of the population to the north of the Tweed. Another speaker dealt with the problem from the point of view of the friendly societies, and Dr. Williams and Dr. Henry also took part in the debate.

Friday, July 29th, 1910.

A discussion took place on the decrease of the birth-rate. Dr. Ballantyne read a masterly paper in which he argued that the falling of the birth-rate was due to the dissemination of the knowledge of the possibility of limiting the number of pregnancies, the late age at which marriage was contracted, and possibly the increased participation of women in intellectual pursuits, athletics, and factory labour. He also spoke of the high antenatal death-rate as a factor in the reduction of the number of population. He regarded this wastage as a menace to the nation, and sketched the manner in which the restoration of a normal birth-rate might be effected. He was hopeful, but realized that the tide was still flowing in the other direction. Dr. Fremantle attacked the problem from a statistical point of view, and deduced from his figures that the decline of the birth-rate was due to the knowledge of methods of prevention, to economic factors chiefly arising from immoderate competition, to a lack of discipline, and an increase in indulgence. Dr. Hunter contended that the elder born children of a family were more liable to suffer from defective conditions than the younger ones, and that the seventh child was best placed. A marked rise in "defect" occurred with the eighth born. The same applied to children of elder born and late born parents. Artificial sterility begat natural sterility, and natural sterility begat idiocy. Dr. Buist regarded the question from a biological and an economic point of view, and in substance found that the evidence of disadvantage from the falling in the birth-rate was not convincing. Biologically the characteristics of those classes in which the fall was most marked were such as suggested a possible gain from the fall, while economically the increased industrial employment of women led to underselling, and in this direction the falling birth-rate might be regarded as a strike of parents for better social conditions. Dr. Dulberg advocated measures which would diminish infantile and juvenile mortality. The most valuable measure was insistence of breast feeding. Wet nursing should be followed as a profession by a greater number of women who now turned to the factory. Professor Benjamin Moore doubted whether it was physiologically sound to advise parents to reproduce as rapidly as possible. Regarding the matter from the point of view of the woman, he considered it necessary to provide a rest between pregnancies. Gestation and lactation called for recuperation, and he believed that there should be three years' interval between the children, and that a working man's family would be better if not more than four children were born. From the figures he did not recognize any immediate danger. Dr. Grace Cadell agreed with Dr. Buist and Professor Moore, and spoke strongly of the necessity of preventing marriage when one of the contracting parties was suffering from gonorrhoea, the chief cause of sterility. She did not think that it was wise that a woman should bear a child every year, and advocated a prolonged period of celibacy after the birth of the child, as prescribed by the Jewish law. Dr. Gilchrist, in a valuable paper, dealt with the social aspect of the problem from the standpoint of eugenics. Dr. Howatt doubted the advisability of breeding from a rapidly diminishing stock. Dr. Frances Ivens also dealt with the importance of gonorrhoea as a widespread cause of sterility, and Dr. Muir spoke of the economic conditions of the lower classes in Glasgow. Dr. Helen Hanson believed that the integrity of the family was on the increase while the birth-rate was falling. She held that it was the husbands and not the wives who wished for a limitation of the number of children. Dr. Bentham showed that the mother was the one in the family who had to go short, and that while this condition existed it would be undesirable to require her to bear a large number of children. Mr. Somerton Clark supported the idea of employing measures to check the fall in the birth-rate in the "upper classes." Dr. Dunlop regarded the decline in the birth-rate as most satisfactory in so far as it revealed a growth of the feeling of parental responsibility. Dr. Reynolds believed that the Church could and should contribute to the matter. Dr. Ballantyne replied.

Section of Medicine.

Thursday, July 28th, 1910.

A discussion on the treatment of chronic constipation was opened by Dr. J. F. Goodhart, on the lines already printed in the Supplement of the Journal. Constipation was defined to be an unnatural delay in the passage of the intestinal contents along the colon. From bismuth observations the average period for the passage of the intestinal contents along the colon only would appear to be some twenty hours from taking the meal; and three or four hours more before expulsion. Constipation thus fell into two groups: constipation of the colon, and constipation of the collecting chamber or rectum. Evacuation of the one was an automatic reflex outside the control of the will; the other was largely aided by voluntary effort, and the trouble came into being when voluntary muscular effort failed. Constipation of the main tract of the colon was a much more intricate subject; it was in the main a physiological one. Its causes concerned themselves with the neuro-muscular apparatus of the intestinal wall and the intestinal contents. The nervous element in the circuit was a dominant one; in constipation habit, nervous vigour and its oscillations, the temperament of the subject, the mental condition and muscular power were important. The attributes of peristalsis were discussed as regards the intestinal contents. The quantity, quality, and variety of food were important; the colon was meant to be full, not empty. Intestinal tone was one of the chief conditions. As to the treatment, not every case needed it. Constipation was healthy for many. The doctrine of intestinal auto-intoxication, as developed of late years was extreme and physiologically unsound. He deprecated the use of intestinal antiseptic and surgical operations, and counselled common sense, the need of patience and perseverance, leaving the bowels to work out their own salvation. Professor Baümler (Freiburg) thought it important that the tone of the sympathetic nervous system should be maintained, and to this end a sufficiency of sleep should be obtained. Sir James Sawyer argued that drugs should not be employed except as a last resort, and advocated uprightness of carriage as a preventive. Dr. H. D. Rolleston thought that the effect of auto-intoxication in constipation should not be minimized. He alluded to the causes of low muscular tone, and of excess of tone in the different forms of constipation. Dr. Newton Pitt pointed out that the dejecta were in only slight degree food residue, but epithelium, mucus, and largely bacteria. He thought autointoxication of great importance, but that its effects varied in different individuals. Mr. Arbuthnot Lane insisted on the extreme seriousness of the results of intestinal autointoxication, and advocated surgical operation in severe cases where other measures had failed. Dr. A. Mantle referred to mucous colitis and enterospasm

in constipation and the irrigation method of treating them. Dr. A. F. Hertz described his observations on bismuth meals. Dr. W. Ewart thought the education of the function of strain was important in relation to constipation. Dr. G. Herschell alluded to the use of warm olive oil injections and the value of the sigmoidoscope. Dr. Stuart Tidey thought the more gregarious a people the more prevalent was constipation, and advocated lavage and surgery in severe cases. Dr. Eason discussed the treatment of constipation with hormones. Dr. John Haddon made some remarks on the physiology of defaecation, and Dr. Goodhart replied. Dr. W. Ewart then gave a demonstration on the value of percussion of the vertebrae in diagnosis.

Friday, July 29th, 1910.

The third day of the meeting of the Section was devoted to the reading and discussion of original papers; the first, on the treatment of neuralgia and sciatica by the injection of 90 per cent. alcohol and eucaine β in normal saline solution respectively into and around the nerve, was read by Dr. Wilfred Harris, and was discussed by Dr. A. O'Sullivan. Dr. Laurence Humphrey read notes of a case of aneurysm of the aorta communicating with the superior vena cava, which was discussed by Dr. H. Morley Fletcher. Dr. Humphry, with Dr. W. E. Dixon, communicated a paper on a case of acromegaly with hypertrophy of the heart and other organs in which apparently new pressor substances in large amounts were found in the urine; this was discussed by Professor Edsall. Dr. G. Guelpa (Paris) read a paper on prophylaxis and treatment of diseases, including diabetes, by starvation, which was discussed by the President (Dr. R. W. Philip). Dr. Ettie Sayer read a paper on the effects of electrical currents on blood pressure, which was discussed by Dr. S. Sloan and Dr. J. Haddon. Dr. A. C. Jordan gave a lantern demonstration of *x*-ray appearances of thoracic aneurysm, and Dr. Herbert French discussed the possible fallacies of the method. Dr. Souttar showed an improved and simplified gastroscope and a working model on which its passage could be practised. Dr. J. S. Mackintosh read a paper on the evolution of the racial types of Europe and its bearing on the racial factor in disease. Dr. W. Camac Wilkinson read a paper on the treatment of pulmonary phthisis with tuberculin, which was discussed by Professor Sahli (Berne), Dr. G. A. Heron, Dr. Odell, Dr. French, Dr. Garson, Dr. Hamilton, Dr. J. F. H. Dally, and the President.

NAVY, ARMY, AND AMBULANCE SECTION.

Thursday, July 28th, 1910.

FLEET SURGEON W. W. PRYN, in a paper on tests for colour vision, said that it was essential that the examiner should himself have normal colour vision, and be tested on this point by the spectroscope. Some very hard things had been said of Holmgren's test; it had been maintained that it allowed some candidates to be passed who ought to be rejected and others rejected who ought to be passed. At the Admiralty Holmgren's test had been found very useful when used as a check on the lamp test. A candidate who had failed with the lamp test almost invariably broke down with the wool test when the test was carried out strictly in accordance with Holmgren's directions. When applied to the subject of incomplete colour blindness, the test, as compared with the lamp, was certainly not so convincing to an onlooker. In pronounced cases of colour blindness the examinee frequently broke down at once and selected several confusion colours before any of the correct skeins. It had often been said that colour-blind persons might pass Holmgren's test, but that was not the experience of Fleet Surgeon Pryn. On the morning of Easter Monday 102 Dulwich College boys were examined with the Edridge-Green lantern and 4 of them were found to be colour-blind. One of the masters, who knew that he had difficulty with colours, requested to be examined with the lamp, and he failed badly; in the afternoon of the same day these 5 were examined by means of Holmgren's test, and all failed. Fleet Surgeon Pryn was told by a visitor to the college of his being "somewhat colour-blind," his difficulty consisting in seeing red unless it were bright and at a comparatively short distance. With the lamp, colours were misnamed. According to reports recently obtained by the Board of Trade, Greece and Italy alone had no colour-vision test for their mercantile services, while the Holmgren wool test, either alone or as an alternative or supplement to other tests, was used in the United Kingdom, Austria, France, Germany, the Netherlands, Norway, Russia, Sweden, and the United States. Japan also employed a wool test, though not apparently one based on Holmgren's principles. Colour vision, as required for sea service, was best tested by the Edridge-Green lamp, and the practice of requiring the coloured lights to be matched with wools was to be recommended. A paper communicated by Fleet Surgeon G. T. Collingwood on naval recruits was read, and, following on the discussion thereon, Surgeon-General Evatt gave details of a proposal to form a united service medical corps. The Section then adjourned.

Friday, July 29th, 1910.

At the concluding sitting the first paper read was by Major S. L. Cummins, R.A.M.C., on the isolation of disease carriers and the methods of dealing with them. On the outbreak of an epidemic of typhoid, soldiers should be paraded in their barrack rooms, and, as each was reached by the medical officer, the soldier should loosen his clothes so as to display the thorax and abdomen, lie down on his bed, and undergo a rapid but thorough examination, directed to the discovery of slight splenic enlargement, rose spots, gastric, hepatic, or intestinal symptoms, signs of bronchitis or pleurisy, furred tongue, and redness or ulceration of tonsils or pharynx. Inquiries should be made as to general fitness, diarrhoea, constipation, sore throat, headache, and so forth, and the temperature should be recorded. Having carried out the inspection—which, by the way, must be repeated as frequently as the strength of the staff permitted—and thus isolated some suspicious cases, they must call upon the bacteriologists to elucidate these, and their assistance must be also required to deal with all contacts in the immediate vicinity of cases. Their efforts should be directed to proving or excluding typhoid infection in suspects and to the recognition of early cases or precocious carriers amongst the contacts. For the first the "Widal" reaction should be of the greatest use, and the examination of the excreta should also help. But as they were examining early cases they might expect great assistance from blood culture, especially in the very cases where "Widal" was still negative. That process, first perfected by Conradi, had now been so far simplified as to be an excellent and easily applied test for early typhoid infection. By means of those several procedures, medical inspection, "Widal," culture from the stools and culture from the blood, they should finally succeed in eliminating infective foci from their regiment, and bring the epidemic to an end. But they had left on their hands the original chronic carriers, as well as several temporary ones. What were they going to do with them? That they were capable of originating outbreaks had been proved in many recorded instances, and needed no further demonstration. The extent to which they were dangerous, however, gave more room for discussion. That danger was, apparently, greater from the temporary than from the chronic carrier. Under European conditions the chronic carrier was not a very great direct menace to the health of his neighbours. But all regular soldiers were liable to serve abroad, and a moment's consideration would show that the potential danger of a "carrier" was multiplied a thousandfold under military conditions in warm climates. The disposal of excreta was often imperfect, flies abounded, and the soldier was under new and unfamiliar conditions of life. Diet, climate, perhaps the exertion of active service, all tended to lower his health and diminish his resistance, while at the same time the paths of

dissemination of typhoid bacilli from the ever-present carrier were greatly increased in number. Major Cummins repeated that the danger from carriers, small under European conditions and in peace time, was urgent in the tropics and under war conditions. Klinger mentioned that "chronic carriers who had been told to take precautions caused 78 infections." They must get rid of them. They were a source of little danger to the civil population, but, in the army, under conditions of active service or tropical climate, they were likely to be very dangerous indeed. Their only course was what was now being done in the army—keep the men under observation for some months. If the excretion of bacilli was persistent, discharge them from the service, notifying their respective medical officers of health as to their condition. But with all precautions they must realize that they would always have typhoid carriers in the army, and that fact must be taken into account. Dr. John Brown (Bacup) and Fleet Surgeon Bassett-Smith having discussed the paper, Major Cummins replied. A paper communicated by Surgeon L. F. Cope, R.N., on air and ventilation in modern warships, was then read, and the statement was made in regard to battleships that, remembering that the cubic space per man in most of the living spaces on board was about 200 cubic feet, it might be rightly considered that the system of ventilation at present in vogue was very fairly successful, particularly as regards the artificial ventilation. Mr. W. H. Whiting, Assistant Director of Naval Construction, spoke of the hearty sympathy that existed between naval constructors and medical officers afloat to improve the conditions of life at sea, and Fleet Surgeon Robley H. Browne bore testimony to the enormous improvement in the sanitary conditions of modern battleships. After Fleet Surgeon Bassett-Smith had pointed out the importance of examining the bacteriological contents of the air in ships, the meeting concluded.

Section of Odontology.

Thursday, July 28th, 1910.

The discussion on the prevention of dental caries was continued, the point specially under consideration this day being the effect of variations in the buccal secretions, and the part played by bacteria normally present. Mr. Kenneth W. Goadby, in introducing, said that from whatever point of view dental caries was regarded, there was now unanimity of opinion, based on ascertained fact, that the actual destruction of teeth by dental caries was due to the action of bacteria, and particularly to those bacteria fermentative of carbohydrates. Having described the sequence by which infection of the pulp took place, he said that until the occurrence of such infection practically no inflammatory action could be observed. In respect of bacteriological problems he drew attention to: (1) The enormous number of morphological forms present in the mouth in diseased conditions, particularly in caries or any disease of the gums. (2) The small proportion of mouth bacteria which may be grown on the usual culture media, the morphological forms found in the usual process of cultivation differing very largely from those found from smears made from carious dentine direct. Prophylaxis might, he pointed out, be attempted in two ways: (1) By removal of fermentable substances through the usual methods of hygiene and the adoption of a suitable diet. (2) By changing the flora of the mouth itself. This latter treatment he described very fully. After discussion of the paper by Messrs. F. J. Bennett, Sidney Spokes, Sim Wallace, and Howard Mummery, Mr. J. H. Badcock, in a paper on the need for the correction of malposition of teeth, showed a series of lantern slides illustrating the normal positions of the teeth, making special reference to the contact points of the teeth. He also showed slides illustrating irregularities of the teeth and consequent difficulties in adequately cleansing the mouth. In treatment he advocated that early attempt be made to correct the irregularities, expansion being effected when possible, and in default extraction of a sufficient number of teeth to relieve the crowding. The correction of the effects of drugs taken as medicine was next considered by Dr. Austen, who, after dealing with mercurials, teething powders —lead, copper, and others—came to the conclusion that there was little ground for the generally accepted statement that drugs are injurious to teeth. The President, Mr. J. Howard Mummery, dealt with the reasons for susceptibility and natural immunity. He considered that there were more predisposing or determining causes of dental decay at work than many of those present in the discussion seem disposed to admit. The final determining cause was the composition of the teeth affected.

Friday, July 29th, 1910.

In a paper on the value of teeth to the human economy, Mr. J. G. Turner said no one could deny that complete regular arches were indispensable to full beauty, and on this account he set a great value on the retention of the temporary teeth till their due date of shedding. Early loss meant contraction of the dental arch and subsequent exclusion of a permanent tooth. On the other hand, it was worth inquiring whether, from the point of view of mastication, views as to the necessity of teeth had not lost some of their former ground. Beside tooth mastication there was also tongue and gum mastication, and our cereal foods were finely ground and readily dealt with by tongue and gum mastication. Salivary and gastric reflexes were as readily and efficiently promoted by gum and tongue mastication as by tooth mastication. Mr. Turner referred to results from his experience in hospital work from extracting septic teeth and leaving people with clean mouths, even if edentulous. He also showed many interesting models of mouths very deficient by nature in masticating power and surface, and yet all quite healthy; and Mr. Turner contended that the difficulty in supplying artificial teeth to every hospital patient who appeared to need it would vanish when both physician and patient realized that sepsis was the enemy, not loss or absence of teeth, and that it needed but a little care to fare just as well in an edentulous state as with a full set of teeth. In a paper on the hygienic effect of crowns and banded teeth, Mr. H. Baldwin contended that the total condemnation of the use of caps or collars fitted to the roots of teeth and entering into the construction of some crowns and bridges could only be founded on half appreciation of the real facts. Properly constructed crowns might be looked upon as the most perfect substitution for a natural organ known to Nature. A well made band need not irritate the gum, and if it did the gum could very soon recede from contact with it and the irritation would cease. It was the abuse and not the use of crowns, with or without collars, which should be condemned. In discussing the paper Mr. Howard Mummery thought it could not be claimed that crowning had no vices and its virtues balanced their vices as nearly as possible. In his own experience fixed bridges were always more or less septic.

Section of Ophthalmology.

Thursday, July 28th, 1910.

The President, Mr. Charles Higgens (London), in the chair. The following demonstrations were given: Methods of testing for colour blindness, by Dr. F. Edridge-Green; new operation for the production of filtration cicatrix in chronic glaucoma, by Dr. H. Herbert; use of new registering form of diaphragm test for measuring binocular vision, by Mr. N. Bishop Harman; use of carbon dioxide snow in trachoma, by Dr. Reginald Morton. The discussion for the day, the more chronic forms of anterior uveitis, was opened by Mr. T. W. Holmes Spicer (London) and Mr. Stephen Mayou (London). Mr. Spicer dealt with cases presenting scleritis. He considered the scleritis the primary lesion, the cyclitis, iritis, and keratitis being indications of its intensity. There was a greater incidence in young women of sedentary occupation. Attempts to find organisms in the lesions failed, and

he concluded, therefore, that they were due to the disturbing influence of toxins from distant inflammatory foci. Treatment by incision and possibly by subsequent touching with carbolic seemed most favourable, but relapses were frequent over many years. Mr. Mayou considered the bacteriology of anterior uveitis as manifested in irido-cyclitis. Unlike scleritis, the evidence of direct bacterial origin was certain. Tubercle, staphylococcus, and syphilis was the order of frequency of infection. Treatment by paracentesis was most favourable, and the use of vaccines prepared from the organisms isolated from the aqueous promised well. The President said the use of vaccines was a genuine advance. Mr. A. W. Ormond (London) dealt with the inflammation as seen in sympathetic cases. Dr. W. H. Brailey (Brighton) commented upon the fallacies of statistics of sex incidence. Dr. R. A. Reeve (Toronto) cited cases of homolateral cyclitis and follicular tonsillitis. Dr. Hill Griffith (Manchester) said that he frequently found pus in nodules of scleritis. Dr. G. A. Berry (Edinburgh) thought that the proof of toxic origin was much more difficult than bacterial. He was strongly of opinion that staphylococcic infection occurred in soils prepared by tubercle elsewhere. Mr. Bishop Harman (London) said his experience of the use of the Wassermann reaction in the diagnosis of these cases was good, but it tended to overthrow one's earlier ideas of clinical indications. Paracentesis he thought most satisfactory. Dr. Cecil Shaw (Belfast) agreed that scleritis was toxic in origin. Dr. Hugh Thompson (London) read a paper on the operative treatment of high myopia. Mr. Charles Wray (London), Mr. Hill Griffith, and Major Gidney, I.M.S., discussed the results of the procedure. Mr. A. H. Benson (Dublin) read a paper on a method of enlarging certain forms of contracted socket. He recommended the use of buccal mucous membrane for transplantation. Lieutenant-Colonel L. J. Pisani, I.M.S., read a paper on the conditions which may account for the greater prevalence of cataract in India. The influence of prolonged dry heat seemed most important. Major Gidney disagreed with his conclusions. Mr. MacGillivray and Dr. Cecil Shaw also spoke. Mr. A. F. MacCallan (Egypt) read a paper on five months' work in Luxor in 1910. The paper showed the efforts to check trachoma.

Friday, July 29th, 1910.

Dr. Risien Russell (London) opened the discussion on the diagnostic value of ophthalmoplegia, total and partial. Paralysis of ocular muscles, he said, must always be considered a serious sign; fleeting pareses were often a precursor of grave disease, such as disseminated sclerosis. Paralysis and spasm must not be confused; the latter was indicative of Thomsen's disease. The importance of paresis, together with other signs in the diagnosis of intracranial tumour was great, but it had to be distinguished from the rarer *migraine ophthalmoplégique*. Sudden onset of paresis did not invalidate sclerosis, nor necessarily imply vascular lesion. Finally he urged the importance of a full general examination, including blood, cerebro-spinal fluid, and specific tests. The President said he concurred in the gravity to be attached to most cases of paresis. Mr. Vernon Cargill (London) said that in many important cases diplopia was not noticed by the patient even with serious paresis and grave central disease. It was usually discovered by the ophthalmic surgeon. So also in the earlier pupillary signs the surgeon first detected them. He thought some single pareses were due to rheumatic affections. Dr. E. Farquhar Buzzard (London) dealt with pupillary phenomena. The importance of the Argyll Robertson pupil could not be underestimated. Similar phenomena had been found to coexist with cystic tumours of the third ventricle. He held that loss of pupil reflex without optic atrophy indicated grave disease within or about the third ventricle. Dr. W. B. Warrington (Liverpool) and Mr. N. Bishop Harman commented on cases of single muscle paresis without subsequent symptoms. The latter said they were sometimes referable to exposure to extreme cold, and that in such cases to give a grave prognosis was to court trouble. Dr. R. A. Reeve (Toronto) concurred; also Miss Amy Sheppard (London), who said there was sometimes tenderness over the affected muscle. Mr. MacGillivray (Dundee) said that he had watched such cases twenty years, and there had been no subsequent grave symptoms. Mr. Hill Griffith commented upon the use of electrical reactions as an aid to diagnosis. Dr. John Hern (Darlington) spoke of an experience identical with that of Mr. MacGillivray. Major Gidney thought that evidence of syphilis was of first importance. Dr. Risien Russell, in reply said the observations of Dr. Buzzard on pupil reactions were of great importance. He agreed with the occurrence of single paresis from excessive cold, but insisted upon the necessity for caution because many cases of single transient paresis developed disseminated sclerosis later. Mr. Bishop Harman (London) read a paper on the education of high myopes, describing the experimental establishment of "myope classes" in London County Council schools. Major G. H. Fink, I.M.S., read a paper entitled "A Plea for Efficient Drainage after Cataract Extraction." Major Gidney commented on it. The following resolution was then brought forward by Mr. Bishop Harman:

> In view of the importance of obtaining continuity of treatment of defects of vision in school children throughout the period of education, and of proper co-ordination of medical inspection and treatment, it is the opinion of the Ophthalmological Section of the Association that the organization of school clinics is desirable.

Mr. Walter Edmunds (London), Dr. Hugh Thompson (London), Dr. J. A. Menzies (Rochdale), Dr. Angus MacGillivray (Dundee), Dr. Beatson Hird (Birmingham), Dr. John Hern (Darlington), Mr. Hill Griffith (Manchester), Dr. Haldane Cook (Enfield), Dr. R. E. Harcourt (Liverpool), Dr. R. Leslie Ridge (Enfield), and the President spoke in support of the motion. Several of the speakers described successful school clinics already established. Mr. Philip Brooks (London) was opposed to gratuitous work, but objected to building costly State hospitals. The motion was carried with one dissentient. There were about thirty-five present. The meeting of the Section closed with a vote of thanks to the President.

SECTION OF OTOLOGY.

Thursday, July 28th, 1910.

THE proceedings on Thursday were given up entirely to a discussion on the diagnosis and treatment of infective labyrinthitis. It was opened by Dr. Robert Bárány of Vienna, who distinguished the following forms of the disease: (1) Acute purulent labyrinthitis. (2) Latent purulent labyrinthitis. (3) Fistula of the labyrinth with intact membranous labyrinth (circumscript labyrinthitis). (4) Fistula of the labyrinth with slight lesion of the membranous labyrinth. (5) Fistula of the labyrinth with severe lesions of the membranous labyrinth. (6) Serous labyrinthitis. The differential diagnosis between these diseases was made possible by investigation of the condition of the semicircular canals, the methods of which were partly originated, partly worked out by the author. The most important sign of the diseases of the semi-circular canals was the spontaneous vestibular nystagmus, which might be present either continuously (acute labyrinthitis), or only during attacks (circumscript labyrinthitis). The investigation into the function of the semicircular canals consisted in the experimental irritation of the canals by means of (1) turning, (2) rapid head movements, (3) syringing with cold and hot water, (4) galvanization, (5) compression and aspiration of the air in the meatus. All these different irritations produced quite definite forms of vestibular nystagmus, which must be observed carefully. Also, intracranial diseases produced vestibular nystagmus, especially those of the posterior fossa (cerebellar abscess, meningitis). The author gave the differential diagnosis between the diseases of the labyrinth and the intracranial complications which often accompany the labyrinth trouble. This diagnosis was based upon the observation of the

spontaneous nystagmus and the exact examination of the irritability of the semicircular canals. Dr. Bárány also gave a demonstration of his methods of investigating the condition of the labyrinth. Mr. Sydney Scott (London) followed with a demonstration of cinematograph photographs of the eyeball, showing the nystagmus produced by pressure in a case of fistula of the external semicircular canal, and also a series showing post-rotary nystagmus evoked by rotation about a vertical axis with the head erect. Mr. C. E. West (London) continued the subject. Infections of the labyrinth, he said, might be either pyogenic or non-pyogenic; the former constituted the main subject of this paper. Pyogenic infection might be either diffuse or localized to a portion of the labyrinth; this part might be restricted to the labyrinthine wall. Diffuse infection might be either acute or chronic; localized infection was always chronic. Necrosis of the labyrinthine capsule might take place in either acute or chronic conditions. The dangers and incapacities caused by infective labyrinthitis, treatment of infective labyrinthitis chiefly operative by the necessity of the case, the aims of operative treatment, the treatment of chronic local infections by the radical mastoid operation and curettage, the operative treatment of the diffuse infections, whether acute or chronic, by drainage of the labyrinth, the vestibulotomies—inferior and double—technique and after-treatment were all dealt with. Tuberculous labyrinthitis, necrosis of the labyrinthine capsule, non-pyogenic infections of the labyrinth, syphilis, mumps, and non-suppurative labyrinthitis in otitis media were also considered. Dr. Albert A. Gray (Glasgow) discussed the continuance of tinnitus after the destruction of the cochlea on both sides as pointing to a central or nervous origin of the symptom. Dr. Dan McKenzie (London) considered that spontaneous nystagmus was not to be relied upon alone as a localizing symptom. Dr. Dundas Grant (London) said that Mr. West and Mr. Scott had had an exceptionally high percentage of cases of labyrinthine suppuration, judged by the experience of a special hospital. Mr. Hunter Tod (London) agreed with Dr. Grant, and cited in support of that contention figures of a large general hospital. Dr. Jobson Horne (London) asked Mr. West the ratio in his hospital clinic of labyrinthine operations to the total number of mastoid operations. Mr. West, in reply, said he had no figures at hand, but stated that the ratio was about 1 in 10.

Friday, July 29th, 1910.

The President of the Association (Mr. Butlin) attended the Section during the earlier part of the proceedings on Friday morning. Dr. Jobson Horne (London) read a paper on deafness and diseases of the ear in relation to the public services and insurance, and their bearing upon forensic cases and the choice of a means of earning a livlihood. After the paper had been discussed, Mr. Butlin demonstrated a new aid to hearing. The instrument was constructed on the principle of the binaural stethoscope, but the sound receiving apparatus could be fixed behind the listener on the back of a chair, and could be rotated with the movements of the head, thereby overcoming the objections of having the apparatus in front of the listener and also the drawback of having to incline the head to a speaker. It was tested by the members present, and its advantages were appreciated. Mr. Macleod Yearsley (London) read a paper on the value of ossiculectomy in chronic middle-ear suppuration. The general opinion of those who took part in the discussion was against the operation after an extended trial. Mr. Mark Hovell (London) communicated some remarks on the connexion between affections of the mucous membranes throughout the body and middle-ear disease. The paper embodied the results of practical experience, and formed a valuable contribution. Dr. J. Stoddart Barr (Glasgow) reported experiments bearing upon the practicability of treating meningitis (septic and specific) by means of lavage of the cerebro-spinal subarachnoid spaces. This was a preliminary communication. Dr. Jobson Horne moved a cordial vote of thanks to the President of the Section—Dr. Edward Law—for the way in which he had discharged the duties, both scientific and social, of his office, and it was carried by acclamation.

Sections of Pathology and Bacteriology.

Thursday, July 28th, 1910.

A conjoint meeting of these Sections was held to discuss the question of complement deviation in diagnosis. Professor Wassermann, who was to have opened the discussion, was unavoidably detained, but his paper was read by the Honorary Secretary. He gave a summary of the history of complement deviation methods, and pointed out that it had so advanced that now it was possible to use the method to diagnose infective diseases where the organism was not yet known. He discussed the use of extracts made from normal tissues as compared with those made from syphilitic tissues, and held that extract of syphilitic tissues must be used to determine the presence of antibodies resulting from a spirochaetal infection, and so these extracts formed the most specific and most reliable antigen. Concerning the refinements that have been introduced to obtain a higher percentage of positive results, he said the non-heated serum gave too delicate a reaction. A partial arrest of haemolysis must not be regarded as positive, but merely doubtful. Further, with regard to the protozoal infections—for example, malaria, which gave a similar reaction—it was necessary first to determine that the patient had had no acute infective febrile disease up to the month before his serum was tested. He touched upon the duration of the reaction in patients treated with antispecific remedies, and pointed out that the virtues and superiority of each new remedy must be judged by the serum reaction, and concluded by mentioning other diseases in which the complement deviation method of diagnosis was possible—for example, glanders (Schütz), and even echinococcus disease and ankylostoma; in these two latter the reaction, obtained with a watery extract of the parasites or their capsules as antigen, disappeared as soon as all the parasites disappeared by operation or treatment. Dr. H. W. Bayly then gave the results of eighteen months' work at the London Lock Hospital; he used the original technique in preference to the various modifications, these latter necessitating an increase in the number of variant factors. He agreed that it was useful for diagnosis, and as showing progress of treatment as well as the best form of treatment. Professor Muir (Glasgow) discussed in detail the question of complement, pointing out that inhibition of complement might simulate fixation. Fixation was found in (1) the presence of an antigen and an antisubstance; (2) syphilitic reaction of Wassermann, which must be put in a separate class; (3) the presence of colloidal substances, and (4) surface absorption by gross organic particles in fluids. Each of these he dwelt on in turn. Henderson Smith (Lister Institute) also spoke on the structure of complement, which he had shown to consist of two fractions. In the ordinary technique of complement deviation only one of these fractions was completely deviated, the other remained free in an active state. This was only true when extracts were used, and not with the whole organisms themselves. Fleet Surgeon Bassett-Smith gave the results of his work, both clinical and pathological, on 1,166 cases of syphilis in hospital practice, and discussed the practical applications and the value of the test, and also the variations obtained with heated and unheated serums. Ivy McKenzie (Glasgow) discussed the individual properties of complement and organ extract. The deviation of complement should be estimated in terms of haemolytic doses absorbed. The extract should not exercise too inhibitory an effect on the complement, and should not be lytic by itself; for, if too inhibitory and if lytic, a normal serum may give a positive result. Dr. Carl Browning (Glasgow), in referring to the use of lecithin and cholesterin, said that pure lecithin might absorb a certain amount of complement from syphilitic serum, but the addition of cholesterin to the lecithin caused a marked increase in the amount of complement fixed. His method had proved of practical value from its certainty and

delicacy. Wakelin Barratt (Liverpool) had experimented with human and mouse cancers, but beyond a few cases of mouse cancer in which he did obtain complement deviation his results were negative. H. R. Dean (Lister Institute) discussed the relative values of extracts prepared from syphilitic and normal organs and had obtained better results with the former. He insisted on careful titration to eliminate the possibility of using a dose which would absorb complement with normal serum, and upon the standardization of all reagents. The meeting closed with a vote of thanks to Professor Wassermann for opening so important and valuable a discussion.

SECTION OF PATHOLOGY.

Friday, July 29th, 1910.

No set discussion took place in this Section, but a series of papers dealing with diverse subjects was read by members. Dr. Addis devoted his attention to the pathogenesis of hereditary haemophilia, advancing the theory that a deficient coagulability of the blood was the only constantly present pathological feature of the disease, and it alone was sufficient to account for the whole symptomatology. In every case that he had examined the severity of symptoms was directly proportional to the degree of diminution of coagulability of the blood. His experiments pointed to the fact that the cause of deficient coagulability in haemophilic blood was to be looked for in something which hindered the formation of thrombin. He had found no deficiency in the amount of fibrinogen, and no quantity of calcium was found capable of reducing the coagulation time of haemophilic plasma, the effect of adding varying quantities of calcium salts to normal and haemophilic plasma and fibrinogen being relatively the same. He had shown that there was no evidence that the diminution of coagulability was due to any deficiency in the amount of thrombokinase. He concluded that haemophilia was due to an inherited qualitative defect in the prothrombin, whereby it was less readily activated than normal prothrombin. Professor Sahli (Berne) mentioned his own work on the subject of haemophilia. He had found that the cause was due to deficiency of thrombokinase. He regarded it as a cellular anomaly (both corpuscles and endothelium of vessels), and Nolf (Liége) had also arrived at the same conclusion. Drs. Glynn and Knowles (Liverpool) then read a paper on some fatal cases of primary thrombosis of the pulmonary artery. In all their cases they found evidence (lamination, pigmentation and retraction of clot) that the clots had been laid down slowly. This, together with the facts that deaths occurred in many cases in the early morning, when the pulse was physiologically slowed, and in most cases no systemic cause could be found, led them to believe that primary spontaneous thrombosis was no less common than embolism—perhaps more frequent. Dr. Goodhart thought that embolism must be more common than thrombosis, though he had seen many cases of this latter condition, and Dr. Box remarked that the cause of sudden death was the supervention of embolus on pulmonary thrombosis. Dr. Braxton Hicks brought forward a paper of medico-legal value. As the result of experimental artificial respiration on stillborn children he had corroborated the older idea that the signs of live birth, namely, aëration of lungs and air in stomach could be produced by artificial methods, which, however, must be carried on for some time. Dr. G. W. Goodhart, in a paper on chloroform necrosis of the liver, pointed out that in 70 per cent. of inhalation experiments on rabbits, marked changes, varying from fatty degeneration to complete necrosis, occurred at the centre of the lobules. Similar but more marked results were produced by subcutaneous injections of certain quantities. Dr. Chisholm gave a preliminary report on the blood volume of rats with implanted sarcomata. His experiments showed that the volume of blood might be increased and the oxygen capacity decreased in tumour rats as compared with normal rats. Dr. Price Jones described some methods of estimating variations of measurement in diameters of red corpuscles. Dr. Beckton contributed further observations on the absence of Altmann's granules from malignant new growths. His paper read before this Section last year had been further extended to include the greater number of cases of sarcoma which he had been able to obtain. It appeared that by this observation it might be possible in future to distinguish between malignant growths and simple or inflammatory lesions, though as yet it was not of very definite diagnostic value save for distinguishing between sarcomata and inflammatory infiltrations. Dr. Gordon Ward's paper on polychromasia and the pathology of haematomata aroused some adverse criticism from Dr. Boycott, who held that polychromasia was undoubtedly a regenerative phenomenon. Dr. Boycott then described his experiments on oleic acid anaemia. The President brought the meeting of the Section to an end after congratulating the members on the excellence of the papers.

SECTION OF PHARMACOLOGY AND THERAPEUTICS.

Thursday, July 28th, 1910.

BEFORE calling for the opening of the discussion on the effects of digitalis on the human heart, the President (Professor A. R. Cushny) said that digitalis, as was well known, had a double action on the inhibitory cardiac apparatus, and on the heart muscle. He asked clinicians whether these two factors were properly balanced in digitalis, and whether the therapeutic effect might be improved by augmenting one or other factor. Experimental investigation could certainly contrive to supply the needs of the clinician in this matter. Clinical opinions must, however, be backed by actual measurements and standards. He called upon Professor Wenckebach (Gröningen) to open the discussion. Professor Wenckebach paid a tribute to the success of British physicians in investigating this difficult subject. He exhibited a number of tracings showing the twofold effect of digitalis—slowing of the beat and irregularity of pulse. These two effects were always found together. Where slowing occurred there was always also irregularity. This was due to strong vagus action. The strengthening of the heart's action was due, in all probability, to the action on the muscular tissue. In small doses there was increase of tone, with a deeper diastole and a deeper systole. In larger doses the diastole increase disappeared, and the systole increase remained. It was not right to limit the use of digitalis to conditions where there was loss of tone. Therapeutic doses might do harm by lessening conductivity, giving rise to partial heart-block. The heart muscle became less excitable with small doses. He had known extra-systoles to disappear under treatment with small doses. In large doses excitability was increased, and extra-systole might arise. In most cases, also, vaso-constriction was affected. All these influences worked in different intensity, according to the dose, form, and condition of the heart. In a slow heart, the slowing action was not wanted. If there was no oedema, the diuretic action was not wanted. In high blood pressure, the vaso-constriction might be a disadvantage. It was necessary to recognize the part played by these different and contradictory factors. Dr. James Mackenzie (London) described the scheme for testing the action of digitalis which he carried out at the Mount Vernon Hospital. The teaching was so contradictory on all points, that he had determined to make as it were a fresh start. In estimating the effect upon the patient of digitalis, he paid much attention to subjective sensations, and changes in these often preceded the objective signs. The pulse and respiration rate and blood pressure were taken before and after exercise. All drugs used in the work were submitted to Professor Cushny for examination. In these and other ways he was fast accumulating a mass of trustworthy data upon which judgement might be formed. Dr. Thomas Lewis (London) read a paper upon the characteristic reaction of the heart to digitalis when the auricle was in fibrillation. Dr. H. H. Turnbull (London) described some of the results which had already been obtained under Dr. James Mackenzie. The discussion was continued to a late

ur by Dr. Windle (London), Sir Lauder Brunton ondon), Dr. W. T. Ritchie (Edinburgh), Sir T. Clifford lbutt (Cambridge), Dr. Crichton Miller (San Remo), . J. Gossage (London); Professor Wenckebach briefly plied.

Friday, July 29th, 1910.

On the last day of the meetings of this Section . H. H. Dale (London) read a paper upon the active inciples of ergot. He traced the history of phar- acological research into the action of this drug. His rn work had led him to recognize the presence of a ecific alkaloid ergotoxin, to which were due the aracteristic gangrene and other toxic symptoms of got; and, in addition, he had found certain bases ich also arose in the putrefaction of proteins. reful clinical observation must determine whether e therapeutic effect was due to the specific alkaloid to the bases. If the latter, then ergot, though great pharmacological interest, was without practi- l importance in therapeutics, for these bases could more readily procured from other sources. Pro- ssor Unna (Hamburg) read a paper entitled, "New cts Concerning Chrysarobin." He had been able, conjunction with Dr. Golodetz, to prove the presence oleic acid in certain parts of the skin. This circum- ance explained the different effects of the drug in fferent parts of the body in psoriasis, for he had proved at oleic acid was able to produce the necessary oxi- tion of chrysarobin into the active "oxychrysarobin." was therefore right to combine with chrysarobin ointment containing oleate of lead if the cure of oriasis was to be quick and thorough. Professor ans Meyer (Vienna) read a paper upon the action of lcium. Especially he dwelt upon its action in pre- nting the appearance of inflammatory exudates. a dog were poisoned with thiosinamin, marked eural and pericardial effusion was the result, but is did not occur if calcium had been previously lministered. Wright had already noted that serum anthemata could be prevented by its use. He ought the change more due to a change in the ssel walls than to any alteration in coagulability. ne comparative therapeutic value of the organic and organic compounds of the halogen elements— osphorus, iron, and arsenic—was then discussed by . Fortescue-Brickdale (Bristol). Dr. P. P. Laidlaw ondon) read a paper upon the action of hydrastine d cotarnine. Clinical papers upon the treatment morphomania and of lobar pneumonia were con- buted by Dr. Crichton Miller (San Remo) and . A. J. Mathison (London) respectively. Mr. Ninian uce's contribution was upon the action of local itants.

Section of Physiology.

Thursday, July 28th, 1910.

E subject for discussion, the factors that make for efficient circulation, was introduced by Professor A. Schäfer (Edinburgh), who stated that it was on relation of certain factors that efficiency depended. ese were the rate of rhythm, the force of the indi- vidual beats, and of the tone of the heart. The spiratory system also played a very important part. other absolutely essential factor was the tone of vessels. The work of physiologists had established yond all doubt the important connexion between nervous and vascular systems. Certain facts were, wever, not easily explained by holding that the ance rested with the nervous system; for example, recovery of tone after complete severance of parts the vascular from the nervous system. He then nt on to speak of the influence of extracts of certain nds on the circulation—the suprarenal and the uitary, and probably also the thyroid. These glands sessed substances—which might be excreted into blood—which acted as depressors. If both these strictor and depressor bodies were formed, then in ition to the nervous control there was chemical trol. Another way in which these glands might p the circulation was by stimulating the nervous stem. That such a stimulating action might exist s rendered highly probable by the recent observa- tions of the favourable influence of extract of pituitary body in surgical shock. Following Professor Schäfer's paper there was an extremely interesting discussion, in which, amongst others, the following spoke: Dr. G. Oliver (Harrogate), Dr. Leonard Hill (London Hospital), who had made some interesting and valuable observa- tions on the effect of posture on blood pressure. Sir James Barr (Liverpool), Professor B. Moore (Liverpool), and Dr. Alex. Haig (London).

Friday, July 29th, 1910.

The last day's work was opened by a paper by Dr. Krogh (Copenhagen) on the estimation of the blood gases by means of his modification of the aërotonometer. He also gave a demonstration of the method of using the instrument. Discussing the causes of absorption in the lungs, he stated that his experiments had led him to the conclusion that the exchange was due simply to diffusion, that there was no evidence of any secretion taking place. He found that the oxygen tension of the arterial blood was always lower than the oxygen tension of the alveolar air, whereas the carbon dioxide tension of the blood and of the air agreed very closely. Dr. J. S. Haldane (Oxford) stated that he could not entirely agree with Dr. Krogh. He admitted that the diffusion theory could account for the condition found during rest, but not when there was a great demand for oxygen, as occurred during work and in high altitudes. Then the only possible explanation was that a definite secretion of oxygen took place. Professor Starling (London) stated that he was in favour of the diffusion theory under all conditions. Dr. Haldane then read a paper on the causes of absorption in the lungs in animals and man. This paper practically amounted to a continuation of the discussion inaugurated by Dr. Krogh's paper. The experiments recorded were carried out on animals and man after the administration of known amounts of CO. The speaker defended vigorously the neces- sity of a physiological stimulus for the exchange. Dr. Buckmaster (London) and Professor W. H. Thomp- son (Dublin) also spoke, and the interesting and valuable discussion was finally closed by the reply of Dr. Krogh. Dr. Ross Taylor (Glasgow) then read a short paper on the excretion of creatin in diabetes mellitus. He found that this substance was constantly present in the urine of diabetics. He then briefly discussed its significance. Dr. C. Gordon Douglas (Oxford) next gave a demonstration of the production of Cheyne-Stokes or periodic breathing. He showed how the condition depended on depression of the carbon dioxide value and the oscillation in the amount of oxygen present. Finally, Dr. Edridge-Green (London) gave a demonstration of his instrument for testing colour vision, and read a paper on some visual phenomena connected with the yellow spot. He pointed out that the fovea and its surroundings might at one time be the least sensitive part of the retina and at another, after exposure to light, the most sensi- tive. He then gave a description of the methods employed in the investigation and the theory of colour vision which his experiments had led him to. The meeting, after a few remarks by the President (Professor Thompson) then closed.

Section of Psychology and Neurology.

Thursday, July 28th, 1910.

A DISCUSSION on the treatment of tabes dorsalis occupied the whole of the second day's proceedings. It was opened by Dr. Risien Russell, who, premising that all treatment should be founded on etiology, and accepting as beyond refutation that syphilitic infec- tion was the *fons et origo* of the disease, maintained that every case of tabes, with certain reservations, should be subjected to thorough antisyphilitic treat- ment. Inunction, as carried out at Aix-la-Chapelle, gave the best results, either alone or combined with intramuscular injections of mercury. His personal experience of the latter had been small, but he had met with cases unsuccessfully treated by injection which had improved under inunction. Mercury by

the mouth was inefficacious, and only to be prescribed when for some reason neither inunction nor injection could be employed. He had never found any serious ill effects from the treatment, and had not met with any bad cases of salivation. Cases should be treated irrespective of the length of the interval between primary infection and onset of the tabetic symptoms, even those in whom the infection was remote doing well. A large proportion of the cases of tabes dorsalis he had met with had been practically untreated for their syphilis, the cases being either of mild primary infection or treated for their syphilis for a few months. As a result he had found in many cases a marked improvement, at times even the knee-jerks returning, and the pupillary signs disappearing. Dr. Russell was followed by Dr. Ferrier, who quoted statistics in disproof of the asserted tabo-genetic effect of mercurial treatment. As to the results of treatment, he would distinguish between what Grasset called an "anatomical cure"—which he considered an impossibility—and a "clinical cure," which should be considered possible in all cases. Dr. Ferrier was followed by Dr. Feibes and Dr. Lieven (Aix-la-Chapelle), both of whom read capital papers in fluent English descriptive of the methods they employ (mainly inunction) with, they said, excellent results. In their experience the intramuscular method was attended with risks, as the result of mercurial accumulation in the gluteal muscles. Dr. Judson Bury, who expressed his doubt of the universal validity of the dictum "no syphilis no tabes," thought in consequence that mercury was not always to be recommended, and maintained that every case should be treated on its own merits. Dr. Farquhar Buzzard, who found himself in almost complete agreement with Dr. Russell, thought that oral treatment should not be absolutely condemned, and also that no limit should be set to the duration of antisyphilitic treatment. Dr. Gullan (Liverpool), having given a favourable account of a small number of tabetics whom he had treated by intramuscular injection, which he preferred to inunction, and a good number of others having spoken, Dr. Risien Russell replied. The publication in full of this discussion will doubtless do much to lighten the pessimism with which the antisyphilitic treatment of tabes is at present regarded in this country.

Friday, July 29th, 1910.

On the last day of the meetings of this Section many papers of great interest were read, and none was listened to with more attention than that of Professor Bárány of Vienna, who, speaking in English, delighted his auditors by his illuminating description of certain new and original methods of examination concerning the relationship between the vestibular apparatus, the cerebellum, cerebrum, and spinal cord. In his theoretical exposition of his subject, the speaker distinguished between spontaneous disturbances of equilibration and those experimentally produced. Proceeding to describe these latter in detail, produced by turning-tables or by syringing first one ear and then the other with cold water, etc., Professor Bárány first explained diagrammatically their underlying neuro muscular mechanism, and then turned to a detailed account of the departures produced in the phenomena of experimental equilibrational disturbances by diseases of the cerebellum, cerebrum, and cord. Professor Bárány, having been warmly thanked by Dr. Alexander Bruce, Dr. A. S. Barnes, and others, replied briefly to questions addressed to him by the President. Dr. G. Thomson (Norwich) next read a paper on the need for a post-graduate curriculum and diploma in psychological medicine, which received the approval of the whole Section. The paper was followed by a resolution, moved by Dr. Thomson and carried unanimously, in favour of approaching the Council of the British Medical Association on the matter in the hope of action being taken. Dr. Alexander Bruce (Edinburgh) then showed on the lantern screen a series of photomicrographs of what he believed to be a unique case of multiple neuromata of the spinal cord, which had the peculiarity of being situated entirely in the walls of the vascular lymphatics. Dr. Edwin Ash (London) then read a somewhat diffuse paper on the psychological treatment of certain functional conditions in which he claimed to have obtained favourable results by the induction of hypnoidal states in many so-called functional disorders, including insanity. No discussion followed, the time remaining short, and a capital paper, which deserved much more consideration than could possibly be given to it, by Dr. W. A. Jolly (Edinburgh) on the knee-jerk and simple reflexes, brought a very successful meeting to a close.

SECTION OF RADIOLOGY AND MEDICAL ELECTRICITY.

Thursday, July 28th, 1910.

DR. S. JELLINEK (Vienna) delivered an address on the subject of electro-pathology, which is closely studied in the Austrian capital, and represented by a chair in the university. The danger of an electrical current, he said, depended, not merely on the number of volts, but upon various other connected factors, such as amperage and duration of contact, and also equally upon certain physiological and mental conditions in the individual. A point about first aid in electrical injuries was the necessity of laying the victim down with his head elevated, so as to minimize the cerebral haemorrhage. He urged that the people generally, especially workmen in electrical undertakings, should be instructed by means of pictures illustrating the origin and consequences of accidents, and the way in which they might be avoided. He showed some remarkable photographs of the effects of the current upon the flesh. Dr. Leopold Freund followed with a paper dealing with the conditions in which *x*-ray treatment was most likely to be of value. He urged that every treatment with the *x* rays should be preceded by preparatory treatment, all crusts and scales which would impede the histological effect of the rays being thoroughly removed, either chemically or mechanically. He believed that in severe skin affections better results than those hitherto achieved could be recorded if previous curettage and cauterizing were practised and exposure delayed until the scurf had separated. A communication was then read from Dr. Dawson Turner and Dr. T. J. George, detailing their experiments on the effects of the *x* rays on the growing brains of rabbits. They were unable to draw any conclusion with regard to microscopic changes, but there were some undeniable gross changes, including loss of weight in all the animals during the period covered by the exposures. The experiments really indicated starting points for further research. The discussion on this paper centred round the question of possible danger to the brain of children from exposures for ringworm, but none of the half-dozen experts who spoke could instance a case of injury to the brain definitely attributable to the *x* rays, although most of them stated that they did not care to employ the rays in the case of very young children. The attention of the Section was then drawn to the subject of ionization. A paper by Dr. C. F. Bailey (Brighton), on radiant heat and iodine ionization in such conditions as rheumatoid arthritis, chronic synovitis, and indeed, anything in which there was a new or recent deposit of fibrous tissue tending to pain on movement or limitation of movement, led to a long discussion. Dr. Bailey preferred a radiant heat sitting, followed immediately by iodine ionization. Iodine ions, in his opinion, were more valuable than the other halogen ions for solvent action on fibrotic deposits. Dr. Lewis Jones said that he had most encouraging results with ionization in the treatment of the crippling and painful swelling of the knees, so frequently met with in middle-aged women. Professor Leduc (Nantes) detailed some remarkable cures with ionization in the treatment of ankylosis and described his technique. Two other papers, undiscussed owing to shortness of time, concluded the session. One was by Dr. J. B. Simpson (Golspie), giving typical instances of the advantages of the *x* rays in country practice, particularly in the diagnosis of fractures and bone diseases. The other paper, by Dr. L. A. Rowden

Leeds), was a plea for a careful screen examination in the *x*-ray diagnosis of renal calculus. He claimed that with a proper technique, which he outlined, the *x*-ray diagnosis of renal calculus was infinitely more accurate than the history of the case and the clinical signs and symptoms all put together. At the same time he did not suggest that the *x*-ray examination should come first, but that it should confirm or negative the diagnosis already made by the physician or surgeon.

Friday, July 29th, 1910.

Dr. G. A. Simmons (St. George's Hospital) read the first paper of the morning, giving an instructive account of the organization of the *x*-ray department in a general hospital. He dealt with the construction and planning of suitable apartments, and the methods of routine administration which the radiographer and his assistants might employ with advantage. He said that the two points he had always kept in mind as being necessary in order to make the *x*-ray diagnosis side of his work of value to the hospital were, first, to be very prompt in furnishing the necessary plates and reports, and, secondly, to criticize every plate severely, and not to be satisfied unless it showed the condition so clearly that it was decipherable by anybody possessed of a pair of eyes. Dr. W. S. Lazarus-Barlow then described some further experiments which he had been conducting at the Middlesex Hospital on radiation and biological processes in connexion with cancer research. The paper was really an addendum to his Croonian Lectures last year. He expressed himself as conscious of a great dissatisfaction that he could present so little that was definite. It was true that there could now be no doubt that radio-activity was capable of influencing biological processes. But the difference between the action of a Crookes tube or a milligram of radium upon the ovum of a worm or upon an insect and that of the ever-present, slightly radio-active environment in which more complicated living organisms passed their life-history was so enormous that sometimes he hesitated to hope for great results. Dr. Barclay (Manchester) showed a series of radiographs giving the appearance of the normal and pathological stomach. The stomach he described as being full of spasmodic trickery; nevertheless, the simple method of *x*-ray examination with the bismuth meal could yield a great deal of information as to its condition. He believed it possible to get fairly close to a correct diagnosis in nearly every pathological case. Hour-glass stomach should always be diagnosed. Carcinoma generally gave some hints as to its presence, or at any rate as to the need of operative interference, owing to pyloric obstruction, before it was diagnosed clinically. Pyloric obstructions should always be made out if well marked, while the examination frequently revealed a suggestion of the presence of gastric ulcer and cicatrices. Professor Wenckebach described a new stand for screening examination in *x*-ray work, which was criticized in the subsequent discussion by Dr. Barclay and Mr. Thurstan Holland as affording inadequate protection. Dr. Harrison Orton and Dr. Alfred Jordan each read a paper on the *x*-ray diagnosis of phthisis. Dr. Jordan pointed out—and the matter was emphasized by Dr. Knobel and by other speakers in a discussion—that although the Roentgen ray method was an indispensable diagnostic aid in all pulmonary diseases, an *x*-ray examination of a disease that was no longer active—the relics of a spent disease—would show practically the same lesion that was in evidence before the course of treatment. A healed fibrous cicatrix gave rise to a shadow in the lung very similar to the one due to an active congestive lesion. Dr. Orton also believed that the *x*-ray examination should only be considered as an aid to diagnosis, and not a method to supplant those at the disposal of the physician. Dr. A. Howard Pirie brought to the notice of the Section several cases in which he had used the *x* rays successfully in the treatment of hyperidrosis. In hyperidrosis frigida as well as a simple hyperidrosis he had found the rays of great service, without any baneful results. There was partial epilation. Dr. Lewis Jones and others discussed the paper, and one of Dr. Pirie's patients—a medical man—bore testimony to the permanence of the cure. On the motion of Dr. Lewis Jones, a cordial vote of thanks was passed to the President and Honorary Secretaries of the Section.

Section of State Medicine.

Thursday, July 28th, 1910.

The Section of State Medicine had a busy morning, the chair being occupied at first by Lord Ilkeston, and later by Mr. Charles E. Paget (M.O.H., Northampton). The first discussion was on town planning in relation to public health. This was opened by Dr. John Robertson (M.O.H., Birmingham), who described as one of the most important aspects of town planning the necessity for distributing the population over greater areas than at present. The number of houses per acre should be reduced. The number could not be uniform, but for new cottage houses it should not be more than an average of twelve per acre. This could only be rendered possible if traffic roads were constructed partly at the expense of the local authority, while non-traffic roads were cheapened and "adopted." Almost as necessary as spreading the population was assistance to manufacturers by cheap land, canal, railway, gas, electric power, and other needful adjuncts. Dr. Hope (M.O.H., Liverpool) submitted plans showing the transformation of large central areas of the city of Liverpool. At a cost of a million sterling the corporation had removed many insanitary areas and re-erected appropriate dwellings upon the sites. Mr. T. C. Horsfall, J.P. (Manchester), said that, as Mr. John Burns in the Housing and Town Planning Act had taken away with one hand what he had given with the other, there must at an early date be an amending Act. He considered that the average English house was a better type of human dwelling than the average dwelling in any other part of the world. Every unnecessary inch of macadam was an evil, and bad results had been brought about by the mania for unnecessarily wide streets. He considered that the English workman lived under much better conditions than the German, and pointed out that the death-rates, especially the tuberculosis death-rate, and infant mortality were very much higher in German than in English towns. In his opinion these evils were encouraged by the use of town-planning powers to build too wide streets. The discussion was continued by Dr. Fremantle (M.O.H. Herts), who gave some interesting details of the garden city of Letchworth, plans of which he distributed to the meeting. He considered that there should be a limitation of houses to 12 per acre. Dr. Robertson replied. Dr. George Reid (County M.O.H. Staffordshire) in a paper on the administrative control of ophthalmia neonatorum, said the disease was the cause of at least one-third of the cases of permanent blindness. The financial return would amply warrant the trifling expenditure needed to cope with the disease, for the cost of educating a blind child amounted to £500, compared with £30, the cost of educating an ordinary child. The procedure was simple, consisting of (1) compulsory notification of the disease, (2) provision for medical treatment and skilled nursing of the cases under Section 133 of the Public Health Act, 1875. Mr. Bishop Harman (London) suggested, in addition to notification, that the doctor in charge of a case should be required to send to the public bacteriological laboratory for microscopical examination two film preparations of the pus in order to ascertain the presence or absence of Neisser's micrococcus. He also suggested that the school medical officer should be called in by the medical officer of health to give expert advice in these cases. After the subject had been further discussed. Dr. E. H. T. Nash (M.O.H. Wimbledon) disagreed with the statement which had been made that every case notified was a patient saved, as this entirely overlooked

the work of the general practitioner, who at the present time had a very considerable knowledge of eye diseases. Dr. Reid briefly replied. A paper by Dr. Niven (M O H. Manchester) on the etiology and prevention of summer diarrhoea was read in his absence by the Honorary Secretary. It offered reasons for believing that all loose manure and other fermentable refuse should be removed to a distance from centres of population at intervals not exceeding a week. Dr. Clements (M.O.H. Beckenham) read notes of an investigation into 44 cases of summer diarrhoea. He was quite convinced that the disease was spread by house flies, and during its prevalence had made experiments in the destruction of flies. Sprays of various kinds were used. Formalin was unsuccessful; better results were obtained with izal, which did not immediately kill the flies: but when it was sprayed over them they became stupefied, and could easily be collected and destroyed. Dr. Brown (Bacup) considered that the house fly as a cause of disease was "not proven," and emphasized the importance of keeping hens in a stable as a means of preventing nuisance from flies. The proceedings of the Section for the day concluded with an interesting paper by Dr. Robert Milne, medical officer to Dr. Barnardo's Homes, on the home treatment and prevention of scarlet fever. Dr. Milne's views have previously been ventilated in this JOURNAL. He does not believe in the isolation of scarlet fever patients, whom he allows to sleep in the same ward, and sometimes even in the same bed, with non-infected and even with surgical cases. During the first four days of a scarlet fever case, commencing as early as possible, he has pure eucalyptus oil gently rubbed in, morning and evening, all over the body. This is repeated once a day till the tenth day of the disease. He swabs the tonsils with 1 in 10 carbolic oil every two hours for the first twenty-four hours. He considers that if his method were universally adopted, it would result in an enormous saving to the nation, as isolation hospitals would no longer be necessary.

Friday, July 29th, 1910.

The concluding meeting of this Section was very largely attended, a number of ladies being present, including H E. The Countess of Aberdeen. During the first part of the proceedings the chair was taken by Dr. S. Monckton Copeman, F.R S, and later on by Lord Ilkeston, President of the Section. The first discussion was on the provision of medical treatment by local education authorities. This was opened by Dr. James Kerr, Education Medical Officer to the London County Council. He started with the definite statement that the medical inspector should not undertake treatment. He detailed the different ailments for which treatment might be required, and said that the doctors must be paid for their work, and the whole scheme so organized that every one should have relief with the least cost and the least friction. The Medical Treatment Act stood in the way of successful general provision of treatment, but the London County Council had made temporary arrangements with hospitals and other institutions The Council paid 2s. per head for every child treated at hospital, and also £50 per annum per half-day weekly worked by a medical man in such treatment In districts beyond reasonable reach of hospitals the suggestion was made that a committee of medical men might arrange to work a centre for treatment, and such attempts were being made in Norwood, Hampstead, and Wandsworth. In his opinion the British Medical Association signally failed, in the condemnation by many Branches of school clinics, under the idea that general practitioners would not be allowed to do the work. Professor Kenwood (Stoke Newington) said that they should first inquire to what extent their existing provisions succeeded in obtaining ameliorative treatment for defects disclosed by medical inspection. From tables produced he found that only 25 per cent. of children had been relieved. The main difficulty experienced was in respect of defects of vision and hearing, ringworm, and conservative treatment of the teeth. With regard to visual defects, he recommended that eye-testing centres should be established in market towns on market days, and the services of practising ophthalmic surgeons availed of on contract terms, and provision of spectacles arranged. Travelling dental clinics might also be established. He laid particular stress on the importance of insisting on parental responsibility for providing medical treatment, and advocated legal action in appropriate cases of neglect. He did not believe in the scheme of subsidizing voluntary hospitals out of the education rate, and thought that the provision of medical treatment might urge them on the road to nationalization of medical service. Dr. Bennett Weaver (M O.H. Abertillery) gave his experiences of providing treatment in a small district. Dr. William Hodgson (Crewe) strongly advocated the claims of the general practitioner to carry out treatment, and objected to the nationalization of the medical service. He considered it most unfair to assume that the Poor Law had broken down, and thought the medical profession ought to go slowly and use the means already at its disposal before resorting to new and untried methods. Mr. Cyril Jackson, Chairman of the Education Committee, L C.C., said they ought to endeavour to bring home to the parents the duty of getting advice for their children, and paying for it. He had no idea of disparaging the general practitioner, but found that parents would not take their children to him. Dr. Drury (Halifax) and Dr. Nash (Wimbledon) urged the claims of the general practitioner, who should be paid for his work and the time occupied in it. Drs. Cooper-Pattin (Norwich), Savage (M.O.H. Somersetshire), Bygott (Barking), Meredith Richards (Croydon), and Wilshaw (Worthing) also spoke, and Dr. Kerr, in reply, said that he had been misunderstood about the general practitioner, and thought the local authority should choose the best men, general practitioners or otherwise. He certainly did not believe in the future of the Poor Law, particularly in respect to school children. Sir William Collins, M.P., opened a discussion upon the reform of death certification. He emphasized the unsatisfactory condition of the present system, and of Coroners' Law. He pointed out that there was very inadequate machinery for bringing about any inquiry into the cause of deaths, especially in the case of infants. He referred to the great difference in the number of uncertified deaths in various parts of the kingdom—1.5 per cent. of deaths being uncertified in London, and 45 per cent. in Inverness-shire. He considered that a coroner should have some knowledge of the law of evidence, and advocated the appointment of a medical investigator into the causes of death. Although the medical profession was to a certain extent suspect in Parliament, yet the legislator was anxious to listen to the last word of science if it could only be assured that the latest word was really the last. He pointed out that under the existing law a coroner could only order a *post-mortem* examination when an inquest was held, whereas there were many instances in which, if a *post-mortem* examination were held, an inquest would be unnecessary. The Right Hon. Dr. Farquharson said, as an old parliamentary hand, he recognized the difficulty of getting anything in the way of legislation through the House of Commons by a private member, especially if a medical man, but if Lord Ilkeston and Sir William Collins would peg away in both Houses they would in time remove the scandal of many people being smuggled into their graves without proper certification. This was most important from the point of view of advocates of cremation, of whom he was one. Drs. Barker Smith, Drury (Halifax), McWalter (Dublin), and Jackson (coroner for Croydon), all spoke in favour of the appointment of medical coroners, and the last speaker advocated payment for death certificates. Mr. Cotes-Preedy spoke as one who was both medically and legally qualified, and was in favour of legal coroners. Dr. Bygott also spoke, and Sir William Collins briefly replied. Dr F. E. Fremantle (M.O.H. Herts) read a paper on the influence of part-time medical officers of health on public health, in which he expressed views favourable to the part-time medical officer. The proceedings were closed by a vote

of thanks to the Chairman (Lord Ilkeston), and congratulations on his elevation to the peerage, proposed by Sir William Collins, seconded by Dr. Herbert Jones (Hereford), and carried by acclamation.

Section of Surgery.

Thursday, July 28th, 1910.

Before the regular work of the Section began, Professor Depage of Brussels gave an interesting demonstration of his method of suturing fractures. Professor Theodore Kocher opened a discussion on the surgical treatment of exophthalmic goitre. He began his address by a graceful reference to the fundamental work of the President of the Section upon the physiology of the thyroid gland. He went on to indicate some advances in methods of diagnosis. The blood changes were of such importance as to demand routine examination. With very few exceptions, the leucocytes were greatly diminished, sometimes by more than 50 per cent. The diminution was exclusively polynuclear. Lymphocytes were increased by 20 to 50 per cent., but the increase was, in general, relative only. Following excision of one lobe or ligature of the superior pedicle, there was a definite return towards the normal blood picture. If the case was "cured" the blood would be found normal. Of course, there are analogous changes in other diseases, but it was noteworthy that in myxoedema there was a leucocytosis. Not every hyperthyrosis was Graves's disease. There may be hyperthyrosis at puberty, in pregnancy, and after some infections. There is, then, a physiological need for excessive secretion, and it would do much harm to operate. Contrary to what was found in myxoedema, in Basedow's disease the coagulability of the blood was diminished in rapidity and intensity. He was unable to understand the view of some American surgeons who held that hypothyrosis was characteristic of Graves's disease. It was noteworthy that the experimental production of these blood changes by exhibition of iodine failed in thyroidless animals. Iodine given in large doses to nervous people the subjects of ordinary goitres might produce all the symptoms of Graves's disease. The administration of thyroid extract in large doses was only capable of giving rise to symptoms of Graves's disease in some individuals, particularly those in whose families there were cases of the disease in question, or of diabetes. No symptoms could be induced in those with thyroid aplasia. The incidence of the disease after fright, fatigue, or great emotion was witness of the influence of the nervous system in its production. Experimental work, too, went to show that there occurred what might be described as a "diarrhoea" of the thyroid secretion. The possible existence of trophic or secretory nerves to the thyroid was good warrant for adopting Crile's suggestion to ligature not the superior artery alone but the whole superior pedicle. So far as therapeutic measures went, he felt that if operation were out of the question a surgeon should do nothing himself and tell his patient to do nothing too. He referred to the influence of rest and diet, and incidentally alluded to the deleterious influence of sea air. Before operating it was of the utmost importance to examine with precise care all the other organs, for in the late stages many serious organic lesions were found associated and precluded the possibility of operative cure. Amongst 4,394 operations for goitre, 469 were for Graves's disease, and his total mortality was 3.4 per cent. Moreover, the mortality figure had dropped progressively with his increasing experience. Of the last 72 cases but one had died. Whilst advising careful attention to the contra-indications, such as glycosuria and the status lymphaticus, he held that the physician who delayed operation in the early stages was accepting a grave responsibility. Dr. Hector Mackenzie, while admitting that the symptoms of the disease were attributable to the excessive activity of the gland, pointed out that the severity of the symptoms bore no relation to the size of the thyroid. In the very worst cases there might be no enlargement. The question he sought to answer was, "what was the cause of the increased activity?" He was impressed with the remarkable causative relation of mental strain, grief, worry, anxiety, or fright. There was, indeed, a striking parallelism between the symptoms of great terror and those of Graves's disease, extending, it was said, even to the occurrence of swelling of the gland. Was it the toxins of fatigue which constituted the effective stimulus? He directed attention to the relations of the thymus to the condition. In all the cases he personally had had opportunity of examining at necropsy the thymus was enlarged. Theoretically, he could not think that thyroidectomy could cure, and he had never seen a case. Of 13 cases at St. Thomas's, 5 were fatal, 3 were *in statu quo*, and 5 were "improved." He could not believe that Professor Kocher got the same class of case to operate upon as was found in London. Medical treatment was increasingly successful, and in time some antidote to the causative toxin would be discovered. Dr. Bruce (Toronto) said he had operated on 22 cases; 20 were successful, 1 died of pneumonia, and 1 was operated upon in the acute stage, and died almost immediately after operation. There were, however, collective figures showing a mortality of only 4 per cent. in over 1,000 cases. Sixteen per cent. were absolute cures and 85 per cent. were able to resume normal life. He advised the use of ether with preliminary morphine as the best anaesthetic. Mr. Heaton said there was a good deal of confusion of cases. Proper selection was essential. An anaesthetic could always be given in cases that were suited to operation at all. Mr. Robert Campbell noted the necessary distinction between the primary disease and that arising as a secondary condition in cases of simple goitre. In the latter class operative results were uniformly good. He would like to know what was the mortality of the disease *per se*, and what the degree of incapacity for work due to it. Dr. Kennedy believed that the dangers of operation had been exaggerated. He had found local anaesthesia with cocaine satisfactory. In acute cases there should be preliminary hygienic and drug treatment. Mr. Barling thought that operation to be successful must be early. Mr. Armour had had 20 cases. He now reserved simple ligature for acute cases, and looked upon it as a temporary measure. He used chloroform, and paid particular attention to light handling of the parts. He had had only one death, and that in a case operated upon against his better judgement. Mr. Deanesly said he saw a large number of goitres, but only 1 per cent. of them could be said to have exophthalmos. Operation in the milder cases gave good results, especially when undertaken early. Mr. W. G. Spencer referred to the excellent results he had obtained in some severe cases by simple division of the isthmus. In one he had afterwards resorted to bilateral sympathectomy with success, when the symptoms recurred. Mr. Thelwall Thomas had two fatalities many years ago, and gave up operating. Recently he had, however, been driven to resume operative measures, and of 6 more recent cases, 3 were cured, and 3 were as yet not far enough distant to speak as to permanence of the improvement. Mr. Hey Groves spoke of the possibility of grafting thyroid as a supplementary operation to replace the toxic gland removed. Professor Crile of Cleveland afterwards read a paper on some of the factors that determined the results of surgical operations. His remarks were based on experimental researches into the effects of anaemia, shock, infection and fear upon the brain cells, and he demonstrated the remarkable disorganization, amounting to total destruction, of these cells that could be induced by any one of these influences if in large enough "dose." He showed, moreover, that the total "dosage" might be the sum of the several factors since the effects were cumulative. He drew the conclusion that it was essential to exclude both the physic and the physical elements of shock. The anaemic element could be completely excluded by blood transfusion. He held that the era of the triumphs of gross anatomy was passed and that the era of the victories of physiology was heralded.

Friday, July 29th, 1910.

Dr. de Martel gave a demonstration of his very ingenious trephine, which works with great rapidity and at the same time without danger to the dura mater. Mr. F. D. Bird (Melbourne) read a paper on conditions simulating cancer of the stomach. He described several instances in which syphiloma of the pylorus had been mistaken for carcinoma and gastrectomy performed. Mr. H. J. Paterson dealt with the early diagnosis of gastric cancer, emphasizing the importance of analyses of the gastric juice. Professor Alexis Thomson made a communication on the pathological anatomy of cancer of the stomach and conditions which are mistaken for it, illustrating his remarks with lantern slides of large microsections of the stomach. He stated that the condition most often mistaken was one of diffuse fibromatosis of inflammatory origin. The "leathern bottle" stomach, which had hitherto been regarded as cancerous, was in reality an example of diffuse fibromatosis. He admitted the great difficulty of diagnosis by inspection, especially in cases of ulcus carcinomatosus. In cases of doubt it was wise to open the stomach and inspect the mucosal surface. Mr. Deanesly advocated the excision of all ulcers of the stomach except those at the pylorus, even if it should be necessary to bisect the organ to accomplish the excision. He had not found gastro-enterostomy at all satisfactory in the treatment of ulceration, whether in the presence of perforation or not. Mr. E. W. Miles read a most important paper on the radical abdomino-perineal operation for cancer of the rectum. He had had 59 cases of the perineal operation, in only 4 of which there had been no recurrence. He had been driven step by step to the performance of more and more extensive operations, and now with an experience of 24 radical excisions he was at last in a position to report some satisfactory results. He had made no attempt to unite the proximal end to the anal site, but established forthwith a permanent colostomy. The paper was discussed by Mr. Drew, Mr. Mummery, and Mr. Bond. Mr. C. J. Bond described a method of establishing colostomy openings and ureteral permanent fistulae by means of elevated and more readily controlled mucous openings. The great point seemed to be that the necessary apparatus could be worn with greater security and comfort. Mr. MacLaurin (Sydney) described the clinical manifestations, diagnosis, and treatment of liver hydatid. Mr. Kennedy detailed a case of successful suture of the circumflex nerve which had been ruptured by a kick. Mr. Lockhart Mummery spoke of the operative treatment of chronic mucous and ulcerative colitis by appendicostomy. A resolution recommending the appointment by the Association of an investigation committee with reference to the best method of treating simple fractures was carried without dissent by the members of the Section.

SECTION OF TROPICAL MEDICINE.

Thursday, July 28th, 1910.

A DISCUSSION on special factors influencing the suitability of Europeans for life in the tropics was opened by Sir R. Havelock Charles, the general drift of his contention being that the heat and moisture of tropical lands caused, independently of disease, deterioration marked chiefly by anaemia. The long-continued high temperature, the great diurnal variations, and the parasitic diseases were, he said, the three special factors peculiar to the tropics which directly affect health. The physiological effect of these was excessive cutaneous action alternating with internal congestions, and the ultimate results were a slow advancing asthenia and anaemia, and a sapped constitution. Pathological changes led to deterioration of blood and degeneration due to hyperaemia, followed by loss of action in the liver and intestines; the incompetence of these viscera generated an accumulation of toxins. The best kind of man to go to the tropics was the good ordinary type of Britisher with a clear head, an even temper, not over-intellectual and introspective, but one who could take an interest in things around him, and one who could do hard work and find pleasure therein. The type of woman wanted was the healthy, not the neurotic; the worker, not the unoccupied or pleasure-loving woman. The man who was not wanted was the victim to migraine, headaches, any hereditary mental taint or epilepsy, who bore heat ill, or suffered from insomnia, or was neurotic in any way. A high degree of myopia with fundus changes was more than disadvantageous. Asthma and tuberculosis should bar a man absolutely for tropical life. Tendency to loose bowels, functional albuminuria, or diabetes were ailments deterrent to healthy life in the tropics. The following joined in the discussion: Lieutenant-Colonel H. Hendley, I.M.S., Dr. F. Charles Harford, Colonel Joubert de la Ferté, I.M.S., Lieutenant-Colonel A. M. Davies, I.M.S., Lieutenant-Colonel P. W. O'Gorman, I.M.S., Dr. J. Preston Maxwell, Dr. J. Basil Price, Dr. D. E. Anderson, Dr. L. W. Sambon, Dr. G. M. Harston, Professor Fülleborn (Hamburg), Mr. S. Bonté Elgood (Cairo), Dr. W. F. Prout, C.M.G., Dr. Andrew Balfour (Khartoum), Dr. Laurence D. Parsons (Gibraltar), Dr. St. George Gray (Southern Nigeria), Major P. Dee, I.M.S., and Dr. Sandwith (President of the Section). Sir R. Havelock Charles wound up the discussion by answering criticisms. Dr. R. Row (India) read an interesting paper on further observations on *Leishmania tropica* of Oriental sore of Cambay, India. Dr. A. Connal read a communication on the serum treatment of a horse suffering from trypanosomiasis. Dr. G. Duncan Whyte (Swatow, China) described the analysis of air within mosquito nets. He showed that in a well-ventilated room the air within the net showed practically no difference from that without the net. Dr. G. C. Low spoke on the subject.

Friday, July 29th, 1910.

On the concluding day a number of interesting papers were read. Observations on tropical bronchooidiosis was the subject of a paper by Dr. Aldo Castellani (Ceylon). Professor Fülleborn (Hamburg) gave an interesting demonstration on the development and morphology of micro-filaria by means of the epidiascope. Drs. G. C. Low, C. W. Daniels, and J. Preston Maxwell joined in the discussion on Professor Fülleborn's paper. Phlebotomus fever was described and illustrated on the screen by Lieutenant-Colonel C. Birt, R.A.M.C., from experience gained in Malta, Crete, India, Aden, and elsewhere. The sandfly, *Phlebotomus papatasii*, he showed to be the carrier of the disease. Dr. L. L. P. Phillips (Cairo) read a paper on the same disease in Egypt; Dr. Andrew Balfour (Khartoum) and Dr. R. Row (Bombay), Dr. A. C. Parsons (Northern Nigeria) and Dr. F. M. Sandwith joining in the discussion. Dr. L. L. P. Phillips read a paper on typhoid fever in Egypt, and expressed the opinion that the disease was of a milder form than that commonly seen in Europe. Recent observations on the etiology of pellagra were made by Dr. Louis W. Sambon on the basis of experiences gained in Italy. Pellagra, he said, was not contagious; it was due to a protozoal infection, and would appear to be carried by *Simulium reptans*. Dr. Lavinder, U.S.A., spoke in appreciation of Dr. Sambon's work in Italy. Dr. Andrew Balfour read a paper on the question of water supply in the tropics, as illustrated by the supply for Khartoum, while human botryomycosis was the subject of a paper by Captain Archibald, R.A.M.C., from experience gained in the same locality. Mr. F. C. Madden, Professor of Surgery at the Egyptian Government School of Medicine, Cairo, read a paper upon the incidence of bilharziosis in Egypt and its clinical manifestations. The paper was illustrated by photographs. The last paper was one on dysentery, read by Major G. H. Fink, I.M.S.

ON July 25th Dr. Alexander George Duncan, late of Calton House, Ambhurst Park, who recently retired from practice after thirty years of professional work in the district, was presented with a handsomely executed illuminated address, accompanied by a purse containing a cheque for £200.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

Territorial Force Ambulance.—On Thursday in last week Lord Galway called attention in the Lords to the scheme for nursing the Territorial Force and to the arrangements by which the St. John Ambulance Association granted certificates. A great work had been done by this association in teaching people to give first aid in the 300 centres in England. Some difficulties had arisen, however, and the question he specially referred to was the granting of certificates. He did not want the standard lowered. It had been suggested that lectures might be given by nurses to women candidates, but he hoped the number of such lectures would be limited, and the remaining lectures and the examination for final certificates conducted by medical men. He hoped the War Office would insist on the certificate being given by an independent medical man. A large number of medical men had given their services in teaching gratuitously, but he understood that the British Medical Association was putting pressure on medical men to charge fees for these classes. He hoped that would not be carried to any great extent, as it would render the classes practically prohibitive. He especially urged that the standard for certificates should be kept up. Lord Lucas said, in reply, that he recognized the very valuable work done by the St. John Ambulance Association, and through their work the Red Cross Society had been able to organize a considerable number of voluntary aid detachments. He could assure his noble friend that there was no intention to lower the standard of efficiency. In the first place, it was a necessary preliminary before any body could go into a voluntary aid detachment that he or she should hold a certificate. He would qualify his statement that every body who went into these detachments was required to hold a certificate, by saying that it was proposed to make one or two exceptions for the benefit of specialists, such as people who had already been in the Regular, the Special Reserve, or the Territorial Army Medical Corps—pharmacists and people of that kind; but every one who joined for general duty would be required to possess a certificate. With regard to the nature of the certificate, there was no doubt that, though good work had been done by the St. John Ambulance Association, there was a great demand that the granting of certificates should be facilitated. In a number of places there had been a general desire to raise voluntary aid detachments, but for one reason or another the people who had intended to join had not been able to get the first aid certificate. It was therefore necessary to consider the acceptance of certificates other than that of the St. John Ambulance Association. The nature of those certificates had not yet been settled, but it was not intended that the certificate should be any lower than that of the well-known standard maintained by the St. John Association. As to whether classes should be trained by nurses or medical men, that was undoubtedly a very vexed question. There were a large number of people who considered that nursing should be taught by qualified medical practitioners, and there was another large section who held the opinion that the best persons to teach nursing were nurses. They had to reconcile those warring factions, and arrive at a conclusion which, while enlisting both parties in support, would not in any way let down the standard. This matter was being considered at the present moment by the Advisory Council. After a speech from Lord Knutsford on the value of the work of the St. John Association, and the present difficulties, Lord Dartmouth pointed out the dangers likely to arise from any friction between the Red Cross Society and the St. John Association. On the question of certificates, he said he understood that these certificates would be given by independent medical men. That the St. John Association was very anxious to insist upon, and also that there should be no lowering of the present standard. The noble viscount who initiated this discussion raised the question of instruction by nurses. To the ordinary mind instruction in home nursing given by a certified nurse was a very natural and desirable thing; but the great difficulty in introducing the question of home nursing lay in the fact that the British Medical Association would have nothing to do with it. That Association was a very powerful body, and if that point was lost sight of they might again find themselves in considerable difficulty with those medical men who were in the British Medical Association. He believed a great number of the most responsible medical men belonged to that union, and it was quite possible, unless they were very careful in this matter, that they might find themselves in the difficulty of not having the necessary medical men to give the instruction and the help required. While they had up to now in many cases been able to depend on the generous assistance of the medical profession in giving instruction free, he understood that in certain parts of the country medical men had been instructed that they must be paid for the work they did. That, of course, would add very largely to the expenditure. He referred to these points because if they were to have a satisfactory solution they would have to be carefully considered. The matter then dropped.

Army Hospital Accommodation.—Lord Dartmouth raised in the House of Lords last week the question of proper hospital accommodation at Lichfield. It was a large garrison and there were connected with it 242 women and 509 children for whom no sort of hospital accommodation was provided or any provision of nurses. Lord Lucas said he had not had time to inquire into this particular case, but he could state the general policy. In certain of the larger garrisons they did maintain military hospitals. They also maintained them for some of the smaller garrisons if a civil hospital was nowhere within reach. They did not, however, maintain hospitals in what might be considered the smaller garrison towns. But where they had these military hospitals, if there were more than 100 beds for soldiers they also maintained a certain number of beds and cots for women and children. They did not, however, recognize any actual responsibility with regard to that. In Lichfield they had not got a military hospital, and he was afraid they did not propose to maintain anything there in the nature of a hospital for women and children. They quite recognized and were grateful for the work done by the organization which maintained a nurse there. These women and children when they required special treatment could be admitted to the civil hospital, and if they did not require that they received medical attendance in their own quarters. That was the general rule with regard to places such as Lichfield, and he was afraid it would be useless to hold out any hope of being able to modify that. He would, however, inquire.

The Indian Budget.—Last week the statement of the Under Secretary on the Indian Budget excited much interest on account of the political position in the great dependency. After an exhaustive statement as regards the general prosperity of agriculture and trade, he turned to medical matters—plague and malaria. The former, he said, continued to puzzle and disappoint the medical and sanitary authorities. His predecessor last year was able to describe its decreasing virulence during the last two years, 1908 and 1909, as encouraging. It was hoped that the worst had been seen of the disease in 1906, as in that year the mortality from it dropped from over a million to 357,000. In 1907 this hope was falsified, as the mortality rose to upwards of 1,300,000. In 1908 the disease seemed again to be a spent force, as the deaths were limited to 156,000. It continued quiescent through 1909 with a mortality of 175,000. This year it had flared up once more, and from January to the end of June 374,000 deaths had been registered. As in former years, the disease this year had been most severely felt in the United Provinces and the Punjab. It was a local disease in the sense that it not only recurred in particular provinces, but in particular districts in these provinces. All investigations tended to prove that it was unconnected with local peculiarities of soil or drainage, or with the comparative wealth or poverty of the inhabitants. Science had helped in removing the mystery which once enveloped it, and in indicating measures by which it could be abated. The extermination of rats and fleas and the prevention of their importation from infected to healthy places were now

generally recognized as essential. Inoculation and the temporary evacuation of infected houses had proved valuable subsidiary measures. Knowledge on these points was spreading, and the general population showed an increasing willingness to co operate with the Administration in complying with the proper measures on the occasion of outbreaks. As the total mortality from all causes in British India, with its population of 226,000,000, exceeded 8 000,000 a year, the contribution which plague made to this death roll was, in most years, relatively small. The effect of malaria on the population at large was more serious than plague. Registration of causes of death was, in India, exceedingly imperfect, and the heading "Fevers" included a great deal besides death from malarial fevers proper, but in years when malaria was active the fever death-rate unmistakably revealed the fact. In 1908, when malaria of a very severe type affected the population of Upper India, the number of deaths registered under the generic title of "Fevers in British India" was 5,424,000, against about 4,500,000 in each of the two preceding years. This increase of over 900,000 deaths represented the ravages of malaria. The causes which brought about epidemics were obscure. They seemed to be connected with excessive rainfalls, which, by flooding the country with water, made it a vast breeding ground for the infecting mosquito. The Government of India was fully alive to the bearing of this lamentable mortality on the social condition of the people and the economic development of the country. In October, 1909, a conference convened at Simla by the Viceroy examined the subject most carefully, and submitted a programme of remedial measures, which it was hoped would not be without result. In the town sites improvements could be made which would keep down the mosquito. In the country the main defence must be prophylactic treatment by quinine. The Indian Government in the past had secured for the people by means of plantations and factories a large and cheap supply of quinine. The supply was now being largely increased and cheapened and more effectively distributed. By special grants in aid, and by improving the finances of municipalities and district boards, the Government of India had enabled the local sanitary authorities to make larger provision than in the past for drainage and site improvements. After some remarks on the opium revenue from Mr. Taylor and Mr. Lloyd, the rest of the debate was devoted to the purely political question of restrictive legislation.

Births and Deaths (Scotland).—Mr. Dundas White asked the Lord Advocate if he could say what had been the natural increase of the population of Scotland by the excess of births over deaths during the first six months of the present year. Mr. Ure answered that the births registered in Scotland during the period referred to numbered 64,233, deaths registered numbered 39,194, and thus the excess of births registered over deaths registered was 25,039.

Immature Meat Prohibition Bill.—Mr. Cathcart Wason introduced this bill last week to prevent the consumption of immature meat derived from the slaughter of calves immediately after birth. He said doctors did not quite agree as to whether this food was necessarily unwholesome. The veal consumed by the well-to-do was probably some four or five weeks old, but it was obviously improper that the poor should have this immature meat, slaughtered immediately after birth, sold to them. The bill was backed by Dr. Addison, Sir John Barlow, Mr. Falconer, Mr. Glover, Mr. Greenwood, Mr. Arthur Lee, Mr. Lonsdale, Mr. Walter Long, Mr. J. McVeagh, Mr. Munro Ferguson, and Mr. Wilkie. The second reading was put down for November 22nd.

Water Supplies (Protection) Bill.—Mr. J. G. Butcher asked the Prime Minister whether his attention had been called to the recent Report from the Select Committee on the Water Supplies (Protection) Bill; and whether, in view of the grave difficulties arising in connexion with the abstraction of underground water by water authorities and others, and of the demand for an alteration in the law as regards compensation for injury caused by such abstraction, he would favourably consider the recommendation of the Select Committee to the effect that a comprehensive inquiry into the whole subject of surface and underground water supplies should be held. The Prime Minister replied that he understood that prior to the appointment of the Joint Select Committee, his right hon. friend the President of the Local Government Board had decided to introduce a bill to give effect to the recommendations of the Royal Commission on Sewage Disposal endorsed recently by the Joint Select Committee. The recommendations of the Select Committee would be carefully considered by the Government in connexion with the bill in question.

American Meat (Importation).—Mr. Hunt, in a long question last week, quoted figures showing that a large number of carcasses of diseased cattle and pigs were imported into this country from America, and Mr. Burns said that the figures which the hon. member gave appeared to be taken from the Annual Reports of the United States Bureau of Animal Industry, but he had no means of verifying them. Under the Public Health (Unsound Food) Regulations, 1908, the medical officer of health was empowered to seize any article of food which was unsound, unwholesome, or unfit for human consumption. That officer had similar power in regard to home-killed meat. Mr. Hunt then pointed out that they were allowed to stamp some of those carcasses in America, and Mr. Burns answered that, whatever the American might do or stamp, no meat that answered to the description given by the hon. member was allowed to be landed in this country under the Act of 1908. Asked how the experts could tell if the diseased parts were cut out, Mr. Burns said that in many cases they could, and he was now taking steps to prevent any possibility of what the hon. member suggested occurring at all.

American Lard.—In reply to questions by Mr. Hunt respecting lard made from diseased swine, Mr. Burns said that the average quantity of American lard imported into this country every year would appear, from the Board of Trade Returns, to be more nearly 200,000,000 lb. than 2 000,000,000 lb. The fat extracted from carcasses condemned by the inspectors of the Department of Agriculture at United States packing houses was required by official regulations to be placed in specially marked containers, bearing the word "Inedible," before shipment. Under the Public Health (Unsound Food) Regulations, 1908, action had been taken by the Board and by British port sanitary authorities to prevent this material, when imported, from being used by lard refiners or for other food purposes.

Diseased Meat for Ship Stores.—Mr. Buxton stated last week that the Board of Trade had no power to inspect at United States ports meat supplied to British ships, but seamen had, under Section 198 of the Merchant Shipping Act, 1894, the right to complain if the provisions were unsatisfactory, and an inquiry was then held. Under Section 206 of the Merchant Shipping Act, 1894, the provisions intended for the use of the crew of any ship going from the United Kingdom through the Suez Canal or round the Cape of Good Hope or Cape Horn must be inspected by officers appointed by the Board of Trade. Under Section 26 of the Merchant Shipping Act of 1906 this inspection might be extended to any ship going from any port in the United Kingdom. If the inspector found the provisions deficient in quality, the ship could be detained until the defects were remedied to his satisfaction. Mr. Hunt then asked if there was no protection against diseased meat being put on board at American ports, and Mr. Tennant replied that the United States Government was perfectly able to protect its seamen from diseased meat. If there was any objection, an inquiry could be held.

Borax and Preservation of Meat.—Mr. Burns stated last week, in reference to the use of borax as a preservative, that in pursuance of the Public Health (Foreign Meat)

Regulations, 1908, certain meats such as tongue, tripe, and kidneys, which were formerly imported in pickle containing large quantities of borax, had ceased to be imported, and he did not at present think it necessary to take any further steps in the matter. He also said that any rules allowing borax to be used in America were dealt with under the regulations of the Food Act passed in 1907.

Dirty Bedding.—In reply to Lord Alexander Thynne, who asked for a bill to prevent dirty flock and loathsome material being used for bedding, Mr. Burns said he hoped it might be possible to introduce a bill dealing with this subject at an early date.

Anthrax (Outbreaks in Russia, India, and Egypt).—Mr. Stanier asked whether the President of the Board of Agriculture would ask the Foreign and Colonial Offices to procure reports on the history and outbreaks of anthrax in Russia, India, and Egypt, and inquire whether there was anything exported from those countries to this country that might carry the disease. Sir E. Strachey replied that investigations as to the possibility of the introduction of anthrax into this country by means of materials imported from abroad had been carried on by the veterinary officers of the Board in their laboratory for the last three years. Some information as to the position in the particular countries named was already available, and steps were being taken to supplement it as far as possible. The Board did not think that they needed to ask for the assistance of either the Foreign or Colonial Offices in the matter.

Boarded-out Children.—On the point of the regular visitation of boarded-out children by women visitors, Mr. Burns said last week that in connexion with any new Boarding out within Unions Order he should be happy to consider whether the provisions of the existing Order as regards the visitation of children required strengthening in any respect.

Malta Fever.—Mr. Chancellor asked the Under Secretary of State for the Colonies if the elected members of the Council of Government in Malta who had declined to concur in the appointment of a committee to consider further the origin of Malta fever, unless the inquiry was limited to the manner in which goats were infected, were paid officials who were largely responsible for the goat's milk theory; and whether he was aware that those members who were popularly elected were almost, if not quite, unanimous in their opposition to that theory. Colonel Seely answered that the elected members, with the exception of two who received remuneration as members of the Executive Council, were not paid by the Government; and their attitude on the question was as stated in the answer made on July 21st.

Invalidity Insurance.—Mr. Hicks Beach asked the Chancellor of the Exchequer whether he had communicated with friendly societies working under the Holloway principles in reference to his proposed scheme of invalidity insurance; and, if he had not yet done so, whether he would obtain the views of these societies on his proposals before the final form was decided upon by the Government. Mr. Lloyd George said that the answer to the first part of the question was in the negative. He could assure the hon. member that ample opportunity would be given to all persons interested to make representations to the Government before their proposals were definitely formulated.

The Adjournment of Parliament.—On Friday, July 29th, the House of Commons met at 12 o'clock, and after some discussion and two divisions the Declaration Bill was passed. A number of small bills were also given a third reading, and then the adjournment was moved till Wednesday, August 3rd, when the House of Commons finished its business and adjourned till Tuesday, November 15th.

EPSOM COLLEGE.

Mr. H. J. Mackinder, M.P., presented the more important prizes at his old school on Wednesday, July 27th, when there was a very large gathering of friends of the college. The weather was threatening early in the morning, but it proved to be fine throughout the day, thus enabling the visitors to inspect the numerous additions to the buildings which have been carried out during the past few years at a cost of close upon £20,000.

The Head Master gave his customary address in the big schoolroom, drawing attention to the importance of the carefully drawn up reports which are sent home in reference to the work of the boys. He emphasized the value of encouraging boys to read aloud during the holidays, and referred to the great structural improvements which the council had effected at the college in recent years, the school being now well equipped for taking 300 resident pupils. He said that at the present time there were 287 boys, which number was a record.

Mr. Mackinder referred to the great improvements which had been made at the college since he had walked up to a platform in that hall to receive a prize, and had captained the school fifteen about thirty years ago. He supported what the head master had said as to the need of reading aloud—an accomplishment that had been allowed to fall somewhat into disuse in modern days—and pointed out how useful such a practice was in helping one to understand the real meaning of a book. A person who could speak our noble language, using short, straightforward sentences, and who could look one squarely in the eye, was likely to be a manly, straightforward being. He was glad to hear the cheers that went up for the Officers' Training Corps when the head master referred to it, because there was a danger that many boys, when they left school, would forget the necessity for keeping their bodies physically fit. The temptation to spend one's life in a rush was increasing, and with the increasing power of our civilization men required poise, which they could not get unless their bodies were fit. A great deal of character came from physical fitness, which helped to make the perfect gentleman. Such a man was one who was always in possession of himself, who would not be rude when some one was rude to him, who could not be thrown off his balance, and who never forgot to be polite. Physical fitness was at the root of that perfect self-possession which in a large measure made the English gentleman. In conclusion he said that he wanted those who went through that school to win for it the proud reputation of making the old Epsomian known as a gentleman, an expert, and a citizen of whom his country was proud.

A vote of thanks to Mr. Mackinder for his speech was proposed by Sir Henry Morris, who observed that even if Mr. Mackinder had not spoken a word, but had merely appeared on the platform, he would have been a great living object-lesson to the boys, being, as he was, a man who both at school and at Oxford, and since leaving the University, had combined in a remarkable manner physical development with mental cultivation. He drew attention to Mr. Mackinder's work as Reader in Geography at the London and Oxford Universities, and as the director, for a time, of the London School of Economics and Political Science; and also to the reputation which he had made as a mountaineer and explorer. He was the first climber to reach actually to the summit of Mount Kenya, the highest mountain in British East Africa, being between 18,000 and 19,000 ft. This ascent he accomplished in 1899—not in 1889, as erroneously recorded in the Epsom College register—and his name was indelibly associated with the great East African rift valley country, as one of the valleys running west from the old volcanic pile of Mount Kenya was known as Mackinder Valley, it having been named after him.

Additions to School Buildings.

The following comprise the recent additions and improvements to the school buildings: The "Markham Skerritt" block, containing large physical and biological laboratories, with lecture-rooms, workshop, battery-room, a day boys' common-room, and four large, airy, and light class-rooms; a new large and most up-to-date gymnasium, with fencing gallery and Swedish exercise appliances; a new music hall for concerts and class teaching, and separate sound-proof music practice rooms; a new

armoury, with stands for 200 rifles; the extension of the shooting range to full regulation length; a new carpenter's shop, with large timber store; and a building giving additional box-room, changing-room, and lavatory accommodation. A heating installation throughout the whole of the buildings, new and old, has been provided on the "Reck" circulator system, together with a complete hot-water supply. The quadrangle has been extended, levelled, and asphalted, and a handsome covered way has been erected round the quadrangle, thus connecting the whole of the numerous buildings.

THE POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

A special general meeting of this Association was held in the Council Chamber, at 429, Strand, London, W.C., on Friday, July 29th, at 4 p.m. All Poor Law medical officers had been invited to be present, and Surgeon-General Evatt, C.B., was in the chair.

Among those present were Drs. G. Jackson (Plymouth), Drury (Halifax), C. Biddle (Merthyr Tydfil), Balding (Royston), Walter Smith (London), Carey Barlow (London), Holder (Hull). Dr. Cruickshank (President of the Association of Medical Officers of Heath) and Dr. Fremantle (M.O.H. of Herts) were also present.

Minutes.

The Honorary Secretary read the minutes of the annual meeting at Halifax. With some slight alteration, they were confirmed, and signed by the chairman.

Poor Law System.

The meeting then entered upon the consideration of the following resolutions, which had been referred from the meeting at Halifax:

1. That it is not desirable that there should be a "break-up" of the present Poor Law system. That proper reform of existing institutions would be better for the welfare of the sick poor and the good of the nation.
2. That any system in which *free* medical relief is given subject to no other condition than the *subsequent* recovery of the cost from all able to pay, would be pauperizing to the nation, and ruinous to the interests of all medical practitioners in poor districts.
3. That, except in urgent cases, some *test*, such as the present medical order, should be required of *all* applicants for State medical relief.
4. That there are no logical grounds for drawing any distinction between medical and other relief when granted by the State.
5. That the medical treatment of paupers, or State patients, by provident institutions is strongly to be condemned. That what is done for the State should be paid for by the State *at an equitable rate*. That the payments accepted at provident dispensaries in order to encourage individual thrift cannot form any sound basis for State payment for the medical charge of the destitute.
6. That a system of "part time" is better for the interests of the sick poor. That it is better for the latter to be attended by the same doctors as the rest of the community, rather than by officials appointed to attend only on the poor. That a system of "part time" medical officers lessens the distance that has to be traversed by applicants for medical relief, a matter of great importance in country areas.
7. That the Poor Law Medical Service, however it may be co-ordinated with the Sanitary Medical Service, should be kept separate from the latter.

They were taken seriatim. There was a difference of opinion with regard to No 1. Dr. Holder strongly objected to it, and others, who were in favour of the principle of the resolution, thought it inadvisable to stereotype it as the policy of the association. After considerable discussion, it was decided to withdraw altogether Resolution 1.

The same was done in the case of No. 4, although most present were in perfect agreement with the principle of the resolution, but it was thought inadvisable by some to put it forward, seeing that the franchise had been granted to the recipients of medical relief, and was not likely to be withdrawn.

With the exception of these two resolutions, all the others were almost unanimously carried, as they stand, with the alteration of "separate" into "distinct" at the end of No. 7.

Vote of Thanks.

The meeting separated with a vote of thanks to the Honorary Secretary for his work on behalf of the Poor Law Medical Service of England and Wales.

LOCAL GOVERNMENT BOARD FOR SCOTLAND.

The fifteenth annual report of the Local Government Board for Scotland has just been issued.

Poor Law.

Dealing with the Poor Law, the Board reports the number of poor in 1909 to be 113,259, being an increase of pauperism amounting to 2,054. The increase occurs mainly in the mining and manufacturing districts of the counties of Lanark, Renfrew, Dumbarton, and Stirling, and is due to continued depression in trade. Compared with 1868—the year of the highest recorded pauperism—the number of poor per 1,000 of population has fallen from 41 to 23—a decrease of 18 per 1,000 of the population.

The administration of parochial relief to pauper children by boarding them with respectable families in rural districts continues to be satisfactorily conducted, no fewer than 6,955 children being thus treated during 1909.

In connexion with the nursing of the sick poor, the Board still continue to hold two examinations—one in June and the other in December—for the certification of trained sick nurses. Thirty-six candidates sat for the June examination, and 40 for the December examination. Of these, 28 obtained the full certificate granted by the Board. The examiners state that the candidates generally showed a highly creditable acquaintance with the subjects on which they were examined, and gave evidence that they had been well and carefully taught.

Public Health.

Small-pox.—Only 6 cases of this disease were reported during 1909, as against 82 in the previous year.

Cerebro-spinal Fever.—One hundred and eighty-nine cases of this disease were intimated, a decrease on the number of the previous year. The mortality continues high, 125 of these cases proving fatal.

Phthisis Pulmonalis.—Regarding the notification of this disease the Board state that 24 districts and 32 burghs have obtained their approval to the addition of phthisis to the list of notifiable diseases. The Board do not insist on the provision of hospital or sanatorium accommodation as a condition of giving approval to the extension of the Infectious Disease (Notification) Act to this disease. Several local authorities utilize small-pox hospitals or empty wards in ordinary infectious diseases hospitals for the treatment of cases.

Vaccination.—There is an increase in the number of defaulters as compared with previous years; this the Board attributes to several causes: (*a*) A general impression among the people that vaccination is no longer compulsory; this impression may be due partly to a misunderstanding of the terms of the Vaccination (Scotland) Act, 1907, and partly to the fact that for six months after the passing of the Act the issue of the usual notices were suspended to permit of declarations of conscientious objection being made and delivered to the registrar; (*b*) failure of the registrars to transmit the notices; (*c*) depression of trade; and (*d*) emigration; 2,677 tubes of glycerinated calf lymph were supplied to parochial vaccinators during 1909.

The remainder of the report contains a series of appendices which deal with the reports of the general superintendents, extracts from the annual reports of medical officers and sanitary officers dealing with any special subject which may have occured in their districts during the year, with circulars on public health matters, and vaccination. It concludes with statistical tables, abstracts, and returns.

The report is a valuable one, embracing, as it does, the work done in the various departments controlled by the Local Government Board.

His Majesty the King has graciously consented to become the Patron of the Royal Meteorological Society.

Dr. H. F. Stokes, one of the London County Council's district medical officers, has been retained as medical adviser in connexion with claims arising out of accidents on the tramways.

Fleet Surgeon G. T. Collingwood, Royal Navy, holding office at the Royal Naval College, Osborne, has been appointed a Member of the Fourth Class of the Royal Victorian Order, dated July 24th.

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THE BOARD OF TRADE COMMITTEE ON COLOUR BLINDNESS.

We have received a copy of a letter written to the Assistant Secretary of the Marine Department of the Board of Trade by the Imperial Merchant Service Guild. The Guild takes exception to the composition of the Departmental Committee on colour blindness, which is constituted as follows: The Right Hon. Arthur Dyke Acland (Chairman), Lord Rayleigh, O.M., F.R.S., Sir Arthur Rücker, F.R.S., Mr. Raymond Beck, Captain Thomas Golding, Professor Francis Gotch, F.R.S., Mr. Norman Hill, Mr. Edward Nettleship, F.R.C.S., Mr. J. H. Parsons, F.R.C.S., Professor J. H. Poynting, F.R.S., and Professor E. H. Starling, M.D., F.R.S., with Dr. William Watson, F.R.S., and Mr. S. G. Tallents as Secretaries.

The Guild understood that shipping organizations were not to be represented and that the Committee was to be a small one. In consequence it took no steps to secure representation. But the Guild now finds that eleven gentlemen have been selected. Of these, one is the secretary of the second largest association of shipowners in this country, another is a distinguished underwriter, while a third is an Elder Brother of Trinity House. Yet the Guild is excluded from any representation.

The Guild further objects that the Royal Society is so largely represented. It points out that the Board of Trade's position with regard to these eyesight tests is impugned not nearly so much as is that of the Royal Society, who recommended in 1892 all the tests used to examine seamen. It feels that it is now conclusively proved that these tests, and more particularly the tests applied to candidates on appeal after failure in colour vision by Sir William Abney, are discredited and useless for their purpose. The Royal Society is on its defence, and must defend the recommendations which it laid before the Board of Trade, and which are now discredited on all hands, more particularly by the most eminent ophthalmologists who have devoted special study to colour vision.

The letter then raises the case of Mr. Trattles, who, after being rejected by Sir William Abney, was, it states, proved by practical tests to be efficient in discriminating between the coloured signals used at sea.

The argument of the letter, then, is that Sir William Abney decided that Mr. Trattles was colour blind, using tests which had been recommended by the Royal Society, and that further practical tests at sea proved that he had normal colour vision. Sir William Abney's assistant, the letter states, is acting as secretary to the committee, which consists largely of Fellows of the Royal Society. It would seem, therefore, to be implied that the committee is strongly prejudiced in favour of the methods used by Sir William Abney and recommended by the Royal Society.

The whole question of colour vision is a highly scientific subject which can only be efficiently handled by physicists, physiologists, and ophthalmic surgeons. All these experts are to be found on the committee, and in addition a distinguished seaman is present to supply technical knowledge with regard to the special circumstances under which a seaman has to recognize signals. There seems to us to be no adequate reason why the Guild should be specially represented; the matter is not a question of marine politics but of pure science. The attack upon Sir William Abney is easily met. It must be perfectly obvious to all thinking men that if any individual makes any definite mistake in the wool test, by matching colours which a normal child would not match, he must be utterly unfit to keep watch at sea. But even when these mistakes have been made, the Board allows an appeal to a higher court. At the second examination the candidate is examined with pure spectral colours colours which are perfectly obvious to a normal child. Any error should at once disqualify. The wool test is easily passed by many colour blind persons, and so the fact that an officer once passed does not show that he has normal colour perception, and when he makes a gross error it is proof that he is unfit for command. The so-called practical test, to take a suspected candidate out in a steamer at night and test him on the lights seen, is in no sense a scientific test. The intelligent officer steaming down the narrow channels of the Thames or Mersey knows perfectly that ships seen to port will show red lights, and he is helped by the fact that the masthead lights are much more brilliant than the port red lights, which in turn are brighter than the green starboard lights. Again, the white lights are high on the mast, the side lights low. The position and colour of the lightships on the Thames and Mersey are well known, and the whole examination is an easy game of guessing. It is a well known fact that there are many marine officers and engine drivers who are colour blind, and yet manage for years, it may be, not to make mistakes; but sooner or later on a misty night the error is made, and a fatal accident may occur. We ourselves should be very unhappy to be passengers in a ship navigated by officers who could not pass Sir William Abney's more recent spectroscopic tests.

There is no doubt that the Royal Society made a great error in recommending Holmgren's wools as a sole and an efficient test. They are thoroughly inefficient, and should be replaced by a lamp test.

In one respect the committee is open to grave objection. It does not include Dr. Edridge-Green, who has devoted his whole life to the special study of these problems and whose advice the Board of Trade set aside when it adopted the recommendations of the Royal Society.

THE ETIOLOGY OF GENERAL PARALYSIS.

Some years ago Ford Robertson, McRae and Jeffrey demonstrated the frequent existence of an organism resembling the Klebs-Loeffler bacillus in the respiratory and alimentary tracts of general paralytics. To this organism, which they named the *Bacillus paralyticans*, they attached etiological significance. It may be recalled also that Ford Robertson and Shennan carried out experimental investigations into the pathogenicity of this organism in animals; the inoculation of the organism, they said, producing marked inco-ordination of movement, dyspnoea and great drowsiness, and the

animals showed *post-mortem* changes in the central nervous system which had "distinct resemblances to those which occur in dementia paralytica." These results have remained unconfirmed by other workers in this field; in fact, Dr. Froude Flashman and Dr. Eyre, working in the laboratory at Claybury, found no evidence that diphtheroid organisms were more common in the throats of general paralytics than in the throats of the subjects of other forms of insanity or of sane members of the general population; whilst J. P. Candler, as the result of the examination of the respiratory, alimentary, and genito-urinary tracts of the cadaver, and of the urine, blood and cerebro-spinal fluid during life, came to the conclusion that there was no evidence to warrant the statement that any particular species of the diphtheroid groups is endowed with specific pathogenic and paralytic properties. Dr. Ford Robertson and his colleagues, however, persevered in their researches and with improved technique succeeded in finding the organism in almost all the tissues of the body. They found also that diphtheroid organisms ingested by leucocytes obtained from cases of general paralysis were more rapidly digested than were those ingested by normal leucocytes, and still later they were able to produce antiserums whose inoculation into general paralytics was followed in some cases by decided improvement.

The results obtained by Dr. Ford Robertson and his colleagues receives some support from investigations since carried out at the pathological laboratory of the New South Wales Lunacy Department by Drs. Froude Flashman and Oliver Latham.[1] After a general review of the whole matter they point out the absence of any detailed accounts or illustrations of changes resembling those met with in the brains of general paralytics in the animals treated by Ford Robertson and his colleagues. They concede that the absence of such changes from the brains of rats dying after a few weeks or months of illness could not be held to negative the theory; but at the same time maintain that the demonstration of these changes would add a strong link in the chain of evidence. This missing link they claim to have supplied. A diphtheroid organism, isolated from a case of general paralysis was grown by them and injected into a rat. The animal became paretic, feeble, lethargic, and died, and, they say, examination of the nervous system revealed "in marked degree all the changes we are accustomed to regard as typical of general paralysis." Altogether fifteen rats were either inoculated with bouillon filtrate, or with bouillon filtrate and living bacilli, or were fed on living bacilli or injected with diphtheroid toxins. Of the fifteen two escaped and the tissues of two more were lost. Of the remainder, in one the histological changes comprised overgrowth of neuroglia, peri-arteritis, numerical increase of vessels of the cerebral and cerebellar cortex, intense engorgement of the pia, and degeneration of the nerve cells. Although these changes were signally marked in only one, the tissues of nearly all the remaining animals showed something of these changes. The other organs also gave well marked evidences of toxic action, in the lungs broncho-pneumonic patches, and in the liver congestion, with increase of fibrous elements; the kidney changes included cloudy swelling of the convoluted tubules and patches of lymphocyte invasion. Drs. Flashman and Latham therefore consider the fact to be established that diphtheroid organisms administered in a suitable way over a long period can produce marked cerebral changes, the chief of which are overgrowth of neuroglia, peri-arteritis, chronic thickening of the pia arachnoid and destruction of neurones. They maintain that syphilis is the prime factor in the causation of general paralysis, but whether it alone suffices to produce the condition, or whether it requires to be aided by bacterial influences, requires, they say, further investigation.

The results of the Wassermann reaction in the cerebro-spinal fluid of general paralytics leave little room for doubt as to the prime importance of previous syphilitic infection, but the results of Drs. Flashman and Latham are of great interest and certainly seem to warrant their statement that the changes found in the brains of general paralytics are not specifically characteristic of that disease, but indicate the reaction of the brain to some chronic form of poisoning.

A very lucid description of the Wassermann method and its diagnostic value in syphilitic and parasyphilitic diseases of the nervous system was contained in Dr. Mott's admirable Morison Lectures on the pathology of syphilis of the nervous system, published in the BRITISH MEDICAL JOURNAL[2] last year. Dr. Mott pointed out the great value of this reaction in general paralysis. Drs. Froude Flashman and Graham Butler have also carried out a long series of investigations in general paralytics and non-paralytic insane which entirely confirm the results obtained by other workers in this particular. Their clinical material was composed of 61 cases diagnosed as general paralysis and 8 cases suffering from other forms of mental disorder. Of the cases diagnosed as general paralysis, the cerebro-spinal fluid in 55 gave a positive reaction; in 2 the serum, but not the cerebro-spinal fluid, gave a positive result; whilst in 4 the reaction in both serum and cerebro-spinal fluid was negative. The further history of those whose cerebro-spinal fluids gave negative results is interesting. One at the time when the report was written was still regarded as a general paralytic by clinical experts, 1 was found to be a paranoiac, 2 were considered to be cases of organic dementia, another a tabo-paretic with predominating tabetic symptoms, and the last a secondary dement. With one exception, therefore, all of the undoubted cases of general paralysis gave positive results to this reaction. With regard to the cases of non-paralytic insanity, used as controls, none gave a positive result with either serum or cerebro-spinal fluid. Such results strongly confirm the belief "no syphilis, no general paralysis," and suggest that in cases where no history of previous syphilitic infection is obtainable either the history or the diagnosis is at fault.

Among other matters of theoretical interest in this relation, the fact that a degenerative process, associated with the breaking down of nervous elements in the central nervous system, is an essential feature of general paralysis and tabes, suggested to Drs. Flashman and Butler the possibility that in other conditions, where extensive destruction of nervous tissues is taking place, similar results might be obtained. They therefore examined the serum and cerebro-spinal fluid of three cases of extensive vascular cerebral lesion, but with entirely negative results. No evidence whatever was obtained of the specific "complement deviation," and the total albuminous content, as shown by precipitation with

[1] Reports from the Pathological Laboratory of the Lunacy Department, New South Wales Government. Vol. ii, Part I. 1910. W. A. Gullick, Government Printer, Sydney. (Pp. 111. Price 4s. 6d.)

[2] Vol. i, pp. 474, 521.

salicyl-sulphonic acid, was the same as in normal cerebro-spinal fluid. It should be remarked that at the outset of their investigations Drs. Flashman and Butler had satisfied themselves that there was a marked difference between the albuminous content of general paralytic and normal fluids. Thus, in 16 cases of general paralysis, each giving a positive Wassermann reaction, the amount of albumen precipitated ranged from 0.01 c.cm. to 0.045 c.cm.; whereas in 2 other cases—one of paranoia and the other of delusional mania—the amount of albumen precipitated was 0.007 c.cm.

In their general discussion of the relation of general paralysis to syphilis the authors point out that it is generally accepted that this is an extremely remote one, and due not to the direct action of the spirochaete but to certain degenerative processes brought about by profound alteration in the metabolism of the body as the result of previous syphilitic infection. On the other hand, they are inclined to find an explanation of the relationship between syphilis and parasyphilitic diseases in the theory, suggested by Mott and others, of latent spirochaete infection. "It certainly seems possible," they say, "that in an apparently cured or recovered case of syphilis an attenuated infection, or a focus, encapsuled, or otherwise rendered temporarily incapable of producing toxic results, and possibly incapable likewise of producing demonstrable 'antibody' formation (meaning thereby the bodies which produce the specific complement deviation of the Wassermann reaction), may exist in the body, capable under special circumstances of being roused into activity, and of giving rise to tissue change, local or general, slight or extensive, with the accompaniment of the formation of deviating bodies. . . . The disappearance, under treatment and otherwise, of the Wassermann reaction, and the latency and recrudescence of syphilis in its various forms, may thereby be explained." In any case, they are persuaded that the bodies in the fluids which bring about the specific reaction are not fortuitously produced by the tissues as a remote result of the presence of spirochaetes, but that they are, and will ultimately be shown to be, due "in the most direct manner to the action of the infective agent, and to be, therefore, antibodies produced by the spirochaete antigen."

THE ANNUAL MEETING.

GENERAL NOTES.

The great event of the year is now a thing of the past, so far as the greater number of members of the Association are actively concerned. That the meeting was highly successful there is no doubt whatever. There were, of course, points in which matters might conceivably have been improved, but it would be a curious kind of meeting of which the same could not be said, and considering the vastness of the scale of the whole of the arrangements on this occasion the openings left for reasonable criticism were remarkably few. Up to the time at which we went to press last week, nothing of material importance in this direction had come under notice, and the same is true at the present moment. Even if the facts were otherwise the debt of the Association in general to the hosts on this occasion, the Metropolitan Counties Branch, and to its executive and administrative officials, would still be a great one. Only those who have ever essayed the task can fully realize the amount of work entailed by the preparations for an annual meeting and the extent of the exertions undergone by those responsible during the week of the meeting for the actual working of the machinery laid down. In any case the Branch can congratulate itself on having been well served by all who represented it, from the President of the Association whom it is proud to possess as a member in the person of Mr. Butlin, right through the list of chairmen, secretaries, and members of committees, not forgetting, of course, the General Treasurer, Mr. Betham Robinson. On the great services rendered by the Honorary General Secretaries, Dr. Lauriston Shaw, Dr. E. W. Goodall, and Dr. W. Griffith, all are agreed. The whole success of a meeting turns on the ability, energy, and tact of the general secretaries, and the Branch, in making the appointments, could not have exercised its choice more happily. On the foregoing point we had something to say last week, and in the same issue we were happy to be able to supply members of the Association, whether present at the meeting or otherwise, with an account of everything which had happened up to the penultimate day of the meeting, including a complete report of the long debates carried on at the numerous sessions of the Representative Body, summaries of the first day's occurrences in the twenty-one Sections, and descriptions of the principal social events of a very busy week and of all the elaborate arrangements made. There are still several matters of this kind to which attention must be drawn, but it would scarcely be desirable to give a detailed account of each of them. The arrangements for the social side of the meeting were of so lavish a kind that anything more than an outlined sketch of events would occupy far more space than could well be spared for the purpose in a journal whose primary object is scientific.

HERALDRY.

Our half-fear that some heraldically hypercritical person might favour us with his views on the Presidential badge presented last week to the Association by the Metropolitan Counties Branch has so far not been realized. We are glad, therefore, to assume that the badge is as little open to exception in point of heraldry as it is attractive in respect of execution and design. On the other hand, fault has been found with our description of the outer line of the decorative frame by which the plaque bearing the figure of Hygeia is surrounded. We are told that the shamrock of Ireland appears on the left side, not on the right; but we take it that, after all, this depends on the point of view from which the badge is regarded. From that of the observer the shamrock is certainly on the right side; but from that of the wearer—which is, perhaps, the more important—it is on the left. We are judging, of course, from the coloured engraving of the badge provided by the excellent guide to London handed to each member of the Association so soon as he registered his name, and which was described in last week's issue. A further criticism is in respect of the position we assigned to the thistle of Scotland and the leek of Wales. In the light of the remarks made by our well-informed critic, we are fain to believe that we exhibited somewhat less discrimination in the matter than might either a donkey on the one hand, or a French cook on the other, and that it is, in fact, the leek, not the thistle, which figures at the lower extremity of the frame. The thistle is on the right as the badge is worn. We make this confession with the humblest apologies to all those who deem the mistake one of importance, and trust that no Scotsman or Welshman will consider the confusion a national insult. We are fully aware that the thistle is the rightly cherished emblem of Scotland, and the leek that of Wales, and honour them both equally. Our failure, in short, to distinguish the one from the

other was due neither to heraldic nor horticultural ignorance, but to the somewhat minute size of the picture before us. It should further be noted that in the report of Dr. Ford Anderson's speech in presenting the badge, which was published in the SUPPLEMENT last week, the word "plurally" crept in before "emblematic." In view of the manifold symbolism of the badge this might perhaps be called *felix culpa*; but of course the word actually used by the speaker was "florally." Finally it may be added that the gift made to Mr. Butlin of a replica of the badge was a personal offering to him by the Branch, and that it is not intended to impose the payment of similar honour to each successive President on the Branch from which he happens to be drawn.

THE LADIES' DINNER.

IT has been a laudable custom for many years past to provide some special amusement for ladies during the holding of the Annual Dinner, and this year saw a new departure in this direction. It was one which is possibly a sign of the times, for the entertainment provided was on all-fours with that which had led to a temporary separation of the ladies from their partners. In other words, they were invited to a dinner at the Hotel Cecil. It was a singularly well-managed affair, and brought together between 300 and 400 ladies, few of whom, it may safely be asserted, had ever before found themselves seated amid such numbers at a meal in an Adamless Eden. Indeed, the sole guest representative of the inferior sex was one of a class which on such occasions plays an important but quite unrecognized part—to wit, a newspaper reporter. He was alone in his glory, not because he was the only representative of a newspaper present, but because all other papers had risen to the greatness of the occasion, and sent lady members of their staff to bring them a report of the proceedings. The ladies who had the making of the arrangements in their hands, Mrs. Butlin, Mrs. Scharlieb, and Mrs. Willey, by a very happy thought appointed a large number of stewards, each of whom was in charge of the ladies whose seats were to be near her, and took care to make their acquaintance. It was, doubtless, a conception born of much experience of feminine gatherings, and contributed materially to the success of the evening. The chair was occupied by the Chairman of the Ladies' Reception Council (Lady Aberdeen), whose health was in due course proposed by Mrs. Butlin. In performing her pleasant task Mrs. Butlin paid a just tribute to Lady Aberdeen's work for, and with, women. Her exertions on behalf of her sex, she said, were known to many, but it was not so well known, perhaps, that she had worked with the medical profession for the prevention of disease. All present would be glad to know that her contributions to the progress of the campaign against tuberculosis had been appreciated abroad as well as at home, and that next October she was to receive a gold medal from a French society interested in the same work. In acknowledging the toast Lady Aberdeen said that she believed the world was at length beginning to realize how much it was indebted to the medical profession, but she wondered if it realized equally how much it owed to wives and daughters who, in their efforts to help their male relatives in their work of serving humanity, had often to sacrifice so much. On the conclusion of the dinner, nearly all present moved on to the Lyceum Club, which provided not only an entertainment but carriages to bring its guests. Its rooms were thronged to a very late hour, those present being provided with an opportunity of forecasting the outcome of the present suffrage contest by listening to a play by Miss Cicely Hamilton and Mr. Christopher St. John, entitled "How the Vote was Won." The string quartette band of this stronghold of feminine brains was also to the fore, and discoursed most excellent music. As might have been expected, this evening made it clear that women have nothing to learn from men on the subject of entertaining, even when the lines followed are of a somewhat novel order.

AT THE GUILDHALL.

THERE are those who hold that by way of making visitors to the Annual Meeting rapidly known to one another personally a dance should find an early place in the list of relaxations. It is a point of view for which there is much to be said, and this year was very nearly met by the party given by the Corporation of the City of London on Wednesday. It was a *conversazione* on a very large scale, and in every way in keeping with the reputation of the City of London in respect of the munificence of its hospitality. The guests were received by Sir John Knill and the Lady Mayoress, supported by Sir Thomas Crosby and the Sheriffs and their ladies, in the great vaulted hall famous for centuries as the common meeting place of all freemen of the City of London, as the habitual residence of the City's tutelary genii, Gog and Magog, and as the scene of the innumerable dinners given in celebration of each Lord Mayor's attainment of office and in honour of Royal and other notable representatives of all nations. The guests found that a multiplicity of pastimes had been provided for their amusement. Two bands, that of the Royal Artillery and that of the Coldstream Guards, were in attendance, as well as Lawler's Ladies Orchestra. Besides this a further aural feast was provided by past and present students of the Guildhall School of Music. Nor were there lacking feasts of a more tangible but not less artistic kind. In other words, the needs of the inner man were very amply met, refreshments being served in the crypt under the new Council Chamber, in the ancient crypt adjoining the museum, and in the library reading room; while two of the committee rooms were prepared for the use of smokers. In addition, a selection of the City's treasures in the shape of books, charters, and other manuscripts, had been laid out for examination, and in the Art Gallery there were many examples of the work of old and modern masters to be seen. As for dancing, this commenced quite early in the evening in the Library, which had been provided for the occasion with a special and very excellent floor. Medical men being nothing if not investigators, it was natural that the quality of the floor should rapidly be put to the test, and in a very short time numbers of academic gowns were to be seen floating over its surface and vieing with the tone of the ladies' frocks. The change of scene from that in which the wearers of most of those robes had been engaged in the morning was indeed remarkable. The rapid success of this dance, if news of it spread in London, might possibly lead next season to despairing hostesses of lazy dancers insisting on the wearing of university costume in place of the black coat of ordinary male humanity. For the rest, we observed with interest that a melody of American origin familiarly known as "Yip-i-addy-i-ay" seemed to exercise much the same fascination on ears attuned to scientific phraseology as it has for long past on the frivolous-minded of all nationalities. Possibly a desire that no wallflowers should find place amid the other floral decorations counted for something, but on the whole we are disposed to conclude that while the charms of music are sedative to the savage breast, their effect on the medically learned are mainly stimulant. In this case the failure of a certain number to exhibit co-ordinated movement of an otherwise choreic order must have

been due to inability to find a partner rather than to any preference for engaging in scientific discussion of the true significance of names such as "Mandy on the Mash," "Tesoro Mio," "Lucky Duck," and "Yankee Grit." For this very pleasant evening members are partly indebted to Sir Thomas Crosby, who is an ex-sheriff of the City of London, and despite his active practice of medicine still contrives to find time to play a very influential part in its affairs.

At Ranelagh and South Kensington.

Both the entertainments at which the President, Dr. Lauriston Shaw, and the members of the Metropolitan Counties Branch were the direct hosts were an entire success, a fact on which those who mainly organized them, Professor H. R. Spencer and Dr. R. E. Crosse, may rightly plume themselves. The evening event, a *conversazione*, was held in the Natural History Museum, South Kensington, and brought together an assembly of well over three thousand persons. It need scarcely be said that the evening was a pleasant one, nor yet that it offered the studiously minded an admirable opportunity of testing how far they had really absorbed the information on the subject of academic costumes which we laid before them in the Journal issued in the week immediately preceding the meeting. This *conversazione*, taking place as it did on the night of the very last day of the meeting, also furnished occasion for exchange of experiences among members, for the healing of any differences arising in the course of the scientific discussions, and for expressions of goodwill between comparatively new acquaintances; it gave every one, too, a valued chance of meeting old friends who had elsewhere been missed, and for making arrangements for further meetings in the early future or on a similar occasion next year. An entertainment of this semi-informal character is a very desirable feature of all meetings, for it fulfils a considerably more useful purpose than that of merely passing an evening in an agreeable fashion; even the nods and smiles interchanged and the passing snatches of conversations all help to promote that feeling of goodwill and recognition of common interests in which the true strength of the British Medical Association lies. The other entertainment took place on Thursday afternoon at Ranelagh, and was a magnificent exemplar of those habitually held at this the resort of fashionable London, the sole one of its kind which still retains its ancient renown. As usual, the principal entertainment apart from conversation, listening to a band, the sampling of refreshments, and the examination of frocks and head gear, was watching a polo match, the games being played on this occasion by Ranelagh *v.* Storks. The general character of the afternoon will, however, best be summed up by quoting what must certainly be regarded as the real *bon mot* of the whole meeting. "These British Medical people," said a very portly member of the menial staff of the Ranelagh Club House, "are really quite decent"!

At St. Albans.

One of the most successful events of the week was the expedition on Friday afternoon to St. Albans. Those who took part in it were the guests of Dr. Eustace Lipscomb, late President of the South Midland Branch of the Association, and present Mayor of St. Albans. They left town from St. Pancras Station in three saloon carriages soon after mid-day, and on their arrival were driven in brakes to the Town Hall. There they were welcomed by Dr. Lipscomb, and then sat down to luncheon forthwith. On its conclusion there was a pleasant interchange of toasts between guests and host, and then, after a short interval for coffee and cigarettes, the party proceeded to the abbey, which, as the Dean himself acted as cicerone, they examined in very advantageous circumstances. He explained in very interesting fashion the history of the fabric, the important part which it had played in the history of Christianity in these islands, and the fashion in which its hidden beauties had been and still were being slowly revealed. Later on a visit was paid to the old site of Verulam (from which Francis Bacon took one of his titles), about a mile distant, where the very ancient edifice which marks it was explored. Finally a return was made to St. Albans, where Mrs. Lipscomb was "at home," tea being served in a charmingly old-time garden to the strains of an excellent band. It was not until after seven o'clock that the party re-arrived in London, but for most of its members the seven hours had passed with amazing rapidity. Still, after all, this is not so remarkable, for there could not be found any pleasanter fashion of exploring the varied treasures of a town which if situated at a greater distance from London would be much more familiar to most people than is actually the case. The general ignorance regarding St. Albans was neatly brought out by the Dean, who could not extract a single correct answer to his non-coupon competition on the subject of what is the highest placed building of the cathedral order in England. It appears that St. Albans Abbey lies at an elevation of over 300 ft., and is thus higher than either Lichfield, Durham, or Lincoln; the highest site of all we understand to be that occupied by the new Pro-Cathedral of Birmingham, though it only exceeds that of St. Albans by a very few feet.

Various Entertainments.

Of the annual dinner on Thursday night, July 28th—a Brobdingnagian affair in the way of dinner parties, attended by over 700 members—it is hardly necessary to speak, since a full account of the doings thereat will be found in the Supplement to this issue. To many, however, the name of the place at which it was held is likely to be unfamiliar, so it may here be noted that "Connaught Rooms" is the new designation of one of the few remaining representatives of the famous London taverns of the past. The rooms are situated in Great Queen Street, a thoroughfare not yet unhappily improved out of all recognition by students of London history, and were formerly known as the "Freemason's Tavern." To many of the hospitalities offered to members it is impossible to allude, even by name. The doors of every institution, directly and indirectly connected with medicine, if not positively thrown open, were all upon the latch, and, thanks to Dr. Craig, many private clubs admitted the medical visitors to temporary membership. Private hospitality in the way of providing house room for the week, organized by the same official of the Branch, was equally widespread, and there were various private entertainments, such as the supper party given on Saturday at the Savage Club to members of the Dermatological Section and others by its President, Dr. Phineas Abraham, and sundry hospitable efforts, to which allusion was made last week. There were also the daily visits and receptions at the hospitals, the medical schools and places such as the Sesame Training Home, the Passmore Edwards Settlement, and the Royal Sanitary Institute. A mere list of the manufacturing and other premises whose managers kindly made arrangements for their examination by visitors, would alone occupy considerable space, and it can only be said that the exceptional opportunities thus offered were greatly appreciated. Included in

the list of possible visits was one to the offices of our contemporary the *Daily Telegraph*, at an hour when everything was in full swing. The opportunity was not lost by any who could secure tickets, and the proprietors took care that no one should leave unrefreshed bodily, as well as provided with at least a misty idea of the operations which daily result in the appearance of what is perhaps the most enterprising of all the great dailies. Some further reference to these and all other connected matters, including the exploration of Johnsonian haunts, which Dr. Withers Green kindly repeated on Friday, will be found in our issue of July 30th. Mention was likewise then made of the excellence of the arrangements for the reception of ladies—in the working of which Miss Boileau, M.D., played a most useful but fatiguing part—and for their amusement during Section meeting hours. For the latter Mrs. Rose Bradford and Mrs. Dudley Buxton were responsible. Indeed, the whole of the arrangements were carefully thought out, and there must have been very many active unseen workers. For that reason we are all the more sorry to be unable to do more than refer cursorily to the few busy organizers of social functions across whose path we happened to pass.

PALAEOGENESIS.

SIR JONATHAN HUTCHINSON performed an excellent service to members by providing in an annexe of the Medical Museum a very large series of paintings and other pictures illustrative of the doctrine of palaeogenesis, of which he is the chief exponent. So far as we understand the theory in question it is to the effect that there exists an ancient type-pattern of skin, and that though the variety of patterns to be found among animals is now infinite it is possible, with sufficient patience, to trace out certain points which ally all patterns so closely to one another as to justify a belief in their common origin. Additional interest is lent to this study by the fact that those conversant with it are able to trace in various skin diseases a relation between their naked-eye phenomena and the original type-pattern. The illustrations provided by Sir Jonathan Hutchinson included (*a*) ten frames containing drawings of pigmentary syphilis collected from the published works of Fournier, Chotzen, Neumann, and Kaposi; (*b*) eight frames containing pictures of acanthosis nigricans illustrating cases published by Radcliffe Crocker, Kaposi, Pollitzer, and others; (*c*) seven frames containing collected illustrations of Addison's disease; (*d*) three frames containing collected illustrations of xanthelasma of the eyelids; (*e*) an original drawing showing white eyelids with symmetrical patches after destructive inflammation of the eyes; (*f*) four frames containing illustrations of melanotic lentigo of the lips and mouth; and (*g*) as many as thirty-five frames covering a series of illustrations of colour patterns in various animals and proving the close resemblances in this respect to be found in very different species. Since there are probably few members who found sufficient leisure during the course of the meeting to examine this exhibit thoroughly, we mention that there was obtainable an excellent excursus on the general theory of palaeogenesis, accompanied by some very clever illustrations, and that copies can probably be obtained by those interested on application to Sir Jonathan Hutchinson. It may also conveniently be mentioned here that in the SUPPLEMENT to this week's issue will be found as full a description as we are able to supply of the remarkable Medical Museum, for the existence of which members were indebted to Mr. H. W. Armit, the Secretary of the Medical Museum Committee. For many of the descriptions of different sections we have to thank the honorary curators in charge of them. To the permanently valuable character of the catalogue issued in connexion with the Museum allusion was made last week. Copies are still obtainable, it is believed.

THE POLICE SURGEONS' ASSOCIATION.

AMONG the many bodies which took advantage of the presence in London of such a large number of medical men was the Police Surgeons' Association which was granted the use of the Council Chamber at 429, Strand, on Friday, and met for its annual meeting, under the presidency of Mr. Nelson Hardy. The report put in stated that it had hitherto still proved impossible to secure for medical witnesses adequate remuneration for their services. It was hoped, however, that by the concerted action of police surgeons at the next general election a future Government would be induced to reconsider the whole question of increased remuneration. For this purpose members were asked to interest their prospective parliamentary representatives and obtain their support and opinion by sending them cards of inquiry immediately before the next election. The question of the provision of ambulances for the metropolis was brought up by Mr. Nelson Hardy, who moved: "That the United Kingdom Police Surgeons' Association desires to draw the attention of the Home Secretary to the inadequate provision of ambulances in the public service within the metropolitan district of London." It was explained that the present position was that the London County Council had promoted a bill to enable itself to provide ambulances, but it had not put those powers in force and apparently did not intend to do so; while past Home Secretaries, under whose control were the Metropolitan Police, had considered the matter would be too expensive. It was to be hoped, however, that Mr. Winston Churchill would take a different view of the matter if he were approached. The resolution was seconded by Mr. Morison and carried unanimously. Mr. William Powell, of Cheltenham, was elected President for the year, and the name of Mr. Nelson Hardy was added to the list of vice-presidents. Mr. H. Powell, of Cheltenham, was elected Joint Honorary Secretary with Mr. W. H. Whitehouse in place of the new President. The Council was re-elected with the addition of Mr. Wolverson, of Wolverhampton, in place of Mr. H. W. Roberts, of London.

THE ANGLO-AMERICAN MEDICAL SOCIETY.

ANOTHER semi-official event of the Annual Meeting in this, as in several previous years, was a luncheon party given by the Continental Anglo-American Medical Society, which has its head quarters in Paris, and includes in its membership nearly all English-speaking medical men established in any part of Europe. The luncheon party took place on Thursday, Professor StClair Thomson presiding over an assembly of over a hundred. The guests included Sir James Dewar, Sir Thomas Barlow, Dr. Lucas-Championnière, Professor Achard, Dr. Luc, and Dr. Dominici of Paris, Sir Clifford Allbutt, Sir James Reid, Sir William Whitla, Professor Saundby, Mr. Sinclair White, Dr. Edwin Rayner, Sir Malcolm Morris, Dr. Goodhart, Mr. Arbuthnot Lane, Mr. Mayo Robson, Dr. Ewart, Sir James Sawyer, Mr. Ballance, Mr. Bland-Sutton, Dr. Bryan of Washington, Dr. Birkett of Montreal, and many other distinguished members of the profession at home and abroad. Sir Thomas Barlow proposed "Success to the Society," which, striving as it did to bring together British and American

practitioners of professional repute, well deserved every encouragement from colleagues at home. He felt sure that its members would do all in their power to maintain abroad the high standard and honourable traditions of British and American medicine. Professor StClair Thomson, in a speech lightened by humour, explained the usefulness of the society in affording a list of reliable men practising on the Continent. Patients in their hands would be safe from enterprising quacks and other disgraceful types of doctors that swarm in certain health resorts throughout Europe. Dr. Sandwith proposed the health of "The Guests," coupled with the names of Sir Thomas Barlow, Sir James Dewar, Dr. Lucas-Championnière, and others. Suitable replies were promptly made, Dr. Edwin Rayner assuring the society of the goodwill of the British Medical Association, of which he was Treasurer. A hearty vote of thanks to the Chair having been passed, the gathering then broke up.

The Temperance Breakfast.

To many members of the Association it will perhaps be news to learn that for no less than forty years past a breakfast given by the National Temperance League has formed a semi-official part of the general proceedings of the Annual Meetings. This year's breakfast took place on Thursday, under the chairmanship of Mr. Pearce Gould, and was well attended. The formal address was delivered by the Bishop of Kensington, who dealt with the responsibility of knowledge. On its conclusion Mr. Pearce Gould, after thanking the bishop, said that the special charm of his address lay in the fact that it precisely represented the particular view for which the National Temperance League stood. It would perhaps be regarded as an act of impertinence if an ordinary temperance society asked the medical profession collectively to such a function, but the League could do so with perfectly good taste. Medical men who accepted its invitations were present as members of a scientific profession. They were not asked to come committed to any position nor with any desire that they should commit themselves prematurely thereafter. The League stood for the promotion and diffusion of accurate knowledge on the subject of intemperance, and it was on that ground alone that it was justified in asking those present to attend. The report of Professor Karl Pearson, to which the bishop had referred, had caused too much commotion, both within and without temperance circles. The speaker was perfectly prepared to accept what Professor Pearson said about the value of his advanced mathematical methods, for on that subject he was an expert. But extreme mathematical knowledge and experience did not qualify the investigators for special recognition of the value of the data which had been submitted to this new and elaborate treatment. Any one in the room was as able to appreciate the value of the facts which Miss Elderton had examined as was Professor Pearson himself. For the purpose to which those facts had been put they were absolutely valueless. The report had been spoken of as a scientific document, but who would have anticipated that when the desire was to determine the effect of alcohol on heredity, the investigators would have seemingly taken pains to mix up in a confused heap teetotalers, excessive drinkers and so-called moderate users of alcohol? That mistake vitiated the report from the very beginning. The temperance element should have been eliminated from a certain section of the population and the results compared. There were hundreds and thousands of abstaining families all over the British isles the effect of whose lifelong abstinence could be quite easily examined if pains were taken to obtain the information in the right direction. During the whole life of the temperance movement it had proved difficult to determine where to draw the dividing line between strictly innocuous moderate drinking and excessive drinking, and yet they were now asked to believe that in Manchester and Edinburgh these innominate investigators had arrived at a scientific conclusion on the point forthwith. The data used were useless, and as in the case of a mill, if rubbish was put to grind at one end only rubbish would emerge at the other. Adding something in regard to his own experiences, the speaker mentioned that he had never suffered professionally by taking a distinct stand on the subject of abstinence. Among the pleasantest recollections of his professional life were hints and other expressions of gratitude from all sorts of men for not having given them that which he knew would have done them harm. Dr. Theodore Kocher, who followed, mentioned that he knew from experience that when he had to do much work, and good work, he must not drink alcohol at all. He was in entire sympathy with a movement which had for object the teaching of people that the only rational way to use alcohol was outside the body. Sir Thomas Barlow, in proposing a vote of thanks to the Bishop of Kensington and Mr. Pearce Gould, said that no one could deny that the League had always pursued its work with good taste and without one trace of bigotry. In seconding it, Sir Victor Horsley dealt further with the Galton Laboratory report, and stated that it had been disowned by the Chairman of the Eugenic Society, for which its authors were working. In spite of their general conclusion that the children of alcoholic parentage were just as healthy as the offspring of moderate drinkers, they came to the equally important conclusion that they died at a much earlier age. The speaker could not understand how one particularly healthy child could expire sooner than another. Further support for the resolution, which was promptly adopted, was forthcoming from Dr. C. F. Harford, who spoke of alcohol in West Africa, from Mr. McAdam Eccles, and from Mr. Robert Whyte, who expressed, on behalf of the League, its appreciation of the assistance rendered to it by those who had spoken and other distinguished members of the medical profession.

The Irish Graduates' Association.

The only other extra-official event to which allusion can be made was the luncheon party and summer meeting of the Irish Medical Schools' and Graduates' Association. It took place at the Holborn Restaurant on Wednesday. Sir William Whitla presiding. Upwards of a hundred persons were present, so that the gathering, in which many ladies participated, was one of the largest on record. A toast to "The British Medical Association" was proposed by Dr. L. S. McManus, who had to resign his membership some years ago on becoming one of the Direct Representatives of the profession on the General Medical Council. Dr. McManus said the Association was very dear to the hearts of every one of his hearers, and no less dear to his own since he had been compelled to sever his connexion with it. He coupled the toast with the name of Dr. E. J. Maclean, whom he congratulated on having been placed in the chair of the Representative Meeting. Dr. Maclean, he said, belonged, like himself, to the Celtic fringe, without which the English were but an egg without salt. Dr. Maclean, in replying, said that this was in a way his maiden speech. It was the first time that at a social gathering he had had to respond

for the British Medical Association since he had been placed in the honourable position to which Dr. McManus had referred. He remarked that Dr. McManus was not now a member of the Association only because he was serving it and the profession in another place. He proposed the health of the Irish Graduates' Association, with whose aims he expressed the warmest sympathy, especially in respect of their work on behalf of the Poor Law medical officers of Ireland. Dr. William Douglas, the Provincial Secretary, having responded, the meeting came to an end.

Golf Doings.

From the point of view of golfers the Annual Meeting week must have been at least as successful and enjoyable as from that of those not affected with this mania. Thanks to the energies of Dr. F. J. Smith and those who co-operated with him in attending to their interests, golfers had the opportunity of testing the virtues of practically every first-class course within easy reach of London. In addition there was the usual annual match between teams drawn from golfers resident in the locality in which the meeting is being held and visitors. The match took place this year on Wednesday afternoon at Northwood Links, the arrangements made by Mr. Percy Furnivall working out to general satisfaction. It proved what is known as a very close thing, London winning at length by ten matches to eight. The London players were Drs. Dane and H. B. Smith (both scratch), Dr. Foord Caiger, Mr. P. Furnivall, and Messrs. T. R. Atkinson, C. Graham, Barker, J. R. Walker, Hope, C. Wilkinson, Flitcroft, F. R. King, S. R. Schofield, Lewis Smith, Rubra, L. E. Creasy, F. J. Smith, C. R. Salisbury, and L. Hatch. The visitors, on the other hand, were represented by Dr. T. Sansome with a handicap of one, Dr. J. Carruthers with a handicap of two, and Messrs. Addis, Wilgress, G. E. Finlayson, F. G. Thomas, Permewan, H. Bawa, Habgood, A. Lucas, Sheehan, A. L. Jackson, J. A. Menzies, J. Blagden, McLeod, G. Stoker, Watson Williams, Macfie, and R. Prichard. The competition for the Ulster Cup, presented at Belfast last year, was held on the course of the Burhill Club. Play was over 18 holes against "bogey." The cup was won by Dr. G. E. Haslip (handicap 14), who finished 4 holes up. He went round in 88 strokes (45 out and 43 home). The second prize was won by Dr. Henderson Smith 6), all square, and the next best returns were: . M. D. Magowan (16), 1 down: J. H. E. Austin (18), down; W. M. Farlowe (17), 2 down; and F. Macrae 18), 4 down. The prize for the best last nine holes was tied for by Dr. Haslip and Dr. Henderson Smith, each 2 up. Mr. E. C. Ryall (13) and Dr. M. Jay (11) were each 1 up, and Dr. L. E. Creasy (3) was all square.

The Saturday Excursions.

The remaining space available permits of but brief reference to the various excursions which ended the week. Their name calls up a vision of the Reception Room on Friday night, at so late an hour that it had already been invaded by charwomen, but was nevertheless still the scene of the unfinished labours of Mr. Charles Ryall, Chairman of the Excursions Committee, and his private assistants, Mrs. Ryall and Miss N. A. Proctor. Mr. Ryall was again to be seen at the railway stations in the morning, and somehow seems to have contrived to see off most of the half-dozen parties. Only two of them departed in much the same direction, those which went to Maidenhead and Windsor respectively. The former, numbering about 70 persons, went down with Dr. Stoddart, of Bethlem Hospital, at their head, and thence explored the river by boat as far as Henley, luncheon being taken on board the launch. At Henley they received a cordial welcome at the Phyllis Court Club, and were refreshed with tea, and at length arrived back in town with all scientific cobwebs thoroughly swept from their brains and just in time for dinner, and further journeys in various directions homewards. The Windsor party had an equally good time, and at the very start established almost a record in such connexions, by turning up 98 strong out of a possible 100. It was Dr. Probyn Williams who kindly played the part of Cook's conductor, and it turned out that he had secured for his party an opportunity of examining not only St. George's Chapel, the Library, and other features of Windsor Castle, but also the State apartments, which for the time being, and in view of the existing mourning, are closed to ordinary visitors. But this was not all, for, after luncheon at the Castle Hotel, he took the party down to Eton, when his place as guide, philosopher, and friend was taken by one of the resident masters, Mr. H. E. Luxmoore, and this famous school was thoroughly explored. Another excursion of a somewhat different order was the expedition to the Lord Mayor's Cripples' Home at Alton, on the invitation of Sir William Treloar and his fellow trustees. The party, under the guidance of Dr. King, travelled down from Waterloo with Sir William Treloar by a special train, and was met on its arrival by Dr. Gauvain, the resident medical superintendent, and Miss Robertson, the matron. There was also a contingent of Sisters and nurses, each of whom took charge of a separate detachment of visitors, and guided them through the various departments into which this very originally organized curative and educational home is broken up. In due course the guests sat down to luncheon, and on its conclusion received from Sir William Treloar a clearly-worded explanation of the origin and aims of this noteworthy institution for the benefit of an especially pitiable class. Later in the afternoon Dr. Gauvain gave an interesting demonstration of plaster work in the formation of splints and supports, and finally, after a visit to the Forest School and further refreshment in the shape of tea, the party started on its way back to town again by special train, arriving shortly after 6 o'clock.

Eastbourne, Brighton, and Bath.

The other three excursions were further afield, two parties travelling to the South Coast, and one to the West of England. The two former expeditions were respectively paid at the invitation of the Chairman and members of the Eastbourne Division of the Association, and of the members of the Brighton Division in co-operation with the Mayors of Brighton and Hove. The Eastbourne party, some seventy strong, with Dr. W. Griffith at its head, was met on its arrival about 11 a.m. by members of the Division, and forthwith taken in coaches along the sea front to the top of Beachy Head, where a fine view and an excellent appetite was obtained. On return to the town other local members joined the party, and all sat down to the luncheon at the Devonshire Park Hotel, Mr. H. D. Farnell, Chairman of the Division, presiding. On its conclusion he proposed a toast to "The Association," giving, in the course of his remarks, a neatly worded and succinct account of its history, and of the part it has been and still is playing in the development of the nation. "It cannot be doubted," he ended, "that the welfare and best interests of the medical profession are inseparable from those of the community at large; the two must

go hand in hand." The toast was coupled by Mr. Farnell with the name of Dr. Griffith, who duly expressed the appreciation of the visitors alike of the cordial hospitality offered them and of the great advantages which Eastbourne has to offer to those in need of a pure atmosphere and exhilarating surroundings. He concluded by proposing the health of Mr. Farnell, who in acknowledging the honour, mentioned the name of Dr. Muir Smith, who as Honorary Secretary of the Division, had worked hard for the success of the visit. Dr. Muir Smith in his turn, however, passed on the credit to Dr. Merry and Dr. K. Fraser by whom, he said, the brunt of the work had been borne. The expedition to Brighton was in all essentials of a similar character, though the co-operation of their worships the Mayors of Brighton and Hove lent a touch of novelty to a visit to a town already so familiar to most people. The party found that the executive officer of the Division, Dr. Ryding Marsh, had arranged quite an extensive programme, which included in the morning a drive round Hove, a visit to St. Anne's Well Gardens, a luncheon at the Hove Town Hall, and in the afternoon a glimpse at the Brighton Aquarium and a reception in the grounds of the Royal Pavilion, with the Mayor of Brighton as host. During the luncheon hour the two Pilgrim Fathers of the party, Dr. Murray Leslie and Dr. Richard Lloyd, met all wishes by proposing toasts to the Division and to the Mayors respectively, and by acknowledging the very cordial reception accorded. The party got back to town soon after 7 o'clock, all being agreed that the day had been thoroughly well spent. To the new developments examined at Bath by the visitors on Saturday, it is proposed to make allusion in a separate article at a somewhat later date. Meantime it need merely be said that the response to the invitation furnished by the Mayor and Corporation of Bath was so ready that the long special train provided could have been filled twice over. The arrangements made by the Mayor, Major Simpson, with the assistance of Mr. Hatton, the Director of the bathing establishment, and the co-operation of Dr. Beaumont, the Honorary Secretary of the Division, and others of its members, were of a most generous and comprehensive nature, and proved thoroughly successful. In the after-luncheon interval the oratorical reputation of the Association was nobly upborne by Dr. Mott, in acknowledging a toast to its prosperity. In concluding his remarks he made a shrewd forecast of the immediate future, by saying that careful examination of the baths was likely to impress the visitors greatly with their value in the treatment of disease, and finally expressed the common feeling by remarking on the rapidity with which seemingly far away Bath can now be reached—something under two unfatiguing hours, over a perfectly constructed roadway. In the afternoon the party divided into two segments each of which in turn explored the baths, where demonstrations were in progress, and the principal streets and surroundings of the town in motor cars. Finally, all reassembled at the Roman Baths at a tea party given by the Chairman of the Division (Dr. Preston King) and the rest of its members. This, however, was by no means the real end of the excursion, for a large contingent stayed the week end, and on Sunday, as the guests of the Division, spent an absolutely perfect day on an expedition to the Cheddar Valley, and its famous gorge and caverns, under the guidance of Dr. Kennedy and Dr. Beaumont. The various stewards appointed to look after visitors on Saturday each wore a blue cornflower as a buttonhole, and the kindness received at their hands was so great that for many visitors this flower will in future be ever associated in their minds with a pleasant picture memory of Bath's stately streets and its waters and hills.

The Annual Exhibition.

The Annual Exhibition held this year was on such a large and important scale that an extended account of it will be necessary. It is not desirable to split it up into too many portions, and as the space available in the Supplement to this issue is too limited to permit of notice of many of the stands, commencement of publication of the account has been deferred until next week.

Lost Property.

Before bringing these Annual Meeting notes to a conclusion, it may be well to point out that notice has been received from the police office at the Natural History Museum at South Kensington of its possession of a considerable number of gloves, handkerchiefs, trinkets, and other property left behind by those who attended the *conversazione* on Friday night. It is unnecessary to give a list of them, as those aware of any loss will probably be able to recover their property on furnishing a description to the officer in charge of the station in question.

MEDICAL BRANCH OF THE NAVY LEAGUE.

The first general meeting of the Medical Branch of the Navy League was held on Friday, July 29th, 1910, at the University of London. Dr. W. P. Herringham, the Chairman of the Provisional Committee, said that some months ago it was thought advisable to form a branch of the Navy League for medical men. They saw a good deal of the world, and could influence people as no other class could do. Notices suggesting the formation of a branch were sent round, and a considerable number of members had already joined. This, however, was the first formal meeting. Dr. Maurice Craig moved, and Dr. Percy Smith seconded, "that a Medical Branch of the Navy League be and is hereby formed." This was unanimously agreed to. The Chairman announced that Sir Richard Douglas Powell had consented to act as President of the Branch. (Applause.) He moved that he be elected to the office. This was carried by acclamation. Sir Richard Douglas Powell then took the chair. The following were elected as officers and council: Mr. Lenthal Cheatle, Dr. Clayton-Greene, Dr. Fawcett, Sir Alfred Fripp, Dr. Herringham, Dr. Latham, Mr. W. Lister, Dr. Macnamara, Mr. Pendlebury, Mr. Hugh Rigby, Dr. Risien Russell, Dr. Scurfield, Dr. Lewis Smith, Mr. Swainson, Dr. Campbell Thompson, Dr. Turney. Sir R. Douglas Powell stated that the Prime Minister observed some time ago that the maintenance of a sufficiently powerful navy was essential for the preservation of the vital interests of forty millions of people in these islands. He might also have said it was necessary for the vital interests of many more millions of Imperial and Colonial subjects of the King. The Chancellor of the Exchequer said he regretted that matters of social reform had to be deferred for the building of Dreadnoughts. The nation felt that social security must have precedence of social reform. Reforms were no good unless they were based on the security of the country. The Medical Branch of the Navy League was not for the purpose of supplying medical aids and comforts in time of war, but for the purpose of securing the interest and advocacy of medical men in favour of the provision of a strong navy. Medical men had immense power. Each of them had great local

power and prestige, and had the means of influencing a considerable clientèle of his fellow subjects. What they desired was that each member of the branch should exercise that influence in his own neighbourhood. Commander Crutchley (Secretary of the Navy League) also addressed the meeting as to the general objects of the Navy League. Dr. Maurice Craig, in moving a hearty vote of thanks to Sir Richard Douglas Powell for being present at the meeting and for kindly consenting to become the president of the branch, stated that the membership was steadily increasing, and every one intended that this branch should become a large and powerful one. The five shilling members were as important as the guinea ones, and it was felt that a large number of medical men would pay the smaller subscription in order to further the welfare of a great cause. Applications for membership should be sent to the Honorary Secretary at 54, Welbeck Street.

LEGISLATION FOR THE FEEBLE-MINDED.

AN influential and representative deputation organized by the National Association for the Feeble-minded, and including the Earl of Meath, Lord Shuttleworth, Lady Frederick Brudenell Bruce, Lady Frederick Cavendish, the Hon. Maude Stanley, Sir E. Brabrook, Mr. Noel Buxton, M.P., Mrs. Hume Pinsent, Drs. Ferrier, H. Corner, Langdon-Down, Tredgold, May Dickinson Berry, and Ettie Sayer, waited upon the Prime Minister, on July 15th, to urge the necessity for early legislation upon the lines recommended by the Royal Commission for the Care and Control of the Feeble-minded. The deputation was introduced by Mr. W. H. Dickinson, M.P. The subject was spoken on from different points of view by Sir W. Chance, Sir T. Acland, the Bishop of Stepney, Mr. Willis Bund, Miss Dendy, Dr. Shuttleworth, Dr. Bickersteth (Vicar of Leeds), and Mr. Montague Crackenthorpe. The Prime Minister, who was accompanied by the Lord Chancellor, the Home Secretary, and the President of the Local Government Board, said he was glad to have had an opportunity of hearing those who had a first-hand knowledge of the subject, and, remarking on the complicated nature of the problem, assured the deputation that the great desire of the Government was to contribute what they could towards a solution. The Lord Chancellor also recognized the vast importance of the subject and the duty which lay on the Government to consider a remedy, with due regard to safeguards against abuse of any fresh powers of control or detention that might seem expedient. Mr. Churchill referred to the effect which feeble-mindedness had upon criminal statistics, and considered that public policy called for systematization in the care and assistance of the 120,000 or 130,000 feeble-minded persons at large in our midst. If by any arrangement, rendered possible in an advancing Christian and scientific civilization, the prevention of the multiplication and perpetuation of this great evil could be brought about, we should have taken upon our shoulders in our own lifetime a work for which those who came after us would owe us a debt of gratitude. Mr. Burns remarked that the arguments urged by the deputation, and the facts and figures quoted, were already before various departments of State, who were considering how best to carry out some of the minor propositions and suggestions that had been made. The question, however, of compulsory detention and enforced control of the feeble-minded was not one which could be dealt with lightly; but he could say that the serious subject brought before them by the deputation appealed to official sympathy, and so far as was practicable by administrative measures, aid was being given to the object they had in view.

THE King and Queen paid a visit to the London Hospital on Saturday, July 30th, and Lord Rothschild, treasurer of the King Edward Hospital Fund for London, has since received a letter from Sir William Carington stating that he is commanded to acquaint him with the King's gracious intention to augment His Majesty's yearly subscription to the King Edward Hospital Fund for London from £500 to £1,000, and enclosing a cheque for £500. The cheque is dated July 30th, as the King is anxious that the date of the augmentation should coincide with that of His Majesty's first visit to a London hospital since his accession.

LITERARY NOTES.

THE printer's devil is in one respect like charity—he covers a multitude of sins for which authors, and others, are really accountable. But sometimes he is guilty. Last week his defacing fingers swept a beautiful line of Arthur Hugh Clough, to whose shade we deem it a duty to make such reparation as is possible for making him write bad grammar. In the verses quoted at the end of the leader on the President's Address in the JOURNAL of July 30th, the last line should read:

> Comes silent, flooding in, the main.

It may interest some readers to know that the lines are from a poem entitled, "Say not the Struggle Nought Availeth." As the quotation referred to the long struggle of the Association for the welfare of the people and the better organization of the profession, we may be allowed to quote the concluding lines, which should further encourage us to take the poet's advice and "Say not the Struggle Nought Availeth."

> And not by eastern window only,
> When daylight comes, comes in the light;
> In front, the sun climbs slow, how slowly!
> But westward, look, the land is bright.

The issue of *Black and White* for August 6th is of special interest to the medical profession. It contains a large number of drawings and photographs illustrating the visit of the King and Queen to the London Hospital. In addition to these there is an article on the work of the hospital by Raymond Blathwayt, excellently illustrated by T. Peddie.

Dr. Alfred C. Jordan (London) writes, quoting the following passage from *Lives of British Physicians*, published in 1830 by John Murray, Albemarle Street. It is of interest in view of the present popularity of soured milk:

Soon after his return from Scotland, the anatomical skill of Harvey was employed, by the King's command, in the dissection of that extraordinary instance of longevity, Thomas Parr, who died November 14th, 1635, at the age of 153 years. He was a poor countryman, who had been brought up from his native country, Shropshire, by Thomas, Earl of Arundel, and shown as a great curiosity at Court. At the age of 88, he had married his first wife; at 102, he had done penance in church for a breach of the laws provided against incontinency. When he was 120 he married again, taking to wife a widow, with whom he is represented to have lived upon the most affectionate terms. At 130, he had threshed corn, and done other agricultural work, by which he gained his livelihood. His usual habits of life had been most sparing; his diet consisting of coarse brown bread, made of bran: of rancid cheese, and sour whey; but when, on his arrival in London, he became domesticated in the family of the Earl of Arundel, his mode of living was changed, he fed high, drank wine, and soon died.

According to Harvey, who opened his body, his death was occasioned by a peripneumony, brought on by the impurity of a London atmosphere, and the sudden alteration of his diet. There were adhesions of the lungs to the pleura on the right side; his heart was large, his intestines sound; but the cartilages of his ribs, instead of being ossified, as they generally are in elderly persons, were, on the contrary, soft and flexible in this man, who was more than a century and a half old. His brain was sound; he had been blind for twenty years before his death, but his hearing was distinct; his memory was very bad.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

The County Council.

Medical Treatment of School Children.

The Education Committee reported to the London County Council last week that it had been in communication with the governing body of the Royal Free Hospital, Gray's Inn Road, with reference to the treatment, by means of *x* rays, of children suffering from ringworm. Under existing arrangements, children attending schools in West Islington and the adjoining districts were referred to Charing Cross Hospital. The Royal Free Hospital would be more convenient for schools in this area, and full advantage could be taken by children from other parts of London of the accommodation set at liberty at Charing Cross Hospital. The arrangements made with other hospitals provided that 100 cases a year should be guaranteed for each clinical assistant working one half-day a week, at a cost of £85. The Committee did not feel able to guarantee a sufficient number of cases for treatment at the Royal Free Hospital to justify the engagement of a clinical assistant for one half-day a week. The governing body was prepared, however, to undertake the treatment of 50 ringworm cases in twelve months, at a charge to the Council of 17s. a case, including the services of a medical practitioner. The offer was accepted.

After the adjournment of the Council for the summer recess the Education Committee met and dealt with several questions of medical interest.

Schoolkeepers and Vaccination Exemption.

The General Purposes Subcommittee drew attention to the case of a caretaker who had made a statutory declaration of conscientious objection to the vaccination of his child. In view of the fact that, should an outbreak of small-pox occur, children of schoolkeepers and caretakers would be more liable than other children to contract and spread the disease, the subcommittee had given the matter very careful consideration, and recommended that in all cases where members of a caretaker's household had not been vaccinated, vaccination should be performed within twenty-four hours, or the schoolkeeper should cease work and he and all members of his household should vacate the premises, no salary to be paid during absence. This was approved.

Medical Fees in Accident Cases.

The Council holds itself responsible for the payment to doctors of the fee for the first attendance upon scholars meeting with accidents at school. The General Purposes Subcommittee stated that the amounts claimed by medical practitioners under this head varied considerably, but when they were well within the rates prescribed by the Local Government Board for Poor Law administration the subcommittee agreed to the charge made. It was desirable, however, that a standard charge should be fixed, and the subcommittee advised the fixing of the following scale: Attendance on child taken to doctor's surgery, 3s. 6d.; when a doctor has been called, 5s. This was agreed to.

The Paddington School for Tuberculous Children.

The Board of Education notified the Education Committee that it was only prepared to give favourable consideration to the proposal to establish a school for tuberculous children in premises provided by the Paddington Dispensary for the Prevention of Consumption,[1] provided the scheme was confined to children having incipient phthisis, or having the disease in a definite form, either of a subacute or chronic nature. The original proposal was that children suffering from tuberculosis, children predisposed to it, or children who had been discharged from sanatoriums and were being treated at the dispensary, should be included in the scheme. If the promoters were prepared to modify their proposals in this respect the Board intimated that it would consider the matter further. The Committee decided to notify the dispensary of this alteration in the scheme.

Provision for Sane Epileptic Children.

The Committee decided on July 6th to ask the Home Secretary to receive a deputation urging the need for legislation with regard to the care and control of the feeble-minded, particularly with regard to making provision for sane epileptic children.[2] It was reported that the General Purposes Committee had vetoed the proposal, on the ground that the Council had not yet considered the report of the Royal Commission, and that to send a deputation would be to commit the Council in advance.

Queen Victoria Jubilee Institute of Nurses.

The Children's Care Committee presented its report upon the experimental scheme for the treatment of children suffering from suppurating ears by "Queen's" nurses in Hackney, Shoreditch, and Bethnal Green.[3] The results, the Committee stated, were not altogether satisfactory, owing mainly to the difficulty of obtaining the medical prescriptions necessary before treatment could be commenced. (It will be recalled that the Metropolitan Counties Branch of the British Medical Association objected to the Council arranging the doctor's prescription for him.) The Committee thought it very desirable that the most satisfactory method of dealing with children suffering from a complaint which required attention two or three times a day, sometimes for long periods, should be discovered, if possible. A further experiment, to ascertain finally whether the Queen Victoria Jubilee Institute of Nurses could be utilized for this purpose, should be made, and in the more favourable district of Paddington. This district of the Institute contained several good dispensaries, and so there would be less difficulty in obtaining medical prescriptions. The Paddington Nursing Association was prepared to undertake the work if the Council paid for the extra help required. An agreement with the association for this purpose was approved.

Difficulty had been experienced in connexion with the treatment of children suffering from affections of the eye and ear, at the Woolwich medical treatment centre, owing to the failure of parents to carry out the instructions of the doctors as to the insertion of atropine in the eyes and the syringing of the ears. The governing body of the Woolwich Cottage Hospital, which is responsible for the centre, stated that the Woolwich Nursing Association was willing to provide, for £40 a year, a nurse who would assist the parents in carrying out the doctors' instructions The Committee accepted the offer for six months.

The Norwood medical practitioners having reported that they found the cost of ringworm treatment to be 7s. per case, the Committee agreed to pay this sum in respect of each of the children treated.

BIRMINGHAM.

A Memorial to King Edward VII.

The Marquis of Hertford, Lord-Lieutenant of Warwickshire, presided over a county meeting on July 20th, which was called to consider the question of raising a memorial to King Edward. It was resolved that a memorial should be erected in the county, and that the best form for it to take would be the establishment of an open-air hospital for the treatment, of an instructional character, of persons suffering from consumption.

Tuberculosis in Warwickshire.

Dr. Bostock Hill, in his annual report for 1909, estimates the population of Warwickshire at 401,868. The number of deaths registered was 5,238, giving a

[1] British Medical Journal, March 26th, 1910, p. 780.

[2] British Medical Journal, July 2nd, p. 43.

[3] British Medical Journal, February 11th, 1909.

rate of 13.03 per 1,000. The number of deaths from phthisis and other tuberculous diseases was 428, being fewer than in 1908, when the number was 451. The medical officer of health strongly advocates compulsory notification, the adoption of some step to educate children and adults as to the means to be taken to prevent the disease, and the disinfection of dwellings and bedding after death. All district councils should obtain proper means of disinfection. He attaches considerable importance to the exhibition of warnings against spitting, and to the sterilization of milk. With regard to the provision of sanatoriums, he notes that small-pox hospitals are not used for considerable portions of the time, and suggests that they might be utilized for the reception of tuberculous patients for limited periods. Birmingham has decided to use some of this accommodation, and a conference of representatives of district councils might lead to some definite line of action.

FIRST SOUTHERN GENERAL HOSPITAL, TERRITORIAL FORCE.

At a meeting of the Warwickshire Territorial Association, held in Birmingham on July 22nd, the Marquis of Hertford presiding, the reports of the Birmingham Branch of the British Red Cross Society upon the site and equipment of the 1st Southern General Hospital were read. The site had been selected and the arrangements for the equipment were almost completed. Colonel Whitcombe, the Administrative Medical Officer of the South Midland Division, had been consulted with regard to the site, and wrote that it "is, in my opinion, admirably suited for the purposes of a general military hospital, and can be easily adapted in the necessary time and at a minimum of cost. The plans accompanying this report have been drawn up by Major Sawyer, the Registrar of the 1st Southern General Hospital." The President said it was very satisfactory to hear that the hospital had been started on proper business-like lines. He thought that it was one of the first in the country that could send in such reports as had been read. That had not been done without a good deal of hard work on the part of those concerned, and he therefore moved a resolution expressing cordial appreciation of the care and interest taken by the Birmingham Branch of the British Red Cross Society in preparing the hospital scheme, and cordially thanking Lieutenant-Colonel Jordan Lloyd and Major Sawyer, administrator and registrar respectively, for the trouble they had taken in the matter.

LIVERPOOL.

ST. PAUL'S EYE HOSPITAL.

THE foundation stone of the new St. Paul's Eye Hospital was laid by Lord Derby on July 21st. There is to be a special department for the treatment of ophthalmia neonatorum, into which the recently confined mothers can be admitted, along with the infant invalid. This department is to be a memorial to the late St. George E. Walker, who founded the hospital about forty years ago. The building is to cost £15,000, of which about £12,000 has been subscribed.

GARDEN SUBURB.

On the same day the Marchioness of Salisbury laid the foundation stone of the first house in a garden suburb which is being made by the "Liverpool Garden Suburb Tenants Co., Limited" on co-partnership principles. One hundred and eighty acres of land have been obtained from the Marquis of Salisbury on a 900 years' lease; the site is within easy reach of the centre of the city in the Wavertree district, and is intersected by the Queen's Drive, a boulevard 107 ft. wide which is at present being constructed by the Liverpool Corporation. The estate is to carry ten or twelve houses to the acre. An attempt is thus being made to provide attractive and healthy housing accommodation on the outskirts of the city for people of moderate means. No town has greater need of such a scheme than Liverpool, for in the past the building has been conducted without any co-ordinated plan, every jerry builder being allowed to run up just whatever class of houses he thought would make an immediate return on the smallest amount of expenditure. A somewhat similar scheme for working-class tenants is being started at Sealand, on the Dee, about six miles from Chester. Ten acres of land have been obtained with an option of thirty more. It is proposed to erect about forty-seven cottages to the acre, the rents to be from 5s. to 8s. a week. These cottages are to be inhabited by the men at the large steel and iron works in the neighbourhood, the distance being small enough to allow the men to get their meals at their own homes.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EDINBURGH ROYAL INFIRMARY.

AT the weekly meeting of the managers of the Royal Infirmary, on Monday, July 25th, Dr. George A. Gibson, Ordinary Physician; Dr. R. A. Fleming, Assistant Physician; and Dr. A. H. Sinclair, Assistant Ophthalmic Surgeon, were reappointed to their respective posts for further periods of five years each as from the month of October next.

EDINBURGH ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL.

Dr. Ballantyne, with Dr. Oliphant Nicholson as Assistant, will be Physician in Charge for the quarter beginning August 1st. For the same period R. C. Alexander, M.A., M.B., Ch.B., has been appointed Senior House-Surgeon, and Keith K. M'Glashen, M.B., Ch.B., Scott Scholar, Junior House-Surgeon.

MEDICAL RESEARCH AWARD.

The medal and prize of the Medico-Psychological Association of Great Britain and Ireland has been awarded to Dr. Hugh Morton, Glasgow, for the best dissertation on the "Bio-Chemistry of the Cerebro-spinal Fluid in the Insane." Dr. Morton is attached to the Royal Asylum at Gartnavel and the Scottish Western Asylums' Research Institute.

BIGNOLD HOSPITAL, WICK.

A public meeting was held at Wick last week to consider the financial crisis which has occurred in the affairs of the Bignold Hospital in consequence of the intimation that Sir Arthur Bignold declined to continue his annual donation of £300 to the funds of the hospital. Sheriff Stuart presided, and there was a very representative attendance. It was explained that Sir Arthur Bignold had spent about £6,000 in building, equipping, and partially endowing the hospital, and since its opening in 1903 he had given an annual donation of £300 to its funds. The annual outlay was about £500. The income from endowments and subscriptions was £124. It will, therefore, be necessary to find some means of raising an additional £350 or more per annum if the institution is to be carried on. Resolutions were passed expressing regret at the loss of Sir Arthur Bignold's support, but thanking him for his generous gift of the institution, and agreeing that a direct personal appeal should be made annually to the people of Wick, Thurso, and the County of Caithness on behalf of the hospital funds.

OFFENSIVE TRADES IN GLASGOW.

In a lengthy article contributed to the *Glasgow Herald* Mr. John Lindsay, Deputy Town Clerk, discusses the question of offensive trades in the city and the difficulties in the way of remedial action on the part of the authorities. In recent times many protestations have been voiced against certain trades, such as gut cleaning, tanning, glue making, etc., near residential localities, and the Town Council has been appealed to to protect the citizens against the offensive odours inseparable from such works. These trades are, of course, regulated by the provisions of the Public Health Act, and the number within the city at

the present time is 34, no less than 24 being situated in the east end of the town. Traders before carrying on any of the businesses known as "offensive trades" must obtain the sanction of the local authority. But the local authority must find reasonable grounds for refusing its sanction, and where the conditions of the statute and by-laws have been fulfilled the Corporation as local authority has practically no option. There is the right of appeal to the Local Government Board, whose decision under the Act is final. Within the past twelve months two cases were dealt with by the authority and in each case very strong local opposition was offered to the applications, which were for extension of premises. The Corporation after proof and debate decided to grant the applications and the objectors appealed to the Local Government Board. The Board sent two representatives to inspect the premises, one a medical member and the other a King's Counsel, and on their reports the appeal was dismissed. Both the Corporation and the Board were compelled to recognize the fact that the businesses, though offensive, were perfectly legal, and must therefore be recognized so long as they were made subject to regulation and control under the Act. Of course it is the business of the Corporation to see that the trades are carried on in conformity with the regulations laid down, and to prosecute those who disregard these regulations; but it is important to note that the Act does not provide for sanction, once legally granted, being withdrawn or recalled.

There is a very stringent provision which may be enforced if effluvia be certified as a nuisance, or injurious or dangerous to health. If it can be shown that the best practicable means have not been used for removing the nuisance or counteracting the effluvia, the author or the occupier may be fined £50. The local authority are unable to take this action save on a certificate by their medical officer of health, or on a representation by a parish council, or a requisition by ten ratepayers; and if they take proceedings the court may suspend a final decision on condition that the offender undertakes to remove the nuisance within a reasonable time, or take such steps as will mitigate or prevent the danger from the effluvia.

These provisions apply not only to cities but are applicable throughout the country. There is a general view that local authorities have an absolute power of veto, and this very lucid and comprehensive paper by an expert, on a vexing question, will serve to dispel much misconception of the position of affairs.

Inverness-shire Sanatorium.

The results of the treatment of the patients in this sanatorium at Aberchalder are increasingly satisfactory. The daily average number of patients in residence during the year was 15. The weekly average cost of patients per head worked out at 27s. This includes both maintenance and administrative charges.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

The Grievance of the Irish Midwives.

Last week the Master of the Rotunda Hospital wrote a letter to the *Irish Times*, pointing out the grievance caused to Ireland by its exclusion from the Midwives Act. In this he quotes Mr. Birrell's reply in answer to a question from Viscount Castlereagh as to whether he proposed to introduce a measure dealing with midwives in Ireland on the lines of the legislation already in operation in England, subject to the necessary modifications to meet special Irish conditions. The Right Hon. Mr. Birrell is reported to have replied: "I do not propose to introduce legislation on the subject—at all events during the present session. I would point out that there is not the same urgency in the matter in Ireland as in England, having regard to the powers which boards of guardians in Ireland already possess." Dr. Tweedy points to the latest statistics of the deaths of women associated with pregnancy and childbirth in Ireland. These show that 6.3 per 1,000 of these women die in Ireland, compared with 4·81 per 1,000 in England and 2 per 1,000 in the Irish maternity hospitals and institutions, to which the most serious cases are sent. These figures speak for themselves. The Royal College of Physicians of Ireland and other public bodies have expressed a unanimous and urgent desire to have the Act extended to this country, and that Ireland should obtain an adequate representation on the Central Midwives Board. In Ireland at present once a midwife has obtained her hospital certificate, the institution which qualifies her ceases to have power to influence her future conduct. She may be profligate, dirty, dishonest, or drunken; sepsis may follow her in epidemics, and yet there is no power at present available in Ireland to prevent her practising.

The governors of the Rotunda Hospital have memorialized the Irish representative peers on the subject, drawing attention to the fact that, as the Midwives Act of 1902 stands, it is quite possible for the Central Midwives Board to frame rules which will preclude Irish trained midwives from practising in England, and will largely lessen their chances of employment in the Colonies. Rules have already been framed which have had this result; and under the Act Irish trained midwives can practise in England only by a special concession of the Central Midwives Board, which may at any time be withdrawn. Since the establishment of a State registration for midwives it has been an almost universal requirement in advertisements for appointments in the Colonies that the State degree must be held, and military authorities at the Curragh require a diploma from those replying to their advertisements. This means that an Irish midwife must cross to England and remain there ten days and spend money for her diploma before presenting herself for any of these appointments. A stigma is thus cast on Irish midwives, in spite of the fact that the time devoted to their training is longer than that required by the Central Midwives Board.

During the Committee stage of the Midwives (No. 2) Bill in the House of Lords on July 26th, Lord Clonbrock moved to add a new clause to provide for the certification of midwives trained in Ireland. Earl Beauchamp said he had been in consultation with the Chief Secretary for Ireland with regard to this subject, and the Government was now prepared to deal with it; he was unable, however, to indicate the lines of the bill which would be required. It is to be hoped, therefore, that this grievous injustice to Ireland will now be remedied.

Royal College of Surgeons in Ireland.

The President of the Royal College of Surgeons in Ireland has addressed a letter to the Chief Secretary of Ireland to direct his attention to the anomalous position of the College and its school of medicine and surgery, and to the wrong done to the College, its school of medicine, and to the public interest, by the fact that while every other school of medicine in Ireland now receives through its governing body ample financial support from Parliament, the school of the College of Surgeons receives no such support, and has to depend upon its earnings and upon the very limited contributions which the council is able to give it out of the straitened College funds.

The council of the College of Surgeons, of course, has no objection to the support given by Parliament to other medical schools, as the State requires and controls medical education, and no medical school can be carried on in the manner demanded by modern medical teaching without considerable subsidy from some source. But the school of the College of Surgeons has been placed at a great disadvantage—amounting to a practical injustice—by the action of the Government, which has supplied its immediate competitors with ample funds, by which they may flourish, attract students, and provide them with a high standard of teaching. It must be remembered

that the Royal College of Surgeons has done good work for a century and a quarter, and, conjoined with the Royal College of Physicians of Ireland, are the largest qualifying body in Ireland and the third largest in the United Kingdom.

The school has already suffered considerably, the number of class tickets sold for last Winter Session was 350 compared with 421 for the previous winter, and this though the Council had expended £1,000 on the Anatomy Department in the early part of 1909. The chief claim to a parliamentary grant is that without such aid it is impossible to provide the high standard of teaching necessary in these times for the training of medical men. "It may be conceded," the letter concludes, "that the Government have some great responsibility with regard to a chartered institution which was originally founded with the help of a parliamentary grant, and we feel that if the money already granted is not to be wasted, the Government should now step in to our aid and give us such assistance as will enable us to bring the institution up to the level of modern requirements in medical education, and thus put us in a position to discharge the duty imposed upon us by Charter."

REGISTRAR-GENERAL'S REPORT.

From the annual report of the Registrar-General for Ireland for 1909, it appears that during that year the natural increase in the population of Ireland was 27,786, but that owing to the loss by emigration the total population diminished by 890, the number of emigrants being 28,676. This number of emigrants, of whom 14,916 were males and 13,760 females, exceeds the number in 1908 by more than 5,000, but is considerably less than the average number during the last ten years. About 86 per cent. of the emigrants were between 15 and 35 years of age. The marriages registered during the year numbered 22,650, which represents a rate of 5.18 per 1,000 of the estimated population, as compared with 5.20 per 1,000 in 1908. The highest rate was 7.20 per 1,000 for the County Borough of Dublin, and the lowest 3.4 per 1,000 for the County Mayo. The births registered were 102,759, of which 99,997 were legitimate and 2,762, or 2.7 per cent., illegitimate. Of the total number 52,726 were males and 50,033 females. The highest local rates were 31.7 for Dublin County Borough and 28.3 for Belfast County Borough, the lowest being 18.4 and 18.5 for the counties Cavan and Roscommon respectively. The total number of deaths was 74,973, equivalent to a rate of 17.2 per 1,000. This rate is 0.6 below the average for the last ten years. The highest local rate was 23.4 for Dublin County Borough and the lowest 13.1 for County Kerry. The mortality from tuberculous disease has diminished by 0.2 per 1,000, as compared with 1908, but tuberculosis is still responsible for 14 per cent. of the whole mortality of the country.

Correspondence.

HEREDITY AND ENVIRONMENT.

SIR,—I am not concerned to try to prove the accuracy of Dr. Ashby's data. That is quite unnecessary. It may, however, be interesting to those who have read Dr. Potts's letters to know from what points chiefly the question of alcoholism in the parents of the Manchester feeble-minded children was decided.

To begin with, Dr. Ashby had exceptional opportunities of knowing and understanding Manchester mothers. It frequently happened that the women who brought their children for examination to the special schools had been previously seen by him at the Children's Hospital.

In almost every case reported on the parents, either one or both, of the child were seen. Occasionally it was not possible to find the parents, but this was rare. Generally it was the mother who brought the child; sometimes it was the father; sometimes both. It frequently happened that an aunt or grandmother would come with the mother. Very frequently a baby or two was brought as well as the child in question.

A mother and child are a good sample of the home and its conditions. The children, so far as conditions went, could be roughly divided into four classes:

1. Well-fed and cleanly-kept children with good habits. Now, if a woman can keep a feeble-minded child in this state, there is good evidence that she does not drink. The appearance and demeanour of such mothers as these bore out their statements that they were sober, and the good nourishment and clothing of the child and its mother were evidence that the father was also sober. Such women as these could generally tell precisely what their husbands earned.

2. Well-kept and trained, but ill-nourished children, whose clothing as well as that of their mothers pointed to poverty. Here, again, the condition of the child would indicate the fact that the mother was not a drunkard, but a sober woman trying to make the best of adverse circumstances. Such women would often not know what their husbands earned, but only what they received. In such a case it might well be that the father was a drunkard. Evidence of this was often forthcoming. On the other hand, he might be merely a selfish, brutal man, earning good money, and keeping the bulk of it for himself, or he might be a wastrel, never sticking to one job for long together.

3. Well-nourished but ill-trained and ill-kept children. In these cases it was evidently often the fault of the mother that things were not better. If she drank the fact would be patent to any doctor; if the father drank the money would have not have been found to feed the wife and children. Sheer incapacity was much more often at the root of the trouble than drink.

4. Children who were both badly kept and badly nourished. Such cases generally had slatternly mothers of very low mental capacity. Sometimes they were obviously alcoholic, but more often merely shiftless, low-grade women wholly unfit to have the charge of children. Such women rarely had husbands in good work; the whole family would be degraded. Sometimes the mother was unmarried. Often evidence was forthcoming that the father was a drunken ne'er-do-weel. More often, still, he was definitely weak of intellect. In these two last classes the mother would herself often be of feeble mind. Beyond the evidence to be drawn from the condition of the mother and child was that to be drawn from the employment of the father. A man who was a member of the fire brigade or of the police force, who was employed as a tram driver, or a night-watchman by the corporation, would not be a drunken man. He might, however, be married to a woman of very low mental power or a drunkard. A carter, earning 25s. a week, would not be likely to be a drunkard, though he might have drinking bouts occasionally. There are other trades in which frequent drunkenness would ensure dismissal.

All these points were taken into consideration by Dr. Ashby, as well as the reports made by school teachers, school-attendance officers, and our superintendent of special schools, Miss Dickens, who herself visits the homes of these children.

There were amongst the cases some twenty-five idiots and imbeciles; these had not been presented to Dr. Ashby for examination, as he had not time to visit their homes; Dr. Lapage kindly did so, acting as Dr. Ashby's deputy.

Going now to the other side of the question—that of normal children with drunken parents and bad home conditions—I do not know whether Dr. Potts will accept what I say; but this is the state of things:

The most miserable and neglected children of the city are sent to industrial schools. It is a matter of common knowledge that those who are sent to residential schools do remarkably well: over 90 per cent. are definitely successful in life. These schools do not now accept children who are weak-minded in any degree, except in one or two instances where special provision is made for such cases.

The children of our day industrial school, almost without exception, are the children of drunken, idle, shiftless folk. Sometimes the child of a respectable widow or widower will find its way there because it has been playing truant, the parent not having been able to give it proper attention.

In the last fifteen years only three feeble-minded children have been found in this school. There were none there when Dr. Ashby made his first examination of

school children previously to the establishment of special schools.

These children soon recover health and spirits in the school. Three meals a day makes a great difference to them; their misery is only skin-deep.

It is part of my duty as a member of the Manchester Education Committee to take my turn in seeing parents who do not send their children to school or who have omitted to pay maintenance charges for Mill Street or a residential school. Amongst these I see plenty of alcoholics, but they are rarely the parents of the children I know as feeble-minded. Occasionally the cases are very pitiful, as when a mechanic earning good money cannot keep his home and children decently because a drunken wife will constantly sell the house up to get drink.

Against his case may be put one which I have known all the particulars for many years. The father is a superintendent of police; the mother a very frail, refined woman, highly neurotic. The mother's mother lives with them and I personally know the mother's sister. All are teetotalers and there is an excellent family tradition of morality. The only child was an imbecile epileptic. One night the father turned back as he was leaving my room and said, "If I had known sooner what you have written about feeble-minded children, I would never have married." It turned out that he had a brother in an asylum.

On one occasion I kept house for nine months for a family whose head had broken both his arms. He was a painter in good work, earning 35s. a week (it is a seasonal trade). He had been drunk every Saturday night for seventeen years. We did not wish these people to come upon the rates, so collected a small sum weekly for their maintenance. There were seven children living, one, the eldest girl, at work. Several has died. None of these children was feeble-minded. The first week the mother spent all the money on meat-pies and ginger-beer; there was nothing left by Wednesday. Thereafter I went and brought in the provisions twice a week. The man kept sober for nine months; he was long in getting well; when he did recover the family disappeared—tired, no doubt, of enforced decent living.

It would be easy to multiply cases such as these for the benefit of those who prefer this kind of evidence to that gathered from statistics. When personal experience of this sort is confirmed by such work as Miss Elderton's and Professor Pearson's it is difficult for the ordinary lay mind to remain unconvinced.

Statistics are dangerous things in the hands of those who do not know how to use them. An instance of this was found when I made my first examination of school children. I had every prejudice in favour of environment as causing all the troubles under the sun. I was puzzled to find fewer feeble-minded children in the two poorest schools of our town than in any others. It was suggested to me that it was possibly because many of the children in those schools were canal-boat children and got more fresh air than did others. I now see that the probable explanation is that the canal-boat folk are more prone to marry away from their immediate surroundings than other town dwellers, and so bring new blood into their families.

I must apologize for this long letter. My excuse is that I do not wish that any one who has noticed this correspondence should think that there has been either carelessness or prejudice in the collecting of the material sent to Professor Pearson.—I am, etc.,

Manchester, July 25th. MARY DENDY.

SANATORIUM TREATMENT OF TUBERCULOSIS.

SIR,—The valuable letters of Dr. Paget-Tomlinson and Dr. John Guy in your last issue tend to emphasize the very points I have at heart and which I am quite sure the medical profession also have at heart. We all want to find an exact measurement of the improvement introduced by sanatorium treatment. There is only one way in which this can be done, namely, by measuring in a scientific manner the number of patients exposed to risk and the number that die within the years that they have been exposed to risk. Dr. Guy has, I judge from his letter, the material from which valuable results could be obtained. I presume he sends out a card or letter yearly to each patient ever treated in the sanatorium. Hence he should be able to add to his data (1) the sex and age of his patients, (2) the class of case at the time when the patient was observed, and (3) *the last date on which the now untraceable patient was heard from and known to be alive.* With this information his data could be made at once available for comparing mortality of sanatorium patients with that of the general population, and also with the like material for non-sanatorium days. If he cares to proceed further in the matter, I shall be only too glad to send him actuarial cards for rapidly entering these facts, which will be simply handed over to a well-known actuary for his independent reduction and opinion. Of course, for proper comparison, every case, slight and severe, that comes into the sanatorium, whether it dies there or later, should be entered and classed.

The same offer is open to Dr. Paget-Tomlinson, although his series is very small. But here I have to draw attention to one or two further points. He writes:

> In speaking of results, I may say that we have given up tabulating very advanced cases, which have occasionally been admitted, a fatal termination being almost invariable: also any cases complicated by some other serious complaint—for example, heart disease.

No such selection can be made if any adequate treatment is to be undertaken. They must be entered as "very advanced" or "complicated." Further, we have now examined a large amount of data from sanatoriums of one kind and another. In all these there are considerable numbers of cases which are *untraceable*, even with the most careful tracking up of patients. Dr. Paget-Tomlinson has no entry at all of untraceable patients. Does this mean that none such have occurred, or have they been excluded from his table? Here, also, the all-important questions of age and sex have been omitted.

Finally, let me draw attention to what seems to me a most important aspect of this matter. Dr. Paget-Tomlinson, on a small sample of patients from which the very advanced cases and, perhaps, the untraceable cases are excluded, finds since 1900 about 20 per cent. of deaths. Dr. John Guy, taking apparently all cases, but excluding the 1908 cases, which Dr. Paget-Tomlinson includes, finds about 32 per cent. of deaths. My own impression is that *both* sets of statistics, if treated by a uniform and genuinely actuarial process, will show practically *identical results* for the true mortality in the various aged groups of those exposed to risk. If this be so, are we to accept Dr. Paget-Tomlinson's view of the "hopeful and satisfactory results of the present 'open-air' methods," or Dr. Guy's view that "the true value of the sanatorium is not curative"? If upon data, which properly reduced, are likely to show exactly the same results, such diverse opinions can be held, does this not indicate that more is needed than is provided here? Do we not want (1) a comparison with the non-tuberculous population of the same ages, and (2) a comparison with the tuberculous population of pre-sanatorium days? The first we know, and it may startle Dr. Paget-Tomlinson to realize that the mortality of his sanatorium tuberculous patients is probably *many* times that of the corresponding age groups in the general population. The second is less well known, but I hope will shortly be discussed as the memoir dealing with it is passing through the press. Meanwhile I would emphasize two points: (*a*) That the question of the value of sanatorium treatment is an open one, and (*b*) that it will only be settled when those interested in the question are willing to submit their data to the only man who can offer a final solution of the problem—the professional and highly trained actuary.—I am, etc., KARL PEARSON.

Biometric Laboratory, University College, London, July 25th.

P.S.—Since the above was printed I have Dr. Paget-Tomlinson's assurance that since the institution was opened no case has been lost sight of—a most creditable record.—August 1st.

SIR,—In connexion with this subject there is one fact regarding which no doubt can possibly exist, and that is the gradually decreasing death-rate from tuberculosis, which has been the feature of recent years. To state, however, that this is due to sanatorium treatment is only

partly true. To be strictly accurate, it is the natural and anticipated result of the broad comprehensive campaign which has been carried on against the ravages of the disease for some years. This campaign includes both curative and prophylactic measures. In addition to the sanatorium treatment of early cases, it embraces improved hygienic conditions in the home, educational measures, the segregation of advanced cases, notification, the suppression of spitting, efforts to provide a pure milk supply, etc. All these measures, and others not mentioned, are collectively responsible for the decreasing death-rate from tuberculosis, but it is obviously impossible to select one of them and correctly assign to it a position of premier importance as a factor in reducing the death-rate.

That the sanatorium is an essential factor in the war against tuberculosis, as at present carried on, none but those possessed of a prejudiced or restricted outlook will deny. In a very considerable percentage of cases, as is shown by *post mortem* records, pulmonary tuberculosis has a marked tendency to heal even under most unadvantageous conditions. If these conservative and healing processes take place under unfavourable conditions it is reasonable to expect that such processes will be more readily induced under the favourable conditions of life which are the feature of the modern sanatorium.

There still exists no little misapprehension as to what sanatorium treatment really is, and regarding the results which the methods adopted really aim at. Some members of the profession, in common with the general public, evidently still regard it as simply a question of the open window and a good meal, and as a means of palliative treatment for all classes of cases irrespective of type, extent, or complication. This, of course, is quite a wrong impression. As a result of the pioneer work done at Frimley by Paterson and Inman, sanatorium treatment in this country has now been placed on a thoroughly scientific and up-to-date basis. It now consists of three important and intelligent steps —first the control of the excessive autoinoculation; secondly, the evoking of an immunizing response by regulated autoinoculation induced by graduated walking exercise and manual labour, and, lastly, the induction of a more permanent response by inoculations with tuberculin or other suitable vaccine.

I am a firm believer in the use of tuberculin as a routine measure in selected sanatorium cases, and am thoroughly in sympathy with Dr. Wilkinson's views, but I regret that, while advocating his scheme, he should depreciate the work done in the sanatorium.

I am sorry to see that my former colleague and old fellow student, Dr. Guy, has fallen upon pessimistic days. His somewhat sombre views appear to be based on a table of figures which he frankly admits are inadequate by reason of the large number of patients (43 per cent.) whose subsequent history he was unable to trace. This is the chief difficulty in collecting reliable statistics of the ultimate results of sanatorium treatment. To keep in touch with a large percentage of ex-sanatorium patients for a period of five years is difficult, and in the case of large institutions which admit patients from a wide or populous area is all but an impossible task. Moreover, to throw light on the true value of sanatorium methods the ultimate results should be tabulated not only in relation to the stage of the disease on admission, but also in relation to the amount of improvement which was evidenced on discharge. Acute and advanced cases may be kept in the sanatorium for months without any appreciable improvement in either the local or general condition. In the majority of such cases a fatal termination is the natural sequence of events. Yet such cases, in which no immediate beneficial result was obtained, are marshalled against the permanence of the immediate beneficial results of sanatorium treatment. Further, to have absolutely trustworthy statistics the causes of death must be investigated. The ex-sanatorium patient is no more immune to attacks by pneumonia, appendicitis, and other intercurrent diseases than is the ordinary individual.

I keep a record of the subsequent history of all patients discharged from the Liverpool Sanatorium, but the records are of too recent a date to be worthy of special note. But after an experience extending over several years I am still a firm believer in the efficacy of the sanatorium régime *plus* tuberculin inoculations in the treatment of suitable cases of pulmonary tuberculosis. I know of no other line of treatment to be compared with it in arresting a tuberculous lesion of the lung with or without tubercle bacilli in the sputum. What is wanted—and urgently wanted—are provision for the segregation of advanced and incurable cases and some comprehensive scheme whereby ex-sanatorium patients may have assistance in becoming proficient in, and obtaining suitable outdoor employment. I am glad to see that the Westmorland Sanatorium is about to open a new block for advanced cases.

In conclusion I may add that I feel sure I voice the opinion of the majority of sanatorium physicians when I say that any statistical evidence which Professor Karl Pearson may bring forward regarding the results of the sanatorium treatment of tuberculosis will be earnestly welcomed by them.—I am, etc.,

Liverpool Sanatorium, July 25th. H. HYSLOP THOMSON.

SIR,—Regarding the influence which sanatorium treatment is exercising on the death-rate from pulmonary tuberculosis, it appears to me that the time has not yet arrived when this factor can be properly estimated; for only a small proportion of cases receive such treatment, and for too short a period. When reasonable sanatorium accommodation has been provided, and the majority of the sufferers undergo treatment, a calculation of the effect on the death-rate can reasonably be made; but I am certain that if every consumptive received sanatorium treatment there would be a remarkable reduction in the mortality. Dr. Guy in your columns again raises the question of the result of treatment in the individual cases, and states his opinion that "the true value of the sanatorium is not curative but educative." Now the value of a sanatorium depends upon the extent to which the physician devotes himself to the work, and if the value of any particular institution be educative rather than curative, we may justly infer that the cases it deals with are too far advanced, that it is understaffed, and the patients do not have the constant supervision which is essential, or that the sanatorium is controlled by a pessimist—for such instances have come under my notice. The psychic influence exerted by the sanatorium physician is of great importance, and if he should cease to look upon his work as mainly curative, that is, as tending towards the patient's recovery, his results will certainly not exceed the ideal at which he aims. I am afraid Dr. Guy is confusing sanatoriums with hospitals for cases beyond the early stage, which have an educative value chiefly; and I desire to point out that the term "sanatorium treatment" should be reserved for "the application to tuberculous patients of all the means which medical science has found to conduce to recovery," and should include all that can be done under the best conditions by physicians who have made a special study of the disease. Dr. Guy remarks that "the curative effects of a residence in these institutions have been unfortunately greatly magnified," but I would point out that the importance of the after-care of the patients has been greatly overlooked, and the majority of the relapses ensue from the sufferer—only partially restored to health by a limited period of treatment—being allowed to return to his old surroundings and occupation, when it would be miraculous if a relapse did not occur. When the importance of the after-care of the individual is realized, the curative effects of treatment will be maintained; but in the meantime, insufficient attention is being paid to it, and hence arise pessimistic utterances.—I am, etc.,

Crieff, July 25th. THOMPSON CAMPBELL, M.D.

THE FUTURE OF THE ASSOCIATION.

SIR,—The rejection of the Draft Charter has been no less regretted by the minority who petitioned for its amendment than by the majority, and they repel with indignation the accusation that they wished to wreck work so hardly accomplished and on which so much money had been spent. They have freely and frequently expressed their gratitude and admiration for the labour and skill expended on it, and only a strict sense of duty, and a sincere conviction that the welfare of the Association was at stake, led them to make and persist in making opposition to certain of its provisions. The influential

position of some of the petitioners, and the overwhelming support received in every case in which the matter was submitted to a vote by Branches, must prove that they represented a far greater number of members all over the country than the actual signatures seemed to show, and the absence of organization, money, and time fully explains the paucity of names adhibited. It is very impolitic, to say the least, for the majority to flout the opinions of an unknown number of members, not only because it will strain the loyalty which is so essential to the smooth working of the affairs of the Association, but because it will have an exceedingly bad effect on the profession outside, which it should be its ambition to attract to its fold. The suppression of the individual vote is the sole cause of our opposition, and is fatal to that confidence which is essential to the security and success of the society. This right of individual franchise is the sum of all our demands, and, as a matter of fact, it has never been argued or voted upon by the Divisions, though in principle it has been admitted in the election of members of Council by the Branches, and more recently and pertinently in the concession of a postal vote to the Colonial Divisions. The State has also admitted the legality and justice of a vote without personal attendance at the polling place in the case of a university election, and most public companies deem it necessary, in order to obtain the confidence of the shareholders and the public, to grant a proxy vote in the event of inability to attend a meeting to decide on important business. For these reasons we considered that it was both just and constitutional to demand that, in important matters, every member of the Association should have free and unfettered opportunity of expressing his opinion, without suffering any disability from having to attend compulsorily a Division meeting. A meeting should, of course, be held, and those who wished could record their votes in person, but sickness, professional duties, distance, or any other impediment should not deprive a member of a voice in the affairs of the Association. When the compromise which would have put an end for ever to our fighting was rejected at Sheffield in 1908, it was on the complaint of Sir V. Horsley that the postal vote was a "new principle," which had not been formally discussed by the Divisions. It was certainly a change as regarded Division voting, but not a "new principle," as I have shown above, in practice; but the obvious remedy—namely, referring it back to the Divisions—was refused by the Chairman ruling my motion out of order to postpone the application for the Draft Charter for that purpose. This policy must be held responsible for the greatly increased opposition which then arose, and culminated in the petition to the Privy Council. It will thus be understood how we have contended, as Mr. Pye-Smith does in his letter to the Journal of July 16th, that "the pace is dangerous." The Association lived under its old constitution for over seventy years, and attained honour and success; it is but in its infancy under the new one, and there are fears that some of its old reputation may be lost by commercialism and a provocative policy. Let us have all the safeguards we can against the encroachments of a spirit which may easily become tyrannical towards those within and militant against those without. At least, let no change of policy be made without thoroughly consulting the members on the widest possible franchise.

The only reasonable objection to a postal vote is that it might lead to an unintelligent decision. That is possible if no time is given for discussion in Division meetings or in the Journal, but really are we justified in insulting the intelligence of our members by holding that they cannot understand a matter without oral explanation? We believe, on the other hand, that an opinion can be as well formed from reading as from hearing a matter discussed, and that the decision will be even sounder and more unfettered. This was strikingly exemplified in the voting at the 1907 Referendum when over one hundred Divisions voted unanimously for or against the same set of questions. This almost ludicrous unanimity could have no other explanation than that the members were swayed by the personality of one or two men, or the special manner in which the case was presented. Besides, the same Referendum revealed the inherent weakness of the Division system, when, though the occasion was so important, only a tenth of the members could be got together, and many Divisions failed to meet at all. This is the foundation on which the so called Representative Body is based, and we consider it too precarious to warrant it taking up revolutionary or speculative schemes.

The postal vote on all important matters was the core of our demand, and the other amendments were meant to make it effective. The composition and independence of the Central Council was insisted upon for this object. But why depend on the intervention of the Council? What is to prevent important business, especially affecting finance, from being automatically referred to the members, as in the case of public companies? The definition of subjects for submission to a postal vote should not surpass the powers of our legal advisers, and, if they hinged chiefly on finance, might be agreed to without much difficulty. If this were done the question of the Council need vex us no more, and that body could be made in name, what it is now in fact, an advisory and executive committee of the Representative Body.

Though I have no mandate from the dissenting members, I am sure I am not wrong when I believe they would accept this solution of the matter. They are sick of hostilities which bring them into sharp conflict with those whom they respect so highly and would gladly work in harmony with. The prospect of further conflict is not to their taste, but, if need be, will be faced unflinchingly. They recognize how hurtful it is to the Association to continue internal warfare, and therefore both their inclination and interest is enlisted on the side of peace.

The question of cost in taking a postal vote need not stand in the way, as it would not exceed greatly the expense of issuing the billet for an ordinary meeting, and, if the Division Secretary were entrusted with the reception and collation of the replies, the central office would be relieved of that duty. The members need not grudge the cost of a halfpenny stamp for returning the voting paper for the privilege of expressing their opinion without attending the Division meeting.—I am, etc.,

Edinburgh, July 18th. A. Walker.

Sir,—In his Presidential address to the Metropolitan Counties Branch, published in your issue of July 16th, Dr. Lauriston Shaw remarks that many men outside the Association distrust its methods and decline its membership. He has in mind, no doubt, the lamentable fact that the Association has practically ceased to grow within the United Kingdom. Yet he need feel no surprise at this; for he himself has supplied the explanation. To this explanation I would draw the attention of your readers, and I hope that every one interested in the future of the profession will read and ponder it.

Dr. Shaw says:

> What are the essential features of the organization through which the aspirations of a united profession may have a reasonable chance of being realized?
>
> In the first place, it must be an entirely voluntary organization. . . .
>
> It must have an entirely democratic constitution. In these days of universal liberty it is useless to expect the members of any profession to submit to the control of an authority in the selection of which they have no voice. But far more important than this, it is impossible to secure the intelligent interest of a member in questions of professional policy and action unless he is given an equal opportunity with his colleagues of framing such policy and dictating such action. Granted these primary features of voluntaryism and a democratic constitution, without which success is impossible, the actual measure of success will depend on details of organization. The more perfect the mechanism for discovering the real wishes of the members and the closer the touch between the executive and the electorate, the greater will be the loyalty and discipline of the members upon which in a last resort all progress will depend.

Weighty words these! How do they accord with the policy which has just cost the Association its Charter?

So far from endeavouring to realize a true medical democracy—from giving to every member, however busy, however isolated, his fair share in the determination of its policy—those who are responsible for the loss of the Charter have strained every nerve to disfranchise the great majority of the Association and to set up, not a democracy, but an irremovable oligarchy.

Many of us who desire a real medical democracy, have urged that the Referendum, which is the sole method of appeal from the decisions of the Representative Body, a

single-chamber government by no means democratic in its mode of election, shall be:

(1) Taken by post to every member,
(2) Reasonably easily obtained, and
(3) Secured by a guarantee of continuance.

To any fair-minded body such proposals should have instantly commended themselves. I understand they so commended themselves to His Majesty's Privy Council. Yet they were strenuously opposed by the government of the Association, even to the point of sacrificing the Charter rather than conceding them.

With such facts before the profession, Dr. Shaw need feel no astonishment that the outside medical public is looking askance at the Association. For it is idle to imagine that a profession of highly educated men, "in these days of universal liberty" (to quote Dr. Shaw's excellent phrase) will voluntarily submit itself to the authority of any single chamber, from whose decisions no appeal is, under any circumstances, possible, and whose mode of election inevitably disfranchises a large majority of the electorate, men to whom exigeant duty in town and country makes attendance at meetings impossible. If medical men are to continue to interest themselves in the doings of the Association, and if its growth in these Islands is to recommence and to go forward, there must be allowed, in the new constitution, an effective appeal from the decisions of the Representative Body, so arranged as to give an equal vote for equal subscription to everyone, that is to say, a postal vote, and so ordered as to be both reasonably easily obtainable and safeguarded by a guarantee of continuance, in other words, on the vote of a simple majority of the Council with its ordinary quorum, or, with equal right, on the demand of any five or more Branches or Divisions (or Branches and Divisions) having a collective membership of not less than 10 per cent. of the Association.

These were the proposals which the present government of the Association elected to lose the Charter rather than accept. Yet what fair-minded person can find the smallest objection to them? It is impossible to frame demands more moderate. Reasonable checks on legislation are obnoxious only to despotism in one or other of its multifarious forms. But it will be found in the long run impossible with success to resist these reasonable requirements. For it needs no mantle of prophecy to enable one to predict, in the event of the persistence of the present shortsighted opposition to them, the approaching *débâcle* of the British Medical Association. If that should occur, the responsibility of its authors will be far heavier than the responsibility for the loss of the prestige which the possession of the Charter should have given us.

But I am told that saner counsels seem at last to be asserting themselves. Let us hope that this may prove to be the case. To a wisely governed and unquestionable democracy of medicine much should be possible. To traditions of altruism unique amongst human occupations, in view of the vast fields of usefulness opened to it by the labours of a century of research, the medical profession of this empire at the present time unites a singular nobility of aim and width of outlook. Its completed organization, when it comes, should be an unexampled instrument of good. May our Association be permitted to gain the honour to which its history entitles it, of building up such an organization. May no fault of leadership, no lack of the political sense, cause it to fall short of its own supremacy of attainment.—I am, etc.,

Exeter, July 17th. W. Gordon.

THE RECENT SPECIAL REPRESENTATIVE MEETING AND SPECIAL GENERAL MEETING.

Sir,—The letter by Dr. A. G. Bateman in your issue of July 16th goes to the root of the matter. Do the members of this Association wish it to be run as a business company or as a medical association? If the latter is the general wish, why waste further money? Much has been already lost in striving after what we could not get, and which if we got we could not really use. Let us remain an association of medical men, honestly striving to do our best to relieve sickness, content with the feeling of satisfaction that must come to all who know they have done their duty.—I am, etc.,

Paignton, July 16th. Griffith C. Wilkin.

EPIGASTRIC PAIN AS A COMPLICATION OF MUMPS.

Sir,—I venture to draw Dr. Godfrey's attention to papers by Dr. Wilfred Edgecombe,[1] Dr. J. Gordon Sharp,[2] and Dr. J. K. Sen.[3] He will find recorded in these papers evidence that to my mind prove that now and then the pancreas is acutely inflamed in the course of an attack of mumps. The symptoms of this complication may be severe, even alarming; but the termination is nearly always in recovery, so that in most cases the prognosis is favourable.—I am, etc.,

London, N.E., July 25th. E. W. Goodall.

Sir,—I was interested to read Dr. Godfrey's note on epigastric pain in mumps, as this symptom was present in myself during an attack two years ago.

Whilst his suggestion of pancreatic metastasis is good, there is another factor which, I think, should be taken into account. I have for some time been struck by the frequency of epigastric and right hypochondriac pain in young persons who for any cause—for example, adenoids—suffer from "dry mouth," and the conclusion I arrived at from further investigation of one or two cases was as follows: During sleep colonies of organisms grow upon the dry tongue, such organisms being capable of producing acid from sugars. They are subsequently swallowed, and the resulting fermentation of the carbohydrates of the food forms a highly irritating material in the stomach. The immediate result, in some cases at least, is an acute pylorospasm, the pain of which may become so severe as to simulate gall stones. The pain usually commences soon after breakfast, lessens slightly towards midday, but after luncheon may become intolerable. I have in my mind a case in which the symptoms continued periodically for years. The physical examination was always negative except for slight dilatation during the attacks, and also some tenderness over the pylorus. Never was there haematemesis or melaena. Medication with calomel, bismuth, etc., was of little use, but the distress was at once relieved by lavage, when the stomach contents were found to be acid and offensive. The condition was cured, and recurrence prevented by an antiseptic mouth wash night and morning and by correcting the habit of nocturnal mouth breathing. There were in this case no carious teeth unfilled. It is worth noting that an excess of saccharine foodstuffs greatly aggravated the symptoms and induced attacks with great precision, but was not essential to their occurrence.

The above experiences make me wonder if Dr. Godfrey's cases were due to the specific organism of mumps or to secondary organisms taking advantage of the condition of "dry mouth."—I am, etc.,

Coldash, Newbury, July 23rd. Cecil E. Reynolds.

Sir,—I was much interested in reading the letter of Dr. Godfrey, of Melbourne, in your issue of July 23rd, on epigastric pain as a complication of mumps.

For some years past I have been seeing many of these cases in which the occurrence of vomiting and abdominal pain, with perhaps high temperature, just as the swelling of the salivary glands was subsiding, led one to the unfulfilled expectation that orchitis was impending.

In December last, at this school, out of some twenty cases of mumps, at least ten followed this course, and as they showed marked tenderness to pressure over the pancreas, I came to the same conclusion as your correspondent, namely, that they were due to a true metastasis to that organ.

My experience of mumps dates back now nearly twenty-five years, and I am strongly of opinion that it is only in the latter part of this period that I have seen such cases as these, and that they belong to a variety of mumps which is indeed of recent development.—I am, etc.,

Marlborough College, July 25th. Edward Penny, M.D.

Sir,—An observation similar to those of Dr. H. P. Godfrey, described in the Journal of July 23rd, may be worth recording. A boy of 10 years, recovering from

[1] *Practitioner*, February, 1908.
[2] *Lancet*, January 16th, 1909.
[3] *Indian Medical Gazette*, March, 1909.

a mild attack of mumps, became rather suddenly ill on the fifth day. The temperature rose to 103°, with headache, epigastric pain, nausea, and (once) sickness. A deep-seated swelling was felt in the epigastric region. The symptoms, treated by hot applications, subsided in three days. There was no sugar in the urine.—I am, etc.,

London, July 27th. R. Fortescue Fox, M.D., M.R.C.P.

AN EFFICIENT AMBULANCE SERVICE FOR LONDON.

Sir,—On October 20th, 1909, the Royal Assent was given to an Act to enable the London County Council to establish and maintain an ambulance service in London. The Council had sought similar powers for providing a rapid ambulance service, summonable by telephone, for cases of accident or illness occurring in the streets or public places in 1906, but these powers, though approved by the Commons, were rejected by the Lords. Since 1907 the City Corporation has adopted a similar system within the area of its jurisdiction, and has demonstrated its complete efficiency in the matter both of the ease and the celerity with which the sufferers are transported to hospital in an electromobile ambulance. I cannot learn that any steps have as yet been taken by the London County Council to confer a similar boon on London outside the City in accordance with the powers of the new Act.

That the need for such service is great and urgent is proved by the report of the Departmental Committee of the Home Office of last year, wherein it was shown that 60 per cent. of all cases of injured or sick persons conveyed to hospital in London are transported otherwise than by ambulance or litter, that in more than one-fourth of the cases fault is found with the prejudicial character of the means of conveyance, while the unsuitable cab is still largely utilized, and actual harm is in one out of three of the more serious cases attributed to its use.

The Committee also drew attention to the fact that the number of accidents occurring in the streets of London had increased by no less than 62 per cent. in the three preceding years. The total figures for last year are, I believe, not yet available, but in a return published last week, which gives the street accidents caused by vehicles alone, and which were known to the police, I find that within the metropolitan district there were, in 1909, 12,018 cases, of which 287 were fatal.

The Home Secretary recently, in answer to a question, informed me that he would be willing to sanction any practicable arrangement for the co-operation of the metropolitan police in carrying out an improved ambulance service. When the new County Council was elected in the spring of this year, the opinion of all the candidates was sought on the question of putting into operation the Council's newly-acquired powers, and a considerable majority of the present Council, irrespective of party, have expressed themselves in favour of the Council providing such service.

Now that the necessary statutory powers are available, there is no longer any excuse for denying to the County of London this necessary municipal service, in which it is notoriously deficient in comparison with the City and our large provincial towns.

You, Sir, have on several occasions advocated this beneficent reform, and I again invoke your aid in bringing the matter before the public.—I am, etc.,

London, W., July 20th. W. J. Collins.

ON THE PRESENCE OF SUGAR IN HEALTHY URINE AS A SOURCE OF THE OSAZONE REACTION.

Sir,—Your issue of July 30th contains a letter from Dr. Cammidge purporting to be an answer to ours inserted in the Journal of the previous week. In our letter we referred to the universally admitted fact that sugar is present in the blood, and argued thereupon that, in conformity with what is observed to constitute the existing order of things, it must also be present in the urine. To this Dr. Cammidge has given a reply which fails in any direct manner to touch the basis of our argument, and has given instead a purely speculative dissertation on metabolism, into which we must decline to follow him. We complain of his method of controversy in this respect, and we have, further, to complain of the incorrect representation he has given in misquoting us with respect to glycuronic acid. He says: "I cannot agree with Drs. Pavy and Bywaters that glycuronic acid in the urine 'is an incidental ingredient, outside the question that is being discussed.'" We said nothing of this kind in our letter. After referring to the question of the existence of glycuronic acid in normal urine, we stated that, if considered to exist, it was looked upon by authoritative observers as only present to a minute extent. We then remarked: "Its presence as an incidental ingredient is outside the question that is being considered." It is within the range of common knowledge that the incidental presence of glycuronic acid in urine follows the ingestion of a number of agents of a drug character, and it is to this that our statement clearly applied. By omitting the word "as," which is a governing word in the sentence, and altering, as has been done, the position of the verb, an altered sense is given to the passage.—We are, etc.,

F. W. Pavy,
H. W. Bywaters.

London, W., August 2nd.

SHIP SURGEONS.

Sir,—I was very pleased to read Dr. Hadfield's contribution to the literature on the above subject in last week's issue, but I hasten to correct a misapprehension which apparently exists in his mind concerning the proposed organization of ship surgeons.

In my letter to the Journal of July 9th I explained how the formation of a subcommittee came to be suggested by the Medico-Political Committee of the British Medical Association, and that, as a preliminary step, it was agreed that two others with myself should act as a provisional committee. I may say that even this preliminary stage was not arrived at without a good deal of "spade work." Some three years ago Dr. Sharpe endeavoured to form an association of British ship surgeons, and a meeting was held in London with a view to considering the question. The attempt, however, proved abortive. Since that time others, including myself, have been actively engaged in the same direction, for, as Dr. Hadfield himself acknowledges, the time is ripe for reform, and the tone of many of the replies received indicates that the movement has not been started too soon. We fully understand that the matter will require the greatest care and tact in its handling, and that there will be no "fuss or friction." The Medico-Political Committee may, I think, be safely trusted to see that "a more or less unrepresentative committee" will not "attack the shipping companies."

The letter which is the subject of Dr. Hadfield's remarks was in no sense a "manifesto," but was published with the full knowledge and consent of the Medico-Political Committee, under whose auspices the organization will be formed and directed.

I quite agree with Dr. Hadfield that the ship does not exist for the surgeon any more than it does for the benefit of the cook. The ship is run in the interest of the owners, and it would frequently be a matter of very great advantage to them if the surgeon was selected with a little more care.

Surely Dr. Hadfield will acknowledge that if we can accomplish a reform in a constitutional manner it will be in the interests of the public, the shipping companies, and the profession. I do not think, however, that any one with this object at heart could hope for a satisfactory result from the method suggested by your correspondent—namely, "the thin end of the wedge of improvement, inserted by private effort"; the profession, ashore and afloat, is too deeply concerned to allow the problem to be solved in this irresponsible manner. I can answer for it, we are not a "warlike committee," and there need be no fear of our "offending the susceptibilities of the shipping companies."

Dr. Hadfield acknowledges that a sea surgeon, with his multifarious duties, should be in his way a specialist, and further states that by comparison with the royal navy medical work in the mercantile marine is far harder and of a more responsible nature, and that "a ship with a crew of 400 or 500 and carrying between 1,000 and 3,000 passengers engaged in a week's voyage to America or a six weeks' journey to Australia obviously forms a large practice for a medical man." Surely he will further acknowledge that it is not out of the way, under such circumstances as

these, to expect a company to provide facilities for the performance of surgical operations, the mention of which is one of the things your correspondent objects to in my letter, and I certainly think that it is only common humanity to endeavour to secure proper hospital accommodation for crew and passengers.

I can assure Dr. Hadfield that the members of the provisional subcommittee are all men of practical experience; two are writers of books dealing with sea practice, and one at least can claim an equal distinction with Dr. Hadfield, having been commodore surgeon of one of the largest steamship lines. I trust further criticism will result from our action, and that the question will be fully ventilated in the columns of the JOURNAL—with the Editor's kind permission.—I am, etc.,

Rostrevor, co. Down, Aug. 1st. JOHN F. ELLIOTT.

A DEFINITION OF INFLAMMATION.

SIR,—With all due deference to the authority of Professor Rushton Parker, may I suggest that Burdon-Sanderson's definition of inflammation is not a sound one? Aristotle laid it down as a principle that a definition should be both inclusive and exclusive. Apply this test to the following cases:

If I knock my hand and that part swells, is this of necessity inflammation?

If I knock my head against a brick wall and a sarcoma develops, is this inflammation?

If Professor Rushton Parker performs an operation and the part heals by first intention (as I am sure it would under his skilful hands), is this inflammation?

Yet in all these instances there is a "local reaction to an irritant."—I am, etc.,

London, W., July 25th. KENNETH CAMPBELL.

SIR,—The recent discussion in the BRITISH MEDICAL JOURNAL induces me to put before its readers a short consideration of the question.

A comparative study of the healing process shows that it is a property of all living organisms and as widespread as the phenomena of life. This fact has led to the extension of the word "inflammation" and to its application to such highly specific reactions as gall formations far beyond the idea suggested by the derivation of the word.[1]

In its simplest expression the reaction of a living tissue to an injury consists in activity of the fixed cells capable of reaction. This is seen in wounds of vegetables, but, when we come to animals, the presence of a mesoderm and body cavity adds an additional factor—namely, the presence of wandering cells; and as we follow this still simple process upwards in the scale of animal life, we reach that highly complicated condition which has been clinically recognized as inflammation, the classical characteristics of which are redness, swelling, heat, and pain. In this condition the vascular system, the representative of the mesoderm and primitive body cavity plays such a predominant part that the reactions of the fixed cells are difficult to follow.

Would it not be possible to embody these scientific and clinical facts in some such definition as this:

Inflammation is that portion of the reaction to injury of higher animals which concerns the vascular system characterized by redness, swelling, heat, and pain, such injury being insufficient to cause death?—I am, etc.,

Sevenoaks, July 25th. JAMES E. BLOMFIELD, M.D.

MATRICULATION AT THE LONDON UNIVERSITY.

SIR,—It is quite refreshing to see the letter of "M.D. Lond.," in the BRITISH MEDICAL JOURNAL of July 16th upon the questions set at the London University Matriculation. It ought, I think, to be more widely known which examinations could be taken in lieu of the matriculation in question. Oxford, Cambridge, and Dublin entrance examinations I have always understood are accepted by London.

For an examiner to be allowed to set schoolboys' questions which the average well-educated man of the world could not answer, seems to me to expose a fault in the university administration requiring a speedy remedy.

No wonder the London medical student avoids the London University, though the hospitals, I venture to state, provide the finest material in the British Isles—possibly in the world—but students go to the provincial universities to acquire a degree.

What is the average number of London M.D.'s on the staff of the London hospitals? I may be very ignorant of facts, but is it 10 per cent.?

I know many M.D.'s of this university at the present time—very able men too—wasting their lives in attending to club patients, a portion of whose modest contribution only falls to the doctor.

In this so-called higher education required for such work?

The directors of the London University ought to welcome the Royal Commission now sitting, as an impartial assembly is more likely to point out the faults, and possibly be the means of bringing the university more abreast with the times.—I am, etc.,

July 26th. A GRADUATE OF ANOTHER UNIVERSITY.

THE DANGERS OF HYPNOTISM.

SIR,—I am very much obliged to Sir Henry Morris for citing authorities in support of his remarks on the so-called "dangers of hypnotism." I was afraid I should be referred to Charcot and his following; but I was under the impression that the fallacies of this school had been exposed some time since, and that the experiments and teaching at Nancy and the work and investigations of Dr. Milne Bramwell, Albert Moll, and a large number of leading medical hypnotists and suggestionists had entirely discredited the theories and conclusions of the Salpêtrière.

However, the concluding sentence in Sir Henry's letter, I think, fairly states my case—namely, "hypnotism may be too dangerous for general use in medical practice, even if in the hands of those specially skilled and experienced the risks are not unduly great, or only very slight." Surely this view indicates that the practice of hypnotic suggestion is a legitimate and desirable therapeutic method if its results can be shown to be good enough. Of course there must be the *savoir faire*, the study of theory, the observation of cases and of the methods and practice of competent teachers.

I do not suggest that any medical practitioner can calmly sit down and proceed to hypnotize with impunity all and sundry according to some stereotyped method he has read in a book. On the contrary, most medical men will readily admit that they know nothing about the subject—and therefore they are dead against it! Such an one, being unversed and ill-equipped, might easily be potential for danger, and the hypnotic process would incur the blame instead of the operator and his *modus operandi*. If one places the administration of anaesthetics in the hands of the incompetent, or leaves the performance of major (and some minor) surgical operations to the unpractised, one must expect dangers to arise, where with the properly trained and skilled anaesthetist or operator such dangers can scarcely be said to exist or are infinitely small.

It would seem, indeed, that the dangers of hypnosis have been greatly exaggerated, while the results of this form of treatment in a vast number of remarkable cases have hardly received sufficiently wide recognition. Apart from the literature of the subject, even one's own quite limited practical experience has been most encouraging in the treatment by hypnotic suggestion of such intractable and deadly cases as drink and drug manias—cases which so often drift into the hands of the quack and the charlatan, if, indeed, they apply for treatment at all. The "dangers" of hypnotism are not worth a thought considered in the light of the results that are obtained by the treatment and the chances of success offered to the patient when all ordinary and orthodox measures have failed. For one must not forget that presumably the so-called danger zone is only reached in the deeper stages of hypnosis and in somnambulism, and possibly in certain cases where the hypnotic state has been induced repeatedly for one reason or another; but the vast majority of persons for whom treatment is undertaken never attain those deeper stages, and neither is it necessary for the end in view that they should.

One knows that only the lighter degrees of hypnotic

[1] *The Inflammation Idea in General Pathology.* W. H. Ransom.

influence are essential in a very large proportion of cases, for successful results: and in a considerable proportion also, suggestion alone, with the patient in a relaxed, passive, receptive condition, is sufficient to secure success. In any event, those cases for which the deepest influence possible is desirable, as well as those requiring a large number of séances (and here it is to be presumed the "danger" may arise), are precisely those cases in which life has become, or will become, desperate and burdensome, and any treatment is worth any risk

Sir Henry Morris quotes M. Pichet as noting "troublesome nausea and marked nervous irritability lasting twenty-four hours after awakening from the hypnotic condition"; also some other writer recording "intense fatigue in the limbs for several hours after hypnosis." Are we to regard such phenomena as "dangers" and condemn hypnotic treatment thereby? If so, surely chloroform narcosis might meet with an equal degree of condemnation.

As regards the case of the woman who acquires a passion for the physician who hypnotizes her, I doubt if hypnotic aid is essential to such an one, who is equally likely to succumb to the physician who carries with him a strong personality and a particular kind of atmosphere that appeals to the lady in question.

This matter, Sir, of the "dangers of hypnotism" is a very interesting and important one, and is no doubt a dominant factor in the prejudice and distrust existing in the minds of the laity and many members of the profession towards hypnotic suggestion as a therapeutic method. After all, we have to ask ourselves two questions: (1) Do we know the conditions under which danger is likely to arise? (2) Can we remove the conditions and so avert the danger? I venture to think the answer is in the affirmative.—I am, etc.,

London, W., July 19th. STANLEY NOBLE, M.D.Brux.

The Services.

EXAMINATION FOR PROMOTION.

THE following candidates were successful at the May examination B and D of Officers of the Territorial Force for Promotion:

For Promotion to the Rank of Lieutenant-Colonel (D 1, Medical Organization of the Territorial Force; D 2, Sanitation and Epidemiology; D 3, Laws and Customs of War on Land).—The undermentioned officers of the Royal Army Medical Corps (Territorial Force), qualified in D, passed in D 1, 2, and 3: Major T. FORREST, M.B., attached to the 7th Battalion Scottish Rifles; Major (Honorary Surgeon Lieutenant-Colonel) H. T. CHALLIS, M.D., 3rd East Anglian Field Ambulance; Lieutenant-Colonel R. T. HALLIDAY, M.B., and Major H. W. THOMSON, M.B., Lowland Mounted Brigade Field Ambulance; Major S. J. J. KIRBY, M.D., 2nd East Anglian Field Ambulance; Major T. STEVENSON, M.B., 2nd West Lancashire Field Ambulance; Major J. MCKIE, M.B., 2nd Lowland Field Ambulance; Major H. H. C. DENT, M.B., F.R.C.S., 3rd North Midland Field Ambulance. Passed in D 1, 2, and 3, qualified in B, and passed in B 1 and 2 under the old regulations: Major W. K. CLAYTON, Yorkshire Mounted Brigade Field Ambulance. Passed in D 1, qualified in D, and already passed in D 2 and 3; Major G. A. EDSELL, M.D., 3rd Home Counties Field Ambulance; and Major W. B. COCKILL, M.D., 3rd West Lancashire Field Ambulance.

For Promotion to the Rank of Captain (B 2, Military Law; B 3, Organization, Administration, and Equipment; B 15, Sanitation).—The following passed in B 2, 3, and 15, qualified in B.—Lieutenant A. ROBERTSON, attached to the Ayrshire Yeomanry; Lieutenant J. C. S. BURKITT, M.D., attached to the Leicestershire Yeomanry; Lieutenants G. E. J. A. ROBINSON, M.D., and C. H. ALLEN, M.B., F.R.C.S., attached to the Nottinghamshire Battery, Royal Horse Artillery; Lieutenant F. W. B. YOUNG, M.B., attached to the 4th West Lancashire (Howitzer) Brigade, Royal Field Artillery; Lieutenant R. BRUCE, M.B., attached to the 3rd Lowland Brigade, Royal Field Artillery; Lieutenant T. H. RICHMOND, M.B., attached to the 2nd North Midland Brigade, Royal Field Artillery; Captain A. H. W. HUNT, attached to the 3rd North Midland Brigade, Royal Field Artillery; Lieutenants W. ST. A. ST. JOHN and F. L. A. GREAVES, F.R.C.S., attached to the 4th North Midland (Howitzer) Brigade, Royal Field Artillery; Lieutenant S. MACLEAN, M.B., attached to the 3rd Wessex Brigade, Royal Field Artillery; Lieutenant C. J. I. KRUMBHOLZ, M.B., attached to the 7th Battalion Royal Warwickshire Regiment; Lieutenant K. S. STORRS, M.B., attached to the 5th Battalion Essex Regiment; Lieutenant A. H. NORRIS, attached to the 5th Battalion Manchester Regiment; Lieutenant W. S. PATERSON, M.B., attached to the 6th Battalion Highland Light Infantry; Lieutenant E. N. THRELFALL, M.D., attached to the Northern Cyclist Battalion: Lieutenant T. H. LIVINGSTONE, M.D., F.R.C.S., attached to the Northumbrian Divisional Company, Army Service Corps; Lieutenants A. AVENT and A. C. GOODWIN, M.B., F.R.C.S., North Midland Mounted Brigade Field Ambulance; Lieutenant A. B. DUNNE, Notts and Derby Mounted Brigade Field Ambulance; Lieutenant J. C. BURTON, 1st South-Western Mounted Brigade Field Ambulance; Captain A. G. HAMILTON, Welsh Border Mounted Brigade Field Ambulance; Lieutenants F. J. REES, J. R. POOLER, M.B., and J. TURTLE, 3rd East Anglian Field Ambulance; Lieutenant A. T. FALWASSER, 1st Home Counties Field Ambulance; Lieutenant J. DUNDAS, M.B., 2nd Home Counties Field Ambulance; Lieutenant F. W. K. TOUGH, F.R.C.S., 1st West Lancashire Field Ambulance; Lieutenant O. H. WILLIAMS, M.D., 2nd West Lancashire Field Ambulance; Lieutenants A. A. W. MERRICK, F.R.C.S., E. KNIGHT, M.B., and N. S. JEFFREY, M.B., 3rd West Lancashire Field Ambulance; Lieutenant S. F. ST. STEADMAN, 5th London Field Ambulance; Lieutenant T. A. BARRON, 1st North Midland Field Ambulance; Lieutenants J. R. PLANT and R. K. HAMILTON, 2nd North Midland Field Ambulance; Lieutenant P. W. TURNOR, 3rd North Midland Field Ambulance; Lieutenant A. COLERIDGE, M.B., 3rd South Midland Field Ambulance; Lieutenants J. M. GOVER, J. P. MILNE, and A. G. DUNN, M.B., 1st Northumbrian Field Ambulance; Lieutenant F. DARLOW, M.B., 1st West Riding Field Ambulance; Lieutenants J. W. STOKES, E. F. FINCH, C. G. MURRAY, and J. MACKINNON, 3rd West Riding Field Ambulance; Lieutenants T. DUNCAN, M.B., G. P. D. HAWKER, and J. MILLER, 1st Wessex Field Ambulance; Lieutenant A. J. MARTIN, 2nd London Sanitary Company. Passed in B 2, 3, and 15: Lieutenant W. SIMPSON, 1st Northumbrian Field Ambulance.

Public Health AND POOR LAW MEDICAL SERVICES.

METROPOLITAN ASYLUMS BOARD.

Scarlet Fever.

AT the meeting of the Metropolitan Asylums Board on Saturday, July 30th, the following letter was read from the Local Government Board under date July 16th:

"I am directed by the Local Government Board to advert to your letter of April 13th last, with reference to the suggestion of the managers of the Metropolitan Asylum District that the Board should institute an inquiry into the causes of the continued prevalence of scarlet fever. In reply, I am directed to state that this subject has been receiving the careful attention of the Board for a considerable time, and that during the last two years scientific workers have been engaged on their behalf in bacteriological investigation of this disease. Pending the discovery of exact methods of diagnosing the presence of the disease by bacteriological means, the Board have instituted inquiries with regard to enteric fever and diphtheria, the germs of which are recognizable. The Board are advised that in both of these diseases protracted and recurrent infection occasionally continues in patients who, so far as can be judged by ordinary medical examination, have completely recovered, just as these phenomena occur in scarlet fever, and it is hoped that the inquiries made into these two diseases will throw much light on the point in its relation to scarlet fever. As stated in answer to a question addressed to the President in the House of Commons on August 25th last, the Medical Officer of the Board will, as soon as his other engagements permit, prepare a memorandum on the subject of administrative means for the prevention of the spread of the disease, and it is hoped that such memorandum may be useful to sanitary authorities in co-ordinating their measures for this purpose. The Board may add that in judging the merits of different methods of treating scarlet fever they will be guided to a considerable extent by the experiences of the managers of the Metropolitan Asylum District. The Board have noted with much interest the accounts contained in the annual reports of the managers of experimental trials already made in the managers' hospitals as to the possibility of treating more than one disease under conditions other than those usually fulfilled. They trust that further exact reports will be made on this and allied subjects, in order that this Board may be in a better position to decide, on the basis of exactly observed experience, as to the utility and the limits of such utility of the methods alluded to above."

ANTI-PARASITE.—The usual method of cleansing a bug-infested room is to spray the walls, ceiling, and floor with a liquid disinfectant and then to introduce sulphur fumes. If this is not effectual it is probably due to the fact that the vermin are lurking in cracks of the wall, etc. A strong liquid disinfectant should be introduced through a syringe into any of such likely hiding places.

QUERY.—If a medical man certifies under the Infectious Disease (Notification) Acts that a patient is suffering from scarlet fever, it would be most improper that his certificate should be commented upon at a meeting of the sanitary authority concerned, and it would be outrageous that the comments should take the form of questioning the diagnosis of the certifier.

IN a recent report to his Government the American Consul-General at Dresden states that the number of medical practitioners has increased out of all proportion to the increase in the population in many parts of Germany. The percentage increase in population and physicians from 1883 to 1903 was as follows: Province of Brandenburg, population 55 per cent., doctors 302 per cent.; Posen, population 17 per cent., doctors 106 per cent.; Berlin, population 69 per cent., doctors 153 per cent. The following shows the number of the population to each physician: Berlin, 776; Posen, 3,246; West Prussia, 3,102; Reuss, 3,725.

Universities and Colleges.

UNIVERSITY OF LONDON.

Extraordinary Meetings of the Senate.

Extraordinary meetings of the Senate were held on June 30th and July 20th.

Deputation to the Chancellor of the Exchequer.

It was resolved that a deputation should wait upon the Chancellor of the Exchequer to urge the consolidation of the assistance received from the State by universities and university colleges.

The deputation subsequently waited on the Chancellor of the Exchequer, who was accompanied by the President of the Board of Education. The object of the deputation having been stated, Mr. Runciman, in reply, expressed his sympathy and his realization of the importance of giving to universities and university colleges a considerable amount of freedom in instruction, and promised that the matter should receive very careful attention. The Chancellor of the Exchequer expressed his concurrence with the reply of Mr. Runciman.

Imperial College of Science and Technology.

At the meeting on July 20th it was resolved:

That the Senate, while prepared to acquiesce in an increase of their number if necessitated by the incorporation of the Imperial College of Science and Technology in the University, record their objection to any scheme of reconstitution which would involve the creation of a large Senate with a small Executive Council, as set forth in Report A, as forwarded by the Academic Council to the Senate (Report of the Academic Council for Transmission to the Royal Commission on University Education in London, pages 32 to 42).

East London College.

The period for which the East London College was admitted as a school of the University in the Faculties of Arts, Science, and Engineering has been extended for a further period of five years.

Election of Chairmen of Committees.

The following have been appointed Chairmen of the Committees:—*Council of External Students:* Dr. S. Russell Wells; *Brown Animal Sanatory Institution Committee:* Sir William Church, Bart.; *Committee of Medical Members:* Dr. Frederick Taylor.

Appointment of Representatives.

The following appointments have been made:—

Dr. H. G. Cook as representative on the court of governors of the University College of South Wales and Monmouthshire.

Dr. E. G. Graham Little as member of the committee of the Chelsea Physic Garden.

Professor A. W. Crossley, F.R.S., as a member of the committee of management of St. Thomas's Hospital Medical School.

Dr. A. D. Waller, F.R.S., as representative of the University at the second International Congress on Alimentary Hygiene at Brussels in October, 1910.

Advanced Lectures in Physiology.

The following scheme of advanced lectures in physiology for the session 1910-1911 has been approved.

I.—*At the Physiological Laboratory of the University.*

1. Mr. Major Greenwood, jun., eight lectures on quantitative methods of studying physiological and pathological variations, on Tuesdays, at 5 p.m., October to December, 1910.

2. Mr. H. E. Armstrong, F.R.S. and Dr. E. F. Armstrong, on hydrolysis and enzyme action, eight lectures, on Tuesdays, at 5 p.m., January to March, 1911.

3. Dr. G. A. Buckmaster and Mr. J. A. Gardner, on gaseous exchanges taking place in the blood, eight lectures, on Tuesdays, at 5 p.m., May to June, 1911.

II.—*At University College.*

4. Dr. C. S. Sherrington, F.R.S., on reflex action, eight lectures, during the first term (Page May Memorial Lectures).

5. Dr. H. H. Dale, on physiological significance of amines, eight lectures, on Fridays, at 4.30 p.m., January to March, 1911.

6. Dr. W. M. Bayliss, F.R.S., on mechanism of oxidation, eight lectures, on Fridays, at 4.30 p.m., May to June, 1911.

III.—*At King's College.*

7. Mr. Joseph Barcroft, F.R.S., on tissue respiration, four lectures, on Mondays, at 4.30 p.m., October to November, 1910.

8. Dr. Otto Rosenheim, on recent progress in physiological chemistry, four lectures, on Mondays, at 4.30 p.m., January to February, 1911.

9. Dr. T. G. Brodie, F.R.S., on physiology of the kidney, eight lectures, on Mondays, at 4.30 p.m., May to June, 1911.

IV.—*At Guy's Hospital.*

10. Mr. J. H. Ryffel, on the intermediate products of metabolism, eight lectures, on Thursdays, at 4 p.m., October to December, 1910.

11. Dr. M. S. Pembrey, on the physiology of the embryo and the newly born, eight lectures, on Thursdays, at 4 p.m., January to March, 1911.

12. Dr. J. S. Haldane, F.R.S., on the secretion of urine, four lectures, on Thursdays, at 4 p.m., in May, 1911.

13. Dr. F. G. Hopkins, F.R.S., on the importance of organic chemistry in relation to physiology, four lectures, on Thursdays, at 4 p.m., in June, 1911.

14. Mr. E. L. Kennaway on autolysis in metabolism, four lectures, on Thursdays, at 4 p.m., in July, 1911.

V. *At St Thomas's Hospital.*

15. Dr. John Mellanby on coagulation of the blood, muscle, and milk, eight lectures, on Wednesdays, at 4.30 p.m., January to March, 1911.

Courses numbered 1, 2, 3, 4, 5, 6, 9, 10, 11, and 15 of the scheme have been recognized as advanced lectures which a candidate at the B.Sc. (Honours) Examination in Physiology may name for part of his examination (Red Book, September, 1909, p. 215). (See also Blue Book, September, 1909, p. 289.)

Ordinary Meeting of the Senate.

A meeting of the Senate was held on July 13th.

Recognition of Teachers.

The following teachers were recognized teachers of the University in the subjects at the institutions indicated:

St. Bartholomew's Hospital.—Mr. Charles Gordon Watson (Clinical Surgery).

Middlesex Hospital.—Mr. Somerville Hastings (Clinical Surgery).

Royal London Ophthalmic Hospital.—Mr. George Coats and Mr. Malcolm L. Hepburn (Ophthalmology).

D.Sc. Degree (Internal).

The degree of D.Sc. in Zoology was conferred on Miss Annie Porter, who had presented a thesis entitled Studies of Parasitic Protozoa, together with further papers contributed to the advancement of science.

B.Sc. Honours in Human Anatomy and Morphology.

It was resolved that the regulations for B.Sc. honours in Human Anatomy and Morphology (Blue Book, September, 1909, p. 287) be amended to stand as follows:

A.—Candidates who not less than one year previously have passed the Second Examination for Medical Degrees, Part II. Such candidates will be examined in the following:

1. Vertebrate Embryology.
2. Cytology, or Physical Anthropology with Practical Craniology.
3. Vertebrate Anatomy. The candidate must be prepared to be examined in the anatomy of not less than five vertebrate animals, of which not less than three shall be mammals, and one shall be a member of the Order of Primates. The candidate will be required to submit to the examiners the records and drawings of his dissections, signed by his teacher, if any. (The dissection of the human body, already provided for below, and of the rabbit, frog, dogfish, or other vertebrate, undertaken in the Zoology for the First Examination for Medical Degrees or the Intermediate Examination in Science, are not to be included in this list.)

B. Candidates who not less than two years previously have passed the Intermediate Examination in Science and who have taken the subjects of Botany and Zoology at that examination. Such candidates will be examined in Human Anatomy, including the dissection of the whole body, to be studied under a teacher of the university, or at one of the recognized medical institutions, and in—

Subjects 1, 2, and 3 as above.
4. Human Anatomy and Embryology.
5. Practical Human Anatomy, including the dissection of the whole body.
6. Physiology.
7. Elementary Practical Physiology.
8. Histology and Practical Histology.

The following candidates have been approved at the examinations indicated:

Second M.B., B.S. (*Part I*).—H. Archer, T. D. C. Barry, *G. A. Bird, Ursula P. Blackwell, W. R. Blore, J. P. Bracken, O. D. Brownfield, Isabel F. Buckle, Gwendolyn M. Burns, Marion M. B. Burt, N. St. J. G. D. Buxton, F. W. Chamberlain, Ying-Jue Cieh, R. C. C. Clay, D. M. Connan, M. B. Cooper, F. H. L. Cunningham, J. H. Dancy, T. W. David, R. F. Fagan, V. Feldman, J. Fielding, F. B. Gilbespy, S. L. Green, H. L. H. Greer, D. W. Griffith, H. E. Griffiths, A. G. Holman, S. C. W. Iredale, A. M. Jones, W. A. E. Karunaratne, G. T. Loughborough, R. J. M. Love, W. F. MacAlevey, H. J. McCurrich, O. S. Martin, A. D. Morris, T. B. Paul, J. E. Pearce, I. H. Pearse, F. T. Rees, W. L. E. Reynolds, R. E. Roberts, *G. W. R. Rudkin, E. A. Scott, P. D. Scott, J. H. Sewart, W. G. Shakespeare, Edith G. Sherwood, H. Smith, H. J. D. Smythe, J. B. Thackeray, H. Q. F. Thompson, H. Vickers, *W. L. Webb, H. P. Whitworth, F. E. S. Willis, M. U. Wilson, W. P. Wippell, S. Y. Wong.

* Awarded a mark of distinction.

Second M.B., B.S. (*Part II*).—*†W. M. Ash, V. Atienza, Mabel K. Bishopp, R. Brewitt-Taylor, N. H. M. Burke, F. W. T. Clemens, R. Creasy, M. J. Cronin, L. G. Crossman, †F. E. Daunt, J. P. Davies, L. A. Dingley, R. J. C. Douty, V. W. Draper, B.Sc., W. H. Edmunds, *A. R. Elliott, Pattie R. Elliott, T. L. Ellis, A. S. Erulkar, H. T. Evans, A. G. C. Findlay, F. R. Fletcher, Gertrude M. Flumerfelt, Katherine M. L. Gamgee, E. A. M. J. Goldie, A. Goodwin, F. A. Grange, P. W. Green, C. J. A. Griffin, M. Gross, A. E. Hallinan, R. S. Harvey, G. M. Heiron, P. H. Henson, M. Hocken, J. M. Joly, T. P. Kilner, L. M. Ladell, T. P. Lewis, Muriel A. Lloyd, J. D. Lyle, G. R. Lynch, †Fede M. Mackenzie, ‡C. J. Marshall, L. A. Martin, P. M. Masina, W. Matthews, †J. N. Mehta, *H. L. Meyer, A. G. H. Moore, *D. E. Morley, E. M. Morris, Edith M. N. Moss, W. D. Owen, R. D. Passey, P. T. Patel,

G. R. Pennant, Edna M. Powell, J. B. Randall, L. N. Reece, G. H. Roberts, J. E. Robertson-Ross, J. A. Ryle, W. B. Sanders, A. R. Sharrod, W. G. Shaw, C. Sherris, A. J. E. Smith, S. Smith, W. H. D. Smith, E. N. Snowden, J. L. Stewart, Agnes P. Taylor, J. R. K. Thomson, C. E. Thornton, J. A. Tsoi-A-Sue, T. B. Vaile, J. R. M. Whigham, A. H. White, C. L. Williams, †A. Wilson, A. Wei-tak Woo, W. A. Young.

* Distinguished in Anatomy.
† Distinguished in Physiology.
‡ Distinguished in Pharmacology.

VICTORIA UNIVERSITY OF MANCHESTER.

The following candidates have been approved at the examinations indicated:

First M.B., Ch.B. (*Part III., Organic Chemistry and Bio-Chemistry*).—Lily Allan, W. R. Blore, J. Brooks, J. E. Brooks, B. Browning, F. Chadwick, W. Christopher, J. W. Craw, N. H. Davison, O. M. de Jong, A. T. Gibb, W. Halliwell, K. G. Haworth, J. R. Jagger, J. D. Kenyon, E. A. Linell, Clara A. Lomas, K. Maximus, A. S. Paterson, W. A. Rogerson, J. R. B. Russell, J. R. Slack, E. H. Walker, H. Wilson.

Third M.B., Ch.B. (*General Pathology and Morbid Anatomy*).—C. T. G. Bird, J. Leach, T. W. Martin, H. G. Peake, W. J. A. Quine, C. M. Stallard.

Third M.B., Ch.B. (*Pharmacology and Therapeutics*).—F. S. Bedale, R. B. Berry, *A. G. Bryce, L. T. Challenor, J. Cowan, G. C. Dixon, G. Fildes, C. W. Fort, E. Grey, G. Jackson, D. S. Jones, J. Leach, J. A. Lees, A. H. Macklin, Mabel E. May, P. H. Midgley, T. H. Oliver, L. W. Sparrow, R. P. Stewart, C. F. White, A. G. Wilkinson, H. D. Willis, S. A. Winstanley, W. H. Wood, H. C. Wright.

Third M.B., Ch.B. (*Hygiene*).—F. S. Bedale, R. B. Berry, C. T. G. Bird, A. G. Bryce, L. T. Challenor, J. Cowan, G. C. Dixon, G. Fildes, C. W. Fort, E. Grey, G. Jackson, D. S. Jones, J. Leach, J. A. Lees, A. H. Macklin, Mabel E. May, P. H. Midgley, T. H. Oliver, L. W. Sparrow, R. P. Stewart, C. F. White, A. G. Wilkinson, H. D. Willis, S. A. Winstanley, W. H. Wood, H. C. Wright.

*With distinction.

Final M.B., Ch.B. (*Forensic Medicine and Toxicology*).—C. E. Butterworth, K. D. Bean, A. H. Holmes, L. W. Howlett, W. H. Laslett, Jane C. Miller, M. Moritz, Lovell Moss, G. E. Sawdon, W. Stirling, J. S. B. Stopford, G. K. Thompson, W. Warburton.

Final.—A. E. Ainscow, Estelle I. E. Atkinson, †R. Brierciiffe, G. T. Cregan, C. Davies, T. E. Dickinson, Gertrude H. Geiler, ‡§R. C. Hutchinson, R. B. Jackson, W. H. Parkinson, *†§W. A. Sneath, W. B. Wamsley, W. Wright.

* First-class honours. † Second-class honours.
‡ Distinction in obstetrics. § Distinction in medicine.

B.Sc. in Public Health.—A. Grant.

D.P.H.—J. D. Buchanan, T. Burrell, Mildred M. L. Cathels, S. J. Clegg, J. B. Ferguson, F. Hall, R. Holmes, A. R. McMaster, J. S. Manson, Agnes H. Nicoll, A. H. Norris, F. Webb, Winifred F. Wigglesworth, F. E. Wynne.

The University Prize in Medicine has been awarded to A. G. Bryce.

UNIVERSITY OF DURHAM.

At a Convocation on Saturday, July 23rd, the following degrees were conferred:

M.D.—N. A. Eddlestone, H. M. Levinson, R. O. Mather, H. R. McAleenan, R. R. Pirri, S. Robson, A. Smith, J. W. Smith.

M.D. (for Practitioners of Fifteen Years' Standing)—W. W. Bell, H. Collier, H. H. P. Cotton, W. B. Darroll, W. H. Hargreaves.

M.S.—H. M. Levinson, S. Robson.

M.B.—I. Bainbridge, J. A. Caulcrick, Helen G. Clark, R. V. Clayton, S. F. St.D. Green, J. Hare, S. Littlewood, Eva Lumb, G. C. M. McGonigle, C. E. Reindorf, E. H. Shaw, S. Worthington, J. C. Young.

B.S.—I. Bainbridge, Helen G. Clark, R. V. Clayton, J. Hare, S. Littlewood, Eva Lumb, G. C. M. M'Gonigle, C. E. Reindorf, E. H. Shaw, S. Worthington, J. C. Young.

B.Hy.—W. G. T. Hepplewhite, F. Rathkens.

On the same occasion Diplomas in Public Health were handed to the following: W. G. T. Hepplewhite, Sophia B. Jackson, K. Jamset, J. A. Neilan, F. Rahtkens, H. M. Stumbles.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

An ordinary quarterly Comitia was held at the College on Thursday, July 28th, the President, Sir Thomas Barlow, in the chair.

His Majesty's Reply to Address from the College.

The President reported that His Majesty the King had graciously received a deputation to present the address from the college, and called upon the Registrar to read the following reply, the Fellows all standing:

> I thank you on behalf of the Queen and myself for the loyal and dutiful address which you have laid before me to-day.
>
> It is a consolation to me in this time of sorrow to feel that my grief is shared by my subjects in all parts of the great Empire over which I have been called to reign, and to know that the character and aims of my beloved father were appreciated by those whose prosperity and welfare were ever in his thoughts.
>
> You may be assured that it will be my constant endeavour to justify the confidence which you repose in me; to follow, with the help of Almighty God, in my father's footsteps; to uphold the honour of our country; and to labour, so far as in me lies, for the prosperity and progress of my people.

Reply of Queen Alexandra to Address of Condolence from the College.

The following letter from Sir Edward Troup was read:

I am directed by the Secretary of State to inform you that the address of condolence of the President and Fellows of the Royal College of Physicians of London, on the death of His late Majesty King Edward the Seventh, has been laid before Queen Alexandra, whose thanks I am to convey to you.

Membership.

The following gentlemen were admitted Members of the College:

John George Adami, M.D.Camb., Benjamin Hobbs Deare, L.R.C.P., Major I.M.S., Gilbert Henry Dive, L.R.C.P., R.A.M.C., Septimus Montague Hebblethwaite, M.D.Lond., Sorabji Manekji Kaka, L.R.C.P., Peter N. Lakshmanan, M.B.Madras, L.R.C.P.

Licences.

The Licence of the College was granted to eighty-eight candidates.

Murchison Scholarship.

The report of the Examiners for the Murchison Scholarship was received, and the certificate was presented to the successful candidate, Mr. W. W. C. Topley, L.R.C.P., of St. Thomas's Hospital.

College Officials.

On the nomination of the President, the Council, and the Library Committee, the following were elected Censors, other College Officers, and Examiners:

Censors: Frederick Taylor, M.D.; Francis de Havilland Hall, M.D.; Seymour John Sharkey, M.D.; David Bridge Lees, M.D. *Treasurer:* Sir Dyce Duckworth, Bart., M.D. *Emeritus Registrar:* Edward Liveing, M.D. *Registrar:* Joseph Arderne Ormerod, M.D. *Emeritus Harveian Librarian:* Joseph Frank Payne, M.D. *Harveian Librarian:* Norman Moore, M.D. *Elected Members of the Library Committee:* Humphry Davy Rolleston, M.D.; Arthur Francis Voelcker, M.D.; Raymond H. P. Crawfurd, M.D.; Charles Arthur Mercier, M.D. *Curators of the Museum:* Sir William Henry Allchin, M.D.; Frederick William Andrewes, M.D.; Seymour John Sharkey, M.D.; William Hunter, M.D. *Finance Committee:* Howard Henry Tooth, C.M.G., M.D.; George Newton Pitt, M.D.; Herbert Pennell Hawkins, M.D. *Examiners.—Chemistry:* Wm. Holdsworth Hurtley, D.Sc.; Hugh C. H. Candy, B.Sc. *Physics:* Dawson F. D. Turner, M.D.; Alfred Henry Fison, D.Sc. *Practical Pharmacy:* Arthur Philip Beddard, M.D.; Edmund Ivens Spriggs, M.D.; William James Fenton, M.D.; Alfred Ernest Russell, M.D.; Arthur Robertson Cushny, M.D. *Physiology:* Nathaniel Henry Alcock, M.D.; Marcus Seymour Pembrey, M.D. *Anatomy:* Christopher Addison, M.D. *Medical Anatomy and Principles and Practice of Medicine:* Wilmot Parker Herringham, M.D.; Richard Grainger Hebb, M.D.; Sidney Harris Cox Martin, M.D.; Herbert Pennell Hawkins, M.D.; Sir Edwin Cooper Perry, M.D.; Sir Hugh Reeve Beevor, Bart., M.D.; James Galloway, M.D.; Arthur Francis Voelcker, M.D.; Wilfred James Hadley, M.D.; Wilfred John Harris, M.D. *Midwifery and Diseases peculiar to Women:* Arthur Hamilton Nicholson Lewers, M.D.; George H. Drummond Robinson, M.D.; Arthur Francis Stabb, M.B.; George H. A. Comyns Berkeley, M.D.; John Shields Fairbairn, M.B. *Public Health:* Part I, Henry Richard Kenwood, M.B.; Part II, Louis C. Parkes, M.D.

Fellowship.

The Registrar moved for the second time the following temporary by-law:

"That Robert Dawson Rudolph, M.D.Edin., elected to the Fellowship on April 28th, 1910, being resident in Canada, be admitted in absentia; any by-law to the contrary notwithstanding."

Communications.

The following communications were received:

1. From the Clerk of the Privy Council, *re* the Petition of the College against the proposed Charter of the British Medical Association.

2. From Dr. J. F. Payne, thanking the College for conferring upon him the title of Emeritus Librarian.

3. From Sir James R. Andrew Clark, asking leave to have a copy made of the portrait of the late Sir Andrew Clark, in possession of the College.

Leave was granted.

4. From the Committee of Management of the Chelsea Physic Garden, thanking the College for their donation.

5. From the Registrar of the General Medical Council concerning—

(*a*) The Assistant Surgeon Branch of the Indian Subordinate Medical Department.

(*b*) The subjects of the Final Examination, and whether candidates should be allowed to enter for them separately.

6 From the Secretary of the Royal College of Surgeons, reporting proceedings of the Council of that College on June 9th.

7. From the Clerk to the Corporation of the City of Glasgow, concerning Congresses on Public Health.

8. From the Secretary to the Imperial Merchant Service Guild, concerning a Committee upon sight-testing which has been appointed by the Board of Trade.

Reports.

The following reports were received:

1. From Dr. H. Lewis Jones, on the Third International Congress of Physio-Therapy held in Paris, March 29th to April 3rd, 1910.

2. From the representative of the College on the General Medical Council.

3. From the Committee of Management, dated June 7th, recommending:

(*a*) That the following universities be placed on the list of universities whose examinations are recognized as exempting candidates from the first and second examinations of the Board under the conditions of Paragraph III, Section III, of the Regulations—namely, the National University of Ireland, and Queen's University, Belfast.

(*b*) That the George Washington University, Washington, U.S.A., be added to the list of foreign universities whose graduates are exempted from the first and second examinations of the Board under the conditions of Paragraph IV, Section III, of the Regulations.

(*c*) That the following hospitals be added to the list of fever hospitals recognized by the Board for instruction in infectious diseases: The Kendray Hospital for Infectious Diseases, Barnsley; and the Great Yarmouth Fever Hospitals.

4. From the same, dated July 12th, recommending:

(*a*) That the Grammar School, Wolverhampton, be added to the list of institutions recognized by the Examining Board in England for instruction in Chemistry and Physics.

(*b*) That Dr. Frederick Taylor be appointed the visitor to the examinations of the Egyptian Medical School for the examinations to be held in December next.

(*c*) That the fee for each part of the examinations for the diploma in Public Health be raised from six to ten guineas for those candidates who do not possess the diplomas of the Royal Colleges, and that such alteration do apply to all such candidates who enter for the first time on or after July 1st, 1911.

All these recommendations were adopted.

The Annual Report of the Imperial Cancer Research Fund, the Quarterly Report of the College Finance Committee, the Annual Report of the Library Committee, the Annual Report of the Curators of the Museum, and the Quarterly Report of the Examiners for the Licence on the results of the examinations in April last were received.

Library.

Books and other publications presented to the Library during the past quarter were received, and thanks returned to the donors.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ORDINARY Council, July 25th, Mr. H. T. Butlin, President, in the chair.

Diplomas.

Diplomas of Membership were granted to eighty-three candidates found qualified at the recent examination, and diplomas in Public Health were granted to twenty-four candidates found qualified.

Imperial Cancer Research Fund.

Mr. Clement Lucas was elected a member of the Executive Committee of the above, in place of Sir Henry Morris, Bart., treasurer of the fund, who becomes a member *ex officio*.

Museum.

Mr. Stephen Mayou will undertake the revision of the ophthalmological collection of the college.

Mr. A. H. Cheatle is about to undertake the revision of the otological collection.

Examinership in Dental Surgery.

The term of office of Mr. A. S. Underwood will expire on October 12th next. The vacancy thus occasioned will be filled up at the quarterly meeting of the Council in that month.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following candidates were admitted to the Fellowship at a meeting on July 29th:

G. W. Badgerow, D. D. Baria, R. D. Brummitt, A. Dangerfield, C. A. A. Dighton, J. Fraser, D. J. M Legge, G. M. B. Liddle, J. L. Lohse, G. J. Luyt, A. H. M Maxwell, J. G. P. Murray (Major I.M.S.), R. S. Taylor, W. Thomson, M. H. Thornely (Captain I.M.S.), and A. Toulmin.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following awards have been made in connexion with the examinations at the end of the now concluded summer session:

The *Barker Anatomical Prize*, Mr. T. Mather Thomson; the *Carmichael Scholarship*, Mr. M. J. Hillery; *Mayne Scholarship*, Mr. J. S. Pegum; *Gold Medals in Operative Surgery*, Mr. J. S. Pegum and Mr. F. W. Warren; *Stoney Memorial Gold Medal in Anatomy*, Mr. M. J. Hillery. The Barker Anatomical Prize is of the value of £26 5s., and the Carmichael Scholarship £15. Awards of money prizes, medals, and certificates were also made in connexion with practical histology, practical chemistry, public health and forensic medicine, materia medica, and biology. Lectures and practical courses recommence on October 15th.

CONJOINT BOARD IN ENGLAND.

AT a meeting of the Council of the Royal College of Surgeons of England on July 25th, and of the Comitia of the Royal College of Physicians of London on July 28th, diplomas of Member and Licences to practise were respectively conferred upon the following candidates:

E. A. Attenborough, G. W. Beresford, C. A. Birts, J. G. Blechschmidt, W. S. Boothman, R. F. B. Bowes, S. E. V. Brown, J. Capell, R. C. Clarke, †R. E. Collins, E. G. H. Cowen, F. E. Cox, T. R. Davey, F. A. Dick, H. W. Doll, R. Drummond, E. C. East, J. A. Edmond, F. C. Endean, B. C. Eskell, W. A. Fernando, C. J. Fox, A. L. George, E. P. Ghadiali, C. Gibson, A. J. Gilchrist, B. Goldsmith, A. H. Gosse, C. D O. Grange, H. E. Griffiths, B. Herald, S. J Higgins, R. M. Hiley, J. E. H. Holroyd, W. H. Hooton, A. N. Houghton, †C. A. Joll, †A. R. Jones, M. M. Khan, W. S. Kidd, C. H. Knowles, W. Krupp, A. B. Lindsay, J. P. Lupton, †W. Macewen, C. McIver, P. A. Mackay, J. C. Mackwood, J. R. McRae, H. L. Mann, H. L. Martyn, G. Matthews, T. C. Maxwell, A. O. Mitchell, C. G. H. Moore, A. L. Moreton, A. Morgan, †D. N. Mudliar, H. Neame, H. L. C. Noel, R. S. Overton, A. C. Paterson, E. A. Penny, J. F. Penson, A. S. Pern, E. P. Poulton, L. Powell, E. A. Ramsden, S. S. Rao, A. H. Richardson, C. G. Richardson, A. S. Roe, A. L. Saul, C. F. Schuler, S. H. Smith, R. M. Soames, W. B. Stones, R. Stout, F. K. te Water, H. W. Tilling, R. H. Vercoe, H. H. V. Welch, A. J. O. Wigmore, W. S. Wildman, F. J. Willans, A. D. J. B. Williams, W. F. Wise, C. Woollard.

* M.R.C.S. Diploma previously granted.
† M.R.C.S. Diploma not yet granted.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE (*Part I, Chemistry; and Part II, Physics*).—W. G. E. Allen, P. W. L. Andrew, P. W. Barnden, N. Briggs, †E. V. Briscoe, E. Catford, J. Crétin, D. R. Curnock, L. S. Debenham, R. E. B. Denny, J. D. Dimock, †H. G. Dresing, J. A. Durante, S. E. Y. Elliott, †D. T. Evans, †J. E. Evans, †C. J. G. Exley, †M. Fahmy, †F. E. Fielden, S. W. Fisk, G. D. Gripper, †D. V. Halstead, E. A. Hardy, †W. H. Harris, F. C. Harrison, I. S. James, G. P. Kidd, †K. E. King, †A. G. Lennon-Brown, †J. S. Leslie, J. A. Liley, N. H. Linzee, †A. T. Madin, †N. H. S. Maelzar, S. Mallinick, H. W Maltby, †H. Millett, D. S. E. Milligan, †G. S. Mitchell, H. G. Moser, †H. F. Mullan, †K. M. Nelson, C. F. Newman, M. Pearson, E. N. Perham, J. Precopoulos, H. P. Price, C. R Reckitt, C. Y. Roberts, L. C. S. Roche, †E. S. Rowbotham, G. F. Roweroft, †N. H. W. Saw, P. de S. Smith, C. S. Staddon, †A. D. Stammers, W. F. Stiell, †W. H. A. D. Sutton, H. B Taylor, †J. A Tippet, †W. A. Turner, †W. E. Wade, A. H. Warde, G. L. Wilkinson.

* Passed in Part I only. † Passed in Part II only.

FIRST COLLEGE (*Part III, Elementary Biology*).—P. W. Barnden, J. H. Bayley, M. Bayumi, A. A. Brown, A. C. O. Brown, E. I. Davies, L. S. Debenham, J. D. Dimock, H. G. Dresing, F. E. Fielden, J. Fox-Russell, G. C. Gell, K. J. M. Graham, J. A. Gregory, J. V. Griffith, G. D. Gripper, W. H. Harris, F. C. Harrison, J. A. Hart, J. R. John, K. E. King, A. J. V. McDonnell, J. McDonnell, W. D. McRae, F. J. Messer, W. H. Milligan, C. F. Newman, T. M. Payne, M. Pearson, H. D. Pickles, J. Precopoulos, E. S. Rowbotham, J. Rumjahn, A. R. Sami, H. L. Smith, W. F. Stiell, H. B. Taylor, G. S. Terry, W. E. Wade, G. L. Wilkinson.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—*F. H. W. Brewer, *†J. M. Burke, *†C. S. Foster, *W. J. G. Gayton, *M. S. Jevons, *J. K. Nariman, *†A. H. Rich, *†F. C. V. Thompson.

MEDICINE.—*A. Cordon, †M. S. Jevons, †H. M. Jones, †J. K. Nariman, †C. Pyper, †R. Rowlands.

FORENSIC MEDICINE.—G. J. F. Elphick, C. W. Hayward, M. S. Jevons, F. G. Norbury, A. McL. Pickup.

MIDWIFERY.—J. Ellison, C. B. Hawthorne, R. G. Maglione, F. G. Norbury, W. E. North-Smith, C. B. Welsby.

* Section I. † Section II.

The diploma of the society has been granted to Messrs. J. M. Burke, C. S. Foster, H. M. Jones, W. E. North-Smith, C. Pyper A. H. Rich, R. Rowlands, and F. C. V. Thompson.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE following candidates were approved at the examination held at the end of the Thirty-third Session:

†A. Connal, † R. Scheult, †H. L. Duke, *†W. V. M. Koch, *H. Falk (Captain, I.M.S.), †C. L. Eyles †F. L. Boag, M. Y. Young, J. F. Leys (U.S. Navy), R. H. S. Marshall, †G. C. M. Davies, José F. de Pazos, G. Hoyos Robledo.

* Passed with distinction.
† H.M. Colonial Medical Service.

ON July 20th a presentation was made to Dr. A. G. Lawrence, of Chepstow, on his retirement after fifty years of practice. The gift to Dr. Lawrence was a massive silver tray, with high filigree edge, bearing on the centre the inscription: "Presented to Arthur Garnons Lawrence, M.D., by many friends in token of the esteem and regard in which he has been held during the fifty years of medical service to sick and poor in and around Chepstow." A presentation to Mrs. Lawrence took the form of a heavily moulded silver kettle and stand, inscribed: "Presented to Mrs. Arthur Garnons Lawrence in token of the regard and affection of her many friends, and in grateful recognition of long and loving service to sick and afflicted neighbours." In addition to these presents was a large album, neatly bound in leather, containing the names of the subscribers, and which practically contained the names of every one in the town and district.

Medico-Legal.

CORONER'S UNAUTHORIZED AUTOPSIES.

At an inquest held at Porth on July 10th, Mr. Rees, the coroner, intimated his intention of communicating with the Home Office, because an autopsy had been made without his authority.

It appears that David B. Jones, colliery labourer, who had sustained an accident some years before, had been attended by Dr. Cochrane, and his dispenser suggested to the widow that a *post-mortem* examination should be made. The suggestion was communicated to Mr. D. Watts Morgan, miners' agent, who, it was alleged, instructed Dr. Mitchell Stevens, Cardiff, with the result that a *post-mortem* examination was carried out on Friday by Dr. Stevens, Dr. Cochrane being present.

Dr. Cochrane gave evidence that death was due to cardiac disease. He was quite satisfied, and would have given a death certificate and not ordered a *post-mortem* examination. The Miners' Federation, he said, was responsible for the instructions, and his dispenser had no right to make any suggestion. Dr. Stevens had acted on the instructions of Mr. D. Watts Morgan.

Lewis Jones, brother of the deceased, stated that Mr. Edwards, the dispenser, told him that he was of opinion that the death of his brother was due to the effects of the accident.

In summing up, the coroner said this was the second time an unauthorized *post-mortem* examination had been conducted at Porth. It was not fair to the colliery company that a *post-mortem* examination should be held in this way. He felt sure that neither Dr. Mitchell Stevens nor Dr. Cochrane would have been concerned in the *post-mortem* examination had they known, without first of all communicating with him in the matter. He would ask the Home Office to inquire into the matter. If the relatives of the deceased could not rely upon their own doctor, he (Mr. Rees) did not know what people were coming to.

The jury returned a verdict, in accordance with the evidence of Dr. Cochrane, that death was due to heart failure.

SOME AMERICAN MEDICAL CASES.

Actions for negligence against members of the medical profession are so rare in this country that the "Digests" may be searched for many years past without revealing a single case where any new principle is enunciated. Such cases, however, sometimes occur in America. In that country there are many courts, interpreting the laws of many States. So numerous are the decisions that the mere "Digest" each year fills two volumes, each as big as Webster's Dictionary! In the volume which contains the cases reported during the latter half of 1909 there are several decisions of interest to the medical profession. In one of these (*Brown* v. *Bennett*, 122 N.W. 305), in an action against two physicians for malpractice, it was held that there was no joint undertaking by them, and that the want of care by one in leaving a surgical sponge in a wound was not imputable to the other.

Although the law as applied in America is founded on the principles of English jurisprudence, it has in some instances developed out of all recognition. In our courts it is often necessary to explain a scientific case to the judge and jury by means of models and diagrams. For instance, in an action against a surgeon for negligence in amputating a limb, it might be necessary to produce diagrams or skiagraphs. But what English lawyer would have thought it necessary to call for the production of the limb itself? In another American case (*Farrell* v. *Haze*, 122 N.W. 197) a charge of malpractice was based on the improper treatment of a Potts fracture, necessitating amputation of a leg. The evidence showed that portions of the bones were removed before amputation, and that the condition of the bones before and at amputation indicated a continuing disintegration from some cause long active after the defendant ceased to treat the injury. In these circumstances it was solemnly held that the bones of the amputated limb could not be received as an exhibit.

The following is a summary of another peculiar case: "In an action against a physician for malpractice, the plaintiff is not entitled to recover smart money." The facts of the case were that the physician had used an unsterilized instrument, whereby the plaintiff had contracted a private disease. It was decided that the plaintiff was not required to prove her case beyond a reasonable doubt. She need not give direct and positive evidence.

The question, who is liable for payment of fees, also arises in the States. In one case (*Hall* v. *Allen*, 104, p. 489) a man, 25 years old, without means and away from his people, was injured, and a physician began to treat him. His sister subsequently wrote to the physician requesting information as to his condition, and stating that the expenses would be paid. It was held that the sister directly employed the physician at her own expense, and that he might recover from her his fees for services rendered after the receipt of the letter.

MIDWIFERY ENGAGEMENTS.

Incog.—A midwifery engagement is binding in law, and the fee can be recovered, even should the lady call in some one else to attend her. Her only course is to ask Dr. B. to release her, but Dr. C. should rather discourage than abet her in what seems to be a capricious change of mind.

THE ASSUMPTION OF MEDICAL TITLES.

Inquirer.—The Medical Act (1858), clause XL, penalizes the assumption of certain medical titles, but the decisions of magistrates have been conflicting, and it is impossible to say whether a prosecution of the quack who calls himself a "herbal physician" would be successful.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

PATIENTS AND PRACTITIONERS.

H. V. writes that A. had been in attendance on a case for three days when a friend called to enquire and sent his own medical adviser, C., to visit the case, which C. did, giving A. only three hours' notice. Our correspondent does not state whether A. was able to be present, but asks us to say whether C.'s proceeding was usual?

*** If C. asked A.'s permission to visit the case with him and A. assented and the joint visit took place there was nothing unusual or improper in the proceeding. The length of notice is not material, as A. could have demurred and asked for a more convenient time. A. could have refused to meet C. if he thought fit to do so, although this is, as a general rule, unwise, and C. could not without a breach of etiquette have visited the patient by himself.

A "SEAWEED TONIC."

A correspondent sends us a cutting from the *Tredegar, Bargoed, and Caerphilly Journal* containing a picturesque paragraph relating to Veno's Seaweed Tonic, informing the public that a nurse is in daily attendance to administer doses of this concoction to credulous vendors, and advice to sufferers from all sorts of diseases. He wishes to know whether this can be stopped.

*** It is to be feared there are many advertisements of this nature issued in the press all over the country. It is very doubtful whether they are illegal under the present law, and it would probably be a waste of time and money to bring such cases before the courts.

FEES.

"Foozler" asks the following questions: (1) In private practice is it usual to charge the same for an abortion, or miscarriage, as for a confinement? (2) When a wound or ulcer is dressed in the course of a professional visit should a higher fee be charged than for an ordinary visit? (3) For setting a fracture, or reducing a dislocation ought a higher fee to be charged than for an ordinary visit?

*** (1) This would depend on the attendance required. The charge might be more, or less, than an ordinary confinement fee. (2) Under these circumstances, more time might be required of the practitioner, and the fee charged would be higher than for an ordinary professional visit. (3) It is usual to charge a special fee inclusive of, or in addition to, the ordinary visit for the treatment of such cases.

Obituary.

We regret to have to announce the death, on July 27th, of Dr. Wm. Spence of Dollar, while on a visit to his brother-in-law, Mr. Hugh Laird, at Aberfeldy. He had an attack of appendicitis, and on the evening of the 24th an operation was necessary, from the effects of which he never rallied. Dr. Spence had not been in robust health for about a year past. He spent the winter and spring at Davos, and had just returned greatly improved. Born at Letham, Fifeshire, fifty years ago, Dr. Spence studied medicine at Edinburgh University, taking his M.B. C.M. degrees in 1882 and his D.P.H. at Glasgow some years later. He had been in Dollar for twenty-three years, where he carried on a large practice. He was parochial medical officer for Dollar. He was a keen sportsman, and specially excelled as a curler. Dr. Spence is survived by a wife, three daughters, and a son, to whom, at this time, much sympathy will be extended from Dr. Spence's many friends.

We regret to announce the death of Dr. G. B. Halford, late Professor of Physiology in the Melbourne University, at the age of 86. In 1862 Dr. Halford was appointed to the charge of the medical school in Melbourne. He resigned his professorship fourteen years ago.

Letters, Notes, and Answers.

Communications respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the Journal, etc., should be addressed to the Office, 429, Strand, London, W.C.

Telegraphic Address.—The telegraphic address of the EDITOR of the British Medical Journal is *Attiology, London*. The telegraphic address of the British Medical Journal is *Articulate, London*.

Telephone (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* British Medical Journal *alone unless the contrary be stated.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

M. would be much obliged for advice as to treatment of "tumultuous" fetal movements, a condition not described in midwifery books consulted. Movements generally come on when mother goes to bed, excite "jumping" of one or both legs, the origin of which is referred to the insertion of psoas and iliacus muscles, and prevent sleep. Six months pregnancy. Similar condition with previous quite healthy child. Mother healthy, not neurotic. Bromides, chloral, trional in fair doses (gr. xx) apparently have no effect.

Pakeha writes: Can any reader suggest a remedy for persistent pain in the following case: Widow, aged 65, hotel keeper. Had protracted illnesses in 1906 and 1909. Gouty diathesis, large flabby heart, enlarged liver, occasional trace of albumen, with also occasional shortage of urine: abdominal ascites, which varies in amount; frequent flatulence, occasional attacks of eczema. She has a rooted dislike to patiently trying any mixture which is not most palatable, and a firm belief that hot gin is her most useful remedy. During her illness last year she had agonizing pain below the left scapula; this has now moved inwards until it is almost central but at the same level. The left radial pulse is distinctly weaker than the right, but she has no tracheal tugging, nor cough. She would be fairly happy if her pain could be relieved, and "Pakeha" will be grateful for suggestions.

ANSWERS.

"Equity," "G. P.," "Justice," and "M. A." have omitted to enclose their cards.

LETTERS, NOTES, ETC.

An Appeal.

Dr. J. B. Richardson (retired) of South Brent writes that Dr. Style, of that village, met with a very serious accident some weeks ago, fracturing the pelvis, and causing serious injury to the bladder and intestines. His motor is damaged beyond repair, and at a representative meeting here, at which Dr. Richardson was in the chair, the following motion was carried: "Following the strong feeling expressed throughout the district that some practical and tangible mark of the respect and esteem felt for Dr. Style should be shown him at this particular period, a public meeting was held in the council schools on Tuesday, July 12th, when it was unanimously resolved to invite subscriptions towards a testimonial, the character of which is to be decided at a later date." The pay of a country doctor is small, the work hard, and bad debts not unknown, and I think there must be many members of the profession who would be glad to help in a case such as this. I shall be happy to receive and acknowledge any subscriptions to this laudable object.

Optic Neuritis in Chlorosis.

The writer of the note on optic neuritis, which appeared in the Journal of July 16th, writes: In answer to Dr. Hawthorne's letter, published in the Journal of July 23rd, I would point out that the annotation to which he refers is practically an abstract of the paper quoted taken from the *Archives of Ophthalmology*. It is unfortunately impossible to verify every reference when abstracting a series of papers. "Adducens paralysis" is a misprint for "abducens paralysis." The first object of the note was to draw the attention of medical men to the fact that optic neuritis is occasionally found in chlorosis, and to give the reference to an excellent case published in an American journal. I regret that either through my mistake or that of the eminent American author, Dr. Hawthorne's name was incorrectly spelt.

Medicaments Applied to Uterus Tasted Immediately.

Dr. R. H. Kennan (Freetown, Sierra Leone) writes: I have just received the copy of the Journal for July 2nd, in which I see a letter from Dr. Alexander Duke referring to patients recognizing by taste in the mouth what drug had been applied to the cervical canal by him. I well remember the late Sir Arthur Macan telling me in Dublin that many patients told him they "tasted kippered herrings" immediately after he had applied pyroligneous acid to the cervical canal. It seems to me that the smell of carbolic acid and iodine (so well known to the public) might suggest their "tastes" to the patients, but such would be less likely in the case of pyroligneous acid suggesting "kippered herrings."

Vicarious Epistaxis in the Menopause.

Dr. Shelton Daly (Manchester) writes: Having read the short notice in the Epitome of the Journal for July 30th, Par. No. 65, upon vicarious epistaxis in menopause, by Macht, I thought the following note of a case of mine might be interesting to some readers: Mrs. L., aged 51, having had two children and one miscarriage, has suffered for the last two years from copious bleeding from the gums (which are not spongy), lasting two days, and filling three handkerchiefs. This is accompanied by headache and face-flushing; in two weeks afterwards, or at the time for her ordinary period, she has a very scanty discharge from the uterus, lasting three days. Her general health is good.

Academic Costumes.

Scarlet Lightning writes: In your description of the different gowns and hoods of the British Universities you are not quite correct with regard to the M.B. of Bristol. The gown is stuff *or silk*. The hood is black foundation; "Bristol red" (a distinct and characteristic colour) lining; salmon colour edging.

X. P. writes: You are probably not aware that the Royal College of Surgeons in Ireland grants an academic costume to its Fellows and Licentiates, thus:

Fellows.—Black stuff Master of Arts gown, faced with St. Patrick's blue Irish poplin border, 5 in. in width, narrowing round the collar behind, and extending to each end of the gown in front. Inside of the blue poplin there shall be a crimson Irish poplin lining 5 in. in width and of similar extent as the blue. Cap: Black velvet college cap, with St. Patrick's blue and crimson tassel.

Licentiates.—Black stuff Master of Arts gown, faced with St. Patrick's blue Irish poplin border, 2½ in. in width, *not* extending behind collar, but continuous to each end of the gown in front. Inside the blue poplin there shall be a crimson Irish poplin lining, 2 in. wide, and of similar extent as the blue. Cap: A black cloth college cap, with black tassel.

Will Messrs. Eve kindly take note, as there are many Fellows and Licentiates in London and elsewhere who are proud of the old college in Stephen's Green?

The Edinburgh Royal College of Physicians has also an academic costume, but I do not know particulars enough to describe it.

Climate for Latent Phthisis.

Dr. John P. Atkinson, jun., B.A., M.R.C.S., L.R.C.P. (Saffron Walden) writes: At page 239 in the British Medical Journal of July 23rd, I notice under the heading "Climate for Latent Phthisis," "M.D." writes, "the patient should avoid (2) a place where drinking water is drawn from the chalk." I presume this has reference more to the constipation than the latent phthisis, for from the rarity of phthisis in this chalky part of Essex, and the fact that cases imported here do well, I have been led to speculate as to whether a chalky water has not a beneficial effect on phthisis, and should be interested to obtain further information on the subject. The contrast in the number of cases and their favourable course when occurring is very marked compared with a previous experience in Devonshire, where the water was soft, peaty, and moorland.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Eight lines and under	0	4	0
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An average line contains six words.

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Note.—It is against the rules of the Post Office to receive *postes Restante* letters addressed either in initials or numbers.

A Lecture

ON THE

VALUE AND MISUSE OF SPECTACLES IN THE TREATMENT OF HEADACHE, MIGRAINE, AND OTHER FUNCTIONAL TROUBLES OF THE EYES.*

BY

ROBERT W. DOYNE, M.A., F.R.C.S.,

READER IN OPHTHALMOLOGY IN THE UNIVERSITY OF OXFORD.

While I approach the subject of my lecture with the keenest interest, I am not free from a certain amount of trepidation, for I know that I must necessarily tread on the toes of some to whom it has become almost a gospel to inflict on mankind on the smallest pretext the machinery of spectacles. It is in no sense an exaggeration to say that we are at the present time face to face with honourable, high-minded medical practitioners who honestly believe that they are preventing the incidence of tubercle, appendicitis, and other troubles by correcting minute refractive errors such as probably more than 90 per cent. of the population would be found, if examined, to possess. It appears to me that the word "astigmatism" has produced in them a mental condition resembling the condition that represents. In addition to these doctors, the country is flooded with opticians, many of them capable men and highly trained in physical optics, who, with no knowledge whatsoever of disease, are strenuously pointing out to all and sundry that the human eye is not a very perfect form of optical instrument, and that glasses can correct some of its errors and therefore should be worn, with the result that great numbers are quite unnecessarily disfigured by wearing glasses, and, what is probably worse, are placed under certain disabilities that accompany the wearing of spectacles.

A little more than thirty years ago I remember reading a book on headaches in which refractive errors of the eyes were not even mentioned as a cause, but nowadays the physical factor of refractive error has so possessed the medical mind that that one condition alone is deemed sufficient to account for functional symptoms without much attempt being made to further differentiate the actual *causa causans* that arises from such errors; but this will not deter me from speaking boldly, and making a protest that is much needed at the present time, against the promiscuous prescribing of spectacles. But at the same time that I make this protest against what I believe to be the misuse of glasses, I wish as loudly to proclaim the enormous benefits and relief from suffering that has attended the development of our knowledge in connexion with their use.

I will now proceed to deal with the manner in which these refractive errors provoke functional troubles, chiefly associated with the sensory branches of the fifth nerve; and I hope to bring before you certain facts which, if they have been before noted, at any rate have not been included in the textbooks on the subject. The principal troubles that refractive and muscle balance errors produce may be divided, roughly and somewhat artificially, into those that are caused by peripheral conditions and those by central conditions, the former often bringing about and merging themselves with the latter. The former include: Pain at the back of the eyes, pain at the brow, tender and bruised feeling of the eye, heaviness of the lids, pain at the inner canthi, pain at the nape of the neck, and morning discomfort. The latter include headache, sickness, sleepiness, polyuria, migraine. Of the former, the first four are due to fatigue of the ciliary muscle and are chiefly associated with hypermetropic errors, but may occur with anatomically normal eyes, and in any case you may be sure that the ciliary muscle is involved when the patient complains of pain at the back of the eyes. That it is a very definite localization of pain may be gathered from the fact that it is an expression used by high, low, rich and poor, and is no mere phrase that might have been adopted as expressive of ocular discomfort. The bruised and tender feeling of the eyeballs is manifest on pressing with the fingers on the eyes through the upper lid, and those of you who have felt it know very well what it means. The heaviness of the lids which helps to produce the sleepiness of the second category is due to the failure of the levator palpebrae. It is constantly in action, like the ciliary muscle, and receives innervation from the same nerve. The pain occasionally felt in the corners of the eyes is due to fatigue of the convergent muscles, and when it occurs is more often associated with exophoria. Pain at the nape of the neck is very often, perhaps always, associated with disturbance of muscle balance such as occurs in heterophoria, a term which includes exophoria, esophoria, hyperphoria, and hypophoria, signifying that the eyes in a state of rest are either divergent, convergent, or one looking up and the other down, the terms "hyperphoria" or "hypophoria" being interchangeable according to which eye you regard as being in the normal position.

I have said that pain at the nape of the neck is "perhaps always" due to disturbance of muscle balance, because when there is no hyperphoria there may be a strain on the external muscles of the eye by the innervation that they receive approaching the limit that is possible in what is known as the amplitude of relative convergence. It may be as well that I should explain what is meant by this expression. When the eyes are focussed for a certain point they have, in order to avoid double vision, to be directed accurately to that point—in other words, the eyes converge upon it. Now the power of convergence and accommodation are so linked together that with a certain amount of accommodation it is only possible to produce convergence within a certain range—that is to say, a certain degree more or a certain degree less than is required to accurately fix the object looked at; and this is a reciprocal condition, for when the eyes converge upon a certain point it is only possible to stimulate the ciliary muscle a certain degree more or a certain degree less than is required to accurately focus the object, and this range is the amplitude of relative accommodation in contradistinction to the former condition, which, as I have said, represents the amplitude of relative convergence. I may further illustrate this by pointing out that, being normal sighted, you can only accurately focus a distant object with one eye through a high concave lens, which requires a great deal of accommodative effort to neutralize its power by allowing the eyes to converge—that is, to squint. This proves that, in using your accommodation to the extent that is required to neutralize the concave lens, you have exceeded the maximum of the range of relative convergence for the point looked at; and in order to use the amount of accommodation needed you have to converge the eye to a much greater degree than is required for the fixation of the object with both eyes, and the excessive convergence used is manifest in the eye that is not fixing. This may seem rather involved, but if you closely follow out what I have said you will be able to understand what I mean.

Now, returning to pain at the back of the neck being perhaps always due to muscle balance strain, you will, I hope, be able to realize my point. If a patient has no heterophoria, but has a high degree of hypermetropia, the correction of the error may make so high a demand upon the accommodation as to stimulate a demand for relative convergence; this would necessarily make a great demand on the endurance of the external recti in restraining convergence, and in this way produce the kind of trouble that is induced by heterophoria. Morning discomfort about the eyes is more commonly felt by people in middle age who use their eyes a good deal overnight. It comes on frequently even after a good night's rest, and patients consequently feel surprised that it should be connected with use of the eyes the previous day. It is a symptom generally of accommodative strain, and though, as I have said, it is most common in middle age, it may be experienced by the young.

To pass on to my second category—conditions which I have attributed to disturbances of the higher brain centres, and especially to the fusion centre. I take ocular headaches as the principal example of this class. Now, the main points of ocular headaches are as follows: They

* Delivered to the candidates for the Diploma in Ophthalmology.

occur in childhood, and frequently as sick headaches; and, though sick headaches may persist in adult life, the type most commonly met with then are nervous headaches. I have noticed great attempts to differentiate the one from the other, but, after all, the only difference is that with the one there is sickness, or a sense of nausea, and with the other there is not. These headaches generally tend to pass off about the age of 50, and when a certain treatment is being employed about that age it often gets the credit, which it does not deserve, of curing the headaches. But there is another form of headache that comes on at about this age, but this is mainly due to failure of accommodation and insufficient help from spectacles. There is another cause which concerns the fusion centre and that is monocular diplopia produced in a remarkable way by astigmatism. This becomes more marked in middle age than in early adult life, and is seldom recognized in children; the condition is probably corrected by a subconscious irregular action of the ciliary muscle, and as its power gets less in middle age the subconscious correction is less effectual. Anyhow it often produces severe headaches from the uncertainty in fusion of the images of the two eyes. These conditions, too, give rise to the morning discomfort of which I have spoken.

Ocular headaches are generally frontal, and are often associated with browache and tender eyeballs. They come on after using the eyes at detail, reading and things of that sort, but what perhaps provokes them more than anything else is detail at a distance, watching a cricket match in the sun, theatres, picture galleries. Near detail is more often associated with the peripheral pain of the first category. The headaches may culminate in sickness, which generally gives relief, but sometimes exaggerates them. They rarely pass off without sleep unless some drug like phenacetin has been taken, which, with the majority, relieves, though a definite minority get no help whatsoever. It is very rare for ocular headache to persist after sleep, and the fact that it does so throws grave doubts upon the question whether the eyes are the cause of headache in that particular instance. Patients who suffer from this form of headache are generally of the neurotic type, and often unduly thin. They frequently dread excessive light, and pull down the blinds when snow is on the ground. They also avoid looking out of the window in a train, and such other things as tend to give rise to headache, though they may not have associated these particular actions as due to preventing headaches, but merely as avoidance of disagreeable conditions. Another symptom that is nearly always constant is polyuria. Perhaps this comes on more as the headache passes off. It has always surprised me very much that this symptom has never been noted, though it is often very marked indeed.

I mentioned just now that I considered these conditions of the second category as mainly due to disturbance of the fusion centre. My attention was first drawn to this form by noticing how very rarely one-eyed people and people who squint, or who have not therefore binocular vision, suffered from functional trouble dependent on the use of the eyes. A moment's consideration will show that this is not surprising, the effort entailed by binocular vision being enormously greater than by monocular vision. In the case of the former, the relative conditions of the muscle controlling the movements of the eye are constantly altering; every movement of the body has to be compensated and every alteration of the line of vision requires relative adjustment, the requirements in each case involving more or less all the external muscles of the eyes in an extraordinary involved evolution, whereas the one-eyed person escapes all such minute details. It is true that the one-eyed does not entirely escape, for the demand upon its functional activity is constant, whereas in two-eyed vision one eye is constantly relieving the other, as may be noticed by a simple manœuvre, such as staring without blinking at a knife on a white tablecloth—or, rather, not at the knife, but, as it were, through it, at an imaginary point some distance off through the table, so that, the eye not being converged on the knife but at a more distant point, the knife looks double; after a few moments the blade, may be, of one of the two images disappears, slowly to reappear, while the handle of the other disappears, and so on. You will notice that the action of blinking immediately dispels the illusion.

I think that all surgeons of experience will agree with me that the one-eyed do largely escape functional symptoms, but if this be not sufficient to demonstrate that the difficulties of the fusion centre are the principal cause of the functional troubles of which I am speaking, the point can still further be supported by noting the conditions of refraction that most commonly are associated with them; and here I think I am at variance with most observers, for, whereas astigmatism is generally spoken of as being the most frequent cause, I find that far and away the error most frequently associated with ocular headaches, etc., is anisometropia—a condition that involves two different retinal images, and lays a severe task upon the fusion centre, and I strongly suspect the main factor, when astigmatism is the cause, is the dissimilarity of the retinal pictures and the consequent difficulty of fusion. Another point in favour of my argument is that monocular diplopia produced in a peculiar way by astigmatism is very frequently associated with headache. Of course, the fusion centre is not always alone responsible, for it has an active *particips criminis* in the focussing centre, on which in many cases, especially in hypermetropia, it is making constant demands for definite images, and for their constant maintenance as definite images. In connexion with this I have often noticed an interesting fact, which I have not seen mentioned anywhere—namely, that the eyes have an automatic power of fine adjustment over and above that which can be stimulated by the will, and that each eye has this independently of the other; I state this is a fact which I maintain I can abundantly prove, though this is hardly the occasion to do so. It comes to this, expressed in a popular way, that the fusion centre makes a demand upon the accommodation centres of each eye that they shall produce for the fusion centre for its purposes as perfect an image as possible, and each centre has independently of the other within a certain rather small limit the power of stimulating the ciliary muscle of its own side, and, according to some observations I have made, even a little irregular action in compensating a certain small amount of astigmatism. Now, in addition to the powers the fusion centre has over the independent accommodation of each eye, it has the same sort of power over the centre controlling the external muscles of the eye, and this again is independent of the will. If you place a low prism base up or down before your eyes, without any conscious effort on your part the two images will fuse; sometimes, but not always, it is true that by a strong voluntary effort you can inhibit the fusion. The same thing is exemplified in heterophoria. And you may notice that it is people with heterophoric errors who screw up one eye in bright sunshine, the explanation probably being that, dazzled and worried, they are not able to attend to all the exigencies of the occasion, which they shirk by closing one eye. It is, then, I maintain, the action and reaction of the fusion centre and the lower centres upon which it relies, the constant effort to fuse dissimilar images, the constant demand on the accommodation to produce and maintain perfect images, with the constant tendency to failure from exhaustion, that provoke the symptoms we call ocular headache, and I have tried to prove to you that they do so from causes which are mainly subconscious and independent of will power. As one would expect, these symptoms appear when from any cause the bodily vigour, which we call "tone," is lowered. This frequently gives rise to erroneous conclusions in the lay mind, and it is common observation to us all, I suppose, to note that those patients whose headaches are very obviously due to the refractive conditions of their eyes or of their muscle balance are the ones who most readily disclaim the connexion. You will all recognize my quotation, "Oh, it can't be my eyes, because they always get well when I go away for a change." Again, "It can't be my eyes, because I have had these headaches all my life, and my father used to have them too." The obvious answer never seems to occur to them, that when the general health is improved the effort that still exists is able to be made without discomfort; or, in the second case, that they have had the same eyes all their lives, and probably their fathers had the same refractive error, for the shape of the eye, on which generally the refractive error depends, is just as

much a family hereditary feature as a nose, mouth, or chin; and, of course, the fact of the hereditariness of refractive errors is constantly demonstrable.

When I separated these ocular manifestations into two divisions, the peripheral and the central, I pointed out that the former merge into the latter; and from what I have said it will be obvious that the disturbance of the brain centres that produces headache is associated with symptoms of exhaustion of the muscles that produce the peripheral symptoms, and together with headaches, as I have before mentioned, intense browache and tenderness of the eyeballs frequently coexist; but this is not always the case, and headache, usually frontal, may be present without other symptoms. I have expressed the opinion that anisometropia is *facile princeps* the cause of headache, but that hypermetropic astigmatism and simple hypermetropia are frequent agents, and I must now say a few words as to the relative rarity of functional symptoms with myopic errors; when they do occur, I believe, as with hypermetropic errors, the trouble arises with the fusion centres. If you have followed the points I have tried to bring before you, it will not be difficult to understand this relative rarity. I have pointed out that the trouble arises from a vicious circle. The fusion centre demands clear images and makes demands on the lower centres which control the muscles of the eyes; the muscles become exhausted, the images become indistinct, and the fusion centre becomes more imperious as its task becomes more difficult. Moreover, all these details are mainly subconscious and independent of the will. When our subconscious self is left to itself, it soon recognizes its limitations and makes no futile attempts, in this way differing from our voluntary self, which is constantly making futile attempts. I can illustrate this by the prism of which I spoke just now, base up or base down, and I said then it should be a weak one, and that without voluntary effort the displaced images would fuse at the same time a sense of discomfort arises. If, however, you use a strong prism, no attempt at fusion will be made, and so long as you do not try to move about, when other conditions would come in, no sense of discomfort will arise; there will just be double images. Now, with myopia no effort of the ciliary muscle can neutralize the myopia, and the subconscious self does not make the attempt, and therefore this cause of headaches, which I tried to show was effort on the part of the accommodation centre to accede to the demands of the fusion centres, does not exist. Moreover, the fusion centre itself has no detailed demands made upon it. When troubles do arise they are more often of the peripheral kind, and are generally due to heterophoria, relative convergence, and the disturbance of vision by inappropriate glasses, upon which I will touch later on.

The extension of the disturbance in ocular headache from the ocular centres to those controlling the stomach is a remarkable one and not readily explainable. It is true, however, that the association of the stomach and its needs is often closely associated with the senses of sight and smell, and there are, of course, intimate association fibres between the centres.

With regard to polyuria that occurs with these headaches, perhaps more often as the attack is passing off, I do not know whether it is produced by raising of the blood tension or direct stimulation of the kidneys. My investigations into this have not been extensive or regularly made; yet in cases which I have examined I have not found the blood pressure always definitely raised or the urine of unusually low specific gravity; indeed in some cases its specific gravity has been rather higher than normal. However, I have no great confidence in these observations. I merely put them forward, so far as they have gone, as suggestions of the need of more accurate and constant observations in this direction.

I will just mention sleepiness as being in the central category. It is a frequently noticed symptom in association with accommodative effort, and, I suppose, is a sign of fag in connexion with this centre and the motor centres in stimulating the levator palpebrae, but it is probably also to some extent an association symptom, the closure of the eyes being associated with sleep, and exhaustion of the levator palpebrae tends to produce closure of the eyes.

Now, with regard to migraine, I hav seen in books and heard opinions expressed that refractive conditions have nothing to do with it. I think it is hardly necessary to argue this point; the association of the two is so common that it is quite beyond the possibility of a coincidence; it is true that migraine attacks some people who have no refractive or muscle balance errors, but so may headaches and aching of the eyes; in other words, functional troubles may arise without any errors, in the same way that legs may ache unduly without walking, if the patient is below par or out of health, without there being any malformation or other abnormality. Notwithstanding this argument, I feel no doubt that other centres than those for sight are sometimes first implicated and the disturbance has spread to the visual centres. Migraine is in its later manifestations very much the same as ocular headache, but its incidence is peculiar and the first symptoms are usually disturbance of the centre for light perception, but there may be other prodromata, especially in those cases which, as I have mentioned before, are not primarily eye centre cases. I cannot do better, in order to describe an attack of migraine, than read to you an account of his own attacks that I got from one of my patients:

I can remember having had sick headaches all my life, and I can remember "zigzags" after a fall when I was about 9. I have attributed attacks to the following causes: Mental worry, shock to mind or body, over-exertion, sudden changes of temperature, indigestion, going to the theatre, rowing, or any work that necessitates holding my arms above my head, such as hanging pictures.* The greater number seem to me to be caused by sudden changes in the weather, but any great anxiety or worry almost invariably brings on an attack within a day or so. The majority of the attacks have of late years come on in the small hours of the morning, but I have had them at all hours of the day and night. The first symptom of an attack is a mistiness of vision. I am told, however, that just before I am conscious of an attack I am flushed for a few moments, having previous to that been very pale. I can only see one half of what I am looking at distinctly; there seems to be a general mistiness over the other half. Sometimes this is the right half and sometimes the left. After a few minutes a zigzag of light suddenly appears in the same half of the field of vision as the mistiness. This zigzag always appears in the same spot (that is, when it is in the same half of the field of vision). When it appears in the right side of the field of vision it always appears just to the right of the centre of the whole field and about one-third from the top. When it appears in the left side it is just to the left of the centre. The zigzag (except in two instances) is horizontal and flickers the whole time, the motion apparently being from left to right. The two instances when the zigzag was not horizontal were in each case when the attack followed a day or so after a previous attack. Then they were vertical, commencing almost at the top of the field of vision and ending at the spot where the horizontal zigzags start. The wave-like motion was downwards. In each case they were in the right side of the field of vision. In one case the zigzag gradually swung round to the right from the top, as it pivoted at the bottom, being gradually joined by other zigzags until the general appearance was much the same as usual. To return to the ordinary attacks: The first zigzag, after a short period, is joined by other and longer zigzags until the whole of that half of the vision is covered with zigzags and generally clouded. The zigzags are not coloured in any way. They are always accompanied by shudderings. They last any time from ten minutes to half an hour, and, roughly speaking, the severity of the attack is in proportion to the number of the zigzags and the length of time they stay. Usually between the first appearance of the mistiness and the zigzags I have slight palpitations of the heart. From half an hour to an hour after the appearance of the first zigzag a headache comes on. This is confined strictly to half the head, and is invariably on the opposite side to that in which the zigzags were. This headache is accompanied by sickness. There is usually no trace of food in the stomach, but small quantities of liquid are brought up, of a very pale greenish colour, which have a peculiar faint fishy odour. Sometimes I am sick within a few minutes of seeing the zigzags. The headache is located chiefly in the forehead just over the eyebrow. The pain gradually grows in intensity until, in a bad attack, it seems more than I can bear. It generally increases in a series of waves, the height of the pain in each one being worse than the previous one; at this point I am usually sick. After the sickness the pain gradually dies down, and then as gradually rises again until the next sickness. When the pain is very bad, I get instant temporary relief by the application of a hot sponge to the back of my neck.

At the height of a bad attack I get a curious numbness in my arms and half my hands; and with a very bad attack a sort of paralysis down the left half of my tongue, and I have a great difficulty in forming my words, in fact, cannot make myself understood, as I cannot say the words I want to. The attacks vary very much in their intensity and duration, and have, in the past, lasted as long as ten hours. During a bad attack the breathing becomes abnormal—spells of very laboured, extremely

* The cause here is probably the strained position of the eyes upwards.—R. W. D.

rapid breathing alternating with spells of very light, almost imperceptible breathing, with a long deep breath at regular intervals. When an attack is in progress I cannot stand any light, even moderately bright daylight very much increasing the headache.

The attacks were at their worst in 1891, when I lived for a year near Birmingham, where I entered an office for the first time, and in 1903, the first year of my married life. About two years ago, on the advice of my wife's doctor, to whom she had mentioned my attacks, I tried bicarbonate of soda in hot water as soon as I had the first symptoms of sickness. Since I have done so I have not had an attack of the worst kind.

Although occasionally an attack comes on without the slightest warning, I generally have warning a day or so before. Even then I have no idea when it will come on. I have three kinds of warning—intense sleepiness, a *bitter taste** in the mouth, and a feeling of great weariness, accompanied by deep sighs. The first and last are the most fatal, the bitter taste is not usually fatal unless it goes on for several days. The sleepiness is generally most marked for half an hour or so before and after a meal. The feeling of intense weariness comes on in the evening preceding an attack, when it comes on in the small hours. I have noticed many times that I have been feeling for days that an attack is imminent, and then one day I feel remarkably well and light hearted, and then an attack comes on. Again, I have repeatedly waked in the morning and thought what a beautiful night's rest I have had, and then an attack has come on either before I have started to get up or while I was dressing.

In the case of this patient there was only a very low hypermetropic error, and I do not regard his attacks as primarily due to ocular centres, although I think the later stage of headache and sickness is probably in his, as well as in other cases, due to disturbance of the fusion centre in the same way as in ocular headache, for you will notice that in migraine the headaches and sickness that occur are always secondary to visual manifestations. The most common visual manifestation is the zigzag light or fortification outline that is experienced at the periphery of the field of vision; another is the shivering cloud that, beginning as a spot, gradually spreads over the whole field; or there may be a large absence (negative scotoma) in the field of vision, or, again, hemiopic loss. The counterpart of these sensory manifestations is a peculiar form of migraine when the ocular motor area is affected, and a temporary paralysis or paresis of one of the ocular motor nerves, generally the third, follows the attack.

I have now gone briefly but widely over the range of functional disturbances associated with the eyes, and I must pass on to the main object of my lecture, and that is treatment and especially the treatment by glasses.

There are certain general principles in the way of treatment that I should first point out. If you have a thin, neurasthenic worrying patient to deal with, you will probably do more good than by any other means if you can improve his general state of health, fatten him, and succeed in getting him not to worry. The vigour of such patients will thus be increased, and they will be able to make the functional efforts required by their particular conditions without exciting the functional troubles of which I have been speaking. This, however, is easier to suggest than to carry out successfully. The Ethiopian cannot change his skin nor the leopard his spots, and you will find it wellnigh impossible to teach the patient with a Martha-like disposition not to be troubled about many things. However, if not entirely successful, much can be done in this direction. Iron or arsenic may be given to the anæmic. The digestive tract should be attended to, those with poor physique should develop themselves by muscular exercises. An actual attack may be cut short sometimes by a violent mental effort or tremendous physical exercise, and often successfully by such drugs as phenacetin, antipyrin, aspirin, or the like. But to really treat the condition you must deal with the cause. The time when these functional symptoms usually declare themselves are in children, when they begin to grow out of their baby fat and do lessons more seriously; again, a little later on when children are growing rapidly, in girls, especially about the age of 17, in boys when they have gained nearly their full height, but have not filled out, in women after childbirth, especially during lactation, and in both sexes after exhausting illness. If the symptoms you are called upon to deal with are merely those of eye strain, pain at the back of the eyes, in the brow, or at the nape of the neck, and you find that there is small hypermetropic error less than, say, 2 D., or a small muscle balance error, it is certainly not necessary at once to assume that glasses must be worn always or even for near work. True, it is usually advisable to help the accommodation temporarily, but this is by no means always the case. You should take a broad view of the situation: if the patient be a child, if you see that the lowered tone is obviously due to a temporary cause and the error be a small one, you can do all that is required by moderating the task that the eyes have to bear daily, and by regular and gradual increasing use train the ciliary muscle to do the work that is required of it, even though it be a little more that is required of a normal eye. It is more generally advisable to give glasses temporarily to help the patient over the stile, but you must recognize that you have not done everything that is needed for your patient if you are content with putting machinery on his nose. Glasses, in themselves, are a disability; they spot with rain, they get dewed, they often break, they pinch or mark the nose, they are always unsightly, and in many other ways a nuisance. You may say that patients get used to them, but so people can to many undesirable things, as living in a sewer or not washing—I give extreme instances—and I maintain that in hundreds of cases in which they are worn they are at least unnecessary. To say that they are necessary is to deny that the ciliary muscle can do its work, and I am prepared to argue with any one that, in numerous cases in which glasses are worn, the muscle has the potentiality to do its work if only it were allowed the chance of developing itself and demonstrating its power. Patients may be given glasses to help them in time of especial need, and the fact that when they get stronger, and the glasses are taken away, the eyes ache, is given as proof that they are still needed. But of course the eyes ache; a muscle will not develop itself beyond its need, and when glasses are taken away it must have a few weeks to develop itself to bear the burden of which glasses have relieved it, but which the improved health of the patient may permit. Fortunately, patients as often as not take the matter into their own hands and discard the glasses which they have been told they must always use. I am now only speaking of patients who have been given glasses for near work, but very often the patients, with perfectly acute vision, have been placed behind glasses to be worn always. In the cases of which I am now speaking, this is not only undesirable but absolutely wrong, for to allow the child's ciliary muscle to do the slight extra work for distance that is involved in low degrees of hypermetropia tends to develop its function and more capable of making the increased effort at near work, which may also be further relieved by glasses. The advantages of the physiological functional exercise in treatment of not only children, of whom chiefly I have been speaking, but also of adults who are suffering from strain of accommodation, seem in danger of being entirely lost sight of. Supposing a person has to walk daily so many miles to his work, and his legs ache, you would not put him to bed for a month to develop the power of the muscles of his legs; you would make him develop his muscles by walking. Why, then, treat the ciliary muscle differently? When a patient complains of aching of the eyes, and, may be, dazzling by light, the usual treatment he receives, even at the hands of many who ought to know better, is rest of the eyes, and perhaps dark glasses, and so he may go on for years. I have known many such cases who are nothing less than artificially manufactured invalids. It cannot be too loudly or forcibly proclaimed that in functional troubles and in functional failure, the treatment that should be adopted is not rest but exercise. To remember and act on that simple fact would be of invaluable benefit to mankind. I saw on this day that I am writing a patient, a man well up in the Indian Civil Service, who, eleven years ago, was told by one of our leading ophthalmic surgeons that he must give up his work at Oxford at which he was then engaged, give up all ideas of the Indian Civil Service, and go on a farm. He was sent to me by a tutor of his college, but so impressed was he by the verdict that had been given him, that I had to beseech him and get the influence of his tutor to induce him to wait three months and try if he could not, by exercise, develop his ciliary muscle to do its work. The fact of his position now shows that within three months he had recognized

* This bitter taste is not a sour eructation, but is from nerve excitation. I inquired carefully into it.—R. W. D.

his power. I really cannot understand how it is that many excellent, scientific, experienced ophthalmic surgeons will not recognize that the ciliary muscle, like any other muscle, can be "Sandowed," if you will allow me to use this expression to impress what I mean on your minds. In developing the ciliary muscle by functional exercise there are a few points you must remember. You must begin with a small amount and gradually increase, and the exercise must be regular, the same amount each day, not more one day when the patient feels "fit" and less when he feels down. It should be the same sort of training for which the athlete goes in. And especially when you have gained the patient's confidence and he feels he is gaining, you must not let him go too fast, and when his eyes are developed up to the required amount of work—say, five or six hours a day—he should keep on regularly with this for some weeks before he attempts to use his eyes freely, sometimes more and sometimes less.

I have hitherto been speaking of low degrees of hypermetropia with functional trouble, but there are high degrees which you will recognize at once are beyond the power of the ciliary muscle, and in these cases you will have to consider the physique of the patient and his conditions of life in prescribing the glasses constantly or only for near work; the necessities of each case, combined with common sense, will lead you to the correct treatment.

Muscle balance errors must sometimes be corrected, but it is well to hold off doing so if you can. It so often leads to the demand for constant glasses, especially in cases of hyperphoria, but you may often correct with advantage half the amount that may exist of exophoria (weakness of external recti, as it used to be called). The much more uncommon condition of esophoria illustrates, sometimes more than other forms of heterophoria, the advantage of a prism. Eyes with normal refraction suffer in this condition, and the cause is more frequently, I think, than in any other error, overlooked. If you recall what I said about relative convergence, you will realize the great difficulty the ciliary muscle has in focussing to the required degree when the eyes, already converged in a state of rest, require little or no voluntary effort of convergence. Accordingly, if you bring about this requirement by giving the patient a prism base out even to the full degree of the error, though less may be sufficient, you will enable the ciliary muscle more readily to do its work in relative accommodation. Cases of hyperphoria that require glasses are among those who should wear them constantly.

Now, as regards headache and migraine, I hold that you cannot with any confidence undertake to give your patient any relief, except sometimes in cases of simple hypermetropia when the centre for accommodation only is involved, unless the glasses are worn constantly. The commonest error that provokes the symptoms is anisometropia, and in that condition, while one eye has bad vision, the other often has supernormal vision. In these latter cases you are met by a great difficulty. The patient has supernormal vision, and you ask him to imprison himself always behind glasses, with all their attendant disadvantages, in order to relieve him of a possible headache, say this day six weeks, and yet only by wearing the glasses can you give him any hope of relief. The question here becomes one for practical consideration. To put it popularly, Is the game worth the candle? In these cases, where you have no other practical advantage to offer the patient, he has to consider whether he will put up with an occasional incapacitating headache or wear glasses always, and the judgement may fairly be left with him. But in cases where the vision of both eyes is bad, more frequently the case with astigmatism, then there is infinitely less difficulty in advising glasses, and, of course, in all those cases where patients' lives are being spoilt by constant headaches and incapacity, there is no question whatever. Instances in which patients' lives have often been altered by means of constantly-worn glasses from continual suffering to practically complete health are by no means uncommon.

The headaches of middle age can generally be relieved by giving proper presbyopic glasses, save those that are due to monocular diplopia, and for such glasses must be prescribed for constant wear.

Finally, I have to deal with the kind of correction that should be worn, and at the outset I will say that I agree with those who give the most exact correction for every error in the case of patients who have to wear glasses always; but I go no further in this direction, and I am fully aware that the views I am going to put before you will receive the most determined opposition, nevertheless I unhesitatingly assert my firm conviction of their correctness. I hold that unless you are going to give glasses for constant wear, you should not correct in detail the error of each eye, but should give a common amount of help to each; in other words, you should not upset in any way the relative condition of one eye towards the other. For instance, if the refraction of the eyes be unequal, and you correct the errors for reading, when mealtime comes the patient leaves off his glasses, and is looking at his plate about the same distance as reading with the eyes unequal, or he may be talking to a friend and looking at his watch. I maintain that for real comfort the eye should always be used under the same relative conditions; that you should not correct astigmatism or anisometropia unless you are prescribing constant glasses, and especially is this the case when you supply a patient with presbyopic glasses; indeed, if you do, you will find that very often he will desert you, and go to another ophthalmic surgeon and say that he cannot wear your glasses. The only disadvantage of this doctrine is that it encourages men to do slipshod work, but it is no excuse whatever for not working out the errors that you are not going to correct them.

The question of myopia does not strictly come into this lecture, but I just mention incidentally that myopic children during the period of growth and development should wear fully-correcting glasses always. It is then that the short sight develops, and nothing checks its development like glasses of the kind I have mentioned.

One word as to cosmetic considerations in glasses. One so often sees pretty, golden-haired children in gold spectacles, the parents saying, "Poor dear child, if she has to wear glasses, let them be gold ones," quite losing sight of the fact that the gold, by simultaneous contrast, takes all the shine and brightness out of the hair. When glasses for adults have to be worn always, it is probably desirable that they should be made as inconspicuous as possible, but glasses to harmonize with the face are always more or less of a failure, and when less inconspicuous are only less of a failure. I myself always think, when glasses are worn only for near work, that no attempt should be made to make them harmonize with the face, and that great large round tortoiseshell frames are the best and most comfortable. True they are grotesque, and people will say, "What dreadful glasses you have got on! where did you get them?" but they will not say they spoil the face; on the contrary, if the face be a beautiful one, the contrast will rather add to it than detract from it. However, each one to his taste.

REFRACTION OF THE EYE IN SCHOOL CHILDREN.*

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I have thought that these few remarks upon the refraction of the eye in children may be of interest in view of the prominence that the treatment of school children has of late taken. Most of you here are acquainted with the methods used for testing the vision and recording the error of refraction of the eye, and you must forgive me if much that I say is familiar. It is certain that many of these children will come under your observation, and in some cases will present to you problems that may appear difficult of solution. It is with the object of, perhaps, being of some use in helping in the solution of some of these difficulties that I have ventured to read you this short paper.

The children are sent from school at all ages, from 5 to 15, for treatment of eye defects. It is a pity that in many cases we do not see them earlier, at the age of 2 or 3, in order that we may attack a squint at its inception, for it is at about this age of 2 years that the majority of convergent squints begin.

*A paper read before the Hampstead Division of the Metropolitan Counties Branch of the British Medical Association, December 17th, 1909.

The children will have been tested roughly at the school, sometimes each eye separately, sometimes binocularly. Here I may say that it is a great pity that, for the sake of uniformity in the records and for statistical purposes, the same method for testing the acuity of vision is not adopted in all schools. I prefer the separate eye method; it takes longer, but gives more accurate results, and the method of recording should be by the percentages of eyes and not of individuals. On placing them before the test types the children show a visual acuity of from $\frac{6}{6}$ to $\frac{6}{60}$ or less in one or both eyes. They may show a more or less marked squint, either constant or periodic.

All children, at the age mentioned, have much accommodative power, and to arrive at a satisfactory estimate of their refractive errors demands complete control of the ciliary muscle. This is best obtained by the use of atropine. There has always been a certain amount of difference of opinion as to the best way to administer it to get the best effect. The usual procedure is to order it to be placed in the eye three or four times a day for three days, and I think, if properly inserted, this is quite sufficient. Some go so far as to order it to be used for a week, as some patients are very refractory to the drug. The strength used should be 1 per cent.

The mode of application varies. It may be prescribed in solution in distilled water and dropped into the eye, or it may be rubbed up with vaseline as an ointment and a small piece placed in the conjunctival sac. The objection to the former method is the rapidity with which it is absorbed, owing to the large amount of mucous membrane it comes in contact with, as it is carried away by the lacrymal passages into the nose, and to its liquid state, in consequence of which not a few cases of atropine poisoning have resulted. The objection to the other method is the irritation to the conjunctiva and the delicate epithelium of the cornea, caused by the viscosity of the medium. Of two evils the last is the less, and is more frequently employed. The latter method has rarely been known to produce poisoning, even when given for a week four times a day. There is another method of using it that has lately come into favour: It is dissolved in hot alkaloidal oil or castor oil, and this oily solution is dropped into the eye; the absorption is much more certain than with the watery solution, and it remains in the conjunctival sac for a longer period. But it produces annoying oily rings on the cornea, and I do not use it on that account when performing retinoscopy.

Great care must be taken, when using the ointment, to make the parents understand how to use the drug, for it is quite frequent to see the children brought back to you with undilated or partially dilated pupils, and with their eyelids and the skin of the face adjoining plentifully besmeared with ointment.

It is quite useless to attempt refraction on an eye which is not sufficiently under the mydriatic, and some cases may be so whose pupils are widely dilated and inactive to light. I will give you an instance which recently occurred to me:

A young woman, aged 17, complained of her eyes aching for near work; her visual acuity was $\frac{6}{9}$ in each eye, with no manifest hypermetropia. Homatropine and cocaine, of each 2 per cent., was dropped into her eyes three times during an hour, when she appeared perfectly under the influence of the mydriatic. On performing retinoscopy the refraction appeared to be −2.50 D. in the right eye, and −1.50 D. in the left, but the shadow was noticed to be variable. She was, therefore, ordered ung. atropine, 1 per cent., three times a day for three days. On her return her refraction was found to be +1 D. in both.

Having mentioned homatropine and cocaine, I may say that there has been a dispute whether these drugs in combination are of equal efficiency to atropine. Probably, if carefully instilled into the eye by the oculist, in oily solution or in the dry form, there will be little to choose between them. Atropine is by far the most reliable drug for use by the patients or parents, and for young children, in my opinion, absolutely essential.

Where, of course, a child is brought to you from a distance, and it is not possible to take days in preparation, the instillation of homatropine and cocaine in 2 per cent. solution every quarter of an hour for one hour will answer as a fairly reliable substitute, especially if the case is a straightforward one. A good result may be obtained by Burroughs and Wellcome's Ophthalmic Tabloids W. repeated in half an hour.

On the child's first visit, if old enough, the test-types should be read and the visual acuity recorded for comparison later, after the retinoscopy has been done; the child must then be sent home for the application of the atropine for not less than three full days. Retinoscopy on children is no very difficult matter to those accustomed to the work, except perhaps in the case of infants 6 months or a year old. An important point in performing refraction is the illumination of the same part of the retina at each estimation, and, if possible, the corresponding portion in each eye. In very young children this is not so difficult as might be imagined, as they will most probably look directly at the light. In older children it may be effected by directing them to look at some part of your face, the middle of your forehead being perhaps the best. There is no need to cover the other eye when doing retinoscopy; in fact, I think it a disadvantage where the child has binocular vision, as, being accustomed to use both eyes, he will fix your forehead with greater ease with the two together than with one alone. It is very different, however, when there is a squint, because, as a rule, there is only one fixing eye; when this is the case, having estimated the best or fixing eye first, the squinting eye should be made to fix by placing a screen before the non-squinting eye.

The reason for endeavouring to make your estimation off the same part of the fundus is that in most eyes there is a physiological cupping of the optic disc, which is of variable depth, and should it so happen that your light is thrown upon the disc at one time and at another upon the macula lutea, the estimation of the refraction would make it appear more myopic in the former than in the latter. The difference may be as great as one or two dioptres. Again, in myopic eyes there is a difference in the measurements of the diameters of the eye, the antero-posterior being the greatest owing to the stretching and bulging of the eyeball at the posterior pole; in consequence of this, if the light be thrown on to a more peripheral part of the fundus, the estimation will be less myopic than if thrown upon the central portion.

Retinoscopy is best performed with a plane mirror rather than a concave, as is so frequently used; there is less light thrown into the eye and less glare, and in consequence the shadow is more easily seen, the difference being best appreciated when near emmetropia.

I have used the term "shadow" to express what is seen when performing retinoscopy because it is so used in the textbooks, but it is a misleading name. What should be seen and what will guide you right in the estimation of the smaller differences of refraction is the reflection of the light from your mirror on the fundus, which is seen by you as a bright ball of light deep in the eye. The non-recognition of this is a most frequent source of mistakes, while at the same time the operator is led further astray by a strong movement of shadow taking place from off the cornea, often in the opposite direction to the light on the fundus. The one is deep in the eye, the other superficial. If this mistake is made, the refraction, if the patient is a hypermetrope, will be very much underestimated. In children it is absolutely necessary that you can place confidence in your retinoscopy and the correctness of your results, because you cannot rely on your little patients' statements, even if they are old enough to read the test types.

Nebulae of the cornea, causing low visual acuity, should not be overlooked; they can be seen with the plane mirror, directly it is placed in position for retinoscopy, as black spots or clouds on the red reflex of the fundus. They will produce—or rather their cause, which is usually old ulceration, will produce—sometimes irregular astigmatism, giving a twirling movement to the corneal reflection of the light of your mirror.

The parents should be told of the existence of these nebulae and the interference with sight they cause, as it is not uncommon for these same children to be sent back again because they do not read $\frac{6}{6}$ with their glasses. In some cases the nebulae interfere with sight so much that it is waste of time endeavouring to improve their vision; the nebulae are in these cases central.

From ten years' experience of retinoscopy, both from my own errors and from the results of others, I find that

many do not give a proper interpretation of their observations, and are not clear what corrections are necessary. I think the plainest way of expressing the matter is thus: Any retinoscopic shadow that deviates from the normal must be brought to emmetropia. Now, the emmetropic shadow, when using a plane mirror, is a shadow moving slowly with the mirror, and by practice it becomes easy to recognize such a shadow at a glance. Should a shadow be seen that moves rapidly with or one that moves against the mirror, it is a shadow that requires correction, and you proceed to place lenses in front of the eye to bring it to emmetropia—that is to say, obtain a shadow moving faintly with the mirror. To make certain that you have gone far enough, it is the custom to go so far that the shadow is changed. Now you have in hand two glasses—one that produces a shadow with the mirror and one that gives a shadow against; it is plain that the glass that gives the *with* shadow has brought the refraction of the eye nearest to emmetropia. But a correction must be made in order to obtain the true refractive error of the eye.

If you sit at a distance of 2 metres or more from a patient who is emmetropic you will obtain a shadow moving with the mirror. If you now place a +0.50 D. lens before the eye you will notice that the shadow now goes against. You have converted the eye to −0.50 D. of myopia. You are also sitting beyond the focal length of a 0.50 D. lens; but the distance from the patient is uncomfortably far, and it is usual and more convenient to sit at about 120 cm. This is within the focal length of a 0.50 D. lens, and if you proceed as before you will find that on placing the +0.50 D. lens before the eye the shadow does not change but still moves with you, and only changes when a +1 D. is placed before the eye. Therefore, when doing retinoscopy at the usual distance of about 120 cm. or something over a metre, the shadow produced by the glass just previous to the one giving a shadow against the mirror (that giving a faint *with* shadow) is not representative of emmetropia but of −0.50 D. of myopia.

We therefore make a correction by deducting 0.50 D. from the + lens and adding 0.50 D. to the − lens, that gives the weakest *with* shadow.

If you sit at or nearer than 1 metre you will be within the focal length of a 1 D. lens and the correction will have to be proportionally greater. This correction is more accurate than that usually given in the textbooks, where you are told to deduct 1 from the changing glass when using + glasses and add 1 when using − glasses. The deduction of 1 from the + is correct (the same thing as deducting 0.50 from the lowest + giving a *with* shadow) but the addition of 1 to the − is wrong by 0.50 too much. In the method I practise, an equal quantity is either added or deducted from similar measurements (the lowest glass giving a *with* shadow), the other adds or deducts from dissimilar measurements (the changing glass, which in hypermetropia changes the shadow from *with* to *against* and in myopia from *against* to *with*).

I have previously emphasized the necessity of relying upon your result. If the patient can read, judge of the correctness of the glasses by the test type, but be slow to make alterations against your retinoscopy, and if there is any doubt in the mind of the patient as to one glass being better than another it should be decided in favour of the retinoscopy. When cylinders are needed the angle is judged in the general direction when doing the retinoscopy, making the final alterations with the assistance of the patient before the test types.

With young children who can give but very imperfect assistance, if any, it is better not to give a cylinder until they are older, but should the astigmatism be great, the angle should be judged as carefully as possible from the movement of the shadow and the cylinder ordered accordingly.

Having dealt rather fully with the methods of refraction estimation, I will turn to the errors of refraction themselves.

There are three classes of anomalies, namely, hypermetropia, myopia, anisometropia. To these are added astigmatism.

There are two classes of astigmatism, namely, regular and irregular. The latter I have mentioned when referring to nebulae of the cornea. It is to the former that these further remarks will relate.

Regular astigmatism is divided again into three classes, namely, simple, compound, and mixed. Any of the three primary anomalies may be complicated by any of the three classes of astigmatism.

The great proportion of children with defective eyesight are hypermetropes, and many of these will show a convergent squint. When referring to squints in this paper I mean only those that are concomitant. Paralytic squint is outside the scope of this paper.

Statistics giving the number of children with defective eyesight have, since the commencement of the examination of such children by the agents of the educational authorities, been very variable.

Quite recently the percentage has been stated to be as high as 77.8. As Dr. Inglis Pollock pointed out at the annual meeting of this Association, it is scarcely possible to persuade an intellectual educational committee that 77 8 per cent. of their scholars have defective vision. Dr. Pollock found the percentage to be 11.65. Out of 1,196,504 children examined in the provided and non-provided schools of the London County Council from March, 1907, to December, 1908, 10.39 per cent. were returned defective by the teachers and 7.34 per cent. by the oculist.

The proportion of myopia in school children has been found to be about 2 or 3 per cent.; the remaining 6 or 7 per cent. is therefore practically all hypermetropia.

It has been the custom in recent years to correct these children as fully as possible, and in quite young children even to over-correct. I am speaking only of hypermetropes.

This is sound doctrine. If it is hoped to cure or even alleviate a squint or prevent an early esophoria becoming a strabismus, the hypermetropia or any combination of conditions with hypermetropia must be corrected completely. We have to arrange matters so that the muscular effort used to accommodate for near vision shall be of such strength that it will stimulate an effort of convergence no greater than that required to converge for ordinary reading distance at 33 cm.; there should be no error uncorrected that would necessitate the child using its ciliary muscle, however slightly, for distant vision. If any is left, the desire to converge will be kept up.

The acts of accommodation and convergence are correlative; a powerful act of accommodation means a powerful act of convergence.

In older children it is best to take off half a dioptre from the sphere to allow for the tonic contraction of the ciliary muscle when released from the action of the mydriatic. More than half a dioptre is unnecessary. If this deduction is not made, the child will complain that the glasses are misty; but should a child complain of this after the half-dioptre has been deducted, the parents must be told to allow the child to continue to wear the glasses, for in another three weeks or so this mistiness will disappear. If this takes place, it means that after the child has recovered from the atropine some strain has returned, which will gradually give way to the effect of the glasses.

Always correct the astigmatism fully at the earliest opportunity, as soon as the child is able to be placed before the test types and can indicate its preference for a certain position or angle of the cylinder.

I do not recommend the ordering of cylinders direct from the retinoscopy except by an expert, and then only in such cases in which the axis of the cylinder can be easily judged and the astigmatism is high.

Myopia, as mentioned before, will average about 2 or 3 per cent. of the total number of children brought with defective sight.

In myopia of low degree the error should be corrected fully, and when ordering glasses, allow nothing for the atropine. Some oculists add a half-dioptre to the sphere to allow for the atropine, and, of course, this means the fullest correction, but I think it is best to leave the eye with just that amount of myopia to help the ciliary muscle in accommodating for near vision.

The astigmatism must, here again, be corrected as early as possible and fully.

In children with the higher degrees of myopia it becomes a question whether they should attend school with other children and be, therefore, placed in competition with them, but should not rather be sent to a special school. Anyhow the myopia will in all probability increase if they do

much study, and they should be warned from long lessons, bad light, and a stooping posture.

It is better not to correct these cases fully but to give them glasses of about two dioptres less than the best glass they read the distant type with, fully correcting their astigmatism, if they have any.

In the moderate degrees of myopia, the deduction of one dioptre will be sufficient.

I do not wish to be arbitrary in deciding what is low and what high degree of myopia, but for practical purposes, I think, anything up to 5 D. may be regarded as low and above 10 D. as high.

It is not uncommon to find that a divergent squint has developed in these cases later in life.

All myopes should be seen every six months, or at least every year, in order that their increase of myopia may be watched and their glasses kept level with it, and advice given to leave off lessons should the myopia be making rapid increase.

There is another matter that must be mentioned when prescribing glasses for these myopic children, especially in the moderate and high degrees. The ciliary muscle, owing to non-use, is small and atrophic, especially the circular fibres, these patients never accommodating; it is better, therefore, not to make them read with glasses that correct their myopia fully—the nervous stimulus would be greater than the muscular power. This means that an additional glass must be given for reading, a dioptre or two less than their distant glass.

These reading glasses will not be necessary with children who have had their myopia corrected early, as they will have developed their ciliary muscle.

I now come to anisometropia, or want of parallelism of the errors of refraction in the two eyes. This condition may be represented by one eye being emmetropic while the other is myopic, hypermetropic, or astigmatic, or both eyes may be ametropic but in a different way. All possible combinations may occur. This is not a rare condition.

Very often the child is found hypermetropic in one eye and myopic in the other. If the error is not great it is often not noticed by the parents or the school teachers, especially if the child has been tested binocularly, the eye with the low degree of hypermetropia reading $\frac{6}{6}$.

When the child is brought for examination it will be found that with one eye, the hypermetropic one, $\frac{6}{6}$ will be read comfortably, and with the other, the myopic one, J.1 will be read, also with comfort. In fact, the child uses one eye for reading and the other for distance, and does not obtain binocular vision. This is of no very great importance, and these children will do very well without glasses if the error in the hypermetropic eye is not great.

It is said that these children do not obtain binocular vision, even when their errors have been carefully corrected; this is so only in the higher degrees of anisometropia. In these the difficulty in obtaining binocular vision is due to the unequal prismatic effect of the enlarging lens before one eye and the diminishing lens before the other eye, so that the images are not properly superimposed.

With elder children who have not worn glasses or have not been properly corrected, it will be found that frequently on giving the full correction they will at first complain of giddiness and vertigo, but this will soon pass off if the glasses are persevered with, and a better result will ultimately be obtained than with only partial correction.

When one eye shows high or moderately high myopia while the other is hypermetropic, it is better to correct only the hypermetropic eye and give a plane glass for the other.

Mixed astigmatism is another condition found. One meridian of the eye under examination is hypermetropic, while the other is myopic. This usually means a high degree of astigmatism, and it should be corrected as fully as possible.

When dealing with a child with a squint it is frequently found that one eye is amblyopic—that is to say, partially blind, blind to the exactness of form and to detail, but still receiving light and coarse impressions. The child will not be able to read the test types, and you will notice that the eye does not fix. The fundus, when examined, will show no pathological changes, and the media will be clear. It is an eye which has been withdrawn from the practice of seeing, owing to the disturbance caused by the diplopia or double vision which is always present in the incipient stages of squint.

After the age of 6 or 7 the endeavour to train these eyes is usually a failure, but up till then the training should always be attempted. It may be done by covering the good eye with a screen for an hour or more every day, and allowing the child to look at picture books and read, or atropine may be prescribed to be dropped into the good eye in order to put it to a disadvantage, especially for reading. The child may also be trained with the aid of a stereoscope, teaching the fusion of simple pictures. Worth's amblyoscope is a better instrument for the accomplishment of the same thing. But for school children, such as we are dealing with, the screen and the atropine are the simplest and easiest of application and direction.

I have only endeavoured to touch lightly on the various divisions of this large subject, but what little I have said I hope will be of some slight use to those who have so kindly listened to me.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF STATE MEDICINE.

The Right Hon. LORD ILKESTON, P.C., M.D., D.C.L., President.

PRESIDENT'S INTRODUCTORY REMARKS.

LORD ILKESTON, in opening the business of the session, referred to the extreme gravity of the subjects which this Section had to discuss. For years past prominent and influential members of the Association had been sowing the seeds of social reform; and no body of men was more capable of giving advice to Parliament on such questions, for they spent their lives amongst those for whom reform was most urgently needed. They had been crying out for many years for social reform, and had in this way been educating public opinion. Their work was now bearing fruit, and with such discussions as those about to take place there came the chance of advancing the public interests as well as those of the medical profession. The country was on the eve of great social reforms, which must of necessity follow the grant of old age pensions and the feeding and medical inspection of school children. Measures had indeed been promised which must materially alter the existing Poor Law system. In these, as well as in the promised legislation dealing with insurance against sickness, inability, and unemployment, the medical profession must be prepared to take its share in the work of formulating, and later on in the administration of, any schemes decided on. For on them as a body would devolve of necessity the labours which would make for efficiency of service and advantage to the public. In a crisis like the present the profession must stand shoulder to shoulder, so as to maintain public respect, independence, and efficiency. If, on the other hand, they pursued an individual petty policy, and allowed the intrusion of ordinary considerations unconnected with the profession, then disaster would surely follow. If they shaped reforms in a wise way, these must necessarily result, not only in the benefit of the profession, but in the real good of the nation, for the two were inseparably connected.

In concluding his remarks the President intimated his intention of adhering strictly to the rules of the Association limiting the time allotted to papers and speakers, as the Section had a large amount of work to get through.

DISCUSSION ON THE RELATION OF POOR LAW REFORM TO PUBLIC HEALTH AND THE MEDICAL PROFESSION.

OPENING PAPER.

By Mrs. Sidney Webb, D.Litt.

The recent Royal Commission on the Poor Law found itself faced by the fact that somewhere between one-third and one-half of our total Poor Law expenditure was intimately associated with what is, strictly speaking, a medical service—that is to say, the provision for sickness and physical infirmity. And the whole Commission, Majority and Minority alike, the officials as well as the non-official members, the Poor Law administrators as well as their critics, found the medical side of the Poor Law extremely unsatisfactory. With one exception, the Commissioners, Majority and Minority alike, agreed in recommending that it should be drastically revolutionized.

I want here to make clear that the Commissioners bring no indictment against the doctors themselves. Taking the service as a whole, I certainly found no reason to complain of the zeal, humanity, or efficiency of the medical men concerned. It is, indeed, satisfactory to notice that the defects signalized in the Poor Law medical service do not arise from any shortcomings on the part of the four thousand Poor Law medical officers, and that both the Majority and Minority Reports speak of their services in appreciative terms.

What, then, is wrong? The principal deficiencies in the Poor Law medical service, as revealed by the Commission, are:

1. That it fails in practice to ensure the provision of any medical assistance at all for a large number of cases among the poor, which do, as a matter of fact, go without treatment by any doctor whatsoever, public or private, to the serious detriment of the public health; and

2. That even where the Poor Law doctor and the Poor Law infirmary get to work on the patients, they fail, in the vast majority of cases, to reach them at the incipient stage of their illnesses, and, indeed, fail often to reach them, especially in phthisis and cancer, at any but an advanced stage, when cure—and sometimes even any useful treatment—has become impossible.

These two fundamental shortcomings of the Poor Law medical service are plainly not any fault of the Poor Law doctors, who were the loudest in their complaints on these very points. They arise from the "deterrent" effect of the relieving officer and the whole Poor Law system, which cannot possibly "search out" cases, and which is always aiming at dissuading as many people as possible from resorting to its aid.

Then we come to some matters which affect personally most of the 4,000 Poor Law doctors, namely:

3. The scandalously inadequate remuneration usually afforded to Poor Law medical duties;

4. The unsatisfactory conditions of the service; and especially

5. The burdening of the district medical officer (in four-fifths of the unions) with the cost of all the ordinary drugs and dressings that he prescribes.

These shortcomings seem to be connected with the placing of a medical service under boards and committees which are not advised by any responsible medical officials and which have non-medical ends in view. This curious subjection of a medical service to a non-medical administration perhaps accounts also for

6. The failure, in all but a few unions, to make any decent provision for nursing, appropriate nourishment, and convalescence, especially in the majority of cases where the Poor Law doctor has to treat the patients in their own wretched homes; and also for

7. The strange lack of connexion between the domiciliary and the institutional treatment. More glaring and obvious is

8. The inadequacy of the general mixed workhouse as a hospital. Whether we consider its structure, its method of government, the medical staff provided for it, the nurses whom the guardians will consent to appoint, or the old-fashioned exiguous equipment—as revealed in Dr. J. C. McVail's carefully measured report, or as we may see it in three-fourths of the unions in England, Wales, Scotland, and Ireland—surely no one acquainted with twentieth century hospital administration can refrain from a feeling of shame that this general mixed workhouse should still be the only public institutional provision available for the sick poor over half the countryside.

I do not forget that in London and a few other towns there are separate Poor Law infirmaries, with excellent equipment, something like reasonable medical staffs, fairly adequate nursing—in fact, not far short of being sometimes good general hospitals. But please remember, when these separately administered Poor Law infirmaries are mentioned, that they are only fifty or sixty in number, and that they do not exist in nine-tenths of the English unions, and that they are available for a still more tiny fraction of Wales, Scotland, and Ireland. Yet I have heard people who know better deliberately cite the excellencies of these quite exceptional Poor Law infirmaries as proving that the medical service of the Poor Law is really, after all, reasonably satisfactory.

Finally, we have the capital defect that, even where the Poor Law service has, contrary to its intent, and to the detriment of the private practitioner, blossomed out into inchoate general hospitals, there is—

9. Still no effective provision made for whole ranges of sickness of the gravest import to the community. Except in about a dozen unions out of the 646 in England and Wales, there is nothing that can be called provision for phthisis; there is no organized system for ensuring the medical treatment, either domiciliary or institutional, of the two most serious diseases of childhood (measles and whooping-cough); and we may, I suppose, add almost a total failure, up to now, with regard to the treatment of venereal diseases.

Now, I am sure that you will feel that it is no answer to this indictment of the Poor Law on its medical side to say that, as regards the affording of medical relief to those who apply for it, the service is far more efficient and far more humane than it has ever been before; that the poor old people are very grateful to the parish doctor, and that they are often quite satisfied with their bottles of medicine. The question raised by the Poor Law Commission, and the question which the statesmen are now considering, is whether (if the nation is to go on paying five or six millions annually in its State provision for sickness) something more generally effective in the way of *prevention* of disease and more in the way of universally guaranteed treatment of disease at the early stages must not be required. Thus, the reform of the Poor Law medical service will turn, not so much on the desire to "relieve" the individual patient, as on the necessity of improving our standard of public health.

The position is complicated, as the Commissioners were forced gradually to realize, by an unsuspected amount of duplication of services and overlapping of work by rival rate-supported medical agencies. In town after town it was discovered that the old idea of the sphere of a public health service—namely, that it confined itself to measures of general prevention, and did not treat the individual patient—was no longer correct. The recent developments of the public health service—its 700 municipal hospitals crowded with patients, dealing with a hundred thousand cases a year, opening their wards to one disease after another, and even adding out-patients' departments and dispensaries; the growing staffs of "health visitors" (who are occasionally qualified medical practitioners), giving "hygienic advice"; the organization, here and there, of domiciliary nursing under the direction of the medical officer of health; the active supervision of midwives; the "milk dispensaries"; the medical inspection and treatment of school children; the "school clinics"; the official acceptance of the specifically pauperizing disease of phthisis as part of the sphere of the public health authority—are rapidly encroaching on the domain of the private practitioner, as well as on that of the Poor Law doctor and the Poor Law infirmary, and bringing about a hopeless confusion of principle as to what is the public and what the personal responsibility for sickness. It is curious to find people shutting their eyes to this growing overlap and duplication. You will actually still hear the public health service spoken of as a "non-case" section of the medical profession—ignoring the hundred thousand patients a year whom the public health doctor already treats in his hospitals: ignoring the growing service of "advising" on the health of infants by the health visitors, and treating them in the municipal milk clinics, and in the various systems now springing up of providing dentistry, treatment of eye, ear, and skin diseases, and ringworm, in children at school; ignoring the new out-patients' departments and dispensaries that are being opened by medical officers of health in one town after another; ignoring the

definite transfer in Scotland, by order of the Local Government Board itself, of all the phthisis patients from the Poor Law doctor to the public health staff; ignoring even the curious geographical anomalies which lead to the same disease being treated in one town by the Poor Law medical service at the expense of the poor rate, and in another town by the public health medical service at the expense of the public health rate.

What the Royal Commission realized—what the chief medical officers of the three Local Government Boards of England, Scotland, and Ireland expressly pointed out—what Dr. J. C. McVail's report emphasized—was that this extraordinary overlap, duplication, and rivalry between competing rate-supported medical services was producing grave evils. What must be clear to the medical profession is that, owing to our failure to "think out" the situation and the policy, the rapid development of these two rate-paid medical services, together with the system of contract practice adopted by the friendly societies, is most seriously undermining the position of the private practitioner among the poorer classes. The longer the present chaos continues the worse will grow the financial prospects of the medical practitioner among the wage-earning population.

Three courses stand open to us. What is most tempting to the ordinary medical man is to maintain the *status quo*, decorated with a few obvious reforms (which may or may not actually get carried out), and to hope that all will go well. "Give peace in *our* time, O Lord." Let us bring the growing club and contract practice, unsatisfactory as it is, under medical control. Let us secure more pay and the price of the drugs and dressings for the district medical officer, so as to make this provision a more valuable adjunct of our private practice. Let us hope that by backing up the Poor Law we can put a stop to those terrible fellows the medical officers of health, who, far from forming a "non-case section of the profession," are, as we know to our cost, in one way or another, taking away from us, in one town or another, every day, more of our phthisis cases, more of our midwifery, more of our baby cases, more of the measles and whooping-cough, more and more of our children's cases generally, and so on. I wonder whether this is an unfair description of the mind of many a harassed practitioner. But does any one really think that it is possible to maintain the *status quo*, or possible to restrain the advances of the public health service? Believe me, that way lies destruction for the poor private practitioner. The reinvigorated Poor Law and the growing public health service—with the friendly societies and a Government insurance scheme in the background—will between them eat him up.

The second course is that advocated by the Majority of the Poor Law Commission. I cannot see that it is any more favourable to the private practitioner than would be a vain reliance on the maintenance of the *status quo*. Under the Majority scheme the public health service is to remain in possession of all its present domain, with the one exception that the nascent school medical treatment is to be transferred, not to the private practitioner, but to the Poor Law, the children and their parents being thereby entered and classed as paupers in receipt of medical relief. The public health service is even to be left free to grow as it chooses, irrespective of the Poor Law, adding one disease after another to those which it freely treats in the municipal hospitals, developing its own out-patients' departments and free dispensaries, expanding its services of health visiting and care of infants, so as to cover (to the detriment of the private practitioner) more and more of the practically unlimited field of medical treatment allowed by the Public Health Acts. Every encouragement is also to be given to the friendly societies and provident dispensaries to extend over the whole country, and, with or without any really enforceable income limit, to enrol as large a proportion as possible of the population, with the result that most of those who are not being treated by either the public health or the Poor Law medical service will be covered by "contract practice." For the Poor Law medical service is also to continue, retaining its salaried district medical officers (because these 4,000 existing office-holders cannot be displaced), and is even to increase, because it is to have its own provision, domiciliary as well as institutional, for phthisis; it is to do all the public medical treatment of school children; it is to retain the service of midwifery, and supply whatever is required; it is even to do something (what, is not very clear) for venereal disease. What is most remarkable is that, as regards medical relief of every kind, it is to give up its whole aspect of "deterrence."

It is not merely that medical relief is to be as far as possible freed from all stigma of pauperism. The sick pauper is no longer to be required to go to the parish doctor. He is to be given a free choice of doctors, and to be put, in fact, in the same position as if he came bringing a half-crown fee in his hand. But there is to be even a more momentous change. It is really very striking, after all the abuse that has been showered on the Minority for its supposed advocacy of "free medical treatment for everybody," to realize that the Majority Report makes, on this point, specifically and definitely, the same proposition as the Minority. The whole Commission, with the one exception of Sir Arthur Downes, found itself unable to withstand the evidence in favour of compelling the public medical officer, adequately remunerated for all the work thus cast upon him, to afford instant treatment without question or formality, to any sick person who applied for medical aid. The stern barrier of the relieving officer, as an intermediary between the medical officer and the applicant for medical aid, is to be removed, just as Parliamentary disfranchisement has been removed, in order that no sick person may be prevented from applying. Do not imagine that this is confined to cases of urgency. You will find them separately dealt with. The proposal relates exclusively to the ordinary non-urgent cases of the wage-earning population. In actual fact, the Majority Report lays it down, over the signature of all the Commissioners, that treatment is to be immediately and freely granted to every applicant who is sick; and that inquiry, with a view to the exaction of payment where means allow, is to follow, not precede, the treatment.

Moreover, it is part of the recommendations of the Majority Report that the workhouse sick wards are everywhere to be replaced by separate Poor Law infirmaries, which are to be as well equipped and as well staffed as the cases require, deliberately in order that no patient shall be deterred from making use of them. Add to this that, as already mentioned, the provident dispensaries and friendly societies are to be helped to enrol as many people as possible, all with free choice of doctors, and you will realize why Sir Arthur Downes became alarmed at the extent to which Lord George Hamilton and his colleagues proposed to withdraw from the private practitioner his present fee-paying patients. So far as I can understand, the only advantage or safeguard that the Majority Report offers to the medical profession in return is the chance of serving gratuitously on a complicated hierarchy of committees and joint subcommittees, which are somehow to prevent overlapping; and the privilege of sharing out with all the "interlopers" who may thereby be attracted, and strictly according to the number of patients, the net proceeds of the enlarged "contract practice" of the locality. I cannot help sharing Sir Arthur Downes's feeling that what with the continually expanding sphere of the public health service, the proposed abandonment of all "deterrence" by the Poor Law medical service, and, concurrently, a great development of "contract practice," the prospect for the private practitioner among the wage-earning population is not a happy one.

But the main objection to both these courses is that they fail to meet the financial difficulty. What the community will insist on is that if it is to go on paying five or six millions a year for sickness, it shall get in return not merely "medical relief," but much more prevention (which is the "public health" standpoint); and also that the waste of duplication shall be stopped. The Minority Report aims at meeting these requirements, whilst at the same time protecting the private practitioner from any loss whatsoever of his remunerative practice.

What the Minority Report proposes as regards the public treatment of the sick is, first of all, unity of administration, not rivalry or overlapping. In each county or county borough all those medical practitioners who are paid from public funds, whether as "full-timers" or "part-timers," and all those institutions for the sick that are maintained from public funds, whether for one disease or another, from probationary observation wards

or reception houses up to sanatoriums or convalescent homes, ought to form a single medical service, not two or more rival services. They ought to be working with the single aim of the prevention of disease, including equally the prevention of its occurrence, the prevention of its continuance, the prevention of its recurrence in the same person or in any other person, and the prevention of its transmission, and not with the possibly contradictory objects of preventive sanitation and "medical relief." They ought to be pursuing a uniform system of bringing help to bear at the incipient stage, instead of the rival systems of "searching out" on the one hand and "deterrence" on the other.

To put this in practical form, the Minority Report proposes that (*a*) the existing Poor Law medical service, with its Poor Law infirmaries, and also (*b*) the public health service, with its isolation hospitals, should both be merged, without interfering with the emolument or position of any existing officer, in a united new county medical service—with a properly distributed and adequately remunerated staff of clinicians and sanitarians, with general and special hospitals and sanatoriums; dealing with all cases of sickness that present themselves or may be reported, at the earliest possible stage, with a view primarily to preventing, diminishing, and extinguishing disease; the whole under the supervision of the Health Committee of the local county or borough council, strengthened by the addition of expert professional members, and under the direction of a Central Department or Minister of Health, giving grants in aid, and concerned exclusively with health administration.

I do not think that I need say anything to prove the advantages of this unity of administration and singleness of aim. If we are to pay out of the rates and taxes for doctors to attend the sick, we must, as a business people, pay for one medical service rather than two, and insist on its working with a single aim, instead of having one set of doctors "deterring" people from coming, and a second set "searching out" cases in order to ensure that none fail to apply. Nor is this any vain dream of unpractical amateurs. If you remember that the chief medical officer of the Local Government Board for England, the medical member of the Local Government Board for Scotland, and the medical member of the Local Government Board for Ireland, all recommended this union of the medical services; that the medical officer of the Board of Education says the same; and that Dr. J. C. McVail, whom the Poor Law Commission appointed expressly to investigate this very point, found himself driven to the same conclusion, you will realize how difficult it will be for any Ministry to adopt any other course. To the official mind the argument for a united county medical service is, in fact, overwhelming.

Now the question is, How will this creation of a united county medical service, and this singleness of aim in the prevention of disease, affect the interests of the private medical practitioner? Remember that it is common ground between both reports that the "deterrent" attitude of the Poor Law must, as regards the sick, be absolutely abandoned, and that medical aid must be rendered without delay or formality to every sick person who applies for it. It is common ground, too, that inquiry into means must follow, not precede, the treatment. The difference between the two schemes is, first, that the Majority Report wants to give to the paupers the same free choice of doctors that is enjoyed by the members of a provident dispensary, whereas the Minority Report insists that this privilege ought to be reserved strictly for the patient who pays his own fee, or who has at any rate provided for himself in advance by provident insurance. And, secondly, that whereas the Majority Report leaves the inquiry into means and the possible exaction of payment to the working of a general Public Assistance Committee, the Minority Report insists on the appointment of a special officer, the Registrar of Public Assistance, with an adequate staff whose special business it will be to register every case, to make the necessary inquiries systematically as a matter of course, and to take proceedings for recovery in all cases in which the patient is found to be in a position in which he could have paid even the smallest doctor's fee. I must leave you to judge which of the two systems offers the most effective safeguard of the private practitioner.

It is, indeed, quite a mistake to suppose that the existence of a unified county medical service in any way implies or involves either the treatment of everybody by the public doctor, or universal gratuitousness of service. This is no part of the Minority Report scheme. Whilst the necessary medical attendance must (as also under the Majority Report) be given straight away to any one who applies for it, the proposed Registrar of Public Assistance will vigilantly inquire into means in every case, and will make and strictly enforce, on all who are able to pay even the smallest fee, a charge at least equal to that of the private practitioner. The intention is not wholly or even mainly to obtain a revenue; but—and this is the point of supreme importance to the private practitioner—to confine, in practice, treatment by the public doctor to those whom it is to the public interest that he should treat. Thus, those whose family incomes were found to be below three shillings per week per adult unit (and rent) would probably be subjected to no charge. I need not remind you that the medical practitioner, apart from his stipend as district medical officer, makes practically nothing at present out of such families. But the man of a pound a week would find himself charged something, and the artisan or little shopkeeper still more, *in order that they may prefer to choose their own doctor and pay him themselves.* This retention to private practice of a *monopoly* of the privilege of "free choice of doctors"—a monopoly which the Minority Report alone proposes—is the real safeguard of the private medical practitioner. Meanwhile, without injuring his interests or in any way lowering his income from fees, the unified county medical service, working on "public health" principles, would secure (1) prompt knowledge of all cases of unattended sickness and treatment at the incipient stage; (2) full remuneration of all doctors employed, either by salary or by some payment for "part time"; (3) proper co-ordinated supply throughout each county of both domiciliary and institutional treatment for all kinds of cases, as well as the necessary drugs and dressings, nursing and provision for convalescence; (4) stimulus to the backward local authorities, by grant in aid from a Minister of Health, to do the utmost possible in the way of the prevention of disease.

DISCUSSION.

Dr. Ford Anderson (Hampstead) spoke as a practitioner having had experience of practice among all classes. While quite agreeing with the strictures of the Minority Report on the *status quo*, he thought that Mrs. Sidney Webb, in view of her scheme, should have mentioned also the criticism of the Report on the Public Health system. Referring to the Minority Report, he said that after pointing out various defects in the public service system, it summed up as follows: "The activity of the most public-spirited medical officer of health is limited practically to particular diseases—to such, in fact, as the local authority may consider infectious." Notwithstanding these defects, Mrs. Webb proposed to establish the domination of the preventive, that is the younger branch, which admittedly was restricted in its work at the pleasure of the health authority, over the older clinical branch of the profession, and he could only say that, in his view, the conclusion was surprising and dangerous, whether it were regarded from the standpoint of sociology or medical science. He was convinced that the Minority Report, if applied, would, as far as medical practice was concerned, lead to superficiality of treatment, deterioration of character, and enslavement of the medical profession. Recovery of fees could come to nothing, and if enforced it would drive the patients of the official clinics to the out-patient departments of hospitals. He would ask, What are the patients to pay? and he pointed out that there could be no differentiation according to income, and the wealthy would pay the same as the poor, to the detriment of the practitioners. The medical officers of the clinic would lose their independence, and their end would be poverty, unless they, like the unjust steward, utilized their opportunities and prepared a private *clientèle* for themselves outside. The practitioners outside would practically disappear; those that remained would be rivals to the Health Department instead of friendly co-operators as they were at present. He thought the proper course would be to establish a provident medical service with a strict wage limit and with free choice of

doctors, as in the scheme now under consideration by the British Medical Association; and if State sickness and invalidity insurance came, this provident medical service would be fortified by some direct or indirect compulsion. He thought, contrary to the view of Mrs. Webb, that prevention of disease would be better carried out by this service than under the official régime of the Minority Report. In provident institutions the advantage of the doctor was bound up with the well-being of the patient; it was his interest to prevent disease, and he had the opportunity of searching out disease in its incipient stages without exposing himself to any suspicion of self-interested motives. He thought the public medical service would be inappropriate for the treatment of the destitute, and the district medical officer would have to remain, under a revised authority and in a revised area, but he should try when possible to encourage his patients to join the public medical service, where, as a member of that service himself, he would probably continue to attend them. He was convinced that by such a scheme the two great services of curative and preventive medicine, whose separate functions were quite definite, would advance amicably and co-operatively on parallel lines, each in its own way helping on the conquest of disease and the efficiency of life.

Dr. COOPER PATTIN (M O H. Norwich) said that Dr. Anderson, differentiating Poor Law from public health medical work, very rightly spoke of the former as being individualistic, and of the latter as general or collectivist. The speaker agreed, and thought this differentiation made out a strong case for amalgamation and mutual correction. Then Dr. Anderson had said that it was quite impossible to establish a chargeability line. To that the speaker demurred absolutely; he could state from experience in supplying spectacles at Norwich that a chargeability line could not only be established, but could also lead to effective recovery of costs. The principle followed by the Norwich Education Authority was to take into consideration the average weekly income of the family (less rent), and the number of members in the family, and charge or not accordingly. He altogether failed to see why this method could not be followed, and prove perfectly practicable, in dealing with all forms of public medical aid. Dr. Ford Anderson appeared to think that amalgamation of the Poor Law medical service with the Public Health Department would imply a condition of servitude on the part of the officers of the former to those of the latter. That was not the speaker's own idea. He prefigured association as colleagues in one common co-ordinated public medical service. Then on the question of giving free choice of doctor to the patient, his experience in Poor Law medical work as doctor to a large Poor Law infirmary (eight months), and also as doctor in charge of a Poor Law rural district in Hampshire (two months) led him to believe, unless average human nature had undergone modifications of which he was ignorant, patients would select that doctor who most freely prescribed "extras." He would add that besides experience in Poor Law work, before taking up public health work he had acted as doctor to a public dispensary with home visitation of patients for three years; and he had found that experience so valuable that if he had his way he would not allow any man to become a medical officer of health who had not had experience either in Poor Law or public dispensary work. Turning now to the subject before the Section, he concurred generally with the broad principles of the Minority Report, and it would not be necessary for him to repeat what the Section had already heard in support of most of them. He was anxious so to amalgamate and incorporate all the public medical agencies—preventive, palliative, and curative—of a community as to make a real inroad upon the most deadly disease medical aid had to deal with—namely, *Delay*. The most effective administrative body for this purpose would be the public health authority—acting through a committee—and that committee he would like to see very largely composed of co-opted members. He would give the authority a majority on the committee, as the bearer of the financial burden, but would co opt all the other members from persons experienced and interested in the work—namely, public medical aid in all its aspects. He would not restrict membership of such a committee to humane persons of the male sex. Such a committee would necessarily want an administrative official, whose duty it would be to co-ordinate and supervise the public medical work, and act as its adviser. On the strength of the old proverb "there's nothing like leather," he naturally would suggest that such an officer would most easily be found in the medical officer of health. A great advantage of placing the organization of public medical aid in the public health department lay in the possibility of that department, through health visitors, gaining early knowledge of illness. Last month the health visitors, in carrying out their duties in Norwich, had come across sixty cases of illness, in a considerable proportion of which medical aid had not been obtained as promptly as was desirable—in some not at all. Their aim must be to secure medical aid as quickly as possible—to commence at the earliest moment their warfare against that deadliest of diseases, delay. Recovery of cost was not the primary, though it was an important, consideration. He did not think the administrative difficulties insuperable. He regarded invalidity insurance as of great importance, and hoped it would be provided shortly. It would be of immense help in treating tuberculosis. Delay, he repeated, was in his judgement the most deadly disease medical aid had to combat.

Dr. J. F. J. SYKES (M.O.H. St. Pancras) said: There always has been, and there always will be, more or less destitution; and there must be an authority of some kind to deal with destitution, whatever other functions the authority or authorities may perform, and whatever name or names it or they may bear. About one-third to one-half of destitution is attributed to ill health, and so medical treatment is largely concerned in the treatment of those who are destitute or on the verge of destitution. It has been proposed to amalgamate the Poor Law medical service, which provides curative treatment for disease, with the public health service, which applies measures for the prevention of ill health. The Poor Law medical service discourages pauperization, and indirectly retards the descent into destitution. The motive of the destitution authority is retardation. The public health service encourages prevention and endeavours to accelerate the ascent to healthiness. The motive of the public health authority is acceleration. What will happen to the wheel of which this amalgamated authority is to be the hub when it has applied to it simultaneously both the powers of an accelerator and of a retardator?

The previous generation of medical officers of health always deplored the association of Poor Law work with public health work, and Mrs. Sidney Webb has called this effect of the Report of the Royal Commission of 1871 a "great catastrophe." Happily dissociation has gone on apace in later years, to the great advantage of prevention.

It was on Monday, April 11th last, that Mrs. Sidney Webb, in delivering a lecture at St. James's Hall on public health administration as a means of reducing destitution, called the merging of the Medical Committee of the Privy Council (formerly known as the Board of Health) and the Poor Law Board into one body "a great catastrophe," and further said that by it the sanitary authority was practically nullified. What was a catastrophe in 1871 is put forward as a salutary reform in 1910. By amalgamating the curative Poor Law medical service with the preventive public health service they must of necessity come to be administered with the same motive and in the same spirit. Which is it to be? deterrence on the one hand, or encouragement on the other? If the latter, there is the danger of the extension of the treatment of disease to many strata of the population above the destitute and the poor, and when the public purse feels the expense, attempts will be made as heretofore to throw the burden on the medical profession. It behoves the profession to be wary of this proposal. This will apply to the treatment of disease, but the prevention of disease does not necessarily imply medical treatment. The condition or ailment having been found or diagnosed, and information or notification given, it does not follow that it should be treated medically or otherwise at public expense or at the expense of the medical profession. In other words, discovery or diagnosis and treatment are separable considerations; for instance, the

medical inspection of school children and the treatment of school children are distinct.

There is no evidence to show that the authority that receives information of discomfort or sickness in order to apply preventive measures must be the same authority that treats disease. On the contrary, for instance, the infectious diseases ambulance and hospital system of the Metropolitan Asylums Board is what foreigners have called a "realized dream of perfection," yet the borough councils do not control that system, and the public health departments of these councils do not suffer; on the contrary, they have more time at their disposal for preventive work by being freed from curative treatment. The same applies to the treatment of lying-in women and the notification of births. It is not necessary for a public health authority, in advising and educating mothers in mothercraft, to undertake the medical treatment of lying-in women or of sick infants. In fact, even at the St. Pancras School for Mothers, which is a voluntary association, sick infants are referred to their own medical attendants. It would be well for the British Medical Association to appoint a committee or refer to a committee the question whether or not it is necessary or desirable that the same authority or body should administer both the treatment of disease and carry out preventive measures amongst the destitute and poor, before committing itself to a definite opinion which will be regarded as an opinion of the medical profession.

There are in the field at the present moment four schemes for the medical treatment of the destitute and the poor: First, the existing Poor Law medical service, with its infirmaries and dispensaries; secondly, the Minority Report proposition of amalgamation of the Poor Law medical service with the public health service; thirdly, the Majority Report proposition of a new composite authority, to be called the "Medical Assistance Committee" of the county or borough, to carry on the existing medical treatment in institutions and to establish a system of provident dispensaries; and fourthly, the British Medical Association scheme of a public medical service in each locality, consisting of and worked by all the medical practitioners who join the local staff.

The use and abuse of either of these services and the payment and recovery of payment will be controlled either by (1) the relieving officer, or (2) the assistance officer, or (3) the registrar of public assistance, whichever name he will be known by.

It is to be observed that the first three of these methods are official and that the medical practitioners will be officials selected by a lay official body, whereas the fourth is unofficial and enables the whole of the local medical profession to treat with the lay official body on equal terms. Furthermore, the first three methods do not take into full account all the various activities, present and future, threatening the existence of general practitioners, although the third comes nearer to it than the first two, whereas the fourth, the public medical service, covers all forms of the treatment of disease, and would embrace the medical diagnosis and treatment required by Poor Law dispensaries, school clinics, friendly societies, philanthropic bodies, and insurance against sickness and invalidity. This is the declared policy of this Association; model rules have been drawn up for forming a public medical service and some local services are already at work. This scheme covers home treatment (visiting) and treatment at dispensary or consulting-room (out-patients), but requires for its completion institutional treatment (in-patients). If matters remain as they are there will be no difficulty, but if the Poor Law guardians be abolished what is to become of their institutions? They will be transferred to some other public body or bodies, and will still remain public institutions under official management. So that whatever happens to the public medical service, each branch in its own locality may go on its way with an easy mind and a knowledge of its increased power of giving and obtaining fair treatment and of maintaining the honour, dignity, and duties of the medical profession.

Dr. R. A. LYSTER (M.O.H. Hampshire) said: Before discussing the relation of Poor Law reform to public health administration, it is obviously desirable to refer briefly to the chief facts that make such reform necessary. These are:

1. The failure of the present Poor Law system to prevent destitution and disease.
2. The continually increasing work and energy of public health authorities in connexion with matters connected with the public provision of medical treatment.
3. The fact that, although the combined cost of Poor Law and public health work amounts to an astonishing sum of money, there is a great amount of obviously necessary work at present unprovided for. For example, no satisfactory provision of medical treatment for people too poor to pay and yet not "destitute" is made; also, all medical officers of health must have met numerous cases where help was absolutely necessary, but where it was impossible to obtain it from the guardians.
4. The overlapping of the two services in other respects. The public health authorities, for instance, are providing an ever-increasing number of sanitary inspectors, health visitors, and such like, while the Poor Law medical officer visits the same people and the same houses without any advantage being taken of his observations.
5. The deterrent nature of the Poor Law, its object being to make things too unpleasant for folks to apply.

The next points to consider are the suggestions that have been made as regards Poor Law reform in its medical aspects. The Majority Report of the Poor Law Commission suggests that the question might be solved by the increase of provident dispensaries. I believe that most members of this Association will agree that provident societies and dispensaries have proved in the past to be a very great disadvantage to the profession generally, and have caused an endless number of disputes and difficulties. Only by means of very great labour, particularly on the part of this Association, has it been possible to begin to emerge from the difficulties that such institutions have created. This being the case, I should imagine that the majority of our members would view the suggestion of their increase and extension with a considerable amount of alarm.

Sir Arthur Downes's ideas are summed up in the statement that "the future must largely depend upon the action of the great voluntary hospitals and institutions of charity and self-help," and he appears to regard both the schemes of the Majority and the Minority as free medical relief without adequate safeguard either to the profession or to the ratepayer. It is rather difficult to understand exactly what his ideas are, but they evidently tend towards the retention of the *status quo*, together with some increase of the medical work done by the Poor Law authorities, and a decrease of that done by the public health authority.

The Minority Report recommends the coalition of the public health and Poor Law services, and any one who reads this report cannot fail to be struck by the excellent and logical arguments in favour of such an amalgamation. Briefly stated, these arguments are as follows:

1. Public health authorities at present provide, in addition to the ordinary sanitary work: Infectious diseases hospitals, antitoxin for treatment of diphtheria, bacteriological diagnosis of diphtheria and other diseases, treatment of ophthalmia neonatorum, treatment for tuberculosis, treatment of school children, treatment of infants, feeding of school children, etc.; and the list is continually growing. There is evidently, therefore, a great tendency for medical relief to be provided other than by Poor Law authority.
2. This really means that these authorities are encroaching upon the sphere of the Poor Law. Such encroachment is due to public demand, and also to the fact that it is quite impossible to draw any definite line between "treatment" and "prevention." The two are inseparable and are essentially complementary. Moreover, the provision of medical treatment for the poor does not differ in principle from the free sanitary service, free isolation and treatment in hospital, and free vaccination that are at present provided. It may be claimed, therefore, that, from a medical point of view, there should be an end of this dual control.
3. The old line dividing preventable from non-preventable diseases has now disappeared.

The question naturally arises, therefore, as to which of these two branches should be included in the other, and in order to determine this question their respective work should be carefully reviewed. If this is done it will be difficult to escape the conclusion that public health authorities in general have done brilliant work, and that the scope of their work, as a result of public approval and public demand, is constantly tending to extend.

A very reasonable question is, How would the Minority suggestions affect medical officers of health, and what influence would it have on their work? In my opinion such a change would very greatly improve the chances of good and useful work for both public health and Poor Law officers. A moment's consideration must show that the

chances of successful prevention would be infinitely increased. The great demand for officials would, moreover, draw many from the ranks of the practitioners, and so decrease the competition among them, although the lucrative part of their work would remain.

Assuming that the majority of the profession decide that the suggestions of the Majority and of Dr. Downes involve too dangerous precedents for them to be adopted, and that the public are not likely to be attracted by such proposals, there appears to be choice only between four possibilities:

1. To leave matters as they are. This is hardly possible, because the public will demand an alteration. Some change is inevitable.

2. The Minority recommendations, the essential points of which are the combination of the Poor Law medical service with the sanitary service, and the protection of the practitioner by a carefully arranged system of recovery of charges from all people able to pay.

3. A national medical service organized on similar lines to the provision of education—that is, the provision of free medical treatment for all. This is probably inevitable in the future, but is not practicable now.

4. An effort to combine the two services without waiting for the other proposals of the Minority scheme. This ought to be possible at once. At all events an effort might be made to cause the combination of districts as they fall vacant, and also the addition of Poor Law appointments to existing part time posts of medical officers of health. Further the vacant posts of district medical officers of health should automatically become part of the county organization, as is already the case in Scotland. In this way the existing difficulties would gradually disappear.

Dr. KEAY (Greenwich) said that while there might be much difference of opinion, there was one thing at least in which all were agreed: not only medical men but the nation at large was vastly indebted to Mr. and Mrs. Sidney Webb for the splendid work they had done in the interests of the poor and the working classes. This he said the more readily as he differed *in toto* from almost every conclusion in the Minority Report. The first great objection he had to the Minority Report was the strong language used in reference to the Poor Law service. For three-quarters of a century the Poor Law had done splendid work, and the country could not possibly have got on without it. It was not perfect, and the same might be said of the public health service. Another objection he had to the report was that it went too far in subordinating the general practitioner to the medical officer of health. When he looked back over thirty years of practice, and thought of the men he had known who had battled with winter storms in Highland glens, or toiled in colliery villages, or given their lives for the poor in our great cities, he was not ashamed of the fact that he belonged to the great army of general practitioners. He saw no reason why they should be subordinated to the medical officer of health, who was a mere fledgling. Since the cure and prevention of disease had gone hand in hand, and the two systems wrought in harmony, there had been a vast improvement, but there would be heartburnings if one part of the profession was to be subordinated to another. The medical officer of health, unless he had had experience in general practice, was not qualified to supervise those occupied in the cure of disease. Further, if the medical officer of health went too far in visiting houses and interfering with the arrangements of the family, he would come to be regarded as a policeman rather than as a medical man. The week before he had had a long conversation in Hamburg with a great Continental authority on public health, who took a strong position in the matter. When young men came from other countries to study public health, he told them to go into the harbour of Hamburg and the lanes of Liverpool and enter into the lives of the people. In that way they would do more good than by writing reports and working in laboratories. A further objection the speaker had to the proposals put forward by Mrs. Webb was that medical men in general practice would be subordinated to county and borough councils. They had already had too much subordination to lay bodies. If appointments were made entirely by public bodies, promotion would depend more on a man's politics than on his professional ability. Of all the schemes brought forward he favoured most that of the British Medical Association, combined with State insurance. For years he had advocated State insurance, and was glad to find that it was now rising rapidly in public favour.

Dr. W. HOLDER (Hull) expressed his thanks to Mrs. Webb, and contended that, had it not been for her and her coadjutors on the Poor Law Commission, the British Medical Association would have allowed the defects of the Poor Law system to remain in the background. He pointed out that the Commissioners had made the nation aware of the impossibility of maintaining the health and prosperity of the poor on the insufficient relief given to the sick. He desired, as one who had for twenty years held the position of councillor and alderman in a large city, to emphasize the importance of a correlation of action between the sanitary medical officer and the Poor Law medical officer. He felt that there was a danger of placing the experienced clinicians under the control of the inexperienced sanitarians, and advocated that in the future every sanitary medical officer should have had to show that he had served for a time in some Poor Law medical district, where he could learn the difficulties of the poor. He thought it was absolutely necessary that the British Medical Association should not repeat the mistake made when it tried to get every practitioner made a participator of the fees and duties of a public vaccinator, which was always an impossible contention. He urged mutual help and not greed or jealous competition, which stood in the way of progress and medical advance.

Mr. F. E. FREMANTLE (M.O.H. Herts) said that as in the history of medicine, as in the scheme of medical education, so in the administration of the public health service it should be through curative that we arrived at preventive medicine, through the individual that we arrived at the general. The public health service was being gradually and should be definitely organized, in so far as their public duties were concerned, into four grades, as proposed by Mr. Goschen in his Public Health Bill (1871), namely: (1) The medical inspectors of the Local Government Board, (2) county medical officers of health; (3) district medical officers of health; (4) Poor Law medical officers. The analogy of the Territorial Force was apt. A new officer in the Territorial Force might have to serve under those who in their civil capacity were his inferiors. In military organization the brigadier was held responsible by the Commander-in-Chief for the work of his brigade; and he in his turn held the colonel responsible for his battalion; and the colonel each captain for his company. To adapt this clear-headed scheme of functions to the public medical service—first, the county councils must be given the proper responsibilities, and the Local Government Board should act only through them; and secondly, the Poor Law medical officers must be made the basis of the public health system, and every medical officer of health should serve his noviciate in that rank. The non-commissioned officers and men of this public health army would be the sanitary inspectors, health visitors, midwives, school attendance officers, and all the functionaries of local government in so far as their duties concerned the public health. Lastly, let them, without regard to the immediate difficulties, first co-operate in framing an effective scheme, and only when that was decided on, consider the reconciliation to it of present offices and officers, with proper justice to the magnificent work done by both branches of public medical work in the State interest.

Dr. MANLEY (M.O.H. West Bromwich) strongly deprecated the attempt to sow dissension between the preventive and curative branches of the profession. The difficulty of co-ordination between municipal and Poor Law bodies was very great, and could only be effected by complete Poor Law reform. He appealed to the meeting to regard the scheme of the Minority as one for an efficient State medical service, and not to be led away by personal considerations and points of detail.

Dr. ROWLAND FOTHERGILL (London) remarked that at the present juncture the question seemed to be what was to be done with the large body of persons who were not able to meet the expense of medical attendance as in-

curred, and those who were what was termed "derelicts." Both the Public Health and Poor Law services asked to have them. Would not the reply be that the former should be encouraged to take advantage of the invalidity insurance scheme? This scheme would retain the family doctor, prevent derelicts, and so reduce the Poor Law work. In accepting any invalidity scheme they should be careful that the Government did not make use of the profession to bear the burdens of the State. Such a scheme should allow of the co-operation of the Government, friendly societies, trade unions and this Association. The Poor Law service should continue, the doctors be made whole-time officers, being given possibilities of advancement and superannuation, and even of transference into the Public Health service. If the latent possibilities of an invalidity insurance scheme were developed, the necessity for a Poor Law service would in time be found to be very little, and it might ultimately be absorbed into the Public Health service under a Minister of Health. But that time had not yet arrived.

Dr. A. Bygott (M.O.H. Barking) referred to the infant mortality in Barking, which was as much as 160 per 1,000 in one ward, and in two others 86 and 66 respectively. This showed how much medical supervision was needed, and it did not seem to be adequately provided for by the British Medical Association scheme. He had discussed this matter repeatedly with parents, and examined several family budgets, and it appeared impossible to provide these people with medical assistance on a contributory scheme which could be satisfactory. At the same time the choice of doctor ought not to be left to the individual when the community paid, because it was found that in the case of vaccination the poor and ignorant would go to those who would do the work least efficiently. He had for seven years in a large practice endeavoured to solve the problem of dealing with the poor by the general practitioner, and was reluctantly driven to the conclusion that to do the work adequately special training and resources were needed which were out of his reach. He had later seven years in the Poor Law service, and was quite sure that the solution was not that way: in fact, he found things so bad that he was glad to give up a senior post and take a junior one in the sanitary service. Something had been said as to the subordination of the Poor Law medical officers to the sanitary officers. There should be no subordination, but rather a co-ordination. The district medical officer would be entirely responsible for treatment, but he would report to the medical officer of health, who would incorporate his statistics in his tables. He himself found it much more satisfactory to report to a sympathetic friend and colleague than to a relieving officer and board of guardians. When complaints were made by the poor the doctor was placed in a very undignified position, and it would be far better for him in such circumstances to have the support of a trained and sympathetic colleague used to dealing with committees. They were not unmindful of the economical conditions of their professional brothers, and recognized the increase of expense owing to the greater cost of living and the necessity for keeping motor cars, etc.; but they wished to assist them by getting much work done, and adequately paid for, that at present went undone, to the detriment of the public health. They had made a present to the community of valuable gifts in the way of free treatment, not dreaming that it would be carried to the extent or lead to the abuses that it had done; but the time had now come to reconsider their position. In conclusion, the speaker earnestly exhorted all present to think seriously over these problems, to read books and discuss the subject over their pipes, and not to be led away by this person or that, but to make up their own minds on these important questions.

Mrs. Webb, in reply, dealt first with two questions of fact. Dr. Ford Anderson had asserted that under the scheme of the British Medical Association for a public medical service, all patients, including those paid for by public authorities, would have the right to choose their own doctor. This was a mistake of fact. The British Medical Association scheme expressly provided that where a local authority or society paid the whole fee—this being the case for Poor Law, Public Health, and Education Committee patients—the patient was to have no choice, and would necessarily be dealt with by the existing rate-paid doctor, so that the ordinary private practitioner would get no more of this large field than he now did. The second issue of fact was as to recovery of cost. Dr. Ford Anderson had declared it to be practically impossible for a public body to recover, instancing the failure of education authorities to recover for school dinners. But school dinners were confined to cases of obvious destitution, so that if anything was in fact recovered, it proved only that a mistake had been made in feeding at all. Quite the opposite was the lesson of experience where services were rendered to non-destitute people. As a matter of fact, half a million a year was even now recovered by public bodies, where there was means (in lunacy, in industrial schools, and in Poor Law infirmaries). The income limit was quite easy to fix. The Home Office, for its reformatory school cases, found it quite practicable to fix 3s. per week per adult unit, excluding rent. As regards Dr. Sykes's advocacy of the Poor Law principle of "retardation" in seeking medical aid, this negatived any successful campaign against phthisis or cancer, and would play havoc with public health. She would give a typical instance of the danger of continuing any approval of the principle of retardation. The Government, speaking by Lord Beauchamp and Lord Sheffield, had deliberately decided to make the doctor's fee in midwifery emergency cases payable by the board of guardians instead of by the county or borough council, because "the use of the Poor Law machinery would prevent many people from availing themselves of the relief offered to them, which would not be the case if a less obnoxious authority was employed." Thus, the "principle of retardation," as Dr. Sykes called it, was avowedly to be applied to prevent the calling in of the doctor, even when the midwife thought it necessary. Lord Beauchamp even laid it down that "there was no obligation to send for the doctor. The midwife advised that the doctor should be sent for, but neither the midwife, the patient, nor the parent was obliged to accept that advice." It seemed to her that incidentally this meant the retardation of doctors' fees, but that was a matter for the British Medical Association.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

VERONAL POISONING.

Apropos the recent note on a case of veronal poisoning by Dr. Sowden, I think the facts relating to two cases bearing on the possible influence of the drug, which came under my own supervision, may be of interest.

Both patients were elderly females, about 70 years of age, and there is an interval of about ten months between the two cases coming under my notice. In each the diagnosis was "senile heart," whilst insomnia was the distressing symptom in both cases. Veronal was tried in each case with exactly similar after-effects.

Five grains of the drug was given at night. The report of the nurse was, in each case, that the patient had had a splendid night's sleep, and that she was still drowsy.

On examination the drowsiness was apparent, although only to a slight degree. What struck one immediately was that a hemiplegia had occurred, as evidenced by paralysis of the left arm and left side of the mouth. The left leg was not affected to any recognizable extent. There was no aphasia, and the patient could open and shut either eye on request. In the first case I saw the patient again the same night, and found that the paralysis had almost totally disappeared, a slight weakness in the grip of the left hand, as compared with the right, being the only remaining symptom. The next morning it was found that this also had disappeared, the grips now being practically equal. The second patient I did not see until the next morning, and found that here also the hemiplegia had totally disappeared.

It is the taking of the two cases together, and the exact similarity of the symptoms in each, that forces me to

the conclusion that the veronal itself was the exciting cause of the hemiplegia, because I was strongly inclined to believe that the veronal in the first case had nothing to do with the condition. I looked upon it as a transient hemiplegia that one occasionally meets with in the aged. It was only looking back on the first case in the light of the second that made me regard the veronal as the exciting cause of the hemiplegia, although, even yet, the possibility of a coincidence cannot be altogether ignored; and bearing upon this, it might be of interest to hear of the experience of any other of your readers with regard to this drug.

Crook. STEWART MCNAUGHTON, M.B.Edin., D.P.H.Camb., etc.

TETANUS IN A SEPTUAGENARIAN: RECOVERY.

THE following note on a case of tetanus may prove of interest:

Mr. S., aged 75, on April 29th punctured the base of the flexor aspect of his left forefinger with a chip of earth-soiled, dirty wood, while chopping. The splinter remained in the finger until May 7th, when it came out after applying poultices, and the wound was soundly healed by May 9th.

Two days before it came out, being six days after the accident, he felt slight pain and stiffness in his jaws, pain in the neck, and slight difficulty in swallowing, and by the time the wound was healed the pain and difficulty in swallowing were marked. I saw him on May 9th, and commenced serum treatment at once. Dr. Melland, who saw him with me, agreed with the diagnosis of tetanus.

Dr. Melland also saw him with me on May 15th, when the patient seemed to be *in extremis*. The stiffness and cramps had gradually extended down the neck to the pectorals, deltoids and arms, and the muscles of the back, producing painful cramps with opisthotonos. Risus sardonicus was present from the commencement. Lastly, the legs became affected, the cramps in the buttocks being severe.

From the 11th to the 30th May his relatives quite gave him up, especially as a chronic bronchitis, from which he suffered, became very troublesome owing to the great difficulty he experienced in coughing up sputum. The tetanus itself was very severe; only a few drops of fluid nourishment were got down his throat at a time. Rectal feeding, with plenty of fluid, was resorted to. By the end of May he began to swallow fluids more freely, and gradually a little solid food was taken, and convalescence was steady, though cramps were still painful and all movements difficult. On June 7th severe bronchopneumonia set in, with oedema of all the left leg, and the temperature rose above 100° F. for the first time (to 103° F.) These complications gradually subsided, and by June 20th he was able to get up, feeling well, except for slight stiffness and cramps in the right leg and both arms.

Medication consisted of 50 c.cm. Pasteur's dried serum at first, followed by 20 c.cm. of the same daily for a week, then by 20 c.cm. daily of Allen and Hanburys' serum for nine days, injected under the abdominal skin. Chloral was given in 20-grain doses thrice daily. I also gave, while the patient could swallow, as much precipitated sulphur, in treacle, as could be got down; he took half a pound in all. I was led to do this from reading in an old BRITISH MEDICAL JOURNAL that sulphur is used in Chili, locally and internally in tetanus, with good results. Very moderate purgation resulted.

The recovery seems remarkable, considering the patient's age, the severity of the disease, and the complications.

Most of my medical friends do not think serum of much use, whether given under the skin or in the spinal canal. They also agree as to the frequency of chest complications. I feel inclined to give some credit to the sulphur.

Failsworth, Lancs. E. BARNES, M.D.Aberd.

INTESTINAL MYIASIS.

IN the early part of last year I reported in the BRITISH MEDICAL JOURNAL two cases of myiasis—one nasal, the other in a tumour of the face.

I had just read the paper on intestinal myiasis by Dr. Soltau Fenwick published in the JOURNAL, when I was fortunate enough to have, for the first time, a case brought to me for treatment.

V. F., a male child of 13 months, was pale and anaemic, yet bright and lively when seen by me. Unfortunately he lived in the country with his mother, so that I could not do any observation myself. The mother, however, was an intelligent woman and gave a clear history of the case.

On one occasion, when 4 or 5 months old, his mother, on removing his napkin, found a maggot on it. Since that he had passed maggots up to the time of my seeing him. They were passed intermittently, the longest interval being a month, and a week the longest period of continuous passing.

Although seen and treated by more than one doctor he had never been cured, and now, eight or nine months after their first appearance, he still passes them. Not feeling quite sure that the mother was correct in her statement, I got her to bring me some stool with the maggots, intending to hatch them out myself. The mail leaving for England, however, before flies had hatched out, I forwarded the specimen to Mr. E. Austen of the British Museum, who had kindly determined a previous fly for me (and whose ready kindness I here acknowledge), in order to have the fly named. He has been good enough to inform me that the fly belongs to the species known as *Aphiochaeta ferruginea*, Brun (family Phoridae).

A few days after obtaining the first specimen, I asked for another, and instructed the mother to secure it immediately after stool and protect it carefully from any outside infection. This she did, and I was able to watch with much interest the development, using a pocket lens. These maggots were uncommonly greedy feeders, and one could practically see them growing until they reached the full size. I now have in my possession a fly hatched out from this set.

The infection has been of about eight months' duration, and it is difficult to imagine frequent reinfections. It is equally difficult to believe that the number of eggs in the first infection could have been the source of supply for so long a time. What, then, is the relation of the fly in my possession to that which first caused the infection?

It is now some weeks since I last saw my little patient, and I am anxious to know what the result of the treatment has been.

STEPHEN M. LAURENCE, M.B., C.M.Edin.

Port of Spain, Trinidad, B.W.I.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ESSEX COUNTY HOSPITAL.

SLOUGHING OF LUNG TISSUE IN PYOPNEUMOTHORAX.

(By SYDNEY W. CURL, M.A., M.D.Cantab., M.R.C.P.Lond., Honorary Physician.)

THE following are notes from a case of pulmonary tuberculosis in which pneumothorax occurred, and at the *post-mortem* examination of which several sloughs of lung tissue were found in the pleural cavity:

The patient, a girl 16 years of age, was admitted to hospital on April 4th, 1910, and the history she gave was somewhat indefinite, but it appeared that for a month previous to admission she had suffered from cough and expectoration. There had apparently been no haemoptysis.

Until the onset of these symptoms she had been perfectly well, and, with the exception of scarlet fever in childhood, she had had no previous illness.

Her family history was a markedly tuberculous one, her mother and grandmother having died of pulmonary tuberculosis, one sister was ill with the same disease, and a brother had died of general tuberculosis. A significant fact in connexion with this tuberculous family history was that all these persons had resided in one cottage.

On admission she was seen to be a fairly well-nourished girl, but rather pallid in appearance. The pulse-frequency was 104, and the respiration-rate 40 per minute, the temperature registering 103.2°.

Examination of the chest showed the left side to be enlarged, with deficient expansion, absent vocal fremitus, hyper-resonant percussion note, and faint amphoric breathing; all these signs

being present in front. At the back vocal fremitus was absent, and the percussion note hyper-resonant over the left side, except at the left base, where there was defective resonance on percussion and absent breath sounds: above this the breath sounds were inaudible, but vocal resonance possessed an amphoric character. Hippocratic succussion splash was well heard at the left base, and during the later periods of the patient's illness metallic tinkling râles were at times particularly marked over the front of the left side and also the bell sound.

Above the right clavicle a few crepitations were heard, but no other abnormal signs were at this time detected in the right lung. Cardiac pulsation was very plainly seen to the right of the sternum, and on percussion cardiac dullness was found to commence 1 in. to the right of the right nipple line. There were no indications of valvular disease. The urine was acid, specific gravity 1020, and contained neither blood, albumen, nor sugar.

A few days after admission an exploring needle was introduced at the left base behind, and a syringeful of clear serum withdrawn, but it was not thought that sufficient fluid was present to necessitate aspiration.

The needle was introduced again above the level of the fluid a few days later and some air allowed to escape, but as each exploration by the needle caused considerable pain to the patient and marked signs of syncope no further attempts were made.

On April 13th some dry pleural creaks were heard in the right supraspinous fossa and the crepitations in front had now extended below the clavicle. The sputum varied in amount from about 4 to 6 oz. daily and was of a muco-purulent character. No tubercle bacilli could be found in it.

On the 2nd of June the patient was seized with a severe paroxysm of coughing with urgent dyspnœa and coughed up a quantity of purulent material; death followed in about half an hour.

The temperature chart showed an irregular fever with marked remissions, but the variations were kept in check by the free use of cryogenin in divided doses.

Post-mortem Examination.—At the necropsy a considerable gush of air occurred when the left pleural sac was opened. About 3 pints of watery brownish-yellow purulent material were found in the left pleural cavity, and lying free in this liquid were four pieces of lung tissue, to which I shall refer presently. The remains of the left lung were represented by a shrivelled, airless mass lying close to the spine, which on section showed numerous caseous tuberculous foci scattered throughout and with the bronchioles containing pus. On slitting up the air tubes of the left lung one was unable to find any definite evidence of a perforation of the walls of the tubes. Both parietal and visceral layers of the left pleura were covered with a thick creamy lymph, and that covering the lung was greatly thickened.

The right lung was adherent at its apex to the surrounding thoracic dome and a number of yellow caseous nodules were seen scattered throughout the upper and middle lobes, and a few were seen in the lower lobe, which was markedly engorged and showed emphysematous bullae. A cavity the size of a cherry was found in the apex of the upper lobe.

The pericardium contained some clear serum and the cardiac muscle was pale, but there was no sign of valvular disease.

The pieces of lung removed from the left pleural cavity were placed in formalin solution and examined later. There were four pieces, the largest of which measured about 2½ in. long by 1½ in. thick; this piece was irregular in shape and weighed over ¾ oz.; the three remaining pieces weighed respectively one, two-thirds, and half a drachm. These pieces of lung tissue were somewhat soft, except the largest piece, which was quite firm in parts and readily admitted handling with forceps.

Remarks.

The interest attached to this case lies in the presence of the lung sloughs found in the pleural cavity, and before looking up the literature I was under the impression that this case was a unique one. However, I find that the late Professor Coats, in speaking of the formation of cavities in phthisis, says: "By the separation of the sloughs the cavity of the abscess may come to communicate with the pleural cavity, and so pneumothorax may result. Sometimes there is even a gangrenous condition developed, and actual sloughing of pieces of lung tissue occurs."[1] With this exception I am unable to find any reference to the subject, and for this reason think that the above case is well worthy of record.

For the notes of the case, both clinical and *post mortem*, I am indebted to my house-physicians, Drs. Fuller and Mackail.

[1] *Manual of Pathology.* Fourth edition. 1900. Page 784.

The Second International Congress on Alimentary Hygiene will be held at Brussels under the patronage of the King of the Belgians, from October 4th to 8th. Communications may be presented in French, English, German, Italian, or Spanish: the official reports of the Congress will be in French. The General Secretary is M. E. Grognard, 3, rue de Louvain, Brussels.

Reviews.

Haematology.

Dr. G. Froin's monograph on haemolysis, haemogenesis, bacteriolysis, and bacteriogenesis[1] is a very ambitious attempt to reorganize our views upon these subjects and to place all the phenomena in a compact system. He introduces a new conception as a key to all the difficulties. All cells contain within themselves the substances which are necessary for their life and death. There are, according to Froin, in serum-haemolysis four factors: the alexine, which is merely the lipase of the blood serum, the *substance sensibilatrice*, a haematoxin, and an anti-haematoxin. The three latter substances are all liberated from the erythrocyte when it undergoes lysis, and there is no longer any necessity for speculation as to the origin of antibodies to either erythrocytes or bacilli. The theory is then used to explain the cytological data which the author has obtained from the examination of a large number of puncture fluids. These parts of the book would be very interesting were there any serious grounds for belief that the theory is well founded. The haematoxin and the antihaematoxin are hypothetical substances deduced by the author from several experiments of his own, but mainly from old observations which were to be found in the literature. That a cytolytic ferment or protease is liberated when erythrocytes undergo lysis is supposed to be demonstrated by some experiments which have been explained otherwise as being a demonstration of the reversibility of the amboceptor-antigen combination, and by the occurrence of hypoleucocytosis in an animal which is injected with an antigen to which it has been sensitized. With regard to the latter it may be noted that Andrewes has recently shown that there is no destruction of the leucocytes as supposed by the author, but that they migrate to the lungs, probably for the purpose of obtaining oxygen. The anti-haematoxin is liberated from the corpuscle at a later stage of haemolysis. The evidence for its existence consists of some old experiments of Bordet on the formation of anti-sensibilatrice. No details of control experiments, no quantitative data, nor even the exact references to the experiments are vouchsafed. It appears that many of them could be explained by deviation of the complement. However that may be, the mere presentation of a new theory of haemolysis based on experiments with untitrated serums cannot be too strongly condemned, nor can the bodily transference of this theory to bacteriolytic phenomena be justified at the present day. To illustrate the manner in which the author uses his theory to elucidate his cytological findings in cases of pleural and meningeal effusions would merely confuse the reader. We may only note that there is a great deal of reference to bacteriolysis in the case of tubercle bacilli, and the repeated assumption that the colour of normal blood serum is due to bilirubin. The monograph cannot be looked upon as a serious contribution to scientific literature.

Professor Asher's essay on the physiological exchange between blood and tissues[2] is a summary by an investigator who has done a considerable amount of work on the subject. He endeavours to clear up the present position of the various problems involved and to indicate the direction which future investigations should take. There are, he thinks, two principal questions; first, What is it that passes through from the blood to the tissues and conversely from the tissues to the blood? and secondly, What are the conditions which bring about these exchanges? He points out that morphologically the structure of the vessels is simple and uniform, so that the explanation of the differences that occur can hardly be found there; on the other hand, since they possess contractility and irritability and are supplied with nerves the assumption is against their playing a purely passive part. He lays stress upon the remarkable manner in which the blood maintains

[1] *Hématolyse et haematogenèse, bactériolyse et bactériogenèse.* Par le Docteur G. Froin, ancien interne des hôpitaux de Paris. (Octavo, p. 272. Paris: Steinheil. 1910. Fr. 6.)

[2] *Sammlung anatomischer und physiologischer Vorträge und Aufsitze.* Herausgegeben von Professor Dr. E. Gaupp and Professor D. W. Nagel. Heft 5. *Der physiologische Stoffaustausch zwischen Blut und Geweben.* Von Leon Asher. Jena: Gustav Fischer. 1909. (Sup. roy. 8vo, pp. 39. M. 1.20.)

its physico-chemical condition constant in spite of the exchanges that are taking place and also that it appears to possess the power of regulating its neutrality. He points out that while the capillary wall is permeable for all components of the blood they do not always pass through. When haemoglobin is set free into the circulation it passes first into the lymph spaces of the bowel, secondly into those of the extremities, and thirdly into the urine and serous sacs. Vaughan Harley has shown that the passage of bile into the blood after the common duct has been tied is hindered if at the same time the thoracic duct is occluded, but under any circumstances the liver capillaries do not seem to be readily permeable to bile. The explanation of these facts is not known. The problems involved should be studied by examining the secretions of the glands, the transudations into serous cavities, and by the injection of substances into the blood vessels, but the physician has opportunities of observing the disturbances of the exchanges between the blood and the tissues, and the explanation of these disturbances is a subject of research for experimental pathology. Pharmacological experiments may form the link between physiology and pathology by investigating the effects of poisons on the permeability of the vessels. Professor Asher concludes that in spite of what has been done very little is known, and that there is a great deal of work to be done in the future.

Dr. OTTO LEERS has produced a very useful and comprehensive monograph[3] on the forensic examination of the blood. It will not only be of use to those who are engaged in forensic examinations, but would, we think, be of great assistance to clinicians in helping them to appraise at their true value many of the results which are issued from clinical laboratories. The innumerable fallacies of the various tests, many of which are in daily use in clinical medicine, are here reviewed in a very critical but judicial spirit. Macroscopical, chemical, microscopical, spectroscopic, and finally biological tests are described with full detail, and all the sources of error and of fallacy enumerated. The description of the technique for the performance of the precipitin test fills forty pages and includes not a single unnecessary detail. The repeated insistence on control reactions at every step can only be appreciated by one who has had experience with serum diagnosis with and without controls. The reliable nature of this test carried out with the necessary precautions seems to be amply demonstrated; but, even so, it is limited in that it does not distinguish between the albumens of allied species, nor have the various attempts to raise the specificity been very successful. At the most they only establish a probability. Nor does the test demonstrate that the suspected fluid is actually blood, but the author has obtained promising results with an anti-haemoglobin serum. On the value of such a serum all authorities are not agreed. The most modern feature in the book is the description of the application of the anaphylaxis test to forensic work. A guinea-pig is sensitized with a small dose of the suspected fluid, and after an incubation period of three to four weeks is given an intracerebral injection of human blood serum. If the previous injection has contained albumen of human origin the animal will show characteristic symptoms of anaphylactic shock. Here again numerous controls are necessary, but the test has several advantages. It requires very little fluid for the preliminary sensitization, and some serums which are unsuited for the precipitin reaction—that is, heated serums—are still capable of giving an anaphylactic reaction. The author does not mention the advantages of the post orbital injection over an intracerebral or intravenous. This is the only omission we have been able to detect; but there is an important misstatement on page 51, where it is categorically stated that the expired air contains 4·4 per cent. of carbonic oxide. There are two coloured plates illustrating some chemical tests and a table of blood spectra. There is an extensive bibliography extending over twenty pages.

We have already placed before our readers a notice which dealt with the first part of this work—*Atlas der menschlischen Blutzellen*.[4] A second volume was inevitable in order to carry out the author's original scheme, but the progress made in haematological studies has also rendered necessary a second volume, in which the newer methods of staining should receive full consideration. To any of our readers who are in the least degree conversant with Dr. PAPPENHEIM'S own contributions to haematology it will at once appear that the task of bringing up to date in book form of the newer conceptions could not be in better hands. The volume before us is a further monument to the author's industry, and serves as one more admirable example of strong convictions emanating from a strong mind. It will not be out of place to remind the reader of the task the author has imposed upon himself. The beautiful plates which embellish this work are meant to be a veritable gallery of all the types of cells which enter at the formation of the blood. We are of late years well supplied with excellent books on haematology in which the blood pictures of certain pathological states are portrayed. Dr. Pappenheim, however, has essayed much more than this, for he has endeavoured to supply a work of reference to which the worker may appeal when, as so often happens, he meets with blood cells which are different to the stereotyped representations with which we are familiar. Every worker knows that repeatedly he meets with cells which do not conform to any of the better known types, and the blood count suffers in accuracy, for, no doubt, certain groups of cells have been made to include individuals which really should belong to another. It is reasonable that Dr. Pappenheim, in carrying out his arduous task, should feel that he must systematize as well; it would have been little use to the reader to merely find an extended gallery of abnormal types, for these unfortunately are only too obvious; but what has long been wanted was a more intimate study of the cellular elements of the blood, which should aim first of all at establishing blood pictures, which, unfamiliar to us at present, still are found to underlie types of blood disease which at the bedside present a rough similarity, but which differ so much individually, one form being an almost insignificant departure from health, and another one a most rapidly fatal disease. Dr. Pappenheim has devoted now two volumes to this aspect of the study, and tells us there is still another to be expected. It is to be hoped that, after all his labours, he will have prepared a way, having defined the types, to that further elucidation of the agencies which are operative in the production of such widely different blood pictures as are familiar to us. No doubt the fault, if it is one, is one which is a necessary accompaniment of all advances in science, but it is none the less very apparent in this work that the terminology adopted by Dr. Pappenheim is cumbrous and very unsatisfactory, and one can imagine that a public discussion in which such unwieldy terms were used would probably end in the direst confusion. There is no necessity to single out passages in support of this statement, for every page bristles with this difficulty. Probably no one is more aware of the shortcoming than Dr. Pappenheim himself, who does not shield himself by any excuses for this defect, and reasonably too, for with so many new types of cells which his microscopic analysis has brought to light there must be introduced unfamiliar terms. We could have wished, however, that with greater boldness still he had coined absolutely new terms and provided somewhere in these volumes a glossary which should secure to the reader guidance from the familiar paths of the older terminology to the mazes of the new. As it is at present, there are many passages, especially in the section dealing with the theory of the ripening, reproduction, metaplasia, heterotopic development and degeneration of the blood cells met with in health and disease, which will defy the reader's intelligence and patience. Moreover, cells which Dr. Pappenheim is convinced belong to some one of the categories which he has endeavoured with so much zeal to place in a full light, may be claimed at any rate by the reader as representatives of other groups which the author has differentiated. Dr. Pappenheim has forced the book into quite different domains from what might have been expected from its present title. It is as if a geographer had endeavoured to map out the world by a most exacting

[3] *Die forensische Blutuntersuchung.* By Dr. Otto Leers, Assistent der Königlichen Unterrichtsanstalt für Staatsarzneikunde an der Universität Berlin. Berlin: Julius Springer. 1910. (Demy 8vo, pp. 212, 30 figures in the text, 3 plates. M. 6.)

[4] *Atlas der menschlischen Blutzellen.* Von Dr. Arthur Pappenheim (Zweite Lieferung). Jena: Gustav Fischer. 1909. (Sup. royal 8vo, pp. xiv and 83–571. Taf. 13–25. M. 30.)

analysis of the débris, the flotsam and jetsam thrown up on his active shores by the various ocean tides and currents. What is wanted is some vessel by means of which explorations may be carried out in remote districts. As Dr. Pappenheim would remind us this is impossible, for at present we do not possess in haematological studies the means by which such excursions might be made; we cannot make an intimate study of the vital processes going on in the narrow and reticular tissues of the lymphatic gland and spleen, nor can we watch the subtle processes by which the numerous metaplastic or heterotopic changes met with in these cells take place. However, Dr. Pappenheim thinks from his investigations that he knows what does take place, and the whole of this work turns upon his ideas of this process. He admits that there are lacunae in his hypotheses, and the perusal of the volumes shows that he has spared no efforts to consider the rival views of his fellow countrymen and when there is divergence, to provide his own reasons and his own explanations. More than this can hardly be expected in this difficult study. Feeling that the cardinal difficulty in grasping the meaning of this work turns upon nomenclature, we place before the reader a short sketch which appears to us to give a key to the appreciation of its contents. The white cells of the blood consist of two groups, those provided with granules and those not so provided. The former are generated in the marrow; the latter are generated also in the marrow but also in the spleen and lymphatic glands and nodules. There is one parent cell, which is alike capable of producing each of these groups and also of the red cells. When a parent cell is giving issue to any one of these three groups, it does so by individual elements, which are distinct in each of the groups, that is, no cell which is progressing to the complete form of a polymorphonuclear cell does so through any configuration which can be met with when another parent cell is developing towards the realization of a lymphocyte or of a red corpuscle. No doubt with our present processes of staining, and as the coloured plates show, there are many instances in which, however, these parent cells in their separate progresses, do appear to bear a very similar aspect. Even Dr. Pappenheim practically confesses this, for when a cell is met with which presents a nucleus like that of lymphocytes but a cytoplasm, which recalls the appearance of a leucocyte (polymorphonuclear cell), he uses the term "leucocytoid lymphocyte" to describe it; also, very often, without explaining why, he uses another alias, "leuco-lymphocyte." Should there be more or less of this cytoplasm, a still further qualification is introduced of large or small bodied, "leuco-lymphocyte." The reader must now, however, be prepared to follow the writer into those further distinctions which yield another parallel set of cells — the lymphoido-leucocytes or lympho-leucocytes—also qualified by the possession of a larger or smaller amount of cytoplasm. Space prevents further reference to such difficulties as those just detailed; the reader must feel that they are not given with a view to warn him away as if from a quagmire. There does not appear to be any other progress possible in the study of the cellular contents of the blood stream, except along such lines, and no one who wishes to be familiar with the trend of thought in this subject can afford to let slip the opportunity of mastering a work like the present one, which will for a considerable time be the last and best written of our authoritative works on this subject.

We have received a monograph on the photography of blood spectra by Drs. E. Rost, Fr. Franz, and R. Heise, of Berlin.[5] Excellent photographic plates are given showing the position and breadth of the bands in different dilutions of oxy-, carboxy-, reduced and met-, and sulph-haemoglobin. Also of the chief derivatives, such as acid and alkalin, haematin, cyanhaematin, haemochromogen, haematoporphyrin. The comparative position of the bands in the red and violet ends of the spectrum are shown, and the importance of the photographic method as a diagnostic aid dwelt upon. The photographic methods used are fully described, and also the previous researches, such as those of the late Professor Gamgee, who discovered the bands in the violet.

Under the title *Le globulin des mammifères*, Dr. Aynaud has made an interesting contribution to the vexed question of the existence of blood platelets.[6] Dr. Aynaud says that Donné in 1844 was the first to describe a third kind of formed element in the bloood and to give it this name, and that it is only just we should keep to the name chosen by the discoverer. Such a title, however, must lead to confusion with the protein-serum globulin which forms part of the colloidal solution—the plasma. Professor Buckmaster, in his book on the *Morphology of the Blood*, published in 1906, led us to believe, as the result of his own researches, that the platelets are precipitates of the blood protein, artefacts produced in the making of microscopical preparations, and not preformed elements of the living blood. Dr. Aynaud claims to have seen them circulating in the living capillaries of the epiploön of the rabbit. A chloralized young rabbit is so fixed that on opening the abdomen, the epiploön can be spread on a glass slide placed under the microscope and on a warm stage and irrigated with warm physiological salt solution. In successful preparations "one sees in the vessels from time to time some small very pale bodies quite different to the red corpuscles; they are more elongated, and rather of a rod-like than a disc-like form"; they can also be seen, he says, in "hanging drop" preparations of plasma if these are made on vaselined slides, on a warm stage, the drops being transferred by a vaselined pipette, and the blood being obtained with avoidance of any contact with tissue juice. To effect this he punctures the jugular vein of an ass with *one* stab of a hollow needle, and collects the blood in a vaselined tube. The corpuscles sink in asses's blood very quickly and leave enough clear plasma at the top in less than five minutes. "The appearance of a drop of plasma collected under these conditions is," says Dr. Aynaud, "quite new. The red cells quickly fall to the bottom of the drop and the white soon follow them. The entire field of the microscope when one focusses the more superficial parts of the drop, appears occupied by an infinity of elements of extraordinary abundance." They almost touch one another, are rod-shaped, very pale, and vary in size from that of a red corpuscle to a quarter of its size. The author gives figures of these structures, which might be, and he says have been, mistaken for trypanosomes. Dr. Aynaud has found the same forms in the blood of other animals. He collected dog's blood by stabbing the femoral artery with a hollow vaselined needle. To make the blood sediment quickly he bled the animal some days previously. He gives details of methods of citrating and oxalating blood so as to preserve the natural form of the platelets. He says they only have the rod-like form at body temperature and become round or oval on cooling, and are altered in shape by chemical reagents. They are made to agglutinate very easily—for example, by addition of a trace of peptons. They may be coloured by neutral red. Their tinctorial reactions show that their chromatophil substance is like the chromatin of protozoa, and quite different to either nuclei or protoplasm of the blood corpuscles. The platelets can be made temporarily to disappear out of the blood of the animal by injecting peptose or other agglutinating substance, such as in heterogeneous serum. The author gives an account of his numeration of the platelets and the influence of hunger, haemorrhage, trypanosomiasis, etc., on their number, and he discusses the relation of the platelets to coagulation of the blood. He says: "The coagulability of the blood is a property which appears after its contact with the tissues, and is proportional to the duration and intensity of this contact. The blood taken from the vessels clots, because it touches the tissues, and not because it carries in itself a powerful haemostatic." The platelets are not essential to the process of coagulation. The platelets are absent from serous fluids and pus, and are present in embryonic blood, and the author concludes that they are just as an essential element of the blood as the corpuscles. We do not, however, think that

[5] *Beiträge zur Photographie der Blutspektra, unter Berucksichtigung der Toxikologie der Ameisensäure.* von Reg.-Rat. Dr. med. E. Rost, Dr. med. Fr. Franz, and Dr. phil. R. Heise. (Sonderabdruck aus *Arbeiten aus dem Kaiserliche Gesundheitsamte.* Band xxxii, Heft 2.) Berlin: J. Springer. 1909. (Imp. 8vo, pp. 223-304, Taf. viii. M. 9.)

[6] *Le globulin des mammifères.* By Dr. M. Aynaud (Trav. du Lab. du Professor Lannelongue). Paris: G. Steinheil. 1909. (Roy. 8vo, pp. 240. Fig. 8.)

they have the same cellular rank as these, and whether they are of the nature of secretory granules or are precipitates from the plasma protein remains to be settled.

ORTHOPAEDICS.

ON the Continent of Europe more attention is paid to the theoretical teaching of details of technique than is the case in Great Britain. Whether this is due to lack of opportunities for practical instruction or to more thorough methods it is hard to say, but at least it must be granted that practical teaching will be all the more effective if it be supplemented by exact theoretical knowledge. Such books as that on plaster-of-Paris appliances, by Dr. J. PRIVAT,[7] do not exist in the English language, and our students are left to pick up the principles of the use of gypsum in surgery from such practice as they may happen to see. In France the use of plaster in the treatment of tuberculous joint disease and deformities has been made almost a fine art, particularly by Dr. CALOT, whose book on Pott's disease was reviewed by us in 1907,[8] and also Dr. DUCROQUET, whose treatise on therapeutic orthopaedics was noticed in 1907.[9] Dr. Calot supplies a laudatory preface, which must surely cause his assistant, Dr. Jean Privat, to blush, although he has no cause to be ashamed of his handiwork. The surgeon who can afford the time to follow out carefully his minute directions cannot fail with ordinary care and skill to produce a more efficient apparatus than nine out of ten of those which are applied in our hospitals. The descriptions are clear and convincing, and the illustrations show what they are meant to show, and are so abundant that one is even devoted to teaching how to remove plaster that has set from the bowl containing it. No consideration, however, is given to the question of the desirability of increasing the strength of gypsum by the addition of such substances as Portland cement—a question that has been very fruitfully studied in the United States. Apparently Dr. Privat is quite satisfied with ordinary plaster-of-Paris. There are few printer's errors in the book, but the excellent plaster shears of Stille of Stockholm are throughout called by the name of Still. Every hospital should have a copy of this book for the instruction of its house-surgeons and nurses.

In a short treatise on *Congenital Dislocation of the Hip*, Mr. JACKSON CLARKE[10] gives an account of the manipulative treatment of the deformity, and a description of an open operation which he has devised for the cure of those cases in which, owing to deficiency of the acetabular wall, the manipulative operation has failed. He also gives a short clinical history of 40 cases treated up to the date of writing. Of these cases, 25 were cured, 10 were uncured or relapsed, and in the remaining 5 the result was either doubtful or incomplete at the time of the report. The author has only performed his open operation twice, and therefore it is too soon to hazard an opinion as to whether its results will prove better than those following the operations of Hoffa or Lorenz. The book is well illustrated, and the descriptions throughout are succinct and clear.

Since 1907 Professor KLAPP has been translated from Bonn to Berlin, and the wider opportunities of practice in the capital and three years' further experience of his method of treatment of scoliosis have made it desirable to issue a new edition of his work, *Funktionelle Behandlung der Skoliose*,[11] of which the first edition was noticed in our issue of November 30th, 1907, vol. ii, p. 1593. The present edition is half as long again as the first edition, and contains more illustrations. In his original preface Dr. Klapp wrote that an exact description of his method had become necessary, because it had been so much advertised and misrepresented that it had suffered in repute, and it had been made to appear as if it was quite easy to cure scoliosis by the crawling method, and that no more was necessary. If we remember rightly, a London daily illustrated paper had a picture of Dr. Klapp's class in full crawl, and the usual misleading and "sloppy" article describing it. Dr. Klapp is not one of those who claims complete cures of advanced scoliosis. His results shown in a series of photographs taken before and after treatment are all the more impressive in that they show marked but not incredible improvement. There can now be no doubt that the crawling method is a valuable addition to our means of treating this obstinate and distressing deformity.

[7] *Les appareils plâtrés.* Par le Docteur Jean Privat, assistant à Paris du Dr. Calot de Berck. Préface du Dr. Calot. Paris: A. Maloine; Toulouse: Edouard Privat. 1910. (Med. 8vo, pp. 308; 268 figures. Fr.6.)

[8] BRITISH MEDICAL JOURNAL, vol. i, p. 442.

[9] Ibid., vol. i, p. 1061.

[10] *Congenital Dislocation of the Hip.* By J. Jackson Clarke, M.B.Lond., F.R.C.S. London: Baillière, Tindall and Cox. 1910. (Demy 8vo, pp. 105; illustrations 55. 3s. 6d.)

[11] *Funktionelle Behandlung der Skoliose. Nebst einem Beitrag zur Kenntnis einiger orthogenetisch-degenerativer Krankheiten.* Von Dr. Rudolf Klapp, A.O., Prof. der Chirurgie an der Kgl. Friedrich-Wilhelms-Universität Berlin. Zweite Umgearbeitete Auflage. Jena: Gustav Fischer. 1910. (Roy. 8vo, pp. 155, Abb. 116. M.4.50.)

NOTES ON BOOKS.

THE Tuberculosis League of Pittsburgh, U.S.A., has issued a small pamphlet on *Tuberculosis or Consumption, and How to Avoid It*, intended as lessons for school children. A copy is furnished by the league to each school child in Pittsburgh, with a request to take it home and talk about it. Pictures rather than letterpress are chiefly relied on to impress the various points on the mind, and the many illustrations are calculated to arrest the attention and have more lasting effect on the memory than mere words. Similar tracts, modified to suit the people of this country and the local conditions, might with advantage be issued by antituberculosis organizations in Great Britain.

A few months ago we reviewed the first edition of Mr. ROBSON'S work, *Social Disease and its Prevention*,[12] and declined to express an opinion as to the advisability of its publication. That others have come to a more definite conclusion as to its merits is proved by a second edition being called for after so short an interval. The book is avowedly intended for the lay public. It consists of a description of the main symptoms and effects of syphilis and gonorrhoea, wherein medical terms are freely used, and the evils of the two complaints by no means minimized. The direct object of the work, however, is the advocacy of a calomel ointment immediately after, or preferably before, a doubtful coitus for the prevention of syphilis, and an injection of protargol for the prevention of gonorrhoea.

Dr. HERMAN apologizes for the seeming illogicality of including in this, the fifth, edition of his book on *Difficult Labour*,[13] chapters on retroversion of the gravid uterus and on eclampsia, but by them he has made it a still more convenient book for the young practitioner to carry for filling in the periods of obstetric waiting which fall to his lot. The book has one great advantage over ordinary textbooks in being so practical and dogmatic. These qualities are well illustrated by the new chapter on eclampsia, where, after a very open-minded discussion of the subject, he concludes with a summary of the treatment which the doctor will be expected to employ. In the chapter on retroversion we note the omission of Sir William Japp Sinclair's method of gradual reposition by a ring pessary. In the discussion of methods of enlarging the narrow pelvis the preference is still rightly given to the subcutaneous method of symphysiotomy. One excellent feature is the insistence of the extent of the information which can be gained by external palpation.

An average two-yearly reissue testifies the usefulness of this little summary, *Golden Rules of Obstetric Practice*.[14] It gives a fair account of the standard practice, but several of the rules are capable of improvement. On page 15 the rule "Never be afraid of chloroform in obstetric practice" should be omitted. On page 11, "When abortion is inevitable, plug the vagina," misses the point, which is the presence of serious bleeding when the abortion cannot be terminated; and the rule on page 22, "Always refuse any alcoholic drink which may be offered you in the patient's house *during* labour," is capable of a serious misinterpretation which should lead to the excision of the last two words.

[12] *Social Disease and its Prevention.* By H. N. Robson, M.R.C.S., L.R.C.P. Second Edition. London: Simpkin, Marshall, and Co. 1909. (Cr. 8vo, pp. 112. 3s. 6d.)

[13] *Difficult Labour: A Guide to its Management for Students and Practitioners.* By G. E. Herman. New and enlarged edition. London, New York, Toronto, and Melbourne: Cassell and Company. 1910. (Cr. 8vo, pp. 559, illustrations 180. 12s. 6d.)

[14] Golden Rules Series No. III. *Golden Rules of Obstetric Practice.* By W. E. Fothergill. Sixth edition. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent, and Co. (Demy 32mo, pp. 71; 1s.)

BRITISH DENTAL ASSOCIATION.

The annual meeting of the British Dental Association was held in the Medical School of the University of Liverpool on August 3rd, 4th, and 5th. Mr. W. H. Waite, L.D S.I, presided. About three hundred and fifty members attended the meeting, many being accompanied by ladies. The proceedings commenced with a meeting of the Representative Board.

Business Meeting.

The general meeting for business of the association followed, and was ably presided over by Mr. W. B. Paterson of London. This meeting was largely attended, the chief interest centring in a Bill for the Prohibition of Practice by Unqualified Persons, which had been prepared by the Representative Board. After considerable discussion a resolution, moved by Mr. W. Gay of Edinburgh, seconded by Mr. L. Matheson of London,

> That the association approves generally of the bill, and instructs the Representative Board to endeavour to promote its acceptance by the Legislature,

was carried. A previous amendment, limiting the bill to an increased protection of title, moved by Mr. G. M. P. Murray of Dublin, was defeated on a division by a majority of two to one.

President's Address.

At the adjourned meeting, which was open to visitors, the President delivered an address which dealt with the past history of the association and its work since the last meeting in Liverpool, held in 1882.

Presentation to the President.

At the conclusion of the address a presentation was made on behalf of the North Midland Branch by Mr. R. Edwards to the President of his portrait in oils.

Papers.

Papers possessing a medical interest were read by Professor C. S. Sherrington, F.R.S., a note on certain reflex actions connected with the mouth; Professor B. Moore, D.Sc., on the physiological and pathological metabolism of calcium and phosphates in relation to the deposition of insoluble salts in the formation of bones, teeth, and calculi.

Two well-sustained and instructive discussions followed upon papers read by Mr. Jas. Milligan, M.B., L.D.S., on dental caries, and Dr. R. J. Erskine Young, L.D S., of Liverpool, on the saving of children's teeth. The latter discussion, which was opened by Mr. Norman G. Bennett, of London, evoked considerable public interest, as shown by the reports in the lay press generally.

Demonstrations.

Dental demonstrations and cases occupied the morning of the concluding day. They were shown in the new premises of the Liverpool Dental Hospital, a building the conveniences and general architectural qualities of which were much admired.

Next Meeting.

The association decided to hold its next meeting in London on August 3rd, 4th, and 5th, 1911, at the invitation of the Metropolitan Branch, and Mr. W. B. Paterson, F.R.C.S., L.D.S., of London, was unanimously nominated President-elect.

Annual Dinner and Social Entertainments.

In addition to the annual dinner various social entertainments were offered to the members during the meeting, including a reception at the Town Hall by the Lord Mayor and Lady Mayoress, a ball at the Philharmonic Hall, and a river cruise by the President and Liverpool and district members.

Golf Competition.

A golf competition over the Hoylake championship course, for the Irish Challenge Cup, was arranged by Mr. J. Royston, L.D.S., of Liverpool.

Benevolent Fund.

The subscribers to the benevolent fund of the association held a meeting at the Adelphi Hotel, and received satisfactory reports from the treasurer, Mr. Clayton Woodhouse, and the honorary secretary, Mr. G. Hern, of London.

Votes of Thanks.

Amongst votes of thanks a special vote was passed in favour of Mr. Joseph A. Woods, M D.S., L D.S., of Liverpool, the local honorary secretary, who was mainly responsible for the successful arrangements made for the meeting.

MEDICAL BOOKKEEPING.

Among the answers to a query on the subject of medical bookkeeping, published in these columns some time ago, was one from Dr. A. E. Goldie, of Tywardreath, Par Station, Cornwall, outlining his own fashion of keeping accounts. As it presented some points of interest, the following account of his system is now given.

The book described was only designed to serve the purposes of a ledger, but it renders a day-book to a certain degree superfluous, so that many practitioners might prefer to regard it as ledger and day-book combined, and keep no other, with the exception of a visiting list and prescription book.

A page of this ledger-day-book, or as much of one as is found to be eventually required, is given up to each family on the practitioner's list, and is ruled and filled in as shown in the annexed table. At the head of each account is written transversely the name of the patient (or of the person to whose family he belongs), his status, and his address; while underneath these entries is in each case noted the scale of charges to be applied to the patient or family in question. The importance of this entry of the scale of charges will appear later.

Vertically the page must be divided into six columns—one narrow date column, one broad detail column, three ordinary £ s. d. columns, and one prescription reference column, while a seventh column for brief notes is some advantage though not essential.

In the detail column are entered the units of work representing the services performed on the day against which they appear, including a note of the particular patient treated, and the total to which such units amount when assessed on the scale at the head of the page.

Assuming that, as in the sample page, the services rendered have been two visits and one supply of mixture; that the charge for a visit with medicine is 5s., and for a visit without medicine 3s. 6d.; and that the patient treated was the wife of the person in whose name the account is kept, the entries for the day would be V.M. + V. = 8/6 (wife). The next day there might be a single visit at which no medicine was prescribed; the entry in that case would be simply V. = 3/6 (wife). The third day there is a visit to the same patient, and a liniment is prescribed, but he is asked to see one of her children, and, prescribing a saline, eventually summarizes the work as V. + Lin. + ½ V.M. = 7/- (wife and Mary).

The fourth day he again sees the wife, and supplies some more liniment, but later in the day is asked to visit Mary again; he does so, and while there the wife makes a remark which leads him to tell her she need not use the liniment. In the evening he enters V. + Lin. + V. = 7/- (ditto, ditto). Strictly speaking the total should be 8s., but as he has countermanded the use of the liniment he thinks it right not to charge for it.

The fifth day he sees wife and daughter, and finding evidence of infectious disease, casts an eye over the household generally with a view to arranging for isolation. This much prolongs his visit, so instead of entering V. + ½ V. = 4/9, he thinks it right to make the entry V. + V. = 7/- (ditto, ditto).

The sixth day he sees the wife and the little girl at the same visit and prescribes a mixture for the latter, his entry for the day being V. + ½ V.M. = 6/- (wife and Mary). He also arranges for a consultation with Dr. Brown. This consultation taking place on the seventh day, on which he also sends a fresh supply of medicine for the mother, his entry for the day would be M. + Consult. c. Brown = 13/- (ditto, ditto).

These illustrations serve to show that although an individual scale of charges is entered at the head of each account, this merely represents the general system on which the patient is to be charged. Sometimes, as in one or two of the examples given, he may think it right to charge either more or less than the sum strictly due according to the scale. Usually a comparison of the

units totalled for the day and the scale will be sufficiently indicative of the reason of any departure from the latter, but if the practitioner wishes to make quite certain of not forgetting, or to show someone else why he departed therefrom, he can make a brief entry in the seventh column, which has been mentioned as being advantageous but not essential. Occasionally, of course, the services rendered include items which do not appear in the ordinary scale of charges, in which case their value must be assessed on general principles.

Name. HERMANN BLANK, ESQ., Insurance Agent,
Address. 24, Marsh Road, Linton.
Scale. V. 3/6, V.M. 5/-, M. 2/6, Lin. 1/-, Lot. 1/6, etc., etc.

1902.		£	s.	d.	Pres.	
May 5	V.M. + V. = 8/6 (wife)	0	8	6	$\frac{27}{1}$	
,, 7	V. = 3/6 (,,)	0	12	0		
,, 9	V. + Lin. + ½ V.M. = 7/- (wife and Mary)	0	19	0	$\frac{30}{2}$ $\frac{30}{3}$	
,, 10	V. + Lin. + V. = 7/- (,, ,,)	1	6	0	$\frac{30}{1}$	Lin. countermanded. Isolation.
,, 11	V. + V. = 7/- (,, ,,)	1	13	0		
,, 12	V. + ½ V.M. = 6/- (,, ,,)	1	19	0	$\frac{30}{1}$	
,, 13	M. + Consult. c. Brown = 13/- (,, ,,)	2	12	0	$\frac{27}{1}$	
,, 14	V.M. = 5/- (Mary) ...	2	17	0	$\frac{30}{2}$	
,, 17	V. = 3/6 (,,) ...	3	0	6		
,, 21	M. = 2/6 (,,) ...	3	3	0	$\frac{30}{2}$	
,, 27	V. + ½ V. = 5/3 (Mary and wife)	3	8	3		
	Account sent 26/6/02					Left the town.
	,, paid 15/7/02					

The next point to be considered is how these entries in the detail column affect the filling in of the £ s. d. column. If it be assumed that the first day's work recorded is the first of a new account, the initial entry in the £ s. d. columns will be the same as the total for that day in the detail column, namely, 8s. 6d. But at the end of the second day the entry in the £ s. d. columns is not the same as in the detail column, but that amount added to that for the previous day's work—in other words, 8s. 6d. and 3s. 6d., or 12s. The entry in the £ s. d. column for all following days is made on the same principle, so that entry in the £ s. d. column represents the amount due up to and including that day. In this way, if the book is kept regularly and the entries in the detail column passed forthwith to the £ s. d. column—a second's work—the medical man is always in a position to know precisely what is due to him from any or all of his patients for all the work done for them since his last accounts were sent out.

The preparation of accounts even of a small practice is frequently a great trouble in ordinary circumstances; even if the figures relating to work on different days are ready, they still have to be added up. Moreover, the figures very often are not ready, the precise sums to be charged having been left to be assessed later on, and assessing charges to be made weeks or months after the services have been rendered is difficult if both practitioner and patient are to be treated with strict fairness. On the system here described assessment and totalization of the accounts are carried out forthwith with a minimum of trouble when all the circumstances are fresh in the practitioner's mind, and in such fashion that he subsequently knows and can demonstrate to any one else he pleases, including his debtor, precisely how the total of a charge has been reached. It may be added, too, that if in the few days preceding quarter day, or the first day of the year, the practitioner or some one on his behalf uses up odd moments in addressing envelopes in advance, the whole worry of account preparing and dispatching is reduced to filling in the total in his book on an ordinary bill, and the inserting it in an envelope and sending it off.

There is one other advantage in adding the scale of charges under the name of the person in whose name the account is kept, and who is responsible for its payment; it not only reminds the practitioner himself of what he has decided to charge a particular patient, but enables a locumtenent to keep the books up to date instead of merely keeping notes of the patients he has visited and leaving the practitioner to assess the charge at some future date. Moreover, the accuracy with which such locumtenent has kept his accounts can be tested forthwith.

On reference to the sample account, it will be seen that on each day when an entry appears in the sixth column there are two sets of figures, above and below one another. The upper figure represents the page of the prescription book, while the lower indicates the position of the prescription on that page. Some practitioners, of course, number all their prescriptions consecutively, in which case the entries made are even simpler. By making these entries, the practitioner can always ascertain, when he will, what medicine he prescribed on any particular day, and his assistant or locumtenent finds it comparatively easy to deal with applications for fresh bottles of medicine.

With the exception of the seventh column, the ruling of the sample account is of a kind common in invoice ledgers, so that any one possessed of an ordinary commercial invoice ledger can keep his accounts in the fashion suggested, but a specially ruled book which includes a seventh column is more convenient. In any case, the names appearing in this ledger-day-book should be carefully indexed. At the bottom of each account it is useful to make a note of the day on which it is sent out and of that on which payment is made, drawing a line through the whole account when paid so as to distinguish it from accounts which are still alive. It is also desirable when two names have to appear in the detail column on the same day to put that of the principal patient first.

SCIENCE NOTES.

THE complicated relations which have been shown to exist in the apparently simple process of blood-clotting have provided the subject of much research. In spite of the care with which the various stages in the process have been followed, and the various factors defined and named, it can hardly be said that we have as yet a very harmonious picture of the whole. In all the higher animals the same degree of complexity obtains as in the case of man, but in invertebrate animals there is, as might be expected, a simpler state of matters. Leo Loeb has recently, in the *Biochemische Zeitschrift*, published the results of some observations on the blood of crustaceans. He finds that the coagulation of the plasma is caused by the direct action of blood coagulins or tissue coagulins, which can be extracted directly from the muscles or the blood corpuscles. They are dependent only on the presence of salts. It has been denied that there is any difference between the coagulin derived from the tissues and that derived from the blood, the former being really due to admixture with blood; but it can be shown that the two substances differ chemically, although they bear a very close resemblance to each other. That both are of considerable importance in the formation of fibrin is a matter of general agreement. In certain invertebrates it can be shown that the so-called primary coagulation can take place without the formation of fibrin, and that it is really a process of cell agglutination which is caused by changes in the constitution of the cytoplasm, possibly with the aid of certain colloid substances produced by the cells. A similar change in the cells with consequent agglutination precedes the true coagulation common to both vertebrates and invertebrates, and these changes lead in the case of crustacea, and probably also in vertebrates, to the separation of blood coagulin. This formation of cell fibrin in invertebrates is the phylogenetic antecedent of thrombosis.

Nova et Vetera.

DANTE'S KNOWLEDGE OF ARISTOTLE'S "DE GENERATIONE."

In a former article[1] entitled, "Was Dante a Doctor?" reference was made to the great Florentine poet's acquaintance with embryology, and more especially with that subject as set forth in Aristotle's *De Generatione Animalium*, and the promise was given that the matter would be more fully discussed at a later date.

The investigation of Dante's indebtedness to Aristotle's works, and more particularly to *De Generatione Animalium*, is rendered difficult by several circumstances. In the first place, the references to it are contained in a poem, and one does not look for exact quotations of a scientific treatise in poetry, even if it be of the very exceptional kind that we find in the *Divina Commedia*; it is true that embryology is also alluded to in the prose work entitled *Il Convivio*, but even it is a commentary upon certain odes which Dante's contemporaries had regarded as love sonnets, and which all the poet's ingenuity could hardly convince the world to be of any other nature. In the second place, the works of Aristotle in Dante's time and in northern Italy were not read in the original Greek, but only in Latin versions, and these most often had not been made direct from the Greek, but from Arabic translations thereof. Dr. Edward Moore[2] is of opinion that Dante may have had access to several such translations, and is inclined to the belief that one of them was the Arabo-Latin version of Michael Scot, and that another was the translation made direct from the Greek into Latin for St. Thomas Aquinas, and published along with his works. It is interesting in this connexion to note that Paget Toynbee[3] finds good reason to believe that the Arabic version of Aristotle's *De Animalibus* used by Michael Scot contained the five books of the *De Generatione* as well as the ten of the *De Animalibus Historiae* and the four of the *De Partibus Animalium*. In the third place the English student is hampered in his inquiry by the lack of a translation into his own language of the *De Generatione Animalium*.[4] He is thus compelled to compare statements in an Italian poem with the text of a Greek biological work, which he feels convinced was only accessible to the Italian author in the form of a Latin translation from an Arabic version or in one prepared from the Greek for use in a theological treatise! In the fourth place the *De Generatione* is in many parts a puzzling treatise, and the text is not above suspicion.

Dr. Edward Moore[5] enumerates twenty-four passages in the *De Generatione* which are, he believes, referred to by Dante; none of them, it is true, is a direct quotation, but as to all of them there is good reason to think that the poet had them in his mind when writing; some of them are alluded to more than once. Further they are nearly all grouped together in two of Dante's works, the *Convivio* and the *Purgatorio*, and the subject which is being dealt with in both cases is the relationship of the soul to the embryo. It should be added that for some of the statements which Dante makes it is necessary to go to another Aristotelian treatise, *De Anima*. There are, therefore, two of Aristotle's works involved, *De Generatione Animalium* and *De Anima*, and two of Dante's, the *Convivio* (Bk. IV, cc. xxi–xxiv) and the *Purgatorio* (c. xxv, 11, 37–78).

Let us look first at the passage in the *Purgatorio*. Dante and Virgil, who have been joined by Statius, are passing along the sixth terrace of the Mount of Purgatory, where the sin of gluttony is being purged, and they are drawing near to the seventh terrace, where lust is to be dealt with. Dante has expressed his wonder regarding the emaciation of the spirits in the sixth terrace, and has asked how hunger could be felt where there was no body, and Virgil has referred him to Statius for an explanation.

[1] British Medical Journal, February 5th and 12th, 1910.
[2] Edward Moore, *Studies in Dante*, 1st Series, pp. 312, 316, 1896.
[3] Paget Toynbee, *Dante Studies and Researches*, p. 248, 1902.
[4] This defect is now being remedied, the Clarendon Press having in preparation a translation by Professor Platt of University College, London; the author has very kindly allowed me to see the proof sheets of his admirably accurate rendering of the *De Generatione*, and I have made use of it in this article.
Op. cit., pp. 337, 338.

The question why Statius should be invoked to elucidate an embryological problem (the endowment of the embryo with a vegetative, sensitive, and rational soul) is one of the incompletely solved enigmas of the *Divina Commedia*, for the supposition that he was called upon because he was, as Dante believed, a *Christian* poet does not altogether meet the case. Statius's reply may be divided into three parts. In the first he describes the generation of the vegetative soul.[6]

> Perfect (*i.e.* the purest essence of the) blood, which is never drunk up by the thirsty veins, and remains like (superfluous) food which thou removest from the table, acquires in the heart virtue informative (*i.e.* creative power) for all human members, as being that (blood) which runs [*ne va*] through the veins to be formed into those (members). Digested yet again (*i.e.* still more purified), it descends to those vessels whereof it is more seemly to be silent than to speak (*ad vasa seminalia*); and from these it afterwards trickles upon another's blood in the natural vessels (*i.e.* in the matrix). Therein the one and the other meet together, the one (the blood of the female) disposed to be passive, and the other (that of the male) to be active, by reason of the perfection of the locality (the heart) from which it flowed; and (the male blood) being conjoined to it (the female blood) begins its operation (of forming the embryo), first by coagulation (*i.e.* turning the blood into flesh), and then gives life to that which it had made to take consistence as substance necessary for its operation.

The formation of the sensitive or animal soul is next described:

> The active virtue (the male) having become a soul, as that of a plant, but thus much differing from it, that this one (the human life) is only on the way (*i.e.* has only reached the first stage), and that one (the plant) has already arrived (*i.e.* has reached perfection), it then works so much that already it moves and feels, as does a sea-fungus; and after that it undertakes to organize the powers of which it is the germ. My Son, the power which is (derived) from the heart of the begetter, at one time dilates, and at another time extends itself, in which (heart) Nature is intent on (forming) all the members.

Then follows the passage in which Statius is represented as telling Dante how the embryo from being a mere animal becomes endowed with a rational soul:

> But how from animal it becomes rational (*lit.* endowed with speech) thou canst not yet discern, for this is the point that has already made one (Averroes) more learned than thou to err so that in his teaching he separated the potential intellect from the soul, because he could see no organ appropriated by it (*i.e.* the possible intellect). Open thy breast to the truth which comes next, and know that, as soon as the articulation of the brain is perfected in the embryo, the primal Mover turns to it, rejoicing at such a masterpiece of Nature, and breathes into it a new-born spirit replete with virtue, which absorbs into its own substance whatever it finds active in it (the embryo), and forms itself into one single soul, which lives and feels and turns itself back upon itself (*i.e.* is self-conscious). And that thou mayest the less wonder at my speech, look at the heat of the Sun, which gets turned into wine when combined with the juice that distils from the vine.

Statius is next represented as telling Dante how at the death of the body the soul separates itself and bears away the intellectual (divine) faculties and also the corporeal ones; but the latter are in a state of latency. So, in a sense, the spirits are able to feel suffering. This brings the long argument to a close.

The modern reader will ask, now, in amazement, And is this poetry? Is this part of one of the greatest epics the world knows? Are we not reading some lines written by one of the metaphysical poets of the seventeenth century, some verses by Dr. John Donne or Abraham Cowley, who made "an effort to be ingeniously absurd," who "mistook learning for poetry"? The answer is that it is poetry, but poetry dealing with one of the greatest of scientific questions—the problem of the beginnings of life and sensation and mental action in the human embryo. Dante is here seen grappling with a profoundly difficult speculation, and his weapons are his own massive intellect, the highest theological knowledge of the Middle Ages (as contained in Thomas Aquinas), and the learning of Aristotle as transmitted to him by the Saracens. Specially the learning of Aristotle. Before attempting to trace the Aristotelian substratum in the passage in the *Purgatorio* which has been given above, I may state that in the *Convivio* (IV, cc. xx, xxi, xxii, et seq.) the subject is dealt with under the definition of nobleness. Human nobleness,

[6] I use here the closely literal translation of the Honourable William Warren Vernon (*Readings on the Purgatorio of Dante*, II. ff 338 et seq, 907), with his explanatory phrases in parenthesis.

says Dante,[7] is "nought else than the seed of blessedness (which) draws nigh despatched by God into the well-placed soul;" and he claims that the definition embraces the four causes so important for mediaeval exactness—the material, formal, efficient, and final. Then he examines the way in which nobleness descends, and finds that there is first a natural way and second a theological or spiritual way. Putting on one side the views about our souls held by Avicenna, Plato, and Pythagoras, he adopts that of Aristotle and the Peripatetics. There follow, in less detail, the same views as are given in the *Purgatoria*, for curiously enough, the prose account of generation is both shorter and less explicit than that of the poem. Dante himself seems to be aware that he has expressed himself in difficult terms, for he adds[8]: "Let no man" (I use again Wicksteed's rendering) "marvel if I speak in such wise as seems hard to understand: for to me myself it seems a marvel how such a producing can be arrived at by argument and perceived by the intellect; and it is not a thing to expound in language—I mean in any language truly vernacular."

Now let us look at Dante's statement of the beginnings of the formation of the embryo with Aristotle's works at our elbow. I use the Firmin-Didot edition of Aristotle's works[9] (Vol. III), and Professor Platt's translation, which is strictly literal.[10] We shall take Dante's statements in their order.[11]

The passage ("*Sangue perfetto, che mai non si breve Dall 'assetate vene*," etc.) begins with a definition of the male semen, and the parallel passages (so to say) are to be found in Aristotle's *De Generatione*, Lib. I, c. xviii–xix.[12] *Χρησίμου ἄρα περιττώματος μέρος τι ἐστι τὸ σπέρμα· χρησιμώτατον δὲ τὸ ἔσχατον καὶ ἐξ οὗ ἤδη γίνεται ἕκαστον τῶν μορίων.* (As rendered by Platt: Semen then is part of a useful secretion. But the most useful is the last, and that from which finally is formed each of the parts of the body.") *Λέγω δὲ περίττωμα μὲν τὸ τῆς τροφῆς ὑπόλειμμα* ("By secretion I mean the residue of the nutriment"); and then, in c. xix, *φανερὸν ὅτι τῆς αἱματικῆς ἂν εἴη περίττωμα τροφῆς τὸ σπέρμα* ("It is plain that semen will be a secretion of the nutriment when reduced to blood.") If we compare Dante with Aristotle, allowing the former to give a poetic turn to his expressions, the resemblance is too striking to be accounted for in any other way than by supposing that Dante had these (or similar) passages from *De Generatione* in his mind. Aristotle says that the semen is a secretion, that a secretion is the residue of the nutriment, and that in this case it is the residue of the nutriment when reduced to blood; Dante modestly veils his statement by omitting the word "semen" and by using its equivalent, perfect blood (or "a blood perfected"). This is not the place to state the views of the ancient physicians on the blood; but it must be remembered that Aristotle believed that the veins alone (not the arteries) contained blood, that the final concoction of the blood was semen, a fluid unlike blood, and that if the concoction was less complete the resemblance to blood was retained—for example, in the catamenia of the female. The idea, therefore, which is expressed both by Aristotle and Dante is that the nutriment is reduced to blood (which goes to the veins), but part is left over (is never "drunk up by the thirsty veins"), and by concoction is converted into semen. Special notice should be taken of Dante's ingenious paraphrase of "residue of the nutriment," which becomes under his pen, "superfluous food which thou removest from the table."

This perfect blood acquires creative power or informative virtue in the heart, and is therefore able to form all the members of the future embryo, for it goes to all the members of the parent. This passage, it must be admitted, has puzzled Dante's commentators, but I think its meaning is as follows: The supposed Aristotelian parallel is *ὅμοιον γὰρ τὸ προσελθὸν πρὸς τὰ μέρη τῷ ὑπολειφθέντι*, which Platt translates, "For that which goes to all the parts of the body—that is, the blood—resembles that which is left over—that is, the semen." If we might read this as: For that which comes from all the parts of the body (the blood) resembles that which is left over (the perfected blood or semen), then the statement would naturally enough come after the preceding one ("it is natural that the offspring should resemble the parents"), and form a part of what has been called the Hippocratic theory of pangenesis, the early forerunner of Darwin's theory of heredity. But it is doubtful if we are at liberty to render the passage thus.

The succeeding part of Dante's description, although veiled, is quite intelligible. Still more purified (concocted), the semen descends to the male genitals (the part of which it is more seemly to be silent than to speak—"*ov' è più bello tacer che dire*," as Dante words it), and afterwards distils in drops upon the other blood (the menstrual fluid of the female) in the uterus (the natural vessel—*in natural vasello*). Then comes the Aristotelian theory of impregnation, which may be stated briefly as the idea that the male semen acts like the sculptor and the menstrual fluid like the marble, whilst the embryo corresponds to the statue. The passages are in the *De Generatione*, Lib. I, c. xxi, and Lib. II, c. iv: *Ἀλλὰ μὴν τό γε θῆλυ, ᾗ θῆλυ, παθητικόν, τὸ δ' ἄρρεν, ᾗ ἄρρεν, ποιητικὸν καὶ ὅθεν ἡ ἀρχὴ τῆς κινήσεως* ("But the female, as female, is passive, and the male, as male, is active, and the principle of the movement comes from him"); *τὸ ποιητικὸν καὶ τὸ παθητικόν, ὅταν θίγωσιν . . . εὐθὺς το μεν ποιεῖ, τὸ δὲ πάσχει* ("The active and passive, when they come in touch . . . straightway the one acts and the other is acted upon"). Dante's lines are quite evidently a reflection of these and of many similar passages in Aristotle.

Dante next describes how the semen acts upon the maternal blood in the uterus, first coagulating it and then giving it life (the vegetative soul). Similarly, Aristotle (*De Generatione*, Lib. II, c. 3) tells how the semen, "when it has entered the uterus, forms the corresponding secretion of the female and moves it with the same movement wherewith it is moved itself" (*ὅταν ἔλθῃ εἰς τὴν ὑστέραν, συνίστησί τε καὶ κινεῖ το περίττωμα τοῦ θέλεος τὴν αὐτὴν κίνησιν, ἥπερ αὐτὸ τυγχάνει κινούμενον.*); and again (*De Generatione*, Lib. II, c. 4) he says, "the female always provides the material, the male that which fashions it" (*ἀεὶ δὲ παρέχει τὸ μεν θῆλυ τὴν ὕλην, το δ' ἄρρεν τὸ δημιουργοῦν*). This concludes Dante's description of the generation of the vegetative soul.

For the account of the generation of the sensitive soul, as stated in the *Purgatorio* (c. xxv, lines 52–60), a similar series of parallel passages is found in Aristotle's *De Anima* and *De Generatione* (as well as in St. Thomas Aquinas's *Summa Theologiae*); but as the argument ceases to have a medical character it will be unnecessary to trace the parallelism. To one interesting matter attention must nevertheless be directed. Dante points out that the embryo, having now simply a vegetative soul, has reached the stage which for the plant is a terminus; if it were a plant it would be at perfection, but being more than a plant it has only arrived at the first stage. It now passes into the second or animal stage and receives a sensitive soul; now it moves and feels, as does a sea-fungus ("*come fungo marino*"). If this be Dante's meaning, then we must ascribe to the Florentine poet a view of embryology which the nineteenth century was disposed to regard as its property—the notion that the human embryo climbed up its own genealogical tree; but Butler seems to think that the allusion to the sea-fungus or zoophyte may have arisen through a misunderstanding of Aristotle's *οὐδὲν ἧττον τὰ σπερματα καὶ τὰ κυηματα τῶν ζώων ζῇ τῶν φυτῶν*. It was, at any rate, a wonderful flash of insight. The remaining passages in Aristotle's *De Generatione* which are cited as parallel with the rest of Dante's description of the generation of the sensitive and the rational soul are given by Butler[13] and Moore[14] as follow: *De Generatione*, Lib. I, c. 19, Lib. II, c. 3 (several times) Lib. III, 2. Lib. V, 1; *De Anima*, Lib. II, 2, 3; *De Animalibus Historiae*, Lib. VIII, 1.

If it is borne in mind that we have been comparing the best Greek text of Aristotle (which Dante certainly had no means of knowing) with statements in a poem of the fourteenth century, it must surely be admitted that the resemblance is so close as only to be accounted for by

[7] *Convivio of Dante Alighieri*, Wicksteed's Translation (Temple Classics), p. 328.
[8] Ibid., p. 331.
[9] *Aristotelis Opera Omnia*, Vol. III, pp. 319 et seq. Parisiis, 1854.
[10] Aristotle's *De Generatione Animalium* (Clarendon Press, Oxford).
[11] Several of the references to Aristotle given by Butler in his *Purgatory of Dante* (p. 319) differ from those according to the Firmin-Didot edition.
[12] Butler gives this reference as chapter 23, not 18, evidently a misprint.
[13] Op. cit.
[14] Op. cit.

Dante possessing an intimate knowledge of one of Aristotle's works which even a mind of "oceanic learning," such as his, must have regarded as a specially difficult subject of study.

The investigation, at any rate, strengthens the position already taken up,[15] that Dante had a not inconsiderable knowledge of medicine, as shown by an exact acquaintance with works specially studied by the physicians of his time. Our wonder, thus excited, is still further augmented by the facility with which he was able to throw the most abstruse scientific matters into pleasing verse, and to sing of procreation and the organs concerned therein without offence. And these things were accomplished in the first or second decade of the fourteenth century, about the time when the English and the Scots were in death grips on the field of Bannockburn! J. W. B.

HEALTH IN THE POTTERY TRADES.

In our issue of July 9th was briefly reviewed the report of the Departmental Committee on the dangers incurred by lead workers.[1] A few points still require consideration. It is not easy to foretell the length of time a patient suffering from plumbism may remain ill. Taking the cases all round, they tend rather to slowness than rapidity of recovery. Even colic is apt to recur, and as for wrist-drop, it is frequently months before power is restored to the enfeebled extensors. The statement that in Prussia three weeks may be taken as the average of the illness has no bearing upon the subject so far as the malady is known in England. There is, too, created as the result of exposure to lead a weakened state of health to which no name can be given, but which only requires a slight accession of lead for acute symptoms of plumbism to develop. In the opinion of the Departmental Committee women are more susceptible to lead than men, a circumstance to which Sir Thomas Oliver we believe was the first to draw special attention, and which is now apparently being recognized by all authorities. It was the greater incidence of sickness and the large number of miscarriages occurring in women working in lead which caused them to be excluded from the dangerous processes of white lead manufacture. It is now recommended that they should be also excluded from glost-placing, but this is less on account of the danger from lead than from the hard nature of the work, and the heavy lifts it involves. There is no doubt as to the advisability of the monthly examination of lead workers, but the systematic examination is felt to be a difficulty when applied to certain classes of casual labourers. Glost-placers have been complaining. These men are hired for temporary work, and as their work is scheduled as dangerous, they are required by the rules to be medically examined once in each calendar month. Should a glost-placer happen to be working on the particular day of the doctor's visit to the factory, the firm pays a reduced fee for the examination; but if he is not then employed, the workman has to present himself at the doctor's surgery before the end of each month to be examined and signed up, and for this he pays 1s. Owing to their irregular employment, it is felt by the men that the 1s. fee is too heavy a charge. The Departmental Committee suggests that the 1s. should be paid by the worker at the time of his examination, and that the fee paid should be entered in his portable register, the money to be refunded by the occupier who first employs the glost placer after the examination, the employer also entering the fact in the worker's portable register. If the employer under these circumstances is to pay the fee, he is not much encouraged to give employment to men of whom there is always a larger supply than there is work for.

The inclusion of lead poisoning under the Workmen's Compensation Act, 1906 has brought the subject of occupations in which lead is used under the notice of the public in a way at first little expected. Under Schedule B of the Act the dependants of a worker whose death occurred too suddenly to admit of his being examined or suspended by the certifying surgeon possessed no legal claim. The attention of the Departmental Committee has therefore been directed to certain hardships connected with compensation for lead poisoning, such as delay of payments, payment of small amounts, and the non-payment of compensation for precautionary suspension. Where compensation is sanctioned by law there should be no delay in payment by manufacturers, nor is there any reason why manufacturers should insist upon being allowed to pay the full amount in one sum when it is really more advantageous to the sick workman and his family to receive weekly small payments instead. As regards non-payment of compensation for precautionary suspension, a certifying surgeon may suspend from employment on the ground that continued work in a lead process would involve serious risk of plumbism, or he may suspend on the ground that the worker is already suffering from lead poisoning, and can therefore lodge a claim for compensation. Certifying surgeons frequently suggest the transference of persons to other departments where they will not be exposed to lead.

The Committee considers that steps should be taken to secure for all persons who are suspended as a precautionary measure some reasonable compensation. A suspended workman might be given light employment where he would not be exposed to lead. Failing this, and where the earnings are less than those previously received, compensation on the usual scale should be given for at least three months, provided that the worker has been employed in a scheduled lead process for one month. Manufacturers are reminded that they have no right to dismiss a workman suspended from employment upon a certificate by a certifying surgeon. The recommendations of the Departmental Committee are as favourable to the workman as they reasonably could be. Operatives during their suspension are not called upon to attend at a surgery or elsewhere for examination. The doctor must visit the patient. The certifying surgeon has power to antedate his certificate prior to the time he first sees the patient, so long as he is satisfied that the patient was absent from work on account of suffering from an illness industrially contracted. As regards the exclusion of women from lead processes the Committee has been wisely guided by its medical expert, Dr. George Reid. It is hoped that as the result of the several recommendations made by the Committee the liability of working mothers to plumbism will be diminished, for if this hope is not realized it is further recommended that all women under 45 years of age should be excluded from employment in the most dangerous lead processes. No immediate action, however, is to be taken on this point, although efforts will be made to obtain reliable statistics for future consideration, since the Secretary of State has reserved to himself the power to call the Committee together again should such be required. Suspension of workmen engaged in dusty processes which cause pulmonary disease could hardly be imposed without compensation. Lung diseases are not scheduled under the Workmen's Compensation Act. A system of compensation might be established, the cost of which in order to be fair could be founded on the proportion between the industrial rate attack from such diseases and that of the general population. One of the members of the Committee was in favour of employers and employed jointly contributing to a fund from which additional compensation could be granted in order to supplement that at present payable by law.

LUNACY IN EGYPT.

The engrossingly interesting annual report[1] for the year 1909 of Dr. John Warnock, the Director of the Egyptian Government Hospital for the Insane at Abbassia, near Cairo, shows that during the year the accommodation at this asylum was raised from 877 beds to 947, while the number of patients in residence rose during the same period from 1,017 to 1,150. On January 1st there was an actual excess of male patients over provided accommodation of 220 and 17 vacancies on the female side. Sections approaching completion will reduce the excess to 160, but by the end of 1910 Dr. Warnock anticipates that there will be 1,275 patients in residence, and by the end of 1911 probably 1,400. The new asylum at Khanka, it is hoped, however, will be able by then to take 240, leaving the numbers practically what they are to-day. Further extensions are planned so that by 1916 there will be 1,150 patients at Abbassia and 1,000 at Khanka. In the meantime the disposal of the excess of patients is a serious

[15] British Medical Journal, p. 336.

[1] Report of the Departmental Committee appointed to inquire into the Dangers attendant on the Use of Lead, etc. (Cd 5219.) 1s. 5d. Wyman and Sons, Limited, Fetter Lane, E.C.

[1] Fifteenth Annual Report of the Egyptian Government Hospital for the Insane. Cairo: National Printing Department. 1910.

difficulty. During the year under review some of the sections contained twice the number of patients they ought to have held according to the scale.

On the general question of the numbers of insane in Egypt, Dr. Warnock quotes the figures of the census of 1907, in which the numbers were returned at 5,447, but he says that the actual number is probably several times that figure, only well-marked cases being entered at the census. As an example of this Dr. Warnock furnishes a table showing that during 1909 the number of persons suspected of being insane sent to local hospitals was 746, of whom only 202 were certified, the remainder, probably nearly all insane, being released. For this reason, when the asylum accommodation has been adequately increased, Dr. Warnock suggests that all reported cases should pass through the asylum. Partly because of the difficulty of getting the local authorities to certify, but also for want of the simple procedure suggested by Dr. Warnock, insane murderers every year are admitted who had been known to be insane long before they committed their crimes.

Admissions.

As we have said, there were 1,017 patients in the asylum on January 1st, 1909, and 1,150 on the last day of the year. The total number of cases treated was 1,595, and the average number daily resident, 1,070. During the year 578 were admitted, of whom 466 were first, and 112 not-first admissions. As in previous years a number of the admitted were more or less injured, 12 being severely injured or moribund, 4 dying in a few days; 5 had fractured ribs, 1 was suffering from cut throat, 2 from severe scalp wounds, 1 from fractured jaw and 1 from a fractured ulna. This is, however, an improvement on last year, when 27 were admitted severely injured, 11 being moribund. As before, also, Dr. Warnock has to complain of the imperfect certification of the insane, many arriving with invalid certificates. During the year 12 were admitted without certificates, as urgently requiring care, and 20 simply on their own signed demand; 44 were brought by their friends without certificates and refused on account of non-certification. With regard to certification, Dr. Warnock says it is impossible to make headway until a lunacy law is passed. Of the total admissions 81 were not Egyptian, those under consular protection being admitted on their Consul's orders. Dr. Warnock points out as a remarkable fact that out of 286,301 non-Egyptians living in Egypt, 102, or over 3 per 10,000, were admitted; whilst of the Egyptian population (10,903,677) only 444, or 0 4 per 10,000, were admitted.

The total admissions were classified according to the forms of mental disorder into: Mania, 128; melancholia, 44; chronic mania and dementia, 35; pellagrous insanity, 101; general paralysis, 36; insanity from alcohol, 37; insanity from hashish, 43; epileptic insanity, 21; adolescent insanity, 39; paranoia, 10; idiocy, imbecility, and weak mind, 44; and other less frequent forms, 8. Of the above list the striking features are, first, the great preponderance of excited over depressed states, and, secondly, the large numbers of cases of insanity due to exogenous toxins. Among causes other than hashish, alcohol, and pellagra, the following etiological factors were assigned: Syphilis in 27; epilepsy in 21; old age and adolescence in 55; mental and emotional stress in 27; and in 213 no cause could be ascertained. With regard to the pellagrous patients, only 101 were diagnosed as suffering from pellagrous insanity, but pellagrous symptoms were noted in many other cases of insanity, in fact, in 145 of the total admissions. Dr. Warnock says that this disease is very common among children in Egypt, though this is apparently not the experience in America. Dr. Warnock notes that the rash and the diarrhoea occur simultaneously; therefore the rash is not a casual symptom due to exposure to the sun's rays, but a sign of a general morbid process. Nearly every case, he says, suffers from bilharzia disease, very many from ankylostomiasis, and also many from favus of the scalp. In the asylum no maize is used in any form, and all flour is carefully analysed, yet pellagrous patients, who have been resident for years, again develop pellagrous rashes during their residence, with acute physical symptoms, sometimes resulting in death. Atoxyl treatment, as in former years, was carried out side by side with other cases not so treated, without showing any resulting benefit.

A point of some interest concerns the general paralytics admitted; Dr. Warnock's tables show that they formed 6.5 per cent. of the total and 8.0 per cent. of the male admissions. Also of the 37 paralytics 27, or 7.3 per cent., had signs or gave histories of previous syphilitic infection. This point is worthy of special note because over and over again, even quite recently, it has been affirmed that in Mohammedan countries syphilis is rife and general paralysis comparatively rare, Egypt being quoted as an example in point.

Discharges, Deaths, etc.

During the year 147 were discharged as recovered, as compared with 85 in the previous year, the increase being due, in great part, Dr. Warnock says, to the additional accommodation available, whereby it has been possible to detain a greater number till they recovered. Also 129 were discharged as relieved, 46 as not improved, and 15 as not insane. The number discharged as uncured (175) compares favourably with that of the previous year (266), owing to increased accommodation, the premature discharge of female patients having practically ceased.

During the year also 108 died, giving a death-rate on the average numbers resident of 10.09 per cent. The deaths were due in 42 cases to cerebro-spinal diseases, including 28 from general paralysis; in 10 to diseases of the heart and blood-vessels; in 1 to suffocation, and in the remainder to general diseases, including 14 from tuberculosis, 15 from pellagra, 9 from pneumonia, 5 from senile decay, 3 from dysentery, 2 from septicaemia, and 1 from typhoid fever. In September an outbreak of typhoid fever occurred, attacking 7 patients, of whom 1 died. As the result of employing Widal's reaction the source of infection was narrowed down to the employees and patients working with food, and after the removal of 6, who gave positive results, no fresh cases occurred. During the year 910 accidents to patients were recorded, the great majority being slight. No case of suicide occurred, though suicidal and homicidal attempts were numerous.

It would be unfair to close this notice of Dr. Warnock's report without mentioning some of the difficulties with which he has had to contend in administering this large and important institution. Perhaps we cannot do better than quote some sentences from his report.

> The number of relatives and friends who visit the patients every week has risen to such an extent that their presence every Friday has become a serious matter. The exertions of three policemen are needed to keep them in order. Several times bands of well-to-do fellaheen have forced their way past the gate-porter and endeavoured to enter the asylum by force. Unsuitable food, matches, hashish, scissors, and other weapons, forbidden articles of clothing, and even poisons, are smuggled in and are the cause of accidents.
>
> The flour supply has been bad; quantities of inferior flour have been delivered, from which it was impossible to make good bread.
>
> Another example is milk, which for years was supplied adulterated and diluted.
>
> The demands of tenderers have steadily increased, apparently by collusive action, but the abandonment of the contract system for seven months appears to have had a good effect.

The foregoing only betray the common frailties of human nature; the following, however, are peculiarly appropriate in the land of the Pharaohs:

> The prevalence of rats in the old roofs and disused drains causes considerable damage to electric wires, food, etc.
>
> The multitudes of flies all over the asylum during the greater part of the year constitute a veritable pest. . . . Although the thousands of bugs formerly plainly visible on the walls no longer exist, there are numbers hidden in the rotten wood of the roof during the day time, which descend at night to feed on the patients.

This list of the plagues of Egypt is not yet exhausted, for there is a nonchalant note to the effect that

> Snakes and scorpions have been exceptionally prevalent during the year.

Dr. Warnock's report is full of valuable information, and those desiring a closer acquaintance with lunacy administration in Egypt cannot do better than consult these reports for 1908 and 1909. What must impress the reader, however, is the progress, to which these reports bear eloquent witness, made within recent years and in the face of the greatest difficulties, in the provision of proper accommodation for the insane of Egpyt and in the furtherance of both scientific inquiry and legislative reforms, mainly as the result of the indefatigable zeal and administrative ability of Dr. Warnock, ably seconded by the Deputy Director, Dr. Dudgeon.

ETHER DRINKING IN ULSTER.

By William Calwell, M.D., Belfast.

The subject of ether drinking as a custom in Ulster has been a vexed one for a number of years; the most various statements are made—one person when questioned denies that he has ever heard of it, the next says that in his district the very hedges, to say nothing of offices such as banks, reek of it on market days, and that it is a pernicious practice which is undermining the health of the country and threatening to spread throughout Ulster. For instance, Dr. Palmer, of Armagh, and Dr. Cooke, of Derry, state that this is a great exaggeration; but, on the other hand, in one town, in a shop owned by a member of more than one public board, a medical man saw the shopman putting up half-pint and pint bottles of ether out of gallon jars to have them ready for the next day's market; it was not done in secret, and seemed to be the usual thing. Again, a well-known medical man, who certainly has the full confidence both of the profession and the public in his honesty and reliability, says that both ether and methylated spirit drinking are much exaggerated intentionally by the publicans, and sometimes by the police, to account for crime due to alcoholism. On the other hand, Dr. Deane, of Loughgall, co. Armagh, writes that he is much afraid of the habit spreading into his district from Cookstown, and urges that steps be taken to stop the indiscriminate sale.

That the habit does exist, and that in one district at least it is considered by the local magistrates to be so prevalent as to demand special legislation, is shown by the action of the justices at the petty sessions held at Cookstown, co Tyrone, on January 28th last. A married woman was charged with ill-treating her children and with being an habitual drunkard, and her husband swore that three months after his marriage, seven years ago, he found his wife was addicted to ether drinking; the habit had increased, and she had been drunk several times from ether during the last six months. When she struck the child she was "in the horrors of drink." She spent to his knowledge about 2s. 6d. every week on ether for her own consumption. After the case had been disposed of Mr. John Glasgow, J.P., said that this was the second consecutive petty sessions at which a sad case had come before them having its origin in ether drinking, and in the previous case the man, who was charged with a horrible offence, was sentenced to two months' imprisonment at the quarter sessions. He proposed that:

> We, as magistrates, assembled at Petty Sessions, Cookstown, which includes in its area a considerable district in which the drinking of ether as an intoxicant is indulged in, pray the Chief Secretary to the Lord Lieutenant of Ireland to so amend the law scheduling ether as a poison as to make it compulsory on the chemist to keep a record of the purchasers and the quantities purchased, as is done in the case of many poisons, and, if practicable, to limit any one sale to a small quantity, as we have reason to believe it is purchased in considerable quantities and resold illicitly in certain districts.

The Chairman seconded the resolution, and the other magistrates expressed assent.

A resolution in these terms has been adopted by two or three other petty sessions, and at the assizes at Omagh on March 8th Captain Lowry, D.L., foreman of the grand jury, asked the Lord Chief Baron to forward the following resolution to the proper quarter:

> That we, the grand jury of the county of Tyrone, desire to call your lordship's attention to the unrestricted sale of ether, and recommend that this drug should be scheduled as a dangerous poison, and chemists should be compelled to keep a register of the sale; and we further ask you to forward this resolution to the proper quarter.

The Chief Baron said that he would have great pleasure in forwarding it to the proper quarter, with a strong recommendation that the suggestion be put in force. He was under the impression, he added, that there was, under an Act of Parliament, some restriction of the sale of ether, but the evidence given in one of the cases showed that these regulations must be insufficient.

This question has been discussed before; the late Mr. Ernest Hart, editor of the British Medical Journal, delivered an address on ether drinking, its prevalence and results, before the Society for the Study and Cure of Inebriety. In this address, which was published in the British Medical Journal, October 18th, 1890, Mr. Ernest Hart gave a full history of the habit and its geographical distribution, with some details of the trade, method of drinking, dose, and prevalence of the evil. He based his report on replies from twelve doctors, four Roman Catholic priests, and one clergyman of the Episcopal church. As this body of evidence was deemed too small, and as the question did not seem to be settled, I drew up the following short letter and series of questions and sent a copy to every medical man in Ulster outside Belfast. The reason Belfast was omitted was that it was well known that ether drinking as a habit or custom did not exist in the town.

INQUIRY INTO THE QUESTION OF ETHER DRINKING IN ULSTER.

Dear Sir,

The question of ether drinking as a habit or custom in Ulster has been raised more than once. It came before the Petty Sessions at Cookstown quite lately; and the magistrates passed a resolution "praying the Chief Secretary for Ireland to so amend the law scheduling ether as a poison as to make it compulsory on a chemist to keep a record of the purchasers and the quantities purchased." "We have reason to believe it is purchased in considerable quantities, and resold illicitly in certain districts."

I am endeavouring to ascertain the facts, and make a report for the British Medical Journal, and should be much obliged if you would kindly answer the enclosed inquiries, and return them to me *as soon as possible*.

Any information or statement marked "Private" will be strictly considered so.

Yours truly,
William Calwell, M.D.

6, College Gardens,
Belfast, Feb. 10th, 1910.

Ether Drinking in Ulster.

1. Have you any cases of ether drinking in your charge; or families, members of which are known to be ether drinkers? If so, how many?

Answer:

2. Do your know generally whether such a habit is indulged in in your neighbourhood, and to what extent?

Answer:

3. Can you assign any cause or origin of the habit?

Answer:

4. What are the general features of a case of
   (*a*) Acute ether intoxication?
   (*b*) Chronic ether inebriety?
   (*c*) Are ether drinkers alcoholic?
   (*d*) Is it fatal?

Answer:

5. Do you know of any other part of Ireland outside Ulster, or indeed anywhere in the world, where the custom of ether drinking is prevalent?

Answer:

6. Any further remarks or information

Answer:

The letters sent out to the medical men in Ulster numbered 576. These all contained a stamped addressed envelope to return the form which was supplied. The answers were as follows:

Medical men not in practice in Ulster		9
Negative replies saying the habit or custom was quite unknown in their district as follows:		
Antrim	43	
Armagh	32	
Cavan	7	
Donegal	34	
Down	55	
Fermanagh	10	
Londonderry	19	
Monaghan	12	
Tyrone	19	
		240
Affirmative from direct knowledge		16
Affirmative from indirect or former knowledge		21
		277
Unanswered		299
		576

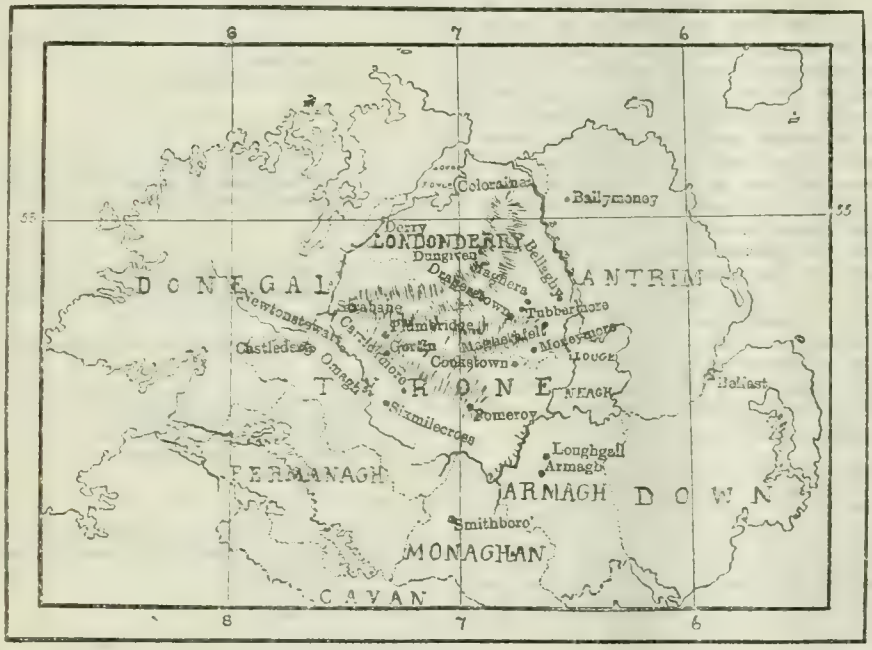
Of the 16 from direct knowledge we find:

Co. Derry,	Moneymore	1
,,	Maghera	2
,,	Magherafelt	3
,,	Draperstown	1
,,	Southern end of County ...	1
,,	Derry	1
,,	Dungiven	1
Co. Tyrone,	Cookstown	2
,,	Carrickmore	1
,,	Pomeroy	1
,,	Plumbridge	1
,,	Benburt	1
		16

Of those 21 giving reliable but indirect information:

Co. Derry,	Tubbermore	1
,,	Derry	1 (?)
,,	Maghera	1
,,	Draperstown	1
,,	South of County	1
,,	Strabane	1
Co. Tyrone,	County (vague)	1
,,	Cookstown	1
,,	Gortin	1
		9
Other counties of Ulster ...	... ...	12
		21

From an inspection of the map it will be seen that the geographical distribution is extremely limited; the south-eastern portion of co. Derry and the eastern portion of co. Tyrone embrace all the region affected. Several correspondents say that the habit occurs among the hills. The references from Derry, Strabane, Coleraine, and Ballymoney are all from hearsay, and point to odd cases that have drifted into the neighbourhood from the acknowledged area. Several chemists have said that tramps occasionally ask for a "dram." The habit is quite unknown in counties Donegal, Fermanagh, Cavan, Armagh, Down, and Antrim, save that sporadic cases in those who have learnt the habit in the ether area may occur. For instance, a patient in the Royal Victoria Hospital, Belfast, made several complaints that she suffered from cramps, and that ether was the only thing that did her any good. She was connected with the Cookstown district, and had originally come from that neighbourhood. She was the only patient in the hospital for many years that I have even suspected of being an ether drinker.



Of the sixteen doctors who gave affirmative replies from personal knowledge, only nine say they have as patients families some members of which they know to be ether drinkers; and only one was in actual attendance on a patient directly for ether drinking at the time of reply. Replies were received from twenty-one medical men in other parts of Ulster than the ether area, who from previous residence, or connexion with, or some other means, know of the existence of the habit in the ether area, although it is not present in the district in which they now reside. We find the following places and districts mentioned: Carrickmore (ten miles east of Omagh), from Sixmilecross, Pomeroy, to Cookstown, Plumbridge, Draperstown, Maghera, Magherafelt (the market square on market days would smell strongly of it); the hilly district from Pomeroy to Carrickmore, Gortin (where, fifty years ago, the publicans used to sell it); Cookstown (where "the bank office used to be stoving with it on market days"). Dr. Robert Mowbray, of Castlederg, describes a scene he witnessed: "About 1868, when a boy, I happened to be visiting between Plumbridge and Draperstown. I was taken at night to a cottage where it (ether drinking) was in full swing. The house was crowded. A pennyworth of ether was measured out, and the great amusement was to see the tyro attempt to drink it. Its vapour generally got into his nostrils, then he sneezed and coughed and was nearly suffocated, and this contributed to the general hilarity." Dr. Morrison, coroner for the Coleraine district, says that half-pint bottles are openly supplied in Maghera. A chemist in Omagh told a doctor that the three gallons of methylated ether he was then putting into smaller bottles was being sent to Carrickmore; and a dispensary doctor of the locality writes: "It is consumed in gallons in the district," "scarcely a house in the district but would smell of ether."

The origin of this peculiar and limited custom is interesting; more than one correspondent assigns it to the years 1848–49. Captain Welch (Resident Magistrate) gives the following history: "In 1848 a bad epidemic of cholera broke out in Glasgow; among those flying from it were two or three who returned to Draperstown, their native place. With them they brought a cholera specific, which they found comforting; a doctor, knowing that the comfort proceeded from ether, laid in a cask; he made his fortune, and the habit began."

"From Draperstown it has spread in a line that follows the hills, say, from Newtonstewart to Coleraine, speaking broadly; and the ether is principally taken by hill men."

Dr. Hegarty of Magherafelt also says that it was introduced from Glasgow in 1847–48 by a medical man who had studied there. Hart quotes the statement that it was sold in Draperstown in 1842. Several explain it as a consequence of the teetotal movement of Father Matthew. It was considered allowable to take ether although not to take whisky. Another explanation is that the police have become more thorough in their search for "poteen" stills, which were common in the mountainous districts. As "white whisky" became more difficult to get, ether took its place.

Be the origin what it may, there is no doubt as to the fact that the custom of ether drinking began some sixty years ago, that it is limited to a well-known and well-defined district, that it is practically unknown outside this area, and that it is common inside it—in some places exceedingly common.

Undoubtedly one great inducement is the low price and the ease with which it is obtained. Ether can be manufactured from methylated spirit in a comparatively pure state; this methylated ether is quite a different product from methylated spirit: the flavour and odour of the latter are not present; all the methyl products have been removed (Hart); its price is exceedingly small, about 1s. a lb. This is the price a shopkeeper in Magherafelt said he paid

for it, and so a "dram" (5j–iv) at a 1d. would afford a very handsome percentage of profit. It was not only sold by chemists across the counter, but by small grocers, and country women hawked it about the country. A "dram" or "draught" is repeated, if intoxication is desired—an old habitué can take two or three ounces; the novice generally takes water before and after.

In answer to Question 4, the responses all point to the same conclusion. Acute ether intoxication is produced by variable amounts, according to the individual; old seasoned topers can consume large amounts, up to two or three ounces; the ordinary treat is "a dram"—not drachm—that is, about 3j-iv, or a pennyworth or so. The intoxication comes on very rapidly; as a general rule, is wilder, more maddening, and more dangerous; the drinker becomes hilarious, and takes to dancing, shouting, and gesticulating. One medical correspondent had the outer table of his skull fractured by a patient in acute ether intoxication. The effects pass off in an hour or so, and the stage of depression rapidly follows. An ether inebriate can get drunk and sober several times in one day.

The same chronic degenerative results. as in chronic alcoholism, do not seem to occur. There were no answers telling of ether dementia, ether peripheral neuritis, ether cirrhosis of liver, although an ether gastric catarrh is mentioned by several. One doctor mentioned an ether imbecility, one said it was destroying the youth of the country, one that the boys in a family infected by ether drinking were nervous and afraid of the dark. Dr. Hetherington, of the Derry District Lunatic Asylum, says he does not see the acute ether intoxication, but only the after-effects, but does not give these.* Dr. Gillespie, Cookstown, says that ether drinking was very common in Ballinascreen, near Draperstown, twenty years ago, but that the priests stamped it out. It was then a popular impression that many went to the asylum on account of this habit. There is no answer to the effect that a medical man was actually in attendance on a chronic ether inebriate, for such inebriety, or for its consequence; so that it may be assumed that no matter what the immediate risk and the general demoralization, physical or mental, sequelae are not common.

Though ether drinkers are not infrequently old alcoholics, the opposite is the rule. In some districts of the ether area it would appear that very many women take "nips"; one estimation puts the percentage at 10, another at 25. All sorts of excuses and reasons are given—"wind on the stomach," "stuffing on the chest," "smothering of wind about the heart." It would seem that alcoholics take it, but that the habit is by no means confined to alcoholics.

The question of fatality is interesting. One is in doubt as to the pathological effects of chronic ether inebriety; there is, however, no doubt as to the direct or immediate danger of ether intoxication. A child was sent twice for ether, and subsequently the mother was found dead; but presumably no effort was made at the inquest to ascertain the exact cause of death. A doctor in one of the affected towns was at the time of writing in actual attendance on a woman severely burnt about the head and shoulders while under the influence of ether.

Several others mention the burns received by accidental ignition of the vapour. I asked a lady from co. Tyrone, who was consulting me, whether she had heard of the habit. She immediately told me the same districts as detailed above, and several stories. One day she was on a visit to Bellaghy, and while at lunch in a friend's house there was some excitement in the street. It appeared that a farmer who had been taking ether was lighting his pipe, and his breath suddenly caught fire, and he was rather severely burnt about the face and head.

There is no ether drinking in Ireland outside this small district. A little of it has been reported in Liverpool, Glasgow, and Bradford, Yorkshire, among the mill operatives; in Durham, among some of the miners' wives; but there is no suspicion of its being on anything like the same scale as in the ether area in Ulster. The people in this district are said to be very near and cunning, very cute, as illustrated by the following story: A farmer from the mountains came into a chemist's for a box of ointment for itch; he haggled about the price for some time, but finally agreed to pay 1s. for a box of a certain size; the wide-mouthed ointment jar was put down on the counter and the dispenser filled the box and turned aside for a moment to write directions; when he returned, he noticed the farmer with his hand behind his back. The shilling was paid and the farmer departed with his box. The dispenser then went to put the jar back to its place and saw that it had been nearly emptied, and the mark of the farmer's four large fingers were clearly engraved on the little ointment left; he had scooped the jar nearly empty with his hand which he then coolly put behind his back.

Mr. Ernest Hart collected information tending to show that a large quantity of ether was imported into this district, but much of it was hearsay evidence. As he pointed out, those who knew most were most interested in the traffic and least likely to reveal details. Dr. Elliott, Smithborough, co. Monaghan, says that a special "market" or "Christmas" whisky is sold in the neighbourhood; it develops a most fearful and wonderful smell, and is very rapidly intoxicating, with a very depressing effect afterwards. He suspects that ether is added to it. This statement is also made by a Donegal doctor, who says the whisky is first diluted and then ether added.

Several correspondents draw attention to the growing prevalence of the habit of drinking methylated spirit. It is not confined to any one district, but is found among the very poor and tramp class all over the country; it is generally taken cold with water, but sometimes made into punch.

I have to thank many medical correspondents who gave me full details, and also Captain Welch (Resident Magistrate), and the editors of several of the local newspapers of the affected district.

* Dr. Hetherington has since kindly written to me saying that he has been making inquiries, "the results of which," he writes, "are, I am sorry to say, very unsatisfactory. The history of cases I get is so mixed up with 'alcohol' and 'ether'; the latter generally is denied when inquiry is made, as there is some sort of feeling that it is against the law. The general secondary effect, such as 'dementia,' seems to be much the same as after the use of the bad whiskies they use in some backward places."

LITERARY NOTES.

Messrs. Putnam have in preparation a *History of Medicine, Philosophical and Critical, from its Origin to the Twentieth Century*, by Davy Allyn Gorton. The work will be issued in two volumes, which will be illustrated. It will contain brief sketches of the lives of famous physicians and surgeons.

The August number of *Pediatrics* is devoted to poliomyelitis. It contains the following original papers: The Pathology of Acute Poliomyelitis, by Dr. I. Strauss, of New York; Experimental Poliomyelitis, by Dr. Simon Flexner, of New York; A Small Epidemic of 17 Cases of Acute Poliomyelitis, by Dr. John Milton Armstrong, of St. Paul, Minnesota; Additional Observations on Acute Poliomyelitis, by Dr. F. E. Coulter, of Omaha, Nebraska; A Contribution to the Study of Acute Poliomyelitis, Based on the Observation of 38 Recent Cases, by Dr. Colin K. Russel, of Montreal; A Plea for the "Abolition" of the Term "Infantile Paralysis" as a Synonym for "Acute Poliomyelitis," by Mr. Geo. P. Shidler, of York, Nebraska; Acute Poliomyelitis, by Dr. J. S. Fowler, of Edinburgh; A Report of an Epidemic of 279 Cases of Acute Poliomyelitis, by Dr. C. A. Anderson, of Stromsburgh, Nebraska.

The Académie des Inscriptions et Belles Lettres has had before it a number of old Chinese manuscripts presented by M. Chavannes. They were discovered by M. A. Stein, a French explorer in Western China, along the Great Wall. There are some 2,000 manuscripts, dating mostly from the first or second century of the Christian era. They give a vivid insight into the daily life of the military colonies stationed behind the Great Wall. M. Stein discovered in the same place some fragments of books, including a manual of medical prescriptions, and a calendar of the year 63 B.C.

The fifth volume of the *Monograph of the Culicidae, or Mosquitoes*, is now ready. It is mainly compiled from collections received at the British Museum (Natural History) from various parts of the world, by Frederick V. Theobald, M.A. It is published by the trustees of the British Museum. The present volume is the third of the supplementary volumes issued since the appearance of

Mr. Theobald's original work on the *Culicidae*, in two volumes, with an atlas of plates, published by the trustees in 1901, in connexion with the investigation into the cause of malaria conducted by the Colonial Office and the Royal Society. It contains an account of twenty-one genera and 392 species not included in Volumes I–IV. The work has a character more comprehensive than that of a mere supplement, since the species described in the previous volumes of the series are given in their proper systematic order in the present volume, and are included in the respective analytical keys.

To the August number of *Travel and Exploration* Mr. F. G. Aflalo contributes a brightly written paper entitled "The Traveller at Sea." It serves as a complete *vade mecum* for passengers on ocean liners, and includes advice on clothing, choice of cabin, relations with the ship's officers, hints on deportment, and other matters which concern travellers at sea. Mr. Aflalo's treatment of these topics is characterized by good sense, sound judgement, broad-minded toleration, and a sympathetic understanding of the temperament and point of view of the average voyager. Among the "Don'ts" are the following: Don't talk scandal. Better be its object than its purveyor. Scandal-mongering on board ship (particularly homeward bound from India) makes more mischief even than on land. Don't (unless you are a peculiarly attractive woman) worry the captain with silly questions about the weather, whales, and waterspouts. He is not a walking "Enquire Within," but an overworked officer, responsible for the ship and all that is in her. Don't play practical jokes on board ship. Remember that, though you may be full of spirits (I do not mean alcohol), there are many people who, though normally genial on land, suffer habitually at sea from what Shackleton calls the "Arctic temper." Above all, never speak lightly of sea-sickness. Though it may be comic enough to those who are immune from it, it is tragedy to those who suffer.

Every one knows the advice given by Sydenham to Blackmore (afterwards Sir Richard) when he told the great physician of his intention to "enter on the physic line" and asked what authors he should read. "Read *Don Quixote*," said Sydenham. "It is a good book; I read it still." There has been much discussion as to what Sydenham meant. It is said by some that he intended to snub the author of *Prince Arthur*, *Creation*, and other portentous epics. But these *monstra horrenda* of literature were not written at the time. Dr. Johnson, who admired Blackmore's poems—more, we suspect, for their morality than for their inspiration—solemnly scolds Sydenham for his flippancy.

> The perverseness of mankind (he says) makes it often mischievous in men of eminence to give way to merriment. The idle and the illiterate will long shelter themselves under this foolish apophthegm.

Dr. Payne says the obvious meaning of the answer is: "Read what you like; reading books will never make a doctor." Is it not possible, however, that what Sydenham meant was that a knowledge of the best literature is a necessary part of the equipment of a practising physician, to whom a knowledge of human nature is at least as necessary as familiarity with medical theories? Payne points out that *Don Quixote* at the date of the anecdote was, in English, still almost a new book. Skelton's translation came out when Sydenham was at the university. If Sydenham did mean that medicine was not to be learnt by poring over old authors, as was the fashion of his day, Blackmore bettered his instruction; for we find him saying of Hippocrates:

> As for this book of Aphorisms, it is just like my Lord Bacon's of the same title, a book of jests, or a grave collection of trite and trifling observations; of which though many are true and certain, yet they signify nothing, and may afford diversion, but no instruction; most of them being much inferior to the sayings of the wise men of Greece, which yet are so low and mean, that we are entertained every day with more valuable sentiments at the table conversation of ingenious and learned men.

He further declared that "assiduous digging in the works of the eldest physicians is like delving for silver in the mines of Cornwall, which will not recompense the labour and expense." That Sydenham's advice was taken would seem to be shown by the fact that Blackmore more than once quotes "the ingenious author of *Don Quixote*." Of his *Prince Arthur*, an epic in ten books, Blackmore says that it was written "by such catches and starts, and in such occasional hours as his profession afforded, and for the greatest part in coffee-houses (then the consulting room of physicians) or in passing up and down the streets." This probably made Dryden say that Blackmore's poems were "writ to the rumbling of his chariot wheels." Pope gives him a place in the *Dunciad*:

> But far o'er all sonorous Blackmore's strain;
> Walls, steeples, skies bray back to him again.
> * * * * *
> All hail him victor in both gifts of song
> Who sings so loudly and who sings so long.

On the other hand, Johnson included Blackmore's name in his *Lives of the Poets*, and he was praised by Locke and Addison.

BRITISH MEDICAL BENEVOLENT FUND.

AT the July meeting of the committee twenty cases were considered, and grants amounting to £156 made to sixteen of the applicants. Appended is an abstract of the cases relieved:

1. Widow, aged 54, of L.R.C.P.Edin. Earns £12 a year as housekeeper, and requires help for two daughters, who are being trained as domestic servants. Relieved once, £12. Voted £10.

2. Daughter, aged 63, of late M.R.C.S. No income; mentally feeble, and entirely dependent on relations, who can ill afford to help. Relieved four times, £48. Voted £12.

3. Widow, aged 59, of L.R.C.P., L.R.C.S. No income; used to do maternity nursing, but is now nearly blind. No children. Relieved sixteen times, £149. Voted £12.

4. Daughter, aged 49, of late F.R.C.S. No income, and requires a little help whilst obtaining an appointment. Relieved four times, £25. Voted £5.

5. Deserted wife, aged 44, of L.R.C.P., M.R.C.S. No income, but hopes shortly to support herself. Voted £10.

6. Widow, aged 62, of L.R.C.P., L.R.C.S.Ireland. Has exhausted means left by husband in educating her children, and is now practically dependent on proceeds of letting her furnished house for a few months yearly. Is a candidate for Epsom College. Voted £12.

7. Daughter, aged 65, of late M.D.St.And. Only income a small annuity bought by friends, and unable to earn a living on account of chronic ill health. Relieved three times, £36. Voted £12.

8. Widow, aged 64, of L.R.C.P.Edin. Has an annuity of £20, and earns about £12 a year by addressing envelopes when able to obtain such work. Relieved thirteen times, £131. Voted £10.

9. Daughter, aged 29, of late M.D., R.U.I. No income, and never likely to be able to support herself on account of permanent ill health. Relieved five times, £30. Voted £10.

10. Daughter, aged 53, of late M.R.C.S. Gives her services in return for a home, and receives slight help from a relation. Health too feeble to admit of active employment. Relieved twice, £10. Voted £5.

11. Daughter, aged 66, of late M.R.C.S. Maintained herself first as a governess and then as a deaconess for many years, but now finds it impossible to obtain regular work. Relieved five times, £54. Voted £12.

12. Widow, aged 78, of F.R.C.S. Has a small income but is unable to dispense with the services of an attendant owing to paralysis and other infirmities. No children. Relieved once, £10. Voted £10.

13. Daughter, aged 71, of late M.R.C.S. No income; was supported for many years by a brother whose means are now much reduced. Relieved twice, £28. Voted £12.

14. Widow, aged 70, of M.R.C.S., L.R.C.P. Has a pension of £20 and is helped by a daughter, a nurse, who has just undergone a serious abdominal operation and cannot therefore assist further at present. Voted £10.

15. Daughter, aged 57, of late L.S.A. No income and incapacitated by locomotor ataxy. Relieved once, £12. Voted £12.

16. Deserted wife, aged 49. Receives a home for herself and daughter in return for services, and asks for a little help towards expenses of canvassing for the daughter's admission to St. Anne's School. Relieved three times, £11. Voted £2.

Subscriptions may be sent to the Hon. Treasurer, Dr. Samuel West, 15, Wimpole Street, London, W.

A SOCIETY of Medical Abstainers, belonging to the Latin countries, has just been formed. The first Congress of French Abstainers will assemble at Grenoble on August 13th.

MR. CHARLES TERRY, M.R.C.S., L.S.A., a retired surgeon, of Bath, left £53,566. Dr. David Davies, J.P., of Bryngolwg, Aberdare, Glamorgan, left estate valued at £82,514 gross, and at £80,867 net. Dr. Alonzo Henry Stocker, formerly Physician-Superintendent of the Grove Hall Asylum, Bow, left estate valued at £123,993 1s. 2d. gross, with net personality £95,969 19s. 7d.

British Medical Journal.

SATURDAY, AUGUST 13th, 1910.

SICKNESS EXPERIENCE IN FRIENDLY SOCIETIES.

It appears from the forty-first annual report of the National Deposit Friendly Society that the average sickness recorded in that society is only 3.19 days per member per year. We have already drawn attention to the fact that in the Manchester Unity of Oddfellows, the Ancient Order of Foresters, and the Hearts of Oak the sickness recorded is from 16 to 18 days per year—that is, about five times as much as in the National Deposit Friendly Society, and it is not easy to find a satisfactory reason for this great difference, though in our correspondence columns this week Dr. Gosse and Dr. Mackeith give some reasons which, taken altogether, afford a partial explanation. The National Deposit Friendly Society has 201,849 members, of whom 154,585 are males and 47,264 females. The proportion of females is thus very high for a mixed society, being nearly a quarter of the whole, and it is suggested that the female members do not so readily "go on the club" as the males. It is to be noted that the period of 3.19 days is "exclusive of confinements" for which 2,236 women received sick pay, and if 28 days be added for each confinement, a simple calculation shows that the total sickness rate *inclusive* of confinements would be 4.02 days per year. Even this is less than a quarter of the rate of the other societies mentioned.

Dr. Gosse suggests that the comparatively higher rate of the other societies is a "striking proof of the demoralizing effect of the pernicious club system." Presumably this means that in other clubs the members feel no compunction in going on the club for trifling ailments as it costs them nothing more, whereas in the National Deposit Friendly Society there is some hesitation, because part of the cost of medical attendance and also part of the sick pay has to come out of their private deposits. The literature of the society explains its low sickness-rate by saying there is an absence of malingering, which by inference is a serious charge against the members of other societies, and it is almost incredible that malingering can raise the sickness-rate of the millions of members of other societies from 3.19 to 16 or 18 days per year.

It may be useful to note that in the National Deposit Friendly Society the members are now placed in three classes. In Class A the proportion of sick pay and medical pay which comes out of private deposits is 3d. in the 1s. Persons whose families have any hereditary disease, or who are engaged in risky trades, are put into Class B or C; those in sickness Class B have to provide 4d. in the 1s., and Class C as much as 6d. in the 1s. out of private deposit towards both sick pay and medical pay. Taking all the classes together, the total sick pay during the year was £76,436, which is 7s. 7d. per member, and of this, £22,229—that is, 2s. 2d. per head—was the members' proportion coming out of private deposits. Also the total medical pay was £32,138, or 3s. 2¼d. each, of which the members' proportion was £9,646—that is, 11¼d. each. Adding all together, the total sick pay and medical pay was 10s. 9¼d. per head, of which 3s. 1¼d. came out of the members' private deposits. This last amount may be regarded as a sort of fine imposed on private savings, and it is supposed to act as a guarantee against demands for excessive sick pay and medical attendance. What is called "grace pay" in this society is a diminished sick pay provided on certain conditions by the society itself for members who have been so long sick that their private deposit has become exhausted, but it should be noted that no medical pay is provided under "grace pay." Members whose private deposit is exhausted and who are receiving "grace pay," have to pay the whole of any doctors' bills out of their own pockets, and no record is made of such payments. These cannot, in any case, be great, as only 860 members received "grace pay" during the last year. There can be little doubt that the deposit system, especially with the various impediments named by Dr. Mackeith, would appreciably lessen the demands for sick pay and medical pay. Ordinary sick club patients would often hesitate to consult the doctor if they had to pay separately any part of the fees. But if this argument were of any great weight, would it not tell to some extent in the Hearts of Oak? Here no medical attendance at all is provided, and the members have to pay the whole of any doctor's fees out of their own pocket, and yet the sickness rate is about 16 days per year—that is, at least four times as high as in the National Deposit Friendly Society, where only part of the medical fees come out of private deposits. Further, though it cannot be said that the National Deposit Friendly Society is a young society—as the last annual report was the forty-first—still it must have a considerable proportion of young members, as its membership has doubled within the last half-dozen years, and this fact would help to lower its sickness rate.

All these considerations make it quite clear that there are special factors applying to the National Deposit Friendly Society which should prevent our regarding its sickness rate of 3.19 days per year as quite comparable with the rates of other societies. The point of special importance in an actuarial relation is that this figure cannot be held to be a criterion of the true amount of sickness for which State sickness insurance must make provision. The figures given by all the other friendly societies, as well as the figures obtained by the British Medical Association inquiry into the conditions of contract practice, show conclusively that provision must be made for between two and three weeks' sickness per year for each person insured. Another very material consideration is that it is of the utmost importance that no system be introduced which will unduly deter poor people from consulting a medical man for even slight ailments. It is, indeed, doubtful which of the two evils is the worse—excessive demands for medical attendance by club patients or such fear of doctors' bills as may lead to neglect of incipient disease. By all means let malingering be prevented, but certainly not by going to the opposite extreme of undue deterrence. If the effect of the deposit system is to prevent malingering without introducing deterrence, well and good; but if it really makes poor patients put off calling in a doctor where wealthy patients would never hesitate, it would defeat one of the primary objects of State insurance, that is,

while fostering self-providence, to provide that the working classes should have equal facilities with the well-to-do classes for medical attention whenever required.

THE MUSCULATURE OF THE PELVIC FLOOR.

THE student early in his career is taught about the origin and attachment of the coccygeus and levator ani muscles, and is reminded that the arrangement of the fibres of the latter is highly important in relation to the support of the pelvic viscera. To the obstetrician and gynaecologist these muscles are of special interest, since prolapses greatly depend on the weakening of the pelvic floor. Yet authorities are divided as to whether muscles, ligaments, fascia, or connective tissue are the true supporting agents evolved for the benefit of the uterus, vagina, and bladder. The general anatomists and physiologists further remind us that the pelvic floor is important in relation to all the viscera above it, as well as to the female organs, and is influenced by several physiological functions. Lastly, the comparative anatomist steps in and demonstrates the pelvic floor in the vertebrata. In the human species the floor lies almost horizontally at the lowest part of the trunk, and there is no tail. In the lower animals the "floor" is not a floor at all in the common sense of the word, as it is placed more or less on the same level as the trunk. The importance of a very close scrutiny of homologies is therefore manifest.

Already much valuable work has been published. Eleven years ago Dr. Peter Thompson's *Myology of the Pelvic Floor* appeared. His fine drawings and demonstrations of the musculature of the pelvic floor should be studied by all who are interested in morphology, human anatomy, physiology, and the diseases of women. The homologies of the different parts of that compound muscle called the levator ani and of the less complicated coccygeus are displayed in white and black. Thompson, like most of his predecessors, laid stress on the relation of these muscles to the tail. He pointed out that in tailed mammals, the coccygei are strongly developed; they receive the name of "abductores caudae" and they move the tail from side to side. When the tail becomes reduced the abductors undergo corresponding retrogressive changes, so that in man, for example, the muscles are largely replaced by fibrous tissue. The ilio-coccygeus and pubo-coccygeus, which in *Homo* make up the levator ani, are, according to Thompson and many other anatomists, tail muscles. That authority, however, admitted that he could not definitely explain why the ilio- and pubo-coccygeus are apparently not represented at all in ungulates.

Dr. R. H. Paramore, in his recent Hunterian Lectures on the Evolution of the Pelvic Floor,[1] entered into the subject very minutely, and considered physiology and natural history as well as the bare morphology of muscles. He made little of the levator ani and coccygeus as tail movers and much of those muscles in relation to internal pressure. He showed that the big tails of many animals are moved by intrinsic muscles absent in *Homo*, and expressed his conviction that the absence or ill development of the levator ani in some animals and of the coccygeus in others had little or nothing to do with their tails but much to do with their habits and surroundings. They are not tail-waggers, according to Dr. Paramore, but a part of the mechanism which regulates internal pressure. In the dogfish the pelvic girdle is represented by a transverse bar of cartilage lying in front of the cloaca. The lateral musculature sends a strand of fibres downwards and forwards to be inserted on the lateral part of the pelvic bar—this is the "caudo-pelvic strand." The pair of strands embrace the cloaca. The dogfish, living in the ocean, needs little external support for its viscera, but it has to pass excreta and also very big ova in horny cases; therefore visceral pressure has to be regulated, and the caudo-pelvic strand is an agent for that purpose; it is the lateral musculature that moves the tail. In the amphibia and reptiles the caudo-pelvic strand is differentiated into antero-posterior caudo-pelvic muscles, the ancestral form of the levator ani group, and the lateral caudo-pelvic muscle, ancestor of the coccygeus. These animals have more or less of a true pelvis. The evolution of the muscles in question is related to the increasing need for the production of a varying internal visceral pressure, necessary not only for the functioning of the posterior end of the body, but also for the repeatedly recurring act of respiration. Birds are too highly specialized to allow of clear homologies, but Dr. Paramore shows that when we study the pelvic floor muscles in the different orders of the mammalia, the evolution of these interesting structures becomes relatively clear. Many of the most familiar mammals have large tails. As above stated, most authorities consider that the tail is moved mainly by the pubo- and ilio-coccygeus or levator ani and by the ischio-coccygeus or coccygeus. Dr. Paramore is of a different opinion. He maintains that they have little to do with the movements of the tail. In *Ateles*, the well-known American spider-monkey, the pelvic floor muscles are attached to the tail near its root, two feet from the distal prehensile part, the grasping movement of which is effected by the intrinsic muscles. In *Semnopithecus entellus*, a large Indian monkey, the tail is stout and long, but not prehensile, yet the pelvic floor muscles are quite as well developed as in *Ateles*. The ischio-coccygeus, our coccygeus, has long been held to be the abductor of the tail, but Paramore maintains that abduction of the tail can be effected by its intrinsic muscles, which are likewise its flexors and extensors, and moreover, that the ischio-coccygeus is well developed in the guinea-pig and *Hyrax*, which have not free tails. In man, also tailless, the levator ani and coccygeus are very well developed, and it is the sacro-coccygei, the true tail-moving muscles of tailed mammals, that have degenerated in our species.

Dr. Paramore demonstrates that in rodents, tailed or otherwise, the pubo-coccygeus and ilio-coccygeus or levator ani, are as a rule not well developed, whilst in the ungulates they are entirely absent. In *Hyrax*, an intermediate form, a pubo-coccygeus, is present, although the ilio-coccygeus is wanting; this interesting animal, let it be remembered, has no free tail. In the carnivora and primates the pubo-ilio-coccygeus and the ischio-coccygeus are well developed. The carnivora and most primates go on all-fours, whilst Nature *os homini sublime dedit*. Men, lions, and monkeys largely pass their lives in strife. The ungulates, on the other hand, often have to run for their lives, and their power of vocalization is poor. The necessity for an internal pressure as low as possible, consistently with the general metabolism of the animal, and for an ever readiness for flight, led, he contends, to the suppression of the pubo-coccygeus and ilio coccygeus—which their tails could dispense with—and the absence of the pubo-coccygei permitted an

[1] The Hunterian Lectures on the Evolution of the Pelvic Floor in the Non-Mammalian Vertebrates and Pronograde Mammals.

easy defaecation, and allowed the act to take place without interruption of locomotion. The larynx is ill developed in these animals. The carnivora were from the first made to attack, not to flee. They depended on successful stalking and slaughter. Stalking required cunning, which stirred the higher psychical centres to greater activity. Slaughter necessitated the use of the fore limbs for striking purposes, and this in turn demanded a fixation, not only of the thorax, but of the whole body. The necessity to hold the breath entailed by such fixation called the muscles constricting the glottis into greater prominence; the simultaneous necessity to convert the soft and supple abdomen into a comparatively rigid mass determined the further development of the pubo-coccygeus and ilio-coccygeus, the preservation of which allowed a powerful and efficient vocalization, and eventually permitted the assumption of the erect attitude—*coelumque tueri jussit et erectos ad sidera tollere vultus.* In short, according to Dr. Paramore, the muscles of the pelvic floor were from their earliest type meant for a physiological end far higher than the wagging of tails, and hence, so far from their being degenerate in man, they are better developed than in many animals graced with lengthy caudal appendages.

EXAMINATION OF CLAIMANTS FOR COMPENSATION.

There is general agreement that the various compensation Acts passed for the benefit of the industrial classes are having unanticipated results, and that some of these are unfavourable to interests which it was intended to safeguard. Of what are doubtless many factors, one can scarcely have been overlooked by any student of law reports relating to claims made under the Acts. The possible expenditure entailed by the multiplication of circumstances in which compensation awards may become payable naturally makes employers more exacting in respect of the physical condition of candidates for employment, and their shyness in this respect is materially increased by the cost of defending claims by men who are either downright malingerers or persons whose inability to work is born either of imagination or hope of gain. It is almost inevitable that there should be claims of this class, but they would bear a smaller proportion to the whole if solicitors and others were less ready to advise clients to press claims of a dubious order. No doubt they deem it their duty to their clients to do so, and presumably it is the same laudable consideration which in London has led a certain number of them to put forward a somewhat remarkable contention during the last year or two. It is of such a character that, if conceded, it would practically have been open to the compensation-claimant's solicitor in all cases to choose himself the legal examiner to be employed by the compensation-payer, and also to be present during the examination and to lay down the law as to where, when, and how it should be conducted. Included in their object, of course, was prevention of their clients being examined thoroughly—if at all—by medical men known to submit claimants to examinations of a kind specially likely to be unfavourable to those whose claims are in any way exaggerated or otherwise unsound. Among these is Dr. Robert Collie, who in his capacity of medical examiner to the London County Council has had much experience of compensation claims, and has also written several articles on this subject and on that of malingering, to which from time to time we have drawn attention. As a man of the world he would seem to have been ready on many occasions to concede a good deal more than might have been expected for the sake of peace and rapid dispatch of business, and several times he made examinations in the offices of the solicitors of claimants and in their presence while subjected to a fire of interruptions. Somewhat foolishly, however, one firm of solicitors went still further, and permitted their client to decline to be examined by Dr. Collie at all. This, of course, promptly led to decisive steps, the net outcome being an application to a county court judge for an order arresting certain proceedings in progress and authorizing non-payment of compensation. A full account of the case will be found at page 413 of this issue. It will be noted that the judge dismissed as unfounded all suggestions that Dr. Collie's methods were in any way unfair to claimants, and scouted the pretensions of solicitors engaged in such cases to be present during examinations or to control their character in any way. He held, quite rightly, that the interests of claimants were fully safeguarded by the statutory provision for the attendance during examination of the claimant's own medical man, should such be desired. Dr. Collie is to be congratulated on his resolution in carrying this matter through, and the medical profession on the decisive quashing of an impertinent pretension likely, if allowed to hold good, to interfere with its dignity and interests.

MODERN STATISTICAL METHODS.

We have received a copy of an article on statistical methods, by Drs. Troup and Maynard[1] which recently appeared in the *Lancet*. This article, which is similar in treatment to but more extensive in scope than the editorial on the same subject which we published some three years ago,[2] can be heartily recommended to the many readers who desire to attain a knowledge of statistical methods sufficient to enable them to follow the numerous technical papers in which these methods are applied to medical and pathological problems. During the last few years we have often expressed the opinion that the importance of modern mathematico-statistical discoveries would at no distant time be recognized in the medical world. As evidence of the correctness of our view, we may point to the facts that at the beginning of this year the governing body of the Lister Institute of Preventive Medicine appointed a medical statistician as a whole-time member of their staff and established a statistical department, and that the number of medical men who have received an adequate training in mathematical statistics, if still small, is increasing steadily. We have no doubt that this iatro-mathematical movement—as Professor Osler would term it—will render important aid to the cause of medical science. We may add that a course of lectures on the methods of statistics as applied to physiological and pathological problems has been approved by the Senate of the University of London under the scheme of advanced lectures in physiology, and will be delivered in the University laboratory on Tuesdays from October 18th to December 6th.

DEATH OF A CORONER AND AN ADJOURNED INQUEST.

The late Dr. Danford Thomas had commenced but not concluded the inquest relating to the Crippen mystery. His sudden and lamented death therefore creates a somewhat peculiar position, and one which would be embarrassing to the police authorities if criminal

[1] "Modern Statistical Methods," by J. M. Troup, M.A., M.B., and G. D. Maynard, F.R.C.S.E. (Pp. 27.) Reprinted from the *Lancet*, May 10th, 1910.

[2] Recent Advances in Statistical Methods. British Medical Journal, 1907, vol. ii, p. 95.

prosecutions were not independent of inquest verdicts and proceedings. In law, where an inquest is opened by a coroner or his deputy and adjourned, should the presiding coroner die during the interval the proceedings are so far useless and a fresh inquest must be held. The acting coroner is required to issue the usual orders *de novo*, to view the body and to direct the jury to do the same, as if no previous inquest had been commenced. He is even required to direct exhumation of the remains in cases where an order for burial was originally granted and burial has taken place. It would be interesting to know what the procedure would be in case of a "body" being cremated in the interval, as it is presumed that an "order for burial" would cover cremation, subject, of course, to the regulations governing this process. Without a "*corpus*" to be viewed, how could the second inquest be held "*super visum corporis*"? Some amendment of the Coroners Acts would appear to be called for to enable the acting coroner to continue an inquest commenced by another who has died in the interval of adjournment of the inquiry. Owing to the death of Dr. Thomas his well-known and able deputy, Mr. Schröder, becomes acting coroner for the district until his successor is appointed. Formerly the decease of a coroner actually determined the authority of a deputy, and the coroner of a neighbouring district had to be called in. By the Coroners Act, 1892, Sec. 1 (4) the authority of the deputy is continued until the fresh appointment is made by the county council. Should the deaths of both coroner and deputy take place, however, the coroner for the adjoining district would be appointed to carry out the duties for the time being.

IS DEFECTIVE SIGHT ON THE INCREASE?

THE remark is often heard, How is it that so many people wear spectacles now? it never used to be so. It is certainly a fact that glasses are more frequently worn now than in the past, especially in England and in America. There are several reasons why this should be so. In the first place, the school authorities are examining thousands of children, and a certain proportion of those found to have defective vision eventually appear in spectacles. Again, both the profession and the public are becoming increasingly alive to the relations which exist between headache, asthenopia, and neuralgia on the one hand and errors of refraction on the other. Ophthalmic surgeons have recognized the truth that small errors of refraction often produce more pain and eye strain than gross variations from the normal. There is much less ignorance among the public with regard to the effect of spectacles than was prevalent in the past century. One does not so frequently hear that glasses destroy the sight, and that if spectacles are once used they can never be dispensed with. Again, the laity realize that many cases of squint are cured by a suitable correction of the refraction error. But when all has been done, even after the most careful correction of the optical error, a physiological defect is often present. It is a common thing to find that children who live in densely populated areas do not, even with a perfect correction, possess more than half the normal visual acuity ($\frac{6}{12}$). This amblyopia is probably of central origin, and recovery must in many cases take place, for slight amblyopia is not nearly so common among the parents of these children as among the children themselves. These partially amblyopic children are not in any way mentally or morally deficient—in fact, they are probably more highly developed mentally than similar children from country schools who are not so amblyopic. There is no evidence that, given suitable education, a visual defect or even complete blindness need be associated with any mental or moral deficiency. The records of the various schools for the blind lend no colour to this view, and highly myopic individuals are often very intellectual. A correspondent has tried to draw a fanciful parallel between colour blindness and moral blindness, but we fail to see any connexion between the two defects. One is a lesion of the highest brain centres, the other, colour blindness, is certainly a subliminal defect. One affects the ψυχή, and is an attribute of man alone; colour blindness could, on the other hand, be shared with the lower brutes. In the event of total deafness and blindness combined, it would be almost impossible to develop the intellect. A case is recorded of an individual who had lost her sense of taste, smell, hearing, touch, and the sight of one eye. Her sole link with her environment was the sight of the remaining eye. When the eye was closed she went practically to sleep, for she had at once lost her position as a sentient being, and her connexion with her environment was totally severed.

GOVERNMENT DEPARTMENTS AND SCIENTIFIC UNDERTAKINGS.

PITT, when asked for money to relieve a man of genius in distress, said that literature could take care of itself; Southey's retort was that it could take care of Prime Ministers too. The British Government has been even less sympathetic in its attitude towards science. Some three years ago it was decided by a conference of German hygienists in Dresden that a large educational exhibition should be organized. Every prominent scientist in Germany into whose purview hygiene or any of its numerous branches could be said to come agreed to take part in the undertaking. Money was collected with but little difficulty, and the patronage of the King of Saxony, the Imperial Chancellor of Germany, and other important personages was secured. The Exhibition grounds in Dresden being deemed too small for the purpose, the King of Saxony immediately offered the use of the Royal Park. An influential committee was formed, and the work of the exhibition was divided into four main sections: (1) Scientific; (2) popular, including sport; (3) historical; (4) industrial. The first of these has been subdivided into forty-four groups. The exhibition is intended to serve as a means of education for the public, and of stimulating the advance of hygienic science. The historical section will comprise illustrations of everything of which there are records in connexion with hygiene from the earliest period down to the end of the last century. From this material a complete history will be compiled and issued in book form. For the rest, some 200 conferences or congresses will be held in connexion with the exhibition. In order to make the exhibition complete in the widest sense of the term, invitations have been issued by the German Government to the Governments of the chief States in the world. The Russian Government at once voted a large sum of money to build and equip a national pavilion, which will afterwards be removed to Moscow, where it will figure as the basis of a National Hygiene Museum. Austria, Hungary, Switzerland, France, Italy, and other States followed suit, and quite lately Japan determined to spend £15,000 on a national pavilion. On April 23rd our Foreign Office officially communicated to the German Government its refusal to participate. This refusal arrived after a long delay, during which time a powerful and representative British National Committee, with Her Royal Highness Princess Christian as Patroness, had been formed. On learning of the refusal the administration

in Dresden sought the assistance of the Executive Committee, and offered the very best site in the vast grounds for a British national pavilion. The Government was again approached, and negotiations were again opened. The matter was referred to the Board of Trade, which is the only department that can deal with exhibitions; indeed, a special branch of this department, the Exhibitions Branch, is the office to which all such undertakings are referred. The proposal was that it should appoint delegates from the Home Office, War Office, Local Government Board, Admiralty, and Board of Trade to serve on the British Executive Committee, to exercise a control over the work of this committee, and to assist in obtaining exhibits and arranging for the attendance of experts at congresses; and that the Government should erect a national pavilion and finance the organization, which would be carried out by the Executive Committee under the control of the Government through its delegates. As arguments in favour of these proposals it was pointed out: That an international exhibition dealing with hygiene without Great Britain was unthinkable; that the British Government was going into Belgian territory to support the commercial exhibition at Brussels, into Italy to support the commercial exhibition at Turin, and an art exhibition at Rome, and into South America to support a comparatively small health exhibition in Buenos Aires. If the Government held aloof from the Hygiene Congress an opportunity would be given to the German press of stirring up ill feeling between the two countries. About this time the Local Government Board officially intimated that it could not take part, and the individual members of the Board withdrew their names from the list of members of the committee. In the course of its deliberations on the matter the Board of Trade asked to be supplied with a list of the members of the Executive Committee, and full information as to the buildings that would be required and their probable cost. Owing to various influences brought to bear upon it, the Board of Trade decided that, owing to the engagements with which His Majesty's Government had entered in respect of participation in other exhibitions to be held during this year and in 1911, it was unable to take an official part in the exhibition now in question. The essence of the story is that a Governmental department which deals exclusively with trade, and which could not, with its existing machinery, organize any satisfactory participation in a purely scientific and educational exhibition, decides that it cannot and will not undertake this duty, and at the same time that this duty shall not be undertaken by a committee or representatives of other Governmental departments. The refusal of the British Government to take part in the Hygiene Exhibition seems to us in the highest degree impolitic.

THE ANTISEPTIC ROLE OF SPECIFICS.

The instant success which attended the introduction of antiseptic methods into surgical practice inevitably engendered hopes that in medicine also beneficial effects might be produced on analogous lines. These hopes proved, however, for the most part fallacious. Most medical men seem disillusioned nowadays as to the benefits produced by intravenous injection of formaldehyde solutions, the inhalation of antiseptic vapours, or the administration of creosote for consumption. Even in regard to the alimentary canal, asepsis by free lavage, rather than antisepsis by disinfectant drugs, is the predominant therapeutic aim. For, as Professor Cushny has recently insisted,[1] pathogenic microbes, whose antiquity probably transcends that of the higher animals by millions of years, have developed a degree of invulnerability to adverse influences, including drugs, with which the cells of those higher organisms cannot compete. To disinfect living tissues and organs the first requisite is obviously to find some chemical substance very much more poisonous to the parasites infesting them than to their own constituent cells. And with regard to the vegetable parasites at least it is more than doubtful whether such substances exist. The case is different, however, with syphilis and malaria; the success in the specific treatment of these is attributed by Professor Cushny to the fact that both are due to animal parasites. These he thinks probably of more recent origin than vegetable parasites; at any rate, they are far more vulnerable to drug action or tissue disinfection than are ordinary microbes. In mercury or iodide of potassium on the one hand and in quinine on the other we possess true tissue disinfectants in relation to the micro-organisms producing syphilis and malaria—that is, substances much more poisonous to the parasites than to the constituent cells of their host. Another animal infection is African sleeping sickness, due to the *Trypanosoma gambiense*, which, as analogy might suggest, has proved more or less tractable to various specifics, such as Fowler's solution and atoxyl or sodium-aminophenyl-arsenate. From the efficacy of arsenic against sleeping sickness, the idea naturally arose that other members of the same series might prove even more beneficial, and at Professor Cushny's suggestion antimony and bismuth were tried on rats infected with the trypanosomes. Apart from the irritant and caustic effects of the former, which caused some trouble, it proved a distinct advance upon the arsenic treatment, but bismuth, though destructive to the parasites, was too poisonous to the host. Antimony is, therefore, like arsenic, a true specific for sleeping sickness, so far as rats are concerned—that is, a tissue antiseptic in relation to the *Trypanosoma gambiense*. Tolerance for trypanocidal drugs is rapidly acquired by the parasites if not killed outright; it is important, therefore, to begin treatment with rather large doses. Another interesting result of Professor Cushny's research is the superior efficacy of a combination of two trypanosomacidal drugs (for example, arsenic and antimony) to that of either given alone in equivalent dosage, suggesting that some of the parasites are more sensitive to one and some to the other. Thus we have what appears to be experimental justification of the practice of treating syphilis with a combination of mercury and the iodides, possibly too for that of combining several soporifics, anaesthetics, or purgatives.

[1] Tissue Antisepsis with Reference to Animal Infections. By A. R. Cushny, M.D., F.R.S. *Proceedings of the Royal Society of Medicine*, vol. ii, pt. iii, pp. 49-56.

ANOTHER X-RAY MARTYR.

The martyrology of science is constantly receiving additions. Not to speak of the many who have given their lives for their patients by sucking tracheotomy tubes, there are those who have fallen victims to plague, glanders, and infections of various kinds in the discharge of their duties or in the search for knowledge likely to benefit mankind. For some years the *x* ray has levied a regular toll on those who devote themselves to the development of its applications. Dr. Hall-Edwards still lives though sorely mutilated; the tragic fate of Arthur Barry Blacker who died in the very hour when a brilliant career was opening up before him still lingers in the memory of those who knew him. Now we learn from America of the premature death of another pioneer, Dr. Mihran K. Kassabian, who died last month in the Jefferson Hospital, Philadelphia, at the age of 42, of cancer contracted from constant exposure to the influence of the *x* rays. In

1902 he noticed *x*-ray burns on his hands. Two years ago it became necessary to amputate two fingers. The operation, however, did not stay the progress of the disease, which a year ago was found to have invaded the left axillary glands. These were removed; nevertheless, the disease quickly recurred. Several further operations were performed, always with the like result. Dr. Kassabian was an Armenian by birth. In 1894 he emigrated to the United States, and in 1898 he began the study of medicine at Philadelphia. After graduation he served in the Hospital Corps of the United States Army during the Spanish-American war. Later he became Instructor in Electro-therapeutics and Radiology in the Medico-Chirurgical College, Philadelphia. In 1902 he resigned that position to become Director of the Roentgen Ray Department in the Philadelphia General Hospital, a position which he held at the time of his death. Almost to the end he continued his work. He contributed largely to the literature of his speciality, the most important of his publications being a work entitled *Electro-therapeutics and the Roentgen Rays*, which is a popular textbook in the United States. All honour to the brave and self-sacrificing men who expose themselves to such dangers in the cause of humanity.

DAVID LIVINGSTONE.

David Livingstone was born in 1813, and it is proposed to celebrate the centenary of the event by an endeavour to restore Charing Cross Hospital, where the great explorer was a student, to that full measure of usefulness of which it has been deprived for some years past through want of funds. For this purpose it is proposed to open a David Livingstone Million Shilling Fund, in order that the closed wards (containing eighty-seven beds) for the relief of the sick and suffering may be reopened. Livingstone was proud of his profession, and once wrote: "It was with unfeigned delight I became a member of a profession which is pre-eminently devoted to practical benevolence, and which with unwearied energy pursues from age to age its endeavours to lessen human woe." Those who wish to send contributions, or who would like cards or books for the purpose of collecting from their friends, should communicate at once with the Rev. A. W. Oxford, M.D., at Charing Cross Hospital.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.

The Oxford Ophthalmological Congress met at Keble College on July 21st and 22nd. The meeting was well attended, and several foreign guests and members were present, including Professor Lagrange (Bordeaux), Dr. Holth (Christiania), Dr. Heine (Kiel), Dr. Stanculeanu (Bucarest), and Dr. Rémy (Dijon). Professor Osler delivered the opening address on the 21st. On that evening the inaugural dinner of the Congress took place in the Hall of Keble College, the chair being occupied by Sir Anderson Critchett, who was supported by Mr. Robert W. Doyne (Master of the Congress), Professor Osler, Professor Arthur Thomson, Mr. Charles Higgens, President of the Section of Ophthalmology, British Medical Association, Mr. Sydney Stephenson, Secretary of the Congress, together with a number of distinguished ophthalmic surgeons, numbering about one hundred. The Vice-Chancellor of the University of Oxford, Dr. T. H. Warren, D.C.L., President of Magdalen College, was the chief guest. The Vice-Chancellor, in replying to the toast of his health, extended a hearty welcome to the members of the Congress, and spoke of the Oxford School of Medicine and its growth under the influence of Sir Henry Acland, Sir John Burdon-Sanderson, and Professor Osler. It had once again taken the lead in establishing a diploma in ophthalmology. He was in favour of the granting of other special diplomas in medicine and surgery should the need for such be shown.

INTERNATIONAL CONGRESS OF PHYSIOTHERAPY.

We have received a copy of the report of Dr. J. Lewis Jones, the delegate of His Majesty's Government to the International Congress of Physiotherapy held at Paris from March 29th to April 2nd, 1910. He states that the Congress was inaugurated by a meeting held in the amphitheatre of the Sorbonne, and honoured by the presence of M. Fallières, President of the French Republic, who delivered an address. A part of the opening ceremony was the introduction of the delegates of foreign Governments, and Dr. Jones said a few words on behalf of Great Britain and Ireland, and expressed his thanks for the reception accorded to the British visitors, and their hope that the proceedings of the congress might prove of benefit to humanity. The work of the congress was arranged in seven sections, namely: (1) Kinesitherapy (treatment by gymnastic exercises, massage, etc.), (2) Hydrotherapy, (3) Treatment by climate and sea bathing, (4) Electrotherapy, (5) Radiotherapy (treatment by Roentgen rays, by radium, and by light rays), (6) Treatment by the use of mineral springs, (7) Treatment by dietetic methods. All of these sections held separate meetings daily during the congress, and many valuable papers were presented. Twenty-four different countries took part in the congress. It was generally recognized that the meeting in Paris showed a considerable increase both in numbers and in importance over the previous Congresses of Physiotherapy, and it was evident that the interest of the medical profession in the treatment of disease by physical methods continues to advance rapidly. The international Congresses of Physiotherapy commenced with a congress held in Liége in 1905, at which Dr. Jones served as the delegate of His Majesty's Government. The second congress was held in Rome in 1908; and the fourth congress is to take place in Berlin in 1912. Dr. Jones goes on to say that the scientific movement which finds expression in these congresses for the study of physical methods in the treatment of disease is a growing one, and continuity of working is secured by the existence of a permanent International Committee which holds meetings for purposes of organization during the intervals between successive congresses. He observed the existence of a very general wish on the part of those who had taken part in the congresses that there should be a meeting in London at some not too distant date. Dr. Jones therefore submits that a congress in London, say in 1914 or 1915, to succeed that already arranged to be held in Berlin in 1912, would be likely to prove a success, and would also be valuable in the interests of British medicine. In the event of the suggestion for a congress in London receiving sanction and support, it would require to be considered before the year 1912 at the meetings of the International Committee, so that a formal announcement and invitation could be given in Berlin during the meeting to be held there in that year.

TOWN-PLANNING IN ESSEX.

The inauguration of the Romford Garden Suburb, which is the latest development of the garden city and town-planning movement, took place on July 28th. The President of the Local Government Board, who laid the foundation-stone of the first house, is always brimming over with substantial common sense on these occasions, and his hopeful speech had a congenial setting in the range of Essex woodland on which the new suburb is to be built, with a public

park on one side, a golf course on the other, and the old parish church of Romford showing in the distance, while behind the speakers was a link with the past in the shape of Gidea Hall, a stately Georgian edifice, with orangery and cloisters of beautiful old-time brickwork. Gidea Hall is to be the centre of the new estate, and, although little is at present visible of the latter, save roads in the making, the plans give an interesting idea of irregular groups of pretty houses, avenues of trees, ample gardens, and ponds, greens, and orchards. Several medical men were present at the function, and among those who sent apologies for absence were Sir R. Douglas Powell, Mr. Bland-Sutton, and Drs. Morley Fletcher, Theodore Williams, and Pye-Smith. Mr. John Burns's speech, which was the first of importance that he has delivered since his Housing and Town-Planning Bill passed into law, was in part a wail of regret that that useful measure had not made its appearance earlier. He pointed out that from thirteen to sixteen thousand families left the central parts of London every year. The future was distinctly on the side of town-planning enterprises in the extra-metropolitan counties, and, indeed, with the astonishing conversion of purely agricultural land into urban areas, a town-plan was becoming more or less necessary for every growing village. Old-time attempts at regulation had been largely in the direction of preventing the expansion of the town. There were absurd old enactments of the Elizabethan or Cromwellian period designed to prevent houses being built beyond one mile of Westminster, and so forth; while even Sir Christopher Wren, enlightened as he was, looked for a London which should have within its walls "no cemeteries, parks, gardens, or unnecessary vacuities." Mr. Burns, on the other hand, saw the London of 1960 stretching from Windsor to Gravesend, and from Hayward's Heath almost to Northampton. To the economical ratepayer he said: "The more you spend on architects the less you will need to spend on governors of prisons; the more on road and drainage surveyors, the less on policemen." Then he quoted some figures to show that the embrace of wider policies, not only in town planning but in efficient local government, was a paying business. During the last ten years the death-rate in England and Wales had dropped from 18 to 14 per 1,000, and infant mortality in the same period had gone down from 163 to 109 per 1,000. And these figures meant, not only that a needless massacre had been prevented, but also that the physique of the survivors had been improved. Then he gave some advice to garden city dwellers and developers. There ought to be no shops on the estate, and no more in the district round about than were necessary for the public convenience and the modest profit of the shopkeepers. We had 40 per cent. too many shops in London, and the consequences were seen in flare litter, shouting, and shameless vulgarity. Essex, he said, was a very healthy county, with a death-rate of only 11 per 1,000; its medical officer proudly claimed for it the distinction of being the healthiest county in England and Wales. But with a population that had increased in ten years by 53 per cent. in the urban areas and by 4 per cent. in the rural areas it needed, almost more than any other county, the advantages of the Housing and Town-Planning Act, and it was incumbent upon those who built to build for posterity. He urged them to avoid street noises, to "get rid of the smoke nuisance before it begins," to suppress vulgar advertisements of more vulgar plays, to rule out a professional football club, to encourage something better for homes than "brick boxes with slate lids," and to nurture a race of practical idealists in the spirit of William Morris, Ruskin, Wren, and Sir Thomas More. Mr. H. H. Raphael, M.P., who has been chiefly instrumental in developing the Romford suburb, said that many members of the Opposition had told him that honestly they wished there could be one Government department with a non-party head in Parliament—that department being the Local Government, and the head its present President. Mr. Tudor Walters, M.P., was similarly eulogistic, and Mr. C. A. McCurdy, M.P., recalling the ancient saying about the two blades of glass, claimed Mr. Burns as the greatest benefactor of his race, because he had made three babies survive in London where only two survived before.

THE NEW ITALIAN MEDICAL ACT.

A translation of the Italian Medical Act, published by *La semaine médicale* (No. 31, p. cxxii), adds some details additional to those mentioned in our summary of its provisions in relation to foreign practitioners.[1] The Act establishes provincial registers for the Orders of the medical profession, veterinary surgeons and pharmacists, and prohibits practice in these departments to all unregistered persons. Each registered person must pay an annual fee of £1, and each Order is empowered to elect a provincial council consisting of five or seven members, according to the number of the registered persons in each Order in the province. Each council elects a president and a representative of each of the three Orders elected by and from among the presidents will have a seat on the Supreme Council of Health. The provincial council will have the duty not only of keeping a register, but of maintaining discipline, settling disputes between registered persons or registered persons and their clients, but decisions of the councils are to be subject to appeal to a general assembly of the Order, and this again to appeal to the Supreme Council of Health. Foreigners enjoying civil rights and possessing diplomas giving them the right to practise in countries which offer reciprocity of an equal kind to Italians are eligible for registration, but a further exception is made in favour of those practitioners who have paid rates and taxes for the last three years, they being allowed to continue to practise amongst foreign residents.

THE PREVENTION OF PLAGUE.

Some years ago Lieutenant-Colonel Buchanan, I.M.S., advocated the keeping of cats to exterminate rats to prevent the spread of plague. He has recently published a pamphlet on the subject and also a paper, which appeared in the Journal of August 6th, 1910. In this he stated that considerable progress had been made, and that many people had now come to realize the advantage of keeping cats. Undoubtedly the presence of large numbers of cats, especially if not too heavily fed, will keep down the numbers of rats in any given place, but as to whether they will exterminate them altogether it is not so easy to say. If such an experiment were attempted on a farmsteading at home, for example, many of the cats would soon find that rabbits, pheasants, and partridges were better than rats, and would stray away and fall victims to the gamekeepers' zeal. This may not apply to India, or even if the same condition did hold good, the straying of a few cats into the jungle would not make very much difference. What perhaps is of more importance is the old country saying that all cats do not make good rat killers—indeed some cats will not kill rats at all—and Lieutenant-Colonel Buchanan states that the same objections have been raised against the Indian cat. After all, this disinclination to tackle the rat may be due to a too full diet elsewhere, and not so much to fear of the consequences of a battle with the pugnacious rodent. Some cats are much better mousers than others, but there is not the slightest

[1] British Medical Journal, July 9th, p. 91.

doubt that the mere presence of a cat in a house tends to keep the mice away whether it catches them or not. This latter fact is one of the strongest points in favour of Lieutenant-Colonel Buchanan's method, and one may rest assured that if several cats are wandering about a house at night no rats will come out and wander about as well. The smell of the cat, just as of the ferret, the rat's deadly enemy, also seems to frighten them away. Plague has recently been carrying off so many people in India that every possible means should be tried to stamp it out. The policy that will ultimately lead to success should fulfil three conditions: (1) It should be efficient; (2) it should be available (or likely to be available) in the near future; and (3) it should be acceptable—a very important thing for India. Inexpensiveness might be added to these requisites. Now the cat fulfils these conditions quite well, and as the native does not mind his cat killing rats though he dislikes doing so himself, there must be a very great gain in having such animals about. The late Professor Koch's conclusion that the cat is the best plague preventer in Africa, taken in connexion with the fact that there is such a strong religious feeling amongst Mohammedans and Hindus in favour of keeping cats, must certainly strengthen Lieutenant-Colonel Buchanan's view of the efficacy of the cat in India. While we thoroughly agree with the dictum that the cat is useful in preventing plague, and that it should be introduced and propagated in parts of India where it is scanty or does not exist, yet we strongly deprecate any diminution or slackening in the means at our disposal at present for combating plague. Inoculation has done so much good in the past, and is doing so much good now, that it would be folly to stop it or diminish it in any way. And the same may be said of trapping and poisoning rats. The place of the cat is as an auxiliary to these other methods; it must not be permitted to supersede them. If used in its proper place it may do unlimited good, and it is to be hoped that Lieutenant-Colonel Buchanan's scheme will be given a fair chance in India and other places infected with plague.

LUNACY ADMINISTRATION IN CAPE COLONY.

In a short but very informing paper, printed in the April number of the *Journal of Mental Science*, Dr. T. Duncan Greenlees, lately the Medical Superintendent of Grahamstown Asylum, traces the development of lunacy administration in Cape Colony since 1872, when Cape Colony was granted its own responsible government. At that time the only asylum for the insane in the colony was at Robben Island, eight miles from Cape Town, where accommodation was provided also for lepers, paupers, and criminals. In 1872, Dr. Greenlees says, there was no Act dealing specially with the insane, but since then Acts, passed in 1875 and 1891 and amended in 1897, have resulted in a lunacy law which for simplicity and ease of working will compare favourably, he thinks, with any in existence. Those interested in comparative lunacy administration will be grateful to Dr. Greenlees for his admirable outline of the legal provision made for the insane in Cape Colony. A point at which the law of this colony departs from English law is that a magistrate has power to order the detention of a lunatic for a period not exceeding one month. Thereafter the further detention can only be granted, after the submission of all documents, by a judge. Concerning this Dr. Greenlees says, "Surely if insanity is a disease, and if it is considered that an Act of Parliament is required for its treatment, then the Act should be made as simple as possible, its sole object being the early treatment of the insane, and if detention is necessary the same justice as is meted out to the ordinary, criminal should be given the lunatic, and a judge and a judge alone, should have the power to deprive even an insane man of his liberty." Another point of divergence is that in Cape Colony, as in all British colonies, the public asylum service is a State service, and its officials are civil servants. Originally, we gather from Dr. Greenlees's remarks, the conditions of service, though on the whole satisfactory for the ordinary civil servant who joined before the age of 20, were less so for the medical asylum officials, who were rarely appointed before the age of 30. It is satisfactory, therefore, to note that, largely through the energetic representations of Dr. Dodds, the able and indefatigable Inspector of Asylums for the Colony, and of Dr. Greenlees, liberal terms have been recommended by a Commission appointed to consider civil service matters, and that although they have not yet received statutory sanction an assurance has been given that the Commissioners' recommendations will be carried into effect.

OPIUM AND COCAINE IN THE UNITED STATES

Dr. Hamilton Wright, United States member of the International Opium Conference, is reported to have stated before the recent annual convention of the Pennsylvania State Pharmaceutical Association, that 400,000 pounds of opium and 150,000 ounces of cocaine were imported last year into the United States, and that 75 per cent. of the opium and 90 per cent. of the cocaine were used by drug habitués. He estimated that 168,000 pounds of opium were used for smoking—68,000 pounds by native Americans, and the rest by the Chinese, of whom there are 150,000 in the United States. Nearly 50 per cent. of all criminals, and over 21 per cent. of prostitutes, are said to be addicted to some drug habit. Dr. Wright, according to the *Boston Medical and Surgical Journal*, further estimates that 2½ per cent. of all physicians, and 1.32 per cent. of all nurses in the United States have the morphine or cocaine habit.

We have much pleasure in stating, on the authority of his medical adviser, Dr. Reginald Jamison, that Dr. Dawson Williams continues to make steady progress towards recovery. It is hoped that it will shortly be possible to move him from the wayside inn to which he was taken at the time of the accident.

The King has been graciously pleased to sanction the following among other promotions in and appointments to the Order of the Hospital of St. John of Jerusalem in England: As a Knight of Grace, John Hammond Morgan, C.V.O., F.R.C.S. (from Honorary Associate); as an Honorary Knight of Grace, Surgeon-Major-General Hieronymus Laub; as a Lady of Grace, Edith Mrs. Bland-Sutton.

The British Association for the Advancement of Science will hold its eightieth annual meeting this year at Sheffield, from August 31st to September 7th, under the presidency of the Rev. Professor T. G. Bonney, Sc.D., LL.D., F.R.S. The presidential address will be delivered at the inaugural meeting, which will be held in the Victoria Hall, on Wednesday, August 31st, at 8.30 p.m. On Friday, September 2nd, the second evening discourse will be delivered by Professor William Stirling, M.D., D.Sc., F.R.S.E., on types of animal movement. The President of the Section of Physiology is Professor A. B. Macallum, Ph.D., D.Sc., F.R.S.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Opticians and Sight Testing: Deputation to the London County Council.

On August 10th Mr. Cyril Jackson, Chairman of the Education Committee of the London County Council, received a deputation representing the Spectacle-makers' Company with reference to a circular entitled "Hints to Parents," which it is proposed to issue, one paragraph of which recommends the parents not to rely on opticians for the sight testing of children in the absence of the advice of an ophthalmic surgeon or other qualified person.

The Hon. Harry Lawson, M.P., Master of the Spectacle-makers' Company who introduced the deputation, said that, whatever might be thought of the qualifications of opticians, it was quite clear that it was impossible for ophthalmic surgeons to deal entirely with the portion of the community which was forced to seek advice as to eyesight. The opticians took every care to exclude from their work cases which ought properly to be submitted to medical and expert opinion. What those who protested against the issue of the circular desired was that opticians should be left free to test cases which they had been in the habit of testing in the past, and it was submitted that if the County Council must interfere in order to give guidance to parents, this guidance should not go beyond a recommendation of a sight-testing optician. Mr. Lawson submitted that the great machinery of the Education Committee should not be used to stop what was beneficent work by the opticians from the public point of view. He pointed out that for ten years a diploma had been issued by the Spectacle-makers' Company, which guaranteed the excellence of the work performed by those holding it. Seven hundred persons had received this diploma.

Other members of the deputation spoke in a similar strain.

Mr. Cyril Jackson said of course he was unable to speak for the Education Committee as a whole, but he promised to convey the views of the deputation to them at their next meeting. They (the deputation) had given him to understand that the diploma issued by the Spectacle-makers' Company was hedged about with safeguards for the public.

The deputation, having thanked the Chairman of the Education Committee for his courtesy in receiving them, withdrew.

MANCHESTER AND DISTRICT.

School for Phthisical Children.

Much attention has recently been drawn in Manchester, especially by the medical officer of health, to the need for better accommodation for persons suffering from phthisis, and Sir Thomas Shann, the chairman of the Education Committee, has just reported the gift of a mansion and grounds for the purpose of providing a residential school for children suffering from the early stages of consumption. The situation of the property is not yet stated, and the donor desires for the present to remain unknown. Sir T. Shann, however, assured the city council that the mansion was in every way well suited for the purpose, and that the acceptance of the gift would entail no serious expenditure, as it would be possible to meet the whole of the cost out of current expenses. He reminded the council that Manchester was in no enviable position as far as accommodation for phthisical cases was concerned. Only one member of the council hesitated to accept the gift, on the ground that he would like to know definitely what the cost would be for upkeep, and because he had some hopes that the citizens might take up the question and establish a sanatorium for consumptives as a memorial to King Edward. Dr. Skinner and other members of the council thought the scheme of Sir T. Shann would be a step in the right direction, though it would only partially supply the needs of the city. On the assurance of Sir T. Shann that the expenses of the new institution would be hardly any, the council unanimously accepted the gift, and passed a vote of thanks to the anonymous donor.

Ophthalmia at Hope Hospital.

Some time ago the Salford Board of Guardians decided to appoint an eye specialist to visit the workhouse, Hope Hospital, and the cottage homes. At that time there were said to be between 40 and 50 cases of ophthalmia at the Hope Hospital alone, and with regard to the cottage homes one of the guardians said that most of the cases which had been taken to the Manchester Eye Hospital had been discovered by guardians by chance, and not until then had the attention of the authorities at the homes been called to them. The new medical superintendent said the children in most cases were not suffering from ophthalmia at all, but that their eye troubles were simply the result of bad feeding previous to their admission; he had had all but 2 cases cleared out of the hospital and sent to their proper places, as he believed there was no need to detain them in the hospital. The 2 cases that remained he thought would soon be cured and that being the case he saw no need for an eye specialist being appointed. The guardians have, therefore, rescinded their resolution to appoint one.

Medical Inspection of School Children in Salford.

The medical officer of health for Salford deals very fully in his annual report of the health of the borough with the work of medical inspection of school children. The staff engaged consists of the medical officer of health himself, an assistant medical officer of health who devotes practically his whole time to examination of school children, a medical officer engaged two half-days a week for testing eyesight and prescribing spectacles, two school nurses, and six district sanitary inspectors. Two groups of children have been specially examined during the past year, those between 5 and 6 years of age representing the entrants, and those between 12 and 13 representing the leavers, and, in addition, a number of children of other ages specially selected by the nurses or teachers on account of some defect. Every school is visited once a week by a sanitary inspector, who reports any defects in sanitation to the medical officer of health. The inspection of the children is carried out personally by the assistant medical officer, who has the help of a nurse, and neither the teachers nor the parents are notified when an inspection will take place, so that the children are seen in their usual condition. Generally for the purpose of examination only the clothing about the neck and the front of the chest is loosened, to allow of examination of the heart and upper lobes of the lungs. If further examination is needed the parents are notified and allowed to be present. When not engaged with the medical inspector the nurses themselves systematically inspect the children, chiefly to discover verminous and parasitic conditions, all the children irrespective of age being thus examined. Verminous children may be excluded from school by the nurses, and the parents are allowed a short time to carry out directions for cleansing. If they fail in this the children are referred to the medical officer. During the year there has been a very marked improvement as regards pediculosis, undoubtedly owing to the visits of the nurses and the medical officers, and the hope is expressed that pediculosis may within a short space of time be altogether eradicated. The results as regards body vermin have not been so satisfactory, and considering the state of many of the homes this is not to be wondered at. The nurses pay special attention to the discovery of ringworm, in certain cases excluding the children, and in doubtful cases removing hairs

for microscopic examination by Professor Delépine. In the course of the year 111 children have been excluded for ringworm, and have had to attend at intervals at the central office for inspection. The authority last year submitted to the Board of Education proposals for treatment by *x* rays, and sanction to a scheme has been obtained on condition that a sum not exceeding 2s. 6d. per case is contributed as a fee, that the treatment be undertaken only by a skilled operator, and in no case by a nurse or other unauthorized person, that the treatment be provided in a separate room, that no child suffering from ringworm shall attend school, and that cases shall be referred for the treatment only by the school medical officer, treatment to be carried out under his direction. The installation has already been made, and cases are now being treated. Previously many cases had gone to the Manchester Skin Hospital.

All the 12-year-old children have their vision tested, but in the case of 5-year-old children systematic vision testing has not been carried out, because of the improbability of satisfactory results and the inability of many of them to name the letters. Where vision is $\frac{6}{18}$ or worse, the children are referred to the central office for full examination. Their eyes are atropinized by the nurses, and the medical officer then estimates refraction by retinoscopy. Among the 12-year-old children, 13 per cent. had defective vision, meaning by this term all cases with vision $\frac{6}{18}$ or worse, and also some cases better than $\frac{6}{18}$, but having hypermetropia or hypermetropic astigmatism, with symptoms of eyestrain. Over 2 per cent. of the children in the upper department were wearing spectacles, though in some cases the parents objected to spectacles on the ground that the children's chance of obtaining employment on leaving school would be prejudiced. Of 771 children specially tested for refractive errors, 202 had hypermetropia, 64 had simple hypermetropic astigmatism, 194 compound hypermetropic astigmatism, 19 myopia, 27 simple myopic astigmatism, 73 compound myopic astigmatism, 84 mixed astigmatism, while the remainder had only slight errors. Only 38 cases of eye diseases were found, of which 17 were keratitis and 3 were fit for a school for the blind. Salford has now 31 children at blind asylums and 11 others attending day schools for the blind.

Otorrhoea was found in 2.18 per cent. of the 12-year-old children and in 1 59 per cent. of the 5-year-old. There is still some difficulty in getting some of the parents to regard it as of any consequence.

Among the 12-year-old children epilepsy was found in 1.7 per 1,000, and mental defect in 6 8 per 1,000, and suitable cases are now maintained in special schools at the part cost of the authority.

Heart murmurs existed in 2 35 per cent. of the 5-year-old children, and in 1 24 per cent. of the 12-year-old, the great majority being mitral systolic murmurs. Some of the children with well-marked murmurs conducted to the back presented no outward signs of the disease, and the parents were not aware of its presence. It is the discovery of such cases which affords one of the strongest reasons for routine medical inspection of all children, including the apparently healthy, as valuable advice may be given to parents as to school work and the kind of employment the children should follow on leaving school.

From tables given showing the condition of teeth, it is seen that among the 12-year-old children, 1 of every 12 boys and 1 of every 8 girls had sound teeth, while 1 in 5 boys and 1 in 7 girls had over 4 teeth decayed. Among the 5-year-old children, 1 in 4 boys and 1 in 5 girls had over 4 teeth decayed. In each case the teeth were in a better condition among the girls than the boys.

Rickets and rickety deformities were observed in 4.86 per cent. of the 5 year old children and in 0 9 per cent. of the 12-year old, proving that the signs of rickets and even of the deformities resulting, often tend to disappear in later school life. The medical officer of health is thus led to doubt the expediency of referring the milder cases of bow-legs and knock-knee to the surgeon. Brilliant results may follow operation, but cases have been seen where the last state was worse than the first.

Phthisis seems to be rare among the entrants, while among the 12-year-old children attending school 0.38 per cent. had definite phthisis. Full statistics are, however, difficult to obtain, as many cases have been forbidden to attend school by their medical attendants. A large number of phthisical children and others suffering from general debility attend the Manchester Children's Hospital, and as the physicians attached to that hospital forbid school attendance in all cases of phthisis or even of doubtful phthisis, the percentages of scholars found in the schools on inspection to be suffering from phthisis is greatly lessened. Of 1,225 cases of all ages referred for special examination, 56 were found to have definitely phthisis, 17 had tuberculous disease of bones and joints, and 10 abdominal tuberculosis, so that about 12.68 per cent. had active tuberculosis of some sort. The education authority apparently does not agree with the universal exclusion of phthisis cases from school. Its practice is to exclude only those with cough or expectoration, or with well-marked physical signs, as it is thought that many of the incipient cases are better at school than in homes where the hygienic conditions are often not of the best.

Very special attention has been paid during the year to the subject of enlarged glands in the neck, as it has frequently happened that children were kept by parents from school on the plea that they had mumps. It was found that of the 5-year-old children 269 per 1,000 had much enlarged cervical and submaxillary glands, 190 per 1,000 had enlarged tonsils or adenoids, and 150 per 1,000 had over 4 decayed teeth. Of the 12 year-old children 165 per 1,000 had much enlarged glands, 202 per 1 000 had enlarged tonsils or adenoids, and 112 per 1,000 had over four decayed teeth, and details are given as to the degree of enlargement of the glands in each case. The report suggests that the exact nature and causation of gland enlargement in the neck offers an attractive field of investigation for school medical officers, for though the general health of the children may often not be much affected, it is established that there is special susceptibility in children with chronically enlarged glands to infection from trivial causes, and in a considerable proportion of the cases serious developments occur. A preliminary investigation has been undertaken to ascertain the relation between enlarged glands and decayed teeth, enlarged tonsils and adenoids, and 2,474 children were examined for this purpose. The glands noted were only those anterior to the sterno-mastoid and those under the jaw, those behind the sterno-mastoid being disregarded. Detailed tables are given, from which it appears (*a*) that glandular enlargement is more prevalent in the 5-year-old children than in the 12-year old; and (*b*) decayed teeth, enlarged tonsils, and adenoids are all associated with increase in the percentage of children with enlarged glands, but the increase is much more pronounced in the case of tonsils and adenoids than in the case of carious teeth. So far the investigations are not sufficiently complete to form any general conclusions. It is still to be considered whether the association of enlarged glands in the neck with enlarged tonsils and adenoids is due to a general lymphatic hyperplasia involving both glands and other lymphoid structures such as tonsils, or whether it is rather the catarrhal conditions to which enlarged tonsils and adenoids predispose that give rise to glandular enlargement. It is also possible that infecting organisms may obtain access more readily by way of enlarged tonsils and adenoids than through the healthy throat or nose. These points may be cleared up by accumulating data bearing on: (*a*) The effect on glands of operation for tonsils and adenoids; (*b*) the effect on glands of catarrhal conditions co-existing with enlarged tonsils and adenoids, and comparing this with the relation between glands and tonsils and adenoids without catarrhal conditions. We are told that it is proposed to go into these questions during the present year in as full a manner as time will allow.

LIVERPOOL.

Dr. Hope's report on the health of the city of Liverpool for the year 1909 shows that though the birth-rate has diminished, it remains one of the highest for large towns in the kingdom. The death-rate—18.3 per 1,000—is the lowest recorded for the city, and among the causes of mortality the rate is the lowest recorded from typhus fever, phthisis, and zymotic diarrhœa. Dr. Hope gives a record of the mortality from scarlet fever for sixty years, which shows the effect of notification and isolation in marked contrast with the rates from measles and whooping-cough. A limited provision is being made for isolation of these two diseases, which show still a very large death-rate. The remarkable decline in the tuberculosis death-rate is the result of the disease being attacked at its origin rather than by treatment, it being found that clearances of insanitary dwellings and workshops are more effective and less expensive than treatment of the diseased individuals. We are glad to see that noise nuisances are now being taken in hand, and proposals have been made to procure by-laws to enable these nuisances to be effectively dealt with. It is pointed out that a quinquennial census is needed to deal with the variations in the conditions of so fluctuating a population as that of Liverpool, errors of from fifty to one hundred thousand leading to neglect of sanitary measures urgently required. Dr. Hope points out that as the result of the Midwives Act 1902, there are very important changes occurring in the matter of attendance on births, in a total of 23,591 births 16 996 were attended by women, only 9.7 per cent. had medical attendants, nearly 10 per cent. were attended by the Liverpool Maternity Hospital and Ladies' Charity; 864 of the cases attended by certified midwives (13,184) required medical assistance, and the Health Committee paid £348 12s. 6d. in guinea fees to medical men for emergency calls where the fee could not be recovered from the patients' friends or from the boards of guardians; 62 cases of puerperal fever were notified to the medical officer, 36 occurred in the cases attended by women, while Dr. Hope leaves us to infer that 26 were in the 9.7 per cent. of cases attended by medical men. The report shows that the milk supplied from town sources is much less liable to contain tuberculous germs than milk from the country owing to the stricter supervision that is maintained in town and the disgraceful lack of it in the country.

SHEFFIELD.

Report of the School Medical Officer

The general condition of the school children and some indications as to future policy are carefully reviewed in the annual report which Dr. Williams has presented to the Education Committee. The results of the routine examination are given in tabular form, and some of the data are illustrated by diagrams. The provision of clogs or of coarse slippers to be worn in school is suggested as a remedy for the bad boots which were found in the case of 13.5 per cent. of the children. Sterner measures under the Children's Act are not hinted at. Under this Act some successful prosecutions have been carried out in the case of verminous children. The cleanliness statistics are improving, but this may be merely that the children have been specially prepared for the examination. The best evidence that there really has been a great improvement is furnished by the condition of cases on admission to the city fever hospitals. The weights and height averages are below those in a high-class secondary school in the city. In spite of these figures it is stated, under the heading of nutrition, that 92.2 per cent. of the children were of average nutrition. The fact that only two certain and three probable cases of pulmonary tuberculosis were detected is, when compared with other statistics, merely a proof that diagnosis of this condition is very uncertain. It might easily lead a layman to conclude that compulsory notification of tuberculosis in Sheffield has caused a great diminution in the numbers of tuberculous children. As regards future policy, we find frank advocacy of the substitution of suburban schools on open-air lines in place of city schools on expensive sites. Municipal treatment of dental caries, of ringworm, and of running ears is also advocated. Since the report was published the provision of a dental clinic has been referred to a subcommittee of the education authority. The report furnishes ample evidence that in Sheffield the subject of school hygiene is receiving the attention which its importance deserves. It is also clear that the practitioners of the city will soon be faced by the problems which are at present agitating the profession in London.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

GLASGOW.

Report of the Medical Officer for 1909.

The report of the Medical Officer of Health for Glasgow for 1909 is of considerable interest. The discrepancy between the population as estimated by the Registrar-General and by the Medical Officer of Health is pointed out. According to the latter Glasgow's population is diminishing, continuing the shrinkage which commenced in 1908. There is a falling marriage-rate and a diminution of the birth-rate. The marriage rate for each 1,000 unmarried women or widows over 15 years of age is now only 39 against 54.7 in 1870–72. The birth-rate was the lowest on record. There has been a steady fall since 1885 and now it is 28.7 per 1,000 persons living. If the calculation is amended for females between the ages of 15 and 45 there is a fall from 173.5 per 1,000 in 1870–72 to 102.7 in 1909—a reduction of 41 per cent. in the birth-rate. The death-rate is practically the same as in 1908, namely, 17.95 per 1,000. During the second and third quarters of 1909 the death-rate was exceptionally low, but the last quarter, owing to two severe spells of protracted frost and fog, the death-rate was very high.

Infant Mortality.—The total number of deaths of infants under 1 year was 3,022, composed of 2,659 legitimate and 363 illegitimate children. The mortality-rate per thousand births is much higher among the illegitimate children (214 against 124 for the legitimate children). The chief cause of infant death is "immaturity," which accounts for one-third of all deaths: then follow diseases of the respiratory system and diseases of the digestive system. Of the 23,503 children born during 1909, 3.7 per cent. were stillborn. In the past year the proportion of the registered births which were notified under the Notification of Births Act rose from 83.9 per cent. in 1908 to 97.8 per cent. Medical men attended at 11,012 births, while midwives attended at the remaining 12,451 births notified. It is impossible to say what proportion of these midwives were certified. The proportion of stillbirths in the medically-attended series is 3.5 against 3.1 in the midwives' series. Probably this is accounted for by the fact that the midwives are less careful to notify stillbirths. The incidence of puerperal fever shows that it occurred 5.7 times for each 1,000 births attended by midwives, and in 3.4 of each 1,000 births attended by doctors. It is impossible to say how much this is due to defective technique of the midwives, or how much arises from the fact that their *clientèle* is among the poorest classes. In almost every case where a doctor did not attend at the confinement, the infant was visited by the inspector under the infant visitation scheme. It is noted that 83.5 per cent. of these children were well nourished at the time of the inspector's visit, 10.5 were fairly nourished, and 2.5 were badly nourished, while 96 per cent. of the children were being fed on the breast. The Health Visitors' Association, formed to work in conjunction with the Health Department in keeping under observation during the first year of life infants whom the inspectors regarded as requiring supervision, has

dealt with 799 of such children. Of these, 389 attained the age of 1 year, and 116 died, while the remainder removed during the first twelve months of the infant's life. Among the other agencies attempting to deal with the reduction of infant mortality are the milk dépôts and the infant consultations; 1,985 infants were registered at the milk dépôts. The average attendance of each child was three and a half months, and the average number of baskets of milk supplied each day was 354. At the 352 infant consultations held during the year 1,717 children attended, the average number of each child's visits being 3.7. No attempt has been made to compare the death-rate among infants fed on dépôt milk with that of the total infant population, but it has been found possible to establish comparisons among the dépôt and consultation children themselves, which are suggestive. The comparisons refer to the results associated with several kinds of feeding, and are based on records by Dr. Mann at three of the infant consultations conducted by her. Charts have been constructed from 1,811 weighings of 469 children which have completed their first year. The main features of the charts show that any diet in which breast milk enters has in the main an advantage over any form of food which is wholly artificial. But the child whose feeding has been mainly artificial from the beginning escapes the disturbance in weight incidental to weaning. The weight chart of the dépôt-fed child is peculiar. At 3 months it compares favourably with that of other artificially-fed children, but thereafter it is uniformly lower, as is shown by the following table:

Nature of Food.	Three Months.	Six Months.	Nine Months.	Twelve Months.
Breast only	9 lb. 15 oz.	14 lb. 1 oz.	15 lb. 12 oz.	18 lb. 1 oz.
Breast and artificial foods	8 lb. 7 oz.	13 lb. 13 oz.	16 lb. 9 oz.	17 lb. 5 oz.
Artificial food only ...	8 lb. 11 oz.	12 lb. 2 oz.	15 lb. 13 oz.	18 lb. 3 oz.
Dépôt milk only ...	8 lb. 13 oz.	11 lb. 12 oz.	15 lb. 13 oz.	16 lb. 4 oz.

On the most favourable interpretation of the figures it could scarcely be suggested that the dépôt milk is supplying the child with a substitute for breast milk better fitted to its needs than those with which it is here compared.

Vaccination.—Declarations of conscientious objection to vaccination were made in respect of 2,653 children during 1909, irrespective of date of birth. This is 470 more than made in 1908, and brings the total number since the Act came into operation up to 5,310. The effect of this Act in Scotland has led to a diminution in the number of children vaccinated. The Act enabling the conscientious objector to make declaration was extended to Scotland in 1907. It affected certain children born in 1906, so that 1905 is the last complete year available under the old Act. Of the children born in Glasgow in 1905, 84.5 per cent. were successfully vaccinated, 10 per cent. died before vaccination could be accomplished, 3.6 per cent. had removed from the district of their birth, and could not be traced. In 1.3 per cent. the vaccination was postponed, and in 0.6 per cent. the children were insusceptible. Contrast this with the result after two years of the full operation of the Act. Of the children born in 1908 only 69.5 per cent. were successfully vaccinated, 10.8 per cent. died before vaccination; 9.2 per cent. were exempted by statutory declaration, while the proportion which could not be traced had risen to 8 per cent. The percentage of postponed remained at 1.7, the insusceptible were 0.8 per cent. The effect of the reduction of the compulsory clause has reduced the proportion of vaccination during infancy by 15 per cent. This reduction is not limited to Glasgow. The figures for Scotland, exclusive of Glasgow, for 1905 shows that the proportion of children successfully vaccinated was 84.6 and 2.9 per cent. were not accounted for. In 1908 the proportion vaccinated successfully was only 68.6 per cent., and 4.9 per cent. were not accounted for, while in 12.7 per cent. declaration of conscientious objection had been made. It is evident that an unvaccinated population is rapidly being produced.

MEDICAL INSPECTION IN ROSS-SHIRE.

The Ross-shire County Committee has appointed Dr. Murray, Stornoway, medical inspector for the Lewis and several west coast mainland parishes, with Dr. Middleton, Cromarty, for the remainder of the county, each at a salary of £250 per annum, with travelling expenses. Both are under Dr. Bruce, Dingwall, as the Local Government Board insisted on one medical officer for the whole county. For his part of the work Dr. Bruce gets an honorarium of £50 per annum. Weighing machines and measuring rods are to be ordered for each of the 133 schools in the county at a cost of £300.

FIFE COAL COMPANY AND WORKMEN'S HOUSES.

Some time ago we mentioned in this column a proposal by the Fife Coal Company to instal baths for the special use of the miners employed at one of their collieries. The company has now erected two blocks of houses which will number twelve in all. Some of the houses have two and some three rooms, including kitchen. In addition to scullery and wash-house and sanitary accommodation, bath-rooms have been provided, with a supply of both hot and cold water. These of course add considerably to the expense of erection, but the cost to the occupants will not be more than about £2 per annum above the rent usually charged at present. These houses, with their bath-rooms, should prove a great boon to the workmen, and the company is to be congratulated on the step it has taken in providing facilities for what must be a great luxury to the begrimed miner

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

THE POOR LAW.

SIR WILLIAM CHANCE, of the Mater Misericordiae Hospital, Dublin, in a paper read recently at the Annual Conference of the Devonshire Poor Law Association at Exeter, defended the present Poor Law system and the principles on which it was founded; and, while admitting that many of the criticisms upon the administration of relief in certain details were well founded, urged that every reasonable reform could be carried out without transferring the duties and powers of boards of guardians to any other authorities. Where were these wonderful people to come from who were to replace the present guardians? He ventured to say that the new public assistance authorities proposed by the Minority Report of the Royal Commission on the Poor Law would be constituted of much the same persons as now took part in Poor Law work. The reasons given for the revolutionary proposals of the Royal Commission were not adequate. But he defended the existing Poor Law system on the ground that it was essentially democratic, whereas the proposals of the Minority Report were socialistic and therefore bureaucratic, while that of the Majority Report tended in the same direction. For himself, he would rather see Poor Law reform proceed somewhat on the lines laid down by Mr. Charles Booth, because his scheme preserved direct popular control, if large administrative units were thought desirable for special administrative purposes. But it might be some time before such reform took place, and in the meantime boards of guardians could do much to reform their present administration. If guardians would only do their best to follow the advice given in the recent Local Government Board circulars, they should hear little more about their being swept away, while pauperism would again assume a downward direction, and the great friendly societies would receive a new impetus to go forward with a general strengthening of the spirit of thrift, providence, and independence, which could alone make and keep our country strong and free.

Trinity College Reforms.

The Royal Commission, in its report on the condition of Dublin University and Trinity College, made mention of certain reforms which it considered necessary in order to suit modern requirements. The board, after considerable discussion, drafted a scheme of reform, which included many radical changes, the most important being the introduction of an elective element in the governing body, which hitherto has rested entirely on the principle of seniority; the election of Fellows is not to depend simply on a mere examination test, and the professors are to be allowed some of the rights and privileges which have up to this been reserved for Fellows. In order to carry out these changes a King's letter is necessary, and a petition to His Majesty embodying these desired changes has been in course of preparation. Two of the senior Fellows, members of the board, objected to these reforms, apparently preferring that things should go on as they are, and moved in the King's Bench for an injunction to prevent the board asking for and accepting a King's letter, on the ground that the board had no power to attempt to change the corporation of the college. The motion was dismissed; it is said, however, that the decision is to be appealed against.

University College, Galway.

Mr. Lloyd George gave a discouraging answer to the deputation from the governing body of University College, Galway, which approached him on the subject of an increase in the endowment of the college They pointed out that by the University Act of 1908 the colleges at Belfast and Cork had received large additional revenues, whereas Galway's slight relief of £600 a year is more than counterbalanced by the new charge of maintenance of the college buildings, which charge was previously borne by the Board of Works. An additional grant is necessary to maintain even the present chairs, and new chairs are badly needed, specially for agriculture and marine science. The Chancellor of the Exchequer said that, in view of the fact that at present no local bodies had made any contribution to the college, he could not recommend an increased grant.

Lunacy in Ireland.

The annual report of the Inspector of the Lunatic Asylums of Ireland, just issued, shows that the total number of insane in such establishments was:

	Jan. 1st, 1910.		Jan. 1st, 1909.
Males	12,562	...	12,355
Females	11,582	...	11,576

showing an increase of 213 during the year, which by a peculiar coincidence is exactly the same as the increase for the previous year. It is, however, 150 less than the average increase for the preceding ten years, which was 363. The figures given relate to the numbers under care, but the ratio of the increase in the number of the registered insane from year to year in proportion to the population is somewhat greater, owing to the fact that the general population was, until 1909, yearly decreasing.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

Memorials to the late King.

During the past month there has been much discussion regarding the best form of memorial to King Edward VII. At a meeting recently held in Madras it was decided, subject to the opinions of the district committees, that a sanatorium for consumptives in a suitable hill station should be constructed. In the United Provinces a similar proposal has been made, but not yet finally decided on. In Bengal there has been much discussion in the lay papers on the proposals of the medical section of the Asiatic Society of Bengal, that a sanatorium for consumption is the most urgent and suitable form of memorial, but that if funds are sufficient an institute for medical research in connexion with a large hospital in Calcutta should also be built. The latter proposal has met with much support as a local memorial, as a sanatorium for phthisis could not be placed in the capital of India. Other suggestions for a purely ornamental structure or a hostel for native students have not found much favour. A meeting will shortly be called by the Lieutenant-Governor to start the subscription list, but it is suggested that the form of the memorial shall not be settled until the amount of the subscriptions is known. This is to be regretted, as there is a strong feeling that some humanitarian form of memorial is the most suitable, while a repetition of the muddling and delay over the Victoria memorial, which will result in its not being completed until nearly twenty years after the death of the Queen, would not be tolerated.

Lucknow Medical College.

Sanction of the Secretary of State has at length been obtained to the scheme for the expenditure of £200,000 in building a hospital and medical school for the United Provinces in Lucknow. An excellent site has some time ago been obtained, and the buildings will be rapidly pushed on. It is understood that Lord Morley has also issued orders that the whole staff of professors shall be selected from native practitioners, the principal of the college only being a European. This is running before one can walk with a vengeance, and a reversal of the principle laid down in the dispatches on the subject, in which it was stated that the employment of native practitioners for civil posts hitherto held by Indian Medical Service officers should begin from the bottom and only slowly work up to the highest posts. Unfortunately the amount of private practice to be obtained in Lucknow will not suffice to attract the best of the native practitioners from Calcutta, where "swadeshi" principles have been most successfully worked to get practically all native practice into the hands of the Bengalis, the best of whom now make too much money to be likely to be attracted to the Lucknow college. The result will be that second class native practitioners will be selected for these professorships in preference to the pick of the very highly qualified Indian Medical Service officers and many eligible European private practitioners. It is hardly necessary seriously to discuss whether this extreme application of the preference for natives over Europeans, which is universally seen in recent appointments in various services in India, will make for efficiency. It is to be regretted that President Roosevelt did not find time to visit India as well as Egypt.

The Director-General on the Future of the Indian Medical Service.

At the recent Indian Medical Service dinner in Simla, at which the innovation was introduced of inviting distinguished guests of other services, Surgeon-General Lukis made a notable speech, which has provoked much comment. He spoke of the military branch of the Indian Medical Service, which at present employs but about one-third of the officers, as in future to be the backbone and most important section. He went on to deprecate the custom of the men in the civil branch looking forward to making lucrative practices, or even calling themselves doctors in preference to their military titles, although as a rule twenty-seven of their thirty years' duty in India had hitherto been spent in civil work. When Lord Morley's dispatch on the future of the Indian Medical Service was published intending candidates for the Indian Medical Service were warned in these columns that the civil branch of the service, which has hitherto been not only its backbone but its very life and soul, would lose much of its attraction if the drastic changes foreshadowed by the present autocratic Secretary of State were carried out. The Director-General may be relied on to do all he can to maintain the glorious traditions of the service of which he is an ornament, but his recent speech has been received with much misgiving, as it is looked on as a straw which shows very decidedly which way the wind is blowing. It is well known in India that members of every European service look

with grave concern on the prospect of only being able to obtain the services of native practitioners in many stations in the future for their wives and families. It is much to be feared that only when it is too late will the head of the India Office realize that it is far easier to destroy the status and attractions of a noble service than subsequently to restore them.

Correspondence.

THE FUTURE OF THE ASSOCIATION.

SIR,—It is somewhat disheartening to find the old policy of belittling the Divisions and their Representatives revived in the letters of Drs. Walker and Gordon in to-day's issue of the JOURNAL.

Much, however, may be forgiven to the humour which attributes the loss of the Charter to the action of the Association as a whole in refusing to abandon its declared policy at the bidding of a recalcitrant minority, or which finds in the very unanimity of the voting on the referendum of 1907 good grounds for believing that such a vote represented the views of only one or two men!

Those, however, who were present at the Representative Meetings in Belfast and London know that the misunderstandings which at first caused a genuine distrust and apprehension of the Representative Body have been dissipated, and that the old feeling no longer exists as a possible factor of disruption.

Having the pleasure of knowing Dr. Gordon personally I am well aware that no member of the Association has its interests more genuinely at heart than he has. I am the more sorry to find myself dissenting so absolutely from his views, and believing as I do that his letter is likely to do a disservice to the Association.

It appears to me that his arguments against the representative character of the "so-called Representative Body"—the expression is Dr. Walker's—might be applied with equal justice, if not with much greater force, to the House of Commons. That assembly is commonly regarded as a thoroughly democratic institution; yet its members are elected by a fraction only of the adult population, and in every constituency there is a minority "represented" by an individual whose views are diametrically opposed to their own. These minorities must rely for the expression of their views on the representatives of constituencies other than their own. In the British Medical Association, on the other hand, membership is the sole condition attaching to the franchise, and surely no one who has listened to the debates at the Representative Meetings would really believe that there had been any failure to give expression to every shade of opinion.

Dr. Gordon alleges that the Association has "practically ceased to grow in the United Kingdom." Without his definition of the word "practically" it is impossible either to confirm or to controvert this statement, but I venture to differ strongly from his deduction that any lessened rate of expansion in our membership is due to distrust of our electoral machinery on the part of medical men outside the Association. Does Dr. Gordon really believe that they know anything about it? The whole burden of the complaint against the Divisional system is that members will not take the trouble to attend the meetings and vote, and in many instances this is admittedly true. Members of a certain type—and they form the majority—are content to receive their JOURNAL and to profit by the work of the Association, while leaving that work to the few who are interested in doing it. I should be surprised, for instance, if 10 per cent. of the members could explain with any approach to accuracy the present method of election to the Council.

Are we to believe that medical men outside the Association take a keener interest in these things than do the members themselves? That they study our electoral methods and betray a "ludicrous unanimity" in accepting the views of Drs. Walker and Gordon?

There is only one way of increasing our membership, and that is by demonstrating that it is to the interest of every medical man to belong to the Association. That was not done by the Branches in the old days. It can be done by the Divisions, and is being done by many of them. Where it is not done it may be the fault of geographical conditions, or of want of interest on the part of the members, but it is not the fault of the present constitution. No one who has the good fortune to belong to an active and united Division, and remembers the old days when everything was done at a more or less inaccessible annual Branch meeting run by an oligarchy of people who could afford to leave their practice for a whole day, could read without a smile the assertion that the Association is less democratic under its present constitution than it was under the old one.

With one remark of Dr. Gordon's I entirely agree—namely, "That those who are responsible for the loss of the Charter have strained every nerve to disfranchise the great majority of the Association and to set up, not a democracy, but an irremovable oligarchy."—I am, etc.,

Leigh, Aug. 6th. FRED. E. WYNNE, M.B., D.P.H.

THE ANNUAL REPRESENTATIVE MEETING OF 1910.

SIR,—This meeting was several times complimented on the high level attained during its proceedings, both in oratorical effect and in business aptitude.

I believe there were about 146 Representatives and 30 members of the Council present, say an average attendance, after the first day, of about 140 or 150.

The SUPPLEMENT of July 30th shows that no less than 92 members delivered speeches (and this excludes most of the Chairman's remarks, all formal proposals by chairmen of committees, all formal secondings, and all mere questions and answers), amounting to 386 in number, individual members varying from a maximum of 30 to a minimum of 1. Ten members spoke upwards of 10 times each, 29 members once each, 53 members between once and ten times each.

These figures, I think, afford conclusive proof that the Representative Meeting is not run by any clique, but is a real and genuine representation of the profession at large.—I am, etc.,

Altrincham, Aug. 8th. T. W. H. GARSTANG.

"DECLARATIONS OF POLICY."

SIR,—I trust that the debate (reported on page 216 of your SUPPLEMENT to the number for July 30th) on Dr. Langdon-Down's motion will not pass unheeded.

I have no sort of claim whatever to elucidate Dr. Langdon-Down's motion, but it does appear to me that its purport was not only (as pointed out by the Chairman of the Representative Meeting) misapprehended by Sir Victor Horsley, but by Dr. Macdonald. It is, I imagine, the case that the mover intended, not that the Council should interpret the particular effect of specific declarations, but that the Council should be asked to define the constitutional force of declarations generally.

The point is really important, for, as Mr. Ballance stated lucidly enough, it is possible for the Representative Meeting to pass resolutions, classified as declarations of policy, on reports from the Council or committees, at very short notice.

If the governing body of an association passes, by a majority, a resolution which ranks as a mere expression of opinion, the retention of one's individual opinion, in opposition, is not incompatible with continued membership of the association. But if a resolution be adopted, as a principle of contemplated action, and one is opposed to such principle and such action, and moreover takes steps to frustrate such action, it seems that retention of membership is both disloyal to the association, and false to one's self.

Yet, when thus forced to consider dissociation from the parent body, one is told that one is acting petulantly and childishly.

If the Representative Meeting had allowed steps to be taken to decide really what is meant, and what force is conveyed, when their resolutions are described as "declarations of policy" many of us, who are opposed strongly to one such declaration at least, would have found ourselves freed from a position of some embarrassment.—I am, etc.,

Mortlake, S.W., August 5th. F. G. CROOKSHANK.

PATHOLOGICAL BRANCH OF PUBLIC HEALTH SERVICE.

Sir,—As there appears to be some confusion in the report of the Rider of the Brighton Division in the Supplement to the Journal, July 30th, p. 214, on the formation of a Pathological Branch of the Public Health Service, may I be permitted to state that such officials would be really public (health) bacteriologists (with a knowledge of pathology), comparable to public analysts?

They would probably be attached to the public health service, though if sufficient elasticity were allowed in their appointments, their services might be most valuable to all those engaged in medical practice, whether private, institutional, or medico legal—for example, to coroners—where local bacteriological arrangements were not available. Dr. R. M. Buchanan, of Glasgow, suggests that the necessary start to such appointments would be given by obtaining the statutory recognition of bacteriologists, which could be carried out in any Milk Bill before the country by their position being defined in its provisions. This was attempted by the Glasgow Corporation last year. If the Association, together with the Society of Medical Officers of Health, the Royal Sanitary Institute and Institute of Public Health, affirms this, such a scientific backing would ensure the position of bacteriologists being defined in any Public Health, Milk, etc., Bill before the country.

May I add that the object of the amendment by me that leave should be given to the Poor Law Reform Committee to send a commission abroad to report on their public medical arrangements, was essentially to obtain the views of foreign medical practitioners as to the effect thereof on the professional and financial position and comfort of (*a*) those practitioners so employed by the State, and (*b*) those not so employed. Such first-hand experience would be useful to the next Special Representative Meeting.

Lastly, I said that it was important that no committee should be formed without Representatives upon it, Dr. Macan having stated that no Representatives were upon the Science Committee. Such representation favours the consideration of every subject from the point of view of the Association. So viewed, there is much to be said for the focussing of our scientific research at some central institution—as the Lister Institute, University College Hospital Medical School, etc.—with other subcentres, both as regards economy and the desired development and organization of our scientific work.—I am, etc.,

F. G. Bushnell,

Hove, July 30th. Representative for the Brighton Division.

THE UNIVERSITY OF LONDON GALTON LABORATORY FOR NATIONAL EUGENICS.

Sir,—In a report going the round of the newspapers of the temperance breakfast given by the National Temperance League the following sentence occurs:

> Sir Victor Horsley dealt further with the Galton Laboratory Report and stated that it had been disowned by the Chairman of the Eugenics Society for which its authors were working. (British Medical Journal, August 6th, p. 341.)

It is necessary to point out that if Sir Victor Horsley used these words they are wholly inaccurate. The Galton Laboratory is under the control of the University of London; it has no relation whatever to the Eugenics Society; and the work the members of its staff take in hand is not planned by nor done under the supervision of any such non-academic propagandist body, but is initiated in the laboratory itself. The authors of the memoir are not members of the Eugenics Society, and what is more have very little sympathy indeed with its methods or personnel. The laboratory has met with much help and friendly assistance from the medical profession, and it is needful on this very account to disclaim any intimate relation with the body in question, and above all to check any idea that its archives and confidential data are accessible to members of that society, or indeed to the general public.—I am, etc.,

Eugenics Laboratory, Aug. 5th. Karl Pearson.

LEUCODERMA AND PALAEOGENESIS.

Sir,—In the British Medical Journal of April 23rd, Sir Jonathan Hutchinson explains the dappled skin of leucoderma as a revelation of a pigment pattern pre-existing in the skin. Dr. Renshaw, in the issue of July 30th, states that "the curious mottled appearance may well be accepted as atavistic; but the complete truth appears to be much more wonderful than that."

Since Darwin's time atavism has been made a sort of dust heap upon which all morphological phenomena which cannot be satisfactorily explained are thrust.

This explanation, pretty as it may be, is purely hypothetical, and brings us no nearer to the causation of vitiligo or leucoderma.

If the pathology of vitiligo is carefully studied it will be noticed that there are marked inflammatory changes in the corium.

Clinically vitiligo and alopecia areata are not uncommonly associated, and several cases are on record where leucoderma preceded a dermatitis atrophicans; in fact, the inflammatory changes seen in a very early stage of skin atrophy are indistinguishable from those found both in vitiligo and alopecia areata.

There can be no doubt that these three diseases are due to some toxaemia, the nature of which we shall remain in the dark about until chemistry comes to fill the gaps which bacteriology cannot.

That vitiligo is of inflammatory nature is amply proved by the appearance of areas of leucoderma on a disappearing macular-syphilitic rash—the so-called leucoderma syphiliticum, a most useful diagnostic sign, especially in women, in whom the neck and anterior folds of the axillae become generally involved.

A depigmented area takes the place of the macule, and as it is not uncommon for a papule to develop in the centre of a macule, a hyperpigmented spot marks where it has been.

Inflammation, then, on the one hand causes a disappearance of the pigment and on the other an increase thereof.

Many assert that hyperpigmentation precedes leucoderma, but whether this is so or not is extremely difficult to say.

The pigment concerned is that found in the lowest layers of the epidermis—it is a melanin but not derived from the blood; on the contrary, it is manufactured by the epidermal cells themselves, and depends upon ferment action. Vitiligo must be regarded as a sign of toxaemia, probably caused by various toxins, some of which produce an inhibitory effect on the ferment action of the rete cells—leucoderma, some a stimulating—chloasma.

The change in the winter coat of animals has been explained by the phagocytic action of certain cells on the pigment. We know that the skin is being continually shed; there is a gradual transformation going on from the prickle cells of the Malpighian layer to the horny cells in the stratum corneum; what becomes, then, of the pigment in its upward progression? There is no evidence that it recedes to be digested by cells in the corium, but everything in favour of a chemical change and transformation into eleidin; therefore seasonal variation can be explained by a chemical alteration in the pigment formed, and an inability of the cells to produce more owing to the ferment action being inhibited by the change of temperature, etc. In some animals seasonal variation is due to a disappearance of certain structures. For instance, the lesser black-headed gull which frequents the Thames by London annually has when he visits us a white head caused by a falling off of the black tips of the white feathers, and these are not reproduced until after the moulting season.—I am, etc.,

J. E. R. McDonagh, F.R.C.S.

Harley Street, W., Aug. 2nd.

SHIP SURGEONS.

Sir,—Letters in the Journal of July 30th from Dr. P. Heywood Hadfield on "ship surgeons" and from Dr. Mark R. Taylor on "trade unions and sentiment" should surely be carefully read. They can hardly fail to have an excellent effect. In many ways, although written from an entirely different point of view, they bear each other good company. Every medical man ought surely to have some authoritative body to which he could look for help, "to help him earn his own living by guaranteeing fair pay for his work, and help him by preventing that

living being taken away by men using unfair means." In the case of ship surgeons this is most particularly required. Some authority ought surely to be able to check medical men from accepting posts as surgeons on ships either for no pay at all, or at any rate for pay which is nothing better than sweating. And what body would have so much authority as the British Medical Association?

Any one reading Dr. Hadfield's letter will realize that the work on board ship for a surgeon nowadays is no sinecure. There are men who for various reasons—often bad health—prefer earning their living afloat, but under the circumstances mentioned they often find it difficult to get a living wage. Twice last month I myself applied for a post as surgeon on a ship, and was offered £6 a month, which I, on principle, refused as inadequate remuneration. Yet on inquiry I found out that the posts were easily filled! Men accepting such pay are doing harm to the profession in bringing it into contempt, and their conduct is surely not far off unprofessional. Could not our powerful Association do anything in the matter? I might add that such men will, as a rule, not only accept such petty payment for their services, but will cheerfully accept accommodation on board which is inferior often to that supplied to very junior officers and engineers, to say nothing of the chief steward.

For obvious reasons I do not attach my name to this letter, but beg to enclose my card, and sign myself,

FAIRPLAY.

August 4th.

SANATORIUM TREATMENT OF TUBERCULOSIS.

SIR,—May I add a few words in continuation of my letter published in the JOURNAL of July 23rd? I quite appreciate the importance of what Professor Pearson has so often emphasized, namely, that in all controversial matters capable of being settled by statistical evidence the final appeal must be to the highly trained statistician, when he has gathered sufficient material upon which to base a conclusion, and no one will rejoice more than myself when reliable statistics upon the whole question of tuberculosis treatment are placed before the public.

The tabulated statement in my letter was not intended to be a complete statistical record. It would have occupied far too much space to have dealt with each individual case, giving age, sex, condition of life, etc., but all these points are fully set forth in our annual reports, which are open to any one's inspection. The sole object of my letter was to compare the results of treatment in pre-sanatorium days with those obtained by modern methods. The former, I admit, are difficult to arrive at, and although I have a certain amount of material at my disposal, I could not tabulate a statement that would be really satisfactory. That such results were very bad I have not a shadow of a doubt, but the statistician would naturally consider any such impression worthless when unsupported by figures. On the other hand, the statement of the results of our sanatorium treatment in Westmorland, so far as numbers allow, is as complete as it possibly can be, thanks to the painstaking accuracy of our Secretary, Dr. W. R. Parker.

Some recent letters have seriously questioned whether there was much, if any, superiority in sanatorium treatment over the old methods, and my condensed table, taken from our annual report (1910) was designed to show the present condition of all the "severe cases" (Class B) which have been admitted into the sanatorium from early in 1900 to the close of 1908. I venture to repeat that a record of over 60 per cent. of such patients reported as "quite well," and following their ordinary work, at a period varying from 5 to 9½ years after discharge, is a most satisfactory one. When pre-sanatorium statistics are forthcoming (if indeed it is possible to furnish absolutely reliable ones) I shall be much interested to see whether they can compete with these results. I have no column for "untraceable" cases in my table, because none such exist. I thought I had made it clear in my letter that not a single Westmorland case had been lost sight of, and this fact greatly enhances the value of the statistics.

Regarding "very advanced cases," is it very profitable to include such cases, when a fatal termination is practically a foregone conclusion, whatever be the treatment adopted? Is it not more to the point, when comparing the efficacy of two methods of treatment, to confine attention to cases where there is at least some hope of recovery? We ceased to tabulate these very advanced cases in 1907, and it may be interesting to quote from the annual report, January, 1908, in order to explain our reason for so doing:

> Henceforth details will be omitted of the very advanced cases, seeing that these have been admitted solely in the absence of a proper home, and, as was foretold from the beginning, no permanent benefit can be expected in them. Indeed, out of 68 such cases admitted during our first five years, only 8 still remain alive: 35 of these died within ten months of discharge, and very few lingered beyond two years.

It will thus be seen that there has been no wish on our part to suppress disagreeable figures in the annual reports. It was felt, however, that the publication, year by year, of the depressing results in connexion with a large class of patients like these, who ought never to be admitted into the ordinary sanatorium, might give a very wrong impression of the value of sanatorium treatment to the general public, who cannot be expected to differentiate between the various stages of the disease.

I rejoice to say that the much-needed home for such cases is now an accomplished fact, and was opened on August 4th for the reception of twenty-five patients.—I am, etc.,

WM. S. PAGET-TOMLINSON,
Honorary Treasurer, Westmorland Sanatorium.

Kirkby Lonsdale, Aug. 8th.

SIR,—An important point has been left in the background in discussing this subject. Statistical investigations on results of sanatorium treatment are of little value without an adequate classification of the cases concerned. It is conceivable that the recoveries after such treatment may be either much fewer or much more numerous than without it, according to the proportion of favourable cases received. It is improbable that the cases admitted into a sanatorium are a fair average sample of the total tuberculous cases in the community. A few sanatoriums, which make a rule of only receiving afebrile ambulant cases, will get, perhaps, 95 per cent. of immediate recoveries; whereas other sanatoriums, receiving patients of all degrees of curability, will possibly only be able to show 25 per cent. of immediate recoveries and proportionately less survivals later on.

It is exceptional for patients in England to stay long enough in a sanatorium to make recovery reasonably certain, so that sanatorium treatment only constitutes a small part of the treatment of "sanatorium cases," and its influence is proportionately less marked. Moreover, continued health after recovery from tuberculosis (whether in a sanatorium or out of it) depends on suitable conditions of life, which are not always possible, and this especially applies to those likely to seek admission to a sanatorium, since they are on the whole less robust than those who recover without sanatorium treatment.

One of the first requisites is an adequate classification of cases on admission, based on the chief points which concern prognosis. Most of the sanatorium and hospital statistics are based upon the anatomical extent of the disease, which, taken alone, is of little value. Were the more important factor of temperature always also taken into consideration, there would be a better chance of arriving at correct conclusions.

I would suggest a primary classification into afebrile, slightly febrile, highly febrile, and complicated, subdivided further, on anatomical grounds, as in Turban's scheme; and the limits of the primary classification might also be in accordance with Turban's indications. Comparing the results in each subdivision with one another, and with the total mortality, we should then see where prolonged sanatorium treatment is unnecessary, where it is curative, and where it is useless. Less discriminative statistics appear to me to be of little value.—I am, etc.,

F. RUFENACHT WALTERS.

Crooksbury Sanatorium, Aug. 8th.

SIR,—It is regrettable that Dr. Latham should write about the "conquest of consumption" by such a fallacious treatment as the so-called open-air treatment.

True, as Dr. Rentoul writes, "How many practical general practitioners would agree that the conquest of consumption was to be found in sanatorium treatment?" (July 16th, p. 176).

Since I wrote the letters in the Journal "The Sanatorium Treatment of Phthisis: Is it Worth While," (February, 1905), I have carefully followed the results of the open-air treatment, and in by far the greater majority of cases they are adverse to the patient. A well-known patient wrote to me stating, after being in three sanatoriums, he believed the patients for a time really believed they were better, but it was merely by "suggestion." The medical officers and nurses are so enthusiastic about the treatment that they believe themselves to have derived great benefits from it, but alas! after they have been home many weeks they relapsed into their former condition and often die.

I have tried numerous experiments with animals and birds, and they all seem to have a deep-rooted instinct to avoid cold damp air, especially night air. Why, therefore, should cold damp air be beneficial for miserable consumptive patients when human beings have the same instinct? I am a firm believer, from practical experience, in warm dry air, and I am now treating two patients through the sun rays. The instructions are to take every opportunity of warm dry air (cold dry air is also beneficial), but to avoid like poison cold damp air, especially night air.

I certainly should like to see my challenge acted upon, namely, to have 50 patients examined by impartial physicians, 25 placed in an ordinary open-air sanatorium, and 25 in a healthy dry place, where they could obtain every advantage of sunshine and warm dry equable air, but entirely prevented from exposure to cold damp air, especially night air. A three months' trial would be sufficient for an authoritative opinion of the cases. The medical and diet treatment to be the same in the two sets. It is unfortunate that the profession should have such a wide difference of opinion upon such a vital subject.—I am, etc.,

London, W., Aug. 6th. Thomas Dutton.

SICKNESS AND INVALIDITY INSURANCE.

Sir,—As you have honoured my communication of June 4th by quoting in your article, July 23rd, I enclose the last report of the National Deposit Friendly Society, and you will see that it is the *total* medical pay, even including fractures, operations, confinements, and consultations; and, as you say, it is "almost incredible" that there should be so much less "sickness" in a contributory society. Then, again, you will see in the report that this society has three days against sixteen days' "sickness." This is only partly explained by the fact that a considerable proportion of women belong who do not go "on the club."

Your 10½d. a visit or consultation (Contract Practice Report, 1905) applies only to adult males, and is above our experience, which was only 6d., which, I think, is nearer the true average. The Sheerness Benefit Society for men and families works out 3¼d. a visit or consultation and medicine.

Evidently such a striking discrepancy wants investigation and explanation; and I believe you will find the main factor the contributory system. The prolonged debate on the report of the Special Poor Law Committee at the Representative Meeting was chiefly on the principle of payment on the old club lines, to which there was considerable opposition, as one would expect, when on the top of the contract practice inquiry of 1902 to 1905, the Representatives in 1906 decided that "the Association should ultimately introduce a system of payment for work actually done."

I do hope the Divisions who have more experience of contract practice will be more consistent, and confirm the principle of payment for work done. It is not a question of profit but of principle, as I have had families contract with me at my own price for medical attendance and which gave satisfaction to neither party, and which I have ever since attended with mutual satisfaction.

I have not yet been able to see or hear of any insuperable difficulty in the administration of a contributory system, nor can I see, when the State introduces a contributory scheme of sickness and other insurance, why the principle should not extend to the payment for medical services.

It is the duty of the Government to favour any scheme that is just and economical, and tends to encourage thrift and self-respect.

The present contract system is improvident and tends to waste of time and service.

I admit the contributory system cannot apply to the destitute or pauper class, and, from what I learnt from Poor Law medical officers, I believe for many reasons they should be attended under the present system.

But the next class, which I call "the amphibious," should be helped, as eloquently pleaded for by Dr. Keay, especially in medical attendance, and it should be distinct from that of the pauper. This is important, as it is now the worst provided-for class in the country, living from hand to mouth, and which all surrounding circumstances combine to submerge and pauperize. This should not be impracticable, for in the Majority Report of the Poor Law Commission the eminent actuaries estimate that an annual payment of under 3s. 9d. would ensure a payment of 10s. 6d. a week for twenty-six weeks, and 7s. 6d. during the remainder of the illness up to 65. Now this is under 1d. a week, and medical attendance should cost less. Surely this could be done with three contributors—the State, employer, and the beneficiary always something if possible. If it amounted to 6d. a week it should cover sickness or unemployment insurance, and medical attendance of family, for some would have no families. There would be no difficulty about the regular wage earners.

Lastly, I should like to point out that medical attendance in most friendly societies is an optional and not an integral part of the benefits, and medical aid societies are simply co-operative or business machines for sweating medical men.—I am, etc.,

Sittingbourne, Aug. 7th. William Gosse.

Sir,—With the certainty in the no distant future that the Sickness and Invalidity Insurance scheme will be put into force in this country, it is most important that we should be fairly prepared to meet the exigencies of such legislation. Though the precise nature not even the promoters themselves may yet know, the broad features are well known to all, and it is very requisite, inasmuch as it affects the interests of the medical profession more than any body of the community, that some scheme should be devised that would meet the approbation of the majority of general practitioners, as this class of the profession will be most concerned in the new state of affairs. Now I think the correspondence on this subject in the Journal, and at the various meetings up and down the country, has proved conclusively that the propositions referring to a scheme of contract work, as suggested by the British Medical Association or its accredited advisers, though done with the very best intentions, do not commend themselves to the bulk of the profession; and it would be certainly most impolitic and wrong for an association which is supposed to represent the views and wishes of the medical man to promote a scheme which to say the least is distasteful to him, and one he is not wishful for, inasmuch as it is, after all, nothing more than the old club practice methods, dished up afresh, garbed in a little different dress, and clothed in words of a little different language, and called "contract practice," which for many years the general practitioner resented as being a disgrace to the honour and dignity of a noble profession, as placing him, in its particular methods of administration, in a serf-like position, out of which he has no escape and no redress. The wails and complaints of the club doctor in the past have been loud and many, and to perpetuate such an enormity of evil would be calamitous; and, speaking as one who has some twenty years of experience directly in connexion with so-called contract work, I can only corroborate the evils of club practice, and should condemn any scheme whereby it may be in any way continued; and if, as it has been suggested, we should have a referendum (which must be postal), I think it would elucidate the present state of affairs, but I would suggest that certainly at the same time of any proposals an alternate scheme should be presented to the members. The question will be asked, Is there any method by which it is possible to present to the profession some scheme which does not possess the defects of the contract practice principle and that will meet the approval of the majority of the profession, while at the same time fulfilling the requirements of the coming legislation? Of course with the co-operation of *all* the profession any scheme could be carried through, but we are desirous of creating

some reasonable proposal which will deal effectively with the medical dispensation of that particular class necessary to be catered for (which will be certainly not less than three-fourths of the whole community), and at the same time not be thought to be too arbitrary or despotic in its nature. Personally I should think it would be possible. It must be understood that whatever plan is proposed, it is requisite that it should be based upon the fact that the cost must be calculated as so much per unit of population—men, women, and children, each scale would be the same per head. Whether this is 4s. or 10s. per unit, must be for the profession to decide, derived from the experience of present Poor Law, friendly society, and other kindred practitioners. The scale of 4s. of friendly societies, of course, is of no real value, as these are a picked class. Again, statistics from the necessitous class will not be an altogether correct guide; but opinions and statistics from all sources must be to hand.

It may be assumed that the country will be divided into districts, varying as to size with the density of population, in each of which every medical practitioner who resided therein, and desired to be placed upon the staff, could act as medical officer to the particular class which the coming enactment provides for. For the points at issue, it would not matter whether these patients were treated at the doctor's surgery or at a public dispensary; he would see every first case of illness (presupposing that the out patient departments of hospitals were dispensed with and only accidents and referred cases treated), and deal with it as he thought fit. If it could be effectively treated at his surgery or at the patient's house, so be it; or if otherwise he would refer it to a charitable hospital for special nursing or operation as required, or to a State hospital, as the case called for; if an infectious case, tuberculous conditions included, to a municipal hospital or sanatorium; if mental or feeble-minded, to an asylum; and the truly necessitous and aged, and maternity cases really without means of sustenance, to a cottage home or infirmary provided for this purpose. All his cases would be booked in the usual way and a return sent to the official quarters periodically of all the professional work he had done during that time. The whole of the district having a certain amount of money at command, collected per unit, part or a whole, from employer and the State, and the individual per ratio, according whether it was a workman, a private individual, or a necessitous person, this amount so collected is paid out in full, after expenses are paid, to the medical men on the staff, according to the amount of work they have individually presented credentials for. Of course, the amount per visit, consultation, etc., would vary at different times, being less in busy seasons, with more professional work on hand, and more in slack season when it was less; but much or little, the attendant would have been paid for the work he had done to the full extent of the amount of funds available. Of course, in such a scheme as above outlined—imperfect in detail, owing to space—there would be considerable minutiae to be gone into, as being associated with several authorities, each of which would have to be considered; but these difficulties could, no doubt, be eventually overcome. This policy, though somewhat similar, materially differs from that of the National Deposit Friendly Society; while it acts admirably for its present purpose, it would not fulfil the requirements of a State medical service, inasmuch as there would be several departments, medical and financial, to be reckoned with, and we have seen from the German system and experience each department would require very careful revision.

In the aforegoing method we have the skeleton of a plan which would do away with the stigma of present-day club practice, and confer upon every practitioner a position of trust combining the different authorities, and obviate overlapping and waste in the prevention and treatment of disease. The question may be pertinently asked, Is the present general practitioner competent to effectively carry out such a plan? Certainly I should reply in the affirmative; he being a qualified and registered individual, has received the most exacting training and education of any profession in the universe; the greater the trust, the more the zeal; such a man would recognize the responsibility, and make himself equal to it, and his position of trust would be accepted by the public as his righteous due, and it would treat him accordingly. Again, there would be heads of departments directing their colleagues in the best possible way so as to effect a smooth and workable result, to bring about a successful and beneficent administration, so that whatever the general practitioner may lack in the early stages, in the end he would come out triumphant. But any scheme can only be perfect with the co-operation of all branches of the profession: let us hope that such may be the final issue, and that all engaged in serving the stern mistress Medicine must recognize that only by such means can they be successful.—I am, etc.,

Birmingham, July 25th. G. CLEMENT BELCHER.

*** Dr. Belcher has apparently overlooked Recommendation L of the Special Poor Law Reform Committee, which was approved by the Representative Meeting, and which was specially framed to provide for either system of payment—that is, either payment per head per year, or, if local medical committees so wish, payment for work actually done, which is the plan that Dr. Belcher prefers.

SIR,—Referring to your leader in the BRITISH MEDICAL JOURNAL of July 23rd regarding State Sickness Insurance, the following items show how in some respects the sickness returns of the National Deposit Friendly Society are less than those of some other large benefit societies.

(*a*) The members belong to a superior social class and live amid healthier surroundings.

(*b*) The society being a comparatively new one, its membership is still being largely augmented by the influx of young members.

The low rate pay per head to doctors is accounted for by the following additional reasons:

1. Because the members of the National Deposit Friendly Society belong also to the other benefit societies, from whose doctors they get medical attendance, no record of such medical attendance appears on the reports of the National Deposit Friendly Society.

2. Because whenever their deposit is exhausted—for example, by long illness—the members are out of all benefits unless they are recommended for "grace" pay, which soon becomes exhausted.

3 Because as the members pay a considerable per centage of the doctor's fee out of their own deposit and as they have the trouble of going to the secretary for a form to take to the doctor, (*a*) many consult the doctor before they get a paper, and such attendance cannot be recovered from the society, as the secretaries are not allowed to antedate the paper; (*b*) many never trouble to get a paper, and (*c*) many never get a second paper. (At the end of each month the paper for that month has to be sent to the secretary of the society.)—I am, etc.,

Southampton, July 26th. A. A. MACKEITH.

A DEFINITION OF INFLAMMATION.

SIR,—When I replied on July 23rd to Dr. Oliver's letter of July 16th it was not to open a long discussion. As to the definition itself, a much better reply than mine, and stating the case in a nutshell, came in the same number of the JOURNAL from Mr. Marcus M. Bowlan, who aptly quotes Burdon-Sanderson's epitome, practically identical with my own abbreviation, of his longer statement.

My object was first to notice Dr. Oliver's interest in a subject that does not receive much attention, but mainly to state the less importance of a definition, than of some insight into the process, of inflammation.

I still think Burdon-Sanderson's the only definition worth the name. The old Latin phrase, though called a definition in my first letter, is not really one at all, but a list of the symptoms of inflammation, thus:—*Notae inflammationis sunt quatuor: rubor, et tumor, cum calore et dolore.* Centuries of usage, with the striking brevity and jingle of the four nouns, will keep it alive; and many prefer it, in spite of some vagueness, to what I regard as the greater precision of Burdon-Sanderson's statement. The writers of most textbooks, so far as I have seen, do not attempt to define inflammation, but plunge at once into a description of its appearances according to their lights.

My own interest in a detailed definition did not arise until I noticed that of Burdon-Sanderson, which, as already said, seems to me both complete and exact, in spite of all words to the contrary.

John Hunter's account of inflammation has yielded to Lister's, and, except for historical purposes, the former need not be considered. Neither of these great observers has defined inflammation, and before Lister made his experiments he found that "so far from our knowledge of inflammation being in a satisfactory condition, authorities are at variance upon the fundamental question, whether it is to be regarded, in accordance with John Hunter's opinion (Palmer's Edition, vol. i, chapter xii, line 7), as active in its nature, and consisting in an exaltation of the functions of the affected part, or whether it should not rather be considered a passive result of diminished functional activity." (*Phil. Trans.*, part ii, for 1858, p. 645.)

"Having been called upon in the capacity of a teacher of surgery to attempt an explanation of the matter to others, I felt bound to do my best, by personal observation, to form a judgement for myself; and several new facts which I have unexpectedly met with appear to throw such fresh and clear light upon the nature of disease, that I venture to submit them to the Royal Society" (p. 647).

While thanking Dr. Kenneth Campbell for his courtesy, I do not claim authority for any opinion of mine unless it "has reason," as the French say, in which case it has the best authority, and "is right," as we say ourselves. Moreover, I regard the healing process as due in every case to inflammation, of which there may be every shade of degree.

It could serve no useful purpose to write here at greater length. I do not feel it to be the bounden duty of every student or practitioner to master these details, which I do not wish to force on the attention of any one. But I do feel it my duty to give opportunity for their study to all interested in and capable of it, who have to hear me.—I am, etc.,

Liverpool, Aug. 7th. RUSHTON PARKER.

TESTS FOR OCCULT BLOOD IN THE FAECES.

SIR,—In a paper which I recently contributed to the JOURNAL (July 2nd, 1910, p. 13) I gave the results of my experience of some modern methods of examining the faeces for occult blood, and pointed out the importance of such examinations in the diagnosis of malignant disease and ulcers of the gastro-intestinal tract, pancreas, etc. As a number of inquiries have been made as to the exact procedure to be followed in applying these tests, I propose briefly to describe the methods I employ in my laboratory.

1. *The Benzidin Test.*—A knife-point of pure benzidin (Merck) is dissolved in about 2 or 3 c.cm. of glacial acetic acid by gentle shaking. A small piece of the well-mixed faeces is then ground up with distilled water to a thin paste, placed in a test tube, which is plugged with cotton-wool, and boiled for about a minute. The contents are then diluted with an equal quantity of water and cooled. Ten to fifteen drops (1 c.cm.) of the benzidin solution are poured into a clean test tube, three to ten drops of the faeces added, and, after the two have been well mixed by shaking, 1 to 3 c.cm.—not more—of a 3 per cent. solution of hydrogen peroxide (H_2O_2) are added, and the contents of the test tube again well mixed by shaking. In the presence of blood a green, blue-green, or deep blue colour appears, the blue being more marked the larger the amount of blood present. Large quantities of blood show a reaction almost instantly; smaller quantities take from a quarter to half a minute, but even very small quantities always give a reaction within two minutes. A negative test gives no blue or green colour, which alone are characteristic, even on standing twenty-four hours. The quantities of the reagents must be carefully observed, and the test tubes and all other apparatus must be perfectly clean. It is to be noted that the following substances, besides blood, have been found to give a positive reaction with benzidin: oxidizing ferments, vegetable as well as animal, but these are destroyed by boiling, potassium iodide, animal charcoal, metallic iron, platinum, and copper (so that test tubes in which Fehling's solution, etc., have been boiled must not be used). Iron salts, pus, saliva, nasal secretion, bowel detritus, and mucus may also give a more or less marked reaction.

2. *The Aloin Test.*—About 5 grams of the mixed faeces are ground up with the distilled water until they are semi-fluid, and poured into a large test tube. The fat is then removed by shaking with an equal volume of pure ether and standing for fifteen to twenty minutes, when the ether separates out and can be poured off. The residue is mixed with one-third of its volume of glacial acetic acid and about 10 c.cm. of pure ether. The mixture is well shaken and allowed to stand for about fifteen minutes. Meanwhile the aloin solution is prepared. This is made by dissolving a knife-point of Barbados aloin in about 5 or 6 c.cm. of 70 per cent. alcohol, shaking, and allowing it to stand until clear. The acid-ether extract is poured off the faeces, and 2 or 3 c.cm. mixed with an equal volume of the clear yellow aloin solution, 2 or 3 c.cm. of old (ozonated) turpentine are then added, and the mixture gently shaken. In the presence of blood a pink, deepening to a cherry red, colour appears, either in the mixture as it is shaken, or in the aloin solution as it sinks to the bottom on standing. In well-marked cases of occult haemorrhage the characteristic cherry-red colour appears within a few seconds, in less marked cases it may take five or ten minutes to develop, but, as a red colour is apt to appear in all cases on standing for an hour or more, it is advisable to set a time limit of fifteen minutes, and to regard any reaction not appearing before the lapse of that interval as negative. The aloin solution must be made freshly for each test, as in time it assumes the red colour seen with blood. The turpentine should be old and should not have stood in the sunlight, as it may then give a reaction alone. It is best prepared by exposing pure turpentine to the air in large open vessels in a semi-dark cellar for several weeks.

3. *Guaiac Test.*—This test is performed as the preceding, except that a fresh solution of guaiac in ether is substituted for the aloin solution. In the presence of blood a blue colour appears, and is best seen in the hydrogen peroxide solution when it sinks to the bottom. The blue may be masked by the brown of the stercobilin of the faeces, and is then seen as an olive green or greenish purple.

The main disturbing factors in the aloin and guaiac tests appear to be fat, iron, and the chlorophyl contained in a richly vegetable diet. Carmine, too, is apt to interfere with the tests, so that it is best to avoid its use.

The guaiac and aloin tests are about equal in sensitiveness, responding to blood dilutions of 1 in 25,000. The benzidin test gives a reaction with 1 to 200,000 of blood. The benzidin test is to be recommended for routine work because of its simplicity and sensitiveness, but a positive result should always be controlled by an aloin or guaiac test, which, if also positive, give strong corroborative evidence. Since my paper was written I have examined over one hundred specimens of faeces by these tests, and further confirmed the reliability of the indications they give, and the soundness of the deductions which I then pointed out might be drawn from them.—I am, etc.,

London, W., Aug. 3rd. P. J. CAMMIDGE, M.D.

ETIOLOGY OF IRITIS.

SIR,—My own experience of this matter differs greatly from that of Mr. Kenneth Campbell, as set forth in his interesting letter in your last issue.

In the hurry of hospital work it is scarcely possible to study each case as carefully as one would wish; but in private practice one is able to examine a case minutely, and to make detailed notes at each visit, and to follow it to the end. It is safer, therefore, to disregard general impressions derived from hospital work, and to confine oneself to the data furnished by one's private case-books.

Mr. Campbell blames syphilis for 70 per cent. of all cases of iritis. I have found less than 30 per cent. of cases of iritis and irido-cyclitis in which there was any reasonable ground for suspecting syphilis as the cause. In considerably more than half of my cases the cause has undoubtedly been septic intoxication, for example, from constipation, "indigestion," putrefactive processes in the bowel, decayed teeth, suppuration in connexion with dead bone, etc., and the disease has only been cured after the removal of the cause. Mr. Campbell regards a case in which both eyes are affected as almost certainly syphilitic. I have several bilateral cases in which there was no possibility of syphilis being the cause.

Syphilitic iritis is usually a complication of the "secondary stage." When an intelligent man, who shows no reluctance to disclose the most intimate personal details,

assures one that he has not for at least four or five years exposed himself to the possibility of syphilitic infection, one may reasonably believe him. Again, many of my cases have been in girls and quite young women—overfed, slothful, constipated—in whom there could have been no reasonable suspicion of acquired syphilis.—I am, etc.,

London, W., July 27th. CLAUD WORTH.

THE CORONERS' LAW AND DEATH CERTIFICATION BILL.

SIR,—When I approach a member of the House of Commons with a request that he will oppose the present form of this bill I am at once met by the exclamation, "Why, it is brought forward by one of your own profession!"

That it should be so makes me feel that if the members of our own profession in the House are opposed to our interests, what hope have we, and what use is the British Medical Association?

But this matter is one that there is, at any rate, one method of dealing with effectually. I take it that every practitioner in the kingdom is opposed to giving the proposed new form of death certificate without a fee. Let us, with one accord, decline to do so. Let the House of Commons pass their precious bill in face of our protest, and let us for once show that we are a united profession to resist oppression. No one would suffer, since we need only cross out "and I have examined the body," giving the usual certificate.

It is time the Government were reminded that the worm will turn; without reference, I recall the following acts of oppression to our profession by the present Government.

1. The amended Vaccination Act. The Royal Commission recommended a fee of 3s. 6d. and permanent appointment. We get 2s. 6d. and monthly contract.
2. The Births Notification Act.
3. The proposed Act.

Would it require more than the threat of a united profession to get the bill altered? I am sure any one who has followed the course of the present Government will say, No.

Cannot the British Medical Association at once circularize all medical men to get an opinion as to whether they will take this—the only effectual form of resistance? Once show a bold front, and there will be no more oppression.

We cannot say, "If you don't support us we will turn you out"; but we can say, "If you don't pay us, we won't work"; and here at last is a chance which all of us are united in, at least that is the opinion of yours, etc.,

July 26th. UNITAS.

DISINFECTANTS IN THE TROPICS.

SIR,—In the BRITISH MEDICAL JOURNAL for March 26th, 1910, p. 753, the report of the paper read on disinfectants at the Society of Medical Officers of Health seems to indicate that the use of chemical disinfectants, at any rate by the general public, is not without its disadvantages. Perhaps, from the point of view of medical officers of health in England this may be so, but in tropical countries among ignorant and dirty people, and especially for the destruction of the numerous kinds of vermin capable of conveying infectious diseases, chemical disinfectants can be of great use.

Although the writer of the paper states that "the only rational use of disinfectants is in connexion with infectious fever," I think it may be possible to indicate other conditions and circumstances in which their use is quite as rational. I deal with the matter from the point of view of a medical man living in the tropics and the suggestions may be helpful to students of tropical medicine.

The reference to the "harm done by using disinfectants in earth closets, thereby preventing the bacterial action of the earth," cannot be allowed to pass unchallenged from our point of view. However well an earth closet in the tropics may be attended to, it is very difficult to keep flies away; earth may be heaped in, but one soon finds it moving with maggots. The flies that result do not leave the closet altogether free from contamination, seeing that they generally remain near where they were hatched for some little time. From there they may fly to the nearest kitchen or dining room! "The bacterial action of the earth" does not keep down flies, so one must use some other means. If one knew the breeding grounds of and could destroy the larvae of all the different kinds of flies that are known or supposed to convey diseases, a great advance would be made in preventive medicine. For the prevention of typhoid fever, dysentery, ankylostomiasis, and a host of other tropical diseases, I recommend as one measure the destruction of all larvae in closets. How is it to be done?

In typhoid and dysentery I prescribe a strong solution of creolin for continual use in the bedpans. I point out that there lies the danger, and that creolin will help to prevent the propagation of the disease. Keep a solution in the bedpan and let the patient evacuate into it. If you attempt to disinfect the stools afterwards, you will find that you have been forestalled by the flies, and at your next meal you will be ingesting what the flies have contributed to your table.

In cases of ankylostomiasis where, for example, a whole family is infected, I instruct the mother to make the children all defaecate into the same commode into which creolin has been poured, and teach her that in this way alone will her children be safe from fresh infection. I have sometimes recommended the mothers to pour boiling water on the stools; but, having remarked the wonderful activity of the flies and the probability of their conveying ankylostoma ova on their feet, I advise the use also of chemical disinfectants.

For the destruction of larvae of flies in earth closets I have used and recommended various methods—throwing in a spadeful of lime occasionally, pouring in a strong solution of creolin, lysol, or carbolic. These latter do not always destroy the larvae, and for this the cheapest way, where one uses a pail or other small receptacle, is to pour boiling water on the wriggling mass.

Again, what are we to use in the tropics for the destruction of fleas, chiggers, and other vermin if we are to be deprived of the use of "chemical disinfectants"? There are certain seasons of the year during which fleas and chiggers are much more abundant than at other times. If we accept the theory that fleas convey bubonic plague we must destroy the fleas. We have found no way of doing this nearly so effective as washing out the verandahs and rooms with a strong solution of creolin at least once a week. I have seen various cases of tetanus in children in whom the only evident wound of entrance was that caused by the removal of a "chigger." Prevent the propagation of chiggers and do away with one predisposing cause of tetanus.

How does the ankylostoma gain entrance into the human body? Whether it is by the mouth or through small wounds in the feet is of minor importance when compared with the knowledge of the fact that the ova exist in the dust about human habitations. Destroy the ova and thus prevent ankylostomiasis. Commercial creolin is very cheap, and there is no reason why the homes and haunts of ankylostomiasis patients should not be kept pretty well drenched with it.

Then, what shall we say of tuberculosis and leprosy? We cannot prevent tuberculous and leprous patients coming to our dispensaries and consulting rooms. How are we to guard against infection from these? The most evident way is by the use of chemical disinfectants. A leper with ulcerated feet walks into my consulting room, he spits on my floor, perhaps blows his nose on it! What is my evident duty to myself and to my family, and to my other patients? It is to disinfect chemically—as being the only means at our disposal—the area over which the leper may have left traces of his disease.

We have spittoons half filled with creolin, and notices posted asking the people to spit in them, but one cannot always prevent consumptives from spitting just where they stand or sit. How are we to destroy their infective sputum? I pour strong chemical disinfectant on it—what else can be done?

At least once a week I have my dispensary, consulting-room and verandahs flooded, drenched with solution of creolin. It has a pleasant odour, it is true, but it is not for that reason that I use a chemical disinfectant and teach the natives to use it. It is because it kills the fleas

and chiggers, and probably thus helps to prevent the propagation of the diseases mentioned.

Until some other means can be invented, I protest that in tropical climates for the prevention of typhoid, dysentery, ankylostomiasis, plague, tuberculosis, leprosy, we find the free use of chemical disinfectants invaluable.—I am, etc.,

J. W. LINDSAY, M.B.

Belén, Concepción, Paraguay, South America.

EPIGASTRIC PAIN AS A COMPLICATION OF MUMPS.

SIR,—I was much interested in the letter of Dr. Horace Godfrey in the BRITISH MEDICAL JOURNAL of July 23rd referring to epigastric pain and vomiting as a complication of mumps, for during a recent epidemic of mumps in this district I had noted similar symptoms to those pointed out by Dr. Godfrey in at least five cases which I had been able to follow up—namely, epigastric pain and vomiting, the onset in each case being some four and in one case seven days after the subsidence of the parotid swelling, the child in the interim feeling apparently quite well.

In all the cases there was a considerable rise of temperature (100° to 101° F.) with the onset of the vomiting, which in two cases was very severe for twenty-four and thirty-five hours respectively, food being vomited immediately it reached the stomach; the duration of the attack was from three to five days.

The three most severe cases were neighbours and playmates, a point of interest which may possibly suggest some greater virulence in the initial attacking organism.

From data obtained from parents, I should say that about 30 per cent. of those suffering from mumps during this epidemic have had similar symptoms to those recorded, all of which, to my mind, appears to confirm the suggestion of Dr. Godfrey that there is some metastasis to the pancreas or to the secreting glands of the stomach.—I am, etc.,

MABEL RUSSELL, M.B., B.S.Lond., D.P.H.Camb.,
School Medical Officer to Borough of
August 3rd. Bromley, Kent.

AUSCULTATION OF THE ABDOMEN.

SIR,—I do not imagine very many members of the profession auscultate the abdomen as a routine in examining patients with abdominal symptoms, but I think this is a mistake, as valuable information can be obtained by doing so. In many cases of obscure abdominal pains, sometimes with a rise of temperature and slight tenderness over "McBurney's spot," it is difficult to decide whether there is or is not any peritoneal trouble. But if the abdomen is auscultated and the usual and familiar gurgling is heard all over the area, it is almost certain (even if there *is* a rise of temperature) that there is no implication of the peritoneum.

On the other hand, if over any area there is an absence of the usual sounds, a very careful diagnosis and prognosis should be made, and all symptoms, besides the physical signs, taken into account.

This sign is, I believe, called "Lockwood's sign," and it has been so helpful to me for some years past that I venture to bring it to the notice of those members of the profession who may not hitherto have tested it.—I am, etc.,

DIGBY MACPHAIL, M.B., C.M.Glasg.

St. Lucia, B.W.I., July 25th.

AUSCULTATORY PERCUSSION.

SIR,—Dr. Hertz gives a drawing of the area of the stomach as determined by means of auscultatory percussion by himself and two others. According to this, one half of the organ lies to the right of the median plane (extending, apparently, to the right edge of the trunk) and a considerable distance above the umbilical plane. As this region is that entirely occupied by the liver comment is needless.—I am, etc.,

A. G. AULD.

London, W., July 25th.

A CORRECTION.

IN the letter entitled "Ship Surgeons" from Dr. John F. Elliott, which was published in the JOURNAL of August 6th, the words "offending the susceptibilities of the shipping companies," which occur in the last two lines of the fifth paragraph, should not have been in inverted commas.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have been approved for the diploma in ophthalmology:

P. E. H. Adams, M. E. D. Allen, J. Burdon-Cooper, A. B Cridland, E. J. Curran, H. A. J. Gidney, F. A. Newman, S. Stephenson R. G. Waddy.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examinations indicated:

FIRST M.B.—A. W. Adams, ‡B. P. Allinson, D. Aucutt, A. R. Balmain, H. E. Bamber, *F. G. L. Barnes, S. Batchelor, ‡M. S. Beaumont, C. S. Beyers, D. A. Blount, *A. L. Blunt, Margaret S. G. Bott, F. H. Bray, M. C. Breese, C. M. Brophy, J. E. Clark, Lilian A. Clark, Mabel C. Clark, P. C. P. Cloake, B.Sc., W. E. K. Coles, *C. Cooke, C. J. C. Cooke, A. W. A. Davies, P. G. S. Davis, A. D. d'Avray, J. N. Deacon, Grace M. Denham, C. R. Denny, R. W. D. C. Easom, J. A. W. Ebden, H. Ellis, J. Fanstone, I. Feldman, H. R. Friedlander, D. H. A. Galbraith, E. D. Granger, A. E. Gravelle, H. S. Griffith, Grace M. Gulston, *‡E. F. Guy, S. A. Hall, F. J. Hallinan, ‡Norah Hamill, R. M. Handfield-Jones, A. G. P. Hardwick, C. E. Harrison, Jessie E. Hart, F. K. Hayman, H. F. T. Hogben, W. A. Hotson, W. V. Hughes, R. N. Hunter, G. M. Jackson, L. P Johns, Hilda G. Johnson, Mary E. Joll, C. O. H. Jones, R. T. Jones, S. W. Jones, T. A. Jones, G. M. Kendall, N. E. Kendall, R. Kerr, B.Sc., J. Kyle, W. M. Lansdale, E. A. Leviseur, H. J. Leviseur, *‡G. C. Linder, E. R. Lovell, ‡Helen M. M. Mackay, S. S. Malkani, P. S. Marshall, A. Menzies, D. Menzies, V. M. Métivier, D. G. F. Moore, J. B. Mudge, Violet Newmarch, ‡W. H. Nicholls, Kathleen H. Parkinson, O. Parry-Jones, Margaret R. Paterson, A. H. Pemberton, A. C. Perry, L. E. Pimm, Mary C. Poonen, C. L. G. Powell, A. L. Punch, K. N. Purkis, J. B. Rawlins, Violet Ione Russell, P. Sai, B. Sampson, E. A. L. Sansom, S. K. Sanyal, F. H. A. Sayed, J. E. Scanlan, Hilda M. Scarborough, C. J. H. Sharp, Edith A. Shaw, B. B. Silcock, A. G. Simmins, J. F. H. Stallman, J. G. Stevens, T. C. Summers, G. T. Symons, E. W. Tait, *W. E. Tanner D. G. C. Tasker, L. H. Terry, J. O. Thomas, R. R. Thompson, H. C. C. Veitch, G. M. Vevers, Katharine A. Waring, C. J. B. Way, H. Wearne, C. M. Williams, L. H. W. Williams, H. Williamson, J. M. Wyatt, C. F. B. Wyborn.

Under Old Regulations.—J. W. Heekes, J. A. Pridham.

* Distinction in Inorganic Chemistry.
† Distinction in Physics.
‡ Distinction in General Biology.

M.D. BRANCH I. (*Medicine*).—M. Bannister, B. H. Barton, J. Cameron, E. C. Hadley, C. E. K. Herapath, J. E. Lane-Claypon, D.Sc., E. G Mack, J. Parkinson, P. Rees, B.Sc., L. J. Short.

M.D. BRANCH II. (*Pathology*).—J. A. B. Hicks.

M.D. BRANCH III. (*Mental Diseases and Psychology*).—A. T. W. Forrester.

M.D. BRANCH IV. (*Midwifery and Diseases of Women*).—Alice M. Benham, Rhoda H. Butler, T. C. Clare, D. W. Daniels (University Medal, St. Mary's Hospital), Eleanor Davies-Colley, E. E. T. Nuthall, F. G. Sergeant.

M.D. BRANCH V. (*State Medicine*).—A. H. G. Burton, J. A. Milne, A. T. Nankivell (University Medal, King's College and St. Bartholomew's Hospital), F. A. Sharpe, C. O. Stallybrass, C. G. Welch.

M.D. BRANCH VI. (*Tropical Medicine*).—J. McF. W. Pollard, H. J. Walton (University Medal, St. Bartholomew's Hospital and London School of Tropical Medicine).

M.S.—E. T. H. Davies, M.D.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examinations indicated:

SECOND M.B., CH.B.—B. G. Derry and A. G. Hieber.

FINAL M.B., CH.B.—C. W. J. Brasher, A. L. Flemming, V. B. Green-Armytage, W. W. King, †S. H. Kingston, L. A. Moore, L. N. Morris, F. C. Nichols, J. W. Taylor.

† Part I only.

UNIVERSITY OF EDINBURGH.

MEDICAL GRADUATION.

THE medical graduation ceremonial took place on Friday, July 22nd, in the McEwan Hall, the Vice-Chancellor (Principal Sir William Turner) presiding. The following degrees were conferred:

M.D.—*A. R. Bearn, *R. A. Campbell, S. G. Corner, M.A., C. S. Crichton, C. H. Derksen (*in absentiâ*); *R J. Dick, *M. Douglas, (M.A.), J. Dunbar-Brunton, (*in absentiâ*); J. Dunbar, *A. L. Dykes, A. Fleming, *W. E. Foggie, M.A., S. Forest, M.A. (*in absentiâ*); *N. C. Forsyth, W. D. Forsyth, M. S. Fraser, **R. S. Frew, T. Gardner, Jessie H. Gellatly, **G. H. R. Gibson, H. J. Glover, (*in absentiâ*); *A. S. Gordon, *W. L. Gordon, *P. Gorrie, J. G. Graham, I. M. Grant (*in absentiâ*); F. G. Harper, R. C. Jameson, **R. H. Jamieson (*in absentiâ*); W. W. Johns, **T. Johnston, J. E. Kuhne, H. R. Lawrence, S. B. Legge, W. Lilico, ***G. C. Low, M.A., T. Lyon, ***W. K. Macdonald, J. E. Mackenzie, *R. E. M'Laren, *J. N. M'Laughlin, *A. C. B. M'Murtrie, *J. Mathewson, M.A., H. J. More, M.A., R. H. Morrison (*in absentiâ*), *W. C. Morton, M.A., *R. E. Moyes, E. Muir (*in absentiâ*), *J. G. P. Murray, W. D. Osler, J. H. Peek (*in absentiâ*), *E. L. Phillips, W. E. Reynolds, *R. M. Robertson, ***W. M. Scott, E. S. Simpson, E. D. Smith, ***R. A. van Someren (*in absentiâ*), *W. S. Stevenson, H. M. Stumbles, **H. F. L. Taylor, M.A. (*in absentiâ*), J. C. Tennant, M.A., *L. H. F. Thatcher, E. G. Thomas, G. R. Twomey, A. A. Walbrugh (*in absentiâ*), *G. F. C. Wallis, ***W. H. Welsh, **H. L. W. Wemyss, J. R. Williams, *A. G. Yates, M.A., ***J. Young.

C.M.—**J. Fraser.

*** Awarded Gold Medals for their Theses.
** Highly Commended for their Theses.
* Commended for their Theses.

M.B., CH.B.—**P. Allan, **R. M. Allan, F. G. Bell, O. H. Blacklay, J. G. Boal, H. R. Borcherds, C. J. G. Bourhill, **J. C. Brash, M.A., B.Sc., F. S. Brennan, G. S. Brock, *J. F. Brown, G. R. Bruce, M.A., J. le F. C. Burrow, G. D. Cairns, E. H. Cameron, A. Campbell, W. W. Carlow, M.A., G. J. Carr, W. D. Chambers, M.A., A. Cochrane, J. Daneel, W. Darlington, Lucy E. Davies, Jemima B. Dickie, **M. R. Drennan, M.A., **J. Drummond, Isabella G. Emslie, W. J. Feltham, E. L. Ferguson, F. P. Fouché, **F. R. Fraser, B.A., C. Gamble, Annie C. Greenep, E. B. Gunson, E. S. B. Hamilton, D. S. Harvey, W. R. C. Heslop, D. van V. Hoffman, J. Honeyford, A. Hood, A. J. G. Hunter, J. Hunter, G. J. Joubert, J. C. J. Khambatta, J. St. P. Knight, Lina Kurz, E. C. Lang, D. T. M. Large, *R. S. Lawson, M.A., Janet Leiper, J. J. Levin, L. A. Lewis, J. P. Litt, J. M. Logie, **D. M. Lyon, W. C. Lyons, W. G. M'Afee, J. C. MacCallum, M.A., K. B. MacGlashan, E. C. Mackay, M.A., J. M'P. Mackinnon, P. W. Maclagan, K. A. Maclean, Mary Macmillan, W. M'Naughton, D. F. Macrae, N. F. Mann, V. P. Mondon, B. B. Morgan, A. A. Morison, D. M. Morison, M. M'L. Morrison, O. A. J. N. Muriset, W. P. Murray, H. G. G. Nelson, P. J. Olivier, H. F. Panton, Dora E. Paterson, W. C. Paton, M.A., J. F. Penman, A. Z. Philips, L. T. Poole, A. H. Porter, S. P. P. Proctor, S. H. Pugh, N. Purcell, A. W. Rattrie, W. D. Reid, D. T. Richardson, A. G. Ritchie, J. Robertson, Lizzie Rose, W. Russell, T. M'C. Sellar, W. A. Shafto, Daisy L. Shawyer, F. M'E. Sinclair, D. R. B. Sivright, K. F. Sonntag, G. H. Stevenson, J. D. G. Stewart, J. Taylor, H. C. Todd, W. A. Todd, J. J. Tough, **C. B. Tudehope, R. C. Wallace, A. M. Warwick, J. C. Watson, W. G. Waugh, M.A., W. L. Webster, H. J. G. Wells, S. H. Wilkinson, G. A. Wyon.

* First-class honours. ** Second-class honours.

B.SC. IN PUBLIC HEALTH.—K. Nehru, M.B., Ch.B., R. S. Williams.

The diploma in Tropical Medicine and Hygiene was conferred on John Scott, M.B., Ch.B. (with distinction), and on Adam White, M.B., Ch.B. (*in absentiâ*), and the following Scholarships and Prizes awarded:

The *Cameron Prize in Therapeutics* to Professor August Bier, for his important additions to Practical Therapeutics embodied in his work on Spinal Anaesthesia, and on Hyperaemia as a therapeutic agent; the *Syme Surgical Fellowship* to W. K. Macdonald; the *Ellis Prize in Physiology* to R. A. Krause; the *Gunning Victoria Jubilee Prize in Surgery* to J. Fraser; the *Anderson Henry Prize in Botany* to Bertha Chandler, M.A.; the *Ettles Scholarship* to F. G. Bell; the *Allan Fellowship in Clinical Medicine and Clinical Medical Surgery* to J. Drummond; the *M'Cosh Graduate's and Bursaries* to R. M. Allan; the *Beaney Prize in Anatomy and Surgery* to A. A. Morison; the *Mouat Scholarship in the Practice of Physic* to J. C. MacCallum; the *Conan Doyle Prize* to C. J. G. Bourhill; the *Annandale Gold Medal in Clinical Surgery* to J. J. Tough; the *Buchanan Scholarship in Gynaecology* to M. R. Drennan, M.A.; the *James Scott Scholarship in Midwifery* to K. B. MacGlashen; the *Dorothy Gilfillan Memorial Prize* to Lina Kurz; the *Pattison Prize in Clinical Surgery* to J. C. Booth; the *Wightman Prize in Clinical Medicine* to W. D. D. Small.

In presenting the Cameron Prize to Professor August Bier, Berlin, Professor Sir Thomas Fraser said that as chairman of the Cameron Prize Committee he had the honour to present Professor Bier, the distinguished surgeon of Berlin, and Professor of Surgery in the renowned University of that city. With much originality of conception Professor Bier had devised new methods and improved existing methods for the prevention of pain by local anaesthetics. In a lecture which he recently delivered he had favoured the university with a most interesting description of the last development of his researches, whereby, by reducing the blood supply in a limited part of the body, the production of local anaesthesia was more rapidly and completely effected than it otherwise could be. The broad result of Professor Bier's work was a great improvement in the methods by which pain-perception in a limb or part of a limb may be suspended. By his method it may be suspended so completely as to allow even the most serious operations to be performed without any suffering and without the necessity of inducing unconsciousness or general anaesthesia, with its well-known risks and dangers. These valuable achievements constituted the grounds on which the Senatus had awarded the Cameron Prize in Therapeutics to Professor Bier. It was a prize which was offered by the university, without distinction of race or country, or even of profession, to the benefactor of mankind who had devised, in the preceding five years, some highly important advancement in therapeutics. Using the word "therapeutics" in its widest sense to imply anything, within the range of the healing art, that constituted a means of preventing or curing disease—whether medical or surgical, or any other variety of it—the previous recipients of the prize included men famous in several departments of science, and such notable benefactors of the human race as Pasteur, Lister, Ferrier, Horsley, Behring, MacEwan, Colonel Bruce, Major Ross, and Finsen. They were much gratified to add the name of Professor Bier to the list, and thus to bring him into close and especially honoured association with the University of Edinburgh—a university which had already taken a great and memorable part in the introduction of anaesthesia for the mitigation of human suffering.

Professor F. M. Caird then gave the usual Promoter's address to the graduates.

UNIVERSITY OF ST. ANDREWS.

THE following candidates have been approved at the examinations indicated:

THIRD M.B., CH.B.—S. D. Craig, Margaret C. Ferrier, D. D. MacKay, G. B. Salmond, W. A. Young.

FINAL M.B., CH.B.—*R. Davidson, W. Johnston, L. A. Moncrieff, Mary Murray.

* With distinction.

QUEEN'S UNIVERSITY, BELFAST.

THE following candidates have been approved at the examinations indicated:

FIRST M.B. (*all subjects*).—W. K. Campbell, *A. Fullerton, C. M'N. M'Cormack, *a* *E. B. C. Mayrs, *d* *G. R. B. Purce, Elizabeth M. Robb, *b* *J. Tate, *c* *O. Wilson.

* Honours. *a* First Scholarship. *b* Second Scholarship. *c* Third Scholarship. *d* Fourth Scholarship.

Physics.—H. Moore.

Chemistry.—A. Black, R. G. Blair, H. M. Coulter, F. J. Devlin, E. Doherty, J. Duffin, Margaret Gorman, T. Grimson, W. H. Hardy, W. S. B. Hay, Mary M. Keirns, J. J. Kerr, B. Lyons, J. M. M'Cormack, W. T. M'Curry, J. R. M. Mackenzie, F. M'Kibbin, R. N. M'Kinstry, T. P. M'Quaid, E. A. Mallon, J. O'Connor, G. W. Rea, J. C. Robb, J. S. Savage, A. F. L. Shiels, F. A. E. Silcock, F. G. Smyth, P. P. Wright.

Zoology.—S. T. Alexander, A. W. Bourke, A. E. M. Carleton, W. J. Carson, H. T. Chatfield, W. M'N. Chesney, R. Coudy, H. M. Coulter, J. Cullenan, C. F. Davey, W. W. Dickson, J. W. Donald, D. Gaston, M. Gilligan, G. Gordon, C. C. Humphries, J. F. D. Hunter, D. Jamison, Mary M. Keirns, W. J. Lascelles, J. M. M'Cormack, J. M'Kay, J. R. M. Mackenzie, H. F. M'Nally, H. Moore, J. O'Connor, M. G. Paul, W. Russell, J. Smyth, J. K. Stewart, D. B. L. Walker, D. Watterson, N. W. F. Wheeler, R. H. Wilson, W. R. E. Wilson, A. A. Woods.

Botany.—R. G. Blair, A. W. Bourke, W. J. Carson, H. T. Chatfield, W. M'N. Chesney, R. Coudy, J. Cullenan, F. J. Devlin, W. W. Dickson, E. Doherty, J. Duffin, D. Gaston, M. Gilligan, Margaret Gorman, T. Grimson, W. H. Hardy, W. S. B. Hay, J. F. D. Hunter, D. Jamison, Mary M. Keirns, W. J. Lascelles, B. Lyons, J. M. M'Cormack, W. T. M'Curry, J. M'Kay, T. B. M'Kee, F. M'Kibbin, R. N. M'Kinstry, H. F. M'Nally, T. P. M'Quaid, E. A. Mallon, Sylvia Marsh, E. B. C. Mayrs, J. J. Murray, J. O'Connor, M. G. Paul, G. W. Rea, J. C. Robb, J. S. Savage, A. F. L. Shields, F. A. E. Silcock, F. G. Smith, J. Smyth, J. K. Stewart, D. B. L. Walker, J. C. Wilson, R. H. Wilson, W. R. E. Wilson, F. N. Woods, P. P. Wright.

SECOND M.B.—F. L. P. Bennett, W. W. Blair, W. A. L. Dunlop, J. M'K. Ferguson, S. Geddis, T. W. G. Hogg, G. D. Latimer (scholarship of £15), J. B. Lyle, W. J. M'Cracken, J. J. H. Mitchell, M. Neilson, *R. L. Rea (first scholarship, £40), Edith Robinson, *T. Walker (second scholarship, £30), T. H. Wilson.

Physiology.—T. M. Adamson, D. M. Clements, J. E. Finlay, W. M'Dermott, E. U. MacWilliam, S. E. Picken, H. R. Sinclair.

THIRD M.B. (*Old Regulations*).—P. A. Clearkin, *T. F. S. Fulton (prize of £10), *N. B. Graham (prize of £10), W. M. O'Farrell. *Anatomy and Physiology*.—H. A. Gillespie, L. D. J. Graham, J. V. Holmes, Hugh A. Skillen, James R. White. *Anatomy only.*—G. E. Hull. *Materia Medica.*—S. Armstrong, S. H. Davidson, J. M. Gibson, J. R. Henry, F. Jefferson, S. M'Comb, J. M'Fadden, R. C. M'Millan, M. M'Ging, E. M'Sorley, I. W. Magill, W. M'N. Walker.

THIRD M.B. (*New Regulations*).—W. K. Calwell, *G. Cooper (first scholarship, £40), *F. Crooks (second scholarship, £30), T. D. Graham, W. S. Haydock, B. C. Letts, W. M. Millar, W. Paul, W. O. Wilson, F. J. Wiseley. *Medical Jurisprudence and Hygiene.*—D. R. Acheson, J. S. Bellas, J. L. Brown, E. S. Dixon, H. Emerson, T. H. Houston, R. M'Culloch, W. Megaw, J. Patrick, S. J. Turkington, W. Wilson. *Pathology and Hygiene.*—E. Morrison. *Pathology.*—J. F. Craig.

FINAL M.B., B.CH., B.A.O.—H. Black (first class honours, special scholarship in medicine, £30), V. L. Connolly, F. P. Ferran, R. A. Kerr (first class honours and first scholarship, £20, and special scholarship in midwifery, £30), S. K. M'Kee, T. P. M'Murray, H. D. Manderson, C. I. Melvill (second class honours, and special scholarship in surgery), C. J. Simpson, W. Stevenson, R. S. Taggart, R. W. Vint. *Pathology, Medical Jurisprudence and Hygiene.*—P. J. Gaffikin, G. S. Glass, R. J. M'Feeters, U. J. G. Mulligan, E. F. Ward. *Medical Jurisprudence and Hygiene.*—W. Boyd.

M.D.—Marion B. Andrews, D. J. Collins, J. S. Dickey (gold medal), S. Hamilton (with commendation), R. F. Kennedy (with commendation), H. M. M'Crea, E. H. M. Milligan, W. A. M'Kee.

D.P.H.—W. Burns, W. Godfrey, B. O'Brien, J. Shaw, A. Trimble.

* Honours.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved at the examination indicated:

D.H.P. (*Final*).—A. Barber, T. D. C. Barry (Lt.-Colonel I.M.S.), Kul Bhûsan, R. Cameron, W. H. Cazaly (Capt. I.M.S.), J. T. Clark, J. K. P. Clarke, J. C. Craig, J. Findlay, J. N. Griffiths, A. H. Hayes (Capt. R.A.M.C.), H. Holroyd, S. K. N. Kabraji, R. C. Leaning, Helen N. Payne, J. Rose, E. D. Shroff, A. C. H. Suhr, C. Trivedi, A. C. F. Turner, Alice M. Van Ingen, J. Walker, Hilda K. Whittingham, A. C. Williams.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FIRST FELLOWSHIP.—H. J. Cotter, J. O'B. Hodnett, A. A. McConnell, W. Pearson, S. B. Surti, I. M. Swanepoel, Miss K. Wall.

FINAL FELLOWSHIP.—V. J. McAllister, A. E. S. Martin, H. S. Meade, E. Montgomery, W. Pearson.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—*T. L. Enright, R. A. Austin, W. P. Cooney, F. J. Cronin, J. Dwyer, O. Farrelly, M. Fitzgibbon, W. A. N. Fox, J. J. Gray, J. Hegarty, J. Lanigan, W. J. A. Laird, M. J. Loftus, F. J. McKeon, R. McGrath, W. G. D. McCall, A. McCawley, A. Merrin, D. Mullin, J. A. Musgrave, L. S. O'Grady, P. J. O'Malley, G. W. Pope, G. M. C. Powell, T. H. Sarsfield, M. Shipsey, N. A. K. Sparrow, C. J. Stack, W. S. Sullivan, M. F. R. Welphy.

Second College.—*H. A. S. Deane, *T. R. Elliott, *B. Goldberg, *K. McGrath, *J. F. S. Magner, R. J. May, *G. E. Pepper, R. J. Aherne, W. D Beamish, P. D. Daly, J. P. English, J. J. Elliott, R. Green, M. B. Gunn, A. Humphreys, T. C. Dillon Kelly, M. P. Leonard, J. D. MacCormack, D. A. MacErlean, F. T. McKenna, P. M. Moriarty, D. O'Carroll, J. O'Driscoll, T. Sampson, R. Slaney, T. S. Smith, G. N. Smyth.

Third College.—*M. J. Hillery, J. C. Attridge, D. Burns, W. H. Condell, A. H. Crowly, N. S. Deene, T. Dowzer, S. Griffin, J. Good, W. H. Johnston, C. W. Joynt, T. Kennedy, P. McCartan, B. Murphy, L. J. O'Donovan, D. P. H. Pearson, T. P. H. Roberts, M. V. Sexton, W. Waugh, A. Wiley, V. J. White, G. Young.

Final.—M. M. S. Coghlan, M. Drummond, C. A. Farrell, A. Foley, J. M. Gage, F. J. Graham, J. P. Johnston, W. V. Johnston, J. Mitchell, H. H. Montgomery, P. T. J. O'Farrell, M. C'Brien, M. F. O'Hea, J. Patten, J. S. Pegum, C. D. K. Seaver, T. Sheedy, J. P. Shorten, R. White.

D P.H. (*Both Parts*).—*D. Alexander, T. Sabastian, Thomas Fehily, H. R. Gogte, R. T. Herron, O. G. F. Luhn, J. R. Shaw, G. F. Shepherd, S. B. Surti, W. R. Wilson.

* With honours.

APOTHECARIES HALL OF IRELAND.

The following candidates have been approved at the examinations indicated:

First Hall.—J. Curran, M. B. Kennedy, D. J. Chadwick.
Third Hall.—Marie Meady, L. A. Hynes.
Final.—J. V. Pestana, W. S. Devoux.

Medico-Legal.

WORKMEN'S COMPENSATION ACT.

Objections to Examination.

In the Westminster County Court on August 3rd Judge Woodfall heard an application from the London County Council for a stay of proceedings and compensation in a case in which the injured workman had refused to submit to medical examination.

On the workman's behalf it was argued that this was an incorrect statement; he was ready to submit to a fair examination, but if the examination was to be conducted by Dr. Collie it must take place at the office of the workman's solicitors and in their presence. This, it was urged, was a legitimate stipulation to make, because his legal representatives had evidence that Dr. Collie behaved with brutality, and called those whom he examined malingerers and lazy.

The workman's solicitor, giving evidence, stated that for some years he had objected to Dr. Collie on account of the way he treated claimants; he shouted at them and frightened them so that they could not tell from what they were suffering. He was not the only solicitor who took up this position.

The workman, giving evidence, stated that Dr. Collie had told him not to wear the bandage he had on his leg, and made him walk without his stick. He spoke very sharply, and would not allow the witness to speak. He would refuse to be examined by Dr. Collie any more, even if his solicitors were present.

Dr. Collie, in answer to questions put to him by the judge, stated, as a member of the medical profession, its objections to laymen being present at examinations. The presence of the solicitor embarrassed both patient and doctor. Whenever he chose, he objected to questions asked, and told the patient not to answer them. This roused a spirit of antagonism between the patient and the doctor, with the result that the doctor felt that he was trying to extract information from what practically amounted to a dumb man. The doctor, feeling that objection might be taken at any moment to questions put by him, felt his power of diagnosis paralysed. A solicitor's office was not a place for a medical examination; there were no facilities for the work, especially when the condition of individual organs and the settlement of fine points were in question. On one occasion a solicitor had insisted on being present, even when the patient was a woman.

The judgement delivered by Judge Woodfall was to the effect that he had no evidence on which he could say that the workman concerned in the case had, apart from personal dislike, any reason to refuse to be examined by Dr. Collie. Dr. Collie had given evidence before him in many cases, and in many of those his evidence had been very damaging to the workmen concerned in them. But he had only given his medical opinion, and what the court had to consider was whether he acted fairly as a medical man. If a doctor asked questions as to what compensation a man would take he would be going beyond his duty, but there was no evidence whatever that Dr. Collie had ever done this, or had asked questions with a view to settling what compensation a man was to have. It had also to be considered whether the workman concerned in the case had been unusually obstructive. In giving evidence on his own behalf he said that Dr. Collie spoke very sharply to him. That was very likely, for Dr. Collie's manner was perhaps peremptory; but why should it not be so? He also complained that Dr. Collie had told him not to use his stick. That was Dr. Collie's opinion: it might be wrong and the workman might feel that he could not get along without his stick. But there was no ground whatever to say that it was not an honest opinion. Dr. Collie also told him to leave his bandage off. The same considerations again applied. The workman said that he did not care to leave his bandage off, and that he would not do it whatever medical man advised him to do so. But again it was a matter of medical opinion. All these facts offered no ground for saying that Dr. Collie was unfair in his examinations, or that the workman was justified in refusing to be examined by him. It would be going a very long way to say that on such grounds the London County Council was not to have the services of its medical officer, a man of great skill. It was entitled to his services, and the court could see no just cause or reason for the workman refusing to be examined by Dr. Collie.

As for the question of whether examinations should take place in the presence of laymen, it was a preposterous thing to suggest that a layman should be introduced at a medical examination. Dr. Collie had given evidence to the effect that the making of examinations of patients before laymen was contrary to the feeling of the medical profession and to its ideas of what was right, and though he was the only medical man who had given evidence on the point, that evidence was upborne by the experience of laymen themselves. The idea of having a layman present seemed to the court to be open to every objection and contrary to general experience when medical men were consulted by laymen on their own behalf.

It was said that the workman must be protected, but the Act fully protected him, since it made it legitimate for him to have his own medical man present if he liked. The Court could not entertain objections on the ground that the doctor might be young and be overwhelmed by the presence of a senior. It must assume that he would be a properly qualified medical man. Hence, if in these circumstances the workman concerned in the case still persisted in refusing to be examined by Dr. Collie, the court must accede to the application and stay the proceedings, including the right to compensation.

A further reference to the case appears at page 393 of this issue.

Rupture of Heart.

Sheriff Boyd, Glasgow, has awarded £280 as compensation in an action under the Workmen's Compensation Act by Mrs. Jackson and her daughter, against the Scotsburn Estate Company, in respect of the death of the husband and father, who was in the defender's employment. In October, 1908, while Jackson was engaged in carrying joists, on a day which was hot and oppressive, he fainted and fell to the ground. Death took place shortly afterwards in his own home, and was found to be due to a rupture on the left side of the heart, caused by the strain resulting from the work in which he was engaged.

The only comment in this case which seems to be called for is that it is imperative on employers of labour, in order to safeguard themselves against being mulcted in heavy damages, to have their employees medically examined at stated intervals, especially workmen who are over 50 years of age.

Recent decisions under the Workmen's Compensation Act seem to prove that nearly every ailment to which the human body is liable can be classed as an "accident" arising "out of, and in the course of," the workman's employment.

Medical Assessor or Medical Referee?

Witness writes: On a recent occasion, when giving evidence under the Workmen's Compensation Act in a Scottish Court before the sheriff and a medical assessor, the sheriff at the close of the rider requested the assessor to examine the workman's alleged injuries. I should like to know if this is the general practice, as it seems to me that the assessor is not then acting as such, but as a medical referee; and that time and money could be saved, and the results the same, if he acted as referee and referee only. After he examines the workmen, the assessor should, I consider, be put in the witness-box and cross-examined as any other expert witness. As it is, he seems to act as witness and judge.

*** Under the Workmen's Compensation Act, 1907, Schedule II (5), a judge of county court (in Scotland the sheriff or his substitute) may, if he thinks fit, summon a medical referee to sit with him as an assessor. We presume that this is what our correspondent refers to. The object of the assessor sitting is to advise the judge, where there is conflicting medical evidence, as to what he (the medical assessor) considers the extent of the injury or disablement the workman suffers from. To satisfy himself on some point of evidence, the assessor may wish to examine the workman himself. This was evidently done in the case our correspondent refers to. Under the Statutory Regulations issued on May 2nd, 1898, in connexion with the Workmen's Compensation Act, 1897, by the Secretary of State, paragraph 19 reads as follows: "In any case of special difficulty the judge, or appointed arbitrator, may require the attendance of the medical referee at any proceedings in the arbitration subject to the receipt of the report, at a date and hour to be arranged, and the medical referee shall attend accordingly, but this Regulation shall not authorize the medical referee being called as a witness." This Regulation, we presume, still holds good and deals with the point raised by our correspondent.

NOTIFICATION OF BIRTHS.

In the Journal of July 30th (p. 297) brief reference was made to a case in which the Acton magistrates dismissed with costs a

summons against a medical man for failing to give notice in writing of the birth of a child, in accordance with the provision of the Notification of Births Act, 1907.

The facts of the case were not in dispute, the sole point at issue being whether the defendant had reasonable ground for believing that notice had been duly given by any other of the persons covered by the terms of the Act. The precise circumstances are, therefore, of importance.

The Act provides that "in the case of every child born in the area in which the Act is adopted it shall be the duty of the father if he is actually residing in the house where the birth takes place at the time of its occurrence, and of any person in attendance on the mother at the time of or within six hours after the birth, to give notice in writing of the birth to the medical officer of health of the district in which the child is born."

In this case the defendant and a certificated nurse from Queen Charlotte's Lying-in Hospital were both in attendance on a confinement. The nurse asked the defendant if the Notification of Births Act had been adopted in the district; he informed her that it had, and that it would be necessary for her or for the father to give notice of the birth to the medical officer of health. She replied that this should be done. Having given the nurse this instruction the defendant did not afterwards take any steps to ascertain whether the requirements of the Act had been complied with. In his evidence the defendant said that no further steps seemed to him necessary, because the father of the child was in the house at the time of its birth, and the nurse was a woman certified under the Midwives Act and in the habit of attending confinements both with and without a doctor. The latter had told him that notice would be given, and he had no reason to suppose the contrary. If the birth had occurred in a poor district he might, perhaps, have asked next day if the notice had been given, but in the actual circumstances it did not appear to him to be necessary. He did not hear that his instructions had not been carried out until a fortnight later.

On these facts it was admitted by the prosecution that the defendant had reasonable ground for believing that notice would be given, but it was argued that he should also have taken steps to ascertain that it had been given, and that, having failed to do so, he was liable to a penalty under the Act.

The court held that the defendant had done all that was required of him under the Act, and had reasonable grounds for believing that notice had been given by some other person. It therefore dismissed the summons with five guineas costs. On the prosecution asking for a case to be stated for submission to a higher court, the bench suggested that formal application should be made, if so advised, on another occasion. The defendant was represented by counsel, instructed on his behalf by Mr. Hempson, of the Medical Defence Union.

The prosecution of medical men in districts in which the Act has been adopted has been comparatively rare, and this case is of interest because it is the first, so far as we are aware, in which the point of what constitute reasonable grounds under the Act has been tried. In this respect it can hardly be said to settle any general principle, since when reasonableness of grounds is in question every case must necessarily be tried upon its merits. Nevertheless, the case is one of a very useful kind, since it furnishes a precedent for holding that when a person has had reasonable ground for believing that a certain step will be taken it is not necessary for him to ascertain that such step actually has been taken. To this extent, and so far as magisterial decisions are final, it settles a point of principle in a natural and very useful fashion.

THE SALE OF ZAM-BUK.

AT the Norwich Quarter Sessions (July 11th) George Calver, commercial traveller, pleaded guilty to a charge of unlawfully selling a tin of ointment to which a false trade description was applied on February 19th, and to other offences under the Mercantile Marks Act, 1887. He was also charged with obtaining sums of money by false pretences, but this charge was not proceeded with.

The prosecutors, who were the Zam-Buk Company, alleged that in the spring of the present year they found that the defendant was selling an ointment not manufactured by them with their trade mark "Zam-Buk" on the boxes. On inquiry it was found that a formula had been published not at all with the authority of the prosecutors, purporting to set forth the way to manufacture this article. Since the first offence was committed, it was found that the defendant was circulating a card headed "Calver's ointment. Prepared according to a formula given by the British Medical Association. It is not Zam-Buk and is not sold as such." They claimed that the defendant was using the words in a way in which he was not entitled to; but as he had agreed not to so use them again, they did not press for a heavy penalty.

Mr. Wild, on behalf of the defendant, said that his client had undoubtedly infringed the Mercantile Marks Act. A book had recently been published, entitled *Secret Remedies*, in which it was stated that for a farthing a compound could be prepared, which the book said was the formula of Zam-Buk. The defendant had the mistaken notion that he was entitled to prepare an ointment according to this formula, and call it Zam-Buk. He would undertake not to do so again.

The Recorder imposed a fine of £5 and costs. He refused to make an order for payment of the costs out of the city funds should the company have any difficulty in obtaining them from the defendant.

THE RIGHT TO FEES.

H. MURRAY.—We understand that no partnership now exists between A. and B., but that A. had agreed to give B. half the proceeds of the club practice, and to allow him to retain all the fees he might earn from private patients. During A.'s holiday the arrangement was modified, so that B. was to retain all the proceeds from the clubs and all the fees he earned from private patients. Therefore, up to A.'s return from his holiday, there can be no doubt that B. should retain all he earned. The difficulty is that a patient seen by B. during A's absence wishes B. to continue in attendance, and we are asked to say how the fees should be divided. As no arrangement had been made for this contingency, we advise that the usual practice should be followed, which is, that the fees earned after A.'s return should be equally divided between A. and B.

CONTRACTS NOT TO PRACTISE.

PACTIS asks whether the rules laid down *re* "Contracts not to Practise," in the issue of July 2nd and 30th, apply to the resident medical officers of friendly societies' medical institutes; whether an agreement not to practise binds them, no consideration having passed.

*** If a medical officer were appointed to such an institute without any restrictive clause in his agreement, and later it was desired to add it to his original agreement, then it would be necessary that there should be a consideration. Where the clause is in the original agreement, then the appointment would be a sufficient consideration.

DOUBTFUL, writing in reference to a quotation from a letter of Mr. Percival Turner in our issue of July 30th—"In case of a sale of a practice by A. to B., and the latter's subsequent death, A. would be unable to return to his practice under his agreement with B. not to do so 'at any time'"—asks whether it would not be necessary to add to the names of the parties some such form as "their executors, administrators, or assigns," in order to make the restriction perpetual.

*** Such a clause is of course habitually included; otherwise, strictly speaking, the agreement would only be a personal one between A. and B.

MR. PERCIVAL TURNER (London) writes: In your comments on my letter in your issue of July 30th you call attention to "agreements which he draws." May I ask you to be kind enough to allow me to state that as a medical agent I should infringe the Solicitors Act and Stamp Act by drawing any agreement for sale or partnership, and that I employ a solicitor to do such work. Further, I may add, the transfer of any practice or share therein should in any case be effected by a deed of assignment under seal and not by agreement.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

DISTRIBUTION OF REPRINTS TO THE PROFESSION.

J. HALPENNY.—There is nothing unethical in sending copies or reprints of articles which have appeared in medical journals to members of the medical profession. There is, however, nothing which is not capable of abuse, and in our opinion it is an abuse when such distribution goes beyond those who are interested in the subject or the person of the writer, and the reprints are used for advertising purposes.

ADVERTISING METHODS AND THE CURE OF DISEASE.

Mr. G. A. CLARKSON writes: A pamphlet which has just been issued by the London and North-Western Railway Company, entitled, "Central Wales and the Welsh Spas," draws attention to the merits of Llangammarch Wells, the waters of which are stated to be "a remedy for cancer in its early stages." It would be interesting to know who is responsible for this statement. The remarks of Sir James Barr in the issue of July 9th, in reference to "The Conquest of Consumption," are not at all too strong.

*** We believe the profession generally shares the views expressed by Sir James Barr and our correspondent, and regrets to see the methods of popular advertisement employed in matters relating to the treatment of disease. The example he quotes, however, is one over which the medical profession has no control, and we should be sorry to believe that any medical man was responsible for it.

The Services.

ROYAL ARMY MEDICAL CORPS.

The following is a list of successful candidates for commissions in the Royal Army Medical Corps at the examination held in London in July, for which 29 candidates entered:

	Marks.
J. D. Bowie, Edinburgh University, M.B., Ch.B.Edin. ...	597
C. H. Harold, Liverpool University, M.D., M.B., Ch.B. Univ.Liverpool	597
J. K. Gaunt, Birmingham University, M.B., Ch.B.Univ. Birmingham	583
G. O. Chambers, St. Bartholomew's Hospital, M.R.C.S.Eng., L.R.C.P.Lond.	573
H. G. Monteith, Cambridge University and London Hospital, M.R.C.S.Eng., L.R.C.P.Lond., Ch.B.Cantab.	570
E. L. Fyffe, St. Thomas's Hospital, M.B., B.S.Lond., M.R.C.S.Eng., L.R.C.P.Lond.	556
R. F. Bridges, Oxford University and London Hospital, M.B., Ch.B.Oxon., M.R.C.S.Eng., L.R.C.P.Lond.	554
C. H. Stringer, Queen's College, Belfast, L.R.C.P. and S.Irel.	547
L. F. K. Way, St. Bartholomew's Hospital, M.R.C.S.Eng., L.R.C.P.Lond.	546
T. J. Hallinan, Charing Cross Hospital, M.B., Ch.B.Lond., M.R.C.S.Eng., L.R.C.P.Lond.	533

INDIAN MEDICAL SERVICE.

The following is a list of successful candidates at the July examination. There were 36 candidates, of whom 29 ultimately entered for the competitive examination; of these 26 qualified, the first 15 being admitted as Lieutenants-on-Probation with effect from July 30th, 1910.

Name.	Degrees, etc.	Medical School.	Marks.
P. B. Bharucha ...	F.R.C.S., L.R.C.P., L.M. and S.B.	Grant Medical College, Bombay; King's College Hospital; Middlesex Hospital	3,773
J. B. Tackaberry	M.B., B.S.Lond., L.M.S.S.A.	Middlesex Hospital	3,751
R. W. G. Hingston	M.B., B.S., National University, Ireland	University College, Cork; Cork Hospital	3,720
N. Davis	M.B., B.S.Lond., M.R.C.S., L.R.C.P.	St. Bartholomew's Hospital	3,623
R. C. Clifford ...	M.R.C.S., L.R.C.P.	St. Bartholomew's Hospital	3,564
C. Newcomb ...	M.B., B.Ch.Oxon., M.R.C.S., L.R.C.P.	St. John's College, Oxford; St. Thomas's Hospital	3,472
L. H. Khan ...	M.R.C.S., L.R.C.P.	Grant Medical College, Bombay; King's College; St. Bartholomew's Hospital	3,318
T. A. Hughes ...	M.B., B.Ch.Dubl., L.M.	Dublin University; Richmond Hospital, Dublin	3,316
H. E. Shortt ...	M.B., Ch.B.Aberd.	Aberdeen University	3,292
R. de S. B. Herrick	L.R.C.P. and S.Irel.	Queen's College, Cork; Royal College of Surgeons, Dublin	3,282
H. L. Batra ...	L.R.C.P. and S.Ed., L.F.P. and S.Glas.	Lahore Medical College; Royal Infirmary, Edinburgh; London Hospital	3,275
W. O. Walker ...	M.B., Ch.B.Edin.	Edinburgh University; Edinburgh New School of Medicine	3,206
M. Purvis ...	M.B., Ch.B.Glas.	Glasgow University	3,205
D. M. Taylor ...	M.B., Ch.B.Glas.	Glasgow University	3,195
V. P. Norman ...	L.M.S.S.A.	London Hospital; Durham University	3,193

EXAMINATIONS FOR PROMOTION.

The following is the list of the successful candidates at the May examination for promotion of Majors of the Royal Army Medical Corps in Technical Subjects:

Major J. G. Brogden, Technical Subjects; has yet to pass in (*d*) ii. Major C. E. P. Fowler, F.R.C.S., (*d*) ii and in Technical Subjects. Major H. V. Prynne, Technical Subjects; .8 in Army Medical Organization in Peace and War; already passed in (*d*) ii. Major J. H. Campbell, D.S.O., Technical Subjects; .9 in Army Medical Organization in Peace and War; already passed in (*d*) ii. Major P. MacKessack, M.B., (*d*) ii; .75; has yet to pass in Technical Subjects. Capt. J. E. Clarke, M.B., (*d*) ii; .75; already passed in (*h*). Capt. J. M. B. Rahilly, M.B., (*d*) ii; has yet to pass in (*h*). Lieut. A. D. Fraser, M.B., (*d*) ii and in (*h*) ii and iii; has yet to pass in (*b*) and in (*h*) i. Lieut V. T. Carruthers, M.B., F.R.C.S., (*d*) ii and in (*h*) i, ii, and iii; has yet to pass in (*b*). Lieuts. H. S. Dickson and R. E. Todd, M.B., (*d*) ii and in (*h*) i, ii, and iii; already passed in (*b*). Lieut. C. McQueen, (*d*) ii; .75; has yet to pass in (*b*) and in (*h*) i, ii, and iii.

Note.—With reference to Army Order 216 of 1909, Majors of the Royal Army Medical Corps who have not fully qualified by December 31st, 1910, in Subjects 1, 2, and 3 of Appendix XIV, Part I (written) will, after that date, be required to pass an examination in Part II (Medical Staff Tour) in addition to any outstanding subject or subjects of Part I, in order to be considered fully qualified for promotion to the rank of Lieutenant-Colonel.

India.

The following is the list of successful candidates at the March Examination for Promotion in Technical subjects:

Royal Army Medical Corps.

Major L. P. Smith, M.D., Technical Subjects; already passed in (*d*) ii. Capt. A. M. Benett, (*d*) ii and in (*h*) ii and iii; for the rank of Captain, already passed in (*b*). Lieut. O. C. P. Cooke, (*d*) ii; .75; already passed in (*b*) and (*h*). Lieut. C. H. Denyer, (*d*) ii; already passed in (*b*) and (*h*). Lieut. H. W. Farebrother, (*h*) ii and iii; already passed in (*b*) and (*d*) ii. Lieut. T. McC. Phillips, M.B ,, (*d*) ii and in (*h*) ii and iii; .75 in (*d*) ii and .8 in (*h*) ii and iii; special certificate; already passed in (*b*). Lieut. H. W. Carson, M.B., (*d*) ii and in (*h*) ii and iii; has yet to pass in (*b*). Lieut. F. T. Dowling, M.B., (*d*) ii and in (*h*) ii and iii; .75 in (*d*) ii; already passed in (*b*). Lieut. R. F. O'T. Dickinson, (*d*) ii and in (*h*) iii; .75 in (*d*) ii; has yet to pass in (*h*) i and ii; already passed in (*b*). Lieut. C. P. O'Brien Butler, (*h*) ii and iii; has yet to pass in (*d*) ii; already passed in (*b*). Lieut. J. R. Lloyd, (*d*) ii and in (*h*) ii and iii; already passed in (*b*). Lieut. H. H. Blake, M.B., (*d*) ii and in (*h*) ii and iii.

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Lieut. R. H. Bott, M.B., F.R.C.S., (*d*) ii and in (*h*) ii and iii; .8 in (*h*) ii and iii. Lieut. J. F. James, M.B., (*d*) ii; .75; already passed in (*h*) ii and iii. Lieut. E. B. Munro, M.B., (*d*) ii; already passed in (*h*) ii and iii. Lieuts. S. C. Chuckerbutty and W. E. R. Williams, M.B., (*d*) ii; .75; already passed in (*h*) ii and iii. Lieut. S. J. Bhathena, (*d*) ii; already passed in (*h*) ii and iii. Lieuts. F. O'D. Fawcett and H. W. Acton, (*d*) ii and in (*h*) ii and iii. Lieut. A. G. Goullie, M.B., F.R.C.S.E., (*d*) ii and in (*h*) ii and iii; .75 in (*d*) ii and .8 in (*h*) ii and iii; special certificate. Lieut. D. H. Rai, M.B., (*d*) ii; already passed in (*h*) ii and iii. Lieuts. W. H. Riddell, M.B., and A. W. Howlett, M.B., (*d*) ii and in (*h*) ii and iii. Lieut. A. N. Thomas, M.B., (*d*) ii and (*h*) ii and iii; .75 in (*d*) ii and .8 in (*h*) ii and iii; special certificate. Lieut. F. S. Smith, (*d*) ii and in (*h*) ii and iii. Lieut. W. E. Brierley, M.B., F.R.C.S., (*d*) ii; has yet to pass in (*h*) ii and iii. Lieut. J. B. Lapsley, M.B., (*d*) ii and in (*h*) ii and iii; .8 in (*h*) ii and iii. Lieut. J. A. Shorten, M.B., (*d*) ii and in (*h*) ii and iii. Lieut. R. B. S. Sewell, (*d*) ii and in (*h*) ii and iii; .8 in (*h*) ii and iii. Lieut. C. H. Fielding, M.B., (*d*) ii and in (*h*) ii and iii. Lieut. W. L. Watson, (*d*) ii and in (*h*) ii and iii; .75 in (*d*) ii. Lieut. S. H. Middleton-West, M.B., (*d*) ii; has yet to pass in (*h*) ii. Lieut. R. S. Townsend, M.B., (*d*) ii and in (*h*) ii and iii. Lieut. R. L. Gamlen, M.B., (*d*) ii and in (*h*) ii and iii; .75 in (*d*) ii. Lieut. T. D. Murison, (*h*) ii and iii; .75.

Note.—Lieutenants of the Royal Army Medical Corps who have not qualified in (*h*) ii and (*h*) iii will be required to take up the new subhead (*h*) i in addition at any subsequent examination in subject (*h*).

HOSPITAL ASSISTANTS.

We have received letters from a hospital assistant serving in the Madras Presidency. He correctly describes the different standards of medical education and examination which obtain at the present moment in India, and makes a temperate protest against the untenable position taken up by a certain section of medical practitioners in Bombay who desire to exclude from registration the military assistant surgeon and hospital assistant classes. He claims with absolute justice that it would be absurd for the Government of India to deny the status of *registered* medical practitioner to men who (1) had undergone a course of four years' medical education at Government medical colleges and schools, (2) who had successfully passed final examinations held by Government examiners, and (3) who were employed by Government in charge of hospitals, dispensaries, police and medico-legal work, gaols, survey parties, military hospitals, emigration work, minor civil stations, and other medical duties too numerous to detail. We entirely agree with this view of the case.

Surgeon-General W. W. Kenny, M.B., is appointed an Honorary Surgeon to the King, vice Surgeon-Major-General J. G. Faught, deceased, June 12th.

O. B. H.—A paper on the Indian Subordinate Medical Department was read at the Sheffield Meeting of the British Medical Association in 1908, and was published in the British Medical Journal of August 15th, 1908. In this paper Colonel Joubert de la Ferté, late Inspector-General of Civil Hospitals, United Provinces, and for many years previously one of the Professors at the Calcutta Medical College, gave full details regarding both the assistant surgeons and the hospital assistant services. We would refer our correspondent to this paper, and ask him what particular grievances other than the defects mentioned by Colonel Joubert de la Ferté he wishes to have brought to notice.

Cholera appears to be becoming very prevalent in Russia. According to the *Times* correspondent, the number of cholera cases in the St. Petersburg hospitals on August 7th was 1,005, among the patients being a countess and a colonel of the *Gendarmerie*. In the provinces cholera is spreading rapidly; over 65,000 cases are recorded. The mortality in the villages is nearly 50 per cent.

The fourth International Congress for the Care of Lunatics will be held in Berlin this year from October 3rd to 7th. Among the subjects on the programme are the following: The connexion between civilization and mental disease; sleeping sickness; the importance of a systematic treatment of sucklings and small children for the prevention of epilepsy, idiocy, and mental disease; sanatoriums for nervous diseases; on the significance of Wassermann's reaction; the influence of family care on the healthy population; progress in the building of lunatic asylums.

Obituary.

GEORGE DANFORD THOMAS, M.D.Brux.,

SENIOR CORONER FOR LONDON.

Dr. George Danford Thomas, a man who had played many parts, but who was best known as Coroner for the Central District of the County of London, died on August 5th, while on a short visit to St. Leonards. He went there on the adjournment of the Crippen trial, on which he was engaged, and was expected to return this week. What has happened, though unexpected, is not altogether a surprise, as he was not very well when he went away. He had also been ill last autumn, and some five years ago had an attack of paralysis, though on that occasion he showed remarkable vitality, and made what was practically a complete recovery.

Dr. Danford Thomas, who was born in 1846, was in the 64th year of his age. He was a son of the late Rev. R. J. F. Thomas, Vicar of Yeovil, and received his general education at Bath. On its completion he entered as a student at St. Mary's Hospital, and became M.R.C.S.Eng. in 1871. Some five years later he proceeded to the M.D. of Brussels, taking honours in medical jurisprudence; meantime he had entered as a law student at the Inner Temple, and had been admitted to the Bar. He had also seen something of the Franco-Prussian war as an officer of the British National Society for the Relief of the Sick and Wounded. His tireless activity and indifference to all risks led to his employment in various capacities not usually filled by representatives of such bodies, and to the special mention of his name in various reports on the war operations by French authorities, and finally to his receipt of the French Order of Merit in acknowledgement of his services.

On first settling down in London, Dr. Danford Thomas started general practice in Paddington, but soon added to his labours official work as first Medical Officer of Health for the district of Willesden. It was about the same time also, namely, the middle of the 'Seventies, that his experience as a coroner commenced, by his becoming deputy to an almost equally celebrated coroner, the late Dr. Hardwicke, then coroner for Central Middlesex.

On Dr. Hardwicke's death in 1881 Dr. Danford Thomas sent in his name as a candidate for the appointment, which at that time was in the hands of the freeholders of the area, and eventually won it after a closely contested election. His work as a coroner thus extended over a period of upwards of thirty years, and was spent in what, in respect of urban coronerships' districts, must be one of the largest in point of both area and population. It includes as many as fifteen parliamentary divisions, and covers areas of London which have been specially fruitful in *causes célèbres*, so far as preliminary criminal investigations are ever of that order. His, therefore, had for many years past been a very well-known name. From first to last he did an enormous amount of work of this kind. Not long ago he made a calculation that he had held altogether some 40,000 inquiries.

Another direction in which Dr. Danford Thomas at one time played an active part was in the Volunteer movement. Comparatively early in his career he founded a bearer company in North London, and he continued to serve as a Volunteer until he had reached the rank of Brigade Surgeon-Lieutenant-Colonel of the North London Volunteer Rifle Brigade. Politics had also attracted him; in addition to doing much useful work in connexion with the organization of the Unionist Party in Paddington, and more recently in the promotion of the success of the Primrose League in that district, he was the party candidate at Islington at the 1885 parliamentary election. He was opposed by an elder brother of Mr. Joseph Chamberlain, and was eventually defeated.

Dr. Danford Thomas's success as a coroner was greatly aided by his medical training, his legal knowledge, his wide acquaintance with mankind, his clear, logically-working brain, and a fund of sympathy for suffering of all kinds. This sympathy, however, was never allowed to interfere with his work, but it prevented his ever becoming an example of crystallized red tape and officialism and enabled him to make things as little unpleasant as possible for the witnesses in many a painful case. He imbued with the same ideas all his officers and the many deputies whom at one time or another he associated with himself, so that there was no coroner's court in London at which more kindly treatment might be expected than at that over which he presided. In his private life he exhibited the same characteristics; he was always ready to assist in various ways those to whom he knew he could be of service. On two occasions he went so far as to take into his house professional acquaintances suffering from mental illness, and thus temporarily stranded in London, and treated them as his guests until their recovery. Another point in his character was a strong sense of *esprit de corps*. Although he regarded himself so far outside the rank of the medical profession as to be unwilling to receive favours at the hands of its individual members, he was a keen supporter of its institutions, including the British Medical Association, and he also afforded important financial support to the Society of Members of the College of Surgeons in the early days of its existence. He, of course, had no personal interest in its success, but in other circumstances he might have been affected by its operations, and it was typical of his character that on this account he should lend it his assistance. In view of all these circumstances it is not strange that he had a host of well-wishers at his back, and that they included persons in every class of life.

Not very long ago he seemed as though he might need them, for an attack upon him was commenced by the London County Council. Dr. Danford Thomas having come into office long before the London County Council was created stood outside even such jurisdiction as an appointing body can exercise over a coroner and could not, it was found, be directly attacked. So the course was adopted of applying to the Lord Chancellor for his removal. The ground put forward was that owing to the state of his health he was incapable of performing his duties efficiently. This step was taken after pressure had been brought to bear upon Dr. Danford Thomas to resign of his own accord. His reply was that pending good behaviour his appointment was for life, and that in default of a retiring allowance he would decline to accede to the Council's wishes for his retirement so long as he felt himself fit to perform his work. The net outcome was that the Lord Chancellor declined to adopt the Council's view, and subsequently made Dr. Danford Thomas aware of his decision in a very kindly worded letter.

The course taken by the London County Council was particularly ill advised, as at the time the attack was commenced Dr. Danford Thomas had been perfectly well for a very long period. Moreover, the fact that a coroner's duties may occasionally have to be performed by a deputy was a circumstance definitely foreseen by the Legislature when framing the Coroners Acts, and in this particular case Dr. Danford Thomas's work during his illnesses had been, by general admission, most efficiently performed by his highly efficient deputy, Mr. Schröder. A further circumstance which made the attack particularly foolish was that it commenced just at a time when a revision of the general duties of coroners was in progress, and when arrangements for their superannuation were in view. In the defeat of the attack this Journal may claim to have played a not inconsiderable part.

We have referred to this attack because there is no doubt that it was more or less directly the cause of Dr. Danford Thomas's final illness. Though he had won a complete victory, and had nothing to fear in the future, he seems to have been specially anxious to justify to the full the confidence reposed in him by the Lord Chancellor, and in consequence had practically declined since early this year to take any advantage of his right to employ a deputy when not feeling well. He had already held since the beginning of the year upwards of 600 inquests, and this great labour, coupled with the extra strain thrown upon him by the peculiar circumstances of the Crippen inquiry, was no doubt the immediate cause of the attack of diabetic coma from which he died.

In the course of his long career as a coroner Dr. Danford Thomas had ample opportunities of making a study of criminology, and took full advantage of them. Many of the suggestions which he made to various authorities have since been embodied in various Acts of Parliament, while others have helped to modify the procedure adopted in criminal investigations and by those engaged therein.

Dr. Danford Thomas was a strong advocate of cremation, and the reformed burial movement in general. He frequently dissuaded those who appeared before him in court from indulging in expensive funerals, and had given instructions that when the time came for his own interment his remains should be either cremated or otherwise disposed of in the simplest fashion available. It was in accordance with this wish that his funeral took place at Hastings instead of from his own house, and that the earth-to-earth or Haden system of interment was adopted.

Dr. Danford Thomas was married, and is survived by his wife and one son, Mr. F. Danford Thomas, deputy coroner for the City of London.

JOHN EDWARD PLATT, M.S., M.D., F.R.C.S.,

SURGEON, MANCHESTER ROYAL INFIRMARY.

The death of Mr. J. E. Platt, which occurred on August 3rd, has caused a gap in the ranks of the medical profession of Manchester which will not be easy to fill. Born at Saddleworth 44 years ago he received his preliminary education at the Manchester Grammar School. He then studied medicine at Owens College, and was admitted a Member of the Royal College of Surgeons of England in 1888. He had already won the exhibition and gold medal in anatomy at the first M.B. examination of the University of London in 1886, and he gained the Turner Medical Scholarship in 1888. He took the degree of B.S. with honours in 1891, proceeding to that of M.S. in 1894. He became a Fellow of the Royal College of Surgeons in 1891. In 1900 he took the degree of M.D. of the University of London. After serving the offices of House-Surgeon and Resident Surgical Officer at the Manchester Royal Infirmary, he became Assistant Surgeon in 1900, and Full Surgeon in 1905. He was Lecturer in Practical Surgery at Manchester University, Honorary Consulting Surgeon to the Manchester Hospital for Consumption and Diseases of the Chest, and to the Manchester Warehousemen's and Clerks' Orphan Schools. Mr. Platt also held the nominal commission of Major in the reserve of officers for the Second Western General Hospital, Territorial Force, in case of mobilization. He was House-Surgeon and Resident Surgical Officer at the Manchester Royal Infirmary, and at the Convalescent Hospital at Cheadle. He was a Member of the Board of Management of the Manchester Royal Infirmary, and at the time of his death Chairman of the Medical Board of that institution. He was a Joint Editor of the Manchester *Medical Chronicle*, and had written much on various medical and surgical subjects. Mr. Platt had a large consulting practice. He was associated with some of the medical societies of Manchester, and for many years had held the position of Secretary of the Manchester Medical Society. In that capacity he did much to forward its interests. In 1902 he married the daughter of the late Mr. J. R. Hook, of Kersal, and leaves a widow and three young children.

The funeral took place on August 6th in the graveyard attached to St. Paul's Church, Kersal. Among those present, in addition to the principal mourners, were: Dr. E. M. Brockbank, Dr. Wrigley, Dr. W. P. Stocks, Dr. R. E. Lord, Dr. W. K. Walls, and Dr. J. H. Sykes, and many others. The Manchester Royal Infirmary, the Medical Board, the Manchester University, the Manchester Medical Society, and the Hospital for Consumption were all represented.

At a special meeting of the board of management of the Royal Infirmary, held on August 9th, sympathetic reference was made to the death of Mr. Platt, and, on the motion of the vice-chairman, Mr. H. H. Smith-Carrington, seconded by the Lord Mayor (Mr. Charles Behrens) and supported by Dr. Graham Steell, senior physician to the infirmary, the following resolution was unanimously adopted:

> That the Board of Management record their high appreciation of the professional skill and devotion to the interests of the Manchester Royal Infirmary constantly exhibited by the late Mr. John Edward Platt, F.R.C.S., honorary surgeon, and their sense of the very severe loss which the Infirmary has sustained by his early death. That this Board desire to assure Mrs. Platt of their heartfelt sympathy in her irreparable loss.

Dr. E. M. Brockbank writes: As fellow residents in senior posts at the Manchester Royal Infirmary, and having had consulting rooms together for the last eight years, during which time we invariably foregathered after hours whenever possible, the late Mr. Platt and I have necessarily seen much of each other, and for this reason I venture to offer a few notes of more personal nature than those which will appear in the chief notice of his death.

My earliest recollection of John Edward Platt dates from the mid-eighties. I remember very clearly to this day how, one day when he was putting away his books in the locker room under the anatomy theatre at Owens College I overheard him telling one of his friends that he had diagnosed a case of phthisis at the infirmary that morning. He related his achievement with a delight that may aptly be called unqualified, for he was then only clerking in the out-patient department. A year or so behind him in student life I had heard of his unusual ability, and here was confirmatory evidence of it. I thought then that he must be a clever fellow to be able to diagnose phthisis and I, struggling with anatomy, wondered whether I should ever achieve the diagnosis of anything. To this day I have never changed the opinion of Mr. Platt's ability there and then formed, though I have had occasion to judge of it from various standpoints and different attitudes of mind to those of college days.

Mr. Platt was an unusually brilliant student, taking many prizes in the class examinations. In both his years of its study he took the prizes in the two subjects of descriptive and practical anatomy, his natural tidiness and neatness of hand standing him in good stead in dissecting His lectures and teaching notes, and, indeed, all his manuscript work, were models of clearness, prepared in a most methodical, orderly way, and written in handwriting easily legible in its minutest form—and it often was minute in his marginal notes. The catalogue of the periodicals in the library of the Manchester Medical Society, which he re-made at an important period of the library's history, will remain an example of this so long as the book exists. Apart from this one great labour, the years in which Mr. Platt was secretary to the society were years of hard work, which added materially to the welfare of the society generally and of the library in particular.

Others are more competent to speak of Mr. Platt's surgical skill, but I have always been impressed with his thorough knowledge of his subject, and with his eminently successful practical application of his knowledge. He was a man of nerve, confident in his powers to a proper degree, and faced important responsibilities and trying occasions both in his public and private life without any undue hesitation.

All who knew of the circumstances were much impressed with the courageous way in which he decided to undergo and contemplated the prospects of a serious operation on himself, actually doing his own work until the day previous to it. His somewhat protracted convalescence, which would have tried the stoutest heart, was borne with equal courage and cheerfulness, and when, after a full year's hard work a second operation became urgently necessary, he submitted to this with such determination and spirit that it was hoped that it, too, would be successfully stood. However, in this the hopes of his friends were disappointed, and he passed away in the prime of life, and with the probability of new and important honours in store for him.

Until eighteen months ago Mr. Platt was apparently in perfect health, and enjoyed life to the full, happy in his work, which was very considerable, and in doing which he showed great powers of endurance, and in his play. Amongst his recreations was that of stamp collecting, and he possessed a very fine and large assortment of rare British issues.

Quiet and unassuming in manner, generous and courteous by nature, broadminded and tolerant to a degree, and seeing the best in everybody, he made friends everywhere. Amongst his colleagues at the infirmary, especially, is his loss deeply felt. His death is therefore felt by a large circle, and by none more keenly than by his colleagues at the infirmary.

WILLIAM BERRY, J.P., F.R.C.S.I.,

SENIOR HONORARY SURGEON, ROYAL ALBERT EDWARD INFIRMARY; MEDICAL OFFICER OF HEALTH, WIGAN.

We are indebted to Mr E. Hodkinson Monks, L.R.C.P., L.R.C.S. and L.M., Honorary Surgeon Royal Albert Edward Infirmary, for the following obituary:

By the sudden death of Mr. Berry, which occurred on July 29th, 1910, Wigan and district, as well as the medical

profession generally, have lost a personality that will be difficult to replace. Having been closely associated with him both professionally and personally for over forty years, I can speak with a full knowledge of all his valuable qualifications.

He commenced his medical career by becoming apprenticed to the firm of the late Drs. Barwise and Monks, who kept an open surgery, and practised in Scholes, Wigan, after proceeding to Glasgow, where he took out his medical and surgical classes, obtaining the diplomas of M.R.C.S.Eng. and L.R.C.P.Edin. One of his first appointments after qualifying was House-Surgeon to the Lancaster Dispensary. Thirty-five years ago Mr. Berry commenced practice in Wallgate, Wigan, and carried on an extensive work in Wigan and district. Always a studious man, he some years ago obtained D.P.H. and F.R.C.S.I.

For many years he was a public man, serving as Councillor, Member of Board of Guardians, Justice of Peace, Honorary Surgeon to the Infirmary. All these positions he filled with satisfaction to all concerned, giving much of his valuable time to carry out the duties connected with them. On the death of Dr. Barwise he was appointed Medical Officer of Health for Wigan, which position he held up to his decease.

He was devoted in his work as a sanitarian, and one has only to look round the town to note the vast improvements carried out under his suggestions during the years of his medical officership.

As a physician and surgeon he was much above the average practitioner, gaining much by experience; he kept himself well up to date, never neglecting to read religiously the British Medical Journal. As an operating surgeon he could at all times cope with any difficulties that might arise, and a record of his surgical experiences would be a valuable manual to peruse.

Mr. Berry was connected with the British Medical Association for many years, and when the Lancashire and Cheshire Branch held its annual meeting in Wigan he was the President; this meeting was one of the most successful held by the Branch. He was Honorary Secretary of the Wigan Medical Society for twenty-five years, and on resigning this position some three years ago the members presented him with some silver plate in recognition of his valuable services.

In conclusion, this is only an outline of the valuable life of one of the most distinguished practitioners in the North of England, and the town of Wigan and district; and the profession generally feels that it has lost one of its brighest stars.

He leaves three sons and three daughters to mourn his loss. His eldest son succeeds him in his profession, whilst the second son is School Inspecting Officer for Wigan.

The funeral took place on Tuesday, August 2nd, at the Wigan Cemetery, and was attended by the magistrates, Corporation officials, Medical Board Infirmary, members of Medical Society, Board of Management Infirmary, and medical officers and several practitioners from many towns. The President of the Royal College of Surgeons, Ireland, was represented by Mr. M. G. McElligott. Mr. Berry was a staunch Roman Catholic, and died fortified by the holy rites of his church.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Henry Granger Piffard, a leading dermatologist and scientific investigator of New York, in his 68th year; Dr. Laloy, librarian of the Paris Academy of Medicine; Dr. Philipp Josef Pick, Professor of Dermatology in the German University of Prague, and author of numerous writings on diseases of the skin, aged 76: Dr. Henry Toupet, physician to the Paris hospitals; Dr. F. Plehn, a leading and very popular ophthalmologist of Berlin; Dr. Pasmal Garin, Professor of Clinical Surgery in the University of Valencia; Dr. W. H. Seaman, Professor of Chemistry and Toxicology in the Howard University, Washington; Dr. Marc Dufour, Professor of Ophthalmology in the Faculty of Medicine, Lausanne; and Dr. Manuel Dominquez, formerly Professor of Therapeutics in the Faculty of Medicine, Mexico.

An International Exposition of Social Hygiene is to be held in Rome in 1911, under the presidency of Professor Baccelli. The exposition will be in connexion with the International Congress on Tuberculosis.

Medical News.

The King and Queen have been graciously pleased to become patrons of the Royal Dental Hospital of London, Leicester Square, W.C.

An International Congress on Pathology will be held in Turin in 1911.

Dr. Archibald Donald MacKinnon, of Broadford, Skye, has been placed on the Commission of the Peace for the County of Inverness.

Dr. Hugh C. Highet has received the Royal permission to accept the Order of the White Elephant, Third Class, conferred upon him by the Emperor of Japan, in recognition of valuable services rendered by him.

It is stated by the *Nottingham Daily Express* that at Melton Mowbray the medical practitioners of the town have decided to commemorate King Edward's reign by raising a fund for the establishment of a cottage hospital.

Sir Rubert Boyce and his expedition of students from the London School of Tropical Medicine, who have been out to Sierra Leone and Sekondi on behalf of the Government, directing the measures necessary for the suppression of the outbreak of yellow fever, are expected to return to Liverpool at the end of the month.

The eleventh French Congress of Medicine will be held in Paris this year on October 15th and two following days, under the presidency of Professor Landouzy, Dean of the Faculty of Medicine of Paris. The questions proposed for discussion are: (1) Bradycardia: (2) the treatment of symptomatic epilepsy; (3) the relations of the liver and spleen in pathology. The programme also includes the following subjects: Accidents of serum-therapy, acute cerebro-spinal meningitis, tuberculin treatment, and affections of the pancreas.

The winter session of the St. George's Hospital Medical School will open on Saturday, October 1st. The prizes will be distributed and the annual oration delivered by Dr. S. Squire Sprigge, Editor of the *Lancet*, at three o'clock. The title of the oration will be "On Prizes." At 4.15 the annual meeting of the St. George's Hospital Club will take place. The annual dinner will be held at Prince's Restaurant at 6.30 for 7.0 o'clock, Mr. G. R. Turner, Surgeon to the Hospital, in the chair. Applications for dinner tickets should be addressed to the Dinner Secretaries, St. George's Hospital, S.W.

We have received from the Wolseley Tool and Motor Car Company a copy of a souvenir issued by it in connexion with a visit recently paid to its works by the American and British Societies of Engineers. This souvenir is a book containing over fifty views relating to the production and history of the Wolseley motor car, together with letterpress giving a general account of the operations of the firm in respect of motor car manufacture. Copies can be obtained, we understand, by motorists, on application at the firm's head quarters, Adderley Park, Birmingham.

At the monthly meeting of the Halifax Town Council on August 3rd it was resolved to advance the salary of Dr. J. T. Neech, Medical Officer of Health, from £500 to £600 per annum by annual increments of £50. Dr. Neech has been in the service of the corporation ten years, and this is the first application he has made to the council for an advance of salary. Alderman Hey, Chairman of the Health Committee, proposing the resolution, spoke in eulogistic terms of Dr. Neech's work, alluding to his business as well as his medical ability. Under his guidance, the health of the borough had greatly improved.

The American Public Health Association will hold its thirty-eighth annual meeting in Milwaukie, Wisconsin, September 5th to 9th next. Representatives from many of the national organizations working in the interest of the public health have been invited to be present and to discuss methods for the correlation of the work of such organizations, and for co-operation with a view to increasing efficiency and economy. Sanitary engineering will occupy a conspicuous place in the programme. This association, according to the *Medical Record*, is the oldest national sanitary organization in the United States. Its membership extends over the United States, the Dominion of Canada, Mexico, and Cuba. Information concerning it can be obtained by addressing Dr. Wm. C. Woodward, Secretary, Washington, D.C.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

R. W. M. asks for information as to what valerian baths are given for, their value, and how to make them.

ANSWERS.

Puerperal Fever.

W.A.R.—We believe it to be the general opinion that puerperal septicaemia is the same thing as septicaemia from septic infection of a wound in any part of the body. But we cannot express an opinion as to the management of a particular hospital.

Income Tax.

Tax inquires whether he should include in his income-tax return the value of his food, rooms, and washing, representing additional remuneration to him over and above his salary of £500 from a public institution.

*** Nothing is required to be included in an income-tax return for the profits derived from an appointment except monetary payment or benefit received that is capable of being turned into money. Our correspondent should return only his salary.

Income Tax and Single Premium Policies.

H.S.A. writes that the Inland Revenue authorities refuse to allow life assurance premiums paid on single premium policies as deductions for the purpose of income tax, and suggests that the ruling applies to annual extras paid for climate.

*** The single premium payments are inadmissible because they are not annual payments, but the annual extras referred to would seem to fall into a different category, and to be proper deductions in arriving at the liability to income tax.

Petrol Duty.

F. A. C. has applied to the local officer of Customs and Excise for repayment of duty on petrol used prior to January 1st, 1910, and has been met with a reference to Part I of the Fifth Schedule of the Finance Act, and his application refused.

*** A duly qualified medical practitioner is clearly entitled to repayment in respect of the duty paid on petrol used for the purpose of supplying motor power to a motor car kept by him while it is being used by him for the purposes of his profession. The repayment is, by the terms of Section 85 of the Act, to be on the whole of the duty paid on petrol so used prior to January 1st, 1910, and on one-half the duty paid on that used subsequently. If the local officer gives no satisfactory reason for refusing the claim in the particular case, our correspondent might submit the facts to the Board of Customs.

Medical Fees.

A correspondent asks to be referred to a scale of the usual charges made by general practitioners for visits and medicine.

*** Attempts have been made to formulate scales, based on the rental of the house in which the patient lives, but they are far from satisfactory. Generally speaking, the fee charged is based on the social and pecuniary position of the patient and the distance the doctor has to traverse in his visits. In poor districts the charges vary from 2s., or even less, to 2s. 6d. and 3s. 6d.; in better-class districts from 5s. to 5s. 6d. and 10s. 6d.

Diet in Exophthalmic Goitre.

Danvers asks for suggestions as to diet for a patient on a course of treatment by rodagen. Exact details would be welcomed for each meal.

*** Rodagen is a preparation made from the milk of thyroidectomized goats, and is used for the treatment of exophthalmic goitre; it is assumed that the patient in question is suffering from this disease. The use of rodagen does not call for any special diet, but there are differences of opinion as to the diet most suitable for Graves's disease. Dr. Hector Mackenzie is of opinion that such patients should not have milk in any quantity, and no beef, mutton, or veal: he allows all kinds of fish, fat bacon, chicken, eggs, fresh fruit, cream, butter, bread, and carbohydrates generally. Most authorities forbid tea, coffee, and cocoa, and alcohol is not necessary in any case. Others consider meat in any form harmful, and a purin-free diet is recommended by them; this means forbidding tea, coffee, cocoa, alcohol, meat, poultry, game, and fish, the patient living on milk, cream, butter, cheese, eggs, cereals, vegetables, and fruits.

LETTERS, NOTES, ETC.

St. Paul's Thorn in the Flesh.

Dr. George Jones, Barrister-at-Law (Lee), writes: If St. Luke the Physician wrote the Acts of the Apostles we may expect to find some help from technical terms. In Acts xxiii the opening words are: Ἀτενίσας δὲ Παῦλος τῷ συνεδρίῳ εἶπεν. . . . "But Paul straining his eyes upon the Sanhedrim said . . ." Liddell and Scott quote a passage from Lucian, s.v. ἀτενής, showing that the word ἀτενίζω may fairly be taken to mean *straining his sight*. In Acts ix, 28, the words are: Καὶ εὐθέως ἀνέπεσαν αὐτοῦ ἀπο τῶν ὀφθαλμῶν ὡς λεπίδες, ἀνέβλεψέν τε . . . "And at once there fell from his eyes as though scales . . ." λεπίς, the word translated "scale," is used by Hippocrates. Aristophanes uses it for an "eggshell," Aristotle of the "scale of a fish." A medical writer uses λεπὶς πρίονος for "sawdust." A naturalist uses it alone for "snowflakes." The word is not used elsewhere in the New Testament. It may mean "dust," "haze." In Acts xxii, 11, St. Paul says of himself, ὡς δὲ οὐκ ἐνέβλεπον ἀπὸ τῆς δόξης τοῦ φώτος ἐκείνου. "But when I did not see from the brightness of that light . . ." etc. Then he goes on to relate that led by the hand he walked (?) to Damascus. Ananias visited him and said, "Brother Saul, ἀνάβλεψον, Look up. Κἀγω αὐτῇ τῇ ὥρᾳ ἀνέβλεψα εἰς αὐτόν, "and in that very hour I looked up *at him*." I do not wish either to belittle or to exalt the miraculous element in Scripture, but if a passage can receive a non-miraculous explanation there is no reason for rejecting the easy and insisting on the difficult view. It is said that one of the early Fathers so magnified the miracle of Divine Providence by which the clothes of the Israelites were preserved during the forty years' wandering, that he suggested that the children were born with shoes on their feet! Our Blessed Lord was not three days *on the Cross*, nor is it recorded that His disciples spent the interval from the Friday afternoon to the Sunday morning in thinking over the past, or making good resolves, any more than did St. Paul, who during the three days in which he *did* not see, took no food and drank nothing. Perhaps his reflections took place in Arabia—Galat. i, 18. St. Paul does not *refer* to a passage in Exodus. The quotation is taken word for word from the Septuagint Version of Exodus xxii, 27, and is a close rendering of the Hebrew which, of course, St. Paul the pupil of Gamaliel the lawyer must have known well. The point of the episode is that as a lawyer St. Paul resented the illegal action (παρανομῶν) of the presiding officer in ordering the ushers of the court to strike the prisoner at the bar. He then apologized for his apparent want of respect for the head of the hierarchy—"I had not found out, οὐκ ἤδειν, I had not noticed, brethren, ὅτι ἐστιν ἀρχιερεύς· that he *is* high priest." Surely he knew who was then in office. Bad or good, Ananias was *de facto* High Priest, and as such entitled to respectful treatment in his own court. Lastly, before Dr. Welch rejects entirely Mr. Clegg's suggestion, will he say what he thinks of Galat. iv, 15: "Where is your happiness, for I bear you witness that you would if possible have dug out your own eyes and have given them to me?" In the previous verse he has spoken of "your trial in my flesh," or "your temptation"—τον πειρασμον ὑμῶν. I have previously referred to St. Paul's large handwriting—Galat. vi, 11.

The Causation of Sex.

Dr. P. H. Walker (Mquandali, Cape Colony) writes: From time to time some new or old, but unconvincing, theory of sex causation is brought forward. Dr. Stark (British Medical Journal, April 23rd) has restated an old one, but has weakened his case by his illustration of the Angus bull. For that young and vigorous animal was used to get males (slaughter bullocks), and by theory he should have got heifers. The right and left ovary hypothesis, even if it were true, would seldom supply reliable information. For, besides the rare cases of mothers who have never visibly menstruated and the commoner instances of women becoming again pregnant while suckling and before the re-establishment of the catamenia, the possibility of superfetation proves positively that ovulation does not inevitably cease with the commencement of pregnancy—a fact which one would also suspect from the slight menstrual show that may occur at the first or second months of pregnancy. Such occult ovulation would upset the most careful calculation. We had the queen bee theory before that. We were to make it a boy or a girl by special feeding of the pregnant mother. The absurd idea (is it Mother Eddy's?) of fixing the sex by continuous exercise of the will throughout pregnancy need hardly be mentioned.

Now there comes to my mind a farmer's family in Scotland. The father and mother were both greatly above the average size, and were clever people too; the only son was the eleventh child, and there were thirteen big handsome daughters. The intervals between the children were as irregular as in other families. What loaded the dice that Fate threw females every time but once?

There was a proverb current among the old-time howdie-wives, a couplet, the substance of which was, You cannot beget a man child in a bed soiled by menstruation. I had my eyes opened to the truth of the axiom twenty years ago, and later

practice *in partibus infidelium*, where the native woman is much less reticent than the average British matron, has but confirmed my belief. It might be translated into the more pretentious dictum: The female sex in the human subject is determined by the amount of molecular change that occurs in the *unfertilized* ovum after its extrusion from the ovary! What though the change be undemonstrable; the unfertilized ovum cannot live on indefinitely in the free state; and it will at least be admitted to be hardly conceivable that such an ovum can exist for nine or ten days in a new environment and no longer nourished by the fluid of the Graafian vesicle without suffering deterioration or alteration of some kind.

The ovum, escaping from the ovary at the beginning of menstruation, travels through the Fallopian tube, swept onwards by the epithelial cilia; in about ten days it arrives in the uterine cavity, where, if it has not been previously fertilized, its inherent vitality is now too feeble to resist dissolution—and there is the end of it. The fertilized ovum, on the other hand, with reinforced vitality, undergoes segmentation and develops the means of anchoring itself and securing fresh nourishment. Only when disease has damaged the ciliated epithelium may the ovum adhere and form a tubal pregnancy. Normally, it finds no resting place until it reaches the raw surface of the uterine cavity—"a chamber empty swept and garnished," prepared for its reception by the menstrual desquamation. The sexual instinct, or rather the excitability of the cerebral and spinal sexual centres—the centres of desire and performance, to use the Falstaffian distinction—varies in different individuals and at different times in the same individual. In one the orgasm may be readily provoked at any time of the month and throughout pregnancy too; in another, although perfectly healthy, there may be indifference and distaste and suspension of spinal excitability, except just after a period, when the afferent nerve endings have been tuned up by the more abundant blood supply to vibrate in the same key with the spinal receptor.

That fertilization may take place in the tube is unquestioned. Theoretically, the spermatozoa are supposed to be capable of a purposeful migration through the os and by their own exertions of fighting their way against the cilia as far even as the ovary. This supposition predicates an extraordinary intelligence for a single cell, and a much longer existence than is warranted by experience. In reality, fertilization never takes place in that way. Conception—that is, the physiological orgasm—carries the whole amount of the ejaculated fluid right into the tubes, and I have no doubt that the unusually scanty menstruation followed by pregnancy, which women consider diagnostic of a male conception, is due to some nerve reflex set up by the presence of a considerable mass of sperm in the tube. It may be objected that the calibre of the proximal end of the tube would preclude such free entrance; but the measurement in the cadaver is no criterion of the amount of elasticity and contractility when the living muscle is in action; and if it were carried no farther than into the uterus there would most surely be some return through the os instead of the characteristic dryness that follows the perfect reaction. This being so, it is evidently possible for the young ovum to be fertilized at once by sperm deposited in the tube just before menstruation, or by fresh sperm after the period when it is from four to nine days' old. I do not think that the free spermatozoon can be reckoned to retain its full vitality for more than forty-eight hours, and that makes the chances of an anteperiodic (male) as compared with a post-periodic (female) conception in the ratio of about 2 to 6—supposing the period to be an ordinary one, lasting for three days. One other circumstance may militate against anteperiodic conception. In some cases there is a considerable amount of cervical secretion, not the glairy secretion of true cervicitis, but sufficient to impede the entrance of the sperm, and after the normal congestion has passed off the canal may become clear again for the time being.

Any accoucheur having the confidence of his patients will be able to make statistics for himself, and when the truth of the proverb is recognized it will be seen that the excess of female births is only natural, there being in all cases longer time in which female conception is possible, and in some a greater likelihood, owing to the heightened excitability and absence of obstruction.

Sterility among the Kaffirs is a misfortune, and among the raw natives a barren wife is apt to be accused of unfaithfulness, especially if subinvolution and sterility follow a stillbirth or miscarriage, as is often the case. In such circumstances the witchfinder has no doubt of it being a case of *Pupa izulu*, or adultery with a dream lover, the Thunderspirit, who is supposed to be jealous, and either prevents the woman from conceiving or kills any child her husband may beget. Such cases, after going the round of the native quacks, generally come in the end to the white doctor, and those, too, come who have had a string of girls and want a change; for though every girl will be worth ten head of cattle when she grows up, yet what is the good of so many cattle if there be no sons to buy wives for! In Britain children are not in such demand. One child is hoped for, but after that, in every class above that of the mere proletarian, pregnancy is more often than not a regrettable accident incidental to married life, that is only forgiven and forgotten when the babe has safely arrived and won a place for itself in the parents' affections. Now I think the uncertainty of the sex has something to do with this attitude. If marriage is a lottery, as they say, the sex of the child is to the ordinary man a toss-up; and if it were recognized that sex could be regulated it might lessen the tendency to the artificial prevention of conception, and what the ordinary man might call "taking no chances."

BERI-BERI.

DR. SAILESHWAR MUKERJIE (Assistant Surgeon, Biological Laboratory, Medical College, Calcutta) writes: I wish to contest the theory of beri-beri (BRITISH MEDICAL JOURNAL, June 4th, 1910, p. 1372) put forward by Drs. Stanton and Fraser, who consider that the loss of phosphates in overmilled rice is the predisposing cause of that disease. The phosphates in question are found in the aleurone grains of rice as a double phosphate of calcium and magnesium. On examining different varieties of rice available here, I found that very few of them contains the aleurone layer, which is very soluble in water, especially boiling water. It is the custom, here in Bengal, to boil the paddy-grains thrice before taking off the pericarp. Then they are put to husk several times, in which process the whole of the testa, tegmen, and aleurone layers are taken away, only the starch layers being left behind for consumption. Among all the varieties of rice used by the Bengalis, only Ramkrishnapur rice and the rice of Mymensing (a district where beri-beri became epidemic only the other day) show a scattered trace of the aleurone layer. But as soon as these two varieties of rice are boiled, not a trace of the aleurone layer is found in them. Thus the rice-eating population of Bengal has always removed this aleurone layer from time immemorial, not only by boiling the rice grains several times, but also by throwing away the residual water after it has been finally boiled. So the want of phosphate salt in rice cannot at all account for the epidemic of beri-beri in Calcutta. Had it been due to want of this proteid and phosphate layer, Bengalis would have suffered more or less from this malady for a long time instead of suffering from a sudden epidemic outbreak all on a sudden. Moreover, during the last epidemic in Calcutta it was not confined to the poor and lower middle class, who can ill afford costly food, but it prevailed to a great extent among the higher classes, who take plenty of nitrogenous and phosphatic diet in the shape of legumins, fish, and milk. My belief is that beri-beri is due to some peculiar fungus growing in the rice kept in damp godowns for a long time. This is supported by the fact that on the only two occasions on which the disease spread amongst the Bengalis, it did so in the rainy season, when fungi are most active. Also the disease occurred specially in families who live in damp houses, or who are in the habit of storing their rice on the damp ground floor. Overmilled rice, from which the tegmen and the aleurone layer have been taken away, may facilitate the growth of these fungi, and that might be one of the causes why Drs. Stanton and Fraser got polyneuritis in fowls easily with overmilled rice, and of their failure to get the disease with undermilled rice, in which the presence of these layers and polishings of rice resist the growth of fungi by keeping off dampness. It is the custom with the rice merchants of Calcutta to mix lime with rice in order to make them highly polished, without which rice is sold at a comparatively reduced price. This lime eats away the faintest trace of the aleurone layer had any part of it been left behind with the rice-grain after it had passed through the several processes of boiling and husking. This lime destroys the residue of the aleurone layer, and so according to the theory of Drs. Stanton and Fraser facilitates the production of beri-beri. But according to the theory here suggested, the presence of this lime is a positive check against beri-beri, as it is a powerful agent in preventing dampness, which is the cause of all fungus growth.

MEDICAMENTS APPLIED TO THE UTERUS TASTED IMMEDIATELY.

DR. D. CAMPBELL (Calne) writes: Great credit is due to Dr. Duke for discovering and recording the fact, known before, that medicaments applied to the uterus are often tasted by patients soon after their application. But there is nothing new under the sun, so said a wise man. In an address by Dr. Lombe Atthill, of the Rotunda Hospital, Dublin, and recorded in the BRITISH MEDICAL JOURNAL, July 2nd, 1892, on dilation of the uterus and local applications to the same, he says, "The fluid I use is iodized phenol. . . . Some of the iodine no doubt is absorbed, and many patients complain of the taste of the iodine in the mouth." Honour to whom honour is due.

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A Paper

ON

SOME PHARMACOLOGICAL EFFECTS OF THE STRONG SULPHUR WATER (HARROGATE).

BY

DAVID BROWN, M.D., B.Sc.,

HARROGATE.

[After expressing his thanks for the opportunities afforded him of bringing his laboratory results to the notice of the societies, Dr. Brown proceeded:]

The results obtained in various clinical cases of gout kept under close observation, during their treatment by the strong sulphur water of the Harrogate Spa, induced me to institute a special plan of research into the pharmacological action of this water on the following cases:

1. In a normal adult (length of experiment, 42 days).
2. In an adult where some slight variations from normal metabolism were suspected (length of experiment, 19 days).
3. In a case of simple acute gout of eight weeks' duration, and not previously treated by drugs or other means (length of experiment, 16 days).

The points considered and methods employed were:

1. Amount and specific gravity of urine.
2. Total nitrogen of the urine (Kjeldahl).
3. Total daily excretion of uric acid (Hopkins).
4. Total daily excretion of xanthin bases (Ludwig Salkowski).
5. Total daily excretion of kreatinin (Folin).

The observations were made daily on the massed total excretions of urine of the previous twenty-four hours.

No chloroform or boiled or otherwise preserved specimens were used.

The calculations are correct to 5 c.cm. of urine. No collection of urine was used which was of a greater age than four hours.

Before the work was started the plan and scope of the inquiry received the valuable criticism of Dr. Gowland Hopkins of Cambridge.

As the work was done without collaboration, the following method was adopted, in order that the personal equation of the experimenter might be eliminated as far as was possible:

1. No calculations were even roughly worked out during the progress of the experiments.
2. At the close of each series of experiments the results of each series of observations were independently calculated and charted.
3. Lastly, the charts of the various cases were contrasted and compared.

Case I.

Conditions of Experiment.—Length of experiment forty-two days, divided into five distinct periods (1-5). Date of commencement, November 10th, 1909.

Period 1, of nine days, on unlimited non-purin diet.

Period 2, of nine days (9-18 inclusive), on limited and fixed non-purin diet. This diet was continued through the remainder of the experiment. The diet contained a daily average of 3,200 calories; its constituents were as follow: Milk 26 oz., butter 2½ oz., cream 1 oz., bread 17 oz., eggs 5, cheese 1¼ oz., macaroni 2 oz., rice ½ oz. Aërated distilled water 30 oz. (It was the usual habit of the experimentee to use this last in lieu of ordinary drinking water.)

Period 3, of thirteen days (19-31). Strong sulphur water was taken in addition to the diet detailed in Period 2.

The doses taken daily were:

Nineteenth day of experiment	20 oz.
Twentieth day of experiment	12 ,,
Twenty-first day of experiment	16 ,,
Twenty-second day of experiment	18 ,,
Twenty-third to thirty-first day of experiment	20 ,,

The smaller doses taken were due to the fact that the dose taken on the nineteenth day caused more than one fluid motion, and it seemed probable that certain excretory effects might possibly be hidden by the free purgation.

Period 4, of nine days (32-40). Same diet was taken as in Period 2.

Period 5, of two days (41-42). The same diet was continued, but unusual exercise (walk of eight miles through deep snow) was taken on the forty-first day.

Also at 5 p.m. on the fourteenth, twenty-seventh, and thirty-sixth days of the experiment respectively a dose of 0.5 gram of pure hypoxanthin (Merck) was taken in cachets. This dose of hypoxanthin corresponds roughly to that found in 2½ lb. of mutton (Hall's tables). The further details of the conditions of the experiment are appended.

Exercise.—An amount limited to about three miles per diem of walking exercise was taken daily. On the three days on which the doses of hypoxanthin were given no walking exercise was allowed, so that any possible chance of only a partial absorption of the full dose of hypoxanthin might be avoided, such as might have occurred if the bowel had been evacuated more than once each day. A daily average of fourteen hours was spent in laboratory work, except on the forty-first day, when the unusual exercise was taken.

Rest.—About six and a half to seven hours per night was spent in bed.

Temperature.—Work was undertaken in a laboratory, which had three windows constantly open, and was without heat, except that of the necessary Bunsen burners. Additional clothing was worn to prevent undue tissue waste in keeping up the heat of the body in this low temperature (November and December).

Bowel.—Opened once daily about 9.30-10 a.m. on each day of experiment, except on the nineteenth day (first day of taking sulphur water), when the bowel was opened three times. No recourse was made to laxative drugs during the whole period of the experiment. On the seventh and eighth days of the experiment there was some slight constipation, and five apples were eaten on the seventh day. On the seventh and eighth days there was, as we shall see, an abnormal excretion of uric acid, due to the constipation or to some effect of this addition to the diet.

Body Weight.—This was taken at the commencement of the experiment, and measured 10 st. 6½ lb. It was repeatedly taken during the course of the experiment, and no variation of more than ½ lb. was at any time noticed, except that on the thirty-second day the weight was 10 st. 7½ lb.

The final weight, after the short period of unusual exercise, was 10 st. 4½ lb.

It is especially important in all xanthin base (purin) and uric acid estimations that the body weight should be stationary, otherwise with a falling body weight one has to admit the possibility of excessive tissue waste and a consequent rise in the amount of endogenous purin excretion.

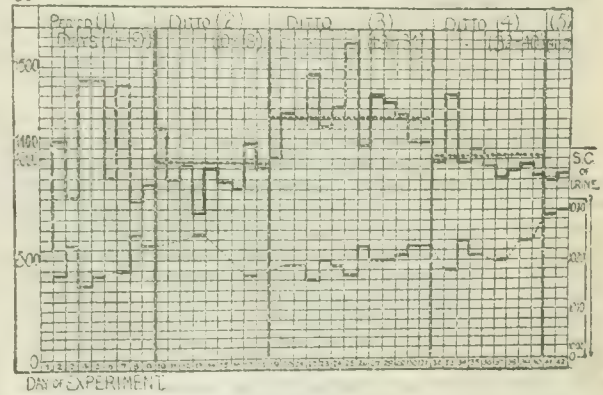
The results of the experiment were as follows, and are shown graphically in detail in Charts A, B, C, D, and C''.

The dotted lines in the various charts denote the average amount of excretion of a given substance in the given period concerned.

You will notice that there are occasional gaps in the series of results. This is due to the fact that all results which did not seem to be quite perfect from a technical point of view were invariably rejected. The methods used for the estimations were those which, though often laborious, appear to be able to give the most nearly constant results.

Chart A.—*Urine Measured in Cubic Centimetres.*

Period 1.—Urine varied considerably. This was probably connected with the variable amount of nitrogenous



food taken during this period, and perhaps the slight constipation noticed had some effect.

Period 2.—Less variation in daily amount. Average amount, 900 c.cm.

[2590]

Read before the Harrogate Medical Society (March 17th, 1910), the Cardiff Medical Society (April 12th, 1910).

Period 3.—Considerable diuresis noted. Average amount of urine, 1,260 c cm. Diuresis amounted to 40 per cent. compared with Period 2. This diuresis reached its maximum on the seventh day of administration of sulphur water (the twenty-fifth of the experiment); the amount after this gradually decreased.

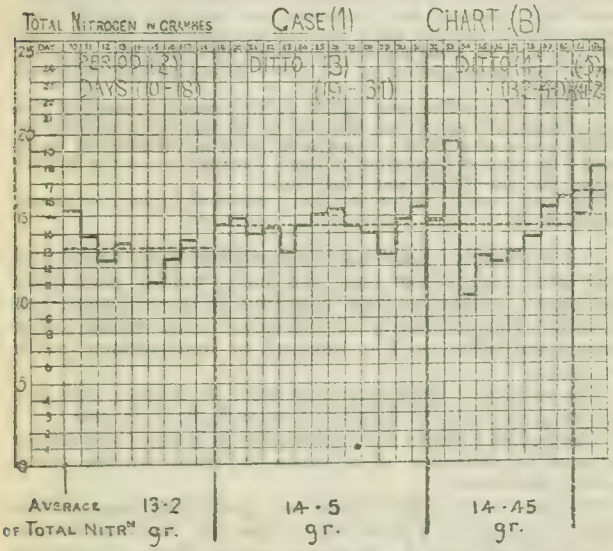
Period 4.—Average daily amount, 1,020 c cm. There is a gradual fall in the daily amount during this period, the amount being less than that of Period 2, on the fifth and succeeding days, following the cessation of the administration of the sulphur water.

Period 5.—The urine was further contracted in amount, a result probably due to loss by perspiration.

Specific Gravity of Urine (lower line of Chart A).—The specific gravity of the urine in detail varies inversely with the amount of the urine from day to day, but the average specific gravity during Period 3 is nearly as high as in the pre-sulphur periods, showing that sulphur water *increases* the total solids of the urine.

CHART B.

The total nitrogen of the urine was taken throughout the whole period of the experiment, but is only of value for our purpose in so far as it concerns the periods of fixed diet (2–5).



Period 2.—It remained steady, at an average of 13.2 grams per diem—that is, nearly ½ gram per kilo of body weight, or 19 grains per stone.

Period 3.—Raised about 10 per cent.

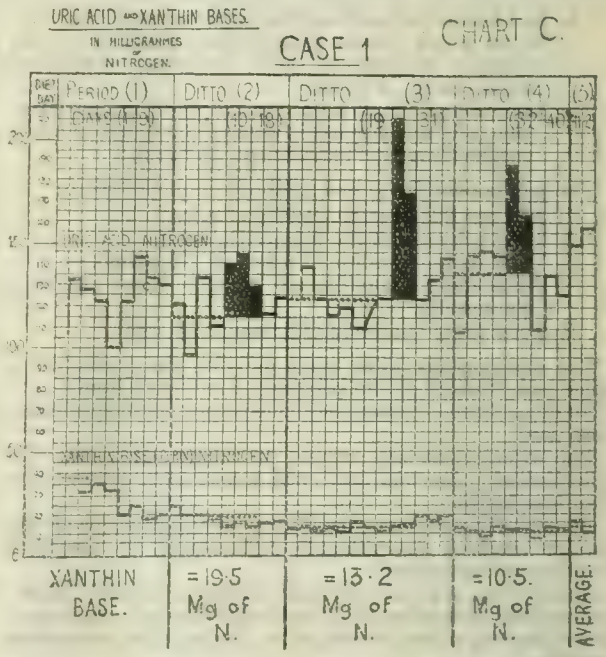
Period 4.—Only fractionally lower than in Period 3. This sustained excretion in the post-sulphur stage is very interesting, and with the body weight remaining constant, while the feeding also was constant, can only, I think, be explained on the supposition that increased absorption of nitrogen took place, and was accompanied by acceleration of body-tissue change.

Period 5.—The daily average was further raised. This was due to the increased exercise on day 41.

CHART C.—*Uric Acid and Xanthin Bases.*

Burian and Schur proved conclusively that no variation in the amount of nitrogenous intake had any effect so long as the nuclein containing elements of food, that is flesh, were avoided. Their variations in dietary ranged from twenty-four eggs to four eggs per diem, and the urea excretion varied correspondingly and enormously, but the uric acid and other purin excretion remained constant. Hypoxanthin only differs in constitution from uric acid by two atoms of oxygen and xanthin by one such atom, and these are probably the immediate precursors in the body of the most highly oxidized member of the series, that is, uric acid. The adenin and guanin by the action of ferments lose their amido groups and are oxidized to hypoxanthin and xanthin respectively. While all the bases appear in the urine during a non-purin diet, the principal purin body excreted other than uric acid is hypoxanthin; this is one main reason why hypoxanthin bases were administered, as has been described, in order to test the effect of sulphur water on the *exogenous* purin excretion.

Perhaps I may recall Folin's researches which finally divided uric acid and xanthin excretions into the portion coming from body tissue change (endogenous) and that derived from the food (exogenous). Burian and Schur showed that the *exogenous* purin excretion in man amounted to about 50 per cent. of the xanthin bases of the food, and was excreted as uric acid, the rest being destroyed and probably excreted as urea. Later observers, and especially Ackroyd, have shown that the 50 per cent. statement is too rigid. On the other hand, the excretion of *endogenous* uric acid and xanthin bases is peculiar for each person, and is constant, or nearly constant, for the individual. In estimating the uric acid and xanthin bases 500 c cm. of the daily massed urine was taken when the amount for the twenty-four hours was 1,000 c.cm. or less. When the total amount of the secretion permitted it, the experiments were done in duplicate, often as much as three quarters of the total days' urine being used, for the estimation of the uric acid and xanthin bases. Where the urine



deposited crystals of uric acid these were separately treated.

The upper line shows the uric acid excretion (Chart C), calculated as nitrogen.

Period 1.—Average 120 mg. This was disturbed by constipation on days seven and eight, and so the whole period is neglected.

Period 2.—Average excretion of the first four days is 115 mg. nitrogen (= 345 mg. uric acid).

Period 3.—Average excretion for seven out of the first eight days of this period is 123 mg. nitrogen (= 370 mg. uric acid).

Period 4.—Average excretion of first four days of this period is 134 mg. nitrogen (= 402 mg. uric acid).

Therefore the rise in Period 3 equalled 8 per cent., and the rise in Period 4 a further 11 per cent.—a total rise of nearly 20 per cent. in the excretion of *endogenous* or body tissue uric acid.

Exogenous Uric Acid (0.5 gram hypoxanthin).—This is represented by the blackened areas of the chart in Periods 2, 3, and 4. On each occasion the ½-gram dose of hypoxanthin was given at 5 p.m. It was given thus late in the day to allow of the absorption of the hypoxanthin undisturbed by possible accidental movements of the bowels during Period 3. (The precaution proved to be unnecessary.)

Period 2.—36 per cent. of the hypoxanthin recovered as uric acid.

Period 3.—80 per cent. of the hypoxanthin recovered as uric acid.

Period 4.—40 per cent. of the hypoxanthin recovered as uric acid. This last result is almost identical with that obtained in Period 2.

The length of time necessary for the excretion in Period 2 is *three* days. In Periods 3 and 4 this is much shortened, being only *two* days. This, again, is an indication of greater tissue ferment activity.

The lower line in Chart C shows the excretion of the xanthin bases, or, as they are more often, though less correctly, termed, "the purins." These are calculated as nitrogen.

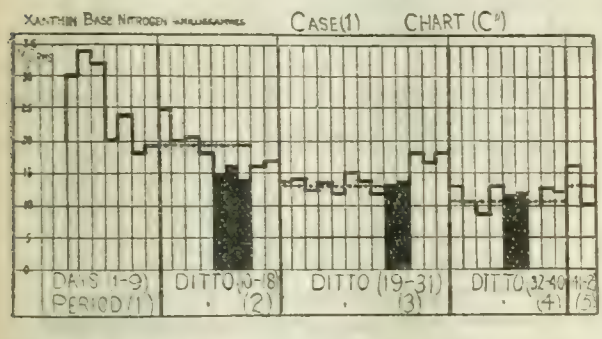
Period 2.—Average for first four days of period is 19.5 mg. nitrogen (=nearly 60 mg. of hypoxanthin).

Period 3.—Average for first eight days is 13.2 mg. nitrogen (=nearly 40 mg. of hypoxanthin). This is a fall of 33 per cent.

Period 4.—Average for first four days is 10.5 mg. nitrogen (=nearly 31 mg. of hypoxanthin). This is a further fall of 22 per cent.

The results of the whole analysis are better seen in Chart C', where the ordinates are three times as long as in the Chart C. In Chart C the xanthin base excretion is on the same scale as that of the uric acid nitrogen, in order to show their relative amounts.

On Chart C' the dark patches represent the excretion of the purin bases during the periods when the hypo-



xanthin taken by the mouth was in part being excreted in varying percentages as uric acid.

The purin base excretion on the three such occasions was not increased, but either below or only just above the average for the earlier days of the particular periods concerned (2, 3, 4).

Hence there is no evidence that any of the *exogenous* hypoxanthin taken by the mouth escapes as such.

In other words the diuresis which is marked when taking sulphur water is in no way able to cause extra excretion of the not fully oxidized purins (xanthin bases).

The action of sulphur water on purin metabolism, even on those purins which are soluble (ex hypoxanthin), is other than that of a mechanical diuresis, or lowering of the flood gates, such as in all probability is the case in connexion with the increased uric acid output during treatment by the salicylates.

Another point in the chart (C) is the primary rise of *endogenous* (or tissue) uric acid on the first two days of ingestion of sulphur water. Also the curious exaggeration of the increased excretion of uric acid after the termination of the excretion of *exogenous* uric acid resulting from the ingestion of the hypoxanthin. Does the ingestion of a moderate amount of the free purin stimulate xanthin oxidase so that it can deal with a larger amount of *endogenous* purins? Also note the increased excretion of xanthin bases after the termination of the excretion of the *exogenous* uric acid. Is this the delayed excretion of the residue of the dose of *exogenous* purin? It is shown both in the pre- and sulphur stages (2 and 3).

Where and how is the extra transformation of the hypoxanthin to uric acid brought about? Xanthin oxidase in the liver is probably mainly responsible under ordinary conditions for the oxidation of xanthin bases to uric acid. And one is driven to the conclusion that some one or more of the constituents of or some physical or electrical condition of the sulphur water has a stimulating effect on this ferment. It is certainly startling to find that the diuresis caused by sulphur water has *no effect* whatever on the excretion of soluble purins as such. This is shown in Chart D.

Here, then, an explanation suggests itself of the assertion often made, and so puzzling to justify by what we know of metabolism, that sulphur water first increases and then decreases the amount of the daily excretion of uric acid. The action of sulphur water is probably a double one as far as the purin bodies are concerned, and when the patient is on a fixed mixed diet:

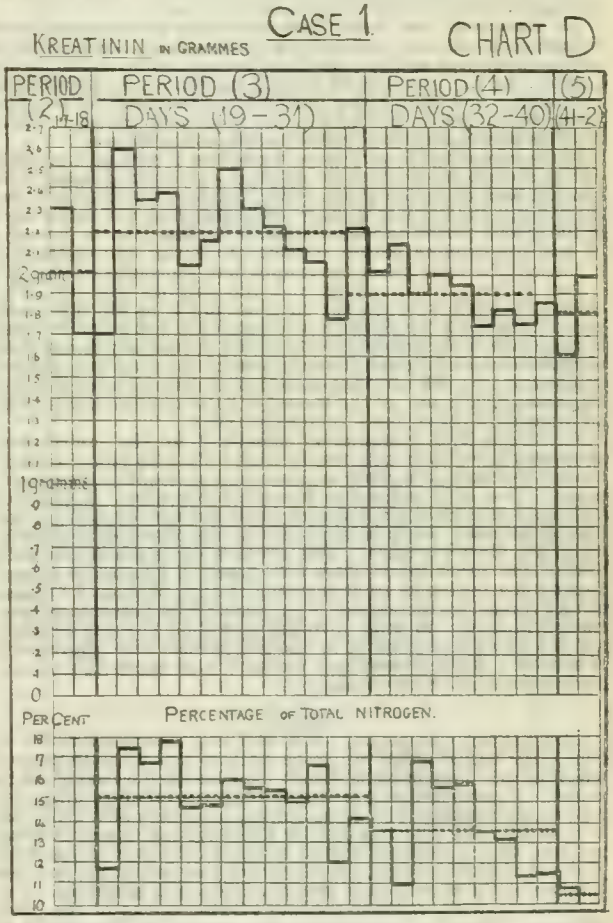
1. The nuclear albumen of flesh food resists digestion longer than other proteids, and is swept out by the daily laxative action of the water in greater proportion than are other albumens. This is probably not the case when the subject is fed with soluble xanthin bases, such as hypoxanthin, this latter substance being usually well absorbed.

2. The actual tissue uric acid is increased, as shown in the charts, but this increase is not enough to balance the loss of purin-forming substances, which, under ordinary circumstances, are absorbed, but which are directly swept out of the intestine by the action of the sulphur water.

The ultimate proof of this view will be included in a subsequent paper dealing with the faecal purins.

Chart D.—*Kreatinin.*

Unfortunately the colorimeter which Dr. Dimmock kindly lent me, and which rendered possible this series



of observations, did not come into my hands until the seventeenth day of the experiment, so that the period for observation of the average endogenous kreatinin is short.

However, the amounts observed are about normal, the experimenter being of spare habit.

Period 2.—Average of two days is 2 grams.

Period 3.—Average excretion is 2.2 grams.

Period 4.—Average excretion is 1.9 grams.

Period 5.—Average excretion is 1.8 grams.

During Period 3 the excretion was markedly higher than in Period 4—that is, by 15 per cent.; while the excretion in Period 4 was on the average lower by 5 per cent. than in Period 2.

Further, the percentage relation to the total nitrogenous excretion was even more marked in Period 3 than in Period 4. This is shown on lower part of Chart D.

The numbers are: Period 3, 15·2 per cent; Period 4, 13·6 per cent.

CASE II.

In this case possibly some minor abnormalities of metabolism might be expected. Considerations of space preclude the reproduction of the charts comparable with those of Case I. The results obtained confirm those detailed in the former.

The conditions as to diet were similar to those of the first case, but every approximately non-purin containing food (by Walker Hall's tables) was permitted, and the diet was unlimited in amount during the whole period of experiment (nineteen days); 8 oz. of claret was taken daily with meals. Eleven days were spent on the preparatory non-purin diet; on the succeeding eight days 20 oz. of sulphur water was taken per diem, and the same constituents of the urine were daily examined by the same methods as in Case I. No restrictions as to exercise were made. Unfortunately, constipation was a trouble during the first stage, and had to be met by doses of cascara sagrada, and on one occasion by an enema.

This drug was chosen as being least likely to interfere with general metabolism, being held to be simply a pure muscle stimulant. This constipation, I am afraid, somewhat disorganized the purin metabolism, but still these charts in the main show the same results as in Case I. The solitary counter-result affects the total amount of nitrogen excreted, which was slightly higher in the first than in the sulphur-water stage; also very free evacuation of the bowel occurred on the first and second days of ingestion of sulphur water. The number of motions for the first four days was respectively 3, 2, 1, 2.

Uric Acid.—The *endogenous* uric acid shows a rise from an average of 107 to 115 mg. of uric acid nitrogen.

The Exogenous Uric Acid.—The two doses of hypoxanthin of ½ gram each, taken on respectively the ninth and seventh days of the experiment at 5 p.m. in the afternoon, show the following results: In the pre-sulphur stage 50 per cent. was recovered as uric acid. And that taken during the treatment by sulphur water shows nearly 80 per cent. as additional uric acid. This result is almost identical with that obtained in Case I.

I may here note the very large deposition of uric acid crystals during almost the whole of the sulphur water taking stage. The xanthin base excretion shows fewer points than in Case I, but the average excretion is slightly lowered during the latter days of the second period as compared with the last four or five days in the pre-sulphur period. Here, of course, the disturbing influence of irregular exercise is apparent, especially on day 12.

The Volume of the Urine and the Specific Gravity.—The results obtained were similar to those noted in the first case, except that the diuresis was not so marked in the sulphur water taking stage, a circumstance due in all probability to the free purgation which followed the ingestion of the first two doses of sulphur water. The average excretion of water during the first stage was 1,175 c.cm., in the second or sulphur stage it was 1,420, an increase of rather more than 25 per cent.

Kreatinin.—The excretion of kreatinin in the pre-sulphur stage was found to be abnormally high. This, as I have already hinted, had been suspected at the commencement of the experiment. Case II is subject to recurrent migrainous headaches and to an abnormal condition of lassitude and depression following unusual exertion, and this is associated with a somewhat low blood pressure. The average excretion of kreatinin during the pre-sulphur stage was nearly 2.8 grams per diem. During the taking of sulphur water it rose to about 2.9 grams as an average, an increase of 5 per cent. The percentage relation of kreatinin to total nitrogen excretion is more striking, and the average percentage in the two periods was respectively 17 and 20. Weight remained stationary at about 11 st. 8½ lb. during the whole experiment.

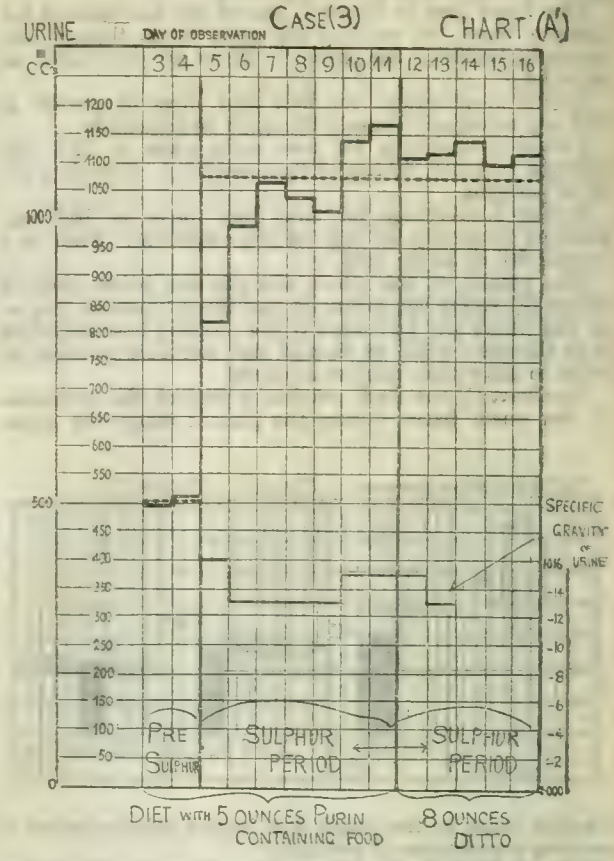
CASE III.

This subject was elderly, and had had repeated attacks of gout. He has a great prejudice against any drug treatment whatsoever. The present attack has lasted for nearly eight weeks. Typical swelling of foot and leg to level of patella. On his arrival he was put on an unlimited non-purin diet with 5 oz. of flesh food. He took this diet for four days before commencing sulphur water; on the third and fourth days observations were made as regards volume, specific gravity of the urine, and the total amounts of uric acid xanthin bases and kreatinin. Unfortunately, with regard to the last substance, one of the older mercury methods of estimation was employed, the results of which do not appear to be accurate and so are neglected.

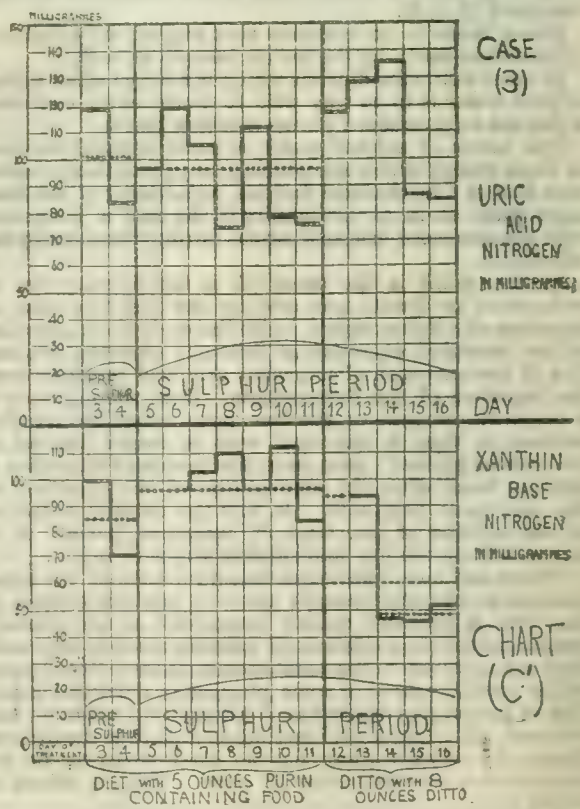
1. *Amount and Specific Gravity of Urine* (Chart A').—The amount on the third and fourth days was respectively 500 and 520 c.cm. On the fifth day he took his first dose, 12 oz. of sulphur water, and continued to take this dose for the eleven succeeding days. The urine on the first day rose to 820 c.cm., and the average amount of urine for the whole of this period is about 1,075 c.cm., the diuresis more than doubled the total amount of urine. The pre-sulphur measurements probably show an unnaturally contracted output, as four days subsequent to the cessation of the taking of sulphur water the urine measured rather over 800 c.cm.

The specific gravity of the urine during the taking of the sulphur water does not vary inversely with the amount of the urine, as was the case in the two previous subjects examined, but is high, showing much increased excretion of solids.

2. *Uric Acid* (Chart C', upper half).—This shows, although the patient was taking 5 oz. of purin-containing food, a total no higher than in the two previous cases on a non-purin diet, and varied very little, except slightly in a downward direction, during the first seven days of the administration of sulphur water. On the eighth day of the administration of sulphur water the purin-containing elements of the diet were increased from 5 to 8 oz. of flesh food, with the result, as far as the uric acid is concerned, which is shown on the chart. The amount of uric acid excreted per diem fell on the eleventh and twelfth days of the administration of sulphur water.



3. *Xanthin Bases* (Chart C', lower half).—The details on the chart are here, I am sorry to say, somewhat fragmentary. On four days the estimations suffered from some technical fault,



and so are omitted. The purin average is high during the first stage, but I think there can be no doubt about the general fall during the last five days, when the larger amount of

purin-containing food formed part of the diet. Here, then, is another suggestion that possibly the addition of purin-containing food or free purin may stimulate the oxidation of purin substances remaining in the body.

I do not wish to hide the fact that on the eighth day of administration of sulphur water the patient was much improved, and on the tenth day the swelling of the leg, which on his arrival in Harrogate reached to the knee, had nearly disappeared, so that a boot could be worn for the first time for nearly ten weeks. The extra amount of exercise may account somewhat for the increase in uric acid on the first three days of the increased diet.

Summary of Results.

In the briefest possible form the three cases show these results (compare Chart A of Case I with Chart A' of Case III, and Chart C of Case I with Chart C' of Case III):

	Case I.	Case II.	Case III.
1. Amount of urine ...	+40 per cent.	+25 per cent.	+110 per cent.
2. Specific gravity of the urine	Tends to vary inversely with the amount of the urine passed from day to day, but is relatively higher during the taking of sulphur water, showing increased excretion of total solids		Tends to vary directly and not inversely on certain days, tending to show very large increase of excretion of total solids in cases of gout.
3. Excretion of total nitrogen	+10 per cent.	Result uncertain or negative	Not observed.
4. Endogenous (or body) uric acid during taking of sulphur water	+8 per cent.	+5 per cent.	Low during the treatment.
5. Endogenous (or body) uric acid after cessation of taking sulphur water	+ further 11 per cent. (in all nearly 20 per cent. increase)	—	—
6. Percentage of 0.5 gram of hypoxanthin taken by mouth obtained as uric acid	36 to 40 per cent.	50 per cent	—
7. Increased percentage of hypoxanthin during taking of sulphur water	To 80 per cent. nearly	To 80 per cent.	—
8. Decrease in excretion of endogenous xanthin bases during treatment with sulphur water	−33 per cent. (with fixed amount of exercise)	Slight decrease (exercise unlimited)	—
9. Decrease in excretion of endogenous xanthin bases after sulphur water	Further −22 per cent (total fall 45 per cent.)	—	—
10. Endogenous kreatinin during taking of sulphur water	+5 per cent.	+5 per cent.	—
11. Endogenous kreatinin after cessation of treatment	−10 per cent.	—	—

No increase in excretion of xanthin (purin) bases as such results from taking of sulphur water in conjunction with doses of *exogenous* pure purin (hypoxanthin).

GENERAL RECAPITULATION.

Now for a general recapitulation. Sulphur water has in the main an oxidizing action on the products of metabolism. It also probably prevents the usual amount of absorption of nucleo-albumens by its action on the intestine. In detail the results obtained are:

1. In physiological subjects there appears to be an increase in the excretion of total nitrogen, probably dependent on an increased general metabolism.

2. The *endogenous* uric acid during the taking of sulphur water and subsequent to that period is increased in all by 20 per cent.

3. The excretion of *exogenous* purins, as tested by taking measured doses of a pure xanthin base, is increased, as is shown on the chart. The increase in the amount of uric acid excreted and due to this source rises from 40 to 80 per cent. of the total amount of *exogenous* purin material ingested.

4. Sulphur water has no power to increase the amount of xanthin bases excreted as such.

5. The excretion of *endogenous* xanthin bases is during the period of ingestion of sulphur water approximately decreased by 33 per cent., and in the post-sulphur stage there is a further diminution in excretion, which reduces the daily excretion of *endogenous* xanthin bases to little more than half of the daily excretion in the pre-sulphur stage, when the subject was on a fixed non-purin diet.

The results point most strongly to a stimulation of xanthin oxidase as a result of treatment by sulphur water. The second case shows results which are comparable with those of the first case. *The third case*, that of gout, with regard to uric acid, shows the total excretion of only the same level as that seen in the first case on a measured non-purin diet, in spite of the 5 oz. of meat food included in the diet. It also shows an increase in the total amount of uric acid excretion following the further addition of 3 oz. of meat to the diet, which for amount compares roughly with that seen in the sulphur period in Case I. With regard to the xanthin base excretion, this is during the whole of the sulphur water period unduly high, until the last few days of that period, when rapid amelioration of the gouty condition was taking place, when there was, in spite of the addition made to the diet, a sudden and sustained fall in the amount of xanthin base excretion.

6. *Kreatinin.*—The combined results of Cases I and II tend to show that an increase in excretion takes place during the period of ingestion of sulphur water, and a fall subsequent to this period, amounting in Case I to 15 per cent. This fall subsequent to the period of treatment with sulphur water is noteworthy when we recognize that the total excretion of nitrogen does not correspondingly fall. These results are probably dependent on the setting up and lessening of the cessation of the diuresis.

7. *Amount of Urine and Specific Gravity.*—Considerable diuresis appears to occur in physiological cases—a diuresis even more marked in the pathological case (gout), where one had some reason to suspect an abnormal contraction in the volume of the urine before the treatment was commenced.

The Specific Gravity.—The lowering of this did not correspond with the degree of diuresis during the treatment with sulphur water, and tends to uphold the view that sulphur water leads to an increase in the excretion of the total solids. The third case, indeed, on certain days, shows an increase in the specific gravity, in spite of the large increase in the total volume of the urine. This suggests that retention of incompletely oxidized products of metabolism occurs in acute gout.

I have to acknowledge my indebtedness for advice and encouragement to Dr. Gowland Hopkins and Dr. Ackroyd of Cambridge, to Dr. Dimmock for the loan of apparatus; also I have to express my obligations to Dr. Solly for a very practical sympathy with this inquiry; to Dr. Mantle of Harrogate; to Mr. Rivers, the borough meteorologist, for working out some statistics; and, last but not least, to Mr. Eynon, pharmacist of this town, who, when I was most pressed with laboratory work, prepared and standardized test solutions which, for want of time, I could not myself undertake.

I have to thank you, Mr. President and Gentlemen, for this opportunity of detailing to you the results of many months of work, and I can only wish that my interest in this inquiry may, to a certain extent, infect you and lead to a very lively discussion.

[After the reading of the paper in Harrogate a discussion followed, in which Drs. Black, Edgecombe, and Solly took part.

At Cardiff a discussion of various points raised by the paper ensued, in which Mr. Tennison Collins (President, Cardiff Medical Society), Drs. Scholberg, Mackenzie Wallis, Treasure, Cresswell, and other gentlemen joined.]

WE gather from the latest report of the Church of England Mission of Hop-pickers that last year the number of temporary immigrants into Kent was as high as 50,000. It is not only for their spiritual needs that the mission caters, makeshift hospitals and trained nurses and like provision being made. The enterprise which started some 43 years ago with four workers now demands the services of over 150 persons. This need is readily comprehensible, as the immigrants are spread over a wide area. Although most of the workers give their services, the expenditure is necessarily considerable. Donations may be sent to the Rev. F. G. Oliphant, Rector of Teston, Maidstone. Request is also made for sound illustrated literature, and old linen for bandages, parcels being sent to Wateringbury station.

THE AFTER-HISTORY OF FORTY CASES OF EPITHELIOMA OF THE LIP.

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Introduction.

Epithelioma of the lip has the reputation of being one of the least malignant varieties of cancer. The majority of surgeons in the past have, therefore, been content to remove it with rather a narrower margin than is customary in dealing with carcinoma in other situations, and it has not been the usual practice to remove all the lymphatic glands into which it might drain unless they were evidently infected. In cancer of the tongue, on the other hand, the whole lymphatic area is always removed nowadays. Some surgeons have recently been treating epithelioma of the lip in the same way, often doing the operation in two stages, the growth on one occasion and the glands on another. An extensive dissection is necessary completely to remove all the lymphatic vessels and glands, and the proceeding is not altogether without risk.

The present report has been drawn up to afford some ground on which opinion may be based, in endeavouring to decide whether the more extensive operation is really desirable. I have sought to trace the after-history of all the patients operated on at the Bristol Royal Infirmary for epithelioma of the lip during the years 1900 to 1909 inclusive. A few may have been overlooked by inadvertence. It has seemed to me better to mention even those concerning whom no subsequent information is available. I may confidently disclaim any personal bias in favour of the one procedure or the other.

The cases are classified according to the method of operation adopted, the operations for recurrence being classed separately.

1. *One operation only: removal of growth on lip by a V incision. Glands not removed.* Twenty-three cases, of which 14 are now well, 4 are known to have died of recurrence, and 2 more have probably done so, and 3 are lost sight of.

2. *One operation only: removal of growth on lip and of a palpable gland or glands.* Six cases, of which 1 is probably cured, 3 died of recurrence, and 2 cannot be traced.

3. *Removal of growth on lip and complete clearance of all the submaxillary glands on that side at the same time or soon after, although not palpably enlarged.* Three cases; 2 well, 1 recurred. All are rather recent.

4. *Recurring cases operated on more than once.* Seven cases, of which 2 are well, 1 has probably recurred, 1 died of pneumonia without recurrence, and 3 died of recurrence.

5. *Recurring cases whose first operation was performed elsewhere.* Six cases, of which 2, probably 3, are well; 3 died of recurrence.

The above results may be expressed in tabular form thus (two patients who left years ago with inoperable glands are included as dead):

Operation.	Cases.	After-history known in	Well.	Died without recurrence.	Probable or known Recurrence.	Died of Recurrence.
1. Growth on lip removed, not glands. One operation only	23	20	14	0	0	6
2. Growth on lip and a palpable gland or glands removed	6	4	1	0	0	3
3. Growth on lip removed and all glands cleared	3	3	2	0	1	0
4. Recurring cases	7	7	2	1	1	3
5. Other surgeons' recurrences	6	6	3	0	0	3
Total	45	40	22	1	2	15

As so few of the patients have been lost to view it will be perfectly fair to complete the list of all those who had their first operation at the Infirmary by adding the 7 recurrent cases to the first two classes in their proper places. The actual result can thus be seen at a glance (two who left with inoperable glands are spoken of as dead):

Operation.	Cases.	After-history known in	Well.	Died of Pneumonia.	Recurred, but now well.	Recurred.	Died of Recurrence.
1. First operation on lip only	28	25	14	1	2	1	7
2. Sore on lip, and palpable glands removed at first operation	8	6	1		0	0	5
3. Sore on lip removed, and all glands cleared, though not enlarged	3	3	2	0	0	1	0

It will be seen that of those cases in whom no glands were removed at their first appearance 16 ended favourably, and 7 died of recurrence. When, however, there were already enlarged glands, though perhaps only one, 1 case resulted favourably, and 5 died. There can be little doubt that an extensive removal of all the glands, besides those enlarged, is indicated in this latter class.

It is probable that there will be difference of opinion as to the proper treatment to be pursued for those patients who present themselves with a sore the size of a hazel-nut on the lip with no palpable glands. Treatment cannot be based only on statistics. We must rely also on experience of similar cases. It is, therefore, important to ask what was the clinical picture in the 7 cases who died.

In C. B. the original growth was the size of a pea.
In W. B. the original growth was probably not large (notes not explicit).
In W. P. the original growth was 1 inch long.
In P. O'T. the original growth was a trifle more than a quarter of the lip.
In J. L. the original growth was the size of a sixpence.
In C. F. the original growth was very extensive.
In W. H. the original growth was half the lower lip.
In J. L. and C. F. there were palpable glands, which were not removed.

In none of the other five patients were there any glands palpably enlarged, although in one or two of them an exploratory incision was made in the neck to be certain of this. Omitting the cases of J. L. and C. F., where glands were felt, and of W. H. and W. P., where the original growth was large, we find 3 patients with a growth less than one-third of the lip in size, with no palpable glands, in whom operation was followed by fatal recurrence. Two recurred in the lip and in the neck, one in the glands only. These 3 are drawn from a group of 20 cases (obtained by deducting the above 4, and one other which has probably recurred, from the 25 cases whose after-history is known). We therefore obtain the following important summaries:

(i) Of 20 patients with a growth on the lip less than one-third of the lip in size, and with no glands palpable, treated by local removal only, 3 died of recurrence.

(ii) Of 6 patients with a growth on the lip and a palpable gland or glands, treated by removal of the growth and of the enlarged glands, 5 died of recurrence.

Time and Site of Recurrence.

In 8 cases recurrence was in the lip. (Of these, only 5 were first operated on at the Infirmary.)

In 9 cases recurrence was in the glands.

In 5 cases recurrence was in both lip and glands.

Several of those who had a recurrence only in the lip now seem to be cured.

Recurrence in the glands was always in about six months or less, except in one case, where the neck had been cleared.

Patients presented themselves for a second operation six, three, three, and two years after the first operation for a recurrence in the lip, though in some cases return was rapid.

Of the 4 mentioned as presenting themselves after so long a time, 3 are still well.

The average duration of life after the operation in those cases in whom a fatal recurrence took place was about one year. One survived for three years; another died in five weeks.

Etiology.

Age.

Nearly all were over 50 years of age. One patient, however, was only 31; another was 35. In the latter

case the pathological and clinical diagnosis were both dubious.

Sex.

Of 45 patients only 2 were women. In one of these the growth was in the upper lip. The other admitted that she smoked a clay pipe.

Relation to Smoking.

In many cases the sore definitely started where a clay pipe was usually held by the patient. Twenty-four of the patients came from the country, and others from the outskirts of Bristol. This is noteworthy, as the immense bulk of our patients come from towns. Three or four said that the growth started in the scar of a healed abrasion.

Conclusions.

It is at once evident that when the glands are already infected, only an extensive dissection will give the patient a reasonable chance of cure.

Ought this dissection, involving removal of the whole lymphatic area, to be carried out when the growth is small and no glands are palpable? I think yes. We have seen that of 20 such cases treated by local excision of the epithelioma, three eventually died of recurrence (15 per cent.). The risk of the operation is not as high as 15 per cent. Nevertheless, in one case the more extensive procedure only delayed and did not prevent the ultimate recurrence. The lesson is that if the neck is to be cleared, it must be cleared very thoroughly.

Brief Summary of Cases (45 in Number, with After-History in 40).

I.—*Cases in which only one Operation was Performed, on the Lip alone; no Glands Removed (23 Cases: 14 now Well; probably 6 died of Recurrence and 3 not traced).*

Initials.	Sex.	Age.	Year.	Condition and Operation.	After-History.
W. P.	M.	63	1902	Growth ½ in. by ½ in.; no glands; V operation	Writes, Feb., 1910, that he is quite cured.
W. B.	M.	67	1902	Growth small; a small chronic patch on other side of lip; no glands; both sides removed	Recurred in cheek and neck; died 18 months after.
J. B.	M.	67	1902	Growth 9 months' duration; glands enlarged; only sore on lip removed	Not known.
M. H.	M.	65	1902	Small growth removed; no glands felt	Not known.
J. W.	M.	62	1903	Growth of 3 months' duration removed; no glands felt	Writes, Feb., 1910, quite cured.
H. R.	M.	66	1903	Growth size of a nut removed; no glands felt	Writes, Feb., 1910, quite cured.
W. P.	M.	72	1903	Growth 1 in. long; 1 years' duration; no glands felt; growth removed	Recurred soon after; died in Aug., 1906.
J. P.	M.	74	1904	Large growth removed; no glands felt	Writes, Feb., 1910, cured.
T. B.	M.	48	1904	Growth of lip removed; no glands	Writes, Feb., 1910, cured.
S. C.	M.	43	1904	Papilloma becoming malignant, removed; no glands felt	Not known.
P. O'T.	M.	74	1905	Growth, rather over a quarter of lip, removed; no glands felt	Inoperable; recurrence in lip and neck 7 months later.
J. D.	M.	74	1905	Growth on lip removed; no glands felt	Writes, Feb., 1910, cured.
S. W.	M.	59	1905	Large growth removed by taking away most of the lip; no glands felt	Writes, Feb., 1910, cured.
F. O.	M.	51	1905	Small growth removed; no glands felt	Seen Feb., 1910, cured.
J. S.	M.	60	1905	Small growth removed; no glands felt	Writes, Feb., 1910, cured.
J. L.	M.	55	1906	Growth on lip removed; no glands felt	Writes, Feb., 1910, cured.
H. W.	M.	51	1906	Growth on lip removed; no glands felt	Writes, Feb., 1910, cured.
I. L.	M.	77	1906	Growth on lip removed; apparently a palpable gland was not removed	Was alive and probably well in Jan., 1910.
C. T.	M.	35	1907	Growth on lip removed; no glands felt; clinical and pathological diagnosis dubious	Writes, Feb., 1910, cured.
J. L.	M.	64	1907	Growth size of sixpence removed; one gland felt, not removed	Inoperable glands in 1908.
C. F.	M.	53	1907	Large sloughing growth of lip and cheek removed; palpable glands, not removed	Recurred in jaw; died in Aug., 1909.
W. H.	M.	72	1909	Growth occupying half of lower lip removed; no glands felt	Recurred in neck; died in Feb., 1910.
G. Y.	M.	76	1909	Small growth removed; no glands felt	No recurrence, June, 1910.

II.—*One Operation only: Growth on Lip and Palpable Gland or Glands Removed (6 Cases: 1 probably cured; 3 Died of Recurrence: 2 lost sight of).*

Initials.	Sex.	Age.	Year.	Condition and Operation	After-History.
A. C.	M.	47	1901	Achondroplasiac dwarf; whole of lower lip involved and removed; glands removed	Not known.
J. J.	M.	64	1902	6 months' growth and one gland removed	Died of recurrence in neck, June, 1903.
G. W.	M.	84	1902	Growth, size of walnut, removed, with one enlarged gland	Not known.
J. L.	M.	66	1904	Growth in scar of old abrasion; one enlarged gland; growth and gland removed. (There is no note that the gland was cancerous.)	Seen Feb., 1910; slightly enlarged glands, both sides of neck, but probably cured.
W. A.	M.	65	1907	Growth and one gland removed	Died Dec., 1908, with enormous ulceration and glands
G. J.	M.	64	1908	Large fungating growth and one gland; both removed; gland proved not to be cancerous	Recurred soon after in neck and lungs; died in 5 weeks.

III.—*Removal of Growth on Lip: Complete Clearance of all the Lymphatic Glands, although none was palpably enlarged (3 recent Cases: 2 well; 1 recurred).*

Initials.	Sex.	Age.	Year.	Condition and Operation.	After-History.
E. W.	M.	55	1908	Growth size of large nut removed; no glands felt, but all cleared out	Wrote, Feb., 1910, that he was quite well; a few months later went to another hospital with extensive recurrence in neck.
A. S.	M.	53	1908	Growth size of a monkey nut removed; no glands felt, but submaxillary glands all cleared out	Seen, Feb., 1910; quite well.
H. B.	M.	64	1909	Small sore removed; a few very small glands could be felt, doubtful if enlarged; all cleared out at an operation a fortnight later	Writes, Feb., 1910; quite well (about 7 months after operation).

IV.—*Cases Operated on more than once, on account of Recurrence (7 Cases: 2 cured, 1 died without further Recurrence, 1 has perhaps recurred, and 3 are dead from further Recurrence).*

Initials.	Sex.	Age.	Year.	Condition and Operation.	After-History.
C. B.	M.	65	1902	Growth the size of a pea removed; no glands felt. Later in the same year glands appeared, and were removed at two operations. The last was a very extensive removal, and it was doubted if all was got away	Died 1 year after the original operation of recurrence in the neck.
E. W.	F.	68	1903	Growth of the upper lip, of two years' duration, removed; no glands felt. Within 2 months recurred, and was again removed; no glands felt	Writes, Feb., 1910, cured.
H. W.	F.	58	1903	Small nodule removed; no glands felt. Patient smokes clay pipe. Three years later recurred in the lip; was again removed	Writes, Feb., 1910, has a small sore again in lip. "May come up to the Infirmary."
J. G.	M.	73	1905	Growth of lip removed; no glands felt. Relapsed in lip in 1907; again removed	Died in 1909 of pneumonia, without recurrence.
T. A.	M.	52	1906	Extensive growth of lip removed, also one palpable gland. More glands removed in 1907. Removal was attempted again in 1908, but failed	Died of recurrence in neck in Dec., 1908.
T. M.	M.	56	1906	Growth removed; no glands felt. Recurred in lip; again removed in 1906	Writes, Feb., 1910, cured.
I. E.	M.	59	1909	Growth and enlarged glands removed. Recurred in lip; was again removed about 2 months later	Died of recurrence in glands in Dec., 1909.

V.—*Recurring Cases, First Operated on Elsewhere (6 Cases: of which 3 are probably well and 3 died of recurrence).*

Initials.	Sex.	Age.	Year.	Condition and Operation.	After-History.
J. P.	M.	58	1905	Growth on lip removed 3 months before; one enlarged gland in neck; removed	Died in 1906 of recurrence.
J. W.	M.	47	1905	Growth on lip removed 2 years before; glands in neck; found to be too extensive for removal	Died a few months later.
W. S.	M.	54	1906	Growth of lip removed in 1900; recurred in lip; removed; no glands felt	Writes, Feb., 1910, cured.
J. C.	M.	(?)	1908	Growth of lip removed in 1906; extensive glands found and removed; carotid, jugular, and probably vagus divided	Died 5 weeks later.
W. B.	M.	70	1908	Growth of lip removed in 1905; small recurrence in lip removed; no glands felt	Writes, Feb., 1910, cured.
H. C.	M.	61	1909	Growth of lip removed 6 months before; enlarged glands, extensive; these were not removed	From a vague letter I gather that he is well.

EFFECT OF A DENTURE AFTER EXCISION OF THE UPPER JAW AND SEPTUM NASI.

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It is well known to surgeons that the removal of the upper jaw is frequently attended with very little outward deformity. Such deformity is not always much increased by removal of the opposite bone, provided the nasal septum remains as the support of the nose. But if a part of the septum be taken away, the nose falls in, and great deformity results, whether one or both upper jaws be removed.

Fig. 1 shows the great distortion and falling-in of the nose in a case where the right upper jaw, septum, and part of the left had to be removed (1878). Ten days after operation an india-rubber ball was placed in the gap to support the cheek and nose. This answered its purpose perfectly for a time, but was not persevered with, and so deformity was not prevented.



Fig. 1.

In May, 1909, through an incision of the upper lip into the right nostril, continued up the cheek by the side of the nose, I excised the right upper jaw of a man aged 39, for a form of epithelioma, which healed very simply and well, but reappeared some nine months later, showing granulating masses filling both nostrils. The lip portion of the scar was cut through again, and all the growth removed, involving the lower part of the nasal septum, and the mucous membrane of the right nasal cavity in detached areas up to the roof. The growth was entirely papillary in character, and only ulcerated where exposed at the nostrils. The microscopical characters, as shown in slides made by Messrs. J. M. Bligh and G. Lissant Cox, exactly resembled that described as "papillary epithelioma" in Ziegler's *Pathological Anatomy*, 11th German edition, vol. i, plate 316.

Immediately after the operation, having wiped the cut surfaces with chloride of zinc solution 40 grains to the ounce, I placed a small sponge in the gap to support the nose, which was now loose and falling in.

The sponge had to be removed next day, or it would have adhered permanently, and a small india-rubber ball was inserted, followed by the denture, made for him after

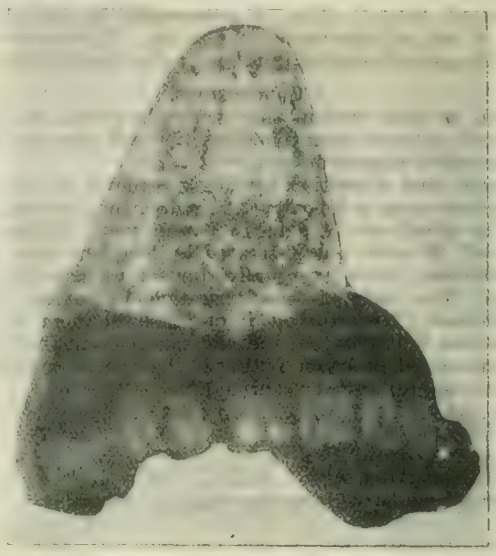


Fig. 2.

the previous operation by Mr. Tindal (of Messrs. Royston Matthews and Bates, Liverpool). This answered the purpose mechanically, but was very uncomfortable, and, although the ball was changed for a smaller one next day, it was still uncomfortable, and was at once removed. The presence of the plate, however, filling the gap in the right half of the palate, was found to be alone a great comfort, and for the moment the loose state of the nose was partly remedied below.

The patient was so little affected by the operation that I allowed him to sit up the day after, and, as he wore the plate that day, he was able to eat bread and milk at once, and to pass from slops to ordinary diet in a very few days. Moreover, the discharge of blood having now ceased, the rather free secretion of mucus became less after insertion of the plate—a conspicuous contrast noticed by the patient on this as compared with the previous occasion, when it lasted many days.

I therefore got Mr. Tindal to enlarge the denture upwards, so as to jut into the gap made in the septum. This he did four days after operation. The effect was very striking. Not only was the denture now much more firmly steadied in place, not having to rely on the one-sided hooks around the left upper teeth, but the patient spoke highly of the increased comfort derived from the immediate cessation of mucous discharge. The early insertion of the denture no doubt kept the parts warm by lessening the current of air through the nose. Patients whose nostrils have been closed entirely by cicatrization after scraping away lupus and other ulcerations, are not under any inconvenience through not being able to "blow their nose." The act is unnecessary, as not enough mucus forms to be "blown."

The existence of this well-fitting denture before the second operation permitted its insertion at the unusually early period of the fifth day; and the absence of the invalid state enabled the patient to go a short distance to have it enlarged. It must probably be seldom that a denture could be fitted early enough after operation to prove as useful as in this case; but this fact, new to me, is worth recording as a help in the after-treatment whenever circumstances permit its adoption.

REMARKS.

The work of dentists in preparing dentures for the patients of surgeons is seldom heard of in any detail in

the clinical records of cases. In this case the denture after the first operation was anchored to the left upper teeth, this sole attachment being from the nature of the case insecure, and a source of strain and discomfort to those teeth. The upward peak in the alteration not only steadied the whole denture and lessened the strain, but proved a great help in unexpected ways, preventing the secretion of mucus and the formation of scabs, besides putting an end to all discomfort. The patient himself irrigated the nostrils after meals, and at other times with warm salt solution without removing the denture.

Fig. 2 shows the denture, and the upper limit of its first shape, which was flat topped, above which is the "peak," since added.

AN IMMENSE RENAL CALCULUS.

By GEORGE W. ORD, M.R.C.S., L.R.C.P.,
RICHMOND.

The case of which the details are here given is of great interest for the following reasons: (1) The presence of calculi in both kidneys. (2) The size of the large calculus: the skiagram gives a shadow of 4½ in., and the actual stone, when removed, measured 3¼ in. by 2 in. by 2 in. (3) The comparatively small amount of discomfort and pain considering the size and irregularity of the stone. (4) The extremely healthy appearance of both the kidneys at the operations. (5) The separation of the calculus into two large and one small fragments, articulating by facets, and, in a way, resembling a knee joint with patella. The joint was movable in a front to back direction, and was evidently flexed whenever the patient bent her back. This capacity for flexion doubtless prevented much of the pain.

A. O., female, aged 30, single, by occupation a cook, was first seen on May 19th, 1906.

Family History.

Parents both alive. Mother suffers from asthma.

Previous History.

She had scarlet fever when 12 years of age. Used to cry after school from backache aged 10–12). Her mother called the pain in her back "lumbago" when she was 19.

Present Illness.

She had renal colic six years ago—small stones passed. Had had two attacks since, the last four months ago. Blood passed only on these occasions; calculi phosphatic in appearance. Had had two attacks of asthma (? renal) one two years ago, the last a month ago.

General Condition.—This is exceptionally good. She is healthy and wholesome in appearance, well able to do her work, but has some backache, sometimes with long intervals of freedom from discomfort; can walk four miles comfortably; catamenia regular.

Urinary System.—She passes 30–40 oz. of urine daily, specific gravity 1012; urea 2 per cent.; slight amount of albumen; small deposit of pus, alkaline in reaction. On microscopical examination crystals of triple phosphates and pus cells were seen. Micturition is normal in frequency except after colic or asthma, when it is increased. With regard to the lumbar pain; when it does come on it lasts three or four days very severely. The pain is very sharp, more so in the right kidney than in the left, and more aching in the right. She likens the pain, when present, to a "jumpy toothache."

Treatment.

Treatment consisted mainly of the administration of glycerine in large doses when pain was present, a tablespoonful or two tablespoonfuls in three times its bulk of water, the pain being greatly relieved thereby. Feeling certain that the kidney contained more calculi than she had passed, I sent her to Dr. Greg at St. Thomas's Hospital for *x* ray examination, and his skiagrams showed the following surprising condition of affairs: Right kidney: A huge shadow, larger than the size of a normal kidney. Left kidney: Four or five large calculous masses.

Operation.

She was admitted to St. Thomas's Hospital. The right kidney was operated on by Mr. Clutton on June 30th, 1906, and a large calculus and five smaller ones from the calyces removed. The kidney appeared quite healthy, and was returned to the abdomen.

The patient made a normal recovery.

The excretion of urine previous to the operation was 44 oz. to 75 oz. daily, and on the days following the operation: 1st day, 17 oz: 2nd day, 36 oz.; 3rd day, 59 oz.; 4th day, 43 oz; 5th day, 77 oz.; 6th day, 63 oz.

Second Operation.

On November 2nd, 1906, the left kidney was operated on. Extract from Mr. Clutton's letter:

> There was an immense number of small stones in left kidney, some in pelvis, and some in the cortex, the latter requiring separate incisions. There was plenty of renal tissue, so the kidney was returned to the abdomen.

Excretion of urine previous to operation 33 oz. to 49 oz. daily. After operation: 1st day, 23 oz.; 2nd day, 67 oz.; 3rd day, 36 oz.; 4th day, 87 oz.; 5th day, 61 oz.; 6th day, 34 oz.; 7th day, 40 oz. Normal recovery.



Fig. 1.—Skiagram (reduced in size) of calculus in right kidney.

The description of the calculi from both kidneys is as follows: Those from the right kidney weighed 118 grams (3¼ oz), no nucleus, bistre in colour, easily friable and porous, surface rough. The largest calculus, measuring 3¼ in. by 2 by 2 in., had been fractured about its middle some time previously, and a regular articulation had resulted, somewhat resembling an infant's knee-joint, patella included. The composition of the calculi was as follows: Calcium, sodium, and magnesium phosphate and carbonate. The calculi from the left kidney weighed 14½ grams.

After-History.

The after-history of the case was as follows:

The patient left the hospital in January, 1907; continued as cook till May, 1908; left her situation and was married in June, 1908.

She was admitted to St. Thomas's Hospital in May, 1909. Operation (right lumbar nephrolithotomy) was performed on May 26th, 1909, by Mr. Clutton, and granular débris removed.

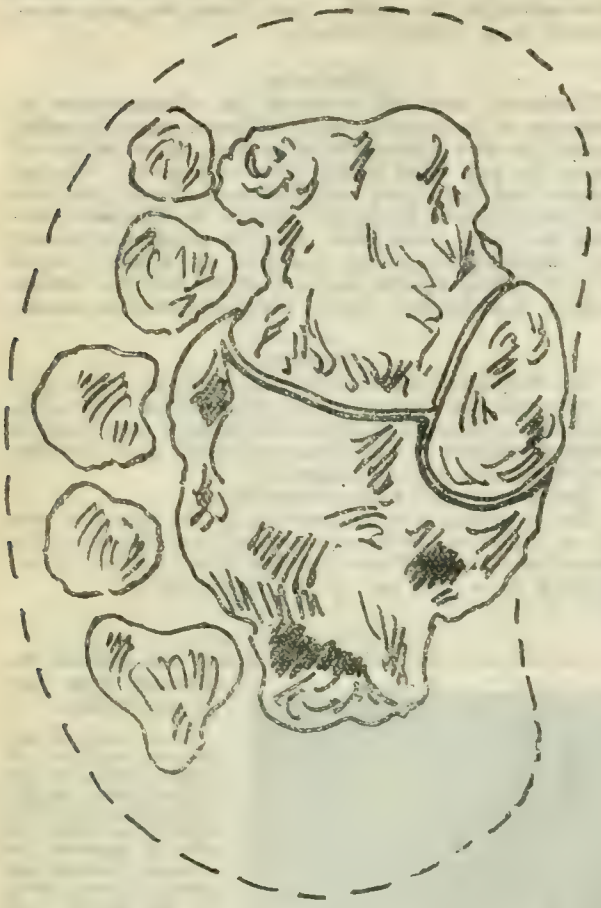


Fig. 2.—Articulated calculus and five calculi from right kidney (Actual size.)

On July 8th, 1909, the right kidney was drained by Mr. Robinson for condition of intermittent hydronephrosis.

Abortion took place on August 13th, 1909. She left hospital in September, 1909, and died on November 11th of the same year, three years and four months after the first operation.

This case may be compared in many ways with Mr. Hurry Fenwick's published in the BRITISH MEDICAL JOURNAL for May 7th, 1910.

1. The large calculous masses.

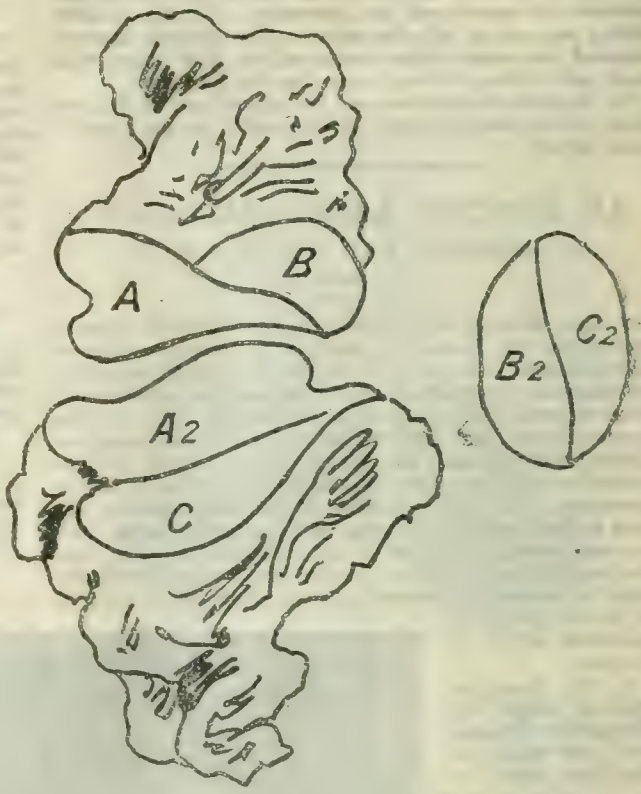


Fig. 3.—Calculus from right kidney showing articulat (Actual size.)

2. The long history of calculus in each case, in mine twenty years; in Mr. Fenwick's fifty years.

3. The composition of the calculi in each case is practically identical.

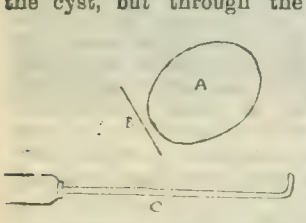
It is to be observed that the after-history is only given for two and a half months in Mr. Fenwick's case.

A SIMPLE METHOD OF REMOVING SEBACEOUS CYSTS.

BY H. FREETH, M.D., B.CH.,
LLANGOLLEN.

THE method here described is in all respects so much more simple and satisfactory than the ordinary method of dissection that I feel justified in bringing it to the notice of the profession.

Let A represent a cyst. An incision B is made, not over the cyst, but through the healthy skin alongside it, parallel to and the same length as the shortest diameter of the cyst.



The hypodermic injection of a little eucaine solution along the line of the incision is all the anaesthetic required.

The small blunt hook C is then inserted into the incision and is worked round the cyst, tearing through the adhesions of the cyst wall, first on the superficial aspect, as that is where the cyst wall is thinnest and most liable to burst, and then on the deeper aspect, until the cyst is completely separated, when it can easily be "delivered by pressure from above, much in the same way as a cataract is delivered.

A dab of collodion on the wound is sufficient dressing.

The advantages of this method are:

1. The incision is through healthy skin and is, especially where the cyst is oblong, much shorter than by the usual method.

2. The union is quicker, more satisfactory, and the appearance of the resulting scar much better than that of an incision through the altered skin over the cyst.

3. A minimum amount of anaesthetic is used, as only a linear injection is required. I have removed quite painlessly eight good-sized cysts from a woman's scalp at a sitting, using altogether only $\frac{1}{3}$ grain eucaine dissolved in 1 c.cm. water.

4. In the case of cysts situated on the scalp very much less hair need be cut, as all that is required is a single snip of the scissors over the site of the incision.

The largest cyst I have so far removed by this method was about as large as a bantam's egg, and I was surprised how the thin stretched skin contracted and became smooth and natural looking in a few days, and should I have occasion to remove a very much larger one I should still employ the same method, and should remove none of the skin but leave it to shrink back, as I have no doubt it would, to its normal condition.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF NAVY, ARMY, AND AMBULANCE.

Colonel Andrew Clark, A.M.S.(T.F.), President.

PRESIDENT'S INTRODUCTORY REMARKS.

After a few initial observations Colonel Andrew Clark said: It may be said that some of the subjects we have put down encroach on other Sections, and perhaps they do in a certain sense, but they are essentially of interest to the services, and this Section was instituted several years ago with a view to providing opportunity for laying special stress on subjects which though of general interest have a very special reference to our army and navy. Those that occur to me as coming under this double category are the first on the list for each day. It is not my intention to occupy much time in introductory remarks; indeed, presidents have been specially requested not to do so, but I should like to make a brief allusion to the relation of the Association to the services. The Territorial Force, consisting as it does of civil members of the profession both in special and general practice, comes in more direct contact with the bulk of the members of the Association at home than does the regular army, and serves to a considerable extent to bind the services to the Association at home; and as it now extends all over the empire, our oversea Branches, which are continually increasing in number, are not a little helped in carrying on the work of the Association, both professional and social, by officers of the army and navy who are from time to time stationed abroad, and they are able to inform the executive of the requirements of various localities which differ very much; and one of the main reasons that determined the Association to seek a Royal Charter, giving more extended powers than those possessed as a limited liability company, was to benefit the oversea Branches. We are not to have the Charter—at any rate, at present—but I hope and believe other means will be found to afford the facilities required. Of late years we have had representatives of the services on the Executive Council, and this has been the means of bringing them and their requirements as well as the oversea Branches into touch with the Association. The formation of the Territorial Force gave the opportunity of the complete reorganization of the medical service of the yeomanry and volunteers, and the formation of a medical corps capable of enabling the force to be independent in its medical organization in case of mobilization, and I think I may venture to claim that representations made by the British Medical Association helped to effect this. I cannot conclude these few remarks without expressing my personal thanks to the honorary secretaries, who have, I know, worked very hard in obtaining, sorting, and arranging the material offered, so that the work of the Section may be interesting, profitable, and practical.

LOCAL AND SPINAL ANALGESIA IN RELATION TO ACTIVE SERVICE.

By Major C. G. Spencer, R.A.M.C.

Surgical work on active service may, for the purposes of this paper, be considered under two heads: the immediate treatment of the wounded during and after an action, and the subsequent treatment of the cases when they have reached a "stationary" or a "general" hospital.

The early treatment is carried out in the field ambulances, and here little more than first aid can be attempted. The removal of the wounded from the field and their evacuation towards the base is the primary duty of the field medical units. All recent experience has shown that at this stage no operation should be undertaken unless it is urgently necessary.

Anaesthetics will therefore be required chiefly for securing wounded vessels, for putting up some compound fractures, and very rarely for any other purpose.

Local analgesia is not at all suitable for this kind of work. It is suitable only for operations in which every step is accurately known beforehand. The field of operation is strictly limited to the area infiltrated with the analgesic solution. If the injection is made into a nerve trunk, or by Bier's method of injection into the veins, the area rendered analgesic is increased, but these methods are not very suitable for field work, being complicated and difficult, and requiring special experience on the part of the operator. The difficulty, often amounting to impossibility, of ensuring asepsis under field conditions is another objection to the use of local analgesia. Perhaps the most weighty objection of all is the time required to produce satisfactory local analgesia. Rapid work is essential in dealing with large numbers of wounded, and it takes far longer to obtain adequate local analgesia than to give a general anaesthetic. The temptation would inevitably be to operate before the injection had taken its full effect, to the detriment of the patient and the hindrance of the operator.

One advantage of local analgesia is that it dispenses with a separate anaesthetist. It might be useful for a medical officer who was single-handed, in charge of a detached body of troops, should he be compelled to operate without assistance. Even then it would hardly enable him to attempt much more than the removal of a superficially lodged bullet. I am aware that many major operations have been done under local analgesia, but I should be sorry to attempt one in the field, unless the supply of chloroform were exhausted.

Spinal analgesia I regard as having no place at all in field work. At the best it is a somewhat uncertain method, and it demands special experience, time, and most careful attention to a multitude of details for its success. Perfect asepsis is essential, and this, as I have already said, cannot be guaranteed under the circumstances attending work in a field ambulance. The assistants at the operation must be thoroughly conversant with the special requirements of the method, the posture of the patient must be very carefully adjusted, and after the operation complete rest for several days is absolutely necessary if the unpleasant after-effects of spinal analgesia are to be avoided. As every wounded man has to be removed down the line of communications by road, rail, or river, within a few hours, that alone renders spinal analgesia altogether inapplicable to field work. It is, in its present stage of development, too delicate and complicated a procedure for the hasty emergency work in a field ambulance.

In the stationary and general hospitals the conditions of surgical work are practically the same as in a military or civil hospital in time of peace, and the special difficulties attending work in the field have not to be faced. Here the choice of an anaesthetic may be made according to the nature of the case, and local, spinal, or general anaesthesia may be employed as the surgeon may prefer.

In these remarks I have throughout referred to local analgesia by Mr. A. E. Barker's method, with eucaine and adrenalin, and to spinal analgesia with a solution of stovaine and glucose, a method also devised by Mr. Barker, and one that has been employed in nearly 400 cases at the Queen Alexandra Military Hospital during the past three years.

DISCUSSION.

Mr. A. E. Barker said he fully endorsed all that Major Spencer had said. His remarks appeared to cover all that could be concluded at the present time about the use of the newer methods in military surgery, and it was a satisfaction to everyone that one versed in these procedures should have, to a considerable degree, helped to crystallize our ideas on the subject about field service. There had been a tendency in several quarters rather

to force the pace in regard to the newer forms of anaesthesia, without sufficient knowledge and experience, and Major Spencer's remarks would help to put a slight check on hasty conclusions and rash action.

Fleet Surgeon A. G. WILDEY said that he was disappointed to hear such discouraging views on the subject of local and spinal analgesia in the field. He looked to early nerve-blocking to relieve much agony in mangled wounds, and by lessening shock and facilitating transport afford some hope of successful primary amputation. He thought that they should not let difficulties stand in the way. Let anatomists show them how to safely and readily reach the nerve trunks with the hypodermic needle. The matter of asepsis could be overcome. He thought the risks attending spinal analgesia should be taken in cases where a general anaesthetic given by an inexperienced person would probably be more dangerous.

Captain J. W. H. HOUGHTON said that, while agreeing entirely with the remarks of Major Spencer and Mr. Barker, he thought the uses of local and spinal analgesia would not be so limited on active service as they indicated. Of course, in a field ambulance, operations of any description were only undertaken for the most compelling emergencies. But in base and stationary hospitals those methods had a very fitting place. There the qualities demanded were efficiency of action, rapidity in effect, and simplicity of administration. In skilled hands those attributes were found in the use of local and spinal analgesia, while the aid of a skilled anaesthetist could be dispensed with, and thus another medical officer freed for more important duties in the rush of work inseparable from the admission of a number of wounded after an action.

Fleet Surgeon P. W. BASSETT-SMITH said, speaking from a bacteriological point of view, he thought the bogey of sepsis in those small surgical proceedings—namely, injections of fluid—was exaggerated. They knew in 10,000 cases of vaccine treatment how the subcutaneous injections under the skin and in tissues practically never produced sepsis if ordinary care was taken in sterilizing the skin by spirit methods as well as the syringe and the solution.

HYPODERMIC INJECTIONS IN "ACTION": SUGGESTIONS FOR SIMPLIFYING THEIR ADMINISTRATION.

By Fleet Surgeon A. G. WILDEY.

IN such actions of war as naval engagements, when casualties are numerous, and caused almost entirely by the results of shell fire, the first attentions of the surgeon and his assistants, professional and lay, will be required for the arrest of haemorrhage, for the relief of pain, and for the lessening of shock. Later, when opportunity occurs, dressings can be applied and surgical details carried out. Here we are dealing with the immediate relief of injuries of great severity—smashed and mangled tissues; compound fractures with dragged and lacerated nerves, sending unceasing afferent impulses of pain and shock; wounds too extensive and too contaminated to allow a hope that such first-aid dressings as may be applied under the circumstances can render them sterile—wounds more eager for anodynes than for immediate antiseptics.

The earliest possible relief from *pain* is a most urgent matter, not only from a humanitarian point of view, and for the lessening of shock, but also on account of the demoralizing effect of the severe suffering of the injured upon the minds of the uninjured crew. An instance typical of this demoralizing effect occurred, it is stated, during a naval action in the Russo-Japanese war. In this case the shrieks of a wounded man—his thigh pinned by jagged iron plating in a fighting-top of a cruiser—most seriously distracted, if they did not actually demoralize, the guns crews on the upper deck. In such circumstances it is hardly an exaggeration to say that the well directed hypodermic needle of the surgeon may be a most efficient factor in the fight. Indeed it may be worth a broadside.

Tourniquets, pressure forceps, and hypodermic syringes, with perhaps the iodoform dusting dredger and the iodine spray or sponge, must take the first places in the surgeon's armament when a pause in the action permits him to reach the wounded.

While much ingenuity has been expended upon the simplification of tourniquets, resulting in their extreme handiness and efficiency, they remain, unfortunately, most painful appliances. Of pressure forceps we have a great variety; but we are still in want of some light, strong, and inexpensive form of easily applied haemostatic clip—something as mechanically simple as the safety pin and costing almost as little—for with such instruments controlling haemorrhage we might avoid in many cases the prolonged application of the tourniquet, which, apart from other dangers, adds, by increasing pain, so greatly to shock. Still more are we in want of some contrivance to simplify the charging of the hypodermic syringe—to ensure rapidity of action and certainty of dose. This operation, so easily performed at the bedside, is beset with many difficulties in the disturbing conditions attending the administration of injections in strenuous times afloat, in the field, or on such occasions in civil practice as railway accidents, earthquake disasters, etc., when very many wounded require attention.

To attempt to charge the syringe directly from a bottle of stock solution, or first to pour the morphine into a shallower vessel, is to invite such accidents to the stock as the capsizing of the bottle or the exposure of its contents to the dust and débris of action, with consequent blocking of the needle. To break glass ampoules and charge the barrel dose by dose is a slow procedure, and requires more delicacy of handling than the circumstances will allow. Consider what these circumstances are likely to be during or immediately after a big engagement afloat. The bowels of a battleship! The air, save the mark! thick with the fumes and reek of the fight, and charged with solid particles dislodged by explosions or by the concussion of a parting shot at the enemy; dim artificial light, perchance failure of the electric circuits; the decks flooded by the fire hoses, and not unlikely acutely inclined by the heeling of the ship with a damaged compartment, or rolling disabled in the trough of the sea. The traffic in the narrow passages congested with stretcher-bearers and their burdens, with such wounded who are able unaided to seek the surgeons' quarters; all hustled by hose parties rushing to extinguish an outbreak of fire. And then imagine the surgeons and their untried lay assistants—the chaplain and the paymasters—with syringes and stock bottles, pots, or ampoules, striving to fill the instruments and to administer injections quickly and efficiently. It is more than probable the stock bottles will be upset, or the solution fouled and the needles blocked, broken, or lost.

To overcome these difficulties we require (1) an unspillable bottle with protection for its contents under all circumstances; also we should have (2) a metal scabbard attached to the coat to readily and securely hold the needle-fixed syringe when not in actual use; this would be a great convenience when we consider there may be no safe place to deposit the instrument when both hands are occupied.

Some time ago I contrived a simple and inexpensive shallow glass reservoir to hold not less than 1 oz. of solution, and fitted with two or double-layered india-rubber detachable caps. Through these caps the needle of the syringe can be thrust into the solution, the syringe rapidly and easily filled—the more rapidly and easily because the needle is steadied by the hold of the rubber. On withdrawing the needle the punctures, of course, close, and if the needle has been entered diagonally the punctures are valvular, thus completely preventing any leakage, and allowing the reservoir to be carried in the pocket in any position or kept suspended by a lanyard. The slight lateral pressure on the needle while charging the syringe prevents the formation of a vacuum. This morphine bottle, with important modifications as to the quality of the glass—as suggested by Mr. Hooper, dispenser-in-charge, Royal Naval Hospital, Haslar—has been adopted by the Admiralty for issue in field chests and to the service afloat. An experimental metal scabbard for the syringe, constructed on board to my rough designs, answers the purpose for which it is required.

Amongst other advantages the shallow rubber-capped morphine vessel admits of injections being given in the dark, provided always the strength of the solution is such

that one complete syringeful is one dose, a very necessary arrangement on active service when one may have to rely on lay assistants. In the dark it is quite easy to discover if the syringe is properly charged, by testing the sense of resistance when compressing the piston, and at the same time closing the end of the needle by pressure of the finger and thumb; very little practice will enable one to distinguish between compressible air and non-compressible fluid.

Morphine vessels can be quickly extemporized by tying two layers of tobacco-pouch rubber over the necks of suitable bottles; or, an excellent plan is to cut a hole rather more than half an inch in diameter in the thin metal screw-cap of a Wulfing's formamint bottle, exposing, like a drum-head, the thick rubber washer with which it is fitted. When well screwed down the bottle is perfectly water-tight. But whatever apparatus is used morphine solution must not be kept for more than a few hours in any but amber-coloured alkali-free glass vessels or gradual precipitation of the alkaloids occurs. Solutions of sulphate of morphine $\frac{1}{6}$ grain in each 5 minims, with and without atropine, for use in the rubber-capped bottles, are now supplied to the naval service. The sulphate salt, I understand, is the most stable, and in the strength mentioned does not crystallize out in cold weather.

In morphine solutions we have the most generally useful injection for the soothing of pain, while its calming action on the circulation aids materially the control of haemorrhage; but equally important are injections of local analgesics and of antishock and haemostatic drugs.

It is not impossible that "nerve-blocking" may be attempted quite early in the treatment of the seriously wounded. Injections of local anaesthetics into the neighbourhood of the great nerve trunks of the limbs may help to cut off the fearful storm-areas of the mangled limbs from the central nervous system, and, by arresting shock impulses, mitigate the agony and dangers of transport, and add to the chances of recovery from a primary amputation. All these injections would be facilitated by the use of rubber-capped bottles; several different drugs can be kept ready to hand if the bottles are of distinctive shape. Armed with these simple contrivances, the surgeon, freed from the embarrassments of the exasperating petty manipulations usually associated with hypodermic injections, can the more speedily and the more efficiently relieve the sufferings of the wounded in action, and prepare them for the ordeal of the operating table.

DISCUSSION.

Fleet Surgeon Bassett-Smith said every endeavour should be made to simplify treatment in emergency, as Fleet Surgeon Wildey had brought forward, but rubber-top bottles had been employed for a very long time for vaccines, and were most excellent; in the tropics, however, rubber rapidly deteriorated, and was therefore not suitable for such climates.

Surgeon-General G. J. H. Evatt suggested that instrument makers be invited to construct a hypodermic needle with a metallic case containing morphine solution, and so made that it could be attached to the needle, squeezed, and then thrown away.

Fleet Surgeon Wildey, in reply, said the perishability o rubber had been taken into account. The rubber caps would be required only on emergencies when the conditions would be strenuous. He had suggested they should be supplied in hermetically sealed tin boxes holding six caps, for use in the tropics. He had considered the use of rubber bulbs with needle attached, such as were introduced by Mr. Ward Cousins many years ago. Here there was a real difficulty of preserving the rubber and a difficulty of inserting the needle without discharging the injection prematurely.

THE TRAINING OF THE TERRITORIAL R.A.M.C.

By Colonel P. Broome Giles, V.D.,
A.M.O. 1st London Division T.F.

Considering the vital importance of efficient medical organization in the time of war, and that the efficiency will be tested directly the order to mobilize is issued, it is surprising more detailed instruction is not specifically laid down in the R.A.M.C. manual or in the Field Service Regulation.

It is necessary to realize that, though a period of six months is intended to be allotted to combatants subsequent to mobilization to perfect their peace training, this cannot apply to the R.A.M.C. Even if a magnanimous foe were willing to accord equal grace to combatant and medical units alike, the power above which shapes our destinies will not fall in with so broad-minded an idea. For, directly mobilization commences, from that moment sickness commences, and accidents occur necessitating the services of the R.A.M.C.

In the past general after general has bitterly lamented the wastage caused by sickness, often to a great extent avoidable. Campaigns have been futile or prolonged, because the sick roll has reduced the fighting personnel either too low to warrant success, or the protection of the sick has required so many troops that strategic operations were hampered. No one knew better than Wellington how the accumulated sick lessened his mobility, or how strategically important it was to have a superior fighting force at a specific time. This is driven home when we realize that the success of Japan in the late Manchurian war was due to an efficiently trained R.A.M.C.—that is, the success was primarily the doctors'.

Without wearying you with statistics, I take it to be an established fact that sickness, and that chiefly of a preventable nature, far exceeds the casualties of the actual shock of war—sickness that in a lesser degree is common to all communities, and which tends to increase under similar conditions in civil life, as when people are crowded together, their nervous systems overtaxed, and their food supply indifferent or reduced in quantity. Accepting this, the general whose medical staff best prevents this sickness is in a better position to successfully conduct a campaign than he with an inefficient medical service.

The Territorial R.A.M.C. are in one way more fortunate than their regular *confrères*, as they possess their own transport, and they know that the clearing from the field ambulances should be carried out by their voluntary aid detachments.

In peace the administrative medical officer is responsible for the training of:

1. The regimental stretcher-bearers,
2. The field ambulance,
3. The sanitary company,
4. The general hospitals,
5. Certain of the voluntary aid personnel,

all of which require separate and different treatment.

In my humble opinion, the ultimate goal—that is, the work expected on mobilization—is the direction in which each line of medical assistance should be trained.

1. The regimental stretcher-bearers should receive from the medical officer attached to their unit instruction in first aid and sufficient drill so that they can work at a stretcher, load and unload any injured as little harmfully as possible; but hours spent in perfecting drill, even if not wasted, could better be employed in acquirin first aid.

This instruction should be given as a course, and the men not permanently segregated as medical orderlies; each year it is better to instruct fresh men, for in action you cannot have too many with a knowledge of first aid. In camp, on all parades which the medical officer attends, a stretcher squad should be told off for emergencies, and opportunity taken to impart instruction, and the men pointed out any advantages or risks the surrounding country possesses in approaching and dealing with removing the wounded.

Similar work can be carried out with the brigade training, and care taken in combined movements that the stretcher squads remain with and do not lose their units: the medical officer should select, and explain why he selects, the places for the wounded to be collected at. Dummies on these days are required.

On field days similar work; but unless there are orders for dummies to fall out, attention would be better directed to intelligently conforming with their unit and attending any real casualties that may occur.

Each unit medical officer should get in touch with his field ambulance and inform the officer commanding where he intends collecting his casualties.

2 *Field Ambulance*.—During the year and previously to camp all the general instruction and drill should have been completed, the sections organized under their officers and at the several marches out with transport should be so forward that two days in camp should be amply sufficient for all ranks to shake down into their respective places.

Now two important questions arise:

1. Shall the field ambulance training be a real thing, a training centre, or shall it merely be an appendix to a brigade, perfunctorily treating such dummies as may be arranged for on field days?

2. As the amount of sickness should be very small, shall a detention hospital be established for the period of camp, or shall each field ambulance deal with its own sick?

Here there is divergence of opinion, I have tried both ways and strongly recommend: (1) That the field ambulance be a training centre; (2) that each field ambulance deal with its own sick by daily detailing sufficient personnel, equipment and transport for that purpose, and so leave the remainder free to exercise; go on trek or bivouac away from camp. This not only teaches the R.A.M.C. their tented duties but accustoms the combatants to use their field ambulance as they would have to on mobilization.

Having settled these points, general training should be sectional, supervised by the officer commanding. I cannot too strongly urge the importance of placing as much responsibility as possible upon the sectional officers; the officer commanding who combines everything from corporal to officer commanding is a mistake, he fosters irresponsibility and creates slackness. During the early days of camp the adjutant and the R.A.M.C. school permanent staff should in turn be present with the units, and suggest improvements and point out any faults. During the training, one day at least the field ambulance should work with its brigade, and under a scheme of the brigadier, getting from that officer his entire plans, so as to distribute his unit as best he can. If dummies can be obtained, a joint exercise with the regimental stretcher bearers is best. On divisional field days, naturally, the field ambulances will be with their brigades; the work may be either simply tactical, or a combination of that and exercises with dummies.

I am greatly in favour of the

(1) Field ambulances on one day going out and keeping their relative positions in an imaginary attack or defence upon a position representing what a division would have occupied—say a frontage of 4,000 yards—and treating casualties systematically placed by the adjutant, who from his experience knows how probably a real fight would have influenced their position. Such a deliberate scheme takes time, and allows of correction when wrong.

(2) Mobilizing a field ambulance as complete as the peace equipment permits, each unit finding a section. This roughly leaves five days for what I consider very valuable training, that is, send your units out on the trek ten, twelve, or fifteen miles and let them do all for themselves, bivouacking if the weather be fit, and let the adjutant in turn accompany them.

3. The Sanitary Company training during the year is more restricted than I should like. There is practically no equipment, and strenuous steps should be taken to put these units in possession of proper training machinery. For camp training one of two courses is open, either to send the personnel to the School of Sanitation at Aldershot, or to employ them upon their specific duties in camp. Here again there have been different methods adopted.

No. 1 Company under my care went to Aldershot last year, and had a course of practical instruction; recently at a week's end camp I saw specimens of their excellent work. This year the company is detailed to the combatant units to perform the duties they would on mobilization. Those not thus employed will be in the R.A.M.C. camp, and will construct specimen works to demonstrate sanitation, etc., for the benefit of the combatant units. On the other hand, No. 2 Sanitary Company were attached to their troops last year, and will, I believe, attend at Aldershot this. I am keen to see which method does best.

Whilst on the sanitary companies, I think that where there is one the water purifiers during the year would obtain greater benefit if trained with them than they could when trained at the head quarters of a field ambulance.

4. *General Hospitals*.—Up to the present these units have been trained at military hospitals, still I feel sure that if with their peace strength they furnished a section of a hospital near their division once every three years it would be advantageous to all and popular. Both in the field ambulances and general hospitals the compounder is the weak spot, as it was in the old bearer company; the dearth during the late war was serious. Those men who would face the long course of instruction cannot as yet obtain pay for their time, but I hope eventually the authorities will realize the danger of the position, and give a composition sum for this purpose.

5. *Voluntary Aid Detachments*.—As these units now (Territorial Regulations, paragraph 75) to some extent are in contact with the administrative medical officer, inasmuch as he has to arrange for certain of their personnel to expand the general hospitals, and as all will be more or less associated with the Territorial R.A.M.C., it seems not the right course to have them instructed and examined by civilian societies, the more so to let them remain the shuttlecock of rival factions.

As the administrative medical officer forms boards of officers to examine all ranks of the R.A.M.C. and the regimental stretcher-bearers, it only seems right that, for the purposes of co-ordination of the voluntary aid detachments with the R.A.M.C (T.), they should be taught and examined on similar lines.

As detachments are formed, let the medical men who will be their commandants or R.A.M.C.(T.) officers be appointed to teach, supplemented in the practical by non-commissioned officers or nurses. When the course is completed let the administrative medical officer appoint a board to examine and give to each approved person a certificate similar to (but to include nursing and sanitation) E 596, now given to regimental stretcher-bearers, and a badge. This preliminary course of instruction to consist of twelve hours lecture and questions, and twelve hours practical, divided: 5 first aid, 5 or 4 nursing, 2 or 3 sanitation. Payment for instructing and examining to be made by an annual grant of 10s. per head, limiting the number to 1,000 for each division.

This done, you would have all the Territorial medical lines under one authority co-ordinate in teaching with the regulars.

MEDICAL REQUIREMENTS IN WAR: WITH SUGGESTIONS FOR ASSISTING THE R.A.M.C. ON MOBILIZATION.

By Lieutenant-Colonel E. M. WILSON, C.B., C.M.G., D.S.O., R.A.M.C.

THE number of officers of the R.A.M.C. usually at home is 638 and the peace establishment of warrant and non-commissioned officers and men is 3,065. The number required to complete the medical establishment on mobilization for 6 divisions, a cavalry division and army troops is 840 officers and nearly 9,000 men.

These figures alone show that an enormous addition must be made to the peace establishment of the corps in both officers and men almost immediately on the declaration of war, especially when it is remembered, first, that all the military hospitals at home must be carried on somehow, and that they will be fully occupied, at first temporarily by unfit recruits and afterwards more permanently by invalids; and secondly, that we may be sure, from the rapidity of modern operations, that the demand for reinforcements will not be long delayed.

My object in submitting these brief notes to you is first to summarize the preparations which have already been made to meet this great demand for trained men, and secondly to make a few suggestions as to the means by which every member of the British Medical Association may help in his own sphere, in his own locality, in his own way, in what may fairly be called a national service.

And first, to clear the ground, I do not wish in this short article to touch except incidentally on the Territorial Medical Service. Not, of course, that we do not very highly value the R.A.M.C.(T.), but because it has a most important duty to perform to which it is definitely allotted—namely, to provide the medical organization for the fourteen divisions of the Territorial Army and twenty-three general hospitals; and, if we were involved in a great war with practically all the regular forces employed

abroad, it seems essential that the Territorial Army should not be robbed at that time of its most efficient personnel.

Volunteers no doubt there would be in the future as in the past, gladly welcomed, but I do not think we ought to rely on the R.A.M.C.(T.) as a body to leave the duties for which they engaged in order to fill up the gaps in the army abroad. With a view of supplying additional medical officers for the expeditionary force, the Special Reserve of Officers R A M.C. was created in an Army Order last year, and in an article which appeared on March 12th in the British Medical Journal I detailed the conditions and requirements. Perhaps I may be permitted to very briefly recapitulate them:

Candidates must be fully qualified and under 30 years of age. They undergo a course of three months' training at Aldershot, receiving pay at 14s. a day with allowances for a servant and for lodgings, a gratuity of £20 for uniform, and, after passing an examination at the end of the course, an annual gratuity of £30 up to the age of 40. After three and a half years there is another course of training before promotion to the rank of captain; this course lasts one month. It may be undertaken at the headquarters hospital of the military command most convenient to the officer, and the pay is the same *plus* 4s. a day messing allowance. Promotion to the rank of major is given after twelve years' service.

But additional advantages are given to students who are members of the Officers' Training Corps and who subsequently qualify. These gentlemen get an additional gratuity of £35, and on joining at Aldershot when they have passed professionally if they have obtained certain certificates while in the Officers' Training Corps their course of instruction is correspondingly diminished. Up to the present time about forty officers have passed through the school at Aldershot. Surely this does not represent the total or even an annual average of young medical men who are willing to serve their country in time of war.

Another source from which I venture to suggest a considerable supply of trained medical men could be obtained in an emergency is the St. John Ambulance Brigade in England and the St. Andrew's Ambulance Corps in Scotland. Medical men who have been active members of those organizations for a period of years, say four or five and upwards, might, if they desired to be registered for employment in military hospitals at home or in the field, be given dormant commissions to take effect whenever mobilization is ordered. They have been accustomed to deal with men, to train and command them, and have acquired knowledge of administration in their camps and exercises. For such men, and I believe there are many, the Aldershot course might be modified or dispensed with, and on mobilization their commissions dated from their registration, subject of course to their remaining efficient with their brigade or corps. In this way I believe we should get a considerable number of well-qualified medical officers, and the *esprit de corps* of the St. John Ambulance Brigade and the St. Andrew's Ambulance Corps would be correspondingly raised, as officers and men would feel that they were an integral part of national defence.

It would be as well to grant a small annual retaining fee and to require a month's notice before withdrawal, as in the case of the officers of the Special Reserve, but the essential point is to recognize medical *officers* of the St. John Ambulance Brigade and the St. Andrew's Ambulance Corps as well as their men as a definite part of the reserve of the R.A.M.C. on mobilization.

There is one other class of medical men to which I might refer before leaving the subject of officers. There are about 150 retired officers of the R.A M C. below the age of 55. Some are employed like myself in retired pay appointments, but there are many others who would no doubt be ready to rejoin their old corps and perform their former duties at short notice in a time of emergency.

Turning now to the branch with which I have been more intimately connected during the past few years, the provision of trained subordinate personnel for medical units on mobilization, it may be noted that when the South African war commenced the total reserve of the R A M C. was under 1,000, and that it is at the present date 4 500. How has this great addition to our reserve been obtained?

First, by the enlistment during the years 1906–1907 of 600 men for one year's colour service and eleven on the reserve.

Secondly, by the transfer last year of nearly 1,800 infantry reservists to our reserve after a three months' course of training in corps duties; and thirdly, by the compulsory transfer to the reserve of all three years' men except those actually required to complete the annual drafts for foreign service.

This last decision of course necessitates a somewhat strict system of selection, as in consequence of the large number of additional non-commissioned officers who would be wanted on mobilization it is useless to retain men who would not be fitted to fill higher positions in case of need. Nearly all serving soldiers of the corps whose services have been extended from three to seven years and onwards have, therefore, either passed for promotion or have qualified in some special capacity as nurses, cooks, clerks, dispensers, skiagraphists, laboratory attendants, etc., and in the great majority of instances are available for employment both as non-commissioned officers and specialists.

With a small peace establishment every serving soldier must be highly trained, the routine duties being performed by reservists recalled to the colours.

Behind, and in addition to our own reserve, comes the Special Reserve of the corps. This body was created in October, 1908, when the R.A.M.C. militia was disbanded, a certain number of the latter corps, including a few non-commissioned officers, joining under the new conditions. Recruits were given six months' training on enlistment, and have an annual training of fifteen days. The enlistment of 1,000 men was authorized, and recruiting ceased in November last. The numbers are already diminishing, the present strength being about 940. These men are not eligible for promotion, and cannot transfer to any other branch of the army or Special Reserve. I said at the commencement of these remarks that as this paper is only meant to deal with the medical requirements of the expeditionary force abroad I should only refer incidentally to the R.A.M.C (T.), but we have another reserve (Category "B") provided by our Territorial comrades. Men volunteering for this reserve are seconded or supernumerary in their own Territorial unit, and would join the expeditionary force on mobilization. The number so volunteering is at present nearly 800. They are all trained and kept efficient in their own corps, and would be a very valuable reinforcement to our ranks, as they were during the South African war.

I think from the foregoing statement you will agree that if war broke out to-morrow we should be in a better position to meet it than we were in October, 1899.

But what of the hospitals at home? For you will realize that when nearly all the trained personnel of the corps march out of all our great military hospitals the *sick* will be left behind, and the number of beds occupied will, it is certain, steadily increase instead of diminishing. Arrangements have been made by the War Office for the R.A.M.C. to be replaced by men of the St. John Ambulance Brigade, and in Scotland by the St. Andrew's Ambulance Corps. Men volunteering for this service join the "Home Hospitals Reserve," and guarantee to undertake duty in the military hospitals at home. Personally, from my own experience, I am afraid that, although I am sure they will do their duty well, they will be more keen to join the force abroad than to perform ordinary routine work at Woolwich, Netley, or Aldershot. During the South African war 2,300 men of the St. John Ambulance Brigade went abroad, but I could only get some twenty or thirty for hospitals at home.

If the military operations lasted any length of time, I expect a good many would find their wishes gratified as reinforcements were required From the St. John Ambulance Brigade more than 2,000 men have registered their names, and from the St. Andrew's Ambulance Corps, which is intended for service only in Scotland, it is practically certain that sufficient volunteers will be forthcoming to supply the staff necessary for all the Scottish military hospitals.

I have indicated briefly what are likely to be the medical requirements of war, and explained the arrangements which have already been made to meet the demand for trained officers and men. Now I should like to suggest in what way the members of the British Medical Association can assist in what is undoubtedly a national service.

First, I think we might all use our influence to encourage young medical men, and especially medical students, to

join the Special Reserve of Officers or the Officers' Training Corps. The conditions are made as easy as possible, the training is excellent, and, whether they are ever required to fulfil their engagements or not, the knowledge and experience gained will be of value to them in after life. Among those who cannot incur the obligations of the Special Reserve, surely there are many who might join the local corps of the R.A.M.C.(T.). In training the rank and file who are eager to learn they will be performing a valuable service to the State. Every man is the better for a knowledge of drill, stretcher drill, and first aid, and if a medical man is unable to spare the time as a commissioned officer of the Territorial Forces, he can at any rate join the nearest division or corps of the St. John Ambulance Brigade.

In this connexion I should like to draw attention to the value of lectures in sanitation. An excellent little handbook has been written for the Order of St. John by Lieutenant-Colonel H. P. G. Elkington, R.A.M.C., and a course of these lectures is allowed to count for the medallions when a man is proficient in first aid. When I tell you that for an army in the field more than 800 men would be required as sanitary orderlies, for sanitary sections and squads, and for water duties with regimental units, you will realize how valuable men trained in these capacities would be. Classes are constantly held at Aldershot for the instruction of the R.A.M.C., but on active service we should be glad of as many additional trained men as possible. This particular branch has been taken up by the St. John Ambulance Brigade at some of their annual camps with great success, and I hope the training may be further extended.

So much for teaching the untrained. Now I should like to say a few words about the desirability of keeping in touch with those who have already been trained and who have passed out of active service.

All over the country there are pensioners and ex-soldiers of the corps — non-commissioned officers, dispensers, stewards, clerks, trained orderlies, and cooks—scattered about, and how little pains are taken to locate them in case of need! Of course, this refers mainly to officers of our own corps, but I have often thought how very little officers in charge of hospitals at home realize what their position would be if war were declared to-morrow and the majority of their trained staff were ordered, as they would be, on active service. I suppose they would promptly sit down and telegraph to the Record Office for pensioners. Yet our own regulations clearly lay down the necessity of keeping a register of men who would be available for employment in an emergency in each command. During the South African war I received many scores, perhaps hundreds, of applications for men trained in different capacities, and was frequently able to telegraph back that a suitable man resided in the very same town from which the demand came.

Now, why were those registers not properly kept? Quite apart from the requirements of war, it would be an advantage if our own medical officers were in touch with their brethren in civil life in the locality, who frequently want dispensers, trained orderlies, etc. We do our best at the Record Office whenever applications are received, but I am convinced that if local registration in all commands were properly carried out, not only would deserving ex-soldiers of the corps find suitable billets, but principal medical officers of districts would have a list of men capable of filling vacancies in their own hospitals should necessity arise.

Leaving what may perhaps be considered minor details, I venture to think that a most valuable reserve might be obtained by expanding the "Home Hospitals Reserve" provided by the St. John Ambulance Brigade and the St. Andrew's Ambulance Corps in Scotland, so as to allow, men of those organizations to serve abroad with the army in the field as well as in the military hospitals at home. At present this reserve consists of a score of officers and 2,300 men of the St. John Ambulance Brigade, and 8 officers and about 70 men of the St. Andrew's Ambulance Corps, and, as I hinted above, I believe a very large number would be willing to serve abroad. Why not have an alternative agreement which every medical officer and man should sign on joining, one for duty in a military hospital at home and one for duty *either* at home or abroad? In both cases officers to have commissions (preferably as captains), and men to be enlisted with their ranks in their own organizations on mobilization for the duration of the war. In fact, to follow the same procedure as is now authorized for the Special Reserve of the Territorial Forces (Category "B").

It may be said that this can be done *after* war is declared, that we shall have plenty of volunteers, that details can be adjusted then, and so on, but I do very urgently maintain that it would be an immense advantage to make all arrangements now, in time of peace, when the matter can be settled on a proper basis. First, because we should know approximately the number both of officers and men on which we could rely, no matter how frequently the individuals varied. In the Special Reserve of the R.A.M.C.(T.), (Category "B") a quarterly return is rendered, and though the individuals can practically withdraw at any time, the total numbers are steadily increasing.

Secondly, the officers and men would know more definitely how they stood, and by signing one or other of the agreements, would realize the exact responsibilities they had undertaken.

Thirdly, which I consider most important, the Orders of St. John and St. Andrew would acquire a definite status as forming an integral portion of the military organization for defence.

I do not think we should undervalue this feeling of sentiment. There is a very strong *esprit de corps* in both organizations, as has been shown by the Order of St. John in raising, with War Office sanction, eight units (bearer companies under former regulations), and keeping them efficient by annual trainings in military hospitals. The *morale* of the men is excellent, and they display a very high degree of intelligence, as I have witnessed myself when attending their annual camps, and as any one who has seen them on duty on public occasions must have observed, and I believe if they could be recognised *now* in times of peace as an essential reserve of the medical service in time of war, not only for the home hospitals, but also (if they volunteer) for duty abroad, it would be a mutual advantage to the State and to the men themselves. The scheme, of course, must be arranged by the responsible authorities, but I think the idea is one in which all members of the profession might take an interest.

In the foregoing remarks I have made no reference to the British Red Cross Society and its voluntary aid detachments. In the most interesting address on the subject which was given by Sir Alfred Keogh in October last, he clearly defined the scope of their operations, namely, to link up the field ambulances of the Territorial Forces with the twenty-three general hospitals. He showed by diagrams and notes how valuable their services would be in this capacity, and I have no doubt the patriotic movement will be widely successful; but the time allotted to our papers in this Section is strictly limited, and I thought it best to confine our attention to the medical requirements of the expeditionary force.

I have tried to show how, in order to make provision for these requirements, every medical practitioner, whether civil or military, may help, each in his own way. All can use their influence to recommend men fully qualified to join the Special Reserve of Officers. Teachers and deans of schools can point out the advantages to students of the Officers' Training Corps. Our own officers might take more interest in the after-careers of our own trained men who leave the colours, by registering their names and recommending them for employment in civil life. Gentlemen too busy in private practice to accept commissions in the Territorial Forces might take up ambulance work and assist in training and keeping efficient some of those subordinates whose services on mobilization would be in such demand.

I would rather lay stress on their being kept efficient, for a man who has once got a certificate in "first aid," or "home nursing," or "sanitation," and who keeps it framed and hung up in his room, is not of much use on active service, whatever he may be in civil life. The Territorial and the Special Reservist must do his training annually. The St. John man must perform at least twelve drills and attendances every year, or he cannot remain in the brigade, and I admit this constant maintaining of efficiency, this "ever climbing up the climbing wave," is a severe tax on teachers and taught.

I sometimes get letters from officers and matrons, saying, "What is the use of our training men when you immediately take them away?" It is so, and it must be so. We are no worse off than the colonel of a regiment who is perpetually training men for the battalion abroad, or the riding master breaking in horses for other men to ride. Let us hope that we are each, according to our capacity, gradually leavening the whole lump and preparing the way for that scheme of universal home service which, when it comes, will find us prepared for any emergency.

DISCUSSION.

Lieutenant-Colonel G. E. Twiss pointed out that in the old form of enrolment in the St. John Ambulance Brigade the candidate was asked, if willing to serve with the army "at home," "abroad," and such questions reintroduced would answer Colonel Wilson's requirements. He then referred to a paragraph in the *Standard* of July 26th, and asked whether that might be taken on authority to mean that if the St. John Ambulance Brigade raised companies of trained and reliable men and women, and offered their services in time of war, their services would not be accepted by Colonel Wilson—that was the only meaning the laity could put to it. The paragraph from the *Standard* was as follows:

> The Army Council has decided that voluntary aid detachments which county associations have been authorized to raise in Great Britain for the purpose of tending sick and wounded in war in the home territory, will, in future, be regarded as a portion of the Technical Reserve, under the terms of Paragraphs 26 to 29 of the Territorial Force Regulations.
>
> It is also notified that no one on the active list of the army will, in accordance was Paragraph 449a of the King's Regulations, take official cognizance of any other body or association which aims at carrying out the work for which the recognized voluntary aid detachments are organized.

Colonel C. H. Milburn pointed out the necessity for the acceptance of men for service abroad, and service at home, as many instances had occurred in the past where men were not medically fit for service abroad, but were eligible and could serve at home. And, further, that men for water duties should be trained in the R.A.M.C. and detailed for duty with combatant units.

Surgeon-General Evatt said that the pharmaceutical profession should be specially dealt with and a defined status given its members on joining the Territorial army. Some medical men refrained from joining the St. John Ambulance organization because they considered their status within the association defective and not justly recognized by the governing body of the association.

Major Connell said there seemed to be a desire on the part of members of the Pharmaceutical Society who were enlisted in general hospitals to obtain commissions. He certainly felt very strongly that it would serve no good purpose to grant such commissions.

Lieutenant-Colonel Wilson, in replying to the discussion, said that he had not seen the Army Order quoted by Lieutenant-Colonel Twiss, but looking at the newspaper cutting it only seemed to say that no one on the *active list* should take official cognizance of any other body or association aiming at doing the same work for which the recognized voluntary aid detachments were organized. It did not appear to interfere with the liberty of any person on retired pay or in civil life connected with ambulance work, teaching or instructing any classes in ambulance or first aid duties. He thought that the system of having two sets of companies in the St. John Ambulance Brigade, one being the company of the brigade in a district and one being a "county company," might lead to duplication, but of course it was a matter for the authorities at St. John's Gate to deal with. Replying to Colonel Milburn, he said that perhaps he had not made himself quite understood about the men of the St. John Ambulance Brigade who served at home during the South African war. Such men had been gladly welcomed, and a separate form of agreement was specially drafted for them, but it was a fact that very few volunteered for this duty, the great majority preferring to go on active service. In reply to Surgeon-General Evatt, Major Connell, and others, regarding the position of qualified pharmacists in military hospitals, he said that it was a fact that dispensers were enlisted into the army during the South African war as privates, and subsequently given promotion. It must be remembered that one had to look at the requirements of a military hospital in time of war more than the wishes of individuals; and it was really useless for administration and an inconvenience to officers in charge to have non-commissioned officers who were not able to do the duties of non-commissioned officers. On active service there must always be a shortage of trained non-commissioned officers, and it could only be a disappointment to officers commanding medical units to have men sent them with badges of rank on their arms given solely for position, who were necessarily unable for lack of training to perform the ordinary duties of such rank. This applied with even more force to the position of warrant officers. Dispensers could join the St. John Ambulance Brigade as supernumeraries and enter the Home Hospitals Reserve; or, enlisting into the Territorial Forces R.A.M.C., could qualify for promotion. They could join Category B of the Special Reserve, and then on mobilization they would be employed in the field with their rank in the Territorial Forces. A knowledge of medical returns and administration in connexion with dispensing was all that was required, and this examination had been passed by several qualified pharmacists in the R.A.M.C.(T.). He thought that men joining the Territorial Forces for water duties should belong to the R.A.M.C., and not be enlisted into other branches of the army. It was no use a man joining the Garrison Artillery or Infantry solely for duties in connexion with water purification and sanitation. It seemed to be better for him to join the R.A.M.C.(T.), preferably a sanitary company, and then on mobilization (or in camp) to be detailed for duty with a unit—to follow, in fact, the same lines as those adopted in the R.A.M.C. Regular Forces. In conclusion, he pointed out that the paper had been written mainly with a view to making suggestions regarding the provision of medical personnel for an army in the field, and he had only referred incidentally to the R.A.M.C.(T.) and voluntary aid detachments, which were really intended for home defence.

TESTS FOR COLOUR VISION.

By Fleet Surgeon W. W. Payn, R.N.

For many years the Admiralty has aimed at a very high standard of physical fitness in executive officers. So long ago as February 23rd, 1857, in order to be successful a candidate had to be free from defect of vision. In 1868 the requirement was "perfect vision in each eye," and in 1879 the regulations provided for the testing of colour vision by means of ribbon flags. In 1887 "imperfect perception of colours" appeared in the long list of physical disabilities, and in the same year the use of wools was authorized as a test for colour perception.

The importance of the subject can scarcely be overrated. If a candidate be entered with organic heart disease he will probably be invalided in a few years, and the cost of his training becomes a loss to the State; but should the subject of colour blindness be accepted, he may at any time be the cause of the loss of a battleship and seven or eight hundred officers and men.

For some twenty years Buxton's marine telechrome has been used for colour-vision testing at the Medical Department. This apparatus consists essentially of a lantern containing an Argand burner with regulator for gas supply, the light being only permitted to escape through a small tube. In front of this tube is a metal disc perforated near its periphery at six equidistant points. The perforations are filled with coloured glasses—yellow, blue, pale green, signal green, rose, and red—one of which can be placed in front of the light tube at a time by the disc being rotated. In front of the colour disc is a segment of metal with two perforations in it, either of which can be placed before the colours. The larger perforation represents, when seen at a distance of six metres, the perspective of a ship's lantern at a hundred yards, the smaller the perspective of the same lantern as it would appear at two thousand yards. The telechrome is provided with a screen containing a piece of ground glass, which when moved into position covers the test colours, and imparts to them the appearance of being seen through a fog.

At the Admiralty the telechrome is placed on a bracket with black side shutters, so that it is shaded but is not in darkness. The test at present is applied as follows: The candidate, at a distance of 6 metres from the lamp, is shown the coloured lights in succession through the larger aperture, is required to name them, and to match them from a selection of Holmgren's wools. The illumination is varied occasionally and the fog glass used.

The most recent directions as to use issued with the instrument are as follows:

The telechrome is to be placed in the dark at a distance of 6 metres from the person whose sight is being tested and on a level with his eyes. The candidate is to sit in good daylight, having in front of him a table with a white cover on which is placed a set of Holmgren's wools. The operator is to set the small aperture of the metal segment before the test colour; and may begin with pale green or rose, passing on to the other colours in turn, and changing the amount of illumination now and then. The candidate is required to select from the set of Holmgren's wools all the skeins which resemble the test colour shown, irrespective of shade (of colour).

In testing railway men and sailors it is advisable to use the large aperture (after having gone through the test with the smaller one), and to place the fogging glass *in situ*. One eye at a time should be tested.

As a rule candidates name the coloured lights and match them with the wools without the least difficulty; but when lights are misnamed or the wrong skein is selected as a match, the wool test is applied, and Holmgren's directions closely followed.

In a set of wools three skeins are labelled thus: I, a pale pure green; IIA, a pink; and IIB, a red. The wools are laid out on a white cloth in broad daylight.

Test 1.—The pale green (Skein I) is placed on another white cloth at a short distance, and without any colour being named the candidate is requested to select from the heap of wools all skeins of the same colour as the specimen, some lighter and some darker. He is asked to place them on the same cloth as the test skein, but at a short distance from it, and is particularly cautioned that all skeins selected must be of the same *colour* as the test skein. The candidate proceeds until he has selected all the pure greens, or until he has chosen some of the confusion colours. In the latter case he is reported to be unfit on account of imperfect perception of colours.

Test 2.—The pink (Skein IIA) is next presented, and the test proceeds as before. If in addition to pink skeins any green or grey are selected by the candidate, he is said to be green-blind; if, on the other hand, he select either blue or violet skeins with pinks, he is said to be red-blind.

Test 3.—The red skein IIB is presented to candidates who fail with the pink, as a confirmatory test. The red-blind is apt to choose, besides red, green and shades of brown which to the normal sense seem darker than red; the green-blind on the other hand shades of these colours which appear lighter than red.

According to Holmgren, the common forms of imperfect perception of colours are: (1) A feeble chromatic sense; (2) incomplete colour blindness; (3) complete red-blindness; (4) complete green-blindness.

In (1), although no wrong skeins are finally selected in the first test, the candidate has evinced a manifest desire to pick out one or more of the confusion colours, for example, by taking such in the hand and looking at them intently or placing them alongside the test skein and then withdrawing them.

In (2) the examinee has actually broken down in the first test and selected wrong skeins, but has been correct in the second test.

In (3) the candidate in the second test has selected colours characteristic of red-blindness, and in (4) he has selected colours characteristic of green-blindness.

Failure with the lamp is almost invariably followed by failure with the wools, but the sum of his performance is taken into account in estimating the candidate's fitness or otherwise for the service.

Between January 1st, 1908, and May 21st, 1910, 1,389 candidates for commissions in the Royal Navy were examined at the Admiralty, and 25 or 1·8 per cent. were rejected on account of imperfect perception of colours.

The early tests of the Board of Trade consisted of (1) a daylight test and (2) a lantern test in a dark room.

In (1) the examination was conducted by means of a pack of forty coloured cards, in which there were eight colours and five cards of each colour. The candidate was required to name the colour of each card as it was taken from the pack, to select all the cards of a named colour, or colours, and to sort them from the shuffled pack into eight heaps, each heap consisting of cards of the same colour.

In (2) a slide containing ground glass was used in combination with each of nine coloured slides, the examinee being required to name the colours at a distance of 15 ft. The only reasons for which a candidate was allowed to be reported as having failed were inability to distinguish red from green, or either from black by daylight, and red from green, or either from the ground glass by artificial light.

On March 20th, 1890, the Council of the Royal Society appointed a Committee on Colour Vision, and the report was presented to both Houses of Parliament in June, 1892. Among the recommendations were the following:

4. That the test for colour vision should be that of Holmgren. If the test be satisfactorily passed, it should be followed by the candidate being required to name without hesitation the colours which are employed as signals or lights and also white light.

6. That a candidate rejected for any of the specified employments should have a right of appeal to an expert approved by the central authority, whose decision should be final.

12. That in cases of judicial inquiries as to collisions or accidents witnesses giving evidence as to the nature or position of coloured signals or lights should be themselves tested for colour and form vision.

This last recommendation is regarded as being very important, and might with advantage be extended to all in any way responsible for accident, irrespective of the fact of their being witnesses. On Recommendations 4 and 6 the Board of Trade has based its existing practice as to tests for colour vision.

The examinations are conducted at different ports in Great Britain and Ireland, either by examiners appointed by the local Marine Boards to examine candidates for certificates of competency, or by the local superintendents of the Board of Trade, or in certain places by the nautical surveyors. These examiners are only allowed to act after they have themselves been passed in colour vision by the Board's special adviser on the subject, and they are instructed how to carry out the test by the Principal Examiner of Masters and Mates. In the event of failure a candidate may appeal, and the Board's practice is always to allow a special examination.

Until October, 1909, the local examination consisted of Holmgren's test pure and simple, but since this date two further test skeins have been employed—namely, purple and yellow. With it is combined a colour ignorance test, the candidate being required to name the colour of red and green skeins of wool and of white objects. All cases of failure are reported to the Principal Examiner of Masters and Mates on a form to which are attached samples of the skeins incorrectly selected by the candidate.

The special examination on appeal is held at South Kensington. It consists of two parts: (1) an examination with the wools; and (2) a spectroscopic test in a dark room.

The Board's regulations relating to the examination of masters and mates in the mercantile marine give very full and explicit directions as to the manner in which the wool test should be conducted.

The subject of colour vision has lately been receiving the attention of the Director-General, and with a view to the adoption of an efficient test for general use in the navy Dr. Edridge-Green's latest pattern colour perception lantern has been on trial. The apparatus consists of four discs, three carrying seven coloured glasses, and one carrying seven modifying glasses, each disc having also a clear aperture.

The other mechanical details are: an electric lamp with projecting accessories, a diaphragm for diminishing the size of the light projected, handles for moving the disc, and the indicator showing the colour or modifier in use. The diaphragm is graduated in respect of three apertures to represent a 5½ in. railway signal bull's eye at 600, 800 and 1,000 yards respectively when the test is made at 20 feet. The front disc contains the following: clear, ground glass, ribbed glass, neutral 1, neutral 2, neutral 3, neutral 4, and neutral 5; while each of the three remaining discs contains the colours: clear, yellow, pure green, standard green, blue, purple, red 1, and red 2.

The examination is conducted in a darkened room, the candidate, at a distance of 15 to 20 ft. from the lantern, being required to name the colour of the light produced by coloured glasses alone, or in combination either with the modifying glasses or the coloured glasses. The neutral glasses represent fog, the ground glass mist, and the ribbed glass rain.

As already mentioned, it has been the custom at the Admiralty to use a lamp, the candidate being required to name the colour of the light as well as to match it with a skein of wool. The method is rapid, satisfactory, and convincing. On different occasions when parents have appealed against the report that a cadet candidate is unfit on account of imperfect perception of colours, a re-examination has been allowed in the father's presence, and in no case has there been any difficulty in demonstrating the defect, and satisfying the parent as to the necessity for rejection.

A lamp should be in darkness, while the wools should be in broad daylight. It is proposed to meet these requirements at the Admiralty new buildings by screening off one corner of the examination room by means of heavy dark curtains extending from ceiling to floor, and arranging for the candidate to stand at a table near a window 6 metres from the lamp. Buxton's telechrome has but six colours, and a piece of ground glass to give the appearance of fog. It has also been said that a better selection of colours might have been made. There is little doubt, however, but that when a candidate has named the colours correctly, and matched them without hesitation, he has given good evidence of fitness for entry as regards colour vision.

The Edridge-Green lamp places at one's disposal a much larger number of possible combinations. The combination red 1 with neutral 4 has been found useful in detecting a defective sensibility to red, the examinee having to approach the lantern to half the usual distance before the red light has been discerned. The use of the same coloured glass in duplicate or triplicate will often disclose the defect; thus, a candidate who named the light from one yellow glass correctly declared it to be red in each case when two and three yellow glasses were in use. In other cases it has been found that the subject of imperfect perception of colours has named the yellow light "red" when it has followed a green, and "green" when it has followed a red. The modifying glasses when combined with the colours have also been found easily to place the colour blind in difficulties.

With this lantern, on account of the larger number of possible combinations, it is less necessary to require matching with wools. Still the practice is regarded as useful. When a person has difficulty in giving the colour a name, he should be asked to match. If his colour vision be normal he will do so without hesitation, and will then often name the colour correctly; while if the colour perception be at fault he will probably disclose the defect by selecting a wrong skein. Also, on account of the number of possible combinations, the Edridge-Green lantern has an advantage over the telechrome. In one case an examinee named the yellow of each lamp at different times both green and red. With the telechrome he had no difficulty with the other five colours, and in a short time he named the yellow light correctly, simply from his knowledge that it was not one of the others. In the event of his becoming a candidate and knowing that he would be examined with the telechrome, it would be quite an easy matter for him to educate himself so as to pass on the lights alone, but if he were required to select all the wools of the colours shown according to directions, and were not successful, he would be refused practically on the Holmgren test.

With the Edridge-Green lamp it was different. This person, after a prolonged examination, still misnamed the yellow and clear lights when combined with the modifying glasses. The glass labelled "blue" is not a typical blue, and when two or three "blues" are combined a violet is the result. A typical blue is, however, obtained by combining blue and standard green, and if an examinee can distinguish any difference in colour between this combination and that of purple and standard green he gives evidence of being heptachromic, of ability to see the seventh colour—indigo—in the spectrum.

It must not be supposed that the labels apply in all circumstances; thus, both blue and purple with the stronger neutrals show pink, and one must exercise his own colour perception in employing the test. It is, therefore, essential that the examiner in this and all other tests should himself have normal colour vision, and with a view to the settling of this point it would be advantageous for all who are engaged extensively in testing colour vision to be subjected to an examination with the spectroscope.

Some very hard things have been said of Holmgren's test; it having been maintained that it allows some candidates to be passed who ought to be rejected and others rejected who ought to be passed. Used as a check on the lamp test, as has been the custom of the Admiralty, the Holmgren test has been found very useful. A candidate who has failed with the lamp almost invariably breaks down with the wools, when the test is carried out strictly in accordance with Holmgren's directions.

When applied to the subject of incomplete colour blindness the test as compared with the lamp is certainly not so convincing to an onlooker. In the last-mentioned case the examinee failed; yet although there was abundant evidence of a feeble chromatic sense there was finally only one confusion colour selected in Test I, and had this been an appeal case there would probably have been great difficulty in convincing the parent that the candidate was unfit on account of imperfect perception of colours. With either lamp on his naming the yellow light at different times both red and green there would probably have been no difficulty whatever.

In more pronounced cases of colour blindness the examinee frequently breaks down at once and selects several confusion colours before any of the correct skeins.

It has often been said that colour-blind persons will pass Holmgren's test. This, however, is not my experience. On the morning of Easter Monday, by permission of the Master of Dulwich College, 102 boys were examined with the Edridge-Green lantern, and four of them were found to be colour-blind. One of the masters, who knew that he had difficulty with colours, requested to be examined with the lamp, and he failed badly. In the afternoon these five were examined by means of Holmgren's test, and all failed.

A visitor who was examining in mathematics informed me that he was somewhat colour blind, and that his difficulty consisted in seeing red unless it were bright and at a comparatively short distance. With the lamp colours were misnamed, and the examinee could only see the red of the combination red 1 and neutral 4 at half the usual distance. This gentleman knew that Holmgren's test put him in a difficulty.

The Board of Trade has recently obtained through the Foreign Office reports upon the colour-vision tests in use in the principal maritime countries of the world for their merchant services. It appears that of these Greece and Italy alone have no colour-vision test, while the Holmgren wool test, either alone or as an alternative or supplement to other tests, is used in the United Kingdom, Austria, France, Germany, the Netherlands, Norway, Russia, Sweden, and the United States. Japan also employs a wool test, though not apparently one based on Holmgren's principles.

Conclusions may be summed up as follows:

1. An examiner should himself have normal colour vision.
2. Colour vision as required for sea service is best tested by means of a lamp.
3. Of lamps which have been used the Edridge-Green is the best form.
4. The practice of requiring the coloured lights to be matched with wools is to be recommended.
5. The Holmgren test is useful as an auxiliary.

DISCUSSION.

Dr. F. W. Edridge-Green said that he must pay this tribute to the Admiralty, that he had examined many men rejected by them and never found one who was normal sighted, though he had examined very many normal sighted persons rejected elsewhere, by the Holmgren test. Holmgren's test was very defective, as in addition to rejecting a very large number of normal sighted persons (on some estimates over 50 per cent. of the total rejected) it allowed cases of the colour-blind to pass.

Fleet Surgeon Pryn, in reply, said he did not maintain that Holmgren's test was a good one, but as an auxiliary he had found it useful. If he had examined candidates by the Holmgren test alone he would probably have had the same results as others, but in his experience candidates

who failed with Buxton's lamp almost always showed with Holmgren's test at least a feeble chromatic sense, and before a candidate was rejected he liked him to convict himself by deed as well as by word. He considered that a candidate who was colour ignorant should be rejected, as if a look-out man reported a red light green, or vice versa, he would be positively dangerous. He might be admitted when he had become educated in colours. Contrast phenomena were not considered to interfere with the lamp test. They were exaggerated in the colour blind and would thus cause their rejection, but candidates with normal colour vision would not be rejected. It was comforting to be told by an authority that examining officers had not been known to reject a candidate who ought to have been passed. An assurance that no candidate had been passed who ought to have been rejected would be welcome.

ISOLATION OF DISEASE CARRIERS, AND METHODS OF DEALING WITH THEM.

By Major S. L. CUMMINS, R.A.M.C.

IN this paper the subject of typhoid carriers only will be dealt with, and I cannot do better than begin it by a classification.

Persons who pass typhoid bacilli in their excreta may be classified as follows:

1. *Precocious Carriers.*—Persons in the incubation period, who are harbouring germs, but have not yet developed the disease.
2. *Paradoxical Carriers.*—Persons who have contracted typhoid bacilli without any resultant illness, and who continue to pass them in the excreta.
3. *Typhoid Cases.*—(*a*) Recognized, (*b*) unrecognized, (*c*) convalescent.
4. *Chronic Carriers.*—Persons who, subsequent to a recognized or unrecognized attack, or even after contact with cases, continue to pass typhoid bacilli either constantly or intermittently in the excreta.

The above classification is founded on that of Sacquépée. Of the groups included in it, the chronic carrier will tend to initiate outbreaks of typhoid fever, while the other groups arising during the outbreak will tend to spread it by furnishing fresh foci of the disease.

It has been calculated that about 3 per cent. of all typhoid convalescents ultimately become chronic carriers, so a step of the greatest importance in discovering carriers is the periodical examination of the excreta of persons who have recovered from the disease. But the search for chronic carriers will most frequently be made in the attempt to discover the origin of an otherwise inexplicable outbreak.

Let us take an imaginary epidemic and consider the steps likely to be most profitable in our search. We will suppose that, in a certain regiment, cases continue to occur from time to time, although all the usual sources of infection, such as water and food supply, have been proved above suspicion, and the accommodation of the troops is satisfactory in every respect. We suspect that the cases are due to a "carrier," and it becomes our business to search for him. We must begin by limiting our field of inquiry, taking the most important groups first. Guided by the distribution of cases in barracks, we commence with all persons associated with the preparation and issue of food.

Our first step, after consideration of their medical history sheets, will be the application of "Widal's" reaction to all these men; and this brings me to discuss the value of this test as applied to the discovery of typhoid carriers. As is to be expected in persons who have had typhoid, carriers usually, but not quite invariably, give a positive response, but seldom in high dilutions. Dr. Alice Hamilton, in a series of typhoid and paratyphoid carriers examined by her, records positive "Widals," in dilutions of 1 in 50 and upwards, in 75 per cent.; but it was high in none. Captain Crawford Kennedy, R.A.M.C., found the test to be positive in seven cases, but not in high dilutions, while it was incomplete in two of them so low as 1 in 20. It will be seen, then, that although in the diagnosis of typhoid fever agglutination of typhoid bacilli by the serum, in low dilutions, is thought little of, in the search for the chronic carrier such an incomplete reaction has a definite value. The test, however, proves nothing except that those responding to it require further attention.

We now pass to the most important test for the diagnosis of the carrier—the examination of the excreta. A positive result is here final proof that the person concerned is a carrier; but, unhappily, a *negative* one does not exclude his being so, since the excretion of bacilli is often intermittent. Before a person is declared free from typhoid bacilli on these negative grounds the examination will have to be repeated many times.

We return to our imaginary epidemic. Two of the cooks prove to agglutinate typhoid bacilli in low dilutions. The first few attempts to isolate typhoid from the excreta have proved negative, and time is being lost. Is there no means of rapidly deciding whether any of these men are really "carriers" or not? Gaetgens has called attention to the value of the opsonic index in the discovery of carriers. He has proved that while after an attack of typhoid fever the opsonic index falls to normal in a few months, it remains persistently high in those persons who continue to harbour typhoid bacilli. In a series of observations published by him it was raised in every case. Dr. Ledingham, Dr. Alice Hamilton, Captain Crawford Kennedy, and others have also reported raised opsonic indices in typhoid carriers. In fact, there is reason to think that the opsonic index is practically always abnormally high in these persons. Although inapplicable to large numbers, the test furnishes just the information that we require in our predicament, as we find that one of our men has a high opsonic index. We conclude, then, that he is in all probability the man we are seeking, and, indeed, during the daily observations of excreta that follow he is found to be intermittently excreting bacilli.

We have now found the probable *origin* of our outbreak, and by isolating this man we are able to shut the stable door after the horse has escaped. For, indeed, cases continue to occur. Let us consider why. The incubation period of typhoid fever is from seven to forty-five days, and, as cases have been occurring at short intervals, there may be several "precocious carriers" at large. There may also be ambulatory and unrecognized cases still passing typhoid bacilli.

In the search for these men we have a fresh problem to consider. We must widen our field of inquiry, and yet our bacteriological staff is already overworked. We can do so by systematic and thorough medical inspection, bearing in mind that the typhoid bacillus can cause symptoms very different from those clinically familiar as characteristic of typhoid fever. To those interested in the question of these abortive cases of typhoid infection I would recommend an interesting account of an epidemic in the French army that recently occurred at Saint Briene. It is described in the *Archives de Médecins et de Pharmacie Militaire* for April, 1910. The methods adopted by the French medical authorities were excellent on that occasion, and we may well apply them to our epidemic.

Our object now is to catch and isolate the early and atypical cases by means of medical inspection. We are agreed that a walk down the ranks with a glance at the wrists—that persistent relic of the itchy era of the British army—will not help us much. Let us take a leaf from the book of our French *confrères* and proceed as follows: The men will parade in their barrack rooms, and, as each is reached by the medical officer, he will loosen his clothes so as to display the thorax and abdomen, lie down on his bed, and undergo a rapid but thorough examination, directed to the discovery of slight splenic enlargement, rose spots, gastric, hepatic, or intestinal symptoms, signs of bronchitis or pleurisy, furred tongue, redness or ulceration of tonsils or pharynx, etc. Inquiries will be made as to general fitness, diarrhoea, constipation, headache, and so forth; and the temperature will be recorded.

In the French epidemic quoted, 57 cases were discovered in this way, of whom only 19 required to be sent to hospital. The others, although proved bacteriologically to be of a typhoidal nature, were merely isolated, but not regarded as in need of hospital treatment. This will give some idea of the importance of a thorough inspection, as well as of the number of typhoid infections that never reach the dignity of an attack of typhoid fever. Their importance from the epidemiological point of view, however, is very great, as they tend to escape recognition.

Having carried out our inspection—which, by the way, must be repeated as frequently as the strength of our staff will permit—and thus isolated some suspicious cases, we

must again call upon the bacteriologist to elucidate these; and his assistance will be also required to deal with all contacts in the immediate vicinity of cases. His efforts will be directed to proving or excluding typhoid infection in our suspects, and to the recognition of early cases or precocious carriers amongst the contacts. For the first, the "Widal" reaction will be of the greatest use, and the examination of the excreta will also help. In nearly all the 57 cases above mentioned as isolated by inspection during the French epidemic a positive "Widal" was obtained, and in several the typhoid bacillus was isolated from the excreta. But as we are examining early cases we may expect great assistance from blood culture, especially in the very cases where "Widal" is still negative. This process, first perfected by Conradi, has now been so far simplified as to be an excellent and easily applied as well as a certain, test for early typhoid infection.

By means of these several procedures—medical inspection, "Widal," culture from the stools and culture from the blood—we finally succeed in eliminating infective foci from our regiment and bring the epidemic to an end. But we have now on our hands the original chronic carriers, as well as several temporary ones. What are we going to do with them? Let us first consider to what extent and in what way they are dangerous. That they are capable of originating outbreaks has been proved in many recorded instances, and needs no further demonstration. The extent to which they are dangerous, however, gives more room for discussion. This danger is apparently greater from the temporary than from the chronic carrier. I quote the following from Dr. Klinger's Report on the Antityphoid Campaign in Germany: "Finally, 103 old cases and 296 bacillus carriers were discovered by the Commission in 1906 and 1907. The old cases were simply discovered by the fact that they were causing new infections. . . . How important it is to discover early a possible source of infection is shown by the fact that, of the 1,397 cases whose origin was more or less determined, 137 were derived from the old cases . . . 47 from hidden carriers, and 912 from sick, who at the time of causing the infection, had not yet been brought under supervision."

In fact, under European conditions, the chronic carrier is not a very great direct menace to the health of his neighbours. But all regular soldiers are liable to serve abroad, and a moment's consideration will show that the potential danger of a "carrier" is multiplied a thousand fold under military conditions in warm climates. In Europe, under peace conditions, the disposal of excreta is likely to be thorough. Flies, now proved by Major Faichnie and others to be active agents in the spread of typhoid bacilli from infected faeces, are relatively few. Above all, the average health of the soldier is good. He is under his natural conditions of climate, and in the best position to withstand infection if it comes his way.

Abroad, all this is changed. The disposal of excreta is often imperfect, flies abound, and the soldier is under new and unfamiliar conditions of life. Diet, climate, perhaps the exertion of active service, all tend to lower his health and diminish his resistance, while at the same time, the paths of dissemination of typhoid bacilli from the ever-present carrier are greatly increased in number. I repeat that the danger from carriers, small under European conditions, is urgent in the tropics. How, then, shall we deal with our carriers? We do not yet know how to cure them, so that door is closed to us. It is not enough to give them careful instructions as to what precautions they must take. Klinger mentions that "Chronic carriers who had been told to take precautions, caused seventy eight infections." There is only one course open to us. We must get rid of them. They are a source of but little danger to the civil population, but, in the army, under conditions of active service or tropical climate, they are likely to be very dangerous indeed. Our only course is what is now being done in the army. Keep the men under observation for some months. If the excretion of bacilli is persistent, discharge them from the service, notifying their respective medical officers of health as to their condition. But with all our precautions, we must realize that we shall always have typhoid carriers in the army; and this fact must be taken into account.

The best prophylaxis against the production of typhoid carriers is the prevention of typhoid fever, and this is best accomplished by sound general measures of garrison hygiene, and by diminishing the susceptibility of individuals and communities by antityphoid inoculation. It should be remembered that for every 100 cases of typhoid prevented, we have eliminated, say, 3 chronic and 97 temporary carriers, with their geometrically increasing potentiality of producing disease.

DISCUSSION.

Dr. John Brown (M.O.H. Bacup) said that in civil practice they knew very little of the typhoid carrier, in fact the danger was so slight that they ran little chance of spreading the disease in that way. What experience had Major Cummins of the value of urotropine in regard to destroying the typhoid bacillus in the urine? In disease of urine due to pathogenic bacilli it was very effective. The danger of typhoid carriers in the army might be of importance, but it was not so in civil practice.

Fleet Surgeon Bassett-Smith said the early diagnosis of typhoid carriers by high opsonic index and agglutination reaction was very important, but only the latter was practical in general use. Typhoid carriers in the navy were of little danger in ships, as the method of disposal of excreta in men of war was very effective; on shore all general dangers were present, but in temperate climates with water carriage as in dockyards the risk was little, though much increased by being abroad. Cases of faecal infection were most common. In cases in the services the men were under observation and were safer in service than outside.

Major Cummins, in reply, said that Dr. Brown had asked whether urotropine was curative in the cases. In his experience urotropine, though useful in diminishing the number of bacteria excreted, was not in any sense curative. He pointed out that his paper only dealt with garrison conditions. He considered that the only hope was to anticipate active service by getting rid of carriers as they arose in peace conditions, but of course that would only be a partial measure at best. Fleet Surgeon Bassett-Smith's question—whether the cases with low agglutinins had high opsonins—must be answered in the affirmative. Both the cases had a raised opsonic index co-existing with low agglutinins.

NAVAL RECRUITS.

By Fleet Surgeon G. T. Collingwood.

This paper, which refers to the physical and medical examination of recruits at the Royal Navy Rendezvous, London, during two periods—1st April to 31st March, 1907 to 1908, and 1908 to 1909—was sent into office at the end of my time there, and was not originally intended for publication. Still I think that the percentage tables of fit and unfit, causes of rejection, and some common causes of rejection, may be found of interest even if not of much value:—

Total examined, 1907-08	...	6,810
Medically fit	...	3,393 (49.82 per cent.)
Medically unfit ...	...	3,417 (50.18 per cent.)
Total examined, 1908-09	...	5,955
Medically fit	...	2,863 (48.08 per cent.)
Medically unfit ...	...	3,092 (51.92 per cent.)

Of those medically fit a fair percentage were subsequently rejected for character and education.

Table I gives the causes of rejection during these two periods arranged in classes according to the different causes of rejection and as nearly as possible in the order the rejection defects were noted, and the would-be recruits were sent away. This is a matter of importance as regards percentages, and after a few weeks' recruiting the conclusion was arrived at that if the figures obtained were to be of any value a definite order of examination must be strictly adhered to, and so this was carried out.

Thus, for example, on Table I, year 1908 9,483 were at the start rejected for defective teeth, and sent away out of the 5 955 examined, giving 8.11 per cent. rejected. The list also shows 632 rejected for defective vision, not, of course, out of 5,955, but 5,955 – 504, namely, those who had been rejected and sent away for defective teeth, deviation of septum, and enlarged tonsils, thus giving 632 rejected for defective vision out of 5,451 who were examined for this defect, namely 11.59 per cent, and so on all the way

down the lists. If not arrived at in some such way the resulting percentages would be incorrect and misleading To attempt to arrive at the conclusion how many out of the 483 rejected for defective teeth would have been rejected for eyesight or one or more of the several other causes of rejection, would only interfere with the obtaining of efficient recruits, and would be almost impossible to work out. Of course if the percentages were worked out from only a small number examined the result might be misleading, but when done from the examination of some thousands of candidates may be of some value.

TABLE I.—*Causes of Rejection, arranged as nearly as possible in the Order the Rejection Defects were Noted.*

Causes of Rejection in Classes.	1907-8.	1908-9.
Defective teeth	548	483
Disease of nose	3	2
Enlarged tonsils	8	19
Defective vision	725	632
Strabismus	6	2
Ophthalmia	3	7
Defective colour vision	93	—
Defective speech	31	26
Disease of ear and deafness	249	228
Fits	0	4
Wry-neck	0	1
Disease of skin	27	26
Old injuries	78	99
Old operations	87	85
Incontinence of urine	4	2
Contracted and webbed fingers	3	2
Contracted and deformed toes	155	111
Other deformities	27	38
Varicose veins	67	74
Knock-knee	252	238
Bow-legs	16	11
Flat-foot	84	181
Corns and bunions	30	19
Spinal curvature	71	64
Haemorrhoids	3	2
Enlarged glands	8	0
Hypospadias	2	6
Retained testicle	24	18
Disease of testicle	2	0
Hydrocele	7	11
Varicocele	48	79
Venereal disease	8	10
Hernia	42	43
Laxity of abdominal rings	52	39
Umbilical hernia	4	0
Disease of heart	450	303
Catarrh	4	0
Under height	70	30
Under chest	118	102
Poor physique	7	6
Obesity	1	3
Defective colour vision	—	86
Total rejected	3,417	3,092
Fit	3,393	2,863
Total examined	6,810	5,955

Order of examination for coloured vision altered during second year.

Table II gives percentages of a few of the most common causes of rejection worked out on the principle mentioned above.

TABLE II.

	1907-8.	1908-9.
1. Defective vision	11.59	11.59
2. Heart disease	11 13	8.90
3. Defective teeth	8 04	8.11
4. Knock-knee	5.36	5.78
5. Deafness and disease of ears	4 61	4.76
6. Under chest	3.35	3.52
7. Deformed toes	3.13	2.55
8. Hernia and laxity of rings	2.27	2.36
9. Flat-foot	1.89	4.68
10. Varicocele	1.14	2.21

Not too much notice was taken of varicoceles, especially in boys, if otherwise robust, as it was regarded as more or less physiological and likely to disappear, or give rise to little or no trouble later.

It is interesting to note how nearly the above causes of rejection for the two years correspond. It may appear that the number rejected for heart trouble was rather high, but at the Royal Navy Rendezvous, London, marked rapidity of pulse remaining after due rest, or irregularity after exertion, were sufficient to cause rejection. At times there may be a hurry in getting ratings, especially stokers, and a more lenient view may be taken of such defects, etc. This, however, should seldom happen, and as the numbers required are generally easily obtained, it is not necessary for the examining officer to take any such risks.

Table III compares the results of naval recruiting at the Royal Navy Rendezvous, London, with that of a few other places, and also at the Rendezvous in 1876. It will be noticed that, as a rule, the percentages vary but little.

TABLE III.

Place.	Examined.	Fit.	Percentage.
R.N. Rendezvous, London	6,810	3,393	49 8
H.M.S. *President*, London	1,293	560	43 3
H.M.S. *Pioneer*, New Zealand	106	52	49.0
Australian Naval Force	197	97	49.2
H.M.S. *Emerald*, Queenstown	257	129	50.2
R.N. Rendezvous, 1876 — Marines	1,086	605	55.7
R.N. Rendezvous, 1876 — Men	59	32	54.2
R.N. Rendezvous, 1876 — Boys	2,022	975	48.2

It may be noted that the standard for boys in 1907 was higher than in 1876, and as on both occasions the numbers required were obtained, I think this may be taken as anything but a sign of the physical degeneration of the race in this respect.

1907: Age, 16 to 16½; height, ft. 2½ in.; chest, 33 in. mean.

1876: Age, 16 to 16½; height, 5 ft. 1 in.; chest, 30 in.

It is doubtful, from these facts and figures, if any satisfactory inferences or deductions can be made as regards the national physique or physical degeneration of the race, for the examining medical officer works under Admiralty regulations, and certain standards of height, chest, etc., are advertised, and vary from time to time according to requirements. Also, that the would-be recruit does not necessarily represent the ordinary type of the race, and though about 50 per cent. are rejected medically as unsuited for the navy, it does not follow that they are physical wrecks or degenerates; on the other

hand, in many instances candidates, knowing themselves to be below the requirements in physique, etc., go away, and do not come up for medical examination. It seems, I think, probable that due attention to the teeth, etc., and the training of the children in our schools may lead to a diminishing number of rejections from this and other causes.

As far as I know, little has been written on naval recruiting and the causes of rejection, so I trust my paper has been found of some interest.

DISCUSSION.

Lieutenant-Colonel Simpson said many cases of disordered action of the heart were in fact of a neurasthenic type (a constitutional condition) associated with high blood pressure—purple hands and a rapid capillary reflux. Treatment was difficult; electric baths on the one hand produced a temporary improvement, and cold sponging as a general nervous tonic was also effective. The condition did not seriously interfere with their work.

Lieutenant-Colonel Glenn Allen said he was interested in the subject, having been connected with recruiting for the army in the London district during the last two years. He desired first of all to state that his experience as regards the cause of disordered action of the heart in the case of recruits made him support the view just advanced by Lieutenant-Colonel Simpson. It was by regulation necessary to record the pulse-rate in every recruit for the army. Every man whose pulse-rate reached or exceeded 112 per minute and was maintained at that rate during the examination was rejected. The cause usually ascribed for that form of functional heart disorder was cigarette smoking. His recruiting experience had led him to doubt whether the majority of cases were due to that cause. He had made a practice of inquiring into the smoking habits of all such recruits, and examined the fingers for nicotine staining. The result had not been to support the view that nicotine poisoning was at the root of the mischief. He was inclined to think that it was principally a matter of temperament. Whether such subjects of nervous excitability of the cardiac muscle under medical examination would not make efficient soldiers was open perhaps to question. As things were at present they were rejected so long as they were subject to that form of palpitation. One other point he should like to draw attention to was the large number of rejections for the navy as compared with the army. The figures given by Fleet Surgeon Collingwood showed rejections exceeding 50 per cent. Speaking generally, without having exact figures beside him, the rejections for the army and special reserve combined amounted to about 33 per cent. in the London district. Why that should be perhaps Fleet Surgeon Collingwood might be able to explain. Apparently all naval recruits had to pass a colour vision test, which was not required in the case of army recruits. That, however, did not explain the large difference in the figures. There must be some difference in the physical standard demanded or in the quality of the recruits seeking admission.

Fleet Surgeon Pryn said for public service he thought it wise to aim at the normal. Independently of requirements for sea service he thought it useful to examine candidates for colour vision. He had had considerable experience of examining boys, and had found that defects were very frequently multiple. Because a defect was not discoverable it did not follow that it did not exist. Given two boys equal in all respects except that one was colour blind, assuming that at some future period one should prove himself to be wanting in ordinary courage in the presence of the enemy he would expect him to be the colour blind. With regard to the question of smoking and heart trouble, he thought that a candidate who abstained from smoking for three months would very likely pass, but at the same time he would very likely be undesirable, as he would probably smoke after entry and suffer again. There again it was desirable to aim at the normal.

AIR AND VENTILATION IN MODERN WARSHIPS.

By Surgeon L. F. Cope, R.N.

It may be laid down as a first principle that pure air is as necessary to health as pure food. To ensure a constant supply of pure air is in a modern warship none too easy. There are several factors to contend against:

1. The limited living space. This may be taken on board ship to be about 200 cubic feet per man.
2. The absence of diffusion through the walls of the ship.
3. The love the bluejacket has of keeping all possible means of ventilation closed.

As against these factors must be placed the fact that the air surrounding the ship is good in quality and plentiful in quantity, and that when under way the movement of the ship tends to help ventilation by causing currents of air to flow through all the available openings.

In modern ships, then, there are two main methods of ventilation: (1) Natural—by means of ports, scuttles, and hatchways; (2) artificial—by electric fans.

Natural Ventilation.

In this the movements of air are entirely due to natural laws—diffusion, wind, and differences of weight due to differences of temperature. But it is very variable and uneven in its results, owing to the small space and varying power and direction of the wind. In a ship natural ventilation takes place entirely through ports and hatches. The former in the ship's side act as inlets, and the latter almost entirely as outlets, owing to their situations.

It is as well to have some idea of the ventilating power of a 15½-in. circular port. If situated, as it is in modern ships, 5 ft. above the deck with a hatchway near it as uptake 9 ft. above the deck, with a difference of temperature between the external and internal air of 20°, it gives an air delivery on a calm day (allowing for loss by friction) of about 13,000 cubic feet per hour—that is, roughly, sufficient for four men under good conditions. This would naturally be considerably increased if there was any wind blowing, but, if there is a man living or sleeping near such a port, the draught would be to him uncomfortably apparent, and the port would be partly or wholly closed, thus lessening its utility as a ventilating factor. The ventilating power of a port may be increased in calm air by fixing a wind scoop to it, and similarly hatches may be made to act as intakes by means of windsails. It is, however, quite apparent that when 150 men live on a mess deck it is quite impossible to arrange enough ports and hatches to supply them with sufficient air by means of natural ventilation alone.

In addition natural ventilation in ships is in most cases to a great extent stultified by too great approximation of intakes and outlets. It is evident that openings in the ship's side must be dependent on, and governed by, the positions of guns and considerations of strength of structure and by the efficiency of the ship as a fighting machine. It therefore frequently happens that one finds a port and a hatch in close juxtaposition. In such cases the air from the former goes straight out by the latter, causing a strong draught, but no ventilation. Natural ventilation alone cannot keep the air of a ship pure and sweet, even under the best possible conditions, while there are many days in the year when a ship is at sea, when by reason of wind and rough sea all ports in the ship's side, and not infrequently the hatches as well, have to be kept shut. For such occasions artificial ventilation is a prime necessity.

Artificial Ventilation.

In modern warships this is carried out by means of electric fans. Taking a typical ship of modern type, there are in all 62 fans, varying in size from 40 in. to 7½ in. in diameter, of which 7 act as exhaust fans and 55 as supply. Each fan is connected with a system of air ducts to distribute the air, and with a pipe led down from the open air to supply the air, the opening on deck of the latter being protected by a coaming and a movable mushroom top to prevent the entry of water. A supply fan forces the air into a main discharge pipe, from which at intervals proceed branches, each terminating in a certain space, and thus forming inlets for the space. On the various branches are louvres, and in this way the air is distributed all over the ventilated area, outlets being

provided, as in natural ventilation, by the hatches. The exhaust fans are connected with the engine rooms, and by their action tend to obviate the dissipation of heat throughout the ship. With regard to artificial ventilation, the following are the chief desiderata:

1. A sufficiency of trunks and louvres, of such a number as to allow 1 louvre to every 1,000 cubic feet of gross space, giving a supply sufficient for five men.
2. The avoidance of air stagnation and pockets of foul air in places far from natural ventilation. This can best be attained by having a large cone-shaped terminal to the air trunk opening low down and some distance away from the outlet, and also by having sufficient means of exhaust, a fan if necessary, to prevent the supply fan causing increase of air pressure without true circulation of air.
3. A maximum velocity of air at louvres of 1,000 feet a minute.
4. Louvres should be so placed, if possible, that the air from them does not blow straight on to a hammock, as when this is the case the louvre is shut by the occupant of the hammock.

The Sick Bay.

In the ship in question the sick bay has cot accommodation for ten men, which, with the staff, gives an air space of 425 cubic feet per man. The ventilation supply consists of four side-scuttles and three branches from a 12½-in. electric fan, which gives 4,000 cubic feet a minute. The exhaust is by a skylight and a 10-in. trunk fitted with a mushroom top. The sick bay watercloset has its own supply and exhaust.

Results of System of Ventilation.

With a view to estimating the efficiency value of ventilation, a series of estimations of the CO_2 content of various parts of the ship was undertaken under the following varying conditions:

(*a*) Optimum condition, with all scuttles and hatches open and fans running.
(*b*) With only natural ventilation.
(*c*) With only artificial ventilation.
(*d*) With scuttles shut, hatches open, no fans running; in fact, the bluejackets' normal.

As far as possible, in all cases in which figures are given there were approximately the same numbers of men present under each condition of ventilation. The results obtained are shown in the attached table. They may be classified as follows:

(*a*) Under optimum conditions, in practically all the living spaces, CO_2 was present to the extent of 0.6655 per 1,000 cub. ft.
(*b*) With only natural ventilation: CO_2 present equals 0 9095 per 1,000 cub. ft.
(*c*) With only artificial ventilation: CO_2 present to the extent of 0.8499 per 1,000 cub. ft.
(*d*) With no intentional supply of fresh air—in fact, with nothing but really natural ventilation: CO_2 present in proportion of 1.3046 per 1,000 cub. ft.

The above figures represent the average of 100 estimations under each of the stated conditions and probably err in over-estimating the CO_2 present.

As I have already stated, the cubic space per man in most of the living spaces on board is about 200 cubic feet. Having regard to the restricted space per man, it may be rightly considered that the system of ventilation at present in vogue is very fairly successful, particularly as regards the artificial ventilation.

In this connexion the following facts are of interest: All the living spaces in the ship, both for officers and men, can be supplied with fresh air by the ventilating fans. These are Davidson's sirocco fans, electrically driven, of 12½ in. diameter, capable of giving 4,000 cubic feet of air per minute when run at maximum speed with free inlet and outlet. One fan of this type is placed in each portion of the mess deck, being supplied with air by means of a trunk leading down from the upper deck.

The engine rooms are separately supplied and exhausted. The supply consists of four 35 in. fans, each giving 31 000 cubic feet per minute; two 25 in. fans, each giving 15,500 cubic feet per minute. The exhaust system consists of four 40 in. fans with a capacity of 40,500 cubic feet per minute each. This system is of extreme value in keeping under control the wild heat which naturally exists in large quantities in this vicinity.

A point of some interest is that the air supplied to the living spaces can, in the ship in question, be heated in cold weather. This is effected by passing the air from the fan through tanks in which are placed steam pipes, the steam being derived from the boiler and engine rooms. The heating area in the steam heater is so designed that it shall be able to keep the air in the living spaces at a temperature of 70° F. on a cold day at sea, but its great disadvantage is that the air, when supplied to the mess decks, is at a low relative humidity, 46 per cent. This hot air, therefore, has a greater drying power than the contained air, and consequently dries the mucous surfaces and brings the body under the debilitating influences of undistributed air of too high a temperature. Some scheme should therefore be evolved to add a trace of water by means of steam supplied to the thermo-tank, so as to bring the relative humidity of the heated air up to 70 per cent.

In the American navy an apparatus has just been installed in the *Alabama* for cooling and washing the air supply, but as no results are yet to hand, it is better to defer giving any opinion till some information as to its merits can be obtained from the United States naval authorities. Windsails and cowls do not exist as ventilating agents in the ship in question, so that the electrical fans are solely relied upon for artificial ventilation. Lastly, it must not be forgotten that, as the whole of the lighting of the ship is by electric lights, all the CO_2 produced is of human origin, and consequently there is less CO_2 to get rid of than in days when tallow candles were used for lighting purposes.

Analyses of Air in Various Parts of the Ship.

Part of Ship.	Contents in Cubic Feet.	Average No. Present.	Cubic Feet per Head.	Ventilation.	Impurities in Volumes CO_2 per 1,000 Air.
I. Stokers' and marines' mess deck	13,460	64	210.3	A. Six scuttles, each 15½ in. diameter; hatchway; 12½ in. fan giving 4,000 cubic feet per minute	0.6925
				B. Scuttles open; fan not running	0 9025
				C. Fan running; scuttles closed	0 8312
				D. Scuttles closed; fan not running	1.662
II. Stokers' mess deck	13,500	65	207.7	A. } As for I above	0 6467
				B. }	0 9063
				C. }	0 8891
				D. }	1.561
III. Seamen's mess deck	11,900	55	216.4	A. } As for I and II above, except that there are seven scuttles	0 6257
				B. }	0 9482
				C. }	0 8562
				D. }	1.2815
IV. Sick bay ...	4,275	10	427.5	A. Four scuttles, each 15½ in. diameter; hatch; trunk from 12½ in fan	0.5937
				B. Scuttles open; fan not running	0.8104
				C. Fan running; scuttles closed	0.7916
				D. Scuttles shut; fan not running	
V. Ward room ...	6,000	24	250 0	A. Two square ports; hatch; two doors; trunk from 12½ in. fan	0 5665
				B. Ports and hatch open; fan not running	0.7553
				C. Fan running; ports and hatch closed	0.8497
				D. Hatch and ports closed; fan not running	1.5015
VI. Officers' cabin	450	1	450.0	A. One scuttle, 15½ in.; louvres on door; trunk from 12½ in. fan	0.5203
				B. Scuttle open; fan not running	0.8875
				C. Fan running; scuttle shut	0.7786
				D. Scuttle shut; no fan running	1.165

Diseases Due to Impure Air.

The chief effect of occupation of a confined space is the disagreeable odour the air acquires from its occupants. This is due to excreta from the skin, the smell coming from the solid materials of the sweat, fats, cholesterin, etc. The discomfort experienced is due to increased temperature and excessive amount of water vapour, and also to respiratory CO_2, for it has been proved that chemically pure CO_2 can be added to the air to the extent of 1 per cent. without causing any appreciable effects. In the case of respired air, however, 5 per cent. causes headache and

depression, but, of course, in such a case there is also a great reduction in oxygen. The CO_2 in respired air is, therefore, taken as a measure of the index total impurities. The air in a ship always contains solid material, the human origin of which is strongly in evidence.

In a well ventilated ship the air is dry and relatively free from organic particles. The most important particulate bodies are the micro-organisms, and, "as a rule, the air of a ship is not free from solid material derived from the respiratory passages."[1] Ventilation, if satisfactory, would not only renew the air, but also get rid of any micro-organisms in it, and as the air at sea is plentiful and practically free from micro-organisms, it is the best possible air to use for such a purpose.

It is a well-known fact that sore throats, tonsillitis, and the syndrome of symptoms known as "an attack of liver" are commonest on board when a ship is at sea for any length of time. This is undoubtedly due to the fact that under such circumstances there is decreased ventilation, owing to scuttles being closed either to avoid draughts or because of the rough sea. In the ship in question, as soon as the ship goes to sea, all the ventilating fans are started and left running till the ship again gets into harbour, and it is to this that one attributes the freedom from tonsillitis and sore throats that has obtained for some time past in the ship.

General Considerations.

In conclusion, then, one may sum up the matter thus: a perfect system of ventilation should be designed in such a manner that the following points are all ensured:

1. Complete and sufficient changing of the air without draughts.
2. In the event of natural ventilation failing, there must be a system of artificial ventilation as good, if not better, to substitute for it.
3. In every case of supply or exhaust, there must be provision for corresponding outlet or inlet.
4. If the air is to be heated, it must also be supplied with moisture, so as not to lower its relative humidity.
5. The openings of all air trunks, whether connected with the supply or exhaust systems, should be placed on the superstructure, so as to enable them to be used at sea in all weathers.

With regard to these points I would suggest the following improvements on the system we now have in the ship in question:

Draughts may be avoided if inlet and outlet are placed sufficiently far apart. Such a system also tends to better ventilation by the prevention of pockets of undisturbed foul air.

With regard to the system of ventilating fans, it seems obvious that some steps must be taken to prevent the trunks from the fans being rendered useless by closing of the louvres and occlusion of the tubes by means of hammocks or clothes being introduced, as is frequently done. Louvres could be fitted with a padlock, by which means, when once opened, they could be locked, and thus prevented from being closed, while a stout grating placed over the end of the trunk would prevent its being stopped up by introduced foreign bodies.

The men's living spaces should be supplied with exhaust fans. This would tend to a much greater degree of efficiency in ventilation. If run in conjunction with the supply fans, and suitably placed, they should ensure almost perfect draughtless ventilation even under the most adverse circumstances, at the same time fulfilling the requirements of a sufficiency of corresponding inlets and outlets.

The openings of air trunks should indubitably all be placed on the superstructure, those on the upper deck being useless in a heavy sea, as they have to be closed to prevent water washing down them, while the superstructure is practically never under water, so that air trunks opening there would be always available.

There can be no doubt that the ventilation of a warship is a very difficult problem. The structure of a warship is such that its efficiency as a fighting machine renders all other points of secondary interest. In addition to the difficulties due to structure which have to be overcome, there are others due to the character and upbringing of the ship's inhabitants. The bluejacket cannot realize that the cleanliness of the air is as important as the cleanliness of the body, and having been brought up from earliest childhood in surroundings almost hermetically sealed against the entrance of fresh air, an atmosphere that has got past "stuffy" seems to him merely normal, and consequently he regards any attempt at the admission of fresh air as an infringement of his liberties.

In the face of such difficulties, the present satisfactory condition of the air in modern ships reflects great credit on the officers whose duties it has been for years past to gradually evolve a system which needs but slight attention to details to be classed as almost perfect.

[1] Gatewood: *Naval Hygiene.*

DISCUSSION.

Mr. W. H. Whiting, Assistant Director of Naval Construction, said there was hearty sympathy between naval constructors and medical officers afloat to improve conditions of life at sea. Exact observations by trained observers of those conditions were of value. The importance of the subject was due to the imperative necessity of developing the whole power of ships costing two millions in action, and hence the need for maintaining the human element in perfectly fit condition. But that particular problem, like so many others in ships, was difficult in itself and made much more difficult by special conditions of warships. Ventilation ashore had not reached in public or private dwellings a very high level. In warships it was more difficult, owing to (1) small space for men (150 cubic feet in a vessel carrying 400 men sleeping); (2) small height of compartments (8 ft.); (3) great subdivision called for by risks of foundering in action, and by increasing desire for privacy—it meant great lengths of ventilation trunks and loss of efficiency; (4) small side scuttles; (5) few openings overhead, due to need of clear upper decks with nothing to impede the fire of the big gun armament of modern warships; (6) two separate sets of conditions—harbour and sea. The tendency was to improve the conditions so far as artificial power was concerned, though more difficult now they no longer had open decks. The system was one of forced supply through trunks and louvres with only natural exhausts. In a 5,000 ton ship, with 400 men, there was a supply of fan power for 24,000 cubic feet per minute. In the best distribution of this supply was a large field for observation.

Fleet Surgeon Robley H. Browne, as recently in medical charge of a modern battleship, bore testimony to the enormous improvement in modern conditions, and the obvious desire of the Constructive Department of the Admiralty to deal with that question. There was no subject in which theory and practice differed so widely; the most elaborate arrangements made by experts were so easily defeated by non-compliance with programme for running of fans. He advocated a mixed system of supply and exhaust as most likely to attain the best result.

Fleet Surgeon Bassett-Smith said that ventilation had a direct bearing on the distribution of disease, more especially sore throats and tubercle, especially draughts and the presence of shut-up places. Any case present on a lower deck brought danger to the others, and should be weeded out at once. Mr. Cope's suggestion of adding steam was important but should not be pushed too far, as damp increased the growth of organisms; and that was a point, that the bacteriological contents of air was far more important to examine than the CO_2, as CO_2 in itself, as shown in submarines, might rise very high and yet produce no apparent ill effect; it was, however, an index of human contamination.

Colonel W. Culver James commented on the supply of air—or, better still, of oxygen—by a system of chambers of compressed air or oxygen from which the gas could be allowed gradually to escape when required into those parts of the vessel that were worst ventilated in time of need.

The Fifth International Congress of Medical Electrology and Radiology will be held at Barcelona from September 13th to the 18th. Among the questions proposed for discussion are the following: (1) The unification of methods in electrical diagnosis; (2) radioscopy and radiography of the abdominal segment; (3) the therapeutic properties of oscillating magnetic fields. Communications relative to the Congress should be addressed to Dr. Comas, Calle Cortès 613, pral. Barcelona.

SECTION OF MEDICAL SOCIOLOGY.

J. A. Macdonald, M.D., President.

PRESIDENT'S INTRODUCTORY REMARKS.

Dr. Macdonald opened the proceedings with a short speech, in the course of which he traced the developments which had led to the establishment of the Section. He had endeavoured to devise a definition of the term "medical sociology," but for the moment could only suggest that it was the phrase by which could most briefly be described all the subjects to be discussed before the Section. They had an important bearing on medicine, but not forming part of its allied sciences were best discussed separately. Politics would be excluded.

DISCUSSION ON THE ECONOMIC BASIS OF HOSPITAL MANAGEMENT.

OPENING PAPER.

By Benjamin Moore, M.A., D.Sc., M.R.C.S.,
Professor of Bio-Chemistry, University of Liverpool.

In opening the discussion Professor Moore stated that there was an aversion on the part of the medical profession to present-day methods of managing hospitals, and a movement was on foot to bring their administration into line with the requirements of the profession. First sketching the history of hospitals, in order to ascertain the reason why the hospitals were treating medical practitioners ill, he said that the bias obtaining in the earlier development had rendered the systems incapable of adequate expansion to meet the national requirements of modern days.

The early eleemosynary atmosphere still hung round the hospitals, and the charity of the few still attempted in vain to carry out a national work for which sufficient funds could only be provided by the graduated contributions of the whole nation. A properly organized hospital system should provide (1) an adequate means of treating in a uniform way the serious diseases of necessitous people; (2) prevention of the spread of disease; (3) means of study and advance in medicine and surgery; and (4) means of instruction and professional training for the whole profession.

The staffs of both voluntary and Poor Law hospitals were at present appointed in many cases by lay committees, who knew little or nothing of the relative professional abilities of the respective candidates, and whose choice depended too often either on the candidate being personally agreeable to members of the committee or upon some other influence unconnected with professional ability.

There was needed some fair method of remunerating professional services in a tangible manner, apart from the *kudos* which the physician was supposed to derive from his appointment, and apart from the possible introductions to patients and practitioners in which it might result. This consideration applied especially to the case of the assistant staff, on whose members the greater proportion of the work often fell. The present system was most deleterious, because only a young man with ample private means could support the strain of dispensing with all salary, keeping up expensive consulting chambers, and spending money in many other professional ways during the seven to ten years before he began to earn an appreciable income as a consulting physician or surgeon. Hence those best fitted by natural endowments and professional attainments for taking up the highest work were often debarred for financial reasons from entering upon a hospital career.

In similar fashion, the fact that the various municipal and Poor Law hospitals throughout the country were administered each on an entirely different system by hundreds of small locally appointed bodies and boards of guardians, instead of by one national authority, rendered impossible continuity of appointment and satisfactory advancement among their medical staffs. The resident medical officers in Poor Law hospitals took up transient service in order to gain a little hospital experience, or, perchance, took a diploma in public health at some medical school or university in the neighbourhood. How much better would it be if these young men could enter a great national service and progress by steps until they reach the highest offices! The present system meant casual employment for junior members of the Poor Law service, which led nowhere and was most disastrous and wasteful to the public service. There was no connexion between such junior appointments and the better paid posts under the Poor Law, and the appointments to the senior posts were often made without system or method, according to the whims of the guardians, or the local influence which could be brought to bear upon them.

As a result of want of co-ordination both in voluntary and Poor Law hospitals, transferences of good men throughout the country from one centre to another were very difficult, and each city, borough, or county had practically to depend on its own local supply.

Many of the Poor Law hospitals were excellent, but in others the patients were crowded together under dangerously insanitary conditions under the care of a medical staff hopelessly disproportionate in number. In one Poor Law hospital recently visited by the speaker phthisical patients were accommodated side by side with non-phthisical cases in the blind end of a long ward, with no windows on three sides of the room. Over 500 beds in this hospital were assigned to the care of each junior resident medical officer. In such conditions, writing a death certificate might well be the chief thing done for many patients by the medical officer in charge.

In regard to out-patient departments much waste of public time resulted from the treatment of trivial cases which ought to have been seen and treated under a properly organized system by a practitioner outside, nor could any system of admitting in-patients prove successful if it did not include the co-operation of outside practitioners. A doctor's certificate that the case was one which could best be treated in a hospital should be necessary.

Proper co-ordination between the work of practitioner and that of hospitals could only be achieved when the custom of doing medical work for charity had been abandoned completely, and when all work, whether in or out of hospital, was properly remunerated either by the individual or by the State.

All these jarring and wasteful systems should be replaced by a properly organized system of State hospitals attended to by qualified and adequately paid medical men. This system should be co-ordinated with the work of the medical practitioner by ensuring that he was paid by the municipality, the State, or by an insurance system, for the work done by him outside for the poorer classes, so that when the patient entered a hospital he was sent in by the practitioner himself, because his case demanded hospital attention, the practitioner being paid the same amount by capitation whether his patient was in or out of hospital. In this way the public safety and the health of the patient would become the sole determinant.

Under such a properly co-ordinated system of national medical service, hospital abuse would become non-existent, and every practitioner in the country would be able to take his share in the work.

The second great evil of the profession, namely, club or contract practice on sweating terms, would also disappear automatically under such a system, for no private club system or friendly society could live in the face of a properly organized Governmental system, any more than could a private postal system for a single district compete with a Governmental postal service for the whole country.

DISCUSSION.

Sir Henry Burdett agreed that it was bad for the hospitals and worse for the profession that the present system of unpaid eleemosynary service should be continued. He was certain that it would be a saving for the voluntary hospitals of London alone to pay the medical staff £60,000 a year, rather than to continue the present system. In order to crystallize the matter, he would quote, as he had promised to do, a statement made to him by a gentleman actively connected with the management of a large London hospital, with a medical school attached. That gentleman said that in a clinical hospital the necessity and demand for material

was so great that the selection of cases eliminated altogether the social factor, that is, the social position and the means of the patient. Indeed, in his own out-patient department, it was notorious that patients capable of paying three guineas as private patients were treated because of their value for teaching purposes, to the exclusion of poorer patients. Of course it was known to many that there were serious abuses in regard to the admission of in-patients in the metropolitan hospitals. The system worked out in the following manner: A number of patients were set aside each day as eligible for admission, having regard to their medical and surgical requirements. These patients were divided into two categories, those bringing cards from outside practitioners, and those representing patients residing in the locality of the hospital and physically in a condition to warrant their admission. It happened at some hospitals, and probably at most, that the first of these classes, those bringing practitioners' cards, were first considered and admitted to the available beds. But it was on record that day after day the poorer people in the district, whose social needs ought to secure their admission first, especially as they came from the district supplying the funds for the upkeep of the hospital, were set aside, and their cases deferred to another day because there were no vacant beds. These were grave abuses, and there were others which the gentleman mentioned confirmed. The present condition of affairs practically meant that if the voluntary hospital was to be continually extended, and if free medical relief was to keep on growing and ramifying at the present rate, it would be impossible for the average member of the medical profession to live. Such a state of affairs was wholly wrong as well as unnecessary. It had grown up because, as the efficiency of hospitals had increased, the demand for medical treatment at their hands had extended to all classes of the community. Formerly hospitals were not popular, and the desire of people who fell ill was not to go to hospital, but to keep out of them. Nowadays, however, operation mortality had fallen so low that everybody wished to be operated upon. Indeed, as far as he could make out, the general trend of the public was toward the same state of mind as that of the Red Indian, who thought that a man had not fulfilled his mission unless he were tattooed. It was an attitude highly complimentary to the profession, but condemnatory of the common sense of the people. The present was a very important opportunity for grasping the whole question of medical relief, and placing it once for all on a proper basis. That basis was to secure the co-operation of all responsible for medical relief in every form, and to put it finally on a businesslike and practical foundation. This should be quite easy if advantage were taken of the Poor Law and of the intention of Government to introduce medical insurance and a national insurance scheme. It would secure the right of each member of the medical profession to live, which was at present being lost. There must be in every community a census of all the hospitals and infirmaries and all the facilities for service and the requirements of the community. The system of admission must be assimilated to that of American and other foreign hospitals—namely, by classifying the patients and dividing the hospitals into pavilions, having in those pavilions accommodation for every class of the community needing hospital care. Those pavilions should consist of four or five grades. There would be first the pavilions providing for the class for which these hospitals were primarily intended—namely, people who could maintain themselves when in health, but who could not meet the charge of medical attendance, and also for a certain number of what were known as Poor Law cases, possibly severe cases, for which payment would be made by the municipality or the State. In another pavilion would be patients who could pay something, but not the whole cost of the treatment. In a third would be those able to pay an inclusive fee, but not the cost of medical attendance. The fourth class would be those who paid everything, including refunding the fees of the medical men and the cost of their treatment. There should also be a fifth class—persons who, when they wanted hospital care, ought to pay for it at a remunerative rate. In that way abuses of so called nursing homes would be got rid of at once. The idea meant that all the existing Poor Law system, all the existing voluntary system, and all the dispensaries, nursing and other agencies for the relief of the sick must be utilized. Every patient would come to a hospital on a basis which would preserve his self-respect, for if there was one thing in this country which the people required, it was increasing self-respect and greater discipline, and there was no better discipline for a young man than to provide for himself if he wished to live a healthy and wholesome life. These results would be attained if the Government and the authors of the Poor Law reports and the authorities of all medical institutions could be brought together into one representative body through a general council, to whom the whole matter should be referred and where it could be threshed out. It meant, in practice, that the bringing together of all the means of medical relief must secure the minimum of expenditure and the maximum of economy. It would enable all the buildings at disposal to be utilized, and would save the State an immense cost, such as that which would be entailed by the proposal of the opener of the discussion.

Dr. G. A. Heron (London) said that he was in agreement with the general trend of what had been said. He resented as almost insulting the statement which had been openly made or insinuated, to the effect that, for the unpaid work carried out in hospitals, physicians and surgeons were amply rewarded by the status which their hospital appointments gave them, and by the public notice and lucrative practice which they, it was asserted, obtained chiefly because of the fact that they held those appointments. In a public speech Mr. Sydney Holland had not hesitated to put forward a statement to that effect as the reason why he had told his audience that he was tired of hearing the praises of the unpaid work of doctors in hospitals. Mr. Sydney Holland was able to get such accurate information on these points that he ought to know that the great majority of hospital physicians and surgeons did not make large incomes from private practice, and gained from their hospital appointments no public status worth mention. A hospital to-day was a place to which any one might go and there receive suitable medical or surgical treatment free of cost provided that he was not discovered to be well able to pay for such professional services. A patient who hid the fact of his being well to do in order to receive medical charity at a hospital was not a deserving object of charity, and should therefore be deemed guilty of fraud and be punished, just as would a person found guilty of any other form of fraud. The office of almoner had been mentioned in connexion with this form of hospital abuse, but in large hospitals it was impossible for any one person effectually to ascertain the fitness or otherwise of the patients, who flocked in hundreds to their out-patient departments. Certainly in many hospitals no real effort was made to stop hospital abuse. The work of almoner should not be entrusted to the secretary of a hospital, because from his position he was obviously one of the last men who should undertake such work. The real remedy for the present most unsatisfactory condition of our hospital service was to place the hospitals under State control, to pay the medical and surgical staff well for the work done by them in hospital, and to throw the hospitals open to all people, rich and poor alike, who chose to go to them. To use this public medical service should be the right of every man, woman, and child in the country as a part of their citizenship.

Dr. Mackintosh (Glasgow) pointed out that the hospitals in different parts of the country were administered in very different manner. This led to overlapping, waste, and considerable degrees of mismanagement. In any scheme of reform it was essential that there should be uniformity of administration. He dealt briefly with the most marked characteristics of the voluntary, municipal, and Poor Law hospitals, and, in speaking of the effect of these three classes of institutions on the medical profession, stated that it should be the aim of the profession to take into consideration the interests not only of the staff of the various hospitals, but also the practitioners outside. In opposing the idea of universal municipalization of the hospitals, he pointed out that a lesson could be learnt from the fever hospitals. Practically every one sent their relatives and friends to fever hospitals when they were suffering from the notifiable infectious diseases. The loss to the practitioner outside was very considerable, especially

when the state of affairs which used to obtain was compared with the present condition. In respect of the administration of the hospitals, every member of the staff should receive an adequate salary. The full surgeons and physicians might receive honoraria and fees from students, but the assistant surgeons and physicians should be paid by salary. It was necessary that the hospitals should obtain the proper material for teaching purposes, but their principal use should be the treatment and care of persons suffering from disease. In this connexion he disagreed with Professor Moore's remarks. While he supported the idea that in-patients should be dealt with on a different plan to out-patients, he pointed out that there was but little in-patient abuse in Scotland. The best method of determining who should use the hospital and who should not was to trust to the medical practitioners who recommended the admission of the patients to judge rightly whether the case was suitable for hospital treatment from a surgical or medical point of view.

Mr. RICHARD KERSHAW (Secretary, Central London Throat and Ear Hospital) put forward as his first contention that medical relief ought to be as easy of access to the individual as the air he breathed, whether that relief was received at the hands of an ordinary practitioner or within the walls of a hospital. With regard to the co-ordination of medical charities, which had been insisted on by so many of the speakers, he felt that the time was fast approaching when the hospitals of this country would become the concern of the State. In support of that statement he referred to the use already made of the hospitals by the Army, Navy and Civil Service. On the vexed question of hospital abuse, the speaker mentioned that at the hospital to which he had been attached for over thirty years, he had used every means to abolish abuse of charity; the greatest difficulty with which he had to contend was the apathy of the medical practitioners themselves in rendering assistance. Nearly 40 per cent. of the out-patients and 60 per cent. of in-patients were sent to the hospital by doctors. For many years he had personally written to those practitioners who had sent patients, asking them if they desired them to continue attendance at the hospital; if so they were invited to witness the operative procedures and generally to consider themselves at all times welcome visitors to the hospital. The response or rather the absence of response to this means of keeping the patients under their personal observation was not at all encouraging. Each year a larger number of patients were sent to special hospitals by medical practitioners, and at his own hospital a real endeavour was made to check abuse.

Professor SAUNDBY (Birmingham) said that the differences of opinion as to how patients should be admitted to hospitals depended upon the varying conditions in different parts of the country. The ticket system was valuable from the financial point of view, but every one agreed that it ought to constitute no bar to the admission of any case of medical or surgical need whose circumstances justified it. The staff of the hospital must be the sole judge of the fitness of applicants. The recommendation of the general practitioner should be invariably recognized, but even this was unhappily not free from abuse. The speaker gave instances of patients who were well able to pay fees who had been sent by medical practitioners to receive special treatment; and of others who were medically or surgically unsuitable, and who were sent with intentionally misleading descriptions in order to secure their admission. He condemned the system of registration fees as leading to the gross scandal of hospitals advertising for patients. He desired to protest against the statement made by previous speakers that every man, woman, and child should have the right to hospital treatment. The plan of graded hospitals to which Sir Henry Burdett had referred might get over some objections, but he would like to see the plan in detail. He had thought over the matter a great deal, and had found no difficulty in what might be called the "nursing home" side of the question, but when it came to the question of the remuneration of the profession the subject became so thorny that he had shrunk from touching it.

Mr. HUGH KER (London), in discussing the question of hospital abuse, pointed out that the extension of the out-patient departments of large general hospitals exercised a serious effect on the general practitioner. Some friendly societies often dispensed with the medical man altogether and advised their members to go to the out-patient department of some adjacent hospital. He recommended the plan of consultation pure and simple most strongly as the only way of getting over this difficulty. This had been carried out by the Bolingbroke Hospital for some years past, by limiting admission of out-patients to those recommended by a ticket signed by the patient's own medical attendant. This method had worked quite successfully and abuse had been reduced to a minimum. The number of patients attending the Bolingbroke Hospital out-patient departments utilized for teaching purposes amounted in the year 1908 to 26,450, and in the year 1909 to 23,704. They were all cases of special interest, and, as the medical superintendent, Dr. Prior, stated, provided excellent material for the purpose of instruction. The cost per head in 1908 was 1s. 9d. and in 1909 1s. 11½d. This was an important consideration from the point of view of expense to the hospital authorities. Unless some method were adopted to minimize hospital abuse, a large number of most useful and hardworking general practitioners must cease to exist.

Dr. BUIST (Dundee) said that the idea that students' fees should form a source of reward of the hospital staff seemed like a suggestion that the medical teacher should surpass the inhabitants of St. Kilda by basing their economics on a system of living on their children. The training of the future medical practitioner was so much more important from the national than the individual aspect that the burdens of its provision should be borne by the public. Included in the question of hospital reform was a demand that the medical work should be better done in future than it had been in the past, and this implied so much more work that while there might be some redistribution of the profession, the total need of their services would be even greater than it was at present. The charitable element in the upkeep of hospitals was the legitimate descendant of the Lady Bountiful, who liked to be kind to her neighbours, regardless of whether she did them good or not, and it must gradually decrease. There need be no convulsion in the process of change, but the prospect of co-ordination of the whole hospital service of the country was very attractive.

Dr. MAJOR GREENWOOD (London) said that he did not wish to see the voluntary hospital system abolished but only very considerably improved. It would be most disastrous for the hospitals to be handed over "neck and crop" to the State. Many of Professor Moore's remarks struck at the principle of charity, though he admitted that this was the main element in the origin of hospitals. There was a spirit abroad inimical to charity, and it was voiced in the House of Commons in the debates on the school dinners. In the speaker's opinion nothing was better for the welfare of the State than charity, which should be encouraged in every way. Why, he asked, should a large burden be put on the shoulders of the taxpayers when wealthy members of the community were willing to take it on theirs? Why should the many able lay members of the community who worked in the management of our hospitals without fee or reward be dismissed? The dissociation of the profession from charity would not increase its reputation in the eyes of the public. Many practitioners were quite willing to perform charitable medical acts, though certainly a considerable portion of medical charity was much abused, and was bad for the public and the profession. If payments were given for all medical services, the hospitals would be bereft of their most valuable physicians and surgeons. In London, at all events, the hospital staffs would have to demand prohibitory payments or resign their posts. If the hospitals were staffed by physicians and surgeons of the same class as those filling most State and municipal appointments, they would certainly not appeal to public opinion as much as at present, and thus there might not be the same demands made upon them. In that case and to that extent present abuses might be rectified or abolished. Nevertheless, he could not agree that this municipalization of the hospital would be good for the medical profession, and he agreed with Professor

Saundby that provision for hospital treatment of all members of the community would tend to take away a large part of the business of the general practitioner.

Mr. Luckham (Salisbury), speaking of his own experience of voluntary hospitals, dispensaries, clubs, and Poor Law service, said that on this basis he had come to the conclusion that charitable work not paid at all was better done than ill paid contract work. The work of the provident dispensary he regarded as a compromise in the way of contract practice. While he was of opinion that the doctor should be the sole arbiter as to suitability for admission into hospital, he realized that the subscribers had a word to say, and suggested that a combined scheme might work well, subscribers' letters being made to require the endorsement of the patient's ordinary medical attendant.

Professor J. T. J. Morrison (Birmingham) thought that the radical suggestions put forward by Professor Moore and Sir Henry Burdett claimed and would receive general sympathy, and in their broad principles would be considered with a good deal of favour. There was a moral obligation resting on the community to provide for its sick and disabled members, not only the ordinary hospital provision of nursing and maintenance, but also adequately paid medical and surgical services. The notion that hospital staffs were duly repaid by reputation or public esteem must be rejected; it was an easy device for soothing the public conscience when confronted with its moral duty. Only a very small minority acquired princely incomes as the direct or indirect outcome of their connexion with hospitals; on the other hand large numbers had to work for years for the merest pittance of an income. He called attention to the incessant extension of hospital buildings and the ever-increasing crowds of patients, of whom a large percentage were unsuitable for hospital treatment, either because of their ailments or of their means. Last year Birmingham, with a population of about half a million, had dealt with some two hundred thousand hospital out-patients, apart from the Poor Law service. No one could doubt that this meant hospital abuse on a large scale. He advocated the promotion and development of the provident dispensary system with the view of diverting unsuitable cases from hospitals and of restoring to general practitioners a field of practice to which they were justly entitled, whilst at the same time preserving the self respect and thriftiness of the patients. He thought that this would solve some pressing problems and be of genuine advantage to the public, to hospitals, and to the profession.

Dr. Lauriston Shaw (London) contended that it was possible to administer the medical attendance of the poor both in hospital and outside with efficiency and economy without the aid of charity. Charity should find its place in anticipating other forms of provision, and when charitable funds were placed at the disposal of the hospitals they should be properly used and not abused. He was greatly in favour of the out-patient departments assuming a purely consultative character. Finally, he dealt with the economic side of the questions under discussion, and concluded that the hospitals should not be regarded as being for the treatment of persons simply because these persons were poor. The medical or surgical aspects of the applicant's case should be placed foremost.

DISCUSSION ON THE SOCIAL ASPECTS OF THE FALLING BIRTH-RATE.

OPENING PAPERS.

I.—J. W. Ballantyne, M.D., F.R.C.P.Edin.,
Physician, Royal Maternity Hospital, Edinburgh, etc.

Hallam Lord Tennyson has told us that his father used to say: "The lavish profusion in the natural world appals me, from the growths of the tropical forest to the capacity of man to multiply, the torrent of babies." But *tempora mutantur, nos et mutamur in illis*, and Tennyson's "torrent of babies" is now a smoothly-flowing brook which threatens ere long to shrink into a mere runnel among rocks. It is incumbent upon sociology to take into account this new state of affairs which has somewhat unexpectedly discovered itself in our midst.

There seems to be no possibility of doubt that society in the long series of experiments it has been making upon itself has firmly established the conclusion that tampering with the institutions of the monogamic marriage and the family brings disaster sooner or later. So dangerous did the relaxation of the marriage tie seem to the Emperor Augustus that in B.C. 29 he directed stringent legislation against the renunciation of the married state then so common among the people; but, writes Merivale[1]:

> Upon this one point the master of the Romans could make no impression upon the dogged disobedience of his subjects; both the men and the women preferred the loose terms of union upon which they had consented to cohabit to the harsh provisions of antiquity; they despised rewards and penalties they audaciously defied.

In time the decline began and the fall followed of that great empire, and among the causes of its decadence we are surely right in recognizing a declension in morals, and especially a weakening of the family as the social unit upon which so much of what is permanent in society rests. Now, whilst history tends to repeat itself, it does not ever reproduce an identical set of circumstances, causes, or effects. It is true that the marriage tie is being attacked at the present time, and that the popular novelist finds much of his popularity to rest on the writing of problem novels, on the discussion of the "leasehold marriage," and on the representation of conjugal unions in which disunion is evidently impending.

But it is not from this side that the most dangerous assault is being made upon the family as the unit of society nowadays. It is not the procreation in increasing numbers of illegitimate children — whose place must necessarily be outside the family circle—which is to be feared, it is rather the non-procreation of legitimate offspring within the family circle, or their appearance in diminishing numbers in it, which is causing the sociologist the gravest anxiety. He dreads the disappearance of the family as the binding force holding society together and its replacement by the selfishly contrived union of two with its small degree of cohesive force, and with its self-imposed law not to add to its numbers. The very definition of the family as "a group of persons consisting of the parents and their children" may soon need revision, in view of the persistent decline of the birth-rate; a *childless family* is surely the bitterest irony, and, from the sociological standpoint, an irreparable disaster. I am, of course, speaking generally, and do not refer to the mating of the unfit or improvident when the arrival of offspring is rather to be dreaded than desired.

At the same time, I find it difficult to wax enthusiastic over eugenics, positive or negative. Of course, I approve in theory; by all means let us try to improve the breed; yet let us also remember that heredity is not the only factor in this business, and that there is an obstetric aspect of this problem often overlooked; head-pressure in labour may spoil much good and careful mating of the fit. The intellectually fit are not necessarily the reproductively fit. But it seems to me the eugenist has come amongst us in evil days; had he come when the births were going up by leaps and bounds he had been very welcome. But, let us put it this way, is a stock-breeder justified in attempting to improve the breed when he has to do with a rapidly decreasing herd? I am willing to hear evidence, but I do not expect to be convinced.

Recent years have shown that the limitation of the family is by no means a Gallic prerogative; it is a process which can be seen at work in Britain and her colonies, and in the Anglo-Saxon race everywhere. It is persistent and is growing at a rate in some countries which is much more rapid than what obtained in France. This attack upon the sociological unit is directed not solely against the topmost strata of society, but also against the middle and the lower middle classes, from which the upper classes are constantly calling for reinforcements. No doubt the causes are complex, and no doubt they differ somewhat from those that existed in Augustan Rome; but among them we may surely reckon the following strong forces.

There is, first, the dissemination of the knowledge of the possibility of limiting the number of pregnancies by other means than the dangerous induction of abortion, and in ways that do not include continence; this information has

[1] Merivale, *The Romans under the Empire*, vol. iv. p. 87.

been industriously propagated by the supporters of neo-malthusianism, and is being quietly handed on from one married man or woman to another all over the country. Time will tell whether the use of "checks" is indeed harmless; but there is already some evidence that a perfectly healthy state of the reproductive organs cannot be looked for when these organs are constantly being stimulated to a certain point, and as constantly being prevented from experiencing the natural consequences of the stimulation. It will be strange if bodily and mental well-being in women are found to be compatible with the frequent production of the sexual orgasm unaccompanied by its reproductive consequences, namely, pregnancy, childbirth, and lactation.

Another cause of the falling birth-rate is to be discovered in the growing love of personal ease and material comforts and luxury. Parents argue that children are expensive in every sense, and they grudge, more especially in early married life, the time and resources required for the procreation and upbringing of offspring; they hardly seem as yet to think of that future in which children can do so much to sustain and support the parent. Our present-day civilization is so complex a thing, that it seems to have no room for the baby; he finds no prepared place for himself in the "flat" system, and to the modern servants he is anathema. Is it possible, in views of recent inventions, that we are approaching the time when there shall be no longer any use for the horse, the carrier pigeon, and the baby?

Another cause is the late age at which so many marriages are now entered into; a large family is hardly to be looked for when the contracting parties are both more than 35 years old. This is not altogether new: Samuel Johnson's father was 53 and his mother 40 when he, their first-born, came into the world, and there was only one other; but opsigamy, as it has been called, is certainly increasingly common.

Yet other causes are perhaps to be found in the higher education of women (in America, at any rate, the college-trained girl has not become the mother of many children), in the entrance of women into economic competition with men, in factory labour among married women, and even possibly in the encouragement of athletics among girls. With regard to the last-named factor, I have certainly noticed a lack of capacity among athletic women to suckle their babies, although I have not specially remarked sterility. We have also to bear in remembrance that by the operation of hysterectomy for fibroids and other morbid states we may secure a woman's health and yet effectively prevent the appearance of offspring.

A scrutiny of the causes of the falling birth-rate makes it clear that they are of a nature not readily to be counteracted. We may meet the spread of dangerous information by the dissemination of correct notions regarding sexual health and continence properly so-called as opposed to selfish licence safeguarding itself against its reproductive consequences; we may endeavour to give the girl a higher education specially suited to her sex, and not simply a replica of what is prepared for the man; we may preach to the civilized nations of Europe and America the doctrine of the strenuous, the heroic, and the self sacrificing (but not child-sacrificing) life; we may make it illegal for a married woman to work in factories or in such other ways as will lessen her chance of bringing her children to the birth; and we may hold out legislative and fiscal bribes to the fathers of large families; but it is more than likely that the Briton and American of to-day, like the Roman of Cæsar's time, will "despise rewards and audaciously defy penalties." At any rate it will be some time before we can get these counteracting influences set to work; and it will be a long time before they begin to yield results in an ascending birth-rate among the classes of society which we wish to see increasing. Is there nothing to be done in the meantime?

It is now more than nine years since I ventured to forecast the future in respect of the consequences of the falling birth-rate, and, in a vision to see the attempt being made in pre-maternity hospitals to check the antenatal loss of life, whilst the terrible mortality among new-born infants was being counteracted by the diffusion of correct views regarding infantile hygiene. In these two directions, the prevention of prenatal death and the saving of neonatal life, there seemed to be hope.

It was then pointed out that there was, so to say, a reserve of young lives, antenatal and neonatal, sufficient to make good the loss arising through the fall in the birth-rate, which might be tapped; if one could but diminish the number of abortions, and if one could but keep in life 50 per cent. of the babies dying in the first year after birth, there would be immediately an addition to the sum total of the population enough to remove the danger arising from the voluntary limitation of the family.[1] Much has now been accomplished along these lines. In a later contribution[2] I entered more in detail into the question of the phenomena associated with the falling birth-rate. I found them to be a high and practically stationary infantile death-rate, an increase in the number of deaths ascribed to premature birth, and, almost certainly, a marked increase in the frequency of the occurrence of abortion and stillbirth. I did not labour to prove that these phenomena were due to the falling birth-rate, although one might with some assurance so regard them; I simply contented myself with pointing out their existence, and I drew attention to the fact that if they could be checked there would immediately be a saving in infantile lives sufficient to reduce very materially the danger of class extinction or race suicide; whilst this was being done attempts could be made to solve the greater and more difficult problems of how to meet the growing tendency to limit families to one or two children, and how to make parents willing again to face the responsibility of a larger number of offspring.

That the infantile death-rate can be reduced has been shown now not only in Huddersfield by the method of rewards so conspicuously successful there, but also in other towns by the expedient of intelligent health visitors and the spreading of a knowledge of the simple laws of a healthy infancy. The correction of erroneous ideas regarding the proper food for young infants has already saved many lives. The prevention of factory and other work done outside the home in the case of pregnant and nursing mothers ought still further to reduce both antenatal and post-natal mortality.

The introduction of a carefully devised system of stillbirth registration would do good both in letting us know how many lives are so sacrificed and in enabling us to detect the contributory causes and so to prepare the way for prevention. Surely there should be some legislation to check the abuse of the thinly-veiled recommendation of induction of abortion which we are constantly seeing under such titles as the "prevention of irregularities peculiar to females" and the like. More complete and continued medical control of pregnancy could hardly fail to be beneficial in preventing some at least of the more serious complications of the pregnant state and the concomitant risks to the life of the unborn child. The medical man is still far too ready to leave his pregnant patient to shift for herself and to content himself with an occasional urinalysis and a passing reference to diet and the state of the bowels; he ought boldly to annex this field of practice and teach his patients that he can make their condition healthier and happier than when they relied on old wives' nostrums or allowed matters to go their way unchecked; he will soon find that he is being sent for at an earlier date than the second stage of labour, and for other purposes than to tie the cord or put on forceps. Sir James Simpson, the centenary of whose birth falls to be celebrated next June, did away with the worst pains of labour first by means of ether and then by chloroform; let it be our endeavour to lessen the weight and irksomeness of pregnancy and give our patients first a normal gestation and then a painless confinement.

It will be seen from what I have ventured to state that I do not regard any immediate checking of the fall in the birth-rate as a likely consequence of anything or of all the things that are being done with that end in view. The tide is still flowing in the direction of a limitation of families, and flowing strongly; let us conserve what we can of the lives that would be lost if the old haphazard plans of dealing with antenatal and early post-natal existence were left unreformed; let us thus limit so far as may be the inroad being made upon the resources of the future; and let us also prepare our measures for resisting

[1] *Amer. Journ. Obstet.*, xliii, 1901, p. 593.
[2] *Trans. Edin. Obstet. Soc.*, xxxii, 1906-7, p. 17; *Encyclopaedia Medica*, vol xv, 1910, p. 327.

the stream of tendency towards the extinction of true family life, and be ready to bring them into full action when we detect the earliest sign of the ebbing of the tide. It may be years yet before the educated peoples of the earth realize the deep and abiding truth underlying the Psalmist's declaration that "God setteth the solitary in families . . . but the rebellious dwell in a dry land." At the same time, it is the duty of every attentive student of sociology to repel by every means in his power the attack that is being made on the integrity of the family as constituted by law, human and divine. We cannot make for ourselves a queen as the bees do.

II.—F. E. Fremantle, F.R.C.S., F.R.C.P., D.P.H Lond.

The speaker having demonstrated verbally and by charts and tables the extent of the fall in the birth-rates of different countries, and the interaction of death-rates, birth-rates, and marriage rates, and the fact that so far as England is concerned fertility is still highest in rural counties and lowest in London, despite the effect of overcrowding in houses and areas, said:

Let us, then, briefly consider the quality of the decline. University College of the University of London issued in 1906 the first of the studies in national deterioration from its department of applied mathematics, in which Heron showed results of superlative interest as to the relation of human fertility to social status during the years 1851 to 1901.

They may be summed up as follows:

1. In 1901, in homes where many domestic servants are kept, there the married women have fewest children. This relation is exceedingly close.

2. Prevalence of cancer, especially amongst females, is associated with a low birth-rate.

3. Where labour is of the lowest type, where poverty leads to the pawnbroker and forces the child at an early age into employment, there the married women have most offspring.

4. The greater the overcrowding, and the prevalence of phthisis and pauper lunacy, the higher is the birth-rate.

5. Poverty, drunkenness, and absence of thrift are associated with high infant mortality and high birth-rate.

6. About half of this difference in productivity between the poor and the well-to-do is due to difference in age of the wives; the other half to lesser fertility, or to a lessened exercise or deliberate restraint of fertility on the part of the well-to-do.

7. The association of undesirable social conditions and high birth-rate has doubled in intensity during the last fifty years.

8. Fifty years ago districts with the highest birth-rate had the lowest infant mortality.

9. Fifty years ago the difference of birth-rate in districts of different social status was accounted for by the difference in mean age of wives.

During these fifty years the relation between low social status and high birth-rate has doubled in intensity, and half the difference between districts of different social status is now due to a reduced nett fertility in the more cultured, more prosperous, healthy and thrifty classes of the community.

Karl Pearson has shown that 25 per cent. of the married population produce 50 per cent. of the next generation. It follows, therefore, that in increasing degree our nation is being stocked from its less prosperous classes. As prosperity is in general the result of ability, and as heredity of character and ability is beyond dispute, the nation is degenerating in the quality as well as in the quantity of its birth-rate.

A. No one disputes the main causes that are at work. The Royal Commission that inquired into the decline of the birth-rate in New South Wales in 1903 reported that:

> the people . . . led astray by false and pernicious doctrine into the belief that personal interest and ambitions, a high standard of ease, comfort, and luxury are the essential aims of life, and that these aims are best attained by refusing to accept the consequences which Nature has ordained shall follow from marriage . . . have neglected and are neglecting their true duty to themselves, their fellow-countrymen and to posterity.

A clergyman of sound judgement and experience in one of the poorest parts of London tells me he finds policemen, small tradesmen, and even the church-going steward of his club all limiting their families. Some have been actually urged to do so by the young ladies of the Women's University Settlement near by. A domestic servant in the West End told her mistress recently that she and her young man after some years of faithful courtship were still in no hurry to marry; he was keeping his mother and she did not wish to marry until she was too old to bear children. These are instances either of self-restraint or prevention of pregnancy, owing to foresight and the struggle for a certain standard of comfort.

In towns which are the seats of textile industries and much women labour, the birth-rate is abnormally low; while in mining districts, where woman labour is but little employed, the birth-rate remains high. In the former towns woman's labour is often essential to the financial maintenance of the family, and restriction to child-bearing seems to them imperative. The result is that the men, no longer in their first youth when they marry, select wives who will add to the family income, and so enable them to live a more comfortable life. A waterside labourer in Rotherhithe was found at home in the middle of the day one Friday. "I've done four days' work," he explained, "and it's time the missus did 'er bit." Combined with the knowledge now spread through all classes of the means of prevention, such a sentiment accounts for the greater part of the decline of the birth-rate.

Other influences are at work. Employers advertise for servants without a family. Model dwellings limit families to two children; if a third arrives, out they go. Even Government services forbid their officials to marry. But in doing so they make a grievous mistake of valuing only the man's immediate service—considerably diminished by the unnatural state of celibacy—and not realizing the far greater value to the State of securing the issue of its good stock.

In the upper social classes the motive is consciously prudential, either with a view of lessening the incumbrances on the purse or with a view of avoiding the discomfort of pregnancy and the responsibility of parenthood. In the majority of cases I believe the prudential motive honestly predominates; but at the back of it is the unconscious struggle, not for the existence either of parents or children, but for the "standard of living," an ever-increasing standard, of which the parents, for the sake of their reputation, friendships, or prospects, dare not fall short. It is all a struggle for the survival of the fittest; but only for the temporary survival or superiority of the fittest individual, not for the survival or superiority of his descendants for all time.

The responsibility for this direct or indirect limitation of fertility does not depend on one sex alone. Mr. and Mrs. Whetham, in their remarkable and fascinating book on this subject, entitled *The Family and the Nation*, remark that:

> The quiet home life necessary for the right birth and management of a large family is incompatible with many external activities and with the gratification of a desire to seek an apparently larger sphere of immediate work and influence in social, industrial, and political life. For young married women such external activities are a direct menace to the future welfare of the race. Even for unmarried women the indirect danger is great, especially in setting a false idea of life before the rising generation.

The girls' public schools boast of the strong, determined, well equipped young women they turn out prepared to face the battles of life. This is their mistake. When the girls are so prepared, they are wholly unprepared to look at the married life as the centre of their aim, to confide their whole selves and futures to men, who shall be their husbands and not their mere colleagues. In all classes of life the appetites of girls are being whetted for distractions, that, however harmless or even useful in themselves, unfit them for domestic duties. Their ideal would seem to be to beat men at their own game; the corollary is that they get out of practice at their own game. The crown of this arch which they are building for themselves is political power: and woman suffrage in any kind or form is therefore profoundly inimical to the birth-rate.

As with the woman, so with the man, the fault is not due as a rule to conscious selfishness. Thanks mainly to improved communications due to the discovery of steam and electricity, competition has now free play not least in matters of industry; for, politics apart, com-

petition is the essence of free trade. Whatever conditions ease the pressure of competition and promote the prosperity of less wealthy members of the able-bodied classes will remove the chief obstacle to the procreation of larger families. But, in addition, men must be attracted to the desire for larger families. Now that their eyes are open the result depends on their desire. It must be stimulated by patriots, moralists, and all who instruct the mass; and, above all, public opinion must be aroused to honour the good parent of large families, and to condole with the disappointment of those less fortunate. The Church of Rome exercises her disciplinary powers with effect, forbidding all use of preventive checks except under priestly dispensation; and the result is that Spain, Bavaria, and Ireland alone of European countries have increased their fertility during the last twenty years; and the contrast in birth-rate between the Roman Catholic French and the Protestant English Canadians is vastly to the former's credit.

B. At the same time it must be recognized that many who are married are unable to procreate when they wish to do so. In such cases one-child families are not rare. It may be that a sedentary life of modern comfort tends to excessive sexual indulgence during and after pregnancy. Few married men and few women have any rules by which to guide their sexual conduct in married life as they would the other factors in personal health. A race-horse stallion will serve twenty-eight or thirty mares in three months, but for the rest of the year he lives a celibate life, is regularly exercised, and is not overfed. It would be well to have the opinion of general practitioners and of specialists in women's and nervous disorders as to the effect of unseasonable sexual intercourse in throwing the generative machinery out of gear. Some such rules should be taught in the medical schools, and passed on by medical men to all whom they may be able to influence.

For discussing the national influence of the birth-rate, let it be remembered that both quality and quantity are required. Let us therefore urge on the Goverment to act in accordance with two recent Royal Commissions and to provide for the detention both of the feeble-minded and of the able-bodied pauper. Two large factors in degeneration of the race would thus be eliminated.

Finally, let us refuse to be deceived by the declining death rate. The present death-rate of 15 per thousand, if permanent in a stationary population, would imply an average life of 66 years for every infant born. The death-rate must again, before long, begin to rise. A birth-rate, on the other hand, may sink to extinction. This, as Polybius tells us, caused the downfall of Rome. This, says Sir John Seeley, was the reason for the decay of Greece. This, indeed, must have been the end of all extinct races, or rather the means to the end, for a race unable to maintain its population is swallowed up by its neighbours and only survives in mixed blood or in scattered communities by the salutary effects of adversity.

Such is the future before the British Empire in the face of populous Russia and the ever-expanding millions of China and Japan. The vast tracts of Australia cannot permanently be retained by five millions of population. Canada, too, and South Africa call aloud for emigrants; and no part of our Empire is in effect so distant from us now as the North of Scotland was from London a century ago. But if we no longer breed men and women to stock our Empire, we have, as the Americans would say, bitten off more than we can chew of the world's surface. Let us remember the 358,000 infants of whom the nation is every year being deprived, and let an ever increasing effort be made to stir up public opinion to the national degeneration now in progress, and to the need for the abler classes of the community to provide generous families of successors who shall transmit their abilities to future generations for the service of Church and State.

Summing up, then, it would appear that the decline of the birth-rate is due to three separate but coincident factors:

1. The rational, due to the knowledge of methods of prevention.

2. The economic, due to the immoderate competition resulting from the revolutionary inventions of the Victorian age and the consequent unlimited freedom of communications.

3. The moral, due to modern indulgence and lack of discipline.

For the moral and economic factors we in this Association can propose no remedies. But for the rational factor we must regard ourselves as responsible for the remedy. Both personally and in public we must insist, as no other profession can, on the paramount importance of Nature's own methods and checks; on the serious dangers resulting from celibacy, from prostitution, from interference with the normal married life, from disregard of Nature's seasons; and, not least, on the healthiness, gaiety, and value, throughout the life of all concerned, of a well-stocked nursery.

III.—A. W. GILCHRIST, M.D.,

Nice.

I WILL venture to presume that it is not necessary for me to offer any word of apology for the somewhat abstract nature of the contribution I will make to this discussion. The exceptional circumstances of my professional position entail the disadvantage—possibly the advantage—of bringing me more in contact with what might be called the cosmical elements of sociology; the conclusions, therefore, at which I am able to arrive in regard to so abstruse and so recondite a science must necessarily partake of this very general character.

I propose to pass briefly in review the chief ideals, arising from the fundamental principles of inequality and equality, which have presided over the evolution of society during the period mainly embraced by the last century. This procedure has seemed to me to constitute the most scientific method of arriving at a just appreciation of the present vital condition of the nation, and the one most susceptible of suggesting a remedy for the causes, ominous and unmistakable, of impending organic decay. We will consider the aristocratic ideal, the ideal of wealth, with its subordinate ideals of science and technical aptitude, the ideals of democracy, and of socialism or cognate forms of collectivism, and lastly, the remedial principle, the aesthetic ideal, such as it is implied in Thomas Carlyle's attributes of the hero, and in the attitude of the super-race so poetically defined by Carlyle's great German successor, Frederic Nietzsche.

One of the most eloquent passages in the famous sermon on infidelity written by Robert Hall refers to the land which offers me, in common with a growing number of our countrymen, a generous hospitality. This passage, as far as I can trust my memory, is couched in the following words: "In one country, and that the centre of Christendom, revelation underwent a total eclipse, whilst atheism, performing on a darkened stage its strange and fearful tragedy, confounded every age, sex, and rank in one indiscriminate slaughter and proscription; that the imperishable memorial of these events might teach the last generation of man to regard religion as the pillar of the State, the parent of social order, which alone has the power to curb the fury of the passions and to secure to every one his right, to the laborious the reward of their labour, to the rich the enjoyment of their wealth, to nobles the preservation of their honours, and to princes the stability of their thrones."

But what was this religion whose transcendental attributes could sustain so imposing a political and social superstructure? It was the religion of inequality, the religion which sanctioned the arbitrary distinctions of feudal times, which divided the fair land of France into baronial manors, and placed upon every dominating peak a frowning castle and a predatory chief; the religion which saw the vassal oppressed by his lord, and which placed the life and liberties of the tiller of the soil, even the integrity and sanctity of his family life, at the mercy of his master. And the force which gave movement and unity to the infuriated mobs that swept away every vestige of privilege and of power? This also was a religion, the religion of equality, "the spectral resurrection of the Christian phenomenon," whose goddess Robespierre erected for the worship of rationalism, the goddess who issued that message of liberty, equality, and fraternity which still aims at presiding over the destinies of the civilized races of the West.

This fascinating illusion of the French Revolution, however, was simply the vestment that concealed the new ideal of wealth under the auspices of which the American Colonies,[1] twenty years before, had thrown over their allegiance to the British crown, and deprived

[1] The old ideals, fostered by Catholicism, probably saved Canada for the Empire.

our country of its fairest possessions, and some of its choicest stock. The same illusion impelled the French revolutionary armies upon their political crusade, while the same ideal was really the mainspring of Napoleon's predatory wars.

How was the mother country affected by the decay of the autocratic or aristocratic ideal, and the rise of the ideal of wealth? It was compensated for the loss of our American heritage by a marked expansion of its commercial field of activity, by a large increase of population, and a corresponding rise in the birth-rate. And the ideal of science was enhanced in dignity in proportion to its power of producing and distributing gold. So with the ideal of technical aptitude and skill, to work was to be considered noble. It is here we can perceive the fallacy of the new ideals. If labour was dignified because it created the wealth, the chief factor in the greatness of the nation, it could dignify every class, and thus the agricultural population was attracted to the town. However humble the worker, however rudimentary the skill he displayed, it must command respect. It could be enhanced in dignity even by being organized, even by losing all individuation.

Thus arose Industrialism, with its disastrous illusions and its factors of future sociological disintegration—Industrialism, which spreads its roots with alarming vigour into the lower strata of society, but produces a sickly and unlovely growth, and no flower to adorn its faded and ephemeral leaf. It gave us, however, Free Trade, which probably retained the Colonies as a precious inheritance for the future, and disarmed the cupidity of an envious and hostile world.

Industrialism, or the principle of equality which leads to its development, conduces logically and inevitably to the rule of democracy, and with the relative fertility of the lowest classes—also easy to foresee—to the advent of social collectivism.

Those who would pierce the future, discover, according to the attitude they assume, two deeply contrasted pictures. When all property is nationalized, and every instrument of production common to all, such happiness as the poor and disinherited of to-day dream as forming the appanage of the rich alone will be the ample wealth of high and low alike. That will be a period when every section of society will be co-ordinated in the harmonious pursuit of felicity and when universal peace will reign supreme. And the other picture? The other picture can only paint the Fates, more often the Erynnes than the Eumenides, weaving the thread of life, and Atropos cutting it when she pleases. But it also shows the Englishman[2] sweeping from clime to clime, as his Viking ancestors flew over the Northern sea; the Englishman too noble to engage in menial labour and too noble, if needs were, to exact it from his ethnical brother, a master, like himself—the Englishman who will know in the exuberance of his vitality that war and courage have done greater things in the world than the love of our neighbour itself.

I have implied throughout these remarks that every school, almost without exception, of biology and sociology, has agreed in insisting upon the present physical and psychical deterioration of the race. This one exception is a school of selectionists, which seems to have for its chief representatives Sir E. Ray Lankester and Sir William Thiselton-Dyer, and for a vigorous and prolific popularizer, our interesting colleague, Dr. Archdall Reid.[3] Every other modern evolutionary school, I repeat, whether professing allegiance to Darwin or Weismann, whether Galtonian, Mutationist, or Mendelian, is unequivocal in its verdict: the race seems to be faltering in its course.

Although the school of biometricians, of which Professor Karl Pearson is the ablest exponent, is often suspected of confounding the content with the form of knowledge, it is to biometrical authorities that recourse is usually had in discussions such as ours. Professor Karl Pearson's Huxley Lecture for 1903 is a consultative document of this character. It is distinctly despondent in its tone. "I fear," he says, "there really does exist a lack of leaders of the highest intelligence in science, in the arts, in trade, even in politics. I do seem to see a want of intelligence in the British merchant, in the British professional man, in the British workman." Professor Karl Pearson spoke at the close of the South African campaign. He refrained from making any allusion to the dismal display of inefficiency betrayed in the early military operations of that war. And yet nobody could have told us better than he that it would have been folly to expect much more. I walked down the Mall two days ago and saw the handsome statue lately erected to the memory of the gunners who died in South Africa. As I contemplated the speaking figures, I could not refrain from a reflection much like this: Why was it necessary that so often brave men should have deliberately laid down their lives to redeem the honour of the army in so many of those fatal Southern fields? And it seemed to me that the spirit of the Spartan hero could have told us why — Leonidas did not expect his helots to die at Thermopylae!

Professor Arthur Thomson apparently does not think that disaster such as this, relieved as it is by much that was noble—that disaster so ominous for our prestige—is a function of the vital military material furnished to us by intense industrialism. "May not the physical deterioration," he tells us,[4] "which the military examinations, for instance, reveal, be in great part due to the crushing burdens of militarism itself?" "As Napoleon[5] reduced the physical stature of the French nation, as the Roman Empire rooted out the best . . . so we are now paying," he continues, "the biological bill for past wars."

Professor Arthur Thomson is a professed and active Weismannist; he belongs to a distinctly dualistic school. His is the vision which sees the world eventually ruled by the eternal principles of Justice, of Goodness, and of Truth. He wishes to have the interest in eugenics quickened; he thinks, seeing "the spreading enthusiasm for health," that a promising line of activity is that of trying to promote social variations. Although he knows that his friend, Mr. Bateson, would prefer mutations and genetics, irrespective of finalism, he wishes, as we see, the object of sociology to be ethical.

As transformists, with the aesthetic ideal, the will to power, and the human type, cast, as we have said, in the hero-mould of Carlyle, the Lamarckian can find little room for a remote ethical or utilitarian social ideal. Nor will he wait passively, even on his native soil, for selection, natural or "rational"[6] to accept or reject him. Least of all when that soil is Britain, red or green. The proud scope of our sociology is to be Imperial; have we not met under the aegis of the Imperial Institute?

Let the home of our race be the Empire, and the Briton a dweller in many climes. This is not an illusion; we want the Effort; and has not the inspiring spirit of Birmingham told us of a project which may be one of our means to an end?

One of our means to an end, but only one. For we also deserve empire even more than purple Rome herself. We would give every subject, race, and creed its highest and most efficient expression. To accomplish so exalted a scheme our principles must be three: We must substitute the aristocracy and predominance of race for the aristocracy and rule of class; we must utilize chemical and biological science in adopting a discriminating law of migratory climatology as an essential basis of federation; and last of all remember that Force fixes the rank and the degree of goodness and that moral codes must vary in time and space.[7]

IV.—Dr. D. W. Hunter,

Royal Albert Asylum, Lancaster.

Dr. Hunter showed that children born at either extreme of the reproductive period were liable to be defectively developed, and that the offspring of parents born under similar conditions showed more "defect" than when the parents occupied an intermediate position in the family. Of the children of the working classes, it could be shown that the elder-born children were more liable to defect than the subsequent born, up to and including the seventh born. With the eighth born, however, there was a sudden sharp rise in the liability to "defect," and the type of defect became more severe than that affecting the elder born. The liability increased steadily in still later members of the family. The defect associated with the

[2] I use the word in its broadest sense.

[3] See the *Laws of Heredity*.

[4] *Heredity*, pp. 529-534.

[5] See J. de Gaultier *De Kant à Nietzsche*, pp. 322 and 327, who invokes a very different cause for the same phenomena.

[6] Or irrational, that is, bacterial or ethylic. *Laws of Heredity*, ch. xxiii.

[7] The closeness of the family tie was largely responsible for the loss by France of her colonies and provinces.

decline of the reproductive faculty was worse on the whole than that associated with the beginning, but there was less of it. Of 1,849 children under observation, only 142 were offspring of parents where the parental mating included a ninth or later born child. Owing to the defective development of the elder born children, the limitation of the family to two or three children inevitably meant a nation of idiots, and that within a few generations. The national method of breeding in this country was little short of insane. Somewhere about 24 to 25 years of age a woman was best fitted to give birth to her first-born. After 25 years of age the capacity to bear a good child as a first-born diminished. The power to reproduce well steadily increased with regular pregnancies until the mother had reached about 37 years of age, after which it declined very rapidly. A period of sterility, either artificial or natural, lowered the quality of a child born subsequently. Artificial sterility begat natural sterility, and natural sterility begat idiocy. The fit stocks in England were hardly ensuring their own survival, and on the whole were leaving behind their worst children. The unfit stocks were steadily on the increase, and every effort was being used to ensure that such increase would continue.

DISCUSSION.

Dr. BUIST (Dundee) hoped that members would remember the fact implied in the remark, "I wish I were as sure of anything as Tom Macaulay is of everything." There was a danger of introducing into the discussion crude political applications of the scientific facts, and it was necessary to maintain in all things a judicious scepticism which would allow members to hear quietly what they might believe touched causes dear to them. During recent years much work had appeared from the biometric school, and many of its results were apt to be misapplied. As a statistical method the basis of the school could not be impugned, but its conclusions required correct biological and economic interpretation. Take, for example, Heron's paper on Relative Fertility. Of its three conclusions, the first, "that 25 per cent. of this generation produce 50 per cent. of the next," expressed an almost self-evident resultant of a fertility of married pairs ranging from zero to ∞. The second meant that certain qualities were heritable which were formerly considered to be purely individual. This was already orthodox. The third —to the effect that the higher fertilities associated with undesirable social factors—could be accepted, but it needed proof that these undesirable social factors were the expression of undesirable heritable character; without such proof there was danger of a fundamental fallacy. The facts and factors of the falling birth-rate were capable of expression in terms of biology, and probably better in terms of economics. For example, one of the evident factors in the falling birth-rate was the increasing industrial employment of women. This in many of its features might be merely a transient social experiment which some persons might describe as the last effect of a system of economic organization based on the principle of underselling. In the medical profession, the Association had been able effectively to combat this, and it was probable that similar action would modify this factor all over the economic field. In analogous terms, the falling birth-rate might be described as a semi-conscious strike of the parent for better conditions of social employment, allied perhaps to the workman's contention for restriction of the number of apprentices. Before allowing too great anxiety over the relatively greater fertility of the poor, one must be convinced that the heritable qualities thus selected were as undesirable as the social conditions of the environment. It was not impossible that the relative infertility at the other end of this scale might be a natural protection for society against the biological qualities of the prudent egoist, whose "success" from a social point of view was not necessarily a gain from the biological. In so far as the claim had been made for definite teaching on these subjects in medical schools, he hoped that the teachers would not forget the maxim, "conceive it possible that you may be mistaken." After all, it was a great consolation that in spite of the varied social experiments, of which there were partial records extending over five thousand years, there was no good evidence of any radical change in the biological value of the human character or intellect, none for degeneration, and little more for measurable advance.

Dr. DULBERG (Manchester) agreed with the view expressed that the tendency for the birth-rate to fall could not be avoided. All energy should therefore be directed to diminishing infantile and juvenile mortality. The principal cause of the former was the absence of breast feeding and injudicious artificial feeding. In Cheetham, on the outskirts of Manchester, the infantile mortality was exactly half of what it was in Ancoats, which was similarly located; and the fact that the bulk of a large part of the population of the former consisted of Jews, combined with the circumstance that the majority of Jewish mothers suckled their children, was a sufficient explanation. Many women of the working classes might well be encouraged to adopt wet-nursing as a calling. Such occupation might be an evil but it was a lesser evil than the employment of these women at mills and factories. As a magistrate of Manchester he saw a deal of the seamy side of life. He had come to the conclusion that much of the juvenile mortality and juvenile disease and crime was due to the absence of maternal influence and bringing up. The employment of married female labour should be reduced as much as possible.

Professor BENJAMIN MOORE (Liverpool) pointed out that the slight decline in the birth-rate shown to exist was not the great danger signal it was supposed to be, but rather the simple biological reply to a given set of good economic conditions. It was a well known biological law that even a micro-organism, when placed in unfavourable conditions as to food and environment, passed into a reproductive phase, and by sporulation or some special type produced new individuals very rapidly. The same condition of affairs in the human race was shown even by the fact brought forward on the other side in the discussion—namely, that one-half of the new births came from the least favourably situated one quarter of the population. Hence, over-rapid birth rate indicates unfavourable conditions of life, so that (so long as the population was on the increase) a lower birth-rate was a valuable indication of a better social condition of affairs, and a matter on which we should congratulate the country rather than proceed to condolences. The increasing population with reduced birth-rate indicates better conditions of life and better conservancy of life; and as this increase in population was shown by Dr. Fremantle to be occurring over all our colonies, the home country, and all the civilized countries of Europe—save France, where the population was only stationary and not falling off—there seemed little cause for alarm in a reduced birth-rate within such bounds that population was still rising. Still more was this seen to be the case when it was reflected that there must be an upper limit of population which these countries could comfortably support, and that this maximum end-limit was being approached with increasing slowness according to a natural law of biology and economics, so that any artificial attempt to reach the maximum sooner was only to be deprecated as scientifically unsound. Turning to the relative birth-rates in different countries, it was observable that the least civilized of the countries spoken of—namely, Russia—had the highest rate, indicating again that more unfavourable conditions of life favoured higher birth-rates. It might be asked, "Is it desirable to advocate such a more rapid rate of reproduction amongst our less favourably situated fellow countrymen, that we produce a race at the level of the Russian peasant rather than our own more virile countrymen?" It had been stated as a matter of history earlier in the discussion that nations like Rome, with a falling birth-rate, had been annihilated by war; but this was not always what history had taught, and other nations had disappeared as world powers by allowing excessive prolific reproduction to sap the virility of the race. Even from the fighting point of view quality was even more important than quantity, as anyone might realize who reflects upon the possible outcome of a war struggle between the virile Jap and the prolific Chinaman. It was not, of course, desirable that there should be disproportionately greater reproduction from the lower strata of the nation, but when they were told that the lower quarter of the nation was accountable for one-

half of the new births, they must remember that according to the above quoted bionomic law this always had been so, and, further, that the strata of society were not stationary. Out of the half born in the lower ranks in any given generation a great number passed upward to a better rank in the succeeding generation, so that the relative proportions did not greatly change, and there was, in addition, an exceedingly heavy death-rate in the lower strata. There was also no moral obligation of any kind on members of the middle classes to produce large families, because members of this class had a perfect right to expect to bring up and train their sons and daughters to retain a position in their own rank in life, and under present-day economic conditions a man in the middle classes could rarely afford to bring up and educate a large family to take a position in his own class. There was just as much, if not more, obligation to bring up children properly, and as they had a right and expectation to be brought up according to their birth, as there was to bring children into the world and allow them to drift downwards. A smaller number of children so brought up in middle-class life was a more valuable asset to the nation than a larger number allowed to drift to a lower grade. From the point of view of quality of the new births, the urging of a rapid rate of child-bearing by the medical profession might have disastrous results; it was of far greater importance to urge upon both working and middle classes that there ought not to be a too rapid production of children in the early years of married life—a process enfeebling to both mother and offspring, and usually followed by a full stop, either artificial or natural, on reproduction altogether. In the interests of both mother and children, there should be a period advocated of two and a half to three years between each birth, for after the prolonged physiologically active period of nine months' gestation, followed by nearly the same of nursing, there ought to be a period of about a year before the next gestation began. Even with such intervals there was on an average quite a sufficient period of sexual life after marriage to allow for five to six healthy births, and families of this medium size were generally best in their physique and viability. Thousands of children were lost to the community every year by over-rapid production by mothers enfeebled by recent childbearing, and amongst those who survive were to be found a great preponderance of the weaklings and unfit of the population. It accordingly followed that a diminishing birth-rate combined with an increasing population was not a thing to be deplored, since it spoke of better economic conditions and more prosperity amongst the working classes, whereby children survived more frequently after they were born, and became stronger and more virile citizens as they grew up.

Dr. Grace Cadell (Leith) regarded luxury and vice as the chief determining causes in the fall of the birth-rate. The conditions which perhaps chiefly damaged the health of offspring were gonorrhoea and syphilis. The former, as was well known, was the most prolific cause of sterility, while the latter was a terrible cause of post-natal and prenatal death. There should be more freedom for women. It was against reason to expect a woman to bear a child every year. In this respect the speaker recalled the Jewish laws, especially noting the regulation with regard to celibacy during pregnancy and the period of lactation. The use of checks to conception was wrong, but it was impossible at the present time to do entirely without them. Sterilization by removal of the ovaries was at present undertaken too frequently.

Dr. R. K. Howat (Middlesbrough) said that a falling birth-rate might be desirable or not according to circumstances. Dr. Fremantle had mentioned, when considering social status in relation to birth-rate, that poverty, drunkenness, and thriftlessness were associated with a high birth-rate; that the higher social strata were characterized by the smallest families, and the lowest strata by the largest families; that this relationship had doubled in intensity in the last fifty years. In these circumstances the fact of a falling birth-rate was to be deplored. Such conditions do not make for an efficient population. The community comprised those who paid, and those who received. These groups corresponded approximately to the fit and the unfit; that is, the more valuable and less valuable (as regards national efficiency). The unfit were maintained, not by the State as a whole, but by the more valuable part of it. This was inevitable; but the extent to which it was being carried in this country begat a feeling of resentment. The present and prospective size of the burden was a factor in deciding people, on economic and social grounds, to limit their families. Drunkenness, thriftlessness, poverty, filth, domestic disorder, and social degradation, were closely associated. Whatever their exact mutual relationships, it was certain that the first was often and largely causal. The rearing of children, the habitual living of their seniors amid such conditions and influences must be prejudicial to their national value. Hence the individuals so affected tended to maintain, and to hand on to their children, these bad conditions of life. Were this evil chain broken the net result would be almost certainly a rise in national efficiency. And were the method of breaking the chain inexpensive it would result in a marked lightening of the national financial burden. There was nothing inherently impracticable in legislation to this end. The effectiveness of legislation largely depended upon the extent to which it expressed the opinion and the will of the community. Supposing it were enacted in this country that every man and woman convicted a stated number of times of drunkenness should be, *ipso facto*, operated on, the former having his vasa deferentia, the latter her Fallopian tubes divided, what results might be expected? There would be no subsequent offspring of such individuals exposed to evil social conditions. Apart from any previous children, the burden of these people would end with themselves. The numbers likely to perpetuate unfitness would be directly diminished. Indirectly, the good effects would, probably, be still greater. The fact of conviction, its inevitable operative sequel, and the physiological effect of the latter upon the offenders would be matter of common knowledge to their friends and associates. The consequences, at least in part, could easily be foreseen. The consciousness of their functional stigma, and the "chaff" of their social equals would be borne by the offenders unsustained by any feeling of glorious martyrdom. Those less advanced would scarcely fail, from fear of the ridicule of their fellows, to restrain somewhat their tendency to earn it. The suggested procedure was directed toward one set of circumstances alone. But its indirect effect would probably reach far beyond these in respect to birth-rate and national efficiency. It would possess certain obvious advantages—for example, cheapness (for it entailed no prolonged and expensive detention), simplicity, effectiveness (part of which would be direct, immediate, certain), while it would not deprive the subjects of the benefits of internal secretions. Such proposals were probably out of harmony with prevailing public sentiment, but in this respect they resembled many others which time and its changes had brought to pass.

Dr. Frances Ivens (Liverpool), as a gynaecologist, pointed out the importance of gonorrhoea as a widely spread cause of sterility in women. Statistics showed that at least 33 per cent. of the women suffering from gonorrhoea were sterile. Wider recognition and treatment by the medical profession of the milder and latent forms of this disease would be an important factor in combating the declining birth-rate.

Dr. Muir (Glasgow) believed that the question of the falling birth-rate was rather political than medico-sociological. As a medical man the falling birth-rate did not concern him in the slightest. There were large families among the poorer classes in Glasgow whose fathers were earning 15s., 18s., or 20s. a week. The effects of deprivation, vice, and depravity were evident in the children, and it would be for the good of the country if such children were never born at all. Nature obviously made an attempt to limit the number of individuals in the succeeding generations by attacking the productiveness of the individuals of the present generation.

Dr. Helen Hanson (London) said that, thanks to the higher education of women, their sports and their larger share in national life, the integrity of family life was on the up grade. The modern mother was the true com

panion of her husband and children. The more a mother shared her children's life the better it would be. An immense amount of sterility, gynaecological disease, infant mortality, and race degeneration was caused by vice. It had been found that the more women came into public life the more vice decreased. In Mohammedan countries, where the speaker worked, women were placed under more artificial restrictions than in England, and the amount of immorality and race degeneration was appalling. On the other hand, in Australia, since women had taken part in the political life of the country, the "age of consent" had been raised, morality was on the up-grade, and infant mortality, which used to be almost the highest among civilized countries, had become almost the lowest. One speaker had intimated that athletics were inimical to motherhood, and the reason that women took them up was a foolish desire to emulate men. The true explanation was that women wanted to live the lives of human beings. One speaker had stated that in his experience it was the selfishness of the woman that prevented parentage. Her own experience was that the woman longed to have children, but the man's selfish love of luxury prevented it. But it was natural that the experience of men and women differed, and that the aggrieved husband should talk to the man doctor, and the aggrieved wife to the woman. That was why men and women were needed together in public life, to prevent lopsidedness and wrong impressions. Still she had heard of cases where for selfish reasons women refused to have children. But it is unreasonable to expect a woman to consider the good of the State when at every election time we emphasize the fact that it is no concern of hers. Men and women were now more considerate of their progeny than formerly. People with phthisis or insanity in their family did not marry or did not have children, and people whose means did not enable them to be certain of providing comfortably for a large family had small ones. The restrictions placed on the labour of married women were introduced with the innocent intention of increasing the birth-rate and race efficiency, but legislation carried through without consultation with those most concerned—that is, women—was liable to defeat its own object. The State enforced celibacy on nearly all its women officers—queens and charwomen were almost the only exceptions. In many middle class families, when something had gone wrong, the mother became the breadwinner. In the old days, when the father was an invalid or died, there was nothing for it but the hard, uncongenial, unremunerative labour of the boarding-house and inferior school and a miserable start in life for the children. If the production of children was a work of national importance why did the State penalize marriage and the bearing of children? This cause operated too among the poorer classes and produced race suicide. In Birmingham medical statistics proved that infant mortality was greater where restrictions were laid on the labour of married women, not because Nature necessarily approved of these women working but because she did very strongly disapprove of their children starving. Lastly, at the present time, millions of the upper and middle class women, *quâ* women, were undergoing a struggle severer than any recorded in the history of the world. An analogy might be found in the early Christian era. At times of persecution women hesitated to marry and bring children into the world, to suffer as they suffered, and moreover they knew that their loyalty to their faith might lead them—the mothers—away from their homes for longer or shorter periods to the detriment of their families. The Pauline advice was—under that present distress—to remain unmarried. The same held good now. The women of the present day hesitate to bring daughters into a world which treats them so harshly. The more a woman was refused a natural development as a human being, by so much was she the worse a mother. A normal, untrammelled woman was quite as fond of children as man. Consult her, give her a free hand, decline to treat her as cattle were treated, and little more of race suicide would be heard.

Dr. Elizabeth Bentham (London) recalled a speech made the previous day in which the speaker had pointed out that the influence of the profession in future legislation would be in exact proportion to the reasonableness of the views expressed, and suggested that the profession should give less heed to prejudice and more to proof Several of the statements made concerned matters which could by no means be taken for granted at present; for instance, it was stated that higher education and the economic competition of women and the teaching of athletics to girls tended to lower the birth-rate and to make women less efficient mothers. In her own experience, strong and athletic women made the best mothers in every sense. There was clearly need of more real companionship. Many of the causes mentioned were merely symptoms of poverty, and this was really the root of the matter. If healthy children were wanted, there must first be healthy mothers, and an inspection of the conditions of those attending any of the out-patient departments sufficed to show that the general standard of health among the working classes was a very low one, and that the women of this class aged very quickly. A very large number of families existed on 25s. a week, or less. This meant a very small supply of bread, butter, and beef, and it was evident that large numbers of women, who were always the first to go short, were chronically underfed. In such families it was idle to expect a high average of healthy pregnancies, and there was the strongest inducement to the voluntary limitation of numbers. It was time that a new departure was made, and that it was recognized that the economic conditions were the real problem. A national minimum wage would do more to check infantile mortality, stillbirths, and the use of abortifacients than even the prohibition of the education of women.

Mr. Somerton Clark (Felixstowe) said the existence of the nation depended on the existence of the army; the army must have officers. British private soldiers preferred to follow officers belonging to the upper classes. Many of the best officers were the sons of old officers, but to-day the birth-rate in officers' families was very small. This was much to be regretted. The remedy was to bring the facts of the future danger to the knowledge of the officers and their patriotism would rise to the occasion.

Dr. Binnie Dunlop (Brasted, Kent) said the decline in the birth-rate was most satisfactory in so far as it revealed a growth of the much needed feeling of parental responsibility. It was only unsatisfactory in so far as it was occurring in the fitter sections of the community. Statesmen must therefore aim not only at eliminating the obviously unfit but at relieving the more fit of the unnecessary financial burden of the less fit.

Mr. L. W. Reynolds (High Wycombe) said the Section should remember that it was the better classes of society that were the greatest culprits in this matter; witness the decrease of candidates for holy orders, and also candidates for the public services. They must also remember that the colonies were crying out for recruits. How was it possible to remedy this? The Church should do something. The Bishop of Oxford had called a commission to investigate the subject. The medical profession also should show women the importance of allowing Nature to take its course, for physiological reasons if for no other, for example, the physiological rest of the ovarian organs. It had been calculated that at the present rate not a single Frenchman would exist in 400 years. How long could the British race count on surviving?

Dr. Ballantyne, in reply, said that the discussion had shown that he had taken a moderate view of the subject, and had avoided either extreme. The majority of the shots discharged by the various speakers had passed him and hit someone else. In reply to Dr. Hunter he pointed out that the beginning of sterility was often an abortion. Even if the picture were drawn at its worst, it could not be conceived that all the children saved by the prevention of abortion would be idiots. He instanced the case of Dr. Samuel Johnson, who was born semi-asphyxiated when his mother was no longer young; and the case of the Carlyles might have been very different if no miscarriage had occurred. In reply to Professor Moore, who spoke "on the other side," he believed that the weight of opinion tended to the putting on of the brake to check the national tendency to diminish the birth-rate. In response to Dr. Cadell, he entirely agreed that gonorrhoea was a widespread cause of sterility, and that the profession could do much to

remedy this. He quoted the opinion of Noeggerath in this connexion. As for Dr. Howat's contention, he did not consider that it would be possible to improve the breed from a rapidly diminishing stock; voluntary sterility and selection were not compatible. He could not quite follow Dr. Hanson, and was doubtful if her claims that education of women had improved the integrity of family life could be sustained. In any case the proofs adduced did not convince him. In reply to Dr. Bentham, he was quite willing to accept her statement that athletics did not diminish the power of lactation; all he had said was that a woman hockey player had informed him that all her fellow players had the experience of being incapable of suckling their infants.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CONGENITAL COLOUR BLINDNESS.

When the colour sense from the standpoint of Holmgren's wools and Williams's lantern amounts to complete or nearly complete blindness to red and green, it influences and limits the expression of the face. If a colour-blind person be intelligent and alert, the expression of face is an appeal to the observer for a cause.

My experience has been almost entirely with the wage-earners of the railway service, who, in many cases, may be described as leading grey lives. These men when entering the service are examined in batches of four. I nearly always detect a candidate who has a very defective colour sense by his face. I also occasionally select a man as having a very defective colour sense, and find that he can pass the two tests successfully. He belongs to a class who, dull and unobservant, select the wools slowly and confuse blue with green; the colour sense is normal, but the mind is indifferent to colour. A colour-blind person's face is devoid of warmth or humour; it is dull, still, and monotonous in the sameness of its expression. When a man blind to red and green is unintelligent his face suggests a mild degree of dementia which his conduct and conversation disprove. The voice of a green-blind in conversation is an unmusical monotone. The appreciation of music in the colour blind appears to diminish as the colour sense diminishes. The almost complete colour blind generally admits to deriving no pleasure from music. A man, however, may be almost tone deaf and have normal colour sense. I carefully examined two boys at the commencement of this year, healthy, unintelligent lads, and green-blind. In each case I had difficulty in eliciting a knee-jerk.

Sydney, N.S.W. G. H. Taylor, L.R.C.S. and P.

A CASE OF VERONAL POISONING.

A lady aged 40 had been suffering from slight depression with insomnia for some time, for which she had been sent into the country for rest and change of air. She had been accustomed to take 15 grains of veronal for the insomnia, but this she stated was only on rare occasions. She had shown no evidence of suicidal tendencies. At 11 o'clock one evening she took 75 grains of veronal (five 15-grain powders). The lady with whom she was staying went in to say good-night to her, and the patient said to her, "Wish that I may sleep and don't wake me or rouse me from my sleep, it means so much."

The lady did not suspect what had occurred and the next morning found the patient in a deep sleep. She remained so till early evening when the friend became somewhat alarmed, especially as the patient's face looked drawn and grey, her eyes sunken and she was in a clammy perspiration.

After repeated attempts at rousing her by slapping her face with a wet towel, etc., her friend at last succeeded in getting her to take a drink of water, and speak to her in a feeble voice, after which she was restless and uncomfortable and vomited at 10 p.m. (nearly twenty-four hours after taking the drug). She passed no water till 8.30 next morning, when she passed a large quantity, containing haematoporphyrin.

She was not seen by me till 2 p.m. that day (thirty-nine hours after the dose). She was then quite conscious, in a very lachrymose and depressed condition, gave an accurate account of what had occurred, confessing that she had taken the veronal with suicidal intent, having read the morning before in the daily paper of a fatal case after a similar dose. Her pulse was fair, 72, regular. She was suffering from great thirst, tongue coated, breath offensive. She was complaining of vertigo and had ataxy, but could move her legs freely in bed, though she said they felt like a dead weight. Pupils equal, somewhat sluggish reaction to light. The haematoporphyrinuria was diminishing, but was still present; she was now passing water freely. There was *no rash*. From this time the symptoms gradually subsided, and she made an uninterrupted recovery.

Considering the enormous dose she took, it seemed to me extraordinary that she was so little affected, especially as she had no emetics, and did not vomit till twenty-four hours after taking the drug.

The case in some respects is similar to the one reported by Dr. Sowden in the British Medical Journal of July 16th, but his patient took even a larger dose, namely, 100 grains.

Hove. Mary E. Martin, L.R.C.P.Edin., L.R.F.P.S.Glas.

Reports

on

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

WEST SUFFOLK GENERAL HOSPITAL, BURY ST. EDMUNDS.

TREATMENT OF TETANUS BY INTRASPINAL INJECTIONS OF MAGNESIUM SULPHATE.

(By Edward Johnson, M.B., Ch.B.Aberd.)

On March 7th, 1910, F. C., a boy aged 16 years, sustained a gunshot wound of the right foot. The bullet was expressed and the wound soon healed. He returned to work, but after about a week began to complain of pain in the back and throat. Later, joint pains developed.

On admission on March 30th he had trismus, opisthotonos, and tonic contractions of the muscles of the abdomen and legs, the spasms coming on at frequent intervals.

Chloral hydrate and potassium bromide were given every two hours, and, in addition, I injected, intraspinally, 45 minims of a 25 per cent. solution of magnesium sulphate (previously boiled in a sterile test-tube) through the third lumbar interspace. Tetanus antitoxin (10 c.cm.) was injected subcutaneously into the abdominal wall. After about an hour the spasms diminished considerably in frequency and in severity. The beneficial effect lasted for more than twelve hours.

The process was repeated on April 1st, the tetanus antiserum being on this occasion injected intraspinally, along with the magnesium sulphate. Next day, magnesium sulphate alone (℥j) was injected. Relaxation of the muscles was observed after each injection.

The patient's condition was so much improved that it was not found necessary to inject again for three days. On April 5th the spasms became frequent again, and ℥j of magnesium sulphate solution was injected into the fourth lumbar interspace. Muscular relaxation resulted, and the spasms gradually ceased.

The patient now sits up in bed, his grin is no longer sardonic, and he is apparently quite cured.

Of course, one cannot say whether the ultimate cure was due to magnesium sulphate, to antiserum, or to Nature, but I have no doubt that the distressing spasms were at least temporarily relieved by the lumbar injections.

I am much indebted to Dr. Kilner for his permission to publish the notes on this case.

Reviews.

OBSTETRICS.

PROFESSORS GILBERT AND FOURNIER, who are responsible for the choice of Professor FABRE to write a condensed treatise on obstetrics[1] for their doctor's library, tell us that he is a master of the art of teaching, that he can expound useful facts with luminous clearness, and that his 466 original illustrations are rigorously exact. All this praise seems to us to be absolutely just. Professor Fabre sets forth his subject in the most beautifully orderly and systematic way. Everything is in its proper place, every statement clear and definite. But the matter of the author's teaching is to the English practitioner more interesting and important than the manner thereof. So we have looked through the book to see what the opinions of the eminent Lyons teacher of obstetrics are upon certain difficult questions. As to placenta praevia, he is in accord with most, in following the teaching of Braxton Hicks. He advises against plugging the vagina because it is painful. But when we come to read about accidental haemorrhage the professor startles us. He divides these cases into benign and grave: *benign* being cases of partial separation of the placenta, *grave* those of complete separation. The mortality of the latter cases he says is 60 per cent. for the mother and 100 per cent. for the child. His treatment of these cases is vaginal Caesarean section. Our difficulty is that every case appears at first to be benign, and we do not know, and Dr. Fabre does not tell us, how we are to distinguish a case that will remain benign from one that will become grave. We know that nine cases out of ten of accidental haemorrhage are slight, and end in recovery. The mortality is nothing like 60 per cent. The mortality of vaginal Caesarean section hitherto has been 15 per cent. so far as we know. What it would be if done upon patients exhausted by haemorrhage so great as to lead to a reasonable belief that the whole placenta had been detached, we refrain from conjecturing. We think the English general practitioner had better be content with the old-fashioned practice of rupturing the membranes and putting on a tight binder. Taking another subject, Dr. Fabre has a strong belief in the treatment of eclampsia by large doses of chloral hydrate. He gives 18 to 30 grams (℥iv to ℥j) the first day, 10 grams the second day, 6 grams the third day, and then 4 grams a day for several days. By this treatment he claims to have brought the mortality down to 9 per cent. This is much better than the 50 per cent. death-rate which has followed Caesarean section in this disease. We may add that the illustrations are many of them photographs from life, many diagrammatic, but all excellent and original.

In our issue of May 6th, 1908, we noticed a book entitled *The Rotunda Practice of Midwifery*. The second edition of this is now published, with a shorter title, *Practical Obstetrics*.[2] It is much more than a reprint. One of the authors, Dr. WRENCH, has now left the Rotunda; and Dr. HASTINGS TWEEDY has been assisted in the preparation of the second edition by one of the present assistant masters, Dr. J. R. FREELAND. The general character of the book remains the same. It is the *Rotunda Practice:* and the authors seem to think that the Rotunda represents, if not finality, at least authority; and that outside the Rotunda there is little to learn. In the preface they draw particular attention to the article on uterine inertia. This has been rewritten. Under the title of "secondary uterine inertia" they give this name to the rare condition first described by Litzmann, and afterwards by Matthews Duncan, as "premature retraction of the uterus"; and further on they say "secondary uterine inertia is accompanied by the signs of obstructed labour." In more than one well-known textbook a sharp contrast is drawn between secondary uterine inertia and obstructed labour: and we think it a pity, and hardly fair to the student, that commonly used terms should be employed to denote entirely different conditions. This peculiar use of the term "secondary uterine inertia" is not the only instance in which the authors show their imperfect acquaintance with other than Rotunda midwifery. They do not know how to decapitate. They tell the reader to disarticulate the vertebrae with Braun's clumsy hook and then cut through the soft parts with scissors. If they will get Ramsbotham's sharp hook (not the serrated hook advertised in connexion with the name of a more recent obstetrician), and use it as Ramsbotham directed, they will find that it will go through the neck like a guillotine, in a fractional part of a minute, and they will send Braun's decollator to a museum. The authors have never heard, apparently, of subcutaneous symphysiotomy, although it was discussed by the Obstetrical Society of London in 1902. The London student will come to grief if he thinks this book an adequate preparation for his examinations in midwifery. And the authors do not know of a chemist in Dublin whose ergot is to be relied upon; for they recommend an American preparation.

The seventh edition of *The Practice of Midwifery*,[3] a work by one of the ablest teachers of his time, Dr. A. LEWIS GALABIN, revised and added to by a younger specialist of the highest eminence, Dr. G. BLACKER, cannot fail to command careful study by the practitioner and student. Dr. Blacker's revision has been very thorough. In the application of mathematical principles to the explanation of the mechanism of labour, the book remains unrivalled. The section on accidental haemorrhage is a curious one. In the first edition, published in 1886, plugging the vagina was recommended for the treatment of accidental haemorrhage when the cervix was undilated and labour had not commenced. This advice was subsequently cancelled on the ground that candidates at the examination hall found it unfavourably received. This was not a consideration that would have influenced Matthews Duncan or Braxton Hicks. Most authorities, the authors now tell us, considered that it was dangerous, on the ground that fatal bleeding might take place into the uterus behind the plug. This is rather a hypothetical objection. The real objections were stated by Braxton Hicks. He was speaking of placenta praevia, but his remarks apply equally to accidental haemorrhage. He said: "With regard to pressure by the tampon, I believe the general consensus in British midwifery is against its use, and with this I am in accord, partly because unless perfectly done—and this is difficult—it is of no use, and if perfectly done it is very distressing to the patient, especially if it be necessary, which it often is, to renew it to avoid septic generation." These are solid and grave objections. The authors say, "Experience appears to justify this treatment, which is now generally accepted." Is it? We turn to Munro Kerr's *Operative Midwifery*, published in 1908, and find him stating: "In Germany there are few who favour the treatment by plugging; the same also applies to France and America" (p. 602). Further on he says: "In this country most recent writers, with the exception of the Rotunda school, favour this treatment (dilatation of the cervix), and trust to it rather than the plug" (p. 605). If Munro Kerr's statements are correct, it is going too far to say that plugging the vagina is now generally accepted. And we think the weighty objections urged by Braxton Hicks should have been stated. The authors state that the tampon was recommended as early as 1776. It has therefore been on trial long enough for its merits to have been fully demonstrated. Further on the authors say, speaking of all cases together: "The statistics of the results of treatment by plugging are very slightly better than those of the old method, not more than might be

[1] Bibliothèque du Doctorat en Médecine. Publiée sous la direction de A. Gilbert, Professeur à la Faculté de Médecine de Paris, et L. Fournier, Ancien chef de clinique de la Faculté de Médecine de Paris. 1908-1910. 30 volumes. *Précis d'Obstétrique.* Par Fabre, Professeur à la Faculté de Médecine de Lyon, Accoucheur des Hôpitaux de Lyon, etc. Paris: J. B. Baillière et Fils. 1910. (Demy 8vo, pp. 750, figs. 460. Fr. 15.)

[2] Oxford Medical Publications. *Practical Obstetrics.* By E. Hastings Tweedy, F.R.C.P.I., Master of the Rotunda Hospital; and G. T. Wrench, M.D., late Assistant Master. Second edition. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, 1910. (Demy 8vo, pp. 501. 12s. 6d.)

[3] *The Practice of Midwifery*, being the seventh edition of Dr. Galabin's *Manual of Midwifery*, greatly enlarged and extended. By Alfred Lewis Galabin, M.A., M.D., Consulting Obstetric Physician to Guy's Hospital, etc., and George Blacker, M.D., B.S.Lond., F.R.C.S. Eng., F.R.C.P.Lond., Obstetric Physician to University College Hospital, etc. Illustrated with 503 engravings; many of the new illustrations specially drawn by T. W. P. Lawrence, M.B., B.S. F.R.C.S., Pathologist to University College Hospital and Curator of the Museum, etc. London: J. and A. Churchill. 1910. (Roy. 8vo, pp. 1140. 18s.)

expected from the effect of modern improvements in antiseptic midwifery." Accepting this view of the matter, is not Braxton Hicks's objection, that it is "very distressing to the patient," a serious consideration, which the student and practitioner should bear in mind? The chapter on precipitate and prolonged labour contains some statements likely to confuse the reader. Thus, he reads of "inertia of the uterus or a tendency to tonic contraction, instead of active rhythmical pains." To us it seems that uterine inertia and tonic contraction of the uterus are quite opposite things, and the former does not tend to pass into the latter. In a subsequent paragraph we are told of painful uterine contractions producing no effect upon the cervix and generally dispelled by an aperient. Most physicians would, we think, call this kind of pain "intestinal colic." So far as this chapter is concerned, the great paper of Braxton Hicks, on the condition of the uterus in obstructed labour, and the two papers, admirable in their precision and lucidity, by Matthews Duncan, which are contained in vol. xxviii of the *Transactions of the Obstetrical Society of London*, might never have been written. But we have criticized enough. The book as a whole is one of which the authors may be proud.

THE *EXTRA-PHARMACOPOEIA*.

It is not far off thirty years since the *Extra-Pharmacopoeia*[4] was first published, and the fourteenth edition, whose authors are Mr. Harrison Martindale and Dr. Wynn Westcott, has now been published. It is a considerably larger volume than its predecessors, but still of a very handy kind. All the features which have made this reference book so useful and have secured for it so great a popularity in the past have been preserved, and its enlargement seems to have been mainly due to the fact that since the date of publication of the thirteenth edition, a little more than two years ago, appeal has been made to the medical public on behalf of a great many new products, and in this volume receive attention. In the case of a book of this character it is only by its constant use that any errors or omissions become visible, so it is impossible to state positively how far this new edition of the *Extra-Pharmacopoeia* will meet every need which it may fairly be expected to fulfil. But on this point it may be said that each predecessor has been a daily companion during its currency and rarely has been found lacking; the probability, therefore, of the new edition proving an equally faithful assistant in medical work of all kinds is very great. In addition the book emerged practically scathless from an evening spent in dipping into its contents, the only omission noted being the absence of any explanation from the list of abbreviations of two letters frequently apposed to preparations described in the text. A good many formulae recently devised for use in connexion with clinical laboratory work were found to have been given a place and an immense amount of miscellaneous information on all subjects connected with the practice of medicine. Indeed, the weak point of the book, so far as it can be said to have one at all, is the extent of the ground which the authors attempt to cover, and actually succeed in covering more or less completely. For one reason and another it may be concluded that they are enthusiasts on the subject of vaccine-therapy, and in the preface there are some statements regarding that method of treatment which read somewhat quaintly in a reference book otherwise of so entirely scientific a character.

GERMAN CLIMATOLOGY.

Just as a book on modern pharmaceutics requires the skill and experience of the chemist as well as the pharmacologist, so a book on modern "climatics" should be built up by a meteorologist statistician in conjunction with the balneologist. The book which we have before us, entitled German Climatics,[5] is constructed in such a manner, and being compiled with care, on the basis of sound knowledge, the authors have succeeded in laying before a wide circle of readers a work which is full of interest and instruction. The medical man is apt to regard climatology as a subject which requires but little attention and which can be summarily classified into the bad effects of bad climates and the good effects of good climates. Tables setting forth averages, discussions dealing with the significance of means and extremes, and deductions drawn from a consideration of the types of climate would seem dry reading to the average medical man, but the authors have demonstrated in a practical manner that this material can be rendered interesting and useful. The book does not limit its sphere, as the title would suggest, to German climatic conditions alone, but deals with types of climate in all parts of the globe. The first part concerns itself with climate and its constituent factors. Temperature, moisture, sunshine, cloud and fog, atmospheric pressure, and wind and impurities of the air are analysed from a statistical point of view and valuable pieces of information can be gleaned from this part. Following it, two chapters illuminate the subject from the physiological and pathological side. The action of climate on human beings and on the various organs forms the subject of the one chapter, while the effect of certain climates on persons suffering from types of diseases forms the basis of the other. The fourth chapter takes the shape of tables of diseases, and of the spas and watering places where they can be treated with advantage, and, conversely, the names of the spas and watering places with the characteristics of the climate and springs. Excellent maps complete a very well compiled book. The literary style of the writing is good, and all exaggerations which are so common in German scientific books are rigidly avoided.

OBESITY.

The second edition of Professor von Noorden's monograph on obesity forms part of Professor Hermann Nothnagel's system of medicine.[6] It has been completely revised, and contains a great deal more matter than the first edition, which was translated into English and published in 1903.[7] The metabolic problems concerned are briefly summarized, but may be found at greater length in the English edition of Professor von Noorden's *Metabolism and Practical Medicine*. He divides obesity into exogenous and endogenous, the former due to overfeeding and the latter to constitutional causes, and obviously the more difficult to explain and to treat. Professor von Noorden believes that hypothyroidism is the most important functional derangement underlying it, but it is associated with deficient activity of other glands, for example, the pancreas, the pineal gland, the pituitary body, and the sexual glands. It is undoubtedly hereditary, and is distinctly more common in certain races, among which the Hebrew race is perhaps the chief. At the same time, he recognizes the influence of habits and of diseases such as those that affect the organs of locomotion, anaemia, heart and lung disease. Its relationship to diabetes of a certain type is well known, and he explains both as dependent upon an inability to consume sugar; in the first stage the unburnt sugar is stored as fat, and later on when the fat-forming capacity has reached its limit, superfluous sugar is excreted in the urine. The book contains detailed accounts of the various methods of cure. The author recognizes the great advantage of treatment in a sanatorium, where the patient learns how to conduct his diet and his mode of life, so that when he returns home he has acquired habits which it rests with him to maintain; these patients, however, require to return year after year for a course of treatment. The book is completed by a full bibliography of the subject.

"QUEER STORIES."

The "Queer Story" in *Truth* has always been worth reading, either for its plot or for the sake of the surprise one has learnt to look for almost instinctively at the end. Apart, however, from the interest attached to the story itself, its subject matter frequently is very interesting for

[4] *The Extra-Pharmacopoeia of Martindale and Westcott.* Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B.Lond., D.P.H. Fourteenth edition. London: H. K. Lewis. (Pott 8vo, pp. 1054. Price 12s. net.)

[5] *Deutsche Klimatik: Grundriss der Lehre von den Luftkuren Erholungsbedürftiger und Kranker.* By Professor Dr. phil. Karl Dove and Privatdozent Dr. med. Frankenhäuser. Berlin: Dietrich Reimer. 1910. (Royal 8vo, pp. 292; tables and 4 maps. 8s.)

[6] *Die Fettsucht.* Von Professor Dr. C. von Noorden. Zweite Auflage. Spezielle Pathologie und Therapie, herausgegeben von Hofrat Professor Dr. Hermann Nothnagel. Wien und Leipzig: Alfred Hoelder. 1910. (Dbl. cr. 8vo, pp. 265.)

[7] British Medical Journal, April 16th, 1904, p. 897.

another reason. The stories in *Truth* with few exceptions are extremely modern, and deal almost exclusively with the different phases of life in the twentieth century. Even when the scene is laid in other times or in another country, the tale often serves merely as an excuse for rendering all the more effective a sly hit at one or other of the thousand and one fads and crazes of the present day. This is palpably the case with regard to "Ye Fleas and ye Fayth-healers," which is included in the sixteenth series of *Queer Stories from Truth*, recently published in book form.[8] This story, which is the best amongst the thirty which make up the volume, is a clever skit on faith-healing, ostensibly as it was practised in the reign of Charles II, but equally applicable to our own enlightened days. It is perhaps hardly fair to describe in detail the plot of this amusing little tale, which is, after all, a very slight one. It is only an account of a trick played by Charles in order to rid his Court of a troop of faith-healers, whose folly and arrogance had aroused even that languid monarch to action. But, slight as it is, the story is extremely funny, the contrast between the sceptical king and the unctuous healer being drawn with considerable skill; whilst the quaint travesty of seventeenth century spelling seems to give point to Charles's wit, and render all the more amusing the parrot-like formula of his unfortunate victim.

The rest of the book does not come up to the standard of "Ye Fleas and ye Fayth-healers," though many of the stories are very good. There is enough variety in the collection to suit all tastes, for it is made up of many different kinds of fiction. Amongst the tragic stories, "The White Feather" and "At the Outpost" are undoubtedly the best, whilst "The Last Test Match"—a pretty little sketch of the death of a little street Arab in the Poplar Hospital—might almost be placed at the head of those whose leading note is a mild pathos. The humorous stories, of course, preponderate; in fact, they form fully one-half of the whole collection. They differ so widely that it is somewhat difficult to judge their varying merits; but, whilst a fair proportion deal with betting and the turf, and therefore appeal only to a limited circle of readers, there are many others of a different stamp and of a decidedly higher class of humour. One of the best of these latter is "The Old Adam," a rowing story, in which a mild old clergyman converts the black sheep of his parish by his picturesque and variegated language when coaching the Oxford crew for the 'Varsity race, a conversion which all his preaching and good example have hitherto failed to accomplish. "The Kaiser's Wire," in which the German Emperor plays his favourite part of *deus ex machinâ*, is another good story. "Mrs. Pringle-Sharp's Bracelet" has a somewhat unusual plot, for the two clients who have each separately employed the same private inquiry agent to discover the whereabouts of a valuable piece of jewellery, have the satisfaction of seeing it pocketed by the said agent himself—"in the interests of public virtue," as he tells them. It is Lafontaine's fable of the lawyers and the oysters in a new setting, though here the clients do not even get the shells.

Altogether this year's assortment of *Queer Stories* ought to prove an excellent book for the holidays, especially for those who like their fiction in small doses and who do not yearn after the sensational or uncommon. The volume is well printed, and of a convenient size and weight for travelling. Readers of the Sixteenth Series will find it fully upholds the reputation earned by its predecessors in former years.

NOTES ON BOOKS.

IT is somewhat of a feat to reduce to vest-pocket size the contents of the current edition of an official pharmacopoeia, but it would appear to have been achieved to all intents and purposes by Mr. WIPPELL GADD in his *Synopsis of the British Pharmacopoeia*.[9] The edition under consideration is the seventh, this circumstance in itself offering good evidence of the utility of this little book. Though there has been no occasion to alter the matter relating to the *Pharmacopoeia* itself, the opportunity has been taken of revising the section relating to poisons so as to bring it into line with the Pharmacy Act of 1908. Every part of the *Pharmacopoeia* appears to have received due attention, the tabular synopses including the names, main characteristics and doses of each official preparation coupled with a few additional notes concerning it. In his preparation of the synopsis Mr. Gadd, who is a barrister and former lecturer on pharmacy, has had the assistance of Mr. C. G. Moor, public analyst for Dorsetshire, and the whole information contained is both clearly and succinctly stated.

The Pocket Clinical Guide, by Dr. JAMES BURNET,[10] deals in the briefest possible manner with simple laboratory tests. It is designed to be a guide to students, but it cannot be recommended as such. The details of technique are not described in sufficient detail to be of much use to the student who is not already familiar with them. We give a few examples of the numerous errors, which are inexcusable in a book which is designed to be the constant companion of the modern student. In describing the iron reaction for diacetic acid there is no mention of the preliminary phosphate precipitation, and the statement is made that the port-wine coloration disappears on heating. Hopkins's method for the determination of uric acid is inaccurately described; ammonium sulphate solution should be used for washing the precipitate, as ammonium chloride affects the subsequent titration with permanganate. The student is advised to attempt the isolation of the typhoid bacillus from the urine by means of centrifugalization and examination of a hanging-drop preparation of the sediment. Blood-counting technique is inadequately described, there being no mention of Newton's rings or of the necessity for obtaining a uniform distribution of cells over the field. The chapter on stomach contents is of little value. Finally, as a test for blood in the faeces, the author advises Teichmann's test, which has long been recognized as absolutely useless for this purpose.

Of the third edition of *Physical Diagnosis*,[11] by Dr. R. C. CABOT, we said that the arrangement of the matter, the excellent illustrations, and the soundness of the teaching would commend the book to every student desiring a full knowledge and clear understanding of clinical phenomena. The same observations may emphatically be made of a fourth edition now published. In regard to auscultation, the author does well to draw attention to the use of the unaided ear—a method of examination often entirely overlooked nowadays. High-pitched sounds such as those produced by deep-seated areas of solidified lung, and in some cases of aortic insufficiency, may often be detected by the naked ear when inaudible by the stethoscope. In describing friction-auscultation it is usefully pointed out that the line of percussion must neither approach nor recede from the chest-piece of the stethoscope; in other words, the line percussed must be a segment of a circle of which the chest-piece is the centre.

Mr. C. W. JOHNSON has discovered that "in individual mentation some things receive too much and others too little attention." The "individual mentation" of the medical profession being what it is, some aspects of the problem of health have received a great deal too much and others far too little attention, with very shocking results. In his brochure, *Health Physical and Mental*,[12] Mr. Johnson proposes to lead us up to heights of speculation from which we can survey the whole matter in a true perspective. The title-page does not inform us as to the author's qualifications for this task, and the *Medical Directory* also fails to throw any light on this subject, but his little book is quite incapable of doing any mischief.

Professor C. L. GREENE, of the University of Minnesota, made a very successful appeal both to students and practitioners when he first brought out his volume on *Medical Diagnosis*[13] some three years ago, and the third edition of the work seems fully entitled to the same welcome. On every page there is evidence of extreme care in the selection of methods of diagnosis, in their

[8] *Queer Stories from Truth*. Sixteenth series. Published at *Truth* Office, 10, Bolt Court, Fleet Street, London, E.C. (Pp. 244.)

[9] *Synopsis of the British Pharmacopoeia*. By H. Wippell Gadd; with analytical notes and suggested standards by G. C. Moor, M.A., F.I.C. Seventh edition. London: Baillière, Tindall, and Cox.

[10] *The Pocket Clinical Guide*. By James Burnet, M.A., M.D., M.R.C.P.E. Edinburgh: John Currie. (Demy 32mo, pp. 127, figs. 11. 1s. 6d.)

[11] *Physical Diagnosis*. By R. C. Cabot, M.D. Fourth edition. London: Baillière, Tindall, and Cox. 1910. (Demy 8vo, pp. 602; 5 plates and 240 figs. 15s.)

[12] *Health, Physical and Mental, or Hygiene of Body and Mind*. By C. W. Johnson. London: The Theosophical Publishing Society. 1909. (Cr. 8vo, pp. 143. 2s.)

[13] *Medical Diagnosis*. By C. L. Greene, M.D. Third edition. London: Robman, Limited. 1910. (Demy 8vo, pp. 734. 15s.)

description, and in the fashions adopted for bringing points of special importance into prominence. The book is a mine of information as to both clinical and laboratory methods of diagnosis, and as to their correct application to individual diseases and morbid conditions as a whole. It is freely illustrated by woodcuts, plates, and some coloured pictures, and though many of these are much smaller than usual they are not less informing. Long as is the index, it fails to draw attention to several important pieces of information to be found in the text.

The Modern Mother,[14] by Dr. H. Laing Gordon, is described by the author as "a guide to girlhood, motherhood, and infancy," and we have no hesitation in saying that it is a thoroughly reliable guide. Dr. Gordon's experience has fitted him for his task, and he has covered the ground very thoroughly. The necessary allusions to sexual matters are made with delicacy and discretion, and if there is a tendency to the inculcation of "counsels of perfection," the practical advice given on personal hygiene, management of infants, etc., is otherwise admirable.

[14] *The Modern Mother: A Guide to Girlhood, Motherhood, and Infancy.* By H. Laing Gordon, M.D. London: T. Werner Laurie. 1909. (Demy 8vo, pp. 278; illustrated. 6s.)

MEDICAL AND SURGICAL APPLIANCES.

A Colour Perception Spectrometer.

At the present moment the whole question of the methods which should be used to examine railway employees and seamen for colour blindness is, to use a hackneyed phrase, in the melting pot. The case of Mr. Trattles and of others has at last drawn the attention of the Board of Trade to the fact that the methods they employ are far from perfect. For years the value of the tests employed both by the Board of Trade and by our railway companies have been criticised not only in this Journal, but also in America and on the Continent, and for years the old inadequate methods have held sway. At last the lay press has taken the matter up, and a committee has been formed to investigate the whole matter.

In a recent paper (*Glasgow Medical Journal*, June, 1910) Dr. Freeland Fergus has laid down the essential optical attributes of a seaman, and, we may add, of the railway man. He must be able in all conditions of weather to identify a masthead light, a port light, and a starboard light. If he shows the *slightest hesitation* he is a danger to navigation. This, then, being admitted it is obvious that he should be tested not with bits of coloured glass, skeins of coloured wool, or coloured cards, but with coloured lights. The Edridge-Green colour perception lamp, equipped with neutral trial glasses to simulate fog and to detect a shortened spectrum, is a suitable lamp for the ordinary tests. Should the candidate fail he can then be tested with pure spectral light. Dr. Edridge-Green has invented for this examination a colour perception spectrometer, which is made by Adam Hilger, Limited, 75A, Camden Road, N.W. The instrument enables the examiner to expose a portion of the spectrum between any two desired wave lengths. It consists of a spectroscope with an adjustable slit and a telescope which contains two adjustable shutters with vertical edges. These shutters can be moved by two micrometer screws each furnished with a drum. Each drum has an index, and is engraved in such a manner that the reading gives the position in the spectrum of the corresponding shutter in wave lengths. The instrument is illuminated by a small oil lamp. Its extreme value is obvious. The candidate can be shown the first part of the red end of the spectrum. He may state that he sees no light at all. Then it is quite obvious that he has a shortened spectrum, and he is at once rejected, no matter what other tests he may pass. He can be shown red or green, and have no possible means of guessing which colour is being exhibited. The instrument enables the neutral patch in dichromics to be accurately mapped out, and all the monochromatic patches can be isolated with ease. We commend the instrument to the Board of Trade as being most suitable for the re-examination of rejected candidates.

The medical tour organized by the German Central Committee this year will start from Stuttgart on September 1st, and visit Ragaz, Flims, Davos, Vulpera, Tarasp, St. Moritz, Zuoz, Pontresina, Sils-Maria, Lugano, Montreux, Caux, Glion, Leysin, Evian, Interlaken, and Bern, ending at Freiburg in Baden on September 19th. Applications must be made not later than August 20th. The head quarters of the Committee are at 134B, Potsdamerstrasse, Berlin, W. The general secretary is Dr. A. Oliven.

Nova et Vetera.

SOME ROYAL DEATH-BEDS.

(Continued from p. 119.)

WILLIAM III.

William III survived Queen Mary about eight years. He had suffered from ague, and had long been tormented by asthma and racked by cough. In 1697, on returning after the ratification of the treaty of Ryswick, he felt ill, and sent for Radcliffe—a proof that he, at least, did not believe that his wife's death was due to the doctor's want of skill. Radcliffe found him suffering from dropsy. He is said to have found the King reading Sir R. L'Estrange's new version of *Æsop's Fables*.[1] After a little preliminary conversation, the doctor requested His Majesty to allow him to look at the book he was reading. Upon opening the volume, the doctor read to the king the following fable, in these words:

"Pray Sir How d'ye Find yourself?" says the Dr. to his Patient. "Why truly," says the Patient; "I have had a Violent Sweat." "Oh the Best Sign in the world" quoth the Dr. And then in a little while after he is at it again, with a "Pray How d'ye find your Body?" "Alas,' says the T'other, "I have just now such a Terrible Fit of Horror and Shaking upon me!" "Why this is all as it should be," says the Physician. "It shews a Mighty Strength of Nature." And then he comes over him a Third time with the same Question again; "Why I am all swelled," says T'other, "as if I had a Dropsy;" 'Best of All," quoth the Doctor, and goes his way. Soon after This Comes one of the Sick Man's Friends to him with the same Question, how he felt himselfe; "Why, truly so Well," says he, "that I am e'en ready to Dye of I know not how many Good signs and Tokens." "May it please your Majesty," says Radcliffe, "yours and the sick man's case is the very same." He advised the king to go abroad, and upon his return Dr. Radcliffe was sent for again. In reply to some questions put by the doctor, the king, showing his swollen ankles, which formed a striking contrast with the rest of his emaciated body, asked what he thought of them. "Why, truly," said the physician, "I would not have your Majesty's two legs for your three kingdoms." Radcliffe also told the king bluntly that his juices were all vitiated, his whole mass of blood corrupted, and the nutriment for the most part turned to water. He is said to have added:

> If your Majesty will forbear making long visits to the Earl of Bradford (with whom the King was wont to drink very hard) I'll engage to make you live three or four years longer, but beyond that time no physic can protract your Majesty's Existence.[2]

The prognosis thus roughly conveyed was verified almost to the letter, for the King died in 1702. In 1701 he had been accompanied to Holland by his Dutch physician, Bidloo, whose treatment of his royal patient gave rise to criticism.

> In addition to other infirmities under which the King laboured he was troubled with boils that formed in various parts of his body; and for these Bidloo directed that his feet and legs should be rubbed night and morning with flannel covered with powder of crab's eyes, flour, and cummin seed. As to diet, the Doctor was exceedingly indulgent, allowing His Majesty to drink cider, ale—in short, all sorts of strong beer; and to take crude aliments before going to bed. It was in vain that Drs. Hutton, Millington, Blakemore, and Lawrence remonstrated. On the King's return to Hampton Court the dropsical swelling of the inferior extremities extended upwards, for which Bidloo prescribed a vapour bath and enclosed the legs of the patient in a wooden box constructed for that purpose.[3]

William felt so much anxiety about his health that he consulted by letter all the most eminent physicians of Europe; and, fearing that they would prophesy smooth things if they knew who the patient was, he wrote under feigned names. To Fagon, Louis XIV's physician, he described himself as a parish priest. Fagon replied that such symptoms could have only one meaning, and that the only advice which he had to give was that the sick man should prepare himself for death. Having obtained this plain answer, the king consulted Fagon again without disguise; the doctor prescribed some medicines which

[1] *Fables of Æsop.* By Sir Roger L'Estrange, Kt. London, 1692.
[2] *The Goldheaded Cane*, by Dr. Macmichael
[3] Ibid.

were thought to have helped to prolong his life for a little time. In a constitution so undermined by disease any accident was likely to have serious consequences. Before long the accident occurred. On February 20th, 1702, as Macaulay says, the King was ambling on a favourite horse, named Sorrel, through the park at Hampton Court. He urged his horse to a gallop just at a spot where a mole had been at work. The horse stumbled and the King was thrown, his right collar-bone being fractured near the acromion. The French surgeon, Roujat, was at hand. But when he wished to bleed the King he could not do so, as the sanction not only of some of the Court physicians but of the Privy Council was necessary before the simple operation could be performed. The injury in itself was not serious. Burnet, however, says that the King all that winter felt that he was sinking; both before and after the accident he said to the Earl of Portland that he was a dead man. "It was not in his legs nor now in his collar-bone that he felt himself ill, but all was decayed within so that he believed he should not be able to go through the fatigue of another campaign." The King himself, with the disregard for medical advice which is a characteristic of royalty, insisted on returning to Kensington. There Roujat's diagnosis was disputed by Bidloo, who at first denied that there was a fracture. On this point the Dutchman seems to have been obliged to give way, and as the jolting of the rough roads made a further reduction necessary, he claimed the right of applying the bandages. This was disputed by Roujat, who is reported to have argued with irresistible logic, but in very bad French: "You are here either in the character of a physician or in that of a surgeon. If the former, you have nothing to do with the business; if the latter, *c'est moi qui* est *le premier chirurgien du Roi*." On March 1st the King's knee became inflamed. On the 3rd he had a short fit of ague which he regarded so little that he said nothing about it; he had another next day. Burnet, who happened to be near him, observed such a visible alteration as gave the Bishop "a very ill opinion of his condition." The next day his strength failed. On the 6th he was so low that he was kept alive only by cordials. He said to those about him: "I am drawing fast towards my end." He received the Sacrament. To his physicians he returned his thanks: "I know," he said, "that you have done all that skill and learning could do for me; but the case is beyond your art and I submit." He could do nothing else, for he was face to face with that pale spectre which strikes with impartial foot the hovels of the poor and the palaces of kings.

> Et la garde qui veille à la barrière du Louvre
> N'en défend pas nos rois.

When the king could scarcely breathe he asked his physicians if this could last long, and was told that death was very near. He swallowed a cordial and asked for his closest friend, Bentinck. These were his last articulate words. He passed away early in the morning of Sunday, March 8th, in the fifty-second year of his age and the fourteenth of his reign.

The following is the report of "the Physicians and Surgeons commanded to assist at the dissecting of the Body of His Late Majesty at Kensington, March 10th, 1702. From the Original delivered to the Right honorable the Privy Council. London. Printed for John Nutt, near Stationers' Hall, 1702."

The Right Honorable the Lord Chamberlain issued out his summons to such Physicians and Surgeons as his Lordship thought fit, appointing them to meet at Kensington and there to examine by Dissection into the State and condition of the Royal Body. The day after the Dissection, the said Physicians and Surgeons being met together again in order to the forming an account of what they had observed, Sir Thomas Millington, Sir Richard Blackmore and Doctor Hannes were deputed as a Committee to draw up the Report.

1. Upon viewing the Body, before Dissection, the following appearances were remarkable. The Body in general was much emaciated. Both the leggs up to the knees and a little higher, as also the Right Hand and Arm as far as the Elbow were considerably swell'd. There was likewise on the Left Thigh near the Hip, a Bladder full as big as a small Pullet's egg, resembling a Blane.

2. Upon opening the Belly, the Gutts were found of a livid Colour; and the Blood contain'd in their vessels black. The Gutt called Ileon had in some places the marks of a slight Inflammation. The Stomach, Pancreas, Mesentery, Liver, Gall-bladder, Spleen and Kidneys were all found and without fault.

3. The Thorax or Chest we observed that the Right side of the Lungs adher'd to the Pleura; and the Left, much more. From which upon separation, there issued forth a quantity of purulent or frothy serum. The upper lobe on the Left side of the Lungs and the part of the Pleura next to it were Inflamed to a degree of Mortification. *And this we look upon as the Immediate cause of the King's death.* From the ventricles of the Heart and the greater Blood vessels arising out of them were taken several large tough flesh-like substances of the kind call'd Polypus. The Heart itself was of the smaller size; but firm and strong.

4. Upon laying bare the Right Collarbone, we found it had been broken near the shoulder; and well set. Some extravasated Blood was lodged above and below the Fracture.

5. The Brain was perfectly sound and without any sign of distemper.

6. 'Tis very rare to find a Body with so little Blood, as was seen in this; there being more found in the Lungs than in all the Parts besides put together.

Doctors Present.	*Surgeons Present.*
Sir Richard Blackmore	Mr. Bernard
Sir Theod. Colladon	Mr. Cowper
Dr. Hannes—Doctor Laurence	Mr. Gardner
Doctor Harrel—Sir Tho. Millington	Mr. Roujat
Doctor How—Professor Bidloo	etc.
Doctor Hullen	
etc.	

It is noteworthy that Radcliffe's name is not in this list, and from this and the fact that Roujat does not mention him among the physicians present at the King's death, it may, perhaps, be inferred that his plain speech had lost him the Royal favour.

Roujat, in a letter to a medical friend in Holland, gave an account of William's last illness,[1] of which the following is a translation:

You remember, Sir, that during the two last visits His Majesty paid to Holland, he was more than usually troubled by his habitual complaint, that is to say, asthma, pains in the side and stomach, with blebs and blisters scattered all over the side of the chest and abdomen. These conditions were often accompanied by fever, and by increase in the swelling of the feet, legs, and hips; as also by two other swellings, one on the right hand, the other on the left knee, which spontaneously disappeared; they were, nevertheless, distinguished by their symptoms from those of the feet, legs, and thighs, which were absolutely oedematous, the others being accompanied by heat, redness, and pain.

During the last week of his life William sometimes walked up and down the gallery at Kensington Palace. Roujat continues:

During all that time Mr. Bidloo never left him; he constantly held him by the arm as usual when he walked or stood. When he was seated or in bed, Mr. Bidloo placed and supported the part (the broken collar bone) with a cushion. It was in that gallery and that very day (the Tuesday before the King's death) that he was imprudent enough to cause to be brought to the King not only his large folio treatise on anatomy, but also the trunk of a skeleton in order to show him the bone which was broken . . . wishing to have crowned heads among his pupils. This His Majesty could not bear, but indignantly had everything taken away. Both the book and the skeleton were seen by many persons when they were being brought and when they were being taken away. . . . He (the King) died . . . at a few minutes after eight o'clock on Sunday, March 8th, 17$\frac{01}{02}$, in the arms of Messrs. "Swel, Fremin and Williams" (*sic*) three of his servants. He died seated on the left side of his bed, having on his dressing gown, drawers, stockings and slippers, in the presence of a number of lords, among others the Duke of "Ormont" (Ormond), Somerset, Devonshire, Queensburi (*sic*) Marlboroug, the Earls of Rumei (*sic*), Portland, Jersai (*sic*), Albemarle, Carlile, Silkerque (*sic*), the Keeper of the Seals, and of various prelates, physicians in ordinary and servants on guard, having retained his mental faculties unimpaired to the last moment.

Roujat then cites in full the account of the autopsy given above, and adds:

But to state frankly my opinion as to the cause of the King's death, I believe that he died of dropsy, his blood and animal spirits being exhausted. His delicate constitution, his scorbutic tendency, the bad conformation of his chest, his excesses in the chase, his wrong system of diet, and lastly the sweatings improperly excited, assuredly hastened his end. I will not deny that the fall may have shortened his life.

This document is interesting chiefly as showing the jealousy of the doctors. Roujat was evidently pleased that Bidloo had incurred William's anger for what Queen Victoria would have called his "indiscretion" in attempting to give the King a lesson in anatomy on his royal person. On the other hand, it is a characteristic touch that the famous Dutch anatomist should have been so absorbed in his favourite science as to forget that sovereigns do not like to be reminded that they are mortal. Even ordinary people might reasonably object to an anatomical demonstration with themselves as the subjects.

[1] Lettre de Mr. Roujat, premier Chirurgien de feu Sa Majesté Britannique Guillaume III. Ecrite de Londres à un Médecin de ses amis en Hollande. London, 1703.

INTERNATIONAL CONGRESS ON DISEASES OF OCCUPATION.

In the British Medical Journal of March 19th, p. 730, it was announced that the Second International Congress on Diseases of Occupation would be held in Brussels this year from September 10th–14th. It was there stated that a British International Committee to promote the objects in the Congress had been formed with Sir Clifford Allbutt and Professor Sheridan Delépine as Presidents; Sir Thomas Oliver as President of the Executive Committee; and Drs. W. F. Dearden of Manchester and T. M. Legge of the Home Office, London, as Honorary Secretaries. How active the honorary secretaries have been in obtaining contributions from English experts is shown by the following list:

Question I.

The English Workmen's Compensation Act: With Special Reference to Hernia, Lumbago, Heatstroke, and Caisson Disease. Dr. R. J. Collie, Medical Referee under the Workmen's Compensation Act, Medical Examiner to the London County Council.

Small-pox as an Industrial Accident. Dr. H. E. Corbin, Medical Officer of Health, Stockport.

Question II.

The Function of the Certifying Factory Surgeon. Dr. W. F. Dearden, Honorary Secretary, Association of Certifying Factory Surgeons.

Certificates of Fitness in the Cotton Trade. Dr. A. Glen Park, Certifying Surgeon, Bolton.

Statistical Studies of Phthisis as an Occupational Disease. Dr. T. D. Lister, Consulting Medical Officer to the Royal Exchange Assurance Corporation.

Descriptions of Systems of Medical Service Adopted by Leading British Railway Companies. Dr. J. G. McBride, Medical Inspector to the North-Eastern Railway Company; Dr. T. M. Watts, Medical Officer to the Great Central Railway Company's Employees' Friendly Society; and Dr. W. F. Dearden, on behalf of a number of companies

Question III.

Experience of Ankylostomiasis in Cornwall. Dr. A. E. Boycott, Lecturer on Pathology, Guy's Hospital.

Incidents in the Life-History of Ankylostoma Duodenale. Professor Sir Thomas Oliver.

Question IV.

Glass Worker's Cataract. Dr. W. Robinson, Surgeon to the Sunderland and Durham Eye Infirmary, etc.

Question V.

Caisson Disease. Lieutenant G. C. C. Damant, R.N., H.M.S. *Excellent*, Portsmouth.

Question VI.

Gaseous Poisons: with Special Reference to Hydrogen Arsenide, and Hydrogen Phosphide. Professor John Glaister.

A Contribution to the Study of Aniline Poisoning. Dr. R. Prosser White, Surgeon to the Roburite Explosives Company, etc.; and Dr. A. Sellers, Public Health Laboratory, Manchester.

Some Unusual Features of Lead Poisoning. Professor Sir Thomas Oliver.

Ten Years' Experience of Notification of Lead Poisoning. Dr. T. M. Legge, H.M. Medical Inspector of Factories.

Early Indications of Lead Poisoning. Dr. S. King Alcock, Certifying Surgeon, Burslem, Medical Referee under the Workmen's Compensation Act, etc.

The names of the writers should be sufficient to vouch for the high standard of the matter presented. French, English, German, and Italian are the official languages of the Congress, and each contribution will be printed in the language in which it is written; abstracts in the other three languages will be distributed along with the paper. The businesslike method of sending out printed copies of all papers and abstracts to members before the Congress meets, and of allowing each contributor to expound on his subject for ten minutes when brought up before the Congress, has been adopted.

All the questions taken up by the British experts are important, though probably the most interesting from a national point of view will be that of medical service. Every class of medical supervision and aid adopted in connexion with industrial pursuits in different countries will be explained and discussed from an international standpoint, and a special effort is being made to obtain as much information as possible on the methods adopted on the leading railway systems of the world. To the latter part of the subject eight of our principal railway companies have contributed valuable data. The duties of the certifying surgeon, along with all other national systems of medical inspection, are to be explained and discussed, so that there will be every opportunity for making comparisons, and those of our own legislators who have recently shown so much interest in the Home Office vote will be able to ascertain if our Continental friends have achieved anything more economical than a sixpenny medical examination or a shilling certificate of industrial poisoning. The Congress is being very well supported from this country, a considerable number of certifying surgeons, insurance medical officers, and medical referees having already signified their intention to be present. Forms of application for membership can be obtained from Dr. W. F. Dearden, 15, Salisbury Buildings, Trafford Road, Manchester.

SCIENCE NOTES.

A number of interesting experiments have recently been performed by Studzinski on the physiological action of the blood and the chemical properties of its active substances. Working with dogs, cats, rabbits, and guinea-pigs, he has found that the injection into the vein of one animal of blood obtained directly from an artery of another animal of the same species causes a rise in the blood pressure of the first animal, but this disappears rapidly without causing any trouble. If, however, the blood is taken from a different species of animal there is an almost immediate fall in the blood pressure. This is rapidly followed by symptoms of excitement and then of depression. If blood is taken from the animal in the course of the experiment it is particularly slow to coagulate, and in some cases only does so after two or three days. The symptoms above mentioned are apparently due to cerebral anaemia. They disappear on section of the vagi, and are analogous to those produced by the action of vasodilatine. The animal returns to the normal state as soon as the blood pressure begins to rise again. If defibrinated blood is now used, transferred from one animal to another of the same species, the same symptoms are produced but to a more intense degree, the reason apparently being that in the process of defibrination the red blood corpuscles have undergone more alteration. From this Studzinski concludes that the vasodilatine exists in the red corpuscles, and that it is set at liberty when they are destroyed. It is itself destroyed by exposure to air for several hours; it is soluble in alcohol, and is an organic nitrogenous substance. In sufficiently large doses it is fatal, and a lethal dose can be obtained by using 15 c.cm. of defibrinated blood of a pig, ox, or horse for every kilogram of the dog's weight. Death occurs from heart failure, and on section the heart is found to be extremely dilated.

From physiological experiment it would appear as if the mechanism of the heart in birds was not controlled by the vagus nerve in the same way as in mammals. Divergent results have been obtained by several workers who have dealt with the matter. Such competent observers as R. Wagner, Claude Bernard, and Thébault were unable to obtain arrest of the heart's action by stimulation of the vagus. On the other hand, Couvreux showed that the nerve contained no accelerating fibres. Einbrodt, however, and later Knoll, demonstrated an acceleration on section and a retardation or arrest on stimulation, the retardation, according to Knoll, being evidenced on the ventricle and not on the auricle. Jürgens has again taken up the problem and gives his results in the *Archiv für die gesammte Physiologie* (1909, p. 506). Pigeons furnished the material for his experiments, and he found that section of the vagus did not augment either the force or the number of the contractions of the auricle or of the ventricle. He has shown clearly, however, that the effect of stimulation is to cause a retardation gradually proceeding to stoppage, with at the same time an increase in the amplitude of the contractions. During the arrest of the auricle the ventricle may or may not show automatic contractions. In certain cases there is a decrease instead of an increase in the amplitude of the contractions. The action of the vagus may thus present several variations, and these are further complicated by the variable automatic activity of the ventricle. In a few cases Jürgens believes that accelerator fibres are present in the vagus.

FAITH AND HEALING.

By the Rev. FRANCIS BOYD,
Warden of the Guild of Health, Clifton.

SOME very interesting articles appeared in the BRITISH MEDICAL JOURNAL of June 18th. I have searched your correspondence columns ever since in the hope of seeing something from the "religious" side. In the absence of an abler pen, may an obscure clergyman make a contribution to the discussion? For, after all, the subject matter of the debate lies where the provinces of the doctor and priest overlap; or, rather, it might be truer to say that it lies in a region where doctor and priest face each other across a gap.

The crux of the whole difficulty is that point at which an energy passes from the spiritual to the material. It is a point that has always attracted man, and always baffled him. But we are trying, in our several ways, to approach it now, which is a great advance on denying its existence and throwing stones at each other.

It may be approached from both sides. The theologian or "religious" man starts from God and follows the process, as far as he can, by his own methods, and the medical or scientific man does the same from the opposite end of the chain. A certain amount of progress can be made from either end, but it is the region of the middle links where we all get out of our depth. Psychology is doing excellent work; it has given us real help, and promises more. But we are still far enough from a solution of the difficulty. Meanwhile, it would do no harm if we could get the conditions of the problem clear.

In the presence of a complicated difficulty of this kind, which lies exclusively in no man's land, there is always a temptation to grab a solution by false simplifications. These may be found in this case either in the direction of a material monism, or a spiritual monism. It is not many years ago that the prevailing doctrine in matters of health was a kind of medico-materialistic monism, and there are still, I suppose, numbers of doctors who would deride the very idea of spiritual or mental succours for bodily ailments. Sir Clifford Allbutt can write as he does because he is a man of distinction; but I suspect he is in advance of the general body of medical opinion. And even in his article there are signs of the old naturalism. And by "naturalism" I mean a view of Nature that is one-sided, exclusive, narrow—as narrow as the popular antithetic view of the Grace of God. It regards events as less significant because they are more manifestly inevitable, less "Divine" because they are more regular, less spiritual because they are more frequent. It is as objectionable as the false spiritualism which makes exactly the same distinctions from an opposite point of view, and with an opposite prejudice. Both sets of extremists are wrong. They begin by being intolerant, and end by proving incapable, and for the same reason. Let us frankly abandon both these positions. Some of us must remember that "religious" people do not seek the foundations of faith in the gaps left by science and the opportunities of freedom and Divine action in the interstices of order. And some of us must remember that modern scientific men are not to be identified with that intolerant and exclusive "Naturalism" which, in the best circles of thought, was buried at the end of the last century.

I suggest also that we might avoid false antitheses. Sir Clifford Allbutt, for example, says: "We know . . . that the physical life of a sick man depends, not upon prayer, but upon the timely arrival of the physician with the antidote." But why that contrast? Are the alternatives mutually exclusive? Must I choose between swallowing the antidote and saying my prayers? I know, of course, that there are foolish people who do so choose. There is a one-sided spiritualism which imagines it is more spiritual because it avoids material means; which refuses the sanitary inspector on the ground that "God will provide." That is a caricature of religion which naturally excites the indignation of your correspondents and all other sensible men. But most of us are sane enough to avoid such a choice. We know that spiritual force does not cease to be spiritual when it employs material means; and we ask that the corresponding error on the other side should be avoided—namely, the notion that nothing is a spiritual exhibition of power which does not avoid the production of material results. There is a halting and prudish spiritualism that shrinks from "means," and there is an anti-spiritual temper which trusts to the means, on the ground that they do not belong to God. Are they not both wrong? We do not want any competition between God and the antidote. Is it not God's gift? Has it any virtue save that which God has given to it? Is the spiritual energy discredited because it touches the material scene a little earlier rather than a little later? It is only a matter of the point in the series at which the spiritual force enters. But there is no rivalry save that which is created by a materialism which regards the means as an alternative or substitute for faith.

Nor do I think Sir Clifford Allbutt is justified in restricting prayer to "spiritual gifts." They are indeed the more precious and to be more earnestly sought. But to rule out prayer for material benefits looks like a return to that old idea that religion finds refuge and a sphere of exercise only in those things which are supposed to be outside law, as if you could not pray about those things which were subject to law. But is not everything subject to law, though we do not as yet understand the law in every case? The reign of law does not exclude prayer (which is also a law) any more than it excludes personal freedom. I would rather argue that it is precisely where law is plainest and best understood that freedom and choice become most effective. I believe in spiritual healing, not because it is a breaking of law, but because it *is* a law; and I do not call a cure by spiritual means any more "miraculous," in the magic sense, than a cure by any other means; nor do I think parallel cases any more a disproof of spiritual healing than they are of surgical healing.

I must not strain the hospitality of your columns, and merely offer these rough suggestions as a small contribution to a very difficult question.

SPIRITUAL HEALING AND THE "GUILD OF HEALTH."

By STANLEY BOUSFIELD, M.A., M.D.Cantab.,
London.

THE Guild of Health issues an annual report stating that one of its three objects is "for the restoration to the Church of the Scriptural Practice of Divine Healing," and takes up a definite attitude regarding the "special gift" of spiritual healing, with corresponding claims to healing powers.

The last annual report showed that out of 429 members 351 were ladies and 53 ministers of religion, but no names of medical men appear in the list. It is particularly important to draw attention to this guild as it has at its head as warden a clergyman who also occupies an active position in the Church of England.

Although all such societies tend to increase when once they have obtained a considerable number of members to spread accounts of past "cures," yet a title like the "Guild of Health" appeals strongly to the many men and women who are continually looking out for something novel or fresh for the ailments of themselves and their friends. To obtain as warden a minister of religion must also greatly tend to attract fresh members.

I have kept in touch with a lady, suffering from myasthenia gravis, during the eight years of her illness; and for some time her condition with a quiet restful life had not varied much. But quite recently she joined this guild and was treated for six weeks by the warden, the Rev. Francis Boyd, at Clifton. She writes to me:

> The first time I saw Mr. Boyd I gave him a full account of myself. He hadn't had a myasthenia person before, and he got a doctor's view of the case from a doctor friend of his.
>
> This doctor, however, did not see my patient; but as the result of the faith and hope inspired by the treatment, after the first week she made continual desperate efforts to walk further and exert herself more.

I will give the following extracts from the letters which I received subsequently:

> About coming home, Mr. Boyd had shown me that the thing worked, so he said there was no need for me to stay longer. I went to him every day for six weeks, which was longer than was generally necessary. . . . I wondered if I said pretty clearly why I left Clifton. Mr. Boyd did first suggest the following week for me to leave, but I knew he thought he couldn't do any more and that I might as well leave. . . . At

the end of a week we had a long talk, and that night I determined to make more effort. . . . Then about walking, I was not told at all what I was to do, only I knew he thought I should do a little more each day. . . . I got the strength during the laying on of hands, but I did not have generally any particular feelings at the time. . . . The gift of healing is only given to some.

These extracts are best left without comment, but clearly they prove both the great responsibility assumed in making such promiscuous attempts at healing, and the sort of belief instilled into the members. The obvious impropriety of such treatment for myasthenia gravis makes it unnecessary to add that no "healing" was accomplished.

Recently I was able to refer to the methods of this guild at a conference on spiritual healing, held in the parish room of a city church, when Mr. Boyd was fortunately present. After the meeting Mr. Boyd sought to justify his actions by explaining to me that when possible he always consulted medical men and that he gave no directions to this lady to overexert herself! The sister of this lady tells me that the organizing secretary of this guild wrote to her:

> We don't consider any disease, however incurable it seems, to be beyond the reach of spiritual healing.

On asking Mr. Boyd if he endorsed this statement he replied, "Theoretically, yes; practically, no," which is a somewhat important difference when it is a question of dealing with such a disease as myasthenia gravis.

At this meeting Mr. Boyd finished his speech by remarking that if he chose to carry on spiritual healing he saw no reason why he should not do so. We might be more likely to agree if Mr. Boyd either worked quietly in his capacity as a clergyman, under proper conditions in conjunction with medical men, or else dissociated himself from the Church and openly called himself a spiritual healer. But, while holding a responsible position in the Church of England, to have his name spread broadcast as a spiritual healer, by being warden of this guild, is at variance not only with the example set by our Great Teacher but with the best traditions of the noble profession to which he belongs.

I make the following extracts from a printed publication, issued by the guild and written by its warden, to show the chief tenets of this society:

> I do not think that as a guild we are concerned with theories as to precisely how health is preserved or recovered. . . . Nothing surely could be further from our Lord's mind than to "make a splash" by a thaumaturgical display. The Gospel had no need of the assistance of such methods. Besides, there is not the smallest hint that our Lord ever intended these gifts to be temporary. And also, this "gift" of healing was no "miraculous" gift in the sense of being an arbitrary permission to break natural laws. Healing is the operation of law, not the breaking of it. It is merely an instance of what we see every day—a higher law superseding a lower one. And precisely because it is a law it is not temporary, and under the same conditions the same results must follow to-day. . . . We must conclude, then, that the gift of healing once given is still in the Church, and ought to be used by those who are so called by the Holy Spirit. . . . For practical purposes we treat disease (quite rightly) as an evil thing, proceeding rather from Satan than from God, a thing to be by every means opposed and done away with; and our only regret is that we cannot more successfully and completely abolish the evil thing.

Of course, it is no reply in favour of this guild to quote instances of some of its other cases which have been benefited. Naturally, this would occur with certain illnesses, but does not affect the argument against the whole principle and method of procedure adopted by the guild in its conduct of spiritual healing.

I hope I have said enough to make us give a wide berth to this guild or to any similar society that may spring up in the future. I offer this criticism because such societies can only tend to retard that most desirable greater union of religion and medicine in a combined attempt to help the physical and mental health of mankind. If our profession has been backward in the past in securing the great help often obtainable from ministers of religion, yet the latter should not approve of attracting men and women to undergo "spiritual healing" by their colleagues through the medium of any such society as the Guild of Health.

THE CATHOLIC CHURCH AND THE LOURDES CURES.

By the Right Rev. Francis Aidan Gasquet, D.D.,

Abbot President of the English Benedictines.

The articles which have appeared in the British Medical Journal on "Faith Healing" and the "Lourdes Miracles" seem to call for some remarks from a Catholic standpoint. I welcome this remarkable series of papers, written by the most eminent men of the medical profession, for their spirit of fairness, although they are for the most part written from a strictly rationalistic point of view. As I conceive it, the fundamental difference between the Catholic and the non-Catholic attitude towards "miracles" in general, is in regard to the possibility of such interventions on the part of the Supreme Being. We affirm not only the possibility but the fact that God has wrought miracles on earth all throughout its history and even since the days of the apostles. Whether He has done so or not in any given case is for us merely a question of evidence.

A miracle, as we understand it, is something which is above or contrary to the ordinary known laws of Nature, or something brought about by supernatural agency. We believe not only that God has made the world and established the laws which govern it, but that His Almighty power continues to rule and control it by His direct action upon it. No one who believes in the existence of God can reasonably doubt the possibility of miracles. To question it is to question whether the Supreme Being can depart from the laws which He has established as Maker of heaven and earth. Jean Jacques Rousseau, that typical unbeliever, long ago declared that such a question "would be impious if it were not absurd," and added that "no man ever denied that God *could* work miracles." Renan, too, formulated the same idea when he said that the verse of the Psalmist, *Numquid poterit Deus parare mensam in deserto*, was a fallacy of interrogation, since it was not a question of God's power to feed His people in the desert, but of His *will* to do so.

Miracles, then, to the Catholics are historical facts, and they depend, as all other historical facts, upon the evidence. In his *Apologia* Cardinal Newman points out that Catholics hold that what God has done once He can and indeed is *likely* to do again. On the other hand, those who hold that the age of miracles is past argue that what the Supreme Being had indeed once done He is *not* likely to do again. According, therefore, to his principles, the occurrence of supernatural facts—miracles—does not startle the Catholic. They may or may not have taken place; he may have no distinct evidence; he may suspend his judgement, but he will say, "It is very possible." He will never say, "I cannot believe it."

So much it is necessary to state as to the attitude of mind in which a Catholic approaches the examination of some so-called miraculous event. And, although the fundamental belief that God can and sometimes does work in a miraculous way may dispose him to accept the fact as being supernatural, his actual acceptance is and should be strictly scientific and based upon the evidence. He has to satisfy himself on the three points: (1) Is it antecedently probable? (2) Is it in its nature certainly miraculous? (3) Has it sufficient evidence?

It is difficult to see what objection can be reasonably raised against the attitude of the Catholic Church towards the miraculous. It is entirely judicious, and does not accept mere credulity. In the process of canonization the official rules of evidence leave nothing to be desired, in the opinion of non-Catholic lawyers who have examined them. The supernatural character of facts alleged as miracles is tested by every possible means; the evidence is sifted with minute care, and facts reputed to be miraculous are rejected which do not fully stand the required tests. The principles adopted by the Congregation of Rites in this examination are those laid down by Pope Benedict XIV, and are worth setting forth in some detail.

Four proved miracles are required for Beatification and two more for Canonization. These must be attested by *eye* and not by *ear* witnesses.

For an alleged cure to be received as miraculous, it is requisite (1) that the disease cured must have been of an aggravated nature, difficult or impossible to be cured in

the ordinary way; (2) that the condition of the patient before the cure showed no signs of mending; (3) that no medicine had been used, or that if it had, that it had done no good; (4) that the cure was sudden; (5) that the cure was complete; and (6) that it was permanent. Could the official attitude of the Church towards miracles be more cautious?

Let me take the case of the recovery of a person's sight, which is proposed to the congregation as a miraculous cure. First of all, it has to be proved that the person was born blind, or had become so afterwards under stated circumstances; secondly, the duration of the blindness has to be stated; thirdly, the cure has to be most minutely detailed; fourthly, the written opinions of the best scientific and medical men as to the cause, etc., of the blindness, must be forthcoming; fifthly, it must be shown that it is impossible to refer the cure to known natural causes; sixthly, it is necessary to show that the cure was instantaneous, which is always required in regard to miracles of the first class; seventhly, whenever the physicians and scientific men cannot trace the absolute cause of blindness, no definite judgement is ever given.

Acting strictly on these rules, a great number of alleged miracles are absolutely rejected in the process of examination into the sanctity of some eminent servant of God. For example, in the case of St. Peter Fournier, the miraculous character of several cures supposed to be wrought through his help was denied, because they were not instantaneous and because it was not shown that the cure could not have been effected by natural causes. In the case of St. Stanislaus, the instantaneous stoppage of a haemorrhage, which was adduced as a cure through his intercession, was not allowed to be miraculous, because, according to the laws of the science of medicine, so much blood had been lost by the patient that he ought to have died before the saint was invoked. Out of nine facts adduced as miraculous in the cause of St. Camillus two only were allowed. This may, I think, be taken as sufficient evidence of the stringent and scientific way in which any question of the miraculous is approached by the Catholic Church.

What is true of the attitude of the authorities of the Roman Congregation towards alleged miraculous facts is true in regard to what are known as "Lourdes miracles." The utmost care is taken to examine into each case; to secure the full medical history of the patient; and, as far as possible, to follow the course of events subsequent to the alleged cure. In the majority of cases cured at Lourdes it is admitted that the relief from suffering or the restoration of health is due to the influence of mind over body, or as we prefer to call it, to the religious influences of the place, including of course the result of a belief in the intercession of the Blessed Mother of God to obtain the cure of the sufferer. That such a cure, which could not, or was not able to be obtained otherwise, did in fact take place under such influences, is surely sufficient to claim that it is a grace, a providence, a manifestation wrought by the *ethos* of the place and by the deep religious feelings called forth in the mind by it. To attribute it to the influence of the Blessed Lady of the shrine is at least as reasonable as to speak of cures wrought by the suggestions and influences of Dr. X., or Professor Z, as effected by them.

Generally speaking, cures such as these at Lourdes are granted to faith and prayer, and for this reason, in places where faith and prayer abound, they are more likely to occur than where and when faith and prayer are not. "Further," writes Newman, "as faith and prayer obtain miracles, so still more commonly do they gain from above the ordinary interventions of Providence; and as it is often very difficult to distinguish between a providence and a miracle, and there will be more providences than miracles, hence it will happen that many occurrences will be called miraculous which strictly speaking are not such, and not more than providential mercies, or what are called 'graces' or favours."

It is this which is so well exemplified at Lourdes. The mere "action of mind on body" does not fully account for what we there find. It is a matter of everyday experience that many arrive with the confident expectation of obtaining relief who in the result receive no material benefit; whilst, on the other hand, there are many instances of persons who have been actually cured who had no hope of being so, and who had come simply to satisfy the importunity of friends. To explain this I may perhaps be allowed to adopt the words of my brother, the late Dr. J. R Gasquet, who for some weeks in the year 1894 studied the cures at Lourdes, together with Dr. Boissarie, in the Bureau des Constatations Médicales, where all the cases are examined and the evidence sifted. He says: "To say there is nothing remarkable about them, and that they are simply instances of suggestion carried out on a large scale, is merely to provoke the retort: 'Why, then, do you not treat your own patients with equal success?' . . . I do not believe that this, that is, formal hypnotic suggestion, is the whole account of the matter. I believe that contact with the supernatural, not only at Lourdes, but in every place where men call for the help of their Creator, may produce much greater effects than ordinary suggestion or auto-suggestion can accomplish. Such effects would be produced through the influence of the mind on the body; and no argument could be based on individual cases, each of which might be paralleled among instances admitted natural. But if the environment of patients visiting Lourdes be borne in mind, it will appear very improbable that the kind and degree of suggestion existing there should produce so many complete and permanent cures, even of purely nervous ailments. Nor will this seem antecedently unlikely to theists, who will be prepared to admit that prayer has a superhuman efficacy to change and renew the moral and spiritual nature of man. Those who grant so much will hardly think it unreasonable to believe that such an action may sometimes overflow into the body, which they know to be so intimately connected with the mind."[1]

But besides the cures, which to a greater or less extent may be considered as brought about by the action of the mind on the body, there are a great number of cases which cannot be explained in this way, at least in the present state of medical and physical science. In all his experience at Salpètrière, Professor Charcot, when he looked for cures to parallel those recorded at Lourdes, had to confess that he could find none in his vast clinic. Instances of such cases may be found in all the books dealing with Lourdes from the point of view of the cures. Dr. Boissarie, whose skill and honesty cannot be doubted, has given a large mass of medical testimony which may be tested by any one interested in these matters. The case of one Gabriel Gargam, set forth in a volume entitled, *Lourdes: a History of its Apparitions and Cures*, by Georges Bertrin (Kegan Paul, 1908), is one that can be easily verified with very little trouble. Briefly the case is as follows: On December 17th, 1899, Gargam was seriously injured in a railway accident. The Orleans Railway Company being sued for damages, a medical report of December 19th, 1900, declared that the injury "constituted a permanent infirmity, hardly susceptible of improvement, and more likely to terminate fatally." Later a further complication ensued, and gangrene of the feet declared itself. The suit against the company was still pending, and the doctors employed by the Orleans Railway, having seen Gargam, advised the company to offer him a pension of 3,000 francs. The civil courts on February 20th, 1901, characterized the offer as "ridiculous in view of the lamentable condition of the patient," and condemned the railway company to pay him an annual pension of 6,000 francs for life, and an indemnity of 60,000 francs.

The civil courts thus recognized the fact that Gargam was a hopeless invalid for life. The agent of the company went still further, and, having visited the patient and examined the medical reports, advised the railway authorities to offer a payment of 12,000 francs annually in place of the 60 000 francs indemnity, since "Gargam was certain to die soon."

The company refused to pay anything and appealed to the Bordeaux courts, which, however, not only decided in favour of the injured man, but ordered the arrears of pension from the day of the accident to be paid to him. So far the whole medical history of the case had been examined and re-examined in the most public manner possible. Growing worse daily, Gargam was finally persuaded by his friends to allow himself to be carried to Lourdes, at the time of the national pilgrimage, although for years he had not been a practising Catholic and made no secret of his want of faith. For more than

[1] *Studies: The Cures at Lourdes*, p. 322.

eighteen months he had not left his bed at the hospital; the lower portion of his body was as good as dead; he fainted at the least movement, and could only be fed with difficulty by an oesophageal tube. In what was to all appearances a dying condition. Gargam reached Lourdes, and was carried on a stretcher to the shrine. Many of the spectators publicly protested against his being allowed to remain there, as his death in public, which seemed imminent, would have a bad effect on other invalids. Such was the state of the unfortunate man when, during the blessing of the sick by the Blessed Sacrament, he was instantly cured. Immediately after he was taken to the Medical Office to be examined. "His entrance into the office," says Dr. Boissarie, "was one of the most touching sights we ever beheld. Sixty doctors were present, counting hospital surgeons, professors, foreigners; also many representatives of papers, believers and sceptics." The medical examination made the following day proved that M. Gargam was cured, and that although signs of sores recently healed were visible upon the body, the gangrene of the feet had suddenly disappeared. Strength rapidly returned, and to-day M. Gargam frequently spends hours in helping to carry the sick who come to Lourdes in search of relief from their sufferings and maladies at the shrine where he was made whole.

The cure here briefly set forth, and which at the time was told in the columns of the *Daily Mail* by a Jewish eye-witness, may be paralleled by many other similar cases. The publicity, however, of the previous history of the Gargam case, and the fact that the man himself may generally be seen engaged in the work of helping the sick at Lourdes at the present day, makes this a case that can easily be inquired into by anyone who will take the trouble to search into the truth of the facts. Other recorded cases, indeed appear to me to be, if possible, even more extraordinary and incapable of any satisfactory natural explanation. Such would be the instantaneous union of bones, which had long been broken, and the ends of which had remained separated by a considerable distance. Science would, I believe, require a considerable period of time to effect the union, even if after a long period it would allow the possibility of bringing the ends together at all. Also, I fancy, most people would allow that no mental suggestion, however powerful, would avail to effect a radical cure of this kind in a few instants.

In view of the constant progress of scientific knowledge, it is quite possible that it might be necessary to qualify former judgements on cures of this kind. The phrase "as far as we know at present" is always usefully appended to a judgement on these matters. Many things which to our forefathers would have appeared impossible are now shown to have a natural explanation. It is for this reason that the official attitude of the Church towards the miraculous is one of extreme caution, and it is this spirit which prevails at Lourdes. The cures there are certain, and the fullest investigation is welcomed, for to us Catholics, whatever be the explanation of *how* the cure is effected, the supernatural cause is the spirit of the place and the intercession of the Blessed Mother of God.

FAITH HEALING AND MIRACLES.

By the REV. HERBERT THURSTON, S.J.

"Of the miracles of our Lord," says Sir Clifford Allbutt, in his article entitled "Reflections on Faith Healing," "we shall agree that this is not the place to speak." Sir Clifford's motive in counselling this reticence is no doubt one which all will regard with respect, but it is difficult for an advocate of the reality of modern miracles to treat such phenomena altogether apart from what must be held to be their warrant and their prototype in the New Testament. It has been well said by Sir J. R. Seeley in *Ecce Homo*:

> Miracles play so important a part in Christ's scheme, that any theory which would represent them as due entirely to the imagination of His followers or of a later age destroys the credibility of the documents not partially but wholly, and leaves Christ a personage as mythical as Hercules.[1]

[1] *Ecce Homo*, first edition, p. 43, and see this whole chapter on "Christ's Credentials."

There is no documentary theory of the Gospels which can eliminate the element of miracle from the life of our Lord. No modern critic has professed to discover an Ur-Markus or anything of the sort in which we find a portrait of Christ not yet embellished with signs and wonders. Even Professor Adolf Harnack, whom none can accuse of ultra-conservatism, not long since astonished the agnostic world by announcing his belief that the third Gospel was written by Luke the physician, substantially as we have it now, about the year 80, while it is undisputed that several of St. Paul's epistles with their fully developed belief in the Resurrection are considerably older than this. thIardly seems too much to say that Christianity as a moral system is founded on a belief in Christ's miracles. Yet many even of those who take only a philosophical interest in such discussions will shrink from the further conclusion that the moral reformation which Christianity has introduced and the heroism it has engendered were built upon nothing better than a lie.

Strong, then, as our reluctance may be to admit of any departure from the uniformity of Nature's laws, there are not less motives on the other side to lead the thinker who looks back reverently upon the history of the world, and whose own past mistakes have taught him that overconfidence is one of the greatest enemies of all true knowledge, to pause before he passes summary judgement upon the character of alleged miracles of healing. Writing for such an audience as are likely to come across this intrusion into the pages of a professional journal of one who is medically speaking a layman, I am hardly disposed to ask for more than delay. I plead for arrest of judgement. I ask that the medical critic should not, after a perusal of Zola's *Lourdes* on the one hand, or of Huysmans's volume[2] on the other, believe that he has before him the materials for a final conclusion. The wiser philosopher, I submit, will distrust his power of arriving at a safe decision until he is in full possession of the evidence. One recognizes the immense pressure of work and the vast competition of interests in modern conditions of life; but, if I may say it, with all respect for the many eminent authorities who have written of faith healing in the JOURNAL of June 18th, they do not seem to have acquired their information about Lourdes from the best sources. The work of M. Georges Bertrin, for example, *Histoire critique des événements de Lourdes*, which provides much the most satisfactory general account, has not, I think, been mentioned by any one.[3] I might add that the majority of the volumes published about Lourdes, not even excepting those of Dr. Boissarie, the President of the Bureau des Constatations, have been written rather for the edification of Catholics, who already believe, than as a presentment of the case for the scientific and the sceptical This constitutes a special reason for deprecating a too precipitate judgement. The systematic collection of evidence will, no doubt, be very much aided by the canonical investigations which the bishops have recently been directed to make, but so far the scientific discussion of the facts, hampered as it is by immense difficulties in the matter of certificates, etc., has only been possible in a few of the more striking cures.

I plead, then, that the question of modern miracles be approached in a practical spirit, and I cannot but believe that many members of the medical profession who really retain an open mind must already be profoundly impressed by the element of mystery with which they are so often brought into contact in their observations of disease and its cure. Has any one yet offered a satisfactory explanation of the latter-day prevalence of appendicitis? Are the successes of so many unorthodox systems of treatment, often, it would seem, fundamentally at variance with the teachings of authorized medicine—homoeopathy, for example, or hydropathy, and more particularly the latest comer, osteopathy[4]—quite adequately accounted for? Is any trustworthy analysis available of the causes which underlie the astonishing

[2] *Les foules de Lourdes*, a work marked by all the exaggerations of the artistic temperament.

[3] The excellent English translation of this work by Mrs. Philip Gibbs unfortunately suffers from the omission of valuable notes contained in the original.

[4] Few would credit the developments of osteopathy in America. It appears that the total number of graduates in osteopathic colleges in 1907 was 3,946 as compared with 63 in 1897. In most of the States of the Union they seem to be legally recognized, and quite a number of expensive manuals of osteopathic treatment are now published in that country.

results often attained by so simple a remedy as change of air? When one considers the fashions that have prevailed in drugs, health resorts, dietary, or even clothing, or in methods of treatment like bleeding or massage, all in turn believed in, and justified by irrefutable "facts," one is inclined to wonder—I speak as a layman—whether scientific medicine has not hitherto failed to reach something which is perhaps more fundamental than any of the laws which it has undoubtedly discovered. All, at any rate, will agree that the time has not yet come when the accumulation of data can be neglected, and I venture to urge that the surprising phenomena of such places of pilgrimage as Lourdes have not yet received from the medical profession at large such careful study as they require.

And first, before applying myself directly to the question of "miracles," I would invite the reader's attention for a moment to the phenomena of a quite different kind recorded in a recent volume of the *Proceedings of the Society for Psychical Research*.[5] Just a year ago I was present at a meeting of that society in which the report was read of certain séances not long before conducted at Naples with the famous medium, Eusapia Palladino. Probably the report would not have impressed me so much had I not had personal knowledge of the resolutely sceptical attitude towards such manifestations of the reader of the paper, the Hon. Everard Feilding, one of the secretaries of the society. Not many months earlier I had heard him declare in terms of strong conviction that, after years of experience with mediums, he had never failed to come upon fraud, and that the results of his experiments in this matter had so far been entirely negative. Or, to quote the statement printed in the volume of the *Proceedings* referred to, a statement which must have passed under his own eye:

> Whilst preserving an open mind as to the possibility of the existence of some hitherto unascertained force in Nature whereby the manifestations testified to by so many observers of high standing were produced, the discovery of repeated fraud had produced in him (Mr. Feilding) an attitude of complete scepticism as regards the probability of his ever finding any example of the exercise of such a force.

The investigation had been conducted by three gentlemen—Messrs. Baggalay, Carrington, and Feilding—all of them of large experience in dealing with the fraudulent practices of mediums, all of them hitherto entirely sceptical as to the existence of any phenomena incapable of being explained by trickery, and two of the three adepts in legerdemain.[6] The light during the séances was for the most part sufficiently good to follow any pronounced movement of the medium's head or arms. The most rigorous control of a kind taught by long experience was exercised over the position of Eusapia's hands and feet. The séances were held in Mr. Feilding's own room at the hotel, and the possibility of any intervention of accomplices or of the aid of any prepared mechanical apparatus was put out of the question. Nevertheless, in spite of these and other precautions all the usual manifestations occurred. Tables were levitated, and stools and curtains moved responsive to the medium's gesture. Spectral hands appeared which touched, clasped, and were distinctly felt on many different occasions by each of the three investigators. Noises and lights of all kinds made themselves perceptible; bells, and other such objects which had been left upon the guéridon behind the curtain, sounded of themselves or floated in the air. Nothing could be more puerile than such displays, and nothing more unconvincing than Eusapia's attribution of these phenomena to the spirit of "John King" who was supposed to enter into her in her state of trance. But still if we are to believe human testimony at all, I venture to say that the reader who will take the trouble to work through the extraordinarily minute and candid report which has been published by the investigators, will find himself compelled against his own will to believe that these things actually occurred. The conclusions unanimously arrived at by the investigators referred to will best be given in their own words:

> The question, therefore, seems reduced to a choice between two improbabilities. Either we were constantly thrown into a state of hallucination by means of a mysterious, suggestive influence exercised by Eusapia, for the existence of which, either in her or anybody else, there is otherwise, in our view, no evidence whatever; or, on the other hand, the ordinarily recognized laws of dynamics have to be enlarged by the assumption that there does actually exist some hitherto unascertained force liberated in her presence, and for the existence of which, both in her and certain other persons, the body of evidence is, we think, not inconsiderable.
>
> With great intellectual reluctance, though without much personal doubt as to its justice, we adopt the latter alternative. Making, then, a reservation for the possibility of some kind of hallucinatory influence of such a kind as fundamentally to invalidate the trustworthiness of all evidence, and for the existence of which we believe there is neither warrant nor parallel, we believe that we have witnessed in the presence of Eusapia Palladino the action of some telekinetic force, the nature and origin of which we cannot attempt to specify, through which without the introduction of either accomplices,[7] apparatus, or mere manual dexterity, she is able to produce movements of, and percussive and other sounds in, objects at a distance from her and unconnected with her in any apparent physical manner, and also to produce matter, or the appearance of matter, without any determinable source of supply.[8]

The report of these representatives of our English society might be received with hesitation, in spite of its most impressively thorough character, were it not well known to all interested in such subjects that many of the most eminent psychologists and men of science upon the Continent have taken part in other séances with the same medium, and have in almost every case been convinced of the genuineness of the phenomena produced. Professor Cesare Lombroso, whose fame as a specialist in criminal anthropology is world-wide, was one of the first (that is, in 1891) to make public profession of his belief in Eusapia. Professor Tamburini, who took part in the same set of experiments, made some qualifications, as also at a later date did Professor Richet; but even they admitted, if I may use Professor Richet's words, that, "absurd and unsatisfactory though they were, it seems to me very difficult to attribute the phenomena produced to deception conscious or unconscious or to a series of deceptions." Monsieur and Madame Curie, the discoverers of radium, took the greatest interest in the experiments with Eusapia, and were very much impressed by her. At the Milan séances a committee consisting largely of professors and physicists, and including such men as Professor Schiaparelli, the director of the Milan Observatory, declared by their official report, in reference more especially to the appearance of a hand:

> It is impossible to count the number of times that that hand appeared and was touched by one of us; suffice it to say that doubt was no longer possible; it was, indeed, a living human hand which we saw and touched, while at the same time the bust and arms of the medium remained visible, and her hands were held by those on either side of her.[9]

Of English investigators, Sir Oliver Lodge, Sir William Crookes, Mr. Frederic Myers, and, with some qualifications, Professor Henry Sidgwick and Mrs. Sidgwick, have all declared that there seemed no way of accounting for the phenomena except by supranormal means. No doubt, in certain séances at Cambridge, Eusapia was plainly detected in frandulent practices; but this, while thoroughly well known, and while rendering the watchfulness of those who observe her more minute, has not impaired the conviction of those who have had adequate opportunities of testing all the phenomena that the majority of them are genuine. M. C. Flammarion, the astronomer, in his *Forces Naturelles Inconnues*, 1907, and Dr. Enrico Morselli, the Professor of Pathology in the University of Genoa, in his two volumes entitled *Psicologia e Spiritismo*, 1907, have both made Eusapia the centre of all their investigations, and have pronounced unhesitatingly in favour of her possession of some faculty hitherto unknown and unexplained. It is not an exaggeration to say that

> The opinion of practically all the scientific men [and they include many of the most eminent names in Europe in the domain of psychology] and others who have given any attention by personal experiment to the subject, is that after making every allowance for such fraud as she may occasionally permit herself to indulge in, Eusapia is nevertheless possessed of faculties of some supranormal kind.[10]

Eusapia Palladino is not, of course, the only medium with regard to whom similar evidence exists. If con-

[5] Vol xxiii, 1909.

[6] Mr. Carrington, who is an American, is the author of a book, *The Physical Phenomena of Spiritualism* (London: Werner Laurie, 1908). This is nothing but a detailed exposure of the tricks employed by fraudulent mediums.

[7] Normally the only persons present were Eusapia, the three investigators, and a shorthand writer chosen by themselves.

[8] Loc. cit., p. 344.

[9] *Proceedings of Soc. for Psych. Research*, vol. xxiii, p. 313.

[10] *Proceedings*, loc. cit., p. 517.

current human testimony can establish any fact at all, there seems no reasonable ground for refusing to believe that D. D. Home on December 16th, 1868, floated out of one window and in at another, thirty feet above the pavement of a London street. The fact was vouched for in the most formal way by the three witnesses who were in the room—Lord Lindsay, afterwards Earl of Crawford, Lord Adare, afterwards Earl of Dunraven, and Captain Charles Wynne—and it is confirmed by the indirect testimony of a number of different persons, amongst the rest Sir William Crookes, who have declared that on other occasions they had seen Home raised several feet from the ground.[11]

Now, it will not, I trust, be supposed that I am putting the miracles at Lourdes upon the same plane as the levitations and materializations of Home and Eusapia Palladino, but I feel very strongly that if eminent men of science who own no allegiance to the Catholic Church, or any church, can accept the latter in spite of their utterly purposeless character, there is no reason why an instantaneous cure—which, after all, is far less of a prodigy than a suspension of the law of gravitation—should be rejected *a priori*. There are, in fact, two reasons why these spiritualistic marvels seem worth appealing to. In the first place, it must be plain that no Catholic ecclesiastic can have any interest in advertising these mediums or their works. So far as the Church of Rome maintains any official attitude towards such manifestations it would treat these apparitions of hands, jangling of instruments, or movements of tables as attributable only to preternatural agencies which, in default of any assignable explanation or reasonable purpose, must be regarded as diabolic. The gospels attribute material and physical effects to the devil, not only in the temptations of our Lord, but also in the maltreatment of the demoniac and the incident of the Gadarean swine. Moreover, the legendary account of Simon Magus (cf. Acts viii, 5, seq.), which is as old as the time of Justin Martyr (c. 150), describes Simon as working miracles by the power of Satan and as raising himself in the air. In the light of the Gospel teaching, it is curious that the spiritualistic mediums are commonly regarded as being possessed by their "control"[12]—Eusapia, for example, when she becomes the vehicle of the communications of "John King," speaks in a gruff male voice.

But, secondly, there are few, if any, of the believers in Eusapia who are not keenly alive to the utterly foolish character of her manifestations and to the suspicious features in her performance due to the comparative darkness, the occasional use of fraud and the passivity enjoined on all present.[13] It is fair to point out that in the miracles of Lourdes no conditions of this kind prevail. Such limitations as seem to exist—for example, no instance is known of the restoration of an amputated limb—seem also to have been generally respected in the miracles of our Saviour Himself.

Turning now to the phenomena at Lourdes, which have been referred to by so many who took part in the discussion on faith healing, I should have liked, if this paper did not threaten to extend to an extravagant length, to offer some criticism upon the historical sketch which forms a notable part of the article of Sir Henry Morris. Perhaps an opportunity may offer of dealing with the subject more at length elsewhere. Let me, then, only say in passing that Bernadette Soubirous's history, both before and after the apparitions, renders it extremely improbable that she should have been selected as a tool to "enlighten the ignorance of the peasantry" regarding the doctrine of the Immaculate Conception. The whole strange story of the apparitions, beginning and ending, in that remote village, within the space of a few weeks, has been minutely recorded. It certainly does great credit to the astuteness of the clergy if they foresaw that so small a spark should kindle so mighty a blaze. Moreover, contemporary documents show that they were so clever in concealing their purpose that they were praised by the sub-prefect for their abstention from any display of sympathy. Abundant extracts from the correspondence between the prefect and his deputies may be read in the early part of the volume of Father L. J. M. Cros, *Notre Dame de Lourdes*, Paris, Retaux, 1901. To this book I may refer those who care to study the history of the apparitions further.

With regard, however, to the miracles themselves, which began to occur in the year of the apparitions, 1858, and have gone on ever since, it is important to observe how different in many respects is the Catholic point of view from that of the faith healer and especially of the Christian Scientist. By the Catholic such cures are never regarded as the natural and ordinary means appointed for the recovery of health. Miracles are always looked upon as a signal boon to which no one can plead any claim of right. Being thus only the manifestation of God's mercy, it is no subject of surprise that a cure should only be accorded partially. No doubt the Paris professors mentioned by Sir Henry Morris were right in saying in the case of Madame Rouchel that "it would have given the Holy Virgin no more trouble to completely cure the lupus than to fill up the perforations in the cheek and palate"; but Christians believe for all that that God bestows His gifts in accordance with His own wise and secret purposes. It would "give Him no more trouble" if He sent all men into the world endowed with perfect health and clear intelligence, but we know that He does not do so. A miracle being, then, something quite extraordinary, and never to be claimed of right, a man is bound to take all reasonable precautions and to use the natural means which medical science may put within his reach to preserve his own health and that of those dependent on him. Again, a miracle in the Catholic idea is something done for the glory of God, and to confirm the faith of the vacillating. Hence, the careful verification of miraculous cures is a praiseworthy act, and the Church invites the fullest publicity, and willingly invokes the aid of science that it may be clearly understood how far the processes of Nature can go, and what lies beyond their province. This attitude towards the verification of miracles is in marked contrast to that of Christian Science; and from this it follows, as I would submit, that when in the case of the Lourdes miracles the character of instantaneousness is claimed for many of them, this claim is in general a reliable one, but that, from the lack of the habit of any such inquiry and verification, the similar statements made in connexion with the Zionist healings of Dr. Dowie or those of Christian Science commonly amount to no more than that the patient at a given moment ceased to feel pain.

But by far the most important of the differences between the miracles of Lourdes and those of Dr. Dowie or Mrs. Eddy is, I would urge, to be sought in the fact that whereas the cures of the latter pair can be shown (as, for example, in the book of Mr. Stephen Paget, *The Faith and Works of Christian Science*) to be limited to functional disorders, the cures at the piscina do include many cases of the instantaneous healing of organic disease. Of course, there are a considerable proportion of hysterical patients who go to Lourdes, and these may or may not benefit by the emotional excitement inevitably generated, at least from time to time, in such an atmosphere. But when we see it stated—as it was by so many of those who wrote in these pages a few weeks ago—that suggestion alone supplies the explanation of the marvels witnessed in the Pyrenees, I feel confident that the distinguished authorities who so expressed themselves would not have spoken thus if they had had fuller reports before them and had had time to study the question more carefully. Two excellent publications may be referred to as dealing specially with this subject. The one is a medical study of Dr. Van der Elst of Paris (*Contribution apportée à la notion d'hystérie par l'étude de l'hypnose*, Paris, Vigot Frères, 1908).[14] In this, though the subject is only touched indirectly, many references are made to the Lourdes miracles. For example, he says, while admitting the existence of hysterical cases, "but it has not been less easy for us to satisfy ourselves of the existence of cures which have nothing to do with functional troubles, but have put an end to ascertained organic mischief. Among the number are such as could not have taken place without destruction or reconstruction of matter. Whatever interpretation one may put upon them or whatever explanation may be given, there can in

[11] See Mr. Andrew Lang, *Cock Lane and Common Sense*, or the Dialectical Society's Report, and the Life of Home by his widow.

[12] "Control" is used in this sense to denote the spirit who speaks through the medium, and to whom all that is done in this state is attributable.

[13] All grabbing at hands or floating objects is strictly prohibited at the seances.

[14] See p. 147 and *passim*.

any case be no question of suggestion." The other work, which may be purchased for a few centimes in the series "Science et Religion," is a little book of a more popular character, but it is written by a medical man, Dr. H. Lavrand, Professeur à la Faculté libre de Médecine de Lille, who has given special study to the subject. Its name, *La suggestion et les guérisons de Lourdes* (Paris, Bloud, 1907), sufficiently indicates the nature of its contents.

I venture to urge, then, that the cases of miracles mentioned in the JOURNAL—those, for example, of de Rudder (p. 1470),[15] or of Mme. Rouchel (p. 1459), and others—would really prove a great deal more than previous contributors seem inclined to concede, if the evidence were more fairly considered, and if weight were allowed to the cumulative effect of a very large number of such cases. The difficulty always urged against the instantaneousness of the cure is the fact that no medical certificate or testimony is forthcoming immediately before the miracle. But surely there are matters—such, for example, as the existence of a hole in Mm. Rouchel's cheek, the presence of a still running purulent discharge, the fact that de Rudder's foot hung loose, and could be turned right round so that the heel was in front and the toes behind—which any fairly intelligent observer can be trusted to bear witness to.

Still such cases are numerous, and I will venture to recall the details of one of more recent date which appears in Dr. Boissarie's last book, and was previously narrated in *The Tablet* (April 18th, 1908). The following is Dr. Boissarie's report of the case:

Marie Borel, of Mende, 27 years of age, had when 19 an attack of typhoid fever from which she recovered perfectly. Two years later at 21 she began to suffer from appendicitis and remained subject to recurrences of that disease in spite of medical treatment. At the age of 23 an operation was considered necessary, and the appendix was removed at the Montpellier Hospital. The patient left the hospital twenty-five days later apparently quite cured. In a few months, however, an abscess formed where the incision had cicatrized and soon opened spontaneously. The patient began to suffer from abdominal pains and was obliged to enter the hospital at Mende, where an operation was performed by Dr. Bardol with the object of closing the fistula resulting from the abscess. But in spite of this treatment the fistula persisted. The patient then began to complain of pain in the back, and was placed for some time in Bonet's apparatus to give rest to the spine. When the apparatus was removed, the girl was unable to leave her bed, and for thirty months was confined to it. A few months after the appearance of the first abscess a second formed above it, which opened spontaneously. The patient objected to any surgical interference. Some months later a third abscess showed itself on a level with the iliac crest in the axillary line. The patient was now 25 years old, and had three suppurating fistulae, which soon began to give passage to faecal matter. Two other fistulae appeared subsequently in the lumbar region discharging pus. The vertebral column became more and more ankylosed, and the patient was scarcely able to move in her bed. The three fistulae, which discharged faecal matter, began to intercommunicate. A sixth fistula, also discharging faecal matter, was formed later in the neighbourhood of these three. For five months preceding the month of August, 1907, the patient had not had a motion through the anus, all the contents of the intestine escaping through the four fistulae in the iliac region. It was a case of artificial anus with several openings. The wounds had to be dressed twice a day, as a considerable amount of pus escaped from the two posterior fistulae. For thirty months before this date the patient could not empty her bladder without the use of a catheter, and from the beginning of the year 1907 the urine had become purulent. With a stiff vertical column ankylosed in the lumbar region, with the abdominal wall perforated by four apertures opening into the intestine and allowing its contents to escape through them entirely, the patient was brought to Lourdes in a condition beyond the aid of surgical skill. Her wounds were dressed twice a day on the 19th and 20th of August, 1907. On the morning of the 21st the dressings were removed, and we are told by the nursing ladies that they contained faecal matter anteriorly and pus posteriorly. She was then carried to the piscina. On the afternoon of the 21st the dressings were removed before the patient was immersed. To the great surprise of every one, the lint and cotton were quite dry, there was no trace of faecal matter, and posteriorly only a few small yellowish stains. The same morning she had a motion per anum, which had not occurred for the last five months. Still the cure was not complete. The patient had still to be carried on a stretcher. On the 22nd of August after the immersion she felt better and was able to rise unsupported, which she had not done for thirty months. She could also pass urine without the catheter. She then came to the Bureau des Constatations, where she was examined under the direction of Dr. Desplats, of Lille. The dressings, which had not been changed from the previous day, August 21st, in the morning, were perfectly dry; the fistulae were closed and healed. The vertebral column could easily be moved in every direction; the patient leaned forward, backward, sideways. She showed us the certificate of Dr. Bardol [this, it seems, was only dated "August"] who says that she is suffering from purulent and faecal fistulae of the abdominal wall, connected with chronic inflammation of the caecum and appendix, and also from ankylosis of the vertebral column, in consequence of which she is unable either to rise or walk. The patient has been well ever since, the bowels and bladder have quite recovered their natural function. The urine is clear.[16]

From a long account of her own condition given by the patient in answer to questions, we learn that the wounds were terribly offensive even after her arrival in Lourdes. Still, she was seen by quite a number of people, who pitied her deplorable state. Unless we suppose a most extraordinary mania for romancing—unlikely in a girl who was so soon, by her own choice, to enter a convent, and who made such a good impression on all observers—it is impossible to doubt that the wounds still discharged faecal matter on the morning of the day before her cure, and this fact was confirmed by the evidence of the ladies who dressed them. On October 15th, 1907, Dr Bardol, who had been in charge of the case before Marie Borel went to Lourdes, wrote in the following terms:

Marie Borel was for a long time under my care at the hospital of Mende. She suffered, as you say, from fistulae with faecal discharge in the region of the right iliac fossa as a result of lesions in the caecum and the appendix, for which she had undergone a first operation at the Montpellier Hospital under Professor Forgues. Later on I myself made a second incision at the hospital of Mende, but I must frankly confess that my explorations in the iliac fossa did not extend very far, and that my finger was soon arrested by a matted growth of false membranes which opposed an impassable barrier to any direct examination.

Since her pilgrimage to Lourdes, Marie Borel has enjoyed wonderfully good health. . . .

It is indisputable that she was cured at Lourdes contrary to all expectation. My friend, Dr. H., who comes from the Paris hospitals, and is a pupil of Charcot, when consulted by me about the case, abstained from offering any medical interpretation. I can only do as he has done, since I belong to the same school which bows before the evidence of facts even when the explanation of the facts is lacking.

(Signed) Dr. BARDOL.

With regard to the same remarkable cure, the most recent evidence I have to produce is from an article which appeared in the *Etudes* for December 5th, 1909. The writer is Dr. Henri Guinier, "ancien agrégé libre de la Faculté de Montpellier," who describes himself as having been well acquainted with Lourdes for forty years, as he commonly took his holidays in that neighbourhood, but who goes on to add that he was also "*sceptique pendant plus de trente ans par éducation professionnelle, à la manière des médecins trop occupés, indifférents ou blasés, qui se bornent à faire de superficielles lectures de comptes rendus incomplets*," etc. After briefly recalling the facts of Marie Borel's six abdominal fistulae, he states that he, with a number of other members of his profession, had had the opportunity of examining Marie Borel on August 22nd, 1907, an hour or two after her cure, and again a year afterwards, when she presented herself at the Bureau des Constatations on August 20th, 1908. With regard to August 22nd, 1907, he says:[17]

We saw six abdominal depressions between two and three centimetres in diameter, irregular, superficial, already slightly coated (*tapissés*) with a reddish cicatricial tissue in full process of development, which was perfectly dry, and which occupied the site of the fistulae so recently closed. The 20th of August, 1908, a year afterwards, every trace of cicatricial tissue had disappeared; upon the healthy skin of the abdomen, now supple and responsive to the touch, there were six patches of redness which marked the position of the former fistulae, but that was all. The abdomen was otherwise absolutely normal.

[15] May I say in passing that a striking example of the inadequate *connaissance de cause* often shown in medical estimates of alleged miraculous occurrences is offered in Mr. Butlin's note on the de Rudder case (BRITISH MEDICAL JOURNAL, p. 1470)? That Mr. Butlin writes in absolute good faith cannot be for a moment in doubt. But when he states that there is no evidence to show whether the bones united in the first months after the accident, this is certainly not a fact admitted by the other side. Dr Affenaer attended de Rudder immediately he was summoned. He reduced the fracture and bandaged the limb. But the patient suffered so much pain that the bandage had to be removed. Thereupon, we are told, the doctor found ulceration and a gangrenous wound. "Les fragments osseux, baignant dans le pus, dépouillés de leur périoste, n'avaient subi aucun travail de réparation. Malgré des soins assidus pendant de longs mois, le Docteur Affenaer ne put obtenir la consolidation."—Dr. A. Deschamps, *Un miracle contemporain—Pierre de Rudder*, Paris, Bloud, 1903, p. 6.

[16] *The Tablet*, April 18th, 1908, p. 623.

[17] *Etudes*, December 5th, 1909, p. 595.

If suggestion can effect such marvels as these, there is no disease, seemingly, with which it cannot cope. But even then we should be puzzled to explain the cure of children under 3 or 4 years of age, of which cases it would be possible to make a not inconsiderable list. One of the most remarkable of these is the case of the little child Aumaître, the daughter, not yet 2 years old, of a doctor at Nantes, who was instantaneously cured of club-foot at Lourdes when surgical operations had failed to effect any improvement. An account may be found in an article by M. Mangin in the *Annales des Sciences Psychiques* for 1907 (pp. 858–859).

Another interesting cure is that of a "*maladie de Pott*" which has been studied by M. Georges Bertrin in a separate brochure entitled *Un miracle d'aujourd'hui* (Paris, Lecoffre, 1908) but I prefer to pass over this and one or two others in order to note an English case which was made known in the *Journal de la Grotte* two days after the faith healing number of the British Medical Journal appeared, and which has since been published in English Catholic newspapers. For a copy of this statement I am indebted to the kindness of Mr. Boothman, the father of the patient, and himself a convert clergyman.

I, the undersigned, Edward Duncan Boothman, M.A.Cantab., formerly rector of Shelton, near Stoke-on-Trent, now residing at Compton Lodge, near Dover, make the following declaration before Drs. Boissarie and Cox, in the Bureau des Constatations at Lourdes:

My son, Joseph Duncan Boothman, aged 16 years, here present, miraculously healed, and desiring to be examined by medical experts, has suffered for ten years past from otorrhoea, involving the almost complete destruction of the drum of the left ear, together with chronic suppuration, with intense pain and absolute deafness, even by conductivity with the bones of the head. He has been treated by several specialists in Brussels, Dover, and London.

On May 13th Dr. Lake, a distinguished aural surgeon of 60, Harley Street, London, W., declared that the boy's life was in imminent danger, and gave the following certificate:

"60, Harley Street, Cavendish Square, W.

"I have examined Master D. Boothman and find a destruction, almost complete, of the drum of the left ear, with chronic suppuration, and I consider an operation advisable, and ultimately necessary.

"Richard Lake.

"12th May, 1910."

He added, after examination by speculum, that the inflammation had taken an acute form and might at any moment "flare up" and reach the brain, causing death.

At this date my son displayed the following symptoms: Tenderness of the mastoid, and at the base of the ear; purulent offensive suppuration; contraction of the muscles attached to the mastoid, causing the head to lean on the left shoulder; constant acute pain in the ear; loss of sleep; general emaciation of the body. The diseased ear was quite insensitive to the vibration of a tuning fork applied to the bones of the head; no sound could be heard by the left ear.

In giving the above certificate, Dr. Lake stated that the operation which he deemed "ultimately necessary" had its uncertainties, and that when successfully achieved the boy would be absolutely deaf for life on the left side.

Mr. Boothman then answered that he wished to take the case to a higher power than that of human science, and that he was beginning a novena to Our Lady of Lourdes.

Dr. Lake replied that evidently upon surgical questions I saw things from a totally distinct point of view from his own; that he fully respected my religious convictions, but he begged me earnestly to lose no time in putting my views to the test of experience, as the danger to my son's life was becoming daily, if not hourly, more threatening.

I thanked the courteous and eminent surgeon and withdrew.

The novena, or nine days' prayer, was then duly begun.

On Sunday, May 22nd, the feast of the Most Holy Trinity, my son was serving mass in the chapel of the Convent of the Augustinian Ladies at Kearsney Manor, near Dover. At the moment of the Elevation of the Sacred Host my son felt a sharp pain in the left ear, and when mass was over, told me of it. He assured me also that the ear was well, the suppuration ceased, and that he could hear better than he had done for years past.

That this was the case soon became evident to us all, and we noted a marked change in the boy's features. His sister Mary, who is 15 years old, when she saw him, declared that at first she did not recognize him owing to the disappearance of the lines of suffering which she had been so long accustomed to observe.

On Monday, May 23rd, Dr. Howden, of Dover, rang me up on the telephone to tell me that he had received a letter from Dr. Lake, asking why the operation he had advised was delayed, warning him that the slightest delay was highly risky. I was able to answer immediately in the telephone: "My son is healed; he hears well, I will bring him to you to-morrow (May 24th) so that you may examine him." Accordingly, on May 24th, Dr. Howden examined the boy, and pronounced his hearing by conductivity to be normal, and that he could hear the ticking of a watch at the distance of three inches.

On June 2nd the boy was examined by Dr. Murphy, of Dover, who gave his certificate in these terms:

"24, Waterloo Crescent, Dover.

"Master Boothman was under my care until the 4th of May last, suffering from chronic otorrhoea, with almost complete destruction of left drum. I have to-day examined him and find the ear dry and free from suppuration and the hearing immensely improved.

"June 2nd, 1910. "C. F. Murphy, F.R.C.S."

As he handed me the certificate, he said: "The case is indeed wonderful, and I congratulate you, but you must understand that a recrudescence is possible." I answered, "Doubtless, but it would be equally possible were the healing the result of human science."

Saturday, June 4th, the boy, with his mother and myself, were able to begin our promised pilgrimage. We reached Lourdes on June 7th, and to day, June 8th, we present ourselves in the Bureau des Constatations.

(Signed) E. Duncan Boothman, M.A.Cantab.

I am unable properly to appreciate the medical aspects of this case, but the cure has so far persisted, and I give it as the most recent example known to me of those wonders of healing at Lourdes which certainly seem to call for more attention than they have hitherto received.

LONDON WATER.

Report on Bacteriological and Chemical Examinations.

The fourth report of Dr. A. C. Houston, Director of Water Examination, Metropolitan Water Board, on the results of the chemical and bacteriological examination of the London waters for the twelve months ended March 31st, 1910, which has recently been issued, is a monument of conscientious labour and a record of excellent scientific work. The results are carefully tabulated, and the document is full of interesting details. The greater part of the report is of a technical character, and only a short summary can be given here.

Bacteriological Results.

The results of the bacteriological examination are stated as follows:

Raw Water.—The averages of microbes per cubic centimetre for the twelve months were as follows: Raw Thames water—5,268 per c.cm.; highest 19,794 (December), lowest 915 (May). Raw Lee water—37.071 per c.cm.; highest 166,131 (February), lowest 1,679 (September). Raw New River water—2,801 per c.cm.; highest 14,989 (December), lowest 515 (May).

It is pointed out that these results have an important bearing on the abstraction figures. In a gravitation scheme, with a superabundant source of supply and huge storage reservoirs, the amount abstracted for storage purposes should be inversely proportional to the current impurity of the water. In the circumstances pertaining to the London supply this is possible only in a partial sense, but attention is again drawn to the fact that the amount of river water abstracted during the months when the river contains an excessive number of bacteria is so large as to emphasize the desirability of passing it through storage reservoirs antecedent to its filtration.

Filtered Waters (including Kent and Lee Valley Unfiltered Water).—The following statement indicates that the exclusive (that is to say, exclusive of samples containing 100 or more microbes per c.cm.) figures for the filtered waters were small, and the percentage reduction effected by the processes of subsidence and filtration remarkably good:

	Thames.	Lee.	New River.
Raw water (microbes per c.cm.)...	5,268	37,071	2,801
Filtered water (microbes per c.cm.)	14.3	21.9	10.1
Percentage reduction	99.7	99 9	99.6

Too much stress, however, Dr. Houston says, must not be laid on percentage reduction of microbes. The worse

initially the raw water, the easier it is to obtain a final filtrate yielding satisfactory results on the basis of percentage purification.

The order of merit, based on the exclusive figures, is as follows, the average number of microbes per c.cm. being respectively:

Kent, 7.2; New River, 10.0; Grand Junction, 11.8; Lambeth, 11.9; West Middlesex, 14.1; Southwark and Vauxhall, 14.6; East London (Thames), 19.0; Kempton Park, 19.6; East London (Lee), 21.9.

Tests for Special Organisms.

The following are the results of tests for special organisms:

B. enteritidis sporogenes Test.

Raw Waters.—35.8, 37.6, and 9.4 per cent. of the samples of Thames, Lee, and New River water respectively yielded positive results with 10 c.cm. of water.

Typical B. coli Test.

Raw Water.—The results, judged by this test, were unsatisfactory, having regard to the fact that the Rivers Thames and Lee are known to be seriously polluted with sewage, and that there is every reason to suppose that the majority of the *B. coli* found in the raw waters are of human excremental origin. The New River contained *B. coli* in 1 c.cm (or less) in 49 per cent., the River Thames in 92.6 per cent., and the River Lee in 93.1 per cent. of the samples. Taking a one-figure average result, the average number of *B. coli* per c.cm., according to this calculation, was as follows:

Typical B. coli per c.cm. of Raw Water.

	Arbitrary One-figure Result.
River Thames	18 0
River Lee	26 0
New River	1.6

The "best month" results were remarkably good, and the average results were also satisfactory.

The improvement in the Southwark and Vauxhall supply during the years 1906–7, 1907–8, 1908 9, and 1909–10 is very striking, the percentage number of first-class samples working out as follows: 47.6, 67.2, 75 5, and 80.0 respectively.

For the filtered waters a one-figure result per cubic centimetre of water, expressed as typical *B. coli* per 1,000 c.cm. of water, is as follows:

Kent, 1 to 2; New River, East London (Lee), Kempton Park, Chelsea, Grand Junction, West Middlesex, Lambeth, Southwark and Vauxhall, 2 to 3; East London (Thames), 3 to 4; Lee derived water, New River derived water, Thames derived water, all London waters, 2 to 3.

It is noted that whereas out of every 100 *B. coli* isolated from the *raw* Thames, Lee, and New River waters, 82.3, 82.2 and 73.9 respectively proved to be typical *B. coli;* the corresponding figures for the filtered waters derived from these sources were 32 6, 28 2, and 37.8 respectively. The collective results were 80 0 in the case of the *raw* waters, and 35.0 in the case of the filtered. This is a proportional statement, and does not refer to the actual number of *B. coli* in the two cases. On the average, for the year under review, the River Lee is more impure than the Thames or New River, particularly than the latter. As regards the filtered waters it is noteworthy that on the average, and in the best and worst months of the year, the Thames-derived waters compare unfavourably with the Lee and New River-derived waters.

Comparison between 1908–9 and 1909–10.

Comparing the condition of London water in 1908–9 and 1909–10 Dr. Houston says that chemically the *raw* Thames, Lee, and New River waters yielded results decidedly worse in 1909–10 than in 1908–9, as judged by the ammoniacal, albuminoid nitrogen, permanganate, turbidity, and colour tests. The filtered waters, as judged by the albuminoid nitrogen, permanganate and colour tests were clearly affected by the unsatisfactory quality of the raw waters during the period under review. During no less than five out of the twelve months the oxygen absorbed from permanganate test yielded results exceeding 0.1 part per 100,000 parts. It needs to be remembered, says Dr. Houston, that a first-class water supply should be free from reasonable objection on physical and chemical as well as on bacteriological grounds.

Bacteriologically, the *raw* waters contained many more bacteria in 1909–10 as compared with 1908–9. The bacteria growing in agar and bile salt agar at 37° C. were also increased during the period under review. The *B. coli* results were also less satisfactory. As regards the *filtered* waters, the general trend of results was slightly in the direction of a decrease in purity, but having regard to the unfavourable meteorological conditions and unsatisfactory state of the *raw* waters, the results afford some ground for satisfaction.

Conclusions.

In conclusion Dr. Houston says that about 80 per cent. of the London water supply is derived from sewage-polluted rivers. As judged by the usual chemical and bacteriological standards the *raw* waters above the "intakes" for waterworks purposes are undoubtedly unsatisfactory in quality, particularly during the winter months. Within recent years a marked improvement has taken place in the methods of purifying sewage so as to render the resulting effluents non-putrescible and *chemically* unobjectionable. Apart from sterilization, however, no known practical process has yet been found which turns out a "safe" effluent, *bacteriologically*, and the great majority even of chemically-satisfactory effluents are swarming with excremental bacteria. It is possible that improved methods of purification will, in a chemical sense, keep pace with increasing pollutions of the rivers Thames and Lee, but the outlook bacteriologically is less hopeful. Prospective legislation as regards sewage purification would seem likely to run on the common-sense lines of protecting the general interests of the community at large, leaving to individual authorities who venture to utilize polluted rivers for waterworks purposes the full responsibility of employing such superadded processes of purification as the particular necessities of their own case demand.

Although the *raw* Thames and Lee contain *B. coli* in undesirable numbers, faecal streptococci are seldom discoverable in 1 c.cm. amounts of the water. Further, the results of a most elaborate search for the typhoid bacillus and Gaertner's bacillus have yielded practically negative results under conditions of experiment which have been shown to be effective in the case of *artificially infected* samples. He does not, however, contend that these pathogenic microbes are in reality uniformly absent, but that, if present, their numerical abundance must be so small that it is almost inconceivable that any of them could ever survive passage through the storage reservoirs and reach the filter beds, which in their turn remove about 98 per cent. of the bacteria.

Storage.—Dr. Houston calls attention to the striking new fact shown in his report that London is not really drinking merely filtered *raw* river water, but *raw* river water which by storage processes has been purified bacteriologically *antecedent* to filtration to a remarkable extent. If all the prefiltration waters were mixed in their respective proportions, the quality of the mixed water antecedent to filtration would be such that on the average over 36 per cent. of the samples would contain no typical *B. coli* in 10 c.cm. of water. When it is remembered that 92.6, 65.7 and 12.8 per cent. of the samples of *raw* Thames water contain typical *B. coli* in 1 c.cm., 0.1 c.cm., and 0.01 c.cm. respectively, the corresponding figures for the Lee being 93.1, 61.7 and 22.0 per cent., the transformation the river water has undergone *previous* to filtration becomes strikingly apparent. Nor does even this represent the highest level of efficiency. Under different and elastic regulations as regards abstraction of river water and a more complete system of "pooling" of stored water interests, over one half the samples (individually as well as collectively) of prefiltration water ought to contain no typical *B. coli* in 10 c.cm. of water. Even putting sedimentation and devitalization completely on one side, he says, the "levelling" effect of storage renders the possibility of any sudden accidental concentrated and dangerous pollution of the river water above the "intakes" a matter of much less grave concern than would otherwise be the case. Storage, in this sense, is equivalent to dilution, inasmuch as it "spreads" the dose of poison over weeks or months and it may indeed, quite apart from any question of devitalization, render innocuous a microbial contamination, which in a concentrated form would be apt to be highly dangerous.

Filtration.—Dr. Houston points out that the rate of filtration at the different works is unequal, and would seem to bear no apparent relation to the variable quality of prefiltration water. Other things being equal, the rate of filtration at a works should be largely governed by the quality of the water that is being filtered. All the filter

beds should have separate filter wells for sampling purposes. It is not sufficient that the quality of the mixed filtered water is good; it is most desirable that each of the filtration units should be in *proven* and perfect working order. The desirability of using only stored water becomes the more apparent when it is remembered that when a filter bed is yielding unsatisfactory results the filtrate cannot, generally speaking, be run to waste until the reports are of a more reassuring character. Speaking generally, it would seem to be safer to use a coarse sand and filter rapidly when dealing with an *adequately* stored water, than to use a fine sand and filter slowly when dealing with *raw* or inadequately stored river water. In the former connexion mechanical filters may play a useful part owing to the ease and rapidity with which they can be cleaned, but it is possible that the old sand filters, if worked under slightly altered conditions (for example, using coarser sand and filtering more rapidly), may greatly increase their field of usefulness. The only way, apart from sterilization, of rendering the prefiltration water always comparatively, if not absolutely, innocuous, is by sedimentation, devitalization, and equalization—in other words, by storage.

Service Reservoirs.—Service reservoirs should never be so small as to lead to variable rates of filtration during the twenty-four hours, hence a "pooling" of service reservoir accommodation is desirable. The equalizing and delaying effect of even transitory storage in service reservoirs is the culminating step in the protection afforded to the water consumer.

The Water as Finally Delivered to Consumers.—Five years' work on the London water question has convinced Dr. Houston that to a progressively increasing extent the "safety" of the metropolis as regards water supply is being reasonably, if not absolutely, assured. As a counsel of perfection he advocates the choice of an initially pure source of water supply; nevertheless, his own results and experiments seem to indicate clearly that the evil effects even of an impure source can be largely, if not entirely, annulled by adequate storage and efficient filtration.

The London Water Question in 1910.

Dealing with the position of the London water question in 1910, Dr. Houston says that the *prospective* security of London, as regards its water supply, should not be based, or only to a limited extent, on past comparative immunity from waterborne diseases. Nor should much, if any, reliance be placed on a comparison between the health statistics of towns using upland and river sources of water supply respectively where *inter alia* the conditions of life render such comparisons of doubtful or negligible value. Reliance should no longer be placed on sand filters as an absolute and final safeguard. Storage reservoirs should no longer be used merely to cover periods of emergency. The aim now should be to abstract *raw* river water as judiciously as possible, to store it for as long a period as is possible, and to filter it as perfectly as is reasonably practicable. Conceptions as regards safety should be no longer based on relative and often unwarrantable assumptions, but on indices of proved utility—for example, the death-rate of *B. coli*. Storage should be no longer regarded as mere sedimentation, but as a devitalizing and equalizing factor of the utmost importance. The raw waters are not only now tested for the total number of bacteria, the number of bacteria growing at blood heat, and the number of *B. coli* and excremental bacteria in general, but they are also examined for the presence of the microbes of waterborne disease. Representative samples of all the water previous to filtration are now examined at frequent intervals for *B. coli* and excremental bacteria in general, and in this way a constant check is kept on the quality of London water *antecedent* to filtration. The filtered waters also are always examined for the total number of bacteria, the number of bacteria growing at blood heat, and the presence of *B. coli*. In addition to the more elaborate tests, rapid tests (chemical and bacteriological) are also made which allow of advance telephone reports being sent to the various work, chemically on the same day as the samples are collected, and bacteriologically the day after.

The Question of Accident.

Dr. Houston points out that in addition to filtration and storage it is also necessary to guard against the possibility of accident. In this connexion questions of drainage, health of workmen, suction of impure water into water mains, laying of new mains, alteration to existing mains, condition of service reservoirs, etc., deserve attention. There is a growing tendency to regard any sudden accidental gross infection as of most dangerous significance, and to consider more constant but highly diluted pollutions as, relatively speaking, of lesser importance. The method of water purification now in progress (storage) renders the position "safe" as regards the river water, provided that no *fresh* and dangerous contamination takes place in connexion with the storage reservoirs, the filter works, the service reservoirs of the delivery mains. Dr. Houston's final opinion is that the "*quality* policy" of the Metropolitan Water Board should be directed towards securing an "epidemiologically sterile" water (that is, a water containing none of the microbes associated with waterborne epidemic disease) *antecedent* to filtration by storage (sedimentation, devitalization, and equalization), aided, if needs be, by the occasional employment of supplementary processes of water purification.

Complaints from Consumers.

Dr. Houston says that, relatively to the population, very few complaints reach the department as to the quality of the water. During the period under review, only sixty were received. The commonest complaints are as follows:

Presence of suspended matter, hardness, colour, deposit on boiling, smell, and taste.

Exceptional cases apart, samples are collected on the same day as the complaint is received.

Alterations to mains, fresh connexions, variations of pressure, and other matters common to all water supplies, account usually for the transitory and local presence of suspended matter in the supply.

As regards *hardness*, the water varies only slightly in this respect, but consumers sometimes are of the belief that some increase has suddenly taken place. The deposit of lime salts on boiling is another fact which at times appears suddenly to strike the consumer as new. During the winter months of the year the water is browner in colour, but as compared with moorland supplies, the London water may be considered relatively very free from brown coloration. As regards smell and taste, the cause, if really existent, is usually found to be associated with foul cisterns. On several occasions dead and decomposing starlings, sparrows, bats, and mice have been found in the cisterns. Sometimes, however, these defects appear to be due to imperfect circulation of water, to new mains, or to joints made with taste-imparting materials.

Report on Research Work.

Typhoid Bacillus and Gaertner's Bacillus.

In his Second Research Report Dr. Houston gave the results of a special search for the typhoid bacillus in 156 samples of *raw* river water. The total amount of water dealt with was 29,400 c.cm. The aggregate total number of bacteria (gelatine at 20–22° C.) in these 29,400 c.cm. was computed to be 135,687,500. The total number of colourless (or nearly colourless) colonies subcultured was 7,329, but none of them proved to be the typhoid bacillus. Since then additional experiments have been carried out, and Gaertner's bacillus as well as the typhoid bacillus has been searched for. Each sample was divided into two equal parts of 500 c.cm. (A and B). The A sample was artificially infected with a definite and very small number of typhoid bacilli and Gaertner's bacilli. The water was then centrifugalized, and the deposit spread over bile-salt agar plates of special composition. After incubation the colourless colonies were subcultured and the characters of the microbes concerned carefully studied. The B sample was treated in *precisely* the same manner except, of course, that it was not artificially infected. Twenty-four experiments were carried out; 14 with *raw* Lee water and 10 with *raw* Thames water, containing, on the general average, 62,688 bacteria per c.cm. (gelatine at 20-22° C.). The worst sample contained 760,000 and the best sample 1,200 bacteria per c.cm. respectively. The total number of colonies selected for study was 5 451 in the infected A samples and a similar number (5,451) in the case of the non-infected B samples. As regards the B samples, out of the 5.451 studied one resembled Gaertner's bacillus and another resembled very closely the typhoid bacillus. The remaining

5,449 microbes were all excluded as not being the typhoid bacillus or Gaertner's bacillus. Excluding, for the moment, from consideration the two microbes just alluded to, it may, says the report, be concluded that the non-infected B samples must have contained *fewer* than 1 typhoid bacillus per 6,485 c.cm. of water and *fewer* than 1 Gaertner's bacillus per 18 10 c cm. of water. It would seem, therefore, that these pathogenic microbes cannot be *uniformly* present in the *raw* waters unless in very small numbers. Dr. Houston is not prepared either to affirm or deny their pathological significance, but if the typhoid-like microbe had been isolated from a case, or suspected case, of typhoid fever, he does not think its identity would have been likely to be questioned. The experiments are still being continued, but meanwhile the conclusion is justifiable that the *raw* sources of water supply, although sewage-polluted and rich in excremental bacteria, do not *uniformly* contain the microbes of waterborne disease unless in very small numbers. The results are unquestionably reassuring, but must not be interpreted as justifying any relaxation in the existing, or proposed, processes of water purification. The existing, or proposed, processes of water purification, he says, should be based on the assumption that the *raw* waters are always specifically dangerous, and results, such as have been described, should be welcomed only as suggesting the hope that the responsibilities of the Water Board may, after all, be less onerous than has hitherto been conjectured, and that the "safety" of London may not rest solely on the safeguards interposed between the sources of supply and the tap of the consumer.

Faecal Streptococci.

The raw river waters (Thames, Lee, and New River) were examined for faecal streptococci. The significance of streptococci in water has been investigated by Dr. Houston for over ten years. His chief reasons for considering the streptococcus test of value in the examination of water supplies are:

1. That streptococci are superabundant in human faeces.
2. That faecal streptococci are absent or non-discoverable in a relatively large volume of pure water.
3. That faecal streptococci do not multiply in pure water.
4. That some faecal streptococci are of feeble vitality, and that the presence of such streptococci in a water, if they could be differentiated from their more robust companions, would seem to indicate pollution of *recent* and therefore specially dangerous sort.

The results confirmed those of 1908, and showed that the *raw* waters seldom contain any living faecal streptococci in 1 c.cm. of water, and that even when present the number is usually small (71 streptococci out of 1,908 subcultures). Dr. Houston concludes that human faeces usually contain a multitude of streptococci—(100,000 per gram is, according to his results, an underestimate of the average number). The *raw* waters (Thames, Lee, and New River) contain, on an average common to all three, less than one streptococcus per c.cm. of water, the same method being employed for their isolation as was used in examining human faeces. The *raw* waters, therefore, on the basis of the streptococcus test are, on the average, at least 100,000 times less impure than human faeces; or, to put it in another way, 10 000 gallons (100 000 lb.) of *raw* water contains less than 1 lb. of human faeces, as judged by the streptococcus test. As the *B. coli* results show that, on the average, the processes of storage and filtration improve the *raw* water bacteriologically, *at least*, 1 000 times, it may inferentially be concluded that the chances of any appreciable number of faecal streptococci ever reaching the consumer of *stored and filtered* water are extremely remote. He adds: "The foregoing results, no doubt, may be judged to be in favour of the comparatively harmless character, *faecally considered*, of even the *raw* sources of London's water supply. But it must be borne in mind that some microbes of faecal outcome may be more resistant to adverse conditions than are streptococci, and once more I would urge the importance of paying attention not only to the results yielded by a single test, but to *all* the factors, chemical, bacteriological, physical, meteorological, and epidemiological which bear, directly or indirectly, on the question of the quality of *raw* sources of London's water supply."

Prefiltration Water.

Dr. Houston gives the results of the examination of the prefiltration water, that is, representative samples of practically all the London water (raw stored, gravel, well, and mixed water) *antecedent* to filtration. He points out that London is not now really drinking *raw* river water, but river water most of which has undergone a remarkable transformation in storage reservoirs. Over 206 million gallons are filtered daily at the various works, and for over a year a constant check has been kept on the quality of the water previous to filtration by the examination bi-weekly of representative samples (prefiltration samples). There are over 160 filter beds now in use, and the great majority of them are in active operation at one and the same time. It is practically impossible to test even once a day the quality of water from each filter bed, and consequently water is constantly going into supply the purity of which has not been actually established by tests. The "quality policy" of the Water Board should, it is pointed out, be directed towards providing an "epidemiologically sterile" water antecedent to filtration, because then any breakdown in the filtration arrangements would become a matter of almost secondary concern. By "epidemiologically sterile" water is meant water which has undergone such a transformation in the storage reservoirs, as judged by the *B. coli* death-rate, that the survival in it of any of the microbes, associated with epidemic waterborne disease is almost, if not quite, inconceivable. In this report it is shown that the relative disappearance of *B. coli* from the river water under conditions of storage is so striking that even if pathogenic bacteria were uniformly present in the river water, their parallel destruction in the storage reservoirs may safely be assumed. It may perhaps be said that only the absolute death of all *B. coli* allows of any such inference. In this connexion several things must be remembered. In the first place not all the *B. coli* in the effluent water from a storage reservoir are of necessity of river water origin. Some of them may be derived from the excrement of birds; and the question of fish-life in the reservoirs, as a contributory factor, also merits consideration. In certain cases excrementally polluted dust may also play a part. Further, it is a fact well known to bacteriologists that out of a large number of individual microbes all of one species, a few are more resistant than their fellows and these are often spoken of as the *resistant minority*. It may be that the few *B. coli* left in an *adequately* stored water may be explained in the foregoing manner or perhaps the explanation may be found in part to be that the few surviving *B. coli* really belong to specially hardy races of *B. coli* initially present in the river water.

The prefiltration waters are examined in two ways. Once a week the liquid lactose bile-salt peptone test is used with 10 c.cm. and 1 c.cm. amounts of water. Gas formation is regarded as a positive result, and the absence of gas formation is regarded as a negative result, and one implying the absence of typical *B. coli* from the amount of water tested. Once a week also the solid lactose bile-salt peptone agar is used and the number of colonies (chiefly excremental bacteria) enumerated. As regards the former test, which was systematically commenced in April, 1909, and has therefore been in progress for a year, it is convenient to speak of A, B, and C samples. An A sample is one which yields negative results with 10 c.cm. of water—that is, it contains no typical *B. coli* in 10 c.cm. A B sample is one which yields positive results with 10 c.cm., but negative results with 1 c.cm. of water. A C sample is one which yields positive results with 1 c.cm. of water. On the basis of the test employed, a B sample is ten times better than a C sample, and an A sample is at least ten times better than a B sample, and at least one hundred times better than a C sample. It has been Dr. Houston's practice for many years to consider a water, about to be purified, of good quality if, at its source, it usually contains no typical *B. coli* in 1 c.cm. of water. As regards water as sent into consumption, his old standard of a negative result in the majority of samples with 100 c.cm. of water is now generally accepted as a reasonable limit. With regard to prefiltration samples, generally speaking, the standard of a negative result with 10 c.cm. of water is the one to be aimed at. During the year ended March 31st, 1910, the *raw* waters (81 samples of each) yielded the following percentage of A, B, and C samples:

	A	B	C
	Per cent.	Per cent.	Per cent.
Raw Thames	0.0	(6.2+93 8)=100.0	93.8
Raw Lee	0.0	(4.9+95.0)= 99 9	95.0
Raw New River ...	2.5	(50.6+46.9)= 97.5	46.9

The net result of the examination is that if all the prefiltration waters were mixed together in their proper pro-

portions the mixture would actually yield no less than 36 per cent. of A samples. In other words, the filters, instead of having to deal with *raw* river water, almost entirely of the C class (Thames, 93·8; Lee, 95·0; New River, 46·9 per cent.), deal on the average with water which, as regards over one-third of the samples, is *at least* one-hundred times better on the basis of the test employed (36.7 per cent. of A samples). Satisfactory as these results are, they do not represent, in Dr. Houston's opinion, the highest standard that could be even economically attained. Altered regulations as regards abstraction of river water, more perfect circulation of the water through the reservoirs, and "pooling" of stored water interests would, Dr. Houston considers, result in all the filter beds receiving water yielding over 50 per cent. of A samples.

Morgan's Bacillus.

Samples of raw Thames, Lee, and New River water were examined for the presence of Morgan's (No. 1) bacillus. The heavy toll which "diarrhoeal diseases" take of children under 5 years of age is a matter of common knowledge, but, although some of the conditions which tend to foster this excessive mortality are well known, the main cause of this malady is still to seek. Morgan, Boycott, Ledingham, Scholberg, and many other observers have, in in the main, failed to associate infantile diarrhoea with the *B. dysenteriae* group of microbes, and Morgan has described a bacillus (Morgan's No. 1 bacillus), which he considers may possibly be a true cause of summer diarrhoea. This bacillus presents certain characters which are uncommon and striking. Apart from other tests, an outstanding feature is that this microbe ferments glucose with gas production, does not produce gas in mannite media, and forms indol in peptone cultures. Some of the chief reasons why Morgan and his colleagues consider this microbe of special significance, are as follows:

It is frequently found in cases of "infective enteritis"—in the faeces during the progress of the affection, and in the autopsy material after death.

It is seldom found in the faeces of children not suffering from "infective enteritis" or in the autopsy material from deaths due to other causes.

It is not only pathogenic on injection, but when mixed with the food of animals it may cause diarrhoea and death.

It is frequently agglutinated by the sera of children suffering from summer diarrhoea (especially at or near convalescence) and seldom (one out of twelve in a very low dilution) by the sera of healthy control children.

"Infective enteritis" is not the only infantile diarrhoeal disease, but speaking of children's diarrhoeal diseases in general, the cause of infection would not seem to be operative through impure water supply. In all sixty-six samples were examined, in 1 c.cm. amounts. Gathering together all the results it was found that:

(*a*) 1,701 colonies grew on the neutral-red bile salt peptone mannite agar plates.
(*b*) 1,204 of these were red colonies and so were rejected.
(*c*) 497 were colourless (or nearly colourless) colonies and these were subcultured into a glucose medium.
(*d*) 445 produced *no* gas in this glucose medium and so were rejected.
(*e*) 52 gave rise to gas formation in this glucose medium and these were subcultured into a mannite medium.
(*f*) 27 produced gas in this mannite medium and so were rejected.
(*g*) 25 produced *no* gas in this mannite medium and these were subcultured into a peptone medium.
(*h*) 25 yielded no indol and these were rejected.

Morgan's No 1 bacillus was not found in 1 c.cm. amounts of numerous samples of the *raw* Thames Lee and New River water. Nearly all the *raw* river water is now stored antecedent to filtration, and storage has been shown to improve water bacteriologically, to a remarkable extent. The final filtration process reduces the number of bacteria in the unfiltered water by about 98 per cent. In these circumstances it appears to be in the highest degree improbable that Morgan's bacillus (No. 1) can ever be present, in the London water, as delivered to consumers.

Cholera Vibrios.

The conclusions of the researches detailed in the report are the same as those given in last year's report (see British Medical Journal July 10th, 1909, p. 87).

BRITISH PHARMACEUTICAL CONFERENCE.

The forty-seventh annual meeting of the British Pharmaceutical Conference opened at the Botany School, Cambridge, on July 26th, under the presidency of Mr. Francis Ransom, F.C.S. (Hitchin). There was a large attendance of members and delegates from all parts of the United Kingdom. The following account of the proceedings is abstracted from the full report which appears in the *Pharmaceutical Journal*.

Addresses of Welcome.

Dr. A. W. Ward (Master of Peterhouse and Deputy Vice-Chancellor), in welcoming the Conference to Cambridge, said that in the circular that had been sent out Peterhouse College had been correctly described as the oldest of the Cambridge colleges, but they did not owe their extremely long life to any special connexion with the medical profession. They had some distinguished members of that profession on their roll. They had now no doubt whatever that they had admitted as a fellow commoner to their high table the discoverer of the circulation of the blood; and another member of the college was Sir Thomas Browne, one of the wittiest and most humorous of men, who occupied the distinguished post of President of the College of Physicians. A third medical man of eminence whom he could recall as having belonged to their college belonged to an earlier date. He was so able a man that the critics would not allow him the credit of the book which he wrote of, hence Pope's famous line, "Garth did not write his own Dispensatory." Dr. Ward understood that the Conference numbered something like a thousand members, and included teachers and examiners in a branch of medical research and practice of which the importance was certainly not underrated in the present day, especially after the recent action taken by the General Medical Council, which extended into ranges of medical inquiry which could not have been dreamt of when the association was founded. They would find a very great development in recent years in their large and flourishing medical school, a development in which the university, aided by the benefactions, had striven to keep abreast of the times in the appliances for medical study, and they would see what a botanical laboratory they now possessed; and he hoped they would be able to pay a visit to the botanical garden, one of the best-managed institutions in connexion with the university. That Conference typified the connexion between scientific research and the national needs, but there was another connexion which had been brought to his mind by observing that one of the papers to be read related to John Ray, who exemplified the connexion between letters and science, which was one of the features of that university on which they all set the greatest value. He was a man almost as distinguished in the literary presentment of his work as in the work itself.

The Mayor of Cambridge and Professor Seward also welcomed the Conference.

Presidential Address.

Mr. Francis Ransom delivered his presidential address, in which he dealt with some aspects of pharmaceutical research of the present day, and endeavoured to draw attention to certain directions in which progress might be anticipated. No real advance in any branch of science could be expected unless adequate attention were paid to the education of those who are to be responsible for its development. It could not be too often pointed out that true education did not consist in the accumulation of a large number of facts, but in so training the mind that it should be able to regard in true proportion the significance of all facts which might be presented. It was gratifying to see that the universities were now offering increased facilities to those who desired to study certain branches of science directly connected with pharmacy. He wished to emphasize a truth which, although generally acknowledged, had not been so fully acted upon as it deserved. In the words of a past-president, the late H. B. Brady, "the attainments of the pharmacist must be complementary to those of the medical practitioner." That was profoundly true not only as referring to the everyday work of the pharmacist, but also in regard to the prosecution of original research. In looking back on the vast

amount of work done during the last fifty years by pharmacologists on the one hand and chemists on the other, the question arose whether they might not have seen even more valuable results if there had been some more definite organization to bring together the two classes of investigator. New remedies were constantly being introduced, and while some seemed destined to find a permanent place in medical practice, others after a few years disappeared altogether, or were restricted to very limited employment. Medicines, like costumes, were subject to the vagaries of fashion. This might to some extent be accounted for by the changing conditions of life which, while eradicating one disease, might encourage another. As, however, many of these remedies claimed to cure complaints which were always with us, their fluctuating reputations must depend also upon other causes. In some cases the therapeutic action obtained by the first observer had been found wanting when tried by others, and that which seemed likely to prove a valuable agent had been discredited. In other cases principles of known activity had been separated by the chemist, but having failed to obtain general recognition by the medical profession the drug was speedily forgotten. In order to establish the value or worthlessness of any remedy organized experimental investigation should be undertaken by the physiologist to determine its action, by the pharmacologist to confirm its remedial value, by the chemist to determine its composition, and by the pharmacist to devise suitable preparations. In many cases the botanist was also required to ascertain the species or variety of the plant from which it was obtained. On looking through the *Year Books of Pharmacy* one saw records of an enormous amount of work done by chemists and pharmacists, both in this and other countries. A large portion of this work had been utilized by the compilers of pharmacopoeias, and in other ways had been rendered of practical value. There remained, however, much valuable work which did not appear to have been adequately recognized by medical men.

In the cultivation of medicinal plants much had already been done, by the aid of practical botanical knowledge, in effecting improvements on the original strain. By varying the conditions of growth, by hybridization, and by careful selection of seed, remarkable results had already been obtained. Cinchonas offered perhaps the best example of what could be done in this direction, the alkaloidal content of the barks cultivated in the East showing a large increase on those growing in the native forests of South America. The attempt to control the proportions of the different alkaloids present, although not yet crowned with success, offered a promising field for further research. Coca afforded another example of the improvement resulting from scientific cultivation in Ceylon and the East Indies.

The cause of the temporary variation in the quality of certain drugs afforded further scope for botanical investigation. For many years the jalap of commerce yielded from 10 to 20 per cent. of resin. A few years ago there commenced a gradual decline in percentage until it was difficult to obtain tubers which would yield the 10 per cent. required by the *British Pharmacopoeia*. During last year the roots became very scarce, and almost famine prices were paid for samples of poor quality. About nine months ago a sudden change occurred, importations became more abundant, prices fell, and at the same time the quality showed great improvement, there being plenty of jalap available containing 10 to 15 per cent. of resin. A somewhat similar experience had occurred in connexion with belladonna root, especially that imported from the Continent. A root containing 0.5 per cent. of alkaloid was at one time obtainable without difficulty, and 0 6 per cent. was occasionally met with. Then for some years it was difficult to find any containing 0.4 per cent., many samples yielding only about 0 2 per cent. Recently there had been some little improvement, but there was still great difficulty in finding root of a high percentage. In both jalap and belladonna it was impossible to form any trustworthy opinion from general appearance as to the value of the drug. Whether the variations were due solely to the seasons or whether there were other conditions affecting the constituents of the drugs was a subject inviting investigation. There were, however, other questions to be decided in the valuation of drugs besides the estimation of what were usually considered to be the active constituents. If the active constituents of drugs could be separated in a pure state, what further use could there be for tinctures, extracts, and other preparations which undoubtedly contained material which could have no medicinal value? It was found, however, that the demand for these somewhat crude preparations still continued, not only in these cases in which no definite active principles had been separated from the drug, but also in such as cinchona, belladonna, and nux vomica from which alkaloids possessing well-defined physiological activity were readily available. If all the beneficial results of belladonna, cinchona, and nux vomica could be obtained by the employment of the separated alkaloids, the sooner the galenical preparations of these drugs became obsolete the better. As, however, there appeared no prospect of these preparations being discarded, it was the duty of the pharmacist to ascertain as far as possible the best methods for their production.

Proceeding, the President said the standardization of disinfectants was a subject which had recently received much consideration. A true disinfectant must not be simply a germicide, but also have the power of decomposing and rendering innocuous the poisonous substances produced by the micro-organisms of disease. The conditions in which the disinfectants were to be used have also to be considered, such as the temperature during the process of disinfection, the presence of foreign substances, and the variety of micro-organism which was the cause of the trouble. Neither the chemical nor bacteriological processes which had hitherto been devised seemed to be applicable in all cases, although for specific purposes comparisons of efficiency might be deduced. Another subject of deep interest to pharmacists, although outside the scope of their ordinary work, was the relation of chemical constitution to physiological action and the production of synthetic remedies. Although the time was probably still far distant when the medical man would be able to rely entirely on the chemist for the synthetic production of compounds possessing any required physiological activity, some progress had already been made in this direction. In the case of ergot an active principle (*p* hydroxyphenylethylamine) had recently been separated from the aqueous extract, having the power of increasing the blood pressure. This compound, which could be produced synthetically, was found to bear a close resemblance in constitution to adrenaline, which had the same physiological action. By thus comparing the constitution of active principles from different drugs similar in physiological action, it might be possible to produce a synthetic remedy having the advantages of each and free from any deleterious properties. Thus eventually in the distant future, when chemistry and physiology had sufficiently advanced, it might be possible to build up synthetically all the remedies that may be required. The progress in pharmacy and pharmaceutical research was, or at least should be, to a large extent reflected in successive editions of the official pharmacopoeias. As the *British Pharmacopoeia*, with its Indian and Colonial Addendum, was now the official guide throughout the British Empire, it was of supreme importance that it should be compiled by the authority of those whose scientific and practical knowledge render them the most competent to perform the work. The *British Pharmacopoeia*, as stated on the title-page, is published under the direction of "The General Council of Medical Education and Registration of the United Kingdom." Although in the preface to the last edition an acknowledgement is made of the assistance rendered by "a Committee of the Pharmaceutical Society of Great Britain," it was the members of the General Medical Council who were solely responsible for its production. In this respect the *British Pharmacopoeia* differed essentially from those of most other countries. By reference to those issued in recent years he found that in nearly every instance the national pharmacopoeias were revised by commissions on which pharmacists as well as medical men were represented. In the case of the United States of America the Convention was almost equally divided between representatives of medicine and pharmacy. In most of the other countries it would also be found that pharmaceutical associations and colleges sent representatives, who not only advised but had direct responsibility in the revision. In former times the education and experience of the medical man gave him a much more

intimate acquaintance with pharmacy than at present, and it would appear that the changed conditions were hardly sufficiently recognized in this country. The fact that the General Medical Council had invited the assistance of the Pharmaceutical Society was a step in the right direction, but he ventured to suggest that a more direct recognition of pharmacists in future revisions would be found to embody more fully the results of pharmaceutical research in our national *Pharmacopoeia*. In order to make the *Pharmacopoeia* imperial rather than national in character it would also seem desirable that India, Canada, and other colonies should appoint medical and pharmaceutical representatives, who should also have direct responsibility in the revision. During the past year a conference had been held between representatives of the British Medical Association and of the British Pharmaceutical Conference, with a view to forming a joint standing committee "to collect data and to promote the realization of aims found to be held in common by both bodies." It remained for the members of the two associations, if they approved the scheme, to elect at their respective annual meetings representatives to serve on this joint committee. As there were many objects which the two associations had in common it was much to be hoped that the committee might be appointed, and there would be an opportunity during the present session for their members to discuss the matter. Although not contemplated for this specific object he would suggest that this or a similar appointed joint committee might be of much value in organizing research work, and thus bringing together medical men and pharmacists for the purpose he had mentioned earlier in his address. They issued every year a list of subjects upon which it was suggested that work should be undertaken. Would not these suggestions be of increased value if they emanated from a committee on which both associations were represented? By providing the means of putting the medical man and the pharmacist into direct communication he believed that such a committee might render much assistance in the promotion and prosecution of original research.

Report of Executive Committee.

Mr. E. Saville Peck read the report of the Executive Committee of the Conference, in which it was stated that at the annual meeting at Newcastle, after the discussion upon the question of confining the dispensing of medical prescriptions to pharmacists, the following resolution was unanimously carried:

> That this matter be referred to the Executive Committee to consider, and if thought desirable to confer with the British Medical Association in reference to it.

After considerable correspondence, extending over several months, a conference was arranged, and took place on Thursday, May 19th, at 429, Strand, the offices of the British Medical Association, under the chairmanship of Mr. Edmund Owen (Chairman of Council of the British Medical Association). There were present, as representatives of the British Medical Association, Dr. Edwin Rayner (Treasurer), Dr. Munro Moir, Mr. C. R Straton, Dr. C. H. Wise, Dr. J. H. Taylor, Mr. Smith Whitaker (Medical Secretary); and as representatives of the British Pharmaceutical Conference, Messrs. J. F. Tocher (ex-President), H. Wippell Gadd, G. C. Druce, W. F. Wells, R. Wright, A. McMillan, F. W. Gamble, C. T. Allen, J. Righton, T. Maltby Clague, and E. Saville Peck (Honorary Secretary). Mr. Smith Whitaker reported that the conference was the outcome of correspondence between the British Pharmaceutical Conference and the Council of the Association, through its Medico-Political Committee. The discusssion, which was both interesting and valuable, turned principally upon:

(*a*) Medical dispensing, its extent, whether it should be transferred to pharmacists, and, if so, how the transfer could be effected.

(*b*) The nature and extent of prescribing by unqualified persons, and the means by which it may be prevented.

(*c*) The possibility of co-operation in action concerning the sale of dangerous, secret, or useless nostrums.

The question was considered as to the expediency of forming a Joint Standing Committee, composed of members of the British Medical Association and the British Pharmaceutical Conference, to collect data and to promote the realization of aims found to be held in common by both bodies. It was eventually decided by the Conference that the members of the Conference should recommend to their respective bodies the institution of a Joint Standing Committee, consisting of at least ten members of the British Medical Association and ten members of the British Pharmaceutical Conference. The Conference left in the hands of the chairman and the secretaries the work of preparation leading up to the institution of the said Joint Standing Committee. The Executive recommended the members of the Conference to proceed to the institution of this Joint Standing Committee, and suggested that those who were selected to represent the British Pharmaceutical Conference at the meeting in May be elected to serve on the Joint Standing Committee.

Committee of Medical Men and Pharmacists.

At the final meeting Mr. E. F. Harrison moved the following motion:

> That the British Pharmaceutical Conference appoint ten representatives to form, with ten representatives of the British Medical Association, a Joint Standing Committee, to promote the realization of aims found to be common to both bodies.

He explained that this motion was the outcome of a paper read by Mr. Tocher at a meeting of the Conference last year. He detailed the negotiations with the British Medical Association on the matter, and said they owed Mr. Peck very hearty thanks for what he had done in connexion with the matter. The names of the proposed committee were Messrs Gadd, Druce, Wells, Righton, McMillan, Gamble, C. T. Allen, Clague, and the two Honorary Secretaries.

The resolution was carried unanimously.

Election of President.

Mr. W. F. Wells of Dublin was elected President for the ensuing year.

LITERARY NOTES.

In the list of the Oxford Medical Publications which are to appear in the autumn is a *History of Medicine*, in two volumes, by Professor Max von Neuburger of Berlin, translated by Dr. E. Playfair. This is a large work dealing with the history of medicine from the earliest times. The first volume will be published early in October, with an introduction by Professor Osler. It deals with medicine from the various periods up to the Middle Ages. Other works in the same series are Volumes V and VI, *System of Syphilis*, edited by Mr. D'Arcy Power and Mr. J. Keogh Murphy, Vol. V dealing with syphilis of the skin, eye, ear, nose, and throat, and Vol. VI dealing with syphilis with regard to the public services; *Handbook of the Surgery of Children*, being a translation by Mr. Keogh Murphy of Professor Kirmisson's well-known work; *Treatment of Fractures*, a large work by J. Hogarth Pringle; *Clinical Pathology*, by T. J. Horder; a *Textbook of Massage*, dealing with the necessary anatomy and physiology, as well as the theory and work of massage, by Miss L. Despard; *Puerperal Infection*, a large and complete monograph, by A. W. W. Lea; and *Practical Organic Chemistry*, by A. M. Kellas.

The fourth number of the *Baby's World* has just appeared, and fully justifies the description given on its title-page, which tells us that it "aims at being a never-failing source of information with regard to everything a mother requires to know about herself and about the proper feeding, clothing, management, and education of her children." It is, in fact, a *vade mecum* of baby-lore for mothers and nurses, not only in these islands, but throughout the empire. Every page of this useful and practical little magazine contains valuable information for those in charge of children, and every phase of child-life at home and abroad is dealt with in the sensible and healthy spirit which is its distinguishing characteristic. The beauty of the *Baby's World* is greatly enhanced by the numerous exquisite photographs of children with which it is illustrated. The *Baby's World* is edited by J. Johnston MacGregor, M.D., F.R.C.S., and is published at 12, Burleigh Street, Strand.

British Medical Journal.

SATURDAY, AUGUST 20th, 1910.

THE EVOLUTION OF THE NURSE.

The death of Florence Nightingale, of whose career some account appears elsewhere in this issue, naturally evokes a memory of the change that has taken place in the last fifty years in respect of nursing arrangements and in the characteristics of the persons by whom they are carried out. By the general public this change is commonly attributed to Miss Nightingale, who, on that account, has sometimes been called the mother of nursing, even by persons presumably cognisant with the real facts.

Neither great reforms nor great discoveries are ever the work of an individual; they emerge from the froth of a fermenting mass in which a leaven has been silently working; and then come to be identified with the name either of the individual who first gave them a shape recognizable by the unlearned, or who was loudest in their description, or whom some accident made conspicuous in connexion with them. In the case of Miss Nightingale two of these alternatives came into operation. The tragic events in which she played so noble a part served equally to convince the public of the great things which might be expected from a reform of nursing, and to gain for Miss Nightingale in connexion with it a renown which she being a woman who hated publicity, was herself far from seeking.

But that reform was already in progress, and Miss Nightingale, much as she contributed to its success, was merely one of its products, not its originator. It was doubtless the outcome of many circumstances and the thoughts of many persons, but was more directly due to the new spirit permeating the world of medicine in the early decades of the nineteenth century. This had led, among other things, to discontent among medical men with the kind of assistance then available, and thence to the foundation of the Kaiserwerth Institute in Germany, of the St. John's Sisterhood for the benefit of King's College Hospital, and to the introduction of improved nursing arrangements at St. Thomas's Hospital under Mrs. Wardroper.

But, although this reform was in progress before Miss Nightingale commenced her labours, she undoubtedly both hastened and guided it. She was a worker rather than a writer or talker, but we have her own record of her notion of what a nurse should be. She scoffed at the idea that a disappointment in love, the want of an object, a general disgust or incapacity for other things, sufficed to turn a woman into a good nurse, or that nursing could be learnt in half a dozen lessons. It took five years to make a woman fit to hold a responsible position. A good nurse, she said, must be a good woman, and a good woman was one who gave her patients her best intellectually, morally, and practically. A patient afforded a threefold interest: intellectually, as necessitating the closest observation of facts, which were explained by lectures and clinical teaching; morally, as a fellow creature to whom either moral good or moral harm must be done; and technically, because each patient was an object lesson in what the nurse must learn to do under the orders of the doctor.

Miss Nightingale was certainly a keen advocate of the highly-trained nurse, but whether she would have approved of certain latter-day developments is another question. For many years past her knowledge of the evolution of the nurse was gained second-hand. No unfavourable criticisms which she may have heard can, however, have surprised her, for in her *Notes on Nursing* she pointed out to her readers an immense number of shortcomings and faults of which they were liable to become guilty, and includes in her references the source of practically every complaint ever heard at the present time either from doctors or patients.

The net outcome of the changes that have taken place in the fifty years which have elapsed since that book was written is highly satisfactory in some respects, but almost equally unsatisfactory in others. Nursing is now a definite occupation, competing for recruits almost on precisely the same footing as other occupations for women. It is attracting a much smaller proportion of ladies than was the case some years ago, and heads of some great institutions are reported to be finding a difficulty in securing probationers of the kind they would desire. In the hospitals the nursing is perfect from a technical point of view, but there is also in most of them some lack of the kind of spirit commonly associated with the name of nurse.

That there should be a tendency to regard patients less as specimens of suffering humanity than as subjects of study is almost inevitable when the primary qualification for admission to a school is an ability to acquire scientific knowledge, and not natural aptitude for tending the sick. If there were none but hospital patients to be considered it is quite likely that hospital authorities would impose far less study on their nurses, and be content with very much less knowledge on their part, and thus be able to choose a different class of woman for admission to their schools.

All the great hospitals, however, rightly or wrongly, cater also for the needs of the general public by training and certifying nurses. These nurses, they know, will eventually work either as independent individuals or as occupants of official positions demanding the most varied kinds of knowledge. It is natural, therefore, that they should desire to secure for their pupils every kind of knowledge of which they are likely to have need. In this way the schools are led to place in the background all considerations other than those of ability to pick up technical skill and pass examinations.

The lines on which these schools are conducted vary and the final result is that the nurses placed at the disposition of the public and of medical men differ as greatly in the extent of their knowledge as in point of general education and social position. It is this mixture of class which makes it so difficult for the public to determine for itself how it should treat the nurses who enter their houses, and it is the same mixture of class, or, rather, absence of an assured position in the social grade, which leads many nurses to create difficulties of sundry kinds.

Owing to the same causes and the multiplicity of schools, it is quite impossible for any medical man except after considerable experience of a nurse's

actual work, to feel certain of her capabilities and the extent of assistance which he will receive from her. In that fact we have the main reason why the British Medical Association has joined hands with the leaders of the nursing world in calling for registration of nurses and the establishment of a Central Nursing Council.

MODERN MIRACLES OF HEALING.

A famous man of science who died not many years ago is reported to have said that he would be satisfied with a dreamless sleep after death if he could be awakened once every century or so and remain alive long enough to see the advances that had been made in the intervals. If Carlyle could have this privilege—one for which he probably would care nothing—accorded to him he might add to his famous article "Characteristics" a paragraph on the wide spread of faith healing in one form or another which is one of the most notable features of the present day. What he would have thought of it, it would perhaps be rash to conjecture, but it is certain that he would have recognized it as a fact. If human testimony can be accepted as proof of anything, cures are still wrought, as they have been as far back as the history of mankind can be traced, by "metaphysical aid"—by which phrase we do not mean supernatural but preternatural agencies. "Mental healing" to the physician is the effect of the operation of the mind on the body, and as such it is interesting as a manifestation of a force as to the nature and action of which we have little or no knowledge. It is unscientific, however, to ignore such facts because we do not understand them; on the other hand, we need not accept them as miracles because we at present are unable to furnish an explanation.

Rational medicine includes not merely a knowledge of the operation of drugs and other therapeutic agencies, it embraces everything that has a healing, or even soothing, agency on the manifold processes of disease. We know that the emotions produce physical effects. We know that shock will restore activity to a palsied limb; that fear will sometimes exorcise the demon of gout; that excitement will make a soldier in the heat of battle insensible to a wound; that love stronger than death will make a weak frame bear strain and fatigue under which it would sink but for the strong feeling which stimulates it to effort; that newborn hope or sudden happiness will brighten the flame of a life which seems to be flickering out. In these and the like conditions spirit triumphs over matter. That it often does so, at least for a time, in disease is the common experience of all whose business is the treatment of the sick. The difficulty is to know when and how to apply this potent, but elusive, remedy.

In the Journal of June 18th the subject of faith healing was discussed from various points of view. All the eminent writers whose views were there given to the profession recognized the power of faith. The interest with which these essays were read is shown by the number of communications about them that have been received. Congratulations have reached us from America and criticism from Canada. In the latter case the writer objected to certain remarks which, in his opinion, "were rather pointed toward some Roman Catholic thought in a way which was offensive." We certainly have no wish to offend the religious feelings of any one, and we have always been careful to keep the Journal free from any tinge of theological controversy. But the miracles of healing said to be wrought at Lourdes are so remarkable in themselves, and are recorded in such detail, that it was impossible to avoid all reference to them. We therefore invited two writers who are recognized by the Roman Catholic community as at once representative of their thought and highly competent critics to deal with the subject from their point of view. The papers by Abbot Gasquet and the Rev. Herbert Thurston, which appear elsewhere in this issue, may be said to state the case for the miracles in a reasonable and temperate manner, that must give food for thought to all but those who, with Hume, think that miracles are violations of the laws of Nature, and are therefore not to be believed though one rose from the dead.

But do we as a matter of fact know the "laws of Nature" so fully that we can decide offhand that anything which happens to be contrary to general experience is a "violation" of these laws? The laws of Nature of which we speak with such assurance are, after all, of our own making. They are forms of thought which represent our knowledge of things at a given time. They are therefore liable to change as knowledge grows. Twenty years ago the Roentgen rays and wireless telegraphy would doubtless have been said by many to be contrary to the laws of Nature. In the domain of the healing art itself the present generation has witnessed advances which to many of our forerunners would have seemed miraculous. At the present day medical science can furnish a rational explanation of the vast majority of the "miracles" of Lourdes. If it cannot yet explain all, that is due to its limitations. An experienced doctor sees many things in the course of his practice which he cannot explain; but he does not on that account straightway accept them as miracles, any more than he looks upon the wonders wrought by Mr. Maskelyne as the work of a supernatural power. This, we venture to think, is the proper attitude of science in the presence of mysteries and miracles. If the fact seems to be proved by sufficient evidence it should be examined with an open mind in every detail.

First of all, the testimony must be most carefully sifted and weighed. As Munsterberg showed, even persons of the highest education and trained acuteness of observation can seldom give a perfectly accurate account of a thing which has happened under their very eyes. Where man's feelings and passions are strongly concerned he is apt to be not only deceiving but self-deceived. Hume justly says: "Where men are heated by zeal and enthusiasm there is no degree of human testimony as may not be procured for the greatest absurdity; and those who will be so silly as to examine the affair by that medium, and seek particular flaws in the testimony, are almost sure to be confounded. It must be a miserable imposture indeed that does not prevail in that contest." We hasten to say that we do not wish to insinuate that there is any wilful deceit in the cases recorded by Dr. Gasquet and the Rev. Herbert Thurston. The case of M. Gargam related by the former seems to be as well authenticated as anything could be. In the present state of feeling of a large proportion of the French people in regard to religion, the evidence must be strong indeed that secured what is virtually a verdict for a miracle from two courts of justice.

But is it a miracle? There's the rub. Traumatic neurosis, as we all know, is full of surprises even for the expert neurologist; and recoveries from conditions

apparently as desperate as that of M. Gargam have occurred without any intervention that could be called miraculous. Nor are we prepared to accept the cases quoted by the Rev. Herbert Thurston, remarkable as they are, as miracles. The occasional rapid healing of fistulae and sinuses is familiar to all surgeons; nor is the cessation of otorrhoea with consequent improvement in hearing outside the experience of otologists. What we should like to have fuller proof of is the instantaneous occurrence of these cures. Even at Lourdes the recorded cures are seldom instantaneous, and not infrequently they are incomplete.

This brings us to consider how such effects are produced. That diseases of purely nervous origin may be cured instantaneously by many natural causes is well known. We have no difficulty, therefore, in believing that the lame have been made able to walk, that sores have been healed, and that pain has been charmed away, under the influence of nervous centres stirred into violent activity by religious emotion. All the surroundings amid which the patient is placed at Lourdes tend to heighten this effect. The wonder is that in proportion to the numbers of sufferers who flock thither for relief the cures are so few. Dr. Maurice Gaud, in a very interesting thesis entitled "Processus Psychiques de Guérison," presented to the University of Lyons in 1907, gives an analysis of all the "cures" officially recorded as having occurred among members of what is called the National Pilgrimage in 1906. Among 1,200 sick persons there were only 30 cases in which any improvement was noted. Of these the majority were suffering from purely nervous affections. Among the others in which some beneficial effect was noted, the disease was not cured, though the symptoms were to some extent relieved. Besides purely nervous ailments, there is a nervous element in most organic diseases which manifests itself in trophic or other disturbances, and it is likely enough that this will be acted on by the influences of the place. Even in tuberculosis and cancer a feeling of betterment is often produced by the hope excited by the use of a new remedy. This is the secret of the success of quack medicines—an apparent success which may puzzle the doctor while it temporarily rejoices the patient. But the disease itself remains uncured.

To conclude, the mechanism of the miracle is stimulation of the nervous system. How that mechanism is set in action, and how it can be made to work in the right way to produce the effect aimed at is another matter. That is the problem which the medical profession has to solve. If it simply buries its head in the sand and refuses to see that faith-healing is a fact, it will, in the words of Carlyle, be awakened "in a terrible *a posteriori* manner," to find that the influence which science ought to have has been to a greater or less extent diverted to other quarters.

MEDICAL WITNESSES AND CORONERS' INQUESTS.

We have frequently had occasion to notice the methods adopted by some coroners when deciding as to whether to hold inquests on cases reported to them. Their decisions at such times have not always given satisfaction, and a further investigation of facts has appeared to indicate that an exercise of that good judgement which the importance of such cases demands and the public naturally expects to be shown has been conspicuously absent. The fact is now generally recognized that if the law allowed coroners to consult medical practitioners, and so procure their professional opinions as well as to pay suitable fees for them, many cases in which inquests are now necessarily held might at once be ended without further legal investigation. Thereby less distress would be occasioned to relatives of the deceased, as well as considerable unnecessary expense avoided.

We wish it, however, to be distinctly understood that, however desirable some alteration in this respect may be, such is not yet the law, as no coroner can at present insist on any written reports by any possible witnesses being sent to him previous to an inquest, nor has he authority to give instructions or orders of any kind whatever to any medical practitioner until he has decided that it is his duty to order an inquest to be held. Notwithstanding this want of power on the part of coroners to enforce their requests for a medical opinion in reference to cases they have under consideration, we believe it has been, and still is, the usual custom for medical practitioners to furnish coroners with all reasonable information so as to help them to decide in very many cases as to the necessity of an inquest or the reverse, and this without any fee whatever for their professional assistance. This ready habit of many members of the medical profession would appear to be on many occasions grossly abused by some coroners. They are very ready to take advantage of the liberal disposition of many ordinary medical practitioners, to procure from them the professional information they are urgently in want of, but having done so, they forget not only to acknowledge it with even the most brief thanks, but at once order an inquest to be held, and procure further medical assistance from other quarters, for which, after such inquest, they have to pay all statutory fees which can be then claimed. Several cases illustrating this high-handed practice have recently been brought to our notice, and of these we will give brief accounts.

1. A pauper was found dead on a country roadside at night. A medical practitioner received directions from the coroner (through his officer) to go to view and examine the body, and report to him in writing as to the cause of death. This request was complied with, and a report was made to the following effect—namely, that no opinion could be formed as to the cause of death of the deceased, as no marks of violence could be discovered on the body. The doctor who made this examination and written report in reference to it heard nothing more of the case, and was not even thanked for his professional services, which involved a journey of several miles, we believe, at night.

2. A medical man in country practice was called out of bed to visit what was represented to him to be an urgent case; on arriving at the house of the supposed patient, he found a middle-aged man dead in his bed, and it was reported that the deceased had just died very suddenly. The sergeant of police reported this case to the coroner of the district, who then instructed his officer to call on the doctor (namely, the one who had been summoned to the house of the deceased at night) and ask for his report. This report, made in writing, was conveyed to the coroner; it was to the effect that the death of the deceased was due to heart failure following dysentery. The result of this was that an inquest was subsequently held. Another practitioner was ordered to make a *post-mortem* examination, attend the inquest, and give evidence thereat. The doctor who first visited after death of

the deceased, and who as soon after as possible reported on the case at the special request of the coroner, was altogether ignored; he was not called at the inquest nor was he summoned to attend. He now complains of having received neither thanks nor fee for his report made for the coroner's use, and this at the special request of the latter.

A medical practitioner in a provincial district attended an old lady for several weeks with fracture of neck of femur. The coroner, after having received a report of the death of this patient from his own officer, sent the latter to ask the doctor for his report on the case, which was at once made and forwarded to him. This aforesaid coroner subsequently held an inquest; he did not summon the doctor who had made the written report to him to attend the inquest, but himself read this written report of the jury at the inquest, and thereby escaped his liability for any payment of fee for the same. The verdict in this case was reported to be "Death in accordance with medical evidence." No medical evidence whatever having been given, this verdict can only be regarded as a direct misrepresentation of fact.

As there is every probability that in the near future we shall see a material change in coroner's law, we venture to hope that such cases as we have here noted will no longer be possible. We are quite aware that the great majority of coroners display every desire to treat members of our profession with all due consideration and justice, and it is within our knowledge that all such coroners very reluctantly apply for the professional assistance of medical practitioners when they feel that they are unable to offer any fee for the help the latter may be in a position to furnish. It is much to be regretted that those coroners who do not appear to understand what fair justice is should fail to follow the example set by others who have had wider and longer experience, and so avoid bringing discredit on themselves by adopting ill advised and unjustifiable methods of carrying out their own public duties.

THE NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION.

The National Association for the Prevention of Consumption and Other Forms of Tuberculosis has issued a special appeal, signed by Lord Derby (the Chairman), the Duke of Devonshire and Mr. Waldorf Astor (joint Honorary Treasurers), for help in its efforts to eradicate tuberculosis. They state that at least £5,000 a year is required to educate the people in the mode of preventing the disease. The quickest, best, and ultimately the cheapest way, they hold, is to educate the nation by means of: (1) Travelling tuberculosis exhibitions; (2) caravans with lantern slides; (3) popular lectures; (4) an information bureau for the press and public; (5) the distribution of literature. Seventy thousand people visited the Tuberculosis Exhibition in Whitechapel. It has been equally successful at Paddington, Marylebone, Cambridge, Walworth, Canning Town, Oxford, and other places. Lack of funds prevents the exhibition making a continuous tour of the country. One or two more exhibitions should, it is urged, be fitted out to visit big towns. Vans with lantern slides are needed for small towns and villages. The association has appointed a Special Appeal Committee to collect funds for an educational campaign on the lines suggested. The work will be purely educational. No grants will be made to institutions for treatment. This Special Appeal Committee now seeks the co-operation of all existing bodies; its members appeal to the numberless small subscribers to charity as well as to large donors. From time to time the committee will issue details of the plan of campaign and its progress, but in the first place it hopes to secure the help and support of organised bodies, and to create branch associations in areas where such do not at present exist. The appeal concludes: "But nothing can be done without money—£500 will fit out an exhibition; £600 will run such an exhibition for a year; £300 will fit out a caravan exhibition; £700 will run it for a year; £5 will pay for a lecture; £1 will pay for a set of lantern slides; one penny will pay for educational leaflets." The Special Appeal Committee has received a letter from the President of the Local Government Board, in which he says: The work of the National Association had, even before his visit to Whitechapel, his heartiest approval, and so likewise has its present crusade against the disease. He expresses the hope that all classes will assist in providing the necessary funds for carrying the crusade to a successful issue. Mr. Burns goes on to say that he is confident that in the measures advocated by the committee they will not overlook the welfare of the worker. "An increasing number of sanitary authorities are providing for home visits to consumptive patients, and are adopting means for the treatment and training of patients in sanatoriums. The measures which you will advocate will, I am confident, provide for assistance being offered to patients in the most sympathetic manner possible, and care will no doubt be taken to guard against the duplication of visits to persons suffering from the disease by representatives of the National Association and by officers of the sanitary authority." He concludes by wishing the association every success in its efforts. It is added in the appeal that the working men's clubs and institutes affiliated to the Club and Institute Union have almost unanimously decided to take for disposal among their members a copy of the book containing 6d. coupons. The post-office authorities have made an important concession to the committee, and have allowed the issue of small books of a total value of 10s. in which contributions of one penny can be collected by means of unused postage stamps. Any person who will help the committee and its work can have a copy of this book on application. Friendly societies and insurance companies are recognizing that the question is of the utmost importance to them, both from a financial and social standpoint, and are giving what aid they can to the committee. The Billposters Associations of Great Britain have also undertaken to assist by posting quite free of charge many thousands of posters drawing attention to the main facts in connexion with the disease and the movement for its extermination. Contributions, however small, should be sent to the Honorary Treasurers, Special Appeal Committee, 20, Hanover Square, W., and the Honorary Secretary will be pleased to furnish any particulars which may be required.

A CARAVAN MISSION OF HEALTH.

Every one nowadays has a mission; it is an age of "crusades" and philanthropic people vie with each other in devising new means of attracting attention. The Women's Imperial Health Association of Great Britain, the president of which is Muriel Viscountess Helmsley, is about to send caravans about the country from which lectures and demonstrations on health, illustrated by biograph pictures and views, will be delivered by competent lecturers in the towns and villages of England. The first of these caravans, happily named "The Aurora," will start from the

Botanic Gardens, Regent's Park, on Saturday, August 20th, 1910, at 12.30. Its departure will be christened with a flask of pure water by Miss Lena Ashwell. The Aurora will then forthwith proceed up the Thames Valley on its way to Bath. It is the object of the association to deal with the health question at its foundation; it therefore intends to teach the mothers of England how to rear and nurture their children that they may become strong and healthy citizens. A special appeal will be made to young girls in order that they may better fulfil the duties which matrimony entails. It is emphatically declared that the association has no fads, no axes to grind, and that it is not "anti" anything nor "pro" anybody. We are glad to know this, for these health missions so often degenerate into the propagation of fads, the dissemination of "anti" ideas and the glorification of individuals. The names of Sir Lauder Brunton, Sir Anderson Critchett, Sir William Bennett, Dr. J. Mitchell Bruce, Mr. McAdam Eccles, Dr. Kelynack, and Mrs. Scharlieb, on the list of vice presidents, form a guarantee to the medical profession that the association will be pursued in a spirit of broad philanthropy, and that its work will be conducted under the guidance of scientific knowledge.

SULPHUR WATERS AND PURIN OUTPUT.

IN this issue of the BRITISH MEDICAL JOURNAL will be found, in a paper by Dr. David Brown, of Harrogate, an account of some investigations undertaken with a view to throwing some light on the physiological effects, as gauged by chemical methods, of the imbibition of sulphur waters. Researches of this kind involve the most delicate manipulations, much labour on the part of the investigator, and the loyal and patient co-operation of an invalid or some other human instrument. so it is not remarkable that they should be carried out with comparative rarity, or that in this particular instance the investigation should not have been applied to a sufficient number of individuals to allow perhaps of definite conclusions being drawn. So far as the researches go, they would seem to indicate that the drinking of natural sulphur water somewhat lessens the output of endogenous xanthin bases and materially increases both endogenous trioxypurin and the exogenous purins recognizable in the excretions. Whether this conclusion should be held to have any direct bearing on treatment by sulphur water is another question, for there is too much dispute about purin bodies, except from a purely chemical point of view, to admit of any theory as to their importance being regarded as finally proved. The battle which was waged a year or two ago on the question of the advantage of securing entire absence of purins from the diet of various patients ended partly for want of fresh combatants, partly because the conclusions reached on different sides seemed, for the moment at any rate, irreconcilable. The impression left on the minds of impartial readers, however, would seem to have been that the advocates of purin-free food had failed to prove their case, and that the presence or absence of purin in food had not been shown to make any material difference in securing perfect nutrition unaccompanied by chronic functional disturbance of any kind. If this be the case it might further be argued perhaps that artificially raising the excretion of purin bodies would not be likely to give any valuable results; but such a contention might readily be upset if clinical views to the contrary were coupled with chemical evidence of more perfect oxidation of primary metabolic products. But in any case work such as that of Dr. Brown is of value as contributing something, at any rate, towards the solution of questions of interest, and inquiries of the same character might well be undertaken in connexion with other natural waters containing conspicuous amounts of salts generally regarded as having a definite if obscurely working effect on the human system.

INTERNATIONAL CONGRESS OF ANATOMISTS.

THE second quinquennial congress of anatomists was held in Brussels on August 7th to the 11th, and was largely attended by anatomists from all parts of the world. Among those present were Professors Waldeyer and von Bardeleben from Germany, Nicolas and Laguesse from France, Minot and Huntingdon from America, Romiti from Italy, Van der Stricht from Belgium, and Professors Arthur Thomson and Paterson from England. Meetings were held in the university in the forenoons for the reading and discussion of papers, and demonstrations were given in the afternoon in the anatomy department. Some fifty papers were presented, dealing mainly with histological and embryological subjects. An important step taken at this conference was the appointing of an international committee, with Professor Mall of Baltimore as secretary, to consider and draw up an international uniform nomenclature for embryology, on the lines of the Basle anatomical nomenclature for general anatomy. Among the papers read by members from Germany, Poll presented a communication upon spermatogenesis and oogenesis in hybrids. Braus gave an interesting demonstration of the segmental distribution of spinal motor nerves to the muscles of the lateral fin of the skate, and Fetzner showed a model and sections of a very young human embryo, resembling the Peter's ovum, in which the fixation and histology of the embryo and trophoblast were excellent. Several communications from members of the German and American societies dealt with the development of the blood cells. Maximow dealt with their development in selachians and amphibians, and Frau Wera Dantschakoff with their development in reptiles. Minot's communication dealt with the nomenclature and morphology of blood cells, and he appealed for a more rational and scientific terminology than at present exists, and for the abolition of such misleading terms as "normoblasts." The papers from French anatomists included one from Lams, accompanied by a demonstration of beautiful specimens, on the fertilization and early changes in the ovum of cobaye. It gave rise to an interesting discussion upon the fate of the tail of the entering spermatozoon, in which Brachet and Van der Stricht took part. Dubreuil showed the development of the lamellae in the upper end of the femur, and the relation which they bear to the entering vessels. A number of communications from members of this society dealt with the presence of mitochondria in various tissue cells. Huntingdon and MacClure dealt with the development of the lymphatic system, and demonstrated changes in the early veins by which lymphatic channels could be formed; while Lee gave an important communication upon the implantation stages of the ovum in the various North American rodents. Huber demonstrated some beautiful corrosion preparations illustrating the morphology of the renal tubules and vessels in vertebrates. Among the communcations by British and Irish anatomists was a demonstration by Professor J. P. Hill of a beautiful series of photographs showing the growth and maturation of the marsupial ovum as illustrated by Dasyurus; Berry (Melbourne), read a paper upon Tasmania crania; Evatt (Winnipeg) advanced a new view of the homologies of the urethra and vagina in the sexes; Arthur Thomson dealt with the anatomy of the angle of the iris, and Whitnall demonstrated

a ligament acting as a check to the action of the levator palpebrae superioris, while Waterston gave a communication upon the shape of the stomach in man, and the action of formalin. A paper from Cameron was read upon the development of the anterior commissure and neighbouring parts. Most of these papers will probably be published at an early date, and hence no description of them need be given here. The congressists were invited to a municipal reception at the Hotel de Ville, and a very pleasant dinner was held one evening. Professor Dollo gave a demonstration of the magnificent collection of specimens of Iguanodon in the Natural History Museum to members, which was greatly appreciated.

SOUTH AFRICAN MEDICAL CONGRESS.

THE twelfth meeting of the South African Medical Congress will be held this year in Capetown from November 7th to the 12th, under the presidency of Dr. C. F. K. Murray, of Kenilworth. The work of the congress will be distributed among the following sections: Medicine (President, Dr. J. Bruce-Bays, Grahamstown); Surgery (President, Dr. G. Ritchie Thomson, Johannesburg); Obstetrics and Gynaecology (President, Dr. A. H. Watkins, Kimberley); Public Health (President, Dr. P. Murison, Durban); Eye, Ear, Nose, and Throat (President, Dr. A. G. Brinton, Johannesburg); Pathology (President, Dr. W. Watkins-Pitchford, Pietermaritzburg); Special Subjects (President, Dr. A. B. Ward, Bloemfontein). The following subjects are proposed for special discussion in the several sections: *Medicine:* The Modern Treatment of Tuberculosis. *Surgery:* Urinary Stone; Diagnosis and Treatment; Prevalence in South Africa. *Obstetrics and Gynaecology:* Diagnosis and Treatment of Fibroid Disease of the Uterus. *Public Health:* Aestival Diarrhoeas of South Africa. *Eye, Ear, Nose, and Throat:* Diagnosis and Treatment of Headache due to Diseases or Disturbance of the Eye, Ear, Throat, or Nose. *Pathology:* Incidence and Characteristics of Cancer in South Africa. *Special Subjects:* Hospital Administration and Organization in South Africa. The Union Parliament is expected to meet on November 4th, and during that week and the following one the Union festivities—pageant, and so forth—will be in full swing. Dr. Jasper Anderson, M.O.H. for Capetown, is Chairman of the Entertainment and Reception Committee. Dr. W. A. Moffat, the Honorary General Secretary, would be glad to be informed beforehand of the probable advent of any medical visitor who may be going out to the Cape at that time.

THE RELATION OF LIGHT PERCEPTION TO COLOUR PERCEPTION.

ON June 30th, 1910, Professor Starling read to the Royal Society a paper on this subject written by F. W. Edridge-Green. The author first pointed out that the majority of the theories of colour perception have been theories of light perception. The two subjects have been much confused. The investigation of these two classes of defective vision is much facilitated by the use of the author's spectrometer, which was described to the society. The instrument enables any portion of the spectrum lying between any two wave lengths to be rapidly isolated and exhibited. The micrometer screws which operate the two shutters are furnished with drums, which are so graduated that they read in wave lengths. When examined with this instrument, a normal individual will, as a rule, name six distinct colours, and will mark out by means of the shutters about eighteen monochromatic patches. The paper dealt with the defects the instrument detected in persons with abnormal colour vision. He laid great stress upon shortening of the red end of the spectrum. Individuals with a shortened spectrum could be compared with those who could not hear very high or very low notes. There are some who cannot appreciate the shrill notes of a canary or of Galton's whistle; others, again, cannot hear the low pedal notes of the organ. Similarly, we have individuals whose spectrum may be shortened either at the red or the violet end. Such a person, looking at a red light of low refrangibility, sees no light at all. His sensorium is not stimulated, all is black. Such persons confused pink and blue. In cases where there is a real colour blindness, it is essential to differentiate between perception of light and perception of hue. The spectrometer enables this to be done. Cases of so-called green blindness are difficult to explain. They are simply cases of dichromic vision without shortening of the spectrum. If we give such a case colours to compare which differ only slightly in shade but are absolutely different in hue, we find that his selection of the lightest or darkest corresponds to that which would be made by a normal individual. Dr. Edridge-Green has examined every case of colour blindness which came under his notice with Rayleigh's colour-mixing apparatus. A match is made between λ 589 (sodium yellow) and a mixture of λ 670 (lithium red) and λ 535 (thallium green). The results appear to be quite independent of the power possessed by the individuals examined to appreciate colour difference. In fact normal values in persons with normal hue perception may be obtained, whereas undoubted colour blind individuals may give normal results. All dichromics are not equally colour blind. One will be readily detected by almost any test, whilst another requires the greatest care to detect at all. Such a man will make a normal match with Rayleigh's apparatus, and will pass Holmgren's test with ease. But when examined with the spectrometer he is at once exposed. He has only eight monochromatic patches instead of eighteen, and he will match spectral blue-green with a mixture of spectral red and violet. Detailed tables accompany the paper, showing the actual results obtained from persons examined with the spectrometer.

MISSIONARIES AND MEDICAL KNOWLEDGE.

THIS year's edition of the *Livingstone College Year Book* may be commended to the notice of those still doubtful of the propriety of ensuring for missionaries in semicivilized tropical countries a sound, if elementary, knowledge of surgery, medicine, and hygiene. It contains a reasoned consideration of the motives which brought the institution into existence and still underlie its work. This apologia is good so far as it goes, but we find some of the extracts of letters from missionaries which accompany it still more convincing. One of them, dealing with the old saying, "A little knowledge is a dangerous thing," puts the whole thing in a nutshell. "When you are two weeks' journey from any assistance, and see your fellow traveller sitting silent and swollen with violent toothache for days together, you fervently wish you had a pair of forceps and a dangerous amount of knowledge. And when in remote places you have a choice of burying your servant or stopping his diarrhoea, would you prefer to talk nonsense about professional skill rather than give him a dose of chloroform, even though it should be at the risk of administering one drop more or less than one who writes M.D. to his name would have done?" This exposition of the situation is sufficiently trenchant to silence most objectors. At the present day, however Livingstone College should not need to stand on its

defence. Hygiene and its bases in physiology and anatomy are being taught even to school children, and there is a first-aid class in practically every village. If such knowledge is desirable in a country owning about one medical man to every 1,400 of its population, it must be infinitely more necessary in countries whose inhabitants are daily exposed to dangerous climatic disorders as well as injuries, and where the missionary may be the one intelligent person to be found within a radius of several hundred miles. Apart from this, no one who has travelled in semicivilized regions can fail to be aware that the white man is invariably credited by natives with a knowledge of medicine, and that it is exceedingly difficult for him to avoid giving advice. The need, indeed, is so strong that almost all missionaries endeavour to obtain medical knowledge of some character. Commonly they simply read medical books for themselves, or wander unguided through the premises of some medical institution. It is very much better that they should go through a regular course of instruction at the hands of those who are most capable of teaching and of bringing home to them the true limitations of the knowledge which it is possible for them to acquire. This is the work of Livingstone College, which imposes a course of nine months' work, and accepts no one as a pupil who does not previously sign an undertaking that he will never take to himself the title of medical missionary or assume the position of a qualified medical man.

INEBRIATE REFORMATORIES.

Among the answers to questions addressed to Ministers circulated with the Parliamentary papers issued just before the adjournment of Parliament was one to Sir John Brigg, member for Keighley, who asked for the number and locality of the inebriate reformatories in operation in Great Britain, the average number of inmates, and the cost per case of permanently successful treatment. The Home Secretary gave the following figures for England, his department having no information regarding Scotland. There are, he stated, two State inebriate reformatories and nine certified inebriate reformatories. The average weekly charge for inmates in the State reformatories for staff and maintenance in the year ending March 31st, 1910, was 21s.; the daily average number of inmates was 92. In the certified reformatories the average weekly charge for inmates during the year 1909 was 15s. 10d.; the daily average number of inmates was 892. Mr. Churchill added: I think my hon. friend will see that it would be impossible at any given time to say how many persons discharged from reformatories had been "permanently benefited."

A REMARKABLE CASE OF FRACTURE.

We live in a time when signs and wonders in the healing of disease are, if we are to believe the prophets of the various cults, of everyday occurrence; when a devotee of Mrs. Eddy speaks airily of curing cases of cancer by the hundred; when consumption and other deadly ailments are conjured away by rites and incantations; and when "nerve force" can be turned on and off like water from a tap. The wonder is that any disease is left, and that Death has not thrown away his blunted and rusty scythe. In the face of the marvellous narratives, the tale we are about to relate seems almost too trivial to tell. It is also, we fear, old; but a story, like wine, often gains by age. As an instance, we may quote Hardcastle's story of "Ould Grouse" in the gun-room in *She Stoops to Conquer*, which Diggory was by special grace allowed to laugh at. How one would like to hear that story! But, alas Hardcastle, unlike him

> Who left half told
> The story of Cambuscan bold,

gives no hint of the oft-told tale for which his servant asked for preferential treatment in the matter of laughter. We feel, however, that at this silly season we may be forgiven if we bestow our tedium on our readers. We therefore tell the story in the latest form in which we have seen it. A doctor received from a correspondent who had crossed the Atlantic a letter to the following effect: "I have at last arrived here after a good passage, which presented no remarkable feature with the exception of the case of a boy who fell from a mast on to the bridge and broke his leg. The surgeon of the ship tied it up firmly with a cord, and forthwith the wounded lad was able to use his leg as before the accident. I cannot sufficiently admire the skill of the operator or the triumph of surgical art." This letter was read before a medical society, and naturally gave rise to much discussion. Had the fact not been attested by a man who was known to be thoroughly trustworthy, it would be rejected without comment. One of the members of the learned body read a paper on the subject, in which he explained in the clearest manner the physical means by which the apparently miraculous cure was wrought. The society, whether convinced or not, applauded his reasoning. Some time after the meeting a further letter was received, in which the reporter said: "I fear I forgot a trifling circumstance in my account of the case of fracture of which I told you. The broken leg was a wooden one." We do not guarantee the exact truth of this story; but it serves to point the moral which Charles II's famous question as to the fish in water impressed upon the Royal Society. Before theorizing about things let us be sure of our facts. In the history of medicine there are too many instances of ingenious explanations of unverified facts. At the present day we would particularly urge not only the public but the profession, when a cure of cancer or a new miracle of faith-healing is reported, to take nothing for granted. Let them insist on proof that it was not a wooden leg that was broken.

THE ANT IN A NEW CHARACTER.

The ant has from time immemorial been held up to the sluggard as a model of industry, and his mode of life and methods of social administration—some of which are sufficiently drastic to satisfy even the most advanced modern reformer—have been closely studied by Lord Avebury. The ant has lately been presented, as we learn from the *New York Medical Journal*, in a new light by Captain Percy L. Jones, of the United States Army Medical Corps. We are beginning to hear much of the baleful activity of the fly in the dissemination of disease. Captain Jones's observations, therefore, which were made in the Philippines, come very opportunely as offering a possible remedy to an addition of the dangers which threaten human life. Having noticed that flies are comparatively rare in the Philippines, he ascertained that there is a species of ant which finds the larvae of the fly very much to its gastronomic taste. The way in which the ant deals with the larva is described by Captain Jones as follows: "Upon watching these ants attack fly larvae, it is interesting to note that they do so in a way which proves that they are no novices at the procedure. One will attack an extremity and apparently bite it, and as soon as the larva begins to coil and makes efforts to escape, numbers of others will immediately jump upon it, and in the course of a few moments the larva will be

apparently dead. I believe that the ant introduces some venom in the act of biting, formic acid in character, which preserves the larva as food until such time as the ant needs it—cans it, in other words. As soon as the struggles of the larva have ceased, they haul it off to their nests and return for others. In many instances I have seen them carry away pupae. It will be interesting for the reader to procure a few maggots and place them over an ant bed." But what would the antivivisectionists say? This ant has other excellent qualities. It is said to destroy bed bugs as well as flies. It might be worth while trying it for this purpose in London. There is one cloud on the bright horizon of fly destruction opened up by Captain Jones's observations. Mr. Banks, the official entomologist in the Bureau of Science in Manila, doubts whether the particular species of ant which takes this field of hygienic industry for its province is found in the United States; indeed, it does not seem to be yet classified. Captain Jones, who is evidently a practical man, has considered the expediency of introducing the Philippine ant into countries where flies are recognized as enemies to health. He thinks that further study of the insect's habits is needed before it is indiscriminately let loose everywhere on flies, for, besides its qualifications as a scavanger and as a destroyer of flies, it may have undesirable propensities, such as an inclination to consume wood and other valuable articles. We must therefore, it would seem, before calling this ant to our assistance, take heed lest we suffer the fate which has often overtaken nations which called in foreign assistance in time of invasion.

TABETIC OPTIC ATROPHY.

Dr. Henning Rönne of Copenhagen contributes a paper to *Ophthalmology* (April, 1910) on the interesting question whether tabetic optic atrophy develops from a disease of the ganglion cells or from the nerve fibres. It is, he says, quite natural that until now no solution of the problem has been reached, for the whole neuron forms a nutritive entity. If the origin is in the cells, then the nerve fibres degenerate secondarily, and vice versa. It is on this account impossible to show from a study of the pathological anatomy which of the two elements is primarily affected, or whether the disease strikes the neuron in all its parts simultaneously. The matter can, however, be approached from a clinical standpoint. In a paper in the *Arch. für Ophthalmologie* (Band lxxi, S. 51) the author called attention to the fact that in certain diseases of the eye, especially glaucoma, a field of vision may be present which so lies in the chart that the edge runs for a certain distance exactly in a horizontal direction along the nasal horizontal meridian. It forms a field figure which Rönne has called "The Nasal Visual Field Defect," and which corresponds to the raphe which is formed from the retinal nerve fibres, which meet (?) on the temporal horizontal meridian of the retina after they have encircled the fixation point by a wider or narrower margin. It is clear that we have in this symptom a means of settling the differential diagnosis between a disease of the cell layer of the retina itself, and of the fibres of the optic nerve, because a disease of the retinal cells would not respect certain nerve bundles which lie merely in anatomical relationship in the conducting part of the nerve bundle. A disease which shows this relationship must be in the nerve fibre. The author has recently carefully examined the fields of persons suffering from tabetic atrophy, and has repeatedly found fields which point strongly to the view that the nerve fibres are affected in bundles. Professor Bjerrum has shown that this is especially true in glaucoma. The paper contains specimens of fields showing the characteristic horizontal line of limitation. If in tabetic optic atrophy the fibres are affected before the ganglion cells, it is probable that the same is true of lesions of other nerves in the body, and one can formulate the general proposition that the lesion of the ganglion cells in tabetic degeneration is a much less important factor than the involvement of the nerve fibres.

THE PROVISION OF DIPHTHERIA ANTITOXIN.

In a circular dated Aug. 15th it is stated that the Local Government Board has had under consideration the question of facilitating the prompt use of diphtheria antitoxin in the case of persons who may be attacked by diphtheria or exposed to the infection of the disease, and with that object it has made an Order, under Section 77 of the Public Health (London) Act, 1891, sanctioning the provision by the Councils of metropolitan boroughs of a temporary supply of diphtheria antitoxin and of medical attendance in connexion therewith. The arrangements with respect to the keeping, distribution, and use of the diphtheria antitoxin are to be made in accordance with the advice of the medical officer of health. In cases in which a patient is under the care of a medical practitioner, the latter should, in ordinary circumstances, be the person to administer the antitoxin. In considering the matter, the Council, it is said, should take into special account the possible requirements of the Poor Law medical officers, as it appears to the Board to be desirable, where the Council avail themselves of the powers now given them, that the Poor Law medical officers should be able to obtain from the store of the Council the antitoxin which they may require from time to time for use in connexion with patients under their care. The free provision of diphtheria antitoxin, which is authorized by the Order, must not be regarded as a substitute for removal to a hospital of a patient suffering from diphtheria, nor as implying that the patient to whom the anti-toxin has been administered may properly be retained for treatment at home, unless means are available for his efficient isolation to the satisfaction of the medical officer of health. It is pointed out that the prompt administration of antitoxin before the patient is removed to hospital may, especially if delay in removal is inevitable, go far towards preventing the attack of diphtheria from being fatal. By Article II of the Order the duties of the medical officer of health are to be deemed to extend to and to include all action by the medical officer of health in the execution of the Order, and Article III provides for the payment by the Council to the medical officer of health of reasonable compensation for such action taken by him. A similar Order is made in regard to the sanitary authorities for the execution of the Public Health (London) Act, 1891, and in regard to the medical officers of health of these authorities.

The annual meeting of the International League against Epilepsy will be held in Berlin, on October 4th and 7th, 1910, at 2 p.m., in the lecture theatre of the Psychiatric Clinic of Professor Dr. Ziehen, under the presidency of Professor Tamburini, of Rome. The business before the meeting consists mainly of the reception of the reports from the international committees upon the work of the league in the different countries, with reference to the prevalence of epilepsy, the numbers of existing institutions for epileptics, etc. Communications will also be received from Dr. Veith (Berlin) upon epilepsy and crime, and Dr. Muskins (Amsterdam) upon the patho-physiology of epilepsy.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

LOCAL GOVERNMENT BOARD REPORT.

Boarded-out Children.

THE annual report of the Local Government Board of Ireland expresses its satisfaction that there was an increase of 309 in the number of children placed out at nurse or boarded-out by the guardians. The recent Royal Commission on the Poor Laws recommended that the maintenance of children in workhouses should no longer be recognized as a legitimate way of dealing with them, and the Board trusts that at no distant date all children who can legally be boarded-out will be placed in suitable foster homes by the guardians.

Advertising Health Resorts.

Under the Health Resorts and Watering Places (Ireland) Act, 1909, any urban or rural authority is now authorized to expend money out of the rates for the purpose of advertising the advantages and amenities of its district, or any part thereof, as a health resort or watering place. The Board now understands that several local authorities are taking advantage of the provisions of the Act.

Dispensary Medical Officers.

It is announced that during the year thirteen boards of guardians adopted the system which was inaugurated at the suggestion of the Board a few years ago, whereby scales of graded salaries are fixed for the medical officers, providing for initial salaries with increments after definite periods of good service. The new system was intended to meet the complaints of many medical officers that their salaries were too small and were not progressive, except in a few individual cases, officers after many years' service being no better paid than when they joined as young men. Scales are now in force in seventy-seven unions, situate chiefly in the provinces of Leinster and Munster. The guardians of the unions in the congested districts are handicapped by their financial position in dealing with the claims of the medical officers, but the Board hopes that the example set by the Banbridge, Belfast, Coleraine, and other boards of guardians in Ulster, will be more generally followed in the well-circumstanced unions, and graded scales of salary adopted commensurate with the services rendered.

Prevention of Tuberculosis.

The members of the Board state that, as a consequence of the Tuberculosis Prevention (Ireland) Act of 1908, which came into force on July 1st, 1909, a number of new and important duties have devolved upon them. Reviewing what has been done in regard to the notification of tuberculosis, the report points out that the Act limits notification to cases of tuberculosis which are a danger to others, owing to the infectious nature of the discharge from the patients, and accordingly, when making the order in pursuance of Section I (2) of the Act, after consultation with the Presidents of the Royal Colleges of Physicians and Surgeons in Ireland, the Board confined notification to tuberculosis of the lung in the case of sufferers so circumstanced that they are likely to become, unless precautionary measures are taken, a means of distributing the disease from the fact of their being housed, or working, under conditions which may be dangerous to others. It is explained in the report that it was the desire of the Legislature in introducing the principle of compulsory notification of tuberculosis to safeguard the sufferers from unnecessary intervention or publicity to the greatest extent compatible with the public interest. Consequently, the penal provisions applicable to other infectious diseases under the Public Health Acts have not been extended to tuberculosis, and there is no power given to sanitary authorities for compulsorily removing patients to hospital. Moreover, it is expressly provided that no undue publicity shall be given to the particulars contained in the medical practitioner's certificate in a case of tuberculosis, and the Board therefore advised sanitary authorities to entrust reliable officers with the custody of the forms of notification, and to impress upon these officers that any disregard of the obligations of secrecy with respect to the contents of such forms would be treated as a serious breach of discipline. The Board, it would seem, does not think that the progress so far made in regard to the adoption of notification is unsatisfactory, especially if it is considered that six years elapsed before the notification of infectious diseases under the Act of 1889 was in operation in thirty-three districts. Misunderstanding, the report says, exists in regard to the power of compulsory removal of tuberculous patients to hospital, and to possible loss of employment; but with the lapse of time and the example of other districts, these apprehensions will, no doubt, be gradually allayed. The Board expresses the hope that before long steps will be taken to introduce the compulsory notification of tuberculosis in all the larger urban districts. Such a course is specially desirable in the county boroughs of Cork and Waterford, where the incidence of phthisis is particularly heavy.

Building of Sanatoriums.

Part II of the Tuberculosis Prevention Act gives powers to local authorities to provide sanatoriums for the treatment of the disease. The report, only covering the period up to the end of March, states that the appointment of officers to, and the equipment of, the Streamhill Sanatorium of the County Cork Joint Hospital Board had made satisfactory progress. The sequel to this is that the Countess of Aberdeen recently opened this Cork Sanatorium. This part of the Act has also, it is stated, been under the consideration of the County Councils of Kildare and Clare. It appears, too, that the sanatorium at Crooksling, established by the Dublin Joint Hospital Board, is in course of erection. The educational movement, under the auspices of the Women's National Health Association, presided over by the Countess of Aberdeen, continues, as the report observes, to do excellent work in many directions, and has the effect of directing attention amongst the people to the best means of preventing the spread of tuberculosis.

A Sanitary Milk Supply.

The report also says that the administration of the Dairies, Cowsheds, and Milkshops (Ireland) Order came into force in May, 1908. Strong recommendations were made to district councils, where the dairying industry is extensively carried on, to appoint veterinary surgeons as chief inspectors to superintend the work of the ordinary inspector, and in some instances the Board issued mandatory orders to local authorities directing them to appoint veterinary surgeons. The number of districts in which veterinary surgeons had, up to the date of the report, been employed for the administration of the Order was 145, while in 71 further districts other inspectors had been appointed. It will thus be seen that provision for the control of the sources of the public milk supply has been made in 216 out of a total of 308 sanitary districts. The large number of districts in which the Order is in successful operation and working smoothly proves that the apprehensions of hardship arising from its administration which were at one time prevalent have not been realized. The districts in which no action has as yet been taken are partly composed of poor and remote areas, where but little milk is produced for public sale. On the other hand, there are some districts where the dairying industry is largely carried on, but in which the local authorities are in determined opposition to the enforcement of the Order. In one or more of those cases, where methods of persuasion have proved ineffectual, the Board is having recourse to proceed-

ings in the High Court for a writ of mandamus to compel district councillors to put the Order in force. From a return recently obtained from the clerks of local authorities, it appears that 6,651 persons are now registered as carrying on the trade of cowkeeper, dairyman, or purveyor of milk. No doubt, with a more extended enforcement of the Order, this number is capable of being largely increased, but the supervision over dairy premises, even as at present exercised, cannot fail to be attended with beneficial results to public health.

Concession to Irish Midwives.

As a result of the representation of the grievance caused to the Irish trained midwives by their non-inclusion in the Midwives Act of 1902, a clause is to be inserted in the new bill entitling properly certified Irish midwives to registration and certification under the Midwives Act, 1902, when the bill becomes law.

County and City of Cork Sanatorium for Consumption.

This sanatorium, situated at Streamhill, co. Cork, is now a completed project and ready for the reception of patients. Her Excellency the Countess of Aberdeen travelled from Dublin by special train on August 4th to perform the opening ceremony. On arrival at the Doneraile Station Her Excellency was received by the Chairman of the Joint Hospital Board and presented with an address of welcome and appreciation for the interest she has displayed in the erection of the sanatorium by coming such a long journey to perform the ceremony of laying the foundation stone, and now again on the occasion of opening the sanatorium for the reception of patients. On arrival at the new sanatorium, which is three miles or more from Doneraile, Her Excellency made a tour of inspection, and in the course of a speech thanking the Joint Hospital Board for having given her the opportunity of seeing the building for herself, and also thanking them for the hearty welcome they gave to her, referred to the reduction in the death-rate from tuberculosis in Ireland during the past year. In 1907 there were 11,600 deaths due to tuberculosis in Ireland out of a total of 70,000 deaths. Now for 1909 Sir William Thompson, the Registrar-General, reported that the death-rate is 10,514, out of about the same general death-rate. That meant a saving of 1,096 deaths in Ireland. Look at it as they might, from the patriotic or from the economic standpoint, they would see they had benefited by this decrease in a disease that all nations at the present time were trying to fight. Cork is the first county in Ireland to erect a county sanatorium, and it is to be hoped the other counties will follow the good example set to them. Cork, though a black spot on the map for deaths from tuberculosis, has perhaps received most encouragement to go on with the campaign against tuberculosis, as there has been a very decided drop in the death statistics since 1907, when 1,134 deaths were recorded, while in 1909 there were only 1,089.

As regards the sanatorium building itself, the frontage is segment shape, the central portion being occupied by the administrative section, while on either side are the patients' quarters, those on the east being devoted to the male, and those on the west to the female, patients. The walls are of woodwork, supported by iron uprights laid on a cement foundation, and every modern device has been brought into requisition to secure the greatest possible amount of light and air in the rooms. The extreme length of the front section is 300 ft., and the depth of the cross section behind is about the same measurement. The water supply is drawn from a number of splendid springs in the mountains overlooking the sanatorium, and carried thither by gravitation. The whole institution is lit by electricity generated on the premises. Already 20 cases have been admitted, and at the meeting of the conjoint board held on August 13th, it was decided that the minimum fee for patients who could pay would be 7s. per week.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

The Edinburgh Medical School.

During the past two years the efficiency of the Edinburgh Medical School has been a subject much discussed by members of the medical profession in the city. On all hands it is unofficially recognized that the present condition of affairs is in many respects unsatisfactory.

An influential committee of the Edinburgh Pathological Club, appointed specially for the purpose, has gone fully into all the aspects of the subject, and the criticisms and suggestions contained in the report have been laid before the university authorities.

Alteration of some methods in the Edinburgh system of teaching and of training is urgently called for. The mental attitude of teachers towards the need and the value of co operation in the different branches and subjects of medicine, and towards the clinical element in teaching, has of recent years tended rather to lag behind the necessities of the time. Teaching, also, has to some extent tended to oust research work from the life of the young graduate.

There is every indication that in the near future the Medical School in Edinburgh will become even more efficient and prominent than it has been.

Edinburgh Post-graduate Courses in Medicine.

During the month of August a course on internal medicine for graduates is this year being held in Edinburgh. The limited number of places for graduates in this course have been well filled, and the course bids fair to prove such a success as will ensure its repetition next year.

The July Report of the Registrar-General for Scotland.

During the month of July, 1910, there were registered in the towns of Glasgow, Edinburgh, Dundee, Aberdeen, Paisley, Leith, Greenock, and Perth, the births of 3,725 living children, of whom 1,885 were males and the rest females. These births are 330 fewer than were registered in these towns in June, and 183 fewer than were registered in July of last year. The equivalent annual birth-rate is 23·2 per thousand of the estimated aggregate population of the eight towns, a rate which is 2·9 below the birth-rate for June, and 1·5 below the rate for July of last year. It is the lowest July birth-rate recorded in these reports, the previous lowest being that for July of 1909, which was 24·7 per 1,000. The birth-rate for the month varied from 31·2 in Greenock to 17·6 in Edinburgh.

British Hospitals Association Conference.

The first conference of the British Hospitals Association will be held in Glasgow University on September 29th and 30th, and arrangements are now in progress for the gathering. The Lord Provost of Glasgow will attend the opening sederunt and offer the delegates a civic welcome to Glasgow. On the 30th the delegates will be entertained by the Corporation, a committee of the magistrates and town council having been appointed to carry out the necessary arrangements for this civic function. Dr. D. J. Mackintosh, M.V.O., Medical Superintendent of the Western Infirmary of Glasgow, is one of the honorary secretaries. The President for the year is Mr. H. Cosmo Bonsor, Treasurer of Guy's Hospital, London.

Glasgow Refuse Disposal.

A most interesting inspection took place on August 9th, when the Cleansing Committee of Glasgow Corporation paid a visit to Ryding Estate, owned and managed by the City Cleansing Department. This estate, extending to 800 acres, was purchased nineteen years ago to provide a method of disposing of the city refuse which could not be otherwise utilized. While much refuse can be sold as manure, there is always a surplus which cannot be easily got rid of,

and this is sent at the rate of from 56,000 to 60,000 tons annually to Ryding, part being used to enrich poor ground and part to fill up hollow ground. As a result the land has yearly increased in productiveness, and crops of oats, wheat, hay, and turnips are raised. The profit on the cropping account last year was £687, and the average for the past ten years has been over £560. From two quarries on the estate a goodly revenue is also derived from the whinstone. Fodder is supplied from the estate for the horses belonging to the department in Glasgow. The first venture made by the Corporation for the disposal of city refuse was in 1879, when a bog known as Fulwood Moss was leased for thirty-one years. This useless bog has now been transformed into good arable land and must now revert to the proprietor. The Ryding Estate was purchased outright in 1891, and its undulating nature made it specially useful for the deposition of unsaleable refuse. Another estate, that of Robroyston, was purchased in 1902, extending to 656 acres, and this has not only been utilized to advantage for depositing material, but the draining and levelling has given work during time of stress to a large number of the "unemployed" of the city. These estates and the operations connected with them are so conducted as to form no charge on the rates, the balance being always on the right side. This is a most satisfactory result of this department of municipal enterprise, and a source of gratification to the city.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

BIRMINGHAM.

HEALTH OF BIRMINGHAM IN 1909.

THE report of the medical officer of health (Dr. Robertson) on the health of the city of Birmingham for the year 1909 has just been published. The estimated population on June 30th, 1909, was 563,629. The number of births was 14 985, as compared with 16,141 in 1908 and 15,619 in 1907. The birth-rate was 26.7 per 1,000, and is by far the lowest recorded. The fall in birth-rate is shown in the following five-yearly periods: 1871–5 the mean birth-rate was 40.4; 1881–5, 36 1; 1891–5, 32.7; and 1901–5, 31.3. The total number of deaths was 8,691, which gives a death-rate of 15.5 per 1,000, as compared with 15 9 in the previous year. This also is a great reduction as shown by comparing the same five-yearly periods. From 1871–5 the mean death-rate was 25.2; 1881–5, 20.7; 1891–5, 20.3; and 1901–5, 18.1.

Infant Mortality.

The number of infants who died before they reached the age of 1 year was 2,030, as against 2,339 in 1908, 2,300 in 1907, 2,686 in 1906, and 2,451 in 1905. The infant mortality-rate was 135, and is the lowest yet recorded. The following table gives the details of the infant mortality during the past five years.

Cause of Death.	1905.	1906.	1907.	1908.	1909.
Measles	40	46	81	13	108
Whooping cough	72	105	63	121	54
Diarrhœa	364	667	188	364	183
Enteritis	126	151	116	128	99
Tuberculous diseases	75	54	70	58	40
Premature birth	304	321	318	358	318
Debility and marasmus	536	453	458	457	391
Convulsions	128	98	120	104	79
Bronchitis, pneumonia, and pleurisy ...	380	356	441	335	314
Suffocation	75	85	78	87	61
All other causes	351	350	367	334	383
Total	2,451	2,686	2,300	2,339	2,030

An Epidemic of Measles.

There was an epidemic of measles during 1909 which caused the largest mortality yet recorded except that of 1871. The epidemic period lasted twenty weeks, during which time there were 476 deaths. The following table shows the extraordinary rapidity with which a measles epidemic will develop and afterwards subside:

Four weeks ending:	Total deaths from measles.	
August 29th, 1908	0	
September 26th, 1908	2	Before the epidemic: 31 deaths in twenty weeks.
October 24th, 1908	1	
November 21st, 1908	10	
December 19th, 1908	18	
January 16th, 1909	41	
February 13th, 1909	76	Epidemic period: 476 deaths in twenty weeks.
March 13th, 1909	161	
April 10th, 1909	136	
May 8th, 1909	62	
June 5th, 1909	21	
July 3rd, 1909	24	After the epidemic: 67 deaths in twenty weeks.
July 31st, 1909	14	
August 28th, 1909	6	
September 25th, 1909	2	

All the houses in which measles was known to exist were visited by the health visitors, who left printed leaflets regarding the precautions necessary to prevent the spread of the disease, and who ascertained which of the children in the house should be kept away from school. Over 6,000 houses were visited during the epidemic period. Before 1909 it was the custom, when a case of measles occurred in a house, to keep all the other children, as well as the patient, away from the school. This practice led to an unnecessarily large loss of attendance, and accordingly it was decided to exclude from school attendance only those contacts who had not previously had an attack of measles, while those who had already suffered from the disease were allowed to continue to attend school. This plan was found to work most satisfactorily.

Vaccination.

The vaccination officers' report for 1909 was as follows: Births returned, 15,401; conscientious objections, 454; died unvaccinated, 1,519; successfully vaccinated, 11,266; postponed by medical advice, 99; removed to other districts, 202; lost sight of, 1,480; still under notice, 231. During the year many instances of worthless vaccination by medical men were seen—cases in which vesiculation is little larger than a pinhead in one or two places. Such vaccination is worthless as a protection against small-pox, and the fault lies largely with the general public, who crowd to the doctor who will stoop to do what is obviously a fraud on the public at large—inefficient vaccination.

Scarlet Fever.

There were 2,871 new cases of scarlet fever notified during 1909, as compared with 2,275 in 1908, and 2,522 in 1907. The total notifications of scarlet fever received numbered 2,941, the difference being due to errors of diagnosis and the notification of some cases which were not resident in Birmingham. The number of deaths was 106, making a fatality-rate of 3.7 per cent., as compared with 3.4 per cent. in 1908. In the large majority of the cases no history of personal contact with previous sufferers or carriers was obtained on investigation. During the year there were 148 cases notified as occurring after the return from isolation of a previous case of scarlet fever from the same house. Of these possible "return" cases, 34 have to be excluded, for the following reasons: 25 secondary cases occurred more than 28 days after the discharge of the primary cases, 4 cases occurred where the infecting cases were not one of scarlet fever, and 5 where the return cases were not scarlet fever. This leaves 114 as the corrected number of "return" cases, following upon 101 possible infecting cases who were freed from isolation during 1909, or the latter part of 1908. Of the "return" cases 69 occurred after an interval of from 9 to 28 days. All parents were advised to take certain precautions when the children returned home from the isolation hospitals, and there is no doubt that in many houses reasonable care was exerted by the parents.

Diphtheria.

The number of cases of diphtheria notified during 1909 was 687, and the number of deaths was 89, or 13 per cent. There was less diphtheria than in the previous year, and still less than in 1907, when 1,012 cases were notified. No special factor appeared during the year to have had any marked influence in disseminating the disease. The milk supply of each infected house was carefully recorded and studied, and no evidence of any carriage of infection by milk was shown. There were 49 secondary cases of diphtheria occurring in houses in which the primary case had occurred in 1909. Of these only one arose within 28 days after the return of the primary case from hospital. During the year 706 Hewat swabs were examined for diphtheria bacilli by the University of Birmingham for medical practitioners in the city at the expense of the Corporation, in addition to 146 swabs examined in connexion with a small outbreak of diphtheria in one of the hospitals, where cultures were taken of all the patients and staff.

Typhoid Fever.

The number of cases of typhoid fever notified during the year 1909 was 95, and the number of deaths was 22, giving a case-mortality of 23 per cent. The number of cases was only half the number in 1906 and 1908 respectively, which were previously the two years with the smallest typhoid incidence. The prevailing severe type of the disease remained at about the same high level as in 1908, nearly a quarter of the total number of cases terminating fatally. Assuming that typhoid fever is due directly or indirectly to excremental contamination, it is extremely probable that the recent subsidence of the disease has been caused by improved provision for avoiding filth conditions in the neighbourhood of dwellings, especially in the poorer parts of the city. In several cases a history of the recent consumption of shellfish was obtained as follows: 14 cases after eating mussels, 1 after oysters, 1 after whelks, and 2 after periwinkles.

Tuberculosis.

During the past four years the mortality from tuberculosis has been relatively low, the rate of mortality from all forms being 1.63 per 1,000 in 1909, against 1.67, 1.67, and 1.62 respectively in the three previous years. There were 914 deaths from tuberculosis, and of these 751 were from phthisis, 48 from abdominal tuberculosis, 51 from tuberculous meningitis, and 64 from other forms of tuberculosis. Tuberculosis in its various forms was responsible for 10 per cent. of the total mortality in Birmingham in 1909, while in the previous year it was responsible for 11 per cent. The reduction in mortality was largely due to a reduction in cases of abdominal tuberculosis and tuberculous meningitis—forms of the disease which affect children. This satisfactory result is most probably due to the better supervision of the milk supply which has been going on during recent years. Of the 751 deaths from phthisis during the year, 521 had been notified as cases—equal to about 70 per cent. During the years 1907, 1908, 1909, 531 samples of milk supplied to dealers and others in the city were bacteriologically examined for tubercle bacilli at the university on behalf of the Health Committee. Out of 206 samples taken from churns in the city, 24, or 12 per cent., were tuberculous; of 44 samples taken from cowsheds in the city, 5, or 11 per per cent., were tuberculous; and of 181 samples taken from cows outside the city, 12, or 7 per cent., were tuberculous. There were, therefore, 41 samples out of 531, or 8 per cent., which were found to contain living tubercle bacilli.

MANCHESTER.

Midwives Supervising Committee.

The Midwives Supervising Committee of the Manchester City Council has just issued its annual report of operations under the Midwives Act for 1909. The number of midwives practising in Manchester was 158, of whom over 68 per cent. were certificated. Dr. Margaret Merry Smith paid 341 visits of inspection to examine the midwives' homes, bags of appliances and record books, and investigated their mode of practice at the patients' homes, 440 lying-in women being thus visited. Handy women and monthly nurses who had been attending cases of puerperal fever were also visited. Four midwives were suspended, and three had their names taken from the roll for failure to comply with the regulations. One other was fined 20s. and costs for practising without notifying the authority. On the whole, however, the work done by the midwives has been good; they have loyally co-operated in carrying out rules, and in only few cases have their appliances and registers been badly kept. The total births registered were 18,016, of which the midwives attended 10,614, that is, 58·8 per cent. In the previous year the midwives attended 11,498 out of 19,041, the birth-rate having declined from 28·89 to 27.52. The percentage of cases attended by midwives is in strange contrast to Salford, where the midwives are said to attend 72.4 per cent. of the births.

During the year 84 cases of puerperal fever were notified, of which 17 died. The attack-rate per 1,000 births was thus 4.67 and the case fatality 20.2 per cent. In the previous year there were 101 cases, with 24 deaths, an attack-rate of 5.3 per 1,000 and a case fatality of 23.8 per cent., which shows a considerable improvement during the year; 33 cases were in the practice of midwives, 34 in the practice of doctors, and 15 were cases where both doctor and midwife had been in attendance, while 2 cases were unattended; 9 of the cases were after abortion, 55 after normal full-time labour, and 20 after abnormal full-time labour, 12 of these being after use of forceps. Perineal tear was noted in 14 cases. Careful inquiry was made in the case of every midwife, and it was evident that midwives suffering from septic fingers hardly realized the danger of attending women at such a time. In one of the rapidly-fatal cases the source of infection was a superficial whitlow on the midwife's finger. The danger of relying on the mere form of disinfection instead of carrying it out in a thorough manner was well shown in a series of cases which occurred in the practice of a young midwife who had obtained the certificate of the Central Midwives Board after training in hospital.

During the year medical aid was summoned by midwives in 1,961 cases, as compared with 1,634 in the previous year. Of the total, 57 were for abortions or complications of pregnancy, 212 for illness during lying-in, 511 for attendance on the newly-born infant, and 1,181 for difficulties in labour. By far the commonest reasons for summoning the doctor were tedious labour in 381 cases, perineal tear in 251, haemorrhage in 125, and feebleness or prematurity of the infant in 264. Although medical men were summoned in 1,961 cases, only 342 applications were sent in for payment of fees. These were considered by the Medical Subcommittee, and payment was made in 282 cases, amounting to £287 6s. Of the 60 cases rejected, 40 had an income above the scale, and 15 did not fulfil the necessary conditions under which a fee is paid. One duplicate application was received and four were referred to boards of guardians. This last is significant in view of the Midwives Bill that has recently passed its second reading in the House of Lords. At present the Supervising Committee is voluntarily paying the fees under Section 133 of the Public Health Act of 1875, and the arrangement has worked well and at little cost, medical men being reasonably sure of being paid for their services where patients are unable to pay. The City Council has already protested against the provision of the new bill which puts on guardians the duty of paying medical fees in these cases, and if the bill becomes law in its present form there will be danger of serious overlapping between the local Supervising Committee which controls the midwives and the guardians who will be responsible for the medical fees. The Supervising Committee, which partly consists of specialists in the work, is the only authority which is competent to decide the nature of the cases for which medical aid is summoned, and yet the guardians will have to pay for that aid. Under the bill the Local Government Board may make

regulations to prescribe the manner in which the guardians are to carry out their duties, but unless these regulations are strict and rigid, there will be a large field for mutual friction between the two authorities. The guardians will have to send to the Supervising Committee a list of all cases where a fee has been demanded, and thus the work will be divided up between two bodies where one could do it far better. As the payment of fees is not to be regarded as parochial relief, it is difficult to see why the guardians should be brought in at all unless it is only intended to pay for paupers. If that is the intention, there cannot be that "secure expectation of payment" which the Departmental Committee recommended and without which the Act will be a failure. It is perfectly clear that unless the regulations of the Local Government Board are carefully watched, the battle over the Midwives Act may have to be fought over again, and there may be a serious disturbance and interference with the good work of the Manchester Supervising Committee.

The following is the Local Supervising Committee's revised statement of payment of fees to medical practitioners when summoned to the assistance of midwives:

Subject to the conditions contained in the book of application forms, the following fees will be paid:

In the case of a woman in labour, a fee of 21s. will be paid for emergencies numbered 1 to 6, and in addition for secondary *post-partum* haemorrhage.

1. A malpresentation.
2. Presentation other than the uncomplicated head or breech.
3. Where no presentation can be made out.
4. Where there is excessive bleeding.
5. Where two hours after the birth of the child the placenta and membranes have not been completely expelled.
6. In cases of rupture of the perineum or of other injuries of the soft parts.
7. Secondary *post-partum* haemorrhage.

A fee of 5s. will be paid for the following emergencies during the lying-in period. If the case is diagnosed puerperal fever, a total fee of 21s. will be paid.

1. Abdominal swelling and tenderness.
2. Offensive lochia, if persistent.
3. Rigor, with raised temperature.
4. Rise of temperature above 100.4° F., with quickening of the pulse for more than 24 hours.

A fee of 5s. will be paid for attendance on cases of

1. Purulent discharge during pregnancy or at the time of labour.

A fee of 2s. 6d. will be paid for medical aid rendered to the newborn child between the hours of 9 a.m. and 9 p.m., and 5s. for such aid between 9 p.m. and 9 a.m., for:

1. Injuries received during birth.
2. Malformation or deformity.
3. Dangerous feebleness.
4. Prematurity.
5. Convulsions.

These payments will only be made in all the foregoing circumstances where the income of the family does not exceed the following:

Man and wife	21s. a week.
Parent or parents and 1 child	23s. ,,
Parent or parents and 2 children	25s. ,,
Parent or parents and 3 ,,	27s. ,,
Parent or parents and 4 ,,	29s. ,,
Parent or parents and 5 ,,	30s. 6d. ,,
Parent or parents and 6 ,,	32s. ,,
Parent or parents and 7 ,,	33s. ,,

It will be noticed that, in the above list of emergencies for which a fee is paid to medical men, nothing is said of inflammation of the eyes of the infants, though when it occurs the midwives have strict instructions to advise medical aid. Since the beginning of the present year ophthalmia neonatorum has been compulsorily notifiable in Manchester, and investigations by Dr. Merry Smith have shown that "midwives must be warned against over-interference with the eyes and instructed to cleanse only the external surface of the lids either during birth or later, and to use for this purpose boracic lotion only. Should inflammation of the eyes occur, the child should at once be placed under medical care and the midwife should not attend to the eyes at all."

The Midwives Act has now been actively administered in Manchester for over five years. In that time there has been a distinct improvement in the work of the midwives, and, thanks to the energetic educational measures undertaken by the local Supervising Committee, the lying-in women, even in the poorest districts, are realizing the great importance of cleaner personal habits, and are readier to carry out instructions as to infant care. The very poor in the central districts are now sure of skilled care and attendance from the midwives working directly in connexion with St. Mary's Hospitals, and the poor women throughout the city can obtain medical aid when required at the cost of the Corporation. The good results of the work of the Supervising Committee are self-evident, and the effect on the general population is both gratifying and stimulating.

HOPE HOSPITAL.

The position of Medical Superintendent of Hope Hospital, which became vacant owing to the retirement of Dr. Hindshaw from ill health, has been filled by the appointment of Dr. Herbert Yearnshaw, who has been in private practice in Salford for the last fourteen years. There were over forty applicants for the post, and the guardians chose four of these to appear before the Board—namely, Dr. W. A. B. Young, South Cave, East Yorkshire; Dr. J. P. Haslam, Newcastle-on-Tyne; Dr. C. W. Hutt, Warrington; and Dr. Yearnshaw, Salford. Of the thirteen guardians present, ten voted for Dr. Yearnshaw, who was thereupon declared elected. Dr. Yearnshaw is a member of the Salford Division of the British Medical Association.

Correspondence.

THE FUTURE OF THE ASSOCIATION.

SIR,—I am sorry my friend, Dr. Wynne, thinks my letter hurtful or disheartening. May I try to reassure him?

In the first place, it is surely most encouraging that he and I, thinking differently on this question, can now discuss it without bitterness. There is a very profound saying that "in order to forgive everything one only needs to understand everything," and it seems to me that the very circumstance that each side in this debate is now willing to admit that the other means well, indicates, surely, a fuller grasp by both of matters which concern so deeply the future of the Association.

Again, Dr. Wynne has written some very kind things about me. I feel precisely the same about him. When men feel personal confidence in each other, surely common ground will not be long in making itself apparent.

But I am quite sure it would be a real disservice to the Association to let it appear from silence that differences were dead when in reality they are only dormant. Men are only waiting, and it would be in the highest degree unsatisfactory if this attitude were misunderstood at the present juncture. I wish to convey no suggestion whatever of any hostile attitude—far from it—but undoubtedly of an anxious attitude. Nor are those who are interested in the matter a very few. No Branch had any right to poll its neighbours, and such Branches as took a postal vote of their members some time ago did so on their own initiative. Thus the comparatively small proportion of the Association who voted in no sense indicated the number of our supporters. What did indicate this number was the overwhelming proportion of the votes recorded in our favour. And I am confident that the outside medical public also are not indifferent. How else explain entirely the pause in our rapidity of growth? I do not wish to dwell on that subject, but to try to explain it. If men are to join our ranks in the numbers Dr. Wynne and I would like to see they must feel sure of two things—first, that the government of the Association shall be on prudent lines, and, secondly, that they shall have their fair share in controlling its policy.

Dr. Wynne will forgive me, I hope, if I point out to him that, as Representative of two of the most compact Divisions in the country, he can scarcely judge of the extent of the disfranchisement which the wider areas of other Divisions would have suffered under the proposed rules to which we objected. Nor does the House of Commons furnish any analogy. On the contrary, it

provides a valuable contrast. Parliamentary elections disfranchise very few men who can be supposed capable of voting intelligently, and the polls are fixed by law within easy reach of all, are open all day, and the process of voting only occupies a few minutes. Compare with this the method proposed for us—namely, attendance at a distant meeting at a certain hour with considerable expenditure of time at it. It should also be remembered that medical men have special disabilities and in framing a rule for themselves should surely allow for these.

If Dr. Wynne will think over our proposals again he will, I think, find little harm in them and a vast amount of reason. Let me put a few questions.

1. Will any prudent or thoughtful man consider it undesirable that a single chamber government, however able, which only meets for three consecutive days in the year to discuss what may be the most crowded and at the same time the most momentous business, should have an effective possible appeal from its decisions? Let it be quite clear I neither impugn the capacity or good intention of the Representative Body, nor do I desire to hamper it. When one puts a brake on a bicycle one does not do so to prevent it going fast and far.

2. Assuming it is only commonly prudent to have such a possible appeal, can anything simpler or less hampering than the referendum be devised? So far from desiring a separate revising second chamber with its inevitable delays and friction, I would willingly see the whole Council elected by the Representative Body if we had such a Referendum as we are proposing.

3. And granted a referendum, what better form, or what form more carefully guarded from the possibility of frivolous abuse, can be designed than that we have suggested? It has to be obviously open to every one to record their vote—that is, postal—and it must be reasonably easily obtainable and have its continuance secured. By giving it to a simple majority of the Council, which will be more and more elected by the Representative Meeting, we only give the Executive a necessary power of revision, which it would only use in rare cases. By giving it with equal rights to any five or more Branches or Divisions of collective membership not less than 10 per cent. of the Association, we make individual wirepulling or frequent appeals to it practically impossible.

I feel confident that our differences have arisen from mutual misunderstanding. With better opinion of each other, with a great common end in view, the advancement of the profession, and with real dangers looming ahead, which we shall all, as comrades shoulder to shoulder, have to meet and overcome, it seems to me we are approaching a satisfactory settlement of this most important matter. Let us make our watchwords openly, what every one of us privately wishes them to be, "*prudence and fairplay*"—words which are the very soul and substance of what we are contending for—and with consequently established confidence in our policy, our Association should steadily go on, as it so greatly needs to do, to include, not half, but the whole of the British medical profession.—I am, etc.,

Exeter, Aug. 15th. W. GORDON.

SIR,—I was not surprised to find that the letters from Dr. Gordon and myself, which you published in the JOURNAL of the 6th inst., had been treated in a facetious manner by Dr. Wynne. The same attitude was assumed by Dr. Verrall in his criticism of Mr. Pye-Smith's letter of the previous week, and in his speech in reply to mine at the Extraordinary General Meeting on June 29th in London. A sort of genial sarcasm, implying pity for delusions of mental obtuseness on our part, underlies their words. Secure in the possession of a huge majority in the Representative Body, these gentlemen can afford to be indulgently humorous at our expense. But what if it proved that they, and not we, are living in a fool's paradise, and that the large body of members who have not yet expressed their views are found to agree with us and not with them? It must not be forgotten that nearly nine-tenths of the members have not expressed an opinion by vote. It is true that they had an opportunity of doing so, but it is not judicious, to say the least, to conclude that silence means consent. To make changes amounting to a reversal in some respects of the policy of the Association is, therefore, unwise without a further test of the mind of the Association. We do not affirm that the members would repudiate the action of the Representative Body in such circumstances, but we believe that, if restrictions of personal liberty within the Association and war with bodies outside begin to gall and chafe and to call for sacrifices, very many would take up the cry, "We are being misled," and adopt their only revenge by resigning their membership. We have no sympathy with those who absent themselves without reason, and we agree with Father O'Flynn that such lazy ones should be helped on with the stick; but there are many who, from legitimate and defensible reasons, find attendance at the meetings difficult, if not impossible, and who cannot be accused of treachery if they complain of the decisions arrived at, or resign as a protest. If the whole of the members are given the opportunity of voting by postal vote, and the case fairly presented to them, the decision, whatever it is, would be loyally accepted by us. What we assert is that the majority of the members do not know well enough what is being done, and what may result from the present policy of the Association. Probably 50 per cent. of them have never read the Draft Charter, and fewer still the present Memorandum, Articles, and By-laws of the Association. The SUPPLEMENT is a closed book to them, and, however inexcusable it is, a state of gross darkness exists among many members as to the new proposals.

When they come to realize the tyranny or inconvenience of the regulations proposed, and the hostility of the public which is inevitable from the adoption of some of the proposals, they will be disagreeably surprised and probably indignant. It will not do to dragoon outsiders into the Association and then threaten them with expulsion if they will not toe the line. This is a free country, and, educated or uneducated, its citizens will not submit to force. The close corporation which knows how to deal with those who will not join (as Dr. Mark Taylor in his letter of July 30th frankly proposed as the proper form of the Association) will not do; nor is it right, as an influential member three years ago mentioned to me as his ideal, "to make the Association so powerful that it will be dangerous to remain outside and still more dangerous to be expelled." We must make the Association, on the contrary, so useful and so reputable, that it will be a privilege and an honour to become a member. This is a very different thing. One means war and the other peace. Mr. Butlin, in his educative and admirable presidential address, said: "Since its reconstitution eight years ago it [the Association] has devoted its attention very largely to the defence of its members, and of the profession generally, against the attempts which are made, with cruel frequency, against them by many sections of the community. . . . But I am afraid there is no side of our work which needs greater tact or more delicate handling than this." An expression of undue force on the one hand, an exhibition of weakness on the other hand, and the amount of mischief which may follow is incalculable. I cannot remember any period of our history when our affairs required more skill or sagacity than the present. At the annual dinner, Dr. J. A. Macdonald defined the objects of the Association as "principally for the furtherance of science and the relief of needy humanity." The Earl of Aberdeen, on the same occasion, expressed his admiration for "the spirit and principle which inspired the methods of the Association." If Dr. Taylor's truculent policy is adopted, no man need expect such words from the noble earl or any other public man in future.

I was delighted to see that the Representative Meeting in July rescinded the amendments of the Wandsworth Division, which had been passed by large majorities at the June meeting. We are glad to welcome the evidence of a conciliatory spirit in Dr. Goodall's motion to refer the question of a postal vote to the Divisions.—I am, etc.,

Edinburgh, Aug. 15th. A. WALKER.

THE FUTURE PROSPECTS AND POSITION OF THE MEDICAL PROFESSION.

SIR,—My attention has been drawn to a slight error which appears in my article on the "Future Prospects and Position of the Medical Profession," etc., published in the JOURNAL of July 16th. On p. 138, second column, I make use of the following words:

As a further illustration of the way in which certain people endeavour to do away with payment to doctor for services

rendered, I may allude to the memorandum recently issued by the National Committee for the Prevention of Destitution, of which the Dean of Norwich is President, and Mrs. Sidney Webb, one of the Vice-Presidents, objecting to Clause 17 of the Midwives Bill, on the ground that payment of a fee to a doctor, who may be called in by a midwife to assist her in an emergency, would pauperize the patient. The Committee would prefer, as usual, to exploit the doctor rather than run any risk of placing the patient under the supervision of the *Local Supervising Authorities*.

On again looking over the memorandum, I find and freely admit that instead of using the words "the local supervising authorities," I should have used the words "the board of guardians." The National Committee are apparently willing that the doctor should get a fee in such cases, but it must be paid by the local supervising authorities, so that the stigma of pauperism, disfranchisement, and the hated visits of the Poor Law relieving officers may be obviated. To my mind this is six of the one and half a dozen of the other, for whoever pays the fee, whether it be the board of guardians or the local supervising authorities, it is charity, and it must be remembered that under the Minority Scheme "the State—that is, the local supervising authority—is to have power to recover charges from patients who are able to pay." This will necessitate visits from the officers of the local supervising authority, which will be hated just as much as those of the Poor Law relieving officer. However, the original bill has been withdrawn, and Lord Beauchamp's bill has been brought in, which provides that the fee is still to be paid by the board of guardians, but that no legal disabilities will be incurred by those for whom the fee is paid. This concession should surely satisfy the National Committee, but the opposite is the case, as they still intend to urge that the fee should be paid by the local supervising authority. How is it possible for Parliament to legislate in this direction, when there is no such authority in existence? It is assuming that the Minority scheme will be adopted in the near future.

The whole aim of the supporters of the Minority Report is apparently to make it easy for the public to obtain a free medical service, in other words, a free State service, and the question of the doctor's fee is a very secondary consideration. As I have already stated, this will be good neither for the community nor the profession.—I am, etc.,

Edinburgh, August 12th. MICHAEL DEWAR.

SICKNESS AND INVALIDITY INSURANCE.

SIR,—In the discussion on sickness and invalidity insurance in your columns I have missed one point, and that an important one to most of us. It is this: If a State medical service is instituted the State medical officer will take over a certain proportion of the work done by each of us general practitioners, a proportion which will vary with the proportion which the wage-earning classes bear to the whole of each of our practices. This will mean a drop in the capital and saleable values of our practices—a serious matter to the many men whose whole capital is invested in their practices. As other schemes equally, or more, to the advantage of the wage-earning classes have been put forward, and as any idea of compensation to practitioners would not be entertained by the Government, it seems to me that the institution of a State medical service should be keenly opposed by the profession—I am, etc.

BRUCE C. KELLY,
Burnham, Somerset, Aug. 9th. M.B., M.R.C.S.

SIR,—Next session the German medical contract scheme of Messrs. Burns, George, Churchill, Rigg, and others, will be brought up. To those of us who can only practise medicine as between man and man, accepting individual responsibility and looking for individual reward for our time and pains expended, no greater injury can be done than the launching of such a wholesale trading scheme of practice.

All medical men with any sense left of honour, dignity, or truth know that personally they cannot give further the time, patience, or the necessary remedies for the terms usually offered by the "friendly societies."

Most of us know that this class of work is generally farmed by the few money-grubbing "business" rather than the true professional man, and that the bulk of the work is done by a kaleidoscopic succession of ill-paid, overworked assistants of sorts. If the extension of cheap medical attention was to be limited to the general labourer without a working family, then one could sympathize with it, but we find the scheme includes all the well paid trades with their large working families; for example, miners, weavers, builders, engineers, fitters, tool-makers, yacht and ship builders, coach-builders, sawyers, etc., warehousemen, and clerks.

The benefits would also be extended to all that vast army of parasites that exist on the weekly collections of the working classes, as the officials of trade unions, friendly societies, tontine societies, building societies, co-operative societies, and political officials and their M.P.'s, which they can afford. We are told by all that trade is prosperous, the railway year is splendid, pleasure resorts crowded, extravagance in dress phenomenal. In spite of all this we are asked by Messrs. Webb, Churchill, Rigg, etc., to attend all the well paid workers at all hours and all seasons, no matter from what cause, whether vice, gluttony, or Heaven knows not what, for next to nothing. There can only be one answer to such demands. These classes are not short of money. The most superficial observer can see that from day to day. The yearbooks confirm it, and when one goes to their accumulated reserves, what these people want is not charity or money, but a little character for straight dealing, and the whole army of insurance parasites, who are dealing in futures and thriving on it, be sent to the right about. Forty thousand medical taxpayers and their friends can influence enough voters to learn the lip-service pseudo-philanthropists of the Commons that those who have to do the real work of their schemes will decide both the terms and the mode of rendering it, and any honour for charity will go to the medical men directly earning it at the expense of their time, health, and purse.—I am, etc.,

Burnley, Aug. 14th. J. I. HALSTEAD.

SICKNESS EXPERIENCE IN FRIENDLY SOCIETIES.

SIR,—In your leader for August 13th, dealing with sickness experience in friendly societies, surprise is expressed that the average sickness period for the National Deposit Friendly Society is only 3.19 days per member per annum, whilst the corresponding figure for the Manchester Unity of Oddfellows, the Ancient Order of Foresters, and the Hearts of Oak is from sixteen to eighteen. Of the three last-named societies, I will deal only with the Hearts of Oak, and consider it in comparison with the National Deposit Friendly Society. Possibly one of the most important points is the class from which the two societies is chiefly recruited. The National Deposit Friendly Society, I believe, is supported mainly by clerks, shop assistants, servants, etc., whose claims upon the society are mainly on account of sickness, and only rarely of accident; in fact the society is mainly a sick society. In the case of the Hearts of Oak, whilst doubtless the majority of claims are for sickness, many are for accident, as the members are chiefly drawn from the artisan class, and therefore much more exposed to accident.

Apart from any such partial explanation of the disparity between the average figures of the two societies, it is undoubtedly necessary to consider other factors, of which the chief one is duly emphasized in your article—namely, that in the case of the National Deposit Friendly Society part of the cost of medical attendance and also part of the sick pay are taken from the members' private deposits—a plan not in force in the other societies. Such an arrangement, so long as human nature remains as at present, will inevitably operate in checking thoughtless and unreasonable demands upon the society's funds.

A further important point is that under the Workmen's Compensation Act in its present form all workmen disabled by or supposed to be disabled by accident are entitled to half their average wages as from the date of the accident, if the disablement lasts more than fourteen days. This being so, there is a great temptation for men to absent themselves from work for a minimum period of a fortnight, even when suffering from such trivial injury as was ignored formerly, when they either were not compensated at all (as in the days prior to the passing of the Act) or not until the end of the first fortnight (as provided by the Act in its original form). And the result of this is easily seen. Not only does the workman claim his compensation—either from his employer or from the insurance

company who represents him—but he also during his absence from work claims benefit from his friendly society's funds. Since none of these cases, apart apparently from fractures and operations, are dealt with by the National Deposit Friendly Society, it is not difficult to see why the average yearly figure for the members' disablement is so low as compared with the other societies. Reports of proceedings at recent meetings of the Hearts of Oak Society show clearly that the increased drain upon the funds in recent times is giving the committee of management grave anxiety as to the future of the society, although its accumulated funds amount to over £3,000 000, and they have actually had under consideration the question of limiting the benefits of the society to cases of sickness, to the exclusion of all cases of disability from accident. The fact is that where a man by a fixed payment becomes entitled to an indefinite amount of treatment he is very generally inclined to obtain as much as he can for the money, and seems to think that by doing so he is doing "good business." Nor can this be wondered at. The fault is mainly with those persons who have bestowed upon him such unrestricted power. Many club patients call at the doctor's surgery on Sunday morning because it gives them an object for their walk, just as men not infrequently pay a most unreasonably early visit to the hospital because, as they say, "Well, there isn't much the matter, but as I was passing I thought I might as well call in for a bottle!"

Where a quite nominal sum is paid for many and indefinite benefits, it is not likely that those benefits will be valued at their true worth; and the National Deposit Friendly Society is very wise in making a contributory scheme compulsory for its members. It should likewise be remembered that no class of members is more likely to abuse the society than those persons whose material position renders them the least fitted for inclusion in its membership. From time to time I have definitely refused to continue attendance upon persons as club members, whose position in my judgement rendered them ineligible; and when attending them afterwards as private patients, I have found them not only able, but willing to pay reasonable charges, the only difference being that whereas as club members they used my establishment as a sort of gratuitous chemist shop, since they could get all they wanted practically for nothing, as soon as they became private patients, they thought more than twice before applying for my advice or remedies. As a matter of fact nearly all non-contributory schemes are inherently unsound and mischievous—being damaging and expensive to the persons or societies who find the funds or services, and demoralizing to the recipients, whose self-respect (a most valuable asset) is inevitably lessened or destroyed.

Only one other point calls for comment at the moment. You say in your leader that in the "Hearts of Oak Benefit Society no medical attendance at all is provided, and the members have to pay the whole of any doctors' fees out of their own pockets, and yet the sickness-rate is about sixteen days per year."

But is this so? The real fact is that the members take one of two courses: either they join some local sick society to which a doctor is attached, or in many cases the Hearts of Oak members in a given town arrange for a payment of 7s. 6d. per annum each to one of several of the doctors practising there, and so ensure for themselves all necessary medical attendance during illness. This they can well afford to do, seeing that during the whole period of disablement through sickness they receive from the Hearts of Oak 18s. per week, while, in addition, if the disablement is due to accident, they receive by law compensation equal to half the amount of their average weekly wages. Moreover as the existence of the Workmen's Compensation Act, in its present form causes men to cease work on account of quite trivial accidents—a cessation which must last for fourteen days in order to entitle them to compensation—no wonder that the Hearts of Oak shows a high figure as the average yearly disablement of its members.

The bearing of this question upon that of sickness and invalidity insurance is obvious—namely, that in any scheme which may be provided by legislation, if medical attendance is to be included, it is highly desirable to make the scheme contributory in character.—I am, etc.,

Wednesbury, Aug. 15th. WALTER GARMAN.

THE POOR LAW COMMISSION.

SIR,—In the debate opened by Mrs. Sidney Webb at the Section of State Medicine on the relation of Poor Law reform to public health administration, I had hoped to criticise some of her statements. Owing to my duties at the Section of Medical Sociology, I was unable to attend the former Section till late, and then through an oversight Mrs. Webb was called upon to reply before I had an opportunity of speaking. Might I under these circumstances ask you to permit me in the pages of the JOURNAL to put before your readers briefly the criticism I had proposed to make on that occasion?

Dealing with defects revealed by the Commission, Mrs. Sidney Webb's first proposition was:

1. The failure to provide treatment at all for many cases, and to reach others at the incipient stage.

I do not deny the truth of this altogether, but what I do contend is that this statement applies to all medical practice at the present time, and not more to Poor Law medical treatment than to the medical treatment of all the lower and middle classes of society, and that where it is true it cannot properly be used as an argument against our present Poor Law medical service. That it is proved by the report of the late Royal Commission I cannot admit. Taking the Majority Report, p. 364 (184), we read:

> We have received much evidence to the effect that the health of the community suffers because of inadequacy in the amount and quality of medical assistance.

On p. 364 (185) we read:

> On the other hand, we must not fail to observe that a large number of witnesses have stated that the health of the community does not suffer on this account.

From the Majority Report, then, we have no evidence to prove this special defect in our present Poor Law medical service.

Let us now look at the Minority Report. On p. 183 we read:

> In the face of this conflict of testimony (showing evident divergence of opinion) we thought it necessary not only to appoint a special investigator, but also to consult those who were officially responsible for the public health.

It is therefore not an altogether unwarranted assumption to make that if a "special investigator" and "fifty-one medical officers of health" had not been consulted, the evidence before the Minority Commissioners would have been much the same as that before the Majority. The Minority appear to think this additional evidence proves their case. My contention is that it does nothing of the kind. As a Poor Law medical officer, I naturally ask why fifty-one Poor Law medical officers, as being officially responsible for the health of the State poor, were not also consulted in the same manner. Without making any reflection on the evidence of the fifty-one medical officers of health—query, Were they whole or part time officers?—I think it only fair to quote some of the evidence derived from this source. On p. 185 of the Minority Report we read of 6 cases of scarlet fever in the house of a widow with no income. There was plenty of room in the house for isolation, and they could have been nursed at home if the guardians would have assisted; but this was refused, and the cases were removed to the isolation hospital. Nine days later 2 more children had to be removed. The total cost to the district was £55, when it might have been £5. Then the witness adds:

> This is an instance of the sacrifice of life, and health and money resulting from untreated cases of disease.

With all due respect to this witness, I would ask seriously whether this evidence proves anything. I trust what the Minority relied on was something better than this.

Again (ibid):

> The Poor Law doctor seldom knows phthisis in any but its incurable stage. Much the same may be said of cancer.

This also, so far as there is any truth in it, affects a much larger section of the community than the legal poor.

2. The deterrent effect of the relieving officer, and of the whole Poor Law system.

With regard to this, (74) and (75) on p. 326 should be compared. The former paragraph states that:

> In the opinion of a number of witnesses Poor Law medical relief is largely deterrent on account of its association with the Poor Law.

The latter:

That there is a great deal of evidence to show that outdoor medical relief is decreasing in its deterrence. [That] the Poor Law has lost all its terrors.

In the face of such a conflict of evidence it is absurd to say that (2) is proven.

3. The adverse influence on treatment of the unsatisfactory system of remuneration of the district medical officer, and of its inadequacy.

4. The saddling of the district medical officer with the cost of drugs.

5. The failure to provide for nursing, suitable nourishment, and convalescence.

These three propositions may be frankly admitted, but such abuses could easily be reformed without the drastic changes proposed by Mrs. Webb.

6. The lack of connexion between the domiciliary and the institutional treatment.

This is not true so far as the metropolitan area is concerned. There is a very close and improving connexion between the two.

Mrs. Webb says there are three courses open:

1. The *status quo* with minor improvements.
2. The Majority Report.
3. The Minority Report.

In (1) why not "major" improvements? Where does Mr. Booth and Sir Arthur Downes's scheme come in? Would this, tacked on to a thorough reform of the medical department based on its present outlines with a radical alteration of its administration, brought about by an extension of the powers of the Local Government Board, with a much better system of inspection by the upper board, be considered the "*status quo* with minor improvements"?

With regard to (3), Mrs. Webb says:

The last provides instant treatment for *all* in need, but safeguards private practice by providing for *rigorous charge and recovery*, so as to discourage resort to it to all families above bare subsistence (say 3s. a week per adult unit).

The italics are my own, but the "all" is inconsistent with the limitation, and the "rigorous charge," etc., is quite as deterrent as anything in the present system. Likewise, the "test" of 3s. a week per adult unit is a startling innovation on the tenor of the original report.—I am, etc.,

MAJOR GREENWOOD,
Honorary Secretary, Poor Law Medical Officers' Association of England and Wales.

London, N.E., Aug. 3rd.

HOSPITALS ON THE RATES.

SIR,—Professor B. Moore is right. It is the duty of the State to provide hospital accommodation for the sick, without making the patients paupers, sweating the medical staff, or converting the hospital governors into perpetual beggars. Of course it would cost a lot. Thus in Dublin there are about 3,000 beds in private hospitals. These cost an average of about £30 per annum for upkeep, equal to £90,000 a year—say 1s. 10d. in the pound on the rates. Probably when existing endowments were allowed for and the cost of country patients deducted, about an extra 6d. in the pound would provide for the upkeep of all the Dublin hospital patients without further begging. The best way for the present would be to give a capitation grant of 2s. 6d. per day per patient to the hospitals. Then any citizen should be admitted to any hospital he selected on production of his doctor's certificate that he needed hospital treatment. This would gradually pave the way for the evolution of a municipal hospital with a properly paid staff. Meanwhile, any money coming into a hospital lightens the burden of the medical staff.—I am, etc.,

J. C. MCWALTER, M.A., D.P.H.,
F.R.F.P. and S. Glasg.

Dublin, August 6th.

CORONERS' LAW AND DEATH CERTIFICATION BILL.

SIR,—Your correspondent, "Unitas," appears very much aggrieved with the omission in this bill of a clause recommending the payment of a fee for the proposed new form of death certificate.

I have no doubt practically the whole profession will agree that it is unjust to make the examining of the dead body a statutory demand, thereby entailing increased labour without any offer of remuneration whatever. Take the instance of the doctor covering a large country area, having seen a dying patient on his morning round five miles away, and being compelled to do this journey again later in the day merely to certify the *fact* of death. Will this be done?

It is, however, only fair to mention that Sir William Collins pointed out in the State Medicine Section of the British Medical Association meeting last month that a clause dealing with fees might endanger the acceptance of the whole measure, inasmuch as a prejudice exists in the minds of M.P.'s that we are "out for fees."

No one, surely, would suppose that Sir William Collins is opposed to a fee being paid his brethren for work insisted on by the State, but it is obviously a question of diplomacy with him, as an experienced parliamentarian, to introduce the minimum amount of contentious material into the bill.

It is for us to decide whether we risk the rejection of an otherwise excellent bill amending coroners' law and death certification by insisting on what might prove a wrecking clause.

Still, in my judgement we ought to be able to eradicate this evil impression of our legislators that we are "out for fees," and replace it with the knowledge that we seek only a just claim.—I am, etc.,

WALTER ASTEN.

London, N., August 13th.

DEATH CERTIFICATION IN GUERNSEY.

SIR,—I send you a copy of the law of the island of Guernsey relating to death certificates and burials.

In every case of death here, either a doctor's certificate or an act of Court (finding of an inquest) must be produced before the Greffier (registrar for the whole island) grants the permit for burial. The law also states that this provision shall apply, as far as possible, to the case of stillborn children. For these cases special medical certificates, as enclosed, are provided. In the case of any doubtful certificates the Greffier refers the matter to me for a decision.

Another law provides that no body may be buried in any other place than a recognized cemetery, and that no cemetery or graveyard may be opened or enlarged without due formalities being observed, and the permission of the Royal Court being granted.

As a digression I may mention that no person may here exercise or carry on the profession or calling of a physician or surgeon without being fully qualified, and having his name on the current *Medical Register*, as well as being licensed by the Royal Court. It is thus easy to deal with unqualified practitioners if evidence to convict them be forthcoming.

Quite recently the secretary of the local Branch of the British Medical Association brought a flagrant case before the notice of the authorities, a bone-setter and "dream doctor" being fined the maximum penalty of the law for having medically attended a patient—namely, £20 and full costs or two months' imprisonment. For a second conviction the fine might be as much as £50 and costs. In this case the Attorney-General laid down that to practise as a "bone-setter" was to practise as a surgeon within the meaning of this law.—I am, etc,

HY. DRAPER BISHOP,
M.O.H. States of Guernsey.

Guernsey, July 13th.

"SANATORIUM TREATMENT OF TUBERCULOSIS."

SIR,—The unfortunate optimism of some early advocates of sanatorium treatment and their disregard of all influences outside their ordinary routine are now bearing fruit in an equally unfortunate pessimism on the part of many of the profession.

Judging from my own observation, I should say that the "open-air treatment" of phthisis, intelligently carried out, is an immense advance on former methods, and that a satisfactory sanatorium is of great value both educationally and therapeutically.

At the same time, I do not think the materials are yet to hand in this country on which to base a precise judgement. Not only must we have, for instance, in every case particulars of sex, age, social standing, temperature, extent of lesions, and presence or absence of complications, but we must know that the case was really tuber-

culous; yet in some instances, it seems to me, no sufficient care is taken to make sure of this fundamental particular.

Further—and on this I have no hesitation in laying stress; it is indeed to draw attention to this that I write—what is true for one sanatorium must not be taken as necessarily true for another. I feel fairly confident that the present methods of choosing sites for sanatoriums are unsatisfactory, and that it will be found, sooner or later, that the site of the sanatorium will prove to be much more important than is now generally held.

The way in which some able men seem unable to conceive of local climate as a possibly important factor in the cure of phthisis is to me very surprising. My own experience is not wide enough to be convincing—very large numbers of cases are needed—but it all goes to suggest to me that the same treatment carried out in what I should think a favourable situation gives better results than in what seems to me a less favourable.

The most promising way, I think, of approaching this factor of local climate is that adopted by Dr. C. Theodore Williams in his *Aërotherapeutics*, whereby a single central observer, or group of observers, classifies cases sent to different places and compares the results. The excellence of Davos, the inferiority of Pau, were thus demonstrated in pre-sanatorium days.

I would strongly urge, in any statistical inquiry into the value of sanatorium treatment, the comparison of the results obtained at different sanatoriums and the investigation of their relation to possible climatic influences. I purposely refrain from alluding to any one particular influence, for the investigation should be in all ways unprejudiced.—I am, etc.,

Exeter, Aug. 13th. W. GORDON.

SIR,—It is to me truly remarkable that Dr. Dutton finds that in by far the greater majority of cases "the results of the open-air treatment . . . are adverse to the patient." It would be interesting to learn precise details of the nature of these adverse effects. It is certainly true that after a course of treatment in a sanatorium patients feel distressed if they remain in a closed room, or sit in a crowded hall or a smoking room, but these are conditions which they are advised to avoid, and therefore I see nothing adverse in such a result. Beyond such effects I know of no harm caused by the open-air treatment.

It is certainly true that animals and birds "seem to have a deep-rooted instinct to avoid cold damp air," and the phthisical patient, along with the domestic dog and cat, likes to cuddle himself by a roaring fire. In the same way the infant and adult too, has a deep-rooted instinct to avoid taking ol. ricini and other nauseous drugs. Medicine is often nasty although beneficial.

Dr. Dutton suggests that patients believe themselves better merely by suggestion, and, on leaving, relapse and die. He is referring to very advanced cases in which no hope of recovery is held, and his own words show that the open-air treatment does cause improvement even in advanced cases, as otherwise they could not *relapse* into their former conditions on leaving; but to come to the conclusion that the relapse and death is the adverse result of the treatment—as he apparently does—is grossly illogical. The help of a trained statistician is certainly needed if such conclusions are being derived from the present available figures.

Suggestion is really most valuable. The atmosphere of a sanatorium has certainly a morbid tendency, which has to be combated by every means in our power, and nothing depresses a patient more and hinders his progress more than the thought that he is not making good progress. It has often struck me that the *spes phthisica* was a merciful dispensation of Providence, but a pity that it was not an earlier symptom. It is a grave charge to make against the treatment that all good done is merely a suggested belief. The sanatorium treatment is not to be estimated by the results in advanced cases; its aims are the arrest of the disease in the earlier stages, and I cannot see that the steady gain in weight to normal, the reduction of temperature, cessation of sweating, diminution and cessation of cough and sputum, and in many instances the disappearance of physical signs and of the tubercle bacilli from the sputum can be brought about merely by suggestion.

Results appear to have been very satisfactory, although it is regrettable that the condition of arrest has not always been reached. Do we not know how few cases are able to remain long enough under treatment? In many cases the patient has a wife and family to support, and rushes back to his work the moment he feels physically fit, with the inevitable result that the treatment is discredited. It has never been maintained that a patient discharged from a sanatorium is cured. He himself has to continue his life, trying to avoid all conditions which might tend to a relapse.

The question of the challenge put forth in the latter portion of Dr. Dutton's letter is merely a question of the most suitable locality for a sanatorium. If the medical and diet treatment are to be the same, it amounts to this: that he is in favour of the sanatorium treatment in a warm dry climate, more or less in favour of it in a cold dry climate, but cannot agree with it in a cold damp climate, for it seems evident that the heat and moisture of the atmosphere must depend on the climate of the country. Broadly, therefore, he advises a sanatorium on the high veldt of South Africa, but disapproves of all sanatoriums in the British Isles. I think it will be agreed by most that sanatorium treatment on the high veldt of South Africa is far more beneficial for early cases than any treatment in the British Isles, though it is disadvantageous in advanced cases owing to the altitude. In my experience with this treatment, as I applied it in South Africa, I have found that patients make much greater progress in the cool weather than in hot, and especially have I noticed that during times of misty weather, which sometimes occur on the high veldt, the condition of the patient is never worse, and very often is actually better, than when the atmosphere is dry. Another point is that hot dry climates, like that of Pretoria, are detrimental to the patient. Dr. Dutton's views of suitable air are certainly not supported by these facts.

Unfortunately, it is not possible for all phthisical patients to go to South Africa, and not even to the Continental sanatoriums, and therefore the only question to be answered is whether the sanatorium treatment in the British Isles is better than no open-air treatment at all. So far as I can see, the figures we now have prove the benefit of the treatment. Further statistics are certainly required, but in my opinion should deal in the main with early cases tabulated according to supposed susceptibility gathered from the family history. Thus it could be assumed that a patient of healthy parents had a normal immunity, whereas one of phthisical parent or parents had a susceptibility greater than normal. On the other hand, even the most straightforward statistics fail to convince all parties. Many persons are still opposed to vaccination.—I am, etc.,

London, S.E., Aug. 14th. A. E. H. PAKES.

SIR,—Statisticians seem to have come to the conclusion that the value of sanatorium treatment cannot, at present at all events, be decided by statistics. This appears to have led certain opponents of sanatorium treatment to the illogical conclusion that such treatment therefore has no value. The statistical method of proof as to the precise efficacy of any particular line of medical treatment must ever remain somewhat unsatisfactory, unless the results of some new treatment are startlingly successful. Furthermore, scientific statistical methods have only recently been applied to such problems and at best are not very applicable to them, for the factors affecting results are so numerous. Possibly before sufficient statistical data for a just conclusion as to the efficacy of sanatorium treatment can be collected, some new factor modifying the present line of treatment will have crept in and have become established. But surely the matter has already been decided by an appeal to common sense. I should very much like to know what ideas the opponents of sanatorium treatment have as to what constitutes the modern treatment of consumption. Six years ago I had definite symptoms and signs of slight phthisis. Except for one period of four months when I had a fresh outbreak (inaugurated by a concatenation of unfortunate circumstances quite beyond my control), I have followed my profession for the last five years under circumstances which may well be considered to be, at times at all events, somewhat exacting and arduous.

I know full well from personal experience what the

modern sanatorium method of treating phthisis is. I believe I have a good conception, too, of most alternative methods which have been or still are used to combat this disease. Personally I cannot understand how any one who really knows what is comprised in the sanatorium open air method of treatment could possibly fail to appreciate it, even though he saw partial failure or death follow such treatment in many a case. It comprises, according to my ideas, much more than simply "the open window." It has aptly been called "systematized common sense." The skilled supervision, for example, of rest and exercise, which helps to control as far as possible auto-inoculations, is perhaps as important as fresh air. The intelligent patient, whether an advanced consumptive or a slight and early case, learns not only the full value of a due amount of fresh air, but also many rules for his future guidance in maintaining improved or perfectly good health. He learns, too, how he can avoid being in any way a danger to other people.

Whatever disease a man may be suffering from, but perhaps especially in the case of chronic pulmonary tuberculosis, it appeals to me as sensible to send him to school for a period that he may learn as far as he can how Nature intended a man to live. It is easy to abuse the artificialities of modern civilization, but it is not always so easy to teach the wayward, and at times stupid, backslider from a healthy way of living the error of his ways. Surely that which gives the invalid suffering from consumption the best chance is to raise as quickly as possible the general health to its highest possible pitch, and to teach him as quickly as possible how to maintain it there; and my experience has taught me that neither of these things, but especially the former, can be accomplished without the use of "open air." By such means the power of resistance is restored, the best possible chance of arresting the disease given, and lastly, but of equal importance, if arrest is brought about, the best chance is given of keeping the disease arrested long enough to justify the assumption that the disease is cured.

Preventive medicine aims at preventing the human machine from getting out of gear, and curative medicine aims at so helping and controlling natural processes that they bring back to a healthy condition the complicated mechanisms of the human body—mechanisms for the most part still entirely beyond our direct control in spite of recent advances in vaccine treatment, "ergo-therapy," organo-therapeutics, etc. From my own experience I feel convinced that I should have taken far longer than I did to learn what constitute risks to my good health; exactly what my capacities for labour, mental and physical, are; and what requirements my body demands if I had never been under sanatorium treatment. In fact, I would go further, for I believe it is quite possible I should never have learnt much about such things had I not had the advantage of living in a sanatorium for a time, for I should quite possibly have died of phthisis years ago.—I am, etc.,

Mundesley, Aug. 14th. S. VERE PEARSON.

THE NATURE OF EROSION OF THE CERVIX.

SIR,—In your brief preliminary report of the discussion which followed Professor Gottschalk's lantern demonstration the microscopical appearances of erosions of the cervix, at the annual meeting of the British Medical Association, the following remarkable sentence appears: "It was pointed out to Professor Gottschalk that the term 'erosion' does not to the British gynaecologist imply any adenomatous growth as it seems to do in Germany." If your reporter had used the word "English" instead of "British" I should not feel called on to correct him, but even then it appears that he would be wrong.

I take Drs. Bland-Sutton and Giles's *Gynaecology* as representative of English opinion; I take Drs. Hart and Barbour's *Gynaecology* as representative of Scotland; and, for want of a better, I take my own as representative of Ireland. In the first named I read of "Adenomatous disease (formerly called *erosion*) of the cervical endometrium." In the second named I read, "The raw-looking surface" (of erosions) "is therefore a *newly-formed glandular secreting surface*, resembling in structure the cervical mucous membrane." In the last named I read, "The altered tissue" (of an erosion) "closely resembles the structure of an adenoma, and consequently the condition is sometimes described as an adenoma of the cervix."

I for one was certainly of opinion that no other view than that contained in these extracts was held by "British" gynaecologists, and I should be very interested to learn who was Professor Gottschalk's instructor. It is a pity that we should appear to be more ignorant than we really are.—I am, etc.

Dublin, Aug. 10th. HENRY JELLETT.

SURGICAL APPOINTMENTS IN ENGLISH HOSPITALS.

SIR,—Will you kindly insert in your next issue the appended copy of a resolution passed by the Council of the Association of Fellows of the Royal College of Surgeons, Ireland, at the meeting held on August 16th, in reference to an advertisement appearing in your issue of August 13th last, inviting applications for the post of Honorary Assistant Surgeon to the Manchester Royal Infirmary and Dispensary, and specifying that applicants must be Fellows of the Royal College of Surgeons, England?—We are, etc.,

F. G. ADYE-CURRAN,
President.
ANDREW CHARLES,
ROBT. P. MCDONNELL,
Honorary Secretaries.

The Association of Fellows of the Royal College of Surgeons in Ireland, Royal College of Surgeons, Dublin, Aug. 17th.

The attention of the Association of Fellows of the Royal College of Surgeons, Ireland, having been drawn to an advertisement of the Manchester Royal Infirmary and Dispensary for an honorary assistant surgeon, where it is stipulated that candidates must be Fellows of the Royal College of Surgeons, England,

This Association hereby protests against such invidious distinctions being drawn between the Irish and English Colleges, inasmuch as the Fellowship of the Irish College is in every way equal to that of the English College, and also that some of the most eminent surgeons in England at the present time are Fellows of the Royal College of Surgeons in Ireland.

MASSAGE IN BERI-BERI: A DISCLAIMER.

SIR,—My attention has been drawn to a paragraph in the *Times* of August 17th concerning the treatment of beri-beri at the Seamen's Hospital, Albert Docks, London, E., with which my name is connected. I wish to state that I have nothing to do with the treatment of cases of beri-beri at the hospital, nor have I heard of Swedish movements and massage being employed in the treatment of beri-beri.—I am, etc.,

London, W., Aug. 17th. JAMES CANTLIE.

The Services.

ROYAL ARMY MEDICAL CORPS.

EXAMINATION OF MAJORS FOR PROMOTION.

WITH reference to footnote to Appendix XIV. of the King's Regulations, it is notified that the subjects selected for the year 1911 will be as follows:—

Subject 3. (i.)—The Medical History of the German Campaign in South-West Africa. A report on this subject will be found in the numbers of the *Journal of the Royal Army Medical Corps* for August and September, 1910, entitled "A Report on the German Campaign in South-West Africa, 1904-1906." (Summarized from *Sanitäts-Bericht uber die Kaiserliche Schutztruppe fur Sudwestafrica während des Hereround Hottentotenaufstandes* vom 1 Januar 1904 bis 31 Mai 1907. Erster Band. Administrativer Teil.)

Subject 3. (ii.)—The Medical Service of the Austro-Hungarian Army, with special reference to its organization (and that of Voluntary Aid) in time of War. Book recommended: "Handbook of the Medical Services of Foreign Armies, Part III, Austria-Hungary."

A LEA-FRANCIS bicycle which recently came under notice was found to be fitted with aluminium pedals, studded with rubber. They were light and seemed to give a firmer grip than ordinary pedals. The device has been patented. The make of a pedal is a small item, but it is by attention to small details that the Lea-Francis and other high-grade machines have built up their reputations.

UNDER the will of the late Mr. Peter Hubert Desvignes of Weybridge, Guy's Hospital receives a sum of £6,000 and the residue of the estate, which would appear to amount to a further £8,000. Bequests of £500 each are made to the Weybridge Cottage Hospital and the British Medical Benevolent Fund.

Obituary.

FLORENCE NIGHTINGALE,

MEMBER OF THE ORDER OF MERIT.

Florence Nightingale—almost equally well known as the Lady of the Lamp—died at her residence in South Street, Park Lane, in the afternoon of Saturday, August 13th. She had not been in her usual condition of health for some little time, and in consequence had been receiving professional visits from her friend and medical adviser, Sir Thomas Barlow. She was in the ninety-first year of her age, and the immediate cause of death was heart failure. Her interment is taking place this week, and in accordance with wishes, expressed by her both verbally and in her will, will be accompanied by ceremonials of as simple and private a character as possible.

Nevertheless, it is probable that a suitable memorial of her life will eventually find a place in Westminster Abbey. None, however, of the great dead of the past few centuries could equally well perhaps dispense with such an honour, for in her work she built for herself a *monumentum ære perennius*. Since the time when it was first acquired over fifty years have passed, and during the interval she had led, so far as the general public is concerned, a very secluded existence. Nevertheless, her name still remains a household word.

All that is here possible is to draw attention to the more essential features of her life. Social and all other conditions have so greatly changed from what they were during the more active portion of Miss Nightingale's career that even a very lengthy biography, unless written by an exceptionally gifted person, would be unlikely to convey a faithful conception alike of the woman herself and of those for whom and with whom she did her great work.

Florence Nightingale was born in 1820, her father being a Mr. Shore, who, on inheriting estates in Yorkshire and elsewhere, had taken the name of Nightingale. Her maternal grandfather was one of the many philanthropists who between them helped to bring about a cessation of the slave trade. She was born in Florence, from which city she received her name, and was educated on somewhat unusual lines. Surrounded by persons of high cultivation, she was trained in classics by her father himself, was taught several languages, and was taken about on travels throughout Europe. She had no brothers and only one sister.

In due course she "came out," was presented at Court, and commenced the ordinary life of an heiress of the day. As her father was a man both of unusual wealth and the head of one of the great county families, this was an inevitable step, but it may safely be assumed that "coming out" did not mean for Miss Nightingale quite what it does for most young women. The girl in her case seems to have been very decidedly the mother of the woman. As a child she had exhibited a practical and enduring interest in the occupations which afterwards became the centre point of her life.

Arrived at womanhood she began a definite study of hospitals and like institutions; and when aged 29, and practically her own mistress, entered the Kaiserwerth Institute in Germany as a probationer nurse. Six months later she put herself in the hands of the Sisters of St. Vincent de Paul in Paris; and, finally, on her return to England, took over the management of the Home for Invalid Ladies in Harley Street. It was a step which created a great deal of talk in society—a term which fifty years ago covered a much narrower group than it does at the present day—for while nursing was only just beginning in this country to be recognized as an occupation in any wise fit for ladies, she herself, as a talented, rich, and decidedly good-looking, young woman, seemed to have everything at her feet.

Some three years later the Crimea war commenced, and very shortly afterwards accounts of the great sufferings of the troops began to reach England. Public feeling, already aroused, was brought to a head by the famous war correspondent, Russell, who in a picturesque letter called on "the daughters of England" to rise to the occasion. The call was immediately answered, among those who tendered their services to the War Office being Miss Nightingale. Her letter crossed one from Mr. Sidney Herbert, offering her complete control of all nursing arrangements if she would go out, and a free hand in respect of stores. His letter included the following words, which show precisely why she was chosen, and in some degree why she was successful:

> Your personal qualities, your knowledge and your power of administration, and, among other things, your rank and position in society give you advantages in such a work which no other person possesses.

She of course accepted the offer, and, thanks to her previous experience, had got together a satisfactory staff of thirty-seven women in less than a week. Ten she drew from among Roman Catholic Sisters of Charity, eight from Protestant Sisterhoods, six from the St. John Nursing Institute, and the balance from other sources.

Travelling over land via Marseilles the party arrived at Scutari, the scene of its labours, at the beginning of November, 1854. The work which it had to do, and which it actually did in such fashion as to excite the most enthusiastic gratitude both among the wounded and in England, can only be generally indicated by recalling certain facts. On the one hand hospitals even in England were still very rough institutions, antiseptics were unknown, and chloroform rarely used. On the other, the place used as a base hospital was merely a barrack at Scutari, about two hundred miles by sea from where the men were wounded or first fell sick; the war had been preceded by forty years of peace; the nursing orderlies were totally untrained and recruited from the veriest riffraff; and of the whole army of about 30,000 men some 10,000 were already either wounded or ill. The number increased later on, but meantime assistance in the way of material and personnel had poured in and matters had greatly improved.

Miss Nightingale did not return home until the very last of the hospitals had been closed. A man-o'-war had been told off to convey her home as a mark of the Government's share in the enthusiasm created by the work of herself and her assistants, but quite characteristically she came home alone in a foreign ship under an assumed name. The gift of £50,000 raised by public subscription in her honour she directed should be used in founding a school for nursing—the present Nightingale Home. As soon as possible she withdrew herself from public notice, and for the rest of her life led a very quite and for many years semi-invalid existence. It was, however, one of a very busy kind, as her advice and assistance on matters directly and indirectly connected with nursing questions were constantly sought by public and private personages. Of nurses themselves she remained the most loyal friend to the very end of her life. In its course she received many, but always unsought, honours, among them being the highest which it is in the power of the Crown to bestow, admission to the Order of Merit.

Much of her reputation Miss Nightingale owed to the rank and file of the army itself. She became identified in their minds with the ameliorated conditions which followed the arrival of her party, and personally known to many of them owing to two circumstances. Despite her manifold occupations as an organizer and administrator, she made a practice of being present at operations, and lamp in hand of going round the wards at some time during the night to see that everything was in order. This was the origin of the term "Lady of the Lamp," applied to her in Longfellow's poem.

Miss Nightingale's work is frequently described as if she had done it single-handed, but she, of course, received splendid assistance from her nurses and would have been the last to deny them their share of honour. It is to her, however, that all credit is naturally given, since hers was the task of inspiration, organization and administration, and of finding a way round a thousand and one difficulties. Among them was not, as has been sometimes stated, any opposition from the medical staff. Its members recognized from the first her real knowledge and great abilities, and she in her turn fully appreciated their labours. Throughout her evidence at the subsequent commission of enquiry she steadfastly laid the blame for the breakdown which had arisen on the shoulders of the War Office itself.

She was never in any sense of the word an amateur, and constantly made obvious her contempt for work of this order. Her books and the few semipublic letters she wrote

convey a very true impression of the woman herself. They show a clear insight into first principles, absolute freedom from cant, and a person who is before all things practical, but possessed of humour, and regarding work entrusted to her unwilling to brook interference of any kind. They also offer further proof of how little novel many "new" ideas are. One book written fifty years ago contains a statement adumbrating the "new" idea that the phenomena of disease are merely evidence of healthy reaction by the organism; and elsewhere she anticipates a justly renowned American professor of pediatrics, who has recently proclaimed that the chief source of infant mortality is not artificial feeding, but neglect of home hygiene. It is, indeed, less Miss Nightingale's work in the Crimea and in connexion with nursing than her early advocacy of hygiene which entitles her to notice in these columns.

She saw the need so near and great,
And to that need was consecrate;

Her arrowy vision, swift yet sane,
Ranging the astral heights of pain,

Discerned, to change, the casual chance
And wanton waste of Ignorance.

High soul with strange mysterious pow'r!
Strong angel of an angry hour!

The heav'nly brood thy hand set free
In those dark dawns of Scutari

Has flown by instinct of the dove
With tidings of thy healing love,

For ev'ry suff'rer's pain-rack'd need
To cheer, sustain and intercede;

The voice that to the soldier's ear
Whispered the word that cancell'd fear

Indwells when droops the raging sword,
Fulfill'd with mercy of the Lord,

Remains, when voices die away,
An echo of undying day.

G. H. R. D.

MARY ADAMSON MARSHALL, M.D. PARIS.

THE death of Mrs. Marshall, M.D., which occurred at Watford, on Monday, August 8th, removes one of the most widely known and respected medical women in Europe.

Mrs. Marshall was born in January, 1837. She was one of a family of twelve. Her father, the Rev. Dr. Anderson, had twice thrown up his living for "conscience sake," his views as to Church government and doctrine not agreeing with those of the majority. Her mother, a woman of rare distinction of mind and character, died when Mary Anderson was a young woman. Dr. Anderson had previously started a large and flourishing residential boys' school, known over the North of Scotland. His daughter at once took charge of the household and of the domestic side of the school. Some years later Dr. Anderson married again, and his daughter then felt free to leave home and to study medicine. She entered the recently opened Medical School for Women at Edinburgh, and went through several classes with distinction. In 1871 she married Mr. Claud Marshall, a solicitor of Greenock.

A few months later her husband died. A son was born, but he lived only a few days. In 1874 Mrs. Marshall resumed her studies in London, and after a time, wishing to get the M.D. degree, she went to Paris. Thanks mainly to the help of the British Ambassador, Lord Lyons, the Paris University, which had already given the M.D. degree to Miss Garrett and Miss Putnam, agreed to accept Mrs. Marshall's certificates taken in Edinburgh and London, on condition that she should repeat in Paris most of the clinical work and many of the senior courses of lectures. She completed her course with much distinction in 1882. She obtained the M.D. Paris, and in addition the diploma which gives permission to practise medicine in France. Her thesis for the M.D. of Paris on *Mitral Stenosis* has been referred to by several authors as a notable contribution to our knowledge of this subject.

Mrs. Marshall practised for some years in London, and she was on the staff of the New Hospital for Women. In 1895 she moved to Cannes, where she became widely known and much respected. She was immensely kind to every one who came into her circle, and to her patients above all. She also was rich in common sense, good judgement, and good taste. In her dealings with her fellow practitioners in London and at Cannes she was absolutely loyal, just, and considerate.

Mrs. Marshall's health had been failing for some time, and she had a severe illness last spring which warned all her friends that her life was precarious, though, thanks to Dr. McDougall's care and skill, she recovered for a time, and was able to return to England. Her final illness was pneumonia of two days' duration.

MR. FREDERICK WEATHERLY, M.R.C.S., died recently at Portishead, Somerset, at the age of 90. He was educated at Great Ealing School, and passed the "College and Hall" in 1841. After forty years of active and professional work in the West of England he retired and devoted himself to public work. He was for many years a Poor Law guardian and chairman of the Bedminster and Long Ashton Boards. He filled several other public offices. He was a J.P. for Somerset, and was formerly Surgeon-Major in the 1st Gloucestershire Volunteer Artillery. He had eight sons and two daughters, among the former being Dr. Lionel Weatherly, to whose initiative was largely due the establishment of Winsley Sanatorium, near Bath.

Universities and Colleges.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

Appointments.

DR. R. H. ADERS-PLIMMER and Dr. W. B. Tuck have been appointed Teachers of Chemistry to Medical Students, and Mr. H. J. Page Demonstrator in Chemistry and Physiological Chemistry to Medical Students.

Vacation Courses in Chemistry, Physics, Biology, Anatomy, and Physiology, for Medical Students begin on September 1st.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Barker Anatomical Prize.

THE Barker anatomical prize for 1911 is offered for a dissection of the first, second, and third cervical nerves from behind. The prize, which is of the value of £21, is open to any student whose name is on the anatomical class list of any school in the United Kingdom. Preparations must be received on or before April 30th, 1911, by the curator, from whom further particulars can be obtained.

Medical News.

THE Brussels Exhibition was burnt down on the evening of August 14th. The British Section, including exhibits by leading firms of surgical instrument makers and drug manufacturers, was completely destroyed.

ON August 10th Professor Albert Eulenburg, the distinguished neurologist of Berlin, celebrated the completion of his 70th year.

DR. WILLIAM MARTIN, of Thorne, Doncaster, has been appointed to the Commission of the Peace for the West Riding of Yorkshire.

HIS MAJESTY THE KING has consented to become a patron of the Earlswood Asylum, the well-known national training school and home for the feeble-minded at Redhill, Surrey.

MADAME CATHERINE SCHUMACHER, widow of the Marquis de Guerry de Beauregard de Maurreuil d'Orvault, has, in addition to a large number of legacies for philanthropic purposes, bequeathed £40,000 to the Pasteur Institute, Paris.

ARRANGEMENTS have been made for the Orient liner *Ophir* to visit Norway and the ports of the northern capitals during a cruise starting on August 27th. The point of departure is Grimsby.

ON Tuesday, July 26th, Prince Alexander of Teck, Grand President, and Princess Alexander of Teck, Lady Grand President of the League of Mercy, attended a meeting at St. James's Palace, and were received by Sir William Collins, M.P., and Mr. James Harrison, M.V.O., honorary secretaries, and by the executive council of the League. The Order of Mercy was presented to a number of persons, among them being Mr. Alexander Thomas Scott, M.R.C.S., of Camden Road, and Dr. Chearnley Smith of Worcester Park. The Order of Mercy is conferred with the approval of His Majesty the King, the names being submitted to him by the Grand President for approval.

Medico-Legal.

PARTNERSHIP EXPENSES.

EQUITY.—A. is the senior partner and B. the junior, each having a half share in the practice. The partnership work is chiefly done at B.'s house, each of the partners attending there on alternate mornings and evenings. A. sees a few patients at his own house, but not more than a dozen during the year. Should anything be charged in the partnership expenses for the cleaning, heating, and attendance connected with the waiting and consulting rooms in B.'s house? If so, what is a fair and reasonable way of arriving at such expenses?

*** The items mentioned are clearly partnership expenses. The amount should be settled by mutual agreement, but it would be impossible from the details given to point out how it might be reasonably determined.

FEES TO MEDICAL WITNESSES.

A CORRESPONDENT complains that he was only allowed a fee of half a guinea for giving evidence before the borough bench in a case which was committed for trial at the assizes. He wishes to know if he is entitled to more.

*** If our correspondent resides within the borough he can only claim half a guinea; if outside, he is entitled to a guinea.

A QUESTION OF COSTS.

CLOVELLY sends the following query: A. purchases a practice from B., and also leases the house, which belongs to B., A.'s solicitor acting for both parties. Should the costs be shared, or is A. liable for them?

*** The usual course is for each party to employ his own solicitor, but in the absence of agreement to the contrary the expense of drawing up the lease would fall on A.

CLOSING OF CONTRACT FOR MEDICAL ATTENDANCE.

A. G. writes: In closing a contract for medical attendance in the wording of which no stipulation as to giving any notice is mentioned, (1) Can the patient demand such notice? (2) If so, how long?

*** (1) Where no time is fixed a reasonable notice is customary. (2) The time, when periodic payments are made under the contract, is often taken by a court of law as a guide in deciding under all the circumstances what would be a "reasonable" notice. In this case probably three months would be considered a "reasonable" notice. In all contracts of this kind it should be clearly laid down what notice is to be given on either side.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

COVERING.

G. F. WHITE.—To place an unqualified assistant in charge of a practice some miles away would, we have no doubt, be regarded by the General Medical Council as a breach of its regulation concerning the employment of unqualified assistants, and would render the practitioner offending liable to have his name removed from the *Medical Register*. If our correspondent desires to proceed in the case, he had better write to the Registrar of the General Medical Council, who will inform him of the steps he should take in order to bring the matter to the notice of the Penal Cases Committee.

HUSBAND AND WIFE.

G. P. complains that his wife, who is separated from him, has opened a nursing home within five minutes' walk of his house, and he further, in our opinion unreasonably, complains that medical men who are known to him have sent patients to the home. He seems to consider that this is a breach of professional etiquette, or even of ethics, but we are unable to understand on what ground he thinks so. We can sympathize with him in the unpleasantness of having a wife from whom he is separated starting a nursing home so near to him, but his grievance seems to us to be solely against her, and any remonstrances he may be in a position to make should be addressed to that quarter.

Public Health AND POOR LAW MEDICAL SERVICES.

BERI-BERI IN THE UNITED STATES.

ACCORDING to reports published by the Public Health and Marine Hospital Service, sporadic cases and outbreaks of beri-beri have occurred in several States. In 1890, we learn from the *New York Medical Journal*, several cases of what was possibly beri-beri were reported among New England fishermen, and in the same report mention was made of other cases of what seemed to be the disease antedating these by ten years. Seventy-one cases were reported among the patients in the State Insane Hospital at Tuscaloosa, Alaska, during the years 1895 and 1896, of which 21 were fatal; 64 of the patients were white and 7 negroes. A somewhat similar outbreak was reported to have occurred in 1895 at the Arkansas State Insane Hospital at Little Rock. The superintendent of the Texas State Lunatic Asylum at Austin, in his annual report for the year ending August 31st, 1907, stated that in the early part of July an epidemic of beri-beri developed in that institution, and that there were over 200 cases, with 20 deaths. It was also stated that since 1891 there had been each year a few cases of the disease, but that it had never assumed an epidemic form until 1907. In the monthly bulletin of the Californian State Board of Health for December, 1909, there was published a list of 25 deaths from beri-beri reported in California during the years 1907, 1908, and 1909. Of these 22 were Japanese, 2 Chinese, and 1 German. An outbreak of beri-beri among convicts in South Carolina was reported on April 8th in the Public Health Reports. There were at least 17 cases and several deaths. The diagnosis was confirmed by an officer who had the opportunity of observing the disease in the Philippine Islands. The local physicians stated that similar cases had occurred not infrequently in past years.

CLEANSING OF BUG-INFECTED ROOM.

DR. G. H. MAPLETON (Goudhurst) writes: If "Antiparasite" will brush crevices with a feather dipped in a strong solution of corrosive sublimate in rectified spirit I will guarantee he will not see another bug.

RURAL HYGIENE.

AJAX.—The following books would be useful to a newly-appointed medical officer of health for a country district, with special reference to drainage, etc.: *Practical Sanitation*, by Reid and Manley (Charles Griffin and Co.); *The Drainage of Town and Country Houses*, by G. A. T. Middleton (Batsford); *Theory and Practice of Hygiene*, by Notter and Firth (Churchill); *Sewage and Sewage Disposal*, by S. Rideal (Ingram).

THE annual meeting and banquet of the Brussels Medical Graduates' Association were held in the Kaiserhof Restaurant of the Brussels Exhibition on Saturday, August 6th. Amongst those present were Dr. Richard Paramore (president), Sir Griffith Boynton, Bart., Mr. Mortimer Ehrlich, Mr. W. F. Kirby, F.Z.S., Dr. Kirby, Dr. Fountain, Dr. Howard Humphris and Dr. Arthur Haydon (honorary secretary). After the toasts of the King of England and the King of the Belgians, the president, Dr. Paramore, read letters of regret for inability to attend from Professor Rommelaere, president of the university, Professor Thiriar, Professor Hauben, and M. Lavachery, secretary of the university. He then gave the toast of the visitors, coupled with the name of Sir Griffith Boynton, who, in responding, remarked upon the enterprise of holding an annual meeting in Brussels, and expressed his pleasure at being able to be present, and proposed the toast of the Brussels Medical Graduates' Association. Dr. Arthur Haydon, honorary secretary, in responding, said that during the twenty-five years of the existence of the association this was the first annual meeting which had been organized in Brussels: and in spite of all the difficulties and disappointments it had been accomplished. There were about 600 British graduates of the University of Brussels in all parts of the world, and this number was steadily increasing. And this proved that the value of study abroad had been appreciated by so many. Dr. Haydon hoped that the next annual meeting of the association held abroad would be at the Paris Exhibition of 1920. At the annual meeting Dr. Francis Edwards was elected president for the ensuing year, Dr. E. O. Fountain, vice-president, Dr. Major Greenwood, honorary treasurer, and Dr. Arthur Haydon, honorary secretary: ten members of council were also elected. All past presidents were elected presidents. A dinner of the association was also held at the Japan-British Exhibition on Tuesday, July 19th, at which 23 members and guests were present, Dr. Jago and Dr. Oliver being the guests of the evening.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

COMPRESSION OF THE ABDOMINAL AORTA.

SANGUINIS asks how best to apply compression of the abdominal aorta in *post partum* haemorrhage, and how long must it be kept up?

*** With the ulnar edge of the hand against the vertebral column. It must be kept up till bleeding has stopped and the uterus has contracted.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

S.M.O. writes: I should be much obliged if you can advise me whether it is any part of a school medical officer's duty to visit the children in their homes for inspection purposes.

*** No. School inspections should only be done at the school; at the same time, there is no law to prevent the school medical officer following up special inquiries by visits at the homes, although generally this is inadvisable. The London authority now prints on its notices a statement that medical examinations will only take place at the schools.

ANSWERS.

TUMULTUOUS FETAL MOVEMENTS.

LIEUTENANT-COLONEL PIKE (Tidworth) writes: I think "M." will find the movements greatly lessened if he applies a binder or abdominal belt firmly round abdomen in patient going to bed. I have found it satisfactory in several cases, and think drugs of any kind are both useless and harmful. I have never met with these excessive movements in first pregnancies.

IN answer to "M.," who asks for suggestions for treatment of "tumultuous" movements in pregnancy, "R." desires to say that she has found the following simple measures of great benefit in many cases: (1) The taking of short rests, with the feet up on a bed or sofa, at intervals during the day—ten to twenty minutes at a time. (2) On going to bed at night the recumbent position ought to be assumed gradually over a period of half an hour or so; it can easily be done by using several pillows and removing them in succession. If during this half hour the patient's abdomen and legs are gently rubbed upwards great relief and comfort follow. (3) The wearing of a well-fitted abdominal belt throughout the day is also useful.

LADY DISPENSERS.

B. A. J. F.—All who desire to become qualified dispensers must decide for themselves which of the two possible ways is best suited to their case. The one is to take the Minor Certificate of the Pharmaceutical Society, the other to take the Assistant's Certificate of the Society of Apothecaries. The former entails a three years' curriculum, including a preliminary examination in general education, apprenticeship, attendance at regular courses of instruction in botany, materia medica, chemistry, and other subjects, and the passing of an examination therein. The cost of undergoing such a curriculum almost necessarily varies in each case, but in none could it be put down, all expenses included, as less than £100. The holders of this certificate are entitled to do all work ordinarily done by chemists, including the opening and keeping of shops, and can claim legal registration as chemists and druggists. There is an Association of Women Pharmacists, Gordon Hall, Gordon Square, W.C., from which ample information on the subject can be obtained. Candidates for the Assistant's Certificate must undergo a course of instruction in practical pharmacy for six months and must be certified as having done so either by a registered medical practitioner, a registered pharmacist, or an assistant of the Society of Apothecaries, holding a public appointment. They have to undergo two examinations—the one a practical test of their ability to compound and dispense medicines, and the other an oral examination in materia medica, chemistry, and pharmacy, and the translations of prescriptions. Examinations are held towards the end of the first month of each quarter throughout the year. The examination fee is 5 guineas. A syllabus can be obtained on application to the Clerk of the Apothecaries' Society, Blackfriars. In view of the wider field open to its holders, the minor certificate must certainly be regarded as the more desirable possession, but holders of the Assistant's certificate are frequently employed at hospitals and dispensaries, and by medical men who conduct dispensing practices, and they are eligible for appointment at any of the institutions maintained by Poor Law authorities, including the Metropolitan Asylums Board. Experience seems to indicate that dispensing is a very suitable occupation for women, and one of a pleasanter kind in its surroundings than are many of those by which women now gain their living. It is not possible to state the average salaries received, as the conditions of appointment vary too greatly; but it is certainly not one of the best paid classes of work.

PERSISTENT PAIN.

ASPIRIN writes in reply to "Pakeha's" query, published on August 6th (p. 360): I would suggest that he gives his patient 15 grains of aspirin at bedtime, say three 5 grain tablets each night for three nights.

PHYSIOGNOMY.

PHIZ.—The following works deal with physiognomy: Lavater, *Essays on Physiognomy for the Promotion of Knowledge and the Love of Mankind*; Sir C. Bell, *Anatomy and Philosophy of Expression*, 1844; J. Shaw, *Physiognomy of Mental Disease and Degeneracy*, 1903; Mary Stanton, *Encyclopaedia of Face and Form Reading*, 1895; J. Simmons, *Physiognomy Illustrating Nature's Revelation of Character*, 1891; Walker, *Physiognomy founded on Physiology*, 1834. These are in English. There are several others in French, German, and Italian, besides a number of articles in periodicals. References may be found in the *Surgeon-General's Catalogue*, Second Series, vol. viii, p. 316.

LETTERS, NOTES, ETC.

ACADEMIC COSTUME.

"RED SANDSTONE" writes: Neither your original note nor the letter of "Scarlet Lightning" (the latter in your issue of August 6th) is quite accurate, as you will see by the following extract from Regulations made May 23rd, 1910: "Graduates shall wear hoods of the Cambridge pattern." "The hoods of Bachelors shall be of stuff *or* silk." "The hoods of Masters and Doctors of silk." "Hoods shall in all cases be of a registered colour which colour shall be called 'University red.'" "Masters' hoods shall be lined throughout with white silk." "Doctors' hoods shall be lined throughout with salmon-coloured silk." The distinctive point of the Bristol hood is that it is coloured not black, the colour being a dark red. There is no distinction between faculties, the hoods of the Arts, Science, Medical and Engineering graduates being precisely similar for each grade, but the grades are distinguished by the white lining of the Master's and the salmon colour of the Doctor's hood. The Bachelor's hood is of the same colour throughout, but being lined with silk the lining gives a slightly different shade of colour.

*** The extract from the regulations supplied by our correspondent hardly clears up the point at issue. Our first correspondent said that the Bristol hood was a black hood lined with Bristol red and edged with salmon silk. In thus correcting us we knew that he himself must be inaccurate, for the information concerning Bristol in our tabular summary of the main points of various academic robes had been kindly supplied by the official of Bristol University most likely to be acquainted with the subject. It did not seem worth while however, to discuss the matter, as Bristol only having recently attained university rank there are unlikely to be many wearers of M.B. robes for some time to come. Judging from the statements now made by our present correspondent, the regulations of the University questions must be open to more than one interpretation; if so, they are all the more in keeping with those of older universities. Nowadays it would appear to be university robe makers such as Messrs. Ede, Son and Ravenscroft who finally settle these decorative details.

"CURE" FOR EPILEPSY IN THE CHANNEL ISLANDS.

IN November last we published a note on a liquid supplied for the treatment of epilepsy, which was submitted by a correspondent who stated that it had a considerable sale in the Channel Islands; examination then showed it to contain potassium and ammonium bromides, with sugar, infusion of gentian, and chloroform water. We have now received a further quantity from a correspondent for quantitative determination of the bromides; the amounts of these prove to be 31.5 grains of potassium bromide and 22.7 grains of ammonium bromide in each fluid ounce, or about 8 grains and 5½ grains respectively in the dose of two teaspoonfuls. At the price of 1s. 6d. per 8-ounce bottle, which our correspondent believes is charged for it, the gross profit cannot well be less than 1s. 4d., and the considerable sale which it enjoys must therefore be very remunerative to the proprietor.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

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Remarks
ON
SOME POINTS IN THE TREATMENT OF GASTRIC ULCER.*

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The treatment of gastric ulcer has, during the past few years, probably given rise to more discussion than that of any other single disease, and many different lines of treatment have been advocated. It is, therefore, obviously impossible for me in the short time at my disposal to criticize all the different views which have been held. I shall only be able to touch upon a few points in the principles of the treatment in so far as they are affected by the little that we know of the pathology of the disease.

Series of cases treated by different methods are continually being published in order to demonstrate that this or that treatment results in the greatest number of cures. Thus gastric ulcer has been treated by starvation, by immediate feeding, by olive oil, gelatine, and other drugs, with or without external applications, and modifications of each treatment have been adopted by different physicians. In each case the advocate claims that his own method gives the best results. In some cases the average time spent in bed is shorter, in others relapses of bleeding are less common, in others again the average loss of weight during the treatment is less than occurs when other methods are employed.

Very few take into account the subsequent condition of the patient with regard to relapses of the symptoms. This discrepancy indicates that collections of cases of this sort are of relatively little value in comparing the efficacy of various modes of treatment. There are several reasons for this. The diagnosis of gastric ulcer presents great difficulties, and in a large number of cases is impossible. The disease is very variable, both with regard to the condition of the ulcer, its position, extent, and external adhesions, the associated gastric disturbances of motility and secretion, and the condition of the gastric mucous membrane with regard to the presence or absence of gastritis. Acute and chronic ulcer are usually not distinctly separated by the observer. The constitution of the patient must also be taken into account. As in health there are individual idiosyncrasies of diet, so in disease a diet suitable for one patient may be unsuitable for another.

I do not wish to imply that all the different treatments are purely empirical and that the statistics merely represent attempts to find out what a treatment selected at random is worth, because each treatment is apparently based upon one or more points which the originator considers to be of special importance in the pathology of gastric ulcer. But I wish to point out that this method of collecting and publishing statistics of cases leads to erroneous results, because different classes of cases which cannot be compared with each other are apparently mixed together. Each case must therefore be studied individually, the pathological conditions present first determined as exactly as possible, and the case then treated according to one or two general principles founded upon our knowledge of the pathology of gastric ulceration, suitable modifications being introduced at the discretion of the medical attendant to meet the requirements of each patient. I am sure that better results will be obtained in this way than if a special "cure" be adopted and applied indiscriminately to every patient as directed.

I will first indicate what conditions the physician is called upon to treat and how such conditions may be recognized.

We must first distinguish acute from chronic gastric ulcer. It is very probable that chronic gastric ulcer arises from the acute variety, because occasionally transitional conditions between the two may be found. For instance, acute gastric ulcer may be considerably delayed in its time of healing, and it may also gradually extend. The records of such cases are difficult to collect, because the patients do not as a rule die, but it cannot be denied that there is a fair amount of evidence in favour of this view. Acute gastric ulcers vary in diameter from about the size of a split pea to an inch. They come before the notice of the physician either whilst they are in process of formation or when they are healing, and in either case profuse bleeding may occur. In fact an acute ulcer may be almost completely healed whilst bleeding from an open artery in the centre continues. It may be the original artery which was opened up during the formation of the ulcer and has continued bleeding, or it may have been opened later as the result of digestion of the centre of the base of the ulcer whilst the edges were healing. Acute ulcers are often called superficial erosions because they not uncommonly look quite superficial, although they extend down to the muscular coat. This is not to be wondered at considering that the thickness of the moderately stretched stomach is only about 4 mm. and the mucous membrane 1 mm. They are also often called fissures, because during healing an acute ulcer tends to contract up and form a radiating or a small depressed fissure-like scar.

An ulcer in the living stomach may look like a fissure and when slightly stretched assume the usual rounded form.

The tendency of an acute ulcer is to heal rapidly as in animals in a few weeks, and also to recur at intervals in the same individual. Such acute ulcers may quite commonly be diagnosed from chronic gastric ulcer, but, as in the case of most other diseases, the diagnosis may be quite impossible.

Acute gastric ulcer is commonly often latent and gives rise to no symptoms. Otherwise it announces its presence in one of three ways: (1) By a sudden perforation. (2) By sudden and profuse haemorrhage. (3) By pain and vomiting, with or without haemorrhage. As the ulcers tend to heal quickly, the symptoms last a proportionately short time.

The usual history of a *chronic* gastric ulcer is one of long-standing indigestion, with attacks of pain, vomiting, and haematemesis at intervals.

Since acute ulcers tend to recur in the same individual, the recurrences are usually diagnosed as relapses of chronic gastric ulcer, but attention to the following points will settle the diagnosis in many cases. There is no *one* point of distinction, so that the whole group of symptoms must be carefully studied. The pain is not so severe as in chronic ulcer, and it is not so commonly paroxysmal and independent of food, neither is it so liable to be continuous. Vomiting is commoner in the chronic form. Haematemesis in the acute disease is more liable to be profuse, to commence suddenly, and to cease suddenly. Hyperacidity occurs frequently in chronic ulcer; in acute ulcer the few estimations which have been made indicate that the acidity is normal or diminished. My own experiments on animals show that when an acute ulcer is in process of formation the acidity is diminished, but when it is healing the latter becomes normal. Wasting is only seen in chronic ulcer. Very long intervals between the attacks are in favour of recurrences of acute ulcer. Diminishing lengths of the intervals, and finally a condition of more or less constant pain and vomiting, are characteristic of a chronic ulcer.

Absolute freedom from symptoms during the intervals is in favour of acute ulcer, and the presence of some form of indigestion in favour of chronic ulcer. Of course the symptoms of indigestion may occur from time to time in a normal person, and they often precede the symptoms of an acute ulcer, but this point is certainly of value when taken in conjunction with others. Even though absolutely free intervals occur in chronic ulcer, it will often be found that the patient is unable to eat a full diet, and only keeps well by living on milk, eggs, and fish. In intervals between acute ulcers the patient can more often take any diet with impunity.

Acute ulcer is commoner in the young, and especially in women, although no age is exempt. Finally, transitional cases occur in which the patient may or may not have had a previous attack, but the duration of the symptoms

*Read before the Therapeutical Section of the Royal Society of Medicine.

is prolonged. Such cases are instances of acute ulcer, the healing of which is delayed or which is extending. Unhealed ulcers have been found more than two and a half months after the burns which caused them have healed, and many cases are recorded in which acute ulcers following burns have only given rise to symptoms some weeks after the burns have healed. The point I wish to emphasize is that at one end of the scale is acute ulcer, which usually heals rapidly; that at the other end is chronic ulcer; and that between the two are ulcers which, beginning acutely, heal slowly, or gradually extend, and some of which become chronic ulcers.

I should like to point out that the healing of acute ulcers may cause considerable deformity of the stomach, and that the character of the scar depends upon the size of the ulcer and the time it takes to heal, so that many scars which have been said to be those of chronic ulcers in the past have probably been those of acute ulcers, or of acute ulcers the healing of which has been delayed. I have gone into these points somewhat at length to show the great importance of acute ulcer, which I believe to be much commoner than is usually taught, and also to emphasize the fact that the more normally and the quicker an acute ulcer heals the less likely are there to be left those sequelae which necessitate surgical intervention.

Treatment of Acute Ulcer.

When an acute ulcer *perforates*, the case, by common consent, should be handed over to the surgeon at the very earliest moment, and success in the treatment of this condition must largely depend upon recognition of the earliest symptoms of perforation. *Haemorrhage* from an acute ulcer is, in my opinion, one of the most important conditions the physician is called upon to treat, and it is so common in this disease and so often the only symptom that it constitutes a definite type of the malady. It may or may not be possible to diagnose whether the ulcer is in process of formation or is already healing by the time at which haemorrhage has occurred during the course of the attack, but I do not think that this is of so much importance since the haemorrhage has to be primarily treated. Haemorrhage from an acute ulcer which is at all profuse is always due to perforation of an artery. The sudden cessation of the haemorrhage is due to plugging of the vessel with a clot. This clot may be interfered with by one of three factors: (1) The condition of distension of the stomach, which opens up and stretches the ulcer; (2) the alternate contraction and relaxation of the muscular coats of the stomach, which mechanically dislodge the clot; (3) the gastric juice, which digests the clot. Whether the clot be loosened or disintegrated, the blood pressure brings on a recurrence of the bleeding. Sometimes the wall of the artery may project almost beyond the level of the muscularis mucosae, and then the clot protrudes into the cavity of the stomach.

Such a condition is due to the movements of the stomach and the pressure of the blood in the artery. The aims of treatment in such cases should be: (1) To keep the stomach in the contracted state, (2) to prevent movements of the organ, and (3) to keep the digestive glands in the resting condition. In conditions where smaller amounts of blood are lost it must be impossible to say whether the bleeding is from smaller arteries, veins, or merely capillaries; but I think that in all these cases the same treatment should be employed. The patient should be kept at absolute rest in bed in the supine position and not allowed to move a muscle. Morphine should be subcutaneously administered in all cases of severe haemorrhage to assist in keeping the patient quiet. The mouth is to be thoroughly cleaned, and pain, if present, treated by morphine, and ice to the epigastrium. For the first twelve hours no feeding is attempted, but after this time has elapsed rectal feeds are started, consisting of peptonized milk and glucose every six hours, the rectum being washed out each morning. When the bleeding has been stopped for three days, mouth feeding is commenced and the rectal feeding discontinued. By stoppage of bleeding I mean not only absence of haematemesis, but also of fresh melaena, because as long as fresh melaena is present active bleeding is going on. A simple enema is given every other day as soon as mouth feeding is commenced, and at the end of a week saline aperients are commenced. I have never seen a case of parotitis occur if the mouth be kept properly clean.

I do not employ rectal feeding in gastric ulcer in any other condition, because it means that the patient is on a starvation diet; but I think at all costs the stomach must be kept at absolute rest in the case of bleeding from an acute gastric ulcer, and it is not necessary to employ the method longer than for a few days. The time is usually so short that I hardly think it necessary to employ the subcutaneous method of feeding with blood serum or other substances. In this way the stomach is kept in the resting condition both with regard to movement and secretion. It has been stated and also denied that rectal feeding causes a flow of gastric juice. I think it is, at all events, likely that the blood in the stomach causes some secretion of gastric juice, and to overcome this difficulty I have allowed the patient to frequently drink lime water by teaspoonfuls. This alkali is preferable to sodium bicarbonate, which distends the stomach by liberation of carbonic oxide gas. The alkali neutralizes what acid is in the stomach and does not encourage further secretion. The movements of the stomach which are set up by this fluid must be minimal.

In four cases within the last few months at University College Hospital the haemorrhage of acute ulcers relapsed on commencing mouth feeding and led to the death of the patients. According to Lenhartz,[1] when feeding is started by mouth at once recurrence of bleeding only occurs in 6.4 per cent. of patients, but I do not see how it is possible to collect a series of cases in which haemorrhage is occurring under the same conditions. The giving of food by the mouth neutralizes what acid is present in the stomach, but it excites further secretion, and as a fact there is always in contact with the stomach wall a layer of freshly-secreted gastric juice which is about to soak into the food. This can be shown by giving a meal soaked in alkali. Although the main body of the food is strongly alkaline there is always a layer in contact with the stomach wall which is strongly acid in reaction, and this layer gradually deepens until the whole has attained the normal acidity. A digesting stomach is therefore in a condition to disintegrate the clot which is blocking the artery.

Muscular movements are also excited by food and these tend to dislodge the clot.

The icebag of Lenhartz, if it has any influence in diminishing the movements of the stomach, must thereby cause stagnation of the stomach contents, and a more prolonged action of the digestive fluids upon the clot. I believe that when the bleeding is slight mouth feeding could be commenced at once, but it is impossible to be sure of the size of the vessel, because in a case recently under my care a fair sized artery was opened, and yet the patient only had coffee-ground vomit, so that I make the rule that in all cases of haemorrhage food should not be administered by mouth.

One cannot be altogether guided by statistics, when one sees actual cases in which bleeding breaks out two or three days after the administration of food. On the other hand I do not state that the patient never dies if fed by the rectum. My own experiments show the importance of the condition of the gastric glands upon the production of gastric ulceration. If the gastric juice be put out of action, ulceration fails to occur. If the stomach is digesting, ulceration produced in it is more marked than when the organ is resting. The presence of food in the stomach must, therefore, be harmful to a newly-formed clot. It is conceivable that the gelatine treatment of Senator might be of advantage if the bleeding came from the capillaries or small veins, but hardly in the case of serious bleeding from an artery. It does not appear to have found many advocates in England.

The older physicians placed great reliance on the various styptics, and later adrenalin has been used, but I do not think modern physicians use drugs at all largely. I do not myself. In severe cases saline solution, with or without glucose, is I suppose administered subcutaneously by most practitioners. The question of operation has been much discussed in relation to profuse haematemesis in acute gastric ulcer. A good deal has been written about it, and I think most surgeons are not greatly in favour of it. It may be stated as a fact that the vast majority of cases of haemorrhage from acute gastric ulcer recover, but that occasionally profuse haemorrhage proves fatal. I think

that fatal haemorrhage is more common than is usually supposed, judging from the opinions of various writers and from what I have seen myself.

Whatever is the exact mortality from haemorrhage does not matter, the fact remains that *sometimes* it *does* prove fatal. It is not the *first* haemorrhage which kills the patient as a rule, but *repetitions* due to dislodgement of the clot. I think all will agree that unless the haemorrhage is so profuse as seriously to threaten life, the case should be treated medically. It is impossible to give exact indications for operation, and each case must be regarded as an individual problem. Such very severe cases recover, that it is nearly always impossible to say that a given patient would have died if he had not been operated upon, and many physicians would not agree with operation in any case. We have three points to go on in dealing with a case: (1) Profuse haemorrhage is sometimes fatal; (2) in the particular case under consideration the bleeding has reached the danger point; (3) many similar cases are recorded in which the bleeding point has been secured and the patient has survived. The second point is the really difficult one, namely, into what degree of danger is the patient to be allowed to enter before the surgeon be called in.

The question of the mortality of this operation should be put aside in the consideration, as the case is naturally desperate. If a patient vomits two or three pints of blood, and after an interval, if the clot breaks down and a similar amount be vomited, I think the case should be operated upon. But it is quite common for a profuse haematemesis to be followed by smaller ones at intervals, or for continued melaena only to follow, so that clear indications may not exist. In doubtful cases the most important point is to be guided by the amount of the initial loss, as indicating the size of the ruptured vessel more or less accurately, the condition of the pulse, and the colour of the patient. With regard to the operation itself there is only one thing to be done—namely, to rapidly open the stomach and secure the bleeding point in the way which commends itself best to the surgeon.

The operation is done as a means of immediately saving life, and gastro-enterostomy is, of course, useless. The acute ulcer may not be found, as sometimes it is almost healed, or it may be very small and the vessel may not be bleeding at the moment. The surgeon must take his chance of this event. Acute ulcers may be multiple, but it is unlikely that an artery will be opened up in more than one of them, and the most important can, at all events, be dealt with. The bleeding being stopped, the next stage in the treatment is to put the ulcer under the best conditions for healing. The following remarks apply equally well to the treatment of acute gastric ulcer, whether haemorrhage has previously occurred or whether the case has merely come up with an attack of pain and vomiting which, from the history and state of the patient, is probably due to an acute gastric ulcer.

In whatever way the initial change is produced which leads to an acute gastric ulcer, we know that the subsequent course of events is greatly affected by the gastric juice. I have been able to show that gastrotoxic ulcers fail to appear at all if the gastric juice be put out of action, and, on the other hand, that hyperacidity of the gastric juice increases the extent of the ulceration, since hydrochloric acid acts as a protoplasmic poison. A further point of importance is that an ulcer produced in the digesting stomach is very much more extensive than an ulcer produced by similar means in the fasting stomach.

However the ulcer be produced, and whether in man or in the lower animals, the same principles must obtain, since the laws regulating the digestive processes in all animals are the same. It seems that if we wish to have the smallest amount of damage done, we must keep the stomach in the resting condition, and the acidity as low as possible. Unfortunately, however, we have no clinical means at present of determining whether an acute ulcer in the human being is being produced or is in the condition of healing at the moment when it is brought before us. However, we *do* know that an acute ulcer is rapidly produced in from twenty-four to seventy-two hours with the gastric juice in its normal condition and the diet normal, so that probably when the case comes under the notice of the physician the ulcer is already fully formed. This probability is strengthened by the results of *post-mortem* examinations. We further know that the natural tendency of an acute gastric ulcer in both man and the lower animals is to commence healing at once, and for the healing to be complete in a few weeks. This fact is well known experimentally, and is certainly so in the human being, because scars similar in all particulars to those found in experimental animals may be seen in patients who have had short attacks of illness similar to those of gastric ulcer.

Cases are also recorded of injuries inflicted upon the stomach in man which were found to have healed rapidly by *post-mortem* examination. It is also a very common experience, when death occurs from haemorrhage in acute ulcer, to find it advanced in healing, although the illness has been of very short duration. We have seen that occasionally acute ulcers may be delayed in their healing, and that sometimes they may extend, so that it is more important, from the point of view of the treatment of a case, to find out what conditions promote or hinder the *healing* of acute gastric ulcer than what is the actual initial lesion provoking its formation. It is here that experiments upon animals have been of great assistance in affording indications for treatment. It is merely necessary to state here that various experimenters have been credited with proving that hyperacidity of the gastric juice delays the healing of an acute ulcer. In my opinion many of these experiments are of no value, because a definite ulcer was not produced in the first instance, the solutions employed were in some cases too strong, and an insufficient number of experiments were done. My own experiments have shown that so long as the motor power of the stomach is intact a hyperacidity of such a degree as is likely to be found in pathological conditions will not delay the healing of an acute ulcer, and I am not alone in maintaining this position, because more recent experimenters have confirmed the point.

When the ulcer is being formed, and the gastric juice is acting destructively, hyperacidity will increase this destructive tendency, but when healing has commenced hyperacidity has no more influence in delaying this than has the normal gastric juice. I have also found that diminished acidity of the stomach contents or moderate infection of the food are likewise without influence. The question is a different one when the motor power of the stomach is disturbed, because when retention of food occurs the healing is definitely delayed for a period of at least twice the normal time. This is due to prolonged contact of the partially-digested food with the connective tissue base of the ulcer, in which necrosis and excessive formation of fibrous tissue are produced, so that the epithelium grows over the base with more difficulty than normal. This being the case, one would expect that an ulcer would not heal so well if the animal were fed on solid food as if it were fed on milk. This is undoubtedly the case, but the effect is seen only in the early stages of healing. When an ulcer is healing, the granulation tissue of the base first becomes covered with a layer of flattened epithelium, consisting of a single layer of cells, and later on this layer thickens and glands develop. Until a continuous layer of cells has formed, the connective tissue of the base is exposed to the action of the digestive fluids, and healing may be delayed, but when once the base is covered up, even with a single layer of cells, the remaining stages will go on normally. Meat is retained longer in the stomach than milk, and produces a larger secretion of gastric juice. On a milk diet I have found that the base of the ulcer is covered with epithelium much quicker than on a meat diet. But I have been surprised to find that diet does not make a greater difference than it does, because even on a meat diet, it is only a question of a little delay in the earlier stages. However, there is no doubt that the most favourable diet in the early stages is a fluid one which is easily digested and not retained long in the stomach. The most important principles to be observed are to allow the stomach to empty itself as quickly as possible, and to give a food which produces only a moderate flow of gastric juice. My experiments on animals have convinced me that rectal feeding for any condition except gastric haemorrhage is to be condemned, and that the milk and egg diet of Lenhartz has much to commend it. In fact, so long as the diet is fluid to begin with for a week or ten days, and at first given in small quantities at frequent

intervals, and so long as solid food is not too suddenly given, I do not think the exact quality of the food matters very much, except that meat extracts should not be used. Lenhartz's method is not altogether founded on correct pathology; his diet is intended to neutralize hyperacidity, which it cannot do, and he puts an icebag on the abdomen to diminish the movements of the stomach, which can only lead to delayed emptying of that organ. Moreover, I do not think that one definite and fixed diet is suitable for every patient, and it is unnecessary.

I do not think that a better diet than peptonized milk can be used for the first three or four days in most cases, followed by ordinary milk, raw eggs and chicken jelly, then breadcrumbs, pounded fish and chicken, milk puddings, boiled eggs, custard and bread-and-butter, and later minced chicken and mutton, potatoes and sieved vegetables, but I do not wish to be dogmatic in laying down definite rules. I think that the patient should be on a more or less full diet at the end of a month. I have found that beef even after this time is badly borne by most patients, and I think it is best not to allow it for the next few months, during which time I warn the patient to live on the simplest food and properly masticate it, to have the teeth properly attended to, and to rest before and after meals. For the relief of pain I use an epigastric icebag when haemorrhage is occurring, and in all other cases hot poultices.

I have not found bismuth to be of any particular value, but sometimes order dilute hydrocyanic acid, 5 minims in two teaspoonfuls of water, for vomiting. When the patient is convalescent I think some preparation of iron should be given. It is very improbable that any direct connexion between chlorosis and ulcer of the stomach exists, but still the effect of anaemia upon the healing of acute gastric ulcer is an important point, because haemorrhage leading to anaemia is a common event in ulcer. The fact that an ulcer readily heals although bleeding is going on from the centre of it, seems to show that the importance of anaemia in preventing healing has been over-estimated. Quincke[2] did two experiments in which lesions were produced in the dog before and after bleeding. In the first experiment the anaemic ulcer took at least thirteen days longer to heal than the normal ulcer. The second experiment proves nothing because the condition of the ulcer is only described up to the twelfth day. Silbermann's[3] and Litthauer's[4] experiments are not quite comparable to the class of case we are dealing with, because they produced haemoglobinaemia by injection of chemicals. The evidence that previous loss of blood delays the healing of an ulcer is therefore of no great importance, certainly not sufficiently conclusive to demand the exhibition of iron during the treatment of acute gastric ulcer.

I have so far dealt with the best means of promoting the normal healing of acute gastric ulcer.

I have already mentioned that in man acute ulcer may be delayed in its healing, and also that an acute ulcer may gradually increase in extent. Unfortunately we have no clinical means of diagnosing such conditions at present except that the history is longer than that of an acute ulcer, and haematemesis may occur late in the disease. I regard such conditions as intermediate between acute and chronic ulcer, and there is no doubt that one factor in the causation is retention of food, so that these cases should be treated as I have already described for acute ulcer, the time and the graduation of the treatment being somewhat extended.

Treatment of Chronic Gastric Ulcer.

No experimenter has ever yet succeeded in producing a chronic gastric ulcer in an animal, so that we know practically nothing about its mode of extension, or the conditions under which it heals. I think that the healing of a chronic ulcer is perhaps less common than is usually supposed, because it is probable that, judging from the extensive scarring which may follow an acute ulcer in animals, many scars which have hitherto been considered to result from the healing of chronic ulcers have really been those of acute ulcers more or less delayed in their healing. We certainly know that, as a rule, the symptoms of a chronic ulcer rapidly disappear with rest and appropriate diet, but how many of these ulcers heal it is impossible to say. Probably not many, judging from *post-mortem* records and the previous history, which usually tells of several previous attacks of a simila nature.

In the treatment, all we can do is to be guided by th principles we have observed in the treatment of acut ulcer. We cannot, however, expect a thickened chroni ulcer to heal in three or four weeks as an acute ulcer does It must first be got into such a condition that it will sto spreading, and that healing may commence. After thi the actual healing must be slower than in the acute form of the disease, so that although the same principles mus be adopted, the treatment must extend over a considerabl longer period. I was able to show experimentally that i the condition of pyloric stenosis an existing ulcer ofte took on a spreading character, and rapid ulceratio occurred in the surrounding mucous membrane, and have lately seen two clinical cases in which a chronic ulce rapidly spread by acute ulceration of the adjoining mucou membrane in acute pyloric obstruction; sometimes on may see evidences of the same thing in closely examinin ordinary chronic ulcers of the stomach. The chief sympton of these cases was coffee-ground vomiting, which apparentl denoted acute extension of the ulcer. I think it must b taken for granted that recurrences of haemorrhage in chronic ulcer indicate extension of the ulceration eithe laterally or in the depth of the ulcer, and there can be n doubt that delayed emptying of the stomach is one caus of such extension.

This is supported by the fact of cessation of haemor rhage from chronic ulcer after gastro-enterostomy, whic by allowing of the rapid emptying of the stomach pro bably stops the extension of the disease. To quote series of such operations with known after-results: ou of 21 cases of simple gastro-jejunostomy for recurren bleeding in chronic ulcer by Moynihan,[5] 2 death occurred and the remaining 19 patients were free fro recurrence of haemorrhage. A few of these cases wer duodenal ulcers, how many is not stated, but the majorit were chronic gastric ulcers. Both the cases I have quote above were operated upon for perforation, and in bot cases acute pyloric stenosis was produced, with the resul that acute extension of the ulcer occurred. This is very strong argument in favour of performing gastro enterostomy in addition to stitching up the perforate ulcer, as advocated by Paterson[6] and other surgeons although the advisability of this must, of course, be lef to the surgeon, who should decide at each individua operation, according to the conditions found. It is there fore of great importance, in the treatment of chroni gastric ulcer as in that of the acute disease, to take car that no undue delay occurs in the emptying of th stomach. As in acute gastric ulcer I think that ther is only one condition which necessitates the stomac being kept empty and in which rectal feeding should b temporarily resorted to, and that is haemorrhage. Th treatment of haemorrhage from a chronic ulcer I conduc on exactly the same lines as I have described for th acute ulcer.

It is perhaps more necessary to give an alkaline flui by the mouth in the chronic disease, as a large number o cases have hyperacidity, which increases the destructive action of the gastric juice when an ulcer is extending, a it is in recurrent haemorrhage.

In the treatment of a case in which haemorrhage has ceased or in which no haemorrhage has occurred, we must remember that we have no certain means of telling whether the ulcer is extending, is stationary, or in th condition of healing, so that we must be guided by th two principles that delayed emptying of the stomach increases the tendency to acute extension of the ulce and delays the healing, and that hyperacidity increases the tendency to ulceration.

Believing, as I do, that the propagation of chronic gastric ulcer is chiefly dependent upon local conditions of the stomach rather than upon the condition of the blood of the patient, I administer the same diet as in the acute condition, but increase it more slowly and extend the treatment over a longer period, thereby relieving the stomach rather than placing the condition of nutrition of the patient in the first place. It is, of course, impossible for a chronic ulcer to heal in a month, as the acute variety is hardly healed before this time, so that I think the treatment should extend over a period of six weeks during which the patient is confined to bed, and a further

x weeks during which he is allowed to get up. After iis he is to eat a light diet for several months, instruc-ons being, of course, given with regard to the care of ie teeth, mastication, regular action of the bowels, and xercise.

With regard to the *quality* of the diet, I think that of enhartz leaves nothing to be desired. I, however, rongly object to the principle of feeding a bleeding atient, and I do not think solid food should be allowed ll the beginning of the third week, milk, eggs, and jellies eing the diet for the first fortnight.

During the second fortnight the patient should gradually et on to pounded fish, pounded chicken, lightly boiled ggs, thin bread-and-butter, and custard.

During the third fortnight, minced chicken and mutton, otatoes and sieved vegetables, and milk puddings.

During the next six weeks he would gradually be put n an ordinary light diet, at which he would remain for ie next few months.

I give this only as a broad outline and leave the exact etails to be filled in in each individual case by the medical ttendant according to his ingenuity.

I think iron ought not to be given as a rule till after the rst six weeks, and I do not think that bismuth is of any se. For pain I think hot poultices are sufficient, except ie patient is bleeding, and then an icebag should be pplied. Vomiting is treated by modifying the diet and by ydrocyanic acid in small amounts of water. The Carlsbad ater of von Leube[7] is certainly useful as an aperient but in o other way. Neither do I think that the constant applica-on of poultices which he so elaborately describes is of ny value except occasionally to relieve pain. In addition e does not keep the patient long enough in bed. The elatine treatment of Senator[8] does not give any better esults in any way than other methods, and it has certainly ot become popular. We know of no specific treatment for astric ulcer, so that any special treatment can be one in ame only. As a fact each of the three special methods ives practically the same results with regard to mortality nd immediate results. Statistics are constantly published y many observers and differ more or less as would naturally e expected. Von Leube's mortality is variously given s from 0.3 to 4 per cent., Senator's about 4 per cent., and iat of Lenhartz from 2 to 3 per cent. Von Leube states iat he completely cured 566 patients out of 627, and of iese 475 were cured under five weeks. In one group of tatistics of patients treated according to Senator 28 out of 0 patients were said to be healed in an average of 20.5 ays.

Such statistics as these are obviously of little use, but ney show that the special factor underlying each treat-ent does equally little harm to the patient if it does no ood. What we want to know is how many patients are ured as shown by after-results, because cessation of ymptoms is no indication that the ulcer has healed. tatistics supplying these facts are scanty. Spriggs[9] gives ie after-results of 21 cases treated by the Lenhartz ethod: 9 had a definite return of the symptoms of ulcer, nd 3 indigestion.

These cases probably included acute as well as chronic lcer, although the author does not separate them; and it s more than likely that return of symptoms in true hronic ulcer would occur in a larger percentage of cases hatever the treatment. In other words, I think it is robable that not half the cases of chronic ulcer heal by edical means; according to Paterson's statistics[10] about 6 per cent. are cured. I think a fair treatment, such as have described above, and extending over three months, hould be given, and if the symptoms return a surgeon hould be called in to perform gastro-enterostomy, which, ccording to what we know of the pathology of the disease, s a rational procedure, and produces its good effects by llowing the stomach to empty itself rapidly.

I am quite aware that symptoms may return after this peration, but the same may be said of gastro-enterostomy or pyloric obstruction, and no one would hesitate in anding such a case over to the surgeon. To sum up, it ay be stated that acute gastric ulcer of normal or elayed healing is to be treated by medical means, except hose cases which perforate, and perhaps a few in which angerous haemorrhage occurs; these latter are to be anded over to the surgeon. Probably more than half the ases of true chronic ulcer should be treated surgically, but a three months' medical treatment is to be tried first, followed by careful dieting, when, if further symptoms occur (pain, vomiting, haematemesis), the ulcer is probably incurable by medical means. All cases of pyloric obstruction, hour-glass stomach, perigastric adhesions, and perforation are to be at once treated surgically.

A final word may be added with regard to prophylactic treatment in patients who have recovered from gastric ulcer.

We know that bacteria and their products are one important cause of acute ulcer, and it is proved that they do so by attacking the stomach through the blood stream, but there is no evidence to show that they are able to do so from the cavity of the stomach in the ordinary condition of that organ. It is, therefore, important to remove all possible sources of infection, such as pyorrhoea alveolaris, chronic appendicitis, and so on. I need not remind you that in chronic appendicitis haemorrhage may occur from the stomach. I have stated above that hyperacidity of the gastric juice is an important predisposing cause of ulceration, and my experiments have demonstrated that other acid substances and protoplasmic poisons, in very weak solutions which are innocuous alone, are able to markedly increase the tendency to ulceration of the stomach. Amongst such acids is acetic acid. I have found that acetic acid of one-eighth the strength of vinegar is able to act in this way, and it is a not uncommon practice amongst a certain class of people to consume large quantities of vinegar. Many other substances which are unconsciously taken in with the food may act in a similar manner.

This side of the subject is quite in its infancy, and these remarks must be rather taken as suggestions for future investigations than as a basis on which to found a definite prophylactic treatment. Still, they show the importance of teaching the patient how to diet himself properly, and to avoid food to which preservatives have been added. It goes without saying that to keep the stomach free from disorders of function must be an important point in prophylactic treatment.

In conclusion, it is true that I have told you nothing new in the treatment of gastric ulcer, but I may, nevertheless, have been able to place the principles of treatment which I have advocated upon firmer foundations than they were before, and, if this is so, our time to-day has not been wasted.

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A Clinical Lecture

ON THE

NECESSITY FOR OPERATION IN GASTRO-DUODENAL ULCERATION.

BY

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Gentlemen,—In the male ward there happen to be at present three cases of gastro-duodenal ulceration exhibiting three sets of quite different phenomena. I will take the opportunity, therefore, of discussing the question of surgical interference under the conditions which are illustrated by these cases. Before describing the histories of the patients, I would draw your attention to the fact that in all three the pathological lesion with which we are faced is that of *chronic* ulceration. The pathology of this condition is at present obscure. We cannot consider it as an accidental circumstance that all three patients are of the male sex, because chronic gastro-duodenal ulceration is more common in men than women in the proportion of almost 3 to 1. In women the lesion most commonly met with in the stomach is the so-called acute ulcer, of small size, depressed floor, and steep non-indurated edges. This

ulcer is frequently multiple, and is much more commonly situated in the cardiac and middle zones of the stomach than in the pyloric zone. The chronic ulcer is usually an inch or more in diameter (at any rate when seen by surgeons), with an irregular margin, which shows definite induration. Further, the chronic ulcer is nearly always solitary, and in three out of every four cases is found in the pyloric zone or the duodenum. These differences in the pathology are sufficiently marked to suggest that the chronic ulcer has an etiology different from that of the acute round ulcer. But whether the distinction between the two is really fundamental is a question which awaits further evidence. Ignorant as we are of the etiology of these conditions, we are unable to lay down any laws of prophylaxis. During certain stages of the process there are certain measures, which are commonly called medical as distinct from surgical, which no doubt favour its healing and cicatrization. At the same time there occur accidents and complications which more or less urgently require surgical aid. As to the necessity for operation in some of these accidents and complications, there is complete agreement throughout the medical world, but there is a considerable area of debated ground in regard to others.

My first case belongs to the category of uncontroversial problems. The patient is a man aged 52, who while passing through Liverpool was suddenly taken with acute illness. On being brought into the hospital a diagnosis of perforation of duodenal ulcer was at once made. His home is twenty miles from a hospital; he was on his way to cross the Atlantic to Canada, so that you see he selected a time most favourable to his chances of recovery for perforating! He is an example of the class of case in which the first definite sign of ulceration is perforation, for except for a vague discomfort some three hours after food a few weeks before admission he can tell us of no previous gastric or duodenal symptoms. The diagnosis of perforation depended upon the presence of two physical signs. In the first place, he exhibited extreme abdominal rigidity, most marked on the right side. In the second place, the liver dulness was absent. He had not vomited. He was submitted at once to operation, from which, as you see, he has made a good recovery.

In connexion with this subject of perforation there are several points which I desire to emphasize. The first is the extraordinarily good general condition which many of these patients show when first seen. We may have a history of sudden excruciating pain, but not infrequently it is difficult to believe that anything serious has happened when we medical men are first brought face to face with the patient. This is, perhaps, particularly true of the strong and apparently robust men who form a considerable proportion of those who suffer this accident. Of the various physical signs which go to establish a diagnosis of perforation, you will do well to place the greatest reliance on the absence of liver dullness. Percussing the thorax from above downwards, you find that although the note changes you are unable to demonstrate the loss of resonance which you expect to meet with when passing from lung to liver. One occasionally meets with cases in which this is the one and only physical sign of perforation which can be demonstrated, though it is perfectly true that very rarely is marked abdominal rigidity absent. The details of operation in such cases need not take up our time, but two points are worth mentioning. In the first place, the wound through which the ruptured ulcer is reached may in almost all cases be sewn up as one sews up an ordinary wound of the abominal parietes; in the second place, it is never safe to omit drainage of the pelvis through a hypogastric wound. Those who have tried the omission of this drainage in cases where they believed that effusion of stomach contents was restricted to the immediate neighbourhood of the perforation will probably have found reason to regret the omission, as I have done myself. After operation this patient was treated, as we treat all such patients now, with continuous rectal saline injections in the sitting posit on.

Our second patient illustrates another acute accident, but one in which the indications for operation are not so definite. He is a man aged 34, and six years ago was attacked with severe pains in the upper part of the abdomen, associated with vomiting. Ever since then he has had "indigestion"—that is, pain coming on from half an hour to an hour after taking food, sometimes lasting for several hours and then not infrequently ending in vomiting. Three weeks ago he had copious haematemesis, and since then he has had two more attacks of the same. You see at the present moment he is extremely pallid and looks emaciated. It is now six days since his last attack of haemorrhage from the mouth, and his stools still contain blood in small quantity. His pulse is small and of low tension, 96 per minute; his red cells are reduced to 1,500,000.

You will observe that so far he has had no surgical treatment, and the lesson from that is that very rarely indeed is it either necessary or wise to operate with the idea of arresting haemorrhage from ulceration by some surgical method. With proper measures, the great majority of cases of haematemesis may be trusted to recover from their attack of haemorrhage. The operation, if it is to be done at all, should be postponed until the patient has recovered from the haemorrhage. This is the course we propose to pursue in the case of this patient; so far we have aimed at producing local and general rest; when, however, he has recovered from his attack, we shall advise him to submit himself to an operation. What that operation will be exactly, we are not in a position to state with absolute certainty; we believe the ulcer to be pyloric in position; he is a comparatively young man, and therefore we do not anticipate that it is cancerous, and under these circumstances a choice will be made at the time of the operation between excision of the ulcer and gastro-jejunostomy. In pyloric ulcers either of these procedures may be trusted to give good results, but we prefer to do excision if excision proves easy and does not involve encroaching on some neighbouring organ such as the pancreas. If we are right that the ulcer is pyloric, experience goes to show that gastro-jejunostomy, though less radical, is of very great assistance in bringing about the healing of the lesion. I have already said that patients do not often die directly from loss of blood from ulceration; it is none the less an extremely serious complication, and when, as in this case, we believe it to be due to the erosion of a chronic ulcer, there can be little question that operation is the wisest course to pursue. You are aware that haemorrhage into the stomach occurs from a variety of causes, and that patients have occasionally been submitted to operation for haemorrhage which was not suitable for surgical remedy. This has, perhaps, most frequently been in cases of gastric haemorrhages of young women. I shall not discuss this question at length now, but content myself with simply saying that where there is definite evidence that the cause of haemorrhage is the erosion of an ulcer of long standing there can be no reasonable controversy as to the advisability of surgical measures. If gastro-enterostomy is performed it is necessary to remember that it is only a measure which *aids* healing. Disappointment sometimes arises from the idea that because the patient "has had an operation" he may choose his own diet and neglect medical measures forthwith. Overloading the stomach and hyperacidity are two things which sometimes spoil the effect operation would otherwise have, and a third desideratum in regard to which he must always be instructed is proper mastication. On the cleanliness of the mouth and the thorough use of the teeth the result of the operation largely depends. To sum up the lesson of this case: serious haemorrhage in chronic gastro-duodenal ulceration requires surgical remedy, not at the time of haemorrhage but after an interval of about three weeks. An "interval" operation is required to save the patient from the recurrence of this very serious complication.

The third patient is a labourer aged 49, whose chief complaint was epigastric pain for six months, coming on more intensely about an hour after food, but present off and on for the whole day. He stated also he had lost weight considerably, but we do not know exactly how much. He had medical treatment during the whole of this time, and found most relief from restricting his diet to easily-digested foods. Constipation was another troublesome symptom; he did not vomit. On palpation of the abdomen there was slight tenderness in the epigastrium no tumour could be felt, but splashing was easily elicited. Furthermore, through his thin abdominal wall peristaltic waves could be seen passing from the left costal border towards the right. We examined the position of the

stomach with the radioscopic screen. After a bismuth meal it could be seen that the greater curvature of the stomach extended as low as the plane of the anterior superior spines when the patient stood up, and active peristaltic movements of the stomach were clearly made out. Test meals showed that free hydrochloric acid was present in the gastric secretion, and also that the stomach contents were retained for many hours beyond the normal. A feature of the case was the absence of sarcinae; apparently, although there was marked stasis of stomach contents, there was little or no abnormal fermentation going on.

This man had therefore marked dilatation and ptosis of the stomach. It was not purely atonic dilatation, for we could see the stomach walls in active and forcible peristalsis. The ptosis was not part of a general abdominal ptosis for no other organ exhibited it. A forcible peristalsis which we can see must always be taken as a definite sign of obstruction, an attempt of the viscus to empty itself against resistance. In this case we judged by what we could see with the screen that the obstruction was at or about the stomach outlet. Considering its presence it is a rather remarkable fact that the man had not suffered from vomiting; it would appear that the stomach had always been able to pass on its contents, although the marked dilatation showed that it had been done under difficulty.

In view of the evidence of obstruction about the pylorus we had no hesitation in recommending an operation. There are types of gastric dilatation in which operation is useless. Purely atonic dilatation of the stomach does occur, although in the past some of the cases so diagnosed were probably a late stage of dilatation resulting from obstruction. In purely atonic dilatation operation is not of value, but the condition is decidedly a rare one. Operation is again of little value when gastric ptosis and dilatation is simply a part of a general ptosis of the abdominal organs. These two conditions should therefore be excluded when the stomach is found dilated before any decision is made to advise operation. In this case on opening the abdomen a cicatricial stenosis of the pylorus was found, and the stomach besides dilatation showed marked hypertrophy of its walls. Posterior gastro-jejunostomy was performed, and care was taken to provide a large opening of 2½ in. The patient vomited twice on the evening of operation, but has not done so since. He was allowed milk diluted with Vichy water on the following day, and now, six days after his operation, he is on a light diet. He has been given bicarbonate of soda, and carbonate of magnesia after each meal in order to prevent any high acidity of the gastric juice, which would interfere with the healing of his gastro-jejunostomy wound. Experiments have shown that such wounds take three or four weeks to heal.

This case belongs, as did the first, to the class of gastric conditions in which the necessity for operation is accepted by all. If you can demonstrate that there is in any portion of the alimentary canal an actual mechanical obstruction to the onward passage of the contents the wisdom in advising operation for the relief of this obstruction is unquestioned. It is of course unnecessary when the ulcer is cicatrized to deal in any direct fashion with it, and we can give complete relief by short-circuiting the food stream. It is very necessary in doing so to be careful of two things—first, to provide a large anastomotic opening; secondly, to avoid the formation of an acute angle at the point of anastomosis. With the latter object a posterior anastomosis is preferred, joining the jejunum to the stomach as close as possible to the commencement of the former.

The indications for operation presented by these three cases by no means exhaust the problems of operation in gastro-duodenal ulceration. You will observe that all three illustrate rather complications of the ulcerative process than simple ulceration itself. In considering the advisability of operation in simple chronic ulceration we are faced with the not infrequent difficulty of diagnosis. Pain, with a constant time relation to the intaking of food, is a symptom sufficient on which to base a definite suspicion of gastro-duodenal ulcer, but it needs to be supported by further evidence before one can say with anything approaching certainty that the ulcer is present. Of the phenomena which lend it support haemorrhage is far and away the most important, and it is therefore worth while taking a great deal of trouble to discover whether there is bleeding into the stomach or duodenum. In some cases persistent pain in spite of treatment is in itself sufficient justification for an exploratory operation. Such an operation is not speculative, as we know that this pain, with a constant relation to food, is in some cases the one and only symptom of ulcer, and also of other gastric or perigastric conditions remediable by surgical measures.

Most surgeons nowadays prefer to deal with an ulcer directly—that is to say, by resection. The most important argument of all for this proceeding is the frequency with which carcinoma is implanted on ulcer. On this subject a most important communication has recently been made by Dr. W. C. McCarthy of St. Mary's Hospital, Rochester, from which it would appear that this sequence of events is even more common than has hitherto been expected.

I shall say no more on the subject of ulceration apart from its complications, as I have at the moment no illustrative case to show you. I will simply give you some reasons why we should take the opportunity which surgery affords of relieving patients from this serious disease even in the absence of complications. In the first place, gastric ulcer untreated is attended by a mortality which has been estimated at 10 per cent.; in the second place, whether medically treated or not, it is liable to be complicated by accidents seriously endangering life; in the third place, while it is notoriously difficult to obtain definite healing, when this does occur it is liable to be associated with such cicatricial contraction that stenosis follows.

HEPATIC ABSCESS FOLLOWING ACUTE APPENDICITIS.

By LEONARD A. BIDWELL, F.R.C.S.,
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The occurrence of hepatic abscess after acute appendicitis is a very rare complication, and although a considerable number of cases have been collected and recorded by Kelly and others, in most of them the suppuration in the liver had only been discovered at a *post-mortem* examination, and the abscesses were multiple, and therefore were scarcely amenable to surgical treatment.

In the two cases which have occurred in my practice, both were discovered during life and treated by operation.

In the fatal case I believe that no other abscess was present, as I had the opportunity of examining the liver a week after opening the hepatic abscess, and then no external evidence of another liver abscess could be detected. In the successful case the abscess was certainly single. The occurrence of suppuration of the liver is usually a late phenomenon seldom occurring until some weeks after the acute attack. In my two cases the interval between the commencement of the disease and the detection of the abscess was eight weeks and four and a half weeks respectively. It is interesting to note that both cases were apparently convalescent, with a normal temperature for the first fortnight after the operation on the appendix. In one case the abscess followed an operation for an appendix abscess, which was opened about three weeks after the initial attack and was thoroughly localized; while in the second case the operation was performed for a perforated appendix with localized peritonitis within forty-eight hours of the onset of the disease.

There is little doubt that the poison is carried to the liver by means of the portal vein, and that the abscess results from pylephlebitis. The patches of pylephlebitis must be close together and the infection very virulent for a single abscess to form. When the patches of pylephlebitis are separated from each other by any amount of normal liver tissue, we shall have the condition of small multiple abscesses, which is more commonly found in the post-mortem room. It is interesting to note that the pus obtained from a liver abscess does not have the characteristic odour of pus from an abscess in connexion with the appendix. With regard to diagnosis, it is practically impossible during life to distinguish between a liver abscess and a subphrenic one. The only point which would suggest abscess of the liver, rather than subphrenic abscess, would be bulging of the right side of the chest with increase in

the width of the intercostal spaces rather than pushing down of the whole liver. When an exploratory puncture has been made and the pus has not got the characteristic odour of an appendix abscess the suspicion that the case is one of hepatic abscess will be considerable. It is often stated that cases of hepatic abscess following appendicitis will show some amount of jaundice, or at any rate an icteric tinge in the conjunctivae. This sign, however, cannot be of great importance, as it did not exist in either of my patients.

With regard to treatment, it is important that the surgeon should be prepared to operate immediately he has discovered pus by means of an exploring needle, since there is a risk of escape of pus into the pleura or peritoneal cavity when the needle is withdrawn.

The abscess will practically always be reached by a similar incision to that employed for subphrenic abscess, namely, one over the ninth rib behind the anterior axillary line. Portions of the ninth and tenth rib are resected, and the diaphragm exposed. In some cases the pleura will be opened in this incision, and if so, its edges should be stitched to the diaphragm.

When the diaphragm is divided, the posterior surface of the liver is exposed, and the exploring needle should be inserted in the direction in which pus had previously been found. When pus is found a director is passed down by the side of the exploring needle, and the exploring needle removed. Gauze is then packed in between the liver and the diaphragm. A pair of sinus forceps are inserted along the groove of the director into the abscess cavity, and a track broken down through the liver substance by withdrawing the forceps. Along this track a large drainage tube is inserted, and the abscess sac is washed out with saline solution by means of a small catheter inserted through the drainage tube. The drainage tube is fixed to the skin, and the rest of the wound closed. There is little risk of any trouble with the pleura, but there may be more risk of infection of the subphrenic space; this occurred in my first case, and was responsible for its fatal termination. The following are the two cases which have occurred in my practice:

Case I.

A young man, aged 25, was first seen by me on February 7th, 1903. He had had an attack of appendicitis at Christmas, 1901, but this only lasted one or two days. Another more severe attack occurred at Easter, 1902, which lasted three or four weeks, and during the attack the patient had a high temperature, vomiting, and a definite lump in the right iliac fossa. The lump, however, disappeared after rest in bed, and he remained in good health until the middle of January, 1903, when he suffered from another acute attack of appendicitis. It commenced with vomiting, and the temperature had been irregular, varying between 102° and 99°. A definite lump had been discovered a few days before I was asked to see the case, three weeks after the commencement of the attack.

On examination there was a large swelling in the right iliac fossa, which was dull on percussion. The rest of the abdomen moved well and was quite soft. On rectal examination it was found that the inflammatory mass extended towards the pelvis. On the following day the patient was anaesthetized and an incision made in the right iliac region. The abscess was opened without separating any peritoneal adhesions. It was found to extend into the pelvis; no search was made for the appendix; two drainage tubes were inserted, one upwards towards the appendix, and the other downwards into the pelvis. The temperature became normal on the day following the operation, but on the third day some faecal matter was noticed in the dressings. This, however, stopped after about a week; the tubes were removed and the discharge became trifling in amount, the temperature remaining level. Three weeks after the operation the temperature again rose. Careful examination of the wound failed to elicit any cause.

I saw him on March 4th, and again on March 10th, but could not discover any evidence of a collection of pus. The temperature remained high, the pulse rapid, and the tongue foul.

On March 15th I found that the liver dullness was slightly increased downwards, and there was some tenderness over the liver. I decided to explore the liver. An incision was made in the upper part of the linea semilunaris, and the liver exposed. There were no adhesions in the neighbourhood of the liver. On passing a trocar into the liver pus was obtained. A free opening was made into the abscess of the liver, and a drainage tube inserted. The patient progressed favourably for a week. The temperature became normal, and his general condition improved. On March 20th his temperature again rose, and on examination it was found that there was a mass in the right lumbar region, which was tender on pressure. An incision was made in the loin, and a subphrenic abscess opened and evacuated. The temperature fell after this, but the patient died a few days later from exhaustion.

In this case the original appendix abscess had formed nearly three weeks after the commencement of the attack of appendicitis. When opening the appendix abscess no adhesions were disturbed and no evidence of any septic absorption appeared until three weeks after the operation. Without any rigor the temperature suddenly rose and remained high until the abscess of the liver was discovered and opened, thirty-five days after the original operation.

The further complication of the subphrenic abscess was probably due to some escape of pus from the liver abscess, which tracked round to the posterior surface of the liver. This would probably have been avoided had a counter-opening been made into the liver after resection of a rib.

Case II.

A boy, aged 15, was admitted into the West London Hospital on January 14th, 1910. He had been seized with acute pain in the right iliac fossa forty-eight hours previously and had vomited several times. On admission his temperature was 102°, pulse 100. The abdomen did not move on respiration, but was not distended. There was acute tenderness and rigidity of the lower half of the right rectus muscle. There was no loss of resonance in the right iliac fossa. The patient was put under an anaesthetic immediately after admission, and the abdomen opened by the gridiron incision. An abscess cavity, containing 2 or 3 oz. of pus was found between the caecum and the anterior abdominal wall. This was emptied and wiped clean.

The appendix, which was gangrenous, was removed, and a gauze plug left in the abscess sac. The patient's temperature fell to normal immediately after the operation, and remained so for three days, when the gauze plug was removed. The temperature remained up for three days, and then dropped to normal, and remained nearly normal for a week. Fourteen days after the operation the notes state: "Discharge very slight, temperature normal, progress satisfactory, wound almost healed." After this the temperature rose on several occasions to 101°. There were no signs of any bowel irritation, but some dullness was found at the base of the right lung.

On February 3rd, as the temperature was still up, and the dull area at the right base had increased, an exploring needle was introduced, and about 2 drachms of clear fluid were removed. This was examined microscopically. No pus nor micro-organisms were found; the cultures also were sterile. The chest condition remained unchanged, the temperature varied between 103° and 100°, so an exploring needle was again inserted on February 10th, and clear fluid again drawn off. This was again examined, and no micro-organisms found. On February 12th there were still signs of fluid in the right pleura, the lung was compressed, and the heart slightly displaced to the left. Whispering pectoriloquy was well heard over the dull area. The liver was slightly depressed, and extended a finger-breadth below the ribs. The rest of the abdomen was normal. The temperature was 101°. The chest was aspirated, but only 1½ oz. of clear sterile fluid was obtained.

On February 15th it was noted that the liver extended three fingerbreadths below the costal margin. The signs at the right base were unaltered. The temperature remained 101°. The right base was again aspirated; a long needle was used, and was pushed deeply into the liver, when pus was drawn off. This pus was examined in the laboratory, and was found to be swarming with bacteria, which were mostly coliform organisms, but there were also streptococci; the former were obtained in cultures. In the pus there were also many cells of the liver parenchyma, some in columns, and others detached. The exploring needle had been inserted in the seventh interspace, so an incision was made over the eighth rib, which was resected in the mid-axillary line. The pleura was opened; it contained some clear fluid, and was shut off with sutures.

The diaphragm was divided, and the posterior surface of the liver exposed. The abscess was opened, as described above, and about 8 oz. of pus let out. A large drainage tube was inserted, and the cavity washed out in saline. The temperature fell to normal immediately after the operation, and the discharge quickly diminished in amount, the tube being removed a fortnight after the abscess had been opened.

The patient was discharged to a convalescent home five weeks after the incision of the liver abscess, all wounds healed soundly, and he is now in perfect health.

A CAUSE OF DEATH AFTER OPERATION FOR APPENDICITIS:

THE THREE LINES OF DEFENCE.

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It cannot have escaped notice that operations for appendicitis, especially when performed upon children, are far too frequently followed by a fatal ending, which sometimes occurs with startling rapidity, not necessarily in the severe and apparently more dangerous cases of general peritoneal infection, but where a localized abscess has been operated upon by a skilled surgeon, and there is no obvious reason for such an untoward result.

Unfortunately in the medical journals it is too customary to record successful cases, and for the fatal ones we must

look to the obituary columns of the daily press. Some years ago I had a very painful experience in my hospital practice, losing four or five cases of appendicitis in quick succession, in the same mysterious manner. Such an experience "gives one furiously to think," and I believe I have found out the explanation. It is in the hope that this may avert a similar experience in the practice of others that I feel obliged to call attention to these cases. The cases were all very similar, the operation was performed in the same manner, and one description will suffice.

A boy of about 9 years old was admitted to the hospital with a definite inflammatory swelling in the appendix region with all the signs of abscess formation including leucocyte count. His general condition fairly good.

Operation on the fifth day from the onset.

An incision was made in the semilunar line opening the peritoneal cavity; the inflammatory swelling around the appendix was carefully packed all round with gauze so as to shut off the peritoneal cavity. The abscess was opened by insinuating the tip of the finger between two adjacent coils.

Pus as it escaped was immediately mopped up with gauze, and when no more escaped the abscess cavity was opened up further and sponged with gauze till it was *quite clean and dry*. (In cases in which the appendix was easily removable, it was removed at this stage, but in most of the cases the appendix was left.)

A drainage tube was introduced into the cavity, which was also packed with gauze soaked in iodoform emulsion and squeezed fairly dry.

The ends of the wound were closed, leaving sufficient space in the centre for the gauze and tube. I hoped by operating in this manner to cut short the period of healing, and that little or no suppuration would occur.

The operation took a very short time, there was no evidence of shock, and the patient left the table in a perfectly satisfactory condition.

From six to twelve hours later an obvious change took place. He became pallid and restless, the pulse increased considerably in rate up to 140 or 160 per minute, and the temperature usually rose, with intervals of sleep alternating with restlessness. The symptoms steadily became worse, and coma was followed by death within twenty-four or at most thirty-six hours after the operation. There had been no vomiting, and no abdominal distension, the abdomen remaining flat and soft throughout. On *post-mortem* examination nothing was found, a little serum in the abscess cavity and on the gauze, but *no pus anywhere*.

The deduction which I draw from these cases is as follows:

In endeavouring to treat a disease we should first try to understand how Nature is working for the same end.

After all, Nature has had a far longer experience than any surgeon, and her methods ought not to be lightly interfered with. We may consider that when suffering from an ordinary attack of appendicitis, by which I mean an attack going on to localized abscess formation, there are *three lines of defence* by which the organism protects itself against the bacillus.

The first line is obvious to all—the lymph agglutination of mesentery, intestines, etc., around the appendix, which limits the abscess, and prevents infection of the general peritoneal cavity with pus. It is these adhesions which surgeons are so careful to preserve, and fearful of breaking down.

But, after all, this is only the outer rampart, and if destroyed it is not necessarily a very serious matter.

The second line of defence is a far more important one, and its importance is, I believe, not sufficiently recognized. I refer to the layer of lymph covering the surface of the intestine and omentum, and forming the wall of the abscess cavity. I believe this lymph acts as a filter, allowing soluble toxins to pass through into the lymphatics and blood stream of the surrounding viscera, but presenting a barrier to the passage of bacilli, like the porcelain of a Berkefeld filter.

It is this barrier which it is all-important to preserve until the third line of defence has been established.

The third line is in the blood itself; the passage of toxins into the circulation results in a rise of temperature, quickening of pulse, etc., and the formation of protective antibodies in the serum.

More and more toxin passes through as time goes on, and the abscess becomes larger, until in course of time, generally during the second week of an attack, the temperature may fall to normal, or nearly so, and the serum become saturated with antibodies.

By this time the patient has become protected. If the abscess is opened, foul-smelling pus flows freely over the abdominal wound, which may afterwards be sutured for the greater part of its extent and heal by first intention, without even any sign of redness round the stitches. There is no more danger to the patient than in opening an abscess anywhere else. This seems to be the meaning of the old-fashioned idea of ripening.

But in the cases I have described—and I believe the same thing has occurred in the practice of others—time was not left for the proper development of this third line, and the second line was removed by the too vigorous sponging with gauze, and probably at the same time some infective material was rubbed into the unprotected surface of the abscess wall, as vaccine lymph is rubbed into an unprotected skin in the ordinary method of vaccination—an acute septicaemia resulted, and death was due to an invasion of blood by the bacilli.

If this theory is correct—and I can think of no other satisfactory explanation for these cases—the moral is obviously this:

1. Not to be in a hurry to operate, unless an operation can be performed within the first twenty-four hours, when the mischief is presumably confined to the appendix itself, or where general peritoneal infection is impending or has already taken place.

2. When a definite abscess has formed, wait till after the first week; when about ten days have elapsed it is probable that protection will be complete. During this period the patient should of course be kept under close observation, so that an operation can take place at any time if necessary.

3. Be contented to drain the cavity. Gentle flushing may be employed at the time of the operation if preferred, but do not do more than is necessary for this purpose.

4. Above all things, if operating early, simply evacuate the pus without touching the abscess wall, and leave the appendix to be dealt with at a later date, when all infection has subsided.

Since I have endeavoured to follow out these maxims I have had no repetition of the experience I have related.

DIRECT OESOPHAGOSCOPY.

BY

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Examination of the oesophagus by means of a straight rigid tube is regarded by some medical men in England as a barbarous and dangerous proceeding. If, on the other hand, this method of examination is at all generally used, there is a singular lack of records. This lack cannot be due to the rarity of the occasions on which oesophagoscopy may be supposed requisite, for medical literature bristles with the rare and interesting type of case.

Some are incredulous that it is mechanically possible thus to examine the oesophagus, with its difficult buccopharyngeal entrance, its natural curvatures, and its proximity to vital thoracic viscera. Such incredulity is best removed by demonstration. Nor is the professional sword-swallower yet extinct; and, in fact, there is no better way of practising oesophagoscopy than by the aid of such an artist.

Others, not incredulous for anatomical reasons, are deterred by various other considerations from admitting the utility of the oesophagoscope. Thus, the field of vision is too small and distant, the difficulty of illumination too great, the chance of fallacy too serious. Such objections are well founded.

However, the field of vision is extensive by comparison with that of the urethroscope.

As to the best method of illumination opinions vary. If the light is to be reflected down the tube the requisites are adequate brilliancy, condensation, and parallelism of rays. The inner surface of the tube should be dulled. It is a little difficult but not impossible by these means to light up an area of oesophageal wall as far down as the cardiac orifice of the stomach.

The chance of fallacious observation is certainly great, but not more so than is the examination by artificial light of any hollow structure with muscular walls, such as

rectum, bladder, and urethra; and there is no reason why this difficulty should not be largely eliminated in the one case as in the other by experience and by a proper use of probes, sponges, and other appliances for cleaning the area under examination.

The following series of cases in which direct oesophagoscopy was applied is too small to serve as a basis for generalizations, but, as far as it goes, it will help to answer questions as to the safety and practicability of the method. If these questions can be settled satisfactorily, then the indications *pro* and *contra*, and all the other matters that collect about any surgical procedure, are not far to seek.

A very good account of this subject is given in *Osophagoskopie*, by Professor Hugo Starck of Karlsruhe; see also Professor Killian's writings in the German Laryngological Archives; a discussion of the British Medical Association at Manchester, 1902; the *Journal of Laryngology*, vol. xvii; a paper by Dr. Paterson of Cardiff (BRITISH MEDICAL JOURNAL, 1906); and a paper by the author in *St. Bartholomew's Hospital Journal*, vol. xiv, 1907.

To my mind the best indication for oesophagoscopy is that of foreign body, yet not in all cases. Some foreign bodies can be safely left to take their chance of passage; others are better removed by lateral oesophagotomy. But the latter procedure ought to be controlled by oesophagoscopy, if only because it occasionally happens that when the oesophagus has been opened it is found that the foreign body has been passed on to the stomach. In such a case the patient will have been spared a somewhat severe wound. A smooth, rounded article, such as an apple, can be safely pushed on its way with a bougie, in the absence of strictures, but not so an irregular, sharp-edged angular object like a piece of bone or some tooth-plates, which can only be dislodged with safety under guidance of the eye. Lack of the last desideratum is a serious objection to the old-fashioned coin-catcher, and to instruments like Kirmisson's hooks. A few cases are recorded, a great many unrecorded, of laceration of the oesophagus by these instruments. An elongated body, such as a hatpin, has not infrequently been removed from the oesophagus by gastrotomy, but this can equally well be done *per vias naturales*.

It is certain that the lay press gives a truer index of fatalities resulting from foreign bodies impacted in the oesophagus or the air passages than the medical journals. However, 32 cases of foreign body in the oesophagus are mentioned in the medical journals of the last three years. Eight of these cases are given as having had a fatal termination. In seven of the eight there is no mention of treatment, and death seems to have resulted from perforation of the trachea or oesophagus, or other damage done by the foreign body itself. In the eighth case the oesophagus was torn by a coin-catcher. Numerous instances of this latter accident could be collected from the lay press and from *post-mortem* record books.

In 24 of the cases the foreign body was successfully removed. The methods used were: Gastrotomy 1, Kirmisson's hook 1, coin-catcher 5, oesophagotomy 6, vomiting induced by various means 3, passage per anum 2, not mentioned 6.

The nature of the foreign bodies was as follows: (*a*) In fatal cases, tooth-plate 3, coin 2, collar stud 1, mass of paper 1; (*b*) in successful cases, coin 9, tooth-plate 8, toy bicycle 2, brooch 2, piece of meat 2, bed-knob 1.

It will be noted that the same articles appear in both lists. It is also of interest to note the times for which these foreign bodies were retained. They vary from six days to seven months Therefore, although delay is clearly inadvisable, a surgeon has plenty of time to work.

Oesophagoscopy is only mentioned once as having been tried unsuccessfully.

Now although the successful issue of some of these cases is due to brilliant surgery, yet the procedure adopted is either haphazard or in the nature of a severe operation. The contention here is that if oesophagoscopy is simple and safe and practical it ought to be tried in most cases of foreign body.

Strictures of the oesophagus are generally malignant and they sometimes progress with extraordinary rapidity. Very little is known about their early stages and the treatment is highly unsatisfactory. If any advance is to be made, it will assuredly only be done by means of direct inspection at earlier periods in the disease. "Innocent" strictures are relatively uncommon. It would appear nevertheless to be important to have some certain means of making an absolute diagnosis in these cases, as well as in other cases of dysphagia and affections of the oesophagus.

CASE I.

Male, aged 52. Three months gradually increasing dysphagia. Great wasting in that time. Can now only swallow fluids, and that with difficulty. Deglutition is impeded. The patient fills his pharynx with the fluid, and then lets it run down by gravity. No enlarged glands felt in the neck. No haematemesis. The pharynx has a scarred appearance, and the epiglottis is slightly misshapen. A history of former syphilis is given. Bougie (12 mm.) stops at 8 in. from the upper incisor teeth.

In this case the history, together with the appearance of the pharynx, afforded a supposition that the stricture might possibly be fibrous or at all events "innocent." It was therefore necessary to see the local condition if possible. As the high position of the stricture made the case difficult if not impossible with an ordinary oesophagoscope, I decided to try first the method of hypopharyngoscopy which I had the pleasure of seeing invented by von Eicken at Freiburg in the summer of 1906.

This method has been described in the *Lancet* for May 25th, 1907, by Dr. Hald of Copenhagen. It consists practically in withdrawing the larynx away from the vertebral column by means of a strong curved probe passed behind the epiglottis and then investigating the pharynx with an ordinary laryngoscope. In this way it was just possible to see the stricture, which showed as a narrow tunnel with what looked like radiating scars running down towards it. Next the pharynx was cocainized and a small oesophagoscope passed down behind the cricoid cartilage. Usually it is almost impossible to retain a tube or any other foreign body in this situation; but this patient was in the habit of doing so, and was thus extremely tolerant. Nothing like ulceration was seen, nor any scars, but the lumen of the oesophagus was contracted in a circular manner, and there were some nodular swellings lying around the field of vision. These felt hard to the probe, and did not yield to pressure. A diagnosis of infiltrating carcinoma was made.

CASE II.

Male, aged 48, stated that a piece of meat was stuck in his neck and wished that it should be removed. He was informed that very likely it had passed on, and that what he felt was only the discomfort caused by its temporary impaction. As the patient was uncertain whether the piece of meat contained any bone, and as he desired the examination, I passed a tube of 10 mm. diameter to a distance of 12 in. from the upper teeth. The lumen was seen to be clear, and there was no injury of the mucous membrane.

I was able to demonstrate the walls of the oesophagus below the upper aperture of the chest moving with respiration. This patient was short and stout, and had a very thick neck, but no teeth in the upper jaw.

CASE III.

Male, aged 30, had a shilling impacted in the oesophagus, near the cricoid cartilage. Skiagrams showed the coin lying antero-posteriorly. An oesophagoscope was passed down behind the cricoid cartilage, but the shilling was not seen. This patient had a very kyphotic spine and very prominent teeth, and was therefore unsuitable for the operation.

It is almost certain that during the cocainization or later the coin had become dislodged and passed lower down the oesophagus, and so was out of reach of the short tube which the skiagram led me to select. In any case the coin became loose, and was vomited soon afterwards.

CASE IV.

Female, aged 35. Chief symptom, vomiting of blood-stained muco-pus, especially during the night. No dysphagia. The vomit contained great numbers of (?) pharyngeal epithelial cells, much mucus, a little blood, some pus, and crowds of bacteria, but no food substance or gastric juice. Skiagrams showed nothing abnormal in neck or chest. There were some crepitations over the upper lobe of the right lung. Dr. S. West made a provisional diagnosis of an oesophageal sinus, due to a suppurating gland, probably tuberculous, having ruptured into the oesophagus. This patient's nose was very wide externally and very roomy on both sides internally, so that the nose and naso-pharynx were easy to examine with the rhinoscope. The pharynx was in a condition of chronic catarrhal inflammation, no doubt owing to the width of the nasal cavities. No disease of any of the air sinuses was discovered. An oesophagoscope, diameter 10 mm., was passed a distance of 12 in. without anything abnormal being found.

Here, as in Case II, the oesophageal walls were seen to move with respiration. This patient was examined again under general anaesthesia (see Case VII). She was a stout woman with a somewhat thick neck and prominent though defective upper teeth. It is worth noting that she vomited some 2 oz. of the material above described through the oesophagoscope.

CASE V.

Female, aged 52. History of a few months' dysphagia and great wasting. I had seen this patient six weeks previously with the intention of making a complete examination, but was at the time prevented from carrying it out by reason of failure of the battery. In the interim gastrostomy was performed, with the result that the patient looks very much better. She has put on weight, is much less anaemic, and can swallow solid food. An oesophagoscope 36 cm. long was passed its whole length without anything abnormal being seen.

This patient had very prominent upper incisor teeth, but no upper molars, and the tube, when in position, lay in the left angle of the mouth, the head being slightly tilted towards the right shoulder. Air rushed up and down the tube in a curious way, probably owing to the presence of the gastrostomy opening.

The nervousness and weakness of this patient prevented further examination, and I recommended general anaesthesia. It is a matter of regret that I did not try to see the lower part of the oesophagus from below—that is, through the gastrostomy wound.

CASE VI.

Male, aged 58. For six weeks has had definite difficulty of swallowing, which has steadily got worse. Can now only swallow fluids. Has not lost much weight, and does not look ill or wasted. Teeth very defective. Pharynx natural. No glands felt in neck. A sound, diameter 24 mm., stopped at 9 in. from the teeth. A sound, diameter 12 mm., passed into the stomach. An oesophagoscope, diameter 12 mm., was passed a distance of 9 in., and showed a narrow stricture with rigid nodular walls, but no ulceration. A diagnosis of rapidly advancing carcinoma was made.

CASE VII.

Same patient as Case IV. The symptoms above detailed persist. Examination under chloroform. Position of patient: flat on the back, with head projecting beyond the end of the table, and supported by an assistant. The tube was somewhat difficult to pass, but without force of any kind finally reached a distance of 14 in. from the teeth. The head had to be turned sideways, so that the tube lay in the angle of the mouth. The oesophagus at 14 in. was seen to pass obliquely to the left, so that only the right anterior wall was visible. At this stage brownish fluid appeared round the curve in the oesophagus, filled the lower part of the tube, and was presently vomited. It had the same characters as the fluid described under Case IV *supra*. The field of vision was now dried with swabs of cotton-wool. Next the tube was very slowly withdrawn, and folds of mucous membrane kept coming into view. No sinus, growth, ulcer, or pouch was seen, and the oesophagus in this case did not seem to have any air-containing lumen except at its very lowest part, which therefore may have been dilated, and thus the cause of the symptoms. Half way through the examination the gag slipped and caused a little anxiety. The conclusions from this case are that if general anaesthesia is used it should be complete, that for the dorsal position the table should be perfectly flat, that special care of the gag is essential, and that good assistance makes matters safe.

This case was on the whole the most satisfactory, because it showed conclusively that it is possible to examine thoroughly the whole length of the oesophagus in this manner.

CASE VIII.

Female, aged 70. Edentulous; extremely wasted; cannot swallow solids; sound stops at 10 in. from the teeth. Examination under chloroform. An oesophagoscope, diameter 12 mm., was passed nearly 10 in. The stricture was clearly seen, and also the upper border of an ulcer with hard, nodular margin. A diagnosis of ulcerating carcinoma was made.

From a diagnostic point of view this case was very satisfactory. It would have been easy in this, as in the other cases of growth, to remove a piece for microscopic examination had it been deemed necessary.

These eight examinations were made on patients varying from 30 to 70 years of age, four males, three females. Two of them took place under general anaesthesia; the rest had no anaesthetic, or only a little cocaine brushed over the pharynx. They show that oesophagoscopy is safe and practical, at all events in these eight consecutive cases picked at random.

As regards anaesthesia, a sensible patient can be of great assistance to the surgeon if he be conscious. He can swallow when directed to do so, he can alter the position of head or neck as required, and his sensations are to some extent a safeguard against damage. For these reasons a beginner should probably not have the patient under a general anaesthetic. But general anaesthesia spares the patient a certain amount of discomfort, and, what is very important, admits of a more leisurely examination. In the two cases in which chloroform was used, prolonged inspection of the oesophagus was easy, and normal and abnormal structures were demonstrated to students and others, after thorough cleansing of the field of vision.

Two patients complained of slight difficulty of swallowing as an after-effect, lasting a few hours. In one case this could fairly be attributed to the cocaine used; in the other it was due to slipping of the gag and bruising of the base of the tongue.

The technique in each case was much the same. Sometimes the obstruction, if any, was first located with a bougie. The chest was thoroughly examined by ordinary physical means and skiagrams of neck and chest were made in all cases, whether for the location of growths or foreign bodies or for the detection of extrinsic pathological conditions such as aneurysm or mediastinal growth.

A guide for passing the instrument is not essential, and obviously cannot be used in cases of high-placed stenosis. If, however, the part to be examined was known to be well within the chest, a flexible bougie loosely fitting the tube was chosen and placed in the tube in such a way that about 2 in. projected from the distal end. It is better to have a loosely fitting bougie, because otherwise it may require a good deal of force to withdraw it, on account of the production of a partial vacuum below it. The projecting part of the bougie (where this was used) and the adjacent 2 in. of the tube are lubricated with some moist substance such as vaseline or paraffinum liquidum.

The easiest way of entering the oesophagus is to place the end of the instrument in a sinus pyriformis, whence it glides naturally into the oesophagus, but occasionally requires the assistance of deglutition. As soon as the end of the tube is within the upper aperture of the thorax the bougie is withdrawn and the rest of the operation carried out under the control of inspection. If difficulty is encountered, no force whatever is used. The exact position of head, neck, jaws, and vertebral column has to be found for each case. Thus, at one time, by extending the head a little more or a little less, at another by turning it laterally towards one or other shoulder, at another by a combination of these positions, and so on, an apparently insuperable obstacle disappears and the tube passes easily downwards. In a certain proportion of cases it is physically impossible to carry out these manœuvres, but that is no reason for discarding the thing altogether.

In view of the great obscurity surrounding diseases of the oesophagus and the unsatisfactory results of the treatment at present applicable to them, it is contended that a wider use of the oesophagoscope is safe and practicable, and could not fail to produce advances in surgery.

Much of what has been said about foreign bodies in the oesophagus applies also to the use of the bronchoscope in cases of foreign body impacted in the trachea or bronchi.

NOTE.—In the period that has elapsed since this paper was written various improvements have been made in the instruments. In the cases here described I used Killian's original instrument. Recent developments have rendered oesophagoscopy simpler and more efficient.

FROM an advance programme to hand we gather that those who take advantage of the arrangements made for holiday cruises by the Yeoward Brothers Line, and leave Liverpool on September 24th, will arrive in Portugal in time for the autumn meeting of the Royal Sporting Club of Portugal. It lasts a fortnight, the events including an amateur bull fight, cross-country races, pigeon shooting, horse jumping, and a competition for the lawn tennis championship. One or other of the ships of this line apparently leaves Liverpool every week from August 20th to November 12th. The round voyage to Portugal, the Canary Isles, and home, lasts some twenty-three days, the fares ranging from ten to twelve guineas. It would appear that passengers are at liberty to break the voyage at discretion.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF RADIOLOGY AND MEDICAL ELECTRICITY.

J. Mackenzie Davidson, M.B., C.M., President.

PRESIDENT'S INTRODUCTORY REMARKS.

After a few initial observations, Dr. Mackenzie Davidson said: I should like to take this opportunity of making some remarks upon the importance of *x*-ray examinations and treatment being conducted by medical men properly equipped for the task; and, incidentally, I may observe that the day will come when medical men who now employ laymen to do this work will regret the precedent they have established.

The precise information afforded by *x* rays is often not taken advantage of by surgeons and physicians. No doubt other *x*-ray workers who are present will recall, as I do, many instances of disasters due to ignoring the valuable help that could have been given by the timely employment of *x* rays. More than this, it is equally important that those who engage in this kind of work should take care to learn proper scientific methods, such as the exact localization of foreign bodies, especially valuable in eye injuries. They should also thoroughly understand stereoscopic methods.

It was once reported to me that a surgeon to a large London hospital had made the remark that it was absurd to talk of an "*x* ray expert," as the matter was so simple that you only had to put an *x*-ray tube on one side of the patient and a plate on the other; and while this is an extreme instance, I am bound to say that there are some grounds for regretting that many of our colleagues do not realize the dignity and importance of this branch of the medical profession—beset, too, with special anxieties and risks—to which some of us have devoted our lives.

Many years ago, when first we learned the injurious effects produced by prolonged exposure to *x* rays, I described to the Roentgen Society a simple method of enclosing the tube in a wooden box coated very thickly with a mixture of red and white lead, and having a suitable opening for the exit of the rays. I also made casts to go round the tube of plaster-of-Paris mixed with red lead, which were effective in screening the operator. It is a matter of great regret that some of the early workers with *x* rays did not employ some such effectual means for protecting themselves and their assistants from injury. In this connexion it will interest you to know that superficial *x*-ray dermatitis can be cured by means of radium. Another precaution which I adopted at an early date was to glaze the frame of the fluorescent screen with very thick lead glass, this not only protecting the screen and allowing tracings to be made from the *x*-ray picture, but also protecting the observer.

And now a few words on the subject of radium. There is probably no remedy which has ever raised such widespread interest, or, I am bound to add, excited such exaggerated hopes; and these exaggerated hopes have had the curious effect of greatly hampering us in our experiments; for in May, 1903, when I cured a large rodent ulcer on the face (which I may say in parenthesis has not recurred), the price of radium was 8s. a milligram, but as soon as a rumour that it could cure cancer got abroad, the price rose rapidly, until it has now become almost prohibitive, as much as £20 a milligram having to be paid for it. There is no doubt that this enormous rise in price has been due to the widespread belief that radium had been found to be a cure for cancer, and being bought in large quantities for that purpose, it has prevented many medical men from obtaining it and using it in the treatment of other diseases for which it has been proved to be a cure.

I have seen many cases of carcinoma treated by radium, but I have never seen one that has been cured by it; and it has also failed to cure some cases of *severe* rodent ulcer. In short, its utility in the treatment of malignant diseases, so far as our present experience goes, is very limited. No doubt its beneficial action in some glandular hypertrophies, and in some cases of what appear to be round-celled sarcomas, has given rise to over-sanguine hopes that it might prove to be somewhat of a specific for malignant diseases of all kinds. However, we are fortunate on the present occasion in having Dr. Dominici, of Paris, present with us, and we look forward with much interest to his exhibition of specimens and patients, and to hear from him what results the large amount of radium at his disposal has enabled him to obtain.

But if radium has not, so far, fulfilled all the hopes that were entertained of it, it has, at any rate, accomplished something, and it is encouraging to turn for a moment to a new field of experiment in which it has yielded good and definite results, namely, certain diseases of the eye. Here, again, the diseases in which it is potent are *superficial*. So far as we have tried it in deep-seated diseases, the results are negative. On the other hand, in some external diseases of the eyes and eyelids, its action is very remarkable, and I feel sure that radium will take a high place in ophthalmic therapeutics. By way of example I may instance 5 cases of spring catarrh which I have cured by radium. The first of these was cured four years ago, and there has been no recurrence. Some of the cases were extremely severe, and one of them, of over six years' standing, had undergone a great variety of treatment, both operative and otherwise, without any permanent benefit. And besides these, in cases of episcleritis, hypopyon ulcers (corneal ulcers generally), incipient interstitial keratitis, and even in bad cases of pterygium, extraordinarily good results have been obtained.

ROENTGEN RAYS IN THERAPEUTICS: A SUGGESTION FROM A PHYSICIST.

By Sir J. J. Thomson, D.Sc.,

Cavendish Professor of Experimental Physics, Cambridge; Professor of Physics, Royal Institution.

After referring to the circumstances by which he, a physicist, was induced by the President of the Section to deliver an address on this occasion, Sir J. J. Thomson, who had no manuscript, said:

You, Sir, announced that I was about to give an address upon the application of the Roentgen rays in medicine. Nothing of the kind. I have no knowledge about the practical application of this subject to disease. But in thinking over what particular subject I might do least harm in speaking upon, it occurred to me that there have recently been some developments with the Roentgen rays which may have important bearings upon medical science and the application of these rays to the purpose of curing disease. Every one is aware, of course, that there are all kinds of Roentgen rays. There are soft rays—meaning rays which cannot penetrate very far through solid substances—and there are hard rays, which have a great power of penetration, and are used principally for what we may describe as purposes of exploration. I will not deal with the hard rays on this occasion. They are the rays which are used for taking the ordinary Roentgen photographs. But I will begin by recalling to your mind the different physiological effects that might be expected to be produced by the hard rays and the soft rays respectively. On the one hand we have the hard rays—rays which can pass through the body without suffering any very enormous diminution—and on the other hand we have the soft rays, which are absorbed within a depth from the surface of the skin to be measured only in hundredths of a millimetre. The physiological effect of the different rays, we may roughly suppose, is proportional to the amount of energy which is absorbed in the tissues. Now, in the case of these hard rays, there is comparatively little absorption, and therefore in any given portion of the body there is little physiological effect. But in the case of these very soft rays, which are absorbed more easily even than the beta rays of radium, the whole of the

energy is taken in by a very thin layer of the flesh, which thereby becomes exposed to a most vigorous physical agency. Chemical change may be expected to take place in that thin layer, and the physical and physiological effects produced by these very soft rays must be enormously greater than those produced by the hard rays.

The deleterious effects, of which there have been so many instances, and the curative effects also, which have followed the Roentgen radiation, have really been due to the rays of the soft and readily absorbed species. It is very important to get rid of these soft rays when we are using Roentgen rays for the purposes of exploration. In that case the soft rays are only harmful, and I have no doubt that all these terrible results which some men have suffered have been due to the fact that in the earlier stages of the manufacture of tubes a considerable amount of these soft rays was absorbed by the surface layers of the flesh, the skin, and so forth, producing very deleterious effects. But it is evident that for the purpose of curing disease this absorption of energy is what we require. Therefore, it is very important that for a purpose of this kind we should have as suitable and efficient a means of producing very soft rays as possible. It is, I think, unwise to use for what we may call curative purposes Roentgen bulbs that approach in hardness those that are employed for photographic purposes. When using these hard rays practically the whole body is exposed to the same influence, and to a layman this procedure looks rather like flogging the whole school because one boy has committed a fault. Parts of the body other than the one concerned are irradiated. For this reason we should realize the importance of developing the methods of producing very soft Roentgen rays, as well as the very hard ones for use in photographic purposes. The matter is important also because, so far as evidence goes at present, it shows that if we get a certain amount of absorption of energy, either by the Roentgen rays or by the beta rays from radium, the effects produced are very much the same. And if we can produce Roentgen rays which are as easily absorbed as the beta rays we have probably a method of treatment at our command which will produce all the effects that are to be produced by radium and in much less expensive way.

The production of these very soft rays directly from a Roentgen tube is a matter of very great difficulty. We know that a Roentgen tube consists of glass of considerable thickness, and that this thickness of glass is quite sufficient to filter out the rays which, we might have hoped, would have been most beneficial for medical purposes. It is true that we may use tubes with aluminium windows, but with any kind of window that would bear the pressure the best rays are absorbed on their way out. We have, therefore, to cast about for some other way of producing the very soft Roentgen rays which are probably the most valuable ones for curative purposes.

It is a recent discovery bearing on this point that I wish to bring before you this morning. A former pupil of mine, Professor C. G. Barkla, now of King's College, London, has been experimenting on the effects produced when Roentgen rays of any ordinary type strike against a metal. It has long been known that, when the Roentgen rays strike against a metal, that metal emits secondary rays. But the essential point about this outgo of secondary Roentgen rays from the surface of the metal was not known until Professor Barkla made his important discovery. This discovery is that when a piece of metal or any substance—it does not matter whether it is metallic or not—is struck by Roentgen rays that substance gives out Roentgen rays of a special quality. For example, if we expose iron to Roentgen rays, the iron gives out one particular kind—a perfectly definite kind—of Roentgen radiation. It does not matter what the quality of the rays that strike it, the iron gives out a constant kind of Roentgen radiation. If we take another metal, say copper, we find that this also gives out a definite Roentgen radiation, and one that is quite different from the one given out by iron. Silver, too, when struck by these rays, emits rays of another and definite quality. And in all these cases the quality of the incident ray—its degree of hardness—does not matter. Whatever it is, the quality of the ray given off by the metal is constant. In this manner we have a definite means of reproducing Roentgen rays of a specific type.

There is one interesting point, scarcely of the nature of an exception, but an important thing to be remembered in connexion with this discovery, namely, that in order to enable the metal to give out its particular ray the incident radiation must be harder than the radiation characteristic of the body. If we take a very soft radiation and allow it to fall upon a metal of high atomic weight—lead, for example—it will not excite the radiation of that metal. In order to excite the lead radiation, we must have it exposed to rays which are harder than those rays which are given out by the lead; but with that proviso, the quality of the ray given out by a metal is perfectly definite. It depends only upon the metal, and not upon the nature of the ray that must be used to excite it.

The quality of the secondary ray depends upon the nature of the metal in a very simple fashion. The hardness of the ray given out by a metal increases as the atomic weight of the metal. It has not yet been found that metals of lower atomic weight than calcium give out any of these rays. They simply scatter the incident radiation. But when we come to metals of higher atomic weight than calcium—to iron, copper, zinc, silver—we have their characteristic radiation. By using these various metals it is possible to get a scale of Roentgen radiation of enormous extent. I will take the case of iron. The radiation from iron would be absorbed, I calculate, by a one-hundredth part of a millimetre thickness of human flesh. If we allowed our Roentgen radiation to fall upon a piece of iron, and projected all the rays given out by the iron on to the flesh, the whole of the radiation would be absorbed within one-hundredth of a millimetre from the surface. Probably this is comparable with the absorption of ultra-violet light. If we go further and take copper, we shall find the radiation falling a little deeper, but still only to the fraction of a millimetre. If we take silver, we find it giving out a radiation which is quite comparable in regard to the depth it penetrates with the beta radiation from radium. The same amount of it would be absorbed close to the surface as with the beta ray. And I suppose—I am only speaking as a layman—that all the effects which are produced by radium treatment are due to the beta rays of radium, and therefore it is useful to know that the secondary rays from silver have just about the same penetrating power as these. It may be just a little greater in the case of the beta rays, but nothing, I think, that would count. If, now, we take tin, of higher atomic weight than silver, we get more penetrating radiation. If we take iodine, we find it still more penetrating—so penetrating that it is difficult to get a bulb to give hard enough rays to excite it. It is only a specially prepared bulb that would be capable of it.

Thus by using these different metals we can graduate and reproduce at any time types of Roentgen radiation, from the very softest—that from iron, which can only affect the surface of the skin—to such radiation—through iodine, for example—as would go through the surface of the body. And by using the radiation from silver we shall obtain practically the same penetrating power and absorption as that given out by the beta rays of radium. Now, would it not be possible for medical purposes to use the radiation given out by these metals instead of trying to produce soft radiation by specially constructed Roentgen bulbs? We can produce radiation from silver by exposing the metal to a tube, and it does not matter what the quality of the tube, because all tubes give out sufficiently hard rays to excite silver.

One other point may be of interest to some people who wish to work upon research of this kind. There is a very peculiar difference between the amount of energy absorbed by hydrogen and by other substances. The ratio of the amount of energy absorbed by hydrogen to that absorbed by carbon or oxygen depends very much upon the quality of the ray. For example, with the very soft rays that are given out by iron there is practically no absorption by hydrogen. They can go through the hydrogen without being affected. But as we increase the hardness of the ray the proportion of energy absorbed by the hydrogen increases also. My point is that in the laboratory we have here an instance in which one kind of substance is specially affected with reference to another by the quality of the ray. It is possible, I think, that diseased tissue may differ in chemical combination from healthy tissue, and in one of the cases we may get a larger relative absorption than in another. We may obtain a kind of ray which would be greedily absorbed by the tissue we wish

to affect, and not absorbed to anything like the same extent by the normal substance. It seems to me that there are possibilities in this direction which may lead to results of medical importance.

Just one other remark in dealing with these different qualities of rays. If we wish to extend the radiation to a certain depth of tissue, we have a special quality of ray at our command suitable for that depth. We cannot use iron rays with the hope of affecting a part 2 mm. or 3 mm. below the skin. Nor is it of any use to employ very hard rays indeed in such a case, because they would go through with so little absorption that there would be no effect. But there is a certain quality constant to each particular depth we wish to reach, and we can select from the scale of metals, and produce rays appropriate to that depth.

[Speaking later in response to a warmly accorded vote of thanks, Sir J. J. Thomson said that a point that struck him in his study of this question was that people ought to be careful in the use of metals they adopted as shields. Iron and copper, which gave out all the soft rays that would do most injury, were most dangerous as shields.]

A SCREEN FOR EXAMINATION IN THE UPRIGHT POSITION.

By C. THURSTAN HOLLAND, M.R.C.S., L.R.C.P.,

Honorary Medical Officer, Electrical Department, Royal Infirmary, Liverpool; Honorary Medical Officer, X-ray Department, Children's Infirmary, Liverpool.

THERE is great difficulty in arranging efficient protection for the *x*-ray operator in making the examination on the screen of chest cases and stomach cases in the upright position.

It is scarcely necessary for me in a paper of this description to emphasize the fact that the standing position for the examination of the stomach, and the standing or sitting position for the examination of the chest, are all-important in *x*-ray work.

A long experience of hospital work, where it is the routine for the various physicians to come down to the *x*-ray room with students in order to demonstrate such cases on the fluorescent screen, has convinced me that the ordinary methods of protection, not only for the *x* ray demonstrator himself, but also for the physician and his classes, are quite inadequate and inefficient.

Usually we see some sort of box around the tube which has a diaphragm in front, close up to the tube-box, and to alter the diaphragm the hand has to be brought into close proximity to the tube-box. With the very active tubes in use at present, even with *x*-ray gloves on, it is not a safe procedure to be constantly bringing the hand close up to the box whilst the tube is in active use inside.

In front of such a box stands the patient, and on the other side of him is the screen, usually with lead-glass in front of it, and sometimes supported in a frame of some kind. Even if there is a small lead-lined screen below the screen and in front of the patient, this is quite inadequate to protect more than one or two persons, and if the patient has to be turned into different positions while being screened, the operator must almost necessarily bring his glove-covered hands round this screen in order to handle the patient. Experience has taught me that the doing of this, although gloves are worn, and although by means of the diaphragm in the tube-box only a portion of the screen is illuminated, involves exposure of oneself to so many rays, secondary and otherwise, that, in my case at any rate, if I examine a few patients in this way during an afternoon, my hands burn and feel uncomfortable all the evening, and often the next day.

Now, if this is true of tubes made active by an ordinary coil, it is doubly so when one is making the examination in front of a tube actioned by such an instrument as the Snook transformer, and the penetration of the rays coming from a tube with a large Snook current going through is so great that it is impossible to do more than protect to a certain extent.

These considerations, and the using of the Snook transformer very largely for making screen examinations with a large current, induced me to devise an apparatus which, whilst at the same time being more efficient from the point of view of protection, rendered it quite easy to handle the patient under observation.

The essential features of the screen are: (1) That it is placed between the tube and the patient, and not between the operator and the patient; (2) that there is a diaphragm in the screen itself, which can be made to any size by means of pulleys on the safe side of the screen; (3) that it affords a protection to a large number of people standing in front of the *x*-ray tube, and that there is a wall of lead between them and the tube, which is only broken at the spot where that portion of the patient under examination is being investigated.

The screen itself consists of an upright shield, 6½ ft. long and 6 ft. high, made of two layers of wood with sheet lead, 4 lb. to the square foot, enclosed between the layers.

This screen is on castors, and can be moved easily about an *x*-ray room. Cut at a convenient height—40 in. from the ground at the lower border—in the middle of the screen is an opening, 24 in. high by 18 in. broad, which can be closed either by a thin wooden board against which a patient can lean, or by a lead-glass window, in case the screen is being used to screen off any portion of the room. The operator can stand behind this window whilst radiographs are being taken or treatment carried out—that is to say, the tube can be viewed through the lead-glass.

On the tube side of the screen are four panels, also with lead between wood, each working separately from the safe side of the screen. The two side ones can be drawn upwards and outwards; they run on ball bearings and close down by their own weight, and they are fixed inside by cords, and so an upright opening can be made of any desired size. The up and down panels are counterbalanced by weights, the latter being on the safe side of the screen, and they can also be wound up and down to any required place. Then for the safe side of the screen the four panels can be easily arranged in any sized four-side opening, and form an efficient diaphragm between the tube and the patient. In order to get even more protection, and also to shut out light, the tube is enclosed in an *x*-ray-proof box behind the screen, and this can also be diaphragmed in the usual way.

The tube box I use is on a wooden frame, which can be fixed by its upper and lower parts to the screen; pulleys attached to the tube-box run over the top of the screen, and the tube in its tube-box can be raised and lowered from the safe side and fixed at once in the desired position.

By taking out the wooden sheath before commencing it is quite easy to see that the anticathode is brought exactly in the middle of the opening, and in making the usual examination it is found to be easier to keep the tube in position and move the patient higher and lower or from side to side as desired.

The screen, with the best lead-glass in front, is mounted on two metal rods, which are bent at a right angle and will allow of upward and downward movements.

The patient can be raised or lowered by various means, such as a platform which will move up and down with a screw. There are other obvious ways of doing this, and also of moving the patient across from side to side.

A slot is provided in the screen frame, so that a plate can be slipped between patient and screen when a plate exposure is to be made, and thus the appearances can be seen.

The cost of the screen is not very great, but of course a thing of this size cannot be made for nothing. The lead alone costs between £4 and £5. The one I had made was made in the hospital itself by a carpenter engaged for the purpose, and thus cost his wages and the price of the material. The total was about £10. However, this is a very small matter when compared with our safety, and whilst we have all been very anxious to devise means of protecting ourselves, I do not think that so far any attempt has been made adequately to protect physicians and students who are in the habit frequently of making the screen examination.

[The paper was illustrated by means of a small model of the screen in question.]

DISCUSSION.

Mr. J. HALL-EDWARDS (Birmingham) said that, while admiring Mr. Thurstan Holland's device, there were several screens already on the market which appeared to carry out all the necessary requirements. He preferred a tube the centre of which moved with the screen itself, and if such a tube were well protected with a heavy diaphragm made of lead, he thought that the area covered by the screen was

protective all round. With such an apparatus he had felt no ill effect, although he was now so sensitive to the *x* rays that, on entering a room where there was a tube in action, he felt them before he knew by sight or hearing that they were being emitted. Mr. Holland's screen had a little advantage over the others in one direction—namely, that, unlike some of the screens on the market, it did protect below the knee. It was very necessary, if there were any scattered rays, that the whole of the body should be protected. No precautions for protection could be too severe.

Mr. Thurstan Holland, in reply, said that personally he did not consider that any screen at present made was suitable for hospital work. The commercial screens were quite adequate for one or two men examining a patient, but when it came to four or five students in addition there was no screen which gave adequate protection to them all

DEMONSTRATIONS.

ELECTRO-PATHOLOGY.

By Dr. S. Jellinek,
Privatdocent to the University of Vienna.

Dr. Jellinek, who spoke without the assistance of manuscript, first expressed his appreciation of the invitation extended to him to take part in the proceedings of the



Fig. 1.—An accident arising from a defective electrical installation. The victim laid hold at the same time of an electrical lamp and of a metal gas chandelier. The insulation being imperfect, he received a shock rendering him unconscious for a short time. The current was on the five-wire system (Fig. 3, *b*), and the pressure between lamp and gaspipe at the moment of accident was 330 volts.

Section, and then gave a brief description of the dangers of the electrical current; he also illustrated by means of the epidiascope the pathological changes which the



Fig. 2.—An accident to a girl who, while bathing in a metallic tub, seized an electrical stand lamp (Fig. 3, *a*), the stand of which was insufficiently insulated. Death resulted, being due probably to the immediate arrest of respiration; and there were indications on the body of extensive electrolytic and electrothermic effects. The current in this case also was on the five-wire system (Fig. 3, *b*).

current produced. The question as to the cause of accidents in industrial electricity appeared simple, he said, but in reality it was complicated, and he was not able to demonstrate its apparent caprice better than by saying that whereas one man who had come into contact with 10,000 volts was not killed, another who had touched a current of 100 volts was killed immediately. The difference in the action of the electrical current with regard to different individuals and in different sets of circumstances could be better understood when they remembered that they had to deal with a number of factors in two categories.

In the first place the occurrence and the gravity of an accident depended upon the external circumstances—that

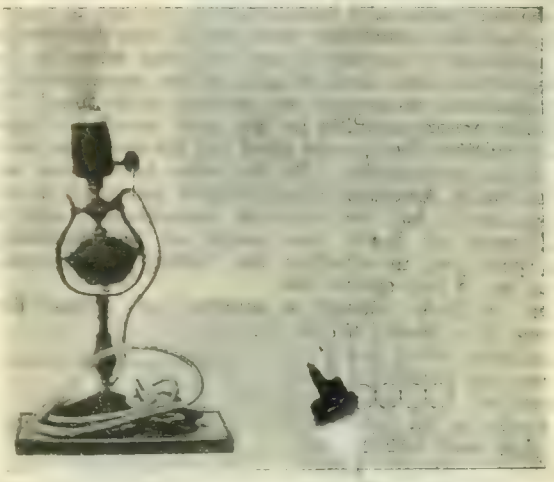


Fig. 3.—*a*, Electrical stand lamp, which was seized by girl in bath (Fig. 2), the stand being insufficiently insulated. *b*, The current scheme, or five-wire system, which was employed in the case of accidents illustrated in Figs. 1 and 2.

is, the electrical installation—and, in the second place, it depended upon certain individual circumstances relating to the particular victim.

The danger of an electrical current was expressed generally by the number of volts, but it depended also upon the ampèrage, the manner in which the contact was made, and the duration of the time of the contact. As to the voltage, it must be said, after their experience of certain accidents, that the current of 100 volts or thereabouts by which electrical lamps were fed was dangerous—indeed, that a current of 50 volts might be considered unsafe. Mortal accidents had occurred in Austria with currents of 160 volts, and in Germany a man was killed even with a current of 65 volts. As to ampèrage, technicians stated that one-tenth of an ampère would produce death; but, of course, in their



Fig. 4.—Occasionally a broken telegraph or telephone wire becomes charged with the trolley currents, with severe effects upon the victim. The wire may be cut, as shown in the illustration, by means of a nipper having insulated handles; but this must be done with caution on account of the blinding effect of the momentary arc which is formed between the separated ends of the wire.

medical experience, they had seen cases in which persons had endured more than one ampère without fatal result. Among the individual conditions, the first to be noted was

the path which the current took through or over the body and the surface resistance of the body itself. The misfortunes which had attended some American electrocutions were brought about by neglecting the direction which the current would take through the victim's body. The current always sought, not the shortest way, but the path of lowest resistance. Another factor too often neglected was the physical and mental condition of the victim at the moment the contact was made. It was a matter of some importance as to whether a person touched a "live" wire by a deliberate intention or was surprised into touching it. He related a case in which a labourer, technically unskilled, was told not to touch a wire, and the prohibition so impressed him that one day, on accidentally touching it and realizing what he had done, he fell down dead, in spite of the remarkable fact that absolutely no current was passing at the time! The *post-mortem* examination in this case revealed a great enlargement of the thymus gland and the condition known as status lymphaticus. On the other hand, there were instances in American electrocutions in which it was impossible to kill the criminal immediately, and the final cause of death was spasm of the diaphragm. The point as to whether the victim was surprised or not was a very crucial one.

Dr. Jellinek showed a number of slides illustrating the heart action in animals under currents of varying intensity, and pointed out that the cause of death in an electrical accident was not always constant. Death might occur through paralysis of the heart or through stoppage of the respiration. In some cases after receiving the shock the victim had been known to be able to get up and talk about his accident, falling down dead subsequently. The difference of sensibility to electrical currents on the part of animals was very great. In Vienna they had experimented upon about ten different species. The horse was killed immediately, about 100 volts being sufficient; dogs were almost equally sensitive; a rabbit was able to endure a higher voltage, and he had been quite unable to kill a frog by means of the current. He considered that, volt for volt, the direct current was more dangerous than the alternating.

He showed many examples of the characteristic electrical burns, which, he said, must be distinguished from the common burn. The true effect of electrical shock was seen in special lesions of the skin having an entirely different pathology from that of the ordinary burning, together with the important difference that they were quite painless. The clinical symptoms differed a good deal. Microscopical haemorrhages of the brain were found in many cases, and this point had an interesting bearing upon first aid in electrical accidents. Too often after a mishap of this kind the victim was laid down with his head low. This was very dangerous. It had been found out by animal experiments and by examination of the brain in the case of persons killed by electricity that these microscopical haemorrhages were in existence, and, the head being lowered, their volume was increased. The head should be elevated, and he also advised in first aid the puncture of the spinal cord, artificial respiration, and venesection.

Since the study of this subject had been taken up in the University of Vienna the number of accidents had greatly decreased, and he had now very little to work upon. He urged that people, especially the workmen in electrical undertakings, should be instructed by means of good pictures, illustrating clearly the origin of accidents, their consequences, and the means of avoiding them. In conclusion he presented to the British Medical Association his *Atlas der Elektropathologie*, containing more than two hundred figures, most of them in colours, exemplifying the effects of electricity upon animal and other tissues.

THE TECHNIQUE AND RESULTS OF RADIUM-THERAPY IN MALIGNANT DISEASE.

BY

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AND

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[WITH SPECIAL PLATE.]

THIS demonstration was given on behalf of Dr. Dominici by Dr. Warden, who said that in accepting the responsibility and privilege of interpreting for Dr. Dominici, he had to express the latter's appreciation of the honour which the Section had done him in asking him to take part in the proceedings. Although unable personally to give any address, owing to his ignorance of the English language, Dr. Dominici had none the less made a great effort to collect for demonstration a series of cases typical of certain classes of tumours, and each illustrating important points in radium-therapy.

Nine cases were referred to in detail, with such evidence as could be given by means of wall-charts and photographs, microscopical sections, etc. In five cases the patients had themselves braved the Channel crossing in order to be present to bear testimony to their condition. In all of them the tumours were grave and of rapid growth, and were either considered inoperable by the surgeon or the operative procedure suggested had been declined by the patient. In all but one case—Case I, the haemolymphangioma—the tumour was of a malignant type. All showed under treatment a local regression, which, if the word "cure" was not permissible, at any rate left nothing to be desired. One case—a patient shown with the malignant abdominal metastatic growths following removal of the testicle—was still under operation and undergoing treatment.

DESCRIPTION OF SPECIAL PLATE.

CASE I.—Haemolymphangioma of neck. Before and after treatment.

CASE II.—Lymphadenoma of parotid. Before and after treatment.

CASE VI.—Epithelioma of mucous membrane of lower lip. Before and after treatment.

The following is a summary of the remarks made on each case demonstrated:

CASE I.

Haemolymphangioma of the neck—a non-malignant tumour, but grave and inoperable, on account of its rapidly increasing size and tendency to haemorrhage.

In July, 1909, the patient, a baby 4 months old, presented a tumour like an enlarged lymphatic gland in the neck, which by October had enormously increased, measuring 3 in. to 4 in. in antero-posterior diameter, and 3½ in. in elevation. The principal cyst was incised, and a tube of silver five-tenths of a millimetre in thickness, 4 cm. long, and 4 mm. in breadth, containing 0.05 cg. of pure sulphate of radium, giving an external activity of 21,000, was introduced and left *in situ* for twenty-four hours, with the result that in seven weeks the tumour had entirely disappeared, and since December, 1909, had shown no sign of recurrence. Full details of this case have been published.[1] One large drawing (shown) revealed blood vessels and lymphatic vessels in a stroma of fibrous connective tissues, and enlarged photographs showed the appearance of the infant before treatment had been begun as well as after. (See Special Plate.)

CASE II.

Lymphadenoma of the parotid. A patient considered inoperable by three surgeons, and treatment begun in November, 1908. A gold tube five-tenths of a millimetre in thickness and containing 0.005 milligram of bromide of radium (giving an activity of 5,400) was introduced, through an incision, and left in for four days. In five weeks the tumour had almost entirely disappeared—entirely in seven weeks. Wall-charts showed the new-formed lymphoid tissue resulting from the connective tissue transformation of the parotid gland. The glandular tubes are separated by masses of lymphoid tissue. The patient was shown before the Section. The affected side of the face appeared, indeed, thinner and flatter than the other, owing no doubt, to a certain amount of atrophy of the facial muscles. See Special Plate.)

CASE III.

Sarcoma of the mucous membrane of the upper jaw. A patient in Professor Gaucher's ward in St. Louis Hospital, Paris. Photographs showed the disappearance of the tumour,

[1] *Bull. et mém. de la Soc. Méd. de Hôp. de Paris*, May 13th, 1910.

ILLUSTRATING DRS. DOMINICI AND WARDEN'S PAPER ON THE RESULTS OF RADIUM-THERAPY IN MALIGNANT DISEASE.



Case I.—Before treatment.



Case I.—After treatment.



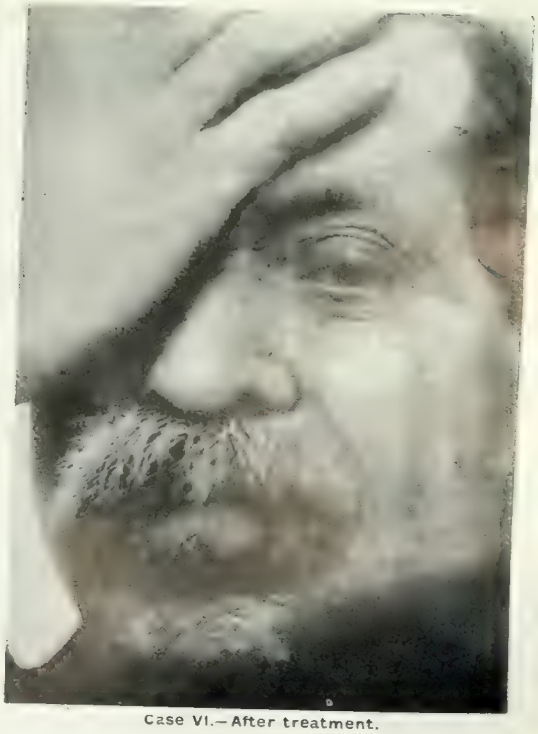
Case II.—Before treatment.



Case II.—After treatment.



Case VI.—Before treatment.



Case VI.—After treatment.

and sections showed in detail the gradual transformation, by cellular evolution, of pure sarcomatous tissue into simple fibrous and cicatricial tissue, the change taking place in three to four months, the clinical and pathological characteristics accompanying each other. The tumour was exposed for sixty-eight hours, in periods of two hours, to the action of 1 cg. of pure sulphate of radium spread on cloth, and placed in a sheath of lead, 1 mm. thick. The treatment lasted, at intervals, from September 15th to November 24th, and again to December 19th, 1908. Full details of the case have been published.[1] In addition to the wall charts illustrating this case were a number of microscopic sections showing the histological changes at various stages of the treatment and the gradual transformation, under low and high power, of pure sarcomatous into fibrous tissue.

CASE IV.

Deep sarcoma of the neck. In July, 1907, two years before treatment was begun, the tumour appeared as a small nodule under the right lower jaw, increasing very rapidly in size in the previous three months. At the time of examination it was purplish in colour, with blood and serum oozing from several orifices. Histological examination showed its structure to be that of a pure embryonic sarcoma. In July, 1909, three tubes, each containing 0.05 cg. of pure sulphate of radium with a silver sheath five-tenths of a millimetre in thickness, were introduced for forty-eight hours. Seven weeks later a deep, indurated, flat mass represented the tumour, which, however, recurred, or rather again showed active growth in November, 1909, when the treatment was repeated with apparently definite success. The patient had now, near the cicatrix, under the skin, a small nodule the size of a split pea. It was impossible to say whether this nodule was of the original sarcomatous tissue, or simply, and more probably, a fibrous remnant. In any case a superficial treatment by radium would be given in order that the patient should have the benefit of the doubt.

CASE V.

Epithelioma of the nose, in which the lower two-thirds of the nose was almost completely destroyed by a fungating growth. Treatment consisted chiefly in three applications of twenty-four hours each with an apparatus containing 0.09 cg. of pure radium in, first, a glass ampoule, and, second, a silver tube, 1 mm. thick, covered by a rubber drainage tube. The result is chiefly interesting in the remarkable restoration of tissue. The radium seems to have had the effect (1) of singling out the malignant tissue and causing its absorption, and (2) of sparing the normal tissue and determining a certain amount of healthy new growth. The photographs showed the left nostril represented merely by a cleft in the epitheliomatous mass (or "rodent ulcer," to use the term commonly given to such cases in England). Along the edge of the right ala nasi was a thin border of more or less normal skin extending forward to the point of the nose, represented by a small area of skin the size of a large pea.

CASE VI.

Epithelioma of the mucous membrane of the lower lip. Growing rapidly in a patch of leucoplasia, and treated for one hundred and forty hours with an apparatus containing 0.01 cg. of pure sulphate of radium, giving a radiation of 4,500 intensity through ½ mm. of lead. Recovery seemed complete in March, 1908, and to-day (July 27th, 1910) the members present are able to satisfy themselves as to the complete integrity of the mucous membrane of the lower lip. (See Special Plate.)

CASE VII.

Epithelioma of the roof of the mouth, starting from the maxillary sinus. In Dr. Tuffier's wards, a case of glandular epithelioma, perforating the palate and alveolar border, for which resection of the upper jaw was considered necessary in September, 1908. A glass tube containing 9 cg. of pure bromide of radium, surrounded by a silver sheath 1 mm. thick, and a rubber drainage tube 2 mm. thick, was inserted into the tumour through the socket of the second molar tooth, which had been extracted. Eleven applications of four to five hours were made, and recovery seemed complete in two months—in December, 1908. The pain and discharge gradually diminished, the cancerous mass and swelling of the adjacent mucous membrane also disappeared, and the teeth became firm in their sockets. This patient was examined by the members present. No trace of the neoplasm could be found, the mucous membrane of the palate round the perforation appearing quite healthy. Sections of the tumour were thrown on the screen, and were also shown under the microscope in the pathological museum.

CASE VIII.

Epithelioma of the breast in a nun, aged 35 years, the growth being of eight months' duration. When first seen the tumour was ulcerated and purple in colour, soft, mobile, and bled readily; there were no glands felt; there was slight retraction of the nipple. In November, 1909, two tubes were introduced to a depth of 5 cm. into the tumour, containing 3 cg. and 5 cg. of pure sulphate of radium, remaining *in situ* forty hours. This was repeated in January, 1910, and the tumour gradually diminished till only a small fibrous nodule was left in February, 1910. The sections showed the gradual transformation of the tumour in various stages of the treatment, and the complete histological detail of the regression of a cancer of the breast.

[1] *La presse médicale*, No. 9, January 30th, 1909.

CASE IX.

Malignant tumour of testicle, originating in seminal tubes, with, later, metastatic growths in the pelvis and abdomen; a case still undergoing treatment, and interesting as showing the effect of radium in arresting metastatic growths. The patient was operated on by castration in June, 1908. In August, 1908, there was a large metastatic tumour in the left iliac fossa, measuring nearly 5 in. in diameter, pressing on the iliac vessels and causing oedema of the whole leg, with great pain. In January, 1909, laparotomy was performed, when the tumour was considered inoperable, and three or four tubes of silver ⅝ mm. in thickness, and containing each 0.05 cg. of pure sulphate of radium, were introduced into the mass, and left in for forty hours. In a month there was great diminution of the tumour, with disappearance of pain and oedema, and improvement of the general condition. In July, 1909, the patient returned with a second mass, probably in the prevertebral glands, felt chiefly in the left hypochondrium, between the kidney and the spleen. Laparotomy was again performed, and 0.15 cg. of radium in three tubes enclosed in a rubber drainage tube were again introduced for forty hours, and again the condition improved. In April, 1910, the tumour had once more increased, and radium was this time inserted by a fistulous track left by the drain, with considerable improvement. Again, ten days ago (July, 1910), a similar treatment was given with immediate relief of pain, and it might not unreasonably be hoped that it would be followed by similar regression of the mass.

DISCUSSION.

Mr. RICKMAN J. GODLEE, F.R.C.S. (University College Hospital), said that he had already seen some of these cases and had talked with Dr. Dominici. Some confusion arose owing to the terms employed to describe the cases. The term "epithelioma of the breast," as applied to a case just described by Dr. Dominici, was scarcely one which an English surgeon would use. The result was very interesting, of course, if it was a case of adult cancer. He desired to know whether there was any instance on record of scirrhus of the breast—what they knew as real cancer of the breast—being ameliorated by radium. Dr. Dominici had given them an opportunity of seeing drawings of the sections in his cases, and so far as he (Mr. Rickman Godlee) could see, the appearance of the large masses of epithelial cells in Case v more resembled that which was seen in sections of rodent ulcer than in those of epithelioma. If that was the case, one was not altogether surprised to see such results obtained, although, nevertheless, they were rather remarkable. Further, he wished to know whether Dr. Dominici had obtained favourable results with squamous epithelioma. He understood him to say in the course of conversation that in early squamous epithelioma radium and the *x* rays would do harm rather than good. Yet in one of the cases shown he could hardly conceive that the tumour from which the photograph was taken could be anything other than a squamous epithelioma. From the appearance of the photograph in the case of the infant who was said to be afflicted with haemolymphangioma of the neck, he judged the case to be one of cystic hydroma; yet it could not be that, because of the haemorrhages. The vascular part of the tumour was of more importance, he supposed, than the lymphatic part—that was to say, it was more of a vascular naevus than a lymphatic naevus. The French surgeons undoubtedly had considerable success with angiomata, and he wished that here in London they had a similar supply of radium to that which their colleagues across the Channel had at their disposal.

Dr. N. S. FINZI (London) said that he had a certain amount of experience with radium in treating cases similar to those which Dr. Dominici had shown, and with much the same results. It was not every case that was amenable to this treatment. Moreover, the radium-therapeutist generally received the cases after the surgeon had done several operations upon them. On the whole, his experience with squamous epithelioma had been unfortunate, although he had one case, affecting the lip, which got well under treatment. The results in glandular carcinoma were different. There was usually a diminution in size, and in quite a number of cases a total disappearance. He did not like dealing with cases of carcinoma of the breast. They only came to him after a series of operations by the surgeon. And although the visible growth might disappear, the patients generally succumbed to deep metastasis in the liver or the mediastinum.

Dr. Horace Manders said it would be interesting to know whether the radium, acting on the original local malady, had any effect at all upon the metastases. Was there any diminution in them at all, or must they each be treated locally?

Dr. C. R. C. Lyster (Middlesex Hospital) wished to know what was the actual distance at which they might expect alteration in cell growth from the radium. He noticed that in the larger tumours upon which Dr. Dominici had acted surgical openings had been made and tubes placed in different positions. It would be interesting to know what distance apart these tubes had been placed. He had never seen any results in deep growths until that day, and such results might be accounted for by the insertion of the tubes in the depths of the tissues.

Mr. Drane Butcher (London Skin Hospital) said that after what Sir J. J. Thomson had said in his wonderful address before the Section that morning it seemed as though the therapeutic result might be due not really to the radium emanation, but to the softer α rays or secondary rays which emanated from the tube in which the radium was contained. It would be interesting to carry out a certain number of experiments upon different tubes. In the early days of radium-therapy gold tubes were used, and, later, silver ones. At the present time, Abbé, of New York, was using tubes of celluloid. In each case, according to the theory which Sir J. J. Thomson had propounded, one would expect some difference in the treatment.

Dr. A. A. Warden, in reply, said that in the case of epithelioma of the breast, about which Mr. Rickman Godlee had spoken, there were no glands. Such an epithelioma as that had little tendency towards metastatic growths. Mr. Godlee had spoken of haemorrhages from the angioma. There were no haemorrhages. The tumour was closed when it was treated. The diagnosis of haemolymphangioma was made from the section, which showed the voluminous blood vessels and the lymphatic vessels, and in incising the tumour blood and lymph escaped.

A METHOD OF TREATMENT BY RADIANT HEAT AND IODINE IONIZATION.

By C. F. Bailey, M.D.,

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The main indication for treatment by radiant heat and iodine ionization is the presence of thickening of ligamentous and fibrous structures surrounding or entering into the composition of joints, adhesions limiting movements of joints, tendons, or muscles, and in fact any deposit of fibrous tissue, newly or comparatively recently formed, which tends to limitation of movement or the production of pain, especially on movement. It therefore finds its use in fibrositis, chronic rheumatic arthritis, rheumatoid arthritis, chronic synovitis, teno-synovitis, sciatica, lumbago, and various myalgias.

Object of the Treatment.

The object of the treatment is to attempt to bring the affected structures into a condition more nearly approaching the normal by increasing their supply of arterial blood to a state of active congestion, by stimulating leucocytosis and metabolism, and at almost the same time driving iodine ions towards the abnormal parts, dissociating iodine and other salts which may be present in them into their component ions, and generally causing such a disturbance of the structure as may promote a change (and a beneficial change) from their abnormal condition by the passage of a galvanic current of considerable volume.

Radiant Heat.

The action of heat generally in relieving pain and checking the progress has always been recognized in these affections, but I think the most efficacious of all heat applications is dry radiant heat. The usual radiant heat appliances are boxlike, the distance of the radiant surface from the joint cannot be regulated, and if they are covered in with asbestos sheeting they become imperfectly ventilated. In consequence, we have with radiant heat a condition to be avoided—namely, "moist air heat," produced by the patient's perspiration. They have a more important defect in that, as the radiant surfaces are made of ordinary low candle power electric carbon filament lamps, they give out rays consisting almost solely of the yellow and yellow-orange. Now the ideal type of radiant heat should be as nearly as possible like sunlight, and should give a spectrum ranging from the ultra-red to the ultra-violet.

This type of spectrum can apparently only be obtained from lamps of a very high candle power. I find the so-called leucodescent radiant heat apparatus, manufactured in America,[1] satisfactory. It consists of one single large lamp in a funnel-shaped projector lined with a reflecting surface. The projector can be raised or lowered by a system of counter-weights or turned in any direction with one hand; the rays can be directed easily and rapidly on any part, and the maximum amount of heat the patient can bear adjusted to a nicety. The lamp possesses a thick filament requiring 12 ampères; it thus uses up as much current as twenty-four 32 candle-power ordinary lamps. Twenty-four 32 candle-power lamps would give 768 candles, the large lamp has a luminosity of 500 candles only; electric energy, therefore, equal to 268 candles is used up in producing heat and other rays of the spectrum. A temperature of 400° F. is obtained, and as it is perfectly dry heat it can be endured with fair comfort and without damage to the skin.

The parts treated, as a rule, undergo twenty minutes' exposure to the radiant heat projector at such a distance (the patient regulating this) that just as much heat is applied as can be tolerated. During the sitting the patient moves the joint into different positions, turns it from side to side, and gently rubs the skin with the hand to allay the scorching sensation, which passes off fairly rapidly, and is followed, as the heat penetrates into the joint, by a sense of comfort and relief from pain. When the lamp is switched off the part feels burning hot to the touch, and the surface is red and mottled from vascular dilatation.

The general result of a radiant heat exposure is that the cutaneous and deeper vessels dilate, lymphatics become filled, local arterial pressure is diminished, and local metabolic processes are increased.

The effects do not pass off at once, and probably after repeated exposures they become more or less permanent.

The duration (twenty minutes) of the exposure to radiant heat is about as much as the skin of the patient will stand if the applications are to take place daily for some weeks.

The results of treatment by "radiant heat alone" in our hospital cases show that, although this is inferior to the "combined" method, yet that "radiant heat alone" does possess a definite value in alleviating pain and in causing improvement in joints and their surroundings as regards improved flexibility and reduction in size.

Iodine Ionization.

As soon as the radiant-heat sitting terminates ionization with iodine "ions" immediately follows. In *no case* is the current allowed to cross from one side of the body to the other, or from one limb to another, because any sudden alteration in the milliampèrage of the current passing produces a much more unpleasant effect if the spinal cord is in the circuit. Furthermore, as "iodine ionization" is much more useful than "lithium ionization" (if one uses a solution of lithium iodide), therefore the joints more especially requiring treatment are the ones connected with the negative pole. Iodine ions seem to be more valuable than the other halogen ions for solvent action on fibrotic deposits. I always now use a 2 per cent. lithium iodide solution, preferring lithium ions as being less corrosive than ions of potassium or sodium. The solution is made with distilled water, and enough linimentum iodi is added before using the fluid to give it a sherry colour and have an excess of iodine present; the specific gravity is 1025. Schall's arm baths are used for both arms and legs; they are filled to a height sufficient to cover either wrists or ankles with solution which has been made *nearly boiling*. Long strips of lint, 6 to 10 in. wide, are soaked in the hot solution, slightly wrung out, and wrapped round the knees in treatment

[1] Obtained for me by Mr. A. E. Dean.

of both ankles, above the elbows if both wrists require it, or they are folded and applied as pads, several square inches in area, if shoulders, hips, or sacro-iliac joints are to receive ionization; the pads or bandaging should in all cases fit close and be quite six-fold thick equally all over. A copper chain-mail electrode is spread over each lint pad, its edges at least one-third of an inch inside the edges of the lint; it is bandaged carefully on, leaving the connexion for the electrode cords exposed. The area of the electrode covering a knee averages 500 sq. cm.; shoulder, 450 sq. cm.; hand when in bath, about 200 sq. cm.; foot, 300 to 350 sq. cm.

Two carbon electrodes are placed in each bath. When two limbs are treated at the same time, the "connexion" of the two baths with the required pole is made by three plugs carrying four cords, the centre plug carrying two, while at the bath's end each cord is attached to each of the four carbon electrodes. By this means equality of voltage is ensured in the two baths, and the possibility of shock from a defect in a single cord is avoided. The other pole is connected in a similar manner by three plugs carrying four cords, one single cord and one of the two double cords is attached to each copper chain mail electrode; this method again to equalize voltage and avoid a shock. By the time the connexions are made the bath solutions have cooled sufficiently for the patient to put his hands or feet, whichever may be required, into the baths. The current is now turned on, raised by 5 milliampères at a time quite gradually, until, in the case where two knees are treated, the milliammeter records 70 milliampères, but if one only is treated 40 milliampères; after twenty minutes the current is slowly turned off. The average current from one knee to foot is 40 milliampères, both knees to feet only 70 milliampères, shoulder to hand 30 milliampères, lower part of arm proper to hand is 25 to 30 milliampères.

The average current density is about 0.15 milliampère per square centimetre in the hand, but the maximum in parts may rise to 1.5 milliampère per square centimetre. In the foot the average is 0.1 milliampère per square centimetre, but the maximum may be 1. Currents of this magnitude only produce reddening of the skin and can be continued daily without causing soreness, especially if a lanolin and white vaseline ointment is rubbed in at night. I have used in some cases stronger currents, but the risk of skin irritation is greater. Similar methods are used for ionization of shoulders, hip, or sacro-iliac joints, the rule being always to "iodine ionize" the joints most requiring treatment, and to *continue* to "iodine ionize" them from day to day, and not to reverse the poles until such marked improvement occurs that other joints become the most clamant for treatment.

The main points are to keep the spinal cord out of the circuit, use every effort to prevent sudden variations in the current, and try—a most difficult matter—to get the current density equal over the parts. I find the discoloration of the iodine-stained pads is a fair index of how the current is behaving, and I always put an extra thickness or so of lint under the centre of the chain-mail electrode, as that is usually the part more deeply decolorized. I always expect the deep layers next the skin not to be decolorized. Tender skin spots in the bath may be guarded with the ointment.

Duration of Treatment.

Each treatment lasts twenty minutes. Daily applications for four weeks is an ordinary time in bad cases. In oints, improvement is usually not apparent until after the seventh or eighth treatment; after that it is progressive. Some cases improve very rapidly indeed.

The solution can be used again and again for the same case; it is best to decant it into Winchester quart bottles and keep its specific gravity, 1025, constant, by the addition of distilled water, as it concentrates from the heating. As it tends to be contaminated by copper, a little lithium carbonate may be added to each bottle to precipitate this metal. After standing, the clear solution is poured off and liniment of iodine added to convert excess of lithium carbonate into iodide (and some iodate). The chain-mail electrodes after a time become coated with copper iodide, and require to be cleaned (Brooks's soap renders the surface of the rings fresh and bright for further use), because the newer and cleaner the copper the more equally is the electric current spread over the surface of the lint pads.

I attach extreme importance to the continuance of iodine preparations by the mouth during the combined treatment; one great value of cataphoresis is the fact that it causes acid or basic radicles, in a so-called "nascent" state, to be formed in the path of the flow of the constant electric current; any iodine compounds lying in or circulating through the joint tissues—should the patient have been taking them for some time and in fair quantities—are broken up by the current and locked up in the joint tissues temporarily, instead of being carried through the blood vessels and excreted. Besides "nascent" iodine ions generally are in all probability much more actively bactericidal and much more energetic than when they combine into soluble non-ionized salts; also the general migration of all kinds of ions, which takes place along the course of the current, may produce an effect of commotion in and stimulation of the tissues which is beneficial.

I also advise such movements and exercises, carried out as soon as possible after the treatment, as will put adhesions on the stretch and eventually rupture them.

Analysis of Twenty-one Cases (others treated since).

Cures	28.6 per cent.	
Relieved	57.2 ,,	(19.06 per cent. very greatly)
No improvement ...	14.2 ,,	

DISCUSSION.

Dr. H. Lewis Jones (St. Bartholomew's Hospital) said that the particular interest of Dr. Bailey's communication lay in the fact that he had tried successfully to reduce the treatment of rheumatic and joint conditions by ionic medication into something like a system. There was a good deal of casual employment of ionization in rheumatic cases going on among workers in different parts of the country, and they could do it better if they were to exchange ideas a little more freely. Dr. Bailey's tabulated list of cases was very encouraging. The speaker had also spent some time in the attempt to treat rheumatic joints by ionic methods, and, of course, there was no doubt that the treatment was useful. But one could not help wondering at times to what depth the ions were driven. Still, from the clinical results obtained, he was sure that they were able to drive the ions as deep as was necessary. If they considered such a condition as rheumatoid arthritis, with its affection of many joints, and other symptoms grouped around it, the question might arise as to whether they were attacking what was evidently a general disease in a rational way. It could be pointed out in answer that very frequently the chief trouble of the patient was due to the defect of this or that particular joint, and it was fair and justifiable, therefore, to do what one could to relieve the local symptoms, even if one were pessimistic as to the disease which was responsible for the local trouble. A form of joint affection in which he had obtained very successful results from ionization was a crippling, painful swelling of the knee so frequently found in middle-aged women. The other joints in these cases were really not affected, but the swollen and painful knees presented a clinical picture with which they were all familiar. In that condition he had had the most encouraging results from ionic applications. The treatment had been more successful than anything else of which he was cognizant. He had not done much in the use of iodine with lithium, and had preferred to use salicylate of soda, depending upon the salicylic ion as the agent to give relief. During the first two or three applications there was generally nothing particular to be noted with regard to improvement, but by about the sixth application the patient would say with no uncertain voice that she was much better, that she could go upstairs with ease and could do her daily work. Of course, there was no rivalry between the different ions, and perhaps someone using iodine instead of salicylate in these cases would have similar reports to give, but, speaking from what he knew, he could give the definite information, as a slight contribution to the subject, that this particular type of case could be really relieved by ionic medication with the salicylic ion. He used small towels, making fourteen or sixteen layers, holding just about two ounces of a 2 per cent. solution. That was his reservoir for the application.

He used as electrode a very thin, flexible silver plate, holding it himself in position. By taking the precaution of using plenty of layers, he was able to give large currents for a long time without any blistering of the skin. He could go as high as 30 milliampères, possibly with some people to 40 milliampères, for twelve or fifteen minutes, and this was his routine method for treatment.

Dr. N. S. FINZI (London) said that he had been able to prove absolutely that certain ions could penetrate into a joint. A pad soaked with potassium ferrocyanide was placed around the knee-joint of a monkey, and this was attached to the negative pole, a strong current being passed for some time. The monkey was then killed, and the knee-joint was cut out and placed unopened in ferro-sulphate solutions. It was left all night, and the next morning the patella tendon, through which the ferro-cyanide ions had passed, was almost black—at any rate, a deep blue, and the cartilages of the joint were blue. This proved, in his opinion, that the ions got into the joint. He had tried iodide and ammonium ions, but he thought it was the combination of the iodide and lithium that had the effects which Dr. Bailey had described. When treating a number of cases he gave very much larger doses than the reader of the paper. The average for treating knees was 70 milliampères, borne for three-quarters of an hour, and the maximum current was 100, or even 150. He placed the patients in series, the lithium pad on one patient being connected to the iodine pad on the next, and in this way he treated four or five cases.

Dr. W. Y. SOMERVILLE (Glasgow) said that the amount of milliampèrage employed by different workers appeared to vary considerably, the last speaker even going above 100 milliampères. He had tried 35 milliampères for five minutes, and had found this to be as much as the patients could stand. Was it of any advantage to have these high currents? (Dr. FINZI remarked, in answer, that the current was only turned on gradually, and 100 milliampères was not reached for a quarter of an hour or twenty minutes.)

Dr. PRIMROSE WELLS (London) had come to the same conclusion as Dr. Bailey, and was quite certain that in these cases of bad joints the great point was the preparation of the joint for treatment by radiant heat or by gentle vibration—some means which would get back the circulation in these sluggish, swollen articulations, and would prepare the tissues for the more beneficial treatment of the ions. He had got the best results from salicylate, but undoubtedly this combined treatment was very useful, and he wished to bear strong testimony to the fact that by a combination of treatments the electro-therapeutist could obtain most successful results in certain rheumatoid and articular troubles.

Professor STEPHANÉ LEDUC (Nantes) said that in the application of the ions of chlorine and iodine in the treatment of ankylosis, either from rheumatism, or traumatism, or infections, he had not come across one case in which the application failed to benefit. In some cases the results were very surprising and wonderful; in others the success, although definite, was partial. He quoted the case of one lady whose hands were so ankylosed that she could not move a finger. He was not disposed to accept her, but she spoke of it as her last hope. He applied the treatment, and some months afterwards she could play lawn tennis; she was in perfect condition. The iodine ion was more caustic than others, and the chlorine was equally efficacious. In the course of treatment the utmost attention must be paid to the signs displayed by the patient. Sometimes the current ran down a hair or an abrasion with painful results. The patients differed greatly in the intensity they could support. In the case he had quoted the current was raised to 40 milliampères within fifteen minutes from the beginning of the séance; in other cases a much greater current intensity could be borne. The ions followed the direction of the current—the line of flux—and the efficacy of the treatment might be increased by changing the current direction.

Dr. CURTIS WEBB (London) said that Professor Leduc's experiences agreed with his own—namely, that equally good results could be obtained in cases of rheumatic or rheumatoid joints, or in other localities where fibrotic deposits were to be dissipated, by employing the chlorine instead of the iodine ion, or, in other words, by using solutions of NaCl instead of KI. The excellent results in the treatment of Dupuytren's contraction by the ionization of Cl had led him (Dr. Curtis Webb) to this conclusion, and results had proved its correctness. This was not surprising when the close relationship of Cl and I in Mendeléeff's classification was remembered, and the bactericidal properties of free chlorine must not be overlooked. In the minds of those who had used this treatment there was no question as to its great value in the conditions alluded to by Dr. Bailey; but the speaker often wondered whether the flow of blood and lymph in the cutaneous and subcutaneous tissues did not catch up the ions and carry them away into the general circulation, and whether the good results must not be attributed as much to the effect of the passage of the current *qua* current, which was really an example of the ionization of the salts of the body fluids through which the current passed, as to the ionization of any drugs from without. In support of this view he quoted the classical experiment of Professor Leduc with two potatoes; but he had been extremely interested in the account of the experiment described by Dr. Finzi, and in the light of that experiment he felt more sure than he had done that the ions did really penetrate deeply into the tissues. He recognized the great value of the leucodescent lamp referred to by Dr. Bailey; but having regard to the possibility of an increased blood flow impeding the penetration of the desired ions into the joint, he always used the heat after and not before the ionization.

Dr. BAILEY, in reply, agreed with Dr. Lewis Jones that in such joint affections as he had indicated this was practically the only treatment that seemed to do any good. He (Dr. Bailey) was a physician, and he also managed the electro-therapeutic department of his hospital; but, as far as his experience went, the only local thing that did any good was some kind of heat treatment and ionization. The essential point with regard to the milliampèrage was that other factors, in addition to the number of milliampères, had to be considered. The milliampèrage must be multiplied by the time and the area of the electrode before any useful comparisons between the experiences of different workers could be made. He had known some gouty cases that could only take 15 to 20 milliampères through the joint, whereas others could take about 40. He agreed with Dr. Leduc with regard to the extreme pain which was caused by the passage of the current down a hair, or by the minutest abrasion of the skin.

ON THE TREATMENT OF SOME CORNEAL ULCERS BY ZINC IONS.

By H. LEWIS JONES, M.A., M.D., F.R.C.P.,
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THE following cases illustrate the value of ionization by zinc for arresting a form of corneal ulceration, which is known as Mooren's ulcer of the cornea, and is very troublesome to deal with by ordinary procedures. Fuchs in his *Textbook of Ophthalmology* states that it was regarded as incurable as long as surgeons were unacquainted with the cauterization of the cornea with the actual cautery, and again he states that just when one supposes the process of ulceration to be nearing recovery, a relapse sets in, and the disease advances with discontinuous attacks and intervening remissions until the ulcer has covered the entire cornea.

Even with the help to be obtained from the galvano-cautery the ulcer is very difficult to arrest, and in a case of long duration the damage to the cornea from the cauterizations becomes serious. Under these circumstances the need for an improved method of treatment is manifest, and in September, 1907, Mr. Holmes Spicer sent me a case which was under his care in the ophthalmic wards at St. Bartholomew's Hospital, to see whether anything could be done for it by electricity. The result was satisfactory, and since then three other examples of

Mooren's ulcer have been sent to me by Mr. Jessop or Mr. Spicer from among their out-patients. In all of these the cure has been quick and complete, and I submit the following notes of the four cases:

Case I.

M., 61. This patient had had ulceration of the right cornea for a long time, in spite of repeated cauterizations, and the cornea showed much scar tissue. On September 19th zinc ions were introduced at a small ulcerated spot near the margin of the cornea, using a current of 1 milliampère for one minute, and on the 26th a second small area staining with fluorescein was discovered near the other spot, and was treated in the same way.

Both spots healed rapidly, and a month later the cornea was reported to be quite sound. The patient has been seen frequently since, but has had no more trouble.

The second case was as follows:

Case II.

F., 47. Ulceration of the outer and upper margin of the right cornea. It has existed fourteen days. On September 14th, 1908, the ulcerated area was ionized with zinc. It was of considerable size, occupying about one sixth of the cornea. A current of half a milliampère was applied for six minutes, in several fractions, as the patient was much agitated and apprehensive during the application.

Three days later the ulcer was healed, and remained so.

Case III.

M., 40. An ulcer of the left cornea, with considerable pain and much injection of the conjunctiva. Under cocaine, zinc ions were introduced for three minutes, with a current of 1 milliampère in three periods of one minute each, owing to the timidity of the patient.

Four days later the report from the ophthalmic department stated that there was no longer any staining with fluorescein. The ulcer was healed, and remained so.

Case IV.

This was the same individual as in Case III. He returned in the following year, 1910, with a similar ulceration in the other or right eye. This was ionized as before for two minutes, but the patient then became unruly, and refused to go on. A fortnight later he came again. The first application had not completely arrested the ulceration, and it was repeated for three minutes with a current of 1·5 milliampères. This was followed by a healing of the ulcer, but a certain degree of conjunctival congestion remained. At my suggestion this was treated with a simple zinc lotion, and under this treatment the eye became normal in a day or two.

The facts just stated are so simple and interesting that they are well worthy of being placed on record, and I consider that the treatment of Mooren's ulcer represents a point gained for ionic medication.

The following theoretical considerations appear to me to be justifiable. The success of the ionic treatment compares in a striking manner with the poor results of treatment by lotions. Where lotions have succeeded they have been of antiseptic nature, such as strong carbolic acid, absolute alcohol, and the like. It seems probable that in Mooren's ulcer we have a bacterial disease; and one observer, Andrade, has actually described a specific organism. A micro-organism, if intracellular, would be out of reach of a simple lotion, and yet might be easily reached if a suitable drug were applied and caused to penetrate by means of the electrical current.

Mooren's ulcer is characterized by a great tendency to relapse, and to involve both eyes either simultaneously or successively. It may be due to an infection which finds access to the conjunctival sac, and may exist there for a time without producing corneal ulceration. Once the surface of the cornea is attacked, the mischief may be kept up by reinfection from the conjunctival sac. We can understand that a zinc lotion is able to destroy any germs which are free, but cannot reach those which have penetrated into the depth of the cornea. It is therefore unable to arrest the ulceration, unless assisted by ionization, but may be valuable for preventing reinfection.

The technique may be briefly described. A loop of zinc wire or the end of a zinc rod is armed with a fine web of absorbent wool, and dipped in a solution of zinc sulphate at 1 per cent. This forms the positive electrode, and is fixed in a suitable handle attached to the source of current. The negative electrode is the usual moistened plate or disc, applied to any convenient skin surface of the patient.

The eye must be carefully cocainized, and the positive electrode then held lightly against the ulcer so as to bathe its whole surface with the zinc solution. An assistant then turns on the current very gradually up to 1 milliampère or 1½, according to the size of the ulcer and the toleration of the patient. It must also be turned off very gradually at the close of the application.

The current is to be applied for three or four minutes in one application, or for a little longer if done in two instalments. The patient needs to be carefully handled and encouraged, because it appears that the procedure is in some way disagreeable or alarming. At any rate, that has been my experience. The patients become agitated, although they admit that the application is not specially painful. Perhaps this apprehensive state is due to the indefinite image of the electrode, as seen out of focus, or it may be an effect of the current. The eye should be treated for a day or two by instillations of zinc sulphate (1 per cent.) after the ionization is over. A single good application should cause healing within a week.

DISCUSSION.

Professor Stephané Leduc (Nantes) said that he was delighted to hear of a successful result in such a troublesome eye disease. With regard to the agitation and apprehension of the patient, to which Dr. Lewis Jones had alluded, it was the quality and intensity of the current which caused whatever pain might accompany the treatment. He urged a very gradual raising of the current in all cases in which the ionization method was employed.

Dr. Lewis Jones, in reply, said that the apprehensiveness of the patients was almost the only difficulty attending the administration of the zinc ion in this way. It was probably due to the dim sight of a great electrode in the middle of the field of vision, or it might be a current effect. At any rate, all his patients had been excessively agitated and nervous during the whole time of the application, and had to be coaxed to bear it a little longer, although the part was deeply cocainized, and there was no sensation of pain. It was, he considered, a curious mental phenomenon.

THE CONDITIONS NECESSARY TO OBTAIN RADICAL CURES BY MEANS OF THE X-RAY TREATMENT.

By Leopold Freund, M.D.,
Vienna.

[Abstract.]

After a reference to some distinguished British workers who had assisted the progress of radio-therapy, Dr. Freund exhibited a tabulated summary of all the cases he had treated by means of Roentgen rays since 1896. The table showed that in the first group of cases, of which hypertrichosis, alopecia areata, tinea tonsurans, and favus were representative, treatment had been given only once and was followed by radical cure; in the second group, represented by lupus vulgaris, Paget's disease, rodent ulcer, epithelioma, superficial tuberculous osteo-arthritis, and others, radical cure was obtained after treatment had been given in the shape of two or more series of irradiations; in the third group, comprising prurigo, eczema, psoriasis, lichen ruber, hyperidrosis, lupus erythematosus, etc., transient improvement was obtained after treatment had been given several times; and in the fourth group, consisting of deep-seated carcinoma and sarcoma, keloid, prostatic enlargement, leukaemia, exophthalmic goitre, and other difficult conditions, success was uncertain after treatment had been given several times. The most favourable conditions for treatment by means of the Roentgen rays were, therefore, diseases of the hair, or, rather, diseases of the hairy parts of the body. Dr. Freund said:

"It is not easy to perceive why that is the case. It is a well-known fact that those trichophyton parasites, which are removed from the heads of persons suffering from favus or tinea tonsurans simultaneously with the hairs, still show energetic vitality and can easily be cultivated, whereas the dose of x rays which caused them to fall out suffices for the complete cure of the skin disease caused

by the parasite, despite the fact that in the changes of the hair follicles many parasitic elements remain behind. The explanation of this very singular fact is furnished by the conduct of other affections caused by micro-organisms when the former are exposed to the Roentgen rays. When, for example, we expose a furunculosis to small repeated doses the formation of pustules does not cease at once; on the contrary, it seems as if they were strengthened and stimulated at first by the first application of the rays. But after a definite and sufficient dose of the rays the formation of pustules ceases quickly, no new pustules appear, and the old ones crumble. Evidently after a definite dose of the rays there is formed in the tissues a certain substance, a poison detrimental to the future development of the bacteria."

Dr. Freund then went on to examine the causes of the comparative failure with the affections of his third group, premising that the tissues in these affections—eczema, psoriasis, etc.—were not less sensitive to the Roentgen rays than those of the second group—lupus vulgaris, epithelioma, etc.: "I exposed a young man for psoriasis, applying rather more than a normal dose (nine sittings) to an exceedingly hard spot on his left elbow by means of a moderately soft tube (seven Wehnelt unities). The consequence was a painful erythem that began on the ninth day. There was a dark red surface contrasting with some spots having psoriasis scales clinging to them, from which the patient had been quite free before treatment. After a week these white spots turned red, although not so intensely red as the surrounding parts. Accordingly the psoriasis scales on the skin during the new exposure resulted in a considerable weakening of the biological effect of the Roentgen rays, for underneath them the skin was strikingly less irritated than in the scabless parts adjoining. But wherever, before exposure, the patient had thoroughly removed the skin scales by washing and maceration no relapse took place."

Dr. Freund then related certain experiments which he had carried out with the object of showing the absorbent action of psoriasis scales. "These experiments," he said, "illustrate the necessity in Roentgen therapy of removing out of the way of the rays anything that can even slightly reduce their effect. This is a matter to which most specialists pay too little attention. All of you have found out by experience that ulcerated tumours are more easily affected by Roentgen rays than are ex-ulcerated ones. Since a psoriasis scab or a thin covering of epithelium so greatly reduces a result otherwise good, how much more must thick layers of normal or pathological tissue, through which the rays have to force their way before they reach the basis or focus impede the attainment of that end! Consequently every treatment with Roentgen rays should be preceded by preparatory treatment. By means of such preparatory treatment all those filters which decrease the histological effect of the rays, such as crusts, scales, infiltrates, newly formed tissues, must be thoroughly removed, chemically and mechanically, and not until then should the basis thus laid bare be exposed to the action of the rays. I believe that in severe affections better results than those hitherto achieved could be attained by previous curettage and cauterizing, and by not exposing until after the scurf has separated. Only in this way can we succeed in thoroughly curing tuberculous and epithelial processes in a short time.

"Histological investigations show that, for example, in cases of psoriasis seemingly cured by Roentgen-therapy, under the perfectly normal surface of the skin there were deposits of diseased tissue, and from these proceeded the constant recurrence of the disease. The physician's task is to destroy these, and he often succeeds by means of periodical after-treatment, which must be resumed every five or six weeks. By means of this periodical subsequent treatment we must as far as possible endeavour to master the affections of my fourth group—deep-seated carcinoma, and sarcoma, keloid, etc.—the situation of which renders them not very favourable for treatment by means of the Roentgen rays."

DISCUSSION.

Mr. DEANE BUTCHER (London Skin Hospital) said that the question of Roentgen vaccination, to which he drew attention some weeks ago,[1] received a good deal of support from Dr. Freund, although he did not call it by that name. In the early part of his paper he referred to an action of the rays which was of the nature of Roentgen vaccination. This was a matter about which they would hear more during the next few years or months. Another interesting point in the paper was the emphasis laid upon the necessity of clearing away every bit of scab that would shield the lesion from *x*-ray action.

Dr. H. D. MCCULLOCH (London) said that the problem of immunity, touched upon by Mr. Deane Butcher, was a fascinating one where Roentgen-therapy was concerned, and it was encouraging to find that Dr. Freund's researches endorsed this *x*-ray effect in the maladies in which he had had satisfactory results. The speaker would emphasize the fact, however, that "vaccines" in the Jennerian sense could only result after the introduction into the living tissues of the body of the causative factor or pathogenic micro-organism when a well-balanced reaction was produced. The *x* rays themselves aided this physiological process when it was defectively responded to, but did not themselves cause a vaccination or an independent immunity in any physiological sense. He had on a previous occasion published his views on "auto-vaccination" by these methods, controlled by opsonic estimations.[2]

Dr. PRIMROSE WELLS bore testimony to the importance of thorough cleaning of the surface of all parts exposed to the *x* rays. He had succeeded in curing ancient patches of psoriasis and eczema by comparatively few exposures of the rays, the cure being due, he considered, to the fact that he generally gave a light bath first, which very effectually removed all scales, etc., from the surface. Some of the success was due to an arc light used in the bath, but, undoubtedly, some of it was due also to a clean surface.

Dr. FREUND, in reply, said that the matter of measurement indicated in his paper was, he believed, of some importance, because measurement of the intensity was commonly made by means of changes which took place in chemical preparations, and the effects upon chemical preparations were not parallel with those upon the living tissue. With regard to other treatments, they had in Austria some baths of great radio-activity, and on making experiments he found psoriasis patches yield very readily to a combined treatment of radio-active substances and the *x* rays.

HYPERIDROSIS CURED BY X RAYS.

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THE cure of hyperidrosis by means of *x* rays is a branch of radiology which is very useful and very neglected, yet the treatment required is short and the result is most satisfactory. It is usually excessive perspiration in the armpit which calls for treatment, and the degree of perspiration is such that every day the patient has all his clothes in the region of the armpit absolutely soaked through by perspiration. The result of proper *x*-ray treatment in such a case is that the armpit becomes even drier than in the case of a normal person. *X* rays have a selective action on sweat glands which are excessively active because in these glands there is a constant formation of young cells which are easily destroyed by *x* rays while the older cells of the skin adjoining are left intact. It is possible that the action of the rays is on the nerve-endings, but I am inclined to believe that the former is the true explanation. There is a peculiar form of hyperidrosis which I have met with in three cases of which the symptoms are identical.

In these cases the perspiration has begun each day after breakfast, gone on all day, till by evening the clothes in the region of the armpit have been soaked through and wringing wet. In each case the patient had to change his clothes for the evening, and from that time on till next morning after breakfast he had no more excessive perspiration. And so it went on every day as long as the patients could remember. In these cases, also, heat did

[1] *Archives of the Roentgen Ray*, June, 1910.
[2] Ibid., April, 1907.

not materially increase the perspiration, but cold increased it very much. Worry and excitement also increased it.

This type is so different from ordinary hyperidrosis that it may be called hyperidrosis frigida—that is, hyperidrosis increased by cold. In every case, whether of the ordinary type, which is increased by heat, or of the hyperidrosis frigida, which is increased by cold, the result of *x*-ray treatment has been the same—namely, the patient has been made absolutely comfortable, and the axilla has been made either absolutely dry all the time or the perspiration has been reduced to less than that in a normal individual.

My attention was first drawn to the subject in 1906, when I unintentionally destroyed the sweat glands in a patient, who afterwards pointed out to me that he did not perspire in the part treated by *x* rays, while he perspired at his work in other parts of the body. Later on I noticed in the British Medical Journal that a doctor had had the skin of his axilla excised in order to get rid of the excessive perspiration there. I pointed out in the British Medical Journal[1] how unnecessary this operation was, when *x* rays could accomplish the result with far less inconvenience to the patient; and since then I have treated the following cases, with results which have been most gratifying to myself and eminently so to the patients, four of whom are medical men.

Case I.

A joiner, who pointed out to me that after a number of sittings in October and November of 1906, when he received unmeasured doses of *x* rays, he found that the part so treated did not perspire when the rest of the body did. I examined him three and a half years after the last *x*-ray treatment, and found that the part was warm and dry, while the surrounding skin felt warm and moist. Thus the sweat glands had ceased acting for three and a half years.

Case II.

A medical man, who had suffered from excessive perspiration in the armpits as long as he could remember, could recall especially the white line left on his Eton jacket at school by the evaporation of the perspiration. He called it his "high-water level." The character of his hyperidrosis was as follows: It began every day after breakfast and went on all day till evening. It soaked through to his jacket and made it thoroughly wet, so that he had to change at least once a day. If he remained at home during the evening he did not perspire excessively, but if he went out for the evening it was very troublesome. Cold weather made it worse, as also did excitement and extreme heat. Treatment was begun on May 17th, 1909, when a pastille dose to each armpit was given. Part of the right axilla received two pastille doses, and it is interesting to note that nothing more than a slight redness followed this dose. Three weeks after this first treatment the patient noticed a decided improvement. On July 2nd a similar treatment was given, and at that time I noticed that the openings of the sweat ducts protruded as little white heads. At the same time he found that his shirt got wet in the forenoon but dried again during the afternoon.

Later on a third treatment was given, and on September 17th a fourth, which was the last. After this last treatment no more *x* rays were given, and the patient has been quite comfortable ever since. Eleven months after the last treatment he wrote to me, saying: "I have not experienced the slightest indication of any return of what was a very real and tiresome infirmity. At our first meeting you propounded the problem, 'What will become of the sweat if it is stopped from exuding in the axilla?' Well, I find that if I am extra nervous or worried my hands become slightly moist—that is all, and that is very slight. I have not so far developed gout or any uric acid trouble. This, I venture to think, is worth recording—namely, that stopping the action of overactive glands in one part does not cause trouble in any other part or organ. It is an unqualified and, I believe, permanent cure."

Case III.

A medical man whose hands perspired so freely that he dreaded to perform an operation or attend a confinement. Excitement and heat made the perspiration more profuse; cold lessened it; he had suffered from it as long as he could remember. When I first saw him I dried his hands and watched the beads of perspiration collect within a minute. He had tried to control it by soaking his hands in 1 per cent. formalin, and this did control it slightly for a short time, but by frequent applications of formalin his hands grew very rough and cracked. As soon as the effect of the formalin passed off the perspiration came back.

The first treatment of one pastille dose to the hands was given at the end of May, 1909, followed by similar treatments on June 30th, July 28th, and August 29th. On the last date he found his hands hardly perspired at all, and I noted that they were drier than my own. *He* was satisfied with his condition, though *I* would not call it perfect; but he had to come more than a hundred miles for the treatment, and he did not come again till March 18th, 1910, when he happened to be in London. On July 8th I saw him again, and the perspiration had completely ceased, except between the fingers and over the hypothenar eminences, where it was very slight. These parts had received a smaller quantity than the rest of the hands, and had, therefore, partly escaped the effect of the rays. . . . He requires to use nothing for his hands now, and they are quite comfortable. On July 26th, 1910, he wrote to me saying: "Before coming to you I had tried all the usual remedies, such as sulphur in milk and belladonna internally; carbolic acid, formalin, salicylic acid, liniment belladonna, etc., externally. These could only keep it in check, whereas since you treated me I have been able to discard the lot." He goes on to say: "I look on the *x* rays as the only cure, and there seems no reason to doubt that the cure is permanent."

Case IV.

A medical man, who suffered from excessive perspiration over his face, axillae, and hands. It was made worse by heat and excitement and improved by cold. When he lay down on my couch for his first few treatments his face perspired as if he was in a Turkish bath, and the perspiration ran from his axillae and soaked a part of the couch. The several parts were treated in a similar way to the other cases. The treatment was spread out from July 16th, 1909, till March 25th, 1910. There was an interval of a month as a rule between the treatments of any one part.

The face was the most troublesome part to treat, as it had to be done with extreme caution. The final result was reported to me by the patient on May 24th as follows:

"1. I commence with the axillary glands. The treatment has been perfectly successful. There appears to be entire cessation of activity under all circumstances and conditions.

"2. The hands are hardly less satisfactory. There is slight secretion, however, but it cannot be called troublesome.

"3. As regards the face the sweat glands have been profoundly altered, but have not been so profoundly annihilated as in the case of the axillae. The secretion, however, is so slight as to cause me none of the old discomfort of body and mind."

The treatment of his face, though so far satisfactory, caused me so much anxiety that I hope I shall not have to treat another face for excessive perspiration. With the armpits I feel no anxiety and feel certain as to the result.

Case V.

A medical man, who suffered from excessive perspiration in the axillae, and had done so for many years. It began after breakfast and went on all day, but stopped in the evening. He had none at all at night. It was made worse by cold and worry. Formalin 40 per cent. and other strengths, dusting powders, and atropine ointment had no effect on it. He tried to control it by means of a sheet of india-rubber, but this only made the part like a poultice.

A first treatment was given of one Sabouraud's dose to each axilla, and a month after he thought there was some improvement. Slight epilation followed this treatment, but I noticed that the perspiration was still profuse. A second application of similar quantity was made a month after the first, and a month later both axillae showed a brown reaction. A third application was made two months after the first, and a month later—that is, three months from the first application—the patient returned delighted to report that the excessive perspiration had entirely ceased. On examining his shirt I found it dry and unstained by perspiration. A final dose of two pastille doses was given, and this caused him no inconvenience. Two months later—that is, five months from the first treatment—I found the right axilla nearly completely epilated, and, though it was a hot day and I found my own armpits slightly moist, the patient's skin in his right axilla was perfectly dry, except a small area the size of a shilling in the deepest part of the axilla, where there was a part of the skin which was not perfectly dry, though no perspiration could be seen there. The left armpit was epilated in the upper half and not in the lower half, and there was a slight dampness in the lower half, but not sufficient to stain or wet his shirt—in fact, on comparing my own axilla, I found it damper than his. The axillae have now been dry for three months, and the patient is perfectly comfortable. He has noticed no ill effects from the want of this excessive perspiration, and is very pleased with the comfort of dry axillae.

Case VI.

A gentleman who had suffered from excessive perspiration for nearly thirty years. This case is one of typical hyperidrosis frigida. It began each day to be troublesome after breakfast, and continued all day till he changed his clothes in the evening, after which it ceased, and he was not troubled by it again till next morning after breakfast. Every day it soaked his jacket in the region of the armpit, and so discoloured his coat that he had to get new clothes more frequently than he otherwise would have required. If he got up extra early and worked in his garden he perspired profusely. Driving on a cold day aggravated it, and so also did any excitement or worry. Heat did not increase the perspiration so much as cold did. When he first came for treatment I could watch the beads of perspiration gather in his axillae within a few minutes.

The treatment was begun on May 25th, 1909, and five treatments in all were given at intervals of about a month. The armpits were divided into areas, so that each part of the armpit received a pastille dose. On September 21st—that is, four months after the first treatment—he reported to me as follows:

[1] British Medical Journal, April 17th, 1909, p. 953.

"The comfort I am feeling from the treatment is more than I can describe, after having suffered for about thirty years." Nine months later he wrote to me: "I am glad to be able to say that my arms are still quite comfortable. Even yet I have not got used to the indescribable feeling of comfort." It is now eleven months since his condition was cured, and he remains cured.

Conclusions.

There is a pathological form of hyperidrosis which one might call hyperidrosis frigida, which is characterized as follows:

1. It begins to be noticed after breakfast. It goes on all day till evening. It stops during the evening unless aggravated by excitement, cold, or worry. It ceases entirely at night. Its chief characteristic is that it is increased by cold, whereas ordinary perspiration is diminished by cold. Excitement and worry also increase it.
2. This form of hyperidrosis, as well as simple hyperidrosis, can be entirely stopped by x rays in suitable quantities.
3. No ill effects follow the cessation of the hyperidrosis.
4. The axilla will stand, as a rule, two pastille doses with impunity.
5. It is necessary to take special precautions so as to ensure that every spot of the part treated receives a total of at least four pastille doses in four months.

DISCUSSION.

Dr. H. LEWIS JONES (St. Bartholomew's Hospital) said that Dr. Pirie had not told them whether in each case there was a permanent epilation or not. Did complete shedding of the hair in the axilla follow the treatment? And was any effect noticeable upon the other glands of the axilla? Did he consider it necessary that the hairs should fall out in order to obtain a result in the shape of a cure of the hyperidrosis, or could the two things be dissociated? Was the excessive sweating dependent upon the hair in the axilla or not? Some people naturally had no hair in the axilla, so that they might assume the hair had no very important physiological value for its possessor.

Dr. G. B. BATTEN (London), in endorsing Dr. Pirie's statements, said that a few years ago he had experience of the exact opposite of this effect. The case was that of a lady who was troubled with constant boils on her face, where, also, the function of perspiration was absent. Sir Malcolm Morris advised the use of the x rays, which cured the boils and brought back to the face a normal secretion of perspiration.

Mr. J. HALL-EDWARDS (Birmingham) asked whether Dr. Pirie had any experience of this method as applied to the perineum, and whether he would consider the application safe in that region.

Dr. VERLEY (London) said that he was one of the patients whom Dr. Pirie had treated, and the treatment had afforded great relief to his condition. He had been in the tropics a great deal and also in the cold regions, and the two extremes of temperature accentuated the trouble. In the very clear, dry, crisp, frosty weather, however, it was not so uncomfortable, this being due probably to the fact that the sweat evaporated so easily. He suffered from it about fifteen years ago, and of late years it had become much worse, so that he had almost determined to have the skin excised when he saw an article of Dr. Pirie's on this subject and submitted himself to treatment. The difficulty of the treatment was in keeping still for the length of time required, but there was no pain attached to it, either at the time or afterwards. After the first treatment there was a certain amount of relief; after the second and third treatments there was little effect, but after the fourth there was practically complete success.

Dr. JAMES METCALFE (Bradford) said that Dr. Pirie had stated that there was alteration of clinical signs in the people treated. Were any observations made upon the urine, and, if so, was there any alteration in the composition of the urine in these cases?

Dr. H. D. MCCULLOCH (London) said that, in his opinion, Dr. Pirie had not done himself justice in merely claiming a "cure" in these cases of hyperidrosis. "Cure," like "disease," was after all merely a relative term. He had not only cured, he had permanently restored normal physiological function, which was vastly more important from a scientific point of view. He had thus influenced the trophic nerve mechanisms controlling these glandular functions, and this action of the x rays and radio-active substances was one that should be emphasized. One speaker had referred to the restoration of the opposite state—namely, lack of secretion. He (Dr. McCulloch) had during the present year restored hair to the scalp in a case of universal alopecia in a young woman with atrophy of the cutis. Where hair follicles and bulbs had quite disappeared for seven years past—including the hair on the eyebrows and lashes—she now had hair five inches long over the entire scalp, the result of repeated small doses over a long period.

Dr. PIRIE, in reply to Dr. Lewis Jones, said that complete epilation was not necessary in order to get perfect comfort and cessation of sweat. The epilation was partial usually, but it had to be fairly complete. With regard to the sebaceous glands, the little pouting ducts to which he referred in his second case might have had something to do with them. He fully expected that small doses of rays would increase the perspiration of the face. He believed that the perineum would do very well under the same treatment, but it would be difficult to treat, owing to the irregularity of its surface. It would be necessary to divide it up into small areas, as in the case of the face, and treat it carefully. The amount of urine had not been investigated, but it was quite natural to think that it would be increased.

SOME EXPERIMENTS ON THE EFFECTS OF X RAYS IN THERAPEUTIC DOSES ON THE GROWING BRAINS OF RABBITS.

BY

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[ABSTRACT.]

THE authors said the subject was of the utmost importance, as a full dose, indicated by bringing to standard tint the pastille of Sabouraud and Noiré, was frequently administered to children for epilation in ringworm; indeed the Education Committee of the London County Council determined in March, 1909, to make this treatment obligatory, and this led Dr. Dawson Turner to write a letter published in the *Times* of March 30th, 1909, containing a protest.

Recamier's results[1] showed that six exposures, each of ten minutes' duration, with the tube at 10 cm. distance, and with an intensity very little above a medium therapeutic dose, were able in the case of kittens to produce in one month after the last exposure very considerable modifications in the direction of the inhibition of growth of the hemicranium, the bones generally and the teeth, and that the effect continued after the cause had ceased to operate.

Others, in particular Danyz, Scholtz, Obersteiner,[2] had shown that young animals whose brains or spinal cords had been exposed to radium rays died with marked nervous symptoms, and that *post-mortem* examinations revealed hyperaemia with punctiform haemorrhages in the brain and cord.

The question arose whether any change, capable of being demonstrated, in the nervous system would be produced by a dose of the x rays, or by a repetition of such doses as are usually employed in the treatment of ringworm.

It was important to remember that in practice more than one dose was usually administered, because as the surface of the cranium was spherical, groups of nerve cells must be exposed to rays which were being applied to opposite areas of the scalp. Where the whole area of the calvaria had to be treated, no matter how careful the

operator might be in giving the scalp an even predetermined dose, the brain was receiving portions of all the doses.

The experiments were performed on rabbits in the laboratory of the Royal Colleges of Edinburgh, with the aid of a Carnegie grant. A litter of six rabbits 6 weeks old was procured, of which two rabbits were to be kept in reserve. The first rabbit was to have one exposure, the second two, the third three, and the fourth four, with weekly intervals between the exposures. Each animal was to be killed three weeks after its last exposure for examination of its brain cells.

It was thought more satisfactory to expose one half of each animal's head to the rays, and to compare that with the unexposed half, than to expose the whole head and to compare that with the head of a control animal. For this reason a leaden mantle was made ⅛ in. thick to protect completely the animal, except the right half of the head. Cotton-wool was used to immobilize the animal inside the mantle, and to prevent injury through struggling. By allowing the rabbit to take a comfortable position and then covering him with the wool and fitting the leaden mantle a very accurate exposure of any duration could be given. The *x*-ray apparatus included a 10 in. Apps coil, and the tube chosen was of medium hardness, and of very steady resistance; it passed, under the conditions of the experiments, a current of between 0·4 and 0·5 milliampère. At the distance at which the heads of the animals were always placed an exposure of about twenty-five minutes was required to administer a Sabouraud dose.

Owing to the death of two of the rabbits from accidents, only four were left for the experiments. Of the remaining animals:

F died five days after the first exposure, having lost 1 oz. (16 to 15) in weight.

D had three exposures; he fell in successive weeks from 15½ oz. to 13½ oz. Nine days after the last exposure he died.

E had two exposures; he fell in weight from 15½ oz. to 11 oz. in two weeks, when he died.

A had three exposures; he weighed at first 17 oz., then in successive weeks he weighed 17½, 16½ (exposures stopped), 18, 19½, 20½, when he was killed.

All the rabbits having unfortunately died except the rabbit A, this one only was left for examination. He should have been killed twenty-one days after the last exposure, but it was noticed that the left iris which had been brown was becoming grey, and as this suggested an analogous fatty degeneration to the arcus senilis of the human eye, it was decided to await further developments. Though the right side of the brain was exposed, the left eye was the first to show changes. An *x* ray epilation and dermatitis of the right side of the snout had been gradually taking place. On the forty-fourth day after the first exposure the left iris was completely grey. Five days later a grey patch 1 mm. broad was seen in the right iris, and in five days this had increased to 4 mm. At this time Dr. A. Sinclair, Assistant Ophthalmic Surgeon to the Royal Infirmary, Edinburgh, made an ophthalmoscopic examination, but no changes other than the fatty degeneration of the irides were observed. At this day, the fifty-fourth, the animal was killed and the brain carefully dissected out. The left or unexposed half was decidedly larger than the right or exposed half. The brain was fixed with formaldehyde and mounted in paraffin, and twenty-six sections (coronal) of the ascending parietal and the ascending frontal convolutions were cut. Each section was mounted complete in order to compare as far as possible corresponding parts of the brain. Twenty sections were stained with haematoxylin and van Giesen's stain, the remaining six with thionin. (Professor R. F. C. Leith, who kindly examined some of the sections, suggested that in future experiments some of the more special stains should be employed.)

On microscopic examination of the two sides it was noticed that in some of the sections

(1) That the large pyramidal cells on the exposed side were not so well developed as on the unexposed; (2) they were more vacuolated, and had not stained so well; (3) they were not quite so numerous.

Objection, it was pointed out, might be made that it was impossible to be sure of comparing corresponding areas, that the difference in staining might be due to the differing penetration of the fixing reagent, and that irregularity in the thickness of the section might account for change number three. Professor Leith, of the Birmingham University, expressed the opinion that the blood vessels on the exposed side were slightly smaller than on the other side, though they showed no other change, such as proliferation of the endothelial lining. There were no changes in the other brain cells, the axis cylinders, or dendrites.

Conclusions.

Owing to the deaths of all the animals experimented on save one, no corroboration could be obtained of the slight microscopic changes observed in Rabbit A. This rabbit should also have been killed on the twenty-first day after the last exposure, instead of which he was not killed until the fortieth day. No conclusion could therefore be drawn as regards microscopic changes (special nerve stains should be employed in future). There were some undeniable gross changes; for example, the difference in size of the two halves of the brain, the fatty degeneration of the irides, both in Rabbit A, and the loss in weight of all the animals during the exposures and the recovery in weight of Animal A after the exposures were stopped. It would therefore seem highly desirable that further investigation of this subject be made.

References.

[1] *Arch. d'élec. méd.*, No. 185. [2] *Arch. gén. de méd.*, juillet, 1909.

DISCUSSION.

Dr. Leopold Freund (Vienna) said that the experiments were very interesting on physiological grounds, but were made upon rabbits or upon very small animals, and for that reason their value with regard to the human subject was vitiated. Although he had been working with *x* rays for fifteen or sixteen years, he (Dr. Freund) had never seen one injurious effect of *x*-ray treatment so far as the brain was concerned. The question was an important one, not only with regard to treatment in the region of the skull but also in the joints. He had often treated osteo-arthritis with the *x* rays with very good results, and he had never seen any ill effects upon the bones.

Mr. Thurstan Holland (Liverpool) agreed with Dr. Freund. These experiments upon small animals were interesting purely as experiments, but they had no bearing upon ringworm treatment and its possible consequences in the human subject. In Liverpool during the last few years he had had large numbers of cases of ringworm under his care. They were treated sometimes with measured doses, and at other times without measured doses, and there had never been an accident of any kind, although certainly by now sufficient time had elapsed for accidents to be known if they had occurred. He preferred, however, not to treat very young children in this way, and, indeed, they were easier to cure by other means. But in the case of children the bones of whose skulls were fairly well formed, his feeling was that there was not the slightest risk of injury to the brain or bone. He suggested that a better plan than the one followed by the authors of the paper would be to try some experiments upon adult animals with very massive doses, and then to examine the brains microscopically to see whether they were affected.

Dr. H. D. McCulloch (London) said that the action of these molecular agents upon nerve tissue and brain matter was most important, not so much in view of the supposed danger when these rays passed through the skulls of infected children (now generally accepted to be without danger or risk), but on account of the functional controlling power of the nervous system over all the bodily functions. M. Sicard, of Paris, was, he believed, the first to undertake research in this direction upon the brains of monkeys, but he did not seem to have succeeded in obtaining the pathological changes one would expect. He (Dr. McCulloch) undertook in 1907 to inquire into the effects of the *x* rays upon the brains of mice, and obtained many kinds of neurological changes resulting in paralysis of groups of muscles and sensory paresis changes which they did not long survive. But histological examination of the tissues was difficult to obtain. The distance of the source of *x* ray energy or radium from the site of the application was a factor to be considered.

Dr. E. S. Worrall (University College Hospital) said that he also had never seen any ill effect follow *x*-ray application in cases of ringworm. He had always avoided treating very young children, and he did not think it advisable to play over an area that was not protected by bone. The youngest he had treated was 4 or 5 years of age.

Dr. A. Howard Pirie (St. Bartholomew's) said that he had conducted an experiment which went to show that the surface of the brain received only one-fortieth part of the dose received by the surface of the scalp under treatment for ringworm. He cut out a square inch of scalp and skull from a cadaver, and placed it against the glass of the *x*-ray tube. This piece of scalp and bone measured exactly two centimetres in thickness, and a Sabouraud's pastille was placed behind it—that is, two centimetres from the glass of the tube. The pastille was kept dry by means of a layer of gutta-percha tissue. It was thus placed at the correct distance for Sabouraud's method, and was exposed to the *x* rays from the tube while five pastille doses were given from the tube to a child for ringworm. Thus if the rays falling on the pastille had not been filtered the pastille ought to have turned a very deep brown, whereas it only turned to a tint half-way between the A and B tints. That was to say, ten times the normal Sabouraud exposure would have turned the pastille to the B tint. Calculating the power of the rays according to the square of the distance, the surface of the skin of a child's scalp, if protected by two centimetres of extra scalp and bone, would require forty times the normal Sabouraud's dose to cause epilation. It must be remembered, also, that the surface of the brain was still further off than the surface of the skin, and this still further reduced the quantity of the *x*-rays received by the brain.

(In reply to Dr. Lewis Jones, Dr. Pirie said that the skull was that of an adult, but he did not think the difference in thickness from that of a child's was very great.)

Dr. W. Ironside Bruce (Charing Cross Hospital) pointed out that the assumption that only one-fortieth part of the dose was given through the skull depended upon the further assumption that the Sabouraud pastille was actually turned by the *x* ray. It might be that other radiation from the tube turned the pastille one-fortieth, while all the time one might be giving the brain a very efficient *x*-ray dose. They knew, at all events, that the *x* rays did penetrate the skull in considerable volume and radiograms were easily obtained through the skull.

A Member said that there might be in certain cases a definite increase in the number of exposed cells in the central nerve after a small dose of the *x* rays, and, in that case the nervous system might actually be benefited rather than injured.

The President said that the fact that the *x* rays went through the skull was one that admitted of no doubt whatsoever. But whether the quantity that passed through the brain when a patient was treated was injurious or not raised a difficult and rather alarming question, in view of the number of children who were treated in this way for ringworm. Not one of the speakers, however, had been able to furnish any definite example of injury. There was another reassuring bit of evidence. The early workers with the *x* rays must have had their brains very severely irradiated for days and weeks, but, so far as he knew, there had been no genuine instances of nervous disease follow this continuous exposure. Therefore he hoped that the treatment of ringworm might go on successfully without any untoward happening.

THE RELIEF OF PAIN AND DISCOMFORT BY MEANS OF HIGH-FREQUENCY CURRENTS.

By W. F. Somerville, M.A., B.Sc., M.D., F.R.F.P.S.,
Medical Electrician, Western Infirmary, Glasgow.

At the present day the subjects discussed at our Sectional Meetings are usually either of a purely scientific nature or are connected with methods of diagnosis through the instrumentality of the *x* rays. The members of this Section, however, are not merely scientists pure and simple, they are men possessed of medical degrees, whose training had in view the relief of suffering among mankind. I feel, therefore, that occasionally reference should be made to the means at our disposal for assisting the essential work of the practitioner, namely, the relief of pain and discomfort in our patients. The older methods of electrical treatment, such as the continuous and interrupted currents, high-frequency and static electricity, should not therefore be allowed to lose their place in our discussions.

Let me for a few minutes give you some of my experiences in connexion with high-frequency currents, a method of treatment I have abundantly practised for over eight years (I refrain from quoting notes of cases, as they would prove wearisome). This important means of treating patients has suffered, like many others, from being at first unwisely boomed, taken up and employed by unqualified persons, and then allowed to a great extent to drop into disuse. But after eight years of careful study of the influence of high-frequency currents, in a great variety of cases and in a great number of men and women of all ages, I am more than ever convinced that in them we have at our disposal a valuable means of alleviating many troublesome affections, some of which cannot be relieved in any other way. Let me refer briefly to some of these conditions.

There is first of all the large class of people who suffer from neuritis or various neuralgic pains more or less severe in different parts of the body. With the exception of opium and its various preparations, relief cannot be obtained by drugs, whereas high-frequency currents carefully applied may secure comfort, if not cure. It has fallen to my lot to cure many cases of neuritis affecting the sciatic nerve where pain was due to neuralgia of the nerve itself and where there were no complications, such as adhesions of the sheath or rheumatoid arthritis of the hip-joint. Neuralgias of the intercostal nerves, the great occipital, trifacial, and even of the lingual nerves, I have frequently seen mitigated in their severity, if not cured, by the application of high-frequency currents given generally and locally. Perhaps the most frequent seat of neuralgia is in the arm on the outer side, the pain running down to the elbow-joint, and due to an affection of superficial branches of the circumflex or of the musculo-spiral nerves. I have treated many of these cases, both in medical men and others, and in only two have I failed, and in these two opportunity was not afforded me of continuing the treatment for a sufficiently long period of time. I have notes of these cases months and years after the attack and the treatment, and have been delighted to find that the cure in almost every case has been permanent.

The pain that frequently persists after fracture or sprain readily yields to high-frequency massage.

I have already reported the results of high-frequency treatment in patients suffering from insomnia, and I may repeat that I am still unaware of any better means of restoring sleep than by these currents. They seldom fail. Drugs, of course, will produce sleep, but they give rise frequently to evil results, and sometimes the cure is worse than the disease. The milliampèrage must be high if cure is to be effected, especially if the insomnia has been of long duration.

It is well known that boils and enlarged glands, especially in the cervical region, yield to high-frequency currents applied locally, and the same may be said of ulcers on the extremities. In expert hands there is not the slightest danger connected with these currents, which cannot always be said of the *x* rays.

Constipation, too, may be successfully combated by means of the local application of high-frequency currents to the abdomen. The abdominal muscles are made to contract rhythmically, and it is probable that the muscles of the bowel may also be acted upon in the same fashion. Atony of the bowel, dilated stomach, and mild cases of mucous colitis are also benefited, especially when the currents are applied through the medium of a tongue and a rectal electrode.

The incontinence of urine of a functional nature in children, as a rule, yields to high-frequency treatment directed to the hypogastrium; while haemorrhoids and fissure of the anus can frequently be cured by rectal electrodes without surgical interference. Other functional

conditions, such as chorea and spasmodic wry-neck, are also overcome by high-frequency currents, chiefly by the employment of electrical massage.

A few years ago I published a number of experiments showing that high-frequency currents had a marked effect in raising the peripheral temperature on the surface of the body, especially in the extremities. Dilatation of the peripheral blood vessels, in addition to improving the local circulation, diminishes resistance to the cardiac systole, and hence is beneficial in lessening undue contraction of the arterioles and the strain which this condition throws upon the heart.

By numerous experiments I have also shown that these currents have an undoubted influence in encouraging elimination of waste products from the kidneys, bringing about a normal ratio between uric acid and urea excretion. A better metabolism within the human economy occurs, and as a result increased appetite is produced and the patient puts on flesh.

Among the various affections of the skin, psoriasis, eczema, and acne yield frequently to the application of high-frequency currents by means of the brush discharge, or of a glass electrode connected with the top of the resonator.

I may report also that the use of high-frequency currents, both locally and generally, in cases of muscular rheumatism and lumbago, and in rheumatic affections of joints, when there is no rheumatoid arthritis, gives pleasing results. Even in rheumatoid arthritis pain may be sometimes considerably alleviated.

Then there is the large class of neurasthenics who derive undoubted benefit from high-frequency treatment. Perhaps suggestion may be responsible for part of the effect, but so many able-bodied men and women free from all signs of ordinary neurasthenia, but nervously overtired through overwork, have shown such improved nerve tone that I am reduced to the conclusion that there must be more than mere suggestion at the root of the improvement. For people who are busily engaged at their work during the day it is of the greatest advantage to be able to obtain an increase of nerve energy in their own city, without having to relinquish their work and go from home for an extended holiday.

It can easily be understood that in nervous affections, where tissue change has occurred in the nerve substance, especially in that of the spinal cord, little or no benefit may be expected, and yet accompanying those serious nerve lesions there is usually a number of symptoms of a more superficial nature which are considerably relieved by high-frequency currents.

Let no one say, therefore, that high-frequency currents have had their day, or have been weighed in the balance and found wanting. Those who make such statements have either failed to investigate these cases sufficiently thoroughly or have pursued the treatment with insufficient care and determination. The ordinary routine practice in hospital, where patients are handed over to a nurse who knows nothing more than how to turn on the switch, is most unsatisfactory and unscientific. This is even dangerous, since these currents are capable of doing harm when improperly applied.

General practitioners sometimes complain that their patients do not derive much benefit from high-frequency treatment; but on inquiry it is usually found that the fault is due to themselves, for having placed their patients at the mercy of some bath attendant or unqualified person as little capable to apply electricity as to perform a major surgical operation. It is a misfortune both to individual patients and to the reputation of electrical methods that ignorant persons are permitted to carry out electrical treatment indiscriminately and without skilled medical supervision. I claim that no one should be allowed to treat patients electrically except those who have obtained a recognized medical qualification. In the hands of a qualified and expert electro-therapeutist high-frequency currents can be made to accomplish most gratifying results in the way of relieving pain and promoting comfort in many sufferers. The more I deal with high-frequency currents the more I am convinced of their efficacy and beneficial influence. To say that their day is past is to confess ignorance of the subject and due to a failure to master the detailed application of this valuable method of treatment.

DISCUSSION.

Dr. Samuel Sloan (Glasgow) said that Dr. Somerville's paper might appear to some to be a glorification of high frequency as a universal panacea, but in reality his statements were very modest. High frequency had passed through several phases. In the beginning it was boomed as capable of successfully treating every disease. When he (Dr. Sloan) began it he had something like that feeling. There followed a phase of scepticism, in which high frequency fell into some disrepute, but now, speaking for himself, he had reached a stage at which he was confident of the efficacy of the treatment. For two or three years he studied the physiological action of these currents, and he came to the conclusion that in cases of cardiac debility small doses of autocondensation acted as a tonic, and that in cases of nervous debility large doses acted as a sedative. These high-frequency currents by autocondensation ought to produce a certain amount of neuro-muscular fatigue, and if they did not produce this—short of producing exhaustion—they probably did no good at all. If, after an application of high frequency, the patients kept quiet on a couch they received an amount of benefit proportional to the neuro-muscular fatigue which they had suffered. The value of high frequency in certain conditions of the gastro-intestinal canal was seen in increase of appetite and removal of constipation. To any one who had tried these currents and had been disappointed with them he would say this: High-frequency currents were tonics. They all had their special tonics, but they knew that the use of a particular tonic would often have no effect. Tonics were not applicable to all cases, and it might be that something was needed in association with the tonic. Change of air, they knew, would sometimes do good, and at other times it would do harm. They had had patients who had gone away on holiday and had returned without being in the least improved. But if they would have a tonic in the shape of a course of high-frequency currents before going away, the holiday might do them a great deal of good. With regard to the effluve, for a year or two he refrained from using it. He possessed great faith in it to begin with, but not afterwards. His disappointments were due to the fact that he had used it as an electrical application. When he used it as a thermic application and a counter-irritant he found that he got very good results. Lately he had been using it in certain spinal conditions, and had found the ataxia and the muscular irritability diminish.

Dr. C. F. Bailey (Brighton), referring to Dr. Somerville's condemnation of the practice of allowing nurses to administer high frequency, said that he had found in certain cases that the high-frequency treatment carried out by an unskilled person, such as a nurse, was of considerable benefit. One case under his care presenting more or less the symptoms of progressive muscular atrophy certainly improved under high frequency thus applied. He had found the effluve of great value in many cases of brachial neuritis, and pain inside the knee also yielded to this form of treatment. He was still of the opinion that the efficacy of high frequency was largely a matter of microscopical massage of the tissues and a certain amount of battery of the small nerves. He had found cases of brachial neuritis which had been for a long time under drug treatment and massage, and the effluve was the one thing that benefited them.

TYPES OF PHTHISIS FROM THE RADIOGRAPHER'S POINT OF VIEW.

By Alfred C. Jordan, B.A., M.D.,
Medical Radiographer, Guy's Hospital.

My experience of phthisis extends to the examination of more than 1,000 patients during the last four years. With regard to the early diagnosis, in my experience every case in which there are definite physical signs, however slight, can be demonstrated by an *x* ray examination, and the exact extent and distribution of the lesion can be shown. Many cases which show no definite physical signs can be similarly revealed by an *x*-ray examination. There are a few early cases with no physical signs where the positive diagnosis of phthisis depends upon the discovery of tubercle bacilli in the sputum, or upon a positive tuberculin reaction. There are other early cases in which

physical signs are purely bronchial in character—for example, crepitant sounds produced in the small bronchioles. In many of these cases an *x*-ray examination will reveal a definite lesion in the lungs, but a few are encountered in this category in which the lungs appear perfectly normal. To state the case plainly, it appears that a catarrhal lesion confined to the air tubes gives rise to no increase of density of the lung tissue, and hence causes no abnormal want of transradiancy. As soon as congestion or fibrosis appears, even in a small degree, a want of clearness is produced and gives rise to the appearances characteristic of the disease. We may thus have acute bronchitis without any radioscopic change.

In examining the chest for phthisis we note, first, the cardiac shadow. It is very common to find the heart of phthisical patients to be small, especially the left ventricle. This is frequently the natural condition of the heart in persons who are liable to become consumptive, such persons being of a feeble, non-muscular build. The advent of pulmonary tuberculosis leads to an accentuation of the want of muscular development of the limbs; the left side of the heart, having less work to do, becomes still further reduced in size and in muscularity. The heart thus becomes almost a symmetrical organ; it is narrow, and is placed vertically, or almost vertically, in the thorax.

We next observe the diaphragm. In phthisis the diaphragm is usually raised on the affected side, and its movement with respiration is considerably restricted on the affected side. This restriction is very obvious in unilateral phthisis. When both lungs are affected the diaphragm moves deficiently on both sides, and is often practically immobile.

With regard to the lungs, phthisis cases, from the point of view of the *x*-ray examination, fall broadly into two classes: apical phthisis and fibroid phthisis. An apical lesion is shown by an impairment of transradiancy at one or both apices. This impairment is not uniform, but is blotchy or mottled, and does not pass imperceptibly into the healthy lung; there is a more or less defined, though irregular, margin separating the consolidated from the normal lung. On deep inspiration the normal lung becomes clearer, and the contrast between it and the consolidated lung at the apex becomes still better defined. A phthisical cavity is seen as an irregular clear area surrounded by a dark area of congested lung. The appearance of any particular cavity varies from time to time. When full of phlegm it is usually far less clear than after the cavity has been emptied of sputum by an attack of coughing.

The appearance of an apical lesion gives no indication as to the state of activity of the tuberculous process. An old healed apical scar throws a shadow which is indistinguishable from that of a recent active lesion. The methods which have been suggested to differentiate between a congestive tuberculous lesion of the apex and a healed cicatrix are, in my experience, quite unreliable. We have thus usually to confine ourselves to a statement of the extent and position of the lesion, and of the degree of movement of the diaphragm, while it must be left to the pathologist to ascertain the degree of activity of the disease.

The second main type of phthisis I have deliberately classed under the general name of "fibroid phthisis." There is normally at the root of the lungs a certain amount of opacity. This consists usually of a band of shadow approximately parallel with the margins of the heart; from this band shadows radiate for a short distance into the clear pulmonary area The degree of this radiating opacity which may occur in health is very variable in individual cases. On the whole, it grows more distinctly visible with advancing years. The radiating shadows may pass out almost to the periphery and down almost to the base in a patient in whom there is no suspicion of disease of the lungs. When the linear shadows are in part converted into mottled patches, or when they are accompanied by mottled patches, then we are certainly dealing with lungs which are affected by disease, and the greater the amount of mottling the more extensive is the disease. With advancing disease the mottled areas coalesce, producing blotches of varying size. In progressive fibroid phthisis the central opacity at the root becomes greater in size and density, so that in fairly advanced cases there are large opaque masses at the roots of the lungs. In a typical case of fibroid phthisis the radiating mottling is most intense at the roots, diminishing toward the base and toward the periphery, and diminishing upwards toward the apex, which either remains clear or is the part least affected. It is not uncommon, however, to find the apical and the fibroid type combined. In these cases the radiating mottling diminishes from the root upwards, but increases again at the apex.

Coming now to bronchiectasis, the author has examined some dozens of patients sent to him with the diagnosis of bronchiectasis. These cases have been found to be of two kinds. First, those in which the lungs have appeared normal. There is no doubt that in these cases the correct diagnosis was septic bronchitis, and not genuine bronchiectasis. Secondly, cases which showed the appearance typical of fibroid phthisis, that is to say, dark masses at the roots with shadows radiating from them. This group includes many cases where there was definite clinical evidence of bronchiectatic cavities. It is certain that the tubular cavities which frequently occur in bronchiectasis are so densely surrounded by fibrosed and congested lung that the nett appearance is one of increased opacity, the cavities, as such, being invisible to the *x*-ray examination. The author has observed two cases only in which bronchiectatic cavities have been definitely visible on the fluorescent screen; in one other case the cavity was due to a carcinomatous stricture of the oesophagus with a perforation communicating with the root of the right lung. A bismuth emulsion was given to the patient to swallow. At the middle of the oesophagus there was an obstruction, and while a thin stream of the emulsion ran through to the stomach, another stream ran horizontally to the right and converted the clear cavity at the root of the lung into a dark area. Within a quarter of an hour the patient coughed up a quantity of sputum in which some of this bismuth emulsion was present.

In old fibrosis the whole or the greater part of the lung is opaque and the heart is usually drawn toward the opaque side; the heart is frequently completely lost to view in the opaque fibrosed lung.

In emphysema the barrel shape of the chest is represented by the position of the ribs. They are more horizontal and wider apart than normal. The expanded lungs are more transradiant than normal, and any accompanying foci of pulmonary tuberculosis stand out in relief. Hence phthisis is very readily detected in the presence of emphysema, although clinically, emphysema especially when accompanied by bronchitis, frequently makes it impossible for the physician to determine whether phthisis be present or not.

The diaphragm is depressed on both sides in emphysema. The cardiac shadow is usually vertical and very long. This is in part due to the low position occupied by the diaphragm, and in part to the circumstance that the heart, being pressed upon by the expanded lungs, is caused to revolve upon its axis, the apex turning forward.

In pleural effusion it is important to make a careful examination of both lungs, particularly the apices, as it is very common to find an early tuberculous lesion. For this examination the patient must always be in the vertical position, and in case the patient has been kept lying in bed he should be caused to sit up for fully twenty minutes before the examination to enable the fluid to make its way to the bases of the lungs. We must bear in mind that a large pleural effusion causes compression of the lung above it, so that the lung is never quite clear above an effusion of considerable size. In all cases of pneumothorax and of hydro-pneumothorax or pyo-pneumothorax we must also be on our guard lest we fail to notice the presence of phthisis.

Other conditions frequently arise in which an *x*-ray examination at once clears up a doubtful diagnosis. Thus pneumonia, acute or chronic, is frequently found to be, in fact, due to phthisis. An abscess of the lung may also give rise to an erroneous diagnosis. An abscess usually takes one of two distinct forms—either it is seen as a dark area with ill-defined outline gradually merging into the normal lung, or as a cyst-like collection of fluid (a round dark area) or of fluid with air (a round area, the lower part dark, the upper part clear, with a sharp horizontal line of separation). These cyst-like collections of pus, or of pus and air, are contained in a dilated bronchial tube

Small collections of this kind have been shown to occur in acute pneumonia without giving rise to any special signs or symptoms. They disappear without ever giving any indication of their presence beyond their discovery by *x*-ray examination.

New growths in the chest are frequently diagnosed when the condition is, in fact, due to phthisis; and conversely, phthisis is frequently thought to be present when there is a new growth invading the chest. The appearances of new growth are extremely variable. The opacity is often very considerable, and its distribution is, as a rule, unlike that seen in phthisis. Irregular masses occur, some of which may have well-defined rounded margins. The growth may start from the mediastinal or bronchial glands, from the pleura or from the lung itself; it may, of course, be either primary or secondary. It is surprising to find that thoracic diseases so dissimilar as phthisis and aneurysm of the aortic arch may be confused, yet this frequently occurs, and an *x*-ray examination reveals the error at once.

In conclusion, it is now beyond any possibility of dispute that the Roentgen ray method is an indispensable diagnostic aid in all pulmonary diseases, and that it is capable of demonstrating the exact position and extent of the pulmonary lesion, even in very early cases of phthisis. It is none the less necessary, however, to make careful clinical and pathological examinations to ascertain the condition of the patient, and the degree of activity of his lesion. Thus, after a long course of sanatorium treatment, when the patient appears to have completely regained his health and weight, being entirely free from pyrexia, and failing to respond to the tuberculin test, while there are no longer tubercle bacilli in the sputum, an *x*-ray examination may reveal practically the same lesion as was shown before the course of treatment, and care must be taken to explain to the physician the fact that a healed fibrous cicatrix gives rise to a shadow in the lung very similar to that due to an active congestive lesion. This fact may be demonstrated in the *post-mortem* room.

SOME POINTS IN THE X-RAY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

By G. Harrison Orton, M.A., M.D.,

Medical Officer in Charge of *X*-Ray Department, St. Mary's Hospital; and of the *X*-Ray and Electrical Departments of the Royal Free Hospital.

Though much has now been written concerning the *x*-ray diagnosis of pulmonary tuberculosis, there is still a great deal of uncertainty as to the value of this method of examination. There are some who maintain that it gives no information which cannot be obtained by other means; others (possibly a too enthusiastic few) that it is the most valuable means of diagnosis at our disposal. In other words, no unanimity of opinion exists, and it is certain that a very small proportion of suspected cases are as yet so examined.

Now, every one who has any knowledge of this method is familiar with the typical mottled shadowing which exists in definite cases of pulmonary tuberculosis, and it has been urged that any case which has advanced to such a degree as to show this shadowing could be diagnosed—at any rate, in expert hands—by other, and perhaps simpler, means. One could produce a large number of skiagrams showing this shadowing in various stages, but it is evident that they cannot represent the disease in its earliest stage; and although I am certain that a fair number of cases may advance to such a stage and yet remain undetected, it is not my intention to discuss that question to day, and I intend rather in the short time at my disposal to bear upon certain other phenomena which are to be observed in cases which show no mottled shadowing on the screen or photographic plate.

Before going further, I wish to emphasize most strongly, as I have always done, the importance of regarding the *x*-ray examination as an aid to diagnosis only, not a method to be used in place of, but in conjunction with, others at our disposal. If this be done, it must be admitted, I think, that a definite conclusion may be arrived at in many cases which would otherwise have remained doubtful.

First, then, a few words about apparatus and technique. A stand for examining the patient in the upright position is essential. There are several of these on the market, some good, some bad—the one I employ I have had specially made to my own design. The essentials are that the tube can be easily moved up and down and from side to side; this can be accomplished readily by a system of counterbalancing. The tube must be completely enclosed in a box lined with protective material; this is necessary for the protection of the operator, and also serves to cut off all extraneous light from the tube. The tube-box must be provided with some form of diaphragm which can be operated easily from a distance; the one I employ is provided with a long arm which ends in a small handle just below that used for moving the tube-box. This is easily operated by the thumb, so that with one hand one is enabled to move the tube in any direction and also to open and shut the diaphragm. In front of the frame carrying the tube-box there is a frame on castors with a canvas back. On this the patient stands, and I have had this portion made separately so that the patient can be moved away easily from the tube when it is required to make a so-called teleroentgenographic examination. From arms on the top of this frame hangs the screen, which is also counterbalanced, and so remains in any position in which it is placed. Being able thus to do all necessary movements of the apparatus with one hand, the other is free to operate the resistance, which should be within easy reach, as it is essential to be able to vary the amount of current passing through the tube without taking the eyes off the screen. Lastly, the resistance, etc, must be so arranged that any current from the minimum to the maximum can be gradually increased or decreased without any jerking or flickering of the light from the tube.

And now a few words about the preparation of the observer. It is essential that the room in which the observations are to be carried out be made quite dark. Examinations with a fluoroscope in a light room are absolutely useless. All valve tubes, etc, must be covered, so that when the apparatus is working as little light as possible be emitted into the room. With a little care this can be reduced to practically *nil*. The observer must remain in the dark, or at any rate in semidarkness (if any light is used a dim blue one seems to be the least likely to upset the luminous sensibility) for at least ten minutes before commencing the examination. This is a matter of the utmost importance, and a satisfactory examination cannot be made if it is disregarded. Beclère, of Paris, who has made a special study of this point, says: "My own experimental observations have proved by precise measurement that after ten minutes in the dark the sensibility of the retina to the light of the fluorescent screen has become fifty to one hundred times greater than it was on emerging from broad daylight. It is about two hundred times greater after twenty minutes' observation, and after a longer interval it still increases." I have dwelt somewhat on this point because although the importance of it is beginning to be recognized yet it is frequently disregarded.

With regard to the position of the patient, I always prefer, when possible, to make the examination with the patient standing up. If the patient is unable to stand, the next best position is sitting on a bicycle saddle, with the legs hanging down on either side. When sitting on an ordinary chair or stool the diaphragm movements cannot be properly observed, and are apt to be interfered with. However, in the early stages now under consideration, practically all patients are able to stand.

Examination of Apices.

I have not time to go into the *x* ray appearances to be made out on examining a normal chest, with which I expect most here are familiar. Suffice it to say, then, that with the exception of certain shadowy lines, which are always seen on either side of the mediastinal shadow, the pulmonary image is clear from apex to base. Now, although clear, there is a very decided difference in the translucency, or, as it has been termed, transradiancy of the lungs, during deep inspiration and expiration respectively. The greater amount of air contained in the lungs during deep inspiration renders them more permeable to the rays—a fact which is evidenced by the brightening or increased fluorescence of the screen during this act. Now a failure to brighten of one or other of all apices during deep inspiration is one of the earliest signs of pulmon-

tuberculosis, and can be observed long before any mottled shadowing is to be made out on the screen or photographic plate. In order to study this phenomenon satisfactorily it is necessary to pay very special attention to the details of technique. In the first place, the luminous sensibility must be as acute as possible, for reasons which I have already mentioned. In the second place, it must be possible so to adjust the rays that the area under examination is barely illuminated. And, lastly, a ray of low penetration should be employed. It will be quite easy to understand that, with a large amount of current passing through a tube emitting rays of high penetration, such as is frequently employed for screen examinations, small differences in density between the apices and also slight changes in translucency between deep inspiration and expiration respectively would be quite unobservable; and equally easy to understand, that unless the luminous sensibility be acute, nothing could be seen at all with the tube adjusted in a manner such as I have described. If all the necessary precautions be taken, however, there will be no difficulty in many cases of demonstrating this failure to brighten, even to the untrained eye, though there are, of course, other cases in which the changes may be visible to the trained eye only.

It may frequently be noted on screen examination that one apex appears somewhat dimmer than the other, at times no doubt due to an unequal muscular development on the two sides. To this sign alone, however, I do not attach any importance, but a failure to brighten is quite a different matter, and means deficient air entry. I need scarcely add that this examination must not be considered complete until the apices of both the upper and lower lobes of both sides have been carefully examined and the facts noted.

It has long been known that a lesion as a rule does not start at the extreme apex, but at a point about 1½ in. or so below this—a fact which was pointed out by Dr. Kingston Fowler many years ago, and which can be demonstrated frequently with the aid of the rays.

We will now proceed to the discussion of the movements of the diaphragm.

About one year after Professor Roentgen's discovery Dr. Williams of Boston pointed out the importance of the study of the diaphragm movements, and the limitation of movement so frequently observed in cases of pulmonary tuberculosis has frequently been referred to as "Williams's sign." Now, although the fact that a limitation of movement of the diaphragm does take place is admitted by most, if not all, observers, there is nevertheless a great diversity of opinion both as to its value, the stage of the disease at which it appears, and its constancy, and I shall hope to learn something to-day from the observations of others.

My own opinion is that this limitation of movement appears at a very early stage, and is often coincident with the early failure of an apex to brighten already referred to. In some cases it may be very marked, the diaphragm appearing to be practically fixed; in others it may require somewhat careful measurements to detect it. With regard to the constancy of this sign, I should not like to say that it is to be observed in all cases, though I think it possible it may be present in all at a certain stage of the disease, but may have passed off in some before the case comes under observation. As the disease tends to become arrested, cured, or chronic, this sign undoubtedly passes off, and in certain cases the range of movement on the side most affected may equal or even exceed that of the side less affected. It is this variation in the range of movement with different stages of the disease which no doubt accounts for many of the discrepancies of opinion as to its value and constancy, the sign being more or less marked or even absent according to the stage at which the case comes under observation. Here for a few moments let us return to the failure of an apex to brighten, the variations in which to some extent are comparable with those of the diaphragm. I have mentioned that when the disease was active the failure to brighten was not absolutely localized to the region of the commencing lesion, but could be observed over a wider area. In a few cases, with a small amount of shadowing, I have observed that the apex brightened, and I am of opinion that if such a shadow be present and the neighbouring lung brightens well on deep inspiration, the shadow is due to a small lesion which has become arrested.

It is not difficult to understand in the early stages and in non-chronic active cases, that this limitation of movement is part of Nature's means of procuring rest, but that later, when the disease has become arrested or chronic, a certain variable amount of lung tissue having been destroyed, the diaphragm takes on, so to speak, a compensatory movement, in order to enable the remaining healthy lung to do the extra work required of it; and the same argument may be applied to the behaviour of the apices. In the year 1904 Dr. David Lawson published some interesting observations he had made on a series of patients where active disease was present, and again later after they had undergone a course of hill climbing and arrest had been secured. In such cases, he states, "it has frequently been observed that the diaphragm upon the affected side during the stage of active disease moved less freely than on the sound side, but that, as convalescence proceeded and compensatory breathing became established, the diaphragm gradually altered the character of its movements, until at length the side which exhibited impaired movement came to show a movement which equalled or even surpassed that of the other side, the limitation of movement thus corresponding to the period of activity of the disease.

I shall be interested to hear if there are any present who have carried out observations on similar lines, for in large general hospitals, where most of my work has been done, it is often not easy to keep an eye upon the cases in a way that can be done in a sanatorium. In many points my own observations correspond with those of Dr. Lawson. The statement, however, that the limitation of movement corresponds with the period of activity of the disease holds, in my experience, up to a certain stage only, for in very chronic cases an exaggerated movement may be present in cases in which the disease is undoubtedly active. In such stages of the disease, however, the diaphragm movements are not of such import, as there are many other signs present on which to base a diagnosis.

Before leaving this subject, I should like to point out that the movements on both sides during ordinary and during forced respiration should be carefully noted, and, further, measurements should be made with the screen both on the front and back of the chest, for it has been noted by several observers that the amplitude of movement of the diaphragm varies with the situation of the disease, being more limited posteriorly when the lesion is on the posterior part of the lung, and *vice versa*.

There are various other alterations in the movements, and alterations in the shape of the dome of the diaphragm which may be observed in many cases, but it is not my intention to discuss these to day. Some are, no doubt, due to pleural adhesions, but I feel confident that the limitation I have just discussed is not, in the majority of cases at any rate, the result of such adhesions, as has been frequently asserted.

The failure of an apex to brighten and the limitation of movement of the diaphragm is a marked feature in early pneumonia, and in the later stages after the cure of the disease I have been able to watch the gradual return to the normal of the diaphragm movements, which is, as a rule, some considerable time after the disappearance of physical signs. This fact shows the importance of taking all the facts of the case into consideration, as the later stages of a pneumonia might easily be mistaken for tuberculosis if reliance were placed on the *x*-ray findings alone.

I have no time to enter into the subject of the small vertical heart and narrow aorta, so frequently associated with pulmonary tuberculosis, and considered by some to be one of the dystrophies which predispose to this disease, but I hope the few remarks I have made will lead to some discussion which will help towards producing some finality of opinion with regard to the points I have touched upon.

DISCUSSION.

Dr. W. B. KNOBEL (Midland Open-air Sanatorium) thought it a pity that any rivalry should be suggested between *x*-ray experts and physicians. Each appeared to think that his method was the first to show the early

signs. In his (Dr. Knobel's) opinion the early diagnosis of phthisis depended upon the consideration of every possible sign and symptom, and the value of the *x* rays in adding to the evidence was undoubted. He pointed out that the early signs, such as the deficient expansion of the chest, the impairment of percussion resonance, the failure of the apex to light up, and the limitation of the movement of the diaphragm—in a word, the early physical and *x*-ray signs—were surely due, not to the actual lesion directly, but rather to a loss of function of the lung, caused probably by the local action of toxins. Taking a case such as he had indicated, showing these signs and symptoms of infection, it would be found, after treatment had resulted in arrest of the disease, that the expansion of the chest had improved, the resonance had been restored, the apex had a better illumination, and the diaphragm a better movement. But if an *x*-ray shadow were present before treatment it would be present after treatment also, and would be exactly, or very nearly, the same two years after the arrest of the disease. The shadows seen on a plate were of no use at all in the diagnosis of active consumption. It would be ridiculous if he were to show plates illustrating cases after successful treatment, and from the presence of shadows an active disease were to be diagnosed. It was only by the screen examination that the activity of a disease could be detected. He thought he could say that in his experience in every case, or perhaps in nine cases out of ten, the *x*-ray plate showed more disease to be present than could be found by physical examination. The plate was a better means of determining the extent of the lesions than the physical method. An *x*-ray examination would detect the disease, would show that there had been a lesion there when it could not be found by physical means. The same thing applied to cavities which gave rise to no definite physical sign. The point with regard to the inability of the plate to furnish evidence of active disease was one which should be made clear to the general profession.

Dr. C. F. Bailey (Brighton) said that his experience confirmed that of Dr. Knobel with regard to the greater extent of the disease shown by the *x*-ray examination. In cases where physical examination suggested that only one lung was affected, the subsequent examination with the *x* rays showed the other lung to be affected also, while a lung known to be affected was shown to be more deeply affected than was originally believed to be the case.

Mr. Thurstan Holland (Liverpool) thought that it ought not to go forth as an uncontradicted statement that the *x*-ray appearances of arrested disease did not disappear entirely. Dr. Knobel had said that they did not, but he (Mr. Thurstan Holland) had had to do with the diagnosis of pulmonary mischief in many children—pulmonary mischief that was undoubted from every point of view—and in cases in which there had been an eventual recovery he had found absolutely nothing in the chest, as shown in the radiograph, to indicate that any disease had existed at all. He went on to point out that a great deal of their plate work had been done on plates which necessitated time exposures. Many of the so-called facts that were obtained by means of time exposures would have to be altered. Diagnostic test-plates must be taken, without any intensifying screen, in a fraction of a second, and it was perfectly easy to do this with modern apparatus. An important point for consideration was the legitimacy of relying upon the absence of signs. After using plates of highest quality and employing the best technique, were they justified in saying, in the absence of any *x*-ray sign, that the case was not one of tuberculosis? He had had a long experience, and although, of course, it was difficult in one's work to keep trace of patients, he did not remember a single case in which a carefully conducted *x*-ray examination having negatived the suspicions of good physicians, was proved to be wrong by the subsequent history of the patient. He was inclined to think that a very careful negative examination was almost as reliable as a carefully conducted positive one, and that when there was not the slightest evidence of any *x*-ray sign of any sort the future history of the case would yield nothing to justify the suspicion that it was one of tuberculosis.

Dr. James Metcalfe (Bradford) said that it seemed to him that the general physical signs, if not obtained in the early stages, were often ignored. In his opinion this was a very important point, having regard to the early sanatorium treatment of phthisis. There was no doubt whatever that early treatment was adopted after *x*-ray examination much more frequently than after some very early physical signs. There was fairly general unanimity among *x*-ray workers as to the *x*-ray signs about which Dr. Orton had spoken—deficient illumination of the apex and limitation of the diaphragmatic movement—but the differential diagnosis was so very important that too much stress could not be laid upon the *x*-ray method of examination.

Dr. A. Howard Pirie (St. Bartholomew's) said that he had reduced the impeded movement of the diaphragm to three causes: (1) Adhesions about the lungs certainly stopped the movement of the diaphragm; (2) disease in the lung produced a reflex action, showing the need for the inflamed lung to have rest; (3) in the parts where there had been disease the quantity of lung tissue was decreased, and therefore the diaphragm was not required to move so far. Dr. Orton had not referred at all to the glands which one saw so frequently at the root of the lung. These seemed so common that one almost came to regard them as normal among people who lived in towns.

Dr. A. E. Barclay (Manchester) said that his experience in bronchitis and similar conditions was that there was no limitation of movement of the diaphragm. Would Dr. Orton give his experience?

Dr. Orton, in reply, said that he did not know what extent of shadow Mr. Thurstan Holland had seen clear up after the arrest of the disease. It was certainly a fact that little shadows did not clear up. He had not been able to watch individual cases sufficiently long to form a final judgement, but he had seen small areas of the disease represented by the *x* rays when the disease was no longer active. There was no doubt that on this point Dr. Knobel was right. He agreed with what Mr. Holland had said about the uselessness of the intensifying screen in making a diagnosis in a supposed case of pulmonary trouble. The screen was useful for bismuth stomachs, but in chest work the mottling or grain was usually so evident as to vitiate the result. Mr. Holland had asked whether, in the absence of *x* ray signs, the patient could be said conclusively to be free from tuberculosis. He (Dr. Orton) believed in the general sufficiency of a negative *x*-ray diagnosis. Some patients under his care at Victoria Park had some physical signs, but the *x*-ray appearances were absolutely negative. The diaphragm moved well and the apex brightened. In three of them, at all events, subsequent events had proved the correctness of the *x*-ray diagnosis and the absence of anything tuberculous. With regard to Dr. Pirie's analysis of the causes for the impeded movement of the diaphragm, there was no doubt that a few cases were due to very old adhesions, but the bulk of the cases were due to Dr. Pirie's second reason, namely, reflex inhibition, which took place in order to enable the inflamed lung to be at rest. In some of his observations he had noticed rather an exaggerated movement of the diaphragm in chronic cases. In answer to Dr. Barclay's question: in bronchitis, as a rule, there was absolutely no limitation of the diaphragmatic movement, and frequently, unless the case was extremely chronic, there was no mottling. The glands at the root of the lung, as Dr. Pirie had said, were often very prominent in town-dwellers, but he was not at all sure that they were tuberculous. They were black looking, their colour evidently being due to the large amount of coal-dust which found its way into the lungs of those who lived in the great centres of population. With regard to dry pleurisy, he had seen a few cases with some limitation of movement of the diaphragm.

THE VALUE OF SCREEN EXAMINATION IN THE DIAGNOSIS OF RENAL CALCULUS.

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In the *x*-ray diagnosis of renal calculus I wish to insist, in the first place, on the necessity of careful screen examina-

tion, as without it many important points bearing on the diagnosis would otherwise be overlooked.

The advantages of screen examination are:

I. The correct quality of rays for the particular case in hand can be obtained.
II. The kidney triangle can be accurately illuminated.
III. The movement and position of any shadow or shadows can be noted; and
IV. The shape, size, and density of any shadow can be observed, and also whether the object causing it is nearer to the anterior or posterior abdominal wall.

I.—*The Correct Quality of Rays.*

It is obvious that if the rays from a Crookes's tube are not sufficiently penetrating to pierce the body of the patient under examination, one cannot expect to see, much less to radiograph, a calculus. On the other hand, if the rays are so penetrating that they show little or no contrast between the bony and soft parts, many calculi would escape detection. The quality of the rays should be such that the twelfth rib and the transverse process of the first lumbar vertebra are sharply and clearly defined.

The penetrating power of the rays, therefore, must vary according to the opacity of the patient; and this can only be accurately ascertained by screen examination.

II.—*The Kidney Triangle can be Accurately Illuminated.*

If the kidney is in its normal position, the shadow of a calculus, provided the position of the *x* ray tube is properly adjusted, is, in nearly all cases, within an imaginary triangle—called the kidney triangle—one side being formed by a line along the upper border of the last rib, the second by a line joining the tips of the transverse processes of the upper three lumbar vertebrae, and the remaining side by a line making an approximately equilateral triangle.

This area should be clearly illuminated, and free from that mottling, due to gas in the large intestine, which so frequently gives rise to difficulty in the correct diagnosis, especially if the calculus is one which is only slightly more opaque to the rays than the surrounding tissues. This source of error can only be eliminated by careful screen examination and the removal of the cause, when present, by obvious means (diet, aperients, etc), and a further examination made.

III.—*The Movement and Position of any Shadow or Shadows can be Noted.*

A shadow seen in the triangle described, if due to calculus, moves either directly downwards or downwards and slightly outwards along the edge of the psoas muscle, on deep inspiration. If a shadow does not move, or moves downwards and inwards towards the spine, or upwards, or more than two inches, it very probably is not caused by calculus but by other conditions which will be enumerated later. This movement of the kidney on deep inspiration is quite considerable—from one to two inches—and much more than is generally supposed.

Occasionally one finds that the shadow of a calculus, especially in women and on the left side, is obscured by the last rib, so that if a radiograph alone is relied on, it could very readily be missed. Screen examination will prevent this error, for on deep inspiration the calculus comes down from behind the rib and can readily be seen. I have had several cases illustrating this point, which is, I consider, a very important one. Then by screen examination one is enabled to detect with more certainty multiple calculi. I have been able to count as many as seven calculi in one case, no larger than a small pea. On operation seven were found, no more and no less. In this case a plate was taken, and I am quite sure that a confident diagnosis could not have been made from it on account of want of definition from the slight movement of the kidney due to quiet respiration. In the case of multiple calculi, again, they may lie so close together that a radiograph would cause them to appear as one. Screen examination will disprove this, and the surgeon must not be satisfied until he has removed them all.

Then again, if multiple shadows are seen, and they do not all move to the same extent, and in the same direction, relatively to each other, they cannot all be due to calculi. I did not fully appreciate this fact in a case I examined for Mr. Littlewood some time ago. I diagnosed a medium-sized calculus in the pelvis of the left kidney, and several smaller ones in its lower pole. The upper shadow moved downwards and slightly outwards with inspiration to the extent of about 1½ in., but the lower shadows moved downwards to a much greater extent, and distinctly inwards towards the spine. On operation a calculus was found in the pelvis of the kidney corresponding to the shadow seen, but the lower pole of the kidney was free from calculi. At a subsequent abdominal section several calcified mesenteric glands were removed in the position stated, and further *x*-ray examination proved that all the shadows had disappeared. If I were investigating a case of this nature again with my present knowledge and experience I think this error would be avoided. I have had three cases, proved by operation, where shadows were seen in the renal triangle but which I diagnosed as due to calcified mesenteric glands, and not to calculi, on account of their movement downwards and inwards towards the spine. I am quite sure that if a plate only had been relied upon in these cases the diagnoses would certainly have been "renal calculus."

IV.—*The Shape, Size, and Density of Shadow.*

Again, the shape and size of a shadow can be more accurately gauged by screen examination, and may be of help in the differential diagnosis and to the surgeon in operating. By screening from the front as well as from the back it can be determined, in most cases, whether the object causing the shadow is nearer to the anterior or posterior abdominal wall, which fact is of considerable value in forming the diagnosis of calculus. The density, also, of a shadow can be noted, and may be of assistance in some cases.

Small calculi in many instances cannot be radiographed, except with special apparatus, on account of the movements of the kidney with respiration during the exposure. They may readily be seen, however, on the screen, which further emphasizes the importance of this method.

Calculi are opaque to the *x* rays and cast shadows of greater or less density, according to their size, but more particularly according to their chemical composition. As a general rule, one may take it that elements are opaque to the rays in proportion to their atomic weights. Thus pure uric acid has the formula of $C_5H_4N_4O_3$, the highest atomic weights of these elements being 16, oxygen. Flesh and fat are also composed of these elements, so it comes about that pure uric acid calculi are very little more opaque than the surrounding tissues, and when of small size it is almost impossible to demonstrate their presence by radiology. Fortunately, however, very few calculi are composed of pure uric acid alone; nearly all contain other elements, more particularly calcium, which has the fairly high atomic weight of 40. Quite a small percentage of calcium will cause a distinct difference in opacity between a calculus and the surrounding tissues.

By noting the size, shape, and intensity of a shadow of a calculus one can form quite a good opinion as to its chemical composition.

In the second place, I wish to insist, in the accurate diagnosis of calculus by the *x* rays, on the importance of cutting the area illuminated down to its smallest possible dimensions. This point has not been sufficiently appreciated by radiographers in general. This, again, can only be done by proper manipulation under screen examination. The reason of this point is obvious to any one who will take the trouble to study the question even superficially.

We know that the rays coming from a Crookes's tube as they travel through space cannot be moved out of their course by any known means, but when they strike an object secondary rays are generated which travel in all directions. It is these secondary radiations which interfere so much with the diagnosis, on account of the want of definition of the shadow cast by a calculus.

Technique of the Examination.—The patient suspected of renal calculus should for three days be put on a light diet of fish, eggs, milk, milk puddings, etc., and given a vegetable aperient, as liq. ext. cascar. t.d.s. post cibos, ♏v to ♏xv, sufficient to cause two or three loose motions a day. Salines and enemata should not be given, as they have a tendency to the formation of gas in the colon. By these means certain sources of error, which will be mentioned later, can be avoided. On the morning of examination, very little (half a pint of bread and milk) or

no breakfast should be taken. The skin of the lumbar region should be examined for pigmented moles, as these may cause a slight shadow. The patient should be placed face-downwards on the *x*-ray couch with a cylindrical air-cushion under the abdomen just below the costal margin. The *x*-ray tube is placed under the couch in a large lead-lined box, which is free to move in any direction on wheels. On the top of this box is a square opening, the size of which can be rapidly altered by sliding sheets of heavy lead, which answer as a diaphragm. A plumb line can be quickly attached to the box and is so adjusted that the "bob" is vertically over the anticathode of the tube.

The advantages of this position are:

1. Easy manipulation of the screen.
2. The abdominal contents are pressed towards the spine, and therefore closer to the screen.
3. The cushion (*a*) acts as a compressor, lessening the thickness of the abdomen; (*b*) prevents to a large extent the movements of the kidney during respiration—important if a negative is required; (*c*) squeezes out the gas from the intestines over the renal area; and (*d*) puts the mesentery on the stretch.
4. The straightening out of the lumbar concavity thus allowing the screen to be placed in contact with the skin. This greatly increases the definition, as the screen is 1½ in. to 2 in. closer to the object under observation.

Whilst the patient is being placed in position the *x*-ray room should be very dimly illuminated by a blue light placed behind the operator. This makes the eyes of the observer much more sensitive to the fluorescence on the screen, especially if a few moments be spent in absolute darkness. At the side of the couch are placed three switches. The first, when pressed, turns out the blue light; the second starts the motor brake; and the third turns on the primary of the coil. Everything being ready and the apparatus suitably adjusted, a rectangle of lead fuse wire, 2 in. by 3 in., is placed over the kidney area under examination. The tube in its box is then so placed that the plumb line hangs over the centre of the rectangle mapped out by the fuse wire. The plumb line is then removed, the light switched off, and the motor started. After a few moments the rays are turned on, and the screen should be clearly and steadily illuminated. The field of illumination is then rapidly cut down by adjusting the slides of the diaphragm on top of the tube-box to the area mapped out by the rectangle of fuse wire. Shadows are then looked for, and, if found, their movement studied on deep inspiration. If no shadow is seen, the area illuminated should still further be cut down, even to 1 in. square, and further investigation made. By running the tube-box up and down the couch and from side to side the whole of the kidney area can be quickly examined. A calculus which can be quite distinctly seen through a very small diaphragmatic opening rapidly disappears when the opening is enlarged. This point I have demonstrated many times, and it can readily be understood from what I have stated about "secondary radiations."

If a radiograph is required an *x*-ray plate takes the place of the screen and the exposure given.

What are the fallacies and how may these be avoided? (As I have already said, if a given shadow does not fall within the renal triangle and does not move directly downwards or downwards and slightly outwards on deep inspiration, in all probability it is not caused by a calculus.) Shadows not caused by calculus within the renal triangle may be due to:

1. Calcareous mesenteric glands. These frequently move downwards and inwards towards the spine; or many shadows may be seen, some of which are outside the renal triangle: or they may not all move equally or in the same direction on respiration; or they may move more than 2 in.; or they may be shown to be nearer the anterior than the posterior abdominal wall. Some or all of these points would help one to come to a right diagnosis, and I have had several cases of this kind.
2. Calcareous retroperitoneal glands. These would not move on respiration.
3. Foreign bodies, as pills, soybalae, etc., in the intestines. Diet and aperients will avoid these.
4. Calcareous deposits in lower costal cartilages in old people. These either do not move on inspiration or move slightly upwards. If present they are generally in a line following the direction of the cartilage. Screening from the front will clear up the point.
5. Phleboliths have been said to occur, but in my experience I have not found them in the abdomen, although they are quite common in the pelvis of people over 45 years of age.
6. Calcareous deposit in a tuberculous kidney. This in some cases cannot be distinguished from calculus, and I have had three such cases.
7. Pigmented moles on the back. These do not move and can be seen.
8. Mottling of the renal area due to gas in the intestines. Diet and aperients will correct this.
9. Gall stones. These, except in very rare instances, are quite transparent and give rise to no difficulty.

Size of the patient. The negative diagnosis of renal calculus in people over 14 st. becomes of less value in proportion to the increase of weight, and I may here state that a negative opinion should never be given unless the landmarks I have mentioned can be observed and a clear illumination of the kidney area obtained.

During the last two and a half years I have examined over 500 cases for stone in the kidney with the following result:

Positive diagnosis of calculus	90	cases.
Operated upon, and stone found... ...	79	,,
Operated upon, and calcified tubercle of kidney found	3	,,
Operated upon, and no stone found ...	4	,,
Not operated upon	4	,,

Of the 4 cases operated upon and no stone found, in 1 the stone—a small one—was passed a few days after operation by the urethra; in 2 the shadow was evidently caused by a calcified mesenteric gland; and in 1 case no cause for the shadow could be found, and it is still present. Of the other 400 odd cases in which a negative opinion was given, 13 were operated upon, and in no case was stone found. Therefore, out of 99 cases operated upon the diagnosis was proved correct in 92 cases; and if the 3 cases of calcified tubercle of kidney be added, as I think they well might be, and also the case where the stone was passed after operation, we have an accuracy of a little over 96 per cent., which I consider distinctly good.

I claim that with a proper technique the *x*-ray diagnosis of renal calculus is infinitely more accurate than the history of the case, the clinical signs and symptoms, examination of the urine, etc., all put together; but, at the same time, I do not suggest that the *x*-ray examination should come first, but that it should be employed to confirm or negative the diagnosis already made by the physician or surgeon.

Since November, 1907, at the Leeds General Infirmary, no calculus has been removed from the kidney by the surgeons which has not been previously diagnosed by *x*-ray examination. It may be of interest to mention that out of the 90 cases in which a positive diagnosis was given, in 16 cases there were multiple calculi, and in 7 cases calculus was present in both kidneys. In 8 cases in which a negative opinion was given a small calculus was subsequently passed per urethram.

In conclusion, it may be stated that radiography is very accurate in the differential diagnosis of renal calculus; that it is of great service to the surgeon in locating the stone and giving him information as to the size and shape of any calculus present, and also the number he is expected to remove. I think that practically every calculus which requires surgical interference can be detected by radiography in people under 14 st. in weight.

RADIATION AND BIOLOGICAL PROCESSES; WITH SOME REFERENCE TO THE SKOTOGRAPHIC ACTION OF ANIMAL TISSUES.

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On various occasions during the past four years papers have been contributed to the Archives of the Middlesex Hospital by members of the Cancer Research Laboratory of that hospital upon certain phenomena manifested by animal tissues when examined photographically and electrically. Further, animal cells have been exposed to radiation, and developmental changes subsequent thereto have been studied in some detail. These researches were summarized by me in my Croonian Lectures before the Royal College of Physicians last year,[1] but some additional results have been obtained since then which may be of interest to the members of the Electro-therapeutic Section.

It was natural, when commencing my inquiries into a possible relationship between radio-activity and cancer, that I should concentrate my attention primarily on the usual tests—photographic and electrical—of recognized radiations. I found evidence that, under certain conditions, animal substances produce a profound effect upon a photographic plate when exposed to that plate in complete darkness. This phenomenon I ventured to speak of as "skotographic," so as to avoid a judgement upon its nature. Similarly I found, as I believe, evidence that animal substances modify electroscopic leak. Here my results were in part consonant with usual views upon radio-activity, in that certain of the substances in question accelerated leak, but in part were dissonant, for in other instances they retarded leak. In all cases, however, the modification of leak was very small. On the other hand, many of these same animal substances produced a profound effect upon the photographic plate, and this disparity between the degrees of photographic and electrical effect constituted an important difficulty in the way of regarding the results as due to radio-activity.

During the past year Dr. Mottram and I have been carrying out experiments to determine the precise nature of the skotographic substance in the watery extracts of animal tissues, and without going into details which may be found elsewhere,[2] we find that the entire skotographic effect of such watery extracts is entirely to be explained by their formation of minute traces of ammonia. It must not be assumed that this is the explanation of all skotographic action, for the intense blackening of a photographic plate by some specimens of cholesterin gall stone occurs in the complete absence of ammonia from the calculus.

The amount of ammonia necessary to produce skotographic effect is excessively small, and a given specimen may continue to emit such small amounts of ammonia for a long time. Thus we have proved that a calculus mainly composed of uric acid, and removed by Percival Pott, who died in 1788, still gives off ammonia, as determined by Nessler's test, so that a filter paper soaked in the reagent and exposed to the calculus yields a picture very similar to the corresponding skotograph.

It is interesting to note that this ammonia must be in a very simple form of combination in the watery extracts and tissues, for an extract which fails to show the presence of nitrogen by sodium combustion—and it is only simple ammonia salts which react in this way—may have profound skotographic powers.

It appears, therefore, that ammonia formation accounts for at least a very considerable proportion of skotographic effect in the case of watery extracts of tissues. Whether there exists in them in addition a radio-active factor which accounts for a part of the effect it is impossible to say from the photographic results. Ammonia gas, it is true, is a better conductor of radio-activity than atmospheric air, but the amount of ammonia formed is so small as to be negligible in this respect, and though potassium has been found to be radio-active there is no evidence that the same is true of ammonium. On the whole it is safer to conclude that the skotographic effects are not evidence of radio-activity.

Turning now to another aspect of our researches—namely, the effect of various animal extracts, of certain chemicals, and of radio-activity and x rays upon animal cells—it is seen that some points of resemblance show themselves. Thus, we have subjected the ova of *Ascaris megalocephala* to the action of x rays, radium, uranium, or thorium, and have found that a dual effect is produced. In the first place, the cells divide more rapidly than the controls; and in the second place, an antagonistic action shows itself at some period during development upon certain of the cells. Thus, one finds that fully-formed living embryos make their appearance earlier in the irradiated specimen than in the control, but that the total number of eggs coming to maturity is considerably less than in the control. This dual action is seen well in the case of ova that have been exposed to x rays for twenty minutes immediately after removal from the oviduct and while they are still in the one-cell stage, or in those whose development has taken place in the presence of radium throughout. Uranium and thorium give rise to a well-marked acceleration of early stages of division alone; they do not appear to exert an antagonistic effect, even though all stages of development be carried out in their presence.

If the ova be exposed to various animal extracts under similar conditions, it is seen that analogous changes in rates of their development occur. Thus protein-free extract of testis of the herring accelerates development; a similar extract of ovary retards development; various fractional distillates of a protein-free extract of sheep's liver caused well-marked acceleration in the early stages of development, but retardation occurred at the stage when the cell masses began to elongate preliminary to the formation of worms, and living worms appeared first in the control; the residue from distillation produced a continuous slight retardation.

The resemblances between the effects of these extracts and of radiations are striking. It is true that the radiation effects are produced though the ova be shielded by a layer of mica, while the extracts, under similar circumstances, are inert, but, as will be insisted later, the egg case itself constitutes a screen for the dividing cell, to say nothing of the layer of gelatine in which they are immersed, or the layer of air intervening between them and the substance whose action is being tested.

Inasmuch as all the animal extracts that have been mentioned above possess strong skotographic powers, the effect of ammonia upon development of the ova was tested directly. It was found that solutions of ammonia of 5 per cent., 15 per cent., and 40 per cent. retard development, but that in the earlier stages the retardation was more marked in the case of the weaker solutions, while pure 0.880 ammonia actually caused acceleration in the earlier stages of division. In the later stages ammonia showed a retardation which increased with the concentration of the gas in solution. Ammonia gas derived from the hydration of solid ammonium carbonate produced similar results.

The action of formalin vapour is exactly similar to that of radium, acceleration occurring in the early stages, but fewer ova coming to maturity than in the control and living worms being first observed in the formalin specimen. This observation is remarkable from the fact that formalin vapour is extensively used in laboratories as a fixing agent for protein. It is clear that in this instance the formalin does not "instantaneously kill" the cell, but, on the contrary, favours its development. Even more, the ova will show accelerated development for four or five days, though actually immersed in pure formalin during the whole time. It is remarkable that the highly diffusible formic aldehyde—present to the extent of 40 per cent.—and the traces of highly diffusible formic acid always associated fail to penetrate the egg cases of the ova. If they penetrated even in minute quantities, all our information goes to show that they would kill the young cell forthwith. Yet a definite influence is exerted, and one which resembles that of radio-activity to an extraordinary extent, even to that of producing its effect upon the living cell when separated from it by a screen (the egg case).

It appears, therefore, that the x rays, radium, formalin, ammonia, and a variety of skotographic animal extracts have effects upon the ova of ascaris which possess many points in common, and which it is difficult to imagine are produced in a purely chemical way. Thus, one can hardly conceive a purely chemical substance as noxious to cell life when weak, but beneficial when strong (ammonia).

In the preceding experiments we have dealt with the cells in what may be termed their prenatal stage; in experiments on silkworms we have investigated the action of x rays and radium upon the post-natal individual in larval, pupal, and imago stages. These experiments are still in progress, but sufficient has been done for us to feel confident that the changes produced are in essence the same as those observed in the ovum of ascaris. In this series x rays and radium have been used according to a somewhat definite scheme in order to differentiate, if possible, between the beneficial and the injurious effects of the radiations. Thus, keeping the output of rays from the tube as constant as possible, we have varied length of exposure in a number of ways, and have dealt with the insect in various stages of its life-history. One subject upon which we hope to throw light incidentally is that of sterility under x rays, for since the sexual act is the sole function of the imago, it is clear that during chrysalid and imago stages changes are taking place subservient to this

end, and any interference therewith by radiation can well be studied by consideration of the resulting fecundity. Unfortunately, after the eggs have been laid, a year has to elapse before information upon their fertility can be obtained. Last year's experiments, owing to the fact that we were totally unaware of the doses to be used, etc., have not given conclusive results. This year we are repeating and extending the experiments.

A further line of research in connexion with radiation and biology now being conducted is rather of the test-tube variety. In 1909, Colwell and I showed that a considerable modification of the easily recognized properties of uranium and thorium is brought about by the combination of these elements with proteid (egg albumin, serum albumin). This is being pushed further, and the influence of *x* rays, radium, etc., on different kinds of protein is being investigated. It is clear that such experiments are fundamental in nature so far as consideration of any inter-relation between radio-activity and biological processes is concerned. It is too early to enter into details, but sufficient has been done to show that this line of research will not prove unfruitful.

In making these remarks, I have been conscious of a great dissatisfaction that I could not present something more definite to the Section. It is true that I feel convinced as to certain of the results; it is true that there cannot now be any doubt that radio-activity is capable of influencing biological processes; it is probable that processes at work in lowly organisms differ but little, if at all, in principle from those at work in the cells of higher organisms, and therefore that the work on which we are engaged will become at some later date available for the human being. But the difference between the action of a Crookes's tube or a milligram of radium upon the ovum of a worm or upon an insect and that of the ever-present slightly radio-active environment in which complicated living organisms pass their life-history is so enormous that one hesitates to hope for great results. It is lawful, however, to remember that modern electricity and modern bacteriology had humble beginnings, even though we are astonished at our own temerity in attempting to unravel the relations between those two elusive processes, radio-activity and life. And at least we may feel satisfied that such results as we put forth have been obtained from actual experiment and not from armchair speculation.

References.

[1] British Medical Journal, June 19th and 26th, 1909, pp. 1465 and 1536. [2] *Arch. Middlesex Hospital*, Ninth Cancer Report, 1910.

DISCUSSION.

Dr. H. D. McCulloch (London) asked Professor Lazarus-Barlow whether, in view of the essentially molecular action of radio-active agents in general, and the apparently paradoxical and unexpected phenomena of the potent chemical agents to which he had alluded, the "accelerations" and "retardations" were not evidence of essentially molecular, as distinguished from chemical, changes. He referred to the molecular systems in the proteidageneous matter of the living cell, and the important part played in the biochemistry of the cell by the enormous molecular constitution of the lecithins and their derivatives, which had recently attracted some attention.

Dr. Lazarus-Barlow said that this was clearly one of the pieces of work which ought to be done. It was an excessively difficult subject, but they were undertaking some investigations along that line. It might be many centuries before they were of any practical value.

The President, in thanking Dr. Lazarus-Barlow for his contribution, said that the working out of the ever-closer relationship between physical science and biological processes was extremely fascinating.

THE CONSTITUTION AND ORGANIZATION OF THE X-RAY DEPARTMENT OF A GENERAL HOSPITAL.

By G. Allfress Simmons, M.D.,
Senior Radiographer, St. George's Hospital, London.

The constitution and organization of the *x*-ray department of a general hospital is now a matter of great importance for the efficient working of the hospital.

A large number of the members of this Section are actively engaged in conducting such a department, and many of us have founded them; and seeing that it has fallen to my lot to organize and inaugurate the *x*-ray departments of two London general hospitals, and to be associated with those of two others, I have acquired a pretty complete knowledge of what is required of such a department and how to try to meet those requirements; and I think a very brief record of my experiences and a description of the electrical and *x*-ray department of the hospital with which I am at present associated may not be without interest to members of this Section.

The fairly recent introduction of *x* rays into the diagnostic and therapeutic armamentarium of hospitals, like the more extended use of pathology, bacteriology, and inoculation, has rendered it necessary for every hospital to set aside some space and some money for the purpose of an *x*-ray department; and as all hospitals alike can ill afford either commodity, the first tentative attempts at establishing *x*-ray departments were, regarded from a more modern point of view, quaint in the extreme. Generally speaking, the first beginning of such a department consisted of a cellar containing a small quantity of extremely elementary apparatus administered and controlled by some unqualified but clever man who had shown an aptitude for such work.

At St. Mary's, before I went there, *x*-ray photographs were taken and *x*-ray treatment administered by the theatre instrument beadle in a cellar in the basement, and in such time as he could spare from his duties of keeping surgical instruments in order, and I am bound to say that, considering his limitations, his work was extremely good.

At St. George's Hospital the *x*-ray department was run under precisely similar conditions by one of the assistants in the pathological or chemistry laboratory, an unqualified man, who had done some extremely valuable *x*-ray work during the South African war, and really I was astonished when I came here to see how good some of the work could be, notwithstanding the adverse conditions.

But as time went on and *x*-ray work was recognized as being of extreme importance as an aid to diagnosis, and the application of *x* rays as a necessary therapeutic measure in certain cases, one hospital after another saw the advisability of having a medically qualified radiographer, till now, even in the smaller hospitals, it is a medical man who is responsible for the department. In many cases the unqualified man took excellent skiagrams, but, from lack of medical training and insight, was unable altogether to appreciate what it was that was wanted by the staff, or to draw sound conclusions from the appearances shown in the plates.

Now in establishing an *x*-ray department it is first necessary to know what is the nature of the work that is required of you; secondly, what space are you going to be given to carry it out in; thirdly, what sum of money you will be allowed to spend in the outfit; and, fourthly, what assistance and backing are the hospital authorities inclined to give to the department. Well, it seems to me that, first and foremost, it is important that the department shall be able promptly and adequately to deal with the requirements from the surgical side of the hospital, and I will take these requirements in the order of their urgency.

In the first place the casualty department brings all manner of fractures, dislocations, and foreign bodies for immediate attention. Of course, a large proportion of these can be kept an hour or two till the radiographer's regular hour of attendance, but a certain number must be seen at once, and it is therefore important that the apparatus anyhow shall be available at any hour of the day or night, and also that the radiographer shall be available at any time, in case of great urgency. The *x*-ray department is especially useful to the casualty department in cases of small foreign bodies, such as needles in fingers and hand, etc., and doubtful fractures and so forth, and it is by rapid screen examinations of such cases that the house-surgeon is enabled to decide whether to admit such cases into the wards or whether to give them one treatment and let them go. I remember one case while I was visiting the *x*-ray department of one of our largest London hospitals, where I saw the radiographer emerge from the dark room with a dripping

photographic plate in his hand, saying, "Hi, don't let that man go." It was a case where rapid screen examination of a hip-joint had not shown a fracture, but a plate taken as a precaution had shown an impacted fracture of the neck of the femur, and the patient was calmly walking off on his fractured limb.

Next come the surgical cases from the wards, fractures of the lower extremities in various stages of repair for examination and re-examination, diseases of bones, and various surgical morbid conditions. These can very well come during the radiographer's hours of attendance, and there are always a number of them awaiting his arrival.

Then the surgeons to the special departments send cases and generally find it convenient to be present themselves at the *x*-ray examination.

Next come the requirements from the medical wards. These latter send a relatively small proportion of cases as compared with the surgical wards, but medical cases are generally more obscure and more difficult than surgical cases and require much more prolonged and careful examination. Screen examination is a very essential thing for medical cases as a rule. A sample of medical cases would be the examination of the extent of the stomach by means of bismuth, first at the time of its administration, and then again several times at various intervals to find out how quickly and completely the stomach empties itself and also the rate of progress through the intestines. Chests, too, have to be screened and photographed for examination of heart, presence or absence of aneurysm, and condition of lungs, nature of tumours in the chest, and so forth.


Sisters Room
Bed
Bed
Bed

side a Finsen-Reyn lamp. This arrangement is convenient because both these lamps require water circulation while in operation. You are probably all familiar with the Finsen-Reyn lamp, which is extensively used for lupus and other conditions of the skin. The Kromayer lamp is used for the same purposes, but consists of a mercury vapour lamp working in a quartz V-shaped tube. It gives out intense ultra-violet radiation, and will produce a reaction similar to that of the Finsen lamp, only in from three to five minutes, as compared with from half to one hour, but it is still a question as to whether its influence penetrates to such a depth as the Finsen.

On this side of the room there is also a Uviol mercury vapour lamp, which also gives out ultra-violet light, and is much used for alopecia areata. On the right-hand wall, as you enter the ward, is arranged another complete *x*-ray outfit, with a Sabouraud stand, and this is used exclusively for therapeutic purposes. In addition to these apparatus there are two trolleys fitted up with galvanization, faradization, sinusoidal current, cautery, and so forth, and there is also a high-frequency outfit in one of the *x*-ray rooms.

These various apparatus are supplied partly by 200-volt continuous current from the main and partly from a transformer in the basements, which converts it to 100 volt continuous. The original kitchen has been converted into a dark-room for development and other photographic processes, and the other offices into dressing-rooms and workshop.

So much for the equipment; now for the staff. This consists of the physician to the skin department, who is responsible for the treatment of his own cases; the senior radiographer, that is myself; a Sister, with one or more nurses under her, according to the amount of work at the time being; and a skilled electrical mechanic.

In an *x*-ray and electro-therapeutical department it is of extreme importance to keep careful and accurate records of every case and plate taken, and also to keep some check on the indiscriminate use of the department. For this reason every case that is brought to the department has to be accompanied by a requirement form duly filled up and signed by, or anyhow for, a member of the staff of the hospital. The only exceptions to this rule are trivial casual cases that only need a short screen examination. These are brought by house-surgeons, who often screen them themselves in the presence of either the Sister or the mechanic. Every case, without exception, is entered in the *x*-ray register at the time of the examination, with particulars—namely, date, name, age, name of physician or surgeon, ward, an exact statement of what is required, a short note of history of case where it is pertinent, and anything that may be observed at the time of the examination, together with technical notes, such as size of plates used, position on patient's body, length of exposure, and so forth. All plates are developed the same day, and a full report sent the next day, with the plate, up to the ward, or to the out-patient department.

In cases of urgency the plates are developed on the spot. Similarly with cases for treatment. Particular notes and requirements are entered in a register, and directions for treatment, and every treatment, or group of treatments, are initialled by the radiographer, who thereby assumes the responsibility. Where required, prints are taken from plates and included in the patient's notes. The plates are afterwards collected from the wards, and all that have anything more than an ephemeral interest are carefully stored under year and number, and in this way back plates can be referred to at any time.

It may be of interest to describe a day's routine in the *x*-ray department. This is opened by the Sister in charge and the mechanic at 9 a.m., and immediately treatment cases begin to arrive, and an occassional screen case or two from the casualty department, any case other than a trivial one being kept for the radiographer. At about 1.15 the radiographer attends, his long days being nominally Tuesdays, Thursdays, and Saturdays, and those of the skin physician being Mondays, Wednesdays, and Fridays. In practice Monday is always a long day, with plenty of work to do, and often he has plenty of work every day of the week. The out-patient physicians and surgeons arrive at 1 o'clock, and cases begin to come up from out-patients at once. The cases from the wards, for which requirements are generally sent in the course of the morning, are now sent for, and everybody becomes very busy. Generally, one or more members of the staff come in to examine cases in the course of the afternoon. In the intervals yesterday's plates are examined and reports on them entered in the book, and treatment cases seen and treatments prescribed. Wednesdays and Fridays are often days of exceptional activity, because though nominally on those days the skin department has first claim on the electro-therapeutical, still there is often a considerable amount of work for the radiographer to do, and perhaps every apparatus in the ward may be in use simultaneously. After the departure of the radiographer there is more treatment work for Sister and nurse and development for the mechanic to do, and there is also a good deal of book work to be done by the Sister, such as copying the book reports on forms to send up to the wards, indexing, entering particulars of treatments, and so forth. Indeed, the keeping of careful and accurate records seems to me to be almost as important as doing good technical and expert work.

In conclusion, I may say that two points I have always kept in mind as necessary to make the *x*-ray diagnosis side of my work of value to the hospital are, first, to be very prompt in furnishing the necessary plates and reports; and, secondly, to criticize every plate severely, and not be satisfied unless it shows the condition so clearly that it is decipherable by anybody who possesses a pair of eyes. A word as to the precautions taken to protect the staff of the *x*-ray department from the deleterious effects of *x* rays may not be out of place. In the first place all tubes used are enclosed in an *x*-ray proof box during use. In making screen examinations the operator's hands are covered with *x*-ray proof gloves and his eyes with *x*-ray proof spectacles; the screens are covered with lead glass and furnished with metal finger-guards, and, generally speaking, he is careful to be as far away as possible from the tubes while in action.

THE NORMAL AND PATHOLOGICAL STOMACH AS SEEN BY THE X RAYS.

By Alfred E. Barclay, M.A., B.C., M.R.C.S., L.R.C.P.,
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One is so frequently asked for a radiograph of the stomach that I would like to say at the commencement that in my experience I have never come across a single case in which an *x*-ray picture by itself could give a diagnosis.

The clinical diagnosis of gastric conditions is notoriously inefficient, and it is hardly likely that the mere shadow of the stomach contents should give a diagnosis straight away.

Radiographs are useful for demonstration purposes and they show more detail than one can observe on the screen and hence they are useful; but I wish strongly to emphasize the fact that a radiograph is a record of the picture at one given moment only, whereas the diagnosis is made, and can only be made, by a series of patient observations made at intervals. Cinematographic radiography would certainly be more ideal than screen work, but the cost must necessarily be prohibitive for practical purposes.

The pictures seen in the upright and the horizontal position differ very considerably, and in so complex a subject as this, I have deemed it advisable for the sake of clearness, to omit reference to examinations conducted with the patient lying down, since such examinations yield infinitely less information than those conducted with the patient standing up, and I wish to give you a paper as clear and as uncomplicated as is within my power.

The bismuth meal consists of either the carbonate or oxychloride, thoroughly mixed up with bread and milk, or porridge, and so far as possible it should always be of the same consistency, but apart from the consistency it matters not what the excipient may be, provided that the

bismuth does not separate out from it. Also the food should be made as *palatable* as possible. The quantity taken by the patient naturally varies, but a satisfactory examination cannot be made with less than 4 oz. of the mixture, which will usually contain 1 oz. of bismuth.

The routine method of examination is first a preliminary glance at the abdomen to note the presence or absence of air in the stomach, and also the position of the diaphragm, which should be on the level of the junction of the sternum and ensiform cartilage, after which the patient's mouth is filled with the food, and he is turned into the semi-lateral position in order that the shadow may be seen as it passes through the lowest part of the oesophagus and through the cardiac orifice. When the food has passed this point, and during the rest of the examination, he stands with his abdomen against the screen. Observations are made while the food passes from the upper to the lower part of the stomach, which may be a question of seconds or of minutes. Further observations are made from time to time till the stomach is empty. This is the routine method, and naturally the examination is varied according to the requirements of the case. Many other procedures have been adopted, such as inflating the stomach with CO_2, injecting air into the large intestine in order to show up the greater curvature more clearly, making the patient swallow a mixture of bismuth and lycopodium, cachet of bismuth in goldbeater's skin, etc.

It must be understood that, whatever method we use, the bismuth will outline the stomach only in so far as it fills it; consequently, where the tone is good and the organ contracts upon its contents, the bismuth shadow represents the true shape of the cavity, except in the upper part, which is naturally filled with air, showing as a light area beneath the left dome of the diaphragm; but if the tone is defective all the food falls to the lowest part, and it is only this portion of the stomach that is outlined.

As I have already said, it is essential to have a clear idea of the normal stomach as shown by the x rays, and it is surprising to find how completely the pictures differ from the accepted idea.

In the first place, the stomach is placed almost entirely to the left of the middle line, and it is a tubular organ roughly J-shaped. The pylorus is about ½ in. above the lowest point, which is slightly above the level of the umbilicus and ½ in. to the right of the middle line.

We must get rid of the idea that the stomach is a cast-iron retort; like the rest of the alimentary canal, it is a muscular tube, especially adapted for the reception and storage of large quantities at a time, the fundus being a trap above the level of the cardiac orifice for the reception of swallowed air and the gases formed during digestion, and its shape may be altered by even slight forces, either within or without. One is inclined to state that there is no definite normal picture of the stomach any more than there is a definite size and shape for a penny india-rubber balloon.

The increased capacity for food is obtained by lateral expansion of the tube, which should hold its contents up against the action of gravity at a fixed level, approximately the level of the cardiac orifice. The tonic action of the gastric muscle is responsible for this maintenance of the fluid level in the upright position.

The lowest border does not move with respiration, and compensation for diaphragmatic movement is taken up by the stomach walls. The stomach contents are not churned up, but take up their position according to their specific gravities; consequently air always occupies the fundus, and shows as a translucent area beneath the left cupola of the diaphragm. If the stomach is empty the air appears as an oval or as a balloon-shaped shadow, narrowing down towards its lowest border, which is convex downwards; whilst if there is a quantity of food in the stomach, this shadow is an arc of a circle, the lower border being a straight line which can be demonstrated as fluid by watching the ripples on its surface on shaking the patient.

There is almost invariably some air in the fundus, but apart from this the walls of the empty stomach are in contact. It is a potential space. Into this space the bismuth food passes, and the weight of a single mouthful may not be sufficient to canalize the tube for a time; hence it stays in the upper part, just below the air, but as more food is given the shadow is seen passing downwards and slightly to the left for 2 in., and then straight downwards to the lowest point. After three or four mouthfuls have been swallowed the shape of the shadow should be more or less like the letter J, and as more food is given the increased capacity is obtained by the lateral expansion of the shadow, and not by any appreciable drop in the position of the lowest border, or raising of the level of the shadow.

If the stomach already contains food the shadow passes from the cardiac orifice in thick "blobs," which drop through the other foods by reason of their greater weight. The rate at which they drop depends on the relative specific gravities.

The stomach is not a fixed organ, and it is easily displaced by even slight forces. For instance, if the splenic flexure is distended with gas, the stomach is displaced to the right; or if the patient's abdomen is pressed upon, the lowest border may be displaced upwards by two inches or more.

Peristaltic waves occur at the rate of about three a minute, and several may be present at the same time. It is only in the last 2 in. or 3 in. that peristalsis is seen on the lesser curvature, and towards the pylorus the rings of contraction segment the bismuth shadow if peristalsis is active, but *there is no physiological division of the gastric cavity.*

The rate at which the food leaves the stomach varies within very wide limits, even in health, and is much influenced by the character of the food. A bismuth meal should have left the stomach within five hours.

It must be remembered that this is the description of the normal stomach, which is by no means always found even in persons who have never suffered from any gastric trouble. It is a fact that the stomach may be very far from normal in tone, and yet fulfil its functions perfectly.

Atony of the Stomach: "Dilatation."

Where the tone of the stomach is perfect the tubular shape of the organ should be maintained until the stomach is empty, but perfect tone is not the rule—in town dwellers at any rate.

Atony is the failure of the muscle to withstand the action of gravity upon the contents. In the mildest degrees of atony the food is held up for a minute and then gradually gravitates to the lowest part, and there is always some evidence of the tubular formation remaining even after a prolonged period. That the bismuth shadow only outlines the lowest part of the stomach after a time does not necessarily indicate loss of tone; for it must be remembered that the stomach may contain other food, and will itself be excreting juice, which, being lighter than the bismuth food, will consequently rise above it, and hence, although the tubular form may be maintained, yet the upper part of the tube will throw no shadow, simply because it contains none of the bismuth mixture.

The picture of a really atonic stomach as seen upon the screen is that the bismuth meal, instead of being held up, in tubular form, sinks at once to the lowest point, where it lies as in a sac. A whole bismuth meal quickly finds its level in the lowest part, forming a more or less crescentic shadow low down in the abdomen, and in extreme cases even on a level with the pubes, but even in these it is usual to find that peristalsis is quite easily seen.

In such cases it is often difficult to persuade the patient to take more than a very small quantity of the bismuth food, but if he can be prevailed upon to do so, it is found that the increased capacity is obtained, not by a widening out of the shadow, but by an increase in the vertical depth; in other words, the stomach does not contract upon its contents, but appears to remain inert.

The manner in which the food enters the stomach suggests that the walls are in contact, and frequently the bismuth descends in a thick stream to the junction of the middle and the upper third, from which point it drops in thick "blobs" to the lowest point, suggesting that there is already some food retained in the lower part of the stomach which keeps the walls apart, and through which the bismuth drops.

The lowest border of the stomach is well below the umbilicus in atony, but this is no proof that the stomach is atonic, for the whole stomach may be displaced downwards, as in visceroptosis—hence the importance of noting the level of the diaphragm.

One frequently hears people say they feel a sinking of the stomach; and this is actually a fact—the sensation is caused by relaxation of the tone, which actually allows the lower border to sink. The tone of the muscle may vary in quite a short time, and is influenced by the patient's appreciation or disgust with food, and by various emotions. For instance, I have seen the lowest border drop an inch when the patient was made to smell asafoetida, and the same phenomenon has always been noted when patients have complained of nausea, while on the other hand the tone returns when the patient is actually about to vomit, and the whole organ contracts up, hence you will see the importance of making food as little unpalatable as possible. It is also a remarkable fact that patients who enjoy their food, and who habitually overeat, never show any signs of atony, while in those who eat very little and who do not relish their food, atony is nearly always present. Whether this is *post* or *propter* I do not know, but these observations strongly suggest that the tone of the stomach is very much under the influence of the mind, and reiterates the old precept that man should take his food with thought.

Frequently at operations the stomach which has appeared at the *x*-ray examination to be quite normal is found as a large flaccid sac, and vice versa. This discrepancy is accounted for by the fact that nausea and disgust will cause temporary diminution in tonic action—that is, the stomach will become a large atonic sac; whereas in retching it is contracted up. Anaesthetics paralyse the involuntary muscle of the stomach, consequently the condition found at the operation is that in which the muscle happened to be when the anaesthetic acted upon it.

In a thinned-out, atonic stomach it is only natural that peristalsis should be weaker than in the normal stomach; but, even in cases where the lowest point had been on the level with the pubes, peristalsis was quite well marked.

On the other hand, one has seen absence of peristalsis in stomachs in which the tone has been perfect, and these cases have all been found at operation to have extensive ulceration or malignant disease involving some portion of the lower third of the lesser curvature; hence it is proved that the two muscular functions of peristalsis and tonic action are independent of each other, and it is suggested also that peristalsis is under the reflex control of nerves passing from the pylorus along the lesser curvature.

I always regard absence of peristalsis, especially when it cannot be evoked by abdominal massage, as suspicious of extensive disease near the pylorus, and always verify the observation by further examinations at subsequent dates.

The study of peristalsis is one which I thought would yield a great deal of information, and possibly it may yet do so with cinematographic records, but in my experience peristalsis is extremely variable from time to time, and its force and rhythm may be altered by minute changes in the character of the stomach contents, or the patient's feelings. For instance, in one patient who suffered from duodenal ulcer very marked peristalsis was observed, some of the waves being excessive and accompanied by colicky pain; on giving the patient some sodium bicarbonate in water, there was an instant relief of this pain and an absolute cessation of all peristalsis.

Excessive peristalsis points to some abnormality near the pylorus; but the stomach is full of so many spasmodic conditions, and is altogether such a nervous organ, that I do not lay much stress upon this sign unless it is exceedingly violent.

Pyloric Obstruction.

Chronic pyloric obstruction has been noted in many cases. It gives rise to retention of food, and if the tone of the stomach is good we see a broad fluid line below the air, which ripples and splashes when the patient is shaken, even though the patient has been starved for several hours previously.

On giving bismuth food a stream of dense shadows is seen falling from the cardiac orifice down to the lowest part of the stomach. Naturally only the lower border is outlined, and on giving more food it is noted that the shadow does not broaden out from side to side, but tends to suggest that the bismuth is only outlining the lower part of the vertical column of the stomach contents. The peristaltic waves are frequently excessive.

Such is the picture when the tone is good; but when the tone is absent, and all the retained food has sunk to the lower part of the stomach, there is nothing to indicate its presence, and the picture is simply that of a dilated stomach in which peristalsis is more violent than one would expect in a thinned-out organ.

The proof of pyloric obstruction is that the stomach still contains some of the bismuth meal longer than five hours, in spite of the presence of good peristalsis, consequently observations must be made from time to time to see when the food leaves the stomach. If it is empty in ten hours, the condition is such that the patient can probably lead a comfortable life with careful dieting, but if there is still food in the stomach after twenty-four hours, as I have noted in forty-two cases, the condition calls for surgical interference. I have yet to come across a case in which the food has been retained after twenty-four hours in which motor insufficiency was the cause of the retention of the food. Operation has always revealed marked obstruction.

Very frequent observations are not necessary, since we can learn from the position of the bismuth in the large intestine approximately when the food left the stomach, for it is noted, to quote Hertz's figures, that food is seen in the caecum in four and a half hours, at the hepatic flexure in six and a half hours, etc. In hospital practice I usually keep patients under observation during the first hour and then do not see them until twenty-four hours later.

Acute pyloric obstruction gives rise to excessive peristalsis, but the obstruction may be spasmodic, and no diagnosis should bemade on this sign alone; but occasionally in early new growths of the pylorus occurring in an otherwise healthy stomach, the peristalsis may be extreme, and coupled with forcible contractions of the stomach as a whole, so that it appears to writhe in its attempts to pull the pylorus back over the food. Such a picture makes the diagnosis of acute pyloric obstruction certain, whether food is retained or not.

Spasmodic Conditions and Gastric Ulcer.

As I have already said, the stomach is an extremely sensitive muscular organ, and it is the site of many spasmodic conditions of which as yet we do not know the significance. These spasmodic contractions enter into all lesions of the alimentary canal and complicate the whole diagnosis. Doubtless many are purely functional, others are reflex, but certainly gastric ulcer is one of the causes of these local spasmodic contractions, and sometimes the site of an ulcer is definitely indicated when the clinical evidence also points to this diagnosis, but without the clinical evidence, even a provisional diagnosis of gastric ulcer should not be made from the presence of spasmodic conditions. Those most frequently met with are situated about the junction of the middle and upper third, and the picture given by the bismuth meal is that the shadow descends to this point and forms up in a cone shape above it as more food is given.

Comparatively suddenly the spasm may relax and the bismuth food passes on into the lower portion, often in a thick stream, giving a bilocular appearance for a time.

When the bismuth food is held up in the upper portion of the stomach, it is always a good plan to get someone to rub the abdomen, and this very frequently relaxes the spasm so that almost at once the contents pass down. When the tone of the whole organ is good, the resultant shadow is that of a normal stomach with possibly a small indentation to mark where the food had been held up, but if the tone is defective, as it usually is in these cases, the contents drop into the lower part, possibly leaving some traces at the point where the obstruction was noted. Further, abdominal massage usually causes the whole shadow to gravitate to the lowest part, but if traces are observed for a considerable length of time in spite of massage, it is almost certain that there is a definite ulcera-

tion or cicatrization at this point, giving rise to the spasm. Such are the pictures of spasm in the middle portion of stomachs of normal and deficient tone, and these may be due to an ulcer, but apart from the evidences of traces left about the ulcer after the upper part of the stomach is empty, the diagnosis is one of a spasmodic condition which may or may not be due to ulceration.

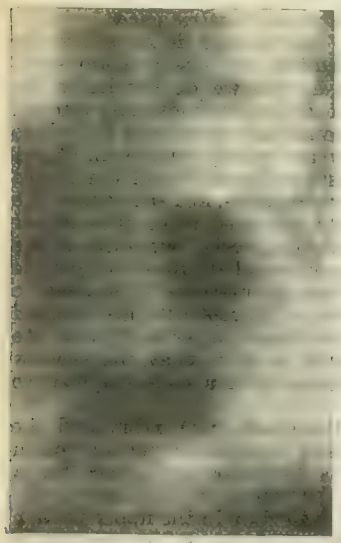
Hour-glass Stomach.

Bilocular conditions of the stomach may be spasmodic in character, and it is not easy in many cases to distinguish between a functional and an organic contraction. The bismuth is held up in the upper sac, and it may be noted that retained food is present, and it is always suggestive of a bilocular condition if the lowest point seen does not reach to near the level of the umbilicus without showing some indication of turning to the right, as if towards the pylorus. On watching the shadow carefully it is generally seen that some portion of it is passing on, either in drops or as a thin pencil, and falling into the lower sac. If no food is seen passing on, the patient should be persuaded to take some more of the bismuth meal, and this is often sufficient to increase the intragastric pressure so that the passage will be canalized.



Hour-glass stomach due to large active ulcer and cicatrix.

If, on rubbing the patient's abdomen, it is found that the greater part of the shadow has descended into the lower sac, the condition is almost certainly spasmodic, but if rubbing the patient's abdomen makes little or no difference in the rate at which food leaves the upper sac, a true organic hour-glass condition is almost certainly present; and on careful examination of the upper sac, peristalsis can be found on the greater curvature starting almost under the diaphragm—that is to say, much higher up than usual. The presence of peristalsis in the upper sac is one of the chief diagnostic points between a true organic and a spasmodic obstruction, but it must be remembered that there will be a spasmodic element in all organic lesions.



Hour glass stomach due to ulcer and puckering.

In the lower sac the food may show a variety of pictures, but usually the shadow is well below the umbilicus, and atony is present. Peristalsis is well marked, and it is very frequently found that pyloric obstruction is also present, and that the greater part of the bismuth meal is still in the lower sac after 24 hours.

Out of 17 cases, giving the picture of hour-glass stomach, 10 have been true organic, 4 partly organic with some ulceration causing spasm, while 3 have been purely functional. Of these functional cases, 2 were entirely unrelieved by gastro-jejunostomy, and the hour-glass appearance was very definite after the operation.

Carcinoma of the Stomach.

New growths in the abdomen throw no shadows which can be distinguished from the general abdominal opacity; they can, however, often be demonstrated by reason of displacements of viscera, irregularities caused by the inroads or the growth in the stomach, and by the obstruction of the passage of the food, all of which may be shown by giving the patient a bismuth meal. If the pylorus is involved, obstruction may be noted, but this form of obstruction cannot be distinguished from pyloric obstruction due to other causes.

Apart from pyloric obstruction, the diagnosis of carcinoma depends upon the irregularities caused by the inroads of the growth, which I have made out in 23 cases. The irregularities observed may be quite small, like the outline of a piece of coral, or there may be marked inroads of the growth which displace the bismuth and consequently give rise to marked irregularities that suggest peristaltic waves at first sight; but, on further observation, it is noticed that these are permanent, and that peristaltic waves (if present) sweep up to these notches, are lost to sight and reappear on the further side of them.

Growths involving the posterior wall may invade the stomach so that the bismuth is displaced and a clear space is seen in the midst of the shadow, which in two cases I have seen appeared and disappeared as peristalsis swept past.

In 5 cases of undoubted carcinoma *in the abdomen* the bismuth examination failed to show any evidence of the growth.

Aërophagy (Air-swallowing).

Air-swallowing is a not uncommon condition, and one which may give rise to severe gastric symptoms. On examining the patient it is always found that the stomach contains air which appears to be greater in quantity than usual. (This is suggestive that there is a neurotic element in the case.) On giving bismuth food the outline of the stomach may be perfectly normal or it may suggest an atonic condition, but it is always noticed that as the patient swallows his food a certain amount of air enters the stomach with each mouthful, and the air shadow gradually increases and may extend as much as half-way down the stomach, so that the cardiac portion is dilated like a great bubble, occupying the whole of the left hypochondriac region, and even displacing the diaphragm upwards. Such patients swallow more air with liquids than they do with solid or semisolid food, so that any case where this condition is suspected should be tested with a glass of water. Violent and persistent eructations may take place, but it is noticed that the air shadow, instead of becoming smaller, remains the same or even becomes greater in extent. In following up these cases I have noticed that 2 out of 7 marked cases have stated in their replies that they have been cured by the examination.

Duodenal Ulcer.

It may be noticed in this condition that just beyond the pylorus there is a separate shadow which is persistent, and is quite unaffected by the peristalsis of the stomach, therefore the shadow is in the duodenum. In conjunction with this we usually have the picture of a perfectly healthy stomach in which peristalsis is more violent than usual, and a feature I have noticed in many cases is that the pylorus opens more frequently, and the gastric contents are passed on more rapidly than usual, so that the stomach is sometimes empty in as short a time as half an hour, and this rapid emptying of the stomach may account for the hunger pain, on which so much has been written lately.

The picture of a normal stomach exhibiting excessive peristalsis, and passing the food on very rapidly, is always suggestive of trouble in or about the duodenum; but the presence of a separate bolus in the duodenum is accidental, and depends upon the presence of cicatrices or spasmodic conditions causing pockets on the inferior surface. The whole picture is very suggestive, but it is not diagnostic, since it may be due to puckering of the duodenum from other causes, such as carcinoma.

To sum up, the simple *x*-ray method of examination with the bismuth meal can yield a great deal of information as to the state of the stomach. The method is not easy, in that it requires a great deal of experience and a thorough understanding of the normal.

That the method is of use is very evident from the fact that already this year over 100 cases have been sent down for examination at the Manchester Royal Infirmary.

It is useless to try to give figures as to correct and incorrect diagnosis, but provided one obtains a clear view of the stomach I feel that one should be able to get near to a correct diagnosis in nearly every case. Hour-glass stomach should always be diagnosed. Carcinoma generally gives some hint as to its presence, or at any rate as to the need of operative interference, owing to pyloric obstruction, sometimes before it is diagnosed clinically. Pyloric obstructions should always be made out if they are well marked, while the examination frequently reveals a suggestion of the presence of gastric ulcer and cicatrices.



The appearance in duodenal ulcer.

My purpose is fulfilled if I have given you an idea of the utility of this simple method, and for those of you who are using the method I would once again reiterate the fact that the stomach is full of spasmodic trickery.

Further progress, I believe, does not lie so much in the elaboration of the apparatus and the perfection of instantaneous and cinematographic radiography as in the better understanding of what we all can see on the screen.

SOME BONY CHANGES OBSERVED IN A CASE OF CHRONIC X-RAY DERMATITIS.

By Reginald Morton, M.D.Toronto, F.R.C.S.Ed.,

Officer in Charge of *X*-ray Department, West London Hospital; Lecturer on Radiology, West London Post-graduate College.

My object in coming before you to-day is to bring to your notice certain changes that have been observed in the bone in the progress of a case of chronic *x*-ray dermatitis. The case is of more than ordinary interest, since the changes, so far as they can be seen by means of the *x* ray, have been observed for so long a time, and also because with our improved knowledge and methods of protection the condition is one that is certain to have an existence only in medical history perhaps within the lifetime of many of us here present.

The patient was an assistant in the *x*-ray department of the London Hospital, and one of the first regular workers in this branch of science. Like many others, his hands were exposed to the *x* rays very freely, and the first attack of acute dermatitis came on in January, 1900, since which time it may be said that he has never been quite free from dermatitis. Chronic ulceration had set in about the end of the same year, and in 1902 keratoses began to form, with the usual accompaniment of telangiectatic blotches, tapering of the fingers, and so on.

In June, 1903, began the series of operations that have been done from time to time. At the first the nail of the right middle finger was taken away; a year later four nails and matrices, and the terminal phalanx of the right middle finger were removed. Suppuration continuing from time to time, half of the second phalanx was removed in February, 1906, but as the stump showed little tendency to heal satisfactorily, the rest of it was taken away in the following June. The stump healed over slowly, but more or less satisfactorily.

Beyond some tenderness on pressure and pain at times, this part gave him little trouble for over a year. On November 9th, 1907, while showing some visitors over the *x*-ray department, with the idea of giving a demonstration as to how a screen was used, he placed this hand for a second or two behind the screen and in the path of the rays. He was surprised to notice the changes in the bone which are shown in the first of the series of radiographs that I propose to show you. In making this series every precaution was taken to expose the hand as little as possible, and as the exposures were almost momentary and at considerable intervals any deleterious action they might have would be trifling.

The first radiograph was made on November 9th, 1907 (Fig. 1). Here you will observe that the distal end of the

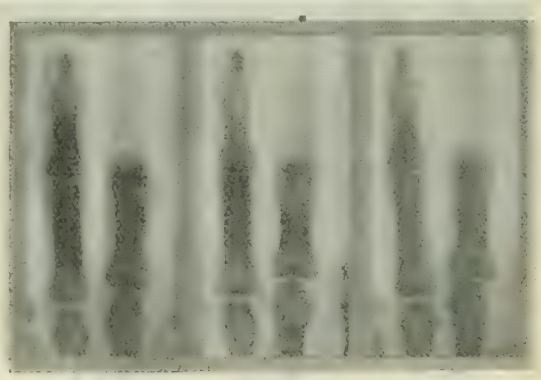


Fig. 1. Fig. 2. Fig. 3.

first phalanx is as transparent to the rays as the soft parts surrounding it, and this state extends for about one-third the length of the bone.

In the next picture, taken on December 1st (Fig. 2), three weeks later, the condition has increased in transparency and extent. On December 30th (Fig. 3) still further progress has been made, so that the distal half of the bone is affected. No further radiographs were made for three months, and the next one was made on April 1st, 1908 (Fig. 4). You will see that the invasion of the normal bone structure has continued until quite two-thirds of it

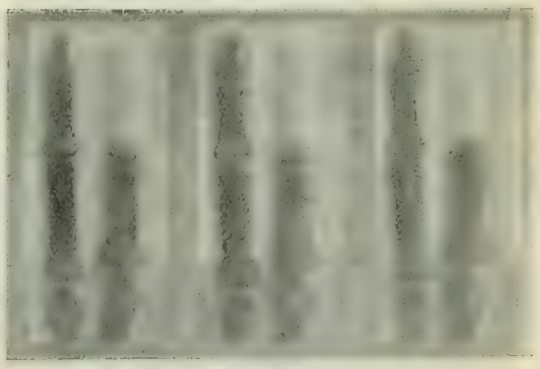


Fig. 4. Fig. 5. Fig. 6.

has been altered in appearance. Concurrently with this, however, the distal end has been getting more opaque in irregular patches, as if Nature were trying to repair the damage. In the next two radiographs (Figs. 5 and 6), taken on May 1st and June 1st respectively, these two processes of destruction and repair are seen to be going on side by side. Only the proximal end of the bone with its articular surface remains of normal structure.

The deposit of lime salts—I hesitate to describe it as new bone—extends up to at least one-half the length of the phalanx, but we can see at this stage a commencing rarefaction of this new material at the tip of the bone, on the side adjoining the other finger.

The first on the next slide was taken on July 1st, 1908 (Fig. 7)—that is, one month later. The slight notch in the new formation has now become a big one, so that half the thickness has been eroded away; it will also be

noticed that the invasion of the normal structure has slowly advanced.

On examination of the next radiograph, made on August 5th, five weeks later (Fig. 8), we see that this notch has been reduced in size, showing that the process of repair has again got the upper hand; and in the radiograph made on September 16th (Fig. 9), the phalanx has been almost restored to what it was before this second rarefactive process set in. The next one, made on October 27th (Fig. 10), shows the last state of affairs practically unaltered, and as the stump was not giving much trouble no further radiographs were made for some time.

Towards the end of the winter, pain and tenderness began to increase, and on March 1st, 1909 (Fig. 11), we found the erosion again in progress, but on the other side

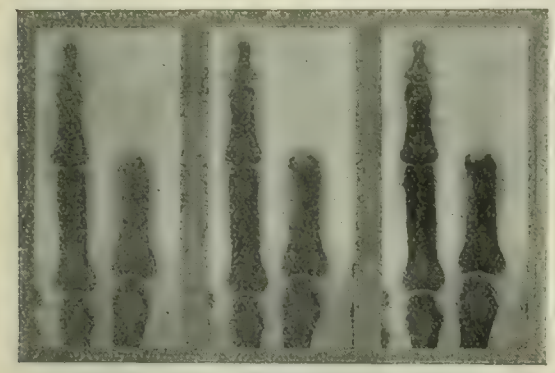


Fig. 7. Fig. 8. Fig. 9.

of the bone, and to such an extent that there seems to be a pathological fracture of the distal end of the phalanx.

The last radiograph I have to show you was made on June 17th, 1909 (Fig. 12), in which the fracture has been repaired after a fashion, but the rarefactive process is again invading the shaft of the bone

It is interesting to notice that all through the case the articular surface and a thin layer of bone immediately adjoining have resisted the destructive action that was going on elsewhere.

The subsequent history of the case has not been favourable, and I understand that the whole of this phalanx was

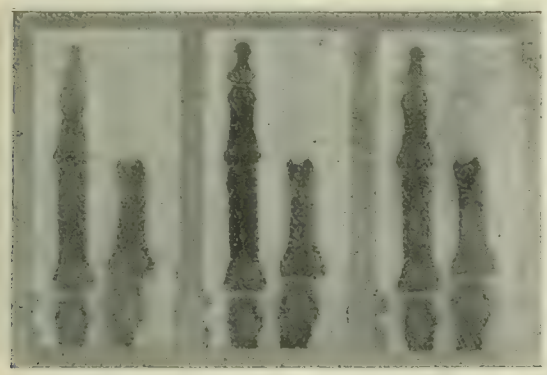


Fig. 10. Fig. 11. Fig. 12.

removed on May 26th of this year. No doubt a report on the gross and microscopic appearances will be forthcoming in due time; it may be of interest to give here a report of the microscopic changes observed in a section made from the terminal phalanx of this same finger, by Professor Leith of the University of Birmingham: "It shows great hypertrophy of the epithelium, great invasion by the epithelium of the deeper tissues, great overgrowth of the cells lining the lymph spaces, reversion of bone corpuscles to periosteal-like cells, and absorption of bone."

While the mention of the invasion of the epithelium and the absorption of bone are both significant, this does not help us very much as to what is the cause of the rarefaction. It must be remembered, however, that this report refers to the terminal phalanx, and there is no evidence to show that any changes such as I have shown you ever took place in that phalanx.

Further, we are safe in assuming that there were no rarefactive changes going on in the first phalanx at the time of the last operation in June, 1906. It was not until November, 1907, that any change was noticed, and then only through an accidental circumstance. The patient's hands were never exposed to the rays except at very long intervals, and then for never more than a second or two.

I regret very much that I have not had an opportunity of seeing this first phalanx after removal, and also of seeing microscopic sections, but I understand that Dr. Gilbert Scott, of the London Hospital, will be able to enlighten us to some extent.

I am sure it will be agreed that the condition shows many points of great interest, and that these cases should be recorded as completely as possible.

DISCUSSION.

Dr. Gilbert Scott (London Hospital) said that the microscopical sections of the amputated stump in the case Dr. Morton had brought forward showed the bones eroded by squamous epithelioma, the curious point being noted that there was no involvement of the skin. The disease was apparently entirely confined to the bone, which seemed to offer less resistance to its progress. Whether all the bony changes seen in the skiagrams from start to finish might be entirely due to the involvement of the bone by this disease from the very commencement, though not diagnosed as such, he could not say. If these bony changes were due entirely to the action of the x rays, it seemed natural to ask why all the bones of the hand were not equally affected. The disease started in the terminal phalanx. If the disease were epitheliomatous from the commencement, and spread downwards through the bones rather than through the epithelial tissues, the changes seen in the radiographs were accounted for. But, this being the case, the disease was evidently not of a very malignant type, because from the commencement in 1900 up to the present time it had only affected as far as the metacarpal bone. An interesting feature of the case, as seen in the skiagrams, was that in one of them the bone appeared to be eroded, and in another, taken some months afterwards, the bone had filled up again. Its period of repair coincided with a holiday taken by the sufferer, after which it become eroded on the opposite side, the side that was eroded in the first instance remaining fairly solid.

Mr. J. Hall-Edwards (Birmingham) said that in his own case no alterations in the bones were found which agreed with any cancerous condition or malignant condition at all. The curious part about it was that at the point where the bones eroded there was no sore on the hands at all, and instead of the hand being enlarged, as one generally found it in nearly all the malignant conditions of the bone, the portion of the finger over the most deeply eroded part was actually smaller. Moreover, on examining it with the aid of a very well focussed tube, a sharp image of it was obtained, without the slightest sign of débris in the space. He came to the conclusion that the erosion of the bone was due to secondary nervous changes, and he could only think that the fact of the bone undergoing considerable softening and getting better was an indication that the absorption of bone was secondary to the injury to the nerves themselves. Although he trusted there would now be no more cases of x-ray disease of the bone, the question was one of interest from the point of view of treatment. Otherwise the door seemed to be shut effectively against such serious results in the future.

Dr. James Metcalfe (Bradford) said that the most curious feature of the case was that the fingers showed recuperative power, which certainly indicated that the condition was not that of epithelioma, for there would be no deposit of bony salts in the part if there had been any malignant growth of that character. It was a matter of great interest, and, indeed, of moment, for any one who suffered from a condition of this kind to know that it was possible for recuperative action to take place, and thereby to be able, perhaps, to get rid of the disease without great mutilation. The paper showed that Dr. Morton had devoted a great deal of time to a subject that could bring him no return save in respect of its scientific interest.

Dr. A. Howard Pirie (St. Bartholomew's) said that it was very refreshing to hear Mr. Hall-Edwards say that the door had been closed against further troubles of this sort from the *x* rays, especially when one remembered that the wave of popular fear had now reached its height. In discussing the best methods of protection, a precaution that was not insisted on was the distance from the *x*-ray tube which might be considered safe. He had made a calculation as to the distance it would take a pastille dose to be received three yards from the tube, and he found that the operator would have to sit at that distance for a period of a week all but an hour and a half before the pastille dose was obtained.

Dr. Morton, in reply, said that to himself the point that was most interesting in this case was the consecutive, or even at times simultaneous, action of the processes of destruction and repair. This made it difficult for him to believe that there could be anything epitheliomatous going on inside the bone. It seemed almost inconceivable that there should be, along with this phenomenon, the microscopical changes pointing to epithelioma to which Dr. Gilbert Scott had alluded. It would be easy to branch off from this into the whole question of *x*-ray protection. He considered that the question of the distance from the tube was the most valuable of all. Personally he was fortunate in having escaped any deleterious action, and he attributed his immunity to the fact that, in the early days, he saw the hands of the late Mr. H. W. Cox, who, however, would not believe that the *x* ray was causing his lesions. He (Dr. Morton) was of the contrary opinion, and he simply took the precaution, as far as possible, always to stand behind the plane of the anticathode, and to put a distance of at least two metres between himself and the tube. Of course, when making screen examinations this was not always possible.

THE ADVANTAGES OF X RAYS IN COUNTRY PRACTICE.

By J. B. Simpson, M.A., M.D., C.M.Edin.,
Surgeon, Lawson Memorial Hospital, Golspie.

It seems to me that the advantages in the use of *x* rays in country practice have not been sufficiently appreciated, and I propose to make some commonplace remarks on this subject, confining myself to the diseases and injuries of bones and joints and to the advantages of the use of *x* rays in these conditions.

For the last twenty-three years my lot has been cast in the Highlands of Scotland, and I can therefore speak with



Fig. 1.—Tuberculous abscess of head of tibia.

a certain amount of assurance with regard to the difficulties encountered by the country practitioner. Situated, as he is, far distant from the hearth of the consultant and specialist, whom he can rarely summon to his aid unless his patient belongs to the richer class, he has to learn to depend on his own judgement in the treatment of many difficult cases. Anything which can help towards greater skill in diagnosis and treatment should be eagerly taken advantage of by him. This is my reason for advocating the use of *x* rays in our work.

For many years I felt that fractures, including the more common as well as the rarer varieties, had not received

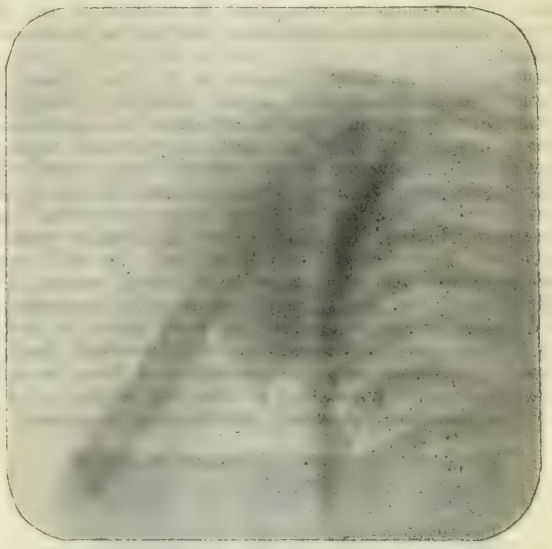


Fig. 2.—Surgical fracture of neck of humerus.

the attention they deserved. We had not a clear idea of the pathology of many of them, and as we possessed no means of proving whether our clinical diagnosis was right or wrong, treatment was apt to be slovenly and unscientific, and the results, more or less, were far from ideal.

By ideal results I do not necessarily mean accurate end-to-end apposition of fractures. In most cases that is impossible, and in many quite unnecessary. The *sine quâ non* should be correction of deformity and restoration of function, the latter being the more important.

The fractures near the ankle joint more especially yielded unsatisfactory results, and will continue to do so until they receive the attention they deserve. In some cases the limb was treated for fracture where none existed, and in other cases the patient struggled about with a fractured fibula diagnosed as a sprain. Injuries in the region of the ankle, knee, and wrist are among the most common in the Highlands, where we have to deal with hillmen, deer-stalkers, gillies, crofters, and fishermen.

Until within the last ten years the country people, who are an exceedingly intelligent class, believed that a doctor was not skilled in the treatment of injured bones or joints, and if treatment consisted in fixing a fracture up for six weeks in a splint and then telling the patient that he was

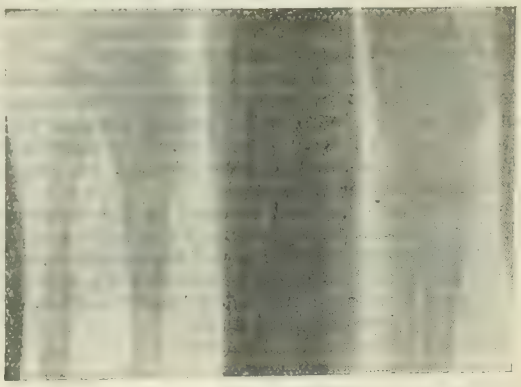


Fig. 3.—Colles's fracture.

cured, I do think their unbelief had some justification. The bonesetter consequently flourished, and his rough and ready methods, the essence of which was free movement of the joints, were considered superior to the doctors' methods because they led to a speedier recovery of the functions of the limb.

The use of *x* rays in practice has been the ruin of the bonesetter, to the advantage not only of the doctor but of the patient. My experience during the last seven years has been that the use of the rays has been of much value in diagnosis, prognosis, and treatment. Bone injuries can be treated with more precision and more assurance and on more rational lines. My experience is that results are better. The period of treatment is shortened and the period of convalescence made less irksome to doctor and to patient.

In the diagnosis of bone disease or of joint disease we were at a disadvantage until a few years ago, inasmuch as the country people seldom consulted us about bone disease unless the limb presented unequivocal signs of mischief. Since I began to use *x* rays I have found that an increasing number of early cases of bone disease of the elbow, wrist, and knee—and you must remember that tuberculous disease is rife in the Highlands—present themselves for diagnosis and treatment. In such cases a skiagram may afford information of much value. The result of this is an opportunity for successful treatment of the disease by constitutional and local remedies rather than by any operative measures. On the other hand, if an operation is necessary, the operator has the advantage of having in his possession a skiagram which helps to determine the extent to which interference is required.

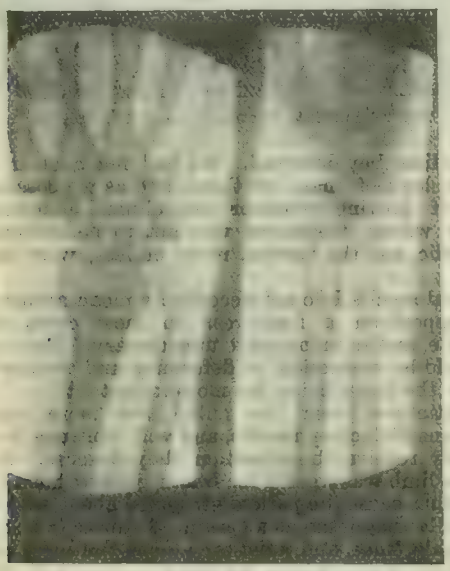


Fig. 4.—Colles's fracture.

The cost of an *x*-ray apparatus suitable for use in the country is not prohibitive. In my own case my experience has been derived from an apparatus which was presented eight years ago to the Lawson Memorial Hospital, Golspie, of which I have the privilege of being the Surgeon. It consists of a Cox 10-in. coil, the old form of Mackenzie Davidson mercury brake, and a 24 volt battery. The tube used has been the ordinary Müller heavy anode tube. With a current of 5 to 7 amperes, and with the anticathode at a distance of 15 to 18 in. from the plate, my exposures have varied from half a minute in the case of a hand, to three minutes for a hip-joint. I have found that a cylinder of sheet lead 7 in. in diameter and about 8 in. long gives better definition in difficult cases.

If every cottage hospital situated in the country were provided with such an apparatus, I am quite sure that a medical practitioner could be found who would be willing to devote sufficient time and attention to *x*-ray work, which would prove a boon to his fellow practitioners and their patients in the surrounding districts.

I would lay stress on three points:

1. That a simple and comparatively inexpensive apparatus can be made to give good results.
2. That good results can only be obtained by thorough acquaintance with the particular apparatus with which one is accustomed to work.
3. That it is essential that the working of such an apparatus should invariably be under the direct supervision of a duly qualified medical man.

[Dr. Simpson concluded his paper by illustrating by means of slides some of the injuries and diseases of the bones which he had met with in country work during the past few years.]

A NEW STAND FOR X-RAY WORK.

By Professor Dr. K. F. Wenckebach,
Groningen, Holland.

Dr. Wenckebach gave a brief demonstration of a new form of *x* ray stand, chiefly for screen work and radiographs, and pointed out that the full advantage of the *x*-ray method of diagnosis was obtained when they had, not merely co-operation between the radiologist and the medical man in charge of the case, but a radiologist who was himself the medical man attending the patient. The new apparatus had the advantage of being in reality a combination of instruments with which many kinds of special work could be done, and also the further advantage that by its means the radiographer could carry out the whole of the work single-handed. The stand was a double-framed arrangement, with accommodation for the patient between the frames. The patient was fixed in sitting or standing position by means of bands and could be placed in any situation desired for radio-examination. The second stand, behind the patient, was capable of being easily pushed forward or pulled backward, and the tube was fixed in its protective box in such a manner that with the aid of a piece of wood it could immediately be centred against the diaphragm. The operator in front of the fluorescent screen was always aware of the exact position of the tube. The simplicity and easy adjustment of the apparatus were such that twelve or fifteen people might be present and see at once what was going on. The apparatus was useful for radiography of the chest, neck, and skull, for stomach work, for the diagnosis of renal calculus, and offered facilities for stereoscopic radiography. The tube and screen could be readjusted when it was necessary to make a screen examination of the larger parts of the body.

DISCUSSION.

Dr. A. E. Barclay (Manchester) said that he used an apparatus similar to the one which had been demonstrated, and his experience with it impelled him to utter a word of warning. After a morning's work with it he found it very tiring, and he came to the conclusion that it was insufficiently protective. After making its protective capacity more complete by the addition of some proof rubber, he experienced a great difference. In his opinion, something further ought to be added to the stand which had been shown.

Mr. Thurstan Holland (Liverpool) also expressed the opinion that all stands of this kind were absolutely inadequate for protection. Personally, he would not like to have a number of students and others to come down day by day, and stand in front of such an apparatus.[1]

Dr. Wenckebach said that he was quite aware that protection could not be made absolute, but in this case it was only the very hardest rays that could come out from the tube, and personally he had never experienced any discomfort. A real danger, it seemed to him, lay in another direction. There was so much lead in the modern *x*-ray room that lead-poisoning was a possibility not to be overlooked.

[1] The makers of the stand in question, Messrs. Siemens Brothers and Co., have since informed us that they supply with most of their screening stands and outfits a second shield, which is lead-lined and has a sliding lead-lined panel, which can be raised or lowered with ease. This shield being very compact it can be used with the operator sitting down as well as in a standing position, and ensures him protection at whatever height or position he requires it.

THE twenty-fifth Congress of the Royal Sanitary Institute will be held at Brighton from September 5th to 10th.

THE Department of Health of Charleston, South Carolina, has established a Pasteur Institute, which will be under the direction of Dr. J. Mercier Green, health officer of the city, and Dr. G. McF. Mood, meat and milk inspector. Patients may receive treatment either at the laboratory of the medical college or at their homes.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF RHUS TOXICODENDRON DERMATITIS.

A SEVERE case of rhus poisoning is, perhaps, sufficiently interesting to warrant my sending a few notes on one which has come under my observation lately.

The victim was a gardener, who came to me last autumn complaining of an itching, burning, erythematous and herpetiform rash, resembling the not uncommon *Primula obconica* rash, to which I attributed it, though the patient did not remember having handled the plant.

Some days later, however, he remembered he had been plucking leaves from a tree which was afterwards recognized as the *Rhus toxicodendron*.

The eruption, beginning on the wrists, soon spread to the eyelids and face. Papules, vesicles, and bullae quickly formed until the whole body was more or less affected. The skin on the hands, forearms, face, neck, and prepuce



RHUS TOXICODENDRON, OR POISON IVY.

became very oedematous, and covered with broken bullae with profuse discharge.

The irritation of the rash was very severe, preventing sleep, and his discomfort was increased by conjunctivitis and tightly-closed eyelids—a condition which lasted for five days.

Calamine and lead lotion were successful in relieving the distress, but it was quite seven weeks from the commencement of the attack before he was able to resume his work.

Crocker, in his *Diseases of the Skin*, states that some people are much more prone to be attacked than others. Evidently this man is one who is very susceptible to it, for, though he pruned the plant with the greatest of care in the spring, he was threatened with another attack this year, which fortunately spread no further than the forearms.

But the curious feature of the case is that, although the patient is so susceptible at present, he could not always have been so, for he has pruned and plucked leaves from the tree with impunity in former seasons.

The illustration is the reproduction of a photograph of the tree for recognition. Although the tree is nearly 20 years old, this is the first time it has been known to poison anyone.

Little Sutton, Chester. H. W. NOTT, M.R.C.S., L.R.C.P.

A CASE OF INCOMPLETE DEVELOPMENT OF THE EXTERNAL AUDITORY MEATUS.

AT the school medical examination of a boy, aged 5, in West Glamorgan, it was found that the right external auditory meatus was only about a quarter of an inch long, and appeared to be lined throughout by normal skin. There was no trace of cerumen, and on palpation with a blunt probe against the skin at the end of the cul-de-sac no bone could be felt. The pinna was normal, but a sessile projection, slightly smaller than a split pea, immediately in front of the tragus, probably represented a supernumerary auricle. On the left side the ear and hearing were normal. The existence of the condition was unknown to the mother, and is the first case I have seen in the examination of over 10,000 children.

Coats states, in his *Manual of Pathology*, fifth edition, p. 1257:

> Congenital contraction and closure of the canal have been observed in various degrees.

With regard to treatment, Lake, in his *Handbook of Diseases of the Ear*, second edition, p. 70, says:

> It is generally useless to attempt to restore the external meatus, as there is in these cases bony occlusion of the canal beyond the membranous cul-de-sac.

Swansea. THOS. E. FRANCIS, M.D., B.S., D.P.H.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

WESTMINSTER HOSPITAL.

CASES OF HIRSCHSPRUNG'S DISEASE.

(Reported by GORDON R. WARD, M.R.C.S., L.R.C.P., House-Surgeon.)

HIRSCHSPRUNG'S disease, which is, perhaps, better known as "idiopathic dilatation of the colon," seems always to involve some loss of the motor function, whatever the other facts may be. Excessive length of the gut or mesentery are often associated, as in one of these cases about to be mentioned. What exactly the atonic condition depends on is a matter of dispute, but its resulting symptom—namely, constipation—is always prominent.

Of the three cases now to be recorded the first illustrates the condition in childhood, with death from constipation and auto-intoxication. The second illustrates a less severe type, but with death from complications. The third is one in which the symptoms were relieved from the time of operation. I am much indebted to Mr. W. G. Spencer for permission to publish these cases, which were under his care at the Westminster Hospital.

CASE I.

H. F., female, aged 3 months, had suffered since birth from extreme constipation. There had been no action of the bowels during the six days previous to admission. The child was wasted, and vomited frequently, the abdomen was distended, and the coils of the intestine were plainly outlined, even in the absence of peristalsis. Medical treatment proved of no avail, and an operation appeared to offer the only chance of life, although a slender one. Mr. Spencer accordingly performed a laparotomy, and tied a gastrotomy tube in the colon. Any more protracted operation was contraindicated by the condition of the patient. The patient died twelve hours later.

It is possible that this life might have been saved had the patient come under medical observation earlier; but, as it was, the *post-mortem* examination showed that there was already considerable ulceration in the splenic region, involving all but the peritoneal coat, while the rest of the colon was much congested and thickened. There was no very marked increase in length.

Such cases are not very hopeful from the point of view of treatment, and if purgatives, careful attention to diet, etc., are of no use, operation should be resorted to early. If by means of an appendicostomy or colostomy, lavage and the direct application of remedies to the colon can be resorted to, there is some hope of establishing the requisite amount of "tone." Nevertheless, it is obvious that in the case of young children, especially those of poor or ignorant parentage, the prognosis must always be grave.

CASE II.

G. S., male, aged 52, was admitted with symptoms of intestinal obstruction. The pulse-rate was 112, and there was distinct suggestion of general peritonitis. The history showed that he had been suffering from partial obstruction for ten days. As far as he could remember, he had always been the subject of more or less obstinate constipation, and had had more than one attack similar to the present one, but less

severe. Mr. Spencer explored the abdomen, and found the sigmoid much lengthened and enormously distended. It was bent upon itself, and lodged under the ziphi-sternum; there was a resulting volvulus at the lower end, the folding having occurred at the site of old adhesions binding the sigmoid to the region of the ileo-caecal valve. Lesser adhesions were present in other situations, and there was commencing general peritonitis. A large part of the sigmoid was excised, and an ileo-sigmoidostomy performed. Appendicostomy was also performed for the reasons above cited. The operation was one of great difficulty, and consequently of unusual duration.

The patient lived twenty-four hours afterwards, but to such a degree had the paralysis of the gut proceeded, that it was not found possible to relieve it by saline injections or other means.

At the *post-mortem* examination the peritonitis was found to have increased in degree, and the bowel was almost ulcerated through at the site of the thickest adhesions. It cannot be doubted that at this point organisms from the bowel could easily have obtained access to the peritoneal cavity.

This, then, illustrates lengthening and distension of the gut, with slight attacks of peritonitis leading to adhesions. Presumably these attacks were local only. The adhesions in turn appear to have been an important factor in determining a volvulus. The volvulus occurring at a point where the bowel was already weakened, and no doubt exercising more traction the more it became distended, predisposed to ulceration. At the site of ulceration perforation was obviously imminent. It is noteworthy that the symptoms of volvulus had existed for ten days, but the onset of peritonitis had much increased the gravity of the patient's condition.

Probably this patient by unremitting attention might have so regulated his bowels as to obviate the attacks of localized peritonitis. When once these had occurred the formation of adhesions made serious complications sooner or later almost inevitable. Even so resection of the sigmoid ten days earlier might have given him many more years of life, but the condition found at operation showed that the disease had been allowed to progress too far.

CASE III.

H. C., male, aged 26, was admitted for radical cure of a left inguinal rupture. It was found that his abdomen was much distended and that he vomited once or twice a day. He gave a history of vomiting previous to the appearance of the hernia, and of constipation for as long as he could remember. As there was some doubt as to what part the hernia might have as causing these symptoms Mr. Spencer performed a radical cure. This, however, did not stop the vomiting. The abdominal distension could be relieved by a series of enemas, but recurred almost immediately. A laparotomy was accordingly performed, but nothing was found except slight thickening of the colon. Mr. Spencer tied a tube in the appendix and closed the exploratory incision. The patient had magnesium sulphate ʒss in a pint of water through the appendicostomy tube every day after. The vomiting and distension immediately ceased. The patient remains in hospital at present, but is getting about and has a good appetite. There is every reason to suppose that the tone of the colon is being gradually restored.

This case shows very well the great value of the direct application of remedies to the colon with daily lavage. Although the distension could be abolished by means of a series of enemas, this treatment was too severe to allow of its long continuance. The constipation had always been a source of inconvenience, but the vomiting was of more recent occurrence. Why this should be so is not apparent—possibly the hernia acted as an aggravating factor, yet it is to be remembered that its cure gave no relief.

These cases exemplify three of the many different clinical pictures which Hirschsprung's disease may present. In all of them the one symptom, constipation, was present, and all gave a history that it had been so as long as they could remember. In all medical treatment had proved of no avail, either from inherent impossibility or from lack of the necessary persistence. Nevertheless, there are many slighter cases which can be dealt with by other than surgical means, and these are often not easy to distinguish from constipation due to other causes. Hirschsprung's disease, strictly speaking, can never be acquired; but there is no doubt that a similar degree of atony can be reached from other causes, and such cases have been successfully dealt with by the surgeon. But although resection of the sigmoid and ileo-sigmoidostomy have been performed with brilliant results, it seems evident that appendicostomy ought first to be tried.

Since these notes were made, Case III has been discharged from the hospital. The appendicostomy opening has been allowed to close, and there is no return of unpleasant symptoms.

Rebiews.

HYGIENE.

SOME idea of the scale on which Brouardel and Mosny's treatise of hygiene[1] has been projected may be gathered from the fact that the present *fascicule*, No. XII, on the general hygiene of towns and centres of population, is a closely printed volume of over seven hundred pages. Altogether twenty of these volumes are to be issued under the direction of Professor CHANTEMESSE and Dr. MOSNY, the former having undertaken the work initiated by the late Professor Brouardel. The titles of these volumes alone indicate that the work when completed will form a veritable encyclopaedia of public health, and the names of the contributors, including nearly all the best known sanitarians, and the principal public health officials in France, are sufficient guarantee of its authority. The present volume, dealing with the general sanitation of cities, towns and urban districts, is the largest, and will doubtless prove one of the most important of the series. It is impossible in the limits of a short review to do more than indicate its scope. Briefly it may be said that none of the problems of modern sanitation is left untouched, but some are dealt with in much greater detail than others. This is doubtless because this volume is intended primarily as a general survey of the subject, portions of which will be dealt with in greater detail in subsequent fasciculi dealing with special subjects. About half the present volume is the work of Professor Macé in collaboration with M. Imbeaux, chief engineer of roads and bridges under the Government, and consists of a general survey of the history of sanitation, the general conditions affecting the health of modern towns, the causes of ill health and the means of preventing it. The last item includes elaborate essays on population, water supply, housing, road making and cleansing, disposal of sewage, refuse, etc., and, in fact, all the problems nowadays included under the study of public health. The amount of information derived not only from cities and towns in France, but from the whole of Europe, with statistics and comparative tables, will make this part of the book permanently valuable as a work of reference. The analyses of various forms of refuse other than sewage are of particular practical value, and not usually to be found in English textbooks of the subject. Housing is very fully treated in all its bearings, and there is a well-illustrated section on ventilation, which in itself is almost a textbook. On the other hand, it is disappointing to find the question of isolation hospitals dismissed in a few lines, and no light thrown on the somewhat burning question of the value of isolation hospitals for scarlet fever. No doubt, however, this will be dealt with in the volume on hygiene of hospitals. It is interesting to note that the French schedule of notifiable diseases differs considerably from ours, and that measles has been included by the Act of 1903. The importance of this is shown by the fact that in 1905 the deaths in Paris from measles were just ten times as many as those from scarlet fever, namely, 424 to 43, which is roughly about the proportion prevailing in this country, where measles is still regarded officially as a trivial complaint. The whole subject of sanitary administration is dealt with in great detail by M. Bluzet, Inspector-General of the Administrative Services under the Ministry of the Interior. This section should be of especial interest to all engaged in sanitary administration in this country, affording as it does an admirable basis for comparison of our own methods with those of other nations. Administration in France is greatly simplified by the Act of 1902, which modernizes and consolidates the previous laws and appears to govern the whole field of sanitary administration, including notification, vaccination and revaccination, housing, water supply, drainage, food and drugs, etc. Perhaps only those who have had to make their way through our maze of more or less contradictory statutes will realize the extent to which this must make for efficiency. The last part of the book, by M. Paul Adam, deals with industrial hygiene, and is no less interesting than the rest. Altogether the

[1] Brouardel et Mosny, *Traité d'hygiène*, publié en fascicules sous la direction de Mons. Chantemesse et E. Mosny. XII. *Hygiène générale des villes et des agglomérations communales*. Par E. Macé, Albert Bluzet, Ed. Imbeaux, et Paul Adam. Paris: J. B. Baillière et Fils. 1910. (Sup. roy. 8vo, pp. 711. Fr. 12.)

work is one which no modern public health library can afford to be without.

The third edition of Dr. D. H. Bergey's *Principles of Hygiene*[2] brings this useful volume thoroughly up to date. Although a fairly bulky volume, the ground covered is so wide that the great merit of the book is its brevity. With the exception of sanitary law and administration, every other aspect of public health work is dealt with; and though most of these subjects are considered in some detail, the book remains an exceedingly readable one. It does not pretend, however, to be exhaustive, and while providing an excellent introduction to the modern study of sanitation, it must be read in connexion with some of the standard books of reference by all serious students of the subject. The author is especially to be congratulated on the chapter on immunity, which forms one of the best summaries of the history and present position of modern views on this subject which we have yet seen. The chapters on air and ventilation, disposal of sewage and refuse, water supply, housing, and building construction, are alike very full and excellent, but the chapter on disinfection is less satisfactory. In proportion to the space given to chemical and other modes of disinfection, it seems strange that steam disinfection and the principles involved should be dismissed in a brief paragraph and a footnote. The book is, of course, written from the American standpoint, but differences in procedure in other countries are usually explained. The book can be unhesitatingly recommended to all who are commencing the study of public health.

In a little more than a hundred pages Colonel J. Smith, M.D., I.M.S., gives us the results of a brief mission to Japan, which was undertaken on behalf of the Government of Mysore. With the instinctive modesty of one who does good work almost without knowing it, the author states that his object was to "find something in Japanese sanitation that would be useful in India." As a matter of fact, his *Notes on Applied Sanitation in Japan*[3] form a really important contribution to the English literature of Japan, and should be studied not only by sanitarians, but by all students of that remarkable country. There are a few classic works in English dealing with Japan and the Japanese, notably, of course, the writings of the late Lefcadio Hearn, but much of the recent literature on the subject has given us but platitudes on scenery and art, with the tripper's point of view of the people. It is impossible to read Colonel Smyth's pages without feeling that this monograph of a trained observer studying his own subject does more to interpret the Oriental mind to the Western than many volumes of the superficial observations of the amateur. There are few subjects which touch the intimate social life of a population on more points than that of sanitation, and Colonel Smyth has approached his subject in no narrow spirit, as will be seen from the fact that his inquiry extends not only to the subjects generally included under the term sanitation, such as housing, water supply, disposal of refuse and excreta, drainage, etc., but to such matters as marriage laws, prostitution, liquor regulations, opium, lunacy, and prisons. In public health administration the Japanese have shown the same remarkable powers of selection and assimilation of European methods that in other matters have placed them alongside the foremost Powers of Europe. As Colonel Smyth says:

> Though one of the proudest people in the world, the Japanese have not mingled stupidity with their pride, but have gone forth into the wide world, sitting humbly at the feet of experts in these matters, wherever they could find them; or they have invited such to their schools and colleges, and, having thus armed themselves with the most varied knowledge and experience, they have whole-heartedly adopted whatever they found beautiful, and good, and useful, and applied it to their daily life.

This rapid transformation has been possible in Japan as it would have been nowhere else, because, however repugnant to the tastes and traditions of the people a change might be, if "the Emperor had given the order," the order was obeyed; because, as Colonel Smyth says on another page, "what suits one Japanese suits all Japanese." We have not space to do more than refer briefly to a few of the many technical subjects considered in this work. The scheme of public health administration, central and provincial, is so simple that Colonel Smyth is able to demonstrate it by two simple tables. The chief problem is the prevention of the following eight diseases: Typhus and typhoid fever, cholera, small-pox, diphtheria, plague, dysentery, and scarlet fever. Every town of any size has its public health laboratory, fully equipped and manned, which deals not only with infective disease, but with food, water, etc. The water supply is mainly derived from wells sunk by a special class of workmen, the Idohori. With a very primitive looking apparatus these men are very skilful and successful borers. They are also water-finders, but make no pretence to superhuman knowledge like our "diviners" with their hazel-twigs and humbug. Where the Japanese sanitary arrangements fail from a Western point of view is in the disposal of excreta. Anything comparable to our water-carriage system would be repugnant to their thrifty minds, and "there is no waste in Japan." All night soil, etc., is conserved in pits, and afterwards applied directly to the land without further treatment. It appears that in cold weather no nuisance is caused, but what the result must be in hot weather, with the flies about, one can only guess. With a water supply derived from wells, one is not surprised that cholera and typhoid are still among the unconquered foes. Vaccination and revaccination at 5 years of age are compulsory, and the arrangements for the preparation and distribution of lymph is at least equal to anything in this country. Medical inspection of schools is very thoroughly organized, but it is curious to come across the complaint about unpaved and dirty schoolyards with which we are so painfully familiar at home. Colonel Smyth spent only some four weeks in Japan, and repeatedly regrets the incompleteness of his observations. But it must have been four weeks of assiduous work, of which his report is a brilliant and delightful summary. He wishes that he had more time in the country, and all who read his book will share that wish. We could hardly have too much of so good a thing as this.

[2] *The Principles of Hygiene: A Practical Manual for Students, Physicians, and Health Officers.* By D. H. Bergey, A.M., M.D. Third edition. Philadelphia and London: W. B. Saunders Company. 1909. (Med. 8vo, pp. 555; illustrated. 13s.)

[3] *Notes on Applied Sanitation in Japan.* By Lieutenant-Colonel J. Smyth, M.D., I.M.S., Sanitary Commissioner in Mysore. Bangalore: Printed at the Government Press. 1909. (Roy. 8vo, pp. 117. 2 rupees.)

OPHTHALMOLOGY.

Ophthalmic Surgery[4] is a book dealing with operations, by Charles H. Beard, of Chicago, and it is thoroughly American throughout. Some of the directions can scarcely be considered applicable to English surgeons at all. On the first page, for instance, when the author is discussing what he terms "paraoperative technic," he states that 'we should acquire the habit of surgical cleanliness." "Unless one is broadly grounded in this training, he is being for ever the victim of his own anticlimaxes, as, for example, picking his teeth with his finger-nails, scratching his head, or taking an instrument between his lips after the most elaborate and up-to-date preparations for an operation." We should hardly expect that any civilized being, much less a surgeon, would be guilty of such practices. He might as well insist that a surgeon should wash his hands after performing an autopsy before starting an operation. We are told on page 484 that

> A jab of the thumb, knuckle, or scrub-brush could, in the eye of these senile subjects, lead to very unpleasant results.

This obvious statement is hardly likely to be contradicted by any one, and most intelligent beings would scarcely want to be told this. Again, the surgeon is warned against "storming, gesticulating, yanking" (whatever that is), "thumping, and even swearing at the patient." After a description of the operation for cataract, a chapter follows headed "Don'ts," in which we are told all sorts of curious things which are to be avoided. The accident of inserting the cataract knife upside down when making a section is termed a "serio-comic dilemma." Where the comic element comes in is certainly not very apparent. All the various operations in general use are fully and well described, while the illustrations are excellent and very numerous. Were it not for the extremely idiomatic

[4] *Ophthalmic Surgery.* By Charles H. Beard, M.D., Chicago. London: Rebman, Limited. 1910. (Roy. 8vo, pp. 680; 9 plates showing 100 instruments, and 300 other illustrations. 22s.)

American in which it is written, the book would form very pleasant and instructive reading. As it is, one is so frequently brought up with quaint and original expressions that, until one gets used to it, it is difficult to follow by any one who is unacquainted with this peculiar sort of English. Notwithstanding the eccentricities which we have pointed out, the work is not without value as an addition to existing works on the operative surgery of the eye.

We are glad to welcome the second edition of *Colour Blindness and Colour Perception*, by Dr. F. W. EDRIDGE-GREEN.[5] The first edition had been exhausted, but so thoroughly was the work done which formed the basis of the first edition (in 1891), that during the interval of nineteen years we notice but little change in the volume; and although it is now brought fully up to date, yet the essentials of the book remain the same. Really, the volume is so little altered that any one who has the first edition will, if he assimilates the information it gives, know almost as much about the subject as he would by reading the second edition. A greater compliment to a piece of work could hardly be given than this, and yet it is not a mere compliment, but a matter of hard fact. That Dr. Edridge-Green's views were revolutionary when they were first brought out many people will remember. His book met with a storm of adverse criticism, and many there were who, while not taking the trouble to understand it, assumed a superior air, and said it was not worth criticizing or considering, so erroneous were the views expressed. Until the last few years that was supposed to be the correct attitude to take; the physicists took it, and so did many ophthalmic surgeons and physiologists who ought to have known better. It was a case which might be compared to the proverb of giving a dog a bad name, and Dr. Edridge-Green got metaphorically hung in consequence. This, however, is all ancient history now. No one who has taken the trouble to investigate the facts has gone away unconvinced, and the ideas expressed are held so generally now that many people would say that the book really contained nothing controversial. How different public opinion was a few years ago can be appreciated only by those who have watched the persistency of Dr. Edridge-Green in trying to obtain a fair hearing for his side of the case. Practically the whole of the new matter is contained in an appendix of 11 pages, and this tells what has been done during the last few years. The theory and the facts remain as they were when first published, so thoroughly was the work done. It is quite unnecessary in a short review like this to enunciate the theory and ideas with which the book abounds, anyone who wishes to find that out can read them for himself, but suffice to say that whoever desires to know the truth about colour-blindness, and who is in the habit of testing men for public services, should have this book at his right hand until he has thoroughly mastered its contents. If this be so, and if colour-vision examiners are medical men, we should have far fewer men passed who are dangerously colour blind for the sea and land services in which coloured lights and signals are used, and we should also avoid the scandal which at present exists whereby many and many a normal-sighted person is rejected from employment wrongfully, just because examiners who are ignorant of their subject are provided with inefficient and obsolete tests.

The *Atlas of External Diseases of the Eye*,[6] by Dr. RICHARD GREEF of Berlin, is really a beautiful book. There are in it 84 coloured illustrations, and 54 plates with explanatory text. It has been translated from the German by Dr. P. W. Shedd, of New York. The book has been reproduced in an altogether exceptional way. As a rule the cases are depicted by an artist, with the patient as his model; but here Dr. Greef has worked in conjunction with a sculptor, F. Kolbow, who has made wax models of important external diseases of the eye. The plates were obtained by making a mask of the living subject, which was then filled with wax, and from the wax models photographic reproduction in four colours was made, and so "a pictorial plasticity" was obtained which is impossible in a drawing. Most of the plates are excellent, and better than anything we have before seen published, though it must be confessed that a few of the plates are not quite up to the high standard set by others in the atlas. The most worrying part of the whole book is the extreme "Americanism" met with in the translated text. Some of the sentences have to be read more than once to see what they really mean, and the translator is evidently a follower of the "nu spellin" school. Except for these imperfections we have nothing but praise for the excellent work of Dr. Greef and his sculptor, while the atlas will make a very great addition to those which already exist.

Dr. WEBSTER FOX is a prolific writer, and he has now brought out a *Practical Treatise on Ophthalmology*,[7] which reminds us very forcibly of another book published by him in 1904, called *Diseases of the Eye*. Papers and even chapters are taken from it wholesale, and if this new volume was termed a second edition of the old, it would not be in any way stretching the point. Of course there are many alterations and much new material, but that would be natural in six years. We are glad to see that the author gives comparatively little space to the description of the way to pass large probes and styles down the nasal duct; instead, there is a lengthy and detailed description, with excellent illustrations, of the way in which the lacrymal sac may be extirpated. The chapter on colour blindness is more up to date than is usually seen in most textbooks, which are content to copy from one to the other, and to ignore modern work and views; not that this chapter is free from antiquated views by any means, but it also describes the ideas which are now being universally adopted, though, like many old ideas, those on colour blindness die very hard. The ordinary regional diseases are described under their respective heads, and chapters are given up to refraction, muscular errors, bacteriology, and histology. The various operations are described under the structures which they chiefly concern. The book is absolutely nothing but a second edition of *Diseases of the Eye*.

This book, *Manuel de neurologie oculaire*, by F. DE LAPERSONNE and A. CANTONNET,[8] of upwards of 350 pages, is divided into two parts. The first deals with the anatomy and physiology of the eye and its nervous mechanism, together with the symptoms produced by lesions of the same, while the second part is concerned with the nervous affections of the eye in different diseases. Some very excellent anatomical drawings, many of them coloured, serve to illustrate the section dealing with anatomy, and some of them are as good or better than are commonly met with in many anatomical textbooks; they are, however, mostly taken from other authors. The methods of clinical examination are illustrated by cuts representing the position of the patient and surgeon during the process. In the description of the very puzzling examination of diplopia with a red glass and a candle, the position of the different images is tabulated so as to render it more clear. Illustrations are one of the features of the book, and many conditions are shown chiefly taken from photographs of actual patients. The book is thorough and complete, and faithfully describes and discusses the many problems connected with the ocular nervous system.

The twenty-ninth volume of the *Transactions of the Ophthalmological Society of the United Kingdom* has now been published, and consists of the papers read before the society during the session 1908–9.[9] The Bowman Lecture, on some hereditary diseases of the eye, which was delivered by Mr. Nettleship, is given in full, and it is a marvel of patient and industrious work. It is done in that thorough and painstaking style so characteristic of the author. It is impossible to mention, even by name, the numerous papers and rare cases described, all of which

[5] *Colour Blindness and Colour Perception*. By F. W. Edridge-Green, M.D., F.R.C.S. Second edition. The International Scientific Series, vol. lxxi. London: Kegan Paul, Trench, Trübner and Co., Ltd. 1909. (Cr. 8vo, pp. 334; 3 coloured plates. 5s.)

[6] *Atlas of External Diseases of the Eye, for Physicians and Students*. By Dr. Richard Greef, Professor of Ophthalmology in the University of Berlin. Only Authorized English Translation by P. W. Shedd, M.D., New York. London: H. K. Lewis. 1910. (Imp. 8vo, pp. 148. Coloured illustrations 34. 42s.)

[7] *A Practical Treatise on Ophthalmology*. By L. Webster Fox, M.D., LL.D. Philadelphia, New York, and London: D. Appleton and Co. 1910. (Roy. 8vo, pp. 833; 6 coloured plates, 300 illustrations. 25s.)

[8] *Manuel de neurologie oculaire*. By F. de Lapersonne and A. Cantonnet. Paris: Masson et Cie. 1910 (Demy 8vo, pp. 374; 106 figures. Fr. 6.)

[9] *Transactions of the Ophthalmological Society of the United Kingdom*. Volume xxix. Session 1908-9. London: J. and A. Churchill. 1909. (Demy 8vo, pp. 428. 12s. 6d.)

are of great interest and importance. The illustrations consist of coloured plates, black and white plates, and text illustrations, and they are all excellent. The volume fully maintains the high reputation which has been gained by its predecessors, and the council and secretaries deserve credit for the way in which they have carried out their arduous duties of collecting, editing, and arranging the papers.

Manual of Military Ophthalmology is a small book of about 220 pages by Lieutenant-Colonel M. T. Yarr, R.A.M.C., the second edition of which has now appeared.[10] Colonel Yarr is so well known as an accomplished ophthalmologist that it is a distinct disappointment to find that although he states the book has been carefully revised and brought up to date yet inaccuracies abound, and many of the ideas expressed are by no means those which are now usually held. On p. 10 is an error which certainly ought not to have escaped detection. In talking of Snellen's distance types, we are told that each part of the letter is arranged so that at its given distance it subtends an angle of 5 degrees, while each part of the letter subtends an angle of 1 degree. What huge letters they would be, just 60 times the size they now are; 5 minutes and 1 minute should be the figures. In the paragraphs on colour vision nothing more recent is given than the all but exploded Young-Helmholtz theory, and no test is recommended for the detection of colour blindness other than the much discredited and inefficient matching test of Holmgren. In treating of retinoscopy, the observer is recommended to place himself 4.5 metres from the patient when using a plane mirror. One wonders how long it would take to do a dozen retinoscopies like this, and how long the surgeon would take walking backwards and forwards between the patient and the stool. He would walk a very considerable distance doing the work of an ordinary out-patient clinic. On page 66 we are told that "Mr. Silcock takes exception to it." Is the author unaware that the profession and the public had to mourn the death of that distinguished surgeon five years ago? The ancient and barbarous operation of slitting canaliculi, and the passage of probes "of the largest size" is advocated for the treatment of lacrymal obstruction, and we are told in the final paragraph that "in bad chronic cases an attempt may be made to dissect out the sac, but this is a most difficult operation and seldom successful." If anyone finds it difficult it is because he does not know how to do it, and the majority of surgeons would rather state that it is an easy operation and always successful. The only operation for ptosis given is that complicated one devised by Panas, which, although it gave good results in the hands of the inventor, yet no one scarcely has since had any good results with it, while the majority are so bad that it is all but universally given up. An obsolete tortoiseshell spoon which will not stand boiling is figured as the correct instrument with which to express a lens in the operation for cataract. It is with a feeling of genuine disappointment that these defects are pointed out, for the author is equal to producing a far better and more up-to date book, and we trust it will not be long before a third edition is issued which really is up to date, and thus a book which we genuinely admire for its many good qualities will take its place among the small books on ophthalmic surgery.

Notes on Cataract Extraction, by Major R. H. Elliott, I.M.S., of Madras, is published in a small book on *Four Common Surgical Operations in India*,[11] by Major P. C. Gabbett, I.M.S. The other three operations are those for hernia, hydrocele, and elephantiasis. We have here to deal only with the part contributed by Major Elliott, which forms the fifth chapter. It consists of but eighteen pages, and is written from a purely practical standpoint. He first tells the beginner how to recognize easy and straightforward cases from the more difficult ones, and he warns anyone to ensure as far as possible that his early cases shall be successful, otherwise he will find the greatest difficulty in subsequently gaining the confidence of the natives. Then he deals with the preparation of the patient and of the instruments, and assumes that the operation will be done with iridectomy, and by the ordinary method of lacerating the capsule, followed by irrigation of the anterior chamber. With a master's eye in detecting the faults of the beginner, he deals with those most likely to be made by the tiro, and explains at length how these are to be avoided and overcome, and finally he gives directions for the treatment of complications which may occur during the healing process. These few pages represent the practical knowledge of an expert, and cannot fail to be of the greatest use to those who are about to commence their career as ophthalmic surgeons. To those whose experience, though relatively large in this country, yet is quite insignificant when compared with that of Major Elliott, we heartily commend this little book, as we feel sure there are but few who will not derive benefit from its perusal.

Optical Instruments Simply Explained[12] is one of a series of books called the Model Engineer Series, and this particular one is written by H. T. Davidge, B.Sc. They cost but 6d. each, and are in paper covers and well illustrated. The one under review is the thirty-fifth of the series, all of which deal with different branches of science. It consists of 83 pages, and a very good description is given of all the common optical instruments—for example, telescopes, microscopes, cameras, spectroscopes, and sextants. Reflection from mirrors and refraction of light by lenses is explained and a description of the eye and sight is given, this latter being the least satisfactory in the whole book. Naturally the subject is not treated in anything like a full manner, but the chief points are well and carefully explained, and for anyone who knows nothing about the subject much useful information may be gleaned.

A second edition of *Errors of Refraction and their Treatment*,[13] by Charles Blair, has recently appeared. It is a very small volume consisting of about one hundred pages, and is intended "to supply in a condensed form the more practical and clinical points in connexion with errors of refraction," and thus the author hopes it may be of use to some who are not able to give much time to the study of refraction. As a cram book it is good enough, but because it is so condensed it requires rather more knowledge than is possessed by one ignorant of the subject really to understand it. The book is well written and deals in a practical manner with the many points which are met with in a study of refraction errors of the eye. As a very small book it is quite equal to any of similar size with which we are acquainted.

MALTA FEVER IN UGANDA.

Sir David Bruce and the other members of the Sleeping Sickness Commission of the Royal Society, 1908–10, have recently shown that "muhinyo,"[14] a native name for a disease prevailing in parts of Uganda, is nothing more nor less than Malta fever. The principal focus of the disease is along the eastern shore of Lake Albert Edward, spreading from there in a south-easterly direction into Ankole. The tribes most affected by the disease are the Bakonjo and the Basongora, both of whom drink the milk of goats and cattle. The symptoms, analysed from 50 cases seen by Sir David Bruce at Masaka, were fever, profuse sweating, pains in the joints and along the course of the nerves, swelling of the various joints, especially the ankles, and extreme weakness and emaciation. The duration of the disease was a long one, most of the patients seen having been ill for several months, and one had been ill for two years. That the disease was Malta fever was abundantly proved by the examination of these cases for agglutinative phenomena, and also by the isolation of the specific germ from their bodies—the goats were in turn

[10] *Manual of Military Ophthalmology for the Use of Medical Officers of the Home, Indian, and Colonial Services.* By M. T. Yarr, F.R.C.S.I., Lieutenant-Colonel R.A.M.C. Second edition. London: Cassell and Co., Limited. 1909. (Fcap. 8vo, pp. 228. 6s.)

[11] *Four Common Surgical Operations in India. Notes on Operations in India for Hernia, Hydrocele, and Elephantiasis.* By Major P. C. Gabbett, I.M.S., Professor of Surgery, Madras. *Notes on Cataract Extraction.* By Major R. H. Elliott, I.M.S., Superintendent of Ophthalmic Hospital, Madras. Madras: Higginbotham and Co., and London: Luzac and Co.; or H. K. Lewis. 1910. (Demy 8vo, pp. 57. 2s.)

[12] *Optical Instruments Simply Explained.* By H. T. Davidge, B.Sc., M.I.E.E. The Model Engineer Series. No. 35. London: Percival Marshall and Co. (Cr. 8vo, pp. 83. 6d.)

[13] *Errors of Refraction and their Treatment: A Clinical Pocket-book for Practitioners and Students.* By Charles Blair, M.D., F.R.C.S. Second edition. Bristol: John Wright and Sons, Limited; and London: Simpkin, Marshall and Co., Limited. 1910. (Fcap. 8vo, pp. 106. 2s. 6d).

[14] "Muhinyo." A disease of natives in Uganda. Read before the Royal Society, June 30th, 1910.

next tried, and after some of these from Ankole had been shown to react to the agglutination test, an attempt was made to isolate the micrococcus from their tissues, this being successful in two cases. Thus the chain was completed and the two diseases demonstrated to be one. The discovery adds another area to the rapidly extending geographical distribution of Malta fever.

NOTES ON BOOKS.

MR. W. H. MARTINDALE'S *Organic Analysis Chart*[15] is a supplement to the well-known *Extra-Pharmacopoeia*, and consists of a tabulated record of melting point, solubility, reaction, and behaviour with common reagents, of a large number of organic substances used in medicine. The "chart" is intended as a guide for identifying any such substance by a simple examination; the particulars mentioned are given for over 300 bodies, including alkaloids, glucosides, synthetic substances like antipyrin and veronal, with many others which do not come under any of these heads; confirmatory tests are given in a separate section. The tables should prove of much use and convenience to chemists and others who may require to identify such substances.

A copy of *Low's Handbook to the Charities of London*[16] which has reached us is the seventy-fifth annual edition of this useful reference book. It is the senior publication dealing with the subject, and making its appearance in the middle of each year contains accounts of changes which have taken place subsequent to the issue of other like books. All the charities with reference to which information is given are placed in alphabetical order, and all those seem to be included which have their head quarters in London, wherever the actual work may be carried out. It is easy to use, and the information given is, as far as we have tested it, correct. This year's preface consists of an interesting sketch of the history of orphanages. The price of the volume is so small as to bring it within reach of all.

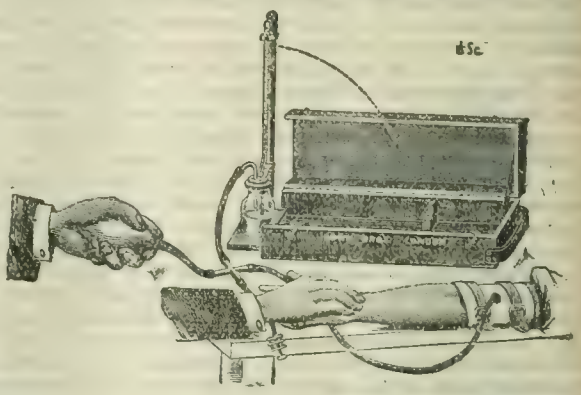
The eighth edition of SQUIRE'S *Pharmacopoeias of the London Hospitals*[17] follows its predecessor at an interval of ten years, during which time twenty-six of the thirty-two hospitals whose formulae are dealt with have produced new editions of their pharmacopoeias; it is obvious, therefore, that for all prescribers or dispensers who require to have a complete collection of the formulae in use in the hospitals in London, the new edition of this work is a necessity. The same plan is followed in this as in previous editions: preparations are arranged in alphabetical order, and each formula is for the most part restricted to the names and quantities of the ingredients, and is followed by the names of the hospitals adopting it. A very large amount of information is thus given within the compass of a book which can be put in the pocket.

[15] *Organic Analysis Chart.* By W. Harrison Martindale, Ph.D. A supplement to the *Extra-Pharmacopoeia*, fourteenth edition. London: H. K. Lewis, 136, Gower Street, W.C. 1910. (16mo, pp. 80; 3s. 6d.)
[16] *Low's Handbook to the Charities of London.* Seventy-fifth edition. London: Eliot Boothroyd. 1910. (1s.)
[17] *The Pharmacopoeias of Thirty of the London Hospitals.* By Peter Squire. Eighth edition; revised by Peter Wyatt Squire. London: J. and A. Churchill, 1910. (Fcap. 8vo, pp. 496. 5s.)

MEDICAL AND SURGICAL APPLIANCES.

A New Form of Sphygmomanometer.

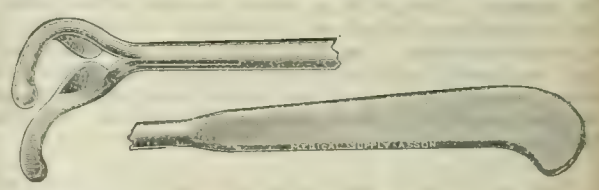
DR. HERBERT FRENCH (Assistant Physician to Guy's Hospital) writes: This apparatus consists of a vertical mercury manometer connected, as shown in the diagram, with a four-way glass cannula, the other three limbs of which lead to a rubber air bellows, a broad rubber bag enclosed in canvas for encircling the arm, and a clip for letting out air when required. The principle is similar to that of various other sphygmomanometers devised for measuring the maximum systolic blood pressure. Most instruments of the kind, however, have the disadvantage that, until fixed up, they are not ready for immediate use, and that, unless great care is used, the mercury is very apt to become spilled, and that if the apparatus is carried to a consultation at a distance much time is taken up in packing it so that nothing will go wrong with it *en route*. These disadvantages are obviated by the instrument here described. The box into which it fits has one of its narrow sides hinged, and to this the mercury bottle is fixed in such a way that the whole manometer can either stand vertically, as in the illustration, or else be rotated down in the direction indicated by the dotted line and arrow until it lies flat in the box. The length of the glass manometer tube and the amount of mercury in the bottle are so adjusted that whereas the lower end of the tube is immersed in the mercury when the manometer is vertical the tube leaves the mercury some little time before it reaches the horizontal position. The result of this simple adjustment is that the mercury cannot become upset whatever position the apparatus is in. It is something like the inverted ink-well in this respect. The great advantage of this is that as soon as a reading has been taken the manometer and its attachments can be laid down flat in the box, and the latter can be carried in any position—even upside down—without any spilling of the mercury. The apparatus can be carried amongst one's



luggage, and yet on arrival it is ready for immediate use. When it is required all that has to be done is to open the box, rotate the manometer into the vertical position, and take a reading in the ordinary way. Owing to the hingeing of the mercury bottle to the main box, no clamp is required to prevent its upsetting. There are minor points about the instrument, such as a contrivance for making the mercury in the manometer rise or fall smoothly, when blood pressure is being measured, without the wide jumpings and oscillations which are apt to occur in the case of some other forms of apparatus. As will be obvious, however, when the instrument is seen, the main advantage claimed for the sphygmomanometer is that whilst giving direct readings in millimetres of mercury it is so constructed as to be equally and instantly ready either for transit to a distance or for immediate use upon a patient. The instrument is made by Down Bros., Ltd., St. Thomas's Street, London, S.E.

An Obstetrical Instrument.

Dr. THOMAS FENTEM (Catcliff, Bakewell) writes: Every one engaged in obstetrical practice must have experienced difficulty in grasping a foot, in a footling presentation, with sufficient firmness to enable him to bring the leg readily down, even when the foot is easily reached with one or two fingers. To assist in situations like this I have devised an instrument, the general characters of which are shown in the accompanying figure. It will be observed my instrument consists of a double hook so



arranged as to slip over the ankle of the presenting foot from behind, the common stem of the two hooks being cleft for some distance so as to give the necessary springiness. The points of the hooks are made bulbous to obviate any risk of injury to the maternal soft parts. The points the instrument take hold of on traction are the two malleoli and the back of the heel, and so firm a hold is taken that I have been able to lift the buttocks of a newly-born child off the bed without the instrument slipping. The end of the handle is carried forward as a beak, in the same direction as the points of the hooks, so that one is at all times aware in which direction the hooks are pointing. The extreme length of the instrument is 10¼ in. I have found the instrument easy of application and effective for the purpose for which it is designed. It has been made for me, from my model, by the Medical Supply Association, Holly Street, Sheffield.

LONDON COUNTY COUNCIL.

Annual Report of the Medical Officer for Education for 1909.

The seventh annual report made by Dr. James Kerr Medical Officer (Education) to the London County Council, has just been issued for the year ending 31st Dec., 1909, and it is claimed that as useful results have been obtained as ever before. In the introduction it is stated that the records of detailed medical inspection show the wastefulness of applying minute routine examination to all children, and where tens of thousands are being examined, the time taken up by recording measurements is time and money wasted unless there is a practical use for them. The inspection for nineteen-twentieths of the children only needs to be severely practical to detect defects with a view to remedies.

The Staff for Medical Inspection.

The medical staff at the end of 1909 numbered 68, of whom 12 were women. Of the total, 12 are on the permanent staff, the medical officer and his chief assistant giving their whole time, with 2 assistants giving half time and 8 quarter time to their duties. The temporary staff consists of 16 school doctors and 40 assistant school doctors, all of whom are appointed annually and are not eligible for reappointment after three years of service. The permanent staff is employed mostly on special enquiries and examinations, while the temporary staff is employed chiefly on the statutory medical inspection in the elementary schools, each giving quarter time to the work. Sixteen additional school doctors are to be appointed from Sept. 1st, 1910. The nursing staff consists of a superintendent, 2 assistants, and 51 school nurses, who undertake the oversight of personal hygiene in both elementary and secondary schools and assist the school doctors.

Inspection.

The former routine inspection was replaced in March, 1909, by the more detailed inspection required by the Education Act of 1907. The head teachers are first informed when the doctor will visit the school, and a supply of medical record cards is sent on which the teachers fill in the names and other details, and parents are notified and invited to be present at the examination. The nurse arrives at the school first to prepare a suitable room, in some cases to examine the children in regard to cleanliness, to make a preliminary vision test, to take weights and measurements, and to obtain family histories and details of previous illnesses from the parents. The doctor then examines the entrants, the leavers, and other cases selected by the teachers, and the nurse enters on the cards the results of the examination from the doctor's dictation. Where treatment is recommended, a card is given to the parents present, or afterwards left at the homes by the nurse, and the parents are impressed with the need of obtaining proper treatment. The doctor then goes over the school and notes the arrangements, the general condition of the children, and the hygiene of the school work, only making suggestions where alterations are absolutely necessary for the health of the school. The results of the examination are tabulated and sent to the Education offices. Since the Council arranged with certain hospitals and institutions for medical treatment it has been deemed advisable to examine all the children in 28 schools in the neighbourhood of the institutions. The total numbers examined were: in 39 schools having 38,399 scholars, 8,263 entrants, leavers, and selected cases were examined according to the complete scheme of the Board of Education. In 31 schools having 33,363 scholars, 5,874 entrants, leavers, and selected cases were examined by the simpler scheme of the London County Council; and in 28 schools practically all the children to the number of 23,283 were examined on the London County Council scheme. At the examinations under the complete scheme of the Board of Education about 72 per cent. of the parents invited actually attended, and the doctors spent on the average 9 min. 8 sec. over each child—that is, about 13 children were examined in two hours. Under the simpler scheme of the London County Council the average time spent by the doctor per child was 6 min. 43 sec., and when all the children in the school were examined only 4 min. 52 sec. was devoted to each. It is specially noted that, except for statistical purposes or for special objects, there is little practical value in taking all full details of every child. For the most part the sole purpose should be to note conditions which require "medical or educational" treatment. By thus limiting the work there is a great saving in cost and time, and the practical results will be equally good. The actual results of the medical inspection are summed up in several tables. In the first two groups of 39 and 31 schools the total number examined was 14,137—including entrants, leavers, and cases selected by the teachers—out of 71,762 on the rolls. The results are given as "slight" or "bad," the latter being those that required treatment. The following are noticeable: Uncleanliness, 2,923; having four or more carious teeth, 2,320; tonsils much enlarged, 2,563; adenoids, "slight," 1,122; "bad," 823; glands, slight, 775; bad, 1,929; defective vision, 1,458; eye disease, 773; ears discharging, slight, 19; bad, 324; ear disease, bad, 373; stammering, slight, 272; bad, 8; systolic murmurs and mitral regurgitation, 269; lung defects, slight, 7; bad, 209; bronchitis, slight, 35; bad, 186; rickets, slight, 57; bad, 121; effects of rickets, bad, 219; anaemia, 489; phthisis, 4 (? 11); tuberculosis, 39 (? 80); eczema, 63; impetigo, 71; ringworm, 68; normal children, 4,282. Similar tables are given for other groups of schools, but no general table for the whole is found.

Biometric Studies of School Life.

The work of Professor Karl Pearson and his school of investigators in the Francis Galton Eugenics Laboratory has given many valuable methods, the results of which, when more used by fully qualified workers, will be of great value. So far, however, probably due weight has not been given to the heterogeneous character of the material to which the methods have been applied. Reference is made to a recently published paper by Mr. D. Heron on the Influence of Defective Physique and Unfavourable Home Environment on the Intelligence of School Children. The author deals with the materials collected in the London elementary schools, and he is convinced that a full answer to the questions that concern the eugenist must depend not only on the records of medical inspection but on careful sociological surveys. "Such alone can tell us the relative weights of heredity and environment, and, above all, show us the exact environmental facts which are influential."

Anthropometry.

Measurements of stature and weight have been taken in all the schools investigated. It is said that children coming to school for the first time at the age of 8 or older are distinctly of poorer physique. So far as can be noted at present the poorest average physique is found in the low-lying areas along the Thames, and better averages on the higher ground to the north and south, corresponding roughly to poorer and better neighbourhoods. The western district, comprising Chelsea, Fulham, and Hammersmith, seem to present the poorest physique, but the available numbers are not sufficiently decisive. At the age of 5 years the average stature of boys was 104 cm., and the weight 17.1 kilos.; and of girls, stature 103.4 cm., and weight 16.7 kilos.

Dental Conditions.

The question of dental treatment has been postponed to the present summer, and there seems to be some doubt about beginning with the great task of treatment of those already in the schools. Preventive treatment while the children are still in the infant schools will probably yield the best results. Judging from the experience at the dental clinic at Kettering and similar attempts in Germany, there is doubt whether arrangements for dental treatment will be successful unless it is free of cost. The condition of the teeth of children at the residential schools bears evidence of the benefit derived from systematic inspection and treatment. In the open-air schools when first established, out of 240 children, only 14 had perfectly healthy sets of teeth, and 215 were in need either of extraction or stopping. What is known as a "toothbrush club" was formed in certain schools, a stock of toothbrushes, costing 2½d. each, being sold to the children at 2½d., which was paid in instalments of ½d. or ¼d. a week, the small profit being used to supply the poorest children,

and precipitated chalk being sold in halfpenny-worths. Prophylaxis in this way will be far less expensive than treatment by dentists.

Personal Hygiene.

Much of the work of the 51 nurses is concerned with the personal hygiene of the children. The Council's cleansing scheme has been applied to 288 schools, and out of 80,000 children examined 16,774 were found to be verminous. The parents of 296 children were prosecuted for neglect of warnings, and fines varying from 1s. to 20s. were imposed, amounting in all to about £90. Full particulars are given of the various cleansing stations.

Medical Treatment of School Children.

It is admitted that all the present arrangements for treatment are yet on their trial. The special subcommittee appointed in June, 1907, consisted of members of the Council and representatives of various interests, and it reported after about eighteen months. The Council decided to follow the proposals of a strong Minority Report and to arrange with various voluntary institutions and charities to do the treatment, the Council paying the cost and recovering it from the parents in accordance with the Local Education Authorities (Medical Treatment) Act, 1909. The limitation of treatment to visual, aural and certain skin diseases was first put forward as a practical measure to simplify the working of the suggested establishments of the Council, but this not having been adopted and the Council having made itself responsible for treatment by hospitals and charities, we are told that "there is now no logical reason why all conditions of illness in children, preventing progress in school or likely to be damaging to efficiency in future years, should not be put on the same basis as these more common educational diseases." It is said that this would not mean any great increase in the numbers to be treated. It is claimed that the treatment given is not in the nature of charitable relief, that the Council pays the hospitals so well that neither hospital nor Council are in any way giving charity. The Council pays 2s. a head for establishment charges, which is said to be sufficient to cover the cost, and the report continues:

For every medical practitioner for each half-day per week spent on the treatment, a payment of £50 per annum is made. This is a reasonable and sufficient scale of payment, and as the sum is paid by the Council purely for professional work, no medical man should under any excuse submit to being sweated into doing the work for less. Evidently, then, neither hospitals nor medical men are giving any charitable service, although hospital almoners are supposed to investigate the fitness of the cases for charitable aid. On the other hand the Council is compelled under the Act of 1909 to charge up to the full cost of any medical treatment. Power is, however, given to make remissions, and the Care Committees have had remissions suggested in cases of poverty in accordance with the following scale:

The scale is too long to quote here, but we find that what is called the full charge for ringworm is 3s. per attendance; for ear, nose, and throat 1s. 8d.; and for eye cases 1s. 4d. The "standard family" is taken as two parents and four children, and the net income on which remissions are calculated is not the full wages, but the amount available after deducting rent "and other regular outgoings as payment for sick club, insurance, and fares to and from work." The term "regular outgoings" is so elastic that it may mean anything up to as much as 20s. or more per week. Thus, when 20s. is named as the net income, the weekly wages may be as much as £2 a week, and a standard family with this income receives such a remission from the full charges that only 4d. is charged for each attendance for any of the complaints named, and apparently even this may be remitted for travelling expenses to and from the hospital. If this is not giving charity where it is not needed, it is not far removed from it. Moreover, a standard family does not pay the full charge of 3s. per attendance for ringworm treatment until the income, after deducting the regular outgoings, amounts to 37s. 6d. a week; in other words, a standard family may be receiving in wages as much as £2 10s. or even £3 a week before it has to pay the full charge for ringworm of 3s. per attendance. It would be interesting to know how much is actually recovered from parents who could quite well afford to pay ordinary fees to general practitioners.

We are further informed that "with very few exceptions all the hospitals have been willing to make agreements with the Council, the most notable exceptions being certain large hospitals like St. Bartholomew's, Guy's, St. Thomas's, Middlesex, and Westminster." Certain general terms enter into the agreements with all the hospitals, for which reference must be made to the report, and it is claimed that the scheme is "perhaps the best experimental scheme that could be devised to co-ordinate the services of the hospitals." The following quotations are noteworthy:

Obvious extensions to be called for are that any disease or ailment may be relieved, and that the Council's voucher should be honoured for payment when received from any properly recognized and efficient institution.

Special Districts.—In certain districts too remote from any efficient institutions, namely, Hampstead, Norwood, Wandsworth, and Woolwich, negotiations are proceeding between committees of medical men representing the local profession and the Council as to the establishment by the medical men at their own expense of centres for treatment, the Council treating these professional committees on the same financial basis as it does the charities, namely, the payment of an establishment charge of 2s. per head and a payment for professional services of £50 per annum for each half-day weekly given by a medical practitioner. It appears scarcely possible for such an undertaking to be made self-supporting with less than 1,800 to 2,000 cases yearly. A capital outlay will also be required at first, which is not required in connexion with the charities. Considering these facts a reasonable suggestion has been made to help further by granting the services of a school nurse for half her time or more in the work of each treatment centre. With the provision of centres for treatment in these districts the provision for the London area under this scheme will be complete. A full year's working of the system now in its early stages must be made before it can be fully appreciated. By that time the various co-ordinations will have been made, causes of friction overcome, and possibly an effective working method evolved.

The routine adopted for obtaining treatment is that, after examination by the school doctor, a card is given to the parents on which the defect is noted for which treatment is advised. If the parents fail to take steps, a printed letter is sent calling attention to the need for treatment. If treatment is still not obtainable, arrangements are made under the Council's scheme, and a card is given to be taken to the proper hospital, which retains it as a voucher for payment by the Council. A table is given in the report showing the results of the scheme in the cases of 5,000 children examined during five months. Of this number, 1,528 received satisfactory treatment and 497 were still under treatment. Of the remainder, 118 had received unsatisfactory treatment, 45 had been discharged though still needing treatment, 104 had gone to a hospital or a doctor, but had not been treated, and all the rest had either not been attended to at all—for various reasons—or had left and were not accounted for, or in some other way were not satisfactory. The following comments are made on these results:

From the reports of the school doctors the treatment obtained by the children seems very variable in amount and quality. It would be unjust to say more at present, but, allowing for all kinds of mental refraction, and knowing the strange possibilities of stories as related by patients, one is forced to conclude that the arrangements for the comfort and convenience of out-patients are often unsatisfactory, and that the treatment given is not always done with the thoroughness and skill that is usually credited. The out-patient departments are probably the worst-managed parts of these great institutions, and would be well worth some detailed consideration on the part of those who control large charitable funds. Speaking generally from the reports of the school doctors, the ophthalmic work is the only work uniformly well done; it has improved in recent years, but even now instances are encountered of glasses being prescribed for children in quite complicated cases apparently without measurement of refraction having been attempted either with or without mydriatic.

Efforts to prevent hospital abuse show that these may become a farce in practice. One hospital, whose doors are only open to patients recommended by medical men, does not acknowledge the cards sent out from the schools, and patients with such cards must first go to some neighbouring practitioner. What has happened is that he copies the statement of "affection of eyes," or whatever it may be, from the school advice card on to a private visiting card, charges sixpence, and the hospital doors are opened, but if the patient is too poor to pay the sixpence, he is refused the benefits of the hospital. The suggestion put forward by Branches of the British Medical Association that all school cases should first be seen by a medical practitioner, and by him be certified to the education authority as suitable for treatment at their expense, would be as unworkable as the scheme of this hospital. If the whole of the children, and not merely a percentage of those requiring treatment, are to have it, the way must be made easy and not difficult. That is the whole end of our hospital system of medical treatment. No case requiring treatment should remain untreated, and artificial restrictions standing in the way of medical treatment,

even in the interest of members of the medical profession, are inadmissible as being against the public interest, and ultimately the interests of the profession itself.

With regard to special diseases, we are told that in spite of much money spent, ringworm has not been materially reduced. During the year 3,019 suspected cases were microscopically examined, and 2,343 were found to be ringworm, 76 being the large-spored form. The treatment followed in the majority is regarded as unsatisfactory, and often only make-belief. Cases had been certified as mere "scurfiness," or were said to have been discharged as cured by hospitals or private doctors when they were still highly infectious. For example, out of 186 cases certified as free and fit for school, 179 were still found to have ringworm, and one favus, only 6 being actually free. Favus in London is practically confined to alien races. At the special favus school opened in 1906 epilation by Roentgen rays was after a time commenced, and has been so successful that the school was closed as a teaching centre in June last year. It had fully justified its existence, as it had cleared the district of cases.

For suppurating ears two nurses were engaged to visit patients at their homes, acting solely under medical instructions. The results are described as a "disheartening failure," as more than half the cases never received treatment. Dr. Kerr thinks it would be best and would involve but little extra cost for the nurses to treat the cases at the schools. Up to the end of the year each case cured had cost £2 5s.

Infectious Diseases.

Great stress is laid on the need for co-operation between the medical officer of health and the school medical officer, and it is suggested that it would often save time if, when children are excluded from school, the medical officer of health would notify the school medical officer directly instead of through the teachers. There has been a great decline in the incidence of scarlatina and diphtheria during the year, though measles has been in excess of the normal. The question of closure of schools for measles and whooping-cough has been fully considered, and it was thought to be irrational to exclude children who had had these diseases simply because there was an epidemic. The plan has therefore been tried with success of only excluding during an epidemic the "unprotected" children—of course, taking every precaution against actual infecting cases. Also, children under 5—that is, below the age of compulsory attendance—have been excluded during epidemics. In the present mild form of scarlatina many cases are only discovered when children are found peeling in school. In such cases the teacher is instructed to keep a list of absentees and carefully to inquire on their return as to any sickness or sore-throat, but the classroom is not closed, nor is any disinfection or special cleansing deemed to be necessary, as secondary cases very seldom occur even though the peeling child has been in constant attendance. From careful observation of a number of cases, the infectivity of peeling cases is considered to be very slight, and routine disinfection is not done. A table is given to show that school influence in causing infection can be detected in less than 20 per cent. of cases, while more than half are infected out of school. The presence of "carrier cases" was suspected in twenty-five schools where diphtheria occurred, and out of 3,009 cultures taken, the diphtheria bacillus was found in 122, that is, 4.5 per cent. In every case when the carriers were excluded, fresh cases ceased to occur. Special inquiries at Battersea and elsewhere seemed to show that school attendance rather tends to hinder the spread of scarlatina and diphtheria, and that the attention of the sanitarian should rather be given to prevent infection in families, houses, courts, and streets. Woolwich and Lewisham had by far the highest percentage of scarlatina, while Lewisham was the worst for diphtheria, Hammersmith for measles, and Paddington and Hampstead for whooping-cough. On the other hand, the City and Finsbury had the least percentage of scarlatina, Holborn the least diphtheria, Stoke Newington and Stepney the least measles, and Chelsea the least whooping-cough. Prima facie, it would appear that there is 25 per cent. higher case-rate for scarlatina in the total child population aged 3 to 14, than in the school population, and 30 per cent. higher for diphtheria.

Special Schools.

In the special schools for the blind, deaf, mental and physical defectives there is provision for about 10,000 children in London, apart from industrial schools and reformatories. The regulations of the Board of Education provide that each child in a special school shall be medically examined once a year to ascertain whether it is fit for an ordinary school, or whether it is so defective as to be unable to profit by any education. There are now 6,764 mental defectives on the rolls, and some interesting facts are given as to their attainments after attendance at the special schools. The provision for epileptics is still unsatisfactory. The Council retains a total of 50 places at Chalfont and Lingfield, though the number returned as epileptics suitable for special schools during the year was 490, and provision is needed for an annual demand of about 140.

For the blind there are 9 schools, including 6 day and 3 residential schools. In addition, children with high degrees of myopia are now being taught in an experimental class for the semi-blind. In this class no books, paper, pens, or pencils are used, but large blackboards round the classroom are used by the teacher, and all work likely to be dangerous to the sight is avoided.

For the deaf there are 10 schools, with a roll of 616, and it is proposed to establish a school for the semi-deaf. Out of 500 deaf children, 229 were congenital cases, 225 acquired, and 46 doubtful. Meningitis and convulsions were the cause of 9.3 per cent., while measles accounted for nearly twice as many cases as scarlatina. Full details are given as to the causes, physical conditions, and treatment of the ear diseases met with.

An interesting and valuable account is given of investigations on the influence of heredity in the production of physical defects, especially deafness, blindness, and mental defects. Reference is made to the tuberculosis school which the Council proposes to establish and maintain for three years. Phthisis is comparatively rare among the children, not exceeding 3 per 1,000, but the results of tubercle are seen in nearly half the cases in the cripple schools. The new tuberculosis school will be for children suffering from or predisposed to tubercle or who have been discharged from sanatoriums. It promises to be one of the most fruitful experiments under the Council, as it is hoped through it to introduce favourable modifications of home environment. The continuation school work in hygiene, infant care, and home nursing will also tend in the same direction.

It should be noted that the report only deals with matters up to the end of 1909. Many modifications have been proposed in inspection and treatment during the present year, most of which have been noticed from time to time in our London Correspondence columns.

SOCIETY OF MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An extraordinary general meeting was held at head quarters, 1, Upper Montague Street, Russell Square, W.C., on Tuesday, July 26th, 1910. By kind permission of the British Medical Association notices thereof had been posted at the University of London, where the members of the society and others attending the Annual General Meeting might see them. Dr. Joseph Smith, the President, occupied the chair. Both Fellows and Members of the College were present.

The President delivered a short address on the past history of the society and its efforts to reform the administration of College affairs.

Drs. Brindley James and Dickinson followed with remarks on the present aims and objects of the society, which are:

(*a*) To arouse and maintain among Members of the Royal College of Surgeons of England a permanent interest in their College by obtaining for them a share in its management.

(*b*) To promote an amendment of the charters of the College which shall permit the Members to take part in the election of the governing body.

(*c*) While seeking primarily to further the interests of Members, to co-operate with the Fellows in obtaining such reforms as are possible under the present charters.

(*d*) Generally to promote the true welfare of the Corporation by bringing the Council, Fellows, and Members into harmonious action.

Dr. BRINDLEY JAMES said their first object, naturally and rightly, was to rouse a feeling amongst the Members with regard to their representation on the Council of the College, and that an earnest desire for this must be manifest before they could expect the public support necessary for the passage of a new charter through Parliament. It was a difficult task to dispel the apathy prevailing amongst the members of the College, and to make them acquire a lively interest in its well-being. He maintained that this apathy was largely due to Members being refused a share in the administration of the College, but that it would be at once and for ever dispelled, if a vote for the Council were the privilege of every Member.

Dr. W. G. DICKINSON contended that nothing in the declared objects of the Society, which had been in existence over fifteen years, was inimical to the best interests of the College. He maintained that up to now the College was not what it ought to be, and might be, in its relations with its 14,000 members. It was unlikely that the policy of the College as dictated by a Council composed solely of twenty-four Fellows in consulting practice, should always be acceptable to those Fellows and Members in general practice. Dr. Dickinson thought that the attitude of the Council was well described in the words of a recent leading article of the BRITISH MEDICAL JOURNAL: they are "sitting aloft like the gods of Olympus, and looking down on the struggles of mankind, without doing anything to help them out of their difficulties." It was this sad condition of affairs, he declared, which the society wished to improve by placing eight members on the Council as representative of those in whom the charter of 1800 vested the whole property of the College. The charter of 1843, which created the Fellows, conferred upon them no rights which conflicted with those given to the Members by the former charter.

The HONORARY SECRETARY (Dr. S. C. Lawrence) reminded those present that a number of Fellows subscribed to the society, and sympathized with its objects. Further, that as many of the present Council were known to be of the same mind, it was probable that at no distant date the society would be able to rejoice in the success of its persevering efforts for a just share in the administration of the College affairs being willingly given to its Members.

THE ROYAL COMMISSION ON THE POOR LAWS AND RELIEF OF DISTRESS.

ANOTHER appendix[1] (vol. xxix) to the Royal Commission on the Poor Laws has just been issued. The appendix deals with the replies of the clergy of the Church of Scotland in connexion with the extent and intensity of poverty in various parts of Scotland. On April 25th, 1907, the Royal Commission addressed to the Moderator of the General Assembly of the Church of Scotland a letter to the effect that the Royal Commission was anxious to avail itself of the great experience possessed in the matter by the clergy of the Church of Scotland. The letter was accompanied by a list of questions which indicated the line of inquiry, and the matter was dealt with by the Committee on Church Interests. Circular letters were addressed to the ministers of all parishes setting forth particulars of the scope and nature of the inquiry, and the information thus obtained is contained in the appendix which has just been published.

Poverty not on the Increase.

To the first query—which asked the extent of poverty in the parish, whether it was increasing in intensity, and whether the minister to whom the query was addressed could point to any special causes, moral or economic, to which it was due—those of the answers which are in the negative are equal to about 79 per cent. of the whole. About 13 per cent. answer that there is much poverty in the parish. These are situated about one third in the towns and one-third in the Highland counties; the remaining one-third seem fairly distributed over other parts of the country.

[1] Royal Commission on the Poor Laws and Relief of Distress. Appendix vol. xxix. Church of Scotland. Report from General Assembly's Committee on Church Interests, with appendix. London: Eyre and Spottiswoode, Limited. 1910. (Price 1s.)

Causes of Poverty.

Among the moral causes, those which are most frequently mentioned is drunkenness, gambling, and betting, which in some districts are reported to be increasing; early marriages, particularly in large centres; want of ambition and weakness of will; desertion of children by parents.

Among the causes of an economic nature, there came most prominently to notice thriftlessness. The wages ruling for some classes of employment are often not sufficient to do more than barely make ends meet, but in very many instances where good wages are earned and when it is practicable there is a want of effort to provide for sickness, old age, and contingent claims.

The Want of Steady Employment.

It is stated that one effect of recent legislation has been in some callings, such as engineering and shipbuilding, to make it almost impossible for elderly workmen to find employment. The insurance companies will not insure workmen above a certain age, and, as employers do not care themselves to undertake the risks involved, these men are discharged.

The Housing Question.

Depression of trade has seriously affected many industries, while in many rural parishes and smaller towns there is a want of industries to provide employment for the population. In the large cities the system of farming-out houses and the condition of many of the buildings in which the poorest class reside conduce in many ways to the existence of misery and distress. The poorest pay, in proportion, very high rents and for accommodation of the most inferior description.

Other Causes of Poverty.

A good deal of the existing poverty is attributed to sickness, infirmity, old age, and inability to work, and among aged single women the two latter causes operate largely. Depopulation, migration, and emigration are indirectly the cause of a certain amount of poverty particularly in the Highlands. The young move to the South or go abroad, and the old people on becoming unfit for work sometimes become chargeable to the parish.

Administration of Charitable Assistance.

Query 2 asked the methods employed in the administration of charitable assistance; and it is stated that mention fails to be made in the returns of the numerous funds, gifted or bequeathed, for the benefit of the poor in particular parishes. The amount of charity and charitable work undertaken by the various churches and parishes is very large and wide-spread.

Unrelieved Distress.

More than 90 per cent. of the replies to query 3—which asked for instances where any appreciable amount of (unrelieved) distress was due to the reluctance of destitute persons to resort to Poor Law relief—are to the effect that no such unrelieved distress exists; but in some returns instances are recorded.

Supplemental Poor Law Relief.

To query 4—asking for particulars whether there is any appreciable amount of distress due to the amount of Poor Law relief being inadequate—a very large proportion of the returns stated that to this cause there is no appreciable amount of distress due, but in many instances mention is made that such distress would exist but for the fact that the relief given is supplemented in various ways by the charity of churches and other agencies, and much private assistance by neighbours and friends.

Overlapping in Populous Centres.

Query 5 referred to the question of overlapping, and the report states that the parishes in which it appears from the returns that needless overlapping between various forms of charity exists to an extent more or less serious are to be found almost entirely in centres of large population. Instances of overlapping between charity and the Poor Law are rare. In private charity possibly there is more overlapping than in the other form.

THE BRUSSELS EXHIBITION.

[The following account of the medical and surgical departments of the Brussels International Exhibition was written before the disastrous fire which destroyed the greater part of it. The exhibitors, especially the British, are showing the greatest energy in renewing the material they had on show.]

Compared with previous international exhibitions, the Brussels Exhibition, though including the gardens it covers an area of more than 200 acres, may be considered a small one. What it lacks in size, however, is amply compensated by the excellence of the exhibits. This is more especially noticeable in the portions of the exhibition allotted to the United Kingdom. The exhibits are arranged under 21 groups and 128 classes. Group III, Class 16, may be described as the Medical and Surgical Class.

British Exhibits.

In this class the Birmingham Dental Supply and Manufacturing Company has a very fine exhibit of artificial teeth of all sizes and all shades from white to dark brown, these latter to match teeth discoloured by smoking. They also show platinum pin-teeth. They state that the teeth are made from a mineral ground and then baked, and the teeth have a very natural appearance. For this exhibit a gold medal was awarded.

Messrs. Brady and Martin (Newcastle-on-Tyne) have an interesting and varied exhibit. They show cases of surgical and dental instruments, a compact high-pressure steam sterilizer, and Dr. James Mackenzie's polygraph for giving simultaneous graphic records of dissimilar pulsating areas. For their exhibit Messrs. Brady and Martin were awarded a *diplôme d'honneur*. A detailed description of Messrs. Burroughs, Wellcome, and Co.'s exhibit would occupy too much space; suffice it to say that it was in keeping with their reputation, and they were awarded a Grand Prix.

There are some very fine exhibits of surgical instruments and hospital furniture. Messrs. Down Brothers' installation was the largest and most complete in the exhibition, and illustrated the advances made during recent years in instruments and appliances used in surgery. For their exhibit they have received the highest award—a Grand Prix. They have previously been awarded a Grand Prize at the International Exhibition at Paris in 1900. Messrs. Down Brothers state that the whole of the instruments in their exhibit were designed in England, and were manufactured in their own workshops.

Messrs. William Gowland, Limited, of Croydon, have a very complete collection of lenses and mirrors, such as oculists' sight testing instruments, ophthalmoscopes, laryngoscopes, etc., for which they claim great accuracy of design and construction. The firm has obtained an award of a Gold Medal.

For his very fine pharmaceutical preparations of all kinds, and as an acknowledgement of the labour involved in their production, and the great benefit to the profession and the public from the information contained in the *Extra-Pharmacopoeia*, the jury awarded a Grand Prix to William Martindale, Ph.D. Subsequently each juror was presented with a copy of the *Extra-Pharmacopoeia*.

A Gold Medal was awarded to The Tintometer, Limited, for their exhibit of colour standards and apparatus for the determination of colour values for their pathological apparatus for diagnosing diseases by means of blood characteristics.

The Wellcome Physiological Research Laboratories, Herne Hill, show a remarkable series of preparations—serums, vaccines, and pathogenic organisms, and illustrations of the methods of their preparation. This will be the sixth Grand Prix that has been awarded to them.

There is no operation in medicine or surgery which is more unscientific and more susceptible of improvement than the manner in which chloroform is very frequently administered. Thanks to a great extent to the work of a committee promoted by the British Medical Association, an instrument has been designed by Mr. A. G. Vernon Harcourt, F.R.S., and manufactured by John J. Griffin and Sons, Limited, which will enable chloroform to be administered in a safer and more economical manner.

It is claimed for this instrument that an exact and constant percentage of chloroform vapour can be administered; that there is a great saving of chloroform; that it is almost impossible to give a fatal dose; that the anaesthesia is more complete and calmer, and that the tendency to vomiting is greatly diminished. Messrs. Griffin were awarded a Grand Prix, and Mr. A. G. Vernon Harcourt a gold medal, as collaborator.

French Exhibits.

Of the French exhibitors, the installation of Messrs. Mathieu is very complete; it includes an operating table designed by Dr. Doyen, in which by a pedal movement the back of the patient can be raised from the table; also a very ingenious abdominal retractor for pelvic operations. This exhibit fully deserves the Grand Prix which has been awarded. Messrs. Mathieu also show a fine assortment of osteotomes and other bone instruments. Of the excellence of Messrs. Luer's instruments the writer can speak from long experience, and the present firm of Wulfing-Luer maintains its high reputation, and has been awarded a Grand Prix. Messrs. Gaillard, Bouissereu, and Porget have very fine exhibits of catheters and similar instruments.

The only important Italian installation is that of the Istituto Sieroterapico Milanese, which has a very complete collection of serum-therapeutic preparations, and exhibits photographs of the building and of the laboratories in which the various serums are prepared.

The Swiss exhibit is small; there is only one exhibitor of note—Schaerer, who gets a Grand Prix.

German Exhibits.

The exhibits in Class 16 in the German Section attain a very high standard; the reputation of the German makers of instruments and hospital furniture is world-wide, and their exhibits fully justify their reputation, and the large number of Grands Prix which have been awarded. H. Windler of Berlin has a very complete exhibit of surgical instruments unsurpassed in variety, ingenuity, and workmanship. Messrs. Hartmann seem to confine their attention to surgical dressings of which they show a large variety. The fact that they employ more than 1,000 workpeople in their preparation justifies their claim to be the largest house in the world in their speciality.

Kratz of Frankfort, in addition to a fine exhibit of surgical instruments, seems to have a reputation of surgical and hypodermic needles and shows the various steps in the manufacture of the latter. Müller of Wiesbaden deservedly obtains a Grand Prix for the perfection and variety of his exhibit of glass eyes.

Weber and Hampel, Conrad Lincke and Schneider of Berlin, appear to confine their attention chiefly to instruments and furniture required by dentists. E. A. Lentz has a fine installation of bacteriological apparatus worthy of his reputation and of the Grand Prix awarded. Emil Kohm of Carlsruhe receives a Grand Prix for his exhibit of thermocauteries and other instruments in platinum and iridium. The microscopes and microscopic apparatus of Zeiss of Jena are beyond criticism and beyond praise, the installation fully justified his world-wide reputation.

Belgian Exhibits.

Compared with its neighbours France and Germany, the Belgian exhibit in Class 16 is small, as indeed would be expected. There are, however, several very interesting exhibits. From a close inspection of photographs and plans, the Sanatorium de la Hulpe at Brussels seems to be in advance of many institutions of the kind. It is situated in a parc of 10 hectares, was built and is maintained by public subscription. It contains 60 male beds, and cost £220 a bed.

Dr. Simon (Brussels) shows an improved chloroform inhaler, something similar to Harcourt's in principle. The Manufacture Belge de Gembloux has a fine exhibit of theatre furniture, and a metal and glass instrument cupboard of improved construction. Xavier Busset (Vilvorde) shows boxes for sterilizing and sterilized dressings in aluminium. A useful and ingenious bed-rest and table called the "Sleeping Chair," which can be fixed rigidly to a bedstead, can be removed in a minute, and is adaptable to beds of vary width, is shown by Honoré Deprès (Brussels). The exhibit of surgical instruments of C. Vandendaelen and Son, though not extensive, is excellent in design and construction. The most interesting apparatus, however, in the Belgian exhibit in Class 16 is Dr. Mayer's inhaler for administering anaesthetics under pressure. This inhaler, which has been simplified and perfected during

the last two years, is of special value in operations necessitating intrathoracic operations, as by its use collapse of the lung and consequent pneumothorax do not occur. This instrument is adapted for either chloroform or ether, and the pressure can be varied as required.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

THE deaths from plague in India during the first six months of 1910 were distributed as follows:

January	51,437
February	67,426
March	110,415
April	77,961
May	42,347
June	11,046
Total for half year	360,632

The areas in which plague has mostly prevailed and the mortality caused by the disease during the first six months of 1910 were:

Bombay Presidency, 16,881; Bengal, 34,388: United Provinces, 119,507; Punjab, 132,490; Central Provinces, 17,750; Rajputana, 28,152; Burma, 5,953. As in former years the Punjab has suffered more severely than any other district of India.

The deaths from plague in all India for the weeks ended July 2nd, 9th, 16th, and 23rd amounted to 891, 717, 561, 554. During the last week in July Bombay headed the list of plague cases, and the Punjab recorded the lowest mortality from plague.

CHINA.

During the first three months of 1910 no cases of plague were reported in China. In Canton and the neighbouring district a slight outbreak occurred in May. In June, cases of plague were reported from Swatow. In the most southerly portions of China a severe outbreak of plague occurred in April; the parts especially affected were those in and around Chao Yang, Hoikow, and Hainan.

HONG KONG.

From April 23rd to August 13th the fresh cases of plague in Hong Kong numbered 27, and the deaths from the disease amounted to 25. Since plague first appeared in Hong Kong in 1894 the disease has recurred annually from about the middle of the month of April to about the middle of August. The outbreak during the current year has been the most mild during the sixteen years since the disease first appeared.

JAPAN.

Plague has been less severe this year in Japan than during any previously recorded year. A few cases occurred in May and June in Osaka, 10 in all, with 4 deaths.

PERSIA.

From March 25th, 1910, when the present outbreak began, until June 4th, the number of plague attacks recorded numbered 55, and the deaths from the disease amounted to 42. Bushire has been the principal centre of plague.

TURKEY IN ASIA.

At Djedda (Port of Mecca) 34 deaths from plague occurred in May. In Lohaia and neighbourhood (Red Sea coast), between April 1st and May 24th, 63 cases reported, with 51 deaths from plague. At Bassra 2 cases and 1 death recorded in April.

NEW ZEALAND.

A case of plague reported from Auckland on May 23rd.

STRAITS SETTLEMENTS.

During May isolated cases of plague recorded.

MAURITIUS.

From January 1st to August 17th, 1910, the fresh cases of plague numbered 135, and the deaths from the disease 113. The worst season for plague was during the first six weeks of 1910.

TUNIS.

Three cases of plague (imported ?) were recorded in the month of June in the port of Tunis.

EGYPT.

From January 1st to June 30th, 1910, there were 849 cases of plague recorded through Egypt. The towns and districts chiefly affected were Alexandria, Cairo, Port Said, Beni Souef, Fayoum, Assouan (1 case), Tantah, Deirut, Galiub, Minia, Kena, and El Tor. Although widely spread in Egypt, plague was nowhere severe.

RUSSIA.

In the Astrachan district plague prevailed during the winter of 1909-10, when between December 1st and March 1st 93 deaths were recorded. During the spring and summer a few cases have been recorded. The last report, June 26th to July 13th, states that during that period there were 13 fresh cases and 12 deaths from the disease. In the Ural districts plague prevailed during the winter, but it has practically disappeared during the summer.

SOUTH AMERICA.

Brazil.—In Bahia, during April, 3 cases; 3 deaths.
Chile.—In Pisagua, during April and May, 14 cases; 4 deaths.
Ecuador.—At Guayaquil, several cases during May.
Venezuela.—At Puerto Cabello, occasional cases.
Peru.—During February, May, and April, 12 cases of plague reported.

TRINIDAD.

During April, 3 deaths from plague recorded.

LITERARY NOTES.

THE September number of *School Hygiene*, which will be ready on September 1st, is a special Congress number, containing a full descriptive account of the Third International Congress on School Hygiene held in Paris from August 2nd to 7th. The inaugural speech of the President, Dr. Mattieu, will be given in full; as are also the addresses to the Congress by Dr. J. Kerr, chief School Medical Officer to the London County Council, "The Doctor's Work in the Schools," and by Dr. Chotzen of Breslau, "Instruction on Sex." Descriptive accounts of the proceedings in the eleven sections, a notice of the Exhibition, a special report of the gymnastic and dancing displays by English and Continental classes, make up a number which contains the only complete account of the Congress published in this country.

The Edinburgh Pen and Pencil Club, in pursuance of its scheme of identifying the houses occupied by famous citizens, has, by permission of the owners, cut an inscription on the house in 23, Rutland Street, Edinburgh, occupied by Dr. John Brown, the author of *Rab and His Friends*. The inscription runs: "Dr. John Brown, author of 'Rab and His Friends,' lived in this house from 1850 to 1882."

For the past four years Professor John Edgar has been engaged preparing a publication on the Great Pyramid of Gizah in Egypt, entitled *Great Pyramid Passages*, in two volumes. In this work he endeavours to show, among other things, how the Great Pyramid, by means of symbolisms and measurements, corroborates the philosophy and prophetic times and seasons of the Scriptural plan of salvation. Last summer he, in company with his brother Morton Edgar, visited Egypt and Palestine, and took careful observations and measurements in the interior of the Great Pyramid. They secured a large number of interesting, and in some cases unique, photographs, most of which are reproduced in the first volume. We understand that the first volume, which contains 164 plates, and is printed on the best art paper, will be published by the end of September. Copies may be procured by applying direct to Morton Edgar, 224, West Regent Street, Glasgow; or to the Watch Tower Bible and Tract Society, 24, Eversholt Street, London, N.W. The price is 5s. 6d. It may be added that in the year 1908 Professor Edgar published a brochure entitled, "Where are the Dead?" as to which we have received several inquiries. It is written in an interesting style, and may be procured for 3d. at the above addresses.

St. Louis, its History and Ideals, is an illustrated booklet prepared by Dr. Philip Skrainka for the sixty-first annual session of the American Medical Association held in June last. It contains an account of the early history of St. Louis and a description of its streets, buildings, parks and public gardens, the art museum and art schools, its medical schools, hospitals and charitable institutions, universities, schools and libraries. The first medical school dates from 1840; the second from the following year. Dr. William Beaumont, whose observations on Saint Martin form the basis of our knowledge of the physiology of the stomach, was a lecturer in the former. There are now three medical schools; two "under the aegis of universities."

In *La Clinique* for August 12th, Dr. Leon Mac-Auliffe gives an account of Dr. Poumiès de la Siboutie, which is interesting as throwing a vivid light on medical teaching in Paris in the early part of last century. Born in Périgord in 1789, Poumiès began his medical studies in Paris in 1810. One of the things that struck him most among his fellow students was the great proportion of lame, hunchback, or otherwise deformed men among them. This he attributes to the fact that conscription and the military schools had taken the best made and most

vigorous, leaving at home the weaklings who were deemed unfit for service. This drain on the strong has left an abiding influence on the male population of France; to such an extent is this the case, that the minimum of height for the army has steadily had to be lowered. The clinical instruction in midwifery was given under somewhat primitive conditions. When a woman was about to be delivered she was brought into the theatre, before the students, and placed well in the middle of the room, where she could be seen by all. She was, however, treated with all possible kindness. The professor demonstrated the different stages of parturition. When all was over the woman was at once taken in a cab to her home, where she was looked after till her recovery. Poumiès was house-surgeon to Dupuytren, whom he describes as a man of consummate practical ability, though imperfectly acquainted with the science of his time. "What he did not know, he guessed or invented; however serious or unusual might be the circumstances with which he had to deal, he was never at a loss."

Dr. Johnson, as every reader of Boswell knows, had a stroke of apoplexy in 1783 of which he gave an account in a letter to Mrs. Thrale. Waking up in the night he says he felt a confusion and indistinctness in his head which he thought lasted about half a minute. "I was alarmed," he says, "and prayed God that however he might afflict my body, he would spare my understanding." This prayer, he goes on to say, that he might try the integrity of his faculties, he made in Latin verse. The verses are given in his *Works* as follows:

Nocte, inter 16 ex 17 Junii, 1783,
Summe pater, quodcunque tuum de corpore Numen
Hoc statuat, precibus Christus adesse velit:
Ingenio parcas, nec sit mihi culpa rogasse,
Qua solum potero parte placere tibi.

"The lines," Johnson continues, "were not very good, but I knew them not to be very good; I made them easily and concluded myself to be unimpaired in my faculties." It is a curious coincidence that Sir Walter Scott adopted a similar method of testing the integrity of his mental faculties. In the *Memories of Sir Walter Scott* by James Skene, published not long ago, an account of his sufferings from gall stones is given. Scott had for many years before his death a foreboding of failing intellectual power. During his illness the large quantities of laudanum which he took doubtless caused mental confusion. This made his fears more acute. Skene says:

In the progress of his illness upon this occasion he asked me one day to read him a short ballad of Bürger in German, that he might amuse himself in translating it, which was accordingly done, and he put up the translation in his pocket-book, and refused to let me see it, saying it was not worth reading. However, some months after, when he began to be decidedly convalescent, he reminded me of the translation, and taking it out of his pocket-book he said he had his reasons both for writing it and for refusing to show what he had written, and that he now felt more nervous than he could express in putting it to the use he intended, which was as a test of the state of his mind during his late illness, for that he had had frequent misgivings in the progress of it that his faculties were giving way, and might never again be recovered. "Now, I really am not bold enough," he said, "to be my own executioner; do you now take the manuscript, and after I have read the original, read it aloud, and let it pronounce the sentence of sanity or imbecility as it may chance." Accordingly this singular experiment was put to the test. Sir Walter read his part, and turning his head aside desired me to go on, and upon my reading the translation, which really was very good, cast a most whimsical glance from under his heavy eyebrows, "Well, is Richard himself again?" There was no doubt of it. I wanted to pocket the manuscript, but he would not suffer me; he said it had answered its end, and must not be urged further.

In fact, adds Skene, it was the use of laudanum which gave birth to all these apprehensions, and he was now satisfied of the truth of this. The failure of his mind, Scott said, was the only dread that preyed upon his spirits, for he had no reason to trust much to the stability of a frame of body which had had to struggle through such a state of feebleness as his had in infancy.

In the current number of the *Archives de l'Institut Pasteur*, MM. H. Camussi and Dr. Ahmed Chérif contribute an interesting article on the treatment of hydrophobia practised by the Arabian physicians. The majority of Mussulmans believe that the prophet himself first described the disease and how it should be treated. Among the traditional doctrines handed down from him which were not consigned to writing till after his death, he gives a very graphic and fairly accurate description of a rabid dog. He puts the incubation period after a bite in the dog itself at from one to two weeks to six months. The following is given as a diagnostic test:

When it happens that one of these animals has bitten some one and there is doubt as to the condition of the victim and the contingencies to be feared, it is sufficient, in order to acquire complete certainty on this point, to steep a piece of bread in the blood that flows from the bite and to throw it to another dog. If this dog eats it up the dog which inflicted the bite is sound, and the bitten man has nothing to fear. On the other hand, should the dog refuse the bread the biter is rabid, and the fatal consequences of the disease are to be feared for the victim unless they are prevented by appropriate treatment. For this it is indispensable to cut out the bitten part, and to draw out the infected blood by dry cupping. The mouth of the wound must also be kept clean, so that the vitiated humours, pus, watery and other humours engendered by the poison may find ready issue. It is necessary that the person who aspires the air of the cups should be very careful, before doing so, to anoint his mouth and lips with a fatty body, oil or pomade.

These traditions of the Prophet are not accepted as authentic by all Mohammedans. However this may be, the description of the disease and the treatment recommended resemble those given by the Greek and Latin authors. This may be explained by the fact that in the time of the prophet, Jewish or Nestorian physicians, trained in the Greek schools of the East, or at Alexandria, who had for the most part been exiled on account of religion, practised their art in Mecca and the principal cities of Asia. In another of these traditional sayings the prophet is represented as teaching that when a dog licks a domestic utensil, it should be washed seven times, once with earth. The reason of this is said by the commentators to be that the poison is contained in the foam that comes from the dog's mouth. Hence, if a dog licks or drinks out of a vessel, the poison passes from the frothy mucus to the liquid, and from that to the vase itself in which it is distributed. The mucus being liquid and of a watery nature the poison from the vessel may enter the human body through the least scratch, and act just as if it had been directly introduced by a bite. Rhazes recommends cauterization and the use of various purgatives—cantharides given internally, gentian, and other drugs. He also held human hair steeped in vinegar and applied on the bite to be a sov'ran remedy. Others recommended that the poison should be counteracted by applications of pounded garlic or onion. Baths were also considered to be useful. Drinks containing crushed or burnt river crabs, which were thought to be less salt than those taken from the sea, were prescribed. The patient was made to drink through a tube introduced into his mouth as far as the root of the tongue. Avicenna knew that the wolf and the jackal are liable to rabies as well as the dog. His description of the disease in man is highly fantastic, one of the symptoms being the expulsion in the urine of "fragments of flesh, of strange form, which might be taken for animals, for instance, tiny dogs." Pliny describes some curious methods of treatment. In the twenty-ninth book of Philemon Holland's translation we find the following:

For the biting of a mad dog take the ashes of a dog's head burnt, and apply it to the sore, it wil saue the Patient from that symptome of being afraid of water; which is incident to such as be so bitten. [And now by occasion of speech know thus much once for all, That all things which are to be calcined require one and the same manner of burning, that is to say, within a new earthen pot neuer occupied before, well luted ouer with strong cley, and so set into an ouen or furnace vntill such time as the contents be calcined.] The said ashes made of a Dog's head is singular good likewise to be drunke in the same case: wherfore some haue given counsell to eat also a dog's head. Others seeke after the wormes that breed in the carkasse of a dead dog, and hang the same fast about the necke or arme of the party that is bitten: or els they lap within a cloath some of the menstrual blood of a woman, and put it vnder the cup or pots bottome out of which the patient drinketh. And there be some againe who burn the haires of the same dogs taile, and conueigh the ashes handsomely in some tent of lint into the wound. Moreouer it is commonly said, That as many as have a Dogges head about them, no other Doggs will come neere to do them any harme. In like manner, if a man carry a dogs tongue in his shooe vnder his great toe, there will no Dogges bay or barke at him.

In this passage we may, perhaps, find the origin of the old precept to take a hair of the dog that bit one. The ancient physicians do not seem to have known of the

drastic method of curing the disease by smothering the patient which is referred to by one of the characters in Charlotte Brontë's *Shirley* as the regular practice, and which, if legends and stories from different parts of the world are to be believed, was sometimes actually carried out. We know a castle in Scotland where a lady of high degree is said to have been "cured" in this summary fashion. It used to be believed, not so long ago, that patients in lock hospitals were dealt with in the same way.

SCIENCE NOTES.

One of the most interesting of recent clinical inventions is described in *La Nature* of July 16th. It is an instrument for recording the electrical variations of the heart. Until a few years ago investigation of the heart's action in the living subject was dependent on the cardiograph and sphymograph for the most part, but physiologists have recognized that these give only an indefinite and inexact indication of what actually occurs. Waller was one of the first to apply electrical methods to the study of the heart *in vivo*. The electrical variations in the heart are transmitted to the adjacent parts and thence throughout the whole body. It is thus apparent that with a suitable apparatus the method of application is extremely simple, for the electrodes can be placed practically anywhere on the surface of the body. An early form of recording instrument was the capillary electrometer of Marey and Lippmann, but Einthoven improved greatly on this by the invention of an extremely sensitive string galvanometer. Bull, of the Marey Institute, has further improved this by the addition of a photographic recording apparatus. This consists of a box, inside which a wheel covered with sensitized paper revolves. On the axle of the wheel there is an interrupter breaking the current from an induction coil a certain number of times during each revolution of the wheel. A slit allows the entrance of light from an arc lamp. Einthoven's galvanometer is placed in the path of this light and the deflections of the very fine galvanometer string are recorded. In making an observation the patient is seated comfortably in a chair, each hand dipped into a vessel containing salt solution. These act as electrodes and are connected by wires to the galvanometer. An extremely accurate record of the heart's action is thus obtained on the photographic paper. The apparatus is obviously not suited for general clinical use, but it could be quite readily employed in a hospital. There is the advantage that the patient need be disturbed very little if at all, for he can be connected by wire to the electrical room. This is done at Leyden, where the hospital is in connexion with Einthoven's laboratory by a wire nearly a mile long.

In the *Journal of Medical Research* for June L. F. Rettger describes a new and improved method of enumerating air bacteria. In relation to public health, the determination of the number of bacteria present in air is not infrequently a matter of some importance, and it is not at all apparent that the methods hitherto in use are of absolute reliability. Petri's original method was to filter air through sand, which was then mixed with gelatine and incubated. Various modifications of this have been described. An earlier plan, adopted by Hesse, was to draw air slowly over the surface of gelatine in a long horizontal glass tube. The process was dependent on the rapid settling of the bacteria on the surface of the gelatine. Winslow's more recent two-bottle apparatus is based on the same principle. Still another method is to filter a definite volume of air through liquefied gelatine, which is then poured into plates. Rettger's new method is essentially a modification of the last. It is extremely simple, and he claims for it a high degree of accuracy. The apparatus consists of a wide test-tube into which 5 c.cm. of sterile normal saline is put. The tube is plugged with a rubber cork pierced by two holes, one of which serves for the passage of the outlet tube, and the other admits the introduction of the aëroscope. This is a small glass tube with a round bulb at one end. The bulb is perforated by about a dozen small holes, and dips into the normal saline in the test-tube. The other end of the aëroscope is bent at an angle so as to prevent dust or bacteria falling into it. The apparatus having been thoroughly sterilized and freed from moisture, a measured quantity of air is drawn through by means of an aspirator. The bacteria in the air are caught by the normal saline, which is then mixed with an equal quantity of double-strength nutrient gelatine and plated. A source of error is due to the fact that bacteria adhere to the walls of the aëroscope. An error of over 10 per cent. may be introduced from this factor but can be obviated by disconnecting the aspirator, plugging the outlet and aëroscope with cotton-wool, and sucking the saline into the aëroscope two or three times. By connecting two such apparatus in series, Rettger has shown that practically 100 per cent. of the bacteria are collected by the first. He has used the method for over a year with complete satisfaction.

BRITISH MEDICAL BENEVOLENT FUND.

At the August meeting of the committee nineteen cases were considered, and grants amounting to £190 made to seventeen of the applicants. Appended is an abstract of the cases relieved.

1. Widow, aged 72, of L.R.C.P.Edin. Has supported herself and an invalid daughter by letting lodgings since her husband's death thirteen years ago; now finds that her rooms are often unoccupied, and that she cannot work as hard as formerly. Voted £12.

2. M.R.C.S., aged 69. Is quite incapacitated and dependent on his wife, whose income is less than £1 a week; children unable to help. Voted £10.

3. Widow, aged 43, of L.R.C.P., L.R.C.S.Edin. Maintained herself for some years after husband's death by acting as matron at a school, but three years ago became permanently deaf, and has since had to depend upon precarious earnings by needlework. Son, aged 15, has just been apprenticed to the Merchant Service. Voted £12.

4. Daughter, aged 59, of L.R.C.S.I. Was a teacher for many years, but is now unable to obtain pupils, and, having no means, is dependent on a sister whose only income is derived from two annuities of £20. Relieved once, £12. Voted £12.

5. Widow, aged 52, of L.R.C.P., L.R.C.S.Edin. Quite unprovided for at sudden death of husband about five years ago, and dependent on small, uncertain earnings by needlework and slight help from a brother-in-law. Two children, aged 19 and 15, the elder at a training college for teachers. Relieved five times, £52. Voted £10.

6. L.R.C.P.Edin., aged 65. Has been quite incapacitated for more than a year past, and is, with his wife and an invalid daughter, dependent on a brother, who pays for their rooms and allows them a few shillings a week. Relieved once, £18. Voted £18.

7. Daughter, aged 67, of late L.S.A. No income, and physically unable to undertake continuous work. Relieved three times, £30. Voted £10.

8. Widow, aged 52, of L.R.C.P.I. Since husband's death eight or nine years ago has supported herself as a nurse, but has recently had three serious illnesses, and is consequently out of work. Relieved once, £5. Voted £10.

9. L.R.C.P., L.R.C.S.Edin., a medical woman, aged 35. For the last four years has been a constant sufferer from colitis, and quite unable to earn a living. Relieved once, £18. Voted £18.

10. Daughter, aged 62, of late M.R.C.S. No income, and dependent on friends and small earnings by needlework. Relieved four times, £48. Voted £12.

11. Widow, aged 40, of M.B., C.M.Aberd. Endeavours to support herself by letting rooms, but at present has no lodgers. Two children, aged 12 and 10. Relieved three times, £22. Voted £12.

12. Daughter, aged 64, of late L.S.A. Only income an annuity of £20, and is in delicate health. Relieved twelve times, £116. Voted £12.

13. Widow, aged 55, of L.R.C.P Edin. No income, and dependent on two sons whose earnings are small. Relieved three times, £30. Voted £10.

14. Daughter, aged 61, of late M.R.C.S. Used to maintain herself as a dispenser, but can no longer obtain work as such, and is dependent on uncertain earnings from wood carving and slight help from a sister who has to earn a living. Relieved four times, £40. Voted £10.

15. Widow, aged 53, of L.R.C.P.I. Quite unprovided for at husband's death a few years ago, and health does not permit of anything but light work. Is at present acting as caretaker, but receives neither salary nor food. Relieved three times, £36. Voted £12.

16. Widow, aged 80, of M.R.C.S. Has a small income, but applies for a little help owing to the infirmities of her children, three of whom are deaf and dumb and one epileptic. Relieved eight times, £55. Voted £5.

17. Widow, aged 60, of late M.D.Edin. Has a situation as companion, but only receives a small salary, and has to help a delicate daughter. Relieved once, £5. Voted £5.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, W.

British Medical Journal.

SATURDAY, AUGUST 27TH, 1910.

THE PROGRESS OF ELECTRO-THERAPY.

From the account of the proceedings of the Section of Radiology and Medical Electricity, which appears elsewhere in this issue, it is clear that workers in this department of medicine are not resting on their laurels. On the contrary, they are steadily quartering old ground in an endeavour to better results, ever annexing new territory, and with the assistance of manufacturing firms paying much attention to securing safer and more accurate appliances. Several of the papers deal with the latter subject; while the rest, though not definitely so divided in our columns, fall easily into two classes, one dealing with the therapeutic application of different forms of electricity, and the other with its use as a diagnostic agent.

There is also a contribution from Sir J. J. Thomson, who, though speaking as a pure physicist, nevertheless had some very interesting suggestions to make. Emphasizing the physical and therapeutic distinctions commonly drawn between hard and soft radiation, he showed that rays of almost any degree of hardness or softness might be obtained with absolute certainty by taking advantage of the fact that the secondary radiation occurring when a Roentgen output impinges on a metal, varies in hardness precisely with the atomic weight of that metal. He also drew attention to a very remarkable fact in respect of the absorption of the energy of radiation by hydrogen. This, of course, depends, as in the case of all other substances, on the quality of the radiation, but seemingly it is in direct instead of inverse ratio to hardness. The one suggestion, if put to practical use, would have the very desirable effect of substituting a scientific for the present almost empirical fashion of securing the kind of radiation required, but the other would seem scarcely capable of utilization unless it could be shown that the hydrogen contents of diseased and normal tissues notably differed. Apart, however, from any immediate practical utility attaching to these ideas, they are of interest as proving how far we still are from complete comprehension of the mysteries of radiation, and how much, therefore, may reasonably be expected in the future of a form of treatment which has already proved of much utility.

The papers on treatment by electric ions make it clear that iontophoresis, as it has been called, somewhat painful as it is, has a more assured future before it than at one time seemed to be the case, and that the results obtainable in dealing with joints enlarged through rheumatoid arthritis and other causes are sufficiently satisfactory to make such treatment worthy of consideration in a class of case little amenable to most forms of treatment. It also appears that Dr. Lewis Jones has successfully applied the same therapeutic measure to cases of corneal ulcer, and in his opening remarks the President, Dr. Mackenzie Davidson, reminded us of his successful attack on diseases of the same order by radium. The circumstance is of interest, since the locality in question is the last to which such powerful remedies might *prima facie* be expected to be usefully applied. It is also clear that hyperidrosis must now be included in the field of successful *x*-ray work.

The investigations recorded by Drs. Dawson Turner and T. J. George on the effect of *x* rays in therapeutic doses on the growing brains of rabbits are of interest as representing a careful piece of research work, but almost admittedly they could hardly be taken as proving anything more than that there is room for further investigation of the kind. If the results as they stand were transferable to children submitted to *x*-ray treatment as a cure for ringworm one would expect all such children to lose weight rapidly, and many of them to die, whereas there is overwhelming clinical evidence that the children escape unscathed.

Early in the history of *x*-ray work there crept in the unfortunate practice of employing unqualified, though to a certain extent technically skilled, men to perform what was then regarded as purely routine work, but it is now dying out and the field of the skiagrapher growing proportionately. The assistance which skiagraphic methods render is becoming of a more dependable character, while at the same time radiologists are less disposed than formerly to claim that screen examinations and skiagraphy can be substituted for clinical examinations or for ordinary physical methods of diagnosis.

In view of the wide field covered by the discussions one might have expected to hear something on the subject of intentional filtration in connexion with *x*-ray work, as at the Annual Meeting last year it was indicated that promising researches on this point were in hand. Possibly no more will ever be heard of it now, for, if the suggestion already mentioned as having been put forward by Sir J. J. Thomson is utilized, filtration, though still necessary in radium work, would be superfluous in using Roentgen radiation.

Apart from their contents, the tone of most of the papers is notable. The weapons of the medical electrician are of a more purely scientific kind than any other in the *armamenta* of medicine and surgery, and the spirit in which they are used is thoroughly in keeping. It is a point which must strike those who can recall the medical electricity of thirty years ago. How thoroughly scientific are the present lines of work is well shown by the fact that on behalf of one form of application, whose results are not readily demonstrable, it was pleaded in effect, though not in words, that it should be judged from an empirical standpoint. This is high-frequency work, on which there is an inclination among many neurologists to look somewhat askance. Independently of its utility in various disorders characterized mainly by minor degrees of pain and discomfort, it was shown that many neurasthenics —including in that term able-bodied persons merely nervously overtired and not exhibiting the more prominent phenomena of that disease—frequently find high-frequency applications of benefit. Summed up, the view would seem to be that high-frequency applications may, if nothing else, fairly claim to be regarded as a useful tonic.

Each reader must decide for himself what conclusions should be based on the nine cases of growths of a malignant order demonstrated by Dr. Dominici after treatment by ultra-penetration. This method of applying radium has so far been comparatively little practised in this country, but it seems scarcely open to question that its effects are, in some cases at any rate, of a most desirable nature.

The last communication to which attention should be drawn is one of a different order from any of the rest—the address delivered by Dr. Jellinek of Vienna, the occupant of a chair of electro-pathology recently founded in the university of that city. He showed how very complicated and various in their nature are the injuries due to unintentional contact with electrical machinery, and did something towards explaining how it is that a current which in some cases leaves the victim but slightly harmed in other cases kills him. A point of pathological interest and much clinical importance demonstrated by him is that a common result of a severe electric shock is rupture of fine vessels in the brain. This being the case, it follows that when in the administration of first aid to such patients the head should be raised, not lowered. Incidentally, Dr. Jellinek supplied also an addition to the list of cases in which the influence of mind on body has been proved in tragic fashion. A workman who had been urgently warned not to interfere with a certain live wire accidentally touched it. He expected to be killed in consequence, and, in fact, instantly died, though at the moment the wire was harmless, since no current was passing. At the *post-mortem* examination he was found to exhibit the phenomena of status lymphaticus; this condition may also perhaps be the true explanation of some other cases in which the effect of mind on body has been very obvious, but the very reverse of that of which recently so much has been heard.

A FRENCH VIEW OF HYPNOTISM.

In a recent number of the *Semaine Médicale* (No. 30, July 27th) Dr. Babinski, well known as an eminent neurologist and a former *chef de clinique* of Charcot at the Salpêtrière, has published a remarkable article on the present position of hypnotism, which he contrasts with the stir it made thirty years ago. "Nowadays," he says, "who uses hypnotism?" Does this mean that treatment is only a question of fashion, or that the method has presented greater difficulties than were expected, or was its utility only an illusion? He asks why physicians who formerly practised hypnotism extensively have ceased to do so except on rare occasions; and he discusses the medico-legal question of the bearing of hypnotism on "free will" and legal "responsibility." He begins his inquiry by attempting to arrive at a clear conception of hypnotism. By different procedures in certain subjects a physical perturbation of the nervous system may be induced, one consequence being exaltation of susceptibility to suggestion. It may be argued that as certain functional disorders or morbid conditions yield to the influence of suggestion when susceptibility thereto is heightened, the indication is to hypnotize patients affected by these pathological manifestations. This conception is absolutely rational if the basis on which it rests is sound, but we cannot admit the exactitude of the facts which are its foundation. There is no proof that the hypnotic condition possesses objective somatic characters which cannot be reproduced by the will. It is quite true that the phenomenon may be real, while there are undoubted facts in psychology of which it would be impossible to produce objective proof, but the reality of hypnotism is not so obvious as that of such mental disorders as delusions of persecution, melancholia or *folie du doute*, and the hypothesis that all hypnotism is a comedy is not absurd; it is a question upon which there must be differences of opinion amongst physicians who are familiar with the subject, and these opinions will probably depend upon the mental constitution of the observer. Babinski, having at the commencement of his career in the Salpêtrière and during many subsequent years had abundant opportunities of studying the subject and observing many patients who presented the most perfect characteristics of hypnotism, believes in the genuineness of hypnotic sleep, and that it differs from all other kinds of sleep, but is capable of being easily simulated. When hypnotism was in full vogue at the Salpêtrière there were at least ten patients upon whom experiments were being constantly made, and it would have been impossible for these people to have shammed without the fact becoming known to other patients in the wards; yet Babinski heard no rumours of such a kind, while some patients showed their belief by asking to be treated by the same method. At the same time he is far from thinking that hypnotism is all that it was held to be thirty years ago. At that time it was generally believed (1) that a subject could be hypnotized against her will, (2) that the hypnotized person forgot on waking all that had happened during the hypnotic sleep, (3) that in the lethargic condition the subject was unconscious, and (4) that in the somnambulant condition the subject's own will was absent and she was obliged during hypnosis, or after waking from it, to perform any actions suggested to her. Dr. Babinski holds that no one can be hypnotized against his or her will; that the hypnotized subject does not forget what happened during the sleep, as he has convinced himself by repeated tests that the patients know and recollect all that has happened; that in the lethargic condition the subject is not unconscious, nor the somnambulant subject under the complete control of the hypnotizer. So long as the subject is asked to do harmless or indifferent actions they are performed willingly; but if repugnant, or even disagreeable, they are refused, and resistance, he holds, would be much greater if an immoral action or a crime were suggested. He does not believe that hypnotism creates or augments susceptibility to suggestion, and although it is true that formerly many hysterical patients were cured after they had been hypnotized, hypnotism had really nothing to do with the cure; they were merely hysterical people capable of being treated by suggestion apart from any hypnotic procedures. In his opinion, not only is hypnotism generally useless, but attempts to hypnotize may make the physician miss the end he has in view; for, if he begins by telling the patient that he will send her to sleep, and fails to do this, she loses confidence in him; whereas he would probably have succeeded had he in the first instance suggested to her the disappearance of the paralysis or contracture.

Nevertheless there are certain hysterical patients so prone to self-suggestion that hypnotism alone can restore them to health, since they are not accessible to psycho-therapeutics in the waking state. In such cases hypnotism is perfectly legitimate, and Dr. Babinski uses it without hesitation. With regard to the medico-legal problems, he is convinced that no hypnotized person can be made to commit a crime or an immoral action against his or her will. It is absolutely impossible to furnish definite proof of the hypnotic state in any given case but while admitting the reality of hypnotism he will not allow that it can make any one irresponsible for crime. It is possible to persuade a person to commit a crime, and there are certain weak individuals who can be more easily persuaded than others to do act

which they know to be wrong, but this is true of them apart from hypnotism, and in the opinion of Babinski there is no ground at all for the fear that hypnotism confers a power which can be abused for criminal or immoral purposes.

It must be understood that in this article we have only given Dr. Babinski's personal views on hypnotism. They are interesting, however, as coming from a man of such large experience, and one who has had such ample opportunities of observing changes of opinion and practice in France.

THE MEDICAL DIRECTORY.

We are asked to state, for the information of our readers, that the circular sent annually by Messrs. J. and A. Churchill to each member of the medical profession will be posted on September 1st. It may be pointed out that this is a month later than was formerly the case. Though the change involves considerable extra pressure of work, it is believed that it is greatly appreciated, and it has proved to be an advantage to avoid making applications for returns during the holiday month of August. It will greatly facilitate the work of those responsible for the publication of the *Directory* if practitioners will be so good as to return the circular without any delay. As is now usual, the *Medical Directory* will be published before Christmas. The Climatological and Balneological section, by Norman Hay Forbes, F.R.C.S.Edin., has been extended to include Continental as well as British spas and health resorts.

PARLIAMENT AND THE MEDICAL PROFESSION.

When addressing the State Medicine Section on the Coroners' Law and Death Certification Bill at the recent Annual Meeting, Sir William Collins, M.P., told his hearers that the medical profession was "suspect" in the House of Commons, and that the prevailing opinion in the lobby was that the medical profession was "out for fees." This was represented as a valid excuse for not inserting in the bill a clause dealing with the question of remuneration for services rendered. Any other course, it was contended, would imperil the chance of the bill becoming law. The Legislature in times past has wrongfully imposed statutory obligations and demands upon the medical profession in the discharge of duties to the State and for the State without provision for recompense or reward. Suspicion haunts the guilty mind. This probably is the explanation of the alleged state of mind in the House of Commons. As for the prevailing opinion in the lobby, if the view mentioned above means that the medical profession is regarded as having awakened to a sense of the injustice of State demands on the time and services of medical men without remuneration, that view is undoubtedly correct, but it is not an attitude which calls for any apology or modification. If the insertion of a clause in an Act of Parliament safeguarding the medical profession from an injustice which no other body would tolerate means the wreck of an Act, then in the name of reason and fairness such an Act should be wrecked. We are told to wait and see, and that in the end good may be the final goal of ill. There is nothing in the past experience of similar enactments to warrant the belief that such will be the case, for it may truly be said that in such matters the House of Commons is "suspect." The amendment of the laws relating to Coroners and to Death Certification is in the public interest, and for the benefit of the State. That being so, it is a scandal that opprobrious epithets should be applied to the medical profession for insisting that in any such amendments as may be deemed desirable, due regard should be paid to fairness and the simple and universally demanded rule of *quid pro quo* be observed.

THE RETIREMENT OF DR. SEATON.

Dr. Edward C. Seaton's retirement from the post of Medical Officer to the Administrative County of Surrey, which was recently announced in the Journal, is a serious loss, not only to the county which he served so well for twenty years, but to the sanitary service of the country. Dr. Seaton, whose father's name is famous in the history of vaccination, had had a large experience in the scientific and administrative work of public health before he decided to give his services entirely to Surrey. In 1871 he began his work by assisting in the sanitary inspection of Oxford during an epidemic of typhoid fever. In the following year Mr. Mundella formed a commission to inquire into the physique of children in the factory districts, and Dr. Seaton was appointed an Assistant Commissioner to make medical inspections of school children in Lancashire and Cheshire. At the end of that year he was appointed the first Medical Officer of Health for Nottingham. In 1884 he became Medical Officer of Health for Chelsea; that post he held until the end of 1890, when he accepted the post which he has recently resigned. A brief summary of his work will show what valuable service Dr. Seaton has rendered to public health. He was the author of the very first report under the Housing Act of 1875, which contained a clause allowing the medical officer of health, entirely on his own responsibility, officially to declare an unhealthy area. His work at Chelsea was somewhat on the same lines, as a very large part of the slum property was dealt with during the years 1884–1900. He was appointed in 1890 as a special commissioner for the Home Office, along with Mr. Cubitt Nicholls, to inquire into and report upon the condition of a very insanitary part of the East End of London. In Surrey he has constantly given advice and assistance to the borough and district medical officers of the county, and has always urged upon them the fundamental importance of attending to the sanitation of the dwellings of the working classes. Through the influence of the Sanitary Committee of the Council, valuable work has also been done by securing for the sanitary inspectorship a position apart from that of the surveyor. In a county such as Surrey this has been one of the most important steps that could be taken under the existing powers towards the improvement of the dwellings of the working classes. Dr. Seaton had a great deal to do with the movement for the notification of infectious diseases, a clause for the purpose of securing this having been inserted by his advice in a local Act obtained by the Nottingham Town Council as far back as 1878. In 1882 he organized an important meeting at a Congress of the old Social Science Association. There, with the co-operation of the medical officers of health of Edinburgh, Birmingham, and Dublin, he defended the movement as to which at the time there was very strong medical opposition in the town. Subsequently, in 1889, the clause which was drawn up in 1878 became the basis of a Government measure, and the first part of his period of office in Surrey was occupied in securing its adoption by the different local authorities. He had had to deal from the earliest part of his career with typhus, which has now become extinct. Following in the footsteps of his father, he gave much attention to smallpox, which, though it has not troubled us much of late, may do so again at any time. In Nottingham Dr. Seaton had the whole responsibility of dealing

with the epidemic of 1881–2. In London, a few years later, in conjunction with Sir Douglas Galton, he advised on the metropolitan arrangements connected with the extra-urban treatment of small-pox, a measure which has been of very marked influence in the limitation of epidemics of late years. During the presidency of the late Sir Andrew Clark, Dr. Seaton got a committee of the College of Physicians to act in conjunction with the Metropolitan Asylums Board, and they induced the President of the Local Government Board to bring in a bill to allow medical students to study the diagnosis of small pox and all the fevers at the Asylums Board hospitals. The course of instruction at these hospitals is now an essential part of the education of medical men, and has proved a great help in the practical working of the Notification Act. Dr. Seaton has always taken an active interest in medical educational work, having for many years performed the almost honorary work of lecturing at St. Thomas's Hospital, besides examining in State Medicine at the Universities of London, Oxford, and Cambridge, as well as at the Royal Colleges of Physicians and Surgeons for the Diploma in Public Health. He also edited the works of Sir John Simon, that great master in sanitary science. Dr. Seaton has also done most valuable work in river purification and water supply. He assisted in the foundation of a County Nursing Association for Surrey, an institution which is likely to prove most beneficial. Throughout his official life Dr. Seaton has always shown great tact in securing harmonious working among the district authorities and their officials, especially his colleagues, the medical officers of health, with whom he has been on the very best of terms. The Surrey County Council accepted Dr. Seaton's resignation on the ground of health with great regret, and recognized his services by appointing him Consulting Medical Officer of Health at a salary of £300 a year. Dr. Thomas Henry Jones, formerly Assistant Medical Officer of Health for the County of Surrey, was appointed to succeed Dr. Seaton, whose numerous friends will join us in wishing him many years of useful life. Besides his consulting work, he will, we understand, deliver a special course of lectures at the London University.

UNREGISTERED DENTISTS.

It is the last straw which breaks the camel's back, it is the last straw but one which sometimes saves the life of that curiously constructed animal. The same useful part may perhaps prove to have been played, in the case of the profession of dentistry, by the decision of the House of Lords on the interpretation to be placed on the Dental Act. The proof furnished that this Act offers no real protection either to registered and qualified dentists or to the general public has attracted a good deal of attention in various quarters. One lay paper which has grasped the dangers of the situation to the full is our contemporary *M.A.P.*: having since studied the subject for itself, it devoted some long articles in its issues for August 6th, August 13th, and August 20th to an endeavour to arouse, as it states, public indignation at a law which permits any one to practise dentistry however ignorant he may be of the work. After pointing out the important part that teeth play in the human economy, and how much suffering and injury is caused by their mistreatment, it shows in various fashions that as things are at present an average person seeking relief for dental troubles is as likely as not to hand over the care of his mouth to the tender mercies of a man who has absolutely no knowledge of dentistry, while all the time believing that he is receiving the best advice obtainable. This is because nothing stands in the way of unregistered practitioners of dentistry, however incompetent, describing themselves by names indistinguishable except by the expert from those properly borne by registered and fully qualified dentists. It estimates the number of unregistered persons engaged in dental practice in one way and another as between 40,000 and 60,000, whereas the number of registered dentists is only about 5,000; and this being the case, concludes that it is no exaggeration to say that the teeth of the nation are in the hands of quacks. It is pointed out that though dishonesty and highly undesirable practices prevail among them, all unregistered practitioners of dentistry are not dishonest persons; but naturally, lacking as they do the knowledge and skill that can only be acquired by long training under competent instructors, they cannot be expected to perform their work efficiently. But despite this saving clause in favour of certain practitioners, it is held that all unqualified men alike should be branded as quacks, and not permitted to describe themselves in terms which lead the public to believe that they possess proper qualifications and have enjoyed the advantage of real training. A crusade of this character on the part of a lay paper is so rare an occurrence that naturally it has aroused both surprise and wrath amongst the unqualified. What makes the articles the more effective is that their tone is moderate and the writer has evidently studied the subject thoroughly. Indeed, the only weak point they present is that a number of men who have banded themselves together under the title of the Incorporated Society of Extractors and Adaptors of Teeth have induced the author to extend to them a certain degree of editorial protection. But on *M.A.P.*'s own showing, these men, when they practise dentistry on their own account, instead of confining themselves to performing for real dentists the more purely mechanical tasks which dentistry involves, are as much quacks as any of those mentioned. However great their mechanical skill may be, they are men who, so far as they can show, have no knowledge of the sciences which underlie and play an essential part in all good dentistry. The articles are thoroughly worth reading by those interested in the subject, and will no doubt do something, at any rate, towards fulfilling their object. This is to amend the law in such fashion as to prohibit the practice of dentistry by any person not in possession of a licence or certificate granted by some recognized authority under the jurisdiction of the General Medical Council.

THE OPIUM HABIT.

A LAY contemporary, which during the past few months has exhibited considerable interest in medical subjects, has discovered that the opium habit is spreading in this country with "baffling rapidity," and is laudably anxious to play its part in staying the alarming tide. For this purpose it has set to work and learnt for itself the real facts. Some of them will cause general astonishment. Who would have thought, for instance, that morphinomaniacs figured largely among the occupants of so-called inebriate homes? On the other hand, it can scarcely be news to any one that society people, including popular jockeys and politicians, steal from South Kensington and Mayfair, where such persons, of course, invariably live, to resort to vile haunts furnished by West End firms at a cost of £2,000. It is easy to believe that only men and women rendered callous by their craving could put up with such surroundings. There is, however, one disclosure over which those

who are students of neither Tariff Reform nor Free Trade may be apt to stumble. Since the cost of opium is about 17s. a pound, it is difficult to understand how the Lancashire tobacconist contrives to supply the Lancashire mill-girl, at a price within her means, with opium-impregnated cigarettes. She smokes them, it appears, by way of gaining temporary relief from the weariness and pain attendant on a life of toil. This is quite a good sentence, and having borrowed it from Peter, we offer it to Paul for use next Sunday in Hyde Park. In fashionable circles much of the evil, it appears, is due to West End medical men supplying opium to those who pretend they require it as medicine. This is all the more credible, because it is so well known that West End practitioners with fashionable patients invariably run dispensing practices! Various other disclosures are made as to the way in which the present race of opium cravers obtain their supplies, but on the whole the most remarkable circumstance of all is one on which our contemporary throws no light. Why do opium cravers, a cunning and knowing class, resort to all the devices in question, when they have only to walk into a chemist's shop where they are "known" and ask for what they want? Opium in any quantity and in any of its forms can lawfully be sold without a medical prescription to any person "known" to the vendor. The requirements of such an elastic term may be fulfilled merely by a few anterior visits for the purchase of some pills or tooth powder. To the credit of pharmacists be it stated that many of them step outside the law and will not sell opium except on a medical prescription; on the other hand, there is nothing to prevent a medical prescription being made up *ad infinitum*, and many chemists stand on their rights and sell opium-containing preparations to all "known" to them. They may be morally wrong, but cannot legally, and hence reasonably, be blamed even if they know the disastrous object of the purchase. If our contemporary wishes to do good it should get the law on the subject altered. It would meet with no opposition on the part of pharmacists as a body.

PRECAUTIONS AGAINST CHOLERA.

The Local Government Board has issued a circular to port sanitary authorities and certain riparian sanitary authorities calling their attention to the fact that cholera is again seriously epidemic in Russia, particularly in the St. Petersburg district and at Cronstadt and other Russian ports. The sanitary authorities of British ports trading with Russia should, it is urged, be on their guard against the importation of cholera into their districts by vessels coming from places where the disease has appeared or is likely to appear. In this connexion, says the circular, it is essential that the medical officers of health of such British ports should endeavour to keep themselves informed as to the spread of the present outbreak of cholera, and especially as to the continuance of the disease in ports where it now exists and its appearance in other ports not yet known to be affected by it. The statement which the Board issues weekly to the medical officers of health of port and riparian sanitary authorities, and which contains information as to such cholera occurrences as have come under the Board's notice, will be of assistance in this direction. The fact is recalled that on September 9th, 1907, the Board issued a revised General Order relating to cholera, yellow fever, and plague on ships arriving from foreign ports. The Board relies on the port and riparian sanitary authorities taking all necessary steps under that Order to prevent the introduction of cholera into this country. Special attention, it is pointed out, should be paid to ships bringing aliens from Russia to British ports. The Local Government Board for Scotland has also issued a circular regarding cholera. The necessity for readiness and vigilance is pointed out. Special precautions should be observed with regard to vessels coming from North Russian and Black Sea ports. Probably never before have such full, careful, and elaborate means been taken for meeting a possible outbreak of cholera in Scotland. Dr. Dittmar has recently been visiting all the medical officers of health and making arrangements against possible contingencies. The various ports in the Firth of Forth are of course danger zones, carrying on as they do much trade with Russian Baltic ports. It is not always the important ports that are the most dangerous points. On the contrary, it is often some insignificant port that is the inlet for danger. The Black Sea is less important for Scotland, since the time occupied by transit to Scotland reduces the danger to a minimum.

QUACK REMEDIES.

Among the accounts of various secret remedies which have appeared in this Journal during the past few years (many of which have now been brought together in a book named *Secret Remedies*) was one dealing with Stevens's Consumption Cure. A special point about it was that attempts were being made to secure purchasers by guaranteeing to pay a stated sum if it did not cure them. The documents in which the guarantee was given were, however, so worded that though they might readily deceive people it was not likely, it seemed to us, to prove possible to enforce the guarantee in any given case. We are glad to see now that in this respect we were mistaken, for, as will be found on reference to our medico-legal columns this week, the widow of a deceased patient has actually succeeded in recovering a sum of £10 promised by the proprietor if his treatment were followed but did not cure the patient. It will be noted, too, that in delivering judgement his Honour Judge Gye dealt faithfully with quacks in general, and spoke of the action of this particular specimen as being an intentional and well-considered fraud, adding that his remedies were quack remedies, not having the slightest value of any kind. In some circulars which this person has issued it has been stated that the ingredients of his "cure" are entirely original discoveries, drugs never used before by any chemist or doctor; it was added that he was ready to give any doctor its formula if desired. As apparently no medical man expressed any curiosity on the subject, he subsequently addressed circulars to medical men themselves inviting their co-operation, and pretending to disclose the composition of his cure. It was, he said, umckaloabo root and chijitse in certain proportions. If he had said that it was extract of high-cockalorum-jig-jig-jig, it would have been equally informing. Subsequently we had the preparation analysed, and found that its contents were of a very simple kind—some alcohol, some glycerine, and a solid substance identical in its characteristics with krameria. The latter is a very familiar drug, but one whose chief claim to continued inclusion in the *British Pharmacopoeia* is that it is a harmless astringent. It is absolutely valueless as a cure of consumption, or of any other disease for which the decoction in question purports to be useful. It was also found that the quantity of the "cure" sold for 5s. could be prepared in accordance with the analysis by any chemist for less than 2d. It is worth noting that the same ostensible remedy is also sold under the names of "Sacco" and "Lungsalva," and that our contemporary *Truth*, which has on many occasions dealt with this "cure," states, in the latest

issue of its *Cautionary List*, that passages from its columns condemning the sale of "Sacco" have been used in a mutilated form as an advertisement.

THE MYSTERY OF WOMAN'S HAIR.

Readers of Scott's *Life of Swift* will remember the story of the small packet containing a lock of hair with the inscription "Only a woman's hair" in the Dean's handwriting. The hair is believed to have been Stella's, and Scott quotes the inscription as an example of Swift's cynicism. Others, perhaps more discerning, have seen in it a sign of a heart throbbing with love which the writer tried to hide under a flimsy disguise of indifference. It scarcely lies within our province to decide questions of sentiment; we will therefore say nothing on that point. We assume that the hair was Stella's own; otherwise the romance would evaporate. This, however, would be an unwarrantable assumption in many other cases. The origin of many women's hair is a mystery which the rude masculine mind will do well not to seek to unveil. Where do the hairdressers get the glorious locks with which they decorate their windows? Black hair, it may be conjectured, comes from the South. Mr. Francis Trollope, in a book entitled *Summer in Brittany*, gives an account of what he called a hair market. Speaking of a fair in Collenée, he says: "What surprised me more than all, by the singularity and novelty of the thing, were the operations of the dealers in hair. In various parts of the motley crowd there were three or four different purchasers of this commodity, who travel the country for the purpose of attending the fairs, and buying the tresses of the peasant girls. They have particularly fine hair, and frequently in the greatest abundance. I should have thought that female vanity would have effectually prevented such a traffic as this being carried to any extent. But there seemed to be no difficulty in finding possessors of beautiful heads of hair perfectly willing to sell. We saw several girls sheared, one after the other, like sheep, and as many more standing ready for the shears, with their caps in their hands, and their long hair combed out, and hanging down to their waists. Some of the operators were men, and some women. By the side of the dealer was placed a large basket, into which every successive crop of hair, tied up into a wisp by itself, was thrown. No doubt the reason of the indifference to their tresses, on the part of the fair Bretonnes, is to be found in the invariable 'mode' which covers every head from childhood upwards, with close caps, which entirely prevents any part of the hair from being seen, and, of course, as totally conceals the want of it. The money given for the hair is about 20 sous, or else a gaudy cotton handkerchief—they net immense profits by their trip through the country." Light hair comes mostly from Germany. It is sometimes stated that the colour of the hair is an index of character; if this be true, it is obvious that the character can be disguised by art. Queen Elizabeth was probably singular in her preference for a red wig, but the colour did not belie her temper. The colour most in demand, however, changes with the fashion at a given time. A fashion which we can only characterize as disgusting seems to prevail at present in certain places. This is the wearing of "rats," structures of which we confess we know nothing, but which we presume to be intended to be decorative. They are, it seems, made sometimes of wire, sometimes of human hair, sometimes of flax, or other vegetable which presents a more or less close likeness to human hair. In connexion with this matter, we touch darker mysteries than those of the French or German hair markets. We have recently seen it stated in an American paper that the hair dealers of Canton, from whom large supplies of black hair is received for the manufacture of "rats," have been discovered exhuming corpses for the sake of the pigtails. The Chinese Government is said to be taking steps to stop this new kind of burking. We trust it will be successful in its efforts, for the traffic in dead hair is dangerous from a hygienic as it is hideous from an aesthetic point of view. But what will not the devotees of fashion risk in the pursuit of their crazy cult? The trade in human teeth used to be highly profitable, and Bransby Cooper in his biography of his famous uncle gives an account of resurrection men who followed the troops in the Peninsula to get the teeth of the fallen soldiers, for which they got high prices in London.

BUYING UP THE MEDICAL PROFESSION.

Among the numerous suggestions stated to have been received, and to be still awaiting consideration, by the committee formed at the Mansion House in connexion with a memorial to His late Majesty are several of a distinctly medical order—by which phrase, be it noted, is not implied a medical origin, for some of them are distinctly wild to the verge of madness. Those of the saner kind include a proposal for the building of an open-air sanatorium for London consumptives. Realization of the scheme would be both a preventive and curative measure, and should be practicable if the buildings provided were of the simple, inexpensive kind now known to be the best for such purpose. To erect and endow a sanatorium of good size would not cost more than a sum such as might reasonably be expected to be collected by the committee in question. Another suggestion is that at each London hospital a ward should be named after King Edward. In view of His late Majesty's great and successful labours on behalf of hospitals this would be a very suitable kind of memorial, and need not necessarily entail the expenditure of more than the cost of the few pots of paint and books of gold leaf required for the placing of inscriptions over ward entrances. As, however, the naming of wards is a definite if seldom realized asset in hospital finance, it would scarcely be right to commemorate King Edward in the fashion indicated without paying a stated sum to each hospital. It is also proposed that by way of a memorial the whole of the medical, surgical, and dental practices in this country shall be nationalized. The very simplicity of the idea must make it attractive to statesmen of all orders, from Socialists downwards. Moreover, nothing material stands in its way; for while it would be superfluous to consult the medical profession before selling, or, rather, buying it up lock, stock, and barrel, the sum required would be a mere trifle. Apart from dentists there are some 32,000 medical men in the British Isles, whose work is commonly calculated to produce an average sum of £250. The gross amount is therefore £8,000,000, and this, when capitalized at the moderate rate of 5 per cent., is only £160,000,000. Having received that sum, medical men as a whole would, no doubt, gladly continue their work as salaried officers of the Crown. Other propositions which also, it is feared, have a medical aspect are those relative to the establishment of a memorial by providing for the temporary housing of persons mentally distressed, for free legal advice to the poor, and by raising a fund out of which temporary loans would be made to the needy and poor. On the other hand, in view of the extent of the consideration

which the medical profession commonly receives at the hands of the elected representatives of the people, and of other circumstances, the idea of forming a national Valhalla can scarcely be regarded as having any interest for medical men as such.

EXTRACTION OF THE LENS IN ITS CAPSULE

The remarkable statistics published by Major Smith, of Jullundur, who has for years made a practice of extracting the lens in its capsule, have led to his method being imitated by many surgeons, not only in India, but also in America and on the Continent. With some few exceptions, however, the results obtained have fallen short of those claimed by Major Smith, and many celebrated ophthalmologists have declared themselves dissatisfied with the procedure because they have found that the percentage of cases in which vitreous was lost was unduly high. Thus, Professor Elschnig, of Prague, who gave the method an extended trial, was obliged to confess that the ultimate results were inferior to those which followed orthodox extraction. Major Smith contends that vitreous loss in his clinic is not materially greater than in other eye hospitals where the old operation is performed, and his claims are fully substantiated by surgeons who have worked with him at Jullundur. In the *Archives of Ophthalmology* for January, 1910, there are two papers dealing with the subject. Captain A. E. J. Lister, F.R.C.S., I.M.S., contributes one on the after-effects of the escape of vitreous during Smith's operation. He has carefully examined cases where small quantities of vitreous had been lost. He found that the effects of slight loss upon the subsequent vision might almost be neglected. About 5 to 6 per cent. lose a little, and only about 1 in 98 of such cases develop consequent fundus disease. No case examined had detachment of the retina. Captain Lister tabulates the final vision in 98 cases of vitreous loss. The majority had V. = $\frac{6}{6}$, and many had an even higher visual acuity. In fact, the general results of these operations in which vitreous had been lost are far better than those to be obtained from any list of the results of extractions by the normal method which has been published either in England or on the Continent. In the same journal Dr. Clerk publishes his observations made during a special visit he paid to Jullundur to study Major Smith's method. He cites 121 cases which came under his immediate notice, and amply corroborates all Major Smith's statements. Knapp's account of Major Smith's operation is not so favourable as Clerk's. He saw Major Smith operate at Jullundur, and gives the following statistics of 104 cases: Vitreous prolapse 12 per cent., iris prolapse or encleisis 16 per cent. Two cases of suppurative iridocyclitis and one subchoroidal haemorrhage.[1] Major Kilkelly,[2] I.M.S., speaks even more unfavourably of Smith's operation. Major Smith in February, 1909, operated upon 23 cases of cataract at the Civil Service Ophthalmic Hospital, Bombay, at the request of Major Kilkelly. The patients were kept in for periods varying from fifteen days to twenty-seven days. The visual acuities obtained were as follows: $\frac{6}{12}$, 1 case; $\frac{6}{9}$, 2 cases; $\frac{6}{36}$, 7 cases; $\frac{6}{60}$, 3 cases; $\frac{6}{6}$, 4 cases; fingers at 18 ft., 5 cases; hand reflex, 1 case. In 5 cases the capsule ruptured; in 2 there was vitreous loss; in 5 iris incarceration; in 4 capsule tags were included in the wound. Vitreous opacities were found in 9 cases, and iritis followed in 7 cases. Major Kilkelly states that after performing 600 extractions in the capsule he gave up the method, and he is of the opinion that these operations of Major Smith's clearly show that a high percentage of accidents occur, and that the average patient is exposed to an unnecessary risk. Upon the whole, therefore, one is disposed to believe that, magnificent as the Jullundur results undoubtedly are, and great as is the temptation to adopt the same practices, extraction in the capsule will always be reserved in Europe for special cases, and will never become the operation of election.

[1] Quoted by Elschnig, *Ophthalmology*, April, 1910.
[2] *Indian Medical Gazette*, May, 1910.

TAXI-CABS.

At this particular moment, when the wrongs of the taxi-cab driver are in question, the rights of the taxi-cab user merit some attention. These being both carefully and clearly set forth in a little pamphlet, entitled *Twenty Points for Users of Taxi-Cabs*, the purchase of that publication would be a wise investment even if recommended by the owners of a bucket-shop. No praise could well be higher. It is published by the Temple Press, Limited, and is obtainable, we believe, at most bookstalls for the sum of one penny. It shows the user of a taxi-cab exactly what he must pay, and that makes it all the easier for him to decide the sum he will add voluntarily to his computation thereof by way of what the Turks term "bakshish," and our French friends, who are ever logical and in many ways more outspoken than ourselves, frankly entitle a *pour-boire*. In view of the great importance attached both by taxi-cab drivers and taxi-cab owners to the behaviour of the public in this matter, it is somewhat quaint to remember that when taxi-cabs were first introduced an argument used in their favour was that tipping would no longer be expected by cab drivers any more than by the steerers of omnibuses. But besides taxi-cab drivers, owners, and users, there is a fourth class of person quite as much entitled to consideration as any of the others. This is the class made up of ordinary wayfarers, whose interests should not be overlooked when the behaviour of taxi-cab drivers is under criticism. The proportion of accidents among them tends constantly to increase, despite the undoubted fact that motor cars are more easily controlled than cabs. One reason for this is that drivers of taxi-cabs have never yet been made to understand, either by the police or by any other authority, that the right of wheeled vehicles to the roadway is not exclusive, and that in this country, though not in France, the duty of avoiding accidents rests primarily on the shoulders of drivers and not on those of foot passengers. At present drivers seem to be under a very different impression—namely, that provided they can prove that they blew their horn no one can be blamed but the victim when accidents occur. Moreover, apart from actual accidents the public suffers materially through the nervousness nowadays inevitably involved when streets have to be crossed. The hoot of a motor horn is not a soothing sound in itself and the fact that when heard close by it usually has to be followed by a jump is a quite unnecessary addition to the various strains habitually put upon the nerves of Londoners. The worse offenders in this respect, however, are not taxi-cab drivers, but the chauffeurs of private cars.

Sir Francis Lovell, C.M.G., Dean of the London School of Tropical Medicine, will, it is announced, make a further tour of the West Indian Colonies during the forthcoming winter, on behalf of that institution, among the possessions which he proposes to visit being British Honduras, Bermuda, and the Bahamas.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

BIRMINGHAM.

EMPLOYMENT OF MARRIED WOMEN AND INFANTILE MORTALITY.

AN investigation has been made in Birmingham with regard to the effect of the industrial employment of married women upon infant mortality, and the result is embodied in the annual report for 1909 of the medical officer of health, Dr. J. Robertson. The investigation was carried out in a thorough manner in one of the areas where the industrial employment of women was greatest while at the same time the infantile mortality-rate was highest. The district covered an area of 289 acres, and had an estimated population of 41,884. The most important industry of the district was metal working. There were 1,503 children born alive during 1908, and 39 stillbirths were recorded, the birth-rate being a high one—namely, 35.8 per 1,000 of the population. Of the 1,503 children born it was found undesirable to include in the inquiry 36, on account of the fact that they were born in circumstances distinctly better than the 1,467 others, and therefore were not comparable. No less than 209 of the remaining infants were lost sight of during the twelve months ensuing after birth; 46 further cases could not be found. There were left, therefore, 1,212 mothers, and these were subdivided into 601 mothers who were not industrially employed during pregnancy and 611 who were so employed. The general conclusion was drawn that the number of mothers employed before the births of their babies was much larger than the number employed afterwards. It was found that whereas 50.4 per cent. were employed before the birth of their infants, only 31.5 per cent. were employed after the birth. The mortality among the infants born in 1908 of all mothers employed either before or after childbirth was at the rate of 190 per 1,000 births, while among those not industrially employed it was 207 per 1,000 births. It was also found that the mortality of those infants whose mothers were industrially employed during pregnancy was 198 per 1,000 births, and that among those who did not work the rate was exactly the same. Common sense would lead to the assertion that the infants of mothers who go out to work must be at a disadvantage, but it is probable that in considering the class of women dealt with in this investigation, there were other points which had an even greater influence on infant mortality than the working of the mother. In many cases the additional income brought in by the mother had an important influence in the prevention of poverty, which is one great cause of a high infant mortality. Again, a certain natural selection may have operated, many women who go to work being thrifty and energetic, and determined not to get below the poverty line, nor yet to neglect their home duties. Probably factory or workshop employment in itself is in the majority of cases not more exacting on a pregnant woman than that which the mother of a large family has to perform daily at home.

Dr. J. Robertson, in his general conclusions upon this investigation, says:

> The figures dealt with in this report relate to women, many of whom are in a state of poverty, and, as already pointed out, this alone has such an evident pernicious influence on the health of the mother and her offspring that the influence of industrial employment is to a considerable extent marked. Bearing this in mind, and taking into consideration our previous investigations on somewhat similar lines, it may be said that in Birmingham the type of industrial employment in vogue does not appreciably influence the health of the mother or her infant when the standard of comparison is that of women in equally poor circumstances who are not employed industrially.
>
> While this is the opinion I have come to from an investigation of the facts in these poverty-stricken districts, I do not for a moment maintain that such industrial employment is free from all harmful influence. The mere fact that it prevents breast-feeding in the majority of cases is, in my opinion, a reason for some State interference. Here, however, it appears to be a question in this Birmingham area as to whether the additional poverty which would be occasioned by preventing mothers from working for, say, six months after a birth would not be the greater of two evils.

EAST SUSSEX.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

THE annual report of Mr. Alexander G. R. Foulerton, medical officer for the county of East Sussex, has lately been issued. Incorporated in it are the reports of Mr. A. Beeley and Mr. S. R. Gloyne, senior assistant medical officers. In an analysis of the results of medical inspection it is pointed out that, of a total of 10,774 children, 6,360 were found to be healthy.

Verminous Children.

Of the children with verminous heads, 5.76 were otherwise healthy. On this subject the report states:

> As pointed out in last year's report, a dirty condition of the scalp is distressingly common among all elementary school children; and a disquieting feature of the existing condition of things is that the neglect of personal cleanliness and attention which causes it is most prevalent amongst the older girls who are near to the time when they will leave school, many for work in domestic service in the houses of the public generally. It should be pointed out that while this condition of the head is very common, a like condition of the body and clothing, which may be attributed to somewhat grosser parental neglect, and is a frequent concomitant of the more squalid kind of poverty, is distinctly rare among school children in East Sussex. It may be pointed out also that already, and working under much less favourable conditions for dealing with the evil than will prevail in the future when the assistance of the district nurse in school medical work has been fully developed, a reduction to the extent of rather more than 12 per cent. in the total number of verminous children has been effected. The improvement is, in reality, even greater than the figures indicate. The number of verminous children has been reduced by 12.5 per cent.; but the gain to cleanliness is somewhat greater, inasmuch as the children who are still in this condition are, as a rule, less dirty in a degree than formerly—there are fewer very bad cases. In dealing with these children the school nurse is invaluable. The teachers have in the past worked very hard to diminish the evil, but their influence is necessarily limited to the school. The nurse, on the other hand, follows the child to her home, and can see that the necessary cleansing is actually carried out. With the more effective organizations of nursing assistance steady improvement should be obtained.

Enlarged Tonsils, Adenoids, etc.

It is pointed out that 11.3 per cent. of the children suffered from enlarged tonsils and adenoids, 9 per cent. from defective vision, while 63 were found to be mentally deficient. An unexpectedly large number of cases of heart disease had been found, associated as a rule with some indications of a general rheumatic tendency.

Tuberculous Infection.

The amount of tuberculous infection generally among school children was relatively small. Out of 14,962 children examined, only 6, or 0.04 per cent., presented symptoms suggestive of pulmonary tuberculosis. All six children were excluded from school. The medical officer states that he was under the impression that the younger adult teachers were liable in a degree somewhat above the average to tuberculosis of the lungs. He had been compelled to advise the retirement of two teachers for that cause during the year. Comparing the figures from other parts of the country, the medical officer observes that, with the exception of Exeter, the East Sussex statistics were far below any other record.

Results of Inspection and Treatment.

Mr. Foulerton sums up the results of inspection and treatment as follows:

> Out of 500 children found at the primary inspection to be in a neglected verminous condition, in nearly every case of the head only, 263 (52.3 per cent.) were found to be either clean or in a distinctly improved condition in this respect within about two months; out of 853 children who at the primary inspection were found in need of definite medical or surgical treatment for one or other illness or defect, 327 (38.3 per cent.) had received the necessary treatment within about two months. The 853 children who required special treatment may be classified thus: 321 children were found with defective vision requiring correction by glasses—within two months 143 (44.5 per cent.) had been supplied with glasses; 373 children were found who required surgical treatment because of enlarged tonsils or adenoids—within 2 months, 140 (37.5 per cent. had received the necessary treatment; 159 children were found

with other illness or defect requiring medical or surgical treatment—within two months; 44 (20.7 per cent.) had received the necessary treatment.

Children Care Committees.

The medical officer, discussing the means of further improving the health of the children, says:

A system of utilizing local resources in the way of trained nursing having now been initiated, and satisfactory working of the system being now ensured, the next measure for improving the health of the children which I have to bring under the attention of the Education Authority involves the question of the formation of local Children Care Committees. Whilst the general administration of medical inspection must necessarily be centred at Lewes, the carrying out of measures for benefiting individual defective children obviously can be more effectively planned by voluntary local organization. And I would ask the Education Committee to consider whether they can see their way to favour the development of small local committees which will take upon themselves the duty of keeping under observation the children of their district who need special medical attention, and of assisting those parents who have difficulty in obtaining the medical treatment which is necessary. There are certain reasons why such Children Care Associations should be dominated by the local School Managers; and an appropriate local committee would include the Lady Managers and the Chairman and Hon. Secretary of the District Nursing Association, when there is one. Such Committees would probably work in close association with the District School Attendance Subcommittee, and could do an immense amount of good. As already stated, very substantial improvement in the health of individual children has already been effected under the present system of control and help from the central office of the Education Authority; but the good hitherto done is not to be compared with the improvement which could be effected by a few individuals working in each locality on behalf of the children of their poorer neighbours. One such association or committee has been at work for some time in East Grinstead, and only a little personal initiative is required to establish the system elsewhere. The scheme is one which will not involve expenditure of money. It requires only the voluntary help of a few persons in each village, who, for humanitarian reasons, will be willing to give a little personal service to help sick and feeble children, and who, for patriotic reasons, will be anxious to do what lies within their power to assist in checking the increasing prevalence of physical degeneration among the population, which is so ugly a feature of our national life.

Care of the Teeth.

Allusion is also made to the necessity for attending to children's teeth, and it is urged that local Children Care Committees could do most valuable work by promoting the formation of dental clubs for the benefit of school children.

MANCHESTER.

THE MANCHESTER EDUCATION COMMITTEE.

THE total number of elementary schools under the Manchester Education Committee is now 193, with accommodation for 136,000 children. The number of children on the books at the end of 1909 was 120,490, and the average attendance 107,024. The education rate has risen from 11½d. in 1902 to 1s. 8½d. in 1909, and there seems every prospect of a further rise in the near future. The school medical officer has four male and one female qualified medical assistants employed on full time, and one part-time medical assistant employed mainly on infectious diseases. There are six school nurses, one being appointed to each of the medical inspectors and the sixth being engaged in following up cases by visits to schools and homes. The nurses prepare the children for examination, record the heights and weights, examine the heads and clothing, and in other ways assist the medical inspectors. Before an inspection the attendance officers notify the parents of the time fixed and invite them to be present, and also obtain information as to past illnesses of the children. If any defects are found, the parents are notified on a white card, and any treatment required is recorded on sheets, which are either sent to the principal teachers, with a request to use their influence to get the cases attended to, or transferred to other forms and given to the nurses for visitation and report. If a child is not attended to within a reasonable time a second notice is sent on a green card, and, if necessary, a short time afterwards a third warning notice is sent on a red card. If the defects are still not attended to, the parents have either to attend at the education offices, where the medical officer sees them and explains the consequences of further neglect, or they are summoned before the rota and the cases are subsequently followed up.

In accordance with the regulations of the Board of Education, the inspectors examined all entrants between 5 and 6 years of age, and leavers between 13 and 14, and also special cases of various ages which the teachers selected as suffering from some obvious defects. The numbers examined were 8,126 entrants, 9,098 leavers, and 3,492 special cases, a total of 20,716. These numbers only include those for whom a record was kept, but there were several thousand others examined for cleanliness or infectious diseases of whom no record was kept. Defects were notified for treatment to the parents in 2,705 entrants and leavers and 1,840 special cases, but of the latter class records were kept in only 830 cases. By far the greatest number of defects come under the headings of defective vision and eye diseases, enlarged tonsils or adenoids and ear disease. The average time occupied by inspection was seven and a half minutes per child—that is, about eight children per hour.

The average height and weight of the Manchester child is considerably below the anthropometric standard, especially in the poorer districts. For boys of 13 the weight was 76 lb., and the height 54.7 in., the standard being 82.6 lb. and 56.9 in. For girls of 13 the weight was 78.7 lb. and height 55.6 in., the standard being 87.2 lb. and 57.7 in. It was also noticed that the average 13-years-old child who has not got beyond Standard V is shorter and lighter than his rival who has reached the higher standards, and that, while rather more than one child in every two of the first group has some defect, in the latter group one in every three is the proportion. The child with a physical defect is therefore considerably handicapped in the ordinary school career. The mental capacity was found to be subnormal in 967 children, while a further number of 95, or 0.6 per cent. of the whole, were returned as mental defectives. Vision was only tested among the entrants in special cases, but it was noticed that a large number of infants were suffering from strabismus. Normal vision was found in 71.5 per cent. of all the children, fair vision in 15.7 per cent., and bad vision—that is, below ⅓—in 12.8 per cent. It was specially noticed that the children in the Jewish quarters suffered from myopia to a much greater extent than other children. Otitis media was reported to exist in 589 cases, and special attention was paid to following up these cases. Phthisis cases numbered 108, some of whom were excluded from school, but in other cases the parents were seen and impressed with the necessity of due care. Rickets was found in 420 cases, and a number of the worst were referred for admission to the residential school for cripples. The vast majority of the children had defective teeth, no less than 2,303 having six or more carious teeth. Here the results of notifying the parents were most disappointing, only a very few parents taking any notice of the reports. A very large number of children had enlarged tonsils and adenoids, and it was specially noticeable that many of these children were in standards below their proper position.

The Education Committee does not itself undertake the treatment of the defects, and the parents are simply advised to obtain treatment either through a private doctor or from a hospital. The only exception is that the authority supplies spectacles when parents apply, and according to circumstances the parents pay the whole or part of the cost, or have glasses provided free. In this way 318 pairs of spectacles were supplied at a total cost to the committee of £23, that is, about 1s. 5½d. per pair. In the case of infectious skin diseases, instructions for treatment are given to the parents. It was found in practice that strict adherence to the Board of Education's requirements as to examination of entrants and leavers would mean leaving unexamined numerous cases of defectives of all ages especially submitted by teachers, most of which require following up, as they were evidently in more urgent need of treatment than many of the

entrants and leavers. No less than 641 children were excluded from school by the medical inspectors in addition to many excluded by the teachers, a large proportion of the exclusions being for skin diseases or uncleanliness, while 136 were for infectious diseases. Of the various methods used to ensure that treatment shall be obtained, it is noted that of the 20,716 children examined, the parents were notified of defects in 4,545 cases, 3,043 were referred to nurses for visiting, 596 were named to teachers as needing special care in regard to physical exercises and school work, 1,645 were marked for the teachers to follow up in order to get defects remedied, and 540 were referred to other departments, such as special schools.

The most urgent cases were always referred to the nurses, who succeeded in getting treatment carried out in 94 per cent., this being in addition to cases specially examined for nits and vermin. In the next grade of cases referred to teachers to follow up, a few had ultimately to be referred to the nurses, but 548 were reported as having been attended to. The method of referring cases to teachers is recognized as being much slower than working through the nurses, and the results cannot be said to have been altogether satisfactory. Only 49 per cent. of the cases were taken off the teachers' lists by the end of the year, and even of these less than three-fourths had been treated. This is distinctly a bad result compared with the work of the nurses. Moreover, the greatest dissatisfaction has been expressed by many medical practitioners with the way in which some of the teachers have indiscriminately recommended children to go to hospitals rather than to private practitioners, and no small amount of hospital abuse has been the result. The blame for this can only attach to the Education Committee in so far as it has not supplied sufficient nurses to do the work, and has not given sufficiently stringent orders to the teachers.

Manchester is particularly well off in the matter of special schools, for, in addition to the special day schools, there is the residential school for cripples at Swinton, which has taken 27 new cases during the year; the David Lewis Colony school for epileptics, which has had 9 new cases; the residential school for the feeble-minded at Sandlebridge, which has admitted 8; while a large number of ailing children have had the advantage of a stay at the country school at Mobberley. In addition, many cases are provided for at residential institutions for the blind and deaf.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

THE WORK OF DUBLIN HOSPITALS.

the fifty-second annual report of the Board of Superintendance of the Dublin hospitals it is stated that, so far as it is able to judge, the general work done in Dublin hospitals from a medical point of view will bear comparison successfully with that of any other city in the United Kingdom. The Dublin hospitals occupy a leading place as regards economy of management. A return is issued showing that the average cost per bed occupied in the London Hospital is £138 6s., while in the Dublin Meath Hospital it is £56 2s. In the London Royal Waterloo Hospital it is £119 3s., while in the Rotunda in Dublin it is £58 8s. In the London Fever Hospital it is £171 2s.; in the Dublin Cork Street Fever Hospital it is £47 5s. The London Ophthalmic Hospital pays £115 6s. for every bed occupied, while the Dublin Royal Victoria Eye and Ear Hospital only pays £47 1s. The report states that rent, rates, and taxes are excluded from this return, which therefore, having regard to the thoroughly satisfactory way in which patients in Dublin hospitals are fed and cared for, reflects the greatest credit upon their management.

The Board again calls attention to the comparative lack of intelligent attention shown to the large class of out-patients, as compared to that lavished upon those who are treated inside the hospitals. The report goes on to say:

> As far as we can see, the boards of the various hospitals under our supervision are as much impressed with this shortcoming as we are, but they lack funds to develop a thorough system. The spectacle described in St. Thomas's Hospital report is still to be seen in Dublin as in London—of worn-out mothers dragging to and from hospitals week after week stunted children in rags and variously diseased, and, on each return journey, to some dark, damp basement or other insanitary dwelling, hugging a large bottle of medicine, gratefully believing that the science and charity of the twentieth century have done all that is possible for them and their offspring. The question is one of great importance to the State. We refer to it, hoping that it may strike the attention of the public as it does ours, and that the funds necessary to establish a better order of things may be forthcoming.

The report makes it quite clear that the continuance of the system of relying upon medicine when sanitation or hygiene is what is wanted has been abandoned everywhere except in the treatment of "out-patients," and it is high time that it was abolished there. The report describes how an effort at reform has been instituted in London: "In some of the London hospitals an effort is being made to supplement the bottle of medicine by work done by 'lady almoners.' For instance, the authorities of St. Thomas's Hospital have appointed two such officials with assistants. The chief objects of the social work carried out by this department are: (1) To check the abuse of the out-patient department by patients who are (*a*) in a position to pay for treatment, (*b*) too poor to benefit by any assistance other than that obtainable through the Poor Law. (2) To ensure as far as possible that all out-patients to whom treatment is granted shall benefit to the full by that treatment. (3) To act as a connecting link between the out patient department and outside charities. The establishment of some such system in Dublin would appear to be urgently required to complete the usefulness of the present hospital system. An extract from the report of the lady almoner of St. Thomas's Hospital shows, however, how a wise and experienced woman, aided by the advice of the doctor, can do more valuable work for the sick poor than the dispensaries can ever hope to achieve. The detailed accounts of the inspection of the various hospitals are all of a satisfactory character. The condemnation of the existing present dispensary system and the suggestions for reform are the points of principal interest and importance in the report, as it is a practical question of great urgency.

KING EDWARD VII MEMORIAL.

At a meeting of the board of governors of the Royal Hospital for Incurables, Dublin, held recently the chairman referred to the fact that the board had decided on erecting in the hospital grounds a pavilion to hold 100 beds as an appropriate Irish memorial to the late King and his reign. Irish people knew that King Edward was deeply interested in the beneficent work of hospitals, and that the treatment of tuberculous disease was very dear and near to his heart. He was glad to say that no sooner had the project been mooted than friends began to write sympathetically, and some money came in. A large sum, however, would be required before the pavilion could be completed, and he appealed to all those present to do what they could to make the memorial worthy of the great and good King who had so recently passed away. About £125 had already been subscribed.

ALLEGED SWEATING AMONGST OUT-WORKERS IN BELFAST.

The Medical Superintendent Officer of Health has stated in his lately issued annual report on the health of the city that "sweating" is undoubtedly one of the main causes of a high death rate. Immediately preceding this statement he alleges serious "sweating" is found amongst the out-workers in many of the branches of the linen trade, shirt makers, etc. He thus suggests that it is a cause of the high death-rate of Belfast. The question has been promptly taken up by manufacturers, and a deputation from the Linen Merchants' Association waited on the Public Health Committee and denied the accuracy of the charges.

It was stated that employers had difficulty in getting hands, and so the very primary element in sweating was absent. The committee had previously passed a resolution to hold an inquiry into the matter. At the same meeting a second deputation from the Trades Council appeared and upheld the statement made in the report of the medical officer of health; hence considerable feeling has arisen. From a health point of view nothing but good can come of such an inquiry. Certainly some of the instances quoted have not a prima facie look of a living wage; but it is well known that many other factors must be taken into consideration; there is as yet no proof of sweating being general.

Ambulance Calls in Belfast.

From the annual report of the Belfast Fire Brigade we learn that the ambulance service has been most satisfactory; 2,733 calls have been answered, and over 9,000 miles have been travelled. The public ambulance work for accidents is carried out by the Fire Brigade in a most efficient manner; there are annual ambulance classes of the men held, and most of them have gained the certificates or medallions of the St. John Ambulance Association. At the Royal Victoria Hospital an extra stretcher is kept, so that the men leave patient and stretcher, pick up the vacant one which is ready for them, and thus lose no time. Some of their bandaging is exceedingly neat and serviceable.

Extraction of Teeth by an Unqualified Dentist.

It may be remembered that a young girl named Collins lost her life in Bantry a few months ago owing to the fact that an unregistered dentist, belonging to the firm of Messrs. Cole and Co., extracted six teeth when the girl was not in a condition of health to stand the operation, as she was suffering from purpura haemorrhagica at the time. The girl bled to death despite all that medical skill could do to save her. Taffe, the assistant, was tried at the Cork Assizes for causing the girl's death, but the jury disagreed. The father of the girl brought an action against Messrs. Cole and Co., and it has just been settled by Messrs. Cole agreeing to pay Mr. Collins £200 as well as all the costs in the case.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Edinburgh.

British Medical Benevolent Fund.

The seventy-fifth annual report of the British Medical Benevolent Fund, for the year 1909, is disappointing reading as far as Edinburgh is concerned. Only 20 doctors out of the 370 in Edinburgh contribute, and the total contributions only amount to the paltry sum of thirteen guineas. Aberdeen, with a population approximately half that of Edinburgh, contributes £27 12s.; and Dundee, with a still smaller population, contributes £19. Perth, with a population of 35,529 (the population of Edinburgh is 355,366), contributes £13 14s. 6d. It is to be hoped that this blot to the discredit of Edinburgh will at once be removed. The British Medical Benevolent Fund appeals in a very special way to the medical profession, as indeed no other charitable fund does, and it is to be hoped that means will be taken to bring this home to every member of the profession in Edinburgh before the next annual collection is made.

British Red Cross Society.

The Scottish Branch of the British Red Cross Society has now been separated from the head quarters of the St. Andrew's Ambulance Association, with which it has been associated since its formation, and its new head quarters have been established at 137, Sauchiehall Street, Glasgow. A circular has been issued to all county branches, and all correspondence will now be addressed to the new head office. Lieutenant-Colonel Barnes, Secretary of the St. Andrew's Ambulance Association, recently resigned the honorary secretaryship of the Scottish Branch of the Red Cross Society, and Major C. C. Fleming, D.S.O., R.A.M.C., will shortly take up the duties of Secretary.

Lunacy in Renfrewshire.

Dr. Hotchkis, Medical Superintendent at Dykebar Asylum, in the first annual report of the Renfrew District Lunacy Board, says that during the first year of the institution 309 cases were admitted, 151 males and 158 females. Of these, 216 were transfers from other institutions and 93 direct admissions. Of the latter, abuse of alcohol heads the list of causes. Worry and loss of work accounted for 11 cases, and 11 were senile. Of these latter it is noted that some had been in better circumstances, and had their relatives chosen to put up with some little inconvenience, they would never have been certified at all. The relations between the numbers of adolescent, climacteric, and senile cases are striking, namely, 1, 6, and 11.

Glasgow Municipal Milk Dépôt.

The subcommittee on infantile mortality (one of the subcommittees of the Health Committee of the Town Council of Glasgow) has made a recommendation that, in view of the fact that the cost of preparation of the milk at the dépôt largely exceeds the sum realized on distribution, the dépôt be closed on August 31st. The report also states that there was no evidence as to the special advantage of this prepared milk as a food, that the use of the milk had not extended to the most neglected children of the city as originally intended, and that the numbers using it had been steadily declining. This question had been remitted to the subcommittee direct, and had not been discussed by the Health Committee—an unusual procedure. When the matter came up for settlement at the Corporation meeting on August 18th, the minute embodying the recommendation was remitted to the Health Committee, so that it might have an opportunity of expressing an opinion. The dépôt will therefore go on meantime till this committee reports. The establishment of the dépôt some years ago was purely a tentative one, and was an experiment based on the pioneer work done at Huddersfield. It was not expected to be a commercial success, but was instituted in the belief that the pure milk supply would tend to reduce the high infantile mortality among the very poor. The trouble lies in the fact that this class is not reached, and that the dépôt is used mainly by those who in any event would take proper care of their children. It is claimed that under the Notification of Births Act the authorities can now obtain better supervision of infants, and that this is of more importance than the milk supply; and that while pure milk is still a necessity, the elaborate and expensive machinery of the municipal milk dépôts is unnecessary. The money spent on the experiment has not been lost altogether, because all experiments on such lines are informing. But whether the continued expenditure would be of advantage to the public health of the city is the point which will come up for discussion, and, in view of the report of the medical officer of health, the municipal milk dépôt is likely to be closed before the end of the year.

Glasgow Corporation and Bellefield Sanatorium.

At the meeting of Glasgow Town Council on August 18th Councillor Dr. McConnell took exception to a minute of the City Finance Committee, giving the renewal of a grant of £200 to Bellefield Sanatorium. Dr. McConnell submitted that the grant ought to be increased to £500, and he asked that the minute should be reconsidered by the committee. They were spending £150,000 per annum on the treatment of fevers, yet in the city the death-rate from consumption was as big as from all the fevers put together. The Corporation contributed only £3,000 per annum in connexion with consumption, and when the Bellefield management were in straits financially he thought £500 at least should be granted. The treasurer pointed out that the renewal of the £200 was all that had been asked by the

management, hence the limited sum. In view of this explanation the minute was carried by the narrow majority of 23 to 20. The feeling was distinctly in favour, however, of something more being done, and when the renewal next year is brought up it may be taken for granted that no limit will be put on the generosity of the Corporation so far as the Bellefield management is concerned. The city is morally bound to do much more for the prevention of tuberculosis than it does at the present time, and Dr. McConnell is to be congratulated on bringing the matter up.

The Sanitary Congress.

The thirty-sixth annual congress of the Incorporated Sanitary Association of Scotland will be held in Elgin from August 31st till September 3rd. Mr. Robert Lindsay, Chief Sanitary Inspector of Midlothian, is the President, and his address will deal with the march of sanitary science. The subjects to be discussed during the congress include human carriers of typhoid and other zymotic diseases; public baths; the need for co-operation in certain phases of local government; smoke pollution of the air and what should be done to prevent it; practical points in the control of pulmonary tuberculosis; and social problems in relation to public health. The annual report submitted by the council states that two examinations in sanitary science were held during the past year. One was held in Edinburgh, where out of 17 candidates 11 passed. The other was held in Glasgow, when 28 passed out of 39 candidates presented. Three examinations in the inspection of meat and other foods were also held, two in Glasgow and one in Edinburgh. The Glasgow delegates taking part in the congress are Dr. A. K. Chalmers, City Medical Officer of Health; Councillor Dr. C. R. Maclean; Mr. P. Fyfe, Chief Sanitary Inspector; Mr. John Lindsay, Town Clerk Depute; and Mr. W. F. Anderson, ex-Convener of the Health Committee of Glasgow Corporation.

Correspondence.

THE FUTURE OF THE ASSOCIATION.

Sir,—What has the Association done for me? This is the perennial cry of certain members of the profession. Should not the question rather be: What have I done for the Association? The answer to the first question is a very great deal; to the second is very little.

Let us consider the interest taken by members in the Divisional meetings of the Association. A few regular attendants turn up and transact the business of the meeting; the majority remain at home and then write about oligarchy and democracy.

The interested members form the accursed oligarchy, the absentees represent the democracy. Then we have an annual meeting, a most important feature of which is a preliminary lunch. Upon this occasion the democracy is well represented.

Then comes the election of officers for the ensuing year. You might expect the downtrodden democrats to storm the citadel and drive out the oligarchy. I regret to say that the experience of most Divisions is that the difficulty in filling these posts is not of selecting the best men from a number of candidates but in finding a sufficient number of men willing to take the posts.

The solution of the problem of how the Association can best help its members is simple in the extreme and it is this: Let individual interest in medico-political matters replace individual apathy and let us all pull together.—I am, etc.,

Bedford, Aug. 16th. S. J. Ross.

SANATORIUM TREATMENT OF CONSUMPTION.

Sir,—I am not certain that you will thank me for a further letter on this subject, but I must again emphasize the statistician's view, because I cannot see how if reports are made up, as Dr. Paget-Tomlinson advocates, we can use them for investigating the real influence of sanatorium treatment. I will accept the view that the sanatorium can do little good to extremely advanced cases, but to compare the mortality in pre-sanatorium and post-sanatorium days we must have statistics of *all* types of cases. At best the classification of cases must involve some personal equation, and even this personal equation may fluctuate from year to year. "What shall I include in my return?" is a question which the medical man may not answer yearly in the same way. I venture to illustrate this from the *Reports of the Westmorland Sanatorium*, the fifth (1905), the seventh (1907), and the tenth (1910), copies of which Dr. Paget-Tomlinson has most courteously sent to me. I do not do this in any spirit of aggressive criticism, but to indicate how difficult it is to pronounce a real judgement in the matter until the statistical side is fully appreciated. In the 1905 report there appears the following classification of 224 cases:

A. Consumption slight, 55 cases.
B. Consumption moderate, 62 cases.
C. Consumption advanced, 67 cases.
D. Consumption seriously complicated, 19 cases.
E. Rejected as hopeless, 21 cases.

The last cases, although admitted to the sanatorium, all died within a few months.

According to the 1910 report, 309 cases in all were admitted during the years 1900 to 1904 inclusive, so that already in 1905, 85 cases appear to be entirely omitted from the record.

In the seventh annual report (1907), Classes A, B, and C appear as above, and contain 65, 89, and 92 cases respectively, or 246 cases out of the 479 admitted to the sanatorium up to this date. Thus 233 cases remain unrecorded.

In the tenth annual report (1910), Classes A and B alone are recorded. But Class B, which up to 1907 was called "consumption moderate," is now termed "consumption severe," although the same original individuals are embraced in it. Up to 1909, 909 persons had been admitted to the sanatorium. Of these patients we find a record solely of 81 cases of "slight" and 129 cases of "severe" consumption, or only 210 cases of the 909 patients treated in the sanatorium are considered in 1910 worthy of record. Thus, in the course of ten years, from a knowledge of 72 per cent. of after-histories, we have passed through 51 per cent. to only 23 per cent. of cases for which the after-history is published. It may be that these 23 per cent. are the only cases to which sanatorium treatment would be of advantage, but it will, I think, be clear that such a classification cannot provide us with actuarial data as to the mortality of the several classes of the tuberculous.

But the changing opinion as to what categories of patients it is desirable to enter upon the record extends to the severity of the disease in the patients themselves. It is not only that patients with "moderate consumption" in 1907 may be held to have had "severe consumption" in 1910, but that individuals who were classed as having "slight" or "moderate" consumption in 1905 or 1907 may have disappeared altogether from the record in 1910. As no patient has been lost sight of, this must mean that a different judgement has in the interval been formed of the severity of their attack, and that they have been transferred from Classes A and B to Classes C, D, or E.

In 1905 the A and B classes, 1900–4, contain 117 individuals; in 1907, 113 individuals; in 1910, 111 individuals. In 1907 the A and B classes, 1900–6, contain 154 individuals; in 1910 they have shrunk to 137 individuals—and even one of these seems to be a transfer, for a male, an "invalid" after discharge, appears replaced by a female, a "hospital nurse," with a quite different record. What has become, then, of these 18 individuals, of whom 13 were "severe" cases, who have disappeared from the record between 1907 and 1910? Three at least I know to be dead; what about the other 10? The disappearance of 13 cases—3, and quite possibly more, of which may be deaths, renders it very difficult for the actuary to be certain of his ground. For example, the 1902 class of "moderate consumption" consists of 16 individuals of whom 7 were dead in 1907; but the same 1902 class in 1910 consists of only 14 individuals of whom 7 are returned as dead—that is, 50 per cent.; but the 2 omitted individuals were two who had died in the 1907 report, so we have really 9 died out of 16 in 1910—that is, 56 per cent., a considerable difference. The system of record has somehow been modified.

It is true that the inclusion of the advanced and hopeless cases in the sanatorium reports—cases for which the advocates of the treatment admit nothing can be done—may produce by its ghastly record a bad effect on the public mind. But without a knowledge of the 77 per cent. of *unrecorded* cases, and without a knowledge of why initially recorded cases disappear from the record, no definite judgement can be made of sanatorium treatment from the actuarial standpoint.

As I have said, my object is not to criticize sanatorium reports. Most sanatoriums are charities and possibly they cannot afford to frighten their subscribers. But my appeal is to the medical committees of these sanatoriums. Somewhere in the archives data ought to be preserved from which it would be easy to ascertain the after-history of every single patient admitted and some idea of how many cases have on the ground of their advanced condition been refused admission.—I am, etc.,

KARL PEARSON.

Biometric Laboratory, University College, London, Aug. 17th.

SIR,—I am afraid my friend Dr. Pakes has not read my letter (August 13th, p. 406) with that care which is his usual wont.

I am not adverse to sanatorium treatment, but what is known as the "open-air treatment," when patients are exposed to open air day and night, in a cold, damp climate, like we find in most parts of Great Britain. It is quite a misfortune that this treatment has got to be known as the sanatorium treatment. An example of it is furnished by Dr. F. S. Toogood (*Tuberculosis and the Poor Law*):

> When the wind blew in a certain direction the rain could not be kept off the beds, and in these circumstances the beds were covered with mackintosh sheets, leaving the faces of the patients uncovered. After a heavy fall of snow last Christmas, there were 6 in. of snow on the beds in the morning.

Could anything be more unscientific and cruel? What possible good could 6 in. of snow on the bed do? I have more than once stated this open-air cure may be beneficial in a dry climate of equable temperature (Canary Islands, California, some parts of South Africa, etc.).

I am sorry Dr. Pakes casts ridicule on the instincts of animals and birds. I place a sublime trust in Nature, and always go to Nature to solve any problem. I am not the only physician who has found the open-air treatment adverse to the patient. A practitioner, writing in the BRITISH MEDICAL JOURNAL (February, 1905), says:

> During the past three years it has been my unhappy experience to have seen over 50 cases of phthisis, 38 of which had been *cured by the open-air system*. Fourteen have been treated for some months, all of them *either dying* (the italics are mine) or in too far advanced a stage of the disease to be benefited by treatment.

I did not write, as Dr. Pakes suggests (August 20th, p. 495), that I believe patients are cured by "suggestion," although I support the patient's view to a great extent.

I may add, in conclusion, I have always supported the educational part of the system, the rest, good hygienic condition, scientific diet, and general discipline of these establishments, and if they were placed in healthy, dry, warm places (there are many spots in Great Britain with all these advantages), well sheltered and an abundance of sunshine, where the patients were not allowed to be exposed either day or night to cold, damp air, I would give the treatment my hearty support. I would, however, add my pious opinion that it is very bad to congregate consumptive patients together; they should be housed in inexpensive bungalow cottages, separated by a good strip of garden, each cottage to house not more than 6 cases. I would also recommend to country practitioners the excellent effect of the sun rays used by me for over twenty years.—I am, etc.,

London, W., Aug. 19th. THOMAS DUTTON.

"MODERN MIRACLES OF HEALING."

SIR,—In your issue of August 20th you publish an instructive article by the Right Rev. Abbot Gasquet on the Catholic Church and the Lourdes cures. The Abbot postulates for an alleged cure to be received as miraculous the following: (1) That the disease cured must have been of an aggravated nature, difficult or impossible to be cured in the ordinary way; (2) that the condition of the patient before the cure showed no sign of mending; (3) that no medicine had been used or, if it had, that it had done no good; (4) that the cure was sudden; (5) that the cure was complete: and (6) that it was permanent.

About fifteen years ago, when I was still in practice in Calcutta, I was the active agent of a "Lourdes miracle," which fulfilled all these six essentials, and which, I believe, caused some sensation in the Indian Roman Catholic world. A short account of the case may be of interest in connexion with the subject.

I was seeing patients at my house when there entered my consulting room a nun and my servant, supporting between them another young nun, of about 25 years of age, whose head was rolling from side to side, her features twitching, her arms limp, and her legs flying out in front of her, or dragging behind, in a pitiful attempt to walk across the room. I watched the procession from the door to the chair in which the poor girl was deposited, and I need hardly say that the nature of the case was practically clear before a word was spoken.

The two girls were Irish nuns, and the companion of the patient, who acted as spokeswoman, told me that they had come all the way to Calcutta from their convent in the south of India (Madras Presidency), as they had heard that I had successfully treated similar cases—an unmerited attribution I may say, in passing. The girl, it seemed, had been suffering from "paralysis" for several years, she had shown no signs of improvement, her life was a burden to herself and her sister nuns, numerous doctors had been consulted, and much treatment been undertaken, with no result.

This history fulfils the conditions Nos. (1), (2), and (3) mentioned by Abbot Gasquet.

The two nuns implored me to hold out some hope of relief, as I had listened to their tale almost in silence, thinking *what* a case it would be for Lourdes. I then said to the patient, "Yes, you can be cured absolutely, without the shadow of a doubt, if you will do what I tell you, and that is, to make the pilgrimage to Lourdes; more than this, it is a heretic, in your opinion, who gives you this advice, for I do not belong to your Church."

They were greatly disappointed at this, as they said their community was a poor one and the necessary expenditure quite beyond them. They asked if drinking the imported Lourdes water would not have the same effect. I said I doubted this, for as much merit was acquired and benefit gained by the actual pilgrimage to the holy spot as by the actual drinking of the waters. What I meant, of course, was that the *entourage*, the approach to the far-famed spot, the exaltation and excitement of fellow pilgrims, the pervading mysticism and expectant atmosphere of the holy place itself would be of powerful assistance in effecting the cure. In the end it was settled that she should drink bottled Lourdes water daily in the Calcutta Convent in Middleton Row, and see me again within a fortnight. I merely prescribed a simple tonic, and much doubt if the prescription was made up.

About ten days afterwards, during my consultation, the same two nuns entered my room, and the formerly "paralysed" one rushed across the room and fell at my feet, embracing them, and saying I had cured her. When she was seated I asked her to tell me all about it, and in her own words this was the story:

"We returned to the convent and told the Revd. Mother all you had said, and I immediately began to drink Lourdes water and to do 'a neunaine' (novena—nine days' prayer). On the ninth day I was lifted into a carriage to do a drive with the Revd. Mother. While we were out I suddenly felt my strength return; I stood up and cried out, 'Mother! Mother! I am cured.' We drove back at once to the convent; I *leaped* out of the carriage, saying, 'I am cured! I am cured!' All the nuns speedily assembled, and we went into the chapel and there sang a Te Deum to thank the Holy Mother *and you, doctor*, for my cure."

I must say I was touched as well as taken aback by the sweet simplicity of these two good women in the way they associated me with the cure and their thanks.

With regard to Abbot Gasquet's postulate (4), the cure here was sudden. It took place during a drive on the ninth day. Postulate (5): the cure was complete, as I found when the girl returned to see me. As far as I know

it was permanent—postulate (6)—for I have never heard to the contrary, though I had frequent communications with the Roman Catholic sisterhoods and priests in Calcutta till I left in 1900. Also, for some time after, I used to get letters from various parts of India asking about the "miracle." Indeed, there was no reason why a condition of pure hysterical paralysis such as this was should return.

I refrain from comments, as my letter is already long, and they are needless.—I am, etc,

C. H. Joubert de la Ferté, M.B.Lond., F.R.C.S., Colonel I.M.S., Formerly Professor of Gynaecology, Calcutta Medical College.

Weybridge, Aug. 21st.

Sir,—Day by day the claims of "religious healing" become more pressing, and the important papers upon this subject published in the British Medical Journal prove how essential it is that medical men shall face the situation.

Prayer has been a dominant factor in the conduct of all religious observances from the earliest times, and, indeed, no faith in a Supreme Being could be counted rational which did not include amongst its essential tenets the invocation of that Deity.

Obviously prayer can mean nothing to the atheist and little to the agnostic; to all other classes of the community it is a subject of most vital importance, and I venture to suggest that it is the keynote to the whole subject of the relationship between religion and medicine. On this question the honest man is met by a difficult problem: How is he to avoid the Scylla of cant and fanaticism without being dashed to pieces on the Charybdis of absolute neglect?

A very large proportion of our profession cannot be classed either as atheists or agnostics; they are members of some "religious body," and as such make use of and profess to believe in the efficacy of prayer.

The Church of England claims a very large number of medical men, not only as seat-holders but also as church officials. Over a very small area in the South-East of London I can count five churchwardens, and many more sidesmen and church helpers. It is absolutely inconceivable that these men, educated and well read, make use every Sunday of prayers in which they have no faith; yet it is an undeniable fact that a large percentage have dissociated this religious belief from their daily work.

Here is the root of the evil; the materialistic tendency of the age appears to have tainted the work of the medical profession, and in consequence certain religious bodies seek for a remedy in the "scriptural practice of Divine healing."

The steady increase of functional disorders has played an important part in bringing about this crisis, and in certain cases has justified the means by successful results. There is far more in this question, however, than a mere appeal to suggestive treatment, for it involves the whole problem of effective supplication to a Supreme and Omnipotent Being.

It is important to remember that this Supreme Being works His will very largely by natural means, and in no case is man justified in neglecting such means in favour of the supernormal or miraculous.

The beautiful and orderly scheme of evolutionary creation is a lesson which can hardly be neglected.

By much inspired work and noble self-sacrifice medical knowledge has reached the eminent position which it now occupies, and it is inconceivable that such ability could have been granted to man, were it not for the welfare of the race. Surely it must be culpable presumption to strive to replace so Divine a gift by an appeal to a remote period when medical science was at a very low ebb.

The present state of public feeling is, however, a serious warning to the Christian members of our profession.

The efficacy of prayer is an undoubted fact, borne testimony to by men of all ages, and no medical man is justified in neglecting such a powerful assistance in his work. I do not mean to advocate that the medical man shall usurp the clergyman's place at the bedside of his patient; such a course is open to many objections, and only in certain cases is it advisable; a suggestive aspect attaches itself to certain prayers, and especially to those of an emotional type. Above all things it is necessary to face this question in a practical way. Prayer and faith are no excuse for slovenly work, neglecting means of keeping up to date, or for a cowardly shirking of responsibility. Most of us have heard the story of the doctor who, when confronted with a severe case of *post-partum* haemorrhage, retired into the next room to pray; it is impossible to conceive a more unjustifiable and illogical procedure, in that he neglected the means of safety granted to the woman by centuries of medical experience in favour of an appeal to miraculous intervention. Finally, I would plead for the co-operation of medical experience with religious conviction as the only rational means of coping with the protean conditions resulting from an age of unrest and excitement.—I am, etc.,

S. Herbert Daukes, M.B., B.C.

Beckenham, Aug. 21st.

SPIRITUAL HEALING AND THE "GUILD OF HEALTH."

Sir,—In your last issue there was a criticism of the Guild of Health by Dr. Stanley Bousfield, which concluded with a warning to all and sundry to avoid the guild as a harmful society. If there is no such thing as "spiritual healing" then plainly Dr. Bousfield is right, and he need not have argued the point. But if he wishes to criticize the guild he might, at any rate, be accurate in his statements.

1. The guild neither possesses nor claims "healing powers." It neither supplies nor recommends "healers." Indeed, it has nothing whatever to do with the supply of healing; and therefore does not increase its membership by the offer of anything "novel or fresh for the ailments of themselves and their friends." So far as healing is concerned there is nothing whatever to be gained by joining the guild.

2. If any of its members endeavour by prayer, imposition of hands, or holy unction to help sufferers they do it entirely on their own account, and receive no recognition of any kind from the guild. The only regulation we have ever made in regard to such is that they are absolutely forbidden to charge any fee of any kind whatever. Beyond that we neither authorize nor forbid: it is outside our work.

3. Neither is our membership increased, voluntarily, by the report of "cures," because cures are never reported.

4. Dr. Bousfield's account of a case of myasthenia is not less misleading. No one could possibly have taken more trouble than I did to secure that the lady in question should obey in every respect the directions of her medical advisers. The chief direction was that she should not over-exert herself. I warned her continually to obey this direction most precisely. The "treatment" may have been "improper" in Dr. Bousfield's opinion, but the result of it was that the lady left me a good deal better, both physically and spiritually, than when she came, and is still improving. Wherein my "great responsibility" lies I do not know. And I do not see what objection any Christian who believes in prayer can have to what I did.

5. I can assure Dr. Bousfield that I am doing exactly what he wishes, namely, "working quietly in my capacity as a clergyman under proper conditions in conjunction with medical men." I neither call myself nor wish to be called a "spiritual healer"; I merely attempt to supply that contribution of spiritual energy in the work of healing sick people which the Church ought to supply, and which I believe the majority of sensible Christian doctors would welcome.

I regret that your columns should be troubled by this almost personal controversy. I only offer this correction of Dr. Bousfield's misleading article in justice to the guild, which is quite unconcerned with anything I may do, rightly or wrongly, in my private capacity, and whose sole aim is to set forward that harmony between religion and medicine which is the hope of every sincere Christian heart.—I am, etc.,

Francis Boyd,
Warden of the Guild of Health.

Clifton, Aug. 20th.

SHIP SURGEONS.

Sir,—The concluding paragraph of Dr. Heywood Hadfield's excellent descriptive letter anent the work of ship surgeons, recently published, is a little unfortunate. He does not seem to have appreciated the fact that Dr. John F. Elliott's committee is not working alone and

unaided, but under full sanction of the Medico-Political Committee of the British Medical Association. Reference to the open letter published in the Journal of July 9th will show that this is the only means by which ship surgeons can be brought under the wing of the parent Association.

The work of the present committee consists solely in finding out for the Medico-Political Committee whether ship surgeons are desirous of obtaining representation. It is the results of this investigation alone which will influence the Medico-Political Committee to further action or not in the matter, and there is no suggestion whatever of "a warlike committee" in the present association of men, who are, so to speak, only tilling the ground for the harvest.

As Dr. Hadfield rightly says, there is no reason or wish on the part of any one to embarrass friendly relations between shipowners and the profession, but at the same time he also admits the business side of the question as far as owners are concerned, while ignoring that of the medical profession. Until this same side is granted to the "medicos" no satisfactory state can be arrived at.

Dr. Hadfield seems to be unduly optimistic, not to say somewhat altruistic, on the subject of reform—admittedly desirable—obtained through individual private enterprise. The experience of others in this respect does not coincide, and, further, it is not the experience of the world in general. Some little while ago the surgeons in one steamship company presented a petition for improvement of conditions, etc. All they obtained in response was the statement that the surgeons employed in a competing line were perfectly satisfied.

With regard to the "aims" of the committee, I do not think any single one unjust or unreasonable, and my own seagoing experience of six years has more than once shown the necessity for adequate hospital accommodation for all sorts and conditions on board in view of the existing merchant shipping laws.—I am, etc.,

London, W., Aug. 12th. A. Vavasour Elder.

THE ETIOLOGY OF IRITIS.

Sir,—Mr. Worth's letter on this subject upholds views upon the etiology of iritis which must find support among many, both specialists and general practitioners, who have given thought to the matter. A certain school of ophthalmologists would banish the term "rheumatic iritis," and tell us that those cases which have been so termed are almost all of venereal origin. Mr. Kenneth Campbell asks, "Whoever saw rheumatic fever complicated by iritis?" The answer is, No one has recorded a case. But how many rheumatic individuals who suffer from "chronic rheumatism" have ever had rheumatic fever? The answer is—not a large proportion. Rheumatism is a general term, and includes a large number of cases of obscure joint lesions and myalgias due to some form of intoxication. It may be gonococcal intoxication, or an autointoxication from intestinal or oral sepsis. The final result may be obscure rheumatism or definite osteo-arthritis, and these conditions are complicated with iritis. A case of osteo-arthritis associated with iritis is recorded in the *Ophthalmoscope* for January, 1908, by Dr. Burt, and is illustrated by diagrams of the affected joints.

It is impossible to agree with Mr. Kenneth Campbell when he states that bilateral iritis is always syphilitic in nature; gonorrheal iritis is frequently bilateral. Byers, in his study of *The Ocular Manifestations of Systematic Gonorrhoea* (Montreal), gives the figures in first attacks as—monocular 48 cases, binocular 23.

I am in full agreement with Mr. Worth in ascribing at least 50 per cent. of all my cases to septic intoxications, especially bad teeth; remove the teeth and the iritis often clears up. I feel convinced that tuberculo-toxaemia plays an unsuspected part in many examples of irido-cyclitis. Many of these cases recover rapidly under treatment with tuberculin. One sees iritis in private patients, young unmarried ladies of unblemished reputation, where a venereal etiology is absolutely out of the question, and many of them are associated with "rheumatism." "Rheumatic" is such a vague term that it would be better to call the cases "autotoxaemic" than rheumatic.—I am, etc.,

Leamington, Aug. 16th. T. Harrison Butler.

Sir,—Mr. Claud Worth appears—for his statements are somewhat indefinite—to base his conclusions chiefly on private cases. The question under discussion is the "etiology of iritis," not the "etiology of iritis in private practice." Without a doubt, syphilitic iritis is rare in private practice, and the explanation thereof is plain: Private patients are usually intelligent, recognize the possibility of their danger, therefore come under general treatment early, and so do not often contract iritis. *Per contra*, with the poor the matter is different.

I am quite unconvinced by Mr. Worth's argument anent constipation, indigestion, putrefactive processes in the bowel, etc. Obviously it is open to the objection of the *post hoc ergo propter hoc* fallacy. My own experience is that constipation, etc., is the normal condition of adult town dwellers.

I still maintain that to elicit a history of syphilis is often a matter of considerable difficulty. The late Dr. Hilton Fagge, one of the shrewdest of clinical observers, in his classical work on *Medicine*, said that three diseases are often missed: phthisis, scabies, and syphilis—phthisis because it is not looked for, scabies because it is overlooked, and syphilis because it is forgotten.—I am, etc.,

London, W., Aug. 14th. Kenneth Campbell.

SICKNESS AND INVALIDITY ASSURANCE.

Sir,—The keen interest taken at present in the various schemes for medical reform is evidenced by the many letters on the subject in the correspondence columns of the Journal, and this must be my excuse for attempting to answer some of the issues raised.

It is stated by Dr. Bruce C. Kelly that if a State medical service were instituted, the State medical officer would take over a certain proportion of the work done by the general practitioner, which would mean a drop in capital and saleable value of practices. Now where does Dr. Kelly think the new State medical officer is going to come from? He cannot drop suddenly out of the air from nowhere; the men now in practice are going to be the State medical officers, and there is work enough in all conscience to supply the whole of them. There is no reason why they should not be paid an income as State medical officer for work done for the poorer classes, and carry out paid work for the wealthier classes also. Supposing, however, that less than the whole of the profession entered on full-time work for the State, then these men would give up their practices, and although the work paid for by fees was lessened, the number of men doing it would be lessened also, so that the value of those private practices remaining would not decrease. As for the men who entered upon State work, they would have something better than the sale of a practice behind them. In case of sickness they would have sick pay, and at 65 they would retire on a pension. Let Dr. Kelly ask any of his friends in civil or military service for the State whether they would like to exchange their pension or position for a sum of between one and two years' annual value, which is about all that a practice will bring in. Dr. Kelly seems to suppose that the proposed Government sickness and invalidity insurance is an alternative to a State medical service. On the contrary it is the forerunner of it, the first step towards it. That is why it is so important to get it on proper lines.

Dr. Halstead, without much evidence, comes to the conclusion that the sickness and invalidity insurance is to be a poor miserable thing, of no service to anyone but the army of parasites that exist on the weekly collections of the working classes. In the opinion of others, it is the first thing which will disband and scatter that army, and all its squalid train. Surely it is too soon to throw discredit on a scheme honestly intended to do good, while it is still unborn—to attempt to procure abortion of it, so to speak. Let the babe come, and let us render the best professional services we can at its birth, guard its health after its arrival, train it up in the way it should go, and it may not turn out such a bad bantling after all. Meanwhile, do not disparage its parentage by speaking of it as "the German medical contract scheme of Messrs. Burns, George, Churchill, Rigg, etc.," for Messrs. Balfour, Law, Chamberlain and Long would be very proud of the honour of standing godfather to it, as Dr. Halstead must know, if he has been following the House of Commons debates on

social reform; while the Archbishop of Canterbury and his whole Chapter are ready to baptize it and give it the blessing of the Church, as witness their recent deputation to the Gorvernment.

Seriously, this scheme is not political in its aspect and has a full tide of public opinion behind it, so that to ask, as Dr. Halstead does, the 40,000 medical practitioners to oppose it, is merely to ask them to butt their heads against a stone wall.

A closely allied subject is the recent debate at the Association meeting on the Poor Law Reform, opened by Mrs. Sidney Webb, and it is quite delightful to see Dr. Major Greenwood admitting (in combating Mrs. Webb's arguments) that the main propositions are correct, but that they hold for all medical practice in the lower classes. Precisely; that is the point, and that is why we require a liberal scheme of State sickness and invalidity insurance, working up as it must to a national medical service.

The authors of the Minority Report—and the Majority Report too, for that matter—merely think that things are a little worse in the Poor Law part than elsewhere; otherwise we agree with Dr. Greenwood that the failure to provide treatment at all for many cases, and to reach others at the incipient stage, applies to all medical practice at the present time. The case for a national medical service could not be more neatly or concisely put by any one.

The last point to which I shall refer is that of State hospitals. It is pleasing to me to note that one who takes so much interest in public affairs as Dr. McWalter approves of the principle, but I would venture to point out that no *real* sum of money is required by the scheme.

The money for the 3,000 beds of the Dublin hospitals has to be collected already; it is only necessary to collect it in a different way. From the generous hearted, both rich and poor, it is now begged in the most barefaced manner as so-called voluntary charity. Let us make the churl and miser pay his share also, distribute the burden all round, so making it lighter, and arrive at a proper hospital system.—I am, etc.,

Birkenhead, Aug. 22nd. BENJAMIN MOORE.

THE LATE MRS. MARY MARSHALL, M.D.

SIR,—In the obituary notice of the late Dr. Mary Marshall in this week's JOURNAL, I see that an important and creditable incident of her career has been omitted.

When Dr. Mary Marshall presented herself to receive the degree of M.D. of Paris, the Vice-President of the Académie de Médecine, Professor Hardy, after referring in most complimentary terms to her thesis on mitral stenosis as an original and painstaking work, addressed her as follows:

> Mais il y a un autre point sur lequel je désire vous offrir mes félicitations. Il y a quelques années on a beaucoup discuté si les femmes pouvaient être admises aux études médicales. . . . J'ai trouvé en vous une réponse à toutes les objections de vos adversaires. . . . Vous avez conquis le droit pour les femmes d'étudier la médecine. . . . Vous avez contribué à la solution d'une grande question sociale.

It seems to me that so appreciative an address should not be left unquoted in the record of a useful, laborious, and beneficent professional life. In all great social changes the pioneers are rightly praised, but those who, by their qualities and achievements, help to make the new order of things acceptable and appreciated ought not to pass out of the arena without some recognition of the services they have thus rendered.—I am, etc.,

London, N.W., Aug. 19th. GABRIELLE ANDERSON.

SIR,—In your obituary notice of the late Dr. Mary Adamson Marshall, the information you give regarding her antecedents is rather vague, and hardly does justice to the stock she came of, or the country that had the honour of giving her birth.

Her father, the Rev. Dr. Alexander Anderson, was a clergyman of the Church of Scotland, and minister of the parish of Boyndie, in Banffshire. At the disruption of 1843 he left the Church for "conscience sake," as you rightly express it, resigned his living, and joined the Free Church, which then came into existence. Afterwards he left the Free Church, and entered the Baptist communion. Except that he continued to preach occasionally, he abandoned clerical work, took up education as a profession, and started in Old Aberdeen the private residential school, which, under the name of the "Gymnasium," became famous throughout the north-east of Scotland. To have been a pupil at the "Gym.," as it was familiarly called, conferred a sort of distinction on a boy. Besides his successful work as a schoolmaster, the good that Dr. Anderson quietly did in helping and encouraging the sons of parents whose means were small was said to have been very great. The lady who became his wife and the mother of Dr. Mary Marshall, was Miss Gavin, daughter of Dr. Gavin, of Strichen, Aberdeenshire, who was succeeded in his practice by his son, her brother. The two Gavins, father and son, were highly accomplished men, and noble specimens of the country doctor of the old school.

The Rev. Dr. Anderson had a large family. One of the sons became the husband of Dr. Elizabeth Garrett. Another is Dr. Ford Anderson, of London, a well-known and much-esteemed member of the profession.

The Rev. Dr. Anderson's brother, Mr. James Anderson was head of the firm of Anderson, Anderson and Co., of the Orient line of steamships, and two of his sons, brothers of Dr. Mary Marshall, were leading members of that firm.—I am, etc.,

Oxford, Aug. 22nd. JAMES NEIL, M.D.

Medical News.

FOUR new medical members were recently elected to the Hungarian Parliament, making a total of seven physicians at present in that legislative body.

THE fifth International Congress of Thalasso-therapy will take place at Kolburg in 1911. The President of the Organizing Committee is Professor Dietrich; the Vice-president, Dr. Rochling.

AN Arab Sheik, Hamed Waly, who is lecturer on the Arabic language in the Berlin Oriental Seminary, has been awarded the degree of doctor of medicine. This is said to be the first time that an Egyptian scientist has received a German University degree.

THE fourteenth Flemish Physical and Medical Congress will be held at Antwerp next month. In connexion therewith an International Scientific Exhibition will be held from September 17th till the 25th. This exhibition will include a physico-chemical section, biological and medical ones. For all particulars application should be made to Dr. G. Van der Gucht, Cuylitsstraat, 11, Antwerp.

A SHOCKING tragedy occurred on August 16th at Kingsand, a seaside village near Plymouth Sound. Major J. H. Nicholas, a retired officer of the Royal Army Medical Corps, was killed by his son, aged 26 years, with an Indian knife, whilst searching the house for supposed burglars. It appears that the son, who has only recently returned from New Zealand, where he had been sheep farming, had been a patient in the Auckland Mental Hospital. At the subsequent inquiry a verdict of wilful murder was returned against the son James. Major Nicholas entered the Army Medical Service in July, 1880, and retired therefrom in July, 1898. He held the degrees of Edinburgh and Dublin.

AT a public meeting held at Lymington Spa on August 8th, Dr. T. W. Thursfield had conferred upon him the freedom of the borough: this is an honour to which only three other persons have so far been deemed entitled. The parchment scroll containing the resolution of the Town Council to add his name to the brief roll was presented to him in a large and very handsome silver-gilt casket. Among other decorations it bears on various shields engravings of the town hall, the free library, the pump room, and the Warneford Hospital, these being the institutions in connexion with which Dr. Thursfield has been more especially prominent. Dr. Thursfield, who became M.D. Aberd. in 1860 and F.R.C.P. Lond. in 1890, has been in practice in Leamington since 1865. He joined the council of the borough in 1885, has occupied the mayoralty twice, and is still serving his townfellows as alderman and justice of the peace. Dr. Thursfield is also senior physician on the staff of the Warneford Hospital, the governors of which, in recognition of his great services, presented the institution with his portrait last year. It now hangs in the hospital board room. Dr. Thursfield was at one time President of the Birmingham and Midlands Branch of the British Medical Association.

Obituary.

SIR CONSTANTINE HOLMAN, M.D.,

FORMERLY OF REIGATE.

IT is with the deepest sorrow that we have to record the death of Sir Constantine Holman, which occurred at Ramsgate on August 18th. To those who had seen him within the last few weeks the news could hardly have been unexpected; nevertheless, it came with the shock that must always be caused by the sudden removal from the scene of a man whom one had known for many years in the fullness of an activity which showed itself in many directions. Sir Constantine had virtually retired from practice for several years, and lived at 26, Gloucester Place, Portman Square. Till the very end, however, he continued to take a keen interest in all matters relating to the profession to which he had given so many years of self-sacrificing devotion and the benefit of an unusually large experience of affairs.



SIR CONSTANTINE HOLMAN.

Constantine Holman was born on October 23rd, 1829. He was the son of the late Henry Holman, of Hurstpierpoint, Sussex. In 1847 he was apprenticed to Messrs. Thomas and Peter Martin, surgeons, of Reigate. The example of Mr. Thomas Martin had a great influence on his life, and while he was still *in statu pupillari* he helped that gentleman in furthering the development of the British Medical Association, and in the promotion of other schemes for the interests of the profession and the welfare of the public. In 1848 he acted as Assistant Secretary to Mr. Martin at a meeting held in Hanover Square Rooms in favour of Poor Law medical reform. In the same year he was Assistant Secretary to Mr. Martin at a meeting of the South-Eastern Branch of the British Medical Association held at Tunbridge Wells. In 1848, too, he was Assistant Secretary to Mr. Martin in carrying on the work with the Surrey Medical Benevolent Society, which was founded in 1812 to relieve the necessities of medical men in Surrey. It was at a meeting of the members of the society that Holman first met the founder of Epsom College, Mr. Propert, who had come down to negotiate the purchase of four scholarships by the society. The amount paid was settled by Mr. Tidd Pratt, then Registrar of Friendly Societies. It is noteworthy that from its foundation in 1812 to 1904 there were only three presidents or secretaries of the society, namely, Thomas Martin, Peter Martin, and Constantine Holman, who was Secretary for fifteen years and President for thirty years. He resigned that office owing to failing health in May, 1909.

In 1849 Holman entered as student at Guy's Hospital, where he was clerk to Aston Key and dresser under Cock. As clerk to Dr. Hughes, Assistant Physician, he reported the first twenty-one cases of differential diagnosis of functional and organic diseases of the heart. In 1849 he gained the Pupil's Physical Society Prize for reports of cases and a paper on struma. After studying for a time at Edinburgh he took the degree of M.D. at the University of St. Andrews in 1851, being admitted a Member of the Royal College of Surgeons of England in the same year. After spending some time in Paris in 1852, he became a Licentiate of the Society of Apothecaries in 1853. In the same year he settled in practice at Reigate. There for many years he was a member of a firm whose practice extended over a large area. As a practitioner he was sound and judicious, and it is a misfortune to mankind that, as in so many like cases, much invaluable experience has died with him. It is easy to understand that a man amid all the work and care of a busy practice should seldom find time to record his experience; nevertheless it is an irreparable loss to the profession. The practitioner who has the opportunity of observing a number of families and individuals from the cradle to the grave must necessarily accumulate knowledge as to what is vaguely but conveniently called "constitution" such as is seldom gained by the pure consultant. He learns how to deal with difficult situations for which hospital training cannot prepare him and which do not often occur in the practice of the consultant. He has to meet emergencies that tax his resource and nerve to the uttermost without the appliances and the skilled assistance which the hospital physician and surgeon has always at hand. Constantine Holman was a fine example of the general practitioner, that class which is the backbone of the medical profession. He had quite sufficient work in the way of his profession to make up a full life; but his range of interests was too large to leave him content to go his rounds and leave the task of improving the condition of the profession to others.

As has been said, almost from the first day of his apprenticeship his interest was aroused in public questions relating to medicine. In 1852 he became a member of the British Medical Association, in the conduct of which he was destined to play an important part. He took an active part in subdividing Surrey, Kent, and Sussex into their six Parliamentary Divisions for the clinical work of the Branch. In 1862 he was elected Joint Secretary of the Branch, and in the following year, after the death of Mr. Peter Martin, he was appointed full Secretary. The task of organizing the subdivisions and getting them into full working order was a heavy one; he had often to attend Council meetings at Birmingham as representative of the Branch, leaving home at 7 a.m., and returning at 1 a.m. on the following day. He was not less active in the business of the Association in general. He was a member of the

Committee of Council, then twenty-one in number. He was one of those who urged the removal of the central offices to London, where its first local habitation was in Great Queen Street, Lincoln's Inn Fields. He also gave his support to the suggestion of the late Mr. Fowke, in the face of a strong opposition, that the Association should print its own journal. The proposal was finally carried at a special general meeting held at Birmingham. Dr. Holman was Secretary of the South-Eastern Branch for five years, and he was its President in 1869–70. He was a strenuous advocate of the abolition of the old Committee of Council on which he had served so long, and of the adoption of the principle of direct representation of the Branches on the Council. When, owing to the expansion of the work of the Association, larger premises were required Dr. Holman took part in acquiring new offices in the Strand, near Somerset House. Within a few years further growth made another removal necessary, and this time the head quarters were shifted to 429, Strand. Dr. Holman, who was a member of the Premises Committee, was a strong advocate of the purchase of the site and building. At the Annual Meeting held in Dublin in 1887 he was elected Treasurer. It was a time of storm and stress, and the office of Treasurer called for the exercise of both tact and firmness. Dr. Holman took an active part in promoting the scheme for army medical reform which had been formulated at the Dublin meeting; he was an active supporter of Dr. Stewart, whose committee had given a great impetus to the progress of State Medicine, and he rendered valuable help to Dr. Waters, of Chester, in the promotion of the Medical Acts Amendment Bill. Later, he was Chairman of the Reference Committee. On that committee was imposed an irksome and thankless duty, and the chairman did his part in the work often at considerable personal inconvenience. He was elected a Vice-President at the Birmingham meeting and was awarded the gold medal of the Association in 1904, "for his distinguished services to the British Medical Association through the South-Eastern Branch, on the Central Council, and as a Vice-President," and "further for his life-long and successful labours for the improvement of the financial condition of the medical charities."

These words, which might well form his epitaph, show that the work which Dr. Holman did for the Association by no means exhausted his zeal for the interests of the profession. As a member of the council of the Obstetrical Society of London he took an active part in advocating the formation of the examining board for midwives. He was a member of the Board of Management of the Ventnor Hospital. At that time the hospital was managed by a board sitting in London, while another sat in Ventnor. Dr. Holman urged that the two boards should be in closer touch, and it was accordingly arranged that the London members should visit the Isle of Wight at stated intervals. His insistence on improvements in the dietary and ventilation of the hospital brought him into collision with some of his colleagues; feeling his position untenable, he resigned his seat on the board.

Of all his public work nothing was nearer to Sir Constantine Holman's heart than Epsom College. In 1887 the school had fallen on evil days and reform was urgently called for. He had been a member of the council of the college for some years, when in 1887 he was appointed Treasurer. The strain of the two offices of Treasurer of the British Medical Association and Epsom College would have been too great for any ordinary man, but Dr. Holman managed to discharge the duties of both offices efficiently. When he was appointed Treasurer of Epsom College there was a large deficit, and the discipline of the school left much to be desired. Owing largely to his efforts, seconded by a very efficient council, the finances were brought into a satisfactory state, and the tone and efficiency of the school were greatly improved. During his period of office as Treasurer, which extended from 1887 to 1906, a better system of accounts was introduced, a rifle corps and a fire brigade were formed, a cricket pavilion was built, the playing fields were extended, the swimming bath was enlarged, the drainage of the college was renovated, a laundry was built and equipped, 15 acres of freehold land was purchased, the chemical laboratory and lecture theatre were extended, and many other improvements were made. The college was recognized as a school of science by the medical licensing bodies. The foundation stone of the Lower School was laid by the Prince of Wales accompanied by the Princess of Wales and Princess Victoria. The following extracts, from the farewell address which he gave on resigning the office of Treasurer of Epsom College in 1906, will serve to show what was accomplished during his period of office: "Half a century is a large slice out of a man's life, and it is fifty-one years since, at a meeting of the Surrey Medical Benevolent Society, I took part in the negotiations with Mr. Propert for an advance of £2,500 to be applied towards the initiation of Epsom College, in return for certain scholarships in perpetuity which the society was to receive. Even before that time I had been engaged in work for the South-Eastern Branch of the British Medical Association. Thus I can say that for considerably more than fifty years I have taken an active part in the public life of the profession, and for forty-one of those years I was engaged in a large general practice. . . . The duties of the office of Treasurer to Epsom College carry with them heavy responsibilities, and I may be allowed to say that I have always looked upon everything

that seemed to come within the sphere of those duties as a matter of grave importance. The Treasurer's burden does not grow lighter, and I had reluctantly to come to the conclusion that it must be transferred to shoulders less bowed by the weight of years. I should not have resigned an office which I have held with great pride for nineteen years had I felt any longer equal to a strain which must increase as the power to bear it diminishes.

"The experience gained as a member of the Council of the British Medical Association, on which I served for nearly forty years, was most valuable to me in my work at Epsom. That experience led me, on my appointment as Treasurer, to institute Committees—School, Finance, Selection and Works—among which the labour of administrative work was divided. These committees, composed of picked men of the council, made inquiries, and threshed out questions that had to be dealt with; their reports were printed and circulated among the members of the council who then had the opportunity of making themselves fully acquainted beforehand with every subject which was to be considered at their meetings. So well has this system worked that I can hardly call to mind an instance in which any important amendment has been moved at a meeting of the council.

"I have not had an easy time as Treasurer. The water supply for a long time caused much anxiety and frequent expense; I hope the matter is now settled for all time. The bursting of the bath led to the discovery that it had never had a proper bottom; it cost us £1,100 to put this right. Last, but not least, came the almost crushing calamity of a breakdown in our drainage, on the renovation of which we had to spend no less than £3,000. This expense has been paid, but only at the cost of selling almost all our realizable securities.

"Fortunately there is a brighter side to the picture, and on this I ask you to look with gratification at what has been done, and hope of even better things for the future. You have 27 more acres of freehold land than you had twenty years ago; you have a lower school in full work, with accommodation for more pupils, and you have a fully equipped chemical laboratory and lecture room. In 1887 we had 191 pupils; there are now 254, which so far is our high-water mark; we are, I think, justified in believing that the increase is at least partly due to the elimination from the title of the word 'Benevolent,' which gave rise to the mistaken notion that Epsom College was a charity school. The decision of the council to encourage the attendance of day boys was carried unanimously. Although it was the wish of our founder to attract such boys, hitherto there has been no opportunity for boys coming from any distance. . . .

"It has always been a pleasure to me to keep in close touch with the teaching staff and the principal officers of the college. Needless to say, many little clouds which are, it may be, no bigger at first than a man's hand, but which will darken the heavens if allowed to grow, may be dissipated by a word spoken in season. The teaching staff are a splendid body of men whose whole heart is in their work; for proof of this one need only look at the scholarships and distinctions won at the hospitals and at the universities by those whom they have trained. Of the three matrons, I can only say in homely phrase that they would be hard to beat. The reformations wrought by the college matron have been of the highest value; Miss Brown, our lower school matron, who plays the part of a mother to fifty small boys, is beyond praise, whilst Miss Hassall, who has for sixteen years been the infirmary matron, has never failed us in times of great difficulty, and has earned the gratitude of many an anxious parent. Mr. Lamb, whom our council know and trust, I have much to thank for, and I cannot say enough in acknowledgement of his help. I cannot conclude without referring to the incorporation of the asylum into the school premises at a rental, whilst the aged pensioners with augmented annuities can live where they please, and pass their last years amongst friends and relations. I have heard of nothing but satisfaction at this change.

"A word about the council itself may not be out of place here. I have often wondered whether the governors in general have estimated at its true value the strength of the present council of the college, to the formation of which have gone infinite care and patience. That the body contains within itself all the elements that make for efficiency will be made apparent by a study of its composition and the balance of its parts. The council consists of leaders of the profession, teachers in the great medical schools of London, representatives of the provinces whose position entitles them to the respect and confidence of their fellows, old Epsomians, and two or three gentlemen of note outside the profession. In Sir Arthur Watson, Bart., K.C., Chairman of the Middlesex Hospital Committee, we have now a most valued member, who never fails us when we ask counsel of him in legal difficulties.

"And now, Ladies and Gentlemen, Governors of Epsom College, it only remains for me to resign into your hands the trust you placed in mine nineteen years ago. From my heart I thank you for the honour then done me. I have done my best, and I hope I have not been an altogether unprofitable servant. As for my colleagues on the council, how can I find words to express my gratitude to them, who have so long trusted me with their fullest confidence, who have been so indulgent to my many shortcomings, who have borne with all my failings, and who have been in every way so considerate to me? Old colleagues and dear friends, I can only say I thank you with all my heart!"

Although he ceased to hold office as Treasurer, Sir Constantine Holman never lost his interest in Epsom College. He lost no opportunity of serving its interests, and he was a constant attendant at its public functions. As he spoke of it even in private his eye would kindle with enthusiasm and his voice sometimes vibrate with emotion. It was fitting, therefore, that his long connexion with the college should be commemorated by an Art and Reading Room which bears his name.

Dr. Holman early joined the British Medical Benevolent Fund, of which he was a Vice-President. He was also a member of the Council of the Association for the Prevention of Consumption and other Forms of Tuberculosis, and of the Polyclinic Society. He was a member of the Council of the Clinical as well as of the Obstetrical Society; he had held the offices of Honorary Secretary and Member of the Council, and Vice-President of the Medical Society of London, and was for a time President of the Guy's Physical Society. He was created a knight in 1904, an honour which he had thoroughly well earned by his services to the medical profession.

Sir Constantine Holman was a man of stately presence and genial manner. Though a man of decided opinions and outspoken in the expression of them, he was always courteous to those who differed from him. He was in conduct, as in appearance, a fine type of the English gentleman. He was never so happy as when he had the opportunity of rendering a service to any one in whom he took an interest.

The funeral took place at Reigate on August 23rd; the Vicar, the Rev. F. C. Davies, officiated. The principal mourners were his son Mr. H. Martin Holman, his son-in-law Mr. C. W. Howard, his grandsons Mr. G. B. C. Howard, Mr. Neville Howard, and Mr. Cecil Howard, and his nephews Dr. H. C. Martin and Mr. H. A. Martin. Epsom College was represented by Sir William Church, the Chairman of the Council; Sir Henry Morris, Treasurer; Rev. W. A. Thomas, Senior Master of Epsom College, and Mr. J. Bernard Lamb, Secretary. The British Medical Association was represented by Dr Cox, Deputy Medical Secretary. The Reigate Division was represented by Dr. J. G. Ogle, its Honorary Secretary, and by its Representative, Dr. Caldecott, Resident Medical Superintendent of Earlswood Asylum. Mr. H. Howard, Secretary, and Mr. C. L. Smiles, Solicitor, of the Earlswood Asylum, in which Sir Constantine Holman took a great interest, were also present. The Surrey Medical Benevolent Society was represented by Mr. A. Napper, of Cranleigh, President; Mr. W. A. Berridge, of Redhill, Honorary Secretary; Dr. Henry Hetley, of Norwood; Dr. Gabb, of Guildford; and Mr. T. H. Martin, of Crawley. A number of local medical practitioners attended the ceremony, among them being Dr. Hetley, Mr. George Fisher of Dorking, Mr. A. R. Walters of Reigate; and Mr. J. H. Pegg of Reigate. The Rev. C. H. Weekes, Mr. W. A. Propert, Mr. W. O. Hodges, Mr. W. Hansell, Mr. R. Hansell, and Mr. A. D. Hansell were also present.

Professor Saundby writes: I am very glad to be able to add a few words of personal appreciation of my old friend and colleague. He was one of the most prominent of the

small band of disinterested and devoted friends of the Association who in the days when it had little prestige and no money laboured to lay the foundation of its present prosperity, and to whom our debt is immense. He was a most successful Treasurer of the Association, coming into office when the golden harvest for which he had worked so hard was beginning to be reaped. His fine presence, urbanity of manner, and genuine business capacity made him without a doubt in anybody's mind the right man in the right place. He was a man of fine character, and a medical practitioner of the best type—kindly disposed, much given to hospitality, and a faithful colleague and friend. May the Association never lack men like him to continue the work he did so well in the days gone by.

Medico-Legal.

STEVENS'S CONSUMPTION CURE.

In the Basingstoke County Court on July 27th an action was brought by a widow against a man named C. H. Stevens for the payment of £10 which he was alleged to have undertaken to pay if he did not cure her husband. This patient, after seeing an advertisement to the effect that the defendant offered £10 to any patient whose cure he undertook if he failed to effect it, got into communication with him, and received a circular stating that the terms were "no cure, no pay." This was followed by a letter consequent on which the patient paid over to the defendant £2 which had been given him by a philanthropic society. He commenced the treatment, pursued it for some time, but a year later died, the cause of death being certified to be pulmonary tuberculosis, acute bronchitis, and heart failure.

By way of defence to the action the defendant endeavoured to make out the words employed in his communications did not amount to a contract. In the course of cross-examination he stated that he was an unregistered lung specialist, and had studied consumption and its cure for fifteen years. By "unregistered" he meant that he was not qualified. He had not studied in hospitals, but under many doctors who were fully qualified men. Being pressed for their names he exhibited laudable scruples in respect of etiquette, but at length mentioned the name of a medical man stated to be living abroad. As for the nature of his study, it consisted, he said, in giving the cure to consumptive patients, and getting medical men to watch the cases while their recoveries were being brought about. He found the cure before he studied the subject. He discovered the cure by accident, the accident being that he got the receipt for the medicines he used from a "native quack doctor." He was not given a receipt, but was simply shown the plants used.

On the conclusion of the evidence the judge said that the case was one of grave importance to the general public, particularly at a time when the cure of consumption and kindred diseases was the subject of very serious examination and investigation on the part of all medical men throughout the world. It was a subject also of the greatest pain and trouble to all those poor people who themselves suffered from consumption or who had members of their families afflicted with the disease in its virulent form. A great number of quack remedies had been from time to time put forward, advertised, and pushed by people who in the majority of cases were wholly unqualified, who had no properly trained medical knowledge, and who in a great number of cases had been proved to be simply impostors trading upon the sad conditions which were brought about by the presence of this disease in any particular family or district. He regretted very much that there were people that could be found to prey upon the fears of people in this way by putting forward quack remedies which had in fact no merit in them and no possibility of cure, or about which they were absolutely and supremely ignorant as to whether they were any good or not, and which were simply put foward as a money-making scheme.

The judge then reviewed the evidence and having decided that the words used constituted a contract in this particular case added that nothing was more specious and calculated to deceive poor country people, who were not used to seeing printed matter, except local newspapers and so forth, than advertisements of this kind; and in the stress and distress they might be under from this disease they fastened upon it greedily, as was perfectly well known to those people who put this class of advertisement in. The terrible distress took away what power they had—and it was very little indeed—of discriminating between what was reasonably probable and what was not; and they fastened on these advertisements and scraped together their money—God knows how hardly sometimes—and sent it to these quack advertisers in the hope of averting the terrible calamity of the disease. That was perfectly well known to those people who advertised, and he was shocked to say that they traded upon it intentionally.

On application for leave to appeal being made the judge refused it, and added, "I will now say what I think and what I had abstained from doing before. I think this is an intentional and well-considered fraud. It is a scandalous thing that poor people should be imposed upon and led to part with their money and to hope that those dear to them would be cured by those processes which were nothing but quack remedies, and had not the slightest value of any kind."

A further reference to the case appears at page 563 of this issue.

MEDICAL MEN AND THEIR FEES.

The question of medical fees occupied a Hampshire jury some considerable time on August 11th, on the occasion of an inquest at Winchester upon the body of Ada Emma Cantle, aged 37, wife of a commercial traveller, of 7, Owen's Road, Winchester. Edward Vaughan Cantle, the deceased's husband, said his wife was expecting her confinement in October. On the previous Monday morning she complained of pains in the head and the heart. He sent his son for Dr. England, and his locumtenent, Dr. Scott, came in his place, and said he had better get a nurse. Witness got a nurse at the Maternity Home, who gave him a note on Dr. Godwin, as Dr Scott could not stay. Dr. Godwin came, and after going upstairs came down and said to witness, "Are you prepared to pay me two guineas?" Witness said he was only able to pay a guinea. Dr. Godwin then left, saying five guineas was the usual fee in such cases, and subsequently sent a note authorizing deceased's removal to the hospital. Witness was unaware that if he was not in a position to pay he could get an official order, and have medical attendance free.

Florence Learmouth, a Maternity Society nurse, said such nurses were not really allowed to attend cases which were not booked up, and this was not.

Dr. Marcus Greene, house-surgeon at Winchester Hospital, said the deceased was admitted on the 8th inst., and was suffering from concealed accidental haemorrhage, which might have been caused by accident or violence. She was artificially delivered of a stillborn child, and died the same night, death being due to *post-partum* haemorrhage. It was impossible to say without an autopsy what caused the haemorrhage. The deceased took a turn for the worse after the birth of the child, and he did not think her life could have been saved had she been medically treated earlier.

Dr. Herbert James Godwin, surgeon, of Winchester, said he first heard of the case on the Monday, when he met the husband. He asked the husband if he was in a position to pay for a doctor, and why had he gone to a charity nurse. When he saw the woman he remarked to the nurse that it looked like a case of accidental haemorrhage. He then interviewed the husband, and told him it was a case for another doctor, and not a charity case, telling him that he thought he could get it done for two guineas, though his (witness's) fee was usually five guineas. It was nearly a full-time child, and no arrangements had been made for a doctor before. He had since ascertained that there were three doctors in Winchester who had attended there without payment, and it should have been a Poor Law case. The woman's pulse becoming serious in the afternoon witness ordered her removal to the hospital, where he attended her. The couple had eight months to make preparation and had failed to do so, this being the fifteenth case of the kind in which he had attended freely in Winchester without a "Thank you." All the other doctors in Winchester had to do this philanthropic work.

Dr. Marcus Greene, of the hospital, said that the *post-mortem* examination revealed old-standing heart disease, pleurisy, and consumption, any of which would be predisposing causes of haemorrhage.

When questioned by the coroner as to why he had not made arrangements for the confinement, the husband said that he had not seen any signs of her needing medical attention. Both were devoted to each other.

In summing up, the coroner (Mr. Henry White) said that it was one of that class of cases sometimes met with in which there seemed a wrong idea about, and he hoped this inquiry would stop it. The public owed a great debt of gratitude to the medical profession, who had a most responsible position to fill. Indeed the responsibility was so great that he (the coroner) thought it marvellous there were men who were prepared to run the risk doctors undertook. As reasonable people, they ought to appreciate all that the medical profession did for them, and no medical man, any more than any other business man, should be expected to do things at the beck and call of people unless he was paid or had a reasonable chance of being paid. If people were without means there were other sources of help available, and he could not help thinking that the husband had rather courted inquiry. He hoped this inquiry would clear up the minds of people that medical assistance could be obtained, however poor the applicants, and that they should not wait until the eleventh hour before obtaining a medical man's assistance.

The jury found in accordance with the medical evidence and *post-mortem* examination, and the coroner would not allow the husband any expenses.

DISMISSAL WITHOUT NOTICE.

A. engages B. with the understanding that B. is to go away for a fortnight, dating from the 15th. B. leaves without permission on the 14th, leaving no address, and does not return, or communicate with A. in any way, until the 1st of the next month. A. then refuses to have B., and the latter claims a month's salary. What is A.'s position?

*** The general law relating to this subject would appear to be as follows: An employee can be summarily dismissed for

misconduct, but in that case is entitled to any salary that has accrued due already, but not to salary accruing, but not due. Our correspondent's case is scarcely one of misconduct, and would appear to be governed by the decision in Fillieul *v.* Armstrong (7 A. & E. 557). In this case a French master returned to his school two or three days after the reassembling of the school, and it was held that it did not warrant the dismissal of the master. According to this B. would be entitled to the notice agreed upon mutually in terminating the engagement, or to the notice customary in such engagements, or in lieu thereof to his salary for that period.

LOCUMTENENTS AND RAILWAY FARES.

A CORRESPONDENT writes that he engaged a locumtenent for a week without any arrangement as to payment of railway fares. He paid the locumtenent five guineas and fare one way from Edinburgh, but the latter demands the return fare, although he left him to act as locumtenent to another practitioner in a neighbouring town, about twenty miles distant.

*** The locumtenent has been paid all that he can reasonably expect, because, in the absence of any definite agreement about return fare, his late employer is entitled to assume that the locumtenent's home is in the neighbouring town, not Edinburgh.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

ADVERTISING BY A DENTIST.

DENS.—The attention of the British Dental Association might be drawn to the advertisement of which our correspondent complains, or he might write direct to the Registrar of the General Medical Council, who would inform him of the steps necessary to bring the matter to the notice of the Dental Penal Cases Committee.

REPRINTS AS ADVERTISEMENTS.

W. B. B.—We desired to make it clear that the circulation to the profession of reprints of articles contributed to the medical press should not be considered advertising, but as everything may be abused we deemed it prudent to add the words to which our correspondent refers. We do not suggest that there is any impropriety in circulating to a reasonable extent a reprint intended to convey information respecting a new means of treatment, but this kind of material is especially liable to the abuse we had in mind and each case must be judged according to its circumstances.

TESTIMONIALS IN NEWSPAPERS.

DUBITANS.—It was customary in England not many years ago for candidates for hospital appointments to publish their letters of application in the newspapers, and copies of testimonials were sent to every governor; but in the course of time a better opinion made itself felt, and the practice has been generally discontinued. We should not, however, regard it as a professional offence where all the candidates did it, and in the case quoted it would be unfair to an individual to expect him to abstain from taking the same course as his competitors if by so doing he might injure his chances. The right course to take is to endeavour to educate public opinion so that such indecent and vulgar publicity should not be necessary.

NURSES AND PROFESSIONAL SECRECY.

COUNTRY PRACTITIONER writes to complain that a parish nurse is reputed to give information about her patients to members of her committee, and that, in consequence, matters of a delicate nature become common property and the subject of gossip in the neighbourhood. He asks whether the nurse is obliged to tell her committee matters which have come to her notice in the course of her professional work.

*** The nurse should regard herself as bound by the obligation of professional secrecy not to disclose anything which comes under her notice in the exercise of her profession, and we should hope the committee as a body and its members as individuals would refrain from putting any questions to her which would be inconsistent with her obligation in this respect.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

SCOT would like to know if a hydrocele could be operated on with a local anaesthetic; if so, which is the best?

G. P. writes: My daughter, aged 26, has had three sharp attacks of dry pleurisy occurring in February and November, 1909, and again at the beginning of the present month. No tuberculous bacilli can be detected in the sputa, but the recurrence of the complaint, which attacks the right side chiefly, suggests a tuberculous origin. Her residence is in a market town situated at the foot of hills, and is somewhat damp and enervating. Her doctor, who has taken most kind and assiduous pains with her case, is anxious for her to pass the winter months in a high and dry situation. I would be greatly obliged if any reader could recommend a well-situated residence. As the husband of the lady has daily duties in London (city), the locality should be fairly accessible to town. Brighton has been mentioned but it is an hour's ride by the best trains. Would the breezy upper parts of Lewes be suitable? Redhill has also been suggested. The importance of this consideration must be obvious.

ANSWERS.

IMPERFORATE NIPPLE.

W. A. W. had better let the breast alone till after delivery. There may be no trouble.

INSTITUTION FOR MENTALLY DEFICIENT BOY.

T. G. M.—There is no special institution which would receive a mentally deficient child of two and a half years at 5s. a week. If application were made to the Medical Superintendent of the Royal Albert Institution at Lancaster he might be able to indicate some married nurse (trained in institution methods) who might privately undertake the care of such a child in her family.

EAR PHONE FOR THE DEAF.

VICTORIAN.—The following extract from the latest edition of the *Cautionary List* issued by *Truth* deals with the question raised. The extract appears in a section headed "Medical Quacks."

> Hoffmann, Professor, 54, Duke Street, Grosvenor Square, London, W. The name used by the Shandon Sales Company, Limited, to advertise "Ear-phones" described as "Wireless Telephones," but are, in fact, simple rubber appliances worth only a few pence. The Shandon Sales Company asks £1 1s for a pair at first, but will accept 10s. 6d. (Vol. 65, p. 1377; vol. 66, pp. 494, 844, 1098.)

The references are to issues of *Truth* in which the claims put forward have been examined. Real telephone aids for the deaf can now be obtained from Acoustic Patents, Limited, the Stolz Electrophone, and other firms, and when care is taken in choosing a combination of receiver and transmitter suited to the particular case are commonly found of very great assistance.

ELECTRICITY FOR MEDICAL PURPOSES.

"SPARD" asks for information as to the practical use (if any) of a Wimshurst electrical machine and Leyden jars for medical treatment. He also asks to be referred to a work on the subject.

*** The value of the Wimshurst machine in medicine depends upon its size and the number of its plates. For ordinary therapeutic purposes a static machine with eight or ten revolving plates is sufficient. The arrangement of static machine and Leyden jar has many applications, and American electrotherapeutists lay stress upon the value in the treatment of sciatica of the static-induced current thus obtained. In Morton's method of "static induction" Leyden jars are connected to the two poles of the machine and their outer coatings are attached to connecting cords and ordinary pad electrodes, which are applied to the skin and muscles in the same way as faradism. The treatment is valuable in muscular affections, and the static "breeze" or indirect spark application is also employed for the relief of acute muscular pains. The uses of the static machine with Leyden jars are dealt with exhaustively in Dr. Sinclair Tousey's recent work, *Medical Electricity and Roentgen Rays* (W. B. Saunders Company), but a smaller book of much lower price, such as Dr. Wilfred Harris's *Electrical Treatment* (Cassell), which devotes a chapter to these static applications from the special point of view of the user of the Wimshurst machine, will probably answer the purpose of the inquirer. The technique requires a great amount of care, and static applications should not be given without a proper knowledge of the subject.

TUMULTUOUS FETAL MOVEMENTS.

DR. H. J. THORP (Ipswich) writes: In reply to your correspondents as to the treatment of tumultuous fetal movements, I would suggest the following: Sod. brom. gr.xx; tr. sumbul 5ss; tr. lupuli 5j: Aq. camph. 5jss; ft. haust; to be taken at 11 a.m. and 9 p.m.

LETTERS, NOTES, ETC

THE Universities' Mission to Central Africa is anxious to secure the services of a medical man willing to go out to Nyasaland for a period of not less than two years. He would receive in return passage out and home, outfit, board and lodging, and, if necessary, a salary. His duties would be the medical care of the staff, the superintendence of the hospitals, and the visiting of patients, both European and native. There are seven nurses at Nyasa, and small hospitals or dispensaries at each station; at Likoma, the central station, the out-patients in the year 1908 numbered 37,268, while 376 cases were treated in hospital. The medical man would be regarded as in every way a member of the staff, and no one would be happy in such a position who was not a communicant member of the Church of England and in general sympathy with the aims and methods of the Mission. Communications on the subject should be addressed to the Rev. D. Travers, Universities' Mission to Central Africa, 9, Dartmouth Street, Westminster, S.W.

HEARTS OF OAK SOCIETY.

A. A. M. writes: In reference to the Hearts of Oak Society, in which medical attendance is *not* provided, it is usual for the members living in large towns to combine and have a medical aid club, to which one or more medical men are appointed medical officers.

ST. PAUL'S "THORN IN THE FLESH."

DR. F. D. WELCH (London) writes: In my last letter I left out some words, and the sentence should have read "a prisoner, on the cross and dead for three days." The opinion about the blindness remains the same. I cannot agree with Dr. George Jones's statement that St. Paul apologized. Ananias offended against man's law, and at the same time offended God and Christ, and the former must have been obvious to all present, Jew and Roman. St. Paul saw his best way was to attack Ananias for offending God and Christ, and his wisdom in continuing this line of attack is shown by the fact that in the confusion of the Jews which followed he successfully turned Pharisees against Sadducees. The Lord praised him for his gallant fight, and Lysias, the chief captain, when he saw St. Paul victorious in the religious battle, did all he could to help him. The Epistle to the Galatians requires much deep thought, and some sentences cannot be taken literally, and "plucked out your own eyes" is one these. Some people think that St. Paul meant his own eyesight was defective, and the Galatians, noticing this, said they would exchange eyes with him if such had been possible. There can be no doubt that some of the Galatians had eyes the sight of which was partly or completely lost from disease or accident, and consequently of little use to themselves. Take, for instance, the case of a Galatian with congenital cataract; I think it is perfectly obvious that St. Paul would have come off *very badly indeed* in such an exchange. I interpret ch. iv, v. 13–15, as follows: "Ye know how because all are sinners I preached Christ unto you at the first. And ye were tempted to despise me as a sinner, but ye did not, nor reject me; but received me as an angel of God, even as Christ Jesus. Where is then the joy of sins forgiven ye spake of? For I bear you record that you were willing to make all possible self-sacrifices for me *worthy to be compared in their great value to good eyesight.*" I think every one will admit that good eyesight is most valuable, and when eyesight is lost that most of the usefulness and pleasures of life are lost at the same time. In ch. vi, v. 11, St. Paul says: "I have written unto you with mine own hand." Now, if his sight was defective, surely he would not write himself but one of "the brethren" mentioned in ch. i, v. 2, would have written for him. This statement of his appears to me strong evidence that his eyesight was good; and he says in the same verse "with how large letters," by which he means that the Galatians could have no excuse for refusing to read this epistle, condemning their recent actions in places, on the ground that his writing was so small and that the letters ran into one another so much that it was impossible to read it. I certainly cannot accept these sentences in Galatians as evidence that St. Paul's eyesight was defective. Quite recently I have, from studying the New Testament, formed the opinion that the "thorn in the flesh" was severe headaches following head injuries. We read in Acts, ch. xiv, v. 19, that in A.D. 46 the Jews "stoned Paul," and the words "supposing he had been dead" show that the stoning was exceedingly severe. It is clear that St. Paul had severe concussion of the brain, and this must have left much headache afterwards, and there was probably also neuralgia left from bruising of the nerves. The headache would return in times of mental anxiety and hot weather, and the neuralgia in cold weather. The news in A.D. 58 that the churches of Galatia had rejected Christ must have caused St. Paul intense sorrow, and this news, with the recollection that the stoning took place at Lystra, in the Roman province of Galatia, made the headaches much worse. On three occasions between A.D. 58 and A.D. 60, when II Corinthians, ch. xii, v. 7, was written, these headaches equalled the worst ones in meningitis, cerebral tumour, and some other brain diseases. St. Paul's words, "the messenger of Satan to buffet me," agree very well with the original cause of the headaches, which was the stoning by the Jews.

THE CAUSATION OF SEX.

DR. MARTINDALE WARD (Twickenham) writes: The correspondence appearing in the JOURNAL concerning "the causation of sex" induces me to propound the following theory: The sex is determined by the preponderance of desire at the time of coitus. Thus if the man has the greatest desire his desire is for the female form. If the woman's desire is the strongest it is for the male form, and a male child is the result. Nearly fifty years of practice has impressed upon me many facts in support of the above theory, which I have often spoken of, but never put in writing, and I should very much like my medical friends to think it out and work it out according to what they know or suspect of the natural desires of their patients and friends. I would put forth the following facts in support of my theory: (1) Many more female children are born than male. Are we not most of us convinced that as a rule the man is active, the woman passive? (2) A family perhaps consists mostly of daughters; where a boy comes in conception generally coincides with a time of weakness or illness of the man. (3) A man who is very amorous will perhaps for years have only daughters. In course of time he will become stale, and then his wife will present him with sons. (4) An old man is overwhelmed with the necessity of having a male heir; he marries a hearty, warm-blooded girl, whose real sexual desires are much greater than his own, and the result is a boy. (5) A poor specimen of a man marries a strong minded female, and the world wonders how he found the pluck to propose; presently she has a son. I could multiply such coincidences *ad infinitum* out of my own experiences, but I want rather to set your readers thinking if such is not their experience also, and if so, I will ask others to explain *how* this happens and content myself with asserting that it does happen, and then I would conclude with this corollary: If a child of one sex is desired, the desires of the parent of the *same* sex must be weakened, while we strengthen and intensify the desires of the sex we do not want.

SHIP SURGEONS.

DR. THOMAS DUTTON (London, W.) writes: In answer to inquiries, the second edition of *Sea Sickness Treatment and Prevention*, with a chapter on "Ship Surgeons," is out of print. I will lend any one the author's copy. I believe there is a copy in the library of the Association. No doubt the matter *re* a proper instituted "Medical Mercantile Marine" went home, as the leading shipping companies boycotted the book (only, I think, on the score of expense). I shall be happy to help in any movement to improve the service. It is quite incomprehensible to me why the travelling public have not insisted before now in having experienced qualified men on board, when any sudden illness of a grave nature may take place when they are thousands of miles from land.

THE MEDICAL MUSEUM.

THE review of the contents of the Medical Museum, which commenced on page 237 of the SUPPLEMENT to the issue of the JOURNAL for August 6th, should have included the following passage:

The photographs and plates by which Drs. Stopford Taylor and R. W. MacKenna supplemented their wax casts numbered over sixty. Among them were three plates illustrating adenoma sebaceum in father, son, and daughter, the disease in each case being seemingly congenital; a case of favus contracted from contact with infected bedding, and one of the rare condition known as granuloma annulare coming on in a child aged 9 after scarlatina. An even rarer disease illustrated was that in which the patient shows a tendency to blister on very slight injuries, epidermolysis bullosa hereditaria; there was also a good case of chlorine acne, the distribution coinciding very precisely with the area of the patient's body left uncovered when at work, and sebaceous cysts, regarded sometimes as a characteristic accompaniment of the condition, being numerous. The whole exhibit was very interesting and instructive.

THE FUTURE OF THE ASSOCIATION.

A Correction.—In the letter from Dr. A. Walker which was published under this heading in the JOURNAL of August 20th, p. 491, the sentence at the end of the first paragraph, "probably 50 per cent. of them have never read the Draft Charter, etc.," should read "25 per cent." In the ninth line from the beginning, "delusions of mental obtuseness" should read, delusions *or* mental obtuseness.

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Remarks
ON
MECHANO-THERAPY IN DISEASE:
WITH SPECIAL REFERENCE TO OSTEOPATHY.

BY
ALEXANDER BRYCE, M.D.GLASG., D.P.H.CAMB.

THE treatment of disease by physical methods has in recent years received a large share of attention. It is very remarkable that the medical profession should so long have neglected such a wide field of therapeutics, especially when in its various branches it has long been exploited by so many irregular practitioners. It would almost seem as if an element of mystery was necessary to make any system popular amongst medical men, and this belief is strengthened by the fact that the only physical method they have so far carefully studied and practised has been electricity. The prevention and cure of disease by manipulation has been to a very large extent left to the layman, and the practitioner who dabbled in it has been too often looked at askance by his medical brethren. If we are not to fall behind in the race for honours in this branch of therapeutics, it is high time we began to interest ourselves more deeply in it, as already the medical profession in America is suffering severely at the hands of a new race of manipulative practitioners, who have recently, indeed, invaded our country.

At all times interested in such methods of treatment, my attention was several years ago forcibly directed to this system in particular, by the remarkable improvement of several of my own reputedly incurable patients, and I at once took steps to inform myself as to the good and bad points of such a potent method of treatment.

I learnt that in America there were over 5,000 practitioners of the art of osteopathy—as it is called—and that these men were accorded the legal status and privileges of the medical profession in all but one or two States in the Republic. I therefore set myself to study carefully all the books which I could obtain on the subject, and in addition endeavoured to obtain such practical knowledge of its methods as was possible in this country. Having learnt all I could in this manner, I subsequently visited America to see the treatment in the land of its birth, and was astounded to discover that it had not only taken a great hold upon the affections of the people, but that no fewer than a dozen schools were in existence for imparting instruction on the subject and at the same time granting diplomas to those who had spent three years in its study. The tuition was in great part conducted by medical men who had been attracted by the merits of osteopathy as a therapeutic method, and whilst the training could not bear comparison with that required of a medical student it was calculated to give a thorough knowledge of anatomy as the groundwork of the art.

I was cordially welcomed not only at the schools but also at the dispensaries, and took every opportunity of conversing with the patients as to any benefit received, as well as comparing the methods of the various practitioners. I was struck with the enthusiasm which the osteopaths display in the practice of their profession, not hesitating to exalt it above every other, and glorifying it as the only rational treatment extant; as well as with the gratitude expressed by the patients, most of whom had previously been under the treatment of allopathic physicians.

I came to the conclusion that there must be some virtue in a method which had such vitality as to spread all over a continent in a few years, and at its present rate of progress bade fair to travel all over the world. I was hardly surprised at this, as my own experience in its practice had at least disclosed the fact that it was of striking benefit in selected cases.

The simplest definition of osteopathy which I have yet met is the correction of anatomical abnormalities which produce physiological discord, but its exponents do not hesitate to claim for it a much higher status. They almost all agree in calling it a distinct system of medicine whose therapeutics comprehends: (1) Manipulation, including surgery, for purposes of readjusting tissue relations; (2) scientific dietetics; (3) personal and public hygiene. It must be confessed, however, that manipulation is practised to the exclusion of every other method, and the system is acclaimed as one which permits you to eat and drink what you fancy and to live as you please, so long as you do not ignore the more important laws of health. The diagnosis consists in the discovery of a "lesion," which is something more than that so well known in surgery, and is defined as a structural change which affects the functional activity of any tissue. Such lesion may be found in any tissue, but its existence is more easily recognized in bone, ligament, and muscle. The most common varieties of lesions are what are called "subluxations" of bones, thickened ligaments, and "contractured" muscles.

A true lesion is said to be palpable, sensitive on pressure, and the functional disturbance produced has some relation to the anatomical abnormality existing. The *point d'appui*, however, of the osteopathic system is the subluxation, and most practitioners of the art are liable to find one or more in every case they examine. The centre of attraction is the spinal column, and the relation of its various vertebrae to one another and the ribs. The slightest change in the normal relation of the articulating surfaces is designated a subluxation, and this may be primary or secondary. In the former case it is produced by direct action on the bone or muscles controlling its movement, and is considered to be a source of irritation to the spinal nerves in direct central relation to it. In this way it is stated to affect the viscera and blood vessels, thus causing perversions of function which are recognized as symptoms of disease. In the latter case it arises from excessive irritation to the peripheral ends of sensory nerves, either those terminating in the skin and subject to temperature changes, or those ending in the visceral mucosa and subject to irritation from the presence of food of an indigestible character, etc. Presumably the pressure of secondary subluxations on the spinal nerves will make them as dangerous as the primary variety, and render their reduction as necessary. The chief function, therefore, of an osteopath is to reduce the subluxations and to correct the lesions which he may discover, and in some isolated cases this may be done in what is called "one treatment." The fact, however, that the majority of cases must be treated for two or three months proves that they are not easily kept reduced; and, needless to say, it would not pay the osteopath to cure his cases so quickly.

The usual course is to charge an initial fee for twelve "treatments" at the rate of three per week and to continue the treatment of the case for one or more months, thereafter giving "treatments" less frequently, although it is sometimes found that patients are unable to stand treatment so often. But patients suffering from all forms of disease who consult an osteopath are treated solely by manipulation. Manifestly they cannot all have vertebral or other subluxations of a serious type, and I am glad to say that in my interviews with leading osteopathic practitioners and teachers in America I had repeated confirmation of this fact. I was assured by one that he rarely found them, and by another well known teacher that he never thought of looking for them. It is important, therefore, to inquire whether there are no other conditions present which contribute to the unquestionable relief acknowledged by some of their patients.

This is found in that state generally described by them as "contractured" muscle—a condition now being recognized by other medical men outside of the osteopathic ranks.

Boardman Reed, in his work, *Diseases of the Stomach*, quotes Dr. John P. Arnold, who describes this peculiarity as a somewhat doughy swelling, or in chronic cases gristly, tense, cord-like feeling of the muscles, more particularly the erector spinae.

Flint and Hammond likewise refer to the condition, and give rules for diagnosing and treating it. I have no doubt of its existence, and in its milder forms am accustomed to associate it with the muscular fibrositis of Dr. Gowers. In the more aggravated forms, however, the muscle is swollen, sodden, almost oedematous, very sensitive, and is shorter and thicker than the normal, so that the points of origin and insertion are approximated. Hence an

infinitesimal example of a subluxation arises. The causation of these contracted muscles is not always clear, but osteopaths teach that they are produced directly by external violence or unsuitable environment, or indirectly by long-continued reflex irritation keeping up contraction of the muscles. The persistent backache complained of by some men and many women is almost certainly of this class, and hence the difficulty of curing it solely by internal medication.

Even should the primary cause be removed, it does not follow that the damaged muscle can return without aid to its original healthy condition. Exercise in such a state of affairs is most painful, and seldom followed by amelioration.

Hydropathy, massage, electricity, and other physical methods are of more value and are often successful. The real cure, however brought about, consists in accurately restoring the bony relationship, and when the condition has been produced by violence, this is done by the osteopath at once and directly. When, however, it is produced by other causes, the proper course is to relax the muscles by separating as far as possible the points of origin and insertion of the muscles. I am of opinion that this is the secret of the relief afforded by an osteopathic "treatment," and in 95 per cent. or even more of the cases under their care is all the treatment that is accorded them, although doubtless adhesions are likewise broken up during this stretching process. Of course, there is nothing very novel in all this, and whatever the osteopath may say, the treatment resolves itself into a combination of massage and Swedish movements, the latter being modified so as to be mostly capable of application by one person on a couch or stool in his own consulting room or at the home of the patient.

So indignant, however, is the osteopath at the suggestion that massage has anything to do with his manipulative efforts, that he frequently foregoes the undoubtedly beneficial results of the preliminary relaxation and stretching, and proceeds by violence to attack the affected part, endeavouring to reduce the subluxation and so cure the lesion.

I have no hesitation in saying that the vast majority of his cases are quite capable of being successfully treated by other methods, and I am confirmed in this view by the statement of the dean of one of their schools, who assured me that all well-educated osteopaths were perfectly cognizant of this fact. I am convinced, however, that many ailments, and especially acute conditions such as typhoid fever, pneumonia, nephritis, "cold in the head," are liable to be seriously aggravated by manipulative attention. It is lamentable that the apotheosis of mechano-therapy should result in such ill-guided enthusiasm as its application to many acute disorders would testify. Every now and again the American medical journals, and even the law reports of the daily papers, contain records of cases injured during osteopathic treatment, but the system has now such a large public following, and its legal position is so secure, that it is difficult to obtain a conviction.

If it be a system of medicine, at the best it is purely a system of one idea. Its nosology is a lesion; its symptomatology, a subluxation; its therapeutics, manipulation; while its pathology is accommodating enough to cut both ways, the subluxation being either the cause or the effect of departure from function.

Despite these limitations, however, as a method of treatment it serves a useful purpose not only in emphasizing the value of manipulation in disease, but in laying stress on cases which have previously been ignored or undiagnosed by the profession, and hence have fallen into the hands of the bonesetters.

We are too much in the habit of thinking that bonesetters make their reputation by breaking down ankylosed joints in patients who have refused the services of or become impatient with their own medical man. This may be, and no doubt is, in a great measure true; but their reputation would be short lived were this all their work, for nothing could prevent the most disastrous sequelae in a very large proportion of their cases.

The regular practitioner of medicine has an unaccountable reverence for bones and joints, especially the bony case of the spinal canal, and this fact was admirably pointed out by Dr. Wharton Hood many years before osteopathy was invented. He published the results of a careful investigation into the methods of Hutton, the bonesetter, and showed that he obtained his results by a combination of relaxation and counter-pressure, much in the same way as the osteopath, and that his special point of attack was the spinal column. But his book has almost been forgotten and his precepts neglected.

I do not hesitate to plead for the admission of this new form of sciencific bonesetting among the recognized methods of treatment practised by the medical profession. My success in the following cases is entirely due to the study I have made of the subject, and I am sure I would have failed to be of service to any of the patients without a knowledge of osteopathic methods.

J. F., aged 48, consulted me on August 24th, 1908, complaining of a pain, of six months' duration, in the right occipital region. His head was turned slightly to the right side, and when I asked him to look straight to the front he said he could not do so on account of the pain. His story was that six months previously he slipped down eight steps, falling on the right side of his lumbar region. He experienced a little pain in this region on getting up, but this was as nothing to the severe pain which came on in the back of his neck and head as the immediate result of the accident. This took place at 7 a.m. and he returned to bed hoping it would all pass off, but as he got no better he sent for a medical man, who prescribed some treatment and ordered him to remain in bed for four or five days. At the expiration of this time he was well enough to get up so far as the pain in his back was concerned, but the pain in his head—or "headache" as he called it—was as bad as ever, and he considered this strange, as he had never had a headache in his life before. During the ensuing six months he saw several doctors, amongst them a consulting surgeon, but derived no benefit. When I examined his neck I found a distinct and decided subluxation of the atlas, the first and only one I have ever come across in my four years' experience of this kind of work, although if we are to believe the osteopath this is the most frequent subluxation in the body. I had no doubt about it. The left transverse process was near the angle of the left inferior maxilla and the right transverse process near the right mastoid bone. I considered that there was pressure on the right suboccipital nerve and that reduction of the subluxation was necessary. This I effected after some preliminary relaxation, and I was rather surprised to find that no click was to be heard during the process, as I had quite anticipated something of the kind.

From that date to this the man has had no recurrence of his pain. In mentioning the matter to several of my medical friends I was astonished to find that they thought little of the matter and referred me to textbooks of surgery for similar cases. These I consulted without success, and I believe I am correct in saying that no such case is recorded in any textbook.

In relating the matter to my friend, Mr. James Sherren, of the London Hospital, he agrees with this view, but referred me to vol. xl of the *Clinical Society Transactions*, London, 1907, where I found several cases recorded by Mr. Edred Corner, under the title, Rotary Subluxation of the Atlas. Four of these were cases of, or referred to by, Professor Howard Marsh, and he considered that in each instance one of the tendons or one of the bundles of a muscle in the back of the neck had become entangled with the posterior tubercle of the transverse process of one of the cervical vertebrae. Two had been cured by anaesthetics and reposition, one by manipulation, and one refused treatment. Mr. Corner looked upon his case as a real subluxation of the atlas, and wondered whether some of the above-mentioned four cases might not have been of the same order.

Evidently my friends had confounded the condition with dislocation of the atlas, which is recorded as being common enough, but always fatal, and of which I have myself previously reported a case in the *Glasgow Medical Journal*.[1] The click on reduction, which, in common with Mr. Edred Corner, I expected but failed to get, is only heard in cases of unilateral dislocation of the lower cervical vertebrae—a condition stated to be fairly common.

Mr. A., aged 24, consulted me in June, 1907, for a pain in the back of his neck. On examination I found a slight swelling on the left side in the neighbourhood of the transverse process of the fourth cervical vertebra, which was very sensitive. This I concluded was a subluxation of the fourth cervical vertebra, and with little difficulty reduced it. The patient experienced no further pain for eleven months, when he again "cricked" his neck. The pain returned, and a swelling gradually appeared, which had the peculiarity of becoming larger and smaller at intervals. On examination I recognized a subluxation of the fourth cervical vertebra, with an enlarged and painful lymphatic gland in its immediate neighbourhood, but in a more superficial

position. When reduction was effected upon this occasion, a decided click or snap was heard, not only by me, but by a friend of the patient, who was sitting at the other side of the room. I feel convinced that this noisy snap was caused by the breaking of some fibrous adhesion. On Mr. A.'s second visit, in a week's time, not only was there no swelling to be detected, but the pain had completely disappeared.

This case is of great interest on account of the swollen lymphatic gland. It is a distinct piece of evidence in favour of the statement that slight displacements or subluxations go on acting as a focus of irritation till they are reduced. The intermittent swelling of the lymphatic gland showed that there was an ever-present pressure on sensitive structures sufficient to produce inflammation. If this can take place superficially it is quite possible that it may occur internally and set up some trouble.

Mrs. A. B., aged 35, consulted me in October, 1908, for backache of two years' duration. Careful examination revealed nothing to account for it excepting an irregularity in the vertebrae in the lower dorsal region. This consisted of an approximation of the spinous process of the eleventh dorsal to that of the tenth, and a corresponding separation from the twelfth. At the same time there was pain on pressure over the spinous process and on the right side thereof. I concluded that I had again to deal with a subluxation, but this time of a slightly different character. Careful relaxation of all the tissues twice a week for about a month produced little benefit and no apparent improvement in the position of the resp .e vertebrae. Accordingly I endeavoured to replace the el enth vertebra according to osteopathic instructions. These are simply a modification of surgical rules, and consist in (1) exaggerating the lesion by bending the body away from the prominent side of the vertebra; (2) bending the body forward to separate the articular surfaces; (3) lateral flexion of the body to the same side as the lesion, and an endeavour to raise the body at the same time. During these three movements the thumb exerts pressure on the side, upper, or lower surface of the spinous process, and, in the third movement especially, endeavours to replace it. This is not always possible the first time it is tried, and even when successful the bone does not always remain in position. This is obvious from the fact that in this case the shape had been altered by its long residence in the new position and its ligaments and muscles stretched and weakened by the unaccustomed tension. In the case in question I found at a subsequent visit that the subluxation had recurred and required reposition; but after half a dozen experiments of this kind it stayed in its place and the pain disappeared. From careful watching of this patient in her mode of sitting and walking, I believe that awkward posture had much to do with the occurrence of the malposition of the vertebra, and it is doubtless due to this fact that so many backaches persist, despite repeated medication and treatment

The habit of sitting with one leg crossed over the other and the shooting backwards of the lumbar curve must occasion great strain of the ligaments and muscles of the spinal column. It is, therefore, necessary to educate such patients into more physiological habits and to encourage them to indulge in a few physical exercises to strengthen the muscles.

L. E., aged 35, was sent to me by Dr. Stacey Wilson in February of last year suffering from pain of seven months' duration in the lower region of his back, the crest of the ilium, the pubis, and shooting down his left leg. He was a quarryman and had fallen from a height of 40 ft. on his back. Fortunately, the fall was broken midway, or he would have been killed. On examination, I found that the posterior spinous process of the left innominate was depressed—the crest of the left ilium less easily palpated than that of the right side and a slight inequality in the pubic region. The two last lumbar vertebrae and upper part of the sacrum were likewise too prominent.

I concluded that the force of the accident had been spent on the tissues in the neighbourhood of the crest of the left ilium, and had forced the whole innominate from its position, producing a rotation upwards and forwards along an axis passing horizontally through the pubic articulation. After much preliminary relaxation, I therefore applied force in such a manner as to endeavour to make the innominate travel in the opposite direction, and was gratified to find that by degrees the bone responded. The treatment was repeated at infrequent intervals, but with improving results, and by the end of July the patient was practically well.

Books on surgery declare that such conditions as I have described are very rare, whilst according to the osteopath they are met with only less frequently than luxations of the atlas, and many strange and varied symptoms are attributed to the deformity. In all probability the condition occurs more frequently than we are willing to admit, and, like the case just quoted, left unreduced with disastrous consequences.

I might go on quoting cases of a similar kind which have occurred in my practice, but I have described a sufficient number to show that slight deformities can be present in the bony frame capable of giving rise to severe pain, and which are liable to be overlooked by medical men. Cases of this kind frequently fall into the hands of the bone-setter, and, after all, the treatment described is more or less that of scientific or regulated bone-setting.

None of the cases which I have described could have been treated successfully without some form of manipulative therapeutics, and it is of prime importance that we should be prepared to recognize and deal with such cases. If we deny the possibility of the existence of so-called subluxations—as is the custom with medical men—we lay ourselves open to the charge of perpetuating the presence of such irregular practitioners in our midst by encouraging their practice. We know that there are three sets of muscles between individual vertebrae—the intertransversales—the interspinales, which are met with in all parts of the column, although inconstantly and irregularly—and the eleven pairs of rotatores spinae in the dorsal region. These last especially do not exist without the possibility of rotation between individual vertebrae such as is affirmed by the osteopath, and it is not incredible that the action of the other two pairs may occasionally be capable of causing an approximation of spinous and transverse processes towards each other.

It is reasonable, seeing that the erect posture is maintained by a distribution of a strain equally over all the joints of the vertebral column, to infer that when there is a displacement of one of these vertebrae too much strain will consequently fall upon the ligaments and muscles between it and its neighbours, and until it is replaced pain will be likely to arise.[2] . . . The conservatism of the medical profession has allowed many forms of treatment, like massage, osteopathy, electricity, and Swedish exercises, to be monopolized by irregular practitioners when they should have been captured for the benefit of rational medicine and the good of the public.[3]

I should like to add a few words with regard to the use of this form of manipulative treatment in cases which are usually quite successfully dealt with by other therapeutic methods. It is the special weakness of this, as of every other, method of treatment that too much should be claimed for it by its devotees, but as they deliberately assert that it is the only rational mode of therapeutics they are compelled to use it in every kind of case, to the exclusion of every other form of treatment. When one considers that there is practically no indication for the use of mechano-therapy in these cases it is surprising what success is obtained by the method. The beneficial results may be attributed to suggestion, correction of minor physical deformities, stimulation of the circulation as in massage, or, what is most probable, the stimulation of the central and sympathetic nervous systems by the application of force over the vertebrae and the heads of the ribs. Whether it be possible to stimulate directly the nerve centres in the spinal cord it is difficult to say, but indirect stimulation in the method I have mentioned is quite possible. These spinal centres are alluded to in osteopathic textbooks in no vague nor uncertain manner, but with a dogmatism and certainty begotten of beneficial therapeutic results.

Just how much damage has been perpetrated by its advocates in their efforts to establish its claim to be a system of medicine it would be hard to say. Two years ago there was presented in one of their journals a series of seventy cases of cancer absolutely cured by osteopathy. On reading these cases one could not resist the conclusion that the reports were prepared for public consumption, as, needless to say, in no case was the evidence conclusive, or such as would bear investigation by scientific men.

I must confess that I have not hesitated to use the method in cases of asthma, neurasthenia, neuralgia, and others which had resisted the orthodox methods of treatment, and I am bound to add that in some cases I have had beneficial results, which could not have been attributed to the influence of suggestion.

Some of the benefit derived may have been due to improved physical condition which naturally results from the treatment, and some of it may have been due to the preliminary relaxation of the muscles and the breaking down of adhesions. "The osteopath claims that all disease is due to displaced tissue, the replacement of which is a prerogative of his own and has, as its sequence, a perfect cure."[4] The simplest method of refuting such a statement is to cure a patient of neuralgia by a short course of iron for the anaemia, which was the causative

factor, when the same patient has just ceased from a course of laborious attempts to rectify the defective spinal condition by an osteopath without any good results. But I can see no impossibility in the statement that vertebral and costal displacements may exert direct pressure on the spinal nerves as they emerge from the intervertebral foramina, or on the sympathetic ganglia which lie on the heads of the ribs. The pathology of herpes zoster is not clearly understood, and osteopathic literature teems with cases which have been cured by rectification of a misplaced rib. Head has stated that "this remarkable eruption is associated with disturbances of the peripheral nerves, usually an inflammation of the sensory ganglion or of the nerve," and it is conceivable that pressure of various kinds on the nerve or ganglion on the posterior root may have some influence in its causation. Osteopathic textbooks attach special significance to the sympathetic in the etiology of disease, and probably err as much in their emphasis of this portion of the nervous system as we do by so largely ignoring its influence. They have exalted to the dignity of laws two observations from the works of Hilton and Head respectively: (1) The muscles moving a joint, the skin over the joint, and the interior of the joint are all supplied by nerves from the same source; (2) when a painful stimulus is applied to a part of low sensibility in close central connexion with a part of much higher sensibility, the pain produced is felt in the part of higher sensibility rather than in the part of lower sensibility to which the stimulus was applied.

Their entire pathology circles around these two statements and the special factor of some displaced tissue, and in proportion as there is reality in the pressure on sensitive parts, in the same proportion is there relief afforded by its successful removal. With such a restricted and localized pathology the area of their therapeutic influence must be very circumscribed. But if this fact be recognized and appropriate constitutional treatment adopted, great benefits are likely to accrue from the admission of this mode of treatment into our therapeutical armamentarium.

I am much indebted to Mr. Billington for directing my attention to an article[5] on Paralytic Ileus as a Sequel of Fractured Ribs, by Mr. J. E. Adams. Mr. Adams quotes the following statement of Starling's: "Stimulation of the splanchnic causes complete relaxation of the lower part of the ileum with the rest of the small bowel, but it produces a strong contraction of the muscle fibres forming the ileo-colic sphincter." He records two cases of fracture of the ribs in the neighbourhood of their angles—in one case the eighth and ninth ribs, and in the other the eighth, ninth, tenth, and eleventh ribs, being involved—in which the whole of the small intestine was paralysed and the ileo-colic sphincter in a state of spasm. Now, as the great splanchnic nerve arises from the sixth to tenth thoracic ganglia, Mr. Adams attributed the paralytic condition of the bowel to irritation of the great splanchnic. Although the thoracic ganglia lie close to the heads of the ribs, he considered that some displacement of the proximal fragments of the ribs may have irritated the sympathetic chain either directly or through the rami communicantes connecting the sympathetic ganglia with the spinal nerves.

He is more inclined to believe in this explanation than in the other possibility, that at the time of the accident a severe blow was administered which caused inhibition of the muscular coats of the bowel.

REFERENCES.

[1] On a Case of Occipito-atloid Disease, *Glasgow Medical Journal*, 1890. [2] *The Laws of Life and Health*, Alexander Bryce, p. 257. [3] Ibid., p. 257. [4] Ibid., p. 255. [5] *Annals of Surgery*, December, 1909.

UNDER the will of the late Miss Julia Woodward, of Clevedon, the University of Bristol receives a donation of £1,000, which is to be used for the foundation of a scholarship either in botany or in music. The cottage hospital at Clevedon is left £200.

TWO neat booklets which have reached our hands contain descriptions of the exhibits at the Japan-British Exhibition, sent by the Wellcome Chemical and Physiological Research Laboratories respectively. Information as to the general lines on which the work is carried on is also given. At the end of each booklet are some pages in Japanese; a study of them leaves an impression of gratitude that so far not even the most advanced degree-granting body has hitherto included Japanese in its medical curriculum.

A Lecture

ON THE

INTERPRETATION OF X-RAY NEGATIVES.

DELIVERED BEFORE THE ST PANCRAS AND ISLINGTON DIVISION OF THE BRITISH MEDICAL ASSOCIATION AT THE GREAT NORTHERN CENTRAL HOSPITAL.

BY

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INTERPRETATION OF X-RAY PHOTOGRAPHS.

THE *x*-ray negative should be examined, as it is more reliable than a print. It is impossible to reproduce in a print many details which are visible in a negative, and it is possible to have a print touched up so as to make it appear better than the original negative. If a negative is blurred so as to obscure the diagnosis, another should be made. With modern *x* ray apparatus it is possible to get a sharp skiagraph of any part of the body. It is sometimes necessary to anaesthetize a child in order to make a skiagraph. It should be kept in mind that the *x*-ray negative is produced by a shadow cast on the film of the plate. If one knows the relative position of the *x* ray tube, the patient, and the plate at the time when the radiograph was made, it is possible to tell on a negative the right side from the left. The radiographer usually places the film side of the plate next to the patient. Suppose one looks at the film side of a negative of the kidney region, and the patient says that the plate was placed on his back, then one can tell that the patient's right kidney is to one's left hand. If a print was made from this negative, the patient's right kidney would be to one's right hand. The information as to left or right side should be supplied by the radiographer, as in some cases it is impossible to tell which is which without his help. The negative should be lighted from behind by a light which passes through opal or ground glass. This light must be neither too strong nor too weak. Special boxes lighted by electric light are made for this purpose. This brings out more detail in the negative than can be seen by holding it up to the light at a window, or to a naked artificial light. By using a proper light one may be able to see details such as a shadowy obscure kidney stone which would be invisible by an unsuitable light. A box fitted with an opal glass window and lighted inside by electric lamps of variable candle power is the best for viewing negatives by.

By tilting the negative at an angle of about 60 degrees to the perpendicular a faint detail may be made more apparent. Sometimes faint details are better seen at a distance of 2 to 3 yards than near at hand. When possible, the right and left sides of the patient should be compared; they should be taken on the same plate at the same time. If this is not possible, an *x*-ray photograph of the normal should be compared with the one under examination. It is important to decide whether a negative is a good enough one from which to form a diagnosis. One must be on guard for distortion of the image from faulty technique, photograph blemishes, forgotten buttons, mercury ointment on the patient's skin, and many other details. If there is any doubt as to diagnosis, a second *x*-ray negative should be made, and in all important cases a second plate should be made after a few days, in order to corroborate the first.

EXAMINATION OF BONE.

In examining a bone the following points should be looked for:

1. Outline of the bone, for irregularities due to fracture, exostosis, detached tendons.
2. Periosteum, which is normally invisible, but may be visible when thickened or detached.
3. Cortex, which may be increased or decreased in thickness or density.
4. Medulla, which may be increased or decreased in thickness or density.

5. General or local atrophy from disease or disuse.
6. Changes in the trabecular structure.
7. Epiphyseal line.
8. Epiphysis.
9. Ossification.

Cartilage casts no greater shadow than muscle, therefore the cartilaginous ends of the bones do not appear in a radiograph. Calcified cartilage, as in the rib cartilages of old patients, throws a distinct shadow. Calcified arteries throw distinct shadows. Lines of separation between muscles, lobulation of fat in superficial fascia, and the depth of the skin can all be shown in suitable cases.

Any calculus which sinks in water can be shown to cast a shadow, but those which float in water cast little or no shadow. Biliary calculi do not cast shadows, and cannot be demonstrated by x rays. It is possible for a biliary calculus to be demonstrated by x rays, provided it is heavier than water; and, in exceptional cases, biliary calculi have been demonstrated by x rays. Secondary deposits in the liver cannot, as a rule, be shown on a plate, though secondary deposits in the lungs can be demonstrated. This is due to the great contrast between the dense secondary growth and the transparent lung tissue.

Flatus in the intestines, by making the body more transparent to the x rays, makes a very definite mark on the plate. Chips of glass in the hand can usually be seen on a plate, but thorns do not appear.



Aneurysm of transverse part of the arch of the aorta

Green-stick fractures and impacted fractures may be seen on a plate when it is impossible to see them on the screen. In examining a skiagraph of the neck of the femur, the amount of rotation outwards of the foot must be considered. If the foot is rotated out, the neck of the femur appears short, and if the foot is kept quite straight the full length of the neck of the femur is shown. Dislocations are usually evident on a skiagraph, but some joints require stereoscopic views to show their condition. The elbow, wrist, and ankle, and in a few cases, the shoulder, may require stereoscopic views for a correct diagnosis of dislocation. Callus casts a shadow, and can be recognized during union of bones. It appears in a radiograph four weeks after a fracture. The difference between the shadow of pus and serum is so little that for practical purposes it does not exist.

Tumours cast very little or no shadow, unless they are very large, bony, or calcified. Brain tumours are hard to show by x rays, but they have been confirmed by this method. Early carcinoma in the stomach casts no pathognomonic shadow. A negative shows most detail when it is quite dry. When it is partly damp the damp part appears lighter than the dry part, and if this is not noticed it could give rise to a mistake in diagnosis. A damp circle in the region of the kidney appears like a stone when the rest of the plate is dry.

A normal radiograph of the bones of the knee and shoulder is frequently got when the patient has great pains in these regions, because it is the soft parts which are at fault, and it is often impossible to show sufficient detail in the soft parts to make a radiograph of value.

Screen Examination.

In order to make a thorough screen examination one must have been in the dark for at least ten minutes. By that time the fatigue of the retina has passed off and the eye is prepared to see what it otherwise could not see. Students, and their teacher, often walk into the dark x ray room to see a patient with renal calculus, and while the radiographer is pointing out the stone and its position in the kidney someone remarks, "Where is the screen?" He cannot see the screen, while the x-ray worker, who has been in the dark for a long time, can see not only the screen but also the shadow of the kidney and the stone. Within ten minutes the student can see just as well.

A lead diaphragm is most essential to cut off all extraneous rays when making a screen examination. Without a diaphragm it may be impossible to see a needle in the hand, while with the diaphragm it may be quite easy.

The x-ray tube should be so fixed that it is easily moved about. It should be under the x-ray couch, and should be well protected so as not to let the x rays fall on the operator or on the spectators.

Screen examination of the head, except for foreign bodies, is of little value. A screen examination of the abdomen should show the pelvic bones and vertebrae, the outline of the kidneys and liver, flatus in the intestine, and metallic foreign bodies, and frequently a renal calculus when one is present. Soft tumours in the abdomen do not appear unless they are very large. A screen examination may fail to show a fracture when a plate shows it clearly.

Examination of the chest should be by both screen and plate, as each has its sphere of usefulness.

The screen examination during removal of foreign bodies is sometimes a necessity, even after they have been carefully localized.

It is impossible to tell at what depth a foreign body lies from the examination of a single negative. The nearer a foreign body is to the plate during the time of exposure, the sharper will be its outline. Thus, if two similar foreign bodies are represented in a negative, the one with the sharper outline is the one nearer to the plate. For exact localization, special methods must be used.

Urinary Calculus.

A patient with symptoms of urinary calculus should be radiographed so as to show both kidneys, both ureters in their entire extent, and the whole of the bladder. This is necessary, as symptoms pointing to stone on one side of the body may be due to a stone on the other side. Symptoms of stone in the bladder may be due to stone in the kidney and vice versa. A patient should be prepared for radiography by a vegetable laxative the night before. Calomel should not be used as it might cause a shadow. An enema should be given immediately before the radiograph is made. The patient should not have had a meal for twelve hours previous to the x-ray examination. Renal calculi can frequently be seen on the fluorescent screen, but there are some which can be radiographed which cannot be seen on the screen. A negative which shows the outline of the psoas muscle, the second last rib, and the lower pole of the kidney clearly, and which has been taken while the patient held his breath, is good enough for giving a negative or positive diagnosis as to stone. When the lower pole of the kidney is blurred it indicates that the patient has moved his kidney by breathing, and a small stone may be made invisible by this movement. If the negative

does not show the outline of the psoas muscle it is possible to make a better one, and if the diagnosis is doubtful a better negative should be made. It may be impossible to get a satisfactory radiograph in the case of a very fat patient. The radiograph should be made while the patient holds his breath. Frequently the outline of only one kidney appears. This is usually the left kidney, and is due to distension of gas in the descending colon pressing on the kidney and thus outlining its edge. The outline of the lower poles of the kidneys can be made more evident by inflating the large intestine with air by a Higginson's syringe, but this method is not recommended for the purpose of showing renal calculi. A calculus of *oxalate of lime* casts the darkest shadow. *Cystine* stones come next in density, followed by *phosphate of lime*. *Mixed phosphate* stones cast still less shadow, and last in order come *uric acid* stones, which may cast no shadow at all. A stone of exactly the same density as the kidney may cast no shadow at all.

Renal Calculus.

A negative showing stone in the kidney should conform to the following points:

Position.—The stone should be in the position of the kidney. It is possible to have two radiographs of a stone showing the stone in different positions. This is caused by the relative position of the *x*-ray tube, the stone, and the photographic plate. Thus when the shadow of a stone coincides with that of the last rib, it is possible by changing the position of the *x* ray tube to project the shadow of the stone clear of the last rib. When a stone can be seen on the fluorescent screen, it will be seen to move freely with respiration. A range of motion of 1 to 1½ in. is usual.

The position of the kidney varies a great deal, but usually renal calculi lie to the inner side of a line drawn vertically upwards from the highest point of the iliac crest. Calculi in the kidney may appear above the level of the last rib and below the level of the crest of the ilium, though such extreme positions are rare.

Density.—The density of its shadow may vary from little more than that of the shadow of the psoas to that of the densest part of a lumbar vertebra.

There may be *one or many*. A single radiograph cannot decide the number of stones present, but it is possible to tell the number by stereoscopic radiographs. Several widely separated stones in the region of the kidney (especially at its periphery) may indicate hydronephrosis.

Fallacies which simulate stone in the kidney are:

Blemishes in the plate. These have usually sharper edges than a stone, and they are usually multiple, though not necessarily so. The radiograph of a stone always has less clearly defined edges than a blemish in the plate.

Calcified lymphatic glands. These are usually found lower down than the position of the kidney. They are rounded, and present a granular appearance, unlike the homogeneous appearance caused by a calculus. The granular appearance is seen in very good radiographs only. A small calcified gland casting a shadow in the position of the kidney could be mistaken for a calculus, and unless an indication of its nature was given by the presence of other calcified glands, a mistake might easily be made. Calcified glands most frequently cast a shadow about the brim of the pelvis and along the side of the spinal column.

Scybalous masses are frequently outside the position of the kidney.

Bismuth, which the patient may have swallowed.

Concretions or foreign bodies in the appendix. These usually lie outside the line of the kidney.

Atheroma of vessels and *myositis ossificans*. In such cases well marked signs would be probably found elsewhere.

Putty-like mass found in old tuberculous kidney. These may cast shadows indistinguishable from stone, or their shadow may be streaky and ill defined, and occupy nearly the whole kidney region. In this case the lowest part of the shadow may be the densest, as the heavy lime salts tend to gravitate.

Extraneous bodies, such as a pigmented mole on the skin, mercury or lead ointment, or other foreign body which may have got between the patient and the plate.

Combinations of any of the above fallacies and a true stone.

A shadow which looks like a stone but cannot be confirmed by subsequent plates should not be considered as stone.

X rays have been used in the operating theatre at the time of operation in order to ascertain where a stone lies in the kidney before opening it. After the kidney has been delivered it is placed in the path of the *x* rays, and the surgeon looks at the shadow of the kidney on a fluorescent screen placed in a cryptoscope. He can thus locate exactly the position of the stone before opening the kidney. Once a stone has been seen on a plate there is a strong probability that it can be seen on the fluorescent screen, provided that

1. The patient is not too *fat*, and plenty of fluorescence can be seen on the screen.
2. The examiner has been in the *dark* for at least ten minutes, so as to remove the fatigue of the retina.
3. A *diaphragm* is used to stop off all *x* rays except over an area half the size of the kidney.

It can be made out more distinctly once it is located by making the patient breathe deeply, and then the stone and kidney will be seen to rise and fall at least 1½ in.

Ureteric Calculus.

A ureteric calculus is mainly distinguished by its position, shape, and size. The position of the ureter on an *x*-ray negative is indicated by a line drawn from the tip of the transverse process of the second lumbar vertebra downwards across the transverse processes of the third, fourth, and fifth lumbar vertebrae to the sacro-iliac synchondrosis and thence to the symphysis pubis nearly concentric with the pelvic brim at a distance of about 1 in. from the brim. Ureteric stones are frequently found where the ureter is narrowest, but may be found elsewhere. They may change their position from day to day not only downwards, but also upwards. Calcified glands are specially common in the position of the ureter as it lies over the sacro-iliac synchondrosis and are liable to be mistaken for ureteric stones. They are usually larger than ureteric stones.

Shape.—The shape of a ureteric stone is usually oval, or elongated. When a stone blocks the ureter there may be a deposit of crystals above the stone, and these cast a shadow, so that a streak is got on the plate. The long axis of a ureteric stone is usually directed towards the bladder. This is important for distinguishing ureteric stone in the pelvis from stone in the bladder. Stone in the bladder generally lies more transversely, while ureteric stone lies more in the direction of the ureter.

Size.—Small ureteric calculi do not usually demand operative treatment. A radiograph made later on may show that the stone has passed on. Stones in the ureter may, however, become encysted, and then they may grow as large as a vesical calculus.

Fallacies.—The same fallacies may be met with in connexion with ureteric stone as are found in cases of renal stone.

In doubtful cases radiographs should be made with a metallic bougie in the ureter in order to show the relative position of a doubtful stone to the ureter. The value of this method is increased by making stereoscopic negatives. Specially opaque *x*-ray bougies should be used. But even this method is not absolutely reliable, as a calcified gland has been found which surrounded the ureter, and cast a shadow indistinguishable from a ureteric stone.

In the position of the ureter in the pelvis there are frequently small shadows which closely resemble ureteric calculi. These are usually caused by phleboliths in the pelvic veins, and are comparatively common. They may be distinguished from ureteric calculi in some cases by:

1. Their relative position to the ureter when a bougie which is opaque to *x* rays is passed into the ureter. They are seen to be placed at a distance from the bougie.
2. They are frequently multiple and in a line. When this line does not correspond with that of the ureter it is in favour of a diagnosis of phleboliths.
3. Their shadow is clearer than that of a ureteric calculus.
4. They are often round, but may be oval.
5. They may cause no symptoms of stone.
6. *Stereoscopically* they may be shown to lie in several planes.

Vesical Calculus.

Vesical stones usually cast *oval* shadows, and *lie transversely*. They are, as a rule, diagnosed without the help

of *x* rays, and the rays are used only as a confirmatory diagnosis. A radiograph of a vesical stone is only likely to be confused with one of a stone in the lower end of a dilated ureter. The vesical stone usually lies with its long axis more or less transverse, while the ureteric stone has its long axis more or less in the line of the ureter. Scybalous masses may cast shadows like vesical calculi, but these scybala are usually indented, whereas vesical calculi are usually oval with no indentation. The bladder can be made very distinct in a radiogram if it is filled with air while being radiographed.

FRACTURES.

Screen examination shows a gross fracture, but certain fractures cannot be recognized by screen examination. The latter include green-stick fractures, cracks in bones with no displacement, small chips partly detached from the bone, and fractures of the phalanges caused by crushing. Wherever there is displacement of fragments the fracture can be seen on screen examination provided one fragment does not cover exactly the other fragment. Therefore a fracture should always be looked at in two planes. Since the introduction of *x* rays metal splints should be used as little as possible, as a fracture cannot be shown satisfactorily through a metal splint. All splints and bandages should be removed whenever it is possible, as they cast shadows. Plaster-of-Paris, iodoform, adhesive plaster, thick layers of cyanide gauze, lead lotion, mercury ointment, and rubber protective tissue cast fairly deep shadows, and should always be removed before screen examination. The screen examination of every fracture can be made most conveniently with the *x*-ray tube below the couch. A cryptoscope should be used as little as possible. When it is not possible to darken the room it is best to make the screen examination at night. A fracture which will make a useful limb often looks very bad on the screen; therefore never let the patient examine the screen. The fragments should lie side by side—not end to end—in a well set fracture.

Fractures are practically never set end to end unless operated on. When set end to end the fragments unite usually at an angle and not in a straight line. The method of union is shown by the radiographs.

The redundant bone is absorbed where it is not required, and new bone thrown out where it is required. Callus and old bone are moulded so that, though the fragments united side by side, the final result is a straight or very nearly straight bone. It is not necessary to set a fracture while watching the result on the fluorescent screen.

In some cases, even under anaesthetic, it is not possible to bring the fragments end to end. This is specially true of fracture of the lower end of the humerus, involving the elbow. Even when it is possible to bring the bones end to end it is not possible often to keep them so. Harm can be done by too much *x*-ray examination, and too many trials to get the bones into better position. A well united fracture shows the line of fracture for years after good union has taken place.

The illustration shows a case of aneurysm. The patient had worked in the *x*-ray department for a year, while suffering from a slight cough and huskiness. On examining his chest by *x* rays a large aneurysm was discovered, as shown in the photograph. He was put to bed for six months and the aneurysm has not increased.

[Dr. Pirie showed a number of *x*-ray negatives to illustrate some of the points to which he referred.]

THE ninth International Conference on Tuberculosis will be held at Brussels from October 5th to the 8th. The principal subjects proposed for discussion are: Hereditary tuberculous contagion; the predisposition to the disease; the protection of children against tuberculosis; tuberculosis and the school; the part of women in the campaign against tuberculosis. Reports on the progress of the fight against tuberculosis in different countries, and others by the committees or sanatoriums, the milk supply, solar radiation, international statistics, and international marks indicating the condition of the lungs, will be presented. A number of communications are promised. Among them is one by Dr. Nathan Raw on the general measures recommended by the International Conference to the Public Authorities for the prevention of the spread of tuberculosis in different countries. All inquiries relative to the congress should be addressed to the Secretariat, Avenue Van Volxem, 253, Forest-Brussels.

THE SPREAD OF CANCER AMONG THE DESCENDANTS OF THE LIBERATED AFRICANS OR CREOLES OF SIERRA LEONE.

By W. RENNER, M.D.,

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I HAVE been rather struck within recent years by the increasing number of cases of cancer of various organs, especially of the breast, that have in the course of my practice come under my observation, and this particularly so among the descendants of the liberated Africans, commonly called creoles, who form the bulk and principal portion of the colony proper.

In consequence of this, I have been induced again to look into the returns of cases admitted into the Colonial Hospital, as well as into my private case-book, to see how far I would be justified in speaking of an increase of this disease among the creoles, its apparent rarity among the resident aborigines in the colony and in the hinterland of Sierra Leone, and how far this apparent increase is due to causes which may be traced to the influences of European civilization and the adoption of the European mode of living.

In pursuing the investigation of this subject, I would first consider the case of the resident aborigines in the colony and in the hinterland. From the fact that this disease is rarely seen or met with among the hundreds of female aborigines who are treated regularly every year in the Colonial Hospital, and that the medical officers of the protectorate districts, especially those who are stationed in large towns where there are established dispensaries at which the natives have been encouraged to attend for treatment, have in their official returns not shown the presence of new growths among their patients, we can safely assume that cancer as a disease is very rare among the aborigines. This is, however, only fairly, but not altogether, satisfactory, as there may be cases which are kept in the background by the people, and which, even when on his patrols in the district, the medical officer cannot get hold of. Therefore, in spite of the non-entry of cases of cancer in the official returns, I would rather not say that the aborigines are immune from the disease, but that the disease is rare among them.

With reference to the creoles in the colony proper, an examination of the records of hospital cases and those of medical practitioners would show that within the last forty years cancer as a disease has been spreading among them.

In 1900 I endeavoured, in a paper entitled "Prevalence of Malignant Disease among the Natives," which formed the appendix to the Colonial Hospital Medical Report, to tabulate cases of malignant new growths that were admitted into the hospital within the years 1870–1900—a period of thirty years. Out of 22,453 cases of all kinds treated in the hospital, only 20 cases of malignant disease were recorded. These cases were simply described as "malignant tumour," "carcinoma," "sarcoma," "malignant growth," but without any details being given as to the particular nature of the disease or of the organ or tissue invaded.

To illustrate my meaning fully I append an extract from the paper, showing in decades the number of cases treated and the number of malignant growths noticed at each period:

Period.	Total Number of Cases Treated.	Nature and Number of Malignant Growths Noted and Treated.	
1870–1879... ...	6,509	Cancer of the breast ... ... 2 Sarcoma ... ... 1 Malignant disease of jaws ... 1	— 4
1880–1889... ...	5,334	Cancer of the breast ... ... 2 Cancer of the liver ... ... 2 Carcinoma ... ... 1 Malignant disease 1	— 6
1890–1899... ...	9,392	Malignant growths ... ... 2 Malignant tumour ... ... 1 Cancer of the liver ... ... 1 Epithelioma 1	— 5
	Grand total		15

If to this third period (1890–1899) be added the 1,218 cases treated in 1900, and among which were:

Epithelioma of the lower lip	1
Scirrhus of the breast	2
Cancer of the pancreas	1

there would be for the period 1890–1900, 10,610 cases treated, including:

Epithelioma of the lower lip	1
Malignant growths	2
Malignant tumour	2
Epithelioma	1
Cancer of the liver	1
Scirrhus of the breast	2
Cancer of the pancreas	1

Tabulating the period under review, the proportion of disease of malignant nature to all the other diseases treated shows clearly as follows:

Year.	Total Patients Treated.	Diseases Malignant.
1870–1879	6,509	4
1880–1889	5,334	6
1890–1900	10,610	10
	22,453	20

Between the dates 1900–09 there were 10,163 cases admitted into hospital. Of these there were:

Carcinoma of the breast	10
Adeno-sarcoma of the groin (recurrent)	1
Adeno-sarcoma of the breast (recurrent)	1
Carcinoma of the uterus	3
Papilloma of the bladder	1
Carcinoma of the rectum	3
Sarcoma of the shoulder-joint	1
Chondro-sarcoma of the upper jaw	1
Carcinoma of the oesophagus	1
Melanotic sarcoma of the foot (recurrent)	1
Epithelioma of the tongue	1
Sarcoma of the arm	1
Sarcoma of the eye	1
	26

These growths, that is, those collected between 1900 and 1909, have been verified by microscopic examination at the Cancer Research Institute of the University of Liverpool.

I have, in compiling this return, not taken in any figures from the Princess Christian Mission Hospital, of which I am one of the consulting surgeons, as these records are not available, having been destroyed last year (1909) by a destructive fire which consumed the entire building. But I am in a position to say that a large number of cases was subjected to operation by me and the other surgeons of that institution.

The above figures are interesting as indicating the presence of cancerous and other malignant growths in the descendants of the liberated Africans or creoles in this colony. I admit that it is not safe to base definite conclusions as to the extent of the increase or spread of this disease upon statistics alone, and therefore I do not consider the figures in the last preceding table as accurately representing the extent of the increase or spread of the disease. For a number of cases must exist which, unfortunately, the general practitioners do not come across, and there must be many sufferers who do not seek the aid of the hospitals. These latter are more or less in the hands of the native fetish doctors, who lull them with the false hope of cure by stating that their disease is a result of witchcraft, and that they (the fetish doctors) are the only persons capable of treating their disease and giving them the desired relief. Some of these patients have remained in their hands trusting still in their occult powers until either becoming hopelessly incurable, the fact at last dawns in their minds that they might seek other aid, or they arrive at that stage where nothing remains for them but to long for that relief from their terrible sufferings which death alone can give.

The existence of cancer and other malignant growths among the creoles, and its absence or rarity among the aborigines, are due in my opinion to the civilized habits of, and the civilizing influences operating upon, the former, and to the primitive mode of living of the latter. The creoles have adopted the mode of living, the food and dress, of the European—have to a great extent discarded the simple food of their forefathers, have been craving for and indulging in preserved and imported foreign food—have substituted the European for the natural African environment, and entailed on themselves in their eager pursuit for wealth and luxury the anxieties and worries incidental to civilization and consequent liability to premature decline.

Reverting to the question of food, while the creoles in a tropical country like Sierra Leone consume a large quantity of meat which is absolutely unnecessary, the aborigines—the Timnes, the Mendis, Kurankos, and others—confine themselves mostly to grain and vegetables, which really should form the bulk of the dietary of the native in the tropics, and eat very little of flesh or meat, with the result that the latter are on the whole healthier, and are free from the tendency to engender and propagate foreign diseases.

On the question of the relation of diet to disease, some medical authorities have asserted that butcher's meat is undoubtedly one of the means by which cancer is propagated. Although I cannot yet, for want of sufficient data, absolutely accept this theory, yet the fact that cancerous growths are common among the well-to-do creoles who can with ease afford meat and other articles of European diet as portion of their daily dietary, strongly appeals to me as lending a support to that theory.

Epitheliomatous growths are very rare among both creoles and aborigines. By this I mean epithelioma of the lip, tongue, cheek, etc., such as have been met with among the negroes of the West Indian Islands, the Southern States of North America, and in India, and are considered to be the result of local irritation. This rarity is possibly due to the fact that the creoles are not great smokers of clay pipes, and are to a large extent the possessors of good teeth. I have, however, noticed a marked tendency to degeneration of the teeth among all classes from children upwards—a condition which was certainly absent twenty-five years ago, and which I put down to the use of European articles of diet, as saccharine foods, preserves, and sweets. If this tendency is not checked I would not be surprised if in another fifty years epithelioma of the tongue should become as common a disease as cancer of the breast in this colony.

But in the aborigines also there is a marked absence of these epitheliomatous growths, and yet both men and women and even children are great clay pipe smokers. Their teeth are, however, kept beautifully, and pearly white, and that tendency to decay which has been noticed in the creoles is altogether absent in them.

The presence of cancer of the breast among the creoles of the colony nullifies, in my opinion, the theory advanced by Dr. Hearsey, Principal Medical Officer of British Central Africa, in his paper on The Rarity of Cancer among the Aborigines of British Central Africa (published in the BRITISH MEDICAL JOURNAL of December 1st, 1906), in which he states:

> Of the various theories advanced to explain the origin of cancer, the theory that it is purely local in origin appears to have obtained the widest acceptance. Premising that cancer of the breast is local in its origin, that for physiological reasons the breast is subject to great and sudden alternations in its functional activity, both at puberty and during pregnancy and lactation, it appears to me that any disturbance of the physiological functions of the breast during lactation would act as an exciting causative agent of no small value in the production of cancer. All native children have of necessity to be brought up on the breast. In civilized communities, even among the poor, there is a marked and growing tendency to wean infants at the outset. In consequence of the physiological increase of supply of blood to the breast during lactation, the artificial suppression of the latter may act as a powerful exciting cause in the production of cancer. If this is not so, how is it to be explained that aboriginal women, who are always compelled to suckle their young, are so immune from cancer of this origin that it is practically unknown amongst them?

To this I have to observe that the cases of cancer of the breast which I have enumerated above as occurring between the years 1900–9 have all come within my personal observation and knowledge. They were all multiparous women who had nursed their infants from twelve to eighteen months each time before weaning, and they had become again pregnant after an interval of from three to twelve months, so that the mammary glands in them were in a state of constant excitement and activity. The physiological activity of the mammary glands is not

in my opinion a reasonable theory to account for the apparent immunity or rarity of cancer of the breast amongst the native women of British Central Africa. The presence and apparently increasing prevalence of this disease amongst the civilized native women descendants of the liberated African in Sierra Leone must point out that we must look for some other means brought about by their contact with and embracing of civilization.

The important fact of hereditary predisposition has not been lost sight of, but so far I have been unable to trace the existence of any growth whatever in their family history of the majority of the cases examined. In one case, however, there was distinct hereditary origin, for which I can vouch, as I treated the grandmother for cystic adeno-sarcoma of the right breast, the granddaughter for carcinoma of the uterus, and the great-granddaughter for recurrent adeno-sarcoma of the groin.

It may be interesting, as bearing upon the question of civilization as a contributory cause to the origin and spread of cancer and other diseases among aboriginal population, to compare the history of two African peoples on the West Coast of Africa—the Sierra Leone creoles and the Fantis or natives of the Gold Coast.

In the case of the Sierra Leone creole, his ancestors of various tribes and languages, different habits and social customs, and of various temperaments, dispositions, and idiosyncrasies, had, as an outcome of the suppression of the slave trade and slavery, been brought and located in Sierra Leone. Possessing nothing of the elements of a nation in common, they could not combine and unite and so become a distinct entity and evolve, if not a language, a common social custom and mode of living best suited to their state and condition as children of the tropics. Their eagerness in their ignorance to forsake their own native social customs and to embrace and adopt the language, dress, and mode of living of their benefactors—an eagerness largely born of gratitude—was only paralleled by the earnest solicitude on the part of their benefactors to help them to throw off what was "native," and which was unwisely regarded by the latter as relics of barbarism and heathenism, and assist them in the adoption of their language, customs, and mode of living. As ignorance and tribal differences slowly gave way to education and intermarriages, the tendency not to assimilate what was best in their native brethren or to unite, but to imitate, adopt, and practise what was foreign, grew and grew until, by the process of evolution, the Sierra Leonean had become more English than any other people on the West Coast of Africa. The initial cause of this was the absence of a common nationality, tribal origin, or clanship; for how different would the creoles have been if their forefathers were all from the same country and of the same tribe! They would have preserved their language, traditions, customs, and habits, and have been better able to resist, for a considerable period at least, the inroads of certain civilized habits and influences, the adoption of which has proved detrimental to their very existence.

Now let me take the case of the Gold Coast, and see how far European civilization has affected a large majority of the people there who are one in language, habits and customs. These people have been in contact with European nations for five centuries. Their country was visited by the Phoenicians; they have had at various periods and for more or less long duration constant intercourse with the Danes, Dutch, Portuguese, Germans and English, who have at intervals and in succession held and fortified their coast towns. Yet after so many centuries of close contact with Europeans, they have by virtue of their race instinct and race unity resisted as one people the inroads of European civilization into their social life, and as a result we find the absence or rather rarity of cancer and other new growths amongst them. How long this condition will last remains to be seen. Native customs die hard, but with the establishment of permanent peace in their country, the opening of their country by railways, the constant influx in increasing numbers of Europeans exploiting the country and working the mines, the equally rapid increasing number of the offspring of such Europeans as a result of intercourse with the native coloured women, descendants of older decades from Danish, Dutch, German and English forefathers, and with the other non-hybrid native women, the liberal and progressive system of education now being established all over the country, I am very much afraid that the social habits and native customs of the Gold Coast people will before long disappear before the mighty onslaughts of European civilization, and with such disappearance arise those conditions which I believe, as the outcome of this civilization, are the origin of cancer. I entertain this apprehension also in regard to the Nigerias and other native territories which are being exploited by or made as a home for the white man.

I have in the above sketch attempted simply to give facts, and state my impressions based on those facts. I have refrained from making definite conclusions or positive statements, and necessarily so where the field of investigation is so wide and my opportunities for making researches are so limited. If, however, this sketch should serve to induce others to collect data and prosecute researches as opportunity offers so that definite conclusions may be arrived at, and should lead the creoles to reflect and alter their present mode of living so as to avert becoming the victims of this dire disease which up to the present baffles medical science, I shall not have made the attempt in vain.

ONE CAUSE OF CANCER AS ILLUSTRATED BY EPITHELIOMA IN KASHMIR.*

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During twenty-five years, of 4,902 tumours removed by operation in the Kashmir Mission Hospital, no less than 1,720 were malignant, and of these 1,189 were epitheliomatous, and 848 were on the thighs or abdomen and were due to the irritation of the kangri, a portable fire basket, carried by the people under their clothes (Fig. 1). When sitting down this rests against the inner sides of the thighs or the front of the abdomen. The front of the chest, the breasts and the calves of the legs are all exposed to the irritation of heat, and they also are liable to become the seats of epitheliomatous disease, although much less frequently than the thighs and abdomen. The disease is twice as common in men as in women. The average age of the patients was as high as 55. Epithelioma is extremely rare under 40.

Pre-Epitheliomatous Conditions.

Scars from previous burns are often the starting-point for epitheliomata. Many of the patients show a strong tendency to proliferating epithelium, and on the abdomen and thighs it is extremely common to find dry scaly pigmented spots or patches slightly raised from the surface. The skin is often mottled and shows the lines of distribution of superficial veins. This is due to overlying pigmentation deposited as the result of the irritation and dilatation of the veins caused by heat. Horny tumours are not rare and sometimes at their base transition into epithelioma can be demonstrated. There is also a condition allied to chronic eczema in which there is redness and a tendency to desquamation. This gradually shades off into the actual formation of scar tissue. When epitheliomatous changes are supervening, thickening is followed by raised patches like wheals. This may be followed by ulceration and gland infection.

Clinical Pathology.

There are three types of kangri burn epithelioma—the raised, the excavated, and the mixed. In the raised type there is usually ulceration, and often fungation and cauliflower excrescence (Fig. 2). Two inches in diameter is a common measurement. In the excavated type the floor is irregular and the edges undermined. In the mixed form the growth as a whole is raised, and circular or oval, and in the centre is a deep crater-like depression. Sometimes one portion of the growth is fungating and another portion excavated. All these growths are very septic, and the skin around is sodden with fetid discharge, which dries and forms crusts on and around the tumour. Ulceration and infiltration proceed, and muscles, peritoneum, and even the surface of ribs may be attacked. Glands are slow to show signs of infection. In the thigh they are usually involved in the following order: along the upper part of the internal saphenous vein, deep in Scarpa's triangle,

* Read before the Bombay Medical Congress.

close to the side of the pubis, transversely below Poupart's ligament, and, in advanced cases, the deep femoral and even the external iliac glands may be involved. In the abdomen, if the primary growth is above the umbilicus, both axillae may be affected—first, the anterior axillary glands, and later on the deep glands in front of and to the inner side of the vessels. Infected glands frequently attain the size of a pigeon's egg. They soften early. When they break down, diffuse infiltration may occur, and the overlying skin may become brawny. Eventually the skin gives way, and a deep ragged ulcer results, from which there is copious foul discharge (Fig. 3). The patient dies of exhaustion, septic intoxication or haemorrhage, from erosion into a large vessel.



Fig. 1.

On section the kangri burn cancer shows thickened edges and floor with translucent and opaque patches. The bulk of the tumour consists of mottled red and grey embryonic tissue with a scaffolding of fibrous tissue and numerous blood vessels. Stiles's method is useful in demonstrating macroscopically the distribution of the infiltrating epithelium. Microscopically the growths are found to be typical squamous-celled epitheliomata, with abundant cell nests. The contents of the lymph glands in the later stages are soft grey and granular, like those of a dermoid cyst.

RESULTS OF TREATMENT.

By prompt and wide removal a radical cure can be attained in the majority of cases. Most careful examination of the groups of lymph glands is required, and they must be absolutely cleared out if any glands are enlarged. At the time of operation the glands must be dealt with first and the septic primary tumour last of all. Glands must not be torn, burst, or cut, and the primary growth should be seized with a volsellum and dissected out without handling. Portions of underlying muscle, and even of peritoneum, should be removed, if necessary. If the glands of groin or axilla have infiltrated the cellular tissue and the skin is brawny, they should not be touched.

Of the total number of cases, 6 died as the result of, or their deaths were hastened by, operation. Of these, 4 were from prolonged suppuration in recurrent growths, 1 from peritonitis, and 1 was due to haemorrhage from ulceration into the femoral artery. But this is far from representing the mortality of the disease. Some cases are inoperable when first seen. Of 300 cases, the records of which I have examined, I find that there was known recurrence in 20. I should fear that there may be at least twice as many unknown to us and that the rate of recurrence may be as high as 20 per cent.

Compared with mammary carcinoma, the disease is superficial at first, and so the diagnosis is early. Superficial lymphatics are first affected, which gives surgery a much better chance, and in the case of the thigh the glands of the groin are under observation and unlikely to escape detection. Consequently the disease is not nearly so malignant as scirrhous cancer.

Many causes have been assigned for cancer. It would appear that irritation, or excessive stimulation, is the most important of all. The effect of a sharp tooth on the tongue, of the chewing of betel in producing buccal cancer, and the application of caustics to warts in elderly people is well known. In the kangri burn cancer we have a most important illustration of the result of irritation by heat. Year by year we have going on under observation the production of cancer by one particular cause. And we have every stage, from the earliest signs of epithelial

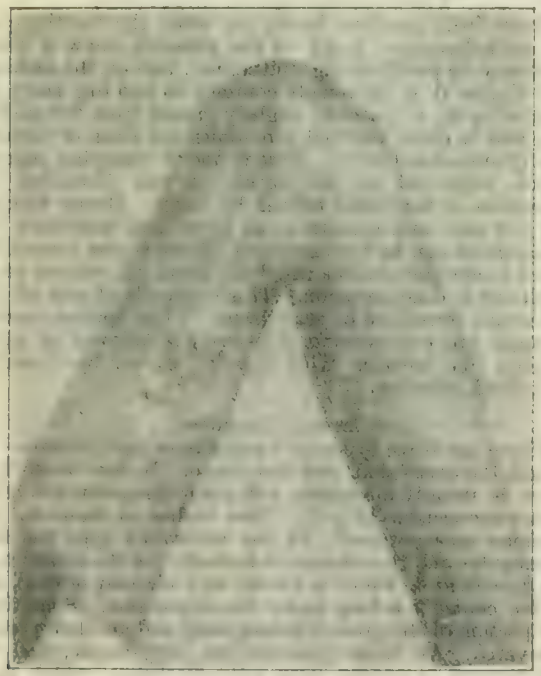


Fig. 2.—Kangri burn epithelioma. Raised type. Observe the scar tissue above and below, the mottling of the thigh and a dilated vein, and the scaly and pigmented condition of the calf.



Fig. 3.—Excavated secondary epithelioma of groin, with thin discharge from lower angle. The upper edge of the primary growth can be seen below.

proliferation to the most advanced cancerous growths with secondary deposits. Kangri burn cancer is a local disease arising from a local cause, and that cause is, in my opinion, not a parasite, but the irritation of heat. Its local infectivity is no proof that it is parasitic. In Thiersch grafts, epithelium detached from one site grows readily in another. It is not difficult to conceive the possibility of a much greater degree of independent growth and reproduction of epithelium apart from a parasitic cause. This, I believe, we have in epithelioma. It is as if a mass of tissue had passed away from the control of some nerve influence, which under ordinary conditions counterbalances trophic action. A history of injury and the existence of cicatrices may point to the existence of embryonic tissue of repair, which when unduly stimulated by heat escapes the nerve control which inhibits undue growth. That in some cases the stimulant which starts epithelial overgrowth is brought by the circulation is shown by the influence of the internal secretion of the ovary on mammary cancer and by the effect of arsenic in the production of epithelioma. The influence of this drug on the nervous system and on trophic processes, although little understood, is well known. It is possible that the epithelial proliferation may be due to a process akin to fertilization.

SUMMARY.

Kangri burn cancer is a typical squamous-celled epithelioma. In the early stages the malignancy is slight, it is too slow to infect glands, and is very amenable to operation. In late cases deep glands are involved, and in many cases owing to adhesions and brawny infiltration of the skin and cellular tissue it is inoperable. In many cases its origin is in scar tissue. It is demonstrably due to a definite cause, namely, irritation from the constant application of heat. In this respect it is similar to other epitheliomata resulting from mechanical, chemical, or thermal irritation. The nature of the cause is opposed to a parasitic theory of origin, and favours a trophic theory of cancer.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF STATE MEDICINE.

The Right Hon. LORD IRESTON, P.C., M.D., D.C.L., President.

DISCUSSION ON THE PROVISION OF MEDICAL TREATMENT OF SCHOOL CHILDREN.

OPENING PAPER.

By JAMES KERR, M.A., M.D., D.P.H.,
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WHEN medical inspection became general, it was inevitable that provision for treatment should also follow. The nature of that provision for treatment has not yet been worked out, but as for the majority who live in populous places it is a measure of relatively greater importance than the provision for the smaller numbers in the country, I have no diffidence in coming here to introduce the subject, and to confine myself solely to the question as it affects the urban populations. I propose merely to sketch the topic in outline, and then to deal with it as it affects medical men and the members of this Association.

The practitioner turning into the schools without special experience soon produces enormous percentages of children returned as defective. Time will lead to these results being considerably discounted, but discount them as you will, large numbers remain who should have definite and careful clinical examination, beyond the school examination, and medical treatment.

The immediate suggestion which comes to mind is that the public or the patients should be safeguarded by a second opinion, and this is secured if the invariable rule be followed that no medical inspector should be engaged in treatment; or the converse, that treatment should only be done by others than the school medical inspectors.

Apart from the Poor Law, which cannot be named as giving any suitable provision for treatment of school children, there were only (*a*) the private practitioner, or (*b*) the charitable institutions.

All sorts of defects and disorders exist among children, but none are very numerous at school ages beyond four or five great groups. Taking them roughly in order numerically these are:

1. Children with caries of the teeth (dental cases).
2. Children with defective vision.
3. Children with aural defects, discharging ears, enlarged tonsils or adenoids, and nasal obstruction.
4. Children debilitated or anaemic and in tuberculous or pre-tuberculous conditions.
5. Children with ringworm.

Other defects or disorders are comparatively unimportant as regards numbers, and these five classes will include 95 per cent. of school cases.

The fourth of these classes (tuberculous and debilitated) can be removed from our immediate consideration, as medical treatment is of a second order compared with the necessity of existence in altered conditions of a hygienic and stimulating environment. These children will require separate consideration from any question of medical treatment at school.

There then remain dental cases, at present 95 per cent. of all school children; visual cases—10 per cent. of all school children have vision so bad as to affect their prospects in life, and another 25 per cent. require careful and detailed examination beyond what is possible in school. Aural cases, defective hearing, discharging ears, and abnormal conditions of tonsils, adenoids, throats, and noses, the numbers of these requiring treatment are, I think, greatly exaggerated. The serious cases may be taken as about 5 per cent., and another 10 to 15 per cent. as requiring careful examination and possible treatment.

Ringworm is trifling, and was only included owing to the failure of either doctors or hospitals to attain any practical remedy. It accounted for one-ninth of the absences, however.

Many years ago it fell to my lot before any one else to consider what was to be done with this mass of children. I satisfied myself at the time that, without further and more extensive arrangements, neither private doctors nor hospitals were able to offer material help in these cases. The dental cases were simply refused treatment other than extraction, and provision did not and does not exist for the numbers requiring conservative treatment. This, numerically, is the biggest part of the problem.

Determining the refraction of children's eyes is not exactly what any one would choose as the way of spending a summer afternoon, and the out-patient rooms were being choked up by these children.

The aural cases with discharging ears are beyond any help from hospitals; they are usually given a placebo and sent off. There is no hospital in London which even pretends to treat all such cases till cured. Ringworm treatment was equally ineffectual. Numbers of medical men cannot or do not recognize typical cases.

For the fees likely to be paid these cases were not worth while to the private practitioner, and practically not one in fifty ever appeared to get the slightest benefit from the private practitioner. To the hospitals these children were merely cases to be got rid of; they presented little interest to the doctors and brought no special credit to the institution. It was evident that for this group of dental, visual, aural and ringworm cases some general effort was required to bring the means of effective relief within the reach of all.

Now we have here a purely scientific problem of how to devise a method of obtaining the greatest benefit to these children for the least cost in time and money. The children's time must not be wasted from school or the

parents' from work, the doctors should be paid for their work, and the whole thing so organized that every one should have relief with the least cost and the least friction. The indifferent parent must have his child provided for as well as the one who is solicitous for the child's welfare. Evidently co-operation was the means at hand, and as every one would benefit from the improvement to be brought about, this requirement of medical aid of some sort, for 95 per cent. of the children, was just as eminently a matter for public provision and the public purse as was the provision of water, drains, or pavements or lights in the streets. The *Schulzahnklinik*, as worked by Professor Jessen at Strassburg, seemed to offer a hint for further development of medical treatment.

Since the matter was first considered, almost without discussion a bill slipped through Parliament and has now become an Act which I am afraid practically stands in the way of any successful general provision of medical or dental treatment for all elementary school children. Fortunately the London County Council had determined on a more cautious and politic plan of proceeding slowly and gaining experience before embarking on any extensive plan, and have made temporary arrangements with hospitals and other institutions. These arrangements probably will not be seriously affected by this Act, which makes the education authority charge the cost of treatment to parents, and for the present the existence of this Act destroys any possible idea of this medical treatment conferring charity on the parents.

The Council pays 2s. per head for every child treated at hospital, in many cases guaranteeing a minimum number, and also pays £50 per annum per half-day weekly worked by a medical man in such treatment. It lays a charge of somewhere about 4s. on each parent, and remits this for those in destitute circumstances, according to a wages scale. Now this is all new work; the proportion that went into medical men's hands previously as remunerative work was infinitesimal. The only objection I can see to be urged is that we are rearing a race who in adult life will be hospital habitués.

There is, however, still a good deal of confusion in many lay as well as medical minds as to these children who can afford to pay doctors' fees being recipients of charity in some way, because the ordinary hospital patient is in receipt of charity. There is no charity about this hospital arrangement for children: it is a pure business arrangement. The hospitals make some profit out of it; 2s. per head in large numbers pays the establishment charges and leaves a surplus, or else the shrewd business men who run the hospitals are out in their calculations, and the hospitals are dealing unfairly by their subscribers; £50 yearly per half-day spent weekly is the British Medical Association's scale for time spent in medical inspection; presumably, then, payment at the rate of £600 a year for his time is sufficient remuneration for the medical man. Surely no one can complain; not the hospitals; not the medical profession; and not the ratepayer; for the Council is charging the cost to every one, and it is only the destitute who are having this remitted, who certainly would not pay private practitioners for their trouble and pains.

But certain districts of London remained beyond reasonable reach of hospitals, and then in one district the suggestion was made that a committee of medical men might arrange to work a centre for treatment, corresponding to a hospital out-patient room. Such attempts are being made in Norwood, Hampstead, and Wandsworth. The County Council has treated them on the same lines as the hospitals, has provided some equipment, and given some aid in the services of a nurse. On financial lines, which are the only ones on which these schemes can be judged by the medical profession, the schemes would not commend themselves on the Stock Exchange. Lastly, we have a kind of model scheme set forth recently in the British Medical Journal, in which the child having been seen by the school doctor is seen again by another doctor who may later treat it, and he pronounces whether it should be treated at the public expense. I go no further; that scheme will never commend itself to business men, and whilst it may afford food for discussion at Branch meetings, I do not think it ever likely to come into the field of practical politics.

Now I have gone over in a very broad way the methods of provision of treatment for urban districts. Let me turn to their effect on the medical practitioner. The general practitioner has his difficulties—no one knows that better than myself, the fruit of long experience—but this work never was in his hands; it is practically all new work. It has nothing to do with his difficulties. This is not the place to deal with the troubles of the medical profession. Until the idea that there is something dignified in doing unpaid work whilst others "devil" most of it for you, in the hope of following you—until that idea is got rid of the profession will deserve to suffer.

Medical treatment of school children at the standard rate of £50 yearly for each half-day weekly then represents wholly new work for members of the medical profession at an average rate of £600 a year. What is wrong with that? Does the medical man suffer?

School clinics have been condemned by Branches of the Association because general practitioners think they would not be allowed to do the work. It is in diffusing this kind of judgement that the British Medical Association fails so signally. The Association wants two or three autocrats, not necessarily medical men, at £3,000 or £4,000 a year, to look after its interests, but the members would have to implicitly obey. The autocrats would prevent such mistakes.

If county councils ever run school clinics, or any other subsidized arrangements of this kind, I believe it will be to their interest to have medical officers giving part of their time and acting on a rota, serving only for 2, 3, 4 or 5 years as may be, and then retiring, but the councils who are custodians of the ratepayers' money ought to seek the best men they can get for that money, and if general practitioners are not elected, presumably it is their own fault. There can be no protection in favour of a selected class of the profession such as some of these gentlemen would appear to desire. That is neither in the interest of the public or profession. Whether in clinics or with associations of medical men, such as has been suggested, there can be none of this bolstering up of a class.

The same argument only holds for hospitals if every man holding such appointments is paid at the standard rate. Any medical practitioner acting on a hospital staff and seeing these children from the schools at less than the standard remuneration, however worthy his motives may be in other respects, is, in respect to his professional brethren outside, acting the part of a blackleg. I do not think this can be insisted on too strongly, and it is the only case where general or any other practitioners can have a logical case against medical treatment of school children as a public provision.

There is much more to be said on the question of treatment. Public provision for treatment of every school child is in the immediate future; let us make the best of it, sinking individual interests and opposition in the general welfare.

DISCUSSION.

Professor Kenwood (M.O.H. Bedfordshire) said all would agree that a right conception of the true ends of a State system of education embodied the recognition of the fact that, as physical defects impaired educational results, and in future years contributed to the ranks of the pauper population, a reasonable outlay upon preventive measures was a sound investment by the State. He then gave reasons for assuming that of school children handicapped by defects in their physical condition, 75 per cent. did not at present receive treatment. The best schemes for improving the matter had yet to be evolved; he said "schemes," because it was inexpedient even to attempt to introduce any uniform scheme for the whole country; the determining factor in local policy must be local circumstances. Whatever the scheme adopted, its working efficiency would be exceptionally taxed until arrears of treatment had been wiped off. Every decade would see the machinery working at less and less pressure. With a view to reducing the remedial work to be done by the education authority to a minimum, pains should be taken to impress on parents during medical inspections the importance of obtaining treatment. If possible the head teacher should be present and his co-operation in this matter enlisted. With the same end in view, efforts of prevention in the home and school should receive the

greatest attention. As for remedial treatment, the main difficulties were created by defects of vision and hearing, by ringworm, and the need for conservative dentistry. In country and small urban districts local practitioners were not as a rule prepared to undertake spectacle prescribing, and eventually the difficulty would have to be met by the appointment of oculists. They would be part-time officers who, assisted by a nurse, would work at many centres. The education authority would also contract for the supply of spectacles, and when possible recover part or all the cost from parents. Parents saw for themselves the need of treatment in cases of defective vision, but not in those of unhealthy throats, discharging ears, and dental decay. For conservative dentistry there was no provision whatever over wide county areas. Eventually children would probably be sent to various centres at which dental practitioners would attend to them at contract rates; or in some instances travelling dental clinics might be necessary. The great majority of the cases of enlarged tonsils and adenoids prevalent in both urban and rural districts, and whose detrimental influence on educational progress must have been very considerable in the past, could and would be dealt with by local practitioners. A scheme for dealing with ringworm was necessary. In rural areas it would be difficult to provide for the best form of treatment —that by *x* rays—except by affording travelling facilities to centres where the necessary apparatus was available, and where arrangements were made for treating school children on certain days. In respect of all defects when effective treatment was not obtainable at the hands of general practitioners, or parents could not, or would not, take advantage of it, the local education authority must consider what further measures should be taken. Merely pointing out the need for treatment did not, for many reasons and in many cases, suffice. The first step should be to make ready available any existing means, voluntary or otherwise, which might be requisitioned to provide the treatment not obtained either from private medical practitioners or the Poor Law guardians. It was most desirable, however, to refrain from measures tending to diminish the sense of parental responsibility, which had been emphasized by Sections 12 and 24 of the Children's Act of 1908. Even at the risk of some hardship and of making medical inspection unpopular, he would take advantage of these clauses and institute prosecution in appropriate cases. Nothing less would stir a certain class of parent. A prosecution might also serve to develop a parental conscience. He had faith in the power of legislation to develop public opinion. Every available means must be adopted of reducing to a minimum parents who were ignorant and careless, and not moved by a sense of duty or appeals and warnings. Most parents were ready to make considerable sacrifices to obtain a remedy for the defects pointed out to them, but many, while able to provide ordinary medical treatment, were unable to afford the greater cost of the special treatment sometimes required. In such cases the parents should pay what they could, and the education authority provide the rest recovering it when possible on the lines adopted in the matter of school meals, which themselves constituted a kind of treatment. When special treatment was demanded, the medical practitioner would often recommend taking the child to a hospital, and to make it easy to obtain such treatment in suitable cases might be deemed desirable. The idea of education authorities subsidizing voluntary hospitals did not seem destined to gain general approval, and it looked as if the need of remedial treatment of school children throughout the country might urge every one on the road towards the nationalization of medical service. Possibly medical inspection would educate public opinion in the value of physical health among children, and thus lead to more parents making the necessary pecuniary sacrifices; but probably an increasing proportion of the cost would have to be borne by the education authority and less and less by philanthropists and the Poor Law, until at length the whole cost of remedial treatment fell on the rates and the State. Those who cared twopence for the future of their country would rather that this should happen than that much of the work should be inefficiently performed, or left entirely undone. If the advocates of such provision preached socialism they also preached imperialism. As an education and public health official, the speaker's first duty was to the school child and to the community as a whole; and, provided the work required was done, it was a matter of indifference to him whether those who did it were general practitioners or medical men appointed for this special work. Nevertheless, his desire to avoid anything in the nature of injustice to his medical colleagues would prompt him to advise that the general practitioner should first be given every possible chance to provide what was wanted in the nature of medical treatment, and the speaker would only advocate other arrangements when the paramount interests of the school child warranted this advice.

Dr. A. E. REMMETT WEAVER (M.O.H. Abertillery) said that in his own district, where the population of 35,000 was engaged in the coal mining industry, they had no hospitals within eighteen miles; but there were large colliery clubs whose doctors naturally did not appreciate having large numbers of school cases thrust upon them without extra payment. It seemed that a school clinic would help, and a small one had been established, at a cost of £120 to the education committee, to treat eye, ear, and skin cases. School clinics would be useful in many districts, but they were not a panacea for the whole of the difficulties. Schemes must vary in nature and scope according to the local needs and conditions.

Dr. WILLIAM HODGSON (Crewe) strongly advocated the claims of the general practitioner to carry out treatment, and objected to nationalization of the medical service. He considered it most unfair to assume that the Poor Law had broken down, and did not agree with Dr. Kerr as to its unsuitability for present-day requirements. The medical profession was not half so bad as it had been painted, but they ought to go slowly and use the means already at their disposal before resorting to new and untried methods.

Mr. CYRIL JACKSON (Chairman of the Education Committee, L.C.C.) said that medical inspection had been carried on for a long time in London, and an amount of defect had been found among children in the schools that was not being treated. The London County Council had decided that facilities should be given for such children as were not getting treatment. Only those quite unable to pay would be excused contribution. In many cases the parents already paid, and this was valuable as ensuring parental responsibility. They would go to their own local practitioners more readily in the future if they had learnt that they must pay, and that it was their duty to look after the health of their children. He agreed with Professor Kenwood that when they refused legal action should be taken. It was often the ignorance of parents that any defect existed that prevented their taking the children to the doctor. The School Care Committee could bring home to them the necessity of treatment. The County Council decided that the medical profession should be fairly treated. The usual arrangement was, as stated by Dr. Kerr, to pay for extra medical assistance for the special treatment of children at an adequate rate of remuneration, and where committees of local medical men were undertaking the treatment their time was paid for at the same rate.

Dr. DRURY (Halifax) said it had been suggested that the treatment of school children should be in the hands of practitioners specially appointed for the work, and it had been hinted that the ordinary general practitioner or Poor Law officer was not equal to the work. As a general practitioner he protested strongly against such a suggestion. If there was any truth in it, then 20,000 practitioners should forthwith be struck off the *Register*. As regarded the treatment of children, the school age was too late for many conditions which should be dealt with earlier, before chronic or permanent symptoms became fixed. There was in existence already a league organized to protest against voluntary inspection as it existed, and any attempt at legal enforcement would meet with great opposition. That league was ready to use any lever against medical practitioners. He was not surprised to hear that the treatment of school children did not cost much in London. When so much work was done for nothing, the cost was

naturally relatively small, but too much gratuitous work was one of the defects which seriously affected the general practitioner.

Dr. COOPER-PATTIN (Norwich) detailed the measures taken in Norwich. (1) As to dental caries. As soon as they received the sanction of the Board of Education a whole-time dentist would be appointed whose duty it would be both to inspect and to treat the teeth of the children in their elementary schools. The authority would treat the children of the necessitous gratuitously, and make such charges as it deemed right to the children of others, in no case exceeding the estimated cost of the treatment to itself. (2) Visual defects. In the case of those too poor to pay for private treatment, or who had been unable to obtain a recommendation for treatment at the eye infirmary, the authority paid for their examination by an ophthalmic surgeon of experience and distinction, charging a reasonable part of the cost of spectacles to the parents. (3) Aural and nasal troubles, adenoids, tonsils, etc. His authority at present made no provision for those, but half of them were efficiently dealt with by private practitioners and public institutions. (4) Cases of anaemia, tuberculosis, etc. These were sent as far as possible to the open-air school, which they hoped to enlarge in another year, when they acquired a newer and more permanent site. (5) Cases of ringworm in children of necessitous parents were, with the sanction of the Board of Education, treated at the municipal buildings. In making charges to parents the authority took into account the average weekly income per head in a family (rent being deducted). Dr. Cooper-Pattin concurred with Mr. Cyril Jackson as to the educative influence upon parents of medical investigation into the condition of school children, with the consequent discovery of unsuspected defects.

Dr. SAVAGE (M.O.H. Somersetshire) said he would confine his remarks to what had actually been accomplished in one of the largest rural counties—Somerset. The most satisfactory results were obtained in regard to defective eyesight. A skilled oculist was on his staff as a full-time medical officer. He examined presumptive eye cases referred to him at special centres, and prescribed spectacles, which could be obtained by the parents for 2s. 6d., at the rate of 6d. a week. It was very satisfactory to note that no less than 70 per cent. of the parents had paid in full by the end of 1909, and the money for the others was coming in. In only three cases had it been necessary for the County Council themselves to provide spectacles. Patients sometimes failed to turn up for inspection, and parents sometimes failed to provide the spectacles. That was usually due to carelessness or apathy, and the speaker had issued a leaflet warning parents of their responsibilities, and had obtained the sanction of his County Council to prosecute in cases of wilful neglect of bad eye cases. Verminous children were treated by a scheme of inspection by school nurses, which worked well. The other cases were referred to after-care committees. He believed Somerset was the first county to provide such committees, which entailed a great deal of correspondence and required a large clerical staff. On the whole the results had been fairly satisfactory. Out of 5,091 cases so referred up to the end of 1909, 3,377 case sheets had been returned to him. Of these, the results in 47 per cent. were satisfactory, in 15 per cent. partially satisfactory, in 5 per cent. no treatment was recommended, 16 per cent. had left school and the results were not known, while in the remaining 17 per cent. nothing had been done. The results varied greatly with the different subcommittees, from 82 to 31 per cent. of positive results.

Dr. BYGOTT (M.O.H. Barking) wished to emphasize the importance of the suggestion that they should proceed with caution. He thought Dr. Lyster did good service when he directed their attention to the source of medical help. There was a theory that every one could get adequate medical assistance by payment, charity, or the Poor Law, and that theory required the fullest investigation before it was laid aside. At the same time it must not be forgotten that Section 12 of the Children's Act, 1908, rendered it a very serious offence not to provide medical assistance for children. He deprecated strongly the setting up of school clinics under the education authority. If a school child needed treatment by a public body other than the guardians, it should be treated by the sanitary authority acting under the powers given by the Public Health Act, Section 131 et seq. By that means contagious skin diseases—ringworm, etc.—could be treated in the younger brothers and sisters of the scholars entirely apart from the question of their attending school. In Barking some treatment had been undertaken in cases of ringworm and minor ailments not usually treated by doctors, but which had a serious effect on the health of the scholars and on school attendance.

Dr. NASH (Wimbledon) spoke of the way in which general practitioners could carry out treatment in school clinics, and pointed out that the only fair basis of remuneration to all parties, in order to give efficiency, was on the basis of the time expended on the work. He deprecated the idea of sending children to hospitals.

Dr. MEREDITH RICHARDS (M.O.H. Croydon) differed from Dr. Kerr in his suggestion that treatment should be divorced from medical inspection. The medical inspector gained by undertaking treatment, because it varied the monotony of his work and made him a better diagnostician. State interference was justified on the grounds that the physical well-being of the next generation was as important to the State as their mental health, and medical treatment at the public expense could be justified by the same arguments as free education. He could contemplate without misgiving the assumption by the State of any duties which civic organization could perform more efficiently than private enterprise. In their professional capacity they must not dictate to politicians what were and what were not the duties of the State; and he feared that the Association would be treated with scant courtesy by whichever party was in power if it attempted to check developments that were determined by political considerations. In urging their authorities to undertake treatment they were told that they were proposing to assist the survival of the unfit by helping the improvident. At present it was often the least deserving who got the most efficient treatment in their Poor Law schools, hospitals, and infirmaries; and what they contemplated was the offer of similar opportunities to the more provident and more deserving. As to parental responsibility, in his experience this argument was most often urged by those who were seeking an excuse for doing nothing. In any case children were not designed for the moral regeneration of their parents, and parental responsibility was, in fact, increased by the opportunities offered for securing the well-being of their children.

Dr. KERR, replying on the discussion, said that the welfare of the child was of greater importance than the particular moral attitude of the parent. The inspector should never treat the children whom he inspected, but might treat other children. He agreed that there was no future for the Poor Law in respect to school children. The arguments against school clinics or hospital treatment because other than general practitioners might carry out treatment was no slur on the general practitioner. It simply meant that public authorities must secure the best medical aid possible; and as a matter of fact in London many general practitioners were selected in preference to others with higher qualifications, because they happened to be in other respects more suitable for appointment.

A DEFENCE OF THE HOME TREATMENT AND PREVENTION OF SCARLET FEVER.

By ROBERT MILNE, M.D.,
Medical Officer Dr. Barnardo's Homes and Hospital.

MY best thanks are due to the Association for this opportunity of laying before my medical brethren my experience and conclusions in regard to the treatment and prevention of scarlet fever. My aim is to substantiate fully the conclusions arrived at in my publication ("A Plea for the Home Treatment and Prevention of Scarlet Fever," James Nisbet and Co., 22, Berners Street, W.), and in the words of Dr. Bond, of Gloucester, in the BRITISH MEDICAL JOURNAL of 14th May, 1910, to make every unprejudiced mind feel that

"scepticism is no longer possible." Also, further, to show that the method of treatment is equally efficacious in the overcrowded homes of the poor as in the mansions of the well-to-do.

While deeply realizing my responsibility in advocating such a revolutionary proceeding, it is only the firmest conviction of its value and its success that has led me to adopt an attitude apparently so antagonistic to that established by law and custom. The facts I have already placed before the profession, together with the fresh evidence I am to lay before you, drawn not only from my own experience but from that of many others will, I trust, convince all.

Although the treatment and its advantages are fully described in my publication, it will be well to give a short summary of the same, mention its advantages, and then demonstrate my position and conclusions.

For twenty-six years I have used pure eucalyptus oil. During the first four days in a scarlet fever case, commencing at the earliest possible moment, I have pure eucalyptus oil gently rubbed in, morning and evening, all over the body, from the crown of the head to the soles of the feet. Afterwards this is repeated once a day until the tenth day of the disease. The tonsils I always swab with 1 in 10 carbolic oil every two hours for the first twenty-four hours, rarely longer.

This being the simple and easy mode of treatment, let me say a word or two about its advantages.

1. When this treatment is commenced early secondary infection never occurs and complications are unknown. How serious a question is that of complications is borne out by a remark of a scarlet fever superintendent. He said:

> After a short time we have not only the scarlet fever germ infection to contend with, but other germs, secondary to this, causing us the very greatest trouble.

Again, Carlip says:

> The tonsils are extremely susceptible to the invasion of streptococci, as they are deprived of their resistance by the scarlatina toxin. By this path may gain entrance the dreaded scarlatina diphtheria, suppuration of the glands, severe phlegmon, and eventually general sepsis.

On this I ask whether all these troubles, which may come on in an hour or two, may not be caused by these secondary infections?

2. With this treatment carefully carried out, I have no hesitation in allowing children to occupy the same room, or even to sleep in the same bed. Therefore isolation is unnecessary.

3. *The Economy of the Treatment.*—One medical officer of health reported that 30 cases due to milk infection cost £300 for isolation—by no means an overestimate. As in one year London has some 152,000 cases, a specialist's estimate that it would save England many millions annually is no exaggeration. What it means to the world no one can estimate. The cost of the treatment I advocate is at most 2s. or 2s. 6d. per case.

4. *Its Household Economy.*—The mother is free to attend both the patient and her duties. The father is free to go to work without the slightest risk, and the children are equally free to attend school.

5. No after-disinfection is necessary, for, the disease having been destroyed, nothing remains.

Thus there is no interruption of the domestic, scholastic, or business affairs of the household. All the inmates are free to pursue their ordinary callings.

Questions have frequently been asked about the disinfection of the patients' spoons, crockery, etc., as these are such a trouble in an ordinary household. There is no disinfection or in any way a keeping of these apart. They are all collected together, washed in the ordinary way, and served out indiscriminately on the next occasion.

The hair is never cut short, neither does it fall afterwards. All the toys and books are frequently exchanged with the healthy children, and are not destroyed afterwards.

Dr. Goodall, in the *Medical Annual* 1910, quotes that in a ward were 22 children and 4 mothers with 4 babies all under four months; that scarlet fever broke out, that every one of the 22 children and 1 of the mothers were attacked, but none of the babies.

With this contrast the following experience. A child of 7 years of age, in one of Dr. Barnardo's Homes, on the fourth day after exposure to infection, developed scarlet fever in February, 1910. In the same room were 24 children under four years of age. They were in the same room all the time, except when out at play. After the tenth day the child was out of bed and mingled freely with the others in all kinds of games. During the whole time they played freely with the child, and even when in bed the toys were freely exchanged. Altogether during the six weeks she mingled freely with 128 children, of whom sixty were under seven years of age. Many medical men saw the case at various stages of the disease. Several examined the case about the eighth day, while some sixteen of the children crowded between the examiners and leaned over the bed, looking as if they understood it all. The seniors looked at one another, smiled, and said, "After this it is only a question of time till isolation ceases." For there was no infection or complication.

An outbreak occurred in the Cottage Home, Kingstown, in February, 1910. Fifty-one children were in residence; only 1 had previously had scarlet fever. These, except 4, were under 7 years of age; 3 were removed to the isolation hospital; 1 of them there suffered with glands. The disease spread rapidly until some 24 cases were laid up. On the fifteenth day the method of treatment I have used was adopted. On the eighteenth all the children mingled together; yet the infection ceased. Dr. Burnet Smith, the honorary medical attendant, wrote me as follows:

> When I undertook your method of treatment I was inclined to be doubtful; but now I can say I am more than pleased with the result. There is no doubt in my mind that the method of treatment as recommended by you not only prevents the infection, but complications.

Could any one more aptly parallel these outbreaks? Could the annals of medicine afford a greater contrast in the results than that given by my reviewer, and the case in one of Dr. Barnardo's Homes and those at Kingstown? Surely my reviewer by next year, having read all the facts, will find that the treatment is, after all, of some value.

In the Barnardo institutions under my care there are 4 cases at the present time. They have been seen by other medical men, and I extend a cordial invitation to any member of the Association or the medical profession to visit the hospital of Dr. Barnardo's Homes at Stepney Causeway on Friday next, between 2 and 4 o'clock, where I would gladly meet them and show them the cases. Two are in the hospital of the Homes; one has been since the first day in the surgical ward with some 15 other cases; he is between 2 hernia cases who were operated on two days after his admission; another is in a home with some 50 others, and since the tenth day all have been together. The other case was with 5 others for ten days, and she has since been with 13.

One of the cases I have referred to was not properly treated until the fourth day. By that time the throat was in a very bad condition. The whole system and course of the disease, even to a heavy septic secondary rash, with bronchial attack, most severe vomiting, diarrhoea, and dysentery, showed the virulence of the secondary infection. Yet the symptoms gradually subsided, and the patient is doing well. As soon as she could be moved, the patient was taken to our hospital in a special ambulance. The inspector visited the house and demanded of the matron the reason for the removal; he said, farther, "No more cases, if they occur, will be allowed to remain, remember!" A case from the same district appears in my plea.

Several medical men have asked me to see some of their children through by this method. One of these adopted the same with a private patient. On the eighth day, when he visited, he found the sanitary inspector had called and insisted on the removal of the child. I know not what his feelings then were, nor what he felt when, four days after the child's return from isolation, another brother was down with scarlet fever.

Private medical men have suffered a grievous wrong in connexion with this matter. When they had arranged for this method of treatment being carried out in the patient's house, even when a nurse was carrying out the treatment, on their next visit they have found that the sanitary authority has swooped down, like an eagle on its prey, and insisted on carrying off the patient to the isolation hospital.

To show the efficacy of this method in the poorest and most overcrowed homes, I give the following. A well-known medical officer of health wrote:

> A friend of mine, a doctor in this city, tried your method in a case. He did not want to have the child removed on account of the mother's condition. There were six children and parents in a small house of two rooms. He took the risk of not notifying the case, and carried out your method, personally. Neither infection nor complication occurred. You must not give names, as we may all get into trouble.

In a poor house a medical man was carrying out this method of treatment. The mother was expecting in ten days. The baby arrived on the fourth day. I have known of seven such cases within a week of the child's attack; yet there was no trouble. Could the ingenuity of man devise a harder test, for this is a terrible dread in such cases?

I would most strongly impress on all medical men the great care that is needed in carrying out the treatment, and also the necessity for commencing the treatment early; for, should a secondary infection occur, which appears so apt to attack the weakened tonsils, then complications of any kind may arise. It has been suggested that nurses alone could carry all this out. Decidedly no! They must be under the care of a medical attendant whose is the responsibility and whose directions must be implicitly followed.

A medical officer of health was greatly struck by the fact that we have no isolation hospital or building of any kind to serve this purpose. For some twenty years a number of cases of measles or scarlet fever has been unknown. The only exception has been described in my book, where the cause is also given. Measles will, I trust, soon be in line with the experiences I have given of scarlet fever.

My aim has, I trust, been attained. What can a meeting called for opposing this method with its undeniable facts do? Simply dismiss. No longer may we read by an able author that I would have attained the same results without treatment. This in spite of his having seen at his own request fresh cases, red as a boiled lobster, with characteristic tongue and throat; in spite of having examined for enlarged glands and other complications some six peeling children as they lay side by side with the most serious operation cases, as reported in my book; in spite of having seen and handled all this in the spring of 1909, yet he does not condescend to mention it in his review of 1910, neither did he tell me that I would have had the same results without any treatment.

Never again, I trust, will we hear of cases being kept for three months, and longer, for ear trouble. For although I have had no such case arise, in chronic cases they have been treated in the ordinary way of this method without any bad effect.

I trust that our friends and our JOURNAL will no longer stand aloof, but speedily find in the treatment all the advantages that a reviewer did when he said, "I endorse every word of it, for I have tried it," and put their shoulder, with others, nobly and loyally to help us onward in this altogether revolutionary, but most brotherly and Christ-like work, for our suffering children. I say for our suffering children, for having shown both in my pleas and to-day, not only from my own, but from the experience of others as well, how harmless scarlet fever is when treated early by this method, surely we can see our way, as I and others have so strongly advocated, not to close our isolation hospitals, but to make them health-giving centres for the failing children before they become seriously ill. This will render a service of untold benefit for our future men and women—the fathers and mothers of future England.

DISCUSSION.

Dr. NASH (Wimbledon) said he had had the opportunity recently of seeing the cases Dr. Milne spoke of. It certainly undermined all ordinary ideas when one saw a case of scarlet fever peeling profusely in a general surgical ward, playing without any restriction with its bedfellows. Municipal authorities would want to know more about the treatment before spending large sums on extending isolation hospitals.

Dr. BROWN (M.O.H. Bacup) said after nearly thirty years' experience of the treatment of scarlet fever by the inunction of carbolized oil over the body, daily, with a warm bath the following morning, with the burning of a small quantity of brimstone two or three times a day, it was rarely that a second case occurred. The advantages were: that the patient's skin was soothed and he slept better: that early peeling resulted; duration of the illness lessened; there was rarely any complication. In his district they had no isolation hospital, and their results would bear favourable comparison with those where isolation was adopted. This important question needed consideration by the Local Government Board and the sanitary authorities. His own experience confirmed to some extent the views of Dr. Milne, and if these were correct, and his plan carried with it all the advantages enumerated, it ought to be adopted. It was generally believed that cases treated in the hospitals were liable to greater severity—by the fact of so many being treated in one place, then that was a great point in favour of Dr. Milne's suggestion.

Dr. MCWALTER (Dublin) said the cost of isolation hospitals had been calculated at three millions sterling, and most of them had come to the conclusion that the isolation treatment of scarlet fever was a failure. He was strongly in favour of Dr. Milne's treatment.

Dr. H. BEALE COLLINS (M.O.H. Kingston-on-Thames) said that he had seen Dr. Milne's cases. He found that on one occasion a boy who had not been visited by the doctor escaped to an adjoining ward. He was found later on to be suffering from scarlet fever, and afterwards three or four others in the ward to which he escaped also developed scarlet fever. Thus the only untreated case was the only case by which the disease was spread. Scarlet fever at present seemed to show very slight infectivity, and the death-rate for this disease was less in Kingston-on-Thames, where there was no isolation hospital, than in the adjoining towns of Richmond and Wimbledon, with large isolation hospitals.

THE TUBERCULOSIS PROBLEM IN COUNTY AREAS.

By A. H. HOGARTH, M.B., B.Ch.Oxon.,
County Medical Officer of Health, Buckinghamshire.

OF far greater importance than the annual death-rate, or the total number of deaths from phthisis of persons who should still be in their prime of life, is a point which is commonly ignored by sanitary officers, namely, the fact that every death recorded implies many years of incapacity from work and uselessness to the community.

What practical steps can be taken to face the tuberculosis problem in county areas? The stock answer is that measures (*a*) educational, (*b*) preventive, (*c*) curative, may be adopted.

(*a*) *Educational measures* are of two kinds: (1) In the school, and (2) in the home. The school aspect of the tuberculosis problem is of the utmost importance, but would furnish sufficient material for a separate paper and discussion, and therefore must be passed over. But the educational treatment of consumptives as well as of susceptible persons, and even of the apparently healthy themselves, is necessary, and can be carried out in the home. And who can undertake this duty better than *local medical practitioners* (the family doctor)? It is, or should be, the function of all medical men to prevent disease, and the British Medical Association must see that general practitioners are in the near future paid for their services to the State as well as to the individual.

In a lesser degree educational treatment of consumptives in their homes can be undertaken by sanitary officials, medical officers of health, district nurses, and health visitors. It was with the object of enlisting the sympathies of local medical men in this work of prevention that the Bucks County Council issued a simply written pamphlet on tuberculosis, copies of which are now submitted. The pamphlet has been widely circulated through the county, partly through the agency of local medical men, and partly through district visitors, sanitary inspectors, school teachers, and others.

It may be regarded as a preliminary step in a campaign to educate not only consumptives and their families, but also *public opinion* on three fundamental points in the treatment of consumption, namely, diet, rest, and fresh air, each of which is equally important, though, as a rule, fresh air and prevention of spitting is the only gospel that is commonly preached.

(*b*) With regard to *preventive measures* I do not propose to enter into any details, as we are for the most part in agreement as to their necessity. Nor is this the occasion to set on foot a discussion as to the advantages and disadvantages of notification. I incline to think that notification of phthisis can only be justified in those areas where definite practical steps have been taken for the treatment of all cases which are notified. Of what value is it to know that a "poor person" is consumptive unless something practical is done to help him? and what is the good of a medical officer of health trying to keep a "poor person" from infecting other members of his family if they are all short of food? The usual preventive measures—disinfection of premises, provision of spitting-cups, etc.—however important in themselves, are not the first or the most essential steps in the solution of the tuberculosis problem, and, if children are not taught the essentials of healthy living at school, pamphlets of instructions ought to be distributed indiscriminately to sick and healthy alike.

For these reasons I do not favour any system of voluntary or compulsory notification of tuberculosis until public opinion is much better educated as to the real nature of the problem to be solved. When adequate provision has been made for the treatment of early cases and for the segregation of advanced cases, then will be time enough for notification. Have not the Local Government Board put the cart before the horse?

The question of veterinary inspection of cattle and the elimination of tuberculosis from dairy cows is a technical public health problem which cannot fittingly be discussed to-day.

(*c*) *Curative Measures.* — If we are to solve this tuberculosis problem, it is deeds not words that are wanted, and the solution lies in undertaking forthwith in all districts some definite and practical measures for segregation and treatment. Here, of course, the financial aspect of the problem is the great stumbling-block, and it is for this reason I venture to submit some points for consideration. In rural counties, at all events, it will be more economical in the end, and more satisfactory in practice, to have recourse to some well-considered scheme of home treatment than to establish a county sanatorium. And if this is so, medical officers of health must look to the support of *local practitioners*. At present I cannot advise my County Council to establish a sanatorium, for the following reasons:

1. The results of sanatorium treatment in other counties and elsewhere are far from encouraging. Results only appear to be really satisfactory when the cases are very carefully selected.

2. Satisfactory administration does not appear to be easy in a county sanatorium.

3. The heavy expenses and outlay scarcely justify an experimental undertaking in this matter.

4. The after-treatment of consumptives is even of greater importance than the so-called "cure," and is not provided for at sanatoriums.

Early diagnosis is the first step towards curative treatment, and for this purpose the ready co-operation of general practitioners and the education of public opinion are essential factors. Surely money would at first be better spent on the establishment of county laboratories than of sanatoriums.

But is it not practicable to treat the vast majority of consumptives (at all events in rural counties) at their own homes and on strictly economical lines? I do not know the history of any such scheme, but I think Dr. A. E. Lyster, of Great Baddow, near Chelmsford, may be regarded for all practical purposes as the pioneer of the movement I wish to bring before your notice, and as I am trying to introduce his scheme into Buckinghamshire, I venture to describe it briefly.

Dr. Lyster has designed a skilfully-constructed shelter of wood and canvas, varying in size from 8 ft. by 8 ft. to 12 ft. by 12 ft. In its present form (which has been evolved as the outcome of ten years' experience) it has the following advantages over the ordinary hut or revolving wooden shelter:

1. It is altogether pervious to light and air.
2. By means of a system of canvas shutters or blinds, the shelter can be entirely opened on one side or on all sides, or it can be entirely closed. Obviously the shutters can be pulled up to windward and down to leeward. On cold nights, the whole shelter can be closed, and even then enough fresh air comes through the pervious canvas. It has stood the test of time. At least one shelter has been in constant use for seven years and they may all be regarded as storm and weather proof.
3. The shelter can be erected in any cottage garden or field and can be built to accommodate one or two patients.
4. The shelter can be used either for the isolation of advanced cases or for the curative treatment of early cases.

Dr. Lyster, being Poor Law Medical Officer of the Fourth District in the Chelmsford Union, has treated in such shelters nearly all the cases of consumption which have occurred in his district during the last ten years, and he is able to show a large percentage of recoveries. He also claims that he has practically freed his district from phthisis, and that now nearly all the patients occupying the shelters in his district either come from the other side of the county or from the metropolis.

The recovery-rate of patients treated in these shelters may or may not be better than elsewhere. I am not aware that Dr. Lyster makes that claim. A certain number of patients have died, but they have died in comparative comfort at their own homes *and in isolation*.

Ten years ago Dr. Lyster began by erecting a single shelter in a cottage garden. The idea was gradually taken up throughout his district of the Chelmsford Union. Then groups of shelters were established, and now Dr. Lyster has under his supervision a small colony of shelters for the simultaneous treatment of ten cases—a miniature sanatorium at which initial outlay and administrative expenditure are reduced to a minimum, and yet the three essentials—namely, (1) a sufficiency of suitable food, (2) adequate periods of rest, and (3) fresh air, are provided in abundance.

In Buckinghamshire I am first of all trying to educate public opinion in as many parts of the county as possible as to the practicability of treating consumptives in similar shelters at or near their own homes. Several of the local medical officers of health have begun to interest themselves in the scheme in its experimental stage; and through the agency of the County Nursing Association and its affiliated societies I am hoping that the idea will take root in many districts. As a scheme it is only semi-official in Buckinghamshire, and the shelters at first are to be supplied by private subscription. But the following procedure has been adopted:

1. Any patient so treated is to be under the care of a local medical man, or, if a Poor Law case, of the district medical officer.
2. The District Nursing Association makes itself responsible, through the district nurse, for the carrying out of the doctor's orders, and for the supervision of the patient and his environment.
3. The local medical officer of health (or the county medical officer of health) must be satisfied that precautions are taken for the adequate isolation of the patient in accordance with ordinary preventive measures.

So much for the general outline of the scheme. It is the general principle—namely, the home treatment of consumptives by local medical practitioners—that I wish to emphasize. Obviously, the details must be worked out to suit the convenience of individual authorities.

A similar scheme might well be adopted by Poor Law guardians and sanitary authorities throughout rural England, where there is no difficulty in securing sufficient open space for the erection of half a dozen shelters, each to house two patients. If such a colony is established in the grounds of a Poor Law infirmary, the administrative arrangements would naturally be part and parcel of Poor Law administration. But probably the better plan is to establish small colonies of ten or twelve patients in a field, and to employ (as Dr. Lyster has done) a man and his wife, who live in an adjoining cottage, and one assistant to look after the patients—that is, to do the catering, cooking, washing of clothes and scrubbing of shelters, to empty spittoons, slops, etc., to supply hot-water bottles, etc.

A few words as to cost. If single patients are treated at their own homes, the only outlay is the initial cost of the shelter, which might be provided either by private

subscription, by the sanitary authority, or by the board of guardians. If several patients are treated together in colonies, it should be possible to obtain the services of a cottager and his wife to do the catering and to undertake the general duties indicated above for £1 a week per head; and thereby local tradesmen are benefited.

At all events, whatever particular form of the Lyster system is adopted, obviously there must be enormous saving in bricks and mortar, as well as in the fees of architects and sanitary engineers.

It is also possible to follow up the scheme on a larger scale, and Dr. Lyster has worked out a plan for a small sanatorium (of 100 beds) constructed on these lines, with a brick building for the administrative block, at a total cost of £60 a bed, whereas the ordinary sanatorium of the past ranges from £100 to £200 a bed, and the cost of administration and upkeep is correspondingly heavy.

I have purposely confined my remarks as far as possible to general principles. There will be no difficulty in adding refinements such as the provision of suitable exercise for patients in the form of garden and farm occupations.

PART-TIME MEDICAL OFFICERS OF HEALTH.

By F. E. FREMANTLE, M.A., B.M., M.Ch.Oxon., F.R.C.P., F.R.C.S., D.P.H.,
County Medical Officer of Health for Herts.

IN considering the relative parts played by medical men as part-time and whole-time officers of health, it is of interest to consider the history of an appointment which has been largely responsible for the diminution of the death-rate in England and Wales from 23.7 per 1,000 in 1864 to 14.5 in 1909, for the saving, that is, in 1909 alone, of 325,000 lives in the population.

The history of sanitary affairs in England down to 1897 is written in the classical pages of the late Sir John Simon's *English Sanitary Institutions*, a book which should be studied for the sake both of its interest and importance by every officer and student of the public health.

The origin of the appointment of medical officers of health lies in the establishment by Government, in the reign of King William IV in 1831, of a consultative Board of Health, consisting of the President of the Royal College of Physicians (Sir Henry Halford) as Chairman, with four Fellows of the College, the Superintendent-General of Quarantine, the Director-General of the Army Medical Department, the Medical Commissioner of the Victualling Office, and two non-medical civil servants—the Comptroller of the Navy and the Deputy Chairman of the Board of Customs—with a paid medical secretary. The occasion of their appointment was the first outbreak of Asiatic cholera in Europe, which touched England in 1831–3, and was the subject of special inquiries by a medical inspector under the board, Dr. McCann of Newcastle. In 1834 Mr. Edwin Chadwick was made Secretary of the new Poor Law Commission, which in 1838 reported to the Home Secretary, Lord John Russell, the need of powers for the prevention of

> charges on the poor rates, which are caused by nuisances by which contagion is generated and persons are reduced to destitution.

In 1839 the House of Lords voted an inquiry, the results of which were published in three volumes in 1842, one of which, entitled the "General Report on the Sanitary Condition of the Labouring Population of Great Britain," was the work of Mr. Chadwick. This report included a recommendation,

> That for the prevention of disease . . . it would be economy to appoint a district medical officer of health independent of private practice, and with the securities of special qualifications and responsibilities to initiate sanitary measures and reclaim the execution of the law.

In 1847 the Town Council of Liverpool, by power of a private act, first appointed a medical officer of health in the person of Dr. W. H. Duncan. In 1848, under the City Sewers Act of that year, the Corporation of the City of London appointed Mr. John Simon, Surgeon of St. Thomas's Hospital, as their first medical officer of health. In 1855 a small bill gave the General Board of Health power to appoint a medical officer, and Mr. John Simon was so appointed. The Metropolitan Management Act of 1855 required the fixed appointment of medical officers of health in all districts of the metropolis, and all 48 appointments were made by the first quarter of 1856. The Royal Commission of 1869-71 recommended the compulsory appointment of medical officers of health by every local authority; Mr. Stansfield, in his Public Health Act of 1872, provided for such appointments to be made by every local authority; by 1873 three-fourths of the authorities had made their appointments, 1,104 out of 1,468.

Mr. Chadwick's original suggestion was for officers "independent of private practice." The first legislation on the subject looked on the officer of health as by qualification an expert specialist, and by duty a public accuser and adviser. But the Royal Commission of 1869–71 proposed that each local sanitary authority should have at least one medical officer of health, his appointment to be subject to the veto, and his removal subject to the sanction of the central authority; that commonly, at least in rural areas, each district medical officer under the Poor Law should be the officer of health for his own area. This manifestly ignored the earlier proposals with regard to officers of health, both as to their qualifications and their duties. But in 1871 the medical labour market, Sir John Simon tells us, was not ready to supply so large a quantity of the special material required; and Mr. Goschen, therefore, in the first bill introduced by the Government to give effect to the views of the Royal Commission, proposed only to give power to local authorities of parishes, unions, or counties to appoint officers. Mr. Stansfield, however, in succeeding Mr. Goschen as President of the Poor Law Board, preferred universality to quality, made the appointments compulsory, and obtained a vote of £100,000 for the half-payment from the Exchequer of the salaries, specially favouring the appointment of Poor Law medical officers as health officers for their areas, and only as an amendment giving power for the same officer to be appointed for two or more sanitary districts. The result shown in the return in July, 1873, was that out of 1,468 districts 1,104 had made appointments. Their classification may be compared with that of medical officers of health in 1910, the figures for which have been kindly supplied to me by Dr. Crookshank, no official information being available.

	Districts.	1873.	1910 (for 1,699 districts).
Whole-time officers for combined districts	108 Urban 142 Rural	35	75
Whole-time officers for single districts	16 Urban 7 Rural	23	250
Part-time officers for combined districts	128 (not specified)	29	25
Part-time officers for single districts	437 Urban 266 Rural	703	1,100
Totals	1,104	790	1,450

Thus in 1873 there were 378 districts in combination; in 1909, according to the annual report of the Local Government Board for 1908–9, there are 244; in 1873 there were 726 single districts (453 urban, 273 rural); in 1909 there are 1,455 (906 urban, 506 rural, and 43 port).

In 250 out of the 453 uncombined urban districts the average salary in 1873 was £14 10s., and no salary was over £25; of the 273 uncombined rural districts, 81 had among them 360 health officers with an average salary of £21 10s.; while some officers were given only £2 or £3 per annum, or no salary at all. No wonder the Local Government Board adopted a policy of pressing for whole-time appointments wherever possible, although the legal provision for combined appointments was most defective, and there was no sort of safeguard for the reasonable stability of the joint appointments. The Board held that all authorities should aim, either separately or in combination, at the appointment of high-class officers, specially skilled and adequately salaried, who should give their whole time to the public service, and for whom the Poor Law officers should act as assistants. The officership of health, in certain aspects of the work, was an office for the redress of wrongs; it was to that extent judicial, and required an impartiality not

easily compatible with the position of a private medical practitioner, whose patients and patrons might be the owners of property which his duties as an officer of health should lead him to injure or condemn. It seemed, therefore, advisable that officers of health should be exclusively engaged in public services, should hold office only during good behaviour, and should be protected in their office against the adverse effects of private resentment.

How have the last thirty-seven years borne out these conclusions? In the first place, as regards the supply of material for whole-time public health appointments, although the number of diplomates in public health increases every year, the prospects of the whole-time service are insufficient to attract a large number of the best applicants. Even the minimum salary of £500 a year is not strictly maintained; the highest salary is only £1,500 a year; there are not a dozen appointments reaching £1,000 a year; there is still no security of tenure; there are few by-paths by which to add to the salary. We hear, therefore, this year of a well-known medical officer of health resigning his position and entering into private practice: the ablest men at the hospitals seldom choose public health work for their career; and even now, out of 1,450 medical officers of health in England and Wales and Scotland, only 325 give their whole time to their official duties, and 1,125 are part-timers. Whether we wish it or not, the sanitary service must for a long time to come be staffed by part-timers, unless salaries for whole-time appointments be raised so as to give every average member of the service a reasonable prospect of realizing £700 a year with pension, the abler men £1,000, and the best men £2,000 or £3,000.

In case no such provision is made in the near future, let us briefly summarize the points in favour of the experienced, tactful, and conscientious holder of a part-time appointment:

1. He is in privileged relation, as their family doctor, to a section of the population in his district. In direct touch with the homes and lives of the poor, he knows best what is defective, what improvements are practicable. In direct touch with squire, dairyman, or butcher, he can often get improvements effected by advice and influence, when statutory action may be impossible, inadvisable, or ineffective. He is in far closer daily and lifelong touch with his district than is the whole-time officer with most parts of his combined sanitary district.

2. His main income is usually derived from private practice; his official salary repays him but scantily for the work, friction, and responsibility which his appointment entails. He is not, therefore, in the main dependent on his official salary for his livelihood; indeed, he may actually gain in reputation, as well as in leisure and private practice, if deprived of his office on account of official action conscientiously undertaken. The whole-time officer, on the other hand, if dismissed, joins the ranks of the unemployed, and will find it most difficult to secure a fresh office, even success involving an uprooting of his home and friendships. It is not the part-time officer who is most influenced by the wishes of the district council and their advisers and electors.

3. The medical practitioner, engaged in clinical as well as preventive work, is constantly thinking out the pathology of disease and the limitation of physiological function, thereby freshening his mind for the work of preventive medicine, questioning its axioms and revising its methods. The divorce, indeed, of preventive from clinical medicine is a serious and fundamental defect in the ideal of whole-time appointments, a defect emphasized by the outcry against a recent proposal to remove fever hospitals from the sphere of the appointment. In a discussion as to the title of medical officer of health, Dr. Newsholme remarked a few years ago that he valued the titular prefix of "medical," as he valued the clinical part of his duties. Public health, indeed, is not a speciality in medicine; it includes the whole of medicine, both preventive and curative, in its relation to the State. As for fevers, so for the far larger range of general medical practice, it concerns itself with every ailment, including many for which a system of prevention has yet to be worked out. And the very change of work brings relief to the part-time medical officer from the drudgery of private clinical practice, and gives freshness to his energies.

4. To the medical profession as a whole it is greatly to their advantage that such plums as are available should remain for distribution amongst them. Professional feeling usually prevents a part-time medical officer of health from taking unfair advantage of his position for the benefit of his private practice; and as a general practitioner himself he has more in common with his brother practitioners than has the whole-time specialist.

The fact remains that the country must either pay for establishing whole-time appointments on a sound financial footing or else must depend on part-time officers for a large place in the sanitary system; that in the latter case a closer co-ordination and supervision of their work is required than can be provided by the Local Government Board; that this might well be effected, as Mr. Goschen provided in his bill in 1871, by giving the county councils and county medical officers of health proper responsibility as sole and essential intermediaries for all purposes between the Board and the local authorities; that the medical profession and the General Medical Council should insist on the better education and qualification of all medical men in public health work, and should press for proper terms and security alike for the part-time as for the whole-time officers.

Medical inspection of school children and the proposals for Poor Law reform give a favourable opportunity for considering afresh the relation of preventive and curative medical work in the public service; and I trust the result may be to retain the localization of the work within limited areas, to promote the reunion of the three departments of State medicine, and to make every medical man, paid by the rates, an assistant medical officer of health for the houses or institutions which he serves.

I should like to see every district medical officer of health serve an apprenticeship as district medical officer under the Poor Law; I should like Parliament and the Local Government Board to throw the whole responsibility for district sanitation in the counties on the county councils, in the same way as the brigadier in military organization is held responsible for every unit in his command.

I would submit that it is character which tells; and that a medical man with tact, influence, and geniality will do more good for the public health as a part-time medical officer of health than will a whole-time officer of inferior personal merits. The appointment, now compulsory, of county medical officers of health, independent of private practice, gives sufficient reason for revising the policy of the Local Government Board, which in thirty-eight years has failed to attain its object in the matter of district appointments. Where, as I know in Hertfordshire, men of quality and good standing are appointed to the districts, and where their work is properly co ordinated by conference, correspondence, weekly circulars, and personal supervision, the only thing required is security of tenure, to make it of quite minor importance whether whole-timers or part-timers are appointed for the district work.

I venture, therefore, to conclude—as, I think, will be generally agreed—that part-time medical officers of health have in the past played a most important part in the advancement of public health; that their special clinical experience, their personal intimacy with patients, and their comparative financial independence, give them exceptional opportunities for securing acceptance of their views; and that the interests of public health will be best promoted by securing a better education of all medical men in public health work than in making any rule to separate preventive from curative work in the activities of the medical profession.

DISCUSSION ON THE REFORM OF DEATH CERTIFICATION.

OPENING PAPER.

By Sir WILLIAM COLLINS, M.P., M.D.Lond., F.R.C.S.Eng.

IN opening the discussion, Sir William Collins said that he had paid a good deal of attention to the subject of death certification since 1893, when he was Chairman of the Public Control Committee of the London County Council. He considered the state of the law in England to be most unsatisfactory, and positively dangerous. He had been spokesman for three deputations to three successive

Lord Chancellors to urge reforms, and received plenty of official sympathy, which was at once so helpless and so hopeless. But nothing had been done.

Lord Ilkeston's committee of 1893 had shown that a death certificate did not even purport to certify the fact of death, that the stillborn were unrecognized by law, and that liveborn were not improbably dealt with as stillborn. Moreover, registrars of death were often ill qualified to decide which cases needed further investigation by a coroner. The more recent committee of Sir Mackenzie Chalmers had disclosed the inefficiency and out-of-date character of "crowner's quest law." There was no guarantee that a coroner had any knowledge of the law of evidence; the nearest medical man was not always the best to make a *post-mortem* examination, which might result in a charge of homicide. The coroner's officer was unknown to the law, and had in some cases been known to be corrupt. There was no power to order a *post-mortem* examination unless an inquest was to follow, whereas such examination might often render a subsequent inquest superfluous. Inquiry at present was often precise when not required, and when most required sometimes there was often none at all. There was no power to pension coroners when superannuated, and medical men attached to hospitals were precluded from receiving inquest fees. The speaker, having in vain invited the Home Office to introduce the overdue legislation, had introduced a bill during the current session to remove some of these more glaring defects and anomalies in the law. He regarded it rather as a *ballon d'essai*, and would welcome any criticism from an audience so well qualified as that to offer advice and suggestions. He considered that a coroner should have some knowledge of the law of evidence, and advocated the appointment of medical investigators into the causes of death in doubtful cases.

DISCUSSION.

The Right Hon. Dr. FARQUHARSON said that as an old parliamentary hand he recognized the difficulty of getting anything in the way of legislation through the House of Commons by a private member, especially if a medical man; but if Lord Ilkeston and Sir William Collins would keep pegging away in both Houses, they would in time remove the scandal of many people being smuggled into their graves without proper certification, and meetings such as that would aid in forming public opinion on the subject. He especially regretted the obstruction to the progress of cremation caused by the present loose system of death certification and registration.

Dr. J. BARKER SMITH (London) considered that the qualifications of a coroner were of less importance than the terms used in his court. For a jury instructed by the coroner to bring in a verdict that a suicide was out of his mind should not be allowed, even for conventional reasons. The term *mind* should not be used in medicine; it should be replaced by the term *brain*, the former being a general and legal term rather than a medical one. He was in favour of medical coroners.

Dr. JACKSON (Croydon) said that the confused state of coroners' law, and the different practice as to death certification in different parts of the country, made legislation necessary, and he heartily welcomed Sir William Collins's bill. But there seemed to be a slur on the profession when it was proposed that a barrister or solicitor with no medical knowledge whatever might be appointed coroner, but that a doctor should not be appointed without a legal diploma. Every inquest was to ascertain the medical cause of death, whereas legal questions only occasionally occurred, and could then be dealt with in the higher courts. He advocated pensions for part-time as well as for whole-time coroners. He also thought medical men should be paid for death certificates, and for notifying births to the medical officer of health.

Dr. DRURY (Halifax) regarded it as somewhat of a scandal that medical men should be suspect in Parliament, and hoped that Sir William Collins and other medical members would be able to remove the mistaken view in the Lobby that medical men were "out for fees." Reform in death certification was urgently needed, and the question of fees was one which should be clearly insisted on without any improper reflections being made on the medical profession. He objected to certificates of death, which were at present obtained from the profession for nothing, being sold to the public.

Dr. MCWALTER (Dublin) spoke in favour of the appointment of medical men as coroners.

Mr. COTES-PREEDY (London), speaking as a member of the medical profession and also a member of the Bar, raised the question as to the evidence given before coroners. At present the majority of testimony given was hearsay and not legal evidence in any court of justice. The power of coroners to commit for trial for murder or manslaughter should be abolished. If an inquest was a medical inquiry, then medical men were necessary, but if a legal inquiry, then knowledge of law was desirable and only legal evidence should be admitted.

Dr. BYGOTT (Barking) agreed with all Sir William Collins's proposals. He thought that death certificates should be decently carried or transmitted, as they were often used for begging purposes, or for the information of insurance agents and others. A coroner should be a specialist doing special judicial work, and be adequately trained and experienced. The qualification should not simply consist in his being a genial town councillor. The coroner should be regarded as a public health official, intimately related to the sanitary department. The deputy coroner should be appointed by the same authority as the coroner, and receive a proper salary. As an instance of the absurdity of the present system of death certification, Dr. Bygott mentioned a case which had not been attended by a medical man and no inquest had been held, but was returned by the Registrar as a death from membranous croup, which he had selected from a list of diseases more or less at random, after talking the matter over with the child's father.

Replying on the discussion, Sir WILLIAM COLLINS said that the ideal coroner would be a man qualified both in law and medicine. He had brought in a bill for pensioning coroners, and he also advocated paying fees for death certificates. He had a special clause in his bill excluding town councillors from being appointed coroners for five years after being on the town council.

DISCUSSION ON TOWN PLANNING IN RELATION TO PUBLIC HEALTH.

OPENING PAPER.

By JOHN ROBERTSON, M.D., B.Sc.Edin.,
Medical Officer of Health, Birmingham.

THE objects in view in making a town plan under the Housing, Town Planning, etc., Act, 1909, are stated to be "the securing proper sanitary conditions, amenity, and convenience" in connexion with the laying out and use of land.

I feel rather strongly that the popular conception of what can be accomplished by town planning is at present somewhat limited. It is, for instance, as necessary to apply the process to the existing parts of a town as it is to the yet undeveloped portions. But while this is so, it is obvious that in most instances our energy must be expended to begin with in insuring that those parts of the town which are undeveloped, and to which town planning can be most easily applied, shall receive our first attention. It is equally obvious that if the town as a whole is to be considered in regard to its sanitary conditions, amenity, and convenience, it is necessary to have what exists in so many German towns, namely, a scheme of projected improvements for the central area as well as for the growing edge.

The expense and difficulties with which we are face to face with reference to the planning of a central area are so great that it is obvious our chance of really satisfactory work is limited. If, however, the suburban areas are to be made convenient of access, the roads in the central areas

may have to be widened. It is obvious, too, that the amenity of the town will depend not only on its residential quarters, but on its central business area. It is therefore desirable, in my opinion, in attacking the subject of town planning in any large town to have a provisional scheme for dealing with the central areas. I have mentioned this necessity for dealing with the central area in order that I may omit any further reference to it without being thought to neglect so important an aspect of the problem.

Town planning, as the name implies, is a process restricted to towns and their suburbs. The need for the process has arisen from the fact that towns have grown within the past fifty years to such a size that the dwellers in the centre are now locked in by suburban areas, and cannot easily obtain the space necessary for healthy existence, while apparently the process is still going on, so that our existing suburbs may in time be similarly confined.

The process of town planning is apparently a very ancient one. To some extent it has been applied to Continental towns within the past century with more or less success, but so far as this country is concerned we have devoted our attention rather to the sanitation of the dwelling-house itself than to the development of the town from a public health point of view. The credit is certainly due to Mr. Horsfall of bringing forcibly to our notice what has been and is being done elsewhere by his book, *The Improvement of the Dwellings and Surroundings of the People*, published in 1904. I am quite aware that some excellent examples of town planning of recent date are to be seen in this country, particularly where large areas of land or even whole towns are under one ownership, so far as the land is concerned. The example which one sees in the New Town district of Edinburgh appears not to command the attention it deserves. But for the excellence of its town planning, Edinburgh would lose its chief attraction to its citizens. It would lose also much of its inspiration and healthiness but for the foresight and care displayed in the town plan. Eastbourne, Cheltenham, and many other towns show fine examples of town planning, so that we must not treat the subject as one that has never been considered before in our own country.

The example of the beautiful German towns is so frequently hurled at us, that we have been obliged to study their system of town planning and the conditions under which their people are housed. I would like to say here that it is extremely difficult to compare the conditions under which German towns have grown with those existing in England. The economic conditions and those pertaining to land tenure have altered the conditions of town development to such an extent that in the case of many of the German towns barrack buildings only are possible, and instead of gardens extra width has been added to tree-planted streets. In the towns land is so expensive that it is impossible to allot space for playing fields or parks where young people and children can roam over the grass and play healthful games. One has no hesitation in saying that the general conditions of life ought to be in England incomparably more healthy than in German towns. With our relatively cheap land making it possible to build cottages and to set aside playing fields, we have something which I think all will agree is better than the most elegantly built barrack buildings and artistically planted streets.

In studying the subject under discussion it is desirable to leave out of consideration exceptional towns. London, for example, cannot reasonably be classed with other towns in this country, so far as town planning is concerned, and similarly many other capitals have conditions which are peculiar to themselves.

1. The first proposition which I desire to make as one of the most important aspects of town planning is the necessity for distributing the population over greater areas than at present. This does not mean that I would advocate an attempt being made to return the people to the land, because I think that, except for relatively a small proportion, there is no real inducement. Man is by nature gregarious, and I think must always prefer the better wages and conditions of the town. While this is so, however, I believe that a most widespread and pernicious influence is at work in towns which it is at present very difficult to estimate statistically, but which is summed up in the expression "urbanization of the people."

It must be borne in mind that up to the present towns have been attracting so large a proportion of the best of the rural population that the effect of urbanization is not so apparent as it will become later. I believe that the condition of urbanization of the people is almost entirely due to want of contact with natural conditions. Our urban population is living under unnatural conditions, and these are telling on the population in the direction of lowered birth-rate, inferior physique of the dwellers in the central areas of the town, and probably also as far as those mental qualities are concerned which made this country great in past times. In nearly every large city in this country the children who live in the central areas cannot of their own free will get into really good and healthy playing fields, and the adults in these areas are deprived of that contact with healthy open-air conditions which are, I believe, absolutely essential for the mass of the people. These people live in an atmosphere of soot and sulphurous acid, their constant look-out is on soot-begrimed brick walls, and, while their homes may be dry and sanitary, they have not the means of obtaining that rest and recreation which is necessary for the strength of the nation.

There is at present some danger that the fascinating new science of eugenics may lead us astray. From contact with the dwellers in our towns I am sure that, while heredity undoubtedly plays an important part in race destiny, yet environment does play almost as important a part in causing the decay which is going on among the population residing in the centre of our large towns. I ought, perhaps, to point out that the migration from the country to the towns which has been going on will almost certainly lessen, and that therefore the effect of this invasion of healthy stock will cease and the resulting urbanization of the people will become more apparent.

Feeling strongly as I do on the necessity for distributing the people in towns so as to give them greater facilities for fresh air and proper recreation, I look to limiting the number of houses per acre as one of the most important results of town planning. I believe that experience alone will determine what is a sufficient number of houses per acre. It is probable that it may be perfectly safe to erect a very considerable number of houses on a particular acre of ground, provided that on adjoining acres the requisite recreation grounds and playing fields are provided. Obviously such a limit will only affect small house property, because the conditions which now obtain in our villa districts are, so far as area and means of recreation are concerned, sufficient in every respect. My own view is that it will probably be found desirable to limit the number of small cottages to an average of ten or twelve per acre instead of over forty, as at present permitted by most of the by-laws now in existence.

Any such limitation, however, must be accompanied by other conditions, otherwise it would not be a sound economic proposition. At the present time it is probable that very few builders would care to undertake a scheme with such a limitation. We have many areas where such a limitation applies, but in most instances the buildings have been erected by persons or societies having high philanthropic ideals. Such examples as we possess do not at present cater for that most important class of the community, the unskilled labourer. Until his financial position is better it will probably be found desirable to give him a very little space to his cottage in the form of a self-contained yard, but a much larger space in the form of common recreation grounds, playing fields, etc.

Twelve cottages and the necessary playing fields to an acre cannot be provided unless the land is cheap, and unless the roads are to be constructed on more economic lines than at present and the means of transit are improved. Fast and cheap means of transit by electric trams, railways, etc., is essential, and for the road traffic it is desirable that the main roads, which I will call traffic roads, should be wide and tree-planted.

But what I most want to draw attention to is the necessity of cheapening the ordinary residential road. So long as the cottages on either side of such a road are sufficiently separated and provision is made for traffic roads, there is no occasion for the wide carriage-way which one sees everywhere in those suburban districts that are occupied by artisan cottages. Probably an 18 ft.

carriage-way, with trees on alternate edges and a foot-walk on one or both sides, is all that is required, the extra space being thrown into front gardens or grass margins to the carriage-way. The effect of such narrowing of the carriage-way is greatly to cheapen the cost of estate development, at the same time reducing the cost of the upkeep of the roads, and, by preventing them becoming traffic roads, ensuring the creation of less dust and noise.

A great many modifications of this road question are possible; but I have thought that in the present discussion it was not desirable to detail them, even if I had the qualifications of a surveyor to do so.

It is possible also to arrange that certain roads, which when laid out are obviously not required for traffic purposes, may at a future date be widened so that they may become traffic roads.

With wide main roads the present limit of our electrical tramway systems is about 4 miles from the centre of the town—that is to say, the majority of artisans cannot conveniently travel further than 4 miles for business purposes. It might, however, be possible in the future to increase this range, but from what I shall deal with in the next heading I do not think that it is necessary to provide for the residence of artisans at any much greater distance than 4 miles from the centre.

As to the land difficulty, I would say that it is likely from existing legislation to put itself right, as indeed it has continued to do for a great many years in England, where the cost of land in the suburbs is probably ten times less than it is in the case of German towns.

It may be argued that such a limitation of houses as I think necessary is uncalled for, in view of the evidence which we have of the healthy condition of the inhabitants of many of the block buildings in London and other towns, but I feel that the statistics of these buildings are special and not applicable to the conditions of the whole town. Similarly, it may be alleged that the experience of the Scottish flatted towns and the numerous Continental flatted towns does not warrant our spreading the population. My answer is that I do not think that the true effect of urbanization is yet evident, except to those who make special inquiry. In the case of flatted towns the fact that no child under 5 years of age can get into the open air except when taken down a long flight of steps by its mother or some other person, and that when it arrives at the bottom of such steps its recreation ground is a paved street, and also that no older child can, except by a lucky coincidence, get into a playing field, appears to me to condemn the system of flats.

Somewhat similar conditions apply to the by-law houses of the present day for artisans, where no open spaces are provided and no playing fields are arranged for. The value of open air at all ages is not yet appreciated, except by those of us who have practical experience of the effect of such open air in the cure and the prevention of disease. Those of us who are actively engaged in the campaign against tuberculosis realize more than ever the value of the open air as distinguished from even the air inside well-ventilated rooms. It is in my opinion necessary to provide in the future that every town dweller shall have so good an opportunity of being in the open air that many of the diseases that we now associate with towns will be either eradicated or very largely diminished.

2. I have already indicated that in addition to the mere limitation of houses it will be necessary to obtain recreation grounds and playing fields. Perhaps one of the most obvious defects in the town planning which we all admire so much in the beautiful German towns is the absence of recreation grounds. I think it will probably be somewhat difficult at the present time to suggest a standard of accommodation, but in the future it may be possible to arrange an acreage per 10 000 of the population. Probably also certain further legislation is needed as to compulsory purchase of such areas.

3. Another aspect of town planning, which I think is probably lost sight of, is that relating to the facilities which should be given to manufacturers in towns. Hitherto manufacturers have had to look after themselves, and their works are scattered. If, however, such an idea as I have outlined is carried out with a view of preventing the establishment of noxious trades in residential areas, then it will be necessary to set aside areas for manufacturing processes, in which provision should be made for railways, canals, special water supplies, electric power, gas for manufacturing purposes, and many other such facilities.

It is obvious that such areas can only be economically worked provided that they are limited. For instance, it is impossible at present to provide a supply of Mond gas to all the manufacturers in a large town, whereas, were these works grouped together, such provision could be made. Such works areas would require to have good means of transit to the residential areas, and if there are several of such areas in a town with the facilities I have mentioned, there appears to be no hardship in limiting factories to them under certain definite conditions. At the present time a large amount of the dirtiness which arises in our towns is due to the hopelessness of ever keeping the dwelling-house clean, owing to the soot and sulphurous acid from the factories. I am familiar with some towns where this aspect of the question has received attention, and can vouch for its success.

There are, of course, obvious defects in the way, and perhaps the chief of these is the purchase of the land, so that not only may the manufacturer obtain facilities in the way of power and transit, but that he may also get the cheapest land possible.

4. As an important item in town planning I would urge the importance of amenity. I do not believe that a self-respecting race can be reared among the soot-begrimed bricks and mortar that we get in all our large towns. Ugliness and dirtiness are two characteristics of nearly all our manufacturing areas. If, therefore, by limiting the number of dwellings and grouping manufactories it is possible to exclude this dirtiness, it will at the same time be possible to arrange for the residential areas to be laid out artistically and beautifully.

5. I mention the condition of convenience as a secondary one because it is quite impossible to limit the dwelling-houses and thereby spread the population without considering at the same time the equally important question of convenience of transit.

DISCUSSION.

Dr. E. W. Hope (M.O.H. Liverpool) said that no more conspicuous example of the mischief resulting from the rapid development of a great city without adequate powers of controlling such development could be instanced than Liverpool. The reports of the Royal Commission of sixty years ago had accurately recorded the mischief done up to that time, and old maps indicated clearly enough how, from want of knowledge, want of parliamentary powers, and want of foresight, this trouble was accentuated for many years afterwards. However, in the last generation Liverpool had availed itself of all general legislation and obtained special powers to meet her exceptional necessities, and the whole trend of modern legislation had been to facilitate the task of great centres of population in making their cities wholesome and pleasant. As Dr. Robertson had pointed out, the central parts of cities, more especially those occupied by the working classes, must receive attention, and had done so in Liverpool. At a cost of a million sterling many insanitary areas had been removed and replaced by appropriate dwellings. At the same time there had been provided open spaces and playgrounds within easy reach of the families of the poorest class of labourer who previously occupied the insanitary dwelling. One of the most conspicuous changes was the marked diminution in the rates of mortality amongst those people in their new surroundings. A system of town planning in the rapidly-growing suburbs such as would for ever prevent a return to the old evils was also in operation. It included the construction of a main road of 108 ft. in width, which would completely encircle the city, and from which minor roads of appropriate width should radiate in a suitable and pre-arranged manner. It had already been largely carried into effect. The general result, so far, had been highly gratifying, building operations having been carried out on good lines, and migration from the central parts to the suburbs encouraged. The cost of seven miles of this roadway had been relatively trifling, not exceeding, approximately, £7,000 per mile, whereas the expense of widening existing central parts of the city, which had also been effected, had exceeded this rate one-hundredfold. The work accomplished towards town planning had also given a stimulus to, and

perhaps brought within the range of practical possibility, the construction of a garden suburb estate, a project receiving valuable assistance from the Marquis of Salisbury. One object of the project was practically to limit the construction of buildings to four houses per acre. The work accomplished had been attended with an improvement in the public health, and had pointed the way in which future developments must take place. A Chair and School of Town Planning and Civic Design had been established at the University, whose staff was engaged upon lines which could not fail to help to mould public opinion, and strengthen the hands of those who already realized how essential it was that the great centres of population should grow upon good lines, and under such conditions as would add to the health and the happiness of the people.

Mr. T. C. HORSFALL, J.P. (Macclesfield), said that the Housing and Town Planning Act would probably not be much used until the regulations issued by the Local Government Board were made much simpler and less burdensome, and perhaps not till an amending Act was passed. Eventually, however, a workable measure would be obtained. Then efforts would be made by a considerable number of persons to induce local authorities to use the powers conferred on them in a way which would remove the evils experienced in some towns, especially parts of London. Already many houses, each used by only one family, had been replaced by taller houses containing flats. This change added to the convenience of life of many persons, and, by making the sites of the altered houses more valuable, brought much gain to some owners of land. Owners of land suitable for the erection of flats would seek to induce the local authorities to make town plans which would allow wide streets and tall houses to be erected. But, both by increasing the density of population and by raising the price of land, that kind of town planning injured the community as a whole. Another set of persons, whose efforts the speaker hoped all medical men would help, would try to get town-planning powers used for the purpose of supplying the conditions necessary for health for all the inhabitants of towns. There was much in our English system of housing which must not be sacrificed. We had many overcrowded dwellings, and many dwellings which were made unwholesome by structural defects; but notwithstanding these evils the average English dwelling was far superior to the average dwelling of any other country. The great evil was the bad environment of English workmen's dwellings. It was impossible for town children to be healthy unless they could get much play, and it was impossible for children or adults to be healthy in body or mind unless they knew enough of flowers and trees to be aware of the fact that the world was beautiful and interesting. Town-planning powers should therefore be so used as to place a playground and a small planted open space within easy reach of every dwelling. Traffic roads should from the first be wide enough for these purposes, but "residential" streets should not be unnecessarily wide. Paved road not needed for use was the most costly and useless form in which open space could be provided. Every unnecessary inch of macadam was an evil. The speaker then showed, by the help of diagrams enlarged from plates in Dr. Rudolf Eberstatt's *Handbuch des Wohnungswesens und der Wohnungfrage*, that many German municipal authorities, by an unwise use of their town-planning powers, had created towns certainly of much splendour and beauty, provided with streets of imposing width, but had simultaneously created a dwellings problem which would be far more difficult to solve than the problem which existed in this country. The diagrams showed that many of the tall five-storied buildings in German towns, which seen from the streets appeared to be palaces, really consisted of back-to-back dwellings, containing as a rule only one or two rooms and a kitchen. The majority were most imperfectly lighted, and ventilated from enclosed courts. The habit of the German authorities of insisting that nearly all streets should be of a width far exceeding what was necessary for traffic made it impossible to erect smaller houses, and had led to the following among other evils. Half the population of Berlin and of several other large towns lived in dwellings consisting of only one or two rooms and a kitchen. Rents were so high that even well-paid workmen who rented only one or two rooms were compelled to take in lodgers, who not infrequently slept in rooms also occupied by the grown-up daughters of the family. This intermixing of the sexes led to much immorality, 15 per cent. of the births in Berlin and 28 per cent. in Munich being illegitimate. Notwithstanding the better education of German workpeople, their greater cleanliness, and the better training in cookery of German women, the death-rate and infant mortality in German towns were considerably higher than in ours. At Ostheim, a suburb of Stuttgart, German town planning worked in such fashion as to make it impossible for one-family houses to be built even in a country place. The housing problem was much less difficult in this country than in any other European country; and in the Hampstead garden suburb, and elsewhere in England, the best way of supplying small dwellings with an adequate amount of open space had already been shown.

Mr. F. E. FREMANTLE (M.O.H. Herts) said the distinction between a garden city and a garden suburb was absolute, the latter arranging for the housing of a single section of the residential population, the former for the whole of a self-contained population—industries, banks, shops, and public buildings being included with residential houses for all sections of the population. Of this idea Letchworth, in Hertfordshire, was the first example, proposals for another garden city on a far larger scale being now under consideration. Letchworth was built on the central area of 1,318 acres, in an estate of 3,800 acres, the intention being to limit the urban population to 30,000, and to retain the agricultural belt, holding at most some 5,000 residents, and affording a close interchange of products and of employment between the urban industries and the land. In eight years the virgin population of 500 had exanded to 6,500, with 1,231 houses, 62 shops and banks, 37 factories and workshops, 9½ miles of new roads, and a corresponding development of gas and water mains and sewers. Buildings had been erected to a value of £365,000, with annual ground-rents of £4,159; the company's total expenditure—little of it on building—of £282,500 had produced a property valued at £379,500. The total present rates were 4s. 8d. in the £. The total death-rate for 1909 was 5.2 per 1,000, the infant mortality 31.7. Three of Dr. Robertson's points were here illustrated: (1) The central area of a town usually grew up in such a way as to make proper treatment of it impossible, but at Letchworth the central area was reserved for later development. In the earlier stages of the town's growth no one was prepared to build stately buildings, private or public, suitable for the central area of the eventual town. In Letchworth, therefore, the railway running across the centre of the area in a cutting was made the first fixed point, the industries growing up along the railway towards the north-east of the whole area, so that the prevailing south-west wind might direct the flow of smoke, slight as it was, away from the residential areas. Close to these industries were provided the first workmen's buildings. (2) A second point of Dr. Robertson's was illustrated by the second group of workmen's dwellings in the north of the area towards Norton, built by the Co-operative Tenants, Limited, a separate company. Then the need of providing for workmen who were not prepared to take care of a private garden was met by the provision of open squares for common use. (3) The limitation of houses to 12 per acre. Even this limit was only reached at Letchworth in one small area; for the most part there were only 8 or less houses per acre. So much for the typical garden city. As an instance of a garden suburb might be quoted the Valentine's Estate at Ilford, in the eastern suburban area of London. The Valentine's Estate at Ilford was purchased by the Town-Planning and Garden Cities Company, Limited, an offshoot of the original company, the Garden Cities Association. There was an old Georgian mansion, for which there appeared no further use, and an estate of some 44 acres within ten minutes of the station, which was only ten minutes by rail from Liverpool Street. The former owners of the property had made over of recent years to the district council a large area, now the public park, and also the gardens, which were equal in beauty to any he (the speaker) had seen. Between these two lay the estate now purchased.

The part chosen for present development was that along the main Connaught Road. The northern part of this area was being developed on fairly usual lines, the roads being arranged to connect conveniently with cross-roads outside the estate, while the houses were given more than the usual allowance of private garden, and trees were worked in appropriately to the scheme. The southern part of the area was arranged on more novel lines. Houses were so placed on both sides of the new Holcombe Road that all would be given views through and across the park. Some houses were provided with large and some with small gardens, the proportion of open space being preserved by the provision of public squares, which the district council had undertaken to maintain. This initial plan was being adapted during development to the wishes of purchasers, and within a few months the company expected to have sold this part of its property under contracts providing for the building of houses on plans subject to the company's approval. The net profits, amounting to some thousands of pounds, subject to the duty on unearned increment, would be devoted to local objects of public interest. This scheme showed, therefore, the great financial value of such development, and the importance of securing that it should be carried out in the public and not in private interest. The speaker appealed to all medical officers of health to take up the question with vigour in their respective districts, with a view to the *prevention of the growth of slums* of any kind, and with a view also to the development of houses as satisfactory to the health of the people in their inter-relation as under the building by-laws they must now be in their individual structure.

DISCUSSION ON ADMINISTRATIVE CONTROL OF OPHTHALMIA NEONATORUM.

OPENING PAPER.

By GEORGE REID, M.D., D.P.H.,
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No argument is needed to emphasize the importance of providing machinery for dealing with ophthalmia neonatorum, which, it has been estimated, is the cause of at least one-third of the cases of permanent blindness in the country. Indeed, having regard to the serious nature of the malady, one may well ask why in these days, when so much time and energy are being devoted to public health questions, possibly of lesser moment and greater complexity, this question, the solution of which is relatively so simple, should hitherto have been overlooked. Apart from the humanitarian aspect of the question, the financial gain in preventing blindness from this cause would be very material, in view of the fact that the cost of educating a blind child amounts to about £500, as compared with £30, the cost of educating the ordinary child. But this by no means represents the total gain from an economic point of view, for a blind person is of far less value to the State than one who possesses his sight.

For some eight or nine months a scheme has been in operation in certain districts in North Staffordshire, including the six Pottery towns now constituting the county borough of Stoke-on-Trent, and even this short experience of its working has shown that the problem is capable of easy solution.

The credit of starting the movement, which, as it turned out, required but little advocacy to commend itself to the authorities, is due to Mr. Greatbatch, the chairman of a large blind and deaf school in North Staffordshire, and the idea originated in a conversation he had with Mr. Folker, the ophthalmic surgeon of the school, who, I am glad to find, is taking part in to-day's discussion. The conversation had reference to the need which had arisen for extending the school buildings, and Mr. Folker pointed out that no extension would be necessary if steps could be taken to insure that cases of ophthalmia neonatorum received early and intelligent treatment. Mr. Greatbatch accordingly approached the various public health authorities in the neighbourhood, and, with the co-operation of the County Council, an important conference of medical officers of health and representatives of the various authorities was held, with the result that a scheme was inaugurated which is now in successful operation.

The procedure is very simple. The law as it stands enables everything to be done which is needful.

In the first place, the public health staff must receive early notification of the cases, and this is provided for by including the affection among diseases which are notifiable under the Compulsory Notification of Infectious Diseases Act. In addition to this, it is desirable, although not essential, that the Notification of Births Act, 1907, should be adopted, as the health visitor appointed under that Act is then available for following up the cases after the completion of the treatment in case of a relapse, and for the discovery of cases which may not have been notified—emergency cases, for example, not attended either by a doctor or midwife.

In the second place, provision must be made for the medical treatment and skilled nursing of the cases under Section 133 of the Public Health Act, 1875.

As Mr. Folker will no doubt tell us, simple though the treatment is in most cases, it is essential that no delay shall take place, and to insure success the services of expert nurses must be placed at the disposal of the medical man, should he desire such help.

Let me sketch, shortly, what the procedure is. On receipt of a notification, say, from a midwife, the medical officer of health causes inquiry to be made into the circumstances, and takes steps to insure that medical help is at once obtained, informing the medical man at the same time that, if required, the authority will provide nurses for the case. If, on the other hand, the case is notified by a medical man, he is at once asked whether he desires that nurses shall be supplied.

Of course, the majority of such cases occur among the poorer classes, and, as a rule, they are not in a position to pay for skilled nursing even for the few days that such is usually required. This being the case, it is essential that the authority shall supply and pay for nursing help in cases which require it. Among the very poor, however, the home conditions may be such that removal of the cases to the workhouse infirmary may be necessary, in which case the Poor Law authority must defray the cost of treatment.

So far, I believe, with one exception, no difficulty has been experienced in inducing parents to avail themselves of the advantages of the scheme, but no doubt cases will occasionally be met with in which the action of the authority may be resented, and to meet such cases it may be necessary to institute proceedings under the Prevention of Cruelty to Children Act. One such prosecution, however, would probably have the effect of breaking down all subsequent opposition to the scheme.

I believe all the authorities in whose districts the scheme is in operation at present have assumed the responsibility of providing and paying for the nursing assistance needful, but, so far, in one district only has provision been made for defraying the cost of medical treatment. No doubt experience will ultimately show that such provision is essential to complete success; medical men should not be asked by a public authority to undertake the treatment of this or any other form of illness unless the request carries with it an obligation to pay for such services. If it should happen that the family is in a position to refund all or a portion of the cost, then the authority has the power to recover, but the medical man should be relieved of all responsibility in that respect. Sooner or later the basis of payment for such services will have to be fixed, and whatever sum may be agreed upon, it is desirable that it should be uniform throughout the country and inclusive. In the one district where such provision has been made the fee paid is £1 1s. per case, and probably that may prove to be a reasonable fee. No doubt, in a certain number of cases, that sum would be but poor remuneration for the services required; on the other hand, there are many mild cases which require little treatment, and these must be regarded as a set-off against the serious cases which call for more prolonged treatment.

We have not yet had long enough experience of the working of the machinery in the districts in Staffordshire where schemes are in operation to be able to show very conclusive results, but, so far, we have every reason to be satisfied. The medical officers of health of the various districts have been good enough to supply me with certain information, from which I am able to give the following particulars.

During the period, about eight months, while the scheme has been in operation in eight districts, having a total population of 281,797, the cases notified by midwives and medical men, or both, numbered 87, all of which, sooner or later, through the action of the authorities, were medically attended, the diagnosis being confirmed in all the midwives' cases with one exception. There were many mild cases among those notified, and for that reason nurses were provided by the authorities for 24 cases only (28 per cent.), while in a few other cases the families were in a position to provide the nursing help required.

The mean cost per case where nurses were supplied amounted to £3 1s. 9d.

Deducting the case in which the diagnosis was not confirmed, 79 cases (91.8 per cent) recovered completely, 4 (4.6 per cent.) recovered partially, 1 (1.2 per cent.) lost the sight of one eye, and 2 (2.3 per cent.) became totally blind.

I find, however, upon inquiry that when the scheme was first brought into operation in many cases notification was greatly delayed, and the want of success in at least three of the four cases which only partially recovered was attributed to this, as well as in one of the cases in which blindness resulted. There is no doubt that a good many of the cases would have had a poor chance of recovery had it not been for the attention they received, and, on the whole, the general opinion among the medical officers of health is, that, having regard to the drawbacks incidental to the novelty of the scheme, the success achieved has been most gratifying.

On the basis of the figures I have given, the notifications per annum in Staffordshire as a whole would amount to 0.45 per 1,000 of the population, and the cost of treatment, including medical attendance in each case at £1 1s. and nursing expenses in the ratio which was found necessary, would amount to a total of £1,204 for a population of 1,377,017, or 17s. 5d. per 1,000, by no means a large sum, having regard to the result achieved, and representing a cost per case of only half the cost of isolating a case of scarlet fever in hospital. It must also be remembered that the number of cases will undoubtedly diminish year by year as the "bona-fide" type of midwife gradually becomes extinct, and is replaced by properly trained women. This weeding-out process, however, will take time, and meanwhile the damage being done is serious. I am confident that the experience we have already had in Staffordshire will, before another year has passed, lead all the authorities in the county to follow the good example of those in the North, and I hope that the lead given in that county will soon be followed by all the authorities in the kingdom, with the result that blindness from ophthalmia neonatorum will practically become a thing of the past.

DISCUSSION.

Mr. BISHOP HARMAN (Oculist, L.C.C. Blind Schools) said that as the Local Government Board had accepted the principle of notification of this disease, it could not be doubted that the agitation carried on for so many years by ophthalmic surgeons and obstetricians was at last to be rewarded. It now remained for medical officers of health to present the case of ophthalmia neonatorum to their own authorities in such fashion as would cause them to desire notification to come into force in their districts. Notification, he continued, will by itself act as a great stimulus to care in the management of labour and of the newborn infant, but an organized plan for promptly dealing with cases that are notified must be prepared. The plan I would suggest is as follows: (1) On the occurrence of a case of purulent conjunctivitis in a newborn infant the doctor in charge should be required, not only to notify it, but also to send to the public bacteriological laboratory for microscopical examination two film preparations of the pus on glass slips. The bacteriological diagnosis of these cases is of the first importance. Risk to the sight of the infant is only to be feared when the micrococcus of Neisser is the infective agent. The virulent streptococcal conjunctivitis is excepted, as it is scarcely ever seen in the newborn. (2) The medical officer of health should be empowered to investigate the case notified, to the end that it may be so treated as to present no risk to the community. As I have shown in my book, *Preventable Blindness*, a whole family may be infected from a newborn infant. (3) The medical officer of health should have at his call some surgeon capable of giving expert advice in the care of these cases, just as is done in epidemics of exanthemata in London. The school medical officer might be made use of for this purpose, and be required to make himself thoroughly conversant with the disease and its treatment. (4) Nursing is of the highest importance, and in view of the particular care and experience required, these cases should be treated at some institution rather than at the homes of the infants. For the most part they occur amongst the very poor, in whose homes the difficulties of housing nurses, of obtaining necessary space for the infant, the lack of ordinary domestic appliances, and particularly the liability to reinfection during the lying-in period of the mother, all make removal both of mother and child to fitting quarters most desirable. It seems to be of the greatest importance that the number of these cases and the final result of their treatment should be collected by the medical officer of health, transmitted to the central authority, and published annually. This will give us a better idea of the incidence of the disease and of the effectiveness of our measures than we can obtain by any private inquiries. It would act as a great stimulus on the laymen of the councils of local authorities if the medical officer of health prepared schedules showing the relative costs of these preventive measures and of the costs of educating blind children. They would present a more effective appeal than any cry for pity.

Mr. HERBERT H. FOLKER (Stoke-on-Trent) said that in ophthalmia neonatorum it was absolutely essential that the Notification of Infectious Diseases Act should be adopted, as success depended on early treatment. There must be a complete machinery at work, and all should work in unison. (1) On receipt of notification a lady inspector should be sent to the house (when the case was in charge of a midwife) to make the necessary arrangements for medical help and nursing. (2) Nurses, one for day and one for night, should be provided at the expense of the municipal authority. (3) Where the homes were of such a poor character as to prejudice the chance of recovery of the infant, cottage homes containing about four beds should be provided, to which the mother and child could be removed. This plan had been adopted by the Liverpool authorities, and had worked with wonderful success. As regarded expense, in the Federation Borough of Stoke-on-Trent, 78 cases were reported during a period of nine months, with 2 cases resulting in blindness. Medical attendance and nursing were supplied when required, and the average cost to the community came to £3 1s. 9d. a case; whereas if these cases had been left to the midwife, the probability was that the percentage of blind would have been much higher. When it was remembered that the education of a blind child cost, roughly, about £490, it would be seen at once that the small initial expense was justified. When mother and child were removed to a home, the medical man in attendance should be left in charge of his patient and not allowed to place the patient under the care of the health authority.

Dr. COOPER-PATTIN (M.O.H. Norwich) said that Norwich had adopted compulsory notification and it was working satisfactorily, and the afflicted children, so far two in number, had also been treated satisfactorily. The medical officer of health would be enabled to effect more quickly the removal of the mother and child from unsuitable surroundings to a hospital where all forms of medical aid were co-ordinated in and made part of a public health department of a community.

Dr. J. C. MCWALTER (Dublin) remarked that ophthalmia neonatorum ought never to occur. If it did there was a prima facie case made out that the nurse or doctor in charge of the case was guilty of negligence. The duty of preventing such cases ought to be insisted on, and if they did occur the general practitioner ought not to be relieved of his duty of treating them. There was a danger that the public would soon cease to attend to the warnings of

doctors if the only remedy suggested was to appoint more specialists at more fees. Hitherto the public had listened to doctors because, although they lived by disease, yet they strove by every means in their power to wipe out disease. Again, one distinguished oculist told them that they should take a smear preparation of a suspected case and send it to a bacteriologist, whilst the equally distinguished specialist who followed stated that unless a case were treated within twelve hours no good could be done, showing that if one waited for the bacteriological report it would be too late to deal effectually with the disease. He considered that the local general practitioner ought to treat the case; if it was virulent it should be sent to an eye hospital.

Dr. E. H. T. NASH (M.O.H. Wimbledon) criticized the figures given by Mr. Folker with regard to the amount saved to the community. He called attention to the statement that 76 cases—that is, the total number notified—were given as cured, thereby saving £490 per case to the community. That statement meant that every case notified would have gone blind, which was very far from the truth. Medical officers of health should be very careful that the balance sheets they laid before their committees were as nearly as possible accurate, and up to the present the figures furnished did not give sufficient data to work on. The question of treatment in the poorest homes by nurses was very difficult, as the homes were in many cases too filthy to ask a nurse to stay in, and often there was only one room. In these cases the method adopted in Liverpool gave the most satisfactory results—that is, the mother and child were removed at once to the hospital, with the promise that the practitioner in attendance on the case should continue the treatment in hospital. This might be done under Section 133 of the Public Health Act, by contribution to the local hospital, carrying with it the right of admission of these cases.

Dr. REID, in reply, said it was not suggested that medical experts should be engaged to attend the cases. The actual practice was for the ordinary medical attendant of the family to be called in, and the authority took steps to ensure that this should be done. It was only right, therefore, that when a medical man's services were sought for by a public authority they should be paid for by that authority, although up to the present this practice was only followed in one of the districts where the compulsory notification of ophthalmia neonatorum was in force. He entirely dissented from the suggestion that the responsibility should not be removed from the midwives. Indeed, responsibility was not removed from them except as regards treatment. The midwife was held responsible for notification, and having regard to the class of women now in practice, and who would be in practice for years to come, to place the responsibility of treatment on their shoulders would be a most unwise and dangerous proceeding; in fact, interference on their part would be worse than useless. As regarded Dr. Nash's suggestion that cases should be dealt with in hospital, this was unnecessary, except in exceptional cases, and in most districts the compulsory removal of mother and child would be resented. Moreover, the objection to such removal would probably lead to delay in treatment, which might have serious consequences. All that was essential was that the child should be placed under medical care, and that the medical man (in such cases as required it) should be provided with nursing assistance, both night and day. All the authorities in Staffordshire, where compulsory notification was in operation, had accepted the responsibility of supplying nurses, and it had been found that their services had been required in 24 per cent. of the cases. He agreed with Dr. Nash that the cases which did not become blind must not for that reason be regarded as successes from the point of view of treatment, as, of course, many would have recovered in any case. At the same time, for what the figures were worth, having regard to the short period in which the scheme had been in operation, he would point out that the failures—that is to say, the cases which ended in blindness in the case of the Staffordshire towns—amounted to 2.3 per cent., compared with 10 per cent., the corresponding figure for Liverpool, where the practice of hospital treatment was now in operation.

DISCUSSION ON THE ETIOLOGY AND PREVENTION OF SUMMER DIARRHOEA.

OPENING PAPER.

By JAMES NIVEN, M.A., M.B., B.C.Cantab.,
Medical Officer of Health, Manchester.

IN opening the discussion Dr. Niven gave reasons for assuming that the subject could best be discussed from the standpoint of the experience of one locality during a number of years, thus eliminating the confusion due to local differences. He therefore based his observations on an investigation of the disease at Manchester during the years 1904, 1905, and 1906.

He considered that the disease was an infectious one, the latent period varying from two or three to seven or eight days. That was shown by the distribution of deaths and by the annual wave of diarrhoea, which, like the annual waves of other zymotic diseases, indicated a rapid transmission in some manner of infection from person to person; but diarrhoea differed from other infectious diseases in that it was not nearly so easy of personal conveyance. It was remarkable that epidemic diarrhoea remained at a uniform low level of fatality from January until the fly season set in; the fatality then began to ascend rapidly, and after a brief period of consummation descended with nearly equal rapidity, the whole period extending over about three months.

After discussing various theories as to the causation of epidemic diarrhoea, the author expressed an opinion that the main factor in its dissemination was the operation of flies. In order to establish this hypothesis certain conditions must be fulfilled:

1. A fairly close correspondence must exist between the number of house-flies in circulation and the number of deaths from fatal diarrhoea.
2. Flies must be present in considerable numbers before the rise of the diarrhoea curve.
3. Any deviation from the correspondence must be explicable in terms of the natural history of flies and diarrhoea.
4. Flies must have been generally present in numbers sufficient to cause infection of food or of infants' mouths.
5. There must be no such correspondence with any other possible cause of diarrhoea capable of explaining its course.
6. House-flies must be shown to be capable of acting as transmitting agents.

The capacity of the house-fly to act as a carrying agent had been conclusively demonstrated by Dr. Sellers in Professor Delépine's laboratory. The infecting organism was probably a *coli* bacillus, and it was found that flies must be present in large numbers to convey sufficient infective matter to render an infant's food pathogenic.

In order to see the degree of correspondence between the number of flies in circulation and the number of deaths from diarrhoea, the following procedure was adopted. A number of reliable observers were sought out, mostly in cottage houses. They were furnished with bell traps containing sweet beer, and were instructed to empty out the contents of these every twenty-four hours at a fixed time, count the flies, enter the number in a book, and recharge the traps with beer. At the end of the season the daily records were entered in a register and added up in weeks for each station, and the total number for all the stations recorded. When the results obtained were displayed in curves a remarkably close correspondence was found between the curve of flies and that of diarrhoea deaths. It was noticed that there was a considerable number of flies per station before the fatal cases of diarrhoea began to ascend.

The argument that flies were the carriers of infection was strengthened by the exclusion of other explanations of the dissemination of diarrhoea. It did not, however, follow that because there was a large number of flies in the houses of any district there would be an exceptional incidence of fatal diarrhoea. That would depend on the amount of infection previously existing in the district and on the type of disease. But if there was a severe incidence of epidemic diarrhoea on any area, one would certainly anticipate that the houses affected had been visited, as a whole, by very large numbers of flies, and that there would be in that area exceptional opportunities for the production of flies. That was found to be the case in two small areas severely visited by diarrhoea which the author had investigated.

The author then pointed out that even if they could ensure that infants were fed on sterilized food and still contracted fatal diarrhoea, it would not disprove the fly hypothesis; because flies might carry infection direct to the infant's mouth, and might also infect the food of older persons outside the house, who might contract a slight attack, and hand on the disease to the infant. Moreover, in a house thickly infested with flies, a vast amount of infective material was deposited on walls and tables, as was shown by Professor Delépine's and Dr. Sellers's investigations. If, therefore, flies were to be excluded, very special instructions and precautions would have to be insisted on. It was certain that in better-class houses, which might be assumed to be comparatively free from flies, infants did not suffer from diarrhoea, whether their food had or had not been sterilized.

There were other indications that flies played an active part in spreading diarrhoea. Privy-midden districts tended to show an exceptional fatality in warm years, when conditions favoured the development of flies; heavy rainfall, on the other hand, playing an important part in checking the development of the pupae.

Turning to the subject of enteric fever, it was found that the autumnal curve of enteric showed a rise coincident with the prevalence of flies, but slighter and not so closely corresponding with the number of flies as in the diarrhoea curve. This rise was divided into primary and secondary portions, the secondary portion being intermingled with the Manchester rise from the consumption of infected mussels, commencing in the thirty-eighth and thirty-ninth weeks. On studying this rise for a long series of years, it was found at the beginning of the period to commence slightly before the rise in diarrhoeal fatality, and to extend beyond it, but not before flies had commenced to be numerous. In recent years the primary part of the autumnal rise corresponded to the rise in diarrhoea deaths, lagging a little behind it, owing to the comparatively long latent period of enteric.

It was a notable fact that confusion between enteric and diarrhoea was specially liable to occur at the height of the diarrhoea season. Cases thus overlooked had also been shown to have special potency in direct infection.

Subtracting cases due to shellfish or to the more obvious forms of direct infection, residual numbers were obtained indicating a slight rise in the fly season, but showing also in other parts of the year rises unaccounted for. These were most conspicuous in the latter weeks of the year, and might be due to spread of the disease by rats, mice, and various domestic insects, such as cockroaches, which infested middens; or they might be due to some other cause not hitherto brought to light.

In conclusion, Dr. Niven said that any further light on the spread of enteric fever by those means could only be obtained by long and painstaking observation. Evidence obtained in South Africa, India, and America pointed to the conclusion that flies had been the chief agency in causing severe outbursts of the disease. That strengthened the interpretation given to the early autumnal rise of enteric, and to the rise and fall of summer diarrhoea. It was scarcely necessary to point out that if these views, not by any means original, were sound, domestic refuse attained much increased importance, and the measures of prevention called for were sufficiently plain and urgent.

DISCUSSION.

Dr. J. H. CLEMENTS (M.O.H. Beckenham) detailed the results of an investigation into 44 cases of summer diarrhoea in a northern town, in the year 1909, in which voluntary notification was for the time being in operation. These 44 cases were notified from forty-two houses, there being two sets of twins, and 40 of them occurring between August 9th and September 9th. In several houses adults or older children suffered from the disease, but were not included in the count, which only related to children under 2 years. The secondary cases were probably infected from a common source and not directly from the first case, for the same care was taken with the stools and linen as in the case of typhoid fever. Of the babies 27 were under 12 months and 17 between 12 and 24 months. Of the former, 17 were under the age of 9 months, and in none of these was the baby fed entirely on the breast; 10 of them were fed wholly by bottle or artificial foods, and 7 were partly breast-fed and partly bottle-fed. The mother went out to work in the mill in 15 cases. In the great majority of the infected houses the yards were unpaved and the conveniences were privy middens. In the few cases in which the house was provided with a watercloset there were privy middens in the adjoining yards or close by. Speaking generally, the cases occurred in parts of the town where the housing was of the poorest type, where the sanitary arrangements were least satisfactory, and where there was evidence of neglect and want of cleanliness within and without the house. A rough estimate was made of the number of flies in the infected houses, and flies were collected from 15 cases for bacteriological examination. In every house where diarrhoea occurred there were numbers of flies, and some of the houses were infested with them. When the scavengers commenced to spray the privy middens with izal several complaints were made to the effect that since the middens were sprayed all the flies swarmed into the houses and became a nuisance. The samples of flies, twelve to eighteen in each sample, were collected in sterile test tubes, and classified according to species before being sent to the laboratory. They practically all belonged to the species *Musca domestica*. In three or four batches of flies the lesser house-fly, *Homolomyia canicularis*, was observed, and on one occasion a large blue-bottle fly was obtained. The flies when kept for a few hours deposited large numbers of eggs on the side of the test tube, and from several batches of flies the eggs were taken and deposited on moist bread and kept in the incubator, and the well-known larva and pupa stages observed. Some fly larvae were obtained from collections of manure in various parts of the town, and their development compared with those grown in the incubator. The larvae hatched in the manure heaps looked almost black compared with the creamy white appearance of those grown on bread, owing to their alimentary canal being filled with the contents of the manure pit. The larval stage was a very active one, and the larva gorged itself with whatever material it was growing in. There could be little doubt that the fly reared in a manure heap had its alimentary canal well stocked with whatever organisms the manure might contain, and these organisms probably continued to multiply during the adult life of the fly, and got deposited wherever it chanced to alight. This fact alone should suffice to cause the fly to be regarded with suspicion, even if his legs were not so admirably constructed for picking up and carrying whatever material his unsavoury habits induced him to rest upon. During the period of fly prevalence some attempts were made to kill the flies in houses where they were the greatest nuisance. Sprays of various kinds were used, and formalin both in the form of vapour and spray was tried; the vapour did not kill the flies, and the spray was so unpleasant and irritating to the person using it that it had to be given up. A spray of izal proved to be more successful; it did not immediately kill the flies, but when sprayed over them they became stupefied and fell to the ground, where they could be swept or gathered up with a cloth and thrown into the fire. By the use of izal spray all the flies in several houses were killed, but on revisiting the houses a few days later the fly nuisance was as bad as before spraying, showing the futility of these methods of dealing with flies unless some contrivance were at the same time adopted to keep them out of the houses. In view of the fact that investigations at the Lister Institute by Morgan and others had shown that one particular bacillus—Morgan's bacillus No. 1—predominated over all the other members of the non-lactose group isolated from diarrhoeal faeces, and that this bacillus was only rarely present in the stools of healthy children, an attempt was made by the speaker to ascertain whether Morgan's bacillus or other organism predominated in his cases. Samples of diarrhoea stools were obtained from 15 of them, and at the same time a number of flies were taken from the living room of the house and examined bacteriologically. The most striking feature in the microscopic examination of the stools was the large number of bacteria present; a thin smear preparation of the stools when stained showed as many organisms as were visible in a twenty-four to forty-eight hours broth culture similarly stained. The bacteriological examination of the flies and stools was carried out

for the speaker by Dr. Thomas Orr, of the County Laboratory, Wakefield, who had had considerable experience in isolating organisms from the intestinal tract. Eventually he reported as follows:

From August 13th till October 14th 15 specimens of faeces from cases of epidemic diarrhoea were received, in order to determine if there could be found any predominating organism to which an etiological influence could be ascribed. In the bacteriological examination my attention was devoted to non-lactose fermenters (MacConkey), a group of organisms supposed to give rise to diarrhoeal conditions; and special search was made for Morgan's bacillus, an organism which has been frequently found present in cases of epidemic diarrhoea in London. The results were disappointing, inasmuch as few non-lactose fermenters were isolated. In only 3 specimens were they found, and the organisms on subcultivation proved to be in one case *B. proteus vulgaris*, and in the other two cases bacilli belonging to the paratyphoid group. Morgan's bacillus was not found. The 15 batches of flies taken from the homes in which the above cases of diarrhoea occurred were examined for the same organisms, but with equally disappointing results. All showed the presence of various species of lactose fermenters (*B. coli*, etc.), but in only 2 cases were non-lactose fermenters found. One organism corresponded in all respects, morphologically and biologically, with Morgan's bacillus, and the other belonged to the paratyphoid group. The results, therefore, have proved unsatisfactory, as no non-lactose fermenters were found to be commonly present. The paucity in these organisms may have been due to the fact that often the specimens had been collected twelve to twenty-four hours before being received.

From this report it appeared that Morgan's bacillus was not present in any of the diarrhoea stools examined, and was present in only one batch of flies. The general conclusions reached were as follows: (1) Diarrhoea is a disease depending on filth conditions. (2) The poison enters the body usually in contaminated food. (3) The common house-fly is an active agent in distributing the poison. (4) The capacity of patients to infect others is not very great. (5) The disease does not run a definite course like some of the other infectious diseases, the patient rapidly improving once the source of the poison is cut off.

Dr. BROWN (Bacup) said that the rôle of the house-fly as a disease carrier was strongly urged by many medical men, especially by those who had lived in tropical and other countries where enteric fever was practically endemic. He was not convinced that the house-fly was a disease carrier, but he considered that as a filth carrier and troublesome pest it ought to be destroyed. The house-fly might serve some useful purpose in nature which they did not yet fully understand and appreciate. They knew the cockroach to be a useful scavenger. Dr. Niven had referred to the difficulty of destroying the house-fly and the necessity for removing horse manure as a hotbed for breeding this pest. It was difficult to get horse manure removed sufficiently often; and in his own experience he found that the house-fly was not a nuisance when six or more hens per horse were kept in or near the midden. The maggots or larvae were practically eaten in this condition, and there was now no "fly-pest" to annoy the residents.

Dr. HERBERT JONES (Hereford) referred to the connexion between diarrhoea and the large accumulations of privy middens in country districts. He urged that the nuisance sections of the Public Health Act should be more stringently enforced to compel householders to cover over excremental matter with earth.

Dr. J. C. MCWALTER (Dublin) considered that the idea of the house-fly being a cause of disease was a mere superstition, but much might be done by removing accumulations of filth, which bred the flies. There was a curious tendency in the human mind to hypothesize the cause of disease. Malaria, small-pox, and fever were by our ancestors looked on as malignant spirits infesting the air. We were still obsessed by the same delusion, and sought to prove that some definite entity which could be seen and touched was the cause of disease. Thus at one time we sought for a definite organism, at another moment we tried to obliterate other entities which were suspected of causing the organism. Obviously the suspected organism might only be a concomitant of the disease, which might be caused by some group of conditions rather than by a given organism. In Continental cities flies were very prevalent, but epidemic diarrhoea was not so prevalent as with us. The earth temperature at 4 ft. from the surface seemed to bear a more definite relation to epidemic diarrhoea than any other collocation of conditions.

SECTION OF MEDICAL SOCIOLOGY.

J. A. MACDONALD, M.D., President.

DISCUSSION ON STATE SICKNESS INSURANCE (PROVISION OF MEDICAL ATTENDANCE) AS AFFECTING THE PUBLIC HEALTH AND THE MEDICAL PROFESSION.

OPENING PAPER.

I.—Mr. SMITH WHITAKER,

Medical Secretary, British Medical Association.

AFTER alluding to a synopsis which had been issued, the speaker said that the first point was whether the existing system by which medical attendance was provided for certain sections of the community was so inadequate as to necessitate an alteration. These arrangements were summarized in the synopsis as private practice, contract practice, charitable services, and public services. It was unnecessary to enter into a prolonged examination of these in order to satisfy all that they were inadequate, and that some other provision was necessary. One of the most important points that had to be considered, and one to which those who spoke for the public were increasingly paying attention, was the necessity that medical treatment should be prompt. In no department more than in that of medical treatment was it true that a stitch in time saved nine. Not only was there a public demand, but the medical profession had recently shown its recognition of the necessity for better provision to ensure that medical attendance should be promptly available when required.

Upon examining the various forms of provision for medical attendance, the elements that were found in practice to lead to delay in obtaining it were, first, the fear of the honest patient that he might not be able to pay the cost of treatment, and, secondly, the ordinary inertia of human nature.

The first of these difficulties might be met by some form of insurance. As regards the second, the want of education, particularly of scientific as distinct from literary education, led to want of recognition of the importance of what appeared to be trifling disorders, and this would be removed by the development of knowledge.

To what extent should the State intervene to make provision for these necessities? In considering the kinds or degrees of intervention that had been suggested it would be noted that, in the first place, there must be some kind of economic provision to secure that the funds necessary to pay for treatment should be available when required, and there was the question what part the State should play in organizing or promoting such provision. Secondly, there was the question to what extent the State should intervene in employing the doctor, or in determining the conditions of his employment. These two kinds of provision must be kept entirely distinct in our minds. There was the question of national insurance, the question whether the State should undertake to make arrangements whereby the funds for the remuneration of the doctor should be available, and, as quite an independent matter, the question whether the State should itself directly employ the doctor or should lay down the conditions under which he should be employed.

As to the first of these points there appeared to be general agreement. On the side of the public, one had heard of no protest against the proposals of the present Government to organize sickness and invalidity insurance; and, as regards the medical profession—though, of course, it was not suggested that there had been any representative pronouncement—there could be little doubt that the general feeling was in favour of some system of insurance whereby proper treatment should be made readily available.

The question, then, would be whether the State should make the arrangements for the actual rendering of medical attendance or should leave that to private arrangements. It had been inferred by some, from certain statements of the Chancellor of the Exchequer, that the Government would not in its Sickness Insurance Scheme make any explicit reference to provision of medical attendance. But if there were insurance against the cost of necessary relief during sickness or invalidity, it was clear that whether the cost of medical treatment was specifically and separately provided for or not, the provision must be sufficient to cover that cost, or it was not of any use to the patient.

Assuming it to be generally agreed that the State shall intervene to the extent of securing that funds out of which the doctor may be paid shall be available, the next question was as to the system of employment of doctors which should be adopted, and the extent to which the State should actively concern itself in this matter. On this there was the widest variety of opinions. At one extreme were the proposals of the Minority of the Royal Commission on the Poor Law, who recommended the employment by the State (using that expression to cover not only central but local public authorities) of a number of whole-time medical officers whose duties should include the treatment of every kind of disease. Some critics of the Minority Poor Law Report alleged that the authors of that report contemplated making the services of the whole-time medical officers available for every member of the community, but such a proposal was not definitely put forward, and the speaker understood that the Minority Commissioners did, in fact, contemplate that the benefits of any State service should be restricted by a wage limit or other similar provision. The main point, however, was the conception of organizing a State service of whole-time salaried medical officers for purposes of treatment.

At the other extreme were those who believed that treatment would always best be given by an independent medical service, and who believed also that it was possible so to organize a public service for medical attendance that the patient should have that desired freedom of choice of his doctor which he enjoys in private practice. Those who took the view that the treatment of disease is not a purely material process would lay stress on this element of choice. Members of the medical profession were sometimes accused of being too materialistic, but the speaker believed that every medical man or woman experienced in practice was convinced that psychical elements had an important influence on the success of treatment of material disorders.

Considering the present matter from the psychological standpoint, two of the most important factors were, as regards the mind of the patient, that he should have confidence in his medical attendant, and, as regards the mind of the doctor, that he should be inspired in all his efforts by the knowledge that he enjoyed the confidence of his patient. These conditions were more likely to be present if the doctor was not forced upon the patient from outside, but occupied his position of trust through the exercise of the patient's volition. That was a most important element to take into account in considering any proposed great extension of the employment of whole-time officers for the treatment of disease.

It would, of course, be possible to provide a public medical service on a part-time system analogous to the present Poor Law medical service. Whatever objections there might be to the Poor Law medical service on the ground of inadequacy of remuneration, it appeared to him that the public made a good bargain in that the Poor Law patients got the benefit of the experience which the Poor Law medical officer acquired in his private practice. In connexion with any system of provision of medical attendance under a State sickness insurance scheme, part-time medical officers would have the same advantage over whole-time medical officers, but this still would not afford the advantages of choice of doctor.

If reliance were placed entirely upon private practitioners not holding any special official position, and the patient left to make his own selection, the doctor being paid out of the insurance fund, the next question would naturally be as to the method to be adopted for the remuneration of the doctor. Several methods would be possible, but the consideration of the relative merits of these was a matter chiefly affecting the medical profession, and might be deferred for consideration along with other aspects of the problem in which the profession were more especially concerned.

One advantage of organizing our national medical service in association with a scheme of national sickness insurance was the retention of the provident element in the organization of the medical service. In saying this he desired to dissociate himself from any assumption of social theories either socialistic or individualistic. He would suggest that they should avoid importing such theoretical issues into the discussion of a question of practical politics such as they were now considering, and that in deciding whether it should be regarded as part of the function of the State to intervene at the present time to promote the organization of a national medical service, whether through a State Sickness Insurance Scheme or otherwise, and in considering whether the beneficiaries should or should not be compelled to contribute to the cost of such a service, they should not concern themselves with any general philosophical questions as to the basis of social organization. In a kindred matter they had had a very excellent warning from the leaders of two of the great political parties—namely, the Prime Minister and Mr. Balfour—who in the discussion in the House of Commons on the Poor Law question had denounced the method of labels as applied to the consideration of questions of this kind, and had deprecated the application of the term "socialism" to proposals such as were then before the House of Commons. In the discussion of this question of a national medical service, there had been a tendency to import such considerations, which he submitted were out of place. He submitted that in deciding how the acknowledged needs of the community as regards the provision of prompt medical attendance should be met, they had no more need to consider abstract questions of socialism or individualism than they need understand the internal structure of the atom in order to decide what was good to take for breakfast. The data for a scientific synthesis of the principles of social organization were, he suggested, not available, but that need not prevent them from adapting practical measures to meet recognized necessities. Dismissing from their minds all such abstractions, he would suggest that it must be clear to all observers that at present there was much disease which was preventable; that the existence and effects of preventable disease were a matter of legitimate concern not only to the individual affected but to the community generally; and that one of the practical means of prevention was to make medical services readily available.

He believed that both the general body of the community and the medical profession were at the present time of opinion that the community must protect itself against the various losses which it incurred through disease by making improved public provision for medical attendance. The only practical question for consideration was how such a service could be most efficiently organized. He believed it would also be recognized that the principle of contribution by the beneficiaries would tend to efficiency of organization.

Turning from the more public aspects of the question to those in which the medical profession was more especially concerned, they had first to consider what was the position of the profession, and what was its claim to be heard by those concerned on behalf of the public before a decision was arrived at. In this, as in all such questions, the profession had, he would suggest, two parts to play. In the first place, members of the medical profession were the proper advisers of the Government on certain aspects of a question, such as that under consideration. He did not suggest that they were the only advisers, and they all knew the British distrust of the expert, but he did not see how it could be contested that medical practitioners by their knowledge and experience were specially qualified to advise the community as to the conditions which would make for efficiency in the organization of a national medical service. But, in the second place, under any such service, medical practitioners would be the employees, and therefore, in accordance with modern ideas, organized bodies representative of the profession had a claim to be heard as to the terms of employment, and it would be to the advantage of the community that upon the terms of employment the views of the

profession should be ascertained, not from individuals, but through such organized bodies.

The questions in which the profession were especially concerned were, of course, those of remuneration and of the conditions of employment which would enable the practitioner to do his work efficiently. Without going into reasons, he would suggest that among the chief conditions which would make for efficiency would be that the patient should have a choice of doctor and the doctor conversely some discretion as to his attendance upon individual patients, and that the details of the arrangement of the medical work of each district should be supervised by a medical committee.

The question of the terms of remuneration was naturally bound up to some extent with that of the system of appointment. If they had special officers, whether whole-time or part-time, payment would presumably be by salary, but, if they afforded a choice of doctor, then, as he had already said, various systems of payment were conceivable. There had been much discussion recently in the columns of the BRITISH MEDICAL JOURNAL and in the Representative Meeting of the Association as to the comparative advantages of the system of payment per head per annum (the ordinary contract practice method), and of the system of payment by fees in respect of the services rendered. He did not propose to go over all the ground covered by these discussions, but would draw attention to one point which had not, so far as he had observed, been brought into prominence—namely, the question whether payment by fee for each individual item of attendance bore, as its advocates appeared to claim, any more natural relation to the work done than payment per head per annum. He had not been able to see that payment by fee or any other particular system of payment afforded any true pecuniary equivalent of work done. Physicists had ascertained the mechanical equivalent of heat, but had any economist been able scientifically to define a monetary equivalent of labour? What magic was there in the fee which enabled any one to say that it was the proper reward for an actual visit or other medical service rendered? How did people arrive at any basis of remuneration for work? Where did the process take place as a result of which the individual doctor expected a certain fee as his recompense for a certain piece of work, and the patient was willing to pay that fee in consideration of receiving that service? Surely it resulted from a rough and ready method of subconscious averaging, arrived at in the minds of the parties as the result of experience. If we endeavoured to analyse the steps of that mental process, what were the elements which led to the result? He would suggest that on the part of the doctor the primary consideration was the total income which accrued to him as the result of a year's work. The charge of an individual fee for an individual service was merely one practical method of securing that the profession should receive a certain desired annual income as the return for the labour of the year. The labourer made his unit of income so much per week; the doctor made his so much per annum. The important practical question was that the total remuneration should be adequate. The principal point, as between the profession and the public, was to make sure that the insurance premium should be sufficient to afford the medical officers an adequate annual income in respect of the part of their time that they would have to devote to this work. The question whether the actual distribution of the funds to the individual doctors should be calculated on a basis of fee per attendance, or of so much per annum in respect of each person for the time being entitled to their services, was purely a question of practical detail and convenience as between members of the profession.

Any such system as he had been discussing would avoid the existing evils of contract practice, which arose, not as some suggested, from the system of payment per head per annum, but from the making of contracts between individual doctors and clubs as a whole, whereby one or a small number of medical practitioners became the sole medical officers to certain organizations. If the bargain were made between bodies representative, on the one hand, of the profession as a whole, and, on the other hand, of the community, or of large sections of the community, adequate remuneration would be as easily secured, if the profession were united, under the one system as under the other.

II.—Mr. C. S. LOCH,

Secretary, Charity Organization Society.

I PROPOSE in this paper to deal with the economics of medical treatment in reference to a scheme for the organization of medical treatment and the better remuneration of medical practice, such as is developed in part in the Report of the Royal Commission on the Poor Laws and the Relief of Distress, and to show that it may become substantially a scheme of insurance against sickness, or may lead up to such a scheme.

The economics of medical practice are difficult. Medical practice is a service, and should, relative to the grade of its skilfulness, be purchasable by the highest bidder according to the demand for such-and-such a grade of service. The community by examinations and registration desires to ensure that the medical practitioner possesses at least a certain minimum of skill. But subject to that the profession classifies itself into consultants with their larger fees, and surgeons, paid according to their skill and reputation, and general practitioners; and undoubtedly there is great variety of remuneration down to the sixpence payable in the poorest districts. There is thus a grading of payment presumably consistent with a grading of skill.

But this only in part represents the economic position. Probably the more knowledge progresses, the higher is the examination standard, and the greater is the skill purchasable for the corresponding fee or payment. But two considerations affect this. The medical practitioner classifies his patients according to their standing. The resident in the larger house pays a larger fee than the resident in the smaller. Hence the same doctoring, but it may be with lesser comforts and comforting, goes to the richer and to the poorer alike; and the margin of difference represents the price of social consideration in terms of medical care and solicitude. So the richer purchaser always pays more, and has, so to speak, serviettes at his dinner; the poorer may have a similar or, indeed, the same meal, but no serviettes.

This characteristic, however, is not peculiar to medicine. The prices of many things vary according to the riches or poverty of a district. On the other hand, if an offer of certain accommodation or services at fixed prices can be made to them the people are inclined to classify themselves according to the offer, in medical treatment, as in other things. There is always a population that likes to travel first class, and another that can or will only pay for third. This represents one element in the consideration of the supply of treatment to members of the wage-earning class—earning, say, under 30s. or 40s., or even 50s., a week. They may become accustomed to take second or third class tickets for treatment when definite second or third class accommodation in medicine is habitually provided at a recognized per attendance fee on association lines like the per mile payment in railway travelling.

But in medical practice there is a further difference. The question to a large extent is not what people will pay for themselves for a certain standard of medical skill, but what other people—the charitable or benevolent, for instance, or the community, as represented in its administrative departments—think should be the standard of medical skill and care for others. Thus new grades of payment, and even the negative grade of non-payment, are recognized on the understanding that there should be available for certain members of the community a grade of treatment higher than that for which they would ordinarily pay or be able to pay. The result is peculiar, and raises broadly all the questions to be discussed in relation to any proposal for insurance against sickness.

The fact that the community (as well as private individuals) desire to have a supply of skilled treatment made available for persons in excess of the skill and treatment for which they are able to pay, complicates the whole economics of medical practice. It is as though they thought some article so important for the citizen that they were ready to supply it in a superior form at less than cost price. The effect of this on a trade would be obvious. The higher-priced goods sold at the lower price would drive out of the market the lower-priced, and the producers of the lower-priced goods would be driven out of the market by degrees as step by step the process continued.

A process of this kind kind has long been in operation in medical treatment. It is now proposed by the Minority Report of members of the Royal Commission on the Poor Laws that it should have a far larger range. It is suggested, indeed, that free treatment should be supplied to the wage-earning class, and that for them payment for medical treatment on economic lines should be altogether abandoned.

Remuneration has several forms which vary according to the methods of remuneration or non-remuneration. There is the payment of the medical practitioner according to the patient's standing. To this we have referred. It is a payment for services on normal economic lines, partially neutralized by a consideration of the status of the purchaser as having or not having a greater ability to pay, a process that has a larger range in economic exchange than is ordinarily assigned to it. There is also remuneration by joint or insurance payments. The sick club which the medical practitioner starts and keeps in his own hands is of this type.

There is also the provident dispensary in which the medical practitioners of a district take part, each remunerated according to the number of the patients who attend them in connexion with the dispensary, subject to a standard of wage which should exclude all those who make a larger wage from the benefits of the dispensary.

In such arrangements of club and provident dispensary the general practitioner is, or should be, receiving his remuneration from the less wealthy of his constituents on terms more convenient to them and sufficiently satisfactory to himself. The conditions are, or should be, primarily under the associated control of the general practitioners of the place.

But in another class of work the position is different. The friendly society or club contracts with the practitioner to attend to its members at a stipulated sum; and there is sometimes much contention whether this sum is a fair remuneration for the work required. Here there is a kind of collective bargaining on the one hand, and, on the other hand, a practitioner competing with other practitioners, and disposed to think that the indirect results of his acceptance of an otherwise insufficient remuneration may justify his acceptance of it. This may or may not be the case. But, so far as it is a question of the particular contract, undoubtedly a wrong is done if the remuneration, which should be payable according to the market standard, is thus reduced.

In this case there is no question of a larger or less payment according to the patient's status. It is a question that is entirely individual to the general practitioner, and turns on his view of his own private advantage. But the quasi-unremunerative contract once accepted the practitioner cannot ruin himself; and accordingly he is placed in the position, not merely of giving less "comfort and comforting" in his services, but of reducing them to the necessary or most nearly remunerative minimum. It follows from this that the contract on his part is vitiated by his regard to indirect results. It is vitiated, as any contract is vitiated, if it is taken at a competing price, when its acceptance means a reduction of the efficacy of treatment below that which is legitimate according to the standard of medical skill and practice accepted by the profession at large.

This standard, as we have seen, is being raised by newer knowledge and a higher skill. It should follow that the remuneration in contract work should rise also proportionally. If it does not, there is a margin of effectual service that, not being remunerated, must tend to disappear in practice. If it were a kind of goods that were vended, instead of a kind of service, the result would be seen at once. The goods could be analysed and their defects ascertained; but this can hardly be done in the case of services rendered. Of course, medical service is a profession, not a miscellaneous trade; and a sense of honour neutralizes the extremes of the economic pressure. But in the interest both of the public and the practitioner, the professional and the economic interest should as far as possible be made consistent.

The same conditions appear in another branch of work. The boards of guardians often contract, as a club or friendly society may do, at times with very similar results; the evidence taken by the Royal Commission on the Poor Laws indicates this. The more expensive drug may not be given, and the patient may suffer accordingly.

Lastly, there is the non-remunerative treatment of sickness. Here, to recur to my illustration, the better goods (or services) supplied at a lower price naturally tend to drive out the middling goods (or services) charged for at higher prices. Society used to be frankly considered as based on a division of classes. The poor, or the labouring poor, as a class could not pay, at least in serious illness. Apart from the educational use of their attendance at hospitals and dispensaries they were accordingly treated gratuitously. The crowd of poor patients which attended at the house of the physician in older days was diverted to the out-patient room of the hospital or to the dispensary. In this way the physician or surgeon of the hospital or dispensary, though he gave his services gratuitously, was remunerated indirectly by assuming a higher status in public reputation, and thus the charitable or gratuitous contract has become vitiated, as has the economic and remunerative friendly society or club contract, but on different grounds.

Clearly in this as in the previous instance the remedy lies in the exclusion of the individual and incidental advantage or perquisite. The service, like others, should be paid for on a remunerative basis, only the remuneration should come not from the patient, by hypothesis unable to pay, but from his patrons. The principle is the same as that applicable to other forms of medical service.

But the argument may be pushed further—on the patient's side. Who are the poor—the labouring poor, it may be asked—for whom free treatment is desired, owing to their lack of means? Also, disease is itself, it may be said, a relative term. The man who is better off, but who suffers from a more serious trouble, requiring, perhaps, a skilled operation, is relatively poor. Should he, too, be treated free? Again, it is said the poor should have the best treatment. The same disease may affect rich and poor alike. What makes for recovery in the one should be available for the other. Hence, as free treatment, the best treatment should be offered. Should this be so? Obviously, in the mere asking of these questions a principle is admitted. In medical remuneration there must be adjustment according to the extent to which patients can pay according to their payability. In ordinary practice this principle, as we have seen, is fully accepted. But it follows that the higher the standard of skill and treatment on the medical side, the greater should be the discrimination on the economic side, unless in these circumstances economic considerations are to go to the wall, or, in other words, unless medical treatment is to be provided to the vast mass of the people on a system of remunerating the medical practitioner by a new universally or very widely applied contract, as between the State and the mass of patients, or by, what may be the same thing, a State salary which would now, or in time, be in the nature of a contract similar to the contract with the club or friendly society or with the Poor Law guardians.

We have, then, this alternative—a new discrimination well founded and generally accepted, or a free system of medical treatment for the mass of patients on lines of State contract. In lieu of the latter there may be a system of sickness insurance established by the State, in part supported by the State, and made compulsory for the mass of patients—say, for instance, of patients earning less than 30s. or 40s. a week. But here, again, the lines of remuneration would be those of contract or of salary similar, in fact, to remuneration by contract. We have thus to consider on the one hand the possibility of a new discrimination and classification of patients, and on the other a salaried or contract State system resting on a free medical service, or on insurance.

Let us take the method of discrimination first. Clearly it depends on a recognition of a minimum non-payment class. We have seen that in principle medical remuneration must be given according to status. By the doctor's club or provident dispensary system, working under the conditions set out above, this remuneration is brought down to the insurance or associative level—the level, that is to say, which represents the lowest legitimate scale of payment, because on the basis of mutual aid a lower payment can legitimately be made by the patient than on the basis of separate arrangements entered into for himself alone, and for the same reason a lower payment per case is

remunerative to the practitioner. Mutual aid serves both parties, the doctor by increasing his clients and regularising their payments, the patients by reducing their fees. Can we work out our problem on this basis? If we can, there are some plain advantages in so doing.

First, the method is already at work on a large scale in different parts of the country. The doctor's club is everywhere: the provident dispensary in the treatment of patients at which the general practitioners of the district participate is a widespread institution. In these institutions there is not a contract practice in the usual, or injurious, meaning of that term. Two things are considered—the general standard of the professional charges applicable to the poorer class and remuneration to the practitioner, and the ability of the poorer class to pay such charges. The profession in the district as a whole settle the one. The patients of the poorer class in the main accept or reject the standard and so settle the other. Contract, that is contract by which an individual practitioner is bound over to fulfil terms quite unremunerative to him (unless it be for certain incidental or speculative advantages), is avoided. There is mutuality on both sides—as between the members of the profession on the one hand, and as between the members of the dispensary on the other. Where these conditions prevail the agreement that is made between the parties can hardly be called a contract in the sense of a "rack-rent" contract.

But there are possible loopholes. The individual patient may stand out and go to the hospital or to the Poor Law. The individual practitioner may stand out and evade the generally accepted terms or undercut them. In fact, there must be competition in the supply of services, but it must also be competition adjusted to social considerations—which, indeed, it is already to an extent not generally recognized. Members on the one side or the other may no doubt wish to escape from these social considerations. But clearly the only way of preventing this is to bring the outlying country to which they may escape under the same general regulations as the country from which they flee. Dr. Dewar, in a recent paper in the BRITISH MEDICAL JOURNAL, says:

> Another scheme is put forward which is based on the fact that on a wide average each club member receives four to five visits and consultations a year—the payment per visit system. Allowing 2s. or 2s. 6d. for each attendance, this would mean a subscription of 10s. a year. This proposal would be a great advance on the 3s. to 4s. club.

He infers that such a standard might be acceptable in a system of State sickness insurance. But if this or some similar standard be accepted it may have another application. Why should it not serve, *mutatis mutandis*, as the basis of remuneration of medical officers under the Poor Law? If this was accepted the medical officer would, on the whole, be remunerated on the same basis as his professional brethren outside, so far as his official services went. Outside there would be a fee payable by patients of less than a certain financial ability, as agreed by the local representatives of the profession; inside, a similar fee would be payable on behalf of patients who were unable to pay the recognized fee. But the standard of remuneration of the practitioners would be equal, or approximately equal, in both cases. If the applicant for Poor Law medical relief was unable to pay the club fees at the time of his application but might do so later, he might fairly be put on the medical club, and his joining it would not injure the profession in any way.

But there are other considerations. The illness may be so serious as to require admission to a hospital for treatment or for operation. For these patients at the hospital or at the Poor Law hospital or infirmary there might be a tariff of charges, and these charges, settled as nearly as possible by the consensus of the profession, would be payable by the patient and his friends, or by the Public Assistance. Now the hospital subscribers pay the charges of maintenance, nursing, and drugs, but not those for the physician's or surgeon's skill. On this plan there would be that additional charge. There would not be more dependence on the part of patients, but probably less. But behind the medical club, and behind the medical relief of the Poor Law to those who have not joined the club, there would in serious cases be the use of the hospital or the infirmary on terms throughout equally remunerative to the profession.

The member of the medical club might perhaps go more fitly to the voluntary hospital than to the Poor Law infirmary, but there would be cases in which this was not desirable; and so vice versa in the case of patients who attended the district medical officer. In this way all those who have, say, less than 35s. or 40s. a week would be provided for, and the utility of the system would declare itself. The argument that free medical relief was necessary because only if it were free would the patient, as soon as he felt ill, apply for medical assistance, would fall to the ground. The patient obtains assistance on good terms, whether he be a member of the sick club or an applicant to the Poor Law. Nevertheless there is discrimination. Most men like independence. On this plan the administration fosters it.

But there is another loophole—the out-patient department and the free dispensary. If the principle here adopted be right—that of payment according to work done—somebody would pay the medical man who conducted the out-patient work. As officers in this department they should claim a payment similar to that which would be accorded to them in club practice; and this can be provided also in the two ways of payment for and by the patient or by the supporters of the institution. And it should not be impossible for the authorities at every hospital to refer cases to the recognized dispensary or club, as it is suggested the Poor Law authorities should do in suitable instances.

In every suitable district there would be a recognized and official Medical Assistance Committee according to the Report of the Majority of the Royal Commission on the Poor Laws, and it would be its duty to promote the provident system on the lines I have mentioned and to co-ordinate the medical agencies and resources of the place. This I believe it could do in accordance with suggestions such as those that I have ventured to make.

If in fact there is a large class below the provident level on its lowest lines, that class would become the claimants of the Poor Law or the voluntary hospitals, as the Medical Assistance Committee would arrange. And so the difficulty of medical economics would be met—that philanthropists and administrators want for their clients better attendance than their clients can pay for, under conditions that militate against the proper remuneration of the medical profession.

Dr. McVail proposes that the public dispensary system should be subsidized by grants from the rates and taxes. He very naturally concludes that without this financial help there will not be a large enough expenditure on the buildings and organization of the dispensary, nor a sufficiently strong centre to which the medical ability and influence of the district would gravitate.

Suppose this plan adopted, you would have a part-pay, part-State organization of medical relief for all classes who could not, or would not, pay the fees that would be required of them according to the standard of club fees. If the provident system were rigidly adhered to or made compulsory, and the loopholes that might lead to an extension of any voluntary and non-payment system blocked, you would have practically State insurance against sickness with the advantages: that the great body of the profession would be included in the new arrangements; that an agreed standard of remuneration would be payable for a similar service, whether in ordinary practice or in public assistance, or in voluntary work; and that the medical resources of the community would be brought into one co-ordinated system.

Whether the step should be taken of applying public funds to the maintenance of the public dispensaries, I am doubtful. On the whole I am against it. But if the present policy of a large expenditure on public health is to continue, the dispensaries as most useful centres for the prevention of illness as well as for its cure would no doubt inevitably receive official support. But throughout it must be remembered that medical aid must be discriminative, and where the means of the patient are insufficient, public assistance or voluntary aid will have to be forthcoming, as heretofore, though under different conditions. No State system without these will work, not even a State sickness insurance system.

Now suppose, in lieu of this, State insurance against sickness introduced. Then, according to a scale, payment would be made by employer and employee with a *plus*

probably from the State as in some measure equivalent to such a scale as that of the recognized public dispensary. With it would no doubt come some arrangements, as in Germany, for paying for beds in voluntary hospitals; and the Public Assistance hospitals would also have to be used. A large fund might accumulate in the hands of the State that might be used in part for the erection of sanatoriums or for the perfection of the medical service.

In both cases the recognized dispensary system and the insurance system sums would be levied from the possible patients, but on the dispensary plan the levy would be voluntary. In both cases, if provision has to be made for a long illness, the Public Assistance authority may have to intervene. Thus in many features the two plans are alike. Take away the voluntariness, and the differences would practically disappear, except, perhaps, on one point—the payment of the medical man. According to the height of the scale of wages for persons entitled to join the dispensary or the insurance scheme, all or almost all the medical practice for the poor or the not-so-poor would become organized, but in the one case on lines of remuneration generally applicable and accepted as such by the medical profession, and in the other on the lines of salaries paid by the State.

If the salaries are based on bare competition, the evils of the present remuneration of district medical officers would be repeated on an enormous scale. If the salaries are payable on what I may call medical association lines, the State would make less profit, and be able to invest less in sanatoriums or other institutions, but otherwise the methods would again be brought into an equality.

But that a dispensary system would impose on the country a much lesser burden of administration is undoubted. It would also entail less red-tape and friction. It would be more consistent with our habits of thought and life. It would be regularized, though voluntary.

To adopt this view is not by implication to oppose invalidity insurance on German lines for long-continued or permanent disablement. A dispensary system of the type we have been discussing, and a method of insurance against invalidity, appear to me to be quite consistent.

DISCUSSION.

Dr. J. PEARSE (Trowbridge), approaching the subject from the standpoint of the general practitioner, said that the latter might not be an expert sociologist, but if his work lay mainly among the poor he was brought into very direct contact with the people, and should have abundant opportunity of knowing their needs. The opinion of the general practitioner was therefore of some weight. As regards the effect of State medical insurance on the public health, there were two points of view—one which regarded sickness as something to be cured and one which regarded sickness as something to be prevented. The latter was that of the Minority Report. It aimed at the removal of all restrictions connected with the seeking of medical relief, at the merging of the present Poor Law system into the departments of the medical officer of health, whose inspectors would search out illness and whose officers would treat it. The ideal was

> Positively to search out every case, even in its most incipient stage.

He was in sympathy with the ideals animating the authors of the report, and were the results a certainty the methods would have to be acclaimed regardless of the cost. But the report expected altogether too much, and there was not sufficient justification for the radical suggestions made. For instance: (1) Though the strenuousness of the medical officer of health had effected much, it was still baffled. With all the vast expenditure on isolation hospitals, diphtheria and scarlet fever were still rife; and it was seriously questionable whether the result was proportionate to the cost. (2) The analogy drawn from the diminution which had taken place in zymotic diseases and in diseases of occupation did not hold good in the sphere of other maladies, and the speaker was puzzled by some of the observations made. Thus:

> Similar reasoning can be legitimately applied to chronic bronchitis, which can usually be prevented, if the acute stage is properly treated; to catarrhal pneumonia, which is often the precursor of phthisis; to the heart diseases that are due to acute rheumatism; to chronic kidney disease; to some forms of cancer, which are curable if operation is early enough.

Now, as a matter of practical experience, chronic bronchitis did not depend only on a badly treated acute attack, but usually on quite other conditions; catarrhal pneumonia was seldom the precursor of phthisis; heart disease would develop in a rheumatic case treated with every care; chronic kidney disease more often developed insidiously than from a neglected acute attack. This was but an illustration of other similar statements, which raised an altogether illusory hope of the prevention of disease. (3) The beneficial results portrayed depended on other matters than inspection and medical treatment. The "cure of the social bad habit" was a recurring phrase in the report, but the cure depended not on the advice given, but on whether society or the individual would accept such advice. Legislation would not cure human nature. (4) Doubtless much sickness among the poor was preventable, and if intemperance and vice were abolished, housing improved, employment and abundant food found for every one, the golden age might dawn; but these things depended not on the *ipse dixit* of the medical officer of health, nor were they the growth of a day. Hence treatment of disease would still be for long the prevailing need. Prevention of disease was the ultimate aim, of course, but the time had not yet come for subordinating all other medical considerations. There was certainly room for co-ordinating other forms of medical assistance with the sanitary services, and much amelioration would result. But, as Dr. Downes had put it:

> The separate functions of the two services are, however, quite definite, and any amalgamation of them such as is suggested would be detrimental and contrary to the public interest.

If medical treatment must still form the keystone of any system of State medical assistance, it followed that the services of general practitioners must still by some means be retained in the service of the State. Despite their tendency to medical demagogy, addiction to the panacea of a bottle of medicine, and failure to cure the social bad habit, they were an asset with which the State could ill afford to dispense; and it would not be in the interests of the community to substitute for them salaried civil servants. There was no work in which so much depended on personal initiative, in which there was such a constant stimulus to self-improvement, and in which reasonable competition was so salutary. The success of medical demagogy was for a day; the success of strenuous work was for a lifetime. Let the State ask general practitioners for their best and remunerate them for their best, and the interests of the public and the profession would both be met. In the present system of contract medical attendance no attempt had ever been made to co-ordinate payment and work; that error should not be repeated now. The most elaborate return of sickness experiences which the speaker had seen was a report prepared for the Manchester Unity of Oddfellows. It showed that the average yearly sickness of each member was 2.344 weeks, a much higher figure than was usually realized. A diagram prepared by the speaker from Table III of that report showed the rate of sickness per member per annum at various ages for the periods 1866 to 1870 and 1893 to 1897 respectively. In the latter the lowest amount of sickness was 0 9 week at the age-period 20 to 24, while it rose steadily at each age-period, and rapidly after middle life, till it reached the high average of 10.5 at the age-period of 65 to 69. It was important to note that sick benefits were based on figures such as these, and medical benefits should be similarly computed, and the remuneration not guessed in some haphazard fashion. When the differences in the two tables were examined, it was seen that the latter table showed a steady rise in the sickness-rate. This was most marked at the higher ages, but was sufficiently obvious throughout all the age-periods. To quote from the report:

> Up to 45 years of age the average sickness has exceeded that of the period '66-'70 by 21 per cent.; between the ages 45-65 the excess is equal to 26 per cent.; at the ages 65 and over it is no less than 45 per cent.

This is a very striking fact, considering the increase in the health of the community as a whole. Did it mean that with an extension of sickness insurance there had been an increased tendency to come on the sick fund? A recent paper on observations on the health statistics of the German people and army stated:

> Owing to the workmen's compensation and invalidity insurance acts, what is called in Germany *Rentensucht* (=a desire

to live at ease on an unearned income) has seized hold of the working class mind and encouraged men to make the most of small defects and ailments.

The speaker was insufficiently acquainted with Germany to gauge the correctness of this statement, but quoted it to emphasize the necessity of carefully scrutinizing sickness claims in the interest both of the public and the profession.

Dr. Keay (Greenwich) said that for a number of years he had taken much interest in State insurance. A few weeks ago he had received the official sanction of the Government to make inquiries on this subject in Berlin and Hamburg, and from the Embassy at Berlin and the Consul-General at Hamburg he had received every possible courtesy and attention. On that account he could probably best contribute to the discussion by giving his recent experience, as the position in Germany a few years ago was now ancient history. Before doing so, he would like to refer to the main points in Mr. Whitaker's paper. Among the various methods of arrangement between the doctor and his patient there was, first of all, that of private practice, according to which the patient paid for each visit or consultation. That still held good to a considerable extent in Scotland and the North of England. He believed that it was the best, but, unfortunately, in large centres of population it was now seldom practicable. There was, secondly, attendance by means of clubs and friendly societies; and, thirdly, that of the charitable services. As to the last he could not trust himself to speak dispassionately, as he regarded the method of attendance by out-patient departments as utterly demoralizing to the community at large. There was the same position in Germany nearly thirty years ago. The membership of friendly societies was then, not as generally stated, large. To meet such defects as at present existed in England State insurance was introduced in Germany more than a quarter of a century ago. The Act was not perfect, and a new bill had recently been introduced. It consisted of 1,754 paragraphs, and over 400 of these had been discussed by a Parliamentary Committee. Unfortunately, there was a wide difference of opinion, and unless greater progress was made the probability was that the bill would never come into force. That bill had unfortunately accentuated the differences that for some time had existed between medical men and the working classes. He had discussed the subject with medical men, State and insurance officials. No one could speak dispassionately on the subject. Insurance officials said that the medical men were extortioners and were plundering the working classes; that it seemed unreasonable that medical men should make an income of £500 or £750 a year almost as soon as they began practice. Medical men, on the other hand, said that they were pitifully underpaid. It had recently been often stated that the average income of a medical man in this country was about £250 a year. He knew no grounds for coming to that conclusion. The income of medical men in Germany was more easily ascertained, as the amount on which taxes were paid in certain States had been published. There was probably at the present time not much difference in the financial position of medical men in the two countries. In Germany there seemed to be a general belief that the prospects were not so bad as was generally stated, as the number of medical students within the past six years had almost doubled. The main point of dispute between medical men and the working classes was as to whether patients should have a free choice or medical men be under control of insurance officials. Of the 36,000 medical men in Germany, 24,000 were banded together to resist this dictation to the utmost, and it did appear strange that while this fight was going on in Germany there should be so many medical men in this country who were willing to subject themselves to public bodies. There could be no doubt that the compulsory insurance system had done well for the working classes in Germany. In the southern agricultural districts and in the large cities of the United Kingdom there were many whose wages were so small that at the end of their days there seemed no other prospect but the workhouse. By State insurance provision was made as soon as work was begun for sickness, old age, and invalidity. The consequence was that there was a feeling of independence among the working classes in Germany that many in this country did not possess. In Berlin he found no slums. In Hamburg alone was there anything approaching widespread poverty and misery. He trusted that the British Medical Association would now be able to devise some scheme so that it could not afterwards be said by the Poor Law Commission or any other authority that the system of medical attendance, or rather want of attendance, in this country was a prolific source of misery and pauperism.

Mr. H. W. Armit (London) expressed his disappointment at finding that the majority of the speakers had dealt with the theoretical aspect of the question, and had more or less ignored the fact that we were twenty-five years behind Germany, and that it was possible to pick up the threads at the point which had been reached in Germany. It had been amply proved that compulsory insurance had effected a marked change for the good in the public welfare. The much-spoken-of feeling of independence of the British workman was a poor asset when this independence was bought at the expense of prosperity. It was far better for an individual to give up this false idea of independence when starvation stared him in the face, and to be content if the State—that is, the community—made provision whereby he could meet his difficulties. In order to render compulsory insurance possible it would be necessary to control the community by police registration. Without registration it would be impossible to effect a complete system of insurance. The State could provide for itself and procure medical attendance and sick pay in exchange for premiums paid by the individual and the community in varying proportions, and, as a result, the general status of the individual would tend to improve. Self-respect would be created and not destroyed, and thus, indirectly, real independence would emanate from submission to registration and enforced insurance. If the community gained by such a scheme—and the speaker was convinced that it would—then the medical profession would also gain. Apart from the fact that the medical profession was a part of the community, it would be possible by selecting the good and refusing the bad of the German scheme to guarantee a living wage for each professional man. In Germany the condition of the profession was scarcely worse than it was in this country; but it must be remembered that we in this country could take advantage of Germany's experience of twenty-five years, and avoid those pitfalls into which our colleagues in Germany had wandered blindly. Dr. Keay had stated that there was extreme poverty in Hamburg, while the reverse held good for other German towns. He disagreed with this statement, for not only had he found the conditions in Hamburg far better than those of London or other large English towns, but the speaker's Hamburg friends on coming to London had on more than one occasion remarked on the number of tattered beggars and derelict persons in the metropolis. This observation was the more striking as there were more slums in Hamburg and more misery than in other German towns. It had been suggested that the introduction of compulsory insurance would of necessity bring with it a large amount of malingering. This might be so, but the German method of safeguarding against this was eminently satisfactory. If a person was thought to be malingering, or if doubt existed with regard to the reality of his complaints, the person was subjected to a period of careful observation by an expert in some suitable institution until a certain diagnosis was arrived at. This might occupy weeks, months, or even years, but from the experience in Germany it could be said that malingering was usually found out early, and prolonged observation was only required in those cases which were known as traumatic neurosis. In this way what was known as "*Rentensucht*" was readily controllable, and malingering could be kept within reasonable bounds. He agreed with Mr. Whitaker that it was immaterial whether the medical practitioner was paid according to the work done or by stipend, provided that a fair return for his labours was accorded him at the end of the year.

Dr. Major Greenwood (London) said that of the two factors mentioned by Mr. Whitaker as preventing prompt attendance in sickness—namely, (1) the feeling of inability to bear the expense, caused by honest feelings of inde-

pendence, and (2) the natural inertia due to carelessness or ignorance as to the serious necessity of prompt attendance on disease—the latter factor was by far the more important. This inertia was really the great drawback, and it was shown to be so by the same carelessness being found throughout all degrees of society. In these days of growing enervation of the lower classes—due to State interference with that independence which it should be the object of all statesmen to maintain—it was most necessary to instil provident ideas among the working classes, and to teach individuals that it was not a good and wise principle to expect the State to do everything for them. The scheme of the Association to provide a national public medical service on provident lines was a very good one, so long as it kept apart from and did not interfere with a proper medical service for the treatment of the destitute or State poor, and it ought to be loyally supported by all its members. One reason for forming this medical service was to have a professional organization ready to undertake the increased medical work naturally resulting from a Governmental scheme of invalidity insurance. It might be a very good thing if all such work were handed over to the British Medical Association, but this was very unlikely to be done. The friendly societies and their numerous doctors would have to be considered. The former had vast political powers, and at the present time would never consent to allow all the medical work to fall into the hands of the Association. The latter's first step should be to organize a better medical service than at present existed, and to endeavour to get into its hands by degrees all the clubs and friendly societies. Then there would be little difficulty in getting nearly all this invalidity work. At the present time the only practical course likely to be taken by the Government was to develop compulsory insurance, thus securing an adequate income for workmen, and leaving them to provide themselves with what medical attendance they chose. He approved of what had been said by Mr. Whitaker regarding the Minority Report, and endorsed every word spoken by Dr. Pearse. Sanitary science belonged to the general practitioner as much as to the sanitary medical service. The improvement in the national health witnessed in late years was quite as much due to the medical profession in general as to medical officers of health. He quite agreed with Sir A. Downes that there must be a separate medical service to attend to the necessities of the State poor. It must be co-ordinated with the sanitary medical service, but be kept apart from it. The speaker regarded the abolition of destitution as visionary. In this age of multiplication of degenerates, preventing destitution from increasing would suffice to absorb all efforts. The independence of the working classes had been sapped by the abuse of charity and the growing tendency of the man in the street to look on State provision of all necessities as within the vista of practical politics. He could not agree with Mr. Armit in his regret at the feeling of independence of the British workman. That feeling was a great national treasure, although diminishing. As a Poor Law medical officer he had repeatedly seen it in the very lowest, and his strongest sympathy had been for those among the very poor who had genuinely felt the hardship of having to give up their independence. When poverty reached a certain stage individual independence must be sacrificed, but this independence should not be interfered with till the public welfare absolutely demanded it.

Dr. W. HOLDER (Hull) repudiated Mr. Loch's suggestion that skill and reputation in the medical profession were regulated by price. Skill and practical training were as highly developed in parish and general practice as anywhere. It was a pity some of the speakers had no experience of the difference in the conditions of practice among the poor in London and those among the workers in the North and Midlands of England, nor of the difference in the degree of independence of the poor of London and the workers of the North and Midlands. There was already in England at work a national company insuring against poverty and finding payment for medical attendance for the patient during sickness. It seemed to be working successfully. It paid fees of 1s. 6d. per consultation and medicine, and 2s. 6d. per visit and medicine for two days, and adequate fees for operations, fractures, etc. These fees were paid by the society with regularity at the end of each month. Hundreds of practitioners whose ledgers in the past had been filled with unpaid accounts, and who had been forced to write off these accounts as losses, had benefited by the system of the National Deposit Friendly Society. It had been able to make regular payments for the work of attending these bad payers, and the result had been a superior average return to the practitioners. In view of the success of the society the Government should investigate its system before drafting a bill on the subject. The British Medical Association had at first objected to this society, but time had modified this opinion considerably. The system tended to enlarge practice, and preserved the independence of the wage earner and of the medical practitioner. In any scheme brought forward the management should not be left in the hands of those receiving benefits. The degradation of medical men working under the usual club management was deplorable. The management and supervision in a good system should be carried out by men of experience, and not by those whose sole qualification was a high university degree. The managers should have served an apprenticeship either before or after graduation in some district where experience could be gained of conditions similar to those which they would have to govern or inspect later. Having carefully surveyed the whole question, the speaker was convinced that there was urgent need for the profession to take a practical and not a sentimental view of the demand for an alteration of the conditions of medical attendance on the wage-earning classes. All honest men must desire full inspection of their work, provided that this be a proper one. He would go as far as to suggest that statistics might be required from those employed under the scheme. If such statistics were made compulsory, Mr. Loch's dictum would rapidly be disproved.

Dr. A. BYGOTT (M.O.H. Barking) said it might interest Dr. Pearse to know that medical inspection of school children at all ages revealed that the great majority had not suffered from scarlet fever; both this disease and diphtheria had lost much of their terrors. It was a great mistake to imagine that the medical officer of health was unsympathetic in his attitude to the general practitioner. As for the speaker himself he had been in general practice for seven years, and had not forgotten the conditions. It was also a mistake to relate disease too much to moral obliquity. Careful inquiry had revealed that the relationship was not so intimate as was formerly imagined. The speaker had tried to follow Mr. Loch, but all he could get out of his scholarly dissertation was that it was better to let sickness insurance alone and proceed to the elaboration of club practice as an intermediate stage. It would be well if Mr. Loch would study carefully the British Medical Association's report on contract practice. It was not in club practice that solution of difficulties should be sought. Club practice permitted great indignity and injustice without providing opportunity of appeal. The medical officers of health were anxious that as much of the work as possible should fall to the lot of the general practitioner. At present, in the speaker's own district, it seemed that only about 5 per cent. of the defects found in school children were treated by the family doctor. Even cases of whooping-cough and similar infectious diseases were taken to the out-patient departments of the London hospitals. Though these conditions should cease, it must, nevertheless, be realized that the hospital factor could not be disregarded in any scheme for State insurance. The manner in which the private practitioner was to be remunerated when his patients went to hospital should be clearly defined. An attempt to limit the access of persons to hospitals would be an unpopular proceeding. When giving evidence before the Royal Commission, the speaker advocated the setting up of an invalidity and sickness insurance scheme on the German lines, but at the same time pointed out its difficulties. A very large number of people would be unable to pay contributions, and just in this section the largest amount of disease was found. The mass of the profession could not hope to have such cases distributed among them, especially as they were supposed to be dealt with at present by the Poor Law doctor, who as an officer of the State had security of tenure. His claims to retain these patients would have to be properly considered.

Some check would be arranged to satisfy the public as to the medical certificates which enabled the insured to obtain monetary and other benefits. In the case of a certain railway company which had appointed a medical examiner to report on cases certified as fit to receive benefits, the amounts paid out had diminished enormously. It was a mistake to imagine that the entire settlement of the question rested with the meeting, because there were many and various interests at stake, and it was necessary to act on the fullest possible information and with the greatest possible care. The position of the profession was an advisory one, and the members could not compel compliance with their wishes; they must be reasonable. Before making any arrangements for any class with which the organizers were not familiar, the habits of that class should be carefully studied in order that the schemes proposed might be compatible with them.

Dr. MUIR (Glasgow) took up the question of the independence of the British workman, and pointed out that north of the Tweed there was a strong feeling of real independence, which he considered was of importance to the community. In dealing with the general principles involved, he came to the conclusion that it was by no means necessary for any Government scheme to be carried out. He was of opinion that the recommendations of the Minority Report were absurd. The Charity Organization Society's proposals did away with the necessity of State insurance. Medical attendance on the working classes was required to remedy the results of vicious practices in 75 per cent. of the cases. The speaker then dealt with the conditions of medical attendance among the poorer population in Glasgow, expressing himself in favour of leaving certain patients in the hands of specially appointed State officers.

Dr. LARKING (Buckingham) doubted if the friendly societies would give up their work in favour of a State insurance scheme. He was convinced that they would object to it strongly. In respect of remuneration it was easy to determine how much work would have to be carried out by examining the sickness statistics of the friendly societies and the Association's contract practice report. The sum of from 8s. to 10s a year should be the minimum. A scheme based on payment for work done would entail too much clerical work. Conditions in Germany were not comparable with those in England, owing to the fact that friendly societies did not exist there. The profession had to deal with three classes of persons: (1) The very poor, the lazy, and the casual labourer; (2) the wage-earning class; and (3) the middle and upper class. No. 3 should be left alone, No. 2 should be dealt with by the friendly societies, and No. 1 by the destitution authority. In country districts any one who was ill could get either the parish doctor, the club doctor, or the private doctor. He deprecated the statement that the British Medical Association was not strong enough to carry any weight. It had 22,000 members out of about 30,000 medical men. It should put its back to the wall, and make a stand.

Dr. A. H. WILLIAMS (Harrow) considered that the payments made by the National Deposit Friendly Society were better than those in vogue in other forms of contract practice in this country. During a recent dispute in his own neighbourhood the profession asked for the payment of 5s. per head instead of 4s., and the larger societies suggested a system on the lines of the National Deposit Friendly Society. Eventually, however, these same societies found that, while they could afford to accept the terms of 5s. per head, they could not pay on the other scheme. His own experience of the system of the payment by the beneficiaries of a fixed sum into a fund, and the allocation of the sum collected to the doctors in proportion to the number of visits and consultations, had shown that the amount of clerical work required rendered its general application unworkable. He approved of the suggestion of 8s. to 10s. per annum. There should be free choice of doctor for those who paid, but when the contribution was paid by any organization, it was the organization which should have the right to select the doctor.

Dr. R. WALLACE HENRY (Leicester) said he had studied the dispensary system for some years and strongly supported Mr. Holder's praise of the good work of men attached to the dispensary services, and supported the principle of contract service with a clearly-defined wage limit and with State registration. He advised members not to depend on the assistance of the friendly societies in fighting any Governmental scheme, as it was well understood that such a scheme was being drawn up with consultation with those societies.

Mr. SMITH WHITAKER, in replying on the discussion, said that as for the specific question whether there was evidence that the Government had been in conference with the friendly societies concerning its contemplated scheme, he had been assured on what was practically first-hand authority that there had been such communication. It might or might not be true, as Mr. Armit contended, that the problems had been worked out through the German experience, but as regards the provision of medical attendance, the German methods did not appear to have been very successful, and he doubted whether any satisfactory conclusion could be drawn from their experience. There was always a difficulty in applying conclusions drawn from the experience of one country to the circumstances of another. For example, the provision of medical attendance through the friendly societies was much older and more strongly rooted here than in Germany. It would be necessary to make a careful examination of the condition of affairs as it actually existed in this country to-day and deal with the facts thus ascertained. The differences between the National Deposit Friendly Society and the Association had nothing to do with the system of payment of fees per visit, but arose from the unwillingness of the society to alter the wording of certain rules which did not conform to its declared intentions, and which had been shown in practice to lead to difficulties with the medical profession in certain districts. As for the suggestion that payment by fee per attendance afforded a fairer basis of remuneration than payment per head per annum, so far as he had been able to observe, the majority of the members of the profession desired above all things that their incomes should be as steady as possible. He would point out that payment by fee per attendance would lead to much greater fluctuation in the income than the system of payment per head per annum, because in the former case there would be not only the variation in the number of patients who constituted the member's *clientèle* for the time being, but also the fluctuation due to the variation in the amount of disease prevalent at any time. Dr. Bygott had questioned the power of the profession to enforce its own terms in connexion with a system of national insurance against the cost of medical attendance, but this was contrary to the experience of the Association. In recent years, even with the present imperfect organization, it had proved possible in a number of instances to prevent the acceptance of unsatisfactory conditions of employment, and their organization was steadily improving. The number of those who would accept an appointment which it was clearly disloyal to the profession to accept was now very small, and they were usually persons whose services were not satisfactory to their employers. The Association had already, in fact, sufficient influence to make it preferable for the Government, or any other body concerned in the organization of a medical service, to consult it beforehand as to the arrangements rather than have differences afterwards. It could advise as to the arrangements that were likely to work smoothly and those which it would be well to avoid under penalty of risking a complete breakdown.

THE International Congress of Physiology will be held at Vienna from September 27th to the 30th. The number of communications and demonstrations on the programme is 175.

THE Metropolitan Asylums Board has made arrangements for two separate courses of lectures and demonstrations in hospital administration for the benefit of candidates for the Diploma in Public Health. They will begin respectively on the second Monday and the second Thursday in October; the courses cover the same ground, and only differ in respect of the day of the week on which the lectures and demonstrations are to be given. Their duration is three months, and the lecturer is Dr. J. MacCombie, of the North-Western Hospital. The fee is £3 3s.

SECTION OF ODONTOLOGY.

J. HOWARD MUMMERY, M.R.C.S., L.D.S.Lond., President.

PRESIDENT'S INTRODUCTORY REMARKS.

THE President initiated the work of the Section with a short speech, in the course of which he said: The great importance of dental surgery among the other departments of medicine is now fully recognized. Many of us have lived to see great changes in this respect. Not so many years ago the practitioner of medicine or surgery paid little or no attention to the mouths of his patients. The last thing to be examined was the mouth, and this is the more astonishing when we consider the profound effects upon the whole body caused by unhealthy teeth and oral secretions.

In my early days of practice, immediately following the introduction of the antiseptic methods in surgery, when a patient was being prepared for a serious operation no thought was given to the state of the teeth, while at the present day no surgeon would operate without first ascertaining that the condition of the mouth and teeth was not likely to be the cause of septic complications, the removal of diseased stumps and the treatment of the teeth and gums being now held by most surgeons to be part of the routine of an important surgical operation.

Again, the profound constitutional effects of pyorrhoea alveolaris are more thoroughly appreciated, and the serious disturbances of the general health brought about by this disease have received great attention during the last few years.

The vaccine treatment of this disease has brought our speciality still more into touch with the general profession of medicine. Good results from this treatment have been obtained in many cases, and, although it may not have quite fully realized our expectations, we have every reason to hope that further advances in our knowledge of the action of the defensive substances of the body will lead to a great advance in the successful application of vaccine-therapy in this and in other bacterial diseases.

The recent more intimate association of the dental with other branches of medicine is beneficial both to the specialist and to the profession generally.

It tends to prevent narrow views on either side, and we cannot but think that a great advance in forwarding the real interests of all branches of medicine has been attained in the foundation of the Royal Society of Medicine, and the institution of a Section of Odontology in the British Medical Association still further cements this bond of union.

Very close study has to be given to such a very special branch as ours, and we are no doubt very apt to become narrow in our views; it is only by the due appreciation of side-issues that a full understanding of the significance of disease can be arrived at.

The great subject of prophylaxis is now coming prominently to the front, and the efforts of the physician in the future will be more and more turned to the prevention of disease.

We have hope that in the near future the concentration of attention given to this subject will lead to the discovery of methods of preventing many terrible diseases that still defy all the efforts of science, but much has been done in the past, and many diseases either banished from civilized countries or so modified in their pernicious effects that, like small-pox, they have ceased to be a continual menace to the population.

The prevention of consumption is now occupying the attention of medical science throughout Europe, and this terrible scourge is being dealt with in a far more efficient way than hitherto. Already the campaign against tuberculosis is bearing fruit, and there is every reason to anticipate a considerable reduction in the mortality from this widespread disease, chiefly through the more effective measures of prevention that have been adopted.

The deterioration of the public health due to the presence of defective and diseased teeth is also a scourge that until recently has not been sufficiently taken into account, and in the discussion we are about to enter upon we shall hope to present at all events the chief factors concerned in the great increase of dental caries in modern times; and we hope that at this meeting we shall have done something to advance the prophylactic treatment of this disease. Much has been done in other countries, notably in Germany, especially by the early treatment of children's teeth; and England is now looking the question in the face, and we feel sure will not be long behind other countries in this great effort for the amelioration of the race.

THE EFFECT OF FOODSTUFFS IN THE CAUSATION AND PREVENTION OF DENTAL CARIES.

By J. SIM WALLACE, D.Sc., M.D., L.D.S.

[ABRIDGED.]

I PROPOSE to try to give a brief outline of the principles of the prevention of dental caries in so far as the effects of foodstuffs are concerned. For the sake of simplicity I shall avoid reference to various conditions such as warmth, moisture, the presence of bacteria, and more or less free exposure to the air. These conditions are so constant that they merely need mention. But there is a variable condition which when present is inevitably followed by caries, and this must be more fully noted. This condition is stagnation of fermentable carbohydrates in more or less immediate contact with the teeth, and undisturbed by the free access of saliva. It is now generally recognized in England at least that this is the important point, and not the existence of carbohydrates in the food.

It is obvious that the teeth may be of a shape such as would predispose to the undue lodgement of carbohydrates, and that their arrangement and relation to surrounding parts may have the same effect. In other words, the predisposing causes of caries are abnormal pits and crevices, irregularities of the teeth, recession of the gums, and abnormal relations of the gums, more especially round the wisdom teeth. Practically all these predisposing causes may be prevented, and it is chiefly through the medium of the foodstuffs that this may be done.

Referring now to the direct cause of caries, there are two classes of foods: (1) Those which tend to leave viscous and fermentable carbohydrates about the teeth; (2) those which tend to brush them away. When we observe what actually happens during mastication, we see that it is chiefly food of a fibrous nature which stimulates efficient mastication. The more or less liquid part and suspended particles contained in the fibrous meshes are expressed and swallowed, while the fibrous part is again and again subjected to crushing and disintegration between the teeth. Such foods are naturally chosen and consumed by adults, but when we turn to the foods which children are compelled to live upon very largely—for example, milk, porridge and milk, sloppy milk puddings, bread soaked in milk, potatoes and gravy, bread and jam, etc.—we realize the absolute impossibility of efficient mastication being carried out. We see further that what really is stimulated is simply a gulping movement of the jaws which helps to plaster the sticky carbohydrates into the crevices of the teeth, in which the bacteria—incubated and multiplied by similar previous meals—are lying in readiness for the production of further quantities of acid destined to decalcify the enamel of the teeth.

Hitherto we have learnt that bacteria are to be regarded as the exciting cause of caries; but when we consider the fact that it is only when carbohydrates are made to lodge unduly with the ever-present bacteria that acid is produced, we might almost be tempted to say that it is the carbohydrate which is the exciting cause. Moreover, if no carbohydrate lodged in the mouth, the bacteria which are best adapted for that medium would either be starved out or be present only in innocuous numbers, while the bacteria which find their natural food in the albuminous desquamated epithelium and other proteid substances may actually be antagonistic to the presence of acid-forming bacteria. Indeed, the normal bacterial flora may, under proper dietetic conditions, be valuable scavengers, liquefying the albuminous matter which otherwise would lodge unduly, and give rise to an unhygienic state of the mouth. Still keeping to the ordinary view that the bacteria are to be regarded as the exciting cause of caries, we recognize that the foods control the bacteria, both in number and kind.

First, fibrous foods, which stimulate efficient mastication, clean the bacteria out of the mouth altogether to a great extent. Secondly, fibrous foods, which by stimulating mastication remove sticky carbohydrates, remove also the nutriment which is most necessary for the development of bacteria, most active in a carbohydrate medium—that is (*a*) acid-forming bacteria; and (*b*) bacteria which give rise to viscous fermentation.

This latter class of bacteria is often overlooked, but inasmuch as it is only when the acid formed by bacteria is protected from neutralization or dilution with the saliva that decalcification of the enamel results, it is obvious that viscous fermentation should not be allowed, much less encouraged, in the mouth. Thus, therefore, cane sugar, when not well diluted, or eaten with something of a detergent nature may possibly, under certain circumstances, be more destructive to the teeth than the more directly fermentable sugars. All these deleterious bacteria and fermentations can fortunately be controlled by the foodstuffs.

It has now to be considered how this can be done in actual practice.

With regard to the diet of children before they have teeth I shall say nothing: we are all agreed that this should be mother's milk. When the child has begun to get a few teeth, and the period has arrived for commencing to supplement the milk diet with something solid, what has to be done? To restrict the child with teeth to milk, and bread soaked in milk, would just be the commencement of evil ways. Gulping food without insalivation would be the first result, functionless incisors the next, carbohydrate fermentation about the teeth would follow; tenderness of the teeth from want of use would naturally come on at a rather later date. So-called teething troubles would indeed have set in. No; the correct transition from the mother's breast, out of which liquid was sucked, is to equally solid food, bread, or toasted bread and butter, with a superficial area, if you like, as large as the mother's breast; from this the infant gnaws and sucks in a somewhat similar manner to that in which it sucked its mother's breast. The thorough insalivation and more or less complete liquefaction of the bread prepares it for the infant's stomach. The child knows that it has something solid in its mouth; it is not deceived, as it is when "bread well soaked in milk" is given to it. It therefore does not tend to choke and splutter. It has not large quantities of uninsalivated starch lying in its stomach ready to undergo unnatural fermentation. Its teeth and gums have been brushed by the gnawing, and indeed a smile of pleasant wonder at the simple and pleasurable transition is wont to come over the little infant's face. By the time a quarter or half a slice of toast is thus consumed—leaving out of account what falls on the floor—the milk which it has yet to be allowed is in readiness, and the shrieking which but for the half slice of bread would have arisen is averted.

Gradually the number of times this augmentation of the meal may be allowed is increased until further additions or variations, for example, rusks or bread rolls, if thought desirable, may be given; although bread and toast and butter to supplement the mother's or the diluted cow's milk is for a month or two almost all that is desirable.

In a short time—say, about the thirteenth month—the molar teeth make their appearance; this is a signal that solid food—for example, bread or toast, and well-baked milk puddings—may be eaten, not, as before, merely as a slight addition to the milk diet, but as a distinct and considerable part of it. And as it is desirable to diminish the amount of and concentration of the milk as the child grows older, so, correspondingly, may a little simply boiled fish or other plain albuminous food be added to the diet. Still later the second molars make their appearance, and the full temporary set of teeth is in position and ought to be in full functional activity. No more milk is then necessary; it may even be seen, both from a consideration of the full set of teeth or from the habits of primitive men and animals, that further milk is not really necessary; in fact, it is unnatural. Some form of milk may, however, be given or risked, perhaps, one should say, after this age, because by this time the child is able to eat practically anything, and, unless it is forced to drink milk by the pint daily, will no doubt be able to dispose of the clots of casein which are so liable to form in the stomach and undergo vigorous fermentation.

After the child has reached the age of 2 or 2½ it has a complete set of temporary teeth, and for its size and requirements as efficient a masticatory apparatus as any man of 30. The meals should then be arranged approximately on the adult plan—that is to say, three meals a day, with four and a half to five hours' interval between. A long interval between meals is what should be aimed at for several reasons; the only one to which I will refer is that the longer the time that elapses from the taking the previous meal, the more certain is the mouth to be free from decomposing foodstuffs, and consequently the more perfectly hygienic and prepared for more food it will be.

The meals should be arranged in such a way that there will be in each a sufficiency of hard food to stimulate the pleasurable activity of efficient mastication, together with its excellent concomitant effects on gums, jaws, teeth, and alimentary canal generally; and it should be terminated with foods of a detergent nature, so that sticky carbohydrates will be cleansed from the teeth and the mouth be in a hygienic condition. That is to say, it must not terminate with sticky carbohydrates, such as bread and marmalade or jam, stewed fruit, cake or sweet biscuits; much less should any between meals be made of these substances, especially when consumed with milk. Nor should sweets be consumed between meals; when they are taken, they must form part of the meal, and be followed by raw fruit.

To indicate more precisely the type of meals which prevent and cause dental caries, the following may be taken as illustrations: First, we shall refer to the kind of meals which do not produce caries:

Breakfast: Fish, bacon, toast and butter, coffee and tea.
Luncheon: Meat or poultry, potatoes, salad, well-baked milk pudding, fresh fruit, water.
Supper: Rusks, toast, or bread rolls and butter, chicken or fish, water or milk and water or tea, fresh fruit.

Secondly, we may outline the kind of meals which induce dental caries:

Breakfast: Milk, porridge and milk, bread and marmalade, then, perhaps, a supplementary breakfast a few hours after of a glass of milk and a sweet biscuit.
Luncheon: Mashed potatoes and gravy, milk and milk pudding.
Supper: Bread soaked in milk, or bread and jam, cocoa and cake, and a supplementary supper on going to bed of a glass of milk and a biscuit, or just "a tiny piece of chocolate."

Do not think that I am advocating an abandonment of the pap system of feeding children because of an exclusive regard for the hygiene of the mouth. It is true that we were originally led to suspect the wisdom of the pap system by a study of the terrible state that the mouth got into under it. We have always considered the hygiene of the alimentary canal all the way along. And now we have our view not only corroborated but also added to by some of the leading authorities of the medical profession. Thus Dr. G. A. Sutherland,[1] in referring to the treatment of the diseases of the alimentary canal in children, says that the real risk of tuberculous infection lies in the unhealthy condition of the alimentary canal. He further says that the natural tendency is to put tuberculous cases on a sloppy diet—milk, bread and milk, and pudding. But he points out that "experience shows that this is the worse possible form of treatment." From what I hear, it would appear that several other children's specialists have made a right-about-wheel from the pap system, but it is unfortunate that the many publications which still advocate the slop-diet system have not been suppressed, for the harm that the system is doing not only to the teeth but also to the alimentary canal and body generally is quite incalculable. I do not think there is any reason for believing that the slop-diet system which was so universally advocated is less dangerous to the alimentary canal than it is to the teeth. We have with us, however, a physician, Dr. Harry Campbell, who has made probably the most philosophical contributions of recent years to the science of dietetics; he may, perhaps, be kind enough to indicate to us how far this is true.

In conclusion, it should be noted that hitherto the authorities on dietetics have neglected considering the value of diet from the point of view of the hygiene of the mouth. The nutritive value of every foodstuff has been tabulated, but the question whether the food lodges and ferments in the mouth, or by lodging stimulates the growth of obnoxious bacteria, together with their acids

and toxins, seems never to have been given a thought. Yet the mouth is the entrance portal of disease; and what chance has a child with an unhealthy mouth when persistently supplied with unhygienic food and poisoned with decomposing products? Is it of any great consequence how nutritious the food may be if the teeth and alimentary canal are ruined? It should surely be recognized that the mouth and alimentary canal must be kept in a hygienic state, and if food which contains a considerable proportion of innutritious matter is required to do this, then such relatively innutritious food must be given. It is useless forcing nutritious food into an unhygienic alimentary canal. At the present time, however, when a child is suffering from lack of appetite and emaciation resulting from the unhygienic state of its mouth and teeth, it is usually given highly nutritious food without the slightest regard to whether such food will restore the mouth to a state of reasonable cleanliness and the alimentary canal to a hygienic state. And, as if to add insult to injury, it is frequen ordered malted foods and medicated syrups three times a day after meals!

The amount of disease and suffering which could easily be prevented by the dietetic régime which has been proved to keep the teeth free from caries is simply incalculable, and it would certainly appear that the impending triumph of medicine not only in the prevention but in treatment of disease is the putting in practice of the dietetic principles which we have indicated. In the past the great advances in medical sciences have generally resulted from the advances of correlated sciences; and I venture to think that the principles of dietetics suggested by a study of the food in relation to the teeth by the dental profession will yet be found to give rise to the greatest triumph over disease that has ever been recorded in the annals of medicine.

REFERENCE.

[1] *The Treatment of Diseases in Children*, p. 110.

DISCUSSION.

Dr. HARRY CAMPBELL (London) pointed out that, considered in all its practical bearings, much the most important subject engaging the attention of this Annual Meeting was the one under discussion. The condition of the teeth of the inhabitants of these isles was a national disgrace. There were upwards of 200 million decayed teeth in this country, and at least as many socket abscesses (pyorrhoea alveolaris), in addition to several millions of root abscesses. The sum total of misery due to this state of things in the shape of pain, unsightliness, foul breath, blood poisoning, and indigestion (with its manifold secondary evils, including gastric and duodenal ulcer, and even cancer), was incalculable. Seeing that almost the whole of this was preventable by the adoption of simple common-sense measures, it could not be contended that he had exaggerated the importance of the discussion. That the chief, wellnigh the sole cause of dental disease was dietetic, was as clear to him as anything well could be. The factor of hereditary predisposition was negligible; dental disease was essentially acquired. In animals living under natural conditions, and in primitive man (for example, the primitive Australian) dental disease was almost unknown; but if a wild animal, or if a primitive man, were brought up on an unsuitable diet it at once appeared, in spite of the clean ancestral chart. He had seen abundant dental disease in civilized savages and in domesticated anthropoid apes. A great cause of dental disease was non-use of the teeth. The inhabitants of these isles sucked their food rather than chewed it, because their starchy food was almost entirely puffy. The only effective way of coping with the evil was preventive—by an alteration in dietetic habits.

Mr. F. J. BENNETT (London) thought that in a general way Dr. Wallace's contentions were established, but that there were important reservations. The great effect of efficient mastication was to wear away fissures, and also to cause enlargement of the dental arch. He also thought the effect of tartar in producing caries was very limited. There were countless millions of people who lived on soft food who had no caries, and whose teeth were regular. He thought also that the absence of lime salts tended to rickets, and so to the production of irregularities. The effect of acid juices on the teeth was to decalcify enamel, as was shown by a specimen which Mr. Bennett exhibited to the meeting.

Dr. WHEATLEY (M.O.H. Shropshire) thought the necessity for hard food, particularly in early years, to cause a proper development of the jaws and teeth and their regular arrangement, might be taken as proved, and as also the necessity throughout life of a certain amount of hard, cleansing food to keep the gums healthy and the teeth in a cleanly state. It might also be taken as proved that the actual destruction of the tooth was caused by the action of acids formed from the fermentation of starch and sugar. If these were facts, it should be quite easy to draw up some simple rules such as, if carried out, would practically prevent this condition. He had endeavoured to draw up such rules, and had embodied them in his report as a school medical officer for the county of Shropshire. He had also recommended his authority to communicate this section of his report to all medical men and dentists in the county, and ask their opinion as to the best means of preventing dental caries. In this way it was hoped to stimulate interest in the profession and possibly arrive at something like unanimity. He had also recommended that lectures on this subject should be given to school teachers, midwives, and district nurses. It might be said that it was impossible to reform the diet of a people by any efforts of this kind. What had been done and was still being done with regard to the improvement of infant feeding, refuted this contention, but in any case these facts should be brought to the knowledge of the people and the chance of benefiting by them be given them. It was perfectly certain that once the well-to-do classes thoroughly understood that this disgusting and disabling condition of teeth could be prevented by simple rules of dietary, a reform would quickly follow. Any attempt to deal with dental caries by dentistry alone would not, however successful, be a real benefit to the race. The greatest triumph of preventive medicine would be the prevention of dental caries and all the evils which result from the same cause. It would certainly be of very great help to this movement if this Section could make some definite pronouncement on the subject, and if some competent and authoritative body could be induced to set out briefly the rules that should be observed for the preservation of teeth in a sound condition. The question might well at the next meeting of the Association be discussed along with the Preventive Medicine Section.

Mr. KENNETH GOADBY (London) agreed with Dr. H. Campbell's general conclusion that inefficient mastication was mainly the cause of dental disease, classing together under that heading caries and alveolar pyorrhoea. He had observed, however, that among the natives in the seamen's hospitals, and also in the monkeys in the Zoological Gardens, dental caries was uncommon and alveolar disease common; moreover, in Mr. J. F. Colyer's specimens of bus horses alveolar disease was directly caused by the impaction of fibrous foods in the interdental spaces. Certainly, in the speaker's experience, among other factors relating to the bacteriology of dental caries, the growth of certain bacteria to the exclusion of others was a point to be considered.

Dr. SIM WALLACE, in reply, said that, with regard to Mr. Bennett's criticism, he did not refer to some of the points simply because there was not time. Thus, with regard to the wearing down of the cusps in helping to bring about a regular set of teeth, he had introduced this theory in his book on the irregularity of the teeth, and had no wish to abandon it. With regard to rice-eating people, it might be said that they cooked and ate the rice in such a way that the mouth was left much cleaner than when the rice was mixed with sugar and milk. He could not agree that tartar was useful. It might not do much harm, but it was much better when the dietetic régime was such as would prevent it. Tartar predisposed to dental caries by inducing recession of the gums, and so at a later date induced stagnation of the food. Deficiency of lime salts in the food did not seem to have anything to do with the prevalence of dental caries. He believed the Esquimaux, whose food contained but little lime, were remarkably exempt from caries.

CARE OF THE MOUTH DURING GENERAL DISORDERS.

By HECTOR MACKENZIE, M.D., F.R.C.P.,
Physician to St. Thomas's Hospital and to the Hospital for Consumption, Brompton.

DENTISTRY has in the course of years become one of the most highly specialized branches of the medical profession. No speciality is more necessary than that which concerns itself with the care of the teeth. But specialism is apt to have its drawbacks, its disadvantages, even we may say its dangers, and the particular drawback to the highly specialized branch of medicine called dentistry is the amount of indifference and ignorance prevailing among other branches of the profession on all matters relating to diseases of the teeth. Considering the important effects which the state of the teeth has on the health of the body, and, again, the influence which states of the body have on the condition of the teeth, I hold that an elementary knowledge of diseases of the teeth should be imparted to all medical students, and should be required of them when they present themselves for their final examinations. The dental surgeon is expected to have a knowledge of general medicine and surgery, and is encouraged to make himself fully qualified in these subjects, but no inducement is given to the ordinary student to acquire the most elementary knowledge of the teeth and their diseases. I cannot remember that as a student I was ever taught anything about the teeth, or about their care.

That things are not very much better nowadays I am quite convinced, if I may judge from the fact that to most of my patients it seems a novelty for a doctor to take any interest in the state of their teeth.

For my own part, I do what I can to get my students to study the teeth and to consider the relations of their diseases to the general health. It is because I am fully persuaded of the importance of sound teeth and sound gums to a sound state of general health that I welcomed the opportunity I am to-day afforded by the kindness of your officers of taking part in this discussion. I cannot pretend to have any special qualifications for addressing you on the subject of the care of the mouth during general disorders in relation to the prevention of dental caries, except that, as physician to two large hospitals, I have had exceptional opportunities of studying the matter.

Caries of the teeth is admittedly the most common pathological change to which the human body is liable. I am not able to bring forward any statistics showing the relation between dental caries and general illnesses, nor do I think the time and trouble involved in the preparation of such statistics would be in any way adequately repaid by the resulting information. It is difficult to watch the gradual development of dental caries, but we know its causes, and we know how it is that general diseases contribute to it. I need not dwell on the lamentable prevalence of dental caries among patients of the lower classes. Among hospital medical patients it is almost unknown to find a mouth which has no unhealthy teeth.

Now, I believe that dental caries is a preventable disease, and that it never arises without neglect of oral hygiene. The disease is generally recognized as due to stagnation of foodstuffs or buccal secretions in the pits of the teeth, or the interstices between them, and the acid decomposition of these, due to the action of micro-organisms.

We may say, no stagnation of particles of food or secretions, no development of caries. The micro-organisms play a necessary part; but stagnation comes first; the micro organisms come in afterwards.

Now, almost all persons of the lower classes habitually neglect the care of their teeth while they are in health. Few, if any, of the men or children use a toothbrush at all, and although some of the women make a limited use of it, it is seldom more than once a day. Neglect, however, is by no means limited to the lower classes, and on that it is unnecessary for me to enlarge here. It is, however, during illness that neglect of oral hygiene becomes most general and most serious. In this matter I cannot but think the fault to a great extent lies at the door of the medical profession. Take the case of fevers; read the description of these illnesses in the medical text-books, and you find sordes, filth which, from neglect, has been allowed to collect on the teeth and lips, mentioned as a usual symptom of the more severe cases. Sordes can only be deposited when allowed by the neglect of nursing. In the case of chronic illnesses the patient neglects keeping the teeth clean because it is a trouble, because he has never learnt to do so in health, or because he does not recognize its importance for his general health. In the case of acute illness he is often too ill to attend to the matter himself; in health, the process of mastication, the movements of the tongue, of the lips, and of the cheeks, help to clear away the food débris. In serious illness there is little or no voluntary effort to remove particles of food. The nature of the food in serious illness is usually such that little or no mastication is needed. The tongue becomes more and more coated, while the teeth become covered with food particles and the buccal secretions. Both need the constant attention of the nurse. When the mouth is not attended to, all those conditions are present in the highest degree which make for putrefactive changes in the stagnated deposits. The putrefactive changes lead to the formation of lactic and other acids which dissolve the lime salts, and thus prepares the way for a further attack of the micro-organisms on the softened enamel and the underlying dentine.

With regard to the measures which should be adopted in acute and chronic illnesses in order to prevent dental caries, it is for you rather than for me to lay down the law. The important matter is keeping the mouth, and in particular keeping the surfaces of the teeth, clean. If the patient is well enough to do so, he should use the toothbrush and rinse the mouth out every time he takes food. When the patient becomes too ill to use the toothbrush, as in typhoid fever or pneumonia, then the duty of cleansing the teeth devolves upon the nurse. After feeding the patient the nurse must cleanse the teeth by rubbing them with pieces of rag or lint moistened with such a mild antiseptic as that about to be mentioned, and an endeavour must be made to get the patient to rinse the mouth out as well, so as to prevent any particles of food from adhering to the teeth. To get at the molar teeth the lint should be placed in the clasp of a sponge-holder. The use of some mild antiseptic as a mouth-wash is indicated. A satisfactory mouth-wash is that made by dissolving 6 grains of phenol and 5 grains of citric acid in an ounce of water, and mixing a teaspoonful of the solution with half a tumblerful of water. A more elegant preparation, when the expense is not important, may be made by using eau de Cologne as the solvent instead of water. When the patient is unable to rinse his mouth out himself, the nurse should turn his head on one side and gently syringe the mouth with the diluted solution.

In cases of chronic illness where carious teeth are already present, the dental surgeon must decide what is to be done; that is outside the province of the physician. In hospital practice, in most chronic illnesses, a large proportion of the teeth are already carious and have to be extracted. When artificial teeth are worn it is often found that the plates have been fitted over diseased stumps, which have to be removed to get the mouth clean. It is beyond the scope of this discussion to refer to the subject of pyorrhoea, but I believe that pyorrhoea in its causation is closely allied to caries. Both depend on stagnation of food and putrefactive changes through the influence of micro-organisms. In the one case, the stagnation occurs on the surfaces of the teeth, in the other, between the teeth and the gums.

It is also beyond the scope of this discussion to refer to the importance of attention to oral hygiene in relation to the treatment of general diseases, such as chronic phthisis, anaemia, rheumatic affections, and diseases of the stomach and intestines. Our attempts to restore the invalid to health will often be frustrated until we have succeeded in getting the mouth into a more or less healthy condition. Lowered vitality favours the vegetation of micro-organisms in the mouth, these attack the teeth, and the diseased teeth still further lower the vitality, so that a vicious circle is established. Treatment and preventive measures attain the same end. The efforts for the prevention of caries will serve equally well to prevent those ill effects to the general system which proceed from unhealthy conditions of teeth. The dental surgeon and medical practitioner alike must strive after the ideal which, to vary an old saying should be, *dens sanus in sano corpore.*

DISCUSSION.

Dr. WHEATLEY (M.O.H. Shropshire) pointed out that any method of preventing dental caries by elaborate methods of cleaning, such as the use of silk thread between the teeth after each meal, were absolutely impracticable with regard to the masses of the people. If it were possible to get rid of dental caries by altering the character of the people's food, there was some hope; but if it was necessary to rely upon elaborate methods of cleaning, prevention of caries was hopeless.

Dr. SIM WALLACE (London) said he must disagree with much that Dr. H. Mackenzie had said, because he seemed to him to have missed the point. He had not indicated that medical men should be taught what types of diet gave rise to cleanliness of the mouth; in fact, he had even suggested that soft diet was not harmful. It was extremely difficult to brush the teeth effectually; indeed, it was practically impossible to brush between the teeth with a toothbrush. Those whom he had come across who attempted to chew soft food, including milk, were by no means exempt from caries. Although artificial cleansing might do some little good, it was liable to divert attention from the all-important fact, namely, that the milk diet so usually adopted or recommended by medical men for invalids or people suffering from constitutional disease was the chief cause of the association of dental caries and constitutional disease.

Dr. SIDNEY DAVIES (M.O.H. Woolwich) said the British nation, as a race, was becoming too well fed, especially as regards the superabundance of soft pretriturated and predigested foods. The difficulty was to find a suitable diet of hard food, and he had come to the Section to gain information as to what articles of food to recommend. He was doing what little he practically could; every house in Woolwich was provided with a leaflet informing parents that children's first permanent molar came through at the age of 6, and that teeth should be cleansed every night from that age.

Mr. W. A. MAGGS (London) said he was glad reference had been made to the advisability of teaching dental surgery to medical students, and he hoped it would in the future be included in the curriculum and examinations of the Conjoint Board and of the universities. Medical students had more or less ignored dentistry, mainly for two reasons, one being the large number of compulsory subjects included in the curriculum, and the other that patients with diseases of the teeth were referred for treatment to the dentist. He expressed the opinion that decay of the teeth during acute illness was not entirely due to want of cleanliness on the part of the patient or nurse. He found that in spite of every precaution decay occurred during acute specific fevers, in extreme anaemia, in rheumatic fever, in acute phthisis, and in other diseases. The secretions of the mouth during acute illnesses were often abnormal, perverted, and acid in reaction. It was difficult to counteract these conditions; and personally he considered the use of a toothbrush and the free rinsing of the mouth with tepid water were the best ways of getting rid of the débris of the food, and so preventing decay of the teeth.

Mr. HOPEWELL-SMITH (London) welcomed Dr. Hector Mackenzie's paper, and wished to emphasize his remarks on the evil done by the retention of septic roots under artificial dentures. Regarding the question from the point of view of prevention of dental caries in ordinary mouth baths, one ought always to ascertain the character of the saliva, and if it was acid prescribe an alkaline one, and if alkaline an acid one. It was probable that toothpowders predisposed to the onset of periodontal diseases; and it was very important to prescribe what was indicated. On visiting a provincial hospital he had found the mouths of patients in the wards in a filthy condition; it was also true that patients were admitted to various sanatoriums in the country for treatment of their bodies without any care whatever having been paid to the welfare of their teeth.

THE INFLUENCE OF CLIMATE ON DENTAL CARIES.

By A. S. UNDERWOOD,
Professor of Dental Surgery, King's College.

THE first step towards the prevention of dental caries must be the identification of the conditions that favour the disease. These conditions must necessarily be of a twofold character: (1) Anything which tends to weaken the natural antibacterial defence of the tooth itself; (2) anything which tends to increase the power and activity of the invading bacterial army.

It appeared to me some time ago that a careful examination of an extended series of skulls of various races and various epochs might throw some light upon this inquiry. The immunity of certain races and the liability of others taken in conjunction with what is known of their diet, surroundings, and mode of life, might result in useful suggestions.

About two years ago I commenced a series of investigations (making careful notes) of the skulls in accessible collections such as the Royal College of Surgeons and the Natural History Museum, and, without burdening you with numbers and figures, all of which will be published later, I propose to give a summary of my results so far to this meeting. I started with strong expectations of finding certain definite results, and, as is so often the case, I did not find in the least what I expected.

In the hot belt of the earth, including India, Africa, and Southern China, bathing and washing are natural habits because of the heat, and rinsing the mouth after meals, and the use of sticks, toothpowder, ashes, and salt for cleansing the mouth is almost universal among the natives; while the food is largely rice, and no alcohol is used. In all of them caries is so rare that to all intents and purposes the natives may be regarded as immune. In the Arctic regions the Esquimaux never wash or clean their mouths (Peary), eat seal, walrus, whale, reindeer, fish, and seafowl, and drink alcohol. A very large series of Esquimaux skulls show the practical immunity among the natives. In the temperate regions, among the Australian natives, there is the same immunity.

Clearly cleanliness or uncleanliness by itself is not a sufficient explanation, and climate *per se* has little or nothing to do with the question. Immune teeth among natives are always worn down, and the rare cases of caries are always in cheek teeth.

As far as skulls throw a light on the question, I have no doubt that what is called civilization is attended by a rapid increase of caries.

I used to think that the talked of increase in the prevalence of caries of late years really meant that nowadays it was more widely detected and reported, but this illusion is now dispelled. A series of English, Scottish, and Welsh skulls of 100 to 150 years old which I examined I found, though not immune, fairly free from caries. Most of these were skulls of poor people, *post-mortem* and dissecting-room subjects, with the exception of a few wealthy murderers.

Among ancient civilizations, I found an appreciable amount of caries among ancient Egyptians. Of ancient skulls I have not finished my inquiry, and therefore have not seen so many specimens of Greek and Roman skulls, but caries was certainly not unknown among them.

In modern times people vary considerably in their liability. M. Magitot published in 1867 some very interesting investigations. He concluded that Caucasian races were specially liable; that mixed races were more liable than pure; that transplanted races were specially liable—I do not agree; that aborigines of America, Mexico, Peru, and Patagonia were immune; also that Australia, Madagascar, New Caledonia, Malays, and Javanese Island folk were specially immune.

A map of France, 1867, drawn up so as to show the relative proportions in various areas of persons exempted from military service on account of caries shows in Finisterre 60 exempts out of 547,000 conscripts, and in Eure 5,014 exempts out of 450,000 men of like age. Normandy and the openings of Garonne, Loire, Dordogne, and Seine are the worst districts.

No single cause explains this fact. Food has little to do with it. In Normandy (the worst district) and in

Brittany (the best) the inhabitants eat and drink practically the same things.

Rivers have also no effect. The Seine and Garonne districts are very bad, while the Rhone district is comparatively immune. Nor can seaside, elevation, climate, food, or wealth be shown to have much to do with it when considered apart.

As for racial distribution, the Celts, small dark folk, have good teeth, while the Kimric races, large blonde folk, have bad teeth.

Poverty and wealth seem no explanation in Great Britain to-day. Town-reared and country-bred people are all equally liable (Welsh mountains and London streets).

Conclusions.

The mischief, as far as weakening the tooth defences is concerned, is to a great extent done before the diet of the individual has passed beyond the milk stage.

Although horse, cow, and goat milk contain much more lime than human milk, and although many artificial foods are ideal in the desirability of their constituents, there is no doubt they are not assimilated nearly so well as mother's milk: it is not what goes into the baby's mouth but what goes into its blood that counts.

Maternal neglect, which is a product of high civilization, is an important factor. Even where the child is breast-fed, Sutherland states that worry and anxiety render the milk unsuitable; and worry and anxiety, the strenuous life, high pressure, luxury, as much as want and distress, are evils attendant upon civilization.

Then there is the wholesale preservation of the physically unfit, which is also a practice pertaining to high civilizations.

My general conclusions are that the prevention of dental caries can best be attained by: (1) A return as far as possible to the simpler life; (2) a return as far as possible to maternal breast-feeding; (3) a universal habit from early childhood of cleansing and rinsing the mouth after every meal, and especially at bedtime.

DISCUSSION.

Mr. F. J. BENNETT (London) thought the simple diet was of importance, as it gave the oral secretions a simpler task in acting on the food.

Mr. W. A. MAGGS (London) agreed that the causation of dental decay was a complex problem, and doubted if diet alone would prevent it. Persons taking every care in cleansing their teeth and in chewing their food suffered from caries, whilst others, entirely disregarding these matters, escaped. Immunity was, in his opinion, largely due to the secretions of the mouth being normal, and free in amount. It was not always correct to say that attrition of the teeth was due to coarse food. The wearing down of the teeth in uncivilized and civilized races was frequently found to be due to an edge-to-edge "bite"—a type of dentition associated with primitive man, and when seen nowadays indicative of sound teeth and virility. Dr. Sim Wallace advocated eating an apple at the end of a meal for the purpose of removing particles of food from the interstices of the teeth. Such a practice was also beneficial in acting as a gentle laxative, and an apple taken daily after breakfast promoted intestinal peristalsis. In the western counties—Somerset, Dorset, and Devon—dental decay was very prevalent amongst the rural population, and was due to drinking the common beverage—cider.

Dr. WHEATLEY (M.O H. Shropshire) thought the question of the importance of hardness of water was one that could be easily cleared up. Certainly in the rural districts of Shropshire, where the water was mostly very hard, the teeth were bad. He had heard no evidence whatever that soft water was a cause of dental caries.

Professor G. ELLIOT SMITH said that during the last ten years his assistants (Drs. Wood Jones and Derry) and himself examined and made notes on more than 15,000 ancient Egyptian and Nubian crania, representing every historical (and prehistoric) period, and had studied the evidences of dental disease. In predynastic times (before 3400 B.C.), in early dynastic times (until 2700 B.C.) in Egypt, and until the time of the eighteenth dynasty (*circa* 1500) in Nubia, dental caries was so extremely rare as to be practically non-existent; yet alveolar abscesses often occurred, because the large quantities of sand contained in the bread and other foods caused early and extreme wearing down of the teeth, and the infection of the exposed pulp cavities with septic material led to alveolar abscess formation. At the time of the Pyramid builders of Lower Egypt (*circa* 2700 B.C.) dental caries and tartar formation became suddenly so common, that amongst the remains of 500 (mostly aristocratic) people of this date that we examined, only about 50 were free from caries, and the jaws of most of them were riddled with abscess cavities. Amongst the well-to-do Egyptians caries had been common ever since then; and in later times it gradually spread to the lower classes.

Dr. C. MUTHU said that behind all causes, such as errors in diet, artificial feeding of infants, etc., the conditions brought in by the present civilization was the chief cause of disease of teeth. So long as the Indians lived their simple, primitive life their teeth were excellent, but as soon as they came into contact with European civilization and adopted Western modes of living their teeth went wrong. Primitive life meant not only eating simple food, but bathing every morning, washing the teeth before and after every meal, morning worship which brought calm and peace of mind and body, early retirement to bed and early rising—in fact, it meant living near the heart of nature. The civilized man had lost the peace of mind. The mind influenced the body. If health meant harmony of various elements of man, disease was caused by disturbance in the relation between body, mind, and spirit—including the disease of teeth. So that behind bad water, bad diet, and behind these shallow causes lay the root-cause of a new environment brought on by the modern conditions of Western civilization.

Dr. CYRIL HOWKINS (Birmingham) stated that from his personal observations on the semi-civilized natives of South Africa, they had exceedingly good teeth. He was unable to understand why the Jews had such excellent teeth as a rule, unless it was from the fact that they rarely married any one save of their own race. He had often wondered if one result of the marriage of individuals from two different races was that the teeth of the offspring were inferior to those of the parents, even if the fact that irregularities of the position which commonly occurred from these marriages was put on one side.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

GUTTA-PERCHA TISSUE FOR DRESSING WOUNDS.

A GOOD dressing for a clean wound is that which shall ensure the maximum of cleanliness and rest for the injured part.

Our efforts to obtain cleanliness most often war against rest in these two ways: (1) A dressing either previously impregnated with or at the time wrung out of some chemical disinfectant acts as an irritant to the edges of the wound. (2) Our vigilance leads us to frequent dressings to see that the wound is in good condition.

Gutta-percha tissue may be sterilized by washing in methylated spirit. The dressing having been applied, the condition of the stitches and wound edges may be observed through the dressing without disturbing it.

The method I observe is as follows: (*a*) Cut off a piece of gutta-percha tissue of the size required, and lay it in a tray of spirit. (*b*) Disinfect the hands, cleanse the wound, put in stitches, and arrest bleeding by pressure of a swab wrung out of spirit. (*c*) Lift the gutta-percha dressing from the spirit by one corner with forceps, and allow the spirit to drain off. (*d*) Lay the dressing upon the wound, and apply a pad of wool and bandage.

I then see the patient at the beginning of the third day, remove the bandage and wool, and note the appearance of the wound; if the wound remain clean, it is inspected through the dressing on the fifth day, and the dressing

remains undisturbed until the removal of stitches on the eighth to tenth day, when a simular dressing is applied and kept in place till cicatrization is sufficiently established for there to be no danger of infection.

I am obtaining more satisfactory results by this means than by any other dressing I have yet used, and believe it well suited to general practitioners' needs.

J. R. RIGDEN TRIST, M.R.C.S.Eng., L.R.C.P.Lond.
London, S.W.

RECOVERY FROM ARYLARSONATE POISONING.

IN the JOURNAL of March 19th, p. 725, you published some notes of mine on a case of arylarsonate poisoning.

I now wish to record the recovery of the same. On seeing my letter, Mr. Charles Wray kindly wrote asking me to try the effect of administering large quantities of water daily, as well as electricity to the temples, of a strength sufficient to produce subjective flashes of light.

Vision was slowly improving prior to this treatment, but it has most certainly proved of the utmost value. The patient took for many weeks 90 to 100 oz. of fluid daily, and for ten weeks, almost daily (Sundays excepted) I applied for four to six minutes a constant current of from 3 to 10 milliampères, with an electrode on each temple. I usually reversed the current sharply once or twice, when a flash of light (of a bluish colour) was generally perceived.

As the case progressed the stronger current was less well borne and a reversal of the weaker current produced results which at first only followed with the stronger.

The patient's vision steadily improved, and he can now see almost quite as well as at the end of last year. He has put on some weight and is altogether doing very well.

Carnsore, Monkstown, co. Dub R. LYNN HEARD.

TREATMENT OF THE SECONDARY INFECTIONS IN PULMONARY TUBERCULOSIS.

DURING ten years of sanatorium experience it has often occurred to me that the tubercle bacillus is, in itself, not such a dangerous organism as generally supposed, and that if left alone without the introduction of chemical tuberculin (C.T.)—that is, that manufactured in laboratories—it tends in many cases to undergo dissolution. The mixed infections are responsible for the ills of tuberculous disease. This has long been recognized in the case of the lungs, but I am unaware that the custom exists to treat mixed infections in the same systematic and routine manner as tuberculin is given. Tuberculin is uncertain in its action, and therefore dangerous, and this is mainly due to the fact that tuberculous patients manufacture their own tuberculin. The dosage of natural tuberculin (N.T.)—that is, that manufactured in the body—can be regulated by exercise and rest; therefore, in any individual case the grades from complete rest in bed to full exercise are gone through according to the dose of N.T. absorbed, as shown by the temperature. When C.T. is given consideration must also be given to the fact that the patient is dosing himself with his own tuberculin, so that a double dose of tuberculin may be avoided.

In pulmonary tuberculosis the lungs are open to mixed infection from the external air, and this mixed infection causes the breaking down of the tuberculous deposit. *Post-mortem* examinations tend to show that a pure tuberculous deposit becomes encapsuled and rendered inactive.

Holding, therefore, the opinion that death from pulmonary tuberculosis is nearly always due to mixed infection, I now treat such cases by ignoring the tubercle bacillus and devote my attention to clearing out the mixed infections.

My method is to obtain the early morning sputum after the patient has used an antiseptic mouth-wash. I then grow a culture of the sputum, and stain it by Gram's method. I treat the organism that is in excess of any other. If a streptococcus, I give 25 c.cm. of antistreptococcus serum (polyvalent) in a little saline solution by the mouth one hour before breakfast. If staphylococci are present, I give the same amount of antistaphylococcus serum (polyvalent). After a week I grow another culture, and again give the corresponding serum to the organism present. In time the mixed infections disappear and only a pure tuberculous infection remains, which tends to get well of itself. If the right serum is given both the negative and positive phases occur, the temperature is under control, and the improved condition of the patient is manifest. I claim for my method (1) that it is simple, rational, and within the reach of all medical men; (2) that the method does no harm to the patient, there are no serious risks attached to the administration of serum, and the results show the efficacy of the method I have adopted. J. PENN MILTON, M.R.C.S., L.R.C.P.Lond.

Edal Torre Sanatorium, Yelverton, S. Devon.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

LIVERPOOL WORKHOUSE HOSPITAL.

SERUM TREATMENT OF DISEASE.

(Two Cases under the care of WILLIAM ALEXANDER, F.R.C.S.)

[Reported by Dr. G. FISHER, House-Surgeon.]

CASE I.—TETANUS

THE patient in the following case, a man aged 22, was admitted at 8 p.m. on April 8th, 1910, complaining of stiffness of, and pain in, his body and jaws, to a less extent in his limbs, which had begun some three or four days previously. He had been working on a farm for some weeks, and had received at different times sundry superficial wounds, mostly on his right hand.

Condition on Admission.

His temperature was 97°, pulse 60, and respirations 20. There was tonic contraction of the muscles of the jaw, sufficient to prevent him separating his teeth more than about ¼ in. The palpebral openings were narrow, and his eyebrows drawn up, his forehead wrinkled, and well-marked risus sardonicus. The neck and back muscles were also rigid, and the anterior abdominal wall board-like and painful. Rigidity and pain were less marked in the lower limbs, whilst in the upper limbs he only complained of slight stiffness in the shoulders. On the right hand there were traces of numerous superficial injuries; the majority of them had healed almost completely; there was no wound of any size, nor any suppurating sore.

Diagnosis.

A diagnosis of tetanus was made. How long it had been incubating was impossible to decide, owing to the varying dates at which the wounds in the hand had been received.

There being no tetanus antitoxin to hand, he was given chloral gr. xx four hourly, and slept fairly well.

Treatment.

Next day the rigidity was more marked, especially in the lower limbs, and the head retracted. The pain had also increased. Antitetanic serum injections were then commenced. It was obtained from the Lister Institute, and, as recommeded, 100 c.cm. were injected in the first twenty-four hours into different parts of the subcutaneous tissues of the anterior abdominal wall and the arm, in doses of 20 c.cm.

The same night the patient complained of severe pain in the abdomen, and had a short slight spasm at 10.25 p.m. He asked to be turned on his left side, as the right was the more painful; then had tremor of legs. A little later he had opisthotonos lasting one minute, and severe slighter attacks before morning, but he slept in the intervals between them, took fluids well, and perspired profusely; temperature 99°.

Progress.

April 10th.—Day: He had eight spasms during the day, lasting from half to one and half minutes each, opisthotonos and slight pleurosthotonos. Pain chiefly down *right* side of body, and right lower limb and arm—very severe, causing him to cry out. Copious perspiration. *Night:* Bowels not moved since day of admission. Calomel gr. v. Morph. hypo. gr. ⅓ at 8 p.m. Slept 8.30 p.m. to 12.30 a.m. Had eight spasms between then and 8 a.m., more severe and lasting longer—up to two minutes: well-marked opisthotonos. Tremors, chiefly of legs, followed

some of the spasms. Enema saponis—no result. Not passed urine during night.

April 11th.—Day: Temperature subnormal. Spasm at 8 a.m., passed urine shortly after, ℥xvij. Spasm in early afternoon, after which given hypo. morph. gr. ¼. Slept for three hours, then had another spasm. At 8 45 p.m. had very severe spasm lasting five minutes, with marked opisthotonos. Antitoxin 90 c.cm. to-day. *Night:* Morph. hypo. gr. ¼ at 9.40 p.m., with but little effect. Temperature 100.2°. Had twelve spasms during night, getting more severe—varying from one to five minutes. Complained of much pain in abdomen and in throat. Slept a little in the intervals between the spasms and continued to perspire copiously; not passed urine; bowels not moved; enema saponis—no result.

April 12th.—Day: Temperature 98°. Passed urine ℥xxij 9 a.m. Complains chiefly of pain down right arm and on front of chest. Antitoxin 60 c.cm. Morph. gr. ¼ hypo. Slept greater part of day; had one spasm at 6.30 p.m., lasting five minutes. Complains of more pain and rigidity in legs, and less in body. *Night:* Calomel gr. ij. Temperature 98.4°. Spasm at 9 p.m., another lasting six minutes at 12.15 a.m. Restless until 1.25, when morph. hypo. gr. ¼ given; slept till 5 a.m.; perspires freely, and complains of much abdominal pain. Another spasm at 6 a.m. Mag. sulph. in morning—no result.

April 13th.—Day: Temperature 100°. Much pain in head and right side. Turpentine enema; good result, and feels easier after two slight spasms. Antitoxin 50 c.cm.; 300 c.cm. to date. *Night:* Did not sleep much, but had no spasms.

April 14th.—Day: Temperature 98°. Morph. hypo. at 9.30 a.m. because much pain complained of; slept till 4 p.m. Pain troublesome in both arms and in head; most pain on right side. Slight spasm at 7 p.m., lasting a few seconds. Passed urine freely; bowels well moved. *Night:* Breathing appeared difficult, and the patient restless. Morph. hypo. ¼ gr. at 12; slept off and on till 4 a.m. Had one slight spasm lasting a few seconds, and occasional starts waking him out of his sleep.

April 15th.—Day: Temperature 100°; still has much pain in head and down right side; three slight spasms this morning. Pleurosthotonos; very little opisthotonos. *Night:* Pain continues, but not quite so severe. Dozed for two hours, interrupted by occasional moans. Nepenthe, ♏xv; slept soundly for two hours; no spasms.

April 16th.—Day: Appears better; could move head from side to side, and had not much pain, except on attempted movement. Could open his mouth slightly to-day to the extent of about ½ in. No attacks of spasm. *Night:* Had nepenthe, ♏xv, at 8.45 p.m.; slept—4 a.m. Two slight spasms, and pain down the right side increased in severity again.

April 17th.—Day: Temperature 99° to 100°. Appeared better again. Pain less. Power of separation of upper and lower incisor teeth about the same—½ in. Could move his head more. No spasms. *Night:* Slept fairly well. No spasms.

April 18th.—Day: Felt much better. Pain only slight, and only in right limbs. Could move his head more freely from side to side, but the muscles of the jaws showed no more improvement. Had an attack of impending suffocation, breathing rapid and laboured for ten minutes, afterwards quite comfortable. *Night:* Good night, except for similar attack as during day, lasting two minutes. Perspiration still free. Slight pain in chest and throat. Could flex lower limbs to some extent, and move arms freely. No further spasms.

April 19th.—Day: Rigidity passing off more rapidly. Power of movement of legs much improved, as also other parts. Antitoxin 60 c.cm.; total, 360 c.cm.

He continued to improve until April 23rd, when temperature went up to 102°. Pain between shoulders, with few crepitations at right base. Also complained of joint pains, his wrists being red and swollen. These symptoms passed off in a few days, and on and after April 28th his temperature was normal. On April 29th he could move his legs freely, as well as arms. Could open his eyes fully. There only remained the tonic contractions in the mouth muscles, the tetanic grin being still perceptible to a slight degree. He was able to sit up in bed to-day. By May 3rd all rigidity had passed off, and a week later he was discharged well.

CASE II.—ANTHRAX.

The patient in this case, a man aged 29, was admitted on February 19th, 1910. He was a dock labourer, who had been working two months previously handling wool.

State on Admission.

He was sent in as a case of anthrax, and presented most of the clinical appearances of that disease. There was a pustule on the upper lip, but it was not quite typical. The surrounding skin was indurated, and there was widespread oedema, but the characteristic dark-brown eschar was not present. The *Bacillus anthracis* was not discovered, although search was made for it. His temperature was 100.4°, and he complained of acute pain about the mouth, nose, and neck.

Treatment.

Serum treatment was commenced about three hours after his admission, 10 c.cm. being given at that time, and a further 10 c.cm. five hours later. The bowels were opened by calomel and pulv. jalap. co.

Progress.

The next day (February 20th) his temperature went up to 102°; pulse 116–120; respirations 34–38; 10 c.cm. antitoxin again injected.

February 21st.—The temperature was still higher—102.8°; pulse 129; respirations 34. Fomentations were applied to the face, and at night he had a morphine suppository gr. ½; also the injection of antitoxin (10 c.cm.) was repeated.

February 22nd.—Temperature 103°, 102°, 102.8°; pulse 138; respirations 38–40. Mist. stimulans ℥j three-hourly was ordered, and at night he had veronal gr. x.

February 23rd.—His condition was much the same, though there was a slight fall of the temperature at night—101.6°; pulse 140; respirations 40; antitoxin 10 c.cm. injected.

February 24th.—There was a further fall of the temperature—down to 101°, but an increase in the pulse-rate—146; respirations 44–46; 10 c.cm. again injected.

February 25th.—There was little change, but on the following day the temperature was 104°. The injection—10 c.cm.—was repeated.

Result.

From this time the temperature began to decline—by lysis—and a week later it was down to normal, after which there were two slight rises of temperature—99° and 99.8° respectively—and then the temperature remained normal. As for the local condition, improvement was noticed soon after the injections were commenced. The progress was rapid, so that in a little more than one week very little sign of the pustule or of the oedema remained. The patient was discharged to town, with his face and head quite healthy, on March 23rd; he, however, complained a little of his chest, and a week later was readmitted (March 30th) with symptoms of a cold. Finally, he was discharged quite well on April 15th, 1910. The total quantity of antitoxin injected was 70 c.cm. It was Professor Sclavo's antianthrax serum.

REMARKS (BY MR. ALEXANDER).

It is of great importance to commence the serum treatment of disease at the earliest possible moment. When the whole system has been overrun by the enemy, all the strongholds and the citadel of life captured, and the ordinary defenders dead or demoralized, the use of the serum treatment must always end in disappointment.

In the first case it was evident that the patient, a young and robust man, was in the grip of a very acute form of the disease. We cannot say that the disease would, under ordinary treatment, have proved fatal, but our experience in former similar cases leads us to believe that such would have been the issue. The antitoxin was ordered at once, but a short delay arose in obtaining it. We followed carefully the instructions issued by the Lister Institute, from which we obtained the serum. The chloral and morphine were only given to relieve and to obtain sleep, but cannot have had any effect in the actual cure of the patient. Should any cases of tetanus come before us in the future we shall certainly begin the same treatment at the earliest possible moment.

The second case, that of anthrax, is incomplete. Part of the notes were accidentally destroyed, so that many details are wanting. The case had the clinical appearances of anthrax, except that the ulcer did not show the characteristic eschar. The bacteriologist was not available at first, so that no laboratory investigations were commenced until some time after the serum treatment was well advanced. The bacillus of anthrax was not found, but this organism is not always found in undoubted cases during life, and we had, fortunately, no opportunity of looking for it after death. The local effect of the injection was much more marked than the general effect. The face and cheek began to clear up long before the temperature showed any signs of subsiding.

AN interesting presentation took place in the Memorial Hall, Newcastle, co. Down, on the evening of August 22nd, Lord Roden presiding; the recipient being Dr. Bell, who has been in practice in this well-known Ulster watering place for some years, and who is leaving to take over a practice in St. John's Wood, London. There was a large attendance, and many remarks were made which showed the high place Dr. Bell held in the hearts of his patients and their opinion of his skill. Dr. Bell is also a high favourite with the profession, who regret his departure but wish him well. An address and purse of sovereigns were presented to Dr. Bell and a beautiful souvenir to Mrs. Bell.

Reviews.

MEDICAL SOCIOLOGY.

IN a volume entitled *Medical Sociology*,[1] recently published by Dr. JAMES PETER WARBASSE, an attempt is made to attain two ends: first, to deal comprehensively with the important subject of sociology from the health point of view; and, secondly, to offer a dissertation on the science and art of medicine. The dissertation is accompanied by a running commentary on the progress of medicine from the earliest evolution of scientific knowledge to the present day, and on through that to the future, when, with prophetic eye, the author sees medicine in a position of such exalted importance among men that they "shall call its mission holy." A combination of subjects such as this makes it difficult to appreciate the class of readers to whom the book will especially appeal. There is matter of interest in the first section for lay as well as for medical readers, but the second section can scarcely be said to have much attraction for any but those who are engaged in or specially concerned with the profession of medicine. The general public can have only a lukewarm interest in such subjects as "the rationalization of therapeutics," "the fate of medicine," "State and college medical examinations," "medical libraries"—to name only a few of the headings of chapters. Some of the questions discussed in the sociological section are highly contentious. In Great Britain, at the present time, much is being done for the proper care of children—in some directions it is even asserted by competent critics that the vicarious assistance of public authorities is going too far—but the most enthusiastic advocate of State protection for children on this side of the Atlantic would scarcely, we imagine, go the length of proclaiming that "the whole responsibility for the child should not rest on the parents alone," and that "children shall be born directly into the custody of society, and society shall demand that they receive the attentions necessary to make them healthy and helpful." Whether such familial solicitude on the part of the State is acceptable to the American people we do not know, but in other countries hesitation is felt at undermining parental responsibility by any form of legislation which would lead to the loosening, in however small a degree, of that tie which binds the child to its father and mother, and which assures, more than any other bond, the maintenance of the family life and the home sentiment. Dr. Warbasse is not, however, content with State interference so far as children are concerned. He goes further, and lays claim to the desirability of—if not the actual need for—the State control of marriage. He says:

> But one thing the State can do, and now; it can demand a clean bill of health from the man who applies for a marrying licence. The innocent wife is the one who too often reaps the wild oats sown by the husband. The State owes it to her to see to it that the marriage contract, with which it is so much interested, shall carry with it a guarantee of safety. When a woman yields herself up for motherhood, she is rendering the greatest service that any one can perform for the State, and she, above all of a country's charges, should be protected. The nations that throw this safeguard about their women are destined to march in the van of human progress. If the State is not ready to take cognizance of every man with gonorrhoea or syphilis, as it now does of every man with small-pox or scarlet fever, it at least must be ready to prevent him from deliberately transmitting these diseases to another when he signifies his intention to do so.

Theoretically such a system of control may be a justifiable sociological ambition, but why confine the control to one class of disease only? Surely many others might be enumerated with contingent possibilities almost as great as syphilis, and certainly greater than gonorrhoea. The book is uneven, but is a fair sample of much literature of a similar character which is at present reaching us from America. Some of the views expressed by the author are unreservedly praiseworthy, but others are open to the suspicion that always attaches to theory unchecked by appeal to history or experience.

[1] *Medical Sociology. A Series of Observations touching upon the Sociology of Health and the Relations of Medicine to Society.* By James Peter Warbasse, M.D., Attending Surgeon to the Surrey M. E. Hospital, etc. New York and London: D. Appleton and Company. 1909. (Post 8vo, pp. 372. 8s. 6d.)

NATIONAL HEALTH.

THE distribution of literature of a popular character has long been recognized by social reformers as a weapon that must not be despised. It is, however, one which soon becomes rusty, and if it is to achieve all that is required of it the most recent researches must be promulgated, and all antiquated notions cast on one side. For this reason, the National Health Manuals, which are being edited by Dr. T. N. KELYNACK, are to be welcomed. They will be issued in separate volumes, each dealing with a special aspect of hygiene in the light of our present-day knowledge. The first is concerned with *Infancy*,[2] and in its compilation the editor has called to his assistance eleven other members of the medical profession, each of whom contributes a chapter upon a particular aspect of infant life. In his choice of contributors Dr. Kelynack has been fortunate. No one is better qualified to give an account of infants' milk dépôts than Dr. Buchan, the Medical Officer of Health of St. Helens, in which town these institutions were first established in this country. Dr. J. F. J. Sykes is well able to describe what municipal action can be taken with respect to infantile mortality; and Dr. Dora Lidgett Bunting has been so closely connected with the St. Pancras school for mothers that it is quite fitting she should describe these institutions. Dr. F. S. Toogood, as Chairman of the Executive Committee of the National Society of Day Nurseries, speaks with authority on the value of the crèche or day nursery. Other contributors include Dr. J. B. Hellier, Sir W. J. Thompson, Dr. J. S. Fowler, Dr. A. Dingwall-Fordyce, Dr. Stanley B. Atkinson, Sir John W. Byers, and Dr. T. A. Helme. With so many writers dealing with the same subject but each from a different point of view, it is inevitable that there should be a certain amount of overlapping and of repetition, but it is remarkable that so little has occurred. If Dr. Kelynack is able to keep up in the subsequent volumes of his health manuals the high standard he has set himself in the first, he will add a series of books to our literature which cannot fail to have a beneficial influence upon the national wellbeing.

[2] National Health Manuals: *Infancy*. Edited by T. N. Kelynack M.D. London: Robert Culley. (Cr. 8vo, pp. 192. 1s.)

POOR LAW REFORM.

MR. BAGSTER WILSON is the Medical Superintendent of the Birmingham Medical Mission, a position in which he was preceded by his father, so that all his life he has been familiar with work among the poor and with the problem of dealing with them, and no one could have had better opportunities for studying the questions on which he has endeavoured to formulate his opinions in this little book on the *Poor Law Crisis*.[3]

He considers that the problem of poverty should be concerned with poor families and their conditions, and not with poverty in the individual. He realizes how much the poor suffer from their own defects, their carelessness, obstinacy, thriftlessness, and ignorance, as well as from their proneness to waste their money on worthless articles, on alcohol, and on gambling, but he contends that a man and his wife and three children must be very poor on an average income of 19s. 3d. a week, which is what he says the unskilled labourer can earn in Birmingham, and that such a man is in no position to supply medical treatment for himself and his family even by contributing to a provident institution.

Mr. Wilson reviews the system of Poor Law relief as now administered in Switzerland, Denmark, and Germany, and the English Poor Law system as it has existed since 1601, dividing this into three periods. He recognizes that since 1834 it has been based upon the principle that a system of Poor Law relief is for the good not of the persons relieved but of the community; that the lot of the pauper should not be made more desirable than that of the lowest independent labourer; and that it is the duty of the State to seek to eradicate pauperism by teaching and training, by inculcating habits of industry, independence, morality, cleanliness, and temperance, but yet in his opinion it has failed. He seems to think it has failed mainly because there has been a woful disregard of the health of the poor, and that it is on account of feeble health that there

[3] *The Poor Law Crisis; Reform or Revolution?* By H. Bagster Wilson, M.R.C.S. London: The Poor Law Publications Co. Birmingham: E. F. Hudson. 1910.

are so many families sunk in poverty. For this reason he urges that all large towns should be divided into health districts, in each of which there should be a representative of the medical officer of health, who should have charge of a State dispensary, but side by side with this there should be a provident dispensary officered by the general practitioners in the district. He would also like to see local medical councils established upon which there should be medical and lay representatives from all the medical charities and from the general body of medical practitioners, the duty of which should be to co-ordinate medical relief and to advise the health committee in such matters. He recognizes how very much the success of any scheme must depend upon the voluntary service of good men and women, and he notes with admiration the work done in Germany by the *Armenspfleger*, who are citizens, voluntary and unpaid, but having official status, whose duty it is to visit the poor and take care that their necessities are relieved.

Mr. Wilson's book, and we may add, a paper published by him in the June number of the *Birmingham Medical Review* under the title, Doctors and Social Progress, are well worth the attention of every one who is interested in this subject.

DISEASES OF THE STOMACH.

The output of American medical works which reaches this country is very large, and many are the result of considerable industry, literary research, and clinical work, yet it would be impossible to say that they all add to our knowledge, or, in other words, that they are not superfluous. Another very usual feature is their large size, this magnitude being due to the habit of incorporating in them much non-essential matter, while the number of illustrations is far beyond what is needed in order to make the text intelligible. The book before us on *Diseases of the Stomach and Intestines*,[4] by Dr. Robert Coleman Kemp, is an example of all that has just been said. It contains 766 pages, with 280 illustrations, "some in colours." A few titles of the illustrations will show the extent to which this pictorial method is carried. In connexion with the local treatment of the stomach, Fig. 75 is a drawing to show the correct method of passing the tube; Fig. 76 is a diagram to show the course of the tube; Fig. 77 is a drawing to show lavage by a single operator, position 1; Fig. 78 the same, position 2; Fig. 79 shows lavage by two nurses, step 1; Fig. 80 the same, step 2; Fig. 81 is a drawing of Friedlieb's stomach tube (a common form); Fig. 82 shows nurses performing lavage with this tube, step 1; Fig. 83 shows step 2; Fig. 84 shows stomach irrigation with T tube, step 1; Fig. 85 the same, step 2; Fig. 86 is a Knapp's director; Fig. 87 shows lavage through the nostril, step 1; and Fig. 88 the same, step 2. The author claims to be "simple and practical," yet he describes complicated methods which cannot be carried out except in a laboratory, and he includes others of doubtful value; he devotes space to such "simple and practical" procedures as gastroscopy, gastrodiaphany, radium transillumination, and radium photography! Such work is merely compilation; these subjects have not been duly filtered through the writer's personal experience, yet when teachers set themselves to write this is what they should strive to give us. It is compilation, too, when on the same page in one place we find that a nutrient enema "should not exceed 250 c.cm.," and lower down a formula "which he has found useful" is given containing 375 c.cm., besides two raw eggs and 3 drachms of sanatogen! The volume deals with both medical and surgical affections, and on the whole the surgical part of the book is better than the medical, although we do not know whether the author is an operating surgeon or not. He appears familiar with such modern German work as has been translated and published in America, but his chief sources of information are American, and he credits his countrymen with observations and suggestions which have not always originated on that side of the Atlantic. He spells Romberg "Rhomberg," Meinert "Meynert," Bidder "Bedder," and he twice writes "regimé" for régime. He states that enteroptosis is an essential factor in mucous colitis, but a factor to be essential must be constant, and that it is not. The book includes typhoid fever as a gastro-intestinal disease; on the same principle he might have included Asiatic cholera. We think it a mistake to say that gastritis requires treatment in bed, although this may be true where there is persistent vomiting; ordinary gastritis can be treated satisfactorily without rest in bed. On the other hand, there should be no ambiguity about the need for treating gastric ulcer in bed; it is not merely preferable, but it is absolutely as essential as in typhoid fever. The treatment of gastritis by teaspoonsful of hot water seems futile; we would suggest half-pints. Why on the same page is "soda water" forbidden and "mineral water" recommended in the treatment of the same affection? The dose of hydrochloric acid is inefficient if it is to make up for the defect in the gastric secretion, while the value of gelatine recommended as a haemostatic is doubtful, as it is useless if sterilized and dangerous if not. All that we have said above of the evidence of industry, literary research, and clinical work is applicable to this book, but it is not marked by any distinctive merits.

[4] *Diseases of the Stomach and Intestines.* By Robert Coleman Kemp, M.D. Philadelphia and London: W. B. Saunders Company. 1910. Roy. 8vo, pp. 766; illustrations 280. 25s.)

BACTERIA IN COUNTRY LIFE.

This book[5] is the latest addition to the Rural Science Series which Mr. L. H. Bailey is editing for Macmillan. The present volume, by Professor Jacob G. Lipman, is addressed primarily to students of agriculture and its allied sciences, and little or no previous knowledge of bacteria is presupposed in the reader. The first part of the book is accordingly devoted to the history of bacteriology, and the morphology, physiology, and chemistry of bacteria and allied species of micro-organisms. This is well and clearly written, and conveys just the information required by the class for whom it is intended. The chapters on bacteria in air, water, and sewage are also clear and correct in detail, but necessarily overlap a good deal the regular textbooks of hygiene and sanitation. However, the author may fairly claim that without them his work would have been incomplete. The last part of the book, dealing with the relations of bacteria to the preservation of milk and the manufacture of cream, butter, and cheese, are excellent, but Professor Lipman is naturally most interesting on his own special subject—that is, the bacteriology of the soil. Particularly good is his account of what we may venture to call "telluric respiration," the interchange of gases between the soil and the atmosphere, which will be a fresh subject to many readers. His account of the nitrifying bacteria is very complete, and all those—farmers, gardeners, or others—interested will find here an exhaustive discussion of the various modern bacterial methods of rendering the atmospheric nitrogen available for the fertilization of crops. The book may be confidently recommended to all students of agriculture.

[5] *Bacteria in Relation to Country Life.* By J. G. Lipman, A.M., Ph.D. The Rural Science Series. Edited by L. H. Bailey. New York and London: The Macmillan Company. 1908. (Post 8vo, pp. 506. 6s. 6d.)

SYMPTOMATOLOGY OF LIVER AND PANCREAS.

The little work on the examination and symptomatology of the liver and pancreas, by Dr. L. Pron,[6] is an elementary textbook intended for the use of students and practitioners. It is divided into two parts, the first on the liver and the second on the pancreas. That on the liver gives some account of the physiology of the organ, of the general etiology of its diseases, and of its relations to other organs in the body. The author then proceeds to describe the examination of the patient, of the urine and stools, of biliary calculi, and gives the various physical methods, including, of course, palpation and percussion. The different symptoms are then discussed separately; for example, enlargement, atrophy, jaundice, fever, pain, ascites, and enlargement of the spleen. The second part, on the pancreas, follows on the same lines, but is shorter. In discussing the diagnosis of jaundice, the author condemns Gmelin's reaction as being insufficiently delicate, and every one must admit that it frequently fails; he finds the iodine test better, although we have not observed much difference between the two, sometimes one giving a better

[6] *Examen et sémiotique du foie et du pancréas.* Par le Docteur L. Pron. Paris: Jules Rousset. 1910. (Cr. 8vo, pp. 178. Fr 3.)

reaction, sometimes the other, with the same urine. He recommends the elaborate method of Grimbert, which is not practicable outside the laboratory, but he praises Monckton's simple methylene-blue test, which, though not in general use, deserves attention; it is performed by taking two test tubes, each three-parts full of water, to one of which is added 2 or 3 drops of a solution of methylene blue and to the other 30 drops of urine; into the latter 20 drops of the diluted solution of methylene blue is poured. With a normal urine this gives a clear blue, but in the presence of traces of bile pigment a greenish colour is developed; by comparing the two tubes the change of tint is made manifest. Although he has found this method satisfactory, Dr. Pron admits that it has been criticized, and therefore prefers the method of Obermayer and Popper. Their reagent is composed of water 625 c.cm., alcohol (95 per cent.) 125 c.cm., sodium chloride 75 grams, potassium iodide 13 grams, tincture of iodine (10 per cent.) 3.5 c.cm.; a few drops are added with a pipette to 5 c.cm. of fresh urine, which must be acid and filtered. At the line of junction between the two liquids a ring appears coloured blue or emerald green or deep bluish-green, according as the urine contains more or less bile pigment. He thinks this method gives excellent results, and, being simple and rapid, is worthy to come into common use. Among the tests for blood in the stools he does not mention benzidine, and in describing the physical signs of a hydatid cyst of the liver he does not draw attention to the usual absence of tenderness and want of symmetry in the shape of the tumour. In his description of the pancreas he follows Carnot, whose book on the pancreas we reviewed some two years ago. We have not noted anything new in his remarks, and are disappointed to find him saying of Cammidge's reaction that "it is useless to describe this reaction, which is very complicated, as certain authors consider it to be artificial and capable of being obtained with any urine, while Carnot considers its significance and symptomatic value to be uncertain."

HANDBOOKS FOR NURSES.

THE *Guy's Hospital Nursing Guide*[7] was originally issued as a handbook for the Nurses' League of Guy's Hospital; but a wise policy has expanded it into a nursing guide which will be equally useful for all nurses. The fifth edition, which was issued last year, is quite the best of the numerous books for nurses which we have seen. There is no useless recapitulation of the instruction which the nurse picks up as a matter of routine in the wards, but all that it would be a strain on her memory to carry in her head is here summarized and scheduled in a little book of reference which can easily go in her reticule. Apart from professional and technical details of this sort, there are admirable articles telling the would-be nurse how to become one, and especially how not to become one; and there is very full instruction for the qualified nurse as to how to go about earning her living. This book should be equally invaluable to the nurse at every stage of her career. The editor is to be congratulated on a masterpiece of the practical.

The scheme underlying *A Handbook for Nurses*[8] differs in some degree from that of many volumes of corresponding title, its author, Mr. SYDNEY WELHAM, Resident Medical Officer, Charing Cross Hospital, wisely refraining from any attempt to deal on paper with such a thoroughly practical subject as nursing. But nursing, of course, is based on principles, and these are fully set forth in this volume. After some thirty pages dealing with anatomy and physiology, the more important symptoms of the principal medical diseases, the treatments commonly adopted are described, any point requiring special attention from the nurse being indicated. Surgical diseases are treated in the same fashion, bacteriological principles not being overlooked. Finally come some chapters on technique, including the administration of douches, forced feeding, etc., an appendix relating to diets, and a useful glossary. The idea of the book is well carried out, and it should prove a useful reference work for nurses both early and late in their career.

Written primarily for the nursing orderlies in the military service, this book on *Practical Nursing*[9] necessarily contains certain details which apply to the usages of military hospitals and to the nursing of cases more likely to be met with abroad than in this country. It should prove most useful to the orderlies of the Royal Army Medical Corps, both Regulars and Territorials. It is, however, of wider utility than its title suggests, and may be studied with advantage by all who wish a good textbook on practical nursing. It contains also a large amount of medical information which would be most helpful to those—for example, missionaries and travellers—who must rely on their own resources in remote parts of the world. It seems to us a most useful and complete nursing manual.

DENTAL SURGERY.

OUR opinion stands on record, and still holds, that *Anaesthesia in Dental Surgery*,[10] by T. D. LUKE, is an excellent little book, which we confidently recommend to all interested in the subject. The third edition has been revised, but on p. 36 one has to read on to gather that gags and not tampons are the subject-matter; and from p. 57 one gathers that the young children of Edinburgh wear corsets. Chloroform for dental operations the author unhesitatingly condemns; but his advocacy of ethyl chloride except as a *portable* anaesthetic fails to convince us. In an appendix on the present position of the anaesthetic question (p. 219) the author insists that ordinary "gas" should be differentiated from "nasal gas" administration, which he rightly describes as fraught with as much danger in inexpert hands as that of "gas and ether," or "gas and ethyl chloride." We find no reference to status lymphaticus, or to septic and purulent mouths as dangers in anaesthesia. Besides the tables of deaths from chloroform and from "gas," useful lists of continuous gas and of ethyl chloride cases have been added.

Owing to the progress of microbiology and antisepsis the domain of dentistry has enlarged considerably, and good extractions and fillings no longer comprise the whole of the art. The modern practitioner must be able to recognize certain maladies belonging to the category of general medicine, and often to formulate a treatment by drawing his indications from a group of symptoms or from an etiology most diversified. Hence the authors of *Consultations et thérapeutique dentaires*[11] have thought to do a service to their brethren by bringing together an account of the maladies they are likely to see, and giving for each, under the form of a consultation on a case, a complete picture of the treatment to be adopted. There is a short but suggestive introduction on the bacteriology of the mouth; but the task of grouping together the maladies the dentist is likely to encounter has not proved an easy one, and the authors seem to have allowed themselves to be led astray by the converse idea that they should describe dental accidents for medical men, and have devoted a very considerable portion of their space to such subjects as "filling materials," "pulpitis," "dental caries," giving information quite unnecessary to the dentist. The rest of the book is incomplete and sometimes incorrect. The only mention of the diversified etiology of facial neuralgia is contained in about twenty lines enumerating possible general causes, and such notes as that the neuralgia of diabetes, gout, alcoholism, or tobacco poisoning will be ameliorated by medication directed to the cause.

[7] *Guy's Hospital Nursing Guide and Register of Nurses trained at Guy's Hospital.* Fifth issue. Edited by the Matron. London: Ash and Co., Limited. 1909. (Demy 8vo, pp. 166. 1s. 6d.)

[8] *A Handbook for Nurses.* By Sydney Welham. London: Mills and Boon, Ltd. (Post 8vo, pp. 239. 3s. 6d.)

[9] *Practical Nursing for Male Nurses in the Royal Army Medical Corps and other Forces.* By Major E. M. Hassard and A. R. Hassard. London: H. Frowde and Hodder and Stoughton. 1910. (Post 8vo, pp. 352. 3s. 6d.)

[10] *Anaesthesia in Dental Surgery.* By Thomas D. Luke, M.D., F.R.C.S.Edin., formerly Lecturer on Anaesthetics, Edinburgh University, Anaesthetist to the Dental Hospital, Edinburgh, etc., and J. Stuart Ross, M.B., F.R.C.S.Edin., Anaesthetist to the Deaconess Hospital, Dental Hospital, Edinburgh, etc. London: Rebman, Ltd. 1910. (Cr. 8vo, pp. 239; illus. 27. 6s.)

[11] *Consultations et thérapeutiques dentaires.* Par le Dr. J. Estecoule et L. Dauzier. Paris: Vigot Frères. 1910. (Fcap. 8vo, pp. 265. Fr.4.)

On page 235 the base of a primary syphilitic ora[1] chancre is said to be markedly indurated. In the section on general anaesthesia, "gas" is said to produce in about forty seconds an anaesthesia lasting four or five minutes; and only the "open" method of ether administration is described. We are told that in one place alcohol and cider predispose by the action of their acids of fermentation to caries and gingivitis, and at another that alcohol 50 per 100 is the best mouth antiseptic. The authors seem unduly fond of scarification and the use of the actual cautery as a counter-irritant (for example, in the early stage of dental abscss). The actual cautery, too, is in high favour for small operations, on the ground that it ensures perfect antisepsis, the ever-present germ ready to invade the injured tissue being apparently forgotten. The detritus of meat lodging among the teeth is said to putrefy and attack the enamel, and other questionable statements might be cited, but enough has been said to justify the statement that the book is not only incomplete but sometimes inaccurate. The authors make a point of having chosen the most useful prescriptions for each case, but we doubt the value of subcutaneous injections of iodoform or of camphorated oil in any of the conditions touched on, and we think the list of prescriptions could well have been diminished by half. All told, we cannot recommend the book; but it serves its purpose in indicating the trend of thought of European dentistry toward a wider and less mechanical aspect of the dental art.

NOTES ON BOOKS.

IN the present expanding stage of electro-therapeutics a periodical, or at most a small manual, is better fitted to cope with the subject than such a mountainous work as *Medical Electricity and Roentgen Rays*.[1] During the preparation of these thousand pages by Dr. TOUSEY'S unassisted pen, new applications of electricity have been discovered and some of the older applications have been discredited, with the result that at certain points his work is "high and dry." Indeed, save in the *x*-ray portion, we have been unable to find one among the hundreds of his references of more recent date than 1907. Ionic medication, for example, although expounded in an interesting fashion and with considerable originality, is scarcely as up-to-date as might have been expected at this late day and in a monograph of this ambition. Fulguration, again, has a place in the volume, but the later and disappointing results obtained by the experts are not included; and in a work with a special section on phototherapy one might expect more than a bare dozen lines upon the Kromayer lamp. That this inadequacy is not due to anything save the special conditions under which such a big task had to be carried out is shown by the general care and lucidity with which the author handles his subject. If his able exposition of *x*-ray photography were detached and separately published it would be of the greatest service to the inexperienced.

LUFF AND CANDY'S *Manual of Chemistry*[2] is intended specially to meet the requirements of medical students in regard to this subject, and is in the main admirably adapted for the purpose. The balance is well maintained in presenting fact and theory, the general and the particular. The attempt to deal with practical chemistry, including the preparation of salts and qualitative and quantitative analysis, in a single chapter of 29 pages is hardly to be commended, and gives an unfortunate appearance of the work being a "cram book" which is not warranted by the greater part of it. In spite of this, medical and other students will be well advised to obtain the new edition of this book.

THOMPSON'S *Compendium of Medicine and Pharmacy*[3] contains a large amount of useful information, but of so heterogeneous a nature that it is impossible to discover the principle on which it has been selected. The subtitle of the book describes it as "for medical practitioners and pharmacists," but there can hardly be any members of either profession who need to refer to a book to learn that the way to find the specific gravity of a liquid, when the weight of a given volume of it is known, is to divide the weight of it by the weight of an equal quantity (*sic*) of water; and any one lacking such knowledge would scarcely look for it in a prescriber's compendium. Detailed directions for ascertaining the quality of ginger rhizome by finding the proportions of ethereal extract, alcoholic extract, and ash which it yields are surely out of place in the same volume as notes on recent and unofficial remedies, "bacteriological memoranda," selections from the formulae of the *British Pharmaceutical Codex*, an index of diseases and remedies," and so-called "synopses" of the British, German, French, and U.S.A. Pharmacopoeias (the last three consisting merely of a very small selection of formulae and a few notes), with much other matter. Far too much has been attempted for any one section to include all the information likely to be wanted. The absence of an index further reduces any utility the book might otherwise possess.

[1] *Medical Electricity and Roentgen Rays.* With chapters on Phototherapy and Radium. By Sinclair Tousey, A.M., M.D. Philadelphia and London: W. B. Saunders Company. 1910. (Roy. 8vo, pp. 1115; 800 illustrations. 30s.)

[2] *A Manual of Chemistry, Theoretical and Practical, Inorganic and Organic, adapted to the Requirements of Students of Medicine.* By Arthur P. Luff, M.D., B.Sc.Lond., F.R.C.P., F.I.C., and Hugh C. Candy, B.A., B.Sc.Lond., F.I.C. New and enlarged edition. London and New York: Cassell and Co., Limited. 1910. (Fcap. 8vo, pp. 638; illus. 46. 7s. 6d.)

[3] *The Compendium of Medicine and Pharmacy:* a Handy Pocketbook of Reference for Medical Practitioners and Pharmacists. By C. J. S. Thompson. Third edition. London: John Bale, Sons and Danielsson, Limited. 1910. (Pott 8vo, pp. 342. 5s.)

MEDICAL AND SURGICAL APPLIANCES.

Forceps for Removal of Turbinate Bones.

MR. GEORGE W. BADGEROW, F.R.C.S. (Senior Assistant Surgeon, Throat Hospital, Golden Square, W.), writes: I have designed the forceps illustrated in the figure more especially for the removal of the anterior ends of the inferior and middle turbinated bones. They are made somewhat on the design of Luc's forceps, but the blades are made to punch or cut a piece cleanly out, and the peculiar jointing of the forceps ensures the accurate approximation of the cutting surfaces. I have used them in a number of cases and find them highly satisfactory, and they will also be found useful for the removal of septum and crest in submucous resection, and they form an efficient punch for removing portions of the tonsil. They are manufactured by Mayer and Meltzer, Great Portland Street, London.



An Ophthalmic Note Chart.

Dr. C. A. Adair Dighton, of Scarborough, has brought out a chart for recording notes upon eye cases. One side of the chart is ruled for details of the case which are to be entered in definite spaces. Thus, under external examination we find the following heads: Lids, conjunctiva, sclerotic, anterior chamber, iris, pupil, tension, vision, and nystagmus. Then follow focal illumination and other methods in rotation. On the back of the chart is a space for treatment and a financial column for debit and credit. The sheet is published by the Medical Supply Association. The idea is not a new one. Messrs. Pulman, of Thayer Street, supply a casebook which was devised by Mr. Ernest Clarke. These formal charts are excellent when notes have to be taken by students, but they have less value from the specialist's point of view.

A Visiting Bag.

We have recently inspected a case made by Messrs. Fisher, Limited, 188, Strand, for the use of general practitioners, under the name of the "M.D. Visiting Case." In appearance it is a dispatch case, its extreme length being 16 in. A strong point in its favour is that on opening the lid everything which the bag contains can be seen at a glance, with the exception of such towels, ligatures and other odds and ends as may be stored in the flap pocket on the inner side of the lid. Sockets are provided for a variety of bottles, and there is ample space for obstetric instruments of all kinds, including a sterilizing apparatus. The case could, of course, if required, be used for other purposes than that for which it is more immediately intended. The makers informed us that it is their intention to line it with material of an impermeable character, capable of being washed or sterilized, in which case the bag is likely to be a very useful possession to many practitioners.

LOCAL IRRITANTS AND CANCER.

ELSEWHERE in this issue will be found a paper by Dr. Ernest Neve on epithelioma caused by the irritation of the kangri, a portable fire basket carried by the natives of Kashmir under their clothes. Any readers interested in the subject may find it convenient to have before them as a complement to Dr. Neve's paper the following extract from the Third Scientific Report on the Investigations of the Imperial Cancer Research.[1] Dr. Bashford there says (p. 19):

"The occurrence of epithelioma of the anterior abdominal wall in Kashmir with a frequency met with nowhere else is also most instructive. Some years ago Dr. Neve drew attention to the development of squamous-celled carcinoma in kangri burns. The kangri is a small earthenware vessel enclosed in basket-work variously decorated, and used to contain a charcoal fire. The kangri is suspended round the waist under the flowing robes to assist in maintaining warmth by the natives of the cold hills of Kashmir. Repeated burns and long-continued chronic irritation of the skin of the abdomen are the consequences. A common sequel to this long-continued chronic irritation is the development of squamous-celled carcinoma with metastases in adjacent lymph glands. We are indebted to Drs. Neve and Rawlence for a specimen of the 'kangri' as well as for photographs of natives using it. We have examined a large number of 'kangri cancers' in all stages of development. Their characteristic structure leaves no doubt that they are epitheliomata, the accompanying figures obviating any need for a detailed description. In the case of Egypt the apparent association of cancer of the bladder and penis with infection by *Bilharzia haematobia* illustrated the development of the disease as a sequel to a different form of chronic irritation. The relation of these different forms of chronic irritation to the development of cancer in different parts of the world helps us to comprehend better the part played by other forms of chronic irritation whose association with cancer has long been observed. These irritations may be mere direct *physical* injury as in fracture of bone or in the 'horn core' of cattle in India (this is a most interesting and instructive form of malignant new growth to which our attention was directed by Captain Brodie-Mills of Bombay. Squamous-cell carcinoma develops at the root of the right horn with great frequency in cattle used for draught purposes—the right horn being used by the natives to attach the animals to agricultural implements or draught wagons), *chemical* as in paraffin, petroleum, arsenic, and aniline cancer, *actinic* as in the case of the hot short clay pipe, the kangru, the *x*-ray, or brand cancers (of cattle). Woodhead has observed several cases of squamous-celled carcinoma develop in engine-drivers over the shin where the skin had been exposed for years to the direct action of heat. They may be of an *infective nature* as in bilharzia for the bladder, the tubercle bacillus where epithelioma develops in an old lupus scar, or *Treponema pallidum*, as in the association of keratosis linguae with epithelioma of the tongue. The irritant may be a *larger parasite*. Borrel has recorded the association of cancer with nematodes and cestodes, and we have observed a case of carcinoma of the small intestine in a mouse at the site of attachment of a tapeworm. The irritants cited can readily be augmented by the enumeration of many others having nothing in common, and they can have only a mediate relation to the causation of the disease. This is a conclusion we have expressed already, and it will be reverted to again in discussing the occurrence of cancer in animals, without studying which it would be very unwise to express any opinion on the significance of the association of chronic irritation with the development of cancer in man.



THE KANGRI.

(For permission to reproduce this illustration we are indebted to the courtesy of Dr. Bashford.)

"The study of all the circumstances associated with the sporadic occurrence of cancer must remain indispensable so long as we are unable to test the relative importance of each by other than statistical methods. The true importance of some of the circumstances which have been defined as having a mediate relation to the development of cancer can only be cleared up after its nature has been ascertained, and purely statistical investigations will remain more or less empirical until this end is attained. The statistical investigation of infective diseases was pursued advantageously before the development of bacteriology directly demonstrated the causes of many of them. That demonstration placed old problems in their true perspective—for example, the geographical distribution of infective diseases, their epidemic and endemic occurrence, the relation between variations in the incidence of infective diseases and, for example, water supply, density of population, rainfall, ground-water, or season. In the case of cancer those who have a serious interest in statistics have not yet advanced from the state of empiricism in which the student of the infective diseases compiled statistics in the days before Pasteur and Koch. It is unjust to minimize the value of the accurate statistics based on the available data, for in our ignorance we do not know that the statistical method has reached its limitations; but only that it is still of the greatest assistance in helping us to define the objective of our experimental studies.

"The increased number of deaths recorded from cancer, its apparent greater frequency in some geographical areas (whether large or small) than others, the assumed importance or unimportance of the influences of race, diet, soil, climate, are all problems of much less importance than, for example, the established fact that cancer increases in frequency as age advances in man and animals and the infective or non-infective nature of cancer. Still it may not be forgotten it was impossible for statistics to supply the proofs of the causes of diseases now known to depend on infective organisms, and it is in all probability as much without the province of statistics to supply the answer to these questions as it is for them to yield a reply to the still more direct question, What is the cause of cancer?

"The occurrence of cancer in association with chronic irritation has long been recognized, and has led to conceptions of the nature of the disease more or less out of accord with the hypothesis of a congenital origin as a general explanation of *all* forms of cancer. The facts recorded above seem to show that the different forms of irritation, although they have in themselves nothing in common, are of more moment than the sites to which they are applied. If the hypothesis of a congenital origin is to hold good for the various instances mentioned in the preceding pages, then it becomes necessary to postulate further a uniform and abundant distribution of 'embryonic rests' over the body, or to assume a different distribution of 'embryonic rests' in Europeans and native races, coinciding with the points they respectively select for the indulgence of various practices involving the application of peculiar irritations. The facts directly refute such a view of the congenital origin of those forms of cancer to which reference has been made above, as developing in consequence of such native customs as, for example, wearing the kangri or chewing betel nut. The same remarks apply also to other better known forms of cancer associated with chronic irritation, for example, chimney sweep's cancer, and to still less known forms, for example, brand-cancer, and 'horn-core' in cattle. The difference in the organ incidence of cancer between Europeans and the natives of Kashmir or India and Ceylon is that in Kashmir the abdominal wall is irritated by the kangri, and the buccal mucous membrane of women in Ceylon and India generally, by chewing betel-nut—it is not in all probability a different distribution of hypothetical 'embryonic rests' from that obtaining in Europeans. To these observations

[1] London, 1908.

and inductions we are now able to add others drawn directly from experiments on animals, and later on in this report Dr. Haaland will describe the experimental development of sarcomata in mice, under circumstances which appear to throw much light on the reasons why cancer develops in association with continuous or intermittent efforts at repair and regeneration. Although at the present time it is necessary to write with great reserve in directly applying the results of experiments to the etiology of cancer in man, nevertheless their bearing on the mediate causative relation obtaining between the chronic irritants cited above and the onset of cancer is one of the most suggestive results yet attained."

Pitch Cancer.

Dr. T. M. Legge, of the Home Office, has been studying the disease peculiar to pitch workers, and known generally as fuel-workers' cancer; his report was referred to in the JOURNAL of June 4th, 1910, p. 1370. Dr. Legge found that there was a general consensus of opinion among medical men, employers, and employed that attention to the body was an almost certain safeguard against the more malignant form of the disease amongst briquette workers. At present there is no accommodation for washing and baths at any of the works. He pointed out that the risk to men engaged in digging or shovelling pitch, in handling briquettes, or in work exposing them to dust in their manufacture would be reasonably met by the requirement of a bath every alternate day, coupled with arrangements enabling them on the other days to wash the face, arms, and chest. No arrangement of baths in factories would be complete without a corresponding provision for change of clothing, as the benefit of bathing would be neutralized were the working clothes to be donned immediately after. Several workmen said that were this provided they would have two sets of clothes—one for work and the other for going home in. A point to be considered for the first time is what standard of bath accommodation should the department lay down in circumstances where this is the main preventive measure recommended, and where it would be well that the majority of the workers should bathe in much the same way as under many regulations they are now enjoined to wash. So far the department has concerned itself only with baths as in the manufacture of white lead, electric accumulators, and nitro and amido derivatives of benzine, to be taken by a limited number of workers once a week, and the requirement "sufficient and suitable" has met the case. Clearly method, system, and supervision will do much by proper marshalling of workers, attention to detail in arrangements for dressing and undressing, to reduce the time bathing will take.

Dr. Legge recommended that the standard of bath accommodation should be one for every five persons handling briquettes or exposed to dust in its manufacture. Washing accommodation should be on the same scale. Overall suits should be produced by the occupier. Referring to the prevention of dust, Dr. Legge says:

"Although actual inhalation of the dust produced in quantities by the open elevators may not be followed by serious consequences to the lungs, its diminution, as shown by the conditions found, lessens occurrence of nails and skin affection. Hence the point is dealt with in the recommendations by a requirement to encase, as far as possible, the disintegration and elevators."

According to the *South Wales Daily Post*, the recommendations are met with by much favour by the workers; but that is not the case with the employers. The Home Office, however, is determined to check the spread of a malady which even now is by no means too clear to them.

On July 14th, Dr. Whitelegge and Dr. Legge, the Home Office Inspectors, met at Whitehall a deputation from South Wales fuel workers in connexion with the proposed regulations for the prevention of disease amongst the men. The conference was between Mr. Ben Tillett, of the Dockers' Union, Mr. W. Thorne, M.P., Councillor Merrills, and Mr. James Aherne. The proposed main regulations considered were the provision of baths and washing accommodation, as well as a change of clothing. The deputation informed the Home Office Inspectors that if provision were made in these respects there seemed little doubt that a very high percentage of the trouble would be eliminated, if not altogether stopped. The men's representatives pointed out that they were willing to co-operate with the employers in this matter, and Councillor Merrills, the district official representative of the Dockers' Union at Swansea, said he could endorse the men's desire to try and stop altogether this unfortunate disease. A few days before, a meeting of the men had been held, and they all agreed that the steps suggested in regard to increased bathing accommodation and changes of clothing were absolutely necessary to protect them. The deputation took exception to some small matters of detail, but in the end adopted the draft of the new regulations.

In the *Province Médicale* of June 12th, 1909, there was published a clinical lecture by Professor C. Audry, Professor of Dermatology in the University of Toulouse, on the epithelioma of pitch workers. After referring to the scrotal cancer of sweeps, he says that it was not till 1873 that Volkmann brought epithelioma of the scrotum, which he had studied on workers in pitch and paraffin, into relation with sweep's cancer. The dermatosis caused by prolonged contact of the skin, says Audry, with the dust or vapour of the irritant (pitch, paraffin, etc.) does not originate suddenly. A pre-epitheliomatous stage has been described by Volkmann. After an inflammatory period, the integument becomes dry and pigmentary spots appear. Elevations, sometimes like masses of senile dirt, sometimes definitely warty, appear. At this time a change of occupation may be sufficient to arrest the evolution of these benign neoplasms. O. Ehrmann has seen 25 to 30 cases in workmen engaged in the manufacture of briquettes. The phenomena were browning of the skin and of the sclerotic comedones, hyperkeratosic and papillomatous formations on the hands. The comedones were probably due to simple obliteration of the follicles by the pitch. The cancer of pitch workers is usually easily curable; sometimes, however, this is not the case. Reference is made to an observation by Tillman on a workman, aged 49, who had worked since the age of 12 years in a paraffin factory, and in whom, when the new growth of the scrotum seemed to have been completely cured, amputation of the arm with total extirpation of the axillary glands had to be performed. In a case described by Zweig, a person from whom warty growths of the face, the hand, and the scrotum had twice been successfully removed, died of a recurrence in the antrum of Highmore. The localization of the lesion in the scrotum is undoubtedly due to the rugose structure of the skin in that situation and to the consequent difficulty of washing away the pitch from the place. Hence the vital importance of rigorous cleanliness.

THE BATTLE OF THE CLUBS IN BELGIUM.

THE battle between the medical profession in Belgium and the sick clubs that have provided medical attendance for their members is now being waged in a most vigorous fashion by the "Cercle Médical" of Antwerp and district, which is a professional society having a legal status, and we are indebted to Dr. Brandligt, the Secretary, for sending through Dr. J. H. Taylor, of Salford, full particulars of an organization which has been successful in improving the general conditions of medical practice in the Antwerp district during the last two years. Dr. Brandligt writes as follows:

In Antwerp and in Belgium generally, the wage-earning classes are by nature provident and the greater number of the workmen are members of benefit societies known as "Mutuelles." The medical men whose services are requisitioned by the societies are quite inadequately remunerated, owing to the strong competition between practitioners and the comparative weakness of the medical associations which are local rather than national. In Antwerp the medical association has fortunately been strengthened by the practically unanimous adhesion of the medical body, and is thus able to dominate the position to a greater extent than obtains elsewhere in the country; the medical service in connexion with the benefit societies is more strictly regulated. The end in view is not in any way the abolition of these benefit societies; they are required to adequately remunerate the profession for the services rendered, and it is hoped to obtain perfect liberty of choice of doctor, so that members may be in a position to call in whomsoever they wish, under certain restrictions. Moreover, the members are subject to a certain amount of supervision in order to avoid the use of this medical service on a reduced scale by those whose social position does not warrant it.

The Antwerp "Cercle Médical," a professional union having a legal status, has inaugurated a system under which the

benefit societies are not only able to arrange medical attendance for members figuring on their sick lists, but may and do leave to such members from a list of about 100 doctors supplied by the "Cercle Médical" an open choice as to the practitioner whom they desire to call in case of sickness, and this system has given excellent results. The workman (wage earner) chooses his doctor for a period of not less than twelve months and is not permitted to make a change during this period unless change of residence should render it necessary. The fees paid are based on an adequate scale, and the medical man is interested in the careful treatment of his patients in order to continue the contract at the expiry of the twelve months first arranged.

To avoid the risks of practitioners making rebate arrangements with such benefit societies, the Cercle Médical itself receives all payments and remits the fees to those entitled to them.

In order to oblige the societies in question to enter into an agreement with the Cercle Médical, the latter has made arrangements with the pharmaceutical chemists for united action, and all agreements are now made in concert. The benefit societies have to accept the regulations imposed, for if they refuse the medical and pharmaceutical service is denied them.

Besides these societies there are free hospitals and benevolent organizations. The law obliges each "commune" to grant gratuitous medical and pharmaceutical aid to those whose means preclude their paying therefor, and the medical men rendering such services are under this law properly indemnified by the communal authorities.

In Belgium the medical associations have decided against sickness insurance for the following reasons:

1. On principle it is undesirable that money should be earned by middlemen at the expense of the practitioner.

2. These sickness insurance societies become too powerful, and the medical associations are no longer able to resist the reduction of fees. In such circumstances the inordinately large number of members of the insurance societies makes it impossible to give each of them the care necessary. This result is morally prejudicial to the profession in general.

3. In Antwerp these sickness insurance societies have frequently tried to obtain a footing; but determined opposition has been made thereto, dictated by results in Holland, more especially in the city of Amsterdam. In fact, in that city these societies have become so powerful that very few indeed of the practitioners are, or can afford to be, independent of them; the scale of fees is in consequence ridiculously low.

It is believed to be a serious curtailment of professional independence to make the medical man an employee of the State; and when the State shall insure all wage earners, or shall oblige all such to insure against sickness, as is the case in Germany, the profession is then exposed to the risk of a still further reduction of fees, is it not? Furthermore, could the growth of this insurance habit be impeded or arrested? Would it not infiltrate among the middle classes as well?

Mutual benefit societies for wage earners in which either the society itself pays the doctor or pays a certain amount to its members in case of sickness are undoubtedly useful. But agreements must be made with them as is done in Antwerp, otherwise attendance at reduced fees would be the inevitable result.

Looking at the question both from a moral and a financial point of view, it is believed that sickness insurance, either by private companies or by the State, is not desirable. By all means admit the utility of the mutual benefit societies, but subject them to sufficiently stringent regulations, making them subservient to the medical associations. This is all that is necessary.

Cercle Médical d'Anvers et faubourgs,
Union Professionnelle Reconnue
(D. Brandligt, Secretaire).

In addition to this personal communication, Dr. Brandligt sends several numbers of the *Bulletin Officiel de la Fédération Médicale Belge* and the *Bulletin Officiel du Cercle Médical d'Anvers*, with a form of contract which is entered into between the Cercle Médical and the individual practitioners of Antwerp, and the tariff of medical fees adopted. In view of the possible formation of a centrally organized and directed public medical service under the auspices of the British Medical Association, some of the following details may be of use.

Dr. Edouard d'Haenens, President of the Cercle Médical, points out that in Antwerp, as in other places, side by side with medical men who are devoted to the interests of the profession, and who voluntarily accept the discipline of professional organizations, there are (*a*) medical men who are neutral and indifferent, (*b*) men who claim freedom to do as they like, (*c*) men who are ready at the first opportunity to "pass to the other side of the barrier," and (*d*) men who are openly bad and take a pleasure in destroying the work of their confrères. All these four classes are a source of danger to professional union, and in order to mark them out the Cercle Médical has drawn up a form of contract to be signed by members and non-members alike, in which the signatories bind themselves under certain penalties not to give their services at reduced fees without the consent of the Cercle Médical. The Cercle Médical also on its side agrees to defend the interests of the signatories, and to indemnify them against loss. This contract has been signed by 298 practitioners out of a possible 314, several of those not signing being retired from practice. A "mixed committee" has been formed, composed of delegates of the Cercle Médical and delegates of the Society of Pharmacy of Antwerp, and its business is to act as intermediary between medical men and pharmacists on the one hand and the "sociétés de secours mutuel" on the other hand, and to fix in co-operation the scale of fees. The Mixed Committee may also regulate the relations between doctors and chemists, and has done much good work in waging war against charlatans and various forms of unqualified practice. It acts by sending reports to the "Commission Médicale Provinciale," or giving information to the Public Prosecutor.

The essential parts of the contract referred to between the Cercle Médical and individual practitioners may be summarized as follows: It first sets forth the reasons why some form of agreement is necessary to prevent the exploitation of the profession by the "mutuelles." Among other reasons it is stated that some of the "mutuelles" have only paid their doctors at the rate of 1 fr. per year or per family, and that the enormous number of patients that a single doctor may have to attend prevents anything like skilled or careful attention. The signatories, therefore, agree as follows:

Article 1. Henceforth no signatory shall give his services to any workmen's society, works, warehouse, or sickness insurance society (the public services excepted) for a lump sum payment or for reduced fees, except on the basis of the rules of the Cercle Médical and the Mixed Committee.

Article 2. The remuneration for medical services will be fixed by agreement between the Mixed Committee and the various societies.

Article 3. Signatories already under agreement with Mutuelles promise to communicate the terms of their contract to the Mixed Committee, which will eventually compel the societies to raise the remuneration in accordance with the value of the services rendered, and the tariff fixed by the Cercle Médical.

Article 4. No signatory shall accept any vacant post in any society without the written authority first obtained of the Cercle Médical under a penalty of 1,000 francs. If a signatory does not give up such a post within three months after he has been ordered to do so by the Cercle Médical, he shall be liable to a further penalty of 5,000 francs. If, after another three months' notice, he again fail to give up the post, a penalty of 10,000 francs will be imposed, after which he will be refused professional recognition ("mis au ban du corps médical"). These sums will not be reduced under any pretext.

It is further provided that part of the indemnities paid by defaulters shall go to the practitioners who are injured, and the rest to the account of the Cercle Médical, which binds itself to recoup any practitioner for loss sustained through carrying out the orders of the Cercle Médical up to a total of 5 000 fr. Provision, too, is made in case of disputes for arbitrators, whose decision shall be final. This contract is binding for five years, and is renewable. It is signed in duplicate, one copy being kept by the Cercle Médical, and the other by the President of the Provincial Medical Commission.

Each signatory receives a "Carte de Membre" in the shape of a small booklet, on the first page of which is the member's name, the seal of the Cercle Médical, and a receipt for the subscription. Following pages contain a list of minimum fees to be charged, and in order to make the tariff known to the public, notices are inserted in the political journals stating that the tariff has been established by and in the name of the Cercle Médical. The tariff is said to have been fully accepted by the public. At the head of the list of fees are notes stating that, in fixing them, regard has been paid to the importance of the services rendered, the dangers run by the doctors, the social position of the patients, and the number and importance of the visits made. The appreciation of these differences has largely to be left to the conscience of the doctors. The fees named are the minima, and the doctor has a right to a higher fee for saving the life of a patient than when his work is only the relief of a chronic and incurable case. When the doctor visits and gives advice to several members of the same family he is to reckon as many visits as he has seen patients. Three classes of patients are named—lower,

middle, and upper—according to their social position, and the tariff in each case is as follows:

A.—*Visits.*

	Lower Class.	Middle Class.	Upper Class.
	Frs.	Frs.	Frs.
Day visit	2	3	5
Morning visit from 6 a.m. to 8 a.m., and evening 7 p.m. to 11 p.m.	4	6	10
Sundays and holidays after midday	4	6	15
Night visits, 11 p.m. to 6 a.m. in summer, and 11 p.m. to 7 a.m. in winter	5	10 to 15	25
Prolonged visits in interest of patient, per hour	5	10 to 15	25

B.—*Consultations at Doctor's Home.*

	Lower Class.	Middle Class.	Upper Class.
	Frs.	Frs.	Frs.
Ordinary verbal consultation	2	3	5
Simple medical advice in writing	3	,,	10

Detailed report on state of health of patient, 25 to 50 fr.

C.—*Consultations between Medical Men.*

	Lower Class.	Middle Class.	Upper Class.
	Frs.	Frs.	Frs.
By day	10	15	25
By night (night hours as above)	10	25	50

With a medical man not resident in the town, 30 fr. minimum.

D.—*Minor Surgery.*

Ordinary dressings, speculum, tooth extraction, vaccination, etc., to be reckoned at the least at double the charge for an ordinary visit.

E.—*Confinements.*

	Lower Class.	Middle Class.	Upper Class.
	Frs.	Frs.	Frs.
Simple natural labour	30	50	100
Instrumental labour	40	60	150
Tedious labour	40	60	150
Assistance given to a midwife in tedious labour	20	25	—
Miscarriages beyond the first half of pregnancy	25	50	100

The fees include one visit per day during the nine days following labour. In case a second medical man has to be called in he will have a right to half the fee allowed to the first, and the fee of the second shall not be less than 20 fr.

A scale of charges is also given for certificates of various kinds, ranging from 2 fr. for a simple "sick note" to 20 fr. for more detailed certificates. For *post-mortem* examinations the fee is 100 fr. minimum.

A scale for life insurance examinations is also given. The fees for examination for insurance are as follows:

Up to 500 fr.	2 fr.
From 500 to 2,000 fr.	3 ,,
,, 2,000 to 5,000 fr.	5 ,,
,, 5,000 to 20,000 fr.	20 ,,
Per thousand above 20,000 fr.	1 ,,

Special fees are charged for attendance on sea going vessels or steamers and tenders on the Rhine.

Fees for Cases where Summoned by the Police.

Visit and first aid with certificate ...	6 fr.
Visit comprising more important attention or needing special dressings ...	10 ,,
Examination and certification of death in police cases	12 ,,

All these fees in police cases will be doubled if a whole hour at least is occupied, or if the visit be between 10 p.m. and 7 a.m. Any departure from these fees in police cases must be justified in the report to be sent to the Hôtel de Ville within a month.

The tariff contains no provision for serious surgical cases or operations, which are apparently left to private arrangements. There seems to have been very little difficulty in obtaining these fees when once it became known that the profession was united and that the tariff had been definitely fixed by the Cercle Médical, and, as a result, Dr. d'Haenens notes that within the last two years the fee for a visit for the lower class has been raised from 1.50 to 2 fr., the fee for visits between 7 p.m. and 11 p.m. has been doubled, that for night visits has been trebled, and that for visits after midday on Sundays and holidays has been doubled. Moreover, though new "Mutuelles" are still being established, they no longer create a medical service of their own, but are content with providing sick pay for their members and leaving the provision of medical aid to the Cercle Médical.

In addition to fixing a tariff and obtaining agreement between medical men to resist exploitation by the "Mutuelles," the Cercle Médical undertakes the collection of doctors' accounts at a lower commission than is charged by ordinary agents, and by undertaking this it has been able to form a "black list," which is at the service of the members.

The attempts to obtain a uniform scale of fees for life insurance examinations have met with much success, and the Cercle Médical has been able to prevent the societies engaging medical examiners at reduced fees. Other matters with which it has dealt are hospital abuse, advertising by medical men, unqualified practice of all sorts, medical appointments under public bodies, and legislation on matters affecting the profession; and to deal more effectively on a national scale with these matters there is the Belgian Medical Federation, to which many of the local medical societies are affiliated.

With regard to sickness insurance societies, the Cercle Médical would prefer to have nothing to do with clubs like the Krankenkassen of Germany. At present Belgium has not got compulsory State sickness insurance, as the Belgian Caisse de Retraites Ouvrières is only a voluntary fund for providing old age and invalidity pensions, subsidized by the State. Beyond all doubt the Antwerp practitioners have every reason to fear any State system that involves anything like the German Krankenkassen, but it is not easy to see why, if sickness insurance were made compulsory, the Cercle Médical should not be quite as well able to make satisfactory terms with a State insurance department as it has done with the Mutuelles, especially as a State department should hardly have the same incentives to exploit the profession as private companies, coming in as middlemen, would seem to have. That, however, as Dr. Brandligt points out, is not the opinion of the Cercle Médical of Antwerp, which is opposed to sickness insurance either by private companies or by the State.

One thing stands out very clearly from this account of the Cercle Médical, namely, that it only requires union in the profession to obtain satisfactory terms from clubs.

Up to the present the English friendly societies have absolutely refused to impose a wage limit, and medical men have been compelled, owing to their own want of union, to give their services at a charity rate of about 4s. per year to many members who could well afford to pay ordinary fees. This difficulty is got over by the Antwerp Cercle Médical by dividing the members of the Mutuelles into three classes paying different rates, as shown in the above tariff, according to their social position and means.

One other point: The Antwerp medical men are paid per visit or consultation for the "Mutuelle" cases, and the patients have a choice of doctor, while, to prevent abuse, the fees are received by the Cercle Médical itself, and are then distributed to the individual practitioners according to work done. The Mutuelles have been compelled to accept this arrangement, and we are told that the public has acquiesced.

THE twenty-third annual meeting of the French Surgical Congress will open this year in Paris on October 3rd. The questions proposed for discussion are: The surgical treatment of exophthalmic goitre; the surgical treatment of duodenal ulcer; the immediate and remote results of operative methods of treatment of varicose veins of the lower limbs.

THE HISTORY OF INOCULATION.

DR. CHARLES F. FORSHAW, M.D. Chicago, F.R.Hist.S., writes under date August 24th:

Last week-end I spent at Kibworth, a large village about ten miles from Leicester, and on the western wall of the church I found a wooden mural tablet, upon which was engraved the following inscription:

In Memory of
Mr. Lewis Paul Williams, Surgeon.
He departed this life January 9th, 1771,
In his 40th year.
He was the first that introduced into practice
Inoculation without Preparation into this Kingdom.

Is the above historically correct, and can any reader give particulars of the career of this Mr. Williams? I may say that I have asked many old residents of Kibworth about this tablet, but not one had previously heard of it.

P.S.—I may add that the top of the tablet contains many medical emblems, such as the serpent, the retort, a flaming heart, etc.

We can find no mention of Mr. Lewis Paul Williams in the *Dictionary of National Biography*, or in the great *History of Medicine* by Sprengel, who deals fully with inoculation. But as Mr. Williams died in 1771 and inoculation was described by a surgeon named Kennedy in an *Essay* published in London in 1715, we do not think the claim made on his behalf in the epitaph quoted can be substantiated, unless some esoteric meaning is attached to the words "without preparation." Inoculation was commonly practised among the Greeks in Constantinople at the beginning of the eighteenth century. Carburi of Cephalonia says the method was in use in his country, and "buying the small-pox" was a familiar practice in some parts of the Highlands of Scotland and in Wales long before it was brought to the notice of the medical profession. According to Alexander Monro the disease was conveyed by means of linen threads steeped in variolous matter which were tied round the wrist. In China in the sixteenth century "small-pox was sown" by introducing crusts from small-pox pustules into the nasal passages of young children. A full account of the procedure is given by the Jesuit missionary, d'Entrecolles, in the *Lettres Edifiantes et Curieuses* under the date 1726. Emanuel Timoni, a physician of Constantinople, described inoculation in 1714, and there are other accounts by Giacomo Pylarini, Venetian Consul at Smyrna, and Samuel Skraggenstierna, Physician to the King of Sweden. The introduction of small-pox inoculation into this country, however, was due to Lady Mary Wortley Montagu, whose husband was Ambassador to the Sublime Porte. Writing to "Mrs. S. C." from Adrianople on April 1st, 1717, she says:

A propos of distempers, I am going to tell you a thing that will make you wish yourself here. The small-pox, so fatal, and so general amongst us, is here entirely harmless by the invention of *ingrafting*, which is the term they give it. There is a set of old women who make it their business to perform the operation every autumn, in the month of September, when the great heat is abated. People send to one another to know if any of their family has a mind to have the small-pox; they make parties for this purpose, and when they are met (commonly fifteen or sixteen together), the old woman comes with a nut-shell full of the matter of the best sort of small-pox, and asks what vein you please to have opened. She immediately rips open that you offer to her with a large needle (which gives you no more pain than a common scratch), and puts into the vein as much matter as can lye upon the head of her needle, and after that binds up the little wound with a hollow bit of shell; and in this manner opens four or five veins. The Grecians have commonly the superstition of opening one in the middle of the forehead, one in each arm, and one on the breast, to mark the sign of the cross; but this has a very ill effect, all these wounds leaving little scars, and is not done by those that are not superstitious, who choose to have them in the legs, or that part of the arm that is concealed. The children or young patients play together all the rest of the day, and are in perfect health to the eighth. Then the fever begins to seize them, and they keep their beds two days, very seldom three. They have very rarely above twenty or thirty in their faces, which never mark; and in eight days' time they are as well as before their illness. Where they are wounded, there remain running sores during the distemper, which I don't doubt is a great relief to it. Every year thousands undergo this operation; and the French embassador says pleasantly, that they take the small-pox here by way of diversion, as they take the waters in other countries. There is no example of any one that has died in it; and you may believe I am well satisfied of the safety of this experiment, since I intend to try it on my dear little son. I am patriot enough to take pains to bring this useful invention into fashion in England; and I should not fail to write to some of our doctors very particularly about it, if I knew any one of them that I thought had virtue enough to destroy such a considerable branch of their revenue for the good of mankind. But that distemper is too beneficial to them, not to expose to all their resentment the hardy wight that should undertake to put an end to it. Perhaps, if I live to return, I may, however, have courage to war with them. Upon this occasion admire the heroism in the heart of your friend, etc.

Maitland, the surgeon to the British Embassy, inoculated Lady Mary's son in 1717. Her infant daughter was inoculated in England in 1721, the event exciting the greatest interest in fashionable as well as in medical circles. It was not, however, till the method had been successfully tried on some condemned criminals in Newgate that people's minds were reassured as to the safety of the practice. In 1722 the Princess of Wales had her two daughters inoculated, and this went far to remove prejudice. Still, however, there was a great deal of opposition to inoculation; doctors called it "an artificial way of depopulating a country" and "a barbarous and dangerous invention," while more temperate controversialists pelted each other with statistics. Of course the parsons preached against it as the work of the Devil. As specimens of theological virulence we quote a few passages from a sermon "against the Dangerous and Sinful Practice of Inoculation, preached at St. Andrew's, Holborn, on Sunday, July the 8th, 1722, by Edmund Massey, M.A., Lecturer of St. Alban Woodstreet."* The preacher took for his text Job ii, 7, "So went Satan forth from the Presence of the Lord, and smote Job with sore Boils, from the sole of his Foot unto his Crown." After describing how the Enemy of Mankind was baffled in his first attempt to shake the faith and patience of Holy Job, and his getting permission to try the effect of bodily pain and loss of health, the enlightened divine goes on to say that the Devil was the first inoculator.

The silence of Scripture hath given Interpreters occasion of guessing at the Distemper which the Devil here inflicted upon Job; But among them all, it appears not certainly what it was. I will therefore desire to give an Opinion, equally I think true, with any that hath yet been taken notice of: It is this, that the Devil by some *venomous Infusion* into the Body of Job, might raise his Blood to such a Ferment, as threw out a *Confluence* of *inflammatory Pustules* all over him, from Head to Foot: That is, his Distemper might be what it is now incident to most Men, and perhaps conveyed to him by some such way as that of *Inoculation*. I do not at present see what can be advanced to invalidate this Supposition, which I look upon to be as tenable as any that is extant about this matter; having this additional Advantage, that the Scene of Action lies in those parts of the world whence this Practice is *Confessedly* derived.

The preacher next inquires how the Evil One was foiled in his designs. He says:

In order to do this, it is not at all improbable to suppose that the Holy Man might duly consider these two Points.

First, For what Causes Diseases are sent amongst Mankind.

Secondly, who is it that has the Power of inflicting them. Let us then accompany him in the first Place, in finding out the Causes why Diseases are sent amongst Mankind. I take them to be principally two: Either for the Trial of our Faith or for the Punishment of our Sins.

* * * * *

This also gives us to consider, that Diseases are not only *judicially* inflicted for past offences, but graciously also designed to *prevent* future: and a little Recollection will tell a Man, whether he has not often been kept Virtuous through fear of the consequences, even when Inclination has gotten the better of his Duty . . . So that we see the worst of Evils have their Use, and in this Sense, and by proper Reflexion, we may make a Moral of the Devil himself. Should all Restraints of this Sort be taken away, were there no fear of Punishment in this Life, nor belief of any in the next; should . . . Health be Handmaid to Uncleanness; we may conjecture from Present Disorders, how mightily they would encrease.

Passing to his "secondly" the preacher proceeds to consider who is that hath the Power of inflicting Diseases upon us:

Our Text indeed ascribed Job's Distemper to the Power of the Devil; but the foregoing Verse shews *that Power* to have been delegated to him, and limited by Almighty God, who alone being Omnipotent, the Powers that be, whether *Natural* or *Political*, must all be derived from him.

* * * * *

I chuse to instance in the Infliction of Diseases, which will attempt to prove are utterly unlawful to be inflicted, by any who profess themselves Christians. Indeed, where the Doctrines of Salvation are not known, and a regular Dependence upon Providence is postponed to the absurd belief of a *Fatality;*

* London: Printed for William Meadows, at the Angel in Cornhill, 1722. Price 6d.

there is no wonder to see Men give into impious, unreasonable Practices, but in a Country where Principles are *established*, where God's government of the World is for the most Part undisputed, and slavish, implicit Belief happily superseded by rational Enquiries; in such a place, methinks, Men cannot easily be reconciled to a *Practice*, which abuses their *Understanding*, as well as insults their *Religion:* and if the received Notions of God's Providence be just, has its Foundation in *Ignorance*, and must be maintained (if at all) by *Presumption*. The Holy Scriptures give us frequent Instances of God's giving Power unto them to *heal Diseases;* and by his Blessing a Power is still continued: But that one was ever granted to *inflict Diseases*, will I think hardly appear; unless in the case of Moses with the Egyptians, and Elisha with his Servant Gehazi: But both these cases were miraculous . . . and cannot be drawn into Precedent by any not invested with the same Character and Authority. Men may, and have, invented Wracks and Tortures for each other, but no Man, let his Crimes be what they will, was ever yet condemned to an immediate sickness, or sentenced to lie languishing in a Fever, for want of a sufficient Authority, which no Body but a present Set of *adventurous Practitioners* have of late pretended to assume.

It will easily be granted, therefore, that such a Procedure, for want of a *competent Authority*, is unlawful: That if Diseases, as beforementioned, are sent unto us for the *Trial of our Faith*, or the *Punishment of our Sins;* He alone to whom our Faith must *approve* it self, and our *Sins* are *manifest*, has *properly* the Power of inflicting them.

Remembering then our Text, I shall not scruple to call that a *Diabolical Operation*, which usurps an Authority founded neither in the Laws of *Nature* or *Religion*, which tends in this case to anticipate and banish *Providence* out of the world, and promotes the encrease of *Vice* and Immorality. That a modern Practice has a direct tendency to all this, I offer the following considerations to evince—

I. A *Natural* or *Physical* Power does not always infer a *Moral* one: That is to say, a Man cannot *lawfully* do every Thing that is in his *Power* to do. . . . Now the Apostle forbids us to do *Evil* (Rom. 3, 8) tho' "Good should come of it," upon Pain of Damnation, which absolutely prohibits all unjustifiable Arts and Practices, be the event never so beneficial and desirable; so that although we have a Power to give a Man a Disease, that is, tho' we know the way how it may be done; since a bare *Power* or *knowledge*, does not infer the *Morality* of so doing; . . we ought to forbear all experiments of that sort: For even *Uncertainty* and doubting in moral or religious Cases, lays a positive, or at least a Prudent *Restraint* upon Practice, because, as the Apostle says (Rom., 14, ult.), "What is not of Faith, is Sin." . . . The good of Mankind . . . is I know, pleaded in Defence of the *Practice* I contend against: But I must profess myself at a Loss, to find or understand, how *that* has been, or can be promoted hereby: For if by *good* be meant the *Preservation of Life*, it is in the first place a question, Whether *Life* be a *good*, or not?

But if it be, the Preservation of it will be found as little beholden to *this Practice* as any other Invention whatsoever. The confessed miscarriages of this new Method, are more than have happened in the ordinary Way: and if this be our Case now, how much worse must it needs prove, if God for our *Presumption and contemptuous Distrust* of his good Providence, should suffer this Delusion to gain ground, and these "Physicians of no value, these Forgers of lies, (as Job expresses it)—Job, 13, 4—to obtain and grow into credit among us: Such I fear they may be accounted, who so confidently tell us what is impossible for them to know; namely, that "they who undergo their Experiment are for ever thereby secured from any future Danger and Infection."

This is a bold assertion indeed, and if such Experiments were *lawful* and consistent with the Rules of *Christian Practice*, I could wish to God it were true also: But if neither of these be the Case if the two Requisited, *Prevention and Lawfulness* be wanting; I believe I may venture to affirm, that the most learned and judicious among the *Professors* of Physick will never give into so destructive a scheme—And I hope the Time is coming that these "Venefici," these "Spreaders of Infection," will be distinguished from those of the *Faculty* who *deserve honour*, and not permitted to mingle with them, as the Devil (Job, 2, 1) among the Sons of God, left like the *Disease-giving* Practitioner, the Harlot whom Solomon (Prov., 7, 23) describes, they "entice us, till a Dart strike through our Liver, and we haste to their snare, not knowing that it is for our Life." Besides, I cannot apprehend how it conduces to the *Preservation* of Mankind, to force a dangerous Distemper upon them, which possibly may *never* happen unto them, and if it should, may *probably* be attended with very *little*, if any Inconvenience; and as before has been hinted, is no Security against *future* contagion. This is unequally to stake a Substance against a Shadow, to make Men run into a real Danger, lest they should happen to fall into an accidental One, and contributes no more to the *Preservation* of Mankind than it would redound to the *Honour* of a well provided City, to invite the Enemy and surrender *now*, for fear lest *sometime hence*, they should possibly be surprised and taken. . . . I look upon this matter to be forbidden by the *Sixth Commandment*. . . . For it is always to be supposed, that a Law which forbids a great Evil, forbids also every Thing that has a Tendency thereto, for which Reason the very next Chapter forbids (Exod. 21) all "voluntary and causeless Wounding, Mutilation," etc. Because these Things go often farther than they are designed, even to the taking away of Life: When this happens they are to be considered, as no other than a Breach of the Commandment: And it is but reasonable to imagine, that when God forbad to take away Life, He forbad also the Commission of any Violence, whereby Loss of Life might *probably* ensue . . . although the effect which follows (if mortal) is beside the *Intention*, yet the *Cause* of it being not so, is sufficient to make a Man guilty before God: Men being justly chargeable with those *effects*, which are the *natural* Results of those *inordinate* Actions from whence they proceed. . . .

There is nothing new under the sun, and those who now denounce vaccination and serumtherapy are but echoing the opinions so elegantly expressed by the Rev. Edmund Massey. He goes on to discuss the value of disease as a safeguard of virtue:

It remains now in the last place to speak of this Modern *Practice*, as it tends to promote *Vice* and Immorality. I believe it will be readily granted me, that there is no one Thing so universally dreaded as the Disease, which this *strange Method of Practice* pretends to elude. But there is this good attending, that the Fear of it is a *happy Restraint* upon many People, who . . . want no other Encouragement to give a loose to their than to be free from Apprehensions of this *uncertain Visitor*.

We ought then to look upon this, and all other Discouragements to Sin, with a thankful Eye, and bless that wise Providence which has mercifully set such checks upon Iniquity, that we may not run smoothly on unadmonished to our Ruin. Could then these *bold Practitioners* lessen the Severity of this Disease; could they entirely secure Men from Danger under it, could they say to the Distemper, as Almighty God does to the proud Waves of the Sea, "Hitherto shalt thou come, but no further" (Job xxxviii, 11). Could they, I say, do all this, I do not see what good Mankind would get in the Main; they would, 'tis true, have one Danger less to fear, but that would be no real kindness; forasmuch as it would be the Occasion of their running into a great many more, and if they should happen to be *more healthy*, 'tis a great chance but they would be *less Righteous*. If Security wou'd make them more diligent in their Callings, more just and honest in their Dealings; or if they would look upon it as a Mercy, and be thankful to God for the Enjoyment of it. . . . No doubt but Providence has a good and beneficial Design in all those Deaths, which we improperly call untimely; . . . What Reason then for this saving, this antiprovidential Project, this pretended Art of Preserving, which thus tends in a great Measure to prevent that religious Watchfulness, which Christianity, as a Warfare, requires? . . . And now upon the whole, what is all this Discourse, but a Persuasive to depend upon the good Pleasure of an all-wise God, rather than throw our selves into the Hands of *foolish and unskilful Men:* . . . A dangerous Experiment this! and not to be made with impunity, unless as we thus pretend to be *wiser*, we prove ourselves *mightier* than he. . . .

Let the *Atheist* then, and the *Scoffer* the *Heathen* and *Unbeliever*, disclaim a dependence upon Providence, dispute the Wisdom of God's Government, and deny Obedience to his Laws; Let them *Inoculate*, and be *Inoculated*, whose Hope is only in, and for *this Life!* But let us who are better instructed, look higher for Security, and seek principally *there* for Succour, where we acknowledge Omnipotence. Let us not sinfully endeavour to alter the course of Nature by any presumptuous Interposition: Let us bless God for the Afflictions which he sends upon us, and the Chastisements wherewith He intends to try or amend us.

Considering that nearly every adult man and woman had had small-pox in that day, it is not easy to see how they were to be kept from sin by fear of the disease. It was only innocent children in whom, for the most part, vice could have been promoted by inoculation! But Mr. Massey's sermon is interesting as an example of the perverse reasoning with which we are so familiar at the present day.

Inoculation slowly gained ground, and in 1746 a hospital for the inoculation of the poor was built in London. In 1754 two scions of royalty were inoculated, and the method received its scientific consecration in a pronouncement of the Royal College of Physicians of London. The enthusiasm of the public found a voice in a poet, of whose name we must sorrowfully confess our ignorance, who wrote a Pindaric Ode on the subject, commencing with the invocation, "Inoculation, heavenly maid!" Improvements in technique made inoculation less dangerous. Daniel Sutton and his assistants are said to have inoculated 20,000 cases without a single death that could "fairly" be attributed to the operation. Another famous inoculator was Dimsdale, who in 1768 was summoned to Russia to inoculate the Empress Catherine and her son, receiving for his services a fee of £10,000, with an annuity of £500, and the title of Baron, which is still held by his descendant. Inoculation also found favour in North and South America and in the West Indies. Inoculation was superseded by vaccination and finally forbidden by Act of Parliament in 1840.

THE following name has been added to the Commission of the Peace for the County of Lanark: John Harvieson, M.B., C.M., Lesmahagow.

SCIENCE NOTES.

AN interesting preliminary communication on "The Recognition of the Individual by Haemolytic Methods" was read before the Royal Society on June 16th. It is by Drs. Todd and White, of the Hygienic Institute, Cairo, and deals with some remarkable experiments. They were conducted on cattle used for the production of rinderpest serum. The fresh serum of these immunized animals was found to have practically no haemolytic action on the corpuscles of a normal ox, except when a small quantity of guinea-pig serum was added, when haemolysis took place very rapidly. Under these latter conditions the haemolytic power is very great, only one-hundredth of a cubic centimetre of the immunized serum being required to haemolyse 1 c.cm. of a 5 per cent. suspension of ox corpuscles. If now the serum of any one of these immunized animals be tested with the corpuscles of a number of other cattle, great variations in the haemolytic power in the different individuals is observed, some being highly susceptible, others almost unaffected. If the serum of a second immunized animal be similarly tested, corresponding variations are evidenced, but the variations do not coincide with those in the first case—that is to say, the susceptible individuals in the first case may be unaffected in the second, and vice versa. The same holds good for the serums from each of the immunized animals; there is the constant result of variation in susceptibility of the test individuals, but in no two cases do the variations coincide. The further experiment was then tried of injecting a normal Cyprus bull with the mixed serums of the immunized cattle. This serum had no haemolytic action on ox corpuscles *in vitro* unless an extraneous complement were added. The result of the injection, however, was that haemoglobinuria occurred, showing that a complement had been elaborated by the bull enabling haemolysis to take place. On testing the serum from the bull a few days later, it was found to possess no further haemolytic action on its own corpuscles, but it was still positive with the corpuscles of many other individuals. It is thus possible to "exhaust" the haemolytic action of an immune serum on the corpuscles of one particular individual while leaving it unaltered with regard to others. Similar experiments were repeated *in vitro* with the same results. By this means the serums of different immune animals were exhausted with the corpuscles of various individuals of the same species, and the haemolytic power of the serums so treated was studied on the corpuscles of different individuals. It was found that if an immune serum is exhausted with the corpuscles of one particular individual it loses its haemolytic power for other individuals as well as for that one, but remains haemolytic for many others. A second immune serum treated similarly shows differences analogous to those in the first experiment described. It is thus evident that the lysins which are formed depend on two distinct factors, namely, the individuality of the injected corpuscles and the individuality of the animal into which they are injected. From a consideration of these preliminary experiments, it follows that by taking a mixture of a sufficiently large number of immune serums and exhausting it with the corpuscles of a single individual it ought to be possible to obtain a serum which is specific for that individual—that is, which ought to have no haemolytic action on the corpuscles of that individual, but to be markedly haemolytic towards the corpuscles of all other individuals of the same species. This hypothesis was verified by actual experiment. The serums of sixty immune Egyptian cattle were mixed and the mixture exhausted with the corpuscles of a normal Cyprus bull. It was then tested on the corpuscles of the normal Cyprus bull, two other Cyprus cattle, and twenty immune Egyptian cattle. Complete haemolysis occurred in every case except that of the Cyprus bull. The "exhausted" serum was thus able to pick out quite sharply the corpuscles of one individual from those of twenty-two others. A second more extensive experiment was then undertaken with 110 different cattle, with the result that in every case complete haemolysis occurred except with the one which had been used in the process of exhaustion. This was confirmed by further experiments, the only case in which any discrepancy did occur being that in which the serum exhausted with the corpuscles of a cow was found to have lost its haemolytic action, not only for the corpuscles of the cow, but for those of its calf. At the same time, the serum exhausted with the corpuscles of the calf was specific for the calf. These results, which we have endeavoured to present as tersely as possible, are of extreme interest, not only from a haematological but also from a biological point of view. They tend to indicate that the individuality of an individual is not confined to the grosser anatomical characteristics, but is shared by the blood corpuscles and, it may be, by all the other cells in the body. It is also apparent, as the authors suggest, that this method might be put to use not only in identifying the cells of the individual, but also in investigating the laws of heredity and other important problems.

LITERARY NOTES.

IN his *Old and Odd Memories*, Mr. Lionel A. Tollemache refers to the "posthumous wanderings" of Louis XIV's heart. The facts were communicated to him by the late General Addison, who told him the Grand Monarque's heart now reposed in Westminster Abbey. How it got there is told in the following story, which may be too "strong" in more senses than one for the digestion of some readers. According to the General's account, the tomb of Louis XIV was rifled during the French Revolution, and his heart was offered for sale. It was eventually bought by Mr. Harcourt, then owner of Nuneham. Dean Buckland paid a visit to Mr. Harcourt, and the relic was shown to him. Being then on the extreme verge of imbecility, the famous geologist said that, when about to examine a curious stone, he first put it into his mouth; and to the astonishment of those present he put the shrunken heart into his mouth and inadvertently swallowed it. His death must have followed soon after his involuntary act of cannibalism, for the royal heart was still inside his body when he was taken to his last resting-place in the Abbey. General Addison added that this extraordinary story was vouched for by one of the owners of Nuneham, Mr. Tollemache thinks by the Rev. William Harcourt, the father of Sir William. The late Mr. Edward Harcourt, elder brother of Sir William, gave a kinsman of Mr. Tollemache a narrative of the affair substantially agreeing with the first part of that given him by the General. His authentic account confirms the foregoing version up to the point of the aged Dean's highly indigestible mouthful, but says nothing about the tragic sequel of the unwonted diet. In confirmation of this extraordinary narrative, Mr. Tollemache says that the Dean and his more celebrated son, Frank Buckland, used to apply what may be called the gustatory test to stones in an almost incredible fashion. The kinsman just cited as a witness, who is himself an F.R.S. of long standing, wrote to Mr. Tollemache as follows:

> It was related that in a cathedral (say Canterbury) the verger was wont to show visitors the stain on a marble tomb, still plainly visible, where the blood of a saint (say Thomas à Becket) had been spilt. When Dean Buckland was taken to this spot, instead of being content with looking and listening, he bent over and applied his tongue to the darkened surface, and exclaimed, as he raised himself, "Bat's dung, decidedly!"

Mr. Tollemache reports a good story told by Professor Thorold Rogers. When on a visit to the States the Professor was disgusted, as he steamed up the St. Lawrence, at seeing the magnificent cliffs deformed by an advertisement cut in gigantic letters, "Take Cockle's antibilious pills." On his return a month later his annoyance was tempered by amusement; for beneath was inscribed in equally bold characters, "and Prepare to meet thy God!" The second poster, he was informed, had been put there in all good faith by the agents of some religious society, and was not the counterblast of a rival firm of medicine vendors. Some wag must have added the fatal "and." The story reminds us of the notice put up on the hospital board by a famous physician, intimating to all whom it might concern that Professor —— would not lecture that day, having been called to attend Her Majesty. The effect of the notice was marred by the words "God Save the Queen!" written underneath by some profane jester.

In his interesting book, entitled *The Nine Days' Queen*, lately published by Methuen and Co., Mr. Richard Davey gives an interesting account of the diet of our forefathers of the sixteenth century. People, he says, rose and went

to bed earlier in Tudor days than we do now, especially in summer, when breakfast was served as early as six o'clock, dinner at ten, and supper at five. There was, of course, no tea nor coffee. The usual breakfast drink was light home-brewed ale. Such very young ladies as Lady Jane Grey, says Mr. Davey, would be served at this meal with a cup of hot milk, and sometimes with a sort of mead, or barley water, heated and spiced. During Lent, he says, breakfast consisted of bread, with salt fish, ling, turbot, eels, fresh whiting, sprats, beer, and wine. At other seasons there were chines of beef, roast breast of mutton, or boiled mutton, butter, cooked eggs, custard, pies, jellies, etc., as well as chickens, ducks, swan, geese, and game. Mr. Davey adds that all meals were somewhat disorderly, for, forks not being in general use, it was the custom for the gentlemen to pick the daintiest scraps out of the common dish with the tips of their fingers and place them gallantly upon the platters of the ladies seated nearest them. It was considered ill-bred to lick one's fingers after this act of courtesy. Proper behaviour was to wipe them daintily upon a sort of napkin or serviette, sometimes, as in Japan, made of tissue paper. In proportion to the amount of meat, very little bread was consumed. Mr. Davey quotes the Venetian Ambassador Giustiniani as saying:

> The English bolt their food in dead silence, and, bread being dear, eat very sparingly of it. They throw their chicken bones under the table when they have sucked them clean.

In a footnote it is stated that the company (that is, the household of the Earl of Surrey, afterwards Duke of Norfolk) was often regaled with boiled neck of mutton; and a very favourite dish appears to have been boiled capon with sauce and a roast breast of veal basted. Occasionally they indulged in rabbit-pie, and there was a bountiful supply of tarts, custards, and sweetmeats. . . . Of the sort of food provided for Lady Jane Grey and Lord Guildford Dudley during their imprisonment before their execution, the nature can only be surmised by consulting the bills of fare, still extant, provided for the Duchess of Somerset (widow of the Protector) during her imprisonment in the Tower. From the fact of the prices of the various dishes being appended, it may be concluded that the wealthier political prisoners were allowed to pay for their meals. Her Grace's bill for "dynner" was as follows:

Mutton stewed with pottage	viij d.
Beef boiled	viij d.
Veale, rost	x d.

'Supper" consisted of:

Slyced beef	vj d.
Mutton rost	viij d.
Bred	x d.
Bere	viij d.
Wyne	viij d.

At the recent Pharmaceutical Conference Dr. J. Reynolds Green, F.R.S., read a paper on Some old English Herbals in the Botanical Library at Cambridge. The paper was published in full in the *Pharmaceutical Journal* of July 30th. It appears that the *Grete Herbal*, which appeared in 1516, was the first serious publication on the subject in English, but its imperfections were great, and it was displaced by *A New Herbal*, by William Turner, the first English book, as the author says, which was worthy of mention. The herbals which appeared later, up to 1650, are described *seriatim*, Hows's *Phytologia Britannica* ending what was practically the period of the herbalists.

The power of the imagination in vitiating human testimony has seldom been more conspicuously displayed than in an instance recorded by the author of an article on chloroform published in *Household Words* of February 12th, 1859. It need be no secret now that the writer was the late Sir William Priestley. Anaesthesia was then in its infancy, and had many enemies to contend with. "When Dr. Simpson," says Priestley, "was first introducing anaesthetics into his special department of practice, he purposely abstained from employing any in the case of one particular lady for whom he had reason to anticipate coming evil. His fears were realized; for the patient, though escaping with life, made a most protracted recovery. The acquaintances of the lady, strong in opposition to the unnatural innovation then much talked of, and bent on regarding this as the source of the entire mischief, asserted that the quantity of the anaesthetic vapour which had been administered to their unfortunate friend was so great, that they felt the odour of it quite oppressive when calling to ask after her, even days after. The simple answer to all this was, that not a drop of the supposed agent had ever been in the house." It is sad to read that among the most bitter opponents of anaesthesia were members of the medical profession. One physician, we are told, condemned a remedy which made patients, as he put it, drunk and insensible. "Another asserted that pain was desirable and salutary, and that the expression of it should be regarded as a healthy indication. Even the chief of the army medical staff recommended the surgeons, during the Crimean war, not to use chloroform; as the pain inflicted by the knife was a wholesome stimulus, and its abolition likely to be injurious. Practitioners were found who did not hesitate to affirm that much which was said about suffering and agony was sentimental nonsense, and that doctors who pandered to the morbid tastes of dilettanti patients were committing a moral wrong. In justice to the profession in general, however, it must be said, that such expressions of opinion were quite exceptional."

Readers of the June number of *L'Hygiène* will doubtless remember the beautiful reproduction, on page 13, of Carreño's realistic picture, "Une Enfant Obèse." A short but extremely interesting article has appeared in the July number of the same magazine in which this famous painting is carefully criticized from the doctor's point of view. It must have been clear even to the most superficial observer that the unfortunate little creature who served as the Spaniard's model was no ordinary child; and as a matter of fact she was not, being, as we learn from the pages of *L'Hygiène*, a dwarf, and in all probability stunted in her mental as well as in her physical growth. A careful examination of her face and figure has led to this diagnosis; features, hair, complexion, and, above all, her vast and unnatural bulk all point to disease, and disease of a kind that affects mind and body alike, and arrests all development in either. The "Enfant Obèse" is, in fact, says the writer, a typical example of myxoedema, a disease unknown to the physicians of her day. It is saddening to reflect, as we admire the wonderful colouring of her rich gown, and marvel at the pitiless dexterity with which Carreño has unwittingly reproduced every one of those signs which betray his sitter's affliction, that if this unhappy child, who probably occupied a position at the Court of Philip IV which she owed entirely to her deformity, had lived some two hundred and fifty years later, there would have been every chance of a radical cure by the administration of thyroid. Another interesting feature of the same number of *L'Hygiène* is a long article on appendicitis by Professor Dieulafoy, President of the Académie de Médecine, who denounces in the strongest terms the folly and danger of neglecting to call in a doctor at the commencement of an attack. His closing words are well worth quoting:

> Remember the following axiom: "It is very consoling, and absolutely true. *When the diagnosis is correct, and the operation is performed in time, and in accordance with the rules of surgery, no one need die of appendicitis.*"

Other things of interest are short articles on cerebro-spinal meningitis, by L. Vaillard, Medical Inspector-General in the French Army; typhoid carriers, by Dr. H. Vincent, Professor at the Ecole du Val de-Grâce; a charming account of the visit paid by the Queen of Bulgaria to the School for Nurses of the Assistance Publique at the Salpêtrière, by André Mesureur; and last, but not least, the second part of M. Georges Vicaire's delightful sketch of that prince of gourmands, Grimod de la Reynière. The usual good taste has been displayed in the selection of the numerous illustrations scattered throughout the pages of the magazine.

THE following medical practitioners have been added to the Commission of the Peace for Ayrshire: Drs. William Adam Paterson, James Thompson, and James Wilson, all of Irvine.

THE number of medical students in the several universities of Switzerland during the past summer semester was as follows: Basel, 181; Bern, 393; Geneva, 570; Lausanne, 317; Zürich, 439.

British Medical Journal.

SATURDAY, SEPTEMBER 3RD, 1910.

THE MEDICAL PROFESSION AND THE FALLING BIRTH-RATE.

THE question of the falling birth-rate led to a very excellent debate at the recent annual meeting, and the full account of it which appeared in the issue of this JOURNAL for August 20th should be read even by medical men who commonly decline to be interested in this subject.

That some lack of interest should be not rare may be regarded as natural. It is a question in the discussion of which the real points are constantly allowed to be obscured by an infinity of side-issues, while theories are commonly made to play the part of facts, and in addition are dressed up in what the Americans or their English ancestors first summed up as "high falute."

In such case scientifically trained and normal-minded men are somewhat apt to turn away with a feeling akin to disgust; they are still more likely to do so if they recognize that the subject is one in which they have in the main no very direct concern, and if they are not aware of any fashion in which they can help to remedy matters.

On this occasion the treatment of the subject was, as might have been expected, of an attractively different order. It is true that a certain number of those who contributed to the discussion exhibited a tendency to wander rather far afield, and that one of them invited immediate action by medical men on grounds which at present certainly are unproved assumptions; but for the most part the speakers kept their views thoroughly in focus and maintained a true perspective in all their remarks. The result was a very illuminating debate, the success of which was mainly due to Dr. J. W. Ballantyne of Edinburgh. In past times he has made some notable contributions to the literature of this subject, and at South Kensington he initiated the discussion in a paper which, in point of lucidity and succinctness combined with comprehensiveness, has rarely been equalled by the author of any dissertation introductory to the formal discussions commonly held at these meetings.

Of such unproved assumptions—possibly correct, possibly wrong—as were made by any speaker, it is proposed to mention only one. This is that an ordinarily active sexual life in which pregnancy is intentionally prevented is directly inimical to the physical well-being of women. It is a statement constantly made, and partly on the strength of it medical men are told that it is their duty to preach the same doctrines on the subject as those of the Roman Catholic Church, which, however, are based on a totally different order of ideas. As already indicated, the assumption may be perfectly true, but the proof has yet to be furnished. The question merits consideration if only because the point is so constantly brought up; but many difficulties surround its thorough examination. If the idea can be shown to be well founded, medical men will then have truly medical—and, indeed, imperative—grounds for joining hands with those who express themselves as seriously disturbed by the fall in the birth-rate, and for co-operating with them so far as this particular factor is concerned.

Meantime, emphasis should be laid on the circumstance that the factors at work are numerous, and that the action of most of them can probably be negatived rapidly, if at all, neither by individuals nor the State, and that in any case most of them are of such kind as little to concern medical men as a profession. It is hardly possible to sum up these factors in a single sentence, but they are covered in a measure by the statement that while most people would admit that a childless family was one of the bitterest of ironies, and while love of children is no less characteristic of normal adults now than formerly, many men and women feel that they can best develop their capabilities by remaining unmarried, and many married couples esteem it a duty alike to themselves and to unborn possible progeny to limit their families to a number which they feel able to educate and place out in life in thoroughly satisfactory fashion.

It would, indeed, be somewhat paradoxical if in an age when the need for endowment, life, sickness, and all other insurances is being constantly put before the public, doctrines such as "Take no thought for the morrow what ye shall eat or what ye shall drink," and "Happy is the man who hath his quiver full," were felt to have their original force.

It is quite possible that these new scruples and such part of the fall in the birth-rate as results from their existence is an inevitable incident in the evolution of civilized humanity, and is the answer which Nature makes when it finds modern man departing so essentially in respect of environment and mode of life from those for which she first designed his ancestors.

It does not follow, however, that medical men have nothing to do with the subject. If a distinction is drawn, as it should be, between conception-rates and birth-rates, this becomes more obvious. With the former it is no concern of medical men to interfere, but the latter they can influence materially in respect of height, and beneficially in point of effectiveness. As for this effectiveness, the infant mortality-rate, after standing practically still ever since vital statistics commenced to be kept accurately, has fallen in the last year or two; but it is not yet certain that the fall is permanent, and continued efforts on the part of medical men will be required to reduce this rate still further. Should they succeed, the fall may be so great as to go a considerable way towards balancing the deficit in the birth-rate in this and most other civilized countries.

The effectiveness of the birth-rate can also be influenced by continuing the study of heredity, which has already been in progress so long, and by pressing on the notice of the public such facts as have been definitely ascertained. They may be few, but they offer the strongest ground for holding that a check should be placed on the fertility of certain classes of individuals whose offspring, if not defective from the beginning, almost inevitably grow up into citizens of very undesirable type. In both these directions there is plenty of work for the medical profession to do.

They can also help to increase the actual height of the birth-rate by doing what lies in their own power to bring into play the reserve of young lives. This

term Dr. Ballantyne aptly applied to the children who are conceived but at present never come into practical existence so far as national interests are concerned. To some part of this reserve allusion has already been made in speaking of infant mortality. The rest is made up of the children who die *in utero* or at birth What is the extent of this reserve it is impossible to state, as records of miscarriages, not to speak of abortions, are few, and there is but little assured knowledge on the subject of the proportion of stillbirths to living children.

In a measure, therefore, the whole question would seem to resolve itself, so far as medical men are concerned, into more careful study and practice of pediatrics, if it be permissible to extend that term, both to ante-natal and post-natal life. In particular it seems certain that the birth-rate would increase and objections to pregnancy diminish if the medical profession devoted a more considerable measure of its attention to endeavours to lessen the irksomeness of this condition as also to securing for future mothers first a normal gestation, a painless confinement, and ready convalescence.

Nor is it easy to dissent from Dr. Ballantyne's statement that medical men are at present somewhat too ready to leave their pregnant patients to shift for themselves, and to restrict their supervision to an occasional analysis of urine or a passing reference to diet and the state of the bowels. It is not the public which alone would benefit by increased attention, for if medical men proved to their patients that the condition of pregnancy when passed from the beginning under constant medical supervision was a healthier and happier one than when reliance is placed on old wife's nostrums or matters are allowed to go their own way, they would soon find that their services were being called into requisition more frequently, and that they were being sent for at a much earlier date than the second stage of labour, and for other purposes than those of tying the cord or putting on forceps.

"UNDEVELOPED LAND" OF MEDICINE.

IN the sphere of medicine there is a vast area of "undeveloped land" which Mr. Lloyd George has somehow failed to include in his Budget. It comprises many methods of treatment which are scarcely taught at all in the schools, which find no place in textbooks, and which consequently the "superior person" passes with gown uplifted to avoid a touch that is deemed pollution. The superior person is, as has more than once been pointed out, one of the greatest obstacles to progress. Not to go back so far as Harvey, who was denounced by the leaders of the profession in his day as a *circulator* or quack, we need only recall how the open air treatment of consumption was ridiculed when the idea was put forward by Bodington, and that years later a member of the Medical and Chirurgical Society asked that that enlightened body should be "protected" against such papers as one in which the late Sir William MacCormac's father had enunciated the same doctrine. When Villemin submitted to the Académie de Médecine experimental proof that phthisis is an infective disease, his doctrine found no favour. Famous physicians refused to listen to Pasteur because he was not a medical man; Lister was scoffed at; the laryngoscope was sneered at as a "physiological toy"; the early ovariotomists in this country were threatened by colleagues with the coroner's court; electricity was looked upon with suspicion; massage within our own memory was regarded as an unclean thing. Even now the vast field of physiotherapy is largely left to laymen for exploitation.

The damage done to the profession by this neglect of things which, if properly applied, hold within them large possibilities of usefulness for the relief of suffering, is very great. Rational medicine should take as its motto Molière's saying, *Je prends mon bien où je le trouve;* whatever can be used as a weapon in the warfare against disease belongs to it of right. Medicine, if it is to be truly rational, must refuse to be bound within the trammels of any "system"; in a scientific sense it must be absolutely unsectarian. A label of any kind is in itself a mark of that worst form of heresy which consists not in opposing authority, but in attempting to embrace all truth within a formula. Hence medicine may legitimately borrow what is good from any system, however absurd may be the general body of that doctrine. The homoeopaths rendered a great service to the healing art, not by the theory on which their practice is alleged to be founded, but by showing that the drastic measures formerly believed to be essential were needless even when not in themselves dangerous. From homoeopathy, in fact, was learnt the far-reaching truth that many diseases tend naturally to get well without physic. Wharton Hood went among the bonesetters, and brought back much that is not perhaps even yet fully appreciated by many surgeons. Now Dr. Bryce has witnessed the mysteries of osteopathy and tells what he saw in a paper published in this week's issue. His account of this strange doctrine will, we think, be read by many with interest.

Osteopathy, which may be described as the "Higher Bonesetting," has the simplicity of the system taught to Gil Blas by Dr. Sangrado. "Its nosology," as Dr. Bryce says, "is a lesion; its symptomatology a subluxation; its therapeutics manipulation." But, as he shows, one may get hints for treatment of certain obscure cases without believing that in the reduction of some subluxation, real or imaginary, lies the secret of curing all diseases. The results recorded by him are of themselves sufficient to justify us in calling attention to the method.

With osteopathy as a doctrine we have already dealt on more than one occasion. It may not be out of place, however, to quote some parts of the account given of it in a volume entitled *Medical Education in the United States and Canada*, a report recently made to the Carnegie Foundation for the Advancement of Science, by Abraham Flexner. There are, it appears, eight osteopathic "schools" in the States—at Chicago, Les Moines, Kirksville (Missouri), Kansas City (Missouri), Philadelphia, Cambridge (Massachusetts), and Los Angeles, which rejoices in the possession of two. Of these schools it is said that they "fairly reek with commercialism. Their catalogues are a mass of hysterical exaggerations, alike of the earning and of the curative power of osteopathy. It is impossible to say upon which score the 'science' most confidently appeals to the crude boys or disappointed men and women whom it successfully exploits." It is stated "with all possible emphasis, that no one of the eight osteopathic schools is in a position to give such training as osteopathy itself demands. The entire course is only three years. In so simple and fundamental a matter as anatomy—assuredly the corner-stone of a 'science' that relies wholly on local manipulation—they are fatally

defective." It is added that nowhere is there the faintest effort to connect such "laboratory teaching" as is given with "clinical osteopathy;" and it is suggested that this may be because no school has anything like the clinical opportunities required. The osteopath for the most part begins to see patients only when, after receiving his D.O. degree, he is fortunate enough to get some private practice. The position is summed up in the following significant paragraph:

"The eight osteopathic schools now enroll over 1,300 students, who pay some 200,000 dollars annually in fees. The instruction furnished for this sum is inexpensive and worthless. Not a single full-time teacher is found in any of them. The fees find their way directly into the pockets of the school owners, or into school buildings and infirmaries that are equally their property. No effort is anywhere made to utilize prosperity as a means of defining an entrance standard or developing the "science." Granting all that its champions claim, osteopathy is still in its incipiency. If sincere, its votaries would be engaged in critically building it up. They are doing nothing of the kind. Indeed, in none of the sectarian schools does one observe progressive effort even along the lines of its own creed. And very naturally: dogma is sufficient unto itself. It may not search its own assumptions; it does well to adopt from the outside, after forced restatement in its own terms."

Nevertheless, if there is anything in osteopathy that may help to ease a sufferer of some pain the cause of which is not apparent, the practitioner should not hesitate to use such aid. Patients who are cured by the manipulations of the osteopath, like those who get relief from any of the manifold varieties of faith healing, are often the failures of rational medicine. These things, therefore, should not be dismissed with a foolish contempt; they should be studied, and the secret of whatever good there may be in them should be discovered. To our mind the special value of Dr. Bryce's paper is that it enforces the view expressed in this article, that the "undeveloped land" which rightly belongs to medicine should not be left to be cultivated by those not of the household of science.

CHOLERA RISKS.

THE cholera scare, to whose existence we made allusion last week, is pursuing its normal course. Apart from Russia, in different localities of which cholera has undoubtedly been present for several years past, cases have been reported from Berlin, Budapest, Vienna, Constantinople, and in the Bari province of Italy on the Adriatic coast. Several of these have already been proved to be false alarms, but the cases in Italy would appear to be genuine cholera. Italy, though no longer an ideal spot from the point of view of a cholera germ, possesses features more favourable to the progress of an outbreak than do most northerly countries; but, despite this fact, there has been no rapid spread, and the authorities would seem to be in a position to deal with matters effectively. The area within which there is most ground for alarm at the prevalence of cholera in Russia includes the countries at the eastern end of the Mediterranean basin. Intercourse between these and South Russia is frequent, and in these days rapid. Partly on this account, partly owing to the mental constitution and physical surroundings of their inhabitants, something resembling the old quarantine regulations are still applied by these countries, and cholera has there not yet lost its reputation as an international bogey. In practice, however, Egypt, Syria, Asia Minor, Greece, and Turkey have all in turn proved within recent years perfectly capable of dealing promptly and successfully with outbreaks when they have actually occurred. So far as Great Britain is concerned, no cases have been rumoured, and still less ascertained, to exist in any town in very direct communication with its shores; but even if the facts were otherwise, there would still be no cause for alarm. Thanks to the late Professor Koch and other investigators, whose methods of work are denounced with much virulence by certain noisy sections of the community, the etiology of cholera and the method of its propagation are now thoroughly understood, with the result that even if cholera cases were imported into England their presence could be regarded with practical indifference by 999 out of every 1,000 of the population. It is quite likely, indeed, that their existence would remain practically unknown were it not for the interest the lay press now takes in medical matters and the magnificent success with which its information bureaus have been organized. In any case, however, such importation would be improbable, for cases arriving by merchant ships would almost certainly be detected and isolated at the port of arrival. On the other hand, it would seem possible that cases might reach England by way of Dover, Folkestone, Harwich, Newhaven, and such other sea ports as are constantly receiving railroad passengers from the other side of the channel, for it would appear—as was not known at the time of the last revision of the international regulations relating to cholera—that there may be "cholera-carriers" just as there are "typhoid-carriers." Knowledge on this subject is not, however, as yet positively assured, and even if a cholera-carrier did arrive in this country and take up his residence in some town or rural locality, the extent of the mischief which he would do should, for the reasons stated, be of a very limited character. Cholera is an entirely waterborne disease, and the water supplies in this country are for the most part excellently supervised.

MIRACLES OF HEALING.

IN a letter published in this issue of the JOURNAL a distinguished physician who hides his identity under the pseudonym "Unconvinced" asks why modern "miracles" are confined to the sphere of healing. To this it may be replied in the first place that the thoroughgoing believer in miracles will not admit that they are limited to the cure of disease; for instance, the alleged liquefaction of the blood of St. Jannarius, though it is held to be in some way connected with the welfare of the city of Naples, is not a miracle of healing. It is true, however, that healing plays a very large part in modern thaumaturgy. Miracles do not happen in the domain of astronomy or physics. Why? Because these are sciences in which a considerable measure of exact knowledge has already been obtained. It must be admitted that medicine is not yet entitled to rank as a science. It does not fulfil the test of a science—that is to say, the power of prediction. The most experienced among us cannot foretell with absolute certainty the issue even of a trivial ailment, or the action of an ordinary drug in a given case, as an astronomer can predict an eclipse. There are no miracles of engineering, because that art is based on accurate knowledge of all the conditions of the problem to be dealt with. There may, of course, be miscalculation and consequent disaster but the difference between engi-

neering and medicine is that, if in the domain of the former anything goes wrong, it is due to bad workmanship; whereas, in the sphere of medicine, a physician of the highest skill, using every resource and precaution that science places in his hands, may fail to cure or even to recognize the disease. If an engine bursts or a bridge breaks down, that is the fault of the engineer; if a physician fails to cure, that is in a large proportion of cases due to the imperfection of his art arising from want of knowledge. The more medical science grows, the smaller will the number of "miracles" become. The proper attitude of the philosophical physician is not to deny facts in the face of evidence which would be accepted in a court of law, but to seek for a rational explanation of them. We may instance the famous case of the "African Confessors," whose tongues were torn out at Tipasa by order of the Vandal King Hunneric in 484, and who yet had afterwards the power of speech. This was long regarded as a miracle, and the evidence of the fact even puzzled Gibbon. Modern surgeons would have no difficulty in believing the fact without seeing in it anything miraculous.[1] It may not be out of place here to quote a suggestive passage from Anatole France's *Jardin d'Epicure*: "Every one knows the miracle of Bolsena immortalized in one of the *Stanze* of Raphael. An unbelieving priest was celebrating Mass; the Host, when he broke it at the Communion, appeared covered with blood. Only ten years ago the Academies would have been very much puzzled to explain so strange a thing. One is not even tempted to deny it, since the discovery of a microscopic fungus, the colonies of which established in flour or in paste have the appearance of coagulated blood. The scientist who made this discovery, believing with truth that these were the red spots of the Bolsena Host, called the fungus *Micrococcus prodigiosus*. There will always be a fungus, a star, or a disease unknown to human science, and it is on that account that it must always, in the name of eternal ignorance, deny every miracle and say of the greatest wonders as of the Bolsena Host, as of the Star in the East, as of the cure of the paralytic: Either this is or is not the case, and if it is, it is in Nature and consequently natural." We do not wish to be understood as denying the possibility of miracles; that is a theological question which it is not our business to discuss. We are only concerned with facts which seem to be outside human experience, and in regard to these we hold that the scientific line of thought is to seek for an explanation without involving a supernatural agency. On the other hand, let us not speak of violations of the laws of Nature till we have a full knowledge of those laws.

THE "ENCYCLOPAEDIA BRITANNICA."

THE University of Cambridge has acquired the copyright of the *Encyclopaedia Britannica*, and is about to publish, at the University Press, an entirely new edition, which, it is said, constitutes a completely new and original survey of human knowledge down to the summer of 1910. It is more than 140 years since the famous *Encyclopaedia Britannica* was first planned by "a Society of Gentlemen in Scotland." The first edition began to appear in 1768, and was completed, in three volumes, in 1771. Since then ten editions have been published, the last one having been issued in 1902 by the *Times*. Preparations for the eleventh edition were begun by the *Times* in May, 1903. The work was entrusted to a large and competent staff, under the editorial direction of Mr. Hugh Chisholm, one of the editors of the tenth edition, reinforced by eminent specialist advisers outside the office, as well as by some 1,500 distinguished contributors in all parts of the world. It came to be realized, however, that the proper origin and abiding-place for the foremost work of reference used by English-speaking people throughout the world was not a newspaper office, but a great learned institution. The eleventh edition of the *Encyclopaedia Britannica* will therefore be issued as a complete work, in twenty-eight volumes, by the University of Cambridge. The most important of the new features which will mark this issue of the *Encyclopaedia Britannica* by Cambridge University is the fact that the whole of the work has been produced and will be published at the same time. Never before has it been possible, owing to the conditions of publication, to exercise a real editorial control over the whole of the *Encyclopaedia Britannica* at one time and as a whole. The whole of the manuscript has lain under the editorial survey at one time, and the editors were thus able to avoid repetitions, to investigate and reconcile inconsistencies, often eliminating error. All the twenty-eight volumes have practically left the hands of the editors, and are in course of manufacture, so that the work will be issued as a complete whole about the end of this year, or at least in the first months of 1911. One other striking innovation that will be greatly appreciated by those who have occasion to consult the *Encyclopaedia* is the diminution in thickness and weight of the volumes that has been accomplished by the use of India paper. It is estimated that a volume printed on that paper will be less than one-third as thick as an ordinary volume containing precisely the same number of pages, and the average weight of such a volume will be less than one-third that of a volume on the ordinary paper. This will make it much easier to find shelf room for the *Encyclopaedia Britannica*, as the complete set of twenty-eight volumes on India paper will only occupy 2 ft. of linear space, as against nearly 6 ft. for the impression on ordinary paper; and for the first time the *Encyclopaedia Britannica* will be found a comparatively portable work, as its total weight will not exceed 60 lb., while the ordinary paper impression weighs more than 200 lb.

CONGRESS OF THE SANITARY INSTITUTE.

THE Congress of the Royal Sanitary Institute, which is to meet in Brighton from September 5th to the 10th, will deal with a number of very important problems in the field of public health. In the Preventive Medicine Section, of which Dr. Hope, of Liverpool, is President, the economic effect of hygiene on the wage-earning capacity of the people will be discussed; the debate will, it is hoped, throw some light on the practical results of modern sanitary effort. Infectious disease in connexion with railway travelling and several subjects relative to the healthy administration of schools will also be dealt with. In the Engineering and Architectural Sections, over which Mr. Henry Rofe, M.Inst.C.E., presides, the influence of subsoil waters on health will be introduced by Mr. Baldwin Latham, and several aspects of school planning, municipal baths and washhouses, and fever hospital construction will come under consideration. The Conference of Municipal Representatives, presided over by the Mayor of Brighton, will have under discussion the Notification of Births Act and the difficulties presented by the recent legislation with regard to midwives. The most effective and economical means by which municipal authorities can provide sanitoriums and treatment for the poorer members of the

[1] See *The Tongue not Essential to Speech*. By the Hon. Edward Twisleton. London. 1873.

community will be considered in the light of recent experience of the efforts that have been made by several authorities to meet this need. The Conference of Port Sanitary Authorities, presided over by Mr. Williamson, Chairman of the Port of London, will consider the disinfection of ships in relation to the introduction of plague and cholera. For many years the careful measures taken at the ports of landing have prevented any serious outbreak in this country, but the continuance of this immunity is of such vast importance to the nation that a further consideration of these protective measures is just now of the greatest importance. The ventilation of ships and the improvement of accommodation for the crews will also come up for consideration. In the Conference of Medical Officers of Health, under the presidency of Dr. Sergeant, of the Lancashire County Council, the registration of schools not controlled by the Board of Education will be considered, the object being to provide some method by which proper space, ventilation, and general health conditions can be secured in private schools which at the present time have practically no supervision. Administrative measures in controlling milk supplies during outbreaks of sickness in cows will also be discussed, and the transmission of scarlet fever and diphtheria from animals to man will be the subject of debate by the Veterinary Inspectors' Conference, presided over by Mr. W. Hunting. The Women's Section, under the presidency of the Countess of Chichester, will devote attention chiefly to papers on the feeding of infants and the teaching of practical hygiene in the home; and in the Childhood Section, under Sir William Collins, many aspects of child life will be considered, including the feeble-minded child, and the measures that can be adopted for improving the condition of this unfortunate class, both in their own interests and the interests of others. The physical training of girls, and the recent experience of treatment of ringworm by *x* rays, are also included in the programme. A popular lecture will be given by Dr. Alex Hill, late Master of Downing College, on "The Bricks with which the Body is Built," and the "National Importance of Child Mortality" will form the subject of the lecture to the Congress by Dr Arthur Newsholme, Principal Medical Officer of the Local Government Board.

TRAFFIC IN HUMAN HAIR.

IN the BRITISH MEDICAL JOURNAL of August 27th reference was made to the brisk business done in the sale of human hair which is used to supply the natural lack of what has been called woman's finest ornament. In *Chambers's Journal* for September 1st we find some details as to the hair market which may supplement the information we were able to give as to the source of the commodity. The greater bulk, says our contemporary, comes from the south-eastern corner of Bohemia. In this region the human hair market is a familiar sight, and the preparation of the material is quite a large industry. The native supply is supplemented by cargoes from China, but these combings are restricted to a certain class of article. The importation from China is very large, the hair arriving in bales packed in straw, averaging about one hundred and thirty pounds in weight. The Chinese hair, as is well known, is intensely black, and as such is of no value. Upon its arrival at the factory, therefore the first process is to change its characteristic colour. This is accomplished by bleaching it in a solution of hydrogen peroxide. Afterwards the hair is sorted according to its length and grade, dyed, and finally finished in any shade desired by the customer. We are unable to say whether the trade is a profitable one, but we note that an individual—not apparently a member of the medical profession—describing himself as an "obesity specialist" recently attributed his bankruptcy partly to his having devoted his attention to the importation and sale of human hair, and to "intellectual pursuits." Bald men often ascribe the loss of their hair to the stress of mental work, the nutritive material intended for it being diverted to the brain—a theory which is received by the uncharitable as having much the same foundation as Falstaff's attribution of his huskiness of voice to singing of anthems. It is conceivable that bankruptcy may lead to baldness, but the case referred to would seem to show that the baldness—of other people—may lead to bankruptcy.

THE MEDICAL LIBRARY ASSOCIATION.

FOR readers of this JOURNAL the new body entitled the Medical Library Association has a special interest apart from the excellence of its objects. The idea of forming an association was conceived at the annual meeting at Sheffield in 1908, and it came into actual existence at the meeting at Belfast last year. On that occasion Dr. Walker Hall, of Bristol, and Mr. C. E. A. Clayton, of Manchester, the two gentlemen to whom the Library Association practically owes its existence, and who are still acting as its honorary secretaries, arranged a most excellent exhibit of ancient manuscripts—of which an account was given at the time—and during the meeting the constitution of the association was finally determined. Formally stated, its objects are: (*a*) To bring together those engaged in, or interested in, medical libraries and medical literature; (*b*) to maintain an exchange for the distribution of duplicate books and periodicals; (*c*) to increase existing facilities for reference work; (*d*) to encourage the study of the history of medicine; and (*e*) to issue publications relating to the principles and details of medical library work. This year three meetings were held during the proceedings at South Kensington, one being of a business character, and the rest open meetings, at which papers were read and discussed. At the first of the latter Professor Osler, who has been taking an active part in matters from the beginning, described the different types of medical libraries to be found in the British Isles, the value of co-operation between them, and the way in which it might be assisted by the Association. Mr. Victor G. Plarr then gave an account of the catalogue of the library possessions of the Royal College of which he is librarian, and defined librarianship as the quintessence of obscure and faithful routine, and a good librarian as a man neither conscious of himself nor prone to analyse an almost instinctive set of practices. The last printed Supplement to the Author Catalogue of the Library of the Royal College of Surgeons was issued in 1860, and then for many years, as the library rapidly increased, a rough card catalogue was kept by the late Dr. Chatto. Eventually Mr. James Blake Bailey, the speaker's immediate predecessor, determined to catalogue the whole library (which now numbers more than 60,000 volumes), and entered light-heartedly on what had since proved a stupendous task. It had lasted some twenty years, but was now practically completed, at any rate, from the point of view of the modern medical profession and modern research. During the past ten years more than 47,000 catalogue-cards, some of which were necessarily voluminous, had been written out. The ideal cataloguer, besides being much else, must be a logician and a linguist, especially a Latinist and German scholar. No scrap of knowledge came amiss when dealing with scientific bibliography. Though the cataloguer's work admitted of no sensational

triumphs, he had the satisfaction of arranging some of the bricks of the great fabric of civilization and thus of increasing and strengthening it. On the second day Mr. C. R. Hewitt, librarian to the Royal Society of Medicine, discussed on practical lines the organization of a medical library, and Mr. H. M. Barlow, assistant librarian to the Royal College of Physicians, showed that on the analogy of the Association of Medical Libraries in the United States the new organization was likely to be thoroughly successful and to confer material benefits on all medical workers in this country. In the final paper, Mr. A. L. Clarke, assistant editor and cataloguer Royal Society of Medicine, dealt with abstracts. These, he said, if they were to give, as they should, just the information required and no more, should contain the author's opinion in a few words, an outline of any statistics his paper contained, and a concise description of the methods detailed, whether a laboratory process or a particular medical treatment or a surgical operation. The subscription to the association is half a guinea a year; the addresses of its honorary secretaries are: Dr. Walker Hall, 3, Royal Park, Clifton, Bristol; Mr. C. E. A. Clayton, the Library, Victoria University, Manchester.

WEST AFRICA AND YELLOW FEVER.

SIR RUBERT BOYCE returned on August 27th from the Gold Coast, where he has been investigating an outbreak of yellow fever. According to the report of an interview with him, which appears in the *Liverpool Journal of Commerce*, the declaration of the existence of yellow fever in British West African colonies this year means, in his opinion, the turning point in their future health prospects. The significance of the declaration lies in the fact that the existence of an unsuspected disease had been found out. This disease was the one which has all along mainly given West Africa such an evil reputation, and which has actually gained for Freetown the unenviable name of the "white man's grave." But now that it is definitely known to be yellow fever, it is a comparatively simple matter to get rid of it, as has been shown at Panama, Rio, and the West Indies. Yellow fever is transmitted, as is well known, by the bite of a species of mosquito, which is unfortunately at the present time very prevalent in West African Coast towns. However, already the Government has got to work in earnest, both in Sierra Leone and in the Gold Coast territory, ut it is especially incumbent upon the West African merchants and mining companies in these colonies to co-operate with the Government by seeing that their clerks and employees work under the most healthful and sanitary conditions. The results of Sir Rubert Boyce's investigations will appear in a eport which he proposes to make to the Government.

THE SEISDON POOR LAW UNION.

THE inhabitants of the Union of Seisdon, in South Staffordshire, can scarcely be congratulated on the business aptitude displayed by their representatives on the board of guardians. They have just succeeded in losing the services of a well-tried and experienced medical officer by refusing an application made by him, and have promptly had to admit that the application was perfectly justified and that they will now have to fill the vacancy at an increased cost. The population of the district in charge of the medical officer in question, Dr. F. A. Cooke, has grown materially since he first took up the appointment some nine years ago, and in consequence Dr. Cooke made representations on the subject to his authority. He showed that the increase of his work was of such a material character that even when new Poor Law patients were alone taken into consideration he was now required to do more than twice as much Poor Law work as one of his colleagues, and a third more than the other, but for the same very modest salary. At the same time the amount he received from vaccination fees had decreased. On these grounds he submitted that his salary should be augmented. The application was promptly refused, and was again refused on being sent in a second time later on. Hence Dr. Cooke resigned his appointment at the end of June this year. When the guardians tried to replace him, there was only one candidate, who withdrew his application on becoming acquainted with the facts. The next step taken by the guardians was to give Dr. Cooke notice of dismissal from the post of public vaccinator, and to raise the salary attached to the office of Poor Law medical officer by £5, namely, from £40 to £45. They then declared both appointments vacant and are now endeavouring to secure applicants. Whether they will be successful is quite another question; for there is a strong feeling in the district that Dr. Cooke has been unfairly treated, and this being the case it is unlikely that any man already in practice within the union will prove willing to take the appointments, while it would, of course, be foolish for any outside practitioner to endeavour to gain a footing. At present a warning notice is appearing in our advertisement pages, and presumably will continue to do so until the Divisions concerned in the matter have decided whether the new terms now offered by the guardians represent adequate payment for the services required and whether application can rightly be made by any one who does not desire to be disloyal to the rest of the profession.

INFANTILE PARALYSIS.

AT the Congress of American Physicians and Surgeons held at Washington in May last, the subject of epidemic poliomyelitis was discussed at a joint meeting of the American Orthopaedic and American Pediatric Societies. The following resolution was adopted: "It having been shown by recent epidemics and investigations connected with the same that epidemic infantile spinal paralysis is an infectious communicable disease that has a mortality of from 5 to 20 per cent., and that 75 per cent. or more of the patients surviving are permanently crippled, State boards of health and other health authorities are urged to adopt the same or similar measures as are already adopted and enforced in Massachusetts for ascertaining the modes of origin and manner of distribution of the disease with a view of controlling and limiting the spread of so serious an affection." A committee, with Dr. Robert W. Lovett, of Boston, Massachusetts, as President, and Dr. Irving M. Snow, of Buffalo, New York, as Secretary, was appointed to urge the various State and municipal health authorities to take up the work of investigation of the various foci of epidemic poliomyelitis, to study its epidemiology, and to instruct the public that the disease is at least mildly communicable.

THE INTENSIFYING SCREEN IN RADIOGRAPHY.

ONE of the most noteworthy features of recent radiological development on its commercial side has been the introduction of a considerable number of new intensifying or re-enforcing screens for shortening the duration of *x*-ray exposures. Almost every dealer in Roentgen apparatus now lists a screen of this kind, under one or other name, and claims that it will reduce

the exposure by nine-tenths, or even more, and that the resulting negatives are free from grain. The screens consist, speaking generally, of a flexible sheet of pasteboard coated with a substance which, like platino-cyanide of barium, becomes luminescent under the influence of the x rays, and the luminous rays emitted add their quota to the Roentgen-ray action and assist in the modification of the salts of silver on the photographic plate. In the Radiological Section of the recent meeting of the British Medical Association the opinion was expressed more than once that the screens had considerable value in the radiography of bismuth-filled stomachs and intestinal conditions, but that they had their limitations, and must on no account be used in such delicate explorations as are entailed in the x-ray diagnosis of phthisis. Praise similarly qualified has been bestowed upon these introductions in the course of two recent discussions upon the precise value of such screens, which have taken place at the Société de Radiologie Médicale de Paris.[1] A useful communication was made by Béclère, who thought that the various new screens on the market—he spoke particularly of one of German origin—constituted a great improvement upon those that were manufactured ten or fourteen years ago. Nevertheless, in the case of images of very fine structure—osseous or pulmonary—the fact remained that, given the same conditions as to the immobility of the radiographed region, a radiograph taken without the intensifying screen retained its superiority over one taken with the screen as an adjunct. Without professing to know the composition of the accelerating substance in the case of the commercial screens, he pointed out that any of the substances which became luminescent under the action of the x rays could be used in their manufacture, although the substances possessing the most vivid luminosity were not those which exercised the re-enforcing action to the fullest extent. The reason for this was that the actinic radiations capable of impressing the plate were not necessarily the visible ones, and might be those appertaining to the region of the ultra-violet. In using the screen, Béclère preferred to interpose it between the plate and the region to be radiographed, instead of, as commonly advised, interposing the plate between the region and the screen. Some difference of opinion was expressed by the French experts as to whether the intervention of the screen, in a radiograph of the lumbar region, would "muffle" the outline of the kidney, but Béclère stated definitely that the kidney outline could be shown, and he also brought forward some radiographs of the intestine, including one of a tumour of the pylorus, all satisfactorily taken in a fraction of a second, after a bismuth meal. He believes that these intensifying screens, although not advisable in every case, are of great assistance when immobility is out of the question, as in the case of the organs of digestion, or when immobility can only be maintained for a few seconds, as in the case of the respiratory apparatus.

[1] *Bulletins et mémoires*, Nos. 15 and 16, 1910.

THE PROVISION OF DIPHTHERIA ANTITOXIN.

SEVERAL newspapers have lately published a letter from Dr. Hadwen touching the circular of the Local Government Board to which attention was drawn in the JOURNAL of August 20th. He is of opinion that the free supply of diphtheria antitoxin is "not merely unconstitutional, but reprehensible." He says that the antitoxin is useless; that the death-rate from diphtheria to the living population has greatly increased since the introduction of antitoxin, etc. The truth is that during the fifteen years before the introduction of the antitoxin the death-rate rose steadily from 120 to 318 per million; during the fifteen years after the introduction of the antitoxin it fell steadily from 291 to 157. And, of course, we must remember that thousands of cases, thirty years ago, and less than thirty years ago, were called "croup," which would now be called "diphtheria." Dr. Hadwen also says that "the case mortality of certain hospitals has only been reduced by the inclusion of large numbers of cases of bacteriological diphtheria possessing no clinical signs of the disease." Ignorant people, reading this letter, might think that the antitoxin was given, as a matter of routine, in cases showing no clinical signs of the disease. And how does he account for the reduced mortality in cases of laryngeal diphtheria and in tracheotomy cases? Finally, he says that the fatality in the cases where antitoxin has not been used has been reduced to a much greater extent. Reduced from what? These cases where the antitoxin is not used are: (1) Cases that do not need it; (2) cases admitted moribund, too late for it. We have noticed Dr. Hadwen's letter for this reason alone, that we have received letters from several correspondents who are surprised at the publication of this letter in the newspapers. We prefer to Dr. Hadwen's opinions the general experience of medical men. Diphtheria antitoxin has been in daily use, these many years, all over the world. It has saved, by this time, not less, probably, than a quarter of a million lives. If it were possible for Dr. Hadwen now, as it was in 1894, to observe, in two hospitals, in one city, during the same period of time, diphtheria treated with antitoxin and diphtheria treated without it, we think it possible that he might change his mind.

AN American association for the study and prevention of infant mortality has lately been founded, and will hold its first meeting next November in Baltimore.

AMONG the recipients of the honorary degree of D.Sc. from the University of Sheffield on the occasion of the meeting of the British Association for the Advancement of Science, being held this week in that city, are Professor C. S. Sherrington, M.D., F.R.S. and Mr. Francis Darwin, M.A., M.B., F.R.S.

THE late Professor William James, of Harvard, well known throughout the world as the founder of the system of philosophy called "pragmatism," supplemented an unusually wide scientific training by studying medicine at Harvard, where he took the M.D. degree in 1870. He was for some years assistant professor of anatomy and physiology. He then gave himself up wholly to philosophy, of which he was appointed professor in 1889.

THE second International Conference for the Study of Cancer will be held in Paris, under the patronage of the President of the French Republic, and the Honorary Presidency of the Minister of Public Instruction, from October 1st to the 5th. The President will be Professor Czerny. The official languages of the Congress will be French, English, and German. Subscriptions (£1) should be sent to the Treasurer, Dr. H. de Rothschild, 6, rue Saint-Philippe de Roule, Paris, VIIIe. All members of the Congress will be entitled to receive a complete set of the publications of the Conference.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

MANCHESTER.

MANCHESTER ROYAL INFIRMARY.

THE Manchester Royal Infirmary has recently been advertising for applications for the post of Honorary Assistant Surgeon, and it was specified in the advertisements that candidates must be Fellows of the Royal College of Surgeons of England. This condition, of course, altogether debars candidates who have only the Scottish or Irish diplomas, and considerable irritation has been expressed at what is regarded in some quarters as a slight on the Scottish and Irish diplomates. The Council of the Association of Fellows of the Royal College of Surgeons of Ireland has forwarded a resolution of protest against the invidious distinction. It is pointed out that some of the most eminent surgeons in England have only the F.R.C.S.Ireland, and it is claimed that the Irish Fellowship is in every way equal to the English. The resolution to be laid before the Board of Management by Mr. Carnt, the Secretary of the Infirmary, says that the condition attached to the advertisement is according to the rules of the infirmary, and he understands that the only object is to secure the best man for the patients. It would be futile and invidious to attempt any comparison between the merits of the English compared with the Scottish and Irish Fellowships, but even the strongest advocate of the superiority of the English College must admit the very modest statement that the Scottish and Irish Fellows are not always invariably and without exception less competent than the English Fellows.

BIRMINGHAM.

ADDITIONAL PRECAUTIONS AGAINST CONSUMPTION.

SOME additional precautions against the spread of consumption were suggested by the medical officer of health for Birmingham in the annual report for 1909. It seems that the present powers are quite insufficient to check the dispersal of infectious sputum. All cases of phthisis coming under the care of the boards of guardians are compulsorily notifiable, and in addition medical men in Birmingham are asked to notify private patients. By these means 60 to 70 per cent. of all cases of advanced tuberculosis of the lungs are known to the health authorities. When a case is notified the patient is visited and advised as to how to dispose of his sputum, and is warned of the danger of indiscriminate spitting. Many of these patients conscientiously follow the directions which are given them. Probably every person suffering from consumption has been spitting out living tubercle bacilli for at least a year before he is notified and warned, while many patients are careless even after being warned, so that this portion of the preventive work cannot be very efficacious. The result is that at present there is a considerable amount of living tuberculous infection strewn broadcast on footpaths and other public places, and in the dwellings of patients. This has been demonstrated by a recent examination of spits picked up from the streets of Birmingham by one of the labourers in the employ of the Health Department, for 7 per cent. of the spits were found to contain living tubercle bacilli. Only yellow-coloured spits were collected, and one sterilized outfit was used for each sputum, so that no question might arise as to each being free from added infection. Many investigations have been made with regard to the dust on ledges and shelves in houses, and the general result has always been that in a majority of the houses where a careless consumptive lived such dust contained living tubercle bacilli, whereas where a careful consumptive lived no such bacilli were found to exist. The medical officer of health is of opinion that it is not advisable at present to introduce any measure which will single out the consumptive and make it an offence for him alone to spit indiscriminately. In every street in a large town there is ample accommodation for those persons who really need to spit, and therefore spitting in the streets, except in the channels and street gullies, should be forbidden by by-laws. The spitting habit seems to be getting less and less, but, nevertheless, in 90 per cent. of cases it is quite unnecessary. Notices requesting persons not to spit are placed in great numbers on the lamp-posts, in omnibuses, public-houses, factories, workshops, and places of public resort. In the tramcars belonging to the Corporation of Birmingham the following peremptory notice, "No person shall spit in or upon any car," is placed as the result of a recent by-law made by the City Council. By these means it is hoped to reduce the unwholesome and dirty habit of promiscuous spitting.

THE MILK SUPPLY OF BIRMINGHAM.

The annual report of the medical officer of health for Birmingham gives an account upon the work done in regard to the inspection of cowsheds and the examination of milk for tubercle infection. The milk supply of Birmingham is derived partly from herds kept within the city area, but mainly from outside. In the former there are powers of inspection of cows and sheds, which are not accorded to the latter, where there is only power to endeavour under restrictive conditions to trace cows suspected of causing tubercle infection in milk, and, when these are found, to interdict them from the dairy herd. There was a monthly veterinary inspection of cows and cowsheds in the city and periodic examination of mixed and unmixed samples of milk. The cows were found mostly clean and healthy, and the cowsheds were kept, on the whole, in a clean and sanitary condition. There were 6,267 cows individually examined in 1909, and in no case was tuberculosis of the udder detected. Corroboration of the general freedom from tuberculosis of the udder in city cows is shown by the fact that in none of the milk samples were tubercle bacilli found. This satisfactory result is partly due to the regular practice followed by city cow-keepers of buying only comparatively young and healthy-looking cows, guaranteed to have sound udders, and selling them out fat within the year, and partly to the systematic inspection in force, which generally secured the voluntary casting at once from the herds of any cows showing evidence of advanced tuberculosis. With regard to the general milk supply, two methods were employed in order to eliminate tubercle infection. The one was to free the herd from tuberculosis, and the other was to trace the infecting cow in a herd and to remove it. The latter is not satisfactory, for it is only after infection has been found in the milk that any attempt is made to trace the infecting cow. A bacteriological examination was made of 106 samples of mixed milk taken from churns at the railway stations, and 7.54 per cent. were found to contain living tubercle bacilli, as compared with 13.72 per cent. in 1908. The farms supplying the tuberculous milk were visited, and the dairy herds inspected. In the cows slaughtered, where a *post-mortem* examination was made by competent observers, tuberculous lesions of the udder were found. A scheme was approved of by the City Council with the view to eradicating tuberculosis from a number of herds within ten miles of the city. This scheme provided for paying the veterinary expenses incurred by dairy farmers, provided they complied with certain approved conditions. Under this scheme 20 dairymen applied to have their herds tested, and in 16 instances the request was complied with. The reasons for refusal were, in one case, the farm was without the prescribed area, in another the sheds did not comply with the necessary requirements, and in two cases the milk was not sold in Birmingham. In consequence of the measures adopted, 8 herds were freed from tuberculosis, and 5 were being freed; but in the other 3 the procedure was suspended, as the farmers declined for the present to proceed further with the matter, owing to the high percentage of cows found infected. Altogether 803 cows were tested, of

which 567 were found free, and 236, or 29.38 per cent., affected. The veterinary cost of testing, in addition to the regular expense of the Corporation veterinary staff, was £67 15s. 5d. The progress has been encouraging; and there is evidence that, provided the milk consumers are prepared to pay a slight increase in price for tubercle-free milk, the dairymen will continue the trouble and expense involved by the scheme. The success of the movement must now largely depend upon the public's support.

THE GENERAL HOSPITAL.

The statistical report for the year 1909 shows that there were 5,511 in-patients treated, and of these 3,164 were cured, 1,042 relieved, 500 died, 162 unrelieved and incurable, 348 transferred to the Jaffray Branch Hospital, and 295 remaining in the hospital at the end of the year. There were 64,318 out-patients, making a total of 69,829. The medical in-patients numbered 1,661, the surgical in-patients 3,319, and the gynaecological in-patients 237. Among the medical in-patients there were 102 cases of pneumonia, of whom 4 died, and 53 cases of bronchopneumonia, of whom 14 died. There were 32 cases of typhoid fever with only 2 deaths. The cases of rheumatic fever numbered 71, and of these 45 were acute, 24 subacute, and 2 chronic. There were 24 cases of malignant tumour, distributed as follows: 1 of lung, 1 of mediastinum, 2 of oesophagus, 11 of stomach, 3 of intestines, 1 of rectum, 1 of pancreas, and 4 of liver. The total deaths on the medical side numbered 215, and 8 other patients were brought in dead.

Among the surgical patients there were 148 cases of malignant tumour, and of these 97 occurred in males and 51 in females. Sarcomata were found, 3 in the breast, 2 in testes, 1 in adrenal gland, 1 in ileo-caecal valve, and 14 in bone. Carcinomata were found, 2 on lips, 1 on palate, 4 floor of mouth, 12 tongue, 4 larynx, 12 oesophagus, 2 skin, 1 nipple, 5 penis, 6 glands (secondary), 10 stomach, 4 pylorus, 16 intestines, 23 rectum, 1 pancreas, 3 liver, 1 kidney, 3 urinary bladder, 1 prostate, 1 peritoneum, 48 female breast, 1 vagina, and 5 uterus. The operations on the abdomen numbered 757. Of these, death followed in 114 cases, or a mortality of 15 per cent. There were 31 deaths from suppurative appendicitis out of 193 cases operated upon, a mortality from this disease of 16 per cent. Eighty-five cases of appendicitis were operated upon in the quiet interval with no deaths. Out of 679 cases similarly treated during the last five years only 1 death has been recorded, and this from acute thyroidism. On the stomach and pylorus 98 operations were performed. They included 1 partial gastrectomy for carcinoma; 6 gastrostomies for stricture of the oesophagus, with a mortality of 66 per cent.; 1 gastro-gastrostomy for hour-glass condition of the stomach; 12 operations for perforated gastric and duodenal ulcers, 10 in males and 2 in females, with a mortality of 50 per cent.; 4 gastro-jejunostomies for carcinoma; and 74 gastro-jejunostomies for simple inflammatory conditions, 37 of each sex, of whom 9 died.

In the gynaecological ward 237 cases were treated, and of these 173 were cured, 27 relieved, 20 unrelieved, and 17 died. There were 31 cases of carcinoma, including 22 of the uterus, 6 of the ovary, 1 each of the vagina, vulva, and colon. There were 12 cases of tubal gestation, with 1 death. Of the operations performed, there were 128 abdominal sections and 111 vaginal sections.

The number of cases of anaesthesia was 3,687. Ether alone was given 98 times, ethyl chloride and ether 215, E_3C_1 and ether 36, nitrous oxide and ether 12, chloroform 830, E_2C_1 837, ethyl chloride and ether, E_2C_1 204; ethyl chloride, ether, and E_2C_1 204; ethyl chloride 477, nitrous oxide 334, and various other sequences or mixtures of ether and chloroform 609. Spinal injection was made in 6 cases, and local anaesthesia used in 169 cases. There were 4 fatalities during anaesthesia—(1) A woman, aged 50, died during operation under chloroform for mastoiditis and cerebellar abscess. (2) A man, aged 43, died under chloroform administered for proposed operation for ulceration of the scrotum. Death was probably due to asphyxia caused by the breaking down of a gumma inside the trachea. (3) A man, aged 59, died during administration of chloroform for proposed excision of the tongue. (4) A woman, aged 20, died under ether during laparotomy for general peritonitis.

The total number of radiographs taken and examinations made in the *x*-ray department was 674. Ten radiographic examinations of the abdomen were made after the administration of food containing bismuth. The cases for *x*-ray treatment numbered 168, consisting of the following: Lupus 56, carcinoma 15, acne 1, rodent ulcer 24, sycosis 3, warts 1, ringworm 61, mole 1, glands of neck 5, Hodgkin's disease 1.

At the Jaffray Branch Hospital 390 patients were treated, with the following results: 219 cured, 92 much relieved, 7 relieved, 10 died, 9 transferred to General Hospital, and 53 remaining in hospital at the end of the year. There were 144 medical and 240 surgical cases.

LIVERPOOL.

MISS FLORENCE NIGHTINGALE.

A SPECIAL service in memory of Miss Florence Nightingale was held at noon on Saturday, August 20th, in St. Peter's, the parish church of Liverpool. There was a large congregation, consisting mostly of nurses in uniform. Many medical men and hospital officials were present.

It is proposed to enlarge and develop the work of the Liverpool Victoria District Nursing Association as a permanent memorial of Miss Nightingale. The association was formed by Mr. W. Rathbone and others with Miss Nightingale's advice and help, and was always an object in which she was much interested.

BROWNLOW HILL WORKHOUSE AND DR. ALEXANDER.

Dr. William Alexander has resigned his post of Medical Officer to the Brownlow Hill Workhouse, with which he has been connected for thirty-eight years. This post is probably unique as regards both the amount of work to be done and the conditions under which it has to be done. Dr. Alexander has at Brownlow Hill about 600 beds under his charge, the patients are mostly surgical, but he has lock wards, a maternity ward with about 450 cases per year, a baby ward for infants under a year, an asylum ward, and a ward for male epileptics. Dr. Alexander has published an account of his work during the years 1900 and 1901. During these two years 17,923 cases were treated, with a 5 per cent. mortality. There were 694 operations, ranging over the whole domain of surgery, and including abdominal operations, Caesarean section, and eye operations. It is especially in the treatment of chronic diseases that the workhouse surgeon has had his greatest triumphs, curing and restoring to society as workers cases which otherwise would be hopeless encumbrances on the community. One of the features of Dr. Alexander's work has been that he has done it all himself—the smallest operation as well as the largest. Dr. Alexander's post has entailed work outside the Brownlow Hill Workhouse, such as the organization and care of a convalescent branch for children suffering from ophthalmia in the outskirts of Liverpool, a camp for boys under 15 at Maghull, and for a long time he had a labour colony for epileptics at Maghull also. This gives some idea of the work of the post Dr. Alexander now resigns, but by no means completes the tale of his labours, for, in addition, he has been one of the honorary surgeons to the Royal Southern Hospital and medical referee for some of the largest insurance companies, including the Prudential. While possessing a large private practice, Dr. Alexander has found time to contribute to surgical literature. His operation for shortening the round ligaments is known all over the world. He was Jacksonian Prizeman in 1881, his subject being the pathology and treatment of diseases of the hip-joint. He also gained the Astley Cooper Prize for an essay on chronic rheumatic arthritis. Dr. Alexander has also

written on the treatment of epilepsy. It may be asked, How could one man accomplish so much? The key to his power has been magnificent physique and health, an untiring industry and enthusiasm, rigid punctuality, and method, with the minimum of talk.

OXFORDSHIRE.

TUBERCULOSIS IN OXFORDSHIRE.

AT a recent meeting of the Henley Rural Council the following letter was read from Dr. Osler on the subject of consumption:

Oxfordshire County Association for the Prevention of Tuberculosis.

May I ask you, on behalf of the above association, to lay this letter before your Council at its next meeting? In view of the prevalence of consumption, and the absence of any adequate means for its relief or prevention, the Radcliffe Infirmary has determined to devote certain hours of its out-patient department each week to the treatment of consumptives only coming from all parts of the district. It will mean a large increase of its work, and this association is undertaking to make good to the Radcliffe Infirmary any loss it may thereby incur. A doctor will be in charge, who will devote himself solely to this department and to preventive work in consumption, in close co-operation with the infirmary and the sanitary authorities. The Oxford City Council has granted £100 a year towards his salary. The association would ask the district councils throughout Oxfordshire to co-operate in this work by making yearly grants of perhaps £10 to £15, according to the population they represent—suggesting that councils representing over 5,000 persons should contribute £15 a year—and by this means to provide a fund of £150 a year, which will be needed to raise the doctor's salary and allowances to £250. Will your council give this matter its serious consideration? An early answer, if it be favourable, will make the immediate appointment of a doctor possible, and he can enter without delay on the special training which this work will need either at Edinburgh or in some centre where preventive work in consumption is already in full activity.

I am, yours very truly,
WM. OSLER.

With the letter was a table of the number of deaths from tuberculosis in Oxfordshire. In Henley borough there was a population of 5,984, of which there were six deaths from tuberculosis in 1909, when the deaths from all causes were 88. In the Henley rural district the population was 9,123, and the deaths from tuberculosis 14, and all other causes 126. The clerk was instructed to write and ask under what conditions would patients be admitted to the hospital if they subscribed the necessary £10 or £15?

STAFFORDSHIRE.

LEAD POISONING IN THE POTTERIES.

IN a volume of appendices to the report of the Departmental Committee on Lead Poisoning, etc., in the Potteries, Dr. G. Reid, of Stafford, deals with the death from phthisis and diseases of the respiratory organs among workers in the six pottery towns in Staffordshire. The mortality in these six localities from phthisis among male potters is more than twice that among other artisans, and more than two and a half times that among other occupied males. As regards respiratory diseases, the death-rate among male potters is more than twice that among other artisans, and more than three times that among other occupied males. The proportionate death-rate of female to male potters in Longton from phthisis is 0.782 to 1, and the corresponding ratio as regards respiratory diseases is 0.321 to 1. According to the Home Office returns, the number of female potters in the Potteries is practically the same as male potters (23,901 and 23,565 respectively). Dr. Reid says that if, therefore, as is generally believed, the chief factor in causing this high mortality from lung diseases among potters is dust, very stringent measures should be taken to ensure that all reasonable precautions to reduce the dust in the atmosphere of pottery works to its smallest possible limits are adopted. The death records in themselves only partially indicate the injury inflicted, for in most cases deaths from such causes are preceded by years of suffering. Comparing the fatality caused by lead in the six towns in question during the period covered by the figures given, it is found that during the three years 1900–1902, 13 deaths among both sexes were recorded from lead poisoning in the Staffordshire Potteries. Dividing this number by three to make it comparable with the annual deaths from lung diseases in the same district, the figures stand as follows:

Annual deaths from lead poisoning among all potters	4.3
Annual deaths from lung diseases among all potters in excess of deaths from same cause among male artisans	148

Dr. Reid adds that the injury attributable to working in lead appears to be only 2.9 per cent. of that resulting from other causes incidental to the pottery trade. He points out that illness as well as death has to be considered, but the 4.3 deaths occurring annually from lead poisoning represent the deaths among the 5,299 lead workers of all ages in the Staffordshire Potteries, where the 148 deaths from the two classes of lung diseases have to be considered in relation to the total number of occupied potters, although the deaths relate to the age-period—25 to 65—only, because it is during such age-period that the injury as regards lung diseases attributable to occupation is likely to manifest itself.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

SEAFORTH SANATORIUM.

THE second annual report of this sanatorium has just been issued. It is perhaps the only sanatorium in the kingdom which has been built, endowed, and receives free for treatment men and women who are suffering from tuberculosis in the incipient stage, the only condition as to admission being that the applicants must be resident in the County of Ross-shire. The Superintendent, Dr. MacLean, states that the year under review has been gratifying. The number of patients treated has increased. There were 42 cases. Of these, 17 have been much improved, 10 cases arrested, 8 showed no improvement, 7 cases were worse on discharge. Of the 10 cases arrested, all are working for their living; 6 have gone abroad.

PROPOSED NEW SICK CHILDREN'S HOSPITAL FOR ABERDEEN.

The Directors of Aberdeen Sick Children's Hospital, having long had in view the pressing necessity for a new hospital building, formally resolved, at a special meeting held on August 23rd, to take immediate steps for the provision of such a building, and appointed a subcommittee to consider and report as to the best methods to be adopted to carry the resolution into effect.

CHOLERA SCARE IN FIFESHIRE.

From exhaustive inquiry and examination the Local Government Board officials are satisfied that there is no cholera in Fife.

The case which gave rise to the rumour that cholera had broken out is that of a miner who resided at Kelty. In the report which the Local Government Board has received on the matter, it is stated that the patient is 38 years of age. He became ill about a fortnight ago with severe diarrhoea, and he showed other symptoms somewhat resembling cholera. Some ten years ago he was invalided home with dysentery from South Africa. His previous attack resembled his present illness. The Medical Officer of Health for Fifeshire is now quite satisfied that the case is not one of cholera. The patient, the report adds, has now considerably improved.

The Local Government Board is satisfied that every precaution has been taken to protect the public health in connexion with the case. A few days ago the Board issued to all the ports in Scotland a circular directing attention to the continuance of cholera in certain parts of Russia. Some time ago the Board caused an inspection to be made of all the ports in Scotland with a view to seeing that orders in connexion

with plague, cholera, and yellow fever were being stringently administered. Reports in this connexion were entirely satisfactory.

INVERNESS-SHIRE: MEDICAL INSPECTOR OF SCHOOL CHILDREN.

Dr. Gordon A. Lang has been appointed School Medical Inspector for the mainland of Inverness-shire, at a salary of £250 per annum, rising to £300, with the usual travelling allowances. Dr. Lang has been Medical Officer to the Inverness Burgh and Landward School for some years past.

GLASGOW AND AIR PURIFICATION.

Another step in the campaign on behalf of air purification in Glasgow has been taken by the Corporation of the city in deciding to supply gas fires for heating purposes on the hire-purchase system. Hitherto only cooking stoves have been hired out by the Gas Committee, and the heavy expense of installation of heaters has militated against gas being utilized by the great mass of the community for heating purposes. The easy facilities now afforded apply to both cookers and heaters. Payments are to be made in twelve instalments extending over four years. The Smoke Abatement Exhibition of gas stoves of all kinds arranged by the Corporation ought to give an immense fillip to the popularizing of gas appliances. In 1903–4 the Gas Department had on hire 26,657 cookers, whereas last year they had 52,700, with an addition of 15,100 free grills. Since last year 4,000 more stoves have been in use and 5,000 more grills. The outlook is therefore highly encouraging, and the Corporation expect that within two years there should, with the facilities for the use of gas which are now offered, be a highly appreciable difference in the city atmosphere. This is not an experiment which will cost money to the ratepayer, as the Gas Department, despite the low price of gas, is a very lucrative one, and the increased use should therefore be financially profitable as well as advantageous from the health point of view.

INSPECTION OF GLASGOW'S SEWAGE WORKS.

The annual inspection of the Glasgow Corporation Sewage Purification Works at Shieldhall took place on August 23rd. The works are situated on the bank of the Clyde, and comprise an array of tanks in which the sewage is treated, all the machinery being driven by electric power. From the tanks the sludge is taken by pipes to the wharf, where it is loaded on sludge steamers and taken for discharge to the outside of the Firth of Clyde. A number of representatives of neighbouring burghs were present at this the first inspection of the Shieldhall completed works, this southern scheme being completed last May at a cost of over two and a quarter millions. The company were taken over the works, and thereafter embarked on the new sludge steamer for a run down the Firth. They were entertained to luncheon, during which the Convener of the Sewage Committee took occasion to make reference to the completion of the whole Glasgow scheme for the purification of the River Clyde, and hoped that adjacent authorities would now do their due share of this work. Failing this, it would be necessary to use compulsion. The Lord Provost also spoke on the subject, and said that it was absolutely necessary that all the authorities on the watershed of the Clyde who had not tackled the question should do so at once if they were to have a pure river. The schemes must not only be purification schemes but efficient ones, which he had good reason to believe some were not. It would be regrettable if, after the enormous expenditure of Glasgow, they were not to have the benefit of that expenditure; and neighbouring authorities must do their bounden duty in this important matter. The Provosts of Renfrew, Partick, Govan, and Pollokshaws also spoke in approval of Glasgow's great municipal undertakings and the benefits accruing to the community.

CORPORATION MILK DÉPÔTS IN GLASGOW.

The recent annual report of the Medical Officer of Health for the City of Glasgow, in referring to the Corporation milk dépôts, pointed out that the number of infants receiving dépôt milk was not increasing, and that the average period in which the milk was used was short. Further, comparing the weights of children coming to the infant consultations, it was found that those children brought up on the dépôt milk did not compare favourably with children receiving other substitutes for mother's milk. As the milk dépôts are run at a financial loss, the question of continuing them in view of this report was brought up by the Infant Mortality Committee, which recommended that the milk dépôts should be discontinued. After receiving the approval of the Health Committee, their finding was eventually adopted by the council despite considerable opposition by those in favour of continuing the dépôts.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

ANTITUBERCULOSIS CAMPAIGN.

THERE was a large attendance at the formal opening of the Allan A. Ryan Home Hospital for Consumption, Pigeon House Road, Dublin, by the Lord Lieutenant, on August 23rd. The home is surrounded by a couple of acres of land, and will accommodate twenty-five patients. Its establishment constitutes another of the important steps which the Women's National Health Association has lately been taking in providing hospital accommodation for advanced cases of pulmonary tuberculosis. Until the commencement of the present campaign the only steps that had been taken in dealing with the tuberculosis question consisted in the establishment of sanatoriums for the treatment of early cases, while advanced cases, which are obviously unsuitable for admission to ordinary hospitals, were, for want of accommodation elsewhere, compelled to remain in their own homes, where they constituted a source of danger to others. Before long, however, those interested in the antituberculosis work, which was inaugurated by Lady Aberdeen, realized that if any diminution in the number of cases of tuberculosis was to be attained it was all-important to deal with the existing advanced cases, and, in consequence, while still actively engaged in providing means of cure for early and incipient cases, of late the association has been largely occupied in endeavouring by various means to remove or render innocuous the sources of infection referred to. The buildings of the Allan A. Ryan Home are the property of the Dublin Corporation, and were originally erected as an isolation hospital, but as they had been lying idle for some years, the Corporation decided to hand them over to the Women's National Health Association on the understanding that should the buildings be required during the course of any serious epidemic they will be vacated in twenty-four hours. The funds for maintaining the home have been provided for a period of five years by Mr. Allan A. Ryan of America, and by an expenditure of £700 a thoroughly up-to-date equipment has been installed. The increasing interest taken by the public in this and other antituberculosis projects augurs well for the future.

TYPHUS FEVER EPIDEMIC.

An outbreak of typhus fever, which for a time threatened to assume serious proportions, is reported on the islands of Lettermullen and Gorumna, off the coast of Galway. Eighteen cases so far have been reported, and eight deaths have occurred. The Local Government Board Medical Inspector who visited the district early found that the patients were in a serious state for want of proper attention, as owing to the remoteness of the district adequate nursing assistance was almost unprocurable. To some extent, however, the difficulties have now been surmounted. The local medical men are hard at work, and are aided by two Dublin nurses, while permission has been obtained to make use of the Lettermullen National School as a temporary hospital. At the last meeting of the Oughterard Board of Guardians only one fresh case was reported.

Infant Mortality.

A largely attended conference on infant mortality was held last week in Dublin under the auspices of the Dublin branch of the Women's National Health Association, and was presided over by Her Excellency Lady Aberdeen. In opening the proceedings Lady Aberdeen stated that the conference had been summoned with the object of making the citizens of Dublin face certain facts. The first of these facts was a very pleasant one, namely, that the infant mortality throughout Ireland compared favourably with that of other countries. Unfortunately, however, very little credit could be taken for this state of affairs, for on further examination a second fact revealed itself, and that was that the infantile mortality in the big cities —Dublin, Belfast, and Cork—was exceptionally high, and that a great proportion of this mortality was due to preventable diseases. Of late years certain steps had been taken by the National Health Association to remedy this state of affairs by the establishment of a babies' club, the institution of special lectures, and by means of a pasteurized milk dépôt; but much more required to be done, and it was felt that the present time was a favourable one for considering the question in view of the fact that the Notification of Births Act had just been adopted by the Dublin Corporation. It was probable that many voluntary workers would be required to make the Act effective, and such workers the association was ready and willing to provide. She hoped that all intending workers would pay close attention to the methods adopted elsewhere, as told by the subsequent speakers. The Hon. Mrs. Bertrand Russell next addressed the meeting, and gave an account of the work of the St. Pancras School for Mothers. She was followed by Lady Plunket, who has lately returned from New Zealand, and who was able to speak of the results achieved in that country by the work inaugurated by Dr. Truby King. By the establishment of a special infants' hospital and by the appointment of special nurses, each one of whom is able to look after about 350 babies, the Society for the Health of Women and Children in New Zealand has been able materially to lessen the infant mortality. Each nurse before being permitted to engage in the work gets three months' special training, and has to pass a severe examination on the general care of infants, more particularly the scientific methods of infant feeding. A letter was read next from Sir John Byers referring to the work now being carried out in Belfast, and the proceedings then terminated with votes of thanks to the Hon. Mrs. Russell and Lady Plunket.

Ambulance Competition.

The annual competition for the Dublin Ambulance Challenge Cup was held recently in Lord Iveagh's gardens, and was competed for by ten teams composed of men holding the St. John Ambulance first-aid certificate. The cup was first presented in 1906 by Lord Iveagh, and has always evoked keen rivalry. On the present occasion it was won, after a close contest, by the team of the Belfast Fire Brigade.

Belfast District Lunatic Asylum: Annual Report for 1909.

The Resident Medical Superintendent (Dr. William Graham) has recently issued his annual report of this institution. The total number of patients on December, 31st, 1909, was 1,217, of whom 764 were in the old asylum, 395 at Purdysburn, and 58 in Ballymena. The total increase over last year was 6 males and 24 females. The percentage of recoveries was 33.1 among the males and 36 among the females; 110 deaths occurred, but there were no fatal cases of suicide or accident. Dr. Graham again draws serious attention to the increase of insanity; in Ireland the ratio of the insane to the general population has increased from 1 in 850 in 1861 to 1 in 180 at the present day. Such figures may be partially due to better methods of registration, closer oversight, and similar changes, but the fact cannot be disputed that there is a real and serious increase. He estimates the number of insane to-day in Ireland as 160,000; "but in addition there is an increase in nervous and mental trouble, which, though not amounting to insanity in a technical sense, is nevertheless a serious menace to society." This is surely a terrible burden for a poor country like Ireland to bear. Dr. Graham insists that this increase in insanity is not an inevitable product of our so-called higher civilization, but of the long continued disturbance of mental equilibrium and the persistent moral unsettlement that accompanies the activity. The remedy, he thinks, lies in a better and more rational education, especially in a true moral education of self-knowledge and self-control. He thinks that roughly 25 per cent. of insanity would be wiped out if the present generation became total abstainers and the scientific aspect of the alcoholic question were universally known. Ultimately heredity, instead of being a curse, might be taken advantage of and become a blessing. As regards treatment, properly supervised farming and gardening work yields undoubtedly the best results in the case of patients physically fit.

Reference is also made to the proposed home for sane epileptics, and to the completion of the villa system at Purdysburn, when the old asylum on the Grosvenor Road may be given up, and all the inmates lodged under one roof. The net capitation cost amounts to £20 15s. 1d. per annum, or £10 11s. 7d. to the ratepayers when we deduct the various receipts from other sources. A most appreciative memorandum on his inspection by Sir G. P. O'Farrell is also included.

University College, Cork.

Miss Honan has very generously placed at the disposal of this College the magnificent sum of £10,000 for the foundation of scholarships to be named the "Honan Scholarships," the first awards of which are to be made in the coming October when the College opens for the Session. It is Miss Honan's wish that these scholarships should be allocated so as to be of service to needy and deserving students of Munster. This is the first response to the request for money which the President made at the first conferring of degrees in May last. The worthy example set by Miss Honan ought to be an incentive to those who are able to do the same. Miss Honan's generosity is well known in the City of Cork, and it seems only a few years ago since she paid the expenses of a magnificent new operation theatre for the North Infirmary, Cork, which is the pride of that institution.

Shanghai.

[FROM OUR SPECIAL CORRESPONDENT.]

Annual Report of Health Department for 1909.

The annual report of Shanghai Municipal Council for the year 1909 has just been issued; it is compiled by Dr. Arthur Stanley, Health Officer.

The staff of the Health Department of Shanghai seems to be sufficient in numbers and well organized. Besides the chief health officer there are two qualified assistants, four sanitary inspectors, and thirteen assistant inspectors, with a Chinese sanitary staff numbering 720. Dr. Stanley reports that the condition of the public health during 1909 may be considered satisfactory. Though threatened with plague, the crucial period was passed without the occurrence of human cases. The reason for this immunity is not obvious. Shanghai and the Yangtse ports have by some been considered to possess a special immunity from plague, but there would appear to be little to support this idea. The occurrence of plague in Hankow and Wuchang tends to show that no such special immunity exists, and to think that it does is calculated to give a false idea of security. The absence of human cases of plague, therefore, may be attributed to the difficulty with which plague naturally spreads and to the sanitary measures taken against it. It is known that plague among rats may exist for some years before it breaks out among human beings, so that measures against rats are called for as long as plague-infected rats can

be found. There is no finality about measures of rat destruction, but by rat-proofing houses plague may be permanently built out. This and the keeping of cats are probably the two most permanently useful measures against plague in Shanghai.

The question of rat-proofing was referred to a committee of property owners, but, as the initial expenditure of effectual rat-proofing was seen to be large, and in the absence of any immediate danger from plague, the matter was not discussed in a way conducive to the adoption of radical measures. In the matter of rat-proofing houses, Dr. Stanley remarks, nothing can be conceded to individual parsimony. Steel and concrete are the ideal materials for houses in any town threatened by plague, and, in considering the cost, the immunity also from fire and earthquake may also be considered.

Regarding laboratory work, Dr. Stanley says that the field of pathological research in China is practically unworked. There could be no greater primary benefit to the health of the community than that which would result from continuing to make the Shanghai Municipal Laboratory a place for research work.

The rat has not been the only animal against which action has been taken for the benefit of the health of the settlement. The mosquito has received an augmented degree of attention, as also has the domestic fly, which is an obvious danger as a carrier of infection. Regarding mosquitos, an extended plan of campaign was carried out. In addition to the elimination of stagnant water, which has been going on for several years, direct measures were taken against the propagation of mosquito larvae on private property by house-to-house visitation of a special mosquito extermination staff.

Vital Statistics.

The death-rate among the resident foreign population during 1909 was 16.7, as against 15.9 in 1908, whilst that among the native population was 15.1. On the whole, we must consider this a very satisfactory death-rate.

Tuberculosis heads the list of fatal diseases both among foreigners and natives, and calls for a measure reducing the overcrowding which is so apparent in the settlement.

Dysentery and beri-beri are accountable for a number of deaths.

There were no cases of plague, although plague-infected rats were found throughout the year.

Infectious Diseases.

There were only 90 cases of infectious disease notified among the resident foreign community. The incidence of small-pox has been exceptionally small. One case only was notified among the foreign resident community. Among the Chinese there were 19 deaths from small-pox—a very marked diminution as compared with 143 and 863 during the previous two years—the reason of this decrease being due to the fact that the Chinese are beginning to appreciate the benefits of vaccination as opposed to inoculation, which they have practised with little benefit for hundreds of years, and which is now illegal in almost all civilized countries.

Vaccination is done free for all Chinese and indigent foreigners applying at the Health Office. Vaccine is also supplied free to the Chinese hospitals in Shanghai; 3,244 vaccinations were done at the Health Office during the year.

Plague-infected rats having been found in December, 1908, a complete plague survey of the settlement was maintained throughout the year; 17,364 rats were found dead, and brought to the Laboratory for examination, and of these 187 were plague-infected. Stringent measures were adopted for the destruction of rats, the result being that nearly 92,000 were trapped and burnt.

Public Health Laboratory.

Full advantage seems to be taken of the Municipal Laboratory, and no pains have been spared to develop its resources. The matters which have been under investigation have been the causes of variation in virulence of small-pox vaccine, cholera antitoxic serum, preventive inoculation against cattle plague, and the causation of beri-beri, etc.

The diagnostic service has been used extensively during the year, 18,265 specimens being examined. Besides, samples of milk were examined and various foods and liquors.

Glycerinated vaccine lymph has been widely distributed throughout the settlement and adjoining countries.

Two horses are kept for the production of diphtheria antitoxin, and a good degree of immunity has been established, using Park's diphtheria bacillus for the production of the toxin; 1,022,000 units were sent out from the Laboratory to meet the needs of Shanghai and the outposts.

A very pleasing feature in connexion with the Laboratory is the Shanghai Pasteur Institute, which was opened in 1899. During the year 1909 28 persons were treated; in all 268 persons have received treatment since the opening. Ten of the cases treated last year were the result of dog-bites within the settlement, and, so far as is known, have escaped hydrophobia.

Hospitals.

The year has seen a further extension of the municipal hospital system, the object being its concentration in the vicinity of the isolation hospital and nursing home, so as to facilitate supervision by the assistant health officer in charge and to co-ordinate the work of the Health Department.

The cases treated in the isolation hospital during the year numbered 551; of these, 47 died, the largest number of deaths being due to beri-beri.

Public Health Work.

Public health work throughout the settlements is carried out very efficiently, despite the indifference, and in many cases opposition, of the Chinese community. It is hoped, however, by a system of sanitary education, so to speak, the natives will be taught that cleanliness, both as regards themselves and their surroundings, is absolutely essential for the proper maintenance of health.

The foreign sanitary staff consists of four inspectors and sixteen assistant inspectors. Mention has already been made of the measures taken regarding the destruction of rats. There has also been a crusade against mosquitos and the domestic fly.

In connexion with mosquito extermination work, the sanitary staff must have had a busy time judging from the work done; 2,204 stagnant waters on land were removed, 149,529 stagnant waters in and around houses removed, and no less than 109,893 stagnant waters oiled weekly.

The crusade against the domestic fly was directed to the careful collection and disposal of house refuse; also in licensed premises the proprietors were required to prevent the access of flies to foodstuffs by the use of perforated windows and spring doors.

The circulation of public health notices in Chinese has been found to be a good way of propagating sanitary knowledge. Each district has its fugleman, whose duty it is to collect crowds round him by means of a bell in the alleys and tea-houses, to whom he recites the notices appropriate to the occasion.

We have seldom perused a health report in which there is so much evidence of thorough work done, and, as the results show, the health of the settlement is in a satisfactory condition, the death-rate comparing favourably with many English towns. We notice, in connexion with the death-rate, that no notice is taken of uncertified deaths; many such must occur in the settlement, and, if we add unregistered deaths, it is quite possible the death-rate would be higher than the statistics before us show.

We are sure this has not escaped Dr. Stanley's notice, and possibly in next year's report some reference will be made to uncertified and unregistered deaths.

India.

[*FROM OUR SPECIAL CORRESPONDENT.*]

MEDICAL MEMORIALS TO THE KING.

As was foreshadowed in previous issues the proposed provincial memorials to the late King are rapidly taking the form of medical institutions, in accordance with the well-known sympathies of Edward VII for hospitals. In Bombay it has been decided to build a new hospital in the north of the island, where it is much wanted, owing to the rapid extension of the poorer quarters in that direction. As it is likely to be placed near the Parel Bacteriological Laboratory, this suggestion will have the further advantage of bringing the research institute into much closer touch with clinical work. In the Punjab at a recent meeting the Lieutenant-Governor urged a proposal to bring the Lahore Medical College up to date by numerous much required extensions as the fittest memorial, as it would benefit every race and the whole province by supplying better qualified medical men for the relief of suffering. This suggestion was adopted unanimously by the meeting and 5 lakhs promised on the spot by Indian noblemen, in addition to numerous smaller sums, while the district of Amritsar has already contributed 40,000 rupees to the fund, and other districts are following suit. One of the professors of the medical college has been deputed to visit the other medical schools of India during the vacation months to collect information which will be of great value to the committee in working out the new improvements at Lahore. In the United Provinces the Lieutenant-Governor was in favour of a sanatorium for consumptives in the Himalayas, this province being particularly well off for hill stations suitable for this purpose. A meeting recently held at Allahabad, after hearing an address on the subject by the Inspector-General of Civil Hospitals, unanimously adopted this proposal for a sanatorium, which will be of immense benefit to the province. The liberal response a few years ago to an appeal for funds for the Lucknow Medical College leaves no doubt that the United Provinces' present memorial will be equally generously supported. In Madras the suggestion for a sanatorium as a memorial has now been definitely adopted by the general committee, on a motion moved by Surgeon-General Benson, I.M.S. It will include both a hospital for advanced cases—who are such a great source of infection in overcrowded native houses—and a sanatorium in a suitable hill station for early curable cases: a happy arrangement which should in time exert a powerful influence in diminishing this scourge of all races and countries, and which so often runs a rapid course in debilitated subjects in the tropics. The Madras Government has set an excellent example to other provinces in promising a very liberal contribution towards the memorial. A meeting has also just been held in Dacca to consider the best form of memorial for Eastern Bengal and Assam. It was generally agreed that it should take the form of some institution for the relief of human suffering, either in the form of a Pasteur institute for Assam or a modern well-equipped hospital at Dacca. The latter alternative was favoured by the Chief Secretary, who presided, as it is most urgently wanted, and will pave the way to the founding of a medical college for the province in the place of the present school for the training of hospital assistants only. Over 3 lakhs of rupees have already been subscribed in Dacca towards the memorial, so sufficient funds may be available for the more ambitious scheme of a hospital worthy of the capital of the new province.

Every large province, with one notable exception, has thus decided in favour of some form of humanitarian medical institution as the most fitting form of memorial to the late King. Bengal alone remains undecided, and here a curious state of affairs has arisen. As has already been reported, the press were practically unanimous in supporting one or other of the suggestions put forward for an institution for the relief of suffering, but at a meeting held at the official residence of the Lieutenant-Governor, his Honour spoke at length criticizing each of the medical proposals. On the ground that a sanatorium for phthisis could not be placed within the province for climatic reasons, he condemned this proposal, at the same time refusing to accept the opinion of the medical profession that tuberculous diseases are terribly prevalent in Bengal, and that, too, in spite of the resolution unanimously passed at the Medical Section of the Asiatic Society of Bengal last year. He summarily dismissed the proposal for an institute of medical research, on the score of the expense its upkeep would entail. He then put forward a proposal of his own to devote the sums subscribed by all races for building a hostel for the native students of the Government Presidency College. As was pointed out the following day by Canon Browne, of the Oxford University Mission, this scheme would only benefit the best-to-do of the students of a single race, who, it is also well known, are the most seditiously inclined in India. The outcry against this plan has been so unanimous that perseverance with it can only lead to the withdrawal of the European community from participating in it. At the last meeting of the Executive Committee it was resolved to call for details regarding the various proposals put forward, one of the latest of which is a sanatorium for the treatment of convalescents from Calcutta and other hospitals at Puri, on the Orissa coast, where there is always a cool sea breeze. As this suggestion is not open to the objections raised by the Lieutenant-Governor to the other medical ones, there is a good chance of its being adopted as the best way out of the present impasse. At the original meeting 4 lakhs of subscriptions were announced, but the flow has received a sudden check, due to the uncertainty of the nature of the memorial.

Correspondence.

SICKNESS AND INVALIDITY INSURANCE.

SIR,—There will shortly be sent to the Divisions for decision a question of more import to the welfare of the profession than any we have had to consider in the last quarter-century, and it is greatly to be desired that the question shall be put in an understandable form, in order that the answer shall be really the voice of the Association. We have already had this question in an uncomprehensible form—to wit, "Are you in favour of a public medical service controlled by the Association?"—which most of us took as reading, "Would you rather have your clubs ruled by the British Medical Association or by the friendly societies?" This is very much like asking, "Do you prefer to die by opium or strychnine?" to which the Divisions, through the mouths of our leisured members (vide Dr. Lauriston Shaw), have replied, "Opium, by all means; it is a great advance in comfort on strychnine." So far true, and if we, the doctors of the poor, have to submit to see our private practice practically swept away and replaced by a vast extension of contract practice with its inevitable degrading conditions—degrading to patient as well as doctor—let us have opium—control by the British Medical Association. But there are signs (proceedings of Representatives: Dr. Keay, Dr. Parker, Dr. Metcalfe, Dr. John Brown, Dr. Pearse, and others) that some of us see a third alternative; and there are unmistakable proofs that the majority of the doctors concerned think that opium is so little better than strychnine that it is not worth fighting for. For example, Mr. Armit (p. 202) states that in Hampstead out of 400 or 500 practitioners only 30 or 40 would take the service, and Sir Victor Horsley (see my letter of April 16th, p. 966) corroborates this experience in other places. Now, to understand what the third alternative is, one has to consider the circumstances under which club or contract work arose and temporarily benefited the profession; how the conditions gradually changed until club work became a synonym for all that was bad; and how, lastly, the acceptance by the State of responsibility for the health of the nation eliminates all necessity for

a continuance of the club or provident system in so far as it concerns the medical man.

It is important to recollect that originally the doctors accepted clubs to benefit themselves; the clubs were instituted to encourage providence among the labourers; there was then, as now, a large class without any idea of thrift, who spent their wretched wage each week, and who in sickness had no savings with which to buy medical attendance; there was also then, as now, a widespread notion that the inhumanity of letting a man die in this rich country for want of medical aid was inhumanity on the part of the doctor, though why he should bear the opprobrium any more than the baker should be held responsible for any one dying of starvation is a mystery. Anyhow, the doctor had then, as now, to give his services with or without pay, and he hailed with mild enthusiasm the certainty of a small payment in lieu of the worry of bills and bad debts and the probability of getting nothing at all. *He* at any rate recognized that he was giving charity out of his abundance; that is to say, with a practice of many patients paying good fees he could afford to take a few at a lower rate.

The next stage might have been foreseen: The better paid workman, seeing his fellow getting the doctor for 4s. a year while he himself had often a bill of £2 or £3 in the year, took up the club notion *con amore*, and with the bargaining power of numbers and the bribe of the club's bringing also private practice among the members' families, compelled the doctor to accept the extension of the club system as inevitable. The next stage was female and juvenile lodges. The resultant diminution of private (adequately paid) practice vexed the doctor sorely, and he entered upon the hopeless fight for a wage limit to save as much of private practice as he could. The "battle of the clubs" waged fiercely if spasmodically, and the "club doctor," looked down on even by the club members, struggled dispiritedly with the overwhelming work that low pay compelled him to attempt. Outsiders wonder why he did not strike. How often has one heard the advice, "Why don't you combine"? but the fact is that besides being ashamed to make public his desperate condition (for in medicine perhaps more than in other spheres of activity a man's merit is gauged by his money-earning power), the club doctor was too much occupied in the struggle for existence (witness the pitiful reports of our Benevolent Society) to have time or energy to take part in the counsels of the Association.

Now comes light on a way out of all this stupidity of unequal charity, sweating, and bad work, but I fear that our Association has not realized what a totally different complexion the matter wears when the State decides *to relieve the profession* of the responsibility of seeing that every citizen has medical aid in time of need.

Gone is the *necessity* for clubs; gone is the necessity for charity; gone from the doctor's shoulders is the burden of representing in himself the nation's humanity.

The State says: "We recognize that thirteen millions of our citizens are paid too little to buy medical aid; it is inhumanity to let them want for it; we propose to give it them." Now *it is absolutely none of our business* whether the State gives this aid gratuitously or makes the workman contribute towards the cost; neither is it our affair what the ultimate cost to the State may be. (Dr. Belcher's otherwise admirable letter of August 13th is spoilt by the irrelevant advice (p. 408) that *the profession* should calculate the cost.) This is the State's business, and the less we go outside our own affairs the better for everybody. What we have to do is to acknowledge gratefully our relief from the imposition we have long borne, point out that the country is adequately provided with doctors in every hole and corner of Great Britain, that contract work has been bad for the public and for the progress of medicine as well as for the profession, that we are determined to have done with it, and that as long as our modest fees are paid we care not who pays them. We might perhaps add that if the Chancellor of the Exchequer (though accustomed to juggle with hundreds of millions of revenue and farthings of expenditure) finds himself unable to devise a cheap and efficient machinery for dealing with the payment of doctors' accounts, we regard it as not so intricate as paying the workman's sick pay (which *must* be done individually), and we shall be happy to give him the services of any of the several thousand brains which adorn our Association. What is all this talk of being ready with a "scheme" for supplying medical attendance, and this hastening to adjust the shackles to our hands by starting school clinics and provident societies? Are these not just the yoke we wish to get rid of? The profession has nothing more to do with "providence" once the State says it will be the workman's providence. Our sole business is to see that the services we give are really efficient and up to date (under any contract system they cannot be so), and that we are adequately paid for them. Let us get fixed in our minds that we have nothing to do except doctor people, and that provident societies and medical aid insurance are commercial speculations quite foreign to our legitimate business, only undertaken hitherto because the public and the State have shirked their plain duty; that charity (always inefficient and unjust) is, as Professor Moore says (SUPPLEMENT, p. 201), a false idea, and that we do the people as well as ourselves harm in supporting it, and we shall be free to move forward on a single line of action, and not spend ourselves in futile side-issues. That line of action is, as I indicated in my letter of April 16th ("A National Emergency"), to revert to the *status quo ante* clubs, to abolish all contracts for individual work, and to insist that our relations to the poor shall be the same that the rich have no hesitation in choosing as the best possible for themselves.—I am, etc.,

Bristol, Aug. 19th. HARRY GREY.

SIR,—I am sure that all your readers engaged in general practice will fully endorse the remarks of Drs. Kelly and Halstead in your issue of August 20th. The Burns-George-Churchill syndicate is out to catch votes. How they get them, or who suffers in the process they care not, so long as they get them. The poor—so-called—have far more pleasures in this life than the hard-working practitioner. What we are doing at the present time is to create an army of thriftless parasites.

When this question of sickness and invalidity insurance is raised, I hope the matter will be freely discussed at our Divisional meetings, and that for once we shall show a united front, and refuse to be sweated by the State.

Let Mr. George direct his attention to the members of his own profession, and interfere with their practices, and I am confident that he would be taught a lesson which he would not very soon forget. Already the Law Society has proved that the legal profession will not stand any slighting remarks about it, even if made by so distinguished a member as Mr. George. Let us take a leaf out of the book of our sister profession, and firmly resist this proposed intolerable abuse.—I am, etc.,

Bedford, Aug. 20th. S. J. ROSS.

SIR,—Reading with great interest the letters published in the BRITISH MEDICAL JOURNAL as to the new scheme of medical practice, may I, as wife of a struggling doctor, ask those other wives similarly placed to influence their husbands to protest against this scheme, which bids fair to deprive us of our already scanty incomes? No one seems to think what it will mean to us who are not blessed by being in the high ranks of the profession, or even have appointment practices. I am afraid we will not be asked to take a part in this new scheme, and the powers that be will appoint their own medical men at their own fixed salaries; then certainly our livelihood in most districts of London and elsewhere will have vanished in the near future. Now, why cannot our husbands, sons, and brothers make a firm stand for the profession of which we are so proud, insisting on fair share of work and proper remuneration for same? None can stand against us if we hold together and unite in our common grievance. Remember our poor brothers and sisters and the heartrending cases reported from time to time in this JOURNAL's Benevolent Fund, and how many of us cannot provide for the future, however much we try. Take my own case. My husband is a highly-qualified man, and, in order to keep himself abreast of the times, has taken out Fellowship and post-graduate courses. Is he and others advancing in life to be deprived of the legitimate reward due to hard work, study, and experience, and stand aside whilst quite inexperienced, newly-qualified officials supplant him? Are we calmly to fold our hands and let others take the bread from our tables and pay rates to enable them to do so?—I am, etc.,

August 29th. A PROTESTING WIFE.

THE FALLING BIRTH-RATE.

Sir,—I should like to add a few words to what I had time to say in the Medical Sociological Section on July 29th. One speaker hinted that it might be well to forbid woman to labour at all. To have all women supported in idleness while men tended the young, the sick, etc., seems revolutionary, but probably what was meant was forbidding them to do remunerative labour, or so-called honourable (as opposed to menial) work. But in this democratic age we have reached, not only the right to live, but the right to work; and, moreover, unless the women are to be State-paid, there is rather too much sound here of sweating them into surrender to be quite in accord with modern ethics. Are men, too, really so unworthy that nothing but compulsion will make a woman mate with them? If women took some share in legislation and voluntarily subjected themselves to this kind of thing, it would be a different matter, but otherwise few would be found to advocate the drastic measures proposed by Mr. Balfour to the antisuffragists—namely, keeping women under lock and key and breeding them for only this one purpose, even though it should result in enforced motherhood and greater increase in the race. But what mankind does appear to wish for is the good old-fashioned domesticated woman, who is always represented as being content with looking after house and nursery. But the nineteenth century was a time of great awakening, and as the father is one parent of his daughter, it is unreasonable to expect man to have increased his interests, and woman still to browse happily among pots and pans. In early days a man hunted for his family's food, but he is not degenerate now because he is a barrister and not a butcher, nor is a woman degenerate who does not add baking and brewing to her motherhood. Even if the sacrifice of all the women led to a healthy race of men the cost would be too great; but, as it is, a warped, discontented mother is bad for her boys, and a race cannot rise, as Cromer says, above the level of its women.

Since, therefore, we cannot go back a hundred years, we have to decide whether it is best to increase the restraints now irksome to women, or to let her take her development into her own hands, and make herself in her own image and not the image man has made for her. It is unlikely that the removal of restraint will injuriously affect the natural function of motherhood; and when we ask woman to explain the apparent enigma of increased liberty coupled with falling birth rate, she is ready with several solutions, two only of which there is space to touch on here.

The fact is, in the middle class matrimony has hitherto been bound up with much extraneous matter; in the upper classes a great chatelaine has always been able to delegate care of house and nursery to competent people; but, should a married middle-class woman go on with a profession or a lower-class factory work, and do the same, an outcry is raised. There is no intrinsic motherliness in superintending boiling eggs or sweeping rooms; it is only a maternal duty when there is no one else to do it. Training makes better cooks than love, and contrivance, common sense, and a common kitchen are rightfully setting the modern mother free. True, a professional woman making £700 a year will not jump at her first offer so eagerly as a companion on £12. The latter sees the man in an unreal glamour of escape from bondage; the former can marry the man for himself, and a rise in the standard of the fatherhood of the nation will be one result of this The man need have even less money than formerly, for the wife's income will supplement it. If at first the modern woman, exulting in her freedom to serve the world by brain as well as heart, were tempted to think that matrimony would shackle her, a very little further advance brings her into line again with Nature. Just as a boy, difficult to train as an only child, learns discipline easily as a Boy Scout, so does a woman, cut off from world interests, consider only her own pleasures and pains, but when she learns to think cosmically, as she is learning now, she will do her part womanfully. So at any rate have I found it in numerous cases, and we have also reassuring evidence from New Zealand and parts of Australia, where after two or three years of woman suffrage, the birth-rate began rising and has risen ever since. In New Zealand in 1896 it was 25.74 per 1,000, in 1905 27.3. During this nine years' period, Hungary, Germany, Scotland, England, and Wales, all went down—England reaching 27.1. Nor is this because New Zealand is now the home of the unfit who are propagating after their kind, for social conditions are on the upgrade there. Not only have we statistics, but also the evidence of Lady Stout, the wife of the late Chief Justice, who ascribes the increasing birth-rate in part to the more settled feeling among the women who are now able to help mould the future as they desire for the good of their families. Dr. Fremantle, notwithstanding this evidence, hinted that this fact made women more reluctant to bring children into the world. I hope he will give us some proof of this startling proposition—it will need to be a convincing one, for a man with the best intentions is at so desperate a disadvantage in interpreting the motives of a woman in such a delicate matter.

Then a second great cause hindering matrimony is the restriction placed on married woman's labour. Surely if a paternal Government had been maternal as well, it would not have hit upon the strange device of penalizing matrimony and childbirth in order to promote and encourage them. A professional woman with £500 a year, knowing her skilled labour ceases on her marriage, postpones it until she has enough to ensure the safety of potential children should anything happen to her husband. Government appears to think she argues instead, "I'm going to marry; and as I am not permitted to work, I will employ my time in having as many children as possible, never mind how poor we may be." But families of four or five are very usual nowadays, even when a woman has no profession to entice her away from having more; and as a matter of fact, the dislocation in the work of a professional woman in having a family of this size would amount to little more than that due to a permissible amount of sick leave. If the highest functionary in the State—the Premier—with Cabinet and Commons, are too frail to take one week from a three and a half months' holiday to finish a suffrage discussion, waiting now forty years since a bill passed its second reading, we need not complain if a few times a woman has some extra weeks' leave to perform her highest function for the State.

Until women may work as they will, they should at least be entitled to some large share of the husband's income (they will spend it freely on the children when necessary), for galling dependence and the sense of commercial considerations entering into the most delicate relationship of life do deter some women from marrying, as men who chafe under paternal supervision should understand. In to-day's paper one sees an intimation that night work is to be stopped for women; what compensation is there to be for depriving them of their means of living? Are women to have no share in deciding their own fate before they are legislated out of existence? Yet most men agree that women are the hinge on which the birth-rate turns. As Lauriston Shaw says, "In these days of universal liberty it is useless to expect any to submit to the control of an authority in the selection of which they have no voice. It is impossible to secure intelligent interest . . . in policy and action unless there is given opportunity of framing such policy and dictating such action. Granted these . . . the more perfect the mechanism for discovering real wishes . . . the greater will be loyalty and discipline . . . upon which in a last resort all progress will depend."—I am, etc.,

H. B. Hanson, M.D., B.S.Lond.,
Assistant Medical Officer, London County Council.
London, N.W., Aug. 25th.

THE NATURE OF "EROSION" OF THE CERVIX.

Sir,—When the full report of the discussion on Professor Gottschalk's demonstration before the Gynaecological Section at the recent annual meeting of the British Medical Association is published, Dr. Jellett, whose letter appears in your issue of August 20th, will see that the brief account in the British Medical Journal of August 6th is not only incorrect, but in fact diametrically opposed to what took place.

As the matter has been given such prominence, and as I was the so-called "instructor," perhaps you will kindly allow me to put the matter right in a few words.

Professor Gottschalk gave a very lucid demonstration of a series of photomicrographs of what he called "erosion" of the cervix, and of what he considered the transition

stage, and the complete transformation of this condition into carcinoma.

I pointed out that the sections represented instances of *chronic cervicitis*, with one (I think) exception, which was a carcinoma; and that they certainly were not examples of what British gynaecologists had in the past termed "erosion," which is a definite adenoma, and should be known by that name.

An intermittent discussion followed between Professor Gottschalk, Professor Nagel, and myself, during which diagrams were drawn, and the whole matter threshed out. There is, however, no need to trouble you with the details.

Subsequently Dr. Comyns Berkeley and the President stated that I had fairly represented the view of British gynaecologists, namely, that the condition is adenomatous; and they pointed out that if the views of Professor Gottschalk and Professor Nagel represent those generally held in Germany, then the term "erosion" was applied in that country to a different condition from that known by the same name in the United Kingdom. Consequently it was suggested that this term (erosion), which is certainly a bad one, ought to be dropped entirely. I did not think any one present remained in doubt at the end of the discussion as to the relative views held by the speakers; but I believe your reporter's error was due to some delay on my part in forwarding the notes on which he had intended to rely for a correct interpretation of what was said.—I am, etc.,

Liverpool, Aug. 20th. W. BLAIR BELL.

A CAUSE OF DEATH AFTER OPERATION FOR APPENDICITIS.

SIR,—The theory advanced by Mr. Brown in his paper on a Cause of Death after Operation for Appendicitis has interested me very much, for in the *Lancet* (1909, vol. i, p. 1450) I published a paper on the Cause of Death after Operation in Acute Appendicitis, at a time when I, like Mr. Brown, was trying to solve the problem as to why some cases died with symptoms of a profound toxaemia, and why almost all the cases which were fatal in this way were in children. I do not propose now to enter into a discussion on the cause of the condition, for I have discussed it fully in this paper; but after reading Mr. Brown's recent paper I have reconsidered the subject, and I should like to point out why I think Mr. Brown's theory cannot be accepted as the correct one.

Mr. Brown suggests that lymph on the intestine allows toxins to pass into the circulation, but not the micro-organisms themselves, and thus, if this lymph is removed by the surgeon when the abscess is opened, then the organisms themselves may penetrate into the vessels and a general septicaemia may be produced. Now surely it is the absorption of the toxin, not the entrance of the micro-organism into the blood stream, which produces the fatal symptoms. Even in a case of true septicaemia, as distinct from mere absorption of toxin from some suppurating area, the patient does not die from the mechanical effect of the organism in blocking minute vessels, but from toxin produced in its growth. If minute vessels are plugged by masses of micro-organisms—a condition rather of pyaemia than septicaemia—even in important organs, it is not so much the mechanical block in these minute vessels which does the harm as the suppuration in the surrounding tissues set up by the chemical products of the growth of the organism.

But the presence of a layer of lymph on the intestines might certainly prevent, or at least retard, absorption of a toxin, and therefore its removal might lead to a fatal toxaemia. If lymph is adherent so that it does not become detached with the evacuation of the pus on gentle sponging, or floated out on flushing, I feel sure no surgeon will detach it, for it would be obviously unwise to roughly sponge or swab such a lymph-lined cavity. Anything like rubbing off adherent lymph would, I feel sure, be avoided.

Then, again, Mr. Brown's theory will by no means account for all the facts. In my paper I published details of two cases in which no pus was present at all—in both a gangrenous appendix was removed—yet both cases died with the same symptoms as the ones in which suppuration was present. Among the cases of local suppuration in which these toxic symptoms supervened were four in which the symptoms of acute appendicitis had been present for a week or more; that is, the operations were done at the time when Mr. Brown suggests it should be done to avoid these fatal symptoms. In my cases it was done then, not from choice but necessity, as the cases did not come under my care earlier. That four of the cases were of this duration is not stated in my paper, as only abstracts of the cases are given, but I have examined my records since reading Mr. Brown's paper, and I find that this is so.

Moreover, it seems to me a dangerous doctrine, that if we have reason to diagnose appendix suppuration, we should wait until we imagine there has been time for the formation of protective antibodies in the serum. Surely, in the meantime the pus may find its way into the peritoneal cavity, and the patient may die of general peritonitis. It is not always possible to keep such cases under personal observation, and even if we do, the spread of a diffuse peritonitis may be so insidious that it may not be so easy to recognize it. And how are we to tell when the serum is sufficiently protective against the organism, or sufficient antitoxin has been manufactured in the serum to overcome the effects of the toxin? Mr. Brown says generally during the second week the temperature falls, and he seems to regard this as the sign that the serum has become saturated with antibodies. But, again and again, the temperature falls in a few days from the beginning of the attack, and yet we find pus present after it has fallen to normal at this period.

Then Mr. Brown says we should only operate early, if within twenty-four hours of the onset, when we may presume mischief is limited to the appendix, or when general peritoneal infection is impending or has taken place. But surely the assumption that mischief was limited to the appendix would be rash, and who can tell whether general peritoneal infection is impending or not? It is because we have learnt, perhaps by a sad experience that we cannot tell, that so many of us now think the sooner a diseased appendix is removed the better.

I think we are very much indebted to Mr. Brown for calling attention to the interesting problem as to why some patients die with symptoms of profound toxaemia after operation for acute appendicitis. As he truly says, we are always ready to record our successful cases, but perhaps we really learn more from the consideration of our failures.—I am, etc.,

Bristol, Aug. 27th. CHARLES A. MORTON.

SIR,—"When to operate for appendicitis?" "*The Three Lines of Defence.*" In the BRITISH MEDICAL JOURNAL for August 27th, page 508, there was a valuable paper by Mr. H. H. Brown on "Appendicitis." His suggestions on when to operate: the three lines of defence: and the four maxims in regard to the operation, are, from my experience and observations, practical, and if carried out would greatly decrease the mortality. It is so rarely that we see cases soon enough to be able to diagnose appendicitis within twenty-four hours, that, in my opinion, it would be safer not to operate until the abscess is formed and the "second line of defence" is ready. Possibly there may be a few cases diagnosed early enough to operate within twenty-four hours.

Bacup, Aug. 29th. JOHN BROWN, M.D.

MODERN MIRACLES OF HEALING.

SIR,—I have read all the recent writings in the JOURNAL *re* miracles with profit, interest, and instruction, although a Catholic.

The letter of Colonel Joubert de la Ferté plainly does not fulfil *all* the conditions enumerated by Abbot Gasquet.

Imprimis—It does not fulfil the very first one: That the disease cured must have been of an aggravated nature, difficult or impossible to be cured in the ordinary way. The case quoted was even to Colonel Joubert de la Ferté most obviously a case of hysteria.

I should like more definite particulars of the case-history. "The girl, it seemed, had been suffering from 'paralysis' for several years" would not at all satisfy my very ordinary medical mind. Moreover, if other doctors had been unable to make a diagnosis of the real condition of things, it was rather a loss to the financial and physical welfare of the hysterical patient under consideration. Colonel Joubert de la Ferté could have wrought this

"miracle" himself, without playing on the religious belief of the nuns. I venture to hazard the view that he will agree with me on this point.

I think a great many physicians perform "miracles" of this kind during their professional lives.

I remember when practising in Boston, U.S.A., being called in to attend an old lady about 80 years, who for five months lay in one position in bed, and was said never to have turned over in bed for that period without being assisted. She then resented being assisted, and an affectionate son and careful nurse were worrying lest a bedsore should develop. I saw the light that Colonel Joubert de la Ferté saw in his case, and I asked to be let alone with the old lady. I made friends with her, had a social chat, and asked her to turn over in bed, as I wished to examine the hip on which she was lying. This she immediately did. I called the nurse, who came into the room, and she surprisedly asked me how I, unaided, was able to turn the patient over. In the nurse's presence I asked the old lady to turn back again, which she did at once. The nurse nearly fell downstairs in her anxiety to tell the glad news to the son of the invalid. In two days the old lady was up, and at the table for her meals. This "miracle" was the surprise of the neighbourhood, but the limelight was on the doctor, not on Lourdes. The people were Catholics, too. *Verbum sap.* Like Colonel Joubert de la Ferté, I, too, refrain from comments, as my letter is longer than I intended, but comments are really needful on such cases as Colonel de la Ferté quotes, which, to my mind, and I say it with all due respect, are flippantly quoted on a really serious question.—I am, etc.,

JOHN J. HANLEY, M.D. Boston, U.S.A.,
M.R.C.S.Eng., L.R.C.P.Lond.,
Formerly Demonstrator of Anatomy of the College
Hull, Aug. 28th. of Physicians and Surgeons, Boston, U.S.A.

SIR,—In regard to the contributions of the three celebrated ecclesiastics to the discussion on faith and healing in the JOURNAL of August 20th, I have no intention of entering into the argument. I merely wish to express my surprise and regret that they do not endeavour to enlist the assistance of the powers they invoke in other fields than those belonging to our profession. I beg of them for a space to leave things medical alone, and take other subjects under their care. Agriculture, for instance. There are many inhospitable regions on the earth's surface which if rendered suitable for cultivation would confer inestimable blessings on the human race. I could conceive of nothing more noble than the spectacle of a party (not too small) of ecclesiastics—Roman, Anglican, etc.—journeying into Central Thibet, and making a novena to the intent that that arid soil should in future be able to produce tobacco, grapes, and other products that tend to the happiness of mankind.

Or engineering. There are mountains, bogs, and swamps which are much in need of improvement.

In meteorology, lightning and hail seem to serve no useful purpose, and united spiritual action against those phenomena, if effectual, would do more to convert this world to the power of faith than several hundred so-called cures of exceedingly indefinite diseases.

Not all the miracles related in the sacred books had relation with medicine. Why have all the diverse ones ceased? It reminds one of the magic purse described by (I think) Anstey which had seen better days, and which coming into possession of a twentieth-century believer and being commanded with due form and ceremony (I forget whether a novena was included) to supply him with a fortune, presented its possessor with three shillings and eightpence.—I am, etc.,

August 21st. UNCONVINCED.

SIR,—When at Lourdes, a few years ago, I saw a case exactly similar to that related by Colonel Joubert de la Ferté in the JOURNAL of August 27th. A hysterical girl had for years walked with her legs crossed like a pair of scissors. The moment the Sisters of Mercy dipped her into the well of cold water she screamed and immediately straightened her legs. The local evening paper, which is published during a pilgrimage, came out that night with the whole of its placard devoted to the words "*Un grand miracle ce jour*," the "miracle" being the straightening of the girl's limbs by the sudden application of cold water. Unfortunately for the young woman, she had been able to use her legs to some extent when they were crossed, but could not do so when they were straightened.—I am, etc.,

August 27th. INFIDUS.

SIR,—One must seek for a clear definition of the word "miracle" before it is possible to intelligently follow the subject under discussion in the JOURNAL.

The Abbot Gasquet gives a suggestion. "Something which is above or contrary to the ordinary laws of Nature, or something brought about by supernatural agency." We know that many phenomena formerly described as supernatural are now known to be in accordance with known natural laws.

I feel the word "miracle" should mean phenomena that supernatural agency alone could bring about in any given case or any similar ones, not a simple anticipation or hurrying, as it were, of natural processes, and which in later years as knowledge further develops may be fully explained by natural laws; and so to my mind the establishment of a "miracle" as such requires greater and more careful consideration than the canonization of a saint. Saints are many, but miracles few or none.

Having reached so far, it should be fairly easy to examine so-called cases of "miracles."

It must be clearly stated that no nervous case is capable of supplying suitable material for a test.

In the case mentioned by Father Thurston, if the boy's ear had been carefully examined by fully competent persons immediately before the Mass on May 22nd, and the drum found to be totally destroyed, and then, if, on the conclusion of the Mass, the ear had been again examined by the same persons, and the drum and the ear found in perfect condition with no trace whatever of past or present disease, then the case would be worthy of some consideration as a "miracle." Otherwise it is certainly not; the auditory sensations are of little or no value.

Take a case of amputation at the hip-joint—the limb removed and preserved in a museum; later on the sudden formation of a fresh limb, with perfect coaptation and usefulness, as though an amputation had never taken place—that would be a "miracle," and no less striking a manifestation deserves the appellation.

Evidence of sudden and complete restoration in the case of severe organic disease, where the normal tissues of a part are undoubtedly destroyed, and their place occupied by abnormal cellular elements—and where it has been possible unmistakably to demonstrate these conditions—such evidence has never been forthcoming.

Bear in mind to be a "miracle" the cure must be sudden, complete, and permanent.

In the humble opinion of the writer there is no evidence for the belief in present-day "miracles."—I am, etc.,

August 21st. J. W. T.

SIR,—We are, indeed, extremely grateful to you for allowing us the opportunity of reading what some members of the Roman Catholic Church have to say on the subject of miracles.

Dr. Gasquet states that a miracle is something done by supernatural agency—that is, by God—and in the next sentence tells us that all things are made and ruled by God, the conclusion being that all things are miracles—as, indeed, they are.

As we do not know all about the laws of God, we cannot say whether any departure has been made from one of them.

Dr. Gasquet is pleased to say that miracles are historical facts, and with the same amount of reason one can say that all historical facts are miracles.

Consider the "requisitions" laid down by Dr. Gasquet:

1. "Difficult or impossible to be cured in the ordinary way." What is the ordinary way? Is it by giving a person something to swallow? If so, these cures are all of them miraculous, for we know nothing as to how it is done, and the ordinary way is really extraordinary.

2. "That the patient showed no signs of mending." Is there any person living whose opinion is worth considering can positively affirm when "mending" starts?

3. "That no medicine had been used." This certainly would be a miracle!

4. "That the cure was *sudden*." What is meant by the

word "sudden"? The dictionary gives it as "unexpected." It would be more miraculous to get all we expected!

5. "That the cure was complete." Who is a judge of perfection?

The fullness with which the Orleans Railway Company case is treated only serves to emphasize the disagreements that arise over compensation cases, and in this case the railway company were advised not to pay because their medical man did not think the case serious.

The following case as bearing on the point may be of interest:

A collier had been injured in the back, with the result that he had bladder trouble, and had to use two crutches. I examined him carefully, and came to the conclusion that there was some spinal mischief. This opinion was supported by another medical man, and the judge awarded full compensation of £280. One week after this judgement the man was out training horses. I always regret having misled the court, but I was honest in my opinion. —I am, etc.,

Swansea, Aug. 20th. G. ARBOUR STEPHENS.

SPIRITUAL HEALING AND THE "GUILD OF HEALTH."

SIR,—The reply of the Warden of this Guild, in your last issue, evades the whole point of my article. He says that the guild is quite unconcerned with anything he may do, rightly or wrongly, in his private capacity. But my criticism was that by undertaking the "public" position of Warden, he not only gives to the guild the approval of a clergyman of the Church of England, which weighs heavily in increasing its membership, but also he uses this wide-spreading medium to obtain cases on which to practise spiritual healing.

Over 350 lady members cannot be denied some part in helping on the chief of the three professed objects for which they join this guild—"For the restoration to the Church of the Scriptural Practice of Divine Healing." They can talk to their friends, distribute pamphlets on spiritual healing by the late and present wardens, and use as their best argument the leadership of a clergyman. But I never suggested that they would themselves endeavour to help sufferers, or charge a fee for doing so—the obvious course is to canvass their friends to come to their clerical fellow-members—yet this is what Mr. Boyd considers to be working quietly in his capacity as a clergyman. I know a lady who was told simultaneously about both this guild and the Society of Emmanuel; but Mr. Hickson as a layman, despite his open claim to a special gift of healing, stood no chance of the new member because a clergyman headed the Guild of Health. However good the aim of people who join these attractively-named societies, and whatever cases of healing they bring forward as effected through these agencies, yet such independent action, in the name of religion, is to be deplored.

Mr. Boyd says that this guild has "nothing whatever to do with the supply of healing," and then later on adds, "I merely attempt to supply that contribution of spiritual energy in the work of healing sick people which the Church ought to supply."

These are very contradictory statements considering that people come into touch with Mr. Boyd for spiritual healing by means of this guild; indeed, most Church people would fail to obtain from their own clergymen similar treatment, especially after the recommendations of the Committee of the twenty Bishops, appointed at the Lambeth Conference in 1908 to consider this subject (vide pages 133 to 138 of the printed report).

Mr. Boyd also complains that my account of his treatment for six weeks of a lady with myasthenia gravis is misleading, but he does not dispute any of the facts. The gravamen of my charge was that it is dangerous for a person untrained in medicine to undertake treatment of disease, spiritually or otherwise, without simultaneously having medical observation as to the progress of the condition. We repeatedly hear supposed results of all kinds of healing brought forward to justify the methods employed; so also Mr. Boyd, who thinks that the patient "left him a good deal better, both physically and spiritually, than when she came." He will no doubt take similar risks in the future, as he does not admit any responsibility incurred in his independent treatment of a case of myasthenia gravis, with the lady under no medical supervision, and without inquiry of any medical man who had treated her in the past.

If Mr. Boyd does not wish to be called a "spiritual healer," then I would suggest he refrained from leading a guild formed for such a purpose; for it is quite certain that his present methods, as Warden of this guild, are calculated to retard rather than "to set forward that harmony between religion and medicine which is the hope of every sincere Christian heart."—I am, etc.,

London, Aug. 29th. STANLEY BOUSFIELD.

THE NEW MIDWIVES BILL.

SIR,—May I, in the interests of tens of thousands of poor women, ask your readers' attention for the new Midwives Bill, which the House of Lords has just passed, and which the House of Commons has now to consider?

When the police find a man urgently needing medical aid, owing to some accident or another, or even to his own misconduct, they summon a doctor to attend to him. That doctor's fee is paid as a matter of course out of the police rate, and the man is not made liable to repay the amount.

When a woman has made the customary provision for her confinement by engaging a certified midwife, Parliament intervenes to compel that midwife, should any unforeseen dangerous emergency arise, to have a doctor sent for. Parliament made no provision as to that doctor's fee, but it is being paid, as a matter of fact, in Manchester and Liverpool, Cardiff, and St. Helens, by the town council out of the public health rate; and all rural and urban district councils have equal powers to make the payment. Sometimes the board of guardians will make the payment, and then the relieving officer is sent to make inquiries, though the Poor Law authority has no legal power to recover the amount.

Now the bill which the House of Lords passed proposes by Clause 17 to put it upon the board of guardians, instead of the town council, in all cases to pay the doctor's fee out of the poor rate, although the payment has admittedly nothing to do with parochial relief, and is expressly declared to be not parochial relief. At the same time the unfortunate woman and her husband are, for the first time, to be made liable to repay whatever fee the board of guardians, under Local Government Board regulations, chooses to pay the doctor.

Here are two separate and distinct hardships to be inflicted on thousands of thrifty and hardworking women and their families, just in their hour of need. The first hardship is the importation into the matter of the machinery of the Poor Law, instead of that of the public health authority. Probably the noble Lords do not see any difference. But many a worthy woman has a feeling of shame and indignity at having anything to do with the Poor Law and the relieving officer.

If the board of guardians, instead of the town or county council, is (for the first time) required to pay the doctor's fee, and to decide whether or not it will recover the amount from the patient, it will inevitably use the Poor Law machinery for this purpose—the visits of inquiry of the relieving officer, the summons to attend before the board, and so on, just as if the matter were one of parochial relief. Indeed, the official argument used for the clause is that this use of the relieving officer affords the most convenient machinery for making the inquiries.

The Government has been warned by all those concerned, by the representatives of the Midwives Institute, the Central Midwives Board, the Society of Medical Officers of Health, the British Medical Association, the Municipal Corporations Association, such typical county councils as those of Lancashire and Nottinghamshire, and such important town councils as that of Manchester, that to import the board of guardians into the delicate and difficult business of providing medical aid in these cases of emergency will, as a matter of fact, deter midwife and patient from calling in the doctor. Lord Sheffield and other noble lords expressly say that they hope it will have that effect!

The second hardship is the new financial burden which the bill, *for the first time*, places on these unfortunate families. I see no reason why, when the State insists on

the medical man being called in, on public health grounds, any repayment of the fee should be insisted on; and it is a distinct grievance that the liability will be, not to pay the modest fee which the doctor would have charged to the poor patient herself, but the one or two guineas which (quite rightly) the Local Government Board will fix as the sum that the doctor may charge to the Public Authority. But, even if it is thought that the Public Authority ought to be able to recover the amount, this is no reason for taking the duty out of the hands of the Public Health Authority and giving it to the Poor Law Authority. Neither has now the power to recover the fee. Either of them could be given that power if desired.

Can anything be done between now and the re-assembling of Parliament in November to prevent the House of Commons from passing Clause 17 of this Bill? I shall be glad if any one willing to help, or desiring further particulars, will communicate with me.—I am, etc.,

BEATRICE WEBB (Mrs. Sidney Webb).

The National Committee for Prevention of Destitution, 37, Norfolk Street, Strand, W.C., Aug. 20th.

SIR,—A member of the General Medical Council who went there to represent general practitioners has been allowing himself to be interviewed by a representative of the *Daily News*, and has informed him that "the vast majority of the general practitioners in the country were opposed to the Poor Law guardians having anything to do with midwifery cases" (*Daily News*, August 29th).

From whom did Dr. McManus receive a mandate to communicate the mind of practitioners to the daily press? His opinions are there given as coinciding with those of a leading official of the Midwives' Institute, who tells us that when a midwife calls in a doctor "it comes within the range of those cases dealt with by the Public Health Authority, and the fees should be paid by the local borough or district council, and ought to be non-recoverable from the husband or family of the woman." In other words, the public are invited, whether they can pay or not, not to call in a doctor, but a midwife, and they can then have medical attendance free of cost.

I should be surprised if our representative on the General Medical Council expressed the mind of the great majority of medical men, and certainly think that if the British Medical Association does not at once move in this matter it will forfeit the confidence of general practitioners.—I am, etc.,

Greenwich, Aug. 29th. J. H. KEAY.

THE SANATORIUM TREATMENT OF TUBERCULOSIS.

SIR,—May I throw in a few words in the discussion under the above heading?

First, I think that a sanatorium is a very necessary institution for the primary treatment of consumption. The idea of going to a sanatorium is to be cured or improved, and this is always hopeful and in many cases successful.

Next, the sanatorium may be used as a training institution for the future; the inmates learn something of the principles of hygiene, the open-air treatment, the proper diet, and cleanly habits and regulations.

I would like to see something more done in these institutions to fit the patients for the struggle for life and against the disease after their discharge. Let more attention be given to the after-prospects of life. We do not hear of many farm colonies being instituted for men leaving the sanatorium life. I have asked applicants for admission to a sanatorium as to the after-life, and they are quite unprepared with any idea how to exist.

A year ago I spent a few weeks at Davos Platz, and mixed freely with consumptives, and learnt a good deal about their complaints and their treatment. I walked and climbed many miles with men who had been sent to Davos for tuberculosis some years previously. These men were strong and in good health, and were engaged in various pursuits in that town.

Now the climate of Davos is most conducive to the well-being of the consumptive; the high elevation (5,000 ft.), the large amount of sunshine, summer and winter; in the winter the frost is severe at night, but the middle of the day is warm with the bright sunshine. The various out-door sports in the winter keep up the spirits of the invalids, and they tell me they feel very "fit" at this time. Unfortunately the same rule does not hold good for the summer months, when there are no sports and only a little walking exercise is allowed.

Lately I have given much attention to the climate of Western Canada, where we may obtain similar conditions to that of Davos. As Archdeacon Lloyd, of Edmonton, has told us, that *there* they have the climate of Davos Platz, and *you need not pay for it!*

In South Alberta you have an altitude of 3,000 ft. above sea level, you have an abundance of sunshine, a dry atmosphere, and very cold winters—all the conditions conducive to the well-being of the consumptive.

A few months ago two patients of mine, under my advice, went to South Alberta, and on their first reaching Canadian soil they began to improve. Their reports to me are most cheering: they are no longer invalids, they are making their way as ordinary colonists, full of hope for the future.

Before they left England these consumptives learnt something of the Colonial life; they camped out, and could cook their own food, etc., and this is the kind of training which should be added to the curriculum of the sanatorium life. To learn how to make a hut, and how to live in it; and to put before them an idea of hope of better health in the future.

The distance to Western Canada is not great; it can be reached in two weeks, and the cost of the voyage and journey is not very much—all within £20. The susceptibilities of the Canadian Government require a little studying; there are stringent regulations against the admission into that country of persons liable to become burdens to their rates. If proper representations were made to the ruling authorities probably some relaxation may be allowed in the case of consumptives in the early stage of the disease, and with good recommendations.

The Swiss Government has profited by advertising their health resorts for consumption. Why not let Canada do the same, and, with proper safeguards, make their land a land of promise for some of our weak ones?—I am, etc.,

Durham, Aug. 27th. EDWARD JEPSON.

SIR,—In forming an opinion as to the value that ought to be placed on sanatorium treatment, there are four points that have to be taken into consideration: The expectations upon which the sanatoriums were obtained, the results claimed to have been obtained, the deduction from those result of the effects known to have been produced by pre-sanatorium treatment used in sanatoriums, and the theory on which the sanatorum movement was found.

Sanatoriums were brought into existence to cure consumption. It is common knowledge that they have failed to do this, and that fact is admitted by the claim now made that sanatorium treatment greatly prolongs life, and that an organization is necessary for the care of patients after leaving the sanatorium.

Pure air, exercise in the open air, good food and removal from the environment in which the disease was produced, are well-known beneficial factors in the pre-sanatorium treatment of phthisis, and their effects must be deducted from the results of sanatorium treatment. What, then, substantially remains? The prevention of "auto-infection"? That in its broad sense was pre-sanatorium and was termed personal and general hygiene. Sleeping in the open air in all kinds of weather? That certainly is a prominent factor in sanatorium treatment, but it has been found to be only applicable to "sanatorium cases." Hippocrates wrote emphatically on the danger of great and sudden changes; and John Fothergill expressly warned us against such changes in the treatment of phthisical patients. Is it likely to be beneficial to the patients after leaving the sanatorium?

Sanatorium treatment is based on the bacillian theory. From the writings of the last ten or fifteen years I am not able to form an opinion as to the exact signification of that theory. Is the *Bacillus tuberculosis*, the mixed infection, or the environment the dominant factor in the production of phthisis? Until that question is decisively settled there can be no solid basis for sanatorium treatment.

Dr. Vere Pearson cites, in the BRITISH MEDICAL JOURNAL of August 20th, his personal experience in favour of sanatorium treatment, and in reply to that I would point to the cases of the late James Henry Bennet, Trudeau, and myself—we were both advised to leave our hospital studies on account of phthisis in 1873—as examples of pre-sanatorium treatment.—I am, etc.,

GODFREY W. HAMBLETON, L.K.Q.C.P.I.

London, E.C., Aug. 26th.

SIR,—I have read Dr. Dutton's letter in the JOURNAL of August 13th, p. 407. I am quite able after years of residence in a country where there are tens of thousands of stock of all sorts to endorse his opinion as to the behaviour of animals in regard to wet cold air, day or night.

But I think he must be ignorant of the fact that all stock and domestic animals unless reared under cover and habitually under cover will never enter a building, however palatial, if left to their own devices.

Their favourite site for a camp is on a moderate hill just below the crest facing the warmest point of the compass, and in the worst of weather prefer to stand to leeward of a clump of trees or fence in preference to entering the most comfortable stable or byre.

I am a general practitioner who for years had dozens of cases of more or less *advanced* phthisis on my hands. I was one of the first to take the fresh air cure up in Australia, and say without hesitation that it gives years of useful life and smooths the path to the grave even if it fails to cure the patient.

Dr. Dutton's letter conveys to my mind the impression that sanatoriums are built in situations specially liable to cold damp airs. I suppose he really means that the open windows of a sanatorium admit air whilst the dew of night and morning is falling and the air is saturated; except in valleys, the period during which this occurs is very short and certainly causes little inconvenience to patients adequately clothed.

I have never been able to trace any ill effects to the influence of water-saturated air or heard that it is anything more than a popular prejudice. I have frequently been exposed to it for weeks at a time nightly whilst camping out.

My own opinion of this controversy is this, that until the general practitioners who first see the cases are courageous enough to diagnose phthisis prior to the discovery of tubercle bacilli in the sputum, sanatoriums will be in bad repute amongst them.—I am, etc.,

August 8th. ANGLO-COLONIAL.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

SIR,—I have been extremely interested in a perusal of the many letters appearing in the JOURNAL, and now extending over a lengthened period, on the treatment, etc., of pulmonary tuberculosis. At the very threshold one is inclined to ask the question, What is the cause of the remarkable difference of opinion that seems to exist with regard to the incidence, avenues of infection, and treatment of such an extremely common disease as pulmonary tuberculosis?

Now, as regards the incidence, to quote only a few authorities, Dr. Sims Woodhead believed that over 90 per cent. of those who lived on to 45 had been infected with tuberculosis; in fact, "at one time or another the tuberculous bacillus had found a foothold on almost every one of us."

Dr. Hamburger, of Vienna, says that "nearly all the persons in the city of Vienna at the age of 14 years were already tuberculous." A serious outlook for the Austrian empire! However, such statements as these—and unfortunately they can be easily multiplied—should not be allowed to pass unnoticed, although they certainly convey only one impression—an erroneous one—to observant physicians in actual practice, who have not allowed themselves to become sufficiently modernized as to ignore that extremely valuable factor in the diagnosis, prognosis, and treatment of disease, and which is included in the very comprehensive term, the "constitution."

It is refreshing to quote another authority on the other side. Dr. J. E. Squire, C.B., London, who has perhaps examined more children than any other physician in the United Kingdom, and who bases his opinion entirely from the clinical standpoint, puts the incidence of tuberculosis in childhood at less than 5 per cent. I do not think there is a physician of experience anywhere who will not agree with Dr. Squire.

Now what is the cause of this extraordinary difference of opinion? The cause is due entirely to the methods of investigation, and to the undue importance attached to the results of experimental investigation. It is both arbitrary and unscientific to establish or define a relationship between the conditions existing in man and animals, especially the lower animals, on which experiments were usually made.

It is to be noted that the claims for the universality of tuberculosis is put forward by laboratory experts, accompanied, to be sure, by the comforting assurance that quite frequently the bacilli remain dormant—prefer to stew, as it were, in their own juice to attacking the unsuspecting host.

It would be a very serious thing should any serious doubts arise in the minds of clinical physicians as regards the value of the reports issuing from bacteriological laboratories; but in this particular instance, at all events, one must not be afraid to express disbelief in an agent which, one may safely presume, is responsible for stamping 95 or 99 per cent. of the human race as tuberculous.

Some extraordinary claims to infallibility have been put forward on behalf of tuberculin as a test (not to mention as a curative agent); but when these claims to infallibility are entirely supported on evidence such as the above, one must be pardoned for not merely entertaining serious doubts as to its value, but for assuming that as an aid to diagnosis it is practically worthless.

All the tuberculin tests at present in use are of little or no practical value; and, as Dr. Squire has said, tuberculin was not even a test of susceptibility, and there was no agreement or even consensus of opinion among experts in favour of the reliability of any single test among the many recommended for our approval. Can the same be said with regard to any other well-known and approved chemical test?

Incipient pulmonary tuberculosis can be very readily and satisfactorily diagnosed at a very early stage—months even before the appearance of any bacilli in the sputum—if due attention is paid to the observation made some twenty years ago by Dr. Kingston Fowler, who based his conclusions on the results of a series of autopsies at the Brompton Hospital.

Dr. David B. Lees, in a most illuminating and instructive article in a recent issue of the BRITISH MEDICAL JOURNAL, has called the attention of the profession to Dr. Fowler's conclusions, the absolute truth and reliability of which can be confirmed by any one who is interested in this disease. It was there pointed out that the initial lesion does not begin at the apices, as is generally thought, but at a point fully two inches lower down, from which it extends either backwards towards the suprascapular space, or downwards and outwards into the second intercostal space. The earliest physical signs can usually be detected in the intercostal space from one to three inches from the sternum.

Posteriorly the dull area was found to be quite close to the upper dorsal vertebrae, which under normal conditions is always resonant.

In the lower lobe also at a very early stage a tuberculous focus is found less commonly about 1 or 1½ in. below the summit, from which it spreads downwards and outwards, and which can be verified clinically by careful percussion along the spine of the scapula and immediate neighbourhood.

These areas near the four apices are the most frequent, but there are others, and for a full description the reader is referred to the original reports.

Now, careful physical examination—percussion especially—over these well-defined areas will enable a satisfactory diagnosis to be made long before the appearance of any bacillus in the sputum, and when, therefore, microscopical examination is as worthless as the *x* rays or tuberculin test. The symptoms present at this stage are dullness on percussion, jerky or diminished air entry, and prolonged expiration.

I think it will be generally admitted that early diagnosis in this disease is of vital importance in the interests of the patient; and if rational, scientific, and energetic treatment

is immediately carried out, a cure of a permanent nature can be predicted in a large majority of cases. There appears to be a certain amount of unanimity with reference to the avenues of infection, but the question is different when treatment comes to be discussed.

The plan of treatment which I recommend, and have practised most successfully for over twelve years, is practically the same as that which has been recommended by two such eminent physicians as Drs. Burney Yeo and David B. Lees. The extraordinary series of cures recently published by Dr. Lees will well repay careful perusal.

The essentials of this treatment consist in *continuous* inhalation of a strong antiseptic solution, such as guaiacol, carbolic acid, and spirit of chloroform. The form of inhaler is the simple one originally introduced by Dr. Burney Yeo. Six drops of this solution are dropped on the small sponge in the centre every hour, the patient is rigorously confined to bed for the first fortnight, and the inhalation is only suspended when food is administered. During the night fresh supplies of the solution are only to be added if the patient is awake. After the first fortnight longer intervals are gradually allowed, but the inhalation must be kept up for from six to ten weeks, according to the progress of the case.

Good nourishing food is frequently administered, and after the first few weeks, graduated exercises are carefully enforced. No drugs are given, and cough medicines are found to be unnecessary, as from almost the very beginning that distressing symptom is relieved.

Such are the outlines of the simple and inexpensive treatment I confidently bring under the notice of the profession.—I am, etc.,

Cairo, Aug. 14th. T. GERALD GARRY.

THE GALTON LABORATORY MEMOIR ON THE INFLUENCE OF PARENTAL ALCOHOLISM.

SIR,—I am surprised to find that so many medical men who are active friends of the temperance cause (as I am myself) are annoyed or disappointed by the conclusions of the above memoir.

Surely these conclusions are quite in harmony both with general biology and with clinical experience.

If alcoholic parentage is to produce any effect on offspring (excluding its social or environmental action), it must be by one of two ways.

1. By way of true biological inheritance.
2. By way of toxic effect upon the germ.

With regard to No. 1, we know that a very large proportion of inebriety represents a neurosis of the type of insanity or other "instability." So far as this kind of parental quality is capable of affecting the offspring, it may appear as an alcoholic tendency, or as some allied phase. But in this case what is transmitted is the parental neurosis which led to the parental drinking. Till we have some better evidence than is yet forthcoming as to the possibility of the inheritance of somatic acquisitions, we cannot expect to find transmitted as a biological heritage the effects of alcohol on the parent or his industriously acquired habits of life.

With regard to No. 2, we know that it is by no means easy to modify for good or evil the fetus in utero. Those who attend confinements in the slums, or who are associated with the babies of the lying-in charities, cannot fail to be impressed with the small difference made by parental habits of life or dietary to the condition of the babies at birth.

In this respect the paper read by Professor Laitinen at the Alcohol Congress last year is of interest, and invites further investigation. Alcohol is, we know, rapidly eliminated, and the human frame has great powers of recovery from its action. If Professor Laitinen's conclusions are confirmed, they would indicate an interesting toxicity of alcohol exercised on the embryo. But—and this is important—if alcoholic parental neurosis or its allies are inherited, it is likely enough that, like other similar manifestations, they would show no sign at the school age. On the other hand, if we look for toxic effects, it is likely enough that such effects, if they ever had been present, would have exhausted themselves in any child who was old enough to come within the range of these researches.

In either case such results as those of the Galton Laboratory memoir are what might have been expected, and it would seem unlikely that the inclusion of data from abstaining parents would have materially modified them.—I am, etc.,

Brighton, Aug. 14th. R. J. RYLE, M.D.

BUFFON'S ENGRAVING OF A PIEBALD NEGRESS.

SIR,—Buffon's engraving of a piebald negress, which was recently reproduced by Sir Jonathan Hutchinson in the BRITISH MEDICAL JOURNAL, June 18th, 1910, p. 1480, is the classical example of its kind, and is cited by all who have written on irregular pigmentation of the skin. In the collection of pictures in the museum of the Royal College of Surgeons there is a portrait in oils of the piebald negress figured by Buffon. My attention was drawn to this picture (which measures 30 in. by 24 in., and depicts the child about life-size) by Professor Karl Pearson and Mr. Nettleship during their inquiries into albinism. The only history attached to the picture is the inscription—presumably painted by the artist—towards the lower right corner of the picture:

The true picture of Mary Sabina, who was born October 12th, 1736, at Matuna, a plantation belonging to ye Jesuits in ye City of Cartagena, in America, of two Negroe slaves named Martiniano and Patrona.

The inscription is painted on an oval grey ground, and surrounded by an ornate conventional design. Seeing that Hunter was interested in the question of albinism, and had made a collection of pictures illustrating the condition, it was at first presumed that this picture had belonged to his collection, but a search through the various documents relating to his pictures gave no sign of such a picture having been in his possession at any time. The clue to the picture was found in Sir Erasmus Wilson's Lectures, delivered at the Royal College of Surgeons, 1876–78. In the first lecture, on Piebald Races of Men, p. 8, a description of the picture is given, and the following footnote added:

From the context and from some differences between the painting and Buffon's engraving I am inclined to believe that the true reading of these words "*l'original du portrait*" should be *the original portrait*, not the original of the portrait, which must refer to the child itself, of which there is no further mention. The history of the picture, which is now in my possession, must be curious, but I have been unable to unravel it further. It was offered for sale to the College, but failing a purchaser was brought to me.

The manner in which this picture came into the collection of the College of Surgeons becomes tolerably clear: most likely when the lectures were finished the picture was temporarily left in the museum; at least it is not mentioned amongst the specimens given to the museum by Sir Erasmus Wilson in 1884. It was purchased by him some time prior to 1870.

For a full history of the picture from which Buffon's engraving was made one must turn to the supplement of vol. iv of *l'Histoire Naturelle*, published by M. le Comte de Buffon, in 1777. About this time Hunter also was inquiring into the cause and nature of pigmentation. In September, 1772, M. Taverne, the Burgomaster of Dunkirk, sent Buffon the original portrait with the history that it was found in 1746 on board an English prize, *The Christian of London*, bound from New England to London, which was captured by le Comte de Maurepas (in another letter M. Taverne says by *la Royale*), and brought into Dunkirk. The picture had thus been in the possession of the burgomaster for 26 years. We do not know whether it was retained by Buffon or returned by him to Dunkirk. The engraving of it, by De Sève, was made in 1777. Presumably the picture was then in Buffon's possession.

Buffon states that the inscription on the picture is in English, and gives the following translation:

Marie Sabina, née le 12 Octobre 1736 à Matuna, plantation appartenante aux Jésuites de Carthagène en Amerique, de deux esclaves, nommés Marteniano et Padrona.

It is word for word with the inscription on the picture in the museum of the Royal College of Surgeons, except that the first two words, "The true," are absent.

The burgomaster and the great naturalist exchanged an interesting series of letters about the picture. M. Taverne regarded piebald negroes as the result of a union between a black and a European. The English inscription that this child was born to two negro slaves was clearly, in his

opinion, an English lie, "sauver l'honneur de la mère." He points out that the hair on the white part of the scalp is European in character, while the black is woolly. Buffon, on the other hand, thought the white hair was also woolly, but that the painter had not expressed the texture clearly. In the college picture the texture of the white hair is also obscure. The burgomaster observed that on the larger pigmented areas smaller spots of a deeper colour were shown by the artist; this is also so in the college picture. Buffon regarded piebald negroes as the progeny of an albino negro with one of normal pigmentation, but failed to convince the burgomaster, who preferred his own explanation.

On comparing Buffon's engraving with the college portrait certain discrepancies become apparent. In Buffon's engraving the child is reversed—as in a mirror—a natural result when a portrait is engraved directly on to copper. The expression and countenance of the child, the distribution of the pigment, and the contour of the body are exactly alike, with a few minor alterations in the shape of some of the smaller flecks of pigment. There can be no doubt the child shown in Buffon's engraving and in the college picture represent the same individual at the same period of life. But in the college picture the child stands in a tobacco plantation in the foreground, with a wooded vale in the middle ground, on which is shown a little hut with the word "Matuna" painted beneath it. In the background are mountains with a glimpse of a harbour on which ships are seen to ride at anchor. The little girl (she appears to be 2 or 3 years of age) has a sash tied modestly round her waist; Buffon's engraving is shown nude; she holds her right elbow bent with her hand in front of her breast; in Buffon's engraving the corresponding arm is extended to show the pigmentation along the flexor aspect.

In both pictures a parrot rests on the forefinger; in the college portrait it is on the left hand and has two legs; in Buffon's engraving it is on the right hand and has only one leg. In Buffon's engraving she is placed not in a plantation but in an interior with a large umbrella to her right, the feathered cap of a Red Indian on her left and tomahawks thrown carelessly on the floor in front of her. All De Sève's engravings have a setting of still life, and it is possible that he preferred such surroundings for his engraving to the Matuna landscape.

Professor Karl Pearson informs me that there are probably two portraits of Mary Sabina—the one in the college and another in a collection in the United States. Buffon states that the inscription is below (*au bas*) the portrait. In the college picture the inscription is at the lower right corner. It is possible that the portrait now in America may be the original of Buffon's engraving. Amongst your many readers throughout the world there are probably some who can throw further light on this matter; perhaps there are more than two portraits of this piebald child.

Near the picture of Mary Sabina in the College of Surgeons hangs an interesting family group which Zoffany painted for Hunter in 1788. The father is an Englishman, aged about 40, the mother an albino negress probably about 30, the two children (a boy aged 8 or 9, and a girl aged 4 or 5) show the even pigmentation of mulattos. The engraving which precedes that of Mary Sabina in the supplement to vol. iv of Buffon's *Histoire Naturelle* is that of an albino negress; in 1777 she was aged 18; Buffon examined her minutely when she was in France. She is figured in relationship to Marie Sabina, because, as we have just seen, Buffon held the opinion that piebald progeny was produced by negro albinos uniting with negroes. The albino negro figured by Buffon in 1777 corresponds very closely in detail of feature and of form to the albino negress drawn by Zoffany for Hunter ten years later. Buffon's writings were well known to Hunter, who was also making observations on the hereditary nature of pigmentation, and it is extremely probable that in Zoffany's picture we have a continuation of the life-history of Buffon's albino negress. Here, again, I beg to appeal for assistance; the clue may lie in a casual reference which would escape a systematic search. As is well known, Hunter intended to leave full histories of his pictures, but death stepped in before he had completed his task.—I am, etc.,

Royal College of Surgeons of England, London, W.C. A. KEITH.

SIR,—The rarity of human piebalds renders the recording of every instance almost a matter of professional duty. I desire to add the subjoined case to those figured by Sir Jonathan Hutchinson in his paper on acroteric piebalds in the BRITISH MEDICAL JOURNAL of June 18th. At the annual meeting in London I exhibited a series of photographs illustrating facial blazes, colour patterns, etc., as seen in animals.

George Alexander Gratton was born of negro parents, on the island of St. Vincent, in 1808. At the age of 15 months he was brought to Bristol and exhibited as a "spotted boy" at the then famous Bartholomew Fair, held at Smithfield. A figure of this child, when considerably older, will be found in the second volume of Chambers's *Book of Days*. He is represented as seated, and grasping a stringless bow. As far as can be judged from the engraving the black mottlings, though less extensive than in Buffon's example, show the same general symmetry. The pigmented areas on the outside of the arms forcibly recall Buffon's figure; three of the four extremities bear imperfect "gloves" or "shoes," the fourth (a foot) being almost concealed behind its fellow. The white blaze, however, covers almost the entire face, the black pigment being almost limited to the parotid and temporal regions. The child died at the age of 4¾ years, and was buried at Great Marlow, in Buckinghamshire. A monument was erected recording the attachment of Richardson, the showman, who had taken great interest in him. It is unfortunate that no photographic record exists of this singular piebald. *Extinctus amabitur idem.*—I am, etc.,

Manchester. GRAHAM RENSHAW.

DERMATITIS ARTEFACTA.

SIR,—I have read with interest some recent contributions on this subject in the JOURNAL. May I point out what is, to my mind, an essential feature in the management of these cases—that, wherever possible, there should be no family exposure? The secret is one which should be kept between medical man and patient alone. In this way some self-respect, which is a valuable asset towards mental healing, is retained by the patient, and the doctor has a better hold of the case in every way. In a paper which I recently read before the Manchester Medical Society I gave several instances in which this plan had been successfully followed, and I believe the patient should always be given this chance. One of the many curious features of this morbid state of mind is the relief and joy with which, in some cases, the victim is rid of his, or her, obsession.—I am, etc.,

Manchester. G. H. LANCASHIRE.

MONGOLIAN IMBECILES.

SIR,—In the article on Mongolian imbeciles of the BRITISH MEDICAL JOURNAL of July 23rd, the chief characteristic of the condition from which it derives its name is hardly mentioned, that is, the slit-like eyes and the epicanthal fold.

Recently I had the somewhat rare experience of having two of these cases at the same time in my practice; both these children were born within a fortnight of each other, and both died of bronchopneumonia (tuberculous?) within three days of each other at the age of about fifteen months. One of these children I suspected to be a Mongolian at the time of birth owing to the small slit-like eyes.

Another feature is that when sitting crosslegged they bow their bodies down in front of them till their foreheads almost or quite touch the ground, in a rhythmical manner for hours at a time as if they were worshipping some heathen god.

Very few of the Mongols which I have seen have survived beyond the fifth year, and it is interesting to know that well-marked types of the condition may survive till puberty.—I am, etc.,

York, July 25th. GEORGE W. MICKLETHWAIT, M.D.

CORONERS' LAW AND DEATH CERTIFICATION BILL.

SIR,—Shall we ever learn wisdom by experience? Dr. Walter Asten (BRITISH MEDICAL JOURNAL, August 20th, page 494) seems to advocate diplomacy, having apparently already forgotten all about the Notification of Births Act,

and that the result of our diplomacy was that the strong politician hoodwinked and then rode roughshod over the weak (though "honourable") profession. And so it will be again if we are weak and foolish enough to rely on diplomacy, which is a very second-rate weapon with which to resist encroachment or fight for right and justice. The resort to it implies that we are uncertain as to our rights, or willing to accept something less. We are not at all uncertain as to our rights, and why should we accept less? Dr. Asten winces if M.P.'s and other interested parties hint that we are "out for fees"; so do I and a good many others, but we must harden our skins and brace up our moral courage. These diplomatists will use the "out for fees" taunt just so long as we wince at it and they can make something out of it for themselves. As soon as we make it clear that we are out for right and justice, and intend to have them, they will drop it and save their breath for the haggle over the amount of the fee, and, no doubt, they will "best" us over that.

It is not right that we only of all free citizens should be compelled to work for nothing, and if we acquiesce, or even philander with diplomacy on the matter, we injure the cause of right and the whole community, and certainly deserve no more than we shall get. Can any one seriously contend that injustice to one section of the community is good for the community at large? I think not. We are told that if we insist on justice to ourselves we may wreck "an otherwise excellent bill." Let us, then, wreck it in the true interests of the community as well as in our own. It will not be our fault if the community have to suffer a little longer for want of the reform, but the fault of those who endeavoured to secure the reform at the cost of injustice and at our expense. Two or three years ago we allowed an unjust measure to become law, though we had the power to prevent it, simply because Mrs. Jones said we were "out for fees," and we could not stand it! We indulged in diplomacy, instead of insisting on common justice and our professional rights. Naturally enough another encroachment is at once attempted, and the same cry, "out for fees," is raised in good time, and again we are told from within the profession that it is a case for diplomatic treatment. There is no need for diplomacy; let us insist firmly on right and justice in the abstract and our own rights in the concrete, and by all means let interested Mrs. Jones and ignorant Mrs. Smith proclaim that we are "out for fees." A truly honourable profession may ignore them both without loss of honour. As for the gratitude of the nation for our sacrifice in its interest, this bill proves how grateful it is for our complacency over the Notification Bill, and we have really nothing to complain of. It is, no doubt, willing to feed us up with such bills to our heart's content.—I am, etc.,

Swinton, Aug. 20th. J. Price Williams.

Sir,—Since reading your excellent article on this bill, I have been anxiously waiting for some abler pen than mine to take up the matter. I was very pleased to read the letter in this week's Journal signed "Unitas."

If members of Parliament are labouring under the delusion that because the bill is introduced by a member of the medical profession that it voices the opinion of the majority of its members, it is high time we gave them to understand that a large proportion of its members regard this clause with great indignation, and are determined to do all in their power to prevent such an injustice being perpetrated.

In many cases the Act will necessitate a journey of several miles and a loss of time of anything up to two hours, and there is to be no recompense for this. If we were to receive the modest fee of half a crown, which you suggest in such cases, it would not cover the cost of horse hire or petrol.

Would any sane Government dream of imposing such a burden on the legal profession without remuneration?

We are already forbidden by law to charge the patient for the certificate.

The medical profession already does enough vicarious philanthropy without having more of it thrust upon it by the State.

The proposal of "Unitas" is in my opinion a good one, and I think if the law is passed we had better do as he suggests. Since, however, it would be easier to prevent the law being passed than get it altered afterwards, I would suggest that the Association should draft a memorial to the Government pointing out the injustice of this clause. I would also suggest that the signatories to the memorial should pledge themselves that in the event of this clause being passed unaltered that they will refuse to carry out its provisions. I think a large majority of the general practitioners throughout the country would sign it. I believe every one in this district would.

Since the successful working of the Act is entirely in the hands of the medical profession, I cannot think that any Government would pass this clause in the face of a protest signed by a large majority of its members. We must let them clearly see, however, that we are determined not to have this injustice thrust upon us.—I am, etc.,

Spennymoor, Aug. 15th. W. Mussellwhite.

Sir,—Although with our usual altruism we consider first the beneficial effects of this bill on the nation, and even hesitate to oppose it on account of its supposed usefulness, it is not the substance, but the principle, that we must oppose.

The argument that the payment of a small fee for work done would wreck the bill is too feeble to stand for a moment.

Has our country become so mean, that—in addition to all the gratuitous work we heap upon the people, and all the unpaid work the nation has thrust on us in return—we should be now asked to do all this work out of charity?

Can it be for one moment maintained that the British nation is no longer able to afford to pay for useful work done for it?

I have already given three instances of oppression by this Government on our profession; surely the time is now ripe to remind them that there is a limit to the burden, or where will legislation to benefit the community at the general practitioners' expense cease?

We see in front of us next session bills vitally affecting our profession; the general practitioner is unrepresented, and the past legislation shows that his interests are totally misunderstood or neglected by the medical members of the House.

Would not the last Vaccination Amendment Bill have been equally well received if our medical representatives had insisted on the conditions recommended by the Royal Commission being observed?

Would not the Births Notification Act have been readily accepted if our representatives had insisted that a fee of 1s. should be paid for each case?

It is worth no one's while to stand for justice to the general practitioner, because he is too feeble and disunited to protest effectually.

Our legislators show no diffidence in increasing their own salaries, and no fear of opposition prevents that from being brought forward.

Now is the time to make our stand and say, You shall pay us for the work we do for you. And, unless we do it now, we shall find ourselves, like all weak animals, individuals, and nations, crushed to the wall.

Let any general practitioner compare his social or monetary position with that of his predecessor of forty years ago, and he will see that the crushing process has not only begun but is far advanced.

Let him look at Germany where the social and monetary position of the general practitioner is almost on a level with that of the small tradesman; or at America, where already it is actually below that of the tradesman, and a practitioner will visit for less than the cab hire from his house to the patients, while his average income is below £200 per annum.

All around are evidences of the crushing out of the impotent and diffident general practitioner.

And the remedy. Now, quite as much as in pre-historic times, it is only strength that commands respect; usefulness and good qualities are admired, but not respected without it.

And our strength is unity. The difficulty of unity amongst us in most things is insuperable, but here is an opportunity for unity without difficulties. In itself a little thing, not adding £5 a year to the income of any one of us, but in principle a great thing, and having the most vital effect

upon our future, only let us embrace it and note the difference it will make in next session's medical legislation.—I am, etc.,

August 22nd. UNITAS.

SIR,—The attitude taken by "Unitas," even though it be a little emphatic in its expression, is a far better one than that of Dr. Asten. It is an iniquitous thing that we should be bound under the present system to certify death for nothing, even though, as we must admit, the information given is of little value. Candour compels me to add that, although circumstances force me to work for the State without fee, it is done grudgingly and with no effort but to avoid the penalty of default. That is to say, I make the work itself as nearly commensurate as possible with the value set upon it by the State. To add to this burden, however, and to ask a medical man to perform efficient and useful service without monetary acknowledgement, is monstrous—even though it be "diplomacy."

It seems to me that the timid policy of Dr. Asten is altogether a mistake. If "it is for us to decide whether we risk the rejection of an otherwise excellent bill . . . by insisting on what might prove a wrecking clause," I think we should make up our minds to take the risk. As a matter of fact, the "evil impression of our legislators" is really the simple and quite justifiable business expedient of trying to get the best terms by a certain amount of bluffing. These same legislators are for the most part business men. A plain but courteous refusal—a little more *fortiter* than *suaviter*—to do work except for some reasonable remuneration would be met by an equally reasonable acquiescence. We are too fond of giving way rather than making any fuss, or "risking the rejection" of anything.

Following precedent, an all-round fee of 2s. 6d. would preserve the principle of payment for work done, and would not unduly burden the State.—I am, etc,

Audley, Aug. 8th. JAMES F. BLACKETT.

MALIGNANT DISEASE.

SIR,—I have read with very great interest the Address in Surgery delivered at the Annual Meeting by Mr. Gilbert Barling.

The study of this address, and especially that portion of it which relates to the spontaneous disappearance of cancerous growths, calls to my mind a very marked example of this retrogression which occurred in my practice about three years ago.

The patient was a married woman, aged 41 years. Five years before I saw her first she had been operated upon for carcinoma of the breast, and had been entirely free from any known recurrence up to that time. On my first examination, which was made as the result of her complaint of loss of strength and of breathlessness, I found some dullness behind the upper portion of the sternum and a chain of slightly enlarged glands behind the edge of the right sterno-mastoid muscle. The axilla was entirely free from any sign of abnormality except for the remains of the operation scar. My diagnosis was, of course, one of recurrence of carcinoma in the mediastinal glands and in the glands of the posterior triangle, and I regarded the case as quite hopeless (as, in fact, it proved eventually). During the next few months the patient progressively declined in strength, and the shortness of breath became rather more marked. During this time a large number of manifestly cancerous nodules appeared in the skin. Of these there were six or eight to be felt in the scalp, and three on one arm and four on the other, besides several others on the legs and body. Some of these lumps attained the size of a shilling, and all appeared actively to be growing.

One day on visiting her I found her condition very greatly changed for the worse. Her breathing was so laboured that she could not lie down, and on examination I found that the right pleura was almost filled with an effusion.

I regarded her end as so near that I did not trouble her with any paracentesis, but contented myself with giving her relief by morphine.

As days went on, I found to my surprise that the effusion was diminishing, and in about three weeks the physical signs had practically disappeared. This led me again to make a careful examination of the whole body, when I found to my still greater surprise that the skin nodules were also undergoing retrogression. As time went on *the whole of these nodules disappeared*, and left practically normal skin behind. Her strength also improved perceptibly during this time, and I had considerable hopes of at any rate a respite from the disease for some time. Unfortunately about three months after the events I have related she rapidly lost strength and died of exhaustion.

This case seems to point to the acquirement from the absorption of the pleural absorption of some antibody which was capable of causing retrogression of manifestly cancerous growths in the skin, though it was not sufficient entirely to eradicate the disease from the system—I am, etc.,

Nantwich. R. T. TURNER, M.D., Ch.B., D.P.H.

MEDICAL BOOKKEEPING.

SIR,—The numerous systems of medical bookkeeping recommended in the pages of the BRITISH MEDICAL JOURNAL from time to time are always of interest, though their very number, like the "remedies" for whooping-cough, seem to indicate that medical bookkeeping is a disease for which no remedy has yet been discovered. As I have studied all the systems recommended, and followed three, separately, over varying periods, it may be of service to describe that which I have adopted and found to answer all the requirements of myself and my patients. The daily work required is not great, and the old bugbear of bookkeeping—getting out the quarterly accounts—now takes two days where formerly it took two weeks (with interruptions). At the same time I have before me at any moment all the attendances and prescriptions with dates which the patient has received, the amount at which these were assessed, the number of times the account was sent out, when paid or balance due; a side column takes any necessary details of the case, such as urinalysis, pulse, etc.

I do not suppose that any one system will suit every practice or every practitioner, but I find it answer admirably for my own practice—a fair-sized middle-class suburban one. Of course the ordinary B. W. and Co.'s visiting list and a cash-book are kept, but no other except my day-prescription-ledger-book—a modification of that described in 1901 by Dr. Birt of Stourbridge.

To begin with, this book is lettered down the side by means of little projecting strips of tracing cloth gummed on in series, bearing on *both* sides the letters A, B, etc, indicating the page where such name-initial may immediately be found. Each page takes three or four names, and the letters are distributed according to their frequency amongst the pages thus: A opposite page 1, B 18, C 62, D 100, E 118, F 132, G 144, H 168, I J 216, K 236, L 248, M 266, N 292, O 304, P 316, R 358, S 380, T 420, V 444, W 454, Y 498.

I employ the signs given in B. W.'s visiting list, with the addition of a few of my own, thus: *V*=ordinary visit; *Vis*=a special message received after 10 a.m.; *Visit*=after 6 p.m.; (V)=night visit; *C*=ordinary consultation; *Consultn*=a long or night consultation; (C)=consultation with a specialist; *Cf*=ordinary certificate; *Certif*=a long form to fill for insurance, etc.; *Op*=slight operation; *Op*=serious or long operation. Visit at the same time for second members of household are $\frac{V}{2}$ or $\frac{VM}{2}$ and for maid- or men-servants $\frac{VM}{M}$ $\frac{CM}{M}$, the M in the upper line meaning medicine.

Furthermore, I believe most men in the course of years come to employ stock prescriptions and stock sizes of bottles. I use no colouring, and I flavour, if at all, with Aq. chloroformi-saturated solution. Medicines, therefore, in the greater number of cases can quite understandably be written 'Alb,' 'Fe,' 'Q,' 'Sal,' 'KI,' 'Feb,' 'Sod,' 'Q St,' 'Q Fe,' 'Q As,' 'Q Br,' 'Q N V,' 'Am c̄ R,' 'Am c̄ N,' etc., giving ample variety in two or three letters which follow in brackets after M (medicine), L (lotion), Lin. (liniment), prescribed. At any given moment or at the end of the quarter I have then only to run my eye along the lines, tot up amount due (according to position of patient) and enter total in *red* figures—£5 5s. This is sent out on the quarter-day immediately following the last attendance

When paid (or "squared up") a square in black ink is drawn round the amount and the whole account is lightly crossed and squared off. If unpaid, the account is sent on the following quarter-day and one stroke is drawn under the amount; next quarter-day a second stroke; and next quarter-day a third stroke with N=note is sent. After that an angry red dagger is stabbed through the whole attendance from right to left and the account is sent to a collector. The great point about the whole is *system* in giving medicine and in keeping one's books. I give stock medicines and regular stock doses, increasing the dose as needed, just as in giving chloroform. Patients rarely require details, nor does the doctor, and the simpler and shorter his method of prescribing and bookkeeping, the more readily will he send out his accounts and the more quickly get them paid. As an instance of how I enter my details, I will take the attendance given in the British Medical Journal last week by Dr. Goldie. I should have Mr. Blank's thus:

H. Blank, Marsh Road, Linton.

May 5.02. Mrs. V M (Q Br); V 7 V 9 V Lin (Bell); Miss $\frac{VM}{2}$ (Sal) 10 V: $\frac{V}{2}$ 11 V: $\frac{V}{2}$ 12 V: $\frac{VM}{2}$ (Q St): *13* M (Soda): (c) *14* Miss V M (Fe) 17 V. 21 M (Fe) 27 V: $\frac{V}{2}$

£3 8 3 | 7/02.

August 19th. SYSTEMATICUS.

ARTIFICIAL RESPIRATION IN NEWBORN INFANTS.

SIR,—I have read Dr. Fothergill's memorandum in the JOURNAL of July 23rd on this subject with much interest. Allow me now to describe my method, one which I have used for many years and found quite satisfactory.

I take an old-fashioned wooden stethoscope, unscrew the ear-piece, put the chest-piece into the child's mouth, press its lips firmly round it with a handkerchief, at the same time occluding the nostrils; then I blow with my mouth down the tube at frequent intervals. It is not always necessary to compress the thorax between breaths. One can blow a child out like a football with no difficulty if one wants to. The air comes from the mouth and, perhaps, upper air passages, not from the lungs, and does not contain an excess of carbonic acid.—I am, etc.,

Goudhurst, Kent, July 24th. G. H. MAPLETON, M.B.

AUSCULTATORY PERCUSSION.

SIR,—It is very evident that the matters discussed by Drs. Jordan and Hertz and others are of the very greatest practical interest, and need every consideration.

In a former letter to this JOURNAL for June 18th, I wrote: "Theoretically, in no case of any internal organ capable of being defined by percussion and by *x* rays can the two outlines correspond, unless the external surface of the body were spherical, and the focus tube" (or rather the radiographic centre of emission) "could be placed at the centre of the sphere."

In the case of an internal organ capable of being defined by orthodiagraphy and by percussion, the two tracings could only correspond when the surface of the body where percussed were flat and the recording plane of the orthodiagraphic tracing were parallel thereto.

I do not think there would be less "distortion" (which I would prefer to call "exaggerated perspective") on a fluorescent screen than on a skiagraph, other things being the same.

The things I have mentioned all depend on well-known principles of mathematical projection. The particular organ under discussion being movable constitutes a particularly puzzling case.—I am, etc.,

Bristol, July 23rd. W. COTTON, M.D.

SANDFLIES AND FEVER IN MALTA.

SIR,—Since the discovery by Lieutenant-Colonel Birt, R.A.M.C., that the sandfly (*Phlebotomus papatasii*) conveys simple continued fever in Malta and elsewhere, several authorities have devoted considerable time in searching for the breeding place of this disease-carrying fly. Hitherto, however, the larval stage has been found rarely in a state of nature. After long and continued searching I have succeeded in finding larvae in a small cave at Notabile, Malta, under similar conditions as to light and moisture as those which were discovered by Grassi in Italy, and more recently by Captain Marett, R.A.M.C., and Corporal Kerr in Malta. I have also discovered that two well-marked species of sandflies are common to this island, though all previous writers have referred to the existence of *Phlebotomus papatasii* only. Whether both kinds are responsible for the transmission of simple continued fever it is impossible to say, as Colonel Birt and all subsequent investigators have overlooked this important fact. It is hoped, therefore, that subsequent investigations will throw some light upon the question, and that it will be possible to furnish further information regarding the bionomics of these insects.—I am, etc.,

Malta, July 31st. R. NEWSTEAD.

HOW TO USE THE "JOURNAL."

SIR,—As one of the older members of the Association, which I joined in 1864 or 1865, I venture to offer my experience in making use of the JOURNAL.

Medical literature of all kinds is superseded so much more quickly as time goes on that few serials will repay the expense of binding. Presumably the JOURNAL has a larger circulation than any other medical paper of its size, but probably not many men would care to have ninety stout volumes on their shelves, as I might have had, so my JOURNAL has not been bound for several years. At the end of each half-year all the advertisements are removed. This is easily done by opening each number in the middle, and turning back the points of the wire clips with a blunt knife. With the index on the top, the twenty-six numbers tied together make a bundle which can be referred to almost as easily as a book. But there is another thing which makes reference easy. For many years, after reading the JOURNAL, two or three specially important articles or valuable statements have been entered in an index every week. The *Medical Digest* has very wide margins, and is well adapted for this simple mode of making one's own book of reference, but any quarto manuscript book with an alphabetical arrangement will answer the same purpose.—I am, etc.,

Castle Cary, Somerset, Aug. 26th. CAREY COOMBS.

SHIP SURGEONS.

SIR,—In view of the proposed formation of a marine branch of the British Medical Association for the purpose of improving the status and pay of ship surgeons, I would urge the hearty co-operation of all ship surgeons in this movement. We have the power to do so in our own hands if we combine firmly to refuse to sign on any vessel that does not recognize our right to charge reasonable fees to all passengers other than those carried under the emigration laws. All interested in this movement should communicate with Dr. John Fletcher, Rostrevor, co. Down, Ireland, before October 3rd, when the matter will come up before the Medico-Political Committee of the British Medical Association.—I am, etc.,

August 26th. ARTHUR W. COMBER, C.P.R. S.S. Co.

FEES FOR MEDICAL EXAMINATION FOR INSURANCE.

SIR,—I do not think I ever received a more extraordinary and impertinent request than that which I have just received from the British Widows' Assurance Company. They ask me to examine a person who lives between two and three miles from my residence, and I am expected to go this distance and make a report on the enclosed form for 2s. 6d. On this form I am asked to answer eleven questions, and the answering of these questions must include (if the report is to be of any use at all) a physical examination of the person.

This is not the first time I have been asked to examine for these ridiculous fees. In one instance I was asked to go six miles—that is, a twelve miles journey—and write a report for 5s.; in another case to see a man living about two hundred yards away for 2s. 6d., including a report, the man having refused to come to my house because he thought I ought to go to his.

I suppose there must be men who are compelled by necessity to undertake work at these rates, but I am glad to think that I have not yet been obliged to descend so low.—I am, etc.,

August 26th. X.

SYCOSIS: SO-CALLED "BARBER'S RASH."

SIR,—I performed a large number of experiments a short time ago with different shaving mugs. Boiling water was poured into the mugs. At the end of one minute (that is, when the shaving-brush would be dipped into the water) the average temperature was 83·38° C., while at the end of another minute (that is, when the razor would be dipped into the water) the average temperature was 77.6° C. The barber must therefore cool the brush and razor ere he can apply it to the skin of the face with safety.

I also performed a series of experiments with a culture of *Staphylococcus pyogenes aureus*. Sterile water was boiled and allowed to cool to (1) 80° C., (2) 74° C., (3) 65° C. respectively. It was contaminated with the culture at these temperatures, and after one minute had elapsed "cultures" from each tube were made on agar. None of the cultures developed. Control experiments were also carried out.

It is clear, therefore, that the bacteriological side of this disease requires elucidation at the hands of some competent bacteriologist ere medical practitioners have any right to take up the dogmatic attitude which they usually do in cases of sycosis. Good-class hairdressers, who are striving after the ideal and who look to the medical profession for guidance in these matters, resent very strongly the imputation which is conveyed in the antiquated term "barber's rash." In fairness to the hairdressing trade, patients should be told that they are far more likely to get sycosis from the many sources outside the hairdressing saloon than they are to get it inside.—I am, etc.,

JOHN WISHART, M.D., D.Sc.

Newcastle-on-Tyne, Aug. 23rd.

SERUM TREATMENT IN CANCER.

SIR,—Professor Barling has done good service to the profession by the exceptionally clear and able statement made by him in his Address in Surgery on the subject of malignant disease. As you say, his outlook is "hopeful," but, on the other hand, his words are duly guarded, and rightly so, seeing there are many pitfalls almost at every step in connexion with the treatment of this disease.

His reference to serum treatment of cancer was brief, and there is one aspect of this part of his subject on which I should like, with your permission, and in no controversial spirit, to make some remarks.

True it is that on the general question of serum treatment the verdict must be "not proven." An undoubted cancer serum has not yet arrived. There is one form of "serum" treatment, however, which to me seems worthy of consideration and, above all, of trial. I refer to the use of the patient's own cancerous exudate "serum." I suggested its application in possible cases three years ago (BRITISH MEDICAL JOURNAL, July 20th, 1907), and I have recommended it often to medical men who asked my opinion in reference to such cases. The *rationale* of it can be stated in few words. In every case of cancer there are, in all likelihood, some immune forces at work, and, though they have arisen essentially as a means of defence against the alien cancer cell, for some reasons unknown to us they do not become effective for defence—they seem to be unable to get within striking distance of the disease. Such forces may exist in large quantity, and, nevertheless, be so placed as to be unavailable. This is markedly true of the large effusions which arise in the thorax and abdomen directly as the result of metastatic cancer. These exudates may remain all through a case, but sometimes, though this is comparatively rare, Nature comes in, and by the magic of her living machinery the fluid is taken from the cavity into the tissues, and a cure, in greater or less degree, follows. As to the mode of attack of the fluid, there is room for diversity of opinion. It may act directly by dissolving the cancer cellular tissues, which then fall to be absorbed; or, as some weighty authorities (Ehrlich, Wells, Ribbert) judge, it may stimulate the body tissues to the formation of cytolysins for the cancer cells.

Be this as it may, the main point is that the "serum" is curative, and being that, there is no reason to suppose that it parts with its activity if it be withdrawn by the aspirating needle and then injected into the subcutaneous tissues. I am of opinion that this is quite practicable and should be done in every case of cancerous effusion, unless the operation be barred for some special reason.

The work of Dr. Hodenpyl, New York, whose untimely death every one regrets, illustrates, and gives forcible point to my contention. In the very interesting cases he recorded, the ascitic serum of an individual who had been spontaneously cured, cured another person. The donor's serum being immune conferred immunity on the receiver. It goes without saying, I think, that the immunity which had been carried by the needle to the receiver and cured him would, *a fortiori*, have done the like service to the donor if the operation had been done on him prior to his spontaneous recovery. There had been effusion at that period, and I assume that absorption had taken place, otherwise there would have been no cure.—I am, etc.,

Lochcarron, Ross-shire, Aug. 2nd. CHARLES G. MACKAY.

EDINBURGH AND THE BRITISH MEDICAL BENEVOLENT FUND.

SIR,—In the Scottish column of the JOURNAL of August 27th, it is stated, in a short article under the above heading, that the amount of Edinburgh's contribution to this Fund for the year 1909 is a "blot to the discredit of Edinburgh."

I emphatically deny that. Your correspondent is presumably a contributor to the fund, and a member of the medical profession in Edinburgh, and, as such, one would have expected him to be cognizant of the peculiar circumstances relating to the collection of contributions for the year 1909.

Dr. Joseph Bell, the Honorary Secretary of the Fund for many years in Edinburgh, retired from the position late in 1909, and it was not till the end of the year that I agreed to accept the post.

The time during which it was possible to attempt to collect contributions was, consequently, limited to a few weeks in the early part of this year.

I am, of course, wholly at one with your correspondent in the hope that the members of the medical profession in Edinburgh will contribute generously to this Fund in the future.

I, however, not only hope for, but expect such generosity, and I cannot but regret that your correspondent has deemed it expedient to adopt such a method to further this end.—I am, etc.,

Edinburgh, Aug. 29th. A. DINGWALL FORDYCE.

THE EARLY DIAGNOSIS OF UTERINE CANCER.

SIR,—It is my growing conviction that the incipient stage of cancer of the uterus is coincident with the maximum weight of the woman, irrespective of age, and that the duration of this incipient stage may vary, as does that of the recognized stage of the disease. I have already received several reports over medical signatures (in order to prove that I myself have not asked leading questions), all to the effect that the time of maximum weight occurred during the years immediately preceding the diagnosis of cancer (that is, in the incipient stage of the disease). The questions asked were: (1) "Present age?" and (2) "About when did you weigh the most?" The second question should have been, and will hereafter be, "About when did you acquire your maximum weight; and about how long did that good weight continue (or how long have you been losing weight or strength)?" A third question should be, "About how long ago did symptoms appear?"

Following are the data of *every* case received to date:

Case 1, aged 51; maximum weight about 1 year ago. Case 2, aged 35; maximum weight 1 year ago. Case 3, aged 54; maximum weight about 9 months ago. Case 4, aged 46; maximum weight about 9 months ago, 190 pounds. Case 5, aged 50; maximum weight at present time. Case 6, aged 52; lost weight during past year, but substantially the same for about 5 years previous to that. Case 7, aged 35; maximum weight acquired 2 years ago; pregnant shortly afterwards.

The majority of the cases interviewed by me *clearly* follow the general line (as can be seen by examining the twenty-six histories), but, unfortunately, the exact dates have not been, or could not be, learnt. The following data are extracted from those cases which are most definitely outlined. All but one are cancer of cervix, and all but one were diagnosed as inoperable.

Case 1, acquisition of maximum weight about 5 years ago; duration of good health and strength, about 4 years; symptoms began 7 months ago. Case 2, acquisition of maximum weight about 3 years ago; duration of good health and strength, 1 or 2 years; symptoms began 5 months ago. Case 3, acquisition of maximum weight about 7 years ago; duration of good health and strength, about 5 years; symptoms began 2 years 8 months ago. Case 4, acquisition of maximum weight about 4 years ago: duration of good health and strength, about 3 years; symptoms began 10 months ago. Case 5, in which the cervix was entirely destroyed, the uterus enlarged and lower part of broad ligament thick and tense, reports acquisition of maximum weight about 10 years ago; a loss of strength for the past 4 years; and the appearance of symptoms but 5 months ago.

The following data were lately gathered for me from his rather recent records by one surgeon whose attention had already been directed to the question of weight.

Case (a) aged 48; maximum weight 2 years before symptoms appeared.
Case (b) aged 45; maximum weight 1 year before symptoms appeared.
Case (c) aged 50; maximum weight 2 years before symptoms appeared.
Case (d) aged 40; maximum weight 6 months before symptoms appeared.
Case (e) aged 38; maximum weight about time of appearance of symptoms.
Case (f) aged 70; maximum weight 4 years before symptoms appeared (fundus).

Clinical data of cancer of $\frac{\text{corpus}}{\text{cervix}}$ uteri:

1. Present age?
2. About how long ago was maximum weight acquired, and about how long did it continue?
3. About how long ago did symptoms appear?

—I am, etc,

E. ATTLEE.

Straitsmouth Inn, Stonehaven, Rockport, Massachusetts, U.S.A., Aug. 11th.

Contract Medical Practice.

TERMS FOR CLUB ATTENDANCE.

MEMBER writes that he has been asked to be medical officer to a club on the following terms: The married men with families to pay 1s. a month, the single 4s. annually (?). He wishes to know whether these terms are too low, and whether it is not customary in clubs for the married and single members to pay the same contributions. All confinements are to be one guinea extra.

*** These terms compare favourably with those of many other clubs, but there is too great a discrepancy between the contributions of the married and single members. It is very usual for the married and single to pay the same, but the contributions in these cases are nearly always less than 1s. a month.

Universities and Colleges.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved at the examinations indicated:

SURGERY.—*†F. H. W. Brewer, †A. Gordon, †W. J. G. Gayton, †M. S. Jevons, †J. C. Johnson, †J. A. Laughton, *G. Meyer, *†J. G. Reidy, *†H. Stanger.

MEDICINE.—*†H. R. L. Allott, *†W. J. Gibson, *†J. M. Moll, †J. G. Reidy, *†A. D. Vernon Taylor.

FORENSIC MEDICINE.—E. M. E. Hall, C. B. Hawthorne, J. B. Holmes, J. C. Johnson, A. D. Vernon Taylor, C. B. Welsby.

MIDWIFERY.—D. E. S. Davies, E. M. E. Hall, O. Marshall, J. M. Moll, J. G. Reidy, A. D. Vernon Taylor.

* Section I. † Section II.

The diploma of the Society has been granted to Messrs. F. H. W. Brewer, W. J. G. Gayton, M. S. Jevons, J. A. Laughton, J. G. Reidy, and H. Stanger.

Public Health AND POOR LAW MEDICAL SERVICES.

TYPHOID FEVER IN THE COUNTY OF DURHAM.[1]

THE insanitary condition of many parts of the administrative county of Durham, with its population of over a million persons, has frequently been commented on. As long ago as 1896 the county council made a representation to the Local Government Board that the Whickham Urban District Council had made default in the performance of their duty under the Public Health Act, 1875, with respect to certain specified insanitary conditions. Some correspondence ensued between the Board and the councils, and after consideration the Board decided not to direct formal inquiry into the subject-matter of the county council's representation. In spite of this rebuff the county council made a similar representation in 1895, when Dr. Darra Mair made a report to the Board upon the sanitary circumstances of the district. In 1904 the county council represented to the Board that the Chester-le-Street Rural District Council had not properly put in force the Public Health Act and the Housing of the Working Classes Act, and in 1906 a like complaint was made by the county council with respect to the Hebburn Urban District Council. Reports were made to the Board with regard to Chester-le-Street by Dr. Wilfred Fletcher, and by Dr. R. J. Reece with regard to Hebburn, but in no one of these three reports is there any opinion expressed as to whether the district councils concerned were or were not in default in carrying out their statutory duties. It is true the medical inspectors named gave many glaring instances of insanitary conditions, and made important recommendations for their abatement, but it is not unlikely that the apparent lack of support which the county council received from the central authority accounts in some measure for the *laissez-faire* attitude of many of the district councils which is revealed in the preliminary report on typhoid fever in the county of Durham, recently presented to the Local Government Board by Dr. S. W. Wheaton.

In a preface to the report Dr. Newsholme points out that for many years past the county of Durham has had the highest death-rate from typhoid fever of any county in England and Wales. After commenting upon the possible effects of domestic overcrowding, of the special mining industry, of the water supplies and of certain foods upon the incidence of the disease, he refers to the extremely filthy domestic arrangements by which excremental matters are retained in the immediate vicinity of dwellings. These arrangements he considers are in large measure associated with the excess of typhoid fever in the county, where the use of the privy-midden is still almost universal, although so-called ash-closets are now provided in most of the new houses of the working classes.

The report itself discloses much careful and painstaking effort on the part of Dr. Wheaton, who admits, however, that if the causes of typhoid fever in the county are to be completely unravelled and prevented from continuing to operate, his preliminary conclusions will require to be confirmed by further inquiry continued over a long period and to be supplemented by much fuller information. He suggests for this purpose that the medical officer of health in each district in the county should carefully investigate every case of the disease notified to him, an exact record being kept of the antecedents of each case, together with the approximate date of onset of the illness, and the relative dates of cases in the same household. Other recommendations are that statistics should be prepared for each sanitary district, setting out for each year the age and sex incidence of all cases of the disease, the occupations of those attacked, and the number of cases treated respectively at home and in hospitals. That a statement should be prepared for each district, giving the method of excrement disposal for each tenement, and that a record should be kept of the number of privy-middens converted into ash-closets, and of privies replaced by water-closets, and of the method of scavenging in force in each district, having special reference to the efficiency of the system and the frequency of removal

BRONZING CARRIED ON IN FACTORIES AND WORKSHOPS.[2]

BRONZE powders are used in lithography and printing, and mostly in the dry state. Bronze lithographic inks have been tried, but they have been a failure. Much of the bronzing in this country is still done by hand. The powder is applied by means of a piece of cotton-wool or by a soft pad on to the printed surface, after which the sheets are dusted by rubbing them with a clean pad. Clouds of dust rise from the surface, especially with young and inexperienced workers. The recommendations of the Departmental Committee of 1895 as to the employment of means for preventing the escape of dust during bronzing were, with other details, published by the Home Office, and, although issued only as voluntary regulations, yet

[1] Reports to the Local Government Board on Public Health and Medical Subjects (New Series, No. 35). Dr. S. W. Wheaton's preliminary report on enteric fever in the county of Durham. Darling and Son, Limited. (9d.)

[2] Report by Edgar L. Collis, M.B., W. Sydney Smith, and Rose E. Squire, all of the Factory Department, Home Office. London: Wyman and Sons. (4½d.)

they were well received by factory owners, and many of them were adopted, including the substitution of machine for hand work. It has been conceded that bronze work done by hand is more trying to the workers and more unhealthy than when done by machinery. Bronze dust is injurious to health in two ways: (*a*) by its irritant effects when inhaled for a prolonged period, and (*b*) by its toxic effects, due to the special character of the dust. Arlidge, Oliver, and Hoffman are quoted as to the harmful effects of metallic dust when inhaled; while, in the opinion of Dixon Mann, Wynter Blyth, and Lewin, the toxic effects of the metallic dust in bronze powders can hardly be attributed to the copper they contain.

Two hundred and thirteen lithographic and letter-press printing works were visited. In these 742 persons are employed; it is, therefore, not a large industry. Under the term "bronzing" is included all processes in which metallic powders, either in the wet or dry state, are used to produce a gold, silver, bronze, or similar metallic effect upon paper, wood, sheet metal, leather, etc. The report deals only with processes in which dry powders are used. These powders are not made in England. They come from Nuremberg and other towns in Bavaria. Gold bronze powders are composed of copper and zinc, with traces of lead, tin, arsenic, and iron. They contain 70 per cent. of copper, but in orange bronze powder there may be as much as 99 per cent. of copper and 1 of zinc. Silver bronze contains tin, zinc, and aluminium.

In hand bronzing 53 per cent. of the workers complained of not feeling well; but in machine work, with little escape of dust, only 35 per cent. complained. The symptoms are sneezing, coughing, and other signs of naso-laryngeal irritation, also a coppery taste in the mouth, epistaxis, headache, nausea, and vomiting. There is frequently observed on the teeth a green line. Since persons under 16 years of age do not suffer more than adults, it is not proposed to prohibit such from working in bronze. The introduction of food and drink into workshops is forbidden, but milk and tea immediately brought into the room before it is consumed are not interdicted. The serving out of half a pint of milk at 11 a.m. and at 4.45 p.m. has been much appreciated by the workers of the firms which voluntarily undertook to discharge this function, and experience shows that among the workers in bronze who received milk there has been less sickness than in workers who did not receive milk. Although 65 per cent. of the factory owners have voluntarily been giving milk to their workers, it is not proposed to enforce the remaining 35 per cent. to fall into line with the others. Recommendations are made in regard to the provision of lavatories, wearing of respirators and overalls. Escape of dust in hand bronzing is to be prevented by exhaust draughts.

SMALL-POX ON BOARD SHIP.

WE have received from Dr. T. P. Lucas of Brisbane a copy of a report which he had sent to the Board of Trade with respect to an outbreak of small-pox on the ss. *Otway*, London to Brisbane, March, 1910. Dr. Lucas, who was a passenger on the *Otway*, enters into some detail as to the circumstances attending the outbreak, concerning which the Board of Trade may be trusted to make suitable investigations.

SWAB.—A medical practitioner is not under any obligation to take a swab from a case of diphtheria occurring in his practice and a district council cannot compel him to do so.

A. V. R.—We have carefully read all the written and printed matter sent us, and we do not think that our correspondent has much cause for complaint. The case about which he writes appears to have been carefully considered by the board of guardians, who have unanimously decided to support their own official. We are afraid our correspondent, evidently with a strong desire to do his best for his patient, displayed some want of discretion when he took upon himself to give orders without proper authority to make him do so.

NON-PAYMENT OF FEE BY GUARDIANS FOR CERTIFICATION OF PAUPER LUNATICS.

ARFON writes saying that in the year 1907 he certified a pauper lunatic for asylum, and the guardians, who usually pay punctually for such cases, did not then do so, but deferred payment because they expected the patient's friends would pay. These guardians now express their regret that they are unable to entertain the claim owing to the length of time which has elapsed since the certification took place.

*** Our correspondent says it is his intention to press the matter farther, and asks our advice on it. We cannot advise any proceedings being taken to recover this claim, as by 22 and 23 Vict., cap. 49, sec. I, any debt which may be due from the guardians shall be paid within the half year in which the same shall have become due, but not afterwards; provided that the Poor Law Board by its order may, if it sees fit, extend the time within which such payment shall be made for a period not exceeding twelve months from the date of such debt.

Medico-Legal.

INQUEST FEES AND COTTAGE HOSPITALS.

AT a recent inquest in Cranleigh, Surrey, on the body of a patient who had died after admission to the Cottage Hospital, the medical witness in the case, Dr. A. A. Napper, before being sworn, raised the question of whether he would be allowed a fee. He did not wish, he said, to press the point unduly, but it ought to be raised, because it was not fair that medical men should have to give their services as medical witnesses simply because the deceased happened to have died in a cottage hospital. Although, therefore, he was going to give his evidence, it would be under protest.

In response, the Deputy Coroner (Mr. Gilbert H. White) said that he quite agreed with the statements made. It did seem hard that if a person happened to die in a cottage hospital the doctor got no fee for giving professional evidence, whereas, if death had taken place on the way thereto, a fee would have been payable. But the law in respect of fees payable at inquests said that if a person died in a public hospital the medical man whose duty it had been to attend that person as a patient of the institution must not be paid a fee if an inquest were subsequently held. It seemed to the speaker, however, that a distinction should be drawn between cottage hospitals and public institutions of the kind specified by the law. In their case the inquest would be held at the institution itself, and the evidence would be given by its house-surgeon; but inquests were not held at cottage hospitals, but away from them, and the doctor had to be fetched away from his practice. The matter ought to be fought out before the auditor, the point being that the inquest was not held at the hospital, but away from it—a fact which brought the matter into a different category.

Finally, with a view to the question being threshed out, the coroner decided to allow Dr. Napper a fee if he would undertake to fight the matter out with the auditor. To this Dr. Napper agreed.

WORKMEN'S COMPENSATION.

Phthisis or Accident.

IN a case at Manchester on August 15th a claim for compensation was made by the dependants of a man who had died of tuberculosis. It appeared that while he was attending a crane on January 24th, 1910, he was struck on the forehead by a heavy weight. In ten days the wound had healed, but the man then complained of pains in his body. When medically examined, he was found to be suffering from pulmonary tuberculosis, from which he died on June 1st. It was now alleged that death was caused or accelerated by the accident. Dr. Clough said that in his opinion consumption was latent in the man's body until the accident, and poorer food due to his receiving only half-pay as compensation lowered his vitality and caused the disease to become active and develop so rapidly. Judge Parry, with whom sat Dr. Judson Bury as medical referee, said that there was no evidence that the accident had materially accelerated the disease, and as the court was bound by the view of the medical assessor, which he had no doubt was correct, there would be an award for the respondents.

Death following Injury to an Eye.

In a case at Wrexham (August 12th) it appeared that one McCarthy, who was a seaman on the ss. *Porthcawl*, sustained an injury to his eye owing to dust blowing into it. As a result, the eye had to be removed. The shock of the operation was alleged to have made him very despondent and to fall into a debilitated condition, and he subsequently died. His relations thereupon brought a claim for compensation. Dr. Cantillon, Dr. Theodore Francis Dillon, and Dr. Smith gave evidence to the effect that death was due to exhaustion and shock following on primary cancer and cirrhosis of the liver. They attributed the man's death to the operation in so far as it made the man despondent, which brought on indigestion and dyspepsia. Dr. Barry, Dr. Mitchell Stevens and Dr. Cook could not agree that death was in any way due to the accident. They expressed the belief that cancer was in existence before the accident. Textbooks were quoted on either side in the endeavour to settle the question. Eventually Judge Hill Kelly said he was not satisfied that a chain of causation had been established between the accident and death. He therefore found for the respondents.

Epileptic Fits.

In a case at Whitby (August 3rd) it appeared that a miner met with an injury through the fall of a roof on August 3rd, 1909. For this he was treated at hospital for a short time, when he returned to work. Later on he developed epilepsy, and on April 30th he had an epileptic seizure. He now claimed compensation on the ground that the epilepsy was produced or aggravated by the accident. He admitted having left the service of another employer in 1905 owing to a fainting fit. Medical men were called on either side. Dr. J. W. Blandford (Stockton) and Dr. F. B. Wigfield (Skelton) said that, judging from the history of the case, epilepsy was the direct result of the injury. Dr. J. W. Staniforth, surgeon to the Grinkle Mines, said that the applicant first mentioned having had a fit as a result of the accident in November, 1909. From what he knew he believed there was epilepsy in the family of the applicant. Eventually Judge Dodd, who was assisted by Dr. Edmondson (Scarborough) as medical referee, found for the applicant—awarding him 13s 6d.

LOCUMTENENTS AND AGENTS' FEES.

A Correspondent asks whether an agent who has introduced a locumtenent, and received his fee, is entitled to another fee if that locumtenent is engaged on a future occasion without consulting the agent.

*** In the absence of express agreement to the contrary, an agent is entitled to a fee only when he directly introduces a locumtenent.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

MILEAGE FEES.

A. C.—In the circumstances described a fee of 2 guineas for each visit seems fair and reasonable.

Obituary.

The Rev. Wm. Jeffrey, M.D., Kilsyth, died on August 25th, at the age of 66 years. He was licensed by the Metropolitan Free Church Presbytery forty years ago, and was first assistant at Newhaven, coming to Glasgow in 1875. He was there impressed with the need of the poor for medical as well as spiritual advice, and he accordingly qualified as a medical practitioner. He was transferred to Kilsyth Free Church in 1889.

Dr. John McConville, a well-known and highly respected practitioner in Glasgow, died on August 22nd at his residence in 14, Parkgrove Terrace. He was a native of Paisley, and after studying at Anderson's College Medical School he qualified in Edinburgh in 1856, graduating M.D. of St. Andrews in 1861. He became a Fellow of the Faculty of Physicians and Surgeons, Glasgow, in 1880. Fifty years ago he returned to Glasgow from the South and started practice, continuing till quite recently. He was 74 years of age, and is survived by his wife, two daughters, and four sons, one of whom was in practice with him in the city.

Dr. Patrick A. Smith, who died a short time ago, was one of the best known general practitioners of Glasgow. He studied at the University of Glasgow, where he took the degrees of M.B. and C.M. in 1881; he became a Licentiate of the Faculty of Physicians and Surgeons of that city in 1882, and a Fellow in 1884. He obtained the degree of M.D. in 1896. After practising a short time in Dumbarton he settled down in Glasgow. He was a successful and highly respected practitioner, having troops of friends in all sections of the community. He was especially popular among his co-religionists, the Roman Catholics. He was the medical adviser of the late Archbishop Eyre, and was married to a sister of Archbishop Maguire. For some time Dr. Smith acted as a member of the Govan Parish Council, but he had to retire owing to the pressure of his professional engagements. Three years ago, on the occasion of his silver jubilee as a practitioner, he was entertained by his many friends in Glasgow, and presented with an illuminated address. Dr. Smith, who lost his wife many years ago, leaves a family of three sons and three daughters. To skill in his profession he united great personal charm, and he was a man of the highest character.

Mr. James Lymburn, who was Librarian of Glasgow University from 1879 till 1905, has passed away at the ripe age of 75 years. He was a native of Paisley and entered the library of the University as Assistant in 1868. On the death of Mr. R. B. Spears in 1878 Mr. Lymburn was appointed his successor. During his term of office he prepared a students' catalogue which was of great value to readers.

We regret to announce the death of Professor Friedrich von Recklinghausen, the distinguished pathologist, which took place at Strassburg on August 25th, in his 76th year.

Professor Masse of Bordeaux, who recently died at the age of 71, had taught operative surgery for a number of years. He made researches on the pathogeny of cysts and dermoid tumours of the iris. He founded in 1880 the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux.*

Medical News.

The late Sir Charles Marriott, M.D., of Leicester, left estate valued at £33,545.

The Annual Welsh Medical Dinner will be held under the presidency of Mr. Robert Jones (Liverpool), at 7.30 p.m. on Friday, September 30th, at the Criterion Restaurant, Piccadilly, London, W. Applications for tickets should be made at an early date to the Honorary Secretary, J. Howell Evans, 25, Berkeley Square, W.

With reference to the demonstrations in clinical medicine now in progress at the London Hospital, and open to all medical men, we are informed that next Monday Dr. Wall, instead of dealing in the lecture theatre with diseases of the lungs, will take a party to Frimley Sanatorium. The train leaves Waterloo at 1.10 p.m., and vouchers for cheap tickets can be obtained; it is also desirable that those who propose to go down should give notice to Mr. Munro Scott at the London Hospital not later than Saturday morning, in order that arrangements may be made for a sufficiency of cabs to be in attendance at Frimley Station.

Some two months ago we had the pleasure of drawing attention to the gallantry displayed by Dr. C. J. J. Harris, of Whitehaven, in connexion with the terrible mining accident in that locality, and now we have the further pleasure of completing the record by stating that he was one of those on whom His Majesty King George conferred the Edward medal on the first occasion of the distribution of this award. The mining accident in question was one of the worst which has ever occurred in respect of the number of lives lost, and as the mine instantly after the explosion caught fire, rescue work was accompanied by even greater dangers than usual. The whole of the operations were conducted in the densest smoke and heat, and all were aware that there was a considerable possibility of a further explosion taking place. Dr. Harris, who became M.R.C.S. in 1884 and M.D.Durham in 1901, is an old student of Charing Cross Hospital and formerly held a commission in the militia.

The Child, a new monthly journal devoted to child welfare, will appear in the early autumn. Dr. T. N. Kelynack has undertaken the editorial oversight, and will be assisted by a representative staff of medical, educational, and philanthropic experts. The journal will aim at meeting the requirements of all engaged in child study or working for the betterment of child life. Among other communications the first number will contain articles by Mr. John Burns, Sir Lauder Brunton, Dr. Bertram Thornton, and others. In order that *The Child* may serve all interests working for child betterment, the publishers are arranging to issue with each number a *Directory* of schools and other educational establishments; also of societies dealing with all forms of child welfare, and of hospitals, orphanages, and like institutions for children. The publishers are Messrs. John Bale, Sons, and Danielsson, Limited, 83–91, Great Titchfield Street, Oxford Street, London, W.

During the past fortnight many cases of epidemic cerebro-spinal fever have been reported in Leicestershire and its neighbourhood, but even if each rumoured case be a real one the fears expressed near and far would scarcely be justified. The experience both of Scotland and Ireland in 1907 and 1908 shows that the disease may prevail widely and for long without adding very materially either to mortality or sickness rates, and without preventing the inhabitants of infected towns pursuing their ordinary avocations tranquilly. What gives the disease its importance is that while there is immense variation in the gravity of attacks the general ratio of deaths to attacks is very high, while serious, and more or less permanent, sequelae are always to be expected. On the other hand, a large proportion of every community would appear to be immune, the occurrence of more than one case in a household being comparatively rare, and many infected persons carrying in their nasal passages the coccus which is the cause of the disease without exhibiting illness of any kind. It is this circumstance which renders control of the disease on ordinary lines by sanitary authorities peculiarly difficult.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

STAMMERER writes: An intelligent boy, aged 9 years, has acquired stammering, and his father, a schoolmaster in a country district, is anxious to cure him if possible. Will any reader kindly suggest a suitable book on the subject for the use and guidance of the boy's father?

BIRMINGHAM writes: Is snuff-taking, as a rule, injurious? In the case I have in view the patient was an inveterate cigar smoker. His doctor thought smoking was deleterious to his heart, and knocked smoking off. Since then the patient has become a snuff-taker, and feels no harmful effects from the habit.

A CORRESPONDENT writes: I have a patient, age about 35, who has an erection of the penis every morning, but no emission. The erection quite incapacitates him from attending to business, and I shall be obliged if your readers can suggest a remedy. Drugs are useless, and there is nothing to be seen with the urethroscope or cystoscope.

FRAXINUS would be glad to know whether milk soured with sauerin, or other lactic acid-forming agents, is absolutely free from sugar or not. Having a number of cases of glycosuria to treat, and living in a country where proper diabetic foods are hard to obtain, he thinks that sour milk might be of use, but wishes to feel sure that it is quite safe to use even in large quantities.

SENEX writes: I shall be glad if any reader can help me as to where a bed pan can be purchased. The one I refer to I bought several years ago and found most useful. It has unfortunately been lent and got broken. It was of peculiar design—broad and oval, and not so deep as the ordinary round or slipper pattern. It was provided with two hollowed saucer-shaped depressions on which the buttocks rested most comfortably, and I believe it was an American idea.

*** The "bed-easee" devised by Dr. Pitt-Taylor, manufactured by James Woolley and Sons of Manchester, and described in our columns on May 23rd, 1908, is of the kind indicated.

ANSWERS.

OMNE VIVUM EX VIVO and A LAYMAN have not enclosed their cards.

LEX.—A carriage to be exempt from licence duty must be used exclusively for trade or husbandry, and must have the owner's name printed on it in accordance with the Customs and Revenue Act, 1888, Sec. 4, Subsection 3.

HOME FOR GIRL OF FEEBLE INTELLECT.

S. M. O. H.—Such a girl would be eligible for the Royal Albert Institution for Training the Feeble-minded of the Northern Counties at Lancaster, terms and forms of application for which might be obtained from the Secretary.

CLIMATE FOR PHTHISIS.

S. D. C. writes: I should advise "G. P." to try some place on the Chiltern Hills.

F.R.C.S. writes: In answer to "G. P." the place that would most nearly meet his daughter's requirements is Caterham-on-the-Hill. Situated on the North Surrey downs, seventeen miles due south of London, at an altitude of 660 to 700 ft. above sea level, on a dry gravelly soil overlying chalk this class of case does remarkably well. The journey to London (Cannon Street), which takes about forty-five minutes, is not sufficiently long to be trying.

MEDICAL OFFICER writes: With the exceptions of Folkestone, Hastings, Bexhill, Seaford, and Worthing, none of the Kent or Sussex seaside towns are suitable places of residence for a case of early pulmonary tuberculosis. Probably none of the towns at this end of the south coast are suitable to cases of advanced pulmonary tuberculosis. In Sussex, Balcombe, Hayward's Heath, Crowborough, Seaford, Rotherfield, and some rather out-of-the-way villages—all situated on high ground, and well-protected from east winds—are well suited to cases of the kind. The town of Lewes, mentioned by your correspondent, would not be a suitable place of residence for a case of pulmonary tuberculosis. As the question of railway service to London is important, it may be mentioned that the service from Hayward's Heath is excellent, that it is moderately good from Balcombe, and that it can be described only as poor from Crowborough. From other otherwise suitable places in Sussex the railway service is impossible for the average man who is engaged in business in London. In Surrey, suitable residence within a reasonable distance of town might be found in the higher parts to the south of Dorking, in the higher parts of Redhill, in Warlingham, and in Woldingham. All these places are well suited to those with early pulmonary tuberculosis; but the railway service to London is only moderately good.

LETTERS, NOTES, ETC.

INCOMPLETE DEVELOPMENT OF EXTERNAL AUDITORY MEATUS.

DR. GRIFFITH J. WILKIN (Paignton) writes: In the JOURNAL of August 27th I see a note on the incompiete development of the external auditory meatus from Dr. T. E. Francis of Swansea. When I was a senior student at St. Mary's Hospital Mr. Field, knowing that I took an interest in ear work, kindly asked me to be present at a private operation of his. The case was one of congenital absence of, I think, both auditory meati, and, so far as I remember, both meati were closed with bone, only a small chink, through which a fine probe could not pass. The date must have been quite in the early Eighties, but possibly Mr. Field could give some information regarding the results, and also as to whether he has ever seen another similar. Personally, neither in hospital or general work have I ever met with such. Now I should be tempted to use a very fine trephine and remove a part of the bone, so as to give admission of air waves to the membrane if present or to the middle ear; of course the greatest care must be employed to avoid damage to other structures.

THE CAUSATION OF SEX.

DR. JAMES W. RITCHIE (Belfast) writes: I have been interested in the letters lately appearing in the BRITISH MEDICAL JOURNAL *re* causation of sex. I attended a patient last week who gave birth to her fourth child. The three previous births were males and this was a female. After delivery she asked me the sex, and when I told her she said she knew it would be so. I asked her for what reason. Her answer was that she had read in Aristotle that if she only allowed her husband to have intercourse with her a few days previous to her expected change if conception took place it would be a female, and that she had only allowed intercourse to take place then. She had also a theory that if conception took place immediately after her changes that the expected birth would be a male. It would be interesting to know if the time of conception had any effect on the causation of sex.

A HANTS M O.H. writes: I have read Dr. M. Ward's suggestions with interest, but is he correct in stating many more female children are born than male? I think not. Certainly not in my area. His suggestions are quite new to me, and am sorry I have not read the previous correspondence. I have been actively engaged in accouchement practice for thirty-six years. In cows the following is reliable (heifers with their first calves being excluded): (1) The male has nothing whatever to do with the sex of the offspring. (2) A cow pours off ova of opposite sexes *only* alternate periods. (3) Say she has a bull calf, and is served the first time she again comes on use or the third or the fifth and so on, the next calf will be of the female sex, and consequently the second, fourth, or sixth time will produce a bull calf. I am of opinion the same could be carried out in the human race, especially where sex may be of intense importance.

DR. GEORGE STEWART (Blackhall, Midlothian) writes: In the issue of the BRITISH MEDICAL JOURNAL of August 27th Dr. Martindale Ward states that many more female children than male are born. I understand that males are in the majority in the proportion of 104 to 100. The deficiency of males in later life is due to causes operating after birth. This is a small matter, but I feel that I should draw attention to such a mistake.

DR. HUGH WOODS, M.A.O. (London) writes: Dr. F. H. Walker, in his letter published in the BRITISH MEDICAL JOURNAL of August 13th, contends, as I understand him, that an anteperiodic conception produces a male and a post-periodic conception a female. I can remember at least one case in which an undoubted post-periodic conception produced a male. Dr. Walker contends that the "excess of female births" is explained by his theory; but I have always believed that the male births exceeded the female births, and although I always keep an open mind on statistical statements, I think the "excess of female births" is an extremely weak support for his theory.

GEO. ELIOT, M.D., M.R.C.S. (Grenfell, Sask., Canada), writes: Seeing some letters in the JOURNAL lately on the subject of causation of sex, I am induced to offer my experience.

I believe that in man, as in the lower animals, sex is dependent on the maturity of the ovum, and that therefore it depends more on the time of intercourse, and therefore impregnation of the ovum, more than any other factor.

It is well known that stock-breeders, wanting to get a female, take the cow or mare to the male during or as soon after the period of "heat" as possible; if they want a male progeny, they put off the trip for eight or ten days, and generally get what they want.

I used to breed curly retrievers, and, as I always refused to sell the bitch pups, they were a dead loss to me; I tried, and found that by keeping the sexes apart till a week after all appearance of "heat" was over, I got at least three-fourths of each litter males; on two occasions, eight out of ten. When asked by women for advice in the matter, I applied the same reason with perfect success, as may be seen in the following instances, premising that I attended each of these women in all their confinements, with the one exception of No. 1, who had had two children before I knew her.

1. L. had six boys in succession; on my advice had intercourse on the day before the period was expected, and also on

the day after it had ceased (it only lasted two days, usual term four or five days); no more for that month; result, a girl. Then came another boy (no precautions); the little boy got drowned. The parents then resolved to try for a girl again, did, and succeeded; they had another boy accidentally two years after.

2. F. had a girl first; heard some talk about No. 1, came to me for instructions. I told her to postpone all intercourse till after the twelfth day, at least, from the cessation of a period. She did so; result, a boy. She deliberately got a girl next, and then two boys, each time telling me what was coming some months before term.

3. P., after the second girl in succession, got my instructions, but, being very passionate, did not follow them; result, five girls in succession, having told me what had happened on each occasion. Has not been pregnant since.

4. B., sister of last, had two girls; got instructions, intending to get a boy; made a mistake in dates, did not have intercourse till after the fifteenth day from cessation of period; got nothing, and has not been pregnant since, much to her regret.

5. S. had two girls, followed instructions, got a boy; then a girl, then another boy; the last three admittedly to test the theory; says she has enough now, and will not *try* for any more.

St. Paul's "Thorn in the Flesh."

DR. G. F. POYNDER (Bedford) writes: With reference to the above, the following extract from *The Great Prophecies of the Centuries Concerning the Church*, by G. H. Pember, M.A., will be of interest to your readers: "One notable incident in Paul's life that bears upon this subject has been often misunderstood, and a brief explanation of it may, perhaps, be useful. Wondrous visions and revelations had been vouchsafed to the Apostle, and he, consequently, fell into a danger, of which he speaks thus: 'And by reason of the exceeding greatness of the revelations—wherefore, that I should not be exalted overmuch, there was given to me a thorn in the flesh, *an angel of Satan* to buffet me, that I should not be exalted overmuch.' Now, countless pages of comment have been written upon this 'thorn in the flesh,' which has been supposed to be bad eyes, epileptic fits, and various other afflictions, but without any certain conclusion. Let us, however, cease to burden and obscure the sacred text by reading human notions into it, but accept rather its own simple and plain words. We shall then see that the thorn in the flesh was no mere disease or infirmity, but precisely what it is said to have been, that is, an angel of Satan sent to buffet the Apostle. This ever-active foe would be perpetually assailing him with the many hindrances and annoyances which are so well known to the true servant of Christ; would be often whispering in his ear incongruous, evil, and even foul thoughts, certain, should he fail to cast them off before they became his own, to check the inflow of spiritual power from the Holy Ghost; would sometimes draw over him a feeling of nervous lassitude, a weariness and feebleness of body and mind, just at the critical moment when it was necessary that he should be strong; would bring about disconcerting incidents, craftily devised to shake his faith, or to irritate his temper; and, in short, would baffle and thwart him at every turn, taking the fullest advantage of any circumstances that could be used for his discomfort and discouragement. Henceforth, then, this dread spirit would be ever hovering near the Apostle, who would be able to do the work for which he had been sent forth, only by dint of ceaseless prayer and a humble walk before his God—a life of peril and danger, of creeping ever, as it were, along the brink of a precipice, which must have powerfully counteracted any tendency to undue elation."

Medicaments Applied to Uterus Tasted Immediately.

DR. ALEXANDER DUKE (London) writes: If Dr. D. Campbell (Calne) will refer to my letter on this subject, he will find I claimed no honour for "recording the fact known before." I merely called attention to the fact, and had I been aware that it was known before I should not have asked the question in the latter part of my letter. I presume that Dr. Campbell's statement that "great credit is due to me for discovering and recording the fact" must be meant in sarcasm? but if so it is quite uncalled for, as I had not known that in 1892 Dr. Lombe Atthill had called attention to the peculiarity, and I should still like to know how the taste is transmitted so rapidly?

DR. CAMERON KIDD (Bromsgrove), writes: The following interesting extract seems to have some application to, and may throw light upon, the immediate tasting of medicaments applied to the uterus recently mentioned in the JOURNAL; it is from a serious novel, *First it was Ordained*, written by Mr. Guy Thorne, with the admirable purpose of combating latter-day limitation of families. The hero Roland, of whom Gertrude is, of course, the prolific wife, is chatting (p. 128) at a fashionable evening party with a judge and the celebrated lady doctor, Ella Low. They have just been witnessing a recitation of decadent French poetry and the judge has asked: "And what is your view, Dr. Low, of the performance we have just been watching?" "Pathological!" she answered with a snap. "I've been at work, Judge, adding to my notes on hysteria. The experience has been most profitable, I assure you. I have seven instances of exaggeration of involuntary mobility and diminution of will power! The emotional, sensational, and reflex movements have been in excess while the voluntary have proved quite defective. I could point out half-a-dozen women in this room who will suffer from *globus hystericus* when they wake up to-morrow morning." "What an uncanny knowledge!" Roland said, laughing: "and pray what is *globus hystericus*?" "Feeling as if you'd swallowed an apple whole." the doctor answered, "and serve the silly creatures right! I am very glad that Gertrude is occupied at home with the chicks. *She* won't suffer from a *spasm in the coccyx* to-morrow morning!!" Gertrude is fortunate; a spasm in the coccyx must be most unpleasant and would probably cause "sensational and reflex movements."

On the Destruction of Flies.

DR. HARDMAN, J.P. (Blackpool), writes: Many years ago, long before the present agitation against flies, I had become convinced that flies might be the carriers of contagious disease. I had seen cases of purulent conjunctivitis which had been attributed to "a fly getting into the eye." I had also seen two or three cases (fatal) of "malignant pustule" of the face which had been attributed to "being bitten by a fly." These, of course, were cases of anthrax. Being an ardent microscopist, I had received with enthusiasm the bacteriological discoveries so rapidly developing, and had subjected all these conjunctival cases to examination by the microscope, merely tinting with one or other of the aniline colours, drying and mounting. I had found that in all these conjunctivitis cases the discharge contained some predominant micro-organism, which might have been the exciting cause. But I made no cultures, nor took any other steps either to prove the pathogenic powers of the micro-organisms or to differentiate them. Being then in busy practice, I had no time for more than I did. But, though I have possessed these convictions as to pathogenesis by flies, I never attempted to act on them until seven to eight years ago. I then commenced destroying flies systematically by the means I still adopt. A halfpenny newspaper is folded and folded until it is about 12 in. to 13 in. long and 2½ in. wide, well flattened out, and tied with strong thread, about 1½ in. from each end. With this instrument it is possible to give a rapid but light tap, sufficient, with a little practice, to kill, but not crush, the flies. I had these instruments in each room. I soon discovered that there was a sporting element in the chase of the quarry, some flies being exceedingly alert and requiring some little art and dexterity to ensure their destruction.

Flies can only see perhaps about a foot, and can then only see an object moving. You may approach a fly rapidly up to 2 ft., and then the hand with the killer may be cautiously advanced towards or over the fly until 6 or 7 in. off it, when a rapid instantaneous movement of the wrist administers the fatal tap.

When first I began it was surprising what numbers I killed—fifteen or twenty in the kitchen, and the same number, perhaps, in the hall and sitting rooms. There are three main kinds of flies—the big bottles, the ordinary house-fly, and a smaller fly. The last, though small, are often very active. Next year I repeated this, and year after year the same.

About the third year I noticed that flies were much less common, and year after year they have kept diminishing in numbers, until now we have only a stray one or two occasionally. Even in the height of summer I often now do not kill one in a week; where I used to kill, perhaps, a hundred, now I hardly kill one. Practically I have exterminated them as far as this house is concerned. The house is situated on the Blackpool Promenade, facing the sea, but the whole mass of the town lies at the back, and there are stables not fifty yards away.

The conclusions I have come to are that nearly all the flies in a house belong to it. They are bred in it, and live in it, and are only to an insignificant extent recruited from outside. Therefore I would formulate the hypothesis that the almost total destruction of flies is quite within the bounds of possibility, and should be energetically undertaken by the members of each household.

Furthermore might arise the corollary, that, if the extensive connexion of flies, and the genesis of disease be proved, houses ought to be subjected to sanitary inspection, and the occupiers proceeded against and fined if the number of flies exceed a certain standard.

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THE

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THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

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The Profession of Medicine.

IN accordance with custom, this number of the BRITISH MEDICAL JOURNAL has been compiled mainly for the benefit of those who either look forward to entering on medical study, or who desire to know what a medical career has to offer, or who have already joined the ranks of medicine as duly qualified men but have not yet found an opening for their abilities. In all cases the statements are founded on the most recent information obtainable, but nevertheless it is not desirable that any one should take definite action in any particular direction solely on the strength of what is stated in these pages. It is open to all to secure and study for themselves most of the documents on which the information given is based, and this is the course which they should adopt.

As for the *schema* of the number, it is as follows. Commencing on this page are a series of short articles dealing in general terms with such organization as has been imposed on the medical profession by the State, with the prospects which medicine has to offer, and with the lines of work to which it is possible for a medical man to devote himself. Next comes, at page 674, an account of the essential features of every medical student's career, followed, on page 676, by a description of what university and other bodies which possess the right to accord licences to practise have to offer in the way of degrees and diplomas, and the conditions on which they grant them.

The next section, commencing on page 689, deals with the facilities for acquiring a medical education offered by the various medical schools and clinical hospitals throughout the kingdom, including the special schools for women. This section is followed in its turn by articles, commencing on page 712, descriptive of the post-graduate schools which have come into existence during comparatively recent years as a means of enabling qualified practitioners to acquire practical knowledge of new forms of treatment, and the diplomas which are expected to be possessed by those who desire to devote themselves to certain branches of medicine.

Finally come accounts of what are commonly known as the Public Services, of the stipulations made by the authorities in the Colonies and in foreign countries in respect of practice by those possessed of degrees and diplomas granted by various bodies in the United Kingdom, and of the education which has to be undergone by those who propose to engage in the work of dental surgery.

THOUGH a good many university and other corporate bodies have for several centuries possessed both rights and powers in connexion with the practice of medicine, the statutory or legal organization of medicine practically dates back only some fifty years, and as it stands is both simple and unsatisfactory. At the time mentioned the Medical Act of 1858 called into being a body entitled the "General Medical Council," which controls the profession of medicine as a whole, and is its sole legal representative. It is now, as it was at the beginning, mainly composed of representatives of institutions which had then, or have now, the right to grant medical degrees or diplomas, and whose privileges in this respect were more or less infringed by the passage of the Act in question. The intentions of that Act were to secure some uniformity in the education of medical men, to give qualified men some assistance in meeting the competition of the unqualified, and to afford to the public a certain measure of protection against the evils of practice by unskilled and untrained persons.

To this end the General Medical Council was directed to institute and maintain a register of properly trained and reputable medical men, while

members of the general public not deemed by the General Medical Council entitled to admission to the *Register* were forbidden to use certain terms implying that they were legally recognized medical men. It was also enacted that public authorities should refuse to employ other than registered medical men or to accept medical certificates from persons not registered, and that the courts of law should not afford their assistance to unregistered persons in recovering fees due for medical or surgical advice or operations. At the same time the Council was authorized to make stipulations as to the terms on which it would admit the registration to graduates and diplomates of different licensing bodies and to remove from the *Register* the names of any persons whose professional conduct was deemed by it to be detrimental to the public interest.

In this way the Council was practically given entire control over the education of medical men, with the result that, by laying down rules as to the subjects to be studied and as to the length of the medical curriculum as a whole, and by taking steps to ensure that the examinations imposed by different licensing bodies are of adequate severity and fairly conducted, it has contrived for many years past to secure a considerable degree of uniformity in the standards of education demanded by different examining bodies so far as the limit downwards is concerned. But the uniformity, of course, is merely relative, for, apart from accidental variation from time to time, several licensing bodies habitually pride themselves on maintaining a higher standard than that of their fellows, and the reputation of their degrees or diplomas varies accordingly among those who are in a position to understand these matters. So far, however, as the public is concerned, it is sufficient to note that the standards of all licensing bodies alike are very much higher now than they used to be even twenty or thirty years ago, and that to this extent the absence of any State examination such as is commonly imposed by Continental Governments becomes a matter of minor importance. Nevertheless, the absence of such an examination is to be regretted, for did it exist there would be less competition for candidates among university and other licensing bodies, and they might be disposed to devote themselves more exclusively to the higher objects of their existence.

But although the Act of 1858 has been a success in the direction stated, it has been a total failure so far as is concerned the protection of the public against either totally unskilled persons or those who, though properly trained in the first place, have fallen into evil ways. This is because: (1) The Act is so worded as to make it easy for even the most blatant quack to describe himself in terms likely to induce the public to believe he is a legally qualified practitioner, and, however successful such attempts may be, it is no official person's duty to interfere with them. (2) Furthermore, the Act does not impose on all persons possessed of medical degrees and diplomas the duty of seeking registration, but leaves them free to do as they like in the matter. Hence, while the Council has no power whatever over the unqualified, its control over the trained men is limited to those who prima facie are least likely to require it—namely, persons who, having gone to the trouble, expense, and labour of acquiring a degree or diploma, voluntarily place themselves under its jurisdiction by seeking registration. Furthermore, the only means it has of ensuring right conduct among the registered is to threaten them with erasure from the *Register*, or actually to erase their names, and for various reasons this is a very weak weapon. In many forms of practice the inconveniences of not being on the *Register* are very slight, and even if a given name is found not to be on the *Register*, it is difficult for any one to be certain what bearing this fact has on its owner's character. Many reputable medical men never take the trouble to register at all, and others either withdraw their names intentionally or allow their names to be erased through failure to give the Council notice of change of address and not answering letters, thus leaving it to suppose that they are either dead or no longer wish to appear in its books. The net outcome of all these various factors is that the extent of the effective organization of the medical profession, so far as the protection of the public is concerned, is very small indeed, and must remain so, to the constant detriment of all concerned, until the public insists upon the Legislature passing a better Act.

THE PROSPECTS OF MEDICAL MEN.

For those who love the profession of medicine and would be loth to see it lack recruits, the prospects that it offers to new entrants has been a distasteful subject for some years, and is one of an eminently depressing kind at the present time. Every one knows that there are medical men who make large incomes, but the prospects offered by any profession can only be gauged by those of an average member of it, and in the case of medicine they are very unsatisfactory. Everything of late years has tended to make medicine a desirable career only for two classes: those who like work of a scientific kind and are independent of its financial outcome, and those who have such a leaning towards the occupation of medical men that they are prepared to content themselves with a bare living; that is to say, with incomes which are so low that their possessors find a difficulty in paying their way as members of an ostensibly well-to-do section of society, and which are considerably less than those commonly resulting from occupations far less exacting in the demands they make on brains, energy, and time. Some of the reasons for this state of affairs are discussed in the notes on different branches of practice.

CHOICE OF A MEDICAL QUALIFICATION.

From what has already been said, it will be clear that any person who has made up his mind to become a medical man has a wide choice with respect to the body from which he will eventually obtain his qualification for registration. We venture to say, however, that he will be well advised to seek a medical degree from a university, and should have very clear reasons for taking any other course. Despite the fact that hundreds of medical men hold diplomas and not degrees, and that of degree-holders the majority never proceed beyond the Bachelorhood, the public takes it for granted that every properly-qualified medical man must necessarily be an M.D., and if explanations to the contrary ever become necessary in the case of individuals, it is disposed to receive them with a certain tincture of incredulity. Furthermore, universities have so multiplied of late years that the difficulty of obtaining a degree is no greater than that of acquiring a diploma. Indeed, it may sometimes be less if the student has entered at one of the medical schools conducted by the Medical Faculty of a university, for in such case the whole of the work is commonly arranged with a view principally to the needs of the degree-seeker, and

the student throughout his career is in contact with those who eventually will take part in his examination. The fact that the degree-seeker has to matriculate does not count, for no one can be registered as a medical student, whatever his final aim, unless he has furnished evidence of adequate general education by passing a recognized public examination in what are known as *Arts*; and whether that examination is called a matriculation examination or a preliminary examination in Arts commonly makes very little difference. About the only students to whom these considerations do not fully apply are those who enter the London medical schools. It is true that they have at their doors the degrees of London University, but in present circumstances they are fenced off from them by an examination in Arts of quite a peculiar kind. Though nominally an ordinary matriculation examination, the university authorities have converted it from its ostensible purpose into a money-making machine, a large proportion of the customers being persons for whom passage of the examination is the final goal, and who have no intention whatever of passing one of the Faculties of the university and proceeding to a degree of any kind. In this way it has become a crammer's examination, and therefore one of a kind which an average boy from the higher forms of the public school finds difficulty in passing, unless he is specially prepared with a view to it. Nevertheless, every prospective entrant at a London medical school should endeavour to surmount this obstacle, for once over it is practically as easy for him to obtain a degree of the university as the diploma of the Conjoint Board or the Society of Apothecaries. A further exemption from the general rule may be made in the case of the limited number of students who enter the medical profession solely with a view to obtaining a commission in the Royal Army Medical Corps, the Medical Department of the Navy, or the Indian Medical Service. These may well choose whatever route towards a legal qualification seems to them easiest and quickest with a view to being in a position to compete for appointment at the earliest possible moment. In none of the services is possession of a degree any particular advantage, while in all of them the prospect of rising high or retiring on a good pension may be materially increased or diminished by entering a few months earlier or a few months later. It should also be noted in respect of medical students as a whole that considerable knowledge of some of the earlier subjects they have to study may be obtained on the modern side of most schools, but whether this early specialization is an advantage is a moot-point. Evidence has recently been forthcoming to the effect that boys on the classical side rapidly catch up the modern-side boys as soon as they commence the study of science and show greater capacity for self-education.

COST OF EDUCATION.

It is not easy to compare precisely the cost of medical education at the various medical schools. The fees of universities for degrees are generally lower than those of other qualifying bodies for diplomas, but in either case these fees are only a small part of the total expenses. The fees for teaching and hospital privileges vary from under £100 to about £150. The cost of living also varies considerably, being higher in London and Oxford than in Aberdeen or Dublin, but all comparisons are vitiated by the varying length of time that students take to obtain a qualification.

In no case can this be less than five years, as the official curriculum necessarily extends over that period. Moreover, official statistics prove that the time actually occupied is habitually very much greater, even in the case of the most able and industrious students. On this point further information will be found in the article describing the normal career of a medical student, and here it need merely be stated that the statistics in question show that the average time that elapses between registration as a student and the acquirement of a first degree or diploma is only three weeks less than seven years. Hence no parent can well feel ill-used if he finds his son on his hands for that period. If an attempt be made to make a definite estimate in figures, the cost of board, lodging, clothing, travelling, subscriptions, and pocket-money may be put at not less than £100 a year. Multiplying this by six or seven and adding about £200 for fees for education and examinations, we get a total of about £900, and probably shall not be far wrong if we reckon about £1,000 as the total cost of the curriculum.

Of course, an eager young student with a fair share of brains will make up his mind that he will accomplish his course in record time, and he will view with a sort of scorn the large percentage of students who take six or seven years to obtain a qualification. He must remember, however, that the study of medicine nowadays is no dilettante's occupation; it means hard work and serious calls on his mental and physical powers. Statistics show that of those who begin the study of medicine, 4 or 5 per cent. die while still students, and this is an index of a far larger percentage of illness, more or less serious. In the later years of the course the student is exposed to special risks of infection: an attack of diphtheria may mean the loss of three months, and the curriculum is so arranged that such loss may involve an addition of six months, or even a year, to the period of pupilage.

DIFFERENT CAREERS IN MEDICINE.

Private Practice.

As every one knows, the lines of work pursued by medical men vary greatly in different cases. Of all medical students a large proportion probably hope to develop into consultants or specialists, but sooner or later they learn that it is only to the few that a career of this kind is practically open.

Success involves years of weary waiting, during which not even a bare living is made from practice, and, in fact, only those who have private means at their disposal can afford, as a rule, to wait, while in any case the result is extremely uncertain.

Despite, therefore, the apparent wealth of choice, the average newly qualified man has to choose between private practice and an official career. Most men necessarily choose the former, if only for the reason that the posts obtainable in the public services are limited in number. It is the more unfortunate, therefore, that the prospects of private practice are inferior to what they used to be. Complaints of lessened incomes and increased expenses began, indeed, to come in a year or two ago in such numbers that the subject was specially investigated by this JOURNAL, and the results recorded in two articles on "The Financial Prospects of Medicine," which appeared in the BRITISH MEDICAL JOURNAL for June 12th and July 17th, 1909. Dealing first with the question of overstocking of the profession, the population and the number of medical men in England and Wales was given for every year from 1881 to 1908. In 1882 there were 15,383

medical men, and the population was 26,334,942, so that if the work had been equally divided each [medical man would have had 1,710 possible patients. By 1908 the medical men had increased to 25,092, while the population had increased to 35,348,780, giving only 1,407 possible patients to each medical man, the increase of medical men having been much greater in proportion than the increase of population. This shows a loss of 300 patients out of every possible 1,700—that is, almost 18 out of every 100. The fall in the number of possible patients was continuous from 1882 to 1901, though since then there has been a slight, almost negligible, rise from 1,381 to 1,407. These figures give prima facie proof that the supply of doctors has increased more rapidly than the demand. But it might be objected that the 1,400 possible patients of to-day provide quite as much work as the 1,700 of twenty-eight years ago. But a reference to the statistics published by the Registrar-General shows that the mean expectation of life has distinctly risen, and that the general mortality-rate has much decreased —two facts which give presumptive proof that there is less average illness now than formerly. This is specially the case with the infectious diseases; small-pox has practically disappeared, the scarlet fever death-rate is scarcely one-sixth of what it was, and the enteric fever rate not one-quarter. It must be pointed out, further, that cases of fever now commonly go to fever hospitals, and are lost to general practitioners. Neither can it be argued that the lower death-rate means not less disease, but better treatment, for though therapeutics have progressed, the advance has not been so great as to account for the enormous decrease in the death-rate from scarlet and enteric fever. There must be fewer cases as well as less mortality. Again, the birth-rate has fallen from 34.2 to 26.3 per 1,000. This has a double effect—there are fewer confinements for medical men to attend, and, in the second place, babies give rise to a good deal of medical work, and if the number is lessened the demand for medical work must lessen accordingly. We may add the fact that the proportion of confinements attended by midwives has constantly increased.

To sum up, the articles in question prove: (1) Doctors have increased in numbers at a greater proportionate rate than the population. (2) There are on the average only 1,400 possible patients now to each doctor against 1,700 twenty-eight years ago. (3) Not only is the number of possible patients less, but each one of those that remain needs less medical attendance than formerly, especially for the zymotic diseases, which used to furnish so much work. (4) The lowered birth-rate has considerably reduced the work of medical men. In addition to all this we may mention the counter-prescribing by chemists, the enormous growth in the sale of quack remedies, pills, and tablets, the growth of badly paid club practice and of hospital abuse, all of which have taken away from medical men former paying patients. Not only so, but the stress of competition between medical men themselves has produced a tendency to lower fees, though working expenses and taxation have both increased. The increase of sixpenny doctors is notorious, and many practitioners who used to receive 5s. for a visit and medicine have now to be content with 2s. 6d.

There are two other circumstances which tend to lessen the income of medical men; one is that Government continues to throw from time to time sundry unpaid duties on the shoulders of medical men; the other is that the medical profession is habitually exploited by the general public. No other profession or trade has so large a proportion of bad debts.

The newly-qualified practitioner often thinks he is making a practice quickly, judging by the number of patients that soon come to his surgery, but too often he is disillusioned as soon as he sends out his bills. He dare not press for payment until he is well established; if he does, the growth in his practice soon ceases, and, what is still more irritating, the very patients who had seemed to regard him as an angel of mercy not infrequently spread charges of incompetence or neglect which, however fully disproved, invariably damage his practice.

The foregoing is a faithful account of the present drawbacks to private practice, and it might also be added that legislation already in view may result in sweeping away a very great deal of all the work on which general practitioners continue at present to live.

Official Appointments.

The Poor Law Medical Service.

As has already been indicated, the alternative to private practice is to engage, if possible, in some kind of official work. One form of this is the work undertaken by members of the Poor Law medical service; this service, however, is not an absolute alternative to private practice, because the number of whole-time appointments is very small, and most Poor Law medical officers have to engage in private practice as well. To show the condition of the service, we need only quote a few sentences from the recently issued report of the Poor Law Commission. We read. "It is undeniable that the majority of the medical officers, in or out door, are paid salaries miserably inadequate." The posts are only taken "to keep somebody else out." Even where the salary nominally paid seems inadequate, it is diminished by the fact that the district medical officers "in the great majority of unions have to find their own drugs and medicines, and any dressings or bandages that are required." "The conditions under which they carry on their duties are as unsatisfactory as their remuneration is demoralizing." As to the resident officers, we are told that in the rural workhouses "the conditions under which medical attendance is afforded are such as to make curative treatment almost impossible." Even in the best Poor Law infirmaries in the large towns there is "a policy of sweating both as to the amount of work required and as to the payment made for it." "The infirmaries are often terribly understaffed," and we read of places with 600 or 800 patients with only one resident medical officer. As a rule, the indoor posts are only taken to get a little experience before settling down in practice, while the outdoor posts are taken either to keep out competitors or to eke out a small private practice. Add to all this the fact that there is no chance of any advancement after long service, and it must be evident that the Poor Law service offers hardly any inducements worth taking into account by any one who has to decide on the branch of medicine he shall adopt.

The Public Health Service.

Another half-and-half alternative to private practice is the Public Health Service, a few of whose members are in the pay of the State, and the majority in that of municipal bodies. The Local Government Board in England employs twenty-three medical officers and inspectors, and the corresponding Boards in Scotland and Ireland employ a few more. These appointments

are made by the political chiefs of the several Boards, and need hardly be taken into consideration. In England, Wales, and Scotland, though the number of medical officers of health is large, the vast majority are engaged in private general practice, and only give a small part of their time to the duties of their office, to which a correspondingly small remuneration is attached. The county boroughs, many of the counties, and a good many of the larger boroughs, including the metropolitan boroughs and some combinations of rural districts, have medical officers of health who devote their whole time to the work, and receive an inclusive salary which varies very much—say, from £250, to, in a very few instances, £1,000 or over. The income is, of course, a net income free from uncertainty, and not subject to any deductions for working expenses. The appointments being made by county or city authorities independently of each other, and of the Local Government Board, whose approval is necessary only after an appointment has been made, there is no regular system of promotion, and a medical officer of health who seeks a better paid and more important appointment has to stand his chance of election by the county or borough council in competition with his fellows. The career is rendered still more uncertain by the fact that in England and Wales, save in the case of metropolitan and certain other boroughs, the medical officer of health has no security of tenure, being elected only from year to year or for a short term of years; instances occur from time to time—and several have occurred within the last few years—in which the zealous discharge of his duties has rendered a medical officer obnoxious to certain members of the local council, who, finding their pockets, as house or slum owners, affected by his activity, have combined to oppose his re-election at the expiration of the term for which he had been appointed. Further reference to this subject will be found at page 716.

Prison and Asylum Work.

The work to be done in connexion with the medical care of prisoners and the treatment of the mentally ill or defective both form definite careers, a detailed account of which will be found at pages 725 and 716 respectively. Here it need merely be said that the Prison Medical Service is a very small one, and that none of its members are in receipt of large salaries. Asylum work gives employment to a much larger number of medical men, and in the upper ranks is better paid. The well-paid posts are, however, few, and the service as a whole is not attractive to most men either as an occupation or a means of gaining a living.

The Military Services.

When all is said and done, it is found that apart from a few scattered posts under various Government departments, including the Foreign Office, the only services which offer a distinct and lifelong career to all who enter them are the Royal Army Medical Corps, the Medical Department of the Royal Navy, and the Indian Medical Service. They all offer financial advantages as compared with the prospects before most general practitioners, though for sundry reasons it is not every keen medical student who would care to enter them. The West African Medical Staff is also, perhaps, entitled to be classed with these services, though it is too small to offer possibilities to more than an exceedingly limited proportion of the men who annually enter the medical profession. Information with respect to all of them will be found in the pages of this issue.

OTHER POSSIBILITIES.

Apart from the careers hitherto considered, a certain number of other possibilities lie before newly-qualified men. An increasing number of these never attempt to practise their profession, but, once qualified, devote themselves to some pure science connected with it. To make this course satisfactory, the individual must, of course, be mentally fitted for such a life, and since the remuneration to be gained is commonly very small, it is highly desirable that he should have private means at his back. The newly-qualified man can also turn his thoughts towards gaining a livelihood in the Colonies. In the smaller Dependencies or Crown Colonies this almost necessarily involves obtaining one of the appointments which the Colonial Office occasionally has to fill, for in few of them is there any real opening for European medical men other than those who live partly by private practice, partly by performing various duties for the local Governments. In respect of the larger and self-governing Colonies, it must be remembered that Canada and Australia, at any rate, have large medical schools, and annually turn out a great number of well qualified men, whose local knowledge gives them a certain advantage over newcomers. Still, for a young medical man who has grit, tact and good health, to build up for himself a practice in these new countries is probably easier than would be the same task anywhere in these islands. In the latter, indeed, only in towns with shifting populations, or on the outskirts of cities with rapidly spreading suburbs, is it often possible for a man to build up an independent practice. Hence in this country commencing private practice, except as an assistant, usually means the expenditur of considerable capital in buying an already established practice, or a partnership in one. A sum equal to two years' gross income is a common amount to pay, and there is always a very large difference between the nominal takings of a practice and the balance left over when annual outgoings have been deducted. Of course, too, however ample his capital, it would be foolish for any young man to invest money in this way until he had acquired, as an assistant or otherwise, a knowledge of the art of conducting a practice: it cannot be taught in any school.

Another possibility not to be overlooked is that of settling down in some foreign health resort or other centre frequented by English-speaking visitors. This usually entails acquiring a foreign licence to practise, and consequently additional study for a varying period. But this expenditure of time and labour is well worth undertaking, for practitioners in the foreign colonies of France and other countries commonly lead a very pleasant kind of life, and earn their living much more easily than do most of their colleagues elsewhere.

ESPRIT DE CORPS.

The psychological quality known as *esprit de corps* is commonly not lacking among medical students and should be sedulously cultivated, since there are circumstances in actual medical life which have a tendency to diminish it. But in no profession is a readiness to join hands for the common good more necessary, for, as has been shown, the protection afforded by such official organization of medicine as exists is practically *nil*. Hence every young medical man should make a point of joining any medical societies in his neighbourhood, and especially those which aim at protecting the interests of medicine.

THE GENERAL MEDICAL COUNCIL.

THE profession of medicine, including for the moment in that term the practice of dentistry, is ruled as a whole by the GENERAL MEDICAL COUNCIL, which holds its sessions at its head quarters in London (299, Oxford Street, London, W.), and has branch offices in Scotland (54, George Square, Edinburgh), and in Ireland (35, Dawson Street, Dublin).

Besides supervising generally the practice of medicine, surgery, and dentistry, it guards the portals of admission to the profession by deciding the terms upon which aspirants shall be recognized as medical students, the education which they must receive, the minimum number of years for which it must be carried on, and the general nature of the examinations by which its proficiency shall finally be tested by the universities and corporations which have authority to issue degrees, diplomas, and licences, entitling the holder legally to practise as a medical man or as a dentist.

Regulations in respect of these matters have been compiled, and a summary follows of those which have more particular application to the intending medical student; it should be carefully studied. The primarily important things to note about the regulations are that they entail (1) the production of proof of a certain degree of proficiency in matters of preliminary or general education; (2) application for registration as a medical student either at the head-quarter office in London or at one of the branch offices in Edinburgh and Dublin.

PRELIMINARY EDUCATION.

The subjects of which proof of efficient knowledge must be produced by applicants for registration as medical students are as follows:

(1) *English:* Grammar; paraphrasing; composition; questions on English history and geography.

(2) *Latin:* Grammar; translation into English from unprescribed Latin books; translation into Latin of a continuous English passage, and of short idiomatic English sentences. In the case of natives of India or other Oriental countries, whose vernacular is other than English, a classical Oriental language may be accepted as equivalent to Latin.

(3) *Mathematics:* Arithmetic; algebra, including easy quadratic equations; geometry, including the subject matter of Euclid, Books i, ii, and iii, and simple deductions.

(4) One of the following subjects:

(α) *Greek:* Grammar; translation into English from unprescribed Greek books; translation into Greek of short idiomatic English sentences; or

(β) *A modern language:* Grammar; translation into English from unprescribed books; translation of a continuous English passage, and of short idiomatic English sentences.

The Council considers it a sufficient testimonial of proficiency in these subjects if the applicant can show that he holds a degree in Arts of any university of the United Kingdom or of the Colonies or of such other universities as may from time to time be recognized for the purpose, or he has passed one or other of the following tests:

I.—UNIVERSITY EXAMINATIONS HELD IN THE UNITED KINGDOM.

A.

Final Examination for a Degree in Arts or Science of any University in the United Kingdom.

B.

University of Oxford.—Junior Local Examinations.[1] Senior Local Examinations.[1] Higher Local Examinations.[2] Responsions. Moderations.

University of Cambridge.—Junior Local Examinations.[1] Senior Local Examinations.[1] Higher Local Examinations.[2] Previous Examination.[1] General Examination.[3]

Oxford and Cambridge Schools' Examination Board.—Higher Certificate Examinations.[2] School Examinations, Higher Certificate.[2]

University of Durham.—Matriculation Examination of the Faculties of Science, Letters, and Music.[4]

University of London.—Matriculation Examination.[2]

Victoria University of Manchester, University of Liverpool. University of Leeds, and University of Sheffield.—Matriculation Examination.[2] Senior School Certificate.[5]

University of Birmingham.—Matriculation Examination.[2] Senior School Leaving Certificate.[2]

University of Wales.—Matriculation Examination.[4]

Universities of Scotland.—Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Medicine and Surgery.[6] Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Arts or Science.[2]

University of St. Andrews.—Final Examination for the Diploma of LL.A.

University of Dublin.—(*a*) Junior Freshman Term Examination, exclusive of Trigonometry. (*b*) Special Preliminary Examination to be held in March, the standard and subjects of which shall be those of a Junior Freshman Examination, exclusive of Trigonometry. (*c*) Junior Exhibition Examination on obtaining marks of sufficient merit in the subjects of (*a*) or (*b*). Examinations for the First, Second, Third, or Fourth Year in Arts.[7]

II.—GOVERNMENT EXAMINATIONS HELD IN THE UNITED KINGDOM.

Scottish Education Department.—Leaving Certificate Examinations; passes in Lower Grade.[6] Leaving Certificate Examinations; passes in Higher Grade or Honours.[2] Intermediate Certificate.[2]

Intermediate Education Board of Ireland.—Middle Grade Examination.[4] Senior Grade Examination.[2]

Central Welsh Board.—Senior Certificate Examinations.[2]

III.—EXAMINATIONS BY CHARTERED BODIES HELD IN THE UNITED KINGDOM.

College of Preceptors.—Examination for First-class Certificates.[6] Preliminary Examination for Medical Students.[4]

Educational Institute of Scotland.—Preliminary Medical Examination.[4]

Royal Colleges of Physicians and Surgeons in Ireland.—Preliminary Examination.[4]

Certain examinations held by authorities not within the United Kingdom also suffice—namely:

The Matriculation Examinations of the Universities of Malta, Bombay, McGill (Montreal), Manitoba, New Brunswick, Dalhousie University (Nova Scotia), Melbourne, Sydney, and Cape of Good Hope; the First Examination in Arts at the Universities of Calcutta, Madras, and Sydney; the Intermediate Examination in Arts at the University of Allahabad and Punjab University; the Preliminary Examination of the Ceylon Medical College; the Preliminary Medical Examination of the University of Otago, of the University of New Zealand, of the Medical Boards of Nova Scotia, Newfoundland, and of the Colleges of Physicians and Surgeons of the Province of Quebec; the Senior Public Examinations of the Universities of Adelaide, Sydney, and Tasmania; the Arts Matriculation in the Province of Ontario. Other Examinations which are sufficient are the German *Abiturienten Examen* of the Gymnasia and Realgymnasia; Examinations entitling to the French Diplomas of Bachelier ès Lettres and Bachelier ès Sciences, and other corresponding Entrance Examinations to the Universities in Europe; and, finally, Examination for the Secondary Education Certificate held by the Egyptian Government. It should be noted, however, that no Certificate from the Indian and Colonial Bodies in the foregoing statement is accepted unless it shows that the Examination has been conducted by or under the authority of the Body granting it, includes all the subjects required by the General Medical Council, and states that all the subjects of examination have been passed at one time; and copies of the form of the required Certificate are supplied by the Registrar of the Council for the purpose.

[1] Certificate to be endorsed as fulfilling the Council's requirements.
[2] Certificates to include the required subjects.
[3] Certificate to be supplemented by others showing that the required mathematical subjects have been passed.
[4] The required subjects to be passed at one time.
[5] To include English language and literature, Latin, mathematics, Greek, or a modern language, and any two other subjects as set out in their regulations.
[6] The required subjects to be passed at one or not more than two examinations.
[7] Certificate to be signed in approved form by the Medical Registrar of the University.

REGISTRATION OF MEDICAL STUDENTS.

In addition to showing that he has passed one of these examinations, any person applying for registration as a medical student must (1) produce satisfactory evidence that he has attained the age of 16 years; (2) show that he has commenced medical study at a university or school of medicine, or at a scientific institution recognized by one of the licensing bodies and approved by the Council. The commencement of professional study will not be reckoned as dating earlier than fifteen days before the date of registration.

Application for registration should be addressed to the Registrar for the division of the United Kingdom in which the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained on application at the offices either of the Medical Council itself or of one of the various licensing bodies and medical schools, and when forwarded it should be accompanied by the certificates as to age and general education.

The regulations with regard to registration apply equally to medical and dental students, with the exception that in the case of the latter pupilage with a registered dental practitioner may be regarded as a commencement of professional study, and that applications for registration should be addressed to the London office only.

PROFESSIONAL EDUCATION.

It is only from the date which appears against his name in the *Students' Register* that the medical student's career officially begins; thereafter five years must pass before he can present himself for the final examination for any diploma which entitles its lawful

possessor to registration as a qualified medical practitioner under the Medical Acts.

There are, however, certain important exceptions to this rule: thus (1) to meet the circumstances brought about by the dates at which sessions of the medical schools commence and end, the close of the fifth year may be reckoned as occurring at the expiration of fifty seven months from the date of registration. (2) The Council will also recognize as the first of the five years one passed at certain approved universities and scientific institutions, a list of which is hereafter given, where the subjects of physics, chemistry, and biology are taught. (3) Those also are deemed to have completed the first of their five years who are graduates in arts or science of any university recognized by the Medical Council, and who, having spent a year in the study of physics, chemistry, and biology, have passed an examination in these subjects for the degrees in question. In any case the period of five years must be one of bona fide study, and during its course education in the following subjects must be pursued and examinations passed:

(i) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity.
(ii) Chemistry, including the principles of the science, and the details which bear on the study of Medicine.
(iii) Elementary Biology.
(iv) Anatomy.
(v) Physiology.
(vi) Materia Medica and Pharmacy.
(vii) Pathology.
(viii) Therapeutics.
(ix) Medicine, including Medical Anatomy and Clinical Medicine.
(x) Surgery, including Surgical Anatomy and Clinical Surgery.
(xi) Midwifery, including Diseases peculiar to Women and to newborn Children.
(xii) Theory and Practice of Vaccination.
(xiii) Forensic Medicine.
(xiv) Hygiene.
(xv) Mental Disease.

As regards these subjects, it should be noted that the Council has recently decided that the practical study of Subject (xi) shall not commence until the student has held the offices of Clinical Clerk and Surgical Dresser, and it has defined the way in which the work is to be done. It also now recommends licensing bodies to require of candidates at their final examinations evidence of instruction in the administration of anaesthetics and in infectious diseases, and of sedulous attention in hospital wards, out-patient departments, and *post-mortem* rooms, as clerks and the like.

The study of these subjects may be commenced and the first year passed at any of the following universities, colleges, and schools:

I.

The Universities of *Oxford*, *Cambridge*, *Durham*, *London* (including all its constituent Medical Schools and Colleges, and also Bedford College, Royal Holloway College, and the Royal College of Science), *Manchester*, *Wales*, *Birmingham*, *Liverpool*, *Leeds*, *Sheffield*, *Bristol*, *Aberdeen*, *St. Andrews*, *Edinburgh*, *Glasgow*, *Dublin*, *National University of Ireland*, *Queen's University of Belfast*.

II.

Bristol: University College.
Edinburgh: School of Medicine of the Royal Colleges, Surgeons' Hall School, Medical College for Women.
Glasgow: Anderson's College, St. Mungo's College, Western Medica School
Dublin: Royal College of Surgeons' Schools of Surgery.

III.

Bradford: Technical College.
Brighton: Technical Day College.
Bristol: Merchant Venturers' Technical College.
Cambridge: Girton and Newnham.
Cheltenham: Ladies' University College.
Derby: Technical College.
Dublin: Royal College of Science for Ireland.
Exeter: Royal Albert Memorial College.
Gloucester: Municipal Technical School (Day Classes).
Halifax: Municipal Technical School (Day Classes).
Huddersfield: Huddersfield Technical College (Day Classes).
Hull: Municipal Technical School (Day Classes).
Leicester: Municipal Technical and Art School (Day Classes).
London: Birkbeck Institute, East London Technical College, Central Technical College, Westfield College, Polytechnic Institute, Battersea (Day Classes), City of London College (Day Classes), South-Western Polytechnic Institute, Chelsea (Day Classes).
Norwich: City of Norwich Technical Institute (Day Classes only).
Nottingham: University College.
Plymouth: Municipal School of Science (Advanced Day Classes).
Portsmouth: Municipal College (Day Classes).
Preston: Harris Institute.
Reading: Reading College.
Rochdale: Municipal Technical School (Day Classes).
Salford: Royal Technical Institute (Day Classes).
Southampton: Hartley College.
Swansea: The Swansea Technical College (Day Classes).
West Ham: Municipal Technical Institute.

Capetown: South African College.
Johannesburg: Transvaal University College.

In addition to these places, it may be noted that there are a number of ordinary schools which certain of the licensing bodies recognize as providing efficient education in chemistry, biology, and physics; they therefore admit persons who have attended courses at such schools to their own examinations in these subjects without demanding further proof of study. The time, however, which these students thus spend is not allowed to count as part of their five years' professional education unless they have previously passed an approved examination in general education, and in no case is more than six months allowed to count.

Wherever the first of the five years is spent, the next three must be passed at one of the schools of medicine recognized by any of the licensing bodies enumerated in the Schedule to the Medical Act of 1858. The final or fifth year the Council recommends should be devoted to clinical work, and it may be passed at any public hospital or dispensary at home or abroad which is recognized by any of the licensing bodies.

Special Considerations.

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in sufficient detail, but before leaving this part of the subject the steps which the aspirant should take may finally be rehearsed in their due order:

(1) Pass an examination in arts;

(2) Enter himself at a medical school or other scientific institution recognized by the Council;

(3) Get himself registered as a medical student;

(4) Study for a minimum of five years certain prescribed subjects;

(5) Meanwhile pass sundry intermediate examinations, and, finally, at the end of the fifth year, one which will entitle him to receive at the hands of a licensing body a legal authority to practise.

The Arts Certificate.—There are, however, other important considerations; thus, it is not a matter of indifference what certificate of proficiency in general education, or arts, the student obtains. The General Medical Council, it is true, will accept any of those which have been mentioned at p. 674, and this, too, is the case with practically all the college corporations in England, Scotland, and Ireland. But all the licensing bodies are not equally accommodating; some of the universities require that their own ordinary matriculation should be passed, others have special matriculation examinations for those wishing to join their medical faculty, and a third and larger number will accept any arts degree and certain matriculation examinations, as well as several other of the tests entered in the Council's list.

The first thing, therefore, the future medical student should, if possible, decide, is at what degrees or diplomas he intends to aim, and then find out what arts certificate will be required. If he cannot decide this question in advance, the best course probably would be to matriculate at London University, choosing as two of his optional subjects Latin and one other language, so as to meet the requirements of the General Medical Council with respect to general education. It is a troublesome examination in some respects, but, as now rearranged, gives a wide choice of subjects, and has the advantage of being accepted as sufficient testimony to general education by a larger number of bodies than in any other analogous examination.

The Minimum Period.—Another point to remember is that the period of five years mentioned is a minimum; a good deal more will almost certainly be required even by the man of good abilities and reasonable industry. Besides these qualities, a student to obtain a registrable qualification in the minimum period of five years, or fifty-seven months must have a considerable amount of good luck; in

other words, he must keep in good health through every term, and never fail at a single examination. Otherwise it is almost inevitable that his career as a student should be prolonged for a greater or smaller number of months beyond the possible minimum. Thus, for instance, a student before presenting himself for any examination has to get what is called "signed up" for the subjects covered by that examination; this means that his teachers have to certify that he has attended the required number of lectures or classes in the subjects in question. If, however, the student happens to be ill during the term when such lectures or classes are taking place, he may miss a sufficient number of them to make it impossible for him to be "signed up."

Then, again, should a student fail to satisfy the examiners at some examination, he cannot present himself again for re-examination for at least three months. This fact generally entails further consequences, because, apart from the student's success at the next stage in his career being imperilled by his having to give up some time to restudying the subjects in which he has failed, the majority of examining boards insist upon a definite interval elapsing between a student passing one examination and his presenting himself for that which should follow it. For instance, the Conjoint Board of England demands that at least twelve months must pass between success at the examination in chemistry, physics, and biology, and that in anatomy and physiology. Then, again, many boards refuse to recognize lectures and classes which have been attended at a date anterior to that at which the student has passed the requisite examination in earlier subjects. Failure at an examination may thus not only mean deferment of the date of examinations, but deferment of the commencement of the student's study of certain subjects. It is thus exceedingly easy for a student to fail to qualify in five years, and, as a matter of fact, the vast majority of students take very much longer than that period.

Furthermore, in speaking of the minimum period, it is to be remembered that that time is only sufficient to gain a registrable qualification, such as a Bachelorship of Medicine or Surgery or a diploma of one of the Royal Colleges. These are quite sufficient for the purposes of general practice or for entering the Services, etc., but those who wish to take a higher qualification, for instance, the F.R.C.S.Eng., must prolong their work for another year or more. So, too, must they who desire to convert their Bachelorship into an M.D., if doing so entails further formal examination. This is not always the case, for at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age and has practised his profession for a certain number of years. However, a student's career proper may be considered, perhaps, to have ended at the time he obtains his first registrable qualification, for while preparing himself for any further tests he can, and usually does, hold some junior appointment which, more or less, covers his expenses.

The Normal Course.—In conclusion, it may be convenient to sketch the general fashion in which the student will pass his five years or more, but discussion of this need not be prolonged, because once a student has entered at a school, and decided at what degrees or diplomas he wishes to aim, the dean of the school will guide his steps in every particular.

Whatever the precise final goal, the path thereto is in all cases identical in broad outline. Practically it is divided into three stages, the conclusion of each being marked by an appropriate examination. In the first stage the student acquires a more or less extensive knowledge of the preliminary sciences, chemistry, physics, and biology; in the second he studies anatomy and physiology; and the third he devotes to the real work of his future life, medicine and surgery and their branches. During each of these stages the student must attend not less than the prescribed number of lectures and classes to ensure getting "signed up" in the subjects of the stage, and do a certain amount of practical work. As for the examinations at the end of the stages, these are known by different titles by different examining bodies, but "preliminary science," "intermediate," and "final" are in common use. Some bodies demand that the student should pass in all the subjects of one stage at one time; others allow the candidate to present himself in each of the subjects separately, thus multiplying the actual number of examinations, but limiting their scope. There are also differences in the requirements of the different licensing bodies as to the length of each stage, but practically all demand that the second shall be longer than the first, and the third than the second. By the length of the allotted stage the candidate may gauge the comparative importance the licensing body attaches to the subjects within the stage and the difficulty of the tests it will impose, and he may feel certain that the time allotted is none too much.

In any case it should be the aim of the student to get through his first two stages as quickly as his abilities and the regulations will allow; and, as a rule, he should have completed the first stage by the end of his first year, and the second stage not later than the end of his third year. He will then have two years in which to prepare for his final examination, and it will prove a very crowded period, for he has to get into it not only medicine and surgery proper, but many other allied subjects, such as midwifery, pathology and bacteriology, forensic medicine, gynaecology, therapeutics, and many others. In the first of the final two years he should complete his formal lectures, and thus have the fifth year at his disposal for entirely practical work and private study; during these two years, too, he will really take part in the work of his hospitals by holding clerkships and dresserships in the wards and out-patient department for the periods laid down by the licensing bodies. Then at length, after perhaps a few weeks of special coaching, he will be ready to present himself for his final examination, which the regulations of most bodies will allow him to divide into two or more parts. The final examination passed in its entirety, he will be able to claim registration as a qualified medical practitioner at the hands of the General Medical Council and become an independent personage. There is still room for him to continue a student's career if he will, for, apart from the higher qualifications to which reference has been made, it may seem to him worth while to devote time to acquiring greater knowledge of some particular branch of medicine, such as ophthalmology or laryngology, or to undergo the courses of study necessary to obtain a diploma of special proficiency in questions of public health (page 716) or in tropical medicine (page 714). Points such as these, however, the student will be fully capable of deciding for himself when he has reached the stage to which our account has now brought him.

The next matters to be considered, therefore, are the requirements in detail of the different licensing bodies, and what they have to offer in the way of degrees and diplomas.

The English Universities.

There are now eleven universities in England and Wales, and ten of them have fully developed Medical Faculties, of which an account is here given. The exception is the University of Wales, whose constituent colleges are those of Aberystwith, Bangor, and Cardiff. The arrangements of its medical faculty are not yet quite complete, but nevertheless it provides at the School of Medicine at Cardiff, of which an account will be found at page 699, thorough training in the work of the first three or four years.

UNIVERSITY OF OXFORD.

The professional degrees conferred by this university are those of Bachelor of Medicine (B.M.), Bachelor of Surgery (B.Ch.), Doctor of Medicine (D.M.), and Master of Surgery (M.Ch.). It also grants a diploma in State

Medicine and in Ophthalmology.[1] On receiving the B.M. the candidate is entitled to registration by the General Medical Council. In favourable circumstances it and the B.Ch. may be obtained in six or seven years from matriculation. Before receiving either, however, the candidate must have taken a degree in Arts (B.A.), for which three years' residence within the university is necessary. This, however, does not necessarily mean deferment of professional study for that period; for some of the subjects chosen for the final stage of the Arts course may be the same as those in which examinations would in any case have to be passed for the medical degrees.

THE B.A. DEGREE.

A candidate may obtain the B.A. degree in either of the following ways:

(*a*) By passing Responsions (or one of the Examinations which are accepted as equivalent); Moderations, a Scripture Examination, or, in the event of a candidate objecting, an examination in some substituted book; and the Final Pass School in three subjects, two of which may be the same as two in the Preliminary Examinations in Natural Science.[2]

(*b*) By passing Responsions; an additional subject in Responsions, the Scripture Examination; some of the Preliminary Examinations in the Natural Science School,[2] or the Preliminary Examination and the School of Jurisprudence, or the Honour School of Mathematics in the First Public Examination; and one of the Final Honour Examinations.

Responsions and the additional subject may be passed before a candidate is a member of the university;[3] Moderations and Scripture can be passed in or after the second term; the Final Pass School may be taken any time after Moderations; a Final Honour School may be taken at the end of the third or within the fourth academical year—that is, twelve or sixteen terms respectively; the Preliminary Examinations of the Natural Science School may be taken as soon as Responsions have been passed.

PROFESSIONAL DEGREES.

To obtain the B.M., B.Ch. degrees the candidate must first pass in four of the subjects of the Preliminary Examination of the Natural Science School—namely, Physics, Chemistry, Zoology, and Botany.

He then has two further examinations to pass, the First B.M. and the Final Examination. These take place twice a year—on the Thursday of the eighth week of Michaelmas and Trinity terms. A candidate at the First M.B. is examined in Human Anatomy, and also Physiology and Organic Chemistry, unless he has previously taken a first or second class in these subjects. Once passed this examination, he can, on production of certain certificates, be examined as soon as he pleases in Pathology, Forensic Medicine, and Hygiene, Materia Medica, and Pharmacy (subjects of the final examination), but cannot present himself for the remaining subjects—Medicine, Surgery, and Midwifery—until the twenty-fourth term from the date of his matriculation, and he must take all the three subjects at one and the same time.

D.M. AND M.CH. DEGREES.

A Bachelor of Medicine who wishes to proceed to the M.D. must have entered his thirty-ninth term and present a dissertation for approval by the appointed examiners. If a candidate for the M.Ch., he must have entered his twenty-seventh term and pass an examination which is held in June.

TEACHING.

The several colleges provide their undergraduate members with tutors for all examinations up to the B.A. degree. In addition, the university provides certain courses of instruction, including lectures, demonstrations, and practical work which cover all the subjects of the Preliminary Examination and First M.B., and in part those of the Final Examination.

SCHOLARSHIPS.

The several colleges grant scholarships of £80 a year, tenable for four years, in Natural Science, Chemistry, Physics, and Biology. Exhibitions of varying value are also awarded in these subjects. Particulars can be obtained on application to the college tutors. A Radcliffe Travelling Fellowship of £200 a year, tenable for three years, is conferred annually; candidates must have taken the B.M. degree. A Philip Walker Studentship in Pathology of £200 a year, tenable for two years, is awarded biennially for the encouragement of research in Pathology, as also are the Rolleston Memorial Prize, of the value of £70, for research in Natural Science (including Pathology), and the two C. Theodore Williams Scholarships in Anatomy and Physiology, of the value of £50 each, tenable for two years.

FEES.

An annual fee of £2 is paid to the university for the first four years, being reduced to £1 when the B.A. has been taken. For the degree the fees are—the B.A., £7 10s.; the B.M. and B.Ch., £14; the D.M., £25; the M.Ch., £12. College fees, varying in amount, are paid for the first four years of membership and in taking degrees. Tuition fees vary from £21 to £30. The minimum annual cost of living during the three university terms may be regarded as not less than £120.

UNIVERSITY OF CAMBRIDGE.

THE professional degrees given by this university are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.C.), which entitle the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants diplomas in State Medicine and Tropical Medicine to persons who are registered medical practitioners, but not necessarily graduates of the university.[4] A candidate for the M.B., B.C. degrees need not possess a degree in Arts; it is sufficient if he has passed the *Previous Examination* or some other examination accepted by the university as its equivalent.

PROFESSIONAL EXAMINATIONS.

To obtain the M.B., the candidate must pass three examinations, of which the latter two take place twice a year—in Michaelmas and Easter terms; those who are finally successful receive the B.C. degree without further examination.

First M.B. or Preliminary Examination in Science.—These comprise (1) Chemistry, (2) Physics, (3) Elementary Biology. The parts may be taken together or separately. In either case the candidate before admission to examination must have satisfied the requirements in respect of the *Previous Examination*, paid the Matriculation Fee, and entered on his first or some later term of residence. The examination is held three times a year—in October, December, and June.

Second M.B.—This examination, which cannot be passed until the first examination has been completed, comprises Part I, Human Anatomy and Physiology; Part II, Elementary Pharmacology, including Pharmaceutical Chemistry and the Elements of General Pathology. No one may enter for Part II unless he has passed Part I. The candidate must be signed up in both subjects and have dissected for six months.

Third M.B.—This is divided into two parts, to neither of which is the candidate admitted until he has passed the examinations previously mentioned. A candidate for the first part, which deals with Surgery and Midwifery, must be signed up in these subjects and have completed two years of hospital practice.

Before admission to the second part the candidate must have completed five years of medical study and be duly signed up in all subjects. He must also possess certificates showing that he has fulfilled all the recommendations as well as the requirements of the General Medical Council. The examination consists of Principles and Practice of Physic, Pathology, and Pharmacology.

Act for the M.B.—Before receiving his degree, a candidate who has been successful at the Final M.B. has to write a thesis. This he reads in public on an assigned day, and is then questioned concerning it and

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[1] See page 718.

[2] The four subjects of the Medical Preliminary Examinations are four of the subjects in the Natural Science Preliminary, and can be commenced directly after passing Responsions.

[3] Membership is constituted by Matriculation and by becoming a member of a College or Hall, or a non-collegiate student.

[4] See page 718.

other subjects of medicine by the Regius Professor of Medicine. If approved at this test he is then certified as having "kept the Act" satisfactorily, and in due course receives his degree. Medical degrees may be taken in absence, the candidate sending a thesis to the Regius Professor of Physic which is laid before the Board.

The Higher Degrees.

The M.D. degree may be taken by an M.B. of three years' standing after keeping a further Act and writing a short extemporary essay, in which he may deal at his choice with either Medicine, Physiology, Pathology, or State Medicine. The M.C. degree may be granted to a candidate who has qualified for the B.C. at least three years previously; he is then examined in Pathology, Surgery, Surgical Anatomy, and Surgical Operations, or submits books or writings of his own which constitute original and meritorious contributions to the science and art of surgery.

Fees.

In addition to college fees, tutorial fees, and the expenses of living, the following examination fees are payable: First M.B., £4 4s.; Second M.B., £4 4s.; Third M.B., £9 9s. A student who has passed in two of the subjects of the second part of the Third M.B. only pays £2 2s. on admission or readmission to the examination in the third subject. For schedules referring to the examinations, lists of schools recognized by the university, and other information, application should be made to the University Registrar.

UNIVERSITY OF LONDON.

Under the regulations of the University of London, the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Surgery, Master of Surgery in two branches, and Doctor of Medicine in six different branches.

All students of the university are divided into two classes, Internal students and External students. An internal student is one who, having matriculated at the university, or otherwise obtained registration as an undergraduate, is pursuing a course of study approved by the university in a school or schools of the university, or under one or more teachers recognized by it. An external student is an undergraduate who is pursuing his education in some other way.

The standard of education required from those who present themselves for degrees, whether as internal or external students, is, as far as possible, the same; but the regulations which affect them differ to some extent. The information which hereinafter follows applies to those who propose to proceed to medical degrees as internal students, and who have not yet commenced their work.

Those who propose to study elsewhere than at one of the constituent schools of the Faculty of Medicine of the university should obtain the regulations which apply to them from the External Registrar. There are a few conditions under which exemption may be obtained from examinations in certain subjects, or the intervals between examination abbreviated, but to the vast majority of students they have no application.

It should be stated here, moreover, that in no circumstances whatever can a degree after examination be granted to any one in less than three years after the date at which he passed the matriculation examination or obtained registration in some other way, and that all students alike of the Faculty of Medicine, unless they are registered medical practitioners of a certain age and standing, must pass not less than five and a half years in professional study subsequent to matriculation. Four and a half of those years must be passed after the First Examination for Medical Degrees at one or more of the medical institutions or schools at home and abroad recognized by the university for the purpose; and one year at least of those years must be passed at one of the schools of the university situated within the United Kingdom.

Matriculation.

The Matriculation Examination takes place three times in each year—namely, in the months of January, June (or July), and September. Application for admission to it must be made on a special form about six weeks beforehand, and must be accompanied by a certificate showing that the candidate will have completed his sixteenth year at the date on which the examination commences. It is a written examination, but the examiners are not precluded from putting viva voce questions to candidates if they should think fit. To pass the examination candidates must show a competent knowledge of five subjects, of which one must be English (one paper of three hours), another Elementary Mathematics (two papers of three hours each), and a third either Latin or Elementary Mechanics or Elementary Physics (Heat, Light, and Sound), or Elementary Chemistry or Elementary Botany. The other two may be selected from any of those in the following list, except, of course, those in which the candidate may have already been examined. Unless Latin has already been taken, one of them must be a language—Latin, Greek, French, German, or other language approved by the Matriculation Board—Ancient History, Logic, Modern History, Physical and General Geography, History, and Geography (which cannot be taken as well as either of the two preceding), Geometrical and Mechanical Drawing, Mathematics (more advanced than in the compulsory examination), Elementary Mechanics, Elementary Chemistry, Elementary Biology (Botany), *Elementary Biology (Zoology), *Elementary Geology, Elementary Physics (Heat, Light, and Sound, or Electricity and Magnetism). Candidates desirous of offering any language other than those named above should submit their proposals for the consideration of the Matriculation Board six months before the beginning of the Matriculation Examination in question. Candidates who desire to be examined in the subject against which an asterisk is affixed must give at least two months' notice. The names of the successful candidates are published in two lists, a first division and a second division. Communications concerning this examination must be addressed to the Principal of the University.

It may be added that there are a certain number of high standard examinations held by various authorities at home and abroad which the Senate regards as the equivalent of its own matriculation examination, and those who can show that they have passed them are admitted to registration as internal or external students on payment of the matriculation fee of £2. Appendix II. to the Matriculation Regulations should be consulted on this point.

Professional Examination.

There are now only three examinations for the M.B., B.S. degrees, but the two last are subdivided.

The First Examination for Medical Degrees takes place twice in each year. It consists of two papers in Inorganic Chemistry, two in General Biology, and two in Physics, and there are practical examinations in Inorganic Chemistry and in Physics, not exceeding three hours each, and in General Biology not exceeding six hours; examiners are also at liberty to test candidates viva voce. A student must present himself for examination, on first entry, in all of the three subjects together. It is a pass examination only, and the list of successful candidates is published in the alphabetical order of their names, but with a note as to any subject in which a candidate has distinguished himself.

The Second Examination for Medical Degrees, Part I., takes place twice a year, commencing on the Thursday following the third Monday in March, and the Thursday following the second Monday in July. The examination cannot be passed within six months of the passing of the First Examination for Medical Degrees. It consists of one three hours' paper in Organic and Applied Chemistry, and a three hours' practical examination, the examiners being at liberty also to test any candidate by viva voce questions. It is a pass examination, but the names of those who have distinguished themselves are specially marked.

The Second Examination for Medical Degrees, Part II, takes place twice a year, commencing on the

third Monday in March and the first Monday in July. Candidates must have passed the First Examination for Medical Degrees at least eighteen months previously, and also have passed Part I of the Second Examination for Medical Degrees. The subjects of examination are Anatomy, Physiology, and Pharmacology. In Anatomy there are two papers, dissection, and an oral examination. In Physiology, two papers and a practical examination not exceeding six hours in length, which will include (*a*) Histology and (*b*) Experimental and Chemical Physiology. In Pharmacology, including Pharmacy and Materia Medica, there will be one paper and an oral examination, which may include recognition of the more important substances in the *British Pharmacopoeia*. It is a pass examination, and the names of the successful candidates will be published in alphabetical order, but any subjects in which a candidate may have distinguished himself will be appended to his name if he has passed in all the subjects at one time. Candidates who have failed in one subject only at this examination may offer themselves for re-examination in that subject, if permitted to do so by the examiners. Candidates who have passed in Anatomy and Physiology in the Second Examination for Medical Degrees may enter in the following year for the degree of B.Sc. (Honours) in Physiology or Human Anatomy and Morphology, provided they have completed a course of study approved for that examination in a school or under a recognized teacher of the university.

Third Examination for Medical Degrees, or the M.B., B.S. Examination, takes place twice a year, commencing on the fourth Monday in October and on the first Monday in May. No candidate will be admitted to this examination unless he has completed the Second Examination for Medical Degrees, together with the prescribed course of study, nor within three academic years from the date of passing the Second Examination, Part II. in Anatomy and Physiology.

The subjects of the examination are Medicine (including Therapeutics and Mental Diseases), Pathology, Forensic Medicine and Hygiene, Surgery, and Midwifery and Diseases of Women. The subjects may be divided into two groups, one of which shall comprise Medicine, Pathology, Forensic Medicine and Hygiene; and the other Surgery and Midwifery and Diseases of Women. Either group may be taken first at the option of the candidate, or the groups may be taken together. The examination in Medicine will consist of (*a*) two papers—each of three hours' duration, (*b*) a viva voce examination on cases, (*c*) an examination of a patient with a written report on the case, and (*d*) an oral examination on the whole subject. In Pathology there will be a paper, a viva voce, and a practical examination in clinical laboratory work, while in Forensic Medicine and Hygiene there will be a paper and an oral examination.

In Surgery there are (*a*) two papers, each of three hours' duration, one on Surgery and the other on Surgical Anatomy and Pathology, (*b*) a clinical examination on cases, and (*c*) an oral examination on Surgical Pathology, (*d*) another on Surgical Appliances and Surface Marking. In Midwifery and Diseases of Women there will be one paper and a viva voce. Only candidates who show a competent knowledge of all the subjects comprising a group will be passed. There will be no separate examination held for honours, but in the list of successful candidates the names will be divided into an honours list and a pass list, in each of which the names will be placed in alphabetical order. Only those, however, who have passed the whole examination at one time will be entitled to a place in the honours list. In this list the subjects in which they have distinguished themselves will be appended to the names of the successful candidates. The examiners will be empowered to recommend the award of a university medal of the value of £5 to the candidate who has most distinguished himself in the whole examination.

A diploma for the degrees of Bachelor of Medicine and Bachelor of Surgery under the seal of the university, constituting a licence to practise, will be delivered to each candidate when he has passed in both groups of the examination, after the report of the examinations shall have been approved by the Senate.

DOCTOR OF MEDICINE.

The examination for the degree of Doctor of Medicine is held twice in each year, commencing on the first Mondays in December and July. Every candidate must have passed the examination for the M.B., B.S. of this university unless he became M.B. before May, 1904. Candidates may present themselves for examination in any one of the following branches: (1) Medicine, (2) Pathology, (3) Mental Diseases, (4) Midwifery and Diseases of Women, (5) State Medicine, (6) Tropical Medicine; and, if they wish, may pass also in another branch at a subsequent examination. Candidates for Branches 1 to 4 who have taken honours at the M.B., B.S. Examination in the subject in which they present themselves for the M.D. degree, or who subsequently to taking the M.B., B.S. have conducted a piece of original work approved for the purpose by the university, or have had such exceptional experience in the branch in which they present themselves as may be approved by the university, may present themselves for the M.D. examination one year after taking their Bachelor's degree. Other candidates must show that they have taken the degree of M.B., B.S. not less than two years previously; and as regards candidates in Branches 1 and 4, either that they have held for at least six months a resident or non-resident medical appointment at a hospital approved for this purpose, or that they have been in qualified practice for not less than five years; or that as regards Branches 2 and 3 they have held in the one case a pathological and in the other an asylum appointment in an institution approved by the university. In each examination for the M.D. in Branches 1 to 4 there will be (1) two papers on the special subject of the branch; (2) a Clinical Examination (except in Branch 2); (3) an essay to be written on one of two given subjects connected with the branch. In Branch 1 there will also be a paper on Pathology, and in Branches 2, 3, and 4 a paper in Medicine, while in Branch 2 a Laboratory Examination will be substituted for the Clinical Examination held in the other branches. As regards the essay, the candidate is expected to set forth his ideas in a clear and orderly fashion, and to examine critically various views that have been put forward on the subject. Account is taken not only of knowledge of detail but of the power shown to construct a lucid and well co-ordinated essay.

The regulations concerning candidates in Branch 5 (State Medicine) and Branch 6 (Tropical Medicine) will be found in their appropriate places in the articles devoted to these subjects (page 716 and page 714).

Finally, it should be noted that exemption may be obtained from part or the whole of the written examination which would otherwise be necessary by presenting a thesis or published work embodying independent research in the branch of medicine in which the candidate presents himself for the M.D. In the case of candidates in Branch 2 (Pathology) the exemption may apply likewise to laboratory work, though in this case a reasoned report on a subject prescribed by the examiners may have to be submitted within a given period.

In any branch of the M.D. Examination a gold medal of the value of £20 may be awarded.

MASTER IN SURGERY.

The examination for the degree of Master in Surgery will take place twice in each year, commencing on the same dates as the foregoing. Candidates may present themselves for examination in Surgery (Branch I) or in Dental Surgery (Branch II). The general regulations already quoted with regard to the M.D. will practically apply to it, surgery being substituted for medicine. In addition, the candidate must produce evidence that he has held a surgical appointment at an approved institution for at least six months. The examination in Surgery (Branch I) will consist of (1) two papers on Surgery (one of which may be a case for commentary); (2) an essay to be written on one of two subjects which may be selected from any branch

of surgery; (3) two papers on Surgical Pathology and Surgical Anatomy; (4) a clinical examination; (5) operations on the dead body; (6) an oral examination at the discretion of the examiners. Competent knowledge in every subject of the examination must be shown in order to pass.

The Examination in Dental Surgery (Branch II) will consist of: (*a*) One paper and viva voce examination in Oral Anatomy and Physiology and in Comparative Dental Anatomy; (*b*) one paper and viva voce examination in Oral Surgery and Therapeutics; (*c*) one paper and viva voce examination in Dental Metallurgy; (*d*) an essay on one of two subjects in Oral Surgery and Pathology; (*e*) one practical examination in Normal and Pathological Dental Histology; (*f*) one practical examination in Bacteriology; (*g*) a clinical and practical examination in Oral Surgery (including operative and prosthetic Dental Surgery). Candidates shall not be approved by the examiners unless they have shown a competent knowledge in all the subjects of the examination.

Candidates for the M.S. in either branch may be exempted from the written portions of the respective examinations if a thesis is presented by them and is approved. In either branch a gold medal of the value of £20 may be awarded.

Fees.

For Matriculation.—£2 for each entry.

First Examination for Medical Degrees.—£5 for each entry to the whole examination. For re-examination in one subject the fee is £2.

Second Examination for Medical Degrees, Part I.—£2 for the first and each subsequent entry.

Second Examination for Medical Degrees, Part II.—£8 for each entry to the whole examination. For re-examination in one subject the fee is £4.

M.B., B.S. Examination.—£10 for each entry to the whole examination, and £5 for examination or re-examination in either group.

M.D. and M.S. Examinations.—£20, and £10 on re-examination.

UNIVERSITY OF DURHAM.

To its own graduates, who may be of either sex, this university grants the degrees of Bachelor and Doctor of Medicine (M.B. and M.D.) and Bachelor and Master of Surgery (B.S. and M.S.; it also grants special degrees and diplomas in State Medicine and Dental Surgery.[1] To become a graduate, however, at the university it is not necessary to pass the major portion of the five years' curriculum within its precincts, or even to commence that period by matriculation. It is sufficient if, before he presents himself for his final examination, the candidate has passed at least one year in study at the University of Durham College of Medicine, including the practice of the Royal Victoria Infirmary in the same city. The earlier examinations may be passed while a student elsewhere, but not less than a year must elapse between the time that the student satisfies the requirements of the university as regards matriculation and his presenting himself for the Final M.B., B.S. Examination.

Matriculation.

The university has its own matriculation examination, but accepts the following as an equivalent:

A degree of Arts of any university in the British Empire.

The Examination for Responsions of the University of Oxford.

The Previous Examination of the University of Cambridge.

The Matriculation Examination or the School Leaving Examination of the University of London.

The Preliminary Examination of the Joint Board of the Scottish Universities.

The Joint Matriculation Examination of the Victoria University of Manchester, the University of Liverpool, the University of Leeds, and the University of Sheffield.

The Matriculation Examination of the University of Wales.

The Preliminary Examination of the University of Birmingham.

The Senior Local Examination of the University of Durham, provided the subjects required by the university are included.

The Senior Local Examination of the University of Oxford, provided the subjects required by the university are included.

The Senior Local Examination of the University of Cambridge, provided the subjects required by the university are included.

The Higher Certificate Examination of the Joint Examination Board of the Universities of Oxford and Cambridge, provided the subjects required by the university are included.

The Leaving Certificate of the Higher Grade of the Scottish Education Department, provided the subjects required by the university are included.

The Senior Certificate or the Honour Certificate Examination of the Central Welsh Board, provided the subjects required by the university are included.

In addition, those who have satisfied the requirements of the General Medical Council, as regards general education, by some test other than one of the above, will be exempted from matriculation, provided that they satisfy the Durham examiners in any three of the subjects set by the Durham Matriculation Examination, exclusive of Religious Instruction and Elementary Mathematics. One of the three subjects must be in a language other than English.

Professional Examinations.

There are four professional examinations for the M.B., B.S. degree. They are held twice a year—in March and July. The first deals with elementary anatomy and biology, chemistry, and physics; the second with anatomy and physiology; the third with pathology, materia medica and pharmacy, elementary bacteriology, medical jurisprudence, and public health. At the final M.B., B.S., the candidate is examined in medicine and clinical and psychological medicine; surgery and clinical surgery; midwifery and diseases of women and children; clinical and practical gynaecology.

M.D.—A Bachelor of Medicine who wishes to proceed to this higher degree must be of at least two years' standing, and satisfy the university that he knows either Greek or German. He then submits a typewritten thesis dealing with original work or observation of his own, and is examined in its subject. If the candidate is not an M.B. of the university, he must be a practitioner of fifteen years' standing and submit to special tests.[2]

B.S.—A candidate for this degree must have passed the examination for the M.B. of the university, and have attended courses on operative surgery and regional anatomy. He must then perform operations on the dead body before the examiners.

M.S.—Candidates for this degree must, like those for the M.D., satisfy the authorities as to their knowledge of Greek of German, and must have been engaged in practice for at least two years subsequent to becoming B.S.Durham. They are submitted to an examination which covers the whole range of surgical knowledge.

Fees.

The following fees are payable: Matriculation or its equivalent, £1 10s.; First, Second, and Third M.B. Examinations, each £5; Final M.B., £10; M.D., B.S., and M.S., £5 for each examination and £6 6s. for each degree. Further information respecting the examinations and degrees may be obtained from Professor Howden, at the University of Durham College of Medicine, Newcastle-on-Tyne.

VICTORIA UNIVERSITY OF MANCHESTER.

This university grants the four ordinary degrees in Medicine and Surgery, M.B. and Ch.B. and M.D. and Ch.M.; a Diploma and a Degree (B.Sc.) are granted in Public Health; and a Degree and Diploma in Dental Surgery. Candidates for degrees must pass the special Matriculation Examination prescribed by the Faculty of Medicine (or some equivalent Examination accepted in lieu thereof; see the Prospectus of the Joint Matriculation Board), and study at the university itself for at least two years of the five years' curriculum, one such year being subsequent to the passing of the First M.B. Examination. The Matriculation Examination comprises (1) Latin, (2) Mathematics, (3) the English Language, its literature and history; (4) two subjects at choice, one of which must be a language, Greek, French, German, or some other modern

[1] See pp. 716 and 730.

[2] See p. 711.

language approved by the Joint Board, Elementary Mechanics, Chemistry, Geography, or Natural History. It is held in July and September.

PROFESSIONAL EXAMINATIONS.

M.B., Ch.B.—There are four examinations for these degrees. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. At all examinations the subjects, or groups of subjects, prescribed can be taken separately or together, as the candidate pleases. The first M B. is divided into Part 1, Inorganic Chemistry and Physics; Part 2, Biology—including Animal and Vegetable Morphology, Physiology, and Laboratory work; Part 3, Elementary Organic Chemistry and Bio-chemistry. The parts may be taken separately or together. At the Second M.B. the candidate is examined in Anatomy and Physiology; at the third in Pathology, Hygiene, and Pharmacology and Therapeutics (including Materia Medica and Practical Pharmacy). The final examination includes Medicine, systematic and clinical (separate papers being given on Mental Diseases), and Diseases of Children, Surgery (systematic, clinical, and practical, with a separate paper on Ophthalmology), Obstetrics and Gynaecology, and Forensic Medicine and Toxicology.

M.D.—A candidate for this degree must be an M.B. of at least one year's standing. He has a choice between presenting an original dissertation or undergoing a written (practical and clinical) examination in Medicine, and a written and practical examination in Pathology, and one other subject to be selected by the candidate.

Ch.M.—A candidate must have held, since becoming Ch.B., and for not less than six months, an appointment in a public institution affording opportunity for the study of practical surgery, and produce certificates of having attended certain courses of study. The examination comprises the general field of surgery, including Ophthalmology and Bacteriology.

FEES FOR EXAMINATIONS.

The following fees are payable: Matriculation, £2; on readmission, £1 10s. Each M.B. Examination, £5; on readmission after failure, £2. M.D., including the conferring of the degree, £10. Ch.M., £5 each for the examination and degree. Application for further information should be addressed to the Dean of the Medical Faculty.

UNIVERSITY OF BIRMINGHAM.

THIS university confers the ordinary medical and surgical degrees—M.B., Ch.B., M.D., and Ch.M.—and also diplomas and degrees in State Medicine and Dentistry. It has a plan, too, by which, extending his study to six instead of five years, the M B., Ch.B. candidate may become a Bachelor in Science as well. Of the five years' curriculum, the first four must be spent, as a rule, at the university itself, the fifth being passed at any approved school or schools. Occasionally, however, the Senate will reduce the period of enforced residence to three years and exempt from the first M.B. those who have passed elsewhere an examination considered to be its equivalent.

All students in the medical faculty must (1) either matriculate in Mathematics, in Chemistry or Experimental Mechanics, in the English Language and Literature and History, and in Latin and one other foreign language; or (2) show that they have passed an examination deemed an equivalent elsewhere. Subject to certain provisos, the following are at present thus regarded:

(*a*) The Previous Examination of the University of Cambridge. (*b*) Responsions of the University of Oxford. (*c*) The Matriculation Examination of a recognized University. (*d*) The Higher Certificate of the Oxford and Cambridge Boards. (*e*) The Oxford or Cambridge Senior Local Examination.

PROFESSIONAL EXAMINATIONS.

The candidate for the M.B., Ch B. degrees has five examinations to pass. In the second and fourth and final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again.

First M B.—This deals with Chemistry, Physics, and Elementary Biology; it may be passed before the student commences residence at the university, provided the regulations as to matriculation have been met.

Second M.B.—This deals with Anatomy and Physiology, and the student must pass in both simultaneously.

Third M B.—This deals with Pathology and Bacteriology, Materia Medica, and Practical Pharmacy.

Fourth M.B.—This takes place at the end of the fourth year, the subjects being Forensic Medicine, Toxicology, Public Health, and Therapeutics.

Final M.B.—This comprises Medicine, Surgery, Midwifery and Diseases of Women, Ophthalmology, and Mental Diseases. The candidate, in addition to more ordinary certificates, must be prepared with a certificate showing that he has personally taken notes of not less than six cases of fever, and of having acted as a *post-mortem* clerk for three months, and received special instruction in anaesthetics and clinical instruction in diseases peculiar to women, asylum ward work, and ophthalmology. The latter must show that he has learnt refraction work. He also has to present to the examiners reports drawn up by himself on six gynaecological cases, and certificates filled up by himself regarding four actual cases of lunacy, and notes respecting two others.

M.D.—An ordinary candidate for this degree must be an M.B., Ch.B. of not less than one year's standing. He presents an original thesis for approval, and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch.M. are of the same general character. Subject to certain requirements as regards special research or other post-graduate study, the graduates of other universities may obtain the M.D. and Ch.M. in the same way as the holders of the Birmingham M.B., Ch.B.

FEES.

The fee for Matriculation is £2, and that for each of the first four professional examinations the same amount. M.B., Ch.B. degree fee, £8; M.D. and Ch.M. examination, £10 each. For further particulars application should be made to the Dean of the Medical Faculty.

UNIVERSITY OF LEEDS.

THE degrees granted in the Medical Faculty of this university are Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). It also gives a Diploma in Public Health and two Degrees in Dental Surgery.

Candidates for the M.B. must have attended courses of instruction approved by the university for not less than five years, two at least of such years having been passed in the university subsequently to the date of passing the First Examination. They must also have matriculated by satisfying the examiners in (1) English (language or literature); (2) English history; (3) Mathematics; (4) Latin; (5) two of the following, one of which must be a language: (*a*) Greek, (*b*) French, (*c*) German, (*d*) some other modern language approved by the Board, (*e*) either Mechanics or Physics, (*f*) Chemistry, (*g*) Geography, (*h*) Natural History. Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination.

PROFESSIONAL EXAMINATIONS.

The examinations for the M.B., Ch.B. number three. The first deals with (1) Physics and Chemistry, (2) Biology. In each subject laboratory work is included, but the two parts can be taken separately. For neither can the candidate present himself until after matriculation, and at least two or three terms' approved work in the respective subjects indicated.

Second M.B.—This may be taken in two parts, (*a*) Anatomy and Physiology, including practical work; (*b*) Materia Medica and Pharmacy, including actual compounding of drugs. The candidate's certificates must show, among other things, that he has dissected during at least five terms.

Final M.B.—This, too, may be divided into two parts, but for neither can the candidate present himself until he has completed ten terms of study. If divided, he must first take Pathology and Bacteriology, Forensic Medicine and Toxicology, and Public Health, and must pass in these before proceeding to the second division. The latter cannot be taken before the end of the fifth year, and before being admitted to the examination in its subjects the candidate, in addition to ordinary certificates, must produce proof that he has done both intern and extern maternity work, and received clinical instruction in gynaecology, and in eye, skin, oral, and laryngeal diseases, and in the administration of anaesthetics. This division covers all branches of surgery, medicine (including mental diseases and diseases of children), and obstetrics and gynaecology. Passages for translation from French and German are included in the papers on medicine. First and Second Class Honours may be obtained in this division.

M.D.—A candidate for this degree must be an M.B., B.Ch. of at least one year's standing. He presents a dissertation embodying the results of personal observation or original research, and, if this is approved, passes an examination which consists in the writing of an extemporary essay, and questions on the history of medicine and the subject of the dissertation.

Ch.M.—The candidate for this degree must have been admitted to the M.B., Ch.B. not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery. In addition he must have attended certain special courses, including one on ophthalmology and one on bacteriology; he is then examined in the subject of surgery in all its branches.

FEES.

The Matriculation fee is £2, and on readmission £1. For each of the other examinations £5, and £2 on readmission. On conferment of the degree of Ch.M. £5 is payable, the same remark applying to the M.D. degree.

UNIVERSITY OF LIVERPOOL.

THIS university, besides granting degrees in Medicine (M.B. and M.D.) and in Surgery (Ch.B. and Ch.M.), gives a degree in Dental Surgery[1] and also diplomas in the same subject as well as in Tropical Medicine,[2] Public Health, and some other minor subjects. For the degrees no study is recognized anterior to matriculation and registration as a medical student.

MATRICULATION.

As regards Matriculation the university has its own examination, but accepts the tests of several other bodies as its equivalent. These include the Final Examination for Graduation in Arts of any university in the United Kingdom, the Matriculation of London University, the Senior Local Examination of Oxford and Cambridge, and the higher certificate of the Joint Oxford and Cambridge Board. Of the five years' curriculum, not less than two must be passed in the university itself, one such year being subsequent to the date of passing the First M.B. Examination.

PROFESSIONAL EXAMINATIONS.

Candidates for the M.B., Ch.B. degrees have three examinations to pass, the first including (1) Chemistry, Inorganic and Organic; (2) Biology, including Zoology and Botany; (3) Physics. Section 2 may be taken alone or passed in conjunction with Sections 1 and 3.

Second M.B.—This test covers (1) Anatomy and Physiology, including Physiological Chemistry and Histology, and (2) Materia Medica, Pharmacy, and Pharmacology; these two sections may be taken separately.

[1] See p. 730. [2] See p. 715.

Final M.B.—This examination deals with six subjects, which may be taken all together or divided into three parts, the first consisting of (1) Pathology and Morbid Anatomy; the second of (2) Therapeutics, and (3) Forensic Medicine, Toxicology, and Public Health; the third of (4) Obstetrics and Diseases of Women, (5) Surgery, (6) Medicine, including Mental Diseases and Diseases of Children.

M.D. and Ch.M.—Candidates for these degrees must have received the M.B. and Ch.B. at least a year previously. The M.D. candidate submits an approved dissertation covering original work, the M.Ch. candidate undergoing an examination in all subjects of Surgery, including Ophthalmology. Other information concerning the diplomas of this university and its medical school will be found on page 697.

UNIVERSITY OF SHEFFIELD.

THE degrees of this university (M.B., Ch.B., and M.D. and Ch.M.) and Diploma in Public Health are open to candidates of either sex. The matriculation examination must be passed, and included in it must be the subjects required by the General Medical Council; the university accepts a certain number of other tests as the equivalent of its own matriculation.

PROFESSIONAL EXAMINATIONS.

A candidate for the degrees of M.B., Ch.B. must produce certificates that he will have attained the age of 21 years on the day of graduation; that he has pursued the courses of study required by the university regulations during a period of not less than five years subsequently to the date of his registration as a medical student by the General Medical Council, three of such years at least having been passed in the university and one year at least having been passed in the university subsequently to the date of passing the first examination. He or she has eventually to pass the following examinations in due order:

First Examination.—The subjects are Chemistry, Physics, and Biology. The examination is divided into two parts: Parts I (*a*) Chemistry, Physics, (*b*) Biology; Part II, Organic Chemistry; and candidates may pass in each part separately. The Intermediate Examination in Science—Chemistry, Physics, and Biology—will, on payment of the required additional fee, be accepted instead of Part I of this examination, but the candidate, after matriculation and registration as a medical student, must have attended courses of instruction (lectures and laboratory work) in Chemistry, Physics, and Biology, for one year each, and in Special Organic Chemistry (lectures and laboratory work) for one term.

Second Examination.—The subjects are Anatomy, Physiology, Materia Medica, and Pharmacy. The examination is divided into two parts, (*a*) Anatomy and Physiology, and (*b*) Materia Medica and Pharmacy; and candidates may pass in either part separately. The candidate must have completed the third Winter Session of professional study, must have passed the First Examination, and must have attended (1) lectures on Anatomy and dissections during two Winter Sessions and one Summer Session; (2) lectures on Physiology during two Winter Sessions, Practical Physiology during two Winter Sessions, and Histology during one Summer Session; and (3) Materia Medica and Pharmacy for three months.

Final Examination.—The subjects are divided into two parts—namely, (A) Forensic Medicine and Toxicology, Public Health, and Pathology, and Morbid Anatomy; and (B) Medicine, including Pharmacology and Therapeutics, Mental Diseases and Diseases of Children, Surgery, Obstetrics and Gynaecology. Candidates may present themselves for examination in both parts on the same occasion or separately, but Part A may not be passed before the completion of the fourth year of study. Candidates for the whole examination, or for Part B, must have completed the fifth year of study.

M.D.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, must

present a thesis embodying observations in some subject approved by the Professor of Medicine, and must pass an examination in the Principles and Practice of Medicine.

Ch.M.—Candidates for the degree of Master in Surgery must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, and must, since taking the degrees of M.B., Ch.B., have held for not less than six months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of Practical Surgery. The subjects of examination are Systematic, Clinical, and Operative Surgery, Surgical Anatomy, Surgical Pathology, and Bacteriology.

Other information concerning this university will be found in the section devoted to Provincial Medical Schools.

UNIVERSITY OF BRISTOL.

THIS university grants the four ordinary degrees in Medicine and Surgery, M.B. and Ch.B. and M.D. (the M.D. may be taken in State Medicine), and Ch.M.; a Diploma, D.P.H., is granted in Public Health: and a Degree and Diploma in Dental Surgery. Candidates for degrees must pass the special Matriculation Examination prescribed by the Faculty of Medicine (or some equivalent Examination accepted in lieu thereof; see the Regulations for Matriculation), and study at the university itself for at least three years of the five and a half years' curriculum, two such years being subsequent to the passing of the Second M.B. Examination. The Matriculation Examination comprises (1) Latin, (2) Mathematics, (3) the English Language, its literature and history; (4) two subjects at choice, one of which must be a language—Greek, French, German, or some other modern language—approved by the Joint Board, and the other either Elementary Mechanics, Chemistry, Geography, or Natural History. It is held in July and September.

PROFESSIONAL EXAMINATIONS.

M.B., Ch.B.—There are three examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. The First M.B. comprises Chemistry, Physics, Botany, and Zoology. The Second M.B. comprises Organic Chemistry, Elementary Anatomy (Part I), Advanced Anatomy, Physiology (Part I). The two groups may be taken separately or together. The Final examination includes Materia Medica and Pharmacy, Pharmacology and Therapeutics, General Pathology, Morbid Anatomy and Bacteriology (Part I), Special Pathology, Forensic Medicine, Toxicology and Public Health, Obstetrics (including Diseases of Women), Surgery (Systematic, Clinical, Practical, and Operative): Medicine (Systematic, Clinical and Practical), including Mental Diseases (Part II). The two groups may be taken separately or together.

M.D.—A candidate for this degree must be an M.B. of at least three years' standing. He has a choice between presenting an original dissertation, undergoing a general examination in Medicine (including Medical Anatomy, Medical Pathology and Bacteriology, Systematic and Clinical Medicine), or passing an examination in State Medicine.

Ch.M.—A candidate must have attended, since becoming Ch.B., and for not less than two years, a public institution affording opportunity for the study of practical surgery, and produce certificates to that effect; the candidate is also required to pass a general examination in Surgery (including Surgical Anatomy, Surgical Pathology and Bacteriology, Operative and Clinical Surgery), and to present a dissertation in some department of Surgery. He must be of three years' standing as Ch.B.

FEES FOR EXAMINATIONS.

Applications for further information should be addressed to the Dean of the Medical Faculty.

English Medical Corporations.

THERE are three medical corporations in England—the Royal College of Physicians, Royal College of Surgeons, Royal Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the "Conjoint Board." Details concerning this body, its component colleges, and the third licensing body here follow.

THE CONJOINT BOARD.

This body deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who satisfy it for the Licence and diploma of Membership respectively. The successful candidate is then entitled to admission to the *Medical Register* as an M.R.C.S.Eng., L.R.C.P.Lond. It performs the same task in connexion with a diploma in State Medicine jointly issued by the two Colleges in question. It obliges all candidates to pass one of a large number of examinations which it considers satisfactory tests of general education, and thereafter to pass five years in professional study at a recognized medical school, allowing, however, six months to be spent at any institution which may be recognized by the Board as giving efficient education in chemistry and physics. A list of such institutions, as also of the tests accepted in regard to general education, can be obtained from the Secretary of the Board at Examination Hall, Victoria Embankment.

PROFESSIONAL EXAMINATIONS.

There are three examinations for the Conjoint diploma, or M.R.C.S., L.R.C.P., which are commonly known as First College, Second College, and Final.

First College.—This examination is in four parts: (1) Chemistry, (2) Physics, (3) Elementary Biology, (4) Practical Pharmacy.

A candidate must present himself for examination in Parts I and II together until he has reached the required standard to pass in both, or in one of these parts, but he will not be allowed to pass in one part unless he obtains at the same time half the number of marks required to pass in the other part. A candidate may take Parts III and IV separately, or he may present himself for the whole examination at one time.

Before admission to either part the candidate must show that he has undergone certain courses of theoretical and practical instruction, but these courses need not be completed within one year, nor need they run concurrently, and they may be commenced or attended before the candidate passes the required preliminary examination in general education. A candidate referred in any part or parts will not be admitted to re-examination for three months. If referred in Chemistry, Physics, or Biology, he must produce evidence of further instruction. Those who are already graduates in medicine, or who have passed an examination in the same subjects before a university board for a degree in medicine, may obtain exemption from re-examination in those subjects at this examination.

Second College.—This examination deals with Anatomy and Physiology, and both subjects must be passed at the same time. A candidate must have attended at a recognized medical school lectures on Anatomy, Physiology, and a course of Practical Physiology and Histology, and have dissected for twelve months during the ordinary sessions. The study of Anatomy and Physiology before passing in two of the first three parts of the First Examination is not recognized. If rejected, a candidate, before being admitted to re-examination, must continue his studies at a recognized medical school for not less than three months.

Final College.—This examination consists of three parts: Part I, Medicine, including Medical Ana-

tomy, Pathology, Practical Pharmacy,[1] Therapeutics' Forensic Medicine, and Public Health; Part II, Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances; Part III, Midwifery and Gynaecology.[2] The examination may be passed at one time or in each part separately. Evidence of attendance at courses of instruction in the subjects of the three parts must be produced, and also of having conducted twenty labours. The candidate must have passed the Second Examination two years previously, and have spent five years in professional study subsequent to passing the required Preliminary Examination. A rejected candidate must produce evidence of further instruction during three months.

Note.—A person holding a Colonial, Indian, or foreign qualification which entitles him to practise in the country where such qualification has been obtained is, after a course of study and examination equivalent to those required by the Regulations of the two Royal Colleges, admissible to the Second and Third or Final Examinations without any interval. Members of an English, Scottish, or Irish university are under certain conditions eligible for admission to the Third or Final Examination two years after passing at their university the subjects included in the First and Second Examinations of the Board.

A Doctor or Bachelor of Medicine or Surgery of an Indian, Colonial, or foreign university recognized for the purpose, who shall have passed at his university in the subjects of the First and Second Examinations will be eligible for admission to the Third or Final Examination two years after passing in the said subjects.

Fees.

First Examination, £10 10s. Re-examination, Parts I and II, £3 3s.; Parts III and IV, each £2 2s. *Second Examination*, £10 10s. Re-examination, £6 6s. *Third Examination*, £21. Re-examination, Part I, Medicine, £5 5s. Practical Pharmacy, £2 2s. Part II, Surgery, £5 5s. Part III, Midwifery and Diseases of Women, £3 3s. Members of an English, Scottish, or Irish university, £5 5s.; for the diplomas, £36 15s.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

This college has three grades—its Licentiates, its Members, and its Fellows. The Licence is only issued through the Conjoint Board, as already stated, unless the candidate commenced professional studies before October, 1884. Its Membership is only granted to those who have passed the final examinations for the Licence; or those who are registered practitioners and graduates of a recognized university; in any case they must be persons over 25 years of age, who do not practise in partnership, dispense medicines, or engage in trade. Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce. Those under 40 are also examined in Latin, and either Greek, French, or German. The examination fee is £6 6s., the Membership fee being £42, or the difference between that sum and what the candidate has already paid if a Licentiate. The body of Fellows is maintained by election from among the Members.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

This college has two grades—Members and Fellows. The Members are admitted as stated in the section dealing with the Conjoint Board. The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations—the first in Anatomy and Physiology, which may be passed after the third Winter Session; the second, chiefly directed to Surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the college before admission to the Second Examination for the Fellowship, except in the case of Graduates in Medicine and Surgery of not less than four years' standing, of universities recognized by the college for the purpose, who are required to attend for one year the Surgical Practice of a general hospital recognized by the college, after obtaining their degrees. The college also issues a Diploma in Dentistry.[3]

Fees—At First Examination: £5 5s. At Second Examination: £12 12s. Diploma fee: Members, £3 3s.; non-members, £13 13s.

SOCIETY OF APOTHECARIES OF LONDON.

This body confers a registrable diploma in Medicine, Surgery, and Midwifery, now known as the L.M.S.S.A. There are nominally only two examinations, but both are subdivided.

Primary Examination.—Part I includes Elementary Biology, Chemistry, Chemical Physics, Practical Chemistry, Pharmacy, and before passing it the candidate should have been registered as a medical student and undergone certain courses of tuition. Part II includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy, with demonstrations. These subjects cannot be taken separately, except in the event of the candidate having previously passed in one. Candidates will be excused any or all the subjects of the Primary Examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society. Candidates referred in Anatomy will be required to produce evidence of further work in the dissecting-room before being admitted to re-examination.

Final Examination.—This is divided into two sections, the first section being again subdivided into three parts. The first part includes the Principles and Practice of Surgery, Surgical Pathology, Operative Manipulation, Surgical Anatomy, Instruments and Appliances. Part II includes: (*a*) The Principles and Practice of Medicine (including Therapeutics, Pharmacology, and Prescriptions), Pathology, and Morbid Histology; (*b*) Forensic Medicine, Hygiene, Theory and Practice of Vaccination, and Mental Diseases. Part III: Midwifery, Gynaecology, and Diseases of Newborn Children, Obstetric Instruments and Appliances. A candidate cannot present himself for this section before the expiration of forty-five months after registration as a medical student, during which time not less than three Winter Sessions and two Summer Sessions must have been passed at one or more of the medical schools connected with a general hospital recognized by the Society. Section 2 consists of Clinical Surgery and Clinical Medicine and Medical Anatomy, and a candidate before appearing at it must have completed five years of medical study.

Fees.

Primary Examination, £5 5s.; Final, £15 15s. Further information may be obtained from the Secretary, Court of Examiners, Apothecaries' Hall, Blackfriars, E.C. It is worth noting that Licentiates of this Society are eligible for admission to its membership, a position conferring the advantages commonly accompanying membership of a City guild. Information on this point should be sought from the Clerk of the Society at its Hall, Blackfriars.

The Scottish Universities.

There are in Scotland four universities, each of them possessing a Faculty of Medicine, and having the right to confer degrees which admit the holder to the *Medical Register*. In essential points the regulations for undergraduates in their medical faculties are on all-fours with one another, so that an account can be given of all of them together.

The universities in question are, of course, those of Edinburgh, Glasgow, Aberdeen, and St. Andrews, and in point of standing and repute it is not easy to differentiate between them. What provision each of the cities in which these universities are situated makes

See p. 723.

[1] Candidates who have previously passed in Practical Pharmacy will not be re-examined in that subject at the Third Examination.

[2] Candidates may present themselves for examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study at a medical school, and not less than one year after the passing of the Second Examination, on production of the required certificates.

for the education of medical students will be found in the section on Medical Schools in Scotland; here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed an excellent repute.

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.). The two former are not separably obtainable one from the other. Besides these degrees a diploma in Tropical Medicine and Hygiene is obtainable from the University of Edinburgh, and registrable degrees in Public Health from the same university and from Glasgow, and diplomas in Public Health from the universities of St. Andrews and Aberdeen. Information as to these will be found in the appropriate sections dealing respectively with Preventive Medicine and Tropical Medicine.

MATRICULATION.

Matriculation is effected by signing the statutory declaration, or *sponsio academica*, and paying a fee of £1 1s., but to make it effective enrolment as a student at some class of the university is necessary; moreover, to make matriculation a step to a degree, a preliminary examination must be passed. This for medical students is an examination in English, Latin, Elementary Mathematics, and either Greek or French or German. Candidates are required to pass in all these subjects, either at one or at not more than two examinations, but they can present themselves as often as they please. These preliminary examinations are held twice a year, in Spring and Autumn, and in point of standard are believed to correspond to that set at the examinations for the lower certificate of the Oxford and Cambridge Schools Examination Board. The universities accept as the equivalent of the preliminary examination a large number of corresponding tests held by other bodies. The fee is 10s. 6d. Compliance with the regulations of the General Medical Council as to registration as set forth on p. 674 is necessary.

PROFESSIONAL EDUCATION.

The regulations as regards the subjects to be studied comply in all respects with the requirements and recommendations of the Medical Council, and in addition necessitate definite study for stated periods of diseases of children, of the larynx, ear and nose, of the skin, of ophthalmology, and of mental diseases.

In respect of midwifery, the student must either conduct personally twenty-five cases of labour or attend a lying-in clinic for three months, and personally conduct twelve deliveries. He must also attend the medical and surgical practice of a hospital recognized for the purpose for at least three years. In each of the prescribed subjects of study the student must attend one or more courses of definite length, those in the more important subjects lasting not less than five months, and in the minor subjects half that time. In respect of these courses certificates must be obtained showing that the student has not only attended the courses regularly, but has duly performed the work of the class.

Out of the necessary five years of medical study, not less than two must be spent at the university whose degrees the student hopes to obtain, and the balance at any place officially recognized for such purpose. In each academic year there are two sessions, one lasting from the beginning of October to the middle of March, and the other from the beginning of May to the middle of July.

PROFESSIONAL EXAMINATIONS.

The distinctive feature of the Scottish curriculum is that though nominally there are only four examinations, each of these may be, and habitually is, split up by the student into sections. Hence, a student may complete some stage of his career during the course of nearly every session. Thus, by the end of the first Winter Session the student may get rid of Physics and Chemistry. At the end of the first Summer Session he can finish with Botany and Zoology, and at the end of the second Summer Session with Physiology. In the middle of his third Winter Session he can finish with Anatomy, and at the end with Practical Materia Medica. Pathology he will pass at the end of the third Summer Session, and so on, until the Final Examination at the end of the fifth Summer Session in Clinical Medicine, Clinical Surgery, and Clinical Gynaecology. At each examination the candidate may pass "with distinction," and a record is kept of the merit displayed, so that, when the time comes for the candidate to graduate, one who has done well throughout can be declared as graduating with first or second class honours. A further point in the system is that the student's own teachers commonly take some part in his examination.

Of the four examinations, the first deals with physics, botany, zoology, and chemistry; the second with anatomy and physiology; the third with materia medica and pathology; the fourth with medicine and surgery (clinical and systematic), midwifery, forensic medicine, and public health, and clinical gynaecology. Each of these examinations is held three times a year.

Exemption from the first professional examination can be obtained by candidates who have passed an examination at any recognized university in its subjects qualifying for a degree in science or in arts. There are no set periods which must elapse between passage of the different examinations, but in every case the student must have attended the necessary course of lectures in each subject and have satisfied the examiners in all the subjects of the previous examination. When a candidate presents himself for an examination of several of its parts, but is not successful in all of them, he is credited at the next examination with those subjects in which he has previously been approved.

THE HIGHER DEGREES.

It is open to those who are already M.B., Ch.B. to proceed either to the M.D. or the Ch.M. A candidate for the former must have been engaged for not less than one year at work in the medical wards of a hospital or in scientific research in a recognized laboratory or in the Naval or Military Medical Service, or have been at least two years in general practice, and he must be 24 years of age. He has to write a thesis on a subject not exclusively surgical, and is examined in clinical medicine and in some one or other of its special departments. The regulations for candidates for the Ch.M. are of a corresponding character, a period of surgical work in a hospital or elsewhere being substituted for medical work, and his thesis being on a surgical rather than a medical subject. He is examined in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery.

FEES.

It is estimated that the class examination and other fees for the M.B., Ch.B. come altogether to £150, the separate fees included in this calculation being as follows:

	£	s.	d.
Preliminary Examination ...	0	10	6
First Professional	6	6	0
Second Professional	5	5	0
Third Professional	4	4	0
Finals	7	7	0

Re-entry in any subject in which the candidate has failed entails a fresh payment of £1 1s. Candidates for the M.D. and Ch.M. pay £10 10s., and on re-entry £5 5s.

More detailed information with regard to the University of Edinburgh can be obtained from the *Medical Programme*, price 2d., which is published by Mr. Thin, 55, South Bridge, Edinburgh, or on application to the Dean of the Faculty of Medicine. Similar information about Glasgow should be sought from the Assistant Clerk, Matriculation Office, Glasgow. With regard to Aberdeen, application may be made to the Secretary of the Medical Faculty, Marischal College. In respect of St. Andrews, information can

be obtained either from the Secretary of the University or, alternatively, the Secretary of the United College, St. Andrews, or the Secretary of University College, Dundee, these being the two constituent colleges of the University of St. Andrews.

Finally, it should be mentioned that, in connexion with all the Scottish universities, including St. Andrews, there are valuable bursaries and scholarships, some information as to which will be found in the article on Medical Schools.

The Scottish Corporations.

There are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Their Licences can be separately obtained only by persons who are already in possession of a recognized qualification—in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow. All others must submit to the examinations held by the Conjoint Board which the three corporations have combined to form. Details concerning this Board and its component colleges follow. The conditions on which their higher qualifications are granted will be found set forth separately in connexion with each corporation.

THE CONJOINT BOARD IN SCOTLAND.

This body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those who are approved at its examinations are entitled to registration and to the initials denoting the Licences of the three bodies concerned—namely, L.R.C.P.Edin., L.R.C.S.Edin., and the L.F.P.S.Glasg. It requires all candidates to comply with the regulations of the General Medical Council as regards registration of medical students set forth on page 674, and to pass a preliminary examination in Arts.

It has an examination of its own of this character, which is conducted for it by the Educational Institute of Scotland, but is prepared to accept any of the educational tests approved by the General Medical Council, a list of which will be found on page 675.

Professional Curriculum.

Subsequent to the passage of the preliminary examination for registration as a medical student the candidate must pass not less than five years in medical study, each comprising a Winter and a Summer Session. On this point and all others connected with the curriculum the regulations of the Board are in keeping with the recommendations and requirements of the General Medical Council as already set forth. The Board does not exact that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held six times every year; four times in Edinburgh and twice in Glasgow; and it is open to candidates to present themselves for examination either at one place or the other. The first examination deals with Physics, Chemistry, and Elementary Biology; the second with Anatomy and Physiology, including Histology; the third with Pathology and Materia Medica, including Pharmacy; and the final with (1) Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; (2) Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eyes; (3) Midwifery and Diseases of Women and of Newborn Children; (4) Medical Jurisprudence and Hygiene. Candidates may also be examined on Diseases of Children, Diseases of the Ear and Throat, Insanity, Vaccination, etc.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of their subjects. On the other hand, the examinations can be broken up by the student and each of the subjects taken separately. If a candidate takes up several subjects of an examination or the whole examination in its entirety, but fails in some of them, he is credited at the next examination with those subjects in which he has been approved. As regards the final examination, a candidate can present himself in Medical Jurisprudence and Public Health at any time after completion of the previous examination and of his study of these subjects; but in Medicine, Surgery, and Midwifery a candidate cannot present himself until the completion of five years' study, and must enter therefor conjointly.

Finally, it should be mentioned that a person who holds a qualification from a recognized university conferring a legal right to practise in the country from which it was obtained, and granted after courses of study and examination deemed by the Board to be the equivalent of its own, may be exempted from the three earlier examinations in whole or in part; but to no examination can a candidate be admitted within three months of his rejection by some other licensing body.

Fees.

It is estimated that the total cost of lectures and fees for the conjoint examinations is about £152. The separate examination fees are as follows: Preliminary, £1; First, Second, and Third Professional, £5 each; and the Final, £15. On re-entry for all divisions of the first three professional examinations payment of £3 is required, and on re-entry in all divisions of the Final Examination, £5. Smaller payments are necessary when re-entry is only in one or two subjects.

Information concerning this Board should be sought either from Mr. James Robertson, solicitor, 54, George Square, Edinburgh, or from Mr. Alexander Duncan, B.A., LL.D., Faculty Hall, St. Vincent Street, Glasgow.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

This college has two grades—its Licence and its Fellowship. Licentiates may be of either sex, but for the Fellowship women are not eligible. As an original qualification the Licence is only granted after fulfilment of the regulations of the Conjoint Board, but as an additional qualification can be obtained by those already possessed of a registrable qualification in Medicine. In this case the candidate has to pass a written, oral, and clinical examination in Surgery, and may be asked to operate on the dead body. The fee is £15 15s., of which £10 10s. are returned to unsuccessful candidates. On due cause shown, a special examination may be granted, the fee being £20, of which £10 is returned to a candidate if he is not approved.

Candidates for the Fellowship must be not less than 25 years of age, and have been in practice subsequent to registration for at least two years, and must hold either a surgical degree from a university recognized for that purpose by the college, or an approved diploma obtained as the result of an examination which includes surgery as well as medicine. Candidates are examined in surgery, including clinical and operative surgery, surgical anatomy, and one other subject which they may choose from among the following: Ophthalmology, laryngology, including aural and nasal surgery, dental surgery, advanced midwifery with obstetric surgery, gynaecology, surgical pathology, operative surgery, and advanced anatomy. The examination is written, oral, and clinical or practical. A candidate who desires to be examined must give one month's notice, his application for admission being supported by two Fellows of the college, one of whom must be resident in Edinburgh, or, in default, by testimonials.

Licentiates of the college pay £35, and others £45. For further information application should be made to the Clerk of the College, Mr. D. L. Eadie, 54, George Square, Edinburgh.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

THIS college has three grades—Licentiateship, Membership, and Fellowship; to the two latter women are not admissible. The regulations applying to candidates for the Licentiateship have already been generally indicated. If desirous of receiving it apart from those of the other two corporations, they must be holders of a surgical qualification, recognized by the college, and must pass an examination corresponding to the medical part of the final examination of the Conjoint Board, and conditioned in the same way, and also an examination in Materia Medica. The fee for examination is 15 guineas, a special examination being obtainable on due cause shown, and on payment of 5 guineas extra. Ordinary examinations take place monthly on the first Wednesday, except in September and October. A candidate for the Membership must be either a Licentiate of a Royal College of Physicians or a graduate in medicine of a British or Irish university, and in either case not less than 24 years of age. He is examined in medicine and therapeutics, and in one further subject at his choice. This may be either (*a*) one of the departments of medicine specially professed; (*b*) psychology; (*c*) general pathology and morbid anatomy; (*d*) medical jurisprudence; (*e*) public health; (*f*) midwifery; (*g*) gynaecology; (*h*) diseases of children, or (*i*) tropical medicine. Licentiates of the college pay £21, others £36 15s. A candidate who is not less than 40 years of age, and who has been in practice not less than ten years, may be exempted from part or all of the examination, provided he is highly distinguished for his scientific attainments. Examinations are held quarterly, and application for admission must be made a month previous to their date. For the Fellowship, the candidate must have been a member of the college for at least three years, and, if accepted, pays fees amounting altogether to a little less than £65. Any further details required can be obtained on application to the Secretary of the College.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THIS body possesses two classes, Licentiates and Fellows. The regulations applying to the former correspond with those respecting candidates for the Licence of the Royal College of Surgeons of Edinburgh. They are examined in surgery (including clinical surgery and surgical anatomy). The fee is £15 15s., and examinations are held quarterly. Candidates for the Fellowship must be qualified medical men of not less than two years' standing and 24 years of age. Candidates approved at this examination are then eligible for election as Fellows. The Faculty can also elect two Fellows annually without previously submitting them to examination, provided they "have highly distinguished themselves in Medical Science or Practice." They must be of not less than ten years' standing and 40 years of age. Further information can be obtained from Mr. A. Duncan, B.A., LL.D., Faculty Hall, St. Vincent Street, Glasgow.

The Irish Universities.

THE opportunities in Ireland for acquiring medical and surgical degrees are ample, for there are nominally three and practically five universities, each possessed of a medical faculty. These are the University of Dublin, usually known as Trinity College, Dublin, the Queen's University of Belfast, and the National University of Ireland. The two former teach students, examine them, and grant or withhold degrees accordingly; while the third is by way of being an academic body only, inasmuch as its practical work is divided up among three constituent colleges. One of these is University College, Cork, another University College, Galway, and the third, which has still to provide itself with buildings, is University College, Dublin. The regulations of all these universities in respect of medical degrees are indicated in the following sections; while specific information as to the arrangements for the education of medical students made at each of them will be found in the section relating to Irish Medical Schools.

UNIVERSITY OF DUBLIN.

THIS university, better known, perhaps, as Trinity College, Dublin, grants two degrees in Medicine (M.B. and M.D.), two in Surgery (B.Ch. and M.Ch.), two in Midwifery (B.A.O. and M.A.O.), and diplomas in the same subjects and in Public Health. It also confers two degrees in Dentistry. Its degrees it only grants to those who, besides having passed the Professional Examination, have graduated in Arts.

PROFESSIONAL EXAMINATIONS.

A candidate for the Final Examination for the M.B., B.Ch., and B.A.O. degrees must be a matriculated student of at least five years' standing, and though he need not have taken his degree in Arts before admission to the Professional Examination, he cannot take his medical degrees until he has been admitted a B.A. As a rule, at least three years of his medical study must be pursued at the university, but the Board has power to accept one year at a recognized London or Edinburgh hospital as the equivalent of one year's attendance at a recognized Dublin hospital, or two years at a recognized country or Colonial hospital as one year of metropolitan work. The examinations which he has to pass are the Preliminary Scientific, Intermediate Medical, and the Final, and of course before admission to any of them he must be duly signed up as regards study in the subjects involved.

Preliminary Scientific.—This covers (*a*) Chemistry and Physics, (*b*) Botany and Zoology: the two divisions may be taken together or at different times.

Intermediate Medical.—This is divided into two parts: (*a*) Anatomy, Physiology, and Histology; (*b*) Applied Anatomy and Applied Physiology. The two parts may be taken separately, but in each part all subjects must be passed at one time.

Final Examination.—Part I: Hygiene and Medical Jurisprudence, Pathology, Materia Medica, and Therapeutics. *Part II:* (*a*) Midwifery, Gynaecology (clinical, paper, and viva voce); (*b*) Medicine, Clinical Medicine, and Mental Diseases; (*c*) Surgery in all branches, including Clinical Ophthalmology. The three sections of Part II may be divided, any two being taken at one examination, and the third later. In either case, the full curriculum must have been completed, nor can the final subject be taken until at least the end of the fifth year.

M.D.—The candidate must have passed all the qualifying examinations in Medicine, Surgery, and Midwifery, and have taken, or have been qualified to take, the degree of B.A. three years previously. He must read a thesis before the Regius Professor of Physic.

M.Ch.—The candidate must be a B.Ch. of not less than three years' standing, and have been engaged in practice for two years. Graduates of ten years' standing may be given a special examination.

M.A.O.—The candidate must have passed the qualifying examination in Medicine, Surgery, and Midwifery. The examination is specially directed to Obstetrics and Practical Gynaecology.

For the university diplomas mentioned the candidate must have completed two years in Arts and five in Medical studies. The examination and courses required are the same as for the degrees.

FEES.

Matriculation, 5s.; M.B., B.Ch., B.A.O., £17; M.D., £13; M.Ch., £11; M.A.O., £5; L.M., L.Ch., L.A.O., £11. Further information may be obtained from the Registrar of the School of Physic, University of Dublin.

QUEEN'S UNIVERSITY, BELFAST.

THE degrees granted by the Medical Faculty of this university are as follows: Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Doctor of Surgery (D.Ch.), Master of Obstetrics (M.A.O.). The university also confers a diploma in Public Health. The first three mentioned are degrees serving as a qualification for admission to the *Medical Register*, and will be conferred at the same time and after the same course of study. In addition to matriculating and passing his professional examinations, a candidate for these degrees must have been a registered medical student for five years, and have passed three of these five as a student at the Belfast School of Medicine.

PROFESSIONAL EXAMINATIONS.

The examinations for the M.B., B.Ch., B.A.O. are four in number. The first deals with: (1) Inorganic, Organic, and Practical Chemistry, (2) Experimental and Practical Physics, (3) Botany and Practical Botany, (4) Zoology and Practical Zoology. It is divided into two parts, of which Botany and Zoology form one. The Second Examination covers Anatomy and Physiology, and may be taken at the end of the second year of the student's career. The Third Examination includes: (1) Pathology, (2) Materia Medica, Pharmacology and Therapeutics, (3) Medical Jurisprudence, and (4) Hygiene. To be valid a certificate in regard to the study of the subjects of this examination must show that the work has been done subsequent to passing the First Examination.

The Final Examination includes: (1) Medicine, (2) Surgery, (3) Midwifery, (4) Ophthalmology and Otology. The student may pass in all subjects at once at the end of his fifth year, or he may divide the examination into two parts—namely, (1) Systematic, (2) Clinical, Practical, and Oral. The first part may be taken at the end of the fourth year, but for the second part the candidate may not present himself until the end of his fifth year. No certificate in regard to study of the subjects of this examination will be valid unless the work was done subsequent to passage in all the subjects of the Second Examination.

M.D.—Candidates for the degree of Doctor of Medicine must be graduates in Medicine of at least three years' standing, unless they hold also a degree of the university in Arts or Science. In that case a standing of two academic years will suffice. Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed. The degree may be conferred either (*a*) after a formal examination, or (*b*) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject. When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of Medicine, (2) a commentary on a selected Clinical case, (3) a Clinical and viva voce examination, and (4) a written paper and Clinical or practical and viva voce examination of a subject chosen from the following list: (1) Human Anatomy, including Embryology, (2) Physiology, (3) Pathology, (4) Pharmacology and Therapeutics, (5) Sanitary Science and Public Health, (6) Forensic Medicine and Toxicology. The regulations for the degrees of M.Ch. and M.A.O. are of the same general nature.

In the case of students who have already matriculated or passed any of the examinations of the Royal University of Ireland, the regulations are duly modified so as to meet their case. Other information concerning this university will be found in the article on Medical Schools in Ireland.

NATIONAL UNIVERSITY OF IRELAND.

THE evolution of this university from the old Royal University of Ireland under the Universities Act of 1908 is now complete. In some ways it is comparable to the University of London, as in itself it is mainly an academic body, doing most of its work through constituent colleges. On the other hand, these constituent colleges—namely, University College, Dublin; University College, Cork; and University College, Galway—differ from the constituent bodies of the University of London, inasmuch as, subject to the approval of the central body, they can arrange their own courses of instruction, their own regulations, and examine their own students with the assistance of external examiners. Every student may therefore complete his education in the place of his choice, pass his examinations therein, and receive his degree thereat, practically at the hands of the body which is responsible for his education—nominally at those of the National University of Ireland itself. In the Medical Faculty the degrees granted are Bachelor of Medicine, Bachelor of Surgery, Bachelor of Obstetrics, Bachelor of Dental Surgery, Master of Surgery, Master of Obstetrics, Master of Dental Surgery, and Doctor of Medicine.

Candidates for the lower degrees in medicine, surgery and obstetrics, which are not given separately, must have passed three of their five years of study at one of the constituent colleges of the university, and may pass the other two at any school of medicine or in any university recognized for the purpose by the Senate. The three years in question do not count except after matriculation, or registration as a student of the medical faculty obtained in some other fashion. There are a variety of examinations accepted by the university in lieu of its own matriculation examination.

Though each constituent college has the right to arrange its own course of work, as already stated, the regulations in the case of medical students appear to be of much the same order at each of the three colleges. They have to pass four examinations. The first, which should be passed at the end of the first year, includes Part A (Chemistry and Physics), and Part B (Botany and Zoology), which parts may be taken separately or together. At the end of the second year they should pass in Anatomy and Physiology; and at the end of the fourth year in Pathology, Materia Medica, and Therapeutics, Hygiene and Public Health, Forensic Medicine and Toxicology. The final examination is divided into three parts, each of which may be taken separately—namely, (*a*) Medicine, including Mental Diseases; (*b*) Surgery, including Ophthalmology and Otology; (*c*) Midwifery and Gynaecology.

The higher degrees are obtainable either by examination or on presentation of an approved work, but in either case not less than three years must have elapsed since the candidate acquired the corresponding degree of Bachelor. Information as to the teaching arrangements of each of the constituent colleges will be found in the section relating to Irish Medical Schools.

The Irish Corporations.

THERE are in Ireland, as in London, three licensing bodies other than the Medical Faculties of Universities, and, just as in London, there are two Royal Colleges of Physicians and Surgeons and an Apothecaries' Hall. The similarity is still more complete, for in Ireland also the two colleges have formed a Conjoint Board, as in London, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall gives its licence separately. The Conjoint Board also holds examinations for the Diploma in Public Health granted by the two colleges.

THE CONJOINT BOARD IN IRELAND.

THIS body requires of candidates the passage either of its own preliminary examination in the subject of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council.

PROFESSIONAL EXAMINATIONS.

There are four professional examinations, the first of which cannot be passed earlier than the end of the

Winter Session, nor the fourth before the conion of full five years of medical study, and before g admitted to any of them the candidate must v that he has studied the different subjects in tice and theory for the requisite periods, certifis to this effect being accepted from the authorities ıost of the recognized medical schools at home abroad. The First and Second Examinations deal ıectively with (*a*) Chemistry and Physics and Biology; and (*a*) Anatomy, and (*b*) Physiology and tology. All parts of these examinations, as also ıe following one, which deals with (*a*) Pathology, Materia Medica, Pharmacy, and Therapeutics, Public Health and Forensic Medicine, may be taken arately.

inal Examination.—This is divided into three sions, which cannot be completed until at least years have passed in medical studies other than se for the first examination, and five years, at t, since the beginning of the curriculum. The sions are (*a*) Medicine, including Fevers, Mental eases, and Diseases of Children; (*b*) Surgery, inling Ophthalmic and Operative Surgery; (*c*) Midry, including Diseases of Women and Newborn ldren, and the Theory and Practice of Vaccination. didates are recommended to present themselves ll the subjects of the Final Examination at one e, but a candidate at or after the end of the fourth may present himself in any one of the divisions (*b*), or (*c*), provided he has completed his curriculum ar as concerns the division in which he presents self.

es.—Preliminary Examination, £2 2s.; re-examina-, £1 1s. First Professional Examination, £15 15s.; ond, £10 10s.; Third, £9 9s.; Final, £6 6s.; Remination fee is £2 2s. for each division.

urther information can be obtained from Mr. Alfred er, Secretary of the Committee of Management, ildare Street, Dublin.

YAL COLLEGE OF PHYSICIANS OF IRELAND.

SE whose names already appear on the *Medical ister* can obtain the separate Licence in Medicine his college, and its Licence in Midwifery. In er case an examination has to be passed in the ects indicated, questions on midwifery, hygiene, jurisprudence being included in the examination the Licence in Medicine. For the Licence in Midry practitioners of over five years' standing are npted from examination by printed questions. other grades of the college are Members and ows. The former are admitted after an examina- which is open to all university graduates in icine and licentiates in medicine of Royal Colleges hysicians, and deals with the general subjects of icine. Fellows are selected, by vote, from among Members.'

es.—For the Licence in Medicine, 15 guineas; for Licence in Midwifery, 5 guineas; or 16 guineas for if they are taken within an interval of a month. cial examinations cost in each case 5 guineas extra. the Membership, 20 guineas to a Licentiate of the ege; 35 guineas to others; a special examination ing 5 guineas extra. The Fellowship £35, in addi- to stamp duty, £25. Information as to special minations and other points can be obtained from Registrar, the Royal College of Physicians, Kildare eet, Dublin.

OYAL COLLEGE OF SURGEONS IN IRELAND.

s body, besides granting a Licence in Surgery, its those possessed of registrable surgical qualifions to its Fellowship under certain conditions. Its ence is usually granted conjointly with that of the lege of Physicians, but it is given separately to lers of a registrable qualification in medicine, vided that the college is satisfied that adequate rses of study have been pursued, and provided its professional examination is passed. This examiion is held on its behalf by the Conjoint Board, and lentical with the ordinary surgical portion of the minations imposed by that body.

The Fellowship.—Candidates for the Fellowship must pass two examinations, of which the first is in Anatomy (including dissections), Physiology, and Histology; and the second in Surgery (including Surgical Anatomy) and Pathology. Both examinations are partly written, partly practical, and partly viva voce; while the final examination includes the performance of operations. All subjects of either examination must be passed at one time, and to neither can a candidate be admitted who has been rejected in any of its subjects by any other licensing body within three months. Candidates are not admitted to the primary examination except on evidence that they have already passed an examination in Anatomy, Physiology, and Histology, held by some university or other body whose degrees or licences entitle the holder to admission to the *Register*; if, however, the candidate is a person whose name is on the colonial or foreign *Medical Register*, at the discretion of the Council. Candidates for the final examination must be over 25 years of age, produce a certificate of general good conduct signed by two or more Fellows of the College, and, if successful, must make a declaration before admission to the effect that they do not conduct dispensing practices, and will not do so as long as they are Fellows.

Fees.—Candidates for the Licence pay 5 guineas for examination, which sum, if they pass, is counted as part of the fee payable on admission to the Licence, this being 25 guineas. Candidates for the Fellowship pay 5 guineas for each examination, the total of 10 guineas being reckoned as part of the fee payable on admission to the Fellowship. That fee is 25 guineas in the case of those who are already Licentiates, and 40 guineas in the case of others.

APOTHECARIES' HALL OF IRELAND.

A DIPLOMA is granted by this Hall which entitles the holder to be registered as a practitioner of Medicine, Surgery, and Midwifery, and confers also the privileges of an Apothecary. Two periods of Dissection, each not less than six months, must be included, and twenty-seven months of hospital attendance, or its equivalent. Four professional examinations have to be passed; they are held quarterly. The first examination deals with Biology, Physics, and Chemistry, Practical and Theoretical; the second examination is in Practical Anatomy and Physiology, and Histology; the third Pathology, Pharmacy and Materia Medica, Forensic Medicine, and Hygiene. A candidate who has passed tests in any of the subjects of these examinations before another licensing body is exempt from further examination in such subjects. The final examination deals with Medicine, Surgery, Ophthalmology, Midwifery, and Gynaecology. The Hall's own examination in all these subjects must be passed, except in the case of candidates who have already been admitted to the *Register*. These are only examined in subjects not covered by their previous qualifications. Women candidates are eligible.

Fees.—For each of the first three examinations, £5 5s.; for the final, £6 6s. If the third and final, or final alone, are passed before the Hall, the other examinations having been passed elsewhere, the fee is £15 15s. Application for other information should be made to the Registrar, 40, Mary Street, Dublin.

MEDICAL SCHOOLS AND COLLEGES.

LONDON.

APART from post-graduate and other special schools, the Medical Schools of London number as many as fourteen, including in the count two institutions which provide education only in the preliminary and intermediate subjects, under the title of "University Centres."

Little guidance can be given in these columns as to choice of one school rather than another, for such choice must depend largely on personal factors. In a general way, however, it may be said that while to the student of to-day it may, perhaps, be almost

a matter of indifference to what school he belongs' there is often in after-life a certain advantage in having been an alumnus at one of the more celebrated schools. On the other hand, there are, perhaps, more opportunities in some respects, especially for obtaining the coveted posts of house-physician and house-surgeon, at the smaller schools.

Information as to the fees at the different schools and the scholarships, prizes, and junior appointments which they offer will be found in the following pages, and should be carefully studied by those who have no personal reason for preferring one to the other. The courses which they provide are fundamentally the same, and in all of them the arrangemends made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the Conjoint Board or the Apothecaries' Society not less than of those who have London or other university degrees in view. At all, too, as has been said, special facilities are offered to men who have commenced their professional education at the older universities, Oxford and Cambridge. Apart from these facts, the only point to which attention can usefully be directed is that on personal inquiry and investigation reason may perhaps be found for regarding the teaching accommodation and general arrangements for students at some schools as superior to those at others. Those who propose to enter a London school should note carefully what is said respecting London students in the opening pages of this issue.

ST. BARTHOLOMEW'S.

THIS institution fills one side of Smithfield and Giltspur Street, sharing with the Post Office buildings a large island of ground separated practically from all other buildings; it is on the edge of the City, and easily reached from all parts of London. The hospital contains 744 beds. Extensive new buildings, opened in July, 1907, occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the place as one of medical study. The library and the chemical, physical, biological, and physiological laboratories have now at their side a very large building, which includes club rooms for the Students' Union, a writing room, a luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom. During the year 1909 a second block of new buildings has been completed. These form the Pathological Department, and include large and well-equipped laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country. Within the precincts of the hospital also there is a residential college for a large number of students. The Students' Union owns, moreover, grounds of some 10 acres in extent for recreative purposes at Winchmore Hill, which is easily accessible from the hospital.

Special classes are held for students preparing for the Preliminary Scientific and other Examinations for the M.B., M.D. of the Universities of London, Oxford, and Cambridge, and for the higher surgical degrees at the same universities, including the M.S.Lond., First and Second F.R.C.S., M.Ch.Oxon., and M.C.Cantab. Special laboratory instruction for the D.P.H. of Cambridge, Oxford, Durham, and London, is also given.

Appointments.—Clinical Clerks to the Physicians and to the Physician-Accoucheur, and Dressers to the Surgeons and in the Casualty Department are chosen from the students; Clerks and Dressers are also selected from the students to attend in the out-patient rooms, in the special departments (Ophthalmic, Orthopaedic, Gynaecological, Laryngological, Aural, Dermatological, Electrical, and Dental) and in the *post-mortem* room. Chief Assistants and Clinical Assistants are selected from qualified men and appointed yearly to help in the special departments just named. Ten House-Physicians and ten House-Surgeons are appointed annually. During their first six months of office they act as "Junior" House-Physicians and House-Surgeons, and receive a salary of £25 a year. During their second six months they become "Senior" House-Physicians and House-Surgeons, and are provided with rooms by the hospital authorities and receive a salary of £80 a year. A resident Midwifery Assistant, an Ophthalmic House-Surgeon, and a House-Surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two Assistant Anaesthetists are appointed annually, and receive salaries of £120 and £100 a year respectively. An Extern Midwifery Assistant is appointed every three months, and receives a salary of £80 a year.

Scholarships.—Five Entrance Scholarships are annually awarded after an Examination usually held in the last week of September. The subjects of examination and conditions of eligibility for these Scholarships are: (1) Two Scholarships, value £75 each, in not fewer than two nor more than three of the following subjects—Chemistry, Physics, Botany, Zoology, Physiology, and Anatomy, limited to students under 25 years of age who have not entered on the medical or surgical practice of any London medical school. (2) One Scholarship, value £150, in not fewer than three of the following subjects—Chemistry, Physics, Botany, Zoology, and Physiology, limited to students under 21 years of age who have not entered on the medical or surgical practice of any London medical school. (3) The Entrance Scholarship in Arts of the value of £100 will be given in Latin and Mathematics, with one other language. (4) The Jeaffreson Exhibition in Mathematics, Latin, and one other language—Greek, French, or German—and of the value of £50. The value of the Scholarships and Prizes is nearly £900 annually.

Further information and a handbook can be obtained on application to the Dean of the Medical School, St. Bartholomew's Hospital.

CHARING CROSS.

THIS school, with its hospital, is situated in the very centre of London, and easily accessible from all parts. It is within three minutes' walk of the Royal Dental Hospital of London, and gives instruction in all subjects of the medical and dental curriculum. The Lectures are given at hours to suit both General and Dental Students. The Hospital, with its Convalescent Home at Limpsfield, contains 200 beds. Over 2,000 cases pass through its wards each year, and some 23,000 out-patients and casualties are treated. There are Special Departments for Mental Diseases, Midwifery, Diseases of Women, of Children, of the Skin, Eye, Ear, Throat, Nose, and Teeth, for Orthopaedic Cases, X-Ray work, and for Electrical Examination and Treatment. Biological and Physics Laboratories have been established in the school, and the Pathological Laboratory has been considerably enlarged.

Appointments.—In the Medical School Demonstratorships and Assistant Demonstratorships (when they fall vacant) are open to students of the school and carry honorariums. The Curator and Pathologist is appointed annually, and receives £100 a year. Medical, Surgical, and Obstetric Registrars to the Hospital are appointed annually, the two former of whom receive £40 a year each, with luncheon in the Hospital. Six House-Physicians, six House-Surgeons, and two Resident Obstetrical Officers are appointed each year on the recommendation of the Medical Committee, after competitive examination. They are provided with board and residence in the Hospital. Clinical Clerks and Dressers are appointed in all the general and special departments of the Hospital. Arrangements can be made for students who have not entered for the entire medical curriculum to hold the posts of Clerk and Dresser. Every student holds in turn the appointment of Pathological Assistant, and assists at the necropsies. The above appointments are open without any additional fee.

Scholarships.—There are five Entrance Scholarships, of the respective value of 75, 50, 30, 20, and 30 guineas. The first, third, and fourth are open to all candidates ready to join the school for the whole curriculum; the second is reserved for the sons of medical men, and the fifth for Dental students. They are awarded at the beginning of each Winter Session after a competitive examination in (1) English, including English Language and Literature, English History with alternative questions on the History of the British Empire, and Geography, including elementary questions in Physical Geography; (2) Latin, and any one of the following three languages—Greek,

French, and German; (3) Mathematics, including Arithmetic, Algebra, and Geometry, with Mechanics, including Statics and Dynamics; (4) Inorganic Chemistry and any three of the following branches of Experimental Physics: Acoustics, Heat, Magnetism, Electricity, and Optics; and (5) Animal and Vegetable Biology. A candidate may offer himself for examination in not more than *three* of the above groups of subjects, but group (1) must be one of the three. Each group is worth 1,000 marks. Students who join in the Summer Session have the same privileges as regards scholarships, medals, and prizes as those who join in October of the same year. Candidates must be under 25 years of age on the first day of the examination, and must give notice to the Librarian of their intention to compete and of the groups in which they offer themselves for examination before 10 a.m. September 17th, 1910. The examination commences the following Monday, September 19th, at 9 a.m., and continues the two following days.

One Epsom Scholarship, giving a free education, is, each Winter Session, placed at the disposal of the Head Master of Epsom College, to be competed for by foundation scholars who have passed the Preliminary Scientific M.B. Examination in the University of London. Failing this, a scholarship of 30 guineas is awarded to a non-foundation scholar who has already passed this examination.

Two University Scholarships, of the value of 50 guineas and 40 guineas respectively, are open to students from the University of Oxford who have passed the first M.B. Examination, to students of the University of Cambridge who have passed the second M.B. Examination, and to students of the University of London who have passed the Intermediate Examination in Medicine, and who have not entered at any London Medical School. Subjects: Anatomy and Physiology, including Histology. The examination for these Scholarships, which will be partly practical, will be held at the school on September 19th and 20th. Candidates must give notice to the Librarian of their intention to compete on or before Saturday (at 10 a.m.), September 17th, 1910. The successful candidates will be required to enter forthwith at the Hospital for the completion of their curriculum.

Fees.—These may be paid in one sum as a composition fee of 115 guineas for general students, 55 guineas for dental students, and 74 guineas for university students, or for general students by sessional payments of 15 guineas every Winter Session and 10 guineas every Summer Session as long as the student remains in the school, with an entrance fee of 10 guineas; and for dental students 31 guineas on entry and 30 guineas at the end of the first twelve months.

Further information may be had of the Dean, Charing Cross Hospital Medical School, Chandos Street, Strand, London, W.C.

ST. GEORGE'S.

THIS school is at Hyde Park Corner, and carried on in connexion with St. George's Hospital, an institution having a service of 436 beds, of which 100 are at the Convalescent Hospital founded by Atkinson Morley at Wimbledon. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centres of London University established at King's College and University College. The school at Hyde Park Corner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of university and all other examinations receive careful attention.

The St. George's Hospital Club consists of an Amalgamation Club, with smoking and luncheon rooms on the hospital premises, and other students' clubs. Students have the advantage of a well-filled library of medical and scientific books. A register of accredited apartments, and a list of medical men and others willing to receive St. George's men as boarders, may be seen on application to the Dean.

Appointments.—Dresserships to the Surgeons and Clinical Clerkships to the Physicians are open without fee to all students of the Hospital. There is a large number of House Office Appointments, which may be held for six, twelve, or eighteen months, and are open without fee to every perpetual student of the Hospital, and are made strictly in accordance with the merits of the candidates. Besides this, after the student has held House Office, the following paid appointments are, among others, open to him: Medical Registrarship at £200 per annum; Surgical Registrarship at £200 per annum; Curatorship of the Museum at £200 per annum; Assistant Curatorship at £100 per annum; Obstetric Assistantship, Resident, at £50 per annum; the post of Resident Anaesthetist at £100 per annum; the post of Senior Anaesthetist at £50 per annum; the posts (2) of Junior Anaesthetists, each at £30 per annum.

Scholarships.—Two Entrance Scholarships in Arts, and 2 in Science, each of the value of 50 guineas, and 2 University Entrance Scholarships in Anatomy and Physiology (70 guineas and £50) are awarded at the commencement of each Winter Session. The William Brown Exhibition, of the value of £100 per annum (tenable for two years), is awarded by examination to a perpetual pupil of the Hospital every second year. The William Brown Exhibition of £40 (tenable for three years) is awarded by examination to a perpetual pupil of the Hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the Hospital.

Fees.—First year (Preliminary Science or First Conjoint) £26 5s., or £21, according to course. Second and third years, £63 in two equal instalments. For the course of clinical study, in the fourth and subsequent years, entrance fee, £10 10s.; annual composition fee, £31 10s. No entrance fee is payable by St. George's students who have studied at King's and University Colleges.

Further information may be obtained from the Dean of the Medical School.

GUY'S.

THE hospital contains 618 beds in constant occupation; an additional 50 beds have been opened on the medical side of the hospital. Thirty-seven beds are set apart for diseases of the eye, and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. There is a special ward of 32 beds for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the Throat and Ear Departments, and Departments for the Treatment of Diseases of the Genito-urinary System or for Orthopaedics have recently been instituted.

It has a College fronting the east gate of the Hospital, providing accommodation for 60 resident students. This contains a dining hall, reading rooms, library of general literature, and gymnasium for the use of the residents and of the members of the Clubs' Union. The athletic ground at Honour Oak Park is reached from the Hospital in twenty minutes.

The new Gordon Museum of Pathology, the Wills Library, and the school buildings in general afford unrivalled opportunities for a liberal education and for research.

Special classes are held for the Preliminary Scientific and Intermediate M.B. Examinations of the University of London and for the first F.R.C.S.Eng.

Special teaching is provided to meet the requirements of the Universities of London, Oxford, and Cambridge in General Pathology and Pharmacology.

Appointments.—All appointments are given to students without extra payment, and according to the merits of the candidates, as determined by a committee of the medical staff. Eight Assistant House-Physicians, 8 House-Physicians, 24 Assistant House-Surgeons, 8 House-Surgeons, and 2 Ophthalmic House-Surgeons are appointed annually. The House-Physicians and House-Surgeons hold office for six months each, and receive free board and lodging in the college, as also do the Resident Obstetric Assistants, of whom 6 are appointed annually, each holding office for six months. Every student is provided with rooms and commons in the hospital during the period of his "take in" as Dresser. In addition to the Clerkships and Dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, dermatology, otology, electricity, anaesthetics, and dentistry. More than 150 additional appointments have been added to the list of those annually open to students of the hospital, the majority of them being in the special departments.

Scholarships, Prizes, etc.—There are two Entrance Scholarships in Arts: One of the value of £100 open to candidates under 20 years of age, and one of £50 open to candidates under 25. Subjects: English, Latin, Arithmetic, Algebra, Euclid, and either Greek, French, or German. Three Open Scholar-

ships in Science: One of £150 and one of £60, open to candidates under 25, and one of £50 to university students who have completed their study of Anatomy and Physiology. Subjects: Anatomy, Physiology, Chemistry, Practical Chemistry, Biology, and Physics. These examinations take place in the last week of September. Junior prizes for general efficiency, £20, £15, £10; Hilton prize for Dissection, £5; Michael Harris prize for Anatomy, £10; Sands Cox Scholarship for Physiology, £15 for three years; Wooldridge Memorial prize for Physiology, £10; Beaney prize for Pathology, £34; Treasurer's gold medal in Medicine, Treasurer's gold medal in Surgery, and the Golding-Bird gold medal and scholarship for Bacteriology (£20) are awarded annually after competitive examination. The Gull Studentship in Pathology and the Beaney Scholarship in Materia Medica, of the annual value of £150 and £31 10s. respectively, are awarded without examination to enable research to be carried on in these subjects. An Arthur Durham Travelling Scholarship of £100 is awarded triennially.

Fees.—There is a system by which composition fees are paid, information as to which should be sought from the Dean of the School.

KING'S COLLEGE HOSPITAL.

THE medical school carried on in connexion with this institution deals, as do the sister institutions at Westminster and University College Hospitals, with the advanced or final subjects of the medical curriculum. The arrangements for education in these subjects are very complete. The hospital contains over 200 beds, its in-patients numbering about 3,000, and its out-patients about 16,000 every year. In addition a considerable number of midwifery cases are attended yearly. There are also special departments for diseases of women and children, ophthalmology, otology, laryngology, dermatology, and dental surgery; a vaccine department is also included.

Appointments.—Fourteen Resident Medical and Surgical Officers are appointed yearly, as well as Dressers and Clerks in the wards, out-patient departments, *post-mortem* room, and special departments. Each of the special departments has also a Senior Clinical Assistant, and there are six Registrars, most of whom receive salaries or honorariums. There is also a Union Club, which combines athletics, music, and other societies connected with the school, and provides also a common room.

Fees.—The composition fee is 70 guineas in one sum, or in two equal instalments of 36 guineas. The prospectus of the school can be obtained on application to its Secretary.

THE LONDON.

THIS hospital (which contains 922 beds) and its Medical College are in Mile End Road, Whitechapel. All the arrangements are very complete and modern. New buildings for the departments of Bacteriology, Public Health, Chemistry, and Biology, a new Pathological Institute, and new Out-patient and Special Departments have been added within the last few years. New Students' Rooms have been added, and a Garden and Fives Court opened for the use of the members of the London Hospital Clubs Union. The College Athletic Ground is at Highams Park, and is open to all members of the Clubs' Union. A special course for the D.P.H. will commence at the beginning of the Winter Session. Special classes for the First and Second M.B.Lond, the Primary and Final Fellowship, and other examinations are held. Those for the Final and Primary F.R.C.S. commence early in September.

Appointments.—The salaried appointments open to students are those of Medical Registrars (3), Surgical Registrars (3), Obstetric Registrar, Medical, Surgical, and Obstetric Tutors; Senior Dressers to Out-patients; Clinical Assistants in the Medical, Surgical, Ophthalmic, Aural, Light and Skin, Orthopaedic, and Electrical Departments. There are also 5 Resident House-Physicians and 7 Resident House-Surgeons, 2 Accoucheurs, 7 Receiving-room Officers, 2 Emergency Officers, 1 Assistant Director of the Pathological Institute, and 3 Pathological Assistants. Also paid and unpaid Clinical Assistants in the various special departments. In addition there are numerous Assistantships and Clerkships, and Dresserships in the various departments.

Scholarships and Prizes.—The following is a list of Scholarships and Prizes: *At Entrance:* Price Scholarships in Science, £120; in Anatomy and Physiology, £60; Entrance Scholarships in Science, £60 and £35; Epsom Scholarship, £126; Buxton Scholarships in Arts, £30 and £20. *After Entrance:* Anatomy and Biology Scholarships, £20; Anatomy and Physiology Scholarship, £25; Letheby Prizes, £30; Scholarships in Clinical Medicine, Surgery, and Obstetrics, £20 each; Duckworth Nelson Prize, £10; Hutchinson Prize, £40; Sutton Prize, £20; Sir Andrew Clark Prize, £26; Anderson Prizes, £9; Out-patient Dressers' Prizes, £60; Practical Anatomy Prizes, £10; Dourc Hoare Prize, £5; Wynne Baxter Prize, £5 5s.

Fees.—The composition is 120 guineas. A reduction of 15 guineas is made to sons of medical men.

Other information may be obtained from the Warden, Mr. Munro Scott, at the London Hospital Medical College, Mile End, E.

ST. MARY'S.

THIS school and its hospital are situated in Praed Street, in the neighbourhood of the residential districts of Paddington, Bayswater, and North Kensington, and are thus especially convenient to students who wish to reside in the immediate vicinity. A register of approved lodgings is kept in the office of the Medical School.

A new Athletic Ground, situated at Park Royal, Acton, has recently been acquired, and will be ready for use in October.

The ground is seven acres in area, and provides ample accommodation for the various athletic clubs; the pavilion is large and well equipped.

The Hospital at present contains 301 beds, of which 31, situated in the New Wing, are devoted to treatment by Therapeutic Inoculation. This Wing also contains the Department for Therapeutic Inoculation, which consists of a large block of consulting rooms, waiting rooms, and laboratories under the direction of Sir Almroth Wright, F.R.S.

The Out-Patient Department, situated on the ground floor, has been in use for some years, and an additional operating theatre has been opened.

In addition to systematic courses of Lectures and Demonstrations, special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London, and for the Primary and Final F.R.C.S. A complete course of instruction in Chemistry, Physics, and Biology, recognized by the University of London as an approved course for Internal Students, is held throughout the year, and students may join in October, January, or April.

All clinical appointments in the Hospital are free to students of the Medical School, the term of office in each case being of four months' duration, and the Resident Medical Officers are chosen by competitive examination. Six House-Physicians, six House-Surgeons, four Obstetric Officers, two Resident Medical Officers to the Inoculation Wards, and two Resident Anaesthetists are appointed each year, and receive board and residence in the hospital.

A large number of salaried appointments are open annually to qualified students, including those of Medical Registrar, Surgical Registrar, Casualty Physician, Casualty House-Surgeon, Assistant Curator together with several demonstratorships.

In the Inoculation Department there are nine Assistantships, the salaries of which amount to £1,60 per annum.

In appointing to these posts preference is given to students of St. Mary's.

Scholarships.—There are Entrance Scholarships in Nature Science. One of £145, two of £50, one of £25, and two of £52 10s (open to students of any British university) awarded annually by competitive examination in September.

Fees.—The composition fee for students is £140 if paid in one sum, or £145 if paid in four instalments. University students who have completed their examinations in Anatomy and Physiology are admitted on payment of a composition fee of 60 guineas (£63 paid in one sum, or 65 guineas (£68 5s.) if paid in two annual instalments. University students, prior to

completing their examination in Anatomy and Physiology, pay an annual fee of 25 guineas (£26 5s.). Separate courses of Lectures, Laboratory Work, or Hospital Practice may be taken.

The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

THE MIDDLESEX.

THIS school and its hospital are in Mortimer Street, W., and close to Oxford Street and Portland Place. There is a resident college for a limited number of students which overlooks the hospital garden. The hospital contains 340 beds. A wing containing 40 beds and special research laboratories is entirely devoted to patients suffering from cancer. It offers unrivalled opportunities for the study of this disease, both in its clinical and pathological aspects.

Special Maternity Wards to enable students to obtain indoor instruction in Obstetric Medicine have recently been added to the Hospital.

In addition to the arrangements for teaching ordinary students all subjects of the medical curriculum, a bacteriological and public health laboratory has been added for the purpose of providing instruction for women medical practitioners preparing for the examinations for the Diploma in Public Health and for the M.D. in State Medicine of the University of London, and of affording facilities to them and other women students desirous of carrying out research work in Public Health, Bacteriology, and General Pathology.

Appointments, etc.—Eighteen Resident appointments are open annually to competition among pupils of the Hospital. The officers reside and board in the Residential College free of expense. There are two Casualty Medical and two Casualty Surgical Officers appointed annually. Six House-Surgeons are appointed every year at intervals of two months, after examination; the six House-Physicians are also appointed annually at similar intervals; they must have a legal qualification, or hold a Broderip Scholarship. An Obstetric House-Physician (qualified to practise) is appointed every six months. Non-Resident Physicians' Assistants are appointed in the various out-patient Departments. In the out-patient department the appointments are: Dresser to the Surgeons to Out-patients and to the Dental Surgeon, Clerk to the Physicians to Out-patients, Dresser to the Ophthalmic Surgeon, Clerk in the Department for Diseases of the Skin, Clerk in the Department for Diseases of Women, and Dresser to the Throat and Ear Department. There are also Extern Midwifery Clerks and *Post-mortem* Clerks. The appointments are so arranged that every student may during his course hold all the Out-patient and In-patient Clerkships and Dresserships. Each student must have held an out-patient clerkship and dressership before being eligible to hold in-patient clerkships or dresserships. No student can be appointed to any office until he has passed the Second Examination of the Examining Board in England or its equivalent. Clinical Assistants are appointed in the Children's, Ophthalmic, Skin, and Throat and Ear Departments.

Scholarships.—Three Entrance Scholarships, value £100, £50, and £25 respectively, are open to students commencing their medical studies in April or October, 1910. An Annual Entrance Scholarship, of the value of £50, is open to students of the Universities of Oxford and Cambridge who have completed the curriculum for, or passed the examinations in, Anatomy and Physiology. Subjects: Anatomy and Physiology, including Histology. The examination for these and the foregoing takes place on September 19th, 20th, and 21st. Application for admission must be made on or before September 10th. Students entering the school in the previous April are eligible. *The Freer Treas Scholarship* is annually awarded on the nomination of the Head master to a pupil of the Epsom College who has passed the Preliminary Scientific M.B. Examination. There is also a Scholarship, value £50, awarded annually to students from New Zealand.

Fees.—The composition fee is 145 guineas for London University students. For students who have passed the Preliminary Scientific (London University), 120 guineas. For students taking the Conjoint diploma, 105 guineas. For members of universities and others who have completed their anatomical and physiological studies, 70 guineas; dental students, 54 guineas.

Further information may be obtained on application to the Dean.

ST. THOMAS'S.

THIS school, and the hospital in connexion with which it works, is situated in Lambeth, the joint buildings on the Thames facing the Houses of Parliament, and forming one of the well-known architectural features of London.

The School Buildings are separated from the Hospital by a quadrangle on which there are cricket practice nets for the use of the students, and comprise numerous theatres, laboratories, and class-rooms well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A splendid library and reading room and a complete museum are open to all students from 9 a.m. to 5 p.m.; Saturdays, 2 p.m. The club premises contain a dining room and smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. A cloak-room with lockers, and a lavatory with bath-rooms, are in the main school building. Students are thus able to spend the whole day at school. Good meals are obtainable at a moderate tariff, with facilities for exercise and recreation. The sports ground of more than nine acres in extent is at Chiswick. It can be reached in forty minutes from the hospital; it is admirably adapted for football, cricket, lawn tennis, and athletic sports. It is provided with a pavilion, where refreshments can be obtained.

The Hospital contains 605 beds, and, in addition to the ordinary provisions of a great hospital, has connected with its out-patient department two large, well-ventilated Clinical Theatres provided with ample sitting accommodation, so that large numbers of students are enabled to follow closely the practice and teaching of the out-patient staff. There is another Clinical Theatre, centrally situated, so as to facilitate the illustration of lectures by patients from the wards and out-patient room; it is arranged also for lantern demonstrations. There is a maternity ward, where students receive instruction in accordance with the latest university regulations.

Appointments.—All Hospital appointments are open to students without charge. A Resident Assistant Physician and a Resident Assistant Surgeon are appointed annually at a salary of £100 each, with board and lodging. Two Hospital Registrars, at an annual salary of £100 each, are appointed yearly. The tenure of these offices may be renewed for a term not exceeding two years. Six Resident Casualty Officers and Anaesthetists are appointed every six months. An Obstetric Tutor and Registrar is appointed each year at an annual salary of £50. Four House-Physicians, four House-Surgeons, two Obstetric House-Physicians, two Ophthalmic House-Surgeons, and eight Clinical Assistants in the special departments are appointed every three months, and hold office for six months if recommended for re-election. Clinical Clerkships and Dresserships to the in-patient and out patient departments are available to the number of 400 each year.

Scholarships.—There are five entrance Scholarships offered: Two in Arts, giving one year's free tuition; one of £150 and one of £60, in Chemistry, Physics, and Biology, for students who have not received instruction in Anatomy or Physiology; one of £50 in any two of the following subjects: Anatomy, Physiology, or Chemistry, for students who have completed their examinations in Anatomy and Physiology, for a medical degree in any of the universities of the United Kingdom, and have not entered as students in any London medical school. Numerous scholarships, prizes, and medals are open for competition throughout the whole career of a student, including a Fellowship of £100 given by the Salters' Company for research in Pharmacology, and the Louis Jenner Research Scholarship, of the annual value of £60, for Pathological research.

Fees.—The entrance fee for Second Year's Students is 20 guineas; for Third Year's Students 10 guineas. The annual composition fee is 30 guineas. For Preliminary Science Students the fee is 15 guineas. No extra charges are made for materials required in practical courses. Special courses of instruction are given for various examinations, and a register of

lodgings is kept at the School. A list of medical practitioners, clergymen, and others who receive students is also available. Further information may be obtained from the Secretary of the School, St. Thomas's Hospital, Albert Embankment, S.E.

University College Hospital.

The school carried on in connexion with the North London Hospital, otherwise known as University College Hospital, is in immediate proximity to the hospital in University Street and opposite University College. Its work is carried out in a building erected for the purpose some two years ago. It contains an ample supply of rooms for lectures and demonstrations in all the subjects which the school undertakes to teach. These are the final subjects of the medical curriculum as distinct from the preliminary sciences and anatomy and physiology, and instruction is given in such fashion as to meet the need of students, whatever the degree or diploma at which they are aiming. Though the school is primarily intended for those who have passed all the early examinations and are preparing for their final test, it is open to students to join the school who have still the whole of their medical studies before them. In this case the school provides for their education in the preliminary sciences and in anatomy and physiology at University College, where work in all these subjects is carried on, University College being now one of the common teaching centres in these subjects for the constituent schools of the Medical Faculty of the University of London. The school possesses a large library, and has set aside for its Medical Society four rooms for reading and recreation. There are also a gymnasium and, at Perivale, an athletic ground.

Scholarships.—The following scholarships and prizes are open to competition: Two *Entrance Exhibitions* of 80 guineas each, awarded after a competitive examination in anatomy and physiology; the *Atkinson Morley Scholarship* of £45 a year for three years, awarded after examination in the theory and practice of surgery; the *Atchison Scholarship* of £55 a year for two years for proficiency in pathology and surgery; the *Filliter Exhibition* in pathology of £30; four *Fellowes Medals* in clinical medicine; the *Bruce Medal* in pathology and surgery; two *Tuke Medals* in pathology, and the *Erichsen Prize* for practical surgery.

Appointments.—All the appointments at the hospital are reserved for students of the school, the dresserships and clerkships being open, of course, to those who have still to qualify. The qualified appointments, in addition to a number of posts as House-Physicians and House-Surgeons and Obstetric Assistants, include appointments as Resident Medical Officer, as Surgical Registrar, as Obstetric Registrar, as Casualty Medical Officer, as Casualty Surgical Officer, and as Deputy Anaesthetists.

Fees.—The fee for the full course of final studies at the school is 80 guineas if paid in one sum, or 82 guineas if paid in two instalments.

Westminster.

This school, with its hospital, situated in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the medical curriculum at the teaching centre of the University of London, established at King's College. The rest of the work is done in the school buildings near the hospital, which contains upwards of 200 beds, and affords most ample facilities for instruction in all branches of Medicine and Surgery.

Appointments.—A Medical and Surgical Registrar are appointed annually, each with a salary of £50. Two House-Physicians, three House-Surgeons, one Assistant House-Physician, one Assistant House-Surgeon, and a Resident Obstetric Assistant are appointed after examination, and are provided with rooms and commons, except the Assistant House-Physician and the Assistant House-Surgeon, who are provided with commons only. The Assistant House-Physician after three months' service becomes House-Physician for a further period of six months, and the Assistant House-Surgeon after two months' service becomes House-Surgeon for a further period of six months. Clinical Assistants to the Assistant Physicians and Assistant Surgeons, and to the officers in charge of special departments, are appointed from among qualified students. Every student must perform the duties of Out-patient Dresser for four months, and afterwards hold the office of In-patient Dresser for four months. He is also required to serve two terms of four months each as Clinical Clerk to an In-patient Physician. Two Pathological Clerks are appointed every four months to assist in the *Post-mortem* room. No student is eligible as an In-patient Dresser or Clinical Clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and Dressers in the Special Departments of Hospital Practice are periodically appointed. So far as vacancies permit, students of other hospitals are admitted to In-patients' Dresserships or Clerkships.

Scholarships.—The following Scholarships are offered for competition during the year 1910-11: In September, 1910: Three Scholarships in Arts, £50, £40, and £30; Scholarship in Arts for Dental Students, £20; two University Scholarships in Anatomy and Physiology, 70 guineas and £60; two Natural Science Scholarships, £60 and £40; Presentation, open to pupils of Epsom College. In April, 1911: Two Scholarships in Arts, £60 and £40; one University Scholarship in Anatomy and Physiology, £60; two Natural Science Scholarships, £60 and £40.

Fees.—The annual composition fee is 25 guineas, and an entrance fee of 15 guineas is payable by every student, including scholars. Under certain conditions 10 guineas of the entrance fee is returnable on qualification. Special terms are given to the sons of medical men. These fees include subscriptions for membership of the Clubs' Union.

Further information can be obtained on application to the Dean at the Westminster Hospital Medical School, Caxton Street, Westminster, S.W.

London (Royal Free Hospital) School of Medicine for Women.

This school is carried on at 8, Hunter Street, Brunswick Square, in connexion with the Royal Free Hospital, and it is, like all the other London schools which have so far been mentioned, one of the constituent schools of the Medical Faculty of London University. The new school buildings, among the best of their kind, were completed in 1900 at a cost, with equipment, of over £35,000. The laboratories are large and well lighted, and are fully equipped for the First and Second Medical Examination courses of the University of London. A large Library and Common Room are provided for the use of the students, and sets of chambers to accommodate seventeen students.

The Hospital has 165 beds, all of which are available for clinical instruction. There are also separate departments for Gynaecology and Obstetrics, and Diseases of the Eye, Ear, and Skin. Instruction is given in Anaesthetics, Bacteriology, etc., in addition to the ordinary Clinical Lectures and Demonstrations and Tutorial Classes. Students also attend the practice of one of the Fever Hospitals of the Metropolitan Asylums Board, and receive special instruction in Lunacy at Bethlem Hospital; they are also admitted to the practice of a number of special hospitals.

The work of the School includes preparation for the M.B., B.S.Lond., the diplomas of the Royal Colleges of England and of the Conjoint Boards of Scotland and Ireland, and the Society of Apothecaries, London also for the greater part of the course required by the University of Durham and the other Universities of England which admit women to their degrees, and the University of Glasgow.

Appointments.—Qualified students of the school can obtain appointments as House-Physician and Surgeon Obstetric Assistants, Surgical and Medical Registrars Anaesthetists, Medical Electrician, Radiographer Curators of the School and Hospital Museums, and Clinical Assistants and Demonstrators in various subjects.

Scholarships.—An Entrance Scholarship value £30, and the St. Dunstan's Medical Examination value £60 a year for three years, extendible to five years, are offered for competition at the end of September in each year. The Bostock Scholarship value £60 a year for two or four years, is awarded by the Re Trustees on the result of an examination held in May by the

University of London. The holder of the Scholarship must enter the London School of Medicine for Women. The John Byron Bursary of £20 a year for two years, the Helen Prideaux Prize of £40, the Mabel Webb Research Scholarship of £30 for two years, the Fanny Butler Scholarship of £14 10s. a year for four years, together with many other scholarships and prizes, are offered on sundry conditions. Various Missionary Societies also offer scholarships on certain conditions, and assist ladies who wish to go to India and other countries as medical missionaries.

Fees.—University of London and Diplomas of Royal Colleges of England, First Medical Examination Course, £25; course for Second and Third Medical Examinations, £135; course after Second Medical Examination, £90. Composition Fee for course of study for other qualifications, £140.

Full particulars as to Curriculum and Scholarships can be obtained from the Secretary, Miss Louie M. Brooks, 8, Hunter Street, W.C.

KING'S COLLEGE.

SINCE the incorporation of King's College in the University of London, the instruction given to Medical Students is carried out there in the classes of the Faculty of Science (Medical Division), and deals only with the subjects of the preliminary and intermediate parts of the curriculum. King's College Hospital (which see) is now a separate institution, and the studies for the final examinations are carried out there.

A special class for the Matriculation Examination will commence on September 27th. Classes for the science subjects are held by the Professors of the Science Faculty of King's College, and students avail themselves of their laboratories.

There is a large athletic ground at Wormwood Scrubbs, managed by the Students' Union Society.

Scholarships.—The Entrance Scholarships are: 1. Two to four Warneford Scholarships, each £100 value; subjects—Mathematics. Classics, Divinity. 2. One Sambrooke Exhibition of £100, open; subjects of examination—Mathematics, Elementary Physics, Inorganic Chemistry, Botany, and Biology. The holders of the preceding awards must proceed to King's College Hospital. 3. Rabbeth Scholarship, value £20, in July, for best evidence of early scientific training.

Fees.—Information as to fees should be obtained from the Dean of the Medical Division of the Faculty of Science at the College. He attends daily, except Saturday, for the purpose of receiving students and their friends.

For conditions of scholarships and subjects of examinations apply to the Dean, or the Secretary, King's College, who will send a full prospectus post free.

UNIVERSITY COLLEGE.

THIS institution, one of the principal component parts of the University of London, possesses a Faculty of Medicine whose work covers all the subjects included in the group commonly known as the Preliminary Medical Sciences—namely, Physics, Chemistry, Botany, and Zoology; and also the Intermediate Medical Sciences—namely, Anatomy, Physiology, and Pharmacology. It also devotes much attention to Hygiene and Pathological Chemistry. It undertakes the education of students in all the subjects mentioned, leaving them free to complete their education in the strictly professional subjects—Medicine, Surgery, and the like—where they will. The work is somewhat differently arranged, accordingly as whether the student has in view the degrees of the University of London or the diplomas of the Royal Colleges. In either case the whole work to be done is broken up into courses devised to meet the requirements of different examinations, and students can join the College for any of them. The general arrangements for the benefit of students include membership of the Union Society with its gymnasium and athletic ground. There is also a collegiate residence for about forty students at Ealing.

Scholarships.—The Scholarships and Exhibitions obtainable include the Bucknill Scholarship, value 135 guineas, in Chemistry, Physics, Botany, and Zoology. (The successful student must complete his work at University College Hospital Medical School), and two Entrance Exhibitions on the same subject, each of the value of 55 guineas.

Fees.—The fees for the courses covering the work of the First Examination for medical degrees of London University and in both parts of the Second Examination amount to 86 guineas. The fees for the courses covering the corresponding examinations held by the Conjoint Board in England come together to 79 guineas. These fees may be broken up into payments for the different courses which it may be desired to take out, but do not cover tuition for more than a stated period.

COOKE'S SCHOOL.

THIS school is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its curriculum work it does not receive more than half a dozen students in the course of the year; these have special advantages both as regards anatomy and physiology. The fees, we are informed, are but slightly in excess of current charges.

The operations of surgery are performed on the dead body. Such courses are recognized for army promotion, for the Indian Medical Service, etc.

The school, which is open all the year round, possesses a good collection of anatomical models, physiological and chemical apparatus, and gentlemen preparing for the higher examinations (F.R.C.S.Eng., M.B.Cambridge, Oxford, London, etc.) receive special instruction in the more difficult subjects.

THE PROVINCES.

THERE are in England and Wales, not counting London, ten medical schools, each, with one exception, supplying instruction in the full medical curriculum. Accounts of them here follow, these being placed more or less roughly in the order of their foundation. In several cases there is appended information concerning other hospitals than those directly connected with the School in question; such Hospitals, officially and unofficially, play a part in the education which the students of the School receive, and in any case serve as places of additional or post-graduate study.

OXFORD AND CAMBRIDGE.

THE medical schools of these ancient seats of learning play year by year an increasingly important part in medical education. At both there are unsurpassed opportunities for obtaining a good knowledge of the Preliminary Sciences and of Anatomy and Physiology, and the same might be said with equal, if not greater, truth in respect of Pathology. All the laboratories are very completely equipped, and the teaching staffs most distinguished. Each of these schools provides a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them, but this is not commonly done. The local hospitals are comparatively small, so the authorities encourage the students, so soon as they have completed the earlier examinations, to join some London school, and thus spend the time of their preparation for the final examination in a city where the opportunities for gaining clinical knowledge are greater and more varied. Most of the London schools make special arrangements for such students, information as to which can be obtained from the respective Deans.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

THIS, the Medical School of the Faculty of Medicine of the University of Durham, is in the neighbouring city, Newcastle-on-Tyne. Its classes and lectures are arranged to meet the requirements of the university in all the degrees which the latter grants, and also those of the other examining bodies. The students do their work in the preliminary sciences at Armstrong College, also part of the university, and then carry on their studies in the new Royal Victoria Infirmary, an institution with over 400 beds and special accommodation for the benefit of students. In a new wing of the school itself there are the departments of Bacteriology and Physiology. There are also in a wing containing a gymnasium a set of rooms for the use of the Students' Union.

Appointments.—Assistant Demonstrators of Anatomy and Prosectors for the Professor of Anatomy, Assistant Physiologists, Pathological Assistants, Assistants to the Dental Surgeon, and Assistants in the Eye Department, Throat and Ear Department, and Department for Skin Diseases, are elected annually. Four times in the year Clinical Clerks and Dressers are appointed for three months.

Scholarships.—A University of Durham Scholarship, value £100, for proficiency in Arts, open annually at the beginning of the Winter Session to intending students. The Pears Scholarship, value £150, for proficiency in Arts (when vacant). The Dickinson Memorial Scholarship, interest of £400, with a gold medal, for Medicine, Surgery, Midwifery, and Pathology, open to perpetual students in their fifth year. The Tulloch Scholarship, interest of £400 annually, for Anatomy, Physiology, and Chemistry, for students at the end of their second year. The Charlton Memorial Scholarship, interest of £700 annually, open to full students entered for the class of Medicine, at the end of their fourth or fifth winter. The Gibb Scholarship, interest of £500 annually, for Pathology, at end of Summer Session. The Goyder Memorial Scholarship, proceeds of £325; subjects: Clinical Medicine and Clinical Surgery. Luke Armstrong Memorial Scholarship, proceeds of £680, for best essay in some subject in Comparative Pathology. The Stephen Scott Scholarship in Surgery, interest on £1,000 annually. The Heath Scholarship in Surgery, interest on £4,000, awarded every other year. First award in 1896.

Fees.—The composition fee for the university course is 72 guineas. Other information should be sought from the Secretary of the School at Newcastle.

Other Hospitals.—(1) In the *Hospital for Sick Children* there are 70 beds, besides an isolated block for infectious and doubtful cases. There is a large out-patient department. The practice of the hospital is open free to all students or qualified practitioners. The number of in-patients in 1906 was 779. The out-patient department is carried on in buildings specially erected in the central part of the city, which have recently been extended at an outlay of £10,000. The attendance of out patients in 1909 was very large. (2) At the *Infirmary for Diseases of the Eye* there are 20 beds. Its out-patients number 6,600 annually. Clinical instruction is given daily from 11 a.m. to 1 p.m.

BIRMINGHAM.

THE Medical School in this city is carried on by the Medical Faculty of the University of Birmingham, its students having an adequate number of good laboratories, class-rooms, and other necessaries devoted to their use by the university. The clinical work is done at the General and Queen's Hospitals, which are amalgamated for this purpose. Together they have upwards of 500 beds for medical, surgical, and special cases, and also an array of special departments of all kinds, including a large maternity department. Clinical instruction is given in the wards and out-patient and special departments daily, and formal clinical lectures delivered weekly throughout the Winter and Summer Sessions. Special tutorial classes are also held alike for the degrees of Birmingham and some other universities and for the diplomas of Corporations.

Appointments.—The large number of appointments open to past or other students include the following:—At the General Hospital: One Resident Medical Officer, salary £100 a year. One Resident Surgical Officer, salary £100 a year. One Resident Pathologist, salary £50 a year. Two non-resident Casualty Assistant Physicians, salary £50 a year. Three non-resident Surgical Casualty Officers, salary £50 a year. Two non-resident Anaesthetists, salary £50 a year. Five House-Surgeons, office tenable for six months, £50 a year. Two Assistant House-Surgeons, salary at the rate of £40 a year. Three House-Physicians, post tenable for six months, £50 a year. One Resident Medical Officer at the Jaffray Branch Hospital, salary £150 a year. One Resident Assistant at the Jaffray Branch Hospital, tenable for three months. At the Queen's Hospital: Three House-Physicians and three House-Surgeons (posts vacant in January and April). One Obstetric and Ophthalmic House-Surgeon (post vacant in April and October). These appointments are tenable for six months. Salaries at the rate of £50 per annum, with board, lodging, and washing. One Resident Dresser, tenable for three months; candidates must previously have attended all their lectures, etc., and need not be qualified. At the Maternity Hospital: One House-Surgeon, salary £50 a year. At the City Workhouse and Workhouse Infirmary: Five Resident Medical Officers. At the Birmingham General and Branch Dispensaries: Twelve Resident Surgeons. At the Birmingham Lunatic Asylums: Five Assistant Medical Officers. At the City Fever Hospitals: Three Assistant Medical Officers. At the Children's Hospital: One Resident Surgical Officer, one Resident Medical Officer. At the Birmingham and Midland Eye Hospital: Three Resident Surgeons. At the Orthopaedic and Spinal Hospital: Two Clinical Assistants (non-resident). At the Ear and Throat Hospital: One House-Surgeon, £70 a year, four Clinical Assistants (non-resident). There are also four non-resident Poor Law appointments in the gift of the Board of Guardians.

Scholarships.—There are numerous money and other awards for Students of sufficient merit, among them being the following: The *Walter Myers Travelling Studentship* of £150; the *Sands Cox Scholarship* of £42 (an Entrance Scholarship in the Faculty of Medicine, awarded on Matriculation marks); four *Queen Scholarships* of £10 10s. each, awarded annually at the second, third, fourth, and final university examinations respectively; one or more *Sydenham Scholarships*, allotted on entrance to Students who are the sons of deceased medical men. The *Ingleby Scholarship* of £10 for proficiency in Midwifery and Gynaecology. There is also an Entrance Scholarship of £37 10s. for Students proceeding to a degree in Dental Surgery, besides prizes in money for successful class work by senior and junior Students.

Fees.—The composition fee is £85. This covers all the work required for the degrees of Birmingham and some other universities, and for the ordinary qualifications of licensing corporations, but not the additional courses required for the Fellowship of the Royal College of Surgeons of England, the diploma and degrees of the university in State Medicine and some other special work. Other information should be sought from the Dean of the Medical Faculty.

MANCHESTER.

THE staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University; all the arrangements for the instruction of students both in their earlier and their later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains about 592 beds, and has associated with it a large convalescent home and the Royal Lunatic Asylum at Cheadle. Instruction in Practical Gynaecology and Midwifery is given at the Royal Infirmary and St. Mary's Hospital.

Appointments.—The following are among the appointments open to past and present students of the school in connexion with its arrangements for clinical tuition: A Surgical Registrar, at £80 per annum, with an additional £30 when acting as Surgical Tutor; a Pathological Registrar, at £100 per annum; a Medical Registrar, at £70 per annum; a Director and Assistant Director of the Clinical Laboratory, at £200 per annum; Assistant Medical Officer, at £105 per annum; three Assistant Surgical Officers, each at £35 per annum; five Anaesthetists, at £50 per annum each; Medical Officers for Radiography and Electricity, £100 per annum; Medical Officer for Home Patients, one year, £150 per annum; Resident Medical Officer, one year, £150 per annum; ditto, at Cheadle, one year, £150 per annum; Resident Surgical Officer, one year, £150 per annum; an Assistant Medical Officer at the Convalescent Hospital at Cheadle, appointed every six months, at a salary of £80 per annum; eight Senior and eight Junior House-Surgeons and ten House-Physicians appointed during the year for a term of six months. Resident Officers are appointed to the Accident Room, the Gynaecological, the Ear and Throat Departments, every six months. Four or more Clinical Clerks are attached to each Physician and Assistant Physician, and to the Obstetric Physician, and four or more Dressers to each Surgeon and Assistant Surgeon, and to the Ophthalmic Surgeon, and four or more

Clerks to the Pathological Registrar, two Clerks to the Director of the Clinical Laboratory, and a number of Clerks, not exceeding six, is appointed to assist the Medical Officer for Home Patients. Accident Room Dressers are appointed every three months. Additional Clinical Clerks are appointed to assist in the departments for the Diseases of the Eye, Ear, and Throat.

Scholarships.—The following are among the Scholarships obtainable by students of the School: *Rogers and Seaton Scholarships in Arts* (in alternate years), £40 per annum, tenable for two years. Two *Dalton Entrance Scholarships in Mathematics*, tenable for two years, value £40, one being awarded annually, except in such years as a Cartwright Scholarship is awarded. *Cartwright Scholarship*, £35 per annum, tenable for three years. Three *Hulme Scholarships*, of £35, tenable for three years, one being awarded annually for proficiency in subjects of general education, and tenable for three years. Two *James Gaskill Scholarships* of £35, tenable for two years, one being awarded annually for proficiency in the branches of Mechanics and Chemistry. A *Dora Muir Scholarship*, £25 per annum, tenable for three years, and open to the competition of Women students only. This is awarded triennially; next competition in May, 1911. *Sir J. P. Kay-Shuttleworth Scholarship*, £30 per annum, tenable for three years, open to the competition of scholars from Sedbergh School, Giggleswick School, and Burnley Grammar School. Subjects: Mathematics, Chemistry, and Mechanics. *Dreschfeld Memorial Scholarship*, value £30, awarded annually on the results of the Matriculation Examination. A *Theodores Modern Languages Exhibition*, £15, awarded annually. Two *Dauntesey Medical Scholarships*, value £35, tenable for one year, for candidates who have not attended lectures in a medical school. Subjects: Zoology, Botany, and Chemistry, tenable for three years. Two *Entrance Scholarships in Medicine*, value £100, awarded annually for proficiency in Arts or Science respectively. Two *Robert Platt Physiological Scholarhips* of £50, tenable for two years. A *Robert Platt Zoological and Botanical Scholarship*, £50. A *Leech Fellowship* of £100 for proficiency shown at the Second or Final M.B. Examination. A *Graduate Scholarship in Medicine:* One of £25 to £50, tenable for one year, awarded annually for proficiency shown at Second M.B. Examination. The *Tom Jones Memorial Surgical Scholarship:* Value £100, tenable for one year, awarded usually triennially; next award in September, 1910. The *Turner Medical Scholarship:* Value £20, awarded annually for proficiency in certain subjects of the Final M.B., Ch.B. Examination. The *John Henry Agnew Scholarship* of £30, awarded annually for proficiency in the Diseases of Children. The *Bradley Memorial Scholarship in Clinical Surgery* of £20. The *Ashby Memorial Scholarship*, tenable for one year (£100), for research in the Diseases of Children.

Fees.—The composition fee for the university courses in Medicine is 70 guineas, payable in three instalments of 30, 20, and 20 guineas, but this sum does not include the fee to cover the work required for the First B.M. Examination. This is £25, payable in one sum. A prospectus and further information about the school and scholarships may be obtained on application to the Registrar.

Other Hospitals.

1. The *Royal Eye Hospital* contains 160 beds. Clinical instruction is given daily to students.

2. *The Manchester Northern Hospital for Women and Children*, situated in Cheetham Hill Road, near the centre of the town, containing 70 beds and cots. Out-patients are seen daily at 9 a.m.

3. The well-known *Hospital for Children* at Pendlebury, near Manchester, contains 168 beds, and 24 beds at the Convalescent Home, St. Anne's-on-the-Sea. The visiting staff see out-patients daily at the Out-patient Department, Gartside Street, Manchester, at 9.30 a.m., and visit the hospital daily. The practice of the hospital and out-patient department is free to students accompanying the visiting medical and surgical staff.

4. *St. Mary's Hospital for Diseases of Women and Children.*—This has 100 beds, including 20 beds for the reception of lying-in cases, especially those attended with difficulty or danger. In the out-patient departments students are taught the various methods of examination and diagnosis, and the use of gynaecological apparatus, while in the wards they have an opportunity of becoming familiar with the diagnosis and treatment of graver cases, and of witnessing more important gynaecological and obstetrical operations. The number of maternity cases attended annually is over 4,000. The hospital possesses a library, presented by the late Dr. Radford, consisting of nearly 5,000 volumes, chiefly on subjects connected with obstetrics and gynaecology. There is also a museum, containing a large number of pathological specimens, and a valuable collection of deformed pelves, casts, obstetric instruments, and anatomical models. The gynaecological practice of the hospital is free to fourth and fifth years' students. The fees for the midwifery practice are as follows: During terms, per month—first month, £8 8s.; second month, £7 7s.; third month, £6 6s.; per term of eleven or twelve weeks, £18 18s. During holidays—minimum period of three weeks, £8 8s.; extra week, £2 12s. 6d. Only eight students are received at one time, thus allowing each one ample opportunity of attending the number of cases of labour required by the examining bodies. Application must be made to the Secretary at the hospital.

LIVERPOOL.

THE Medical School of this city is part of the university, and, owing to the enlightened liberality of several men of wealth, is particularly well provided with special laboratories, as well as with ordinary spacious and well-equipped class-rooms and laboratories for the instruction of students proceeding to medical degrees and diplomas in special and ordinary subjects. All the laboratories and other rooms are situated close to one another and intercommunicate, together forming four large blocks of buildings. The anatomical department is very complete, and includes a large and well-stocked museum and a well-lighted dissecting room on the upper floor measuring 70t ft. by 40 ft. The departments of Physiology are accommodated in the block provided by the generosity of the late Rev. Thompson Yates. Comparatively recent additions are the Johnston Laboratories for Experimental Medicine, Bio-chemistry, and Comparative Pathology, and the building for Surgery, Toxicology, and Dental Subjects. The work of the students at the later periods of their study is arranged upon equally satisfactory lines, the teaching hospitals, of which an account is given below, having amalgamated to form the Clinical School of the University.

Appointments.—The nature of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming its clinical department.

Scholarships.—The awards made each year to successful students total over £1,000. They include the following: Two Fellowships of £100, one in Pathology, the other in Physiology; a *Robert Gee Fellowship* in Anatomy, value £100; an *Alexander Fellowship* for Research in Pathology; a *Johnston Colonial Fellowship* in Pathology and Bacteriology; a *John W. Garratt International Fellowship* in Physiology and Pathology, value £100 and renewable; an *Ethel Boyce Fellowship* in Gynaecological Pathology, and a *Thelwall Thomas Fellowship* in Surgical Pathology, all of the value of £100 and all renewable; a University Scholarship of £25, awarded on the results of the Second M.B. Examinations; two *Lyon Jones Scholarships*, of the value of £21 each for two years, one for the junior and the other for senior students; the *Derby Exhibition* of £15 in Clinical Medicine and Surgery alternately; the *Clinical School Exhibition* of £15; the *Torr Gold Medal* in Anatomy; the *George Holt Medal* in Physiology; the *Kanthack Medal* in Pathology; the *Robert Gee Prize*; two *Robert Gee Entrance Scholarships*, value £25 per annum for two years, and other Entrance Scholarships.

Fees.—Information as to the fees paid for the courses of instruction provided by the school should be sought from the Dean of the Medical Faculty.

The Clinical School.

The following hospitals form the Clinical School of the university:

1. The *Royal Infirmary* contains altogether some 300 beds, and is immediately adjacent to the university; it covers in its work all branches of clinical study. The wards are arranged in separate clinics, with a physician or surgeon and a resident medical or surgical officer attached to each; each clinic having a "clinical room," in which to interview patients and conduct microscopical and chemical tests. The assistant physicians and assistant surgeons conduct the medical and surgical out-patient department, and take charge of the wards in the absence of the physicians and surgeons. There are four theatres for surgical operations and one for clinical lectures, and there is a

theatre and a laboratory for Morbid Anatomy. There are two electrical rooms, with three Roentgen-ray installations and a high-frequency apparatus, and there are provisions for the employment of various kinds of baths. There is also a room for the Medical and Surgical Registrars, and for the records kept by them. There is a special laboratory for the investigation of morbid products, and another for the investigation of cancer. Separate cloak-room accommodation is provided for women students. The eight resident medical and surgical officers have each their own bedroom and private sitting-room, in addition to common rooms for meals and recreation. Two senior students are appointed resident casualty officers. They attend to accident cases brought to the hospital, accompany the ambulance, and help in the clinical work. A large waiting-room is set apart for the use of students, for whom there is, besides, ample cloak-room and lavatory accommodation.

2. *The David Lewis Northern Hospital*, possessing 246 beds, is situated in Great Howard Street. There are three Surgical and two Medical Clinics and a large Out-patient Department with suitable rooms for examination and an operation theatre. A fully-equipped clinical laboratory provides means for clinical investigation and research, in addition to those afforded in the clinical rooms of the various wards. Among the other departments is one for Electro-therapeutics and *X*-ray examination, and one for Orthopaedic exercise and gymnastics. Excellent accommodation is available for students, including a common room and cloak-room. In the common room is a reference library for the use of students. Facilities are offered for Post-graduate work. The five Resident Medical Officers receive salaries at the rate of £60 per annum; they each possess a separate bedroom and sitting-room, in addition to a common room for meals.

3. The *Royal Southern Hospital* contains over 200 beds, and is fully equipped for clinical instruction. There are three medical and three surgical clinics. Various changes have been completed during late years, in particular the opening of a new clinical laboratory for chemical and bacteriological work close to the site of the pathological laboratory. The electrical department has been reorganized, and a new and complete installation for *x*-ray work and light treatment has been made. A Resident Pathologist has recently been appointed to conduct investigation in connexion with the hospital work and to instruct the students. The hospital is easily accessible from all parts of the city.

4. The *Stanley Hospital* contains 106 beds, divided into two medical and two surgical clinics. There are two modern operating theatres and a well-equipped clinical room and gynaecological ward. The Resident House-Surgeons are appointed periodically at salaries ranging from £60 to £90 per annum. There is a large out-patient clinic in each of the special departments of Ophthalmology and Laryngology. The large Medical and Surgical Out-patient Departments provide a considerable amount of clinical material. There is a complete *x*-ray installation.

5. *The Infirmary for Children* has 100 beds and a large new out-patient department. Students are admitted to the practice of the hospital for periods of three months, such practice including attendance both in the wards and the out patient clinics. Students are invited to become out-patient clerks for a period of three months during the fifth year, and to attend two afternoons each week at 2.30.

6. *The Hospital for Women* contains 55 beds. Students who take their course of Clinical Gynaecology in the hospital receive instruction in the wards and out-patient department. The Honorary Surgeons attend daily at 1 p.m.

7. *The Eye and Ear Infirmary* contains 65 beds. Evening courses of Lectures on Refraction and Ophthalmoscopy and Diseases of the Ear are delivered during the winter months by the honorary medical staff. Students who take out their course of Clinical Ophthalmology in the hospital receive clinical instruction in the out-patient department. The surgeons attend daily at 1.30.

8. *St. Paul's Eye Hospital* contains 46 beds. The Surgeons attend daily at 1.30. Complete arrangements are made for instruction in clinical ophthalmology to students for periods of three months. A new hospital is in course of erection.

9. *St. George's Hospital for Diseases of the Skin* has a large dermatological out-patient clinic. Demonstrations are given by the Honorary Medical Staff on Mondays, Tuesdays, and Wednesdays, at 12.30.

LEEDS.

THE School of Medicine in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary, where students sufficiently advanced receive their clinical instruction. The buildings were opened in 1894, and contain excellent dissecting rooms, several well-arranged laboratories for Physiology, Pathology, and Bacteriology, three lecture theatres, and several smaller class-rooms. In addition there are a library and reading-room and two museums, one being devoted to Pathology and the other to Anatomy. The comfort of the students is secured by a common-room and a refectory in which they can take meals. It is estimated by the authorities that the approximate cost of medical education to a student in this university is £195, *plus*, of course, the expenses of living during the five years covered by the curriculum. The General Infirmary has over 482 beds in constant use, and includes gynaecological and ophthalmic wards and a large new out-patient department. The Ida Semi-convalescent Hospital and Robert Arthington Hospital, Cookridge, attached to the Infirmary, has over 40 beds. The West Riding Lunatic Asylum at Wakefield is also open for the study of Mental Diseases. Students can, in addition, attend the practice of the Leeds Public Dispensary (where the practical instruction in dental subjects is also given), the City Fever Hospitals (100 beds), the Hospital for Women and Children, and the Leeds Maternity Hospital.

Appointments.—Senior Anaesthetist, £50. Five Anaesthetists, £25 each. Medical Registrar and Surgical Registrar, at £25 each per annum. The Resident Medical and Surgical Officers, each at £150 per annum. The Casualty Officer, at £125 per annum. The Resident Ophthalmic Officer, at £100 per annum. A Resident Obstetric Officer at £50 is attached to the Gynaecological Ward and an extensive external maternity department. A Resident Medical Officer is appointed every six months for the Ida Semi-convalescent Hospital (honorarium, £30). Six House-Physicians, each holding office for six months, and seven House-Surgeons, holding office for six months. Physicians' Clerks and Surgeons' Dressers are appointed for six months; Ophthalmic and Aural Dressers, Gynaecological Ward Clerks, Gynaecological Out-patient Clerks, Maternity Clerks, Assistant Physicians' Clerks, Laryngological Clerks, and Assistant Surgeons' Dressers, Assistant Ophthalmic Surgeons' Dressers, Dressers in the Casualty Room, *Post-mortem* Clerks, and Laboratory Assistants for three months. A Clinical Pathologist (£300 per annum), together with an Assistant Clinical Pathologist (£150), has charge of the pathological laboratory. Appointments are also open to students at the Leeds Public Dispensary (three Resident Medical Officers, with salaries commencing at £80), at the Hospital for Women (House-Surgeon, honorarium £120, and Anaesthetist £25), and at the West Riding Asylums.

Scholarships.—The university awards annually a scholarship on the results of the July Matriculation Examination in the form of a free admission to the lectures and classes given in the university, which are covered by the composition fee. The Infirmary also awards a Scholarship on the results of the First Examination, of the value of 40 guineas, in the form of a free admission to the clinical teaching of the Infirmary.

Fees.—The composition fee for the university course is £73 2s. 6d. (for students who have passed the Second Examination, £48 16s. 6d.), and for the clinical work at the Infirmary £42.

Further information can be obtained from the Dean, School of Medicine, Leeds.

SHEFFIELD.

IN this city the medical school is one of the departments of the university, being conducted and controlled by its Medical Faculty, and occupying the entire north wing of the quadrangle of the university buildings overlooking Weston Park. The Laboratories and Lecture Rooms connected with the subjects of the First and Second Examinations—namely, Chemistry, Physics, Biology, Anatomy, and Physiology—are, both as regards structural arrangements and scientific equipment, on the most modern and complete lines. No expense has been spared in the matter of apparatus for teaching or research work, and the facilities for practical study in these subjects are as excellent as all the other arrangements of the school.

For students of Pathology and Bacteriology there are laboratories replete with everything necessary for the most advanced work and a large Pathological Museum, which is open daily. In addition, there is a museum devoted to Materia Medica specimens and a large library and reading-room. There are a number of Recreation, Athletic, and other Societies, all under the management of an annually elected Students' Representative Council, and large and comfortable common rooms both for men and women students.

In the university buildings there is a refectory open to all students of the school, in which luncheon, dinner, and other meals may be obtained at extremely moderate prices. A university journal, *Floreamus*, edited by a joint committee of the staff and students, is published each term. The ordinary clinical work of the school is done at the Royal Infirmary and Royal Hospital, which have amalgamated for the purpose of clinical instruction. Between them they provide 427 beds for the treatment of medical, surgical, and special cases, each having both an in-patient and out-patient department for diseases of the eye.

In addition, the Royal Infirmary has special departments for the treatment of Diseases of the Skin and Ear, with beds assigned to them, whilst at the Royal Hospital there are special Out-patient Departments for Diseases of the Throat, Ear, Skin, Orthopaedics, and Mental Diseases. During the last year over 6,000 patients passed through the wards of the two institutions, while those attending as out-patients numbered over 45,000. The Medical and Surgical Staffs attend daily, and give clinical instruction in the wards and out-patient rooms. Clinical Lectures in Medicine and Surgery are given weekly. Instruction in the practical administration of Anaesthetics is given at either institution by the anaesthetist, and the *post-mortem* examinations at both institutions are in charge of the Professor of Pathology, and afford ample material for study of this subject. In addition, the students have the advantage of being able to attend the practice of the *Jessop Hospital for Diseases of Women*, an institution which takes in yearly over 700 gynaecological patients and about 250 cases of confinement, and has as well large out-patient clinics for both classes of patient, the extern maternity work numbering about 250 cases a year. Special courses on Fever are given at the City Fever Hospitals (547 beds), and on Mental Disease at the South Yorkshire Asylum (1,610 beds).

Appointments.—The following appointments are open to all students who have passed their examinations in Anatomy and Physiology: (1) Casualty Dresserships, (2) Surgical Dresserships, (3) Medical Clerkships, (4) Pathological Clerkships, (5) Ophthalmic Clerkships, (6) Clerk to the Skin Department, etc. Except in the case of Casualty Dressers, these appointments are made for three months, commencing on the first days of October, January, April, and July. The Casualty Dresserships last two months, beginning on the first of any month. All students are required to hold them before being eligible for any of the other appointments.

Scholarships.—*Medical Scholarship*, value £100, open to women only. *Entrance Medical Scholarship*, value £115, open to both sexes. Two *Staff Medical Scholarships*, one value £157 10s., the other value £52 10s., open to both sexes. One *Town Trustees' Scholarship*, value £50, tenable for three years, for girls under the age of 19 years, having had a two years' residence in Sheffield immediately prior to becoming scholars or educated in a Sheffield school. Two *Town Trustees' Scholarships*, value £60, for boys or girls under 19 years of age, on conditions similar to the last-mentioned scholarship. *Town Trustees' Fellowship*, value £75 tenable for one year. *Mechanics' Institute Scholarship*, value £50, tenable for one year and renewable for a second year. The *Frederick Clifford Scholarship*, value £50, tenable for two years. *Kaye Scholarship*, for proficiency in Anatomy and Physiology, value £22 10s. Gold and Bronze medals are also awarded for proficiency in various subjects.

Fees.—The composition fee of £80, payable in three instalments, covers attendance on all the courses of Lectures and practical classes, except Pharmacy, Vaccination, and instruction in Anaesthetics, required for a Degree Course in the university, or for the ordinary qualifications in Medicine and Surgery of the Examining Boards. It does not include clinical work or practical instruction in Mental Diseases, Diseases of Women, and Infectious Diseases. The fee for the full course of clinical work is £42 in one sum.

BRISTOL.

THE school is carried on by the Faculty of Medicine of the university, and provides full instruction for all its degrees and diplomas. The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them 470 beds and extensive out-patient departments, besides special clinics for diseases of women and children, and those of the eye, throat, and ear, in addition to arrangements for dental work, and large outdoor maternity departments. The students of the school also have the advantage of attending the practice of the Royal Hospital for Sick Children and Women, containing 104 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is therefore 614. Excellent facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each student has the opportunity of personally studying a large number of cases and of acquiring practical skill in diagnosis and treatment. All classes are open to women.

Appointments—The posts open to past and other students of the school are those of House-Physician, House-Surgeon, Junior House-Physician, and Junior House-Surgeon at the Royal Infirmary; Clinical Clerks and Dressers, also Ophthalmic, Obstetric, and Pathological Clerks being appointed. At the General Hospital, House-Surgeon, Assistant House-Surgeon, Assistant House-Physician, and Casualty House-Surgeon, and Clinical Clerks, Dressers, and Obstetric, Ophthalmic, and Pathological Clerks are appointed. In each case the Dressers reside in the Hospital in rotation free of expense.

Scholarships.—The following are among the Scholarships and other awards open to students of the school: Two *Martin Memorial Pathological Scholarships*, of £10 each; the *Tibbits Memorial Prize*, value 9 guineas, for proficiency in Practical Surgery; the Committee's Gold and Silver Medals for fifth-year Students for general proficiency; the *Augustin Prichard Prize*, value 7 guineas, for proficiency in Anatomy; the *Henry Clark Prize*, value 11 guineas, for general proficiency; the *Crosby Leonard Prize*, value 7 guineas, for proficiency in Surgery; the *Suple Surgical Prize*, a gold medal and 7 guineas; the *Suple Medical Prize*, a gold medal and 7 guineas; the *Henry Marshall Prize*, value £12, for Dressers; the *H. M. Clarke Scholarship*, value £15, for proficiency in Surgery; the *Sanders Scholarship*, value £22 10s., for general proficiency.

Fees.—The composition fee for all the courses required for the medical curriculum, including hospital practice, is 140 guineas.

CARDIFF.

THE school in this city is carried on by the University College of South Wales and Monmouthshire, and devotes itself principally to training students during the first three years of the medical curriculum, all classes being open to women students. The courses of instruction given are recognized by all licensing bodies in Great Britain, and, after passing the tests corresponding to the first three years of the curriculum, the student can complete his course, for whatever degree he is aiming at, in London or elsewhere. Besides this, there is an arrangement with the Managing Committee of the Infirmary by which students at the school can take advantage of the opportunities for acquiring experience afforded in the

wards of this large, well-ordered hospital. Hence many students, especially from Wales and Monmouthshire, find it convenient to avail themselves of the advantage of being able to pursue the earlier part of their medical curriculum near home. They can also obtain instruction in the administration of anaesthetics, and with a little additional work can qualify for the B.Sc. degree of the University of Wales. This degree includes the subjects which comprise the first three years of a medical student's curriculum, and it is a compulsory degree for those students who propose to sit for the M.B., Ch.B., of the University of Wales. There is also a Department of Public Health, in which all the work for Diplomas in State Medicine, whether for the University of Wales or other Examining Boards, can be done. A Chair of Pathology and Bacteriology has been established, and it is intended to offer facilities for the study of the subjects of the fourth year of the medical curriculum.

Post-graduate Vacation Courses are carried on in association with the Cardiff Infirmary.

Scholarships.—There is a considerable number of scholarships connected with the college, and open to students of the School of Medicine, information as to which can be obtained on application.

Fees.—The composition fee for the courses required by students proceeding to the degrees of the University of London is £57 10s.; that for students proceeding to a diploma of the licensing corporations being £41 10s. Further information may be obtained on application to the Dean of the Faculty of Medicine

SCOTLAND.

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very ample, whether the student be proceeding to a university degree or to a diploma. To the descriptions of its different medical centres is in some cases added an account of hospitals which either play an official part in the education given to students as yet unqualified or offer valuable opportunities for post-graduation work.

ABERDEEN.

THE school is conducted by the Faculty of Medicine. This comprises twelve chairs, from which instruction is given in all the main branches of medical science—namely, Botany, Zoology, Physics, Chemistry, Anatomy, Physiology, Materia Medica, Pathology, Forensic Medicine, Surgery, Medicine, and Midwifery. Special opportunities for practical instruction are afforded in the laboratories and museums attached to these departments.

Clinical instruction is obtained in the Royal Infirmary (accommodating 230 patients), the Royal Lunatic Asylum (700 patients), the Sick Children's Hospital (85 patients), the City Fever Hospital (100 patients), the General Dispensary, Maternity and Vaccine Institution (10,000 out-patients annually), and the Ophthalmic Institution (1,600 patients annually). Courses of practical instruction are given in Diseases of Children at the Sick Children's Hospital; in Fevers at the City Fever Hospital; in Insanity at the Royal Asylum; in Diseases of Ear, Nose, and Throat at the Dispensary; in Diseases of the Eye at the Infirmary and Eye Institution; in Diseases of the Skin at the Royal Infirmary.

Bursaries.—Scholarships and Fellowships, to the number of fifty, and of the annual value of £1,180, may be held by students of medicine in this university. They range from £8 to £100 per annum, and are tenable in most cases for two or three years.

Fees.—The fee for each university course is, as a general rule, £4 4s.; and for a second attendance, £3 3s. Matriculation Fee, both sessions, £1 1s.; Summer Session alone, 10s. 6d.; Royal Infirmary, Perpetual Fee, £6; or, first year, £3 10s.; second year, £3. The Winter Session begins on October 13th, 1910.

EDINBURGH.

THERE are three Schools of Medicine: the School of the University, the School of Medicine of the Royal Colleges, Edinburgh, and the Edinburgh School of Medicine for Women.

THE UNIVERSITY SCHOOL.—This school of course furnishes a full curriculum, and, in addition to other resources of the university, has the following means for practical instruction: Royal Botanic Garden, Herbarium, and Museum; Zoological Laboratory and Museum of Science and Art; Physical Laboratory; Chemical Laboratories; Dissecting Room, Bone Room, and Anatomical Museum; Physiological Laboratory, Medical Jurisprudence Laboratories; John Usher Institute of Public Health; Materia Medica Museum and Laboratory; *Post-mortem* Department of the Royal Infirmary and University Pathological and Bacteriological Laboratory; Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery, Surgery, and Midwifery; and the practice of the hospitals, of which some account is given on p. 701.

Fees.—The Sessional Fee for Zoology, Botany (Garden Fee, 5s.), Chemistry, Anatomy Lectures, Physiology, Pathology, Materia Medica, Medical Jurisprudence, Surgery, Medicine, Midwifery and Gynaecology, Clinical Surgery (Winter), Clinical Medicine (Winter), is £4 4s. each. Second Course £3 3s. Third Free. A perpetual ticket taken at the beginning of the first year is £6 6s. Physics, Practical Chemistry, Advanced Practical Physiology, Practical Pathology, Clinical Surgery (Summer), Clinical Medicine (Summer), Practical Anatomy (Winter), Operative Surgery, Obstetric Operations, Practical Materia Medica, including Pharmacy, Pathological Bacteriology, Experimental Pharmacology, Vertebrate Morphology and Comparative Embryology, are £3 3s. Practical Botany (besides Garden Fee of 5s.), Elementary Practical Zoology (besides charge of 10s. for Laboratory expenses), Practical Physiology (Experimental), Practical Physiology (Histological), Practical Botany (Advanced), Practical Zoology (Advanced), Practical Anatomy (Summer), Anthropology, Anatomy Demonstrations, Diseases of Children, Diseases of the Eye, Diseases of the Larynx, Ear, and Nose, Diseases of Tropical Climates, Clinical Instruction on Diseases of the Skin, Regional Anatomy, Physiological Chemistry, Invertebrate Zoology, Organic Chemistry, Mental Diseases, £2 2s. Applied Anatomy (Medical and Surgical), £1 1s. Vaccination, £1 1s.

Scholarships.—In connexion with the University of Edinburgh and its Medical Faculty there is a very large number of funds for the assistance of students by means of bursaries, scholarships, exhibitions, and money awards from the beginning to end of their undergraduate career. In addition there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students. The value of these very numerous awards, and the conditions attaching to them, are so varied that it would hardly be possible to give an adequate account of them within the limits of space at disposal, and at the best such an account would be somewhat confusing to those studying the subject for the first time. The purpose of this issue of the JOURNAL will therefore best be fulfilled by merely pointing out that no other university is in a better, even if in as good, a position to smooth the financial path of earnest students, and by referring those interested to the prospectus relating to the medical faculty for detailed information.

THE SCHOOL OF MEDICINE.—This School of Medicine is composed of Lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons, and also recognized by the University through their *licentia docendi*, who, for the sake of convenience, lecture in separate buildings near at hand to the Royal Infirmary. The Lecturers form one body, are all subject to the same rules and regulations, and enjoy the same privileges. A constitution and set of regulations have been drawn up, in virtue of which a medical corporation has been formed, recognized by both Royal Colleges: the government of the School is placed in the hands of a Governing Board consisting of five members elected by the Royal College of Physicians, of five members elected by the Royal College of Surgeons, and of five members elected

by the Lecturers in the School. This Board, with the assistance of the Standing Committees of the School, supervises the whole management, and specially the maintenance of the efficiency and discipline of the School. The lecturing and other teaching work of the School is carried on in several separate buildings situated in different parts of the town. The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the School. The fees payable for class and other instruction, and including the sums payable on admission to the examination of the Conjoint Board for the Triple qualification, amount to about £115. Other information can be obtained on application to the Dean of the School, 11, Bristo Place, Edinburgh.

THE EDINBURGH SCHOOL OF MEDICINE FOR WOMEN.—The Edinburgh School of Medicine for Women provides all the classes required for a complete curriculum. The classes qualify for the University Degree in Medicine, for the Diploma of the Royal Colleges, and for the Triple qualification. The lecturers of the school are specially recognized by the Court of Edinburgh University for the education of women who propose taking the Degree in Medicine of the University of Edinburgh. Most of the classes are held in Surgeons' Hall. The office of the school, and a sitting-room and other conveniences, are provided in the same building for the use of the women students. The clinical instruction of the students is conducted in the wards of the Royal Infirmary, specially set apart for the purpose; in the Royal Hospital for Sick Children; in the City Hospital for Infectious Diseases, at Bangour Asylum, and at the various public dispensaries. The fees and the regulations as to the course of study are the same as for the students at the School for Male Students. Further particulars are obtainable from the Dean of the School of Medicine for Women, Surgeons' Hall, Edinburgh.

THE MEDICAL COLLEGE FOR WOMEN.—This at one time was the principal school for women, and is under the control of the Scottish Association for the Medical Education of Women. Its head quarters, however, having been sold over its head, it has suspended operations for the time being. Information respecting it should be sought from the Clerk and Treasurer of the Association, Mr. A. T. Hunter, C.A., 66, Frederick Street, Edinburgh.

Clinical Hospitals.

1. *Edinburgh Royal Infirmary.*—There are over 900 beds and 80 at the Convalescent House at Corstorphine. For last year the in-patients numbered 12,388 and the out-patients 35,678. Instruction is given in all the special departments of medicine and surgery, in gynaecology, eye, ear, throat, and nose affections, diseases of skin, dental work (extraction, stopping, and artificial cases), the administration of anaesthetics, electro-therapeutics, hydro-therapeutics, and *x*-ray work, etc. Women are admitted and receive special and separate tuition on both the medical and surgical sides. Nine resident physicians and eleven resident surgeons (three of whom are entirely set apart for the out-patient department) are appointed every six months. They live in the hospital free of charge, save for laundry. They must be registered. Thirty non-resident clinical assistants are also appointed for six months in the various departments. The Physicians and Surgeons appoint their own clerks and dressers, and assistants in the Pathological Department are appointed by the Pathologist. Fees: Six months, £4 4s.; one year, £6 6s.; perpetual ticket, £12 if paid in one sum, or £12 12s if by separate payments.

2. *Royal Victoria Hospital for Consumption.*—Excellent opportunity is afforded for the clinical study of Tuberculosis and Diseases of the Chest. Special clinics by the staff are arranged from time to time, both in the hospital itself, which contains about 100 beds, and in the extensive outdoor department, which has its head quarters at the Royal Victoria Dispensary for Consumption, 26, Lauriston Place, close to the University. The number in attendance at these clinics is limited. Application for places has to be made some time in advance. Two medical appointments in connexion with the hospital are vacant every six months: (1) Resident Physician; (2) Non-resident Clinical Assistant for the Dispensary. The vacancies occur usually in April and October.

3. *Royal Edinburgh Hospital for Sick Children.*—The hospital is in Sciennes Road, about seven minutes' walk from the Medical School and Royal Infirmary. It contains over 120 available beds. There are some 2,275 in-patients and 27,000 out-patient attendances yearly. The out-patient department is conducted in a building adjoining the hospital, and is well equipped. Systematic clinical courses of instruction, which qualify for the university and other examinations, are given at various times throughout the year by the ordinary physicians and surgeons. Students may enter at any time. Four resident appointments are made half-yearly. Further information should be sought from the Registrar of the hospital.

4. *Edinburgh Eye, Ear, and Throat Infirmary.*—Open daily at 6, Cambridge Street, at 1 p.m. for Eye Diseases; on Monday, Thursday, and Saturday at 12, and on Tuesday and Friday at 4, for Ear, Nose, and Throat Diseases. There is a small infirmary of ten beds in male and female wards. In-patients, 145; out-patients, 4,771.

5. *Edinburgh Royal Maternity and Simpson Memorial Hospital* has 44 beds, about 612 in-patients and 763 out-patients yearly. A Nursing Home in Leith is worked in connexion with the hospital, and last year supervised the deliveries of some 539 out-patients. Daily clinics are given by the physicians and assistant physicians. Two House-Surgeons are on duty, one being appointed each quarter. The Milne Murray Home in connexion with the hospital is a residence for students taking their midwifery practice. *Fees:* The hospital fee is £4 4s. per month, and the residency fee 25s. per week. There is accommodation for twelve students. Students can also attend the hospital and take out their cases in connexion with a number of associated dispensaries.

6. *Edinburgh City Hospital for Infectious Diseases* at Colinton Mains contains 600 beds, a large number of which are available for teaching purposes. Qualifying courses of instruction are given by the Consulting Physician and the Medical Superintendent during the Winter and Summer Sessions. The fee is £1 1s. The patients average between 3,000 and 4,000.

7. *Royal Asylum, Morningside, Edinburgh.*—There is a clinical field of 400 beds at "The West House," comprising all the wards except those for private patients. Students have the opportunity of personally coming in contact with and examining the cases, so as to learn the modes of dealing with patients suffering from mental disease; they are exercised in diagnosis and the drawing up of certificates, the aim being to enable them to recognize its early stages, to distinguish its varieties, to adopt suitable treatment, and to advise the relatives as to sending the patient to an asylum.

There is a systematic course of Lectures and Clinical Demonstrations extending during the Summer Session (fee £2 2s.). During the Winter months there is a weekly ward visit and clinique on Saturdays at 9.30 a.m. open to members of the class, and facilities are given for case-taking and for original research on subjects connected with insanity in the laboratory of the Asylum.

GLASGOW.

THERE are four medical schools in this city: the two schools of the university, one of which (Queen Margaret College) is for women students; St. Mungo's College (the School of the Royal Infirmary), and Anderson's College.

THE UNIVERSITY SCHOOL FOR MEN.—The whole course of study required for graduation at the University of Glasgow can be passed here. Besides work of a practical and clinical kind in the hospitals, practical

courses are conducted in the laboratories of the following departments: Surgery, Pathology, Public Health, Pharmacy, Physiology, Anatomy, Chemistry, Zoology, Physics, and Botany, the Botanic Garden and the Hunterian Museum being also open to students. New buildings and equipments have recently been provided for Botany at a cost of £20,000, for Practical Anatomy at £14,000, for Operative Surgery at £9,900, as well as for Pathology, while very large additions, costing nearly £12,000, have been made to the Chemistry Laboratory, rendering it probably the most extensive in Scotland. New class-rooms and laboratories have been erected for the departments of Physiology, Materia Medica, and Medical Jurisprudence and Public Health costing, with equipment, upwards of £60,000. The university has of late been making efforts to extend and improve the accommodation, especially the laboratories, of the medical departments, to strengthen the teaching staff, and to encourage post-graduate and research work. Three very extensive General Hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (595 beds), near the university, and attended by the bulk of the men students; the Royal Infirmary (588 beds); and the Victoria Infirmary (260 beds); while the Royal Asylum (460 beds), the Royal Hospital for Sick Children (74 beds), the Maternity Hospital (34 beds), the Glasgow Eye Infirmary (100 beds), the Fever Hospitals at Belvidere (680 beds), and Ruchill (540 beds), and other institutions afford facilities for the practical study of special branches.

Bursaries.—Bursaries confined to the Medical Faculty amount in annual value to about £1,000, while bursaries in any Faculty, amounting to about the same annual sum, may be held by students of medicine, a number of both sets being open to women. Several valuable scholarships may be held by medical students who have graduated in Arts. Some of the bursaries are described below.

Fees.—The matriculation fee for each year is £1 1s. In most cases the fee for each university class is £4 4s., but in some cases it is £3 3s. For hospital attendance students pay an entrance fee of £10 10s. at the Western Infirmary, with an additional fee of £3 3s. for each winter and £2 2s. for each summer clinical course; while at the Royal Infirmary the fees for the first year are £10 10s. and the total fees £21. The university fee for the four professional examinations is £23 2s. (£6 6s. for each of the first and second examinations, and £5 5s. for each of the third and fourth). For the whole curriculum, the fees for matriculation, class attendance, hospital attendance, and professional examinations, amount to £150.

For further information apply to the Secretary, the Matriculation Office, Glasgow University.

BURSARIES.—The following Bursaries are open to undergraduates of both sexes: The *Gibson Bursary*, annual value £36, tenable for four years. This is open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland, and will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. One *Logan Bursary*, annual value £16, tenable for four years; appointment by the Senate. Next vacancy, 1913. The *Mackintosh Mental Science Bursary* in Medicine, of the value of £31, is awarded annually to the student (of either sex) attending the class of Insanity, who stands first in an examination in that subject, to be held in June—the Bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The *Gardiner Bursary*, annual value £14, tenable for two years, will be awarded after the autumn professional examination to the candidate who has passed in Physiology at the Second Professional Examination, and whose aggregate of marks in that subject and in Chemistry and Physics of the First Professional Examination is the highest. Next vacancy, 1911. The following are tenable in any Faculty: Two *Pratt Bursaries* (each £20 and tenable for four years), both open in 1910; and two *Taylor Bursaries* (each £10, tenable for four years), one open in 1910 and the other in 1913. Three *Armagh Bursaries* (£52 each), one open in 1910 to students taking honours in Mathematics and Natural Philosophy in the Final Examination for the degree of M.A., tenable for three years. *Andrew and Bethia Stewart Bursaries* (£50 each, tenable for three years, in Medicine or Law); two are vacant in 1910; candidates must have taken the M.A. degree of Glasgow. There is a special Examination. Nine *Glasgow Highland Society's Bursaries*, for students of Highland descent, of the annual value of £25, and tenable for five years; two are vacant in 1910. The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction, under conditions given in the *University Calendar*. The *Dobbie Smith Gold Medal* is awarded annually for the best essay on a prescribed subject within the Science of Botany. The *Brunton Memorial Prize* of £10 is awarded annually to the most distinguished graduate in Medicine of the year. The University Commissioners issued an ordinance to make regulations for the admission of women to certain Bursaries, Scholarships, and Fellowships. Scholarships and Fellowships are offered by the Carnegie Trust in Science and Medicine for post-graduate study. There are also four *McCunn Medical Research Scholarships* (£100 for one year) for graduates in Medicine of the Scottish Universities.

Medical Schools for Women.

QUEEN MARGARET COLLEGE.—In this, the Women's Medical School of the University of Glasgow, the course of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with class-rooms, reading room, library, etc. They are taught in some classes apart from male students, in others together with them, but in either case have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards containing 180 beds are reserved for their exclusive use, and in its dispensary; also in the Royal Hospital for Sick Children, the Glasgow Ear Hospital, the Royal Asylum, Gartnavel; the Ophthalmic Institution, the City of Glasgow Fever Hospitals, Belvidere and Ruchill, and the Glasgow Maternity Hospital.

Scholarship.—The *Arthur Scholarship*, annual value £20, tenable for three years. Open to competition by medical students of first year of the First Professional Examination in October, 1910. This scholarship is the gift of Mrs. Arthur, of Barshaw, and is restricted to women medical students.

Class and Examination Fees.—The class and hospital fees for the subjects enjoined by Ordinance as constituting a five years' course of study and clinical work amount to about £113 8s. To this must be added £5 5s. for matriculation fees (£1 1s. for each of the five years), £23 2s. for examination fees, and £5 1s. for registration as a medical practitioner.

Board for Students.—A House of Residence for women students, Queen Margaret Hall, is situated near the college. The cost of board and residence is from 17s. to 25s. per week, according to accommodation. Full information can be obtained from the Mistress, Queen Margaret College, or from the Warden, Queen Margaret Hall, Bute Gardens, Glasgow.

ST. MUNGO'S COLLEGE.—This is the Medical School of the Royal Infirmary, which is the largest in Glasgow. The Infirmary is situated in Cathedral Square, Castle Street, and has car communication with every part of the city. St. Mungo's College is in the Infirmary grounds.

The Infirmary has, including the Ophthalmic Department, over 620 beds, the average number occupied in 1909 being 630. When the reconstruction of the Infirmary, long in progress, is completed, it will have about 700 beds. There are special beds and wards for Diseases of Women, of the Throat, Nose and Ear, Venereal Diseases, Burns, and Septic Cases.

At the Outdoor Department the attendances in 1909 numbered over 140,000. In addition to the large Medical and Surgical Departments, there are Departments for Special Diseases—namely, Diseases of Women, of the Throat and Nose, of the Ear, of the Eye, of the Skin, and of the Teeth. A fully-equipped Electrical Pavilion was opened a few years ago, and year by year the latest and most approved apparatus for diagnosis and treatment has been added. Wards are set apart for the teaching of women students.

Appointments.—Five House-Physicians and ten House-Surgeons, having a legal qualification in Medicine and Surgery, who board in the Hospital free of charge, are appointed every six months. Clerks and Dressers are appointed by the Physicians and Surgeons. As a large number of cases of Acute Diseases and Accidents of a varied character are received, these appointments are very valuable and desirable.

Fees.—The fees for hospital attendance, including clinical lectures and Tutorial Instruction, attendance at the Outdoor Department, at the Pathological Department, *Post-mortem* Examinations, and the use of

the Museum, which has not long since been rearranged and catalogued, are as follows: For one year, £10 10s.; for six months, £6 6s.; for three months, £4 4s. Students who have paid fees to the amount of £21 to the Glasgow Royal Infirmary are permitted to attend, in any subsequent year or years, one Winter and one Summer Course of Instruction in the Infirmary without further payment; and Students who have paid to any other hospital in the United Kingdom fees, being not less than £21, in virtue of which they are entitled to attend without further payment, shall be admitted as students of the Royal Infirmary on payment of £3 3s. for six months, or £1 11s. 6d. for three months.

Anderson's College.—This school provides education in all subjects of the five years' curriculum. The Hospital Practice and Clinical Lectures are provided in Western or Royal Infirmary; Pathology in Western or Royal Infirmary; Vaccination and Dispensary Practice in Western or Royal Infirmary Dispensary. These classes are recognized by all the Licensing Corporations in the United Kingdom, and also by the Universities of London, Durham, Glasgow, and Edinburgh (the latter two under certain conditions which are stated in the school *Calendar*). The courses (Lectures and Laboratory) in Public Health are also recognized by the Scottish Licensing Board, the Irish Colleges, and the University of Cambridge.

The school buildings are situated in Dumbarton Road, immediately to the west of the entrance of the Western Infirmary, within two minutes' walk of that institution, and four minutes' walk of the university.

Class Fees.—For each Course of Lectures (Anatomy, Ophthalmic Medicine and Surgery, Aural Surgery, Diseases of Throat and Nose, and Mental Diseases), First Session, £2 2s.; Second Session (in Anderson's College) £1 1s. For Practical Classes (except Anatomy, Chemistry, and Public Health), namely, Botany, Zoology, Physiology, Pharmacy, Operative Surgery, First Session £2 2s.; Second Session, £2 2s. Anatomy Class Fees, Winter: First Session, Lectures and Practical Anatomy, £5 5s.; Practical Anatomy alone, £2 2s. Second Session, Lectures and Practical Anatomy, £5 5s.; Practical Anatomy alone, £2 2s. Third Session, Practical Anatomy, £1 1s. Summer: Lectures and Practical Anatomy, £2 12s. 6d.; Lectures alone £1 11s. 6d; Practical Anatomy alone, £1 11s. 6d.; Osteology and Practical Anatomy, £2 12s. 6d.; Osteology alone, £1 11s. 6d.; Practical Anatomy alone, £1 11s. 6d. Chemistry: Lectures, £2 2s.; Practical Chemistry, £3 3s. Botany and Zoology: Reduced Fees for Lectures with Laboratory Work in Botany or in Zoology, during same Summer Session, £3 3s. For Lecture Class or Practical Class separately, in Botany or in Zoology, £2 2s. Ophthalmic Medicine and Surgery (including Hospital Practice), Aural Surgery, Diseases of Throat and Nose, and Mental Diseases: Fee for each Course, £1 1s. Public Health Laboratory: Fee for Six Months' Course, including Lectures, £12 12s. Western Infirmary.—Fees: For Hospital Attendance, £10 10s.; for Clinical Instruction, Winter Session, £3 3s.; Summer Session, £2 2s. Students who have completed the Clinical Course elsewhere are permitted to enter for a six months' course of the Hospital only on payment of a fee of £2 2s. Pathology, £4 4s. Practical Pathology, £3 3s. Pathology Demonstrations only, £1 1s. Vaccination fee, £1 1s. Royal Infirmary.—Fees: Hospital Practice and Clinical Instruction, first year, £10 10s.; second year, £10 10s.; afterwards free. Six months, £6 6s.; three months, £4 4s. Pathology, both courses, £4 4s. Vaccination fee, £1 1s. Attendance at the dispensaries of the Western and Royal Infirmaries is included in the hospital fee. Eye Infirmary.—Fee: Hospital Practice and Clinical Instruction, including Lectures at the College, six months, £1 1s. The session opens on Monday, October 17th, 1910

The Carnegie Trust pays the fees of students at Anderson's College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A *Calendar* will be sent on receipt of a post-card by the Secretary to the Medical Faculty, Anderson's College Medical School, Glasgow W., who will forward any further information which may be desired.

Clinical Hospitals.

1. The *Royal Infirmary.*—Some notes respecting this institution have been given in connexion with its Medical School.

2. *Glasgow Western Infirmary.*—This hospital adjoins the University of Glasgow, and has over 500 beds at present, and 100 more will be added this year. The Clinical Courses are given by the Physicians and Surgeons, each of whom conducts a separate class, and students may attend whichever they select at the beginning of the session. Special instruction is given to junior students by tutors or assistants, and Clinical Clerks and Dressers are selected from the members of the class. Special wards are set apart for Diseases of Women and for Diseases of the Skin. In the Out-patient Departments there are special clinics for Diseases of Women and for Diseases of the Throat, Ear, and Teeth, etc. All the courses of clinical instruction are recognized at the University of Glasgow and other Boards in the kingdom. Fourteen Resident Assistants are appointed annually without fee from those who have completed their course. *Fees.*—(1) Every Student must pay a fee of £10 10s. for hospital attendance, and this is kept quite apart from the fees for clinical instruction. (2) Every Student pays £2 2s. for each Summer, and £3 3s. for each Winter Session of clinical instruction, or such other fees as may be fixed from time to time by the managers in conjunction with the University Court. (3) Students who have completed their clinical course elsewhere are permitted to enter for a six months' course of the hospital only, on payment of a fee of £2 2s. In-patients, 8,503; out-patients, 36,384.

3. *Glasgow Eye Infirmary.*—This infirmary is situated at 174, Berkeley Street, and 80, Charlotte Street, and has 100 beds. Dispensaries open daily at 12.30 p.m. Operations performed on Monday and Wednesday at 10 a.m. and 2 p.m., and Friday at 9 a.m. and 2 p.m. Students' fees for six months, 1 guinea. In-patients, 1,757; out-patients, 24,536.

4. *Royal Hospital for Sick Children.*—This hospital, containing over 100 beds (26 of which are at the country branch at Drumchapel) and devoted to the non-infectious diseases of children, is open for clinical instruction, as also is the out-patient department in West Graham Street. Students, by paying a fee of £1 1s., are entitled to the practice of the hospital and dispensary for twelve months from the term of entry. The in-patients number about 1,100 yearly, the out-patient work being proportionately very much more extensive. A new building capable of accommodating some 200 in-patients is in view.

St. Andrews and Dundee.

The medical institutions in these two cities cater specially for students proceeding to the degrees of the University of St. Andrews, but admit, we understand, other students as well. In the former city the United College provides education in all subjects of the first two years. In Dundee, University College provides for the needs of students from the beginning to the end of the five years' curriculum. Its buildings are modern, and contain laboratories and workrooms for Anatomy, Physiology, Materia Medica, Pathology, Ophthalmology, Public Health, Medicine, Surgery, and Gynaecology. The Clinical work of the school is facilitated by the institutions below described. The class fees are 4 guineas for systematic classes and 3 guineas for practical classes. The Hospital ticket is 3 guineas a year, or 2 guineas each Session. Added up, the fees for the curriculum amount to about 100 guineas. In connexion with both institutions there are Bursaries and Scholarships of considerable value, which are awarded after competitive examination. Information as to these can be obtained either from the Secretary of the University of St. Andrews or the Secretary of one or the other college. Information regarding the clinical facilities may be obtained from Professor Kynoch, Dean of the Medical Faculty.

Dundee Royal Infirmary.—The Infirmary contains 400 beds, with a special ward for the treatment of diseases of children. Five Resident and one non-Resident Qualified Assistants are appointed annually. Clinical Clerks and Dressers are attached to the physicians and surgeons, and students are appointed to assist in the *post-mortem* room. Out-patients are seen daily at 9 a.m. There is an Intern and Extern Maternity Department connected with the Infirmary. The instruction given at the Infirmary is recognized for purposes of graduation by all the Scottish universities, the University of London, the University of Cambridge, the Royal University of Ireland, and by the Royal Colleges of England and Scotland. Further information on application to the Medical Superintendent.

Dundee District Asylum.—The appointments include two qualified Resident Assistants and two Resident Clinical Clerks. Clinical instruction is given.

IRELAND.

There is a choice of six Schools for those prosecuting their medical studies in Ireland, and for clinical instruction the choice is equally satisfactory and varied, though the hospitals themselves are comparatively small. There is also a school specially intended for post-graduation students who are candidates for admission to either the Royal Navy, the Army, or the Indian Medical Service. Some account of these schools follows:

The School of Physic.

This school is in Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians in Ireland; the King's Professors of Institutes of Medicine, Practice of Medicine, Materia Medica, and Midwifery being appointed by the latter.

Clinical instruction is given at Sir Patrick Dun's Hospital, and some twelve other metropolitan hospitals, infirmaries, and asylums are recognized by the Board.

The Schools of Surgery.

There are schools carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons. The are formed of the College's own school, combined with two famous old medical schools—Carmichael and Ledwich; they are attached to the college by Charter. The buildings contain spacious dissecting-rooms, one set apart for lady students, and special Pathological, Bacteriological, Public Health, Chemical, and Pharmaceutical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the college.

Prizes.—Among the prizes annually awarded are: The Barker Anatomical Prize (£26 5s.); the Carmichael Scholarship (£15); the Mayne Scholarship (£8); the Gold Medal in Surgery, and the Stoney Memorial Gold Medal in Anatomy; Class Prizes of £2 and £1, accompanied by silver medals, will also be given in each subject.

The next session begins October 15th, terminating March 31st, whilst summer lectures and classes commence on April 1st, and are carried on until June 30th.

A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

University College, Dublin.

This institution is one of the constituent colleges of the National University of Ireland. Strictly speaking, it has yet no buildings of its own, but, so far as its medical department is concerned, its needs are already well provided for, since the College is being developed on the foundation of the old Catholic University Medical School in Cecilia Street, Dublin. Part of the teaching work is conducted at the buildings of the old school, and part in the buildings formerly occupied by the now defunct Royal University of Ireland. In one way and another the College provides lectures and teaching covering the whole curriculum of the medical student, who, in respect of his clinical studies, is left free to pursue them at any of the recognized Dublin hospitals. Some account of these is given in this section under the heading, "Other Educational Facilities."

Belfast.

The Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete medical curriculum for all purposes. The laboratories in connexion with the departments of Biology, Chemistry, Physiology, Pathology, Anatomy, Physics, and Materia Medica are all excellent, and there is a Students' Union which gives students the advantage of dining-rooms, reading-rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 300 beds, and the Mater Infirmorum Hospital, which has 150 beds. Other hospitals open to the students of the university are: The Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital, the Benn Ulster Eye, Ear, and Throat Hospital, the Union Infirmary and Fever Hospital, the Fever Hospital, Purdysburn, the District Lunatic Asylum, the Samaritan Hospital, Forster Green Hospital for Diseases of the Chest, and the Belfast Hospital for Skin Diseases.

Scholarships.—(1) Eight Entrance Scholarships, value from £15 to £30 each; (2) sixteen Professional Scholarships, value from £15 to £40 each; (3) two Dunville Studentships (one each alternate year), value £150 each; (4) one Andrews Studentship each alternate year, value £145; (5) numerous sessional prizes. There is also a Post-Graduate Research Fund open to all graduates of not more than three years' standing. Gold medals are awarded at M.D. examination.

Fees.—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is, approximately, £104. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmorum Hospital, but not fees for the special hospitals. The course for the Conjoint Board costs about the same amount. A pamphlet containing full information can be obtained on application to the Secretary, Queen's University, Belfast.

University College, Cork.

This institution, formerly known as Queen's College, Cork, is one of the constituent colleges of the new National University. It holds examinations for the Medical Faculty of that university, in addition to continuing the work which it has hitherto performed, namely, that of providing education adapted to the needs of medical students at all stages of their career. Its first aim is to fit students for the degrees of the new university, but students proceeding for the examinations of the Conjoint Boards of England, Scotland, or Ireland, the Society of Apothecaries of London, or the Apothecaries' Hall of Ireland, or London University, can arrange the courses of Lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the College courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students can also attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session extends from October to June inclusive. The College contains laboratories in the departments of Biology, Chemistry, Physiology, Pathology, and Materia Medica and Pharmacy, and there are a Botanic Garden and Plant Houses in the grounds.

Scholarships.—Over £1,500 is available annually for Scholarships in the College. Particulars as to each of them can be obtained on application to the Registrar.

Fees.—The fees for the lectures and hospital attendances required by the National University of

Ireland course come to about £100. Further information can be found in the College Regulations, or obtained on application to the Registrar.

UNIVERSITY COLLEGE, GALWAY.

This institution, to which further reference is made at p. 688, is one of the constituent colleges of the National University of Ireland and provides a medical as well as other forms of education. The college buildings are well lighted and well ventilated, and contain dissecting rooms, an anatomical theatre, and laboratories for the study of physiology, chemistry, physics, and other departments of medical science. For pathology and chemistry new laboratories are in process of construction. It has good grounds surrounding it, and there are many arrangements, such as a library and an athletic union, for the benefit of those belonging to the Medical Faculty, as well as of students in other departments of the college. The clinical teaching, which is recognized as qualifying not only for the degrees of the National University, but for those of the London University and the diplomas of the various colleges in the three kingdoms, is carried on at the Galway Hospital, the Galway Union Hospital, and the Galway Fever Hospital. The former is a general hospital, and at the two latter students have ample opportunities of studying zymotic diseases and chronic diseases respectively, as also diseases of children, for the Union Hospital has a special ward for them. In the medical departments eight scholarships in medicine, each of the value of £25, are annually awarded, as well as numerous sessional prizes each year. Further information as to these scholarships, and as to fees for hospital attendance, laboratory work, and lectures, and all other items of the medical curriculum, can be obtained on application to the Registrar at the college.

POST GRADUATE SCHOOL FOR SERVICE CANDIDATES.

This school, carried on in Dublin with the sanction and support of the Board of Trinity College, is designed to enable Irish medical students who desire to enter the Royal Navy, the Army, or Indian Medical Service to prepare themselves in Ireland. The large number of the class each session is a proof that this object has been attained. The classes, which are largely practical, include instruction in Clinical Medicine and Surgery, Pathology, Theoretical Medicine and Surgery, Midwifery, Operative Surgery (on the cadaver), Anatomy and Physiology. The practical classes meet in the various departments of the Medical School, Trinity College, where the lectures are also given. Clinical instruction in connexion with the course is given at one of the Dublin hospitals. The classes are held twice each year. Further particulars and a prospectus of the course may be obtained on application to Dr. R. A. Stoney, Honorary Secretary, 115, Lower Baggot Street, Dublin.

OTHER EDUCATIONAL FACILITIES.

SOME account may also be given of the many hospitals in and around Dublin which, officially or unofficially, take a share in the educational work of this centre of medical study, and also afford opportunities to post-graduate students.

SIR PATRICK DUN'S HOSPITAL.

This hospital, situated in Grand Canal Street, is connected with the School of Physic of the University of Dublin, but its practice is open to students of medicine attending other schools, and its certificates are recognized by the Royal University of Ireland and the Royal Colleges of Surgeons in England, Scotland, and Ireland. Clinical instruction is given daily by the physicians and surgeons, and special classes for students commencing their studies are held during October, November, and December. They embrace the elements of Medicine and Surgery, including note-taking. The operating theatre is thoroughly in accord with the requirements of modern surgery. Clinical teaching on the Diseases of Women is given twice a week, and in the special wing devoted to fever cases regular clinical instruction is given throughout the Winter and Summer Sessions. Pathological and Bacteriological Demonstrations are given on Fridays during the Winter and Summer Sessions in the new Pathological Laboratory. A new department for the treatment of Throat, Nose, and Ear diseases affords instruction in these subjects, and in the use of the Laryngoscope and Otoscope. In the *x* ray department opportunities are given the members of the Hospital Class of seeing the various applications of the *x* rays to the diagnosis and treatment of injury and disease. Arrangements have been made for special instruction in the administration of anaesthetics. The out-patient departments are similarly useful. Special demonstrations are given upon Diseases of the Skin.

Appointments.—A Resident Surgeon, with salary, is appointed annually, and five Resident Pupils, and six Surgical Dressers, and six Clinical Clerks each half-year.

Prizes.—The Haughton Clinical Medals and Prizes, value £15 each, in Medicine and Surgery are awarded annually, other candidates who show sufficient merit being given special certificates.

Fees.—The fees are: Winter and Summer Session, together, £12 12s. Winter Session only (six months), £8 8s. Summer Session only (three months), £5 5s. Other information can be obtained from the Honorary Secretary to the Medical Staff of the Hospital.

RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS.

Of these combined hospitals, Richmond deals with surgical work, Whitworth with medical, and Hardwicke with fever cases. Together they contain over 300 beds, and have special clinics for diseases of the eye, ear, throat and nose, and for diseases of women. The Truss Establishment, for the distribution of trusses to the ruptured poor of Ireland, is connected with these hospitals. A fully-equipped pathological laboratory has recently been opened and a new mortuary built. The Richmond Lunatic Asylum, containing 1,200 beds, is close by, affording facility for the study of mental diseases.

Appointments.—A Resident Physician and a Resident Surgeon are elected half yearly, and receive a salary. Twelve Resident Clinical Clerks are elected quarterly. These appointments are not only open to students of these hospitals, but also to students of other hospitals and to qualified doctors.

Further information can be obained from the Honorary Secretary and Treasurer, R. Travers Smith, M.D., 20, Lower Fitzwilliam Street.

ADELAIDE MEDICAL AND SURGICAL HOSPITALS.

The hospitals contain 140 beds. A House-Surgeon and Physician, resident and salaried, is appointed yearly, and four resident pupils are selected half-yearly. Further particulars may be obtained on application to the Secretary of the Hospital or to any of the members of the medical staff.

ROYAL CITY OF DUBLIN HOSPITAL.

This hospital, in addition to the general Medical and Surgical Wards, contains special wards for Ophthalmic and Aural Cases, Diseases of Women, and Diseases of Children. There is also an isolated building for the reception of infectious cases. An entirely new operation theatre has been constructed in accordance with the most modern surgical requirements. Roentgen-ray and Lupus Lamp Departments have been installed. Special instruction is given in the administration of anaesthetics, and certificates are awarded to students taking out this course.

Appointments.—Clinical Clerks to the Physicians and Dressers to the Surgeons are appointed from the most deserving of the class, and certificates awarded for the faithful performance of their duties. Medical and Surgical Resident Pupils are appointed, and special certificates awarded if merited. A Resident Medical Officer is appointed annually.

For further particulars application should be made to the Honorary Secretary of the Medical Board at the Hospital.

Mater Misericordiae Hospital.

This hospital, the largest in Dublin, is open at all hours for the reception of accidents and urgent cases. Clinical instruction is given by the Physicians and Surgeons at 9 a.m. daily. A course of clinical instruction on Fever is given during the Winter and Summer Sessions. A certificate of attendance upon this course, to meet the requirements of the licensing bodies, may be obtained. Opportunities are afforded for the study of Diseases of Women in the ward under the care of the obstetric physician, and at the dispensary held on Tuesdays and Saturdays. Ophthalmic Surgery is taught in the special wards and in the dispensary. Surgical operations are performed on Mondays, Tuesdays, Fridays, and Saturdays at 11 o'clock. Connected with the hospital are extensive dispensaries, which afford valuable opportunities for the study of general Medical and Surgical Diseases, and Accidents. Instruction will be given on Pathology and Bacteriology. Leonard Prizes will be offered for competition annually. Certificates of attendance are recognized by all the universities and licensing bodies in the United Kingdom. Private wards have been opened for the reception of medical and surgical cases. A training school and a home for trained nurses have been opened in connexion with the hospital.

Fees.—Nine months, £12 12s.; six winter months, £8 8s.; three summer months, £5 5s. Entries can be made with any of the physicians or surgeons, or with the Registrar, Dr. Martin Dempsey, 35, Merrion Square.

Mercer's Hospital.

This is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork Street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution, and become eligible for the posts of Resident Pupils, etc. There is a large Out-Patient Department, and a special department for Diseases Peculiar to Women. There are also special wards for the treatment and study of children's diseases. During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

Appointments.—A House-Surgeon is appointed annually. Five Resident Pupils, each for six months, and Clinical Clerks and Dressers are appointed monthly from amongst the most deserving members of the class.

Fees.—Winter, six months, £8 8s.; summer, three months, £5 5s.; nine months, £12 12s.

Further particulars can be obtained from the Honorary Secretary of the Medical Board.

Dr. Steevens's Hospital.

This hospital, situated at Kingsbridge and containing over 200 beds, affords exceptional advantages for clinical instruction. Owing to its position amongst manufactories and railway works a large number of casualties are always under treatment, while there are to be found occupying its beds at all times numerous cases of acute and chronic medical and surgical disease. There is a ward entirely devoted to venereal diseases, and a detached building for fever cases, and a newly-built extensive general out-patient department, with separate clinics for diseases of the eye and ear, skin, throat, teeth, and diseases of women, daily opportunity being afforded to students to become thoroughly familiar with the modern appliances used in diagnosis and treatment of disease. A new and well-appointed receiving room for accidents has recently been added. There is also a fully-equipped X-ray Department and a fully-furnished Pathological Laboratory. General operations are performed on Tuesday, Thursday, and Saturday, and Gynaecological operations on Wednesday. The hospital accommodates four medical, six surgical, and two specialist (Gynaecology and Ophthalmology) resident pupils, who are provided with separate furnished rooms, with coal and gas. There is a comfortable common sitting room for meals, which can be obtained at a reasonable rate.

Fees.—Hospital practice, nine months, 12 guineas; six months, 8 guineas; three months, 5 guineas. Residence: Each three months, 10 guineas, which includes fee for hospital practice and certificate.

A prospectus may be obtained from the Resident Surgeon, or the Honorary Secretary to the Medical Staff.

Meath Hospital and Co. Dublin Infirmary.

This hospital was founded in 1753, and now contains 160 beds available for clinical teaching. A building containing 40 beds for the isolated treatment of fevers is attached to the Hospital. The Certificates of this Hospital are recognized by all the universities and licensing bodies of the United Kingdom. Six Medical Clinical Clerks and twelve Surgical Resident Pupils and Dressers are appointed every six months, and a House-Surgeon and two Clinical Assistants are elected annually. The session opens on October 1st. A prospectus giving the complete arrangements for the Medical and Surgical Classes for the coming session may be obtained from the Honorary Secretary of the Medical Board at the Hospital.

The Rotunda Hospital.

This institution consists of two distinct hospitals, and is the largest combined Maternity and Gynaecological Hospital in the British Empire. Nearly 3,000 patients are admitted annually to the hospital, and a number of cases of confinement are attended at the patients' own homes, whilst over 14,000 patients are attended in the out-patient department. A Pathological Laboratory is one of the important features of the hospital. The clinical instruction given includes daily lectures and practical demonstrations in Midwifery, Gynaecology, and Cystoscopy. A diploma is granted to pupils on their passing an examination after a period of six months' attendance on the practice of the hospital. Paid clinical clerks are selected (by examination) from amongst qualified men who have obtained the hospital diploma. The residential quarters in the hospital for both men and women students have within the last few years undergone complete renovation, and afford comfortable accommodation. The grounds of the hospital contain grass courts for lawn tennis and croquet. Pupils can enter at any time for a period of one month or longer. The hospital offers exceptional opportunities for qualified practitioners of any nationality who desire to take out a course of post-graduate instruction.

Fees.—Intern pupils: Six months, £21; three months, £12 12s.; two months, £9 9s.; one month, £6 6s. Extern pupils: Six months, £10 10s.

Royal Victoria Eye and Ear Hospital.

This hospital, situated in Adelaide Road, Dublin, is an amalgamation of two institutions which formerly gave special instruction in ophthalmology separately—namely, St. Mark's Ophthalmic Hospital and the National Eye and Ear Infirmary. The combined institution, which was opened in February, 1904, contains 82 beds. Clinical instruction in diseases of the eye, including the use of the ophthalmoscope, is given daily, and students attend the operations, which are performed as occasion requires. Instruction in aural surgery is also given. Special classes for practical instruction in the use of the ophthalmoscope, etc., and for the demonstration of cases, are formed from time to time. A detached Out-patient Department, specially designed to meet all the requirements of eye, ear, and throat patients, and complete in every respect for the cure and demonstration of their diseases, is now well advanced in construction, and is expected will be ready for occupation by the end of this year. It is anticipated that this department will be one of the most complete of its kind in exietence.

CLINICAL HOSPITALS IN ENGLAND.

THERE are a great many hospitals in the United Kingdom which, though not connected with any medical school, open their doors either to those who have yet to become qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving what instruction opportunity offers; and at those which are situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, appointments in the way of resident medical officerships, house-physicianships, and house-surgeoncies. These are usually paid offices, which may be held for periods varying from six months to a year. Notices of the vacancies as they occur appear in our columns, and there is rarely any lack of candidates, since the holder is placed in a particularly favourable position for gaining either general or special experience. An account of some which are situated in London and the provinces here follows, reference to those in large medical centres other than London being made in the accounts given of the Medical Schools in Scotland, Ireland, and the provinces respectively.

LONDON.

GENERAL HOSPITALS.

Great Northern Central Hospital, Holloway Road, N.—This hospital is recognized by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. The hospital contains 182 beds, all of which are at present available for occupation (that is, no beds empty for want of funds). The large rectangular and circular wards, each of which contains 20 beds and 4 cots, the operation theatre, and an additional out-patient department, general and special, and the pathological departments, have all been erected since 1887. A second operation theatre and a new surgery block containing two observation wards, patients' waiting hall, examining rooms, and surgery proper, were opened in 1906. There is also an electrical department, and a children's ward containing 12 cots. Medical practitioners are invited to attend the general and special practice of the hospital. Clinical Assistants (qualified), Clinical Clerks, and Pathological Clerks are appointed in the general and special departments, and may receive certificates at the end of their terms of office. There are one Resident Medical Officer, three House-Surgeons, two House-Physicians, a Pathologist, and five Anaesthetists. Full particulars concerning these appointments can be obtained from the Honorary Secretary of the Medical Committee. Owing to the development of tube railways and electric trams the hospital is now one of the most accessible in London.

London Temperance Hospital.—The hospital in Hampstead Road contains 100 beds. The medical and surgical practice is open to students and practitioners. There are several appointments (vacancies in which, when they occur, are advertised in the JOURNAL). The principal are those of Surgical and Medical Registrars, Pathologist and Bacteriologist, Anaesthetist, Radiographer, Resident Medical Officer, one Assistant Medical Officer, and Assistant House-Surgeon. From time to time clinical classes are held by members of the staff.

Seamen's Hospital Society.—Dreadnought Hospital, Greenwich, 250 beds. Branch Hospital, Royal Victoria and Albert Docks, 50 beds. Dispensary in the East India Dock Road, and at Gravesend. Reference to the opportunities which these institutions afford for general clinical study and for obtaining special instruction in the diseases of tropical climates will be found at pages 713 and 715 respectively.

West London Hospital.—This hospital possesses some 160 beds, and, besides having a large out-patient department, the work of which is subdivided among the different special branches of medicine and surgery, it treats annually between two and three thousand in-patients. The excellent opportunity it affords for clinical study will be found fully described at page 713 in the article on post-graduate work.

Prince of Wales's General Hospital, Tottenham, N.—Full information as to the attractions of this hospital as a place for clinical study, and as to the manner in which its valuable resources are utilized, will be found at page 714 in the article on post-graduate work. The district in which the hospital is situated has been growing rapidly of late years, and attendance in its various departments annually increases.

CHILDREN'S HOSPITALS.

The Hospital for Sick Children, Great Ormond Street, W.C. (Medical School recognized by the University of London for the Study of Children's Diseases), contains 222 beds, divided into 87 medical, 97 surgical, and 38 for special and infectious cases, besides 36 beds at the Convalescent Branch, Highgate. The hospital having been recognized by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need, and is open to students who have completed four years of medical study, and also to qualified medical men. The sessions are of ten weeks' duration, and begin in October, January, and March. Appointments are made every three months to eight Medical Clerkships and eight Surgical Clerkships. Lectures or Demonstrations, given once or twice every week during both Winter and Summer Sessions, are open, free of charge, to medical practitioners. Fees for hospital practice: One month, 2 guineas; three months, 5 guineas; perpetual ticket, 10 guineas. Special for Clinical Clerks, £3 3s. for three months. Certificates of attendance are granted. Special Post-graduate Courses of three months' duration are held four times a year. Each course comprises two medical and two surgical meetings a week. Fees: Medical course, £5; surgical course, £5. Prospectuses and further information will be forwarded on application to the Dean at the hospital.

Paddington Green Children's Hospital, Paddington Green, London, W.—Number of beds, 46; average number of beds daily occupied, 36; average number of in-patients, 734; average number of out-patients, 18,414. Daily attendance of the Medical and Surgical Staff. There are six Clinical Assistants. There is a Convalescent Home attached to the Hospital at Fair View, Slough, with accommodation for 16 children in the winter and 24 in the summer months.

East London Hospital for Children, Shadwell.—The hospital contains 120 cots. Two House-Surgeons and two House-Physicians (holding office for six months) are appointed annually. This hospital is recognized by the Conjoint Board for England as a place of instruction for students, at which six months of their fifth year may be spent in clinical work. The following opportunities for the study of the diseases of childhood are offered to gentlemen who have completed four years of medical study, and to those who are already qualified. The practice of the hospital (in the out-patients' department) is open to students every day (except Saturdays), at such hours as the physicians or surgeons for the day are attending. The in-patient practice is open to students holding clerkships or dresserships in the hospital, and to students not holding appointments during the attendance of the physicians and surgeons. A certain number of Clinical Clerks and Dressers are appointed every three months to each physician and surgeon. They are eligible for reappointment at the end of three months. Additional information may be obtained on application to the Secretary at the hospital.

The Queen's Hospital for Children, Hackney Road, Bethnal Green.—This hospital, formerly known as the North-Eastern, contains 134 beds. The in-patients in 1909 numbered 1,941, of whom 788 were children under 2 years of age; out-patients, 33,616; new cases, 87,679 attendances. There are special Dental, Eye, Skin, Ear, Nose, and Throat and Roentgen-ray Departments. The institution offers plenty of facilities for Medical and Surgical study of all kinds. Detailed information in respect of it can be obtained on application to the Secretary.

The Belgrave Hospital for Children.—The hospital has accommodation for 40 children and a very extensive out-patient service. The proportion of very young children to the total number treated is high. Medical and Surgical Out-patients are seen at 9.30 on Mondays, Tuesdays, Thursdays, and Fridays. Clinical Assistants to the Out-patient Staff are appointed from time to time.

LYING-IN HOSPITALS AND HOSPITALS FOR WOMEN.

Queen Charlotte's Lying-in Hospital.—This hospital, situated in Marylebone Road, receives over 1,800 patients annually, besides having a large out-patient department. Medical students and qualified practitioners are received, and on account of the large number of primiparous cases —nearly one-half of the total admissions—have unusual opportunities of seeing Obstetric complications and Operative Midwifery. Clinical laboratory instruction is given. Certificates of attendance at this hospital are recognized by all universities, colleges, and licensing bodies. There is a residential college opposite the hospital and in telephonic communication with it. *Fees.*—Those attending the practice of the hospital, in order to conduct the number of cases they are required to attend by the licensing bodies, pay a fee of £8 8s. for a course of four weeks. Those who attend only for the preliminary instruction in midwifery now required by the General Medical Council pay £5 5s. for a calendar month. Students are accommodated at the Residential College adjoining the hospital. Terms for residence and full board, 30s. per week.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—The Samaritan Hospital treats diseases peculiar to women only. It has 56 beds. It receives qualified practitioners as Clinical Assistants in both in-patient and out-patient departments; fee, £3 3s. per quarter. Further particulars can be obtained from the Secretary.

OPHTHALMIC HOSPITALS.

Royal London Ophthalmic Hospital (Moorfields Eye Hospital), City Road, E.C.—This hospital contains 138 beds and treats annually about 2,350 in-patients and 47,000 out patients. Operations are performed daily from 10 a.m. to 1 p.m., and four surgeons attend on each day. Students are admitted to the practice of the hospital. *Fees:* For six months, £3 3s ; perpetual, £5 5s. Courses of instruction in the following subjects are given each term: (1) Examination of the Eye; (2) the Use of the Ophthalmoscope; (3) Errors of Refraction; (4) External Diseases of the Eye; (5) Surgical Anatomy of the Eye; (6) Motor Anomalies; (7) Pathology of the Eye; (8) Practical Pathology; (9) Bacteriology; (10) Operative Surgery; (11) Classes for X-ray work; (12) Clinical Lectures. A composition fee of £10 10s. will entitle students of the hospital to a perpetual ticket, and will admit them once to all the above Lectures and Demonstrations, except the classes on Practical Pathology, Bacteriology, Operative Surgery, and X-ray work. Students of the Hospital are eligible for the offices of House-Surgeon, Refraction Assistants, or Clinical and Junior Assistants. Junior Assistants are appointed every three months. Any further information desired can be obtained on application to the Secretary.

Royal Westminster Ophthalmic Hospital, King William Street, West Strand.—The hospital, modernized throughout, contains 40 beds, a large out-patient department, a lecture room, and a well-equipped pathological laboratory. The practice is open to practitioners and students from 1 to 4 p.m. daily. Special instruction is given in the Pathology, Diagnosis, and Treatment of Eye Affections, including the operations on the eye, the treatment of errors of refraction, and the use of the ophthalmoscope. *Fees:* Six months, £3 3s; perpetual, £5 5s. Shorter periods of instruction can be arranged. For further particulars apply to the Secretary at the hospital.

Royal Eye Hospital, St. George's Circus, Southwark, S.E. —This hospital contains 40 beds and 2 cots. The out-patients number over 28 000 yearly. Operations are performed and patients seen daily at 9 a.m. and 2 p.m. Qualified practitioners and students are admitted to the practice of the hospital. Courses of instruction in Ophthalmology are given during the Summer and Winter Sessions. Fee for each course, £2 2s.; including three months' Hospital practice, £3 3s. Qualified students of the hospital are eligible for the offices of Registrar and House-Surgeon; they may also be appointed Clinical Assistants for six months, and are eligible for re-election. Further particulars may be obtained from the Secretary at the hospital.

Central London Ophthalmic Hospital, Gray's Inn Road, W.C.—This hospital has 26 beds and possesses facilities for clinical teaching daily. Last year there were 452 In-patients and 13,718 Out-patients (entailing 31,650 attendances). Classes of Instruction in the various branches of Ophthalmology are held during the Winter Session commencing in October. The Out-patient work begins at 1 o'clock, and operations are performed daily between 1 and 4 o'clock. *Fees:* A composition fee of £5 5s. will entitle students to a perpetual ticket, and £3 3s. to three months' hospital practice, and either fee will admit students to the Ophthalmoscope and Refraction classes.

FEVER AND SMALL-POX HOSPITALS.

Students are admitted to study at the Fever and Small-pox Hospitals of the Metropolitan Asylums Board after they have completed the third year of medical education, provided they have held the offices of clinical clerk and dresser, and have obtained the sanction of the authorities of the medical school to which they belong. The minimum duration of the course of study at the fever hospitals is two months, and the ordinary course of study at the small-pox hospitals consists of twelve demonstrations. At the fever hospitals the student must attend two days a week, and a third attendance is allowed, which may be taken at the convenience of the student, either in the morning or afternoon. To enable him to do this, an afternoon class is held once a week at those hospitals which have morning classes, and a morning class once a week where students are now received only in the afternoon. A register of students and the number of attendances of each individual is duly kept at each hospital. At the small-pox hospitals the dates and times of demonstrations are notified to students who have entered for a course. They must abide by the rules laid down as to disinfection and other matters, and must satisfy the Board of Management that they are sufficiently protected against small-pox by vaccination or otherwise. A certificate signed by the medical superintendent of the hospital at which attendance is made, and countersigned by the Clerk to the Board, is granted to a student when he has satisfactorily completed the course of study. Qualified medical men are admitted under similar terms and conditions, except that the sanction of the authorities of the medical school is not required in their case. Courses of instruction in the diagnosis and treatment of fevers are held three times a year at most hospitals, beginning in January, May, and October respectively, and other courses are usually arranged to commence in February, August, and November respectively. Information as to the classes is furnished to each of the recognized medical schools in the metropolis. Courses in connexion with small-pox are held from time to time as circumstances permit.

Fees.—Fever hospitals, two months, £3 3s., and £1 1s. for every additional month; small-pox hospitals, £4 4s. for the course of 12 demonstrations, or (for qualified medical men only) £1 1s. per demonstration, or £2 2s. per course of three demonstrations.

MISCELLANEOUS SPECIAL HOSPITALS.

Bethlem Royal Hospital.—At this hospital for Mental Diseases, in St. George's Road, Southwark, two Resident House-Physicians are appointed twice a year for six months from recently-qualified medical students. Students of general hospitals and qualified medical men are allowed to attend for clinical instruction for three months on payment of a fee. Post-graduate courses are given from time to time.

Hospital for Consumption and Diseases of the Chest, Brompton. — The hospital has been recognized by the Conjoint Board for England as a place where six months of the fifth year may be spent in clinical work. It is also one of the institutions belonging to the London Post-Graduate Association. There are 333 beds in the two buildings constituting the hospital, and a special throat department, as well as an open-air sanatorium at Frimley. Pupils are admitted to the in-patient and out-patient practice of the hospital and to the laboratories. Courses of lectures and demonstrations are given from October to April on Wednesdays at 4 p.m., and occasional lectures during the summer. Clinical Assistants, who must be qualified men, are appointed to the Assistant Physicians in the out-patient department, and Clinical Clerks are appointed to the Physicians in the wards. These appointments are tenable from three to six months.

The fee for the practice of the hospital is £1 1s. for each month, or £2 2s. for each period of three months, or a perpetual fee of £5 5s. The charge for one month's study in the Clinical Laboratory is 5 guineas.

City of London Hospital for Diseases of the Chest, Victoria Park.—There are 164 beds. The practice of the hospital, both as regards in-patients and out-patients, is open to students and medical practitioners. Certificates of attendance in the medical practice of this hospital are recognized by the London University, the Conjoint Board, and the Society of Apothecaries. Information as to medical instruction can be obtained on application to the Secretary to the Medical Committee at the hospital.

National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury.—This hospital, with the Finchley branch, contains 200 beds and cots. The out-patient practice and lectures are free to students and practitioners of both sexes. Lectures and demonstrations are given on Tuesdays and Fridays, at 3.30, in three courses—spring, summer, and winter—and the physicians for out-patients attend every Monday, Tuesday, Wednesday, and Friday at 2. Surgical operations are performed on Tuesdays and Fridays at 9. The hospital is a school of the University of London, and has been recognized by the Conjoint Board for England as one of the places where part of the fifth year of study may be spent. The Physicians for in-patients attend at 2.30 on Monday, Tuesday, Wednesday, and Friday. Clinical Clerks are appointed for three months. Communications regarding clinical clerkships, lectures, and hospital practice should be addressed to the Secretary at the hospital.

Metropolitan Ear, Nose, and Throat Hospital.—This hospital (founded 1838) is situated in Grafton Street, Tottenham Court Road. The out-patient department is open daily at 2.30 p.m. to practitioners and students for acquiring clinical instruction and technical knowledge. Operations are performed on in-patients on Tuesdays, Wednesdays, Thursdays, and Fridays, at 9.30 a.m. Fee for one month's attendance at the hospital £1 1s., and for three months £2 2s. During the forthcoming session demonstrations will be given by members of the staff on the pathology and treatment of diseases of the ear and respiratory passages. Short practical classes will also be held in clinical pathology and surgical anatomy. Weekly clinical lectures are given by the staff on the special diseases treated at the hospital; the date, time, and subject of these lectures are previously announced in this JOURNAL. The lectures are free to all medical practitioners and students.

Royal Ear Hospital, Dean Street, Soho, W.—Courses in Diseases of the Ear and Nose are given by members of the staff throughout the teaching year. The teaching is of a practical character, and Clinical Assistants are appointed. Ten clinics are held every week. The operation days are Tuesdays and Fridays. Students are charged 1 guinea for six weeks' attendance and instruction. For full particulars address the Honorary Secretary of the Medical Board, Royal Ear Hospital, Dean Street, Soho.

Hospital for Diseases of the Throat, Golden Square, London, W.—The hospital contains 48 beds for in-patients. There is an annual out-patient attendance of nearly 50 000. Operations are performed every morning (except on Mondays). Practitioners and medical students are admitted to the practice of the hospital at a fee of 5 guineas for three months, 7 guineas for six months, or 10 guineas for perpetual studentship. The courses may commence at any date. Special terms are granted to medical men in actual practice who can only attend the hospital once or twice weekly. Clinical instruction is given daily in the Out-patient Department from 2 to 5 p.m., on Tuesdays and Fridays from 6.30 to 9 p.m., and on Mondays at 9.30 a.m. Systematic courses of lectures, with Clinical and Pathological Demonstrations, are given in the Winter Session, and are free to students of the hospital. From amongst the students are selected Junior Clinical Assistants to assist the member of the staff to whom each is appointed. Application for further information should be addressed to the Honorary Secretary to the Medical Staff.

Central London Throat and Ear Hospital, Gray's Inn Road.—The hospital contains accommodation for 26 in-patients, and, in addition to new operating theatres, has a very extensive out-patient department (between 40,000 and 50,000 attendances yearly), which is open daily to all medical practitioners and students for the purpose of Clinical Demonstration and Instruction. Fee, for three months' attendance, 5 guineas; for six months, 8 guineas. Courses of practical demonstrations on the special diseases treated at this hospital are held during both the winter and summer months by members of the staff. The dates of these demonstrations are announced in the JOURNAL prior to their commencement. They are open to qualified practitioners and advanced students of medicine on payment of 2 guineas for each course of lectures, with attendance at the hospital clinic during the period of six weeks. Operative Surgery classes are held at intervals. Operations on in-patients and out-patients are performed on Tuesdays, Wednesdays, Thursdays, and Fridays at 2 p.m. In the newly equipped laboratory considerable attention is given to scientific work, particularly with regard to the pathology and bacteriology of the diseases of the ear and upper respiratory passages. Full particulars will be supplied on application to the Dean at the hospital.

St. Peter's Hospital for Stone and Urinary Diseases, Henrietta Street, Covent Garden.—Qualified medical men and students are admitted free to the practice of this hospital, which contains 32 beds and has a large out-patient attendance (33,390 for 1909). New cases, 3,818. Operations are performed and consultations held on Wednesdays and Fridays at 2. Clinical instruction is given regularly by members of the staff. In-patients admitted in 1908, 509.

The Hospital for Diseases of the Skin, 52, Stamford Street, Blackfriars, S.E.—This hospital was founded in 1841 as a special school for the study of diseases of the skin. Its practice is free to practitioners and students. It is open daily for out-patients at 2 p.m. Practical courses of cutaneous histopathology and on the diagnosis and treatment of diseases of the skin and syphilis are held at frequent intervals. There are fully-equipped pathological and light departments. Clinical assistants are appointed from time to time.

St. John's Hospital for Diseases of the Skin.—The Out-patient Practice (at 49, Leicester Square, W.C.) is open free to the medical profession every week-day from 2 to 4 p.m., on presentation of their cards to the Medical Officer in attendance. The *X*-ray Department is in operation every day except Saturday from 2 to 4. Chesterfield Lectures are given free, October to May, on Thursdays, at 6 o'clock. In connexion with these Lectures a practical course is given in the Laboratory, comprising Microscopic Examinations of Sections, Hair Examination, Staining, etc., during the summer. The Chesterfield Silver Medal is competed for annually in the month of June. The In-patient Department, with 40 beds, is at 262, Uxbridge Road, W. Further particulars may be obtained from the Secretary-Superintendent, 49, Leicester Square, W.C.

THE PROVINCES.

IT is the practice at a great many of the larger county and other hospitals in the provinces to offer facilities for instruction in their wards to medical students, who are usually treated as the pupils either of the resident officers or of the honorary medical staff. In some cases they pay fees, in others they receive an honorarium for the services they render as dressers, and in like capacities. A list of these and some allied institutions follows.

BATH.

Royal United Hospital.—The hospital contains 130 beds, and is recognized by the Royal Colleges of Physicians and Surgeons as a medical school. It contains a library and an excellent museum, in which are a large number of interesting specimens, both in Pathology and Comparative Anatomy. Fees for attendance: Twelve months, £10 10s.; six months, £5 5s. (Temporary pupils can also, by permission of the honorary staff, attend the practice of the hospital by the payment of £1 1s. for each month.) Instruction in Practical Pharmacy for three months, £3 3s. Further particulars can be obtained on application to the Secretary.

BRADFORD.

Bradford Royal Infirmary.—The hospital contains 210 beds. Non-resident pupils are received, and have

every opportunity of acquiring a practical knowledge of their profession under the superintendence of a Resident Surgical Officer, two House-Surgeons, and a House-Physician. One year's attendance is recognized by the Examining Boards. *Fee:* Perpetual, £10 10s.

BRIGHTON.

Sussex County Hospital.—The hospital contains 195 beds (135 surgical, 60 medical), with separate ward for children and separate blocks for diseases of women and for cases requiring isolation; and the Out-patient Department is attended by 1,100 to 1,300 patients weekly. The institution is recognized by the Conjoint Board as a hospital where part of a course of Dispensing may be taken. Pupils are admitted to the clinical teaching. Further information may be obtained from the House-Surgeon.

CANTERBURY.

Kent and Canterbury Hospital.—The hospital contains 84 beds. Over 700 in-patients and 1,200 out-patients attend every year. Lectures are delivered weekly during term time on Practical Medicine and Surgery to the students of St. Augustine's Missionary College.

DERBY.

Derbyshire Royal Infirmary.—The infirmary has beds for 259 patients. Pupils are admitted to the in and out practice at a fee of £10 10s. a year.

DEVONPORT.

Royal Albert Hospital and Eye Infirmary.—The hospital contains 52 beds, 11 additional beds for emergency cases only, and 2 Home Wards for the accommodation of private patients on payment. A course of Practical Pharmacy is given by the Dispenser on payment of a fee of £5 5s.; pupils of the medical staff can attend this course on payment of £2 2s. The number of in-patients treated during the twelve months ended September 30th, 1909, was 771. In the Casualty Department first aid was given to 2,696 persons. The out-patients treated in the Ophthalmic Department numbered 868.

EXETER.

Royal Devon and Exeter Hospital.—The hospital contains 200 beds, including a special ward for children. There are a Library, Museum, Pathological Department, and *Post-mortem* Rooms. A new Operating Theatre was opened in 1906, and an Electrical Treatment Department in 1907. Attendance on the practice at this hospital qualifies for all the Examining Boards. Arrangements are made by which students can attend Midwifery. For further particulars apply to the Secretary.

West of England Eye Infirmary.—This infirmary contains 64 beds. Arrangements can be made for students at the Exeter Hospital to attend the practice of the Eye Infirmary.

GLOUCESTER.

Gloucestershire Royal Infirmary and Eye Institution.—The hospital contains 140 beds. Resident and non-resident pupils are admitted by the General Committee on the recommendation of a member of the Medical Board. Each pupil pays in advance £10 for the first half-year and £5 for every subsequent quarter, or portion of a quarter, of a year. Each resident pupil has board and lodging in the house, for which he pays in advance 26 guineas for the first half-year, and 13 guineas for every subsequent quarter, or portion of a quarter, of a year. Each pupil pays in advance to the House-Surgeon a fee of £5 5s. for instruction, and a further fee of £3 3s. for every subsequent year or portion of a year. One year spent at this hospital, after passing a preliminary examination, is recognized by the Conjoint Board.

LEICESTER INFIRMARY.

In this infirmary there are 240 beds, of which some 230 are in constant use. Of these beds, 42 are in a special annexe known as the Children's Hospital. There are six resident medical officers, and in addition two resident clinical assistants are appointed every six months, an honorarium of £10 10s. being given at the end of their term of office, in addition to board and apartments. The work of the hospital, especially on the surgical side, is very extensive, four operating theatres being in use. There is also a large out-patient department; it is fitted with rooms for the accommodation of the members of the staff in charge of the various special departments, and is a most complete and well-equipped building. A new south-east wing has recently been erected, at a cost of £20,000. It contains three wards, each accommodating 30 patients. In addition there are side wards to each floor (a two-bed and a one-bed ward) for observation and for delirious cases, and clinical laboratories. An electric lift conveys patients from top to bottom. The top ward of the new wing has been released by the opening of a nurses' home, and is now being equipped as a surgical ward. The number of beds will then be 270. A sum of £100,000 has been expended on the reconstruction of the institution during a period of seven years, and the infirmary is now thoroughly modernized and efficient.

LINCOLN.

County Hospital.—The hospital contains 125 beds and 5 isolation beds. The House-Surgeon is allowed to take two pupils, on terms arranged between the Weekly Board, himself, and the pupils. A fee of not less than £10 10s. is paid by every pupil to the hospital. The House-Surgeon is responsible for the conduct of his pupils. The pupils remain in the hospital only when occupied in performing or observing the actual work of the hospital.

NORTHAMPTON.

General Hospital.—There are 166 beds and a large out-patient department. Out-pupils are received, and have every opportunity of acquiring a practical knowledge of their profession. Instruction is also given in Anatomy, Materia Medica, and Pharmacy. Non-resident pupils are taken at a fee of £10 10s. annually.

NORWICH.

Norfolk and Norwich Hospital.—The hospital contains 210 beds. Students (non-resident) are admitted according to the following scale: For three months, £3 3s.; for six months, £5 5s.; as permanent students, £8 8s. The resident officers are a House-Physician, House-Surgeon, Assistant House-Surgeon, and Second Assistant House-Surgeon.

NOTTINGHAM.

General Hospital.—The hospital contains 241 beds. The Honorary Staff introduce pupils to witness the practice of the hospital on payment of £10 10s. annually in advance. The pupils receive instruction from the Resident Medical Officers.

PORTSMOUTH.

Royal Portsmouth Hospital.—150 beds. One year's attendance is recognized by the Examining Boards. For particulars as to fees, application should be made to the Secretary.

SOUTHAMPTON.

Royal South Hants and Southampton Hospital.—The number of beds is 130. The in-patients number about 1,900 a year, the out-patients about 9,000. Large additions to buildings, including new isolation wards, new operating room, a new ward block and a steam laundry, new night casualty receiving room and nurses' homes for 44 nurses have been completed, and new kitchens are in course of erection. Attendance at this hospital is recognized by the Conjoint Board.

STAFFORD.

Staffordshire General Infirmary.—There are 77 beds. The pupils of medical practitioners, resident in the county of Stafford, are allowed to attend the medical and surgical practice of the infirmary, and to be present at operations. The pupils of the officers of the institution are admitted to these privileges gratuitously, those of other practitioners on payment of £10 10s. by each pupil.

North Staffordshire Infirmary and Eye Hospital.—The infirmary has accommodation for 216 patients, including children's wards, eye department, and electrical and *x*-ray departments. The attendance of pupils in this infirmary is recognized by all the Examining Boards. Particulars as to fees, etc., may be obtained from the Secretary and House-Governor of the Infirmary, Hartshill, Stoke-on-Trent.

WINCHESTER.

Royal Hants County Hospital.—The hospital contains 108 beds. The Physicians and Surgeons are allowed to introduce a certain number of pupils; the Resident

Medical Officer may also receive a pupil, for whose maintenance a certain sum, to be fixed by the Committee, is payable annually in advance. Pupils of medical men not on the staff of the hospital may, with the consent of the Committee, become out-pupils and attend the practice of the hospital, under the direction of the Resident Medical Officer, on payment of £10 10s. for one year, or £21 for unlimited attendance.

WOLVERHAMPTON.

Wolverhampton and Staffordshire General Hospital.—There are 200 beds. It is recognized by the University of London, the Royal Colleges of Physicians and Surgeons, and other Examining Boards. The in-patients number 2,827, and out-patients 19,888. The operating theatre, pathological laboratory, and *post-mortem* room are new and well equipped. Special departments for children, gynaecology, ear, throat, and nose diseases, electro-therapeutic and *x*-ray departments. There is an excellent library. The resident officers are a Resident Medical Officer, Resident Surgical Officer, two House-Surgeons. Pupils are allowed to witness the whole of the practice of the hospital and to be present at operations, and have every opportunity of acquiring a practical knowledge of their profession. Fees: £3 3s. a quarter, £10 10s. the first year, and £5 5s. subsequent years. A course of practical pharmacy is given by the Dispenser. Fees: £3 3s. for three months. Application should be made to the Secretary of the Medical Staff.

YORK.

York County Hospital.—The hospital contains 150 beds, including children's ward, eye department, and *x*-ray apparatus. Non-resident pupils may be introduced by the Honorary Medical and Surgical Officers, or by the Resident Staff (which consists of a House-Physician and a House-Surgeon) on terms to be arranged with the Honorary Staff. Pupils visit the wards with the members of the Honorary Staff (the House-Physician and House-Surgeon are present at the operations and necropsies), and are instructed in the elements of minor surgery in the casualty department. The in-patients number about 1,400 annually, and the out-patients 11,000, who make 44,000 attendances. Further particulars may be obtained from the Senior Resident Officer.

MEDICAL EDUCATION OF WOMEN.

THE incident of chief interest during the past twelve months has been the appearance of women at the examinations of the Royal Colleges of England. Their choice of qualification is now very wide, and includes: All the Universities of Great Britain, with the exception of Oxford and Cambridge; the Royal College of Physicians, London, and the Royal College of Surgeons, England; the Society of Apothecaries of London; the Conjoint Colleges of Scotland and of Ireland.

The regulations of each differ considerably, so that it is necessary for a student to decide, before beginning her course, which degree or diploma she will aim at obtaining. The ordinary regulations of the General Medical Council (see page 674) must be observed, and women can pursue their education either at certain schools only open to women, or at ordinary schools where they do their work more or less in common with men students.

The schools which admit women only are the London (Royal Free Hospital) School of Medicine for Women, which is one of the constituent schools of the Medical Faculty of the University of London; the Edinburgh School of Medicine for Women (see page 701), and Queen Margaret College, Glasgow (see page 702). Women are also admitted to the Schools of Medicine conducted in connexion with the Universities of Dublin, Durham, Liverpool, Manchester, Birmingham, Leeds, Sheffield, and Aberdeen; the Catholic University, Dublin, St. Mungo's College, Glasgow, Bristol University College, the Schools of Surgery of the Royal College of Surgeons in Ireland, and of the Queen's Colleges of Belfast, Cork, and Galway. Two years of the medical curriculum can be taken by women students at the United College, St. Andrews, and the remaining three at University College, Dundee, where the whole five years can be passed if desired. Women can also attend classes for the first three years of the medical curriculum at University College, Cardiff.

Year by year the openings for women who adopt a medical career increase, and the new regulations of the Board of Education making the medical inspection of school children compulsory has opened up a wide field of work in that direction. Women hold many appointments as Resident Medical Officers in hospitals for women and children all over the country, and are eligible for appointment in some general hospitals, and in a large number of sanatoriums, infirmaries, fever hospitals, and asylums. Many medical women are also engaged in public health and school inspection work.

As regards the London School of Medicine for Women, particulars will be found at page 695 in the article on London Medical Schools.

DEGREES FOR PRACTITIONERS.

AT one time it was almost the universal custom for medical students educated in London not to seek a university degree, and as that custom still prevails to a considerable extent, a very large proportion of medical men in actual practice in England possess diplomas to practise but not degrees in medicine. The question whether a medical man not known to be a pure surgeon should be addressed as "Doctor" or "Mr." is one which the general public has settled, as it settles most things, for itself and according to its own view of the proprieties; but, nevertheless, those who have not taken a degree often regret their inability to sign themselves "M.D.," and that they have no legal title to the term "Doctor." Hence, some universities have issued special regulations under which the degree of M.D. is granted to practitioners of a certain standing under special conditions. The regulations of these universities are stated briefly in the following paragraphs. The University of Brussels also grants the degree of M.D. to practitioners after examination, without restriction as to residence or curriculum; but this degree is not registrable on the *Medical Register* if obtained subsequently to June, 1886.

UNIVERSITY OF LONDON.

Registered medical practitioners who have passed the First Examination for Medical Degrees and the Second Examination for Medical Degrees, Part I, may proceed to the Second Examination for Medical Degrees, Part II, and M.B., B.S. Examinations without observing the intervals prescribed by the regulations on producing certificates that they have gone through the required course of study at a School of the University; subject to the proviso that no degree of the university can under any circumstances be granted by examination to any one in less than three years after passing the Matriculation Examination or after admission by the university of the candidate's right to exemption therefrom.

UNIVERSITY OF DURHAM.

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period, upon the following conditions without residence: The candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. Should he not have passed previously to the professional examination in virtue of which his name was placed on the *Register* an examination in Arts, he is examined in Classics and Mathematics; if otherwise, he is required to translate into English passages from any one of the following Latin authors: Caesar, *De Bello Gallico* (first three books), Virgil, *Ænid* (first three books), or Celsus (first three books).

Professional Examination.—The candidate must pass an examination in the following subjects: i. Principles and Practice of Medicine, including Psychological Medicine, Hygiene, and Therapeutics; ii. Principles and Practice of Surgery; iii. Midwifery and Diseases of Women and Children; iv. Pathology, Medical and Surgical; v. Anatomy, Medical and Surgical; vi. Medical Jurisprudence and Toxicology. The examination is conducted by means of printed papers, clinically and viva voce, at

the College of Medicine, Northumberland Road, Newcastle, and in the Royal Victoria Infirmary, Newcastle. The classical portion of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

Foreign and Colonial Practitioners.—Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

Fees.—The inclusive fee is 50 guineas; if a candidate fail to pass, 20 guineas are retained, but if he present himself again, 40 guineas only are required.

Dates, etc.—The examinations are held twice a year—towards the end of March and of July. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

University of Brussels.

British practitioners of medicine holding medical and surgical qualifications are, in common with legally-qualified practitioners in other countries, admissible without further curriculum to the examination for the degree of M.D. of the University of Brussels.

Examination.—The examination is divided into three parts. The "First Doctorate" includes Medicine, Pathology (with microscopical examination[1]), Therapeutics, Mental Diseases, and Diseases of Women and Children. The "Second Doctorate" comprises Surgery, Midwifery, Hygiene, and Medical Jurisprudence. The "Third Doctorate" consists of clinical examination in Medicine and Surgery, examination in Midwifery with the *mannequin*, Ophthalmology, Operative Surgery (amputation, ligature of arteries in the dead subject), and Regional Anatomy with Dissections. Special importance is attached to practical knowledge. The examination is conducted in French through an official interpreter, but most of the examiners, it is stated, speak English fluently. The examination is viva voce, but a written examination may be obtained on paying a special fee of £1 for each part.

Dates.—The examinations take place on the first Tuesday in November, December, March, May, and June. It is desirable that the candidate should arrive in Brussels on the previous Saturday before 2 p.m. at latest. The whole examination (First, Second, and Third Doctorate) may be got through in about a week, and seldom exceeds eight to ten days.

Fees.—Candidates are required to leave their diplomas with the Registrar of the university prior to the examination. The fees are: For inscription of name, £8 12s.; for examination, £13; for legalization of diploma, 8s.; total, £22. If a candidate fail in the first part of the examination, the fees for the second and third are returned to him; if in the second, the fees for the third. A rejected candidate may present himself again in three months on paying the examination fees, provided his second appearance be in the same academic year (October 1st to June 30th); otherwise the matriculation fee must be renewed—that is, the fee for inscription of name.

Further particulars may be obtained on application to the Secretary of the University, Brussels. There is an Association of British Graduates of the Brussels University, and the Honorary Secretary, Dr. Arthur Haydon, 23, Henrietta Street, Cavendish Square, W., will be pleased to give information or receive applications for membership.

POST-GRADUATION STUDY.

THE value, and in some circumstances even the necessity, of post-graduation study is now so generally recognized that there is no occasion to dilate upon it here. The need for some means of acquiring direct knowledge of the technique of the new branches which are constantly springing up is indeed so generally felt among otherwise experienced practitioners, that several institutions designed solely for their benefit have been at work now for some years. Of these institutions some account follows. Beyond this it need merely be said that in most medical centres it is now exceptional for one or more courses for qualified men not to be held once or more often during the year; that most of the institutions mentioned in the section on Clinical Hospitals make special arrangements for the benefit of qualified men desirous of studying work of the kind undertaken within their wards; and that valuable adjuncts to post-graduation study exist in the shape of the Library of the British Medical Association—one specially rich in recent works—of the libraries of the several universities, and in those of the Royal College of Surgeons of England and of the Royal Colleges of Physicians in London and in Edinburgh.

[1] More microscopic work is now required than formerly.

London Post-Graduate Association.

The wealth of London in material for clinical study is of course enormous, and the object with which the London Post-Graduate Association was started, now many years ago, was to throw open to the general body of medical practitioners all that is most useful and attractive in it.

To fulfil this purpose it entered into arrangements with the principal medical schools of London and with the administrators of the leading special hospitals of such a nature that it is now able to issue a ticket which admits the holder to all the clinical instruction provided in these institutions. Armed with this ticket, a medical man can enter freely any of the institutions concerned, becoming to all intents and purposes one of their students, and having as much right to visit their wards and attend in their out-patient departments as if he were once more in his salad days and back within the familiar walls of his old school. He can thus get as much clinical instruction in the wards and in the special and general out-patient departments as he pleases, and the operating theatres and the *post-mortem* rooms are equally open to him.

The fact that one ticket admits him to so many hospitals is a decided advantage, for if interested in one particular branch of the work, he can follow that up throughout the day in different institutions, instead of having to limit his study of it to one or two days a week. A further useful point in the system is that it affords practitioners an opportunity of becoming acquainted with the different methods of a large number of specialists, and of noting the different ways in which men all equally eminent in their particular line deal with cases much of the same type; there could be no better way, indeed, of getting abreast with the results of modern research and into touch with current thought in medicine and surgery than by attending various hospitals with the help of a ticket from this Association.

The institutions thrown open are, among general hospitals, Charing Cross, Guy's, King's College Hospital, St. George's, St. Mary's, St. Thomas's, and University College and Westminster. Among special hospitals, the Brompton Hospital for Diseases of the Chest, the Hospital for Sick Children (Great Ormond Street), the National Hospital for the Paralysed and Epileptic, the Royal London Ophthalmic Hospital, the London School of Tropical Medicine, St. Mark's Hospital for Diseases of the Rectum, and the Medical Graduates' College and Polyclinic. The fee for a ticket lasting three months is £10 10s., while for £15 15s. one for six months is issued.

Further particulars about this Association can be obtained from the Secretary, London Post-Graduate Association, 20, Hanover Square, London, W.; if application is made in person, the visit should be paid between the hours of 10.30 a.m. and 1 p.m.

London Medical Graduates' College and Polyclinic.

This institution, familiarly known as the Polyclinic, opened its doors some eleven years ago, its work being executed on quite original lines. The soundness of these became very early apparent, and large numbers of practitioners now attend the classes and avail themselves of the various forms of instruction which the College offers.

The work is carried on in a building in central London, which is well arranged and readily accessible from all quarters. It stands at the corner of Chenies and Ridgmount Streets, its postal address being 22, Chenies Street, W.C. This street runs at right angles to Tottenham Court Road, crossing Gower Street. The ground floor of the College is given up to the class-rooms, which are furnished with blackboards and various appliances for

clinical instruction. In one of them is a large and powerful Roentgen-ray apparatus, which is frequently requisitioned in the diagnosis of fractures and deformities. When occasion requires the divided partitions of the rooms can be removed, and a class-room of fine proportions thus provided. On the first floor is a library, a reading room, and the consultation theatre, and on the upper floor is found an excellent laboratory for bacteriology and clinical pathology, each table being provided with its own set of reagents and test tubes and its Bunsen burner. Besides these rooms there is in the basement an important annexe in the shape of a dark room. Against the walls of this are placed twelve seats, each separated from the adjoining one by a partition, and each having its own electric light that can be used in varying strength, naked or shaded. In this room twelve patients can be examined simultaneously, but separately from each other, with the ophthalmoscope, laryngoscope, or other instruments of precision, and their indications demonstrated. An adjoining room is fitted with appliances for instruction in ophthalmic cases, such as type tests, working models of eyes, stereoscopes, lenses, etc.

Another important part of the College is the Museum, situated at the side of the building and devoted to clinical illustrations. Portraits and models of diseased conditions find their place there, and the newest medical and surgical instruments and appliances of all kinds, which can be examined at any time, form a marked feature of this department of the College. The museum has been enriched by a unique collection of valuable pictures of disease, especially skin diseases, most of which are painted from life, together with many other specimens of rare clinical value, which has been placed at the service of the Polyclinic by Sir Jonathan Hutchinson, F.R.S., and the Museum has been appropriately named after him the Hutchinson Museum.

Perhaps, however, the most characteristic feature of the school is the system of consultations. These take place every afternoon at 4 o'clock, and patients attend them either at the invitation of the management or they may be brought by practitioners who are members of the school. Besides the excellent opportunities for teaching which these consultations afford, they provide occasion for discussing cases and studying exceptional forms of disease by the most recent methods of diagnosis. Notes are taken of the cases, and are supplemented on occasion by photographs or other portraits of the rarer morbid conditions.

On Mondays, Tuesdays, Wednesdays, and Thursdays of each session, at 5.15 p.m., formal lectures are delivered on medicine, surgery, and their branches.

Of practical classes there are four sessions in the year, each lasting six weeks, while a vacation course extending over three weeks takes place in August and again in September. An annual payment of 1 guinea admits to the consultations and lectures, and secures the use of the Reading-room, Museum, and Library: subscribers also receive the *Polyclinic Journal*, which is published every month.

Short courses of lecture-demonstrations in such special subjects as Haematology, Cyto-diagnosis, Opsonins, and Bacterial Vaccines, Ophthalmoscopy, Retinoscopy, Sigmoidoscopy, Cystoscopy, Intestinal Surgery, and the Examination of the Gastric Contents, etc., have recently been instituted, and are given at short intervals during the year.

Provision is also made for those who are reading for the higher qualifications, special tutorial classes being conducted. Full particulars of all the work done may be obtained on application to the Medical Superintendent, 22, Chenies Street, W.C.

West London Post-Graduate College.

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The College started in 1895, and the present building was opened in 1901; it is provided with lecture, reading, writing, and class rooms, and accommodation of all sorts for the convenience of post-graduate students. In the last five years the yearly entry has averaged over 200.

As for ward work, the students accompany the senior staff on their visits to the wards at 2.30 p.m. daily, and also go round with the resident medical officers in the morning. Out-patient work begins at 2.15 p.m. This department is large, and affords ample facilities for post-graduates to see and examine patients. There are the usual special departments dealing with diseases of the eye, ear, throat, nose, skin, orthopaedics, *x* ray work, electro-therapeutics, gynaecology, and medical diseases of children. Post-graduates are appointed to act as clinical assistants for three or six months. There is no charge to members of the College. Practical classes are held in medicine, general practical surgery, intestinal surgery, surface anatomy, and blood and urine analysis, cystoscopy, venereal disease, tropical diseases, retinoscopy, ophthalmic operative surgery, and finally in operative surgery. The size of the classes is limited so as to ensure that each student shall have full opportunities of gaining experience in methods of examination and treatment.

Operations take place at 2.30 p.m. daily, the surgeons often availing themselves of the assistance of the post-graduates, and in any case making arrangements so that they can readily see what is going on. The Anaesthetists give instruction in the administration of different anaesthetics, including spinal analgesia, on the operating days, students being allowed to administer them under supervision, while special classes are held in each session.

The pathological laboratory is in charge of a pathologist who attends during the whole day. In bacteriology and microscopy special instruction is given on three mornings a week, the students working at other times under the general guidance of the pathologist.

Demonstrations are given each week in the morning by the Assistant Physicians and by the Medical and Surgical Registrars on Practical Medicine. Lectures of a practical kind are given daily (except Saturday and Sunday) at 5 p.m.

The arrangements of the College may be said to be equally suited to those who are preparing themselves for examination for the higher degrees and diplomas, to the needs of officers in the different Services on study leave, who attend in large numbers, and to those medical men in ordinary practice who desire to get themselves up to date in general medicine and surgery, or to make a special study of some particular branch of work. The College, it may be noted, is in a residential quarter, and there are plenty of good lodgings in its neighbourhood.

The fees are as follows: Hospital practice, including all ordinary demonstrations and lectures, £1 1s. for one week, £3 3s. for one month, £4 4s. for six weeks, £6 6s. for three months, £10 10s. for six months, £15 15s. for one year, and £30 for a life ticket. Every year in August there is a special vacation class lasting four weeks, for which the fee is £2 2s. Three months' instruction in the administration of anaesthetics costs £2 2s. Subscriptions for any course can be taken out from any date. The Certificates of the School are recognized by the Admiralty, the War Office, the Colonial Office, the India Office, and the University of London (for higher degrees).

All communications concerning the school should be addressed to the Dean, Post-Graduate College, West London Hospital, Hammersmith, W., from whom also a full prospectus can be obtained by any person holding a medical qualification.

The London School of Clinical Medicine.

The School Buildings, Lecture Rooms, Pathological Laboratories, Museum, Operative Surgery Class-rooms, etc., are in the Dreadnought Hospital at Greenwich, and the whole hospital of 250 beds, with its Out-patient Departments, is open to students from 10 a.m. till 5 p.m.

Medical, Surgical, and Special Department In-patient Clinics are held every afternoon except Saturday by the senior members of the staff, and operations are performed daily, whilst out-patients in the Medical, Surgical, and Special Departments are demonstrated by the Assistant Physicians and Assistant Surgeons daily in the forenoon.

Practical Classes are arranged each session in the following subjects: The Practice of Medicine, the Practice of Surgery, Diseases of the Eye, Diseases of the Throat, Nose, and Ear, Diseases of the Skin, Diseases of the Nervous System, Operative Surgery, Clinical Pathology,

Microscopy, and Bacteriology, Mental Diseases, Radiography, Dental Surgery, the Administration of Anaesthetics, Hygiene and Public Health, Gynaecology, Surgical Diseases of Women, Surgical Diseases of Children, Medical Diseases of Women, Medical Diseases of Children, Applied Anatomy, and Midwifery.

Three sessions, of three months' duration, are held in each year, beginning on January 15th, May 1st, and October 1st. Every variety of disease may be studied in the wards and out-patient rooms of the hospital, at the dispensaries, and at the affiliated hospitals. For the purpose of extension of the amount and variety of clinical material and teaching, arrangements have been entered into with the Royal Waterloo Hospital for the reception of Graduates who desire instruction in diseases of women and children; with the Bethlem Hospital for those who require tuition in mental disease; and with the General Lying-in Hospital (York Road) for the prosecution of study in midwifery. These Hospitals are situated on the south side of the river, are directly linked to the Dreadnought by both railway and tramway, and are affiliated to the London School of Clinical Medicine.

The Certificates of the School are recognized by the Admiralty, the War Office, and the University of London (for the higher degrees). The supply of material affords exceptional facilities for practical instruction in operative surgery and in pathology on the cadaver. The hospital also offers a wide field for the study of venereal diseases, and there is a special department with open-air wards for the treatment of tuberculosis.

Appointments.—There are a Medical Superintendent, two House-Physicians, two House-Surgeons, and a Pathologist at the Dreadnought Hospital, Greenwich. The pay of these offices varies from £50 to £150 (and all found).

The Prospectuses, Syllabuses, and other particulars can be obtained on application to the Secretary, Seamen's Hospital, Greenwich, S.E., or from the Dean at the School.

North-East London Post-Graduate College.

The head quarters of this post-graduate school are situated at the Prince of Wales's General Hospital, which is in the midst of what is now a densely-populated neighbourhood containing about a quarter of a million inhabitants. It contains 125 beds, and its precise situation is South Tottenham, N., where it is within a few minutes' walk of South Tottenham Station on the Midland Railway, Seven Sisters Station on the Great Eastern Railway, and Tottenham Hale on the Great Eastern main line. It is also readily accessible from Finsbury Park and Hackney by electric tram passing the hospital door, and by corresponding means may be reached easily from Dalston, Edmonton, Hackney, and other parts of North London.

The College is recognized by the Admiralty and the India Office for the purposes of study leave, and by the University of London as a place for advanced study for the M.D. and M.S. degree; the course of practical teaching of bacteriology is approved by the University of Cambridge for its D.P.H. diploma, and there are ample arrangements for the convenience of men who are thus working, or who are general practitioners desirous of getting themselves into touch with modern methods. There is provided for their use a reading and writing room, and they can obtain afternoon tea and receive telephonic messages; similarly there is a reference and lending library for their benefit, and a museum and pathological laboratory in which they can work. The hospital as a whole certainly affords excellent facilities to qualified medical practitioners who wish to take part for a time in the work of an active general hospital, or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye, ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, radiography and the application of electricity in disease, and the administration of anaesthetics. Throughout the sessions into which the year's work is divided, clinics, lectures, and demonstrations are given by members of the teaching staff in the lecture-room, in the wards, in the various out-patient departments, and in certain affiliated institutions. Operations are performed every afternoon of the week except Saturday. Special classes are arranged in Gynaecology, the Surgical Diseases of Children, including Orthopaedic Surgery; Diseases of the Throat, Nose, and Ear; Diagnosis of Diseases of the Chest, Diagnosis of Diseases of the Nervous System, Ophthalmoscopy and Refraction, Analysis of Gastric Contents, Clinical Examination of the Blood, Diseases of the Skin, Abdominal Surgery, Surgical Anatomy, Surgery of the Urogenital Tract, Radiography, Anaesthetics, Bacteriology, and Medical Electricity. In all these classes the numbers are carefully limited, so as to give every member full opportunity for work.

As for fees, these are as follows: One guinea for a three months' course of study in any one department, which may be begun at any time; a fee of 3 guineas admits to the whole practice of the hospital for a similar term (one month, 2 guineas), and a perpetual ticket for the practice of the hospital may be obtained on payment of a fee of 5 guineas. Medical practitioners who have attended a three months' course in any department are eligible for appointment as Clinical Assistants in those departments. A certificate, signed by the staff, may be obtained at the end of three months' hospital attendance. A vacation course is held in September, beginning this year on the 12th inst., the fee for which is 2 guineas.

Additional information about the College and its work can be obtained on application to the Dean of the Post-Graduate College, 142, Harley Street, London, W., who will also supply a prospectus, a syllabus of the lectures and demonstrations to be given during the next formal session, and a syllabus of the ensuing vacation course.

TROPICAL MEDICINE.

THERE are Schools of Tropical Medicine in London and Liverpool, and several examining bodies have instituted diplomas in the subject; it is also one of the six optional subjects in which the degree of M.D. can be obtained at the University of London. The Colonial Office now expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise often demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees follows.

Diplomas and Degrees.

LONDON UNIVERSITY.—Candidates for an M.D. degree in Tropical Medicine must have taken the M.B., B.S. degrees not less than two years previously, unless subsequently to that event they have either conducted a piece of original work approved for the purpose by the university, or have had such special experience as may be similarly approved; in either of these two cases the interval may be diminished to one year. All candidates alike must either have attended for not less than one academic year a complete theoretical and practical course on Tropical Medicine at a school approved for that purpose or have been engaged for not less than two years subsequently to taking their degrees in hospital, official, or private practice, in regions where tropical diseases prevail. The examination eventually to be passed consists of a paper in General Medicine, one in Tropical Medicine, one in Pathology of Tropical Diseases and in Tropical Hygiene, the writing of an essay, and clinical and laboratory examinations. The examiners may submit any candidate to a viva voce examination. The Schools of Tropical Medicine approved by the university are the London School of Tropical Medicine and the Liverpool Tropical School; the School of Medicine (Kasr El Ainy Hospital), Cairo; and the Hospitals attached to the Medical Colleges at Calcutta, Bombay, Madras, and Lahore, India (for certificates of appointments). It should be noted that exemption from the written part of the examination can be obtained on conditions which will be found set forth on page 679.

UNIVERSITY OF EDINBURGH.—This university grants a diploma in Tropical Medicine and Hygiene after an examination which is usually held twice a year. It is however, only open to those who are graduates of the university in Medicine and Surgery. In addition to this the candidates must show that they have attended approved courses of instruction in Practical Bacteriology (including the patho-

genic micro-organisms of tropical diseases), in Diseases of Tropical Climates (including the zoological characters and life-history of disease-carrying insects), in Tropical Hygiene, and in clinical study of Tropical Diseases. They must possess, too, certificates of efficiency in the conduct of *post-mortem* examinations. The examination is in the four subjects indicated, the fee for each part being £1 1s.

UNIVERSITY OF LIVERPOOL.—A diploma in Tropical Medicine is given by this university to students who have been through the courses provided by the Liverpool School of Tropical Medicine, and have passed the examination held twice yearly by the university examiners. The examination lasts three days, and consists (1) of three papers dealing with Tropical Medicine, Tropical Pathology, and Tropical Sanitation and Entomology respectively; (2) of a Clinical Examination; and (3) of an Oral Examination. The results are declared as soon as possible afterwards. The fee is 5 guineas. Further information about this diploma can be obtained from the Dean of the Faculty of Medicine, University of Liverpool.

UNIVERSITY OF CAMBRIDGE.—This university grants a diploma in Tropical Medicine and Hygiene to any person whose name has been on the *Medical Register* for not less than a year, provided that he passes the examination of the university in this subject. Previous to admission to the examination, however, he must produce approved evidence that he has studied Pathology (including Parasitology and Bacteriology in relation to Tropical Diseases), Clinical Medicine, and Surgery at a hospital for tropical diseases, and Hygiene and methods of sanitation applicable to tropical climates.

As evidence of study and attainments a candidate may present to the Syndicate (1) any dissertation, memoir, or other record of work carried out by himself on a subject connected with Tropical Medicine or Hygiene; (2) any certificate or diploma in Public Health or Sanitary Science he may have obtained from a recognized examining body. Such evidence will be considered by the Syndicate in determining whether he is qualified for admission to the examination, and by the examiners in determining whether, if admitted, he shall be included in the list of successful candidates.

The examination, which is written, oral, and clinical, deals with the following subjects:

1. The methods of pathological and bacteriological investigation. The examination of the blood. The characters, diagnosis, and life-history of animal and vegetable parasites. The examination, chemical, and microscopic, of poisonous or contaminated foods and waters.
2. The origin, pathology, propagation, distribution, prevention, symptoms, diagnosis, and treatment of the epidemic, endemic, and other diseases of Tropical climates, including Malaria; Blackwater Fever; Trypanosomiasis; Relapsing Fever; Dengue; Yellow Fever; Plague; Tetanus; Beri-beri; Dysentery and Hepatic Abscess, Cholera, Enteric Fever, Malta Fever, and Specific Diarrhoeal Affections of the Tropics; Diseases due to Cestode and other Worms; Filariasis; Bilharzial Disease; Specific Boils, Sores and other Cutaneous Affections; Mycetoma; Ophthalmic affections of the Tropics; Affections caused by Poisonous Plants and Animals, and by Poisoned Weapons; Sunstroke.
3. The general effects on health in the Tropics of seasons and climate, soil, water, and food. Personal hygiene, acclimatization. Principles of general hygiene, with special reference to food supplies and water supplies, sites, dwellings, drainage, and the disposal of refuse. The sanitation of native quarters, camps, plantations, factories, hospitals, asylums, gaols, pilgrim and coolie ships. Principles and methods of disinfection.

Examinations are held in January and August each year, and last four days.

Fees.—The fee for the examination and diploma is 9 guineas on admission or readmission. Application for further information should be made to Dr. G. S. Graham-Smith, Pathological Laboratory, Cambridge.

SCHOOLS.

LONDON SCHOOL OF TROPICAL MEDICINE.—This school is under the auspices of the Seamen's Hospital Society. Its buildings, Laboratories, Museum, Library, etc., are within the grounds of the Branch Hospital, Royal Victoria and Albert Dock; Station, Connaught Road, Great Eastern Railway, and excellent opportunities are afforded to students and others who may be desirous of studying diseases incidental to Tropical climates before entering the Services or going abroad. In the hospitals of the Society are to be found cases of Tropical disease such as may be met with in actual practice in the tropics. There are three courses in the year, each lasting three months, beginning October 1st, January 15th, and May 1st respectively. The Laboratory, Museum, Library, are open all day, and clinical instruction is given daily in the wards of the hospitals. Certificates are granted after examination to those who complete a full course. Resident chambers are available for students. All qualified Medical Practitioners and students in the final year of their studies and qualified Veterinary Surgeons may attend the course. The Craggs Prize of £50, and the Stanley Memorial Grant of about £55, for research work, are awarded annually. Prospectus, syllabus, and other information can be obtained on application to the Secretary, Seamen's Hospital, Greenwich, or to the Director at the school.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.—This school is affiliated with the University of Liverpool and the Royal Southern Hospital of Liverpool. Two full courses of instruction are given every year, commencing on January 6th and September 15th, lasting for the term of about thirteen weeks, and followed by the examination for the Diploma of Tropical Medicine given by the University of Liverpool. Each course consists:

(1) Of a systematic series of lectures on Tropical Medicine and Sanitation delivered by the Professor of Tropical Medicine at the university; (2) of additional lectures on Special African Diseases and Special Indian Diseases, delivered at the university; (3) of systematic lectures and demonstrations on Tropical Pathology, Parasitology, and Bacteriology by the Walter Myers Lecturer, at the university; (4) of similar instruction on Medical Entomology by the Lecturer on Economic Entomology, at the university; and (5) of clinical lectures and demonstrations delivered at the Royal Southern Hospital by the Physicians in charge of the Tropical Ward, the Professor, and the Walter Myers Lecturer.

The instruction given occupies six hours a day for five days a week during the term. Teaching under headings (3) and (4) above is delivered in the laboratory of the school at the university, which contains accommodation for thirty students with all necessary appurtenances, including a well-equipped Museum, a Class Library, and access to the general Departmental Library. Teaching under heading (5) is given in the Tropical Ward and the attached Clinical Laboratories of the Royal Southern Hospital on two or three afternoons a week.

In addition to the Full Courses, a short Course of Practical Instruction in Tropical Pathology and Medical Entomology, lasting one month, is given every year in June, and proves very useful to medical men returning from the tropics on short leave. This course is followed by a class examination with a certificate of satisfactory attendance, possession of which excuses the first month's attendance during the Full Autumn and Lent Courses.

Students of the school who do not care to undertake the examination held by the university at the end of each term for its diplomas in Tropical Medicine are given a certificate of attendance if the latter has been satisfactory.

For research students there is most excellent accommodation at the laboratories of the school in the university, and also in the research laboratories of the school at Runcorn, sixteen miles distant from the city.

Since it was instituted the school has dispatched to the tropics twenty-three scientific expeditions, many of the workers having been taken from among its students. The work done by them has been published in twenty-one special memoirs, with many plates and figures, besides textbooks and numerous articles in the scientific press. From the beginning of 1907, however, the memoirs have been succeeded by the *Annals of Tropical Medicine and Parasitology*. These are published by the Committee for the school, and its pages are open to outside contributors.

Fees.—The fee for the Full Course of instruction is £13 13s., with an extra charge of 10s. 6d. for the use of a microscope if required. The fee for the Diploma Examination is £5 5s., and that for the Short Course is £4 4s. A prospectus and further information about the school may be obtained on application to the Secretary, 10B, Exchange Buildings, Liverpool.

PSYCHOLOGICAL MEDICINE.

It is not unlikely that one result of the recent Royal Commission on the Care and Control of the Feeble-Minded may be a considerable widening of the horizon before those who devote themselves to the treatment of mental disease. But this remains to be seen, and in any case psychological medicine already forms a distinct career of a kind which is attractive to many medical men. It cannot as yet be regarded as a "service," as those who at present follow it, if not occupied in private asylums, are in the employ of various independent county and other councils. The formation of a general service, so far as the public asylums are concerned, seems not very unlikely, and the attractions of the work as a career will then be increased. Perhaps the Local Government Board would be the general controlling body, as, indeed, it is now the ultimate authority in some departments of lunacy administration. Pensions are granted on a contributory basis, after a certain length of service. A recent Act of Parliament makes it a certainty what before was optional on the part of governing bodies.

As for the study of mental diseases, this has long been a compulsory subject in the medical curriculum, lectures and attendances at a recognized asylum being necessary before a diploma or a qualification from a university can be granted—and the same now applies to the examinations for diploma at the combined colleges; but the method in which the instruction is given has of late years greatly improved, and the facilities which exist for its pursuit are now very considerable.

Moreover, in London and some of the larger university towns instruction in pure psychology, as apart from the therapeutic study of mental disease, is now to be obtained. Impetus has been given to the whole subject by the adoption by the University of London of mental diseases as one of the branches of medicine in which an M.D. can be obtained, while the Royal University of Ireland grants a diploma for proficiency in the same subject to such of its graduates in medicine as satisfy the examiners at a special examination held for the purpose.

Reference may also be made to the Medico-Psychological Association of Great Britain and Ireland, which grants a certificate to candidates who have gone through a prescribed course of instruction, and pass an examination—held periodically in London, Scotland, or Ireland—which is designed to test the candidate's knowledge of mental disease and his ability to undertake the care and treatment of an insane person. The association considers that all practitioners should have a competent knowledge of the subject, and that the holding of such a certificate is of particular advantage to those who hope to obtain appointments in the Prison, the Poor Law, and other services. Only registered medical practitioners are eligible for the certificate, but it is not necessary that candidates should be registered, or even qualified, before presenting themselves for examination. They may take the examination before graduation, but they will not receive the certificate until they possess a registrable qualification. The examinations qualify for the Gaskell Prize, value £30; and £10 10s. and a bronze medal are offered by the same association to asylum assistant medical officers for the best dissertation on any clinical or pathological subject relating to insanity. The Hack Tuke Memorial Prize is also awarded for an essay upon a subject connected with insanity. The association has recently approached the Royal College of Physicians with the view of requesting the college to issue a diploma, or at least to grant a certificate, to candidates who are subjected to a more severe test in psychological medicine than is now set for the licence. This proposition is still *sub judice*.

To revert to the financial and allied attractions of the pursuit of Psychological Medicine, it may be said that, as compared with those of other "services" and other branches of medicine, they must be regarded as, on the whole, not inconsiderable. The emoluments are generally fair, and in the senior posts distinctly good. In private asylum practice large sums are made, though to procure these returns a correspondingly large sum must usually be invested. As a rule, a man recently qualified takes an appointment as a junior assistant medical officer in a county asylum or lunatic hospital, and for this he gets from £100 to £150 a year, with all extras besides. If he is fortunate, he becomes in time the Senior Assistant, and his income rises to about £300 a year (in good counties), besides apartments, living, and washing. In many asylums provision is made for the Senior Assistant to be married if he wishes, and to have suitable quarters. In this grade he is likely to stay some time. When the opportunity occurs, he becomes a candidate for a medical superintendentship, and his yearly income may then, if he is successful, be anything from £500 to £1,500 a year. Not every man, however, is suited to asylum practice. The life is one of responsibility, and as much of the work done is directly subject to the exigencies of lay committees and Government officials, it is, especially in the higher grades, often of a worrying nature. For men of certain types of character in the junior grades there is, too, a danger that they may allow themselves to be beguiled too much by the amenities of asylum life, and fall also into the habit of devoting insufficient time to the scientific aspects of their work, however much attention they pay to its routine. Such a man may easily let valuable opportunities slip away and become a "chronic A.M.O.," unfit for the duties of any other position either in or outside an asylum. There is, too, a certain amount of luck in obtaining the higher positions in lunacy work, but the possession of first-class qualifications, a reputation for loyalty and straightness, and a real capacity and liking for the work, both in its scientific and practical aspects, are all factors which go to spell success. Most asylums are now provided with laboratories and operating theatres, and there is a general disposition among their governing bodies to expect scientific work from the junior staff. Recent advances in bacteriology have materially changed the views formerly held as to the causation and the morbid anatomy of insanity, and no one can be considered qualified to undertake the treatment of this disease who has not studied the modern methods of research. In many asylums there are special appointments for Bacteriologists and Pathologists, and some of these positions are now held by men of prime eminence at salaries corresponding with their high position. The importance of the study of Psychology and of Mental Physiology should be insisted upon, because the reproach formerly urged that this branch of medicine was neglected, or only dealt with in a purely commercial spirit, is rapidly being removed under recent efforts to place the whole subject on a sound scientific basis.

PREVENTIVE MEDICINE.

The division of medicine variously known as Sanitary Science, of State, Public Health, or Preventive Medicine, offers a career to men to whom any other path in the profession of medicine might prove distasteful, and it is all the more attractive because, both in scope and in the importance attached to it, it shows a tendency to increase year by year. In spite of this, it cannot be said that the position of medical officers of health as a whole is at present a satisfactory one, inasmuch as a large number of those holding the smaller appointments or a combination of small districts are only appointed year by year, and are liable to be dismissed if they do not please those who form or can influence the local authorities. This must often be the case, for if a medical officer of health does his duty, it is almost impossible to avoid treading severely on the toes of landlords, manufacturers, and other persons of local importance. There are, however, many appointments in connexion with the larger towns and under the county councils which are both permanent and well paid as compared with many other forms of medical work, and in other respects of an attractive character. It should be added, too, that the Local Government Board itself has a staff of medical inspectors, whose initial salary is £500 a year.

Public health work, of course, is of quite a special character, and it is desirable that any one who wishes to adopt it as a career should turn to it comparatively early, though not before he has obtained some experience of the work of a general practitioner. In any case, it is essential that he should obtain a diploma in Public Health, and the

choice of diplomas now open is considerable. Having done this, the next best step is to try to obtain an assistantship to an officer in charge of a large borough or district, or an appointment as a school medical officer—that is, a medical inspectorship under the education authority of some area. This work does not necessarily demand anything more than knowledge already in the possession of most practitioners—namely, quick recognition of physical defects in young people, an intimacy with the conditions of school life itself to produce or increase them, and ability to ascertain precisely the condition of eyes, and ears, and throats. Nevertheless, under the lead of the Board of Education, the county and other authorities which have posts as school medical officers in their gift commonly place the work of school medical inspection in the hands of the medical officer of health, and supply him, if they think necessary, with an assistant, who shares his general duties or devotes himself entirely to school inspection, and such officer is usually expected to hold the D.P.H. The value of these appointments is not usually very great, but often they lead on to appointment as medical officer of health. The pay offered is commonly between £250 and £300 a year, but some authorities of large districts are paying their principal school medical officer a very much higher salary.

In their general nature the examinations of all the bodies which grant diplomas in Public Health are the same, though they differ somewhat in their reputed difficulty. All of them aim at excluding any candidate who does not appear to have a thorough knowledge of his work in theory and in practice, for the regulations of the General Medical Council demand that the granting of a diploma in Sanitary Science, State Medicine, or Public Health shall be proof of the "possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health." The tests, in short, are supposed to constitute an Honour and not a mere Pass Examination. As regards the special tuition required, it is now easy to obtain this in practically every centre of medical education, and almost at every important medical school. It is of importance to note in this connexion that the chemical and bacteriological examinations for many of the health diplomas are so practical, and the time allowed so short, that unless a candidate—even though familiar with the duties of M.O.H.—has a considerable amount of the manipulative dexterity, only to be acquired by ample work in a laboratory, he would not be likely to satisfy the examiners.

The requirements of the General Medical Council as regards the special education and examination of candidates for registrable diplomas and degrees in State Medicine have been couched by it as follows, the statement being preceded by the general declaration which has been already quoted.

Rule 1.—A period of not less than twelve months shall have elapsed between the attainment of a registrable qualification in medicine, surgery, and midwifery, and the admission of the candidate to any examination, or any part thereof, for a diploma in Sanitary Science, Public Health, or State Medicine.

Rule 2.—Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has during six months received practical instruction in a laboratory or laboratories, British or foreign, approved by the Licensing Body granting the diplomas, in which Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man are taught.

Rule 3.—Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Rule 2) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of—

(*a*) In England and Wales, the Medical Officer of Health of a county or of a single sanitary district having a population of not less than 50,000 or a Medical Officer of Health devoting his whole time to Public Health work; or

(*b*) In Scotland, a Medical Officer of Health of a county or counties, or of one or more sanitary districts having a population of not less than 30,000; or

(*c*) In Ireland, a Medical Superintendent Officer of Health of a district or districts having a population of not less than 30,000; or

(*d*) In the British Dominions outside the United Kingdom, a Medical Officer of Health of a sanitary district having a population of not less than 30,000, who himself holds a registrable diploma in Public Health; or

(*e*) A Medical Officer of Health who is also a teacher in the department of Public Health of a recognized medical school; or

(*f*) A Sanitary Staff Officer of the Royal Army Medical Corps having charge of an army corps, district, or command, recognized for this purpose by the General Medical Council.

Note (1). The certificate of an Assistant Medical Officer of Health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence under Rule 3, provided the Medical Officer of Health of the county or district in question permits the assistant officer to give the necessary instructions and to issue certificates.

Note (2). Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under Rule 2), in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on Public Health Administration, given by a teacher or teachers in the Department of Public Health of a recognized medical school.

Note (3). A candidate who shall have produced evidence that he has himself held, for a period of not less than three years, an appointment as Medical Officer of Health of a sanitary district within the British Dominions, and having a population of not less than 15,000 may be exempted from the requirement of Rule 3.

Rule 4.—Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration.

Note (1). Methods of administration shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the medical superintendence of the hospital generally.

Note (2). In the case of a Medical Officer of the Royal Army Medical Corps a certificate from a Principal Medical Officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to infectious diseases, may be accepted as evidence under Rule 4.

Rule 5.—The examination shall have been conducted by examiners specially qualified; it shall have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a Medical Officer of Health.

The Rules 2, 3, and 4, as to study, shall not apply to medical practitioners registered or entitled to be registered on or before January 1st, 1890.

The subjects in which a candidate must qualify himself for examination, the courses of study he must follow, whatever the State Medicine diploma in view, are sufficiently indicated by the foregoing rules; all the examining bodies necessarily insist upon compliance with them on the part of their candidates. The steps, moreover, which they take to ascertain the candidate's fitness for a diploma are in all cases much the same, though the order in which the subjects are taken is not always identical. Practically all of them divide the examination subjects into two parts, which are usually taken by candidates at more or less widely-separated dates. Most of the bodies also have an age clause not allowing the candidate to complete the examinations until he is two or three years older than the average newly-qualified man. The general rule is to place in the First Examination such subjects as chemistry and physics (in relation to the air, water, food), ventilation, the sanitation of houses, principles of architecture, of sanitary engineering, Geology in relation to the same, Bacteriology in all its relations, and the Pathology of human and epizootic diseases. Two or more papers are devoted to such subjects, this being followed by a corresponding number of practical examinations in the

laboratory, at one of which the candidates will have to complete an analysis of a specimen of water, discover the impurity in some specimens of air, identify the adulteration in some food specimens, and the like. The other laboratory examination will probably be given up to the preparation of bacteriological specimens, the identification of cultures and parasites, and other tests of practical knowledge of bacteriology; as a rule a viva voce on the work done follows. In the second part are commonly included two or more papers dealing with sanitary law, epidemiology, vital statistics, the management of hospitals, and all other general questions which affect the public health. The practical examination in this part commonly consists in drawing up a report on the sanitary construction and condition of some actual building or habitation, the whole being followed, perhaps, by a clinical examination in a fever hospital, and nearly always by a viva voce test in which the candidate is called upon to explain the use of apparatus shown him, express an opinion on specimens of food, and answer offhand queries as to the established practice concerning various points of sanitary administration. As has been stated, however, there are variations among the examining bodies which, though possibly not great in themselves, may be quite enough materially to increase or diminish the difficulty of passing examinations which many Boards seriously endeavour to make a proof of really high proficiency. Every candidate, therefore, should, when he has settled what diploma or degree in State Medicine he wishes to obtain, seek the schedule relating to it from the authority concerned. He will find most of these mentioned in the concluding paragraphs of this section, each separately headed.

CONJOINT BOARD IN ENGLAND.—This body holds an examination on behalf of the Royal College of Physicians and the Royal College of Surgeons. It usually takes place in January and July each year, a fee of 6 guineas being payable for each of its two parts if the candidates are diplomates of the two Colleges concerned, and 10 guineas for each part to others. Candidates before admission to Part II must be aged at least 24 years.

UNIVERSITY OF OXFORD.—The diploma given by this body is open to all persons who possess a registrable qualification in medicine and surgery. The examination is held twice annually, and is divided into two parts, the fee for each being £5.

UNIVERSITY OF CAMBRIDGE.—This university also gives its diplomas to all persons whose names are on the *Medical Register*. The fee for each of the two parts is 6 guineas. Special courses of instruction are given at Cambridge for these examinations, though the work done at other institutions is accepted. Inquiries about the diploma should be addressed to the Assistant Secretary to the State Medicine Syndicate, the Chemical Laboratory, Pembroke Street, Cambridge.

UNIVERSITY OF LIVERPOOL.—The university grants a diploma in Public Health to candidates on the *Medical Register* who take out the courses of instruction at the university, or otherwise qualify themselves according to regulations. The examination is in two parts, and is held twice yearly—in January and July. The prospectus of the Department of Public Health may be obtained on application to the Dean of the Faculty of Medicine.

LONDON UNIVERSITY.—Graduates of London University can obtain a registrable Public Health qualification by passing Branch 5 (State Medicine), one of the six branches of medicine out of which candidates for the M.D. degree of this university can select their special subject. They must show that they have taken the degrees M.B., B.S., not less than two years previously, and that subsequently to taking those degrees they have had (1) six months' practical instruction in an approved laboratory; (2) six months' practical instruction from a medical officer of health, of which three must not coincide with the laboratory work, and three months' practice at a hospital for infectious diseases. The interval between passing the M.B., B.S., and proceeding to the M.D. State Medicine may be reduced to one year, subject to conditions corresponding to those affecting Branches 1, 2, 3, and 4 (see page 679). The examination will consist of two papers in State Medicine (including Hygiene, School Hygiene, and Forensic Medicine), one paper in Medicine, an essay to be written on one or two subjects of State Medicine, and a practical examination extending over two days, one of which will be devoted to laboratory work and the other to practical examination in and reporting on, subjects which fall within the outdoor duties of a medical officer of health; a viva voce is also possible. Exemption from the written part of the examination can be obtained on the same conditions as those applying to the M.D. degree in other branches. They will be found set forth on page 679.

UNIVERSITY OF DURHAM.—A diploma in Public Health and two degrees in the same subject (Bachelor of Hygiene, B.Hy., and Doctor of Hygiene, D.Hy.) are granted by the University of Durham. The conditions applying to candidates for the diploma and for the B.Hy. are practically identical, except that the degree candidate must be a graduate in medicine of a recognized university and have performed his three months' work at comparative pathology and bacteriology and his three months' work at chemistry at Newcastle-on-Tyne. The fee for the examination is 10 guineas. A B.Hy. who wishes to proceed to the Doctorship must have been in practice as a medical officer of health for two years subsequent to the date of his acquirement of the former, and submit a thesis on some subject of hygiene for approval.

VICTORIA UNIVERSITY OF MANCHESTER.—Both a degree and diploma are granted by this university, the former being known as the B.Sc. in Public Health, and there are also certificates in Factory Hygiene and in School Hygiene. The diploma is open to all candidates possessing a registrable qualification in Medicine, the examination fee being 5 guineas for each of the two parts of the examination. They can obtain their instruction in the Public Health Laboratories of the University. Candidates for the B.Sc. must be graduates in Medicine of Manchester, or some other university recognized for the purpose. They must have studied certain approved subjects in the university for not less than two years after graduation, and devote a third year to work in two of its scientific departments. They also have to pass the D.P.H. examination, attaining a special standard in it. Full particulars of the courses of study and the fees for the same are given in the prospectus of the Department of Public Health issued by the university.

UNIVERSITY OF BIRMINGHAM.—A diploma may be obtained from this university by all persons registered under the Medical Act, the fees being £5 for each part of the examination. They must, however, unless old students of Birmingham, receive their instruction in the necessary subjects at the hands of the university itself. The university also grants a degree in Public Health (B.Sc. in Public Health), candidates for which must be graduates in medicine of the university, must attend a course of geology, and pass an examination of a higher standard than that for the diploma.

UNIVERSITY OF LEEDS.—A diploma is given by this university, and special courses of instruction are provided, which are available for candidates for any diploma in State Medicine. The fees for such instruction are 10 guineas for the practical work in sanitation under the medical officer of health of the city; 5 guineas for each laboratory course, and to those who have not before been students of the university, a fee of 1 guinea for registration

UNIVERSITY OF SHEFFIELD.—A diploma is granted by this university, the regulations concerning it being on all-fours with those of the General Medical Council. As elsewhere, there are two examinations which must be passed in turn. The university provides laboratory and other facilities for the study of public health, accepts certificates from other bodies, but requires that the practical work in chemistry and physics and the bacteriology shall be taken in the university.

UNIVERSITY OF EDINBURGH.—Two degrees in Science in the Department of Public Health—B.Sc. and D.Sc.—are here given. Candidates must be graduates in medicine of this or some other university. Those proceeding to the higher degree must have held the B.Sc. in the same subject for at least five years, and submit an approved thesis, and must pass an examination. The fee for the B.Sc. examination is £3 3s. for each part. The examinations are held in March and July. Six months must elapse between the first part and the second.

UNIVERSITY OF ABERDEEN.—A diploma in Public Health is granted by this university to graduates in Medicine, the

regulations entailing, besides laboratory work and instruction in public health administration, six months' attendance at an infectious hospital containing not less than 50 beds, and special instruction in the drawing and interpretation of plans. Those who are graduates of some other university than Aberdeen must attend certain of the courses on the subject of Public Health provided by the university. The fee for the examination is 5 guineas.

UNIVERSITY OF ST. ANDREWS.—A diploma is granted by this university to its own medical graduates and those of other universities. There are two examinations, the fee for each being 5 guineas.

UNIVERSITY OF GLASGOW.—Two degrees in science, as applied to State Medicine, are granted by the university—the B.Sc. Public Health and the D.Sc. Public Health. Candidates for B.Sc. must be graduates in Medicine, and, if they have not already done so, must matriculate at Glasgow for the year in which they appear for examination. They have to follow certain courses of study, some of which must necessarily be taken out in the public health laboratory of Glasgow University. A candidate for the D.Sc. Public Health must have obtained the B.Sc. Public Health.

CONJOINT BOARD IN SCOTLAND.—This body examines candidates for a diploma in Public Health, granted by the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow conjointly. The examination takes place in Glasgow or Edinburgh, and is held twice a year—in October and May. The fee for each of its two parts is £6 6s. It is open to all candidates holding a registrable qualification for over a year who have taken out the required curriculum. Applications for examination in Edinburgh should be sent to Mr. James Robertson, Solicitor, 54, George Square, Edinburgh; and in Glasgow to Mr. Alexander Duncan, B.A., LL.D., 242, St. Vincent Street, Glasgow, not later than fourteen days before the examination day. The regulations and synopses of subjects may be had on application to either of these gentlemen, or may be found in the *Calendar of The School of Medicine of the Royal Colleges, Edinburgh*, issued by the Dean of the School, 11, Bristo Place, Edinburgh.

UNIVERSITY OF DUBLIN.—Candidates for the diploma in Public Health of this university must be registered medical practitioners. Examinations are held in December, March, and June, a full syllabus concerning them being obtainable from the Registrar of the School of Physic, Dublin.

QUEEN'S UNIVERSITY, BELFAST.—A diploma in Public Health is granted to all legally qualified practitioners who have satisfied the special requirements of the General Medical Council and have passed two examinations.

NATIONAL UNIVERSITY OF IRELAND.—The regulations of this new university have in view the granting of a diploma and a degree, the latter being a B.Sc. in Public Health, but neither will be open to other than matriculated students at one or other of the university's constituent colleges.

CONJOINT BOARD IN IRELAND.—This body holds an examination on behalf of the two Royal Colleges of Physicians and Surgeons, which together grant a diploma in Public Health. The fee for examination is £10 10s., a special examination being obtainable for an extra fee of £15 15s.

THE PUBLIC SERVICES.

THE ROYAL NAVY, THE ARMY, AND THE INDIAN MEDICAL SERVICES.

GENERAL REGULATIONS.

THE following are the general rules governing admission to these services:

All candidates must be between the ages of 21 and 28 years, must possess registrable qualifications to practise medicine and surgery in Great Britain and Ireland, and must be adjudged by the Medical Board appointed for the purpose to be physically fit for service before being admitted to the entrance examination. This examination takes place before permission is accorded to compete at the entrance examinations. Special attention is given to the candidate's power of vision. A moderate degree of myopia is not considered a disqualification, provided that it can be corrected by glasses so as to secure adequate vision for the performance of operations, and that no organic disease of the eye exists.

Testimony has also to be furnished, or is sought by the authority concerned, with regard to the candidate's moral and general character, and the Secretary of State in each service reserves the right to refuse permission to compete to any candidate he pleases.

As the prospect of a medical officer in any of these services attaining to the highest administrative grades depends to a large extent upon the regulations with regard to compulsory retirement at the age of 55 (if below a certain grade at that age), there is a distinct advantage in entering at as early an age as possible.

The attractions of the Royal Army Medical Corps have of late years materially increased, and in addition to improvements in pay the Service now offers considerable scope for the work of a man who has specially studied some one or other branch of medicine or surgery. Those who enter the Indian Medical Service often have unequalled opportunities for scientific work and practical surgery and medicine of the highest kind, but the Service as a career is at the present moment somewhat under a cloud owing to threatened changes in the fashion its members are employed. As for the Medical Department, there has for long past been considerable discontent, and no effect has so far been given to certain reforms believed to have been officially recommended. Nevertheless, the fact that both from this Service and from the Royal Army Medical Corps it is possible for an officer to retire with a gratuity of £500 to £1,000 while still under the age of 30 is to be remembered, especially by those who initially have not sufficient capital with which to establish themselves in private practice.

ROYAL NAVY MEDICAL SERVICE.

THE regulations for admission of candidates to this Service, beyond those indicated in the foregoing paragraph, require the production of proof that the candidate is of pure European descent, the son either of natural-born British subjects or of parents naturalized in the United Kingdom, and the filling-in by the candidate of certain declaration forms as to his health, previous appointments, and readiness to serve; the documents concerned have to be transmitted to the Director-General, the Medical Department, the Admiralty, London, S.W., and if approved the candidate is permitted to compete for a vacancy.

Candidates will be examined by the Examining Board in the following subjects: (*a*) Medicine, including Medical Pathology and Therapeutics; (*b*) Surgery, including Surgical Pathology and Clinical Surgery.

The examination will be partly written and partly practical, marks being allotted under the following scheme:

Medicine.		*Surgery.*	
Paper	400	Paper	400
Clinical	400	Clinical	400
Oral	400	Oral	400
	1,200		1,200

No candidate shall be considered eligible who obtains less than 50 per cent. of marks in each subject. The examination will be held in London, and will occupy four days.

The Admiralty also has power to admit annually without competition:

Not more than six candidates specially recommended by the governing bodies of such Colonial universities as may be selected. In all cases candidates have to pass an examination as to physical soundness.

A candidate successful at the entrance examination will be appointed as Acting Surgeon in the Royal Navy, and will be required to pass through such courses of instruction as the Admiralty may decide. At the end of the courses the Acting Surgeon will be examined, and, after he has passed, will be given a commission as Surgeon in the Royal Navy. The commission will date from the day of passing the Entrance Examination. The number of marks gained at this examination, together with those gained at the Entrance Examination, will decide a candidate's place on the list for seniority. An Acting Surgeon who fails to qualify in the above examination will be allowed a second trial at the next examination, the period

between the two examinations not being counted as service for either promotion, withdrawal with gratuity, or retirement after twenty years' service, and should he qualify, he will be placed at the bottom of his list; should he again fail, his appointment will not be confirmed, and he will be required to withdraw.

A gold medal, a silver medal, and three Navy Regulation Pocket Cases will be awarded as prizes in connexion with these examinations; and the Gold Medallist will have a distinguishing mark after his name in the Navy List.

Surgeons on entry are paid at the rate of 14s. a day, and are only required to provide themselves with a pocket case of instruments. All other instruments are provided at the public expense.

Every medical officer is required to undergo a post-graduate course of three months' duration at a metropolitan hospital once in every eight years (should the exigencies of the Service permit), and this as far as possible during his surgeon's, staff surgeon's, or fleet surgeon's period of service. While carrying out this course the medical officer is borne on a ship's books for full pay and will reside at the Royal Naval College, Greenwich. The fees for each course (not exceeding £25) are paid by the Admiralty on the production of vouchers at the end of the course. The medical officer is required to produce separate certificates of efficient attendance in the following: (1) The medical and surgical practice of the hospital, including instruction in anaesthetics; (2) a course of operative surgery on the dead body; (3) a course of bacteriology; (4) a course of ophthalmic surgery, particular attention being paid to the diagnosis of errors of refraction; (5) a practical course of skiagraphy.

Promotion.

In the ordinary course an officer reaches the rank of Staff Surgeon in eight years from the date of his first commission, but before promotion he must pass the Qualifying Examination. This is a written examination, the subjects being Medicine, Surgery, Pathology, General Hygiene, and Naval Hygiene. Earlier promotion may be given in acknowledgement of distinguished service or conspicuous professional merit. It is customary to allow those who, when candidates for the Navy, hold or are about to hold such posts to complete their service in them, provided it does not exceed twelve months, and such time reckons as service in the Navy, though the individual does not receive pay from Naval funds. A Staff Surgeon in the ordinary course is promoted to the rank of Fleet Surgeon eight years after the date of his attainment of the lower rank. Promotion to the higher rank of Deputy Inspector-General of Hospitals and Fleets is by selection from among the Fleet Surgeons. Similarly an Inspector-General of Hospitals and Fleets is selected from among those Deputy Inspectors-General who have three years' full-pay service in that rank to their credit. Special promotion from the rank of Staff Surgeon to Fleet Surgeon may be granted exceptionally for distinguished service or conspicuous professional merit.

Pay, Full Pay, and Allowances.

The following are the daily and yearly rates of full pay and allowances in the different ranks:

	£ s. d.		£ s. d.
Surgeon:			
On entry	0 14 0	.....	255 10 0
After 4 years' full-pay service	0 17 0	.....	310 5 0
Staff Surgeon:			
On promotion	1 0 0	.....	365 0 0
After 4 years' full-pay service in rank ...	1 4 0	.....	438 0 0
Fleet Surgeon:			
On promotion	1 7 0	.....	492 15 0
After 4 years' full-pay service in rank ...	1 10 0	.....	547 10 0
,, 8 ,, ,, ,, ...	1 13 0	.....	602 5 0
,, 12 ,, ,, ,, ...	1 16 0	.....	657 0 0
Deputy Inspector-General	2 2 0	.....	766 10 0
Inspector-General	—	.....	1,300 0 0 (Consolidated.)

Other Allowances.

The Inspectors-General at Haslar, Chatham, and Plymouth Hospitals are granted an allowance of 10s. a day as charge pay. Deputy inspectors-general, fleet surgeons of over four years' seniority (5s.), and fleet surgeons of under four years' seniority, and staff surgeons of over four years' seniority (2s. 6d.) in charge of certain hospitals receive charge pay of 7s. 6d., 5s., and 2s. 6d. a day respectively. The senior medical officer—fleet or staff surgeon—of ships bearing the flags of flag officers commanding foreign stations and the Home and Atlantic Fleets receive an allowance of 5s. a day. An allowance of 2s. 6d. a day may be granted to the senior medical officer of ships bearing the flag of flag officers not commanding stations or fleets and to ships flying the broad pennant of commodores. Medical officers conducting the course of instruction at Haslar Hospital are entitled to receive the following allowances: The two senior officers employed upon this duty, £150 a year each; the junior officer assisting, £50 a year; the junior officer instructing the sick-berth staff, £50 a year; the officer instructing the sick-berth staff at Plymouth, £50 a year. The following charge allowances may be granted to medical officers in charge of hospital ships: If above the rank of fleet surgeons, 5s. a day; if of the rank of fleet surgeon or junior, 3s. 6d. a day. The fleet and staff surgeons serving at the Admiralty and at the Marine Rendezvous are granted hospital allowance of £53 a year in addition to the usual lodging money. Hospital allowances for naval medical officers at home and abroad, in lieu of provisions for themselves and servants, and for fuel and lights, are as follows: Deputy inspectors-general, at home, £67; abroad, £112; fleet surgeons and staff surgeons of over four years' seniority, at home, £53; abroad, £112; staff surgeons of under four years' seniority, and surgeons, at home, £39; abroad, £108. These allowances are also made to medical officers of Marine Divisions and Dockyards. Medical officers employed elsewhere than as above, and not victualled in kind, receive an allowance of 1s. 6d. a day. Travelling allowances, extra pay, lodging money, and compensation for losses are all fixed for naval medical officers according to their relative rank in the Service.

Half-pay.

Surgeons under 2 years' full-pay service receive when on half pay 6s. per diem; after 2 years' full-pay service, 7s. per diem; after 4 years, 8s.; after 6 years, 9s.; on promotion to staff surgeons, 10s.; after 2 years' service in rank, 11s.; after 4 years, 12s.; after 6 years, 13s.; and on promotion to fleet surgeon, 14s.; after 2 years' service in rank, 15s.; after 4 years, 17s.; after 6 years, 18s.; after 8 years, 19s.; and after 10 years, £1. Deputy inspector-general on promotion, 25s.; after 2 years' service in rank, 27s.; after 4 years, 29s. Inspector-general, 38s.

Retirement.

After four years' full-pay service a surgeon may withdraw and join the Reserve of Naval Medical Officers. On doing so he receives a gratuity of £500, retains his rank and uniform, and if he agrees to remain in the Reserve for four years receives a retaining fee of £25 per annum. At the end of this period he can re-engage for a further four years on the same terms, but after that he is retired altogether. While in the Reserve he is liable to be called up for service in times of war or emergency, and then receives the ordinary pay and allowances of his rank. He may also in the first instance enter the Reserve with power to resign on six months' notice, but in this case he receives no retaining fee.

Voluntary withdrawal is also permitted, if the Lords of the Admiralty approve, to officers after eight, twelve, and sixteen years' full-pay service, the retiring officer receiving a gratuity. An officer being a fleet surgeon of twenty years' service may similarly retire, and then receives retired pay. It is to be noted, however, that the Lords of the Admiralty do not invariably consent forthwith to these voluntary retirements, and that loss of full-pay service, from sickness or inability to obtain service from no default of the officer, may delay the completion of the period of full-pay service mentioned

Retirement is compulsory in the case of ordinary officers at 55, or at any age if the officer has not been on full pay service for three years in any one rank, or after continuous non-employment for four years in any two ranks combined; and in the case of Inspectors and Deputy Inspectors-General at the age of 60, with the same qualification. In the case of an Inspector-General, retirement under the age clause may be deferred by the Admiralty, if it pleases, until the age of 62.

The following are the amounts paid on retirement:—

Rank.	Gratuities.	Daily.	Yearly.
	£ s. d.	£ s. d.	£ s. d.
Surgeon, Staff Surgeon, and Fleet Surgeon:			
After 4 years' full-pay service	500 0 0	—	—
,, 8 ,, ,,	1,000 0 0	—	—
,, 12 ,, ,,	1,500 0 0	—	—
,, 16 ,, ,,	2,250 0 0	—	—
Fleet Surgeon:			
After 20 years' service	—	*1 0 0	365 0 0
,, 24 ,, ...	—	*1 2 6	410 12 6
,, 27 ,, ...	—	*1 5 0	456 5 0
,, 30 ,, ...	—	*†1 10 0	547 10 0
Deputy Inspector-General	—	1 15 0	638 15 0
Inspector-General	—	2 0 0	730 0 0

* To obtain this rate an officer must hold the Commission of Fleet Surgeon.

† Or on compulsory retirement at the age of 55.

An officer who retires with less than twenty years' service on account of disability contracted in and attributable to the service receives the half-pay of his rank, or, with the consent of their Lordships, a gratuity on the scales previously given, but such an officer is not entitled to receive any special compensation for the disability in addition to the gratuity as above, unless he has received a wound in action or has been injured in duty, when extra gratuity or pension may be awarded.

An officer retired with less than twenty years' service on account of disability contracted in but not attributable to the service receives:

(*a*) If he has over eight years' full-pay service, either a gratuity on the scale given in paragraph above, or half-pay, according as their Lordships think fit.

(*b*) If he has less than eight years' full-pay service, such gratuity as their Lordships think fit, not exceeding the rate of £125 for each year of full-pay service.

In circumstances other than those specified, and other than misconduct, neglect of duty, etc., an officer retired with less than twenty years' service will not be allowed half-pay or retired pay, but will receive a gratuity on the scale laid down above, if he has eight years' full-pay service; should his full pay service not amount to eight years, a gratuity at the discretion of the Admiralty.

The power vested in their Lordships of granting reduced rates of half-pay and retired pay in cases of misconduct is extended to the award of gratuities on retirement, and the gratuity awarded will be reduced to such an amount as is thought fit.

An officer retiring after twenty years' full pay service is eligible, if recommended by the Medical Director-General for distinguished or meritorious service, to receive a step of honorary rank, such step being awarded at their Lordships' discretion, and not conferring any claim to increase of retired pay or of widow's pension.

All retired officers are liable, till the age of 55, to serve in time of declared national emergency, in a rank not lower than that held on retirement. This liability does not exist in cases of withdrawal on the conditions previously specified under voluntary retirement.

Retired officers receive special consideration as regards appointments on shore connected with the Admiralty.

If an officer retires or withdraws on a gratuity, his widow and children lose the claim to a pension or compassionate allowance which they would otherwise possess.

ROYAL ARMY MEDICAL CORPS.

A CANDIDATE qualified as stated in the paragraph on page 719 must fill up a form of application and declaration, which can be obtained on application to the Director-General, Army Medical Service, War Office, London, S.W., and submit it to the Director-General in sufficient time to permit of reference to the medical school in which the candidate completed his course as a medical student.

The Dean, or other responsible authority, of such school will be requested by the Director-General to render a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the Corps. After the form of application and this confidential report have been received, the Director-General will decide if the candidate may be allowed to compete for a commission in the Royal Army Medical Corps. If approved, he will then be examined as to his physical fitness by a Board of Medical Officers, in accordance with regulations which can also be obtained from the Director-General. The entrance examinations are held twice in the year, usually in January and July, and only two trials are allowed. The Army Council reserves the right of rejecting any candidate who may show a deficiency in his general education. With regard to the age of candidates, it is permissible to deduct from the age of a candidate any period for which he may have served as an officer, or in a position usually occupied by an officer, during a national emergency, if such deduction will bring him within the regulation age for candidates. In any case such service counts towards retired pay and gratuity in the case of an accepted candidate.

An entrance fee of £1 is required from each candidate admitted to the examination, and is payable at the conclusion of his physical examination, if pronounced fit.

A candidate successful at the entrance examination is at once appointed a lieutenant on probation, and then required to pass through such courses of instruction as the Army Council shall decide, and, after passing the examinations in the subjects taught, and satisfying the Director-General that he possesses the necessary skill, knowledge, and character for permanent appointment to the Royal Army Medical Corps, his commission as lieutenant will be confirmed. The commission given him bears the date of his appointment as lieutenant on probation.

ENTRANCE EXAMINATIONS.

All the competitors are examined by the Examining Board in medicine and surgery; the tests in these subjects are of a clinical and practical character, partly written and partly oral. Marks are allotted under the following scheme:

	Maximum Marks.
Medicine (written).	
A. Examination and report upon a medical case in the wards of a hospital	125
B. Commentary upon a case in medicine ... (Two periods of forty-five minutes—total one and a half hours—for A, and one and a half hours for B.)	100
Medicine (oral).	
A. Clinical cases	100
B. Medical pathology ... ... (Ten minutes to examine case, and ten minutes viva voce—total twenty minutes—for A; thirty minutes to examine specimens, and ten minutes viva voce—total forty minutes—for B.)	75
Surgery (written).	
A. Examination and report upon a surgical case	100
B. Commentary upon a case in surgery ... (Two periods of forty-five minutes—total, one and a half hours—for A, and one and a half hours for B.)	125
Surgery (oral.)	
A. Clinical surgery and pathology (including diseases of the eye)	75
B. Operative surgery and bandaging (including surgical instruments and appliances) (Ten minutes to examine case, and ten minutes viva voce—total, twenty minutes—for A, and about thirty minutes for B.)	100
Total marks	800

The reports indicated on patients must include, besides the details ordinarily included in case-taking, a commentary on the features of the case as a whole, a prognosis, and a plan of treatment. The commentary on the reports on cases submitted to the candidate must discuss in detail all their various points.

The examinations are held in London, and occupy about four days.

Having gained a place at this entrance examination, the successful candidates proceed to the Royal Army Medical College for instruction in recruiting duties, at the termination of which they undergo two months' instruction in Hygiene, Pathology, Tropical Medicine, Military Surgery, and Military Medical Administration, after which they are examined in these subjects. The maximum number of marks obtainable at this examination is 700.

On completion of this course the lieutenants on probation join the Royal Army Medical Corps School of Instruction at Aldershot for a two months' course in the technical duties of the corps, and at the end of the course are examined in the subjects taught. The maximum number of marks obtainable at this examination is 100.

A lieutenant on probation who fails to qualify at either of these examinations is allowed a second trial. Should he then qualify he is placed at the bottom of his batch; but failing success his commission is not confirmed. Illiteracy in speech or writing evidenced at any of the examinations previous to final acceptance of the candidate and confirmation of his commission is regarded as disqualifying for appointment.

Promotion.

The position of an approved candidate in his batch and his final place in the list for promotion is determined by the combined results of all the examinations passed by him previous to the confirmation of his commission. If, however, a lieutenant on probation is seconded in order to hold appointment at a civil hospital, he retains the place in the list which he gained at the entrance examination, and has merely to qualify at the remainder when in course of time he goes up for them.

An officer finally accepted is eligible for promotion to the rank of Captain after three and a half years' service, and to that of Major after twelve years' service, in both cases a Promotion Examination having to be passed. Promotion to the rank of Major may be accelerated by obtaining special distinction at the Qualifying Examination for that rank. Above the rank of Major promotion is by selection from among the list of Majors who have qualified by examination. In certain circumstances eventual failure to pass the examination may entail retirement from the service. Special promotions are made for meritorious or distinguished service, distinction in original investigation or research coming within these terms.

Examinations for Promotion.

Lieutenants before Promotion to Captain.

This examination may be taken at any time after completing eighteen months' service, and is held in the military district in which the officer is serving. The subjects are:

(1) Squad, company, and corps drills and exercises. (2) (*a*) The terms of the Geneva Convention: (*b*) a general knowledge of the administration, organization, and equipment of the army in its relation to the medical services. (3) The duties of ward-masters and students, and the preparation of accounts and requisitions connected therewith. (4) Duties of executive medical officers. (5) Military law.

Captains before Promotion to Major.

This examination, which may be taken at any time after completing five years' service, is held in London on the termination of a period of special study. It consists of written papers, essays, oral and practical examinations on:

(1) Medicine. (2) Surgery. (3) Hygiene. (4) Bacteriology and tropical diseases. (5) One special subject from the subjoined list, to which additions may from time to time be made: (*a*) Bacteriology, including the preparation of antitoxins; (*b*) Dermatology, including venereal diseases; (*c*) Midwifery and gynaecology; (*d*) Operative surgery, advanced; (*e*) Ophthalmology; (*f*) Otology, including laryngology and rhinology; (*g*) State medicine; (6) Military law.

Majors before Promotion to Lieutenant-Colonel.

This examination, which may be taken at any time after three years in the rank of Major, is held in the military district in which the officer is serving, at times duly notified. The subjects are:

(1) Army medical organization in peace and war. (2) Sanitation of towns, camps, transports, and all places likely to be occupied by troops in peace or war; epidemiology and management of epidemics. (3) (*a*) Medical history of the more important campaigns, and the lessons to be learnt therefrom; (*b*) a knowledge of the Army Medical Services of the more important Powers; (*c*) the laws and customs of war so far as they relate to the sick and wounded. (4) A practical problem in field medical administration.

Pay, Additional Pay, and Charge Pay.

The following are the rates of pay, additional pay, and charge pay:

Ordinary Pay.

Army Medical Service. *At Head Quarters.*	Inclusive of all Allowances except Field and Travelling Allowances. Yearly. £
Director-General	2,000
Deputy Director-General	1,500
Assistant Director-General	850
Deputy Assistant Director-General	750

At Other Stations.	Exclusive of Allowances. Daily. £ s. d.
Surgeon-General	3 0 0
Colonel	2 5 0
Lieutenant-Colonel	1 10 0
Lieutenant Colonel promoted to the rank, on or after January 9th, 1907, after 3 years as such ...	1 15 0
Major	1 3 6
After 3 years' service as such	1 6 0
Captain	0 15 6
After 7 years' total full-pay service ...	0 17 0
After 10 years' total full-pay service ...	1 1 0
Lieutenant on probation and Lieutenant ...	0 14 0

Additional Pay.

Officer not serving on the head quarters staff appointed a member of the Advisory Board ... ... £150 a year

	Daily. s. d.
Officer under the rank of lieutenant-colonel holding an appointment as specialist	2 6

Charge Pay.

(*a*) Officer in charge of a general or other hospital; or o a division of a general hospital:

	Daily. s. d.
If in charge of at least 50 beds	2 6
,, ,, 100 ,, ...	5 0
,, ,, 200 ,, ...	7 6
,, ,, 300 ,, ...	10 0
(*b*) Senior Medical Officer, Royal Arsenal, not exceeding	10 0
(*c*) Officer in command of the dépôt, Royal Army Medical Corps	5 0

(*d*) The senior officer of the Army Medical Service with a army in the field—

A rate to be fixed by the Secretary of State according to th magnitude of the charge.

(*e*) The officer, if under the substantive rank of colonel, holding the appointment of senior medical officer in a command abroad, or of an administrative medical officer, if the number of soldiers is 1,500 or upwards... ... ... 5 0

Retirement.

On the completion of three years' service, but not mo than six, an officer of the Royal Army Medical Corps m be permitted by the Army Council to become an Arm Reserve officer for a period of years, and while so servi receives pay at the rate of £25 a year. With the sanctio of the Army Council such officer may be allowed to retu to the active list, and if the period he has been in t Reserve of Officers amounts to at least one year, and n more than three years, he will be allowed to reckon on third of such period towards promotion, gratuity, a pension.

The ordinary rules as to retirement are as follows:

Retirement is also compulsory on the ground of age, the case of surgeons-general at 60, of colonels at 57, a officers below that rank at 55; the director-general reti on completion of his term of office in that appointme A major is retired on completion of twenty-five yea service if he has been superseded for promotion, or after twenty years' service, he has failed to qualify promotion. Similarly, a lieutenant who has failed qualify within the requisite period for promotion to t

rank of captain is retired if he fails to qualify at the next succeeding examination; while a captain who fails in the same way in respect of the examination for promotion to major must retire on the gratuity to which he is then entitled by service, or, in default of that, on the completion of five years' service as captain. An officer placed on the half-pay list on account of medical unfitness is, if not previously retired, placed on the retired list at the expiration of five years from the date on which he was placed on the half-pay list, or if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by the Army Council.

An officer, whether on full or half pay, who, to the satisfaction of the regulated medical authority, has been pronounced insane, must be retired from the army, with the retired pay to which he would be entitled if reported by the regulated medical authority to be permanently unfit for duty. If this disability was not caused by military service, and he is not entitled to permanent retired pay by length of service, he will receive temporary retired pay equivalent to the half-pay, and temporary retired pay, if any, which he would have received if his disability had been other than insanity.

Finally, any officer may, if the Army Council pleases, be retired on completion of thirty years' service, and it is open to the Council to permit an officer to retire at any time which it deems expedient.

RETIRED PAY.

An officer who retires after holding the appointment of Director-General for three years, and with thirty years' service to his credit, receives a pension of £1,125 a year. In other ranks the rates are as follows:

	Daily. £ s. d.
Surgeon-General	2 0 0
Colonel:	
Under 4 years' service as such, but with 30 years' total service	1 10 0
After 4 years' service as such	1 15 0
If not qualified as above	the rate for a Lieutenant-colonel.

	Daily. £ s. d.
Lieutenant-Colonel:	
After 20 years' service	1 0 0
After 25 ,, ...	1 2 6
After 28 ,, ...	1 7 6
Major:	
After 20 years' service	1 0 0

	Gratuity. £
Major or Captain:	
After 5 years' service in the rank of captain ...	1,000
After 3 years' service in the rank of major ...	1,800
After 6 years' service in the rank of major ...	2,500

Except in the case of a colonel promoted after January 9th, 1907, or a lieutenant-colonel, an officer of the Army Medical Service who, on voluntary retirement, has served for less than three years in the rank from which he retires, is entitled only to the gratuity or retired pay assigned to the next lower rank.

Exchanges between officers of the Royal Army Medical Corps and the Indian Medical Service are occasionally permitted, subject to the officers having less than seven years' service and other conditions.

The regulations as regards sick leave and ordinary leave on full pay are the same for officers of the Royal Army Medical Corps as for those of other departmental officers.

The regulations as regards pensions to widows and compassionate allowances and other dependents of officers are the same in the case of officers of the Royal Army Medical Corps as in the case of ordinary officers. There is in addition an army medical officers' widows' annuity fund on mutual assurance principles.

INDIAN MEDICAL SERVICE.

A CANDIDATE for this service must be a natural-born subject of His Majesty, of European or East Indian descent, and the general rules mentioned in the paragraph on page 719 apply to him; he must make his application for permission to compete for a commission on a prescribed form. The accompanying certificate must include one showing that the candidate has studied in an ophthalmic hospital or ophthalmic department for not less than three months, the work including refraction. If allowed to compete, he pays a fee of £1, and is then examined in the following subjects:

	Marks.
1. Medicine, including Therapeutics	1,200
2. Surgery, including Diseases of the Eye	1,200
3. Applied Anatomy and Physiology	600
4. Pathology and Bacteriology	900
5. Midwifery and Diseases of Women and Children	600
6. Materia Medica, Pharmacology, and Toxicology ...	600

The examinations in Medicine and Surgery are in part practical, and include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. As regards the subjects of the examination, no syllabus is issued, the questions put being such as to test the candidate's general knowledge of them.

No candidate is considered eligible who does not obtain at least one-third of the marks obtainable in each of the above subjects, and one-half of the aggregate marks for all the subjects. Examinations usually take place in January and July of each year. Candidates can obtain on application copies of the papers set at certain of the previous examinations. No candidate is permitted to compete more than three times.

If successful the candidates are granted about a month's leave, and then required to attend two successive courses of two months each at Aldershot and at the Royal Army Medical College, Millbank, during which time each candidate receives an allowance of 14s. per diem, with quarters, or when quarters are not provided, with the usual allowances of a subaltern in lieu thereof, to cover all costs of maintenance; he is required to provide himself with the regulation undress uniform and mess dress of a lieutenant of the Indian Medical Service. Should he be granted sick leave before the completion of his course of instruction and final admission to the service, he receives furlough pay at the rate of 10s. 6d. a day for the period of his sick leave.

At the conclusion of each course candidates have to pass an examination in its subjects, and must obtain 50 per cent. of the possible marks. Those who fail may, if specially recommended, undergo the courses and examination a second time. Unless they then pass their acting commissions are cancelled.

In special cases permission may be granted to lieutenants to delay their departure for India, in order to sit for some further professional examination. Lieutenants remaining in England under such circumstances will receive no pay for any period beyond two months from the date of leaving the Royal Army Medical College, unless the period elapsing before the day on which the majority of the lieutenants of the same seniority sail for India exceeds two months, in which case lieutenants allowed to remain in England will receive pay up to that day. In such cases pay will recommence on the day of embarkation for India.

A lieutenant who within a reasonable period before the date at which he would otherwise sail for India furnishes proof of his election to a resident appointment at a recognized civil hospital may be seconded for a period not exceeding one year from the date on which he takes up such appointment, provided that he joins it within three months of passing his final examination, and that he holds himself in readiness to sail for India within fourteen days of the termination of the appointment. While seconded he receives no pay from Indian funds, but his service towards promotion, increase of pay, and pension will reckon from the date borne on his commission.

All officers on appointment are placed on one list, their position on it being determined by the combined results of the Preliminary and Final Examinations. They are liable for military employment in any part of India, but with a view to future transfers to civil employment each stands posted to one of the following civil areas: Madras and Burma; Bombay with Aden; Upper Provinces (United Provinces, Punjab, and Central Provinces); Lower Provinces (Bengal, Eastern Bengal, and Assam). The allocation of officers to these areas of employment is determined upon a consideration of all the circumstances, including, as far as possible, the candidate's own wishes. An officer transferred to civil employment, though ordinarily employed within the area of his choice, remains liable to employment elsewhere if the exigencies of the service require it.

Officers on appointment are sent to India by troopship when possible; otherwise, by private steamer at the public cost. Until they arrive in India, when they begin to receive the ordinary pay of their rank, they receive 14s. a day. If an officer, after receiving his commission, falls ill, he is paid at the rate of £250 a year from the date at which he should have sailed until the actual date of embarkation, and at the rate of 14s. a day during the voyage to India.

PROMOTION.

A lieutenant's commission dates from the day on which the result of the examination at which he is admitted is announced. He may be promoted to captain on completion of three years' full-pay[1] service from date of first commission; but after completing eighteen months' service, and before promotion to the rank of captain, he will be required to pass an examination in military law and military medical organization. A captain is promoted to major on completion of twelve years' full-pay[1] service, but this promotion is accelerated by six months in the case of officers who fulfil certain specified conditions. A major is promoted to lieutenant-colonel on completion of eight years' full-pay[1] service in the rank of major. All promotions from the rank of lieutenant-colonel to that of colonel, and from the rank of colonel to that of surgeon-general, are by selection for ability and merit. In all ranks distinguished service in the field may be rewarded by accelerated promotion.

TENURE OF OFFICE IN ADMINISTRATIVE GRADES.

The tenure of office of surgeons-general and colonels is limited to five years. Colonels, if not disqualified by age, are eligible either for employment for a second tour or duty in the same grade, or for employment in the higher grade of surgeon-general by promotion thereto. Absence on leave in excess of eight months, exclusive of privilege leave, during a five years' tour on duty involves forfeiture of appointment.

PAY AND ALLOWANCE.[2]

The following are the monthly rates of Indian pay drawn by officers of the Indian Medical Service from the date of their arrival n India:

Rank.	Unemployed Pay.	Grade Pay.	Staff Pay.	In Officiating Medical Charge of a Regiment.	In Permanent Medical Charge of a Regiment.
	Rs.	Rs.	Rs.	Rs.	Rs.
Lieutenant	420	350	150	425	500
Captain	475	400	150	475	550
,, after 5 years' service	475	450	150	525	600
,, after 7 years' service	—	500	150	575	650
,, after 10 years' service	—	550	150	625	700
Major	—	650	150	725	800
,, after 15 years' service	—	750	150	825	900
Lieutenant-Colonel	—	900	350	1,075	1,250
,, ,, after 25 years' service	—	900	400	1,100	1,300
,, ,, specially selected for increased pay ...	—	1,000	400	1,200	1,400

NOTES.—(*a*) Unemployed pay is drawn by officers of less than 7 years' service who are not holding officiating or substantive charge of native regiments. Officers of more than 7 years' service draw grade pay alone when unemployed. Staff pay is the pay of a command, and is drawn in addition to grade pay. (*b*) Horse allowance is granted to officers in substantive charge of cavalry regiments at the rate of Rs 90 a month to lieutenant-colonels and majors, and Rs. 60 a month to captains and lieutenants.

The principal administrative appointments are held by colonels and surgeons-general on the following consolidated salaries:

Colonel, from Rs. 1,800 to Rs. 2,500 per mensem.
Surgeon-General 2 @ Rs. 2,200 ,,
,, 2 @ Rs. 2,500 ,,
,, 1 @ Rs. 3,000 ,,

[1] Time (not exceeding one year) passed on temporary half-pay reckons as service for promotion and pension in the case of officers placed on half-pay on account of ill health contracted in the performance of military duty.

[2] Under present arrangements officers of the Indian Medical Service who are not statutory natives of India receive exchange compensation allowance to compensate them for the fall of the value of the rupee. The allowance consists of an addition to their salaries (subject to certain limitations) equal to half the difference between their salaries converted at (1) 1s. 6d. the rupee, and (2) the average market rate or each quarter.

Specialist pay at the rate of Rs. 60 a month is granted to officers below the rank of lieutenant-colonel who may be appointed to certain posts.

Except in the administrative grades and in certain special appointments, medical officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

No officer, however employed, can draw more than the grade pay of his rank unless he has passed the examination in Hindustani known as the "Lower Standard." Failure to pass disqualifies an officer, even when holding a substantive or officiating charge, from receiving any portion of the staff allowances of the appointment.

Surgeons-general and colonels, on vacating office at the expiration of the five years' tour of duty, are permitted to draw in India an unemployed salary of Rs. 1,350 per mensem in the former, and Rs. 1,000 in the latter case, for a period of six months from the date of their vacating office, after which they are placed while unemployed on the following scale of pay:

	Surgeon-General, Per diem. £ s. d.	Colonel, Per diem. £ s. d.
After 30 years' service on full pay ...	2 5 0	1 14 0
,, 25 ,, ,, ...	2 5 0	1 10 0
,, 20 ,, ,, or on promotion should this period of service not be completed ...	2 0 0	1 8 0

Posts in Civil Employ.

A large number of posts in civil employ are ordinarily filled up from officers of the Indian Medical Service. Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment. The principal appointments, together with the salaries attached to each, are stated in the table at the top of the next page.

There are also six Chemical Examiners with Rs. 800 to 1,650 per mensem, and a number of Port Health Officers with Rs. 750 to 1,950 per mensem. Other appointments of Resident Surgeons and Physicians at hospitals, etc., are on salaries ranging from Rs. 700 to 1,650 per mensem. There are also a certain number of appointments under the Political Department on salaries ranging from Rs. 450 to 1,450 per mensem, exclusive of local allowances.

Qualified officers of the medical service are also eligible for appointments in the Assay and Mint Departments. The salaries of these appointments are from Rs. 600 to 2,250 per mensem.

LEAVE RULES.

(The paragraphs in small type apply only to officers in military employ.)

Officers below the rank of colonel may be granted:

1. Privilege leave under such regulations as may from time to time be in force.
2. Leave out of India, for no longer period than one year, capable of extension to two years' absence from duty, on the following pay:
   - On first appointment ... ... £250 a year.
   - After the commencement of the 10th year's service for pension 300
   - Ditto, ditto, 15th ditto 450
   - Ditto, ditto, 20th ditto 600
   - Ditto, ditto, 25th ditto 700
3. Leave in India, but for the period of one year only, on full military pay and half the staff salary of appointment.

No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted except on specially urgent grounds and without pay.

An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence (unless, as under the foregoing paragraph, he is specially granted an extension of leave without pay) is placed on temporary half-pay or the retired list, as the circumstances of the case may require. An officer is also liable to be placed on half-pay or the retired list should his health require an undue amount of leave, whether in or out of India.

Leave may be granted at any time, but solely at the discretion of the civil or military authorities in India under whom an officer may be serving.

An officer on leave, whether in India or out of India, is required to rejoin at once on being recalled to duty, unless certified by a Medical Board as unfit to do so.

Officers of the Administrative Grades may be granted leave not exceeding eight months, besides privilege leave during their tenure of appointment.

Extra furlough may be granted to officers desirous of pursuing special courses of study at the rate of on

Description of Appointment.	Approximate Number of Appointments in Each Class.	Salary per Mensem.			
		When held by a Lieutenant-Colonel.	When held by a Major.	When held by a Captain.	When held by a Lieutenant.
		Rs.	Rs.	Rs.	Rs.
Inspectors-General of Civil Hospitals	6	2,250–2,500			
Sanitary Commissioner with Government of India	1	2,000–2,500			
Inspectors-General of Prisons	8	1,500–2,000			
Principals of Medical Colleges	2	1,650–1,800	1,200–1,300		
Professorial Appointments	23	1,500–1,650	1,050–1,150	800–950	750
Sanitary Commissioners	6	1,500–1,800			
Deputy Sanitary Commissioners	13	1,350–1,500	900–1,000	650–800	600
Bacteriological Appointments	5	1,500–1,600	1,050–1,150	700–900	650
Superintendents of Central Lunatic Asylums	6	1,400–1,550	1,050–1,150	700–800	650
Superintendents of First-Class Central Gaols	5	1,400–1,550	950–1,050	700–850	650
Superintendents of Second Class Central Gaols	5	1,300–1 450	850–950	600–750	550
Civil Surgeoncies (First Class)	37	1,300–1,450	850–950	600–750	550
Civil Surgeoncies (Second Class)	171	1,200–1,350	750–850	500–650	450
Probationary Chemical Examiner	1	—	—	600–750	550
Officers deputed to Plague Duty	—	1,450	1,000–1,100	750–900	700

month's furlough for each year's service up to twelve months in all.

HONOURS AND REWARDS.

All officers are eligible for the military distinction of the Order of the Bath and for other Orders, British and Indian, and for good service pensions. Six of the most meritorious are named Honorary Physicians, and six Honorary Surgeons to His Majesty.

RETIRING PENSIONS AND HALF PAY.

The following are the ordinary rates of pension:

	Per Annum.
	£
After 30 years' service	700
,, 27½ ,,	600
,, 25 ,,	500
,, 20 ,,	400
,, 17 ,,	300

Service for pension reckons from date of first commission, and includes all leave taken under the rules quoted (See also Note 1 on page 724.)

A surgeon-general, after three years' active employment in that appointment, is entitled to retire upon a pension of £350 per annum, in addition to that to which he may be entitled under the above scale.

A colonel is entitled, after three years' active employment in that appointment, to retire upon a pension of £125 per annum, in addition to the pension to which he may be entitled under the above scale, and after five years of such employment on an additional pension of £250 in all.

In each of the cases stated in the two foregoing paragraphs eight months' absence on leave as well as privilege leave is allowed to count towards actual service in those grades.

A surgeon-general or colonel who has completed his term of service and has reverted to British pay may reside in Europe, at the same time qualifying for higher pension.

All officers of the rank of lieutenant-colonel and major are placed on the retired list on attaining the age of 55 years: the Director-General, when he has attained the age of 62 years, and all other surgeons-general and colonels when they have attained the age of 60 years. But a lieutenant-colonel, who has been specially selected for increased pay, if he attains the age of 55 years before he becomes entitled to the pension for 30 years' service, may be retained until completion of such service; and in any special case where it would appear to be for the good of the service that an officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

Officers placed on half-pay on account of ill health, as described in the paragraphs concerning leave, receive: Under five years' service, 6s. a day, or £109 10s. a year; after five years' service, 8s. a day, or £146 a year; after ten years' service, 10s. a day, or £182 10s. a year; after fifteen years' service, 13s. 6d. a day, or £246 7s. 6d. a year.

An officer of less than three years' service, although he may be transferred to the half-pay list under the general conditions of transfer, will not be granted any half-pay unless his unfitness has been caused by duty.

INVALID PENSIONS.

An officer who has become incapacitated for further service in India on account of unfitness caused by duty may, after he has been two years on temporary half-pay, be granted an invalid pension. Such pensions begin at £192 a year after twelve years' service, and rise by £20 for each additional year's service up to £272.

As already stated in the footnote on page 724, time not exceeding one year passed on temporary half-pay reckons as service for promotion and pension in the case of an officer placed on half-pay on account of ill health in the performance of military duty.

Additional pensions for wounds and injuries received in action or in the performance of military duty are awarded to officers of the Indian Medical Service on the same terms as to combatant officers of the Indian Army.

FAMILY PENSIONS.

The claims to pensions of widows and families of officers are treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being.

The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, for the benefits of which all officers must, as a condition of their appointment, subscribe from the date of their arrival in India, except in the case of natives of India, for whom it is optional.

PRISON MEDICAL SERVICE.

THE prison department consists of two branches—the convict service and the local prison service. These are now practically amalgamated, and the officers of each branch are freely interchangeable. Candidates for the Medical Staff are approved by the Secretary of State for the Home Office on the recommendation of the Prison Commissioners. The Chairman of the Board is Sir Evelyn Ruggles-Brise, K.C.B. Application for employment may be made to the Board on a special form, which can be obtained from the Secretary, Prison Commission, Home Office, London, S.W.

In the smaller prisons the Medical Officer is usually a local practitioner, but in the larger the members of the Medical Staff are required to give their whole time to the service.

The number of vacancies is not large and the rate of promotion is at present very slow.

In the case of those required to give their whole time to the service the appointment in the first instance is to the post of deputy medical officer, and from the seniors of this rank the medical officers are selected as vacancies occur. The deputy medical officers are paid £250, rising to £300, with unfurnished quarters. The whole-time medical officers are paid £300, rising to £550, with unfurnished quarters. There are fifteen deputy medical officers and fourteen whole-time and forty-five part-time medical officers.

APPOINTMENTS UNDER THE COLONIAL OFFICE.

MEDICAL appointments are from time to time filled up by the Colonial Office in the following Colonies and Protectorates: British Guiana, Jamaica, Trinidad, Windward Islands, Leeward Islands, British Honduras, Fiji, Sierra Leone, Gambia, Gold Coast, Northern and Southern Nigeria, East Africa and Uganda Protectorates, Nyasaland, Somaliland, Ceylon, Straits Settlements, the Federated Malay States, Hong Kong, Mauritius, Seychelles, Cyprus, Gibraltar, St. Helena, and the Falkland Islands. In Ceylon, Jamaica, and Mauritius vacancies are almost always filled locally by the appointment of qualified native candidates. As a rule officers are required on appointment to undergo a three months' course of instruction at the London or Liverpool School of Tropical Medicine, and to obtain a certificate of proficiency before taking up their appointment. It is for the East and West African Colonies and Protectorates that medical officers are chiefly required.

The majority of the West Indian appointments involve medical charge of a district, including, as a rule, the care of a hospital, poorhouse, asylum, or other institution, and free attendance on the aged and children.

Passage money on first appointment, and leave of absence on half-pay (in addition to the ordinary annual vacation on full pay, not exceeding three months in two years), are granted only in the cases specified in the Colonial Regulations. Leave on half pay is not granted before the completion of six years' service, except on the ground of illness or urgent private affairs. With regard to pension, medical officers are usually on the same footing as other Government servants; but in cases where private practice is allowed pensions cannot, as a rule, be claimed.

All applicants must be between the ages of 23 and 35.* Preference is given to those who have held junior appointments on the staffs of hospitals. Testimonials to character and professional competence are required, and every officer before being appointed must be medically examined by one of the consulting physicians of the Colonial Office.

In addition to the ordinary medical appointments, vacancies also occasionally, though very rarely, occur for which specialists are required—for example, to take charge of a lunatic asylum.

Applications should be addressed to the Assistant Private Secretary, Colonial Office, Downing Street, S.W.

The nominal value of the appointments in the gift of the Colonial Office varies very considerably; but as a general rule it will be found on close examination that the rates of pay correspond in real value pretty closely, when questions of climate, opportunities for private practice, the cost of living, and the actual work demanded are taken into consideration. The posts to which the lower salaries are attached commonly involve work which can be regarded as merely an adjunct to ordinary private practice, while high pay means either few opportunities for practice, an undesirable climate, or work of a special character demanding high administrative ability. Taken as a whole, all these appointments may be put down as offering their occupant the opportunity of gaining his livelihood, and possibly saving a little money, in a fashion which will test his abilities to the full.

A pamphlet giving a good deal of information as to the various posts is published, and should be obtained from the Colonial Office by prospective candidates. Likewise should be obtained the pamphlet relating to the West African Colonies. All their medical work has for some years past been done by a body known as the West African Medical Staff. The main advantages of the same are that it is a regular service somewhat on the lines of the Indian Medical Service; that the rates of pay in the higher grade are fairly satisfactory as compared with the cost of living on the coast, that opportunities for scientific practice of medicine are ample, and that at the end of every year's work an officer can return to England for several months' leave. There have also been a great many drawbacks, some of which have been and still are inevitable, and others due to faulty organization. Many of the latter have been remedied as the outcome of the deliberations of a departmental committee which concluded its labours early last year, and should the recommendations of that body eventually be accepted in their entirety, the service will be one to be thoroughly commended to those who are prepared to face a life in a tropical country.

* In the case of East Africa, Uganda, Nyasaland, and Somaliland, preference will be given to candidates who are over 25 years of age. In the case of Fiji, preference will be given to candidates who are under 30.

PRACTICE IN BRITISH COLONIES.

THE following notes supply a general indication of the requirements which must be satisfied by those desirous of practising in the Colonies on the strength of qualifications received from licensing bodies in the United Kingdom. Personal inquiry should, however, always be made on the point.

CANADA.

Throughout practically the whole of Canada registration is a necessary prelude to practice; each province keeps its own Register, and has its own regulations as to admission thereto. Some information as to these regulations, so far as practitioners from the United Kingdom are concerned, here follows. For most of it we have to express our indebtedness to the Registrar of the different licensing bodies concerned. Medical men, however, who propose to settle in Canada should in all cases address a formal inquiry to the Registrar of the province in which they propose to settle, and obtain in advance any forms they may have to fill in and the dates of any examinations which may be necessary. Some of the provinces impose, it will be noted, an examination on qualified men touching their fitness to practice. Some indication of what this means in the case of one province, and perhaps of most, is supplied in the note on British Columbia.

Quebec.—A register is maintained in this province by the Provincial Medical Board, which has its seat in Montreal. It has power to issue a licence to practise to any person who can afford proof of good conduct and that his name is on the *Medical Register* of the United Kingdom in virtue of having undergone a period of five years' study, during the course of which he was uninterruptedly resident in the United Kingdom.

Nova Scotia.—The medical authority in this province is the Provincial Medical Board, 241, Pleasant Street, Halifax. Applicants for admission to its Register on the strength of British qualifications must produce (1) the diplomas entitling them to registration in the United Kingdom; (2) a certificate from the Registrar of the General Medical Council showing that his name is on the *Register*, and that no charge is pending against him; (3) a recent and certified photograph as evidence of identity; (4) a certificate of age; (5) satisfactory evidence of good character. To such register any person is admissible who is duly registered by the General Medical Council of Great Britain. The fee for registration is 30 dollars.

Prince Edward Island.—The medical government of this province is in the hands of a council selected from among the members of the Medical Society of Prince Edward Island. This council maintains a Register, and will admit to it, on payment of the required fee, any person who is duly registered by the General Medical Council in Great Britain. The council has its office at Grafton Street, Charlottetown.

Ontario.—The authority in medical matters in this province is the Council of the College of Physicians and Surgeons of Ontario, whose registration office is at 170, University Avenue, Toronto. The law leaves it optional to this council to admit to registration any person who is duly registered in Great Britain, or who is otherwise authorized to practise medicine, surgery, and midwifery in the United Kingdom. Its working rule at present is to admit practitioners who have been five years in active practice after admission on the *Register* of the General Medical Council on their passing the intermediate and final examinations for the M.B. degree of the University of Toronto. Those who have not been five years in practice must pass all the examinations.

British Columbia.—The governing body is the Medical Council of British Columbia, which has its seat at Victoria and keeps a Medical Register. A practitioner who affords proof of good conduct, and can show that he was registered in Great Britain or Ireland previous to

June 30th, 1887, may obtain admission to the provincial register in return for a fee which, according to the medical Act of the Colony, must not exceed 100 dollars. Otherwise he must pass a "satisfactory examination touching his fitness to practise as a physician or surgeon," as well as pay the aforesaid registration fee. The examinations thus specified appear to consist of four or five written questions in anatomy, chemistry, and public health, materia medica, and therapeutics, medical jurisprudence, midwifery, and diseases of women and children, physiology, surgery, the theory and practice of medicine and medical pathology. So far as can be gathered from the nature of the questions set on a recent occasion the examination is not one which an ordinarily well informed practitioner would be likely to fail to pass.

Manitoba.—The medical authority in this colony is the College of Physicians and Surgeons of Manitoba. It has its seat at Winnipeg, and maintains a Register to which it at present admits medical men whose names are registered in the United Kingdom and who are of good standing. The fee is 75 dollars.

Alberta and Saskatchewan.—These are the names of two new provinces created by dividing up between them a large part of all the country known as the North-Western Territories. In each of them a Medical Act has been passed, which brings into existence in the one case the College of Physicians and Surgeons of the Province of Alberta, and in the other the College of Physicians and Surgeons of the Province of Saskatchewan. Each of them maintains a Register, admission to which costs 50 dollars. Before admission, however, a medical man with qualifications derived from the United Kingdom would have to pass an examination "touching his fitness and capacity to practise medicine, surgery, and midwifery." The cost of this examination is a further 50 dollars. The Alberta College is at the capital of the Province, Edmonton, and the Saskatchewan College is at Regina.

New Brunswick.—A Register is maintained by the Council of Physicians and Surgeons of New Brunswick, which has its seat at St. John. In the regulations respecting candidates for admission to the Register which this council has laid down, previous admission to the *Medical Register* in Great Britain and Ireland is not specifically mentioned as a qualification for admission to the Register in New Brunswick. On the other hand, any medical man who holds qualifications entitling him to the *Register* in Great Britain would appear to be able to meet all the conditions mentioned, provided that the preliminary examination in general education passed by him previous to commencing the study of medicine has been the matriculation of some university, or that it has been an examination including in its subjects English, arithmetic, algebra, geometry, Latin, elementary chemistry, elementary mechanics, history, geography, and two of the following languages: Greek, French, and German.

AUSTRALASIA.

In Australia and New Zealand admission to the Register is accorded to those who can supply proof that they are registered in the United Kingdom, that they are of good repute, and that they are the rightful owners of the documents which they present.

SOUTH AFRICA.

Cape Colony.—Application for admission to practise must be addressed to the Colonial Secretary at Capetown, and is granted by him on the recommendation of the Colonial Medical Council. Applicants who desire to obtain registration without undergoing examination must produce proof that they are the rightful owners of degrees or diplomas entitling them to practise in the United Kingdom. The fee for registration is £5.

Natal.—Registration is in force in this Colony, the regulations respecting it corresponding with those in Cape Colony, but the fee at present is only £1. Recently, however, there has been a proposal to increase it.

The Transvaal.—There is a Medical Council at Pretoria which maintains a Register, and admits to it any person who furnishes proof of identity with the rightful owner of a qualification, entitling the person named to admission to the *Register* in Great Britain and Ireland. The fee for a licence to practise is £10.

Orange River Colony.—The regulations affecting British practitioners are the same as those in the Transvaal, but a licence to practise costs £7 19s.

Rhodesia.—A licence to practise costs £5, and is accorded to the legal holders of degrees and diplomas entitling them to admission to the *Register* in Great Britain or Ireland upon application to the Administrator of Rhodesia.

CROWN COLONIES.

In the Crown Colonies, including Ceylon, the Straits Settlements, Mauritius, British Guiana, and the West Indian Islands, and many other of the smaller British possessions scattered throughout the world, no difficulty is raised to the practice of medicine and admission to the Register, if one is kept, in the case of any medical man who is in a position to prove his qualification to registration under the Medical Act of 1858.

PRACTICE IN FOREIGN COUNTRIES.

THE following notes give some indication of the conditions under which medical men possessing British degrees or diplomas are at liberty to practise in foreign countries:

FOREIGN STATES.

Austria.—It is necessary to pass the State examination, or to obtain a university degree in Medicine, a necessary preliminary to which is naturalization as an Austrian subject. Recognition of foreign diplomas may be obtained on passing certain examinations.

Belgium.—Permission to practise must be obtained by foreign practitioners through a duly appointed Medical Board. To obtain it is a matter of extreme difficulty.

Bulgaria.—Foreign medical graduates must pass a viva voce examination conducted in the Bulgarian language.

Denmark.—Foreigners are allowed no privilege in respect of exemption from examination.

Egypt.—Permission to practise is accorded by the Director-General of the Sanitary Department to registered British practitioners upon proof of identity and a certificate of good character from the British Consul-General.

France.—The degree of M.D. must be obtained by examination before a French faculty (Paris, Montpelier, Nancy, Bordeaux, Lyons, Lille, or Toulouse). This regulation applies to Algiers also. The degree, moreover, confers the right to practise only if it has been obtained on precisely the same conditions as those to which French students are subject.

Germany.—Any person may practise medicine in this country, but does so at his own peril unless he has passed the *Staats-Examen.* The latter alone confers recognition as a legal medical practitioner, and must be passed even by those who are already graduates of German universities. It takes place every year in November, and can be held by a Medical Board of Examiners at any German university. The application of a candidate for admission to the examination must be accompanied by certificates of admission to the university from a German public school, and of at least nine half-yearly terms of medical study at a German university. The Government reserves to itself the right to exempt from this examination men of medical distinction under certain conditions, but the latter have no application to foreign medical men. Very occasionally also certificates of study at other than German universities and medical schools are accepted in lieu of some of the courses imposed on candidates.

Greece.—A State examination must be passed, but graduates of foreign schools may take their examination in French or German.

Holland.—Foreigners are required to pass the State examination, but registered English medical men are entitled to exemption from part of it.

Hungary.—An English diploma does not entitle its owner to practise, but recognition of British qualifications may sometimes be obtained.

Italy.—This country, which has always been disposed to make things easy for foreign practitioners, now accords to those whose names are on the register kept by the

General Medical Council the right of admission to the Italian register.

Monaco.—In virtue of the reciprocity in the matter of recognition of medical degrees and diplomas now existing between Italy and Monaco, the following British qualifications are, for the purposes of medical practice in the Principality of Monaco, considered equivalent to the French Diploma of Medicine: The degree of Doctor of Medicine of the University of "the United Kingdom of Great Britain," and the diplomas of Fellows of the Royal Colleges of Surgeons and Physicians of London, Edinburgh, Dublin, and of the Faculty of Physicians and Surgeons of Glasgow. Every application for leave to practise must be accompanied by the diplomas of the applicant or by copies of those documents certified as correct either by a Consul of the Principality or by the Mayor of Monaco. The applicants must enter into an undertaking to live in the Principality and to practise their profession during the whole or part of the months of May, June, July, August, September, and October, agreeably to Article 1 of the Ordinance of May 29th, 1894.

Portugal.—The State examination must be passed.

Norway.—The State examination must be passed. The Government may, however, grant permission in individual cases to persons who produce satisfactory evidence that they possess the requisite knowledge.

Roumania.—The State examination must be passed (viva voce).

Russia.—Foreign medical men must pass a comprehensive examination at the Medical Academy of St. Petersburg or one of the universities of Russia, and must know Russian. Those who have not a B.A. degree must pass an examination in general education, and in Greek and Latin.

Servia.—No permission to practise can be obtained by any one other than a Servian subject, irrespective of examinations.

South America.—All the foreign States in the South American continent require a medical man who seeks permission to practise to pass an examination conducted in Spanish, irrespective of any degrees or diplomas which he may hold.

Spain.—The regulations in this country have varied a good deal, the present position being that foreign medical men must qualify in the same way as Spaniards, or, at all events, must pass an examination before the medical faculty of a Spanish college and be recommended by it for the grant of a permission to practise. Temporary permission to practise seem, however, often to be accorded.

Sweden.—The State examination must be passed. Some reduction in the length of the curriculum may be granted.

Switzerland.—A qualified English practitioner desiring to practise in Switzerland, even if he practise only among his own countrymen, is required to pass the Federal examination in that country. The degree of Doctor of Medicine does not give the right to practise. The Federal examination may be passed at Basle, Zürich, or Berne in German, and at Geneva or Lausanne in French. The applicant is advised to obtain from one of his teachers or some persons of recognized scientific eminence in this country an introduction to a professor at the university at which he proposes to pass the examination. The facilities offered even to the best qualified foreigners are so few that probably no one could obtain a right to practise in less than two years.

The United States.—Each of the States has its own laws and regulations; some of them will admit any man to the *Register* who holds a diploma or degree wherever obtained; the majority require the candidate for registration to submit to an examination. Attempts to bring about reciprocity between the States have long been in progress. Changes are frequent, and any one proposing to practise in America should address special inquiries to the Medical Board of the State in which he desires to settle for information as to the regulations in force.

Turkey.—A viva voce examination in the chief branches of medicine and surgery must be passed at Constantinople (fee, about £20). Before being admitted to the examination the candidate must present a diploma from a medical school recognized by the Government of the country in which it is situated.

Dental Surgery.

The regulations of the General Medical Council require candidates for registrable qualifications in Dental Surgery to produce certificates of having been engaged during four years in professional studies, and of having received two years' instruction in Mechanical Dentistry from a registered practitioner, or at some dental hospital where instruction is given in this subject. One year's bona-fide apprenticeship with a registered dental practitioner, or one years' instruction at a dental hospital, after being registered as a dental student, may be counted one of the four years of professional study. The two years of instruction in Mechanical Dentistry, or any part of them, may be taken by the medical student, either before or after his registration as a student; but no year of such mechanical instruction will be counted as one of the four years of professional study unless taken after registration. As regards preliminary examination and registration, dental students are subject to the same regulations as medical students, but professional study may commence by pupilage with a registered dental practitioner. Dental surgery, it may be noted, is one of the branches in which a Bachelor in Surgery of the University of London may now proceed to the Mastership.

As regards registrable qualifications, they can obtain either diplomas or degrees at the hands of a large number of bodies, some account of which follows, while they have an even larger choice in the matter of places of technical education. The following is a list of some of them:

In London:
(1) The Dental Hospital of London, Leicester Square.
(2) The National Dental Hospital and College, Great Portland Street, W.
(3) The Dental School of Guy's Hospital.

In the Provinces, at schools connected with:
(1) The University of Sheffield.
(2) The Victoria University of Manchester.
(3) The University of Liverpool.
(4) The University of Leeds.
(5) The Devon and Exeter Dental Hospital.
(6) The University of Bristol.

In Scotland at the:
(1) Incorporated Edinburgh Dental Hospital and School.
(2) St. Mungo's College, Glasgow.
(3) Anderson's College, Glasgow.

In Ireland at the:
(1) Dental Hospital of Dublin.
(2) Trinity College, Dublin.

DIPLOMAS AND DEGREES.

Royal College of Surgeons of England.

This body grants a diploma to candidates who pass three successive examinations, to which they are admitted on production of the following certificates:

Before the First Examination.—Of having received instruction at an institution recognized for the purpose in Chemistry, Physics, and Practical Chemistry.

Before the Second.—Of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of Mechanical Dentistry.

Of registration as a dental student.

Of having attended at a recognized dental hospital and school—(*a*) course of lectures on Dental Metallurgy; (*b*) a course of Practical Dental Metallurgy; (*c*) a course of lectures on Dental Mechanics; (*d*) a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns.

Before the Third.—Of having been engaged during four years in the acquirement of professional knowledge subsequent to the date of registration as a dental student.

Of having attended at a recognized dental hospital and school (*a*) a course of Dental Anatomy and Physiology; (*b*) a separate course of Dental Histology, including the preparation of Microscopical Sections; (*c*) a course of Dental Surgery; (*d*) a separate course of Practical Dental Surgery; (*e*) a course of not less than five lectures on the Surgery of the Mouth; (*f*) a course of Dental Bacteriology; (*g*) a course of Dental Materia Medica; (*h*) a course of instruction in the Administration of such Anaesthetics as are in common use in Dental Surgery.

Of having attended at a recognized dental hospital, or in the dental department of a recognized general hospital, the practice of Dental Surgery during two years.

Of having attended at a recognized medical school (*a*) a course of lectures on Anatomy, (*b*) a course of lectures on Physiology, (*c*) a separate Practical Course of Physiology, (*d*) a course of lectures on Surgery, (*e*) a course of lectures on Medicine; (*d*) and (*e*) must be attended after the completion of courses (*a*) and (*b*).

Of having performed dissections at a recognized medical school during not less than twelve months.

Of having attended at a recognized hospital or hospitals the Practice of Surgery and Clinical Lectures on Surgery for twelve months during the ordinary sessions.

Of being 21 years of age.

The first examination is identical with Parts I and II of the First Examination of the Conjoint Board for medical students, and exemption from it may be obtained under corresponding circumstances.

The second examination deals with Medical Dentistry and Dental Metallurgy. Candidates who have passed the previous examination may present themselves for this licence on production of the certificates already specified. A great deal of practical work is included in this examination.

The third examination covers (1) General Anatomy and Physiology, General Pathology and Surgery; (2) Dental Anatomy and Physiology, Dental Pathology and Surgery, and Practical Dental Surgery. This examination is partly written, partly practical, and partly oral, and in Section II candidates may be examined practically:

(*a*) On the treatment of Dental Caries, and may be required to prepare and fill cavities with gold or plastic filling or material, or to do any other operation in Dental Surgery.

(*b*) On the Mechanical and Surgical Treatment of the various irregularities of Children's Teeth.

Candidates who have passed the Second Examination at least six months previously may present themselves for the two parts separately, or they may take the whole examination at one time. But they may not proceed to Part II until they have passed Part I.

Candidates who have passed the Second Examination of the Examining Board in England, or produce evidence of having passed the Examination in Anatomy and Physiology required for a Degree or other Qualification in Medicine or Surgery registrable under the Medical Act of 1886, are exempted from re-examination in those subjects at the Final Examination.

Candidates who are members of the College, or who have passed the examination in Surgery of the Examining Board in England, or who produce evidence of having passed the Examination in Surgery for a Degree or other qualification in medicine or Surgery registrable under the Medical Act of 1886, are exempted from examination in Surgery and Pathology in Section I.

The holders of certain degrees or Licences in Dental Surgery recognized by the College are admitted to the second and third examinations together, without passing the Preliminary Science Examination, provided they produce evidence (*a*) of having passed a satisfactory Preliminary Examination in general education, (*b*) of having completed the curriculum of professional study required by the Regulations, (*c*) of having passed the required Professional Examinations for their Degree or Licence in Dental Surgery. The following are the Degrees and Licence at present thus recognized: D.D.S. University of Harvard, D.D.S. University of Pennsylvania, D.D S. University of Michigan, Licence of the Dental Board of Victoria. Special regulations apply to holders of registered diplomas in the Colonies.

Fees.—The fee for the diploma in Dental Surgery is 20 guineas, payable in certain instalments.

Further information may be obtained from the Secretary of the Examining Board in England, Examination Hall, Victoria Embankment, London, W.C.

University of Birmingham.

Degrees in Dentistry—namely, Bachelor and Master of Dental Surgery (B.D S. and M.D.S.) and a diploma in Dental Surgery (L D S.)—are granted by the University of Birmingham. All candidates for degrees must pass the same Matriculation Examination as that required from candidates for medical degrees. The Degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained the Licence in Dental Surgery of the University or from some body legally entitled to confer such qualification. The candidate is not eligible for the degree until a period of twelve months has elapsed from the passing of his examination for the Licence in Dental Surgery. Of this period at least six months must be spent in the dental department of a general hospital approved by the university. In addition to the Licence in Dental Surgery, the candidate must produce evidence—

1. That he has attended the courses required by medical students of the university in the following subjects, and passed the examinations held in the same for medical and surgical degrees: (*a*) Chemistry and Practical Chemistry, (*b*) Physics and Practical Physics, (*c*) Elementary Biology, (*d*) Anatomy and Practical Anatomy, (*e*) Physiology and Practical Physiology.

2. That he has attended the following courses: (*f*) One special course of Lectures on Medicine, (*g*) One special course of Lectures on Surgery, (*h*) Pathology and Bacteriology; and has passed the class examinations held in each of these subjects.

3. That he has attended courses in: (*k*) Dental Histology and Patho-histology; (*l*) Comparative Dental Anatomy; (*m*) Dental Surgery and Prosthetic Dentistry.

4. That he has received instruction in the Clinical Examination of living cases at the dental department of a general hospital for a period of not less than six months.

The Final Examination will deal with the subjects in Classes 3 and 4. On the expiration of twelve months from the date of passing the examination for the degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. For this degree he will be required to submit a thesis containing original work and investigations in some subject connected with Dentistry, which thesis shall be submitted to examiners to be nominated by the Advisory Board. The degree will be awarded or withheld according to the report of these examiners.

The regulations concerning candidates for the diploma are comparable to those of other licence-granting bodies, such as the Royal College of Surgeons of England, but examination in the subjects of the curriculum is divided into four sections.

University of Leeds.

The degrees of Bachelor of Dental Surgery (B.Ch.D) and Master of Dental Surgery (M.Ch.D) are granted by this university, and also a diploma. Candidates for the degree of Bachelor of Dental Surgery must have passed the Matriculation Examination or its equivalent, and have pursued thereafter approved courses of study for not less than five academic years, two of such years at least having been passed in the university subsequently to the date of passing Parts I and II of the First Examination, and such period of pupilage or hospital attendance, or both, as may be prescribed by the regulations of the university. No candidate is admitted to the degree who has not attained the age of 21 years on the day of graduation. Three examinations—First, Second, and Final—must be passed. The First Examination, which is held twice a year, covers (1) Physics, Chemistry; (2) Biology; (3) Dental Mechanics and Dental Metallurgy. Candidates are allowed to take each part separately.

Candidates who have passed the Intermediate Examination for the degree of Bachelor of Science, and have in that examination satisfied the Examiners in Chemistry, in Physics, or in Biology, are, on payment of the difference between the fees required for the two examinations, regarded as having satisfied the requirements of Parts I and II of the First Examination for the degree of Bachelor of Dental Surgery in those subjects in which they have passed. The subjects of the Second Examination, which is held twice a year, are: Anatomy, Physiology, Dental Anatomy and Physiology, Dental Materia Medica. The subjects of the Final Examination, which is held twice a year, are: Dental Surgery, Dental Pathology and Bacteriology, Operative Dental Surgery, Medicine and Surgery. Candidates are required, before presenting themselves for the Final Examination, to have passed the First Examination not less than two years previously, to have passed the Second Examination not less than six months previously and to have attended courses of instruction in accordance with the regulations of the university.

Candidates for the diploma must have attended courses of instruction approved by the university extending over not less than four years, and have completed a pupilage of three years. They have to pass three examinations,

besides one in general education. The first deals with Chemistry and Physics. For the next they cannot present themselves until the third year of their pupilage; it deals with Dental Metallurgy and Dental Mechanics. The Final Examination consists of two parts—Part I: Anatomy, Physiology, Dental Anatomy and Physiology. Part II: Surgery, Dental Surgery, Pathology and Bacteriology, Operative Dental Surgery (Practical), Dental Materia Medica, and Therapeutics. Candidates must pass in Part I before being examined in Part II, and may pass the two parts separately. Part I cannot be taken until at least a year since the passage of the previous examination.

Before admission to any of the examinations the candidate must be duly signed up in all its subjects. The certificates presented before admission to the second part of the final examination must include one showing that the candidate has received practical instruction in the administration of anaesthetics.

Fees.—The composition fee for the requisite courses for the B.Ch.D. is £65; and for the L.D.S., £60. A prospectus containing full information may be obtained on application to the Dean of the Faculty of Medicine.

Victoria University of Manchester.

The degrees of Bachelor of Dental Surgery (B.D.S.) and Master of Dental Surgery (M.D S.) are granted by this university, and also a diploma. Candidates for the degree are required to pass the Matriculation Examination as for the Faculty of Medicine, and pass four examinations.

First Examination for the B.D.S.—Before admission candidates must produce evidence that they have attended at least one year's course in each of the subjects of the examination: (*a*) Chemistry, Inorganic and Organic; (*b*) Physics; (*c*) Zoology. They may be passed separately.

Second Examination.—Candidates for this must show that they have attended the Prosthetic Laboratory Work of an approved Dental Hospital for at least two years and attended courses in each of the subjects of the examinations, which are: (*a*) Dental Mechanics; (*b*) Dental Metallurgy.

Third Examination.—Candidates before admission must have duly attended in each of its subjects: (*a*) Anatomy; (*b*) Physiology and Histology; (*c*) Dental Anatomy (Human and Comparative), and Dental Histology.

Final Examination.—This comprises: (*a*) Surgery and Pathology; (*b*) Dental Surgery and Pathology, and Dental Materia Medica; (*c*) Dental Prosthetics and Orthodontia; (*d*) Operative Dentistry, and admission to it depends on the candidate having made the required number of attendances at the classes and practical work.

To proceed to the higher degree of Master of Dental Surgery the candidate must be of not less than one year's standing as a Bachelor, and either present an approved thesis or pass an examination in some group of dental subjects.

The courses and examination for the diploma are of the same general nature and arranged in much the same fashion, but for the two years' Prosthetic Laboratory work apprenticeship to a registered dentist may be substituted; while for the final examination Orthodontia and Dental Pathology and Materia Medica are omitted. The authorities permit those who before October 1st, 1905, obtained a registered dental qualification either after study at Owens College, Manchester, or the university, or at a recognized dental hospital, to proceed to the B.D.S. without passing the two first examinations.

University of Liverpool.

This university grants a diploma in Dental Surgery and two degrees in the same subject (B.D.S. and M.D.S.), the management of the curriculum being in the hands of the Board of Dental Studies. The new Dental Hospital (opened in March, 1910) is in close proximity to the University, and is completely equipped for clinical instruction. Application for further information should be made to the Secretary of the Board at the University.

University of Durham.

This university grants a diploma in Dental Surgery. The regulations as to the curriculum to be followed by candidates are in keeping with those of other dental licensing bodies, but examinations in the subjects of study, which include Dental Bacteriology and Anaesthetics, are broken up into four. Before the date of the final examination the candidate must have undergone three years' pupilage in mechanical dentistry with a registered dentist.

Royal College of Surgeons in Edinburgh.

This body grants a diploma in Dental Surgery, and imposes on candidates two examinations. The only special point about the regulations is that before admission to the second examination a candidate must afford proof that he has undergone instruction in Mechanical Dentistry, either as a registered dental student or otherwise, for not less than three years. The fees for examination and diploma amount altogether to 15 guineas.

National University of Ireland.

The scheme of work of this new university includes the granting of two degrees in Dental Surgery. For the lower degree—the Bachelorship—four examinations will have to be passed, and, in addition to other requirements, the candidate must have been apprenticed to a registered dentist for a period of not less than two years. Candidates for the Mastership must have held the lower degree for at least three years.

Royal College of Surgeons in Ireland.

This body grants a diploma in Dental Surgery, for which candidates have to pass two examinations. At the first examination the subjects are: (A) Physics and Chemistry, including Practical Chemistry and Metallurgy; (B) General Anatomy, Physiology and Histology, and Dental Anatomy, Physiology and Histology. The two groups may be taken together or separately. At the second, or final examination, the subjects are General Pathology, Medicine and Surgery, Dental Surgery and Dental Pathology, with the Materia Medica and Therapeutics applicable to Dental Surgery, Dental Mechanics and Metallurgy, and Orthodontia. The candidate must pass in all subjects on one occasion. Candidates who have within the previous three months been rejected by any licensing body in the subjects of the examination for which they are presenting themselves are not admitted thereto.

From certain subjects of each of the examinations candidates are exempted who have previously passed in those subjects examinations held by various bodies recognized for this purpose. Those fully qualified in general surgery may also have remission made in the time which they must devote to technical studies.

The total sum payable for examinations and diploma is £21.

Medical News.

THE King has been graciously pleased to become the Patron of the Royal Victoria Infirmary, Newcastle-upon-Tyne, in succession to the late King Edward.

TWO new streets in Dresden have recently been named respectively "Robert Kochstrasse" and "Virchowstrasse."

M. GUSTAVE MOYNIER, President of the International Committee of the Red Cross Society, died at Geneva on August 22nd.

SIR JOHN WILLIAM MOORE, M.D., F.R.C.P.I., has been appointed a Deputy Lieutenant for the County of the City of Dublin.

THE annual meeting and dinner of the Caledonian Medical Society will be held at Fort William on Friday, September 23rd, Dr. A. Cameron Miller in the chair.

THE annual Welsh Medical Dinner will be held, under the presidency of Mr. Robert Jones (Liverpool), at 7.30 p.m. on Friday, September 30th, at the Criterion Restaurant, Piccadilly, London, W. Applications for tickets should be made at an early date to the Honorary Secretary, Mr. J. Howell Evans, 25, Berkeley Square, W.

The Services.

ST. JOHN AMBULANCE BRIGADE.

WE have received a communication from Lieutenant-Colonel Twiss, R.A.M.C. (retired), Honorary Commandant of the Southampton St. John Ambulance Company, enclosing a letter which he has sent to the pupils of the St. John Ambulance Association residing in the neighbourhood who have been trained under the auspices of the Red Cross Society, or who already belong to Voluntary Aid Detachments. As this is at the present time a subject of general interest, we print a portion of the letter, which may assist some who are working on the same lines and have not had the experience of Lieutenant-Colonel Twiss, who served in South Africa as staff officer to a Principal Medical Officer of an infantry division, and as Principal Medical Officer of a general hospital, and had forcibly brought before him the fact that the medical services of the army badly needed a large and real reserve. Feeling this as long ago as 1905, when still serving in the army, he moved the inhabitants of Southampton to train in peace to help their fellow beings, so that in time of war they should also be able to tend those who had suffered for them, and to whom they really owed this help: those who want to help but are neither trained nor organized are a very material hindrance. It was in 1907 that Lieutenant-Colonel Twiss joined the brigade and he formed the nursing division in 1908, and the object of his letter is to get recruits.

The table given below shows in its three columns what is needed:

1. Minimum establishment of an existing Division.
2. How such Division, expanded, as is the case with practically all of them, grows.
3. Normal establishment of a St. John Ambulance Company, though such Company can be increased by subsections to any extent.

A comparison of these three columns will show how simple the transition from peace to war organization is.

Present Minimum Establishment Division, St. John Ambulance Brigade.	Expanded.	St. John Ambulance Company.
AMBULANCE DIVISION.		MEN'S SECTION.
1 Honorary Surgeon	2 or more Medical Officers	2 Medical Officers.
1 Superintendent (Officer)		Commandant.
1 Sergeant	4 Officers	Assistant Commandant
2 Corporals		Quartermaster.
16 Privates		Assistant Quartermaster.
	4 Sergeants	4 Under Officers.
	8 Corporals	48 Privates, and allows for those belonging to Territorial Force, etc.
	64 Privates	
Honorary Members.	*Honorary Members.*	
2 Pharmacists	2 Pharmacists	Pharmacist and Assistant Pharmacist
NURSING DIVISION.		WOMEN'S SECTION.
1 Honorary Surgeon	2 Medical Officers (or more)	Commandant and Assistant Commandant
1 Lady Superintendent (Officer)	2 Officers	Quartermaster and Assistant Quartermaster
12 Nursing Sisters	24 Nursing Sisters	2 Lady Superintendents
		18 Nursing Sisters, allowing for casualties at time of mobilization.
Honorary Members.	*Honorary Members.*	
1 Trained Nurse	2 Trained Nurses	2 Trained Nurses

Who are Qualified to Join at Once?

1. Registered medical practitioners, ladies or gentlemen.
2. Trained hospital nurses.
3. Qualified pharmacists.
4. Men who have first-aid certificates, St. John Ambulance Association.
5. Women who have first-aid and home-nursing certificates from St John Ambulance Association.
6. Pensioners, Royal Army Medical Corps.

What will they do in Peace Time?

1. Meet twice a month, as Divisions, to have their previous knowledge kept up.
2. Meet once a month, as the company, to receive further instruction to fit them for their work in time of war. (Such meetings will last about an hour.)
3. They can, if they find it necessary, resign at any time.

What will they do in War Time.

1. They will fit up a suitable building or buildings as a hospital in their *own town* for the sick and wounded who may be left near it.
2. The women will do the actual nursing and special cooking.
3. The men will do all the rest of the hospital work and that in connexion with the bringing the wounded thither and thence to a regular hospital—having learnt how to utilize available gear for their comfortable and safe transit.

What must each Member do to be Considered "Efficient"?

1. Attend at least 12 drills a year.
2. Pass the annual re-examination in first aid (in this way obtaining voucher medallion, or label, as the case may be).
3. Be present at the annual inspection, which includes first aid for men and first aid and home nursing for women, held in the town, when their ability in each branch of knowledge will be tested.
4. Turn out when convenient for public duty in the town. (There were 77 members from Hants and Isle of Wight at Windsor on May 20th, 1910.)

What are Our Needs?

All those who have already been mentioned as qualified to join, and it is *particularly desired* that as no hospital can work well, if at all, without a certain number of male and female cooks, clerks, carpenters, joiners and other mechanics, those who have these useful qualifications will also obtain the necessary St. John Ambulance Association certificates and join. In time of stress *all* may and will have to lend a hand with the wounded, so *all* must know how to do so.

In conclusion it may be mentioned that members of the brigade who belong to the Territorial Force, or a brigade service unit, can only be supernumerary members of the Medical Home Defence Unit, called a St. John Ambulance Company, and that members of the brigade as such cannot belong to Voluntary Aid Detachments.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

D. T. would be glad to know if there is in England any home for inebriates where the alcohol treatment—the saturation of all the food with alcohol to cause disgust—can be carried out? Our correspondent would also be glad to know if there is any truth in the statement that on *post-mortem* examinations on habitual drunkards, who as a rule eat little solid food, the large intestine has been found contracted or smaller than normal from disuse?

EBB would be glad to learn of a home for a very respectable woman, who at times suffers from loss of will power, but between times is a very willing and capable worker. Her age is about 43; she is neither insane, violent, nor suicidal, and he considers it is a case in which treatment by suggestion might be of great benefit. She has no means of her own, but her friends could find about 5s. a week if necessary.

ANSWERS.

TROUBLESOME ERECTION.

DR. H. J. THORP (Ipswich) writes: In reply to your correspondent (BRITISH MEDICAL JOURNAL, September 3rd, p. 667), whose patient has an erection of the penis every morning, I would suggest the following: Pot. iodi gr. v, dec. sarsae co. ʒj; t.d.s.; ung. pot. iodi c sapone to be applied to the under surface of the urethra, and also perineum, every night. Avoid all forms of alcohol and spiced and salted foods, also tea and coffee. Camphor monobrom. gr. v. every night.

SOURED MILK TREATMENT IN DIABETES.

GLYCOSURIC writes: In answer to "Fraxinus" in the JOURNAL of September 3rd, p. 667, I may say that I have tried the soured milk treatment upon myself, as I suffer from glycosuria, and thought such treatment might prove useful. What I found, however, was as follows: (1) Although the culture used was a liquid one, and was supplied by a most reliable and well-known firm, and although the milk was incubated with this for no less than sixty hours with extreme care as to previous sterilization, etc., the lactose was not completely removed from the milk. (2) In spite of all care, organisms less desirable than Metchnikoff's grew in the milk, presumably from the original lactic bacillus culture. (3) The milk was so exceedingly nasty as to be almost undrinkable, on account of its acidity. (4) There was a marked rise in percentage of sugar and in volume of urine passed after taking this milk. (5) Diarrhoea was often set up after the ingestion of a pint or so of such milk. Taking any smaller quantity seemed hardly worth while after all the trouble in preparation.

LOCAL ANAESTHETIC IN OPERATION FOR HYDROCELE.

DR. H. HUTCHINSON (Glasgow) writes: In answer to "Scot" (BRITISH MEDICAL JOURNAL, August 27th), hydrocele can be operated on with a local anaesthetic. I have found the following useful for the removal of piles, hydrocele, and lipoma:

℞ Cocain. hydrochlor. (B. W. and Co.) .. gr. ijss
Adrenalin. hydrochlor. (P. D. and Co.) ♏vj
Aq. destil. ... ... ʒj
Mix.

This solution is easily made, keeps well, and can be used for dental purposes as well. For local anaesthetic purposes the usual method is adopted of injecting the solution into the tissues round about the part to be operated on.

INCOME TAX.

C. H. W. P.—If the partnership profits for the first year were less than the sum assessed, our correspondent is entitled to an adjustment of the income tax paid for the year 1909-10 on furnishing accounts to the Surveyor of Taxes for the decision of the Commissioners. Further, if his income from April to June, 1909, added to his share of the partnership profits as adjusted to April, 1910, falls below £700, he is entitled to an abatement of from £70 to £160, according to the extent of the income.

Petrol Duty.

W. S. R.—The rebate of duty on petrol allowed to medical men is one-half the duty paid on spirit used in the car while being used for professional purposes. Application for a form for obtaining the relief should be made to the local officer of Customs and Excise within six months of using the spirit.

Hornbeam has been refused repayment of the duty on motor spirit by the Customs authorities up to December, 1909, on the ground that the dealer from whom the spirit was obtained has not been able to produce satisfactory evidence that the duty was paid to the Revenue.

*** The Commissioners of Customs and Excise are, under the Finance Act, entitled to proof that the duty of which repayment is sought has actually been paid; if this proof be not forthcoming, the consumer appears to have no remedy. The difficulty would normally arise only in regard to the few months following April 30th, 1909, when there existed a considerable quantity of petrol that had not been subjected to the duty.

Disappointed has been refused repayment of the petrol duty by the local officer of Customs and Excise on the ground that the claim has not been made within six months of using the spirit. Our correspondent suggests, further, that as it is impossible to know how much petrol is used in actual professional work the rebate is a dead letter.

*** Inasmuch as the Finance Bill was not passed until April 29th, 1910, it is thought that the Commissioners of Customs and Excise could hardly object to a claim made in August in respect of a duty imposed under that Act. "Disappointed" is advised to put the facts before the Commissioners by letter to the Custom House, London, E.C. In regard to the quantity of petrol used for professional purposes, the practitioner should take a proportion based on the approximate relative use of his car for professional purposes; such an estimate will presumably be accepted by the authorities.

LETTERS, NOTES, ETC.

St. Paul's "Thorn in the Flesh."

J. B. writes: In your correspondence columns in the Journal of August 13th, referring to St. Paul's "thorn in the flesh," Dr. G. Jones discusses the possibility of obtaining help from technical terms used by St. Luke. He seeks to do this by an examination of certain Greek words from the Greek translation of the Acts of the Apostles. As Christ and the Apostles spoke in Aramaic, the words discussed were those used by the translators and not by St. Luke.

Appendicitis.

Aphorism writes: I offer the following suggestion to "makers of books." Appendicitis is a disease of great importance to every practitioner, and there is a vast literature on the subject: Cannot some experienced surgeon compile a booklet on similar lines to the well-known Golden Rules of Practice series, and entitled "Golden Rules of Practice in Appendicitis"? I venture to say there is great need for such a work. It would be a veritable life-saving book in many cases, and if a suitable one were forthcoming it would be soon in the hands of most medical men who desire to do well by their patients.

Pitfalls of Terminology.

In his *Old and Odd Memories* Mr. Lionel Tollemache tells of a patient who said to her doctor: "You see, Sir, what it is. I've got a complication of diseases. When the high strikes meets the dumb beagles (lumbago) then you gets the viper's dance." Among other specimens of popular pathology which we have lately come across we may mention the following: "I should not have returned to crime," pleaded an aged prisoner, "if I had not been laid up with ammonia." An old man was operated on, and his wife said first he had a tumult in his bowels, and after the operation they found it was a knapsack! An "ulster" in the stomach is a common expression for "ulcer." An old lady whose son was shot in the Transvaal thought this was a polite name for stomach. A woman whose husband had entered Guy's Hospital for an operation is reported to have said at Southwark County Court the other day that the doctors had given him a cosmetic. We recently heard a sympathetic cook comforting a lady who complained of pain in the shoulder with the assurance that it was only "masculine rheumatism." Perhaps to these might be added the description of a local festival, an interesting feature of which was, in the language of the penny-a-liner, that the young men and maidens of the village enjoyed the pleasures of sexual intercourse on the grass to the music of an excellent band. Some, if not all these, are doubtless "chestnuts," but collectors of *Castanea vulgaris* may be asked to remember that even the specimens most familiar to them are not known to all.

Carbon Dioxide Snow and Micro-organisms in Diseases of the Eye.

Major G. H. Fink, I.M.S. (ret.), writes: Referring once more to the point where the subject of carbon dioxide snow was mentioned in one of the papers in the Ophthalmic Section of the annual meeting of the British Medical Association, and which raised a discussion, in which I took a humble part in mentioning certain facts connected with the subject, I feel that it might be of interest to point out the main features of the research in which Mr. E. H. Hankin, M.A., Chemical Examiner and Bacteriologist to the Government of the North-Western Provinces and Oudh, and other British investigators took part in at the time. I do so because I mentioned that gentleman's name in my remarks bearing on the liquid form of the product under discussion and its effects on micro-organisms.

Professor Koch, at that time, gave 100 microbes per c.cm. as the limit of safety for drinking water; but Hankin, who was working at the subject of soda water (otherwise aërated water) in India, made his counts of the microbes present in bottled aërated water by the method known as the "plate culture method," described so clearly by him, and put the safety point at a lower figure.

Two interesting and useful facts were brought to light by his researches, and which were confirmed by others—first, that the CO_2 in H_2CO_3 acts as a poison to the microbes present. He tells us that a bottle of this liquid, which was teeming with bacteria when first made, is greatly reduced through the action of the CO_2 and generally perfectly free from them at the end of a week. I think I said that the micro-organisms were destroyed at the end of about *four* days; but this was a mistake on my part through having quoted Hankin's research from memory, having read his article so far back as 1893. Secondly, that in India one is safe even from the chances of infection by the comma bacillus if the aërated or soda water be kept for a week or over before it is drunk, since the germ of cholera, though the deadliest in its attack, is the easiest to kill if bottled up in aërated water, for it generally succumbs within an hour or two of bottling.

Two of the germs which were found most resistant to the action of carbonic acid gas were the *Bacillus fluorescens liquefaciens* and the germ of enteric fever. At the end of a week the former was still alive, though its powers were markedly reduced.

Slater, who was also investigating this point in connexion with the resistant powers of germs in soda water, found that the *Bacillus fluorescens liquefaciens* was living at the end of five weeks in England. This difference in the resistance offered in India and this country is accounted for—whereas in India soda water is manufactured in a higher temperature at a much higher pressure—namely, 180 lb. to the square inch—in England it was at a lower temperature and a pressure of 30 lb. to 40 lb. to the square inch. The high pressure and temperature aid in the destruction of the germ.

The utility of such an investigation in India has aided towards solving the question of a suitable drinking water supply, and the proper manufacture of soda water, which is now largely consumed.

The healing and soothing effects of aërated water would be clearly understood with the above points before us. In gastric troubles, and in the case of solution of continuity of various tissues, a safe lotion will be found in a bottle of aërated water kept in store for a week or more in India. Its antiseptic and cleanly effects in cases where some of the more powerful antiseptics cannot be had are worth trying, for its healing properties are valuable.

Some dyspeptics who have suffered for years and cannot give up their beer or stout would find the gradually lessening of these drinks, with the addition of aërated water to fill up the deficiency, a remedy worth knowing. Cases of three years' standing have yielded to it.

It is on these grounds above mentioned that the healing properties of carbon dioxide snow in ophthalmic practice seem to receive some explanation. In high temperatures, and in very cold temperatures, the germicidal effect of the CO_2 in liquid and highly compressed form seem to act in particular classes of cases presented. The virulence of the germ—such as the germ of cholera—is not to be considered evidently of any consequence, and if the comma bacillus curls up and dies under the CO_2 at a high temperature and pressure of 180 lb. to the square inch when bottled up, apparently the germ of trachoma, which is so very resistant to most remedies hitherto tried, is unable to live long in the presence of carbonic dioxide snow, even though not bottled. Doubtless in both cases (cholera and trachoma) the action has a physiochemical explanation which is full of interest.

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Remarks

ON

EIGHTEEN CASES OF SPINAL ANALGESIA BY THE STOVAINE-STRYCHNINE METHOD OF JONNESCO,

INCLUDING SIX CASES OF HIGH DORSAL PUNCTURE.

BY

LAWRIE McGAVIN, F.R.C.S.ENG.,

SURGEON TO THE SEAMEN'S HOSPITAL; LECTURER ON CLINICAL SURGERY IN THE LONDON SCHOOL OF CLINICAL MEDICINE.

It will be within the recollection of the members of the medical profession that in the autumn of last year Professor Thomas Jonnesco of Bucharest demonstrated before the Surgical Section of the Royal Society of Medicine, and also in the operating theatre of the Seamen's Hospital, a method of spinal analgesia introduced by him with the object of rendering possible operations on the head, neck, and upper extremity. As I was mainly responsible for these demonstrations, and have since then submitted Jonnesco's method to the test of practical application in my wards, I have ventured in this communication to place the results obtained before my professional *confrères*, as much to satisfy many inquirers as to issue a warning to those who may wish, like myself, to make the practice of spinal analgesia extended to the upper regions of the body. Jonnesco's method is based on the supposition that the addition of neutral strychnine sulphate to the stovaine employed is capable of overcoming the danger of respiratory paralysis when the injection is made between the spines of the first and second dorsal vertebrae, or when, the solution having been injected at a lower level, it has been purposely allowed to gravitate to the upper regions of the cord, the patient being in the Trendelenburg position.

With regard to the results obtained by Professors Jonnesco, Janio, and Nasta,[1] it must be admitted that, as reported, they would suggest a very high measure of success and safety, and, compared with my cases here reported, show a marked contrast, since it is claimed that in no case was any ill effect noted. Whether this is due to exceptional experience, or to some peculiarity in the class of patient submitted to operation in our respective countries, I am unable to say; it is, however, reasonable to suppose that the method, when first attempted by Professor Jonnesco, was as new to him as it was to me when I followed his example. Whatever the results obtained in Bucharest may have been, it will be remembered by those who were present in the operating theatre of the Seamen's Hospital, that of the three cases injected by Professor Jonnesco by his own method and using his own drugs and instruments, only one—a case of tuberculous cervical glands—was completely successful. In the second—a laparotomy—the injection was made in the dorsi-lumbar interspace, and the patient, although analgesic, so far as his skin and muscles were concerned, to a point considerably above the level of his fifth cervical vertebra, complained of dragging sensations when his intestines were manipulated, and had to be submitted to a general anaesthetic. The third case, that of a boy of 12, was given 2 cg. of stovaine and ½ mg. of strychnine, with a view to exploration of his mastoid antrum; complaining of pain on the application of the gouge, he was given a second dose of the same amount; he still complained of pain, and was then given chloroform. It is, however, only fair to say that this boy assured me on the following day that, being afraid, he had lied, and that he had experienced no pain whatever, and that it was the grating of the metal on the bone which frightened him. Further, the fact remains that all three of these patients were analgesic to above their phrenic origins, two of them actually to the vertex, and yet there was neither respiratory paralysis nor any ill effect afterwards.

The reason of the early publication of so few cases from my own wards is, I regret to say, that I have not been convinced of the safety of Jonnesco's method; nor, from what I have seen of it, do I feel justified in employing it further for the present. I have set forth the report of my cases without any attempt either to magnify the importance of those which were successful, or to mitigate the adverse facts in those in which the method failed. The statements with regard to each are strictly accurate in every detail.

Professor Jonnesco claims as his method both high and low punctures whenever strychnine is combined with stovaine. I have therefore included all such cases in my report, although some of the latter might possibly have been done equally well without strychnine, for I have frequently obtained analgesia to the clavicles by stovaine alone without any sign of respiratory paralysis. The chief interest, however, lies in the six cases of high dorsal puncture (Nos. 7, 8, 10. 12, 14, 15), and in the two cases (Nos. 1 and 2) in which, the puncture being made at the level of the eighth dorsal spine, the analgesia rose above the phrenic origins, and in that of No. 6, in which artificial respiration was successfully employed for a period of sixty-five minutes.

It is a matter of great regret to me personally, as I am sure it will be to Professor Jonnesco, whose great courtesy I wish to acknowledge most cordially here, that these cases have not in my hands borne out his contention that the addition of strychnine is capable of preventing respiratory paralysis. The fact is, however, obvious, that although in some cases respiratory paralysis does occur, there are others in which there is no sign of it. In the state of our knowledge of the subject, and with the drugs at present at our command, the method appears to me to be fraught with considerable danger, apart from which the condition of a patient suffering from respiratory paralysis and yet perfectly conscious, even if artificial respiration can be successfully applied, is one of great mental anguish and bodily discomfort, and extremely harassing to witness.

CASE I.

A. R., aged 27, a man of spare physique, suffering from a left-sided empyema. He had been ill for some weeks, and at the time of operation his appearance was hectic, his left chest quite motionless, and his intercostal spaces obliterated. Pulse 110. Temperature 102.5°.

Not having at hand the dry stovaine employed by Professor Jonnesco,* I employed 5 cg † of Barker's stovaine-glucose solution, to which was added 1 mg. of neutral strychnine sulphate. This was injected between the seventh and eighth dorsal spines without difficulty, the patient being in the left lateral position. At the end of one minute he was turned over on to his back; the Trendelenburg position was not used, but no attempt was made to keep the patient's head elevated as in the ordinary form of spinal analgesia. The analgesia rose steadily to the level of the eyes in three minutes, and descended to about the groins. Respiration continued unaltered in rhythm or amplitude, and short of slight nausea for a moment or two, the patient experienced no discomfort. A portion of the eighth rib was resected and the empyema evacuated. The patient felt nothing of the operation, and his convalescence was uneventful. During the analgesia, which lasted for 40 minutes, any operation might have been easily accomplished between the chin and the umbilicus, the analgesia being deep over this area. There was neither sickness nor headache. Pyrexia could not be estimated, as the case was already septic.

CASE II.

J. C., aged 35, admitted to hospital for a small epigastric hernia of some months' duration. A man of good physique; 5 cg. stovaine and 1 mg. strychnine were injected as in the above case, but in the sitting position. Patient was at once placed upon his back, the head not being at all raised. Analgesia rose gradually to the level of the eyebrows without any interference with the intercostals or the diaphragm. No inconvenience on the table other than slight nausea. The analgesia extended to the middle of the thighs, and was quite satisfactory in the epigastric region. It lasted about 50 minutes, and was followed by no ill effects of any kind. Pyrexia.

CASE III.

W. H., aged 43, admitted for complete forward dislocation of the tibia on the femur, with rupture of all the deep structures behind the knee-joint, resulting in gangrene on the third day. Injection performed in the left lateral position; 6 cg. stovaine + 1 mg. strychnine given through the dorsi-lumbar interspace. Strychnine added in this case, as, owing to the patient's condition, it was thought that the Trendelenburg position might be required during operation. Analgesia rose to the level of the nipples, and amputation was performed at the middle of the thigh. The analgesia was perfect. There was neither vomiting nor faintness, nor was there any shock following the operation. Analgesia lasted about forty minutes; there was no subsequent pyrexia.

* Cases I and II were both done prior to the visit of Professor Jonnesco to London.

† This of course refers to the amount of the drug in the solution.

CASE IV.

H. B., aged 14, admitted for undescended testis. Injection consisted of 4·5 cg. stovaine-glucose + ⅓ mg. strychnine. Analgesia rose to the level of the eighth dorsal vertebra, and was perfect. Patient vomited once on the table. The testis was transplanted to the scrotum without difficulty. Analgesia lasted thirty-five minutes, and was followed by no after-effects other than pyrexia, which lasted four days, and ranged from 99° to 99.5°.

CASE V.

H. L., aged 26. Admitted for perforated duodenal ulcer. This was the first case submitted by me to injection *after* the visit of Professor Jonnesco to London, and by his advice I did not employ mid-dorsal puncture, but made the injection in the dorsi-lumbar interspace, using stovaine (dry) 10 cg. + 1 mg. strychnine, and placing the patient at once in the deep Trendelenburg position. Analgesia rose slowly to the level of the fifth dorsal area, and remained there; accordingly, at the end of fourteen minutes I again injected 3 cg. stovaine + ⅓ mg. strychnine, and, as before, used the Trendelenburg position. This was followed by a rise of analgesia to the level of the second dorsal area, after which the abdomen was opened. Much turbid fluid appeared along the ascending colon and among the intestinal coils, and with great difficulty, owing to the narrowness of the costal angle and the depth of the thorax, a perforation was found in the first part of the duodenum. The perforation had become sealed off by recent lymph, and the patient's condition precluded a gastro-enterostomy. Accordingly the abdomen was cleansed by sponging, and drains were placed in the right loin and pelvis. Only once during the operation did the patient complain of dragging and nausea when the stomach was pulled upon. No pain was felt till the last skin sutures were being inserted, the analgesia having lasted 70 minutes. Recovery was rapid; there were no after-effects. In spite of the large dose (13 cg. in all) the intercostal muscles were quite unaffected and strong expiratory efforts could be made. There was complete absence of any increase of shock, in spite of prolonged manipulation of the bowels, and the patient's condition was distinctly better after than before operation.

CASE VI.

N. B., aged 32. This patient, a nurse, was seen by me for acute haematemesis occurring on three consecutive days. She was subject to gastric ulcer, and had been ill on previous occasions. When I first saw her she was blanched, bringing up repeatedly small quantities of blood; her pulse was rather feeble and about 125, and her respirations sighing and about 14 to the minute. She was obviously very ill, and was said to have brought up in all about three pints of blood in the previous three days. Fearing that the vomiting after a general anaesthetic would result in a final haemorrhage, I resolved to attempt an operation by the method in question. I had no dry stovaine with me, nor had I strychnine. I therefore used 8 cg. stovaine-glucose solution + 1 mg. strychnine, the latter drug being made up from tabloids by the dispenser of the institution to which the patient belonged. I was very doubtful of the potency of this last drug, and expressed the opinion that it might fail, and that if it did respiratory paralysis might result. After consultation with her medical advisers, it was resolved to risk the injection—first, because the patient was still bleeding; secondly, because I am firmly convinced of the fact that stovaine does *not* paralyse the heart; and, thirdly, because this being so, I felt confident that if respiratory paralysis should occur, I could keep the patient alive by artificial respiration, she being of light build and a young woman. The injection was therefore given in the dorsi-lumbar interspace, and the head end of the table was slightly lowered. Two minutes later the patient, without uttering a sound, became completely unconscious and ceased to breathe either with her diaphragm or her intercostals. Her pulse at the moment of injection was 130. I now commenced artificial respiration, keeping nearly as possible to the normal rhythm, and at the end of ten minutes the pulse had fallen to 90, and was fuller and stronger than before; such colour as she had the patient kept very well. Her pupils at this time were slightly contracted. At the end of half an hour a pause was made to see if there was any movement of the diaphragm, but none was observed; the pulse was regular, and the aorta could be seen to be pulsating steadily and with fair strength. At the end of an hour the pupils began to dilate a little, and the eyelids, which had been half closed, gradually opened; there was also a suspicion of movement in the lips. A pause was again made, when it was found that the diaphragm was beginning to move; it, however, ceased again, and artificial respiration was again resorted to. Five minutes later the patient moved her head and began to breathe softly; presently she was conscious and asked where she was; she was at this time analgesic to the clavicles. Analgesia rapidly passed off, there was no further vomiting nor retching, and the patient gradually recovered after a prolonged convalescence. It should be stated that during the last fifteen minutes intravenous infusion of three pints of dextrose solution was performed by one of the resident medical officers through the long saphenous vein. Altogether, artificial respiration had been performed for a period of sixty-five minutes. No operation, of course, was possible.

I was at first inclined to attribute the failure of this case to the fact that the strychnine was in tabloid form, and had been kept for some months; from later experience, however, I am compelled to forego this hypothesis. Strychnine is one of the most constant of the alkaloids, rarely losing its potency or its saline form. It is possible that in the weak condition of the patient the dose was unnecessarily high; at the same time Jonnesco advises a dose of 8 cg. to 10 cg. in cases of high abdominal section. I now believe that the trouble was due to the fact that the method itself is at fault, and that strychnine is not always to be depended on for the prevention of respiratory paralysis.

CASE VII.

K.W., aged 22, a Russian, was admitted for Jacksonian epilepsy of the left side, resulting from an old depressed fracture of the right fronto-parietal region, the injury having been received from the falling of a pulley-block nine months previously.

Injection consisted of 3 cg. stovaine (dry) + ⅓ mg. strychnine, and was given in the sitting position, the puncture being made between the first and second dorsal spines. The patient was hardly aware of the puncture, which was made without difficulty, and was at once placed upon his back, and the head and shoulders were lowered. In two minutes analgesia was complete to the crown of the head, and to a point just below the umbilicus, remaining quite perfect for over half an hour. A semilunar flap was raised from the scalp over the depression, and a disc of the cranial vault measuring 2.5 in. in diameter was removed by means of the trephine and gouge forceps. The patient chatted of various subjects throughout the operation, only remarking once of any pain, when the lowest of the sutures was inserted just above the eyebrow. There was no alteration whatever either in pulse or respiration, both of which were normally performed. After the operation he expressed his thanks, and walked back to his bed saying he felt none the worse for his experience. He slept well that night and the following night, having neither headache nor vomiting. The following day he was sleeping, and at tea-time could not be roused; the house-surgeon was sent for, and found him comatose, his breathing being stertorous and both his pupils dilated. He was at once seen by my colleague, Mr. Choyce, who realized from his appearance that it was too late to save him; death occurred shortly afterwards. A *post-mortem* examination revealed a large clot in the operation area due to secondary haemorrhage, presumably from a torn branch of the middle meningeal artery, although every care had been taken at the operation to provide against such an accident. The puncture in the dura mater was found between the spines mentioned, and the cord and its membranes and the base of the brain were found to be perfectly normal.

CASE VIII.

W. B., aged 35, was admitted for a fusiform enlargement of the lower half of the right humerus and crepitus about the condyles and in the elbow-joint. The diagnosis lay between sarcoma and gummatous osteitis. The skiagram did not help much, the showing in the upper half corresponding closely to the former, while that of the lower half closely resembled the latter disease. I therefore resolved to explore, and in the sitting position I injected the patient exactly as in the last case, placing him at once upon his back and lowering the head and shoulders. In five minutes analgesia was complete from the vertex to the costal margin. Respiration was in every respect perfect, and the analgesia, which lasted for forty-five minutes, would easily have permitted of the performance of an interscapulo-thoracic amputation, had the case proved to be malignant. It was however gummatous, and the medulla being extensively disorganized as high as the upper third of the bone, it was entirely removed with a sharp spoon; the cavity was packed with gauze, and the wound, 7 in. in length, partly sutured. The whole operation was entirely painless, and the patient expressed himself as being "delighted with the method." His temperature was raised to 99° and 99.5° for the two subsequent days, remained normal for a day or so, and then again rose slightly as the result of the inevitable discharge. There was neither sickness nor headache.

CASE IX.

L. M., aged 36, a somewhat delicate woman although well developed, was seen by me in consultation for chronic ovaritis. she was in fact sent to me with a view to operation. Owing to her aversion to general anaesthesia, it was arranged to operate by spinal analgesia.

In the sitting position an injection was made of 8 cg. stovaine + 1 mg. strychnine (the same dose, it will be noted, as that which led to respiratory paralysis in Case VI) in the dorso-lumbar interspace. Analgesia rose steadily to the nipple without producing faintness or other discomfort. The abdomen was opened, and the right ovary, being found to be small and cirrhotic, was removed in the usual manner. No nausea was felt on pulling on the uterus. The patient's pulse, which had been 130 before operation, steadied down during the operation and was under 90 when it was finished. The analgesia lasted about an hour, and was quite perfect; it was followed by slight pyrexia for three days, otherwise there was nothing unusual to note.

CASE X.

J. B., aged 59, admitted for carcinoma of the tongue and secondary glands in the neck. It was not my intention to attempt removal of the tongue by this method, as I do not think the hardiest patient would care to face a severe tongue or jaw operation with his full consciousness retained. As the man expressed no objection to having the glands removed by its means, I submitted him to it. The injection was performed as in Cases VII and VIII, the patient being placed at once upon his back, with the head and shoulders lowered. Analgesia was less extensive, although the dose was the same as in the two cases mentioned, the limits being from the forehead above

the costal margin below. Although the patient was not aware of it and suffered no discomfort whatever, I noticed that the intercostal muscles were not acting fully: the diaphragm was moving with perfect freedom. No nausea, vomiting, nor faintness were experienced. Subsequently the diaphragmatic excursions became much less extensive for some minutes, but the patient still remained comfortable. The pulse was very slow throughout, being not more than 42 to 58; this, however, was subsequently found to be normal in this patient. Respiratory rhythm remained constant at 30, the increase over the normal being probably accounted for by the extra labour thrown upon the diaphragm by the intercostal paresis.

The analgesia was perfect, and permitted of entire removal of the submaxillary and cervical glands and ligature of the lingual and facial arteries. Its duration was thirty-five minutes. The patient felt nothing whatever of the operation, and at its conclusion walked back to his ward. There were no subsequent complications except pyrexia of two days' duration, to the extent of 99.4°.

CASE XI.

C. R., aged 60, admitted for carcinoma of the cardiac end of the stomach. Patient was in a weak state, and the case was not in any way a promising one for gastrostomy, which was, however, attempted at his request.

The injection consisted of 6 cg. stovaine + 1 mg. strychnine, given through the dorsi-lumbar interspace, the patient being in the left lateral position, with the head of the table lowered. Analgesia did not extend higher than the nipples, and as he complained of pain as soon as the parietal peritoneum was incised, and when the stomach was pulled upon, chloroform was substituted and a Witzel's gastrostomy performed. No subsequent ill effects were noticed which could be attributed to the injection. The patient died at the end of forty-eight hours from exhaustion, the peritoneum being found at the autopsy clean and free from any leakage from the gastrostomy, which was sound.

CASE XII.

W. W., aged 40, admitted under the care of my colleague, Dr. Nixon Biggs, for otitis media. At the request of Dr. Biggs, who proposed to explore the mastoid antrum, I injected the patient between the first and second dorsal spines with 3 cg. stovaine + ½ mg. strychnine, in the sitting position.

The head was lowered as before, and in seven minutes the patient was analgesic from the vertex to the costal margin, with the exception of the nasal septum, the palate, and the pharynx. The tongue was analgesic in the anterior third. No trouble whatever was experienced by this patient either as regards his respiration or pulse, both remaining in every respect normal. There was no nausea, vomiting, or other unpleasant symptom. No pain was felt until the separation of the cartilage of the deep part of the meatus was attempted; this was apparently quite sensitive, although the bone was freely gouged without any pain, and it is possible that had cocaine been instilled the operation might have been completed painlessly. General anaesthesia was, however, substituted. There were no after-effects in this case.

The pain complained of was probably due to the immunity of the auricular branch of the pneumogastric nerve, this latter, like the glosso-pharyngeal, being apparently little affected by these injections.

CASE XIII.

L. C., aged 43, sent to me by Dr. Croft Watts, of Farnborough, for a large abdominal tumour of six weeks' history.

Patient was a woman of spare build and very nervous temperament, and her temperature suggested mild sepsis. An injection of 8 cg. stovaine + 1 mg. strychnine was given in the dorsi-lumbar interspace, the left lateral position being employed. On lowering the head end of the table, the analgesia rose slowly to the fourth dorsal area without inducing any untoward symptoms, the patient being quite comfortable. On opening the abdomen below the umbilicus the tumour was found to consist of the right ovary, which had attained the size of a Rugby football. To it the appendix was adherent, and from the right side of the uterus there grew a fibro-myoma of the size of a Jaffa orange. No nausea or pain was induced by any amount of traction on the pelvic organs, and accordingly the ovary, appendix, and the fibroid were removed without difficulty. The former contained 6 pints of fairly recent blood; the appendix was not diseased. Slight pyrexia for three days represented the only after-effect, and the patient made an uninterrupted recovery. The analgesia lasted an hour and a half, and was of the most perfect order.

CASE XIV.

H. P., aged 20, admitted under Dr. Nixon Biggs for submucous resection of the nasal septum. Injection was performed exactly as in Cases VII, VIII, X, and XII, except that in this case some cerebro-spinal fluid was drawn into the syringe so as to mix with the solution, the whole being then projected into the theca. I thought that in this manner I might cause a more general diffusion of the solution and thus avoid irregular analgesia. The patient was then placed upon his back and the head was lowered. Almost at once the patient's respiration became embarrassed and he became terrified, gasping for air, struggling on the table, and whispering that he was suffocating. It was seen that his diaphragm, although moving, was almost inactive, the intercostals being completely paralysed. He was reassured as to his safety, and in less than a minute his breathing became easier. His pulse and colour remained good, and in a short time he became calm. Strychnine $\frac{1}{30}$ grain was given hypodermically, but neither oxygen nor artificial respiration were employed. He was now found to be analgesic from the vertex to the costal margin, the pharynx and tongue alone being sensitive, and he consented to undergo his operation, which was easily carried out quite painlessly and with very little haemorrhage. Complete analgesia lasted thirty minutes. There was neither headache nor vomiting, and only slight pyrexia; next day he said he felt well, but acknowledged that for the moment he had been frightened at the operation.

CASE XV.

J. M., aged 40, admitted under Dr. Nixon Biggs for submucous resection of the septum of the nose. Injection was performed exactly as in the previous case, except that, in view of the obvious failure of the strychnine already recorded, the dose of this drug was increased to 1 mg. and the solution increased to a bulk of 1 c.cm., the stovaine remaining the same—namely, 3 cg. In two minutes from the time of injection the patient complained of nausea, and in five minutes he whispered excitedly that he was suffocating. In another moment it was seen that respiration was on the point of ceasing and that he was slightly livid. He was obviously terrified, and protruded his tongue convulsively with a licking movement, opening and shutting his mouth rapidly, and throwing himself into convulsions on the table. Although these movements of the body suggested opisthotonos there was no spasm of the muscles, and I fancy they were simply due to terror.

Artificial respiration was now commenced and a hypodermic injection of $\frac{1}{30}$ grain strychnine was given. Almost at once the colour returned, and in two minutes the patient was able to breathe with his diaphragm, his fear leaving him as his respiration improved. The analgesia was found to extend from the chin in front and the occipital protuberance behind to the umbilicus below. No other part of the head was analgesic, and taste and hearing were not affected. The pulse remained between 80 and 90 throughout, and was strong and regular. As analgesia was lacking, considering what the patient had undergone, it was determined to postpone the operation, and he was sent back to bed.

Seen next day, he was none the worse for his experience; he had not been sick and had had no headache; but he said that some years before he had been washed overboard and nearly drowned, and that the feeling when on the table closely resembled that of the initial stages of drowning. He had no pyrexia.

This case determined me not again to put any patient to the risk of such suffering by the employment of Jonnesco's method, so far as high injections were concerned, and proved to me incontestably that strychnine is by no means to be relied upon in these cases.

CASE XVI.

M. H., a woman aged 55, was sent to me by Dr. Fleming, of Haverstock Hill, for the cure of a gigantic umbilical hernia by the implantation of a filigree of silver wire.

I have seldom been able to accomplish these very extensive operations by the aid of spinal analgesia, but have always wished to do so owing to the greater relaxation of muscle and the absence of straining which it guarantees. This hernia measured 35 in. in circumference, and in the erect position extended downwards over the upper third of the thighs. The operation took place in the Hampstead Hospital.

An injection of 10 cg. stovaine (dry) + 1 mg. strychnine was given in the dorsi-lumbar interspace, the patient being in the sitting position. She was then placed on her back, and the head end of the table lowered. In five minutes the analgesia had extended to the level of the nipples, and in another minute was up to the third rib. The table was then levelled, and the operation was commenced. A large mass of omentum was ligated and removed, the sac cut away, and the intestines returned with some difficulty. The manipulations, however, produced no sensation of nausea or pain, and the abdomen was soon closed. The recti muscles were brought out of their sheaths, which were opened extensively for the purpose, and a filigree measuring 9 in. by 5 in. was implanted between the posterior layers of these sheaths and the muscles, which were then approximated over the filigree. The operation lasted fifty minutes and the analgesia ninety minutes. There were no after-effects of any kind except pyrexia for three days, ranging to 100°, but some days later the patient had a slight attack of pneumonia, and a mild one of facial erysipelas, from which she soon recovered. Her convalescence was rapid after this. During the operation the patient was comfortable and chatted freely, saying she much preferred the method to general anaesthesia.

CASE XVII.

W. K., aged 15 years 6 months, admitted for left renal calculus. Patient was placed in the left lateral position and an injection made in the dorsi-lumbar interspace consisting of 6 cg. stovaine + 1 mg. strychnine. The head end of the table was lowered, and at the end of a minute patient was turned upon his back. Analgesia extended to the level of the second rib. The bladder was washed out and a cystoscopic examination made; blood was found to be coming from the ureter of the suspected side, which fact strengthened the evidence of a somewhat doubtful skiagram. The patient was now turned over on to the sound side and nephrolithotomy was performed. Up to the moment of opening the kidney, these proceedings had been perfectly painless; now, however, he began to complain of dragging pain, and in a short time I was forced to resort to chloroform to complete the operation. The analgesia had lasted forty minutes and had been perfect, and had it not

been for the time taken up in washing out the bladder and by the cystoscopy, the main operation could easily have been done by this means alone. A small impacted calculus was found in the lower end of the pelvis of the kidney. With the exception of a single vomit fifteen minutes after injection, there were no after-effects of any kind. Pulse remained at 90 and respirations at 20 throughout: there was no shock, and patient was well and comfortable next day.

CASE XVIII.

R. T., aged 48, admitted for an irreducible inguinal hernia of gigantic proportions. In circumference it measured 35 in., and it depended to a point 16 in. below the pubic spine. The patient was a stoutly-built but rather plethoric man, and the risk of so prolonged an operation as would be required was fully pointed out to him. He begged that something might be done, since not only could he obtain no employment, but also the weight of the gradually increasing mass made it impossible for him to get about. He very pluckily agreed to take any risk, and this rather against my advice. Three weeks were spent in getting rid of some oedema of the scrotum and endeavouring to lessen the size of the mass, and then operation was performed. The injection was given in the right lateral position, and consisted of 7 cg. stovaine + 1 mg. strychnine given in the dorsi-lumbar interspace. The patient was put in the Trendelenburg position not only to cause the solution to rise in the theca, but also that gravity might assist in the return of the hernial contents. The analgesia rose to the nipples. On opening the sac, it was found to contain the caecum, appendix, ascending and transverse colon, 10 to 12 ft. of ileum, and a large mass of omentum. The latter was removed painlessly, and I then began to attempt to return the bowel. At the end of nearly ten minutes I had made little progress, and the patient was complaining of "pain in his chest" and had vomited twice; his pulse and respiration were both good. Chloroform was therefore substituted, very little being required to keep him fully under. Ultimately by returning the bowel inch by inch from the distal to the proximal end I succeeded in reducing the whole of it. As he showed no signs of shock I separated the neck of the sac from its surroundings without attempting to remove the body and fundus, and closed it. I then implanted two silver wire filigrees by the method I have elsewhere described,[2] closed the wound, and returned the patient to bed. As regards the analgesia there is nothing further to note; it failed, as so frequently happens where intestinal operations are concerned, to overcome the sensation of dragging and nausea. For any other than such operations it would have been ideal. As I had feared, the interference with the bowel proved to be too much for the patient; paralytic ileus set in twenty-four hours later, and in spite of a caecostomy done under local anaesthesia, the distension increased and he died from embarrassed respiration and oedema of the lungs. No pathological change of any sort was found in the spinal cord or meninges. Although I hesitated to perform this operation on account of the risk, I was encouraged to hope it might be successful, owing to the fact that three years ago I operated upon, and succeeded in curing by the double-filigree operation, a patient whose hernia almost exactly resembled the one here described, and which measured 25 in. in circumference and 15 in. in length. The operation was done under spinal analgesia.[3]

These, then, are the results I have obtained by the use of Jonnesco's combination, and it must be confessed that as a whole they are disappointing. The four successful cases of high puncture serve, so far as analgesia above the phrenics is concerned, to show that the method has, at least, *some* element of possibility in it; it is, however, uncertain, imperfect at present, and of doubtful value in replacing general anaesthesia. The unsuccessful cases of high puncture show it to be fraught with danger, and from the humane standpoint unjustifiable. The cases of low puncture serve to show very little else than that strychnine can be injected into the spinal canal without producing spastic symptoms, and that it undoubtedly results in a shortening of the period of analgesia usually resulting from the use of stovaine alone. The effects of the analgesic on the cranial nerves appear to be irregular. So far as I have been able to see, the first, second, third, and fourth remain unaffected; the fifth is at times under control, as is also the seventh; the sixth, eighth, ninth, tenth, and twelfth are unaffected, while the eleventh may or may not be paralysed. That the four last nerves should escape when the trigeminal is affected is a very remarkable fact, seeing that, lying in that portion of the base of the skull to which the injection has most ready access, they must of necessity be bathed in the solution.

It would certainly appear proved by Cases VI, XIV, and XV that stovaine is not a cardiac depressant, although it is to some extent a vaso-dilator, as shown by the slight fall of blood pressure which has been noticed in some of the 500 odd cases of spinal analgesia carried out in my wards at Greenwich.

I can see no object in adding strychnine to cases of low spinal analgesia, since I have found no difficulty in carrying out operations under stovaine analgesia without it, even when such analgesia has been pushed to the level of the clavicles. I do not mean by this that such a height is to be aimed at; even in skilled hands it is of doubtful safety; but, even if strychnine has been added to the stovaine to make it safer, it is still impossible to rely upon it in any particular case, and it is precisely this fact which has compelled me to forego the further use of Jonnesco's method. The idea it has in view is splendid, but to be of use it must show a high percentage of safety, and this condition it does not at present fulfil.

The above remarks, it must be remembered, apply solely to cases done by the stovaine-strychnine method, the results of which must not be confounded with those of the stovaine-glucose method of Barker. Of these latter cases, considerably over 500 have now been done in the wards of the Seamen's Hospital with perfect satisfaction to the patients, to myself, and to those of my colleagues who have given it a trial. I may say here that in this series, which extends over a period of three years, no case has as yet been met with in which there were alarming or dangerous symptoms either during or after operation; while the simplicity of the method, the comfort of the patient on the table, the immunity from unpleasant after-effects, and the saving of time which it ensures, combine to make it the method of election in cases suitable to its use. It is to me a matter of regret that I have been compelled, owing to the requirements of the authorities of the Naval Medical Service, to employ general anaesthesia in a certain proportion of my cases, in order to furnish material for classes of instruction in anaesthetics, to members of that service taking out courses in the London School of Clinical Medicine. That spinal analgesia is not yet a recognized branch of anaesthetics is to my mind, certainly so far as the Naval and Military Medical Services are concerned, a great misfortune, since it is in these services especially that spinal analgesia must find its highest sphere of utility.

REFERENCES.
[1] BRITISH MEDICAL JOURNAL, 1909. [2] Ibid., August, 1909. [3] Ibid.

Remarks
ON
ANAESTHETIZING PATIENTS FOR OPERATIONS ON THE THROAT, NOSE, AND ACCESSORY SINUSES.

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THE increasing importance attached to anaesthetics, and the recognition of the fact that the anaesthetic is not the least important part of any surgical procedure, has prompted me to publish the following method, which I employ for anaesthetizing patients during operations on the throat, nose, and accessory sinuses. I have used the method for nearly four years, and lately its scope has been extended to operations on the mouth, face, and neck. The following article, however, is more particularly intended to apply to its adaptation to throat and nose work.

The routine method of anaesthetizing I employ is to induce anaesthesia with ethyl chloride and ether, and then after a varying time to substitute what we in Bristol call the "two-bottle" method—namely, a plain domette-covered mask (Murray's) and two drop bottles, one containing chloroform, the other ether. These two anaesthetics are added to the mask in such quantities and at such intervals as may be thought necessary, the smallest possible amount of chloroform being used, and at times altogether omitted, resulting in a pure, open ether administration. This method is superior to using a definite mixture of the two drugs, as the proportions can be so easily varied to suit individual cases.

On this method is based the one now to be described.

Anaesthesia is induced by ethyl chloride and ether, and maintained by ether vapour delivered to the patient

through a mouth tube from a Buxton's bottle of suitable size, with or without the addition of chloroform vapour from a second Buxton's bottle.

APPARATUS.

The apparatus, which is very similar to that of Mr.

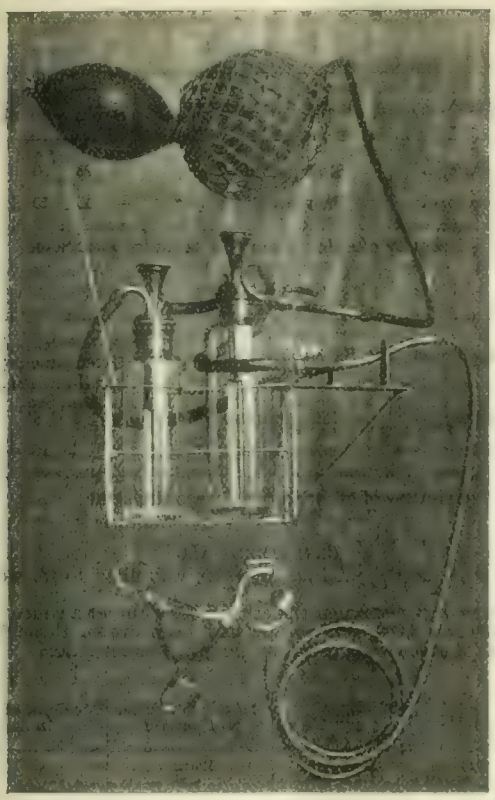


Fig. 1.—Apparatus complete. Hand blower attached.

Walter Tyrrell,[1] consists of two Buxton's bottles, held in a light stand. (Fig. 1.)

One bottle, for the ether, is a 4.5 cm. internal diameter, and deep enough to allow the surface of the ether to be maintained at least 6 cm. above the opening of the air inlet tube.

The second bottle, for chloroform, has the same internal diameter, and gives a column of chloroform 3.5 cm. above the opening of its air inlet.

These measurements I determined by experiment as being the smallest capable of supplying the amount of vapour required.

The inlet tubes of the two bottles are attached to a Y tube, through the stem of which air enters from the bellows. The exit tubes are similarly connected to a second Y tube, from which an india-rubber pipe conducts the vapour, or mixed vapours, to the patient.

I found from experience that the angle made by the limbs of the Y tube with each other was of some importance; it should not be greater than 58 degrees. Each limb must be provided with a stopcock, but to facilitate manipulation, instead of the usual small butterfly handle a straight one, 2 5 cm. long, should be fitted to each tap.

Into the angle formed by the limbs of the delivery Y tube is soldered a short pipe, 4 mm. internal diameter, provided with a stop-tap. This is connected to an oxygen cylinder, so that the gas may, if necessary, be given in conjunction with the anaesthetic. (Fig. 3.)

Another point I think of importance is that nowhere should supply or delivery tubes be of less than 3 mm. or more than 5 mm. internal diameter.

SOURCE OF THE AIR SUPPLY.

I at first worked with an ordinary hand blower with a bulb of 100 c.cm. capacity. This required the constant use of one hand, and occasionally failed to supply sufficient vapour. I then tried a foot blower made by Brown of Leicester, which has proved itself capable of any demand made on it. Its capacity is 305 c.cm., but worked in the ordinary way with the foot each compression gives an average of 260 c cm. of air. The advantage of the foot blower is that both hands are free, and there is a large reserve of power if wanted.



Fig. 2.—Watson Williams's post-nasal plug forceps and tongue hook.

THE GAG AND CHLOROFORM MOUTH TUBES.

The gag I use is of Doyen's pattern but the toothplates are covered with soft lead. This prevents any damage to the teeth and obviates the risk of the ordinary rubber covering getting loose in the mouth. To each toothplate of the gag is attached a chloroform tube; it may be thought that this renders the gag slightly large, but it has this advantage—the tubes are always ready and cannot get lost.

That part of the chloroform tube attached to the toothplate is 3 cm. long, thus allowing it to project well into the mouth beyond the end of the toothplate, and ensuring the stream of anaesthetic vapour being carried well back towards the pharynx. The outer ends of these tubes are carried along parallel to the arms of the gag to keep them as much as possible out of the way. Fig. 2 will, I hope, make the form of both gag and tubes clear.



FIG. 3.—The delivery Y tube showing oxygen tube in centre. (Note.—The handles advocated are *not* attached to this tube.)

HOW TO MAINTAIN THE APPARATUS AT A CONSTANT TEMPERATURE.

A few trials of the apparatus showed that some means would be required to prevent the ether bottle freezing. Water vapour from

the air condenses in the ether, and, freezing, soon blocks the air inlet. I tried several plans, and finally found that standing the whole apparatus in a basin of cold water was sufficient to maintain the temperature of the ether bottle. This simple expedient absolutely prevents freezing, whilst without it the bottle is rendered useless in a very short time.

THE PERCENTAGE STRENGTH OF THE VAPOUR GIVEN OFF BY THE APPARATUS.

I made experiments to determine the percentage strength of the vapour delivered to the patient. They were made under working conditions as follows: Measured quantities of air were first *drawn* and then *pumped* through the apparatus; the amount of chloroform and ether evaporated in each case was estimated by the difference in weight of the bottle before and after the air had been drawn or pumped through, and from the temperature and barometric pressure the vapour percentage was calculated.

EXPERIMENT I.

A definite quantity of ether was placed in the ether bottle.
The bottle was placed in a basin.
Air was blown through by the hand bellows—

A. With the basin empty;
B. With water in the basin reaching halfway up the ether bottle.

The results of two out of ten experiments are given.

No. 1.

A.—*Basin Empty.*

Air.	Result.
After 30,000 c.cm.	Bottle covered with frost.
After next 20,000 c.cm. ...	Ice in ether; small cone of ice under air inlet tube.
After next 10,000 c cm. ...	Orifice inlet tube completely blocked with ice.
Total 60,000 c.cm. ...	Just over half the ether evaporated.

B.—*Basin Contains Water at 8.5° C.*

Air.	Result.
70,000 c.cm.	All ether evaporated; no sign of freezing.

No. 2.

A.—*Basin Empty.*

Air.	Result.
After 20,000 c.cm.	Bottle covered with frost.
After next 20,000 c.cm. ...	Ice in ether; small cone of ice under air inlet tube
After next 20,000 c.cm. ...	Air inlet completely frozen.
Total 60,000 c.cm. ...	Exactly five-eighths ether evaporated.

B.—*Basin Contains Water at 8.3° C.*

Air.	Result.
60,500 c.cm.	All ether evaporated; no sign of freezing.

N.B.—Every endeavour was made to keep the rate of pumping as uniform as possible throughout.

EXPERIMENT II.

This was made to determine the effect of alterations in the rate of pumping on the quantity of anaesthetic delivered to the patient, and shows that increased rate of pumping causes a given quantity to be evaporated in a shorter time. This corresponds to what I found to be the case in actual practice—namely, that the quicker one pumped, the quicker the depth of anaesthesia was varied.

One chloroform and one ether result are given.

1. The apparatus was placed in water.
2. Measured quantities of the anaesthetics were placed in the bottles.
3. Air was blown through at a definite rate.
4. This was repeated under exactly similar conditions, except that the air was passed through at twice the previous speed.

Example I.

Anaesthetic.	Rate of Pumping.	Time to Evaporate Given Amount.
		Min. Sec.
Chloroform	Slow pumping	28 50
Chloroform	Fast pumping	13 30

N.B.—Quantity of chloroform the same in both cases.

Example II.

Anaesthetic.	Rate of Pumping.	Time to Evaporate Given Amount.
		Min. Sec.
Ether	Slow pumping	5 5
Ether	Fast pumping	3 20

N.B.—Quantity of ether in both cases the same.

EXPERIMENT III.

The ether bottle standing in water was filled to its working level.
Air was *drawn* through the ether 5,000 c.cm. at a time.
After each 5,000 c.cm. of air had been drawn through, the amount of ether evaporated, by weight, was estimated.

No.	Air.	Time.	Amount of Ether Evaporated.	Per Cent. of Ether in Air.
	C.cm.	Min. Sec.	Grams.	
1	5,000	5 52	7.8	33*
2	5,000	5 27	7.6	
3	5,000	5 7	7.0	
4	5,000	5 38	7.2	
5	5,000	5 13	6.8	
6	5,000	5 8	6.5	
7	5,000	5 2	6.1	
8	5,000	5 6	5.8	
9	5,000	4 52	5.2	
10	5,000	4 47	4.7	22

* The maximum and minimum percentages are alone noted.

The experiment was repeated under the same conditions, excepting that the air was *blown* through the ether, instead of being drawn through. It will be seen that in this way more ether was evaporated than when the air was *drawn* through. In each case every endeavour was made to bring the surrounding circumstances as near as was possible to those of actual practice.

No.	Air.	Time.	Amount of Ether Evaporated.	Per Cent.
	C cm.	Min. Sec.	Grams.	
1	5,000	0 58	15.7 (?)	
2	5,000	0 59	9.6	37*
3	5,000	0 58	8.9	
4	5,000	0 56	8.3	
5	5,000	0 57	7.7	
6	5,000	0 54	7.0	
7	5,000	0 55	6.6	
8	5,000	0 56	5.3	25
9	Bottle	Empty		
10				

* The maximum and minimum percentages are alone noted.

EXPERIMENT IV.

Air under exactly similar conditions was *drawn* through the chloroform bottle, filled to its working level and standing in water.

No.	Air.	Time.	Amount of $CHCl_3$ Evaporated.	Per Cent.
	C.cm.	Min. Sec.	Grams.	
1	5,000	6 16	4.1	13.7*
2	5,000	6 8	3.9	
3	5,000	6 16	3.8	
4	5,000	6 6	3.9	
5	5,000	5 59	4.0	
6	5,000	6 9	3.7	
7	5,000	6 22	3.9	
8	5,000	6 2	3.8	
9	5,000	5 42	3.9	
10	5,000	5 44	3.9	13.6

* The maximum and minimum percentages are alone noted.

On *blowing* air through the chloroform the following figures were obtained. As a contrast, the bottle in this case was *not* placed in water. Room temperature, 18° C.

No.	Air.	Time.	Amount of $CHCl_3$ Evaporated.	Percentage of $CHCl_3$ in Air.
	C.cm.	Min. Sec.	Grams.	
1	5,200	2 1	4.95	15.7*
2	5,200	2 5	4.75	
3	5,200	2 1	4.2	
4	5,200	1 55	4.15	
5	5,200	1 50	4.15	
6	5,200	1 50	4.05	
7	5,200	2 5	3.87	
8	5,200	1 45	3.87	
9	5,200	1 40	3.9	
10	5,200	1 30	3.5	12.7

* The maximum and minimum percentages are alone noted.

EXPERIMENT V.

This consisted of setting up the apparatus in its basin of water and blowing air through both bottles at the same time. The amount of each anaesthetic evaporated was weighed.

No.	Air.	Time.	Amount of $CHCl_3$ Evaporated.	Amount of Ether Evaporated.
	C.cm.	Min. Sec.	Grams.	Grams.
1	5,000	1 18	1.6	6.6
2	5,000	1 17	1.4	5.6
3	5,000	1 14	1.4	5.5
4	5,000	1 11	1.4	5.0
5	5,000	1 10	1.7	5.2
6	5,000	1 10	1.6	4.9
7	5,000	1 9	1.6	4.8
8	5,000	1 9	1.4	4.6
9	5,000	1 9	1.4	4.5
10	5,000	1 8	1.4	4.4

In this last observation the percentage composition of the issuing air varied from

5.8 per cent. $CHCl_3$ and 29 per cent. $(C_2H_5)_2O$
to 5.1 per cent. $CHCl_3$ and 21 per cent. $(C_2H_5)_2O$.

From these experiments I conclude:

1. That in *practice* the amount of anaesthetic in the air delivered to the patient increased with the rate of pumping.

2. That when the chloroform bottle stands in water the percentage in the issuing air is fairly uniform.

3. That the amount of ether in the air is not so constant, varying far more than the chloroform. As the air stream traverses a long or short column of the ether, so the percentage in the issuing air is more or less.

INDUCTION OF ANAESTHESIA.

The methods available are:

1. Chloroform.
2. Chloroform and ether ("two-bottle" method).
3. Gas and ether.
4. Ethyl chloride and ether.

I think chloroform alone should never be used for inducing anaesthesia if it can be avoided. The "two-bottle" method is always available, and I have never met a case in which it could not be used. When ethyl chloride and ether is contraindicated it will be found an excellent means of inducing anaesthesia, and, provided the induction is not hurried, is practically free from risk.

I have given up gas and ether as it is not always easy to prevent cyanosis, with salivation and secretion of mucus, which are to be specially avoided when adrenalin is used as a haemostatic.

Ethyl chloride and ether is used whenever possible; it produces less secretion and practically no cyanosis as compared to gas and ether. The objections raised, that it is more unpleasant for the patient, have no foundation, if carefully given.

To the Clover I use is attached a Hewitt's gas valve and a large bag. The inhaler is filled and the valves arranged so that the patient breathes "to and from" the air through the valve nearest the bag. A cubic centimetre of ethyl chloride* is introduced into the bag, the inhaler is now applied, and the valve nearest the bag gradually closed, so that the patient has slowly presented to him the dilute ethyl chloride vapour. As soon as the valve is closed the body of the inhaler is very gradually rotated in the usual way. In this manner the patient is anaesthetized without any unpleasant sensations of choking. Swallowing and holding the breath are avoided. Directly the patient is under, the air valve nearest the bag is opened about $\frac{1}{32}$ in. and is kept so, thus allowing an admixture of fresh air with the ether vapour.

Given in this way, it takes from one to two minutes longer to get the patients under, but the distressing sensations complained of in the ordinary method are absent, and secretion of mucus the exception.

CHANGING TO THE OPEN METHOD.

As soon as the patient is under, the gag is introduced and pumping started.

In cases induced with ethyl chloride and ether, the ether taps alone are opened, pumping is started at first slowly, then more quickly, and in a very short time the patient can be got deeply under ether.

Anaesthesia is maintained by varying the rate of pumping, so as to regulate the depth of anaesthesia to the requirements of the moment.

Should the patient tend to come round when the ether is first administered from the apparatus, the admixture of a small quantity of chloroform vapour from bottle No 2 is all that is necessary; as anaesthesia deepens the chloroform is gradually lessened until only pure ether is being given.

If, on the other hand, anaesthesia is commenced with chloroform and ether, start with the mixed vapours, from the apparatus, and gradually lessen the chloroform, watching all the time for any sign of secretion. In a large percentage of cases open ether can be given with impunity. but if it is seen that the patient will not take the open ether, then try until the largest percentage of ether and the smallest of chloroform the patient will take is found. I have not met a case in which some ether could not be given with the chloroform. If it is evident from the first that pure ether is inadmissible, start with the mixture and then arrange it as above.

In starting always be most careful to have a weak vapour, the strength of which is gradually increased by regulation of the taps, with more forcible and frequent pumping.

When changing from a mixture of chloroform and ether to ether or chloroform alone, the stream of air passing through the anaesthetic must be lessened, for, if this is not done, shutting off the one anaesthetic will increase the amount of the other, as the air stream, having a lessened channel to pass through, must do so more quickly, and, as we have seen above, the amount of anaesthetic delivered

* I am indebted to my colleague, Mr. A. L. Flemming, for bringing my notice the efficiency of such small doses of ethyl chloride.

to the patient will under these conditions be greater than it was in the mixture

Under no circumstances change from ether to chloroform unless the corneal reflex is present. The points to aim at during the administration are—a light anaesthesia with avoidance of secretion.

In cases where cocaine has been used a very brisk corneal reflex can be maintained all the time, unless the operator should go beyond the insensitive area. If no cocaine has been used, it is necessary to keep the patient more deeply under, but the corneal reflex need not be abolished. I never work with the corneal reflex gone if I can possibly help it.

It is not necessary to keep the patient at one uniform level of anaesthesia. Always try and suit the depth to the manipulations of the moment, and in this way I believe the patient is spared a lot of the unpleasant after-effects of the operation.

Secretion is one of the most difficult problems to be dealt with in these cases, especially if adrenalin has been used, because the surgeon so often requires the patient's head placed in the mid-line, so that it is impossible for the secretion to gravitate into the cheek and so out of the mouth. Instead it tends to fall back into the pharynx and larynx.

However, minute care in the induction and maintenance of anaesthesia on the lines suggested will in the majority of cases free us from this trouble. Much secretion means (1) cough, (2) intercurrent asphyxia, (3) chronic oxygen starvation.

THE TYPE OF ANAESTHESIA.

Patients anaesthetized with the mixed vapour present the same features as do those anaesthetized with a mixture of the two drugs, given on a mask in the usual way. In those anaesthetized with ether vapour alone the face is slightly flushed; the pupils, usually somewhat contracted, vary with the depth of anaesthesia; respiration is regular, soft snoring and moderately deep; the pulse full, regular, and slightly quickened. The colour remains good, even when deeply under. In the majority of cases there is little if any secretion and very little sweating.

HAEMORRHAGE.

The control of haemorrhage naturally falling under the care of the surgeon, the anaesthetist is simply concerned with the method of preventing access of blood to the larynx.

When the source of bleeding is outside the mouth or nasal cavities, it does not directly affect the administrator, but bleeding from within the mouth and nose, as in nasal operations, does directly affect him, and he should be prepared, in conjunction with the operator, to take such steps as will prevent its reaching the air passages.

When the source of bleeding is within the mouth sponging only can be resorted to, and it is usually arranged by the surgeon whether the assistant or the anaesthetist shall undertake the duty.

In antral operations where bleeding comes from between the cheek and gum, a long roll of wool packed between the teeth, from the mid-line in front to the ramus of the jaw behind, makes a watertight joint, and at the same time I am in the habit, unless the surgeon object, of having the naso-pharynx plugged.

During operations within the nose or on the frontal sinuses, blood can be prevented from escaping through the posterior nares—either by plugging them or the naso-pharnyx.

The posterior nares are plugged by gauze passed through from the front; the naso-pharynx by a sponge passed up behind the soft palate, preferably with Watson Williams post-nasal plug forceps.

The arguments in favour of plugging the posterior nares are:

1. Less bleeding.
2. No risk from the pharyngeal reflex.
3. The airway is not obstructed by bulging forward of the soft palate.
4. There is less risk of secretion of mucus from irritation of the pharynx.

But in favour of the naso-pharyngeal plug, which I strongly advocate, it may be said:

1. It does not increase the bleeding.
2. I have never seen it produce reflexly any ill effect.
3. The airway is easily kept patent by drawing forward the tongue.
4. Properly introduced and kept in its right place, it gives rise to little if any secretion.

Further, it can be easily, almost instantaneously, applied after very little practice. The posterior nares are plugged with difficulty, the gauze tending to find its way into the naso-pharynx, a watertight joint being very difficult to obtain, whilst if any operation has to be done on the sphenoidal sinus or posterior ethmoidal cells, the gauze will be in the way.

To introduce the post nasal plug, which is best made of marine sponge, fix it firmly in the forceps (Fig. 2), pass it to the back of the mouth, as if its destination was the larynx. When on the posterior pharyngeal wall, below the soft palate, rotate it upwards through half a circle, when it easily slips into place, and, finally, depressing the handles, push the sponge home. The forceps are left on. Dr. Williams uses a special form of retractor to pull the soft palate forward and thus facilitate the introduction, but this is not absolutely necessary. The right size of sponge is soon learnt by practice; it should be introduced without fumbling or mucous secretion may be set up; the patient must be sufficiently under to prevent difficulty from contraction of the muscles of the palate and fauces.

On examining the soft palate, after introducing the plug, two things will be noticed—small beads of mucus standing out on the buccal surface, and a bulging forward and downward of the soft palate itself. If deftly introduced and the forceps steadied by the anaesthetist, no further secretion takes place. Should free respiration be interfered with by the bulging palate meeting the dorsum of the tongue, the small tongue hook (Fig. 2) hooked into the tip of the tongue in the mid-line will draw it forwards and clear the airway.

On the tongue hook will be noted a small ring; this can be slipped over one of the hooks on the plug forceps, thus mechanically holding the tongue forward and obviating the necessity of using the hand. There is no necessity to forcibly drag the tongue out, just sufficient tension to clear the palate being all that is required.

This may seem complicated, but the plug can be introduced and the hook fixed in a few seconds, giving a free airway, an absence of all anxiety relative to blood entering the larynx, and the advantage of being able to place the head in the mid-line without the tongue falling back. I have only heard of two patients who complained of this tongue hook—one in private and one in hospital practice. Patients when questioned next day always say they have no discomfort.

The effect of the anaesthetic on haemorrhage when care is used is not so great as some would have us suppose. Chloroform, chloroform and ether, and ether, in the order given, cause increasing amount of haemorrhage, but the amount caused by ether given with care is, in my experience, so little in excess of that produced by chloroform, that it is usually impossible to say from the amount of haemorrhage which anaesthetic is being used.

If a patient is kept cyanosed, whether from injudicious ether or obstructed airway, he will bleed, and under these circumstances it is hardly fair to blame the anaesthetic.

It occasionally happens that patients whose nasal passages have been plugged previous to operation give some trouble whilst going under with ethyl chloride and ether. Breathing takes place through the mouth until consciousness is lost, when an attempt is immediately made to breathe through the plugged nose, and it will sometimes take a lot of "dodging" to get a return to oral breathing. The best way is to use a large facepiece and to insert a small mouth-prop, when very little trouble will be experienced. The difficulty with these cases is that they refuse to breathe except through their plugged nostrils.

When anaesthesia is induced by chloroform and ether, patients with their noses plugged take longer to go under, but the same difficulty is not experienced with their breathing.

At the conclusion of an operation where the post-nasal plug has been used, after the patient is cleansed, the head should be turned on one side and the opposite shoulder raised; the tongue hook is removed but the gag left in. In this position the patient remains until it is judged that

he is sufficiently round to obviate all danger of blood entering the larynx. The post-nasal plug is now taken out; some blood is sure to be retained above it, and this, when it finds its way into the pharynx, can be sponged out. The gag should next be removed. The reason for leaving it in so long is to render the swallowing of blood more difficult, a thing to be avoided as likely to cause vomiting.

The patient is taken back to bed on his side, and kept in that position under efficient observation until round.

It perhaps hardly comes within the scope of the anaesthetist to apply haemostatic measures, although, in common with the operator, he may suffer from the want of them; but in intranasal operations by far the best results I have seen have been obtained by packing the nose just before the operation with separate small pieces of gauze, wrung out of a solution of 10 per cent. solution of cocaine with adrenalin (1 in 5,000), the strips being applied to the spot to be operated on by aid of speculum and forceps.

Management of the Secretion of Mucus and Saliva.

In cases anaesthetized for nasal operations, in the manner described above, trouble occasionally arises from secretion of mucus and saliva. This is practically always due to the adrenalin used, and constitutes the chief difficulty with which we have to deal; many of the cases do not secrete at all, and the rest if properly managed will give no trouble. But occasionally a case is found where the secretion is a nuisance, preventing a smooth anaesthesia and taxing the skill of the anaesthetist to the utmost. It is often necessary to keep the head raised and in the middle line: this greatly adds to the trouble, as the usual course of lowering the head and turning it on one side cannot be resorted to.

Secretion interferes with free respiration and so causes cyanosis, which begets more secretion; thus if great care is not taken a vicious circle is started, soon leading to a most undesirable state of things. Fortunately it is nearly always avoidable, and when it does occur is fairly easily managed.

Secretion is caused by (1) adrenalin used as a haemostatic, (2) the anaesthetic, (3) mechanical irritation by plugs and injudicious swabbing of the fauces, (4) cyanosis.

Adrenalin.

One action of this substance is to cause a secretion of thick mucus and saliva.

Now, this result has been said to occur only after adrenalin has been injected. But I have seen it after its application to the mucous membrane, and especially after it had been used to stop bleeding, when there was much raw surface, especially so if the solution was a strong one. From a few experiments I have tried on myself, I concluded that ether increased the secretion when a strong solution of adrenalin was used; but with a weak solution I could get no definite proof of this action.

The Anaesthetic.

Of the two anaesthetics, ether is the most troublesome in this respect; a strong ether vapour, as is well known, tends to cause both salivation and secretion. The importance of a careful induction has already been insisted on. When open ether vapour is first administered, it will be found that by gradually increasing the strength until tolerance is fully established, very little if any secretion will result, and this soon stops. An attempt to save time by getting the patient under quickly is much to be deprecated, as it is a very usual cause of this trouble.

Mechanical Irritation.

If the post-nasal forceps are not kept still, secretion will be set up. If steadied by one finger this trouble can be avoided.

Rough and unnecessary sponging out of the pharynx is another and fruitful source of mucous secretion. It should be done as seldom and gently as possible.

Cyanosis.

As one of the first and constant cares of the anaesthetist is to keep a free airway, cyanosis should not occur. But if it does—and for some reason the cause cannot be entirely removed—give a very small quantity of oxygen with the anaesthetic, just sufficient to keep the patient a good colour. On the few occasions I have had to use it the result was excellent.

There is one point in connexion with this question of secretion to which I wish to draw particular attention. In those cases where I have had trouble adrenalin has always been used. In a series of cases where I used this method of anaesthetizing patients for operations, both on the nose and on other regions, where adrenalin was not used, I had no difficulty from the secretion. These control cases show that the extreme amount of secretion occasionally met with is not due to the ether.

Cocaine and Adrenalin.[3]

When anaesthetizing patients for operation who have just previously been treated with one or both of these drugs, the following considerations should be borne in mind.

Under certain conditions both are poisons. The peculiar idiosyncrasy to cocaine shown by some people is well known; nevertheless I have only once seen symptoms arising from this cause. In this case the larynx was painted with 20 per cent. cocaine for bronchoscopy. Towards the end of the examination the patient showed symptoms only attributable to the cocaine. These gradually passed off. Anaesthesia was induced with chloroform and ether and maintained by a little ether. But although this is the only case I have had personal experience of during anaesthesia, I have several times seen patients exhibiting toxic symptoms after their mucous membranes had been painted with cocaine; therefore the possibility of such symptoms occurring should not be forgotten.

With adrenalin I have several times seen a group of symptoms appear which could only be attributed to its action. They have been specially marked after it had been applied to a raw surface to stop bleeding. Twice they have appeared after the nose had been packed with strong adrenalin without any breach of the mucous surface. These symptoms, which I have only seen when adrenalin was used, are a rapid pulse—from 120 to 200 per minute—a peculiar "floppy" heart action, profuse sweating, and secretion from the pharyngeal and tracheal mucous membrane. What the blood pressure is I am unable to state, never having measured it under these circumstances. I have never found glycosuria in any of the cases treated with adrenalin.

Surgical Shock.

Except in some cases of submucous resection of the nasal septum, surgical shock is not met with.

Here symptoms of both respiratory depression and cardiac shock have shown themselves—namely, shallow, irregular breathing, and a slow, weak pulse, always during that part of the operation dealing with the cartilaginous septum. Directly the septum is removed, and the bony crest is being dealt with, these symptoms pass off. Once or twice, when giving chloroform to these cases, they have caused me some anxiety. The explanation is that during the manipulation of the cartilage the naso-palatine branches of the fifth cranial nerves are stimulated, and through the connexion of the reception nucleus of the fifth nerve with the vagal nucleus inhibiting impulses reach the heart. It is well known that excitation of afferent fibres of the respiratory tract will produce cardiac inhibition, arrest of respiration, vaso-dilatation, and fall of blood pressure.[3] The afferent paths, that is to say, the naso-palatine nerves, being divided with the cartilage, the stimuli cannot pass. Therefore, when the cartilage is removed the symptoms disappear.

I now give all cases of submucous resection submitted to general anaesthesia, ether, and since doing so I have only seen these symptoms in a very much slighter form, never sufficiently marked to give rise to the slightest anxiety.

After-Effects.

These have been slight. There has been no case of pneumonia, and only one of very mild bronchitis due to blood accidentally entering the bronchi. There have been no other respiratory complications.

Vomiting: as in a large measure the comfort of the patient depends upon the amount of vomiting, I have followed my after-results closely. At first sight they do not appear good, but it must be remembered that most of these patients swallow some blood, and in my experience this is practically always vomited. Then, as the majority of the vomiting takes place before complete consciousness is established, the patient knows little or nothing about it. In only one case was treatment for the vomiting required—in that of a woman who vomited for twenty-four hours (after an operation on the sphenoidal sinus).

If the number of times that the patient vomits may be taken as a rough index of his feelings after an anaesthetic, the following table will be of interest. It must be remembered, however, that he may vomit once or twice before fully round. All the patients were prepared after the manner advocated by Mr. A. L. Flemming,[4] and the vomited matter has consisted practically of blood or altered blood.

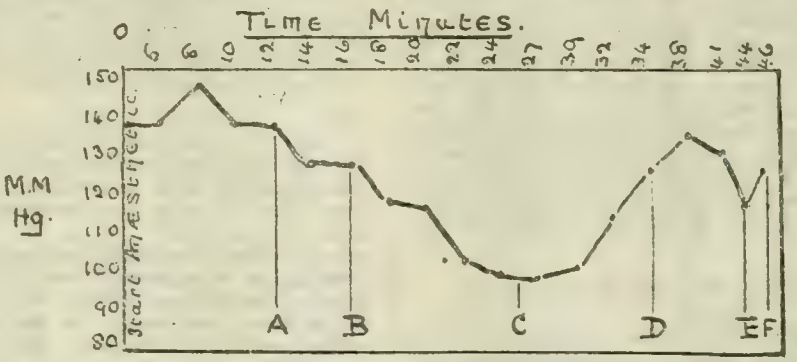


Fig. 4.—Blood pressure. Submucous resection. A, Start separating mucous membrane. B, Separating mucous membrane opposite side. C, Cartilage divided. D, Anaesthetic stopped. E, Vomiting, F, Patient conscious.

Of the cases on whom these observations were made—

Vomited.	Did not Vomit.
77 per cent.	23 per cent.

Of the patients who vomited—

30	per cent. vomited	... ...	Once.
27.5	per cent. vomited	... ...	Twice.
25	per cent. vomited	... ...	Three times.
5	per cent. vomited	... ...	Four times.
2.5	per cent. vomited	... ...	Five times.
5	per cent. vomited	... ...	Six times.
*5	per cent.; vomiting lasted over twelve hours.		

*One case vomited for twenty-four hours, and required special treatment.

CONCLUSIONS.

From the foregoing remarks it will be seen that patients anaesthetized by this method are easily given open ether for operations on the throat and nose. The chief difficulty met with is excessive secretion, which I have never seen unless adrenalin had been used. This excessive secretion has only followed the use of strong and never the use of weak (1 in 5,000 and under) adrenalin.

The method of using the post-nasal plug has been described at length; having once tried it on a suitable case, no one, I am sure, would ever be without it.

Another point I wish to emphasize is the reflex effects occasionally met with in submucous resections. From my experience I very strongly advocate ether for these cases when a general anaesthetic is used.

The accompanying chart of the blood pressure from such a case is, I think, worthy of study, and I am indebted to Dr. Watson Williams, under whose care the patient was, for permission to make the observations. (Fig. 4.)

I was unaware until the publication of Dr. A. H. Miller's[5] paper of his work in this connexion, but I am very glad to see the favourable account he gives of his results, which confirms my good opinion of open ether for the class of case under consideration. When its technique has been mastered it will be used, I am sure, in preference to any other method.

It must not be thought that on account of the prominence given to the difficulties found in anaesthetizing these cases that they are of frequent occurrence; on the contrary, they are the exception. It has been done with the view of suggesting how to manage them when they do occur.

I have to thank Professor Francis Francis and Mr. O. C. M. Davis (Bristol University) for much help in the estimation of the chloroform and ether percentages. These represent the maximum output of the machine under average working conditions. I wish particularly to draw attention to the strength of the chloroform vapour. The greatest care should be taken when using chloroform alone, but when the mixture is used, the strength of the chloroform vapour presented to the patient is diluted by the inspired air to a sufficient extent—not that this factor should make us any less careful.

With regard to the ether percentages, I am unaware what percentage strength of ether vapour is required to produce anaesthesia, but I do know that the percentage produced by the apparatus is more than is required. It is surprising what a weak ether vapour, continuously given, is required to keep a patient under. Much is harmful, giving rise to the unpleasant symptoms associated with the drug.

[I am indebted to Messrs. Down Bros. for much help in the actual manufacture of the apparatus.]

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STATE INSURANCE AND THE POOR LAW COMMISSION.

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THE Poor Law Commissioners have differed widely in opinion as to the best means of dealing with pauperism and poverty. In one thing, however, they are agreed. They have given it as their unanimous verdict that not a little of the poverty and pauperism in this country is due to the fact that there is no provision for adequate medical attendance. Nor can we deny it. The remedies put forward in the Majority and Minority Reports are generally regarded by medical men as unsatisfactory. The question now is: Are we ourselves prepared to bring forward a remedy? There can be no doubt that, though somewhat late in the day, there is now a decided movement in that direction. A scheme of medical attendance has been discussed at the Representative Meeting, and will be sent down to the Divisions, when every member will be free, and it is to be hoped prepared, to give his opinion. Of course, we are aware that the British Medical Association does not embrace the whole medical profession. Objections have been made to its constitution and management; the Association is on a democratic basis, and these are open to remedy; and of this, at least, we may rest assured, that if any scheme of medical attendance is to be brought forward, it can only be under the auspices of the British Medical Association. There is no other body at present in existence that represents the interests of all and is numerically strong enough to deal with it.

In endeavouring to contribute towards the solution of this question I make no secret of the fact that some years ago, after long pondering the subject, I came to the conclusion that the best remedy is State insurance; nor have I since discovered any reason why I should depart from that conclusion. State insurance has been in force in Germany for more than a quarter of a century. We can now study it in all its details. We can see in what

manner it has affected national life, and how far it has succeeded and how far it has failed in solving those problems that are confronting every European nation. No one can claim that it has as yet proved an unlimited success, or that we ought slavishly to follow the trend of its development on the Continent. But what I contend for here more especially is that, as regards medical attendance, it goes farther to remedy the defects complained of in the Poor Law Report than any of the proposals brought forward by the Poor Law Commission.

Wherein have we failed? As regards medical attendance under the Poor Law, the Commission affirm that district medical officers are poorly paid; that their attendance is perfunctory; that they cannot afford to give the medicine required; and, as regards the nation at large, they lay strong emphasis on the fact that the poorer classes have often great difficulty in obtaining medical attendance; that much of the attendance given is unsatisfactory; that there is overlapping; and that too little is done for the prevention of disease.

In order that we may form some idea as to how far this criticism is justified, let us, putting aside for the meantime attendance under Poor Law and public health, glance at the different systems under which the great body of the people are being treated for the cure of disease.

I.—Private Practice.

This system still holds good to a large extent among the working classes in the North of England and Scotland, and to a considerable extent in rural districts generally. Were it practicable there are probably but few medical men who would not say that it is, after all, the best. Unfortunately it is not always practicable. Take, for example, a district at my own door. There is a population of about 7,000, consisting of publicans, small shopkeepers, artisans and labourers. Many, who are not paupers, are attended through medical orders which are freely given. A number are in clubs and in a provident dispensary. Others are attended by medical men who charge 6d. or less for advice and medicine, and up to 5s. a week when they are visited daily. The greater part are attended free of charge by hospitals, and confinements by midwives. The consequence is that in this population there are not ten private patients. Many of the people living in this district have a good income, and can well afford to pay the ordinary private fee or a much larger sum than is paid to clubs or provident dispensaries. There are others—and it is this class with which the Poor Law Commission largely deals—who are not in a position to pay even 6d. for advice and medicine. Letters have from time to time appeared in the Journal, mostly from practitioners in country districts, who say that a considerable part of their income is derived from the yearly or half-yearly bills paid by men earning not more than 16s. a week, and they naturally ask why there should now be a flood of proposals for doing away with private practice. I have gone over many family budgets of those living in town and country, and reckon that those earning 16s. a week in the country are as well off as those earning 27s. or 28s. a week in the large towns, and, unfortunately, there are millions of our urban population living in houses where the income is less than that amount. Or take another extreme instance. There are districts in the West Highlands of Scotland where, according to the Registrar-General's Return, about half the people die without medical attendance. There, too, Poor Law and private practice have utterly failed.

Here, then, we are faced with a difficulty which I cannot pretend to solve. In some parts of the country private practice has succeeded, in others it has all but entirely failed. The consequence is that legislation well adapted to meet the needs of some parts of the country might prove detrimental to others. In legislating for the future there is, however, one fact that ought to be considered—namely, that the mode of life in this country is rapidly changing. Railways, motors, telegraphs, newpapers, and the transference of large industries to rural districts are altering the conditions of life, and life in the most remote country village is being rapidly assimilated to that in the towns. In these circumstances it seems not unreasonable to anticipate that private practice among the working classes may by and by become a thing of the past.

II.—Voluntary Insurance by Means of Clubs, Friendly Societies, Provident Dispensaries, etc.

The relationship between medical men and the working classes as affiliated to clubs and friendly societies has, not only in this country, but throughout Europe, been far from what might be desired. Disputes have arisen which I would not willingly say one word to accentuate. No one can possibly question the fact that the working classes have gained much by combination, and that the claims on the Poor Law have thereby been much diminished. At the same time it is evident, as was repeatedly pointed out to the Poor Law Commission, that there is a large body of poorly-paid workers who do not profit by voluntary insurance, and but little is done even for the skilled artisan who, through family circumstances, seasonal or bad trade, is unable to continue his subscriptions. In these circumstances some have thought that in framing an insurance bill Mr. Lloyd George has shown himself but too anxious to propitiate friendly societies. At the same time it must be remembered that in an insurance bill the provision of support during illness is of as much, even of more, importance than that of medical attendance. A further reason may have been that the friendly societies were more pressing in their demands than the members of the medical profession. Be that as it may, he has now told us that before that bill is brought forward we shall be consulted: and if, after all, we find that it is passed in the interest of only one party in the State, it will be our own blame if it does not meet with the most strenuous opposition.

As for the proposals of the Majority to solve the question of medical attendance by increasing provident dispensaries to which paupers would be admitted, I do not suppose that practically any medical man takes them seriously. At the present time, notwithstanding every effort on the part of boards of guardians and others, considerably less than 1 per cent. of the population belong to provident dispensaries, and I have heard of no medical man, except Dr. McVail, who believes that, though a subsidy were granted by the State, they would be materially increased.

III.—Charity through the Medium of Hospitals, Medical Missions, etc.

For a century or more it has been quite evident that in large cities at least private practice and voluntary combination would have utterly failed had there been no Poor Law and no hospitals. As Dr. Major Greenwood has clearly shown in a recent article, there was a time, after the breaking up of monasteries and the advent of Poor Law and philanthropic institutions, when the poor must have greatly suffered through the want of medical attention. Hospitals have since done excellent work, but, as we general practitioners well know, they have developed in a manner detrimental not only to our interests, but, as we believe, to those of the community. Some feeble attempts are now being made to stem the increasing tide that is rushing to out-patient departments.

I have before me the report of the first year's working of the lady almoners of the London Hospital. The report is thoroughly honest. It shows how the attempt to prevent this abuse of hospitals has been a mere drop in the bucket. After giving a sample of the well-to-do people who sponge upon hospitals, we have the statement that "the chairman has informed us that the committee intend to prosecute such cases in future for obtaining goods under false pretences." Is it likely? We have heard that so often before, but of the tens of thousands not one has been prosecuted. In the same report is mentioned the case of a woman who "was attending no less than six hospitals, and drinking medicine from each." The Minority have given us an alarmist report as to the sufferings of the poor through the difficulty in getting medical attendance. If general practitioners had been asked they could have readily given a few paragraphs to show that many poor are at the present time suffering from an excess of medical attendance. If I may be allowed to express my own personal opinion—and it is founded on daily contact with facts—it is drink, gambling, and out-patient departments that at the present time are in our large cities the most powerful factors in demoralizing the people and in leading to pauperism.

We have thus seen that, while in some parts of the country private practice meets the necessities of the case,

in others it has utterly failed; that voluntary assurance provides only for a certain section of the community, and that charity has developed in a manner prejudicial to the welfare of medical men and to the country at large.

IV.—Compulsory Insurance.

There are many respects in which our present position in this country resembles that which existed in Germany before compulsory insurance was introduced. There had been a gradual exodus from the rural districts—where the landlord or employer often paid for medical attendance—into industrial centres where it was seldom that any provision was made. That voluntary insurance had done something is evident from the fact that some years before the compulsory bill was passed there were over 5,000 clubs or friendly societies in Germany, with a membership of nearly 1,000,000. There were hospitals, but on a much smaller scale than in this country.

The position was not satisfactory. The Emperor William I and Bismarck pondered much over it. During that reign much had been done for the worker. He had got freedom of contract, and could hold his own with the employer. It was felt that that freedom had been purchased at too great a price if he were driven to the wall, and no provision was made for support and medical attendance during illness contracted, it might be, through the altered conditions of life or the nature of his employment. In this country we have begun with old age pensions, which are non-contributory. In Germany they began with sickness, and in doing so I think they took a more reasonable course. As Dr. Zacher has said:

> Insurance against sickness is the oldest and most embracing, because on the one hand the necessity of provision for the sick makes itself the oftenest and most urgently felt, and on the other hand, owing to the temporary nature of that necessity, it can be most readily relieved.

It is not necessary to give in detail an account of State insurance in Germany and other countries. These details have been given in this Journal in April last. To save the trouble of immediate reference I will describe it in a few words: The bill for sick insurance was passed in 1883. Its main principles are that every worker (all are not yet included), male or female, over 16 years of age, and earning not more than what is equivalent to about 38s. a week, should be compelled to pay for medical attendance; that the amount paid by the workers (not the doctors' fee) should be graduated according to the wage received; and that to the payment made by the worker the employer is compelled to add 50 per cent. The manner in which payment is made is by a deduction of 1 to 2 (in special cases up to 4) per cent. from his wages, and the money is paid by the employer into the insurance office.

In return for the payments made by employers and employed the worker receives half his weekly wage during illness, and medical attendance, medicine, trusses, spectacles, etc, free of charge. He may, as we shall afterwards see, in some districts call in any doctor, in others he is limited in his choice. The rule is that a note be taken from the employer, but if that is not convenient at the time it can be handed in afterwards. There has been no complaint as to delay on that account. If the medical attendant thinks it advisable that he should be sent to the hospital, there is no difficulty in obtaining admittance, as from the sum deducted from wages, to which the contribution has been added from the employer, a payment for each patient is made. And here, by the way, I may add that, though I have read the German medical journals for a considerable time past, I have never seen a single complaint as to any difficulty in admittance or as to any abuse of hospitals. For the purpose of carrying out this work societies are formed on territorial or other grounds. There are, for example, municipal sick societies, societies connected with large works, trade societies (building, mining, etc.), and others adapted to special circumstances or to the continuity of voluntary societies that existed before compulsory insurance came into force.

In 1884 a compulsory accident insurance bill was passed, according to which workers earning not more than somewhat under £3 a week receive after the first thirteen weeks, during which they draw on the sick assurance fund, two-thirds of the usual wage, while a provision is made for wives and families. The money required is paid by the employer.

In 1891, in order to provide for those not covered by the sickness and accident bills, an invalidity and old age bill was passed. In this case the employer pays an amount equal to that deducted from the worker, while a subsidy of about £2 000,000 is paid by the State.

In addition to the above the worker may, if he chooses, by further payment secure greater advantages, or he may contribute to other forms of insurance that are not compulsory. I spent some time lately in endeavouring to discover what effect compulsory insurance has had on clubs and friendly societies, but was assured at the Government offices in Berlin that my search was useless, as no reliable statistics could be obtained.

Germany took the initiative in State insurance, and it is in that country the greatest advance has been made. A careful study not only of the original bill, but of its development during more than a quarter of a century, is necessary for the preparation of any bill that will adapt itself to our national needs. Statesmen, ecclesiastical and social leaders, have evidently made up their minds that a bill of some sort must be passed, and, as Professor Moore has said, were we as medical men to oppose it, it would be equivalent to butting our heads against a stone wall. It is incumbent on us, therefore, to go thoroughly into it. How far Mr. Lloyd George and other statesmen have made inquiry I am unable to say. At the sick-insurance offices I have visited in various towns there is no lively recollection of any inquiry having been made. In any case, it is scarce to be expected that, beyond trying to discover what would affect the nation at large, they would devote much time to matters that are of special interest only to medical men.

That compulsory insurance has proved an unmitigated success in Germany is more than its most enthusiastic advocate can claim. Bills were produced when there were few data and no experience on which to proceed. This has rendered the position more difficult. In this country, with the exception of the Old Age Pension Bill we have a clean slate, and there appears to be no reason why in these circumstances we should not evolve a system superior to any that exists on the Continent.

I cannot now refer to all the difficulties that have cropped up during the development of State insurance. Suffice it to say that they are mostly due to the fact that the three bills mentioned were passed at three different dates. Employers do not always know to whom to pay their subscriptions, and employees do not always know to whom to apply. The different societies to which I have referred are most confusing, to an outsider at least. In Leipzig, which I have always, rightly or wrongly, regarded as a model of management, there is one society with about 170,000 members. In Berlin the number of societies, up to recently at least, was 155. This and much else could be readily simplified, and the cost of management, which is at present from 5 per cent. to 10 per cent., could be still further diminished had there not been mistakes in the past.

A strong attempt is now being made to remedy these defects. A new bill has been introduced containing 1,754 paragraphs. The preamble alone is a bulky volume of 784 pages. This bill has been referred to a Parliamentary Committee who have got through a little over 400 paragraphs; the discussion of which has been reported in the daily press. The final issue it is by no means easy to forecast.

One result of this new bill certainly is that it has awakened animosity and accentuated differences that have long existed between many of the medical men and those belonging to insurance societies. The main point in dispute is the "free choice" of doctors. In some towns and districts there has been absolute freedom on the part of those insured to call in whatever doctor they choose, so that apart from the mode of payment the relation of doctors to patients is that of private practice. In others, especially in the case of those attached to large factories, the choice has been limited. In April last 491 delegates, representing nearly 24,000 medical men, met in Berlin and all but unanimously—there were three dissentients—emphatically protested against the new bill and affirmed their ideal of free choice. What right, they ask, have sick offices to prescribe how many or what doctors should practise in a particular district? The working classes themselves have freedom of contract, why should medical

men be restricted? Why, as in many districts would doubtless be the case, should they have to trim their political opinions to suit a political party? It seems, however, evident that not a few of the societies wish to have the doctors under control. If there be absolute freedom of choice, they say that medical men will court popularity and give certificates, so that there will be no limit to malingering. Besides, if payment is made according to the attendance given, medical men will pile up bills so as to drain the insurance societies. As to malingering, the doctors admit that there are black sheep in every flock, but they say that when complaints are made they can readily be settled by a strong committee of medical men; while the fact that employers who contribute and have an interest in the amount paid ought to prove an additional safeguard. The question as to piling up unnecessary attendance when freedom of choice is given is not so easily solved. I do not think that it can be denied that during the first few years of State insurance there were medical men who took a dishonest disadvantage. A child might be brought to a surgery, and it might be elicited from the parents that there were three others at home suffering from the same disease. In this case a charge for four consultations was made. The claims sent in came as a surprise, and the future of State insurance was seriously threatened. Many measures were tried. I have beside me the annual reports for the past twenty-five years of the working of sick assurance in Leipzig, and it is most interesting to watch the development. The plan at last hit on was to fix a certain sum per head, and if the total demands for attendance exceeded the multiple of that amount, what is termed a liquidation was made, and a certain percentage was deducted from each bill. This system seems now to work satisfactorily. It would require a volume to enter into detail on the different matters involved in this dispute. It is being constantly referred to in the daily press, and discussed at great length in the medical journals. Already, as is generally known, it has led to a strike in Cologne. Meantime, the insurance societies in Cologne have conquered. They have brought in what are usually termed "blacklegs," and it is generally admitted that they are the dregs of the profession. The people seem to be losing confidence in them, and notwithstanding their efforts and the prying of officials, one does not find in the latest statistics any proof that they are succeeding in the prevention of malingering or lessening the claims for medical attendance. It is quite possible that this strike may extend over Germany. Both parties are confident in their position. The 24,000 members of the Leipzig Verband affirm that if their claims are not granted they will refuse medical attendance, and the societies will be compelled to yield and State insurance become impossible. Insurance officials, on the other hand, say they will stick to their position, and that though 24,000 men are banded together, there are still 12,000 on whom they can safely rely. Judging from the state of matters in Cologne, it does not appear that many of the 12,000 would show themselves inclined to back up the societies.

The wage limit has furnished another subject of dispute. Hitherto, as we have said, sick insurance has been limited to those having a yearly income of not more than 2,000 marks. It is now proposed to extend this limit to 2,500 or 3,000 marks. In the Parliamentary Committee a Social Democrat proposed 5 000 marks. In Austria it is proposed to raise the limit to 3,600 marks. Medical men contend—and they have supported their contention by elaborate statistics—that if the limit were raised even to 2,500 marks, it would mean the almost entire elimination of private practice in many districts; and they further contend that while the amount paid under State insurance by the average workman might be sufficient, they would seriously suffer if attendance were to be had on the same terms by well-paid artisans and the middle classes. Further, the new bill proposes to cover a class not hitherto reached by State insurance, namely, farm servants and those living on a few acres of ground. Were the limit in their case to be fixed at 2,000 marks, there are many rural districts in which there would be practically no field for private practice. A limit of 900 marks is regarded by many medical men as quite sufficient to meet the necessity of the case.

In reading the journals that deal mostly with this dispute, one is struck by the fact that comparatively little is said as to the actual rate of payment. As there is a general impression in England that German doctors are very badly paid, perhaps I may be pardoned for devoting a little more space to this subject. Two months ago our Government kindly gave me introductions to the Ambassador at Berlin and to the Consul-General at Hamburg, in order that I might have greater facilities for inquiring into State insurance. Through their great courtesy and kindness, for which I cannot be too thankful, I had a ready entrance into Government offices, discussed the subject with State and other officials, doctors, and heads of insurance societies. One thing I noted—that when the dispute between the doctors and the insurance societies was mentioned there was hardly any one who could discuss it dispassionately. For example, when the rate of payment was referred to, I was told by insurance officials that the doctors were extortioners; that they were plundering the poor; that in no other trade or profession was it possible for a man to make £500 or £750 within the first few years. On the other hand, the doctors say that it is scarcely possible to eke out an existence, and quite impossible to make adequate provision for wives and families. The truth seems to lie between the two extremes. In this country there is no means of precisely estimating the average income of medical men. In some parts of Germany it seems possible to make a more precise estimate, as statements have been published giving the amount on which income tax is paid. I have, for example, beside me the statistics from Schleswig-Holstein, a State in which there are practically no large towns, and where the inhabitants are mostly occupied in agriculture, navigation, and fishing. The following are the amounts on which income tax is paid by the 603 medical men in ordinary practice:

Under £200	28 per cent.
From £200 to £300	22 ,,
From £300 to £400	20 ,,
From £400 to £500	13 ,,
From £500 to £750	12 ,,
From £750 to £1,000	3 ,,
From £1,000 to £1,700	2 ,,
	and one over.

When we thus find that 70 per cent. have a net income of less than £400, we may probably take it that the average income in a similar district in England is somewhat higher. But in judging this matter we must take into account the fact that life in Germany is simpler, and that not so much is expected by patients in the way of expensive motor cars and other kinds of expenditure not absolutely necessary. And, further, we must note the steady increase of fees under State insurance. In Hamburg, for example, the amounts paid by each member of this municipal insurance society for medical attendance (medicine not included) in 1895 was 2s. 5d. In 1909 it was 7s. In all towns there has been a steady increase. That the financial position of medical men in Germany is better than is generally supposed is further evident from the fact that though there are good openings in commercial and scientific pursuits, the number of medical students during the past six years has almost doubled. (In the winter session 1904–5 there were 5,926; in 1909–10 there were 10,263.)

We have thus seen that though the financial position of medical men in Germany is not all that could be desired, it is better than it is often represented to be. The German system of State insurance is not perfect, nor do I know that a perfect system is possible. A modern writer has said that: "The modern Utopia must be not static but kinetic, must shape not as a permanent stage but as a hopeful stage leading to all manner of stages." Much depends on the individual. Better, perhaps, than a perfect system would be "a flexible common compromise in which a perpetually novel succession of individualities may converge most effectually upon a comprehensive onward development." Viewing the matter in this light, and putting aside details, there are certain general principles in State insurance for which I contend, and which, if wisely adapted, would, I believe, solve all our difficulties.

1. *Compulsion.*—We are constantly told that the great body of people in this country will not tolerate compulsion. Before rushing to that conclusion it would be more reasonable to consider what compulsion means. There are certain things which are better done by us as individuals. There are

others which are better done by the municipality or the State. It would be impossible for every family in London to provide their own water supply. In getting it otherwise we are compelled to submit to conditions. England has already travelled far in the way of compulsion. Education is compulsory, and though we may not all care to send our children to the Council schools, we are compelled to pay for the children not only of paupers but of those who may be earning thousands a year. Turn where we may we find compulsion. We may be attending the children of well-to-do people for some infectious disease and expecting a good bill. The sanitary inspector steps in. They are removed to an institution where they are maintained at great expense, and we are compelled to pay for them. We are compelled to notify births and certify deaths free of charge, and if general practitioners continue to be as apathetic as in the past, we shall soon be compelled to pay hospitals and midwives for doing work for which we were educated and which we are quite capable of doing. Medical men are compelled. But there must be no law to compel men earning good incomes to make provision or pay for medical attendance! They may talk loudly about independence, squander their money, sponge upon charity, and become a burden on their poor and provident neighbours, but they must not be compelled. If England is to hold its own among the nations, some regard must be had to the *moral* as well as the physique of its people. Happily there is one good sign of the times—namely, that one can hear the strongest language on this subject from the better working classes themselves.

Among those who object to compulsion are the authors of the Minority Report. They there tell us that in this country "Compulsion is totally impracticable." In what respect do we differ from other nations where it is found to be practicable? A strange statement this is to come from the authors of a report who themselves advocate a form of compulsion more drastic than any country has heard of. As a straw will sometimes show how the wind blows, I may be pardoned a simple illustration. Some years ago there was in my own neighbourhood a rapid increase of rates. The people protested, but there was no great excitement. Shortly after the council gave notice that all houses under a certain rental were to be inspected, if any part of them was sublet. The feeling was so strong that the council had to resile from their position, and promised that there would be no inspections unless some prima facie evidence of nuisance existed. So far as I read the signs of the times, the public, especially the working classes, will submit to a great deal in the form of deduction from wages or payment of rates, but they will not submit to such a form of compulsion as will allow lady health visitors and others to enter their houses and compel them to submit to medical treatment. We may strain at a gnat, but we need not try to swallow a camel.

2. Another main principle of State insurance is that, in order to adequate medical attendance being given, assistance is required from the employer and the State. As already said, the Poor Law Commission have laid much stress on the fact that there is a large body of people in this country, not paupers, who cannot pay for medical attendance. And here I entirely agree with the authors of the Minority Report when they persistently ask, Why should a man be compelled to become a pauper because he is sick?

It is needless to dwell on the fact that it is the duty of the State to secure for all the best possible measure of health. The State has already recognized its obligations in that respect, and has expended large sums on public health. Board, lodging, and medical attendance are provided free of charge, not only for the poor, but the rich when they are suffering from infectious disease. There has been but little limit to expenditure in that direction. Is it due to the remissness of general practitioners that hitherto, apart from the Poor Law, the State has done nothing in the way of providing medical attendance for the hundreds of thousands who suffer from non-infectious disease and who cannot afford to call in a doctor?

It might seem at first sight more difficult to explain why the employer should contribute to the cost of medical attendance on his workers. And yet, if we are not blinded by custom and totally absorbed in our insular ideas, the reason seems plain. In feudal times—it might be from pure selfishness—the landowner took on himself the responsibility for the health of those on his estate. In those parts of the country where remnants of the patriarchal system still remain the master provides for the health of his servants and the employer for that of his workers. Many of us can look back to our early days in practice when, if a man was injured at work or took suddenly ill, the bill was paid by the employer. He is now taken to the nearest hospital, where he is treated at the expense of the charitable public, and if any considerable contribution is made by the employer he is applauded for his liberality, but he in no way recognizes any obligation. This is not as it should be, and the better class of employers fully recognize the facts. There is a spirit of great liberality among many employers, and they aim at something higher than popular applause or titular distinction through giving large sums to charities. They know that money given as at present is often misspent. They have a genuine interest in their workers. They are desirous of a closer relationship than the mere cash nexus, and not a few of them would, I believe, gladly give more if they could but see the money wisely expended. To those who are not acquainted with the discussion on the new German bill it may come as a surprise that the employers are desirous of paying more rather than less. It will be remembered that, according to the law as at present, the employer contributes one-third and the worker two-thirds to the sick insurance fund. The employer now wishes to pay one-half, the reason being that he desires an equal share in the management. From this it is evident that there is no strong objection on the part of employers in Germany at least to contribute towards medical attendance on their workers.

There are two considerations that appeal to employers in this country. First, they reckon that if money were paid in this way there would be less to pay as a poor-rate. It would be too tedious to go into statistics, but I think we may take it that State insurance has reduced the poor-rates in Germany by at least one half. I have made a rough comparison between what some firms in this country are paying as poor-rate and what they would have to pay if State insurance were introduced, and reckon that they would have to pay considerably more, but that there are compensating advantages. Another consideration that appeals to employers is the fact that now that the Poor Law Commission has sat they are likely to be called on to pay more in any case, more especially if the recommendations of the Minority are adopted. If, as under that scheme, payment of trifling sums for medical attendance are to be recovered, it seems doubtful if the amount received would do more than cover the cost of collection. We can learn from the past. Some of us can well remember what happened when education was made compulsory. There were many parents who could not pay the fees. School boards became heartily tired of remitting fees, and few attempts were made to recover. The consequence was that the House of Commons, with, if I mistake not, five dissentient votes, peremptorily settled the whole business, and made education free to the children of rich and poor alike. If the recommendations of the Minority were carried out, we need scarce doubt that the result would be the same as regards medical attendance, and the burden of rates and taxes vastly increased.

While claiming that the employer should contribute towards attendance on his workers, there is, however, one respect in which, I think, he already pays more than his due. It will be remembered that in Germany the cost of insurance against accident does not come into force until after thirteen weeks, so that up to that time the burden does not, as in this country, fall entirely on the employer. As accidents are quite as often due to the carelessness of the worker as to defects in machinery, there seems to be no reason why the worker should not contribute his share. Were this done, the employer would be placed on a more equable footing, and it is probable the number of accidents would be largely diminished.

3. Were State insurance introduced in this country, there is one principle for which our German *confrères* have strenuously contended, and for which we too, I think, should strenuously contend—namely, the independence of the medical profession.

We are here beset with danger from two different quarters. If the proposals of the Minority Report are

carried out, we become the servants of county and borough councils. Much has been said against guardians. With a few exceptions, I do not think they can be accused of having unduly interfered with their medical officers. Part-time medical officers of health have not had all the freedom that could be desired, and when we see after every municipal election the scramble of jerry-builders and owners of small property to get on health committees, we naturally surmise that the position even of the whole-time medical officer, if he do his duty, is not always an enviable one. Hitherto the great body of the profession has been free from outside control, but were practically all to become subject to municipal authority, the position of those holding appointments would be less comfortable than it now is. Great attractions in the form of large salaries and motor cars have been held out to us as the price of our freedom. Many of us who are general practitioners are too old to depart from the traditions of the past, and it would be a great hardship were we obliged to seek appointments or promotion through public bodies. Like our German *confrères*, we are equally anxious that our profession should not be lowered by political or other wire-pulling becoming a condition of appointments or promotion rather than ability and capacity to practise our profession.

Further, were a State insurance bill passed, the danger is that we might become, even more than we now are, the servants of clubs and friendly societies. Under State insurance, as we have seen, the freedom of medical men may be as great as in private practice. This has always existed in some parts of Germany. In others it has not, and now there is the determination to fight for it. I shall not refer to the differences that have arisen in Germany as to the amount of fees, and as to whether payment should be according to a fixed sum per head or to the amount of attendance. These difficulties can be got over; but if the voluntary societies in this country are to insist that any man, whatever his income, may become a member and be entitled to medical attendance, I cannot see how a reconciliation is possible. In no other country has a similar demand been made. The German societies have always admitted a limit beyond which members shall not be admitted. The contention has only been as to the amount at what that limit shall be fixed. How this difficulty is to be got over I know not. As there is at present a committee consisting of members of the British Medical Association and the representatives of friendly societies, it may not be advisable to say much on this subject. Possibly, however, I may be allowed to make a suggestion. As these societies exist for trade purposes and the support of their members during sickness, is it, in consideration of the present position, absolutely necessary that they provide medical attendance? The Hearts of Oak Society, for example, seems prosperous enough, and it does not regard this as a necessity. Be that as it may, we must hold our own, and support our members if they plainly say on what conditions they are willing to hold their appointments. Trades-unionism is foreign to the spirit of our profession, and it is sincerely to be hoped that these differences will be settled, and that, like our German neighbours, we shall not be compelled to take up an absolutely antagonistic position, and decline to continue attendance unless under reasonable conditions. In any case, I hold that all advantages that might accrue through State insurance or otherwise would be dearly bought if the medical profession in this country were to lose its independence.

4. State insurance has for its object not only the treatment but the prevention of disease. For the prevention of disease it is essential that there be no difficulty in obtaining treatment. As every member of a State insurance society is entitled to attendance and medicine free of charge, there is no temptation to delay till a disease has passed its earliest stage. Nor is there, as in this country, any difficulty or delay in entering the hospital, sanatorium, or convalescent home. In the annual report just published of the Leipzig Municipal Sick Insurance Society, one finds numerous illustrations, constituting quite a work of art, of the institutions provided by the society and private individuals.

At the same time be it noted that, apart from infectious disease, there is no compulsion to undergo treatment. For this it is reckoned there are other safeguards which are quite sufficient. It is, for example, the interest of the employer, who has to bear his share of the cost of the maintenance and treatment of his workers during illness, to see to it that they are not injuring their health nor unduly delaying to seek adequate treatment. The advent of disease makes itself known to the individual himself, to his friends and neighbours, and whatever precautions are taken it is probably but seldom that its presence is discovered otherwise. Some of the German officials I met were well acquainted with the proposals put forward in the Minority Report and regarded them as ludicrous. Are you, I was asked, to send your young lady health visitors to interview big navvies, to diagnose their ailments, and to compel them to submit to treatment? Others, to whom I explained our present position, regarded these proposals as too absurd to be credible.

I do not think it can possibly be denied that in recent years a great advance has been made in the prevention of disease and in sanitation in the large towns in Germany, though progress has been but slow in many country villages. State insurance, working hand-in-hand with the public health system, has been making a determined fight against tuberculosis. A vigorous campaign is now being initiated against alcoholism and sexual disease. It is quite true that one seldom sees a man what is termed the worse of drink in Germany. At the same time it is becoming more fully recognized that the drinking of enormous quantities of light beer and coarse spirits are undermining the physique of the nation. They further claim that their mode of dealing with the prevention of disease is more practical than in England. Why, I was asked, have the English people been spending millions of pounds in an endeavour to stamp out scarlet fever, when they might have seen long ago that the measures they have adopted were utterly unpractical?

Quite recently I spent the greater part of two days in wandering through the poorest parts of Berlin and in conversing with all manner of people. I saw poverty enough, as was evidenced by the clothing and impaired physique, but I failed to discover one man, woman, or child unwashed or with unmended garments. Rightly or wrongly, I could not help attributing this in no small degree to their system of public health and to the self-respect engendered by the contributory system. In Hamburg, with its large foreign population, I found two districts that approximated to the slums in our English cities. But there, too, rapid progress is being made. Property is being bought up, houses are being pulled down, and it seems not improbable that in a few years the narrow and crowded streets will have entirely vanished.

Since writing this paper I have received a long list of questions from several medical men. Some of these I am unable to answer, as I have neither had the leisure nor the opportunity to become as fully acquainted with the subject as I could wish. The difficulty lies in the fact that there is a great difference as to details in different districts. Fees, for example, and many other matters are arranged locally between the medical men and insurance offices, and when disputes arise there are different authorities to which they can be referred. It would be impossible to state precisely the average amount paid where there is a fixed sum for each individual. I have gone through the reports of several towns, but know that I am quite open to correction when I set down the average as a little over 6s. for each member. This, it will be understood, does not include medicine, medicine being supplied, unless in remote country districts, by chemists, who contract for a fixed sum, and are paid in the same way as medical men. Chemists do not prescribe even for trivial ailments. In Leipzig the fee for the first visit is 2s., and 1s. afterwards, extra fees being paid when the distance is more than three-fifths of a mile, for night visits, confinements, operations, etc. It has not always been found possible to make arrangements for families. On the list of insurance doctors there are general practitioners and specialists, and in large towns there are central clinics where there are a number of doctors, and there is no weary waiting till patients are seen.

The subject has been much discussed by the Committee who are sitting on the new bill, but it has not yet been found possible to include casual labour. A leading Government official told me that this is not a matter of so much interest to them as to us, as he did not believe that in all Germany there are 100,000 casual labourers. Happily this problem seems in the way of being partially solved in

this country, as many employers are now seeing its disadvantages and endeavouring to secure regular instead of casual labour.

A further question has been asked—How would State insurance affect the different grades of the profession? So far as I can see it, the Poor Law medical officer would continue to hold his present office, but the amount of work would be considerably curtailed. Part-time and whole-time medical officers of health are required. The Polizei-Arzt—whom we must not regard as the police-surgeon, but rather as somewhat equivalent to our part-time medical officer of health—is much in evidence in Germany. Were a movement to take place here for "free choice," as in Germany, club and works' appointments might be gradually thrown open, and those holding these appointments might lose some of their patients, but the loss would be compensated through a higher fee being paid owing to the contribution from the State and the employer. At the initiation of State insurance this difficulty was got over more easily than was anticipated, and among the 24,000 medical men banded together for free choice are many who are holding appointments. Were State insurance to be made universal in this country, practitioners living in districts where the working classes pay good fees might find themselves worse off financially, but there seems to be no reason why matters of detail should not be left to be settled according to the needs of this community. In large towns and districts where the working classes pay little or nothing, as every worker would be compelled to pay, the income of the general practitioner would be largely increased. The amount paid under State insurance has not, so far as I can make out, influenced the rate of payment by the middle and wealthier classes. As a line of demarcation has thereby been drawn, and as one can readily know who are entitled to low fees and to charity, we might reasonably anticipate that the field for consultants and private practice would be greatly enlarged, but, as Sir Arthur Downes has said, "The future must largely depend on the action of the great voluntary hospitals and institutions of charity and self-help."

I shall conclude by quoting the words used by the opening speaker at the recent congress in Berlin, though I cannot give the full force of the original:

> Let all our deliberations be inspired by a sense of the seriousness of the position, inspired by the love of our calling and profession, inspired by the necessity of a faithful and strong combination, but also inspired by the love of our country, for it is our firm conviction that compliance with our wishes and demands would benefit not only ourselves but the nation at large.

Whatever benefits State insurance would confer on the medical profession, I am strongly convinced that it would still more benefit our country by encouraging a higher tone of morality, by mitigating the lot of the poor, by promoting independence and patriotism, and by enabling us to hold our own among the nations. It is in this, I think, and in no narrow-minded or selfish spirit, we ought to appeal to our country and our Government if we expect them to comply with our demands.

STATE INVALIDITY AND SICK INSURANCE.

CONSIDERATION OF THE TERMS AND CONDITIONS ON WHICH THE NECESSARY SERVICES OF THE MEDICAL PROFESSION SHOULD BE OBTAINABLE.

By E. ROWLAND FOTHERGILL, M.B., B.S.,
WANDSWORTH.

The physical deterioration resulting from unemployment, insufficient or bad food and housing, neglected ailments, etc., with all the consequent injury to succeeding generations, has for some time been brought prominently before the medical profession.

All parties in the State now recognize their existence and their urgency, and are in favour of taking some steps to try to stop this human wastage.

The Problem.

The problem would seem to be how to maintain the 15,000,000 of the labouring classes in the most perfect physical conditions so that they may one and all retain their positions in the "fighting line"; how to return to this fighting line with the least possible delay those who are laid by temporarily through illness or accident; and how to prevent those who through age, illness, or accident have had temporarily or permanently to leave this fighting line from becoming a source of danger to the health of others.

That portion of this problem which more nearly interests the medical profession has been labelled "invalidity."

Charity.

As it is the Government which intends to bring forward proposals to deal with this problem, which to be complete should include recommendations covering medical attendance, any further necessity for appealing to the medical profession in the name of charity is gone. The profession, however, should be on its guard that any difficulties that may for the moment arise in the elaboration of a scheme are not solved to the satisfaction of the laity by some such appeal. Each party interested in the scheme—whether the State, friendly societies, trade unions, employers, or the medical profession—can quite well be left to do its own charity in its own way, and not as a consequence of coercion.

Insurance Company.

The scheme should be worked on an insurance basis. Who is to be the insurance company?

As the State with its limitless possibilities of calls will be fully able to guarantee the funds necessary for an efficient and constantly improving service, and as it must control the distribution of the funds in order to safeguard the interests of the taxpayers and the beneficiaries, it alone would seem to be the party to take this position of responsibility.

The State, therefore, would guarantee:—

(1) To the beneficiaries:

- (*a*) Medical attendance during accident and illness.
- (*b*) Sick pay during accident and illness.
- (*c*) Pensions when permanently out of work through illness before being 70 years of age.
- (*d*) Sustenance and medical attendance for the families of those laid by.
- (*e*) Adequate wages during unemployment due to no cause over which the beneficiary had a control, or which is a result of physical defects.

(2) To trade unions, friendly societies, State hospitals and dispensaries (clinics), nursing and convalescent homes, nursing associations, and all branches of the medical profession adequate funds wherewith to meet the claims on their respective services.

Determination of Funds Required.

The trade unions and friendly societies will no doubt be consulted, if this has not already been done, with reference to (*b*), (*c*), (*d*) and (*e*).

The medical profession should be consulted—and through the only body representative of it (the British Medical Association)—with reference to (*a*) and (*d*).

The Government having obtained the necessary data from all parties, can then with actuarial advice determine the total amount of funds required to carry any suggested scheme into operation, and also apportion the amounts of the contributions to be asked from the State, the employers, and the employees.

The Question for the Medical Profession.

The Chancellor of the Exchequer has expressed his willingness to receive a deputation from the Association to discuss the proposals of the Government in so far as they may relate to the medical profession.

It would therefore seem opportune to consider what reply the Association will give to the question, "On what terms and on what conditions does the Association suggest that the necessary services of general practitioners, consultants, and specialists should be placed at the disposal of the State?"

The Terms of the Contract.

If the medical profession decides that it is desirable in the interests of the community, as well as of itself, that there be some scheme of invalidity insurance covering

Table giving Some of the Advantages and Disadvantages stated to attach to the Three Proposed Terms of Contract.

	(1) Payment per Head per Annum.	(2) Whole-time Appointments.	(3) Payment for Services Actually Rendered.	Comments.
What would be the position of the doctor in an epidemic?	The Government would exact the extra services required in fulfilment of the bond	The Government would exact, without any increase of remuneration, the extra services required in fulfilment of the bond	The Government would pay the doctors for the extra services required	The doctor becomes the insurance company in proposals (1) and (2).
What would be the position of the doctor when the Government desired additional duties?	As in the Post Office appointments, these duties would be imposed with no increase of capitation grant	There would be no increase of salary	The Government would pay the doctors in accordance with terms arranged with the British Medical Association	Ditto.
Could the State rest satisfied that the proposal would tend to prevention of disease?	No. As a consequence of the application to the doctor on the most trivial excuse the doctor has come to treat most of such patients by "a bottle of medicine" after lightning diagnosis	As in proposal (1), the benefit will be *nil*	As the doctor will obtain a fee he will be encouraged to devote time to the patient	In any case, the best way for attaining the object in view would seem to be by compulsory visiting at stated periods for a guaranteed fee of the patient by the doctor.
Would not the Government [illegible] treatment covered by the insurance?	Yes. But as no one doctor is qualified to give every attention there are bound to be extras	No doubt there would be whole-time officers from all branches of the profession	As payment is by fee the necessary treatment can be obtained of the competent doctor	No scheme with loopholes would appeal to the State.
Could it be said that by this scheme a doctor had underwritten the State's insurance policy?	Yes	No	No	Doctors are tired of being insurance companies, with no capital to draw on except their own health and the interests of those dependent on them.
Can it be said that the patient has an absolutely free choice of a doctor?	[illegible] for the two are the [illegible] a year, whether [illegible] desire to cancel the arrangement	No. The State would bind the beneficiary to a certain doctor	Yes. Both are at liberty to cancel at any time the arrangements made	Those who at present have full liberty of choice and will be compelled to insure will not favour proposals (1) or (2).
Would patients complain of neglect and that a doctor was not doing his best?	They do so now, and in lengthened illnesses doctors transfer them to hospitals [illegible] to save their time and drugs	As in proposal (1), the same position would arise	Seeing that doctors are paid by fees, the justification for such an assertion would be questionable	If the State desires prompt recovery of a beneficiary proposal (1) would defeat that object.
Is the proposal likely to encourage farming out the patients of a doctor to [illegible] and underpaid assistants?	It would be impossible for a doctor to do the work otherwise, there being no check on the demand for his services	Not possible	Being paid by fees, if the doctor could not attend he would [illegible] assistant	The State is hardly likely to organize any service allowing of this abuse.
Will a doctor be able to know his income under the proposal?	Yes. For example, he will know he will get £400, and no more, however much he does	Yes, as proposal (1)	Yes, seeing that in private practice doctors can roughly estimate their probable receipts. He will know he will get £400 for the work done under proposal (1), and most certainly a good deal more on an average of years	—
Does the proposal relieve the doctor from being the slave of his patients?	No. He is tied for a year, having no access to him the patient on the list.	No	Yes. At a [illegible] the doctor [illegible] practice, [illegible] ance	Although proposal (1) gives a beneficiary a choice of all doctors in the district, it only increases the number of possible slaves.
Will doctors have cause to [illegible] their services?	Yes; as at present	Yes	No	The State as well as the employers, as they help to pay the doctor, will associate themselves with the employer as taskmasters, and compel acquiescence. A doctor might be ruined by this pressure.
Will there be any remuneration for the doctor being paid for extras not covered by the capitation fee?	There [illegible] would be [illegible] on attending [illegible] tion of his [illegible] ment, when the patient would transfer himself to another doctor, and leave pay his debt	There would be no extras	Each item would be guaranteed payment in accordance with tariff of fees	—
If a doctor succeeds to a practice would have [illegible] known ages and state of health of beneficiaries on his predecessor's list?	Yes. The older the beneficiaries are, the more attendance they require. He would give the attendance for which his predecessor had received and retained the payment	No	No. He would know that the more attendance the more payment to himself	—
If a beneficiary develops a chronic illness, what would probably happen?	At the termination of the year's contract, no doctor would accept him at the capitation fee, the risks being unknown	Nothing. Only more work for the whole-time officer	Extra fees would be received by the doctor	The State would not approve any scheme which threw out of it invalids and the aged.
Does the proposal offer the doctor any inducement to transfer his present club patients into the scheme?	No; for he would saddle himself with two additional taskmasters (the State and the employer), even if he did receive a higher premium	No. As in proposal (1)	Yes. He would obtain payment for work done and be independent of officials	Under proposal (1) a doctor might receive £100 for attending 500; under proposal (3) he would retain, say, 400 members, and receive more than £100.
Seeing that the probability is that all earning under £160 may be in the scheme, does the proposal benefit or harm the doctor who at present gets paid by account?	Great harm would result in greatly lowered income	As proposal (1)	No harm would result providing fees in tariff were on a satisfactory scale	The probability is that in districts where there is no club practice, if proposal (1) is enforced, that the beneficiaries will contract out, and the scheme be a dead letter.

medical attendance,* then there would seem to be four possible replies as to the terms:

(1) By a fixed payment per beneficiary per annum, throughout the United Kingdom.

(2) By whole-time appointments with security of tenure and participation in a superannuation scheme, throughout the United Kingdom.

(3) By payment in direct accordance with services rendered; such payments and services being determined in a tariff covering all possible contingencies, and which has been agreed upon between the Government and the Association, such tariff to be applicable throughout the United Kingdom.

(4) That the United Kingdom be divided into zones. That proposal (1) or (3) be made applicable in a zone as might be determined by the local Board of Control after consulting the local medical profession.

Funds for the Medical Service.

It cannot be too early recognized that, although the Government will no doubt be willing to give the Association adequate representation on all central and local Boards of Control formed of parties interested to deal with the whole scheme, there can be no possible chance, in these days of representation going with taxation, of that portion of the funds necessary to cover the medical service (several millions a year) being handed over to the Association for it to distribute.

The organization of the Association centrally and locally will probably be found useful by the State for the ethical control of its members, and for voicing the wishes of the medical profession.

Axioms to be Used in Testing the Advantages and Disadvantages of the Terms.

Before enumerating some of the advantages and disadvantages stated to attach to each one of the suggested terms of the contract, it might be useful to repeat certain axioms by which to test these terms.

(*a*) The true interests of the community and those of the medical profession invariably coincide. Any scheme suggested for providing medical assistance which does not recognize this fact will prove ultimately to be unsound.

(*b*) Any system of medical assistance to prove satisfactory should ensure that the payment to the medical man should be adequate, and in accordance with the professional services required.

(*c*) Under any scheme of insurance against the cost of medical attendance it should be possible to place the insured in a similar position in all respects to that held by a person whose financial state renders an insurance unnecessary.

The Advantages and Disadvantages stated to Attach to Each Proposal.

As no correspondents have placed before the members in the JOURNAL arguments in favour of whole-time appointments, or fixed payments per head per annum, it is necessary to refer to those advanced at the recent Representative Meeting, although even there the recommendations in favour of the latter proposal were such as might be expected to be advanced by a beneficiary, and not a medical attendant.

For clearness of demonstration the three proposals, with a few advantages and disadvantages said to attach to them, have been placed in a tabular form (see p. 749).

As in no insurance business is it allowed to the beneficiary, on his own unsupported testimony, to demand the benefits for which he has insured, those in favour of proposal (1) would seem to have to provide some safeguard in order to obtain general acceptance of their recommendation. Another safeguard which it would seem to be necessary to provide is a maximum limit to the amount of benefit which can be obtained in return for the amount of premium paid. On the other hand, those in favour of proposal (3) would have to provide some safeguard against collusion between the beneficiary and the medical attendant with the object of making the account for the latter as high as possible. In Germany this seems to be done through the ethical control exercised by the medical association.

The advantages and disadvantages tabulated on p. 749 do not exhaust the number that it is said can be enumerated, but they will suggest others to those who are conversant with practice of a contract nature, as well as afford an opportunity to any who favour one system to advance arguments for or against the statements made.

Two arguments have been advanced in favour of proposal (1)—namely, that medical men are used to this system and would not readily understand any other; and, again, that there does not seem to be any great disposition on the part of doctors, although constantly protesting, to give up that form of contract. The former argument has been advanced in favour of skinning eels alive, and the latter might be advanced in the form that it is quite unnecessary to provide a man overboard with a lifeboat seeing that he is clinging so tenaciously to a spar of timber.

The Conditions of the Contract.

It is not possible to enunciate conditions before we hear the intentions of the Government. But these three might probably prove acceptable to the medical profession:

(*a*) That in all negotiations with the members of the medical profession the British Medical Association, its Branches and Divisions, shall be the recognized medium.

(*b*) That the medical profession, while always desirous to co-operate in schemes having for their object the physical improvement of the nation, declines to relieve the Government, the employers, or employees of their respective liabilities to each other in any scheme of insurance propounded.

(*c*) That the medical profession, while willing to negotiate for its services, refuses to make itself responsible for the provision of clerical assistance, drugs, and other requirements for a complete medical service.

Scheme of Invalidity and Sickness Insurance.

Should the Government decide to put forward a scheme to include medical services, the British Medical Association would no doubt be willing to assist in the drafting of the medical portion of it, if asked. But it might place the Association in an awkward position were it to allow schemes covering the various requirements to be published under its aegis before the intentions of the Government are known.

As insurance against unemployment in many of its aspects is closely allied to this question, the recent presidential address given by Sir A. Llewellyn Smith in the Economic and Statistic Section of the British Association at Sheffield, which is quoted fairly fully in the *Daily Telegraph* for September 2nd, might be read with advantage.

It is to be hoped that members of the medical profession, especially general practitioners, will without any further delay address themselves to the reply to be given to the question: "On what terms and on what conditions does the medical profession suggest that its necessary services should be placed at the disposal of the State in any scheme the Government may bring forward to cover invalidity and sick insurance?"

* The medical profession in Belgium has decided against it, and has formed a "Cercle Médical." See BRITISH MEDICAL JOURNAL, September 3rd, p. 630.

UNDER the will of the late Mr. Daniel James Woodman, of Blackheath, Guy's Hospital receives a donation of £1,000 for the endowment of a Woodman Bed, the National Trust Society £600 for general purposes, the Seamen's Hospital, Greenwich, and the Royal Hospital for Incurables, Putney, each £500, and the Cancer Hospital, Fulham, £300.

WE are informed that among those to whom a Grand Prix has been awarded by the judges at the Japan-British Exhibition is the firm which manufactures the well-known disinfectant Izal. A good many members of the Association were, we believe, the guests of the firm at its works near Sheffield, on the occasion of the annual meeting a couple of years ago.

THE Government of Bombay has decided, we learn, to extend the area over which the existing Leper Act applies in the Province, and in co-operation with the Mission to Lepers in India and the East to provide whatever additional accommodation for lepers may prove necessary. The Mission, which only receives a small subsidy, already supports nearly 4,000 lepers in India, and is now engaged in improving its arrangements for those of pure European and Eurasian extraction. Gifts in aid of this enterprise will be gladly received by the Organizing Secretary, 33, Henrietta Street, Covent Garden.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF ANAESTHETICS.

FREDERIC WILLIAM HEWITT, M.D., M.V.O., President.

PRESIDENT'S INTRODUCTORY REMARKS.

THE President, after a few initial observations, said that the inauguration of an Anaesthetics Section had come about at an opportune time, for, owing to recent developments in this branch of practice, they were, he believed, on the threshold of a new era in anaesthesia. The characteristics of this new era might be summed up in the two words—precaution and precision. They were, he hoped, about to bid farewell for ever to slapdash and slipshod anaesthesia, and to the dangerous view that, no matter how skilful the administrator of an anaesthetic might be, the use of that anaesthetic was necessarily attended by a certain definite risk to life. The era that fortunately was closing had allowed this misleading view to pass unchallenged. The era that was opening would, he believed, witness the acceptance of the all-important principle that by the adoption of proper precautions—particularly as to the selection of appropriate anaesthetics—and by the application of precise methods of administering them, safe and efficient anaesthesia might be induced in practically every case requiring surgical aid. It was satisfactory to observe that considerable attention had recently been paid to this department of medical science. There was every reason to believe that by the better education of medical students, by an increase in the number of resident and other anaesthetic appointments, by the systematic and more careful examination of patients prior to anaesthetization, and by entrusting the administration of anaesthetics not necessarily to specialists but to those who had had ample hospital experience in their use, the death-rate of anaesthesia would rapidly decline. But in order that true progress might take place a great deal of work had yet to be accomplished, and this newly-formed Section of Anaesthetics would have no small opportunities in this and subsequent years of promoting the interests of the public by placing surgical anaesthesia upon that sound and scientific basis to which it was entitled. It was almost inconceivable that both the public and the profession had taken so little trouble in the past to provide for the safety of patients artificially rendered unconscious for necessary and beneficent surgical operations. Was there any medical function which more immediately and more profoundly interfered with the very mechanisms upon which human life depended than the administration of a general anaesthetic for a surgical operation? It was to be regretted that there were still certain people who displayed feelings akin to jealousy when any attempts were made to raise the standard of anaesthesia to its proper level. But he (the President) was convinced that all thoughtful and well-informed men must see the necessity for improving this department of practice in order to fit it for modern surgical requirements. So far as the meetings of this Section were concerned, he (the President) conceived that their main object would be the advancement of surgical anaesthesia by the interchange of observations, opinions, and theories. Such meetings as were about to take place were less suited, perhaps, for lengthy disquisitions and formal papers than for brief communications of an interesting and practical character.

In arranging the programme with the co-operation of the other officers of the Section, an attempt had been made to attack, in order of their importance, the various problems that had to be solved. Thus he hoped that a good deal of light was about to be thrown upon the vexed question of the best methods of chloroform administration; that some useful pronouncements would be made as to the advantages and disadvantages of the "open" system of etherization; that valuable contributions to the important subject of surgical shock would be made; and that the debate on the present position and limitations of spinal analgesia would leave behind it many useful conclusions. Finally, he would remind his audience that an opportunity would be given them of supporting the proposals for legislation that had recently been made by the General Medical Council and by the Home Office Coroners' Committee respectively—proposals which had as their object the restriction of the employment of anaesthetics for medical and surgical purposes to qualified medical and dental practitioners. He sincerely hoped that all members of the Association would take this opportunity of expressing the urgent necessity for protecting the public against the indiscriminate use of drugs which, thanks to the action of the Council of the Association, were considered, at all events by that body, as worthy of study by a special Section of the meeting. To those who were specially interested in this question of legislation it might seem a happy omen that almost on the eve of this inaugural meeting of this Section, the Home Secretary had stated, in reply to a question in Parliament, that when time permitted he hoped to propose legislation with regard to those recommendations of the Coroners' Committee relating to deaths under anaesthetics.

DISCUSSION ON THE DOSIMETRIC METHOD OF ADMINISTERING CHLOROFORM.

OPENING PAPERS.

I.—DUDLEY W. BUXTON, M.D., B.S., M.R.C.P.

BEFORE formally opening the discussion on dosimetry I should like to suggest what I am sure all members of the Association will heartily concur in, that we offer to the Association and its Council our thanks for the public-spirited manner in which they have helped by supplying money for the investigation of the action of anaesthetics.

To Dr. Waller we also owe a debt, for it was his insistence and his help which initiated the present inquiry and his guidance which assisted us in the early stages of our work. Mr. Vernon Harcourt also has done much, more than those outside the committee can know, to forward our research, and his has been a labour of love and one which can hardly be too lavishly acknowledged.

It will be convenient to give succinctly the substance of the final report of the Committee appointed by the British Medical Association. The work was restricted by the terms of the reference to the following lines of inquiry:

(*a*) The investigation of the best methods whereby chloroform could be quantitatively estimated in air, in the liquids and tissues of the body; and

(*b*) The determination of the exact percentage of chloroform vapour in air which would induce surgical anaesthesia without subjecting the patient to any risks of overdosage.

The ability to obtain accurate quantitative estimation of chloroform is essential before undertaking experiments to determine the percentage strengths of the vapour of chloroform inhaled and exhaled as well as the amount of chloroform retained by the fluids and tissues of the body. The Committee adopted certain methods, namely, that of Harcourt and that of Waller; but in a discussion dealing with the practical side of the question of dosimetry these do not require further mention.

The investigation of the maximum percentage which is consistent with safety emphasizes the following facts:

A safe percentage must have a sliding value, because a maximum value which is proved safe when it is gradually attained to—that is, when lower percentages lead up to it—is dangerous if employed *ab initio*. Again, a maximum percentage safe within the limits of the induction period is no longer within the safety zone when it is inhaled for a prolonged period.

Admitting these as facts, the safe percentage maximum, to which reference is made below, is that percentage which experiment and experience led the Committee to adopt as the limit for induction for adults. Below this percentage strength satisfactory surgical anaesthesia could not be attained within a reasonable time; percentage strengths above it affect respiration injuriously, and depress blood pressure to a dangerous degree.

The practical questions before us, then, are: (1) Can there be such a definite and uniform percentage strength of chloroform vapour in the inspired air during the ordinary administration of chloroform? (2) What method or methods exist to ensure the constancy of such a chloroform in air admixture, and how are they to be employed?

Capricious Action of Chloroform.

If, as it has been asserted, chloroform is a capricious drug, no definite dose can exist, and each person submitted to it must take his chance of death or anaesthesia, according as the strength of vapour presented to him exceeds or falls below his personal maximum of safety. There is, however, no scientific evidence of the existence of this capricious behaviour of chloroform. There is some variation, within limits, of the reaction of individuals towards chloroform—a variation which some persons of experience have regarded and do regard as amounting to idiosyncrasy. It is considered that a percentage of, say, 2, for example, produces a more rapid anaesthesia in some persons than others, and this same percentage may fail to produce anaesthesia for quite a considerable time in some persons. But even if we were to assume the statement to be true that chloroform is capricious and certain individuals possess an idiosyncrasy towards chloroform, such facts would supply a very strong argument in favour of adopting a most precise and accurate method of dosimetric administration of chloroform, since such a method ensures that the patient passes into unconsciousness with only a gradual increase of vapour strength of chloroform, so that the signs of anaesthesia, which are too precise to be overlooked, supply the warning that for the particular individual the maximum limit of safety has been attained. Physiology has shown in the fullest way that chloroform when inhaled causes consecutive phenomena; the degrees of narcosis are absolutely uniform and progressive. It is true that an apparent difference in the phenomena is revealed under different conditions. A very high percentage vapour will cause sudden death—the death of the shot through the heart type—whereas a lower but still dangerous strength will kill gradually. The degrees of narcosis in the first case are telescoped together; the catastrophe conceals the individual steps through which it has been reached.

It is of the utmost importance that we should know whether there is a definite danger limit for all persons, and whether it is individual or uniform. To this point the Committee has devoted great attention. As far as we know, all drugs possess definite actions upon mankind: they stimulate function, or they destroy tissue life, and do so in direct proportion to the dosage employed. It was reasonable, therefore, to believe chloroform would obey the same laws. The earlier experimenters—Claude Bernard, Snow, Paul Bert—investigated the question by experiments upon the lower animals, and their conclusions are quite definite and precise. Also they agree practically in the figures which represent the percentages of chloroform in air causing anaesthesia or death.

> A percentage below 1 does not produce surgical anaesthesia.
> A percentage of 2 does produce anaesthesia.
> Percentages above 1.7, if persisted in, gradually interfere with respiration, and a percentage higher than 2 more rapidly induces respiratory failure. Very high percentages produce sudden and complete respiratory failure and circulatory collapse.

It is difficult to understand how such very definite pronouncements failed to influence the methods adopted for giving chloroform, and it is hardly necessary to spend time upon this deplorable fact; this is rendered more extraordinary when we remember that even from the first the death-rate due to chloroform administration mounted year by year as the drug became the common property of the profession. If certain areas appeared immune from such catastrophes, investigation revealed the sinister fact that apparent safety was due to the absence of that wholesome publicity which has shown us the dangers not so much of the drug as of the methods adopted in its use.

Some attempts were made, however, to carry into practice the teaching of physiology. Snow, Clover, Dubois, Junker, and others devised dosimetric inhalers. Of these, the only safe one was that of Dubois, since Dr. Dubois alone adopted a safe maximum, namely, 2 per cent., while in the case of the other inhalers a possible 5 per cent. of chloroform vapour or more could be inhaled; hence the patient's safety depended entirely upon the skill and powers of observation of the person manipulating the inhaler. As a result, the Dubois machine alone has a record which is, so far as I can ascertain, without a single death. Snow's, Clover's, Junker's inhalers, although possibly safer than some plans, still allowed death through overdosage, even in the hands of expert persons. To the more recent dosimetric inhalers I shall refer later.

Physiology.

The Committee, through its expert members, undertook to ascertain by direct experiment what are the effects upon the tissues, systems, and entire individual of dosing with known percentage mixtures of chloroform in air or a circulatory fluid. Their results are given fully in the appendices of the five annual reports, and are epitomized in the section on the physiology of anaesthesia in the final report. Our knowledge is now sufficiently complete for us to accept as proven that all the tissues of the body are paresed or killed according as the strength of chloroform supplied to them is below or above the safety limit. We owe to Waller the knowledge that nerve tissue is thrown out of function by one strength, but can renew its power of conductivity when the chloroform is removed; that another strength of vapour will promote greater effect, will at first paralyse and then absolutely destroy the conductivity and power of response, so that recovery is impossible. In like manner Sherrington and Sowton have demonstrated that the musculature of the heart, of the hollow viscera, and the voluntary muscles are affected directly as the strength of chloroform which abolishes their function; that abeyance of function merely or destruction of tissue life is simply a question of percentage dosage.

The demonstration that the effect produced varies directly as the strength of the chloroform in air mixture applies not only to isolated tissues, but also to the intact animal. The respiration, the circulation, the functionizing of the nervous system are altered, depressed, paresed, or utterly destroyed according as the percentage strength of the chloroform and air mixture inhaled is raised.

One of the most striking features of the argument is that supplied by Embley and Martin. Their experiments show that chloroform intensifies the irritability of the vagus centres during the induction of anaesthesia, and that the higher the percentage of chloroform vapour in air the more is the vagus liable to inhibit the heart, and through the nervous nexus bring about circulatory and respiratory collapse. If the percentage vapour is kept within the limits ascertained to be safe—that is, below 2—the inhibition of the heart with the concomitant respiratory failure and fall of blood pressure will not prove fatal in the normal animal: section of the vagi restores the equilibrium of life. Above this percentage dogs die, or slowly recover when fatigue of the vagi develops, according as the vapour of chloroform is too high or just within the zone of possible safety. These workers have shown most clearly that one of the chiefest dangers of chloroform is that originating in vagus action, and that this danger is proportionately great or less as the strength of the chloroform vapour in air mixture inhaled. Such dangers are incident to the period of induction, the period, that is, which clinical experience has taught us is peculiarly one of peril during the administration of an anaesthetic.

Further evidence supporting the view that there is a definite safe maximum is given by the report of a number of cases of human beings who inhaled definite percentage strengths of chloroform vapour in air. The patients were both members of the Committee, willing patients, and hospital patients who were subject to the usual nervousness and dislike of inhaling an anaesthetic. The mixture inhaled and the exhaled breath were estimated. The results obtained were corroborated by the subsequent routine employment of accurate dosimetric inhalers. Thus, although anaesthetic sleep could be produced with lower percentage strengths than 2, true surgical anaesthesia—that is, an anaesthesia from which the patient is not aroused by the skin incision—cannot, as a rule, be induced by less than 2 per cent. Bert and Dubois state that 1.6 per cent. is usually sufficient, but this is not my experience so far as the actual induction is concerned. The usual phenomena of the early degrees of narcosis are recorded by the Committee, but less struggling and fewer

minor complications occur in the dosimetric system. The report records a fall of blood pressure of from 130 to 110 mm. with a 1 per cent., while it fell to 90 mm. with a 1.5 per cent. in ten minutes. So soon as the percentage strength was lessened the blood pressure rose—a fact of cardinal importance when we remember that, as the Committee points out, it has been proved by Embley that failure of respiration is practically impossible when a good blood pressure is maintained.

The respiration grows more shallow coincidentally with the lowered blood pressure, and is increased in volume when the strength of vapour is diminished. The reports supply us with particulars concerning the exchange of gases in the lungs and blood during chloroform inhalation, and we are shown that during the first few minutes the tension of chloroform vapour in the inspired air exceeds that in the expired, while later the difference gradually lessens. That the ultimate effects of chloroform must be upon the tissues needs no emphasizing. At present we do not know what is the tension of chloroform which exists in the immediate vicinity of the tissues; we know that the red blood corpuscles convey the chloroform to the tissues, and it has been suggested that it forms loose aggregations with the proteid or lipoid bodies. It has been shown that whatever bio-chemical changes are effected in the tissues through this aggregation of chloroform are directly proportional to the amount of anaesthetic in the blood stream. When it is increased the tissues take up more and their functionation is diminished; when the tension is lessened chloroform leaves the tissues, re-entering the blood stream to be borne back to the lungs and exhaled in expiration. That some tissues are less affected than others is also proved, and, as the report points out, it is this very differentiation of effect which renders it possible for chloroform to be employed as an anaesthetic, since the respiratory centre maintains its function later than other centres. The fact remains that the continuous action of chloroform brings about progressive paralysis of the component parts of the nervous system, and unless the percentage which is sufficient to induce anaesthesia is lowered during the post-induction stages of narcosis, deeper degrees of narcosis are brought about, and the nerve centres controlling respiration and circulation become paralysed and systemic death must result.

The report, then, advances facts which go far to demonstrate that there is a definite percentage of chloroform in the inhaled air which is sufficient to induce anaesthesia, and this 2 per cent. under normal conditions has not in their experience, as in that of others, led to dangerous consequences in the induction period. I may perhaps quote their conclusions—

1. That a 1 per cent. vapour is insufficient to induce surgical anaesthesia in an adult—at all events, within the limits of time ordinarily available.

2. That a 2 per cent. is sufficient to induce full surgical anaesthesia.

3. That in pathological conditions—such as depraved blood states, some diatheses, grave pathological states—the definite dose or percentage is below 2, and must be determined in each case.

4. That the dosage of the maintenance of anaesthesia is of as much importance as that of the induction period, and the neglect of recognizing this has caused many deaths and constantly delays convalescence.

5. That no definite limit of safety can be fixed for this dose, but that it is in most cases 1 per cent. at first, and must be lowered as time goes on.

What are the methods at our disposal, and how do they fulfil the desiderata?

1. The method of mixtures.
2. Open methods by dropping or by douche.
3. Method by inhalers.

It is obvious that all these methods must achieve some sort of dosage, otherwise their results would be disastrous.

The method by mixtures is a very old one. Dr. Harley suggested diluting chloroform with alcohol and ether as early as 1864, and Bert and his pupils attempted to obtain chloroform vapours of definite strength by mixing alcohol, olive oil, and other materials with the chloroform. The only plan in use at present is to use ether-chloroform, ether-alcohol-chloroform, or alcohol-chloroform by some open-air or quasi-open method, and so we may consider them together.

A considerable amount of work has been done which elucidates the actual strengths of vapours given off by open masks covered by lint, linen, domette, or flannel. Some precision is possible when chloroform is used by itself by estimating the exact amount of that drug given off from an evaporating surface, but when the chloroform has been diluted with ether or other diluent the problem is a very complicated one, involving questions of the rates of volatilization of the constituents of the mixture, the spread of the liquid, and so on. The point about such mixtures is that, however useful they may be in the hands of experienced persons, their use cannot be reduced to scientific rules nor their action limited save by the personal experience and constant vigilance of the person using them. Their dosage can be judged only by their effects; the administrator never knows what precise strength of vapour he is employing.

Waller, Levy, and others have demonstrated very clearly that chloroform dropped upon an open mask gives off vapours the strengths of which vary according to the size of the drop—the douche may be regarded as the extreme at one end of the scale—the rate of dropping, the nature of the material as to the presence of hairs, absorbent properties, and so on, and the approximation of the mask to the patient's face. The percentage may be 2 per cent., but it is more often higher, and the test conditions of the laboratory which control the delivery and size of the drops are hardly to be reproduced in clinical practice. The percentages resulting from douching—that is, pouring one or more drachms of chloroform upon a mask or into a cone—are less uniform than those obtained by a strictly drop method, and are further prone to produce an uneven and intermittent supply of anaesthetic, a strong vapour at the moment of douching diminishing to a very weak one just before a fresh douche is given. Even with the drop method a very high and so dangerous percentage of chloroform vapour can be delivered, and in both plans the regulation of the strength is in practice a matter of guess-work dependent upon the personal effort of the person controlling the supply. He has no knowledge either of the amount the patient is inhaling—since much of the evaporation diffuses chloroform into the room—nor of the strength of the vapour he is giving, and therefore he cannot estimate the actual amount which has already entered the tissues of the person inhaling.

When we pass to the inhalers we come upon more certain ground. The older types: the use of gas-holders, such as Bert employed, of the inhalers of Snow, Clover, and others, has been judged by experience, and they have been rejected either because they are not portable or because they are not exact enough in their deliveries. The modern form of Junker's inhaler, although portable, yet has several disadvantages. The vapour strengths delivered are not rigidly exact, but depend upon the person who employs them, the rate and force of compression of the ball or balls, and the temperature of the bottle as well as the depth of the chloroform contained in this bottle, are all variants which affect the strength of the vapour delivered.

Experiment and clinical experience have shown that the Junker inhaler is capable of giving a dangerously high percentage. The apparatus also affords no clue to the administrator of the actual strength of the vapour delivered at any given moment, nor of variations in the strengths of the vapours given from time to time during a prolonged administration.

The remaining inhalers to be considered are those suggested by Dubois, Harcourt, Roth-Dräger, Levy, Waller, Collingwood, and Alcock. Of these, Harcourt's and Levy's are of the draw-over type; the rest are of the plenum type.

The Roth-Dräger inhaler, valuable as it is in many ways, yet labours under two disadvantages: the one its weight and therefore unportableness, and the other that it has no fixed maximum delivery, and therefore allows excessive strengths of vapour to be delivered if the administrator so wills; as a result deaths from overdosage have occurred during its use.

As to the rival claims of a plenum and a draw-over system, I think much may be said for either system; but it appears to me far more important to establish the principle that dosimetry in chloroform administration should be accepted than to discuss individual apparatuses. I would submit that the criteria of an apparatus which

should be in the hands of every member of the medical profession are:

(1) That it should deliver chloroform vapour in strengths only up to a definite maximum, and this maximum has been put by Snow, Bert, the Committee, and Dr. Waller at 2 per cent. (2) That an index readily seen should show the administrator what strength vapour he is employing. (3) That the strength of the vapour should be easily and rapidly regulated by mechanical means governed by the administrator. (4) That the apparatus can be easily learnt and be quite portable.

The shortness of the time allotted to me prevents me from dealing with the modern types of dosimetric inhalers; these are all described in the report, and to this I must refer you.

It is the unfortunate defect of all plenum inhalers that they require either a motor or a bellows, and such an addition lessens the facility of their transport. The draw-over system has the inherent necessity, which some regard as a defect, of requiring the person inhaling to employ his own respiratory efforts to obtain his anaesthetic. It is, of course, an increased effort, but the experience of some years has convinced me that the effort required is very slight, and does not prejudice even those whose respiratory system is hampered by disease or deformity. I admit that when I commenced to use the draw-over system I was strongly prejudiced against it, and anticipated dangers from dyspnoea and cyanosis. I found, however, none developed, and my prejudice was cured by experience. Probably many who have not used the system still have such a prejudice, and I can only advise them to master the technique of some efficient "draw-over" inhaler, such as that of Mr. Vernon Harcourt, and they will realize the fallacy of such *a priori* reasoning.

The most important point to be considered in discussing a dosimetric system of chloroform administration has yet to be dealt with. The percentage strengths of vapour delivered by any method of mixtures or evaporated from open masks by dropping or douching has been determined either by aspirating with bellows, blowing by willing persons—the experimenters—or other means wholly under the control of those who were making the determination of the percentage. These rigid conditions exist in the physiological laboratory, but, alas, they are quite unattainable when chloroform has to be administered to suffering humanity. This fact it is which renders any method dangerous which does not insure a constant and rigid strength value of chloroform vapour being maintained, whether the patient breathes quickly or slowly, deeply or in shallow gasps, whether he struggles and fights or holds his breath. I do not deny that the skilled man at his best may and does avoid danger even under such adverse conditions and when using an open method of administration, but this does not prove the wisdom of refusing a safe method; it only demonstrates that by the law of chances a danger is escaped for a certain number of times. If we are sure that safety lies in giving chloroform below a certain vapour strength—that is, 2 per cent.—by a method which does not allow of a higher percentage being inhaled, surely it is our duty to adopt dosimetry and preserve the overworked and sometimes inexperienced chloroformist from the haunting dread of chloroform fatality. It seems to me to be equally futile to reject the principle, even though we have objections, possibly valid, possibly not, to an apparatus which, whatever faults it may have, can at least fulfil the main requirements of the method. That dosimetry of chloroform may involve loss of time, may necessitate learning the technique of a new method, and other minor inconveniences, ought not to weigh against an increased safety.

But there is a further and graver aspect of this matter. It is this. The surgery of to-day differs widely from that of preceding decades, and it had and does demand more than mere anaesthesia. Many operators—and it is for them to judge the right of the question—require not only a loss of sensation, abeyance of the function of the nervous system involved in the state of anaesthesia, but a further effect, and one which is only obtained by drugging the medullary centres. It is urged that here dosimetry fails if we adhere to a rigid maximum of 2 per cent. The report, however, seems to me to negative such a contention, for it states explicitly that a 2 per cent. or even less if persisted in for a long period, will after induction eventually affect the medullary centres. Luckily this result in normal persons takes time, but there is no doubt that not only induction of full surgical anaesthesia, but dangerous fall of blood pressure with respiratory enfeeblement, follow the prolonged use of the Committee's maximum. This is why, although 2 per cent. is called safe in the period of induction, it is shown to be dangerous if persisted in for long during the period of maintenance.

As is pointed out in the report, the maximum limit of 2 per cent. is adopted as a probably correct one—certainly for the period of induction. If the exigencies of surgeons call for a deeper degree of narcosis than that which is termed "anaesthesia," this can readily be attained after anaesthesia is reached, and with less risk by dosimetry than by other methods. Its attainment must, from the very nature of the drug employed, be always associated with risk, since deep narcosis carries with it drugging of the medullary centres, enfeeblement of respiration, as well as a dangerous fall of blood pressure. It, however, presents less peril when we know the exact dose we are giving, and therefore know the precise degree of fall of blood pressure, as well as the extent of the respiratory enfeeblement, which are associated with any given percentage strength of vapour employed. We may be compelled by the necessities of an operation to run this risk, but I submit we must do so with a full appreciation of what that risk is, and are bound to adopt the best method—that is, dosimetry—in order to bring that risk within bounds and under control.

In conclusion, I can only express my regret that such an important subject, through the exigencies of time, should have been dealt with in so inadequate a manner, and can only hope that many members of the Association who may be unacquainted with the practical working of dosimetry will take an early opportunity of mastering the requisite technique.

II.—Professor Waller.

Professor Waller said that it was necessary to have at heart as an object the diminution of the death-rate of anaesthetics, whatever the method employed. He would like to endorse all that had been said by Dr. Dudley Buxton and contained in the report of the Chloroform Committee. All were agreed that the limits of the safe administration of chloroform lay between 1 and 2 per cent. In respect to apparatus, he did not trust the accuracy of the Vernon Harcourt apparatus, because he preferred one in which the percentage of chloroform vapour present in the air could be judged from moment to moment. Familiarity with an apparatus of this type, he believed, imbued students with the principles of dosimetry which enabled them to cope with cases, when they had only the roughest means at their disposal, with greater success and safety than they otherwise would have done. For successful administrations by the percentage method the chloroform must be supplied continuously at 1 or 2 per cent.; if for a few moments the administration were discontinued, the patient, being lightly under, would show signs of "coming round."

DISCUSSION.

Mr. Alexander Wilson (Manchester) said there could be no objections to the dosimetric system except in respect of the means used in connexion with it. The apparatus offered was either too cumbersome and expensive or not sufficiently exact to be acceptable to the bulk of the profession. There was no extensive experience of what would be the result of a wide application of dosimetric apparatus in the hands of inexperienced men. It was therefore important to know what might be expected from its extended employment. It would be very easy to overestimate its value and come to rely too much upon the mere apparatus, to the exclusion of other important factors. His own experience of dosimetric apparatus had been confined to the Vernon Harcourt and Roth-Dräger inhalers, the former of which he had used constantly for the last seven years, the latter for five. Altogether he had employed one or other of these instruments in between two to three thousand cases, and for the last two years they had been in daily use at the Manchester Royal Infirmary. In the light of his own experience and that of others, he would suggest "that no dosimetric apparatus would abolish the two fundamental defects of chloroform as an anaesthetic, these defects being its tendency, apparently even in

small doses, to induce paralysis of the circulation and its deficient obtundent" capacity in preventing shock. The tendency to shock had already been in evidence with the Vernon Harcourt inhaler, and would always exist, no matter what apparatus was employed. Secondly, he would also suggest "that it was very doubtful how far the universal adoption of dosimetric methods would materially diminish the death-rate from chloroform." Deaths due to overdose would naturally be eliminated by dosimetry, but there was a class of accident, commonly reported in terms such as:

Chloroform was administered on lint; the patient took it willingly; the breathing was quite free; after a few minutes it was noticed that the respirations had suddenly ceased, the face was pale, the pupils dilated, and no pulse could be felt. All efforts at resuscitation failed, and, beyond a few intermittent gasping respirations, there were no further signs of life.

This class of case would not, he thought, be prevented solely by the use of dosimetric apparatus; some other safeguards were necessary in addition to mere dosimetry. These safeguards were a proper appreciation of the first signs of danger. There was a popular and widespread impression that a gradual cessation of the respirations or a sudden respiratory paralysis was to be looked for and feared, but this was altogether a mistake and most dangerously wrong. The lesion was a paralysis or disorganization of the circulatory mechanism in a subject with a more or less intact nervous system. The earliest gross indications of danger were such as presented themselves in all cases of failure of the circulation, from whatever cause—namely, exaggerated respirations, not gradual impairment. Earlier information of danger even than this could be obtained by observing the pulse, which at the very beginning of the trouble exhibited weakening and loss of tension. If chloroform must be used, no matter by what apparatus, the recognition of the early signs of danger were, if not the best safeguard, at least most important as a means of reducing fatalities.

Dr. Scharlieb (London) said that chloroform when given in unmeasured dosage and by empirical and unscientific methods was a powerful poison. No one would dispense hydrocyanic acid or any other powerful poison without using the most scientific methods of measuring the dose. Still more, therefore, was some percentage system of regulating the strength of the dose of chloroform absolutely imperative. There were many different forms of apparatus designed to regulate the dosage more or less accurately. They were only the outward and visible sign, so to speak, of the inward essential—namely, a means whereby they could begin with a minimal dose, gradually increase it within safe limits till anaesthesia was produced, and then gradually decrease it to such dose as would maintain the anaesthesia at such a depth as the requirements of the individual operation demanded.

Dr. Paul Chapman (Hereford) said that in the county hospital with which he was associated the house-surgeons were invariably unacquainted with any of the precise forms of apparatus for the administration of chloroform. The speaker thought that it was a mistake to allow students in the large hospitals to give anaesthetics by the unscientific open method. Would it be possible to get statistics from any one hospital of the relative number of times chloroform had been given by measured or by unmeasured doses? The report of the Chloroform Commission was valuable, but unduly favoured one form of apparatus. The speaker preferred the Dubois apparatus, the only objection to it being that it was not easily portable.

Dr. A. G. Levy (London) said that his personal experience of the percentage administrations of chloroform had been mainly derived from the use of the simplified inhaler described by him in the *Lancet* of May 27th, 1905. It was similar in general principle to the well-known Vernon Harcourt inhaler—that was to say, it was of the so-called "draw-over" type. The advantages derived from the use of any good mechanical inhaler were as follows:

1. The facility of increasing or diminishing the strength of vapour by gradually progressive stages.
2. The facility of continuously maintaining a suitable strength of vapour for any desired period.
3. The facility of limiting the strength of vapour to as low a concentration as may be consistent with complete anaesthesia, whereby no more chloroform is put into the patient than is actually required.
4. Knowledge of the percentage strength of the chloroform vapour is a great assistance to the administrator. This knowledge must, however, be applied with considerable discretion.

The conclusions at which he had arrived from clinical investigation on the reaction of the human subject to definite concentrations of chloroform were as follows:

Individuals, both in pathological and normal or comparatively normal conditions, vary considerably in their reaction to a given strength of vapour. It is therefore impossible to fix a precise percentage limit, a so-called "limit of safety," for all individuals. Thus a vapour strength which would be efficient for all individuals would be excessive for many. The conventional 2 per cent. limit is definitely insufficient in a large proportion of cases.[1]

These conclusions in regard to a "limit of safety" were not in accord with the findings of the Chloroform Committee. The want of agreement must be due either to difference of opinion as to what constituted a clinically sufficient state of anaesthesia or to discrepancies in the measurement of the vapour. His clinical results certainly afforded no scope for hair-splitting discussion, for they were striking and convincing. It was quite possible that the "ad plenum" system might be effective with a lower percentage of vapour, on account of the absence of a "dead space" and probably for some further reasons. The "Dubois" was limited to 2 per cent., and was stated to act efficiently. Dr. Alcock's "ad plenum" inhaler was graduated over 2 per cent., and it had been found necessary habitually to exceed this limit when using it. How these contradictory findings in regard to "plenum" inhalers might be reconciled he could not say.

The advent of the regulating inhaler had not reduced the administration of chloroform to the purely mechanical process that was apparently at one time anticipated. Regulating appliances, when properly understood and applied, should provide a relative immunity from death and alarming conditions in general; but every apparatus capable of inducing complete chloroform anaesthesia had the inherent potentiality of causing death, either through inadvertence or as a result of imperfections in existing knowledge of the intrinsic action of chloroform. Respiratory and circulatory disturbances were occasionally met with, especially in the earlier stages of the operation, and the speaker had reported one death as a result of a few inspirations of 3 per cent. vapour before the commencement of the operation. The Special Chloroform Committee reported 4 deaths on the operating table in a series of some 5,000 administrations by the Harcourt inhaler. This was a sufficiently high proportion, even though death were ascribed, as was the case in these instances, to surgical causes. The transfer to the category of "death from operation" of all those cases in which it could be shown that no excessive quantity or strength of anaesthetic had been employed appeared to be a summary way of dealing with the problem of deaths under chloroform. Furthermore, such a statistical method left unrecorded the total mortality under percentage chloroform administration, which alone was of value in comparing non-percentage methods with other anaesthetics. These cases read astonishingly like the accounts of deaths under chloroform when given by ordinary methods, and should have been returned as "deaths under chloroform." These records, therefore, would suggest that some deaths generally attributed to excess of chloroform were not really so due, and it was perhaps unfortunate that the Committee had not more particularly considered, apart from the question of over-administration, to what extent deaths might be conduced by the general action of chloroform, and how far by its administration in too attenuated strength. These cases definitely demonstrated that the extreme limitation of vapour did not tend to protect in any marked degree from the peril of shock and of fatal reflex inhibitions.

As regards individual inhalers, the Vernon Harcourt was a great advance upon any of its type previously produced, but unfortunately it was erratic in its delivery to a degree which had been proved to be of very serious importance.[2] In his own pattern of inhaler, which was of a similar type but delivering over 2 per cent., the faults urged against the Harcourt were thoroughly corrected, possibly at the

[1] See *Transactions of the Royal Society of Medicine*, vol. ii, 1909.
[2] See H. C. Crouch and A. G. Levy, British Medical Journal, September 24th, 1904.

expense of some degree of convenience. The "shake" error was eliminated, the percentage was unaffected by variations in the type of breathing, and the delivery passages were wide enough to avoid the faintest inspiratory effort. Moreover, it was as simple in its clinical application as any other. The "ad plenum" inhalers afforded results very similar to those of the other type, except that possibly the induction might be rather more satisfactorily carried out. Of the more perfected forms, the Dubois and Dr. Alcock's, the latter was the less cumbersome, and the graduation was preferable, being progressive instead of in abrupt steps. When chloroform had to be employed in the absence of mechanical appliances, far more attention should be devoted to its methodical administration. A useful and simple device consisted of a mask[3] cover divided into sections, which served to restrict the supply of vapour below 1 per cent., or below 1.5 per cent., and so on, according to the section employed. In emergencies, especially those in which a doctor had to work single-handed, such a simple appliance should prove very valuable. Chloroform was an essentially unsatisfactory anaesthetic, and whilst the regulated administration of it tended very largely indeed towards the protection of the patient and the convenience and guidance of the administrator, there could be no royal road to absolute safety. The Dubois and the Vernon Harcourt had now been before the profession for a number of years, and neither had been generally adopted. Was this the fault of the method, or of the inhalers, or of a remarkably conservative attitude on the part of anaesthetists? These questions would be best answered if a number of members of this Section would combine to give the percentage method a thorough personal investigation in all its aspects.

Dr. Fielden (Belfast) said there was a difference—not perhaps realized by students and some medical men—between the expression of dosage, say, of a tincture and of chloroform. In the former it was a question of so many minims or drachms, but the dosage of chloroform was the *percentage* of chloroform vapour in the air breathed, and did not refer to the measured quantity of the drug. The Vernon Harcourt inhaler was a valuable piece of apparatus, but there were occasions when more than 2 per cent. of chloroform was inhaled; for instance, in the exaggerated breathing one saw in alcoholics and strong struggling patients air was drawn through the chloroform bottle with such force that almost a condition of bubbling was produced. In such case there must be more than 2 per cent. of vapour. One objection to a vacuum inhaler—such as the Harcourt—was that it could not be used during the performance of an operation upon the mouth. Many cases of abdominal operation required a larger percentage than 2 of chloroform to relax the rigidity of the abdominal muscles. The rigidity might be due to paucity of oxygen; but there were some cases in which the abdominal muscles seemed to have got into a condition of partial spasm from their habit of protecting the diseased abdominal organs.

Dr. H. J. Starling (Norwich) stated shortly his appreciation of the Vernon Harcourt apparatus; that he had no difficulty in anaesthetizing any and every kind of subject with a 2 per cent. vapour so long as a reasonable period of time was allowed; that the use of the apparatus was of great service in long operations; that the amount of sickness after its use was not so great as after other methods of anaesthetizing; and that sickness when it occurred came on after a delay of six to twelve hours, and then often lasted for a considerable time.

Dr. S. Thompson Rowling (Leeds) mentioned a simple apparatus which he said practically combined the advantages of the percentage inhalers with the simple drop-bottle method of chloroform administration without the disadvantages of either. It essentially consisted in suspending the drop-bottle, the dropping being regulated by the inclination of the bottle, altered by a coarse and fine mechanical adjustment. The rate of administration was regulated by the adjustment, and was read off by a watch suspended close by. The suspension was from a horizontal rod, adjustable both as to height and width over the patient's head, and supported by two lateral vertical supports. The framework was an excellent and efficient anaesthetic screen.

[3] This is made by Messrs. Allen nd Hanburys.

Dr. David Lamb (Glasgow) said that some years ago, when the Vernon Harcourt inhaler was introduced to the profession, he gave it a reasonable trial, but the results did not come up to his expectations. They were sometimes excellent, but in others—young men and alcoholics—he had worked away patiently for twenty minutes or more without inducing anaesthesia satisfactory to the surgeon. If such difficulties occurred in the hands of one accustomed, like himself, to various forms of apparatus, even admitting the possibility or probability of some fault in the administration, what results could be expected in the hands of a general practitioner who gave an anaesthetic only on rare occasions? He found it difficult to persuade those accustomed to administration of chloroform by the simple drop method to use an apparatus, so simple even as that for mixtures of chloroform and ether. So far as general practitioners in Scotland were concerned, the problem of safe anaesthesia would not be solved by any form of apparatus so elaborate and one requiring so much close observation as the Vernon Harcourt apparatus, and consequently necessitating a proportionate loss of attention to the patient. The specialist also, even with dosimetry, would ultimately be forced to fall back on the condition of the patient as his principal guide. The speaker admired the scientific ingenuity of the Vernon Harcourt apparatus, but, after all, it was the man and his experience behind any form of apparatus which was the only safeguard, and it was only by insisting upon every student gaining that experience, possibly on the lines suggested by Professor Waller, that the public could be safeguarded, so far as that was possible at all, when working with such a powerful agent as every general anaesthetic must of necessity be.

Dr. Vernon Harcourt (London) said that he had arranged several years ago for the delivery of chloroform through his inhaler on the plenum system. He had brought the arrangement with him, and would show it later in the day. He believed the instrument maker had no grave difficulty in keeping alike the size of the bottles and the adjustment of the specific gravity bulbs on which the percentage of chloroform depended. According to his analyses, the percentage of chloroform was diminished when the rate of passage of air increased. The construction and use of his apparatus depended on chemical and physical principles, which need not be discussed.

Dr. MacGregor Young (Leeds) thought that the argument advanced, that a knowledge derived from mechanical apparatus of the percentage of chloroform present by smell would prove very useful, even when the anaesthetist had no apparatus, was fallacious, as the anaesthetist could not, from the nature of the case, keep smelling for the strength of the vapour.

Dr. Dudley Buxton, in replying, said several speakers had referred to the possible dangers of the Vernon Harcourt inhaler through inaccurate construction by the instrument makers. The criticism, of course, applied to all inhalers and to all scientific instruments. If valid, physiological work, physical and chemical research must be regarded as open to attack on the same score. Experience, as well as testing, had proved that the present form of the Harcourt inhaler was accurate for all practical purposes. He deprecated the remarks of Dr. Chapman in respect of the attitude of the Committee towards the Vernon Harcourt inhaler. The description in the report of the Dubois inhaler was that given by Dr. Raphael Dubois, the inventor, and references were also given to the luminous papers written by Dr. Chapman himself, so that it was inaccurate for Dr. Chapman to say the Dubois apparatus had been ignored. Its merits were recognized and extolled, but it was too well known to need any exploitation. Mr. Alexander Wilson's remarks about shock really emphasized the value of dosimetry. Shock meant fall of blood pressure, fall of blood pressure meant less chloroform—a lower percentage was required. To achieve the change a dosimetric inhaler was the only practical means. Of course, an inhaler was only a scientific instrument; it required the guiding hand of a competent person. The Vernon Harcourt inhaler

was only a safeguard against overdosage: other difficulties and dangers would be dealt with by the anaesthetist, but he would do this better if he employed a scientific instrument rather than a haphazard method of mixtures or drops. Dr. Levy was quite incorrect in stating the cases of death cited in the report were due to the chloroform, and as an expert his knowledge would convince him that the phenomena of chloroform poisoning were quite definite; the symptoms of other accidents due to surgical causes were as distinctive, and no one could make the mistake at which Dr. Levy had hinted. No method employed could be independent of surgical dangers, but an exact method gave more chance than a haphazard one. It had been suggested that dangers arose through light "anaesthesia." He (Dr. Dudley Buxton) had pointed out again and again that there was a wide distinction between light and incomplete anaesthesia. No evidence of any value existed which showed that a fall of blood pressure—that is, shock—was engendered by light anaesthesia. Incomplete anaesthesia—a state in which conveyance of painful peripheral stimuli was possible—could and often did produce sudden fall of blood pressure. The skilled anaesthetist would always avoid incomplete but aim at light though adequate anaesthesia. So far from lessening shock by deepening narcosis, the reverse was the case, since as narcosis became more profound so did the blood pressure fall, and the patient entered a zone of increased peril. The plan of regular dropping from a fixed chloroform bottle was not a novelty—it was figured, for example, and described in Dr. Dubois's book on anaesthetics, published in 1894, and was offered as an alternative to the use of the Dubois machine.

DISCUSSION ON THE PREVENTION AND TREATMENT OF SHOCK.

OPENING PAPERS.

I.—GEORGE ROWELL, F.R.C.S.,
Senior Anaesthetist, Guy's Hospital.

IT is obvious that the prevention and treatment of shock during anaesthesia must depend upon our knowledge of the physiology of the subject, and while this is at the present time well enough understood in its essentials for the practical requirements of the anaesthetist, yet there are many points of deep interest to us which will be dealt with by the distinguished scientists who have promised to take part in this discussion, to whom, first of all, I would beg to offer, on behalf of this Section, our best thanks for their kindness in coming here to help us; and while resisting—I confess with difficulty—the temptation to allude to those of our own country whose work upon the subject has been of so much value to us as administrators, one cannot allow this occasion to pass without expressing a hearty welcome to Dr. G. W. Crile, by whose presence, I do assure him, we feel peculiarly honoured.

For the sake of convenience, we may include under the term "shock" all degrees of serious impairment of the circulation, whether produced by accidents, psychic causes, reflexes during narcosis, asphyxia, haemorrhage, toxaemia, or exhaustion.

In addition to the symptoms of circulatory enfeeblement which are encountered from such causes, I may here, as a little practical point, allude to the fact that an enlarging pupil is a common quantitative, and, although somewhat rough, often a most helpful, guide.

While endeavouring for many reasons to keep strictly to the clinical side of the subject, I take it that very few in this room will dissent from Dr. Crile's view that the one essential characteristic of conditions of shock is a low blood pressure. Most administrators of anaesthetics will agree that a falling blood pressure is the first sign of the onset of shock, and that its rise is equally the first real sign of recovery. It will also be generally conceded that next to keeping the respiration adequate, it should be our constant care to keep the blood pressure as steady as possible, and, in the event of shock occurring, to endeavour to restore it, as soon and as efficiently as we are able, to the patient's normal level.

Now, it is well recognized that too large a dose of the anaesthetic employed, as of other poisons, will produce symptoms of shock. And, omitting the question of how much or how little of the patient's reflex system should be kept excitable in any particular case—since the knowledge of this depends entirely upon the experience of the administrator—let me first briefly consider the comparative effects of the most commonly used anaesthetics.

Very few who have had experience doubt that chloroform is the least desirable anaesthetic to employ to prevent shock; that ether is the best, and that in mixtures the prevention of shock is assisted, so far as the nature of the anaesthetic can assist it, in direct proportion to the preponderance of ether and in inverse proportion to the percentage of chloroform present. Of this truth I am able to show you proof, not that the facts do not appear in the classic tracings of Crile, but I am fortunate in having the results of a very careful and extensive research undertaken by Dr. C. D. Edwards upon the influence of anaesthetics on the blood pressure, which is shortly to be published in the *Guy's Hospital Reports*. Dr. Edwards has taken blood pressures by a Riva Rocci sphygmomanometer throughout no less than 144 administrations of various anaesthetics under ordinary hospital conditions.

In his 17 chloroform cases the blood pressure fell in all, the fall beginning early in the administration. The chief point that comes out in this series is that the fall usually varies at once, and in a marked manner, with the depth of the narcosis. As an instance of a chloroform blood-pressure chart, I exhibit one showing clearly a fall from 145 to 80 mm. of mercury in ten minutes, accompanied by a pulse which became slow and feeble. On withholding the anaesthetic the blood pressure in a few minutes rose to 120, and the pulse improved. During the operation manipulations in the splanchnic area caused a fall of blood pressure to 50, while the pulse rose to 110, and became very weak. In Dr. Edwards's 23 cases of the A.C.E. mixture the blood pressure fell below normal during the administration in 21, and the average blood pressure was below normal in 70 per cent. The fall was less than the fall under chloroform.

In 5 cases of a 1 to 2 C.E. mixture—that is, with the same proportion of chloroform as is contained in the A.C.E. mixture—it appeared that the depressing effect was less marked than with pure chloroform, but more marked than with the A.C.E. mixture.

Of 53 ether cases, only 4 had an average blood pressure below normal, and in 39 of the cases (74 per cent.) the blood pressure never at any moment fell below normal. Further, in those cases in which the blood pressure did fall below normal, this could never once be attributed to the anaesthetic, and it is particularly noteworthy that in every one of the ether cases there was an initial rise above normal.

Within comparatively wide limits an increase in the depth of ether narcosis appeared to raise the blood pressure; showing, what one's clinical experience had taught one, that ether acts as a stimulant in both smaller and larger doses than are ordinarily employed in practice.

I exhibit a typical chart of an uncomplicated ether administration, lasting eighty-five minutes, for ovariotomy and appendicectomy, which shows a blood pressure raised throughout and with very little variation.

As regards obstructed respiration in its relation to shock, Dr. Edwards's cases show, more plainly than either he or I had imagined, its general effect in causing a fall of blood pressure, both with ether and with mixtures. Although with embarrassed respiration the initial rise of ether was increased, any degree of cyanosis soon caused a marked fall, which varied with the degree of obstruction. The fluctuations of blood pressure with obstructed breathing were generally three times as large as in cases in which this factor was absent.

The previous condition of the patient is, after all, the most important factor for the administrator's consideration when an anaesthetic is to be given; and conditions of cachexia, starvation, anaemia, pyrexia, toxaemia, and shock from injury, all demand special care to prevent shock during the administration. The duration and character of the operation have, of course, also to be considered in the same connexion. Most of the surgical procedures which are likely to produce shock are well recognized. But I may, perhaps, instance excision of the rectum in the male, involving a thorough cleaning out of the cavity of the sacrum, as, in my experience, one of the operations which requires most care on the part of the administrator.

Ether given by the open method is an anaesthetic which, after a large experience, I have no hesitation in describing as a powerful preventive of shock. The blood pressures taken during the use of this method by Dr. Edwards were only eleven in number, and in some instances the ether was given after induction by other methods; but his reports show, what exactly accords with clinical experience, that there is much less respiratory obstruction and consequently much less initial rise of blood pressure, while the succeeding observations rarely show a drop below normal. The blood pressure under open ether keeps remarkably steady, with very slight and trivial fluctuations.

The pressor action of ether, particularly when the open method is employed, seems to me to demand its general employment in all cases in which it is not specifically or reasonably contraindicated. By reason of its stimulating effect, the centres constantly receive a good supply of arterial blood, and I have no hesitation in saying that those who have used this method at all extensively will prefer it before all others—at any rate, in cases in which shock is to be feared. In such cases it is also important to place the patient in the most favourable condition apart from the question of the anaesthetic. For example, man when anaesthetized being a cold-blooded animal, it is important to keep the temperature of the room high, and nutrient enemata are often of value before operation in ill-nourished subjects. So are good feeding, rest, and regular small doses of strychnine for a few days before the operation.

But the most important means at our disposal for placing a patient in a condition to resist shock is the transfusion of saline fluid before and during the administration. This procedure is one of the many important advances that surgery owes to the genius of Arbuthnot Lane. He first employed it as long ago as 1891, and continued its use in spite of the dicta of eminent physiologists, who pronounced it of no value. In Mr. Lane's latest apparatus for its employment the bag he uses is filled with normal saline solution, then closed, and the whole apparatus boiled for five minutes in a sterilizer. It is then put under a cold-water tap for a few minutes until the bag can be comfortably borne when held tightly against the cheek. That means that the temperature of the fluid is from 110° to 115°, and, as it cools down in the tube, it will be of the proper temperature when running slowly through the needle. The skin is sterilized by rubbing for a few minutes with a solution of biniodide of mercury in spirit, and the fluid allowed to run from the needle on to the back of the wrist before introducing the needle, to assure oneself that the temperature is suitable. If it can be comfortably borne, the needle is then introduced into the cellular tissue, the tap turned, and the bag hung some two or three feet above the point of delivery. In all serious conditions of the patient, and in all grave operations, this should be done before the anaesthetic is commenced and the process allowed to continue during the administration, the needle being left *in situ* until the end of the operation, when it is removed, a small piece of sterile gauze placed over the hole and covered with a piece of strapping. In extreme cases as much as four or even five pints may be given in this way during the course of an operation; and experience has shown that symptoms of shock rarely arise when this precaution is taken, and when they do arise are not serious. In the large number of cases in which I have used this method, and in which it has been employed by surgeons in cases that I have anaesthetized, I have never known of any harm to result from its employment.

There is one drug which has a remarkable and lasting effect upon the blood pressure, and is consequently of the greatest value in the prevention and treatment of shock. I allude to the extract of the infundibular portion of the pituitary gland. I have now had fifteen months' experience of this drug, the results of which may be of interest. In each case I have employed the preparation of Messrs. Burroughs, Wellcome and Company, which is a 20 per cent. solution put up in these glass bulbs, each containing 1 c cm. I have used it more than twenty times, twice experimentally, and on every other occasion in cases with marked symptoms of shock, and on no occasion has it failed to produce a considerable and lasting effect. Its most striking property is that its effect is still obvious after twelve to twenty-four hours, and in some instances even longer. The tracing exhibited shows its typical effect on the blood pressure of a pithed cat, for which I am indebted to the kindness of Dr. H. H. Dale. The only doubt I have had about this drug was as to its keeping properties, although I had used it when six months old with apparently the same result as a fresh sample. Dr. Dale has very kindly provided me with a beautiful tracing showing a comparison between the effects of a new preparation and the oldest one at his disposal, which had been in his laboratory cupboard for more than fifteen months. You will see that, allowing for the succeeding injections, the rises caused by the two preparations given alternately are practically identical; so that Dr. Dale can definitely say that it retains its activity unaltered.

Although I have used pituitary extract in some very grave conditions, I have never had to employ more than one dose. Dr. Edwards took blood pressures in 7 cases in which this drug was used—twice intravenously, and five times subcutaneously. When used subcutaneously the longest time before its effects were obvious was thirty minutes, the shortest five minutes; intravenously it acted immediately. All the cases showed a raised blood pressure when it was taken after some hours, and in one case the blood pressure remained raised for three days. I do not advocate the use of this drug until there are some symptoms of shock, but employed then in conjunction with saline transfusion it is of the highest value. If the emergency is urgent, both can, of course, be given intravenously. This chart shows their remarkable effect in an extreme case, and also shows how the blood-pressure observations made it possible to regulate the infusion of saline solution for more than half an hour, so as to maintain sufficient blood pressure to complete the operation.

In concluding my remarks, which I fear have already taken too much time, I wish to call attention to the connexion of low blood pressure during the administration with after-sickness. When the blood pressure has been kept up by the use of open ether and saline transfusion, sickness is either conspicuously absent or slight and transient, even after long and severe operations, and the patients commonly make good recoveries.

With this very imperfect review of the subject, I must beg your forgiveness if at any time I have seemed to place in undue prominence my own experience—for my only object has been to inaugurate a good discussion.

II.—George W. Crile, A.M., M.D.,
Cleveland, Ohio, U.S.A.

Disregarding the influence of the particular anaesthesia used, the manner of its administration, and the physical condition of the patient, and considering only the influence of the operative technique upon shock in operations performed under inhalation anaesthesia, it seems best to divide the subject into two parts—first, the relative shock-producing value of the various tissues and organs; secondly, the method of operating with a minimum shock.

The several regions of the body have varying shock-producing values, which, at least in part, correspond to the ticklish regions. In recent experiments I have found that the brain substance has virtually no shock-producing quality. The maximum is found in the trunk, and in the extremities. The abdomen is more susceptible than the back: the sole and palm more than the dorsum; within the abdomen, the region of the diaphragm, more than that of the pelvis; the kidney, the ureters, and the urinary bladder have a relatively low shock value, while the omentum is practically a negative tissue. The peripheral nerve trunks have marked shock value. As a general statement, the more a part in the course of evolution has been exposed to injury, the greater the shock reaction when subjected to operative trauma.

The kind and amount of trauma employed by the surgeon is the single item of greatest importance.

Sharp division of *tissue* causes the least disturbance. Crushing, tearing, and dragging on tissue causes the greatest amount of shock. Perhaps the most shock-producing type of trauma known is that used by the carnivora in killing their prey, or fighting with each other. That type of trauma is almost specifically shock-producing.

One operator, therefore, may in the performance of precisely the same technique cause more shock than

another. Occasionally one sees a surgeon employ the technique of the carnivora.

It is well, also, to bear in mind that in inhalation anaesthesia only a part of the brain is asleep. Complete anaesthesia of the entire brain produces suspended animation, or death. The medulla at least is but little affected, and the response of the unanaesthetized portion of the brain is constantly observed in the course of operations—for example, the altered rate and rhythm of the pulse and the respiration, the change in the vasomotor tone, as indicated by the fluctuation in the blood pressure, the contraction of muscles, and, under light anaesthesia, purposeless movements of the body, all show that a large portion of the brain is either partially or not at all anaesthetized. These subconscious phenomena represent the discharge of nervous energy in response to mechanical stimulation of the nociceptors, and are vain, subconscious efforts of defence or escape. The greater such subconscious action, the greater the shock. In bad risks this subconscious response should, if possible, be wholly excluded by the combination of local with general anaesthesia—the local anaesthesia physiologically blocking the afferent impulses—thus sequestering the brain from harmful impulses.

In a given operation the surgeon and anaesthetist should work in symphony. The anaesthetist should be warned in advance of a move in the technique which will send a flow of impulses to the brain, discharging large amounts of energy, and tending to force the patient out of quiet anaesthesia.

Being warned, the anaesthetist then will not, therefore, give an overdose of anaesthesia by the increased exchange of air in response to the reflex stimulation of the respiratory centre by trauma.

The conservation of blood is an important point in the prevention of shock. Not only is the prevention of the loss of blood important in itself, but a dry field requires less trauma incident to sponging. In operations upon the larynx the reflex inhibitory impulses should be prevented by the local application of cocaine.

In operations within the mouth and the nose, the provision for quiet continuous anaesthesia by means of tubage of the pharynx is an advantage to the patient, the anaesthetist, and the surgeon—to the patient, because it prevents the danger of bronchopneumonia from inhalation of blood; to the anaesthetist, because it gives him a fair opportunity to administer an even anaesthesia; and to the surgeon, because he can work as consecutively as if the operation were made for hernia.

Another, and in my opinion a most important point, is the exclusion of the factor of fear—at least in certain patients and in certain diseases.

In Graves's disease I have seen fear alone cause death. These patients, being pathologically susceptible to fear, may be anaesthetized and operated on as follows:

Consent for operation having been obtained in advance, the patient while in her bed is given, under any pretext, inhalations by the regular anaesthetist, using the anaesthetizing apparatus, but substituting any volatile oil for the anaesthetic. After this measure becomes a commonplace, ether is in some instance cautiously added until primary anaesthesia is attained. This is merely a practice march. On the day of operation, the patient is unconsciously anaesthetized in her bed, while the ward cart is waiting outside the door to carry her at once to the operating room. When ready to begin operating, nitrous oxide is substituted for ether, and the entire field of operation is cocained just as carefully as if the patient were receiving no general anaesthetic. In this manner this most difficult class of patients, because of their maximum discharge of energy on a minimum traumatic or psychic stimulus, may be mastered. The complete isolation of the brain from the inflow of impulses both traumatic and psychic is the key. The conservation of nervous energy, by thus breaking completely the connexion with the associational centres of the brain, is in many cases other than Graves's disease of the highest importance.

Every anaesthetist is familiar with the troubled, restless behaviour of the subconscious brain in patients frightened before or during the early stages of anaesthesia, and every surgeon knows that the post-operative course in such cases is not so even.

In recent experiments I have found, as I believe, that uncomplicated fear may cause morphologic changes in the brain cells, and Dolly and I showed that uncomplicated trauma caused morphologic changes in the brain cells. Now, if operations could be so performed that the perception of fear could be excluded, and the traumatic impulses incident to the technique could be blocked, then the brain would remain in a neutral state during the entire operation. Such a brain should go unscathed and experience no post-operative impairment. I have repeatedly verified the correctness of this point. A combination of morphine and scopolamin two hours prior to operation, a minimum show of preparation, nitrous oxide anaesthesia, and in some cases local anaesthesia as well, and the most gentle handling of tissue minimizes post-operative nervous phenomena, which, as I believe, is merely a later phase of psychic and traumatic shock.

Since this discussion is intended to touch upon only the prevention and the treatment of shock, I shall make no statement as to the pathology, excepting upon one point as bearing upon the treatment—namely, the brain cells, especially those of the cortex and cerebellum, show morphologic alterations, whatever the point of application of the shock producing trauma. Until some new principle is discovered whereby these morphologic changes may be restored at will, I can conceive of no specific remedy for shock. Morphine has a certain advantage in the rest it secures. Apparently the only means of restoration is rest. These statements are intended to apply only to the lesion in the nerve cells. But there is a great danger secondary to the lesion in the nerve cells; indeed, it is a link in the vicious circle—namely, the consequent anaemia. Anaemia itself adds to the lesion made by trauma. Fortunately anaemia may be overcome, even when the commonly employed methods—such as posture, bandaging, saline infusions, etc.—fail. The gravest stages of anaemia may be overcome, provided, of course, the brain cells are not fatally damaged, by the direct transfusion of normal human blood. In desperate risks the donor may be placed on a table alongside of the patient, and in the course of the operation blood may be transferred as required to sustain the circulation of the patient. The efficiency of transfusion is indicated by the fact that if a sufficient amount of blood is transferred the circulation may be continued independently of the central nervous system. A carefully over-transfused dog may be decapitated without a fall in the blood pressure.

The prevention of shock in operations under inhalation anaesthesia is, as it seems to me, most effectively accomplished by the conservation of the energy of the patient—by the prevention of the loss of heat, loss of blood, the exclusion of psychic influences, a minimum trauma of sensitive tissue; by a feather-edge dissection, and in certain cases a double anaesthesia, central and peripheral, thereby wholly sequestering the brain and wholly preventing shock. Once there is shock, the treatment consists in overcoming anaemia and securing physiologic rest, which alone can restore the damaged brain cells. When all other measures fail the direct transfusion of blood is indicated.

III.—P. LOCKHART MUMMERY, B.C., F.R.C.S.,

Senior Assistant Surgeon, St. Mark's Hospital for Cancer, Fistula, and other Diseases of the Rectum; and Senior Surgeon to Out-Patients, the Queen's Hospital for Children, Hackney.

THE definition of surgical shock which is now practically universally accepted is "a condition of lowered blood pressure resulting from exhaustion of the vasomotor centres." The truth of this definition rests upon a sound scientific basis of experiment, and, moreover, fits in with all the known clinical facts. Its first recognition is due to Dr. Crile's original experiments, the correctness of which have been verified by Cushing, myself, and others, during the last six years.

I think I am not overstating the case when I say that the discovery of the nature and causation of surgical shock, and more especially of the vital importance of the maintenance of the blood pressure and of conserving the integrity of the vasomotor centres in all such conditions, is one of the most important developments which has taken place in scientific surgery in recent years, and one which has already done much to save human life. I would especially insist upon the importance of preventing shock during surgical operations, as it is a condition easily

prevented, but difficult to treat successfully when once well established. If the physiological factors which operate in causing shock are known, there should be little difficulty in preventing shock.

This is not the time or place to discuss the different details of surgical technique by which the surgeon may prevent shock during long and serious operations, as although these factors are of the greatest importance, they do not come within the control of the anaesthetist.

During the progress of an experimental research into the causes of shock, carried out by Dr. Symes and myself during the last five years, two facts in the relationship between the anaesthetic and shock particularly struck me as important. First, shock more readily occurred when chloroform anaesthesia was used; and, secondly, the deeper the anaesthesia, the less effect did operative procedures have in producing shock. Thus, if the animal was kept under ether in the condition ordinarily understood by surgical anaesthesia—that is to say, in such a condition that the superficial reflexes were abolished—shock slowly developed as the result of surgical procedure. If, however, the animal were kept under very deep anaesthesia, so that the deep reflexes were also abolished, and especially if, in addition, morphine were administered, it was then found almost impossible to produce shock—that is, surgical procedure produced practically no effect upon the blood pressure. We have to take into consideration the fact that anaesthesia itself produces shock if administered for any length of time. This applies especially to anaesthesia produced by chloroform, in which there is a progressive fall in the blood pressure from start to finish, and a very serious degree of shock will ultimately result from this alone. Although the same applies to some extent to ether, it is not so marked, and by choosing a combination of deep ether anaesthesia, or ether-morphine anaesthesia, we have a very good preventive to production of shock during operation. I therefore consider the ideal anaesthetic, in cases where shock is a possible factor in the case, is ether by the open method combined with morphine, administered hypodermically; though I think that a mixture of ether and chloroform combined with morphine is, perhaps, equally good for this purpose, and for other reasons often preferable.

Keeping the patient warm during the progress of a long abdominal operation is most important, and, with this end in view, my own practice is to have a Gamgee suit made consisting of trousers and jacket, which is worn during the operation, and necessitates only the abdomen being exposed. It is also, I believe, most important to keep the wound area covered as much as possible by towels or sterilized pads. I think that the use of the Trendelenburg position during abdominal operations is of great value in preventing shock. By its use we call in the aid of gravity to maintain the blood pressure in the vital centres. I think that whenever possible the Trendelenburg position should be used for cases where shock is a possibility. In this connexion, however, there is one precaution which it is most important to observe—namely, that the abdomen should always be tightly bandaged *before* the table is lowered, otherwise serious and sudden collapse not uncommonly occurs.

The administration of morphine just before the operation is of undoubted value in preventing shock. It acts by cutting off the afferent sensory impulses passing to the brain and vasomotor centres from the field of operation. I know that some anaesthetists object to it on the ground that it is an anaesthetic over which one has lost control when once administered. But I do not quite see the force of this argument, as morphine is not a complete anaesthetic by itself, and after its administration total anaesthesia still remains under control by the anaesthetist. Personally, I have never seen anything but good result from it when used in combination with ether and chloroform.

I most cordially agree with Mr. Rowell in advocating the use of continuous subcutaneous infusion of saline solution, during long abdominal operations, as a means of preventing shock. I believe it to be of the utmost value. I have used it in all serious operations for some time, and am certain that by means of it I have obtained results otherwise impossible.

With regard to the treatment of shock. This depends for its success upon our being able to maintain the blood pressure at or near the normal level by artificial means until such time as the vasomotor centres have recovered. Strychnine, or any kind of stimulant, is absolutely contra-indicated, and will do serious harm. Small doses of morphine are of much more value than stimulants. Our chief object will be to maintain the pressure in the vital centres by maintenance of the "head-down" position, and by bandaging firmly the limbs and abdomen. In serious cases these measures should be supplemented by intravenous infusion with weak solutions of adrenalin—a drug which gives us absolute command over the blood pressure, even when the vasomotor centres are paralysed or destroyed. The drug, however, which promises to be of most practical value is an extract of the infundibular portion of the pituitary gland. This drug, like adrenalin, will raise the blood pressure independently of the vasomotor centres, but has the great advantage that its effect lasts for some considerable time. As in the case of adrenalin, it is essential that it should be administered intravenously when there is any serious degree of shock, or it will have no chance of reaching that part of the circulation where it can exert its action.

Lastly, it is of importance to administer some easily assimilated nourishment at frequent intervals to patients who are suffering from shock.

IV.—J. D. MALCOLM, F.R.C.S.Edin.,

Senior Surgeon, Samaritan Hospital.

No one can appreciate more highly than I do the work of Dr. Crile, but I would fain persuade him that, in regard to shock, it is capable of an interpretation other than that which he has given. He teaches that the vasomotor centres are paralysed in shock, and it is well known that when these centres are out of action all the small vessels dilate. But he has also asserted that both before and after death from shock

> The arteries were quite empty, the tissues pale. . . . There was a manifest transference of the blood from the arteries and capillaries to the veins. . . . The relative proportion of blood in the arteries and capillaries and that in the venous trunks gave a rough estimate of the depth of the shock.[1]

He also said that when the splanchnic area was not involved in the manipulations of an experiment,

> Autopsies did not reveal a condition of vascular distension in this area different from that of other areas.[2]

These statements describe exactly the conditions which I have often observed in the peritoneal cavity as shock developed. The tissues become extremely pale and bloodless, and Crile's fuller statements seem to me to indicate with certainty that the arteries and capillaries of the animal observed were powerfully constricted, or that its venous trunks alone were relaxed. These facts appear to me to be irreconcilable with his theory.

Crile also said that he could always raise blood pressure by injecting saline solution into a vein, but that the rise was less sustained as the state of shock developed. In cases of deepest shock he found that the blood was little diluted by the solution, which rapidly passed out of the vessels into the tissues, causing oedema and sometimes death.[3] These observations seem to indicate that the capacity of the vascular system did not increase. Again, it has been demonstrated by Sherrington and Mouckton Copeman, and by Cobbett and Roy, that serum escapes from the blood into the tissues as a consequence of injuries, and the vessels must contract, actively or passively, if their contents diminish.

The effects of strychnine as described by Crile[4] are instructive. He said that this drug brought about the vascular conditions characteristic of shock. When convulsions were prevented by curare, strychnine in large doses produced a marked prolonged rise of blood pressure, which was followed by a fall to subnormal. Each consecutive dose caused a less extensive rise, followed by a greater fall until a very low blood pressure was established. Arterial contraction was clearly the cause of the rises of pressure, and Crile asserted that the excessive fall indicated an excessive vascular relaxation. But in arriving at this conclusion he did not even mention the

[1] *Surgical Shock*, by Geo. W. Crile, p. 142.
[2] Loc. cit., p. 139.
[3] *Blood Pressure in Surgery*, pp. 269-71.
[4] Ibid., pp. 266-68.

possibility that the fall of pressure might be due to a loss of fluid; and it seems to me that unless this possibility is excluded a low blood pressure does not offer any proof that the blood vessels are dilated or paralysed.

That much fluid escapes from the body in the state of shock must be obvious to any one who has seen a typical case of rupture of a gastric ulcer into the peritoneal cavity, and the importance of this loss will be recognized when the effects of even a slight haemorrhage upon developing shock and the necessity for administering fluid to promote recovery are considered.

Other facts have been put forward in support of the view that the vasomotor centres become paralysed in shock, but many of these seem to have been observed in pithed animals. Such observations may illustrate the vascular conditions that should arise in shock if the vasomotor centres are paralysed in that state, but they are altogether irrelevant as proofs of Crile's theory until it is shown that the vascular changes are the same in both cases—for example, that the "quite empty" arteries described by Crile as occurring in shock are also developed after pithing. I believe that these two conditions differ widely from each other, and the whole trend of recent physiological work seems to me to be opposed to the idea that the vasomotor centres are paralysed in the state of shock. W. T. Porter[5] and M. G. Seelig[6] have published records which directly negative this view, and Yandell Henderson[7] has propounded the acapnia theory. He showed that shock is always accompanied by a diminution of the amount of carbon dioxide in the blood, and he was able at will to prevent, or cause, or cure the vascular changes characteristic of shock by regulating the amount of this gas in the tissues. He showed, moreover, by volumetric records of the output of the heart, and Eugene Boise[8] has independently pointed out, that a sufficiently intense stimulus to cardiac contraction causes the heart to pass into a state bordering upon that of tetanus, so that its propelling power is abolished and the carotid blood pressure falls. These authors agree in asserting that in shock the vasomotor centres are in a state of intense hyperactivity. Henderson says that the fall of blood pressure in shock "is not due to abolition of the peripheral resistance in the arterial system. No inhibition or fatigue or failure of any sort occurs in the vasomotor nervous system. On the contrary, this mechanism is intensely active in an effort to compensate the lessened blood stream."[9] Henderson's views on the necessity for maintaining a fairly high percentage of carbon dioxide in the blood, and his description of the conduct of the heart when there is too little of this gas, have also been confirmed by E. Jerusalem and Professor Starling.[10] But a fall of carotid blood pressure arising from an intense vascular contraction is possible only if fluid escapes freely from the vessels into the tissues or out of the body. The chief danger of developing shock is that the tissues may be starved by arterial contraction. After shock is well developed, if its causes cease to act, the vessels will relax and a great fall of pressure must occur not only in proportion to the vascular relaxation, but also in proportion to the amount of fluid that has been lost. The conditions at this time simulate in some respects those of a pithed animal, but the phenomena are really closely comparable to those of a severe haemorrhage, and the danger of the low blood pressure during recovery from shock is that syncope may occur. Thus there are two causes of a low blood pressure—one occurring only in the most advanced state of developing shock, the other arising more or less in all cases as recovery is taking place. These two conditions of low blood pressure should be clearly differentiated.

I am persuaded that the improved methods of administering anaesthetics have done as much as, if not more than, surgical advances to abolish shock, and I feel sure that the work of Yandell Henderson will give the anaesthetists still greater power in this direction. The regulation of the amount of carbon dioxide in the body is mainly effected through the lungs. A too free ventilation should be prevented. Morphine, given before an operation, tends to quiet the respiration, and should be administered, if it is not otherwise contraindicated. If an increasing rate of the heart action seems to show that an onset of shock is imminent, the patient should be made to rebreathe his own breath through a long tube or to inhale a mixture of carbon dioxide and air. But only a slight excess of this gas is required. In large excess it acts as a powerful cardiac depressant. The effects of oxygen are somewhat in dispute. It seems to me that it should be given freely.

When the causes of shock are active everything possible should be done to minimize the effects of injury by giving sedatives and vaso-dilators, either in anticipation of mischief or when occasion arises, and by keeping the patient warm. No vaso-constrictor should be given at this time. After shock has developed, if its causes cease to act, the tendency to recover is spontaneous, but the patient may require stimulation, and perhaps assistance to keep him breathing until carbon dioxide reaccumulates in the blood in sufficient quantity to induce voluntary respiratory efforts. In this stage all the methods described for maintaining the blood supply to the central nervous system are useful. Vaso-dilators should not now be given. On the contrary, dilatation should be controlled until a sufficient quantity of properly constituted blood is restored to the body, and strychnine in small doses is by far the best drug for this purpose. The use of adrenalin and extract of the infundibular portion of the pituitary body seems to me to be recommended entirely because of their action on pithed animals. I have seen no reason to believe that the advantages of their administration in the treatment of shock are due to anything but the fluid with which they must be given. One of the chief necessities during the stage of recovery is that fluid should be given freely. It is needed as soon as the vessels begin to relax, and this want should be anticipated by a subcutaneous injection of saline solution. Particularly in septic cases, and in cases of great debility, such an administration is urgently required to prevent shock during, after, and even before, an operation. The fluid supplies a waste product that is being rapidly lost; and it may, therefore, be said to act as a food. In the stage of recovery saline infusion into a vein is not necessary, and Crile's description of the effects of forcing fluid into the venous system when shock is developing shows that such treatment at that time gives rise to serious danger from oedema in and around the lungs.

In conclusion, I would urge that as the state of shock develops, there arises an intense and increasing stimulus to contraction of the vascular system, which in advanced cases may give rise to a low blood pressure from over-contraction of the heart—a condition of great danger—but that the low blood pressure commonly observed in non-fatal and less severe cases is a secondary phenomenon due principally to loss of fluid from the vessels. I have never undertaken any experimental work, but I have seen a great deal of abdominal surgery, and before Crile's theory was published I opposed the idea that there is any kind of vascular relaxation as the state of shock develops. That idea does not help me to understand any clinical observations I have ever made.

Moreover, Crile himself seems to me, in the passages I have quoted from his writings, to support not his own but the opposite view, and if he could be persuaded to give these passages their full value, I do not think he could avoid joining in the belief that the primary phenomena of shock are due to an intense arterial contraction.

The acapnia theory, which involves this view, seems to me full of promise for usefulness by explaining clinical phenomena, and by suggesting practical measures for treatment.

DISCUSSION.

Professor LEONARD HILL (London) said that from a physiological point of view shock was caused by a paralysis of the synapses by a widespread injury which caused a defective transmission at these points. He said that stimulation of any reflex arc left it momentarily depressed, so that any reflex mechanism was fatigued by excessive stimulation; that nervous shock was primary; that the fall of blood pressure was secondary (1) to the general relaxation of the body, (2) to haemorrhage and exhaustion. Bandaging the limbs, pressure upon the abdomen, administration of oxygen, and transfusion of

[5] *American Journal of Physiology*, 1907 8, p 405.
[6] *Journal of the American Medical Association*, January 8th, 1909.
[7] Acapnia and Shock, by Yandell Henderson, *American Journal of Physiology*, February, 1908; February and April, 1909; and later papers.
[8] *American Gynaecological Society's Transactions*, 1908.
[9] *Proc. Amer. Phys. Soc.*, 1909, p. 30.
[10] On the Significance of Carbon Dioxide for the Heart Beat, by Jerusalem and E. H. Starling, *Journ. of Phys.*, vol. xl, p. 279.

saline was the appropriate treatment, the object being to maintain the circulation, which would allow the synapses to recover.

Dr. DAVID LAMB (Glasgow) said that his experience of the treatment of shock corroborated Mr. Rowell's remarks. Undoubtedly when shock had occurred free saline intravenous transfusion with head and trunk lowered was amongst the most effective remedial measures at command. In ordinary circumstances two pints were used, but in one case—apparently moribund—the introduction of five pints of saline into a vein was followed by a marvellous result.

Professor WESLEY MILLS laid stress on the dreadful misery as well as the danger of shock. Starvation and purgation were not necessary in all cases, and might be injurious. It was very important to keep the patient warm.

DISCUSSION ON THE PRESENT POSITION AND LIMITATIONS OF SPINAL ANAESTHESIA.

OPENING PAPERS.

I.—J. BLUMFELD, M.D.Cantab.,
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THERE are some authorities who believe that little profit can come from discussing spinal analgesia at its present stage of development. The Council of this Section have, however, and I think wisely, decided otherwise. It seems to me that it is a good thing for us to try and settle by collective experience where the matter now stands. We shall be in no way attempting to declare that the future may not entirely upset our present position, but we shall certainly provide valuable information if we can arrive at some sort of general opinion as to exactly in what cases and under what conditions spinal analgesia is to be recommended, or to be objected to, at the present time. There are, perhaps, some who still maintain that it should never be used if a general anaesthetic is available; there are certainly others who think that there are many cases in which it is to be chosen in preference to general anaesthesia when either of the two can equally well be had.

The great advances that have been made since the method was first introduced over ten years ago—advances chiefly depending upon the abandonment of cocaine in favour of stovaine and novocain and tropacocaine—are in themselves enough to warn us not to regard the present position of spinal analgesia as necessarily or even probably final. At the same time we wish to know first what that present position is as regards safety, convenience, certainty, etc, in comparison with general anaesthesia, and particularly we want to know when, if ever, we ought to recommend spinal analgesia in preference to any form of general anaesthesia.

In order to provoke discussion, and to draw from those of greater experience in the matter than myself the results of their investigations, I shall not hesitate to make statements more dogmatic than my knowledge warrants, nor to lay down conclusions which later speakers will probably dissent from and very likely upset. Without further apology, therefore, I propose to consider spinal anaesthesia under two aspects—first, as a routine general anaesthetic, and, secondly, as the anaesthetic of choice under certain circumstances. And I may say at once that I propose to try and show with regard to the first position that we are not justified in adopting spinal anaesthesia as a routine anaesthetic; and, secondly, that there are certain, though few, conditions under which it appears to be the best method we have at our disposal.

Now, with regard to the routine use of such a method as spinal analgesia, we must first face the broad problem of whether or not it is desirable that the patient should be conscious during the performance of an operation. Obviously, if any one took the view that such consciousness was always and wholly undesirable, except in very minor surgery, he would under no circumstances admit spinal analgesia. Such an extreme view is hardly tenable when we bear in mind the common case of operations upon the eye. Here consciousness is the rule, and the surgeon is able to be considerably helped by the voluntary aid of the patient in moving the eye. Yet we must remember that even in eye cases it often happens that from the general mental temperament of the patient the surgeon prefers unconsciousness, and has a general anaesthetic administered. There are not many other operations during which the patient, if conscious, can voluntarily assist the surgeon, even if he were not paralysed by the analgesic, and this advantage of spinal analgesia therefore does not often enter into the question.

On the other hand, there are many cases in which the patient, if feeling any pain or queer sensation or imagining pain, may considerably interfere with the surgeon's convenience. Moreover, we have to consider something besides the immediate inconvenience that may result from the patient's consciousness. We have to take into consideration the general effect upon his nervous system. This is in many cases, I am certain, a most important matter. That this should be the case is easily understood by any one who has studied Freud's analytical diagnosis of hysteria and has realized the important part which fear, particularly in early life, plays in such conditions. In many cases the necessary stringing up, so to speak, of the patient, the nervous tension under which he forces himself to obey instructions quietly, the intense and subdued apprehension under which he labours from beginning to end of the ordeal—these things, even if he is spared all actual pain, are enough in many cases very seriously to derange a patient's condition of nervous equilibrium.

The important effect that may be produced by fear has recently been shown in a way perhaps more convincing than ever before. Crile has shown that actual morphological changes may be produced in cortical cells by the action of the emotion of fear alone, and some of those here no doubt saw the illustrative drawings yesterday, and heard Dr. Crile's remarks upon the matter then. Several of those remarks bore very pertinently upon that side of the question of spinal analgesia with which we are now dealing—namely, the disadvantages of consciousness; for Dr. Crile, in discussing shock, showed how large a psychical side there was in the production of shock; and physiologists who followed him showed, too, that the true seat of origin of shock is in the nervous system, the vascular condition being secondary. Now, this being so, we cannot hope to prevent shock by merely cutting off peripheral impulses; shock must be prevented also from above. The psychical factor in its causation must also be eliminated, and for this purpose we must have unconsciousness—that is, general anaesthesia. The importance of the psychical factor varies immensely with different individuals, it is true, and thus it is that spinal analgesia may sometimes be perfectly successful for an operation which, in a more susceptible, sensitive kind of individual, will only be performed quietly under the influence of a general anaesthetic.

I may say, apropos of this matter, that one case afforded me valuable evidence of the reality of these considerations of the psychical side of the question. It was valuable because the patient, a medical man, was in no sense a nervous individual, and he was anxious to have his operation—a rectal one—performed under spinal analgesia. This was done, and he felt no pain, and yet he is emphatic that nothing would induce him to undergo the experience again. He would rather, he declares, be sick for a couple of days after chloroform. The amount of control that was required to keep quite still and to ignore the ideas suggested by the moving of instruments and the necessary movements on the part of assistants, etc., and the absolute stillness required of him afterwards for fear of starting headache, made the experience an intolerable one.

If such is the case with a normal individual, we can realize what it must be with one by nature nervous or apprehensive, and we can easily decide how important it must be to select for spinal analgesia only such persons as are suitable from this point of view. In the case of quite small children their rapid forgetfulness may make this aspect of the matter unimportant, but in the case of children of about 8 years and upwards I am certain that the terror which I have sometimes seen them exhibit makes the use of spinal analgesia in many cases highly objectionable, even if they were spared all physical pain. Pain may be mental as well as physical, and the effects of the former kind, which cannot be avoided by spinal

analgesia, may be more far-reaching and undesirable than any purely physical torment. This is an aspect of the matter which I do not believe is sufficiently borne in mind, and one from which the use of spinal analgesia has the appearance of a retrograde movement when compared with the peaceful oblivion procured by the proper use of general anaesthetics.

From the same point of view the abilities of some surgeons are prejudiced by their patient's consciousness. In the old days a cool callousness was required on the part of the operator which is not called for during general anaesthesia, and there are some surgeons who cannot entirely disregard the moanings or complaints of a patient who momentarily experiences discomfort or pain during an operation under spinal analgesia. These interruptions interfere with his calm, and require on the surgeon's part an amount of indifference to which some refuse or are temperamentally incapable of subjecting themselves. On the other side of the argument—upon the advantages or disadvantages of consciousness—we must reckon with the fact that a certain number of patients dread more than anything else the loss of consciousness. These would obviously be persons in whose cases spinal analgesia should be chosen so far as this point of view is concerned.

Any anaesthetic which is to be used in a routine fashion must not only be certain to produce a requisite anaesthesia, but must also be so safe that the risk to life is at any rate only to be reckoned as one in some thousands. It should, in fact, be such that when used for healthy persons not undergoing very severe operations, the risk may be said to be negligible. That may fairly be stated to be the position of the general anaesthetics in competent hands. Now, it is obvious, I think, from the general experience that if spinal analgesia were used in a routine way for all operations to which it is applicable at all, the risk to life would be very much greater than this. Indeed, Professor Bier himself a year ago stated that a fatality of 1 to 4 in 500 was to be looked for. In the first place it is certain from the recorded cases that occasionally the injection into the spinal theca of what is ordinarily considered a proper dose of stovaine has produced a rapidly fatal effect. It is quite true that in several of the fatal cases recorded the condition of the patients was precarious before the puncture, but in others it is expressly stated that the condition was good, and that there was no operative procedure to be blamed for the collapse. In others, again, operation had not begun. As regards certainty in producing anaesthesia the spinal method at present leaves a good deal to be desired. For various reasons there are failures to an extent variously estimated at from 2 to 7 per cent. Some of these failures are no doubt due to faulty technique, and may be regarded as probably to be obviated in the future. In others it is found impossible to enter the spinal theca—this may occur owing to unusual obesity on the part of the patient or anatomical peculiarity of the spine. In other cases, again, cerebro-spinal fluid escapes, the theca has evidently been entered, the dose is injected, and yet there is no anaesthesia. Presumably some failures of this kind are due to the stovaine being inert, probably from not being sufficiently fresh. I had one such case in which this explanation would not hold. However occurring, these failures have seriously to be reckoned with in any comparison between spinal and general anaesthesia, for by the latter method there is, of course, in competent hands practically no such thing as inability to procure anaesthesia. Again, in cases under spinal analgesia we are sometimes disconcerted by the fact that anaesthesia is perfect up to a point and then fails. For instance, in an appendix operation the abdomen had been opened with perfect comfort on the part of the patient, but the manipulation necessary to free a firmly adherent, deeply seated appendix gave rise to so much sickening feeling and such violent hiccoughing that I was obliged to give some chloroform throughout the rest of the operation. It is necessities of this kind, not at all uncommon where operations involving dragging are concerned, that go to prevent my regarding spinal analgesia as a reliable routine method.

The effect of spinal analgesia in minimizing shock by cutting off peripheral impulses will probably prove its great claim to utility in the future. There is no reason why this valuable effect should not be employed in conjunction with general anaesthesia, and in fact this has already been done, although not always by original intention. The extremely small amounts of general anaesthetic that need be administered to a patient who has been injected with stovaine reduce any risk due to the general anaesthetic to a minimum. Enough only need be given to ensure absence of all consciousness, and it seems to me that by this combination of spinal analgesia with unconsciousness we ought to be able to make anaesthesia even in severe operations as safe as is chloroform administration in an ordinary case of midwifery. At present this point has not been reached. The danger has not yet been eliminated from doses of stovaine, etc., sufficient to ensure perfect abdominal calm. The work of Mr. Tyrrell Gray, which seeks absolutely to localize the effect of the injected drug, seems to me of the greatest promise in this respect. If we could by injecting some spinal analgesic cut off all peripheral impulses and paralyse the abdominal muscles, at the same time getting no absorption of the drug into the general circulation, and then ensure absence of all pain and consciousness by minute quantities of chloroform, we should have an ideal condition both from the patient's and from the surgeon's point of view. At present an ideal condition, from the surgeon's point of view, is only obtained, where severe abdominal operations are concerned, at considerable risk, and usually, in my experience, with some, if not considerable, discomfort to the patient. The gain to the surgeon's convenience of the absolute flaccidity obtained by spinal analgesia cannot be disputed. It is a flaccidity which we cannot imitate with general anaesthetics, for it is a flaccidity in which the recti muscles resemble more those of the corpse than of the living subject. They offer absolutely no resistance to the manipulations of the surgeon, and give him freedom to the extent which we cannot get with general anaesthesia, with which, of course, we cannot paralyse the recti unless we paralyse the respiratory centre too, an effect which we are not over-anxious to produce. Now this condition, so delightful to the operator, is only obtained at the price of other disadvantages. First, there is absorption of the stovaine into the general circulation to an extent which produces dangerous depression, and has several times proved fatal; and, secondly, in the most favourable cases there is a period of retching or vomiting usually about fifteen minutes after the injection. This is variously explained as being due to paralysis of the lower intercostal muscles, with dilatation of the stomach and overaction of the diaphragm, or to cerebral anaemia due to the filling of the vessels of the splanchnic area by reason of their dilatation in conjunction with relaxation of the abdominal muscles. It is true that this period of circulatory depression and retching or vomiting lasts generally only a very little time. But it has not always been so, and when remedial measures are necessary we are debarred from the most effective of all—lowering of the patient's head—by the additional risk we should incur of causing the stovaine to gravitate to the bulb. It is true that some of the French surgeons say that in injections of caffeine and serum they have an absolute safeguard against serious effects from this condition of collapse. I have had no personal experience of these remedies, and shall be interested to hear if others can corroborate the statements of M. Tuffier in this respect.

When we come to consider conditions under which spinal analgesia is by some regarded as the method of choice, we are met by extraordinary differences of opinion. Taking, for example, the case of intestinal obstruction with frequent vomiting, we have here an example of a condition which many regard as particularly dangerous for general anaesthesia. Spinal analgesia was confidently looked to as a means of increased safety during operation under such circumstances, yet we find one observer who states that this is a condition under which he cannot recommend spinal analgesia, and he gives three fatal cases on which he bases his opinion. Recently another similar case has been reported in the JOURNAL of our Association.

Another class of case in which general anaesthesia has undoubted special dangers is that of diabetic patients undergoing amputation for gangrene. Here the mortality due to coma following general anaesthesia is undoubtedly high, and here it appears to me is a class of case in which spinal analgesia deserves the first consideration. The dose to be injected need not be so large as in abdominal cases; the risk of collapse from the spinal analgesic can therefore be reduced to a minimum, and

enough general anaesthesia for the patient's comfort can be supplied by the means of gas and oxygen, which is, so far as we know, free from harmful effects to the diabetic.

Cases of serious disease of the lungs—acute phthisis, for example, or advanced bronchitis—in which an operation is necessary, upon the lower limbs or perineal or genital regions, provide further examples of cases in which it appears to me spinal analgesia should be the method of choice. In cases of heart disease, on the other hand, I believe that the danger of general anaesthesia is commonly over-estimated, and certainly in the instances which have come under my own observation, I have never regretted the choice of a general anaesthetic in opposition to spinal analgesia. Cases of operation upon patients who are in an advanced stage of general peritonitis form another class in which there is often much to recommend the choice of spinal analgesia. These patients are already apathetic from the extent of their toxic poisoning, and there is little fear of shock from the psychical side; to cut off the peripheral causation of shock is therefore a rational proceeding, and there are cases in which a prolonged general anaesthesia does sometimes turn the scale against the patient's chance of recovery.

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[ABRIDGED.]

In dealing with my subject I shall not consider the earliest series of cases in which cocaine was used, and my remarks will apply therefore to the results of the injection of eucaine, stovaine, tropacocaine, and novocain. Cocaine is the chloroform of local anaesthetics, and nowadays is practically unused for producing spinal analgesia. The facts and opinions expressed in the very large number of the abstracts of articles which I have consulted vary greatly and sometimes differ absolutely.

Let us compare the death-rate of inhalation anaesthesia and spinal analgesia respectively. I have collected 50 deaths ascribed to spinal analgesia. The association of some of them with the method has been disputed, but on the other hand has been upheld; 35 at least of them occurred under the most widely-used drug, stovaine.

The deaths under general (excluding nitrous oxide) anaesthesia in a total of 1 686,348 cases recorded in Europe numbered 518, or 1 in 3,255 I have also collected from more than forty observers 23 955 cases of spinal analgesia with 29 deaths, or 1 in 826. Strauss some time ago referred to 22,717 cases with 46 deaths; omitting 19 in which he thought the method was not responsible, the mortality was 1 in 2,524. Only this year Strauss said he had collected 30,000 cases, the deaths being 1 in 1,800. At another time he said that tropacocaine had a record of 7,059 cases with 5 deaths, or 1 in 1,411. Schwartz mentions 3,000 cases without a death, and Chiene 15,842 cases with 21 deaths, or 1 in 754, and remarked that only 3 seemed clearly due to the method. Chaput has stated that there has been 7,000 cases without a fatality, but his figures were contested by those who had reported deaths. Müller (1910) said he used spinal analgesia by preference, and had had over 2 000 cases without real trouble. The very latest figures are those given by Hochmeier and König, when speaking this year of the present position of spinal analgesia. They recently collected 2,400 cases from many clinics and hospitals, the deaths numbering 12, or 1 in 200. Four patients died of respiratory paralysis a short time after, or directly in connexion with, the injection. In 3 cases death was said to have occurred some hours after operation with signs of heart paralysis, 1 patient died of anuria, another of cerebral apoplexy ten minutes after injection. Purulent meningitis caused death in 3 cases. Hochmeier refers the large number of deaths to the fact that many of the patients were unfavourable subjects because of old age or already existing internal disease, but I think this is the class of case in which we should expect results of spinal analgesia to be distinctly better than those of inhalation anaesthesia. Hochmeier concludes that spinal ana gesia should only be used when "Äther-rausch" and local analgesia will not suffice and there is marked contraindication to general anaesthesia.

The danger-rate in general anaesthesia (British Medical Association Report) is 153 in 23,423 cases, or 1 in 153. In 18,081 cases of spinal analgesia I found 107 danger cases, or 1 in 169. Chiene found 34 cases of grave collapse in 15 842 cases, or 1 in 466.

Failure is not always admitted by those who practise spinal analgesia; for example, Chaput said that he had had no failures for two years (he uses stovacocaine and gives scopolamine). I have not been able to find full and recent figures recorded by Tuffier in France, or Morton in U.S.A., both of whom have very extensively, the latter in 4,000 cases, used spinal analgesia.

Under failures I include failure to puncture, insufficient analgesia, no analgesia, and cases where inhalation anaesthesia had to be used, and have collected 11,745 cases where such information has been vouched, with 1,097 failures, equal 9.3 per cent. This proportion corresponds with the figures quite recently collected by Hochmeier and König, who reported 9 per cent. of failures in 2,400 cases.

Failure may occur even when injection is well carried out and there is apparently no defect in technique. Such failure is sometimes supposed to be due to idiosyncrasy. Failure, also, is said to be not uncommon in timid and nervous subjects, and not infrequently occurs where spinal analgesia is specially indicated, as I have seen several times. It is not rare that spinal disease—for example, osteomalacia, spinal deformity, or obesity prevents puncture. Meissner found that in 15 out of 600 cases the 2 latter causes operated. Connected with failure is the very occasionally late appearance of analgesia—for example, after three-quarters of an hour (Höllander), and its disappearance before the end of operation. Rarely, also, the analgesia may be unilateral. The large percentage of failures indicates that spinal analgesia should be carried out by an expert, and, in my opinion, by the anaesthetist. Jonnesco claims absolute safety for his method, and does not mention the word failure. The results of 7 of his cases recorded in England and America were as follow: 1 good, 1 unsatisfactory, 3 failures, and 2 almost died. Of 7 high analgesias demonstrated by Jonnesco in America, 4 resulted unfortunately, and 2 nearly died.

Our results at the General Hospital so far have not been encouraging. I have notes of 21 cases with 12 failures, 3 collapses, 2 deaths. The collapses and deaths occurred in patients in whom inhalation anaesthesia was feared, but both collapsed patients successfully took chloroform later on. One death and two collapses occurred with Jonnesco's method.

There is little mention of psychic disturbance in spinal analgesia. It is only reasonable to suppose that patients should have their cerebral activity stimulated under the unusual conditions of operation, and unless analgesia be absolute and operation straightforward psychic insult must necessarily be present.

What is the psychic effect of failure to puncture or to obtain complete analgesia? We must remember that the percentage of failures is large and that several attempts at puncture are sometimes made. I have heard of as many as seven. The psychic damage cannot be measured in terms as can shock or collapse, and psychic after-effect may last for months after the cause has operated.

Nervous and timid subjects are said to be refractory to spinal analgesia—that is, the standard dose does not produce the standard effect. This must in many cases be due to the fact that patients' psychic activity is greatly stimulated. We know that nervous patients often need much more than do ordinary patients of a general anaesthetic; on the other hand, psychic activity in patients who are very ill is fortunately greatly lessened, and spinal analgesia seems to be particularly appropriate in some of these cases. For large and long operations the present tendency is to combine scopolamine-morphine with spinal analgesia, and possibly to add a little ether or chloroform. Are we to regard this empirical and complicated combination of drugs, whose action after injection cannot be controlled, as generally better for the surgeon and patient than is narcosis? Krönig and Gauss, for example, use scopolamine-morphine with spinal injection in gynaecological operations because of the psychic effect produced, especially in the Trendelenburg posture. Holzbach says that in excited or stout patients he uses the same combination because of the complaints of patients that they cannot sleep any more and that they hear everything, and thus the effects of the

best analgesia may be thwarted. He produced in nearly three-quarters of his cases a deep sleep whose snoring is a source of satisfaction! So important is the psychic factor.

In gynaecology the authors just mentioned use spinal analgesia for the larger operations, but prefer general anaesthesia for the shorter ones. Retention of consciousness during large operations cannot, I think, be looked upon with indifference, and the long-continued Trendelenburg position is unpleasant from the first, and towards the end of the operation becomes almost unendurable.

From the surgeon's point of view it has been said that "if successful, the method fulfils all the surgeon's needs except that of certainty; there is absolute flaccidity of the muscles, anaemia of the parts, little bleeding, and little or no protrusion of the intestine in abdominal work." There is practically no mention in literature of anaemia of the tissues. Gray, however, says that the intestines are anaemic. With full analgesia relaxation of the abdominal wall is often absolute, which is of great advantage in deep abdominal work. Gray has had brilliant results during operation for intussusception in children.

The general opinion appears to be that children under 14 are not suitable subjects for spinal analgesia, but Gray and one or two others have found them to be ideal.

For obstetric work Westermark says puncture is more difficult because of the difficulty pregnant women have of bending their back. Uterine contractions are not interfered with while the cervix and perineum are relaxed. Epidural injection has been successfully used by Stoeckel in 111 out of 141 obstetric cases.

According to Neugebauer, in rectal surgery spinal analgesia is of great advantage, because the sphincters relax so much that the anus and region above are open wide for visual inspection, and he suggests spinal analgesia before narcosis and for diagnostic purposes.

It has been claimed that spinal analgesia greatly lessens the ratio of lung troubles after operation. In inhalation anaesthesia this ratio has been estimated at 2 per cent. with 1 per cent. of deaths); another estimate is 0.32 per cent. Kümmel (1909) said that since he had used scopolamine-morphine the pneumonia rate had fallen from 3.5 per cent. to 0.61 per cent. In gynaecological laparotomies Krönig and Gauss say that with inhalation anaesthesia there are 7 per cent. bronchopneumonias and a death-rate of 2 to 3 per cent. They found, however, that in 600 laparotomies under spinal analgesia there was no after-pneumonia (they added scopolamine-morphine). Holzbach always operates under spinal analgesia on women ill with bronchitis, even if they have very bad symptoms, and has found no harm result. Hochmeier and König found that lung troubles in 2,400 cases of spinal analgesia numbered 1.7 per cent., and said that the danger of lung troubles was equally as great as for narcosis. I think it is either König or Kümmel who truly says that thanks to the modern method of administration of scopolamine, post-operative pneumonia has become a dream, because there is no salivation and there are no tracheal râles, while vomiting is rarely observed."

Certainly, with our recent methods of inhalation anaesthesia, and general precautions, lung troubles are seldom seen. The after-effect is said to be much less than that after general anaesthesia. Gray says there is no comparison between the two methods. Other observers record vomiting lasting for several days and sometimes almost uncontrollable.

The most common after-effect is headache, which may be very severe and last for several days or longer. This is very rarely experienced after inhalation anaesthesia, but is found in about one-third to one-half of the cases of spinal analgesia. Deetz reported headache in 50 per cent. of his cases; it was very severe in 8, in 1 case lasted for two weeks, and in another for at least six weeks. Becker reported a case of headache and vertigo lasting for three weeks. Hochmeier mentions 1 case which lasted for six months.

The number of severe and dangerous after-effects on the side of the nervous system is astonishing. Prolonged sciatalgia may occur, for example, in 30 per cent. of cases (Feliziani), pain in the limbs for a week or ten days, or even two months. The irritation or damage to the central nervous system may proceed further, as shown by meningismus, paraesthesia, and more or less extensive paralysis, which may persist, and at times by fatal meningitis. Leguen reported 4 cases (in 250) of intense meningeal reaction lasting from four to six days. Many cases of paresis and paralysis of the limbs, bladder, and rectum are recorded, but space forbids me to mention them in detail. Paralysis of the abducent nerves is not infrequent. Vossius collected 33 cases, 1 of which lasted for six months; the percentage of these cases has been given as 2 per cent. Paralyses of the facial, hypoglossal, external cutaneous nerves, and of the shoulder muscles have also been recorded. Trophic disturbances may occur; retention of urine seems to be not uncommon, and may be prolonged.

With regard to dosage. Various and frequently severe symptoms during anaesthesia, and especially certain dangerous and persistent after-effects and deaths, show the difficulty of accurate adjustment of dosage to individual cases. Undoubtedly some of the deaths have been due to over-dosage. The standard dose is sometimes an overdose and sometimes insufficient. Hardouin collected 15 fatalities under stovaine, and in none of them was the dose over 0.07 grain; thus a standard dose proved fatal. Localization of dose, not an easy thing, cannot always be relied upon to prevent danger. The dose is empirical, and no allowance can be made for idiosyncrasy or for an error of judgement in summing up the condition of the patient.

It seems to me that, generally speaking, spinal analgesia is indicated where the toxic effect of general anaesthesia, especially if prolonged, is feared. This is particularly the case in old people, and in cases of acute disease. I would particularly urge its advantages in the case of diabetics where ether is usually impossible and chloroform is peculiarly dangerous because of its remote action. In bad cases—for example, cachexia, shock, and diabetes—there is what I call a "critical point" when the choice of a method of anaesthesia will often decide the issue of the case. In these conditions psychic sensibility fortunately is lessened, and the immediate or remote continuing toxic effect of inhalation anaesthesia may prove too much for the patient, so it is better that he should risk the immediately probably slighter toxic effect and more troublesome after-effect due to local nervous disturbance, and the 9 per cent. failure to produce analgesia, and that spinal analgesia be chosen, always providing operation is to be below the umbilicus and local anaesthesia is impossible. Apart from these cases, if the method *must* be used it should be reserved, as Tuffier recommends, for cases in which success is fairly certain and local anaesthesia impracticable, and, I would add, in which the operation is definite and no emergency is likely to arise.

From an extensive review of all the literature available to me on the subject, I conclude that spinal analgesia is retrogressing in favour, and is generally only used when there are marked contraindications to inhalation anaesthesia and local anaesthesia is not possible. Only a few surgeons who have had special experience of the method in a large number of cases of the same kind use it largely. In Germany it is abandoned by 50 per cent. of the surgeons who have employed it. The proportion of deaths, as one would expect from the conditions, is greater than in inhalation anaesthesia. The immediate dangers are at least as great. The after-effects are not uncommonly most severe, affect the nervous system, and on the average at least as frequent as those following inhalation anaesthesia. Many of them are most persistent and disastrous, though I must say that the English results are much better in this respect than the foreign. In spinal analgesia the chief after-effects are headache, backache, and raised temperature; in inhalation anaesthesia vomiting.

The percentage of failures in the former is very high. An excessive dose, whether absolute or relative, as in the case of idiosyncrasy, is more immediately and hopelessly fatal than is one after ether or chloroform, because it cannot be antagonized by mechanical eliminative means.

In the treatment of emergencies from spinal analgesia, one does wrong whether one sets up or inverts the patient; in the one case he may die of syncope, and in the other of poisoning.

Keen says that the ideal anaesthesia will abolish pain by abolishing consciousness, but without danger to life. Spinal analgesia does not fulfil either of these conditions. I place spinal analgesia as a method of preventing pain between inhalation and local anaesthesia. Generally

speaking, I think it should only be used in certain selected and mostly critical cases.

III.—E. CANNY RYALL, F.R.C.S.I.

MR. CANNY RYALL said that, as the probation period of spinal analgesia was now over, it was justifiable to lay down distinct indication and contraindications to its use. At present spinal analgesia should be restricted to: (1) Cases for which local or venous anaesthesia are inadequate. (2) Cases in which there are weighty motives for not employing inhalation narcosis, or where spinal analgesia is especially indicated.

It might thus be used in the following circumstances: (1) Operations involving the danger of great shock. (2) Severe injuries associated with shock. (3) Urgent operations. (4) Operations upon the head and neck. (He did not agree with Dr. Blumfeld that the use of spinal analgesia for operations above the umbilicus was too dangerous and too uncertain to justify its use.) (5) Abdominal operations. (The complete muscular relaxation, the elimination of shock, and the diminished liability to post-operative pneumonia were some of the advantages associated with this form of analgesia.) (6) For prostatectomies, since for old and weak people this method had an undoubted advantage over general anaesthesia. The enucleation was rendered much easier owing to the complete muscular relaxation. The dangers attending severe vomiting were avoided and shock was reduced to a minimum. (7) For rectal surgery.

Some diseases, if present, made the avoidance of general narcosis desirable, such as: (*a*) Diseases of the vascular system — acute pericarditis, severe valvular diseases, arterio-sclerosis, etc.; (*b*) diseases of the lungs — pneumonia, bronchitis, phthisis, etc.; (*c*) renal disease.

As a rule alcoholics were exceedingly hard to anaesthetize, requiring excessive quantities of ether or chloroform to obtain complete muscular relaxation. They breathed badly, and were more or less troublesome all through the operation. These subjects bore spinal analgesia very well. For them this method was particularly indicated when treating severe fractures or dislocations.

According to Continental gynaecologists, the employment of this method of anaesthesia had markedly improved the operative results. It was particularly indicated in total abdominal hysterectomy for fibromata and carcinomata.

There was a certain class of people for whom the idea of complete unconsciousness was the most terrifying part of the operation. For such persons spinal anaesthesia was especial useful.

Age offered no contraindication to spinal analgesia; on the contrary, the utility of the method at both extremes of life had frequently been demonstrated.

The contraindications to spinal analgesia were: (1) Operations which could be performed under local or venous analgesia. (2) Acute infective disease, as several deaths from suppurative meningitis had occurred, when severe infective diseases were present at the time the injection was given. (3) Suppurative processes in the neighbourhood of the proposed site of puncture. (4) Alterations in the vertebral column which might prevent the puncture succeeding. (5) Diseases of the central nervous system, especially tumours of the brain. There were strict contraindications, as several cases of sudden death had followed simple lumbar puncture with withdrawal of cerebro-spinal fluid from patients suffering from cerebral tumours. (6) Recent syphilis. (7) A high temperature. (8) If the patient could not rest in bed for twenty-four hours after operation spinal analgesia must on no account be attempted. (9) In hysterical or very nervous patients a subcutaneous injection of one or more doses of scopolamine often worked wonders.

The net conclusion drawn was that spinal analgesia had rendered most excellent service and had a future of rich promise. It would not displace other methods, neither would it die, but would remain and undoubtedly fill its proper place in surgery.

DISCUSSION.

Mr. J. T. J. MORRISON (Birmingham) said he was a convinced supporter of spinal analgesia, as it had proved a valuable aid in his operative work. During the past three years he had dealt with more than four hundred cases without encountering any anxious incident or sequel. His experience was restricted to tropacocaine, which he greatly preferred to other agents, because he considered it the least toxic drug yet introduced for the purpose. As the procedure had still to make its way in this country and involved surgical technicalities, he chose to take the responsibility of administering the tropacocaine himself instead of leaving it to the anaesthetist. The operations he had performed on patients under spinal anaesthesia ranged from sequestrotomy of the sixth rib down to excision of an interphalangeal joint for hammer-toe; and included cholecystomy for gall stones, gastrostomy, nephro-lithotomy, nephropexy, laparotomy for intestinal obstruction and appendicitis, both acute and chronic, umbilical and other herniotomies, operations on the urinary bladder, rectal operations, and amputations through the thigh and below. Within the last annual series his cases at the Queen's Hospital, Birmingham, numbered 173. Analysis of this series showed that the extremes in point of age were a boy aged 10, on whom Bassini's operation was done for the cure of inguinal hernia, and a man aged 81, with vesical carcinoma, partial resection of the bladder being performed: both of these cases were successful in every respect. Four of the 173 patients required a general anaesthetic in addition—namely, (1) a man, aged 57, with double inguinal hernia (the sacs were large and very adherent, and the analgesia did not last out the operation); (2) a nurse, aged 37, with old adhesions of the knee-joint (this was a neurotic person); (3) a man, aged 39, with inguinal hernia (no analgesic reaction to tropacocaine seemed to be obtained); (4) a boy, aged 15, with inguinal hernia (a nervous lad, who was comforted with 5 minims of chloroform given on a mask by the house-surgeon, Mr. J. Adams). In several other cases analgesia was imperfect but sufficient for the purpose in hand. The chief complications met with in the series were faintness, headache, and vomiting. By giving strychnine under the skin before and sips of brandy and water during the operation, faintness was mitigated or prevented. When pronounced it was treated by lowering the head, and, very rarely, by injecting ether subcutaneously. Headache occurred in 34 cases—that is, about 20 per cent.; in some patients it was severe, and lasted several days. Eleven patients had subsequent vomiting, and 2 vomited on the table. One patient, suffering from necrosis of the femur, lost control over the contents of his rectum during operation, but he had no ill result afterwards. The level of the site of injection varied between the eleventh dorsal intraspinous space and the fourth lumbar.

Mr. TYRRELL GRAY said that the indications for and limitations of spinal analgesia depended upon the principles upon which work was done. Physiological and physical laws prevailed in the body, and it was by a study of its physiological action that chloroform had been made so safe. The study of spinal analgesia must be carried out in a similar manner. The principal risks involved by its use were: (1) A spread of the paralysis; (2) absorption of the drug. A heavy solution was an advantage, as it enabled the effects to be more definitely localized. The method was of great value in diminishing shock, and was indicated when this condition was specially to be desired, and in vomiting, renal disease, disease of the lungs, and when muscular relaxation was desirable. The contraindications were the existence of spinal disease and cases in which a general anaesthetic formed no additional danger, or in which shock was not to be anticipated. A comparison of the relative safety was unfair until the subject had been studied scientifically.

DISCUSSION ON THE OPEN SYSTEM OF ETHER ADMINISTRATION.

OPENING PAPERS.

I.—H. BELLAMY GARDNER, M.R.C.S., L.R.C.P.Lond.

IN offering some remarks upon the open system of ether administration I have to say that I am anxious that this anaesthetic should not, owing to the simplicity of the method, be used for unsuitable subjects.

In selecting ether as an anaesthetic we must make sure that the patient has a moderately good power of chest

expansion and is not suffering from any disease of the lung, for in persons with rigid chests or chronic pulmonary affections increased secretion of mucus in the trachea and bronchi may result in immediate bronchitis or pneumonia. General discredit will certainly follow its injudicious employment, and a most valuable addition to our resources will lose its proper place in the surgical practice of to-day.

To show how far enthusiasm for a novelty sometimes carries away our better judgement I will relate the following incident: An elderly emphysematous man with chronic bronchitis was given ether by the open system for the excision of a growth in the bowel. A severe attack of pneumonia supervened, from which he gradually recovered. At an interval of only six weeks a further operation for a faecal fistula was required, and I was then, for the first time, called to anaesthetize him. The surgeon in this instance, being the ether enthusiast, suggested open ether as a suitable anaesthetic, though on entering the patient's room respiratory râles in the old man's chest were audible before arriving at his bedside. He took chloroform quite comfortably, and without subsequent pulmonary complication.

To prevent the secretion of saliva and mucus in appreciable quantities, the patient for whom ether has been selected should receive a hypodermic injection of $\frac{1}{120}$ grain of sulphate of atropine half an hour before the administration; $\frac{1}{6}$ grain of acetate of morphine may be added in very athletic, neurotic or alcoholic subjects. Atropine has several other valuable qualities in connexion with operations, for I find that it maintains the body temperature by preventing sweating, and assists in obtunding the effects of surgical shock. A small aluminium surgical mouth-prop is first inserted between the side teeth. A light circular roll of gauze is then laid upon the patient's face to prevent waste of the heavy ether vapour. The wire mask fitted with twelve layers of gauze is rested upon it. The administrator now directs the patient to breathe out gently through his mouth, and by pouring out a small stream of ether and encouraging remarks, talks the patient off to sleep. Consciousness is clouded much earlier than with chloroform, and the ether vapour being too weak to be pungent is readily inhaled without cough or holding of the breath.

The gauze is gradually wetted all over the mask to attain the third stage of anaesthesia; but after this only the lower section opposite to the mouth need be kept moist.

There is rarely any struggling. If stertorous breathing arise which is not relieved by pushing the lower jaw forward, the mouth should be opened wide for a moment while a clip is inserted one-third of an inch from the tip of the tongue. This is then held gently forward by the thumb loop and the mask replaced over it.

A good deal more faith and less ether than is generally employed attain the best results, and these can easily be acquired, because there is no tendency to the sudden occurrence of sickness, as with chloroform when the anaesthesia has been allowed to become too light. If the air passages be kept really free from obstruction, dilatation of the pupil and laboured breathing are signs of too profound a degree of narcosis.

The much greater obtundent quality of ether in preventing the transmission of surgical stimuli results in the absence of "crowing breathing," that is to say, partial reflex laryngeal spasm, during the dilatation of orifices or traction on sensitive structures, nor are these manœuvres followed by the cold sweat of shock which under other anaesthetics is a marked concomitant.

The abdominal muscles are easily relaxed under open ether and remain so, without either reflex rigidity or unduly ample respiratory excursion, but the latter entirely depends upon the administrator's skill in keeping a free oral airway without the slightest mechanical anoxaemic factor. The patient should always be warmly clad in double blankets, but there is no object in warming the atmosphere unduly. If mucous râles become markedly audible or duskiness occur, the ether should be abandoned for chloroform, given at first in extremely small amount, because of the obstruction such mucus may cause to its proper elimination.

After ether the patient may and should be propped up in bed for recovery almost in the sitting position, and directly he wakes encouraged verbally to cough and clear his air passages, so that stagnant mucus may not cause subsequent dyspnoea or congestion.

The as yet somewhat imperfectly appreciated advantages of the open system consist in its simplicity and extreme safety during the operation, the absence of shock, and, more important still, the almost complete immunity from after-sickness of any kind. In my own experience whole batches of a dozen patients in series have recovered without vomiting at all. This valuable quality renders it the proper anaesthetic for patients with septic conditions and children who are liable to acidosis and severe post-chloroform sickness.

Dr. Crile's glass funnel and nasal tubing for the continuation of ether administration during mouth operations extends its use to many other cases, and old people with feeble circulation can now be safely tided through these ordeals.

The operation for extirpation of goitre has certainly lost half its dangers since this method has come into use, for the disturbance of the vital structures in the neck has barely any effect upon the breathing under ether by the open system; neither have I observed that moderate haemorrhage nor a raised position of the head produce any variation from the level of safety. I have recently met with a patient with mitral valvular regurgitation, who, requiring the removal of a number of exostosed teeth, developed a most alarming syncope on two occasions under nitrous oxide and oxygen in the dentist's chair. On a third occasion six difficult extractions were accomplished in the upright posture under open ether without faintness or subsequent vomiting.

I see little advance from the use of the bag inhalers in the employment of close-fitting rims or facepieces, or, in fact, of any other apparatus than a wire frame and gauze, because they produce varying degrees of negative pressure in the chest during respiration either by their narrow calibre or other mechanical limitation of air supply, and though I greatly admire their ingenuity, I do not regard such appliances as providing the true open system of ether administration at all.

II.—A. L. FLEMMING, M.R.C.S., L.R.C.P.,

Senior Honorary Anaesthetist, Bristol Royal Infirmary.

I SHOULD be glad if, when discussing Dr. Bellamy Gardner's remarks, members present would express their views upon the following points, which have reference to the phenomena met with during the administration of ether by the open system.

Judging from clinical evidence, at any rate, one can hardly doubt that the primary effect of ether is its stimulating action on the respiratory machine; and it seems to me that this action of ether, if properly used, affords us a valuable means of controlling the condition of our patient, but if abused may lead to over-stimulation and exhaustion.

This control is well illustrated in the administration of ether and chloroform with the drugs not previously mixed, but delivered from separate drop bottles, one containing ether, the other chloroform; so that as occasion demands any variation may be made in their respective proportions. Under these circumstances, if the breathing becomes shallow and the pulse weak, an increase in the proportion of the ether given is followed immediately by deeper respirations, and after a short interval by improvement in the pulse. In fact, we seem to have in ether a means of carrying out a sort of artificial respiration with its secondary beneficial effect upon the circulation.

Patients who are anaesthetized by this method show a remarkable absence of any tendency to become faint or to show signs of shock. I would suggest that possibly this satisfactory condition may be due to the mechanical effect upon the heart and great vessels of the increased respiratory movements.

My apology for making mention of ether and chloroform, given from separate bottles, is that it was while using this method some years ago—in 1896—that I first realized how easily anaesthesia could be maintained by open ether, and I am convinced that if more anaesthetists were to adopt this two-bottle system, the result would be a more general use of ether given on the open mask.

I should like to hear views as to the risks of overstimulation by the open ether method, and as to the best means by which we may avoid exhausting the respiratory apparatus.

There is a complication which, although well recognized, is, I think, so often overlooked, that a reference to it today may not be out of place.

I refer to the reflex circulatory and respiratory depression consequent upon the accumulation of mucus in the larynx and trachea; as this phenomenon very often occurs without any obvious cyanosis, the true cause of the patient's faint condition is apt to be overlooked. The most satisfactory way of dealing with this condition seems to be to allow, or even encourage, the patient to cough. I have mentioned this complication because it is apt to occur during ether anaesthesia, and I venture to think that its importance has not been duly emphasized in some of our textbooks.

My third point is one which I approach with considerable diffidence, seeing that my experience is contrary to the ordinary textbook and monograph teachings. I will therefore not express views, but will rest content with relating a few facts as I have observed them.

In many instances I have been surprised by the small amount of bleeding occurring during operations performed under open ether. I will especially mention such operations as those for simple, malignant, and exophthalmic goitre and removal of cerebral tumours, and other operations upon the brain.

In this connexion I would remind you that the blood pressure is not raised above normal by ether given by this open method, provided there is no accompanying cyanosis, and this fact may explain the absence of excessive bleeding in the cases I have quoted. In order to obtain such a satisfactory anaesthesia, it is absolutely necessary to keep the air passage dry and to avoid cyanosis.

If there are any gentlemen here who use open ether in such cases as goitre or cerebral operations, will they kindly tell us what their experience has been as regards haemorrhage?

DISCUSSION.

Dr. G. ROWELL (London) thought the method safe and the resulting sleep in many cases almost indistinguishable from the best chloroform narcosis. He did not agree that the blood pressure was not raised: it was raised very constantly but very slightly, and was remarkably free from fluctuation. He had only had to change from open ether twice during some years. He had not found that open ether gave rise to pulmonary after-effects if the patient were guarded from chill, and he considered that the freedom of the method from after-effects was one of its great advantages.

Mr. E. J. QUIRK (London) agreed with Mr. Gardner that open ether was a good anaesthetic and that it prevented shock. On the other hand, the previous injection of morphine and atropine seemed to be absolutely necessary. The induction period was very long, and there was a large amount of ether vapour in the room, to the great inconvenience of the operators.

Mr. H. J. PATTERSON (London), speaking of open ether from a surgeon's point of view, thought it was an excellent anaesthetic, and wondered that it had not been introduced before. He did not agree that ether was not suitable for mouth operation or for children under 10, and believed that it was an ideal anaesthetic for alcoholics. The advantages of open ether were its safety and its freedom from after-effects. The anaesthesia was equal to that of chloroform, and was especially suitable for goitres.

Mr. ALEXANDER BROWNLEE (Cardiff) considered that the open ether continuous drop method was the best routine practice; much of its success lay in the dropping being continuous and not intermittent. Ether had been given by open methods for many years past by Silk's inhalers and various modifications of these; but, although they were a great advance on the old closed method, the fact that they were intermittent methods was against them. The continuous drop method was that used by the brothers Mayo of America in their surgical clinic, and their anaesthetist recorded 4,000 administrations "without a death directly due to the anaesthetic," which was rather an elastic term. In children over 10 years of age, in women, and in men of average build and temperate habits, the open method had no equal. He could not understand how anaesthetists could use and surgeons tolerate the old closed method if acquainted with the alternative. In short operations where anaesthesia could be induced quickly by gas or ethyl chloride, there might still be some use for the closed method, but its sphere was limited. It was dirty and unphysiological, while the open method was the reverse, and certainly lessened shock. Yet the method had disadvantages, these being as follows: (1) It was unsatisfactory in young children unless a fair amount of air was given with it. The speaker had seen some children almost asphyxiated with it through failure to pay attention to the necessity of plenty of air. (2) It presented no advantages in operations about the mouth; and although it was true it might be given to patients sitting in a dental chair, the anaesthesia did not last long enough for the extraction of twenty to twenty-five teeth by an average dentist. (3) It was unsatisfactory in dealing with strong, alcoholic men, unless preceded by an injection of morphine and atropine. (4) A larger quantity of ether was used, although practice with the method enabled the administrator to lessen the wastage.

Mr. G. A. H. BARTON (London) said that he had used the method for some time, but thought it had some practical drawbacks—namely, the amount of ether used and in the atmosphere of the room. He did not agree that the method made induction of anaesthesia easy, and had experienced great difficulty with muscular subjects and alcoholics.

Mr. STEWART V. STOCK (Bristol) thought that for the maintenance of anaesthesia by the use of open ether it was best to use a Murray mask covered with a single layer of domette. This mask should be a close fit to the face to prevent air reaching the patient except through the domette covering. No face-pad was required. The advantages were simplicity and the comparative absence of frost on the mask. This latter advantage was of importance, as it prevented too great a cooling of the inspired mixture of air and ether vapour. A very cold vapour would not only help to lower the body temperature, but also help in irritating the respiratory tract. For the first induction of anaesthesia where the open ether method was to be used, it was best to use ethyl chloride and ether; 1 c.cm. of the former was sufficient. Directly consciousness was lost a small stream of air should be admitted to the Clover by means of a valve in the angle-piece connecting the inhaler to its bag, and this admission of air should be continued as long as the Clover was used; it prevented cyanosis, and also to a very large extent it abolished any secretion. Should ethyl chloride and ether be contraindicated, anaesthesia should be induced by the "two-bottle" method—namely, the domette-covered mask and two bottles, one containing chloroform, the other ether. Chloroform was gradually dropped on the mask, which was held ½ in. clear of the face. Ether was also added from the second bottle, and as consciousness disappeared the chloroform was discontinued, ether only being used, the mask now being brought into close contact with the face and open ether proceeded with. The great aim both of induction and maintenance of anaesthesia should be the avoidance of secretion. Secretion (apart from cyanosis) indicated irritation of the respiratory tract; if it was not set up, respiratory complications due to the anaesthetic would not follow. As too strong an anaesthetic vapour produced this secretion, it would be well to lay down a definite strength for the ether vapour, as had been done in the case of chloroform. With this object in view, the speaker had experimented with ether vapour of a strength varying from 20 per cent. to 30 per cent., supplied to the patient on the plenum principle through a perforated tube lying immediately under the domette covering of the Murray mask, the perforations being so arranged as to be immediately opposite the mouth and nose. The ether vapour was produced by blowing air through ether contained in a Buxton bottle, which was stood in a basin

of water at about 8.5° C. This maintained the temperature of the ether bottle, and prevented freezing. As a maximum 5,000 c.cm. of this vapour was pumped into the mask per minute; this was, of course, diluted by the air drawn through the meshes of the domette. He could not at present say what percentage of ether the mixture represented, and did not claim that it was an accurate method of dosage, as the difficulty of producing a constant air supply was great. Once this difficulty had been overcome in a practical and portable way, open ether with a definite strength of vapour would easily be given. But in any case the method had given excellent results during the few months he had tried it. There was less salivation, and the vapour presented to the patient was of a distinctly higher temperature than when evaporated from a Gaye mask. The vapour could be further warmed by leading it through a small coil of india-rubber tube lying in a basin of hot water. The speaker also desired to urge the use of oxygen to prevent the evil effects of secretion when present and difficult to get rid of.

Mr. SIDNEY HAYNES (Birmingham) considered open ether very safe, but had found that a good deal of mucus was formed, and that there was after-trouble with alcoholics in abdominal operations. The induction was long.

Mr. HERBERT TANNER (London) objected to the administration of ether on layers of gauze. He admired the Clover, but objected to the rebreathing into the septic bag. He was in the habit of using an apparatus in which the ether was warmed in the chamber by the exhaled breath.

Professor WALLER (London) said that "open ether" meant 10 to 20 per cent. of ether vapour in the air, and that any apparatus which gave that proportion was to all intents and purposes "open ether." He believed the safe limits of ether percentage were between 10 to 20 per cent.

The discussion terminated in the adoption of the following resolution, which was proposed by Mr. G. ROWELL and seconded by the PRESIDENT OF THE SECTION:

That, in view of the interest excited by the open method of ether administration and the striking claims made on its behalf, the Section of Anaesthetics recommends the Council to appoint a committee to investigate and report exclusively upon this question.

RESOLUTION.

Before the conclusion of the proceedings of the Section the following resolution was adopted, on the motion of the PRESIDENT and seconded by Mr. COTES-PREEDY:

The Section of Anaesthetics approves the resolution of the General Medical Council and of the Departmental Committee of the Home Office respectively, and recommend the Council of the British Medical Association, on behalf of the Association, to take such steps as they may think desirable to represent to the Privy Council and to the Home Secretary the need for the proposed legislation in the interest of the public safety.

SECTION OF ODONTOLOGY.

J. HOWARD MUMMERY, M.R.C.S., L.D.S.Lond., President.

(*Continued from p. 622.*)

THE BUCCAL SECRETIONS AND DENTAL CARIES.

By KENNETH GOADBY, M.R.C.S., D.P.H.Lond.,
Dental Surgeon, Seamen's Hospital Society and National Dental Hospital.

IT is now admitted on all sides that dental caries is due to the action of bacteria. The process has been studied both *in vivo* and *in vitro*. First, the enamel is penetrated locally by the action of acids produced *in situ* by carbohydrate-fermenting organisms. Next the bacteria find lodgement in the dentine and grow through its canals. Finally, the tooth pulp is invaded, becomes inflamed, and ultimately dies. In the earlier stages the lime salts in the enamel and dentine are decalcified, in the later the matrix of the tooth is digested by the proteolytic forms produced by the bacteria. The vitality of dentine is so low from a physiological point of view that protective inflammatory process is wellnigh impossible. Secondary dentine is certainly sometimes formed in the pulp cavity, and it is possible that the increased density of dentine in middle-aged people may be partly a defensive process. As a broad general principle it can be said that no inflammatory reaction occurs in the hard dental tissues. Dental caries is therefore more nearly related to the gradual destruction of wood through the agency of micro-organisms than to caries of bone or necrosis of soft animal tissues.

The outstanding features of the bacteriology of the mouth are:

1. The enormous number of morphological forms present in the mouth in diseased conditions, particularly in caries, or any disease of the gums.
2. The small proportion of mouth bacteria which may be grown on the usual culture media, the morphological forms found in the usual process of cultivation differing very largely from those found from smears made from carious dentine direct.

A little consideration will show that dental caries cannot be due to a generalized acidosis of the saliva, as otherwise it would be more symmetrical, more general, and more severe than is commonly the case. Points where foods may lodge are more frequently the seat of caries than elsewhere. In addition, dental caries is by no means so common in persons with diseased gums as in those with normal gums, and at Budapest last year I pointed out that in pyorrhoea alveolaris or allied diseases, patients affected also with dental caries showed a very high percentage of lactose-fermenting organisms as compared with noncarious mouths.

Before dealing with the bacteria particularly associated with caries, the normal flora of the human mouth must be considered. Its constitution is affected by:

(*a*) Adventitious bacteria derived from food, air, and water.
(*b*) Bacteria owing their origin to pathological conditions of the mouth other than dental caries.
(*c*) Pathological conditions of the throat, tonsils, pharynx, fauces, which may be frequently the source of bacteria found in the mouth.

In the examination of mouth bacteria too little account is usually made of these factors. In a normal mouth free from dental caries or inflammation of the gums, and with no detectable lesion of the throat, the number of bacteria of the mouth is exceedingly small three hours after a meal. Immediately following a meal a number of adventitious forms are to be met with, but if a bacteriological examination of the mouth of a healthy European is made, say, the first thing in the morning, and the mouth is of the normal kind described, practically the only bacteria to be found are: (1) *Streptococcus brevis;* and (2) bacilli closely related to the *B. lactis* and *mesentericus* groups.

Reaction of the Buccal Secretions.—A good deal of importance attaches to the reaction of the oral secretions. Saliva is generally stated to be alkaline, but it is rare to find saliva other than slightly acid to litmus paper, even in mouths entirely free from caries. In examining the mouths of natives at the Seamen's Hospital I have noted three facts.

1. That the mouths are invariably slightly acid to litmus.
2. That although dental caries is not present, turgidity and early inflammation of the gum exists in a large number, and definite gum affections are present in a very considerable number.
3. That in the healthy mouths, free from caries, a considerable number of the organisms of putrefaction are present, associated with only a small number of organisms capable of producing acid from carbohydrates.

In examining a number of monkeys at the Zoological Gardens some time ago an exactly similar condition was found—namely, a large number of organisms of the putrefactive type, a smaller number of carbohydrate fermenters, together with a slightly acid reaction. There is therefore a very close resemblance between the mouths of normal monkeys free from caries and those of the natives previously mentioned.

In persons suffering from dental caries, the acid reaction of the saliva is generally very little more marked than in a normal mouth. Locally, however, wherever caries is in progress, as in carious cavities, the acid reaction is strong. Individuals suffering from dental caries may be roughly divided into two classes.

(*a*) Those in which caries is rampant, where fillings rapidly give out at their edges, and in whose mouths it is common to say the teeth are chalky, and that no fillings will hold.

(*b*) Those persons in whom dental caries is progressing but slowly, attacking perhaps only one tooth around the bands of an artificial denture, or in some sequestered position which does not become cleaned in the ordinary process of mastication or of hygiene.

Bacteriologically these two classes show a very considerable difference, the proportion of organisms fermenting carbohydrate to lactic acid being in the first class about 40 to 1.

In all cases of caries certain species of acid-forming bacteria tend to be present more frequently than others. They may be thus grouped:

(*a*) *Cocci*: Staphylococci (generally albus) and streptococci (commonest type faecalis); (*b*) *Sarcinae*: Lutea, alba (occasionally) aurantiaca (rarely); (*c*) *Bacilli of the acidi-lactic acid group*: (*d*) *Bacilli of the necro-dentalis group*: (Streptobacilli); (*e*) *The saccharomyces group.*

The *Bacillus coli group* is by no means common, and although in certain cases organisms producing fermentation of carbohydrates with gas formation may be found, they are by no means general.

All these organisms are able to ferment glucose, lactose, and maltose, and many of them cane sugar, but the fermentation of cane sugar not only is more feeble but takes much longer than glucose or maltose.

As a general thing it may be said that it takes about two and a half times as long to ferment a given quantity of cane sugar by means of mouth bacteria as it does the same amount of glucose or maltose. In the majority of instances a 2 per cent. solution of glucose or maltose in peptone water having a reaction neutral to litmus will show an acid reaction in five to six hours, often less, cane sugar requiring about thirty-six hours.

I have made a number of experiments with regard to the fermentation of cheap sweets with cultivations of bacteria obtained from carious mouths. In twenty-four hours the amount of acid produced in the case of chocolates was equal to about 1 per cent. of decinormal lactic acid, whereas in the case of sweets of the barley-sugar type the amount of acid in twenty-four hours could scarcely be estimated.

The blastomyces, or yeasts, which are constantly associated with acute caries, are able to withstand a considerable concentration of lactic acid, and at the same time are able to go on fermenting fresh supplies of carbohydrate, provided the excess is neutralized locally, as it invariably is in dental caries, by the adjacent lime salt of the teeth.

I have elsewhere pointed out that in the initial process of dental caries certain other organisms, not in themselves fermenting carbohydrates, are concerned. Often in a mouth apparently well cared for dental caries exists to an alarming extent—a matter of common experience to dental surgeons. In these cases organisms of the *Staphylococcus viscosus* type are to be found, an organism which forms curious gelatinous colonies, almost impossible to remove from the surface of the culture medium without breaking the surface of that medium; this organism easily lives symbiotically with many carbohydrate fermenters. These "sticky bacteria" become attached to the teeth, generally in sheltered positions, and fermentation occurs through the layer which they form on the surface of the enamel, as through an osmotic membrane, the dissolved lime salt diffusing out and the fresh acid diffusing in. In this way considerable patches of enamel may become damaged from time to time, which later on break down, or through the perforation of which other, and often anaërobic, bacteria find their way into the interior of the tooth, and gradually continue the process already set up.

From what I have said with regard to the general bacteriology of dental caries, it will be at once appreciated that prophylaxis may be attempted in two ways:

1. By the removal of fermentable substances through the usual methods of hygiene and the adoption of a suitable diet.

2. By changing the flora of the mouth itself.

In an earlier paper on dental caries I suggested that it might be possible to attempt to combat dental caries by crowding out the acid-producing organisms by others less virulent so far as dentine is concerned. Since then I have carried this point further, and found that a great deal may be done by a proper study of the bacteriological condition of given cases. Certain bacteria (particularly those of the *mesentericus* group) do not ferment carbohydrates to acid, but tend to produce a definite alkaline reaction, and in addition by-products inimical to acid fermenters. It is true that they produce proteolytic enzymes, but these are of no moment where no actual dentine is exposed.

The method adopted is first of all to make a careful bacteriological examination of the mouth, and to determine the type of organism which is present in the largest numbers. Having made a careful survey of the bacteria present, careful cleansing of all portions of the mouth is carried out, and performed with solutions directed particularly towards inhibiting the growth of the bacteria present. In this connexion I find mildly acid lotions compounded with citric acid very efficacious. Cultivations with some innocuous form of organism are then made use of, such, for instance, as *B. mesentericus vulgatus*, or *Bacillus subtilis*, but preferably the first mentioned. The spores of this organism are sown freely about the mouth, and resource is at times made to increase the number present by the use of lotions containing a pure culture of the organism, considerable care being exercised during the period of treatment that those special carbohydrates are withheld temporarily which are particularly susceptible to fermentation by the form of infection present.

The method adopted is in some points similar to the treatment advocated by means of sour milk in altering the flora of the intestine, but in choosing an organism to combat the existing bacteria it may be necessary to try the effect of the combined growth of the two bacteria to determine if the one will grow to the exclusion of the other, as in some instances it is essential to modify the added bacteria. There is no risk of digestive trouble following the use of organisms in this way, provided pure cultures are made use of, and such treatment for rampant caries in the type of acute caries well known to dental surgeons has given excellent results in my hands. Dietetic regulation should be carried out subsequently, as well as regular and efficient hygienic measures and mildly acid mouth lotions.

DISCUSSION.

Mr. HOWARD MUMMERY (London) was interested to hear Mr. Goadby's view of the part played by yeasts with regard to dental caries, especially in active caries at the margins of teeth, as these organisms were too large to penetrate the dentinal tubes. Another point that had not been appreciated was that there were so few bacteria in the normal mouth in the early hours of the morning, and that *Leptothrix racemosa* and the various other common organisms were only associated with pathological conditions. This was rather surprising, as these organisms were nearly always met with in any mouth in the deposit on the teeth, which Mr. Goadby appeared to think was a pathological condition.

Mr. BADCOCK said that Mr. Goadby had touched upon the relative rates of fermentability of various sugars, and this raised a point of very practical interest. As it would be manifestly useless to prohibit patients from consuming sweetmeats in some form or other, he would like to ask what class of sweetmeats he considered least deleterious.

Mr. SIDNEY SPOKES (University College Hospital) wished to refer to the remarks made as to prophylaxis, and especially to the recommendation that in helping to clean the mouth solutions of lactic acid should be employed. He was not concerned to discuss the usefulness or otherwise of the "sour milk treatment." A large number of people were taking such milk with as much satisfaction apparently as the babe at its mother's breast, but certain suggestive cases where dental caries seemed to have broken out among them had led the speaker to impress urgently upon patients the necessity of careful cleansing after taking the dose. It was generally considered that lactic acid formed during fermentation of carbohydrates in the mouth constituted one of the principal dangers to the teeth, and the introduction of curdled masses of lactic acid milk likely to collect and remain in out-of-the-way places seemed to warrant one in warning patients.

Mr. F. J. BENNETT (London) thought that the important papers by Harden and Young on the formation of

a hexose-phosphate in the yeast fermentation of glucose, fructose, etc., were of interest in the question of dental caries, because it suggested the question as to what was the chemical substance which the bacteria obtained from the teeth—was it the basic element, the calcium, or the phosphatic acid element? Was it also possible that alcohol when used as a mouth-wash reacted with the acid of caries to form a neutral ester?

Dr. SIM WALLACE (London) said he was glad to notice Mr. Goadby had insisted on the localized nature of caries, for it was too often assumed that a generalized presence of fermentative processes and points of least resistance were important factors in the etiology of caries. Although cane sugar was fermented two and a half times more slowly in pure cultures, yet was this fermentation as slow in impure cultures? According to Dr. Miller, cane sugar and grape sugar produced a similar amount of acid in a given time. Citric and lactic acids seemed to be antagonistic to the development of acid-forming bacteria, and therefore to the initiation of caries. What about malic acid? From clinical experience it was known that apples were antagonistic to dental caries in itself, and therefore presumably antagonistic to acid-forming bacteria. With regard to sour milk, it could hardly be harmful, because it was an article of daily consumption in certain races, Kaffirs using it habitually. If, however, sour milk was consumed in such a way as to be combined with lodgeable foodstuffs, it was obviously likely to be specially detrimental to the teeth. Kaffirs, however, ate food of a detergent nature, and this no doubt accounted for their excellent teeth.

THE NEED FOR CORRECTION OF MALPOSITIONS OF THE TEETH.

By J. H. BADCOCK, L.D.S., M.R.C.S.Eng., L.R.C.P.Lond.

CONCERNING the causation of dental caries a great deal yet remains unexplained, but there is no shadow of doubt that in the vast majority of cases the lodgement and fermentation of foodstuffs, particularly carbohydrate foodstuffs, is the immediate and exciting cause. Doubtless there are cases where the teeth remain free from caries in dirty mouths abounding with débris of all kinds, and where this immunity is transmitted from parent to children, but it nevertheless remains true that for most practical purposes we may regard the stagnation and fermentation of foodstuffs as the all-predominating factor in the decay of teeth. Prevent it and you will prevent caries, or, in accessible positions, arrest it if already begun.

If you will look into the mouth of a healthy animal living in a natural environment, or into the mouth of a young and healthy child fed on suitable food, the first thing that will strike you is its beautiful cleanliness. The teeth are white and flawless, the gums a pale rose colour, firm, hard, and closely applied to the teeth; there is no sign of débris anywhere. If the inspection be made immediately after a meal and a few fragments do remain, they will be floating free in the saliva, ready to go with it, as it is normally swallowed, nowhere adherent.

What are the factors which bring about this condition? First, there is the texture of the teeth, very hard and very shiny, eminently adapted not to hold food after comminution. Then there is the shape of the teeth. The morsal aspects, developed into cusps in the grinding teeth, in normal arrangement so fit and interdigitate with the surfaces of their opponents as to bring every part into apposition during some phase of the complicated movements of mastication. The lingual and buccal surfaces are rounded, with a bulge that serves to throw the food off laterally and prevent its being forced up between tooth and gum. This bulge is more prominent on the lingual aspects of the upper teeth which tilt outwards, less prominent on the lingual aspects of the lower teeth which tilt inwards, and most prominent of all in the milk teeth, to afford extra protection to the younger and softer gums, yet nowhere prominent enough to afford a stagnation point beneath it. The mesial and distal surfaces spread forward and backward to bridge over and protect the interdental papillae, which in their turn completely fill the spaces which exist between the teeth in the dry specimen, and, so long as they remain unimpaired, make lodgement of food therein impossible.

Tough or fibrous food driven by firm muscles on to teeth of such pattern cleanses them thoroughly in the very act of use, and by its beneficial friction keeps the gums, protected at the free edge (the only vulnerable point) by the bulge of the tooth, hard, healthy, and clean.

There is a third factor, the arrangement of the teeth in their relations to each other, and this is pathologically by far the most important, because, while abnormality of shape is rare, abnormality of position is exceedingly common.

In the normal arch all the teeth are regularly placed and in firm contact; the finer the denture the harder the contact. The contact points are placed where the enamel is thickest, and are very small in area owing to the curves of the teeth. Inasmuch as each tooth has a slight independent movement in its socket, when in use it rubs against its neighbours, and so slight facets appear at the contact points, and the more vigorous the teeth are used the more marked are the facets. Now, facets imply wear, and yet as age advances the teeth are as closely applied as ever. This is because of the tendency which exists for the molars to move forwards, and to a less extent for the premolars to move backwards, so that the members of the arch are kept pushed together and the formation of spaces between them averted. The contact points are so small as to afford the least chance of lodgement, and the movement between the teeth keeps them polished.

Not only are the relations of each tooth with its neighbours in the same jaw important, but also its relation to its opponent in the opposite jaw.

In each jaw the cusps of the premolar and molar teeth form two ridges—an outer and an inner ridge. When the mouth is closed the outer ridge of the lower fits between the two ridges of the upper, and the inner ridge of the upper between the two ridges of the lower; in other words, the lower arch is partially overlapped by the upper. Moreover, each cusp in each jaw interdigitates with two in the opposite jaw, each cusp in the mandible shutting in front of the corresponding cusp in the maxilla. As a result every surface of the morsal aspect comes into play during the lateral movements of the jaws which takes place in mastication. Any irregularity in arrangement will disturb these relations with detriment both to the self-cleansing and the masticating mechanism, and the greater the irregularity the greater will be the harm done

If the teeth be spaced ever so slightly, food will be forced down between them and lodge there, particularly fibres of meat and fish, and these fibres being mixed with carbohydrate material eaten with them, fermentation will take place and caries be set up; in addition, that important structure, the interdental papilla, will be destroyed, leaving a permanent space between the necks of the teeth which cannot by any means be kept clean.

If the teeth be crowded, they will no longer touch their neighbours at the points designed to touch, but in such a way that their curves will fail to correspond as they were designed to do, and crevices will be formed and often large surfaces of enamel will be brought into contact; or, what is worse, almost in contact and exposed to the action of the fermenting foodstuffs which are packed in at every meal until the space is full and have no opportunity of escape.

One or more teeth may be thrown wholly or partially inside or outside the line of occlusion with their opponents, and so miss the friction which they would otherwise obtain in the act of chewing.

Such teeth will rapidly become coated. This condition is very frequently seen in wisdom teeth crowded outside the normal arch, and protected from friction by the cheeks. If a tooth be outside the line of its neighbours, an uncleansable cul-de-sac will be formed behind it, or, if forced behind its neighbours, in front of it. In short, it will be clear from the illustrations shown that there cannot be irregularity of even a single tooth without damage to the self-cleansing power.

It is, therefore, an important principle of caries prophylaxis that any irregularity of the teeth shall be, if possible, prevented by endeavouring to ensure normal growth of the jaws by the use of food suitable both in nutritional value and physical characteristics, as advocated by Dr. Sim Wallace, with, if necessary, the aid of mechanical apparatus

to stimulate growth and make room for the teeth in normal positions. If the age of prevention be passed, and crowding has already occurred, steps should be taken to correct it, and, generally speaking, the earlier such steps be taken the better; the younger the child, the more easily are the teeth moved from the faulty positions and retained in their correct relations. Moreover, this predisposing cause of caries has less time to act.

Any consideration of the methods by which crowding may be corrected is outside the scope of this discussion; suffice it to say that regularity of the dental arch may be obtained either by expanding the alveolar processes to accommodate the teeth in full number and correct relation, or by the removal of teeth and the rearrangement of the remainder in an arch smaller than the normal.

Of these two methods, the former is capable of giving the most ideally perfect results and restoring the normal in every particular, and it is more than probable that the application of pressure on the alveolar ridges stimulates growth in the jaws themselves, and, in the case of the maxilla, of the nasal passages and the accessory cavities.

In practice the method of treatment by expansion of the jaws is for the wealthy classes who can afford the expenditure of time and money incident upon it, while the extraction method, with mechanical aid when necessary and obtainable, is for the poorer classes. Its results in intelligent hands are often exceedingly good, and always a vast improvement upon a condition of crowding which is more than slight.

When mechanical aid is impossible or, as in rare cases, inadvisable, much may be done by judicious extraction only; but it must be borne in mind that if extraction be not undertaken on well-considered lines with intelligent appreciation of its consequences, the result may be worse than the condition it was intended to alleviate.

To sum up—any oral conditions which tend to uncleanliness will favour caries, while conditions tending to cleanliness will aid in its prevention. It is natural for the mouth to be clean. This natural cleanliness is due to several factors—namely:

(*a*) The hard and polished surfaces of the teeth.
(*b*) The shapes of the individual teeth.
(*c*) Friction of hard food upon the teeth and gums in the act of chewing.
(*d*) The arrangement of the teeth with relation to one another.

Any departure from the normal arrangement favours the lodgement and stagnation of food, and should be prevented or corrected as soon as possible.

The correction of irregularities of the teeth tends to the prevention of caries in direct proportion to the degree in which the result attained approaches the normal.

DISCUSSION.

Mr. W. Booth Pearsall said that on examination of the teeth in skulls of ancient races it could be seen that the contact points between the teeth were well marked, and in many instances 1 mm. in diameter. They got worn with well-marked facets. In the cases of well-marked attrition the curves commonly seen where the cusps were worn away were similar to those of the natal teeth, but rather more flattened. The compensatory curve remained, but in the contact attrition came by very vigorous mastication; the worn surfaces of the teeth retained a curve between the buccal and lingual surfaces.

Mr. J. Milligan (Barrow-in-Furness) suggested that good contact points in the teeth of prehistoric man was a factor which acted in preventing the occurrence of dental caries among the early races of mankind.

Mr. Badcock, in reply, said that he had no knowledge of the conditions obtaining in paleolithic skulls, but in various ancient skulls which he had examined he had found the contact points large and well worn. This he attributed to the large amount of grit prevalent in the food of early times and the amount of work the jaws had to do in days when food was tougher than it was now. The very general disappearance of cusps in such skulls he attributed to the same causes—more use and more grit.

THE EFFECTS OF DRUGS IN THE CAUSATION OF DENTAL CARIES.

By Harold Austen, M.D.Lond.,
Assistant Dental Surgeon, St. Bartholomew's Hospital.

Before we can consider the correction of the effects of drugs upon the teeth it is necessary first to inquire what these effects are.

There is a very widely-spread and deeply-seated popular belief that the taking of drugs is a common cause of the decay of the teeth, and times and again one hears a case of rapid caries in the child or young adult set down to the fact that they have taken a large quantity of medicine.

This belief is fostered, first, by the fact that certain drugs such as iron cause an obvious, though superficial blackening of the teeth; and, secondly, that decay of the teeth is found to be prevalent after such disturbances of the general health as are commonly treated, partly at all events, by the administration of medicines.

Examples of general disturbances which seem to be associated with the production of caries, probably through an abnormal condition of the oral secretions, are found in anaemia, dyspepsia, pregnancy, acute rheumatism, enteric and other continued fevers. The belief that drugs injure the teeth, however, appears to rest upon but slender foundations, the popular belief being based upon the argument, "*post hoc, ergo propter hoc.*"

Two classes of drugs would appear to be prima facie a potential source of caries.

1. Very dilute solutions of weak acids have been shown by experiment to be capable of destroying the enamel of teeth by decalcification. In order to produce this effect, however, it is necessary that they be applied *continuously*. All modern research tends to prove that acids highly injurious to the teeth are generated *in situ* by the fermentation of the remains of carbohydrate foods. Such acids are formed from sticky or viscid materials which are not readily soluble in the saliva, and in places which do not readily admit of natural cleansing; they have consequently the necessary opportunity for continuous action. Now, in the mouth, acid medicines and gargles are not applied continuously, but very intermittently. They come in contact mostly with the exposed surfaces of the teeth which are constantly washed by the saliva, in which these acids are freely soluble; while a further removal of any acid that remains must take place whenever food is taken by the mechanical scouring that occurs during the act of mastication.

From these considerations it is difficult to see how the necessarily weak solutions of acids taken can ever have any marked injurious effect.

2. Mercurials when administered in infancy have been credited with the production of hypoplasia of the teeth, the so-called honeycombing. Representations of typically hypoplastic teeth, described as "mercurial teeth," have figured in certain surgical textbooks. It has been alleged that mercury enters into the composition of certain secret remedies largely used by the poorer classes as teething powders during the period of the eruption of the temporary teeth, producing the effects described upon the permanent dentition. The evidence for this is far from convincing, while it is quite certain that hypoplasia is seen in many cases in which no mercury has ever been administered, and arises from disturbances of the general health during the period when the crowns of the permanent teeth are being formed. It is quite possible, however, that mercurials may sometimes be responsible for the production of hypoplasia, and this may be considered as an instance of a medicine causing a predisposition to caries, to which hypoplastic teeth are very liable. Mercurials administered in large doses have long been known to cause well-marked disturbances in the associated tissues, the gums and even bone. It is conceivable that mercury acting in this way, when there has been actual ulceration, or loss of tissue, may cause a predisposition to caries at the necks of the teeth.

Lead, bismuth, silver and copper, being drugs partly excreted by the oral mucous membrane, have been credited with occasionally producing similar effects to mercury, in septic mouths.

The only treatment for the correction of the effect of any drugs appears to be to maintain complete cleanliness of the mouth, and to neutralize the possible effects of acids taken by the immediate use of an alkaline mouth-wash.

DISCUSSION.

Mr. C. EDWARD WALLIS said that having had during the last few years opportunities of examining the mouths of many hundreds of London County Council school children, he had given a good deal of time to finding out to what extent the children of the poorer classes were dosed with mercurial teething powders. What he had learnt indicated that a great number of these children were practically brought up during their infancy either on grey powder or on various proprietary so-called teething powders containing mercury. In spite of this, there was remarkably little hypoplastic enamel amongst the permanent teeth of these school children—certainly less than 2 per cent. Mercury had little or no effect. These facts clearly upbore Dr. Austen's views regarding the practically negligible effects of the internal use of mercury upon the dental enamel.

SUSCEPTIBILITY AND IMMUNITY TO DENTAL CARIES.

By J. HOWARD MUMMERY,
President of the Section.

WHILE agreeing that the principal factor in the great increase of caries of the teeth is the soft, cooked food of civilized man favouring accumulation and consequent local fermentation, it does not seem possible to me that predisposing or determining causes are not also at work.

In any question of physiology or pathology concerning the human body, do we find such simple issues, do we not find many factors determining the incidence of disease, and it is not probable that caries of the teeth—exceptional pathologically as this disease may be—will prove any exception to this rule.

I should like to think it were such a simple question as these speakers consider it to be, for we then should be much nearer to some satisfactory solution of the problem, and to the eradication of a disease which, while not directly dangerous to life, is one productive of more widespread deterioration of physique than perhaps any other. With regard to mastication of the food, we know that among modern civilized people it is rare to find a muscular apparatus capable of exerting the same amount of attrition of the food that the muscles of prehistoric man possessed. I have the mandible of a child from an early British barrow that shows an amount of attrition that certainly could not be obtained by the feeble jaw muscles of the child of these days, however hard the food.

In dealing with this part of the subject we have to consider, in the first place, what are the innate conditions of the body that confer immunity to caries, if such conditions are present, and why some individuals escape the disease, while the majority are very susceptible.

Certain protective substances of the nature of alexins may, and certainly do, appear in the saliva, which act as antitoxins to certain toxic bacteria, but we cannot understand how these substances can confer immunity in caries, which differs from other diseases in that the first stage is a purely chemical action, consisting of decalcification by an acid. We have therefore to look for some causes that control fermentation and consequent acid production in the mouth.

It is within the experience of all of us that certain individuals, sometimes for their whole lifetime, sometimes for a more or less lengthened period, show a complete immunity to dental caries. On inquiry, it is found these fortunate individuals live under the same conditions and surroundings in very many cases as their less fortunate neighbours, and apparently take no greater care of their teeth. If food is the sole cause of caries, how do we account for these cases?

Some experiments carried out by Professor Miller on the saliva of immunes and susceptibles showed very little difference in the rapidity with which lactic acid was formed, the results in these experiments being slightly in favour of the immune.

There can be little doubt, however, that, whatever the causes of this immunity may be, the exact conditions present in the mouth cannot be reproduced in a laboratory experiment.

With regard to the effect of the composition of the teeth as affecting the incidence of caries, there has been considerable controversy, Professor Black considering that "neither the density, nor the percentage of lime salts, nor the strength, is in any degree a factor in predisposing the teeth to caries," but, as has been pointed out recently, the experiments of Black, like those of Miller, on hard and soft teeth were made upon the dentine, and the tissue exposed in the mouth is the enamel.

Professor Röse has shown that in burring enamel an eminent difference in degree of hardness is shown by this tissue, and Miller has pointed out that while the percentage of lime salts may be the same in different teeth, the molecular conditions may be variable—the degree of stability of the compounds formed with the organic material may differ in some teeth.

Professor Röse states that continual metabolic changes are taking place in the dentine and cementum during life, but that these changes do not affect the enamel, the hardness or softness of this tissue being determined in the infant at the time of calcification.

The prolonged action of a weak acid will show different effects in different teeth, as shown by Mr. Stanley Mummery in his communication to the Odontological Section of the Royal Society of Medicine. This difference may account for the extensive caries seen in some persons after a prolonged illness, the more continued contact of the acids breaking down the resistance of the enamel, while another individual exposed to the same conditions may escape altogether, owing to the more resistant nature of the enamel. For my own part, I never could accept Dr. Black's experiments as proving that the structure of the teeth has no influence whatever on the incidence of caries—it seems quite contrary to clinical experience; and the researches of Professor Röse and others seem to show very clearly that the enamel, which must be the tissue principally concerned, does show differences in degree of calcification, and although these changes do not take place during adult life, there are many influences brought to bear upon the early tooth germs that would affect the degree of calcification of the enamel and determine the ultimate occurrence of caries.

Action of the Saliva and other Fluids of the Mouth.

It was long thought, chiefly as the result of the experiments of Sanarelli, that the saliva acts as an antiseptic, but the well-known experiments of Miller and Hugenschmidt showed that, far from being an antiseptic, saliva served as a very good culture medium for bacteria, which is what we should expect, knowing how bacteria flourish in the mouth and that people who have a very copious flow of saliva are often the subjects of very extensive caries.

The experiments showed that Sanarelli had used filtered saliva, which was saliva deprived of all its nutritive qualities for bacteria, and his experiments were necessarily inconclusive.

It was shown that the saliva contains diastase and microbial ferments which exercise a positive chemiotaxis on the leucocytes, and so tend to free the mouth, to some extent, of bacteria.

Miller concluded that it was this action of the saliva that was effective in bringing about the rapid healing of wounds in the mouth. The saliva also fulfils a very important rôle in the mouth by mechanically freeing it of microorganisms which are carried into the stomach in the act of swallowing.

The question also arises, if saliva, although not able to destroy microbes, may act on their soluble poisonous products, certain African tribes using saliva as a remedy for snakebite.

The question of the action of the sulphocyanide of potassium present in normal saliva has again been raised, but Miller and others have definitely shown that in the very minute quantities in which it is found in the mouth it could have no effect in the inhibition of caries.

No doubt some influence is exerted by the reaction of the saliva; it is found that when the saliva of the horse is mixed with a definite quantity of sugar much less acid is formed than when the same amount of sugar is fermented with human saliva.

This neutralization of the acid formed in the mouth of the horse in consequence of the high alkalinity of the saliva may be one of the causes why the horse, although

by no means immune to caries, is less prone to the disease than man.

The reaction of the saliva we should expect to have a distinct influence on immunity to caries, as a strongly alkaline saliva would, by the neutralization of the acid first formed by the fermentation of the food, tend to delay the destructive process on the tissues of the teeth.

As I shall point out presently, however, an alkaline pabulum is more suitable for the growth of acid-producing and other bacteria than an acid one.

Where the food is allowed to accumulate, as in the buccal sulci and between the teeth of old horses, rapid decay takes place, the alkaline saliva not penetrating to the depths of these accumulations.

For the same reason, in the human mouth, retention centres are an important factor in the production of caries, and it is also well ascertained that sterilization of the mouth cannot be obtained when these accumulations are present, the antiseptic used not being able to penetrate to the surface of the enamel or dentine where the active fermentation process is in progress.

In many experiments carried out by Professor Miller it was shown that by the careful use of the toothbrush and silk immediately before the application of the disinfectant wash, the mouth could be rendered sterile, no growth taking place in the mixed saliva taken from the mouth for some little time afterwards.

The variations in the composition of the saliva in different individuals are very considerable.

In some cases, according to Dr. Michaels, the saliva contains considerable quantities of glycogen; in other cases very little. This substance would serve as perfectly as other carbohydrates as a pabulum for caries producing bacteria, and the amount present may possibly have some influence in individual susceptibility to caries.

Alterations in the nutritive properties of the saliva as a culture medium might profoundly modify the growth of sensitive bacteria, and so influence considerably the production of lactic acid.

As pointed out by Dr. Kirk in a recent paper, when the saliva is mucoid in character it is invariably alkaline—mucin being precipitated by acids, saliva when of thin consistence and acid reaction being free of mucin.

This author has observed that where there is thin limpid saliva of acid reaction, there is generally an absence of active caries, and that the carious process is most active in mouths which show an alkaline reaction and highly mucoid saliva.

It is well known that bacterial growth proceeds best in a neutral or slightly alkaline medium, and that an increase of lactic or other acid beyond a certain amount inhibits the growth of micro-organisms.

When lactic acid, formed in the mouth from glucose or other carbohydrates, comes in contact with mucin, the mucin is precipitated, and, according to Dr. Kirk, forms one form of bacterial plaque upon the teeth, the mucin acting as a binding material to the mass of micro-organisms.

In experiments carried out in the laboratory Dr. Kirk was able to produce a precipitation of mucin in the form of a large plaque, the reaction of the medium being acid. It would thus appear that saliva of an alkaline reaction, when much mucin is present, is more likely to give rise to acid fermentation than an acid saliva, and that the precipitation of the mucin by the acid produced in the mouth serves to bind the bacteria together in contact with the tooth substance and intensify the local action of the acid. The use of lime water as a mouth-wash has been recommended, this being a rapid solvent of mucin, and thus tending to free the teeth of this film-like deposit.

The author considers that, it being shown there is no antiseptic action of the saliva, "we are justified, in our present state of knowledge, in viewing immunity to carious action as being dependent upon the amount of pabulum upon which the bacteria of decay normally thrive." The local precipitation of mucin by the secreted lactic acid he looks upon as an important factor in the production of caries.

The much vexed question of heredity I shall only briefly refer to. We cannot consider that defective teeth are directly inherited, if we agree with most evolutionists in discarding the doctrine of the inheritance of acquired characters, and it certainly seems to be evident that in civilized communities natural selection is in abeyance, and artificial selection has not taken its place. Among the masses in civilized countries the tendency is to deterioration of physique, and this would naturally be expected when natural selection is no longer active in ensuring the survival of the fittest.

Of course, if we accept Dr. Black's conclusions, we must consider that heredity has very little influence, but if a community with less sound and resistant tissues is found among civilized peoples, we must think that it is to be looked upon as a factor.

THE VALUE OF TEETH IN THE HUMAN ECONOMY.

By J. G. TURNER, F.R.C.S.,
Dental Surgeon, St. Thomas's Hospital.

MANY years ago my attention was drawn to this subject by an aged relative, who, though toothless, ate pork crackling with relish, and lately the question has become insistent owing to large numbers of indigent patients at a big general London hospital. What is the value of teeth to the human economy in the conditions of contemporary civilization? No one will deny their intrinsic beauty, and in my opinion complete regular dental arches (exception made of the third molar), articulating within the limits of normal, are indispensable to the full beauty and nobility of the human countenance. On this account I set a great value on the retention of temporary teeth till their due date of shedding. Early loss means contraction of the dental arch and sequent exclusion of a permanent tooth, unless the child can be induced to wear some form of apparatus designed to preserve the full size of the arch.

Many people postulate for the temporary teeth, or perhaps I should say for the presence of teeth during the growing age, a far more important rôle. The argument runs that the stress of mastication promotes the development of every part to which it can be traced; therefore, in its absence, development fails. But the jaws and the facial bones in general subserve other functions—speech, breathing, smell, sight—besides mastication, and these Nature, doubtless, has equally in view when the impulse of growth is given on impregnation. But the best answer is supplied by the case of idiot children, such as may be seen at Darenth, whose mental development is so low that if given solid food they make no attempt at mastication, but swallow it whole and choke themselves. They are therefore always spoon-fed on slops. Yet their jaws are above the average in size.

It may be added on this point that the mandible is a loose bone with no such yoked articulation, demanding perfectly correlated growth for full performance of its function, as obtains in the case, for example, of the ulna. Hence we may expect that so long as its function is satisfactorily performed there will be considerable variation in its size and consequently in the dental articulation. And this is exactly what we do find. It makes no difference to mastication or cleanliness whether the lower teeth bite forward or backward, inward or outward, in their relation to the upper, and Nature is not over-particular on the point.

The question, however, to which I wish especially to direct attention concerns the value of teeth in nutrition. What is the value now and here of tooth mastication? Till recently the only recognized dental defect was deficiency in the numbers, and whatever ills—chiefly those in which failure of nutrition was an outstanding symptom—the physician saw fit to connect with teeth were ascribed to a deficiency in number; to loss of tooth masticatory power. As a consequence, both in the popular and the medical mind, the idea of the almost vital importance of teeth became fixed as an axiomatic truth.

Teeth are for eating.

Therefore you cannot eat without teeth.

Therefore teeth are indispensable to life.

This is an *a priori* argument which seemed to fit in well with facts, since most people began to lose their teeth early in life.

Now we have learnt the importance and extent of oral sepsis, and it becomes imperative to inquire whether the belief in the importance of teeth may not have lost some of its old-time force. The dental profession, I find,

presents two camps—one camp bewails that the food of civilized man nowadays affords no use for teeth; the other is continually crying "more teeth." The former camp, I hope, will be with me in pushing the argument, when needful, to its logical conclusion.

When mastication is spoken of, tooth mastication is always meant. But there are also tongue and gum mastication, and machine mastication. Our cereal foods are finely ground, and can readily be dealt with by tongue and gum mastication; and our meat can be cooked and minced or shredded beyond the powers of the most efficient tooth mastication. In the presence of food, salivary and gastric reflexes are as readily and efficiently promoted by tongue and gum mastication as by tooth mastication.

Hence we may expect to find as a working rule that teeth are a non-essential; and *de facto* the conclusion is right. In hospital practice I unhesitatingly remove from the mouths of children of any age every septic or painful tooth; leaving some edentulous, many practically so. The result is always greatly to the child's benefit. When the children are seen one or two or three years after they are always well-grown and well-nourished, and the mothers make no complaint of any difficulty in feeding them.

I do the same in the case of adults, and with similar results. Patients who were slowly dying of oral sepsis return to work in their edentulous state, and when they come back six months later asking for false teeth they are unrecognizable in their new-found vigour. Obviously they have been able to nourish themselves to the full extent of metabolic possibilities, and they acknowledge it on questioning. The only unmanageable food one labourer could think of was pickles.

The following cases show that the state of stable nutritional equilibrium can readily be maintained in the edentulous. I dined lately with a healthy old gentleman of 80: there was a full-course dinner of fish, roast mutton, etc., of which he ate his due share. After dinner he told me he had been edentulous for twenty years, having discarded his false teeth as impracticable.

Five years ago a medical friend of mine saw two sisters: the elder had a full set of teeth and was healthy, the younger had pronounced oral sepsis and was always ill. The younger had all her teeth out, but never got a false set. To-day the positions are reversed: the younger is healthy and strong, but the teeth of the elder have gone the way of all teeth and she has a septic mouth, and she is the invalid.

There is a point which concerns the partly edentulous which needs mention. A few teeth interdigitating rather than opposing may actually interfere with mastication rather than assist, and especially so if septic or painful, though I have been surprised to find that, for example, the isolated lower canines I leave, when possible, to steady a lower denture are no source of inconvenience to my hospital patients, perhaps owing to the absence of sepsis.

On the insertion of false teeth tooth mastication is restored and tender teeth relieved, but equally useful mastication would have been obtained by total extirpation. And here I may ask those physicians who differ fundamentally from me in their estimate of the value of tooth mastication whether some such condition was not present in the cases on which they base their estimate?

To test my opinion I obtained leave to visit the Brompton Hospital Sanatorium, and with Dr. Paterson examined forty inmates, male and female in equal numbers. Owing to the care of the dental surgeon at Brompton in dealing with sepsis, I found a considerable number practically edentulous, and many with but a small amount of tooth-masticating surface. But Dr. Paterson told me he found no difficulty in feeding them, nor did the absence of teeth bear any causal relation to the incidence of indigestion. In spite of the absence of teeth the patients improved. One man in his edentulous state had reached and maintained, while doing labourer's work, his highest known weight; another recovered through having no teeth in his upper jaw, and has been working now four years as a tailor's fitter.*

Nature herself makes numerous experiments in the same direction, as the following pictures show:

1. Here is a picture of the mouth of a young man who belongs to a large family exhibiting hereditary hypoplasia of the teeth. His teeth have never been more than stumps level with the gum, yet he is an athletic man who never ails in any way.

2. The lower jaws of these two children shut frog-like inside the upper, yet the children are well grown.

3. These three children have marked inferior protrusion, and only one molar in each quarter in opposition, yet all are absolutely healthy.

4. This child can only bite on four molars, one in each quarter, and only on the cusps of these, and yet it is as healthy as other children.

These cases touch a point I have been endeavouring to settle—namely, how many opposing teeth may reasonably be considered as affording sufficient tooth-mastication power? They seem to tell us four molars, provided two oppose two. Certainly one good side of the mouth (or a molar and two bicuspids in each quarter) is amply sufficient, but I have seen far less suffice; and where more seems imperative I think a little more care in diet would be an equally efficient remedy.

My answer to the question, What is the value of tooth mastication? is that among civilized peoples of to-day tooth mastication is a non-essential; the edentulous can, with a little care, fare equally well with the fully equipped.

To the question, What, then, is the value of teeth to civilized man, I answer, "Beauty." Beauty it is that is in the balance against sepsis. I have brought up this subject hoping to find others whose experience is similar to my own, and that so we may open a way out of the difficulty presented by the impossibility of supplying artificial teeth to every hospital patient who appears to need them. The difficulty will vanish when both physician and patient realize that sepsis is the enemy, not loss, and that it needs but a little care to fare just as well in an edentulous state as with a full set of teeth.

* He was fitted with an upper set soon after returning to work.

DISCUSSION.

Mr. HOWARD MUMMERY (London) said that in his experience it was remarkable to find how much persons improved when they had had their teeth removed, such teeth, of course, being in a septic condition. Persons with septic mouths, and who remained in what was usually called very good health, were really living over a volcano which might at any time become a cause of grave trouble. The patients became subjects of septic poisoning, an attack of influenza or some such lowering disease being the determining cause. He agreed that no teeth were better than septic teeth, though no teeth were not better than artificial dentures, as many edentulous people would not take sufficient trouble with their food.

Mr. MILLIGAN (Barrow-in-Furness) feared that in the absence of teeth food would not be retained in the mouth long enough to ensure thorough insalivation. He thought soft food alone could be eaten. He agreed that anaemic girls especially improved greatly after wholesale extraction, and asked which Mr. Turner considered more important—the removal of sepsis or the restoration of more efficient mastication?

Dr. M. H. CRYER (Philadelphia, U.S.A.) said that while Mr. Turner's paper would be taken as a most radical suggestion, both in this country and in America, there were many points with which the speaker fully agreed. Teeth were not so absolutely necessary for mastication and insalivation as was generally supposed, especially when food was prepared as it was in this and other civilized countries. The orthodontist, in endeavouring to save as much masticating surface as possible, often induced a pathological condition of the teeth and surrounding tissues which was most detrimental to the good health of the general system. The power of tooth mastication did not depend so much upon the great surface used as upon a few definite points of occluding force, so that entire dentures were often less useful than a few occluding sound or well-filled teeth. One tender spot in a large occluding surface would do incalculable harm in causing a tendency to "bolt" the food, whereas even an edentulous person would keep the food in the mouth long enough for the salivary glands to perform their function. On the other hand, there was no question but that the greatest of care should be used in keeping deciduous teeth in good condition until the permanent ones were ready to take their places, and then in exercising the most exhaustive

vigilance to keep them free from any condition which would produce oral sepsis, by using all the known means of hygienic care and by well-placed and carefully-finished fillings when necessary. Artificial teeth were of great importance, and demanded the highest standard of workmanship and good sound judgement, with the view always of conserving the best interests of the following functions —mastication, insalivation, speech, and aesthetic values.

Mr. BOOTH PEARSALL (London) thought it might as well be argued that the intestinal economy was badly designed because of stomach-ache. He could point to many people restored to health by means of artificial teeth. He attributed an important rôle in the production of ill health to improper occlusion of the teeth.

Mr. J. LEWIN PAYNE thought Mr. Turner's contention that teeth were non-essential as masticatory organs, and of little importance in the human economy, demanded much stronger evidence than had yet been put forward. If such were a fact, it seemed strange indeed that Providence had endowed practically all vertebrate animals with an ample masticatory apparatus, which persisted in a high state of development in spite of many other changes in the anatomical structure. If, with a little care, the edentulous could fare as well as those with teeth, why had these organs remained so long? A certain percentage of people might manage tolerably well without teeth, and it was undoubtedly true that an edentulous patient was better off than one whose mouth was reeking with septic roots; but when such theories as these were stated as facts they were in danger of going from one extreme to the other, and of overlooking entirely the functional activity of the mouth. Furthermore, teeth were required in the human economy, not merely as a means of beauty and for mastication, but also as an aid to speech and in the development of the jaws.

Mr. TURNER, in reply, said that some of the speakers seemed to have mistaken the intention of his paper. As he had said, his object was to simplify the treatment of hospital patients by urging what seemed to him a fact, that an edentulous patient could fare just as well as one with a full set under the food conditions of the civilization of to-day. If, however, his conclusion held good for hospital patients, it held good for all. He had pointed out a fact of which those who criticized him had taken no cognizance—that a few interdigitating teeth, especially if septic and tender, would be a detriment rather than an aid; and unless his critics could assert that each case which had influenced their opinion was an aseptic completely edentulous mouth, their criticism was at present valueless. The presence of teeth was not at all necessary to the retention of food in the mouth till insalivation was thoroughly effected; on the other hand, both with teeth and without it was possible to reach the physiological limit of the use of mastication with resultant nausea and vomiting. As to meat, teeth were scarcely used for its comminution—it could be easily cut with a knife and fork into fragments as small as ever teeth cut it. The deck of a channel steamer on a rough day provided excellent material for studying the point. An appeal to the lower animals did not furnish his critics with much comfort. In them teeth were more for prehension and fighting than for mastication. He did not think malocclusion could be held responsible for much, since the articulation of the adult both in savage races of to day and in skulls from old graveyards, etc., was generally a flat mill. Moreover, Nature had found that in the case of a herbivorous diet—which of all diets entailed the most severe use of teeth in bruising and pulping the grass—a flat mill with a slightly salient enamel "pattern," as in the horse, was the most efficient masticatory apparatus. He was very pleased to learn Dr. Cryer's agreement with his proposition, and especially with his point as to the value of a "concentrated" mastication on a few teeth as compared with the "diffuse" mastication of a full set. Mr. Mummery's summing-up fairly expressed the meaning of his paper.

CROWN AND BRIDGE WORK.

A PAPER dealing with crown and bridge work was read by one of the Honorary Secretaries on behalf of Mr. Harry Baldwin. Its main contention was that well-fitted collars and bands, even if passing beneath the gums, are non-injurious and non-septic, and that properly constructed crowns are to be regarded as the most perfect substitute known for natural teeth. Most of the members who discussed this paper dissented from the views expressed. They held that, however careful and skilled the work might be, real accuracy and fit could never be obtained, and that mouths containing bridges and crowns must always be in a more or less septic condition. On this account their use should be avoided when possible.

Memoranda:

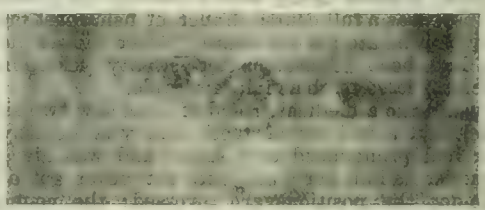
MEDICAL, SURGICAL, OBSTETRICAL.

ATROPHIC RHINITIS FOLLOWED BY GUMMA OF BRIDGE OF NOSE.

THE following is a note of a case of atrophic rhinitis, followed by gumma of the bridge of the nose, in a boy of 12.

The patient, a weakly, ill-developed lad, was first seen in February, 1908. He had several fits when 1 year old, and has always been delicate and not allowed to go to school. He has a sister, aged 18, who is quite well. There is a history of one miscarriage one year before the birth of the boy. There are remains of old iritis of the left eye, which diverges. In both eyes there are extensive old choroidal changes, chiefly along the vessels. There has been a bad smell from the nares for five or six years. The boy has well-marked atrophic rhinitis, with crusts, more marked on the right side. Small doses of hydrarg. c cret. and a formalin spray were ordered.

The boy was not seen again until August, 1909. He had not been well for some months, and had been taking hydrarg. c cret. since February, 1908. Ten days before his visit



a red, painful swelling appeared on the bridge of the nose which burst after five days. There was a large ulcer, the size of sixpence, with indurated edges, on the bridge of the nose, which had perforated the nares. Both nostrils were full of crusts. Weak chromic acid and carbolic acid were applied at intervals of a few days to the ulcer. Inunctions of ungt. hydrarg. and large doses of potass. iodide were ordered. The nares were sprayed with formalin and peroxide of hydrogen. In spite of this treatment the ulcer was spreading rapidly, and on September 5th was larger than a shilling-piece. Decoctum sarsae co. was then ordered. In three days there was marked improvement, and in ten days the ulcer was much smaller. I did not see the boy again until April, 1910. The ulcer had healed in October and there was dense adherent cicatricial tissue covering the old perforation. This case is interesting from several points of view.

1. It proves that atrophic rhinitis can be due to congenital syphilis.[1] There can be no doubt that the boy was suffering from this disease.

2. Although the boy had been taking hydrarg. c cret. for eighteen months a gumma developed on the bridge of the nose.

3. Mercurial inunctions and very large doses of potass. iodide failed to arrest the growth of the gumma, whereas decoctum sarsae at once effected a cure.

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PUERPERAL SEPTICAEMIA.

ON April 27th, 1910, Mrs. D. was confined of twins. She was extremely anaemic and had suffered from great swelling of the legs and feet for several weeks. She had not been medically attended for this. There was no history

[1] Alexander, *Archiv. Laryngologie*, 222 and 223.

of any vaginal discharge. When first seen her pulse was 120, and the pains very feeble and infrequent. Both children presented by the head, and were delivered with forceps as the pains were not sufficient to do more than engage the head in the pelvic brim. She had severe *post-partum* haemorrhage, which was checked and finally stopped by compression of the abdominal aorta. The uterus was douched out with creolin as hot as could be borne.

On the 28th the temperature was 100° and rose the next morning to 102°. The lochia were scanty but sweet, and the patient said she felt very well, had slept fairly, and taken a moderate amount of food. By the evening of the 29th the temperature was 104.5°, the pulse 148, and as there was a faintly putrid smell about the lochia the vagina was scrubbed out and douched, and the uterus was washed out with iodine.

Early on the morning of the 30th the temperature was 104°. The patient had had a bad night and the pulse was over 140. A specimen of blood taken was examined by Dr. Murray of Liverpool, who reported on May 1st that it was sterile. Ten c.cm. of Burroughs and Wellcomes' polyvalent antistreptococcic serum was injected about noon. On May 1st both children developed a mild purulent ophthalmia, which readily yielded to treatment. From May 1st to May 4th the uterine discharge was purulent and extremely foul; the uterus was washed out twice daily with iodine. The temperature ranged from 100.4° to 103°, and the pulse-rate never fell below 130 and was oftener 140. The patient said she felt well; had no headache and no suspicion of a rigor. She took a fair amount of fluid nourishment. She was given about 8 oz. of brandy daily, and for medicine strong doses of tr. ferri perchlor. and quinine. She was restless at night but not sleepless, often having half an hour's consecutive sleep. She was never delirious. Her feeling of wellbeing did not depend on any mental hebetude, as she was throughout perfectly intelligent and alert. On May 4th the uterus was washed out at 11 a.m., the patient, as always, on the back, and the douche only raised about 2 ft. from the bed. The temperature was then 101.6°. At 1.30 she had a most severe rigor; temperature 106°, pulse 152. She had a second injection of 10 c.cm. of the same serum as before. At 3.30 her temperature was 108°, and the pulse, uncountable at the wrist, 180 at the heart. The abdomen was slightly tender all over the lower half and meteorism was very evident; the small intestine being markedly distended. For the first time she said she felt extremely ill. Her clothing was torn down the front and she was packed round with towels, and the front of her body and the whole of her thighs and legs freely sluiced with cold water. In a quarter of an hour the temperature had fallen to 105°; but she complained of extreme illness, said good-bye to all her friends, and expressed herself as conscious that she had not more than a few minutes to live. During the rest of the day the temperature and pulse-rate fell steadily, till at midnight the one was 100.4° and the other 138. During the night she had some sleep and took freely of fluids. By morning the distension of the intestine had entirely disappeared.

On May 5th the temperature never rose above 100° F., and the pulse varied from 124 to 130. She had an egg and toast for breakfast, a mutton chop for dinner, and again said she felt very well.

The rigor and hyperpyrexia followed so immediately on the douche that it was evident that they were due to some escape of fluid through patent Fallopian tubes, so the douching was suspended. From May 5th to 7th there was nothing to record but steady, satisfactory progress, but on the 9th the uterine discharge was so vilely offensive that the uterus was douched again, the height of the douche being only 6 in. However, the same result followed in a minor degree; temperature 1.30 p.m., 103.5° F., pulse 150. Meteorism, though present, was much less pronounced than on the first occasion. Ten c.cm. of serum was given, and at 9.30 temperature was 100.8° F., pulse 128. The following days the temperature and pulse were:

	A.M.	P.M.
May 8th ...	Temp. 99.4°, pulse 122.	Temp. 100.2°, pulse 122.
May 9th ...	Temp. 100°, pulse 127.	Temp. 100.2°, pulse 124.
May 10th...	Temp. 101.2°, pulse 122.	Temp. 101°, pulse 126.

On examination per vaginam there was neither perimetritis nor parametritis; the uterus was involuting well, and there was no vaginal discharge. From the 7th the vagina had been washed out twice daily, but no uterine douche given. A Bondin catheter was passed into the uterus and gently aspirated, but withdrew nothing but a few drops of blood-stained and slightly offensive fluid; 10 c.cm. of serum were given by the mouth.

	A.M.	P.M.
May 11th...	Temperature 99.6°.	Temperature 101°.
May 12th...	Temperature 100°.	Temperature 102°.

Serum 10 c.cm. injected.

May 13th and 14th the evening temperature was 103° F., and on the 14th a swelling was found on the right buttock, which on incision discharged a small quantity of vile-smelling chocolate-coloured pus.

From that date progress has been steady. She rose from bed on May 31st, and on June 12th went away for a change of air. She reports on June 23rd, "I feel much better, and am enjoying myself fine. I only felt my back aching a bit when I went for a long walk."

The principal points of interest are the immediate onset of infection, which was almost certainly derived from the vagina and carried directly into the uterus on the blades of the forceps (rubber gloves were worn and the forceps on each occasion taken directly out of the water in which they had been boiled); the extraordinarily high fever; the proof afforded by the abscess that the infection was finally generalized, and the extreme value in certain cases of stock polyvalent serums. Polyvalent serums prepared by Parke, Davis, and Co. and the Lister Institute were obtained for use in case the first serum failed, but were not required.

Llandudno. EDWARD GOODDY.

HICCOUGH IN THE COURSE OF DIAPHRAGMATIC PLEURISY TREATED BY LABORDE'S METHOD.

F. S., aged 22 years, a toolmaker by trade, and of marked neurotic temperament, was seized with sudden severe pain in the back whilst at work. When seen later in the day he was evidently in violent pain, which he located at the lower part of the back, over the lumbo-sacral joint; his respirations were hurried and "pleuritic" in type, temperature 102°, and pulse 100. There were no other physical signs until the following morning, when friction sounds were distinctly heard over the basal margin of the left lung for about 3 in. on either side of the mid-axillary line. The pain had left the back, and was now located almost exactly to the region over which the pleural friction was heard. He developed a patch of consolidation in the base of the left lung, and the temperature continued between 102° and 104° for five days, when the crisis occurred, and the temperature dropped to 98°, and subsequently did not rise above the normal. The next day, however, the patient developed occasional distressing hiccough, which became more and more violent and frequent, until in a few hours it occurred with every inspiration. Morphine, by the mouth and subcutaneously, potassium bromide and chloral hydrate, nitro-glycerine, hot brandy, were all in turn tried and found to be useless, as was also "holding the breath." The hiccough continued for four days, stopping only when the patient had occasional snatches of sleep, and reappearing immediately on waking; it prevented his taking sufficient nourishment, and was rapidly bringing him to a state of extreme exhaustion. Finally, Laborde's method was tried. The tongue was seized at the tip between the fingers and pulled forwards, being held in this position for two minutes. The hiccough ceased immediately, and did not reappear for five hours, when a slight attack was treated in a similar manner. Thereafter the symptom did not recur.

The success of the method is possibly purely due to a mechanical cause, the traction on the tongue preventing the abrupt closure of the glottis, which is characteristic of hiccough; though Laborde's own theory that in his method of restoring the apparently drowned the superior laryngeal nerve is reflexly stimulated by the rhythmic traction of the tongue, and the fact that in such cases hiccough is frequently an early sign of the return of normal respiration, suggest that a temporary inhibition of the superior laryngeal nerve by continuous and forcible traction may, in part at any rate, be responsible for the cessation of symptomatic hiccough.

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MONOCULAR CONJUNCTIVITIS AND LACRYMAL CONCRETIONS.

An obstinate monocular conjunctivitis always suggests the possibility of some affection of the lacrymal passages, and, in many such cases, pressure over the tear sac will cause some muco-purulent secretion to be expelled from one or both puncta. Constant reinfection of the conjunctiva from an infected lacrymal concretion is a far rarer occurrence.

Dr. George S. Derby[1] states that in 1907 upwards of 50 cases of lacrymal concretion had been published. In only 4 of these was the upper canaliculus involved. Löwenstein had recently added a fifth and Derby reported 2 further examples. The case here appended is yet another instance of the occurrence of concretion in the upper canaliculus.

On February 10th Mrs. X., aged 47, consulted me for a conjunctivitis which had troubled her for a month, at first in both eyes, but persisting only in the right. I found marked bulbar and palpebral congestion and some redness and undue prominence of the upper lacrymal papilla. This latter the patient herself pointed out to me as something red hanging down in the corner of her eye. On pressure over the lacrymal sac, no exudation was expelled, but the prominence of the papilla became more marked, so that it looked as though there were a small cyst immediately beneath the punctum.

Treatment with a lotion of sodium biborate, with protargol and boracic ointment, later supplemented by zinc sulphate drops and a weak ammoniated mercury ointment, was carefully carried out for seven weeks with no permanent effect. There had thus been a continued conjunctivitis of eleven weeks altogether.

The patient now consented to let me slit up the canaliculus, as I had diagnosed an infected lacrymal concretion, acting as a permanent focus of infection. I did so and removed two concretions, each the size of twice an ordinary pin's head. They were of a dirty yellow colour and soft. The first squashed under my finger, as I tested its consistency, but on removal it had a distinct rounded surface, as though it had rubbed continually against the other concretion. The second concretion I examined under the microscope and found an amorphous mass. Both were evidently pieces of inspissated mucus occupying the lumen of the canaliculus, but apparently not completely blocking it, since there was no interference with the passage of tears, and the protargol drops passed freely into the nostril.

A week after removal of the concretion slight improvement was noticed. I syringed through the upper canaliculus, and the lotion passed freely into the nose. A fortnight later the white of the eyeball showed clearly for the first time, and five weeks after the operation the eye was normal.

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Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

BRADFORD ROYAL INFIRMARY.

A RARE PELVIC TUMOUR.

(By Arthur T. Paterson, M.D.Edin., Resident Surgeon.)
[Under the care of Dr. T. Jason Wood.]

The following case seems to be of rather more than ordinary interest owing to its rarity:

The patient, a widow of 64 years, came to the Bradford Royal Infirmary complaining of pain in the right inguinal region and at the vulva; the pain was especially present after micturition, and the patient felt that she did not pass her water freely. These conditions had prevailed for about six months, and were first noticed after she had done a lot of walking whilst electioneering. There was no haematuria, but occasional scalding, and the urine contained a trace of albumen.

The patient was examined under an anaesthetic, and a firm round swelling, which could be grasped in bimanual examination, found on the right side of pelvis, close to middle line. A sound was passed into uterus, and took the normal direction, thus excluding that organ as being the lump felt.

The patient seemed desirous of undergoing an operation for the relief of her symptoms, so she was admitted as an in-patient, and operated on a few days later, the diagnosis made being that of a small ovarian tumour, or a fibroid with a short pedicle.

Under ether a suprapubic median incision was made: the tumour presented itself at once. It had no connexion with the uterus; this organ was seen to be rather small, otherwise normal; the ovaries also were observed to be healthy. Some doubt existed as to exactly where the tumour was attached and what it was. It rested above and in close proximity to the fundus of the bladder, and shifted its position as the bladder was distended artificially. Obviously now the tumour was seen to be adherent to the anterior surface of the bladder, and most likely had eroded the wall of the latter viscus, since, on opening the tumour and allowing it to discharge a jelly-like substance, a finger inserted through the opening palpated a sound in the bladder.

The tumour was completely evacuated, then dissected off the bladder; the opening in the bladder wall was closed in two layers with catgut sutures. A rubber drainage tube made fast with a stitch was inserted into the prevesical space, as a precautionary measure against leakage, and the abdominal wall repaired layer by layer. A self-retaining catheter was inserted into the urethra. The wound in the abdomen remained dry for three or four days; then urine appeared on the dressing, so a Cathcart's draining apparatus was fitted on to the drainage tube and drained the urine quite satisfactorily, none being passed naturally. The suprapubic opening gradually closed, and in four weeks the Cathcart's apparatus became unnecessary, the patient passing a gradually increasing quantity of water naturally. Four days after removal of the drainage apparatus the suprapubic wound had quite healed, and that day the patient passed 43 oz. of urine naturally and without difficulty.

A few days later she went to the convalescent home at Rawdon, and before leaving I satisfied myself that the wound had quite healed. Patient assured me she no longer had any pain, but still had some feeling of difficulty in emptying the bladder; doubtless this was due to the surgical interference at the time of operation, and would in all probability disappear.

The tumour was considered to be a dermoid, originating probably in connexion with the urachus. On section it was seen to be of two compartments; the uppermost had a somewhat calcified wall and contained caseous matter; the lower and larger compartment had a vascular wall, the interior of which was ridged, and it contained a colloid-like substance; no typically dermoid structures were found within.

The tumour was now sent to Dr. Eurich, the honorary pathologist, who kindly sent the following report: "The walls of the tumour consist of dense, interlacing masses of non-striped muscular fibre. Here and there among this mass of muscle can be seen scattered alveoli lined by columnar epithelium, and containing in their lumen colloid material."

Diagnosis: "Adenomatous myoma, probably developed from urachus."

[1] *Archives of Ophthalmology*, November, 1909, p. 581.

LONDON HOSPITAL.

A CASE OF MENINGEAL HAEMORRHAGE IN A DIABETIC DUE TO ENDOCARDITIS WITHOUT PHYSICAL SIGNS OF VALVULAR TROUBLE.

(By D. G. Rice-Oxley, M.R.C.S.Eng., L.R.C.P.Lond., House-Physician.)
[Under the care of Dr. Percy Kidd.]

J. P., a man, aged 49, was admitted to the London Hospital on May 23rd, 1910. He complained of twitching movements on the right side of his body, which commenced in the hand, and quickly spread to the arm, face, and leg.

He first noticed the movements one week previous to his admission, and they had been getting steadily worse. He had always considered himself a healthy man, and had complained of nothing, except that he noticed for some months past that he was getting thinner. He had been subject also to frequency of micturition, and was always very thirsty.

On admittance he had an air of lassitude, the complexion was somewhat florid, and the eyes were of a bright blue colour. The fits were extremely frequent, coming on about every minute, and lasting about twenty seconds. They involved the whole of the right side of the body, but more especially the arm and face. The convulsions were clonic in character, and the patient did not lose consciousness, or have any incontinence of either urine or faeces during the convulsions.

The skin was dry, the tongue clean and moist. Temperature, 100°; pulse, 102, equal and regular, but the tension was slightly raised. The pupils were equal, and reacted well to light and accommodation. The lungs were clear, and the heart appeared quite normal.

On examination of the urine, it was found to be acid, specific gravity 1038, trace of albumen, and sugar present in large quantities, 6.6 per cent.

The fits became more frequent, and the patient gradually lapsed into a comatose condition, and died three days after admission. A *post-mortem* examination was made which revealed a condition of septic endocarditis and meningeal haemorrhage.

The heart weighed 11 oz., and there were large vegetations, with erosion and considerable thickening of the aortic cusps, and numerous small vegetations on the aortic surface of the mitral valve. The aortic valve was incompetent to the water test. The coronary arteries and aorta showed considerable atheroma. There was also blood clot in the superior frontal sulcus and adjacent portion of the precentral sulcus, touching the genu, on the left side. The ascending frontal convulsion was stained, but there was no disease of brain. The pancreas appeared normal, and weighed 2½ oz. The kidneys were terra cotta.

The case is remarkable because:

1. There were no physical signs or symptoms suggestive of any cardiac valvular trouble.

2. The haemorrhage was meningeal and could not have accounted for the diabetes, which, I suppose, was incidental. The pancreas showed no disease or enlargement.

3. There was no infarction of viscera.

I am indebted to Dr. Percy Kidd for his kind permission to publish this case.

Reviews.

SURGERY.

THE collection of papers by the late Mr. HAROLD BARNARD, edited by Mr. JAMES SHERREN, and published under the title, *Contributions to Abdominal Surgery*,[1] will impress upon those who had not the advantage of intimacy with the author, or of experiencing the influence of his genial personality and gifts for teaching, the great loss suffered by British surgery in his too early death. The first two hundred and fifty pages embody the published and unpublished materials for a comprehensive work on intestinal obstruction that Mr. Barnard had in view at the time of his death. As it stands, the article forms a monograph that for arrangement, classification, wealth of illustration both from the literature and from the author's large personal experience at the London Hospital, for shrewd reference of signs and symptoms to their pathological and physiological causes, and for the thoughtful application of theoretical considerations to treatment, will lay every future writer under a heavy obligation, and in the meantime will supply students and practitioners alike with an easy road to the perfecting of their knowledge of the subject. It would take us too far to go over the whole essay in detail, but we may instance as an example of the fruits of his statistical research the observation that all cases of intestinal obstruction from simple faecal impaction die if submitted to laparotomy; and to indicate the careful way in which he applied his knowledge of physiology, the suggestion that some cases of chronic ulcerative colitis may be due to a functional failure on the part of the caecum in neutralizing the chyme and its ferments periodically poured into it from the ileum. The second paper in the book is headed "Gastric Surgery," but deals almost exclusively with anatomical and physiological considerations, and is rather a summary of recent additions to existing ideas on the matter than a contribution to the surgery of the stomach. On the other hand, the paper on the simulation of acute peritonitis by pleuro-pneumonic diseases, illustrated by six cases, and discussing the criteria for diagnosis, will be read with great profit and no little interest by all who do abdominal surgery, and, indeed, by all those who see acute cases. There is probably not quite such general ignorance of the possibility of this simulation as the deficiencies of the textbooks lead Mr. Barnard to assume. There must be few hospitals where it is not the subject of a clinical lecture from time to time both by physician and surgeon, but everybody is liable to be caught napping, and nobody will be the worse for this reminder. He does not, perhaps, make it quite clear that in some, at least, of these cases there is a pneumonic peritonitis of mild type in association with, or preceding, the pleural or pulmonary lesion. The three lectures on acute appendicitis which follow do not betray, and their more fugitive character doubtless is the reason, quite the same considered judgement as the first essay. The author, moreover, was upon debatable ground. He was not an out-and-out advocate of early operation. He knew, of course, that cases operated upon within the first twenty-four hours stood the best chance, but he was only too conversant, like most hospital surgeons, with cases seen for the first time on the third or fourth or fifth or later days, and he knew the danger of the "third day." It is curious, however, that familiar as he was with the remarkable virtures of massive saline infusion in the treatment of general peritonitis, he did not, apparently, realize its influence in inhibiting the onset of spreading peritonitis in circumstances in which spread might reasonably be anticipated, nor the immunity it affords a patient when submitted to an operation involving exposure otherwise dangerous. The last contribution needs no elaborate notice, for the paper read before the Surgical Section of the Royal Society of Medicine on subphrenic abscess made so great an impression at the time, and has been used already by so many other writers, that his conclusions must be widely known. Suffice it to say that, in Mr. Sherren's words, it "has done much to clarify our ideas on what is one of the most difficult subjects in this branch of surgery; careful perusal of this work, putting into practice its teachings, will be the means of saving many lives." It would not be right to omit reference to the care and skill with which the editor's task has been performed. No doubt it was a labour of love, but it is not an easy matter to collate another man's manuscript and to dovetail fragments into such a symmetrical sequence as is here accomplished. The illustrations, of which there are many, do not a little to increase the value of a book that will not need the pathetic but adventitious aid attaching to a memorial publication to secure a large sale and wide appreciation.

Mr. MOYNIHAN'S monograph on *Duodenal Ulcer*[2] is a solid contribution to surgical literature written in the finished style we are now accustomed to expect from his pen. A hard worker himself, Mr. Moynihan knows how to elicit the best efforts of his assistants, and he spares no trouble to enlist aid far and wide. Thus it is he is able to give an account of duodenal ulcer which represents not only his own very large experience but a research in the library, and, what is more important, in hospital records and museums. Every section of his book is illustrated by detailed case reports the ollection of which must represent in the aggregate an enormous expenditure of time. It is interesting to find from the short historical introduction that we need go no further back than 1817 to find the earliest mention of duodenal ulcer, and that the first case in which the diagnosis was made and verified was by Wunderlich in 1845. The second chapter

[1] *Contributions to Abdominal Surgery.* By the late H. L. Barnard, M.S., F.R.C.S. Edited by James Sherren, F.R.C.S. London: Edward Arnold. 1910. (Med. 8vo, pp. 411; illustrated. 15s.)

[2] *Duodenal Ulcer.* By B. G. A. Moynihan. London and Philadelphia: W. B. Saunders Company. 1910. (Crown 8vo, pp. 378; illustrated. 18s.)

deals with the vexed question of ulcers following burns. Curling's cases and a good many others are here illustrated; it is stated that the lesion "is doubtless a toxic ulcer, and therefore analogous to the ulcer which occurs in septicaemia, uraemia, typhoid fever, erysipelas, and pemphigus." This, however, does not advance the matter very far, nor does it explain the entire absence of any such occurrence amongst very large series of necropsies made by first-rate observers. In the next section uraemic ulcers receive attention, and details of 27 cases are given. There seems to be some experimental evidence to support the view that the duodenum is the most efficient path for the excretion of urinary poisons. Submucous haemorrhages are frequently found in association with ulcers, and it is possible that the ulceration begins at the site of effused blood and is determined by the action of the gastric juice immediately beyond the pylorus. Tuberculous ulcer is not very uncommon, for Mr. Moynihan is able to transcribe 34 case reports. It is rarely, however, that symptoms call for operation; two only have occurred in his own practice. There is an interesting chapter on melaena neonatorum and duodenal ulcer. No less than thirty instances are furnished. Landau's view, supplemented by Helmholz, was that the incidence was "due to thrombosis of the umbilical vein; thrombi were carried thence into the general circulation and were deposited in various organs." The digestive action of the gastric juice came into play in the case of the duodenal infarcts. These cases, therefore, form an interesting sidelight on "burn" and other "toxic" ulcers. When the author reaches his main thesis—chronic duodenal ulcer—the reader will find himself on familiar ground, for much that is printed here has appeared in one form or another in current literature in the last two or three years. He will not be surprised to meet such a sentence as this: "It is therefore not necessary to the attaining of an accurate diagnosis that any examination of the patient be made. The anamnesis is everything; the physical examination is relatively nothing." Again, "Recurrent severe 'hyperchlorhydria' *is* duodenal ulcer"; and again, persistent hyperchlorhydria "is the medical term for the surgical condition duodenal ulcer." These are questions that the author must be left to fight out with the physicians, and there is no doubt that he will give a very good account of himself. We suspect that when by his dramatic statements he has compelled a very considerable degree of admissions from his opponents, he will be the first to admit that in matters medical assertions couched in such uncompromisingly dogmatic terms imply exceptions. Whatever the upshot of the difference of opinion, there is the solid evidence of a series of 189 operations by one surgeon within nine years for a condition that has only been known for a century, and was first diagnosed *intra vitam* little more than half a century since. Moreover, it appears from Mr. Collinson's tabulated statements of these cases, that in every instance of ulcer, recognized on evidence that would have led physicians to diagnose some such state as "acid dyspepsia," an ulcer has been found in the duodenum which could be demonstrated, upon the exterior of the gut, to those looking on at the operation. In another aspect of this surgical record there is ground for congratulation. There is an operative mortality of but 2.15 per cent., and recent reports enable the figures for cures, as distinct from recoveries, to be put at 79 per cent. The treatment of chronic duodenal ulcer needs no reference, for it has become part of the routine of every operating surgeon; but there will be no grudging Mr. Moynihan a large share of the merit for pioneer work that has made such a state of things possible. The illustrations, both of specimens and of the stages of the operations, are alike very good.

The course of surgical operations[3] prescribed by Professor SCHMIEDEN for his students and for practitioners is set out in extremely pleasant fashion. The author has hit off in the happiest fashion just the line between a manual solely for use in the dead-house—though he indicates an intention for the dead-house by putting upon his title-page the words, "Mortui vivos docent"—and a treatise on operative surgery. That is to say, that, although he describes nothing that cannot be practised upon the dead body, and refrains from anything more in the way of selective indication than the general principle "the simpler the better," yet, in the wording of the directions, there is evident throughout the constant thought of the operating theatre, the direct application of what is being learnt upon the dead to technical perfection in operating upon the living. It is a book not for a student going up for an examination, but for the budding surgeon. The style is quite simple, and the illustrations generally very good. There is no attempt to teach anatomy; students would not find here anything to compare with the diagrams in such a book as Allingham's for assisting a flagging anatomical memory, but for one who knows his anatomy as he ought, there is ample in this text. Like most Continental authors, Professor Schmieden shows a fondness for osteoplastic amputations; he prefers a Pirogoff to a Syme, for instance. He knows the value of the circular amputation in the lower third of the thigh, but, unfortunately, his illustrations of the circular method are indifferent; almost the only indifferent ones in the book. Except upon the recently dead body, catheterization cannot be taught satisfactorily in the dead-house, but perhaps it is right to include mention of it. We have read no book of its size more suitable for use by a class in operative surgery, and it is just about the right size.

The second edition of Mr. WHEELER'S *Student's Handbook of Operative Surgery*[4] is decidedly an improvement on the first, but the limitations indicated in our review of the first edition still subsist. Textbooks on this subject are gradualy becoming "modernized." The courses given in the schools have long since become so. Whilst amputations, excisions, and ligature of arteries in continuity retain their pristine importance, the extended field of surgery has brought scores of other operations into equal prominence, and all, or almost all, are practised on the dead body. This, however, is, as the name indicates, a manual purely for students, and the operative class is largely an anatomical exercise for them. It is therefore a little unwise, as it seems to us, to keep the volume small by minimizing the anatomical data and diagrams. The text is notably free from errors, but it is not the book to be read for the examinations taken by the majority of English students.

In committing to print the accumulated experience of many years' teaching and operative experience, Professor PELS-LEUSDEN has modestly disclaimed the title "Operative Surgery," and sought to indicate, in the subtle way possible in the German language, just the nuance of meaning which English readers will associate with the operations of surgery,[5] and in consequence this book must challenge comparison with Mr. Jacobson's well-known work. The intention here has not been to compile an encyclopaedia of operations, but to provide a working account of those in most common use and something by way of indications as to the respective merits of the different procedures, together with the reasons for selecting a particular method upon a particular occasion. It is a sound guide to the practice of five years ago, and perhaps that is what a textbook ought to be. Certainly it is no reflection upon Professor Pels-Leusden to say this. He is sufficiently up-to-date to include an account of Trendelenburg's operation upon the pulmonary artery for embolism; he describes many of the recent developments in operative work upon the thorax and upon the vessels; he has had the energy to secure a set of illustrations almost entirely new; finally he exhibits the sane judgement and practical common sense which make him a safe guide to those who read and rely upon his pages when gaining their own operative experience. The line and wash drawings by Dr. Muller are quite good; his insets to show anatomical details in projection and section are delicate little pieces of work and extremely useful. Where the author has considered an operation not of sufficient frequency to warrant description in detail, he has given plenty of references to recent cases. Such is the case, for example, with exposure of the pituitary body for the removal of tumours. The section

[3] *Der chirurgische Operationskursus.* Von Professor Dr. Victor Schmieden. Leipzig: J. A. Barth. 1910. (Sup. roy. 8vo, pp. 342; illustrations 354. M.13.50.)

[4] *Student's Handbook of Operative Surgery.* By W. I. de C. Wheeler, M.D., F.R.C.S.I., Surgeon to Mercer's Hospital, Dublin. London: Baillière, Tindall, and Cox. 1910. (Cr. 8vo, pp. 310; illustrations 157. 7s. 6d.)

[5] *Chirurgische Operationslehre für Studierende und Aerzte.* Von Professor Dr. F. Pels-Leusden. Berlin and Vienna: Urban and Schwarzenberg. 1910. (Sup. roy. 8vo, pp. 744; 668 illustrations. M.18.)

dealing with abdominal surgery is not quite satisfying. Probably the reader is a little biassed by some of the early sentences. In the after-treatment of abdominal cases Professor Pels-Leusden is dreadfully afraid of purgation. If the bowels have not acted by the fifth day, an enema may be ventured upon! It is not surprising to find him referring to the passage of flatus as "heavenly music" both for the patient and the doctor! An emasculated Murphy method of rectal saline infusion is described and attributed to Katzenstein. In dealing with intestinal anastomosis the author shows a fondness for mechanical apparatus of the Murphy-button type, and a reluctance to employ lateral anastomosis that is surely more than five years out of date. He gives very good figures of the Borelius method of implanting the ureters and trigone of an ectopic bladder into a partially segregated loop of sigmoid. In the account of suprapubic prostatectomy it is advised to preserve the urethra by careful dissection with scissors, and to complete the operation by an equally careful suture of the divided mucosa at the base of the bladder. We cannot help thinking this is one of the operations of which the author says in his preface that if he has not had experience of them in the theatre he has performed them upon the cadaver. There is evidence, too, of a persistent liking for transfixion amputations. There seems to be very little that is new in the book, but there is singularly little that is not good of its kind. One slip will doubtless be corrected in another edition—namely, the figures of the larynx on pages 553–4, which are quite puzzling until one realizes that the cartilages have turned their backs on the trachea. A useful if not a very attractive book.

The English student will have no temptation to turn to the German work, for books of the same class, a little better done, are to be had in his own tongue. For example, the second volume of the *Manual of Operative Surgery*,[6] which Mr. HUTCHINSON has rewritten for TREVES, is now available, and bears out all that we said in reviewing the first volume (BRITISH MEDICAL JOURNAL, April 2nd, 1910, p. 814). The second volume includes operations on the head, neck, and spine, upon the thorax and breast, upon the vessels and nerves; amputations, operations on bones and joints, upon tendons and fasciae. Mr. Hutchinson is a very cautious, and by no means too sanguine, guide. Most surgeons have periods of depression when they review their results in operations for brain tumours, for cancer of the breast and tongue, and in operations upon nerves. A torn brachial plexus is not a very hopeful field for suture or anastomosis, but there are enough good results to save the attempt from damnation by faint praise. Of course there are failures in anastomosis for facial palsy, but there are lots of successes; true, in this country, operations for exophthalmic goitre are not favourably received, but what about the work of the Mayos? If so few operations for cerebral tumours result in cures, at least it would have been worth while to include an account of Cushing's decompressive operations. Operations upon vessels may be in the experimental stage, but a fair number of operations in the human subject is now on record, and a student will naturally expect his work on operative surgery to say something about the subject. It is strange in these days to have to say of a book that there are not enough illustrations, but the selection here is not quite up to the mark; figures of instruments are showered upon every operator in enormous volumes by the makers, but in such a complicated point as the fashioning of flaps from the cartilaginous meatus to line the bare mastoid cavity, the young surgeon will be very grateful for figures and diagrams. One little correction, and we have done grumbling. The special trocar and cannula devised for empyemata was suggested, we believe, not by Mr. G. B. Turner, but by Mr. William Turner. There are very few operations, or special points about operations in general daily use, for which the reader will not be able to turn with confidence to this book. He will be able to refresh his memory about anatomical details, about instruments, and about difficulties and dangers likely to be encountered. He will find his information well displayed and well printed, readily accessible, and clearly expressed.

[6] *A Manual of Operative Surgery.* By Sir Frederick Treves and Jonathan Hutchinson. Third edition, vol. ii. London: Cassell and Co. 1910. (Royal 8vo, pp. 828. Plates 16, illustrations 495. 36s.)

The appearance of a second edition of SLUSS's *Emergency Surgery*[7] within a year of the first publication is sufficient indication of the appreciation this compact little book has won. A new chapter on the general technique of laparotomy does little to advance the author's express purpose, but, on the other hand, the additional matter includes a brief account of pericardiotomy, of spinal anaesthesia, and of the important subject subphrenic abscess. It is, we think, hardly fair to attribute the clarification of our ideas in this respect to Guibal. The late Mr. Harold Barnard deserves the credit. We feel obliged to protest, too, against the instruction to put hot-water bottles to the feet of a patient recovering from anaesthesia, unless it be definitely intimated that very ample covering is essential. Still, these are minor matters, and the book has proved its usefulness.

NOTES ON BOOKS.

SLEEPING SICKNESS.

DR. HEARSEY reports on sleeping sickness in the Nyasaland Protectorate on June 15th, 1910, this being found in Part X[8] of his diary which is published from time to time. Since the issue of the last memorandum there is little of interest to record. The discovery recently made by Dr. Leach of several cases of sleeping sickness in North Eastern Rhodesia, in the basin of the Luangwa river, and in the absence—so far as yet ascertained—of *Glossina palpalis* either on the Luangwa or its tributaries, has necessarily not a little significance for Nyasaland; more especially when it is recollected that in the majority of the Nyasaland cases it has also not been possible to associate the infections with *Glossina palpalis* as the causative factor. A brief summary of these cases is then given, the information being based on reports furnished by the Acting Administrator of North-Eastern Rhodesia. As a search is now being made for *Glossina palpalis* in the neighbourhood of the confluence of the Luangwa and Zambesi rivers by a medical officer accompanied by an entomologist, some definite information may be obtained. The fact of a fresh case of trypanosomiasis being found within a few miles of Zomba would seem to point to the deduction that the disease is a much more widespread one than is generally supposed, and that numerous cases must be going about at present undetected.

The first edition of 10,000 copies of M.D.'s volume on *Ideal Health*[9] having been exhausted, it may be assumed that it was appreciated, and that the second edition, recently issued in a revised form, is called for. But for the fact that the author, who conceals his identity under a *nom-de-guerre*, categorically states in the preface to his first edition that he derives "absolutely no advantage, pecuniary or otherwise, from any of the articles or apparatus recommended in these pages," one would be inclined to regard the volume as a mere trade advertisement to promote the sale of "spring chest expanders," "spring exercisers," and suchlike special varieties of apparatus provided to promote the culture of physical development. While we have no fault to find with the manner in which the knowledge and teaching it contains are conveyed, we are not at all sure that, even under cover of anonymity, a member of the medical profession is wise, however altruistic he may be, to promote by his advocacy the sale of this, that, or the other form of mechanical contrivance which is promoted, put upon the market, and puffed after the usual methods of commerce.

[7] *Emergency Surgery for the General Practitioner.* By John W. Sluss A.M., M.D. Second edition. London: Rebman, Limited. 1910. (Demy 8vo, pp. 762; 605 illustrations. 15s.)

[8] *Nyasaland Protectorate: Sleeping Sickness Diary.* Part X. By the Principal Medical Officer. Zomba: Printed by the Government Printer. 1910.

[9] *Ideal Health: How to Attain it by Physical Culture.* By M.D. Second edition. Bristol: John Wright and Sons, Limited; and London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1909. (Cr. 8vo, pp. 123; illustrations from life. 1s.)

THE annual meeting and dinner of the Caledonian Medical Society will be held at Fort William, on Friday, September 23rd. The chair will be taken by Dr. A. Cameron Miller, of Fort William.

THE Annual Welsh Medical Dinner will be held under the presidency of Mr. Robert Jones (Liverpool), at 7.30 p.m., on Friday, September 30th, at the Criterion Restaurant, Piccadilly, London, W. Applications for tickets should be made at an early date to the Honorary Secretary, Mr. J. Howell Evans, 25, Berkeley Square, W.

BRITISH ASSOCIATION.

THE eightieth annual meeting of the British Association for the Advancement of Science was opened at Sheffield on August 31st, under the presidency of Professor BONNEY, who took as the subject of his address the Ice Age in Western Europe. We are enabled by the courtesy of the Assistant Secretary, Mr. O. J. R. Howarth, M.A., to give summaries of the chief communications which are of interest, directly or indirectly, to medical readers.

SECTION OF PHYSIOLOGY.

The Nature of Life.

Professor A. B. MACALLUM, President of the Section of Physiology, delivered an address on the nature of life. He said the record of investigation of the phenomena of the life of animal and vegetable cells for the last eighty years constituted a body of knowledge of imposing magnitude and of surpassing interest to all who are concerned in the studies that bear on the organic world. This body of knowledge, which was called cytology, was still, with all this achievement, in one respect an undeveloped science. It was almost wholly concerned with the structural or morphological side of the cell, while of the functional phenomena our knowledge was only of the most general kind, and the reason was not far to seek. What little was known of the physiological side of the cell—as, for example, of cellular secretion, absorption, and nutrition—had only to a very limited extent been the outcome of observations directed to that end. It was in very great part the result of all the inferences and generalizations drawn from the data of morphological research. This state of our knowledge had fashioned our concept of living matter. When we thought of the cell it was idealized as a morphological element only. The functional aspect was not ignored, but we knew very little about it, and we veiled our ignorance by classing its manifestations as vital phenomena. It was true that in the last twenty years, and more particularly in the last ten, we had gathered something from biochemical research. We knew much concerning ferment or catalytic action, of the physical characters of colloids, of the constitution of proteins, and their synthesis in the laboratory promised to be an achievement of the near future. We were also in a position to understand a little more clearly what happened in proteins when, on decomposition in the cell, they yielded the waste products, urea, and other metabolites, with carbon dioxide and water. Further, fats could be formed in the laboratory from glycerine and fatty acids, a large number of which had also been synthesized, and a very large majority of the sugars of the aldohexose type had been built up from simpler compounds. These facts indicated that some of the results of the activity of animal and vegetable cells might be paralleled in the laboratory, but that was as far as the resemblance extended. The methods of the laboratory were not as yet those of Nature. Nature worked unerringly, unfalteringly, with an amazing economy of material and energy, while "our laboratory syntheses were but roundabout ways to the waste sink." In consequence, it was customary to regard living matter as *sui generis* without an analogue or parallel in the inorganic world, and the secrets involved in its actions and activities as insoluble enigmas. Impelled by this view, there were those, also, who postulated as an explanation for all these manifestations the intervention in so-called living matter of a force otherwise and elsewhere unknown, biotic or vital, whose action was directed, according to the character of the structure through which it operated, to the production of the phenomena in question. Living protoplasm was, in this view, but a mask and a medium for action of the unknown force. This was an old doctrine, but it had again made headway in recent years owing to the reaction from the enthusiasm which came from the belief that the application of the known laws of physics and chemistry in the study of living matter would explain all its mysteries. A quarter of a century ago hopes were high that the solution of these problems would soon be found in a more profound comprehension of the laws of the physical world. Since then there had been an extraordinary increase in our knowledge of the structure and of the products of the activity of living matter without a corresponding increase in knowledge in the processes involved. The obscurity still involving the latter appeared all the greater because of the high lights thrown on the former. Despair, in consequence, had taken the place of hope with some, and the action of a mysterious force was invoked to explain a mystery. It might be admitted that our methods of investigation were very inadequate, and that our knowledge of the laws of matter, seemingly comprehensive, was not at present profound enough to enable us to solve all the problems involved in the vital phenomena. The greatest factor in the difficulty of their solution, however, had been the fact that there had been a great lack of investigators specially trained not only in biology, but also in physics and chemistry, for the very purpose of attacking intelligently such problems. The biologists, for want of such a wide training, had emphasized the morphological aspect and the readily observable phenomona of living matter; while the physicist and chemist, knowing little of the morphology of the cell and of its vital manifestations, had been unable to apply satisfactorily the principles of their sciences to an understanding of its processes. The high degree of specialism which certain departments of biology had in recent years developed had made that difficulty still greater. It must also be said that in some instances in which the physicist and chemist attempted to aid in the solution of biological problems the result on the whole had not been quite satisfactory. For example, in the phenomena of osmosis, the application of Arrhenius's theory of ionization and van 't Hoff's gas theory of solutions promised at first to explain all the processes and the results of diffusion through animal membranes. These theories were supported by such an array of facts from the side of physics and physical chemistry that there appeared to be no question whatever regarding their universal validity, and their application in the study of biological phenomena was urged with acclaim by physical chemists and eagerly welcomed by physiologists. The result in all cases was not what was expected. Diffusion of solutes, according to the theories, should, if the membranes were permeable to them, always be from the fluid where their concentration was high to that in which it was low. This appeared to happen in a number of instances in the case of living membranes, but in one signal instance at least the very reverse normally obtained. In the kidney, membranes formed of cells constituting the lining of the glomeruli and the renal tubules separated the urine, as it was being formed, from the blood plasma and the lymph circulating through the kidney. Though the excreted fluid was derived from the plasma and lymph, it was usually of much greater osmotic concentration than the latter. It might be urged that this and other discrepancies were explained by the distribution (or partition) coefficient of the solutes responsible for the greater concentration of the product of excretion, these solutes being more soluble in the excreted medium than in the blood plasma, and distributing or diffusing themselves accordingly. If such a principle were applicable here as an explanation, it might be quite as much so in other physiological cases in which the results were supposedly due only to the forces postulated in the theories of van 't Hoff and Arrhenius. Whether this were so or not, the central fact remained that the enthusiastic hopes with which the theories were applied by physiologists and biologists in the explanation of certain vital phenomena had not been wholly realized. The result had been a reaction amongst physiologists and biologists which had not been the least contributory of all the causes that had led to the present revival of vitalism. Another difficulty in accounting for the vital phenomena had been due, until recently, to a lack of knowledge of the physical and chemical properties of colloids and colloidal "solutions." The importance of this knowledge consisted in the fact that protoplasm, "the physical basis" of life, consisted mainly of colloids and water. Till eleven years ago what was known regarding colloids was derived chiefly from the researches of Graham (1851–62), Ljubavin (1889), Barus and Schneider (1891), and Linder and Picton (1892–97), who were the pioneers in this line. In 1899 were published the observations of Hardy, through whose investigations very great progress in our knowledge of colloids was made. In 1903 came the invention of the ultramicroscope by Siedentopf and Zsigmondy, by which the suspension character of colloid material in its so called "solutions" was visually demonstrated. During the last seven years a host of

workers had by their investigations greatly extended our knowledge of the physical and chemical properties of colloids, and now the science of collochemistry bid fair, the more it developed, to play a very important part in all studies bearing on the constitution and properties of living matter. Then, also, there were the phenomena of surface tension. This force, the nature of which was first indicated by Segner in 1751, and described with more detail by Young in 1804 and La Place in 1806 in the exposition of their theories of capillarity, was first in 1869 only casually suggested as a factor in vital processes by Engelmann. Since the latter date and until 1892, when Bütschli published his observations on protoplasmic movement, no serious effort was made to utilize the principle of this force in the explanation of vital phenomena. Even to-day, when we knew more of the laws of surface tension, it was introduced only as an incidental factor in speculations regarding the origin of protoplasmic movement and muscular contraction, and yet it was the most important of all the forces concerned in the life of animal and vegetable cells. It might be gathered from what he had said that the chief defect in biological research had been, and was still, the failure to apply thoroughly the laws of the physical world in the explanation of vital phenomena. Because of this too much emphasis was placed on the division made between the biological and the physical sciences. That division was very largely an artificial one, and it would in all probability be maintained eventually only as a convenience in the classification of the sciences. The biologist and physiologist had to deal with problems in which a wide range of knowledge was necessary for their adequate treatment; and, if the individual investigator had not a very extensive training in the physical sciences, it was impossible for him to have at his command all the facts bearing on the subject of his research, unless the problem involved were a very narrow one. This growing defect in the biological sciences could be lessened only by the insistence of those in charge of advanced courses in biological and physiological laboratories that only they whose training was of a very wide character should be allowed to take up research. It was, perhaps, futile to expect that such a rule would ever be enforced, for in the keen competition between universities for young teachers who had made some reputation for original investigation there might not be too close a scrutiny of the qualifications of those who offered themselves for post-graduate courses. There was, further, the difficulty that the heads of scientific departments were not desirous of limiting the output of new knowledge from their laboratories by insisting on the wider training for the men of science who were in the process of developing as students of research. It was perhaps true, also, that there still remained a great deal unobserved or unrecorded in the fields of biology, physiology, and bio-chemistry, in the investigation of all of which a broad training was not specially required to give good service; and that, further, this condition would obtain for one or two decades still. It was quite as certain, however, that the returns from such service would tend to diminish in number and value, and, if the coming generation of workers were not recruited from a systematically and broadly trained class of students, a period of comparative sterility might supervene. As it was to-day, there were few who devoted themselves to the direct study of the chemical and physical properties of the cell, the fundamental unit of living matter. There were, of course, many who were concerned with the morphology of the cell, and who employed in their studies the methods of hardening and staining which had been of very great service in revealing the structural as well as the superficial chemical properties of the cell. On the facts so gained views were based which dealt with the chemistry of the cell, and which were more or less widely accepted, but the results and generalizations drawn from them gave us but little insight into the chemical constitution of the cell. We recognized in the morphologist's chromatin a substance which had only in a most general way an individuality, while the inclusions in the nucleus and the cytoplasm, on whose distinction by staining great emphasis was laid, could only in a most superficial way be classified chemically. The results of digestion experiments on the cell structures were also open to objection. The action of pepsin and hydrochloric acid must depend very largely on the accessibility of the material whose character was to be determined. If there were membranes protecting cellular elements, pepsin, which was a colloid, if it diffused at all, must in some cases at least penetrate them with difficulty. In *Spirogyra*, for example, the external membrane formed of a thick layer of cellulose was impermeable to pepsin, but not to the acid; and, in consequence, the changes which occurred in it during peptic digestion were due to the acid alone. Even in the cell whose periphery was not protected by a membrane, the insoluble colloid material at the surface served as a barrier to the free entrance of the pepsin. It was, however, more particularly in the action on the nucleus and its contents that peptic digestion failed to give results which could be regarded as free from objection. Here was a membrane which during life served to keep out of the nucleus not only all inorganic salts but also all organic compounds, except chiefly those of the class of nucleo-proteins. That such a membrane might, when the organism was dead, be permeable to pepsin was at least open to question, and in consequence what was seen in the nucleus after the cell had been acted on by pepsin and hydrochloric acid could not be adduced as evidence of its chemical or even of its morphological character. The results of digestive experiments on cells were, therefore, misleading. What might from them appear as nucleo-protein might be anything but that, while, if the pepsin penetrated as readily as the acid, there should be left not nucleo-protein, but pure nucleic acid, which should not stain at all. The objections he now urged against the conclusions drawn from the results of digestion experiments had developed out of his own observations on yeast cells, diatoms, *Spirogyra*, and especially the blue-green algae. The latter were, as was *Spirogyra*, encased in a membrane which was an effective barrier to all colloids. When, therefore, threads of *Oscillaria* were subjected to the action of artificial gastric juice, a certain diminution in volume was observed owing to the dissolving power of the hydrochloric acid, and an alteration of the staining power of certain structures was found to obtain, but the pepsin had nothing to do with these, as might be determined by examination of control preparations treated with a solution of hydrochloric acid alone. It was thus seen how slender was our knowledge of the chemistry of cells derived from staining methods and from digestion experiments. That, however, had not been the worst result of our confidence in our methods. It had led cytologists to rely on these methods alone, to leave undeveloped others which might have thrown great light on the chemical constitution of the cell, and which might have enabled us to understand a little more clearly the causation of some of the vital phenomena. It was the futility of some of the old methods that led him, twenty years ago, to attack the chemistry of the cell from what appeared to him a correctly chemical standpoint. It seemed to him then, and it appeared as true now, that a diligent search for decisive chemical reactions would yield results of the very greatest importance. In the interval he had been able to accomplish only a small fraction of what he hoped to do, but he thought the results had justified the view that, if there had been many investigators in this line instead of only a very few, the science of cyto-chemistry would play a larger part in the solution of the problems of cell physiology than it now did. The methods and the results, though meagre, showed distinctly indeed that the inorganic salts were not diffused uniformly throughout the cell; that in vegetable cells they were rigidly localized, while in animal cells, except those devoted to absorption and excretion, they were confined to specified areas in the cell. Their localization, except in the case of inorganic salts of iron, was not due to the formation of the precipitates, but rather to a condition which was the result of the action of surface tension. That seemed to him to be the only explanation for the remarkable distribution, for example, of potash salts in vegetable cells. We knew that, except in the chloroplatinate of potassium and in the hexanitrite of potassium, sodium and cobalt, potassium salts formed no precipitates; and yet, in the cytoplasm of vegetable cells, the potassium was so localized at a few points to appear at first as if it were in the form of a precipitate. In normal active cells of *Spirogyra* it was massed along the edge of the chromotophor, while in the mesophyllic cells of leaves it was condensed in masses of the cytoplasm, which were by no

means conspicuous in ordinary preparations of those cells. This effect of surface tension in localizing the distribution of inorganic salts at points in the cytoplasm would explain the distribution of potassium in motor structures. In striated muscle the element was abundant in amount, and was confined to the dim bands in the normal conditions. The distribution of a salt in such a fluid, whether it lowered surface tension or increased it, was due to the action of a law which might be expressed in words to the effect that the concentration in a system was so adjusted as to reduce the energy at any point to a minimum. Our knowledge of this action of inorganic or organic substances on the surface tension in a fluid and of the differences in their concentrations throughout the latter was contained in the results of the observations on gas mixtures by J. Willard Gibbs published in 1878. The principle as applied to solutions was independently discovered by J. J. Thomson in 1887. It was known as the Gibbs principle, although the current enunciations of it contained the more extended observations of Thomson. As formulated usually it was more briefly given, and its essential points might be rendered in the statement *that when a substance on solution in a fluid lowers the surface tension of the latter the concentration of the solute was greater in the surface layer than elsewhere in the solution; but when the substance dissolved raised the surface tension of the fluid, the concentration of the solute was least in the surface layers of the solution.* After dealing in considerable detail with the effects of surface tension, Professor Macallum went on to say that enough had been advanced to indicate that surface tension was not a minor feature in cell life. He would go further and say that the energy evolved in muscular contraction, that also involved in secretion and excretion, the force concerned in the phenomena of nuclear and cell division, and that force also engaged by the nerve cell in the production of a nerve impulse, were but manifestations of surface tension. On this view the living cell was but a machine, an engine, for transforming potential into kinetic and other forms of energy, through or by changes in its surface energy.

He then discussed surface tension in nerve cells and nerve fibres. The very fact that in the repair of a divided nerve fibre the renewal of the peripheral portion of the axon occurred through a movement—a flowing outward, as it were—of the soft colloid material from the central portion of the divided fibre was, in itself, a strong indication that surface tension was low here and high on the cell body itself. This fact did not stand alone. He pointed out six years ago that potassium salt was abundant along the course of the axon and apparently on its exterior surface, while it was present but in traces in the nerve cell itself. In the latter chlorides were present only in traces, and therefore sodium, if present, was there in more minute quantities, while haloid chlorine was abundant in the axon. The conclusions that followed were not far to seek. They knew that an electrical displacement or disturbance of ever so slight a character occurring at a point on the surface of a drop lowered correspondingly the surface tension at that point. What a nerve impulse fundamentally involved we were not certain, but we did know that it was always accompanied by, if not constituted of, a change of electrical potential, which was as rapidly transmitted as was the impulse. When this change of potential was transmitted along an axon through its synaptic terminals to another nerve cell, the surface tension of the latter must be lowered to a degree corresponding to the magnitude of the electrical disturbance produced, and, in consequence, a slight displacement of the potassium ions would occur at each point in succession along the course of its axon. This displacement of the ions as it proceeded would produce a change of electrical potential, and thus account for the current of action. The displacement of the ions in the axon would last as long as the alteration of surface tension which gave rise to it, and this would comprehend not more than a very minute fraction of a second. Consequently, many such variations in the surface tension of the body of the nerve cell would occur in the second; and, as the physical change concerned would involve only the very surface layer of the cell, a minimum of fatigue would result in the cell, while little or none would develop in the axon. It might be pointed out that in medullated nerve fibres the lipoid-holding sheath, in close contact as it was with the axon, must of necessity maintain on the course of the latter a surface tension low as compared with that on the nerve cell itself, which, as the synaptic relations of other nerve cells with it postulate, was not closely invested with an enveloping membrane. In non-medullated nerve fibres the simple enveloping sheath might function in the same manner, and probably, if it was not rich in lipoid material, in a less marked degree. In bringing his address to a close, Professor Macallum said that in applying the laws of surface tension in the explanation of vital phenomena he was proceeding along a path into the unknown which had been as yet only in a most general way marked out by pioneer investigators, and in consequence, to avoid mistakes, he had been constrained to repress the desire to make larger ventures from the imperfectly beaten main road. Perhaps, after all, he might have fallen into error. It was a far cry to certainty. As Duclaux had aptly put it, the reason why science advanced was that it was never sure of anything. Notwithstanding this inadequate treatment of the subject of surface tension in relation to cellular processes, he hoped he had made it in some measure clear that the same force which shaped the raindrop or the molten mass of a planet was an all-important factor in the causation of vital phenomena. Some of the latter might not thereby be explained. We did not as yet know all that was concerned in the physical state of solutions. The fact ascertained by Rona and Michaelis, that certain sugars, which neither lowered nor appreciably raised surface tension in their solutions, condensed or were absorbed on the surface of a solution system, was an indication that there were at least some problems with a bearing on vital phenomena yet to solve. Nevertheless, what we had gained from our knowledge of the laws of surface tension constituted a distinct step in advance, and a more extended application of the Gibbs-Thomson principle might throw light on the causation of other vital phenomena. To that end a greatly developed science of microchemistry was necessary.

Anaesthetics.

The committee, consisting of Dr. A. D. Waller (Chairman), Dr. F. W. Hewitt (Secretary), Dr. Blumfeld, Mr. J. A. Gardiner, and Dr. G. A. Buckmaster, appointed to acquire further knowledge, clinical and experimental, concerning anaesthetics—especially chloroform, ether, and alcohol—with special reference to deaths by or during anaesthesia, and their possible diminution, presented their second interim report. It was stated that the committee had held seven laboratory meetings during the past year, at which apparatus for the graduated administration of chloroform and of ether had been examined and discussed, and experiments made therewith upon animals. In addition to such formal experiments in the presence of the full committee, many additional experiments had been made and reported to the committee:

1. On the graduated administration of chloroform vapour.
2. On the graduated administration of ether vapour.
3. On the effects upon the course of anaesthesia of diminution and augmentation of the percentage of oxygen in inspired atmosphere.
4. On the amounts of chloroform present in the blood and in the nervous system of man and of animals after death under chloroform.

These several subjects had involved an amount of detailed work that caused the committee to state that its work could be considerably forwarded if an assistant devoting his whole time to the matter could be engaged. The committee, after consideration of several forms of apparatus designed for the graduated administration of chloroform, and after adequate experience of the use of the chloroform balance for the anaesthesia of animals, believed that this apparatus could be usefully employed in the hospital. They had taken preliminary steps towards bringing the apparatus into a form suitable for this purpose, and they hoped that it would shortly be set in operation at St. George's Hospital, under the supervision of Dr. Hewitt. The principle of this apparatus and its application in the laboratory were described by Dr. Waller in an appendix to the interim report of the committee of last year. The apparatus fulfilled what had been recognized by the committee as the most important indication necessary for safe anaesthesia—namely, the uniform, continuous, and regulated administration of chloroform vapour between the limit of 1 and 2 per cent. The committee found that the

most convenient and reliable method of ascertaining the percentage of chloroform in air consisted in directly ascertaining on a balance the difference of weight between two identical counterpoised bulbs, A filled with air, B filled with the mixture to be titrated. As regards the production of anaesthesia by ether vapour, the committee was of opinion that the clinical experience obtained with an unknown percentage of ether vapour required to be complemented by the scientific knowledge of the percentages of ether and air that might be necessary and sufficient. It had initiated experiments upon animals, from which the provisional conclusion was drawn that a mixture composed of approximately 1 volume of ether vapour and 9 volumes of air should be safe and sufficient for the production of surgical anaesthesia. Comparative experiments had been undertaken for the committee by Drs. Veley and Waller during the past year on local anaesthetics. The first results had been published in the *Proceedings of the Royal Society* on the comparative action of stovaine and cocaine as measured by their direct effect upon the contractility of isolated muscle. Further observations had been made by Dr. Veley and Mr. Symes on the effects of stovaine and cocaine, the result of which would, it was hoped, shortly be published. Dr. Buckmaster and Mr. Gardner had pursued their investigation on "The Rate of Assumption of Chloroform by the Blood," and, arising out of that investigation, had undertaken an elaborate examination into the blood gases, the results of which would be published in due course. Drs. Hewitt and Waller brought forward definite experimental evidence that the effect of chloroform was aggravated by sub-oxygenation, and attenuated by hyper-oxygenation. The committee had co-opted Dr. V. H. Veley as a member, and asked to be reappointed. The work contemplated for the ensuing year comprised:

1. *On the clinical side:* The practical application to hospital purposes of the chloroform balance.

2. *On the scientific side:* The further study of the distribution of chloroform in the blood and tissues during life and after death, and of the comparative power of various local anaesthetics.

In conclusion, the committee thought fit to call attention to the fact that the importance of the questions involved was such that during the past year resolutions had been adopted by the General Medical Council and by the Council of the British Medical Association in support of early legislation to secure better regulation of the administration of general anaesthetics, and that the recent report of a Departmental Committee of the Home Office laid special stress upon the need of careful clinical observation controlled by physiological experiments.

Dr. HEWITT said that the Association might still further protect public interests by supporting the proposals for legislation recently made by the Home Office Departmental Committee and by the General Medical Council. As the law stood at present, any person whatsoever might give an anesthetic—general or local—and in order that the public, and particularly the poorer classes, might benefit, as they should, from the great discovery of anaesthesia, it was necessary that this state of things should be prohibited by law. The reform recently effected by which all medical and dental students were obliged to have received instruction in anaesthetics was a fitting preliminary to legislation, and the scientific work of the Anaesthetics Committee and of other committees would be most valuable in indicating the lines upon which students should be taught. He hoped that before long it would not only be illegal for ignorant and unqualified persons to give anaesthetics, but that, by reason of advances in our knowledge, these agents would invariably be administered on scientific principles. In this way he was confident that a marked diminution would be found in the mortality from anaesthetics. When it was remembered that anaesthetics were amongst the most powerful drugs now in use, it was surely necessary to protect the public against their indiscriminate employment. Unless anaesthetics were given by properly trained persons the public would continue to suffer on the one hand from unnecessary risk to life, and on the other from imperfect or make-believe anaesthesia. The Home Secretary had recently promised to consider the subject, and the present was a fitting opportunity to urge further legislation.

Professor W. H. THOMPSON (Dublin) urged the importance of doing something to check the mortality consequent upon the administration of anaesthetics, especially chloroform. He felt convinced that in the end they would revert, under proper conditions of administration, to chloroform.

Dr. CHARLES S. MINOT (Harvard Medical School, Boston, U.S.A.), in which city ether was first used as an anaesthetic, stated that ether was only used directly and exclusively there for relatively unimportant operations, in which but a small dose was required. The subject had been pursued so thoroughly in Boston that certain physicians made a speciality of anaesthetics, which had resulted in a great improvement in their use.

Compressed Air Illness.

A discussion on caisson disease was opened by Dr. LEONARD HILL. He said air dissolved in the body, according to Henry's law. The cause of the illness was the escape of nitrogen bubbles in the blood. Oxygen chemically combined with the tissues, and did not contribute to the illness. The prevention was the arrangement of the decompression period, so that the nitrogen dissolved in the body could escape through the lungs without the formation of bubbles in the blood. The blood was the carrier by which the tissues were saturated and desaturated on passing through the lungs. The Admiralty tables of stage decompression were based on this assumption. Experiments by Messrs. F. J. Twart, H. B. Walker, and the speaker showed that this was incorrect. The subject stayed an hour at + 45 lb. Free diuresis was established by drinking water. The bladder was emptied every seven minutes, after decompression in five minutes from + 45 lb. to + 15 lb. Analyses of the urine showed equilibrium of the nitrogen after about fourteen minutes. It followed that the arterial blood was only desaturated in about that time. The Admiralty tables and those of Mr. Japp (East River Tunnels, New York) were based on the suggestion that the blood circulated about once a minute, on the relative mass of blood and tissues, on the relative solubility of nitrogen in blood and tissues, and on the supposition that "quick" parts half saturated in about five minutes and "slow" parts in seventy-five minutes. The great difference between the circulation and pulmonary ventilation in states of rest and hard work had not been taken into account. The circulation might be six and even ten times faster during work. This upset all calculations based on "quick" and "slow" parts. Saturation and desaturation were not at the same rate, if carried out in the one case resting and in the other working. The decompression period could be shortened by making men work during it. The speaker and F. J. Twart had worked out the solubility of nitrogen in fact at + 90 lb., and found Vernon's figures for 1 atmosphere almost hold good for 7 atmospheres. Fat dissolved more than five times as much oxygen and nitrogen as water. These experiments confirming those of Greenwood and the speaker on heavy and light rats, and those of Boycott and Damant on fatter and leaner guinea-pigs, showed that fat men were unsuitable for compressed-air work. It had been established by human experience that short exposures to high pressures were free from risk. The Admiralty Committee therefore laid great stress on the danger of saturation of "slow" parts, and said the danger increased with the length of shift. While the effect of work might turn a "slow" into a "quick" part, the effect of fatigue in long shifts complicated the problem. Dr. Hill regarded the time required for saturation and desaturation of the blood and abdominal organs, such as the liver, as particularly the danger time. Neither the tables of the goat experiments of Boycott, Damant, and Haldane, nor the tables of Keays concerning the 557,000 man-shifts at the East River Tunnels gave conclusive evidence that shifts of three hours were more dangerous than one and a half, or eight than three. The variations in percentage of cases, even when calculated from groups of 3,000 to 4,000 man-shifts, were very large—for example, eight-hours' shift 0·43 per cent., May, 1907, and 0.94 per cent., January, 1907. Chance played a very big rôle. The first three-hour shift gave 0·35 per cent. cases, and 9 fatal or dangerous, in about 43,600 man-shifts; the second three-hour shift (after three hours' interval) gave 0.72 per cent. cases, and 4 dangerous or fatal, in the same number of man-shifts. The sum of cases for the six hours was 1.07 per cent. The percentage

in 10,700 man-shifts of eight hours was 0.62. Two three-hour shifts with a three-hour interval appeared, then, to be almost doubly as risky as one eight-hour shift, because it doubled the decompressions. The percentage of illness was 0.66 and death 0.0035, in 557,000 man-shifts, with a decompression-rate of fifteen minutes from +29 to +33 lb. Of the 3,692 cases among 10,000 men, 89 per cent. were bends, 5 per cent. vertigo = about 95 per cent. non-dangerous; 1.26 pain and prostration, 2.18 per cent. paralysis, 1 62 dyspnoea, 0.46 collapse = about 5 per cent. dangerous. The compression relieved 90 per cent., and of the rest all except 0 5 per cent. were partly relieved. The Admiralty table ordained a rate of 42 to 52 minutes stage decompression for +29 to 33 lb. Dr. Hill did not expect engineers to accept the Admiralty period in the face of the above figures. Eight thousand five hundred man-shifts were decompressed +40 lb. in 48 minutes, with 1.62 per cent. cases and no serious ones. The method was (1) +40 to +29 lb. in 5 minutes; (2) 10 minutes' walking in +29 lb.; (3) +29 to +12.5 lb. in 8 minutes; (4) 10 minutes' walking in +12 5 lb.; (5) +12 5 to +0 in 15 minutes. The Admiralty table ordained 92 minutes for this pressure. About half this time evidently was enough. "Slow" parts produced bends which did not matter; they could be relieved by recompression. Statistics of the results of "uniform stage" decompression obtained on goats by Boycott, Damant, and Haldane; on guinea-pigs by Boycott and Damant; on rabbits, pigs, and goats by Drs. Hill and Greenwood, taken together, afforded no convincing evidence of the superiority of either method. The pig was a better animal to compare with man than a goat. The fermentation of gas in the goat's stomach complicated the problem. Comparable pig figures showed 4 severe or fatal cases in 20 uniform, 9 in 32 stage, 9 in 44 modified uniform (decompression rate slowing as pressure fell). The time of decompression was 90 to 110 minutes, the pressure +75 lb. Decompression in 37 to 45 minutes killed 4 out of 4 by stage; 4 out of 8 and 3 severe cases by uniform. These were small pigs, weighing 33½ lb. to 49 lb. F. J. Twart and Dr. Hill had determined the desaturation of water when decompressed from +90 to +20 lb. in 10 minutes; and either (1) left quiet, (2) shaken, (3) gently oscillated, the gas came off without bubbling in 1 and 3. In the case of oil there was a slow, steady, formation of small bubbles (0.1 to 0.3 mm. in diameter). The unstudied conditions which controlled bubble formation in supersaturated solutions were of the first importance. "Delayed" illness and varying susceptibility depended on these influences. The varying percentage of fat in blood, chyle, liver, and the gaseous contents of the guts were factors. Ill health, a debauch, rich feeding modified these conditions. (Fat 3 to 11 per cent. in chyle, liver 2 to 3 5 per cent. in richly fed, 19 to 24 per cent. in fatty infiltration.) Experiments by M. Greenwood and Dr. Hill showed that it was fairly safe to decompress pigs and goats from +75 to +18 lb. in 10 minutes, and from +18 to +0 in 20 minutes, after an interval of 80 to 100 minutes. One death and no severe case resulted in 47 pigs weighing 50 to 100 lb.; 1 severe, 83 slight cases in 19 goats weighing 39 to 57 lb. To these might be added 4 pigs (56 to 100 lb.) safely decompressed from +60 lb. Decompression from +90 to +20 lb., followed by an interval of 105 to 120 minutes, gave unfavourable results in fat pigs weighing 81 to 115 lb.—namely, 7 deaths and 1 severe case in 27 pigs. The deaths occurred in the pigs which had the shortest interval, 105 to 110 minutes. Two of these deaths and the severe case were due to the pump stopping at +20 and the chamber rapidly leaking out. Only one pig out of all showed symptoms at +20 lb. The pigs lay asleep and did not move. Six goats compressed after a big feed were all taken with great gaseous distension of the stomach at +20 lb. By extending the interval to 140 to 150 minutes three goats (on a spare died) were decompressed successfully time after time after exposure to +90 lb. for three to four hours. An interval of 30 to 50 minutes at +15 lb. proved safe for twelve goats and one pig (96 lb.), after compression to +50 lb. Experiments by H. B. Walker, F. J. Twart, and Dr. Hill showed that the breathing of oxygen for a few minutes at +15 lb. washed the excess of nitrogen out of the urine (and blood) quickly, while only a little oxygen passed into the urine. It was safe to breathe oxygen for some minutes at +15 lb., but inadvisable to breathe it at higher pressures because of the toxic effects of high pressures of oxygen. Experiments of Major Greenwood and Dr. Hill showed that a partial pressure of CO_2 up to 1 to 2 per cent. was of no importance. Hot, moist atmospheres were exhausting. Many of the pig experiments were conducted with 4 to 5 per cent. atm. CO_2 in the chamber, and this was unfavourable, as the partial pressure fell on decompression, and lessened the pulmonary ventilation. Ventilation should be reduced in the lock. The cooling effect of decompression should be prevented, for it constricted the cutaneous vessels. M. Greenwood and Dr. Hill were safely decompressed from +75 lb. by the uniform method—about 20 minutes per atm., four experiments. They were actually exposed for about 30 minutes above +60 lb., and virtually exposed for about 50 minutes. From +60 lb. they were safely decompressed, six experiments. M. Greenwood was once decompressed safely from +92 lb. in 2 hours 17 minutes, after actual exposure above +75 lb. for about 30 minutes, and virtual exposure for about 55 minutes. Hersent safely decompressed men after exposures of 1 hour in 26 minutes from +2½ atm.; in 46 minutes from +3 atm.; in 60 minutes from +3½ atm.; in 77 minutes from +4 atm.; in 100 minutes from +4½ atm.; in 150 minutes from +5 atm.; in 183 minutes from +5½ atm. Hersent safely used a method which was theoretically the worst—namely, +5 to +4 atm. in 45 minutes; +4 to +3 in 35; +3 to +2 in 30; +2 to +1 in 20; +1 to +0 in 15.

Damant and Cotte were safely decompressed several times after short exposures by the stage method of the Admiralty Committee—for example, in 51 minutes, after 12 minutes, at +80 lb.; in 90 minutes, after 29 minutes, at +80 lb.; in 50 minutes, after 6 minutes, at +93½ lb. These few high-pressure observations on men showed that the stage method could be used safely after short exposures. The experience of divers had proved that a short uniform decompression in 20 minutes or less could be safely borne after exposure of not more than 15 to 20 minutes to +60 to +73 lb.—for example, Erostabe, Lambert. Much depended on the individual. They did not prove the far greater risk of the uniform method as claimed by the Admiralty Committee.

Dr. Hill expressed his conclusions as follows: One stage at +15 lb. would suffice for caisson workers up to +50 lb. Exercise and oxygen could be used to shorten the pause at +15 lb. A pause of 15 minutes at +10 lb. for +30 lb., and of 30 minutes at +15 lb. for +45 lb. would probably suffice, so long as a medical lock for recompression was at hand.

The Effect of Climate on Health and Disease.

The committee on this subject, consisting of Sir Lauder Brunton (Chairman), Mr. J. Barcroft and Lieutenant-Colonel R. J. Simpson (Secretaries), Colonel Sir D. Bruce, Dr. S. G. Campbell, Sir Kendal Franks, Professor J. G. McKendrick, Sir A. Mitchell, Dr. C. F. K. Murray, Dr. C. Porter, Dr. J. L. Todd, Professor G. Sims Woodhead, and the Heads of the Schools of Tropical Medicine of Liverpool, London, and Edinburgh, presented its fourth report. The work produced by the committee had consisted in a series of observations carried out in the Island of Teneriffe on the subjects of the effect of altitude and solar radiation upon the organism. The committee was only prepared to report upon the first of these subjects this year. The work was carried on at three stations, the altitudes of which were—sea-level, 7,000 ft., and 11,000 ft. respectively. The dissociation curves of four members of the party were studied, two completely. D.'s curves were investigated at a constant CO_2 tension equal to that of his alveolar air at the sea-level (41 mm. of mercury). At different altitudes it was found that the affinity of the blood for oxygen decreased progressively as the altitude increased. In point of fact D's CO_2 tension became progressively lower as the altitude increased, and therefore another series of curves was delineated in which the CO_2 tension was that of the alveolar air at the altitude in question. These curves coincided with one another and with the sea-level curve (D.). The probable explanation of these facts was that as the altitude increased the carbonic acid was replaced in the blood by some most volatile acid, such as lactic acid, and that the total effective concentration of acid was the same throughout. The case of B. was somewhat different. His dissociation curve remained the same throughout, as also did the carbonic acid in his alveolar air. Hence in his case also the total concentration of acid

in the blood remained unaltered. The further question arose: Is it possible to explain the difference between the two types of reaction? In the first place, B.'s curve at the sea-level was somewhat different from that of D. The difference indicated a greater alkalinity in B.'s blood. Titration bore out this indication. In the second place, considerations based upon his respiratory quotient required that in proportion as the CO_2 tension in D.'s alveolar air was lower at 11,000 ft. than in that of B., so D.'s oxygen tension was higher than that of B. Actual analysis showed this to be true. At 11,000 ft. D. had an oxygen tension of 63 mm. and B. of 49 mm. In the third place, Krogh had shown that the oxygen tension in the blood could be calculated from that in the alveolar air by subtracting 1 mm. for every 100 c.cm. of oxygen absorbed by the lung per minute.

The following table will therefore give the oxygen tension in D.'s and B.'s blood under varying circumstances of oxygen intake:

	c.cm.	c.cm.	c.cm.	c.cm.	c.cm.	c.cm.	c.cm.
O_2 absorbed per minute	300	600	900	1,200	1,500	1,800	2,100
	mm.	mm.	mm.	mm.	mm.	mm.	mm.
O_2 tension in D.'s blood at 11,000 ft.	58	55	51	48	45	42	37
O_2 tension in B.'s blood at 11,000 ft.	46	43	39	36	33	30	26

The point of interest was that, at rest (that is, using about 300 c.cm. of O_2 per minute), B.'s blood and D.'s were about equally saturated. Hence, as B. was careful not to take much exercise, his blood had had no occasion to compensate, he was in as strong a position as D., who had compensated. On the other hand, were increasing quantities of exercise taken, and increasing quantities of oxygen absorbed, B. would be more and more at a disadvantage. These facts form at least an intelligible reason why B. should have suffered from mountain sickness when he attempted to take exercise at 11,000 ft., whilst D. did not.

Essentials of Voice Production.

Professor WESLEY MILLS presented a communication on this subject. He said that at the present time it was vital for those who taught especially to agree on some principles. Only principles and not "methods," except those based on a few fundamentals, were possible. It was better to abandon the term "method" if applied to any one's systematic teaching. It was more important to emphasize what was common in the teaching and practice of speaking and singing than the differences. Other things being equal, the more of a singer the speaker was the greater his success. For the singer, training in speaking should for a time precede training in singing or be carried on with it. The vocal mechanism consisted of three main parts. In using these the subject employed neuro-muscular mechanisms controlled by psychic factors. The psychic must precede the somatic. At first results were largely voluntary; later reflex and subconscious. In all muscular movements, those concerned with voice production included, sensations were of vital importance. In phonation the chief sense was hearing, but others, usually associated with muscular movements, were also essential. Without these "voice-placement" was impossible. Speaking of breathing in relation to voice production, Professor Wesley Mills said the practice of the old Italian vocal teachers was not inconsistent with the latest investigations on breathing. Good voice production did not necessarily constitute good art, but was essential to it. The term "accent" as now often used was unsatisfactory. The value or quality of vowel sounds should be settled by an international commission of experts. The same applied to a few consonants, especially "r."

Evolution of Speech and Speech Centres.

In a communication on this subject, Dr. ALBERT A. GRAY said speech developed as a result of hearing, hence it was not surprising that the centre in the brain for the understanding of speech was in close proximity to that for hearing, and, indeed, might for some purposes be considered as part of that centre. The centre for the understanding of speech, however, was limited to the left side, while that for hearing was found on both sides of the brain. The centre for hearing was termed the audito-sensory centre, and that for the understanding of speech audito-psychic. Hence when these centres were destroyed on both sides, the individual became quite deaf and did not understand speech. If the centres were destroyed on the left side only, he heard what was spoken because the right audito-sensory centre was still intact, but he did not understand what was said because the audito-psychic centre was present on the left side only, and was destroyed. If the hearing centre on the right side only was destroyed the individual could still hear and understand speech. The centre for the production of speech was found on the left side of the brain in the third frontal convolution and adjacent regions. Since this centre was only concerned in the production of speech, it followed that when it was destroyed the individual could still hear and understand what was said to him, but he could not frame words and sentences to express himself in speech. Dealing with the mechanism of the voice, Dr. Gray said the voice was produced by the vibrations of the vocal cords, and, for the most part, the various tones depended upon the portions of the cords which vibrated and the degree of tension in these portions. The changes in the extent and tension of the vibrating portions of the vocal cords were determined by muscular action, which in its turn was governed by the centres in the brain described previously. The voice was resonated in the cavities of the mouth, pharynx, and nose. Hence, by altering the size and shape of these cavities by means of movements of the tongue, palate, etc., the quality of the tones produced in the larynx could be affected at will.

Body Metabolism in Cancer.

The following report of the committee, consisting of Professor C. S. Sherrington (Chairman) and Dr. S. M. Copeman (Secretary), on body metabolism in cancer was presented:

Consideration of the curves of cancer mortality in the human subject, whether male or female, discloses the interesting and important fact that cancer is not, as is usually thought to be the case, a disease of old age, however much it may be related to senescence of certain of the body tissues. As a matter of fact, the disease is of extreme rarity in the later years of life, especially in the female sex. Thus the characteristic feature of the age-incidence of cancer, as pointed out by Roger Williams and others, and as demonstrated by the returns of the Registrar-General, is not its continued increase with advance of years, but rather its disproportionate augmentation in the post-meridian periods of life—that is, between the ages of 45 and 65 years—liability to the malady waxing as the reproductive activities wane. The facts, indeed, clearly show that cancer is *not* a disease of senility merely, which *per se* plays no part in its development. In the animal world the age-incidence of cancer is evidently governed by a similar law, as has been demonstrated by Stricker for horses and dogs, and by Bashford and Murray for mice; all these observers being in agreement as to the rarity of malignant tumours in early life and their relative frequency in later life, antecedent, however, to onset of old age. In the light of these facts, it would seem not improbable that the onset of malignant disease, whether in man or the lower animals, may have intimate relationship with diminished or perverted functioning of the reproductive organs, which, under normal circumstances, may be regarded as exerting—possibly by virtue of their so-called "internal secretions"—some restraining and co-ordinating influence on the growth of the somatic tissue elements. Evidence of the existence of such a controlling influence is found in the fact, on which there is now general agreement among those engaged in the experimental investigation of cancer, that whereas transplantation of "spontaneous" cancer in the mouse to normal individuals is apt to prove successful in but few instances when full-grown animals are employed for experimental purposes, complete insertion success has not infrequently proved possible of accomplishment when mice of not more than 6 or 7 weeks old are used. In view of the further fact that fanciers are agreed that the mouse is incapable of reproduction before the age of 3 months, while 6 months is generally stated to be the earliest age at which these animals should be mated in order to ensure healthy offspring, it would appear that the

greatest measure of success in experimental implantation of cancer in this animal is obtainable only during the period of life antecedent to full or even commencing activity of the reproductive functions. On the other hand, implantation of cancer material from one mouse to another is *least* likely to be attended by success when the recipient is of an age at which these functions have attained the stage of full activity.

For these and other reasons it appeared desirable to investigate the question as to whether any of the products of the reproductive glands—presumably given off, under normal circumstances, in the form of an internal secretion—can be shown experimentally to influence, in one or another direction, the development of cancer as witnessed when this disease is experimentally produced in the mouse. For the prosecution of this investigation facilities have been most kindly afforded by the Executive Committee and the Director (Dr. Bashford) of the Imperial Cancer Research Fund.

Although at the present time but little doubt exists as to the production of an internal secretion by the testes and ovaries, practically nothing is known of its nature and composition. It has, however, been suggested that its main constituent is in all probability derived from metabolism of nucleo proteids which are present to so considerable an extent in the tissues of the reproductive glands. Professor von Poehl, of St. Petersburg, and others have, indeed, claimed that spermin, a crystallizable substance which has been isolated from the testes, prostate, ovaries, and in less amount from certain other organs and tissues, constitutes the essential principle in question. For the purposes of the present investigation, therefore, it appeared desirable, in the first instance, to make use of this substance (of which Dr. von Poehl, the successor of the late Professor von Poehl, kindly provided supplies), employing, in addition, freshly prepared emulsions of mouse testes, extracts of dried and powdered testes freed from nucleoproteid, boiled watery extracts of the testicle of various animals, and a solution of nucleinic acid of orchitic origin. In every instance the action of all these various substances was tested on the mouse by hypodermic injection, while fresh emulsion of testes and solutions of nucleinic acid were also administered internally by a method of experimental feeding devised for the purpose.

For each series of experiments a number of mice were employed which had been inoculated with cancer material, by a member of the staff of the Imperial Cancer Research Laboratories, from ten days to three weeks previously, by which time most of the animals had developed tumours, sometimes of considerable size, at the site of operation. The precise area of the resulting tumours in each animal is recorded on charts by one of the laboratory attendants ten days after implantation, and subsequently at weekly intervals. In every experiment one lot of inoculated mice was set aside as a control. Each series of experiments has extended over a period of five or six weeks, or occasionally even more, so that the work has necessarily taken up a considerable period of time. Owing also to exigencies of the special work of the laboratory staff, and of official duties on the part of the member of this committee to whom the investigation was entrusted, delay in the prosecution of the work has from time to time proved unavoidable.

As the work is still in progress it would serve no useful purpose, on the present occasion, to enter into details of the numerous experiments performed. It is therefore proposed only here to set out a brief statement of the main results which thus far have been obtained.

As a preliminary step a number of mice were injected hypodermically with a 2 per cent. solution of spermin in normal saline solution, in quantities varying from 0.1 to 0.4 c.cm., in order to make certain that the employment of this substance was not productive of any ill effect on the mouse. This having proved to be the case with these doses, four mice which had been inoculated just previously with 0.05 gram of tumour $\frac{63}{41A}$ in the left axilla, were subsequently injected daily, with the exception of Sundays, for a period of seventeen days, with 0.4 c.cm. of the spermin solution. By this date three out of the four tumours which had arisen in these mice, as the result of inoculation, had entirely disappeared, while of eight tumours which had arisen in ten control mice, inoculated on the same date, *none* had disappeared, although two had somewhat decreased in size.

On February 4th of the present year twenty mice were inoculated with a very rapidly growing strain of tumour, of which ten were kept as controls in a separate cage. A week later tumours had appeared in all these mice. From this date, for a period of nearly three weeks, ten of the mice were injected daily, except on Saturdays and Sundays, with 0.4 c.cm. of the spermin solution. As by this time the result obtained with the injected as compared with the control mice merely showed differences which might be considered as coming within the limit of experimental variation, the work was not continued.

In view of the apparent difference of results obtained in these two experiments, Dr. Bashford suggested that for future work it would be desirable to employ for purposes of inoculation a slow but continuously growing tumour (Twort 30B.), which, in this respect, most nearly reproduces the characteristics of a spontaneously occurring tumour. With this material Dr. Murray inoculated forty mice on March 4th, of which ten were kept as controls, the other thirty being divided into three lots of ten each, and kept in separate cages. These were respectively injected daily: (*a*) With fresh emulsion of mouse testis 0.4 c.cm. each; (*b*) with spermin solution; and (*c*) Poehl's orchidin solution in similar quantities. On March 21st eight tumours had developed in each lot of ten mice, while one of the controls had died. By April 4th, of the spermin series, five of the tumours had disappeared; of the testicle emulsion series, all eight tumours showed a definite increase in size, while of the orchidin series the tumours exhibited no appreciable difference from those of the controls. At this point the experiment was unavoidably interrupted.

In a further experiment on somewhat different lines half the number of the experimental mice, in addition to being injected daily with spermin, had fresh testicle emulsion administered by the mouth. These latter, at the end of four days, showed a considerable diminution in size as compared with those injected with spermin only, one tumour of fair size having even at so early a stage of the experiment disappeared completely. Subsequently, however—possibly for the reason that the dose of spermin, which was larger than in previous experiments, was repeated too frequently—all the remaining tumours exhibited slow but steady increase in size up to the period when, three weeks later, the experiment was terminated.

In other experiments a testicle extract was employed which had been freed from nucleo-proteid, and which therefore contained, in addition to spermin, creatin and other extractives, as well as inorganic salts. The use of this material for the purposes of injection in a large number of mice eventually afforded no appreciable difference from the control of mice as regards the size of the tumours, the result thus differing, on the one hand, from the definite increase obtained with the use of *fresh* testicle emulsion, and, on the other, from the diminution obtained in certain instances in which a solution of spermin was employed. Certain of these experiments are now in process of being repeated, with large numbers of mice, by independent workers in the laboratories of the Imperial Cancer Research Fund, where also, thanks to the kindness of Dr. Bashford, a further series of experiments are also being carried out, in which nucleinic acid of orchitic origin is to be employed, both hypodermically and by oral administration—in the latter case both with and without the simultaneous use of hypodermic injections of spermin.

Anthropometry of Oxford Undergraduates.

Dr. EDGAR SCHUSTER presented a communication embodying the first results from the Oxford Anthropometric Laboratory. The laboratory was started by Professor Bourne in January, 1908, with the following objects, among others:

(1) To obtain a statistical survey of the physical development of undergraduates. (2) To ascertain what bodily changes or developments take place during a man's residence at Oxford as an undergraduate, and whether such changes depend at all on what games he plays, what school he reads for, and so on.

The following measurements and tests were applied: (1) *Acuity of vision;* (2) *spot pattern test.* This test was devised by Dr. McDougall, and was intended to measure the power of concentration. A pattern made by pricking nine holes in a piece of cardboard was shown to the sub-

ject for a small fraction of a second by means of an electric light placed behind it and a photographic shutter. After seeing the pattern five times in this way, he was asked to make a map of it on squared paper. This he probably failed to do correctly; he was then shown the pattern five times again, and was asked to make a fresh map; and so on until he got it right. Some interesting results had been obtained with this test, for it had been found that the scholars and exhibitioners were distinctly better at it than commoners; secondly, that men who subsequently took first and second classes in the final schools were better than those who took lower classes; and, thirdly, that men reading science and mathematics were, on the whole, better than those reading other subjects. (3) *Lung capacity*, measured with a spirometer. (4) *Stature, standing, sitting, and kneeling*, from which were deduced length of leg and length of thigh. (5) *Weight*. (6) *Strength of pull;* and also the following *head measurements:* length, breadth, auricular height, horizontal circumference, sagittal arc, transverse arc. In treating the material the men were divided into groups according to age, and each age group was considered separately. The averages, standard deviations, and various correlation coefficients had been found for each group. The strength of pull and lung capacity increased considerably with age. Stature, weight, and head length also showed a similar tendency, but not to so marked an extent.

Mental and Muscular Fatigue.

The committee, consisting of Professor C. S. Sherrington (Chairman), Mr. W. MacDougall (Secretary), Professor J. S. MacDonald, and Mr. H. Sackville Lawson, appointed to investigate this subject, presented an interim report. It was stated that Professor J. S. MacDonald of Sheffield had been engaged especially on the physiological aspects of muscular fatigue as studied in isolated muscle preparations. Mr. H. S. Lawson of Wolverhampton had worked on the examination of fatigue in schools, and had had a number of school teachers engaged in the observations. It was urgently desirable that the committee should be reappointed for another year in order to carry on their investigations further.

Muscular Fatigue.

Professor MACDONALD, in his report, said that repeated excitation of excised frog's muscle led finally to a complete stage of exhaustion, during which a maintained state of slight contracture was present unbroken by any new contractile responses to continued stimulation. Before reaching this stage, the muscle yielded contractions, steadily diminishing in height and increasing in duration. These two modifications did not follow the same law of development. It was possible thus to secure a maximal degree of the one associated with a minimal degree of the other. Thus, also, the change in height of the contractions was arithmetically progressive, whereas the change in duration, increasing at first slowly, later proceeded at greatly increased pace. The later stages of this rapid development might be masked when the muscle was made to lift a maximal load, and such conditions might give rise to the still more complex appearance of a contraction line, increasing at first and later diminishing. In addition a further and separable effect of previous activity was that initial increase in the height of contraction spoken of as Bowditch's "staircase." It was a common opinion that this phenomenon was to be observed in muscle in a fresh state. Professor MacDonald had made certain of the fact that it was capable of demonstration, not near the final stage of fatigue, but at a surprisingly late stage of fatigue. Thus it was possible, by the interpolation of a short period of rest and a subsequent renewal of stimulation, after fatiguing a muscle until it yielded a contracture upon which each new response appeared merely as an augmentation of this state, to observe this staircase phenomenon in a series of contractions, each of which was obviously of a very prolonged and therefore fatigued type. Viewing the prolongation as symptomatic of a severe degree of fatigue, it was inconceivable that muscle in this state should contract to a greater degree save as the result of an increased excitation. It became necessary, therefore, to consider the possibility that the nervous impulse conveyed to the contractile material was modified by material within the muscle, and that conduction through this material was quantitatively facilitated by immediately antecedent use. The staircase phenomenon was quite possibly an affair involving the sarcoplasm, and not the contractile sarcostyles of muscle. In what degree a similar statement was applicable, not only to the initial increase, but also to the later fall in the height of contraction, remained an open question.

In order to simplify the investigation of such points, he had directed attention to the necessity for a connected conception of the facts of muscular contraction, and in a paper published in the *Quarterly Journal of Physiology* he had endeavoured to supply a conception everywhere consonant with observed fact. According to the views there advanced the relaxation of muscle was an active process reversing the conditions effective during contraction, and was to be regarded as a process of recuperation tending to reconstitute in the muscle a state favourable to the development of a subsequent contraction. The increased duration of the contraction of a fatigued muscle, mainly, but by no means entirely, occupying the period of relaxation, was capable of treatment as due to a diminished recuperative power. It was of interest therefore to place alongside of this statement the fact, observed by all those engaged in the collection of measurements of heat production in excised muscle, that when fresh and fatigued muscles were made by adjustment of the stimulation to perform equal work, fatigued muscle gave off less heat.

It was fair to assume that less combustion (that is, oxidation) had occurred because the store of combustible material was becoming exhausted. As a matter of fact, it had been shown that the presence of a smaller amount of such material did actually, without reference to rest or fatigue, diminish the amount of heat evolved during any standard contraction. Temporarily, therefore, it might be said that a fatigued muscle performed similar work, accompanied by diminished oxidation. It was absurd, then, to regard oxidation as the prime cause of contraction. It was, on the other hand, more probably a consequence of contraction, not so much in the forefront during fatigue. In the paper referred to he had endeavoured to show that this was the case, and that oxidation, like relaxation, was a recuperative process, which placed a muscle that had once contracted in a position to contract again.

1. Previous activity was then liable to modify the contraction process, as in the case of the staircase, by modifying the transmission of excitation through a muscle—that was to say, by modifying the mode of transmission of electrical charges. Since this transmission depended upon the electrolytes of muscle, one might look for modifications in these electrolytes as due to previous activity, and possibly responsible for many of the best known incidents in fatigue.

2. Previous activity also affected the store of combustible material within muscle, and so greatly modified its recuperative power.

As to the manner of the recuperation, which was partially defeated by fatigue, it was possible that there were differences in such different cases as those provided by the muscle of cold-blooded and warm-blooded animals respectively. When the recuperative processes of the relaxation period had done their work there was still need for further recuperation. This was clearly seen in the case of frog's muscle. Thus, he had made sure of the fact that even the second contraction of such a muscle was modified by the occurrence of the first to a demonstrable degree, provided that it was observed within a certain period, much more prolonged than that of visible change, after the occurrence of the first. The second contraction was not only higher (staircase), but even more clearly prolonged. Oxidations, accelerated by contraction—and these were the whole source of energy—were occurring in this later period of relaxation, but were here more clearly seen as alone in action. In what form did such processes provide their energy? Conceivably, this energy might be placed at the disposal of the muscle in the simplest way, as so much heat, or as some other form of energy. In this connexion he had continued an investigation of the relation between temperature and the internal osmotic pressure of muscle, since contraction was probably due to variations in the distribution of this factor within the muscle, but so far without observing any corresponding change not similarly producible in any simple solution having none of the attributes of "muscle."

This investigation had, however, still to be continued into the case of mammalian muscle. It was clear that it would militate greatly against the average efficiency of the muscles of cold-blooded animals if their energy was delivered to them in the form of heat, and the only conditions determining an addition or an abstraction of energy were variations in external temperature. The muscle of the warm-blooded animal was more fortunately situated behind the protection of its constant temperature regulation. The usual expectation was that muscle of this second class was more complex in its relation to its oxidative sources of energy. It was probable that the fact was the reverse of this, and that the warm-blooded muscle was more simple, and did actually owe the physical condition of its internal solutions, upon which the phenomenon of contraction depended, to the heat provided by the processes of oxidation. That was to say, it was conceivable that the maintenance of a constant temperature was also to be regarded as the maintenance of a constant bank of energy.

Mental Fatigue in Schools.

In a communication on this subject Mr. H. Sackville Lawson said the investigation was begun in November, 1908. The general object had been to discover what relation existed between the proved ability (relative) of a subject and his capacity for continuous work at high pressure—namely, to discover whether an able boy was more resistant to fatigue than one less gifted. The local committee engaged on the investigation consisted of three head masters of elementary schools and Mr. Sackville Lawson himself. The number of boys experimented on was thirty, ten from each of the three schools. Each boy was within two months of 9 years on January 1st, 1909. The nature of the experimental work had been twofold. It had been the aim of the committee:

1. To obtain, by means of suitable tests submitted, a "General Intelligence" Order of Merit for the thirty boys.
2. To provide continuous work of such a nature and for such a period of time that fatigue effects may be shown.

Part I.—*General Intelligence Order of Merit.*

Twelve tests had been given. The length of time for a single test had been from five to ten days. The final Order of Merit had been obtained by aggregating the places obtained in the various intelligence tests. This final order was considered to be a hierarchy of Natural Intelligence. Incidentally it might be mentioned that a separate order of merit had been obtained by the ordinary scholastic examination methods. This had been found to correlate with the other to the extent of 0.61 where 1 = complete similarity of rank or identity of position.

Part II.—*Fatigue Tests.*

The general method of procedure had been as follows:

Written work, generally of a mathematical nature, had been given for a period of half an hour per day. This half hour had been taken either at the beginning or at the end of the school day. On the expiration of each five minutes a signal had been given in order that the output per period might be calculated. Thus there had been six consecutive periods each of five minutes' duration. The output in sums completed per period, as well as the number accurately done, had been calculated. Increase in rapidity and improvement in accuracy had been assumed to be due to the favourable influence of practice, while the reverse result had been ascribed to the inhibiting effects of fatigue.

Since "practice" and "fatigue" were forces opposed to one another, in that they reacted on the individual in contrary manner, it followed that the effect produced must be a resultant one. Where the urging forward tendency was strong the pushing back might be present latently. A 20 per cent. increase due to practice would hide a 10 per cent. diminution due to fatigue.

The figures given below represented the resultant generic effect produced by Fatigue Test A.

Period.	Length.	Number of Days.	A. Output (Gross).	B. Output (Accuracies).	C. Per cent. of Sums done Correctly.
I	5 minutes	5	880	532	60.5
II	,,	5	798	448	56 0
III	,,	5	854	455	53.3
IV	,,	5	804	438	54 8
V	,,	5	790	406	51.0
VI	,,	5	795	379	47.5

The figures in columns A and B represented the sum total of the efforts of twenty-five boys. Column C showed the accuracy output per hundred sums per period.

In the instance considered the worst period was the last, the best period the first. The coefficient of diminished accuracy was found by subtracting the minimum value (47.5) after the maximum (60.5) had been obtained, and dividing this number by the maximum value. Thus

$$60.5 - 47.5 = 13; \text{ and } \frac{13}{60.5} = .2148, \text{ or } 21.48 \text{ per cent.},$$

where the number 100 represented absolute inaccuracy and 240 a condition of complete sustained accuracy. It was assumed provisionally that the falling-off in accuracy was due to fatigue. In this manner the individual performances had been calculated and an order of merit had been obtained. The top boy in the order was he who showed the least susceptibility to fatigue, who maintained, that is, the steadiest output of accurate work period by period throughout the time allotted to the test.

The crude coefficient of correlation between this order and the final order of intelligence was 0.22, or as a percentage 22 where the number 100 represented similarity of rank or identity of position. When the order of merit (fatigue) was inverted, and the top place assumed by that boy who showed the greatest susceptibility to fatigue, as measured in terms of diminished accuracy of output, the coefficient of correlation was − .28.

With regard to the other fatigue tests, the clerical work was not yet finished. They may, however, briefly be summarized as follows:

Test A.—Addition sums. Two digit numbers. Five numbers in column. Thirty minutes a day for three days. Given at conclusion of school working day.

Test B.—Counting squares. Size $\frac{1}{8}$ sq. in. Thirty minutes a day for five days. Given at commencement of school working day.

Method.—Pencil dot is made in each square. Across every tenth square a diagonal is drawn. Unit effort is ten squares. Number of units marked noted per period.

Test C.—Multiplication sums. Five digit numbers multiplied by two digit numbers. Thirty minutes a day for two days. Given at conclusion of school working day. In each of these tests a signal was given at the end of each five-minute period in order that the output per period might be calculated.

Test D.—Dotting test. The machine which is being used is Dr. Rivers's modification of Dr. Dougall's apparatus.

The committee hoped to produce its report in December.

Section of Education.

Tests of Intelligence.

In the Section of Education, Dr. Otto Lipmann presented a paper on methods of testing intelligence in children. He said Binet and Simon gave a number of tests by which all the mental functions belonging to the intelligence might be investigated. They showed for each age the tests which a "normal" child might be expected to accomplish. The preliminary question, What percentage of children of the same age were normal? was answered by nearly the same number, whether the method of Galton, McDougall, or that followed in several other investigations was employed. If the supernormal individuals who accomplished the test were added, the result was nearly always the same—a percentage of 77.

In a paper on experimental tests of general intelligence, Mr. Cyril Burt stated that a series of experiments was carried out at Oxford two years ago, mainly upon thirty elementary school children, 12½ to 13½ years of age. The chief object was to determine the relative value, as tests of general intelligence, of a dozen brief tasks, involving mental processes at various levels, in various aspects and of various degrees of complexity. By "general intelligence" was understood innate, unspecialized mental efficiency, as distinguished both from acquired knowledge, interests, and dexterities, and from specific endowment, aptitude, or talent. Views attributing to sensory discrimination, whether general or specific, an intimate functional correspondence with general intelligence, were not confirmed. Auditory and visual tests, indeed, showed positive, though not considerable, correlations with intelligence; but these seemed rather to be referred to the dependence in the course of evolution of the progress of intelligence upon the perception of space and upon the perception of spoken words, and of these respectively upon delicacy of eye and ear. Tests of discrimination of touches and of weights showed approximately no correlation with intelligence whatever. Simple motor tests, such as tapping and dealing, showed somewhat

higher correlations than the sensory tests. But of the six simpler tests, sensory and motor, none gave correlations above 0.05. The remaining six dealt either with processes of a higher mental level—such as memory, habituation, scope, and maintenance of attention—or with more complex mental processes, involving co-ordination of both sensory and motor activities. Each of these six yielded correlations of over 0.50, the coefficients in the case of the last two being particularly high. An amalgamation of the results of the six gave correlations with intelligence of 0.85 to 0.91; and these figures were distinctly higher than those for the estimates of one teacher with another's, or with the results of examinations. Further experiment had since been made in Liverpool at a mixed secondary school and at a secondary school for girls. The main object of these was to investigate three problems suggested by the limitations of the foregoing investigation—namely, how far such tests were affected by difference in sex, how far they could be undertaken with success by teachers untrained in a psychological laboratory, and how far they could be carried out as mass-experiments with numbers of children simultaneously instead of singly upon individuals. Tests had also been added to represent processes of the highest mental level—abstraction, judgement, inference, perception of relations—a level untouched by the previous research. The results indicated that, as compared with simple sensory or motor tests, tasks involving higher and more complex processes were vitiated to a far less extent by difference of sex in the subjects, absence of special training in the experimenter, and the peculiar conditions of experiments upon children in class. They also appeared to possess the most intimate relations to intelligence. Tests, therefore, of this type seemed the more practicable for educational investigations and sociological surveys upon a scale sufficiently extensive for statistical treatment of the results.

Perseveration.

In a paper on perseveration as a test of the quality of intelligence and apparatus for its measurement, Mr. J. G. GRAY said that perseveration depended on an elemental property of the brain which determined the persistence of mental impressions or the rapidity with which one impression could follow another. It might be measured in various ways, one of the best being by Wiersma's colour disc. On this disc were two colours which could be seen separately when the disc was rotating slowly, but as the speed of the disc was gradually increased a point was reached when the two colours fused into one uniform tint. This critical speed was a measure of the perseveration of the subject being tested. Gross had shown theoretically how the mental character of the subject might be deduced from his or her perseveration, and the experiments made by Wiersma and others agreed very closely with Gross's theoretical deductions. Perseveration indicated the quality of the intelligence rather than its amount; persons with high perseveration might be described as slow-intelligent, and those with low perseveration as quick-intelligent. There was a considerable range of perseveration among normal persons, but when it passed above or below certain limits it was usually associated with insanity of different kinds. Acute maniacs had abnormally low and melancholics abnormally high perseveration. A description was given of an improvement on Wiersma's disc devised by the author, in which illuminated coloured glasses were reflected into the eye of the subject by a revolving mirror. This enabled the luminosity of the colours to be regulated. Results of tests made by the author on visitors to the exhibitions at the White City were given, and an interesting hypothesis on the connexion between perseveration and colour blindness.

Intelligence in School Children.

Mr. WILLIAM BROWN dealt with the measurement of intelligence in school children. He said that, although from an abstract and formal point of view it might be expected that a definition of intelligence should precede any investigation into the problem of its measurement, such an arrangement was only partially justifiable. Unless they were prepared to hypostatize intelligence as merely one of a number of "faculties" displayed by the mind, they must face the problem of an all-inclusive survey of the mental ability of individuals; and, if they possessed the means of measuring the nature and degree of the interrelations existing between the various distinguishable factors of such mental ability, they might find themselves justified in regarding the mind as some sort of system to which in its entirety, at least from one point of view, the name intelligence might best be applied. If such a result should emerge the problems of the measurement and the definition of intelligence would be solved simultaneously. Since the mind, like the body, was variable, the method most applicable to the problem would be the statistical method of correlation. Taking a sufficient number of cases, they might proceed to determine the magnitude of the tendency to concomitant variation displayed by the various subsidiary mental capacities distinguished by ordinary thought and measured by ordinary standards.

Binet's Method.

M. Binet's method for the measurement of intelligence was described by Miss KATHARINE L. JOHNSTON, who had applied his tests to 200 school girls of Sheffield. She said if these tests were what their authors hoped them to be they would assist teachers who desired to determine the reasons for the lack of progress of pupils, or to gain knowledge of the intellectual calibre of a new pupil. Children of 9, for example, were asked, *inter alia* (1) to give the exact date; (2) to enumerate the days of the week; (3) to recall after a brief interval at least six facts mentioned in a brief newspaper extract. Should a child accomplish all or all but one of the tests he was adjudged at the level of that age, and was then subjected to all the tests of the succeeding ages. If he accomplished five of these a year was added to his level; if ten, two years. But if the child failed in two or more of the tests appropriate to his own age he was put through the tests of each preceding year in turn until he proved successful.

Dr. CHARLES M. MYERS, in a paper on the pitfalls of "mental tests," entered a protest against the collection of vast quantities of psychological data, especially by an army of untrained observers. Nothing could be more dangerous than the supposition that the consequent errors cancelled one another in the long run.

Professor O. MEUMANN, whose paper was read by Dr. LUCY HOESCH ERNST, said that general intelligence could never be determined by "intelligence tests," but higher intelligence could.

Dr. W. H. R. RIVERS, of Cambridge, said that a great advance had been made in the scientific testing of intelligence, but there was still an enormous discrepancy between different observers' results of a comparatively simple test. Extreme care was therefore desirable, and a vast amount of work would have to be done before there was any hope of applying test systems practically. All the results cited had been drawn from children in the mass, and simply suggested the kind of lines on which work should proceed in order to get at tests applicable to individuals. It would be extremely useful if doctors could have some definite tests of defective intelligence, instead of having to reach a decision in a rather haphazard way.

SECTION OF ANTHROPOLOGY.

The People of Egypt.

Professor G. ELLIOT SMITH presented a communication on the people of Egypt. In the present state of our knowledge, he said, it would be idle to discuss the origin of the predynastic Egyptian population beyond stating that the people showed undoubted affinities with the so-called "Mediterranean race," as well as with the Arabs, and that they must have been settled in the Nile valley for many ages before they constructed the earliest prehistoric graves known to us, for their peculiarly distinctive culture, their arts, their mode of writing, and their religion were certainly evolved in Egypt. But even before the end of the predynastic period a slight change in the physical traits of the population could be detected; although it was not until more than four centuries later—it was not until the time of the Third Dynasty—that the modification of the physical type became sufficiently pronounced to afford unmistakable evidence of its significance. Then the three Nile territories under consideration had each its own distinctive people: Lower Nubia, a population essentially identical with the predynastic Egyptian, but slightly tinctured with

negro; Lower Egypt, the descendants of the predynastic Egyptians, profoundly modified by admixture with alien white immigrants, who entered the Nile valley via the Delta; and Upper Egypt, protected by its geographical position from the direct effect of either of these foreign influences, was being subjected to the indirect influence of both by the intermingling of its people with those of Nubia and Northern Egypt. In the time of the Middle Kingdom this double racial influence became much more pronounced in the Thebaid. The Nubian element also became more significant, the influx consisting at various times of slaves, mercenaries, and perhaps also invaders, not to mention the slow but steady percolation into Egypt of a negroid element resulting from the secular intermingling of neighbouring peoples. Thus began that graduation of racial characters in the Nile valley, ranging from the Levantine white population of Alexandria to the negro of the Soudan, which had persisted until the present day, and was displayed even in the measurements of 30,000 modern Egyptian men, which were now being examined by Mr. J. I. Craig. It was not yet possible to express a positive opinion as to the source of the white immigration into the Delta, which first reached significant proportions in the times of the Third and Fourth Dynasties; but, from evidence which he had recently collected, it seemed probable that the bulk of it came from the Levant. It was most likely, however, that there was a steady influx into the Delta of people coming both from east and west, and that their percolation into Egypt was so gradual as not violently to disturb the even flow of the evolution of the distinctive Egyptian civilization. Nevertheless, it was perhaps not without significance, especially when they took into account the simple-minded, unprogressive, and extremely conservative character of the real Egyptian, to note that none of the greatest monuments were constructed nor the most noteworthy advances made in the arts of the Egyptian civilization, except on the initiative of the aristocracy, in the composition of which there was a considerable infusion of non-Egyptian blood. From the times of the Pyramid builders until the present day Egypt's rulers had probably never been of undiluted Egyptian origin.

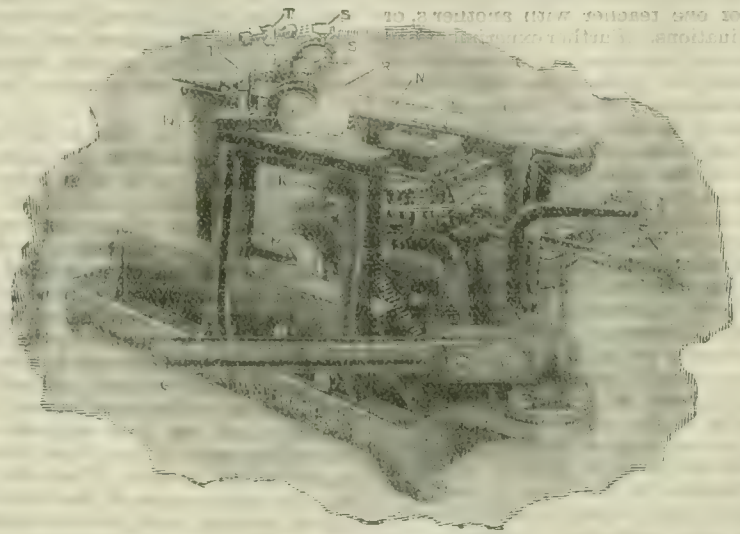


Fig. 1.—General view of large sliding microtome.

Excavations at Memphis.

Professor W. M. Flinders Petrie, describing excavations at Memphis, said no instance of a stone-built tomb was known before the end of the Second Dynasty, when King Khasakhamui built a stone chamber at Abydos. Not till the latter part of the Third Dynasty did stone-built chambers become the custom, even for kings. The oldest stone tombs of subjects were those at Meydum, which were opened by the British School last winter. The great mastabas of Nefer-maat and another noble, close to the Pyramid of Sneferu, the interiors of which had defied modern search, were attacked in a thorough manner. The mound over the tomb, No. 17, was mined through to a depth of 45 ft. At the bottom was found a closed stone building, which had been completely buried beneath the mound, without leaving any external opening. The burial had, therefore, taken place before the mound was thrown up, and the burial must have taken place before the date of the Pyramid of Sneferu, 4650 B.C. This was the earliest private stone tomb that could be dated. The passages were lofty, and the great chamber was roofed with beams of stone, which weighed up to 40 tons each. In a recess at the end of the hall stood the sarcophagus of red granite, the oldest stone sarcophagus known. The burial was of the greatest interest, as it showed that the body was completely unfleshed before it was wrapped in linen. The bones had been completely stripped and severed, excepting that the spine was not dissevered. Each bone was then wrapped separately in fine linen, the spine was packed closely with linen, and linen was pressed into the empty eye-sockets. The skull, which was found with the rest of the bones, as compared with the usual Egyptian heads, was large, with narrow face, extremely orthognathous, and very narrow nose. The neighbouring tomb of the noble Nefer-maat was the largest of all, the size being 380 ft. by 206 ft. The burial of Nefer-maat, again, proved to have been an unfleshed skeleton.

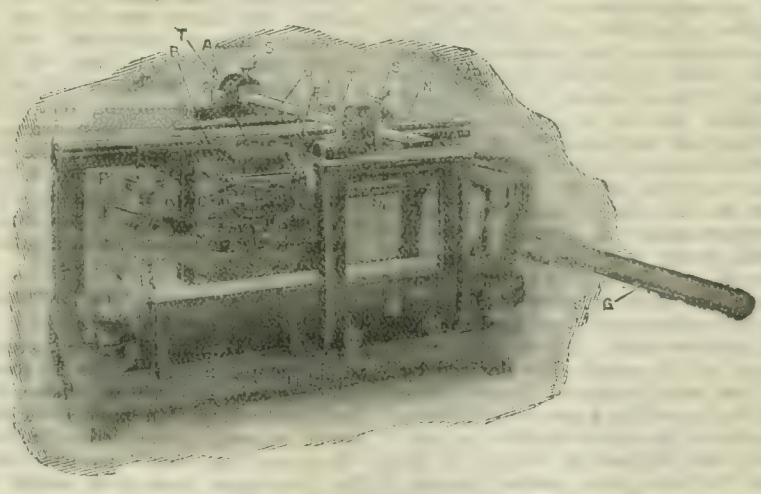


Fig. 2.—Large sliding microtome.

New Sliding Microtome.

Dr. Duckworth gave a description of a microtome recently designed by the Cambridge Scientific Instrument Company, Limited. The instrument was shown at the reception. The microtome is capable of cutting through decalcified bone or cartilage, and is useful for cutting sections too large to be cut with either of their two rocking microtomes. The following is a description of the instrument:

The object, embedded in a block A of paraffin wax or celloidin, is fixed to the wood block which is clamped in the object-holder B. This object-holder is fitted with orientating adjustments very similar to those used in the firm's rocking microtomes, being mounted in a cup-shaped socket at the end of a brass pillar E. This pillar can be raised or lowered and clamped at any height by the clamping screw D. The orientating adjustments are made by four screws one of which is lettered C.

The sliding carriage, which supports the object-holder and feeding mechanism, rests at three points on two guides in the frame of the instrument. The whole carriage can be moved backwards and forwards on these guides by

means of the handle G working through the levers H. The design is such that all wear is automatically compensated for. After the cutting stroke, and when the carriage has nearly reached the extreme position as in Fig. 2 (p. 792), a stop pin, operating through the ratchet M, turns the toothed wheel L and screw K so feeding the object-holder upwards. The amount of the feed is regulated and indicated by the index P. On the return stroke the mechanism causes that part of the sliding carriage which holds the object-holder to drop just before it reaches the knife B in order to avoid fouling the same, and to rise after passing the knife to its former position in preparation for the next cutting stroke.

The construction of the sliding carriage is such as to convert the feed into a parallel motion, and so give sections of a uniform thickness, and, further, since the carriage slides on plane guides, the sections are also from a plane surface. The knife B is clamped in two heavy brass clamps by the screws S S. The position of these clamps can be moved so as to set the knife obliquely to the direction of movement of the object. The clamping screws T T hold the clamps firmly in position. The angle the cutting edge makes with the horizontal plane is also readily adjustable, and a small angular scale is divided on the knife-holders, so that the same angle can be easily repeated. Two knives are supplied, each measuring 30 cm. long by 5 cm. wide.

The first one A is ground to a very fine angle, and is used for delicate work, as, for instance, with soft celloidin, fresh, or alcohol-hardened preparations. The second knife B is the most generally useful knife. It is not ground to such a fine angle, and is used with the majority of paraffin preparations and also with hard celloidin.

The microtome will cut sections measuring up to 150 by 120 mm. (6 by 4¾ in.) in either paraffin or celloidin. The thickness of the sections can be varied from 0 to 0.06 mm., each division on the scale being equal to 0.002 mm. The total distance through which the microtome will automatically feed the object-holder is 21 mm.

In using the instrument the user should be sure to have the cutting edge of the knife pointing towards the handle end of the microtome. Before clamping the knife in position the two small capstan-headed screws, situated at the back of the holders, should be slackened with a tommy pin. The knife can then be clamped by the screws (S S) with the flat side underneath. It can then be tilted to the desired angle and finally locked in position by the capstan-headed screws. The flat underside of the knife should be inclined to the horizontal, the best angle being determined experimentally for each particular piece of work.

When used for cutting paraffin sections it is customary to have the cutting edge at right angles to the direction of movement of the object. When cutting celloidin, however, it is necessary to use the knife at an oblique angle of about 30 degrees to this direction as illustrated in Fig. 1 (p. 792). During the process of cutting celloidin sections both the knife and the tissue should usually be kept constantly moistened with either 80 per cent. alcohol or with cedar-wood oil. The instrument is, however, capable of cutting dry sections. The two surfaces on which the carriage slides should be kept well lubricated. All that is necessary to ensure this is to keep a supply of oil in the troughs where these surfaces are situated. For convenience in handling the knives when stropping them a removable metal handle is supplied. The Cambridge Scientific Instrument Company also supplies special stropping attachment to ensure the correct cutting angle being maintained.

In the case of the knife A this stropping attachment is in the form of a wire which can be fixed to the flat side of the knife blade. This, in effect, makes the flat side hollow-ground, and both sides can then be stropped in the same manner as an ordinary hollow-ground razor.

In the case of the knife B a less acute cutting edge is required and the stropping attachment takes the form of a split tube which can be fixed to the back of the knife. This has the effect of making a more obtuse, and therefore a stronger, cutting edge.

Some of the principal advantages claimed for this microtome are:

1. It is extremely powerful, and will cut through decalcified bone and cartilage.
2. It will cut sections from very large objects.
3. It will cut either paraffin or celloidin sections.
4. It is designed on geometric principles, so that even after many years' wear it will still cut true sections.

EHRLICH'S NEW ANTISYPHILITIC REMEDY.

THE therapeutic action of arsenic in syphilis has long been recognized, but up to the time of the introduction of atoxyl no serious attempts appear to have been made to substitute arsenic for mercury in the treatment of this disease. The employment of atoxyl did not last long, as it was soon discovered that the toxicity of this compound was considerable and the advantages over the older mercurial preparations were not of a nature to justify the risk. Ehrlich realized, however, that arsenic would prove of great value in this field of therapeutics, and began a systematic investigation with the object of determining which compounds lent themselves best to the purpose. He aimed definitely at a *therapia sterilisans magna*. Arsazetin was brought out early, and proved itself possessed of a strong specific action. It was, however, too toxic for safe usage. Ehrlich achieved better results with his arseno-phenyl-glycin, a substance of which more may be heard in the future. After many patient experiments, during which 605 different preparations of arsenic were dealt with, Ehrlich began to investigate a substance which Bertheim had prepared chemically for him, and which had the chemical composition of a dioxy-diamido-arseno benzol. The experiments were conducted by Ehrlich and Hata, and the substance has received, besides its chemical name, those of "606," "Ehrlich-Hata," and "arsenobenzol." The latter name is incorrect, and should be reserved for the substance from which "606" is built up. The bichloride of the substance is stable, but the sodium salt which is used for injection is very much the reverse. For this reason the former is put up in sealed tubes, and this should be converted into the latter by the addition of sodium hydrate just before use. The former is a yellow powder, which is soluble in methyl alcohol, hot water, etc. Since the various clinicians who have employed it have devised a large number of methods of preparing the solution for injection, we need not concern ourselves with these details at present, the more so since the substance cannot yet be bought in the market, and each investigator who wishes to use it would naturally have to study the literature after obtaining samples from Ehrlich.

Alt was the first to report on its pharmacological action. At a meeting of the Medizinische Gesellschaft in Magdeburg he read a paper[1] in which he recounted his experience of the preparation in syphilis in such glowing terms that it was believed that his enthusiasm was due to the newness of the remedy. In a later communication[2] he admitted that he had feared that his wonderful results might be interpreted in this manner, but in the meantime, a large number of others having obtained the same results, he boldly defied the critic to charge him with exaggeration. It would be impracticable to deal with all the communications which have appeared since Alt's first paper, nor is this now necessary, since Dr. Bresler[3] has published a neat little booklet in which he deals with the majority of the publications up to the middle of August of this year. After Alt had told the world that a single injection of 0.3 gram of "606" sufficed to clear up primary, secondary, and even tertiary lesions within the course of a few days, and to convert a possible Wassermann reaction into a negative one, Iversen,[4] in a remarkable communication, recounted how a single injection of dioxy-diamido-arseno-benzol succeeded in curing relapsing fever in 92 per cent. of the cases. In 3 out of the 4 cases in which relapses took place after the injection, no spirochaetes could be found, notwithstanding diligent search. Ehrlich and his assistants had previously been able to cure relapsing fever in mice and rats by one injection. Iversen applied the medicament both intramuscularly and intravenously, and came to the conclusion that the therapeutic dose for relapsing fever was 0.2 to 0.3 gram. During the following months a large number of clinicians tested the action of "606" in syphilis, and with one accord sung its praises in their reports. The extraordinary rapidity with which it acted

[1] Alt, *Muench. med. Woch.*, No. 11, 1910.
[2] *Muench. med. Woch.*, No. 34, 1910.
[3] *Die Syphilisbehandlung mit dem Ehrlich-Hata'schen Mittel.* By Dr. Johannes Bresler. Second edition. Halle: C. Marhold. 1910. Pp. 65. (1s. 9d.)
[4] Iversen, *Muench. med. Woch.*, No. 15, 1910.

appears to have struck every one. Wechselmann[5] stated that the curative action was so rapid that the patients could not be demonstrated with advantage. This author reported a number of cases in which the cures, or rather disappearance of symptoms, were little short of miraculous. He was especially gratified by the results obtained in malignant cases which had resisted medication with mercury and potassium iodide. Cases of bad prognosis were recorded in which the remedy, in spite of apparently approaching death, succeeded in restoring health within a few days or a week or two. Up to August of this year no adverse reports, as far as concerns the removal of symptoms, were published. The lay press in Germany and France took up the subject with enthusiasm, and "interviews" with Ehrlich, Hallopeau, and Gaucher *inter alios* were given in sensational style in *Le Journal*. Some dissatisfaction was expressed by a few that the drug was not readily obtainable, but this appears to be unjustifiable, since Ehrlich had distributed in the most open-handed manner possible sufficient quantities to the directors of clinics with a large venereal *clientèle*. The drug is not to be placed on the market until Ehrlich has collected records of from 20,000 to 30,000 cases.

While a large number of the publications deal more or less exclusively with clinical records of the visible improvements in bad cases, a few deal with the subject in an inquiring spirit, and of these those of Neisser[6] and Blaschko[7] deserve special mention. It is necessary, however, briefly to state before passing on to these papers that Taege[8] and Duhot[9] independently reported cases of a syphilitic mother, with an infant badly infected with hereditary syphilis, being treated by injection, and the infant suckling at its mother's breast becoming completely freed from all signs of the disease within a very short time. Neisser was struck by the fact that only 10 per cent. of the cases treated with this new remedy showed a transition from a positive to a negative Wassermann reaction, while recurrences were also observed in some cases. Neisser himself leaves it an open question whether these results may not be due to the smallness of the doses employed. Other observers (Lange, Fraenkel and Grouven, etc) confirm the find as far as the Wassermann reaction is concerned, and Lange found that some cases which gave negative reactions before treatment became positive after injection. This was also confirmed by others. In many cases this change was transient, while in others it appeared to be more or less permanent. In spite of this, Neisser stated that there can be no doubt as to the specificity of the drug, and that he awaits further observations before deciding whether it cures absolutely or not. Blaschko came to the conclusion that while a perfect cure does not occur in all cases, and while it is not probable that a well-established constitutional syphilis could be cured right off with a single injection in the doses now employed, the prospect of a *therapia sterilisans magna* in early cases appears to be good. He laid certain indications for its use, and was hopeful that great things may be done in these case. They include cases in which mercury has failed to cure, cases in which mercury is not well tolerated, cases in which, in spite of mercury, recurrence of symptoms occurs, and very early cases. He further believed that the medicament might be given with advantage in cases with fresh constitutional symptoms which had not yet been treated with mercury, or in combination with mercury or iodide, in recurrent cases, and also in parasyphilitic affections.

With regard to the disadvantages of the preparation but little can be said. The majority of the authors report that, with the exception of some pain and infiltration (this may be severe) at the site of injection, and occasional rise of temperature, transient rash, and even vomiting, no ill effects result from the injections, and that, provided it is not employed in cases with advanced organic degenerations, no risk attends its use. Fraenkel and Grouven[10] report the sudden death of a young waiter who was treated by intravenous injection of "606" in rather high concentration. At the *post mortem* examination extensive cerebral disease, a flabby, atrophic heart, hypoplasia of the kidney, enlargement of the spleen, and engorgement of the liver were found, and Ehrlich[11] is unwilling to regard this case as justifying a condemnation of the intravenous application of the remedy. Bohâc and Sobotka[12] reported 3 cases out of 14 which revealed serious toxic effects of the injections. These included retention of urine, disappearance of the patellar reflexes, tenesmus, and constipation. Ehrlich appears to have made inquiries of the other investigators as to the occurrence of these symptoms; but Alt, Doerr, Finger, Neisser, Michaelis, and others replied that they had not observed anything similar in all their cases. Sellei suggested that the symptoms observed were due to methyl alcohol used in dissolving the powder. This explanation was not accepted either by the authors or by Ehrlich, since only very small quantities were employed. Two infants died shortly after injection in Wechselmann's clinic, but in these cases Ehrlich suggested that, inasmuch as the death took place after all the signs of congenital syphilis had disappeared, and no evidence of arsenical poisoning could be obtained at the *post-mortem* examinations, the death should be ascribed to a sudden setting free of endotoxins from the killed spirochaetes, and advised that infants whose nutrition is not good should not be treated in this manner.

Wechselmann and Lange[13] report that they have succeeded in preparing the solution in such a manner that it can be injected without pain. Lastly, mention must be made of the fact that the injections are at times followed by Herxheimer's local reaction. Neisser (loc. cit.) regarded this as evidence of the specific nature of the pharmacological action.

In conclusion reference must be made to an excellent article by Bayet, in which the whole subject, as well as his own observations, is dealt with,[14] and also of the fact that the treatment is being tried in London both at the Lock Hospital[15] and the London Hospital.[16] The results in this country are said to be extremely good; and McDonagh goes further than most observers in claiming that there is no doubt that "by Ehrlich's genius the greatest victory over syphilis has been gained . . . and we know that we are on the right road to find an absolute cure for a disease which is a curse to mankind." On the other hand Bouchard, in a recent communication to the Académie des Sciences, is decidedly hostile to the claims made on behalf of the new remedy.

[5] Wechselmann, *Berl. klin. Woch.*, No. 27, 1910; *Deut. med. Woch.*, No. 32, 1910.
[6] Neisser, *Deut. med. Woch*, No. 26, 1910.
[7] Blaschko, *Berl. klin. Woch*, No. 35, 1910.
[8] Taege, *Muench. med. Woch.*, No. 33, 1910.
[9] Duhot, ibid., No. 34, 1910.
[10] Fraenkel and Grouven, ibid., No. 34, 1910.
[11] Ehrlich, ibid., No. 35, 1910.
[12] Bohâc and Sobotka, *Wiener klin. Woch.*, No. 30, 1910.
[13] Wechselmann and Lange, *Deut. med. Woch.*, No. 34, 1910.
[14] Bayet, *Journ. méd. de Bruxelles*, No. 35, 1910.
[15] McDonagh, *Lancet*, September 3rd, 1910.
[16] J. McIntosh (in Recurrent Fever), *Lancet*, September 3rd, 1910.

LITERARY NOTES.

AT the recent Pharmaceutical Conference a sketch of the life and work of John Ray was given by Mr. G. Claridge Druce. It was published in full in the *Pharmaceutical Journal* of July 30th. John Ray, or, as he then spelled his name, Wray, entered St. Catherine's Hall, Cambridge, on June 28th, 1644. Two years later he migrated to Trinity College, and in 1649 was chosen Junior Fellow. In 1651 he took his Master of Arts and became a Senior Fellow of the college. He became the tutor of Francis Willughby, of Middleton Hall, who had the same love for natural science as Ray, and his name appears with that of Ray on a paper dated July 23rd, 1659, which Mr. Druce purchased, with some other autographs, from the late W. Pamplin. The list is dated 1656 and 1657, and, therefore, three or four years earlier than Ray's first publication, which was a small duodecimo volume of 182 pages, printed at Cambridge, entitled *Catalogus Plantarum circa Cantabrigiam Nascentium*. In 1662 he was deprived of his Fellowship for refusing to sign the declaration against the solemn league and covenant. From 1663 to 1665 he was travelling abroad with Willughby. In 1670 he published his first work on the general flora of Britain, under the title of *Catalogus Plantarum Angliae*, 1670, an octavo volume of 358 pages, and enumerates about 1,050 species of plants —a smaller number than that given by How in the *Phytologia* of 1650, which contains 1,200 species, or by Merrett in his *Pinax* of 1666, in which more than 1,400 are enumerated; but Ray has been much more careful in selecting undoubted natives, and in avoiding the introduction of mere forms or varieties. In 1682 appeared his

Methodus Plantarum Nova, an octavo of 166 pages, which contains a natural arrangement of plants based chiefly on the characters of the fruit, but he still adhered to the ancient division of the vegetable kingdom into trees, shrubs, and herbarium plants. This work foreshadowed his great work, the *Historia Plantarum*, in two folio volumes, one of 984, the other of 985 pages, which appeared in 1686 and 1688 In that work Ray everywhere distinguished British from exotic plants, and gave the place of growth and time of flowering: 6,900 plants were described. In 1688 he also issued his *Fasciculus Stirpium Britannicarum*, an octavo volume in which several new British plants from Wales and Cornwall were given. In 1690 appeared the *Synopsis Methodica Stirpium Britannicarum*, a small octavo volume of 317 pages, dedicated to Thomas, son of his old friend Francis Willughby. This book was so much in advance of previous works that it became the pocket companion of every British botanist In 1690 he supplied to Gibson the provincial catalogues of plants which appeared in Camden's *Britannia*. In 1696 he issued a second edition of the *Synopsis*, but the numerous additions, nearly one hundred in number, were chiefly due to auxiliaries, Ray's advancing years and infirmities necessarily curtailing his field work. In 1704 a third volume of the *Historia* appeared. He died at the age of 78 at Black Notley, on January 17th, 1705, and a monument is erected there to his memory. There was no doubt, said Mr. Druce, that Ray was one of the greatest students of botany which Britain has produced, and whose labours and example have done so much, not only for his own time but for succeeding ages. His European herbarium and letters are in the British Museum, and there is a portrait and bust of him at Trinity College, Cambridge. Linnaeus perpetuated his name in the plant genus *Rajania*, and a genus in ichthyology is also called *Raia*. Mr. Druce exhibited a copy of the first edition of the *Synopsis*, which was purchased at Dr. Sibthorp's sale, and is said to have belonged to the Oxford Professor of Botany, Dillenius, who edited the third edition of Ray's *Synopsis*. The historian says:

> Mr. Ray was a man of excellent natural Parts, and had a singular vivacity in his Style, whether he wrote in English or Latin, which was equally easy to him. In a word, in his Dealings, no man more strictly just; in his Conversation no man more humble, courteous, and affable; towards God, no man more devout; and towards the Poor and Distressed no man more compassionate and charitable according to his abilities.

It is a thing which must strike even the casual reader that the people of Rome in the days of the Empire present many points of resemblance with the citizens of our great modern capitals. In nothing, perhaps, do these ancient lords of the world, in the period of their decadence, resemble us so closely as in the intense interest they displayed in their bodies and their eagerness to adopt all possible means of keeping them in health. It may not be so generally known that the means employed by the Roman in the reign of Augustus or Nero to preserve or recover his physical fitness were very much the same as those in vogue at the present day. Dr. H. Maegeli-Akerbloom, *Privatdocent* of the History of Medicine in the University of Geneva, has published an article on this subject in the *Revue Suisse de Médecine* for April, 1909, in which the close analogy between twentieth century hygiene and that of ancient Rome is very clearly shown. In "L'Hygiène chez les Romains au temps d'Auguste," Dr. Maegeli-Akerbloom gives a detailed account of the different exercises, diets, etc., which were fashionable at that time in Rome. The chief authority he cites is Celsus, who, whether he was a physician or not, gives advice on health, marked with sound common sense. For instance, he protests strongly against the danger and folly of athletic training in everyday life. Men who have been trained in the way athletes train themselves age quickly and become worn-out and ill. He advocates moderation in all things—in sleep, in exercise, in eating and drinking—and he holds that change of diet, as well as change of air, is necessary for health. The state of the appetite should be the guide to the proper amount of nourishment to be taken at each meal. The chief interest of Celsus's book, however, lies in the advice he gives as to the various "cures" for different ailments. Many of them are familiar enough to modern ears. Then, as now, massage played an important part in these hygienic régimes; it was used in cases of fatigue, with baths similar to those now known as Turkish and others; in acute febrile diseases massage was used, even for meningitis, in the hope of sending the patient to sleep. A complete rule of life is laid down for patients suffering from phthisis or any chronic disease, and also for those afflicted with disordered stomach For the former Celsus recommends travel, with the object, it would seem, of ensuring plenty of movement, for as well as sea voyages, travelling in litters or carriages is advised, whilst those too poor to indulge in this kind of jolting are advised to swing themselves in a bed or hammock suspended from the ceiling. If even this is out of the question, the patient should raise one of the feet of his bed by means of a piece of wood, or the like, and rock himself backwards and forwards as much as possible. The treatment for stomach troubles was more elaborate. The patient was advised to walk, fence, or take exercise in any way that would call into play the muscles of the upper part of the body. Reading aloud was also recommended. He was recommended to take but two meals a day and drink only light wines; cold drinks must be taken only after meals, though the wine should be warmed if the patient drank it fasting. Some sound advice is given as to the precautions to be observed in an epidemic. Celsus warns people to avoid fatigue and excess of every kind, and also sudden changes of temperature. He has been dead some nineteen hundred years; yet much of his book might have been written yesterday, and many of his counsels might be followed with advantage to-day by those who vainly seek for health of mind and body in patent medicines and secret remedies.

Perhaps few people realize that the British army, which to-day prides itself upon its loyalty to the Crown, owes its existence to men who had rebelled against their lawful sovereign. Before the outbreak of the civil war in the seventeenth century, no such thing as a standing army existed in England. The first attempt at a regular military service, in the modern sense of the word, was made by Cromwell when he raised and organized the Parliamentary forces. At the Restoration, Charles II took these troops bodily into his own service; and thus was formed the nucleus from which was ultimately evolved the British army as it stands at the present day. Major H. A. L. Howell, R.A.M.C., in an article entitled "The Story of the Army Surgeon and the Care of the Sick and Wounded in the British Army, from 1660 to 1688," published in the *Journal of the Royal Army Medical Corps* for January, 1910, has given a most interesting and instructive account of the condition of the army, and the position of the military doctor under the last Stuart kings. From him we learn that during the latter half of the seventeenth century, each cavalry regiment had its own surgeon, whilst the infantry rejoiced both in a surgeon and a surgeon's mate. Moreover, the men sent out on detached duty were always accompanied by their medical attendant, in the form of a surgeon's mate. On active service, besides the regimental surgeons the army had also the benefit of a physician with an assistant apothecary, who were attached to the staff of the commanding officer. All the practitioners belonging to the army appear to have ranked as staff officers, for in an old pay list of Cornwall's regiment (now the Norfolk), dated 1686, the names of both the surgeon and his mate appear directly after that of the major, and before those of the adjutant and the quartermaster. The pay of the military doctor varied, of course, according to his rank. The usual amount received by the surgeon was 4s. a day, his "mate" reciving 2s. 6d., whilst the physician of an army in the field drew as much as 10s, and the apothecary 5s. a day. The surgeon, however, had means of augmenting his pay. Major Howell says:

> At this time, and for nearly a century after, it was not unusual to find surgeons holding double commissions. The surgeon purchased a commission as an ensign, and drew, in addition to an ensign's pay, 2s. 6d. a day for hospital duty. On promotion such officers usually gave up the surgical part of their duties.

In those days all drugs required by the troops were supplied by the Crown. Major Howell quotes the Royal Order issued in 1673, by which Charles II settled the sum of money to be expended yearly upon medicine for his army. The decree runs as follows:

> Whereas, for the preventing of the great and uncertain charges of Apothecaries' bills of physic and internal medicines

for sick soldiers, We have thought fit to allow forty shillings a year to Richard Whittle for providing of physic and internal medicines, besides the forty shillings for each company allowed to the Surgeon of the Regiment of Our Foot Guards for external medicines yearly, which said allowance of forty shillings yearly for physic or internal medicines to commence from the twentieth of September last. Our Will and Pleasure, therefore, is that you take notice thereof, and give it in orders, that when the non-commissioned officers and private soldiers respectively shall be sick, the said Richard Whittle may be applied to for internal medicines, as well as hurt men are to apply to the surgeon of the Regiment for external medicines when they need the same. Given at Our Court at Whitehall, the 24th day of January, 1673.

Charles seems to have been anxious for the well-being of his sick and wounded soldiers, and took a great interest in the hospitals erected for their use, such as the hospitals at Chelsea and Kilmainham, in Dublin, which were built during his reign, and were intended especially for men disabled in the service of their country. When a military hospital was established at Tangier during the war, £547 10s. was allowed towards its support. We possess a few interesting details concerning the latter hospital: its staff consisted of a physician, a surgeon, and a surgeon's mate at the usual rate of pay; and it seems to have possessed a well-stocked pharmacy, to judge from the compensation paid after the capture of Tangier by the Moors. As much as £20 was allowed to "the Chirgeon in Charles Fort, Tangier, for several medicaments and Instruments of Surgery left there." When, during the Dutch war of 1664, there was a lack of accommodation for the wounded men, half the hospitals in the kingdom were set aside for them; and in London St. Thomas's gave up half their beds for the same purpose. The army doctor of that period did not confine his attention solely to his professional duties, but took his share of fighting when the occasion arose. He accompanied his regiment into battle, and we hear of one White, described as a military "doctar," who, during the British occupation of Tangier, volunteered for an expedition into Morocco, where he fell with the rest of his companions, who were almost completely annihilated by the Moors. It is a curious fact that few of the military doctors of that time occupied the front rank of the medical profession. Nevertheless, it is evident that some progress was made in military surgery. A primitive form of tourniquet, which consisted of a piece of wood placed under the bandage which encircled the limb, was introduced by von Hilden (1560–1634); and later on, at the siege of Besançon in 1674, the block tourniquet made its appearance under the auspices of Morel. Also, about this time—in 1679, to be exact—flap-surgery, once practised in ancient Rome, was introduced into this country by Lowdham, an Oxford surgeon. But, in spite of these advances along the thorny path of knowledge, surgery, and particularly surgery in the field, remained a rough and ready art until nearly a century and a half after "good King Charles's golden reign."

THE WINTER SESSION IN THE MEDICAL SCHOOLS.

THE arrangements in view for the opening of the winter work at most of the medical schools will be found in the following paragraphs. The Deans of some other schools have been good enough to fill in the forms sent to them, but as the forms have been returned without signature or other indication of the institutions to which they relate, it is impossible to utilize them.

ST. BARTHOLOMEW'S HOSPITAL.—The opening ceremony will be the old students' annual dinner on October 3rd. This will be held, as usual, in the Great Hall of the hospital, at 6.30 for 7 o'clock. The chair will be taken by Mr. C. B. Lockwood.

ST. THOMAS'S HOSPITAL.—The winter session will commence on October 4th without formal ceremony. The annual dinner of old students will take place the same evening at the Hotel Cecil. The chair will be taken by Mr. W. F. Haslam.

ST. GEORGE'S HOSPITAL.—The winter's work will be inaugurated at 3 p.m. on October 1st by a prize-giving ceremony and an address by Dr. Squire Sprigge on "Prizes." The ceremony and address will be followed at 4.15 by the annual meeting of the St. George's Club. The old students' annual dinner will be held the same evening at Prince's Restaurant, Mr. G. R. Turner being in the chair.

THE LONDON HOSPITAL.—Work for the winter session will begin on Saturday, October 1st. On the following Monday, at 3 p.m., Mr. Robert Hutchison will deliver the Schorstein Lecture. The old students' annual dinner will take place the same evening at the Hotel Cecil, Mr. Mark Hovell in the chair.

KING'S COLLEGE HOSPITAL.—The winter's work will commence without formal ceremony on Saturday, October 1st. The dinner of past and present students will be held on Monday, October 3rd, at the Waldorf Hotel, Dr. John Phillips presiding.

WESTMINSTER HOSPITAL.—As in recent years, term will commence without formal prelude on October 3rd, while the annual dinner of past and present students will take place on Thursday evening, October 6th, at the Imperial Restaurant. The post of chairman has not yet been allotted.

ST. MARY'S HOSPITAL.—The winter session will commence on October 3rd, when the prizes and awards for the sessions 1909–10 will be presented by Sir Conan Doyle in the Medical School Library. The annual dinner of past and present students will be held on the same date at 7 p.m. at Prince's Restaurant, Mr. Ernest Lane in the chair.

THE LONDON SCHOOL OF MEDICINE FOR WOMEN.—The winter work will be inaugurated at 4 p.m. on Monday, October 3rd, by an address from Mr. E. W. Roughton on Woman's Sphere in Medicine. The ceremony will take place, as usual, at the school buildings, 8, Hunter Street, Brunswick Square.

MIDDLESEX HOSPITAL.—The winter session will commence on October 3rd, when an introductory address will be delivered by Mr. Salmon Nowell; a prize distribution will follow. The annual dinner of past and present students will take place the same evening at the Trocadero at 7 o'clock, Mr. T. H. Kellock in the chair.

CHARING CROSS HOSPITAL.—The winter session will be opened on October 3rd by the annual distribution of prizes. The ceremony will take place in the out-patients' hall of the hospital at 3.15 p.m., the prizes being handed to the successful students by Lady Juliet Duff. Subsequently the eighth Harley Lecture will be delivered by Dr. F. W. Mott, its subject being, "The Hereditary Aspect of Nervous and Mental Diseases." The dinner of past and present students will be held the same evening at the Criterion Restaurant, Mr. Daniel in the chair.

UNIVERSITY COLLEGE HOSPITAL.—The winter term will be inaugurated on October 3rd by a prize-giving ceremony in the library of the school at 3 p.m., and followed by an address from the Very Reverend the Dean of Salisbury on self-development. The dinner of past and present students will be held the same evening at the Gaiety Restaurant.

UNIVERSITY COLLEGE, LONDON.—Work in the medical department of the Faculty of Science will commence on Tuesday, October 4th, without any inaugural ceremony.

GUY'S HOSPITAL.—Term will commence without formal ceremony on Monday, October 3rd. The event will, however, be marked by the holding of the first meeting of the Pupils' Physical Society on the following Friday. This will take the form of a *conversazione* in the Wills Library, where the guests will be received, at 8.30 p.m., by Sir Samuel Wilks, supported by the honorary vice-presidents.

NORTH-EAST LONDON POST-GRADUATE COLLEGE.—The winter session will commence on Thursday, October 27th, being inaugurated by an address from Sir Lauder Brunton on "The Value of Blood-pressure Observation in Medical Practice."

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.—The winter term lectures commence on Monday, October 3rd, on which date, at 5 p.m., Dr. Robert Jones, of Claybury Asylum, will deliver an address on the teaching of insanity in the British Isles.

QUEEN'S UNIVERSITY OF BELFAST.—The winter session in the Medical Faculty will open on Tuesday, October 11th, without any inaugural ceremony.

UNIVERSITY COLLEGE, CARDIFF.—Work for the winter session in the medical department of University College, Cardiff, will commence on Tuesday, October 4th, without formal ceremony.

TRINITY COLLEGE, DUBLIN.—Work for the winter session in the School of Physic will commence on October 1st, without formal ceremony of any kind.

UNIVERSITY OF BIRMINGHAM.—Work for the winter session in the Medical Faculty will be inaugurated on Monday, October 3rd, by a reception and *conversazione*. There will be no formal address. The annual dinner will be held in January, as usual.

UNIVERSITY OF LIVERPOOL.—Work for the winter in the Medical Faculty will commence on Tuesday, October 4th, being inaugurated by the delivery of an address by Dr. A. B Macallum, Professor of Physiology in the University of Toronto. The annual dinner will be held the same evening, Professor Paul in the chair.

UNIVERSITY OF DURHAM.—The winter session will commence on Monday, October 3rd, without any formal opening ceremony.

UNIVERSITY OF LEEDS.—An address inaugural to the commencement of the work of the winter session will be delivered on October 4th by Professor Howard Marsh, of Cambridge. The annual dinner will be held the same evening at the Queen's Hotel.

UNIVERSITY OF EDINBURGH.—Work in the Medical Faculty will commence on Tuesday, October 4th. There will be no special ceremony, but each professor will deliver a short introductory address to his students.

UNIVERSITY OF ABERDEEN.—The winter session in the Faculty of Medicine opens on Thursday, October 13th, without any official ceremony.

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SATURDAY, SEPTEMBER 17TH, 1910.

DOSIMETRY AND THE REPORT OF THE SPECIAL CHLOROFORM COMMITTEE.

THE contents of the full report of the Special Chloroform Committee and the discussions held in the Anaesthetics Section of the British Medical Association during the recent meeting, afford yet another proof that finality in medical matters can hardly be attained. As science must ever be in flux so must the ancillary arts undergo corresponding changes. Since the days of Nepenthes and Letheon the mind of man has sought for means whereby humanity may escape the suffering incident to the curative efforts of the surgeon's knife. The late Sir James Paget has depicted with almost too painful realism what those sufferings were before the days of modern anaesthesia. Opium, alcohol to drunkenness, nerve compression as practised by Moore, bleeding to syncope, and the ministrations of Father Hell and the hypnotists were but ineffectual measures, and a new era opened when Sir Humphry Davy published his researches on the gases and incidentally on the action of nitrous oxide. But even before the tragedy of Horace Wells's attempt and failure to demonstrate to an unsympathetic audience true anaesthesia by inhalation, Crawford Long had used ether in practical surgery as an anaesthetic, and so anaesthesia, as we now know it, had become an accomplished fact. This was in 1842, and the documents proving Long's discovery formed one of the most interesting exhibits in the museum collected for the recent meeting. The vigorous advocacy of Sir James Y. Simpson, as well as its own inherent qualities, soon, however, gave to chloroform the premier place among anaesthetics. In spite of its dangers, too patent to be disguised or ignored, it has maintained that position ever since 1847. If the most fatal through its potency, chloroform remains the most convenient and most widely used of anaesthetics.

Those who are curious in such matters must know that some hundreds of drugs from time to time have been exploited as substitutes for it, and men have sought salvation in mixtures containing it as an ingredient, and carefully devised methods of giving it. There have been pessimists who, likening chloroform to the upas tree, have decried its use in any form, lest the bones of its victims bleach beneath that tree's outspreading branches. Thus, spinal analgesia and local infiltration have been often vaunted as a necessary reform whereby chloroform may be entirely superseded. In the Sections of the Navy, Army, and Ambulance, and of Anaesthetics, these matters were discussed, and we are reminded that enthusiasm, like ambition, is apt "to o'erleap itself." The relations of the anaesthetic to surgical shock, and the more recent pronouncements in favour of ether as an anaesthetic, were germane to our contention that, with our present knowledge of all the suggested alternatives to the use of chloroform, none stand forth so convincingly as to wrest from it its dominating ascendancy. The newer methods may appeal to the human thirst for novelty, but dispassionate examination reveals unforeseen perils and unanticipated drawbacks. In a generation in which nerves bulk largely no spinal method of analgesia will appeal to all, for, with mind set on edge, the patient remains conscious that he is undergoing an operation, and that upon its success his very life depends. At least, chloroform will spare him such an ordeal, and he demands that its use may be robbed of its dangers. The work of the Special Chloroform Committee has been directed to this end, and the perusal of its report and of the discussion on dosimetry of chloroform which took place in the Anaesthetics Section will reward the reader for his pains. Dosimetry, we are told, is no new application of exact knowledge; it was taught by Snow and Paul Bert, and the elaborate report with which we are dealing reviews all that has been done by experiment and in practice from their day until this present time. The experiments which form the basis of the report have been done partly by members of the Committee and partly by outside workers.

These physiological findings and a large mass of clinical material constitute the evidence which the report presents to its readers, and upon this evidence rests its more convincing pronouncements. These are to the following effect: Chloroform produces anaesthesia in all persons when its percentage vapour in air is as two is to one hundred. For induction this percentage is safe within the experience of the Committee and others; prolonged inhalation of chloroform calls for lowering of the strength of the vapour inhaled. This 2 per cent. maximum adopted by the Committee agrees with the results arrived at by Snow and Paul Bert and is what Waller has consistently urged for many years past. The Committee has attempted to carry conviction by pointing out the direct effects of 2 per cent. and lower percentages upon individual tissues and upon the organism as a whole. It shows, as indeed is common knowledge, that the effects of chloroform are directly proportional to the dose inhaled, and that the area of narcotization of the central nervous system is increased *pari passu* with the strength of the vapour inhaled and the length of time during which the inhalation lasts. Thus, when a higher percentage is employed or the 2 per cent. is persisted in, the blood pressure steadily falls and respiration as steadily grows weaker through the effect of the drug upon the central nervous system.

The report's first claim to recognition is that it emphasizes a principle; everything else is matter of detail and permits of adjustment. In the discussion on dosimetry voices were raised in favour of a "plenum" system of inhaler rather than a "draw-over" system, and many contended that the former was immeasurably important. It is, however, far more urgent, if we are to accept the statements of the report, for us to grasp the principle that with dosimetric methods chloroform can be used with safety; without such methods its safety depends entirely upon the acumen and experience of the administrator. Of course, it is not contended that any method can be safe unless the user understands his business, but we affirm that the better the method the better can competent persons perform their business. Whether or not the maximum for everyday practice should be fixed at 2 per cent. may be open to criticism, but the evidence advanced in its favour is certainly very strong. It may be urged, as indeed was done during the

discussion, that the exigencies of modern surgery often demand more than mere anaesthesia. In certain contingencies an intensive effect upon the respiration and central nervous system must be faced or the surgeon's art is hampered. But here, again, it appears to us that the report meets the difficulty, and while admitting that in such cases risks must be run and a higher strength of chloroform vapour than 2 per cent. may be inhaled, it urges that the risk is minimized if the administrator recognizes it is a risk and if he adopts a dosimetric method which allows him to vary his percentage according to the necessities of the case and the moment.

Another aspect of the question is that to which Dr. Waller has more than once adverted. A student or practitioner who has been trained to work with a dosimetric instrument which delivers to the patient definite percentage strengths of chloroform in air in such a way that the administrator can see the record of the proportions he is giving, and can watch its effects upon the person inhaling, learns to apprehend the correlation between causes—percentage doses of chloroform—and effects—the degrees of narcosis produced. He is no longer an empiric using a drug of which he knows little or nothing, and watching for effects the possible onset of which he knows less; he becomes the scientific worker following an exact method, a method enabling him to control effects by controlling the dominant factors of their causation.

The report is no mere academic discussion upon the pharmacology of chloroform. It has essentially a practical side, which permeates all its sections, and so it becomes a ready means whereby a practitioner who has not seen dosimetric inhalers used can master the technique. In this appears to lie one of its chiefest merits, and it certainly justifies the encomium which Mr. Butlin passed upon it in his presidential address when he said that its publication marked an era in our knowledge of anaesthetics.

"606."

THE code of medical ethics forbids the scientist to use advertisement in the strict sense of the word, and the medical profession is so strict in enforcing this written and unwritten law that the scientist cannot turn, like the ordinary business man, to profitable account the fruits of his work. Chemists are not hampered by such a code, and are therefore permitted to employ many means of attracting the notice of the world at large to their achievements. Nevertheless, in the history of the medical laboratories during the last quarter of a century several methods have been successfully adopted to bring discoveries of significance to the immediate notice of the laity. Koch made his startling announcement of the discovery of the tubercle bacillus before a meeting of a medical society to which members of the general public had no access, but to which representatives of the lay press had admission. Later, he introduced the method of labelling his tuberculin preparations by letters instead of names, a method which appears to have attracted attention, and which von Behring and others employed with success. The latest innovation of this kind is the naming of a chemical substance —the mono-sodium or bi-sodium salt of the bichloride of dioxy-diamido-arseno-benzol—by a number. Ehrlich and Hata have shown much shrewdness in calling this substance "606," since the mystery which surrounds the term in the eyes of the public has made people anxious to find out something about the substance which it notes. The German and French daily press have fed the curiosity of the public, not without some exaggeration, and the result has been striking. The spas in which syphilis is largely treated seem to fear that their days are numbered; patients clamour to be treated by the wonderful new remedy, and are little inclined to leave it to the physician to decide whether the case is really suitable for this treatment.

At the present moment it is difficult, if not impossible, to determine the full value of this new remedy, but certain facts are already available from the reports of nearly 3,000 cases treated in various clinics by the most competent observers. From these facts some deductions can be made. It is quite certain that the new remedy is capable of changing the clinical aspect of a case of syphilis in any of the three stages within a surprisingly short space of time and as the result of a single injection. While it yet remains to be decided by experience whether it is better to apply the drug subcutaneously, intramuscularly, or intravenously, and which is the best manner of preparing the solution for injection, it is practically certain that in the most desperate cases of syphilis, in which mercury is of no value and which otherwise tend to run a rapid course ending in death, health can, temporarily at any rate, be restored almost miraculously by a single injection of "606." Its specificity cannot be doubted, we are told by Neisser, an authority whose word will be accepted all over the world.

The question will be asked by all: "Is the cure permanent?" To this no certain reply can as yet be given. Neisser looks to the Wassermann reaction for an answer, and finds that only in 10 per cent. of his cases has the positive reaction been changed into a negative. Others find that this change takes place in a considerably higher proportion. But it must be admitted that the significance of the reaction is not so certain as to make it possible to answer so vital a question on this evidence alone. If Wassermann's reaction depended on the presence of a syphilitic antibody in the serum of syphilitics, it would be reasonable to expect a persistance of this antibody after complete cure. Lange, however, tells us that we must be chary in speaking of a reaction becoming negative, and advises the practitioner to regard the change as a weakening of the positive reaction. The reaction is possibly dependent on an adsorption of complement by globulin or other proteid substance thrown out of true solution. If this be so, we obviously know too little about the action of the toxic products of the virus on globulins to decide whether this could only take place as long as the virus is alive in the body.

The best results with "606" so far reported appear to follow injections into the gluteal muscles. Alt and others believe that the effect of this "dépôt" medication is more likely to be lasting than when the substance is thrust directly into the circulation. Investigations show that some time after the injection arsenic is to be found in the site of the injection. It is, therefore, reasonable to hope that from such a dépôt sufficient active substance could be absorbed effectually to sterilize the body of spirochaetes. Ehrlich has shown that the preparation acts directly on the parasites and not on normal tissue, but it has further been found clinically that under its influence syphilitic tissue is actually absorbed. The observation that an infant suffering from congenital syphilis

of a very severe type can apparently be cured by taking the breast of its mother after she has received a single injection of "606" suggests not only that the drug is specific, but that it is powerfully specific.

We are inclined to believe, as experience in other cases has taught us, that we have not yet learned how toxic the preparation is. Meantime we note that, among some 3,000 cases treated with the remedy, death has resulted in two almost moribund infants, in one young man, and two other adults whose central nervous system was much affected by disease, and in a fourth adult case. Ehrlich has from the first, however, declared that the drug must not be employed in cases of marked organic disease, especially of the central nervous system and of the cardio-vascular system, and it would therefore seem, up to the present, that no risk to life is associated with its application in suitable cases. It is, however, much too early to speak definitively on this point. Another matter of importance is the possible effect of the drug on the optic nerve. This is of very special interest in view of experience in connexion with other arsenic derivatives.

We must also wait for months and years before we can ascertain whether the first injection affects the virus in such a way as to render it refractory to a subsequent application should recurrence of symptoms occur. Time, too, will reveal whether recurrences will occur frequently or not after injection with "606." In the meantime, it may be said with some confidence that Ehrlich has given us, by means of systematic scientific research, a highly valuable medicament, and has perhaps solved the problem, as far as syphilis is concerned, of intravital sterilization.

THE WAR AGAINST TUBERCULOSIS.

IN the contest which medical science constantly maintains against disease no more interesting issues arise than those which are concerned with the strategy adopted to secure conquest over the more powerful and ubiquitous enemies of mankind whose ravages have been so enormous as to constitute them veritable plagues. In many instances the battle has been conducted to a successful issue, and such allies of the "grim tyrant" as small-pox, typhus fever, malaria, diphtheria, and yellow fever, have been compelled to strike their flags and range themselves among the vanquished foes of the human race. Of those which remain to be subdued, the two most important are cancer and tuberculosis. With the former we are not now specially concerned, though it may be said in passing that, by means of special research organized on co-operative principles, in addition to individual effort exerted along many lines of original investigation, cancer is being slowly but surely driven from its strongholds, and the day may not be far distant when the secret of its aggressive activity will be revealed, and it, too, brought into line with those other enemies of human life and health which have already capitulated to the determined bombardment of scientific inquiry and inductive reasoning.

With regard to tuberculosis the position is somewhat different, because the progress of the fight is more advanced, and several important outposts have already been captured. Thanks to the pioneer work of Koch, we are familiar with the micro-organic battalions by the aid of which it wages its warfare; we are further cognisant of the assistance rendered to these pathognomonic hosts by the collaboration of septic allies which, in the guise of a mixed infection, add complexity to the strife in those corners of the field where it rages in its most acute intensity; and, in addition, we have come to recognize the advantage which accrues to the enemy when the accident of events puts him in possession of a battle-ground suited to the successful conduct of his operations.

These pioneer achievements have cleared the way for further action, and current events, backed by a flood of recent literature, bear evidence to the fact that another strategical move is at present being made in the direction of enlisting more thoroughly the assistance of public health authorities and the co-operation of the great mass of the people in renewed efforts to control tuberculosis and ultimately to limit its prevalence to sporadic dimensions. When we remember the enormous toll upon human life and productive activity which tuberculous disease in one form and another levies in almost all countries, every well-considered scheme for its abolition is worthy of the whole-hearted support of humanity at large. As in the case of other calamitous diseases endless specifics have been vaunted and advertised for its cure. Many have been mere products of the inventive faculty of the money-making and unscrupulous charlatan; others have been launched on the public, in all good faith, as the result of prolonged but incompleted scientific research; but all have, so far, failed to accomplish that decisive victory which has crowned human effort in regard to other disorders, and which, it may confidently be hoped, will in like manner some day reward the arduous labours of those who recognise tuberculosis as a powerful but conquerable enemy of man.

It is generally admitted nowadays that fresh air, sunlight, and food are the most effective weapons to be used against the tubercle bacillus, and it is further believed by many observers that these natural forces can be materially assisted by the exhibition of antiseptics, tuberculin, cod-liver oil, and other collateral aids. It has, moreover, been abundantly proved that the disciplinary methods which can be enforced in an institution, properly equipped and judiciously managed, invest them with added power to carry out their beneficent usefulness. Hence has come into being the sanatorium system of open-air management which, from modest beginnings many years ago, has now become not only a recognised plan of treatment, but one which, for the time being, has largely superseded every other curative method.

We have no fault to find with a system from which such good results have been obtained as to justify the frank acceptance of its principles as being established on grounds of unequivocal success. But it may be worth while sounding a note of warning against the risk of being carried away on the crest of a wave of ultra-enthusiasm. To many it seems likely that sanatorium treatment, though experimentally good and justifiable will not be found to prove the last word in the cure of the disease. It is asserted by such critics that sanatorium principles are being carried to excess, and that results are proclaimed by some of those who are uncompromisingly attracted by them which will not stand the test of unbiassed correction, and from which are claimed deductions that are incapable of verification. An active correspondence which has been carried on in our columns for several weeks past is illustrative of the need for an attitude of reserve.

In a volume recently issued by Dr. Arthur Latham and Mr. Charles H. Garland, under the title of *The*

Conquest of Consumption,[1] claims are set forth in favour of the sanatorium which, though representing the honest expression of the authors' belief in the system they advocate, constitute a demand upon financial enterprise and statistical reliability so formidable as to justify a policy of "wait and see" in regard to their recommendations. In this volume the authors set forth logically enough their argument in favour of the possibility of exterminating tuberculosis within a comparatively short number of years. They draw attention to the financial burden which the disease imposes upon the nation, and they estimate that it costs friendly societies over one million sterling annually in sick benefits; that 10 per cent. of the cost of the Poor Law administration—or something like one and a half millions of pounds—is due to it; that the loss of wage-earning power, because of it, is close upon two millions sterling per year; and that "the 40,000 deaths from consumption, and the 20,000 deaths from other forms of tuberculosis, which occur annually in England and Wales, represent a national loss of £26,400,000." The remedial measures suggested include the establishment of antituberculosis dispensaries, the multiplication of sanatoriums, the compulsory notification of the disease, the segregation of hopeless cases, and adequate provision for purity of the milk and butter supply. Such a comprehensive scheme would involve they say, "a capital outlay of £2,250,000, and an annual outlay of £4,580,266"; while they sum up the situation by asking "whether it is worth while to endeavour to stamp out consumption and other forms of tuberculosis by an expenditure which at the outset would amount to less than five millions a year, and which after a few years would automatically decrease." They calculate that, if their proposals were adopted, we should stamp out consumption; save an annual expenditure, direct and indirect, of between seven and eight millions of pounds; preserve about 60,000 lives per annum; and "add enormously to the national health and the wage-earning capacity of the nation."

Such specious promises of surprising results might adorn attractively the prospectus of a speculative commercial undertaking, but are they warrantable or prudent as a deliberate expression of expert experience on a scientific question concerning which opinions are still divided?

The correspondence in our columns to which we have referred throws very grave doubts on the reliability of the statistics produced by the authors, upon which they depend very largely for support to their argument.

The question of sanatorium treatment, as at present conducted, is still in the crucible of professional opinion, and there are not wanting those who entirely distrust it as a final solution of the problem.

The possibility of a specific being found for the disease is no Will-o'-the-wisp to be contemptuously brushed aside, and if medical science repeats the story of her conquest tuberculosis may, before many more decades have passed away, be as independent of sanatoriums and dispensaries and segregation camps as pneumonia or enteric fever.

In a small volume entitled *Conquering Consumption*,[2] issued contemporaneously with the book of Dr. Latham and Mr. Garland, the author—Dr. Woods Hutchinson, Professor of Clinical Medicine in the New York Polyclinic—a distinguished writer, who is well known in this country, pillories all statistics regarding tuberculosis by reminding us of the old German tradition that "Jeder Mensch ist an Ende ein Bischen tuberkulöse." He succinctly summarizes the difficulties of treatment when he says, "The bacilli do not grow of themselves in our bodies, nor are they handed down to us from our ancestors. They are always imported—carried in our food, or sucked in in the air that we breathe; whirled in the clouds of dust raised either by the wind or the deadly broom; picked up from floors or sidewalks upon our shoes, or that volunteer street-cleaner, the trailing skirt; carried by flies, or dirty fingers, or filthy garments, and dropped on our food or in our milk; shot on the floor in expectoration, there to be crawled in by the children; sprayed all overything within three or four feet in a cough or sneeze; always carried somehow—never moving of themselves—and usually by some human agency or act! Break this link in the chain and you stop consumption!"

The elaborate and prodigiously expensive machinery which Dr. Latham and Mr. Garland would have us create seems an unwieldy instrument for the severance of this one small shackle in the etiological chain of the disease. In his discursive and attractive volume Dr. Woods Hutchinson advocates, as does every physician nowadays, fresh air, sunshine, food, and regulated exercise, but he enters no plea for an elaborate and State-subsidized sanatorium system. His recommendations are essentially practical, as, for instance, when he says: "The ideal place for the cure of tuberculosis is a camp where others are taking the cure at the same time. But where this, for any reason, is out of the question, a very fair substitute, giving within 15 or 20 per cent. of the same chances of cure, can be improvised in the average home."

We have thus called special attention to the question of the treatment of tuberculosis because it is at present very much in the air. Crusades are being promoted throughout the country to teach the people the fundamental truths about consumption, and with them we are in the fullest sympathy. By instructing the working classes on the nature, behaviour, and means of propagation of tuberculous disorders, and by inculcating the value of the great natural prophylactics, more will be done to limit the prevalence of the disease in future generations than any curative measures, whatever they be, applied to those already suffering from it. We are in no sense opponents of sanatoriums; but their mission is, in our opinion, educative rather than curative, and their multiplication to any such extent as that advocated by Dr. Latham and Mr. Garland would involve, it seems to us, inexpedient expenditure in which no ratepayers would quietly acquiesce until they were more assuredly convinced than by any arguments yet before them that "the game is worth the candle."

DENTAL SURGERY.

THERE are few people, unfortunately, who can disclaim all interest in the art and science of dentistry, so without hesitation we commend to general perusal the full account of the proceedings of the Section of Odontology, which appears in the earlier part of this issue. There is matter therein of moment to all and of some attraction even to those whose knowledge of what is now a high art is limited to the feel of the business end of a burr or to acquaintance with the command

[1] *The Conquest of Consumption: An Economic Study.* By Arthur Latham, M.D., and Charles H. Garland. London and Leipsic: T. Fisher Unwin. 1910. (Post 8vo, pp. 185. 4s. 6d.)

[2] *Conquering Consumption.* By Woods Hutchinson, A.M., M.D., Clinical Professor of Medicine, New York Polyclinic. London: Constable and Co.; Boston and New York: Houghton Mifflin Company. 1910. (Post 8vo, pp. 138; illustrations 6. 4s. 6d.)

"Breathe quietly," which commonly accompanies the imposition of the nitrous oxide mask. For ourselves, we are chiefly attracted by the evidence afforded of the depth to which the scientific spirit has penetrated the dental mind. We derive this proof from the indulgence of dentists in that game which the medical profession alone among its compeers has so far shown a disposition to play. This is the sport of sitting on the end of a branch and lopping it through at the tree-end purely *pro bono publico*, and with total indifference to the effect on the sitter. The general condemnation of bridge and crown work is an instance in point. It seems that whatever the skill and patience of the operator, absolute fit of a band to a tooth is so far impossible to obtain that no mouth which includes crowned teeth is ever likely to be clean and sweet except for the briefest interval. The corollary is that bridge work and crown work—one of the most paying branches of dentistry—must be avoided whenever any alternative is possible. To other people Mr. J. G. Turner's consideration of the value of teeth in the economy of modern man may appeal more strongly. It contains both humour and common sense, and results in a conclusion that, except as aids to beauty, teeth are comparatively useless. In other words, a person who possesses no natural or artificial teeth whatever can yet enjoy and digest such food as nowadays commonly makes its appearance on the dinner table; moreover, in health and comfort he is likely to be better off than those whose teeth are bad. The rider is that, when dealing with out-patients, there should be no hesitation in removing all unsaveable decayed teeth, and every tooth if need be, merely because the person is too poor to be able to secure a well-fitting set of artificial teeth; much the same considerations apply also to children whose temporary teeth are badly decayed. We do not gather, however, that Mr. Turner, or those who approved his views, support in any wise a contention recently put forward by an American physician. It expressed a belief that artificial teeth were hardly less harmful than septic roots, and that the more perfectly they fulfilled the function of natural teeth the greater the objection to them. This view would seem to have originated in the fact that when people suddenly regain the power of easy mastication they eat food which is not good for them. No doubt this is occasionally true, but it hardly seems a reason for decrying the general use of artificial dentures. It would be different if it had ever been shown that loss of teeth was a natural sequence of a lessened need for food. But, so far from this being the case, nothing in the science of dentistry seems more certain than that dental caries and resulting loss of teeth is the outcome of purely local causes. Indeed, it now seems to be admitted that the general and only essential cause of dental caries as a rule is the use of carbohydrate food, the readiness with which particles of it find lodgement in oral crevices, and the facility with which, when thus retained, these particles give rise to the formation of lactic acid as a result of the activities of certain almost omnipresent micro-organisms. In another paper grounds are put forward for holding that the old belief that mercurials and drugs in general are bad for the teeth is ill-grounded, the administration of the mercury and the existence of ill-grown teeth being the common outcome of the same set of circumstances.

INSURANCE ON THE CHEAP.

SEVERAL communications have reached us this week from different quarters, all relating to a proposition now being made to sundry medical men by the Pearl Life Insurance Company. It is to the effect that the recipients shall agree to accept special terms for the examining and reporting on those who are candidates for policies for small sums and in virtue of monthly instead of yearly or half-yearly premiums. The fees offered for the medical reports are as follows: If the sum assured is £25 then a fee of 3s. 6d.: if over £25 but not exceeding £50 then 5s.; if over £50 but not exceeding £100 then 7s. 6d. The special temptation held out to the medical men concerned is the belief that the number of candidates for insurance will be so large that it will pay them well to do the work at these rates; furthermore, the amount of work to be done is disguised by the supply of a special form for use in connexion with these cases. We use the term "disguised" advisedly, for although, thanks to close printing and the elision of superfluous words, the whole of the examination form is represented by a single sheet of foolscap, the amount of work required of a man who fills up the report conscientiously will be precisely the same as if the questions extended over ten pages. One is disposed to believe that the authorities of this company can never have been through an examination of any sort or have gone through it blindly. Otherwise they would appreciate the fact that there is no ratio between the simplicity and brevity of the form of a question and the difficulty and labour of answering it properly. The whole of the questions asked in the document mentioned could, for instance, be got into twenty-five words, but the difficulty of dealing with them would not thereby be lessened. The words "Assess the probabilities of long life in the case of X and give your reasons in such form that their soundness can be tested," would cover everything. The Pearl Company, in short, seems to be confusing clerical labour with scientific work, and to believe that the two can be shortened by the same process. The desire of the company to place life insurance at the disposition of the poorer classes is laudable, and its businesslike wish to make a profit thereby is equally commendable; but the sympathy of the medical profession should hardly extend so far as to make it ready to assist these efforts at its own expense, and the company should be left to devise a means of putting its speculation on a sound footing in some other fashion. If, in fact, its policies became popular among the classes for whom they are intended, and applicants were numerous, there would be a correspondingly large turnover, with the usual effect of reduction of the net clerical and administrative expenditure on each item; but no such considerations hold good in the case of the medical officers who would supply the reports, and on whose judgement, ability, and simpleness the whole safety of the speculation would depend. The more candidates they had to examine, the greater the number of cases in which they would do a guinea's worth for about a sixth of that sum. If many medical men fell in with the proposition of the Pearl Company it is they who would be the initial sufferers, but in the long run the company would suffer likewise. Conscientious as we medical men as a class are, there would be an almost inevitable tendency for the value of the reports and the amount paid for them to assimilate. *Naturam expellas furcâ, tamen usque recurret.*

INFANT AND CHILD MORTALITY.

THE steady fall in the death-rate at all ages which took place in England and Wales during the second half of the nineteenth century was a great source of satisfaction to sanitary reformers, although that satisfaction was tempered with some disappointment and apprehension owing to the absence of any corresponding decrease in the rate of mortality among

young children. In 1867 Ruskin wrote that one of the crowning and most accursed sins of the society of that day was the brutality with which it suffered the neglect of children. At that time, taking the country through, of every 100 children born, 15 died before reaching the age of 12 months, and in some districts the number reached even 20 or 25. During the next five and thirty years the same high mortality-rate prevailed, notwithstanding improved sanitary conditions, increased educational facilities, and greater national prosperity. With the opening years of the present century, however, a remarkable change has taken place, and, with the single exception of 1904, there has been in each of the past eight years a steady decline in the rate of infant mortality, until in 1909 it was only 109 per 1,000 births. This gratifying result has not been achieved by accident. It has been brought about because the public generally has realized the importance of saving infant life, and at the same time public health administrators have sought for and adopted remedial measures on rational lines. Foremost among these measures must be included those which have for their object the instruction of mothers in the upbringing of their offspring, together with the giving of practical assistance where such appeared necessary. The machinery employed has included paid and voluntary women health visitors, milk dépôts, schools for mothers, and similar institutions, while much assistance has been given by such legislative enactments as the Notification of Births Act and the Midwives Act. The adoption of these preventive measures or of any one of them has not been by any means universal, and for this reason alone there was need for such a review of the subject as that contained in the report which Dr. Arthur Newsholme has presented to the Local Government Board.[1] The object of the report, as stated in the preface, has been to determine on the basis of our national statistics, whether reduction of infant mortality implies any untoward influence on the health of survivors to later years; to indicate the communities which are characterized by a continuing high rate of infant mortality and to assess, so far as may be possible, the relative value of the different factors of excessive infant mortality. The report deals in the main with the question as it affects the administrative counties and certain groups of districts within them. Next year the chief urban centres of population, especially those having the highest relative mortality, will be considered. The reply to the first question which Dr. Newsholme set himself to answer is that those counties having high infant mortalities continue in general to suffer somewhat excessively throughout the first twenty years of human life, and that those counties having low infant mortalities continue to have relatively low death-rates in the first twenty years of life, though the superiority is not so great at the later as it is at the earlier ages. As to the second question there is overwhelming statistical evidence, marshalled with a skill with which Dr. Newsholme's writings have made us familiar, that in crowded centres of population infant mortality is the highest. With regard to the factors concerned in excessive infant mortality, the conclusion arrived at is that the highest mortality is to be found in those counties where, under urban conditions of life, filthy privies are permitted, where scavenging is neglected, and where the streets and yards are to a large extent not "made up" or paved. Such circumstances have a greater influence in determining a high death-rate among young children than the industrial employment of married women or early motherhood, and the opinion is definitely expressed that there is no essential causal relation between a high birth-rate and a high rate of infant mortality. An academic discussion upon the causes and prevalence of infant mortality would serve no good purpose unless the lessons it teaches are to be put to some practical purpose. How this may be done is very clearly shown by Dr. Newsholme. He recommends more detailed investigation of all deaths occurring in infancy as a guide to administrative action; inquiries into the circumstances attending stillbirths; the adequate training of midwives; the efficient administration of the Midwives Act; the adoption of the Notification of Births Act; and the making of arrangements for the giving of instruction in infant hygiene. He does not, however, fail to point out that the chief means of securing a low infant mortality are "efficient domestic and municipal sanitation, good housing, and intelligent and painstaking mothering."

[1] Thirty-ninth Annual Report of Local Government Board. Supplement to the report of the Board's Medical Officer containing a report by the Medical Officer on Infant and Child Mortality. London: Darling and Son. Price, 1s. 3d. Cd, 5263.

BRITISH HOSPITALS ASSOCIATION.

THE first annual conference of the British Hospitals Association will be held in the University Buildings, Glasgow, on September 29th and 30th, under the presidency of Mr. Cosmo Bonsor, Treasurer of Guy's Hospital. An address of welcome will be delivered on September 29th by the Hon. the Lord Provost, Mr. A. M'Innes Shaw. Among the subjects proposed for discussion are the following: "The Majority point of view on the Poor Law as regards General and Special Hospitals," to be introduced by Mr. C. S. Loch, Secretary of the Council of the London Charity Organization Society; "The Abuse of the Hospital and its Cure," to be introduced by Mr. A. Scott Finnie; "A Unified County Medical Service, and how it will affect the Voluntary Hospital," to be introduced by Mrs. Sidney Webb; "The Institutional Treatment of Tuberculosis," to be introduced by Dr. Nathan Raw, of Liverpool. The Local Honorary Secretary is Dr. D. J. Mackintosh, M.V.O., Western Infirmary, Glasgow.

DUBLIN HOSPITALS' TUBERCULOSIS COMMITTEE.

A QUARTERLY meeting of the Dublin Hospitals' Tuberculosis Committee was held on Thursday, September 1st, at 76, Grafton Street, at 5.15 p.m. Sir John Moore was in the chair, which was subsequently occupied by Sir Arthur Chance. Among those present were: Her Excellency the Countess of Aberdeen, Sir Charles Cameron, C.B., Drs. M. F. Cox, Drury, Frank Dunne, De la Hoyde, Garland, Lieutenant-Colonel Flinn, and the Honorary Secretary, Sir William J. Thompson. During the course of the proceedings letters were read, and Dr. Joseph T. Daniel's report for the past three months was presented. He stated that during the three months ended August 20th, 1910, he had made thirty-one visits to patients at their homes, and forty-one visits were made by patients to his house, a total of seventy-two visits. The summary of the reports of the two district nurses who are working amongst the consumptive poor of Dublin and the summary of the report of the district nurse working in Terenure were also submitted and approved. A subcommittee was appointed to draw up a resolution for submission to the committee with reference to the limitations imposed on notification of tuberculosis under the present regulations under the Tuberculosis Act. The committee considered the recommendation of the Dublin Hospitals Board that lady almoners should be appointed by each of the clinical hospitals, and that

such almoners should visit the homes of the patients attending the outdoor departments, in order to make the hospital treatment more effective. It was also recommended that these almoners should give instruction and advice in matters of health, fresh air, cleanliness, dietary, care of children, and in cases of necessity efforts would be made to obtain help suitable to each case by charitable organizations or through other means. The committee, having had two and a half years' experience of the value of this system through the results to be seen in the summary of the work accomplished by their nurses for tuberculosis patients, recommended by the hospitals and others, were in a position to support most strongly the recommendations of the Dublin Hospitals Board.

ANTIVACCINATION LEAGUE DECLINING.

THE National Antivaccination League has fallen on evil days. So far as support from the general public goes a very low ebb has been reached, and there are no signs of recovery. The income of the league, as acknowledged in the official organ, has declined to such an extent that it barely reaches an average of £20 per month for the current year. In 1909 it was over £40 per month. In 1908 it was over £60 per month, and in 1907 it was over £80 per month. This is a source of much uneasiness at head quarters—a very natural state of affairs, seeing there is less money to share among those who have made the antivaccination cause a sort of profession. It is not only on the financial side that trouble exists. During recent years we have on several occasions drawn attention to the dissensions that exist among the leaders, and the bitter policy of animosity towards the medical profession which has been so much in evidence has no doubt led to many withdrawals from the ranks. Thousands of pounds have been literally wasted in the futile attempt to establish the case against vaccination, and the leaders have frankly confessed that, having regard to the "objects" of the league, their efforts have been crowned with failure. It is not surprising, therefore, that the league should be declining. Sympathy with the methods of advocacy adopted by the official organ will be still further alienated in all lovers of fair and reasonable controversy by the fact that it has been found necessary in two recent issues of the *Vaccination Inquirer* to publish an apology to members of the medical profession and withdrawal of statements and comments. In July an apology was tendered to the physicians of his late Majesty King Edward. The *Inquirer* had suggested in a previous issue that the late King's physicians were "grossly neglectful" or "grossly ignorant." In the September number an apology, withdrawal, and expression of regret was addressed to a London public vaccinator. This had reference to a suggestion that a more proper verdict at an inquest on the body of a child who had died from natural causes would have been one of manslaughter. The public vaccinator appears to have acted very generously in accepting the apology and a cheque to cover costs; otherwise the funds of the declining cause might have been seriously drained.

THE PROBLEM OF ARTIFICIAL ILLUMINATION.

DR. FORTIN[1] considers that the problem to be solved before we obtain an ideal artificial light is to synthesize daylight by artificial means. Daylight is characterized by its richness in blue rays and by its diffused light. Sunlight is diffused, as Tyndall showed, by the fine particles suspended in the atmosphere. But for their existence, the sky would probably appear black and objects illuminated by the sun would present zones alternately too brilliant or too obscure. Such a world would be very fatiguing to the eyes, which would be compelled to look at objects varying so greatly in brilliancy. Again, sunlight differs from most artificial light by its richness in blue rays of long wave length. Fortin does not agree with those who would have us believe that blue light is harmful; he says all nature is against this view. The sky is blue and the sea is blue, and nowhere are great masses of red to be found. Solar light contains ultra-violet rays, but those emitted from artificial light are largely arrested by the glass which often shields the light. Fortin even states that he had worked for long periods with the mercury vapour lamp without sustaining the least harm, and he observes that photographic workers cannot work in red light for an unlimited time. The author has succeeded in obtaining the ideal light by surrounding three Edison incandescent bulbs with a spiral mercury vapour tube. This combination is perfectly satisfactory. It is enclosed in an opal globe which mixes the light of the incandescent lamp, too rich in red rays, with that from the mercury vapour, which is rich in blue rays. The result is an almost perfect synthesis of daylight. Again, the mercury vapour lamp requires an electric resistance which is supplied by the glow lamp. We are unable to agree with the author upon the question of the harmlessness of blue light. There is not the slightest doubt that photographic process operatives who work with the uviol mercury vapour lamp suffer from severe ophthalmia electrica unless they shade their eyes with yellow glass. Excessive exposure to sunlight has also a deleterious effect upon blind individuals who are not protected by pigmented skin from the action of ultra-violet rays. This is so much the case that it is stated that blonde families tend to die out in the tropics. An oil lamp is very poor in ultra-violet rays, and is the best for use by students. Ordinary gas light contains little ultra-violet light, but the incandescent mantle emits them. The light from a carbon filament lamp contains more than that from incandescent gas, and metallic filament lamps emit still more violet rays. The arc lamp is comparatively rich in ultra-violet rays, but the uviol mercury vapour lamp has them in the greatest abundance, and is in consequence the worst possible light for the eyes. It has been installed in many factories because it does not throw a strong shadow and is very economical, using little current for the light obtained.

[1] *Recueil d'Ophtalmologie*, May, 1910.

THE COST OF PROGRESS.

IN humanitarian circles it is customary to speak of civilization as a disease, and to compare the noble savage and the effete citizen in a manner greatly to the latter's disadvantage from the point of view of health and constitution. Facts do not lend unqualified support to this kind of idealism, yet it must be confessed that the list of industrial diseases, already formidable, is a constantly growing one, and that every new invention carries attendant evils in its train. Among distinctively modern diseases may be instanced the poisoning produced by the fumes of calcium carbide or acetylene; the headache, dyspepsia, cardiac failure, and sensory disturbances traceable to the manufacture and use of aniline dyes; the frothing of the blood, known as caisson disease, which follows too rapid decompression in workers at the foundations of bridges; the functional neurosis known as telegraphists' cramp, resulting from the use of the Morse key; and the numerous affections

of the skin, lungs, digestive tract, and eyes due to irritation by organic or inorganic dusts of industrial origin. Among the last-named special mention may be made of "shoddy fever," caused by the dust arising from pulverization of wool-containing rags. A modern danger *par excellence* is that of electrocution by contact with live wires, to which innumerable workers are daily and hourly exposed. Direct currents of 700 volts pressure and upwards and alternating currents of half that amount are officially recognized as dangerous to life, but even lower charges have produced fatal results. With the sad cases of Dr. Hall-Edwards and Dr. Kassabian fresh in their minds, medical readers do not need reminding of the terrible potentialities of the Roentgen ray. The conquest of the air is proving so costly to life that there is a growing feeling that its commercial exploitation by health and pleasure resorts in the form of "flying weeks" has been altogether premature, and should for the present be stopped. If therefore we cannot admit that civilization is itself in essence pathological, neither can we deny the costliness of its benefits or the pathogenetic associations of its every forward step.

CATTLE AND SLEEPING SICKNESS.

WHEN in Uganda recently, Colonel Sir David Bruce and his fellow workers on the Sleeping Sickness Commission carried out a series of experiments to ascertain if cattle may act as a reservoir of the virus of sleeping sickness (*Trypanosoma gambiense*). Up till recently animals have not been viewed with suspicion as regards the carrying of this parasite, but now, after the work mentioned above, they will have to be. The Commission proved by experiment that cattle may act as a reservoir of the virus of sleeping sickness, and that healthy animals may be infected from them by means of *Glossina palpalis*. They also proved that cattle in the fly area do naturally harbour *Trypanosoma gambiense*, and that therefore it is possible that the cattle and antelope living in the fly area may act as reservoirs, and so keep up the infectivity of the *Glossina palpalis* for an indefinite period, but they admit that up to the present there is no definite proof that this actually does take place in nature. If later it is shown that this really does take place in nature, then the chances of stamping out sleeping sickness along an area such as the lake shore of the Victoria Nyanza will be practically *nil*, and all that will remain will be to keep the natives from living in this fly area. The loss of so much fertile land will necessarily be felt severely by a rising colony such as Uganda, but, after all, there would seem to be no alternative. The discussion on the subject will be found in the proceedings of the Section of Tropical Medicine.

INTERNAL AND EXTERNAL SECRETION IN THE HEALTHY ORGANISM IN THE LIGHT OF VITAL STAINING.

UNDER the above title Professor Goldmann, of Freiburg, has reprinted an article which appeared in the *Beiträge zur klinische Chirurgie*. By means of vital staining by subcutaneous injections of a solution of pyrrhol blue (a condensation product of tetramethyl-diaminobenzhydrol with pyrrhol) he has succeeded in demonstrating a special class of cell which is found in the connective tissues and the stroma of various organs. At the point of injection the skin of the animal becomes blue, and the coloration spreads till the whole skin is a bright blue. The aqueous humour, the bile, the milk, the faeces and the urine are all stained blue at times, and in most cases this staining of the external secretions seemed to be dependent on staining of the blood serum. The secretions might be blue when the glandular epithelium was quite unstained. Thus in the liver the gland cells were quite unstained whilst the Kupfer cells were deeply stained. The cell staining was not a necrotic phenomenon, for artificial necroses were unstained, nor was it simple imbibition from the serum, for the endothelium of the blood vessels and leucocytes were quite unstained. The cells in the connective tissue which took up the stain are identified by Goldmann with the resting *Wanderzellen* of Maximow, the klasmatocytes of Ranvier, the adventitia cells of Marchand, and the *cellules rhagriocrines* of Renaut. Throughout the monograph Goldmann refers to them simply as "pyrrhol cells." The question now is, Are these cells of any great importance; or, rather, is vital staining by means of pyrrhol blue an indication of any important function? There seems to be already very good evidence that this is the case. Thus, the choroid plexus is the only structure of the nervous system which is stained. Perhaps the most remarkable fact is that when one of the stained rats becomes pregnant the colour vanishes from the skin without there being any corresponding increase of its excretion in the urine. On *post-mortem* examination of the animals, it was found that the chorionic epithelium was very deeply stained, although the embryo was unstained. The amniotic fluid was stained. Similarly, if a tumour developed, the blue pigment migrated to the region of the tumour and was found in the surrounding connective tissues; if one ear of an animal was cauterized before the initial injection was given, it was found that the stain first appeared in the region of the burn. The observations lend support to the conclusion that the connective tissue is a huge gland with most important functions. The experiments are now being continued in pathological conditions, the results of which will be reported later.

A MONUMENT in memory of Dr. Niels Finsen, to whom we owe the light treatment of lupus and other diseases, was recently unveiled at Copenhagen.

IT is with much regret that we announce the death of Mr. John Langton, Consulting Surgeon to St. Bartholomew's Hospital, which occurred on September 11th, at the age of 70. We hope to publish an obituary notice in a later issue.

THE suite in attendance on Field-Marshal His Royal Highness the Duke of Connaught during his visit to South Africa in connexion with the opening of the first Union Parliament will include Captain E. S. Worthington, R.A.M.C., as medical officer.

MR. W. HARRISON CRIPPS, has been presented with a silver bowl, richly gilt, with caryatid handles, by the members of his surgical classes on his retirement from the appointment of senior surgeon to St. Bartholomew's Hospital.

WE regret to announce the death of Dr. Lombe Atthill, of Monkstown Castle, co. Dublin, which occurred on September 14th on the platform of Strood Railway Station, Rochester, after hurrying to catch a train. Dr. Atthill, who was born on December 3rd, 1827, retired from practice in 1898, and the recollections of his long professional life were published in the first four numbers of the BRITISH MEDICAL JOURNAL for 1910. We hope to publish an obituary notice in a subsequent issue.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

WEST YORKSHIRE.

REPORT OF THE BRADFORD SCHOOL MEDICAL OFFICER.

THIS exhaustive report of Dr. Lewis Williams, school medical officer to the Bradford Education Authority, for the year ending December 31st, 1909, demands more than the usual amount of notice, for various reasons. It contains numerous details of different types of school buildings, methods of inspection, and treatment at the school clinic.

It begins with the statement that education authorities are deserting the central hall type of school for the more hygienic pavilion model. Mechanical ventilation is often unsatisfactory, and natural ventilation is much preferable. Many of the schools are provided with baths, the shower bath being preferred on account of its greater cleanliness, cheapness, and applicability to several children at the same time. Swimming baths are also provided at some schools.

Methods of Inspection.

A notice is sent to the head teacher, the parent is invited to be present, and the examination is carried out in accordance with the Board of Education's schedule. The results are recorded on a health schedule, with room for further remarks after any subsequent examination. The schedules are classed as "normal" and "abnormal." The latter relate to children who need watching or require treatment; such children are re-examined again in a month's time. As soon as a child ceases to require watching the schedule is transferred to the normal bag. Each child is re-examined before leaving school. Altogether, 10,466 children were inspected in one way or another during the year; 3,542 were inspected in ordinary schools, of whom 1,533 were placed in the "abnormal" class. The number referred for actual treatment was approximately 16 per cent. of all those examined. The time spent on inspection was some five to seven minutes per child. Numerous details of the incidence of infectious diseases, of previous illnesses, of the general conditions, and of the defects and diseases found are given. Special stress is laid on the evil effects of adenoids and enlarged tonsils on children. Verminous children are excluded from the schools, the parent instructed to clean them, and, if necessary, the school nurse sees that any special method of cleansing the head is fully carried out.

Treatment.

Considerations of the various methods adopted by different authorities for the treatment of medically inspected school children follow. It does not appear that the Bradford authority has demonstrated the fulfilment of one of the requirements of the Board of Education, namely:

> To secure that only those children shall be treated in a school clinic for whose treatment adequate provision cannot otherwise be made, whether by the parents or by voluntary associations or institutions, such as hospitals, or through the agency of the Poor Law.

No inquiry is seemingly made into the financial position of the parents, a matter of the utmost importance, which, if neglected, inevitably leads to abuse. Finally, Dr. Williams enters into a lengthy dissertation on the functions and the advantages of school clinics and the objections alleged against them. In order to bolster up his arguments in favour of school clinics, he has recourse to insinuations against the capacity of the general medical practitioners of Bradford; and not of its medical practitioners only, but even of the hospitals in the neighbourhood.

Thus he quotes and evidently adopts Dr. A. H. Hogarth's statement:

> Many members of the medical profession appear quite devoid of conscientiousness. They constantly certify children as free from infectious and contagious disease and as fit to attend school when they are *obviously* suffering from ringworm or scabies, and *sometimes even in diphtheria their action is not above suspicion.* For example, out of 240 certificates of freedom from ringworm, no less than 234 were proved to be inaccurate on microscopical examination of specimens from the affected cases. . . .
>
> The school clinic has much to recommend it—its existence is amply justified by the many advantages which it possesses over *any other proposed scheme of treatment.* Having a knowledge of the conditions from the point of view of the child, the school, and the school curriculum, they (the school medical officers), are able to act *entirely in the interests* of the children, and of the authority to whom they are responsible. . . .
>
> It will probably be absolutely necessary that all children who have suffered from ringworm shall be examined by the school medical staff before they are permitted to return to school. At present children who produce a medical certificate of cure are readmitted by the head teacher. The experience of the year 1909 compels one to say that this arrangement is not at all satisfactory. Of the children so readmitted during the year about 75 per cent. were found on microscopical examination to be still affected with the disease and in an infectious condition. . . .
>
> It is useless our urging parents to obtain medical treatment and excluding their children from school, if there be no *adequate* provision for such treatment . . . the education authority can offer *adequate* provision for treatment. . . .
>
> Objection is also raised by general medical practitioners. In the past, at any rate, *they have failed in their efforts to keep the children in good health.*

The Executive Committee of the Bradford Division of the Yorkshire Branch has considered the matter, and has sent a letter of protest to the press in reference to Dr. Williams's remarks, which have been widely quoted locally. It was thought by the latter body that a *modus vivendi* had been discovered some months ago with the local education authority after an interview of its Chairman and Secretaries with Dr. Newman, of the Board of Education, and the Bradford school medical officer. Apparently Dr. Williams does not desire this, however obvious to any impartial observer is the necessity for a working agreement between the school clinic and the local practitioners. With him it is to be war *à outrance.* The medical men of Bradford, however, have nothing to fear from the contest. The answers to the reflections made in the medical officer's report are so obvious that it is really not worth while giving them here. But the suggestion made all through the report that the treatment received at the school clinic is in all its branches of the highest specialized character is too ridiculous to be discussed. The school medical officers are not only busily occupied in inspecting, but they may themselves be called general practitioners. They are treating skin diseases, infectious diseases, eye diseases, ear diseases, throat diseases, taking refractions, carrying out electrical treatment, and numerous other duties that disqualify them from giving an authoritative opinion in any one branch. How it can be expected that the general practitioners will accept the statistics and the deductions inferred from them as reliable it is difficult to understand. It is to be hoped that Dr. Williams will withdraw his statements.

The following is the letter to which reference has been made. It appeared in the *Yorkshire Observer*, *Bradford Daily Telegraph*, and the *Bradford Argus* of September 8th:

> Sir,
>
> It is to be regretted that in the recent report of Dr. Williams to the Bradford Education Committee, certain reflections on the medical profession were made which were widely quoted in the local press. The Executive Committee of the Bradford Division of the British Medical Association, as representing the medical practitioners of the city, wishes to state that while frankly admitting the beneficial effects of medical inspection of school children, and accepting the school clinic as a *fait accompli*, considers that there are grave grounds for criticism of the report referred to. Surely it must be acknowledged that for the medical inspection of school children and the efficient working of a school clinic few things are of more importance than the maintenance of good relations between the education authorities and the general practitioners. Notwithstanding this obvious necessity for amicable co-operation, the medical officer to the education authority has freely hurled all sorts of insinuations and unsustainable charges against the general body of a profession to which he has the honour to belong. These charges involve reflections not only on its professional capacity but also, and this is of far greater import, on its personal honesty and good faith. It is true that some of these charges are contained in a quotation from another source of no great authority. But no allowance can be made for this fact, for if the words are not Dr. Williams's own, they are his at any rate by adoption. That

the most careful and conscientious practitioner has his limitations and that even the medical officers of school clinics are not infallible we humbly acknowledge, but we deny *in toto* that, as the report says, "Many members of the medical profession appear quite devoid of conscientiousness," and also "They have failed in their efforts to keep the children in good health."

Having made this protest we leave the rest to the judgement of the public, who well know how much they are indebted to the zeal and public spirit of the medical profession for the enormous diminution of the death-rate and the great advancement of sanitation and hygiene of every sort in recent years, and all this long before the advent of school clinics.—We are, Sir,

Yours faithfully,

J. METCALFE,
Chairman.
J. BEATTIE DUNLOP.
J. WHERRY WILLSON,
Co-Secretaries of the Bradford Division.

MANCHESTER.

MEDICAL EXAMINATION OF ENGINE DRIVERS.

A GOOD deal of feeling has been aroused among railway men in the Manchester district by the action of the Lancashire and Yorkshire Railway Company with regard to medical certificates of fitness or unfitness for work as engine drivers. It is understood that the Board of Trade has made representations to the railway companies on the question, and has urged that the medical examination of engine drivers should be strictly enforced. On one occasion an engine driver fell dead on the footplate, and it was shown at the inquest that he had been suffering from heart disease; only recently a pointsman was found dead in his box, and other incidents of a similar nature have awakened the railway companies to the possible serious danger to passenger trains if engine drivers or other responsible servants were subject to momentary attacks of faintness or to sudden breakdowns of any kind while on duty. The men themselves and their trades unions, of course, readily admit that it is the obvious duty of the companies to see that their men are physically fit for their work, but the engine drivers of the Lancashire and Yorkshire Railway Company are finding fault with the way in which this is done. Quite recently a driver who had been in the employ of the company thirty-seven years was reduced to the position of shed sweeper, his wages being reduced from 7s. to 3s. a day, because he failed to pass a medical test carried out by the company's medical officer, though it is said that two independent doctors declared the man quite fit for duty as a driver. It is said that varicose veins, ruptures, and marks of old injuries sustained at work has been held to disqualify a driver for remaining on the footplate, and the men are claiming that such conditions ought not to prejudice a man. When a driver has been in receipt of sick pay it is acknowledged that he should produce a medical certificate of fitness before he resumes work, but it is claimed that when he has been off duty for a few days, perhaps with only a cold, he should not be required to undergo an examination at the hands of the company's doctor as strict as one for life insurance, and that the ordinary certificate of any doctor ought to be sufficient. At present any such certificate has to be submitted to the company, and in many cases the men are required to undergo another special examination by the company's doctor. The secretary of the Associated Society of Locomotive Engineers and Firemen says that in some cases the company's doctor has disagreed with the certificate of fitness given by another doctor, and the society has sent the man to a specialist, who has found that the company's doctor has made a mistake, and the man has been reinstated. In other cases, though the specialist has agreed with the diagnosis of the company's doctor, there has been nothing seriously wrong, and, as the society contends, nothing to unfit the men for engine driving. The strictness of the medical test has had the effect of preventing the men going off duty for what they consider to be slight ailments which may, after all, be serious, and they claim that they should in all cases have the right of appeal from the company's doctor. It is only fair to say that the company's view of the matter has not yet been made known, but the men evidently feel much irritation at the way in which the medical tests are carried out, and threats have been made that unless some more satisfactory arrangements are made, there may be a strike of engine drivers and firemen on the Lancashire and Yorkshire Railway.

This question of medical certificates is also assuming a serious aspect in Lancashire, not only in connexion with railway men, but in various other directions. Colliery owners are engaging their own doctors to check the certificates of the men's club doctors. Even judges, under the Compensation Act, often seem to assume as a foregone conclusion that a doctor engaged by a workman will naturally give a certificate favourable to the workman, while a doctor engaged by the masters will naturally give an opposite certificate. Within the last few weeks the Chairman of the Manchester Education Committee publicly stated that a certificate of unfitness for school could easily be got for 6d., the interpretation of this being only too evident, though it was not intended as a general imputation on the profession. Neither is it at all rare for doctors of workmen's clubs and friendly societies to have their certificates questioned, and great unpleasantness has been caused on at least three occasions in Manchester within the last two years by deliberate attempts to throw suspicion on the bona fides of medical certificates. One case occurred where a club doctor was dismissed by a small clique of members of the club because he had given a certificate that a man was fit to resume work, and the man had gone to a private doctor, paid him a fee, and obtained a certificate of unfitness for work. There will, of course, always be room for honest differences of opinion as to the exact day when a man is fit to resume work after an illness, and when there is the least doubt some slight delay in "signing off" will always be justifiable, but the matter is becoming one in which the honesty of the doctor's certificate is questioned. Attempts are made to place medical men in positions where they are given to understand that it will be to their interest to certify in a particular way, and the public are only too ready to believe that self-interest counts for more than honesty, with the result that there is a great distrust of medical certificates. It is impossible to overcome this by mere asseverations on the part of the doctor that he has honestly given an unbiassed opinion. One thing, at any rate, can be done—that is, absolutely to refuse any position, especially in connexion with clubs, where there is not a proper guarantee given that the doctor will be protected in the discharge of his duties. That is not the case in many of the clubs at present.

THE TREATMENT OF PHTHISIS IN MANCHESTER.

Some months ago a deputation of the Chorlton Board of Guardians waited on the Sanitary Committee to impress on it the urgency of further action in regard to phthisis in Manchester. It was suggested that the Sanitary Committee should provide a sanatorium for 200 patients, and the guardians held out the hope that they would assist families impoverished by phthisis. The Medical Officer of Health was instructed to report on the proposals. His report is to the effect that when voluntary notification of phthisis was adopted ten years ago in Manchester it was thought that more good could be done by giving instruction in precautions to be adopted and by securing cleanliness in the people's homes than by the erection of a sanatorium. But experience has shown that the Sanitary Committee has been greatly assisted by having accommodation to offer at the Crossley Sanatorium and at Clayton Vale. There has been a decided fall in the death-rate from phthisis, especially in those districts which have had the advantage of instruction and control. The influence of poverty in the production of phthisis and of phthisis in the production of poverty has become more and more evident. It has been calculated that the loss of wages among the notified cases in 1909 amounted to at least £48,000, and

it would be worth while to spend a large sum of money to reduce this loss. The deaths from phthisis in Manchester exceed 1 000 a year, and assuming that the cases are infective for an average of three years, there are quite 3,000 infectious cases to be dealt with of phthisis alone, apart from other infectious cases suffering from open tuberculous diseases.

At least three methods are needed to combat the mortality from phthisis: (1) Isolation in hospital. The beds at present available for this purpose number 585, including the union hospitals. But the difficulty here is that, as soon as patients get a little better, they leave the hospitals and soon become again infectious. Still there is a considerable section of the industrial classes to whom it would be a great gain to have access to hospital treatment. Many would refuse to enter a pauper institution, and while some could pay a certain part of the cost of treatment, others not only cannot pay, but cannot be induced to enter a hospital, because absence from work would reduce their families to poverty. (2) A second line of work consists in the notification of phthisis, in visiting and instructing the patients and their families, and in getting for the families such assistance from existing charities as is possible. Moreover, an effort is already made to secure some precautions in workshops, common lodging-houses, and public-houses; while in public vehicles a by-law is in force which to some extent removes sources of infection. The work done under the scheme of voluntary notification is mentioned as the most potent means of reducing phthisis in recent years. (3) The third line of work consists in giving adequate assistance to the families of consumptives. The offer of the Chorlton guardians can only apply to South Manchester, as the rest of the city is under other boards; but Dr. Niven thinks that the stigma of pauperism might attach to the scheme, and partly frustrate it, and that the magnitude of the work has hardly been realized.

It is generally agreed that unless an early diagnosis can be made there is not much prospect of cure, but several obstacles are mentioned to this early diagnosis. First of all the working men often abstain from inquiring into the causes of their illness until it is too late. Diagnosis, too, is often difficult in the very early stages, and the more penetrating methods of diagnosis, such as injection of tuberculin, are not so generally used as they ought to be. It is admitted that the German system of sickness insurance has greatly reduced the amount of phthisis in that country, though ameliorations in the general lot of the people must have had a great influence. Some fear is expressed that, if sickness insurance is adopted in England on the German system, numerous cases, which do not recover under treatment, will have to be discharged when their insurance expires, and we may still be left face to face with the present difficulties. In such cases there would be nothing for it but a judicious use of public funds. The fact seems to be overlooked that even after the personal insurance is expired in Germany, the enormous surplus funds of the insurance department are used to continue treatment as long as is necessary without resort to public funds.

Another obstacle to efficient treatment is that there is no power of compulsory detention in union hospitals, and even if there were, the probable effect would be to cause people who now enter to remain in misery at home infecting their families. Some cases, too, would have to remain in hospital for many years, which would be enormously expensive, and the utmost that could be expected from hospital treatment is some reduction of the evil. Another difficulty is the inadequacy of the staff engaged to attend to the notified cases. So far the staff has not been able to pay more than one visit to each case notified, whereas every case needs carefully following up and keeping under observation.

The following are given as among the procedures from which further progress may be expected:

1. Elementary instruction of the public as to the precautions to be used and systematic instruction to the patients themselves. Public lectures by medical men are recommended, a fee of 2 guineas being paid for each lecture by the Sanitary Committee.
2. Additional staff to deal with cases notified, which are now fairly numerous since the order of the Local Government Board came into force requiring all cases under the Poor Law to be notified to the medical officer of health.
3. More hospital and sanatorium provision. Most of the notified cases would require not less than twelve months' treatment, and for this at least 200 more beds would be needed, the cost of which would be at least £15,000 a year.
4. Compulsory notification of all cases of phthisis.
5. Accommodation for children suffering from tuberculosis, such as a combined hospital and school. A school for ailing children without definite symptoms but probably in the pre-tuberculous stage would be beneficial.
6. A system of compulsory insurance such as that adopted in Germany, but until this is established provision out of public funds should be made, for which it is estimated that about £5,000 a year would be necessary. This special provision should not be given unless strict measures are taken to see that it is properly expended in procuring good food, good clothing and sanitary conditions.

The total annual expenditure necessary to carry out these recommendations is put down at about £21,000.

SMALL POX IN COTTON.

The occurrence of sporadic cases of small-pox from time to time among workers in cotton mills at Stockport and other places in Lancashire has led to the idea that the infection was conveyed in cotton, and in an address delivered at the International Conference on Diseases of Occupation, held at Brussels, Dr. Corbin, the Medical Officer of Health for Stockport, raised the question whether such cases might not be held to be "accidental injuries" coming under the Workmen's Compensation Act. It is recognized that the difficulty of proving the source of infection may be almost insuperable in individual cases. Nevertheless in some instances, since the possibility of cotton being the carrier of the infection was first mooted, the chain of evidence connecting cases of small-pox in Lancashire with cases occurring among the native gatherers of cotton in Egypt and the States has been followed out very completely, and every care is now taken to guard against native workers suffering from the disease having anything to do with the cotton. As Dr. Corbin points out, even if a native engaged in gathering the cotton were actually suffering from the disease, the probability of the infection being conveyed is extremely slight. In the first place, there must be considerable attenuation of the virus before the material reaches the hands of the workers in England. Moreover, there would be little chance of infection with this attenuation unless the infective material were inhaled or carried directly to the mouth. Further, persons employed in piecing only occasionally use the saliva as a means to facilitate the process, and the probability of the strands requiring to be pieced just at the point where infected material occurred is very small. In addition, the individuals must be susceptible to the disease, and this is uncommon in vaccinated persons and almost non-existent in re-vaccinated persons. Dr. Corbin's inquiries show that it is almost impossible to prevent with certainty the infection of cotton by the natives, and as one case may give rise to an epidemic, the necessity of vaccination and revaccination of all cotton workers ought to be insisted on.

BIRMINGHAM.

PROVISION FOR THE INSANE.

THE insane of Birmingham are treated at five institutions. The three chief institutions are Winson Green, Rubery Hill, and Hollymoor asylums, the last two being devoted to chronic and incurable cases. There are two smaller establishments, known as the Leveretts at Handsworth, and Glenthorn at Birches Green, which are used for private patients and as convalescent homes. The authorized accommodation in the asylums is as follows: Winson Green, 624; Rubery Hill, 817; Hollymoor, 604; the Leveretts, 40; and Glenthorn, 40; making a total of 2,125. The average resident number for last year was 1,819, or about 300 below the authorized accommodation. Of

the patients, 226 were discharged recovered, 27 were removed on the application of friends, 232 were taken to other asylums, and 163 died. There were 936 patients chargeable to the Birmingham parish, 2 to the city, 506 to Aston Union, 190 to King's Norton Union, 7 to the prison authorities, and there were 61 private patients and 108 out-city patients and contract patients. There was at one time a contract with the London County Council for the maintenance of 200 patients, but although this contract has been terminated, Birmingham still takes a large number of patients from outside authorities.

The asylum administration involves a cost to the rates of £24,000 per annum, which is equivalent to a rate of 2½d. in the £. This amount is required to pay interest on loans and sinking fund. The institutions are self-supporting; in fact, the sums received from Poor Law authorities and private persons for the maintenance of inmates are more than sufficient to meet establishment charges, the surplus, about £2,500 a year, being carried to the building account. The capital expenditure on all the asylums amounts to £533,815. Loans have been raised to the extent of £534,257. A sum of £199,145 has been provided for redemption purposes, so that the capital expenditure remaining to be provided for is £334,670. Of the total capital expenditure, £94,720 has been spent on Winson Green, £165,012 on Rubery Hill, and £274,082 on Hollymoor Asylum. The average annual cost of maintaining the five institutions, including salaries, wages, provisions, clothing, and other necessaries and repairs to buildings, is £54,000. The annual cost of maintenance waa defrayed last year by the following sums: From inside unions, £47,300; pauper lunatics outside Birmingham, £600; contract patients, £4,000; for maintenance of private patients, £3,000; and from the Treasury for criminal patients, £120.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

SUTTON HOLIDAY HOME AND "PREVENTORIUM."

THE first annual meeting of the Sutton Holiday Home was presided over last week at Sutton by the Lord Lieutenant, and was attended by a large number of the public. The object of the home is to provide fresh air, good food, and rest for persons who, although not actually suffering from organic disease, are in a debilitated state which renders them liable to be attacked by tuberculosis or other infective diseases. During this, the first year of its existence, it has received 125 patients in all, most of whom, after a short stay, were sufficiently benefited to return to active work. Amusements of all sorts are provided at the home, and a special feature is made of providing a very nourishing diet. The Lord Lieutenant, in addressing the meeting, referred to the opposition which was offered by some of the residents at Sutton to the establishment of such a home in their midst, and said that for his part he would regard such a home as likely to enhance the value of neighbouring property rather than the reverse, for instead of finding as formerly a row of empty cottages, one found cottages filled with cheerful people who were enjoying themselves in a healthy and rational way. Many will agree with the view taken by the Lord Lieutenant, but in doing so it is necessary to remember that the opposition referred to was to the establishment of a tuberculosis sanatorium, and not to the present home. As soon as the promoters of the home had given guarantees that no tuberculous patients would be admitted to it most of the opposition was withdrawn. On the question of the danger to a neighbourhood of the establishment of a tuberculosis sanatorium, opinion appears to be divided; and it is possible that strenuous opposition would still be offered by the inhabitants of seaside resorts to the utilization of their disused coastguard stations for such a purpose. Lady Aberdeen also addressed the meeting, and referred in detail to the work carried out in the home. She hoped that it would be the first of many similar institutions throughout Ireland. The starting of this "preventorium" was rendered possible by the gift of over £500 from their friends in Boston, U.S.A., but she hoped that in future sufficient subscriptions would be available in Ireland itself for its support. Sir John Moore next proposed:

> That the grateful thanks of this meeting of the Women's National Health Association be tendered to the friends of the Association in Boston who equipped and started the Holiday Home and Preventorium.

This was seconded by Sir John Lentaigne, and the proceedings terminated.

NATIONAL MEDICAL SERVICE.

At a special council meeting of the Irish Medical Association, held on August 25th, it was resolved:

> That a sum not exceeding £200 be voted, to be used jointly with the £300 granted by the British Medical Association, for the purpose of furthering the views of the joint committee of the British Medical Association and the Irish Medical Association relative to a State medical service being formed.

Two days later the joint committee referred to in this resolution met and decided to appoint paid organizers to visit members of the profession in Ireland in order to promote united action in the furtherance of reform of the Poor Law medical service, the reform approved of by the committee itself being on the lines of the recommendations of the Vicereagal Commission. A circular letter was drafted, and ordered to be sent to every medical practitioner in Ireland, with a request for an early reply. The letter summarizes the proposals that the committee favour, and at the same time assures existing dispensary officers that none of the proposals will result in any existing officer being worse off in regard to either status or emoluments. Legislation is believed to be inevitable, and possibly imminent, and it is all-important that the voice of the profession should be effective in shaping it. The proposals advocated by the committee are:

> (1) That the public medical services (except lunacy) should be unified and placed under the control of a board containing a due proportion of medical men elected by the service, with laymen chosen by the county councils. (2) The establishment of a national medical service, entered by examination, and administered by this board. (3) Adequate payment to be provided for by the State, and payment to be progressive according to service. (4) Promotion to be by merit to all positions in the service. (5) The establishment of a properly organized public health service, and also of a system of hospitals accessible to all requiring treatment, and free from the workhouse taint.

JERVIS STREET HOSPITAL.

The managing committee of Jervis Street Hospital in its report for 1909 states that during the year it has commenced the building of a new dispensary, for which purpose a sum of £1,000 has been placed at their disposal by the trustees of the Pembroke Irish Charities Fund. The new building has been an urgent necessity for many years. It will contain accident reception rooms, consulting rooms, a pharmacy and an emergency operation theatre. It is expected that it will be completed and ready for use at the end of next month.

ENTERIC FEVER AT MANORHAMILTON.

A report by Dr. Brendan M'Carthy, Local Government Board Inspector, on the occurrence of a large number of cases of enteric fever in the Manorhamilton Dispensary District, was received at the last meeting of Manorhamilton District Council. Dr. M'Carthy states that 40 cases of enteric occurred in the district during this year, and that 7 cases had occurred in the neighbouring Dromahare district since the beginning of May. During the last four or five years enteric has been endemic in the district, and the present outbreak is, he believes, caused by the use of contaminated separated milk. Dr. M'Carthy suggests that in future frequent visits should be made to creameries to ascertain whether pasteurization was being rigidly carried out, and that all water supplies at creameries should be regularly examined to guard against possible pollution.

VETERINARY DISPENSARIES.

The first of the veterinary dispensaries organized by the Congested District Board was opened in the

Ballyhaunis district of county Mayo on September 1st, and Mr. T. J. Flynn, M.R.C.V.S., has been appointed as veterinary officer. He will attend periodically at each of the principal centres of population throughout his district to give veterinary advice to bona-fide farmers resident in congested districts, the valuation of whose holdings does not exceed £10. A regular scale of fees has been drawn up, including fees for the common veterinary operations. It is expected that many other dispensaries will be opened throughout the congested districts before the end of this month.

LEITRIM COUNTY INFIRMARY: RESIGNATION OF THE MEDICAL OFFICER.

Universal regret was expressed at a recent meeting of the committee of the Leitrim County Infirmary on the receipt of a letter from the medical officer, Dr. Bradshaw, stating that, on account of his advanced age—83 years—and failing health, he was compelled to give notice of his determination to resign his appointment as surgeon to the infirmary on October 1st. Dr. Bradshaw has occupied the post of surgeon to this infirmary for the past forty-five years, and now thanks the members of the board for their continued support. It is pleasant, he says, to look back on the fact that during his period of office he never had any cause of disagreement with the board. The chairman, in laying Dr. Bradshaw's letter before the committee, said that no man had ever done greater service for any institution than did Dr. Bradshaw for the Leitrim Infirmary, and he felt that his resignation was a great loss to the governors and to the public. Several other members also bore testimony to Dr. Bradshaw's medical skill and to his universal courtesy and kindness.

BELFAST.

The Linen Trade and the Health Department.

At the monthly meeting of the City Council the report of the Public Health Committee was under discussion. From the first the Lord Mayor ruled that they had absolutely no power to discuss "sweating": they were bound to consider sanitation and the health of the citizens, but not whether so many buttonholes a penny was a fair rate of wages. There was further confusion, as the chairman of the Health Committee, in moving the adoption of the minutes, asked the Corporation to omit that portion dealing with the medical officer of health's report on home work. The Health Committee had met several times and examined Dr. Bailie's report, and came to the conclusion, from the explanation offered by Dr. Bailie, that "he did not intend to convey, nor does he contend, that sweating rates of payment have been or are paid in the linen and making-up trades generally"; and then the committee proposes so to alter Dr. Bailie's report as to withdraw any general charge, but to adhere to the particulars given. When the minutes were printed for the Corporation their accuracy was denied, and so all that portion dealing with this "sweating" allegation was withdrawn. The matter will come under discussion again probably at a special meeting at an early date.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

SCOTLAND AND THE BRITISH ASSOCIATION.

THE announcement that the British Association for the Advancement of Science has received and accepted an invitation to hold its meeting in 1912 in Dundee is heartily welcomed by many who retain pleasant recollections of previous meetings in Scotland. The last time the Association met in Scotland was in 1901, at Glasgow. Altogether the Association has met eleven times in Scotland during the eighty years of its existence.

It met in Dundee once before, in 1867, and had a very successful meeting, attracting a total attendance of 2,444. The Duke of Buccleuch acted as president, and among the sectional presidents were the late Lord Kelvin and Sir Archibald Geikie, while the special lecturers included Herschel and Tyndall.

THE HEALTH OF EDINBURGH.

During the week ending August 20th the mortality in Edinburgh was equivalent to a death-rate of 12.6 per 1,000; during the week ending August 27th it was equivalent to a death-rate of 8.6 per 1,000; and during the week ending September 3rd it was equivalent to a death-rate of 8.8 per 1,000.

EDINBURGH HOSPITAL.

Their Majesties the King and Queen have been graciously pleased to become Patron and Patroness of the Royal Edinburgh Hospital for Incurables.

FEEDING NECESSITOUS SCHOOL CHILDREN IN EDINBURGH.

A committee was formed some time ago—the Flora C. Stevenson Committee—to provide dinners for necessitous school children in Edinburgh, and some interesting facts are brought out in connexion with the dietary provided. Instead of giving soup and bread for dinner the committee decided to try the experiment of giving the children porridge and milk. The committee realized that if the experiment was to be of any value superintendence was essential, and so each day a member of the committee arranged to be present when the children were at dinner.

The caterers agreed to give a bowl of porridge and milk for one penny, and an additional supply for one halfpenny to any child who asked for it. This additional supply was nearly as large as the first, but less milk was allowed.

There was difficulty at first with some children, who either had never tried or had tasted only badly-made porridge, and it was in these cases that the superintendence arranged for was specially valuable.

But as time went on all the children learned to like porridge, and an improvement was noted in their appearance. The conclusion the committee arrived at after two months' trial of the porridge dinners was that they were a great improvement on soup and bread, and justify the committee in trying them on a larger scale. School boards are empowered under Section 6 (2) of the Education (Scotland) Act of 1908 to feed some of the necessitous school children, but the task of collecting subscriptions still falls on the voluntary agencies. The porridge dinner might with very great advantage be tried in other towns, as it is a notable fact that within recent years oatmeal as a food has fallen into disuse in the homes of the working classes, and the absence of this national food from the dietary of Scottish children accounts in no small measure for the deterioration of the people.

NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION.

The President of the Local Government Board, Mr. John Burns, has intimated his acceptance of the offer of £1,000 given by an Edinburgh gentleman in the form of posters for distribution throughout the country, so as to educate the public as to the best means of, first, avoiding the risk of infection, and, secondly, recovery from the disease. This offer will be handed over to the National Association for the Prevention of Consumption.

SCOTTISH SANITARY CONGRESS.

The thirty-sixth annual congress of the Incorporated Sanitary Association of Scotland was held this year at Elgin on August 31st and September 1st. There was a large attendance of members. After the business meeting on August 31st, Dr. Templeman, Dundee, delivered a very interesting popular lecture on The Rôle of Insects in the Spread of Disease. He mentioned malaria and yellow fever as two diseases illustrative of infection by blood-sucking insects. The infection of food by the house-fly was touched upon, while the flea and domestic bed-bug were also mentioned as

insects which must be regarded with grave suspicion as carriers of infection in their rôle as blood-sucking insects. Other interesting papers were contributed by the president, who took for his address, The March of Sanitary Science. Professor Matthew Hay, Aberdeen, read a paper on Human Carriers of Typhoid and Other Zymotic Diseases. Mr. Turriff, burgh surveyor, Elgin, opened a discussion on the subject of Public Baths. Councillor Lambie, Larkhall, read a paper on The Need for Co-operation in Certain Phases of Local Government. A paper by Mr. Peter Fyfe, Chief Sanitary Inspector, Glasgow, on smoke pollution of the air, asked what should be done to prevent it. A very interesting paper was contributed by Dr. Robertson, M.O.H. for Leith, on Practical Points in the Control of Pulmonary Tuberculosis. He said that, while the problem was difficult, there was really no need for alarm. This might be gathered from a recital of one or two figures and facts which every one could understand. As far back as 1855, the death-rates from tuberculosis in Glasgow, Paisley, and Greenock were respectively 42.2, 46.9, and 49.4. In 1909 these figures had declined to 13.6, 13.3, and 11.1 per 10,000 persons living. Describing the system of treatment adopted in connexion with Leith Public Health Hospital, Dr. Robertson said that at first they tried to deal with advanced as well as early cases. They soon gave up that attempt. It was an idea which was theoretically sound, but beset with administrative difficulties. The advanced case was a heavy handful, and the nursing of such a case a dispiriting business. He was still convinced that the money spent in isolating, feeding, coddling, and nursing the hopeless cases was money wasted. Better far to employ one or more nurses to visit and revisit such unfortunates than, literally speaking, throw away the ratepayers' money. Any necessary education could be done at home. It was a great mistake to inflate these unfortunate persons' minds with the idea that they were to be bolstered up at the hospital and fitted for a sphere of comparative utility. He knew that there were many who were not at one with him. That did not unteach what he had learned by practical experience. The very fact that they were, figuratively speaking, shutting the door of the hospital in the face of the advanced case was already bearing fruit. The method he advocated for dealing with the advanced cases might seem harsh. It was theoretically not correct, he granted, but the plan was fashioned to fit the frame of administrative practice. One did not run public health on sentiment. From the very outset they had followed the principle of housing the patients in unpretentious shelters. These shelters Dr. Robertson described. The treatment of consumption did one thing pre-eminently. It taught people that they could live in draughts. It was the fear of draughts that killed many people, because they preferred to breathe and re-breathe the poisonous exhalations of one another rather than admit the simple antidote—fresh air.

Mr. John Lindsay, Depute Town Clerk, Glasgow, dealt with the question of combination of authorities in the enforcement of the provisions of the Public Health Act of 1897. Provisions which were permissive and optional had their weakness, and what was required was that the Local Government Board should have the right to say to any two or more local authorities that they should combine for the more efficient carrying out of the requirements of the Act. Separate action on a small scale cost more to the ratepayers and tended to reduce efficiency. Such combination was at present allowed by the Act, and in the matter of inspection of meat and food (Section 43) combination would secure uniformity of inspection. Section 46 of the Act dealt with disinfection and destruction of bed and body clothing, and enacted that every local authority might, and if required by the Local Government Board "shall," make the necessary provision. But the power of the Board should also be extended to the subsections which stated that two or more authorities *may* combine to make such provision. When Parliament gave the Board power to compel combination under Section 66 in the provision of hospitals, reception houses, and nurses for infectious disease, it should also have given similar power to compel combination for prevention of such disease when that result would probably be attained by reasonable co-operation. Provisions for sewerage disposal, water supply, epidemics, etc., were also referred to in detail, and, in conclusion, Mr. Lindsay said that what he had urged as regards combination of local authorities, with the Local Government Board behind to compel such combination in those cases in which they thought fit, referred mainly to contiguous local authorities, whose population was not very large or whose district was not very great. The principle, however, also applied, in his view, to the cases of smaller local authorities whose territory was contiguous to that of a larger local authority. In such a case the larger authority had usually the best and most modern and extensive equipment for defending the public health, and there could be no question that the public interest demanded imperatively that the adjoining authority should fall into line with its more powerful and progressive neighbour. The work and enterprises he was referring to were such that it was idle to talk of the smaller authority attempting to overtake them for the benefit of their individual ratepayers. Parliament and the Local Government Board had recognized this in many cases. Two outstanding instances that had occurred in his official experience were: first, the city of Glasgow in its undertaking for the purification of the Clyde; and, secondly, the constitution of the Corporation of Glasgow as the Port Sanitary Authority of the port of Glasgow. In both cases the executive authority was the Corporation, although the scope of the respective operations extended beyond the city's municipal territory. The contention he was now urging was in the first instance confirmed by Parliament, and in the second by the Local Government Board, and that after the fullest inquiry and consideration in each case. What undoubtedly was required in this country was that in any question involving the protection or the maintenance of public health Parliament should, through such a public department as the Local Government Board, have the general oversight and supervision of the work of local authorities, so as, on the one hand, to prevent either the shirking of duty to save expense, or the overlapping of work and the consequent waste of public money; and, on the other hand, to secure the best possible results without extravagance for the general body of the people.

The Congress closed with a paper by Mr. Alexander Fraser, Inverness, on Social Problems in Relation to Public Health, in which he advocated a State control of parentage. He would make it a preliminary to the formation of a home that a man should prove his ability to maintain himself and his family before he was permitted to incur any responsibilities. He might be told that this would immediately result in the decrease of births, but that would be balanced by the decrease in the deaths of infants; and, in any event, would this be a loss, in view of the quality of the children? A remedy could be found in no more severe or difficult a form than the so-called labour colony. There the inefficient might remain all his life, earning his living and prevented from doing harm to the present generation or passing on his bad character to any descendants of the next.

Report of Lunacy Commissioners.

In the forty-sixth annual report of the General Board of Commissioners in Lunacy for Scotland it was pointed out that for the first time for nineteen years there was a fall in 1903 in the number of pauper patients in establishments in proportion to population. The results of the retrospect submitted in the fifty-second annual report, issued on September 9th in a Blue Book, are regarded therein as showing that the year 1903 marked a true turning point, and that no permanent increase in the amount of registered insanity is likely to occur in future under present conditions, beyond the almost inevitable rise due to increase of population, or such

as might result from mere accumulation through a diminished rate of discharge.

On January 1st, 1910, exclusive of insane persons maintained at home by their natural guardians, there were in Scotland 18,337 insane persons of whom the Board had official cognizance, including the inmates of training schools for imbecile children and of the criminal lunatic department of Perth Prison. Of these, 2,560 were maintained from private sources, 15,724 by parochial rates, and 53 at the expense of the State. As the total number on January 1st, 1909, was 18,197, an increase had taken place during the past year of 140. No less than 2,843 lunatics were boarded-out in private dwellings on January 1st, 1910.

During last year 496 private patients were admitted, being 114 less than in the preceding year, and 73 less than the average for the quinquennial 1900–4. The number of pauper patients admitted was 2,753, being 160 less than the number during the preceding year, and 255 below the average for the quinquennial 1900–4; 91 voluntary patients were admitted into asylums during 1909. The average number of such patients admitted for the ten years 1900-9 was 91. The number resident on January 1st, 1910, was 99.

Two hundred and fifteen private patients were discharged recovered during 1909, which is 19 less than in the preceding year, and 37 below the average for the five years 1900–4. The number of pauper patients discharged recovered was 1,030, which is 151 below the number for the preceding year, and 261 less than the average for the five years 1900–4.

The number of patients discharged unrecovered was 149, or 1 less than last year, and 21 above the average of the five years 1900–4. The number of pauper patients discharged unrecovered was 369, which is 47 below the number so discharged in the preceding year, and 44 less than the average for the five years 1900–4.

The number of private patients who died in establishments during 1909 was 209, which is 38 more than in 1908, and 41 more than the average of the five years 1900–4. The number of pauper patients who died was 1,184, which is 43 more than in 1908, and 170 above the average of the five years 1900–4.

Escapes.

The whole number of escapes during 1909 was 145. Of these, 68 were brought back within twenty-four hours, 44 within a week, and 11 after a week. There were 22 still absent on the expiry of twenty-eight days from the date of escape. Of the 22 patients not brought back, 5 were removed from the asylum registers as recovered, 5 as relieved, 9 as not improved, and 3 died.

Accidents.

During the year 1909 there were 117 accidents, of which 10 ended fatally, 7 being certainly or probably due to suicidal intention.

The present condition of establishments for the insane occupies more than seventeen pages of the report. State and criminal lunatics and lunatics in private dwellings are reported on. The number of private lunatics who were provided for in private dwellings, with the sanction of the Board, on January 1st, 1910, was 120. The want of accommodation for the poorer class of private patients is again referred to, and it is stated that permissive power should be given by statute to district lunacy boards to provide accommodation for private patients under certain conditions. Legislation in the direction suggested would tend to relieve the rates and would meet with the approval of district lunacy boards. The total cost per patient for all district asylums in Scotland for 1908–9 was £44 17s.

Asylums Officers' Superannuation.

The Asylums Officers' Superannuation Act, which was passed at the close of last year, and which came into operation in Scotland on May 15th of the present year, provides for the superannuation of all established officers and servants of district asylums upon a contributory basis, which, in the case of those in service when the Act passed, varies according to length of service from 2 to 3 per cent. of salary or wages and emoluments, and is 3 per cent. in the case of all those appointed subsequently to the Act coming into force. Unless in the case of those permanently incapacitated from duty after ten years' service, the Act requires a service of twenty years before pension can be claimed.

Quinquennial Retrospect.

The figures relating to registered insanity during the past five years fully confirms the hopeful prognostications made in 1903 and 1906. Increases occurred, in excess of what could be accounted for by increased population, varying, in the quinquenniads between 1881 and 1905, from 18 to 20. In the last five years this increased proportion dropped to 7. But for the fact that the preceding quinquenniad contained two of the years (1903 and 1904), in which a diminished rate of increase first manifested itself, the fall in the last period would have been more marked. The proportions of registered patients per 100,000 of population for each of the past five years are as follows:

1906	363
1907	362
1908	365
1909	366
1910	364

If it could be shown that the rate of production of registered insanity is standing still or diminishing, though the fact may not at once express itself in the number shown on the register at a particular date, the result must be that the number on the register will sooner or later be brought into correspondence with the rate of production.

The conclusions brought out by a retrospect of the last quinquennial period may be stated as follows:

1. That the number of patients on the register has increased during the past five years, but that the increase is greatly below that shown by any quinquenniad during the previous twenty five years.
2. That the occurrence of insanity as shown by admissions to the register in proportion to population shows a marked decrease throughout the past five years.
3. That this decrease is confined to no particular part of the country, but is manifest throughout the country and irrespective of whether the population of a district is rising or falling.
4. That the number of patients removed from the register by discharge as recovered or unrecovered has been falling continuously during the past thirty years, and never to so large an extent as during the past five years.
5. That the removals from the register by death have risen to some extent, especially during the past ten years.
6. That the increased number of patients found on the register during the past five years is due solely to accumulation caused by a continuous fall in the number of patients discharged, to an extent which outbalanced the effects of a lowered admission rate and a higher death-rate.

Boarding Out.

In his fifteenth annual report relative to private and curable patients as well as insane poor persons resident in private dwellings, Dr. J. F. Sutherland makes some interesting remarks. It was found that the available accommodation in Inverness District Asylum was all but utilized, and steps were taken to board out in the colonies near Inverness chronic, harmless, and incurable patients, either on probation or by minute of the Parish Council. It was pointed out to the parish officials that, to begin with at all events, it was preferable to adopt the hitherto successful plan of providing for them near Inverness. If they were removed to a distant place, the cost of removal from and return to the asylum in the event of the patient from any cause proving unfit for family care would outweigh the saving resulting from the lower cost of maintenance, while, if boarded out within a radius of twelve miles of the District Asylum, they could, at little cost, be promptly returned to the District Asylum in the event of proving unfit.

The activity in evidence at the Inverness District Asylum in recent years in the matter of boarding out unrecovered cases finds expression in the following suggestive figures—for 1907, 24; for 1908, 34; and for

1909, 50. The steps taken by Dr. T. C. Mackenzie, the medical superintendent, have most effectively relieved the congestion of the institution and thus averted the need for extension. It will not, it is presumed, be seriously doubted that a similar policy periodically pursued in all other institutions would obviate for many years to come the need for costly asylum extensions to meet the overcrowding due to the undesirable accumulation of patients who have ceased to need asylum care. For the success of the policy here adopted what is necessary is hearty co-operation and conference between the medical superintendent, the inspector of poor of the parish in which the colonies are situated (for it is he, with his special knowledge, who has most to do with finding suitable homes and guardians), inspectors of poor of near or remote parishes to which patients are chargeable, and the Visiting Commissioners as representing the General Board. Co-operation of the kind referred to can alone bring about what is best for every interest concerned. Within a radius of sixteen miles of the Inverness District Asylum, 132 patients (51 males and 81 females) were to be found in private dwellings and specially licensed houses. Of these, 38, for the most part in the town of Inverness, were residing with related, and 82 with unrelated guardians, and of the whole, 87, or 66 per cent., had at one time or another been inmates of the asylum. The Inverness rural colonies, it will be acknowledged, thus fulfil a most useful purpose in connexion with boarding out. The average weekly allowance in the area is about 5s. 6d. exclusive of clothing and boots, which would bring the cost up to something like 6s. 6d. per week, a sum less than that which prevails in the South and Midlands by 1s. 6d. per week. The great majority of the patients in the districts of Abriachan, Caiplich, and Glen-Urquhart are housed with crofters, whose rents range from £1 to £42, the average rent of the houses and holdings being about £12. Many of these houses may rightly be said to afford cosy and comfortable quarters. The acreage of land attached to these houses ranges from 1 to 60 acres, and the average may be put at 20 acres. The capacity of the 132 patients for usefulness either in the home or in the fields may be expressed as follows: "Useful," 47; "moderately useful," 43; and "useless," 42.

Glasgow Royal Infirmary Post-graduate Courses.

The opening lecture in connexion with the post-graduate courses at the Glasgow Royal Infirmary was delivered by Sir James Barr, M.D., LL.D., Liverpool, his subject being The Use and Abuse of the Lime Salts in Health and Disease. Mr. J. D. Hedderwich, Chairman of Governors, presided, and referred to the fact that Sir James was a former student and resident surgeon at the Royal Infirmary. He also commented on the post-graduate teaching which had regularly been given at the infirmary, teaching which attracted men from all parts of Scotland, and occasionally also from Australia, Canada, Africa, and even China.

The Western Infirmary, Glasgow.

The managers of the Western Infirmary last week appointed Dr. Barclay Ness a visiting physician and Dr. Robert Kennedy a visiting surgeon, to fill up the vacancies left by the death of Sir Thomas McCall Anderson and the resignation of Sir Hector Cameron. Though the new Royal Infirmary scheme is not yet in working order it is so far advanced that the University Court agreed to allow the managers of the Western Infirmary to anticipate events and to assume the patronage of the wards formerly allotted to the clinical chairs. Under the deed of constitution of the old clinical chairs the Western Infirmary was bound to provide ward accommodation for the two professors, and, consequently, the patronage was not directly in the managers' hands. Under the Royal Infirmary scheme the clinical chairs at the Western Infirmary are abolished and the endowments are transferred to the former. Consequently the managers resume full control of the appointment of the staff.

Special Correspondence.

PARIS.

Antityphoid Vaccine.

On June 21st last Professor Vincent communicated to the Académie de Médecine the result of his work on antityphoid vaccination. The subject of typhoid fever shows no signs of disappearing from the notice papers of medical meetings. Tuberculosis itself, which a few years ago was the chief topic of discussion, seems now to have given place to typhoid as the main subject of interest to scientific men. No doubt it is natural enough that our microbiologists should from time to time feel the want of a change of organism. Be this as it may, antityphoid vaccination would seem to have entered upon the practical stage. Of the three ways of obtaining prophylactic vaccine—injection of living bacilli of attenuated virulence, injection of dead bacilli, and the injection of bacillary autolysins—M. Vincent only made use of the last, holding that the use of living bacilli gave rise to disappointment. The diminution in their virulence is never more than relative, and they may even sometimes, in subjects particularly susceptible to infection, give rise to the very disease which they are meant to ward off. It is always a dangerous game to try and make wolves into watch-dogs. Vaccines made from dead bacilli do not give rise to regrettable surprises of this kind, but if effective they may nevertheless sometimes cause very troublesome reactions, both local and general. Our tissues submit with a very bad grace to being turned into cemeteries. Macerations of the products of the living Eberth bacilli alone produce a vaccine which is both useful and harmless. M. Vincent uses a composite extract made from eight kinds of typhoid bacilli. After making numerous experiments *in anima vili*, he tried this vaccine on thirteen persons who nobly offered themselves in the cause of humanity; he gave four to ten injections in ten days, and the subjects experienced neither pain nor fever. In spite of the apprehension which the unlucky number might have aroused, the immunization of the thirteen subjects was achieved. To establish this M. Vincent did not inoculate them with typhoid fever—an experiment which a man would only be justified in performing on himself. But he withdrew some serum from the subjects treated, and introduced into it highly virulent bacilli, which in that medium did not take long to fade away and wither as if they had been attacked by galloping consumption. The blood diluted with 500 to 1,000 times its volume of distilled water did not seem to suit them any better. He considered it reasonable to conclude from this immunization *in vitro* that these persons had really been rendered immune. But no analogy equals actual demonstration by a fact. As with the vaccine of Jenner, so in this case success in an immense number of cases will be necessary before the value of the discovery can be accepted as proved. The preparatory work of Vincent justifies us in extending the experiment to everyday practice, and in appealing without undue temerity to the verdict of the future. When the duration of the immunity thus produced shall have been determined, it will be possible to put antityphoid vaccination on a footing as methodical and systematic as vaccination against small-pox. Meanwhile, let us not neglect hygiene and disinfection, and let us hope that there will survive throughout the world only so many tame typhoid bacilli as will be sufficient for the production of Vincent's vaccine and Chantemesse's serum. We should then be able to dispense with them altogether and return to the heroic ages when the heart projected into the arteries only blood without any admixture. Yet I feel rather uneasy when I think that our descendants will have to undergo many repeated vaccinations against tuberculosis, typhoid fever, cancer, small-pox, the different kinds of eruptive fevers, and an endless number of acute diseases. In my prophetic soul I foresee the time when, as a consequence of the prevalence of strange disorders, unexpected neuroses and previously unknown infections, the following question will be put to the International Academy of Pantopolis: Can the humours be adulterated with impunity?

The immunities effected by Nature in the course of centuries have been brought about by the slow adaptation

of the organism to the environment. Is not the nature of artificial immunizations by their very abruptness sufficient to upset the balance of life? In the present state of things it would be as rash to assert this as to deny it. Let us remember that down to the present time we have only treated individuals; in fact, we have done even less—we have treated lesions or symptoms only. How little we know about our slow physiological evolution, about the obscure problems of heredity, and about functional transformations! We accept the common opinion that diseases change, that some disappear, that new ones appear. But how can we state this definitely in the terms of the old-fashioned nomenclature, so uncertain and so badly drawn up? We can quite understand that tuberculosis would have depopulated the world if it had prevailed in the Middle Ages with the same virulence as if the contagion had had full scope in the horrible hygienic conditions of ancient times, where the neglect of personal cleanliness, unhealthiness of dwellings, the narrowness and uncleanliness of the public streets, the horrible promiscuity of the latrines, poverty, famine, and war, combined to render human ignorance the prey of every infection.

In truth, the virulence of the germs of diseases has become attenuated and that of others increased, and in our strife with evil our efforts to assist Nature are often rather blind. There is just one thing which may help us to believe that our efforts are not altogether wasted, and that is the lightheartedness with which we regard remote results. However presumptuous our science may be it does not rule the world, but is a part of it; developed by the human mind, it is one of the forces by which it is nerved and changed. It is one of the agents of its evolution, as Darwin saw it in the mechanism of animal life. It is enough for us to seek to bring ourselves into tune with the harmony of the universe.

BUDAPEST.

Ehrlich's New Antisyphilitic Remedy in Hungary.

The extraordinary interest which was aroused by the first announcement concerning Ehrlich's new antisyphilitic remedy which appeared in the papers resulted in such a rush of patients to the doctors asking for its administration that many practitioners were induced to go to Frankfort to study the new method at the source. I was amongst those who went to Frankfort and to Berlin to learn the details of the method, and the readers of the Journal may be interested in reading my experiences and those of other Hungarian doctors as they were described in *Gyógyászal* (Therapeutics) of June 26th and July 3rd.

The famous meeting of the Berlin Medical Society of June 22nd, when Professor Wechselmann first exhibited the syphilitic patients who had been cured by the Ehrlich-Hata diamido-arseno-benzol marks a new epoch in the therapeutics of syphilis. Clinical experience has doubtless sanctioned the belief that mercury is a certain cure for syphilis, though we know very little of its mode of action. Does it kill the spirochaetes? For some time this was thought to be the case. But, if we consider what a small amount of mercury enters into the organism in a regularly-applied mercury cure, we tend more and more to the belief that mercury does not directly act as a germicide, but rather as a catalyzing agent, thus affecting the healing power of the tissues. This view is confirmed by the fact that even after the administration of an excessive dose of mercury, which may even be dangerous owing to its haemolytic action, we do not see more rapid or permanent cures in organisms infected with syphilis.

It has been said that practical experience has confirmed our confidence in mercury. Yet how often are we deceived in this belief! Tertiary manifestations and the so-called post-syphilitic diseases of the brain and spinal cord must be attributed to the insufficiencies of a course of mercurial treatment. Ehrlich's greatest merit lies in the fact that he has made an exhaustive series of experiments with a drug which, it was known, could produce a damaging effect on the spirochaete. That drug is arsenic. With this substance he experimented till he was successful in finding a combination which, when tried on animals, proved to be efficacious with mathematical certainty. This he recommended as a remedy for human beings, and from the cases cured in Berlin and reported by Wechselmann, and by Spatz in Budapest, it would seem that Ehrlich's remedy has a future. Some days after the Berlin meeting I myself saw the cases exhibited there, and I can say without exaggeration that in some of them the effect of the remedy was quicker and more pronounced than I have ever seen produced by any other therapeutic method.

This statement must be taken to refer to *some* cases only, because the so-called secondary symptoms of syphilis have often been known to disappear after a single injection of a mercurial solution. But that the progress of malignant syphilis should be checked at once, that feverish cachectic individuals should apparently be cured after the administration of a single injection, that they should gain in vigour and in body weight, that ulcerations of many years' standing should be healed at once—this, indeed, is marvellous. To see such a patient three days before and three days after an injection strikes one with astonishment. After what I have seen in Berlin and in Budapest (in the 17th Military Garrison Hospital), I do not hesitate to say that even if later it should turn out that our hopes regarding the new remedy were exaggerated, the simple fact that the remedy is capable of producing such a rapid and wonderful change in the most severe cases of syphilis, which till now have proved refractory to treatment, renders it invaluable. Its quick action is its most surprising quality. In illustration may be quoted a case of Dr. Sellei in which the diamido-arseno-benzol was injected into a woman suffering from syphilitic roseola. Five hours after the injection the syphilides had become pale pigmented spots. Twenty-four hours after the injection preparations made from the affected skin showed no spirochaetes even on the most careful microscopical examination, whereas before the injection it swarmed with spirochaetes. Dr. Sellei has been authorized by Dr. Wechselmann, Professor of Dermatology and Director of the Dermatological Department of the Virchow Hospital in Berlin, and by Dr. Spatz, Senior Dermatologist to the Garrison Hospital in Budapest, to report some of their cases which have been exhibited before the Berlin Medical Society and before the Budapest Medical Society respectively.

Abstracts of a few cases related in the paper published in the *Gyógyászal* may be given here:

1. Woman with lichen syphiliticus. It is generally admitted that lichen has reacted very slightly to antisyphilitic remedies hitherto in use, and that it is one of the severest forms of syphilitic infection; twelve days after the injection the exanthemata had entirely disappeared.

2. A male patient with similar exanthemata; complete resolution took place four days after injection. Four days later the lichen had totally disappeared, only dark brown patches marked the site of the eruptions.

3. Female patient with anal stricture due to syphilis. Ulcerations in the anus. Large serpiginous syphilides on both buttocks. She had frequently been treated with mercury injections, inunctions, etc. On May 5th she was given an injection of Ehrlich's remedy. On May 27th all the ulcers, even those in the anus, had healed.

4. A male patient suffering from papular syphilis. Five days after the injection no trace of the exanthemata remained; only pigmented spots were visible.

5. A female patient with papular syphilides. Entire healing five days after injection.

6. Plaques on the tonsils and large ulcers on the soft palate. Twelve days after injection, complete cure.

7. Papular syphilis. Six days after injection the exanthemata had almost entirely disappeared.

8 and 9. Severe cases of malignant syphilis. In both cases every recognized remedy had failed. The Ehrlich treatment has done wonders. One patient is completely cured; in the other a very small ulcer still persists.

10 and 11. Cases of pemphigus neonatorum. Both entirely cured.

12, 13, and 14. Cases of pemphigus syphiliticus neonatorum. Although all died, the skin symptoms disappeared after the injection.

Dr. Wechselmann also related some failures with the Ehrlich remedy. One case was that of a female patient with broad condylomata on the labia majora and around the anus. After injection of arseno-benzol the condylomata

round the anus diminished; those of the vulva, however, still persisted.

A male patient with sclerosis was given an injection on June 7th. The sclerosis was in process of involution, but still existed on July 6th.

These few cases show that Ehrlich's drug acts quickly in the different stages and manifestations of syphilis. Of course all cases do not react uniformly to the drug. The most surprising feature is that severe cases, and cases which do not react to mercury, quickly and surely respond to the new method.

Very interesting and instructive, too, are the animal experiments. Ehrlich first studied the action of his drug on hares. He inoculated the testes of hares with material containing spirochaetes, and when the primary syphilitic symptoms made their appearance he began to treat the animal with amido-arseno-benzol. In his Frankfort laboratory he showed me photographs of animals with syphilitic diseases in different stages of regression. In his animal experiments his principal assistant was Hata, a Japanese doctor. The spirochaetes were not demonstrable sometimes even twenty-four hours after injection. This shows that the amido-arseno benzol exerts a powerful germicidal action on the spirochaetes, and therefore is really specific.

Of course, the short time the new method has been in use does not allow a definite conclusion to be drawn as to the permanency of its effect. Is it capable of preventing a recrudescence? does it really kill all the germs at once? Alt, Schreiber, and others maintain that though, in a few cases, a formerly positive Wassermann's reaction has become after a single injection negative, this is not a conclusive proof that this result will be permanent. Whether recurrence will take place after the symptoms have seemingly abated is a question to which time alone can supply an answer. This fact, notwithstanding all the hopes excited by the effects of the remedy, should make us very cautious in forming a judgement. The injection, though not dangerous, must be very carefully administered, because, according to Ehrlich, if we do not satisfy ourselves beforehand of the soundness of the patient's retina and optic nerve, we may meet with serious by-effects, though it is unquestionable that the amido-benzol is far less toxic to the optic nerve than atoxyl. Ehrlich does not use his remedy in the case of patients suffering from heart disease, aneurysm, liver and kidney disease, or phthisis. It is also contraindicated in the case of infants and aged weakly subjects. Doctors who get his medicine for experimental purposes—already (July 15th) there is none left in stock—are required to sign a written agreement to the effect that they will not employ the remedy unless the patient remains in bed for the specified time and that they will carefully observe the cases and send reports thereon to Ehrlich.

As regards its chemical composition, the drug is dichlorhydral-dioxy-diamido-arseno-benzol. It is a greenish-yellow fluid put up in small vacuum tubes. The technique of the injections has been elaborated by Alt and Wechselmann. The latter has stated the proper doses and made it possible to employ the drug without inflicting considerable pain on the patient. The powder, of which Wechselmann gives 0.60 gram for one injection, must be dissolved in a little methylated spirit, whilst sufficient normal caustic solution is added to made the solution turbid. Whilst the caustic is being added the mixture must be stirred with a glass rod, otherwise it becomes jelly-like and unsuitable for injection. Then to the fluid some drops of phenolphthalein are added. This indicates whether the fluid is rendered sufficiently alkaline or not. Normally only enough phenolphthalein is added to make the solution slightly red.

The injections are best given high up into the glutaei. The skin is first painted with tincture of iodine; then the fluid is slowly injected. The original method of administration gave rise to fever and pain, but with the modifications introduced by Wechselmann these disagreeable effects are prevented.

AN ambulatory chair for the teaching of the measures necessary for the prevention of malaria has been founded at Adria by the Visconti Institute of Modrone. It is intended that the professor shall give lectures and demonstrations in the rural districts of the Basilicata and Apulia.

Correspondence.

SICKNESS AND INVALIDITY ASSURANCE.

SIR,—Professor Moore's ideal of a unified State medical service, in which all posts, from that of a district medical officer in the country to that of physician to a metropolitan hospital, would be open to all by examination, has long been my ideal, and the effect of its institution on the efficiency of the profession individually and collectively would, I believe, be enormous; but with this ideal service I am not concerned in these letters to the JOURNAL, and although my arguments as to possible financial loss in the transition stage would still be applicable, I for one would be willing to suffer loss in order to become part of such an ideal service.

But there is no evidence, as far as I know, that the Government has in view any such sweeping reform of the medical profession. Mr. Lloyd George's Sickness and Invalidity Insurance Bill, great and courageous move as it is, is a bill to ameliorate the lot of the poorer classes, the results to the medical profession being secondary; and if we are to judge by the attitude of Governments in the past towards us, our services may be sought at the lowest possible rates. My argument, therefore, is concerned with such a State medical service as may be called upon to serve the working of Mr. Lloyd George's bill.

That there exists in the profession to-day a feeling of insecurity is indubitable, and I share it. If I felt myself in the happy position of security from danger as that in which Professor Moore is, my letter to the JOURNAL of August 20th would not have been written, and I might have been adducing the same arguments as Professor Moore does in taking notice of my modest letter, and in the same spirit of detachment and complacent serenity. Professor Moore says, in effect, that the matter is very simple, that even in the transition stage no one can lose. But is it so simple as his somewhat academic arguments would lead one to suppose? Let Professor Moore suppose, for the moment, that he is a medical man in a town where there are twenty or thirty other medical men, and that he has a practice worth £1,500 a year, in which he has invested £3,000; let him suppose, further, that one-half of this income is derived from the classes the care of which would be taken over by a State medical officer. When the State medical service is instituted Professor Moore would have the option of accepting an appointment in the service. By refusing he would lose £750 annual income, so naturally he accepts, and doubtless all goes well. But perhaps in three or four years' time he may wish a change of climate, or, being still young and ambitious, may wish to take up special work, or for various other reasons may be desirous of leaving this town. What then is his position? He can sell the half of his practice which is derived from private patients and realize £1,500 of the original £3,000 of his capital, but where is the other £1,500 to come from? He cannot sell his State appointment. Will the Government give him the equivalent of this £1,500 after three or four years' service, or will it study his wishes and give him an equally good post in another town more to his liking, or will it allow him to devote himself to special work, at the same time paying him the interest on his £1,500, till it gives him another appointment; or, finally, will it make him feel that he is in servitude, and that, after all, unless he resigns himself to losing his £1,500 he had better be content to remain where he is till he reaches the age of 65 and can claim this pension which Professor Moore tells us he would get, and which is to serve as the equivalent of his invested capital?

Is there any authoritative information available which will enable Professor Moore to answer these questions satisfactorily?

If I act on Professor Moore's advice, and appeal to friends in naval and military medical services, am I told that these premier services are models of organization and pervaded by a spirit of contentment? Not a bit of it.

Is there the least likelihood of an entirely lay Government like the present, unassisted and uncontrolled by our own profession, giving us a State medical service which will satisfy us? The time for this has not yet come; I wish it had. If a bill for this purpose were being framed by Professor Moore the matter would be on a

different footing. My conclusion, therefore, is that we shall be serving our interests best by opposing any scheme of State medical service which, in the light of our present knowledge, is likely to be put before us for the working of Mr. Lloyd George's bill.—I am, etc,

Burnham, Somerset, Aug. 30th. BRUCE C. KELLY.

SIR,—A suggestion by a late correspondent of yours—namely, of placing the medical side of this important business before the Chancellor—is a good and sound one.

I wrote at once to our member, requesting him to lay before the Chancellor the desirability of requesting a conference, in due time, with the British Medical Association, in order to facilitate amicable relations once and for all with the profession in this matter, and the careful avoidance of approaching them through the medium of friendly societies.

I enclose the answer received; it is as follows:

Upcott, Barnstaple, N. Devon.
August 28th, 1910.

My dear Sir,

I shall have very much pleasure in placing your letter before the Chancellor of the Exchequer, who will, no doubt, give it, and the suggestion contained in it, his serious consideration.—Yours faithfully,

ERNEST J. SOARES.

How many of the 40 000 odd medicals are moving in the matter ere it is too late?—I am, etc.,

Hartland, Aug. 31st. A. L. MARTYN.

SIR,—A few weeks ago I saw in the BRITISH MEDICAL JOURNAL that Mr. Sidney Webb had been invited to speak—in fact, to be the principal speaker—at a meeting of the British Medical Association. In the course of his speech-making, which was ill-chosen and decidedly impertinent considering the audience he had, he, in reply to a question by Dr. Fothergill regarding the disposal of certain "possible recovered money," made the astounding reply that he did not care what was done with it, but that it might be put to a fund for necessitous medical men out of employment. He also condescended to congratulate the medical profession on being such poor fighters for their own interests. And well he might!

I should like to know who was responsible for a man so evidently out of all sympathy with the general body of the medical profession being asked to address such a meeting, and I should like to ask also why the meeting did not pass a motion expressing entire disagreement with Mr. Sidney Webb's efforts. Would such a man be taken into the counsels of the Law Society and be allowed unchallenged to give vent to such ill-mannered utterances?

I notice that Mrs. Sidney Webb, who describes herself as a member of "the National Committee for the Prevention of Destitution," is also trying her best, apparently with the help and connivance of "the leaders" of our profession, to pauperize us. Will you please explain why valuable space is granted, in the issue of September 3rd, to her letter on "The New Midwives Bill," in which she has the hardihood to ask the medical profession to oppose the bill on behalf of "thousands of thrifty and hard-working women and their families"?

Mrs. Sidney Webb has apparently a great deal to learn. Every medical man unfortunately could tell of confinements, too numerous to recall, where he has attended entirely free of charge, and where the poor unfortunate families could well afford to pay, but prefer to spend their money on drink, gramophones, visits to the seaside, fancy food, silk dresses and blouses, gaudy hats, theatres and music halls, and a thousand other things—in fact, on everything but paying their doctor's bill.

The really necessitous cases do not require Mrs. Sidney Webb's advocacy, nor that of the ambitious and falsely styled "National Committee," with its backing of clerics intensely jealous of the advance of science—especially medical and surgical—and the confidence which the public now reposes in it.

If there is to be State aid for sickness and invalidity—which I very much doubt, and which I, for one, shall strenuously oppose if contrary to the interests of the profession—why should the legal profession not be put on a similar basis, and, indeed, all trades and professions? In other words, why should we not all be converted to socialism?

I do not deny that there are many hard cases requiring help. No one knows that better than a man in general practice. But what I do say is that the problem should be tackled in a different way. The root of the whole business is the *wages question*. Some workers have far too much and others far too little. Why should medical men be victimized to keep the victims of sweated labour in a semblance of health while their oppressors, their employers—in so many cases alien Jews by birth—are left quietly in possession of their ill-gotten booty?

It would also be a great boon to the community at large if stern restrictions were placed upon the insertion of quack advertisements in newspapers, and of advertisements of articles for sale on the instalment plan. These two avenues of spending money—which, moreover, brings no commensurate return—are patronized very largely by the uneducated, and require drastic attention.

Lastly, may I urge that the medical profession does not require outside assistance, no matter from what exalted quarter? In my opinion, it wants fair play, and it wants better representation to get it.—I am, etc,

Liverpool, Sept. 7th. ANDREW SERGEANT MCNEIL.

SIR,—Just as in national and imperial politics affairs are rapidly nearing perhaps the most serious crisis that this country has ever seen, so in medical politics we shall before long be face to face with the most momentous question that can possibly be put to our profession. Are we to continue to live the life of independent individuals, free in thought and speech, for the most part *sans peur et sans reproche*; or, on the other hand, are we to be allowed to exist, tongue-tied servants of a Government department, obsequious flunkeys of a tyrant State? Are we to live on our own terms or on State terms? Are we to be free or slaves?

Although our very liberty depends upon our answer to this imminent question, we are to-day in such a humiliating position, owing to our own cowardice, selfishness, and apathy, that it can be answered in only one way. We can only say, We have no organization, no unity, no power of combination, so we must perforce throw ourselves on the generosity of the State; we must trust to the sense of justice in the party leaders. The generosity and the justice of the Coroners Act, the Early Notification of Births Act, and the Vaccination Act! God help us! Governments will not, and we ourselves cannot! Hard words: cowardice, selfishness, apathy? Yes, and hard facts! Rank cowardice to fear the shadow while hugging the substance; to shriek at the *name* of trades unionism while using its severest methods.

Our apathy is horrible. How many Branches get a 10 per cent. attendance when a medico-political subject is down for discussion? But selfishness is the greatest curse of all. We begin by asking how much we can give a man if he will join the Association, what wonder if he on his part asks how much he can get out of it? We shall not even begin to move until every member, and every would-be member is continually asking, "What can I do for the Association and for my profession?" Working in such selfish spirit do we deserve any better fate than the one which will surely overtake us—obliteration as a great, a noble and an independent profession?

Is there no *man*, no *leader of men*, amongst us to sound the clarion notes—altruism, loyalty, courage, swift action, and unbending pride in our calling? And if these notes spell trades unionism? let us boldly avow the fact, and no longer shamefacedly pretend that we are too *gentlemanly* to be trades unionists.

We are tiring of schemes, reports, amendments, riders, and such like, and we wearily ask *cui bono?* What position are we in that we can dictate terms of any kind whatever to our masters?

At the present time we care not so much what the profession thinks as whether the whole profession will stand shoulder to shoulder in backing up the studied and expressed opinion of the majority.

We are fighting for great principles, justice and liberty, aye, and for much more, even for life itself, and at such a time I warmly endorse Dr. Grey's opinion that the details of schemes, and even the schemes themselves, are no

business of ours, but that it is our business to see to it that we are in such a position that we are able to either accept or reject these schemes, according as they seem to us just or unjust.—I am, etc.,

Bristol, Sept. 6th. H. F. DEVIS.

SIR,—Dr. Grey is quite right in demanding payment for work done and in desiring the complete abolition of contract work.

Some years ago I was practising alone in a town of 3,000 inhabitants and refused to take a local club over on contract rates, but accepted on the condition that a fee be paid for each consultation, and I won the day.

My experience is that club patients are never off the doorstep, but those who pay, like the National Deposit Friendly Society, are never on the doorstep.—I am, etc.,

Harrogate, Sept. 4th. J. W. MALIM.

SIR,—It has been suggested to me that the opposition to the proposal that the State should deal with individual medical men on the basis of payment for each attendance arises from a fear that it might open the way to fraud in "running up bills" unnecessarily. That such a suspicion should be entertained shows a lamentable ignorance of the part which the profession has played in the prevention of sickness, and a blindness to facts that is almost culpable. Our attitude towards such mental myopia might well be one of profound contempt and indignation, but it may be more expedient to reason gently with the offenders, and, having expressed our opinion than a bond is unnecessary, yet give that bond as a proof of good faith. Since, therefore, it seems that a "scheme" of payment per visit at ordinary fees might tangibly allay the fears of dishonest dealings, and make clear to our ministers what is already clear to us, it may be well to foreshadow how the matter might conveniently be dealt with. I might, however, point out that overpay of medical men might not be such a disaster as our legislators seem to imagine, and would be considerably better for the country and the nation than underpay. It is notorious that medicine as a commercial business is a failure. When one considers the capital sunk in a medical man's education and in starting or buying a practice (more than enough to launch him in a large business), and the arduous and responsible labour of practice, the long hours (ten or twelve a day in a six and a half or seven day week), and the fact that the doctor's income depends solely on his own personal labour, it seems probable that there will be before long a marked deterioration of the class who will enter medicine as a profession. Moreover, it is unquestionable that in the present day the wretched pay, necessitating the taking on of more work than the doctor is capable of doing well, is responsible for the actual low standard of medical services, a standard far beneath that which the progress of medicine and facilities for education have put within our reach.

I have already pointed out that it is the State's business to find the money for medical attendance and the other benefits they propose to confer on the industrial classes, and to calculate how much they want; but as some ideas on this point also appear to be expected from the profession, I may refer the Chancellor to a letter of mine in the JOURNAL of 1903, vol. ii, p. 615, where I calculated, from the figures of one of the sickness insurance companies, that the average doctor's account on ordinarily healthy lives might be taken as £2 4s. 1d. per annum, this to include the cost of collection under a sickness insurance scheme. Other figures may be obtained from friendly societies and so on, and with due allowance for the classes of patients dealt with, and for the economy that might be effected by a Government department dealing with large numbers, might be collated to find the incidence of sickness. The cost of medical attendance will undoubtedly be found to be very much greater than the penny-a-week club would have led one to suppose; but this is the very reason that the medical profession must refuse to accept any more contract work, since contract work has always meant an acceptance of risk at a totally inadequate premium, and its strong point in the eyes of its promoters is the opportunity of putting that unwarrantable risk on the shoulders of the promoters' servants.

It is presumed from the Chancellor's statement in the House that, to furnish the necessary sum, employers, employees, and the Imperial Exchequer will all contribute, and I suggest to Mr. Lloyd George that he should tax the employees per family and not per unit; it stands to reason that the more medical attendance a labourer needs (according to the number of his family or his own health) the less will he be able to pay for it, and to levy an extra contribution from a delicate man or a quiverful man is to ensure that he or his children must be less well clothed and fed and housed, and *ipsa causa*, more liable to sickness. I am sure, also, that the suggestion to levy on bachelors the same as on married men will commend itself to the Chancellor as a check on that distressful condition yclept the decline in the birth-rate. The sum, then, to be taken per family might be calculated *pro rata* of wages; and, as the benefits to be received for it—medical attendance, sick pay, out-of-work benefit, and old age and debility pensions—are enormous, the contribution exacted may well be a large one, even to 5s. in the £; the more so, since, according to John Stuart Mill, whatever sum the labourer is forced to spend on comforts he has not hitherto had, he will not do without those he is accustomed to, and will demand and surely obtain a rise of wages sufficient to keep up his "standard of comfort." Many labourers also, especially those least able to afford it, pay as much as this in house rent alone for the doubtful benefit of roof-shelter in a slum.

Having, therefore, obtained the employees' contribution, the Chancellor must consider carefully the capacity of the employer to contribute, and I hope everyone will agree that this is really a point we need not be expected to investigate. I cannot see how it enters into medical politics. It is said that the State must also bear part of the expense. Whether this is so or not is again a question of political, not medical, economy. All the medical profession can say about it is that if the funds drawn from the employers and employees are insufficient, the balance must *not* come out of the pockets of the medical men who serve the State in this matter.

Now as to the "scheme" of payments.

The important point is that the relation of doctor and patient is to be the same as in private practice; the patient to have free choice of a doctor, the doctor to be paid his ordinary fees.

The ordinary fees for visits, surgery attendances, and medicines, for fracture cases and confinements, are as easy to ascertain in any district as the price of bread or meat. The ordinary fee is neither the lowest a doctor charges to his poorest patient nor the highest he demands of his richest (since the higher fee is taken to make up for the loss on the lower one), nor yet the fee of the "cheapest" medical man nor of the "dearest"; but is the fee charged to the majority of patients and by the majority of doctors, and any medical man could say at once what is the ordinary fee in his district; there ought to be no difficulty about this, but I enlarge on it because there has been considerable talk of the difficulty of fixing a fee. The only difficult fee to fix would be the confinement fee, which is universally ridiculously inadequate; the seven or eight *post-partum* visits usually given, charged as ordinary visits at 3s. each, come to 21s. or 24s.; and a confinement fee of 21s. means that the attendance at the birth, often many hours in the night, is a free gift, and charity or advertisement.

The Payment of Accounts.—It is almost inevitable, I think, that in the State insurance scheme the workman's contributions will be deducted from his wages by his employer, and I suggest that the workman will obtain the service of the doctor through his employer by a system of sick-notes, as is done by a large firm in this town.

When the employee or any of his family is sick, he will apply to his firm for a sick-note on Dr. Brown, Dr. White, or Dr. Grey; this note to be valid for attendance during a month, a fortnight, or a week.

(The sick-notes of the Bristol Dispensary and of the private firm referred to are valid for six weeks, but I suggest that they may vary according to the man's statement as to what is likely to be required.)

This sick-note is taken to the man's doctor, who forthwith commences attendance. (In emergencies the man summons the doctor first and then obtains a note.) The doctor fills in each visit and attendance on the back of the note (as easy a matter as keeping a day-book and ledger), and at the end of the week, fortnight, or month, returns it to the employer, keeping himself a counterfoil of the total

amount. The employer endorses the account and sends it to the official paymaster. If the attendance is not finished the patient obtains another note, which is dealt with in the same manner.

There are thus already two checks on the attendance. First, the repeated applying for a note and stating generally the nature of the service required—for example, the man says one of his children has got diarrhoea, and obtains a sick-note for a week; at the end of a week he asks for another note for a month as his child is certified as having typhoid. Secondly, there is the check of the employer knowing his men, who are the shirkers, who are the sickly ones, and who have the sickly families; often also he knows the nature of the illness, as in accidents at the works.

There is still a third and doubly efficient check, for the note goes to the official paymaster, who ought to be a medical man like the medical officer of health. In a very few weeks *any* paymaster would have a very intimate knowledge not only of the amount of attendance each disease or accident averaged, but of the amount given by each doctor in his district for any particular ailment. In case of a difference of opinion between the doctor and the paymaster, the matter could be referred to the Ethical Committee of the British Medical Association local Division, who would deal equitably and honourably between the two. When it is remembered that not only are there the criminal laws and courts of justice available for the prevention of fraud, but that the medical man is also subject in such cases to the crushing penal powers of the General Medical Council, it will be evident, I hope, that the idea of fraud in "running up bills" is, as I said, contemptible.

The "ordinary fees" may be a stumbling-block to some doctors, who would say "my fees are higher than the ordinary ones, and I cannot accept the fee of the Government paymaster." But this practitioner has already the same difficulty in his ordinary practice, and if some of his patients who used to pay him 5s. a visit are now insured by the State (as under the payment per visit system there is no reason why they should not be) to the extent of 3s. a visit, he will as easily obtain the supplementary 2s. as he did formerly the 5s. in competition with his *confrères* of lower requirements.

This system also solves all difficulty about wage limits. In a letter to the JOURNAL of February 19th, 1910, Dr. P. R. Cooper says:

> What a blessing it would be if all medical practice could be paid for in this way—that, is, not by the patient but by an independent insurance department—

poor persons being assisted in their premiums by the State. Now there is nothing in this scheme to prevent the man with an income of £500 a year (to whom insurance against doctors' fees is as necessary as insurance against fire) insuring with the State by paying a premium equal to the total contributions of State, employer, and beneficiary, and there might even be two scales of premium to meet the benefits required, or the *pro rata* on income premiums might be continued up to £1,000 a year. In a letter to the JOURNAL (May 7th, 1910) Dr. Gough says:

> "The extension of the present club system as suggested by the British Medical Association is about the worst system for the average general practitioner that could be devised . . . the principle of the thing is wrong; if any "scheme" is to be carried through, it must be unanimously supported by the whole body of our profession. To obtain such unanimity of purpose it is a *sine qua non* that the scheme shall not be detrimental to the interests of any section of the profession.

Now the British Medical Association's scheme, and Dr. Fothergill's scheme, are both detrimental to the interests of that section of the profession—namely, the general practioners—which is affected by them, though I agree with Dr. Gough that the former is the worse offender; but a scheme which aims at putting our poor patients on the same footing as our rich can be detrimental only to those club doctors who hold their patients by *force majeure*. Certainly their occupation will be gone; but this scheme, if it does anything at all, will redress the present inequality between the amount of attendance required and the amount actually afforded by the patients' means. It is true in one sense that at present there are too many doctors, but only too many for the pay available, not too many for the work that ought to be done. Under a State insurance scheme, with adequate remuneration, there will be work *and* pay for all, at least for many years until the supply of doctors once more exceeds the increased demand, and the doctor with all club patients, even if he loses two-thirds of them as a result of their freedom, will earn as much as he did before from his club attendance. Lastly, the club system has been a righteous grievance to the club *patient*, and, as a club doctor myself, I feel it would be a low ground to take that I might lose my club patients in dealing with that grievance.

My scheme, therefore, is to approach the Government with these propositions:

1. The vast majority of medical men work primarily for love of their work, and not for pay (proofs galore in Poor Law Commission Report, in attitude of science, history of medicine, etc.).

2. Poor pay of medical men is bad for the patients they treat, for the progress of medicine, and therefore for the nation at large. (Enlarge on club work—100 patients a day—the "bottle of medicine," impossibility of, not unwillingness to do, good work, and so on.)

3. The payment per head system is obnoxious to all medical men (except such as hold only clubs, which is equivalent to being a salaried officer).

4. Private practice or whole-time salary are the only services which *wholly* satisfy the doctor (or, we might add, the patient).

5. Salaried officers are barred for a State insurance scheme, because the *subscribers* will demand and have a right to unlimited choice of doctor.

6. It is better for the patient and for the nation that they should get medical advice too easily rather than with too much difficulty.

We present to the Chancellor of the Exchequer (7) a scheme for leaving to the contributing assured full liberty to have what doctor he will, and for paying that doctor in the way he would like by a system of sick-notes or vouchers (this to be discussed and elaborated if necessary).

And if the answer to that scheme is that it would cost a great deal of money, we reply that the gain to the nation in health, physique, and freedom from anxiety will be greater even than the gain to the doctor in being emancipated from the atrocious conditions under which he has laboured so long; and I cannot but think that a statesman of the first rank would view the magnitude of the benefits he had the chance to confer, with a mind broad enough to see the smallness of the merits of parsimony in the methods of achieving his project; nor could I suppose him blind to the honour that would devolve on the man who discarded the idol of "cheapness" in favour of equity and efficiency.—I am, etc.,

Bristol, Sept. 3rd. HARRY GREY, M.D.

SHIP SURGEONS.

SIR,—The accompanying letter is typical of many received by me. I must thank the numerous ship surgeons who have written in similar terms supporting the scheme of association as outlined in the letter of June 9th. It may be remarked that one of the suggestions contained therein has since been acted upon—namely, "the revision of the existing Board of Trade scale of drugs and appliances"—surgeons of several leading companies having been called upon to report on the question of the present drug supply.

Dear Dr. Elliott,—As an old ship surgeon of the Orient, Royal Mail, Union Castle, Pacific Steam Navigation Company, and other lines, I need hardly say I am in complete sympathy with the formation of some organized society, partly represented by a subcommittee of the Medico-Political Committee of the British Medical Association, to inquire into the many rightful grievances of ship surgeons. As a fairly large body of professional men earning their livelihood at sea, the utter apathy displayed by them in this matter is much to be deplored, and, I fear, only tends to accentuate the bad name the ship surgeon has in many cases deservedly earned.

If we mean to establish our proper status it is essential that, as ship surgeons, we unite firmly, and form a strong representative committee, which will ultimately secure not only the aid of the British Medical Association and the Board of Trade, *but of all shipping companies*. We will then have some chance of improving not only the lot of the ship surgeon, but ensuring that shipping companies have steady, capable, and reliable men, who will not in future be looked upon as the "birds of passage" they have hitherto been.

The many points detailed in your letter all need consideration. The formation of a Royal Naval Reserve of Surgeons is

what many would heartily welcome, and should prove a stimulus in fostering the much-needed *esprit de corps*.

If necessary, make use of my name, for I shall be glad to help in any way I can.—Yours very truly,

(Signed) George A. F. Graves.

The tone of the above letter is similar to many received daily, all going to show that the time is ripe for reform.—I am, etc.,

Rostrevor, Sept. 9th. John F. Elliott.

Sir,—I have read with much interest the somewhat desultory correspondence which has been appearing under the heading "Ship Surgeons" for the last two months. I am greatly afraid that interest in this matter is difficult to arouse, principally because those who should be most interested in it are generally at sea, and are out of touch with current medical news.

About two years ago an attempt was made to start a ship surgeons' association. On writing fifteen months ago for particulars, I was informed that the proposed association had failed to materialize owing to lack of interest. I am not a member of the British Medical Association, but if a maritime branch could be formed, or something definitely done for ship surgeons, I should certainly become a member.

With regard to the work, there seems to be a general idea that a ship surgeon has next to nothing to do, and that he is a "slacker," if not something worse. This may be true on some routes, but on others the work is very heavy at times. Things are quite busy enough for most men on the homeward run of a mail ship from Bombay to Marseilles, with a fever-infected crew and a full list of passengers—women, children, and debilitated men—to look after, to say nothing of inspections of every member of the crew every day from Bombay to Suez.

It would be interesting, I think, if some one who has been surgeon on one of the big Atlantic liners would give a brief outline of the work done on a single trip—say, on the Cunardar *Mauretania* or the White Star *Baltic*.—I am, etc,

September 8th. Dukter-Sahib.

NOTIFICATION OF BIRTHS ACT.

Sir,—Owing to certain cases which have been placed in my hands, it is clear that in some districts in England the local authorities intend to bring into operation the penal clause of the Notification of Births Act in respect of "medical attendants" who have failed to carry out the procedure of notification. It will be remembered that where the Act is in operation the duty of notification falls upon the parent, the person attending, and the medical practitioner. Apparently, the penal clause for non-notification is to be set in motion against the last of these only; and in one case it will fall to the lot of the Medical Defence Union shortly to defend seven or eight summonses issued against an individual member. We have, as lately reported in the Journal, successfully defended a member who was proceeded against, being able to plead as a defence that he had reasonable grounds for belief that one of the other "parties" had notified. I should like to warn the profession generally that if this defence be raised, it must be supported by evidence.

A medical practitioner, as soon as the birth is complete, should call the attention of the father of the child or the nurse attending to the necessity of notification, and if possible this direction should be in the presence of a third person, so that additional evidence should be capable of being brought forward if a summons be issued against him later. Whilst the Act is in operation it is useless to ignore it or to imagine that the authorities are not prepared to prosecute. A rude awakening will soon assure practitioners to the contrary. The procedure adopted by most authorities is to treat the parent and the nurse as non-existent, and to deal with the medical attendant as if he were the sole person responsible for the notification. This procedure is manifestly unjust, but the loose drafting of the Act, like so many other Acts, presses heavily upon our profession, and permits this choice of defendants to the authorities, and enables these to single out the "doctor" for the attack.

There are two alternatives to escape the penalty of conviction or the trouble of a prosecution: either to duly notify, or to see that one or other of the persons named in the Act carries out the directions as to notification. It must be always remembered that in defending we have to satisfy the magistrates that we had reasonable ground of belief that someone else has notified, and that unless we can do so a penalty may follow.

The Notification of Births Act is going to cost the medical profession some considerable trouble, and every precaution should be taken to prevent additional loss of money by incurring penalties. Almost every session of Parliament now casts additional unpaid work upon our profession. The proposed "Coroners Act," promoted by a medical member of Parliament, and, I believe, drafted by a "medical barrister," will be, if passed, another instance of the manner in which the profession is to be heavily burdened for the benefit of the public, without remuneration. It is high time that united action should be taken to check this legislative exploitation; to refrain from defending ourselves because a cry may be raised that we are "out for fees" is to brand ourselves as cowardly. Is there any other profession which is compelled by law to do so much gratuitous work as ours? It is high time that we prevented any further "raid upon our hen-roosts."—I am, etc.,

London, W.C., Sept 6th. A. G. Bateman.

CORONERS' LAW AND DEATH CERTIFICATION BILL.

Sir,—I was glad to see the four excellent letters on this subject in the British Medical Journal of September 3rd, and hope practical steps will at once be taken to give effect to Dr. Mussellwhite's suggestions. (These should include non-members of the British Medical Association.)

As long as the members of the medical profession allow themselves to be treated as convicts—that is, forced to work for nothing—just so long will they be treated in this way. If they, as a body, decline to do professional work for the State without reasonable remuneration, that remuneration will be forthcoming, and with it the respect of all reasonable and business men, and the work will be well done and be of value to the State.—I am, etc.,

Ambleside, Sept. 5th. G. Ainslie Johnston.

Sir,—We, as a profession, claim that we should be paid for work done by us, and it appears that in consequence of this attitude on our part we have rendered ourselves liable to the reproach that we are "out for fees." We are no more "out for fees" than are all men and women who have to support themselves by their own exertions and are not living on independent means.

Dr. Asten tells us that Sir William Collins has omitted arrangements for payment in his bill for reasons of "diplomacy." It is strange that men in other occupations are never refused payment for similar reasons. If we order provisions from our butcher or baker, we have to pay coin of the realm, and the diplomat who obtains goods from tradesmen without payment very soon gets into trouble. May we hope that "diplomacy" may soon become as obsolete inside the House of Commons as it is outside it?

The suggestion made by "Unitas" in your issue of August 13th that we should cross out the words "I have examined the body" is open to the objection that the registrar might decline to accept a certificate so treated, with the result that the relatives of the deceased might be unable to get the body buried. Most of us would give way if matters came to such an extreme as this.—I am, etc.,

September 6th. Democrat.

SANATORIUM TREATMENT OF TUBERCULOSIS.

Sir,—Dr. Dutton's letters in the Journal of August 13th and 27th make it quite clear that, in his opinion, cold, damp night air is hurtful to the individual, and apparently his opinion is shared by a writer in last week's issue. It is this groundless fear of the injurious influence of cold, damp night air which compels a large number of people to close tightly their bedroom windows at night and spend their sleeping hours in badly-ventilated rooms, much to their own detriment. Some nine years ago at our county hospital we built an open-air balcony capable of containing ten beds. On this balcony have been treated cases of pulmonary tuberculosis and a large number of other diseases likely to be benefited by the open air

Since that date, so satisfied have we been with the results of our balcony experience, that we have added open-air balconies to every ward in the hospital, including the two children's wards, so that every night, winter and summer, we have on an average over forty individuals—men, women, and children—sleeping in the open air. The night air of our city is, as a rule, neither warm nor dry, and yet I feel sure that every member of our hospital staff is thoroughly convinced, as the result of observation, that our patients derive very great benefit from this form of treatment. We, of course, take care that our patients are sufficiently warmly clothed and protected from rain and snow. When we started our balconies we anticipated some trouble in overcoming the rooted objection of many to night exposure, but our anticipation proved unwarranted. After the first night patients settle down, and they very, very rarely indeed want to return to the shelter of the ward. Over and over again patients have told me that they sleep so much better in the open and wake up more refreshed; there can be no doubt, too, that their appetites are much improved by the constant inhalation of cold pure air.

Dr. Dutton tells us that animals and birds seem to have a deep-rooted instinct to avoid cold, damp air, especially night air. It would be interesting to know how in this country birds and beasts manage to avoid breathing the cold, damp night air. Certainly the birds in the Thames valley seem to thrive wonderfully on it. Naturally in stormy weather they seek as much shelter as they can, but that does not prevent their breathing the night air.

I feel sure that if only Dr. Dutton had the opportunity of closely watching the treatment of a considerable number of patients suffering from a variety of diseases in open-air balconies, his long-cherished prejudice against cold, damp air would be overcome.—I am, etc.,

Oxford, Sept. 5th. W. COLLIER.

SIR,—I have read with considerable perplexity in the JOURNAL of August 27th Professor Pearson's criticisms upon our Westmorland Sanatorium statistics, based upon his perusal of three annual reports which I had sent to him, thinking that they might possibly be of some use to him in the special work upon which he is engaged. My perplexity arose from finding that he had based his criticisms upon the assumption that our statistics deal with *all the patients* admitted into our sanatorium—that is, out-county as well as Westmorland patients (which together number over 900 up to the end of last year), whereas I expressly stated in both my letters to the JOURNAL that our statistics were confined to Westmorland, and the same fact is clearly stated in the reports sent to Professor Pearson. Hence he makes it appear that there is annually the omission of a startling number of patients, the percentage of unrecorded cases advancing by leaps and bounds during the last few years! Certainly this is so, if the *total patients* be taken into account, and why? Simply because the Westmorland cases, which we record, have remained almost stationary in numbers since the commencement of our work (16 to 20 beds), whilst the number of out-county cases, which we do not record, has increased rapidly, especially during the last three years, until at the present time they occupy upwards of 40 beds. The mistake has arisen through Professor Pearson having taken his figures from a short table in the medical superintendent's portion of the tenth annual report, which gives the *total number of cases* admitted each year since 1900. If he has done this inadvertently, it seems a strange mistake, considering that in the same report (tenth) there is a clear statement of our method of recording cases to be found on page 3, under the heading of "results." If purposely done, I can only suppose that he declines to deal with statistics of Westmorland patients as a separate group, whilst we continue to admit a large number of patients from other counties, whose after history is not followed up. In the absence of any explanation as to why he has thus dealt with our figures, I fear that the general impression produced by his letter upon the mind of the ordinary reader will be a very misleading one, and this, I feel sure, is the last thing Professor Pearson would desire.

Secondly, with regard to the change of description from "moderate" to "severe" in Class B cases, the transition may sound rather abrupt, but it in no way affects the results, the same patients being found in that class, whatever be the description. We retained the term "moderate" (that is, "moderately advanced") as long as we classified a third group, C, as "advanced"; but when we excluded the latter, three years ago, the word "moderate" for Class B cases was changed to "severe," in accordance with Dr. Turban's classification, where this term is applied to cases similar in character to those of our Class B.

Thirdly, Professor Pearson draws attention to some discrepancies to be found in the three reports sent to him regarding the number of A and B cases recorded over a series of years, and especially to the disappearance of some 18 cases in the 1910 report. It is quite true that in a few instances there has been a transfer of patients from one class to another. It was only done after a careful revision of the original reports in the case-books, and with an earnest desire to give the most correct classification, and never with the idea of improving the appearance of our reports. The most important cause, however, of the disappearance of some of the patients in the 1910 report is that in former years we included cases from the contiguous district of North Lonsdale (often coupled with Westmorland, but really a part of Lancashire), whereas last year we decided to exclude them as not strictly belonging to Westmorland. The after-history of these cases shows that their retention would really have improved our statistics. Had I known that Professor Pearson intended to give a critical analysis of these reports in the JOURNAL, I could have furnished him with detailed information upon all these points. What I have here said, however, will entirely account for any discrepancies alluded to by him, though it would be quite impossible in a letter of this kind to go into all the figures necessary to prove this.

I can readily see that our tabulated statements, as they stand, with the alterations alluded to, may minimize their value for the purposes of the trained statistician, but it must be remembered that they are chiefly for the use of the general public in this county, and in the form in which they appear in the last report I again claim that they give an absolutely complete and accurate record of all Westmorland consumptives (Classes A and B) treated during the last ten years. It may be statistically unsound to omit the very advanced cases, as Professor Pearson tells us, but being practically incurable under any treatment, I still fail to see how their exclusion affects the position which I took up in my first letter to the JOURNAL, which was an inquiry into the relative merits of sanatorium treatment and that of former days among those consumptives in whom there is some prospect of arresting the disease. Apologizing for the length of this letter, in which I trust I have stated the matter clearly and, above all, fairly,—I am, etc.,

Kirkby Lonsdale, Sept. 3rd. WM. S. PAGET-TOMLINSON.

P.S.—Pressure of work prevented this reply appearing in the JOURNAL of September 3rd.

A PLEA FOR CONSUMPTIVES.

SIR,—While much is being said and written with a view to checking consumption, social laws have been made and legislation even suggested to make it a notifiable disease, it may not be inopportune to hear the views of one of the accursed. I use a strong term with some reason, for I have recently found that servants refuse your service, hotel keepers refuse to keep you, lodging houses object to having you, one's own home and people are anxious to get rid of you, so that I, for one, feel justified in considering myself "one of the accursed." And the result of all this energy of philanthropists, of societies, and of medical men has opened up a new field for commercial enterprise, and the "accursed one" is advised or forced, as the case may be, to go to a sanatorium. I happen to have been in one, and can say with conviction that the curative power of sanatoriums is absolutely imaginary.

No one denies that good air and good food are not only beneficial but absolutely necessary to "cure"; but to the leisured class who can afford both in their own homes the superiority of the latter as a place for "cure" is immense. I speak of the ordinary case of the consumptive, not of him who is also a drunkard or drug addicted—and for these cases I admit the possible desirability of sanatoriums. But surely a life surrounded by disease, by

those on whom death has already laid his hand, by racking coughs and expectorating sounds night and day, is a hell on earth, and life prolonged for months or years under such hideous circumstances may well drive even the bravest to despair and self-destruction. My own case is a very early one, and I have known cases where girls are practically forced to stay in these places, where parents are urged by the resident doctor to keep them. I have heard cries and lamentations all unavailing.

If such places must exist let them be open to public inspection, so that the very real wrongs suffered there by many of our unfortunate fellow-beings may be heard and righted; and let legislation see that no one can be detained there unless a willing party.

August 29th. ONE WHO HAS SUFFERED.

THE MEDICAL PROFESSION AND THE FALLING BIRTH-RATE.

SIR,—I have read with great interest the papers on the social aspects of the falling birth-rate reported in the JOURNAL for August 20th last, but my admiration for the noble ideas expressed therein is tinctured by the thought that we as a profession should remember that "people who live in glass houses should not throw stones," and should, therefore, before criticizing the falling birth-rate and offering the advice recommended by Dr. Fremantle, set our own house in order. To illustrate my argument, I will use the advertisement columns of the same issue of the JOURNAL in which the above-mentioned articles occur, but the same will apply to the JOURNAL every week. A necessary preliminary to a good birth-rate is, to those who have any respect for the marriage tie, better facilities for marriage and the removal of the ban on those who already have children. We often see and hear of cases where employers of labour or public authorities employ unmarried men only, or stipulate that there shall be no "encumbrances." Turning to the JOURNAL, we find the profession to be just as bad. I am giving the case of those members who have to depend on other members of the medical profession or public authorities for a means of obtaining a living—that is, assistants to general practitioners, and those who hold certain public posts—for example, at hospitals, asylums, dispensaries, and so forth.

In the JOURNAL of August 20th there are 15 applications for assistants; of these, 12 are required to be unmarried (indoor assistant means unmarried). With regard to public posts, taking a salary of £120 as the minimum on which a medical man could possibly keep a wife, there are 14 such posts vacant; of these, 9 specifically mention that applicants must be unmarried, and the remainder do not mention marriage, though it is safe to assume that preference would be given to an unmarried man. As regards the advertisements relating to house-surgeons, etc., it is usually not necessary to mention marriage, since the salary is low and the post only temporary, but out of about 42 such advertisements no less than 14 have thought it necessary to mention that an unmarried man is wanted. These posts are worth from £40 to £100 a year! Fancy insisting that applicants should be single! Do the committees of these institutions think that a married man would apply for such a post, or, even if he did think it worth taking for the sake of experience, is a married man to be considered less capable than an unmarried one?

Dr. Fremantle says "we must insist on the paramount importance of Nature's own methods and checks; on the serious dangers resulting from celibacy, from prostitution, from interference with the normal married life," etc.; but before indulging in polemics of this kind we must ourselves set a good example, otherwise we shall rightly be accused of preaching what we do not practise.—I am, etc.,

Birmingham, Aug. 27th. J. F. BRIDGE, M.B., B.S., D.P.H.

THE DANGERS OF FLANNELETTE.

SIR,—The conclusions of the British Fire Prevention Committee on fire tests with textiles, referred to in your issue of July 23rd, disagree so completely with those come to by myself, especially in reference to the inflammability of flannelette, that I venture to draw your attention to the evidence which I gave before the Departmental Committee on Coroners' Law, which dealt, among other matters, with deaths from burning. This evidence, as a reference to the Committee's Blue Book issued this year will show, was supported by many other independent witnesses who had arrived at the same main conclusion that I had. My evidence was to prove that the various so-called non-inflammable flannelettes were only really non-inflammable till washed. After a few washings in the ordinary way they burnt almost, if not quite, as readily as ordinary flannelette. I demonstrated this to the members of the Committee by actually burning specimens before them.

As 85 per cent. of the deaths from burning are due to the want of fireguards, I argued that the only way to prevent the annual loss of 1,400 lives due to burning in this country was to make it compulsory to have a fireguard fixed in every room occupied by children. Section 15 of the Children Act is a step in the right direction, but this only makes it an offence if the child is burnt from the want of a guard; it punishes the parent when his child is injured, but it does not compel him to take reasonable precautions to prevent his child from injury.

I shall wait with interest the final report of this Committee to see what conclusions they have come to on this matter, after hearing the various views of the many witnesses.—I am, etc.,

Hove, Sussex, Sept. 5th. L. A. PARRY, M.D., B.S., F.R.C.S.

THE NEW MIDWIVES BILL.

SIR,—Mrs. Sidney Webb has, in the JOURNAL of September 3rd, written a letter on this subject which seems crammed full of misstatements and to be argued on wrong premisses.

What is the similarity between a man meeting an accident say by a motor car (one of the "Minority" cars) and a nine months pregnant woman requiring a doctor's assistance?

Accepting Mrs. Sidney Webb's analogy, the obvious answer would be that this man, having had seven months' notice of the possible accident, should have arranged for his own doctor or the Poor Law doctor to be ready to come to his assistance if required.

When has the British Medical Association "warned the Government that to import the Boards of Guardians into the difficult business of providing medical aid will deter the midwife and patient from calling in a doctor"?

So far as my recollection goes this Association preferred the local Health Authority because the profession is sick and tired of battling to no purpose with these antiquated Boards. The interests of the woman was a consequent, not the primary cause of this decision. To put it quite plainly, Mrs. Sidney Webb advocates that medical attendance should be given without any deterrent and free of cost to rich and poor who care to demand it, regardless of the fact that *pregnancy and its sequent is not an emergency.*

Sentiment has run riot over this question.

Let Mrs. Sidney Webb concentrate her agitation on having the bill amended so as to include a clause to compel the midwife to disclose to her prospective patient the limitations of a midwife, and to register the name of a doctor who has expressed his willingness to attend if required.

If this is done, it will be found that the rich who are now out to obtain cheap doctoring at their confinement will not engage a midwife; that the poor need not fear any inquiries made later, because they will have nothing to hide from the authorities or their neighbours; and the midwife will thus be kept in that position she was intended to fill.

Personally, I hope that neither the Association nor any of its members will play into the hands of the thriftless and shameless by supporting Mrs. Sidney Webb's agitation, thereby helping to reduce the incomes of general practitioners and to increase the rates.—I am, etc.,

London, S.W., Sept. 10th. E. ROWLAND FOTHERGILL.

SIR,—Dr. Keay has raised some important issues in connexion with the new Midwives Bill. It is not sufficiently recognized that a keen competition takes place between many junior practitioners and midwives as to who shall attend a large section of working-class mothers in childbirth. This is much to be deplored, because economic

conditions should secure for every mother the services of a doctor and a competent midwifery nurse on such occasions; the doctor ought to see the patient during pregnancy to supervise the labour, and be available if any emergency arises, but it ought not to be necessary to remain in a patient's house for several hours at night to witness a physiological process.

In the face of such competition there may be objections to subsidizing the work of the midwife and in making it easier, if one simply regards pecuniary profit.

Sufficient attention has not been paid to the difficulty which midwives have in getting the patient's friends to call in a doctor. I have met with many complaints, as a practitioner who was frequently sent for by midwives, and as an inspector of midwives. No person can be punished as a criminal who refuses to fetch a doctor in such cases, unless the absence of the doctor would involve cruelty to the child after it has had an independent existence. To emphasize this point, in English law neither the priest nor Levite mentioned in the parable of the Good Samaritan would be liable to criminal proceedings even if the wounded traveller died as the result of such passive inhumanity; the same holds good between husband and wife or relatives and friends, etc.

Clause 17 is apparently the only one which is of much public importance, and as it is not proposed in any part of the bill to compel the friends of a lying-in woman to secure medical aid after a midwife has informed them that such is necessary, it is not giving poor women a proper chance of receiving such assistance to bring the relieving officer and the parish machinery, which the poor loathe, to the rescue of a difficult situation.—I am, etc.,

Barking, Sept. 3rd. A. BYGOTT.

SIR,—By publishing her letter in the BRITISH MEDICAL JOURNAL Mrs. Sidney Webb has invited the criticism of the medical profession, and therefore it may not be inopportune to draw attention to the anarchy and confusion into which it is rapidly being plunged by the fallacious reasoning and erroneous methods of well-intentioned but too enthusiastic socio-political philanthropists.

In the first place, Mrs. Webb is quite wrong in supposing that the doctors' fees are paid as a matter of course by the police when he is called by them. Instances could easily be multiplied in which the police have refused to pay under such circumstances. Philanthropic feeling is so intense at present in pursuit of its object that it does not care who suffers so long as its end is attained, and hence new grievances are created. Indeed, it is quite time that this kind of spirit, which is becoming a popular craze, should be curbed and its unfortunate possessors placed under some sort of restraint.

Women of the class whom Mrs. Webb's kind heart commiserates do not make provision for their confinements, but even in that case payment has for many years already been forthcoming from other sources—namely, the union. But now Mrs. Webb's feelings are offended and her sympathies excited, and she wishes to make still further provision for those who do make some provision already. She points out that Parliament in the first bill made no provision for the doctor's fee. Why? Because it was so utterly heedless in its enthusiasm for the sick of one class that it quite forgot the needs of another class.

What is the difference between this and class or strategic legislation? Verily, we are having a plague of legislative measures. No sooner is one Act passed than we have another amending Act, and there is no longer any doubt that the influence of the sanitary authority (or is it the classical, refined, fully fledged, consulting D.P.H.?) is partaking of the vanity which overleaps itself, and is interfering with the work of the general practitioner in directions with which it is not in any way concerned. Why, for instance, is the general practitioner to be deprived of his occasional midwifery case?

In the instances for which Mrs. Webb pleads, the life of the woman is already protected up to the time of her confinement by the sanitary authority, then the guardians, if necessary, step in, and both her life and the child's is protected by the midwife, or nurse and accoucheur. How, then, can infant mortality, one of the ostensible objects of the fuss, be reduced in the way suggested? The very grievances and hardships of the thrifty and hardworking woman of which Mrs. Webb complains are produced by the interference which is prompted by the opinions which she and her friends hold. What will be the result of a second division of the State being called upon to pay? Just as Dr. Keay has pointed out—that the general practitioner will be pushed out, and a much larger proportion of confinements paid for out of the rates without any corresponding benefit whatever, except some dole to the improvident woman. There is no need for the medical man being called in *on public health grounds*. That, as I have pointed out, is already done. Why do it a second time? If the inquiries of the Poor Law are objected to, their offensiveness can be obviated in other ways than by applying to the sanitary authority or the council.

Again, why should the Local Government Board, in the contingencies which Mrs. Webb looks forward to in the future, be called upon to fix any man's fee? Here will be a pretty precedent! It means that the State will be called upon to fix all fees, and the socialist reveals himself at once. Why should the medical man not be allowed to sell his skill in the best market, or in the alternative why not fix the fees of all the professions? Are Mrs. Webb and the Prevention of Destitution Committee prepared for this?

The profession is "out for fees." We are not ashamed of it. As you remark, Sir, a great profession is smarting under the injustice, for many years, of being compelled by law to facilitate the work of a Local Government Board which is now unwieldy through overloading, or that of the Registrar-General, and to assuage the sorrows of relatives of the dead by giving gratuitous certificates, and for its complacency is now being compelled to give other certificates for 1s., and yet again under a penalty for nothing. Are we to be ashamed of protecting our industry and generosity to the public health and welfare? We shall shortly have to protect ourselves against osteo-arthritic-therapy (*sic*). Between now and November, during which Mrs. Webb wishes us to furbish up our political influence, we hope to have intervals of sunshine and fine weather.

Let Mrs. Webb and her kind-hearted friends take a holiday, and not turn the State upside down by political agitation, for destitution (poverty) will always be with us, notwithstanding the efforts of the National Committee. I enclose my card, and subscribe myself, Yours, etc.,

September 6th. A POOR LAW MEDICAL OFFICER.

FEES FOR MEDICAL EXAMINATION FOR INSURANCE.

SIR,—The letter of your correspondent "X." in the JOURNAL of September 3rd raises a very small grievance out of the many that our profession has against insurance companies, or, more accurately, the agents of such. Let me point out to "X." troubles more serious:

1. If the doctor conscientiously examines the proposer in order to fill up the form, probably the next case from that agent will be sent to another doctor.

2. If the doctor makes an unfavourable report, even to a slight extent, he will receive no further work from that agent.

3. Agents, not all I hope, expect the doctor to canvass for cases, and a doctor is chosen who will give up a large part of his time to canvassing. In some instances it is the doctor's wife who undertakes this piece of work.

4. So independent of doctors are insurance agents that some will only give a doctor work on condition that he fills up the medical report form without even having seen the proposer, and I am sorry to say that some medical men stoop even so low as to walk into the agent's office and fill up a bundle of forms that have been waiting for his weekly visit, after which he walks out pocketing both his fees and his conscience. I refused money on such conditions not long ago myself. Verily, it does not pay to be troubled with that thing called "conscience" nowadays! I sometimes wonder do the directors know of the tactics of their agents. I am inclined to think they do, and wink at it, too.

In the profession the result works out like this: "wasters" are supported and perpetuated at the expense of the honest man who will not stoop to such dirty work.—I am, etc.,

September 8th. CLEAN HANDS.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

SIR,—I must thank Dr. T. Gerald Garry for his mention of my paper on the physical signs of incipient pulmonary tuberculosis and its treatment by continuous antiseptic inhalation, published in the BRITISH MEDICAL JOURNAL for December 11th, 1909, and am glad to find that the statements made in that paper meet with his approval and are confirmed by his own experience. He tells us that the plan of treatment recommended in that paper "is practically the same" as that which he has "practised most successfully for over twelve years." It would be most useful if he would give your readers some details of the cases which he has treated in this manner, and of the results obtained. Will he also tell us what precise combination of antiseptic drugs he has been in the habit of employing, and also *for how many hours out of the twenty-four* his patients have worn the inhaler? Many physicians have followed the advice of Dr. Yeo as to antiseptic inhalation, but the period of use of this remedy has been usually far too limited, and I know of no published cases except my own in which the absolutely continuous use of the remedy has been insisted on.—I am, etc,

September 13th. DAVID B. LEES.

SPIRITUAL HEALING AND THE "GUILD OF HEALTH."

SIR,—In my last letter I pointed out that Dr. Bousfield's original article was inaccurate in almost every respect. He now says that I have "evaded the whole point" of his article. I am obliged, therefore, to ask once more the hospitality of your columns. His criticism includes apparently two charges: (1) That by undertaking the position of Warden I "give the guild the approval of a clergyman of the Church of England, which weighs heavily in increasing its membership." It is quite true. I wish my approval weighed more heavily. Indeed, I am touched by this unsuspected importance of an obscure curate. (2) "He uses this wide spreading medium to obtain cases on which to practise spiritual healing." But I do not do anything of the kind. I have hardly ever accepted "cases" who were not connected with the Church of which I am a curate, or personal friends of my own. Dr. Bousfield's idea of our members "canvassing their friends to come to" me, or any of their "clerical fellow-members," is simply ludicrous. The two statements quoted by him are obviously not contradictory at all. The one concerns the guild; the other concerns myself. Whatever I do, I do as a clergyman of the Church of England. The guild is not concerned, and, indeed, knows nothing whatever about it. Except in a very few cases, I have invariably advised people who write to me from a distance to apply to the clergy of their own district.

In regard to the case Dr. Bousfield persists in referring to, I have merely to repeat my request that he would show me what "great responsibility" I undertook and what danger there was in doing what I did. It is hardly an answer to make a general statement about the risk of dealing with cases without medical advice, as I have stated most emphatically my entire agreement with such a perfectly obvious truth.

Finally, the guild, as I said before, is not "founded for such a purpose," which in his letter means the supply of spiritual healing.

I do not in the least mind criticism. It is precisely what is wanted. But it is reasonable to ask that any one who desires to criticize a person or a guild should take the trouble to find out the truth about the matter, and should not prejudice public opinion by misrepresentations which, if they are unintentional, are not the less inexcusable. I suggest to Dr. Bousfield that we should reserve our energies for the more profitable task of studying some of those difficult questions which are involved in this matter, and which I indicated in my article which appeared in your issue of August 20th.—I am, etc.,

FRANCIS BOYD,
Clifton, Sept. 7th. Warden of the Guild of Health.

SIR,—After long absence abroad, I picked up the BRITISH MEDICAL JOURNAL for August, and have read there on page 464 an astonishing attack on the Guild of Health and its Warden, the Rev. Francis Boyd, by Dr. Stanley Bousfield, M.A., M.B.Cantab. I have read it carefully, and utterly fail to see what it is that Dr. Bousfield finds to criticize in the actions of Mr. Boyd or the existence of the Guild of Health.

If Mr. Boyd had been doing what many others do with impunity—that is, trespassing on the domain of the Medical Faculty, and playing tricks on a patient—I could understand Dr. Bousfield's position, but apparently he has done neither one nor the other.

But what I should like to ask is, Why was Mr. Boyd asked to assist the lady in question? Why are the clergy ever asked if they can help in times of sickness—why do faith healers or spiritual healers exist at all?

I venture to answer this question by an analogy. In Church matters, what originally gave rise to Dissent? Every honest Churchman knows that Dissent came into existence as a consequence of the shortcomings of the Church; and in the same way all sorts of "healings" have also arisen to supply a felt need on the part of the laity, who, having spent all their substance on physicians, who have hitherto blinded themselves to the possibility of anything beyond a material aspect of disease, fly as a last resource to the Gospels, and for comfort and consolation to the clergy in conditions rendered hopeless often by the ignorance and incompetency of medical men. I consider Dr. Bousfield's attack on Mr. Boyd one of the most unfair things I have ever read.

In the first place, what does he mean by "treated"? It is a term used to imply all sorts of charlatanism, and therefore, apart from the medical profession, misleading.

What Mr. Boyd actually did was quite within the scope of his profession. He endeavoured to bring about the very thing which, as a rule, is conducive to the success of the doctor's remedies, a firm belief in the health-giving influence of the Divine Presence, and His unchangeableness and therefore willingness, to relieve suffering, in order to bring about in the patient that calm, collected attitude towards her physical condition which every doctor recognizes as an enormous asset to his own work.

In using either the laying-on of hands or Holy Unction, Mr. Boyd would be entirely acting in his own province and be but obeying a scriptural injunction.

In his attempts to undermine the Guild of Health, Dr. Bousfield is attacking one of the sanest and most practical societies of late years. It is the Church's own effort, inside the Church, to bring together thoughtful men and women to study their Gospels and learn therefrom the message in time of sickness. It constitutes a wise provision on the part of Church people against the onslaughts of the many fallacious cults, such as Christian Science, which with dangerous philosophy and still more dangerous action often neutralize medical treatment, and by raising false hopes bring about the very form of physical excitement that is most antagonistic to beneficial results.

Therefore it is a pity that this eminent doctor should single out a professional man acting quite within the limits of his profession, and a guild which was originally started some years ago for the very express purpose of bringing about those very conditions which are most beneficial to medical practice.

But, thank God, all doctors do not view the work of conscientious clergymen through Dr. Bousfield's spectacles. As an obscure minister of the Word, I have for the last fifteen years practised what he speaks of as "spiritual healing." I have done nothing more and nothing less than that for which Dr. Bousfield seeks to vilify Mr. Boyd; and I can confidently say that the majority of the cases which I myself have dealt with have been those sent to me by men who stand high in the list both of specialists and general practitioners. But I rather think that so far from harming either the guild or its excellent Warden, this most unfair attack on the part of Dr. Stanley Bousfield, M.A., M.B.Cantab., will only tend to advertise the one and strengthen the hands of the other.—I am, etc,

BOUSFIELD S. LOMBARD, M.A.Cantab.,
September 7th. British Chaplain, St. Petersburg.

THE PROVISION OF DIPHTHERIA ANTITOXIN.

SIR,—In a leaderette in your issue of September 3rd you criticize my letter on the above subject. May I be permitted to comment on your criticism?

1. You say: "The truth is that during the fifteen years before the introduction of antitoxin the death-rate rose

steadily from 120 to 318 per million; during the fifteen years after the introduction of antitoxin it fell steadily from 291 to 157."

This is scarcely correct. In neither the pre- nor post-antitoxin period was there a "steady" rise or fall. It is a characteristic of diphtheria all the world over, as I have shown by numerous statistics in my brochure, *The Antitoxin Treatment of Diphtheria*, that it comes for the most part in epidemics, and the death-rate varies in proportion to its severity quite independently of any alleged remedy.

For instance, beginning with the year 1879, when the rate per million was 120, it dropped to 109 the next year, and rose again to 121 in 1881. Then it remained fairly constant for ten years, averaging 163 per million, which would have been considerably less but for two abnormal exacerbations in 1884 and 1889.

Then it ran up with an almost vertical column in 1892 and 1893 to 222 and 318 respectively, dropping down to 291 in 1894—the last of the pre-antitoxin years. It was not until towards the end of 1895 that antitoxin came into general use in this country. A decline in the death-rate had therefore set in twelve months before.

Then came a fairly constant rate, averaging 266 per million for another eight years, during which period antitoxin was being pushed extensively; the average rate during this period, in spite of antitoxin, exceeded the previous (pre-antitoxin) period by nearly 75 per cent.

In 1902 a decline commenced, and now for the last six recorded years there has been a steady rate between 157 and 182, averaging 168 per million. But this rate has not reached to so low an ebb as it did during the ten years from 1882 to 1891, although antitoxin has been more vigorously resorted to than ever.

The ten years' rate of mortality following the introduction of antitoxin represents the highest decennium on record; and no year nor any group of years since can show so low a rate of mortality as that which obtained before antitoxin became fashionable.

Or, taking the years corresponding to your figures as a whole, the average annual rate per million for the fifteen years before antitoxin works out at 171 4, whereas the fifteen years after show no less than 228 6. In other words, the average death-rate per million during the fifteen years since antitoxin has been in use is 25 per cent. greater than in the fifteen years before it was introduced.

2. But you urge that "thousands of cases, thirty years ago, and less than thirty years ago, were called 'croup,' which would now be called 'diphtheria.'"

Such a statement could not be constituted evidence unless backed up by statistical proof. Fortunately, the Registrar-General does provide statistics upon this interesting point which leave no question as to the result, for he gives the average annual death-rate per million of diphtheria and croup together in ten-year periods as follows:

1861-70.	1871-80.	1881-90.	1891-1900.
390	261	286	314

Now the apologists for antitoxin are faced by the fact that in 1871-80 the death-rate from diphtheria and croup combined was only 261 per million, whereas in 1891-1900, after six years of antitoxin treatment, it had risen to 314! Moreover, there is the peculiar fact that the death-rate of the first decennium fell from 390 to 261 in the second, showing that the ordinary laws of epidemicity can account for the rise and fall of mortality in absolute independence of antitoxin.

3. In reply to my statement that the hospital fatality has been reduced by reason of the inclusion of numbers of cases of bacteriological diphtheria possessing no clinical signs of the disease, you ask how do I "account for the reduced mortality in cases of laryngeal diphtheria and in tracheotomy cases."

The answer is very simple. Since the introduction of antitoxin there has been an increasingly urgent demand that all cases of diphtheria, bacteriological or otherwise, should be removed to hospital, so that instead of, as formerly, cases of severe diphtheria being hurried into hospital for operation at the last moment when the patients were practically moribund, they are now secured earlier, whereby intubation or tracheotomy can be performed before it is too late.

4. In quoting my statement that "the fatality in the cases where antitoxin has not been used has been reduced to a much greater extent," you inquire "Reduced from what?"

My argument is that the table of the Metropolitan Asylums Board, giving 11,716 reputed cases of "diphtheria" from 1895 to 1907 treated without antitoxin, shows a greater reduction in fatality than does the table of 63,249 cases treated with antitoxin. The latter shows a reduction from 28.1 to 10.37; the former shows a reduction during the same period from 13.4 to 2 84—that is, double as much. The fact that all the moribunds, the complications, and the second-week cases were put into the non-antitoxined table only makes the result the more remarkable. At the same time, the inclusion of these cases in this table and their elimination from the table of antitoxined cases vitiates both tables, and constitutes them an unscientific presentation of statistics.

5. In conclusion you say you "prefer the general experience of medical men to my opinions."

This you are justified in doing, providing "the general experience" is based upon sound and scientific reasoning and that my "opinions" are proved to be devoid of such. But to follow this expression by saying that antitoxin "has saved by this time not less, probably, than a quarter of a million lives" only adds an unsubstantiated general "opinion" to an unproved estimate of "general experience," and provides no evidence for the assumption. The evidence, as I think I have shown, goes all the other way.—I am, etc.,

WALTER R. HADWEN, M.D., J.P.,
President of the British Union for the Abolition of Vivisection.

Gloucester, Sept. 6th.

* We have thought it right to publish this letter; but we are content to leave the question to the judgement of the medical profession, after fifteen years' experience, not only in this country, but over all the civilized world.

Obituary.

JOSEPH NELSON, M.D.,

CONSULTING OPHTHALMIC SURGEON, ROYAL VICTORIA HOSPITAL, BELFAST.

IT was with very sincere regret that the profession and public in Ulster heard of the death of Dr. Nelson, which took place in one of the private hospitals in Belfast on the morning of August 31st. Dr. Nelson had been in ill health for the past few months, but only those in immediate attendance were aware of the gravity of his condition. Dr. Nelson was 70 years old when he died, but up till a few months ago looked hale and well.

His was a remarkable and adventurous career. He was born in Downpatrick, co. Down, and was the son and grandson of well-known clergymen. He entered the Faculty of Medicine in the old Queen's College in 1858; but in 1860, in company with a fellow student, Alexander Blakely Patterson, afterwards an Indian judge, and now the only survivor of the handful of Englishmen who took part in the Sicilian expedition, he volunteered for Garibaldi and joined that General in Genoa. They left Genoa in a tramp steamer, and after a week at sea, on May 11th, 1860, they entered and captured Marsala. Young Nelson was also in the march on Palermo and fought at Calatafimi, where Garibaldi's "thousand redshirts" of students, poets, journalists, and artisans, utterly routed King Bomba's fifteen thousand so-called regulars; three times were they beaten back under hot artillery and musketry fire from the last ridge, but finally carried it with the bayonet and routed the foe. Twelve days later they marched into Palermo; and on August 22nd crossed the Straits of Messina and marched through Calabria and entered Naples. After the battle of Volturno, they were joined by Victor Emmanuel, whom Garibaldi proclaimed king of a united Italy. Young Nelson was through this campaign and fought in all the battles; he received a lieutenant's commission in the Regimento Inglese, was presented with a sword by Garibaldi, and subsequently received two medals from the King of Italy. He was fortunate enough to escape both wounds and illness. Returning to Ireland he completed his studies at Belfast and took the M.D. of the old Queen's University in Ireland in 1863, and the

L.R.C.S.I. in the same year. He set out for India as surgeon to a tea plantation; he stayed in the East fourteen years, and acquired several valuable estates as well as skill as an ophthalmic surgeon. Here he also joined in an expedition against the Manipuris, for which he was awarded a war medal. Returning to Ireland, he pursued the study of his speciality in Dublin, and learnt German; he then went to Vienna, acting as assistant to Arlt and Fuchs, and a year later was appointed to the newly-created post of Surgeon to the Eye, Ear, and Throat Department in the old Royal Hospital, subsequently the Royal Victoria Hospital, Belfast, and later to the Hospital for Sick Children. On reaching the age limit in the former institution he retired, greatly to the regret of his colleagues, who presented him with a handsome service of plate, and he was appointed consulting surgeon.

Dr. Nelson had been President of the Ulster Medical Society, and on the visit of the British Medical Association in 1884 was Secretary of the Ophthalmic Section. He was pressed on more than one occasion to accept the Presidentship of the Ulster Branch, but he was always shy of such offices, although a keen attender when any subject his own speciality was being debated. He was a most devoted son of the old Queen's College and Queen's University. To his last day he upheld the highest type of education, and, being endowed with unusual common sense and good judgement, he saw the futility of make-believe and shams. Dr. Nelson's professional relations were of the happiest, and for many years he had one of the largest consulting practices in his department in Ulster, so that his name was a household word. In everything he undertook—whether a dinner, the electric lighting of a room, or the treatment of a patient—he had the happy knack of hammering out every detail until he was satisfied that the best was being done.

Dr. Nelson was twice married, and leaves a widow and five children, most of whom are grown up, and with whom deep sympathy is felt.

DR. TEMPLE C. PALEY, who died recently, was for many years associated with the city of York. He was a grandson of Archdeacon Paley of Carlisle, the famous author of *Evidences of Christianity* and other theological works which long enjoyed great popularity. Dr. Temple Paley was a son of a former Vicar of Easingwold. He received his medical education at University College, London, and was admitted a Member of the Royal College of Surgeons of England in 1846, and a Licentiate of the Society of Apothecaries in 1847. He obtained the M.D. degree from the University of St. Andrews in 1873. He settled in York in 1853, and resided there for a lengthened period. Originally he was House-Surgeon at the York County Hospital, and held that position for three years, but on the Crimean war breaking out he rejoined his regiment, the old West York Militia, of which he was surgeon-major, and went with them to Gibraltar, subsequently joining the battalion for active service. Dr. Paley was noted for his devotion to his duties, and during a severe cholera epidemic at Gibraltar won the regard and esteem of all ranks, making many lifelong friendships. After his return to York he recommenced his medical practice. He was very much respected and beloved as a medical practitioner, and had numerous patients amongst all classes of residents, both in the city and county, and his death will be widely regretted. He had been living for several years at Malvern, and enjoyed good health, though failing somewhat recently. Dr. Paley was 85 years of age, and was a J.P. of Lancashire.

DR. ROBERT BAKER, for many years the head of the Retreat, York, died on August 18th, at the age of 67. A native of Thirsk, he received his medical education at Edinburgh, where he took the degree of Doctor of Medicine in 1864. After practising for some time at Thirsk he took over the private asylum at Lawrence House, York, from Dr. Swanson. In 1874 he succeeded Dr. Kitching as medical superintendent of the Friends' Retreat at York, and continued in that capacity until 1892. In that year he became visiting medical officer to the Retreat, which position he held up to the time of his death. He was skilful in his profession, and was a consistent exponent of the humane treatment of mental diseases, the extension of which he constantly urged. During his connexion with the Retreat many improvements and extensions were carried out, notably the opening of the Gentlemen's Lodge in 1876, the East Villa in 1881, and the West Villa in 1890. He was a member, and at one time president, of the Royal Medical Society (Edinburgh), and also of the Medico-Psychological Association, which met at York while he was its president. Dr. Baker was at one time resident physician, and also resident surgeon, of the clinical wards of the Edinburgh Royal Infirmary. He contributed several important articles to the *Journal of Mental Science* and other periodicals on insanity, and also published some pamphlets on the subject.

EDUARD HENOCH, whose name is a household word to all students of children's diseases, died on August 26th, at the age of 90. He was born at Berlin on July 16th, 1820, and studied medicine there under the famous clinician Romberg, who was his uncle, and Schönlein. He took his degree in 1843, and was afterwards for a considerable time assistant to Romberg. In 1858 he was appointed Professor Extraordinary at Berlin, where he passed the whole of his career. From 1872 to 1893 he was head of the children's clinic in the Berlin Charité. In 1894 he retired. He was the author of many works, the best known of which was his *Lectures on Children's Diseases*, which has been translated into several languages, and was recognized as authoritative throughout the medical world.

DR. PAOLO MANTEGAZZA, well known by his popular writings on scientific subjects, died on August 28th, in his 80th year. Born at Monza in 1831 he studied at Milan and at Pisa, graduating as Doctor of Medicine at Pavia. He began to teach in 1858, after having spent some time in South America. In 1860 he was appointed Professor of Pathology at Pavia—the first Chair of the kind established in Italy—and a laboratory for experiments was also fitted up for him. In 1870 he became Professor of Anthropology in the Istituto di Studii Superiori at Florence. He was the author of works on such subjects as the physiology of pain, the physiology of pleasure, the physiology of love, etc. He was a great traveller, and recorded his experiences in books on the Rio de la Plata, Teneriffe, Lapland, and India. He also took an active part in politics, sitting in the Chamber of Deputies in four successive Parliaments His medical knowledge made him especially useful in the discussion of questions of hygiene. In 1876 he was created a Senator of the Kingdom of Italy.

FRIEDRICH DANIEL VON RECKLINGHAUSEN, the famous pathologist, whose death was recently announced in the JOURNAL, was born at Gütersloh in 1833. He was a pupil of Rudolf Virchow, whose assistant in the Pathological Institute he was for six years. He also worked under Rokitansky at Vienna. In 1865 he was appointed Professor of Pathological Anatomy in the University of Königsberg. In the following year he accepted a "call" to Würzburg, and in 1872 he became Professor in the newly-founded University of Strassburg. He made many important discoveries in pathology, and was the author of numerous contributions to the literature of that department of medical science. As a teacher he had a great and deserved reputation. He was a man of fine personal character. He resigned his Chair in 1906.

DR. J. BROWN SIM, of Nottingham, who died recently, was born at Stewarton, near Glasgow, and was educated for the medical profession at Glasgow University, where he took the degrees of M.B. and C.M. in 1873, and M.D. in 1876. For a time he was House-Surgeon at the Glasgow Royal Infirmary and at the Lock Hospital. He afterwards settled in practice at Nottingham. In 1890 he became a member of the Nottingham City Council, and ceased to sit for that constituency after the elections in 1908. He served for a year with distinction the office of Sheriff, and as Chairman of the Parliamentary Committee he took a leading part in a number of important matters relating to the government and development of Nottingham. He was also for a time Vice-Chairman of the Watch Committee.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

THE USE AND ABUSE OF TESTIMONIALS.

QUERIST.—Medical practitioners should take care, when giving written testimonials, to be sure they will not be abused for purposes of advertisement. But there is no rule of medical etiquette forbidding the giving of testimonials to nurses, masseurs, or masseuses, nor any impropriety in the reasonable use of such testimonials by the recipients.

THE SERVICES OF A SUBSTITUTE.

C.—When one practitioner acts as a substitute for another without any previous arrangement, he is by custom entitled to half the fee, but there is no doubt that in law he could claim the whole. Not to acknowledge such friendly help by a due expression of thanks and the offer of half the fee would be a breach of professional etiquette of which we should be sorry to think any medical practitioner knowingly capable.

NEWSPAPER NOTICES OF MEDICAL PRACTITIONERS.

A CORRESPONDENT sends us a copy of a Bournemouth paper which contains a notice and portrait of the local schools' medical officer, and comments upon it as a professional advertisement. We have repeatedly pointed out, however, that there is no means of preventing the press from giving notices of public officials, and that it is unfair to make their subjects responsible for the zeal of journalists. Moreover, an official who is not in private practice is not open to the suspicion of doing anything directly or indirectly to attract patients. The same remarks apply to a cutting from the *Sheffield Independent*, which contains the report of a meeting of the Bakewell Board of Guardians, where one of these worthies spoke in favour of the candidate who was elected to fill the post of district medical officer as a "jolly good fellow," who "never looked for a rise of salary, and consequently was a gentleman. He had done his work well and never troubled about wages." Doubtless, from the point of view of the guardians, these are excellent qualities, but the recipient of such praise might tell a different story.

AN anonymous correspondent sends a cutting from a Welsh newspaper, which gives some account of the arrangement by which a workhouse medical officer is leaving that post to enter into partnership with a neighbouring practitioner, and adds a sarcastic comment, of which the point is that such a notice is advertising by the parties concerned.

*** As has often been pointed out, it is impossible to prevent newspapers mentioning official changes and adding such scraps of information as they can gather together, but it is uncharitable to assume without evidence that either of the medical practitioners concerned is responsible for or had any knowledge of its publication.

MEDICAL ADVERTISING.

J. C. W.—Although every one distinguishes between advertising for practice and those indirect methods by which a medical practitioner brings himself and his affairs before the public, the latter are not to be condoned because not amenable to the graver censure of the General Medical Council. We think that a practitioner who should allow a photograph of himself on his motor car to be circulated by the agent for a particular machine, and furnish a glowing testimonial in its favour to be printed upon the same postcard advertisement, would not act in accordance with what most members of the profession would regard as the better rule.

MEDICAL PRACTITIONERS IN CHEMISTS' SHOPS.

C. W. H. N.—In former days it was by no means uncommon for a medical practitioner holding the Licence of the Apothecaries' Society to keep a regular chemist's shop, but this has become almost a thing of the past. At the present time, we imagine, it would be difficult to find a registered medical practitioner to take such a post as that described.

CIRCULARS TO PATIENTS.

W. H. C.—It is customary to send out a circular to bona-fide patients to announce the accession of a partner to a medical practice.

INTRODUCTION TO PRACTICE.

C.—In the circumstances, a circular signed by the vendor should be sent to those patients whom he has not been able to introduce personally, and C. should call on them or leave cards as soon as possible.

BRANCH SURGERIES AT CHEMISTS' SHOPS.

DEIR.—We have frequently pointed out that there are obvious and serious objections to medical practitioners having branch surgeries at chemists' shops.

Medico-Legal.

FEES TO MEDICAL WITNESSES.

A MEMBER writes that he has been subpoenaed to attend as a medical witness at the Middlesex Sessions, Guildhall, Westminster. He wishes to know what fee he is entitled to. He resides in the Enfield district.

*** He is entitled to travelling expenses, and 1 guinea a day.

WHO IS TO PAY?

M. W. B.—A workman while at his employment meets with an accident, and goes to B., the nearest doctor, for attendance. He presents his employer's card, and is attended by B. Can B. sue the firm for his fees?

*** If the employers sent the workman to B. for attendance, and the card was intended as a voucher that the firm would be liable, B. could recover from the latter. Otherwise, B. can only look to his patient for payment.

LOCUMTENENTS AND FEES FOR MEDICAL EVIDENCE.

S. S. inquires whether a locumtenent is entitled to the whole or a part of the fees for attending the coroner's or other courts, or performing *post-mortem* examinations: (*a*) In case of sudden death, or accident, where the locumtenent saw the case from the first. (*b*) Where the principal first saw the case, and the coroner's order for *post-mortem* examination, etc., was dealt with by the locumtenent.

*** All fees for attendance at the coroner's, or other, courts belong to the principal exclusively, provided that such attendance has taken place during the time the locumtenent has been in the service of the principal. The same applies to fees for *post-mortem* examinations.

DEATH CERTIFICATES AND INSURANCE PAYMENTS.

ENQUIRER asks whether it is legal for any friendly society to pay the amount insured simply on the production of a medical certificate of the death of the insured.

*** It is not legal to pay insurance money without the production of a certificate from a registrar that the death has been duly registered according to law. The medical death certificate can only be used for the purpose of registering the death.

PARTNERS AND PROFITS.

BELISARIUS writes that an arrangement of the following character was entered into between two practitioners A. and B. A. succeeded B. on the understanding that he was to pay to B. one-third of the annual receipts of the practice for three and a half years. After this agreement had been entered into, A. was appointed a part-time school medical inspector under a county council. Should the emoluments from this office be added to the receipts from the practice in arriving at B.'s share?

*** In the absence of express agreement to the contrary, *all* emoluments of a professional character received by A. in carrying on B.'s former practice should be reckoned in arriving at B.'s share.

APPOINTMENTS OF CORONERS AND POLICE SURGEONS.

POLICE writes to ask for information as to the appointments of coroners and police surgeons; also as to the proper person to whom to apply concerning such appointments.

*** There is no one authority which appoints coroners for England and Wales. These officials are appointed as vacancies occur (generally occasioned by death) after the necessary writ has been issued by the Lord Chancellor directing local authorities to fill up the vacancy in question. These local authorities are county councils, borough or city councils, etc., as the case may be, and to these authorities aspirants for appointment to the vacant office should make application. As to police surgeons, we believe that the Surgeon-in-Chief of the Metropolitan Police has the appointment of the district medical officers of that force. Chief constables of counties or other large districts have doubtless great influence in filling up any casual vacancies.

WORKMEN'S COMPENSATION.

Refusal to be Examined.

In a case at Dunfermline (August 12th) it appeared that the contractors who are building the new dockyards at Rosyth had paid compensation at the rate of 9s. 8d. per week for six weeks to a man who had been injured on their works. They then refused to pay anything further on the ground that the accident was not sustained in the course of the employment, the injury having been caused by the workman pricking his thumb with a pin, which caused suppuration of the thumb. It having been held that the employers having admitted liability could not now back out, they took the further point that the man was no longer incapacitated. The workman refused to submit to a medical examination, in consequence of which the sheriff suspended the compensation until the workman should consent to allow himself to be examined.

Stoppage of the Nose.

In a case at Chepstow (August 15th) it appeared that in July, 1908, the applicant, who was employed at an ironworks, was injured in the head, nose, and face, with the result that there was thickening of the membrane of the nose and one of the tear ducts. He subsequently resumed his employment and worked for defendants in various ways. In April, 1910, he was put to unload bricks, the dust from which obstructed his nose, and in consequence of its abnormal condition inflammation was set up. He was subsequently away from his work from April 7th to May 5th; and, as the trouble recurred, he was further incapacitated from June 6th to 14th. In these circumstances the judge held that the man had been the victim of an accident, and made an award in his favour.

Rights and Duties of Certifying Surgeons.

A curious point was referred to in an answer by Mr. Churchill in the House of Commons on August 3rd. It appeared that a workman who was suffering from lead poisoning applied to Dr. Young, of Liverpool, for a certificate of disablement. Dr. Young referred him to Dr. Knox, who was acting for another Dr. Young, the certifying surgeon under the Factory Acts. Although Dr. Knox had previously examined this man for the Federated Employers' Association, it appears that he was still bound to give the certificate in question. Mr. Churchill pointed out that he had no power, even if he had the desire, to authorize the workman to apply to any surgeon other than the factory surgeon or his duly appointed substitute.

Duty to Undergo an Operation.

County-court judges are wont to show a considerable amount of scepticism when it is alleged that an operation will enable a man to earn more wages. In a case at Middlesbrough on August 8th it appeared that as the result of an accident to a hand blood poisoning set in, and the index finger became permanently stiff. Evidence called on behalf of the employer was given to the effect that the man's incapacity to work was largely due to his refusal to have the finger removed, and that were it removed he would be able to do light work. On these grounds a diminution of the compensation order was asked for. Evidence was given on the workman's behalf to show that he was not fit to undergo an operation, and also that there was trouble in the palm of the hand which would extend the scope of the operation to considerably more than one finger. An examination having been made by a medical referee, His Honour said he was satisfied that the man's hand would be better if the finger were amputated; but, even so, he doubted whether the man could earn his old wages, or even get employment. He suggested, therefore, the payment of a lump sum in settlement, and the case was adjourned for two months.

The Services.

INDIAN MEDICAL SERVICE.

STUDY LEAVE.

The Government of India has ruled that officers on furlough or other leave, who wish to have part of it converted into study leave, must address the Under Secretary of State, India Office, and should attach (1) a statement showing how they propose to spend the study leave, and (2) documentary evidence that their application for the particular course of study or examination proposed has the approval of the proper authorities in India. Further, officers on furlough or other leave who desire to have it extended for purposes of study should address the Under Secretary of State, but in addition to the above requirements they must support their applications with documentary proof of their having obtained the approval of the authorities concerned in India to their applying for an extension of leave.

ST. JOHN AMBULANCE BRIGADE.

Lieutenant-Colonel Twiss, R.A.M.C., writes to point out that the communication to which reference was made in the article published in the JOURNAL of September 10th, p. 731, was sent to the pupils of the Southampton centre of the St. John Ambulance Association, *except* those trained under the auspices of the British Red Cross Society and those whom he knew already belonged to its Voluntary Aid Detachments.

Public Health AND POOR LAW MEDICAL SERVICES.

DISINFECTION AFTER SCARLET FEVER AND DIPHTHERIA.

Dr. Charles V. Chapin, the Superintendent of Health of the City of Providence, Rhode Island, has frequently thrown doubt upon the necessity for disinfecting premises after the presence in them of certain infectious diseases. In his annual report for 1909 he states that he considers disinfection after diphtheria to be useless unless it can be shown with a reasonable degree of certainty that all the members of the affected family are free from the diphtheria bacilli. Consequently he decided early in 1905 to give up disinfecting after diphtheria unless two successive negative results could be obtained from every member of the family. Owing to the unwillingness of most persons to submit to the taking of cultures, very few disinfections had been done since that time. In the four years prior to 1905, when disinfection was carrried out, there were 25 recurrences of the disease after 1,457 families had been infected, equal to 1.71 per cent. During the five years in which there had been no disinfection there had been 42 recurrences in 2,019 families, equal to 2.08 per cent. Dr. Chapin considers, however, that the danger of omitting disinfection is probably better measured by the development of the disease in persons who go away from home during the sickness and return when it is presumed they may do so with safety. The percentage of attacks among those returning home after disinfection during the fifteen years 1889–1904 was 0.88; and since 1905, when there had been no disinfection, the percentage of attacks was only 0.18. Since the end of 1908 disinfection after scarlet fever had not been urged, but it had been offered; and up to the end of 1909 67 persons had returned to scarlet fever houses where there had been no official disinfection, and not one of these persons was attacked with the disease, whereas during the ten years ending 1909 nearly 2 per cent. of those who returned to disinfected houses became infected.

BACK-TO-BACK HOUSES.

When the Housing, Town Planning, etc., Bill was passing through the House of Commons efforts were made, at the instance of certain North-Country towns, to throw out the clause which prohibited the erection of back-to-back houses. The President of the Local Government Board supported the inclusion of the clause by quoting the well-known results of several medical officers of health and others, who had shown conclusively that the death-rates from all causes and from respiratory diseases was very much higher in back-to-back houses than it was in those dwellings which were provided with through ventilation. Within the past two years further exhaustive investigations into the same question have been carried out for the Local Government Board by Dr. Darra Mair, which have confirmed the results obtained by previous inquiries.[1]

SOCIETY FOR THE PREVENTION AND CURE OF CONSUMPTION IN THE COUNTY OF DURHAM.

The County of Durham Society for the Prevention and Cure of Consumption held its eleventh annual meeting at its sanatorium, Stanhope, on June 25th last, when the report for the year ended April 30th, 1910, was presented. In referring to the preventive work of the society, it is noted that the death-rate for tuberculosis for the county has fallen from 2.13 in 1897 to 1.7 in 1908—a saving of life which is eminently satisfactory. The sanatorium at Stanhope, which was opened in May, 1900, has accommodation for 45 men, whilst a second sanatorium at Wolsingham, which has just completed its first year of work, accommodates 28 women and children. Altogether 225 patients have been admitted during the year which is the subject of the present report. Of these, 101 have been sent to the sanatorium by various local authorities in the county of Durham who have retained beds. Unfortunately less than one-fourth of the cases were admitted in a curable stage of the disease. The results of treatment at the two institutions show a close agreement with those recorded in other sanatoriums, and emphasize the importance of admission in the early stage of the disease. In these circumstances, the small proportion of early cases admitted is unfortunate.

INSPECTION OF FOOD SUPPLIES IN HULL.

The Sanitary Committee of the Corporation of Hull is fully alive to its responsibilities in connexion with the inspection of foodstuffs which are manufactured on a large scale. Consequent upon the city analyst finding a leathery mould in some jam submitted to him for examination, the chief food inspector has reported the result of investigations he has made at the jam factories in the city. It appears that a great deal of jam is made from fruit pulp, which is fruit that has been boiled in steam-jacketed pans. This pulp is placed in large stoneware jars or barrels which are sealed up with corks and resin. On

[1] Report on Back-to-back Houses. By Dr. L. W. Darra Mair. With an introduction by the Medical Officer of the Board. Cd. 5314. (3d.)

the surface of nearly all fruit pulp a mould forms which does not penetrate much into the substance, and when jam is properly made the layer of mould should be sliced off the top of the pulp. In some cases, however, the pulp is poured out through the bung-hole of a cask, when the mould gets incorporated in the substance of the jam. At a recent meeting of the Sanitary Committee the city analyst reported that in not one of fifty-five samples of flour which had been sent to him for examination had he found any mineral adulterant; all were found to be pure wheat flour without the addition of alum or of any foreign grain such as soya flour.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Essex.—The estimated population of the administrative county of Essex at the middle of 1909 was 1,070,973, or a quarter of a million more than the number recorded at the last census. The birth-rate was 22.9 per 1,000 and the death-rate 10.7 per 1,000. The infantile mortality-rate was 80 per 1.000 births. In the preface to the report the county medical officer of health, Dr. J. C. Thresh, refers to the insufficiency of the information which is given in some of the reports of the district medical officers of health, who do not, he states, point out sanitary defects which require remedying and improvements required in administration. He admits that some of the medical officers of health in the county have not hesitated to express the opinion that if they opened their minds too freely in their reports they would soon cease to hold their appointments. With this view Dr. Thresh does not appear to be in agreement, and he asks if those medical officers of health who do report fully ever fail to obtain re-election. The Notification of Births Act is in force in three districts in the administrative county—namely, Barking, Grays, and Ilford. In each district a woman health visitor has been appointed. Referring to the necessity for making a chemical and bacteriological examination of a water supply, Dr. Thresh expresses the opinion that while a chemical examination is absolutely necessary, a bacteriological examination may or may not be required. At the Essex county public health laboratory it is the custom to make a chemical examination first, and, if the results leave any doubt as to the wholesomeness of the supply, such bacteriological tests are applied as may be necessary to arrive at a definite conclusion.

Medical News.

WE are requested to state that the second fortnight of the post-graduate course now in progress at Edinburgh commences on Monday, September 19th. Each of its several parts is independent. The honorary secretary is Dr. Edwin Bramwell, whose official address is University New Buildings, Edinburgh.

IN consequence of representations made by the General Shipowners' Society, London, the Board of Trade is now reconsidering the scale of medicines prescribed for use on board ship. With a view of assisting the Board of Trade to arrive at a decision on the subject, medical officers of the leading steamship lines have formulated a modern list of drugs.

ON September 12th Mr. Herbert Samuel, Postmaster-General, formally handed over to the Committee of the National Sanatorium at Benenden, Kent, a new twenty-bedded pavilion subscribed for by the Post Office Branch of the National Association for the Establishment and Maintenance of Sanatoria for Workers' Friendly Society.

A TOWN planning and model house exhibition is to be held next summer at the Romford Garden Suburb, and in connexion with it a competition for certain prizes of considerable value is announced. Most of them relate to cottages and houses to cost not more than a fixed price, and examples of which the competitors are to supply. Another is for the best suggested plan of laying out the Gidea Park Estate.

THE tenth International Congress of Pharmacy was held recently at Brussels. Delegates from sixteen different Governments and from most of the prominent pharmaceutical associations of Europe were present. Among the subjects discussed were the general principles on which the official examination of medicinal preparations should be based. It was unanimously resolved to invite the Belgian Government to convene at as early a date as possible an international conference for the purpose of unifying the method of the analysis of potent drugs. It was also resolved to request the editors and the various committees of different pharmacopoeias to adopt in the next edition of these volumes analytical reagents of a uniform character.

Letters, Notes, and Answers.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

R. C. writes: Can any member inform me of a ladies' club or similar institution suitable for a lady dispenser engaged during the day in a N.W. practice?

GEAR-BOX writes: Before taking a contemplated plunge from petrol motors, I should very much like if some medical users of Stanley steamers would allow me to communicate with them.

RUSTICUS desires to know where to obtain information about the relative values of: (1) the Alexander-Adams operation; (2) the intraperitoneal method of shortening the round ligaments; (3) the fixation method advocated by Kelly in treatment of retroversions and retroflexions of the uterus.

NORTH would be much obliged if some one could advise him as regards a suitable place in the South of England or elsewhere where a medical man, who has been ordered to spend the winter months in a milder and drier climate than that of the North of Ireland, could go to. A really comfortable seaside golf hotel with moderate winter tariff and golf charges would be most suitable, as outdoor exercise is essential.

RUS writes: I am staying in a house in the North of England where there is a plague of what the owner calls mosquitos. Whether they are real mosquitos I do not know, but they are buzzing, biting insects, which possibly were in the empty house, or may have been imported in some foreign furniture. Could you or any reader tell me how to get rid of them?

X. desires to know if any one can suggest a line of treatment for an obstinate case of erythema multiforme occurring in a little girl of 3 years old. The recurrent eruption disappeared for a time under strict sour-milk treatment, but the child grew weary of taking it, and immediately on its being slackened the spots began to reappear. Change of air has been tried, tonics of various kinds, arsenic, salol, etc. An attempt was made to give naphthol β, but the nauseous properties of the drug defied attempts to conceal it. The eruption has now lasted many months.

ANSWERS.

G. A. F.—Application should be made to the Secretary, National Hospital for the Paralysed, etc., Queen Square, Bloomsbury, who would probably be able to recommend a suitable home.

M.B.—Our correspondent must use his own judgement in the matter. In the few cases in which the Fallopian tubes have been removed on account of tubal pregnancy or some other morbid change, we are not aware that any ill results hav followed.

INDIAN DIPLOMAS.

L.R.C.P. AND S.—The only diplomas granted in India which entitle their holder to be registered, and therefore to practise, in this country are those of the Universities of Calcutta, Bombay, Madras, and Punjab respectively. As for the Colonies, each of them is its own master in respect of granting or refusing admission to its register, but when dealing with foreign diplomas—that is, those not locally obtained—the smaller Colonies commonly adopt the practice of this country.

TROUBLESOME ERECTION.

ANT-APHRODISIAC writes: In answer to "A Correspondent" in the JOURNAL of September 3rd, I may state as a personal experience, after taking a nightly dose of ʒss pot. brom. for nearly two years, on account of a slight attack of *petit ma*

that this had a strongly sedative effect on the sexual function, erections and desire being almost absent. I have used the same treatment in a patient who was troubled in the same way as "Correspondent's" with good result. It might be worth while to try it, at least for a time. If flavoured with saccharin it is quite a pleasant "nightcap."

Local Anaesthetic in Operation for Hydrocele.

Pharmakos writes: In your issue of September 10th, 1910, p. 731, you publish a formula for a local anaesthetic received from Dr. Hutchinson of Glasgow. Permit me to point out (1) that adrenalin hydrochloride is a solid and cannot be measured in minims—possibly your correspondent means liq. adren. hydrochlor. 1 in 1,000, but he does not say so; (2) that he has not indicated the maker of the distilled water, while giving a source for the other ingredients; and (3) that a solution of cocaine and adrenalin does *not* keep well without added antiseptic unless sterilized and kept in ampoules.

LETTERS, NOTES, ETC.

Treatment of Inflamed Arm after Vaccination.

Deputy Inspector-General J. J. Dennis, R.N., M.D., writes: One perhaps sees, and frequently hears, of bad arms after vaccination against small-pox. The treatment in many cases has been fomentation. I should like to point out the magic effect of the local application over the inflamed parts of equal parts of liq. ferri perchlor. and glycerine, with a dry dressing over all. The time on the sick list will be found to be much shortened.

Fracture of the Penis.

C. H. P. writes: In the Epitome of August 27th there is a case quoted of "fracture of penis." The enclosed extract from an old book of anatomy (*Samuel Collins' Anatomy*, London, 1685, Vol. I, Book I., Part IV, page 535, para. 4) is interesting as illustrating a similar injury: "A gentleman, who being influenced with amorous Desires, courted his mistress in order to fruition and paid dear for his sport, as having his unchast flame quenched before it was raised to a hight, by reason his unkind mistress gave a speedy check to his Amours in putting by his Thrust, by taking his drawn weapon into her hand, whereby the Weapon and not her Hand was wounded; so that the arteries of the nervous bodies relating to the yard, highly distended with a great source of blood and violently crushed with a rough hand, were thereby lacerated and a great effusion of blood passed through the urethra, whereupon the yard grew immediately lank upon a free discharge of blood out of the arteries furnishing the nervous bodies."

The Causation of Sex.

Dr. Oliver Beddard (London, E.C.) writes: Dr. Martindale Ward's letter (August 27th) suggests to me a saying common among the old women in Norfolk, "Any one can have a boy, but it takes a man to get a girl."

Dr. Louis E. Stevenson (Temple Sowerby, Westmorland) writes: I think the simplest solution of this difficult question is to suppose that the sex of the child depends on the relative strength of the male and female elements at the time of conception—that if the spermatozoon be the more vigorous a female will result and vice versa. The following sexual family history is, to my mind, very instructive. I know a family where the husband is physically very much stronger than the wife. Their first three children were all daughters. The husband then suffered a year's very bad health following on a severe attack of influenza. Towards the end of this year a son was born. When the husband's health was restored two more daughters were born. The husband then suffered from great prostration and shock for about two years, the result of a severe cab accident in London. During this period (in the second year) another boy was born. The youngest child is a daughter who was born after the recovery of the husband. On this theory a hermaphrodite would be the result of conception when the strength of the sexual elements was exactly equal—naturally a rare occurrence. Twins of both sexes would be the result of the fertilization of ova of different relative strengths.

St. Paul's "Thorn in the Flesh."

Dr. W. J. Young (Cambridge) writes: Permit me a few words in reply to "J. B.'s" statement, "Christ and the Apostles spoke in Aramaic." Surely "J. B." cannot be familiar with the evidence. True, Farrar in his *Life of Christ* concludes that Christ did not speak Greek; but, as has been pointed out, Farrar's dramatic sense was keener and truer than his logical faculty, for he speaks of the Lord's "final emphatic word τετέλεσται"! "J. B." should read Roberts's *Discussions on the Gospels* and Conybeare's *Greek Used by Christ*. These would, I think, lead him to modify his sweeping statement. The facts are: (1) Christ spoke *generally* in Greek, occasionally in Aramaic. (2) The names of at least one Apostle (Philip) and all the seven deacons are Greek. (3) Greek was *the* universal language of the time from Britain to India. It was so much the common language that Romans complained of the neglect of Latin *in home life*, and Caesar's last words were not "et tu, Brute," but *καὶ σύ, παιδίον*. It would, therefore, have been impossible for Luke, a physician of Antioch (see Lightfoot, *Supernatural Religion*), to have been ignorant of that language, or to have written to Theophilus (a Greek name, by the way) in Aramaic. (4) Paul spoke Greek to Lysias in Jerusalem (Acts xxi, 37), and Luke records it as a *special circumstance* that Paul addressed the mob in Aramaic. Paul, also, speaking Greek before Festus and Agrippa, alludes to the *special* event of Christ addressing him in Aramaic (Acts xxvi, 14). (5) Peter and James both quote the LXX where it differs from the Hebrew, in the latter case (Acts xv, 15–18) where the difference is the point of the quotation. Study of the New Testament itself should help "J. B." to think again. In the meantime he might do worse than answer to his own satisfaction the following questions: What language did Christ speak to the Greek woman (Mark vii, 26)? What language spoke the Greeks who came to Jerusalem, and why did they approach *Philip*, and what language did they expect Jesus to speak to them (John xii, 20–22)? What language was Jesus speaking when he said "Abba, Father" (Mark xiv, 36)? How is the word *ἐπιούσιον* to be accounted for in the Lord's Prayer? This is the first time in a long experience that I have ever known it suggested that Luke wrote in Aramaic. I would recommend "J. B." to get and study Green's *Handbook to Greek Grammar of the New Testament*. As to the "thorn" itself, I agree with those of your correspondents who regard it as probably an affection of the eyes, but the evidence, though pointing that way, is not absolutely conclusive. That it was a superhuman Satanic presence haunting him, like Luther's devil, is a theory which cannot commend itself to us in these days, nor, indeed, to any one who is familiar with the Scripture.

Dr. G. A. Ferraby (Nottingham) writes: In the Journal of September 10th, p. 732, it is suggested that the Acts of the Apostles is a translation from an Aramaic original. I am no textual critic, but surely this is an error, since St. Paul, the chief actor in the later events, and St. Luke, who recorded them, were both Greek-speaking Jews (if the latter was a Jew). The only part of St. Luke's writings which I have seen it suggested as not being of his own composition consists of the first two chapters of his gospel, which, it is thought by some, may have been a transcript (or translation?) of a record possibly written by our Lord's Mother. As to a previous suggestion by another writer that St. Paul's trouble was due to chronic glaucoma, I think two considerations dispose of the suggestion. First, it does not fit in with the indication in Gal. iv, 14, that it was a loathsome condition; and, secondly, this epistle was probably written (according to Angus's *Bible Handbook*) A.D. 57 or 58, while it gives his visit to Galatia as in A.D. 51. I doubt if a man in those days with obvious symptoms of chronic glaucoma would see to write, even in large characters, some six or seven years later. I have no positive suggestion to make on the general question, but wish to help towards a diagnosis by exclusion.

Dr. George Jones (Blackheath) writes: I am sorry not to be able to give more time to the discussion on St. Paul's trouble. If your two last correspondents are satisfied that St. Paul had (1) as Dr. Welch seems to suggest, a headache lasting for many years *off and on* but somewhat similar in causation to Jacksonian epilepsy well and good, only the matter begins to suggest to a lawyer things he has heard in court when cross-examining an applicant under the Workmen's Compensation Act. (2) Dr. Poynder's author suggests a *stimulus carnis* of the kind reprobated by Luther (*vide* Lightfoot *ad loc.*), well and good. I have no more to say to them; but I do wish once more to urge upon the court consisting of your readers, without quoting further details: (*a*) That St. Paul does not say that he was troubled with either sensual or neurotic suggestions or "nervous debility," nor does he ever doubt his powers. Nor do his letters ever suggest anything but physical fatigue (for example, the shipwreck); (*b*) that he did not write his letters himself but dictated them, taking up the pen only to add the last lines in a large hand similar to that used by some myopes; (*c*) that when we find physical explanations of phenomena it is no part of our duty to search for metaphysical explanations thereof.

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Note.—It is against the rules of the Post Office to receive *Poste Restante* letters addressed either in initials or numbers.

An Address

ON THE

USE AND ABUSE OF THE LIME SALTS IN HEALTH AND DISEASE.

DELIVERED AT THE OPENING OF THE POST-GRADUATE COURSE AT THE GLASGOW ROYAL INFIRMARY, SEPTEMBER 1ST, 1910,

BY

SIR JAMES BARR, M.D., LL.D., F.R.C.P., F.R.S.E.,
CONSULTING PHYSICIAN, THE ROYAL INFIRMARY, LIVERPOOL.

LADIES AND GENTLEMEN,—I am here to-day to deliver the opening address of your session, in response to your kind invitation which has been twice extended to me. My presence here is to me specially gratifying, as it renews old reminiscences of my residence in this Infirmary thirty-seven years ago under my revered teacher, the late Sir William Gairdner. Many of my friends of those days are still alive, and perhaps as youthful as ever, though some, I regret to say, have joined the great majority.

In selecting a subject for my address worthy of this occasion, I had to recollect that it was going to be delivered before an intelligent and critical Scottish audience, who would expect something new or something true. It is always my habit to adhere to the latter condition, and it will be for you to judge as to the newness or freshness of the presentation.

It occurred to me that as Loch Katrine water was supposed to be very deficient in lime, and when I was here this deficiency was blamed for the prevalence of rickets, you might take some interest at least in the use of the lime salts. The subject of the lime salts has interested me for over thirty years, first from a pathological standpoint, next as therapeutic agents, and finally from a physiological point of view. Perhaps the order should have been reversed, but I studied the questions intermittently as they presented themselves to me, and not in any systematic manner.

In 1876 I published a paper on the effects of overwork on the heart and aorta.[1] I showed how chronic high arterial tension led to atheroma of the aorta. At that time I had not the advantage of any of the numerous blood-pressure instruments which are now on the market. My observations were made with my finger-tips and the sphygmograph. I have still plenty of faith in my fingers; with proper training they become very sensitive instruments of precision. In a paper which I read at the Liverpool Medical Institution on February 17th, 1881, on the etiology of aneurysm,[2] I showed that calcification of the aorta was due to the deposition of lime salts in the atheromatous patches which occurred in the subendothelial layer of the intima.

Between 1882 and 1890 Sydney Ringer[3] performed a series of classic experiments on the physiological effects of the various inorganic constituents of the blood. He showed that for the continuous contraction of the ventricles of the frog's heart the presence of minute quantities of a calcium salt was absolutely essential. Calcium increases the efficiency of the beat but delays dilatation: "The effects produced by lime salts in dilatation, and even the persistent spasm induced by the alkaline preparations, are completely removed by a minute trace of a potassium salt—1 in 10,000 to 15,000."

The ventricle continued to beat perfectly when supplied with a neutral normal saline solution containing minute quantities of calcium and potassium chloride, and therefore alkalinity of the circulating fluid is not necessary for contractility. The alkaline reaction of the blood is no doubt necessary indirectly for contractility, for muscular contractions develop acidity, and this must give an acid reaction to a neutral fluid, and the heart cannot contract when supplied with an acid-circulating fluid.

Sodium bicarbonate added to normal saline broadens the beat and rounds its summit, and slightly prolongs both contraction and dilatation. Owing to the increased breadth of the beat, if the contractions are frequent, there occurs partial fusion of the beats. Sodium bicarbonate also induces some persistent spasm (contracture) if the contractions are frequent. All these effects of sodium bicarbonate are obviated by a physiological quantity of potassium chloride.

He showed the antagonism between the potassium and calcium salts, and that the presence of both in proper proportions was necessary for regular and efficient cardiac systoles. He also showed that this antagonism between calcium and potassium existed even in toxic doses, though the antagonism was somewhat modified by temperature, as hot weather caused much tonic contraction, which was not entirely obviated by the effects of potassium in hastening dilatation.

He found that sodium phosphate and sodium bicarbonate accelerated dilatation without sustaining the contractility of the ventricle, and of the calcium salts the phosphate was the most efficient.

He experimented on fishes, and found that the presence of lime in the water was necessary for the maintenance of life.

I draw attention to the interesting fact that those lime salts most efficacious in sustaining function of cardiac tissue are those best adapted to sustain life in ova and tadpoles, phosphate of lime being far more efficacious than sulphate, and the sulphate somewhat more efficacious than chloride. It would appear that those salts of lime in which the lime atom is least saturated by the acid are the most capable of sustaining function.

It must be remembered, however, that in the human subject where drugs are administered by the mouth the sulphate and tribasic phosphate are practically insoluble, and therefore useless. The glycero-phosphate of calcium is very soluble, and a very effective drug. I recollect being very much amused a few years ago by the statement of a professor of therapeutics that the phosphate of lime cured the toothache of pregnancy. His idea as to the cause and cure of the toothache in a pregnant woman was, to say the least of it, original, but it is to be hoped the idea will die with him.

Dr. Ringer, in association with Dr. Dudley Buxton, showed that the effects of the salts of sodium, potassium, and calcium on skeletal muscles are somewhat different from their effects on the heart. The contractility of skeletal muscles perfused with normal saline solution lasts longer, but when exhausted there is a great delay in relaxation. The contractions are strengthened and the relaxation delayed by potassium salts. On the other hand, the lime salts accelerate both contraction and relaxation. Personally, I have usually found that patients liable to cramp, especially of the calf muscles, have a deficiency of lime in their blood, and thus the remainder-contraction so apt to occur in exhausted muscles is not counteracted by a sufficiency of calcium.

In the present day, when the effect of sodium chloride in the causation of dropsy is so widely recognized, it is worth remembering that Dr. Ringer made experiments on the swelling of laminaria when immersed in water, and he found that sodium and potassium chloride retarded but did not lessen the amount of fluid taken up; on the other hand, even minute traces of the chloride or other soluble salt of calcium greatly and persistently restricted the swelling of laminaria. In the treatment of dropsy the chloride of sodium should be excluded, while the calcium salts are beneficial.

I have given this long summary of the work of Sydney Ringer because in the present day it is practically unknown, or does not receive the recognition to which its great merits entitle it. If it had come from Germany it would have been in every textbook on the circulation. Its clinical importance was not sufficiently recognized because only the few took the trouble to inquire as to whether there was too much or too little lime in the blood, and all estimations on this score were purely guess-work, as there was no method known of estimating the amount of lime in less than a litre of blood, and there was no patient who would spare that amount for the mere sake of knowing how much lime it contained. Sir Almroth Wright used a moderately convenient, but not very reliable, method based on the strength of a solution of oxalate of ammonium required to prevent blood clotting. Since the work of Ringer and Sainsbury[4] and others it has been universally recognized that the presence of calcium was necessary for the clotting of blood and milk. More recently, Blair Bell has shown that the setting of gelatine is also due to the presence of calcium. Recently, in a series of very careful experiments, Dr. T. Addis[5] has controverted the work of Wright, and he concludes:

(1) The coagulation time of the blood is unaffected by the administration by the mouth of soluble calcium salts or of citric acid. (2) The amount of ionizable calcium in the blood is

increased by the administration of soluble calcium salts by the mouth, and is diminished by the administration of citric acid, but the increase or decrease which is thus brought about is considerably less than the degree of variation in the calcium content which is necessary before any appreciable effect is produced on the coagulation time.

In 1907 Blair Bell[6] devised a most ingenious and reliable method of estimating the amount of ionizable calcium in a few drops of blood. Briefly stated, he mixes in a small capsule 250 c.mm. of an aqueous solution of oxalic acid (1 in 30) and 100 c.mm. of blood. After the oxalic acid has had time to combine with the calcium and magnesium in the blood, he adds 250 c mm. of a weak solution of acetic acid and glycerine, which dissolves the magnesium salts. He next adds 100 c mm. of the mixture to 500 c.mm. of distilled water. Of this final dilution he places a drop on a glass slide of a Thoma haemocytometer. He counts the number of calcium oxalate crystals in 250 squares, and an average of one crystal per square gives his calcium index 1.0. Blair Bell now considers the normal healthy maximum to be 0.8. This excellent method has not caught on as it should, simply from the fact that it involves trouble, and the ordinary Britisher will not take trouble. When Blair Bell showed the powerful effect of the pituitary extract on involuntary muscular fibre, and its great value in shock, uterine inertia, and intestinal paresis, he had any number of followers, because it is a very simple matter to give a hypodermic injection, so that the drug has been used in all manner of diseases for which it is in no way suited, and Blair Bell has had to complain of its abuse.

When you see a patient in consultation you have usually to make up your mind pretty quickly not only as to diagnosis, but also as to treatment. As to the question whether a patient has got too much or too little calcium in his circulation I have got a good many devices of my own which help me in arriving quickly at a conclusion. These devices I am not going to put down categorically, because they require a good deal of practical experience, but if you are very attentive to this address you may discover them. I frequently have my opinion corroborated or corrected by Pantland Hick, who conducts my blood examinations after Blair Bell's method. For many of the beneficial effects of calcium in health and disease I can strongly recommend my readers to the work of Blair Bell and Pantland Hick on calcium metabolism.

In the following remarks on the use and abuse of the lime salts it will save time and space if I deal with health and disease together.

The Effects of the Calcium Salts on the Circulatory System.

I have referred to the work of Sydney Ringer on the necessity of calcium for the maintenance of the action of the heart and of life. On several occasions I have shown that most chronic diseases of the heart arise from causes acting on the periphery. In my Toronto address[7] I described my methods of estimating the velocity of the blood in the arteries, capillaries, and veins. I also dealt with the viscosity of the blood as the chief cause of the resistance to the flow in the capillaries. Since then I have come to the conclusion that the principal cause of this viscosity is the lime salts, especially the fixed lime. The viscosity can be accurately estimated by the viscosimeter of Du Pre Denning and Watson, and clinically by watching the freedom of flow from a lancet-needle puncture. I determine it by watching the velocity of the capillary circulation in the dorsal surface of a warm finger or hand held at the level of the heart. It is necessary to take the capillary circulation at the level of the heart because the velocity is about doubled by lowering the hand 320 millimetres.

I measure the capillary velocity by gently expressing the blood out of a flat plexus of capillaries in the back of the finger or hand with a rod 10 mm. in diameter, and then watch the time it takes the blood to return with a stop-watch recording fifths of a second. A spot must be selected where the return current comes from all parts of the circumference of the compressed area. In a capillary the axial velocity is double the mean velocity; now the red cells occupy the centre and fill about four-fifths of the lumen of the capillaries, so the actual velocity is about four-fifths of the observed velocity. I therefore put the radius of my rod down as four, although it is actually five millimetres.

From repeated observations I have come to the conclusion that when the capillary velocity is 4 mm. in one second or less there is no excess of lime salts in the blood, but the converse does not hold good.* I have recently seen a case where the capillary velocity was only 4 mm. in one and two-fifths seconds, but the calcium index was only 0 5; the patient was 74 years of age, suffering from arteriosclerosis, with lesions of his aortic, mitral, and tricuspid valves. I felt confident that there was too much fixed lime in his blood and tissues; accordingly I put him on a calcium-free diet and large doses of phosphoric acid. In a week the free calcium ions in his blood had so increased that the index had risen to 1.2, and at the same time the velocity had increased to 4 mm. in one second. In the chilblain circulation the capillary velocity may fall to 4 mm. in two or three seconds, but in this condition almost every one believes that the lime salts are deficient. This is quite true of the free calcium ions, but not necessarily so of the fixed lime. In these cases the fingers and toes are much swollen from the congestion of the large capillaries, but there is no true oedema of the tissues, which would undoubtedly occur if the fixed lime in the blood was deficient. The large molecules of calcium albuminate do not readily transude, and, as Sydney Ringer showed, the oedema of the tissues is inhibited by the presence of the lime salts. On the other hand, in orthostatic albuminuria there is a marked deficiency in the fixed lime, and so the albumen readily transudes through the glomeruli under the increased pressure from the erect posture.

From repeated observations I have come to the conclusion that it is the fixed lime which is concerned in the viscosity and in the coagulation of the blood, and with both these phenomena the free calcium ions which are revealed by Blair Bell's method have directly nothing to do.

The viscosity of the blood in the capillaries increases the work of the heart, but this is merely the second line of resistance, and owing to the large capillary bed it cannot raise the arterial pressure much unless there be also contraction of the arterioles. So far as the lime salts are concerned, this contraction and the action of the heart are due to the free calcium ions. Of course, the secretions of the infundibular portion of the pituitary body and of the suprarenals also lead to such contraction of involuntary muscular fibre, but we are not at present concerned with their excess or deficiency in the circulation. In many cases of orthostatic albuminuria, although there is a deficiency in fixed lime, there may be no defect in free calcium ions, so with the increased capillary velocity there may be contracted arterioles and raised arterial blood pressure. In the maintenance of the arterial blood pressure both the free and fixed lime salts play a very important rôle, both in the input from the heart and in the regulation of the output through the arterioles and capillaries, but I do not wish you to get any exaggerated ideas of their importance, because the secretions of the pituitary and suprarenal glands are also necessary for the regulation of this pressure and the maintenance of life. In Addison's disease, where the vasomotor nerves have not got their natural stimulus, you cannot sufficiently maintain the blood pressure, no matter how much lime you administer. Again, in Landry's paralysis, when you get paralysis of vasomotor nerves with dilatation of the arterioles, the viscosity of the blood may be great, and for a time the heart may act powerfully in order to maintain the blood pressure, but there is an enormous fall in the pressure gradient, and the heart soon gets exhausted pumping blood into the unfilled arteries. There is a great waste of energy and the force of the heart is poorly represented at the periphery. When the capillary velocity falls to about 1 mm. in the second or less, the blood gets charged with carbonic acid; this increases the viscosity and further enhances the work of the heart, but, apart from contraction of the arterioles, it does not raise the arterial blood pressure.

"Good healing flesh," of which many people are very proud, simply means that there is a sufficient or excessive amount of calcium cement in the tissues. This is very useful if you are going to get cut up in strips with a bowie knife, or bruised by a Johnson or Jeffries, as might happen in some parts of America, or if you are going to fall into

* Dr. Haig uses a capillary dynamometer for estimating the amount of purin bodies in the circulation.

the hands of the surgeons, which is a very great risk in this country; but if you are going to preserve the even tenor of your way and live a healthy life to a good old age then you had better not have any unnecessary amount of lime in your blood or tissues. It is one of those cases where you can have too much of a good thing.

My conclusions are that the fixed lime, or that which is linked on to the molecules of albumen, increases the viscosity and coagulability of the blood, while the free calcium ions in association with the suprarenal and pituitary secretions increase the tone and contraction of the arteries and arterioles, heighten the blood pressure, and maintain the force and efficiency of the cardiac contractions. In this latter effect the ions of potassium and sodium play an important part. Lime is by no means the only agent in the production of the viscosity of the blood, which is a moderately viscous fluid, being about five times more viscous than distilled water. The viscosity is augmented by an increase in the number of the corpuscles and in the density, by cold and carbonic acid. It is also important to note that the suprarenal and probably infundibular (pituitary) secretions lead to the retention of lime salts in the blood and tissues, while the thyroid and ovaries increase calcium metabolism, diminish the free and fixed lime in the blood, and thus lessen the viscosity. This has been well shown by Blair Bell, and, on his recommendation, I have for the last three years used with great advantage the calcium salts in the treatment of exophthalmic goitre. However, in many cases the great metabolism leads to an excessive amount of free lime in the blood, and hence calcium is not the only factor in treatment. What part the purin bodies play in the viscosity of the blood I am not prepared to say, and at present it is not my business to inquire, but there can be no doubt that lime may be united with uric acid in the blood, tissues, urine, and urinary calculi.

It is very difficult to prove experimentally the part played by calcium in producing and maintaining high arterial pressure, because it is a slowly acting drug; it is absorbed with difficulty by many people, the blood can only hold a limited amount in the free state, and the more alkaline the blood the less it will hold. There are some people, like myself, who absorb lime very readily, but fortunately excrete it almost as quickly. Within two hours of drinking a glass of milk there is a marked increase in the lime in my urine. While we cannot show with the sphygmomanometer that a dose of lime markedly raises the blood pressure, we have the indirect evidence that decalcifying agents quickly and markedly lower the blood pressure and lessen the viscosity of the blood. These agents do not always lessen the free calcium ions, because they take up a good deal of the loosely fixed lime in the blood vessels and other tissues. Under the free use of phosphoric acid I have seen the free calcium ions increase in the blood, while coarse valvular murmurs abated, and in some cases even disappeared. The blood is the agent for carrying the calcium *to* the tissues, and *from* them to the excretory organs.

Sir Almroth Wright has shown the great value of decalcifying agents in the treatment of thrombosis; on the other hand, when you get capillary haemorrhages, whatever treatment the blood pressure may demand, the viscosity of the blood should be increased by the lime salts. When using decalcifying agents the lime salts should be as far as possible eliminated from the diet, hence milk, cheese, the numerous milk foods in the market, animal jellies, and hard water should be interdicted. Five years ago I sounded a note of warning against the indiscriminate use of sour milk, on account of the lime which it contains; but now the craze has sufficiently developed to attract a discussion at the last meeting of the British Medical Association, and to merit the attention of the daily papers. The craze will soon die out, no doubt to be replaced by some other equally absurd, when people find that they are not going to live to the age of Methuselah. Exercise rapidly increases calcium metabolism, and no doubt the Bulgarian peasant can quickly get rid of the excess of lime which he takes in, but it is quite a different matter with the town dweller. Milk is essential for children, and is useful in many diseases where we wish to increase the amount of calcium in the blood, such as cases of haemorrhage, many cases of pneumonia, and the acute stage of typhoid fever, etc., but for the ordinary adult its utility is somewhat limited.

There are many who assert that the tissues will only take up what lime they require, but I am afraid the tissues have often no discretion in the matter. The lime salts are very apt to get deposited in any part of the body which is not properly functionating. I have seen ossification of the costal cartilages in a man of 27 years of age produced by long-continued fixing of the chest with a spinal support.

Arteriosclerosis.—I here use the term "arteriosclerosis" in its widest sense, to include all thickening and hardening of the arteries. However high blood pressure is brought about it eventually leads to degenerative changes in all the coats of the vessels. Very many years ago I showed how chronic high tension led to degenerative changes, with subsequent atheroma and calcification of the deep layers of the intima of the aorta, and lately Oskar Klotz [8] has found that the degenerative changes in the muscular arteries begin in the media. He has also shown that the lime salts are always deposited in the form of calcium soaps, and afterwards the fatty acid is replaced by phosphoric and carbonic acids.* Dr. Klotz has experimentally demonstrated in corroboration of the previous work of Dr. Josué, that the intravenous injection of adrenalin led to degeneration and subsequent calcification of the media. He also suspended rabbits by the hind legs for a few minutes daily, and thus brought about advanced lesions in the aorta. In this connexion it is worthy of note that in rabbits the calcium index is usually high, and in the human being the arteries of the lower extremities, which are usually subjected to the highest blood pressure, are the most prone to arteriosclerosis. In all the aortas from subjects over 25 years of age examined by Dr. Klotz he found more or less calcareous degeneration.

As the degenerative changes proceed the arteries, especially the aorta, gradually lose their elasticity; consequently the energy imparted by the heart to the blood is not properly stored up, there is a great fall in the pressure gradient between the systolic and diastolic pressures—this leads to longitudinal straining of the arteries, the arch of the aorta gets dilated, and the muscular arteries become tortuous. The best way to prevent and improve these degenerative conditions is to maintain a low systolic and a relatively high diastolic pressure. You may not be able to regulate the secretions of the pituitary and suprarenal glands, but you certainly can control the high-pressure effects which they produce. You can stimulate or add to the secretion of the thyroid gland, which increases calcium metabolism and lowers the blood pressure.

In this indirect manner the iodine preparations act. If the degenerative changes in the aorta have not proceeded too far—and this is most readily measured by the difference between the systolic and diastolic pressures—it is really wonderful what the free and long-continued use of decalcifying agents can accomplish. I have seen aortas considerably dilated so that the arch could be easily felt in the suprasternal notch, and the elasticity much impaired, as indicated by the loud, clear, clanging second sound, diminish in size and the second sound become quite normal. I have seen coarse, rough valvular murmurs and cardiac intermissions permanently disappear. Healthy exercise increases calcium metabolism and lowers blood pressure, and for good health a considerable amount of exercise is absolutely essential. At the last meeting of the Association of Physicians a couple of gentlemen detailed their experiments in exercising rabbits in order to cause cardiac hypertrophy. Of course, the rabbits' hearts did not hypertrophy, as any one should have been able to forecast. The way to bring about hypertrophy of the heart is to raise the arterial blood pressure; if they had given the rabbits some digitalis they would have succeeded better.

Women are not so liable to arteriosclerosis as men, because they eat less, are more temperate in all things, and, as Blair Bell has shown, they get rid of a good deal of calcium with each menstrual period. When it does occur in women, apart from kidney disease, it chiefly occurs in those who have borne large families and in those liable to emotional disturbances—emotion acts like suddenly turning a stopcock in a water-pipe connected with the main; it sets up waves of pressure, the chief stress of which is thrown on the aorta. Blair Bell has shown

* I am now informed that over twenty years ago, in the Glasgow Royal Infirmary, David Newman taught that the lime is always deposited in the blood vessels in the form of a calcium soap, and afterwards the fatty acids are replaced.

that many of the ailments of pregnancy and menstruation appear to be due to calcium deficiency.

It may be inferred from what I have previously said that I am not an advocate of the numerous milk foods in the market. It is only fair to state that Dr. Francis Bond of Gloucester is a strong advocate of cheese and the skipping-rope for the maintenance of health, and he has, I think, about skipped into the Eighties. May he long continue to skip and enjoy his cheese! If a man takes plenty of exercise he can easily get rid of any excess of lime. It does not matter much what a healthy man eats so long as he does not eat too much and takes a large variety. It would be a great advantage to the community if there were better cooks and fewer artificial foods. Sydney Smith said:

> Man could direct his ways by plain reason, and support his life by tasteless food; but God has given us wit, and flavour, and brightness, and laughter, and perfumes, to enliven the day of man's pilgrimage, and to charm his pained steps over the burning marl.

Although I am anxious to direct your lives according to the dictates of reason, I have no wish to deprive you of all the sweets of life for the mere sake of prolonging existence.

Angina Pectoris.—There has been a great deal written on this subject of late which I suppose you have all read. I think I have read all the papers and learnt to forget the most of them. I am not going to weary you with any further dissertation, except to point out two types from a therapeutic point of view. There is, first, the spasmodic type or true angina, where the patient is pale, cold and haggard, anxious, and suffering severe pain, with great oppression in the chest. There is a feeling of want of air, though no real respiratory distress; the skin may be dry, or there may be a cold, clammy sweat. The pulse is usually slow, infrequent and firm, though it may be frequent and rather feeble, and is often intermittent. In these cases there is an excess of lime in the heart muscle and also to a less extent in the blood. The following illustrative case may be here recorded.

On June 18th, 1910, I was asked by my friend, Dr. J. Herbert Sykes, to see a lady with him who had been suffering for six months from angina pectoris. Lately the attacks had been increasing in number and severity, and now there were at least a dozen attacks in each twenty-four hours. All the usual remedies had been tried without much avail, and a very grave view was taken of the case. Mrs. C., aged 65, a thick-set, well-nourished woman, pale face, anxious expression, great pain and intense feeling of oppression in region of heart. The attacks are now so frequent that she has scarcely any rest night or day. Heart's area large, 2 in. to the right and 5½ in. to the left of the mesial line: marked tenderness over the front of the chest. Heart sounds fairly clear, and action regular, except for an occasional intermission; at the aortic area there is a long, rough, loud systolic murmur; a low-pitched systolic murmur at the mitral and tricuspid areas: marked pulsation in the veins of the neck, and the liver large and tender; the superficial arteries thickened and tortuous, and the aorta dilated. Pulse 120, fair volume, an occasional intermission, raised tension. Capillary circulation sluggish, 4 mm. in 1⅔ seconds. Skin at present dry, but she has often cold sweats.

I explained my view to Dr. Sykes, that the patient had too much lime in her blood, and more especially in the cardiac muscle. I recommended that all lime should be excluded from her diet, including the hard Southport water; that she should have plenty of acid fruit, half a drachm of dilute phosphoric acid every four hours; also small doses of morphine and atropine until the pain was relieved. Dr. Sykes had never heard of phosphoric acid for angina pectoris, but was quite willing to try it on my recommendation. Pantland Hick found the calcium index of her blood 1.1. I was afraid to tell Dr. Sykes at the time that the free calcium in her blood was only a point over Blair Bell's unit, for fear he might lose faith in the phosphoric acid, and I had not time to enter into a long explanation, so I simply wrote to him that the calcium content in her blood was more than twice that of mine, without mentioning that my friend Hick thought mine at that time (0.5) too low, and also that I had seen the index over 2.0 without any cardiac symptoms. I advised him to continue the phosphoric acid until her tissues were well decalcified, and that I had no objection to nitroglycerine, so long as he recognized that it was a mere palliative. The treatment seemed to have been almost too successful, as I was not asked to see her again. However, in reply to my inquiry, Dr. Sykes wrote me on August 16th: "Mrs. C., the angina patient, has done exceedingly well. Up to the time that you saw her she required to take twelve to fourteen tablets of nitroglycerine daily, so frequent were her attacks. Afterwards the attacks became much less frequent, perhaps one in three or four days. I kept her in bed for about 1 month; she then got up, but was very weak, shaky, and pulse apt to be intermittent. I stopped the acid mixture, and put her on strychnine and tincture of strophanthus, continuing the same diet. She improved in strength and appetite, so that she was enabled to walk out without any discomfort. About two weeks ago she went with her husband to Bowness, and the latest report is very satisfactory. She is exceedingly pleased with her progress, and thankful that so much relief has been gained. Certainly the increased amount of lime salts was the cause of the trouble."

The second type of angina to which I wish to draw your attention is really not a true angina, but is often mistaken for such and disastrously treated as such. The distress and danger are equally great. These cases are marked by dilatation of the heart, especially of the right side, and increased intracardiac pressure. There is no increase of lime salts, but rather a deficiency. The respiratory distress is real and extreme; there is a feeling of suffocation and great oppression about the chest. The patient is dusky and bathed in a cold, clammy sweat. The lungs get rapidly oedematous. If such a patient is treated with nitroglycerine, nitrite of amyl, or alcohol, his fate is certainly sealed. I have seen many such cases, but a recent one will suffice. It was the case of a stout, flabby lady, aged 56 years, suffering from a much-dilated heart with congestion of the lungs after a protracted attack of rheumatism. When I entered the room she made an effort to raise herself in bed, and was seized with an acute attack of cardiac failure. She gasped for breath, could not speak for the oppression in her chest; her pulse was frequent, quick and small, feeble, and scarcely perceptible at the wrist. She became livid and bathed in a cold perspiration and appeared to be dying. I have no doubt she would have died in less than half an hour if assistance had not been at hand. Before examining her I at once gave her hypodermically $\frac{1}{30}$ grain of strychnine and $\frac{1}{50}$ grain of atropine. There was marked congestion of the lower lobes of both lungs, with commencing acute oedema. She afterwards got a hypodermic injection of $\frac{1}{30}$ grain of strychnine and $\frac{1}{100}$ grain of atropine twice daily; also a mixture of the iodide of calcium and tincture of iodine. She made a good recovery.

Stokes-Adams Disease.—You all know the modern hypotheses as to how the rhythmic function of the heart is started and maintained; how a stimulus is generated at the sino-auricular node, and somehow or other travels through the auricles down the bundle of His to the apex of the ventricles and the papillary muscles, and back again to the base of the ventricles. What is the nature of this stimulus and how it is propagated God only knows, as the nearest approach to a definition which I have heard is that a *stimulus* is a *stimulus*. In this case it is not Scotch whisky, but just a stimulus to contraction. As to its mode of propagation, nothing definitely is known except that it is supposed to travel along the auricular-ventricular bundle, and at the Stannius bridge, between the auricles and ventricles, it moves very slowly, like an old flint gun which often misses fire. Some have supposed that this stimulus has got a wave of contraction of its own, which wave is picked up and reinforced by the ordinary cardiac muscle. On the other hand, Engelmann has shown that it can be propagated apart from any contraction. There are various embellishments of this theory, such as *positive* and *negative chronotropic*, *dromotropic*, *bathmotropic*, and *inotropic* influences. This stimulus runs the risk of being more or less frequently blocked by disease and drugs, so it has been necessary to assume that every healthy muscle cell of the heart has the power of producing a stimulus of its own, which it constantly does, and this is as constantly used up with every contraction, so that after every systole the heart is bankrupt of stimulus. From a therapeutic point of view, as far as I can see, this apparently learned jargon leads only to the grave. It seems to be forgotten that rhythmic action is the function of all muscle; even the skeletal muscles act rhythmically under certain pressure or strain—witness an ankle or patellar clonus. While the myogenists are settling these matters I would advise you to pay some attention to the inorganic constituents of the heart muscle and blood. I have not yet made up my own mind as to the proper treatment of this affection, but I will point out to you the lines along which I think observations should be made. These cases are, perhaps fortunately, few and far between, so that the number which any individual sees is not great. The last case I saw was a lunatic, and he absolutely refused to take any physic. His relatives were quite content to leave the matter to Nature.

In these cases the contraction of the left ventricle,

although very infrequent, is powerful and fairly regular; the systolic arterial blood pressure is high and the diastolic low. There may be two or three ineffective contractions of the right ventricle between the powerful systoles of the left. In these cases you should try to increase the irritability of the cardiac muscle, lessen the remainder-contraction of the ventricles, hasten ventricular diastole, and increase the intracardiac pressure. On this last account this is about the only cardiac affection where a liberal allowance of beer or stout does good. To hasten diastole and lessen the remainder-contraction, active potassium ions are necessary, while the sodium salts should be diminished. For the maintenance of efficient cardiac contraction, free calcium ions are essential, hence all agents which increase calcium metabolism do good, such as thyroid gland and iodine. I have found a combination of calcium iodide, potassium chloride, and tincture of iodine useful. Also phosphoric acid with the glycerophosphates of potassium and calcium.

In this connexion the work of George Ralph Mines[9] is very interesting and instructive. He showed that "the chlorides, nitrates, and sulphates of lanthanum, cerium, and yttrium (unlike those of aluminium) form neutral aqueous solutions. Such solutions added to Ringer's solution made up without alkali will, when perfused through the frog's heart, stop it in diastole when the mixture contains only a hundred-thousandth or even a millionth gram molecule of the rare earth in a litre. The effect is very slowly removed by washing out with neutral Ringer's solution, but the beat is instantly restored by the addition of a little alkali". . . "The close parallel between the action of acids and of the salts of the rare earths on an artificial membrane and their actions on the living heart seems to have a special significance in view of the strong probability that the rhythmic activity of the heart depends on the relations which obtain between the ions within and without the cells."

My text covers a very large area, and I have occupied so much time with a small portion of the field that I am afraid in the remainder of my address I cannot give you much more than headlines; you must fill in the details. I do not wish you to get the idea that the maintenance of health and the treatment of disease consist only in the regulation of the lime salts, but this is merely the part of the subject with which we are at present dealing.

Diseases of the Lungs: Pneumonia.—This is the disease in which I first began the systematic use of lime salts about twenty years ago. I had noticed that in the acute stage of pneumonia the more scanty and the more sticky the expectoration, the more viscous the blood, the more lime salts and leucocytes it contains, *caeteris paribus*, the more favourable the prognosis; on the other hand, the more fluid and haemorrhagic the expectoration, the more liquid the blood, the less the lime salts and leucocytes the worse the prognosis. Dr. Auld[10] has also shown

> that pneumonic consolidation is Nature's method of localizing the morbid process and curing the disease. . . . Moreover, in cases of pneumococcus infection showing little or no tendency to pulmonary hepatization—when the pneumococci run riot in the organism, so to speak—the result is always grave, and indeed generally fatal.

Asthma.—In the attacks there is an excess of free calcium ions in the blood, and in the treatment, both during and between the paroxysms, the intake of calcium in the diet should be strictly regulated. During the paroxysm not merely antispasmodics, but also decalcifying agents should be freely prescribed. A milk diet should be rigidly excluded.

Bronchitis and Emphysema.—In chronic throat cough, bronchitis, and emphysema alcohol and tobacco should be strictly interdicted. The individual should, as far as possible, live in a dry atmosphere and have a dry diet. There is not, as a rule, too much free lime in the blood, but in later stages there is too much fixed lime; you get rigid costal cartilages and a fixed chest wall. One writer thinks that a large rigid barrel-shaped chest is an advantage in emphysema, because it increases the size of the chest, and he thinks exercises a constant suction, thus assisting the heart. This idea is about as absurd as an individual hanging on to the handle of a pump and expecting the instrument to go on working. The practical person would keep moving the handle of the pump, so I would advise you never to let your costal cartilages become rigid if you can help it, but if they do, increase their function by respiratory gymnastics, use decalcifying agents, and lessen the intake of lime.

Acute Infectious Diseases.—Recently Major W. D. Sutherland and Captain D. McCay[11] have shown the inhibitory influence exerted by hypertonic saline solutions and calcium chloride on the action of specific haemolysins, and in blackwater fever they recommend large intravenous or subcutaneous transfusions of a solution containing sodium chloride 12 grams and calcium chloride 0·25 gram to the litre of distilled water. In septicaemia, pyaemia, and infective endocarditis the lime salts do good. They are also useful in pernicious anaemia.

Acute Rheumatism.—In this disease there is an excess of free calcium ions in the blood, and a tendency to fibrin formation. The increase in calcium raises the blood pressure, and this increases the liability to heart mischief. The valves which are subjected to the greatest strain are those which are affected. In valvulitis and pericarditis decalcifying agents should be freely used. A milk diet always does harm, whereas plenty of red meat, which increases the ammonia in the tissues and thus neutralizes the sarcolactic acid, is beneficial. In gout there is more frequently an excess of lime in the tissues and urine than in the free state in the blood; a decalcifying agent like phosphoric acid is useful.

The Nervous System.—It seems to me that those lob-sided cranks who constitute the Food Reform Association must have a good deal of lime in their brains, as their ideas seem as firmly fixed as if they were set in plaster-of-Paris. However, there are some of them who have got an axe to grind that are not such fools as they look. If you want to think quickly, speak quickly, and act quickly, you had better not have too much lime in your nervous tissue, but, on the other hand, for stability and tenacity a certain amount of lime is necessary. I sometimes think it might be worth while to have a typically slow, deliberate, solid Aberdonian chopped up to see how much granite is in his composition. Their salvation seems to rest in oatmeal and Scotch whisky, and thus the calcium is never allowed to reach the cement stage, so you never meet one who is stolid; even the ubiquitous and versatile Jew has no chance against an Aberdonian. Scotsmen, as a rule, do not sink with their gravity or rise with their levity.

Epilepsy.—All the soluble calcium salts do good in this disease, but their administration is not sufficient, you should also lessen the sodium salts, which increase excitability and conductivity of nerve; hence I allow epileptics very little table salt in their food. You should also avoid all decalcifying agents, such as acids, acid salts, and acid fruits, and you should correct any acid fermentation in the stomach. All kinds of milk foods are good. The magnesium salts have a somewhat similar effect to that of calcium, and they constitute the best purgative in this disease. If you wish to use a bromide, which is not always necessary or desirable, then the strontium bromide is the best. Of the calcium salts, I am inclined to think that the iodide is the most efficient in this disease, and it is effective in much smaller doses than any of the other lime salts.

Disseminated Sclerosis.—The lime salts are useful in this disease and the sodium salts injurious, and all acids should be avoided. However, I prefer the salts of zinc, especially the sulphate, with which I have had some excellent results. In this connexion I may mention that in England, to any one who has been in a railway accident, or who wants something out of the Workmen's Compensation Act, exaggerated knee-jerks are a valuable asset; it is often painful to listen to the exaggerated importance which is frequently attributed to this simple sign, which can be readily developed, and is not of much consequence when it is developed. If the knee-jerks are exaggerated in a person who is not taking strychnine, and is not suffering from any obvious nerve lesion, there is usually a deficiency of lime. When the knee-jerks are excessive, or there is other evidence of nerve irritability, you should not prescribe strychnine—a drug which is about as much abused in the present day as digitalis.

Locomotor Ataxia.—The lime salts in this disease are in excess. The treatment from which I have seen the best results has been phosphoric acid and strychnine, Fraenkel's exercises, and the avoidance of a milk diet

Some wonderful results—real or imaginary—have lately been ascribed to mercury, contrary to all former experience. It is supposed that the mercury destroys the *Spirochaetae pallidae*, or their toxins, but I am inclined to agree with those who think that the spirochaetes and their toxins have disappeared long before the appearance of locomotor ataxia. Any good effect which the mercury may have must, therefore, depend on the influence of the metal on the nerve tissue, though I should scarcely expect any of the heavy metals to prove advantageous in this disease.

Neurasthenia and Hysteria.—These are protean or nondescript diseases, a refuge for the destitute. The lime salts are very variable, but, as a rule, deficient, and, at any rate, the metabolism is defective, hence when you wish to give a calcium salt it should be in an active form, such as the iodide, chloride, or glycero-phosphate.

Migraine.—As a rule, the lime salts are in excess, and there is also some intestinal toxaemia. Cutting off the lime salts in the diet and giving a course of sulphate of magnesium in the mornings do good.

The Skin: Eczema, Urticaria, etc.—I believe nowadays dermatologists look upon the majority of cases of eczema as microbic in origin, but I think the irritation may come from within as well as from without, and that in many cases the germ lies in a deficiency of lime and in a dilated stomach. The old gouty eczema is not such a myth as some suppose it to be. In urticaria, enema and serum rashes there is a deficiency of lime in the blood.

Muscular System.—In myalgia, or the so-called muscular rheumatism, there is a deficiency of lime and an effusion into the muscular sheath. Any dilatation of the stomach or acid fermentation should be corrected. The diet should be fairly salt-free, contain no acids, and not much starch. I prefer a meat diet, and in place of milk the lime can be taken as medicine. There should be no sour milk given.

Tetany and Cramp.—Tetany, and cramp of the calf muscles which usually occurs at night, are often associated with dilatation of the stomach and acid fermentation; in both the lime salts are defective. The treatment is best conducted by attention to the intestinal tract.

Wounds.—Wounds of all kinds heal best when there is a fair amount of calcium in the tissues affected. On the other hand, you may have too much lime and more repair than is either necessary or desirable. Blair Bell has shown that there is a large amount of lime in all scar tissue. All the operations of the surgeons in Dupuytren's contraction have ignominiously failed, and as a rule only made matters worse. I have found an excess of lime in the blood in such cases, and lately I have been treating them—with what success remains to be seen—by increasing the function of the part affected and by using general decalcifying agents.

The Digestive Tract.—In the so-called congenital hypertrophic stenosis of infancy I believe the causal agent to be the excessive amount of lime in cow's milk setting up first spasm and then hypertrophy of the pyloric walls. If this be so the disease is not congenital, and the treatment is largely a question of diet. If there be no mother's milk and the cow's milk must be used, then it should be well diluted and contain a considerable quantity of citrate of sodium. Olive oil is useful as a nutrient and to relieve the spasm.

Lime is absorbed into the system through the intestinal mucous membrane, and this is also the most active agent in excreting it.

Professor Benjamin Moore[12] says:

> It is now generally accepted that the neutral fats of the food are completely split up in the course of intestinal digestion, by the lipase of the pancreatic juice, into free fatty acids and glycerine, and that the fatty acids are then rendered soluble by the bile salts and lecithin, either in the form of free acids or as alkaline soaps. So that all the constituents formed in fat digestion are finally taken up by the columnar cells in soluble form.

He also holds that the absorbed fat is re-synthesized to neutral fat in the intestinal mucous membrane, and while

> the detached cells of the pancreas, mucous membrane of the intestine, and mesenteric lymphatic glands have a powerful action in setting fatty acid free from soap, no synthesis of neutral fats has been obtained by the action of such cells or their extracts upon solutions containing soap and glycerine.

Dr. O. T. Williams,[13] who has done some important work on fat digestion and assimilation, has shown that—

> there are conditions in the intestines in which certain soaps or other insoluble compounds of fatty acids are not absorbed by the intestinal mucous membrane, and that with the presence of these conditions certain diseases of the alimentary tract are related. The analyses here given show that true intestinal sand, appendix concretions, and some bodies formed in the intestines are largely formed of fats and calcium soaps. The fats and soaps present are compounds of saturated fatty acids. The constitution of these bodies and their relation to each other in chemical constitution throw, in my opinion, much light upon the etiology of appendicitis and mucous colitis, and possibly upon the underlying factors in certain diseases accompanied by colic.

Dr. Williams[14] has also shown that in countries such as Italy, Greece, and Spain, where large quantities of unsaturated fatty acids, such as olive oil, are taken, appendicitis is comparatively rare. My own experience corroborates the views of Dr. Williams. In my opinion, if people were more careful in their diet and kept their bowels freely open—thus preventing the *Bacillus coli* assuming a malignant type—appendicitis would be a rare disease. The more acid the contents of the colon, the less the putrefaction and the less the liability to appendicitis and colitis.

Some persons absorb lime very badly, and this is perhaps due to the form in which it is presented to the mucous membrane. The insoluble fats, stearin and palmitin, which constitute the greater part of beef and mutton fat, can be extracted from the faeces to the extent of 80 per cent. or more. When these fats are split up their acids readily combine with calcium, forming insoluble soaps which irritate the mucous membrane. On the other hand, cod-liver oil, olive oil, butter and bacon fat contain a large quantity of unsaturated fatty acids, which even with lime form soluble soaps. When, therefore, a person is on a milk diet, or for any reason taking lime, the fat which he takes should largely consist of olein. Butter is much better than margarine, because it contains more unsaturated fatty acid.

Colitis.—In some cases of obstinate constipation there is too much lime in the blood and in the intestinal wall; the same remark applies to the spasmodic form of colitis where there is very severe colicky pain, but where the mucous membrane is to a slight extent involved in the colitis there may be attacks of diarrhoea alternating with the constipation. In such cases there is also intestinal sand in the form of insoluble calcium soaps.

In mucous colitis the calcium index is frequently low, though not invariably so, owing to defective absorption of lime on account of the formation of insoluble calcium soaps, and owing to excessive excretion of lime. In such cases there is diarrhoea, but where there is a fair absorption of lime with a moderately high calcium index the diarrhoea may alternate with constipation. The colitis in dysentery, typhoid fever, tuberculosis, and summer diarrhoea is, of course, microbic in origin, but the forms with which we are here dealing are due to dietetic errors.

In the treatment of spasmodic or mucous colitis or muco-entero-colitis, milk, cheese, all milk foods, animal jellies, and hard water should be forbidden. The fats should be of the unsaturated type, and I usually order a wineglassful of olive oil at bedtime each night. If there be diarrhoea, the acid sulphate of sodium is an excellent drug, while if there be constipation the ordinary sulphate with the citrate of sodium answers better.

Cirrhosis.—In cirrhosis of the liver the calcium index is generally low owing to the catarrh of the stomach and intestines set up by the alcohol. The first part of the treatment is to stop the alcohol and cure the catarrh.

The Urinary Tract.—Dr. Mackarell, Professor B. Moore, and Professor Thelwall Thomas[15] have recently shown that in a preponderating number of renal calculi—at least in Liverpool—there is a large amount of oxalate and phosphate of calcium. This is no more than might be expected anywhere, as healthy kidneys always excrete a certain proportion of lime, though not so much as is excreted by the bowel. The excretion is greatest when the blood is most alkaline; hence the excretion, even under ordinary diet, is greater during the day than it is at night, and on a milk diet the increase is often very marked. Blair Bell and Pantland Hick found the calcium index of the blood to fall gradually during the day, and I think this apparent periodicity is due to the increased excretion. When the kidneys are diseased the defective excretion often leads to retention in the system. The late Dr. J. H. Bryant and Dr. W. Hale White[16] recorded a

unique case of calcification of the arteries, and obliterative endarteritis associated with congenital hydronephrosis, in a child aged 6 months. The right foot was gangrenous, and the changes in the anterior tibial artery extreme. The child was fed at the breast for the first two months, and on cow's milk for the last four. In chronic Bright's disease and in advanced granular kidneys the excretion of lime is very defective, and yet in these diseases milk is almost universally prescribed by the medical profession. In the albuminuria of adolescence or orthostatic albuminuria there is no defect in the excretion of lime, and in such cases milk is beneficial.

As a matter of ordinary routine in my examination of the urine I always precipitate the lime. This helps me to estimate not merely the activity of the kidneys, but also the calcium content of the blood. If there be no excess in the blood there is not likely to be any excess in the urine, but in all these examinations the condition of the kidneys and the specific gravity of the urine must be taken into account—in *urina potûs* you do not expect to find much lime or anything else.

In conclusion, ladies and gentlemen, I must thank you for a very patient hearing. I feel that the address has been very long, but I could have made it much longer without exhausting the subject. However, I think I have said enough to show you that I attach considerable importance to the lime salts in health and disease.

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A SIMPLE CURATIVE TREATMENT OF CHOLERA.

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THOSE who have had to deal with cholera cases in the tropics must often have felt great disappointment at the absence of any material improvement in the treatment of the disease as a direct result of Koch's discovery of the causative organism. The lack of power to check the copious evacuations and prevent the onset of collapse in the acute stage, and the no less helplessness in the presence of later continued suppression of the functions of the kidney, with slow but sure uraemic poisoning, make cholera a terrible disease to contend with. Feeling convinced that a careful study of the changes in the blood would yield valuable indications for its treatment, I have carried out a long series of researches on these lines,[1] especially during the past three years. The first result was the reduction of the death-rate to barely one-half by the use of hypertonic saline intravenous injections in the collapse stage, and blood-pressure-raising measures as a preventive of later uraemia. These have already been published elsewhere,[2] so they will only be summarized here as a preliminary to an account of a more directly curative treatment, which has yielded still more remarkable results during the last twelve months.

THE BLOOD CHANGES AS AN INDICATION FOR THE USE OF HYPERTONIC SALINE INJECTIONS.

I first studied the loss of fluid from the blood and the degree of its concentration by measuring the volume of corpuscles and serum respectively by means of the haemocrite. Table I gives the results, which show that in the mildest cases, not requiring transfusion, an average of one-third of the fluid had been lost from the blood; in severe cases recovering after hypertonic injections, one-half of the fluid had been lost; while in the most severe fatal cases no less than two-thirds of the fluid of the blood had escaped. There was thus a very definite relationship between the amount of fluid lost and the severity of the case, although the rapidity of the loss is doubtless also a factor of great importance, as pointed out by Wall. These observations clearly indicate the necessity of replacing the lost fluid in the collapse stage of cholera.

TABLE I.—*Blood Changes and the Effects of Hypertonic Saline Injections in Cholera.*

	Normal.	Average of 7 Fatal Cases.	Average of 12 Cases Recovering after Transfusion.	Average of 5 Mild Cases not Transfused.
Percentage of corpuscles	45	71	63	56
Percentage of serum...	55	29	37	44
Loss of serum... ...	—	64 per cent.	52 per cent.	35 per cent.
Pints of saline injected	—	3.7	3.6	—
Serum after injection	6	61 per cent.	61 per cent.	—
Blood pressure before injection	110	0–50 mm.	51 mm.	71 mm.
Blood pressure after injection	—	97	107	—
Chlorides before injection	0.8	0.79	0 90	0.92
Chlorides after injection	—	0.95	1.07	—

Of equal importance is the discovery that in cholera, in addition to the loss of fluid from the blood, there is also a great loss of the salts. Thus, instead of the percentage of chlorides becoming increased with the concentration of the blood, it remains comparatively low, and may even be below normal in the worst cases, the loss of salts being in some degree in proportion to the severity of the case, as shown in Table I. This change accounts for the comparative failure of injections of normal salines in cholera collapse, and furnishes an additional reason for the use of hypertonic solutions in order to replace the chlorides, as well as the fluid, lost from the blood in cholera. Raising the salts in the blood appears to check to some extent further loss of fluid from the blood, and so hypertonic injections are not often rapidly followed by an increase of the watery stools, as is so usually the case after normal salines, with rapid recurrence of collapse.

The results of this treatment during two years at the Calcutta Medical College Hospital, compared with the records of the same hospital during eleven years before the revival of intravenous injections by me, are shown in Table II.

TABLE II.—*Results of Different Forms of Treatment of Cholera.*

Period.	Treatment.	Cases.	Deaths.	Percentage. Deaths.	Percentage. Recoveries.
1895–1905 ...	Rectal and subcutaneous salines	1,243	783	59.0	41.0
1906	Normal salines intravenously	112	57	51.9	49.1
1907	Rectal and subcutaneous salines	158	94	59.5	40 5
1908–1909 ..	Hypertonic intravenous salines	294	96	32.6	67.4
Aug., 1909, to July, 1910	Hypertonics *plus* permanganates	103	24	23.3	76.7

During the eleven earlier years the death-rate was 59 per cent. In 1906, when normal salines were used intravenously by Captain Megaw, I.M.S., and myself, it fell slightly to 51 per cent., but on their being given up once more in 1907 as of little use, it rose again to 59.5 per cent. The hypertonic solutions were commenced early in 1908, and during two years' observations the mortality among 294 cases was only 32.6 per cent., or but little more than one-half the previous rate, thus affording most conclusive evidence of the great life-saving value of the new method.

The technique of the injections has been fully described by me in the *Indian Medical Gazette* of November, 1909,[3] including a simple method of regulating the rate of flow, so only the following points need be mentioned here: The hypertonic solution consists of 120 grains of sodium chloride, 6 grains of potassium chloride, and 4 grains of calcium chloride to one pint of sterile water, so as to approximate in its composition to Ringer's fluid. Both Burroughs and Wellcome and Parke, Davis and Co. stock soluble tablets of this formula, such that four to a pint make my hypertonic solution (1.35 per cent.), while three in the same amount of water (0.95 per cent.) is suitable for rectal

injections. Down Brothers make my stopcock cannula and graduated transfusion bulb for regulating the rate of the flow into the vein. In marked collapse in an adult male with little or no pulse at the wrist, three or four pints should be given intravenously at the rate of not more than 4 oz. per minute, being slowed at once to 1 oz. per minute if any distress or severe headache is caused. The specific gravity of the blood is a valuable guide, as, if it is raised to 1062 or over, the above quantities may safely be given. If it is not above normal the collapse is probably not due to cholera, and such copious intravenous injections may be dangerous by producing oedema of the lung. A patient admitted to my ward as cholera, with marked collapse and epigastric pain, was found to have a blood specific gravity of only 1048, so was not transfused, although obviously dying. *Post-mortem* haemopericardium from perforation of the aorta was found, in which condition transfusion would have only hastened her death.

If collapse recurs after a hypertonic injection for cholera the same strength should be repeated. A marked rise of temperature follows these injections, which occasionally goes on to hyperpyrexia. I have found that this grave complication occurs most commonly in patients whose rectal temperature is above normal on admission, even if the surface of the body is cold. In such cases the fluid should be given at only just blood heat, or, better, a little below. In a recent case of cholera with complete loss of pulse, an axillary temperature of 101° and a rectal one of 105°, an intravenous injection was given at a temperature of only 86° F., and with external applications of cold the hyperpyrexia was controlled, the circulation restored, and the patient safely tided over the collapse and reaction stages, recovering completely.

The Prevention of Post choleraic Uraemia by Maintaining a High Blood Pressure.

Another very important fact brought out by my researches is the close relationship between continued deficient blood pressure and fatal post-choleraic uraemia. Daily observations on a large number of cases have shown that every adult whose blood pressure remained continuously below 95 mm. died of uraemia, while if it is raised to over 105 mm. urine is almost invariably freely secreted. Moreover, in fatal uraemia *post-mortem* saline perfusions through the renal circulation revealed very evident obstruction to the flow through the organ, due to the great congestion and haemorrhages into the organ, which was clearly the cause of the suppression of urine. Daily manometer observations have enabled the danger of uraemia to be foreseen, and by using all means to raise the blood pressure to the necessary height I have been able to reduce the proportion of deaths from uraemia to the total admissions to one-half of the former rate,[4] and that, too, in spite of having tided so many severe cases over the collapse stage by hypertonic transfusions, to face the dangers of continued suppression of urine. In fact, I regard this discovery as only second in importance to the value of the strong salt solutions. The measures used include rectal, subcutaneous, and occasionally slow intravenous injections of normal salt solution (0 95 per cent.), cardiac tonics, such as digitalin and strophanthin (the latter intravenously), and the vaso-constrictors, adrenalin and pituitary extract.

By the above means the circulation is usually rapidly restored to such a degree as to lead to the free excretion of the toxins through the kidneys, which is far safer and more satisfactory than Johnston's attempt to eliminate them by purgative treatment. Although by these various measures the mortality of cholera has been reduced by nearly one-half, yet even this system of treatment frequently fails in the most severe and late cases, and especially in immigrant Europeans, whose attacks are more serious than those of native inhabitants of the endemic areas of Lower Bengal. If collapse recurs after a hypertonic injection, repetitions also often fail to save the patient. In some very severe cases the restoration of the circulation by salines is followed by absorption of a lethal dose of toxins from the bowel with high fever, which, in my experience, is always fatal if unconsciousness ensues. Yet to neglect transfusion in these cases is only to allow the patient to die of collapse. I therefore became convinced that any further reduction in the mortality could only result from some more directly curative means, while the power to greatly prolong life, even in very serious cases of cholera, by the hypertonic injections led me to hope for further progress in such a direction.

The Destruction of Toxins in the Bowel as a Curative Treatment of Cholera.

Since the discovery of the comma bacillus, innumerable intestinal antiseptics have been used in the treatment of cholera with a view to destroying the causative organism in the bowel. The simple fact that none of these have come into general use, taken with the sustained mortality of the disease for many years past (the death-rate of cholera in the British army in India, for example, having during recent years been nearly 80 per cent), is sufficient evidence that such antiseptics have no specific action against the disease. Their failure may best be explained in the following manner. We know that the comma bacilli are practically limited to the interior of the bowel, and only penetrate slightly into the mucous membrane. The symptoms of the disease are therefore largely due to the absorption of the specific toxins from the intestinal contents. Now these toxins are mainly, if not entirely, intracellular in nature, and are only set free from the bodies of the bacilli after their death and disintegration in the alkaline bowel fluids, for the rice-water stools of cholera are distinctly alkaline. This being the case, it is easy to conceive that the extensive destruction of comma bacilli in the bowel by intestinal antiseptics may actually result in the more rapid absorption of the deadly intracellular toxins, and so aggravate instead of curing the disease. In this connexion it is worth recalling the observations of Gotschlich and Weltgang that in agar cultures of forty-eight hours' incubation only 7.43 per cent., and after sixty-eight hours only 0.8 per cent., of the cholera spirilla present at the end of the first twenty-four hours were still alive. This tendency of the organisms to quickly reach their maximum numbers, and then as quickly die out and liberate their endotoxins, best explains the short but sharp nature of an attack of cholera, as pointed out by Strong. It at once becomes clear, from these considerations, that an effectual cure of cholera—apart from any specific anticholeraic serum—is most likely to result from some simple method of destroying or rendering harmless the toxins within the bowel itself, thus preventing their absorption in fatal doses. I therefore set to work to find such an agent of a non-poisonous nature.

The Action of Oxidizing Agents in Rendering Bacterial Toxins Innocuous.

A consideration of the close affinities in their chemical nature and physiological actions between bacterial toxins and snake venoms led me to test the effects of oxidizing agents on the former. The remarkable power of permanganates in destroying the toxicity of snake venoms was shown by Lacerda as long ago as 1881, and confirmed by Brunton and Fayrer soon after. In 1903 I tested the action of potassium permanganate on a number of Indian, African, and American venoms, and found a small quantity of this drug was equally effective against each of them, since which many lives have been saved by the local use of this remedy by means of Slr Lauder Brunton's snake lancet. I have recently carried out a number of experiments which demonstrate an equally remarkable action of permanganates in rendering harmless certain bacterial toxins. Those relating to cholera toxins may be briefly referred to here.

Although dead cholera bacilli containing the intracellular toxins are not fatal to pigeons when injected subcutaneously, I have found that a quarter of a culture tube injected intravenously kills these animals in from twelve to eighteen hours. Yet I have been able to inject three times that amount, previously mixed for half an hour or less at blood heat with 3 mg. of calcium permanganate, without death resulting, although some immediate dyspnoea may result from the effect of the precipitate formed in the mixture. The toxin thus appears to have been destroyed by the oxidizing agent. I have not been able to use larger doses, as 5 mg. of the permanganate salt intravenously caused rapid death of pigeons with convulsions. I was also unable to test the action of the toxins given intraperitoneally in guinea-pigs, as unfortunately the salt here also proved to be poisonous, while of course they cannot be given intravenously with safety in sufficient amounts to be of therapeutical value in larger animals or in man.

ADMINISTRATION AND DOSES OF PERMANGANATES.

Although in cholera the bowels are so completely cleared out of their normal contents, and the watery stools contain very little albuminous matter, still, it is not to be expected that the usual small doses of 2 to 3 grains at long intervals, as given in amenorrhoea, could exert much influence in destroying toxins in the small intestine. On coming into contact with unstable animal albumens the oxygen is set free in a nascent form and manganese dioxide precipitated, which appears to be largely inert in the bowel. I have already given up to 50 grains within a day or two, without the slightest indication of any harm having resulted from it, and intend to push it still further in bad cases in the future.

The permanganates are given in two different ways. First, in solution, to drink *ad libitum* in the place of water. Beginning with ½ to 1 grain to the pint, on account of the unpleasant astringent taste, the strength is rapidly increased up to 4 to 6 grains in 1 pint, or even stronger if the patient will swallow it. Fortunately, in severe cases the thirst is so great that no difficulty is usually experienced in pushing the drug in this way. Vomiting may occur, but does no harm. On the contrary, it probably helps to remove some toxin. I have even known obstinate vomiting in cholera relieved by the permanganate drinks, doubtless by destroying some irritant substances in the stomach. Calcium permanganate is the best salt for this purpose, being somewhat less astringent than the potassium one, while as it is divalent it will exert a greater oxidizing action. The calcium element may also possibly lessen the effusion through the bowel wall. The other method of administration is in pill form, for which purpose the potassium salt is more easily dispensed on account of the very hygroscopic properties of the calcium and sodium compounds. The simplest method is to mix two grains of potassium permanganate with a little kaolin powder and vaseline, and make as small a pill as possible. It is then coated with salol one part, in sandarach varnish five parts, or with keratin so as to only dissolve on reaching the alkaline small intestine, where its action is wanted. It is important to see that the pills readily dissolve as they sometimes become hard and inefficient after being kept some time, and may then pass through the bowel unchanged. Two leading firms are investigating the best way of putting up the permanganates at my suggestion, so a thoroughly efficient preparation is sure to be available very shortly. I now give one pill every quarter of an hour for the first two hours, and then every half-hour until the stools become coloured green and less copious, which usually occurs in about twelve hours. In mild cases they need only be given during alternate four-hourly periods. Barley water may also be administered to maintain the strength, as it is not readily acted on by the permanganates. At the beginning of the second day eight more pills are given, and in severe cases this is repeated on the third day in order to avoid relapses which have occurred in three cases. They all promptly yielded to a renewal of the permanganate treatment, thus furnishing an additional reason for believing its action to be directly curative.

RESULTS OF THE PERMANGANATE TREATMENT.

The internal administration of permanganates in cholera for the purpose of destroying the specific toxins within the alimentary tract was commenced in August, 1909. By the end of the year 17 cases, including 10 severe attacks requiring transfusion, had been treated, with only 1 death. The mortality at that season, however, is usually lower than in the first quarter of the year, when I felt sure such a phenomenal recovery-rate could not possibly be maintained. I therefore contented myself with mentioning the new treatment in a lecture to the Calcutta Medical Club in December, 1910,[5] and determined to pursue it for a complete year before fully analysing the results obtained, which are as follows:

In the first quarter of 1910 several very severe cases were lost, but the mortality was still 15 per cent. below that of the same period of the previous year. During this time the proper dosage and best methods of administration were being worked out, and the knowledge so gained may bear further fruit in the future. The mortality for a complete year from August, 1909, to July, 1910, inclusive, has been 23.3 per cent. among 103 cases, against 34.7 per cent. in the first complete year of hypertonic transfusions alone, and 59 per cent. in the eleven years before the revival of transfusion. Thus, the mortality, which had been reduced by nearly one half by the hypertonic saline injections, has now been reduced by the addition of the permanganate treatment to but little more than one-third of the old rate. This further great gain is particularly satisfactory, as it can only be due to saving very severe and previously hopeless cases. It is still possible that slight further improvement may result from pushing the treatment, which necessarily had to be used with considerable caution at first. That the drug is not very toxic in nature will be clear from the following case, which was under the care of Captain J. W. D. Megaw, I.M.S., at the European Hospital: A young adult male swallowed half an ounce of solid potassium permanganate crystals in an attempt to commit suicide. When he came under observation, it was already too late to wash any of the salt out of the stomach, yet he made an excellent recovery after only a fairly acute pharyngitis and a very mild gastritis.

Before accepting the reduced mortality of the last twelve months as due to the new line of treatment adopted, it is necessary to be certain that the cases dealt with were not milder than usual. That they were undoubted cholera is beyond question, for, in the first place, the typical symptoms of the disease were present, all clinically doubtful cases having been excluded. Secondly, the diagnosis has been confirmed bacteriologically in almost every case by finding large numbers of comma bacilli in the stools, while in many they were also isolated and found to give the serum reactions in high dilutions, commonly as high as 1 in 10 000. Regarding the severity of the disease, we fortunately have an admirable control in the figures of the neighbouring Campbell Hospital, which for a number of years previously to the use of transfusion ran closely parallel with those of the Medical College. Until the last three months my methods have not been used there, and the mortality in the first quarter of this year was no less than 71 per cent., the disease having thus been of at least average, or somewhat over average, severity. From May to July, however, hypertonic transfusions and very weak permanganate drinks have been regularly used at the Campbell Hospital, and the mortality has fallen to 34 per cent., against 64 per cent. in the same months of the previous year, the assistant surgeons in charge attributing the great improvement to these measures.

A new cholera ward at the Medical College Hospital was opened in April, 1909, and was placed under my care, thanks to the kindness of Surgeon-General C. P. Lukis, I.M.S. The blood pressure has been taken in every case on admission, and, as a rule, transfusion has only been performed if it has fallen to below 70 mm., which means a very feeble or no pulse at the wrist. All the other conditions have been the same, except the addition of the permanganate treatment in August, 1909, while 9 cases were treated with another similar oxidizing agent, namely, sodium peroxide. The latter drug was found, however, to be more irritating and less convenient for making into pills than permanganates. Experience has shown that the mortality among cases not requiring transfusion is very small and due to complications. The proportion of admissions requiring transfusion will, therefore, furnish the most reliable test of the severity of any series of cases, and the percentage of recoveries among those patients showing such serious collapse as to necessitate intravenous saline injections will give the clearest indication of the life-saving effect of any given treatment, for very few such cases recovered in Calcutta before the introduction of hypertonic transfusions by the writer in 1908. Tested in this way I find in the first place that during the last twelve months intravenous injections have been required in no less than 67 per cent. of the admissions, which is a larger proportion than at any previous period. The proportion of severe cases during the last year has, therefore, been actually higher than usual, so that the reduced mortality under the permanganate treatment is all the more striking.

We may next consider the mortality among the severe transfusion cases. During a year and a half of hypertonic injections without permanganates, the death-rate among 170 transfusion cases was 47 per cent., leaving 53 per cent. of recoveries. In the first year the precise blood pressure and other indications for transfusion were being worked

out, and a larger number of moderately severe cases were given intravenous salines than at later periods, cholera having been also somewhat milder in Calcutta in 1908 than usual. A fairer comparison would be obtained by taking the results in the new ward before and after the addition of permanganates under otherwise identical conditions. From April to July, 1909 (a season when the mortality is somewhat below the yearly average), 28 cases were transfused, with 46.4 per cent. of recoveries. Against this we have, during the last twelve months of permanganate treatment, 69 transfusions with 68.1 per cent. of recoveries, leaving only 31.9 per cent. of deaths in these serious cases. Such a result in the collapse stage of cholera, with a blood-pressure below 70 mm., speaks volumes for the new method.

An even more severe test may be obtained by considering the extremely severe cases requiring more than one transfusion, which is only exceptionally necessary with hypertonic solutions. Before the addition of permanganates, only 38 per cent. out of 50 such cases recovered. Since the toxin-destroying drug has been added, 15 out of 24, or 62.5 per cent. have been repeatedly saved from impending death.

EFFECT OF THE PERMANGANATE TREATMENT IN DIFFERENT PERIODS OF THE DISEASE.

If my contention that the permanganates actually destroy some of the cholera toxins in the bowel is correct, then it should have most effect in those cases which come early under treatment. In testing this it is necessary to bear in mind that there is a marked variation in the mortality of the disease in relation to the time which has elapsed after the onset of the symptoms before admission to hospital. As some of the older Anglo-Indian writers have pointed out, and contrary to what at first sight might be expected, the mortality of cholera is highest among those coming under observation within the first twelve hours of the onset of the disease, and considerably lower among later admissions. It may rise again among patients coming after more than forty-eight hours, as these latter are commonly brought on account of the occurrence of the deadly uraemic complication. The simple explanation of these facts is that the more virulent the disease, the more rapidly collapse requiring removal to hospital will set in. Table III illustrates this point, the first line giving the results of cases treated by hypertonics alone, and the second similar figures for the last twelve months under permanganate treatment.

TABLE III.—*Relation of Period of Admission to Death-rate in Cholera.*

Hours after Onset.	Up to 12 Hours.			12 to 48 Hours.		
	Cases.	Deaths.	Per-centage.	Cases.	Deaths.	Per-centage.
Hypertonic only ...	74	33	44.6	94	19	20.6
Hypertonic with permanganates	46	9	19.6	36	8	22.2

These figures are very striking, and show that the further reduction in the death-rate by the administration of permanganates is essentially due to their favourable action in the severe rapidly developing class of cases coming early under treatment—that is, just those whom early destruction of the toxins in the bowel might be expected to most benefit. In cases in which the disease develops slowly there is more time for the formation of antitoxins in the system as a result of the continued absorption of less overwhelming quantities of the poison. In these the hypertonic salines alone may raise and maintain the blood pressure sufficiently high to allow of rapid elimination to the toxins through the kidneys, thus preventing the accumulation of a fatal dose in the blood.

Again, if the toxins are really rendered harmless to any marked extent in the bowel, then a smaller number of patients admitted with a blood pressure over 70 mm. should subsequently collapse and require transfusion after they have been some hours under treatment in hospital. An analysis of my cases from this point of view shows with the hypertonic injections alone 21.5 per cent. of the transfusions were required for failure of the blood pressure some time after admission; while since the permanganates treatment was added only 12.8 per cent. of such cases have occurred, or but little over half as many. Moreover, in nearly all these the collapse came on within four hours of admission—that is, before the permanganates had time to fully act.

PROPORTION OF DEATHS AT DIFFERENT PERIOD STAGES OF THE DISEASE.

Among the 103 cases the 24 deaths were distributed as follows:

Collapse, 11; reaction with fever, 4; late uraemia, 7; other complications, 2; total, 24.

These figures may be compared with the deaths among 136 cases during 1907, before I introduced the use of hypertonic salines. The percentages then were:

Collapse and reaction stages, 46.3 per cent.; uraemia, 13.2 per cent.; total, 59.5 per cent.

The notes in 1907 were not sufficiently detailed to allow of a separate estimation of the deaths in the collapse and reaction stages, but it will be seen the combined figures are just over three times as high as those of the last twelve months, while the deaths to admissions from uraemia were twice as many. The present death-rate from uraemia of 6.8 per cent. is nearly as low as is likely to be reached, for 5 per cent. of all *post-mortem* subjects in Calcutta show some degree of organic disease of the kidneys, which would leave little or no chance of recovery from a severe attack of cholera. Three of the 7 fatal uraemic cases were in opium eaters—a significant fact. The reduction of the death-rate in the collapse and reaction stages to only 15 per cent. in the last year is very noteworthy, especially if we take into account the condition of admission of the fatal cases. Thus of the total twenty-four fatalities no less than eleven of the patients were admitted with absolutely no pulse to be felt at the wrist, so that the blood pressure could not even be estimated, and in three more it was less than 50 mm., the pulse only just being perceptible. Even such cases, however, are very far from being hopeless, for out of 36 pulseless cases in the last twelve months, no less than 21, or 58 per cent., were saved. Three of the fatal cases were of the very virulent haemorrhagic type and 2 had severe abdominal pain, which is a very bad prognostic sign. Still, I believe that with my present experience several more cases might have been saved, and I am hopeful that another year even 80 per cent. of the Calcutta Medical College cholera patients may possibly be saved.

Clinically the good effects are equally marked, and were particularly striking in several very severe cases, requiring two transfusions within a few hours. Formerly, in the rare occurrence of recovery in such patients, they remained in a critical condition, with marked toxaemic symptoms, for several days. With the permanganate treatment I have repeatedly been astonished to find such patients practically convalescent within twenty-four hours, and showing very little signs of the terrible ordeal through which they had passed. In ordinarily severe transfusion cases the copious rice-water stools become changed to small green evacuations in twelve to twenty-four hours of admission in collapse, in a manner formerly rarely observed. The number of comma bacilli in the stools becomes greatly reduced at the same time. Thus, everything points to permanganates having a definite specific curative action in cholera, and I have no hesitation in recommending its adoption as a routine method of treatment, in combination with hypertonic salines when necessary, as superior to any other therapeutical measure yet subjected to a prolonged and critical trial.

At the same time, I am very far from claiming the new treatment as an infallible remedy for cholera. On the contrary, the more I see of this terrible disease, the more fully I realize the impossibility of saving certain very virulent types, especially if brought late when a fatal dose of toxin has been absorbed. In the future, intravenous injections of a powerful anticholeraic serum may be available for their treatment, while I am about to try oxygen inhalations in the hope of destroying some of the toxins in the blood. Further improvement is most likely to result from these measures and from giving the permanganates in still larger doses than I have yet ventured to use. In trying my methods it should also be borne in mind that the mortality at the beginning of an epidemic is very much higher than at the end, or it may at once be con-

demned on account of its apparent failure in the early hopelessly severe cases, although, if persevered with, it can scarcely fail to reduce the total mortality in a parallel manner to the Calcutta results. Due allowance should also be made for the greater mortality in epidemics than among sporadic cases in an endemic area, such as Calcutta. Of course the permanganates alone will be of little or no use without the addition of hypertonic intravenous salines in those patients who come under observation in a state of marked or complete collapse.

In conclusion, I would point out that the clearest idea of the real life-saving effect of the new methods can be conveyed by the following consideration of the foregoing data. Since the new cholera ward has been open, and an assistant surgeon and a nurse have been available day and night (to whom I owe my best thanks for their ungrudging labours under trying conditions, to which so much of the success of my treatment is due), only 2 per cent. of the admissions have died without being transfused, including a young child in whom a large enough vein could not be found. During nearly three years' experience, 63 per cent. of the admissions have required intravenous injections. This leaves 37 per cent. of mild cases not passing into the collapse stage, 35 of whom might be expected to recover in any case. Now, in the eleven years preceding my investigations, during which intravenous salines were very rarely given, the total recovery-rate was 41 per cent. If cases not showing collapse were in the same proportion as latterly, then 35 of the 41 per cent. of recoveries must have been mild cases, leaving only 6 of the 63 per cent. of collapse cases who were saved, or just under 10 per cent. If we compare this figure with the recovery-rate of 68 per cent. in transfusion cases during the last twelve months, we obtain a seven-fold increase of the cures among severe and formerly nearly always fatal attacks of cholera. Such a result, obtained by a system of treatment based on a close investigation during several years by modern scientific methods of the blood and circulatory changes in cholera, is very gratifying, and should encourage the provision of greater facilities for research work in connexion with large hospitals in the tropics.

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NOTES ON CHOLERA.

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CONSTANTINOPLE.

CHOLERA reigns again in Russia. It has appeared in a sporadic form in several spots in Turkey, and cases have been reported from the northern provinces of Persia, especially Ardabile. Before long, many of the readers of the BRITISH MEDICAL JOURNAL may have the misfortune to face the disease for the first time in the East. I have, therefore, thought it useful to publish a few notes. I remember the cholera epidemic of Ispahan in 1869. I studied the disease in the cholera ward of the medical hospital of Bengal under the late Drs. Smith and S. Partridge during the years 1878–9 and 1880. I had much to do with the terrible epidemics of 1892 and 1903 in Teheran. Personally, and indirectly through my former pupils, I had perhaps more to do in the fight against it than any of my colleagues. My full notes, statistics, etc., are in Teheran; I cannot avail myself of their assistance. I shall mention only such points as have appeared to me new or suggestive.

Cholera is not one disease, since a series of many conditions differing very widely in their clinical features, and demanding different lines of treatment, are grouped under the name of cholera. The disease I saw in Calcutta was so mild as to look contemptibly ridiculous when placed side by side with the Persian form of it. The epidemic of 1892 was different from the epidemic of 1903; the last was dangerous mostly on account of the uraemic symptoms it produced early in the attack, rendering all preparations of opium, so useful in the epidemic of 1892, dangerous agents in the cholera of 1903.

It is impossible to determine the period of the occurrence of the first cases of cholera in a large city. Teheran was officially declared cholera-stricken at the end of June in 1892, but I have notes of mysterious cases of much earlier date. An old lady died about the end of May, 1892, after a short attack of vomiting, constipation, and uraemia. Later on during the cholera I saw many similar cases, and no doubt was left on my mind that this old lady died of cholera with unusual symptoms long before cholera was officially pronounced as existing in Teheran. The two epidemics I have watched in Teheran have generally run a course like this: The earlier cases were mild; most of them recovered by taking a few does of salol, benzo-naphthol, naphthol-β, salicylate or nitrate of bismuth, etc. I am sure any mild intelligent course of treatment would cure 80, 90, 95 per cent. of these cases; gradually the type of disease changed, severer forms became more frequent, until we reached a period of several days when nearly every one attacked by cholera was carried off rapidly. In 1892 this period lasted a week, in 1903 it was three days. Then the type of disease changed, without a diminution in the number of cases attacked; recoveries were seen, they became more frequent, and lastly, most of the cases recovered. In the same epidemic we can watch side by side widely different types of cholera. In 1892 Ekbaleh Saltaneh left Teheran during the epidemic with a host of his followers, and took refuge at Davoudieh, a garden of ten minutes' drive from the British village of Gulhak. I passed two nights among the cases at Davoudieh. Some brought a mild form of cholera from the town, and many who took cholera (I suppose from them) in Davoudieh had this mild form. But a niece of the gentleman took severe cholera in Tadjrishe, was carried to this garden, she became pulseless and black and died rapidly. Her father and a woman who nursed her, living, eating, and drinking, Persian fashion, freely with the patient, took cholera from her, became rapidly pulseless, livid, and died within ten to twelve hours of the attack. In all, 26 people took cholera in this camp, and only these three of Tadjrishe source were so severe, most of the other type of cholera running side by side with this recovered. The importance of drinking water was brought out again and again. In the epidemic of 1892 I published a brochure in Persian, wherein I stated the evidence of the propagation of cholera through water, and insisted on the boiling of drinking water. The Persians first laughed at this; Persian colleagues and priests on purpose had cholera subjects washed in running drinking water to disprove European theories. Some of the older school of European colleagues thought it wise to keep a close tongue. But facts are hard things. Persians saw how, on placing the springs of two dirty, wall-closed Armenian villages under strict control, we absolutely controlled the epidemic; only a few imported cases were seen in these villages, Dahrousse and Vanak. Meanwhile cholera was rife in the neighbouring royal camp and in all the Persian villages round under Persian, English, and Russian control. None could control the water so absolutely as the Armenian communities, because they had to deal with a different population. The Armenians were ready to take suggestions from Europe, willing to accept and act upon advice coming from us; the Persians opposed our ideas on the mere ground that they came from Europe. But gradually they saw hard facts: they then found that in their several writings and traditions it was stated that cholera spreads by drinking water. Appropriate sound texts were found or quoted, and in 1903 very few intelligent Persians took cholera. Every family of any note adopted the rule of using only boiled water for drinking, and although the type of disease in 1903 was very fatal, its total ravages were much less than in 1892, because many people had found out the secret of protecting themselves from it.

Cholera finds favourable conditions for its propagation in Oriental promiscuous living. In 1892, early one morning, Sapahdar, then one of the Bakthiari chiefs, passed through the Russian village of Zerghendeh to tell me to call on his family in Teheran. He had abandoned them and was moving to the mountains in the north. I arrived at his residence about 11 a.m., found twenty to thirty women and children grouped in one hall over their breakfast spread on the ground. Some were eating, others howling with cramps, others vomiting, all forms of intestinal and gastric filth spread on the same carpet from which this host fed most philosophically. No doubt visitors were received all day in the same hall, invited to

sit on the same infected carpet, and with their stockings and clothes they carried away more than they bargained. Faecal matter is carried about in the East from house to house by flies, and also by men who thus catch on their shoeless feet and long flowing robes what is abundantly supplied on soiled carpets and house floors. Promiscuous eating from the same dish directly with the hand is another dangerous practice. Russian workmen's families were literally swept off during the cholera of 1892; fifteen to twenty families had been brought to Teheran, and lived near the railway station. Ordinary Russians are less clean in their habits of life than Persians, and their poor families were swept off.

Flight during cholera causes fearful havoc in Persia. In 1892 the present Regent moved out of town with a numerous band of retainers. He infected a whole province and left forty of his followers dead on the road. Amine ol Molk, brother of the late Atabeg, moved out of Teheran during cholera. He infected four villages successively, and lost many retainers. On the other hand, the present Persian Premier and the present Governor of Ghilan moved out of town, on my advice, before the outbreak of the epidemic, and lost not one of their large following. Persian camps become literally slaughterhouses during cholera. With their ideas of conservancy, open latrines everywhere, and free pollution of all sources of water, cholera spreads like wildfire.

I consider all conglomeration of Persians as dangerous when there is risk of cholera, and I have ever been opposed to any quartering measures during cholera. Gatherings of Persian travellers become centres for the creation and propagation of cholera. I think this is true for all Eastern races without distinction of religion.

In the diagnosis of cholera great importance must be attached to a quick pulse. A normal or slow pulse would plead against the existence of cholera. Much straining or distinct blood in the stools would exclude a pure cholera attack. Absence of vomiting and absence of stools do not exclude the existence of cholera. The very worst cases die without these apparent and habitual symptoms. The thermometer should always be used; in the algid state a temperature of 96 4°, or below it, under the tongue is nearly always fatal. After death the temperature rises; in the rectum to 105°, or above it. During the existence of an epidemic of cholera many nervous men and women show symptoms of repeated vomiting and frequent abundant spitting and also diarrhoea, without having true cholera. The absence of brachial pulse is very grave; in the trinitrine, alcoholic solution of nitroglycerine, I have sometimes succeeded in restoring the pulse in such cases. I cannot say that in the final fatal result much has been gained by temporary appearance of the pulse. Pregnancy, unless very far advanced, does not add much to the gravity of cholera. I remember cases of recovery, when later on the pregnancy took its usual course. I certainly cannot follow the advice of some of the Continental authorities to empty the uterus quickly in all cases of cholera.

Young people and very old people do not take cholera to the same extent as middle-aged adults. I have seen cholera in both extremes of life, but still, in my experience it is people in the middle period of life who are specially prone to cholera. In the epidemic of 1869, people in Julfa, Ispahan, abandoned the delicious fruits in the numerous orchards about that suburb. We children partook freely of peaches, pears, nectarines, apricots, apples, etc. I do not remember a single case of cholera among a host of sinners. As children we thought it would be delightful to have cholera every year and have all the fruits left to ourselves. My later experience of 1892 and 1903 has confirmed the same impression; children during cholera may freely indulge in fruits that would be dangerous to their parents.

During the attack of cholera it is perfectly useless to insist on feeding the patient: the leathery shrivelled state of the skin suggests the existence of a similar state in the alimentary canal. Even after the period of reaction food must be given very carefully. Some of my younger colleagues insisted on early and abundant or frequent feeding in cholera, against the ancient accepted principle. I watched their experience and I found the results woful. Even days after cholera is over food must be given carefully to avoid relapses. In my experience few die from a second attack of cholera in the same epidemic. This suggests the idea that an attack of cholera gives temporary immunity against its lethal toxic effects. Many other facts support this idea. Eastern nations who have had dire experience of cholera tremble when, after an immunity of several years, they hear of the first cholera cases in a neighbouring town. They know that sooner or later they must have it and pay very dear for it. But once they have had their epidemic, paid their contribution to it, they attach no importance to sporadic cases occurring amongst them. They are not afraid of the reappearance of cholera amongst them by reinfection from a town that has been infected from them. Experience has taught them that cholera is sure to spread on virgin soil in a population that has been free from it for several years, and that it will not do much harm in a city where it has done its work recently. It is difficult to determine this period of immunity. In Persia the popular impression is that it is over ten years.

In an epidemic of cholera many take the disease in a mild form; a slight diarrhoea, much gurgling and uneasiness about the bowels, and loss of flesh are common phenomena during cholera years. It is possible that these symptoms mean a mild infection, which is sufficient to afford immunity. Possibly also boiled and filtered water and other hygienic measures tend to avoid infection from virulent cultures, and they procure a milder form of the disease sufficient for temporary protection. The late Professor Spencer of Edinburgh had quoted as evidences the remarkably good results of his operations done without any antiseptic precautions against microbial theories. He used to repeat as a joke that someone had replied that microbes must come in shoals to do harm, and in his cases they had not moved in shoals. Cholera microbes must move in armies, and in a special, virulent state of culture, to do any harm. Pure water, boiled or filtered, prevents this attack by an army, and gives us the chance of getting our immunity from milder enemies, found not in shoals but in less formidable numbers.

In the treatment of cholera many facts must be remembered. In each epidemic the road tending to death must be studied. When people get rapidly livid, opiates must be avoided. What is sufficient at the beginning or end of an epidemic is not of any use in the middle-period type of the disease. As a student I saw Dr. Smith use calomel invariably; Dr. S. Partridge ironically recommended rose-water. Both were mistaken; much can be done to save choleraic patients, but frequent 10-grain doses of calomel are not suitable remedies.

In the earlier milder cases I have found salol and benzonaphthol very useful. In the epidemic of 1892 I saved many by chlorodyne or laudanum, but in 1903 I could not use them freely on account of the early uraemic type of the disease. I remember many men living to-day who were near dying, and would probably have died, in spite of free use of salol, chlorodyne, etc., had I not resorted to the free use of creoline. I gave the liquid freshly dropped on flour—4 to 6 drops, rolled about in the flour by a stick, then turned on cigarette paper, gently enveloped in the paper, and swallowed. According to circumstances, I gave 4 to 6 doses of this bolus, repeating every second or third hour. I have read of others not having good results from creoline; some have pronounced it "horsy," but I am sure many would have died in 1892 who are alive to-day had I been afraid of using creoline. The drug must be used in the fresh state, as I described it. In many cases of inveterate diarrhoea also creoline has given me good results. I have used it frequently since 1892.

Preparations of ether, valerianate of ammonia, friction, counter-irritation, packing in hot towels, etc., are useful to bring about reaction, but the temperature must be carefully watched. Anything above 102° F. is already grave (in cholera), and not much should be done to bring about over reaction.

I have tried the use of the physiological serum in small and abundant quantities, injected pints of it gradually or rapidly into the cellular tissues or into the peritoneal cavity. I have seen some patients saved by it; many others have died after even six or seven days of continual use of the serum. I think it tends to add to the danger of uraemic poisoning. I have frequently used a serum having much less sodium chlorate than the usual proportion. I cannot say this has given me better results. Some of my

Persian friends used large enemata of tannin solution with good results. I have frequently restored the absent pulse by alcoholic solutions of nitroglycerine, but the improvement has given no permanent solid results. Lactic acid is a good drink. I cannot say that it prevents or cures cholera. Plunging in cold water, into running streams, I have seen and have frequently tried with good results. But the man who can try it—has had the force to walk and the will to decide on taking a cold plunge—cannot be really in a critical condition. I have not had the courage to subject my really dangerous cases to cold hydropathic treatment.

I have seen severe forms of lead poisoning in people who had taken lead and opium pills for days to avoid taking cholera. Others become brighter by taking capsules of carbolic acid for weeks. None of my pupils and assistants took cholera. This I mention for the comfort of any of my young colleagues who have much to do with it for the first time.

In the East it will always be difficult to prevent, or check, the propagation of cholera. In Persia, what little organization exists in ordinary times melts away at the outbreak of cholera. The Shah, his ministers, governors, grandees, all resort to flight. Some of the older school of physicians also accompany these grandees, thus giving a bad example to younger and less experienced men. Persian ministers cannot be made to think of any useful general measures. In ordinary times it is narrow, short-sighted self-interest that guides all their actions. During an epidemic like cholera, all that is base and cowardly in men of this stamp comes out in all its ugliness. Hence we see choleraics abandoned in the street, numbers of the dead lying about on the main roads of the capital, hosts of moribund men and women hurried down in hired vehicles from villages into towns. This is done to prevent their dying without the city walls. A stupid rule excludes such bodies from the right of burial in the ordinary cemeteries. Before and during an epidemic volumes of necessary measures are submitted to the authorities. They like to request the advice of medical men of all nations as to what should be done. But they mean to gain time, have this report and that report, until the necessary forty to sixty days of the conflagration are over, and then they say, Thank God the evil is over; it is not necessary to take any special measures.

During the last epidemic the Persian Premier, the most intelligent man of his class, asked me to write a report. It would have been the fiftieth one had I written it. I requested him to give a general order to stop all men who work in the numerous canâts (underground springs of drinking water) to stop working during cholera. I thought this the first essential step to take. The next day I saw that the men who worked in the canât of the village where he resided for the summer had ceased working. He had taken immediate steps to prevent his own spring from pollution and his action finished there. There are over sixty of these canâts in and about Teheran; the rest he left to take their chance. I of course thought that I had already written sufficiently on the steps necessary for checking the spread of cholera in the empire of His Imperial Majesty the Shah of Persia.

DR. STARR JORDAN, President of the Leyland Stanford University, and also President of the American Eugenics group, has arranged to give an address on the colour problem in America on October 4th, at the invitation of the Eugenics Education Society. A limited number of free tickets are available on application to the Honorary Secretary, 6, York Buildings, Adelphi.

UNDER the will of the late Miss Emily Knowles of Worple Lodge, Epsom, the following hospitals each receives a bequest of £5,000: Charing Cross, the Middlesex, St. Mary's, University College Hospital, the London, the Cancer Hospital (Fulham Road), the Chelsea Hospital for Women, St. George's, the Royal Free Hospital, and Queen Charlotte's Hospital for Lying-in Women.

UNDER the will of the late Mr. Robert Grimshaw Dunville, chairman of the firm of whisky distillers of that name, the Victoria Hospital, Belfast, the Hospital for Sick Children, Queen Street, Belfast, and the Institution for Training Hospital Nurses, each receive a sum of £500.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF DERMATOLOGY.

PHINEAS ABRAHAM, M.D., President.

PRESIDENT'S INTRODUCTORY REMARKS.

AFTER a few initial observations Dr. ABRAHAM said: You will observe that several of the subjects which are on this occasion to be brought under notice are comparatively new, and are at the present day occupying the minds of dermatologists throughout the world; most of them, indeed, may be said to be yet in the experimental stage. A great deal of patient observation and experiment have yet to be done; for instance, in connexion with vaccine therapy, *x*-ray, radium, and the freezing treatment of diseases of the skin.

All honour to the pioneers whose researches have widened our knowledge, and have given us these new and potent adjuncts to our therapeutical equipment; but, in our admiration at the brilliant results which have been in some cases effected by the employment of these novel methods, let us not forget that good results are also often obtainable with our old and well-tried remedies. I have heard it remarked by a flippant layman that "fashion seems to change in medicine as it does in bonnets," and there may be some element of truth in the cynical suggestion. We are, perhaps, a little too prone to rush from one form of treatment to another, because it is new, and to ignore for the time all past experience. A few years ago, for instance, and for a very few years, some of us attempted to employ the Finsen light treatment practically for all cases of lupus, and in many instances we wasted our patients' time and put them to enormous expense. We now know more about the limitations of the Finsen treatment; and in many cases of lupus I, for one, have gone back to the old Volkmann spoon and to other remedies which I am sure are more convenient and, in the cases referred to, more efficacious. So it is, I venture to submit (even at the risk of being considered retrograde), with some of the other recently introduced methods. Useful though they will doubtless prove to be in some cases, until we know their limitations and more about them we should be chary in employing them—except for purposes of avowed experiment—in those cases which we believe can be more easily and surely benefited by well known and safe measures.

With these few words—which may, perhaps, be regarded not only as a "plea for our good old remedies," but as a note of caution against coming to "hasty conclusions resting upon insufficient evidence," as a leader in the *Times* has put it, and thereby deserving the sarcastic censure of our non-medical critics—I declare the Section open.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF SYPHILIS.

OPENING PAPER.

By ERNST J. FEIBES, M.D.,
Aix-la-Chapelle.

No branch of modern medicine has recently made greater progress than that of syphilography. Experimental investigations on animals have proved that the *Spirochaeta pallida* is the generator of the disease, and the presence of this organism in the lesions enables us to establish an early diagnosis, while at a later stage the serum reaction reveals the existence of syphilis in the body. These methods have enabled us to explain much that was

previously mysterious, and has made our knowledge of the disease more accurate.

Since Schaudinn's discovery of the *Spirochaeta pallida* it has been proved that it is constantly present in all manifest lesions of the disease, whether they be hereditary, acquired or experimental; the fact that it is not plentiful in late tertiary manifestations accounts for the general assumption that these lesions are not contagious.

Though no one has yet been able to grow the organism on artificial media, its constant presence at all stages of the disease and in all the products of the lesions prove it to be the real generator of syphilis. Formerly, where the primary lesions were not characteristic one was forced to leave the diagnosis open until swelling of the glands or the appearance of the roseola established the diagnosis, and much valuable time was lost.

The presence of the *Spirochaeta pallida* can be easily shown by any one familiar with the modern methods of demonstrating it; the silver-impregnation method of Lavaditi reveals it in sections of tissue; the dark field illumination method enables it and its characteristic movements to be seen *in vivo*. This simple method is carried out as follows: the lesion is rubbed with a piece of dry cotton-wool, and the serum obtained by means of a small Bier's sucker or by expression by means of a dissecting forceps, and immediately put on a slide and examined. The *Spirochaeta pallida* is recognized by its characteristic corkscrew shape and movements, and by its refraction of light, and with a little experience it can be easily distinguished from the *Spirochaeta refringens*. The dark ground method of examination is decidedly the best.

Schereschewsky's modification of Giemsa's method can be recommended for the examination of smears. The serum is thinly spread on a slide, and while still moist is fixed by exposure for thirty seconds to the vapour of a 1 per cent. solution of osmic acid then air-dried at 37° C., and passed three times through a flame; a 0·5 per cent. solution of glycerine, to each cubic centimetre of which one drop of Giemsa's solution has been added, is boiled and poured over the slide, the hot solution is left on the slide for two minutes, and the process repeated three times, and the slide then freely washed in running water. The spirochaete is beautifully shown stained a fine bluish-red colour.

Burr's method is easily executed, but is uncertain unless the organism is present in large numbers. A drop of the serum is placed on a slide and diluted with an equal quantity of distilled water; a drop of ordinary Indian ink is added, and the whole spread with a platinum wire, air-dried, and examined directly with an oil-immersion lens; the white, strongly refracting spirochaetes are seen on a dark grey background.

Meirowski of Cologne has recently described an expeditious method of beautifully displaying the spirochaete both stained and *in vivo*. The method is short, and is as follows: The spot to be examined is first cleaned with physiological solution of salt; then a freshly prepared paste of methyl-violet is thoroughly pressed on it with a glass rod and left *in situ* for two or three minutes, and some of the violet-stained serum removed with a small Bier's sucker, placed on a slide, diluted with distilled water, covered, and examined with an oil-immersion lens; the red blood cells and the ordinary bacteria are stained a deep blue, the *Spirochaeta pallida* is stained distinctly but of a light blue, and the *S. refringens* is distinguished by being much coarser; the corkscrew movements of the *pallida* are distinctly seen.

In cases where the *pallida* cannot be demonstrated we proceed to examine by Wassermann's serum reaction; in the beginning of syphilis this method frequently fails, unless general infection has already taken place, and it is only positive results that are of value at this stage.

The diagnosis of the specific character of the primary lesion having been made, the question of excision arises, although we know by Neisser's experiments with monkeys that the generalization of the poison occurs quickly. I still adopt the practice of cutting out the sore if this can be done easily and without mutilation, for the following reasons: First, the possibility of the prevention of the syphilis is not excluded; secondly, we diminish the number of spirochaetes; thirdly, we eliminate a dangerous source of infection; and, fourthly, we remove the site on which later manifestations of syphilis, such as chancre redux and tertiary lesions, tend to occur.

Formerly we used to delay general treatment until the roseola appeared. Neisser's proof of the early generalization of the virus, however, indicates that we ought at once to combat the disease with all our energy. Thus it may still be possible to obtain a real prevention of general infection, and such cases have been known where no further symptoms have occurred, and where the Wassermann reaction has remained negative, and other cases where, in consequence of early energetic treatment, the whole course of the disease has been extremely mild.

We have learnt that in the past our treatment has erred on the side of not being energetic enough, especially where the pill treatment has been adopted; I do not hesitate to state that a thorough mercurial treatment cannot be carried out with pills—the constitutional disturbances caused by this method precludes its being thorough. "Mercolint" and other mild methods useful as intermediate courses have to be rejected as a chief cure, and especially as a first cure. The early treatment must be as energetic as possible, and, where the symptoms are severe, must be pushed to the limit of physiological toleration This has been my practice for many years, and with the happiest results. I am glad to learn that this view has now become general, and that it is specially recommended by Neisser.

For a thorough mercurialization I am of opinion the method of "Schmierkur" (rubbings) is the most efficient; with no other treatment can we so thoroughly regulate the admission of mercury; we can stop it at a moment's notice, and easily prevent the discomforts and dangers of acute mercurial poisoning. How different is this with injections of insoluble mercurial preparations, which, when once injected, will go on producing their effect though the patient may be threatened with the worst!

I will shortly describe my treatment, carried out in many thousands of cases, and, as already mentioned, with the best results. The *procul negotiis* plays an important part; the course energetically and systematically carried out, the open air, the environment of a watering place, the devotion of the whole attention to the course, are all important factors; experienced rubbers relieve the patient of the drudgery of self-rubbing, the doses of mercurial ointment are gradually increased from 5 grams to 10 grams or more, and at the same time the area of the body to be rubbed is increased as well as the time of application; varied hydropathic applications, such as sulphur baths, douches, sulphur steam baths, and electric light baths, are valuable adjuncts. Frequent examination of the urine and heart enable us to proceed safely without producing injurious effects, and I have never seen any evil results produced by a properly conducted "Schmierkur"; and the results are extremely good, both in regard to relapses and in their effect on the Wassermann reaction, but it must be understood that such a course cannot be properly carried out while the patient is leading his ordinary business or social life; the quiet of a hospital or of a watering place is essential.

If for any reason the "Schmierkur" is inapplicable, injections of calomel may be recommended as being of equal value; their disadvantages are their painfulness, the risk of abscesses, and their danger in cases of idiosyncrasy. They are undoubtedly of great efficacy, especially as regards producing an effect quickly. Last year Neisser introduced a salt called "asurol," containing 40 per cent. of mercury, which is injected with grey oil, and does not precipitate albumen or cause irritation, and of which a large number of doses can be administered without risk of poisoning. A good new preparation (1907), worthy of mention, is atoxylate of mercury, introduced by Uhlenhuth, and which Lesser, Mickley, Blaschka, Faery, Boethke, and Lambkin have recommended, the good effects of it being attributed to the atoxyl as well as to the mercury. Zieler (Würzburg) reports adversely on its efficacy.

We now arrive at the consideration of treatment by arsenic. First, the cacodylic preparations were recommended, until these were superseded by atoxyl, owing to its curative effect on syphilis in monkeys. Lesser tried it in his hospital. At first the results were bad, owing to insufficient dosage. The doses were raised and the results, even in severe syphilis, were exceedingly good, but before long results were published indicating grave danger

in the use of this drug—blindness and other mishaps were reported, and relapses were frequent. Atoxyl was then displaced in favour of arsacetin, recommended by Ehrlich. This was said to be less poisonous, but blindness has also occurred with this salt, and it is not so efficacious as atoxyl. Other preparations also have been introduced, such as arseno phenyl glycin and the so-called Hata preparation, or dioxy-diamido-arseno benzol, recommended by Ehrlich. Remarkable results are reported, but the cases treated by the Hata preparation are so far too few and the time that has elapsed too short to enable definite conclusions to be drawn in regard to its safety and efficacy. Whether these aspirations of Ehrlich in regard to the *therapia magna sterilans* will be realized must be left for the future to decide. It is to be much regretted that the ordinary newspapers have occupied themselves so much in discussing this treatment before its exact effects have been ascertained.

We now come to the consideration of the iodide treatment, which is certainly one which cannot be despised; many life-saving effects have been produced by large and increasing doses of iodides, and I published some years ago magnificent successes obtained by iodipin, especially in tertiary affections; other useful preparations of iodine are iodglidin, sajodin, iodtropon, and others. As to the general lines of the treatment of syphilis, we recommend to-day, as we did formerly, the intermittent treatment, without waiting for relapses, and whether the Wassermann reaction is negative or positive, as we cannot yet count on a reliable and complete early cure, though we must differentiate between those cases where early treatment produces permanent negativity as regards Wassermann's reaction and those cases in which the positive reaction persists in spite of the most energetic treatment. Such cases are rare; I have observed four where the severest and most prolonged courses with mercury and iodide did not bring on negativity; after a year's treatment, however, they became negative. Such cases must be treated with the greatest energy, even if symptoms are absent; it is only in this way that they can be successfully protected from the severest and worst consequences.

To judge of the value of a positive Wassermann reaction in regard to therapeutical indications, we have to decide whether it indicates immunity due to a past syphilis or a still persistent syphilis. Clinical evidence points to the latter conclusion. Meirowsky has observed three cases where husbands who had suffered from syphilis infected their wives, although at the time of infection no symptoms were present, but the Wassermann reaction was positive. In these cases the positive Wassermann reaction indicated not a past syphilis but a persistent syphilis, and that these men must have still been carriers of spirochaetes.

Often enough one hears of cases who, fifteen, twenty, or more years ago, have had syphilis, and still give a positive reaction in spite of the absence of symptoms and the production of healthy children. In this connexion we must bear in mind that visceral syphilis often escapes detection, syphilitic lesions are frequently discovered *post mortem* which gave rise to no symptoms during life, and Lesser found in necropsies on syphilitic subjects that 50 per cent. of them presented signs of their old syphilis, such as gumma in the liver, scars of the testicles, and changes in the aorta. If the reaction is positive, syphilis is still present, and in such cases a positive reaction can be converted into a negative one by energetic and appropriate treatment. A positive reaction must be regarded as a symptom of syphilis. One of the chief results of Neisser's expeditions to Java was the observation that there is no real immunity against syphilis, and that seeming immunity only means the continued presence of the disease. This indicates the necessity of arranging therapeutic measures in the late syphilitic stages according to the indications of the Wassermann reaction, so as to prevent the threatening consequences, be they general paralysis or tabes, and, if possible, by energetic measures to change the positive into a negative reaction.

DISCUSSION.

Mr. J. ERNEST LANE (London) deprecated being bound to any one system of treatment when dealing with such a complex disorder as syphilis. Each case should be treated on its merits, and one should not be restricted to any routine plan. In a large proportion of cases treatment by pills was eminently satisfactory; it had the merit of being simple, convenient, and inexpensive, and could be carried out by the patient himself without the constant intervention of the surgeon or the masseur. The tendency at the present time was to prolong the period of treatment over five, or even seven, years, and the majority of patients would not submit themselves to courses of inunction or injections for such a protracted period. It would probably be considered a heresy to advocate the treatment of syphilis by such a simple method as by pills, but he was not altogether without experience of other plans, such as inunction, intramuscular injections, fumigations, the arylarsonates, and even the *dernier cri* in the treatment of disease—namely, Ehrlich's new preparation known as "Hata"—and in the majority of mild and uncomplicated cases he found treatment by the mouth was perfectly satisfactory. The less irksome and inconvenient the treatment, the more likely the patient was to continue it for the requisite period—a point in favour of oral treatment. Obviously this was not appropriate in every case of syphilis, and it was certainly contraindicated in patients with impaired digestion, or where it was advisable to administer other remedies by the stomach; in cases of some rapidly spreading and destructive lesion; in cases such as cerebral, spinal, or visceral syphilis. In conditions such as these more drastic measures were required. First and foremost, from the point of efficacy, he would place intramuscular injections of calomel—by far the most reliable remedy at our disposal on account of its energy and the rapidity of its action. Like every other plan it had its disadvantages, which appeared to the speaker to be considerably exaggerated, for, in an experience of over 3,000 injections, he had never met with any more serious disaster than gluteal abscess, which occurred in four cases, but speedily yielded to treatment. Inunction treatment was decidedly inferior to intramuscular injections, as it was unreliable and unequal in its action; it involved the employment of a skilled rubber; it was often productive of severe stomatitis, of enteritis and dermatitis; it entailed publicity, and, further, was repugnant to the feelings of the aesthetic patient. He had had considerable experience with treatment by the arylarsonates, but had abandoned them owing to the danger of blindness caused by those preparations. Of Ehrlich's "Hata" he had not yet had sufficient experience to pronounce upon it.

Dr. R. B. WILD (Manchester), speaking of the treatment of syphilis from the pharmacological aspect, said that no matter in what form or by what channel mercury was given it was converted into a soluble double salt with sodium chloride and albumen, as such it circulated, and was deposited, especially in the liver, until excretion was complete. The nearest and least harmful path to the liver was undoubtedly by the stomach and duodenum, and for the treatment of 90 per cent. of the cases of syphilis administration by the alimentary canal was the most useful and the best method of treatment. For the remainder of the cases, inunction or intramuscular injections might be used. The former was both efficacious and rapid, the chief objection being the intermittency of the courses of treatment, which at most could only be carried out twice a year. The intramuscular method was painful and might be dangerous, but the tendency was to give in this way a very small amount of mercury, possibly too little in any case; and the speaker had seen in recent years cases of tertiary syphilis in ex-soldiers who had been treated by injection some years previously. The really important point in the treatment of syphilis was the prevention of tertiary lesions. Mercury was the essential drug to use, and it mattered little what method was employed so long as it was efficient and sufficiently long continued. As regards the arsenical compounds, the value of arsenic with mercury in the form of Donovan's solution had long been recognized, but there was as yet no proof that arsenic would in any way prevent the incidence of tertiaries. The new organic compounds of arsenic were still in the experimental stage, and the speaker had seen nervous symptoms follow their administration. Some years must elapse before the value of these newer methods of treatment in preventing tertiary lesions could be determined. The Wassermann reaction must also still be regarded as in the experimental stage with regard to therapeutic indications.

Dr. GEORGE PERNET (London) said that in his opinion pill treatment was inadequate, and considering the large number of late syphilis cases, that method had failed. He admitted that inunction was valuable. But he desired to lay special stress on intramuscular injections, both of insoluble and soluble preparations, which gave such good results. Calomel came first, and in serious complications was a sovereign remedy. Grey oil was also very useful, though less potent than calomel. It was important to inject insoluble preparations of mercury in two movements. As to soluble preparations, he had found benzoate of mercury of decided value. In order to test a patient it was sometimes advisable to begin with soluble and then go on with insoluble preparations. He desired to emphasize that cases for intramuscular treatment should be selected. It was not a routine treatment. Every case of syphilis should be dealt with strictly on its own individual merits, and the patient's teeth put in order before commencing a course of treatment. This could not be repeated too often. Of course iodides were valuable, especially in patients over 40, when it was important to protect the arterial system, but in healthy young adults the *routine* exhibition of iodides was not necessary. Iodipin and lipiodol in intramuscular injections were also serviceable in some cases. Atoxyl and some other arsenical compounds had been shown to be without curative effects, and could not be ranked with mercury, which remained the specific, unless it became dethroned by Professor Ehrlich's "606" preparation. The latter, also known as "Hata," certainly appeared to be very potent, but more experimental work was required before passing final judgement. Moreover, contrary to what had been found regarding atoxyl, the new compound, "606," did not appear to affect the ocular nerve. Dr. Pernet had recently employed hectine (an arsenical compound), which appeared to be safer than atoxyl, and was useful when, for some reason or another, mercury had to be suspended. The study of syphilis was neglected in this country. There was no systematic teaching relating to a disease that directly or indirectly led to such a large morbidity. It was really a national concern, and it was high time the subject should be dealt with systematically and occupy its proper place in the curriculum of all medical schools.

Mr. J. E. R. MCDONAGH (London), on the suggestion of the President, read, as his contribution to the discussion, a paper which will be found at p. 846.

Dr. G. STOPFORD TAYLOR (Liverpool) invariably treated his cases of syphilis with injections of grey oil, but combined mercurial inunction when the secondary symptoms were severe, and until they disappeared, relying upon injections until cure was effected. Each course consisted of ten or twelve injections of 7 cg. In the intervals he gave short courses of potassium iodide. The frequency of injections of grey oil depended upon symptoms. He had been surprised at the smallness of the dose and at the infrequency of injections required to cause the disappearance of all objective symptoms of syphilis. The advantages of injections were that the patient was kept under the observation of the doctor, and consequently observed those rules which were so essential to his recovery. By the oral method it was otherwise, and he had frequently seen cases which had failed to improve until injections were resorted to. The objections raised by Dr. Wild against this treatment in the army might apply to any other method, as it was always a difficult matter to impress upon patients the absolute necessity of keeping under treatment. Amongst hospital patients women often appeared with tertiary lesions who had no knowledge of having had primary or secondary syphilis.

Dr. J. GOODWIN TOMKINSON (Glasgow), while not altogether abandoning the oral administration of specific remedies, endeavoured to practise soluble mercurial injections in all refractory cases—in fact, in as many cases as circumstances would allow. His preference for the soluble salts of mercury was owing to the ease with which the toxic effects of the drug could be controlled—virtually immediately on ceasing the injections. This could not be said of the insoluble salts. It had been adduced by Mr. Lane that an objection to the injection method was the necessity for the patient systematically to visit his physician. He ventured to think that one of its great advantages was that it was carried out by the physician himself, for doubtless the oral method was not infrequently inadequate owing to the patient's neglect to carry out the treatment prescribed. Apart from this, it must be admitted that the injection method had proved itself more efficacious than the oral. The inunction method appeared to him to be an offence against one's aesthetic taste. There was no doubt that the treatment of syphilis should be a protracted one; but how difficult it was to ensure this in hospital practice, where it was no unusual thing for a patient to disappear at the same time as the rash! Would not this be obviated by compulsory notification of the disease?

Dr. WILLIAM GRIFFITH (London) recalled that Major French had stated that 26 deaths following treatment by intramuscular injections were on record. This treatment had not yet shown its superiority over inunction or giving pills per os, and in the vast majority of cases oral administration was eminently satisfactory.

Dr. ALFRED EDDOWES (London) advocated treating the disease locally wherever possible. He used mercurial ointments to all syphilitic eruptions, early or late, limited locally or generalized, in addition to all other methods in use. For late nodular syphilides he considered mercurial plasters more useful than ointments.

Dr. DOUGLAS HEATH (Birmingham) had been in the habit of using the inunction treatment for many years, even in the treatment of malignant syphilis. He had never found it to fail even in the most severe cases. He usually diluted the mercurial ointment with ung. aq. rosae (*B.P.*), and found in this way that dermatitis was avoided. He found that hospital patients would carry out the treatment if the essentials were impressed upon them, and that subsequently a pill treatment could be employed. For late manifestations he generally gave a course of inunction at once together with iodides.

A CASE OF PITYRIASIS RUBRA PILARIS, WITH REMARKS ON THE ETIOLOGY OF THIS AFFECTION.

By J. GOODWIN TOMKINSON, M.D.,

Physician for Skin Diseases to the Dispensary at the Glasgow Western Infirmary; Medical Electrician, Glasgow Western Infirmary; Dermatologist, Glasgow Hospital for Diseases of the Ear, Throat, and Nose.

[*With Special Plate.*]

THE rareness of this affection, coupled in this particular case with certain features of clinical and possibly etiological interest, is my excuse for submitting this report to the Dermatological Section.

On December 10th, 1909, I had the pleasure of showing this case at a meeting of the Glasgow Medico-Chirurgical Society held in Glasgow Western Infirmary. The following is a brief report made at that time:

H. T., aged 30, lithographic stone polisher. Family history uninteresting. Patient states that sixteen years ago, after commencing work as a lithographic stone polisher, the palms of his hands became red and thickened. Seven months ago follicular papules appeared on the proximal phalanges of the fingers of both hands, later on the middle phalanges of the third and fourth fingers, and subsequently on the back of the hands, affecting in the main the skin over the first, second, and fifth metacarpal bones. Later, the fronts of the wrists, the outer aspects of the forearms, and the backs of the elbows became affected.

On examination, in addition to the lesions already mentioned, isolated follicular papules are seen on the lower abdomen. Large horny, dark grey follicular papules are conspicuous over the dorsal convexity of the spine, extending laterally. In the summit of the intergluteal fold—namely, over the sacrum—the papules are closely aggregated, presenting a somewhat verrucose appearance, and a similar condition is present over both ischial tuberosities. The knees are similarly but not so markedly affected, and there is some hyperkeratosis where the boot is laced. The soles are erythematous, the neighbourhood of the heels markedly hyperkeratotic, as is also the centre of the right sole. The forehead is slightly erythematous, but no scaling is observed. The upper half of the bridge of the nose shows telangiectases. A few comedones are present on the face, and also on the back of the neck. The scalp is scaly but not markedly. The affected areas of hands, fingers, intergluteal fold, and ischial tuberosities are slightly but definitely erythematous,

TO ILLUSTRATE DR. J. GOODWIN TOMKINSON'S PAPER ON PITYRIASIS RUBRA PILARIS



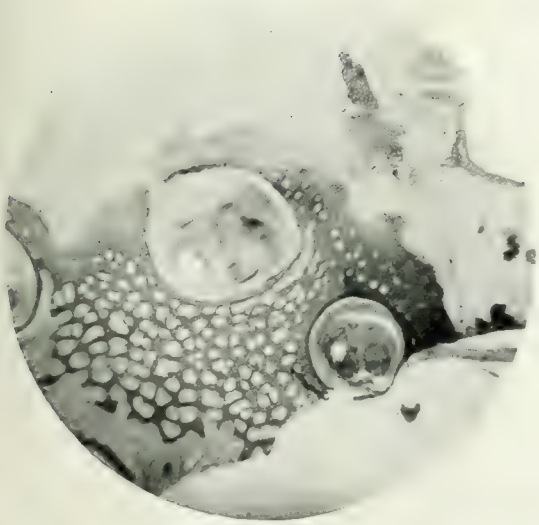
Fig. 1.—Back of left hand, showing characteristic distribution of follicular papules; also the tendency to terminal bending of the nails towards the palm.

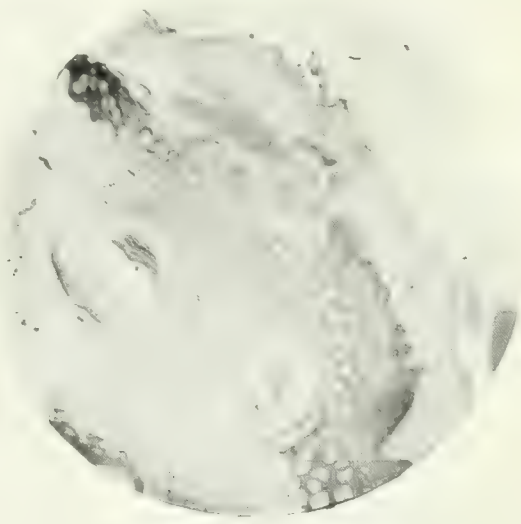


Fig. 2.—Palmar surface of left hand, showing epidermal thickening and some fissuring. Thickening most marked at base of palm, where soft tissues are thinner and occupational pressure probably greater owing to closer proximity of skeletal tissue.



Fig. 5.—Fronts of legs. The knees show some coalescence of papules, but the photograph does not bring this out very prominently (pressure points); varicose veins and evidence of previous rickets.





Figs. 6 and 7.—Photomicrographs of section of skin from back of right hand, showing epidermal thickening, well marked about the hair follicles, and forming the epidermal plugs.

d there is a suspicion of erythema on the mid-dorsal region the trunk. The erythema appears to begin perifollicularly d spread laterally until neighbouring specific centres of gin have coalesced into one continuous patch. The finger ils are longitudinally striated. The papules throughout are stinctly follicular and contain a central horny cone. Their edominating tint is greyish, but gives the impression of being uch deeper on the hands, owing to the central hairs being cidedly darker in colour. n passing the hand over the sions a distinct grating sen- tion is experienced. The tient is tattooed on the left rearm, the device being two asped hands, male and female, ove a heart; above these a ar, on either side of which is spirillum-like device; be- ath all the words "True ove."

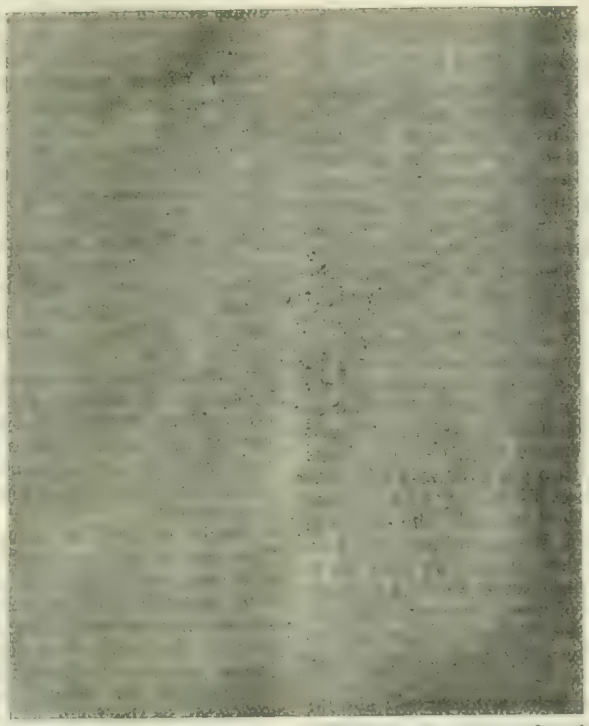


Fig. 3.—Back of trunk showing follicular papulation over dorsal convexity of spine, etc. (pressure points).

On July 22nd, 1910, the tient came to the Western nfirmary, having been sent r in order that a biopsy ight be made. The follow- ng additional notes were ien taken:

Palms erythematous and nickened, being definitely yperkeratotic at centre of ase and about the natural nes of the digital flexures. 'he nails tend to bend over he finger ends, more par- icularly those of the left and. They are also longi- udinally ridged, and under heir free edge there are ccumulations — possibly epi- ermic. In addition to the ronounced papules in the mid- orsal region of the trunk, ecorded in a previous note, he remainder of the back xhibits a generalized finer ollicular papulation. In con- rast with this the papules re less pronounced, than previously recorded, on the outer spect of the forearms and lower abomen. The lumbar egion shows fine silvery furfuraceous desquamation. The ruptive elements over the isch al tuberosities and summit of he intergluteal fold have coalesced in these regions, and show hick adherent greyish-yellow scales. There are plaques of oalesced eruption in the patellar regions similar to, but less pronounced than, those just recorded over the ischial tuberosities. On the shoulders where the braces are sup- ported, and chiefly on the right side, there is increased papulation as com- pared with contiguous parts. While on the soles of the feet there are hyper- keratotic areas where pressure is exerted. There is indubitable epidermal hyper- trophy where little or no pressure acts. Scaliness of the scalp, while not ex- cessively pronounced, is quite evident, and appears to be most marked about the pilo-sebaceous orifices. The hair of the scalp, beyond slight thinning on the vertex, does not appear to have suffered. There is entire absence of itching and other subjective symptoms. The general health is good, and the urine normal. The patient's tibiae, however, show rachitic deformity, and varicose veins are prominent on both legs.



Fig. 4.—Region of sacrum and ischial tuberosities showing more or less coalescence of follicular papular elements (pressure points).

Histological examination of a sec- tion of skin taken from an affected area of the right hand revealed hypertrophy of the corneous and mucous layers of the epidermis. This was especially well marked in the region of the hair follicles where the hairs are ensheathed by horny accumulations of the hyper- trophied lining of their follicles. Here and there the dermis showed slight infiltration.

With respect to the etiology of this affection, my friend and master, Professor Gaucher, remarks in his volume *Maladies de la peau*, of Brouardel and Thoinot's *Nouveau Traité de Médecine et de Thérapeutique*: "I have twice seen patients whom I had treated for pityriasis rubra pilaris, and who were cured succumb some years later to pulmonary tuberculosis. This was, without doubt, more than a mere coincidence, for Milian has just shown that patients exhibiting pityriasis rubra pilaris, even in apparently good health, react to tuberculin. This affection would, then, be of tuberculous origin." In this case I have not applied any tuberculin test, nor have I yet examined the blood.

According to the patient's story, the first evidence of the disease was on the palms after commencing work as a lithographic stone polisher. Last week I visited the printing offices of a well-known Glasgow printer and lithographer, and, owing to his kindness, saw a lithographic stone polisher at work. The actual lithographic stone is a slab of limestone. It is first polished with coarse sand, then with a polishing stone of grey sandstone, afterwards with a stone called "water of Ayr" or snake stone. Finally, the application of an aqueous solution of nitric acid and gum arabic completes the process. Sometimes the lithographic stone is replaced by a zinc or aluminium plate. During the process of polishing, the lithographic stone is supported on a widely fenestrated wooden frame over a tank of water into which the polisher is constantly dipping his hands and the polishing stones. The aqueous solution of nitric acid and gum arabic is applied on a sponge or cloth by hand, but, in so far as I ascertained at the time, not by the stone polisher, but by another artisan. While watching the process of polishing I endeavoured closely to scrutinize the polisher's hands, but failed to detect anything abnormal in the appearance of the parts that were visible.

It will be recalled that the lesions in this case are in the main much more pronounced in regions of pressure—namely, over the ischial tuberosities, the lower end of the sacrum, the dorsal convexity of the spinal column, the elbows and outer forearms—sites pressed upon in the sitting posture—on the shoulders where the braces are supported, more marked on the right one, due doubtless to the more frequent use of the right arm and the higher bracing of the right side to bring the fork of the trousers into the right scroto-crural interval. The occupational pressure on the palms is obvious, as is also the pressure on the soles of the feet, the front of the ankle, and the knee.

Without, perhaps, throwing any light upon the ultimate etiological factors in the disease, these clinical signs doubtless point to pressure as a determining or accessory agent in the development at least of some of the lesions in this and, perhaps, on closer observation, in other cases but nothing more, otherwise pityriasis rubra pilaris could be by no means a rare affection. Doubtless the actual cause must be sought for internally. It will be remembered that the palmar condition commenced at the age of 14 and that an interval of about fifteen years elapsed, according to the patient's statement, before the development of follicular papules. Stelwagon observes "it (pityriasis

rubra pilaris) has its origin in the majority of cases in childhood or early youth." Might not this suggest some, as yet undiscovered, congenital deficiency in the cutaneous tissues, and the increased cornification a protective effort on the part of Nature?

The patient has had virtually no treatment owing to disinclination to attend the infirmary.

SERUM DIAGNOSIS OF SYPHILIS.

By J. E. R. McDONAGH, F.R.C.S.

WITHOUT troubling you with the technique of Wassermann's reaction, with which you are all so familiar, I will straight away give my own experience of the same. My first step which modified the reaction was to use the patient's serum active, instead of inactive, and as I have shown in the *Practitioner*, 1909, vol. lxxxiii, p. 307, the results obtained in testing the serums, both active and inactive, showed the reaction to be somewhat more sensitive in the former than the latter, but too great stress cannot be laid upon the point of time at which the serums are tested. Forty-eight hours should elapse before a serum is tested, as by this time all the complement present will have disappeared.

The reason why I advocated the use of active serum as well as inactive, both of which I always used, one serving as a control against the other, was owing to the fact that in inactivating the serum complementoid bodies are formed causing a negative result in a serum which should have given a positive one. Wechselmann got over this difficulty by precipitating these complementoid bodies with barium sulphate, and using the filtered serum made the reaction considerably more sensitive than Wassermann's original, but it unfortunately increases the labour; be that as it may, if the positive reactions in undoubted cases of syphilis are increased thereby, the value of a negative reaction will be much greater, and as I have obtained better results with Wechselmann's method than by employing active serums, I always use the former.

One point of the greatest practical importance I should like to draw attention to. If a serum is kept, as happened recently in two cases of mine, for a week, especially if not pipetted off from the corpuscles, it has the power of fixing complement alone; such a serum has been designated autotropic. An autotropic serum can invariably be recognized, because, in the control tube when haemolysis should be complete in every case, no haemolysis occurs.

Practical Application of the Reaction.

Owing to the fact that a positive reaction is not given in the primary stage of syphilis in more than about 40 per cent. of cases until the disease has become a systemic one, no reliance can be based upon a negative reaction, if a doubtful sore is in question. Since the *Spirochaeta pallida* can be invariably demonstrated by means of the dark ground illumination, the Indian ink method, and also Meirowsky's methyl violet procedure in the serum from a specific sore, it can be readily seen that a Wassermann reaction is unnecessary at this stage. I shall now depart from the old classification of secondary and tertiary syphilis and divide the cases into early, late, and latent, that is, those showing no signs. In "early" I include the primary rash and the train of symptoms caused by a general infection, such as headache, sore throat, etc. By "late" I include any recrudescent rashes and gummata, and the special group called "parasyphilis," to which belong tabes and general paralysis of the insane. In the early and late syphilides I have obtained a positive reaction in 97 per cent. from over 5,000 cases. This positive reaction can be converted into a negative one in early syphilis, but in many of the cases of late syphilis the disease has reached such a condition that it is impossible to eliminate the syphilitic poison by means of our present antisyphilitic remedies. In latent syphilis the percentage of positive results is very considerably diminished. Early in the disease a positive result means insufficient treatment; late in the disease it may mean that the patient is suffering from some visceral lesion dependent upon syphilis, such as general arterio-sclerosis, aneurysm, aortic disease, or a gumma in an internal organ. By prolonging treatment, a positive result in the former can be changed into a negative one, but not so in the latter.

This brings me, then, to discuss the influence of treatment upon the reaction. From what I have already said it is clear that mercury has the power of changing the reaction early in the disease, but not late. Therefore, first and foremost, a patient diagnosed as being syphilitic, say from a positive spirochaete examination in the serum of a sore, should, before the disease has become generalized, receive the most active and vigorous form of treatment possible. Mercury, in the form of inunctions, is more potent in this respect than when given in any other form. Injections come next in importance, and pills least of all. This fact was very strikingly brought home to me in the following way: Working at the Wassermann reaction on the Continent, I found that it was almost a rule to obtain a negative reaction after a patient had had a course of inunctions, or, less frequently, injections. On my return to England I tested several cases in which patients had taken internal treatment for two, three, or four years, at the end of which the reaction was usually positive. At the same time I was struck by the frequency of syphilitic tongues one met with in England compared to abroad. I managed to get a series of cases all of which gave a positive reaction, although many of them had taken pills for a number of years, and at the time internal treatment was being further pushed. I have shown in the *Lancet*, 1910, vol. clxxviii, p. 920, what I consider to be the relationship between syphilitic buccal affections and internal administration of mercury. In tabes a positive reaction is given in about 60 per cent. of cases, and in general paralysis of the insane in 100 per cent. These figures with the cerebro-spinal fluid are not so constant, and when a positive result is given and tested quantitatively, not so much complement is absorbed.

Ought we to treat every case giving a positive reaction? The answer may be in the affirmative. Although it may not cure the patient in the late stages of the disease, it will probably stop its further progress. The treatment should invariably be mercurial, supplemented by potassium iodide; the latter alone should never be relied upon, since it has no power in changing the reaction.

Although the Wassermann reaction has aided us considerably in the form of treatment we should adopt, it is not yet so infallible as to say how long the treatment should be continued; so until this problem is solved we ought to adhere to the old three years' régime; after that time, if a negative reaction is given three, six, and nine months consecutively, one will not go far wrong in stating that the patient is cured. A negative reaction obtained either while the patient is taking mercury or has finished his course of treatment is valueless, owing to the action of mercury, as mentioned above. At least six weeks should elapse after last taking mercury before the blood is tested.

The marked influence which treatment has upon the reaction has been very clearly shown in about 200 reported cases, in which after one injection of Ehrlich's new preparation a negative reaction was obtained.

This new preparation, or Ehrlich-Hata's No. 606, is a dioxy-diamido-arseno-benzol, and after one injection of 6 to 8 grains even the severest late syphilitic manifestations have healed up, and the Wassermann reaction become negative, a result which was unobtainable, however much mercury was being used. Geheimrat Professor Ehrlich has been so kind as to send me some of this drug to try for him at the Lock Hospital, and I have now under my care cases of both early and late syphilis, cases which have had no mercury, and others which have been treated without any benefit, a report on which I shall soon look forward to giving you. (See *Lancet*, September 3rd, 1910.)

Syphilis in Women.

Syphilis in women is not usually so manifest as in men; especially is this the case during the child-bearing period; in fact, a woman may give birth to several syphilitic children without herself showing the slightest sign of the disease or giving the history of such; and such women, as I demonstrated before the Royal Society of Medicine (*Proceedings*, 1910, vol. iii, No. 7, p. 90), are particularly prone to develop gummata at or about the menopause. The mother of a syphilitic child, whether she shows symptoms or not, usually gives a positive reaction; therefore every suspected woman should be examined by means of this test, and if a positive result is obtained, should be treated with mercury throughout the whole time of each successive pregnancy, so increasing the chances of

begetting a normal child. Against this, the question always arises as to what proof we have that treating the mother affects the offspring. The best answer to this is that congenital syphilis is not only less frequent but also a milder disease in private patients than in hospital patients, since the former are more rigorously treated. Treatment of a syphilitic father should also not be omitted, as is so frequently done.

Congenital Syphilis.

The reaction in congenital syphilis is peculiar in many respects. First, it is usually a very strong one; secondly, mercury seems to have very little influence upon it, which is not unreasonable considering the disease has grown with the child, the tissues being saturated with the poison, so that the blood reacts just as in a case of late acquired syphilis. It is unfortunate that mercury has not the same influence upon changing the reaction as in acquired syphilis, since we cannot lay down rules as to how long a congenital syphilitic should be treated. If the mother is known to be syphilitic, and she begets a child who shows no symptoms of the disease, this child's blood should be invariably tested, and if the reaction is positive, a two or three years' treatment of mercury should be resorted to. If this were invariably done, there is no doubt that cases of juvenile paralysis, double interstitial keratitis, etc., would be much rarer, since these late phenomena of congenital syphilis are not infrequently the first.

Life Insurance.

Wassermann's reaction is now entitled to play an important rôle in determining the knotty problems of life insurance. A candidate with a recent history or with previous manifestations of syphilis is, according to present custom, rejected or deferred by most offices. This is sound business, but the facts and conclusions cited above justify a closer scrutiny in all syphilitic cases.

A candidate giving a positive reaction, even though years may have elapsed since the original infection, should be regarded as ineligible, for such a result usually signifies the presence of a visceral lesion that will ultimately shorten life. The virus has obtained such a firm hold that treatment, while capable of checking its course, can never thoroughly get rid of it. Furthermore, a candidate yielding a positive reaction after shorter lapses of time—say three years from the date of the primary lesion—should be received with caution, for this usually denotes that the early treatment of the patient has been insufficient, with consequent liability to the later manifestations of the disease.

On the other hand, a candidate may be accepted who, having completed a two years' course of treatment, shows a negative reaction on being tested at intervals of three, six, and nine months after such a course. The influence of syphilis on his chances of life may then be safely discounted. In no case is acceptance warrantable until two years have elapsed since the original infection.

ON THE VALUE OF A RICE DIET IN CERTAIN ACUTE DISEASES OF THE SKIN.

By L. DUNCAN BULKLEY, A.M., M.D.,
Physician to the New York Skin and Cancer Hospital; Consulting Physician to the New York Hospital.

THE purpose of this communication is to call attention to the importance of the dietary element in connexion with the treatment of certain affections of the skin and to emphasize the value of one particular diet.

There can be no question but that local causes play a prominent part in the production of many skin lesions, and that the full extent of the influence of local parasitism has not by any means been yet clearly defined. From the results of vaccine-therapy it would seem that we are also only beginning to understand the important rôle which micro-organisms within the system can play in connexion with lesions on the skin.

But some thoughtful physicians are still seeking to know why it is that these exogenous etiological elements produce an eruption in one individual and not in others, and why the same individual may at one time escape and at another time suffer from their baneful influence. Modern science has demonstrated the almost omnipresence of the micro-organisms which are blamed for the various eruptions, and yet very few are injuriously affected by them!

Intelligent reasoning would surely answer that it is because the system or the tissues were at one time susceptible to their harmful influence, while at another time they were capable of resisting the attack. We all know the powerful influence of the liver in arresting deleterious elements from entering the blood current, and the efficient work of the phagocytes in rendering them harmless when they have gained access to the vital fluid or tissues. We all know that, although pus cocci are almost omnipresent, they relatively seldom give rise to boils and carbuncles, even though they are often found within the follicles of the skin; nor can these be produced by their artificial inoculation in healthy skin.

True science should look deeper than local causes in a large share of cases of many kinds of disease, and the study of metabolism is throwing great light on the true pathogeny of many affections, including some of those of the skin. As the study of metabolic disturbances progresses, illumined by careful volumetric analyses of the urine—that true indicator of the state of the arterial blood—it will be more and more apparent and realized that successful practice will depend upon the careful recognition and treatment of disordered systemic conditions, with due regard to local causation.

But all recognize that metabolism is influenced, or determined for good or bad, to a great degree by the proper or improper action of the various organs and emunctories of the body, and universal experience shows that these are again influenced continually by the character of the food and drink taken.

The effect of diet in diseases of the skin has not yet been at all clearly worked out; indeed, there is relatively little definitely determined in this line. But no one who has carefully observed and studied patients in private practice for many years can fail to be struck with the ill results of indiscretion in eating and drinking in a number of affections of the skin, such as urticaria, acne, eczema, psoriasis, etc.; and if dietary effects can be observed in these diseases then the same must be of greater or less importance in connexion with very many others, for metabolic errors certainly influence nutrition and repair. The harmful influence of alcohol in many diseases of the skin is most marked,[1] and the injurious effects of excessive meat eating in psoriasis has been mentioned by many observers; while the beneficial influence of an absolutely vegetarian diet in the latter disease is most marked and interesting,[2] as I have witnessed in dozens of cases.

In certain more acute and inflammatory conditions of the skin the effects of erroneous diet are often very striking, while, conversely, the results obtained from a proper and often very restricted diet are sometimes very remarkable. All are familiar with the various forms of urticaria and erythema from quite a variety of articles of diet, of acne after particular and great indulgence in sweets, chocolate, milk, etc, fresh attacks of acute eczema after over-indulgence at the table, outbursts of erythema multiforme following great indiscretions in eating and drinking, etc.

For many years I have used a rather peculiar and unusual form of diet in many of these very acute attacks, which has been of such inestimable service that I think it worth while to call especial attention to the matter.

The first occasion when I employed it was on January 2nd, 1906, in an excessively severe outburst of bullous erythema multiforme in a man aged 43, who had had two similar attacks within the previous three years.

This patient had been eating heavily and drinking champagne, and the attack had begun only at 4 o'clock on the preceding afternoon, with a few small papules and much itching. Within the twenty-four hours it had developed in a most violent form, and both hands and wrists were the seat of intense inflammation, with great swelling and small and large tense bullae, more or less haemorrhagic, the intensity of the process seeming to increase even while the case was being studied; he was in real agony from the burning and itching, and intense erythrism of the whole system; the pulse 88, hard and throbbing, and the tongue coated. He was given a laxative and an alkaline diuretic, with a lotion, and was told to confine his diet for a few days to boiled rice, bread, butter, and water, and absolutely nothing else.

He was seen five days later, and the change was remarkable, the eruption had cooled down at once, and the hands and wrists were then almost normal, except the desquamation from the bullae, and they gave him no discomfort. He remarked on the great difference in the course of the eruption under this treatment from what he had experienced in the two former attacks.

Since that time I have employed this method of dietary treatment, with other proper measures, in a very considerable number of cases of acute inflammatory dermatoses, mainly in private practice, and with the most gratifying results, so that now I can almost promise that in a very short time there shall be the greatest relief to the suffering accompanying them, and am confident that the results far exceed any that I had ever had before without it. In several cases of very acute general lichen planus and dermatitis herpetiformis the results have been very striking, as also in acute urticaria. Some cases of rapidly developing psoriasis, with much congestion, have also been most favourably affected by this plan of diet, in all instances, of course, with other measures suitable to the condition present.

Some of the most satisfactory experiences have been in patients with very acute generalized eczema, which sometimes prove so exceedingly difficult to control.

A remarkable instance occurred recently in the person of a physician, aged 38, who for ten years or more had had eczema of the toes with occasional eruption on the hands, in the groin, about the navel, etc.

Seven weeks before he was first seen, April 21st, 1910, he suffered from a burn of the left hand, which was followed very shortly by an eruption, which spread quickly to the arms and body, so that when first seen the eruption was wellnigh universal. The hands and arms were swollen to double their size, and covered with fine vesicles; the feet and limbs were also greatly affected, tense, and in some places exuding, as were also the body and face; the burning and itching had caused intense suffering for some weeks, and sleep could not be obtained even with the strongest measures. In addition to proper remedies, he was placed on a diet of absolutely nothing but rice, bread, butter, and water. The next day the eruption had cooled down considerably, and five days from the first the change in his condition was remarkable. All tenseness had gone, and the hands and feet were about normal in size and the skin peeling freely. He had always been a great meat eater, and had taken whisky freely and much beer in summer.

A very similar case was seen on January 26th, 1910, in a lady aged 48, whose agony was excessive from acute eczema, which had been increasing for two months. In three days all had cooled down, and she was relatively comfortable, though, of course, requiring further treatment.

It is not necessary to multiply cases, many of which could be given which have been seen during the past four years; the result has been uniformly satisfactory, the patients recognizing at once the relief to the system given by the greatly restricted diet. When first proposed or ordered there is always some remonstrance, and many questions are asked as to other articles of diet, but experience has taught me that the best results are obtained by adhering strictly and absolutely to the articles mentioned, certainly for a few days.

A few words may be said in regard to the *rationale* of the plan. We know less about the metabolism of the carbohydrates and fats than we do of that of the proteids, the waste products of the former being largely carried off by the lungs, whose excretion we have not yet learnt to analyse easily, while the nitrogenous elements are readily analysed in the urine. But in a large share of certain diseases of the skin the urinary secretion is found to be imperfect or deficient, and proteid metabolism seems to be at fault in many of them.[3] The idea occurred, therefore, of relieving the liver and kidneys, as far as possible, from nitrogenous elimination by the withholding of exogenous proteids, and rice and white bread were selected as being foods most free from nitrogen. Water alone was freely supplied for the necessities of the system, milk being avoided, having a large proteid element, and also coffee, tea, and chocolate, as having considerable xanthin products. By the free use of rice and bread-and-butter an abundance of calories can be introduced, and in no instance has the patient seemed to suffer from the absence of the ordinary ingredients of mixed diet.

It is not a little interesting to note that careful volumetric analysis of the urine during a strict vegetarian diet shows that the excretion is by no means devoid of nitrogenous elements, and this very simple rice diet allows the organs to remove much effete endogenous nitrogenous material from the system; the acidity of the urine keeps up fairly and the urea will often be maintained at somewhere near the normal amount.

It is not to be supposed that this greatly restricted diet is maintained for any great length of time; my first directions are that the patient shall observe this régime for three or five days. By the second or third day there is the greatest change in the feelings, and much of the intensity of the inflammatory process has subsided, and, with other proper treatment, there is a most marked improvement and relief; by the fifth day this is much more evident, as in the cases mentioned, where all tension had ceased and desquamation was well in progress.

After the fifth day I commonly allow a moderate mixed meal to be taken at noon, continuing the rice, bread, butter, and water alone for the morning and evening meals. In a few days more I give also a moderate breakfast, but with very little meat at either time, and maintain the evening meal still as at first; some days later other food may be allowed. I may remark, however, that I find it very advantageous to make the evening meal very light in many inflammatory diseases of the skin, and often insist upon it for long periods; the sleep is much better and is less likely to be disturbed by itching.

The preparation of the rice is a matter which should receive some attention, as it has much to do with its acceptability and digestibility. It should be thoroughly cooked, but not with too much water, never with milk, and should then be left uncovered on the fire until it has more or less dried out and is flaky. I direct that it shall be eaten slowly, with a fork, with butter and salt, and well masticated, as also the bread-and-butter; it is not to be washed down with water, but the latter is to be drank separately, as freely as desired, hot if preferred, but not iced. When milk is given later to these patients I find that is best borne when taken warm, pure, and alone, one hour before eating, especially before the evening meal, on the plan which I have repeatedly advocated for many years past.[4]

It may seem unnecessary to enter into these commonplace details before a scientific body, but I can assure you that experience has long taught me that careful attention to small details is of vital importance in connexion with dermatology; and one sees them so often neglected, and with such bad results, that they cannot be too often urged. If I shall have succeeded in aiding anyone as I have been aided, in the management of these often trying cases, by my simple presentation of this, to me, very valuable treatment, I shall feel amply repaid.

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DISCUSSION.

Professor P. G. UNNA (Hamburg) remarked that treatment of skin diseases by special diet was doubtless very useful in certain cases, and he would certainly endeavour to watch in some of his own patients the results of such a restricted diet as had been just recommended.

Dr. M. B. HARTZELL (Philadelphia) said he had no confidence in the influence of a vegetable diet in psoriasis. Doubtless in the future, when knowledge was greatly increased, it might be possible to lay down definite rules for diet, but at present it was impossible to do so in the great majority of diseases.

Dr. ALFRED EDDOWES (London) thought every one who had heard the excellent and suggestive paper just read would entirely agree with the remarks on the effect which diet produces on dermatoses. A few chocolates or rancid toffee were often enough to bring on an attack of urticaria papulosa. Rich, fatty food could quickly excite an attack of giant urticaria. He had known one kipper do so in the case of a patient who had previously been free for a month. The quantity of food taken was, as Dr. Bulkley had said,

important. Some cases of eczema in subjects of Bright's disease did very well with carefully limited diet, but at once relapsed if too much food or alcohol were indulged in. He strongly advocated giving plenty of water as a diuretic. A glass of water at bedtime often lessened irritation of the skin and any tendency to distressing dreams. Alcohol helped those who had small appetites, feeble digestion, and tendency to pain and flatus, but it was an unmixed evil and a superfluity for those who ate enough, or too much, with a good digestion. Here was the medical attendant's chance to help the patient to help himself. Certain articles of diet always upset certain people—onions and turbot, mackerel, mint, rhubarb, gooseberries, grapes, and eggs. An excess of alcohol and rich fats were probably only partially oxidized in the blood and lungs, and then acted as irritants to the skin and other organs. This recalled what went on in a cigar or candle which was allowed to smoulder. In the one case an ethereal oil and in the other fat became suboxidized (rancid). Possibly rancidity and disease were sometimes convertible terms. One ought to eat because one had an appetite, not simply because it was mealtime. In skin complaints, as in other diseases, there should, as far as possible, be included in the diet a food which was itself a remedy. In cases of lupus erythematosus he had succeeded in this direction with sour milk. In many cases of eczema whey had proved valuable.

Dr. R. B. WILD (Manchester) said that existing knowledge of the principles of dietetics was yet insufficient to enable definite rules to be laid down for patients in all cases of skin disease. There were three classes of dermatological cases in which dietetic treatment was of the greatest importance, though it was not possible at present to go beyond generalities. The first class consisted of persons in whom certain articles of food caused a dermatosis, usually of the vasomotor type. These substances were closely allied in their action to rash-producing drugs and the mechanism probably similar. As the patients affected had a delicately balanced vasomotor system, a slight disturbance of the balance of function known as "health" produced symptoms apparently out of all proportion to the cause. The next group, chiefly found in hospital practice, was made up of patients chronically underfed; their skin cells also suffered from under-nutrition and lacked resisting power. This condition was often the chief cause of the difficulty of curing cases of trade dermatitis. Under-nutrition also explained the cases of eczema in children, which merely required to be taken into hospital and properly fed to be cured by even the simplest local treatment. The third class of cases, chiefly seen in private practice, depended on the deficient elimination of waste products in those persons who fed too highly and took too little exercise. With regard to single articles of diet, apart from idiosyncrasy, excess of sugar was one potent factor in certain forms of eczema, and the products of overheated fat were very injurious to many people. With respect to the vegetarian treatment of ordinary psoriasis, the speaker had not been able to convince himself that it had any advantages over a mixed diet, though he was quite willing to admit that an excess of proteid was often injurious.

Dr. DAVID WALSH (London) said that in 1890 he had read a paper advancing the general conclusion that a large number of skin eruptions were explicable on the ground of excretory irritation, and later on embodied the same views in a small monograph under that title. His proposition depended on the fact that the skin was one of various excretory channels that might be irritated by the elimination of certain internal irritants from the body. That "internal irritant" might be a drug, such as iodine or copaiba, or a poison elaborated within the body, such as that of gout, or of bacterial origin, as in enteric fever. In many of those cases the internal irritant might be found in the skin irritation in such circumstances as to suggest cause and effect. Dr. Bulkley had laid special stress upon the excretion of iodides, alcohol, and bromides through the skin. Those drugs were discussed in the speaker's original paper, and if there were any truth in the generalization based on the phenomena occurring in connexion with their use, it certainly included the toxic irritant substances taken into the body in the form of food and drink. Illustrations might be found in meat ptomaine rashes and the intensification of acne papules by malt liquors.

Dr. W. KNOWSLEY SIBLEY (London) agreed that in the great majority of eruptive skin diseases the question of diet was of as much importance as external applications. Dermatologists in the past had seriously neglected the internal treatment, and had relied too much upon their ointments and lotions. To mention only one article of diet—alcohol, by its action as a dilator of the superficial blood vessels, caused an increased dermatitis in the majority of cutaneous eruptions. With regard to the question of vegetarian or meat diet, the whole subject resolved itself into that most complicated problem, namely, the treatment of gout and rheumatism and their infinite and indefinite symptoms.

Dr. GEORGE PERNET (London) said that with regard to diet in skin diseases generally, dermatologists were more or less in agreement. Like Professor Unna, he had been consulted by patients who had already tried a variety of diets, without result, and required something more than a new diet sheet. That a restricted diet like rice, as suggested by Dr. Bulkley, or a salt-free diet might be beneficial in some acute inflammatory diseases of the skin was undoubted, especially if the kidneys were inadequate and so forth. But in psoriasis he had not found strict diet—vegetarianism, for instance—of much service. Indeed, sometimes patients required a generous diet, more food than they had been accustomed to, especially hospital patients. In them bed and proper food made all the difference. He had often found that in the case of out-patients the wherewithal to get some food was an important element in the treatment of some cases suffering, in addition to psoriasis, from *la misère physiologique*. As to the suggestion that general (internal) treatment of skin patients had been neglected, he did not agree; for the late Dr. Radcliffe Crocker, with whom he had been associated for many years, was specially keen on taking cases as a whole and on their merits, and had emphasized that line of treatment in his admirable treatise on *Diseases of the Skin*. The speaker agreed in a general way as to the bad effects of alcohol in acutely inflammatory skin diseases.

The PRESIDENT (Dr. P. S. Abraham, London), in thanking Dr. Bulkley for his suggestive paper, said that he would invariably knock off all fresh fruit in acute inflammatory diseases of the skin. He did not think that the promiscuous use of soured milk was advisable, but when properly prepared this agent was of great value in certain cases. He agreed with one or two previous speakers that the circumstances and conditions of life in different patients, especially among the different races of mankind, altered cases greatly with regard to the sugar intake of which each was capable. With regard to the question of diet in psoriasis, he had come across some equally bad cases of the disease in teetotalers and vegetarians.

Dr. DUNCAN BULKLEY (New York), in reply, said he wished to emphasize the fact that it was impossible to draw safe conclusions from cases observed in out-patient practice, as this class of persons would not or could not perfectly carry out directions correctly for a sufficient length of time. Nor was it very feasible to judge from those who were in-patients in hospitals, as they were generally there for too short a time to determine the effect of diet in chronic ailments. But well-observed patients in private practice, in the better walks of life, when careful notes were taken at each visit, over some length of time, certainly showed the effect of diet, often in a remarkable manner. One speaker had mentioned that psoriasis had been reported to be benefited by an exclusive meat diet. The erroneous view in question arose something over forty years ago, when an unknown physician named Passavant, in a German journal, wrote an open letter to Professor Hebra, stating that he himself had had psoriasis, and was cured of it by what he called a meat diet and by avoiding tea, coffee, alcohol, etc. On studying this article the speaker (Dr. Bulkley) found that the diet was largely composed of fats, and that Dr. Passavant did not state if he

had used other treatment also, or if he had had any return of the eruption; he mentioned that one patient with eczema seemed to be benefited by the same treatment. In the next edition of his book Hebra took pains to allude to the article by Passavant, and scouted the idea and the value of such an imperfect observation. A search of literature now revealed the fact that during the forty years which had elapsed there had not been a single corroborative report, although the textbooks continually referred to Dr. Passavant's original communication and to no other report. Surely in all these years there would be some confirmative evidence, if the statement made was true regarding this common, rebellious, and easily recognized disease. On the other hand, literature was full of more or less definite statements regarding the injurious effects of a nitrogenous diet in psoriasis and of the value of one restricted to the carbohydrates and fats. For about a year past the speaker had kept a special list of the cases of psoriasis seen in private practice under vegetarian diet; they numbered over 100. Many of the cases were recent, but many of the patients had pursued the dietary treatment for months or years—in some instances over ten years—with more or less faithfulness. From a careful observation and study of these cases he was thoroughly convinced of the inestimable value of his mode of procedure. In some instances, where the patients had long had the eruption, he had placed them solely on a strictly vegetarian diet, with no local or internal measures whatever, and had seen the eruption steadily vanish. In many instances he had seen a relapse when the absolute diet was not followed, the eruption yielding again to a rigid course. He did not, of course, claim that psoriasis could be always cured by a vegetarian diet alone, although he was positive that it was a great element in treatment; when relapses did occur, they were mild and yielded much more readily. He wished it also to be recognized that to be effective the vegetarian diet must be absolute, butter being the only article allowed which did not come from the ground. Alcohol in every form must be excluded, and often it was necessary to avoid tea and coffee as being xanthin-bearing substances.

RECENT EXPERIENCES IN THE TREATMENT OF FAVUS.

By J. F. HALLS DALLY, M.A., M.D.Cantab, M.R.C.P.Lond.,
Assistant Physician, National Hospital for Diseases of the Heart; Physician to the St. Marylebone General Dispensary.

I HAVE been asked to give an account of my personal experiences in the treatment of favus at the London County Council Special School in the East End of London, and I trust that the few brief remarks which I have to make on a disease now very rare in London may not be without interest to the present Section.

In June, 1906, this school was opened at Finch Street, Osborne Place, in the vicinity of Aldgate, for the purpose of treating a large number of existing cases known to the Council. Since its opening 152 children have been admitted for treatment, which in all the early cases consisted in the application of lotions and ointments, *x*-ray treatment being instituted for the first time in May, 1908. Of the 152 cases, 82 have had *x*-ray applications; 132 children were discharged from the school with the disease cured, 1 was discharged for observation, no note was made as to the condition on discharge in 7 cases, 11 left for various reasons, some of these having reached the age-limit, and 1 died of pulmonary tuberculosis. No case was entered as cured without careful microscopical examination of several hairs taken from various portions of the scalp, and the majority of these cases since their discharge have been kept under observation. In one case only has the fungus been found again present one and a half years later. Very rarely has it been necessary to apply *x*-ray treatment for the second time owing to failure in securing successful epilation at the first attempt.

During six months ending June 30th, 1909, 50 children were discharged as cured, 24 being admitted; during six months ending December 31st, 1909, 20 children were discharged as cured, 7 cases being admitted, and 3 being still under treatment. By March of the present year it was found that the stock of available cases was becoming exhausted; in other words, that failing the introduction of fresh cases through alien immigration, the disease is practically stamped out for London. Is it too much to hope that in the future we may be adequately protected against fresh sources of infection by the rigid enforcement of the Aliens Act?

No monopoly of favus cases is, of course, claimed for this school, for sporadic cases crop up at most of the large hospitals; but whereas cases in the East End of London were formerly much more numerous, they are now comparatively non-existent. Hence in this large area the complete extirpation of the disease as regards children of school age has been attained, and the school was consequently closed, by order of the London County Council, on May 9th, 1910.

Of the first 23 cases admitted, 21 had already been under hospital or other treatment, but only one child had materially benefited. The majority of admissions within a short time of closure was composed of younger brothers and sisters of children previously treated in the school, and, apart from these, few fresh cases have been discovered. In one of the latter the child (a Russian Pole) was said to have had the disease for at least six months prior to admission to this country, whilst another (a German Pole) is said to have had the disease for five years before coming over, and to have been in England three years.

Five families closely related have had various members treated in the Finch Street School, the children treated, seven in number, being in each case first cousins. With one exception (Irish) all our cases were aliens.

I do not propose to weary you with an elaborate description of the condition. This can be found in the textbooks. It may suffice if I briefly sketch the outlines of the disease as it appears clinically. By no means does every child present the sulphur-yellow scutula and mouse-like odour described as characteristic of the disease. In some cases the cups are yellowish-white in colour and irregularly distributed over the scalp. In other cases, again, no cups are present. The majority of cases show a considerable amount of inflammatory hyperaemia, best marked in those localities where the disease is most active. In these situations there is frequently falling of the hair, and numerous yellowish crusts and scabs composed of epithelial débris and serous exudation, varying from the size of a threepenny piece to that of half a crown, are seen all over the hairy scalp. In a well-marked case which has existed for some months or years, smooth, paper-like scars, often depressed, and patches of cicatricial atrophy are seen in the sites of the old disease. In some instances, owing to the presence of small, closely-aggregated areas of cicatricial atrophy, each of which is covered with dry epidermic scales, the hair, when cut short, presents a moth-eaten appearance. The mousy odour, when present, appears to be associated with the sulphur-yellow cups; if suppuration has occurred, sometimes a faint odour which differs from the above may be noted. In most recent mild cases the mousy smell is absent. In addition to suppuration another complication of the disease which most frequently occurs is impetigo contagiosa. This latter at times may be so extensive as to mask almost entirely the original condition. Tinea favosa capitis is usually most apparent on the vertex, and the affected hairs are lustreless, in black-haired subjects, in whom the disease is usually seen, appearing greyish-brown and dead. The loss of hair is patchy and the alopecia resulting can almost invariably be distinguished from that which follows the application of *x* rays of too great intensity or too prolonged duration.

The method of treatment which I have found to give the best results is as follows: On the day previous to the application of *x* rays the hair is cut quite short with clippers, which are then carefully sterilized, and the child's head is washed with soft soap. If many crusts or much suppuration is present, the head may be further cleansed by the application of cyllin poultices. *X* rays are applied after the manner advocated by Kienbock, which was first shown to me by Dr. Adamson, who published a description of the method last year in the *Lancet*.[1] The hairy scalp is mapped out by taking five centres, each of which is not less than 5 in. from the ones adjacent, and by this means the whole scalp is epilated by five exposures, each case taking on the average about one hour. Protection for operator and nurse can be attained by the use of any

suitable form of shield, the one passed round being a simple form which I devised for use with our own form of apparatus. By far the most satisfactory tubes in my experience are the Chabaud and the Drisler, the latter having the advantage of cheapness and of standing the passage of a greater amount of current. Eighteen days afterwards the head is washed, by which time the hair has begun to fall out. A cyllin poultice is applied daily for the next three days, the head being washed daily after this for seven to ten days. By this time the scalp should present a billiard ball appearance, and if there should be a few stumps still remaining, these are picked out individually with epilation forceps. Unless contraindicated, pure izal or cyllin is painted on once weekly. Should this prove too strong, solutions of greater dilution are employed, or ung. hyd. amm. dil. is rubbed in daily. A new growth of curly hair appears in about nine weeks' time, and by the end of three months is frequently half an inch in length.

If for any reason *x*-ray treatment cannot be immediately applied, the disease may be held in check by the application of strong solutions of oxidized hydrocarbons, of which cyllin and izal are the best, since, although antiseptic and disinfectant, they are neither caustic nor toxic. The most useful ointment is one which is frequently used by Dr. Abraham in the treatment of ringworm cases at the West London Hospital and elsewhere, which consists of 50 per cent. oleate of copper ointment, together with a like quantity of an ointment of carbolic and salicylic acids (aa 5j ad 5j).

Although, as regards ringworm, I am in complete accord with our President in the opinion that the use of *x* rays is unnecessary for every case, since it is a frequent observation that many early and limited cases can be more speedily cured by effective ointment treatment, yet I think it will not be gainsaid that for favus *x* rays should be advocated as the best possible treatment.

REFERENCE.

[1] *Lancet*, May 15th, 1909, p. 1373.

NOTE ON SOME VARIETIES OF "MOLLUSCUM CONTAGIOSUM."

By P. S. ABRAHAM, M.A., M.D., B.Sc.,
President of the Section.

WHEN "molluscum contagiosum" occurs as small, pearly-looking, sessile excrescences, the diagnosis of the affection is easy, even without microscopical examination; but when the little tumours are embedded within the skin, and not raised above the surface, the true nature of the lesions may be excusably overlooked by any but the experienced dermatologist. This is also the case when the growths are developed very closely together, or "agminated," forming a flattened area slightly raised above the surrounding integument. Both conditions are rare, and perhaps this is why so few dermatological textbooks and writers make any allusion to them.

Of the former variety a good example came under my notice on the hands of a woman, both on the palmar and dorsal aspects. Under a lens translucent foci were to be seen embedded in the skin, with no protrusion, but with a slight tendency to umbilication in the larger ones. A scraping exhibited the typical "molluscum bodies," and soon confirmed the diagnosis.

An interesting instance of the "agminate" variety has recently been under my care. A young lady had upon her neck, just below the larynx, a brownish, rough, and scaly oval patch, with an irregular outline, measuring about 3 by 2 cm., and but slightly raised above the surface. This had existed for many months, was slowly increasing in size, was itchy, and had been treated for "eczema." It certainly at first bore strong resemblance to a patch of chronic indurated eczema. Not very far off, however, a few undoubted "mullusca contagiosa" were to be seen elsewhere on the neck, and their presence led me to look more closely into the larger lesion. I found that the patch really consisted of numerous small "molluscum contagiosum" growths, closely massed together. The cure was effected by scraping out and by the application of carbolic and salicylic ointment. I subsequently saw the lady's sister, with whom she slept, and she had two or three small but typical growths, also on the neck. Her lesions had existed for a much longer period than her sister's, but had not extended or become massed together.

We may presume contagion in this case, probably from the use of the same towels or pillow cases; but I must confess I have come across little traceable evidence of contagion in cases of this disease. I can confirm, however, Sir Jonathan Hutchinson's original observation of the occurrence of "molluscum contagiosum" among the frequenters of Turkish baths. Three very extensive generalized cases which I have lately seen in private practice were accustomed to go to Turkish baths, and two of them to the same establishment.

I may add that these generalized cases, even where the individual lesions are quite typical, I have known mistaken for, and treated as, very different diseases—for example, acne, syphilis, and chicken-pox!

SOME CASES OF ACTINOMYCOSIS, WITH ESPECIAL REFERENCE TO TREATMENT BY POTASSIUM IODIDE.

By R. B. WILD, M.D., M.R.C.P., M.Sc.,
Professor of Materia Medica and Therapeutics in the University of Manchester; Honorary Physician to the Christie Hospital, and the Manchester and Salford Hospital for Skin Diseases.

FOR over ten years previous to 1907 we had no cases of actinomycosis at the Manchester and Salford Hospital for Skin Diseases, and I am not aware of any cases occurring in the district.

Apparently some source or sources of infection must have been imported in the spring or early summer of 1907, and caused a group of four cases, which came under my own observation in the autumn of 1907 and the first part of 1908. Possibly other cases occurred, but I have not hitherto heard of any, nor have we seen any fresh cases at the hospital since April, 1908.

The appearances presented by cases of actinomycotic infection are so well known and so much alike that a minute description is unnecessary at the present time. I purpose, therefore, briefly to describe the salient features of each case, and to draw attention to certain points, more especially with regard to treatment, which appear worthy of note. The cases are as follow:

CASE I.

J. H. A., youth, aged 19, an iron-driller by trade, but out of work for some time and "doing odd jobs," which had included the care and feeding of pigs. He had been ill with swelling of the left cheek and abscesses for about fourteen weeks, and had been a patient at the Salford Royal Hospital, where a diagnosis of actinomycosis was made, abscesses opened, and iodipin administered.

First seen at the Skin Hospital on September 18th, 1907. He was a pale, well-nourished youth of fair complexion. All the internal organs were healthy.

The left side of the face and neck was much swollen and presented cicatrices where abscesses had been opened. The swollen surface was irregular and studded with nodular inflammatory swellings and papules, many of which were broken down into abscesses and sinuses discharging purulent and sero-purulent matter. Several subcutaneous swellings of a larger size were present in the neck; the lowest reached the left clavicle near the sternum, and the most posterior, about the size of a pigeon's egg, was behind the left ear.

The eyelids were much swollen, the left eye closed, and could not be opened to inspect the conjunctiva. Inside the mouth the gum of the lower jaw on the left side was swollen, and there was some discharge from the alveoli of the molar teeth, which were absent on that side. The left cheek was hard and projected into the cavity of the mouth, which could only be slightly opened.

The purulent discharge contained some granules and the actinomyces was found in it.

The patient was taken into the hospital and treated by boric acid fomentations for a few days, afterwards by a dressing of 1 in 80 carbolic acid, which was also used to syringe the sinuses and abscesses. An antiseptic collutorium was used frequently. Sittings were given twice a week for a month with *x* rays, ten minutes each time, with an open tube, moderately hard. As no benefit appeared to be derived from the *x* rays, they were then stopped.

He was placed on a full milk diet, with broths and eggs, but salt, potatoes, and vegetables forbidden. Internally potassium iodide was given in 40 and then 60 grain doses, three times a day at first, then four times a day, and later a smaller dose six times and then eight times a day, the total daily dose remaining at a maximum of 240 grains. On account of the rapid elimination of potassium iodide I believe a more marked effect is obtained by giving the drug at short intervals, and I have found no difficulty in doing so if a solution is made of ℥j of potassium iodide in ℥viii of plain water, and ℥ss or ℥j (representing gr. xxx or gr. lx respectively) given in a cup of milk every two or three hours.

There were no symptoms of iodism, and this treatment was continued for ninety-four days, when he had taken 10,380 grains of the drug.

In December he acquired a severe cold, and had a few spots of iodide acne. The drug was stopped for a week and a diaphoretic mixture given. Then the potassium iodide was resumed, at first 60 grains daily and increased to 120, and continued for a hundred days, during which he took 7,755 grains. He was then discharged from the hospital and made an out-patient, April 11th, 1908. All the sinuses were healed; there were no abscesses, but the tissues were considerably swollen; the left eye was slightly open and was quite healthy.

He attended regularly as an out-patient for six months longer, taking 60 grains of potassium iodide daily, a total of 9,120 grains in one hundred and eighty-eight days; he was then well and able to resume his work. I have seen him at intervals since then, the last time in May, 1910. He remains well, but is still unable to open the left eye as fully as the right, and there is slight swelling round the operation scars. In all, he took 27,255 grains (nearly 4 lb.) of potassium iodide in thirteen months.

CASE II.

S. M., a butcher, aged 56, seen in consultation. A somewhat stout man, but had lost flesh and strength during his illness. No history of infection could be obtained nor any remembrance of any affection, which might have been actinomycosis, in cattle with which he had been in contact.

He was seen on October 11th, 1907, and stated that about five months previously he first noticed a swelling near the angle of the jaw on the right side, this increased in size, and four months ago his doctor saw it and opened an abscess which discharged pus. The abscess never healed, infiltration spread round it, other abscesses formed, the general health broke down, and two nights previously a large haemorrhage occurred from a sinus just below the right ear. When seen he was pale and tremulous, pulse 130 and weak. The whole of the right side of the neck and the posterior part of the right cheek below the ear were much swollen, dark brownish-red in colour, and studded with openings from which purulent discharge exuded. Some of this was collected for examination and actinomyces found. There were no visible lesions inside the mouth, but the mucous membrane of the cheek was sore. Potassium iodide in gr. x doses had been prescribed, but he had only taken it very irregularly.

The haemorrhage recurred and he died from exhaustion a few days later.

CASE III.

E. C., a married woman aged 43, a foreign Jewess occupied in housework, a dark-complexioned, rather thin, small woman. She did not speak English well, and the history was difficult to obtain; no probable source of infection could be ascertained; she stated that the affection of the face began nine months previously, and she had been a patient at the Ancoats Hospital, where a diagnosis of actinomycosis was made. First seen at the Skin Hospital, February 19th, 1908. In appearance she had a marked resemblance to Case I, but was much less severe. The left side of the face and upper part of the neck was swollen and studded with nodular inflammatory swellings; some of these were broken down, and discharging pus and sero-pus which contained actinomyces. The left eye was completely closed from swelling of the lids.

She refused to come into the hospital, and was treated as an out-patient by applications locally of lead and carbolic lotion, and internally potassium iodide, 120 grains daily, given in milk in divided doses. In three months she had taken 10,080 grains, and was greatly improved, and the drug was stopped for three weeks and then continued in doses of 45 grains, and afterwards 30 grains, daily, for five months longer, when she considered herself well and ceased attendance, having taken 13,280 grains of potassium iodide (nearly 2 lb.) in eight months. I saw nothing of her again until January, 1910, when she came to the hospital suffering from eczema of the perineal region. She had some scars from the former abscesses, but no signs of actinomycosis. I saw her last in May, 1910, and she remains well.

CASE IV.

M. T., married woman, aged 40, engaged in housework. Admitted to the Christie Hospital, April 23rd, 1908, under the care of my surgical colleague, Mr. A. H. Burgess, F.R.C.S.

The patient had not been well for some months; she had suffered from obscure abdominal pains and had lost flesh. Five weeks before admission the pains became more severe, especially after exertion, and were localized in the right iliac region and groin. On deep palpation a hard mass was found in the right iliac fossa. The mass was fixed, well defined, and nodular, the most superficial part about the size of a walnut; no fluctuation was perceptible, and the upper part of the mass was the only place where pressure caused pain. The temperature was of hectic type, reaching 102° in the evening.

A laparotomy was performed, and the mass found to be behind the bowel and irremovable. A portion was removed for microscopical examination, and proved to be inflammatory tissue; no tubercle bacilli or histological tubercles were found.

The abdominal wound healed, and she went home, but was readmitted July 9th, 1908, with a red, brawny swelling on the right hip. This burst the following evening, and discharged freely; the pus contained opaque bodies, which proved to be actinomyces. A small discharging sinus was also present in the scar of the first operation.

On August 26th the sinuses were thoroughly scraped out under anaesthesia by Mr. C. Roberts, F.R.C.S. As soon as the actinomyces was found she was placed under potassium iodide, at first a small dose as she was anaemic and very weak. This was gradually increased to 180 grains daily, and for a time she improved considerably, and we had hopes of her recovery.

Towards the end of October, however, fresh abscesses formed in the groin and round the hip. The operation was repeated, and five sinuses opened up and drained. A faecal fistula developed with new abscesses; she became very weak, and in the middle of November the potassium iodide was stopped. She had taken over 9,000 grains in three and a half months. She lived six weeks after the iodide was stopped, and died from exhaustion at the beginning of January, 1909.

The autopsy showed extensive infiltration of all the muscles round the hip, the bodies of the lower three lumbar vertebrae were almost destroyed, and the pelvic bones affected. There was a perforation of the ascending colon, the wall of which was extensively involved. It was impossible to say where the disease originated, but the appendix vermiformis was healthy.

REMARKS.

There are several points in the above cases which seem worthy of mention. In all the cases the diagnosis was verified by the discovery of the fungus, and this was confirmed by further examination in the pathological department of the university under the supervision of Professor Lorrain Smith.

The striking similarity in the appearances presented by the three cases where the face and neck were affected. This was very marked in Cases I and III, which differed only in the degree of severity and extent to which the neck was involved.

The time at which the infection occurred. The case first seen in September, 1907, had a history which pointed to infection some time before June, 1907. The history in the second and third cases also brought the probable date of infection to the same time.

The fourth case, seen in April, 1908, had only a history of several months' illness, but the extent of the disease discovered at the first operation showed that—judging at the rate of progress in the other cases—infection must have occurred some considerable time before the symptoms became sufficiently severe to lead the patient to seek relief, and it does not seem unreasonable to assume that at least nine months had elapsed between infection and the first operation. Thus in three of the four cases, and probably in the fourth also, infection occurred in the spring or early summer of 1907.

Etiology.—No obvious source of infection could be traced in any of the cases. The difficulty was largely increased by the fact that no case came under observation within three months of its origin. The only significant facts are that the first case had been engaged in feeding pigs; none of these pigs were diseased, so far as could be ascertained by inquiry. The second case was a butcher, and possibly exposed to infection in several ways. The third and fourth cases, in married women engaged wholly in housework and living on ordinary diet common to the rest of their household, are quite inexplicable, and only show how infection may occur in the most unexpected places. No connexion of any kind could be traced between the cases. No one of the patients knew any of the others. All the patients, however, lived in the north and west quadrant of the district, and the most remote case came from Eccles, four miles west of the city.

Treatment.—The value of large doses of potassium iodide is well shown in these cases, especially Cases I and III. I have never seen so severe a case as Case I recover. He had been well treated with smaller doses of potassium iodide and also by other iodine preparations, but the disease extended, and it was only when the dose of potassium iodide reached 240 grains daily that improvement began. When fully under the influence of the iodide the simplest local treatment—namely, carbolic acid lotion 1 in

80—was quite sufficient, and no further operative measures—not even the opening of an abscess—were required. Case III was much less severe and recovered under doses which never exceeded 120 grains a day. Case II was never really under the influence of the iodide prescribed for him; he was difficult to control and only took a few doses intermittently. Case IV responded for a time to the potassium iodide; she was very weak; the dose could not be pushed beyond 180 grains a day, and the autopsy showed considerable bone affection. It is possible that the great vascularity of the head and neck is an important factor in bringing the potassium iodide into contact with the diseased tissues, and that the results when less highly vascular tissues are attacked may be less satisfactory. The very large amounts of potassium iodide which were taken in these cases for many months without harm, and with only very trifling and temporary symptoms of iodism, are worth noting at a time when we are pressed to discard this most efficacious drug in favour of less active substitutes, on the ground that the alkaline iodides cannot be continued in large doses without injurious symptoms. I consider that the diuretic effects of large doses of potassium salts is an important factor in preventing iodism; most of the severe cases of iodism met with are produced by doses too small to act as diuretics, and on this account the iodide of potassium is preferable to the sodium salt where large doses are required. It is important also to reduce the consumption of other salts and foods containing much saline constituent when the dose exceeds about 120 grains daily. In giving large doses, the method of making a strong solution in plain water and giving each dose in 4 to 6 ounces of milk is very useful; there is no difficulty in administering eight doses in the sixteen hours of wakefulness which comprise an ordinary day, and the body is kept more fully under the influence of a rapidly eliminated drug like potassium iodide when the doses are given at short intervals than by much larger doses given three times a day, as is the more usual custom.

SOME POINTS IN CONNEXION WITH ELECTROLYSIS FOR HIRSUTIES.

By WILLMOTT EVANS, M.D., F.R.C.S.

IN the opinion of all who have had much experience of it, electrolysis is decidedly the best method of treatment of hirsuties, and this has been recognized ever since its introduction by Hardaway. It is worth bearing in mind that the method was suggested to Hardaway by Michel, who had employed it for ingrowing eyelashes, and ophthalmic surgeons recognize its value. There was for a time an attempt to advocate the use of *x* rays for the removal of excessive hairs, but in my opinion it is untrustworthy, and I do not think it should be employed, though it is, of course, of the greatest value in cases where it is wished merely to remove hairs temporarily.

In spite of the fact that most dermatologists value electrolysis highly in the treatment of hirsuties, from time to time objections are urged against the method, but this is largely due to the mode in which the method is applied and not to the method itself. The fact that electrolysis for hirsuties is largely employed by unqualified persons will also account for some of the unsatisfactory results.

The most common objection made to electrolysis is that there is a great tendency to recurrence. This is mainly due to inefficient application; the needle has probably not been introduced exactly along the hair follicle, or it has not been inserted sufficiently far, or the wrong pole of the battery has been used. It is essential that the needle should be attached to the negative pole, for at that pole only is the destruction of the hair papilla complete and rapid. A very small percentage of the hairs removed may reasonably return, but these should not exceed 10 per cent., and in skilled hands it may not exceed 2 per cent.

The pain of the operation is also sometimes advanced as an objection to the method, but it is really very slight if an excessive current be not employed.

Pustulation should hardly ever occur if antiseptic precautions be taken, though if these precautions be neglected troublesome sepsis may result, and this is especially likely to occur when electrolysis is employed by unqualified persons. A keloid formation in the scar is, in my opinion, also microbic in origin, and I could, if time would permit advance many reasons in support of this opinion, but here it will suffice to say that it does not occur if suitable antiseptic precautions be taken.

Deposits of iron from the needle, producing small black marks, can only occur if the positive pole has been employed instead of the negative. It cannot occur if an iridoplatinum needle be employed, but, as I mention later, I think steel needles are better. The points which I consider of importance in electrolysis for hirsuties are the following: Precautions should be taken to make the skin of the parts affected as free from germs as possible. This is best accomplished by wiping over the surface with a suitable antiseptic, such as a solution of phenol (1 in 60); it is, I think, better not to use perchloride of mercury. This application of an antiseptic may be repeated from time to time during the operation. Quite as important—or even more important—is it to be sure that the needle is aseptic. This is best assured by employing a steel needle, and by using a fresh needle for each patient, and by sterilizing it by heat, as in a spirit flame, or by soaking it in a suitable antiseptic. The irido-platinum needle has the advantage that it can be bent so as to make it easier to introduce in some positions, but this is only a small advantage. That the irido-platinum needle does not cause pigmentation when it is attached to the positive pole is, I think, no advantage, for the needle should never be attached to the positive pole, as that pole is much less efficient.

The current used is best furnished by Leclanché cells, and six are quite sufficient. The current should not be made until the needle is at rest in the follicle, and it is best to break it at the positive pole, which is held in the patient's hand. A milliammeter should always be employed, so that an excessive current is not used. A little under 1 milliampère is the best strength of current to employ, and a small resistance should be in the circuit so as to make it possible to control the strength of the current. From ten to twenty seconds are sufficient, and if the electrolysis proceeds for a longer time a small scar may result. The hair may not be quite loose immediately after the cessation of the electrolysis, but it becomes looser a short time after, as the alkali formed in the follicle has time to dissolve the keratin.

Lastly, it is of supreme importance that too many hairs should not be removed at one sitting, or, in other words, the sittings should not be too long; from three-quarters of an hour to one hour should be ample.

A CASE OF PEMPHIGUS VEGETANS:

WITH REMARKS ON TREATMENT.

By GEORGE PERNET, M.D.,

Lecturer on Dermatology, Medical Graduates' College, London.

THE following are the notes of a case which was originally in the West London Hospital, but which was transferred to another institution, as the former hospital had to be emptied for cleaning. The case in the first instance, as far as I am concerned, was under the care of Dr. Abraham, and in the last stages under mine. I am indebted to Dr. Abraham for his notes of the case, and I shall therefore begin at the beginning, and give them first for the sake of lucidity.

The patient was a male, aged 39, admitted February 15th, 1908. Until this illness his health had been fairly good. Scarlet fever ten years previously, and gonorrhœa twenty years ago. No syphilis. Has been a post-office attendant. The disease started with an eruption on the face, taken for "barber's rash," two years previously, commencing on the upper lip. Some months later a sore place appeared on the scrotum, discharging freely, and spreading to the pubes, the inner parts of the groins, and for some distance down the thighs. Meanwhile the cheeks, chin, and scalp had become infected. Six months later the axillæ were involved. The patient states that in most places the first appearance of the disease was in the form of soft warts, but his mother remembers seeing "blisters," especially about the thighs. The growths had spread up the thighs. He was treated in a provincial hospital with *x* rays, and some improvement followed at the time, but the patient ascribes much of the subsequent soreness of the trunk and increase of the disease to that treatment.

In June, 1907, he was admitted to one of the smaller London hospitals, and the condition was diagnosed as generalized condylomata. The patient was put on antisyphilitic treatment, *plus* perhydrol and dusting powder, with calomel locally. There was apparent improvement in some respects. He was then

sent to the Lock Hospital. There the case was not considered to be syphilitic, and the patient was put on arsenic.

He was then admitted to the West London Hospital, when his condition was as follows: The hairy areas of the face are covered with thick yellow crusts, beneath which are soft papillomatous, closely packed outgrowths, free discharging. The whole scalp is similarly affected, but in a less degree. The papillomatous lesions spread down the back of the neck, but there are also large raw areas discharging purulent fluid. Both axillae are filled up with similar but larger and closely packed growths of the consistence and appearance of condylomata, but giving a superficial appearance of epithelioma. The sides of the scrotum and the inner parts of the groins and thighs are occupied by similar growths. The base of the penis and the organ itself are oedematous.

There are several large erythematous areas on the sides and front of the trunk, whilst on the buttocks and back are open running sores. The discharging parts emit a most offensive sickly odour. Movement is very painful.

The patient's temperature on admission was 100.2° F.; pulse 104; urine 1006, no albumen, no sugar.

Treatment.—The patient was treated externally with creolin baths and dressings and a soothing zinc and lead ointment for the inflamed parts. A mild compound mercurial ointment for face, head, axillae, and genitalia was ordered. Internally, quinine in large doses, iron, etc.

There was apparent improvement for a time, but on March 15th the temperature went up to 103°, and practically the whole of the trunk became covered with large erythematous blotches soon coalescing and becoming excoriated with raw exuding surfaces.

Previously to this a few purulent bullae had appeared on the toe of one foot—the first bulla that had been seen. The treatment was now changed, and protargol in 7 per cent. solution or in ointment was freely used and the quinine increased.

The temperature went down and the general condition improved, but other purulent bullae made their appearance. Polyvalent serum was injected, at the suggestion of Dr. Pernet, with marked benefit.

On March 21st this was repeated several times, and early in April the excoriations on the trunk had quite healed. In every way there was marked improvement. Recurrences, however, took place from time to time, in spite of repeated injections of the polyvalent serum and of atoxyl and various changes in the external applications. It was remarkable that the patient's appetite and spirits remained good the whole time, and he quite thought he would recover.

Staphylococci were found in the blood on March 15th, but none on June 6th. Dr. Tow, Pathologist to the West London Hospital, also made a blood count then as follows:

Polymorphonuclear cells ...	...	65	per cent.
Large mononuclear ...	...	2.5	,,
Lymphocytes ...	...	18.5	,,
Eosinophiles ...	...	13.5	,,
Transitional ...	...	0.5	,,

It was at this stage the patient had to leave the West London Hospital, and came under my care and observation. On admission the patient was in a very emaciated condition, and, I may add, in a hopeless one as to recovery. He presented large surfaces denuded of epidermis, with discharging lesions in the axillae and groins. Pus was discharging from raw surfaces round the eyes. About the mouth there were black crusts. There were pressure sores about the posterior superior iliac spines and the spines of the scapulae. The patient died ten days after admission. Everything was done to relieve him in his distressing condition. The following notes were made of the *post-mortem* appearances:

The body is that of a poorly-nourished man. No enlargement of any of the superficial glands. Mucous membrane of mouth and tongue normal. The pharynx, oesophagus, stomach, and intestines are normal; no ulceration, hyperaemia, or membranous deposit.

Mesenteric and retroperitoneal glands normal. No pus in any of the serous cavities.

Chest: Mucous membrane of air passages normal. Chest glands normal. Lungs large and emphysematous. Lower lobes of both lungs contain large areas of semi-solid tissue, which is red, oedematous, and friable, but is non-granular. There are no signs of tuberculous mischief in the lungs.

Heart: Right side of heart dilated and slightly hypertrophied. Muscle substance normal. At the free edge of pulmonary valve there are numerous small vegetations. The other valves are normal. Right side of heart contains blood clot extending into pulmonary artery. Left side of heart is normal. Thyroid gland normal.

Abdomen: The liver is large, pale, and very fatty. No amyloid change, no suppuration, no cirrhosis. Gall bladder and passages are normal. Spleen large and soft. Kidneys large, capsules strip off easily; cortex is wide and shows cloudy swelling; pyramids normal. Ureters, bladder, and generative organs normal. Suprarenals normal. Mesenteric and retroperitoneal glands normal. Pancreas normal. Arteries healthy and show scarcely any alteration.

Brain normal.

Although quite a number of cases of pemphigus vegetans cases have been published since Neumann, of Vienna, first drew attention to this clinical condition, yet it is important to relate cases as they occur. In the first place for the very good reason that unless they come under the observation of a dermatologist familiar with pemphigus vegetans the disease is not only overlooked, but is apt to be taken for syphilis. This is a mistake frequently made, and before Neumann disentangled it the diagnosis of syphilis was the rule. In the present case this rule was verified, one observer having diagnosed it as syphilis and instituted anti-syphilitic treatment before the patient was admitted to the West London Hospital. Now, with the examination for the *Treponema pallidum* and the Wassermann reaction, such an error would be less likely to occur, although a positive Wassermann, if the patient happened to be a syphilitic as well, might make matters worse. This is a point worth remembering.

As to the *x* rays, they appear to have aggravated the condition in this instance. In any case, they would not be likely to cure any more than they do in mycosis fungoides, although the effect on the growths might be satisfactory at first.

When I saw the patient at the West London Hospital he was in a pretty bad way, and recollecting that my case of acute lupus erythematosus d'emblée,[1] though in a moribund condition, had rallied under injections of polyvalent serum, I suggested the empirical trial of that remedy to Dr. Abraham. The upshot, for the time at any rate, was satisfactory, and perhaps put off the evil day. When the patient came under my own care he was so obviously dying that it would have been useless to employ the serum again, a trial having been already made.

But a point I desire very specially to bring out is that an attempt should be made to get at the micro-organisms causing the mischief—for micro-organism it undoubtedly is, at any rate in the majority of cases—for we must confess that the main etiological factor at work has been elucidated in but few cases, and that only when too late. In a case of pemphigus vegetans which I published[2] I found the *Bacillus pyocyaneus* in pure culture in the fluid of a bulla. This was before vaccine days. But were such a thing to occur again, obviously the treatment would be to employ a *Bacillus pyocyaneus* vaccine, and with the hope of a successful issue. In any case the proper treatment for such a fatal condition as pemphigus vegetans would be a vaccine from the particular micro-organism found—that is, if it could be found. As we all know, the vegetating lesions in this and in many another condition are due to secondary infections, so that there we have an indication for another vaccine to be employed concurrently. Perhaps had a staphylococcic vaccine been employed quite early in the case detailed above some good might have been achieved. In such cases, too, opium, alone or in combination with arsenic, would perhaps prove useful.

A point to bear in mind with regard to pemphigus vegetans is that the disease is not an entity, but is, in my opinion, a clinical skin condition arising from various etiological factors, both essential and secondary.

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[1] Pernet, *Le lupus erythémateux d'emblée*, Paris, 1903. [2] Pernet, Pemphigus Vegetans and the *Bacillus pyocyaneus*, British Medical Association, Oxford, 1904.

INVESTIGATION OF A DERMATITIS AMONGST FLOWER-PICKERS IN THE SCILLY ISLANDS, THE SO-CALLED "LILY RASH."

By David Walsh, M.D.Edin.,

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There is reason to believe that rashes due to contact with plants and plant juices are more common than is ordinarily suspected by dermatologists. In the spring of the present year the author's attention was drawn to the frequent occurrence of a dermatitis amongst those engaged in gathering and packing the various kinds of daffodil grown in large quantities in the Scilly Islands. A patient who visited that place during the flower season picked a number of daffodils, and developed a rash upon the hands. In writing for advice the fact was mentioned that a so-called "lily rash" was common among the flower-pickers. As the occurrence seemed of interest from a dermatological point of view, the author went to St. Mary's,

the chief island, in order to investigate the circumstances on the spot, and arrived there on March 26th, in the height of the flower season.

The flowers that give rise to the rash belong to the Amaryllidaceae or Narcissus tribe. They are described as lily-like, herbaceous plants, growing from bulbs, with long, sword-like leaves, the flowers with six petals and six stamens, and an inferior ovary—that is, the seed vessel situated beneath and not included within the flower. The last-mentioned peculiarity distinguishes the order from the true lily tribe. The Amaryllidaceae contain many poisonous species; they have all bulbous roots, which are perennial, while the leaves and flower-stems die down each year. The chief species are the Daffodil and the Narcisse. The Daffodil, or *Narcissus pseudo-narcissus* is distinguished by the presence of a tubular or cup-shaped appendage or corona, surrounding the stamens and within the petals. In some varieties it is developed into a long cup, sometimes fringed at the margin. The flowers have a strong scent, and are said to cause headache if inhaled for any great length of time. The bulb and every part of the plant, according to Sowerby and Johnson, are powerful emetics, and the flowers are said to have produced dangerous effects in children who have swallowed portions of them.[1]

The Narcisse is a beautiful species, long naturalized in England, although probably not indigenous. The flowers are pure white, with the small cup-like process, or corona, in the centre, tipped with crimson. It is more poisonous than the daffodil, being powerfully emetic and irritant, especially the bulbs, 30 or 40 grains of which are said to have produced alarming symptoms. The origin of the name is probably from the Greek *νάρκη*, stupor, and not as related in the pretty fable, which says the flower first sprang from the grave of Narcissus.

Bernhard Smith, who has written a small book on poisonous plants, does not classify the vegetable skin irritants separately. Nor does he state the nature of the toxic substance in *Primula sinensis;* for the nettles he gives formic acid, for the poison ivy (*Rhus toxicodendron*) and poison sumach (*Rhus vevenata*) he gives pyrogallic acid. The last-mentioned statement does not agree with the views of recent authorities. Formerly the poison of the Rhus species was generally supposed to be toxicodendric acid, but Pfaff has shown that the irritant is a fixed oil, toxicodendrol, soluble in alcohol and precipitated by lead salts, which is similar to cardol. One is inclined, therefore, to regard somewhat critically the statement of Bernhard Smith,[2] which attributes the irritant o the large and varied family of Amaryllidaceae to "oil of jonquil"; in short, there appears to be no trustworthy account of the chemistry of the Amaryllidaceae.

The "lily rash," as it is popularly called in the islands, is common enough among those who gather the flowers, as well as amongst those who pack them. The flowers are grown for the most part in the open fields, but some early species are forced under glass. They are picked and tied in bunches of twelve blooms each, and these are carried off in large baskets to the packing sheds. At each step of the process the workers are exposed to contact with the plant juices, as well as the flower stalks, flowers, and leaves. Enormous quantities of flowers and leaves are thus dealt with. One of the most expert pickers, for instance, has been known to pick 2 000 bunches of twelve blooms each in the course of a single working day. Sometimes the arms of the workers are bare, and at others covered, but the hands are always exposed. The weather during the flower season is usually mild. At the time of the author's visit, at the end of March, there were some exceedingly hot days; indeed, as a matter of fact, he was attacked with a severe sun dermatitis of the face, neck, and hands. This traumatism of the skin, as will be shown later, is probably somewhat closely concerned with the plant dermatitis.

The rash usually attacks the hands and arms, and not uncommonly the face, to which the irritant may be conveyed by infected hands. At times, especially where there are "cuts" or cracks in the skin, it takes the form of severe local inflammations and ulcers. It may become chronic, or the eruption may generalize. In a few instances the health is seriously affected. The author saw some cases and obtained photographs of others. One of the patients seen had an erythematous eruption of hands and arms. She was a cook, who had recently been picking daffodils in the fields. In another patient the hands showed a condition resembling chronic eczema with rhagades and nail excoriations.

The rash may be described as an erythema of papular, vesicular or pustular type, of varying degrees of severity, at times chronic, and in rare instances generalized.

A good deal of information was gained from growers and workers upon the islands. All were agreed upon the following points:

1. Some workers escape the rash altogether.
2. Some are attacked once only.
3. Some are so susceptible that they dare not touch the flowers.
4. The most severe ill effects are from infected cuts or sores on hands.
5. Some varieties of daffodil and of narcisse are more poisonous than others—the worst being the Campernelle,* a small variety with dark yellow flowers.

1. The fact that some workers escape altogether emphasizes the important part played by individual susceptibility.

2. The observation that some workers are attacked once only is of interest. It may be that the juice has attacked some broken skin surface, or that the individual resistance has broken down under some other special and temporary circumstance. One grower, for instance, stated that he was affected once only, after working all day in the rain. Several other persons mentioned a similar experience as regarded wet weather. It may be that the moisture favoured the absorption of an irritant, or helped to damage the skin and so predispose to invasion.

Another grower said that his nephew, a lad about 15 years of age, was not subject to the rash. On one occasion, however, when working on a very hot day with his shirt open, he scratched the side of his chest, and shortly afterwards "blisters" developed on the scratched area. This observation points to traumatism and direct inoculation of an irritant as possible determining factors. That probability is borne out by the severe results attributed on all sides to the predisposing influence of a broken skin surface.

5. As to the varying degrees of virulence of the different varieties, the daffodils, although for the most part comparatively harmless, nevertheless furnish the plant that is universally regarded as the most dangerous, namely, the Campernelle, a small variety, with deep yellow flowers and small rounded spiky leaves. The degree of virulence in the chief varieties grown upon the islands appears to be in the following order: (1) *D. campanelle;* (2) *N. ornatus;* (3) *N. gloriosa;* (4) *N. Scilly white;* (5) *N. grand monarque;* (6) all other kinds now and then.

Among other interesting facts it appears that dogs are sometimes affected after running amongst the flowers. Horses are sometimes fed upon the plants after they have flowered, and in one instance a horse was seen tethered and browsing in a field of daffodils, apparently without ill effects.

One grower stated that his eyes were always irritated when he went inside a greenhouse where Scilly Whites were growing. Other similar cases were reported; they may be compared with the ill effects recorded by botanists, such as headache and faintness, from prolonged exposure to the scent of daffodils. Another possible explanation is that of pollen irritation, but pollen was found to be negative when applied continuously to an unbroken skin.

An attempt was made to identify the irritant substance or substances causing the dermatitis. At the author's request Messrs. Bullock and Co., pharmaceutical chemists, of Hanover Street, London, made a number of preparations from fresh plants sent over direct from the Scilly Islands. They prepared a succus from several varieties, a tincture from the fresh flowers and flower stalks of the Scilly White, an alkaloid, and a small quantity of an essential oil, obtained from the so-called "essence" or pomade of jonquil. The latter is a delicately-scented grease used in making perfume, and is the only substance approaching the oil of jonquil mentioned by Bernhard Smith, of which no mention could be traced in technical literature.

These preparations were all tested experimentally by the author. They were negative in effect upon the unbroken skin. The oil obtained from the essence of jonquil was negative when inoculated into the surface of the skin slightly scratched with a needle.

Positive results were obtained from the inoculation both

* This appears to be the local rendering of Campanelle.

of the tincture and of succus into a surface lightly abraded with a needle so as to cut through the tops of some of the papillae. The succus reaction was much more severe. The area inoculated, about the size of a threepenny piece, became red and swollen, and a few days later was surrounded by a faint spreading zone of inflammation the size of half a crown. A portion of the central lesion produced by the succus was excised and found under the microscope to contain a very few short Gram-staining bacilli.

The succus was examined by Dr. Eastes, and found to yield a culture of *Bacillus subtilis*, which, being non-pathogenic, may be disregarded; also a few short lengths of mycelium, which could not be grown in culture.

Another substance obtained by Messrs. Bullock was a yellowish powder which separated out from the concentrated tincture. Under the microscope it was seen to consist of masses of delicate needle-shaped crystals. At the time of writing the exact nature of this substance has not been ascertained, but it contains neither oxalic acid nor lime.

The writer, however, is informed by Mr. A. D. Cotton, of Kew, that the order of Amaryllidaceae is characterized by the presence of raphides composed of calcium oxylate. Seeing that the latter is a feeble skin irritant, a possible explanation of the dermatitis may be the mechanical action of these minute needle-shaped crystals on broken skin.

In the case of the pickers the irritant, whatever it may be, acts far more powerfully on the broken skin, according to the unanimous testimony of the pickers themselves—a view that is borne out by the author's experiments. It is further suggested by the case of the single attack of the boy who, after scratching himself upon the chest developed a local crop of vesicles. In traumatism and individual susceptibility, indeed, lie the probable explanations of this particular plant dermatitis. The fact that persons sometimes get a similar kind of rash from handling the bulbs suggests that the irritant may exist in the bulbs as well as in other parts of the plant. Lastly, if we assume that traumatism is essential to the dermatitis, it might in many instances be due to the effects of the sun, which is sometimes excessively hot in the Scillies in the spring.

The precise causative irritant of this interesting rash, then, despite a careful search, has not yet been identified. Indeed, it has not so far been possible to ascertain with certainty whether it is of a chemical or a biological nature. It seems, however, to be probably chemical; and it may be noted incidentally that the succus apparently has a powerful cardiac action, stopping the frog's heart in systole, acting in this way like the members of the digitalis group. The most interesting practical points brought out so far in this investigation are the essential importance of the broken skin and of individual susceptibility as preceding conditions of the development of the dermatitis.

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NOTES ON PALAEOGENESIS.

By Sir JONATHAN HUTCHINSON, F.R.S.

IN beginning the observation of the patterns in the skins of animals, it may be convenient to assume that the parent type was a ringed worm. From this we may in bold conjecture pass on to the snake, on which the rings have become lozenges, and the tail differs very conspicuously from the head. In the lizard we see added two pairs of side limbs, and the lower half of the body, or perhaps a much longer portion, is clumsily narrowed to a point and constitutes a "tail." As we progress in the animal scale the tail becomes modified, and is so much narrowed from its base that it looks like an appendage to the trunk rather than a direct continuation of it. Going back to our conception of a cylindrical worm with rings of colour, but without limbs and without modification of tail, we may endeavour to realize what may occur if a distensile integument covering the whole be contracted or cut down at its sides to fit the tail or stretched out to cover the limbs which grow out at its sides. We shall easily see that in the case of the tail the rings will become smaller but may be yet more definite, but that on the limbs they may be variously disturbed in their curves and possibly broken. From their breakage may result bands, streaks, patches, or spots.

It may need some patience, backed by adequate imaginative faculty and some faith, but if these are given, it will probably not be impossible to interpret plausibly most of the various modifications in pattern which the skins of animals display. At any rate, we may feel confident their explanation is to be sought in this direction. It is to be understood from the outset that mere colour is of only secondary importance. It is from its being conspicuous that it is of foremost use in our inquiries, but it may vary with the greatest ease without implying important change. It is the pattern, and not the colour, which we must regard, and the chief use of colour is to show the pattern. It must be understood that the "pattern" implies much more than proneness to peculiarity in coloration. It depends upon modifications in structure which are inborn and inherited, and, although capable of almost endless modifications and often suppressed as regards their manifestations, are never entirely eradicated. It is in reference to their appearance unexpectedly in very remote generations that the word "palaeogenesis" is useful. My chief object in the following pages is to show that there are certain recognizable tracts of skin common to all animals which have their own peculiar endowments. These latter are fundamental, and receive in hereditary transmission modification only.

Coloration—Elementary Observations.

Amongst the elementary facts as regards the coloration of animals we may note first that the integument is patterned in two halves, which meet above and below, and which leave at what might be called their seams of junction longitudinal stripes. It is so common as to be almost universal that there is a stripe down the middle of the back, beginning at the animal's nose and extending to the tip of the tail. This *dorsal stripe* may be narrow or broad, and may be almost endlessly diversified in tint, in size, and in details as to its formation, and by the interruptions to which it is liable. In many cases it is absolutely continuous from nose-tip to tail-end, but in a great number it is interrupted by transverse bars or cut up into spots. Very often it is indistinct or wholly concealed by growths of long hair. In some animals it is prone to peculiar forms of exaggeration either in its continuity or in parts.

On the belly of the animal, from the tip of the lower jaw to the end of the tail, there is very usually a band of coloured hair which differs from the rest but is seldom so well marked as the dorsal streak. It is usually much broader and less well defined than the latter, and very often it cannot be traced from beginning to end. In all cases both the dorsal and abdominal streak should be looked for in young animals, or even in the fetus, as they are often obliterated as age advances. This abdominal streak becomes the "Linea fusca" in the language of gynaecologists, and is usually only a pigmented band from epigastrium to pubes, but by no means infrequently grows coarse hair.

In connexion with the dorsal and abdominal bands there may be developed either long longitudinal ones running parallel to them at variable intervals or vertical streaks coursing down the animal's sides like ribs; these bars may cross each other, and may map out the skin into blocks more or less angular. Of these latter, the angle may often be destroyed, and roundish or oval patches, arranged in lines, may be all that is left. It is by special arrangements of these lines and ribs that the pattern sometimes described as "harnessed" (the harnessed antelope), the conditions known as "brindled," the stripes of the tiger and zebra, the spots of the leopard and the blotches of the giraffe are produced.

Amongst common, but by no means constant, peculiarities in the coloration of animals, several may be mentioned which should, for convenience sake, receive special names. The obliquely-placed elliptical patch on the cheek of the badger, which extends from near the ear, surrounds the eye and ends at the angle of the mouth, can be traced in a great number of animals, with slight modifications as to size, obliquity, etc. It will be conveniently known as "the badger's streak," since it is exceedingly well marked in that mammal. It has not as yet been traced in the human subject in any condition, either in health or disease.

The colour pattern of the face in animals varies exceedingly. Amongst the commonest conditions is the occurrence of a star, usually white, in the middle of the forehead. This star may be a roundish patch, or it may have prolongations from the centre, upwards and sideways, forming a cross or dagger. Its vertical portion may run upwards between the ears over the nape, and downwards to the nostrils. On the sides and across the whole forehead it is often conspicuously developed in domesticated animals, and may be best studied in the horse. In a few very rare examples it has been recognized in the human subject, and in them appears to have been coincident with a patch on the lower lip, involving the chin. In many horses it is large enough to make the whole face look white. In most instances these forehead stars or patches are white, but it must not be assumed that they are always so. A condition which is coincident almost invariably with the white star on the forehead, or the white face, is whiteness of the terminal portions of the extremities. Horses which have large white forehead stars almost invariably have what are known as "white stockings."

What has just been referred to as "white stockings" may be regarded as an acroteric condition, and is very often not coincident with any loss of colour on other parts of the animal's body, with the exception of the tail and the face. On the feet the band of whiteness may be nothing more than a narrowing immediately above the hoof, or it may extend up the manus and pes as high as the knee or hock, and even higher. In wild animals it probably always involves all four limbs, and with bilateral symmetry; but in our horses, and other domesticated animals, it is sometimes not bilateral, and very often it is not symmetrically so. It is almost invariably observed that in the horse the hinder limbs show more white than the fore limbs.

Animals which are striped or brindled on the body usually show rings on the tail. We may regard the tail as being a narrowed prolongation of the trunk, and carrying with it the lateral stripes, both dorsal and abdominal, which then meet and form circles. These rings are almost invariably connected the one with the other by a more or less obscure longitudinal band, the prolongation of the dorsal and abdominal streaks.

The tail, in addition to the rings just described, often displays other peculiarities. Its tip is often tufted with long hair, and very often differs in colour from the rest. So also the body portion of the tail very usually shares in colour with that of the animal's rump. It may, therefore, be described as of three portions whenever it is long, as the rump portion, a long middle portion, and the tip. In the first two of these it presents an upper and a lower surface, whilst at the tip both sides are alike. When the upper and lower surfaces differ, the upper surface will usually resemble the back of the animal in colour, and the under surface the belly. Very frequently the upper surface is black, and the under white, especially in animals having short tails. The rump portion of the tail, when distinctly marked in colour from the rest, usually grows thicker and longer fur. In some cases, especially in the Marsupials, the production of thick fur ends with this part, the rest of the tail being more or less bare and rat-like, and in some instances the line of difference is very abruptly marked. The colour of the tip usually corresponds with that of the animal's nose. In animals which change the colour of their fur with change of season the tip of the tail seldom undergoes any alteration; thus, in the ermine it is coal-black, both in summer and winter.

The central idea of my speculations is that there exists an ancient type pattern, one and the same for the skins of all animals. This does not concern colour only; indeed, colour is one of its most variable features. Colour may be regarded as affording conspicuousness of peculiarity of endowment, but not in itself of much importance. All acquired or individual peculiarities are prone to be inherited for a time, but are all controlled by the primary type. None are really new productions, but all are modifications of what has preceded them. Thus the epidermic horn of the rhinoceros is fore-shadowed in some other animals by a thick indurated patch of skin on the nose. It is an exaggeration, not an absolute novelty.

The nails on the human hand are to be regarded as of very ancient inheritance—palaeogenetic but not aboriginal. A thicker layer of tissue (*stratum lucidum*) is provided on the dorsal tip of all the digits in a vast majority of animals. It becomes modified into claw, hoof, or nail, according to the animal's needs, but is essentially the same. In some animals a claw may be found at the tip of the tail.

Although the arrangement of the skin pattern is almost infinitely varied, and presents often peculiarities which are very difficult to explain, yet we may firmly believe that there is order in the whole. What is wanted is ingenuity and patience in tracing out and comparing different patterns. It will often be found that conditions which at first sight looked very different, on more careful inspection are obviously alike. It is often not easy to say which part of the pattern is ground colour and which the streak or spots.

In order to determine the real markings, it is desirable to see specimens of the animal both when fully grown and when old; also one of each sex at the several ages and under various seasonal states. In the human subject, not infrequently, changes which are associated with those of disease render obvious certain markings in the skin, which were certainly original endowments. The "porcupine patch" is sacral or lumbo-sacral. It is, of course, a modification or development of a special part of the dorsal streak. This patch grows the "quills," whilst the rest of the back produces only coarse hair. In the adult hedgehog the whole back and sides develop spines, but in the young animal only the "porcupine-patch" has spines. There are many transitional forms.

In many animals bristles or very coarse hairs are produced on the porcupine patch, and even in some human subjects there is a definite bar of strong hair across this region. Virchow attributed the hair-patches which he had observed in this region to defects in the vertebrae, the so-called spina bifida occulta; but the "porcupine-patch" is sometimes present in well-formed spinal columns. It is, I believe, in the human subject, sexual as well as palaeogenetic. I have never seen it in women.

Amongst the zebras the dorsal black streak is often not well marked, and, in contrast with the asses, zebras have almost always dark-coloured noses. It would appear that the dorsal streak is sometimes white instead of black. The bars on the legs, often narrow, circular and strongly marked, are present almost to the hoofs, and on the face almost to the mouth, and are sometimes evident almost to the tip of the tail. There are usually some strong bands near to the shoulder, but no tendency to the formation of a single bar like that of the ass's shoulder streak. A remarkable tendency to equatorial limitation is sometimes observed, especially in the quagga. In the latter, the hind quarters are often free from bars, and the lower parts of all the limbs almost always so. The bars in the zebras vary very much in their width and multiplicity. Almost invariably the bars are curved obliquely over the hind quarters. Burchell's zebra appears to be a connecting link with the quagga.

The hypothesis which I venture to suggest as a convenient one by which to explain the coloration of the skin and appendages of animals in general is the following: An archetype of the cutaneous envelope of the body common to all has been transmitted by inheritance with the most various minor modifications, all of which in turn become modified, and are, when so changed, still prone by inheritance to transmission. These modifications are of the nature either of overgrowths, or of suppressions, and neither the one nor the other is absolutely permanent.

Although, of course, we cannot sustain such a hypothesis, it will be convenient to assume that, at an early period of animal life, the parent form of the infinite variety of beings which we now behold was a cylindrical worm, constructed in rings and without limbs. It had been formed in two halves, one on each side, which had met and joined above and below, thus constituting an upper and under line of juncture. These two halves, although designed to be exactly alike, are not absolutely so, and from the earliest period minute differences may now and then be observed. Thus, all animals are prone to be, from organization, right-handed and left-handed; although the difference may be in most cases not recognizable, it is always present, and is on occasion made evident.

The worm-like body which we have presupposed as original is covered by a wrappage which we call skin, and which must not be thought of as if it were a coating of india-rubber. It is a very complex structure, and contains in itself very wonderful possibilities of growth and development. It consists of several layers, each of which has its own endowments, and it encloses in itself the germs of such structures as hair, nails, glands, and even teeth. It contains also elements which are capable of producing various colours. In the lowest forms of life, and in the earliest stages in all, the skin is closely united with the body substance which it protects, but as organization or age advances, it loses its hold on the bones, muscles, etc., which are beneath it, and becomes movable upon them, and in a sense self-dependent, sharing with them only by receiving minute blood vessels and filaments of nerves. We have supposed our worm-like progenitor to be without limbs, not to be of indefinite length but wholly without limbs, and to show on its outside little more than a long series of rings, more or less coloured and connected both above and below by bands running lengthwise. There comes a time, however, when the animal needs limbs. These are formed by the budding out, from its sides, of structures which have been hitherto hidden. We are not concerned to do more as regards the development of these limbs than to suggest their effect upon the distribution of the colour already present in the skin. The limbs do not form for themselves new growths of skin, but push before them long pouches of the body-skin with its stripes or rings or spots of colour. Although, of course, the skin enlarges by growth, it is at the same time also stretched. The effect of this may easily be understood. It is very common for conditions existing in the fetus, and still present and obvious at the time of birth, to disappear during adolescence. Lambs, even if of well-bred flocks, and destined to be wholly white as regards the fleece, are almost always born speckled with brown or black. This is seen in Southdowns, in which the face remains through life brown. In other cases, conditions not seen at the time of birth, become conspicuous during early life, and may either disappear or persist as adult age is reached.

Palaeogenetic Speculations in Reference to Disease.

The conditions occasionally seen in the human subject in connexion with which I invoke the theory of palaeogenesis are the following: First, unilateral streaks on the neck, trunk, and limbs. To these the term "herpetic ichthyosis," or "unilateral ichthyosis," and many others have been given. Perhaps the term "Blett's Bands," in allusion, I believe, to their first observer, and as not involving any theory of cause, is the best.

Especially we should avoid any adjective implying that they are one-sided, for they are almost always bilateral, although very unequal in their development on the two sides.

All forms of ichthyosis have for their base inborn defect of structure, and are usually palaeogenetic in origin, and the terms which have been applied comparing them to the appearances in various animals, such as "serpentine," "porcupine," and other expressions, are perhaps not quite so entirely fanciful as they have been thought.

The patches which occur in xanthelasma of the eyelids, although they are not present at birth and are not always persistent, have probably their peculiar location in connexion with peculiarity of organization. The tendency to peculiarity of structure in the particular parts affected is revealed in the normal arrangement of colour in some animals.

Leucoderma colli is perhaps one of the conditions which may be the most readily accepted as of palaeogenetic origin. It was the first which drew my attention to the topic. In it the occurrence of diffuse pigmentation appears to reveal the fact that the skin of the neck and trunk, although in health showing no spots or mottling, is really dappled with white.

Naevi, in some of their various forms, are probably examples of local palaeogenesis.

The diffuse melanosis of the mouth occasionally seen, and which has been observed occurring congenitally in two sisters, is another good example of the same tendency. The mouth changes in Addison's disease, and in what is sometimes called "black tongue," and is often a racial peculiarity, must be placed in the same category.

Palaeogenetic influences in all probability take a considerable share in the definite localization of many maladies. In the condition to which the term "sycosis keloid" is given, we may suppose that it is the survival of structures which constitute the mane in animals which supply the site. These conditions occur only in the male sex and in adults, and occupy the base of the neck and nape, sometimes extending on to the scalp, and in a scattered manner down the back and shoulders. The indolent pustules which give rise to the keloid condition are probably developed in what remains of the pilo-sebaceous system of these regions. A remarkable tendency is often displayed to gather the hairs of the parts into tufts, like those of a scrubbing-brush, a condition sometimes seen, I believe, in the horse's mane—several hairs making their exit at the same orifice.

THE TREATMENT OF SOME SKIN DISEASES BY VACCINE-THERAPY.

By J. L. BENCH, M.D., D.Sc., M.R.C.P.,
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ALTHOUGH within the last year or so vaccine-therapy has been adopted for the treatment of widely differing forms of disease, its development and still more extended use will depend largely on the lessons which have been and are still being learnt from its employment in diseases of the skin. It is, of course, evident that the immediate effects of treatment by vaccines can be more readily studied in affections of the skin than in diseases of internal organs; and such treatment of skin diseases must always serve, as it were, as a control, even if the method of vaccine-therapy does not stand or fall according to its ability or inability to cure, or at least alleviate, some cutaneous diseases. It would appear to many presumptuous to talk of curing malignant endocarditis, enteric fever, and pneumonia by the injection of vaccines if no good effect could be obtained by vaccines in simple cases of staphylococcic affections of the skin such as boils, tuberculous affections such as lupus vulgaris, streptococcal affections such as impetigo contagiosa, to say nothing of acne vulgaris and eczema.

The cure, or want of cure, of such skin affections is plainly before our eyes, and of the result there can be no two opinions, and it is easy to judge the effect of any injection of a vaccine on an uncomplicated and otherwise untreated skin disease. That favourable results have been obtained in a number of cases treated by vaccine-therapy is, I think, undoubted, or the method would have already fallen into disuse; and I might perhaps refer here to some papers on skin cases treated with vaccines by Pernet and myself in the *British Journal of Dermatology* of October, November, and December, 1906, and by myself in the *Lancet* of January 19th and March 23rd, 1907. These cases include tuberculous, staphylococcal, and streptococcal affections of the skin, and the results were good; but, however enthusiastic I might be, I should expect many to dissent if I stated that every such tuberculous, staphylococcal, or streptococcal skin disease can be cured by vaccine-therapy. Our experience of the method is, of course, greater every day—of its limitations as well as its possibilities—and our successes ought in the future to be even greater than in the past.

When we bear in mind that the power of reaction of the patient sets us one very definite limitation, and that even after correctly diagnosing one infection we must not forget the possibility of a second coexisting infection—in other words, a mixed infection—we see some of the reasons why vaccine-therapy is not uniformly successful, even when the right vaccine and the right dose have been administered.

As an example of this mixed infection, I might mention a case of a patient with ulcerating lupus vulgaris of some years' standing, who had been treated with *x* rays with little improvement, and whom I treated with tuberculin injections for six weeks without doing much good. Cultivations, however, showed a well-marked coexisting staphylococcal infection, and injections of a staphylococcal vaccine in addition to the tuberculin produced so great an improvement in the patient that he was sent back to the country almost cured. He came to the hospital again at the end of two months with the lupus lesion quite broken down and in a condition as bad as when he was first seen.

ultivations now showed that while at home he had con-racted an infection with *Bacillus coli*, and it was not ntil *coli* vaccine was injected that the lupus finally eared up.

Then again, the determination of the dose of vaccine is ometimes far from easy, and a patient who shows no nprovement with a dose of, say, $\frac{1}{50000}$ mg. tuberculin ay respond satisfactorily to the much smaller dose $\frac{1}{2000000}$ mg.

I remember the case of a patient with acne vulgaris who ad been treated elsewhere for some time with staphylo-occal vaccines in varying doses without benefit. When e came under my care I found his opsonic index to taphylococci to be 1.45, so I gave him an injection of 0 million acne bacilli. This caused a great improvement, ut a repetition of the dose at the end of three weeks had o good effect, and it was only when, after several similar ailures, I reduced the dose to 5 million bacilli that the esions began again to improve, and finally cleared up.

The treatment of localized streptococcal infections does ot always necessitate the use of vaccines, but some cases vith rapid spread of the infection respond well to inocula-ion. I include here those cases of erysipelatous inflamma-ion where the streptococcus has entered through a mucous nembrane, or an abrasion at the junction of skin and nucous membrane, and which resist external applications nd the injection of weak carbolic acid solution at the preading edge. A more unusual case which came under ny care was that of a man who was bitten on the hand y a cat, and developed a dermatitis spreading from the vound which involved the hand and afterwards the fore-rm with a considerable amount of oedema. A pure culture f *Streptococcus pyogenes longus* was obtained from the vound discharge, and also from an incision in the arm, nd his opsonic index to streptococci was 0.53. Of a vaccine prepared from this culture I gave him first a 5-million dose, and six days later a 10-million dose, ncreasing the dose afterwards to 50 million. The wound was also scraped and the arm incised, and this, of course, helped; but I certainly think the return of he opsonic index to normal, and the rapid cessation of spread of the dermatitis were assisted by the employment of an autogenous streptococcal vaccine. The initial dose of 5 million may sound a small one, but it is a good working rule to inject fewer dead cocci in proportion as the inflam-mation is more acute. This applies not only to cases of direct streptococcal infection by traumatism, as in the last case, but also to other spreading erysipelatoid streptococcal infections, where the site of inoculation cannot be so definitely determined. While on the subject of strepto-coccal infections I might mention a peculiar case where, in a patient with an opsonic index of 0.62, the first injection of an autogenous vaccine of only 5 million streptococci was immediately followed by a typical outbreak of herpes zoster. The injection was given in the forearm, and the herpes zoster was in the distribution of the second and third dorsal nerves. There was a considerable amount of pain and resulting insomnia, and the patient was inca-pacitated for about ten days. You will most likely say it was a mere coincidence, and so it probably was, but I should like to know whether any similar coincidence has occurred to the knowledge of anyone present.

Pneumococcal and gonorrhoeal infections of the skin are rare and usually secondary, but I might draw your atten-tion to the fact that, especially in the case of gonococci, there seems to be a great difference in the virulence of different strains. Thus, a vaccine prepared from one patient and used with success in him may, in a second patient, produce a marked local reaction, even when given in the same or a smaller dose. I am speaking now of the clinical appear-ances only, for the effect on the opsonic index of the two patients may with the same dose be similar, but neverthe-less it is wise to diminish the dose in the patient who shows such well-marked clinical reaction.

I do not propose now to discuss the nature of opsonins, whether they are lytic antibodies under another name, or what is the relation of the thermolabile opsonins of normal serum to the thermostable bacteriotropins of immune serum. It is, however, important to remember that opsonins neutralize the repellent power of the pathogenic bacteria on the phagocytes and enable these latter to ingest them and render them inactive. Still more im-portant is it to know whether we can accurately measure the opsonic content of the serum and whether the opsonic index is a reliable guide to such measurement. It has certainly been shown that, even in the hands of very capable observers, the opsonic index is not entirely trust-worthy, and it has been argued that attention to clinical symptoms and temperature is a more reliable means of determining the correct dose of a vaccine and the most suitable intervals between the injections. But, inaccurate as the method is in any hands, I maintain that it is at the present moment the most reliable method we have of determining the opsonic content of the serum, and therefore may still be regarded as at least a useful guide.

As to the administration of vaccines by the mouth, this method has in the hands of Leishman and others proved unsatisfactory, and only introduces unnecessary complica-tions. Personally, I never employ it.

In conclusion, I do not think that the vaccine method is perfect, nor do I think it is incapable of improvement. I think it probable that, in the future, antibodies will be in-creased in the organism by other methods than the injec-tion of dead bacilli. It may be that the phagocytes will be stimulated or the repellent powers of the bacteria neutralized by the injection of sterile modified serum. But, for the present at any rate, dermatologists will still employ vaccines, and it is in their hands and in skin cases that the best results with vaccines will be obtained.

CUTANEOUS DIPHTHERIA.

By G. W. DAWSON, F.R.C.S.I.,
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IT has always been recognized that diphtheria may attack an open wound of the skin; but whilst it was common during the epidemics which took place in the early part of the last century, it is now comparatively rare and almost forgotten. So long ago as 1759 Chomel mentions the disease, and later, in the year 1828, Trousseau pays a good deal of attention to it. According to this authority, it never develops on the skin unless the epidermis is removed, and the lesions he describes as being affected by diphtheria are blisters, leech bites, herpes, etc. He describes the appearances of a wound when affected by this disease. It becomes painful and gives rise to a fetid serosity, with the gradual formation of a greyish membrane. For this type of case his description still holds good, but the appearance of the membrane was evidently necessary for the diagnosis of the disease.

Within the last few years a considerable number of cases of cutaneous diphtheria have been reported. Of the 10 recent cases which I shall mention later I have seen 4, and in 9 of them there was no membrane or other usual manifestation of diphtheria—an important fact when we come to consider the virulence of the causal agent and the danger to the community from the dissemination of such a fatal organism. It is obvious that this class of case is much more important than those which are asso-ciated with diphtheria of the throat or the formation of membranes in other parts of the body—conditions so well known as to lead to a speedy diagnosis; whilst other cases, by reason of the absence of those well-known clinical signs, continue to spread far and wide one of the most virulent and fatal organisms known to mankind. I believe that time will show that this type of disease is not so rare as the few cases recorded would lead us to suppose.

All but 2 of these cases occurred in children; 4 of them ended fatally, 7 of them were of an impetiginous eczematous type, and in 3 of them there were vesicles and bullae which gave rise to a profuse discharge. Four of them had severe conjunctivitis, with copious serous and purulent discharge.

The commonest and therefore most typical form occurs in children, and has the appearance of an impetiginous eczema, nearly always affecting the head and face, and associated with severe conjunctivitis, sometimes with otorrhoea and rhinitis, the whole forming a clinical entity from which a diagnosis may be deduced with some degree of confidence.

The diphtheria bacillus has been described in a number of cases without any reference to its pathogenic pro-perties; but certain harmless diphtheroid organisms are so common that no case can be considered unless the

organism is put through its cultural tests, and above all, its virulence to laboratory animals proved.

As will be seen by some of the subjoined cases, cutaneous diphtheria may be very resistant to ordinary treatment lasting sometimes for years, while it invariably responds to antitoxin.

Whether the disease is due to diphtheria in the first instance or is merely an accidental inoculation of a preceding eczema, or conjunctivitis, or, as in one case I am about to mention, a bullous eruption such as dermatitis herpetiformis, is a matter for investigation and discussion. I am inclined to support the ancient view of Trousseau that a damaged epidermis is necessary for the invasion of the skin by diphtheria.

CASE I.

A. J., aged 4 years. This child only came under my care a few days ago; I am therefore fortunately able to show him to the meeting. He is one of three children, one of whom has eczema and rickets. Two years ago he was severely burnt about the face, for which he was in hospital twelve months. At the beginning of this year he had a convulsion and the scar of the burn began to ooze, there was also a little eczema behind the ears for some time. In February he developed an eruption over the trunk and to a lesser extent on the limbs. He was then a bright and intelligent child. The rash became moist and of an impetiginous character, and remained more or less the same till the month of June, when the right eye became inflamed and he got a running from the nose. On July 1st he was very much worse, pus streaming from the eyes, face much inflamed, and discharge from the left ear. The eyes were so swollen that they could not be opened. On July 16th the Klebs-Loeffler bacillus was discovered by Dr. Hare.

CASE II.

A man, 58 years of age, came under my charge last October, with numerous cherry-sized bullae at the base of the neck, both arms, and one on each outer canthus of the eye. They were for the most part grouped, and appeared rapidly on an erythematous base, and ran their course in about a week. The eruption began three months previously and was intensely itchy. The case was looked on as one of dermatitis herpetiformis, and arsenic was given internally and sulphur ointment rubbed into the affected places. He improved for some time, but after a month's treatment was as bad as ever. The contents of a recent bulla were examined by Dr. J. G. Hare, and smears made on agar-agar and blood serum, when a pure culture of the Klebs-Loeffler bacillus was obtained. Two guinea-pigs were inoculated, one with 0.5 c.cm. of broth culture of the bacillus and the other with 1 c.cm. Both died within twenty-eight hours. Two other guinea-pigs were then inoculated with 1 c.cm. of the emulsion and 1 c.cm. of antitoxin (diphtheria); they both lived.

Treatment.—Antitoxin was injected on the following dates:

November	17th	4,000 units.
,,	20th	4 000 ,,
,,	27th	4 000 ,,
,,	30th	4,000 ,,

He improved very much after the second injection and the severe itching completely disappeared; no fresh places came after the last injection. The case is remarkable in that clinically and microscopically it was one of dermatitis herpetiformis and bears no clinical resemblance to the other cases of this group.

CASE III.

This little girl, aged 18 months, whose photograph I show you, was a typical case of the disease, so typical that the diagnosis was arrived at from the clinical appearance alone. You will see by the picture that the scalp and face are covered by a moist impetiginous eruption. The eyelids are so swollen that the palpebral orifice is completely closed, and from them there came a copious purulent discharge. Her temperature was 103°, and her pulse 126. The diphtheria bacillus was obtained by Dr. Hare. Unfortunately the child died within twenty-four hours.

CASE IV.

Dr. Slater reported the case of a girl aged 13, who, three years before coming under observation, had suffered from inflammation of the eyes and white patches on the vulva with the formation of blisters around the latter. For this condition she was in a general hospital for five months, without much benefit. Loeffler's bacillus was obtained from the serous fluid dripping from her face, on which were numerous vesicles. The injection of antitoxin was quickly followed by a cure.

CASE V.

Dr. Eddowes reported the case of a girl aged 11 years, suffering from bullae on arms, hands, and lips, with traces of a ruptured vesicle on the fauces. Streptococci and staphylococci were obtained at first, but later Loeffler's bacillus was discovered in the roof of the bullae. This case recovered by the application of antiseptics.

CASE VI.

In a woman 21 years of age (reported by Dr. Eddowes in the BRITISH MEDICAL JOURNAL), who had an impetiginous eruption for three years, for which she was treated in a large general hospital. Loeffler's bacillus was obtained from the fluid which streamed from her eyes. She was very ill, but the injection of antitoxin had a magic effect, most of the eruption clearing up in a week.

CASE VII.

Labbé and Demarque describe a child of 4 years with a disseminated impetiginous eruption, in addition to which there were a number of sharply defined ulcers. Loeffler's bacillus was discovered, and the administration of antitoxin was followed by a cure.

CASE VIII.

The same gentlemen describe another case in a child 2½ years of age. There was impetigo of the scalp and face with excoriation of the lips. Loeffler's bacillus, as well as the staphylococcus and streptococcus, were obtained. Death took place from pneumonia.

CASE IX.

Schucht's case was aged 3, had infantile ecthyma with sharply circumscribed ulcers and a purulent discharge from the ear. This child died of tuberculosis and meningitis.

CASE X.

Dr. Bolton described a case in a child aged 1½ years, with a gangrenous patch in the groin, surrounded by an inflammatory areola. No membrane was observed, but the bacillus of Loeffler was obtained. There was vomiting and abundant albumen in the urine. The child died in the forty-first day of the disease.

DISCUSSION.

Dr. GEORGE PERNET (London) remarked that he had had an interesting case under his and the late Dr. Radcliffe Crocker's care some years ago and bearing on the subject under review. The patient was a young child who came under observation for a gangrenous lesion near the anus. It was treated by local injections of carbolic acid and did very well. But whilst the child was recovering from the skin trouble, which was nearly well, it was noticed by the nurse that the child was not swallowing its liquids and liquid food properly. This was found to be due to paralysis of the palate. The idea of the skin lesion being of a diphtheritic nature came immediately to the speaker's mind. The child was injected with antitoxin with as little delay as possible, but unfortunately with no beneficial result, as paralysis of the diaphragm and death soon ensued.

Dr. WALSH (London) said that the cases recorded suggested that present views on the subject of diphtheria required to be revised, while they also emphasized the close connexion between dermatology and general medicine. Some years ago, when clinical assistant in an East End hospital, he had seen a fair number of cases of conjunctival diphtheria in which no signs or symptoms were present except a membrane containing specific microorganisms. These cases, however, developed paralysis.

Dr. DOUGLAS HEATH (Birmingham) said he had seen diphtheria of the skin in cases recognizable before cultures were taken. In one case, in a child aged 3 years, an impetiginous eruption was present over the whole body. In the groin was a large ulcer covered with a grey membrane. The Klebs-Loeffler bacillus was easily found in the membrane from this ulcer. The child made a very good recovery.

Dr. W. GRIFFITH (London) laid stress on the importance of differentiating between diphtheroid and the true Klebs-Loeffler bacillus, and that no case should be accepted unless the bacillus was pathogenic to animals under the conditions applicable to the Klebs-Loeffler bacillus generally.

Dr. R. PRICHARD (Cardiff) said that the cases brought forward were of much interest and importance to public health officers. Such cases might be a cause of the spread of ordinary diphtheria. Some years ago he had seen a case of a patch of eczema under the left ear in a young girl. This spread across the cheek in a streak to the angle of the mouth and formed a greyish membrane on the buccal surface. This gave the Klebs-Loeffler bacillus. The case rapidly improved with antidiphtheritic serum, but a younger sister contracted typical diphtheria.

THE USE OF SOLID CARBON DIOXIDE IN DERMATOLOGY.

By EDWARD REGINALD MORTON, M.D.Toronto, F.R.C.S.Ed.,
In Charge of the X-ray Department, West London Hospital; Lecturer on Radiology, West London Post graduate College: Vice-President, Electro-Therapeutical Section, Royal Society of Medicine.

THE use of solid carbon dioxide was first introduced into therapeutics by Dr. W. A. Pusey, of Chicago, about three years ago, and it was brought to my notice in June of last year by Dr. Geyser, of New York. As a rule I, in common with many others, look askance at most new therapeutic agents, and with reason; but I may say that in this case I was attracted to the substance at once, and in all my experience I cannot recall a single instance where extensive application of a new therapeutic agent brought out so much that is satisfactory and so little that is disappointing.

The principle involved is that of refrigeration; but the process is not one of simple freezing as ordinarily understood. In ordinary freezing, where the temperature of the frozen part seldom falls more than a few degrees below 0° C., and lasting for a few seconds or perhaps a minute or two, the subsequent effects are comparatively trifling and bear little resemblance to the reaction that follows an application of solid carbon dioxide. As CO_2 has little or no local action of its own, we are safe in assuming that the effects obtained are due to the low temperature to which the tissues are subjected, and to that alone.

We may consider for a moment what most likely takes place when a tissue cell is subjected to such severe congelation. As the temperature falls to freezing point, the first effect is that the cell becomes a solid instead of a semifluid body, and possesses rigidity. Owing to the expansion that water undergoes as its temperature falls below 4° C., something must give way, on the same principle that a bottle full of water is cracked if left out of doors on a frosty night. It is not necessary to dwell any further on this point before an audience of this kind, and I am sure it will be agreed that it is a safe assumption that the individual cells suffer mechanical injury, and although the injuries will probably be of microscopic or ultramicroscopic dimensions, they will be none the less potent to bring about the immediate and profound reaction that follows.

When we read papers by experts in radio-therapeutics, we find frequent reference to the "selective action" of the rays under consideration, as if this were a wonderful property not found elsewhere.

Personally, I am of the opinion that this is a case of "putting the cart before the horse," and that the reason abnormal cells are removed before the healthy ones is due to their lower vitality and resisting power. Given an area consisting of normal and abnormal cells, and apply to it anything that has a tendency to destroy them, whether it be x rays, radium, or solid carbon dioxide, the abnormal cells will disappear first, not because the particular agent employed has a selective action, but on account of the low resisting power of the unhealthy cells.

The curative action, then, of solid carbon dioxide is an indirect one; it causes damage to all the cells that come within its influence, but, so long as the application has not been unduly prolonged, only the abnormal cells are unable to recover. They die and are removed by phagocytosis. This introduces the important question of dosage.

No hard and fast rule can be laid down, as every case must be treated on its own merits. The only factors to be considered are those of time and pressure. The average length of the application is from thirty to forty seconds. If a very slight and superficial reaction is all that is required, ten seconds will be long enough; if one is treating a hard, dry, common wart, the application may have to be prolonged for two, three, or even four minutes, owing to the badly conducting properties of the growth. The amount of pressure to be employed is very difficult to define, and it is just here that a little practice and following up the results will teach one more than anything else. Speaking generally, if a vascular growth is to be satisfactorily dealt with, the pressure should be sufficient to arrest the circulation; if this is not done the result will be disappointing. The depth to which the freezing action extends is a question of pressure and the time it is kept up. Where the bone is near the surface it is quite easy to freeze the soft tissues to it. This often happens when treating naevi of the scalp, and such cases usually do very well, no doubt because it is so easy to be quite sure that the freezing has been thoroughly carried out. Very light pressure has practically no action, on account of the rapid evaporation of the CO_2 in its return to the gaseous state. For this reason it is possible to handle a piece of the solidified gas without discomfort. If a piece be put on a smooth and slightly inclined surface, it slides down the slope with a rapidity out of all proportion to the degree of inclination. It will thus be seen that a certain degree of pressure is necessary to overcome the insulating effect of the gas that is given off so rapidly from the surface of the crayon. The rapidity of the evaporation is seen when a piece is immersed in water, but unless it has been compressed very hard it will not sink. Personally I prefer the crayon made so hard that it sinks readily in cold water, but it is not necessary to have it as hard as this to get good results.

Effects of the Application.

I shall only describe here what takes place in an average application for a naevus, of thirty seconds' duration, with firm pressure. On removing the crayon the depression made by it remains, and the depressed surface is white and hard, just like a piece of porcelain. The part returns to its normal shape in a time that varies from two to three times that of the application itself. When the thawing is completed the surface is found to be covered with the moisture of condensation.

The reaction sets in almost at once, and the part is within a few minutes of a firmer consistency, and beginning to swell. A wheal quickly forms, and is well developed within an hour. Vesication almost always follows an application of twenty or more seconds. This may be relieved with a sterile needle, and should be dressed with some antiseptic ointment. A crust forms in about five days, and in most cases this should be allowed to come off of its own accord. After a properly made application of solid carbon dioxide there is no necrosis or sloughing; an intense reaction is set up, in the course of which the diseased, or at least abnormal, cells are removed. If it is desired to produce sloughing for any reason, this can be done by making a second, and even a third, application after the first has thawed out. An application made on the following day also intensifies the effect very considerably. I have found this procedure of use in treating fleshy moles, which are, as a rule, very resistant.

The action of carbon dioxide in no way resembles that produced by caustics, as some have supposed without giving very much thought to the matter. Caustics destroy tissue more or less immediately, mostly by virtue of their strong affinity for water. When necrosis follows an application of solid CO_2 it is a result of the inflammatory stasis induced by a very prolonged freezing, and one that is in the great majority of cases quite unnecessary.

In view of what has been said I think you will agree that in carbon dioxide we have a means of setting up a reaction in living tissues that may be controlled to almost any degree that may be desired, and so long as the application is properly made there is no danger of any gross destruction of tissue. Owing to this latter fact the scars following these applications are as nearly like normal skin as is possible to attain by any other means.

There is much more that I could and would like to say about this fascinating substance and its therapeutic value, but I must not take up the time of the Section any further in this way.

I shall now pass on to give a brief account of the results I have obtained in the treatment of the various cutaneous disorders where it has been used. My most extensive experience has been with naevus in all its varieties. These cases are very satisfactory for the trial of a new agent such as the one we are considering. They occur in all degrees of thickness, and, while the great majority show no malignancy, they do not disappear unless thoroughly treated, and it is comparatively easy to know whether the desired result has been obtained.

The simplest type is that known as the capillary naevus, and I have found it possible to cure no less than 90 per

cent. of my cases with a single application of solid CO_2, and this without the need of an anaesthetic in any one of them; in fact, I never require an anaesthetic for any of my cases, and once patients see what a simple and almost painless procedure it is they prefer not to have it.

A few cases of this type of naevus had to have a second or even a third application to make a good result, but they form a very small proportion of the whole. I may mention here that, as there is no normal skin covering the ordinary capillary naevus, the resulting scar is not so good as in others. It gives a very poor foundation to work upon.

In the cavernous type the result is, as might be expected, not so good; but even here 65 per cent. were completely cured by a single application, and in only 10 per cent. of all cases had the method to be supplemented by electrolysis. With regard to "port-wine marks," my results have not been very much better than those obtained by other methods; at the same time I feel sure some more or less simple modification of the method will bring better results. I am now experimenting with short applications of about ten seconds, with a moderate degree of pressure, and I have reason to think the result will be better than anything else that I have tried for this most troublesome form of naevus. In any case the applications have to be repeated from time to time. Little or no effect follows the first treatment, but is generally very noticeable after the second or third.

In the treatment of lupus vulgaris I have had results that are so far distinctly encouraging. With this method there seems to be little difficulty in getting the part to heal up and become to all appearances cured. Most of them had but one application, but a few have been treated several times. Freezing has been found satisfactory for this disease on the Continent, and there is no reason why this form of freezing should not be equally successful. I hope to report results after some considerable time has elapsed. In dealing with such cases I carefully remove all crusts, and clean the surface before applying the crayon. This should be done with firm pressure for about forty seconds, and antiseptic dressings used subsequently.

With regard to lupus erythematosus, there is no doubt that solid carbon dioxide has a very definite value. As the disease is a very superficial one only short applications are called for, and the lesions as a rule heal up fairly rapidly. The same can, of course, be said for other remedies, and I do not say that this method is more satisfactory than others that have been tried. It is at least as good as any other local application, and forms a useful alternative.

For moles and warts this method is, in my experience, easily the first; a successful result should follow a single application in nearly all cases. The fleshy mole gives the most trouble, probably because it is necessary to destroy some tissue and not merely alter its character.

In treating these the growth must be thoroughly frozen, and in the case of a dry common wart we must also freeze a narrow zone of the healthy tissue around the base; this may take as long as three or four minutes, but if it is not thoroughly done the result will not be satisfactory.

It is interesting to state that, in treating a hairy mole, the hairs are removed, and do not return for a considerable time at least. This is a point where more time is required to determine the truth. As a method of treating hypertrichosis it is not to be recommended.

The list of diseases and disorders to which this agent may be applied with benefit will almost certainly be very greatly extended. Most dermatologists are very busy with other things, especially radium, and until this enthusiasm subsides, as it undoubtedly will when they find out the truth, then perhaps solid carbon dioxide will receive the attention it deserves. Being a radiologist rather than a dermatologist, I do not get the best opportunities for trial on an extended scale, and I may say here that had it not been for the great kindness of our President, Dr. Abraham, my experience would have been much more restricted.

Before concluding this paper I wish to mention what I have done in the way of treating rodent ulcer by this method. At first I hesitated to use it until my experience had been somewhat extensive, and for the first trial I waited until a favourable case presented itself. In testing a new mode of treatment I think it only fair to select favourable cases for the first trials; using the most severe cases for this purpose is likely to engender a prejudice against the agent in question that may be entirely unwarranted. For these reasons I did not attempt to deal with a rodent ulcer with solid CO_2 until about two months ago, and I have now treated four cases, two of which I am glad to be able to show you to-day.

The first one (female) was about the size of a sixpence, and situated just above the zygomatic arch, and its characters were that of a typical rodent ulcer of six years' duration. It was referred to me by Dr. Abraham. On April 29th last I scraped away the granulation tissue and then applied the CO_2 with firm pressure for forty seconds. It was entirely healed on May 23rd. This is over two months ago. I think you will agree that the result is all that could be desired.

The other case (male, aged 59 years) was referred to me by Mr. Etherington-Smith. He had a typical rodent ulcer on the left side of the nose, and was in the shape of a square or parallelogram, with its sides about $\frac{3}{4}$ in. long. The method of preparation and treatment was exactly the same as in the former case. This was on June 29th, 1910. On July 20th it was healed over, except for a small spot about the size of a pin's head. You now see the case four weeks after treatment. Here again I think it will be agreed that the result is satisfactory. In both cases a simple boric acid ointment dressing was all that was used.

The other two cases were private patients, but were small ulcers having no unusual features, and the result was equally satisfactory. A noteworthy feature of all four cases was that there was not the slightest hesitation about the healing process; seldom if ever have I seen ulcers heal so rapidly and completely. The case of the man I show you had lasted for three years, and was slowly but steadily increasing in size. Following a single application of solid CO_2 it was entirely healed after twenty-one days. I very much doubt if any other method can show such advantages as this in the treatment of rodent ulcer. The question of permanence has yet to be settled, but I have little doubt on this point. Unless the unhealthy cells were all destroyed and removed I do not see how such rapid and complete healing could take place.

In conclusion, I hope I have succeeded in making out a good case for the use of solid carbon dioxide in dermatology. I have now treated considerably over 2,000 cases of naevus by various methods, and while electrolysis, the cautery, the high-frequency spark, and radium have their uses, and are to be preferred in a small proportion of cases to meet special conditions, solid CO_2 is the most useful of all, as well as the most satisfactory; and not the least satisfactory feature of this agent is that it has shown itself capable of successfully dealing with some of those conditions which have been thought to be the peculiar province of radium. This is a great gain and one of much importance to a large section of the public. Radium is ruinously expensive, and treatment with it is very prolonged in most cases. In a very large number of cases solid carbon dioxide will answer equally well with a great saving of time and money.

[On the conclusion of his paper Dr. Morton demonstrated the preparation of carbon dioxide crayons and various members showed the working of sundry appliances which have been introduced for the purpose.]

THE TREATMENT OF X-RAY BURNS.

By Alfred Eddowes, M.D.,
London.

The chief object which the author has in view is to call attention to an operation which he has introduced for the relief of bad cases in which painful ulceration has occurred and proved rebellious to ordinary treatment. Slight cases can be easily managed by the application of fomentations, lotions, and pastes of various kinds, and Unna's zinc-gelatine.

For some of the chronic cases, particularly those commonly involving the backs of the hands in *x*-ray workers, he has found few remedies to equal compound tincture of benzoin. It is a common thing to see bleeding and painful chaps on the hands of such operators. If the affected hands be closed so as to gently open the cracks, the tincture runs in and fills them up. The dressing has a

certain flexibility when dry, which is of advantage, and its colour tends to exclude light. After the dressing has dried, of course gloves should generally be worn. In severe cases, where there is pain, rigidity, and ulceration, it sometimes happens that the ulcers heal but slowly, if they heal at all; and, if healed, easily break down again. When first confronted with this difficulty, he thought of Hilton's method of treating irritable ulcers by section of nerves near the tender spot, but the problem was greater than that which Hilton had to solve, because in *x*-ray ulcer the parts around for some distance are involved in a condition of fibrositis. Those who have examined such tissue will recognize that all epidermal appendages—hair follicles, sebaceous glands, sweat glands, and ducts—are squeezed right out of existence. That there must be also injurious tension on the nerve fibres is beyond question, but as the surface of the ulcers is exquisitely tender, especially at certain spots, there can be no doubt that the nerves do still exist in the tissues, though their function is profoundly disturbed.

Before resorting to the knife for the treatment of this morbid tissue the following questions had to be answered: If cutting across the nerves will give relief, where should the cuts be made, in what direction and to what depth, and how many? Secondly, if incisions are so made as to relieve the pain and tension, will the tissues live or slough, and can we rely upon new granulations filling and effectually repairing the gaps? All surgeons will have observed what great vitality there is in thick skin flaps either caused by accidents or by the surgeon's knife, even when they have to depend for a time entirely on a recurrent circulation supplied from a distal attachment. In the face of the great suffering endured in bad cases, the attempt seemed justifiable. Many of those present have probably read a paper published by Dr. Agnes Savill in the BRITISH MEDICAL JOURNAL for December 18th, 1909, describing one of the first cases operated upon by Dr. Eddowes. In that case there was extensive *x*-ray burn in which a line of ulcers existed from just above the elbow almost as high as the shoulder-joint. Several curved incisions, across and between these ulcers, were made, with the object of cutting all the cutaneous nerves which were either involved in the ulcers or the dense tissue around them. All the ulcers did well and healed except the upper one; this from time to time was still a little painful, and would not remain healed. The reason was not far to seek. It had not been sufficiently recognized that a good portion of the skin over and around the deltoid muscle was supplied by nerves coming round from the brachial plexus, behind the humerus, and running almost transversely across the limb. It therefore occurred to him that a second and more complete operation for the remaining ulcer should be carried out. A semicircular incision was made through the tissues near the ulcer, so as to sever any branches of nerves passing transversely through the subcutaneous cellular tissue, or directly through the fascia, to the base of the ulcer. As soon as the incision was made, it was clearly shown by the contraction of the flap that there had been a considerable tension in the morbid tissue.

The diagram laid before you illustrates how the nerves run in the upper arm, and therefore how the incisions in that part should be made to cut them. The flaps or undercut portions must have, of course, sufficient distal attachment for efficient circulation to be carried on till the granulations tissue can help in blood supply. Where there is deep subcutaneous tissue the incisions can be deep—say to the fascia—but they must not be too close together. Each case must be anatomically and otherwise considered on its own merits.

Not only, as in the above-mentioned case, do incisions relieve pain and tension, and cure the ulcers, but they also, by bringing in extra new tissue, increase the mobility of the parts.

DEMONSTRATIONS.

DURING the course of the meeting a number of cases of interest on account either of their course or their rarity were demonstrated by various members of the Section. They included 3 cases of leprosy shown by the President of the Section, Dr. Phineas Abraham.

SECTION OF TROPICAL MEDICINE.

FLEMING M. SANDWITH, M.D., F.R.C.P., Gresham Professor of Physic, President.

PRESIDENT'S INTRODUCTORY REMARKS.

AFTER a few initial observations, Dr. SANDWITH said:

Exactly fifteen years ago, when the British Medical Association last held a meeting in London, the work was divided into fifteen sections, but it was only in one of them, that devoted to pathology and bacteriology, that any question was raised of tropical interest. The programme of that Section announced three papers bearing on tropical subjects, two of which (on leprosy) do not seem to have been published; the third, some of you may remember, was a demonstration of the parasite of malaria by Dr. Patrick Manson, and this was accompanied by a paper dealing more especially with the life-history of the parasite outside the human body. On that occasion the Nestor of tropical science pointed out the probability that the mosquito was the intermediate host of the parasite, while he drew attention to the work of Major Ross in India.

I need not remind you of the progress in the world's history which tropical medicine and hygiene have achieved since that date. There have sprung into being, as a necessary part of our equipment, two tropical schools in this country, elementary tuition in tropical medicine at many medical schools in the kingdom, an honourable acknowledgement of the subject by four British universities, the regular inclusion of a Tropical Section at these annual meetings, the formation of national societies of tropical medicine in many countries, and the growth of an international society which has for its aim the knitting together of tropical workers all over the world. In this great metropolis we are proud to remember that other famous countries have paid us the compliment of following in our steps, and among the tropical schools of later development there is none of higher repute than that of Hamburg, worthily represented here to-day by Professor Fülleborn.

The past year has yielded us a rich harvest of accumulated knowledge from the tropics, some details of which we shall now have the opportunity of hearing from those who have taken a principal part in unravelling the tangled skeins of microbic diseases.

The officers of this Section had hoped to obtain some first-hand information from those who have succeeded so admirably in making the Panama Canal zone and Cuba habitable places for the white and the coloured man, but unfortunately neither Colonel W. C. Gorgas nor Colonel J. R. Kean could be spared from their official duties during this month.

Before closing these few introductory remarks I wish to emphasize some points which I have long thought of some interest to us all. In spite of the gradually accumulating knowledge of tropical subjects which has already made the early years of this century memorable in the general history of medicine, we are still suffering from profound ignorance of many details connected with every exotic disease, and we have not yet reached the stage when any worker can dare to rest upon his oars.

Our knowledge of the prevention and treatment of an ailment has sometimes outstripped our acquaintance with the pathology and morbid anatomy of that disease, and science is in need of a devoted band of pathologists who will in time reveal to us many secrets now hidden. The foundation stone of accurate medical knowledge lies in the *post-mortem* room, and yet I am aware that diseases have often to be studied far from well-equipped hospitals and laboratories, amidst a population which will not permit the performance of autopsies. Let us hope that some day every tropical school will proudly own a large pathological museum, which will enable students to study the morbid processes of every exotic disease.

Lastly, one word of perhaps unneeded caution to enthusiastic discoverers of a new theory. If the peculiar combination of circumstances found to coexist in one country will not stand the test of confirmation in other countries where the special disease is rife, the theory must be reconsidered before being accepted as a fact. We shall all do well to remember Pasteur's advice—to take care lest we certainly find the proof for which we are searching.

DISCUSSION ON HUMAN TRYPANOSOMIASIS.

OPENING PAPER.

By Colonel Sir David Bruce, C.B., F.R.S.

The last discussion on sleeping sickness by this Section of the British Medical Association took place in 1904, when I had the honour of opening it. At that time I laid down a series of propositions, and said it would be interesting to find out in the future how many of them would hold good.

I will run rapidly over these six-year-old propositions.

1. The first was that the trypanosomes found in the blood of natives on the West Coast of Africa and in Uganda are identical. This still holds good.

2. The second was that the so-called trypanosoma fever of West Africa is the first stage of sleeping sickness. This has also held good.

3. The third was that neither the native nor the European is immune to this disease. This, again, has held good up to the present year.

4. The fourth was that, as regards prognosis, instead of being favourable, as had been stated, the mortality was 100 per cent. This is a controversial point, but, in my opinion, there is no absolute proof up to the present that a single person has recovered from sleeping sickness.

Since 1908 there have been records of some 49 cases of sleeping sickness in Europeans. In Europeans the chance of recovery by treatment is much greater than in the case of natives. The disease in white people is usually recognized in the earliest stages, whereas in the native it is often overlooked until the symptoms of the disease are marked. In regard to the natives, the reports from the various sleeping-sickness camps show that they all tend to die off, as time goes on, in spite of any treatment. But in regard to Europeans, it may be well to go a little more into detail. Of the 49 cases, 9 are still alive, 28 are dead, and the records of the remaining 12 are wanting or deficient.

5. Another proposition laid down by me in 1904 was that there was no evidence to show that any of the lower animals took any important part in the spread of sleeping sickness. This, so far as direct evidence goes, is still true. But it is possible that some modification will require to be made in regard to this opinion in the future. On the lake shore, near the Sleeping Sickness Commission's laboratory at Mpumu, in Uganda, the tsetse flies have been found to retain their infectivity for some two years after the native population have been removed from the sleeping-sickness area. It is difficult to understand how these flies retain their infectivity for such a long time. It may be that the flies live for more than two years, and that they are able to retain their infectivity as long as they live. Or it might be that some of the natives creep back to the lake shore, and in this way infect the flies. Or, thirdly, it may be that some of the wild animals or birds on the lake shore are acting as a reservoir of the virus, and so keep up the infectivity of the flies. It is true that we kept flies infective in the laboratory for some seventy-five days, and it is probable that flies may live much longer than this in their native haunts. It is also probable that a fly retains its infectivity as long as it lives. In regard to the fly being able to obtain the virus from infected natives, that was also to some extent possible, as natives during that time were passing to and fro between the islands and the mainland to attend a local market. Against this there is the fact that the tsetse flies on the island of Damba were found to be infective as late as May of the present year, and, so far as I am aware, this island has been uninhabited for a long time. As to the possibility that some of the wild animals on the lake shore may have become infected, and so are acting as a reservoir of the virus, it is quite an easy matter to infect cattle with *Trypanosoma gambiense*, to infect flies from them, and pass on the disease by means of these flies to healthy animals. It has also been proved by direct experiment that the antelope, such as the water-buck and bush-buck, are just as capable as the cattle of being infected with sleeping sickness. In several experiments infected flies have been fed on antelope; in ten days or so, when the parasites appeared in their blood, laboratory-bred flies have been fed upon them, and finally, after some thirty days, these laboratory-bred flies have been fed on monkeys, and the monkeys have in their turn become infected. In other words, repeating as nearly as possible what takes place in Nature. In one case a naturally-infected ox was found on one of the islands in the lake. However, the result of the injection of the blood of hippopotami, antelope, crocodiles, and birds shot in the sleeping-sickness area has up to the present proved negative. We must therefore wait, and make further experiments, before we are able to answer the question as to whether the lower animals take any part in the spread of sleeping sickness. But the opinion is growing in my mind that it is more than probable that the wild game on the lake shore will be found to act as a reservoir. In this case the fly-area may remain infective for an indefinite period, and the return of the native population may require to be postponed for a longer time than was at first anticipated. Other methods of stamping out the disease may require to be experimented with. Among these the gradual bringing of the lake shore under cultivation might be feasible. Wild game, tsetse flies and sleeping sickness are not compatible with civilization and cultivation.

6. A sixth proposition was that sleeping sickness is conveyed from the sick to the healthy by means of a biting fly—the *Glossina palpalis*. During the last six years this has been proved up to the hilt. In every part where sleeping sickness is found there also is found the *Glossina palpalis*. Lately, however, there has been a revival of the disposition to believe that sleeping sickness may be spread by other species of tsetse flies, such as *morsitans* and *pallidipes*. In North East Rhodesia cases of the disease have occurred in the valley of the Luangwa, which are supposed to have been contracted there, although up to the present *Glossina palpalis* has never been found in that valley. The tsetse fly found in this valley is *Glossina morsitans*, and the suspicion is that this fly is responsible for these cases. Until, however, this has been thoroughly investigated we must cling to the belief that in Nature *Glossina palpalis* is the only carrier. Otherwise the present plan of preventing and stamping out sleeping sickness by removing the natives from the *Glossina palpalis* area would have doubt and suspicion thrown upon it, and administrative authorities would be less keen to act.

7. A seventh proposition was, that it had been proved by laboratory experiment that other members of the genus *Glossina* were able to convey the virus from the sick to healthy, and that if this proved to be true under natural conditions, there was a real danger that sleeping sickness might spread to the East Coast fly belt. Up to the present, with the exception of the Luangwa valley in North-East Rhodesia, no evidence has been brought forward to show that sleeping sickness is ever spread except by means of *Glossina palpalis*. We must therefore watch carefully for any indication of the spread of this disease beyond the *Glossina palpalis* area, and try to anticipate and prevent the invasion of the east and south.

8. An eighth proposition was, that there is no proof that other genera of biting flies, such as *Stomoxys*, *Tabanus*, etc., carry the infection under natural conditions. This also holds true at the present moment.

9. A ninth proposition was that there is no proof that *Trypanosoma gambiense* passes through any metamorphosis in *Glossina palpalis*, but that the transference of the parasite by this fly from one animal to another is purely mechanical. In regard to this point a good deal of evidence has been brought forward since our last meeting. At the end of 1908 Dr. Kleine, in German East Africa, discovered that *Glossina palpalis* could convey trypanosome disease some twenty days after having bitten an infected animal. The Sleeping Sickness Commission carried out a large number of experiments in 1909 to throw light on this subject. The result we came to was that *Trypanosoma gambiense* multiplies in the intestine of about one in twenty flies (*Glossina palpalis*) which have been fed on an infected animal; that the flies become infected, on an average, thirty-four days after their first feed upon the infected animal; and that when the flies become infected they may remain infective for as long as seventy-five days. Seventy-five days was the longest time we were able to keep an infected fly alive in the laboratory. The Commission then made a number of experiments to find out whether in fact any mechanical transference of

any kind ever takes place. From these experiments it was found that mechanical transference takes place if the flies are transferred instantaneously from the infected to the healthy animal. This is known as interrupted feeding. It was further found that no mechanical transference takes place even if only half an hour is allowed to elapse between the feeding of the flies on the infected animal and their transference to the healthy one. All our old experiments in regard to the mechanical transference of sleeping sickness up to forty-eight hours were, therefore, interpreted wrongly. They depended for their success upon the fact that they were carried on sufficiently long to enable the late development of the parasites to take place in the interior of the fly. At the same time, it must be borne in mind that there is still no evidence up to the present of any sexual cycle or metamorphosis taking place in the fly. All we can say is that after a certain time a development takes place in a small percentage of flies which renders these infective, and that the flies retain this power of infectivity for a long time. I said in 1904 that in all probability some development does take place, but I had no hesitation in asserting that this development would be found to be quite different from the metamorphosis which had been prophesied, and which we know takes place in the case of the malarial parasite and the mosquito. The discovery of a sexual cycle of development in the tsetse fly, therefore, still remains a desideratum.

10. The tenth proposition was that all the evidence went to show that all the stages of the development of *Trypanosoma gambiense* take place in the human host. At the present time there does not seem to be much meaning in this proposition, and it may therefore be passed over.

11. The last proposition gave the various proposed means for combating the disease. These were to prevent, as far as possible, the movement of healthy natives into sleeping sickness areas; the evacuation, if possible, of these areas; the destruction of the breeding places of the tsetse fly, and of the fly itself as far as possible. Of these four preventive measures, the second—the removal of the native population from the sleeping sickness area—has been the most successful. During the last two years in Uganda proper, under the direction of Dr. A. D. P. Hodges, the principal medical officer, all the natives have been taken from the lake shore and from the islands and placed in fly-free areas away from the lake shore. This, so far as I am aware, has been successful, and it is probable that, as the result of this exodus, not a single case of fresh infection is occurring in Uganda. It is comparatively easy in Uganda to carry out this method of stamping out the disease. The fly area is confined to the islands and to the edge of the lake, and does not run up the river valleys into the interior of the country except in the case of the river Nile. The natives, moreover, as a rule are docile and obedient to their chiefs. The pity of it is that the fertile islands and lake shore have gone back to the jungle, and things rank and unprofitable possess them. The destruction of the breeding places of the fly has only been possible in restricted areas—such as round the Government cantonment of Entebbe and the various landing places and ferries on the lake shore and the Nile. As long as the islands were inhabited there was necessarily a good deal of intercourse between the natives of the islands and those of the mainland. Now that the islands are empty of their inhabitants this no longer occurs, and the cleared landing places will now revert to the jungle, like the rest of the lake shore. This destruction of the breeding places of the fly by clearing the edge of the lake and bringing it under cultivation has been quite successful so far as I am aware, and has, for example, rendered Entebbe a safe and habitable place.

I have now run rapidly through the eleven propositions laid down in 1904, and, as you have heard, although most of them remain true, some of them require to be profoundly modified.

DISCUSSION.

Dr. ANDREW BALFOUR (Khartoum) said that possibly the *Trypanosoma gambiense* changed morphologically when passed through a series of domestic animals, and also in wild animals, such as antelope. There might be resting forms present in the internal organs of such animals when the parasites were visible in the peripheral blood. The difficulty of finding trypanosomes in the peripheral blood of animals was shown by recent work in America. Just as in spirochaetosis there might be what are called infective granules, so these might occur in trypanosomiasis.

Dr. J. HOWARD COOK (Uganda) said that his own experience of the mortality of sleeping sickness amongst the natives confirmed the belief that it was cent. per cent. The only hopeful case ever in the speaker's hospital was the following. Two native printers came from Entebbe, and trypanosomes were found in the glands of the neck in each case. One refused treatment and died eighteen months later, the other consented and had the usual atoxyl injections, and over four years afterwards he was alive and well, and was taken back to his employment as printer in the Government printing office. His glands were subsequently examined again with a negative result. The case was put forward not as a definite cure but as worthy of note. He also pointed out that although it might be considered that in any area or island the native population had been deported, yet it was extremely difficult to make sure that natives did not surreptitiously return to their homes in canoes by night. He and his colleagues had heard from time to time of this occurring in spite of the present stringent precautions. Such persons readily act as reservoirs of infection. In conclusion he said (1) Sir David Bruce had suggested cultivation of the lake shore. This, as an ideal, was indubitably desirable, but was it possible, and was it justifiable from the point of view of risk to employees? (2) What were the prospects and the amount of risk of clearing limited gardens by the "fly-paper" method where natives were provided with jackets smeared with poisoned treacle? (3) Was there any information as to the value of arsenic or any other drugs as a preventive of trypanosomiasis?

Dr. G. C. LOW (London) said that some time ago he read in the *Bulletin of the Sleeping Sickness Bureau* about the cases of sleeping sickness that had recently been cropping up in Rhodesia, where *Glossina palpalis* was said not to exist, but where *Glossina morsitans* abounds. The explanation of this might be due to one of four things: (1) Perhaps *Glossina palpalis* did really exist there and might eventually be found. (2) *Glossina morsitans* might be acting as the carrier of the *Trypanosoma gambiense*. (3) The trypanosome of Rhodesia might be a new species with *Glossina morsitans* as its carrier. (4) Or were these Rhodesia trypanosomes really *T. brucei*, the parasite of nagana? As regards the latter suggestion he had often thought it strange that man should be the only animal who was immune to the *T. brucei*, and perhaps after all time would show that he was not. The recent multiplication of species, chiefly by Laveran, had confused the subject very much, and it was possible that *T. gambiense*, *T. brucei*, and other species might after all be demonstrated to be much more closely connected to each other than was thought, and Dr. Balfour's remarks on the change of morphology of the *T. gambiense* in antelopes and other animals supported this. Of course many of the animal trypanosomes of the dimorphon type were morphologically different from the human, but these with the free flagellum certainly were morphologically very like each other. As regards the question of cure of sleeping sickness, the speaker was inclined to agree with Sir David Bruce that this was exceedingly doubtful. Personally, he knew many of the cases referred to, and, of course, the patient whose disease was diagnosed in 1900, and who was still alive, certainly looked like a cure. If one patient was cured then others might be; but still, even granting that, the prognosis was gloomy. Seven years after infection few would be found to be surviving. Again, one must certainly include in the statistics cases that died of intercurrent diseases, such as pneumonia, sepsis, and the like, and if this were done then the mortality rose at once enormously. With such a deadly disease, then, the only thing to do was to avoid getting it—that is, to devise a proper prophylaxis.

Dr. W. T. PROUT, C.M.G. (Liverpool), recalled an investigation many years ago into the prevalence of sleeping sickness on the West Coast of Africa. It was found that though cases occurred occasionally in Sierra Leone, the disease was not recognized by the natives, and it

was clearly not a disease of the locality. Within recent years its presence had been microscopically demonstrated, although in many cases it did not apparently reach the sleeping stage. Possibly the disease had been introduced owing to improved methods of communication along the coast. The *Glossina palpalis* was present, and possibly an extensive spread might take place. The problem would be a serious one, because it would be impossible to deal with an important seaport like Freetown by removal of the inhabitants, as had been done in Uganda. Possibly a considerable degree of saturation of a locality with *Glossina* was necessary before an epidemic spread of sleeping sickness took place, just as in the case of yellow fever and *Stegomyia*.

Dr. LOUIS W. SAMBON (London) said that ever since 1903 he had contended in favour of the existence of a necessary developmental cycle of *Trypanosoma gambiense* within the body of its tsetse-fly carrier. This belief was founded on morphological differentiation of *Trypanosoma gambiense* observed in the blood of an old-standing case of sleeping sickness examined by him at the London School of Tropical Medicine. The differentiation was of a kind analogous to that presented by the gametes of the Plasmodidae and other haemoprotozoa. The latter had been regarded as sexuals. Another foundation for his opinion was the frequent failure reported by various investigators to infect animals by means of living and active trypanosomes taken from the stomach of the fly. This corresponded exactly with the non-infectivity of the gametes of Plasmodidae. Sir David Bruce's experiments in Zululand on *Trypanosoma brucei* had been limited to the use of flies which had only recently imbibed the blood of infected animals; the speaker had suggested that the flies should be tested fifteen or more days after experimental infection. The difference between the multiplication and development of the Trypanosomidae and Plasmodidae within their respective carriers was not really so great as appeared at first sight. The process was practically the same: A rapid multiplication following upon conjugation of differentiated forms, and an active migration through the definitive host, with periods of quiescency in adaptation to the various requirements at different stages of development. In the Plasmodidae the multiplying zygote was enclosed within a cyst; in the Trypanosomidae it remained free, and the dividing forms separated and divided again and again until the analogous minimal forms or "sporozoites" were reached. This was the only difference, and one of very little moment. Indeed, in another group, that of the Haemoproteidae, a kind of link was found between the two modes just mentioned. As had been shown by Schaudinn's researches, the zygote in Haemoproteus did not break up until the ultimate divisional forms were formed, although the multiplying zygote remained free. With regard to the possibility of hereditary transmission of *Trypanosoma gambiense*, *Trypanosoma brucei*, and probably other forms by the respective infected *Glossinae* to their progeny, the majority of experiments so far carried out to test this point had been negative, but, notwithstanding the failure of these experiments, the speaker still maintained his view, which was based chiefly on the following facts: (1) His own interpretation of experiments made by others with experimentally trypanosome-infected flies to prove their infectivity; (2) the peculiar manner in which tsetse flies produce their young, as first pointed out by Sir David Bruce; (3) the analogy, not only of certain tick-borne haemoprotozoal infections, but of fly-borne trypanosomid diseases, as shown by Flu in the flagellate of *Melophagus ovinus*, and by Schaudinn in the flagellate of *Culex*.

SOME FEATURES OF TUBERCULOSIS IN INDIA.

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THE object of this paper is to show that tuberculosis manifests itself in India rather differently to that in Europe, not at all in the tuberculous lesions of organs but in the beginning of the disease, and that it adds another prolonged fever to the many fevers met with in that continent; we have enough of these, and very puzzling they often prove in their differentiation, when it comes to a question of diagnosis. The ophthalmic and cutaneous reactions with tuberculin have added a valuable method to assist us in the differential diagnosis. There are three forms in which early tuberculosis shows itself, and they differ, curiously enough, and for some unexplainable reason, from the early signs seen in Europe.

1. An acute febrile form resembling atypical typhoid, which I would call "acute tuberculous fever," and met with principally in young adults.

2. An irregular fever with enlargement of the cervical glands, the carotid chain, and those under the jaw, and seen principally among children.

3. A debility associated with dyspepsia and constipation, resembling tropical debility. Even here the thermometer shows afternoon or evening rises to about 100° F., and very easily overlooked.

An enumeration of the symptoms of acute tuberculous fever will show you how easy it is to confound it with other Indian fevers. There is a continued pyrexia of a remittent or intermittent type, lasting from a week to four weeks or more, and I have known cases with a duration of two, three, and four months. The liver is often enlarged, the spleen not so; the bowels are constipated, generally obstinately. The abdomen shows some amount of meteorism, though this never reaches the extent seen in enteric fever. Vomiting and nausea may be marked, though not continuous. The most distinguishing feature of this fever is pain and tenderness in the epigastrium, and it is on this that special stress must be laid, in order to assist us in the differential diagnosis. Some cases have acute exacerbations of pain, others only tenderness, which, if it be associated with hepatic enlargement, makes the diagnosis from liver abscess very difficult. The mind is clear, generally remarkably so, except that when the temperature is high there may be some delirium at night. The paroxysms of pyrexia produce none of the marked prostration noticeable in malaria, enteric, etc. The initial enlargement of the spleen in enteric contrasts with the want of enlargement in acute tuberculous fever. The tongue is furred, but its condition does not remind one of the "typhoid tongue." The skin is dry and hot; there are no hectic or malarial sweats. The urine is high-coloured and contains no albumen. Such, then, is this acute fever, and it is easy to imagine that many of these cases have been called "atypical typhoid," or simple continued fever. It is not a picture of the acute miliary tuberculosis, or the "typhoidal type" seen in Europe and here so fatal. In India our patients almost invariably recover. However, I maintain that in many cases it means the launching out of the sufferer on a tuberculous career. Thus, it may be the beginning of a long period of ill health of an indefinite kind—dyspepsia of a flatulent type, relapses of fever, periods of general depression, with a temperature below normal if frequently and carefully taken, and a loss in weight, and in some cases anaemia. The general malaise is not continuous; the condition is varied by periods of good health.

As there are numerous cases of this fever among Europeans in India, as well as among Indians, it is obvious that some of the former drift to England to puzzle consultants at home. Ill-defined cases with a history of an acute fever or irregular fever, often called malaria, associated with some liver enlargement, should, I think, be investigated for Indian tubercle when other diagnosis has failed.

Europeans appear to be more resistant to the after-effects of tuberculous fever, probably owing to the healthier lives they lead, and there may also exist a certain racial immunity; but among Indians numbers develop obvious tuberculosis—tubercle of the lungs, glands, bones, etc., following immediately on the fever, or after an interval of health. The longer the fever lasts the greater the danger of these sequelae. In many cases the initial fever has been forgotten, or called malaria; and especially when irregular exacerbations of fever follow, the resemblance to malaria is still more striking.

The existence of the abdominal symptoms mentioned above points to invasion by means of the alimentary canal, and whether it will be proved to be a form of bovine tuberculosis is a question yet to be settled. It has, how-

ever, nothing to do with tuberculous peritonitis; there is little in common, though I have seen the peritoneum eventually invaded, nor is it a form of acute generalized tuberculosis, or the typhoidal type described by Professor Cornet. The low mortality is enough to disassociate it from these.

The differential diagnosis of this disease from among the acute and continuous fevers in India does not, I think, present any difficulty. With cases of continued fever it has now become the routine of Indian practice to examine blood slides for malarial parasites; to try Widal's test for typhoid, paratyphoid, and Malta fever; to make a blood count for leucocytosis in hepatic cases; and when obviously the case is not one of septicaemia, it is then time to try the cutaneous reaction for tubercle, and, failing that, the ophthalmic reaction; and if these fail, then it is time to relegate the cause to the unknown. However, in practice, a number of acute tuberculous fever cases will be met with. An interesting point is that the opsonic index to tubercle is high—certainly during the early part of the attack. It is only when by watching this and noticing a fall in the index that treatment by tuberculin is to be decided on. Then it is very efficacious, and then only; and, moreover, it is of extreme value in warding off the tuberculosis cachexia that follows and in preventing the appearance of localized tuberculosis. Thus I have been in the practice of using T.R. injections for some months after the apparent cure.

Concerning the second form of early tubercle I have mentioned above as principally occurring in the young, my remarks are, perhaps, of less interest. So widespread has tubercle become in India that the number of children affected by this irregular fever and enlarged glands is a matter of some importance. The liability to fever in these cases is the feature that contrasts them with similar gland enlargements due to tubercle in Europe. I am only referring to early cases, not those in which numerous cervical glands, with or without enlargements in other groups, are manifestations of obvious and widespread tuberculosis. The liability of the former class to become merged with the latter is also noticeable. I have seen numerous cases of irregular fever, enlarged cervical glands, even among the young of the best families in India; the conditions that bring about this are a misfortune. However, if these boys and girls are placed in healthy surroundings, Nature will effect a cure. Tuberculin is useful here in hastening matters. In cases among English children I have always given a good prognosis and advocated a hasty retreat to Europe or the hills.

The third class of early tuberculosis, in which the symptoms are more indefinite and the patients simply complain of ill health, would be more difficult to prove as due to tubercle were it not that numbers drift into definite phthisis. It is as well to be on the look-out for such cases, and in these the thermometer gives us its ready help. There is a daily rise to about 100° F., or a little under, and this explains symptoms such as headache, cardiac irritability, dyspepsia, and general neurasthenia. There, again, the cutaneous and ophthalmic reactions are useful tests. If the positive reaction is association with such symptoms, then that clinches the diagnosis. I am quite aware that this reaction can be obtained in a proportion of healthy people, but the patient is not one of these. Again, in the tropics it is no uncommon thing to find that many individuals show a rise of temperature on either side of 99°, and are still healthy, but our tuberculous cachectics give a rise and fall, which latter is particularly characteristic. As this class of case is cured by a change to a better climate, it is easy to overlook these, and to classify them as neurasthenics suffering from tropical debility.

FURTHER OBSERVATIONS ON LEISHMANIA TROPICA OF ORIENTAL SORE OF CAMBAY, INDIA.

By R. Row, M.D.Lond., D.Sc.Lond.

SINCE the publication of my last memoirs on the development of this parasite in culture in human blood serum, a number of observations have been made by me to elucidate the following points:

1. On the changes the flagellate body undergoes in cultures *in vitro*.
2. Whether the ⊙ body could be recovered as the result of further changes in the flagellates in culture *in vitro*.
3. On the production of the lesion in monkeys from the human virus.
4. On the differences of this lesion from that produced in monkeys by Nicolle in Tunis.
5. On the nature of the parasites recovered from the artificial lesions in monkeys.
6. On the possibility of the house-fly being one of the etiological factors concerned in the natural production of the disease, in the light of the experiments on monkeys.
7. On the practical application in the treatment of kala-azar by using the virus from the monkey for vaccination of kala-azar patients.

The following is a summary of my observations on the above-mentioned points:

1 and 2. No definite ⊙ bodies can be observed even after twenty-four days' observation of the hanging-drop cultures made with aseptic precautions; the only change observable (after the appearance of the flagellates) consists of the appearance of a number of masses of large coccal bodies in the disintegrating groups of flagellates. These look like contaminations, but on close examination appear like modified ⊙ bodies, looking like large torulae—about one-third of a red corpuscle—with a central deep violet staining core and a faintly staining pink ectoplasm. In no case, however, can the nucleus and blepharoplast be made out with certainty. These bodies in culture have never given rise to flagellates, and by inoculation experiments they have always yielded negative results. Thus it would appear that, even should these bodies turn out to be the ultimate post-flagellate product of the parasite, they require to undergo certain other changes before they can behave like the original ⊙ bodies of the parasite—or look like them; and in all my cultures I have never been able to observe even any attempts at "rounding off" of the flagellates such as are described and depicted by Nicolle.[1] These facts, in addition to those described below, lead one to the belief that the Tunisian parasite is distinct from the Indian species with which I have been working.

3, 4, and 5. Production of the disease in the *Macacus sinicus*: the incubation period; the character and duration of the sore; points of difference from the artificial sore produced by Nicolle in Tunis.

The contents of a sore from the human lesion taken on December 30th, 1909, were used to infect a monkey (*M. sinicus*) by cutaneous scarification on December 31st. After three or four days the scarification wound healed up, and at the seat of infection not a trace of anything having been done could be detected for two months. It was on March 1st, 1910, that three very minute spots, almost like pin-points, could be seen in a line 2 or 3 mm. apart. These could not be felt, but only seen as slight brownish patches of discoloration. They were watched day after day, and found to be growing very slowly; and on March 16th they could be distinctly felt as tiny nodules or small pin-heads. There was a faintly marked tendency to scale formation, but no red zone round the pin-heads. On this day one of them was cut into, and the serosanguineous fluid, when examined, was found to be rich in the parasite, both individually and packed in large macrophages. The parasite appeared larger than that of the human lesion and the details appeared clearer, so that I am led to believe the parasite had undergone the first stage of development even *in situ* in the lesion of the monkey.

A portion of the juice was cultured as in my previous experiments, and beautiful masses of flagellates and developmental stages of the parasite were obtained; the flagellates were utilized for infecting a monkey—to test if the flagellates retained the virulence of the original ⊙ bodies—with negative results up till to-day; and lastly, a third part of the juice was utilized to infect fresh monkeys by cutaneous scarification, with positive result confirming the results of first experiment. The lesion in the monkey is slow in development and practically the same as in man before its ulceration. There is always a delicate layer of scales on the sore, and during these three months the sore has been gradually increasing in size in all dimensions; the three papules having now fused, the sore is of the size of a small thin half-bean. There is no suppuration, and each time it has been examined it has been rich in the parasites—both as regards individuals and also in parasite-

laden macrophages, and each time it has yielded good culture and abundant rosettes.

Thus it appears that the sore I have produced in monkeys is distinct from that produced by Nicolle in Tunis in monkeys with the parasite of Clou de Gafsa, and for the following reasons:

(*a*) Incubation in my case in 2 months; incubation in Nicolle's case in 3 to 4 weeks (24 days).
(*b*) Lesion in my case is slow in development and of long duration; lesion in Nicolle's case is quick in development and of 2 weeks' duration.
(*c*) Parasites obtained from my sores are rich and well-developed; parasites obtained from Nicolle's sores are very few and shrunken and abortive.
(*d*) The macrophagin in my sores are large, abundant and packed with parasites; the macrophagin of Nicolle's sores are small and at best contain 4 or 5 parasites, and those, too, in shrunken condition.
(*e*) My sores have been still growing (3 months); Nicolle's sores healed in 15 days.
(*f*) And lastly: the animal is susceptible for reinfection during the period when the first sore has been in progress, as I have been able to infect another spot in my first infected monkey one month after the appearance of the first sore. This fact is exactly what takes place in man, as during the course of one attack a person may develop more than one sore—appearing periodically until he may have even as many as twenty sores in the different parts of the body.

6. From the above facts, derived from the experimental inoculation in the monkey, one may be justified in concluding that to obtain a sore it is a *sine quâ non* to infect a spot with parasite in the ⊙ body state, and that any development from this towards the flagellate stage reduces the potency of the virus, and that one person may reinfect himself or another person directly—that is, without there being the necessity of the intervention of an insect in whom further development of the parasite of any complicated nature has to take place, and that it is much less likely that the intervention of a biting insect is required for the production of the disease. The parasite has been never found by me in the peripheral blood of over 40 cases examined for the purpose. And the fact that occasionally a parasite has been found in circulating blood by another observer (Neumann) is more of interest than of importance in the consideration of the etiology of the disease.

It may be stated in this connexion that the disease in Cambay is most prevalent towards the end of the rainy season, and taking two months as the incubation period in man, the persons get infected mostly during the height of the monsoon, when the house-fly is the greatest pest in Cambay. The discharge from the sores forms a great attraction to the common house fly, so that it is not unusual to see a patient with a sore literally besieged with swarms of flies; and taken that the discharge of a sore is rich in parasites, and the fly settles on it and before long settles on another person, it is not unlikely that the parasite could be transferred directly from person to person, either on its legs or much more so through its excreta, and an accidental nail scratch produced during the tickling by the fly on the spot would be all that is necessary for the infection.

Experiments conducted to reproduce these conditions are in progress, and the results are being awaited with interest, and will be communicated directly they are received.

This must not be taken to be the only method of infection—but it seems to be one of the simple methods—explicable in the light of experiments on the monkey and the local conditions of Cambay above indicated, and should not lead one to forget the possibility of the important rôle played by the house fly, in whose intestine the ⊙ body may go through the whole cycle of development into flagellates and back again into the ⊙ body.

These observations are also in progress, and will be forthwith communicated as soon as the results are available.

7. Manson's questions at the end of his chapter on kala-azar are so suggestive that I have taken the first opportunity of attempting to answer them with the aid of vaccination in man. Through the kindness of Major Donovan I have been able to vaccinate two cases of kala-azar under his care in Madras, in the right forearm—with the virus of the monkey—on April 28th, 1910, and Major Donovan has been kind enough to keep these cases under his observation, and we shall communicate the results at our first opportunity.

REFERENCE.
[1] *Archives de l'Institut Pasteur du Tunis*, 1909, p. 120.

OBSERVATIONS ON "TROPICAL BRONCHO-OÏDIOSIS."

By ALDO CASTELLANI, M.D.,
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AT the meeting of the Far Eastern Association, held at Manila in March last, I communicated the results of an investigation on a type of bronchitis—very common in Ceylon—due to an *oïdium*. At that time I had observed about 20 cases, the diagnosis being based on the microscopical examination of the expectoration. In 4 cases I had grown the fungus, using maltose and other sugar agars. Since my return to Ceylon I have come across several other cases, and I have grown the fungus in two more. It may be, perhaps, of interest to give the result of my further researches.

A mild and a severe type of the condition may be distinguished. In the mild type the general condition of the patient is fairly good, there is little or no fever, and he simply complains of cough; there is muco-purulent expectoration. The physical examination of the chest will reveal a few coarse moist râles, or, in some cases, nothing at all. The condition may last several weeks, and even months. A potassium iodide treatment (grains xv three times daily) is of great advantage.

The following is an example of this type of the malady:

Mrs. N., a European lady, living in a very hot and damp district of Ceylon for the last four years, consulted me three weeks ago. For three months she had complained of cough with scanty muco-purulent expectoration, mostly in the morning. General condition fairly good. The examination of the chest reveals nothing. Examination of the sputum: Tubercle bacilli negative; oïdium-like fungus present in large amount, and easily grown on sugar agars. Saiodin was prescribed (grains x three times daily).

I received a letter a few days ago informing me that she is much better and the expectoration has completely stopped.

The severe type of the disease closely resembles phthisis. The patient becomes emaciated; there is hectic fever, muco-purulent and bloody expectorations; occasionally true haemoptysis occurs, a teaspoonful or more of bright blood being spat up at a time. The search for tubercle bacilli is always negative; the inoculation into animals is also negative. The physical examination of the chest shows patches of dullness, fine crepitations, and pleural rubbing. This type is often fatal, no treatment being of much use.

As an example of the severe type of the condition, the following case may be quoted:

Mr. M., planter. When the patient arrived in Colombo, after several months' illness, he was extremely weak, had serotine fever, bloody expectoration. On examination of the chest, both sides several patches of diminished resonance, fine crepitations, and pleural rubbings. I examined the sputum for tubercle bacilli many times without finding any. Inoculations in several guinea-pigs negative. Cutaneous and ocular reactions negative; cultivations were made from the expectoration on several occasions. Oïdium-like fungus and a streptococcus were constantly grown.

No treatment relieved the patient, who died six weeks after arrival in Colombo. No autopsy was allowed.

Cases of medium gravity are also met with. These often present, with bronchial and broncho-alveolar symptoms, a type of subcontinuous or continuous fever. As an example of this type of the malady I may quote the following case, which I have kept under observation in the seamen's ward for some time.

Singho Appu, Cingalese man, 29 years of age, admitted to the seamen's ward on March 31st, 1910, with history of continuous fever and cough, said to be of two weeks' duration. On admission the general condition of the patient is fairly good. Temperature 101°, pulse 96. The patient has frequent attacks of cough, but the expectoration, which is muco-purulent, is not abundant. The physical examination of the chest reveals a few rhonchi and some coarse moist râles on both sides; at the right base there is a small patch where the resonance is slightly impaired, and some subcrepitant râles are heard; a similar small patch, with the same signs, is found in the left infrascapular region. Nothing worth noting as regards the circulatory and digestive systems; the oral mucosa does not show signs of thrush.

Special Examinations.—Sputum: examination for tubercle bacilli, repeated several times, negative. The microscopical examination of the fresh preparations shows a large amount of a fungus, numerous spores and some mycelium being present. The fungus (see Table, Strain 6) is easily grown, using maltose

	Litmus Milk.	Glucose.	Laevulose.	Maltose.	Galactose.	Saccharose.	Lactose.	Mannite.	Dulcite.	Dextrin.	Raffinose.	Arabinose.	Adonite.	Inulin.	Nutrose.	Broth.	Peptone Water.	Indole.	Liquefaction Gelatine.	Liquefaction Serum.	Gram.
Oïdium, Strain 1	O	AG	AG	AG	AG	AG	O	O	O	O	O	O	O	O	O	O	O	O	O	O	+
,, ,, 2	O	AG	AG	AG	AG[3]	AG	O	O	O	O	O	O	O	O	O	O	O	O	O	O	+
,, ,, 3	O	AG	AG	AG	AG[3]	AG	O	O	O	O	O	O	O	O	O	O	O	O	O	O	+
,, ,, 4	O[4]	AG	AG	AG	AG[3]	AG	O	O	O	O	O	O	O	O	O	O	O	O	O	O	+
,, ,, 5	O[4]	AG	AG	AG	AG[3]	AG	O	O	O	O	O	O	O	O	O	O	O	O	O	O	+
,, ,, 6	O	AG	AG	AG	AG[3]	AG	O	O	O	O	O	O	O	O	O	O	O	O	O	O	+

A.—Production of acid. G.—Production of gas.
O.—Negative result; namely, neither acid nor clot in milk, neither acid nor gas in sugar media, or non-liquefaction of gelatine or serum, as the case may be.

1. Clear. Thin pellicle.
2. Practically no growth
3. Trace only.
4. If any change, slightly alkaline.

and other sugar agars. A few cocci and short bacilli are present; true pneumococci apparently absent.

Blood.—Widal and bile-blood cultures negative; sporo-agglutination for the fungus positive.

The temperature gradually decreased to normal. There were no sweatings or shivering fits. The condition of the respiratory organs gradually improved, the patches of diminished resonance becoming normal. The expectoration, which had never been very abundant, decreased rapidly, and the fungus disappeared.

In fresh preparations of the sputum spore-like, round or oval cells, 4 to 6 μ, are seen at portions of mycelial tubes. The fungus is Gram-positive. If a particle of the sputum be smeared on maltose or glucose agar plates, after two or three days numerous white, roundish colonies appear, easily distinguished, even macroscopically with a little practice, from the colonies of cocci, etc.

The fungus colonies are further investigated by inoculating various sugar agars and sugar broths. On solid media the six strains I have isolated are identical; their growth is comparatively scarce on ordinary alkaline agar, while it is very abundant, thick, and of white creamy colour in the various acid sugar agars. The best (?) media are perhaps Sabouraud and glucose acid agars. On these media the growth on the slope consists practically of globular cells, similar to a yeast, while in the water of condensation globular cells and mycelial particles are generally present together. A little mycelium may, however, occasionally be found also in the growth on the slope.

The principal culture characters of the six strains of oïdium I have isolated are collected in the accompanying table.

From the table it will be seen that all the six strains are practically identical, except that some produce acid and abundant gas in glucose, while others produce in that medium acid, but only a trace or no gas at all. The strains are different from the common *Oïdium albicans* (the thrush fungus) and *Oïdium lactis*: in contrast to these among other different characters they have no action on milk (thirty days).

Conclusions.

1. A type of bronchitis in which an oïdium is present in the expectoration is of common occurrence in Ceylon.

2. The fungus is probably the true cause of the disease, as in my cases no other etiological agent, such as tuberculous bacilli, etc., could be found. Moreover, when the patient gets better the fungus becomes very scarce or disappears completely.

3. The oïdium infection apparently attacks directly the bronchi, as none of my patients presented lesions due to oïdia in the mouth or pharynx.

4. The oïdium, as shown by its culture characters, seems to be a new species for which I suggest the term "*Oïdium tropicale*." The pathological condition caused by it might be called "tropical broncho-oïdiosis."

5. The diagnosis of tropical broncho-oïdiosis is based on bacteriological methods. The condition is distinguished from pulmonary tuberculosis by the absence of the tubercle bacillus, the negative animal inoculations, and the negative result of the cuti and ocular reactions; from "broncho-spirochaetosis" by the absence of spirochaetes; from "endemic haemoptysis" by the absence of the ova of the specific worm, *Paragonimus Westermani* (Kerbert).

6. Before making a diagnosis of "broncho-oïdiosis" care should be taken to ascertain that the expectoration was collected in sterile Petri dishes, because in a tropical country sputum exposed to the air quickly becomes contaminated with various fungi. Primary broncho-oïdiosis should also be distinguished from the secondary broncho-oïdiosis occasionally met with in cachectic patients suffering from cancer, diabetes, tuberculosis, etc., and presenting thrush lesions on the oral mucosa.

In these cases the ordinary thrush fungus (*Oïdium albicans*) may occasionally spread from the oral mucosa to the respiratory organs.

DISCUSSION ON SPECIAL FACTORS INFLUENCING THE SUITABILITY OF EUROPEANS FOR LIFE IN THE TROPICS.

OPENING PAPER.

By Sir R. Havelock Charles, K.C.V.O., M.Ch., F.R.C.S.I.,
Formerly Professor of Surgery, Medical College, Calcutta, and Surgeon to the College Hospital.

The subject we have to discuss affects many: first, those wishing to try their fortunes where the sun shines brighter; secondly, those recruiting men and women to carry on work in places where risks to health are much greater than in the home countries; this applies to Government and masters of private enterprises; thirdly, assurance companies, who are asked to take risks foreign to conditions usual to them; fourthly, the inhabitants of the countries that receive those whom we send, and who are undoubtedly influenced for good or evil by the material exported, by the example set by that material—morally, physically, and hygienically. Hence, only the fit should "take up the white man's burden," and we should only "send forth the best we breed."

Let us first consider what we are to understand by the term "the tropics."

We have all been taught, at some time or other, that the tropics form the zone around the earth, extending 23½ degrees on either side of the equator, the northern limit being the Tropic of Cancer and the southern boundary the Tropic of Capricorn, the whole region being called the torrid zone. If we stop with this knowledge, we have no idea of the climatic conditions to be met with. For about 12 degrees on either side of the equator, at the sea-level, you have torrid heat. But, since the highest mountains of the world are found in these regions, every variety of climate is experienced, from the true tropical of the coast—

> A listless climate made, where, sooth to say,
> No living wight could work, nor carèd even to play,

where if the health be ill,

> The soul sours, and gradual rancour grows
> Embittered more from peevish day to day.

Between this heat and the almost arctic conditions of perpetual snow and ice, in the most elevated regions,

there is a zone, seldom thought of by the dweller in Europe—the third temperate zone. There the scenery and climate are often all that the fancy can picture. With advancing tropical hygiene these localities may possibly become partly a white man's country. The conditions of life being so varied, they can only be appreciated by those who have lived there.

We know it is in the tropics more especially that the lives of the lowest organisms are supported at the expense of the higher ones. It is there that the worst of the scourges of man are traceable to parasitic invasion. It is there that every condition requisite for the natural cultivation of pathogenic life is found. It is there that parasitic invasion is much more highly destructive to the human race than is its malign agency on our species in the temperate regions.

For a crop to grow, two things are requisite: (*a*) Seed; (*b*) soil.

Since the parasitic seed everywhere abounds in the torrid zone, the aim of the sojourner—that "stranger among strange faces"—is so to live that his body may be but bare and stony ground when the germs fall thereon.

The aim of the medical examiner should be to seek out those with the fewest flaws—those with the machinery least likely to break down under a stress greater than that for which the European was evolved.

The examiner must never forget that the man or woman he is sending out holds his or her life, in great measure, in subjection to the innate power to subdue the most apparently insignificant members of the animal and vegetable world. A knowledge of these organisms is due to the labours of workers in tropical pathology.

We seem to be near the time, owing to awakened tropical study, when Wisdom will at length be justified of her children, and research in these philanthropic studies will meet with generous endowment by those whose fortunes have been made in regions where thousands die from preventable disease. The great end of life is, as Huxley put it, not knowledge but action, or as a West End hospital has pithily emphasized it, by erecting in golden letters on its front, "help is better than sympathy."

In addition to climatic conditions are to be considered the racial surroundings, which will be influenced by the civilization or non-civilization present; the customs due to religious beliefs; and the bearing of the natives to strangers. All peoples are not equally pleasant to live with, and this often makes the amenities of life agreeable, or the reverse, according as the energy of the European is appreciated, or is obnoxious.

The dweller in the torrid zone finds the necessities of life to his hand with but little struggle; hence his philosophy is,

> Be sure it is of vanities most vain
> To toil for what you here, untoiling, may obtain,

and this reacts on him.

The European, quick, hasty, often impatient, thinks his own ways are ever the best for others, and he is continually pushing his ideas and practices where they are neither understood nor desired. It would be well if he could cultivate his activity without restlessness, his energy without impatience, and his inflexibility without ill humour; if he would follow the rule of life laid upon every man—that of discovering the mean, suited to his character, between self-assertion and self-restraint—in consonance with his environment.

Three special factors peculiar to the tropics directly bear on his characteristics: (*a*) The long-continued high temperatures; (*b*) the great diurnal variations; (*c*) the parasitic diseases.

The physiological effect of these is excessive cutaneous action, alternating with internal congestions. The ultimate results are a slow advancing asthenia and anaemia and a sapped constitution. Pathological changes now ensue—in deterioration of blood and degenerations due to hyperaemia, and to loss of action in the liver and intestines. Following on the incompetence of these viscera comes an accumulation of toxins.

The toxins, the continuous heat, and the impoverishment of the blood increase nervous irritability, and there follows a lessening of the controlling influences of the nervous system over nutrition and the mechanism of the vital functions.

The individual who is able to get satisfactory work out has been able to accommodate the constitution to new physiological requirements. When successful the process will be accompanied by the acquisition of habits of thought and hygiene in keeping with the new surroundings. Certain organs will have more to do—liver, spleen, intestines, and skin. Certain have less to do, since the process elevates the activity of some and depresses that of others, but it is questionable whether perfect compensation is ever possible in the generality; and most individuals will ultimately suffer from tropical congestive diseases. The subjects of these worries are those so susceptible to sudden changes of temperature, especially cold and damp, which cause "chill"—a term much better understood by the practitioner in the tropics than his *confrère* in Europe. Another point we who have lived there have had so often impressed upon us is that once an individual has had a severe illness in the tropics, a prolonged change to Europe will be essential; whereas convalescence from a similar sort of breakdown in the temperate zone would possibly, without harm, lead to an immediate return to work.

The best kind of man to go to the tropics is the good ordinary type of Britisher, with a clear head "well screwed on," an even temper, not over intellectual; one who can take an interest in things around, not unduly introspective, not ever sighing for the flesh-pots of Piccadilly; one who can work hard and find pleasure therein, capable of bearing exposure to the sun; one who will practise temperance in all things, with self-control and common sense. He will have a mouth full of good teeth, a healthy appetite, and a good digestion; a bowel marked by regularity in action, but a tendency to constipation rather than looseness; possessing a chest with good expansion and a heart with plenty of give and take, a regular pulse and a healthy circulation; a liver and kidneys that act without drugs; and a skin clean, healthy, and not overmuch of the blonde type. Such a one will bear with honour to himself and credit to his country the white man's burden; will take an interest in life, will be an asset to his employers, and, appreciating the magnificence of his surroundings, find his work to his mind and inclination.

The best type of woman will be built on similar lines, and will be a true helpmeet to her husband. My professional observation has taught me, what all of us know, that the very best asset a working man in the tropics can possess is a true woman, and, with Chaucer, I concur and say, "What is better than wisdom? Woman. And what is better than a good woman? Nothing."

She will have her trials. Every source of annoyance to the husband will be even greater to her, for she has more leisure to think, and her chief danger is lack of occupation. But, if she interests herself in her house, and takes up and pursues some hobby to while away the time, she also will receive her reward, and find the tropics not unbearable.

The type of woman not wanted is the irritable and capricious. She who considers she is "misunderstood by her husband," given to headaches and backaches, and fits of the vapours—

> Who sometimes would laugh and sometimes would cry
> Then sudden waxed wroth, and all she knew not why—

who takes no interest in her house, or who has no pursuit to occupy her too great leisure, who must be amused and cannot amuse herself, whose sexual functions cause her to be a chronic and fault-finding invalid.

The unsuitable man is he who is a victim to migraine, headaches, any hereditary mental taint, or epilepsy; who bears heat ill, or suffers from insomnia, or is neurotic in any way. If he have irritable eyes that suffer from glare, or a high degree of myopia with fundus changes, he should be viewed with suspicion. If asthma worries him he should not go, and tuberculosis should bar him absolutely.

Since debilitating climatic influences are distinctly calculated to bring about early enfeeblement of the heart, the subject of athlete's heart must receive attention. Valvular troubles should be a bar, and arterio-sclerosis a cause of absolute exclusion.

Bad teeth, enlarged tonsils, adenoids, mastoid trouble, and any form of nasal obstruction should first be set right. A tendency to chronic dyspepsia and loose bowels, with disordered liver, leading to attacks of jaundice, must be carefully considered. A suspected appendix must first be

cases of physiological albuminuria, in my opinion, should not be accepted.

Victims of diabetes, or those addicted to drugs or alcohol, present nothing for second thought. The anaemic are quite unsuitable, and those of the enteric age should first be rendered immune.

The obese individual is heavily handicapped with possibilities of fevers, and heat, and consequent heart failure. I do not think he is fit to be sent to the tropics.

Subjects of gouty eczema, psoriasis, and bad acne, and cases of furunculosis, will do ill in hot regions, and ever be subject to the worries of Job when he used his potsherd.

Those suffering from syphilis, when the disease is active, should be kept at home; but once the complaint has been got in hand, other things being equal, a case can go through its further treatment quite well—certainly in India.

Subjects of marked varicose veins and bad haemorrhoids must have them first set right. Cases of varicocele require operation when seeking Government service. This is necessary in any pensionable employment, where it is not advisable to admit men with a disease showing objective signs, upon which subjective symptoms might be based by any one who may desire to malinger, and so escape duty, or service, or obtain leave wrongfully. My personal experience advises me to refuse such candidates who suffer from any form but the very smallest enlargement. It even gets worse under conditions of tropical work.

The subject of hernia, of course, is not admissible without the radical cure being performed successfully.

A class of unfit may, and do, live at ease within the tropics. These are certain of the weak-chested and scrofulous individuals, but never those with active tubercle. Some of us can recall instances of individuals —old tropical residents—anaemic, cachectic, with organic disease present, leading a happy existence in the plains of India. Their functional energy receives force from the external warmth, and the skin, stimulated to overaction, relieves the necessities of the debilitated internal organs. These old people have the physiological pendulum so set that the clock only goes in one position, and any sudden change, such as a high degree of humidity and rapid fall of temperature, met with at the beginning of the rains or in the hills, soon find their weak spots.

In considering the factors bearing on tropical enlistment one must look at the various sides.

1. That of the employer of labour, whether Government or private enterprise. Often candidates may be passed for a four years' spell of work that could not possibly be allowed for twenty years. Again, admission to a pensionable service from the employer's point of view must be more closely guarded than employ without pension.

2. The side of the would-be emigrant. It is not kindness to him, in the long run, nor is it to his interest to be passed fit if he be a doubtful life. It is better to stop his going to a place unsuited to his organism, and he should be advised to try climes of a temperate nature.

3. The side of the assurance company. Each tropical country, and each part of it, should be treated on its own merits. Actual personal knowledge alone can afford a company advice worth having. A life might be a fair risk living in one part of India, and a bad one if sent to another part.

There is a class of European—the man on whom the tropical factors *seem* to have no influence. He follows his own free will in drink and diet, and appears none the worse. From the time of Job Charnock even until now examples are many. He is above the law, and is a sad rock of offence to his weaker-kneed fellow countrymen. They who try to imitate him get invalided or die in the attempt.

The type of returned old Indian of former days, such as Thackeray has drawn him, is not so often observed now—

> A military gent I see,
> And while his face I scan,
> I think you'll all agree with me,
> He comes from Hindustan.

He was of the period of curry and brandy-pawnee, and a survival from many.

Some of us can look back and think of old friends and comrades who started life with us years ago. Alas! how many "are not"!

"The names we loved to hear have been carved for many a year on the tomb."

They also were selected physically fit for tropical work. But, no matter how you make the choice, certain will drop out, and it is not always those with the apparently strongest bodies and best physique that last the longest, but rather those possessed with what I may call the tropical trinity—an even temperament, a healthy digestion, a sound nervous system—and of these three the greatest is the last, because it usually implies the first two.

The problem appears to be a sum in simple proportion. You are given the three factors:

1. The European, with his special physique, habits, and temperament.
2. The hot countries, with their climates and special parasitic diseases.
3. The inhabitants and their peculiarities.

State your question, arrange your factors, work out the sum, and find the fourth proportional, which will be, according to the interaction of the factors, the probable return of the exile, should he be endowed with the stated qualifications, in a fair condition of health after twenty-five to thirty years of strenuous life; or, when the qualifications have been deficient, an obituary notice and funeral in some foreign clime—perhaps the return of an invalid, who will eke out a miserable existence at the mercy of every thermometric or barometric change in these isles.

The right man, as Bacon says, "has fortitude and constancy of mind." "He enjoys the good without disdain, and endures the bad without impatience."

DISCUSSION.

Colonel T. H. HENDLEY, I.M.S. (ret.), said he cordially agreed with all Sir Havelock Charles had said, and should like to see his remarks printed and kept in every board-room dealing with candidates for the tropics. The reference to jaundice as disqualifying was of interest to the speaker personally, as he had suffered from jaundice twice quite early in his service, and yet he had stayed some thirty-three years after these attacks in the East, and with good health. As to the question of leave, the present custom in India was that the first leave should not be longer delayed than five or six years. The speaker had thirteen years' service before he took his first leave, but he believed the present system answered well. To the observation made by the opener of the discussion that even the unhealthiest tropical provinces often contained healthy areas in contiguous hills, it might be added that even in the plains there was sometimes a great difference in the healthiness of adjacent stations.

Dr. C. F. HARFORD (London), speaking as medical officer of the Church Missionary Society and of the experience of the medical board of that society, strongly emphasized the importance of persons intended for work in the tropics possessing a thoroughly sound nervous system. The adverse nervous influences of the tropics were partly due to the heat and the effects of climatic disease, but also due to strange languages and surroundings and the many influences which made it difficult for an individual to adapt himself to his environment. As regards the digestive system, there was decided risk in sending out people who had a tendency to looseness of the bowels. It also seemed to him undesirable to send out persons with chronic middle-ear disease, as this might interfere with the taking of quinine.

Colonel C. H. JOUBERT DE LA FERTÉ, I.M.S. (ret.), remarked that the advent of bacteriology had greatly helped to mitigate the terrors of life and the difficulties of the practice of medicine and surgery in tropical climates. This "bogey," if he might venture to call it so, of the tropics had much to do with mistaken views of the causes of disease in tropical countries. Before the introduction of antiseptics it used to be thought that all operations in the tropics were fraught with danger and should only be performed in the cold weather. But after many years' experience of abdominal surgery in Calcutta he was able to assert that surgery was as safe, if not safer, and the results as good there as in temperate climates. The free ventilation of the wards, with as many large windows as beds on both sides always open to currents

of fresh air, gave ideal conditions. Possibly for about six weeks during the hottest season surgical work slacked off, but this was more due to the physical strain on the operator than to fear of bad results to the patient. It had been very truly said that "life in India depends on the liver." If those who had to live in the tropics never forgot the existence of the hosts of "lowly organisms" which surrounded them day and night, lurking unsuspected in articles of food and drink, and if they knew what to avoid and led a temperate, active life, they would find that life in the tropics had more compensations and fewer terrors than was generally thought. He was in cordial agreement with all Sir Havelock Charles's postulates as to the best type of man and woman for the tropics, and the requirements essential in passing candidates for service in the tropics.

Lieutenant-Colonel A. M. Davies, I.M.S, who expressed his general agreement with the opening paper, included among other reasons making a vigorous nervous system desirable the facts that the amount of work that had to be done and that was done by the educated and professional classes in the tropics was habitually greater than at home, and that the amount of sleep that could be obtained was less than at home and more interrupted. Besides an equable temperament, a habit of mind that led to an active habit of body was a mental condition of great value.

Lieutenant-Colonel P. W. O'Gorman, I.M.S, said that temperance in diet, in drink, and exercise constituted the secret of keeping fit and well in a hot climate. Alcohol especially tended to produce the internal congestion alluded to by Sir Havelock Charles. Now that temperance amongst Europeans was more prevalent than formerly, diseases due to heat-stroke, hepatic and digestive trouble generally had been markedly reduced.

Dr. J. Preston Maxwell (Amoy, China) agreed with Dr. Harford's remark that care should be taken that persons passed for service in the tropics were able to take quinine. Some persons were quite unable to do so, and that was a serious matter in malarious regions. Individuals with any family history of mental unsoundness should be rejected without hesitation. Asthma cases as a rule did badly in the tropics, and persons who had passed gravel or small kidney calculi should be rejected, as the trouble was accentuated in the heat, and those individuals rapidly became neurasthenics.

Dr. Basil Price (London) made a preliminary communication, relevant to the subject under discussion, on an inquiry which he had carried out as Secretary to the Association of Medical Officers of Missionary Societies, amongst the missionaries of eighteen of the large English missionary societies who died or retired between 1890–1909. A return had been obtained relating to the causes of death and retirement in 893 missionaries of both sexes working in all parts of the subtropical and tropical zones. This number was made up as follows:

Ordained and lay missionaries	468
Doctors	21
Married women	228
Unmarried lady missionaries	176

The number of deaths was actually 623, but of these 32 were unclassified, leaving a total of 596. The retirements numbered 265, the cause being known in 243 of them.

A.—*The Causes of Deaths.*

1. *So-called Preventable Diseases.*

		Per cent.
Malaria	96	16
Enteric	65	10
Tuberculosis	44	7.4
Dysentery	36	6.4
Blackwater fever	36	6.4
Cholera	36	6.4
Typhus	22	3.8
Small-pox	20	3.2
Sunstroke / Heatstroke	9	1.4
	364	or 61

2. *Various Conditions.*

		Per cent.
Childbirth with complications	26	4.3
Cardiac conditions	21	3.8
Accidents	18	3
Cancer	14	2.3
Pneumonia	14	2.3
Senile decay	8	1.4
	101	

3. *Unusual Causes.*

Types of disease occurring in very small numbers or unclassified	163

It would be noticed that 364 out of the 628 deaths, or 61 per cent. of the total number, were due to a class of disease which was largely preventable. This emphasized the need of disseminating knowledge with regard to such diseases amongst those going abroad to tropical or subtropical zones.

B.—*The Causes of Retirements (243).*

The figures emphasized markedly the incidence of nervous and mental conditions as a cause of breakdown.

		Per cent.
Nervous breakdown of a neurasthenic type	65	
Insanity—melancholia	30	95 = 39
Tuberculosis	32	13
General breakdown—"debility"	14	5.7
Cardiac conditions	11	4.5
Post-malarial conditions	11	4.5
Senile decay	10	4.1
	173	
Other causes of various and isolated character	70	
	243	

The rather heavy mortality and incidence of tuberculosis (of various forms) came rather as a surprise. Of the 76 cases, 44 died in the field and 32 retired. In 20 cases family predisposition was stated positively to be present, but the actual development of symptoms appeared abroad, after in most cases a thorough medical examination before departure from England, and was put down to contraction of infection owing to environment and nature of work.

Dr. D. E. Anderson (London) said that all knew certain countries and islands in the tropics were so healthy as to be used by Europeans as health resorts, so that in any case if the tropics were condemned certain exceptions must be made. Madeira, the Canary Islands, the Bahamas, Natal, Rhodesia, and most of the islands of the Pacific, had always been looked upon as possessing a healthy climate. Even Mauritius, before malarial fever and the plague reached the island, was a very healthy place.

Dr. Sambon (London) said that some years ago he had put forward the view that the white man should prove as capable of acclimatization in India as in subtropical regions of America and Australia. The ground for this belief, which met with little acceptance, was that mortality and morbidity in the tropics were not due to the tropical climate *per se*, but mainly to parasitism. At that time little or next to nothing was known with regard to the true causation of tropical diseases. Most of them were ascribed to peculiar meteorological conditions of tropical regions. Now, however, a large number of these diseases had been thoroughly worked out, and all such as had been properly and fully investigated had proved to be parasitic diseases. Moreover, preventive measures taken against such diseases had proved surprisingly effective. The great victories over malaria and yellow fever, for instance, and more especially Major Gorgas's herculean labours in Cuba and in the Panama Canal zone, showed very clearly that the healthiness of the tropics was entirely within the control of the white man. From the discussion that had taken place he gathered that both Sir Havelock Charles and others there present believed that a long residence in the tropics was undoubtedly pernicious to the health of the white man. He had not heard all the opener's remarks, but had arrived in time to hear Sir Havelock Charles say: "What are the conditions of the European after several years of strenuous life in the tropics?" He would like to ask, in reply, What is the condition of a European after several years of

strenuous life in London or any other European town? All speakers had stated that to tropical places only perfectly healthy people should go. This would, no doubt, be a great desideratum, but the same advice might be given to people abroad intending to take the risks of life in this country; they should be sure to start with a clean bill of health if they expected to remain well after several years of strenuous life in London, Manchester, Birmingham, or Glasgow. He agreed that unhealthy Europeans should not be sent to the tropics, not only for their own sake, but also for that of the tropics, where already Europeans had been scattering broadcast their own diseases, and especially tuberculosis. The healthiness of the tropics varied considerably from one place to another. There were no tropical diseases, strictly speaking, but there were many diseases variously distributed in different tropical countries. Great changes had occurred during historic times in the healthiness of tropical countries. Some places had been rendered far more unhealthy through the introduction of new diseases, such as malaria, leprosy, syphilis, and tuberculosis, which were in such places previously unknown; others, through improved hygiene, had been rendered very much healthier, and, indeed, many compared most favourably with the best known European health resorts. Of course, the white man going to live in some tropical country must be prepared to contract the diseases peculiar to that country, to the infective conditions of which he might become exposed. But there were some very instructive examples at home of the same sort of thing—for instance, in the case of children when first sent to school. In considering the unhealthiness that in the past had been witnessed in Europeans after a long spell of life in the tropics, the state of their health at the time they left for the tropics, and the diseases which caused either their death or their ill health after returning home, had been somewhat overlooked.

Dr. G. M. HARSTON (Hong Kong) held that an equable temperament was of much value in withstanding the stress of life in tropical countries. The correction of a latent astigmatism was an important factor before proceeding to the tropics.

Professor FÜLLEBORN (Hamburg) said that his knowledge of the German colonies led him to agree fully with what Sir Havelock Charles had said. It was customary in Germany to give those who were about to live in the tropics 1 gram of quinine in order to see whether they could take the drug or not.

Mrs. B. S ELGOOD (Cairo) said the type of woman who did well in Egypt was the stout, well-formed, solid girl.

Dr. W. T. PROUT, C.M.G. (Liverpool), said that while, of course, any actual organic disease excluded a man from service in the unhealthy parts of the tropics, there were occasionally men who, while it was impossible to indicate any actual organic defect, yet were not suited for a useful life in the tropics. Young men with an obvious tendency to obesity and weedy, undersized youths were cases in point. On the whole, the blonde type of man proved more resistant in the tropics than the brunette. He could not agree with Dr. Sambon's views that the deterioration in health which took place in certain parts of the tropics was entirely parasitological. Prolonged residence, especially if combined with strenuous work, in a climate characterized by high temperature, with little range, and a high degree of relative humidity, produced not only a physical but a mental deterioration, associated with a considerable degree of anaemia, quite apart from any bacterial infection. An analogous condition occurred among masseurs employed in bathing establishments. Any one unable to take quinine should be absolutely rejected.

Dr. ANDREW BALFOUR (Khartoum) did not agree with Sir Havelock Charles that cases of functional albuminuria should without exception be rejected. Many cases were benefited by residence in certain tropical countries.

Dr. ST. GEORGE GRAY (Southern Nigeria) agreed that long-continued moist heat was a potent factor in the causation of diseases in the tropics. The quinine test was an excellent precaution and should be adopted.

Major P. DEE, I.M.S., after giving an interesting account of the work required of a medical officer in many stations in India, said that when he considered the hours of actual work and the responsibility the medical officer in India had to take upon his shoulders, the marvel was that white men could work for so long as they did in what was termed an unhealthy climate.

The PRESIDENT (Dr. F. M. Sandwith), in summing up the discussion, said he was struck with the whole trend of the remarks, which tended to show the full responsibility of taking up the "white man's burden," and of sending, when possible, to hot countries the best Europeans, rather than the second best. He emphasized Sir Havelock Charles's remarks on the importance of a stable nervous system, and drew attention to the fact that in hot countries the lunatic inmates of asylums were more excited and maniacal during summer heat than in the cool winter months. As asthma must be defined as a neurosis, it was obvious that it might sometimes be a bar to intending candidates, though he (the President) knew of men doing very good work in the tropics in spite of chronic asthma. The happy combination of physique and intelligence had been wanted in all times, and was specially demanded by the Duke of Wellington in the Peninsular campaigns. He wished to utter a word of protest against the ill-founded idea in some parts of Africa that the longer a missionary had served in Africa the less need was there for him to come home every two or three years. Though it was quite true that some men could become immune against malaria by long residence, they did not become "salted" against all the ills of a hot country, and he thought it very important, for physical, moral, and intellectual reasons, that no white man should spend many years on end without refreshing himself with the contact of his equals and superiors. With regard to psoriasis, a great deal depended upon the extent of its distribution. If the whole of a man's skin was affected, it was obvious that his sweat glands could not carry on their normal function, and advisers at home must remember that the skin was all-important to a man in the tropics. Personally, he had never had to refuse a candidate for obesity; on the contrary, the Anglo-Saxon race often had to be taught that a little fat was necessary. There was no doubt that a few rare individuals were unable to take even small doses of quinine, and in doubtful cases he had never found any difficulty in persuading candidates to try some experimental doses of quinine before they were finally accepted.

Sir R. HAVELOCK CHARLES, in his reply, said: Colonel Hendley has referred to the commonness of jaundice in India and the quick recovery therefrom. In this I agree, but the embargo I placed on it was in the case of an applicant the subject of chronic dyspepsia, loose bowels, disordered liver leading to attacks of jaundice. Such a one is unfit for India. He is not in the same category with the healthy man who from exposure contracts an attack of catarrhal jaundice. The sequelae would be quite different in the two cases. As to length of service in India without leave. It is to the interest of the employer of labour as well as the employee that leave should be taken at stated intervals. I consider that the rules for leave by the Government of India are based on this, and that on the whole they are very fair. Hardship sometimes occurs, due to the exigencies of the service, but that "is all in the day's pay." As to psoriasis: I referred to individuals the subjects of the disease from infancy. It stands to reason that if the skin be unhealthy the mucous lining of the body will have more to bear and organs to which the skin has a vicarious action will have to play more than their part. Still more—here is an individual with disease showing objective signs. He, in case he wishes to simulate subjective symptoms, will be the master of any medical board before which he may appear. For this reason alone he is unfit for Government service. Dr. Harford backs me up regarding the necessity of a strong nervous system, and he refers to want of sleep. I desire to be more emphatic on the point. Insomnia is about the worst thing that can occur to an official—from it anything will arise. Colonel Joubert de la Ferté has spoken very smooth things of the present state of India. No doubt improvements are many, and the amenities of life in the

large cities are much pleasanter; but in spite of all this, if the European is to do good work there he must be specially selected. The ordinary type of "weak-kneed" and "broken-backed" individual will not do now more than formerly. The work is hard, the climate is trying. Colonel Davies has drawn attention to the heart and nervous system. Subjects of athlete's heart, after careful examination, may be taken for civil life provided the arteries be normal. I agree regarding the importance of the nervous system. Dr. Sambon considers that the only thing to fear in the tropics is parasitic disease. This is not so. Clinical study has strongly shown me that climatic conditions play a most important part, and that the virulence of the incidence of many affections is accentuated by tropical environment. Yielding to no one in the regard in which I hold laboratory work, I maintain that any opinion on the matter based on laboratory work alone is futile. Clinical experience in the tropics at the bedside of the sick, examinations of returned invalids, with a good working knowledge of laboratory methods, must impress on any one whose practice has been extensive that, apart from parasitic invasion, there is still the climatic condition to be considered. The anthropologist, in following out the diversities of races, knows the effects of climate, and in the evolution of a people its environment, apart from parasitic action, is one of the strongest factors. Dr. Sambon states definitely that the European can be acclimatized in the tropics, and Dr. Fülleborn asks a question on the point. I deny Dr. Sambon's statement *in toto*. I would suggest to him a study of the Eurasian question in India. A quest to find any descendants of the Greek armies that followed Alexander and settled in India, and of descendants of the subjects of the Indo-Greek and Indo-Parthian dynasties. Again, in modern times, we know that it was only so long as the Moghul Empire was supported by fresh blood from Central Asia that it remained strong. Decadence of even the Central Asiatic followed in a few generations when settled in India. This is a very interesting question. I base my opinion on long observation and careful study of Asiatic peoples and their history. Dr. Elgood supports my contention regarding the "type of woman not wanted." I do not agree with her in advocating a lazy life for women. Give them occupation. Let them have "exercise," but do not confound it with "fatigue." Let them govern themselves with common sense—if possible—in the selection of pursuits for either study or exercise, bearing in mind that man should be manly and virile, and woman should be womanly and feminine. Nature abhors the half and-half. From Dr. Balfour I disagree when he suggests that the subjects of physiological albuminuria might be recruited. Why should Government burden itself with an inferior article when it can procure a better? Let philanthropic societies employ such individuals!

A REPORT ON THE SERUM TREATMENT OF A HORSE SUFFERING FROM TRYPANOSOMIASIS.

By A. Connal,
West African Medical Staff.

The serum treatment of trypanosomiasis in horses and cattle has been tried in numerous instances, with varying success. A permanent cure did not result in the present case, but the temporary improvement was definite, and one or two suggestions arise which are worthy of further consideration.

Trypanosomiasis in cattle and horses is very common in the neighbourhood of Lagos. Amongst the large herds of cattle in the vicinity of the town it is rare to see a well-nourished animal, the great bulk being very emaciated. The blood from a few of the bullocks has been examined, and has been found in every case to be heavily infected with trypanosomes of the dimorphon type.

Biting flies are very numerous. *Glossina palpalis* is not uncommon. The grounds of the Medical Research Institute are only a few yards from the railway line which passes from Ebute Metta, Lagos, to Jebba in Northern Nigeria. On more than one occasion a *Glossina palpalis* has been caught in the grounds shortly after a train from up-country had passed by. *Glossina morsitans*, on the other hand, must be rare, because no specimen has yet been sent to the institute from the district. Thus there is the occurrence of *Glossina palpalis*, yet no human trypanosomiasis, and the apparent absence of *Glossina morsitans*, with a very widespread infection of cattle with trypanosomiasis.

Of the other blood-sucking flies, numerous species of Tabanus are found, Stomoxys is very common, also Hippobosca, while Chrysops and Haematopota are rare. On one occasion, when there was a trypanosomiasis horse in the stable, Stomoxys was a great pest. Replete with their meal, they dotted the stable walls, and were easily caught. On squashing the insects on a slide and examining the fresh material under the microscope, a few living trypanosomes were seen. On stained specimens, however, it was found that the majority of the parasites were degenerated and broken up.

It should be mentioned also that at certain times of the year (December till April) large droves of donkeys come to the town from up country. These animals, too, were emaciated, and it was a common occurrence, in spite of the proverb, to see a dead donkey by the wayside. No attempts were made to get blood smears from these animals. It is extremely difficult to overcome the superstitious prejudices of the natives, and they object even to the approach of the entomologist.

As regards the actual experiment, horse No. I was sent to the laboratory by Mr. Cuthbertson, of Lagos, on February 28th, 1910. The animal had been certified by the Government veterinary official in the previous year as suffering from trypanosomiasis. No treatment had been given, and the horse had been used simply as a control in the experimental treatment of other animals. Shortly after the termination of the veterinary appointment, Mr. Cuthbertson saw signs of improvement in his horse, and at his suggestion blood smears were examined on February 20th, 1910. No parasites were found. A week later the horse was sent to the laboratory for observation. The blood was examined at different hours of the day, regularly thereafter, and no trypanosomes were ever observed. On March 5th, however, at 1 p.m., very scanty filaria embryos were seen, and at other times during the next two months these parasites were observed, always in the daytime. The question arises, Were the filaria embryos directly or indirectly responsible for the disappearance of the trypanosomes? Both parasites live in the blood plasma. Do the filaria embryos absorb the food of the trypanosomes, and thus starve them out, or are there toxic products inimical to the trypanosomes?

It remains to be mentioned that prominent chains of enlarged glands were present in horse No. I. These glands were especially numerous in the upper part of the hind and fore legs and in front of the chest. Each gland in turn broke down and ulcerated, leaving a large ulcerating surface with exuberant granulations. The animal gradually grew weaker, until the experiment had to be stopped, towards the end of April, owing to the impossibility of sterilizing the skin efficiently in order to withdraw blood for the serum. Horse No. II was a young animal which had apparently been in good health until about the middle of February, 1910. At this time it suddenly went off its feed, sickened, and had several rigors. On March 3rd numerous trypanosomes of the dimorphon type were found in the blood. The animal rapidly emaciated, walked with great difficulty, and stood with the legs far apart, the head hanging low, and the penis long and pendulous. On March 11th blood was withdrawn from a vein in the flank of Horse I. The blood was allowed to coagulate in a sterile flask, and after twenty-four hours the serum was injected intravenously into Horse II. The first dose was small, 1.5 c.cm. On the following day 5 c.cm. were injected; 20 c.cm. were administered on March 23rd, 40 c.cm. on March 29th, and 75 c.cm. on April 9th. Thereafter the treatment had to be stopped on account of the illness of Horse I.

The diminution in the number of trypanosomes will be seen in the accompanying table. When the treatment was begun the parasites numbered 312 in one breadth of the slide. The number was one-third less two days later, and in other six days no trypanosomes were seen in six breadths of the slide. Thereafter the number remained small, and for several days at a time none was seen.

The method of counting was to make a smear the complete breadth of the slide at some part, stain with Giemsa, and estimate the number of parasites in six complete

breadths of the slide. With the magnification employed, six breadths equalled 600 fields, and for comparative purposes this was thought to be sufficient.

The improvement in the general condition of Horse II was remarkable. By the middle of April he was able to trot and gallop, held his head well up, and had put on flesh. Since I came home on leave, however, I have heard that he steadily went back after the treatment was discontinued, and that he died about the end of May.

Numerous attempts were made to inoculate the trypanosomes into *Mus rattus*, *Mus decumanus*, and one species of field rat and of field mouse, without success.

The following table, relating to horse No. II, shows the number of trypanosomes discovered on certain dates, and the apparent results of the injection of serum:

Date.	Trypanosomes.	Serum.
1910.		
March 9th	307	
,, 11th	312	1·5 c.cm. serum.
,, 13th	198	5 c.cm. serum.
,, 15th	163	
,, 17th	117	
,, 19th	none	
,, 21st	3	
,, 23rd	70	20 c.cm. serum.
,, 24th to 26th	none	
,, 27th	0·6	
,, 28th	6	
,, 29th to 31st	0·6	40 c.cm. serum.
April 1st to 2nd	3	
,, 3rd to 6th	none	
,, 7th	2	
,, 8th to 11th	0·2	75 c.cm. serum.
,, 12th	2	
,, 13th	18	
,, 14th	10	
,, 15th	5	
,, 16th	2	
,, 17th	2	
,, 18th	7	
,, 19th to 20th	5	
,, 23rd	0·5	

LACTO-BACILLINE (METCHNIKOFF) IN THE TREATMENT OF TROPICAL INTESTINAL AILMENTS.

By JAMES CANTLIE, M.B., F.R.C.S.

WHEN Metchnikoff gave his lecture at the Royal Institute of Public Health in July, 1907, on the uses of lacto-bacilline in the treatment of disease, the writer believed that a valuable therapeutic agent was to hand whereby intestinal ailments so frequently met with in tropical practice could be successfully treated. Inquiry amongst the leading London chemists for the drug proving futile, the writer got Messrs. Martindale to telegraph to Paris for the necessary apparatus and appliances. These promptly arrived in two days, and the "soured milk" was administered at once to three cases of sprue and two cases of post-dysenteric flux (mucus with occasional blood). The cases of sprue all became worse; the diarrhœa increased, the acidity and acid smell of the faeces became more marked, and the bulk and fermenting (gaseous) appearance of the motions decidedly more apparent. After a week's trial the treatment had to be given up. Subsequent trials in other cases of sprue had the same unfortunate ending.

In post-dysenteric flux and in any form of subsequent colitis treatment by either soured milk or the administration of the powder in sugar and water proved disappointing. The only cases in which the treatment could be said to do good were those placed upon a strictly meat diet with which lacto-bacilline in sugar and water was given.

Consideration of the *rationale* of the treatment in cases of sprue would prepare one for a result of the kind. Sprue stools are essentially acid, and, in fact, an acid fermentation seems to be the essence of the ailment; and therefore to increase this by administering a bacillus which thrives in an acid medium would seem to be, and it has proved to be, therapeutically wrong. Of course, the acid fermentation processes in the two states may be opposed, and one might prove detrimental to the other. This, however, is not the case in sprue, and the only conclusion is that the soured milk or the administration of lacto-bacilline in any form is detrimental.

The only cases from the tropics in which the lacto-bacilline treatment has proved of some value will be found in persons suffering from what may be termed a "played-out digestion." This is a condition which every tropical practitioner is familiar with. The patient has lost flesh, the skin is dry and harsh, gastric and intestinal digestion is impaired, there is a fitful diarrhœa, and the patient is inclined to become morose and depressed. In such cases a ten days' course of soured milk treatment not infrequently alleviates the symptoms and strengthens the digestion. After the ten-day course the soured milk treatment should be abandoned, and, after two days' interval, an alkaline mixture should be given for a corresponding period. The interval of two days is advisable, as if the alkali is administered too soon after the lacto-bacilline is left off gaseous disturbances ensue in the intestines with considerable discomfort. Alternating acid and alkaline treatment by any plan of administration is highly advantageous in intestinal troubles of the kind mentioned. The flora of the acid intestinal fluid is not that of the alkaline, and vice versa, and the alternation of the media tends to get rid of organisms which may be detrimental. In the same way the writer alternates the "milk" and "meat" treatment of sprue and other tropical intestinal ailments. The organisms which thrive in a milk medium do not thrive when meat only is given, and vice versa: the flora of the intestine are thereby altered and obnoxious factors may be got rid of. The writer finds corroboration of this idea in suggestions made by Sir Lauder Brunton, and the success attending treatment by this method has proved most encouraging.

DISCUSSION.

Dr. ANDREW DUNCAN (Lieutenant-Colonel, I.M.S., ret.) said that he had adopted Mr. Cantlie's method of treating sprue, with marked benefit. The milk diet almost universally followed had many drawbacks, both from the practical and physiological points of view, whereas the "meat" régime administered according to Mr. Cantlie's plan had given in his (Colonel Duncan's) hands excellent results.

Dr. ROW (India) said the flora of the intestine in both health and in several ailments to which it was subject required to be more carefully worked out before scientific methods of treatment could be established.

PHLEBOTOMUS OR SANDFLY FEVER.

By Lieutenant-Colonel C. BIRT, R.A.M.C.

THIS fever, under various names, has long been known to prevail in the tropics. In the year 1804, Pym, an army medical officer, gave this account of cases which he had observed in the Mediterranean:

> The disease generally comes on like other fevers with slight headache, chilliness, shivering, sometimes sickness at the stomach. These symptoms are in a few hours followed by violent pain in the head, confined chiefly to the eyeballs and forehead, pain in the back and in the calves of the legs. The face becomes flushed and the eyes have a shining, watery appearance, with a slight degree of inflammation like those of a person half drunk. The skin is dry, the bowels in general bound, the tongue foul. The fever ends about the third day.

The military medical reports of Malta, which go back as far as 1822, year by year refer to extensive outbreaks of this febricula during the hot weather among newcomers. Sometimes more than half a regiment would be attacked in their first summer of residence on the island. In their second year and onwards they would be "seasoned," and the incidence would be much less. In 1909 only 6 per cent. of the cases were not first attacks.

Since sandfly fever is of short duration and causes no mortality, its existence had been quite overshadowed by the graver infections caused by the typhoid bacillus, and the *Micrococcus melitensis* respectively. The latter gave rise to 643 admissions in the year 1905, and each case averaged sixty-three days in hospital. When Malta fever was extinguished among the troops by prohibiting the use of goat's milk in 1906, sandfly fever appeared in relief and called for investigation. Thus in the year 1907 there were only 11 cases of Malta and 14 of enteric fever, but there were 340 of sandfly fever, then called "simple continued

fever." In 1908 the incidence of Malta and enteric fevers had fallen to 5 cases of each, but the sandfly fever admissions numbered 354.

Towards the end of the year 1908 R. Doerr[1] published the researches which he had made on a short febrile ailment which attacked a large proportion of the soldiers who had recently arrived at stations on the Dalmatian coast. It was prevalent only during the summer months. Doerr showed by experiment that this fever was caused by an invisible virus, present in the blood during the first day of the pyrexia, which was conveyed by the sandfly, *Phlebotomus papatasii*.

It was suggested[2] that a like study should be made of Pym's fever in Malta. Accordingly the writer was dispatched to that island, in April, 1909, to investigate experimentally the ailment and to ascertain the part played by the *Phlebotomus papatasii*, should it be found there.

1909.	Sandfly fever.	Enteric fever.	Malta fever.
May	8	5	—
June	34	4	—
July	89	--	—
August	47	—	1
September ...	39	—	—
October	26	—	—
November	0	1	—

The prevalence by months of fevers among the troops in Malta is shown above.

In 4	per cent. of the cases of sandfly fever there was pyrexia for		1	day.
In 16	per cent. there was pyrexia for		2	days.
In 30	,,	,,	3	,,
In 23	,,	,,	4	,,
In 12	,,	,,	5	,,
In 9	,,	,,	6	,,
In 3	,,	,,	7	,,
In 2	,,	,,	8	,,
In 0·5	,,	,,	9	,,
In 0.5	,,	,,	10	,,

In 85 per cent., therefore, the temperature was raised for five days only or under.

Sixty-five per cent. of the attacks occurred in soldiers who had resided less than a year in Malta. Ninety-two per cent. is the proportion of seizures in men who had landed less than two years previously. So it is evident that the newcomer is predisposed.

Symptoms.

The onset of phlebotomus fever is usually sudden, though sometimes the pyrexia may be preceded by lassitude, and discomfort for a few days. Chilliness may be complained of, and slight rigors observed, but never the chattering of the teeth of the ague onset. He is attacked with giddiness and a violent headache, chiefly confined to the brow and behind the eyes, exaggerated by the least movement of the head. He has pain in his back and in the calves of his legs, and stiffness of all the muscles of his body, which render him restless, though at the same time unwilling to move in bed, since he finds that a change of position only aggravates his discomfort. He is drowsy, and resents being disturbed. Sleep is either much broken or absent. His face is deeply flushed and somewhat tumid. His eyelids are slightly swollen and are half open. His eyes are bloodshot, so that Pym's description of the half drunken look of these patients is characteristic. The eyeballs are sensitive to movement and gentle pressure. The temperature rises to 101°–103° F. in a few hours, but the pulse remains slow, often not more than 80. It has been noted as low as 40. The patient may have vomited. This symptom occurs in about 25 per cent. of the cases. Diarrhoea with watery stools was marked in 20 per cent. Constipation is commonly observed.

The tongue becomes coated with a thin white fur, except at the tip and edges. It is inclined to be large and flabby. Taste is impaired. Loss of appetite is constant. Nausea is a frequent symptom. There is often congestion of the fauces and vesicles on the palate are frequent. Throat symptoms, however, are rarely noticed by the patient. There is no expectoration nor coryza. The skin is usually dry, though occasional perspirations may occur. But the profuse sweating, such as ends a fit of ague, does not take place. There is often much dilatation of the capillaries of the face, which causes puffiness of the eyelids and features, and gives a dissipated look to the sufferer. In the early Sixties, indeed, alcoholic excess was supposed to be the cause of Pym's fever. Many of the unfortunate soldiers who were attacked were shown in the army returns under the heading "Ebriositas." The erythema may extend to the neck and upper part of the chest. Rashes are absent, except those caused by insects. The joints are not swollen.

Blood was obtained by venepuncture in 23 instances.

Cultures on agar, in peptone broth, and in peptone bile have remained permanently sterile. Agglutination examinations were made in 47 cases. There has been no clumping of the *Micrococcus melitensis*, *Bacillus typhosus*, *B. paratyphosus* A and B by dilutions of the serums higher than those in which this occurs with normal blood. No malarial or other parasites, nor any structural alterations in the blood elements have been discovered. Leucopenia is an almost constant sign, and of considerable diagnostic value. The average of 35 estimations was 5,428 leucocytes per cubic millimetre. Several counts have been under 2,500. Franz's enumerations in 18 Dalmatian patients gave somewhat lower figures—3,700, 2,900, 3,300 leucocytes per cubic millimetre on the first, second, and third day of the illness. McCarrison obtained an average of 5,250 leucocytes per cubic millimetre in 20 Indian cases. The polynuclear leucocytes are diminished. They numbered 56 per cent. instead of the usual 65 to 75 per cent. The large and medium sized mononuclears are proportionately increased; the lymphocytes and eosinophiles decreased.

The negative results obtained in the blood examinations excluded malaria, relapsing, trypanosome, Malta, typhoid, streptococcic, staphylococcic, tetragenus, pneumococcic, and influenzal infections, and also Rogers's seven-day fever, which he attributes to a typhoid-like organism.

It was first necessary to ascertain if this short fever of Malta was a specific disease. Here experiments on the lower animals gave no assistance, for they were all immune to 5 c.cm. of the blood of a patient in the first day of his illness. When the nature of the investigation was explained to the gunners of No. 99 Company of the Royal Garrison Artillery, many of them came forward voluntarily and offered to submit to experiment. Had it not been for their intelligence and self-sacrificing courage, which paid no heed to their own sufferings, the inquiry into the origin and causation of Pym's fever would have remained barren.

Experiments with Blood.

1. Private J. Matthews, 2nd Somerset Light Infantry, was attacked with head and back ache on the morning of August 13th, 1909. His temperature was raised to 101° F. His face was flushed, and his conjunctivae injected. His tongue was large, moist, and coated with a thin white fur, except at the tip and edges. He was constipated. His leucocytes were reduced to 5,900 per cubic millimetres. There were no malarial parasites in films. Serum reactions were negative. Blood cultures remained sterile. Eighteen hours after the onset 9 c.cm. of blood were withdrawn from the median basilic vein. His febrile symptoms continued throughout the second day, accompanied with epigastric pain and tenderness. He made a rapid recovery.

2. Gunner Thomas Carey, 99th Company Royal Garrison Artillery, volunteered to receive Matthews's blood. Accordingly 1·5 c.cm. of the blood withdrawn from Matthews at 6.30 p.m. August 13th, 1909, were immediately injected subcutaneously into Carey's forearm. Three days sixteen hours later, on the morning of August 17th, he was seized with a feeling of chilliness, malaise, severe head and back ache. He was incapacitated from work, and lay on his bed tossing about, trying to get relief from his pains. His temperature that evening was 101.4° F. His face was deeply flushed, and his eyes were injected, and were tender to pressure and hypersensitive to light. His tongue was moist and coated with white fur. Loss of appetite, thirst, and constipation were present. There was no rash nor trace of the bites of insects. On the second day his fever was unabated, but his pulse-rate was 50 only. His leucocytes were 5,900 per cubic millimetre. The polynuclears were diminished to 57 per cent. The medium-sized mononuclears and transitionals were increased to 19 per cent. No malarial parasites were found. His temperature fell on the evening of the second day, and he made an uninterrupted recovery.

3. Gunner Albert Edward Bradley, at his own wish, received 2 c.cm. of the blood withdrawn from Matthews. Four days and sixteen hours after the subcutaneous inoculation he was compelled to take to bed on account of intense frontal headache and pains in his back and limbs, which gave him no ease. He had nausea and vomiting. His temperature ascended to 103° F.; his pulse remained below 90. He had the characteristic bon-vivant appearance of sandfly fever. He obtained but little sleep during the night, troubled with pains in his head

eyes, back, and knees. Next day his face was still flushed and his conjunctivae injected. His tongue was coated with white fur, except at the tip and edges. He complained of much stiffness generally. His leucocytes were reduced to 5,600 per cubic millimetre. The polynuclears were diminished to less than 50 per cent. The medium-sized mononuclears were relatively increased. Improvement began on the third day. No complication attended his convalescence.

4. Private T. Gillespie, 2nd Somerset Regiment, was admitted to hospital on September 15th, 1909. He came from barracks, in which numerous cases of sandfly fever had occurred. His forearms bore marks of *Phlebotomus* bites. Notwithstanding this, he was emphatic that his illness was caused by the sun, to which he had been exposed many hours that day. The theory that most of the short non-malarial pyrexial attacks of the tropics are due to solar influence has held sway so long and tenaciously that it was deemed advisable to test the virulence of the blood of one of these "sun-fever" cases. The attack came on suddenly, with pains of a severe character in his head, back, and calves of his legs. His comrades noticed that he looked very ill and could hardly walk. He bore the aspect of sandfly fever. His face was congested and puffy. His conjunctivae were seen to be deeply injected through his heavy, half-open eyelids. His temperature was 103.2°; his pulse 72 only. He complained of a racking headache, chiefly confined to the forehead and eyes, which were intolerant to light, movements of the head, and gentle pressure. His tongue was large, moist, and coated with a thin fur, except at the tip and edges. His blood contained no parasites, but the leucocytes were reduced to 6,500 per cubic millimetre. The polynuclears were decreased to 42 per cent., and the medium-sized mononuclears increased to 22 per cent. Next day, though his temperature was lower, his symptoms were unabated. He was constipated and vomited once. He began to improve at the end of forty-eight hours. His pulse-rate remained below 60 after the first observation, though his temperature did not fall till the fourth day. Twenty-three hours after the onset 9 c.cm. of blood were obtained by venepuncture; 3 c.cm. were inoculated into peptone broth, which remained sterile.

5. Gunner Albert Meades, 99th Company, Royal Garrison Artillery, elected to receive 3 c.cm. of Gillespie's blood immediately after it had been withdrawn. He was in excellent health, and had never been ill. On the evening following the subcutaneous injection he felt languid. Next day he had slight headache, loss of appetite, and disinclination for exertion. His bowels were sluggish and his tongue was rough and furred in the centre. Purgatives gave some relief, but his usual vigour did not return. The morning of September 22nd, five and a half days after inoculation, marked the onset of a very severe attack of phlebotomus fever. Headache began, accompanied with pains in his legs, knees, and back, which continued with increasing severity. In the evening his flushed face, tumid features, half-closed palpebral apertures, suffused conjunctivae, and his look of distress were typical signs of the infection. One-third of a gram of phenacetin was given to alleviate his headache, which had now become unbearable. On the second day of the attack his symptoms were unrelieved. He vomited once, and had much nausea and distaste for food. His tongue was thickly coated with white creamy fur, except at the tip and edges. He could scarcely move in bed, on account of the pains and stiffness in all his muscles. His headache was still intense. He had photophobia. Ocular movements were attended with pain. He was drowsy, restless, and resented being disturbed. His pulse-rate remained below 80. His leucocytes amounted to 4,125 per cubic millimetre only. The polynuclears were diminished. No malarial or other parasite was present. On the third day improvement began, though he was much harassed by stiffness and pain on moving his back and leg muscles. He slept the greater part of the day. On the fourth day his temperature declined and his symptoms were becoming less pronounced. His tongue remained dirty. His convalescence began on the fifth day and was uninterrupted. At no time did he exhibit any rash or marks of insects. His case affords a good example of a prodromal stage which has been observed by Pick in sandfly fever. A few examples of malaise and slight disorders of digestion preliminary to the onset of the pyrexia have been noted in the Malta epidemic.

6. Gunner George Dyer, of the same company, was Meades's companion in offering himself for experiment; 3 c.cm. of Gillespie's blood, immediately after it was shed, were injected beneath the skin of his forearm. Five and a half days later he complained of chilliness, headache, malaise, distaste for food. His temperature soon rose to 102.4° F.; the pains in his head, back, and limbs were so severe that he passed an almost sleepless night. Next morning all his symptoms were aggravated; his face was much flushed and his eyes suffused; his headache was tormenting; the general stiffness of his muscles curtailed his movements in bed; his tongue was thickly coated with brownish-white fur, except at the tip and edges; he had vesicles on the mucous membrane of his mouth and palate; his pulse was slow and irregular; his leucocytes were 8,575 per cubic millimetre. There was a decrease in the polynuclears and lymphocytes, and an increase to 38 per cent. in the medium-sized mononuclears. There were no malarial or other parasites. On the third day the intensity of his symptoms was becoming subdued, and he spent many hours in sleep. The fever subsided on the fourth day. A leucocyte count then gave 5,970 per cubic millimetre. On the fifth day he had nearly recovered his usual health, but his pulse was still slow and irregular. No rash was observed throughout his illness.

The evidence from these experiments shows that the blood of patients suffering from the short summer fever of Malta is virulent, and capable of inducing the fever in healthy men, if taken within twenty-four hours of the onset, and that the blood of a person who attributed his illness to exposure to the sun was virulent, and induced fever in two normal individuals.

The nature of the virus was investigated by filtration experiments.

Five c.cm. of Matthews's blood was mixed with 45 c.cm. of sterile physiological salt solution before coagulation had taken place. The mixture was placed in a Cobbett's filter which had been tested with an emulsion of *Micrococcus melitensis* and sterilized. It was fitted with a "Chamberland F. candle controlle." Filtration was conducted under the pressure of gravity only, at a temperature of 78° F.; 20 c.cm. of filtrate were collected in twenty-four hours, which proved sterile on culture on agar. After completion of the process the filter was again tested with the *M. melitensis* and was found to be proof against this minute organism.

Seven c.cm. of this filtrate, representing 0.7 c.cm. of fresh blood, were injected beneath the skin of the forearm of Gunner Edwin George Bennett, 99th Company Royal Garrison Artillery, who willingly consented to offer himself for experiment. Four days and twenty-one hours later he began to feel unwell. His head and back ached. His face became flushed; his eyes were suffused and the eyeballs tender on pressure. His temperature was raised to 101° F., but his pulse-rate was below 60. He passed an almost sleepless night, caused by the pains and aches in his head, eyes, and back. Anorexia and constipation were marked. His leucocytes were 10,100 per c.mm. There was a relative diminution in the polynuclears, with an increase in the medium-sized mononuclears. His temperature did not reach the normal level until the eighth day. Convalescence was rapid.

Six c.cm. of the same filtrate, which had been preserved in the dark at a temperature of 75° to 80° F. for a week, were injected beneath the skin of Gunner James McCauley, another willing volunteer. This corresponded with 0.6 c.cm. of undiluted blood. Four and a half days later he began to feel unwell, lost his appetite, and complained of headache. He felt inclined to lie down all day. His evening temperature was 99.4° F. and his pulse 72. His face was congested and his eyes were suffused and heavy. Next day his symptoms passed off.

Hence the virus of sandfly fever can pass through a Pasteur-Chamberland filter and can retain its activity *in vitro* for a week.

The sandfly of Malta is the *Phlebotomus papatasii*, which makes its appearance in scant numbers at the beginning of May. It becomes more numerous as summer advances, and disappears at the end of October. It has been found in all places where cases of Pym's fever arose. Nearly 3,000 of these flies were captured and put in cages in order to study their habits and life-history; but they are short-lived in captivity. Grassi,[3] the authority on *Phlebotomus*, succeeded in rearing it from ovum to imago only after years of failure and in finding its larvae in the field. Though many officers, non-commissioned officers, and men of the R.A.M.C. made strenuous efforts to discover the breeding places of the sandfly in Malta last year, they were all disappointed. Captain P. J. Marett, R.A.M.C., has now been successful. In June of this year he found the larvae and pupae of *Phlebotomus* in the interior of loosely constructed stone walls, and has reared them to maturity.

Experiments with Infected Sandflies.

Gunner Finn, who was attacked with the usual symptoms of sandfly fever, accompanied with epigastric pain, vomiting, and diarrhoea, introduced his forearm into a cage containing recently captured phlebotomi, ten hours after the onset. On withdrawing his forearm half an hour later there were marks of seven punctures, which rapidly became the centres of urticarial spots. These vanished in a few hours. No trace of the bites was visible next day.

Doerr had shown that the virus of the Dalmatian fever undergoes elaboration in the *Phlebotomus*, since they are not infective immediately after sucking virulent blood.

These infected sandflies were therefore carefully watched for seven days, at the end of which Lieutenant H. G. Gibson, R.A.M.C., introduced his forearm into their cage, and was bitten by one fly only. A small irritable papule was the result, which remained visible for forty-eight hours.

Seven days after being stung he began to feel ill. Nausea and repeated vomiting came on. Headache, vertigo, pains in his eyes, back, lower limbs, and abdomen caused him to pass a sleepless night. Movements in bed were attended with much discomfort. He had the usual appearance of Pym's fever, marked by the deep congestion of his face and conjunctivae,

and somewhat swollen features. His tongue was coated with a thin white fur. Loss of taste and appetite, much nausea, giddiness, constipation, stiffness in his trunk and limbs, continued. His temperature was raised to 100.2° F., but the pulse-rate was 66 only. At the end of the third day his symptoms had subsided.

Another cage of sandflies was infected by Private Stansbury ten hours after the onset of a typical attack of phlebotomus fever. Though several of the insects sucked his blood, no trace of their bites remained next morning.

Ten days later, Corporal H. Griggs, R.A.M.C., put his forearm into the cage and was thrice stung. After an incubation period of six days and eight hours he began to feel chilly and to suffer from severe frontal headache, giddiness, pains in his legs and back, anorexia, thirst, and high fever. Next day his symptoms were aggravated; he felt weaker and became faint when he attempted to stand. He was constipated. On the morning of the third day he was prostrated with pains in his head, trunk, and limbs, weakness and giddiness. His face was much flushed, his conjunctivae suffused, his eyes tender and intolerant of light. He had the aspect of severe illness. His tongue was large, moist, and coated with white fur except at the tip and edges. Examination of his blood showed no parasites, and gave negative reactions with the *Micrococcus melitensis* and *B. typhosus*. His leucocytes were reduced to 4,050 per cubic millimetre. His pulse continued slow and irregular throughout the fever. There was no amelioration of the symptoms until the seventh day. He rapidly regained his usually robust health.

A cage containing about seventy sandflies which had been allowed to feed on three patients in the first day of their pyrexia was conveyed for the writer to London by Lieutenant-Colonel J. J. Gerrard, R.A.M.C. Sir William Leishman, Lieutenants H. S. Ranken and F. W. M. Cunningham, R.A.M.C., proffered their forearms to the flies immediately after their arrival at the Royal Army Medical College, London. Sir William Leishman is in doubt whether they attacked him. He could find no trace of a puncture.

Lieutenant Ranken was twice bitten. Minute ecchymoses formed round the site of the stings. Five days later he felt cold and uncomfortable, and suffered from frontal and temporal headache. Next day his malaise continued, and diarrhoea began, which remained uncontrolled until the fourth day. He then speedily regained his health. No pyrexia was noted.

Lieutenant Cunningham was bitten by one *Phlebotomus* only. The mark of the puncture disappeared in twenty-four hours. After an incubation period of five days he began to feel unwell. He had headache, weariness, and general malaise. Diarrhoea began and continued next day. On the third and fourth days he felt well. On the morning of the fifth day he had a rigor, which some minutes later recurred with greater severity; no thermometric observation was then made; his pulse-rate was 90. Shortly afterwards he fell asleep, and woke up feeling well.

Franz[4] has noted that in those cases of sandfly-infection in which the intestinal symptoms are pronounced the temperature may remain within the normal limits.

This experimental evidence shows that the sandfly of Malta, *Phlebotomus papatasii*, can convey the virus, and that the bite of one fly only is sufficient for the purpose; also that the sandflies are infective seven to ten days after sucking virulent blood.

Sandfly fever is prevalent throughout the Mediterranean area. In the first half of last century it was common in Gibraltar—July was the month of greatest incidence. Of recent years the number of cases among the troops has much diminished. Sandflies are now only sparsely scattered on the Rock. When our troops first occupied Cyprus the infection was rampant, but it is now less in evidence. In the old records of the military occupation of the Ionian islands, Corfu, Paxo, Santa Maura, Cephalonia, Ithaca, Zante, Cerigo, which date back to 1817, Pym's febricula occurred in summer epidemics in the British garrisons. July was the month of greatest incidence.

We read that at Santa Maura in the year 1828, the fever began in June and ended in October, but not before almost every individual had been attacked.

Surgeon-General J. G. MacNeece and the writer found that both the fever and the *Phlebotomus papatasii* existed in Crete in 1909. Sandfly fever had been there recognized as an infection distinct from ague by Major A. E. Master and other medical officers. The suffused conjunctiva had caused it to be given the slang name "pink eye."

In Dalmatia the epidemics may assume great proportions. In one station 42 per cent. of the Austrian troops were attacked in July and August. The disease on the Adriatic littoral is a graver ailment than the Malta type. Convalescence may be protracted for weeks on account of mental depression, giddiness, disorders of digestion, etc.

In Egypt between 200 and 300 cases occur in the British garrison every year. The writer's own experience of the Aden summer fever enables him to say that it is similar to, though more severe than, the Malta infection.

In India explosive summer outbreaks occur in many parts, notably in Peshawar and the Punjab generally. As in Herzegovina, the disease may assume a grave aspect, and cholera-like symptoms have been noted. In 1906, 1,220 cases occurred among 3,521 native soldiers stationed at Abbottabad. September was the month of greatest incidence, when there were 556 admissions. The *Phlebotomus papatasii* is widespread throughout India. The epidemics in Chitral and Kila Drosh were closely studied by Captain McCarrison[5] in 1903–4, who suspected that the sandfly might be the agency by which the fever was spread. Unfortunately his experiments failed. He was on the verge of the discovery afterwards achieved by Doerr.

Seventy or eighty cases are recorded each year in the returns of our troops stationed in the Straits Settlements.

For the prevention of the disease isolation of the patient during the first forty-eight hours only of his illness in sandfly-proof nets is required. Doerr[6] has shown that the blood is avirulent after the end of the second day.

Captain Marett's discovery of the pupae and larvae in the crannies of sun-parched walls, coupled with the fact that the sandfly months are the rainless months in every part of the world, suggests that moisture is inimical to them. It seems probable that their numbers might be lessened by spraying their haunts with sea water in the maritime areas where sandfly fever is epidemic.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACTION AND VITAL REACTION IN NATURE WITH REGARD TO VACCINE-THERAPY.

For the cure of disease, if not for the prevention of disease, the results of vaccine-therapy do not as yet seem brilliant. Surely this is not very astonishing when one considers what vaccine-therapy is. For hundreds and thousands of years Nature has been treating her children by a form of inoculation-treatment in all kinds of infections. Nature's treatment, indeed, dates from the commencement of the infectious diseases themselves. At last her method of treatment has been partially discovered, and great honour is indeed due to those who by their efforts discover Nature's secret methods and endeavour to make their discoveries useful to mankind. Nature's auto-inoculation is always going on, and is automatically regulated according to the circumstances of the case. In acute infections, when the amount of auto-inoculation is great, the patient (owing to his weakness) is forced to rest, and so he has to reserve his strength as far as possible, and does not unnecessarily increase the amount of the circulating toxins. In chronic infections and during convalescence Nature encourages a certain amount of exercise and promotes auto-inoculation, whilst we help Nature by providing the patient with pure air, suitable food, etc. By the help of the law of the survival of the fittest this (Nature's) automatic mechanism of vaccine-therapy has during ages been perfecting itself, and though in individual cases Nature's method can doubtless be advantageously regulated or improved on by the skilful modern vaccine-therapist, small wonder is it that the vaccine-therapist's inoculations do

not seem like becoming a panacea for infectious diseases. Probably, in very many cases, Nature's scale of auto-inoculation doses—that is, her automatic adjustment of inoculation—cannot be improved upon. I feel tempted to ask whether some of the apparently brilliant results of the vaccine-therapists are really such triumphs as they at first sight appear to be. Let us take an instance. Every one who has examined many healthy men for life assurance knows how frequently those who have formerly had gonorrhoea pass "threads" in their urine. I think that the presence of such urinary "threads" (free from gonococci) often persists throughout life without causing any inconvenience. I have heard of a man who became miserable in his mind because he had such threads in his urine, and worried his doctor in proportion. At last, I believe, the threads were found to contain staphylococci, and a course of vaccine-therapy led to their complete removal from the urine. Is it not possible that Nature sometimes, like the law, *de minimis non curat*, and that this man's mental condition was really his chief disease? But I do not for a moment mean to deny the possibility of modern vaccine-therapy sometimes achieving real "triumphs."

London, W. F. PARKES WEBER, M.D.

EXTRAUTERINE GESTATION.

MY only reason for reporting the following two cases of extrauterine gestation is the extreme rarity of such cases in this country. The first case was that of a Persian lady, aged 24 years, the mother of two children, the youngest aged four years. She was suddenly seized during the night with severe pain in the right iliac region, accompanied with haemorrhage. She awoke her husband, who found her pale and pulseless. Native hakeems were called, who injected morphine freely, and applied ice to the abdomen. These measures greatly relieved the pain. Thinking the pain was due to suppressed menstruation, as she was some fifteen days beyond her period, Jewish women were then called, who used measures to bring about the desired result. The haemorrhage reappeared. The pain continued at intervals, and a lump gradually appeared to the right of the pubes. Exactly six weeks after the first attack of pain I was called to see her. She was then more or less under the influence of morphine; she looked extremely ill, complaining of much pain, describing it as of a bearing down or expulsive character. The tongue was coated, bowels very constipated, with occasional vomiting. The pulse was small, compressible, 84 per minute. There was pain and difficulty on micturition. Temperature 101°. The abdomen was tense, but not distended. She was removed to the hospital on the same day, and kept quietly in bed, the diet and bowels carefully regulated, so that her general condition improved considerably. The following menstrual history was obtained: Since the birth of her last child four years ago the menses were scanty; the two months preceding her present illness the discharge was scarcely noticeable. There was no history of her having passed casts at any time. A blood count showed a leucocytosis of 18,000 white cells per c.cm. Her husband gave the history of a chronic posterior urethritis. A tumour as large as a pigeon's egg could be felt and seen above and to the right of the pubes, which was very painful on pressure. *Per vaginam* the uterus was very sensitive on pressure; the cervix was short; a soft, boggy mass could be felt filling up Douglas's pouch. On June 20th the abdomen was opened. The tumour could plainly be seen in the broad ligament, close to the uterus. There was much blood clot in the pelvic cavity. The tumour was clamped, ligatured, and removed. A great deal of old blood clot was removed from Douglas's pouch. After the operation the patient was treated by saline transfusion and injections of strychnine. She made an excellent recovery, and left the hospital at the end of three weeks.

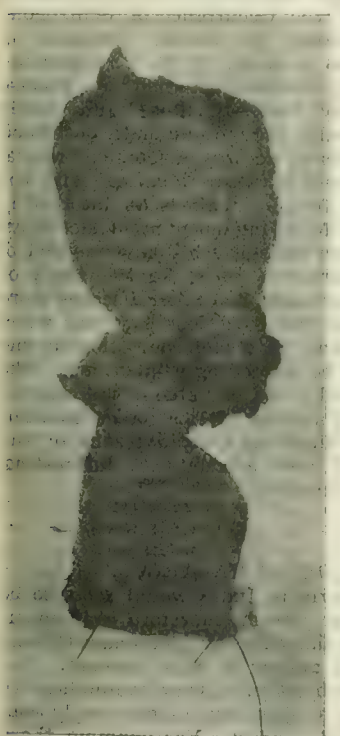


Fig. 1.—Tumour removed from Case I.

The second case was that of Mrs. T., a European. She had had one confinement some years previously, which was followed by leucorrhoea and menorrhagia. The history of the attack was as follows:

Whilst visiting a neighbour on July 18th, 1909, she was seized with a sharp pain in the abdomen, with haemorrhage. She could scarcely crawl upstairs to her own home. When seen by me she was constantly retching, with colicky pains in the abdomen, fainting, and great prostration, skin moist, pulse small, soft, and rapid. There was no secretion in the breasts. The abdomen was lax, no bulging could be seen, but there was dullness in the lower abdomen, chiefly on the left side. On vaginal examination a tumour could be felt to the left of the uterus in the broad ligament, which was very painful on pressure; a glairy bloody discharge remained on the finger. When seen again, as soon as a truce was declared, I found her condition so serious that, on consultation with Drs. Lindley and Neligan, it was agreed to operate as quickly as possible at her own house, a diagnosis of extrauterine pregnancy being made. The operation was accordingly performed on July 27th. On opening the abdomen there was considerable pelvic peritonitis, the bowels being matted together. There was also much old clot in Douglas's pouch, which was carefully sponged out. The tumour was easily removed with little loss of blood. The patient suffered severe shock, and in spite of every care gradually sank and died in thirty-six hours. An operation could not have been performed under worse circumstances, as the city was in a state of siege when she first fell ill, and the operation was done at the earliest possible moment, but much valuable time had been lost.

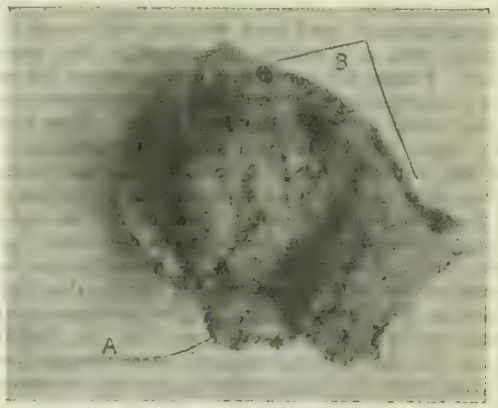


Fig. 2.—Case II. A, Silver wire in Fallopian tube; B, site of rupture.

JOSEPH SCOTT,
Medical Superintendent, Indo-European Telegraph Department.

Teheran, Persia.

THE seventh International Congress of Dermatology will be held in Rome, September 25th to 29th, 1911, under the presidency of Professor Tommaso de Amicis, of Naples, Senator of the Kingdom of Italy. The general secretary is Dr. Gaetano Ciarrocchi, of Rome.

WE are requested to point out that the Jervis Street Hospital is one of those in Dublin which afford special opportunities for obtaining clinical instruction in various branches of medicine and surgery. It has a new out-patient department and separate clinics for gynaecology, ophthalmology, and other specialities. Twelve resident appointments are made annually, four being tenable by qualified practitioners and the rest by senior students. Full particulars can be obtained from Dr. F. Callaghan, honorary secretary to the Medical Board, 38, Westland Row, Dublin.

Reviews.

TROPICAL MEDICINE.

A VERY excellent and accurate account of tropical medicine is to be found in the recently published *Manual of Tropical Medicine*[1] by Drs. CASTELLANI and CHALMERS of Colombo, Ceylon. Necessarily a book dealing in detail with the many diverse subjects which make up tropical medicine of the present day must be a large one, and this is so as regards the volume under discussion, the text, with the index and list of authorities, running to 1242 pages. The plan of the work, which is a good one, is as follows: Part I. introductory, deals with the history of tropical medicine, climate, the effects of tropical climates on man and the incidence of disease in the tropics. Part II is concerned with the causation of disease in the tropics, and consists of a section on physical causes of disease, chemical causes of disease, and thirdly, the biological causes of disease. The latter section deals with the zoology, classification, and description of the protozoan and metazoan parasites concerned in the production of disease in man and the lower animals. Part III has also three sections: A, fevers; B, general diseases; and C, systemic diseases. An index and list of authorities terminates the work. The zoological part of the work is very full and accurate, and is thoroughly up to date both as regards description and nomenclature. The international code of nomenclature laid down by zoologists is strictly followed, and though this changes some of the familiar names of common parasites, yet in the long run it must conduce to clearness, because once the names are finally settled they will remain and be universally used by all. It is to be hoped, however, that systematists will avoid the constant production of new genera, often on insufficient grounds, and that workers will avoid rushing into print with new names for parasites that are really not new. Points for criticism in this part of the manual are the junction of the haemoflagellates and haemosporidia into one order or tribe, the Binucleata. The inversion of the ends of the trypanosomes—for example, talking of the usually accepted anterior end as posterior—this can only lead to confusion, and there is equally good proof that the old nomenclature is as correct as the new—the change of the term "melanin" to "haemozoin," and the question of the nomenclature of the haemogregarines and the classification of the spirochaetes. In the description of the species of sarcocystis, p. 332, no mention is made of the one recently found and described by Darling in Panama. In the helminthological part Manson has not found the eggs of *Schistosomum japonicum* in cases from South Africa (p. 375), and 130 μ as the measurement of the *Microfilaria bancrofti* on page 410 is wrong, such small measurements of this parasite not existing. Apart from these very minor defects, however, the zoological part of the work is excellent, and should prove of the greatest value for reference. The purely medical part of the book, from page 631 to the end, is also well written; the histories of the different diseases are always given shortly and clearly, and all that it is necessary for one to know on the symptomatology, diagnosis, treatment, and otherwise will be found to follow. One of the chief points that strikes attention here is the very full and able manner in which the diseases of the skin are treated. Seven chapters are devoted to dermatology, and there is no other work on tropical medicine that approaches to such fullness as the present on this special subject. One would like to write further praising other points in the book, together with the index and list of authors—the latter will be found specially useful—but space will not permit. The enormous amount of work the authors must have done to produce such a work as the present will be fully appreciated by all who know the subject, and the same body of people will at once realize the value of the work, and will also see that the manual is one that will take a high place amongst the works on tropical medicine, first as a textbook and perhaps more especially as a book of reference. Drs. Castellani and Chalmers are to be heartily congratulated on the value of their first-class contribution to tropical medicine.

The *Annals of Tropical Medicine and Parasitology* for June and July, 1910,[2] contain many extremely interesting papers. That for June is devoted to the Amazon Yellow Fever Expedition, an expedition which was successfully carried out by Dr. Wolferstan Thomas. The latter had the good fortune to find a second case of oesophagostomiasis in man, this exceedingly rare condition only having been once recorded before—namely, by Dr. Brumpt in 1905, in a negro from the Omo River, near Lake Rudolph, in East Africa. Professor Railliet and his assistant, Mr. Henry, describe the zoological features of the parasite, and name it the *Oesophagostoma stephanostoma var. thomasi*. There is no doubt that systematic *post-mortem* examinations in the tropics by experts would reveal many treasures that for ages have been missed, and it will be interesting to note if other cases of this rare condition will be found by Dr. Thomas when he returns to Manáos. Other papers of interest by the same author are entitled, "The Sanitary Conditions and Diseases prevailing in Manáos, North Brazil, 1905 and 1909," and "Yellow Fever." In the July number amongst other papers are ones on Parasitic Granuloma, by A. R. Ferguson and Owen Richards; Factors in the Transmission and Prevention of Malaria in the Panama Canal Zone, by S. T. Darling; Preliminary Experiments on the Effects of Cold on Various Diseases in Small Animals, by Professor Ross and C. L. Williams; On the Occurrence of Schizogony in an Avian Leucocytozoon, *L. lovati*, Parasitic in the Red Grouse, *Lagopus scoticus*, by H. B. Fantham; and A Case of Sleeping Sickness Studied by Precise Enumerative Methods, by Professor Ross and David Thomson. Though clinically the granulomata described by Ferguson and Richards in no way resembled oriental sores, yet in several of them parasites identical with the *Leishmania tropica* were found. This is an interesting observation and one worth following out in other ulcerative conditions. Professor Ross hopes by his new method of precisely enumerating parasites to make the study of cases of malaria, trypanosomiasis, and other diseases more accurate. It also enables one to detect parasites when they are in numbers so small that their detection by the ordinary methods would be exceedingly laborious. The method in the future should prove of value in the class of cases mentioned. Darling's paper gives a good account of the different *Anophelines* inhabiting the canal zone on the Isthmus of Panama, and also accounts of interesting biting and infection experiments.

PROPHYLAXIS OF MALARIA.

THE prophylaxis of malaria in India would seem to be rather a vexed question at present, therefore it is opportune that a book bearing this title[3] by Lieutenant-Colonel P. HEHIR, I.M.S., should appear at this moment. The author deals with the subject in a very comprehensive manner and goes into the subject much more deeply than the title of his work would suggest. For example, there is a part on epidemiology, a part on pathology, and the third part deals with the prophylaxis, this requiring over 100 pages for its description. We may confine our remarks to this part, but this does not, however, mean that the first part of the work is not worth notice. As a matter of fact

[1] *Manual of Tropical Medicine.* By Aldo Castellani, M.D Florence; Privat-Docent (Naples) Director of the Clinic for Tropical Diseases, Ceylon; Physician, Seamen's Ward, General Hospital, Colombo; Professor of Tropical Medicine and Lecturer on Dermatology, Ceylon Medical College; and Albert J. Chalmers, M.D.Vic. and Liv., F.R.C.S. Eng., D.P.H.Camb., Registrar and Lecturer on Pathology and Animal Parasitology, Ceylon Medical College; Pathologist, General Hospital, Colombo. *University Series.* London: Bailliere, Tindall, and Cox. 1910. (Demy 8vo, pp. 1272; illustrations 373, and coloured plates; 21s.)

[2] *Annals of Tropical Medicine and Parasitology*, June 1st, 1910. Series T.M., vol. iv, No. 1. July 25th, 1910, Series T.M., vol. iv, No. 2, Issued by the Liverpool School of Tropical Medicine. Liverpool: At the University Press. London: Constable and Co., Limited, 10, Orange Street, Leicester Square, W.C. (10s. 6d. net.)

[3] *Prophylaxis of Malaria in India.* By Lieutenant-Colonel P. Hehir, I.M.S., M.D., F.R.C.P., F.R.C.S., and F.R.S.E., D.P.H.Camb., D.T.M. Liv. Univ., late Specialist in "Fevers," Northern Command; Medical Officer, 2nd Battalion 8th Gurkha Rifles, Lansdowne; Author of "Prevention of Disease and Inefficiency in Indian Frontier Warfare." Printed at the Pioneer Press, Allahabad. 1910.

it is excellent and gives a very good idea of that branch of the subject. Colonel Hehir begins his remarks on prophylaxis by giving a table of the methods commonly used. These need not be described here again as they are well known to all. After this each individual method is discussed in detail and so fully that there is little, if anything, to criticize adversely about them. On page 257 the author states that the advantages to be got by antimosquito measures in rural districts are comparatively limited, and he believes that mosquito reduction is specially for cities and towns being only applicable in a limited sense for villages. Though agreeing with this in some ways, yet one would rather treat every place, village or otherwise, strictly on its own merits, and when this is done it may be found that much good can be accomplished. In such a vast place as India there must necessarily be hundreds or thousands of different conditions requiring investigation, and until different areas are mapped out and studied no one can possibly tell what can or what cannot be done. The sanitary officer must join forces with the mosquito expert, medical or otherwise, if the best use is to be made of the money available, and after all is said and done the latter commodity must be present and in abundance before anything great can be accomplished. If the statement on p. 259 that "One has repeatedly heard the view of the dissemination of malaria through *Anophelines* ridiculed by intelligent officials of Government in various departments" is true, then it indicates a deplorable state of affairs in India, and one which the Government should take immediate and drastic steps to prevent in the future. Undoubtedly such general ignorance keeps back scientific progress, and the possessors of it can surely not be termed intelligent. As Colonel Hehir says, "No system of prophylaxis covers all places," and that is the crux of the whole situation. Colonel Hehir is to be congratulated on the fair way in which he puts the whole question of this somewhat difficult subject, and one sincerely hopes that his work will be well read in India and will do good in helping the onward march against malaria.

TROPICAL FEVERS.

Fevers in the Tropics, the well-known work by LEONARD ROGERS, Professor of Pathology in the Medical College, Calcutta, has now reached its second edition.[4] In the author's preface to this edition he explains how the work of revision is very difficult when one has official duties to perform, and is in a far distant tropical country. In this one thoroughly sympathises with him, and at the same time congratulates him on the results of his efforts. Only those who have tried to write in some far distant country, away from libraries, recent literature, fresh periodicals, and books, knows how heartless a task this is. Under the circumstances it has seemed best to him to leave the first part of the book—the first edition—alone, adding to this an addendum containing an account of the most important progress made during the last two years with regard to fevers in the tropics. The first part of the present edition up to p. 334, therefore, stands as before, and has already been reviewed; the present remarks apply to the addendum. As regards kala-azar, one agrees with the author when he states that "the infrequency with which he (Patton) obtained developmental forms of the Leishman-Donovan bodies in bed bugs, fed on cases of kala-azar, showing numerous parasites in their peripheral blood, is remarkable, and leaves some doubt as to whether this is the common and only source of infection." On the other hand, in fairness to this idea, he (Rogers) states that measures directed against bugs seem to have undoubtedly reduced the number of cases. The chapter on sleeping sickness deals chiefly with *Glossina palpalis*, the development of the trypanosomes in it, and with its destruction; this information being chiefly derived from the bulletins of the Sleeping Sickness Bureau. The most important parts of the addendum are, of course, the chapters entitled "Further Experience of the Ipecacuanha Treatment of Amoebic Hepatitis in Preventing Tropical Liver Abscess" and "Amoebic Suppurative Hepatitis or Tropical Liver Abscess." In one's own mind there is not the slightest doubt that the recommendation, made by Rogers, of using large doses of ipecacuanha in the treatment of the presuppurative stages of liver abscess, and now even in what one considers to be the beginning of suppuration, and in the after-treatment of the condition when the pus is let out, is a sound one, and no one who gives it a fair trial will have cause to rue its employment. One cannot read the accounts of some of his cases without being very much struck with the effects of the treatment, and certainly, even in England, many tropical cases of obscure liver troubles with pyrexia clear up under this ipecacuanha dosage in a marvellous fashion. The chapter on tropical liver abscess is specially good, as the author has had the good fortune not only of seeing so many cases but also of having access to the voluminous Calcutta records. As to whether surgeons will support his trocar method of evacuating abscesses by aspiration alone is doubtful, and his own brother officers have criticized it pretty severely already. Be that as it may, the injection of the quinine solution into the abscess cavity advocated by him would seem to be sound, and would also seem to shorten the suppuration considerably, and there does not, therefore, seem to be any definite reason why it should not be adopted. The observations on epidemic dropsy would seem to isolate this disease once and for all from beri-beri, though as rice seems to play a part in its production it may be allied to it. The appendix, full as it is of the latest information, should add to the value of the first part of the work, which, if one can judge by the fact of a second edition being required, would seem to have enjoyed considerable popularity.

[4] Oxford Medical Publications. *Fevers in the Tropics: Their Clinical and Microscopical Differentiation, Including the Milroy Lectures on Kala-Azar.* By Leonard Rogers, M.D., F.R.C.P., F.R.C.S., B.S., I.M.S., Professor of Pathology, Medical College, Calcutta; Fellow of the Calcutta University; Honorary Member of the United States Society of Tropical Diseases, and of the Philippines Medical Society. Second edition. London: Henry Frowde, and Hodder and Stoughton. 1910. (Cr. 4to, pp. 444; 8 figures; 83 charts; 11 plates. 21s.)

THE CULICIDAE.

A Monograph of the Culicidae of the World,[5] vol. v, by F. V. THEOBALD, will make the student of tropical medicine or entomology pause and wonder if there is to be any finality at all in this interesting branch of science. Since vol. iv was published twenty-one new genera and 392 new species have been described, and as the first two volumes have been out of print for some time it has been found necessary in the present volume to make mention at least of all the species described in any of its predecessors. Thus the present volume is not a mere supplement, for, containing tables for the determination of genera and species as well, it really becomes a work by itself, and one that should materially facilitate the use of the earlier volumes. Growth in the classification of the Culicidae since Theobald introduced his method of scale structures as an aid, has been phenomenal. Barely twelve years ago there were about six genera of mosquitos; now the subfamily Culicina alone contains eighty-three genera, and the number of species is legion. It will manifestly be seen that a thorough knowledge of all the different families, subfamilies, and genera of mosquitos is practically impossible for the ordinary medical man, and the subject, as a whole, has passed into the hands of entomological specialists, or, to be more accurate, into the hands of specialists on the Culicidae alone. There are signs even that an entire unanimity does not exist between the Culicidae specialists themselves, and lately a school has arisen that has thrown doubts on the scale method of classification first described and perfected by Mr. Theobald. Though the scale method of classification may not be perfect, yet it has certainly answered better than any other method invented, and such being the case should be retained. It is too much to expect complete harmony amongst scientific workers on any given subject, but if the habit of multiplying genera and species of mosquitos is to continue without attempting to see if these have been described before, then, as far as the medical man goes at

[5] *A Monograph of the Culicidae, or Mosquitos, Mainly Compiled from Collections received at the British Museum.* By Fred. V. Theobald, M.A. Vol. v. London: Printed by order of the Trustees. Sold by Longmans and Co.; B. Quariteh; Dulau and Co.; and at the British Museum (Natural History). 1910. (Demy 8vo, pp. 460. 25s.)

least, a revulsion of feeling will take place, and a reversion to the simpler classifications of previous days will have to be made. After all, only a very small percentage of mosquitos cause disease, and it will be sufficient for students of tropical medicine to have a good sound working knowledge of these alone. If others eventually are incriminated then they will have to be properly classified and entered on the lists required by medical men. Outside of the medical profession there is really little, if any, interest taken in this special branch of entomology. As regards points of special interest in the book, one notes that Mr. Theobald retains the name *Stegomyia fasciata*, and holds that this antedates Meigen's *calopus*, a term which has recently replaced *fasciata*, chiefly in America. A number of the old Taeniorhynchus species are placed in a newly formed genus, the *Chrysoconops;* and others of the old genus Culex are split up and placed in further new genera. The book is got up like the former volumes, is well illustrated, and contains a very good series of photographs of wing scales. It remains, without doubt, the standard book on mosquitos of the present time.

SLEEPING SICKNESS.

DR. HODGES, Principal Medical Officer of Health of Uganda, in discussing the question of treatment of sleeping sickness in his *Progress Report on the Uganda Sleeping Sickness Camps from December, 1906, to November, 1909*, concludes: (1) That the prospect of curing sleeping sickness by medicinal treatment has not materially increased; (2) that the percentage of apparent cures is, on the whole, very small, and practically negligible from the point of view of stamping out the disease or safeguarding the population; (3) that the percentage of apparent cures continues to diminish with lapse of time after treatment, while the death-rate continues to increase; (4) that though the percentage of improvement is slightly higher for some methods of treatment than for others, the percentages are so small as to render such differences of no great importance; (5) that the conclusions drawn in the report for 1908 have been borne out by the further experience gained since that time. These conclusions bear out the opinions of most of the speakers on the discussion on trypanosomiasis at the recent meeting of the British Medical Association held in London. The fact is, there is no specific drug for human trypanosomiasis, and the discovery of one is still a thing to be devoutly hoped for. Ehrlich's newest drug, technically known as "606," may prove to be this.

There is a wealth of material in No. X *Reports of the Sleeping Sickness Commission of the Royal Society*,[6] recently published. It deals principally with trypanosomiasis, and should be consulted in the original by all who are specially interested in this subject. Most of the papers are by Colonel Sir David Bruce, together with Captains Hamerton, Bateman, and Mackie, members of the Commission, but other workers also contribute. Professor Minchin, for example, writes a report on a series of blood parasites collected by the Commission; Mr. Plimmer, with others, writes on treatment: and Professor Cushny and Dr. Thomson also take up the latter subject. As regards treatment, there does not seem to be any definite progress to record, but it is only by careful experimental work such as is being done that success can be looked for in the future. From the point of view of prophylaxis of sleeping sickness in Uganda, the important fact found out by the Commission, that the *Glossinae* are still infective along the lake shore, is all-important. The flies have apparently retained their infectivity for a period of at least two years, and, as the authors put it, "how much longer they will remain infective it is impossible to say, but it is obvious that experiments should be continued in order to answer this important question." The native population can certainly not be allowed back to the shores of the Nyanza till the flies are no longer infective, and if some animal eventually be proved to be acting as a reservoir, then this may be never. The fact that *Glossina palpalis* may act as a carrier of animal trypanosomes, as well as those of man, complicates matters somewhat, and the impression one gains from reading this most recent work on trypanosomiasis is that the subject, instead of being finished, is only in its infancy. Many problems are still waiting solution. The illustrations and plates in the report are excellent, and Lady Bruce must be specially congratulated on the part she has played in preparing some of these. The report as a whole is a valuable contribution to the study of trypanosomiasis.

[6] *Reports of the Sleeping Sickness Commission of the Royal Society.* No. X. London: Printed by His Majesty's Stationery Office, by Darling and Son, Ltd., 34-40, Bacon Street, E. And to be purchased, either directly or through any bookseller, from Wyman and Sons, Ltd., Fetter Lane, E.C.; or Oliver and Boyd, Tweedale Court, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin. 1910. (3s.)

DISEASES OF THE SKIN.

THE eighth edition of the treatise on *Diseases of the Skin*,[7] by Dr. NEVINS HYDE, of Chicago, has just been issued. This new revised edition has been delayed on account of the untimely death of Dr. Frank Montgomery, long associated with the author in his task. Dr. Hyde has been assisted by Dr. Oliver Ormsby, of Chicago, in preparing the present edition, which reflects great credit on all concerned. We have already recorded our high appreciation of this treatise in previous notices. Among other points of interest in the present edition, the unpleasant results of the paraffin treatment of deformities to remove wrinkles, form dimples, and otherwise change the contour of the face, are insisted on. The author adds that the deformity resulting from the treatment is intense in some cases, and causes the patient much suffering and remorse. The remarks on acute lupus erythematosus might certainly be amplified. The chapter on pellagra contains many references to recent American investigations on the subject, the disease having only of recent years been recognized as existing in the United States. Although the damaged maize intoxication theory has been doubted and renewed researches in other directions are now in train, Dr. Hyde remarks that "the origin of some of the American cases has been distinctly traced to the consumption of maize producing a toxine after its storage." This treatise on diseases of the skin can be recommended, and as a work of reference for dermatologists the book is indispensable.

Dr. STELWAGON, of Philadelphia, whose large book on diseases of the skin is well known, has recently brought out a seventh edition[8] of his *Essentials*. This little volume belongs to Lumsden Question Compends. There is obviously a demand for this kind of book. It is not unusual to see students going about with short cuts to the knowledge of particular subjects, on the "wisdom while you wait" principle. This is mentally a disintegrating method, encouraged by a written system of examination leading to much cramming. It has been said concerning examinations that fools ask questions which wise men cannot answer, and there is some truth in the dictum. Let us hope that in the future the mere bookworm in medicine will be as extinct as the dodo. These compends fill, no doubt, a long-felt want. From such an author as Dr. Stelwagon it is very good of its kind, of course. That could not be otherwise. But we prefer to think of him as the writer of an excellent treatise on diseases of the skin.

SYPHILIS INSONTIUM.

FOLLOWING in the footsteps of Dr. Bulkley of New York, Dr. OSKAR SCHEUER of Vienna has written a book entitled *Syphilis Insontium*.[9] This title is a very bad one, quite apart from the question of innocence, for it implies a syphilis of the guilty, thus introducing the idea of sin, which is quite outside the province of medicine.

[7] *A Practical Treatise on Diseases of the Skin, for Students and Practitioners.* By James Nevins Hyde, A.M., M.D. Eighth revised edition. London: Bailliere, Tindall, and Cox. 1910. (Roy. 8vo, pp. 1126; 223 engravings and 58 plates. 25s.)

[8] *Essentials of Diseases of the Skin, including Syphilodermata; arranged in the form of Questions and Answers for Students of Medicine.* By Henry W. Stelwagon, M.D., Ph.D. Seventh edition, illustrated. Philadelphia and London: W. B. Saunders Company. 1909. (Cr. 8vo, pp. 291 4s.)

[9] *Die Syphilis der Unschuldigen (Syphilis Insontium).* Von Dr. Oskar Scheuer. Vienna and Berlin: Urban und Schwarzenburg. 1910. Sup. roy. 8vo, pp. 247. M.9.)

Moreover, in this particular instance, when we find the author solemnly describing "Schanker am Anus durch Päderastie," in the case of far from innocent actors, under the title of *Syphilis der Unschuldigen*, the situation becomes almost comic. As the book resolves itself into a survey of extragenital infection in syphilis, why not call it by that name? The subject of extragenital infection is of the very highest importance, and in Dr. Scheuer's volume are recorded a number of cases of this class. The medical man is apt to miss the nature of extragenital chancres, whereas syphilis is a disease he should always be on the look-out for. The author opens with a quotation of John Stuart Mill that you can no more cure and prevent the diseases of society than those of the body if you do not talk about them. Now, there is no doubt that syphilis is not sufficiently talked about with us; indeed, in our medical schools methodical teaching of the subject does not exist. Dr. Scheuer has brought together a large selection of cases, but they are only a selection, as syphilographers do not publish details of all the cases of extragenital lues coming under their notice. Among the writers on the subject the Russians stand out prominently, for it is well known how frequent extragenital syphilis is in that country. Dr. Scheuer insists on the sexual perversity of Paris. This is strange for a man practising in Vienna. All great cities are much the same in this respect, simply because man is man everywhere, and liable from the nature of things to the same sexual aberrations. Dr. Scheuer's book is well worth perusing. There is a good bibliography, but unfortunately no index.

NOTES ON BOOKS.

STRONG AND TEAGUE have recently[10] had encouraging results in the treatment of surra in the Philippines by the use of arseno-phenyl glycin, a drug first brought forward by Professor Ehrlich. They used the drug in two different ways: (1) By stages in which relatively small doses are given and at repeated intervals; (2) by one or several large doses. The second method proved much the most efficacious in monkeys and horses; but unfortunately as regards the latter the margin between the dose necessary to effect a complete cure and the fatal one was so small that death from the drug often occurred. Yet the authors do not hesitate to say that arseno-phenyl glycin has proved to be by far the most satisfactory means of treatment of trypanosomiasis (surra) yet discovered. The drug in their hands has shown itself to be very efficacious for the treatment and cure of surra infection in monkeys, and, though the results in horses are not so good, yet they are the best that have as yet been obtained. They state that they have for the first time been able to cure horses afflicted with this parasite, a thing they were never able to accomplish before with the drugs at their disposal. Though a certain success may be expected, then, in an epidemic, one can never predict with certainty whether in a given instance the horse will be cured or succumb first to the action of the drug; but, as the disease is invariably fatal to these animals without treatment, a trial of the drug should be made in the case of any horse of value. In an epidemic at a place called Alabang a sufficient percentage of horses was saved to demonstrate that the treatment is of some practical value. It does not, of course, follow that this drug may be of any special value in human trypanosomiasis, or in many of the different animal strains of trypanosomes found in Africa; but still any drug which gives the slightest hope should be persevered in and given an extended trial.

The Death-Dealing Insects and Their Story,[11] by C. CONYERS MORRELL, gives a very useful synopsis of the part some insects play in the transmission of tropical diseases. Intended for the laity, it is written in a plain and easy style, with technicalities and scientific terms kept in abeyance as much as possible. It should give any one who reads it carefully a very good general idea of the subject, and then this may be followed up by references to advanced works. The education of the laity in the tropics on subjects such as sanitation and insect prophylaxis is a very important one, and without doubt the best way that this may be attained is by the issue of pamphlets and easily-read booklets such as the above. This book, or similar ones, should be made compulsory in all schools in the tropics.

[10] *The Treatment of Trypanosomiasis, with Especial Reference to Surra.* By Richard P. Strong and Oscar Teague (from the Biological Laboratory, Bureau of Science, Manila, P.I.). *The Philippine Journal of Science*, vol. v. No. 1, February, 1910.

[11] *The Death-Dealing Insects and Their Story.* By C. Conyers Morrell. Manchester: H. A. W. Offices. 1910. (Cr. 8vo, pp. 87. 1s.)

Nova et Vetera.

MODERN FAITH HEALERS.

COUNT CAGLIOSTRO.

HISTORY affords many instances of the curious fact that when faith in established religion decays superstition flourishes most rankly even among those who have rejected the old beliefs. The break up of the old Roman religion was followed by widespread belief in sorcery, magic and the most extravagant quackery. The same thing occurred before the outbreak of the French Revolution when faith in Christianity had been sapped by the Encyclopaedists; and again in our own day, when rational religion is more and more replaced by fantastic forms of superstition which appeal not only to the half-educated but to many who with much superficial "culture" are lacking in the critical faculty and in the homely quality of common sense.

One of the most striking examples of the success of imposture which seems to us now so transparent that only the most ignorant could have been taken in by it, is afforded by the career of the famous quack who called himself Cagliostro. He made his appearance on the stage of quackery at a most opportune time. As Carlyle says:

> It was the very age of impostors, cut-purses, swindlers, double-goers, enthusiasts, ambiguous persons; quacks simple, quacks compound; crackbrained, or with deceit prepense; quacks and quackeries of all colours and kinds. How many Mesmerists, Magicians, Cabalists, Swedenborgians, Illuminati, Crucified Nuns, and Devils of Loudun! To which the Inquisition-Biographer adds Vampires, Sylphs, Rosicrucians, Freemasons, and an *Etcetera*. Consider your Schröpfers, Cagliostros, Casanovas, Saint Germains, Dr. Grahams; the Chevalier d'Eon, Psalmanazar, Abbé Paris, and the ghost of Cock Lane! As if Bedlam had broken loose; as if, rather, in that "spiritual Twelfth-hour of the night," the everlasting Pit had opened itself, and from *its* still blacker bosom had issued Madness and all manner of shapeless Misbirths, to masquerade and chatter there.

To us now the man appears simply as a quack of the most obvious kind; yet there must have been some curious fascination in him, for, to say nothing of the vast crowds of believers whom he found in nearly every town in Europe, he attracted the attention of men like Mirabeau and Lavater; he was made the hero of plays by Schiller and Goethe, and the subject of an elaborate study by Carlyle. The story of his career would seem absolutely incredible but for the fact that man is by the constitution of his mind a lover of signs and wonders, and therefore is generally ready to meet an impostor half way. The secret of Cagliostro's influence is to be found in that mysterious and yet tremendous force which, for want of a better name, we call Suggestion. People believed in him in direct proportion to the preposterous nature of his claims. He also contrived to throw about himself the cloak of mystery—always in itself an attraction to the credulous. Like all quacks, he professed contempt for rational medicine; this is a pretension that never fails to impress the ignorant and those whom Warburton calls the "better vulgar." Most people are incapable of appreciating the aims of science and cannot weigh evidence; they are therefore easily led astray by any false prophet who vaunts his independence of ordinary methods of cure and his possession of mystic lore. This attitude towards science, which progresses by slow and laborious steps cannot be changed by Act of Parliament; the darkness of ignorance and superstition can be dissipated only by the slow dawn of truth. Belief in quackery will never die till an intellectual atmosphere has been created in which it cannot live.

As Cagliostro was in some respects the most remarkable of all quacks—the "quack of quacks" Carlyle called him—an account of his career may not be without interest. His real name was Joseph Balsamo, and he was born at Palermo, of parents in a humble position, on June 18th,

1743. He was an idle boy, who gave much trouble to those who had charge of him. Having been placed in a seminary he more than once ran away. About the age of 13, through the influence of an uncle, he was admitted to a religious brotherhood at Cartegirone. There he was put under the infirmarian, and thus had the free run of the dispensary. There he learnt a smattering of chemistry and medicine, and the scraps of knowledge thus gained formed his medical stock-in-trade for life. There, too, he may have learnt the rudiments of alchemy, of which he was afterwards to make much use. He did not take kindly to the discipline under which he lived, and in consequence was often punished. Young as he was he seems to have picked up a good deal of knowledge of what is called "life" from the streets of Palermo, and he could use this in an impish way, which shows that he was not without a certain sense of humour. When made to read the Martyrology while the brethren were at meals, he substituted for the names of the saints therein commemorated the names of the most notorious prostitutes of Palermo Whether this was the culminating offence or not we do not know, but he was returned on the hands of his uncle at Palermo. He next tried painting. He had no real artistic capacity, but a considerable power of imitation which extended to handwriting as well as painting. This talent naturally led to forgery, in which he became very proficient. Meanwhile, he was leading a dissolute life, and, like Autolycus, picking up unconsidered trifles of jewellery and other valuables which came in his way. The exploit which finally made Palermo too hot to hold him was a swindle perpetrated on a goldsmith to whom he pretended to reveal a place where treasure was hidden. Money of course had to be advanced for the mystic process required for its recovery, and he extracted some £30 from his dupe, luring him on by the usual rites of sorcery, magic circles, and the bursting forth of phosphorus flames. When the goldsmith pressed for something more solid he was beaten black and blue by a number of the swindler's accomplices. After this affair Cagliostro found it convenient to leave his native place in order to escape the stiletto of the man whom he had defrauded.

For some time his subsequent course was like that of certain rivers which run for a part of their course underground. He is said to have visited Greece, Rhodes, Malta, Egypt, Arabia, Persia, and to have associated himself with a certain Althotas, whom he afterwards described as the Prince of Trebizond. He relates that he worked with Althotas in the laboratory at Malta, and discovered the secret of making silk out of hemp. Althotas disappears from view at Malta, where Cagliostro still, according to his own account, was graciously received by the Grand Master, who gave him letters of recommendation to persons of influence at Naples. All the evidence about this part of Cagliostro's life is found on investigation to rest on his own statements. Whatever truth there may be in them it may be conjectured, without want of charity, that, wherever he may have been, he was qualifying for the highest degrees in rascality. After a time he comes to the surface in Rome, where he tried to make a living by the sale of imitation pen-and-ink drawings. These works of art brought him little money, but he found in Rome what was to prove one of his chief sources of wealth. This was a girl, by name Lorenza Feliciani, whom he married. Lorenza was very handsome, and Cagliostro saw in her charms an easy way to fortune. With her he made pilgrimages to various places where he found plenty of wealthy patrons willing to pay for the privilege of worshipping at her shrine.

We get a glimpse of the worthy pair in the *Mémoires* of Casanova, a work to which Carlyle could not gain access because "most British librarians make a point of denying that they possess" it. It is indeed a book which whoso looks into, even in the way of research, should bathe afterwards in running water and be unclean till even. It may be interesting to quote Casanova's account of Cagliostro as he saw him before the days of his fame. Dining every day at the *table d'hôte* at Aix in Provence, Casanova heard one day of two pilgrims, a man and a woman, who had just arrived. He says:

> They were Italians, had come on foot from St. James of Compostella, in Galicia, and seemed to be persons of position, as on their arrival in the town they distributed large alms. It was said that the female pilgrim was charming, about 18 years of age, and that being very tired she had gone to bed on arriving. They were lodged in the same inn, and we all became very curious about them. As an Italian I had to put myself at the head of a number of people who wished to pay them a visit. I judged them to be either devout fanatics or rogues. We found the lady pilgrim seated on an armchair, having the appearance of a person worn out with fatigue and interesting on account of her youth, her beauty, which was enhanced by an air of sadness, and on account of her crucifix of yellow metal six inches long which she held in her hands. On our entrance she laid down the crucifix and rose to give us a gracious welcome. The pilgrim, who was arranging shells on his weeds of black waxed cloth, did not move. But looking towards his wife seemed to say that we should occupy ourselves with her. He seemed about 24 or 25, short, well enough made, and had on his face, which was sufficiently pleasing, an expression in which were mingled effrontery, cynicism and roguery. He was altogether the opposite of his wife, who posed as an example of the dignity, modesty, simplicity, sweetness, and timidity which gives so much charm to a young woman. These two persons who could barely make themselves understood in French seemed relieved when I spoke to them in Italian. She told me she was a Roman, and she need not have said so, as her beautiful accent was a proof of the fact. As regards him, I judged him to be a Neopolitan or a Sicilian. In his passport, which was dated Rome, his name was given as Balsamo. She was called Serafina Feliciani, names which she has not changed. As regards the man, in ten years we shall find him under the name of Cagliostro. "We go back to Rome," she said to me, "very glad to have made our devotions to St. James of Compostella, and to Our Lady del Pilar. We have always gone on foot living on alms, the better to obtain the mercy of God whom I have so much offended in my life. I ask only a halfpenny in the way of charity, but have always been given silver and even gold, so that on arriving in each town we have had to distribute to the poor all that remained to us, so as not to commit the sin of want of confidence in eternal providence. My husband being strong, has not suffered much, but as for me I have endured the greatest sufferings in making so long a voyage on foot, sleeping on straw, or on bad beds, and never putting off my clothes in order not to contract diseases which it would be difficult for me afterwards to get rid of."
>
> I judged it probable enough that she told us this last circumstance only to awaken in us the desire to see the cleanness of her skin elsewhere than on her arms and hands, of which, in the meantime, she allowed us to see, gratis, the perfect whiteness and cleanliness.
>
> "Do you intend to make any stay here, Madame?"
>
> "The fatigue from which I suffer will compel us to pass three days in this town, whence we shall go to Rome, passing through Turin, where we will pay our devotions to the Holy Shroud."
>
> "You know doubtless that there are several of these in Europe?"
>
> "We have been told so, but we have been assured that the true one is that of Turin. It is that of which St. Veronica made use to wipe the face of our Redeemer who imprinted thereon his divine image."
>
> We left quite satisfied with her, but did not much believe in her devotion. As for me, still weak from illness, I made no attempt upon her virtue. But all those with me would have willingly supped with her if they had had the chance. The next day the husband of the fair Roman came to ask me to go up to breakfast with them, offering if I preferred it, that they should come down to me. It would have been rude to refuse; I therefore said to him that they would give me pleasure if they came down. During the breakfast I asked the Pilgrim as to his profession, and he told me that he drew with the pen in the style called chiar-oscuro. His skill consisted in copying a print, not in inventing.
>
> But he assured me that he excelled in his art and could copy a print so exactly that the copy could not be distinguished from the original.
>
> "I congratulate you, that is a talent with which if you are not rich, you are sure to earn your bread wherever you care to put yourself."
>
> "Everybody says the same, but it is wrong, because with my talent one starves. In pursuing this trade in Rome or Naples, I work all day to earn half a *testone* [a small silver coin worth thirty *soldi*] not enough to live on."
>
> After this discourse he showed me some fans which he had made, than which nothing could be finer. They were done with the pen, and could not be surpassed by the most perfect engraving. To convince me finally he showed me a Rembrandt of his doing, which was, if possible, finer than the original. Nevertheless, he swore to me that his talent did not enable him to live. This, however, I did not believe. He was one of those idle genuises who prefer a vagabond existence to a life of work.
>
> I offered him a louis for one of his fans, but he refused the money, begging me to accept it for nothing, and to carry round the hat for him at table, as he wished to start the next day but one. I accepted his gift and promised to do as he wished, and I got for him a couple of hundred francs, which the lady came to the table where we were still seated to receive. This young woman, far from advertising vice, had the demeanour of virtue. Invited to write her name on a lottery ticket, she excused herself, saying that in Rome girls whom it was intended to bring up in the path of virtue were not taught to write. Everybody laughed at this excuse except myself, who, having pity on her, did not wish to see her humiliated; but I was then sure that she belonged to the lowest class of

the people. The next day she came to my room to ask for a letter of introduction for Avignon; I wrote two for her at once—one for Audifret the banker, the other for the innkeeper of St. Omer. In the evening she gave me back the one addressed to M. Audifret, saying that her husband had told her that it was not required. At the same time she asked me to examine it to see if it was really the letter I had given her. Having looked at it closely, I said it was certainly my letter. She told me, laughing, that I was wrong, as it was only a copy.

"Impossible," said I.

She called her husband, who brought my real letter in his hand. Being no longer able to doubt, I said to him:

"Your talent is admirable, for this is much more difficult to imitate than an engraving. With it you may go far, and gain great advantage from your ability, but if you don't take care it may cost you your life."

The couple left the next day. In ten years I shall relate where and how I saw this man again under the name of Count Pellegrini, with the good Serafina his wife and tool.

At the moment I write this he is in prison, from which probably he will not come out, and his wife is happy—perhaps—in a convent.

The picture of the prince of liars and swindlers taking round the hat on behalf of the prince of quacks is curious if not edifying. The date of this account would seem to be 1768 or thereabouts. Casanova's Memoirs break off abruptly in 1774, or we should doubtless have had some of the details of Cagliostro's later career which he promises. It is interesting to note the ease and certainty with which one rogue saw through the other.

Balsamo took many titles of his own invention, but the name "Cagliostro" by which he is best known is that of a grand-uncle. He embellished it with the profix of Count. He travelled through Europe seeking for gulls, his wife riding inside with the adorer of the moment, her husband leaving her an open market for her wares by sitting outside. Among his pilgrimages was one to Saint Germain, then living in Westphalia, and it is probable that from that famous quack he got some hints on the transmutation of metals and cabalistic mysteries.

It was not long before he started as a quack on his own account. He used the little knowledge of drugs he had gained in the dispensary of the Monastery at Palermo, making much use of the "extract of Saturn"; this extract of lead was the basis of Goulard's preparations. He gave it in such large doses that many of his patients got lead colic in consequence. He also made a large use of aromatics.

As the charms of his "Countess" began to lose their stimulating effect he concocted love philtres for both sexes. Among these was the "Wine of Egypt," the chief ingredient being cantharides; it was sold for a great price. He had a beautifying water by means of which he professed to remove wrinkles from the faces of elderly ladies. There were also charms of various kinds, and magical apparatus, blue flames, and divining rods. It is a testimony, perhaps, to our national good sense that, notwithstanding this comprehensive outfit, his trade does not seem to have prospered in England. He tried every art of swindling besides quackery, but the English lawyers were too much for him, and to escape their clutches he was fain to quit our shores.

One thing, however, which was to prove very profitable to him elsewhere he found in England. He got not only himself but his wife admitted Freemasons. Cagliostro seems to have seen what possibilities lay in the invention of a new rite. Inspired by one George Cofton with the notion of Egyptian masonry, Cagliostro proceeded to develop it into a new gospel by which adepts were to be regenerated physically and morally and made perfect. By means of it they were to find the philosopher's stone, and also a "Pentagon of Rejuvenescence" which would restore man to his primitive state of innocence. Of this renovated craft Cagliostro proclaimed himself the Grand Cophta, who was to be worshipped with all manner of curious rites. He had authority over the angels and everything was done in virtue of the power which he derived immediately from God. We now have the small swindler of Palermo full blown into the high priest of a new cult with powers as large as those claimed by Mrs. Eddy.

Freemasonry enabled Cagliostro to gain a footing in most of the towns which he visited. He delivered addresses, enrolled adepts, and no doubt flourished exceedingly for a time at their expense. One wonders how he imposed on so many, for he had not even the flow of speech which goes to the making of the stump orator. He spoke in a jargon composed of Sicilian Italian mingled with fragments of other languages and tongues of his own invention. The matter of his discourse was unintelligible bombast.

How Cagliostro, ignorant as he was, was able to impress even men who might be credited with some power of discernment may be gathered from what Lavater says of him:

> Cagliostro is a man; and a man such as few are; in whom, however, I am not a believer. Oh! that he were simple of heart and humble as a child; that he had feelings for the simplicity of the Gospel and the Majesty of the Lord! Who were so great as he? Cagliostro often tells what is not true and promises what he does not perform. Yet do I nowise hold his operations as deceptions, though they are not what he calls them.

If Lavater could be thus misled by mere impudence, how easy a prey must Cagliostro have found the general run of his fellow beings!

It would be too long to follow him in his wanderings throughout Europe in search of dupes. He travelled in great style, attended by a troop of lacqueys dressed in gorgeous liveries. He and his wife were clothed in the finest raiment and lived in magnificently furnished rooms, where they interviewed numerous guests, and distributed medicines and gave money to the poor. He also founded Lodges and sold "Spagiric Foods." He was often the object of inconvenient attentions of the police, and from many places which he had entered in triumph he was ignominiously expelled. Thus at St. Petersburg in 1780, the Empress sent her physician to examine his stock in trade, with the result that he was ordered to leave Russia forthwith. Complaints of a false assumption of titles and the forging of bills were also made, but the bird had flown. In Poland we find him delivering a harangue on Medical Philosophy and the ignorance of doctors, going through the hocus-pocus of Egyptian masonry, and transmuting metals. Again he was unmasked. Nevertheless he reaped a rich harvest from those fools who, in the immortal words of the Tichborne claimant, having money are made for those who have none. We get glimpses of him successively at Vienna, Frankfurt, and elsewhere.

The tide of his prosperity rose to its highest point in 1780, when he entered Strassburg with the usual showman-like display. There he remained many months, for there he found his fattest victim. This was the Archbishop, Prince Louis Cardinal de Rohan. The Cardinal was interested in botany, alchemy, and the art of divination, and expressed a wish to see Cagliostro. The reply was characteristic of his mode of producing an impression: "If Monseigneur the Cardinal is sick let him come and I will cure him; if he is well he has no need of me, I none of him." It must be admitted that Cagliostro knew how to fool any one whom he could get hold of to the top of his bent. To one he would speak of miraculous cures, to another of high mysteries of masonry and the spiritual life, to a third of the transmutation of metals. In passing a large Crucifix he would start and express surprise that the artist had so well caught the likeness, as if he had seen the original. He would even hint that if the Saviour had followed his advice He would not have met the fate that overtook Him. He worked his way into the Cardinal de Rohan's confidence to such an extent that the prelate had no mind but his. In the Cardinal, who was immensely rich, Cagliostro found not only a disciple, but a protector, and, above all, an inexhaustible source of revenue. A curious account of Cagliostro at this time is given by Dr. Meiners, a professor of medicine at Göttingen. It may be quoted here:

> "Before ever I arrived in Strassburg I knew almost to a certainty that I should not see Count Cagliostro; at least not get to speak with him. From many persons I had heard that he, on no account, received visits from curious Travellers, in a state of health; that such as, without being sick, appeared in his audiences were sure to be treated by him, in the brutalest way, as spies. . . ." "Nevertheless, though I saw not this new god of Physic near at hand and deliberately, but only for a moment as he rolled on in a rapid carriage, I fancy myself to be better acquainted with him than many that have lived in his society for months." "My unavoidable conviction is that Count Cagliostro, from of old, has been more of a cheat than an enthusiast; and also that he continues to cheat to this day."
>
> "As to his country I have ascertained nothing. Some make him a Spaniard, others a Jew, or an Italian, or a Ragusan; or even an Arab, who had persuaded some Asiatic Prince to send his son to travel in Europe, and then murdered the youth and taken possession of his treasures. As the self-styled Count

speaks badly all the languages you hear from him, and has most likely spent the greater part of his life under feigned names far from home, it is probable enough no sure trace of his origin may ever be discovered."

"On his first appearance in Strassburg he connected himself with the Freemasons; but only till he felt strong enough to stand on his own feet: he soon gained the favour of the Praetor and the Cardinal; and through these the favour of the Court, to such a degree that his adversaries cannot so much as think of overthrowing him. With the Praetor and Cardinal he is said to demean himself as with persons who were under boundless obligation to him, to whom he was under none: the equipage of the Cardinal he seems to use as freely as his own. He pretends that he can recognize Atheists or Blasphemers by the smell; that the vapour from such throws him into epileptic fits; into which sacred disorder, he, like a true juggler, has the art of falling when he likes. In public he no longer vaunts of rule over spirits, or other magical arts: but I know, even as certainly, that he still pretends to evoke spirits, and by their help and apparition to heal diseases, as I know this other fact, that he understands no more of the human system, or the nature of its diseases, or the use of the commonest therapeutic methods, than any other quack."

"According to the crediblest accounts of persons who have long observed him, he is a man to an inconceivable degree choleric (*heftig*), heedless, inconstant; and therefore doubtless it was the happiest idea he ever in his whole life came upon, this making of himself inaccessible; of raising the most obstinate reserve as a bulwark round him: without which precaution he must long ago have been caught at fault.

"For his own labour he takes neither payment nor presents: when presents are made him of such a sort as cannot without offence be refused, he forthwith returns some counter-present, of equal or still higher value. Nay, he not only takes nothing from his patients, but frequently admits them, months long, to his house and his table, and will not consent to the smallest recompense. With all this disinterestedness (conspicuous enough, as you may suppose), he lives in an expensive way, plays deep, loses almost constantly to ladies; so that, according to the very lowest estimate, he must require at least 20,000 livres a year. The darkness which Cagliostro has, on purpose, spread over the sources of his income and outlay, contributes even more than his munificence and miraculous cures to the notion that he is a divine extraordinary man, who has watched Nature in her deepest operations, and among other secrets stolen that of Gold-making from her. . . .

"With a mixture of sorrow and indignation over our age, I have to record that this man has found acceptance, not only among the great, but also with many of the learned, and even physicians and naturalists." [1]



Cagliostro was at his height of fame and prosperity in these Strassburg days when he was in undisputed possession of the fat prey he found in the Cardinal. Unfortunately for him a rival came on the scene in the person of the fatal "Countess de la Motte Valois," who was much cleverer than Cagliostro and equally unscrupulous. De Rohan, who had fallen out of favour at Court, was anxious to get into the good graces of Marie Antoinette. He consulted Cagliostro, who predicted that his influence in the State would soon become paramount. It would be out of place to tell here the famous story of the diamond necklace, which was the undoing of the hapless Queen, after ruining the Cardinal and the two parasites who were preying upon him.

In 1781 he made his first appearance in Paris. He laid himself out to attract attention. The fashion of his garments was so strange that children ran away at the sight of him. He wore several watches and a large amount of jewellery. All sorts of stories about him were current in that sensation-loving society. Thus it was related that he had given a supper at which each of the guests was invited to name a dead person whom he wished to see. The spirits of the Duc de Choiseul, Voltaire, Diderot, and Montesquieu were called up, but from the accounts given by the more sensible guests, ghosts of these brilliant men talked the kind of twaddle with which spiritualism has made us familiar.

In 1785 he returned to Paris, and there on August 22nd, 1786, he was arrested, and, in his own words, his house was pillaged by the police. "Elixirs, balsams, precious liquors," all became their prey. His dwelling remained shut up till 1805, when it was opened by the owner, who sold the furniture to recoup himself for the loss of rent.[2] Cagliostro was lodged in the Bastille, but was liberated after nine months of imprisonment. At the same time he was ordered to quit France, and, like most Continental scoundrels, took refuge in London, which then, as now, was the cesspool of nations. There he attempted to make a trade in his Egyptian pills, which he said were sold in Paris at thirty shillings a drachm. He also discoursed to Egyptian lodges and tried to give public audiences as at Strassburg. But his bait did not attract; the law was again on his track, and in 1787 he returned to the Continent, only to be sent out of one country after another, till, in despair, urged apparently by his wife, who wished to get home, he went to Rome. Arriving there in May, 1789, he was laid by the heels on the 29th of the following December by the Holy Inquisition, which had long been waiting to get him within its clutches, not for selling aphrodisiac pills, but for his Freemasonry. He was imprisoned in the castle of St. Angelo, and, after a trial which lasted about eighteen months, he was let off with his life but confined in the prison of St. Leo. This was in April, 1791. In the summer of 1795 he died.

There are many documents concerning Cagliostro, but the definite information that can be extracted from them is inconsiderable in comparison with their number. His portrait tells us more about him, perhaps, than any written record. Of it Carlyle says:

> One of the most authentic documents preserved of him is the portrait of his Visage. An Effigies once universally diffused; in oil-paint, aquatint, marble, stucco, and perhaps gingerbread, decorating millions of apartments: of which remarkable Effigies one copy, engraved in the line-manner, happily still lies here. Fittest of visages; worthy to be worn by the Quack of Quacks! A most portentous face of scoundrelism: a fat, snub, abominable face; dew-lapped, flatnosed, greasy, full of greediness, sensuality, ox-like obstinacy; a forehead impudent, refusing to be ashamed; and then two eyes turned up seraphically languishing, as in divine contemplation and adoration; a touch of quiz too: on the whole, perhaps the most perfect quack-face produced by the eighteenth century. There he sits, and seraphically languishes, with this epigraph:
>
> *De l'Ami des Humains reconnaissez les traits:*
> *Tous ses jours sont marqués par de nouveaux bienfaits,*
> *Il prolonge la vie, il secourt l'indigence;*
> *Le plaisir d'être utile est seul sa récompense.*

Of his healing power the evidence is of the vaguest and most elusive character. He boasted that he had cured fifteen thousand persons—all of whom of course had suffered many things from many physicians to no purpose—and that among all those who came to him for treatment only three had died. He posed as an oracle, and skilfully arranged his *mise-en-scène* so as to produce an effect on the imagination. In his periodical tours of healing the cases were often selected beforehand. Naturally he was particularly successful in dealing with

[1] Quoted in the *Lettre du Comte de Mirabeau à . . . sur MM de Cagliostro et Lavater*. Berlin: Chez François de Lagarde. 1786.

[2] G. Lenôtre, *Vieilles Maisons, Vieux Papiers*, vol. i.

women. Like all faith healers, he attributed his failures to the lack of faith on the part of the patient. He had considerable shrewdness and insight into the weaknesses of human nature; in particular he was a good physiognomist—an art which, carefully cultivated by long practice, stood him in good stead in the choice of his victims. Like the Ancient Mariner, he might have said—

> The moment that his face I see
> I know the man that must hear me:
> To him my tale I teach.

Doubt and incredulity he met with the most arrogant insolence.

What was Cagliostro's secret? As already said, it was the infinite gullibility of mankind, to whom he offered bodily health by means of a panacea of which he alone had the secret; health of soul by means of his Egyptian Freemasonry; and riches beyond the dreams of avarice by means of the philosopher's stone. According to the anonymous author of a *Mémoire Authentique pour servir à l'histoire du Comte de Cagliostro* (Strasbourg, 1786), he learnt the secret of the panacea which made man immortal from Saint Germain; it was simply Tokay coloured red or green as might be deemed more likely to inspire belief. Saint Germain further gave him advice which quacks of all kinds find useful: To shun, hate, and calumniate people of intelligence; to flatter, wheedle, and cajole fools; and to surround himself with an atmosphere of mystery. According to another account, his elixir of eternal youth consisted of malvoisie wine mixed with the products of the distillation of the spermatic fluid of certain animals with the juice of several plants.[3] Cagliostro, it is said, sold two kinds of elixir: one which "fixed" people at a certain age, the other, considerably more costly, which made them twenty-five years younger.

We have little doubt that Cagliostro did work some cures. According to Mirabeau, who took some trouble to get information about him, he had no knowledge of the art of healing except in the sphere of nervous disease.[4] But he had the power of exciting faith in neurotic people who were ready to be deceived by any impostor who gave himself the airs of a prophet. It is the old story, which is repeated in every age, and which is told with blatant emphasis at the present day. The form may change but the thing itself is eternal.

INTERNATIONAL CONGRESS ON DISEASES OF OCCUPATION.

THE second International Congress on Diseases of Occupation was held this year at Brussels. The opening ceremony took place on September 10th in the Palais des Fêtes at the Exhibition, the MINISTER OF INDUSTRY AND LABOUR (M. Hubert) delivering the inaugural address. There was a large attendance from practically all European countries, including about thirty British representatives, among whom were: Dr. T. M. Legge, of the Home Office; Professor Glaister and Dr. A. Scott, of Glasgow; Dr. A. E. Boycott, of Guy's Hospital; Dr. Kenneth Goadby, of London; Dr. W. F. Dearden and Dr. W. M. Hamilton, of Manchester; Dr. H. Langley Browne, of West Bromwich; Dr. R. Prosser White, of Wigan; Dr. W. Robinson, of Sunderland; Dr. A. Wilson, of Sheffield; Dr. G. McBride, of Leeds; Dr. A. Glen Park, of Bolton; Dr. Milburn, of Hull; Lieutenant G. C. C. Damant, R.N.; and a number of gentlemen attending on behalf of various associations and insurance societies.

State Control and Industrial Hygiene.

The afternoon of the opening day was devoted to the consideration of State medical supervision and control of industrial occupation. In a paper on the function of the certifying surgeon, Dr. DEARDEN drew attention to the fact that the principle of medical supervision had been recognized in England from the time of the passing of the first Factory Act in 1802, and showed the extent to which this is exercised by the certifying surgeon of the present day under a number of different headings. He explained the methods adopted by factory surgeons in following out their work, and laid special stress on the extent to which the fitness of the individual for a particular process is regulated by attaching conditions to the certificate. An analysis of 5,775 certificates granted with qualifying conditions during 1909, showing the nature of these conditions and the defects of body or process calling for such, was given. A table was also provided which showed the different processes in the spinning and manufacture of cotton which required juvenile labour, under what conditions and in what manner each process may be considered injurious, the state of health or degree of infirmity considered as injurious, to what extent refusal of the certificate is required or to what extent this should be made conditional. He presented a further tabulation of causes for refusal of the certificate in 14,000 cases of physical unfitness. Although he admitted that the system of supervision of the factory surgeon could be improved and his function extended, he thought the principles upon which it was founded were sound and worthy of serious consideration from other nations. He laid special stress on the fact that this official is free from all local control by municipalities or other like bodies, being directly responsible to the State for the due carrying out of his duties. Dr. A. GLEN PARK, of Bolton, followed with a paper on certificates of fitness in the cotton trade, describing in detail the different processes at which children and young people are employed and the particular dangers of each. He pointed out the necessity existing for the certifying surgeon to be possessed of a knowledge of the different trade processes in his district in order to enable him to properly regulate conditional employment. An interesting account was provided by Dr. ARPAD KRITZ, of Vienna, of an experimental system, applied to the twenty-six trade schools of Vienna, whereby an obligatory course of industrial hygiene is given to the pupils, who at the same time are under medical supervision and have their future employment regulated according to their physical fitness or otherwise for the particular trades they wish to take up. In the discussion which followed, the office of certifying surgeon was much commended, one delegate of Belgium going so far as to say that the system was ideal, and insisting that if such beneficial restrictions could be adopted in so free a country as England, his own people, though they made so strong an objection on the ground of a parent's right to regulate the doings of his own child, might safely follow. The general drift of the discussion was in favour of medical examinations for fitness and that these should be periodical; that all cases of industrial disease or poisoning should be instantly notified and followed up by a medical investigation; that those engaged in dangerous trades should be placed under strict medical supervision.

Compensation for Industrial Disease.

The second principal discussion, on the subject of compensation for industrial disease and the possibility or otherwise of including such in the same category as industrial accident, was taken on September 11th. Dr. T. M. LEGGE described the provisions of the Workmen's Compensation Act of 1906 in so far as they extend to the indemnification against the twenty-four industrial diseases and poisonings which are scheduled, outlining the methods of procedure and giving statistics of the first year's working.

Dr. R. J. COLLIE gave an account of the working of the Compensation Act, and was very strong on defects of the system so far as concerned industrial accidents. He held the view that litigation was responsible for a great deal of auto-suggestion, for which compensation was more effectual as a cure than the physician. He pointed out the tendency of so much compensation to create systems of medical inspection on commencing work and after illness, and how this, under the present law, reacts unfavourably upon the workman, particularly as no provision is made for contracting out. He showed how little the services of the medical referee are utilized, either for report or as an assessor, and drew a comparison between the way in which expert knowledge is utilized in case of accident and the manner in which it is brought to bear upon scheduled industrial diseases. In the former case the referee is not appealed to unless both parties agree, which in practice is very rare, while in industrial diseases no steps can be taken to obtain compensation without a certificate from the certifying surgeon, and either party feeling aggrieved at his

[3] Eliphas Levi, *Dogme et Rituel de la Haute Magie*, Paris, 1861.
[4] *Lettre du Comte de Mirabeau à . . . sur MM. de Cagliostro et Lavater*, Berlin, 1786.

can appeal to the referee, whose decision is final. He could not understand why the same machinery should not have been made applicable to the whole of the Act. He considered that either party should be entitled to call for a report from the medical referee or for the presence of a medical assessor.

Dr. OLIVIER LENOIR (Paris) discussed the difficulties experienced in bringing industrial disease under the accident heading, and the modern tendency to stretch a few points in favour of the workman to accomplish this. He stated that in France a law is projected by which compensation would be allowed in all cases of sickness which did not last more than thirty days, and that, after such period, those which are shown to be due to industrial causes would have their compensation extended. The insurance is to be mutual and shared in by the State, the employer, and the employee, a system which he believed to be the correct one and calculated effectually to abolish the objectionable class distinction between "pensioneurs" and "pensionées."

Drs. HEYERMANS and KOOPERBERG (Amsterdam) were of opinion, from their experience of State insurance in Holland, that a clear distinction should be made between industrial disease and accident, and that if the former were legislated for many complications which now arise through the workman having to seek the aid of the law relating to accidents, when he is suffering from what should properly come under sickness qualification, would disappear. They thought that English legislation for industrial disease provides the best model to follow. They pointed out that it was difficult to understand why a workman becoming deaf as the result of an explosion should be more entitled to compensation than a boiler-maker who, in the course of his work, becomes deaf from a constant repetition of what are equivalent to small explosions. They stated their objections to a broad definition of industrial disease, and were agreed that a fixed schedule of those entitled to compensation could be very satisfactorily worked in Holland.

Dr. TELEKY (Vienna), Dr. W. HANAUER (Frankfort), Dr. A. PERSER (Berlin), Professor QUERTON (Brussels), Dr. MUGDAN (Berlin), and others took part in the debate, the consensus of opinion being to the effect that the two should not be classed together, but that industrial disease should be separately legislated for, preferably on the English system. The German system of insurance against all illness to the workman was highly commended, but regarded as too great an undertaking to commence operations with.

The Prevention of Ankylostomiasis.

The first subject for discussion on September 12th was on the measures which should be taken against the spread of ankylostomiasis. Sir THOMAS OLIVER presented a very valuable paper, which showed that although English coal mines were not at presented infected, the liability of such to infection should not be overlooked. He thought that those coming into England from infected districts in other countries should have their stools microscopically examined as a precautionary measure. He further described some interesting experiments which he had made to ascertain the resisting power of ova and larvae to desiccation and to the action of the gastric juices, and others on the harmful effects of cinders, basic slag, sodium chloride, iron sulphate, and copper chloride. He pointed out that a ton of iron sulphate, costing £8, would effectually disinfect several miles of mine roadways.

Dr. A. E. BOYCOTT described the incidence of the disease in the Dolcoath Tin Mine, in Cornwall, and the methods adopted for its eradication, the latter being apparently confined to early administration of thymol to the patients.

Dr. E. MALVOS (Director of the Bacteriological Institute, Liége) gave figures showing the enormous diminution of infected persons in his district between 1902 and 1909, the period during which active methods against the disease had been in operation. In the former year one half of the 5,680 miners working in certain mines were affected, and 20 to 50 per cent. of the 6,060 miners in other mines, whilst in the latter year there were no mines with 50 per cent. and over of the personnel infected, and only 300 of a personnel with from 20 to 50 per cent. infected. He ascribed this success to systematic microscopical examination of stools, periodical inspection of miners, and the antiparasitical treatment of all worm-carriers as they were discovered.

Dr. H. WOLFF (Bohemia), Dr. DELBASTAILLE (Liége), Dr. T. PETROF (Sofia), Dr. CAILIBAU (Mons), Dr. H. GOLDMAN (Odenberg), and Professor MONTI (Pavia) also contributed their views. The pronouncements which found most favour were as follows: Education of miners on the subject; disinfection of galleries; provision of suitable pails for the dejections, with proper attention to removal and cleansing; the supply of fresh water to the workings for drinking purposes; the provision of baths and lavatories on the surface, with facilities for change of clothes; the erection of efficient w.c. accommodation on the surface, and the inducement of miners to use these instead of the provision below ground; the insistence on certificates of freedom from the disease in case of fresh hands; periodical microscopical examination of stools; and suitable treatment of infected cases. The drugs recommended as most successful in treatment were ethereal extract of male fern, thymol, and toeniol, the last being a compound of sebriol and salicylate of thymol.

(*To be continued*)

SCIENCE NOTES.

ON account of the rather frequent mistakes which are apt to be made in distinguishing edible from poisonous mushrooms, the Board of Agriculture and Fisheries has issued a pamphlet dealing with these fungi. The species of mushroom are so numerous that without special knowledge it is no easy matter to recognize and differentiate them all. Not infrequently a poisonous variety is a close ally of an edible form. It is reassuring to learn, however, that the majority of mushrooms are edible, or at least harmless; and a certain safeguard is to become thoroughly familiar with the comparatively small number of harmful kinds. No rough-and-ready test is sufficiently general to prevent mistakes; no reliance is to be placed on the presence of a skin that can be readily peeled off as a sure sign of an edible mushroom, and there is just as little foundation for the statement that a poisonous variety can be distinguished by the tarnishing of a silver spoon when placed in contact with it. The very wholesome suspicion with which most people regard fungi other than the common mushroom leads to the neglect of many other varieties even more palatable. There are, for instance, the tufted mushroom, the bleeding agaric, the parasol mushroom, the blewits, and the common morel, all of which are believed to be superior in flavour to the common mushroom. The Board of Agriculture has the economic purpose in view of teaching people, and especially those resident in the country, to utilize a valuable supply of food. Together with short descriptive notes the pamphlet contains well-executed coloured plates of twenty-five of the commonest British mushrooms, eight of which are poisonous. The drawings were prepared by Mr. Massee of the Kew Gardens, which is a guarantee of their value and accuracy.

An interesting matter about which very little is known is the rate of the heart beat amongst various animals, and the factors which influence it. In a general way it is known that the pulse-rate tends to be inversely proportional to the size of the animal; but the actuality of this generalization has as yet not been supported by many exact observations, nor its significance determined by thorough investigation. As far as we can tell at present the rate at which the heart beats seems to be determined by its own particular properties, and the amount of work which it has to perform. Its size, minute structure, its relation to the nervous system, the salts present in the blood, and the temperature all bear an influence, but which of these is of chief import it is difficult to say. The extent of our knowledge of the subject is rather well summed up in *Science Progress* for July, by Dr. Florence Buchanan, in an interesting article entitled, "The Significance of the Pulse Rate in Vertebrate Animals." Dr. Buchanan has worked at the subject herself, and is able to give the results of personal experience. The amount of work which the heart has to do depends to a large extent on the structure and habits of the animal, and the relative

weight and size of the heart vary accordingly. Thus in fishes, where the circulatory system is comparatively simple and where no elevated temperature has to be maintained, the size of the heart is extremely small. It is seldom more than one-thousandth of the body weight, and in the flat fishes especially it may be as small as 0.04 per cent. of the body weight. In the small singing birds, on the other hand, in which a great demand is made on the lungs, the weight of the heart may reach 2.5 per cent. of the body weight. A bird's heart may therefore be relatively thirty or forty times the size of that of a fish. The actual size of the animal is of considerable importance in determining the frequency of the beat in warm-blooded animals. The smaller the animal the greater is its relative superficial area, and the greater the heat loss. A greater amount of oxygen must therefore be supplied to the tissues, and this end is secured by an increase in the pulse-rate. These two factors—namely, the absolute weight of the heart and the amount of oxygen consumed, estimated in carbonic acid gas expired per kilogram per hour—are sufficient to give an approximate idea of the pulse-rate. Thus, if the pulse-rate of a pigeon be 185, the weight of its heart 1.5 per cent., and the carbonic acid figure 3.4 c.cm., the pulse-rate of another bird—for example, a sparrow—can be calculated provided the weight of its heart and the amount of carbonic acid expired be known. From a number of sparrows the average weight of the heart is found to be 1.36 per cent. and the carbonic acid expired 12.2 c.cm. The pulse-rate ought, therefore, to be $185 \times \frac{12.2}{3.4} \times \frac{1.5}{1.36} = 732$. This agrees quite closely with actual observation, and the fact that a similar close approximation may be made in other cases goes to show that the pulse-rate is largely dependent on these two factors. This does not hold good in all cases, however; in the rabbit, for instance, the observed pulse-rate falls short of that determined by calculation to the extent of 30 per cent., and it is obvious that some other factor must come into consideration. What this is remains doubtful. Dr. Buchanan describes the method of taking the pulse in small animals, and discusses various other points which need not be referred to here. The article is welcome as marking the beginning of an investigation of much promise, which may not only modify certain physiological conceptions but may also provide further material for the study of evolution.

THE INTERNATIONAL HYGIENE EXHIBITION.

THE following article, which appeared in the *National Zeitung* of August 5th, reveals what construction has been placed on the action of the British Government in refusing to participate in the Dresden Hygiene Exhibition in Germany. We need not comment on the article further than to say that the Government cannot justly complain of the tone of the article, since the action in refusing to go to Germany to take part in the greatest hygienic undertaking ever organized is incomprehensible for a country which boasts of being the pioneer in hygiene, and the excuse offered for this action is too flimsy to foster credulity:

ENGLAND'S NON-PARTICIPATION IN THE HYGIENE EXHIBITION IN DRESDEN.

Berlin, August 5th.

A remarkable side-light has been thrown on the "friendly feelings" which England entertains for Germany by the recently reported fact that the English Foreign Office has declined to organize a British participation in the International Hygienic Exhibition in Dresden. We learn from Dresden that in a very carefully worded explanation issuing from a "well informed source" an attempt has been made to attribute this refusal to the "private character" of the great scientific institutions of England. In this effusion of the "well informed source," of which doubtless the direction of the exhibition knows more than it is inclined to say, we read *inter alia* that in spite of appearances it is improbable that political motives have been responsible for the refusal, but that the cause might be sought in the peculiar conditions obtaining in England and that an attempt is being made to render an English participation possible by inviting private subscriptions.

We should have thought that the English Government would have been able to find plenty of ways and means to render possible a participation of its country in the great German Hygiene Exhibition next year if it had entertained even to the smallest degree "friendly feelings" toward Germany. The explanation of the Exhibition Administration, however well intentioned, cannot explain away the fatal suspicion that English friendship is extremely slender, not only in politics, and that this decision must be ascribed to an animosity against Germany, possibly because the first International Hygiene Exhibition has invited the civilized States to come to Germany. England, the land of the Lister Institute, and other hygienic institutions which might justly be termed classical, could certainly have taken part with ease and advantage in the International Hygiene Exhibition, Dresden, 1911, if only a little goodwill had been present. That she holds herself aloof from this friendly competition which will take place in Germany between the civilized nations, that she cannot bring herself to accept Germany's hospitality on the neutral ground of the humane, cultured endeavours by which the whole of mankind will benefit, does not reveal a deeply rooted "friendly feeling."

The suggestion that an attempt is to be made by the collection of private funds, to render an English participation still possible, indicates that the impression which the refusal of the German invitation must have produced has been recognized in England. If these endeavours are crowned with success, so much the better for England; since whatever happens no blame can be attached to Germany.

LITERARY NOTES.

IT is always interesting to see a famous man of the past through the eyes of his contemporaries, and in the second volume of the *Memoirs of the Duchesse de Dino* (published by William Heinemann, London, 1910) we are afforded a glimpse of Heine's famous university chum, the great surgeon Dieffenbach, as he appeared to one of his own generation. Madame de Dino, who was travelling in Germany with her eldest son, M. de Valençay, during the summer of 1840, writes from Berlin that that city "is just now much excited by a mode of curing squinting, practised by Dieffenbach. Out of two hundred cases he has had only one failure, and that was due to the impatience of the patient. It is a very clever idea, and people come in from all parts to be made beautiful instead of ugly." Some days later she writes that her son has actually seen Dieffenbach operate, and gives a full account of the scene. She says:

My son, whom I found at our hotel on the point of coming in . . . had just been watching the operation for curing squinting, and was full of admiration for Dieffenbach, his dexterity, and the result of the operation. Of the two patients, both young girls, one did not say a word, and the other cried a great deal. The mere demonstration would have made me want to scream. The whole operation lasts from seventy to eighty seconds. The operator is helped by three pupils; one raises the upper eyelid, the second depresses the lower lid, and the third wipes away the blood between the two incisions. The first incision divides the lower part of the white of the eye; then with a little hook Dieffenbach draws forward the muscle covered by that part, cuts it through, and the operation is over. This muscle in the case of people who squint is too short, and brings the eye too close to the nose. As soon as it is cut through the pupil goes to its proper place.

Dr. Harold E. Kitchen (Manchester) writes: "In the 4th series of Dr. Cabanès's *Le Cabinet Secret de l'Histoire*, the interested reader will find the story of the 'wanderings' of Louis XIV's heart, but with some important differences to that related in Literary Notes in the JOURNAL of September 3rd. Dr. Cabanès relates that the incident took place at No. 104 Rue du Faubourg-Poissonnière, where Dr. Buckland then lived, and the time of this gruesome adventure is given as *before* (not after) the Revolution. Assuming the story to be correct, the heart must have been digested long before Dr. Buckland was laid to rest in Westminster. Dr. Cabanès goes on to say:

"Unfortunately, a recent discovery contradicts this legend. The Carnavalet Museum has had in its possession for nearly ten years, a letter of the Comte de Maurepas, minister of Louis XV, dated from Versailles, March 19th, 1730. In it M. de Maurepas informs the Duc d'Artois that, according to the king's command, the heart of Louis XIV would be interred the next morning, the 21st of March, in the Church of the Jesuit Fathers of the Rue Saint Antoine. He invites him to attend along with M. Robert de Cotte, architect of the king's buildings, and the steward Jules de Cotte, to place the heart 'within the mausoleum constructed to receive it.' To this letter is joined the procès-verbal of the ceremony, which took place, in fact, in the morning of the 21st of March."

If the statement that the heart of the Sun-King was swallowed by Buckland before the Revolution is true, there

was indeed ample time for it to be digested, as the famous dean was born in 1784 and died in 1856. He must, however, have shown his taste for "strange food" at a very early age.

Everything that serves to throw light upon the past ought to be of interest to the present generation, and old letters, diaries, and other family papers are of inestimable value in affording us a glimpse into the everyday life of our forefathers. The *Nineteenth Century* for September contains an article by Mr. C. S. Tomes on Middle-class Life Two Hundred Years Ago, which gives us a vivid picture of the manner of life led in those days by the minor gentry, country clergymen, and the like. The author has gathered his materials from an old account book, entitled the "Extraordinary Book in my own Concernes," once the property of Mr. Francis Taylor, a gentleman who, in the year 1708, was living upon his own small estate at South Littleton, near Evesham: and these old papers have proved to be a treasure-house of interesting details concerning family life in England at the commencement of the eighteenth century. We learn from the "Extraordinary Book," for instance, what kind of table was kept in middle-class country houses at that period, and the sort of food that was usually eaten. It is obvious, from Mr. Taylor's accounts, that a great deal of meat was considered necessary, for, though his household consisted only of six persons, they managed to get through 1,400 lb. of mutton and beef in the course of one year. It is only just to add that part of this amount was consumed by the labourers and farm hands in the employ of the Taylors; but it is a curious fact that this enormous consumption of meat in England had been remarked upon by foreign visitors nearly two centuries earlier, and was, apparently, still a national feature in the reign of William and Mary. The meat served at the master's table was, doubtless, fresh enough, but such does not seem to have been the case in humbler households. When a sick sheep died, Mr. Taylor had no compunction in selling the carcass to "ye poore" at 4s. 6d. the quarter; and a cow who had found a watery grave in the moat round his house was likewise sold to the poor for 11s. 2d. The diet at Mr. Taylor's table seems to have been a varied one. His accounts show that his family enjoyed various kinds of fish, barrels of oysters, giblets, fat geese, metheglin (a sweet wine made from honey), and also lampreys. A quaint entry is once made concerning the latter, when they had been bought ready potted: "6 Pottes of lampreys, 13s., of these 5 pottes were sent as a present, ye other was eat with Rattes." At that time both tea and coffee were very expensive luxuries, and seem to have been bought by the Taylors in very small quantities, a quarter of a pound at the time. Neither did they drink much wine. Indeed, their cellar seems to have contained only three kinds—red and white port, which cost from 4s. 6d. to 6s 6d. a gallon; and canary (sack), which was a little dearer, a gallon costing something like 8s. All these wines were bought in bulk in London, Bristol, or Worcester, and were bottled at home, chiefly in pint bottles. A menu of the dinner given by the Taylors at the christening of one of their daughters gives a good idea of the usual diet of the period. The first course consisted of:

A Salmon melt and 2 carps boyled with small fish fryed round ye dish
A loyn of veal royst
A pigeon pie
A carrot pudding
A piece of beef boyled with cabbage and boyled Pigg laid round about it
And 2 dishes on side table p. remoles (viz., a legg of mutton boyled with Callowflowers and a quarter of lamb rost).

The master of the house remarks of these two last dishes, "No need of this, and might have bin saved." The second course was not so elaborate; it merely consisted of:

A young Turkie rost
2 Ducks rost
A dish of pease
A dish of Tarts, Cheesecakes, custards, all in a dish with a Sillabub in ye middle.

There is no record left of how many guests sat down to these Gargantuan feasts, nor how they survived it; neither the vegetarian nor the apostle of the simple life had a place amongst our hungry forefathers. A good many details concerning the medical men of the period can be gleaned from Mr. Taylor's accounts. In those days the surgeon was still looked upon as far lower in the social scale than the physician, and each physician had his attendant apothecary, who visited his master's patients in order to apply plasters and attend to minor details of that kind. On one occasion, we learn from the account book, the physician having ordered an emetic for one of the household, the apothecary spent the night at Littleton in order to see the patient safely through his trouble. Frequently, indeed, the apothecary of those days, though he possessed no medical qualifications of any kind, was called in to treat minor ailments in preference to the doctor, whose fees were higher. We hear of one, Jarret Smythe, who bled Mr. Taylor for a bad cold, and was paid 5s. for the operation, though the patient complains that "he took 15 oz. too much at one time." This same Jarret Smythe appears to have been a successful man. He made a considerable amount of money through bleedings, and in spite of the fact that he sold drugs and veterinary medicines, he managed to marry an heiress. His wife may possibly have been won by his claims to gentle blood, rather than by his professional successes, for Smythe claimed cousinship with a Somersetshire baronet It was only for colds and other trifling indispositions, however, that the Taylors of Littleton consulted the apothecary; in cases of serious illness either the physician or surgeon was called in. The fee of the former was usually a guinea; that of the latter varied according to the case. Thus, when the surgeon Owen bled Mr. Taylor "in ye right arm for a pain about my left shoulder," he received 5s. —exactly the same amount as Jarret Smythe had received for a similar operation; but when consulted about "ye dropsie," Owen charged 7s. 6d., as well as 5s. for a "little bottle of water for ye dropsie." His "little bottle of water," however, does not appear to have been very efficacious, for we next hear of Mr. Taylor consulting a quack, a clergyman, who apparently endeavoured to add the cure of bodies to his cure of souls. From Taylor's delay in paying the bill of this clerical practitioner, Mr. Tomes assumes that his medicines were of no more use than the surgeon's, though Taylor's entry in his "Extraordinary Book," when he finally does settle the account, is only to the effect that he paid "to the Revd. Mr. Schrine Smyth for three papers of powders he sent me for ye dropsie, 5s." All the domestic literature of the centuries which preceded the introduction of vaccination is full of references to small-pox and the fearful ravages caused by that terrible disease. The Taylors' account book is no exception to the general rule. In July, 1710, the eldest daughter, Judith, left home on a visit to London and never returned. She died of small-pox in September; and in the same year one of the sons fell ill of the same disease, for there is an entry in the account book concerning the amount paid to a man who was sent into Coventry "to see my son Frank ill of ye small pox"; and later the sum of 10s. is noted down as being sent to the woman who had nursed him through his illness. Some time after, an outbreak of small-pox occurring in the village, the youngest daughter was sent away from home in order to be out of the risk of infection, and a year later she was obliged to leave home again for the same reason. On the first occasion Miss Taylor took refuge in the house of the apothecary, Jarret Smythe, to whose wife her father paid £1 6s. 6d. for six weeks' "tabling."

Going back a hundred and fifty years further we get a glimpse of the manner of living in the Merrie England of those days. In his *Two English Queens and Philip* Martin Hume says that at the time of Mary Tudor's marriage with Philip II of Spain, during the summer of 1554, one of the King's Spanish suite, who had followed him to England, sent home the following description of English living:

The ordinary consumption in the palace (of the Queen) every day is from eighty to a hundred sheep, with a dozen fat oxen and a dozen and a half of calves, besides vast quantities of game, poultry, venison, wild boar, and rabbits; whilst, as for beer, they drink more in the summer than the river would hold in Valladolid. The ladies and some of the gentlemen put sugar into their wine.

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SATURDAY, SEPTEMBER 24TH, 1910.

POOR LAW BABIES IN LONDON AND BERLIN.

IN the issue of the *Poor Law Officers' Journal* of September 16th Dr. C. Thackray Parsons severely criticizes an article by Dr. Janet Lane-Claypon which appears in the current number of the *Nineteenth Century and After*, and which professes to be a comparison of the methods of treatment of Poor Law babies in London and Berlin. It cannot be said that Dr. Parsons's criticism is at all too strong. He evidently writes with full knowledge of the conditions and methods of treatment in London Poor Law institutions, and is able to show conclusively that Dr. Lane-Claypon can have had only a very superficial acquaintance with London workhouses, and was by no means properly equipped to make the comparison that she attempts. Dr. Lane-Claypon, on the other hand, has evidently a first-hand knowledge of the methods in use in Berlin, and gives most useful details of the boarding-out system and of the Kinderasyl for infants and the Waisenhaus for children over one year. These institutions may be described as receiving houses or homes for quarantine, in which children are kept for about three weeks, or longer if necessary, under the best sanitary conditions, with proper medical and nursing attention, until they are seen to be in a fit condition for boarding-out. The boarding-out is in carefully-selected houses, mostly in Berlin, though some are in the country, and the children are kept under an elaborate system of inspection by skilled officials.

The details given of the Berlin system are most valuable, and if Dr. Lane-Claypon had confined herself to this she would have done good service. But when she comes to make a comparison between London and Berlin she by no means succeeds in proving her contention that the results of the Berlin system are superior to the results obtained in London. She begins by quoting some statistics about infant mortality in English workhouses from the Minority Report of the Poor Law Commission, which, as we showed in the JOURNAL for July 10th, 1909 (p. 917), are open to the greatest doubt and which are shown by the Local Government Board memorandum to be distinctly misleading. This alone would be a bad foundation to rest on, but what more completely vitiates Dr. Lane-Claypon's comparison is that the statistics alluded to are not London statistics at all, but refer to specially selected workhouses all over the country. In other words, while professing to compare Berlin and London, she takes on the one hand the ideal system of Berlin, neglecting the general methods in use in other parts of Germany, while on the other hand she chooses, not the methods used in London, but a haphazard collection of workhouses from all over England. Thus the comparison is not in fact between Berlin and London, but between the best that Berlin can produce and a heterogeneous collection of ordinary workhouses situated in various parts of England.

It is not surprising that Dr. Parsons strongly protests against this method of comparison as not being fair to London. He points out that though Dr. Lane-Claypon quotes from the Majority Report that there were on March 31st, 1906, 2,799 children under 1 year and 11,424 under 5 years in receipt of indoor relief, it is not fair to jump to the conclusion that all these were in workhouses. First of all, these figures are not for London, but for the whole country; and, moreover, taking all England and Wales, of 6,511 children under 3 years of age in receipt of indoor relief, only 3,367 were in the ordinary workhouse wards, the figures for ages 3 to 5 not being given. But of the children in receipt of indoor relief in London, many were not in workhouses at all, but in special sick wards or infirmaries in separate schools, cottage homes or scattered homes, ringworm schools, ophthalmic schools, seaside homes for tuberculous children, the convalescent home at Carshalton, and institutions for the blind, the deaf and dumb, epileptic and other institutions; and, as a matter of fact, on January 1st, 1910, there were only 1,227 children under 16 years of age in all the London workhouses. Thus indoor relief of children in London by no means implies as Dr. Lane-Claypon seems to infer, that the children are in workhouse nurseries.

But, further, Dr. Lane-Claypon seems to assume that the statement of the Minority Report that the nursing of the workhouse babies is often in the hands, not of trained nurses, but of pauper women, and even of feeble-minded pauper inmates, refers to London, whereas the statement really refers to England generally; and, as a matter of fact, Dr. Parsons affirms that there is not a single workhouse in London where feeble-minded paupers are used to look after babies, most of them being in charge of trained nurses, and all of them being personally inspected and supervised by medical men or women, while the mothers are instructed in the proper care of their infants.

Nor is Dr. Lane-Claypon at all more accurate in her comparison of the death-rates in the London and the Berlin institutions. Omitting the death-rates during the first week of life, as the Kinderasyl is not used as a maternity hospital, Dr. Parsons shows that in the London workhouse and infirmaries in 1907 the death-rate from 1 week to 1 year of age was 78.8 per 1,000, while in the Kinderasyl, though it was only 54.7 in 1906, in 1907 it was 84.4, which is actually higher than in the London institutions. These figures are given only to show that Dr. Lane-Claypon's claim for the superiority of the Berlin system is unfounded, but comparisons based on single years, and for such small numbers, cannot be relied on for practical purposes.

Another statement made by Dr. Lane-Claypon is equally open to criticism; it is certainly not correct to state as a general fact that "only a small percentage of children are born unfit." Even as applied to the general population this is open to doubt, as it is often impossible to tell definitely whether a newly-born child is fit or not. Altogether apart from the environment into which a child is born, weaknesses and actual diseases may perhaps be inherited, which are not readily recognized at first, and often only declare themselves after a few weeks; weaknesses, too, which would probably show themselves in many cases however good the environment after birth were made. Dr. Parsons quotes on this point the admirable address of Dr. Ballantyne, delivered before the Section of Medical Sociology at the annual meeting of the British Medical Association; he also gives special statistics

regarding the maternity ward of the Fulham Infirmary, which show that no less than 21.9 per cent. of the infants started life with a marked physical inferiority. This is only what might naturally be expected when we take into consideration the character, mode of life, and physical condition, as well as the environment, of many of the mothers prior to their confinement. Every one will agree with Dr. Lane-Claypon when she advocates the best possible treatment for Poor Law babies. The welfare of the race demands nothing less. We cannot admit that London is so bad as it is painted, but we do agree that there is room for improvement. It may be open to question whether the boarding-out system would be the best for infants, and still more doubtful is it whether the almost military strictness of the Berlin system would be tolerated in England, or, indeed, whether it is advisable. The demand in England will be for some system more elastic in its application. By all means let us accept any good suggestion from Berlin calculated to improve children born unfit and to prevent the fit being damaged; but do not let us fail to recognize the fact that many children are born unfit, if only because this involves the recognition of the further fact that to prevent excessive infant mortality the treatment must begin with the mother before the child is born.

THE DETECTION OF MALINGERERS.

WHEN the Workmen's Compensation Act of 1897 came to be passed it was confidently expected that, sooner or later, it would throw a large amount of new work upon the medical profession. But it was only faintly appreciated that one of the duties to be performed by medical men would be the detection of malingerers. Of inducements to men to malinger there appears, unhappily, to be no end. It is but human nature to prefer idleness to the daily round, and a prolonged holiday begets disinclination and inability to work. Further, in addition to the benefits which accrue in the form of compensation, there is sick benefit to be obtained from the friendly society or the trade union. A man who receives half his ordinary wages in the form of compensation, together with sick pay from his union and his friendly society, is in a position which excites the envy of the toiling masses.

So far as the friendly societies are concerned there is evidence that the added inducements to malinger are having a serious effect upon their funds. Thus, at the Manchester Unity conference last Whitsuntide, the actuary recommended the "Order" to deal with the question of accident liability. He expressed the view that the mining lodges would never be in a solvent position unless they expunged the accident risk from their liabilities, and confined themselves solely to the provision for sickness and death benefits; that the pressure of claims was so severe that, unless exceptional measures were taken, the Unity would be in a very serious position in the near future.

But it is unnecessary to quote figures and statistics to show that the malingerer is thriving on the rich soil produced by the Workmen's Compensation Act. He is there; and it is one of the functions of the practitioner who is concerned with compensation cases to detect and expose him. Your malingerer is often prepared for the dodges which are usually resorted to in the course of a medical examination. He knows all about knee-jerks; he can feign blindness with wonderful skill, and he finds but little difficulty in convincing a county court judge that he is unable to exercise his usual calling. A rogue of this character is fair game for any artifice.

Certain kinds of alleged complaint of physical defect can easily be exposed by any practitioner who knows his business. For example, if a man alleges that he is totally blind of one eye it is possible to confuse him with optical instruments so that he does not know which eye he is using. But there are other cases of pure shamming which can be detected by the exercise of a little common sense and the study of human nature. We recall the case of a man who said he had something wrong with his leg, and who came limping into the consulting-room of the employer's physician. Having reason to suspect unfair play, the physician said very little, but took care to watch through the window the way in which his patient walked down the street after the interview. The limp had wholly vanished! Dr. Collie, to whom employers of labour are indebted for having established the right of the physician to examine a claimant for compensation in private, lately recounted the following amusing incident to the Medico-Legal Society: "The other day I proved to a house-surgeon that a dear old lady (whom he had condemned to wear for many weeks a back-splint for an alleged stiff knee-joint on the right side) was a humbug by removing the splint and directing her to sit down and take off her right boot, whilst I eagerly plied her with questions as to what exactly happened at the moment of the accident. I asked whether the defendant's servants had been becomingly polite, what she said, what they said, and so forth—all of which was no business of mine. It was intensely interesting to her, however. She forgot the present, and lived in the past, removing as she spoke her boot in the usual way—that is to say, she crossed her legs and bent her knee!"

The malingerer who is determined to get damages, "come what come may," will sometimes endure an amount of suffering during an examination which is calculated to deceive the unwary. The following incident, which also came within the experience of Dr. Collie, is an illustration: A labourer came to him complaining of pain when the dorsal region of his back was touched. There is a popular—and, of course, erroneous—idea that an electric current is not felt even in minor injuries to the spinal column. This patient was evidently seized with this idea. Dr. Collie applied the battery. The claimant said he did not feel it over the painful area. When the current was made considerably stronger the man tried to bear it manfully. At last, with a howl, he fell in a heap on the ground. As there was no one in the room to sympathize, Dr. Collie told him not to make a fool of himself, explaining that he now knew what had been the matter with the man, and that he was to go back to work at once. The account concludes: "His wife, who was downstairs, hearing the yell, entered the room, and I explained to her that he was now well, as I had cured him with the battery. I said I was very pleased; he said he was: and the wife agreed with both of us. He said he would go back to work forthwith, and he did so."

Sometimes the practitioner who is subpoenaed as a witness has an opportunity of exposing a fraud almost, but not quite, in the presence of the court. Mr. Arthur S. Morley, who recently read a paper entitled "Abuses of the Workmen's Compensation Act," at a meeting of the Medico-Legal Society, related the following experience: "A dock labourer

was struck on the back of the head by a falling spar, and sustained two small scalp wounds, slight concussion, and a bruised shoulder. I saw him in a room outside the county court where his case was to be heard, in the presence of his own solicitor and doctor. He complained of inability to use the shoulder, and of complete loss of sight, and was led about by his wife, limping along and making a truly piteous picture. I got him to strip in order that I might examine the shoulder, and found that he had slight osteoarthritis in many of his joints. To test his sight roughly I asked him to pick up a wax vesta from the stained floor. He groped about for some time all round it, but failed to find it. I then told him to dress, and meanwhile pushed a black safety pin he had been wearing off the table on to the black floor. He proceeded with his toilet, and presently, quite innocently, stooped down and picked up the black pin from the dark floor without the least hesitation. When my evidence was heard, his doctor suggested to the cross-examining counsel to ask me why I had not examined with the ophthalmoscope for evidence of optic neuritis or atrophy! However, my account of the incident referred to, confirmed as it was by other witnesses, was sufficient to convince the judge, and the case terminated in judgement for the defendants."

The adoption of a few simple ruses similar to those which we have described ought to enable the practitioner to detect many frauds and impositions. It is possible that some day the Compensation Act will be amended so as to visit the perpetrators of these frauds with severe penalties.

INCOME TAX ON EARNED INCOMES.

WE think it well to draw the special attention of our readers to the fact that the time within which a claim to be assessed to income tax at the lower rates applicable to earned income may be made for the year 1910–11 expires at the end of this month. The law requires that such claims should be made before September 30th in each year—a time limit that is rigidly adhered to, except in so far as it is, we believe, the practice to admit claims made on the last day of the month. Unless the title to relief on earned income be established in due time, income tax will be charged at the full rate of 1s. 2d. in the £, instead of at 9d. or 1s. respectively, where the total income of the individual from all sources does not exceed £2,000, or is more than £2,000 but does not exceed £3,000. In the ordinary course the claim to be assessed at the appropriate rate on earned income will have been preferred on the usual form at the time the income tax return for the current year was made; but if this was not done, it will be well to apply to the local surveyor of taxes at once for the necessary form of declaration. If it should be found impracticable to complete the declaration by September 30th, on account of the requisite information not being available, a formal notice of claim should be sent to the surveyor, with a statement that the declaration of total income will follow as soon as possible. For the purpose of this claim, the income of an individual from all sources does not mean the gross income, but the amount of his income as assessable for income tax, computed, so far as professional profits are concerned, in the manner explained in the JOURNAL of April 23rd, 1910. Moreover, the total income from all sources is arrived at after deducting from the sums assessable for income tax any annual payments made for interest, annuities, ground rents, or similar matters. In the case of partnerships it is to be observed that it is not the amount of the income of the partnership that determines the title to claim relief but the extent of the total income of the individual partner. Thus it is possible for the share of one partner to be charged at the rate of 9d. and for the share of the other to be charged at 1s. 2d., although there be only one assessment on the joint profits. In connexion with earned incomes, it may not be out of place to refer to assessments on fees from appointments. We are glad to be able to state that as the result of the suggestions made in the JOURNAL of July 2nd, the Board of Inland Revenue have informed their surveyors of taxes that medical practitioners who are in general practice may be allowed to include their receipts from appointments in the general return of their profits made under Schedule D of the income tax. Hitherto it has been necessary for separate returns to be made with a view to a separate assessment for each appointment held, and the change in the method of assessment now made will go far to simplify the calculations to be made by the practitioner in compiling his annual return. For the current year, we understand, the assessments will be made on the returns already sent in, unless an application is received by the Surveyor of Taxes to be permitted to substitute an amended return before the assessments are made. Such a notice should contain a list of the appointments the emoluments of which it is desired should be included in the general assessment made on the average of the profits of the past three years. It may be remarked that it will still be open to a medical man who prefers to make separate returns for his appointments to do so, and this course would recommend itself to one whose present receipts from appointments are less than on the average of the three years 1907, 1908, and 1909. On the other hand, when the new basis is adopted, the Revenue authorities will presumably require that all future returns shall be made consistently on the same lines to include the profits of all appointments held during the preceding three years.

DELEGATION OF DUTIES OF CORONERS.

WE have received a copy of a provincial daily paper in which an account is given of the proceedings of a county council at a recent meeting, when the chairman informed the members present that he had received a communication from a gentleman of position with relation to the death of a man 70 years of age who had died suddenly. As the doctor declined to give the usual death certificate, the case had subsequently been brought to the notice of the coroner, who was reported to have sent a certificate to the local police officer with instructions to the effect that if he thought there were circumstances calling for an inquiry he should let him (the coroner) know. This certificate the policeman appears to have handed to the relatives of the deceased, and the body was then buried without an inquest and without the cause of death having been ascertained. The writer went on to say that he held the opinion strongly that the coroner had no power to delegate authority to the policeman to decide whether an inquest ought to be held or not, and he considered that the Joint Committee of the County Council ought to be asked to consider the matter, and to issue instructions to the police not to undertake such responsibilities in future cases. The Council decided to deal with the matter as suggested. It is curious that the question should have arisen, for, as is well known, one of the most common and important duties of a coroner is to decide whether inquests shall be held. The task is always one of responsibility and often of difficulty, and to leave it to an individual policeman, or to any person other

than a legally appointed deputy, is a stultification of the law. The duty of police constables, when acting as coroners' officers, is no doubt to collect all such reasonable information as the coroner may require to enable him to decide as to whether he ought to order an inquest to be held, and then, having done this (so far as this stage of the case is concerned), the duty of the police is at an end.

NOVEL VACCINATION PROBLEM.

A PUBLIC vaccinator has been confronted with a curious problem presenting remarkable difficulties. The father of a child who had attained the age of 4 months, and whose name appeared on the public vaccinator's list, wrote to that official a letter in which he explained that he was not a conscientious objector to vaccination or he would have made the declaration against it. His wife, he explained, was an Italian, and desired to bring up the child in the manner followed in her own country, where the child would be vaccinated at the school age and not in early infancy. Anticipating the visit of the public vaccinator, the father desired to know if his wife's wish could be gratified. He concluded by writing: "My wife wished me to say that the child is *half* Italian, and if the English Government enforce vaccination they must undertake to confine the effects of vaccination to the English portion of the infant. She claims the protection of the Italian Consul for the Italian half of the boy." We are at a loss to know how the public vaccinator will be able to carry out the mother's strict injunctions in this case, which is more difficult than that which Solomon solved in so practical a fashion. We may add that this is not an American yarn, like Mark Twain's story of the dispute between a man and his father-in-law as to the milk of a cow in which they held equal shares.

TRAMWAYS.

THANKS to the London County Council the tramway car is, so to speak, always with us, just as, despite Mr. Sidney Webb, we have the poor. Indeed, there is a certain connexion between the two facts, the tramway being the carriage of those of us for whom the supertax has no terrors. They whirl us out to our suburban, if hardly rustic, residences in the evening, and bring us rapidly to work in the morning. They now, in short, play so important a part in the life of Londoners that everything connected with them is of interest. On this point it may be said that, while there have been improvements in administration during the last few years, a good deal remains to be done before tramways can be regarded as an unmixed blessing. They must always present the drawback of tending to reduce the walking capacity of the young men who form so large a proportion of the passengers carried; this is a point of some importance if these young men be regarded as facultative soldiers at some national crisis, and possibly also from the point of view of maintenance of national physique. Probably, too, the facilities they offer for avoiding exercise have a certain detrimental effect on the healthiness of the population in general. But these drawbacks are the inevitable outcome of the increased facilities for locomotion, which are the cause or the consequence of the desertion of London as a place of residence. On the other hand, there is no reason whatever why tramways, at any rate, should not balance the account by enabling even the poorest person to enjoy the advantage of fresh air. Indeed, a few years ago we pointed to the very valuable part which they seemed destined to play in this direction. Unfortunately, however, the cars introduced not very long ago are so built that instead of promoting the health of Londoners they must have the opposite effect. So far as the inside seats are concerned there is little room for criticism, but the arrangements made for what are ironically called "outside seats" are simply foolish. The chamber in which "outside" passengers have to sit is either stuffier than a tenement dwelling or one in comparison with which the Cave of the Whirling Winds must have been a place of breathless calm. On a wet day the ventilation is not sufficient for cigarette smoke to escape, and on a fine day the draughts are of so searching a nature that the London County Council, through its Tramway Department, must already have been the cause of many deaths and more illnesses among its ratepayers and those of surrounding boroughs. This is no evidence of lack of physique on the part of the victims, for while fresh air is good for every one, draughts are exceedingly dangerous, even to those possessed of the strongest constitutions. The first duty, no doubt, of the coach builders of the London County Council is to ensure that the tramways can pay by providing plenty of room, and the provision of a place for smoking is also an advantage; but it can hardly be beyond their ingenuity to enable the top to play a third and equally important part—that of enabling workers in London, if they will, to pass the time necessarily spent in getting from and to their homes in healthful circumstances. There are thousands of passengers who would prefer a really "outside" journey at all times of the year, for it is never so windy and rarely so wet as to make this course unpleasant provided the seats are dry. To enable them to do this would be quite easy if the carriage builders of the London County Council only covered in half the tops of the tramways and adopted a device to be seen, for instance, on Bristol tramways. They would still have plenty of room for passengers who like closed vehicles. The device in question is one by which the seats are made completely reversible, upper and under surfaces being identical.

A NEW SANATORIUM DEVELOPMENT.

AN institution, to be known as the Arthur Boyd Memorial Sanatorium, was formally declared open at Little Baddow, in the County of Essex, on September 13th. It constitutes in its way a new development in the antituberculosis campaign, and one which is initially due to the energies of Dr. Arthur Lyster of that neighbourhood. It is clearly impossible in small, scattered rural districts to make provision for the treatment of cases of tuberculosis at sanatoriums on the lines which have been followed, and are still being followed, in connexion with thickly-populated centres. Moreover, from the very beginning doubt has been cast on the supposition that in sanatorium work buildings of an elaborate kind are necessary. The fashion in this respect was set by the Midhurst Sanatorium, the circumstances of the creation of which naturally attracted great attention. At that time regret was expressed in these columns that the capital outlay for each bed provided should have been so high, and it was indicated that if such expenditure were really necessary, the chances of an adequate number of sanatoriums being provided throughout the country was exceedingly small. There is now hardly any dispute that the arrangements which must be made in order to secure the success of sanatorium work need not necessarily be of an elaborate character; and, developing this idea, Dr. Lyster has seemingly cut the needs, so to speak, down to the bone. The new undertaking in his neighbourhood has been provided at a total cost, we understand, of not more than £25 a bed; and that this sum is sufficient would seem to be

roved by what has already been done. At the Boyd ome itself twenty-one patients have been under eatment for a total of 355 weeks, or an average of most seventeen weeks; each has paid a sum of 30s. week, out of which £1 has been handed to the matron r their keep, and the balance of 10s. spent in pay- ent of medical attendance, washing, newspapers, and rious small needs outside actual necessities. Beyond is, with the assistance of the Great Baddow Tuber- ulosis Committee, which was early formed, the same neral idea has been in general operation, inexpensive elters having been built and lent to people in the rrounding villages for use in their gardens. Many rsons in an early stage of tuberculosis, we understand, ve been using these shelters at night and engaging their ordinary occupations by day. The further ogress of this movement will be watched with much terest, for it is clear that if in a year or so the results e still satisfactory, a way will have been revealed of mensely lessening the financial difficulties of dealing ith tuberculosis effectively in this country.

MAJOR FARMAR-BRINGHURST.

READERS will probably remember that early in the mmer a coroner's jury in Surrey brought a verdict manslaughter against a retired officer of the Army edical Staff, the general ground thereof being that had directly and indirectly contributed to hasten s wife's death. As a consequence of this verdict he as committed to prison and the case remitted for ial at the Guildford Assizes. The Grand Jury, how- er, at once threw out the bill, and when the case was terwards mentioned in connexion with the coroner's arrant the Lord Chief Justice directed the jury to turn a verdict of Not Guilty, adding that there was evidence which would justify the defendant being t upon trial. This result, though in itself satis- ctory, was in a measure unfortunate, since it prived the officer in question, Major Farmar- ringhurst, of an opportunity of securing for his nswer to the charge a publicity equal to that hich the inquest had received. In view of is circumstance he has since published in the cal press the material which would have been ed in his defence. A copy has reached our nds, and a perusal of the statements made and the various documents set forth confirms the im- ression created by the Grand Jury's treatment of the atter and by the subsequent remarks made thereon the Lord Chief Justice, and, indeed, by the ac- unts previously published of the proceedings at the quest. Into details of the history disclosed it is unnecessary to enter; they are precisely of the haracter likely to be anticipated by any medical an who has ever been intimately conversant with e tragic struggles involved when a husband with a rtain position to maintain endeavours to deal single- nded with the social and other difficulties created narcomania and alcoholic habits in a wife. It ed merely be noted that letters received by ajor Farmar-Bringhurst when in prison pending ial make it clear that his position was not, as he pposed, unknown except to one or two medical en under whose treatment his wife had been. he fact that the unfortunate lady concerned in e case was killing herself by her habits had en observed by casual acquaintances. But this rcumstance, too, is a common feature of such cases. some degree, perhaps, the fashion in which Major rmar-Bringhurst met some of his difficulties was wise, but the unwisdom was by no means of a dis- editable kind. It lay in turning away from the urse which greater consideration for his own terests might have dictated, and in giving way to his wife's wishes that nothing should be done which would increase the chances of her illness and the habits connected with it becoming locally known. For the rest, readers of this JOURNAL scarcely need be reminded of the fashion in which inquests in the country are conducted, and of the preposterous fashion in which coroners' juries frequently launch charges against individuals. This is so well known that unless an inquest verdict or rider has been tested and found true by independent authorities, neither the one nor the other can be regarded as importing the least stigma against the character of any individual. Nevertheless, they are exceedingly annoying, and often do a great deal of harm, and on this ground and those already indicated, Major Farmar-Bringhurst has our full sympathy.

UPRIGHT OR OBLIQUE WRITING.

THE minds of our French colleagues would appear to be greatly exercised with regard to the rela- tive hygienic importance of upright and oblique writing. Some maintain that the so-called English style or slanting caligraphy has a most dele- terious effect upon both the frame and the eyes of the scholar, while the opposing camp declare that the posture necessary for upright writing is harmful and that adopted for slanting is good. Cohen in Germany, and Javal in Paris, pointed out the connexion between myopia and excessive study, and many orthopaedic experts have insisted on the lifelong harm which may accrue to a child who is allowed to write in a false posi- tion. Ellinger in 1877 and Gross in 1878 advised an altera- tion in the desks and in the position of the copybooks, and also that the slope of the letters should be reduced. Schubert in 1880 advised a return to upright writing as a remedy for the evils which had been traced to improper positions taken by children in writing at school. The matter was taken up by the Government, and a commission was formed at Paris in 1881 which pronounced in favour of upright writing. In 1891 the Paris Ophthalmological Society discussed the relations which existed between school work and myopia. The society advised, among other things, that upright writing be taught in place of sloped writing. In 1906 a league of upright writing was formed, initiated by Buisson, Laviose, Jainl, and Robguin. But in 1908 Drs. Pechin and Ducroquet presented a paper to the French Ophthalmological Society, in which they sought to prove that sloped writing was better for the pupil than upright. They stated that upright writing was more fatiguing to the child than slanted writing, and that it postulated a false position at the desk. They therefore recommended that this sloped writing be taught in the Government schools. The latest paper on the subject is communicated to the *Recueil d'ophtalmologie* for January, 1910. It approves the original conclusion of the society in question and opposes that of Pechin and Ducroquet. These authors furnished diagrams of children writing upright characters with one shoulder higher than the other and with manifest curves in the spine. Other pictures showed children engaged in sloping writing sitting square, with straight backs, and shoulders at the same height. Beauvois, the author of the new paper has similar pictures, only reversed. The deformed children are engaged in sloped writing, those who are writing in the upright style are drawn in a correct posture! Pechin and Ducroquet would appear to recommend not only that the letters be sloped, but that the paper be placed obliquely on the desk, with the top deflected to the left. If the paper be so placed and, the right elbow be rested upon the table, both elbows take the weight of the body,

and each line is written by the hand describing a circle from the elbow as centre. This method is, the authors state, the natural one and the least fatiguing. There can be little doubt that this oblique position of the paper is more comfortable for the ordinary adult, but the same need not apply to the infant. Beauvois points out that there is an essential difference between adult and infant writing, due not only to the variation in size, but also to the greater muscular co-ordination of the adult. As he says, a child rather "draws" his letters than writes. It is a little difficult to see why straight writing should necessitate a different position from sloped writing. It would almost appear that both types are consistent with a perfectly correct attitude. Neither of the authors has studied the problem of reverse sloped letters. This might perhaps be even more salutary than upright writing! The chief point is that the child should be made to sit square to his work, and should have a desk of such a height that his eyes are neither too near nor too far from his work. Naturally errors of refraction should be corrected. Should all the weight be supported by the back, or should one or both elbows take a share? If the left elbow alone takes weight the left shoulder will tend to rise, and sclerosis will follow. If both elbows be placed on the table, and each take an equal share of the weight, the paper must be sloped. If much writing must be done a change of method is probably the best. First, the back may take all the weight, the paper being straight, then the elbows may take their share and the paper be sloped. The most cramped position is that which used to be inculcated by writing masters. The pen to point to the left shoulder, and the weight of the hands to be taken by the ring and little fingers alone. This method gives great flexibility, conduces to rapid method, but it is tiring, and quite impossible for children. At present several methods are in vogue; all are strongly supported by eminent authorities, but no one of them has been absolutely proved to be the best.

LEAD AND DUST IN POTTERY MANUFACTURE.

THE Departmental Committee appointed to inquire into the dangers attendant on the use of lead in the manufacture of earthenware and china has issued a second volume,[1] in which is gathered information from all sources, home and foreign, and which opens with a historical summary showing the progress of factory legislation in this country as applied to potteries. Although factory legislation was commenced in 1802, it was not until 1864 that it dealt with pottery manufacture, and then mainly with the limitation of hours of labour for children. Since then legislation has proceeded apace, special attention being directed to the subject of lead poisoning and means for the removal of dust. In a summary of the experimental work on plumbism by Dr. Glibert, Principal Medical Factory Inspector of Belgium, much interesting information is supplied in regard to the anaemia of lead workers. Several tables are published dealing with the incidence of lead poisoning in the various departments of pottery manufacture. In these tables is focussed all available statistical information. By the certifying factory surgeons of the pottery towns have been furnished short reports and tables in which the ages of affected workers are given, as well as their liability to particular types of plumbism. From Dr. Kenneth Goadby's treatise on lead poisoning long extracts have been taken in which the medical aspects of plumbism generally are discussed. In addition, experiments showing the solubility of the various lead salts in gastric juice are detailed, as well as those of a purely physiological character, some of which are likely to throw considerable light upon the more obscure problems connected with plumbism. Similar experiments as regards the solubilities of lead compounds in gastric juice and during mixed digestion are detailed by Mr. W. Thomason, F.I.C., which along with those already mentioned confirm the information previously supplied upon these points by Sir Edward Thorpe and Sir Thomas Oliver, members of the late Pottery Commission. Perhaps the most interesting information in the report is that supplied by Dr. George Reid, an abstract of which was given in the BRITISH MEDICAL JOURNAL of September 3rd, p. 646. Dr. Reid raises a very important question when he says that, without minimizing the gravity of the situation so far as lead poisoning is concerned, the mortality from this cause is a cipher compared with the deaths from phthisis and respiratory diseases—the death-rate from plumbism per 1,000 being 0.81 compared with 7.05. Another interesting and far-reaching problem which follows upon the previous question, and which is also raised by Dr. Reid, is that of compensation in cases of lung disease among potters. The problem bristles with difficulties. The regulations in use in the potteries of European countries are published at length and are of value from the point of view of comparison with our own. The volume closes with reports on systems of ventilation by Mr. C. R. Pendock, His Majesty's Inspector of Factories, in which the various methods in use are criticized and improvements suggested. The two volumes supply most valuable information. They are the most complete reports relating to the hygiene of pottery manufacture in this or any other country. Sir Ernest Hatch, as chairman, not only gave himself unremittingly to the task he undertook, but succeeded in imbuing the members of the committee with a love for the work similar to that which animated himself and which is reflected in the excellent report issued by the committee.

[1] Report of the Departmental Committee appointed to Inquire into the Dangers attendant on the Use of Lead, etc., in the Manufacture of Earthenware and China. Vol. ii. Appendices. Wyman and Sons, Fetter Lane, E.C. Price 1s. 9d.

LUNACY LAW REFORM IN GUERNSEY.

IN the SUPPLEMENT of the BRITISH MEDICAL JOURNAL of September 3rd will be found an article on lunacy law reform in Guernsey, by Dr. Marcus H. Bulteel. In his article Dr. Bulteel refers to the report of a Special Commissioner of the JOURNAL, printed on June 2nd, 1906, and says justly that inasmuch as the report of the Special Commissioner pointed out so much that was defective in the law it seemed only fair that the great reform which has been brought about by the action of the Guernsey Division of the British Medical Association, with the cordial and enlightened co-operation of His Majesty's Procureur Mr. E. C. Ozanne, should be made equally public. It should be recalled that the report of the Special Commissioner included both lunacy law and lunacy administration, both of which were found to be greatly defective. We are now glad to learn that the whole lunacy law of the bailiwick has been recodified and that amendments recommended by a committee of the Guernsey Division of the Association have helped to bring it into line with the excellent lunacy law of the sister isle of Jersey, or, subject to differences determined by local exigencies, with that of England and Wales. We therefore congratulate the Guernsey Division on the success which has attended its labours. At the same time much remains to be done. Before the time of our Special Commissioner's report a committee had been appointed by the States and this committee presented majority and minority reports. Both were agreed that there should be

established a central asylum under a separate administration, thus doing away with the confusion of Poor Law and lunacy administration which then obtained and still, we gather, exists. "For financial and other reasons," Dr. Bulteel says, "the States have found themselves unable at the present time to enter upon the fresh outlay involved in such a scheme," and consequently the committee of the Division limited their efforts to reform of the law. For a description of the actual conditions under which insane persons, pauper and private, are treated in Guernsey we would refer those interested to the report of the Special Commissioner already referred to, and we can only hope that the Division, encouraged by its success in one department, will press for reform in the other.

PREGNANCY, SYPHILIS, AND SERUM-DIAGNOSIS.

SYPHILOGRAPHY has made great advances during the present century, especially in regard to its bacteriology and serum-diagnosis. The relation of syphilis to the death-rate of infants, and therefore to pregnancy, was discussed ages before these new discoveries were ever thought of. The bearing of these discoveries on such well-known evils as congenital syphilis and habitual abortion has, therefore, attracted the attention of obstetricians since Schaudinn showed that the *Spirochaeta pallida* was the specific micro-organism of syphilis, and since Wassermann, Neisser, and Bruck reported those experiments which led to the introduction of a serum-diagnostic reaction in syphilis regarded by them as specific. In the spring of 1908 Dr. Herbert Williamson and Dr. Eardley Holland reported, before the Obstetrical and Gynaecological Section of the Royal Society of Medicine, a case of intrauterine death of the fetus occurring in six consecutive pregnancies. There was no evidence of syphilis in the father or the mother. The patient was watched through her fifth pregnancy, and she was delivered prematurely of a stillborn child. Dr. E. Holland, working with the silver method, detected the spirochaetes in abundance in the child's liver and spleen. The mother once more became pregnant, and specific medicines were prescribed. The menstrual history was obscure; hydramnion was present. Labour was induced earlier than was compatible with the safety of the embryo, and living twins, a male and a female, were born, both under 4 lb. in weight. Neither lived many days, nor showed any syphilitic lesion. The liver and other viscera of the female twin were examined, but the spirochaete could not be detected. There was much discussion on this case, which admits of several interpretations. Another case of interest to the obstetrician was reported by Dr. Zacharias[1] quite recently. A syphilitic mother, aged 28, expelled a fleshy or haematic mole at the fifth month. It was of the bulk of a normal two months ovum and contained about 20 c.cm. of a pale yellow liquor amnii and a gelatinous body about half an inch long, the blighted ovum. It was examined in Professor Prochownik's clinic. The patient was put to the test and the Wassermann reaction was found to be well marked. On the other hand, the mole itself was carefully searched, but the spirochaete could not be detected. Zacharias urged the necessity of applying the serum to all mothers who were delivered of moles or aborted frequently. It is clear that the blood test and the bacteriological test for syphilis are likely to prove of great general value in obstetrics, but practitioners will be hardly likely to avail themselves of them freely until experts have simplified their methods and made them more certain. An interesting paper by a great authority on the general subject will be found in the proceedings of the Section of Dermatology in the early part of the present issue.

[1] "Eine Hämatommole." Meeting of the Hamburg Obstetrical Society. *Zentralbl. f. Gynäk.*, September 10th, 1910, p. 1221.

THE WEIR TRUST.

CONSIDERABLE sympathy must be felt with the governors of the Bolingbroke Hospital in the position in which they find themselves placed by the recent decision of the High Court with regard to the disposition of the estate left by the late Mr. Weir. As will be remembered, the trustees of this estate, with the authority of the Charity Commissioners, and in pursuance as was believed of the terms of the will, gave Bolingbroke Hospital £5,000 some two years ago for the purpose of extensions. As the latest decision of the High Court is to the effect that no part of the trust funds can rightly be devoted to work outside the limits of Streatham, the governors of the hospital have decided to hand back the sum in question. This step, however, will practically exhaust their funds and necessarily interfere with the well-being of an institution which does much good work for South-West London, and which is administered on lines more consonant with the true interests of the public than are those of most hospitals.

MUSCAE VOLITANTES.

SOONER or later almost every individual becomes conscious under certain circumstances of small shadows in his field of vision, the so-called muscae volitantes. The subject is of interest to every practitioner, for often in the case of a nervous or run-down patient these entoptic phenomena assume an importance often out of all proportion to their real significance. When an individual complains of seeing floating shadows like flies or strings of beads his refractive media should be carefully examined, for there may be an objective cause for his subjective sensations. There may be early cataract or floating opacities in the vitreous. The latter are common in eyes which are highly myopic. But in most cases the eye will be found to be absolutely normal. The patient has become cognisant of a purely physiological phenomenon. The vitreous is not a homogeneous clear jelly, but contains organized cellular elements, the relics of embryonic life, which throw faint shadows upon the retina. In the *Recueil d'ophtalmologie* for February, 1910, the subject is discussed by Scrini, who summarizes the literature of the subject. In 1707 Maitre Jan studied the matter and ascribed the symptoms to a defect in some of the retinal fibres. Before his time, in 1690, the Jesuit Dechales suggested an explanation which was not far from the correct one. The phenomena were due, he said, to the projected shadows of certain corpuscles floating in the neighbourhood of the retina. But it was not until 1857 that Donders definitely showed that Dechales's view was correct. Before Donders many other incorrect explanations had been accepted. One of the very best accounts of entoptic phenomena has been given by J. Burdon-Cooper in the *Ophthalmic Review*, vol. xxvii, p. 357. He describes the usual ways of rendering the minute particles in the vitreous visible and delineates all the common figures. The best method is to remove the high power objective of a microscope from the nose-piece and place it upside down on the top of the eye-piece. If a beam of light be thrown through the condenser and the eye be placed close to the objective all the shadows thrown upon the retina are clearly visible and can be studied

in detail. The luminosity of the entoptic field can be varied by the iris diaphragm. This is important, for objects seen in the anterior part of the vitreous which are very indistinct when the field is bright, stand out in high relief when the illumination is diminished. A position for the condenser and diaphragm can be found which gives the maximum distinctness for any object under examination. Another effective method is to hold a small sphere of glass from 1 to 2 mm. in diameter close to the eye and between it and the source of light. This little device is easily made by fusing one end of a fine capillary glass tube until a small bead forms. By these simple methods any one can examine the vitreous contents of his own eye. If we carefully examine the refractive media of our patients with a small flat mirror with a +12 to +20 lens behind it and fail to detect any opacities in the lens or vitreous, we can assure them that the objects they can see are purely physiological and encourage them to cease to notice them.

RECENT OBSTETRICS AND GYNAECOLOGY.

WE have heard the work of a young and pushing specialist criticized with the remark, "He is a man who will always get a result." Experience does not invariably lead to a result; and the newest treatment is not always the best treatment. Drs. K. Franz, of Jena, and J. Veit, of Halle, have edited the first part of a new journal to which they have given the name of "Practical results of obstetrics and gynaecology,"[1] and which has provoked the reflection to which utterance has been given above. We know not how far it is matter of coincidence that all the contributors to this new journal should have sent in papers of the same kind, or how far each paper has been written to order in accordance with editorial instructions. We have in this country an excellent periodical, the *Journal of Obstetrics and Gynaecology of the British Empire*, which gives its readers from time to time what is there called a "critical review"—that is, a paper in which a young man of industry and ability, on the instructions of the editor, summarizes and criticizes the recent literature on some particular subject. It is not necessary, for the production of a good paper of this kind, that the writer should himself have done original work at the subject. These "critical reviews," like similar articles in the BRITISH MEDICAL JOURNAL, have, we have good reason to know, been most acceptable to, and valued highly by, readers. The papers which very instructively fill the pages of this new German periodical are all of the "critical review" class, but of a somewhat specialized type. The editors in their preface tell us that the German obstetrical and gynaecological papers at present in existence give the practitioner too much theory and too little practical information. These papers of "practical results in obstetrics and gynaecology," however, are collections of clinical experience—we hope we shall not be misunderstood if we say clinical experiments—and they have their value, especially to the teacher. But as to *results*—meaning by that some step forward taken, some definite fact attained that was not known before—well, we have not found it. The papers are records of attempts at progress—careful, laborious, honourable effort—but the result is very little. Here are the subjects: Extirpation of the uterus in puerperal fever; the artificial termination of pregnancy; the dietary of lying-in women and infants; the changes in the technique and indications of Caesarean section; the doctrine of endometritis in its practical effects; the principles of forceps delivery; cancer of the stomach in its relation to gynaecology and midwifery; the diagnosis and treatment of acute general puerperal peritonitis; prolapse and its treatment; puerperal haemorrhage and its treatment; practical results of serology in midwifery and gynaecology; contracted pelvis; lumbar anaesthesia; when ought both ovaries to be removed? disinfection in practice. A list of topics, it will be seen, offering plenty of variety, and all of them important in practice. The teacher of midwifery and gynaecology will find this volume of great use to him, informing him in a brief compass of the directions in which activity is manifest. But the general practitioner who takes it up expecting to be able to fill his pockets with so many additional pebbles to throw at disease will find himself disappointed. He will find suggestions of plenty of things that he may do, but scanty and indefinite information as to the effects that he may expect to follow his action. But it is, on the whole, a useful publication. Each subject is laboured with the thoroughness characteristic of the great nation to which the writers belong. Each paper represents the latest, if not the last, word upon its subject. We thank the editors for it.

[1] *Praktische Ergebnisse der Geburtshilfe und Gynäkologie.* Herausgegeben von K. Franz, Jena, und J. Veit, Halle. Erster Jahrgang, 1 Abtheilung. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1909. (Sup. roy. 8vo, pp. 297. Taf. I. 7s.)

THE presentation of the portraits of Professor Ogston to himself and to the University of Aberdeen will be made in the Portrait Gallery of Marischal College on Friday, October 14th, at 3.30 p.m., by the Right Honourable Robert Farquharson, M.D., of Finzean. All subscribers are invited to be present.

MANY of our readers may be glad to know that the Librarian of the British Medical Association is prepared to forward to any member on application the *Catalogue of Periodical Publications, including Hospital Reports and Transactions of Societies and Congresses*, which may be had on loan under conditions which are indicated at the beginning of the list.

THE annual dinner of the Edinburgh Graduates in the Midlands will be held at the Grand Hotel, Birmingham, on Thursday, October 6th, at 7.30 p.m., with Dr. Byrom Bramwell as the guest of the club. Any graduates desiring to be present should communicate with the Honorary Secretary, Mr. John T. Hewetson, 89, Cornwall Street, Birmingham, not later than October 4th. He will be glad to have the names and addresses of any Edinburgh gradates recently settled in the Midlands who have not received notices, so that they can be added to the list.

THE Fifth International Dairy Congress, which will be held in Stockholm in 1911, offers a prize of £20 for the best essay on the nutritive value of raw milk as compared with that of pasteurized, sterilized, or evaporated milk, determined, at least in part, by experiments made upon infants. In case the raw milk is found to give the better results, it is requested that the rôle played by the enzymes of the milk be determined if possible. The papers, which may be written in German, French, or English, and typewritten, should be sent before April 1st, 1911, to the Secrétariat général de la Fédération internationale de Laiterie, 23 rue David Desvachez, Bruxelles, Belgium. The prize will be awarded by a jury of five to be chosen by the congress.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

CLINICAL TEACHING IN THE SCOTTISH MEDICAL SCHOOLS.

PROFESSOR E. SIMS WOODHEAD, Cambridge, a member of the committee on the Scottish Universities, has added an interesting and valuable note to the committee's report on clinical teaching in the medical schools of Scotland. He points out that for a long time there has been difficulty in providing sufficient clinical material for the instruction of students at the Universities of Edinburgh and Glasgow. In Aberdeen, where there is an excellent medical school, this difficulty has not been felt; whilst in Dundee, with its splendid infirmary and 400 beds, the material is largely in excess of the needs of the comparatively small number of students in attendance. In Glasgow, under the new arrangement with the managers of the Royal Infirmary, and with a splendid new hospital for women at the disposal of the University authorities, the accommodation at the Western Infirmary (at which, in former years, the greater part of the teaching has been carried on) has now been largely supplemented, and the problem of supplying clinical material and teaching to the medical students attending the school has been solved. In Edinburgh, where, in proportion to the number of students attending the clinics, the accommodation in the Royal Infirmary is comparatively small, arrangements have recently been made to bring some of the clinical teachers, and with them the beds at their disposal, into closer touch with the service of the university. These changes have been attended with considerable success. Much more, however, might still be done in the utilization, not only of the in-patients, but of the out-patients, for clinical instruction in this school. The question, then, is in what directions, and by what means, a better and fuller utilization of (1) the available clinical material, and (2) the available teaching strength, seems to be possible. This twofold problem involved, at the outset, an examination of the relation existing between the University and the extramural school of medicine. The teachers in the extramural school were independent, a highly satisfactory state of affairs. The clinical teachers—university and extramural—controlled the whole of the clinical material that was required for the training of the medical student, and it was evident that the success of any competitive element among these teachers, as at present carried on, could only result in the unequal distribution of the students among the teachers, and, therefore, of the available clinical material among the students. If the reputation of the clinical teaching in the Edinburgh schools is to be raised, or even maintained, some modification of the present system is now desirable.

The problem, on its two sides, must first be illustrated by a review of the existing position of matters.

In the Royal Infirmary at the present time there are, roughly speaking, 900 beds at the disposal of the teachers. On the surgical side some 290 beds are set apart for the men, and 46 for the women students. Of the 290 beds, about 225 appear to be under the direct control of the two university professors and two surgeons who, under a recent arrangement, have been made University Lecturers in Clinical Surgery. Although these latter are University Lecturers in the Royal Infirmary, they are allowed if they wish to do so, to lecture on systematic surgery in the extramural medical school. Of the full surgeons one still remains an extramural lecturer in clinical surgery. These surgeons are assisted by five assistant surgeons, who go on duty when the surgeons are away, and attend to the out-patients, especially on receiving days. One of them takes charge of the "lock" wards, and one surgeon and one assistant surgeon take charge of the clinical instruction of the women students.

The beds set apart for general medical patients number from 310 to 330 available for instruction for the men, and 40 for the women, medical students. These beds are divided much more equally between the university and the extramural school than are those in the surgical wards. The three university professors of clinical medicine have control of about 140 beds, and the four extramural lecturers of about 170. None of these extramural physicians act as university lecturers, as do certain members of the staff on the surgical side of the hospital. Seven assistant physicians perform duties similar to those falling to the assistant surgeons. None of these assistants are called upon to do any clinical teaching except in the absence of one or other of the senior physicians, or in the observation ward or in the ward for delirium tremens patients. In the gynaecological ward (27 beds), to which men students are admitted, there is one full physician, with whom is associated an assistant physician. (The women are taught by one gynaecologist, who has 30 beds at his disposal, and has associated with him an assistant gynaecologist.) The special wards are allotted to: Skin diseases (one physician and two assistant physicians, with 22 beds, the physician being also a university lecturer); diseases of the eye (46 beds in charge of two surgeons and two assistant surgeons—one of each in the university and one of each in the extramural school); diseases of the ear and throat (30 beds in charge of two surgeons and two assistant surgeons—one of each in the university wards, and one of each on the extramural side). We have thus about 190 beds in these special departments in charge of five full surgeons or physicians, who can call on the services of six assistants. These latter, however, have no special teaching duties assigned to them. A medical electrician with an assistant, a pathologist with three assistants, and three tutors in clinical medicine, along with a tutor in clinical surgery and one in gynaecology, complete the infirmary teaching staff.

The students—university and extramural—by whom this material is to be used, number about 600—200 third-year students, 200 fourth-year students, and 200 senior or fifth-year students. There are thus 200 students of surgery to be taught on the patients in 336 beds—about 1.7 beds per student. In the senior surgical clinics about 100 students have to be provided for. If all the "full" surgeons were on duty at one time, each would have a following of 60 students. If the five assistant surgeons were regularly utilized in teaching, the number in each clinical class might be reduced to 30. In the medical wards (with, say, 310 beds, exclusive of those set apart for the teaching of women students) only slightly more material was available. If the students were equally divided among the seven full physicians, each would have a class of over 40. If the services of the assistant physicians were more fully utilized, this number might be brought down to 20—a much more manageable and satisfactory number to teach. An extension of tutorial work would considerably lighten the duties of those teaching in the clinical wards.

In the Royal Hospital for Sick Children there are 117 beds (42 surgical and 75 medical). Much of the material here collected might be utilized in clinical teaching, quite apart from the special instruction in diseases of children.

The number of beds in the City Fever Hospital was ample for the training of even a larger number of students than at present resorted to Edinburgh.

The material for the study of midwifery, though not large, has, says Professor Sims Woodhead, up to the present, been sufficient for the needs of the students who stay in Edinburgh to do this work.

A characteristic feature of the Edinburgh course of medical training is the "dispensary" work. Situated in various parts of the city are dispensaries where students, under the supervision of a physician or a surgeon, examine out-patients, prescribe for them, and also attend them in their own homes, treating them on their own responsibility, and in this way garnering much valuable experience of actual practice.

Out-patient work at present seems to be far too little utilized, not only in the Edinburgh hospitals, but in many of the other schools. In Edinburgh this is more serious from the fact that such a comparatively small number of ward beds are available. In the wards, of course, the student examines and writes a report on the condition of the patient, and goes carefully into and records every detail of the case in a way that would not be practicable with out-patients. In the surgical out-patients' room, however, under the supervision of the surgeon or his assistant, much of the work of ward examination and treatment might be largely supplemented. (More might also be done in the medical out-patient room, though not so much as on the surgical side.) It would, no doubt, be impossible to keep permanent records of anything except the more important features of the case, but a careful examination and treatment of three or four patients daily in the out-patient room, under proper supervision and guidance, would be of inestimable value to the student who has already been well grounded in clinical methods in the ward. Much of this work is often looked upon as being preliminary to ward work. It should, however, be supplementary or additional to it, as the student is not in a position to profit by it fully until he has gone through a systematic training on a few cases in the wards. From the facts above mentioned it is evident, as regards the first point in question—the distribu-

tion of material among the students—that there is not so much lack of material as a want of organization and full utilization of the material actually at the command of the teacher.

As to the second point—the utilization of the available supply of teachers—there is an unequal distribution of the students among the senior clinical teachers, and, along with this, there is undoubtedly a marked dearth of junior clinical teaching appointments. Without doubt the professors of systematic and clinical surgery and medicine in the University of Edinburgh have been greatly overworked both as regards clinical teaching and examinations. An attempt has been made on the surgical side to improve this condition by appointing two of the surgeons in the extra-mural wards to be extra-clinical lecturers, and there seems to be no reason why the whole of the physicians and surgeons, and assistant physicians and surgeons, and even some of the junior tutors, should not become university officials so far as their hospital work is concerned. Several of the lecturers, physicians, and surgeons might, in turn, act along with the professors, who might, when necessary, call to their aid, as assessors and assistant examiners, the assistant physicians and assistant surgeons. Similar duties and privileges might with equal advantage be extended to the senior members of the staff of the Royal Hospital for Sick Children, the Royal Maternity Hospital, the City Fever Hospital, and the Royal Morningside Asylum, where university teaching is already carried on by the members of the various staffs.

One great advantage of throwing further teaching responsibility on the assistant physicians and assistant surgeons would be that it would then be possible to divide the clinical students into junior and senior classes. At present a teacher in the wards is often handicapped; his teaching is either much above the heads of half his audience or much below the level of the other half, and cannot be satisfactory to either set of students. With an additional number of teachers available such overlapping, at present inevitable, might easily be avoided. The teaching might be made much more practical, as in smaller classes a far larger proportion of the men would be able to examine the patient without interfering with his comfort; moreover, as already mentioned, the out-patient work might then be made a regular part of the compulsory clinical work of the curriculum. Further, it has always been a tradition in the Edinburgh school—a tradition still kept alive—that certain of the assistant physicians should devote their time to the study of special branches of medicine, and there seems to be no reason why special clinics on diseases of the heart and diseases of the nervous, respiratory, haemopoietic, and other systems should not be carried on by some of the assistant physicians, thus greatly relieving, and at the same time supplementing, the work of the general wards.

In order to complete the co-ordination of clinical and pathological teaching in the Edinburgh Medical School the pathologist in the *post-mortem* department of the Royal Infirmary might well be appointed a lecturer on morbid anatomy under the professor of pathology, the other pathologists in the various hospitals being offered the status of assistants in the university whilst working in the hospitals, but allowed to hold practical or even systematic classes, not necessarily in the infirmary, but in the university, under the professor of pathology, or in the extramural school, as independent lecturers.

It should be an essential feature of the arrangement thus outlined that the classes of each of the senior members of the staff of the infirmary or of the Royal Hospital for Sick Children should be limited to, say, forty until the enrolments in each of the other classes should have reached a similar number. The classes of the assistant members of the staff might with advantage be limited to an even smaller number.

To attain all this it is obvious, says the report, that co-operation between the managers of the various hospitals is necessary. Then there was the financial aspect, and the establishment of a fee fund was suggested.

LORD SHAW ON THE HEALTH OF STUDENTS.

At the opening of a new school in Perth on August 29th, Lord Shaw of Dunfermline delivered an address on education, dealing specially with its effect on the health of students. Investigations, he said, had been going on regarding this question, particularly in Glasgow, and the revelations were distressing. The claims of a career were so strenuous that only the realities of life were attended to, and those in the training for professional men and women were bound to become hard and forbidding. The body of the student and his life were irregularly watched over. Students were forced to lodge away from home and its associations, in university centres, and often in circumstances which were a menace to health. He appealed for the institution of residential colleges in such centres, where orderly habits, good food, spacious healthy dwellings, and the happiness of social friendships could be made part of a dignified and well-ordered existence. The time was ripe for a better and upward change in this respect in Scotland if only means could be found to form a great central financial fund to give a commencement to the whole scheme. Everything was favourable. The universities were favourable, local committees were ready to be formed, and the Government, which paid out large sums annually, were deeply interested, in order to get the best possible return for the expenditure. From teachers and students so trained there would extend for generations of pupils a refining and elevating influence which would make its impress on rising nations of Scotsmen.

GLASGOW UNIVERSITY.

The number of entrants for preliminary and bursary examinations in Glasgow University, to be held from September 9th to 21st, are well up to last year's average. In the medical preliminary examinations the numbers are: English, 70; Latin, 72; Greek, 32; mathematics, 65; French, 60; German, 5; Gaelic, 3; Welsh, 1; and Arabic, 1. There is an increase in the number of bursary candidates as compared with last year.

THE CARE OF UNFIT CHILDREN IN GLASGOW.

The Glasgow Parish Council, at its meeting on September 6th, discussed a memorandum prepared by Mr. James R. Motion, the inspector, on the question of making some provision outside the institutions for unfit pauper children, so that they might be taught something suitable to their health and capacities. The class of children referred to had no future before them but residence in a hospital or a poorhouse, owing to their condition of health rendering them unable to earn a livelihood when discharged, or become in any way self-supporting. Boarding out does not meet the want felt in such cases, and the suggestion was made that some derelict mansion house, with ground attached, should be procured, where the children might be properly cared for, and taught knitting, weaving, canvas-work, basket-making, wood-carving, gardening, and fruit culture, etc. The chairman's committee, after consideration of the scheme, recommended its adoption, as the accommodation at Stobhill Hospital was not sufficient, and this class of children ought to be, as far as possible, removed from an institution with a poorhouse taint. The Council ultimately decided to agree to the proposal by a majority of 22 to 6. The proposal is a novel one, and its development will be watched with much interest. As the number of children is large, probably several such homes as suggested may have to be obtained.

THE SCOTTISH CHAMBER OF AGRICULTURE AND PURE MILK.

A meeting of Directors of the Scottish Chamber of Agriculture took place at Glasgow on September 1st, when arangements were completed for the annual meeting and conference with Lord Carrington, Minister of Agriculture, on October 5th. Among the resolutions submitted for discussion at the conference was one dealing with the milk standard "to consider the operation of the Sale of Food and Drugs Act in relation to milk." A committee was appointed last May to go into the question and report, and this report was submitted. The committee was of opinion that the law

as to adulteration of milk should be strengthened so that the warranty defence would not be set up. Among other things they consider that it should be made an offence to have skimmed or separated milk in vessels not clearly indicating the nature of the contents; that it should be an offence for any dealer or his servant to mix milk with water or with skimmed milk unless it is not for sale; that a fixed standard of quality, namely, 3 per cent. of butter fat, and 8.5 per cent. of solids not fat, should be set up in place of the present limits on which a presumption of adulteration is raised; that officers of local authorities should have the same right of entry to premises of milk sellers as under the Butter and Margarine Act; and that powers should be given to the Board of Agriculture to prescribe methods by which a fair and average sample of milk be obtained. The committee considered that these changes would ensure a better milk supply, would discourage adulteration and the sale of poor milk, and would raise the tone of the business of milk distribution. The report of the committee is recommended to the conference for its approval.

Proposed Jewish Dispensary in Glasgow.

A conference of representatives of the Jewish clergy and delegates from most of the Jewish congregations and institutions in Glasgow was held in the Herzl Hall on September 4th. The conference was convened by the Glasgow Jewish Hospital and Sick Visiting Association to consider a proposal for the establishment of a free Jewish dispensary on the south side of the city, and, if possible, a Jewish kitchen in connexion with one of the infirmaries. Mr. J. Fox, who presided, stated that not more than £250 would be required to finance the scheme. The Rev. L. Levine stated that Jewish dispensaries were to be found in Liverpool, Leeds, Birmingham, and Manchester, and that such a dispensary would be most desirable. Referring to the proposal to establish a Jewish kitchen in one of the infirmaries, he wished it to be understood that he was not complaining of the treatment of Jewish patients. He was a frequent visitor at the infirmaries, and he could say that the nurses and doctors treated them with great kindness. But many of the Jewish patients brought up from childhood to the strict dietary laws of the Hebrew faith found the strange diet a hindrance to recovery. A provisional committee was appointed to formulate a scheme for the dispensary, and to approach the directors of one of the infirmaries regarding a separate Jewish kitchen.

Air Purification Movement in Glasgow.

The smoke abatement exhibition organized by the Corporation of Glasgow in pursuance of the air purification campaign was opened on September 16th by Lord Pentland, Secretary of State for Scotland. There was a large gathering at the opening ceremony, and the Lord Provost, in introducing Lord Pentland, referred to the objects of the exhibition and to the determination of the Corporation to leave nothing undone to make the city atmosphere sweeter and purer. Lord Pentland referred to the problem before the citizens as one concerning their health and working power, and while many obstacles must be overcome before the object was attained, the exhibition would show how great were the economies in their power if proper methods were used. The exhibition is the most complete and most comprehensive of its kind ever held in the country, occupying over 30,000 sq. ft. of floor space, and will remain open for three weeks. It is in three main divisions. One division illustrates the use of gas appliances for lighting, cooking, and heating; the second division is devoted to electrical appliances; while the third is intended to demonstrate the value of smokeless fuels, either in ordinary or special stoves. The Corporation gas and electrical departments have spared no pains to make the exhibition as complete as possible, and each of these departments has fitted up a special model house, fully equipped in the one case with gas appliances, in the other with electric fittings, for cooking and heating. The principal manufacturing firms in the United Kingdom have also collaborated to provide an interesting and instructive display.

Motor Ambulance Wagon for Glasgow Fever Hospital.

The Corporation of Glasgow has completed arrangements for the supply of a motor ambulance wagon for the removal of cases to the City Fever Hospital. As this innovation is experimental, the new vehicle will be used solely for the conveyance of diphtheria patients, where speedy removal is always desirable and of great importance. Should the motor vehicle prove the advantage it is anticipated, several others will be added in place of the present horse-drawn vehicles.

Glasgow and the Tuberculosis Exhibition.

The Glasgow and District Branch of the National Association for the Prevention of Consumption have resolved to arrange for a visit of the Exhibition on Tuberculosis to Glasgow at the end of next month, and have asked that the exhibition be under the joint auspices of the Health Committee of the Corporation and the association. As the object of this exhibition is to educate the public and create increased interest in the work of preventing and treating tuberculous disease, and as popular lectures by eminent medical men are delivered during its course, the Corporation has remitted the matter to the Standing Subcommittee on the Prevention of Tuberculosis, with full powers to make any arrangement they consider fitting. The request of the Glasgow and District Branch will in all likelihood be acceded to, as the exhibition will further the aims of the Corporation subcommittee and bring its views prominently before the citizens of Glasgow.

Aberdeen Medical Men and Oldmill Poorhouse.

The medical men of Aberdeen by their refusal to apply for the vacant medical officership of the Oldmill Poorhouse at the salary offered, namely, £75, have forced the Parish Council to raise the salary to £105. The salary which the Aberdeen Branch of the British Medical Association suggested would be adequate remuneration for the services required was £150. At the meeting of the Parish Council on September 14th several proposals were before them, one proposition being that a resident medical officer be appointed at a salary of £250 with board: this found some support. Eventually it was agreed to advertise the vacancy at a salary of £100, with £5 for work under the Lunacy Act. At a meeting of the Aberdeen Branch held on September 16th, it was unanimously decided to adhere to the former resolution, which strongly recommended that no medical man should apply for the Parish Council appointment at a less salary than £150 per annum, which was considered the irreducible minimum.

Northern Infirmary, Inverness.

The annual report for 1909 has just been issued; 755 cases were treated in the wards of the infirmary during the year, 170 cases were treated in the *x*-ray department, and separate applications to the number of 842 were given. There were several changes in the medical staff during the year. Dr. John MacDonald resigned as a member of the acting staff, and Dr. John W. Mackenzie was appointed in his place; Dr. Roberts has been appointed an assistant member, owing to the promotion of Dr. Mackenzie.

Medical Inspection in Ayrshire Schools.

Dr. C. R. Macdonald, in his first annual report on the medical inspection of school children in Ayrshire, just issued, states that in the 67 schools dealt with during the past year 3,666 routine cases and 1,034 special cases were attended to. In future, children at all the schools will be examined at three age periods at least—namely, (1) during the first year of school life, (2) at about 8 years of age, and (3) before leaving school. No arrangements have yet been made regarding the question of school nurses, but it will be impossible to obtain the full benefits of medical inspection without a staff of nurses to visit the homes of all children requiring attention. This might be done either by a special staff or by arrangement with local nursing associations. As to physical condition, the children examined compared favourably as to height and weight with the Anthropometric

Committee's standard for Great Britain. Although a large proportion of children were found with defects, these were generally of a minor character; for example, pediculosis of the head constituted about 25 per cent. of the defects discovered.

MEMORIAL TO DR. HAY.

The committee appointed to raise a fund to perpetuate the memory of the late Dr. Hay, of Leslie, have now handed over to the local nursing association the sum at its disposal, £115 2s. 10d., to be used for the benevolent and charitable branch of the association's operations, cases of dangerous and incurable diseases to have first consideration.

APPOINTMENTS OF MEDICAL INSPECTORS OF SCHOOLS.

Dr. Alex. G. Glass, Burnley, has been appointed medical inspector of schools for the united counties of Roxburgh and Selkirk. The commencing salary is £300 per annum; there were twenty-one applicants. Dr. G. Wishart M'Intosh, Kirkcaldy, has been appointed medical inspector of schools for Kirkcaldy.

GREENOCK AND THE TREATMENT OF PHTHISIS.

The subcommittee appointed by the Corporation of Greenock has decided to recommend that for the adequate carrying out of any scheme for the prevention or cure of phthisis an increase of one penny in the public health rate of the burgh would be advisable.

PERTH COUNTY FEVER HOSPITAL.

At a recent meeting of the Highland District Committee, held on September 3rd, a report was submitted from Dr. Graham, Medical Officer of Health of the county, to the effect that after the erection of Perth New Infirmary the agreement with the district committees would terminate. To alter and extend the county fever hospital would cost £2,500, the cost per patient per annum, including repayment of loan, being £9 12s. 6d. The hospital would contain 68 beds. The committee agreed to join with the other district committees in support of the proposal.

SIDLAW SANATORIUM.

At a meeting of the governors of Dundee Royal Infirmary it was stated that with the passing of the Provisional Order authorizing the transfer of the sanatorium and endowments to the infirmary directors the way was now open to an early resumption of work at the sanatorium.

WEST OF SCOTLAND CONVALESCENT SEASIDE HOMES.

The forty-first annual report of this most deserving institution states that on July 31st, 1909, there were 307 persons resident in the homes. During the succeeding twelve months 5,043 patients were admitted (exclusive of children under two years of age), 4,831 were restored to health, 189 relieved, 92 did not improve, 2 died, and 236 remained in the homes. These patients came from Glasgow and the West of Scotland, and a considerable number also came from the East of Scotland and the Border counties.

MOFFAT AND ITS BATHS.

An amusing discussion took place at the monthly meeting of Moffat Town Council on the question of the continuous loss in recent years in connexion with the mineral baths. During the last three years there has been a loss of £250, and for every bath taken by a visitor at 2s. it would appear that the ratepayers paid 5s. The income amounted to 3s. 6d. per diem and the upkeep cost the council 8s. per diem. One member blamed the doctors for sending patients past their own doors to Buxton and Harrogate: another advised that the baths should be done away with altogether, while a third advised the spending of £2,000 to £3,000 to improve them. It was argued that golf brought twenty people to Moffat for every one the baths brought. The discussion ended without any new move being taken in either direction.

HEALTH OF INVERNESS.

The annual report of the medical officer of health for the burgh of Inverness has just been issued. On the estimated population for the year, 24,000, there is a birth-rate of 21.041; this rate, as in other towns, has been gradually diminishing for the past ten years. The death-rate, 15.541, was the lowest for the past eight years. The infantile mortality-rate was lower than it has been for the past ten years—118—excepting 1904, when it was 103. More than half the deaths occurred within the first three months. Voluntary health visitors have been doing good work in the burgh, and possibly the visits paid by the ladies may have some influence on the infantile mortality-rate. There were only 78 cases of infectious disease notified during the year, but 37 deaths were registered as being due to pulmonary phthisis. Although voluntary notification is in force in the burgh, this measure has not been successful in furnishing much information as to the incidence of the disease. It is regrettable to notice from the report that no less than 96 parents took advantage of the conscientious objection clause with regard to vaccination. The remainder of the report deals with the different sanitary measures undertaken during the year.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

PROPOSED MEMORIAL TO KING EDWARD VII IN BELFAST.

A LARGE and influential public meeting, convened by the Lord Mayor, has been held in the Council Chamber, City Hall, Belfast, to consider what steps should be taken to establish in the city a memorial of His late Majesty King Edward VII.

The Lord Mayor, Councillor R. J. M'Mordie, M.A., presided, and the large chamber was filled; there were many apologies expressing great regret at being unable to attend, and expressing hearty co-operation and sympathy.

The Lord Mayor said he thought the opinion of those in the city was quite solid on the desirability of founding a memorial to the late King Edward VII. He was sure a wise choice would be made at that meeting as to what form it should take, and the citizens in Belfast, and those residing in the surrounding districts, would unite to do something which, if not worthy of a great name and a great ruler, would still be a credit to Belfast and its environs. He proposed:

> That this meeting of the citizens of Belfast, and of residents in the adjoining counties, heartily approve of the proposal to establish a memorial of His late beloved Majesty King Edward VII in the City of Belfast.

This was seconded by Mr. R. H. Reade, D.L., and carried unanimously, the whole meeting standing.

The Right Hon. Thomas Sinclair moved:

> That having regard to the unfailing interest taken by King Edward in all measures having for their object the relief of suffering and disease, and to the noteworthy work accomplished by him for the support of hospitals in the metropolis, this meeting resolves that the proposed memorial shall take the form of the erection and equipment of a much-needed additional building, to be called by His late Majesty's name and used for special medical and surgical as well as for administrative purposes, at the Royal Victoria Hospital, which is doing such noble work in the relief of disease for a wide district in Ulster.

Mr. Sinclair, in deeply sympathetic and loyal terms, referred to the leading characteristics of the late King, his compassion for the lives of the poor, and his measures for the alleviation of their sufferings. He reminded the audience that seven years ago His late Majesty himself visited their then new hospital, which they boasted was one of the finest in the kingdom. But already there was need for further development, and 64 beds were still unused for lack of funds; it was clear, then, that a new block which would again bring the institution abreast of the time, would be a fitting and becoming memorial to His late beloved Majesty. This was seconded by Mr. Robert Thompson, M.P., and supported by Sir John Byers, who said it was

necessary to take cognizance of the enormous advances that had been made in the medical and ancillary sciences; two of the most pressing wants were two new departments, one for radiology and one for vaccine-therapy. Radiology was of enormous value to the physician, the surgeon, and the specialist for diagnostic purposes, and of great value in the treatment of lupus and allied affections; their present accommodation had become hopelessly inadequate. Haematology and vaccine-therapy were found to help enormously in the recognition and treatment of infective and microbial forms of disease. These new departments would be amply housed in the ground floor of the proposed new block. Sir Otto Jaffe, Sir William Crawford and Mr. David Fleck (Chairman of the Working Men's Committee) also expressed their keen sympathy and strong approval of the shape the proposed memorial was to take.

The Very Rev. the Dean of Belfast then moved:

> That a subscription list be opened, with the Lord Mayor as treasurer (subscriptions being payable in three years' instalments if desired), and that an opportunity be given to all classes in the community to join in making the memorial worthy of its object.

This was seconded by the Rev. William Park and carried unanimously. Subscriptions promised were announced by Mr. Monypeny, the Lord Mayor's private secretary, to the amount of £7,975. The Vice-Chancellor of the Queen's University (Rev. Dr. Hamilton) then moved the appointment of a large committee to carry out the foregoing resolutions. Among the members of this committee are Sir John Byers, Sir William Whitla, Dr. Walton Browne, and Dr. R. J. Johnstone. He said that it was an interesting fact that the late King Edward was the only king who trod the streets of Belfast during a period of 220 years, and so far as the object which the meeting had approved was concerned they would, by adopting the scheme at once, attain a worthy memorial of the late King entirely in consonance with his own character, his aims, and his work, as well as one which for all time would go on doing good among the classes for whom King Edward specially cared—the diseased, the suffering, and the sorrowing. Captain the Hon. Arthur O'Neill, M.P., seconded the resolution, and it was passed unanimously.

County Longford Infirmary.

In August last the Committee of Management of the County Longford Infirmary decided to request their medical officer, Dr. Mayne, to hand in his resignation on or before September 1st, owing to the absence of harmony amongst those concerned in managing the institution, and on September 7th an adjourned meeting of the committee was held to consider his reply. Dr. Mayne stated that he did not see his way to accede to the committee's request, and that the want of harmony was in no way caused by him. His sole desire had always been to discharge his duties conscientiously, and to have the hospital utilized to the best advantage for the benefit and welfare of the sick poor. After considerable discussion the following resolution was proposed and passed by a majority of five votes against four:

> That in view of the fact that Dr. Mayne has not handed in his resignation, as requested to do so, on or before September 1st, 1910, to be received by the committee at their meeting on the 7th, we hereby dismiss him from the position of Surgeon of County Longford Infirmary, and require the Local Government Board, after a sworn inquiry, to assent to our order, the dismissal to take effect from date of assent of Local Government Board, as provided by Local Government Act, 1898; and that if the surgeon should think fit to hand in his resignation before above resolution becomes operative, that same be accepted, and that the surgeon be granted the maximum retiring allowance permitted by law.

In reply to this resolution the Local Government Board has stated that before the Board can consider the question of holding a sworn inquiry, a detailed statement of the charges preferred against Dr. Mayne must be submitted to it.

Sanatorium in County Galway.

A large house, with land attached, has been purchased by Mrs. F. Shawe Tayler, of co. Galway, and has been offered by her to the County Council as a fully-equipped sanatorium, on condition that the Council take it over and work it for incipient cases of consumption occurring in co. Galway. Reports on the house and on the situation have been forwarded by various medical men to the County Council, who will consider the offer at their next meeting.

Insanity in County Mayo.

At the last meeting of the Mayo Asylum Committee the annual report of Dr. Courtenay, lunacy inspector, was received. After referring to the great economy exercised in the management of the asylum, and eulogizing the careful superintendence of the medical officers the report refers to the great increase in the number of inmates in the asylum. In 1880 the institution contained 289 patients; in 1890, 387; in 1900, 610; and in 1910, 810. Although the committee had liberally striven to keep pace with the increasing numbers by adding to the original buildings, the number of patients had now increased to such an extent as to render the existing accommodation inadequate, and it would be necessary for the committee to consider how the additional necessary accommodation could be best provided. The report also advises the purchase of additional land for farm purposes.

Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

University Nursing Certificates.

THE Swansea guardians have decided to request the authorities of the University of Wales to take steps for holding an examination and issuing certificates for nursing.

The Movement in Wales against Consumption.

The proposal that the people of Wales should perpetuate the memory of the late King by instituting a national campaign for the elimination of consumption is making rapid progress. Mr. David Davies, M.P., has enlisted the sympathy and support of many eminent medical men, M.P.'s, and others of influence and title, and an outline of his scheme was recently given by him in an interview with a press representative. If the principle he advocates be adopted, he says it should be left to a committee of representatives of all the counties in Wales, with co-opted experts, to formulate a definite scheme, but he suggests that the campaign should consist in (1) educating the people by lectures, exhibitions, etc.; (2) forming local dispensaries, with trained nurses to look after the cases, and (3) erecting sanatoriums and homes. The cost he roughly estimated at from £250,000 to £300,000. "There is promised already towards the scheme," he added, "a sum of £132 000," from about seven people. On being further questioned Mr. Davies said:

> I cannot imagine any scheme which North and South Wales could better unite in supporting. Almost all the other schemes I have heard broached are parochial, or, at any rate, local. I think it would be a great mistake to start a lot of local memorials. If Wales is a nation, surely she can rise to the occasion, and have a national memorial. And what better memorial could we have than one to stamp out consumption? At present Wales is one of the blackest spots on the tuberculosis map of Great Britain.

Aberdare Council.

At the ordinary meeting of the Aberdare District Council held on September 12th the report of the Health Committee recommending closing orders in respect of a number of cellar-houses was considered. Some of these premises had been vacated, but the clerk suggested that the order should be made in all cases, as that would prevent their being reopened. A member asked if these houses were condemned on the report of the sanitary inspector alone, when the clerk

stated that the medical officer of health had reported on them to the Health Committee, and they had passed a resolution which the Council is now asked to confirm. Notice was given to all the owners to attend the August meeting, and they had not done so. It was further suggested that the Health Committee should in all cases visit the houses before condemning them, as great hardship was imposed on poor people by closing their dwellings. The order, however, was made.

CARDIFF SCHOOL CHILDREN.

Dr. E. Walford, School Medical Officer for Cardiff, has issued a report on the inspections he has made during the period April 4th to July 28th, 1910. The report shows that of the 2,969 boys and girls he examined, the majority were clean and well-clothed, but only 849 had sound teeth. Fifty of the children examined had disease of the heart, 18 disease of the lungs, and 6 disease of the nervous system. The number of children recommended for medical treatment (defective teeth and vision excluded) was 403, or 13.5 per cent., 4 per cent. being for tuberculosis. Of the 1,213 children who had had their eyes tested, over 960 had normal sight, the rest having more or less defective vision. For defects other than defective teeth and vision, 482 notices were sent to parents about their children, for defective vision 131 notices were sent, and for defective teeth 583 notices were sent. The summary of medical inspection of school children for the school year ending July, 1910, shows that the number of children inspected on school premises was 9,015, and the number referred for special examination and examined at the City Hall 1,181. The number recommended for medical treatment, exclusive of teeth and vision defects, was 1,270, or 14 per cent. Notices were sent to 1,349 parents, and 693 cases were followed up by school nurses. Only 6.5 per cent. of the cases reported to parents for defective teeth were attended to, 596 receiving no attention.

India.

[*FROM OUR SPECIAL CORRESPONDENT.*]

THE GRANT MEDICAL COLLEGE, BOMBAY.

The report submitted by the principal, Lieutenant-Colonel H. P. Dymock, M.D., I.M.S., for the year 1909 indicates progress. Several important additions have been made to the building. The Sir William Moore operating theatre has been completed and is in use; likewise a lecture theatre, pathological and police-surgeons' laboratory and the coroner's court, refrigerating rooms for the anatomy department, and the students' hostel. The latter cost nearly 2½ lakhs of rupees and supplies a great want. A new physiological laboratory has been sanctioned, to cost about 1¾ lakhs. Several other wants are indicated by the principal in order to place the institution in harmony with recent advances in medical science and education. A sympathetic speech delivered by the Governor of Bombay, Colonel Sir George Sydenham Clarke, G.C.M.G., on the occasion of the distribution of prizes, makes it manifest that he will spare no effort to raise the Grant Medical College to the level of the best medical schools in Europe. The details of the working of the college exhibit success. The number of students on the rolls at the beginning of the year was 482 and at the close 518; of the latter, 68 were Christians (Europeans and Eurasians), 291 Hindus, 135 Parsees, 16 Mohammedans, and 8 Jews. The class of military medical pupils numbered 40. Ninety students left the college on completion of five years' course of study. Numerous changes occurred in the teaching staff during the year. This appears to be a regrettable circumstance, but is probably inevitable under present conditions. The retirement of Lieutenant-Colonel T. D. Collis Barry, I.M.S., Professor of Chemistry and Medical Jurisprudence, is recorded, with an expression of the esteem in which he was held by both colleagues and students. The fees received during the year amounted to Rs. 85,679.

THE BOMBAY BACTERIOLOGICAL LABORATORY.

This is the only laboratory in India in which anti-plague vaccine is made; and, in addition, it fulfils the purpose of a bacteriological laboratory for the Province of Bombay. The report for the year 1909, by the Director, Lieutenant-Colonel W. B. Bannerman, M.D., D.Sc., I.M.S., gives evidence of increased work in both capacities. The issue of vaccine amounted to 593,164 doses, an increase of 59,849 doses as compared with the previous year. No evidence of harm resulting from inoculation was obtained; on the other hand, a considerable mass of testimony in favour of its prophylactic value is recorded. The period of incubation in the flasks has been lengthened from two to four months in order to obtain a milder general and local reaction. Researches were conducted in the laboratory regarding pulicides and rat destroyers. During the year 91,540 rats were examined, of which 9,600 were found plague-infected. An interesting table is given showing the half-monthly mortality of plague in Bombay and the number of plague-infected rats discovered during the same periods. The rise and fall of the two series of figures correspond. The clinical work done in the laboratory includes bacteriological observations and examinations of neoplasms and fluids. Pathological researches were also conducted regarding rabies, snake venom, the preparation of antivenine, and cerebro-spinal meningitis. Serums of various kinds are prepared and stored, and sold to hospitals and practitioners for therapeutical trials. Medical men are received for instruction in the laboratory and courses of instruction for assistant surgeons are also held, with satisfactory result.

THE HEALTH OF THE CITY OF BOMBAY.

The year 1909 was a healthy one according to the elaborate and interesting report prepared by the Executive Health Officer, Dr. J. A. Turner, D.P.H. The birth-rate was 20.28, or, making allowance for unregistered births, 27 28. Considering that the percentage of women between the ages of 15 and 45 is 22, against 25 in England, the rate is a high one. Calculated on the number of women living between 15 and 45 years, the birth-rate of Bombay is 138, against 106 in England. The death-rate of the year was 35.66, against 39.13 in 1908. There were 16,569 fewer deaths than the average of the preceding decennium. There was also a marked improvement in infant mortality, the rate being 404 per 1,000 of registered births, against 450 in 1908. Dr. Turner details at considerable length the measures that are being taken to reduce this mortality by supplying skilled attendance on mothers, and helping them to better management of their infants. To this end it is proposed to erect a lying-in hospital for the poor with arrangements for teaching nursing to native midwives, to be supplied free. The chief causes of mortality in Bombay are respiratory diseases, plague, fevers, phthisis, diseases of the nervous system, and diarrhœa. There was a decrease under all these heads excepting phthisis, which showed a slight rise. Plague deaths were fewer than in any year since the introduction of the disease in 1896. Active measures are in operation to reduce the incidence of plague. The subject of malaria is also being carefully studied, and means are being adopted to obviate infection. There was a considerable rise in cholera deaths, due to repeated importation by pilgrims from Nasik. Although small-pox was less prevalent, the disease was on several occasions introduced by Mohammedan pilgrims, who are a continual menace to the health of the city. Sanitary administration is in an active and efficient state. Motor traction has been employed with advantage for the removal of rubbish. The Municipal Laboratory under Mr. B. P. Ghadially is doing good work.

Correspondence.

SANATORIUM TREATMENT OF TUBERCULOSIS.

SIR,—I am very sorry to have overlooked the fact that at the Westmorland Sanatorium a record is only kept of the *local* patients, and my sincere apologies are due to Dr. Paget-Tomlinson for this oversight. But with this admission my criticisms are, I think, perfectly correct from the statistical standpoint. Dr. Paget-Tomlinson himself writes in the BRITISH MEDICAL JOURNAL of July 23rd, 1910:

> It may here be stated that any sanatorium which does not report progress of cases for some years after discharge is guilty of a serious omission, and naturally lays itself open to grave criticism.

But he omits to report progress of two-thirds of the patients of even the two specially selected Classes A and B discharged from his sanatorium, and surely he must therefore to that extent be "guilty of serious omission." I have in my possession reports of more than 1,000 patients of *all grades of disease severity* discharged from a sanatorium which covers a far wider area than the Westmorland Sanatorium, and therefore the task of report is not impossible. The importance of it is, I think, manifest, because for a *general* mortality comparison it is needful to draw cases from a wide variety of occupations and environments, manufacturing and urban as well as rural.

And here we reach a second point: The general population dies of other diseases besides tuberculosis—heart disease, asthma, non-tuberculous complications—all such cases are deliberately excluded by Dr. Paget-Tomlinson from his record when they are associated with tuberculosis. Hence we cannot compare, on the basis of his statistics, the death-rate among the tuberculous with the general death-rate, for we should be comparing the deaths from one disease with the deaths of the population from every disease. All the knowledge we have from the old presanatorium days is that of the mortality of the tuberculous irrespective of the cause of their death. The tuberculous are as liable to other diseases as—perhaps more liable than—other persons, and the mortality returns which exclude all cases with non-tuberculous complications must clearly be misleading.

Dr. Paget-Tomlinson says that the shifting of all his Class B cases from the category of "moderate" to "severe" may sound rather an abrupt transition, but that when he dropped his Class C, or "consumption advanced," he changed his Class B to "severe," in accordance with Dr. Turban's classification. It is not quite clear to my mind whether he means his Class B to accord with Turban II or Turban III. I presume chiefly to Turban II, for his Class B is defined as "consolidation not extensive, no cavity, no high fever; tubercle bacilli commonly found." The bulk of Turban II fall into what other authorities term "moderately advanced." The bulk of Turban III falls into "far advanced." It is difficult to understand why Dr. Paget-Tomlinson has called those cases "severe" which fall into the "moderately advanced" of other authorities or of his own earlier classification. In the *Report*, 1910, Dr. Paget-Tomlinson tells us (p. 3) that the detailed tables are now confined rigidly to those admitted from Westmorland, and that all are included, "provided they remained in the sanatorium at least one month, provided they were not of the very advanced type suitable for only a home, and provided they were not also suffering from some non-tuberculous ailment, like heart disease, which masked the tuberculous affection." Does the Westmorland public, does the layman who is asked to contribute to an extensive system of sanatoriums, understand that 48 per cent. of the cases received (see *Report*, 1905)—practically one-half of the patients sent to sanatoriums and received there—are not likely to be benefited by the treatment, and are so hopeless as to be excluded from the record of after-histories? Will not any one of those 48 per cent. imagine himself to have the "severe" consumption which Dr. Paget-Tomlinson tells us covers a class of persons who after discharge are "in excellent health" in 60 per cent. of cases? Would it not be fairer to tell the public straight away that in nearly 50 per cent. of cases received at the sanatorium nothing can be done, and that only in the cases, where the consolidation is not extensive and there is no cavity and no high fever, 68 per cent. may hope to be alive after five to nine years?

And how does even this death-rate of 32 per cent. of those discharged from the Westmorland Sanatorium at least five years and not more than nine years ago compare with results elsewhere and with results of presanatorium days? Elderton and Perry[1] show that, according to Roepke's data for Turban II, 14 per cent. were dead four and a half years after discharge, and for Turban III 29 per cent. were dead four and a half years after discharge. Assuming that Turban III is equivalent to a lengthened period since Stage II, Dr. Paget-Tomlinson's Turban II results with 32 per cent. of deaths on an average of a little more than seven years' discharge, do not seem to be very much better or worse than the Friedrichsheim statistics, and this notwithstanding the fact that Roepke apparently includes *all* patients discharged. Dr. Noel Bardswell in his "moderately advanced" cases, which, according to Dr. Paget-Tomlinson, correspond to his Class B, got 13 per cent. of deaths in the five to nine years groups, a considerably less number than Dr. Paget-Tomlinson, but both are, of course, liable to modification if the age distribution, which there is no reason to suppose, were very different.

Dr. Paget-Tomlinson says that the 18 cases which I referred to as disappearing between the 1905 and 1910 reports from the records would better his percentage. It is certainly unfortunate that the three omissions I was able to trace were all *deaths*, and in the only case I was able to apply them raised the death-rate from 50 per cent. to 56 per cent. But since they were recorded in 1905 they belong to the five to nine years since discharge classes on which Dr. Paget-Tomlinson laid special stress in his letter of July 23rd; and let us suppose, which appears exceedingly improbable, that only the three out of the eighteen which I was able to trace have died in the interval, then the 32 per cent. death-rate would be reduced to 28 per cent., a result not comparing favourably with Bardswell's 13 per cent. I lay no stress on this result, because it is not obtained by a method which allows for either age or social class. But it is this death-rate which Dr. Paget-Tomlinson used as an argument in his original letter. Thus it seems to me that whatever selection of cases to be recorded exists at the Westmorland Sanatorium—and such selection, even if it be a revision of classification, must make the statistician at the very least anxious—there is not a marked favourable difference between these results and those of other sanatoriums, a conclusion I stated in my letter in your issue of August 6th:

> My own impression is that *both* sets of statistics [Dr. Guy's and Dr. Paget-Tomlinson's], if treated by a uniform and genuinely actuarial process, will show practically *identical* results.

A further acquaintance with the nature of Dr. Paget-Tomlinson's data tends to confirm this opinion. Now Dr. Paget-Tomlinson tells us that his position with regard to the relative merits of sanatorium treatment and that of former days is not affected by his exclusions. I think it very seriously is, because it is difficult to obtain the same selected class of cases for actual comparison from presanatorium data. But, waiving this point, his results do not show, treated by his own method, any markedly favourable difference from those of other sanatoriums. It then remains to compare both against the "treatment of former days." *No such comparison is made anywhere by Dr. Paget-Tomlinson.* All he has done is to ask in his first letter for some assurance on good evidence that anything like such good results were obtained from the old methods. The onus of proof might be supposed to lie on him, but as he asks for an assurance I must refer him to Elderton and Perry's paper just issued, in which he will see that sanatorium results apparently strictly comparable with his own show a mortality which appears for the same class of cases in no way less than that of the old methods of treatment.

Your able and temperate leader, Sir, in the last issue of the JOURNAL, ought to emphasize the point that we need further knowledge before large schemes of combating tuberculosis are propounded, and immense sums of money

[1] *A Third Study of the Statistics of Pulmonary Tuberculosis: the Mortality of the Tuberculous and Sanatorium Treatment.* Dulau and Co.

demanded for putting them into execution. Sanatoriums undoubtedly help the non-tuberculous by teaching the tuberculous the social importance of sanatory behaviour, but their influence in lessening the mortality of the already tuberculous in a marked and appreciable manner is open to question. Nor, again, is the infectious nature of tuberculosis any answer to the statistical evidence put forward by myself and others as to the importance of the hereditary factor. We have only to note that Dr. Charles Goring found among criminals for tuberculosis a high relation between father and son, but scarcely any relation between husband and wife, and that I found in a different class twice the association between father and son that there is between husband and wife, to see that infection due to environment is not the only factor. The old view "that consumption could be inherited" was verbally inaccurate, but practically sound in that the constitution liable to tuberculosis is inherited, and, while the tubercle bacillus abounds, the hereditary factor must be, as actual statistics show, of the greatest importance. It is all the more to be regretted that in the recent crusade against consumption it should be thought necessary to assert that:

> We may now claim to have obtained certainty that this opinion [the unimportance of the heredity factor] is correct, and may declare with complete assurance that the children of consumptive parents are not born with the seeds of disease inherent in them, and differ from others, if at all, only in the greater risks of infection to which they are exposed by their surroundings (*Times* Leader, September 14th).

To "surroundings" must be added "and their hereditary constitution" to make this statement consonant with our existing knowledge, or a basis for practical action with regard to tuberculosis.

In the very interesting correspondence which has appeared in your pages we have had much personal opinion and many impressions. All these are of value, but what we need is rather the presentation of statistical material relating to heredity and relating to mortality. The only contributions to the latter are those of Dr. Guy and Dr. Paget-Tomlinson, and both these contributions seem to me to show that the case for sanatoriums as based on lessened mortality is not proven.—I am, etc.,

University College, London, W. C., Sept. 20th. KARL PEARSON.

SIR,—I have been much interested in reading the correspondence in your columns relative to sanatorium treatment. My interest has been further stimulated by the perusal of a brochure, just published by the Department of Applied Mathematics, University College, London, entitled, "A Third Study of the Statistics of Pulmonary Tuberculosis and Sanatorium Treatment," by Messrs. Elderton and Perry. The general conclusions arrived at would appear to be that cases of pulmonary tuberculosis are as well whether untreated or treated. This is somewhat disappointing to one who is engaged in this kind of work, and, when the unsatisfactory nature of all other kinds of treatment is considered, must be profoundly distressing to those who have had the misfortune to contract this serious disease.

There are, of course, many difficulties in the way of finding out the exact results of sanatorium treatment; but in an inquiry of this kind I think it would be well to give, first of all, a definition of what sanatorium treatment consists in. It is by no means uncommon to find what a few of us regard as the essentials of successful treatment practically omitted from the regimen of many sanatoriums. I should like to suggest to the authors another inquiry, one in which the wheat might be separated from the chaff; one where it might be discovered which were the harmful and which the useful parts of sanatorium treatment. For any line of inquiry tending to expose the errors into which we may have been led by too much enthusiasm would be really useful

I should like, also, to suggest that, as Dr. Pollock and Dr. Williams were experts in the diagnosis of this condition, it is more than probable that they were vastly superior diagnosticians to the ordinary general practitioner of the present day.

Further, there should be no need to go to Dr. Pollock and Dr. Williams for statistics of presanatorium days; most of the tuberculous at present live in presanatorium days, since only an insignificant minority of present-day patients get the opportunity of going to a sanatorium.

No one knows better than a sanatorium doctor that pulmonary tuberculosis may exist for years, and all practitioners of age and experience know that some persons affected with the disease make a good recovery in spite of all adverse conditions. This fact has been well known and fully utilized by quacks for many years.

Further, so far as my experience goes, and I have resided in five different sanatoriums, the patients are "carefully selected," the result of the selection being, with a few notable exceptions, that we seldom get a case unless it is going wrong, cases that are apparently getting well not being sent to a sanatorium, though they often apply for admission after periods of apparent and fugitive improvement, when they have relapsed.

I see that some allowance is made for the presumed time the patient was ill before being admitted to the sanatorium, but I do not think this matter, which is all-important, is quite realized by the compiler of these statistics. I have at present in the sanatorium a man whose first symptoms appeared seventeen years since; it should surprise no one that even a sanatorium cannot restore to this man his breathing apparatus.

A short time ago I discharged on the same day four men—one had suffered from the disease for nine years, two for five years, and one for eighteen months before being admitted to the sanatorium, and the week following I discharged a woman who had been ill for five years before admission. Some of these had during the periods mentioned enjoyed a fair measure of health, and would have supplied excellent material for presanatorium statistics of longevity. Unfortunately it appears more than probable that they will be used for supplying post-sanatorium statistics of non-longevity, for they were all with one exception third stagers, and although much benefited it was impossible to supply them with new lungs.

One of the chief duties of a sanatorium is to prevent the formation of chronic invalids. A more fruitful inquiry would be to treat and leave untreated alternate cases, and then tabulate the results in two columns.

Fortunately, until the appearance of so much adverse criticism we were tending to get more suitable cases into the sanatorium; but after the publication of the statistics which I have mentioned—which, I am afraid, few except the initiated will understand at their true value, and which tend to be quoted loosely as facts—we are once more in danger of being where we began before any real effort was made to treat these patients, and the old *laissez-faire* method is likely to be continued for some years more.

At least the figures, so far as they go, tend to show the necessity of abandoning the position of cheerful optimism at present too often held with regard to early cases; when this position has been abandoned the doleful pessimism at present surrounding treatment may at last be removed. It should seem self-evident that when dealing with an infective and destructive lesion treatment should be commenced at once, and that instead of months the importance of days should be remembered when the question of treatment is being considered.

New Cumnock, Sept. 10th. EDWARD E. PREST.

SIR,—I have followed the correspondence on the sanatorium question with interest. The object in view in the modern developments of treatment of phthisis is surely to place the patient in such an environment that the antibacterial agencies of the blood can be stimulated to the highest possible degree of activity.

In a paper I read at the recent British Medical Congress, entitled "The Evolution of Racial Types of Europe, its Bearing on the Racial Factor in Disease" (not yet published in your report), I pointed out that sanatorium and "open-air" treatment of phthisis is at present applied in an empirical manner, and that if the patient's racial type or subtype be determined, and the conditions under which this type or subtype evolved be studied, we should then have something approaching a working principle in the climatic or environment treatment of phthisis.

The British people is mainly derived from two original types—the blonde dolichocephalic Nordic or Teutonic, and the brunette dolichocephalic Iberian or Mediterranean; there is also almost certainly a strain of the brachy-

cephalic Alpine. These three types evolved under radically different conditions, none of which is wholly comprehended in the present climate of our island. We are therefore in process of evolving a type or group of subtypes more or less perfectly adapted to existing conditions. It is when a patient of a given type or subtype gets into an environment overtaxing his powers of adaptation that trouble is likely to begin—a trouble often to be cured by restoring the patient to environmental conditions suited to his type.

As an illustration of my meaning, I will call attention to a passage in a paper by Sir William Bennett, in the June number of the *Practitioner* for this year, entitled "Some Points relating to Tuberculous Glands, mainly with Reference to Treatment." He remarks: "A child born at a seaside resort, who, some years after, whilst living in another place, developed tuberculosis of the cervical glands, was subjected without much benefit to every kind of treatment, including residence at several duly accredited seaside places, a high altitude, a sea voyage, etc. Finally, she was sent to the place of her nativity, with a benefit which was quite remarkable. I have seen similar cases in people born inland. It looks, in fact, very much as if there may be some peculiar relation between the health of individuals and the climate in which they are born."

Now, I would submit that the mere fact of their being born in a given climate does not connote that that climate is the most favourable for their recovery from disease; it may be quite the reverse, as in white children born in the tropics.

If, on the other hand, the physical type is the outcome of selection through many generations from the influence of local climatic and social conditions—a subtype, it may be, showing the mixed features of more than one of the primary ancestral races—then one can readily understand that a restoration to such conditions may rouse the latent powers of resistance, and effect a cure in such a disease as tuberculosis.

Herein, I am convinced, is the explanation why one patient benefits in the Alps in winter, another in Egypt, a third in the Riviera, a fourth on our own coasts or inland, or in their birthplace, according as they approximate to pure ancestral types or are examples of local subtypes. In my paper referred to above I have entered into the evolution of the original racial types which go to compose our nation. The evolution of the Jews, studied in the same light, is highly significant in regard to their special pathology, and the whole question of migration bristles with formidable problems.

It is, however, specially with regard to the treatment of phthisis that my letter is penned, and I submit that until the evolution of individual types is considered and applied, sanatorium and "open-air" treatment will continue to yield a large proportion of those disappointing cases familiar to the family practitioner.—I am, etc,

Hampstead, Sept. 18th. J. S. MACKINTOSH.

SIR,—The treatment of phthisis in sanatoriums and the open-air treatment of phthisis are two widely different things, though frequently mentioned as though the terms were synonymous. In fact, the former necessarily includes the latter as part, and part only, of a whole which can only be successfully carried out in a sanatorium by men who devote their entire time to the patients under their care, and can watchfully observe and act on the rapid changes and varying symptoms as they occur.

Modesty, no doubt, has prevented the many able and experienced physicians who are working in this particular field from putting forward their claims as authorities on diseases of the lungs, but such indeed they are; and the advantage to the patient is inestimable of being under the care of men who are in a position to apply any appropriate form of treatment, as suited to the individual case, while amid the best hygienic surroundings day and night.

Dr. R. W Allen says truly, "Success is gained by minute attention to details, by placing the patient under the best possible conditions, and by so keeping an open mind as to the influence of a course of specific treatment as to be prepared to modify it to suit the individual patient."

This excellent precept, I am convinced, can only be followed in a good sanatorium where the patient is under the constant and immediate supervision of an expert, amid healthy and well-regulated surroundings—I am, etc.,

HORACE WILSON, M.B., B.S.Lond.

London, N.W., Sept. 18th.

SIR,—The treatment of tuberculosis is receiving a rather unusual amount of attention at the present time. May I venture to raise a question as to the soundness, or at least the usefulness, of the autoinoculation theory?

For some years sanatorium physicians, and others who have the special care of consumptives, have, I believe, relied largely on a system of graduated exercise to produce an inoculation of small doses of the patient's own particular brand of tuberculin; and have rejected, almost contemptuously, the idea of inoculation with any form of the commercially prepared article. Of course, I do not for a moment seek to deny that autoinoculation takes place. It furnishes a satisfactory explanation of the pyrexia met with in fairly advanced cases. But it is the so-called "exercise temperatures" which I venture to call in question. It is claimed that these are due to autoinoculations of tuberculin; that they therefore have a curative effect; and that they thus render any other tuberculin treatment unnecessary.

I know of no reason why the toxin absorbed from a patient's own tuberculous lesion should differ in its action from tuberculin injected by means of a hypodermic needle. Yet we know that small doses of tuberculin administered hypodermically either (*a*) produce no appreciable effect on the temperature; or (*b*) quickly induce immunity to similar doses; or (*c*) if in relatively too large doses, have a rapidly cumulative effect and eventuate in a very decided reaction, with ill effects which may last many weeks. Now, "exercise temperatures" do not show any of these phenomena. On the contrary, patients who every morning take their walks of four, six, or eight miles, according to their strength, show day after day much the same exercise temperatures (probably about 37.5° C.) There is no sign of any acquired immunity. All one notices is that as their legs grow stronger these people are able to walk farther. Again, in cases of a slightly more febrile type—people, for instance, who cannot walk a mile without a temperature of about 38° C.—any little excitement or mental effort or even standing for a few minutes will cause a rise of temperature. Is this also to be attributed to an autoinoculation? If so, one asks how is that brought about? and, once more, why does it not produce immunity, and how is it that the temperature rises and falls on these occasions so much more quickly than it would if it were due to a hypodermic dose of any kind of tuberculin preparation?

The explanation I would suggest for all these slight rises of temperature (including, of course and especially, the "exercise temperatures") is that they are due to fatigue toxins acting on a heat-controlling mechanism rendered unduly sensitive by the tuberculous toxins which are always circulating in the blood of consumptives. This seems to me to fit all the facts better than the usual interpretation. If this be so, then the graduated exercise, the importance of which is so much emphasized by sanatorium physicians, is only of use in so far as any regular exercise improves the general health; but as a factor in the specific treatment of phthisis it must be regarded as a broken reed.

At present, indeed, I believe that this autoinoculation theory is standing in the way of progress. For, even if the effect of exercise as regards the production of curative autoinoculations be not so mythical and valueless as I conceive it to be, it must surely be insignificant in comparison with the systematic intelligent use of suitable tuberculin preparations. It would be a thousand pities if any theory or prejudice were allowed to hinder any longer the proper use in this country of those valuable remedies which Koch has placed in our hands.—I am, etc.,

September 2nd. E. M.

SIR,—My friend, Dr. W. Collier, whom I erroneously (BRITISH MEDICAL JOURNAL, February, 1905) believed to be with me instead of against me *re* the open-air treatment of phthisis, asks me some questions which I will try to enlighten him upon.

Does Dr. Collier, or the advocates of this treatment, sleep in the cold, damp air themselves? I ask this

question because I have always contended, if cold, damp air is beneficial to consumptive patients, it must be more beneficial as a preventive of consumption, especially in those who are always running the risk of catching it.

Has Dr. Collier ever watched the effect of placing a consumptive patient in a cold, damp room with windows wide open and then placing the same patient in a room where there is a large wood fire burning, and where the windows have been opened for some time and then closed? It is a revelation.

Perhaps Dr. Collier will be convinced that cattle and birds have a deep-rooted instinct to avoid cold damp air by the following experiments. If you place a large shed in a field where there are cattle and divide it into four parts, you will always, in stormy weather, find the cattle in the leeward and warmest division; if you provide the same shelter for birds—north, east, south, and west of a house—you will find their instincts are the same as the cattle; and if you look for that intelligible anti-open-air-cure bird, the sparrow, on a cold, damp day, you will find him on the leeward and warmest side of a chimneystack. He will seldom leave this position, except for food, and certainly not at night.

I believe I had ample opportunities of forming an unbiassed, impartial opinion of the open-air cure long before it became the "sanatorium treatment," and from the hundreds of letters I have received through my writings in various papers on this subject, I have come to the conclusion long since, which is the same as "One Who Has Suffered" (BRITISH MEDICAL JOURNAL, September 17th, p. 819), that the curative powers of sanatoriums are absolutely imaginary. Why, therefore, torture these poor unfortunate victims by exposing them day and night to cold, damp air, which renders (in my opinion) their breathing more difficult and their cough more distressing. Apologizing for taking up so much valuable space,—I am, etc.,

September 18th. THOMAS DUTTON.

P.S.—Seaside places are always bad for consumptive patients, because the air is generally cold and damp, except for a few weeks in the summer.

SICKNESS AND INVALIDITY INSURANCE.

SIR,—Allow me to thank Dr. Bruce C. Kelly for his courteous rejoinder to my previous letter, and to reply to some of his arguments. It is a pleasure to note that Dr. Kelly, like so many, agrees to a unified State medical service as an ideal; but, after all, an ideal is of very little service unless we strive towards its realization, and it is for this reason that I regard the proposed State insurance and certain other proposals as temporary intermediate positions on the way towards an ideal unified national service.

Most of us appear to be closing our eyes, or at least keeping silence, with regard to what is the one real danger of the coming State insurance scheme, and that is that it shall fall into the hands of the hundreds of friendly societies. I have been reading certain effusions by leaders of these organizations in the lay press, and it is quite obvious that they do not want State intervention, and would wreck the scheme if they could; but, failing this, their earnest desire is to commandeer the whole scheme. If we now secure a unified national insurance system, worked directly by Government, we shall move forward; but if there is established only a system of subsidizing friendly societies, with compulsion on all wage-earners to join one or other of these organizations, we shall move backward. If we can arrange to do this class of work directly for Government, we shall smash up friendly societies once and for all. If the friendly societies bring off their *coup* and arrange to work the medical profession for Government under such a huge compulsory scheme, then they will have succeeded in smashing us once and for all. So let us see to it.

It is a curious coincidence that in the same issue of the JOURNAL in which Dr. Kelly proclaims my views regarding a national medical service to be a pure academic ideal there appears, on p. 808, under the very heading, "National Medical Service," an account of the preparations for establishing just such a service in Ireland. It there appears that the British Medical Association has granted £300, and the Irish Medical Association £200; these sums are to be used jointly "for the purpose of furthering the views of the Joint Committee of the British Medical Association and the Irish Medical Association relative to a State medical service being formed."

A most excellent scheme for this Irish National Medical Service has been drafted, as shown in the JOURNAL report, and every medical practitioner in Ireland is being circularized.

My countrymen evidently mean business in this matter, and I know many of them are most sanguine of success. Let their motto be that of a famous Irish regiment, "Faugh a Balloch," and the other countries may follow when they have "cleared the way."

Dr. Kelly, like a former critic, refers to my personal "happy position of security from danger" as a salaried university professor. May I be allowed to point out that it is towards such a "happy position of security" that I am trying my utmost to conduct my colleagues of the profession who admit, with Dr. Kelly, that "there exists in the profession to-day a feeling of insecurity." Well may there exist such a feeling to day, and the haven of refuge is to belong to a strong, unified National Service. Surely a person who is himself in safety should best be able to help others to safety, and I fail to see why I should be gently sneered at on this account.

It is always easy to construct beautiful pitfalls and impossibilities against any scheme of reform; we have known them since the days of George Stevenson, and the railway, and the cow. The medical man with the total practice of £1,500 a year, of which £750 is derived from wage-earners and £750 from the wealthier classes, is a specimen of this *genus*. Such men do not represent 5 per cent. of the profession to begin with. What honest man could make £750 on working-class practice with the fees that rule at present, and yet find time to make another £750 on well-to-do practice?

The much more usual type of man is he who makes £450 out of working-class practice, with a wage limit of, say, £2 a week, and perhaps £50 additional out of wealthy patients.

One sees no good reason, if Government introduces a proper insurance scheme, why this man under an equitable supervision should not be paid £500 for carrying on the working-class part of his practice by Government and still be allowed facilities to attend for payment the few wealthy people in his neighbourhood who want to employ him. But, supposing this were not allowed, then each one of nine practitioners in a district could accept Government service at an average of £500 a year each, and each resign on an average £50 worth of wealthy-class practice; these nine amounts of £50, together with his own residue of wealthy-class practice, make an income of about £500 for the tenth man who elects to go on with private practice alone for the well-to-do, his previous working-class portion being distributed amongst the nine who have gone into State work.

In many districts in cities there would be practically no dislocation at all, and any small amount there would be would soon adjust itself. In sparsely-peopled country districts the wealthy would have to send or go to town, which would be no disadvantage to the profession.

Dr. Kelly's case is obviously easy of treatment on such lines as outlined above, and there would surely in a considerable town be only one such practitioner as he has postulated with £1,500 a year, and the man with £750 of wealthy-class practice is surely marked out as the man to continue to practise for the wealthy. Suppose seven other practitioners in the district elect to be State medical officers and become whole-timers, doing no work paid by fees, then from each of these seven, who would now amongst them rob the one private practitioner of his £750 worth of working-class practice, would come in return a contribution of such an amount that when the seven are added together the total amount of £750 would still be left undisturbed, and the one private practitioner would now make his £1,500 from private practice alone.

It is certain there would be some small ups and downs in income inevitable, but what reform has ever come without such movements, or what needed reform has long been delayed on account of them?

There are 32,000 medical practitioners in the whole United Kingdom, and if we take £250 as the average income (recent criticism has taught me to be generous) we obtain for the total income of the medical profession

£8,000,000. Now *a penny a week* from each of 12,000.000 workmen, a penny a week from each workman's employer, and a penny a week for each workman from the State (equivalent to £2,600,000 only), raises the sum of £7,800,000, and for this we can adequately attend to the whole working-class population, men, women and children, and leave only £200,000 to be made in private fees from the wealthy. Financially, the scheme for a unified National Medical Service is much lighter than the Old Age Pensions.—I am, etc.,

Birkenhead, Sept. 19th. BENJAMIN MOORE.

SIR,—I think that the thanks of the profession are due to Dr. Keay for his very interesting and lucid article on this subject in the JOURNAL of September 17th.

I think that it is desirable that any scheme should fulfil the following conditions:

1. It should be founded on an insurance basis, so that the healthy would compensate for the unhealthy.
2. It should be compulsory.
3. There should be a free choice of doctor from those on the list who are willing to serve.
4. There should be a wage limit.
5. It should be based on the principle of payment for work done.

The bone of contention will very likely centre round No. 5, but surely we can strike on some figure which would be acceptable to the whole profession. It may be urged, and, of course, with truth, that a scheme such as this would make us servants of the State. Well, personally, I would rather attend patients who are in receipt of under 20s. a week as a servant of the State, even at the rate of 1s. per visit, than under the present system by which the vast majority pay us nothing at all.

In reference to the scheme put forward by the British Medical Association, it would be quite unworkable in practice, especially in mining districts. Under it we would have to charge a miner one fee and a member of the artisan class another, which would lead to endless confusion and discontent. It surely should be obvious that if we want uniformity in anything it is in our contract practice. It is also obvious that the authors of the scheme cannot have studied the subject of State insurance, or they might have known that a system of collectors such as they propose is an utter impossibility.

We are quite in the dark as yet as to the exact form which the measure of sick insurance will take, but we may be certain, at any rate, that payment will be from and into a central fund. In conclusion, the great point for the medical profession is:

1. To know what they want; and
2. To be united in wanting it.—I am, etc.,

Newcastle-on-Tyne, Sept. 19th. W. SINCLAIR FRASER.

SIR,—I have read with much interest the articles and correspondence on State invalidity and sickness insurance. It is most instructive, and should be perused by every general practitioner. The lack of unity among doctors has been reiterated *ad nauseam*, and no doubt with a considerable amount of truth. But as this matter of State insurance hits us all, there is every reason why we should use all our efforts to see that we are not exploited, either by the Government or the general public.

There is one point upon which I think we shall all agree, and that is, that payment should be paid for work actually done. The carefully worked out table given by Dr. Fothergill on page 749 obviously proves this, although I should have thought that it was so obvious as to hardly require proof. I feel sure that nearly all men who are in general practice will recognize this.

Professor Moore takes a very complacent view of a unified State medical service; and, as Dr. Bruce Kelly points out, he considers that the capital a man has invested in a practice is of small account compared to the possibility of his getting a pension, supposing he lives long enough to get it. To my mind it is of paramount importance that this capital should be guarded. and that whatever assurance scheme is introduced we should endeavour on no account to accept one which will further reduce the already diminishing incomes of medical men.

There is an important point in any scheme that may be brought forward to provide medical attendance for the working classes, and that is this—there is a marked difference as regards practice in the town and in the country. The majority of a country practitioner's patients earn from 15s. to 20s. a week. A man earning 30s. a week is well off. Nearly all these are in clubs, but their wives and families are not. They are private patients, and most of them pay their bills, so they make up quite a large part of a country doctor's practice. I am perfectly aware that in a town practice the wives and families of men earning such wages as these could be regarded as a *quantité négligible* as far as private practice is concerned. Therefore, a scheme of insurance which would be suitable to a town practice might not necessarily be good for a country one. So that country doctors should bear this in mind.

I understand that the British Medical Association intend to interview Mr. Lloyd George, so as to see that the interests of the medical profession are well guarded in this new State scheme.

I cannot help thinking that the general opinion of the medical profession would be best obtained by a postal referendum, dividing the results into those obtained from country practitioners and those obtained from town ones.

It is somewhat puzzling for a man in busy practice to make out the different points brought forward by different writers and correspondents as regards this scheme, but there is one which, in my opinion, is of paramount importance, and that is the principle that we should be paid for work actually done, and not per head, as in the present club system.—I am, etc.,

Gillingham, Dorset, Sept. 19th. R. W. MORGAN, M.D.

SIR,—It is apparent that all your correspondents agree that our interests as a profession are threatened. They are also agreed that our difficulties might easily be solved if we were less apathetic and took a greater interest in medico-political matters. Let us candidly acknowledge that not only are we out for fees, but we intend to get them. *Now* is the time to *act*. Let me make a suggestion. Let us set apart a date for a meeting to be held in every Division to discuss this all-important question of State insurance. Let the secretary of each Division be supplied with the questions to be answered. Let the answers be sent up to the Association without delay. Then we should have the considered opinion of the profession, and it would be easy to know how best to act. I should also suggest that non-members of the Association be invited to these meetings, and after the meetings be invited to join the Association. Doubtless Government officials are now hard at work preparing their scheme. Let us have ours ready for the time when the question is introduced in Parliament.

It is time for us to cease expressing opinions and to deal with facts.—I am etc.,

Bedford, Sept. 19th. S. J. ROSS.

CONTRACT PRACTICE AND THE MEDICAL PROFESSION.

SIR,—The discussions upon State insurance and the exploitation of the medical profession have all turned upon the respective merits, or demerits, of the Majority or Minority Report of the Poor Law Commission. It has been assumed that by legislation one of these schemes will be later brought into operation, and that the medical practitioners all over the United Kingdom will have their charges for medical attendance fixed upon a certain scale. May I venture to suggest that no legislation can compel anything of the kind without the concurrence or apathy of those concerned; and that, unless medical men are foolish enough to agree to be so exploited, the regulation of their fees will still remain in their own hands? To place the State in a position generally to fix the fees for medical attendance will be so suicidal a policy for us that I cannot understand any one outside a lunatic asylum consenting to it. Contract practice as at present, however newly christened, should be steadily and persistently resisted; or, if amended, should be undertaken only at a remunerative rate. The State does not attempt to fix the price of provisions or the cost of mercantile articles, and there is not the slightest reason for its interference with respect to remuneration for medical attendance. Such remuneration should, apart

from attendance upon "paupers"—I hope this term will not offend any Socialist readers of the British Medical Journal—be based upon a scale suited to the financial position of the person requiring it, and in accordance with the usual conditions of supply and demand. At present, under contract practice, the yearly sum for medical attendance paid by the majority of the masses is less than the annual sum demanded by the State for a dog tax—in other words, more is paid for a dog than a doctor. The stupid and unbusinesslike policy of accepting contract practice at a low fee for the sake of obtaining an appointment and keeping another man out of it has caused infinite harm to our profession. United action on our part would soon raise the annual payment to a more remunerative sum, and such united action must be taken unless we desire to place ourselves in the position of bankrupts. To quote the letter of Dr. Brandligt, of Belgium, published in the Journal of September 3rd:

> The end in view is not in any way the abolition of these benefit societies; they are required to adequately remunerate the profession for services rendered. . . . In such circumstances the inordinately large number of members of the insurance societies makes it impossible to give each of them the care necessary. This result is morally prejudicial to the profession in general.

To become a mere employee of the State in this respect will be to change one despotic master for another. The exigencies of the political party which initiates "State insurance" will make it necessary to leave the gates open for the admission of insurers as wide as possible, and the now paying middle class with numerous votes will take advantage of this and not permit themselves to be excluded, and such inclusion will further damage the "goodwill" of medical practices. The siren voices of Mrs. Sidney Webb and her Fabian colleagues have apparently dulled the senses of many medical politicians, and unless we wake up and realize the position which we are being led into, we shall be bound hand and foot as slaves, and be unable to extricate ourselves later. That some form of "mutual benefit" for those earning small incomes *re* medical aid is necessary is undoubted; but the "benefit" must be "mutual" and not all on the side of the patient. It would be a benefit to the consumer were the State to formulate a scheme to enable those of small means to buy the best tea at 2d. a pound, and meat in the same proportion; but I fancy if such a scheme were brought forward the butchers and the grocers would be sufficiently powerful to knock this method of pauperizing such traders on the head. Surely we are sufficiently powerful to put a stop to the long-continued exploitation of medical practitioners. The State does nothing for us as a profession: it affords us not the slightest protection in respect of our practice or titles. The Medical Acts, which the wisdom of our legislators have passed, are useless, except to give the most perfect safeguards to unqualified persons. The State heaps gratuitous work on us year after year, inflicts penalties upon us if we fail to carry out this unpaid work, and it now seeks to reduce our fees to a minimum. It is endeavouring to destroy without compensation the "goodwill" of our practices—a goodwill which, in many instances, has been amply paid for by us in the past at an estimated value, and which we hoped and believed would be an available asset at some future date when we desired to "realize" it.

It is for a united profession to say with no uncertain voice whether it will permit any further encroachments and interference; and whilst considering the position we may well remember the old statement—"if we do not hang together we may hang separately." It is better to be "out for fees" than "out of pocket."—I am, etc.,

London, W.C., Sept. 21st. A. G. Bateman.

THE NEW MIDWIVES BILL.

Sir,—I agree with Dr. Fothergill's letter, published in the Journal of September 17th, p 820; but I would much like to have the opinion of general practitioners on one point—namely, Is it to the advantage or is it just and right to the medical profession that medical men should for the sake of a small payment give their services as lecturers and teachers to nursing homes to train midwives, and thus enable them to compete with our profession? It is to my mind as wrong as it would be for a veterinary surgeon to train farriers how to treat animal diseases.—I am, etc.,

London, S.W., Sept. 19th. James Hamilton.

MIDWIVES AND MEDICAL PRACTITIONERS.

Sir,—I crave the favour of a little of your space to bring before the notice of my fellow practitioners the quaint manner in which the Midwives Act does its work—and the Central Midwives Board leaves its work undone.

An advertisement (which I transcribe—omitting names) of a nurse who carries on a maternity practice under the aegis of the Central Midwives Board has appeared weekly for many months in the local press of a certain London suburb.

> Nursing and Midwifery Institute ————. Patients supplied with midwife, monthly nurse, or visiting nurse. Inpatients taken, both general and maternity. *Attendance by doctor* or midwife, *fees arranged*, strictly moderate. Maternity club, Nurse ———, certified midwife.

I wish to draw special attention to the words italicized.

In addition to this advertisement a circular in similar terms has been issued broadcast throughout the neighbourhood in question.

When the matter was brought to the notice of the Central Midwives Board, their secretary replied that neither the advertisement nor the circular infringed the regulations of the Board.

It is therefore open to these women to advertise as much as they please—a fact which demonstrates the need of drastic revision both of the "regulations" and of the Board responsible for them.

Under the limitations imposed by the Act it is impossible for a midwife to carry on a considerable practice without the assistance of medical men. It is difficult to believe that the men who habitually assist this midwife and live in her immediate neighbourhood are ignorant of the nature of her advertisement.

In return for their complaisance the nurse's medical friends receive the benefit of her touting advertisement, in which she offers the services of a doctor. However one may deprecate their methods, it does not lay the men open to any action by the General Medical Council, as there is no direct evidence of a *financial* understanding between them and the advertising midwife. Apparently, therefore, under the present rules of the game, it is open to midwives to advertise themselves and their medical backers without laying either class open to any consequences whatever.

The gross unfairness of competition on these lines is obvious, and it behoves all honest practitioners to take such action as will make these rather dubious practices impossible.

With apologies for the length of my letter.—I am, etc.,

West Ealing, Sept. 16th. Fred. W. James.

THE POOR LAW AND THE FALLING BIRTH-RATE.

Sir,—In reference to the discussions on the falling birth-rate and Poor Law reform, may I suggest that before any alteration is made in the Poor Law all tax-paying women should be represented in the House of Commons, and consideration be then given to the question of what should be the economic position of (*a*) the wife, (*b*) the mother, and (*c*) the widow. In discussing the Poor Law this question is never made clear.

Consider the following facts:

1. The Government offers women a lower scale of remuneration than it offers to men, and an attempt is made to justify this on the ground that men support women.

2. By the Factory Acts it is proposed to prevent the married women from being employed in profitable labour.

3. Lord Beauchamp has laid it down, "There was no obligation to send for the doctor. The midwife advised that the doctor should be sent for, but neither the midwife, the patient, nor the parent was obliged to accept that advice." One notes that the husband is not regarded as having any concern, let alone responsibility, in the case—unless by "the parent" is meant, not the patient's parent, but the unborn child's one and only legal parent. If Lord Beauchamp had in mind the husband when he talked of "the parent," it appears that in the eye of the

law the life of the mother is not worth even a passing thought.

5. In the BRITISH MEDICAL JOURNAL of September 17th "A Poor Law Medical Officer" writes:

> Women of the class whom Mrs. Webb's kind heart commiserates do not make provision for their confinements, but even in that case payment has for many years already been forthcoming from other sources—namely, the union.

The law seeks to place men in a privileged position economically on the ground that men support women. But when in her confinement the woman needs a doctor, the husband is under no legal obligation to provide for her; and it is she who is reproached by "Poor Law Medical Officer" with not having made provision for her confinement. Moreover, if the husband sends for a doctor but fails to provide the fee and the woman dies, coroner and jury censure—the doctor! and pity—the husband!

> Wherefore I praised the dead which are already dead more than the living which are yet alive; yea, better than they both is he which hath not yet been, who hath not seen the evil work that is done under the sun.

Yet there are those who are surprised at the falling birth-rate!—I am, etc.,

Cardiff, Sept. 20th. ERIE EVANS.

CORONERS' LAW AND DEATH CERTIFICATION BILL.

SIR,—I have read with interest the letters appearing in the JOURNAL in reference to the Coroners' Law and Death Certification Bill; and consider that if the medical profession allow the bill as at present constituted to become law without an emphatic protest they have only themselves to blame. It is iniquitous if we are to be burdened by extra duties in the public interest without adequate remuneration. The State can afford to pay, and should be made to pay.

It has been suggested that an all-round fee of 2s. 6d. would meet the case. It may meet the case of the town practitioner with the majority of patients in close proximity to his surgery; but what about the country practitioner who has long distances to go, possibly called out in the middle of the night to see a dying person ten or twelve miles away, who dies a few hours after the visit, and next day the relatives call for the death certificate. Are we to journey back and view the body over rough roads, possibly covered with frost and snow, or in pelting rain, a total distance of twenty or more miles and receive no remuneration, or a paltry half-crown?

Personally, I would sign any form protesting against this unjust clause.—I am, etc.,

September 20th. A COUNTRY G. P.

SIR,—Perhaps the following would meet the objections which have, most properly, been raised as regards the inspection of the body after death by the doctor who had attended. That the doctor visits the house, sees the body, satisfies himself as to the death, charges the same fee to the official authority which he was accustomed to receive during the patient's lifetime. If his visits were at 5s. or 7s., etc., he should charge accordingly. On those terms, but on no others, our objections would cease.—I am, etc.,

Bournemouth, Sept. 17th. A. HUMPHREY DAVY, M.D.

SPIRITUAL HEALING AND THE "GUILD OF HEALTH."

SIR,—It seems a pity that the clerical mind cannot evolve a definite and logical statement of its proposals—especially when these are concerned with the attempt to cure bodily disease—instead of entangling itself in a web of tortuous argument.

The dual personality of Mr. Boyd as a clergyman of the Church of England and as Warden of the Guild of Health may be interesting, but it is of more importance to know what he proposes to do in each capacity. It is impossible to gather this from his letters or from the publications of his guild.

For the information of Mr. Boyd and his fellow "healer," Mr. Lombard, may it not be stated that the medical profession cannot accept the assistance of ignorant free lances who presume, on their own initiative, to treat disease of which they know nothing? Nor can medicine accept the assertion of the existence of "special gifts of healing" on the unsupported testimony of professed healers.

Unfortunately Mr. Boyd and his friends rely on a text of Scripture which would appear to justify them in undertaking the treatment of any case of disease solely by means of prayer, the laying on of hands, and anointing with oil; and until we know the extent to which spiritual healers consider that this text allows them to go in the treatment of physical or mental disorders, and the limitations, if any, that they would set to their efforts, it is impossible to invoke their co-operation.

If Mr. Boyd would be careful only to treat cases under the supervision of medical men—which was plainly not the case with the patient suffering from myasthenia gravis—and if the Guild of Health would simply investigate and discuss in a scientific manner the effects of faith in the treatment of disease, both the clergyman and his Society might hope to obtain some recognition. Under present conditions the Guild of Health can only be classed with "the many fallacious cults, such as Christian Science," mentioned by Mr. Lombard.—I am, etc.,

London, W., Sept. 20th. CHAS. BUTTAR.

SIR,—The letters in your last issue from the late and present wardens of this guild, taken alone read as if I had made a very personal attack on Mr. Boyd. But it only concerns the questions of the public leadership of such a society by a clergyman, and the independence of medical control adopted in his treatment by spiritual healing.

Mr. Boyd says he does not use this wide-spreading medium to obtain cases on which to practise spiritual healing, because during the short time that he has been warden, he himself has "hardly ever accepted" any applicants through the guild, but has advised people writing from a distance to apply to other nearer clergy. But the principle is the same even if up to now he has only treated one or two cases himself and referred the others to clergymen more available than he would be at Clifton. Also, it confirms my original criticism of such proceedings as ministers of religion having people sent to them for spiritual healing through these attractively-named societies, since some of these distant correspondents obviously have heard of Mr. Boyd through the guild.

Mr. Boyd explains the statement made in his first letter that this guild has "nothing whatever to do with the supply of healing" by now saying that the guild is not "concerned" with the treatment of the clergyman to whom any of their applicants may go, as it is carried out in the clergyman's private capacity! So in this connexion it is interesting to quote from the official printed "Memorandum" of this guild, and under "Our Aims," we read:

> We desire also to encourage the exercise of the Gift of Healing in all those members of the Church, whether clerical or lay, who are called by God thereto. We hope that many will be led to enquire whether they are called to this very sacred and responsible work. We do not as a Guild supply healers, though we are ready to give any information we can about those who are engaged in that work. We never in our meetings or pamphlets give advertisements to results, as we believe that to be contrary to the mind of Our Lord and of no value for faith.

Referring to membership, the pamphlet states: "Members are asked to forward the objects of the guild in any way they can," and one of their three professed objects is "For the Restoration to the Church of the Scriptural Practice of Divine Healing."

Finally, in another of their publications the writer says: "In England the Guild of Health is pledged to further spiritual healing." Surely these quotations fully prove the part that this guild intends to take in attracting men and women to give a trial to spiritual healing.

Turning to the letter by Mr. Lombard, he says he could understand my position if Mr. Boyd had been "trespassing on the domain of the medical faculty." This, I hold, was done by treating a lady suffering from myasthenia gravis every day for six weeks without medical supervision and without inquiry of any medical man who had treated her in the past. Mr. Lombard suggests that people go to the clergy for spiritual healing, and that these societies come into being on account of the "ignorance and incompetency of medical men"; but our shortcomings do not justify independent treatment of disease by ministers of religion who are untrained in medicine.

To conclude, the above quotations from the literature of this guild practically say to the general public: "There is a gift of healing given to some people, and perhaps you

may be able to practise it yourself, even if you are only one of the laity. But, any way, we can put you in the way to obtain spiritual healing."

This is no fantastic interpretation of the aims of this guild, and I repeat that such societies can only retard that most desirable closer union of religion and medicine in a combined attempt to help the mental and physical health of mankind.—I am, etc.,

London, Sept. 19th. STANLEY BOUSFIELD.

"SPIRITUAL HEALING."

SIR,—I know of a case, the wife of a professional man, who suffered badly from hysteria associated with bronchial asthma. She attended several medical men, but the hysteria remained uncured until she was brought under the influence of a quack who assumed "spiritual healing." She recovered moral power, and her hysteria left her—the evil spirit was cast out, and she is regarded by all her friends as "cured."

There are still occasional troubles of a bronchial character, which show the organic changes in the lungs, such as are associated with chronic bronchitis, remain, as they necessarily must, uncured. It suffices for the "cure" that the hysteria has disappeared, and the woman is able to perform the ordinary duties of her position in life.

As long as the Rev. F. Boyd and his following are content to be correctly labelled as ministering to those who have lost their mental power, as evidenced by hysteria, and are careful to treat *patients* only, and not *diseases* of an organic character, it will not matter much.

If this be clearly stated the public will be in no danger from their interference, though I am inclined to think the correct diagnosis will be disputed, or, at any rate, objected to, by both the shepherd and his sheep.—I am, etc.,

September 19th. J. W. T.

SHIP SURGEONS.

SIR,—A number of your correspondents seem to be unaware of the fact that for a few years past the chief steamship companies at Liverpool have had printed on the backs of tickets issued *to first-class passengers* a notice to the effect that the ship surgeon is entitled to charge reasonable fees for the treatment of such sick passengers. I take some credit for the adoption of this rule, and not a few surgeons have told me that it has greatly lessened their work as to the treatment of very trivial affections, while it has given them *the right* to ask for, and accept, fees. It is further provided by some of the steamship companies that a passenger has the right to appeal to the captain if the fees are thought to be excessive. I am told that on the Austrian Lloyd Company a similar notice is fixed in the saloon. I think one tourist steamship company in London has printed on each ticket a notice to the effect that the surgeon (who is not paid any salary by the company) is entitled to charge sick passengers the usual fees.

It is difficult to understand why the deans of the medical faculties do not "post" newly qualified doctors as to the conditions of sea life, and to advise them how to act. The ship surgeon is the only person on board a ship who remains at the salary he began upon—generally £10 per month—no matter how many years he serves. Whose fault is this? Only his own. I think I am right in stating that the Booth Steamship Company pay their surgeons up to £20 per month.

I have often thought it would be a very desirable plan to promote surgeons to the first-class ships as vacancies occur, and to give them an increase of salary each year. Some have suggested an annual bonus, but this is very nebulous, especially as many passengers may complain! It has also been suggested that sea-going doctors should have their own union in London, and that only and solely through this union should ship doctors be supplied. This is an idea worth thinking upon.

The class of men going to sea now is usually a good class, while the number of the sick public taking sea trips is increasing yearly.

Ship surgeons suffer from the same chronic complaints as do others of the medical calling in so far that they will neither organize, nor will they pay those who organize for them. Even the dock labourers and street sweepers have their organizations, and can bring influence to bear with the view of furthering their betterment. Ship surgeons also suffer like others of us in this respect, that they feel if one or two of them become "agitators," the other "deadheads" will jump at their places! Well, if this is an incurable social disease, let the ship surgeons suffer. Any body of men should receive what they ask for, even if this be the ignoring of their supposed sufferings. It is for them as a body, and *only* as a collective body, to draw up a reasonable proposal and to act upon it. This they have for at least thirty-five years refused to do. Their only idea is to go on growling—as they seem to prefer to do—and to be ignored. What do they want? To be mugwumps?—I am, etc.,

Liverpool, Sept. 18th. R. R. RENTOUL.

"KANGRI CANCER": A PHYSIOLOGICAL ASPECT.

SIR,—The original articles on the subject of cancer which appear in the BRITISH MEDICAL JOURNAL of September 3rd, along with your complementary extract from the third scientific report on the investigations of the Imperial Cancer Research, while affording instructive reading, call for a few remarks by a former colleague of Dr. Neve, twelve years of whose early professional career were spent among the people of Kashmir (1884–95). The points I desire to submit are: The well-known association of cancer incidence with riverine districts and alluvial soils, as shown among the dwellers of the Vale of Kashmir, compared with those inhabiting the surrounding mountainous regions—namely, Ladakh and Iskardu to the north and Poonch and Kishtwar to the south. It is true that the mountaineers, being more hardy, resort less to this means of warmth during the winter months, but the extreme rarity of the disease among them cannot thus be accounted for, though all these tribes are equally verminiferous in their apparel. The kangri is only worn during the winter months, from October till April; during the remaining six months there is opportunity for recovery from its irritative effects. With the other well-known chemical and thermic irritants, as the chewing of betel nut and lime, or the clay pipe smoking, the effect is more continuous throughout the years. May this account for the lesser "malignancy" of the former type?

In regard to the clinical pathology, Dr. Neve states that, "Glands are slow to show signs of infection." There does not seem to be any distinction drawn between the physiologically involved glands which hypertrophy in functioning and those that have degenerated and become subsequently infected.

The detection of involved glands merely by palpation, it will be admitted, is no simple matter, and one that is open to serious fallacy. Those that are hypertrophied are not necessarily infected.

Mr. Barrett Lockwood, alluding to the changes in the axillary glands in a case of mammary carcinoma extirpated by him, says:[1]

> The axillary lymphatic glands were sent for examination. Mr. Ernest Shaw, whose histological skill is acknowledged, reported that *the large glands did not contain cancer, but that some minute ones did* (italics mine). This, too, Mr. Shaw tells me, is an ordinary experience.

I beg to submit that these "minute ones" were supernumerary ones in a state of evolution that had come into being to meet the requirements, just as they do around the mammary gland during the period of lactation, to meet the mouth infection of the milk ducts by the infant, a fact first observed by Stiles. They became infected, being in a rudimentary and immature state, *and these, owing to their minuteness*, often escape inclusion in the radical operation.

The inguinal lymphatics of the Kashmiri after middle life are, in the great majority, in an unhealthy state, owing to the fact that probably no race under the sun is more afflicted with venereal disease and its sequelae.

Another reason for the apparent non-malignancy and late involvement of the glands, apart from their remoteness from the umbilical region, might be the compensatory functioning of the large prickle cells of the rete Malpighi, which are lymphoid in character, and would react outside a certain radius of the areas denervated by the constant heat.

The acquired denervations produced by mechanical, chemical, and thermic agents, though greater in degree,

[1] BRITISH MEDICAL JOURNAL, January 27th, 1906.

seem to be analogous to the physiological trophic degeneration of the sexual organs and their adnexae at the "change of life."

The denervations induced by the molecular action of the *x* rays is markedly different from that produced by the well-known agents enumerated. By this action of radio-active agents it is possible to induce step by step cellular changes which have all the clinical and histological features of epithelioma in the shortest time, at any age, on any *normal area* of the body, including the bones, while it is much more difficult, if even possible, to induce similar changes on *abnormal areas*, such as scar tissue or previously denervated areas from other causes, by this means. The effect is the very opposite—namely, a re-innervation of such areas. I have drawn attention to these effects elsewhere recently.[2]

Again, it has been shown that in ordinary cancerous processes the histological changes are more conspicuously retrograde than recuperative;[3] in the *x* ray changes they are conspicuously recuperative. Lymphatic gland involvement is almost unknown, and, where it has been found, was probably the result of secondary microbic infection intercurrently acquired.

I have not seen Dr. Haarland's view as to how cancer develops in mice in association with continuous or intermittent efforts at repair and regeneration, but Dr. Clowes, of the New York State Cancer Laboratory, stated that:[4] "The tendency (is) often noticed in tumours to remain stationary after fairly rapid development, and then subsequently either to grow rapidly or retrogress. In this connexion it must be noted that *x* rays produce a much more marked effect at this stage, at which apparently the disease has quite overcome the natural immunity of the mouse."

Messrs. Farmer, Moore, and Walker, of the Liverpool Cancer Research Laboratories, have shown that by subjecting Jensen tumour tissue to the prolonged freezing action of liquid air its "malignancy" or capacity for successful implantation was greatly increased, and I cannot conceive of any mammalian tissue cells surviving such an ordeal, though the more lowly minute microbic forms evidently do so.—I am, etc.,

London, W., Sept. 4th. H. D. MCCULLOCH.

A CAUSE OF DEATH AFTER OPERATION FOR APPENDICITIS.

SIR,—In your issue of August 27th there was a short paper by Mr. Herbert Brown, of Ipswich, on this subject, which appealed to me very strongly. My experience corroborates every word of Mr. Brown's paper, and I am sure if the axioms as to treatment at the end of his article were followed out many more lives would be saved by operation. Children cannot stand a severe operation, and it is much better to leave the appendix, as a general rule, after opening and draining the abscess cavity. In a similar case to the one described by Mr. Brown, a little girl of 5 years who died sixteen hours after operation, I put death down to shock from the manipulation necessary in order to remove the appendix, but whether due to shock or to the sudden deluging of the system with toxins, as Mr. Brown thinks, the moral is the same—the less manipulation that the patient has to undergo the better, especially if the patient is a child. General practice teaches one that the appendix may be safely left behind in abscess cases as it rarely gives rise to any trouble afterwards.

Of course, besides the danger of death in twenty-four hours, there is always the risk of causing a localized abscess to become a spreading peritonitis by insufficient packing off of the peritoneal cavity, and I am afraid I have seen cases lost from this cause; these patients succumb on the third and fourth day generally, and are quite distinct from the cases quoted by Mr. Brown. This danger is another reason for delaying operation to the end of the first week or even ten days from the commencement of symptoms as advised by Mr. Brown, as by that time adhesions are stronger and in many cases the anterior abdominal wall is involved in the abscess cavity, and the general peritoneal cavity is not opened at all.

Operating during the first twenty four hours is a counsel of perfection that is very rarely feasible in general practice, the two great difficulties being that the friends delay in sending for a doctor sometimes in the worst cases, and, secondly, the patient withholds consent at first.

Another reason for not being in a hurry to operate in acute cases first seen after twenty-four hours from commencement of the attack is that it is wonderful how often cases that one feels certain must go on to abscess will settle down again; rigidity of the abdominal wall and palpable masses disappear as if by magic, so that the case eventually comes to be treated by an interval operation.

For these reasons, in addition to those given by Mr. Brown, I heartily commend his axioms as to treatment as stated at the end of his article.—I am, etc.,

W. A. REES, M.D Lond., F.R.C.S.Eng.

Swanage, Sept. 2nd.

SIR,—Mr. C. A. Morton disagrees with my theory, on grounds which appear to me to be somewhat trivial and partly founded on a misconception of my meaning.

Of course, every one knows that a septicaemia is fatal not because of the "mechanical effect of the organism in blocking minute vessels," but because of the chemical effect of the toxins elaborated by the organism.

I understand by a *septicaemia* a *toxaemia* produced by organisms multiplying in the blood or lymph stream.

Needless to say, I did not suggest any such mechanical theory to explain these cases.

My reasons for attributing the fatal issue to a septicaemia rather than a toxaemia alone were, first, that I did not think a sufficiently large dose of toxin would be absorbed from such a small area in the short time occupied by the operation, and secondly, because there seemed to be a definite incubation period of from six to twelve hours, during which the patients appeared to be progressing normally; the serious symptoms often came on almost suddenly. I have seen an acute streptococcic infection with pus formation manifest itself within six hours of an operation. I must confess, however, that I have no proof of this theory, as I have not attempted to obtain a culture from the patient's blood.

But the question of toxaemia or septicaemia is of minor importance, and we are both agreed as to the danger of removing the layer of lymph. Then Mr. Morton refers to two cases in which a gangrenous appendix was removed, both of which died with the symptoms which I have described. Of course the presence of pus is not necessary; it is not the pus, but the organisms and toxin which are the source of danger, and a gangrenous appendix is a hotbed of organisms. In fact, a case of this kind would be more dangerous, as there is less likelihood of the presence of a well-defined layer of lymph surrounding the focus of infection.

He goes on to quote four cases in which the symptoms of appendicitis had been present for a week or more before operation. These cases only came under his care at the time of operation; but, even if the symptoms referred to the appendix had been present for more than a week, it by no means follows that an abscess had existed for that period.

My plea is for delay in operating unless the case is seen in the first twenty-four hours, or there is other indication such as commencing general infection of the peritoneum, etc. Of course this applies to cases which can be kept under close observation, and the surgeon should be ready to operate at any time when it appears to him advisable. In these days of hospitals and surgical homes such a course is generally quite feasible.

Sir Frederick Treves years ago advocated delay; he considered an operation during the first week especially dangerous, and I think later experience has justified this opinion.—I am, etc.,

Ipswich, Sept. 4th. HERBERT H. BROWN.

PORTRAITS ILLUSTRATING "SPOTTED FEVER."

SIR,—In the Clinical Museum (The Polyclinic) we have no single representation of the eruption which sometimes attends the form of cerebro spinal meningitis which has been by some named "spotted fever." If any of your readers can assist me to obtain a drawing which we could copy I shall be much obliged. It will be still more satisfactory if we can borrow several. They will be well cared for and duly returned.—I am, etc.,

London, W.C., Sept. 20th. JONATHAN HUTCHINSON.

[2] Dr. McCulloch, ibid., August 27th, 1910, p. 524.
[3] Dr. James Metcalfe, ibid., August 27th, 1910, p. 542.
Ibid., December 1st, 1906, p. 1553.

PALAEOGENETIC FACE-PATTERN IN ACROTERIC PIEBALDS.

SIR,—This communication must reach you very late, partly because I am so far away, and partly because I have been on holiday and find a pile of BRITISH MEDICAL JOURNALS awaiting me on my return; but I hope the interest of what I have to say will excuse its tardy appearance.

One of my fellow-travellers lent me a book to read. It was entitled "Amorgst the Cannibals of New Guinea," and was written by a scientist named Pratt, who had been engaged in studying the butterflies and birds of New Guinea. It was profusely illustrated by excellent photographs, amongst which was one of the piebald men of New Guinea. Mr. Pratt himself is not a medical man, but nevertheless he advances the hypothesis that this condition of piebaldness may not be a specific character, but due to a skin disease; but he says "they seem to suffer no disability of any kind."

It will be noticed that the illustration from Buffon, in Sir Jonathan Hutchinson's article, was of a child from the West Indies, and there is no note as to the origin of the other three negresses.

As I must quote from memory I cannot be sure of the exact title of the book; and I believe the author is now resident in London, though I do not know his address.—I am, etc.,

Outtrim, South Gippsland, July 23rd. A. E. TAYLOR.

JONNESCO'S METHOD OF SPINAL ANALGESIA.

SIR,—In view of Professor Jonnesco's failure to convince both his English and American *confrères* of the efficacy of his method, and as a corollary to Mr. McGavin's paper in the JOURNAL of September 17th (p. 733), it may be of interest to record my experience of this procedure on Egyptian patients in Kasr el-Ainy Hospital, Cairo.

I faithfully followed Jonnesco's directions as regards technique, and Messrs. Parke Davis were good enough to make me a series of samples of Jonnesco's solutions in ampoules sufficient for one injection, which worked admirably.

I have done ten cases by the high method, and have convinced myself of its efficacy, but do not think it is a method to be recommended, either in the interests of the patient or as a subject for instruction of students. The first two cases were not altogether successful, owing to my faulty technique, but in both cases I was able to complete the operation by giving literally only a few drops of chloroform. In all the other cases anaesthesia was perfect, and, with one exception, without any bad effects. This case was one of a large tumour of the palate, of doubtful pathology, in whom, after a preliminary laryngotomy, an attempt was made to remove the tumour, when he became pale and restless, and gradually stopped breathing. Artificial respiration was carried out for ten minutes, and the breathing slowly returned, and I was able to complete the operation, which necessitated considerable manipulation after splitting the cheek, without any other anaesthetic. Next morning the patient was sitting up, and had no further trouble. I blame myself for this accident, as I feel sure I kept the head too low too long after the injection.

Two other cases—one a boy of 10—had symptoms of "air hunger" during the operation, but soon recovered. My cases include two rodent ulcers of ear and of eye, two necrosis of jaw, two necrosis of humerus, tuberculous cervical glands, tuberculous ulceration over sternum, tumour of palate, and scirrhus of breast.

If I am tempted to employ the high method again it will be when an extensive operation is required for scirrhus of the breast, where the prevention of shock is a desideratum; but my opinion is that, though the anaesthesia may be and generally is quite perfect, we are running quite an unwarranted risk in subjecting our patients to such danger as must necessarily be present in producing effects on the spinal cord and its nerves in such close proximity to the vital centres in the medulla.

The low method is on quite a different footing. It has become almost the routine practice of my colleagues and myself at Kasr-el-Ainy Hospital to employ spinal anaesthesia by stovaine for all operations below the nipple line, and it is rarely, if ever, necessary to make the injection higher than in the dorsi-lumbar space. We have not yet seen any bad effects from its use.

I have been accustomed to use Billon's solution with epirenine, but have had my most perfect results and more freedom from headache and other minor after-effects with Jonnesco's solutions, made up by Messrs. Parke Davis in ampoules. In one case I was able to do an operation for an ununited fracture of the femur lasting one hour and forty minutes with one injection.

The actual dose of the stovaine does not appear to be so important as Jonnesco holds, for I found that when my supply of the stronger solutions was exhausted I got just as good effects with the weaker solutions, always provided that the solution was properly introduced into the cerebro-spinal space. I generally allowed some of the cerebro-spinal fluid to mix with the solution in the syringe before injecting.—I am, etc.,

September 20th. FRANK C. MADDEN.

THE PREVENTION OR ABORTION OF CATARRH.

SIR,—Is it possible to prevent catarrh? or, catarrh having commenced, is it possible to abort it? I have long been interested—enormously interested—in this question, and a few years ago I started an interesting discussion in the BRITISH MEDICAL JOURNAL on the subject of these infectious catarrhs. The title was something as follows: "A Plea for the Investigation of Catarrh."

I entered the medical profession in 1864, and every year convinces me more and more that the infectious catarrhs play very much the same part with regard to the inhabitants of temperate climates that the malarial class of disorders do to the tropical and subtropical populations. Not that I would suggest that there is the slightest pathological similitude between the two classes of disorders, further than that both are infectious, both affect large sections of the population, and both cause an enormous amount of sickness, disability, and, ultimately, directly or indirectly, death.

I feel positively jealous, and even indignant, when I think of the enormous efforts made and money spent in investigating the causes and prevention of such diseases as malaria, sleeping sickness, beri-beri, kala-azar, etc., and the comparatively puny and half-hearted endeavours made to combat our deadly enemy, the infectious catarrhs. Why, the matter is one of national importance, and ought long ago to have received a large grant from Government, and even been the subject of a Royal Commission! At a guess, I should say that, on an average, every man, woman, and child in the United Kingdom is laid up with infectious catarrh for from one to two weeks every year. The population being some 46,000,000, think of the enormous disability and interruption of work this means! Would that the mischief ended here; unfortunately it does not. The effects of influenzal catarrhs—the pyrexial class—often last weeks, or months, or even years, whilst the consequences, immediate and remote, are full of the direst possibilities. Look how often the fell enemy attacks and disables our legislators. Fools! Incapables! One would have expected that they would have had the intelligence and enterprise to have moved energetically and regardless of expense long ago. Vain expectations! They are fit for nothing but to tax us.

I am prompted to these remarks by reflecting on my experiences of two old lady relatives, who for years have depended solely upon myself for medical care and treatment. Originally both were delicate, and when young suffered from a variety of derangements connected with this delicacy. They have had such disorders as chronic and acute obstruction of the bowels, indigestion, constipation, Ménière's vertigo (very bad for years), angina pectoris (very bad, and often nearly fatal), migraine, rheumatic gout, extreme degeneration of arteries, general and special debilities, extensive bedsores, congestion of lung, passage of renal calculi with terrible pain and vomiting, last year nineteen small calculi (recovered in a week), falls, and severe injury to head, etc., vesical catarrh and retention of urine, incarcerated fibroid in pelvis, attacks of diarrhoea and dysentery. These constitute a few of the things I have dealt with in the last twenty years. I have not managed so very badly, as they will attain the ages of 90 and 92 respectively if they live till next month, and are as well as, if not much better than, they have been for years. But—and here is the

point—great as have been my doubts and anxieties with regard to many of the attacks mentioned, the infectious catarrhs have given me more trouble and anxious solicitude than all the ailments I have mentioned put together. Every year they are almost sure to have one or more attacks of acute infectious catarrh-influenza, and then there is the devil to pay. Bronchial catarrh, congestion of lungs, debility, bedsores, etc. We all know the picture too well, and we all know, by painful experience, the failure too often of the ordinary remedies. Creasotal, quinine, the salicylates, alkalies, ammonium chloride, sodium and ammonium benzoate, ipecacuanha belladonna, digitalis, strychnine, aconite, heroin—all these have at one or other time been tried, and have some of them been of benefit—but, oh! for a direct prophylactic or antidote such as diphtheria antitoxin or quinine in malaria, or hypodermic morphine in choleraic diarrhoea.

If I only had such a remedy, and its use were reasonably safe, my old ladies would have 100 already in sight. Can any one help me?—I am, etc.,

Blackpool, Aug. 26th. WM. HARDMAN.

DANGERS OF THE ELECTRIC CURRENT.

SIR,—The communication with reference to the dangers of the electric current made by Dr. S. Jellinek of Vienna to the meeting of the Section of Radiology and Medical Electricity of the British Medical Association, and reported in the JOURNAL of August 27th, was of special interest to me owing to the fact that on two occasions I have been the victim of accidents very similar in nature to that related by the doctor as having occurred to a girl while bathing in a metallic tub, though fortunately for me without the serious consequences which occurred in her case. About two years ago I was bathing in a small bath-room attached to the flat I then occupied. I was standing up in a bath half filled with water, and in stretching out to seize hold of a towel suspended from a hook on the door my right arm, all wet as it was, brushed against a brass switch which controlled the electric lamp hanging from the ceiling, and lit at the time. Immediately all the muscles of the right side of my body seemed clutched by an invisible power, and I was flung violently down into the bath. I have no recollection of coming into contact with the bath, and can only remember that on coming to realize my position I found myself breathing hard and deep, at the same time feeling a curious tingling sensation all over the body and a soreness of the muscles so rudely brought into action. In a few moments I had recovered sufficiently to get out of the bath and proceed to mop up the flood of water which my hurried descent had expelled from the bath on to the floor. It was some days before I got rid of the effects of the shock upon my dorsal musculature.

I attribute the accident to leakage of current from the switch as the result of the deposit upon it of moisture condensed from the somewhat steamy atmosphere. The current was one of 210 volts, but I should doubt whether the whole of it passed through my body. I was unfortunately unable to notice whether the lamp remained lit during the passage of the current through me.

My second accident occurred some nine months later in the same room and from the same cause, for I was foolish enough to disregard the warning given me by the first. Its effects were similar: bruised muscles and a shock to the nerves.—I am, etc.,

London, N.W., Sept. 17th. HUBERT PINTO-LEITE.

THE INTERPRETATION OF X-RAY NEGATIVES.

SIR,—In reference to Dr. Pirie's paper on this interesting subject in the JOURNAL for September 3rd, not only is the *x*-ray negative viewed from its film side more reliable than a print in the matter of detail, but it is also more correct in the matter of perspective and form.

While the fluorescent screen viewed from the only practicable side it can be viewed from (namely, the side remote from the focus tube in action) and the *x* ray print agree with the ordinary photographic print in the matter of tone, in the matter of form the *x* ray negative viewed from its film side alone can correctly correspond with the ordinary photographic print or a draughtsman's sketch of the objects portrayed.

The case of an outline drawing or sketch as compared with an *x*-ray photograph is perhaps the simplest to understand, and may be briefly set down now.

The *x*-ray photographer, by means of his invisible rays, throws a shadow of the objects he wishes to take upon a plane of delineation on the far side of the objects to be taken from the focus tube. The draughtsman, sketching the same objects supposed to be visible, or actually so, draws them on a plane of delineation between his eye and the objects to be drawn. If his eye be in the same relative position to the objects in question that the centre of emission of the focus tube originally held, and the plane of his drawing be parallel to the *x*-ray photographic plate, then all parts point for point in these two delineations of the same object will appear in the same direction and under the same angles—that is, in the same perspective—as they would appear to be in the object to the eye itself.

The accepted view, I know, is quite the reverse of this, and must lead to many practical mistakes and confusion of interpretation; and, of course, is due largely to the fact that the fluorescent screen can be viewed only from what I believe to be the wrong or reverse side, and the belief that the *x*-ray print corresponds to the ordinary photographic print in form as well as in tone.—I am, etc.,

Bristol, Sept. 3rd. WILLIAM COTTON, M.D.

Medico-Legal.

MALE SERVANTS.

AT the South-Western Police Court, on September 8th, a claim was made on behalf of the London County Council against a medical man in Wandsworth for keeping a male servant without a licence authorizing his employment. The servant in question was a surgery boy, who attended night and morning, who was elsewhere employed during the main part of the day, and who slept at his own home. During his hours of work at the surgery he did many odd jobs, including sometimes knife and boot cleaning. It was contended that despite the latter facts nothing in the nature of the boy's employment brought him within the meaning of the Act relating to male servants. This point having been argued by counsel on both sides, the presiding magistrate gave his decision, which was in favour of the medical man concerned, Dr. John Tod Thyne. In addition, the court awarded him three guineas against the Council.

This is the first occasion, so far as we are aware, on which the same claim has been made in the metropolitan area, and Dr. Thyne's energy in rebutting it would seem likely to save a large sum to the profession as a whole, and is therefore a matter for general congratulation.

THE HYGIENIC INSTITUTE.

IN the Sheriff's Court in Glasgow on September 1st judgement was delivered in an action in which the Hygienic Institute in Glasgow and Oscar Farkasch and Michael Lauer, partners in the business conducted at this institute, both of Glasgow, were joint defenders. The plaintiff or pursuer was a woman, an inhabitant of Ryton-on-Tyne in Durham, who had had teeth extracted at the institution in question in the circumstances and with the results indicated later on. The court awarded her by way of special and general damages a sum of £52 15s., together with costs. The more important items in the findings of the court were as follows:

The court held that the defenders had entered into a contract with the pursuer, and by that contract held out themselves and their representatives as extractors of teeth and practisers of dentistry, and that in virtue of that contract had bound themselves and their representatives to perform the necessary dental operation on the pursuer with ordinary success and with ordinary care and prudence, and that in the event of breach of the obligation thus established they would be liable to damages. It also held that in part performance of the said contract William Bell, an operator in the employment of the defenders, extracted ten teeth from the mouth of the pursuer; that the said William Bell and his assistant during the operation, Joseph Sharp, were not qualified dental practitioners; that in performing the said operation the said William Bell tore the skin or mucous membrane in the pursuer's mouth, leaving a flap piece thereof lying over in such a fashion as to expose and lay bare the whole of the front of the lower jaw bone; that after completing the said operation the said William Bell and his assistant left the pursuer in a condition of excessive bleeding from the mouth without applying any remedy thereto; that the instruments used in performing the said operation were not sterilized before being put into the pursuer's mouth; that three days after the said operation the pursuer's mouth became septic; that the failure to sterilize the said instruments was the probable cause of the said septic condition of the mouth, and that in consequance of her said injuries the pursuer was confined to her bed for ten days and required medical attention for six weeks.

Incidentally, the court, speaking of the evidence of the medical witness, Dr. Reid Pirrie, of Ryton-on-Tyne, said that, while he had expressed himself in somewhat forcible language in his disapproval of the manner in which the operation had been conducted, he appeared to the court to be in no way exaggerating what he had witnessed, but, on the contrary, to be giving a carefully-considered and well-thought-over opinion.

The Hygienic Institute appears in *Truth's* "Cautionary List," and accounts of other cases in which it has been cast in damages will be found in the BRITISH MEDICAL JOURNAL, vol. i. 1909, pp. 876 and 932; vol. ii, 1909, p. 1198; and vol. i, 1910, p. 421. It seems to have, or to have had, branches in Glasgow, Newcastle, and Hull.

LOCUMTENENT AS RIVAL PRACTITIONER.

SPEED sends the following query: A., in practice in a small country town, sells his practice to B. C. has acted on two or three occasions as locumtenent for A. Is there any (*a*) legal or (*b*) ethical objection to C. setting up in opposition to B.?

*** (*a*) Unless C. has signed a bond not to practise in opposition to A. or A.'s assigns, there is no legal objection to C. setting up in opposition to B. (*b*) Speaking generally, such a procedure on C.'s part would not be ethical, but the mere fact of having once been a locumtenent in a practice does not necessarily make it unethical to practise in that neighbourhood at some future time.

LOCUMTENENTS AND AGENTS' FEES.

MR. PERCIVAL TURNER (London, W.C.) writes: My attention has just been called to your reply to a question on this subject. May I be permitted to most strongly emphasize the fact that an agent is entitled to another fee if the same locum tenent is re-engaged by the same principal? In my terms it stated: "These fees are payable upon each engagement and *every re-engagement* effected directly or indirectly through Mr. Turner," and most agencies have the same rule. I might add that a large number of my locumtenents go every year to the same principals, and, seeing I charge principals no fees, how am I to meet my expenses if I get nothing from the locumtenent? I am glad to state that, out of nearly 1,000 engagements every year, I cannot call to mind a single instance where the locumtenent has raised any question as to my right to my fee.

*** Mr. Turner is of course entitled to speak for himself, but we do not think the custom is general. We know at least one medical agent who only expects to be paid for the work he does—that is, for introducing the locumtenent to the principal. If some five or six years later the principal, who may have formed an acquaintance with the "locum," employs him again without reference to the medical agent, it seems to us preposterous that the latter should expect another fee. As Mr. Turner appears to stipulate for this when the locumtenent comes to him, no doubt he can claim it by virtue of a special contract to this effect; but, apart from that, we do not think he could ever recover the fee.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

MEDICAL ADVERTISING.

WELCH asks whether a registered dentist would come under the penal clause of the General Medical Council if he attached his name and address to a tooth powder which he supplies to his patients.

*** We cannot pretend to say what the General Medical Council might regard as objectionable advertising, but we should think it better for our correspondent not to put such a label upon the tooth powder, as it would be likely to be interpreted by most people as intended for advertising purposes.

PROFESSIONAL AMENITIES.

J. relates a story of having arranged with a colleague to assist him in an operation, and complains that the colleague left him in the middle of it owing to some misunderstanding as to who was to perform the operation, and he asks our opinion of the case. We have only an *ex parte* statement, but, speaking broadly, we should say that in the interests of the patient and as a general professional obligation no practitioner would be justified in leaving a colleague as described in the middle of an operation.

Contract Medical Practice.

DR. ALFRED PACKMAN (Rochester) writes: Recently I brought an action in the local county court to recover the sum of two guineas from a club patient for setting a fractured ankle. The judge has referred the matter until October 12th next for "further evidence of usual custom," and I should be glad if any members of the Association who have had cases of this kind of a *surgical* nature, and who also look upon them as *extras* demanding special care, skill, and attention, would give me the benefit of their experiences. Two years ago I asked for and received from the "Oddfellows" a letter agreeing that members should pay for all *surgical attendance* as distinct from medical attendance.

Public Health

THE NOTIFICATION OF MEASLES.

AT the meeting of the Hackney Borough Council on September 15th the following important motion was proposed by Dr. A. S. Dawson of Homerton, a member of the Council:

> That it be referred to the Public Health Committee to consider and report to the Council on the advisability or otherwise of taking steps for the compulsory notification of measles as an infectious disease.

In the course of his introductory speech, Dr. Dawson said that measles was responsible for ten times the number of deaths resulting from scarlet fever or diphtheria, while it was the secondary effects of measles which caused degenerates. His desire for notification was not based mainly on professional or personal grounds, though one of his children had died in consequence of the absence of notification, but on the question of principle. It was an opprobrium on their health authorities that they were so supine in this matter when measles had been notifiable for years in Paris. He had hoped Dr. Rushbrooke would second his motion, but in his absence he trusted Dr. Miller would do so. The latter, however, declined to do so, and the motion was seconded by Councillor Wild and agreed to.

EXTRACTION OF TEETH OF PAUPER CHILDREN BY DISTRICT MEDICAL OFFICERS.

C. C. writes saying he holds a Poor Law appointment and is also medical officer to cottage homes for pauper children. He wishes to know whether he can charge the guardians for the extraction of the teeth of these children when they apply to him for relief. He has no written agreement which bears upon this point.

*** If the cottage homes are within our correspondent's Poor Law district he cannot claim any fees for extracting the teeth of any paupers residing therein as these operations form part of the duties of all district medical officers.

Medical News.

THE medical staff of the Ancoats Hospital, Manchester, is making arrangements for a course of post-graduate lectures to commence in October.

MR. C. B. LOCKWOOD will deliver an address on inflammation and its relationship to malignant disease at the opening meeting of the session 1910–11 of the Manchester Medical Society. The meeting will be held in the Medical School of the Manchester University on Wednesday, October 5th, at 8.30 p.m.

THE winter session at the Central London Throat and Ear Hospital commences on Monday, October 17th, on which day an introductory address will be delivered by Dr. Purves Stewart, at 4.30 p.m. Its title is Intracranial Diseases Associated with Nasal, Aural, and Laryngeal Symptoms.

THE annual Welsh Medical Dinner will be held under the presidency of Mr. Robert Jones (Liverpool) at 7.30 p.m. on Friday, September 30th, at the Criterion Restaurant, Piccadilly, London, W. Applications for tickets should be made at an early date to the Honorary Secretary, J. Howell Evans, 25, Berkeley Square, W.

THE fiftieth course of lectures and demonstrations for sanitary officers given at the Royal Sanitary Institute will commence on October 3rd, while the seventeenth course of practical training for meat inspectors conducted by the same body will begin on Friday, October 7th, at 7 p.m. The institute has also arranged for a course of lectures, beginning on Monday, October 10th, at 7 p.m., to assist students entering for the examinations on hygiene in its bearing on school life, and for women health visitors and school nurses.

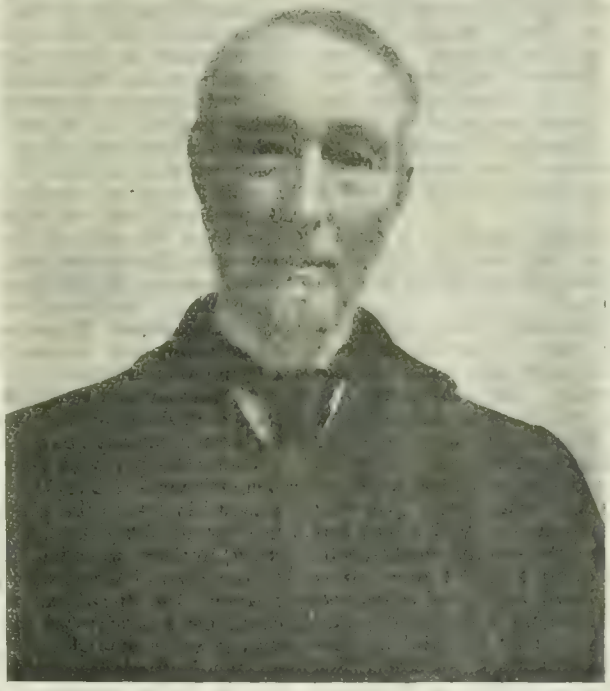
A COURSE of lectures and demonstrations will be given at the Children's Hospital, Great Ormond Street, on Thursdays, at 4 p.m. The session will begin on October 6th, when Dr. W. S. Colman will lecture on scurvy. On October 13th Mr. Kellock will lecture on torticollis. In addition to these lectures special post-graduate courses of three months' duration are held for systematic instruction in the medical and surgical diseases of children. These courses consist of twenty-four medical and twenty-four surgical demonstrations. The fee is £5 for the medical and £5 for the surgical course, and arrangements can be made for portions of each course. The Dean, Dr. Arthur Francis Voelcker, will be pleased to give any further information respecting these courses.

Obituary.

LOMBE ATTHILL, M.D.Dubl.,

FELLOW AND EX-PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND, EX PRESIDENT OF THE ROYAL ACADEMY OF MEDICINE IN IRELAND, EX-MASTER ROTUNDA LYING-IN HOSPITAL, DUBLIN.

DEATH has removed with tragic suddenness a familiar figure in the medical and social circles of Ireland. Dr. Lombe Atthill is gone—but he has gone at the close of an exceptionally long, useful, and successful life. Up to the end he carried his years lightly. His temperament was essentially of the active type. He *had* to be up and doing, and any suggestion that he required bodily or mental rest was quite distasteful to him. It was known to himself and to his friends for a considerable time that the muscular power of his heart was on the wane. Trouble with his breathing after a little unusual exertion gave him fears of sudden cardiac collapse, but in spite of this he seemed in his usual health when he started a few days before his death to spend a short holiday with relations near Rochester. He spent a night in London, and during the next few days he revisited some of the scenes of his early school days, and with boyish delight recalled the memories of those far-off times. He was in treaty for the publication of Personal Reminiscences which were to be supplementary to the Medical Recollections published in the BRITISH MEDICAL JOURNAL in the early part of the present year, and it is probable that when he set forth alone from his friend's house on Wednesday, September 14th, he had as his objective an interview with his publishers in London. Whatever his object was, it was not to be accomplished, for as he was counting the change he had received at the ticket office in Strood Railway Station, the end came in a moment, without a murmur and without a struggle. But in this apparently tragic ending he was saved the realization of the fear which possesses many active men, "of the sick room, the mortal strife, the turmoil for a little breath." The news of his sudden "call," far away from his home, was a serious shock to his family, and particularly so to Mrs. Atthill, who by reason of her greater age, had been unable to accompany him on the visit he was making to one of her granddaughters.



DR. LOMBE ATTHILL.

Lombe Atthill was born on December 3rd, 1827. He was the youngest and thirteenth surviving child of the Rev. William Atthill, who was Rector of the parish of Magheracoulmoney, in the county of Fermanagh. The latter—who was the son of the Rev. W. Atthill, the representative of an old Norfolk family whose seat was Brandiston Hall—had been a distinguished mathematician, and had graduated from Cambridge University as Second Wrangler of his year. He sent his youngest son to school in England, and subsequently to Portora. His school days over, and selecting medicine as a profession, Lombe Atthill was apprenticed in 1844 to Mr. Maurice Colles, at that time Surgeon to the Meath Hospital. Here young Atthill had the signal advantage of being trained in the medical wards of the Meath Hospital by the great William Stokes. He obtained the Licence in Surgery of the Royal College of Surgeons in Ireland in 1847, and he has put it on record that, "I do not think from the day I joined the class to the final day of the examination for my diploma I was ever once absent unless prevented from illness or during vacation."

There is no necessity to reiterate on the present occasion the keen struggle for a livelihood which the youthful surgeon encountered and which he himself has portrayed so graphically in his "Recollections." The means were small, owing to his father's death, but the spirit of determination was great. He was not contented with his general educational and professional attainments, so he proceeded to graduate in Arts and Medicine in the University of Dublin in 1849. These were surely times of plain living and high thinking for the ambitious student. Later on his experiences as a country practitioner were not reassuring, so he migrated back to Dublin, and having failed to secure a union appointment, he began his gynaecological career by entering the Rotunda Hospital as Resident Assistant to the Master for a period of three years from 1851. In these days of struggle he had the temerity even to get married.

Dr. Atthill's connexion with the Royal College of Physicians began in 1857, when he obtained the Licence in Medicine. In 1860 he was elected to the Fellowship, and in the following February he became Registrar, a position which he filled with great ability for eight years. He was subsequently elected a Censor for two periods of two years each, and also an Examiner in Midwifery and Vice-President. He filled the Presidential Chair from 1888 to 1890, and during his term of presidency he was chosen by the College to succeed the late Dr. Aquila Smith as its representative on the General Medical Council. He discharged the important duties of this distinguished office for a period of fourteen years in a manner which gave entire satisfaction to the College. His voluntary retirement from the office in 1903 was followed by the election of Sir John Moore as his successor. He was also Treasurer of the College from 1890 until 1903.

From 1872 Dr. Atthill had advocated the establishment of conjoint examinations with the Royal College of Surgeons for the Licences of the two Colleges, and when eventually the Conjoint Board was formed in 1886 he became one of the original representatives of the College of Physicians on the Committee of Management.

In 1868 fortune began to smile upon Atthill, for in that year he was appointed Gynaecologist to the Adelaide Hospital in Dublin. There he soon gathered around him a large extern clinic, and the publication of many of the clinical lectures which he delivered to his class at this time not only established his reputation as a gynaecologist, but brought him into prominence as an author. He collected these published lectures into a small manual entitled *Diseases of Women*, which ran through six editions within a few years. The eighth and final edition of this little work fittingly appeared at the expiration of his term of office as Master of the Rotunda Lying-in Hospital. In 1875 he became Master of that well-known institution, and during his full period of seven years he performed a large amount of truly pioneer work which made advancement along modern lines easier for those who succeeded him.

In addition to the *Diseases of Women*, he contributed many papers to the medical journals. Among these were: On Chloroform in Midwifery and its uses in Puerperal Con-

vulsions; Chronic Inflammation of the Vagina and Reflex Irritation of the Bladder; Retroflexion of the Uterus and Inversion of the Uterus.

It would be, of course, quite futile to institute comparisons between a work on gynaecology written in the days when this branch of medical science was in its infancy and the elaborate textbooks of to-day. In any case, the writer of this notice is incompetent to offer a fair criticism, and it must be left to others who are engaged in this particular branch of medical science to estimate Atthill's writing and teaching at their proper value.

Dr. Atthill became President of the Old Dublin Obstetrical Society in 1874, when he delivered a Presidential address on the Physiology of Menstruation. Then when the Obstetrical Society, at whose meetings he was a constant contributor, coalesced with the other existing societies in 1882, to form the Royal Academy of Medicine in Ireland, Atthill became an active member in the Councils of the latter. He was President of the Section of Obstetrics in 1884–6, and again in 1895–7; and finally he enjoyed the marked distinction of being elected President of the Academy in 1900 for the usual term of three years.

This office is occupied alternately by a physician and surgeon, and as the late Dr. George Hugh Kidd, an eminent gynaecologist in his day, had been elected on a previous occasion to fill the presidential chair during a surgical term, so Dr. Atthill, also an eminent gynaecologist, came in turn to be chosen as a representative of the physicians. This was an honour which he valued highly.

In the welfare and progress of the British Medical Association Dr. Atthill took a keen interest. He was President of the Section of Obstetric Medicine at the Annual Meeting held in 1876. He supported the late Sir George Duffey when the latter succeeded in establishing the Dublin, now the Leinster, Branch of the Association in 1877. He was one of the earliest of the Branch Presidents, and for many years he was an active member of the Council.

To his latest days he interested himself to a special degree in the Rotunda Hospital, the Adelaide Hospital, the small local hospital at Monkstown, and in the Medical Benevolent Fund Society of Ireland.

Dr. Atthill was a strong personality. He was not a brilliant speaker, but he was "rich in saving common sense." He had a fine business capacity, and was a reliable guide in the disposal of money. His generosity was unostentatious, but real. He was a wise and shrewd counsellor—a true and faithful friend. His ripe experience and worldly knowledge were always at the service of his more youthful colleagues. He worshipped at the shrine of the Great Master who went about doing good. He was abstemious in all things, and early in life had learnt the sovereign lessons of "self-reverence, self-knowledge, self-control." He had a high sense of honour, and acted up to his ideals. He strove hard to know what was right, and he acted rightly as far as his judgement could guide him. He worked hard; he had led a strenuous life, and he was rewarded with professional and financial success. For many years he occupied the leading position in Ireland of his speciality. He cared nothing for titular honours. He had won handsomely in the great game of life. He had the courage to do what others in an equally successful position often fear to do, and that was when he had made a competence he retired from his active professional work and so made room for the younger men who were struggling in their turn to succeed.

In his beautiful home at Monkstown Castle, to which he retired in 1895, he had much to engage his tireless energy, and many an enjoyable summer evening his hard-worked medical friends from the city spent in his grounds and around his hospitable table. His garden was a source of genuine pride to him. He was exceedingly fond of yachting, and had many disturbing experiences in his yacht. When quite 70 years of age he took to cycling, and even up to a recent date he favoured this mode of recreation.

He lost his first wife many years ago, and subsequently married Mrs. Duffey, mother of the late Sir George Duffey. To his widow, and to all the members of his family, the sympathy of the medical profession is extended in their great bereavement.

The remains were brought to Dublin, and laid to rest in Mount Jerome Cemetery on Saturday morning, September 17th, when the Fellows of the Royal College of Physicians attended in large numbers to pay their last tribute of respect to the "Father" of the College in whose welfare he took the deepest interest for a period of forty years.

JOHN LANGTON, F.R.C.S.,

CONSULTING SURGEON, ST. BARTHOLOMEW'S HOSPITAL.

THE death of Mr. John Langton, of St. Bartholomew's Hospital, took place on Sunday, September 11th, after a short illness. Mr. Langton was 70 years of age, and almost the whole of his very busy life had been devoted to the study and practice of the surgical profession, to which he was whole-heartedly attached.

He was educated at Brighton and in Germany, matriculated at the London University, and, starting at the age of 17 as a student at St. Bartholomew's Hospital, he worked there without intermission until his retirement from the active staff in 1904, when he was appointed Consulting Surgeon and a Governor of the hospital.

After filling responsible posts on the junior staff and in the Medical School of St. Bartholomew's, he was appointed Assistant Surgeon at the early age of 28, and in the year 1881 was elected full Surgeon For twenty-three years he visited the hospital nearly every day, and there by his self-sacrificing devotion endeared himself to numberless patients and to the students whom he delighted to teach.

His sphere of activity was not, however, restricted to St. Bartholomew's, for he was also Surgeon to the City of London Truss Society for close on forty years, where his standard of work was of a markedly high character. In addition he was Consulting Surgeon to the City of London Lying-in Hospital, Tottenham Hospital, Friedenheim Hospital, the Memorial Hospital, Mildmay Park, and the West End Hospital for Nervous Diseases. He was for many years a member of the Court of Examiners at the Royal College of Surgeons, an active member of the Council, and held the office of Vice-President. He had also filled the office of President of the Clinical Society and of the Medical Society, and up to the time of his death was Treasurer of the latter society, and devoted much of his time to furthering its interests. For many years Mr. Langton was Treasurer of the Royal British Nurses Association, and he was interested in a variety of other nursing associations.

All institutions to which he was attached will suffer a loss, for, whatever the position filled by him, the same high sense of duty characterized all his work.

From the point of view of one of his pupils it always seemed that Mr. Langton, or "Johnny" as he was called, was at his best in the wards of St. Bartholomew's, which he was in the habit of visiting almost every day of the week, Sundays included. He delighted in his work, he was on the best of terms with his sisters and nurses, he loved teaching the "boys," as he called the dressers, and no one could have been nicer to his house surgeons, to whom he was as a personal friend.

As a lecturer he could hardly be regarded as brilliant, but he had a method of teaching peculiarly his own and admirably adapted to bring out the best knowledge a student possessed.

Many men will remember with gratitude the little informal "grinds" he used to give in one of the boxes in the old surgery—a small room with as many men as could cram into it, and there he would see out-patients or any case about which his house surgeon wanted advice. There he loved to put his anatomical and surgical questions, and woe betide the man who in his opinion was a "trimmer" or who tried to hedge.

His patients loved him, and he had a marvellous memory for them. He would remember for years their complaint, and even the bed and ward in which they had been. They were not mere cases to him, but interesting men and women demanding and getting his sympathy.

His sense of duty was great, and, though finding it tiring in his latter years, he would never relinquish his turn of night duty, nor fail to respond to a call from the hospital. His retirement from the active staff was a great grief; a man of no hobbies outside his profession, the mere thought even of retirement grieved him. When he became Senior Surgeon, and he saw his name-board at the entrance to the wards transferred to the head of the list, he regretfully remarked, "In the condemned cell at last." As a surgeon

he was a very sound operator, and, what is better, he had good judgement, especially in what he used to say was the most difficult of all things to decide—the knowledge of when not operate.

He was a general surgeon in the best sense of the word, though on the subject of hernia the immense experience gained by many years' hard work at the City of London Truss Society made him an acknowledged expert. This special work gave him much pleasure, arduous as it was and entailing early morning rising. A tribute to his influence there is the constant inquiry for the "old doctor" from numerous patients whom he had relieved.

During the last year or two Mr. Langton had been failing, and a week before his death he became hemiplegic. He died as he had lived—well. Without suffering he passed away, and of him it can truly be said that the world was the better for his work.

MANY Anglo-Indians will regret to hear of the death of Deputy Surgeon-General JOHN LISTON PAUL, which occurred at Torquay on August 25th. He was born at Elgin in 1827, and studied at Aberdeen, where he obtained the degree of M.A. in 1845. He afterwards studied at Edinburgh, where he took the degree of Doctor of Medicine in 1848. After a further period of study in Paris he entered the Medical Service of the Madras Army in 1851. After the usual regimental service, his high professional attainments procured for him the Professorship of Surgery in the Madras Medical College, which he filled most usefully for several years. At the same time he was engaged in a large private practice in Madras, where he gained the esteem and affection of all who sought his advice and aid. He retired comparatively early from the Indian Service with the honorary rank of Deputy Surgeon-General, though the substantive grade was offered to him by the Indian Government. He acted as President of the Medical Board at the India Office during the absence of Sir Joseph Fayrer. After his retirement Dr. Paul conducted an extensive private practice in London, where his skill and kindness gained him many new friends. He recently went to reside in Torquay, where he passed away full of years and greatly mourned. The deceased officer was brother of Lieutenant W. Paul, of the Bengal Army, who was killed at the Relief of Lucknow in 1857 while gallantly leading his men. Dr. Paul was a godson of Liston, the celebrated surgeon.

Deputy Inspector-General JOHN JACK, M.D., died on September 8th at Kensington, at the age of 92. He was the oldest officer on the retired list of the Royal Navy Medical Service. He qualified as a Licentiate of the Royal College of Surgeons at Edinburgh in 1839, entered the Navy in 1842, was made Staff Surgeon in 1854, and Fleet Surgeon in 1867, retiring with the rank of Deputy Inspector-General in 1875. He was awarded the Gilbert Blane Gold Medal, granted to medical officers for the most approved journals of their practice while in medical charge of a ship of war in the Royal Navy.

The Services.

VOLUNTARY AID DETACHMENTS.

WE understand that the formation of voluntary aid detachments is making progress throughout the country, and, as an amendment to paragraph 22 of the scheme for the organization of voluntary aid in England and Wales which we printed in the JOURNAL of August 21st, 1909, and as applied to Scotland on December 21st, has recently been issued by the War Office. We give the purport of it for the benefit of those engaged in the work.

Paragraph 22 relates to the preliminary educational requirements of the voluntary aid detachments, and the Army Council now states that the following bodies are approved by the War Office for the purpose of granting certificates in "first-aid," the list being provisional, and to be added to from time to time: (*a*) The St. John Ambulance Association; (*b*) the St. Andrews Ambulance Association; (*c*) the National Fire Brigade Union; (*d*) the National Health Society; (*e*) the London County Council; (*f*) Provincial County Council, where the conditions as regards instruction and examination laid down in the above quoted paragraph of the Voluntary Aid Scheme are complied with.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

BETA writes: Can any reader tell me of a place within easy access of a north London suburb where I could obtain tuition and practice in motor driving, together with efficient practical instruction in mechanism and small repairs?

M.D. writes: My duties take me to very dirty tenements, from which I always bring away a large number of fleas, which seriously impair my night's rest. Could any of your readers suggest a means of dealing with these pests? Keating's powder is not of much use, and has the disadvantage of discolouring the bedsheets.

LUTONIAN writes: What books are most suitable to read for the M.D.Lond., Branch I (Medicine)?

*** The field for reading demanded is a wide one. The following should suffice: (1) A standard textbook, such as Osler's; (2) diseases of children, such as the work of Goodhart and Still; (3) diseases of the nervous system, such as that of Purves Stewart; (4) a work on pathology—general and special; Adami's book, although very large, is up to date, and may be read in parts; (5) smaller works, such as Bosanquet's *Serums, Vaccines, and Toxins in Diagnosis and Treatment* (Cassell and Co.), Latham's *Sanatorium Treatment of Consumption*, and Manson's *Tropical Diseases* are also very useful. The first volume of Clifford Allbutt's *System of Medicine*, "Prolegomena," is most valuable.

RENAL COLIC AND LIFE INSURANCE.

H. D. writes: Could you kindly inform me whether a man aged 28 years who, eleven years ago had an attack of renal colic and recently has had two attacks, and passed a small calculus shortly after the second attack, could safely be recommended to a life insurance company as a *first-class* life?

*** At least three years should elapse after an attack of renal colic before the life could be safely recommended at the ordinary rate, and the history of previous attacks would probably lead to a longer period of probation.

EGYPT AND CHRONIC RHEUMATIC PATIENTS.

C. W. G. asks as to the relative merits of Biskra and Cairo for a patient suffering with chronic rheumatism to reside in during the winter and early spring months?

*** Biskra is an oasis town with sulphur baths within four miles, and is well provided with shady drives. But the objections to it for English patients are that the food (bread, fish, and meat) are not very good, there is no English-speaking doctor nor chemist, and the hotels are not first class. At Helouan and Assuan in Egypt there are special facilities for patients suffering from chronic rheumatism, sulphur baths at the former, within half a mile of good hotels, better food, golf, and other recreations suitable to British patients. Helouan has also the great advantage of being within three-quarters of an hour by train from Cairo. Cairo itself can hardly be recommended as a special resort for chronic rheumatism, though patients who do not require sulphur baths do very well at Mena House, near the Pyramids. Those who have tried both Egypt and Algeria find themselves more comfortable in the former, though the climate of both countries is very similar during the winter and early spring. At both Helouan and Assuan there are English doctors, and there is also one at Mena House.

ANSWERS.

SILURIAN.—For the D.P.H. of the Royal College of Physicians and Surgeons in Ireland the following books are suitable: *Meteorology*, by Sir J. W. Moore (new edition 1910). Bacteriology: Hewlett's or Muir and Ritchie's *Manual of Bacteriology*; Horrocks's *Introduction to Bacteriological Examination of Water* (Churchill) may also be consulted. Sanitary Law: Birmingham's *Irish Sanitary Law* (Brown and Nolan, Dublin). Hygiene: Parkes and Kenwood's *Hygiene and Public Health* (Lewis, 1909).

LICENCE DUTY ON MOTOR CARS.

J. M. asks whether the occasional use of his car for other than professional purposes debars him from the title to the allowance of one half the licence duty.

*** No The condition on which the allowance depends is that the car shall be "kept for the purpose of his profession"; if this condition be fulfilled the occasional use for private purposes should be immaterial.

DEAF AND DUMB CHILDREN.

E. F.—Institutions do not as a rule receive deaf and dumb children under 7 years of age. The educational authorities, however, take cognizance of those over 5, and application should be made to the education committee of the district with regard to the case named.

MOSQUITOS IN HOUSES.

DR. F. M. SANDWITH (London, W.) writes: "Rus" writes to ask you how to rid a house in the North of England of buzzing biting insects, locally called mosquitos. Why does he not send samples of them to the London or Liverpool School of Tropical Medicine and ask what insect the house is suffering from, and where the breeding grounds probably are? In the meantime he should kill all adult insects, and then destroy their larvae in their breeding pools.

EXPERIENCE writes: "Rus" can destroy the mosquitos by means of Keating's insect powder. Burn it on a metal plate over a spirit lamp and let the fumes fill the room.

DR. ARTHUR W. THOMAS (Boscombe) writes: In answer to "Rus's" inquiry, the "insects" of which he complains are probably native gnats, either *Culex irritans* or *vesicans*. There is practically no difference between a gnat and a mosquito. The only cure for these pests is prevention, and, as they must have water to breed in, all water-butts, cisterns, pools, or ponds near the house should be emptied; but if this is impossible, a thin layer of paraffin on the surface of the water will destroy all larvae, thus preventing the perfect fly coming to maturity.

WORKS ON HEREDITY.

OMNE VIVUM EX VIVO.—Our correspondent would probably find what he requires among the following works: *The Laws of Heredity:* G. Archdall Reid; Methuen, 21s. (Reviewed in BRITISH MEDICAL JOURNAL, vol. i, 1910, p. 1356.) *The Influence of Defective Physique and Unfavourable Home Environment on the Intelligence of School Children:* David Heron; pp. 60. *A First Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring:* Ethel M. Elderton; pp. 46. (Reviewed in BRITISH MEDICAL JOURNAL, vol. i, 1910, p. 1366.) *Treasury of Human Inheritance:* Parts I and II; published by Dulau and Co.; 14s (Reviewed in BRITISH MEDICAL JOURNAL, vol. ii, 1909, pp. 20 and 884.) *Variation, Heredity and Evolution:* R. H. Lock; published by John Murray; 5s. (Reviewed in vol. ii, 1909, p. 552.) *Influence of Heredity on Disease, with Special Reference to Tuberculosis, Cancer and Diseases of the Nervous System;* published by Longmans; 4s. 6d. (Reviewed in vol. ii, 1909, p. 883.) *Relative Strength of Nurture and Nature:* Ethel M. Elderton; published by Dulau and Co.; 1s. (Reviewed in BRITISH MEDICAL JOURNAL, vol. ii, 1909, p. 1620.) *Methods and Scope of Genetics:* W. Bateson; published by the Cambridge University Press; 1s. 6d. (Reviewed in JOURNAL, vol. i, 1909, p. 1182.) *Heredity:* J. A. Thomson; published by J. Murray; 9s. (Reviewed in BRITISH MEDICAL JOURNAL, vol. i, 1909, p. 1182.)

DUTIES OF POST OFFICE MEDICAL OFFICERS.

APEX is medical officer to the Post Office in a country district. One of the auxiliary men on his capitation list met with an accident when working in his garden. "Apex" has to visit him at a distance of three miles for a week to dress his wound. Is "Apex" entitled to treat him as a private patient, or must he attend him gratis as a Post Office employee?

*** "Free medical attendance" is held to include, except in the case of accidents arising from the nature of an officer's duties, only such services as the medical officer is able to render in the course of ordinary practice, and not medical or surgical treatment of a special kind. "Apex's" case, strictly speaking, would be held to be covered by his capitation grant, unless the accident was such a severe one as to involve surgical treatment of a "special kind." If "Apex" holds that the latter is the case, he would be well advised to come to some arrangement with the officer in question, and, failing this, to ask the Secretary to the Post Office, through his local postmaster, for permission to charge fees, stating in his application the reasons that prompt it.

LETTERS, NOTES, ETC.

ST. PAUL'S THORN IN THE FLESH.

DR. J. BATTESON (West Ealing) writes: May I make a brief reply to Dr. Young's criticism of my letter of September 10th *re* "St. Paul's Thorn in the Flesh"? Dr. Young says:

1. "Christ spoke *generally* in Greek, occasionally in Aramaic." There is absolutely no proof of this statement. "He only knew Aramaic." "Beyond these (the so-called Books of the Law) and learning to read and write in his Aramaic mother tongue, the book knowledge of Jesus did not go. . . . A curse was pronounced against the Jew who taught his children Greek" (Clodd, *Jesus of Nazareth*, p. 67). "It is not probable that Jesus knew Greek. This language was very little spread in Judea beyond those who participated in government, and the towns inhabited by pagans, like Caesarea. The real mother tongue of Jesus was the Syriac dialect mixed with Hebrew which was then spoken in Palestine" (Renan, *Life of Jesus*, p. 36).

2. "The names of at least one apostle and all the seven deacons are Greek." It is a fair surmise that the Aramaic or Hebrew names received Greek forms by the later compilers of the Gospels. The word Jesus is only the Greek form of Christ's real Hebrew name *Joshua*.

3. "Greek was the universal language," etc. Was not this the Augustan age of Roman literature? Did not Horace, Virgil, Cicero, etc., flourish at this period? "It would therefore be impossible for Luke . . . to have written in Aramaic." Why not? If Christ, though a carpenter's son, is assumed by Dr. Young to have spoken both languages, why should not Luke, an educated physician, have done so?

4. "Paul alludes to the *special* event of Christ addressing him in Aramaic." Christ speaking in Hebrew was referred to *incidentally* and not specially.

5. What language did Christ speak to the Greek woman? Aramaic. The Greek woman as a foreigner would be more likely to learn the language of those among whom she lived than the natives a foreign language for which they had little or no use. The marginal reading of the Revised Version merely says she was a Gentile (not a Greek), and a Syro-Phoenician, whose language was Aramaic. Even if she had not been a Syro-Phoenician it was an easy matter for one of the crowd to have interpreted.

6. What language was Jesus speaking when he said "Abba Father"? Aramaic, in which Abba is the correct root for Father, and is not a Greek term at all.

I do not see the advantage to be obtained by buying a Greek grammar of the New Testament (as Dr. Young suggests I should do) in order that I may understand what Christ and his Disciples said in Aramaic. As to the thorn in the flesh, this seems to have been a bodily weakness of a painful, humiliating, and depressing character with recurrent attacks. This theory excludes: (1) Certain spiritual temptations (Luther); (2) carnal incitements (due to a Latin misreading of *stimulus carnis*) (Roman Catholic writers in general); (3) erections, satyriasis (Kraft, etc.); (4) syphilis (Rosenbaum); (5) human opponents (Chrysostom, Erasmus); (6) bodily disease—epilepsy, hysteria, etc. (Ewald), headache (Tertullian), malarial fever (Ramsay and Hows); (7) ophthalmic disease (Farrar).

THE DESTRUCTION OF FLIES.

DR. T. F. J. BLAKER (Preston Park) writes: I have read Dr. Hardman's Blackpool letter in the JOURNAL of September 3rd on the destruction of flies with much amusement. The idea of a learned doctor and J.P. chevying round his house after these Muscae volitantes, fly-flapper in hand, is highly diverting and reminiscent of that celebrated picture in *Punch*, "The Philosopher and the Bluebottle." But he doesn't tell us what to do when they settle on the ceiling. Are we to fetch the household steps? The conclusion he has come to that "flies are only to an insignificant extent recruited from the outside" I see refuted every day at this time of the year. It happens to be part of my duty to attend a large number of poor people who live near the borough dust destructor, where there are dust heaps and dust carts, and again on the outskirts of the town where market gardeners and such like people dwell who keep large quantities of manure on the premises. All their houses are one black mass of flies in spite of every effort to destroy and keep them under. It is no exaggeration to say they swarm in hundreds of thousands. If these houses were "subjected to sanitary inspection, and the occupiers proceeded against and fined," as Dr. Hardman suggests, loud and angry protests would be at once provoked.

DROITWICH.

IN a recent note on Droitwich it was stated that a full account of this health resort would be found in our issue for June 15th, 1909. The date given should have been two years earlier—namely, June 15th, 1907 (vol. i, 1907, page 1440).

SPINAL ANALGESIA.

A Correction.—Dr. W. J. McCardie (Birmingham) writes: May I point out that in my paper on spinal analgesia published in the JOURNAL of September 17th, p. 765, second column, line 21, the word "grain" should be "gram."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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An Address
ON
ANCIENT HUMORISM AND MODERN HUMORISM.

Delivered at the International Congress of Physiology held in Vienna, September 27th to 30th.

By CHARLES RICHET, M.D.,
Professor of Physiology, University of Paris.

I.

When, after an interval of three years, our family of physiologists finds itself once more gathered together in formal congress, as we are at the present moment, we have many things to say to each other, and as the intensity of physiological research is considerable, it will be necessary to mention the definite progress that has been made after three years of labour. At this, our first meeting, therefore, it would be fitting that the new facts discovered by physiologists should be set before you. When, therefore, our illustrious President did me the great honour—an honour for which I am profoundly grateful to him—of selecting me as the first speaker, I first thought of giving you a brief account of the work accomplished since 1907. But very quickly I realized that such an account, even if I were capable of giving it, which is very doubtful, would be more like an analytical review than an academic discourse, and would be more of the nature of a book than of a speech.

Therefore I thought it wiser, though equally rash, to furnish, instead of a technical and bibliographical analysis, a more synthetic study—a general sketch of the tendencies of contemporary physiology.

II.

Just as the traveller in the course of his journey, after having accomplished a fairly long stage, stops for a moment to look backwards and forwards, measuring with his eyes the distance he has covered and that which remains for him to traverse, so we, too, may ask ourselves what point we have reached and from what point we started. It is our right, our duty even, to seek in what direction is proceeding the evolution of the science which is dear to us—physiology—that science so useful in contributing to the welfare of mankind, to which all of us here present consecrate our teaching and our researches.

Now, it seems to me, upon reflection, that the physiological concepts of to-day might very well be expressed by a very old word, now perhaps a trifle out of-date, "*humorism*." All of us at this present moment are, consciously or unconsciously, humoralists—that is to say, we look upon the chemical constitution of our humours as being the basis of all biological phenomena; and we understand that word "humour" in the most general sense, for we not only think of the circulating or secreted humours, such as the blood, the bile, the milk, the urine, and the gastric juice, but also of the liquids which enter into the composition of our tissues; in other words, of all the chemical substances in solution of which the living organism is composed. It is by the chemical evolution of the substances contained in the plasmatic liquids that life is constituted.

And in conceiving life under this form we are only following a very ancient tradition. From the earliest times the composition of the humours has been regarded as of fundamental importance. Humorism had preoccupied not only physiologists, but also, and especially, physicians. For physicians have always been a little more theorists than physiologists, though the theories of medicine are always the direct outcome of physiological opinion. At all times, and perhaps more than ever to day, physicians seek both their theory and their practice in the teaching of physiology. It matters little whether they acknowledge this or not; they follow the impulse that experimentation gives to the biological sciences. We are the creators, the innovators, the revolutionaries, and they conform to our conceptions. So much better if these conceptions are right. So much the worse if they are wrong. Medical theories are always the reflection of contemporary physiological theories.

It is not surprising, therefore, that the word "humorism" applies as much to medical as to physiological ideas. The physicians of the past were humoralists because the physiologists were so also. And as the physiology of the present day is essentially humoralist, modern medicine is necessarily so too, even at the risk of exaggeration. Medicine and physiology are merged in one another. Hippocrates, Galen, Van Helmont, the masters of humorism, did not think it necessary to separate the theories of life from the theories of disease.

And we must follow their example energetically, resolutely. There are not two biologies, that of the sick man and that of the healthy man. The laws are the same. We have a right to claim all the admirable work of contemporary experimental pathology as a part of physiology. I know very well that experimental pathology and physiology are taught from different chairs. But we admit that that fact is not of the least importance. The method is the same; the object is the same. The method, everywhere and always, is the experimental method; the object is, everywhere and always, the knowledge of biological phenomena.

III.

The humorism of the ancients is very singular. According to Hippocrates, and—but for some slight shades of difference—according to Galen, life depends upon the humours. When they are in the right condition we have health; when they are corrupted we have illness. Nothing, you see, can be simpler.

What are these humours? Strange to say, Hippocrates, Galen, and all the physicians who followed them during sixteen centuries, describe humours which they had never seen, and which no one will ever see, for they do not exist. There was the blood, the yellow bile, the black bile, and the phlegm. The blood and bile have certainly an actual existence; but where is the black bile, which causes melancholy? And this extraordinary phlegm or pituitary secretion—this strange liquid, which is the cause of tumours, of chlorosis, of rheumatism, and cacochymia—where is it? Who will ever see it? Who has ever seen it? What can we say of this fanciful classification of humours into four groups, of which two are absolutely imaginary?

It was not until the advent of the great anatomists of the sixteenth century that the science of life emerged from the clouds in which it was enwrapped; it was not until the time of Harvey and Descartes that experiment triumphed over book learning. But what is truly extraordinary, what surpasses our wildest dreams, is the fact that for sixteen hundred years all physicians and all physiologists remained bound in the shackles of this incomprehensible error of the four cardinal humours. By what miracle was the spirit of conservatism or of routine able to hide the truth to such a degree? The men of science and the doctors of former times were no less intelligent than those of to-day. Nevertheless they accepted without a shadow of proof these childish theories; they could not see most simple facts, and they saw most complicated things which not only did not exist but which were not even probable. Is there not reason to be a little uneasy as to the fate reserved for our own work? Have we any assurance that our own conceptions will not be treated with contempt by our successors four hundred years hence? It is, therefore, prudent not to be too hard upon the past, because thus we may predispose those who come after us to show us a little indulgence.

With the Italian anatomists of the Renaissance, the orientation of physiology changed, in spite of the impotent efforts of Van Helmont; humorism was replaced by mechanism. It was thought that anatomy should be the guide of its servant, physiology. The dissection and opening of corpses became the basis of medicine and physiology. With the coming of Willis, Winslow, Morgagni, humorism was almost abandoned. And, after all, this was but just. How could it have any appearance of truth, since chemistry was not yet born?

It came into being, as you know, with Lavoisier, and with chemistry came medicine and physiology. The more I study the history of physiology the more do I look upon Lavoisier as the great initiator. It is useless to describe here his immense work. I will content myself with

indicating it in a sentence that sums it up. Lavoisier understood, discovered, and demonstrated that life is a chemical phenomenon. At once all was clear. One understands the cause of animal heat, the *raison d'être* of respiration and alimentation; one grasps the meaning of energy; one applies the great principle of the transformation of the forces to general biology; and one can plainly foresee that humorism will triumph, and that the chemical transformations of which the organisms are the seat will be merged in the vital principle, which itself will have become superfluous. In spite of Galen, Descartes, Harvey, Haller, physiology begins with Lavoisier.

IV.

Nevertheless, the great scientific revolution which gave birth to chemistry did not immediately bear fruit. There were periods of uncertainty and hesitation, during which physiology and medicine, its faithful companion throughout the glorious nineteenth century, so fertile in discoveries, have oscillated, not knowing exactly from what side light was to come. And, in fact, just as the anatomists of the Renaissance guided biology from the side of dissection, so the micrographers, with their more and more perfected microscopes, have appeared to draw physiology towards histology, histogenesis and cellular morphology. Now, even if magnificent discoveries have been made as to the structure of cells; if it has been found possible to describe their forms, and the transformations of their granules; if, finally, it has become possible to consider the cell, which appears so simple an element, as an extremely complicated world in itself, nevertheless it seems to me that all this progress in morphology has done nothing towards elucidating questions of physiology. The greatest physiologists, on various occasions, have laid stress on the inadequacy of anatomy—even the most delicate microscopic anatomy—to elucidate the modality of the functions. This was one of the ideas dear to Magendie, and especially to Claude Bernard, who never tired of repeating that histology can do nothing, or next to nothing, for physiology, and that the knowledge of a form in nowise implies the knowledge of a function. It seems to me that one cannot possibly exaggerate in this direction. Even if we are able to describe minutely the form of a cell and the complicated network of the different granules which constitute it, we shall not have got much further towards knowing its proper function. Granted that a nerve cell contains two or three groups of matter which will take a different stain, how does the knowledge of that fact help us to know the quantity of oxygen it consumes, to determinethe conditions of reflex action and the laws of its irritability? Let us suppose that we have fathomed the structure of the muscular fibre, what will it teach us of muscular contraction?

Happily physiologists have not allowed themselves to be misled by the mirage of the microscope; they have studied physiology as physiologists, not as histologists; by chemical and physical experimentation, not by morphology. It is evident that neither Claude Bernard, Helmholtz, nor Ludwig refused to admit the use of it; but they always declared that its use was limited. They always preferred experiment to observation. They always preferred to analyse a function rather than to describe a form. It is for this reason that they made such noble discoveries, for the histology of an organ does not by itself lead to the discovery of the function of that organ.

V.

But medicine has not been as wise as physiology. It believed that microscopic anatomy, normal or pathological, was going to clear up everything, and we are forced to admit that it has hardly derived any profit at all therefrom. The whole history of cellular pathology, despite the genius of Virchow, has ended in a rather lamentable failure. Two or three of Pasteur's experiments have done more towards the renovation of medicine than fifty years of pathological anatomy.

And if I speak of Pasteur, of his glorious successors, R. Koch and Ehrlich, as I might speak of the eminent bacteriologists of the present day, it is because experimental pathology becomes mingled with pathological physiology, though not with morbid anatomy. It is not the microscopic observation of forms that has given us these marvellous discoveries by means of which the medicine of the past has been completely overthrown. Every branch of medicine has been regenerated—etiology, pathogeny, hygiene, therapeutics. It has been a revolution without precedent in the history of science. And this progress is due solely to experimentation—that is to say, to the methods of the physiologists. The morphology of bacteria is of little importance compared with the biology of bacteria.

Nevertheless, at the beginning of bacteriology, it seemed as though there was to be a definitive movement away from humorism. But important discoveries very quickly showed that, even for the study of microbes, it was necessary for the application of phenomena to come back to biologico-chemical analysis—that is to say, to humorism—for the understanding of microbes.

First came the fine discovery of Roux, which proved that the symptoms produced by the living and developing microbes are more or less identical with the symptoms caused by chemical substances which contain microbes. By injecting the soluble products contained in the microbes of diphtheria, the symptoms of that disease, which is due to the multiplication of diphtherial microbes, are reproduced. Some time afterwards I showed, in conjunction with Héricourt, that there are in the blood chemical substances capable of producing immunity. This was the principle of serumtherapy, which was so brilliantly applied by Behring two years later to diphtheria. And on all sides, with admirable enthusiasm, both doctors and physiologists, without stopping to ask if their work belonged to the domain of medicine or to that of physiology, studied the chemical functions of the blood, and have discovered in it manifold properties, the complexity of which increases every day. This is humorism in the strictest sense of the word.

You see, therefore, that although physiology has from the beginning been attached to humorism, medicine oscillated for a long time between contrary tendencies, leaning turn by turn towards anatomy, histology and bacterial morphology, but finally reverting to humorism, following the way pointed by the physiologists.

VI.

It is hardly necessary to point out that this modern humorism differs profoundly from the humorism of the ancients. In order to make you better understand the abyss which divides contemporary science from the conceptions of the past, I should like to show you in a very simple form—which I will try to present under the form of laws—the principal data of the humorism of to-day. To tell the truth, I reproach myself a little for using so pretentious a word as "laws." They are not laws, but rather generalizations of facts. It is no longer, as in the days of Hippocrates and Galen, a question of more or less undemonstrable theories, but rather positive facts, demonstrated and incontestable.

The first law is the following; it is founded on an incalculable number of facts:

The quantities of substances which come into play in physiological reactions are often in such minute proportions that they may be called imponderable.

This, first of all, calls for a definition of that which is ponderable. The limit of it is shown by the delicacy of our balances. One can weigh with a certain degree of exactitude a tenth part of a milligram, though that itself is a sufficiently delicate measure; but further we cannot go, and when we have to do with a hundredth part of a milligram, we have no means of determining such a weight. All the same, we are able to speak of a hundredth part, a thousandth part, a millionth part of a milligram; because, by dissolving a milligram in a litre, we get a thousandth part of a milligram in a cubic centimetre; by dissolving it in a cubic metre, we get the millionth part of a milligram in a cubic centimetre. But no chemical reagent, however sensitive, can reveal the presence of this infinitely minute amount. Nevertheless, certain physiological reactions allow us to demonstrate the action of these prodigiously diluted substances. I will give you some examples.

VII.

In seeking to discover the action of metallic salts on the acid fermentation of milk—a transformation of lactose into lactic acid—I have been able, by the use of very delicate acidimetric processes, to measure very minute

differences between the quantities of acid contained in the fermented liquids. For example, I have been able to determine that in certain milks the quantity of acid was 100, and in others 100.5. This slight difference would signify nothing if one were content with analysing two flasks: the Flask A has 100, the Flask B 100.5. Manifold influences, impossible to determine with exactitude, may easily have slightly accelerated the process of fermentation in the flask of which the acidity is 100.5. But if, instead of using only two flasks, I use 2,000—1,000 flasks of Milk A and 1,000 flasks of Milk B—and if I find almost invariably that there is a difference of 0.5 per cent. between Milk A and Milk B, I am warranted in concluding with absolute certainty that there is in the flasks containing the Milk B an influence which is not negligible, and which accelerates the fermentation.

It is in this way that I have been able to establish that sometimes quantities of metallic salts corresponding to the frightfully small dose of the ten-millionth of a milligram per litre (in the case of the vanadium salts, for instance), were not without some effect on the lactic fermentation. This figure is altogether extraordinary, for the ten-millionth of a milligram exceeds in infinity all that we are accustomed to take into consideration.

Nevertheless the lactic ferment is discernible, distinctly discernible, in this amazing dilution, and as there is in a litre which is fermenting a hundred thousand milliards of cells, and perhaps more, it follows that the quantity of vanadium which acts on each cell is indicated by a fraction of a gram so small that twenty-five zeros would be needed to express it. All metals act almost in the same way as vanadium, notably thallium and barium. One may, therefore, ask oneself if it is a case of chemical action or of an action more or less analogous to that of radium. My lamented friend P. Curie formerly gave me a little radium emanation, that is to say, a gas in such small proportion that it is imponderable (one is not even yet certain that this emanation is a gas); in any case it has been possible to mix this emanation, already greatly diluted when Curie gave it to me, with 1,000 times its volume of air without its ceasing to exert an action on the lactic ferment. There is, therefore, ground for asking oneself if this action of the diluted metallic salts, that of the emanation of radium, to which the action of mineral waters is now compared, is chemical or physical? Is there not a transformation of energy? When the chemical action is transformed into other energies it becomes in certain cases perceptible to our senses even when it is very slight. Thus the light of a bright acetylene flame during one second represents only 1 cg. of carbon; nevertheless, it is perceived at the distance of 1 kilometre, that is to say, over an area of a square centimetre, making part of a sphere the radius of which is 1 kilometre. The very minute quantity of luminous energy set free by the thousand-millionth part of a milligram of carbon is still perceived by our retina.

In truth nothing permits us to suppose that these phenomena are not chemical; for we do not know the limit of the sensitiveness of living cells to chemical action. All that we can say is that the cells are extremely sensitive to chemical excitations. I can give you some examples of this.

It cannot be supposed that the olfactory sensibility is due to an excitation which is not chemical in nature. An odour is perceived when some particles of material substance come in contact with the olfactory mucous membrane, and this contact is necessary. But what infinite smallness! How calculate the quantity of matter that a hare leaves behind it in crossing a field? Nevertheless, it is enough to enable a dog to find the scent two hours later. Berthelot proved that in making a sufficiently rapid current of air pass over iodoform the smell of the iodoform is very distinctly perceived in the air that has passed. Nevertheless, the weight of the iodoform remains almost the same, although its smell is perceived in each one of the millions of litres that have been in contact with it. Berthelot was accustomed to cite another fact of the same order, but of rather uncertain interpretation. When one rubs copper lightly a certain characteristic odour is liberated, and yet the copper does not lose in weight.

M. Engelmann made a very curious experiment. Certain infusoria contain in their cell some granules of chlorophyll. Now if these infusoria are made to live in a liquid containing bacteria, and they are exposed for only a second to a ray of the sun, at once all the bacteria are seen precipitating themselves towards the chlorophyllian infusorium. This is because the infinitesimal quantity of chlorophyll exposed to light during a second has decomposed a particle of the dissolved carbonic acid and liberated oxygen which attracts bacteria. And, of course, in such a case we have to do with an imponderable quantity. But this quantity has been sufficient to make the bacteria precipitate themselves with violence towards this thousand-millionth part of a gram and a still smaller quantity of oxygen that has been given off.

The quantities of iodine found in the blood are in such small quantity that they cannot be measured. Often even one cannot detect any trace, and nevertheless, this iodine, which is found in imponderable proportions in the blood, may be—perhaps by the thyroid body—separated, isolated, accumulated, so that there is an iodine combination in the gland.

And as regards adrenalin secreted by the suprarenal glands and certainly poured into the blood, in what infinitesimal doses is it found in the blood of the suprarenal veins!

All chemiotaxis reveals to us the action of infinitesimal quantities. And in this chemiotaxis the history of the spermatozoa is of quite special interest. If they are attracted towards the ovum, that is assuredly by a chemiotactic force, and direct experiment proves that they are extremely sensitive to the weakest chemical action. If they are placed in contact with a drop of acid diluted to one-thousandth they are at once attracted. Now they move only because there is a difference of acidity between the quantity of acid found in the head and that in the tail of the spermatozoon; and this difference, if one thinks of the smallness of the cellular organism, exceeds in minuteness all that we can imagine.

In passing, it may be mentioned that embryology, which had hitherto remained a science almost entirely morphological, in which it might seem that humorism played no part, has now also entered on its humoral period. And forthwith great results have been obtained. The admirable researches of Delage have established the fact of chemical parthenogenesis, and the chemical—or osmotic, which is almost the same thing—influence of certain metallic salts even greatly diluted on the maturation of the ovum. So that chemistry—that is to say, humorism—dominates the penetration of the spermatozoon into the ovum, due to chemiotactic affinities as well as the maturation of the ovum and its embryogenic development. The chemical laws which govern the life of the adult also govern his birth. Certainly one is astonished when one sees a single cell by its proliferation become the origin of the immense aggregation of diverse cells which makes up the adult. But astonishment is still greater if one reflects that this development is the result of a chemical conflict, a conflict of substances altogether specific—since fecundation does not occur between different species—substances the absolute quantity of which is so small that it exceeds the limits of our understanding.

Experimentation with toxins furnishes us with examples just as remarkable.

Allow me in connexion with this to speak to you of a fact which I discovered some years ago, and which I called *anaphylaxis*. Thanks to the ardour and talent with which on all sides this new law of general physiology has been studied, it has assumed a great importance in physiology, and especially in pathology.

Anaphylaxis is the opposite of protection (phylaxis). If one injects an albuminoid substance—for example, a toxin—into the circulatory system of an animal, instead of being protected by this first injection against a further injection of the same toxin, it has become more sensitive to its action. Let us suppose that the fatal dose is 1 cg. The injection of a tenth part of that dose—that is to say, 1 mg.—will not make it at all ill, or scarcely so. But a month later—for almost a month is required for the anaphylactic state to be produced—it has become so sensitive that a dose of 1 mg. is enough to kill it by the immediate production of formidable symptoms. Therefore the first injection has caused a condition which is the opposite of protection—namely, anaphylaxia.

The sensibility of certain animals, notably guinea-pigs, to this first injection, which produces the anaphy-

lactic condition, is altogether extraordinary. Two American physiologists, Rosenau and Anderson, have made a curious experiment on this point. They inject guinea-pigs with a very inoffensive serum, namely, horse serum; and they have satisfied themselves that horse serum has sometimes an anaphylactic effect in the inconceivably small dose of one-hundred-thousandth part of a cubic centimetre. In other words, a guinea-pig which a month before received the hundred-thousandth part of a cubic centimetre of horse serum, is never again altogether the same as a normal guinea-pig If at the end of a month it receives another injection of a dose of horse serum, perfectly harmless to a normal guinea-pig, this will kill it in a few minutes. Now, the chemical albuminoid substance in horse serum which produces anaphylaxis is probably in very small proportion; it perhaps contains only one-thousandth part of the active substance, perhaps even less; in any case we learn from this curious experiment that a thousand-millionth part of a gram is still an active—a very active—quantity.

Another American physiologist, Dr. Vaughan, has succeeded in extracting from ovalbumin a chemical substance, both albuminoid and crystallizable, which produces anaphylaxis when given in a dose of a thousand-millionth part of a gram.

Anaphylaxis is not the only way in which the influence of these infinitesimal quantities of substance is manifested. The history of haemolysis, which the splendid work of Hamburger, Bordet, and many others has made so precise, shows very clearly that the most minute proportions of certain definite chemical matters possess a powerful activity.

The injection of a toxin produces an antitoxin (the active substance of anaphylaxis), and these antibodies and toxogenins are almost absolutely specific. But this is not the most curious feature of their history. To every antigen there is a corresponding special antibody. To the diversity of antigens correspond the diversity of antibodies secreted. The tyrosine of vegetable origin and the tyrosine of animal origin appear identical, and yet, as my friend C. Gessard has shown, vegetable antityrosinase is not the same thing as animal antityrosinase. Nothing can give us a clearer idea of this rigorous specificity than the application of anaphylaxis to medico-legal research.

M. Uhlenhuth has made some very conclusive experiments on this subject. Nine guinea-pigs receive injections of some drops of blood, of unknown origin (man, dog, rabbit, ox, horse, sheep, tortoise, fowl, or guinea-pig). A month later each of these guinea-pigs receives an injection of serum (man, dog, or rabbit, etc.). Let us suppose that one animal dies, the one injected with the blood of a horse. From this we may conclude with absolute certainty that the blood of unknown origin which was injected into the guinea pigs a month earlier was that of a horse.

In connexion with this subject a somewhat amusing experiment has been made. A watery extract of various tissues from an Egyptian mummy over 3,000 years old was made and injected into guinea-pigs, and a month later it was found that these animals had been made anaphylactic by means of human albumins; which justifies us in drawing the conclusion—otherwise very probable—that the chemical constitution of the human being 3 000 years ago closely resembled the chemical constitution of man to-day.

I could cite many other facts, but I think I have said enough to convince you that very small quantities of substance possess a considerable biological activity. I prefer to try to indicate to you what deductions are to be made from such cases.

To begin with, our method of study is different from the old methods.

Up to the present, if one wished to study a substance one determined it chemically, one endeavoured to isolate it, to prepare it in a state of relative purity. But nowadays a new biological chemistry has sprung into being, that of imponderables. The *Chemistry of Imponderables!* These are two words which seem terribly contradictory. For chemistry depends above everything on the balance, and here we are constrained to study bodies beyond the reach of the balance.

The chemistry of the imponderables becomes necessarily, therefore, the chemistry of functions, in quite a different sense from the chemistry of functions in organic chemistry. It is the chemistry of the biological functions of the humours.

Assuredly there is a certain amount of danger in studying bodies that one cannot isolate, in giving them names, in describing their properties without having seen them, without having isolated them in the slightest degree, knowing on the contrary, that they are mixed together with a great number of similar bodies. This is a real danger which must be taken into account—all the more because we have seen Hippocrates, Galen, and the old masters of medicine describe humours which existed only in their imaginations! Nevertheless, here we are dealing not with hypotheses, but with positive experiments. Here, let us say, we have a cubic centimetre of serum containing, besides the normal substances of serum, an anticoagulating substance, an anaphylactizing substance, or toxogenin, a lipase, a glycase, an antihaemolytic substance, a diphtherial antitoxin, a tetanus antitoxin, and if the unfortunate animal from which the serum is to be taken is capable of resisting other injections of antigens, its serum may contain many other antibodies besides. It would be an utter impossibility to isolate these different substances, the properties of which are very similar, though certainly not identical. Let us content ourselves by studying the chemico-biological functions of this drop of blood, which is a world in itself, and which possesses very strongly-marked properties—properties that a sagacious and scientific experimentation is going to reveal to us.

We are as yet only at the beginning of this chemistry of imponderables founded upon the analysis of biological functions, and nevertheless we can already foresee several of its consequences. It leads us directly into a region which up to the present day was almost totally unexplored—that is to say, into the physiology of the individual.

Till to-day investigators have concerned themselves almost entirely with the physiology of the species. One endeavoured to learn the conditions of existence of rabbits, dogs, cats, and guinea-pigs, and it was believed that the different individuals of the same species were identically the same, which is, in truth, very nearly the case. What is true of one rabbit would be applicable to another rabbit of the same size, sex, nourishment, and colour. But, as a matter of fact, such identity does not exist. In the vast forest there are no two families identically alike. No two animals are ever identical. It is certain that there are between them both anatomical and functional differences. Therefore it would be most interesting to physiologists to go further than they have yet done to determine these different characters; in a word, to work at the physiology of the individual after having studied the physiology of the species. To determine in what degree the individuals of the same species differ from each other would decidedly be a most useful and fertile discovery for physiology as well as for medicine.

Individuals of the same species differ in their psychological characteristics. This fact does not surprise us, since it has been a matter of common knowledge for a long time. The differences are all the greater the higher we go in the scale of mental development. In the human race the psychological differentiations which give to each individual a special character are most strongly marked. Each of us has a personality which differs very sharply from every other human personality. Memory, which has fixed in each of us the recollection of dissimilar events, accentuates all the more this intellectual variety which exists in us from the hour of birth. We are not surprised at it, for from the first beginnings of thought we have understood that our own "ego" differed from the "ego" of others in character, will, tastes, feelings, and memories.

We have, therefore, every one of us, a psychological individuality. But what has not been sufficiently taken into account is that each of us has also a humoral individuality. Each of us is differentiated from the rest of mankind not only by our mentality but by our chemical constitution. Since our humours contain an enormous number of imponderable substances, similar and allied, which most certainly exist in different proportions in different individuals, it follows that the humoral differences can be no less than the psychological differences. The more one analyses the chemical functions of the blood in different individuals, men or animals, the more one finds

individual differences; and if, up to the present, homologous liquids belonging to animals of the same species have been identified, this is because it has only been possible to make an insufficient analysis.

Our chemical processes are too imperfect and too rough to reveal these differences to us. All the same we are able to affirm that they exist. The blood and humours of a person vaccinated ten years ago differ from the blood and humours of a non-vaccinated person. But will it ever be possible to isolate and determine this substance to which the vaccination has given birth in our organism?

Every illness, every intoxication, has caused the formation, perhaps the destruction, of a certain substance in the blood, and has left its natural trace, a trace which is not effaced by years. Just as there is the psychological memory, facts which are present to the consciousness, so there is a humoral memory of all preceding injections. As these injections differ in each person in intensity, quantity, and duration, it follows that each person differs from every other in the chemical properties of his blood.

It is useless to object that these differences are due, not to substances dissolved in the blood, but to leucocytes, and that it is by the modality of phagocytosis that individuals differ. According to the latest analysis, phagocytosis is a chemical phenomenon. The leucocytes have no activity save through the ferments they secrete, so that the differences of the phagocytes can be nothing else but a difference in chemical composition.

One might have hoped to discover a means of recognizing the individual humoral differences through the study of anaphylaxis. I have endeavoured to do so, but without success. This is how I proceeded. At first I tried to see how far it would be possible to transfuse the blood of one animal into another of the same species, and I found that one could inject into a dog 10 per cent. of his weight of pure dog's blood. A month later I injected the same dog with another 10 per cent. of blood taken from the animal from which the blood had before been transfused.

If there had been an individual anaphylaxis, there would have been at the second injection symptoms to which the first injection had not given rise; as if, for example, instead of two injections of dog's blood, I had given two of horse's blood. But the result of these experiments has been on the whole negative.

This by no means invalidates the fact of a strongly-marked humoral individuality, for anaphylaxis, notwithstanding all its precision, is still, like the rest, a somewhat rough process.

To sum up, as far as the law which is called the first law of humoralism is concerned, we can state positively that there exist in our humours innumerable substances, in infinitesimal and imponderable quantities, which, in spite of their minute proportion, play a considerable part in biological phenomena; and that, being in different proportions in each person, give to the humours of every individual a personal character, which differentiates him from all the other individuals of his own species.

We are, therefore, thoroughgoing humoralists; so much so that we can hardly suppose that the action of these infinitesimal quantities is exercised by the phenomena of ionization or osmosis. Whatever may be the importance of osmosis, it does not make itself felt when we have to do with the millionth part of a gram. It is certain that the mode in which these substances react is chemical, though we know little about the way in which chemical reactions operate in fairly strong dilutions.

Nevertheless we can foresee the modalities according to which these reactions of imponderable substances are effected. Certain remarkable and established facts relative to the function of certain glands, notably the pancreas, permit us to do so. The pancreatic trypsin has no digestive power; and as a matter of fact is it conceivable that there exists in a cell a substance which digests the cell itself? The pancreatic juice, isolated and gathered with minute precautions to guard against admixture with other liquids, is therefore deprived of all digestive activity, and the pancreatic cells contain no ferment. But they contain a "proferment," a pro trypsin, which can become extremely active under the influence of diverse chemical actions, and notably that of intestinal enterokinase. The active chemical substance A is therefore preceded by an inactive substance A', which is its generator; and A' becomes A when it is in presence of another substance B' equally inactive. There will then be the following reaction, which is really very simple: $A' + B' = A + B$. It is probable that the quantities B' necessary to bring about the reaction are very small, and it is possible that B' does not disappear in this reaction. It is of little consequence; none the less, the matter stands as follows:

The activity of a liquid results from the conflict of two substances which, isolated, are inactive.

This is the second law of humorism, to which I call your attention most particularly, for it is of very wide scope. The haemolytic phenomena are due to the action of two substances, the properties of which it has been possible to study separately. The phenomena of anaphylaxis are likewise due to the combined action of two substances which are powerless when apart—namely, the antigen, which is in itself in a small dose ineffective, and the toxogenin which exists in the blood of an anaphylactized animal, toxogenin the slow formation of which has been caused by the injection of antigen; toxogenin which is in itself absolutely ineffectual and non-toxic, since anaphylactized animals live for a long time in perfect health; toxogenin which becomes a terribly deadly poison in the course of a few seconds when it meets with antigen, which likewise, in itself, is inoffensive.

Moreover, we find a striking example of these combined actions in an experiment well known to all physiologists since Claude Bernard. Amygdalin, from bitter almonds, is an innocent enough substance, as is also the emulsion, which is not at all poisonous. Now, if an animal is injected with a very small quantity of emulsion, having previously received an injection of amygdalin, immediate and appalling symptoms appear, for the result of the chemical conflict of amygdalin and emulsion, both harmless, is a terrible poison (hydrocyanic acid). Every time that a careful experiment has been made on ferments and toxalbumins, so nearly allied to the ferments, it has been ascertained that in the organisms ferments and toxins exist in the state of *proferments* and *protoxins*. The cell can only secrete a substance inoffensive for the cell; it would be absurd to suppose that it will produce that which is capable of killing or dissolving it. Therefore it secretes only a harmless substance, endowed with scarcely any toxic or fermentative properties. But this innocent substance, which is neither haemolytic, nor glycolytic, nor lipolytic, nor neurolytic, may become so when it encounters in its path another equally harmless substance. And the result of the reaction will be, according to the nature of the two bodies which come into play, or even of one of these bodies, the production of a substance either haemolytic, glycolytic, lipolytic, or neurolytic.

If most often we act upon ferments and toxins already formed, it is because we have not known how to prepare the protoxins and proferments. As a matter of fact, these preparatory bodies are probably of extreme instability, and transform themselves into real toxins and real ferments under very slight chemical influences, weaker than our laboratory reagents, which are violent and brutal, and whose action is not controlled. Thus, in order to arrive at a knowledge of these proferments we are nearly always obliged to study the organic liquids intact without having subjected them to any manipulations. The preparation and isolation of these bodies causes them to disappear, and the more one tries to purify them so much the faster do they disappear, as of old gold disappeared in the crucible of the alchemists.

We were speaking just now of the chemistry of the imponderables; now we have come to the chemistry of unstables. And certainly the difficulties are immense, but it is the interest of science that every step in advance leads us into a region the exploration of which is more laborious and more uncertain. Let us give this instability of chemical substances, humoral or biovular, its real name, its true physiological name—it is irritability. To be unstable is to be apt to modify one's self under the influence of the feeblest external actions; it is to be irritable by exterior actions, whether mechanical, physical, or chemical; all irritability—that is to say, the greater part of physiology—has for its basis the chemical instability of bodies which constitute the living being.

Thus, on the one hand, a substance is active, though the

proportion of it is small; on the other hand, for the function of this substance, by the conflict of two substances which have been prepared long before, a very slight excitement, chemical or other, suffices. These two laws lead necessarily to a third, namely, that phenomena of great intensity may be produced suddenly, when a chemical cause, even a very slight one, intervenes. This chemical cause, which though infinitely minute leads to sudden and powerful effects, is produced by the nervous system. It is probably in this way that is to be explained that wonderful phenomenon which has justly attracted the attention of all physiologists—the action of the nervous system on the secretions. One of the masters of physiology, the great Pflüger, whose recent death we now deplore, a long time ago sought to discover nerve endings penetrating into secreting cells. This is not necessary in order to understand the phenomena of glandular excitement. We need not suppose that the nervous protoplasm comes into direct contact with the glandular protoplasm. It is sufficient to admit that a most minute fermentative reaction is produced from the beginning of the nervous tube to its ending, running along from point to point like a train of gunpowder, with a rapidity of 30 metres a second, and that at the extremity there appears a minute quantity of substance which is capable of acting chemically upon the secreting cells. The imponderability and the instability of the chemical substances of our organs are sufficient to explain this action. And perhaps it is by an analogous mechanism that the nerves act upon the muscles and determine reaction. Who knows even if the complicated actions of the soul, reflex or voluntary, the feelings and the emotions, are not also chemical phenomena, as Lavoisier has already remarked in words that have become famous. But I do not wish to allow myself to be carried away by hypotheses; it is enough for me to have established that the irritability of our tissues is the necessary and inevitable consequence of the two fundamental laws of humoralism—imponderability and instability. You see, therefore, that there is no need to place in opposition to each other the humoral and the nervous theories, inasmuch as the irritability which rules the functions of the nervous system is in itself a humoral phenomenon. And, by a wonderful concatenation, the nervous system acts at every moment on the chemical constitution of our humours, just as the chemical constitution of our humours reacts each instant on the nervous system. But in the case of the nerves, as in the case of the humours, it is chemistry that governs all. The living being is a chemical mechanism, and perhaps it is nothing more.

In any case its completion is astounding, and we might well be afraid, if we had not before us the example of our glorious predecessors. With resources very inferior to ours, with imperfect instruments, obsessed by ridiculous theories, they finished by bringing to light some truths from the ocean of darkness in which they were sunk. It is true that they were not always modest, and they often believed themselves to have grasped the truth when they had only got hold of illusion and error. There also let their example serve us as a lesson. Let us be bold in hypothesis. One is never sufficiently so. But let us also be very cautious in affirmation. For that which constitutes a true man of science is that he joins to extreme boldness in hypothesis extreme caution in conclusion. Especially, do not allow your patience to tire. Nature is rebellious, and does not allow the first comer all at once to tear from her her secrets. One only succeeds in learning these terrible secrets in fragments, and at the cost of long and laborious efforts. There is no need for me, gentlemen, to recall this to you who have disinterestedly given yourselves to the study of the great problems of life. It is not, therefore, to you that I speak, but I will speak all the same, for I should wish that my feeble voice could be heard louder and further.

Science to-day cannot progress without great pecuniary sacrifice. Science is costly. Instruments and laboratories, staffs and material—the expense increases every day with the increase of the difficulties of research. It is therefore necessary that public authorities and public opinion, which is superior to governments, should at last understand that physiology must be supplied with necessary arms. But, alas! it is other arms that are gathered on all sides. Never has the madness of militarism been so serious. All the energy that there is in peoples—energy in men and energy in money—is devoted to the fostering of absurd hatred and fratricidal rivalries. War—the war which ruins and desolates mankind—war takes all. And science—beneficent and fertile science—science has only the remains. Incredible and lamentable error, which at all times weighs on human destiny, and to-day more heavily than ever.

Do you wish for a striking example? Here it is. An admirable discovery has just been made. Man has just succeeded in constructing flying machines and in supporting himself in the air, in traversing space as rapidly and easily as a bird. We have some right here, gentlemen, to be proud, since it is the physiologists who opened the way for the brothers Wright. I can speak of it here before you, Mr. President, who have made such beautiful investigations on the flight of birds. And why should I not recall the memory of a great physiologist, my master Marey, who, with his profound sagacity, foresaw the triumph of the airman? And why should I not say—not, I admit, without some pride—that with my ingenious friend Zatin, in 1892, we constructed and floated the first aëroplane. Aviation, therefore, has its starting point in physiology, and it is well to record the fact here in a gathering of physiologists.

Well, poor man is brutalized by his warlike fury to such a point, that the conquest of the air by science and human industry has at once suggested to him the triumphant idea that the aëroplane is a marvellous engine of war. He has set before himself the glorious task of transforming an instrument of pacification into a murderous machine, and, excited by foolish journals, public opinion has become more violently warlike.

In the face of this immense human folly we, my dear colleagues, have a great duty. That is, to seek to dissipate ignorance, for it is by ignorance that men are made as bellicose as savages.

Let us combat ignorance and aid the coming of the kingdom of science, which knows no frontiers. Science makes existence happier and less cruel. It is entitled to the respect of all, for it prepares a less barbarous world for the men of the future.

Honour, therefore, to our science! Honour to physiology, which strives for the mitigation of the misery, the error, and the suffering of mankind!

ABSENCE OF THE FALLOPIAN TUBES AND OF MENSTRUATION.

MONTHLY RECURRING ATTACKS OF PERITONITIS: RELIEF FOLLOWING AN OPERATION JOINING OVARIAN POUCHES WITH THE UTERINE CAVITY.

By W. G. SPENCER, M.S.,
SURGEON TO THE WESTMINSTER HOSPITAL,

With a Note

By ALBAN DORAN, F.R.C.S.,
CONSULTING SURGEON TO THE SAMARITAN FREE HOSPITAL.

I AM much obliged to Mr. Alban Doran for his note on this case. He tells me that there is no similar case recorded in the *Transactions of the Obstetrical Society of London*; nor does there appear to be such a one included in the bibliography attached to Dr. J. W. Ballantyne's article in Allbutt and Eden's *System of Gynaecology*, second edition, 1906, p. 171; nor have I found any other reference.

History.

G. R., single, aged 28, a general servant, was sent into hospital in May, 1909, by Dr. Shillingford, of Peckham, complaining of attacks of pain in the right iliac region. The patient had never menstruated; she had never had a show of any kind. When aged about 18 she first felt sharp pains in the abdomen around the umbilicus, and such pains have recurred with fair regularity every month, usually lasting three or four days. Gradually the attacks of pain became more severe. They began by a strange feeling in the right iliac region; then, as the pain increased around the umbilicus, she felt faint, trembled, sweated, and had nausea. A very severe attack occurred in September, 1908, and another in the following November. Recently the umbilical pain had tended to spread

round to the back and downwards behind the left hip, the latter pain persisting between the attacks. The last occurrence was a week before admission. Her reason for going to Dr. Shillingford was that she was becoming unable to follow her occupation.

Examination after Admission.

She was a well-grown woman with normal breasts, external genitals, and hair. There was a well-defined normal hymen. Per rectum a normal movable uterus with cervix was felt. To the right side there was felt bimanually an oval swelling in the ileo-caecal region resting on the psoas muscle. It was thought to be an enlarged appendix, or an appendix adherent to an ovary, separated from the uterus by a normal broad ligament. On the left side there was a smaller swelling, which was taken to be a tender ovary, whilst the left broad ligament seemed free. No further abnormality was discovered.

Operation.

An incision was made through the right linea semilunaris, when the omentum was found adhering by its free margin over the fundus of the uterus and ovarian region (Fig. 1).

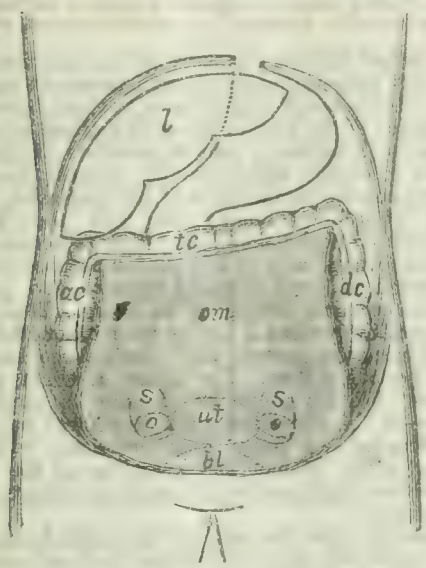


Fig. 1.—*l*, Liver. *ac*, Ascending colon. *tr*, Transverse colon. *dc*, Decending colon. *s*, Ovarian pouches. *om*, Omentum. *bl*, Bladder. *ut*, Uterus. *o*, Ovaries.

Having separated and reflected the omentum, a perfectly normal appendix was drawn out with the caecum, examined, and replaced.

Next the uterus was examined. The body was quite normal;

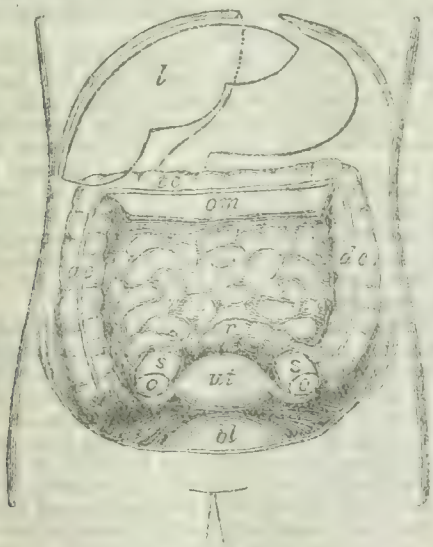


Fig. 2.—Lettering as Fig. 1. *r*, Rectum.

in the place of each cornu was a pea-like knob. There was no sign of the main portion of the Fallopian tube on either side, but the round ligament was well defined, and there was nothing else abnormal about the inner part of the broad ligament. Each ovary was enclosed in a pouch formed by peritoneal adhesions; the opening of the pouch into the general peritoneal cavity was directed backwards; the peritoneal surface of the ovaries projected into the interior of the pouches (Fig. 2). This surface of the ovary appeared normal, and on pricking one of the follicles fluid spurted out; but I did not observe any sign of a corpus luteum of menstruation, nor any remains of blood clot or pigment whatever.

In the wall of the sac where it was continuous with the broad ligament there appeared to be traces of the fimbriae of the Fallopian tube. I then went on to search for the Fallopian tubes. A uterine sound was passed quite easily by Dr. Bourns, and to the normal distance. I then laid open the uterine cavity by cutting transversely upon the point of the sound (Fig. 3), and tried to pass a fine probe outwards through the cornua. But the lumen of the uterus did not extend into the pea-like knobs previously noted. On the left side the knob contained a small dermoid cyst enclosing sebaceous material but no hairs. On the right the knob was a mass of fibrous tissue. I next slit outwards the upper free edge of the broad ligaments, and split the layers without finding any trace of a Fallopian tube, except

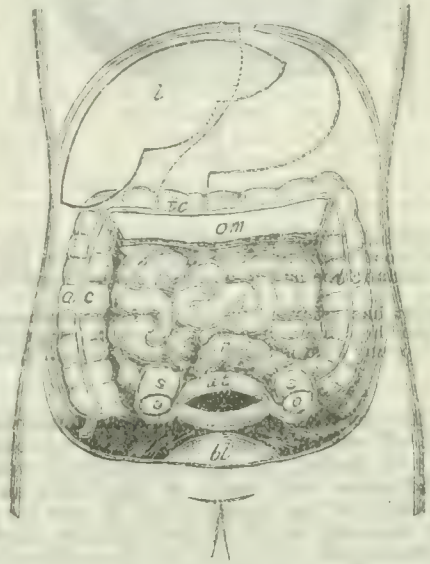


Fig. 3.

what appeared to be the fimbriated extremity fused in the wall of the ovarian pouches.

Next I passed a drainage tube downwards from the uterine cavity through the cervix, and brought the orifices of the two ovarian pouches over the uterus and sutured them so as to establish a continuity with the uterine cavity (Fig. 4). Over

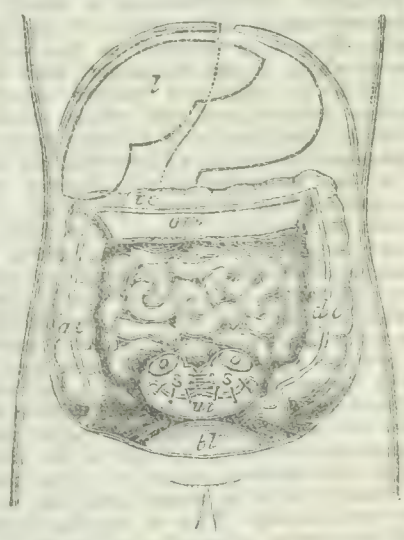


Fig. 4.

this I laid and stitched in position an omental graft, by cutting away the reflected omentum from the transverse colon, the raw surface so left being infolded. Thus, only serous surfaces

remained, and all opportunity for the further formation of peritoneal adhesions was avoided (Fig. 5).

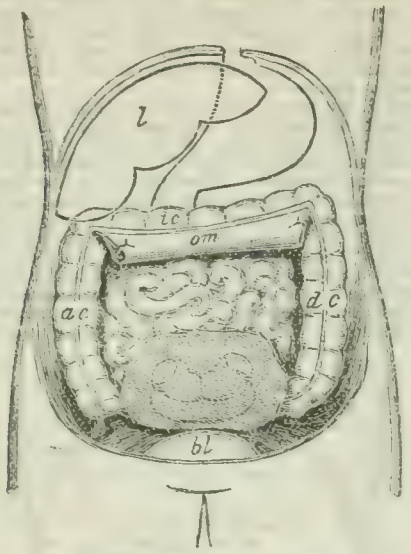


Fig. 5.

The abdominal wound was then sewn up in stages. There was a little blood-stained uterine discharge, which soon ceased after the uterine tube had come away, on the fourth day, from the vagina.

The patient has returned frequently for examination. She is in very good health, has had no further attacks nor abdominal disturbance of any kind nor any noticeable vaginal discharge.

Conclusion.

As for the operative procedure, it was commenced with the object of relieving the patient by removing the appendix. On finding the appendix normal I went on to separate adhesions and search for the Fallopian tubes. The later stages of the operation had in view the prevention of the recurring attacks of peritonitis by shutting off ovarian follicles from rupturing into the peritoneal cavity, and was concluded by leaving no raw surfaces to re-form adhesions.

NOTE BY MR ALBAN DORAN.

This case is of much importance, as systematic writers teach that in true arrested development of the Fallopian tubes the remainder of the united portion of Müller's ducts—that is to say, the uterus—is of necessity involved in the malformation. In Mr. Spencer's patient the uterus was well developed. Three features of special interest should be borne in mind. First, traces of the fimbriae of the Fallopian tube were detected on the wall of the ovarian pouch where it was continuous with the broad ligament. This is what the modern embryologists, Francis Balfour, Arthur Keith, and others, would expect. The arrest of the tubal portion of Müller's duct was complete, but these authorities have shown that the fimbriated extremity of the Fallopian tube is derived from the pronephros, and not from Müller's duct at all. This condition is seen in the adult shark. "Kobelt's tubes," on the outer extremity of the parovarium, Wolffian body or mesonephron, are, we are taught, of pronephric origin also. Secondly, the knob which represented the Fallopian tube on the left side contained a small dermoid cyst. About ten cases of dermoid tumour of the Fallopian tube in our species have been reported, and Fromme and Heynemann review them in the new edition of Veit's *Handbuch der Gynäkologie*. Orthmann's monograph, *Ueber Embryoma tubae*, deserves special study. It is, indeed, strange that a disease so rare in the normal tube was found in this instance, where it was reduced almost to nullity. Lastly, let it be remembered, the round ligaments were well defined. This is the rule in malformations of Müller's ducts, especially in imperfect union of its lower portion with its fellow—that is to say, in bifid uterus. In the JOURNAL, vol. i, 1899, p. 1389, I reported "The Removal of a Fibroid from a Uterus Unicornis in a Parous Subject." A small fibromyoma had developed in the fibrous band which represented the suppressed uterine cornu, yet the round ligament on the same side was very thick, far more developed than that connected with the other cornu, which had been gravid before, and was the seat of pregnancy after I removed the fibroid. The Fallopian tube was well developed on the side where the cornu was suppressed. Some authorities imply that precocious development of the round ligament is the cause of arrested fusion of Müller's ducts.

An Address

ENTITLED

THE QUICKENING SPIRIT.

BY

LEONARD WILLIAMS, M.D., M.R.C.P.,

PHYSICIAN TO THE FRENCH HOSPITAL; PHYSICIAN TO THE MILLER HOSPITAL; ASSISTANT PHYSICIAN TO THE METROPOLITAN HOSPITAL.

IN the slow and laborious process of the evolution of man towards his higher destiny certain moments appear as salient. Discoveries of natural laws, as that of gravitation, the utilization of the powers latent in matters of common occurrence such as steam, and the wonders of the microscope, are examples which readily suggest themselves. Even more notable for members of our profession are the discovery of general anaesthesia and the Listerian principles of surgical cleanliness. We are accustomed to regard such events more or less sudden because they have revolutionized hitherto accepted theories and practices. But we are certainly wrong in so doing. These epoch-making events represent in reality the fruition of a process whose germination, growth, and efflorescence have occupied long periods of time. For Nature does not work by hurricanes. We are conscious—it may be unpleasantly conscious—of the hurricane when it comes; but that is merely because we have been heedless, wilfully or ignorantly, of the premonitory symptoms of the cyclone, which the wise might, and ought perhaps, to have foreseen and forestalled.

In pondering over the manner in which I could most usefully employ the time so flatteringly placed at my disposal this evening, it occurred to me that, though very far from arrogating to myself a wisdom or a perspicacity above my fellows, inasmuch as I seem to discern in the trend of present-day medical thought a movement which is destined to occupy a great deal of time and interest in the immediate future, I might serve some useful purpose by endeavouring, however crudely, to focus attention on that movement, so that we may learn to utilize even what little is now known on the subject to the joint advantage of our patients and ourselves and the incidental undoing of the quack and the charlatan.

That mind exercises an influence over matter is a formula which most of us have lisped since the days of our childhood. The formula represents a belief, held strongly perhaps, but essentially vaguely, even by those who have had a scientific training, and it has not hitherto assumed anything which could be described as a definite outline. Such an outline I believe it to be now in process of assuming, and it is the part of those who take the profession of medicine seriously to contribute something out of the vast store of material which lies daily to their hands towards the elucidation of some of the difficult but fascinating problems which await solution.

In the human body every motive force is provided with a corresponding controlling force, and it is important to realize that the motive force itself is always developed in advance of the corresponding controlling force. When a child is born it has the power of contracting its muscles and thus moving its limbs, but it is a long time before it can so co-ordinate these muscles as to walk or otherwise accurately accomplish any purposive movement. Similarly, the new-born child, though able to defaecate and micturate, is unable for many months to control these primal acts to the point of bringing itself within the accepted canons of cleanliness. So much is recognized, but it is not so well recognized that the same laws obtain in the region of what is called the mind. Here the motive force is represented by the emotions—a child is all emotion and instinct—and the control force is provided by reason and

experience—that is, by the intellect and the will. Intellect and will are admittedly not identical, and they are associated here with the view of abbreviating the argument, without, I hope, vitiating it. It is of course quite clear that the development of the intellect and the will, with its consequent control of the emotions, will exercise a progressively modifying influence upon character, but is it true to say that this same development of the will at the expense, so to speak, of the emotions can exercise any moderating influence upon the *materies* of the human body, so as to render the tissues both less susceptible to disease and better equipped to combat disease when invasion has been successful? That it must be true is an opinion which is forced upon every thinking medical man by the experiences of his everyday work. They are commonplaces of medical literature which tell of chorea being provoked by fright, of an attack of the gout being caused by a fit of anger, of exophthalmic goitre being brought on by worry and anxiety; and works on psychology will furnish the curious with well authenticated instances of examples even more dramatic. When we come to inquire how such effects can be produced, our attention is immediately attracted by, and becomes focussed upon, the circulatory system. The physical manifestations of violent emotion are preponderatingly vascular. The lividity of rage, the blush of shame, the deathly pallor of alarm, and the ashen hue of excitement, are expressions which have been dear to the pens of writers since time began; and they describe, truly enough, what all of us have frequently experienced even in our own persons. Now, it must not be supposed that such vascular changes as these manifestations represent are confined to the integument; for, as Leonard Hill has shown, the pressure of the blood in the system at large is kept in a state of equipoise by the law which provides that a vaso-constriction in one part shall be immediately compensated for by a corresponding vaso-dilatation in another part; so that while the sudden cutaneous hyperaemia of the "blush of shame" proclaims an ischaemia elsewhere, so the cutaneous ischaemia of "pallid fear" denotes a compensatory hyperaemia in some possibly distant area.

If we now proceed to consider the effect of such vascular storms upon the economy generally, we have no difficulty in concluding that the customary working of the human machine must thereby be profoundly disturbed. So long as the circulation of the blood is smooth and orderly, its purification is regularly accomplished by the excretory organs, and its renovation adequately effected by the continuous supply of material from the contributory glands. If, however, instead of being smooth and orderly, the circulation is fitful and spasmodic, the excretory organs and contributory glands will be alternately gorged with sudden repletion and starved into astonished bankruptcy, with the result that the circulatory fluid itself becomes so fundamentally altered in composition that it imposes upon the tissues either an excess of what they do not require or an insufficiency of that which they demand. In view of such considerations it is surely not possible to doubt that violent emotions affect the physical health of their victim.

And if this be true of sudden and violent emotions overtaking people who are normally controlled, it must be equally true of those who, owing to defective education of the will, live a life of constant subordination to the caprices of their emotions. For it is not necessary that profound changes in blood distribution should be seen in order that they may be appreciated. Vascular perturbances may occur without either blushing or pallor; indeed, the emotional vascular see-saw, when it takes place between important internal organs, is even more likely to prove deleterious to the economy than when one of the parts affected happens to be the skin. Professor Osler,[1] in his recently delivered most illuminating Lumleian Lectures, says that "the profession is now riding on the top of a cardio-vascular wave," and I suppose I may be considered to have been caught in the trough of that wave when I ask you to believe that the physical ills which beset emotional patients are due primarily to circulatory causes. Such, however, is the position, and if I have succeeded in making myself clear up to this point, I have said enough to show that uncontrolled or misdirected emotions may, and do, by their action on the calibre of the blood vessels which supply the excretory organs and the replenishing glands, so affect the composition of the blood itself that the nutrition of the tissues is impaired.

If it be true that we are on the crest of a cardio-vascular wave, it is at any rate equally true that we are poised on the apex of a laboriously erected hillock of microbes, which I may say in passing has attained to such dimensions that we are in serious danger of forgetting that, important though the microbe may be, the soil is at least equally so; and I therefore make no excuse for drawing my first inference from the foregoing considerations with this hillock in full view. With the nutrition of the tissues impaired, the tissues themselves become bereft of their normal powers of resistance to bacterial invasion; in other words, the soil becomes unduly receptive, with the result that acute specifics of all kinds have a peculiar tendency to show themselves. I need only call attention to the fact that the period of life during which such troubles are most prevalent—namely, childhood and early adolescence—is precisely that period at which the emotions are fully developed, and are as yet but very partially controlled by the exercise of the will to point the moral of the example.

In the matter of the so-called functional neuroses, of which hysteria is the type, it is now very generally admitted that the ebullitions and caprices and vagaries for which they are famous are due primarily to the uncontrolled sway of the emotions, which, acting on the calibre of the blood vessels, produce profound changes in the easily modified functions of the brain and spinal cord. In the case of the hysterical seizure, for example, there would seem to be an ischaemia in some part of the central nervous system which is compensated for by the hyperaemia in the renal area, which is clearly the cause of the abundant flow of light-coloured urine which occurs as soon as the attack is over.

So far as metabolic diseases are concerned, I am myself inclined to believe, though I do not expect many to agree with me, that they are in a large measure the result of some disturbance of function in connexion with the internal secretory glands—the thyroid, the pituitary, the suprarenal, the ovary, the pancreas, and others. A study of one of these, the thyroid, will show that its functions are very easily disturbed—they are so far more frequently than is generally supposed—and that such disturbances are invariably associated with serious modifications in the normal circulatory phenomena. The same may be said of the ovary to an almost greater extent, and to a less extent of the pituitary and many of the others. Now, we have to remember that the function of each of these internal secretory glands is to supply its own particular essence to the blood plasma, and that if such essence is either excessive or insufficient in quantity, or if it is defective in quality, serious results will ensue. Nothing, surely, would be more likely to bring about any or all of these results at different times than such a fitful supply of blood to these glands as we have already seen to result from a general inadequacy of emotional control.

We have now reached the stage in this argument at which it ought to be clear that, surgical injuries apart, there is no type of disease which may not be provoked or encouraged by the action of the emotions when insufficiently curbed and guided by the development of the will. This proposition, stated baldly, would have seemed difficult enough to sustain, and I have purposely examined it at some length because I believe it to be a truth which we as a profession must hasten to recognize and act upon. For there are already serious unqualified competitors in the field; competitors who, having blundered upon this truth, are ignorantly exploiting it for their own purposes, to the detriment of the public when they fail, and the discredit of the profession when they succeed. For though the wholesale application of the principle provides them with a large measure of almost incredible success, their ignorance of its limitations will always ensure for them a wide margin of ignominious and disastrous failure. It is hardly necessary for me to say that no therapeutic agent of this nature, however potent, will avail anything against a large class of morbid conditions, such, for instance, as advancing degenerative disease, malignant neoplastic growths, or other conditions in which surgical aid is necessary or expedient.

The nostrum in which these people, Christian Scientists and others, deal, however variously it may be dressed, is the same in all cases. Whether with real piety it be

encased in a religious vestment, as at Lourdes and other shrines, or whether, with brazen effrontery and a crafty eye to business possibilities, it be smothered in a tornado of high-sounding but utterly meaningless verbiage, as in the book of Mrs. Eddy, the mainspring of all these systems nakedly expressed is the control which they impose upon the emotions. It is, doubtless, true that they substitute one overpowering emotion, faith, for a host of minor ones; but, so far as the health of the individual is concerned, the net result is all to the good, for his faith instils into him that all-essential control over the multiplicity of emotions whose unrestrained play had hitherto exercised such a baneful effect upon him. Now, how does faith accomplish these results?

Before setting myself to answer that question, let me say parenthetically that it is no longer possible to dismiss the whole question by casting doubts on the results themselves. Any one who will take the trouble to investigate the matter with an open mind will very soon be convinced of their reality. An attitude of obstinate unreceptive scepticism leads only to stagnation and death, and has certainly no place in an atmosphere where men are striving to unravel difficult and elusive problems.

But to return to the question of faith and its workings in the present connexion. I have already said that it teaches people to control their emotions, which is not only obvious, but is indeed its primary object from a religio-ethical standpoint; and from what has gone before it follows, I think, that by its control of the emotions it makes directly and strongly for an improved state of material health in the individual. That explains its prophylactic power, which is no less pronounced, and is indeed, in a sense, more remarkable than its curative power. It explains also its therapeutic power, though not perhaps in quite the same way.

A person who is thoroughly imbued with faith in an omnipotent and omniscient deity reconciles himself to tribulation by the consideration that his trials are imposed upon him by the inscrutable will of God; and his belief in the unfailing loving-kindness of that God leads him to turn his attention from his own pains in order to think intently upon his relations with the Deity. It is in this way that martyrs have suffered not only with equanimity, but, according to their own showing, with a degree of physical pain which was practically negligible, ordeals which to ordinary people would have been impossible tortures. The strength of their position is their power of turning their attention away from what is painful in order to concentrate it upon what is agreeable and hopeful. To accomplish this, however, the guiding and sustaining faith must be something better than the academic acquiescence which so often does duty in this direction; it must be the overweening and ever-present faith of the convert. Now, in ordinary people, this power does not come of itself, it must be educated. That which characterizes the hysteric is an entire absence of the power to concentrate the attention on anything except her own person. Faith, when it touches her, compels her to think of other and higher things, on which, by degrees, she learns to concentrate her attention. With her powers in this direction properly developed she ceases to be unduly emotional, and is able to relegate bodily discomforts to their proper sphere and to see them in their true perspective. What we have to realize is that this end can be achieved by means less questionable—and I say this with all reverence—than by appeals to the supernatural; for at their very best such means have the disadvantage of being in themselves essentially emotional, and at their worst are apt to sink to the lowest depths of quackery and charlatanism.

It may be objected that the question of a rational education of the will with a view of subduing the emotions is one which concerns parents and teachers rather than medical men. In its widest sense this is no doubt true; but as medical men we are called upon to deal with the individual, whom it is our duty to help in every possible way. Now I make so bold as to say that if we fail to place before him the power which resides in him—and in him alone—of ameliorating his condition, then we are neglecting or evading an obvious and paramount duty. It is a good thing to engender in the patient a confidence that we and the methods we employ are able to guide him into the way of peace; but it is a much better thing to arouse him to a full sense of his own powers in the same direction. This is the factor which in modern therapeutics is being neglected. Patients have learnt to expect from us only such aid as is purely material, whether it be surgical or medicinal, because it is this kind, and this kind only, which we have been in the habit of offering them. We do not speak to them of the mental aspect of affairs, largely, I suppose, because this aspect is so often regarded as being entirely concerned with character—a matter in which it savours of impertinence in us to interfere. That such is very far from being the case I have already endeavoured to show, and I am here to plead for a change of policy in this direction; not that we should turn aside from the study and investigation of material phenomena which we have been, and still are, prosecuting to such excellent purpose, but that we should combine with the benefits thus opened to us those which are to be obtained by enlisting the aid of the mind.

I should indeed be inviting you to make bricks without straw if I were to call upon you to do this thing without appending some suggestions as to how it should be done. Such suggestions as I have to make are of the simplest possible description, for in a matter of this kind each individual must develop the details of the method along the lines which most befit his character and temperament. The essential point is that he should have a clear idea of what he wants to do, and that he should pursue that end with determination and perseverance. I have tried to show that his object is to awaken in his patient a sense of her own powers, her own dignity, and her own superiority to the littlenesses by which our lives are inevitably beset; that he should teach her so to educate and control and order her thoughts and sensations that she may learn to dominate them, instead of allowing them to dominate her. In our attempts to do this, which at first may seem fruitless enough, let us consent to do without such adventitious aids as hypnotism. But do not misunderstand me on this point. Not only have I nothing to say against such methods, but I can testify with admiration to the benefits which in the hands of the competent they are capable of conferring in suitable cases. But the public distrusts these methods, and inasmuch as it is essential to our mission that we should merit the confidence of the public, they are in ordinary circumstances much better discarded. Moreover, except in very extreme borderland cases, they are unnecessary. What in general practice can be accomplished by hypnotism can be accomplished even more effectually by a direct appeal to the patient's better self, supported, it may be, in the case of the very young, by specially directed educative efforts. In the next place, bearing in mind the difficulty and complexity of the subject and the necessity for training ourselves in the most successful methods of evoking and fostering the necessary control in our patients, let us content ourselves with small beginnings. It is well to make the first essay in a person of breeding and intelligence, in whom we feel that there is something to which an appeal can effectively be made. Take, for example, a woman of over 40, who is just beginning to feel the stress of the approaching climacteric, with its vague but intensely unpleasant subjective sensations, its vascular vagaries, and its internal secretory chaos. Such a woman may be intellectually above the average, and not, hitherto, conspicuously uncontrolled; but she is face to face with a trial in which all the control she can command will prove too little unless it be provided with reinforcements. Such reinforcements are now sought in various directions. A few find comfort in religion: others, less fortunate, invoke the aid of drugs, among which brandy, morphine, and cocaine are the most common, while a third set appeal with confidence to the operating surgeon. But these, except perhaps the first, are vain things, for the only really effective aid must come from within; and this is the point upon which it is our duty continually to dwell. In connexion with such a case let us consider a symptom about which we are so often consulted, namely, insomnia. To have recourse to drugs is a procedure which every conscientious physician will, in such circumstances, postpone until all else has failed. To appeal to the influence of mind over matter may fail—in the hands of the inexperienced it probably will fail—but it can at any rate do no harm. And how is that appeal to be made? There may be better ways, but the one which I usually adopt

is as follows: I begin by pointing out that it is a mistake to elevate sleep into a fetish; that the world does not come to an end because one person, however important, is unable to sleep; and that the most certain method of keeping such an elusive entity from embracing one, is in pity to implore its advent with outstretched hands or to summon it peremptorily and impatiently with clenched teeth. In order to prevent the question of sleeplessness from obtruding itself, I then explain the importance of concentrating the attention on something definite. Then comes the difficulty. Everyone has tried the expedient of contemplating imaginary lambs jumping over a gate, which has always proved useless. It is then necessary to insist that it has proved useless for a very obvious reason. To think of lambs jumping over a gate for half an hour on end requires a degree of concentration given to very few; and seeing that the patient's power of concentration is weakened by her present state it is well to embark upon some less heroic venture. The desire for the heroic in these patients is insatiable. To bring them down to earth, baldly and even brutally, is a necessary preliminary to any successful appeal. With this end in view, instead of the saltatory sheep I invite them to think of something pleasant and attractive, but calm and reposeful. To the romantic I suggest the moonlight on a quiet sea, the sun on upland meadows; to the more material, a comfortable armchair in front of a fire, or a warm bath, scented, it may be, with pumuline or other essence; but—and here is the crux—they must go on thinking about it. They must concentrate all their attention upon it, and must not be surprised if at first the charm fails to work. When the attention tires, a not too interesting book may be temporarily appealed to, and then the experiment repeated. If the patient can be induced to act thus for several nights in succession without allowing her thoughts to revert in pity to her sleepless state, it is astonishing what success will often ensue; more especially if, by an appeal to her reason and proper pride, you have succeeded in enlisting her real co-operation.

I have used insomnia as an instance, but the principle of which it is an illustration is of almost universal application. We have to teach our patients to exercise determination in thinking of the agreeable and the hopeful in order that their thoughts may be deflected from the unpleasant and the material. The practice of the moment is unfortunately in the opposite direction. By a legitimate and laudable interest in our work, coupled, it may be, with a pardonable pride in our special knowledge, we are led—far too often led—into a little disquisition, a miniature clinical lecture, upon the malady in question, with the result that the patient's whole attention becomes morbidly focussed thereon, to the utter nullification of our best directed textbook therapy. To abandon this position in order to occupy that for which I plead would be something in the nature of a revolution; and it is because I feel that such a revolution is upon us that I have preferred to discuss this somewhat thorny question rather than invite your attention to some subject of more strictly medicinal interest. We can no longer afford to neglect the aid of the mind as a therapeutic agent. It refuses to be neglected. It is daily and hourly becoming more insistent for the recognition of its legitimate claims, and, if it does not obtain recognition at our hands, it will seek and obtain it elsewhere. It has been my endeavour to place these claims upon a scientific basis, and if I have been even partially successful I shall be encouraged to feel that I have done something to merit the honour, which I esteem so highly, of having been invited to address you to-night.

Reference.
[1] *Lancet*, March 6th, 1910.

The second International Congress of Alimentary Hygiene will be held in Brussels from October 4th to 8th. Among the subjects proposed for discussion are the following: Professor M. Dastre of Paris, "The ultra-violet rays and their application to alimentary hygiene"; M. Bordet, Director of the Pasteur Institute, Brussels, "Hygiene and bacteriology." Members and associates (subscription 20 fr. and 10 fr. respectively) are admitted free to the Universal Exhibition during the time of the congress. Special railway facilities have been arranged. Further information may be obtained of the Honorary Secretary, Mr. Cecil H. Cribb, 138, Shaftesbury Avenue, London, W.

SEVENTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

Sir Victor Horsley, F.R.C.S., F.R.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

Sir Victor Horsley, acting in accordance with the unwritten rule that Presidents of Sections should not deliver formal introductory addresses, initiated the proceedings by a few words of welcome to the foreign guests and ordinary members of the Section, and then called for the opening of the first discussion.

DISCUSSION ON THE SURGICAL TREATMENT OF GRAVES'S DISEASE.

OPENING PAPERS.

I.—Professor Kocher,
Berne.

We have gained, during recent years, a clear comprehension of the etiology of Graves's disease and of the differences in the symptoms and prognosis of different cases, and this has naturally brought us to the choice of different ways of treatment. Surgical treatment has given decided proofs of the correctness of Möbius's theory of thyreogenous origin of Graves's disease. On the one hand we can show (as I did in 1883, by analysing my first 100 cases of excision of goitre) that by taking away the goitrous thyroid gland entirely we produce myxoedema in the form of cachexia strumipriva and that slighter cases of the same condition sometimes follow partial excision. On the other hand, we can now show with equal precision (according to a law I formulated at the Congress of International Medicine at Munich in 1906) that by taking away more or less of Gravesian goitres we produce no myxoedematous state, and obtain a more or less complete cure of the Graves disease. There cannot be much doubt, therefore, that in the latter disease we have a pathological condition of the thyroid gland opposite to that which exists in myxoedema; in other words, we have hyperthyreosis instead of hypothyreosis.

Then again, we can, thanks to Murray, cure myxoedema by administering either the extract of thyroid gland or injection; and conversely, we can aggravate Graves's disease by thyroidine, iodothyroine, or other thyroid preparations. Moreover, it has been proved that with thyroid extracts we may even produce an artificial Graves's disease, even in cases of aplasia thyreoidea in myxoedematous people. Again, therefore, we must conclude that it is an excess of substances produced by the thyroid gland which causes the symptoms of Graves's disease; and lately more direct proofs have been given that it is the excess of a real secretion of the thyroid gland which is the *initial* feature in Graves's disease.

I made, at the Congress of the German Society of Surgery at Berlin, April, 1908, a communication on the changes observed in the blood in about a hundred cases of Graves's disease, and then came to the conclusion that—always taking into consideration the whole clinical features of a case—we have in such examination of the blood a very important assistant in *diagnosis* as well as *prognosis* in this disease.

I found that the essential feature of the blood change consists in a great diminution of the polynuclear cells, these going down from 5,000 of the normal blood to 1,260 per millimetre cube, whilst the small mononuclear cells—that is to say, the lymphocytes—show a relative

increase in number—namely, from 20 per cent. of the normal blood to 50 per cent. and more, and sometimes an absolute augmentation from 1,500 to 2,000 of the normal blood to over 5,000.[1]

Caro, v. Jagic, and others have confirmed this fact, and Kostling[2] has added that the large mononuclear cells diminish step by step with the polynuclear, so that he thinks v. Jagic's point of view correct—namely, that these two forms have the same origin, the mononuclear being only a form of the polynuclear.

Lately Miss Charlotte Miller[3] has found analogous changes in the blood in cases of "simple goitre"—that is to say, a hyperlymphomatosis from 30 to 50 per cent.,[4] and a hypopolynucleosis down to 50 per cent. of the normal or more. As in Graves's disease,[5] the essential feature is the absolute diminution of the neutrophile (polynuclear) forms.

I admit that there exist cases of undoubted Graves's disease in which no important change in the blood is to be found, but they are very exceptional. Kostling explains this fact by a theory put forward by Hess and Eppinger, founded on observations made by Kraus and Friedenthal, that thyroid extracts have a double influence, increasing the tonus of the sympathetic system on the one hand, and of the vagus system on the other.[6]

Eppinger, Falta, and Rudinger have come to the same conclusion, and Kostliog has tried to show that we have to distinguish two forms of hyperthyreoidism, the one with hypertonia of the sympathetic system, the other of the vagus. The latter would be a secondary phenomenon in the sense of a compensatory change. He thinks that the most important sign of hypertonia of the sympatheticus is (according to Fränkel) adrenalinaemia (which can be demonstrated with a modification of Ehrman's method) and dilatation of the iris on instillation of adrenalin. The lymphocytosis, he thinks, is a consequence of hypertonia of the vagus (that is to say, a phenomenon of reaction), as he could produce artificial lymphomatosis by injection of extract of the pancreas.

What I wish to say for the moment is that in doubtful cases of Graves's disease I am not willing to accept a diagnosis of the latter disease if the blood test does not give a positive result. In the exceptional cases where I could not find it in real Graves's disease other signs of the disease were sufficiently well marked to make the diagnosis clear.

I ought to lay stress on the point that we have to distinguish a physiological from a pathological hyperthyreosis. I cannot at all admit, as some American authors are inclined to do, that we may be allowed to identify hyperthyreoidism with Graves's disease, or to go so far as to find an indication for an operation in the simple fact of the existence of signs of hyperthyreosis.

When a larger amount of thyroid secretion is needed by the healthy organism, as it is at the age of puberty, in pregnancy, and in some diseases, hypertrophic swelling with hyperactivity of the gland means a useful physiological process, and it is a great mistake to interfere by operation, as is sometimes done, thus bringing the operative measure for real Graves's disease into discredit.

We must therefore always examine the blood in making a diagnosis. It may be that with the improvement of methods we may find it very useful to investigate, also if there exists an adrenalinaemia or Löwi's sign in these cases. At any rate, we must be glad to have got a new and important indication for the distinction of true Graves's disease from the so-called pseudo-Basedow's, Basedow's "formes frustes," and other forms of nervous disorders. My son, Albert Kocher, will soon publish his and my view on the manner of looking at lymphomatosis, with Kostliog, as a kind of reaction.

Here I may say that we have found that after successful operations, when a patient may already feel a great deal better, he may be, according to our examination, still only incompletely cured, for the lymphomatosis may remain for a while, or even continue to increase. On the other hand, when we have arrived at a *complete cure* (sometimes by repeated operations), the blood also becomes entirely normal in every way. So the blood test becomes a very valuable indication of the progress of a case towards healing if we keep in mind that hyperlymphomatosis is one feature of the blood in this malady. In Graves's disease the diminution of the total quantity of leucocytes—that is to say, a leucopenia with absolute diminution of the neutrophile cells—is another still more important point.

When we find that there exists lymphomatosis in "ordinary" goitre we may decide, by counting the total quantity of leucocytes and the absolute number of polynuclear forms, whether we have to do with a combination of goitre with Graves's symptoms or if we are to look on this anomaly as a sign of hypothyreosis, since we frequently find increase of lymphocytes to 30 per cent. and 40 per cent. in myxoedema. With this, however, there may be a normal number of leucocytes as a whole.

Dr. Turin, assistant in my clinic, has proved experimentally that lymphomatosis can be produced by injection of thyroidine as well as by appropriate doses of iodide of potassium in individuals who have no atrophy or aplasia of their thyroid gland.

Happily, we have another very good control for the distinction of hyperthyreosis and hypothyreosis, namely, by determining the index of coagulation of the blood, and thus complete our estimate of the disease by the state of the blood.

Miss Lidsky, one of our students, has, under the guidance and help of Kottman, examined the rapidity and intensity of coagulation of the blood in 37 of my Graves's disease cases on whom I have operated both before and after the operation.[7] The examinations have been made with an apparatus invented by Kottman, called a "coaguloviscosimeter."

Dr. Kottman has found that the normal human blood at 20° C. gives the beginning of coagulation after 18 min., and the end of it at 23 min. Out of 37 Graves's cases, 29 gave a much slower coagulation (78 3 per cent.), 2 gave normal coagulation (5.4 per cent.), and 6 gave a quicker coagulation (16.2 per cent.).

Of the cases in which the coagulation was normal one had already been operated on by me, over a year before, with excellent result; the others, two months before the blood was examined. The same good result of the operation has been found in 3 other cases where the blood was examined before and after the operation, where the coagulation was slow before and normal, or nearly normal, afterwards.

Out of the 6 cases of Graves's disease in which coagulation was found to be exceptionally quicker, 2 had been under treatment for a long time with phosphate of soda in large doses, and 3 of the cases were particularly severe cases.

Besides the slowing of coagulation, its intensity was found to be greatly diminished. Thus the examination of the coagulability of the blood is an important aid in the diagnosis of Graves's disease, and at the same time a great help in controlling the effect of medication as well as of operation in the cure of the disease.

Miss Lidsky has, with Dr. Kottman, made a control of the effect of injecting extract of thyroid gland on the coagulability of the blood in rabbits and dogs. She injected 4 to 6 tabloids of thyroidine (Burroughs and Wellcome's) diluted with physiological salt solution (50 c.cm.). In rabbits the beginning of coagulation was at 9 min. instead of 6 min., and the end at 13 min. instead of 11 min. If the injections were repeated daily, the beginning was delayed to 14 min. and the end to 23 min. Also the intensity of coagulation was greatly diminished. This was still

[1] The fact that we have a great increase of lymphocytes at the same time with decrease of polynuclear cells might be considered as the more important as the former, whilst the proteolytic cells act in the opposite way.

[2] Kostling, Grenzgebiete, 21, 1910. *Ueber chronische Tyreotoxicosen.*

[3] *Mediz. Klinik*, 1910.

[4] In opposition to the finding of Kostling in Graves's disease Miller has found that the *large* mononuclear constitute a large part of the increase of the lymphocytes.

[5] So Miller thinks in her cases also.

[6] Certainly there exist notable differences in some cases of Graves's disease, as there may be in one case exophthalmos in a high degree, very pronounced vascular symptoms with large swelling of the thyroid, in the other no exophthalmos (as I have already pointed out at the meeting of the Medical Society of London four years ago), brownish discoloration of the skin, and very rapid pulse; but I am not prepared to give now a satisfactory explanation of these differences. There exists, according to Eppinger, Falta, and Rudinger, an exciting influence from the thyroid gland to the adrenals and vice versa. O. Wiener was able to increase the quantity of thyreoglobulin in the thyroid gland and the percentage of iodine alnica by administering adrenalin. There may be, therefore, many combinations of factors to explain the occurrence of different clinical symptoms.

[7] The results are to be published at Berne, by Anne Lidsky.

more the case in dogs when large doses of thyroid extract were used (168 tabloids on the whole were given to one animal). It is interesting to see that a fluid extract of Poehl with glycerine did *not* produce the same effect.

I may call your attention also to the investigations of Hugo Wiener,[8] proving that the thyreoglobulin of Oswald, which is found in the colloid of the follicles of the thyroid gland, does not coagulate like the proteid of other organs (cf. Poehl) at 40° C., but even delays the coagulation of other proteid substances. Pineles and Piok[9] also found that the secreted proteids (thyreoglobulin) produced the physiological effect of the whole gland, but not so the "Organeiweiss" of Notkin.

Miss Lidsky has, with Dr. Kottman, examined a series of 8 cases of spontaneous myxoedema and of cachexia strumipriva after operation; she has been able to show that in these cases, contrary to the results of blood examination in Graves's disease, the rapidity of coagulation as well as the intensity is greatly increased, the beginning of coagulation occurring after 4 min. and ending at 6 min. This result did not depend on any great change in the *absolute* quantity of erythrocytes, leucocytes, or the percentage of haemoglobin; thus, in a case where the haemoglobin was at 95 per cent., the red corpuscles at 4,622,000, and the white at 5,760, the coaguloviscosimeter gave the beginning of coagulation at 4 min. and ending at 12 min. The white corpuscles showed the differences spoken of above. It is particularly interesting that after transplantation of thyroid gland into a bone (Kocher's method), and after introduction of thyroid extract by mouth, the coagulability changed in one case from commencing at 4 min. before treatment to 10 min. afterwards, and from ending at 6 min. to 16 min. after treatment.

Miss Lidsky and Kottman have also examined 11 cases of ordinary goitre, and have shown that the form of coagulation of the blood proves in the majority of these cases that ordinary goitre is, as a rule, combined with a certain degree of hypothyreosis. It is not at all astonishing that there are exceptions to this rule if we consider that what is called struma nodosa may be combined with a hypertrophic development of healthy thyroid tissue between the diseased parts, or even with the histological changes of exophthalmic goitre in some part of the gland.

Nature does not follow our tendency to systematize into categories the pathological changes in an organ, but shows the most varying combinations of colloid goitre and hyperplastic goitre, of hypothyreosis and hyperthyreosis, to such a degree that very able men, as Cyon, Oswald, and Lenhartz, have considered Graves's disease to be only the beginning of a hypothyreosis, and have thus been led to very false conclusions as to treatment. Graves's goitre may in later stages change into atrophic goitre, as colloid goitre may become histologically under the influence of treatment a Graves's goitre, but that is no reason why we should not support a strict distinction between the ordinary and regular cases of both diseases.

A further and very important indication of the importance of functional hyperactivity of the thyroid gland in Graves's disease is the fact of the existence of what I have called "iodine Basedow"—that is to say, an artificial Graves's disease evoked by the administration of iodine by mouth or subcutaneously. I have given the results of my observations on that subject in a paper read at the Congress of the German Society of Surgery at Berlin in the spring of 1910.[10]

If we administer to nervous patients affected with goitre iodine preparations in strong doses, we may see most of the symptoms of Graves's disease develop in a short time. I have seen such cases, especially in persons who had intrathoracic goitres going far down towards the mediastinum. These people suffer a great deal from shortness of breath, sometimes with crises of suffocation, and at the same time these patients are particularly exposed to the complication Professor Kraus has described as "Kropfherz," in consequence of their dyspnoea, and very probably also of direct influence on the nerve supply of the heart. I have still more frequently seen the full symptoms of Graves's disease developed after iodine treatment in persons who gave already before treatment a history of some signs of hyperthyreosis—that is, complaining of occasional palpitation of the heart, bad sleep, nervousness, and great fatigue. All such people may develop under iodine treatment the characteristic clinical type of Graves's disease in a few weeks, or even more rapidly.

I have been able to show that in some of these artificial cases of Graves's disease the characteristic changes in the blood are also found, and that the symptoms disappear in a short time by appropriate treatment, especially excision of the gland. The chemical examination of this latter shows an exceptionally large amount of iodine in it, amounting to 50 or 60 mg. of pure iodine, or even more. It is of great practical interest to note that when iodine treatment is persisted in for too long a time, or when no early measures against the affection are taken, this artificial Graves's disease may get worse and the patient may die under the same circumstances as in spontaneous Graves's disease, especially with heart failure. After too long continuance of the iodine treatment operative measures may even fail by becoming too dangerous and producing a sudden fatal issue.

If we keep in mind the fact that we may produce artificial Graves's disease in goitrous nervous people by administration of extracts of the thyroid gland (thyroidine); and, on the other hand, that we are not able to produce artificial Graves's disease in cases of hypoplasia of the thyroid gland and myxoedema by the use of iodine preparations, though easily by the application of thyroidine and other thyroid gland preparations, we must come to the conclusion that it is by stimulation of the function of the thyroid gland with excess in its secretion that iodine produces pathological hyperthyreosis. O. Wiener has been able to prove directly that by the administration of sodium iodide the contents of thyreoglobulin in the gland and the symptoms of pathological hyperthyreosis or artificial Graves's disease were greatly increased.

Pineles[11] has added to our statistics a series of cases proving the complete sensibility to iodine preparations in goitrous people belonging to families the members of which are affected with Graves's disease or diabetes.

The type of artificial Graves's disease we call iodine-Basedow is the more interesting as it has been proved directly by many researches (Bruns, Baumgarten, and de Lignevis, assistant in our clinic) that iodine increases the secretion of the thyroid gland, the follicles are filled with colloid matter, and in experimental as well as in clinical (according to our own observation) cases we may see in the beginning of iodine treatment a notable swelling of the gland. But we know very well also that after this initial period the goitrous gland begins to decrease, and this is the effect we try to produce with iodine treatment. We must conclude that the iodine which the gland cells take up with great avidity, and which combines with the colloid material filling the follicles, increases also the excretion of the same material in the blood or the lymphatic vessels. This is most important. Artificial Graves's disease comes on in a severe form only when goitres disappear rather quickly under the influence of iodine. The gland may still contain a rather large quantity, but if too much is kept back there are no symptoms of hyperthyreoidism.

With true Graves's disease it is quite the same. A great many authors have found that the goitre in this disease contains an unusually small quantity of iodine, because it is excreted as quickly as the organic iodine combinations have been formed in the glands. But, according to Oswald's and Albert Kocher's preliminary communications, in the worst cases the diseased gland may contain unusually large quantities of iodine, when there exists an excessive attraction for this material, so that only part of it can be distributed in the general circulation (in organic combination).

Now, if we ask how the amount of transformation of the iodine in the thyroid gland and of the excretion of the iodine globulin is controlled, we must come to the conclusion that it must be by nerve influence. Further, though it seems (by all clinical experience) certain that we must accept the fact of the existence of an internal secretion of the thyroid gland, which is of the highest importance for the maintenance of the normal function of the nervous system and of other organs, and that we may explain the symptoms of myxoedema, cachexia thyreopriva,

[8] *Arch. für exper. Path. u. Pharm.*, Bd. 61.
[9] *Zeits. für exper. Path. und Therap.*, Bd. 37.
[10] The paper will be published this year.
[11] *Wien. klin. Woch.*, 1910, No. 10.

and cretinism by the want of that internal secretion, and the symptoms of Graves's disease by some excess of the same, it is desirable to gather further proofs of the existence of that secretion.

Physiologists, after the decisive experiments of Sir Victor Horsley on that secretion, have to a great extent cleared up the question of the function of the thyroid gland, and lately Asher of Berne has tried to give a direct proof of the fact of real glandular secretion, based on the experiments of Falta, Rudinger, and Eppinger, showing that the thyroid gland and the adrenals have an influence on each other. Asher and Flack have investigated the effect of excitation of the thyroid nerves upon the action of adrenalin. After injecting a given dose of adrenalin they have measured exactly the increase of blood pressure, first, without any other procedure, and secondly, after irritating electrically the cut end of the laryngeal nerves, which are very powerful dilators of the thyroid vessels. They found that the same doses of adrenalin have a much greater effect if at the same time the excitation of the thyroid nerves took place.

It is true that it was necessary to cut at the same time the depressor nerve. Cyon had tried to show that iodothyrine has a pronounced excitatory effect on the depressor system. Asher and Flack have been able to confirm the fact that when the inferior laryngeal nerves were excited electrically the excitability of the depressor nerve was greatly increased. Not to counteract the effect of the adrenalin in the above experiment they had therefore to cut the depressor.

By their experiments Asher and Flack think they have proved decisively that there exists an internal secretion in the thyroid gland, which may be activated by the irritation of the nerves of the gland going to the vessels as well as to the epithelium itself. This fact, if confirmed, is very interesting, as it explains why in some cases the ligature of both inferior arteries has produced a very favourable effect on the symptoms of Graves's disease.

We have seen cases when by the ligature of the upper pedicle of the thyroid gland on one side the blood already has shown a remarkable change. So in one case the total number of leucocytes went up from 4,900 to 7,200, the neutrophiles from 1,886 to 4,010, and the lymphocytes diminished from 51 per cent. to 37 per cent. According to Asher and Flack's demonstrations it is necessary to ligature the *whole inferior pedicle* to cut off the influence of the nerves entirely.

Let me remind you that some experiments have already been published showing the probability of trophic nerves (secretory nerves) of the thyroid gland existing. Katzenstein has found an atrophy of the epithelium with change into colloid by cutting the laryngeal nerves, and Hugo Wiener[12] has found that after excision of the inferior cervical sympathetic ganglion the thyreoglobulin of the thyroid gland is greatly diminished in quantity, and the quantity of iodine in the gland as well. As this is not the case after the excision of the superior ganglion, he concludes that the secreting fibres of the lymphatic nerve ascend probably from the fifth and sixth cervical nerves. Morat[13] also was able to produce a swelling of the thyroid gland by exciting the sympathetic nerve. If this be so, we understand the action of galvanization of the sympathetic in the neck, which certainly, in some cases, brings an amelioration in some symptoms of Graves's disease. Also, we might ask, if Jaboulay's experiment with excision of the cervical sympathetic may not, if properly executed, have an influence on Graves's disease; but then, according to Hugo Wiener's experiments, it would be necessary to take out the inferior and not the superior ganglion.

If we are able to show that the primary cause of Graves's disease may be an excessive irritation of the nervous system, affecting especially the sympathetic branches of the thyroid nerves, and that the same pathological effect may be produced by the *excessive influence of iodine* on a gland already altered in its histological constitution, or by *excessive reaction* of the same under pathological circumstances, as after acute infections, we might seek for rational treatment in the first place by way of removing the causes of the pathological condition.

Experience proves that this is not sufficient in most of the cases. Rest, rest, and rest again is the great remedy of medical men when excessive excitement has given rise to a sudden outbreak of Graves's symptoms. Most of the remedies given besides the rest cure are of no use, especially the digitalis preparations given so frequently. I think still the best medical treatment is by phosphorus preparations. But, on the whole, it is best for the medical man to tell the patient to do nothing and to do nothing himself. To exclude all iodine preparations is the best means against what we called "iodine Basedow." To direct careful attention to this point is in many cases more important than the giving of any remedy. Excessive functional activity has in most cases led already to histological changes the same as those produced by infectious diseases, and so conventional treatment fails to produce the desired effect.

We must not, then, wait and risk the prolonged poisoning of the system which will produce irreparable organic changes in the heart muscle, the kidneys, the liver, the brain; we must treat the diseased organ itself and diminish its activity by diminishing the quantity of secreting cells; we must exclude, by cutting the superior pedicle, the nerve influence and produce partial atrophy by ligature of the vessels or perform partial excision in sufficient quantity to reduce the secretion to normal degree. I can prove that this is practically possible without damaging our patients in any way or risking their life; therefore surgical interference is the only sure and quick way to come to a real cure, but it must be kept in mind that it should be done only after most careful consideration, as I shall presently show.

Let me give you the results of my practice on the ground of these considerations, so that you may judge for yourselves as to the value of surgical interference.

I have performed up to this day 4,394 excisions of goitre. These include 469 cases of Graves's disease. The total mortality of these 469 cases is 3.4 per cent., but the mortality has always gone down, being at 5 per cent. when I gave a report at your medical society of 176 cases, four years ago, diminishing in the 155 cases of Graves's disease which the fourth thousand of our goitre operations include to 2.5 per cent., and finally in the 72 cases of Graves's disease operated on since January of this year only 1 patient died, which means a mortality of 1.3 per cent. It may be that we will bring the mortality still lower down, as has been the case for ordinary goitre, going down to ½, 1.2, 1.3 per cent., since the death mentioned in the last series was one of a young woman affected with nephritis, upon whom it would have been better not to have operated at all.

This brings us to the question of the *contraindications to operative interference*. The more I have seen of the disease the more I have been convinced that the continuous poisoning of the system with thyroid secretion brings on in long-standing cases organic changes in the heart muscle, in the kidneys, in the liver, in the pancreas, and in the cells of the cortex cerebri.

Crile[14] has shown that the cells of the cortex cerebri, of the cerebellum and medulla may show alterations leading to complete destruction of many cells. He therefore insists that in operations on Graves's patients, everything must be avoided which might increase the already existing damage to the brain, above all *mental shock*. He was able to produce analogous changes in rabbits by frightening them. He is of opinion that these changes may give rise to rapid collapse. I also have seen in some of my cases, when death comes on very suddenly after operation, that these patients seemed not to gain their full consciousness after the operation and died with rising temperature and extremely quick pulse. There must be analogous alterations in the ganglionic apparatus of the heart after long-standing Graves's disease, and weakening of the muscle of the heart by degeneration (myocarditis). In every case when the pulse has become very irregular, especially in respect of tension, there is a danger of heart failure after the operation.

As to the pancreas, Eppinger, Falta, and Rudinger have shown that a connexion exists between the thyroid gland and the pancreas, and for this reason the digestion may be affected, and especially diarrhoea and glycosuria produced, both being very favourably influenced by treatment with trypsin. We shall in a short time publish our experience

[12] *Archiv f. exper. Path. u. Pharmac.*, Bd. 61.
[13] *Presse méd.*, 1897.
[14] *Annals of Surgery*, June, 1910.

on glycosuria in the form of alimentary glycosuria as well as diabetes, and the good results of trypsin treatment. The liver probably is secondarily affected.

Still more important is the existence of albuminuria with nephritis. These cases are in later stages of the disease not very rare, and operation on such patients offers even greater risk than with the organic alterations mentioned above. We have seen more than one case where albuminuria and nephritis were combined with floating kidney, and existed on the same side. In such cases I do not operate before the symptoms have disappeared, wholly or nearly, under treatment.

The greatest risk of all is that of a *combination with status lymphaticus*—that is to say, with swelling of the lymphatic glands, the thymus, and the spleen. I can show that in not a few of our fatal cases sudden death was to be attributed to such complication. Whilst most of the other organic changes are the consequence of a long duration of the disease, status lymphaticus may develop rather early. It is very satisfactory to say that even in cases where we found irregular heart action, glycosuria, and albuminuria, we have seen a complete *restitutio ad integrum* when we had succeeded in avoiding the immediate post-operative dangers—a fact which seems to be a valuable proof of the poisonous effect of thyroid fluid on the different organs of the body.

I am convinced that when general practitioners and physicians carefully consider these very dangerous consequences of long-standing Graves's disease they will no longer take upon themselves the responsibility of delaying an operation which gives, when applied early, such very striking results.

A. Kocher said, in his address to the American Medical Association, 1907, that we have not seen a single case in which the patient had not been benefited by the thyroid operation.

Crile,[15] a very able observer, says: "I have seen no case that was not benefited by operation . . . and I know of few classes of cases that experience such deep and fundamental relief as cases of acute toxic Graves's disease successfully operated upon."

I have heard more than once from my patients after operation that they only knew what real mental quietness meant after the immediate and fundamental relief by operation.

If the members of this Surgical Section appreciate the benefit which a patient suffering from exophthalmic goitre can derive from a careful and early surgical interference, go and tell your friends practising internal medicine to help on the accomplishment of a cure of that severe and dangerous disease, and not oblige the surgeon by a late operation, as Crile says, "after the ship has gone on the rock, to deal with the wreckage."

II.—Hector Mackenzie, M.D., F.R.C.P.,

Physician, St. Thomas's Hospital, and Brompton Hospital for Consumption.

There is no doubt in my mind that most of the symptoms which are considered to be characteristic of exophthalmic goitre are usually related to and centre round an overactive thyroid gland. We are familiar with the results of overdosage with thyroid gland or its preparations. We know how under its influence the rate of the heart becomes accelerated, the skin takes on increased action, the processes of metabolism are stimulated, and there is loss of body weight. Gastro-intestinal disturbances are apt to be produced, and the subject becomes tremulous and excitable.

Although in no cases in human subjects, as far as I know, has exophthalmos been produced by the administration of thyroid substance, Mr. Walter Edmunds has observed this phenomenon in monkeys and dogs produced in this way. The symptoms with which we are familiar in the subjects of exophthalmic goitre—with the doubtful exception of exophthalmos—are similar to those which arise from overdosage with the secretion of the thyroid gland. That the thyroid gland at certain stages of exophthalmic goitre is overactive is supported by the evidences of its increased blood supply and by the microscopic appearances, showing increased secretory activity with hyperplasia of the epithelium, strikingly similar, as Mr. Walter Edmunds has pointed out, to the changes of the nature of compensatory hypertrophy which take place in a small portion of a gland left behind when a large portion has been experimentally removed from an animal. It has been found also by Oswald and Albert Kocher that in cases of exophthalmic goitre, where colloid material is present in the follicles, there is an extraordinary increase in the amount of iodine. In one lobe they found as much as 10 to 50 mg., while in a normal thyroid the iodine content varies between 2 to 9 mg. Sometimes, it is true, the iodine content may be low, but this may only be the consequence of rapid absorption of the secretion. We are justified, therefore, I think, in concluding from the symptoms of the disease and the evidences in the gland itself of overactivity, that the latter plays the leading rôle in the production of the disease. I would, however, point out that the severity of the symptoms seems in no way to be proportional to the size of the enlarged gland—that, as a rule, it is in the cases with a moderate enlargement which are of the severe type that often as the patient gets worse the gland becomes smaller, and that in some of the worst cases of the disease there is no appreciable enlargement of the gland at all.

But now we come to the important question—What is it which excites the thyroid gland to its overactivity? Can we not get at the cause of its overactivity? Is there some toxic substance circulating in the blood which calls forth the effort of the thyroid gland to neutralize it? The regulating power of the gland seems to be thrown out of gear by some abnormal stimulation, and an overpowering amount of secretion is thus produced. In this relation it is very interesting to consider how frequently the disease appears to be started by some mental strain. Severe fright, intense grief, great anxiety, and worry, are common antecedents in the history of those cases, and I have long been impressed by the resemblance of the picture of the person suffering from intense fear to that of the patient with exophthalmic goitre. Under the influence of fear the eyeballs start forward, the upper eyelids are elevated, and the eyes are fixed on the object of terror. The heart at the same time beats quickly and violently, so that it can be felt palpitating against the ribs. The limbs tremble; the skin breaks out into a clammy sweat; the face and neck are flushed or pallid.

Here we have the symptoms of exophthalmic goitre acutely produced, and there is no reason to suppose that the thyroid gland has anything to do with the condition. But it is interesting to observe that sometimes, under the influence of great excitement and overexertion, a fullness or swelling of the neck occurs. Professor Kocher has suggested that an increased metabolism in the nervous system, such as might arise from sudden or prolonged nervous exhaustion, produces toxic substances which, when they reach the thyroid gland, stimulate it to increased activity. This seems to me very probable. At any rate, it is a plausible explanation of the relationship of emotional disturbance to the changes we meet in the thyroid gland.

Before going further it is highly important that we should take notice of the relationship of another gland, namely the thymus, to exophthalmic goitre. The presence of a persistent and often much enlarged thymus gland is a very frequent feature of the disease. In all the fatal cases I have myself had an opportunity of examining it was present. But I am no longer entitled to state that an enlarged thymus is always present, for in one case examined at St. Thomas's Hospital the thymus was found to be atrophied. This case, however, was one of already seven years' duration when the fatal termination came. In some of the cases the enlargement of the thymus has been very considerable, the gland sometimes weighing as much as 3 oz. The enlargement of the thymus in exophthalmic goitre has long been recognized as a feature of the disease. It should also be noted that hyperplastic swelling of the cervical and bronchial lymphatic glands and of the lymphatic structures of the intestines and enlargement of the tonsils have also been noted in fatal cases. Now what is the relationship of the enlarged thymus to the disease is difficult to explain, but that the relationship is a very close one is obvious, and it has a very important bearing on the surgical treatment of the disease.

Of recent years attention has been frequently directed to a condition designated status lymphaticus, or lymphatism—a condition characterized by hyperplasia of the thymus and of the lymphatic tissue generally throughout

[15] The *Lancet*, Clinic for 1910.

the body, and also by hyperplasia of the heart and of the arterial system. It is found in a large number of otherwise unexplained cases of sudden death. Its cause is quite unknown. Like exophthalmic goitre it is occasionally found in several members of the same family. It has been found in a number of cases of death under anaesthesia. The condition is unsuspected during life. In some of the cases reported as examples of this condition it has been noted that the thyroid was enlarged, but this has not been the rule.

I believe, however, that the status lymphaticus really underlies many cases of exophthalmic goitre. It is this condition of lymphatism which contributes so largely to the immediate risk to life from operation in exophthalmic goitre. Most of the cases of death from operation occur during or shortly after its performance. As yet I do not know of any case where this quickly fatal result has occurred and an enlarged thymus has not been found. I may say here that the immediately fatal result of operation in several of my own cases has had a strong deterrent effect on me as regards resorting to surgical treatment. Within the last few weeks another case under one of my colleagues has ended fatally while the operation was in progress, and in this also the condition of lymphatism was found to be present.

It will be gathered from what I have already said that while I am prepared to admit that the hypertrophy and overactivity of the thyroid is responsible for the main symptoms of the disease, I do not consider it is, like the atrophy of the gland in myxoedema, the *fons et origo* of the disease. Therefore, theoretically I do not expect that removal of the goitre or part of it will cure the disease. But I am quite willing to be convinced by results. Personally I have seen no cases that I should consider cured by operation.

Our results at St. Thomas's have been as follows: Thirteen cases have been operated on; of these, 5 were improved, 3 remained *in statu quo*, and 5 terminated fatally as the result of the operation. Of the cases improved 2 had no exophthalmos thoughout; in the other 3 the exophthalmos did not appreciably diminish after the operation, although the pulse became quieter. One of my cases which was unimproved was operated on sixteen years ago, and was of old standing at the time of the operation. I saw her recently; her eyes were as prominent as ever and her tachycardia still remained, but there was no evidence of any remaining thyroid enlargement. She came to see me because recently she had developed diabetes. It may be said that these cases are too few to entitle one to pass judgement on operative treatment. But the results are certainly discouraging, and incline me to persevere with medical treatment.

By far the best published results are those which have been given by Professor Kocher himself. I congratulate him, but I cannot believe that he gets the same kind of cases to operate on as we do here. The results of operations recorded by Rehn, Mayo, and Schulz show a much higher rate of mortality. For the severe cases Rehn notes that the mortality was as high as 22 per cent. A large proportion of cases operated on abroad appear to be of the slighter forms, which are also amenable to medical treatment.

When we come to compare the results, the cases treated medically compare very favourably with those treated surgically, if we exclude those of Professor Kocher. Among hospital patients 36 per cent. recover completely or almost completely, and not more than 25 per cent. are observed to terminate fatally. But among private patients the results are much better. We are advancing in our knowledge of the disease, and I think our medical treatment is becoming more successful. I believe it is a disease for which we shall find a medical cure. The disease depends on the presence of a poison circulating in the blood, and I do not despair of an antidote to this poison being discovered. I hold that in cases of a serious type the risk from operation is too great to make it justifiable, while in cases of a mild type I do not think the results are sufficiently good to make one advise operation.

DISCUSSION.

Dr. H. A. BRUCE (Toronto) said he had hoped to be able to report a small series of cases without a death, but although his first twenty cases recovered the next two died—the first from pneumonia on the sixth day; the second died of shock in sixteen hours, and showed *post mortem* an enlarged thymus gland. The speaker had been able to follow up most of these cases, and 14 of them were cured, 5 so much benefited as to be able to resume their usual work, and 1, although relieved at first, had recurrence four months after, and would require ligation of vessels of the opposite side. While the speaker was operating on a case of ordinary simple goitre, the patient suddenly stopped breathing and died on the table. The *post-mortem* examination showed the status lymphaticus. McWilliams had recently collected 1,055 cases of Graves's disease operated on by Kocher, Garré, Mayo, Crile, and other well known Continental and American surgeons, with a mortality of 4 per cent. Garré collected over 500 cases giving the ultimate results. He found 16 per cent. of absolute cures and 85 per cent. of such marked improvement that the patients were able to resume their usual occupations and live a normal life. This should answer Dr. Hector Mackenzie's statistics of cases under medical treatment and showing 36 per cent. of recoveries. Professor Kocher and many Continental surgeons used, it seemed, a local anaesthetic, but the Swiss must have a very different nervous constitution from patients in Canada, where the speaker had not been able to operate successfully under a local anaesthetic. He had adopted the method devised by Dr. Crile of operating without the patient's knowledge. This followed his observation that psychical excitation caused an acute attack from a discharge of secretion from the thyroid gland into the circulation. It worked admirably in all his cases and he very strongly recommended its use. He might also say that he always used ether as an anaesthetic given by the open method.

Mr. GEORGE HEATON (Birmingham) said it was well to keep in mind that it was still an open question whether the symptoms of exophthalmic goitre were due solely to an excessive thyroid secretion or to perversion of the action of that gland—in other words, to hyperthyroidism or an "aberrant" thyroidism. If the first view were correct, removal of the source of excessive secretion must almost necessarily be followed by a cure of the symptoms; but if these were due to a perverted secretion, cure might not so certainly follow if any portion of the gland were left behind. In some of the worst and most acute cases of Graves's disease, the general symptoms occasionally appeared before any goitre was noticed. Then, again, the size of the goitre had certainly no fixed relation to the severity of the patient's symptoms; in more than one fatal case he had seen the goitre entirely disappear before the end.

These clinical facts and the microscopic appearance of portions of the gland after removal (which, with its acini full of rapidly proliferating epithelium, and with almost complete absence of colloid material, in no way resembled an ordinary hypertrophied organ), were very much against the disease being a pure hyperthyroidism. It was also a singular fact that in a very large percentage of the fatal cases of Graves's disease, there was found *post mortem* a great enlargement of the thymus gland, and often a general lymphatic enlargement. Their appearances resembled somewhat closely those found in the so-called "status lymphaticus," and formed only one of the many points of resemblance between the two diseases. In considering the operative risks of Graves's disease it must be borne in mind that many cases of ordinary parenchymatous and cystic bronchoceles exhibited some symptoms of hyperthyroidism. They were often mistaken for cases of true Graves's disease, and, in fact, were regarded as such by some surgeons. The speaker did not take this view, and thought they should be kept in a separate class.

Such cases were numerous, and the operative risk was infinitesimal. It was the inclusion of such cases in statistical lists of operations that had given rise to such divergent views as to the risks and dangers involved.

In true cases of Graves's disease the danger of the operation lay in delay. In the quite early stages of the disease the risk of excision, though greater than in simple goitres, was comparatively small, but at this stage unfortunately the surgeon seldom saw them. If the disease was not arrested or the symptoms much improved after a few months' trial of purely medical measures—including as

factors of prime importance complete rest of body and of mind from all sources of worry and excitement—operation should be advised. At this stage removal of one lobe of the gland would, as a rule, cure the patient, and the operation was only slightly more serious than in the ordinary variety of goitre. When the symptoms had been in existence for a considerably longer period and were slowly progressive, or when, as so frequently happened, the patient relapsed as soon as a strict regimen was relaxed, operation might still be advised. But the risks were now much greater, and must be fairly put before the patient; it was no longer possible to promise a cure, though great improvement might be expected. Here the choice must be made between excision of one lobe, as before, or if the case was too severe of ligaturing one or more of the thyroid arteries in turn, with excision, after an interval, if the patient was not cured or considerably improved. Of such cases the speaker had had one or two brilliant cures, and a larger number of modified successes, and one death. The fatal case followed simple ligature under a local anaesthetic in an acute case. He chose his cases, however, most carefully, and refused more frequently than he consented to operate.

The third class was the advanced or extremely acute cases. These were the ones that the surgeon was most frequently called upon to see. All else had failed; the patient was rapidly going downhill; the tachycardia, restlessness, and nervous symptoms were intense, and diarrhoea and vomiting, with pyrexia, were often present. Such cases the speaker would never touch, and he believed that the majority of operators took the same course. Any operative procedure whatever was almost certainly followed by disaster; the shock of any traumatism would prove fatal. In respect of anaesthesia he held that unless there was evidence of cardiac degeneration and much dilatation—when no operation at all should be done—a general anaesthetic was to be preferred, and did not add to the risk, but rather minimized it. It enabled the operator to perform his work more rapidly, with greater ease and comfort to himself, and so with greater dexterity.

Mr. Robert Campbell (Belfast) said that before a profitable discussion could be held on the subject the cases should be divided into primary and secondary exophthalmic goitre. The former class included those that were most prone to a fatal issue after operation, and it would be advisable to restrict the discussion to these cases. Personally he had operated on 6 cases of primary exophthalmic goitre without a fatality. In all the cases excision of one lobe of the gland was the operation performed. Three cases had rapidly and completely recovered. One was relieved, but the symptoms persisted to such an extent that the patient was unable to follow her occupation; excision of half the other lobe was then performed, with complete and permanent relief. Another case had gradually improved, but at the end of a year she could not yet be said to be free from symptoms. Another case illustrated Dr. Kocher's view as to the influence of sea air, the patient after recovering completely having developed in a mild degree a recurrence of symptoms. In his first 3 cases the speaker used local anaesthesia, but afterwards adopted ether and morphine, with which he had every reason to be satisfied. His experience made him a strong supporter of operative treatment.

Mr. Robert Kennedy (Glasgow) said that, after excision of one half of the thyroid gland in Graves's disease with extreme exophthalmos, he had noticed a tendency within a few days for the protrusion of the eyeball on the side of operation to be distinctly less marked than on the other side. Possibly this was due to the affected thyroid gland causing a direct irritation along the sympathetic, and in this way acting as a contributory cause of the exophthalmos. After removal of one side of the gland, there may thus be a diminution of that irritation, and therefore a tendency for the eyeball to recede somewhat. After excision of the cervical sympathetic, there was always in the speaker's experience recession of the eyeball; it was very noticeable when only one side had been dealt with, and less so by reason of the symmetry when the operation had been done on both sides. Hence in the photographs, such as those of Jaboulay, which had been produced as showing the improvement in the exophthalmos following such operations, the improvement might be more apparent than real. The dangers of excising half or more of the thyroid had been exaggerated, but general anaesthesia ought certainly to be avoided, more especially as local anaesthesia worked so satisfactorily. Recently he had given up β eucaine in favour of cocaine; $\frac{1}{2}$ grain of this was quite sufficient to enable a very large lobe to be painlessly removed if the cocaine used was sufficiently diluted, say $\frac{1}{2}$ grain in 100 m of water. Pyrexia, up to 102° F., after the operation was quite unassociated with sepsis. It occurred, if at all, in the first forty-eight hours, and the wounds showed no indication of sepsis, and healed normally. He always, however, left a drain at the lower angle. Probably the pyrexia was due to absorption of substances from the gland. It was not necessary, however, to suppose with Rehn, Möbius, and Reinbach, that post-operative deaths were usually due to acute poisoning by absorption of the substances, as in the vast majority of cases these deaths were due to the condition of the heart. In very acute cases presenting marked cardiac dilatation and possibly gastric symptoms, he delayed operating until they had been brought into a more suitable condition by medical and hygienic treatment. In every case appropriate medical treatment should undoubtedly precede operation, and in these particular cases an operation without preliminary preparation would be more than likely to prove fatal.

Mr. Gilbert Barling (Birmingham) thought that cases of Graves's disease coming to the surgeon should be divided into two groups: (1) those who suffered in the first instance from ordinary goitre, and in whom eventually the nervous phenomena of Graves's disease supervened; (2) those in whom the nervous symptoms predominated from the first, the condition of the thyroid gland attracting, at all events from the patient, little attention. He had operated in several of the first group by excision of half or more of the enlarged thyroid; all the patients had recovered, and there had been almost immediate relief to their symptoms, so that they could return to their ordinary life. The cases in the second group were always sources of the greatest anxiety. He had confined his operations in these to ligation of arteries, sometimes ligaturing two, at others three, arteries at different times. In nearly all the patients operated on relief had been given, so that life was made tolerable and useful; but he had to mention three deaths. In all of these the symptoms were very severe and steadily progressive; they were just the cases most needing help from operation, as they were going steadily, and in two instances rapidly, to the bad. The first was a woman aged 35, in whom both superior thyroids were tied under choloroform anaesthesia; she died the same day with rapidly increasing excitement and quickening pulse. The second was a woman aged 50, in whom both superior thyroid arteries were ligatured under eucaine anaesthesia. The patient died on the sixth day with thrombosis of the whole length of the right femoral artery, a curious occurrence in the light of the observation by Professor Kocher that in Graves's disease there was diminished coagulability of the blood. The third patient was a nurse aged 23, whose symptoms came on very acutely, and who, after abstaining from work for a few weeks, unfortunately then returned to her duties and went rapidly to the bad. Both superior thyroid arteries were tied under morphine-scopolamine-ether anaesthesia, and the patient died in a few hours, with excitement, rapidly increasing pulse, and probably oedema of the lungs. The importance of complete rest in bed for some time before operation could not be too strongly pressed. Even when this was insisted on, and whatever method of anaesthesia was used, operation in these very severe cases—the cases, above all, for which they had little other therapeutic resource—would always convey a large element of risk.

Mr. Donald Armour (London) said that his remarks would be based entirely upon his own operative experience in some 20 odd cases, with 1 death. He had never refused to operate on a case, but had invariably insisted that the diagnosis of exophthalmic goitre should be confirmed by one or more of his medical colleagues. He had experience of two operative procedures—namely, tying of arteries and excision of one lobe or more of the thyroid gland. After his first 6 cases he abandoned the tying of arteries, and

now only performed it in cases where the larger operation was contraindicated, as a preliminary to a later excision of a part of the gland. While the tying of arteries was a safer operation than excision, it was not so effective, and, moreover, might be more difficult. With the exception of his first case, when local anaesthesia was used, he had invariably used chloroform given by the Vernon Harcourt method. Twenty minutes before the operation the patient had a hypodermic injection of $\frac{1}{4}$ grain of morphine and from $\frac{1}{75}$ to $\frac{1}{150}$ grain of atropine. Either during the operation or immediately following it the patient had a continuous saline administered subcutaneously or by the rectum. He laid great stress upon the manipulation of the gland during operation, as he regarded any rough handling or swabbing as distinctly dangerous, and therefore to be studiously avoided. He used drains now less frequently than at first. In respect of results, his first 12 cases were investigated by Dr. Alfred Warren, who used them as a basis for his M.D. thesis at Cambridge. These were taken because they had been performed sufficiently long ago to enable one to come to a definite conclusion as to the result of operation. Dr. Warren found that all cases had improved as the result of operation, some having completely recovered, one or two having since married and borne children. The one death was a case which should not have been operated upon. The patient was extremely emaciated, had persistent diarrhoea and vomiting, and occasional hallucinations. She had been abandoned by the physicians as a hopeless case, and it was only at the earnest solicitation of her relatives that the speaker agreed to operate as a last resource, after fully explaining the risks. The patient died just after the completion of the operation.

Mr. E. DRANESLY said that there existed not merely all grades of severity in cases showing the classical symptoms of Graves's disease, but various transitional cases between the perfect clinical picture and cases of simple goitre without symptoms. Speaking generally, the symptoms of hyperthyroidism were in inverse proportion to the number and size of the adenomatous masses, or, rather, were directly related to the amount of hypertrophied or perverted gland substance which remained. Hence the formation of adenomata might be regarded as a natural curative or protective process. If this pathological conception was correct, the removal of a sufficient amount of the enlarged and altered gland should bring about an amelioration or cure of all cases of goitre accompanied by symptoms of hyperthyroidism, including those severe forms which presented the classical symptoms of Graves's disease. The experience of surgery at the present day was in harmony with this conclusion, and it was impossible to doubt that exophthalmic goitre could be cured by excising a sufficient quantity of the affected thyroid gland. The only questions that remained open to discussion, therefore, were the relative advantages of operative and non-operative methods of treatment in particular cases, and the best means of avoiding the risks and difficulties of the operations, and of ensuring a successful result. As to the first question, much depended on the natural course of the disease. Was the usual tendency towards recovery or the reverse? That many cases run a fairly prolonged course was incontrovertible. That some cases might be ameliorated by various non-operative means was equally beyond dispute. Nevertheless, complete recovery, either spontaneous or assisted by medical means, was rare, and a majority of severe cases proved fatal within a few years. The remainder were more or less invalided and did not live their full term of years. That, at any rate, was his own impression. As to the dangers of the operation, the mortality was high in severe cases, though even in these experienced operators showed greatly improved results. In cases presenting all the classical symptoms in a mild form the fatality of operation was no longer great, and in those transitional cases in which an ordinary goitre was associated with some only of the classical symptoms the fatality was little more than that of operating for simple goitre, or not more than 1 or 2 per cent. The risks of general anaesthesia had been exaggerated by some. Except in very advanced cases with organic changes in the heart, general anaesthesia was preferable. He had no experience of ligaturing the arteries without removing a portion of the gland, but had always removed the larger lateral lobe together with the isthmus. In some cases he removed two-thirds or three-quarters of the whole gland, taking care to avoid ligaturing either the superior or inferior artery on one side, and always leaving a small portion of gland at the entrance of the inferior artery on the side from which the whole lobe was taken. By this means one avoided ligaturing the main trunk of the inferior thyroid and endangering the recurrent laryngeal nerve. Incidentally this also preserved the arterial branch of the parathyroid on that side, though he was not yet convinced that that fact was of importance. Within twenty-four hours his patients had always expressed themselves as feeling much better than before. The pulse, generally greatly accelerated by the operation, had gradually declined, and eventually became normal, or nearly so. Exophthalmos diminished, but in his own experience had never completely disappeared. In other respects complete recovery occurred.

Mr. W. G. SPENCER (London) said that in his experience division of the isthmus by cutting out a small portion and pulling the lobes a little apart had afforded marked relief. Indeed, this operation might be sufficient. The cases in which there was marked parenchymatous enlargement might require removal of more than the isthmus. A girl sent up by Dr. Bourns, of Oxted, had portions removed at four operations before she was sufficiently relieved. By thus doing limited operations he had escaped fatalities. Other cases in point were as follows:

1. An unmarried woman, aged 25, had been under the care of Dr. de Havilland Hall for some years. She had marked exophthalmos, was very anaemic, and had a pulse-rate of 130 whilst in bed. The thyroid gland was not enlarged. The isthmus was divided under superficial anaesthesia, and when she left the hospital the pulse was 90. Nine months later she was asked to come up to the hospital, but replied that she was so well as not to need further treatment.

2. The patient, a pale, thin young woman, had had seven years before an enlargement of the thyroid, which had gradually got smaller and harder, and with it difficult breathing had supervened. The thyroid gland felt of normal size and shape, but of almost stony hardness. There was marked stridor; the pulse was 130 to 140. The isthmus was cut through and a piece excised; it was of the texture of the hardest fibrous tumour. The trachea had been markedly constricted, uniformly, not laterally, compressed. When the trachea was incised just below the cricoid cartilage, it seemed to be narrowed below to a mere chink. The trachea was, therefore, divided longitudinally through the constriction and a tracheotomy tube inserted. The tube was kept in for a fortnight; the wound had healed at the end of a month. Six months later there was no respiratory difficulty, but a little stridor could be heard. The pulse was still 120 per minute. Later on she developed signs of myxoedema, and attended hospital for some years for treatment. A slight stridor was always present.

3. In the following case it was necessary to remove the sympathetic ganglia at separate operations. A single woman, aged 32, under the care of Dr. Murrell and Dr. F. Norman, had not been relieved by medical treatment. The thyroid gland was not obviously enlarged, but there was a fullness in the neck on each side which suggested an enlargement of the sympathetic ganglia. She was in much distress; the night before the operation she spent sitting up in bed and crying. The pulse-rate was 130, with little tension. The isthmus was excised as quickly as possible; microscopically nothing abnormal was noticeable. The pulse-rate receded, to be not more than 90 at any time; she improved in health, and slept well. After a time attacks of pain started in the left eyeball; it was of a burning character, with throbbing pain in the left temple. As this could not be relieved, three years after the division of the isthmus the left upper cervical ganglion was excised and the sympathetic nerves dragged out. The sections of the sympathetic ganglion did not show on microscopical examination anything but what has been found in these ganglia without sympathetic disturbance. For three months she remained without pain, then similar attacks started in the right eye. There was burning pain at the back of the eyeball, throbbing pain in the right temple, a feeling of muscular contraction, a flushing of the face, and flow of tears. The attacks came on during her first sleep, and kept her awake for hours. Drugs did not relieve, and the right sympathetic ganglion and nerves were excised; nothing distinctly abnormal could be seen on histological examination. A year after this third operation the eyeballs were prominent, but the sclerotic did not show below the upper lid; she had a pulse of 90. She slept all night. She could ride a bicycle for twenty miles without getting tired. She had had no more pain. About a year ago she complained of severe attacks of palpitation; whilst in bed and carefully dieted she presented no abnormal symptoms.

Mr. THELWALL THOMAS (Liverpool) said that after an early experience, many years ago, of the dangers of chloroform anaesthesia in exophthalmic goitre, he abandoned the

operation and only recently had resorted to it again. Physicians were now realizing that after *short* non-successful medical treatment, surgical interference ought to be resorted to. Under open ether anaesthesia results were now very good in the severe types of true exophthalmic goitre. This type appeared to be rare in comparison with the cases of general goitre. The last series of cases operated upon by the speaker had recovered.

Mr. Hey Groves (Bristol) mentioned treatment of exophthalmic goitre by grafting normal thyroid tissue after excision of the diseased gland. He maintained that in many cases there were three different factors in the causation of the disease, namely, (1) an excess of certain elements of thyroid secretion, (2) the presence of abnormal thyroid secretion, and (3) the absence of certain elements of normal thyroid secretion. It had already been remarked by previous speakers that a fairly large proportion of those operated upon for exophthalmic goitre made only a partial recovery. The view was urged that in many such cases a more complete removal of the diseased thyroid followed by multiple grafts of the healthy human gland would produce a more thorough cure. Evidence of this was adduced by briefly referring to a case of a girl who had had a subtotal thyroidectomy for severe exophthalmic goitre. She developed severe tetany and other signs of thyroid insufficiency, but the dyspnoea and tachycardia persisted, whilst the exophthalmos was cured. But after grafting both parathyroid and thyroid tissues directly from another patient operated upon for thyroid adenoma) her condition showed much more marked improvement than that which occurred after the thyroidectomy. Details of this case and a review of the subject named will be published later.

A METHOD OF ESTABLISHING COLOTOMY OPENINGS AND PERMANENT URETERAL FISTULAE.

By C. J. Bond, F.R.C.S.,
Senior Honorary Surgeon, Leicester Infirmary.

I think it will be admitted by every one that the personal discomfort which under present conditions is the lot of the patient with a colotomy opening or a ureteral fistula is a very real evil, and must be regarded as a considerable set-off when advising radical operation for the removal of malignant disease of the lower bowel or bladder. Any method, therefore, by means of which we can prevent or minimize this consequential disability and discomfort is well worthy of our serious consideration.

I desire in the first place to draw your attention to the result in operations on the lower urinary tract. Ureteral implantation in the loins or the bowel is practically a necessary part of the operation for radical removal of the bladder for malignant disease. It is, moreover, the only way of relieving the acute suffering which supervenes in the later and inoperable stages of the same disease from the presence of urine in the diseased bladder. In cases of advanced tuberculous disease which have resisted other treatment, relief may also only be obtained by cutting off the urinary flow. Unfortunately the ureteral fistulae so established, in whatever situation, and in spite of considerable ingenuity and variety of mechanical appliance, are still a source of much discomfort to the patient.

It was in connexion with a bad case of extroversion of the bladder in June, 1907, that I was first led to try and establish a raised or teat-like outlet for the mucous canal of the ureters, instead of allowing them to open flush with the skin surface, as has hitherto been the custom.

The patient was a female child, aged 5, in whom an unsuccessful attempt had been made previously in another hospital to transplant the ureters into the rectum. Owing to the strictures produced in the ureteral openings, and the resulting urinary stasis, extensive ascending infection of both kidneys was present, threatening the life of the patient, and I decided to establish permanent ureteral fistulae in the loins, with the hope that the freer drainage so provided might check the renal infection.

Accordingly, on June 11th, 1907, the right ureter was freely exposed in its course along the psoas muscle, and over the brim of the pelvis. It was distended to the size of the forearm with purulent urine. It was divided after ligature as low as possible, and the proximal end brought out in the right loin in the position indicated in the photograph. A strip of skin about ½ in. wide parallel with the skin incision was now raised, with its base at the point of exit of the ureter through the abdominal wall. This skin flap was wound spirally round the free end of the ureter, the edges of the spiral were sutured together, and the end of the flap at the summit of the papilla also sewn round



Fig. 1.

the cut end of the tube. In this manner a skin covering was provided for the free 1½ in. of ureter lying outside the abdomen, and the canal thus made to open on the summit of a skin papilla having the ureter running through its centre as a core (Fig. 1).



Fig. 2.

The left ureter, also distended and infected, was treated in the same way a month later. A Jacques catheter was fixed in either ureter, and the turbid urine collected in bottles, one on either side.

The present condition of the papillae and the ureteral openings is shown in the next photograph, taken three years later. This shows that they have for the most part retained their shape and prominence, though a slight flattening has occurred on the right side owing to a slough of a small portion of the skin flap (Fig. 2).

A special form of lumbar urinal was then devised (Fig. 3). This consists of a rubber belt with two hollow cups with inner flanges which fit over the papillae, and which drain by rubber tubing into two small rubber reservoirs, one on either side. In this way, provided the instrument is kept carefully cleansed, the child is enabled to get about in fair comfort, and now attends school.

One word about the effect on the renal infection of the shorter and more direct urinary outflow established by the operation. A gradual improvement in the condition of the urine collected by ureteral catheter from each kidney was noticed soon after the operation. Advantage was taken of the ready access to the kidney pelvis to wash out each organ daily for a time, but this did not seem to make much difference in the condition of the urine, which gradually improved after the relief of the urinary stasis. From the experience of this and other ureteral cases I was led to extend the principle of the raised or papillary opening, with certain modifications to colotomy-openings and the artificial anus. A difficulty in the case of the bowel arises from the fact that it is necessary to provide a much more ample skin covering to allow of



Fig. 3.

the varying condition of distension of the bowel tube. I found that the spiral skin flap wound round that portion of the bowel brought out through the abdominal incision was not satisfactory. It necessitated dividing the bowel across at the operation and providing for the permanent opening of the distal portion to one side of the



Fig. 4.



Fig. 5.

papilla. The skin flap, moreover, had to be too long. Hence a different method was adopted.

A transverse incision is first made through the skin of the abdomen with its centre at the point at which it is desired to bring out the loop of descending colon through the abdominal wall (Fig. 4).

The edges of this skin incision are fully retracted, and a vertical incision is made through the abdominal wall at right angles to the skin incision. A loop of colon of appropriate length is then drawn through. If the mesocolon is short, it may be necessary to liberate this partly at the reflection to the parietal peritoneum, in order that a loop of bowel some 4 in. in length may lie outside the abdomen without tension. It is also desirable to approximate the two arms, distal and proximal, of the loop by two or three sutures passing through the mesenteric border of each segment; in this way a parallel double tube is formed.

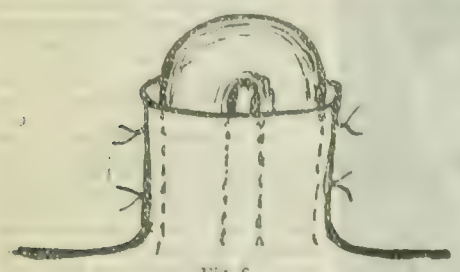


Fig. 6.

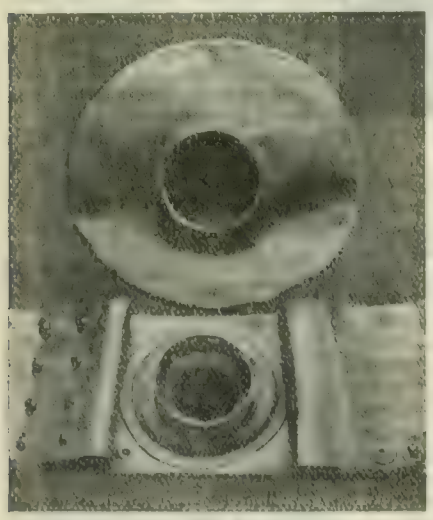


Fig. 7.

The next step is to clothe this loop of bowel with skin. Two rectangular skin flaps are marked out, one on either side of the original transverse skin incision (Fig. 5). A terminal incision starts at each end of this first incision, and is carried at right angles to it for about two inches; it then turns back at right angles, and is carried parallel to the first transverse incision to a point opposite its centre. The two rectangular skin flaps so included are now raised and hinged back, one on each side to the middle line of the transverse incision. These flaps are now applied to the two sides, inner and outer, of the bowel loop by undermining and approximating the sides of the transverse incision.

The skin flaps (Fig. 6) are then sutured together round the bowel, and it is best to suture the lower or

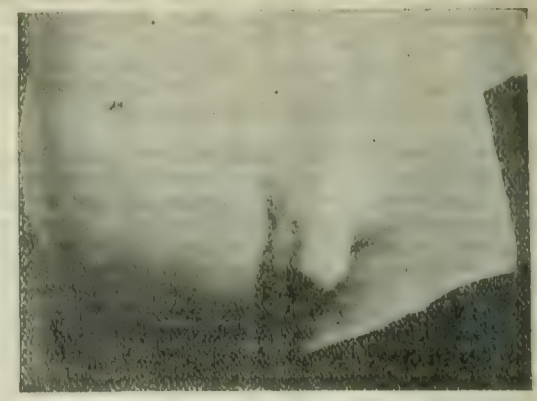


Fig. 8.

under edges first, in order to secure the union of the skin round the bowel on its lower side, as if there is much



Fig. 9.

tension the upper edges may be left unsutured, without much disadvantage to the result, provided the base of the



Fig. 10.

flaps are approximated. The square ends of the skin flaps are then lightly sutured to the bowel coat on a level with the mesenteric angle, so that when the bowel is

opened on the summit of the papilla a few days later there will be a good eversion of the mucous coat on either side resulting in a well-everted and patent muco-cutaneous stoma.

It is important to delay opening the bowel for some days if possible in order that primary union may take place between the skin flaps and the peritoneal surface of the bowel and between the sutured skin edges. In this way cicatricial contraction is prevented. If it should be necessary to open the bowel at the time of operation a glass tube should be tied in.

Figs. 8, 9, and 10 show the after-results—the teat-like colotomy anus so formed taken at varying intervals after operation in both male and female patients.

Fig. 7 shows the colotomy belt specially made to fit over the papillary anus.

One word in conclusion concerning the advantages, immediate and remote, which we may, I think, look for by this method of performing colotomy. From my own experience of the removal of the lower bowel for malignant disease, and from observation of cases operated on by other surgeons, I have learnt to regard any attempt to restore the continuity of the bowel by anastomosis, after the removal of cancer of any considerable portion of the lower rectum involving the sphincter area, as inadvisable.

The thought of the subsequent junction of ends has an inhibiting effect on the surgeon's mind. It tends to prevent a sufficiently free and wide removal of bowel and meso-rectum. It is very desirable that the whole of the upper area of disease should be attacked and freely exposed from within the abdomen, and the lower outlet and sphincters where necessary removed by a combined abdomino-perineal route. The whole sacral concavity can thus be swept clear of its lymphatic contents. Malignant disease of the lower sigmoid colon and rectum should, in fact, be dealt with on the same lines on which we now deal with cancer of the uterus—namely, by hysterectomy on the lines laid down by Wertheim.

In the former, as in the latter case, the structures in the pelvis should be freely exposed to view, and facility obtained for identifying, and if necessary isolating, the ureters and other important structures, and for removing the whole lymphatic area. This can only be carried out satisfactorily after a preliminary and permanent colotomy has been performed.

I am not without hope that by the method I have just described, or by further improvement of it, we may be enabled to render the daily lives of patients condemned to permanent colotomy much more comfortable. By thus more readily reconciling such patients to a state of things which has hitherto involved very serious disability, we may minimize one factor which has considerably retarded the progress of the efficient and radical surgical treatment of cancer of the rectum.

THE RADICAL ABDOMINO-PERINEAL OPERATION FOR CANCER OF THE RECTUM AND OF THE PELVIC COLON.

By W. Ernest Miles, F.R.C.S.Eng.,
Surgeon to the Cancer Hospital and to the Gordon Hospital for Diseases of the Rectum.

For several years past I have been struck by the great frequency with which recurrence follows perineal operations in the surgical treatment of cancer of the rectum and of the terminal portion of the pelvic colon. Indeed, my personal experience tends to show that it is a rule to which there are few exceptions, especially if the patients are kept under observation for several years afterwards. By perineal operations I mean any operation undertaken from the perineum and not some particular procedure such as is often described in textbooks under the head of perineal excision. Used in this generic sense perineal operations include excisions effected by the various methods of exposure such as Kraske's, Bardenheuer's, and the like.

It seemed to me that this frequency of recurrence was due to some fault in technique and in a too great conservatism in the removal of the tissue surrounding the diseased portion of the bowel. Consequently I made observations upon the spread of cancer from the rectum, and carried out the investigation under the following heads—namely, (1) the progressive spread of the disease in inoperable cases from the clinical aspect; (2) the *post-mortem* findings in patients who had died from inoperable cancer of the rectum; (3) the evidence of spread of the disease in the tissues surrounding the bowel observed during the performance of operations; and (4) the localities in which recurrences took place after excision.

In this way I have been able to determine that a cancerous growth in the rectum spreads in three directions, and invades the tissues either in the nature of a direct permeation, or as separate metastases; at any rate so far as naked-eye appearances show. The directions of spread are downward, lateral, and upward, and take place in the zones of tissue traversed by the lymphatic vessels. Thus we may speak of the zone of downward spread, the zone of lateral spread, and the zone of upward spread.

The Zone of Downward Spread.—The tissues in this zone consist of the wall of the bowel below the growth, the external sphincter muscle, the perianal skin, and the fat contained in the ischio-rectal fossa.

The Zone of Lateral Spread.—This comprises the levatores ani muscles, the fascia propria of the rectum, the pre-sacral connective tissue, and its contained lymphatic glands. In the male the capsule of the prostate gland, the vesiculae seminales, and the base of the bladder; and in the female the posterior wall of the vagina, the cervix uteri, and the base of the broad ligament with Poirier's gland.

The Zone of Upward Spread.—This consists of the bowel above the growth, the pelvic peritoneum, the pelvic mesocolon, particularly the border attached to the pelvic parietes with the adjacent peritoneum and the lymph nodes situated at the bifurcation of the left common iliac artery.

It is my object in this paper to show that the tissues contained in these three zones of spread are vulnerable to recurrence in any case of cancer of the rectum and of the terminal portion of the pelvic colon irrespective of the situation or the extent of the growth. For this purpose I shall deal mainly with my fourth line of investigation and set forth the inferences to be drawn from the post-operative recurrences, because it seems to me that this is of the most practical use to the surgeon.

I have made use of only those cases of recurrence which have occurred in my own practice, and have arranged them into five classes showing the types of operation I performed during the periods indicated by the dates of the operations. In my earliest cases, having but scanty knowledge of the spread of cancer from the rectum, I made many mistakes in fashioning my operative procedure, but these served a useful purpose and enabled me to extend the scope of the operation in order to include in each subsequent series those tissues which seemed most vulnerable to recurrence. Thus it will be seen that each series is an advance in that respect upon the preceding, and the whole may be regarded in the light of the gradual evolution of the operation which forms the basis of this paper, namely, the radical abdomino-perineal.

Class I.—In the 9 cases included in Class I, the disease was located in the upper part of the rectum in 2, in the ampulla in 4, and in the lower part in 3. The recurrences manifested themselves comparatively early, the average duration of immunity being twelve months, the shortest time being six months, and the longest eighteen months. The skin and the fat of the ischio-rectal fossa proved themselves to be the most vulnerable tissues, one or other of them having been involved by the secondary growth in all but one instance. In this series of operations, therefore, it was evident that two serious mistakes had been made—first, that the skin had not been removed widely enough; and, secondly, that the ischio-rectal fat had been imperfectly dissected away.

Class II.—In the next series of cases I remedied these faults by removing the skin widely, and by dissecting away as much of the ischio-rectal fat as possible. Of the 14 cases contained in this series the skin and ischio-rectal fat were implicated by the recurrent growth in 2 only. In one of these the skin was involved by the primary growth, and in the other the growth was extensive and had implicated the posterior wall of the vagina. In the remaining 12 the recurrent growths were situated at a somewhat higher level, the vulnerable tissues being the levatores ani, the prostate gland, and the base of the bladder. The position and the extent of the primary growths were similar to those in the preceding series, and therefore it can be safely assumed that the removal

of the skin and the ischio-rectal fat checked the recurrence so far as the downward zone of spread was concerned. The duration of the period of immunity from recurrence was about the same as in the preceding series, the longest being seventeen months, the shortest six months, and the average eleven months.

Class III.—In the next series of cases, all were suitable for resection, the growths being situated high up. In all of them recurrence took place early, the vulnerable tissues being the wall of the rectum itself and the fascia propria of the rectum. The recurrence in the wall of the bowel was undoubtedly due to the section having been made too close to the growth.

It was obvious from the study of the recurrences in this and the preceding class that the vulnerable tissues should be widely removed, and consequently I determined in the next series of cases to extirpate the levatores ani completely together with the connective tissue lining their upper surfaces: to dissect away the fascia propria of the rectum and as much of the pro sacral connective tissue as could be reached: to remove the capsule of the prostate gland when the growth involved the anterior wall of the rectum; to open up the peritoneal cavity, and to divide the bowel 3 in. above the uppermost limit of the growth.

Class IV.—Of the 11 cases included in Class IV in which the foregoing measures were carried out, only 2 recurrences took place in the region of the lateral zone of spread, all the others occurring in tissues situated above the field of operation. The vulnerable tissues in these cases were the wall of the pelvic colon, the peritoneum, and the pelvic mesocolon.

Class V.—It was necessary, therefore, in the next series of cases to extend the operation still further, and consequently I decided to remove as much of the pelvic colon and its mesocolon as could be reached. Of the 16 cases contained in this series, only 3 recurrences took place in the lateral zone of spread, all the others occurring above the field of operation, in the pelvic mesocolon and the pelvic peritoneum.

It is interesting to note that in the last two series the period of immunity from recurrence was considerably lengthened, several of the patients not having exhibited any signs of recurrence for over two years, while in 1 case thirty-seven months had elapsed. Moreover, the detection of early recurrence was due in several instances to the fact that the pelvic mesocolon could be palpated by the finger introduced into the lower opening of the colostomy. In some of these instances these early growths could not be palpated through the abdominal wall for several months after they were known to exist. Consequently, if colostomy had not been performed in these cases, a much longer period of immunity would probably have been surmised.

A careful study of the cases of recurrence in all these classes brings out the following points:

1. That a growth in the rectum, wherever situated, may lead to recurrence in the tissues comprising the zone of downward spread.
2. That a growth in the rectum, wherever situated, may similarly lead to recurrence in the tissues comprising the zone of lateral spread.
3. That a growth in the terminal portion of the pelvic colon may lead to recurrence in both the zones of downward and lateral spread.
4. That free extirpation of the tissues comprising the downward and lateral zones of spread generally prevents recurrence in the field of operation.
5. That, however free the extirpation of the tissues comprising the downward and lateral zones of spread may have been, recurrence will in all probability take place among the tissues of the zone of upward spread.
6. That the most complete and extensive perineal operation possible is, with few exceptions, quite inadequate for preventing a recurrence of the disease.

Up to the end of the year 1906 I had performed 59 perineal excisions, with 1 death, which, from the point of view of mortality was quite satisfactory, but, of the 58 patients who recovered, 54 are known to have suffered from recurrence. Of the remaining 4, 1 died seven years after the operation from some intercurrent disease and 3 remain well and are free from recurrence.

Such an experience as the above decided me to abandon perineal methods of excision and to rely solely upon an abdomino-perineal procedure. I therefore designed an operation which would enable me to extirpate the whole of the tissues comprising the zone of upward as well as those forming the zones of lateral and downward spread, for in this way only could one hope to check the tendency to recurrence. I have now performed this radical operation twenty-six times. These patients constitute Class VI.

Ten of them died within periods varying from twenty-four hours to twelve days after the operation, 1 is still in hospital, 1 left too recently to make any statement about him, 1 died thirteen months after operation without sign of recurrence, and 1 has not been since seen. This accounts for 14 out of the 26 patients. The remainder, 12 in number, are all still well and show no sign of recurrence after periods varying from a few months to over three and a third years. In 8 cases the period is over eighteen months and in 4 it is over three years.

The mere combination of the abdominal and the perineal routes in the extirpation of the cancerous rectum is not necessarily a radical procedure. The object of the combined operation is not so much to facilitate operative manœuvres as to safeguard the patient against the onset of recurrence. Such a desirable end can only be attained by a thorough eradication of all the tissues comprising the three distinct zones of spread. This is the only conclusion that can be arrived at from a correct interpretation of the facts in regard to the localities in which post-operative recurrence manifested itself. In the surgical treatment of cancer of the rectum there seems to be among surgeons a decided prejudice against two things—(1) The establishment of an abdominal anus, and (2) the loss of the natural sphincteric control—and consequently from time to time one sees reported in surgical literature cases in which an operation for cancer of the rectum has been carried out to the exclusion of one or the other or both of these. Some of these operative procedures are most ingenious in their inception and are very skilfully executed, but one hears little of the after-results. It seems to me that if the proximal end of the pelvic colon is left long enough to be brought down to the anus, the greater part of the zone of upward spread is left behind, and consequently there would be greater liability to recurrence than if the whole of the pelvic colon together with its mesocolon and adjacent parietal peritoneum were removed. However, there is room for much investigation on this point, and very valuable information would be obtained if the subsequent histories, extending over a period of at least three years, of patients who had undergone these less radical operations were published.

The radical abdomino-perineal operation carried out on the lines here advocated is one of the most formidable operations in surgery. In its execution, speed in operating is of prime importance. Generally speaking, the operation can be completed in an hour and a half, but it should be borne in mind that every minute that can be saved is of great importance to the patient. In my series of 26 operations, the longest time was one hour and fifty-five minutes, and the shortest one hour and seven minutes.

Preparation of the Patient before Operation.

Every patient with cancer of the rectum, whether the growth is causing stenosis or not, suffers from some degree of intestinal stasis with attendant auto-intoxication. Consequently at least a week should be spent, prior to the operation, in clearing the colon thoroughly. This should be done by mild daily aperients and intestinal lavage. The administration of small doses of salol during this time is also highly beneficial.

If there is decided stenosis of the bowel, and especially when there is evidence of hypertrophy and distension of the colon above the growth, either left iliac colostomy or a temporary cæcostomy should be performed two or three weeks previously. Personally I think that cæcostomy is the better in these cases. It is less risky, and acts equally well. During this period of preparation the patient should be kept in bed and given a light, easily assimilable diet. On the night before the operation, and again on the morning of the operation, a hypodermic injection of solution of strychnine (mlij) should be given.

Method of Operating.

This will be best described in its various stages. The patient should be placed in the high Trendelenburg position and the abdominal cavity opened by a median incision extending from the umbilicus to the symphysis pubis. I think this incision is greatly to be preferred to the one sometimes practised in the left linea semilunaris. The edges of the abdominal wound are then held apart by a self-retaining abdominal retractor, and a

general survey of the pelvic and abdominal cavities is rapidly made. Careful search should be made for small nodules of growth on the peritoneum, or upon the small intestine. In my experience the liver is seldom the seat of secondary deposits, unless there is general dissemination of the disease.

Division of the Colon.—The pelvic colon is now drawn up into the wound, and the distribution of the vessels in its mesocolon noted. A point in the colon is then selected between the distribution of the upper and middle sigmoidal arteries. Two stout silk sutures are then passed round the colon, about half an inch apart, and tied firmly.

Treatment of the Ends of the Colon.—The colon is divided with scissors between the sutures, and then the extremities are invaginated and buried by means of a purse-string suture. The distal extremity should be firmly closed in this way, so as to prevent leakage during the subsequent manipulation of this portion of the bowel. The upper extremity is temporarily laid aside until it is utilized for forming the colostomy just before the abdominal cavity is closed.

The Meso-Pelvic Colon.—The pelvic mesocolon is then divided with scissors directly backwards to within a short distance of the inferior mesenteric artery. The peritoneum on its outer side is then incised and a search made for the left ureter which lies close to and parallel to the inferior mesenteric artery in this situation. When found, the ureter is held to one side by an assistant and then a ligature is passed round the inferior mesenteric artery at a point between the origins of the upper and middle sigmoidal arteries. When the ligature has been firmly tied the remainder of the pelvic mesocolon is divided.

The Pelvic Peritoneum.—The peritoneum is then incised downwards longitudinally on either side of the parietal attachment of the pelvic mesocolon and about an inch away from it. These incisions are extended downwards as far as the recto-vesical pouch when they are continued round the lateral aspects of the pelvic wall to meet anteriorly just behind the base of the bladder. In the female subject the left broad ligament should be obliterated and the left ovary and tube removed. The lateral margins of the peritoneum are now dissected up for some distance so as to serve for the re-establishment of the pelvic floor.

Detachment of Pelvic Colon and Rectum.—As the blood supply has been cut off through ligature of the inferior mesenteric artery, this part of the operation can be proceeded with rapidly, and is practically bloodless. Commencing above at the point where the inferior mesenteric vessels have been divided, all the connective tissue over the bifurcation of the common iliac vessels containing the lymph nodes situated in that position is dissected carefully downwards as far as the promontory of the sacrum. The loose connective tissue plane situated in front of the anterior sacral ligaments is then opened up. By passing the index finger into this space the pelvic mesocolon and the fascia propria of the rectum are readily detached as far as the base of the coccyx. A similar method of blunt dissection is then carried out anteriorly, by which means the bladder is detached as far as the prostate gland. Attention is now paid to the separation of the lateral aspects of the rectum, and it is here that great care must be exercised to avoid injuring the left ureter, which adheres closely to the peritoneum as it skirts the lateral wall of the pelvis. When the left ureter has been defined it should be carefully freed as far as the base of the bladder. On the right side the ureter need not be seen, and if possible should not be disturbed. The dissection is then carried downwards on either side until the upper surface of the levator ani muscle is reached, the lateral ligaments of the rectum, which are recognized as firm vertical bands of fascia, requiring division with scissors. It is important that this separation should be carried down on all sides as far as the points indicated, lest considerable difficulty be experienced when the perineal portion of the operation is in progress.

Re-establishing the Pelvic Floor.—The pelvic colon and the upper part of the rectum which now lies loose in the pelvic cavity is then crowded downwards and covered with a layer of sterilized gauze. The lateral edges of the peritoneum are then brought together. It often happens that although these edges meet posteriorly a considerable gap is left anteriorly. In the male this gap can be readily filled by dissecting up the peritoneum from the bladder, but in the female the uterus itself may have to be utilized for this purpose.

The Colostomy.—An incision through the skin about 1½ in. long is now made about 1 in. internally to the left anterior superior iliac spine. The aponeurosis of the external oblique is then incised, and the fibres of the internal oblique and transversalis muscles are separated until an aperture large enough to admit the index finger is made. Through this small opening the stump of the proximal end of the gut is drawn and fixed in position by two silkworm gut sutures. The end of the bowel need not be opened up until the perineal portion of the operation has been completed.

Closure of the Abdominal Wound.—The toilet of the peritoneum is now made, and two or three pints of saline solution introduced into the abdominal cavity. The abdominal wound is then closed in layers in the usual way.

Perineal Portion of the Operation.

The Trendelenburg position having been dispensed with, the patient is turned over and placed in the right lateral and semi-prone posture. A purse-string suture is then inserted round the anus to prevent escape of its contents.

The Skin Incisions.—A transverse incision is first made at the level of the sacro-coccygeal joint, and from the centre of this a median cut is carried down to a point about an inch from the anus. From the lower extremity of the latter a semi-circular incision is made round the anus on either side, meeting anteriorly at the central point of the perineum. These last incisions should include as wide an area of skin as possible.

The Exposure.—The skin is reflected to the requisite extent on either side and the coccyx is removed. There is no need to cut away any of the sacrum. The remainder of the fascia propria of the rectum is then detached and the interval between the levatores ani muscles are defined. These muscles are then divided as far outwards as their origin from the pelvic wall. The pelvic colon and the rectum are drawn out of the wound, when it will be found the tissues comprising the lateral and downward zones of spread only remain to be divided. This should be done as freely as possible.

[A booklet containing printed tables recording all the important points in the 80 cases discussed in this paper was handed to members of the Section. Copies of it can, we understand, be obtained on application to Mr. Miles.]

DISCUSSION.

Mr. Douglas Drew (London) pointed out the importance of removing the whole of the area along which infection spreads. It was impossible to carry this out thoroughly and at the same time to re-establish the continuity of the bowel. He had done this in 2 cases, but in both a fatal result ensued from sloughing of the rectum. In 2 others he had done the same operation and given the patient a colostomy; these were well more than three years later.

Mr. Lockhart Mummery (London) agreed that the only operation which should be considered now for cancer of the rectum was one involving the total and *en masse* removal of the whole rectum and neighbouring lymphatic area. A colostomy opening for the bowel was not a necessity. By modifying the technique it was possible to restore the bowel and leave the patient with a new rectum formed from the colon, which became entirely satisfactory as regards control and function. In one case of a man upon whom he had operated seven years ago, he formed a new rectum from the colon, over which the patient had most satisfactory control. Most patients in his experience would refuse any operation at all if a permanent colostomy was the best they could be promised. The aim should be to improve and develop the operation and to complete the restoration of function, but the patient should not be left with a permanent colostomy.

Mr. C. J. Bond (Leicester) said it was the increasing necessity for a permanent colostomy after radical operation for the removal of cancer of the rectum, and the great desirability of removing some of the discomfort and disability which attended the establishment of an artificial anus as at present made that had led him to adopt the method just described by him of performing colostomy. If any great advance was to be made in the reduction of the percentage of recurrences after operation for cancer of the rectum it must be by means of a wider and more elaborately planned extirpation of the pelvic colon and the associated lymphatic area on the lines so well laid down in Mr. Miles's paper. In order to bring this about in many cases surgeons must reconcile themselves and their patients to the disadvantages of a permanent colostomy. The operation for the radical removal of cancer of the rectum was at present passing through those evolutionary phases through which the similar operation for cancer of the uterus also passed a few years ago. The removal of cancer of the rectum must proceed on the lines laid down by Wertheim as necessary in hysterectomy for cancer of the uterus. In other words, important structures like the ureters must be recognized and, if necessary, isolated, while the whole of the diseased structures within the pelvis and at its outlet, together with a wide margin of apparently healthy muscular connective tissues and bowel, both laterally and above and below the recognizable disease, must be swept away. To accomplish this satisfactorily in most cases meant a permanent colostomy, if the immediate dangers and the ultimate disabilities in the shape of cicatricial contraction and loss of control with a perineal anus were to be overcome.

Mr. Miles, in reply, said he could not agree with Mr. Lockhart Mummery that it was possible to perform an adequate operation if the tissues forming the pelvic floor were left *in situ*. It was true that patients did not like the idea of having a colostomy, but at the same time they should not be allowed to choose an operation which was bound, it seemed to him, to be followed by recurrence.

A CASE OF SECONDARY SUTURE OF THE CIRCUMFLEX NERVE.

By ROBERT KENNEDY, M.A., M.D., D.Sc.,
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THE patient was a labourer, aged 35, who was sent for operation from the electrical department. The history of the case is as follows:

On January 1st, 1908, while asleep, he was kicked on the back of his right shoulder. Next day his back and arm were discoloured, and he was unable to abduct the right arm, and the shoulder was painful. A fortnight later he came to the Western Infirmary and was seen by Dr. Taylor. He could then use the hand and elbow, but could not abduct the arm. Dr. Taylor referred him to Dr. Hay, and electrical treatment was begun. On August 25th—that is, nearly eight months after the accident—Dr. Hay referred him to me with a view to operation.

State on Examination.—He was unable to abduct the arm to an extent greater than about 30 degrees, and there was marked atrophy of the deltoid, the roundness of the shoulder having disappeared, and the sharp outline of the acromion being prominent. On testing the deltoid electrically no responses whatever could be elicited either with the interrupted or with the continuous current. This was not, however, the only defect. Dr. Hay, in referring the case to me, called my attention to a displacement of the scapula which was present, and on examination I was able to confirm the presence of a marked displacement of the lower angle of the scapula, which was very prominent. Also when the patient's hand was placed upon his opposite shoulder the deformity became very much more pronounced, the vertebral border also then being quite prominent. The level also of the scapula was changed. Thus the inferior angle of the right scapula was 2 in. higher than the corresponding part on the left side, and the former was closer to the middle line, the exact distance being 2 in. as compared with 2¾ in., the corresponding measurement on the left side. It was evident, therefore, that the inferior angle of the scapula had been displaced upwards and inwards in addition to backwards. No muscular atrophy other than that evident in the deltoid could be determined. One other indication was present, and that was hyperaesthesia over part of the area supplied by the circumflex nerve—namely, the area over the outer and upper aspect of the region supplied by the cutaneous branch of the circumflex. There was also an area here which showed dullness, and this condition was previously noted by Dr. Hay.

Treatment.—On account of the lapse of time (eight months) from the date of accident without sign of spontaneous muscular restoration, but, on the other hand, with marked evidence of advanced atrophy in the deltoid, it was decided to expose the circumflex nerve in the axilla. The development of hyperaesthesia over part of the cutaneous distribution was not regarded as a sign of efficient restoration of the nerve, and, with evidence of progressive wasting of the deltoid, the probability of a spontaneous restoration of function was very remote. The operation took place on August 26th, 1908. An incision, 6 in. long, was made from the posterior margin of the axilla downwards and forwards to the middle axillary line. The long thoracic nerve was exposed and found to have a normal aspect. The serratus magnus was then examined, and appeared to be healthy and well developed. Stimuli were then applied to the nerve, and prompt and vigorous contractions of the serratus were the result. The serratus magnus had therefore nothing to do with the malposition of the scapula. Next, the circumflex nerve was sought, and this was easily found, as it passed through the quadrilateral space to wind round the humerus. The nerve was found swollen, as is commonly the case with damaged nerves, and about an inch proximal to the point where it leaves the axilla the damage was found. Two bulbous ends—a larger central and smaller peripheral—were united by a thin band of cicatricial tissue. Stimuli applied at different levels of this nerve above and below the damage failed to produce any response in the two muscles. The two bulbs with the intervening cicatricial tissue were excised and the two nerve ends united by catgut.

Result.—The wound healed by first intention, but after the first month I had not an opportunity of seeing the patient for about six months, and at that time restoration of function was found to be considerably advanced. He stated that no improvement occurred for several months, and that by five months from the date of operation he could raise the arm above his head. When examined on February 24th, 1910—that is, eighteen months after the operation, the following is the report of his condition: He was able to abduct the arm normally, and to raise it above his head almost quite as well as he could his left arm. The volume of the deltoid was not quite as great as that of the right muscle, but it was well filled up, rounded and firm, and was felt contracting well when the hand was placed upon it while he was abducting the arm. The malposition of the scapula had almost entirely disappeared. A slight prominence of the inferior angle was seen, but it was trivial. When he placed the hand on the opposite shoulder there was no outstanding of the vertebral border, such as formerly suggested "winged scapula." The level of the scapula also corresponded with that of the left side. As regards the cutaneous distribution, the area which before operation was hyperaesthetic began a few months after the operation to develop a disagreeable sensation, which he describes as a gnawing sensation. This had now very considerably disappeared, but an area now measuring 3½ in. by 3 in. on the outer and upper aspect of the arm was still not quite normal. Light touch was felt everywhere, but not quite so clearly as over the corresponding area in the other arm. Deep pressure caused a slightly painful sensation. The prick of a needle in any part of the area was at once appreciated as pain, but it was not so keen as on the opposite corresponding area, and on other parts of the arm outside of the affected area. The sense of thermic difference was quick and correct. There was still a slight sense of gnawing in the part, but it was very much less than formerly, and was gradually becoming less.

Final Result.—When seen again last June, that is, twenty-two months after operation, further improvement had taken place in the four months which had elapsed since he was last seen, and now the muscle was well developed and powerful, and enabled him to raise his arm practically to the normal extent.

OBSERVATIONS.

The portions of nerve removed at the operation were found joined together by a portion of tissue presenting the appearance of connective tissue. These portions were all removed in one piece, and this was fixed with Müller's fluid and cut into a complete series of longitudinal sections by imbedding in paraffin with the object of ascertaining the amount of nerve union. One of the sections chosen from the middle of the series, where the approximation attained by the central to the peripheral end is closest, shows a portion of the central swelling terminating in a knob-like end, and also a peripheral swelling or bulb of smaller dimensions. These two ends are sharply demarcated from the connective tissue which holds them together. That connective tissue presents the usual appearance of cicatricial tissue, but about its centre can be seen evidences of bridging between the two ends by a few nerve fibres (Fig. 5).

The number of these nerve fibres is not sufficient to constitute a proper union of the nerve, but may account for the development of the type of sensation which appeared in the area supplied by the cutaneous branch of the nerve—namely, hyperaesthesia. They did not prevent the deltoid from continuing to atrophy to an extent that even its galvanic irritability could not be elicited.

The microscopic appearances here are of much interest as showing the very close proximity in which nerve ends may lie without being able to make a union by nerve substance sufficient to enable normal conductivity to be restored, and in this case the cicatricial tissue intervening does not appear to have been of a very dense type likely to have interfered with the process of regeneration merely by its compressing force. Also the time which elapsed before the specimen was removed at the operation, namely, eight months, renders it improbable that an efficient union would have taken place had further time been allowed to elapse.

The explanation which appears to me to be the correct one is that the cause which prevents the union of the divided ends is that which was produced at the time of the accident, namely, bruising and laceration of the tissues in the immediate neighbourhood. The result of this is that at the commencement the process of nerve union is interfered with and prevented from taking place, and the two nerve ends instead of being united by nerve fibres become enclosed in a covering of cicatricial tissue which hinders subsequent efficient union. Inadequate paths may bridge across the gap, as in this case, but if anything prevents the efficient union being laid down at once it will stand a poor chance of forming later on.

Where a nerve is divided without much bruising to the surroundings, as in an aseptic operation, it is well known that union is the rule, even although the ends are not left quite in apposition and frequently even although they should be left considerably separated; but it is quite otherwise where the nerve ends are left even in close apposition in the midst of bruised or otherwise seriously damaged tissues, even although these injured tissues are not in communication with a wound and are free from the action of organisms.

With reference to the complete recovery which has taken place in this case in consequence of the surgical intervention I should like to contrast with that the result which might possibly be attained without such intervention. Frequently these cases remain with permanent loss of function, usually with impaired function. In this

case at eight months there was practically no improvement in the movements, but it is well to remember that it is possible for very considerable restoration of function to take place although the deltoid remains permanently atrophied and consequently useless. This restoration of function is wholly vicarious, and is produced by hypertrophy and overaction of the muscles which rotate the scapula, and which normally are called upon to rotate the scapula in order to enable the arm to be elevated, normally acting in association with the deltoid. With a completely destroyed deltoid these muscles by overaction may take up much of the function of the deltoid, aided perhaps by hypertrophy and additional action of the supraspinatus. Some years ago I published in the Journal[3] a case of this kind, with photograph of the patient elevating his arm, and reference to that paper will show the astonishing degree to which this vicarious function can develop. Thomayer[2] and Bäumler[1] had previously published observations of the same kind, but in their cases the vicarious restoration had not proceeded to any great extent. I have not met with another case resembling that which I published, and possibly it is altogether exceptional.

It may be noted also that the patient who exhibited that recovery was most persevering with his efforts to develop his muscles, and it is probably only under such circumstances that appreciable vicarious function would develop. Even with these efforts the vicarious restoration became efficient only after about eleven months of hard exercises, and at the end of a further period of six months did not enable him to do a hard day's work without exceptional exhaustion. Even in that very marked case of vicarious restoration the extent to which the arm could be elevated fell considerably short of the normal, whereas in the case which I now publish the suture of the nerve has restored the movements quite to the normal.

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ON CERTAIN FACTORS THAT INFLUENCE THE IMMEDIATE RESULTS OF SURGICAL OPERATIONS

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Asepsis and anaesthesia are the foundations upon which surgeons of this generation have based the development of a practice so efficient that the mortality rate of the leading operators in all parts of the world in uncomplicated major operations is approaching the vanishing point. This rise in efficiency has evolved from increments contributed by many men, and through a generous dissemination of knowledge. An almost startling proportion of the progress has consisted in ridding our technique of traditional mistakes. But there still lies before us the difficult problem of bringing relief to patients who require operation in the presence of some serious handicap. In these cases we must not only omit the errors of the past and practise the virtues of the present, but we must find new and fundamental methods. In the few remarks I have the honour to make, I hope to offer some suggestions as to the directions of investigation that have seemed to me to hold promise. I shall therefore limit myself to a group of operations from which our present mortality tables are largely gathered. I shall consider those patients who are impaired (1) by infection, (2) by anaemia, (3) by shock, and (4) by psychic influences, and I shall discuss these topics especially with reference to their effect upon the brain cells, and from the restricted view-point of the immediate operative results.

So familiar are the functions of the cells of the brain that we scarcely realize that those functions are the most consequential facts in Nature. Is it not inspiring to contemplate that the brain cells have probably descended in an unbroken succession of generations since before the Cambrian period—many million years—and that during this vast period of descent these cells have transmitted with infinite precision the changes wrought upon them by environment, and that their marvellous manifestations of activity which we behold about us to-day are but an accumulation of variations in Nature, aided by natural selection and inheritance, thus binding them—that is, ourselves—to the entire past? These brain cells are the dominant cells of organic life, and have existed amid the vicissitudes of change with less alteration than even the crust of the earth. Whether they be lodged in man or in the lower animals, they are related to and obey the same general biological laws, and their discharge of energy is governed by the laws of inheritance and of association.

Nature has shown her appreciation of the cells of the nervous system by her extraordinary care in providing an efficient protection against traumatism, and by a remarkable provision for a constant blood supply. The mechanism of these nerve cells is exquisitely balanced, and their metabolic processes are the highest in the organic scale. It should surprise no one to find these cells sensitive to toxins, to anaemia, to trauma, to certain drugs, and to certain psychic influences.

While engaged with me in a research on anaemia and shock, Dolley found that the morphologic law of alteration in nucleus plasma relation in protozoa subjected to fatigue, to hunger, or to cold, enunciated by Hertwig, applied to the cells of the brain. Utilizing this observation, Drs. Austin and Sloan investigated with me the changes in infections, certain drug poisons, trauma, and fear.

In the early stages of acute anaemia, of shock, of fear, and of strychnine poisoning, there is an increase in the size of the cell and in the amount of Nissl substance. This probably indicates an increased functional activity of the cell. In toxaemia this stage is not seen. In the later stages of cell changes, whatever the cause, the morphologic alterations are similar. A summary of the morphologic alterations seen in shock will therefore suffice for those seen in anaemia, in toxins, and in fear. Quoting from a previous paper:

> In uncomplicated surgical shock in animals of various grades of severity produced by trauma under ether anaesthesia, in which the anaemic factor was wholly excluded by transfusion, there were corresponding changes in the structure of the nerve cells in all parts of the brain, and an alteration in their reaction to the Nissl stain as well. The structural changes of the cells include alteration in the absolute size of the cells; in the size relation of the nucleus and cytoplasm; in the membrane surrounding the cell and the membrane surrounding the nucleus; and, finally, in the general contour of the cell. As to the gross size, the increase varies from slight to even eight times the normal. In the normal there is a certain relation between the size of the nucleus and the remainder of the cell. In shock the nucleus becomes relatively larger. In the normal the membrane surrounding the cell and that surrounding the nucleus always presents an unbroken continuity; in severe shock these limiting membranes may be extensively ruptured, affording no restraint to the forces that produce distortion of the cell structure. In extreme cases the cell completely loses its contour and presents the appearance of a disorganized mass of protoplasm. As to the changes in their reaction to the Nissl stain, there is at first an increase in the amount of the Nissl staining substance; later, as the degree of shock is increased, the reaction to the stain diminishes; and in the final stages there is little or no staining reaction. Even in cases of fatal shock only a certain proportion of the cells are thus altered.

On morphologic grounds, when the nucleus, the nucleolus, and the cell body become so altered as to leave an undifferentiated mass of protoplasm, the cell is certainly dead and will never regenerate. This probably constitutes a part of the so-called wear and tear of life. The gravity of a given case of shock is indicated by the percentage of cells that are thus broken down and killed. The damage of pure trauma without anaemia is manifested in the cells of the cortex, of the cerebellum, and of the medulla as widespread as the symptomatology. The spinal cord is little, if at all, affected. Nerve cells that have been impaired by overwork, anaemia, infection, drug poisons, shock or fear, obey the same general law of morphologic change. Therefore the changes that are seen in the brain cells are not in the least specific for any one factor—at least, not in the diseases and injuries and by the methods we have thus far studied them.

Anaemia.

Anaemia of the brain was studied in animals killed by chloroform or suffocation, then resuscitated by centripetal arterial infusion of adrenalin and rhythmic pressure upon the thorax.

In acute anaemia of the brain changes, varying from temporary hyperchromatism through every stage down to the death of the cell, are seen. The appearance of an increase in the Nissl substance immediately following anaemia is probably due to a final effort at compensation. The potential energy of the cell is soon expended. If this effort does not result in an efficient circulation through the brain, collapse and death must follow.

This is a fact of great clinical importance. The practical lesson is that we should not permit our patients to continue in the state of anaemia long enough to reach this fatal cycle. There is another point with reference to anaemia of the brain which has both a philosophic and a practical point of view. In our work on resuscitation we found, in agreement with Hill and with Stewart, that the various parts of the brain were not equally affected by a given degree of anaemia. The vasomotor and the respiratory centres are less affected than the cerebral cortex. We have been able so to time the resuscitations that the cortex was destroyed and the medulla lived. In a general way it would seem that the resistance to anaemia is governed by phylogeny—the older the function the more resistant it is to anaemia. Experimental decerebrates may in this manner be created at will. In two cases of resuscitation in the human, Dr. Sloan and I confirmed many of the foregoing phenomena. From the time of resuscitation until death, six and twenty-four hours respectively, no part of the brain phylogenetically younger than the vasomotor and the respiratory centres functionated. The individuals as such were dead, while the circulation and the respiration, whose failure was awaited to complete death, were fairly good.

A brain damaged by anaemia impairs the surgical risk.

Infections.

We examined the cortex, cerebellum, and medulla in the following *classes* of infections:

(*a*) Staphylococcus and streptococcus peritonitis.
(*b*) Toxaemia from gangrene of the intestine and from the expressed juice of gangrenous infected tissue.
(*c*) Acute streptococcaemia in a young human adult.

The experiments on intestinal gangrene may be worth special mention. On removing the clamp that caused the obstruction that produced gangrene the animals soon died. If the obstruction was unreleased, the animals died, but later. Even when a previous entero-enterostomy had been made and the isolated coil was used for the experiment, death still occurred. As a rule there was no peritonitis, and death took place in from twelve to twenty-four hours. If a complete resection of the gangrenous segment was made, death nevertheless occurred in about the same time, but by making an external drain in the experimental loop the animals lived. These results were at once explained by injecting a very small quantity of the juice expressed from the tissue of the gangrenous coil subcutaneously, intravenously, or intraperitoneally, into a sound animal. Even when the juice was injected by a hypodermic needle into the lumen of the normal bowel, serious illness followed. The symptoms were precisely the same as those so frequently observed following resection for gangrene of the bowel in man. The coincident widespread impairment or destruction of the animal's brain cells told the entire story. Undoubtedly, at the time of the operation of resection a sufficient amount of the toxins had already been absorbed and fixed in the brain cells to cause death; or, if there had not been toxins enough, death was made more certain through the amount of poison squeezed into the circulation by our wholly unguarded manipulation of the gangrenous gut. Had we realized the deadly poisonous nature of the fluid we thus heedlessly pressed into the circulation, we would have altered our technique by clamping off the circulation through adjacent healthy tissue before dividing the strangulating ring. I have practised this method since I have understood that the fatalities in these cases are due principally to a toxic destruction of the brain cells. In the streptococcaemia patient I could well understand the delirium and the unconsciousness when I beheld the destruction of his brain cells. This is probably the key to the rôle the infections play in the immediate surgical risk and in the convalescence. Is it not possible that, in some instances at least, the gross lesion at the seats of the peripheral focus of infection is of less importance than the microscopic lesion in the brain cells?

Fear.

Contemplating the paralysing influence of fear on both man and the lower animals, and the great rôle played by fear in surgery, we investigated the question as to whether or not uncomplicated fear caused morphologic changes in the brain cells of rabbits. Killed in the midst of fright the brain cells showed an increase in the Nissl bodies and in the size of the cells; killed several hours after the fright there were seen the changes described in the later stages of experimental shock. This statement is based on a study of the microchemical stain, the measurement of the cell body and the nucleus compared with a corresponding series of normals run through by a parallel technique. Uncomplicated fear in rabbits causes widespread morphologic changes in the brain cells. The maximum change was seen in the cortex and in the cerebellum, less change in the medulla, and none in the cord.

We may summarize the preceding as follows: Trauma, anaemia, infection and fear, cause definite, easily demonstrable changes in the brain cells. These changes vary from alterations in the quantity of Nissl's substance, the size of the cell, the relation between the nucleus and the cytoplasm, and finally destruction of the cell.

In a case of infection the cells might be as effectively further damaged by haemorrhage, by trauma, or by fear, as by more infection; in a case of anaemia the brain cells might be as effectively further damaged by infection, by trauma, or by fear, as by more haemorrhage; in a case of shock the brain cells might be as effectively more damaged by toxaemia, by haemorrhage or by fear, as by more trauma; in a case of Graves's disease, the brain cells may be further damaged by infection, by haemorrhage, by shock, and by fear, as well as by the administration of thyroid extract or by psychic stimuli. Trauma, anaemia, infection, and fear, singly or in combination, damage the brain cells, and so influence the immediate surgical risk. Patients handicapped by shock, anaemia, or infection, have therefore a decreased margin of safety. These factors stand as a fixed charge; the surgeon must, therefore, reduce the expenditure of vitality incident to the operation. In some cases the reduced margin may be partially restored by a certain procedure to be later mentioned. In this group of handicapped cases, if operations are to be more safely performed, new methods must be employed. The new methods relate to the anaesthesia and the operative technique.

First discussing inhalation anaesthesia, I have been struck with the contrast between the degree of shock in operations under nitrous-oxide-oxygen anaesthesia and ether anaesthesia. Based on observations on 1,220 major operations under nitrous-oxide-oxygen anaesthesia, and a laboratory research consisting of administering as nearly as possible an equal amount of trauma in two series of animals, one series under nitrous oxide anaesthesia, the other under ether anaesthesia, making blood-pressure tracings during the application of the shock producing trauma, and making neurocytologic studies of the brains, the following statements seem warranted:

The blood pressure in the nitrous oxide series showed far less change than in the ether series. In a large number of cells, counted and studied in shock experiments the number of cells destroyed in the ether series was no less than four times as great as in the nitrous oxide series.

In the clinic the difference is certainly no less striking. We must conclude that either nitrous oxide acts as a protective against shock, or ether predisposes to shock.

As to anaesthetics in the infection, contrasting the immediate and the post-operative results in 75 consecutive cases of acute perforative appendicitis operated on under ether anaesthesia, and 75 under nitrous oxide anaesthesia the average pulse-rate in the ether series at the time of operation was 114, and during the twenty-four hours after the operation the average increased to 122. The average pulse-rate in the nitrous oxide cases at the time of operations was 115, and during the first twenty-four hours after the operation the average fell to 105. There was in these cases an average difference during the first twenty-four hours of 18 beats in favour of the nitrous oxide cases. In other respects the nitrous oxide patients were equally better off. Nausea and vomiting following nitrous oxide is inconsequential as compared with ether. Graham of Chicago has shown by experiment that ether causes

distinct impairment in immunity. In not a single instance following nitrous oxide anaesthesia did the patient follow the acutely accelerated course to death, as I have occasionally observed following ether. I am quite certain that in a close case etherization *per se* would sufficiently impair the patient to cause death.

Among the factors under consideration—shock, fear, and anaemia are to the greatest degree controllable; indeed, as I shall hope to show, in many instances are under complete control. We will first consider shock and fear.

Turning to surgical shock, if we would prevent it we must first understand the cause. Between our inner selves and the environment in which we are immersed there intervenes the skin, in which are placed numerous nerve endings which act as specific receptors for conveying pertinent information to the brain. In the deeper parts other receptors are found. The receptors whose specific duty is that of warning against harmful influences are called nociceptors (Sherrington). These are found only in the part of the body which, in the course of evolution, has been subjected to injury frequently enough to be of selection value. Thus, the abdomen, the feet, the hands, and so on, have numerous nociceptors, and are, therefore, shock-producing territories on the receipt of adequate stimuli. Because the brain has been protected through the vast ages, it has no nociceptors, and trauma is, as my experiments seem to show, incapable of producing true surgical shock. It follows, therefore, that the various regions of the body have shock values somewhat in proportion to the number of nociceptors.

The causes of shock are fear and adequate trauma of tissue that contains nociceptors. Trauma and fear are phylogenetically of near kin, having arisen from the same general cause and act in a similar manner. Both cause a pathologic discharge of nerve energy, which may be followed by exhaustion, just as the erotic feeling is produced by adequate psychic or mechanic stimuli. Now the factor of fear may be almost wholly excluded by management of the patient, and in part by the administration of morphine or scopolamine, or both. The other shock-producing factor—trauma—may be excluded by interrupting the physiologic connexion between the brain and the field of operation by the use of local anaesthesia, whether by infiltration, intraneural, or by the spinal method. By excluding both the psychic and the traumatic factors, shock itself is excluded. The factor of anaemia may be completely controlled by the direct transfusion of blood, provided, of course, it is done before there is destruction of the brain cells.

The foregoing principles may be illustrated by indicating their application to several types of cases.

In cases of senile and diabetic gangrene we have types of handicapped patients. The practice in these cases should be gas and oxygen anaesthesia; in younger subjects morphine and scopolamine, to protect the cortex against fear—in the aged senility alone is sufficient protection against fear—infiltration anaesthesia of the skin; intraneural anaesthesia of nerve trunks, no tourniquet, sharp division of the soft parts to the bone, division of the bone with a Gigli saw, gentle retraction of flaps, tying of vascular trunks in continuity, securing all vessels en route, maintaining a dry clear field. As far as possible all handling should be on the distal side of the field—in short, a feather edge technique. Since following this plan I have made twelve amputations, for gangrene of the leg, without a fatality. Indeed there is usually no noticeable operative effect.

Graves's Disease.—A study of 120 operations for Graves's disease convinced me that in Graves's disease there is a hypersensibility to trauma and to fear—the two primary factors in surgical shock. Hence operation upon any other part of the body having nociceptors would cause the specific reaction seen in Graves's cases—a reaction sometimes called hyperthyroidism—as readily as operations upon the neck. Therefore, by excluding completely by a special method the psychic factor and anaesthetizing the field of operation with cocaine as carefully as though no inhalation anaesthesia were being given—that is, by controlling both the cortex and the periphery, one by inhalation anaesthesia and special management, the other by local anaesthesia—the central nervous system is completely isolated—marooned—and no reaction follows. This technique has wholly altered the immediate operative results.

Pathologic intracranial tension threatening total anaemia of the brain constitutes an especially grave handicap. Recent researches have shown that the brain cortex cannot endure total anaemia more than six and a half to eight minutes. The high blood pressure in these cases is, it seems, due to an effort on the part of Nature to protect the brain against anaemia. By the general surgeon increased intracranial pressure is encountered most frequently in intracranial haemorrhage and in depressed fractures. In these cases a high pressure should be maintained until the pathologic intracranial tension is relieved. If the patient is comatose, or nearly so, no general anaesthesia should be used. With cocaine as an anaesthetic, one may turn down an osteoplastic flap, or at least may open the skull. Should a general anaesthesia be needed, a momentary nitrous-oxide-oxygen anaesthesia which does not lower the blood pressure may be used with advantage.

Many of these head cases, formerly operated upon by routine methods, without due appreciation of the imminence of and the disasters following total anaemia of the brain for even a few minutes, were, as I believe, dispatched by the unintelligent technique that was intended to give relief.

In the acute surgical infections, especially of the abdomen, one should guard against any further lowering of the immunity of the patient, and further injury of the brain cells. This is, perhaps, best accomplished by giving nitrous oxide instead of ether because of the specific damage of ether to immunity and because of our clinical evidence that nitrous oxide produces no such damage, and by a minimum trauma as so strongly urged by Murphy.

Fear, as an active agency in further damaging the already impaired nerve cells, should, as I interpret the evidence, be especially avoided. In addition to specially orienteering morphine and scopolamine are therefore useful.

Patients handicapped by a seriously depressed vitality from long-continued infection or by starvation or loss of blood may be reclaimed in a remarkable manner by the direct transfusion of blood. By this technique such hazards as resection of the stomach in emaciated, starved subjects, in haemorrhage from gastric ulcer, gastro-enterostomy in a starving infant with congenital pyloric stenosis, and a number of otherwise hopelessly handicapped patients were successfully carried through the indicated operation. Then, too, in certain cases of pathologic haemorrhage, and in post-operative haemorrhage, transfusion is occasionally a life-saving resource.

Post-Operative Neurasthenia.

We have been so engrossed in our technique and in the lesions of the various organs and parts of the body that we have almost forgotten the all-important normal brain. I have been astonished to find to what extent the public have come to expect nervous disarrangement for from six months to a year after operations—about as long as is required to recover from a nervous breakdown or from the acute phenomena of a major grief. In more than 1,000 cases I observed as to this point I found that harmful mental impressions could be greatly minimized by giving morphine and scopolamine prior to operation, by making the least possible show of preparation, and by the administration of the innocuous nitrous-oxide-oxygen anaesthesia, and in particular cases the addition of local to general anaesthesia—that is, a peripheral as well as central dissociation. To needlessly expose a sensitive, highly organized brain to the naked perception of the possibility of death from an operation is like uncovering a photographic plate in the bright sunlight to inspect it before putting it into the camera. Inasmuch as it is now established that brain cells may be morphologically altered by psychic and by traumatic stimuli, and that the psychic stimuli may be excluded by morphine and special orienteering, and the traumatic stimuli by cocaine blocking, it follows that the brain may in many operations be wholly isolated from all impulses, so that no post-operative nervous impairment follows.

Conclusion.

The dramatic period of surgery based on gross anatomy culminated in the days of the Coopers and the Potts. The enunciation of the principles of asepsis by Lister, and the discovery of anaesthesia by Morton and Simpson, opened a new era in which the human body was dissected to its last microscopic analysis. Operations of magnitude not dreamed of by the old masters are now performed in the farthest outposts of the civilized world, with a mortality in good risk patients that is approaching the vanishing point. It would seem that this era of the great triumvirate of

anaesthesia, asepsis, and pathologic anatomy is nearing its zenith. Is not the next great impulse which is even now being given, and principally by Englishmen—among whom no one has contributed more than your distinguished Chairman—is not this impulse in the direction of our final goal? Are we not on the threshold of the era of physiology, the interpretation of the laws of life itself?

So long have we directed our attention upon tumours, infection, and injuries, that we have not sufficiently studied the vital force itself, and we have viewed every anatomical and pathologic part as an entity, and man as an isolated phenomenon in nature. May we not find in the laws of phylogeny and association the master key that will open to us the explanation of many of the pathologic phenomena as they have already explained many normal phenomena? And may medicine not correlate the pathologic phenomena of the sick man with the forces of evolution, as the naturalists have correlated the phenomena of the sound man, and disease as well as health be given its evolutionary setting?

THE OPERATIVE TREATMENT OF CHRONIC MUCOUS AND ULCERATIVE COLITIS.

By P. LOCKHART MUMMERY, B.C., F.R.C.S.,

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IN considering the surgical treatment of these conditions we must bear in mind that mucous colitis on the one hand is a condition that is not even remotely fatal, while ulcerative colitis on the other hand is a very fatal disease, more serious than acute appendicitis, and with an untreated mortality of over 60 per cent.

Chronic mucous colitis is a condition which only calls for operative treatment in severe cases when medical treatment has failed to give relief. The majority of cases will yield with time and patience to suitable non-operative treatment, and it is only in very severe cases that operation is indicated, and only then when the patient is seriously incapacited by the condition. In any case, operations which involve serious risk to life are not permissible.

Before considering the question of operative treatment in cases of chronic mucous or membranous colitis it is necessary to verify the diagnosis by sigmoidoscopy. If this is not done good results cannot be expected from operative treatment. My experience has been that more than half the cases of so-called chronic mucous colitis are not suffering from colitis (that is, inflammation of the colon) at all, but from some other condition of the colon which is causing excessive mucous secretion. It may be accepted as an axiom that any lesion which causes either a local or general irritation of the colon may give rise to the passage of mucus in the stools either in the form of shreds or membrane. Before attempting, therefore, to treat any case of mucous or membranous colitis it is essential to verify the diagnosis or failure is more than likely to be the result.

Leaving out of account those so-called cases of mucous colitis in which the symptoms are secondary to some lesion of the bowel other than inflammation of its walls, and in which no colitis can be demonstrated by sigmoidoscopy, there are two methods of treating mucous colitis by operation:

1. Giving rest to the colon by colotomy, or ileo-sigmoidostomy.
2. By establishing an opening in the caecum, through which the colon can be washed out.

Both these methods have given satisfactory results as regards curing the condition, but we have to take into consideration that mucous colitis is not a fatal disease, and that it is, therefore, hardly justifiable to perform an operation such as ileo-sigmoidostomy, which is inevitably accompanied by a serious risk; or, on the other hand, to perform a right-sided colotomy, which will seriously and often permanently invalid the patient. Indeed, most patients will prefer to put up with the colitis rather than suffer the inconveniences of a colotomy opening on the right side; and a left inguinal colotomy, though the operation has sometimes been performed for this condition, is obviously useless, as it does not get above the disease. Moreover, in the case of a right-sided colotomy, it is impossible to promise the patient that the colotomy can subsequently be closed without risk of the colitis recurring.

The second method—namely, by the performance of appendicostomy—has none of these disadvantages. The operation is practically free from risk, and the artificial opening for irrigation purposes thus established does not cause the patient any inconvenience whatever, and he is in no way incapacitated by its presence.

The results of appendicostomy in cases of chronic mucous colitis are good. The patients rapidly improve in general health, they put on weight, often with surprising rapidity, and the neurotic symptoms, which so frequently accompany the condition, disappear. I have several times seen patients who had previously been chronic invalids become quite ordinary active people as a result of keeping the bowel washed out for a few months.

Cases.		Results.		Remarks.
Author	6	Cured	4	All well over a year later; there were slight temporary relapses in tw cases.
		Improved	1	
		No better	1	
Edwards	1	Cured		
Tuttle	2	Cured	1	
		Improved	1	
Willis	1	Cured		
Keetley	3	Cured	2	
		No better	1	
Moynihan	1	Cured		
Armour	1	Cured		
Stretton	3	Cured	1	
		Improved	1	
		No better	1	
Grey	1	Recovered		Slight relapse two years later.
Pringle	1	No better		
Total	20			

Cured, 13; improved, 3; no better, 4. Slight relapses in 3 cases.

Slight recurrences of the colitis occasionally take place, but are quickly recovered from by resuming the irrigation of the bowel, and in a majority of the cases a complete cure results.

Cases have been recorded in which no improvement followed appendicostomy, but there is strong presumptive evidence that these were not cases of true colitis; thus in three such cases which have come within my own knowledge there was no positive evidence of colitis, and in one of them the patient was subsequently discovered to be suffering from cancer of the sigmoid flexure. The following is a good instance of the importance of a careful sigmoidoscopic examination before proceeding to treat a case for chronic mucous colitis:

J. B., a man aged 41, had for some months been treated for chronic mucous colitis, without any improvement. His symptoms began about eighteen months before I saw him. There was intermittent colicky abdominal pain and discomfort, accompanied by the passage of much thick mucus in his stools. The bowels were very constipated with an occasional attack of diarrhoea, when little but mucus was passed. There had never been any blood in the stools. He looked in good health, and had not lost weight. His appetite was good, and he had been attending to his business up to the time I saw him.

An examination with the sigmoidoscope showed no colitis, but I was able to see a cancerous growth about the size of a two-shilling piece at about the centre of the pelvic colon. This was subsequently resected and the patient recovered.

I had a similar case last year, in which a woman, aged 42, supposed to be suffering from chronic colitis, was found on examination to have a small cancerous polypus in the colon. This was successfully resected.

Ulcerative Colitis.—This condition, unlike chronic mucous colitis, is very serious and often fatal. In the cases which I collected two years ago for the Jacksonian essay, the mortality in unoperated cases was 78 per cent., while in the discussion on ulcerative colitis, which took place at the Royal Society of Medicine in January, 1909, the figures from different London hospitals showed a mortality in all cases of over 50 per cent. I feel certain that this mortality can be almost entirely done away with

by early appendicostomy in all cases of ulcerative colitis. Appendicostomy enables the condition to be controlled almost immediately, and if performed early will save the patient's life.

The operation is not a serious one, and can be performed very quickly in most cases. It has the further advantage, as compared for instance with caecostomy, that it does not result in an unpleasant faecal opening or in any incapacity whatever. When not being used, the opening causes no inconvenience, and does not necessitate the wearing of any apparatus.

Ulcerative colitis is a condition which can be easily diagnosed; the only condition with which it is likely to be confused is enteric fever, and from this it is easily distinguishable by Widal's reaction or sigmoidoscopy.

I have only met with one case in which the operation failed to save the patient's life, and that was a case of very severe acute pneumonic colitis, in which the operation was not performed till over a fortnight after the onset of the condition. Even then the colitis cleared up, but the patient died from complications.

I wish to urge the importance of immediate appendicostomy in all cases of ulcerative colitis, and I feel convinced that if this treatment is adopted we shall do away almost entirely with the present very high mortality of this disease.

I daresay it will be said that many cases of ulcerative colitis do recover without operation. This is undeniable, but recovery in these cases is in my experience a long and tedious process with frequent relapses, and it is often a year or more before the patient is well again; whereas, if appendicostomy is performed, the patient is usually well again in a few weeks.

When we consider that the operation, especially if performed early, is practically free from any risk, and that it does not involve any disagreeable condition or disability, there can be no reasonable objection to its being performed in all cases once the diagnosis has been established. Indeed, I have more than once performed the operation upon patients who had recovered from an attack of ulcerative colitis to stop repeated recurrences.

It is quite remarkable how quickly an improvement occurs in cases of ulcerative colitis after systematic lavage of the colon through an appendicostomy opening is commenced. The almost constant diarrhoea and foul liquid stools containing blood are quickly checked, and the patient, instead of looking like a dying person, becomes himself again. The profound toxaemia, which is such a marked feature in bad cases of ulcerative colitis, can only be adequately dealt with when the colon can be washed completely out, and this is impossible unless appendicostomy is performed. When the colon is extensively ulcerated absorption into the blood stream of any poisonous substances contained within its lumen readily occurs, and this absorption takes place over such a large area that the patient is rapidly and seriously poisoned by the contents of his colon.

It is this which explains the failure of purely medical treatment to deal with the disease, for nothing short of the constant removal of the toxic products produced in the colon can be expected to prevent this absorption. It is quite impossible adequately to wash out the colon by means of rectal injections, quite apart from the fact that the bowel in these cases is so irritable that they are immediately rejected.

I believe that the correct treatment for all cases of ulcerative colitis—apart from amoebic dysentery, of which in its acute form I have no experience—is immediate appendicostomy, and that if the operation is performed early the present high mortality will disappear.

CONDITIONS LIABLE TO BE MISTAKEN FOR CANCER OF THE STOMACH.

By Alexis Thomson, M.D., F.R.C.S.Edin.,
Professor of Surgery, University of Edinburgh.

The practice, which has long prevailed in the Edinburgh school, of making complete sections of diseased organs, or parts of organs, thin enough for microscopical examination, is of great value in determining not only the nature of the disease, but its distribution and also any secondary changes which may have occurred. With the aid of my senior assistant, Mr. J. M. Graham, and Mr. Richard Muir, of the Pathological Department of the University, I have completed the examination of the portions of stomach I have resected for cancer; 24 of these were available, and in no less than 6 it was found that the lesion was a fibromatosis associated with chronic ulcer. It seemed desirable to examine the portions of stomach resected for cancer by my colleagues on the infirmary staff, and I must confess it was consoling that of 25 specimens kindly placed at my disposal, no less than 7 were found to be free from cancer.

With my eyes thus opened, I thought it would be interesting to have an inspection of the gastric cancers in the anatomical museum of the university. I had no difficulty in picking out a considerable number in which the appearances threw doubt on the accuracy of the view expressed in the catalogue. Through the kindness of the conservator, Professor Arthur Robinson, I was able to cut sections of the doubtful specimens, and although the material was not well preserved for microscopical examination, there were 6 out of 21 that showed no trace of cancer. If the three groups of specimens are added together, we have a total of 72, and of these 26.38 per cent. were lesions which simulate cancer. I was already familiar with the simulation of carcinoma by non-malignant affections in the colon and in the rectum, but I had no idea that the recognition of cancer in the stomach was so uncertain as these figures would indicate.

In the stomach, the lesion which most closely simulates cancer, and is most often mistaken for it, is a diffuse form of fibromatosis associated with ulcer; there are also rarer forms of fibromatosis—for example, those associated with tuberculosis and with syphilis.

Fibromatosis of the Stomach.—I venture to suggest this term in place of those previously employed, of which the best known are cirrhosis, linitis plastica, fibroid induration, and inflammatory narrowing of the stomach. Aschoff, in the latest edition of his work on pathology, describes cirrhosis as a sequel of chronic catarrh, the fibrous thickening extending from the mucous membrane to the other coats; Nothnagel, on the other hand, believes that it originates in the peritoneum and then spreads inwards. It is to be borne in mind that pathologists are handicapped in the study of affections of the stomach by the bad state of preservation in which this organ comes under observation in the *post-mortem* room. Leith (Allbutt's *System*) refers to cirrhosis as one of the rarest of stomach affections, and gives a good description of its pathological anatomy, without, however, committing himself as to its origin. In a case observed by him the fibromatosis extended throughout the whole of the gastro-intestinal canal, excepting the duodenum and upper part of the jejunum. Quite recently Poncet, Leriche, Mouriquand, and Villard, of the Lyons school, have contributed a number of articles on inflammatory narrowings of the pylorus; they appear to be of opinion that the lesion is usually, if not always, tuberculous in character.

Surgeons have given little attention to the condition, although it is probably implied in the reports of cases where a pyloric tumour believed to be cancer has disappeared after gastro-enterostomy. I am sure many surgeons have met with it as a source of difficulty in performing gastro-enterostomy, the sclerosis and the fixation of the mucous membrane interfering with the application of the sutures.

Fibromatosis is not to be confused with the cicatricial induration which is so common at the base of a chronic ulcer, although the two conditions frequently co-exist. The most characteristic feature of the fibromatosis is its capacity of spreading, not only throughout the stomach but to other organs which may be brought into contact with it, particularly the colon and the pancreas. This suggests an infective or toxic origin, which receives support from its frequent association with ulcer.

Naked Eye Appearances.—All surgeons who have given the matter some attention will agree that the external appearances of the fibrosed stomach are extremely like cancer. The portion of stomach affected presents all the characteristics of a new growth; it forms a tumour-like mass, hard and well defined; when free from adhesions the peritoneum may present a white or even a pearly appearance that one used to look upon as characteristic of cancer. Both in cancer and in ulcer-fibrosis, the

lymphatic glands may be enlarged, and present precisely similar characters. When the stomach is laid open, the



Fig. 1 – A portion of stomach resected for cancer and found to be so. Microscopically it is a columnar epithelioma undergoing colloid degeneration.

resemblance to cancer to a large extent disappears; there is no appearance of new growth from the mucous

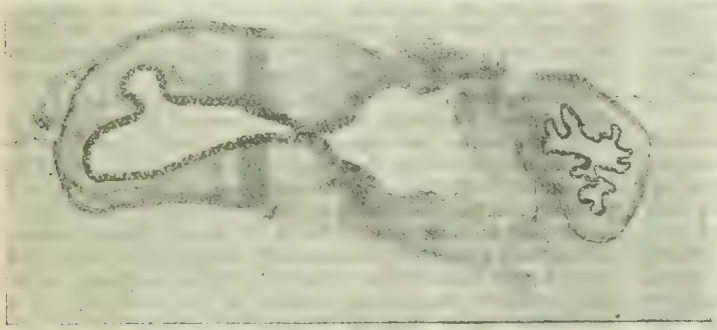


Fig. 3.—Cross section of pyloric end of stomach and colon, natural size. In the centre is seen a chronic ulcer, and extending from this there is fibromatosis round the entire circumference of the stomach and in the adherent portion of the transverse colon.

membrane in fibromatosis. In cancer, on the other hand, there is nearly always a visible growth in the mucous membrane, and very frequently this takes the form of cauliflower-like, fungating masses. Unfortunately, with the clamp method of operating, the interior of the stomach is not seen until the resection is completed.

If the affected portion of stomach is cut across it will often be observed that in cancer the distinction between the different coats is obliterated; in fibromatosis it is more pronounced than in the normal stomach. In cancer the main increase in thickness is in the mucous membrane; in fibromatosis it is most frequently in the submucous coat.

The condition of the mucous membrane varied widely in different cases. In all of my own specimens there was a chronic ulcer in the centre of the fibrosed area. I was astonished at the size of the ulcer; it frequently extended more than halfway round the circumference of the stomach. In some cases the mucous membrane was reduced to a mere film of granulation tissue, presenting to the naked eye a smooth, atrophic appearance. In the contracted forms of fibromatosis the mucous membrane is thrown into folds similar to, but rarely so well marked as, those observed in fibromatosis of the colon and rectum.

One of the characteristic features of fibromatosis, and one which differentiates it from the common cicatricial induration at the base of an ulcer, is its capacity of spreading widely from its point of origin.

In one of my own cases (Fig. 3) there was a chronic ulcer at the pylorus, and the fibromatosis which had commenced at the site of the ulcer not only extended round the entire circumference

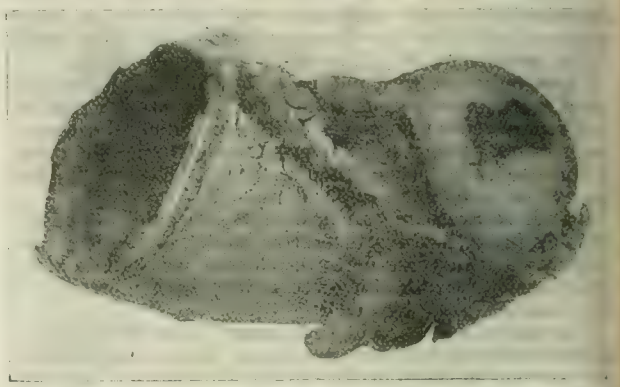


Fig. 2—Diffuse fibromatosis in the pyloric end of a stomach resected for cancer. The section at the pyloric end shows the great increase in thickness of the submucous coat, which by its contraction has thrown the mucous membrane into folds.

of the pyloric portion of the stomach, but also round the transverse colon, which was adherent to it. This condition of affairs added to the already close resemblance to malignant disease, so that I had no hesitation in resecting both stomach and colon; fortunately the patient made a good recovery.

When the fibromatosis extends throughout the whole stomach the viscus is smaller and heavier, it does not collapse when opened, and the general appearance has led to its being called the "leather bottle stomach." This condition is illustrated in all our larger museums, the best-known specimen being that in the Royal College of Surgeons of England, because it has been so frequently figured by Mayo Robson as an example of diffuse carcinoma. I have not had the opportunity of examining this specimen microscopically, but I have no hesitation in concluding from the naked-eye appearances, and their close similarity

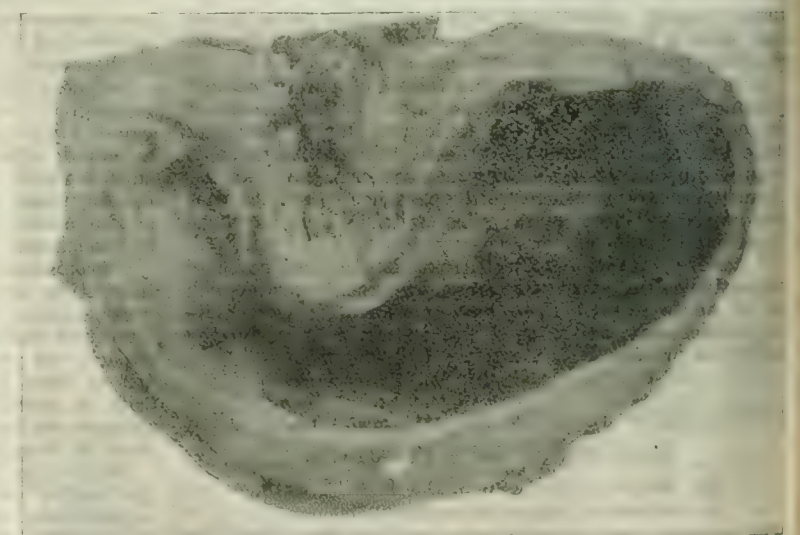


Fig. 4.—Generalized fibromatosis or "leather bottle" stomach. The differentiation of the different layers of the stomach wall is well brought out, and owing to contraction at the pylorus, the muscular coat is hypertrophied. (Anatomical Museum of the University of Edinburgh.)

to the specimens I have myself examined, that it is really a diffuse fibromatosis.

The hypertrophy of the muscular coat which is visible to the naked eye is accounted for by the contraction at the pylorus. I am aware that the "leather bottle" stomach has been usually regarded as the result of an atrophic scirrhus; my own observations negative this view, and I may add that in all the cancers of the stomach which I have examined there was not a single instance of atrophic scirrhus.



Fig. 5.—Fibromatosis in the submucous coat close to the edge of a chronic ulcer. Only isolated remains of the muscularis mucosae are seen.

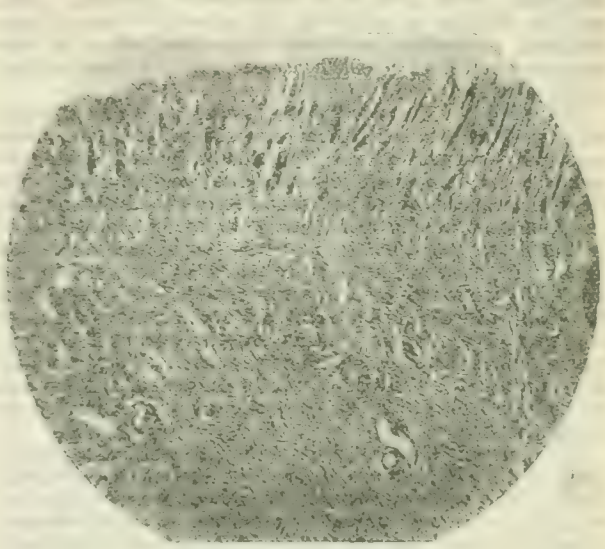


Fig. 6.—The mucous membrane overlying the fibromatosis from the same preparation as Fig. 5 under a higher power. Only the remains of gland-tubes are seen.

The Changes in Gastric Fibromatosis as seen with the Microscope.—In the majority of the specimens examined the *mucous membrane* was the seat of ulceration, that is to say, it was chiefly composed of granulation tissue, the capillaries of which come up close to the surface, while many of the cells are of large size and appear to be of the nature of phagocytes. Most of the gland tubules disappear, but here and there isolated remains of them are seen in the midst of the granulation tissue. The *muscularis mucosae* is thickened and the muscular bundles of which it is composed are segmented off from one another by granulation tissue. (Figs. 5, 6, and 7.)

The *submucous coat* is the main seat of the fibromatosis. In a few cases, apparently of recent origin, the thickening is due to granulation tissue. In those of longer standing—and these comprise the great majority—the new tissue is composed of fully formed white fibrous tissue and well-formed blood vessels. The fibres are wavy, they run in all directions, and are not closely packed. Between them there are abundant fibroblasts. There are no elastic fibres, and Weigert's stain does not bring out any change in the nerve fibres. In some specimens, apparently those of long standing, the blood vessels show endarteritis.

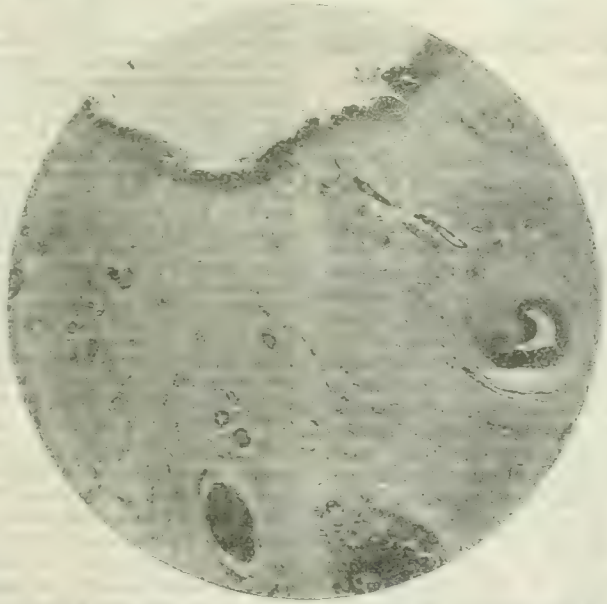


Fig. 7.—Fibromatosis associated with chronic ulcer extending throughout all the coats. The mucous membrane is represented by a thin film of granulation tissue. The walls of the blood vessels are greatly thickened. At the lowest part of the field is seen a lymphatic gland.

The *muscular coat* may show a simple hypertrophy consequent on narrowing of the pyloric outlet; in the majority the fibromatosis extends between the bundles of the muscular coat, separating these from one another, and, it may be, completely replacing them.

The *serous* and *subserous coats* may also be the seat of an extension of the fibromatosis, and the stomach is then usually adherent to the parietes or to some adjacent viscus, such as the colon or pancreas.

One of the specimens of fibromatosis given me by my colleague, Mr. Caird, showed a remarkable combination of ulcer-cancer and tuberculosis. The fibromatosis mainly affected the subserous coat, and measured fully half an inch in thickness, and showed a number of the most perfect giant-celled systems. The mucous membrane was the seat of an ulcer, in the granulation tissue of which there were numerous giant cells and also a proliferation of the glandular epithelium, which was obviously engaged in invading the submucous coat. In this particular instance the tuberculous infection appeared to have preceded the ulcer-cancer.

So far as I have observed, the cancer which follows on ulcer is always a columnar epithelioma, and the microscopical changes are very similar to those in ulcers which become the seat of cancer in other parts of the body. I think I am also justified in saying that ulcer-cancer takes a much longer time to infect the surrounding parts than the common forms of cancer of the stomach.

Clinical Differentiation.—The clinical differentiation between fibromatosis and carcinoma resolves itself mainly into the differentiation between chronic ulcer and carcinoma—a subject which is beyond the scope of this article. It may be said, however, that loss of appetite, progressive loss of weight, disappearance of free HCl, and the presence of a palpable tumour, may be combined in ulcer-fibromatosis as they may be in cancer.

At the Operation.—As a rule there will be no difficulty in differentiating between the two conditions at the operation. There will be less liability to confuse between them if one realizes the possibility of error, and one remembers that the mistake is always made in the same direction, believing the disease to be cancer when it is not. I was

formerly inclined to regard involvement of the duodenum as supporting the non-malignancy of the gastric lesion, but a case under my own observation showed that this reasoning is not to be trusted. The patient, a man aged 52, had suffered from gastric symptoms for two years, and was then seized with acute perforation. On opening the abdomen I found that he had a perforated duodenal ulcer, and in addition a cancer at his pylorus. I closed the duodenal perforation, and twelve days later, when he had recovered sufficient strength, I resected the pyloric portion of the stomach.

Microscopical Examination.—In cases in which a doubt still exists as between cancer and fibromatosis, it sounds reasonable as well as scientific that a portion should be removed for immediate microscopical examination. My experience leads me to say that I have very little faith in the results of this hurried examination. In some cases it will clear up the difficulty, in others it will leave room for doubt. In a considerable proportion of the specimens upon which I have been working it required a prolonged histological investigation before one could decide definitely one way or the other; this is especially true of chronic ulcers which become the seat of cancer. The specimen not only requires to be carefully hardened, but several portions of it may have to be sectioned and examined at leisure.

It has already been pointed out that the external appearances of the stomach are those most likely to leave one in doubt, while the appearances as viewed from within the stomach are much more illuminating. I would recommend, therefore, that the stomach be laid open at a little distance from the tumour, and the interior examined, certainly with the fingers, and, if possible, with the eye; this should enable one to differentiate between chronic ulcer with fibromatosis and the common forms of malignant disease. In the case of ulcer-cancer we should have greater difficulty, and the possibility of its occurrence supports the argument for advising resection as the best treatment of chronic ulcer of the stomach, whether a gastro-enterostomy is performed or not. There is not the same indication for resecting chronic ulcer of the duodenum, as it presents no tendency to malignant transformation.

CONDITIONS SIMULATING CANCER OF THE STOMACH.

By F. D. Bird, M.B., C.M.,
Melbourne.

The surgeon's task in the treatment of stomach disease is not nearly so simple as it appears to him who advises an exploratory operation. It has become easy to perform gastro-jejunostomy, gastrectomy is almost commonplace, but the choice of what to do is to my mind often most difficult. An exploratory operation should explore with, if possible, a resulting finality. Now, finality cannot be reached by mere feeling through a small opening, unless there is a multitude of cancerous nodules scattered about, and even this may very closely be mimicked by a hydatid efflorescence. Again, what surgeon is omniscient enough to decide with certainty between ordinary carcinoma, chronic ulcer with induration and thickening, foreign body peritonitis round a small gastric perforation, ulcus carcinomatosus situated near the pylorus, syphiloma, chronic pancreatitis with adhesion and myxoma, with a forefinger in a small incision as his only guide? even with a larger incision which allows full inspection and freer palpation it is often difficult, and sometimes impossible without the assistance of a microscope.

It certainly seems a failure in the surgeon to have to close the abdomen without a definite diagnosis after what he is pleased to call an exploratory operation, yet this I am sure is not seldom his only correct procedure. The surgeon must rely on the microscopist for his ultimate diagnosis in a number of gastric cases.

It is in the early cases of carcinoma of the pylorus, of early fibroid thickening there, of young syphiloma of that region, that the surgeon can attain his highest usefulness, and it is here that his diagnostic powers, limited to sight and feeling, are most likely to fail him. The position is difficult, for when the physician has performed his chemical tests, has regulated the diet, has removed all sources of gastric hyperaemia without effect, when the bacteriologist has finished his leucocyte and serum tests, with results whose value we are only beginning to learn, it still remains for the surgeon to decide whether his exploration should be amplified into a gastrectomy.

In most cases unfortunately the cancerous nature is made manifest by the tag of growth creeping along the lesser curvature, but in a case which is suitable for gastrectomy or a very ample pylorectomy, how can the surgeon be sure he is not dealing with a syphilitic manifestation which in some of its forms produces a distinct, well-defined tumour, very alike indeed to the early cancer? The surgeon having but little time to spare sees a tumour which lends itself to removal, and he promptly essays his gastrectomy, which in a fair percentage of cases will, if the specimen be examined microscopically, be found to have been an unnecessary proceeding. Some years ago I with much satisfaction found and cut out what I thought was an early pyloric carcinoma admirably fitted for resection. My satisfaction evaporated on hearing the statements of Professor Allen and Dr. Mollison—both highly competent microscopists at the Melbourne University—that the specimen was a syphiloma. It can be seen in the Melbourne Museum with several others owning the same spirochaetal origin removed by colleagues and remaining as monuments to the difficulty of differentiating syphiloma from early carcinoma of the pylorus.

From the fact that early carcinoma gives rise to such slight symptoms, while syphiloma causes marked deterioration of health, with gastric disability, and on exploration reveals a circumscribed tumour inviting removal, I have little doubt that some of the successful cases of gastrectomy and pylorectomy alive years after these surgical proceedings were instances of operation for syphiloma and not for carcinoma. Again, in those cases in which a gastro-enterostomy has been performed as a palliative, with the pronouncement of a cancerous diagnosis, and the patients have refused to pursue their cancerous natural history, it is likely that syphilis was the cause of the mistake in prognosis. Being much impressed with these cases, I became alert to the possibilities of syphilis as a cause of definite tumour simulating cancer of the pylorus. The following is a case in point:

I was fortunate enough to be sufficiently suspicious of the real nature of a pyloric growth, in a man under 35 years of age, to be content with removing a piece of the growth and one of the circumferential glands instead of performing the partial gastrectomy which seemed amply justified. Dr. Mollison assured me of the syphilitic nature of the pieces removed, and the patient was placed upon vigorous antisyphilitic treatment, with, for a time, excellent results. However, the symptoms pointing to pyloric obstruction became prominent again, and he allowed me to reopen his abdomen with a view to performing gastro-enterostomy. This was done because the stenosis at the pylorus was marked, but the tumour itself had almost disappeared, the pylorus presenting an entirely different appearance from that seen at the previous inspection, although but four months had elapsed. The perigastric glands, which had been pink, swollen, and evidently irritated, were much less obvious, and did not obtrude themselves on the attention in the way that they did at the first operation. This patient was kept under observation for over three years, and though he had to be careful with his diet, he had no further gastric symptoms. He benefited much from occasional courses of antisyphilitic medicine, without which he became anaemic and lowered in general health.

Other similar cases could be adduced from my notes if space permitted, and that syphilis can form a definite circumscribed tumour at the pylorus I have no doubt whatever. These tumours invite removal by their circumscription, by the absence of an extension from them along the lesser curvature; both surgeon and anaesthetist are anxious for a decision, as gastrectomy is not a short operation; to reopen the abdomen seems inartistic surgery, and yet in many cases I hold it is the proper course to limit one's effort to cutting out a small piece of the tumour and a gland for microscopical examination. This unheroic action will not very infrequently save a superfluous gastrectomy, and in other cases which appear to be carcinoma too far advanced for operation the microscopic finding may prevent the patient going to his grave labelled gastric carcinoma when he is really suffering from syphiloma of the stomach, which in some cases will kill him as surely if drug treatment is withheld. These syphilomatous growths may occur at other parts of the stomach wall, simulating mural cancer, and they may be ulcerated on their inner aspect. One of the two which

I have seen which were not at the pylorus was situated on the anterior gastric wall and greater curvature, and had glued itself on to the parietal peritoneum, and was implicating the fibrous and muscular structures of the abdominal wall.

How can we tell that our exploration has exposed a syphilitic growth? The previous history hardly gives earnest of a clinical individuality. There is pain at times, loss of strength and anaemia, wasting and gastric disability. Of haematemesis I can speak but little, and not at all of cryptic haemorrhage in the faeces; but when the abdomen is opened we may find help to a diagnosis from concomitant syphilitic evidences elsewhere than in the stomach; thus there may be whitish blotches and markings on the peritoneum, notably on that covering the spleen and the liver, on the parietal peritoneum, and that forming the round ligament. I have learnt to look upon purposeless scars and adhesions in the great omentum as very likely to be syphilitic.

If such stigmata are seen, I am sure that a suspicion of syphilis should enter the mind of the surgeon sufficiently strongly to stay him from performing an operation of prime severity at once. The look of the tumour may arouse doubt also, especially if it has been present but a short time; it is more succulent looking, almost opalescent, than sarcoma or carcinoma, but the older it is the more it resembles these growths, a development which is true of gummata in other parts of the body.

If microscopical evidence and therapeutic test and clinical success are sufficient, I am justified in speaking with the certainty I affect of these cases of what I firmly believe to be syphiloma of the stomach, always supposing that there is not a micro-organism akin to the *Treponema pallidum*, which produces similar tumour effects.

This subject has interested me for years, and but very little of my experience of it have I been able to bring under the Wassermann test, of which I think the surgeon should avail himself before exploring the upper abdomen, as syphilis is a commoner cause of disease here, I firmly believe, than is at present recognized.

The points I wish to labour are these:

1. The possible uncertainty of explorations without the assistance of the microscope.
2. That a very few cases simulating cancer of the stomach are due to hydatid and myxoedema.
3. That a not inconsiderable number are the result of syphilis.
4. That when syphiloma of the stomach exists and is unrecognized on exploration one of three results ensues—either an unnecessary gastrectomy is performed, or a hopeless prognosis of cancerous death is made and the patient dies of his syphilis, or with the same prognosis he refuses to die and regains moderate health after explorations, for the virulence of these syphilomata varies widely.

Please do not think that I speak against explorations. I am one who believes that in a case with symptoms pointing to the upper mid-abdomen, after a month's unavailing treatment at the hands of the physicians an exploration by sight and touch of the allied organs, stomach, pancreas, and liver, should be made, but in some cases this will not be enough to establish the diagnosis without the microscopic pronouncement on a piece of the tumour removed for the purpose.

In addition, operation, I take it, helps the action of the drug treatment in the absorption of the syphilitic material.

THE EARLY DIAGNOSIS AND TREATMENT OF CANCER OF THE STOMACH.

By Herbert J. Paterson, M.C., M.B.Cantab., F.R.C.S., London.

It is, perhaps, hardly realized that, although the stomach is more frequently affected with cancer than any other organ in the body, gastrectomy (partial or otherwise) is one of the uncommon operations in surgery. This is not as it should be, for gastric cancer in its early stage is markedly a local disease, and can be removed with favourable results, both immediate and remote.

It is possible that many of our profession do not yet realize these facts, and the object of this paper is to bring out some points in the early diagnosis of the condition and the present-day results of surgical treatment.

The Early Symptoms.

At present we know of no pathognomonic symptom, and have to depend on careful study of the clinical symptoms, together with a thorough investigation of the gastric contents. The earliest of the former are loss of appetite, failure of strength, and anaemia.

Loss of appetite is usually gradual and insidious, but in some cases is sudden, and may be attributed to some indiscretion in diet. In many instances there is a marked aversion from meat. The patient refuses food, not because he fears it will cause him pain, but because his appetite is gone. Progressive loss of strength is an early symptom, sometimes the first to attract attention, and is often associated with impaired mental activity and depression of spirits. As a rule, even in the early stages, a slight but increasing degree of anaemia is present. In some cases this is the earliest symptom of the disease. In my experience such cases run a very rapid course, and are usually beyond the reach of surgery before a diagnosis is made. Fortunately, however, such form only a small proportion of all the cases.

A palpable tumour is not an early sign of cancer. Our aim should be to establish a diagnosis, or at least the necessity for surgical treatment, before a tumour can be felt. Nevertheless, a palpable tumour by no means contraindicates the possibility of a complete removal. In one of my cases there was a large tumour not only palpable but visible, but the patient lived nearly four years after partial gastrectomy with removal of a portion of the pancreas. In palpating for a tumour the abdomen should be examined not only after emptying the stomach, but after distending it with air. In some cases in which this is done a hardening can be felt in the region of the pylorus, probably due to a spasm of the pylorus set up by the distension. When present this is an indication, not necessarily of cancer, but of the necessity for surgical treatment.

The Gastric Contents.

There are many who do not attach much importance to gastric analyses. I am not one of these, for I believe that when interpreted in connexion with the clinical history of the case they are of the greatest help, often the chief aid, in assisting us to come to a conclusion as to the necessity for surgical treatment.

The two most important points are:

1. Evidence of impairment of the motor functions of the stomach.
2. A diminution of the chlorides in the gastric juice.

1. In about 65 per cent. of cases the disease begins at or close to the pylorus. It follows, therefore, that one of the earliest signs of cancer of the stomach is impairment of its motility. The simplest way in which to estimate this is to give the patient 12 oz. of milk overnight, and then pass a stomach tube ten hours later. By this time the stomach should be empty. The presence of food remains indicates impaired motility. If, on making this test, about 50 c.cm. or over of fluid containing food residues is drawn off, we are pretty safe in concluding that there is some condition present rendering an operation advisable. Persistent impairment of the gastric motility is a condition requiring surgical intervention.

2. In 1842 Golding-Bird pointed out that free hydrochloric acid is often absent in cases of gastric cancer. For a time this was regarded as a sign pathognomonic of cancer. We now know that this is not the case. This sign, like many others, has "been weighed in the balance and found wanting." Free hydrochloric acid is absent in many other conditions. Of much greater importance is the diminution of the protein hydrochloric acid. A marked diminution of the protein hydrochloric acid is in my experience a very early symptom of gastric cancer. It is true that in chronic gastritis due to other causes than malignant disease there is a marked diminution of the protein hydrochloric acid, but in estimating the value of this sign we must consider its importance in relation to the clinical history. Chronic gastritis secondary to cancer progresses much more rapidly than gastritis due to other causes. The relation of the degree of diminution of the protein hydrochloric acid to the duration of the patient's symptoms must be considered. In other words, marked impairment of gastric motility, or marked diminution of protein hydrochloric acid in a patient over middle age raises a suspicion of malignancy, and the shorter the history and the greater

the degree of gastritis as shown by analysis, the greater the probability of cancer. Let me illustrate this by two analyses of the gastric contents of two patients, neither of whom had any palpable tumour.

The first analysis refers to a man who had suffered from gastric symptoms for a year. Total acidity, 44; total chlorides, 0.206; free HCl, 0 000; protein HCl, 0.082; mineral HCl, 0.124.

The chemical findings in this case are those of chronic gastritis with a very marked diminution of the protein hydrochloric acid. This might be due to inflammatory disease or to cancer. The comparatively long history, and at the same time fair condition of the patient, and the absence of any degree of anaemia were against malignant disease. Cancer of such long standing should have resulted in a much lower total acidity, and probably even more marked diminution of the protein hydrochloric acid. At the operation a gumma of the liver was found which had become adherent to and involved the plorus.

The second analysis is that of the gastric contents of a woman who had suffered from gastric symptoms for four months. Total acidity, 29; total chlorides, 0.185; free HCl, 0.000; protein HCl, 0.070; mineral HCl, 0.115.

In this case the degree of gastritis was rather greater than in the first case, and yet the history was much shorter. This coupled with the fact that the patient had evidently lost flesh and was slightly anaemic led to a diagnosis of carcinoma, which was confirmed by operation and successfully removed. I have not yet met with a case in which the protein hydrochloric acid was about 0.100 or less in which there was not some condition requiring surgical treatment.

I am convinced that a good many cases are overlooked because under dieting and rest the patient improves temporarily and puts on weight. It is not uncommon in hospital notes to find a record such as this:

The patient was admitted for supposed cancer of the stomach, but under medical treatment gained in weight and was discharged much improved.

Not infrequently such improvement is but temporary, and later the patient again comes under observation with obviously inoperable gastric cancer. I have observed a patient with cancer of the stomach put on as much as 4 lb. in ten days. Such improvement, of course, occurs only in early cases, before the disease has spread beyond the limits of the pylorus—just those cases, in other words, which would be most benefited by operation. I wish, therefore, to lay particular emphasis on this point—namely, that gain in weight and temporary improvement under medical treatment and rest in bed is no contraindication to cancer of the stomach.

Fortunately it is not necessary to make a definite diagnosis of cancer in every case. All we need do is to ascertain that a condition is present which required surgical treatment, and this I maintain is quite possible with the means at our disposal. I am as averse as any one from making exploratory operations for diagnosis. At the same time I think the really reckless man is not he who explores after carefully considering the clinical history and results of gastric analysis, but he who adopts the policy of "wait and see" until the possibility of performing a radical operation is gone for ever. When once we are satisfied as to the probability of cancer, the risk of abdominal operation is less than the risk of delay.

It would be outside the limits of this paper to refer to the difficulties in deciding after the abdomen is opened whether a given pyloric swelling is malignant or inflammatory, further than to say that in several instances I have found the gastric findings very helpful. In three cases in which, after opening the abdomen, the disease appeared to be malignant but in which gastric analysis pointed to the contrary, I acted on the strength of the gastric findings, and the subsequent history justified my confidence in gastric chemistry.

Neither have I said anything about the gastroscope as an aid to diagnosis, because, although it is an exceedingly ingenious and interesting instrument scientifically, I am very doubtful whether it will help us much in the diagnosis of cancer. Considering how difficult it sometimes is to decide whether a swelling is inflammatory or malignant, even when we can both feel and see, I do not think we can expect much help from an instrument which aids us by sight alone.

Method of Operating.

Carcinoma of the stomach is no exception to the general rule that the wider the excision the better are the ultimate results. In the ideal operation at least 1 in. of the duodenum and two-thirds of the stomach should be removed, together with all the glands along the lesser curvature as high as the origin of the gastric artery, the jejunum being anastomosed either to the anterior or posterior wall of the stomach. I have always, when performing a gastrectomy in one stage, adopted the plan I advocated in 1904—namely, performing the anastomosis of the jejunum of the stomach before I perform the resection. The advantages of the plan are:

1. The anastomosis is easier before the resection has been performed.
2. If the patient does not bear the anastomosis well the resection can be postponed until a later date.
3. There is less risk of the anastomosis being performed with undue hurry if it is done first.
4. In cases of doubt, a piece of the growth can be removed and examined microscopically while the anastomosis is being performed.

I would point out, however, that an examination of this sort, if negative, does not disprove the presence of cancer. To be of value the microscopical examination must be positive.

In early cases it is sufficient to remove the gastro-colic omentum as close to the colon as possible, but in later cases in which the glands along the greater curvature are enlarged, it is in my opinion advisable, in order to guard against recurrence, to remove the transverse colon as well.

I have repeatedly observed the spread of cancer cells along the gastro colic omentum, and after removal of the stomach the patient may die later from a small growth in the colon or its neighbourhood. I have seen several instances of this, and one occurred in my own practice some years ago. A patient came back to me about three and three-quarter years after partial gastrectomy with a large fixed mass in the umbilical region. I regarded it as an inoperable mass of new growth. Some months later she was suddenly seized with severe abdominal pain, and died a few hours later. On examination I found the mass was inflammatory round a stercoral ulcer secondary to a large faecal accumulation produced by a small carcinomatous growth in the transverse colon, which could easily have been removed. If in this case I had removed the transverse colon at the same time as I removed the stomach I think it is reasonable to suppose that the patient would have been permanently cured.

Only a short time ago I opened the abdomen of a patient with gastric cancer, which seemed to be very suitable for removal, but on examining further I found a tiny nodule of growth in the transverse colon, a nodule so tiny that it might easily have been overlooked.

I do not wish to be misunderstood. I think progress is to be made not by extending our operative measures but by earlier operation. At the present time most cases are not seen by the surgeon until the disease is fairly advanced. I regard resection of the stomach as a futile operation if any cancer nodules are left behind. If the glands along the greater curvature are enlarged it is almost certain that the disease will recur unless the transverse colon and the omentum are removed.

Our aim, however, should be to attack the disease at a stage when this addition to the operation is unnecessary. Mr. Groves has recently suggested that the gastro-colic omentum should be stripped off. While I think this an additional guard against recurrence, my opinion is that if any addition is necessary to the ordinary operation, the addition should consist of removal of the colon.

When resection of the colon is decided on, the operation should always be performed in two stages. A gastro-jejunostomy and ileo-colostomy at the first operation, and resection of the stomach and colon three weeks later.

I must confess that of late years I have been increasingly drawn to the plan of performing partial gastrectomy in two stages—as originally proposed by Tupolske in 1891. Most patients with gastric cancer are in poor condition for any operation, and often even a simple gastro-jejunostomy is as much as they can stand in addition to the examination of the growth. Indeed, it is often only some hours after the operation that one realizes how little vitality they possess. After a preliminary gastro-jejunostomy they rapidly improve, so that in two or three weeks' time they are much better subjects for resection. It must be admitted that the preliminary gastro-jejunostomy does to some extent increase the difficulties of the subsequent resection, but these are outweighed by the greater safety of the two-stage operation, and in this, as in all surgery, the safety of the patient is our first consideration.

Personally, I do not believe in attempting resection in advanced cases. My rule is this—if, after opening the abdomen, I am in doubt as to whether I can get wide of the disease, I do not attempt to perform partial gastrectomy. A palliative gastro jejunostomy is in my experience of no benefit except when there is vomiting due to definite pyloric obstruction.

The Results of Operation.

(*a*) *Immediate.*—In the hands of those who have had experience of gastric work the mortality of partial gastrectomy varies from 14 to 20 per cent. The mortality-rate in the cases operated on by the distinguished brothers, W. J. and C. H. Mayo, is 13·5 per cent. I would point out, however, that in their series of cases there are a certain number of very late cases. The great majority of deaths after operation are due to the fact that the patient's resistance is so diminished by the disease that the margin of safety is reduced to a very low point, and I venture to think that if we could get our cases reasonably early the mortality would not be greater than 10 per cent.

(*b*) *Remote.*—In my Hunterian Lectures I collected a number of cases of gastrectomy and showed that, of the patients who recovered, 24 per cent. were alive and well three years after operation, and 15 per cent. alive and well five years after operation. I believe that now a more extensive removal is being practised the results are even better. Leriche has reported 89 patients alive and well three years after operation, and of these 34 were alive and well five years or more after operation. Personally, I can point to one patient alive and well six years after operation, one lived nearly four years, another nearly three and a half years, and another is alive and well nearly three years after operation. Most of the patients who die from recurrence die within three and a half years, so that if a patient lives five years after operation for cancer of the stomach there would seem to be a strong probability of cure. Putting the matter into figures, I think we may fairly estimate the possible chances of a patient upon whom a wide removal of gastric cancer is performed by one skilled in abdominal surgery as follows:

Chance of recovery from the operation, 85 per cent.
Chance of living three years free from recurrence, 20 per cent.
Chance of probable cure, 12 per cent.

Conclusions.

Although I have insisted on the necessity for earlier diagnosis and earlier surgical treatment, I do not think that the great mortality from gastric cancer is altogether due to errors in diagnosis. While it is true that many cases are unrecognized until too late, it is equally true that many are unrelieved, either through the unwillingness of the patient to submit to operation, or to the reluctance of the medical man to urge it. At any rate, we as a profession cannot altogether escape some of the responsibility for the mortality from cancer of the stomach. My experience leads me to believe that in at least 10 per cent. of the cases which die without operation, the growth is found after death so localized that its removal would have been quite practicable.

What has been here said may be summarized as follows:

1. The number of operations performed for cancer of the stomach is far smaller than should be the case, considering the prevalence of the disease.
2. The reasons for this are, partly undue delay in making a diagnosis, and partly the reluctance of medical men to advise operation.
3. In patients in the middle period of life marked chronic gastritis and food retention is an indication for surgical treatment.
4. The minimum operation would consist of removal of two-thirds of the stomach with the glands along the lesser curvature, and 1 in. of the duodenum.
5. In later cases it is advisable to remove the transverse colon and great omentum.
6. Operation in two stages is safer than the performance of the whole operation at once.
7. If there is any doubt as to whether resection can be performed wide of the disease, no radical operation should be attempted.
8. The immediate mortality of the operation in skilled hands is 15 per cent. We may hope that in the near future the mortality may with earlier diagnosis be not greater than 10 per cent.
9. At present, in about 12 per cent. of the cases operated on, there is a probability of permanent cure, and the end results as well as the immediate are slowly but steadily improving.

THE ACTION OF GASTRO-ENTEROSTOMY IN CASES OF GASTRIC AND DUODENAL ULCER IN WHICH THERE IS NO MECHANICAL DIFFICULTY.

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The enormous benefit that is derived from the operation of gastro-enterostomy in cases in which there is a mechanical obstruction, such as stenosis of the pylorus, goes without saying, and needs no proof. But in cases in which there is no difficulty of this kind I have often been struck by the strange disproportion between the extent of the lesions seen and the amount of benefit derived. Before the operation the patient suffers from chronic ill health, repeated attacks of indigestion, constant vomiting and pain, and occasional haematemesis. After the operation, if reasonable care in diet is observed, he is perfectly well. Yet at the operation the only lesion seen is a small ulcer in some part of the stomach or duodenum which appears to be well out of the way, or, less still, a superficial scar left by an ulcer so shallow that there has been no material degree of contraction. It is clear that such a lesion as this cannot be the whole explanation, for of the benefit derived from the operation, its extent and its continuance, there can be no doubt.

The only clinical evidence hitherto available that there can be anything further beyond this comparatively trivial lesion, is the occasional presence of haematemesis, the frequent existence of an excess of free hydrochloric acid in the gastric juice, and sometimes hypersecretion. The only *post-mortem* evidence, in addition to the presence of the ulcer or the scar, is a few extravasations in the mucous membrane around, and perhaps some superficial erosions. But I have noted on many occasions during operations upon these cases that the condition of the mucous membrane during life is strikingly different from that which is usually described, and this has now been borne out much more fully by the use of the gastroscope.

The mucous membrane of the stomach after death is absolutely different from what it is during life. After death it is a thin, grey, flabby membrane, that hangs in loose folds. During life it is soft, vascular, and thick, and maintains its own shape. During fasting, the usual condition in which it is seen, it is absolutely different from what it is during digestion; and, as may be imagined, if the bounds of physiological activity are passed, and the mucous membrane is spurred on to pathological work, such as is evidenced by the presence of an excess of free hydrochloric acid, or excessive secretion, the difference is greater still. The mucous membrane is swollen and congested to the utmost, especially in those parts where it is thickest, softest, and most vascular, and where the lymphatic follicles are largest and most numerous. It bleeds with the slightest touch, and the blood pours from it. Extravasations seem to form everywhere in its substance with the very slightest provocation or none at all. Its surface is so soft and tender that the least irritation causes it to give way. Erosions which, if circumstances are favourable, develop into ulcers, make their appearance wherever it is touched or squeezed by the muscles that surround it; and if inflammation sets in, as it always does sooner or later around an ulcer or an abrasion, these effects are carried farther still. The gastroscope shows that this is no fancy picture. The wonder in such cases is not that haemorrhages and ulcers occur, but that the stomach is ever free from them. Ulceration is too often regarded as if it were a disease of itself. It is sometimes, but in the majority of instances an acute ulcer is merely a local accentuation of a more or less general pathological state of the mucous membrane. An acute ulcer, when it has once been formed, makes all the symptoms worse by the inflammation that attends it and perpetuates them; but no matter how prominent it appears to be, the ulcer, unless due to embolism or some other gross vascular lesion, is really secondary. With rare exceptions it is not until an ulcer becomes chronic that it can be regarded as a disease of itself—one that requires treatment directed only to the ulcer and nothing else.

It is this morbid state of the mucous membrane of the

stomach and first part of the duodenum, the existence of which could only be suspected so long as the evidence was limited to the altered secretory activity of the gastric mucous membrane and the presence of a few extravasations, that is responsible for nearly all the symptoms which are ordinarily laid to the credit of acute gastric ulcer, and in many instances for the formation of the ulcer itself. Haematemesis, in cases of acute ulceration, is caused quite as often by haemorrhage from minute lesions of the mucous surface around as from the ulcer itself. Haemorrhages are much more often the cause of erosions than the consequence. It is the extreme sensitiveness of the mucous surface, made so much worse by inflammation spreading from the abrasions, that is the main cause of the spasm of the muscles around the pylorus and the antrum; and this spasm, in its turn, is the main cause of the pain so characteristic of this affection. In short, it is not the ulcer, but the exquisitely hypersensitive and hyperaemic condition of the mucous membrane which underlies all the symptoms. Pylorospasm, haemorrhage, ulcers, and erosions are effects, not causes, though they combine to make all the symptoms infinitely worse.

This morbid condition of the mucous membrane may be caused in many different ways: continually swallowing septic poisons from the mouth; excessive meat diet, dram drinking, especially of raw neat spirit on an empty stomach; taking inordinate quantities of vinegar; exposure to cold (the relation of cold to the recurrence of the symptoms of duodenal ulcer after even many years has often been remarked; but it is not the ulcer that returns, but the condition of the mucous membrane that gives rise to the ulcer); the absorption of toxins from an inflamed appendix (Paterson and Moynihan); gall stones (Fenwick); movable kidney, as I have noted myself on two occasions; and probably many others. Whenever it occurs, as may easily be imagined, it may lead to the formation of an ulcer; and whenever an ulcer follows, it makes this condition worse by the inflammation that spreads from it.

How, then, does the operation of gastro-enterostomy give such relief in these cases? It cannot give relief if the primary cause is allowed to persist, as, for example, the swallowing of septic poisons generated in the mouth, or the absorption of toxins from an inflamed appendix. But if the primary cause is removed or has ceased to work, the operation breaks the circle. The stomach empties itself at once through the artificial opening. The spasmodic contraction of the muscles around the pylorus and the antrum comes to an end. The pain ceases with it, for it is the spasmodic contraction which is the real cause of the stabbing and bursting pain of ulcer, not the contact of the acid with the sensory nerves on the floor of the ulcer, for there are none. The mucous membrane recovers its natural condition, the hyperaemia subsides, the morbid hyperaesthesia which perpetuates the symptoms goes with it, and the ulcer heals. If there is no inflammation, relief is immediate. If inflammation has already set in, it takes longer, and if there is an ulcer it has to heal; but the existence of an ulcer or of a scar is not necessary to make the operation a clinical success.

The presence of an excess of free hydrochloric acid is of importance for several reasons. It is evidence (and hitherto has been almost the only evidence) of the presence of this morbid condition of the mucous membrane. It lowers the vitality of the tissues with which it comes into contact, rendering them more likely to break down and ulcerate. And if an ulcer has been formed, it tends to prevent its healing. But the excess is only one of the results of the condition of the mucous membrane, and not even an invariable one. It may be relieved by giving alkalis, or sometimes by the regurgitation of the alkaline bile and pancreatic juice through the artificial opening into the stomach, but these cannot cure it. The only way to stop the excessive secretion is to bring the morbid working of the mucous membrane to an end. Whatever may have been its original cause, the excessive secretion is maintained and made worse by the pylorospasm and ulceration, the effects that it itself produces; and the most successful way in practice is first to find out and remove the primary cause, if it is still at work, and then, if the symptoms continue, to break the circle by performing gastro-enterostomy, which has the merit of succeeding where all else has failed.

EXCISION OF GASTRIC ULCERS.

By Edward Deanesly, M.D., F.R.C.S.,
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The object of this short paper is to suggest that the almost universal adoption of gastro-enterostomy as the operation of choice in the surgical treatment of simple ulceration of the stomach and duodenum is neither based on sound principles nor justified by results.

The condition for which this operation was first designed and practised was stenosis of the pylorus. A new route was provided for the food by a short circuit. The principle was obvious and simple, and the results continue to justify it. So excellent, indeed, were the results found to be in cases of non-malignant stenosis of the pylorus that an extension of the same operation was soon made to cases of ulceration in which there was no stenosis.

The immediate results appeared to justify this procedure also. Pain was almost invariably relieved at once. The power of taking and digesting ordinary food was often regained, and the healing of the ulcer was reasonably inferred in most cases and actually verified in some. New principles had then to be sought to explain the favourable results. Spasm of the pylorus was assumed to exist even when the ulcer was situated at a distance from it and the short-circuiting was supposed to obviate this hypothetical condition. Radiographic observations made by means of food mixed with bismuth on patients on whom gastro-enterostomy had been performed showed, however, that the food does not pass for long by the artificial aperture but by the natural pyloric route. Experiments on animals previously pointed to the same conclusion. New explanations have, therefore, been sought in the altered reaction of the food due to the flow of bile and jejunal contents into the stomach, which observation has proved to occur in all cases quite apart from the so-called "vicious circle," from imperfect methods of performing the anastomosis. Whatever may be the true explanation I think practically every surgeon of experience must admit that gastro-enterostomy does almost always produce at least temporary alleviation of the symptoms of gastric ulceration whether the pylorus is involved in it or not.

That the results of gastro-enterostomy, brilliant as they so often are, are by no means always permanent, every candid surgeon must admit. Leaving on one side regurgitant vomiting, which is now rarely seen after a properly executed gastro-enterostomy, what are the symptoms which must be considered to show probably or certainly that the ulceration has not healed? Haemorrhage is rare after gastro-enterostomy, if we exclude that which may occur during the first two weeks from operative causes. Nevertheless, it has been often recorded, and must be taken as positive proof of failure to procure healing of the ulcer. Perforation of the original ulcer or of a new one at variable periods after gastro-enterostomy has also been often recorded. Recurrence of pain is the most frequent symptom of relapse, and is extremely common, even in cases which in every other respect are very successful. The recurrent pain does not in all cases, or even in the majority, I think, point to an open ulcer. When it does so the pain is severe and burning and directly related to the ingestion of solid food. Complete failure of gastro-enterostomy to bring about the permanent healing of the ulcer is, therefore, a matter of strong inference in a certain number of cases, and of actual demonstration in some cases.

Is there any relation between the situation of the ulcer and the liability to recurrence of symptoms after gastro-enterostomy? My own experience suggests that there is, and I believe that the experience of most surgeons is so similar that we may accept as a maxim that the nearer the ulcer is to the pylorus the more favourable the effect of gastro-enterostomy, and vice versa. I have, therefore, thought it worth while to ascertain as far as possible my own experience in this respect. Owing to the difficulty of tracing after-histories, I am unable to give complete particulars of all my cases, but the following summary is at least suggestive.

During the past ten years I have been able to trace all but a small percentage of those gastro-enterostomies in which the operation was performed for pyloric obstruction (non-malignant) and for ulceration of the duodenum or

stomach in the immediate neighbourhood of the pylorus. In all of them there was complete relief of symptoms and in none has there occurred anything to suggest the formation of a fresh ulcer, or the reopening of an old one. On the other hand, of those cases in which gastro-enterostomy was performed during the same period for ulceration not involving the pylorus less than one-third were ascertained to be completely relieved from one to five years after the operation. Of the remaining two-thirds, one-third could not be traced, and one-third, after a period of relief, had a return of pain and vomiting. Two cases submitted to a second operation. In one the ulcer, which was situated in the centre of the posterior wall, was found completely cicatrized and the gastro-enterostomy was found still patent and in perfect position. The pylorus, which was patent, was occluded by suture and the vomiting afterwards ceased, but the patient continues to have pain after solid food, though her digestion and general condition are much better than before the operation. In the second case there was a return of pain, vomiting, and haematemesis seven months after the gastro-enterostomy. Two years after the operation the abdomen was reopened and the gastro-jejunal fistula found in perfect condition. The original ulcer was found unhealed on the small curvature and posterior wall not involving the pylorus. It was excised completely and the gastric wound sutured. When last heard of there had been no return of vomiting or haematemesis, and the patient is pursuing her occupation at the present time—seven years since the first operation. This case made a considerable impression on me, for it was not only one of my earliest experience of recurrence of gastric symptoms after a successful normal gastro-enterostomy, but it proved that even a quite perfect and uncomplicated gastro-jejunal fistula was no guarantee against recurrence of ulceration or even against haematemesis. Subsequent experience showed me that the ulcers which proved most refractory to gastro-enterostomy were those situated on the small curvature of the stomach involving both surfaces, and those on the posterior wall at a considerable distance from the pylorus. Both these positions are very common sites for chronic ulcer, quite as common, if not more so, than the pyloric and duodenal areas.

The obvious inference is that chronic ulcers not pyloric or duodenal should be excised, but up to the present this procedure has met with little support. Most textbooks either dismiss it or deprecate it. Several reasons are adduced against it. Theoretically the conditions which cause ulcers to appear or prevent their healing are, of course, not affected by removing the ulcer, and the operation of excision does nothing to prevent the occurrence of a fresh ulcer. Again, it is alleged that in a large proportion of cases the ulcers are not single and may be numerous. I do not know how far statistical evidence bears out this contention, but my own experience is that the great majority of chronic ulcers are single, and that more than two ulcers are very rare. The operation of excision has also been said to be unsuited for large chronic ulcers on account of the difficulty of approximating the stomach wound. This objection is purely theoretical and unsound. Unless the ulcer extends far upwards towards the cardiac end there is no difficulty in removing and resuturing any of the central part of the stomach.

The results of gastro-enterostomy in cases of pyloric and duodenal ulceration, whether with or without stenosis, have been so extremely successful in the hands of so many surgeons and in such large numbers of cases that it is undoubtedly the operation of choice for this condition. The operation is easy, safe, based on sound principles, and excellent in its results. None of these assertions can be made for gastro-enterostomy for ulcers which are not pyloric or duodenal. I suggest that the operation of excision of central ulcers is technically no more difficult or dangerous than gastro-enterostomy; that it is more rational theoretically; and that it should be the operation of choice. During the last twelve months I have excised the ulcer in every case in which it was not in immediate proximity to the pylorus. The cases were eight in number, the smallest ulcer being ½ in. and the largest 2½ in. in diameter. In the latter only was it necessary to make a complete bisection of the stomach. All the ulcers were on the posterior wall, and all involved the small curvature. The gap left by the excision was closed transversely so as to cause no stenosis. In the case of the large ulcer the floor was formed in its whole diameter by the pancreas, and when the latter was separated from it and the puckering of the stomach thus undone, the real size of the ulcer—that is, of the actual loss of stomach wall area—was seen to be nearly double the apparent size of the ulcer *in situ*. When the two portions of the divided stomach were sutured together after removal of the ulcer and a necessary margin of healthy tissue, the size of the stomach was diminished by about one-fourth. In spite of this the functional result up to the present is absolutely perfect, and digestion and appetite are better than ever in the patient's previous life. All eight cases recovered without the least trouble, and all are at present in good health and free from symptoms. The time that has elapsed is, of course, too short to prove the permanency of the cure, but for the reasons already given, and from my unsatisfactory experience of gastro-enterostomy in central ulcers, I intend to excise every case of this kind in future, in the expectation that the results will in all probability be better than those of gastro-enterostomy.

Lastly, I wish to advocate the excision of perforated gastric ulcers whenever possible, which I believe to be in the great majority of cases. In five consecutive cases of perforating pyloric or duodenal ulcer, all of which recovered, and none of whom has since suffered from gastric symptoms, I found no difficulty and several advantages in excising the ulcer. The resulting gap, being in perfectly sound and movable tissue, was easily sutured transversely to the gastro-duodenal axis in such a way as to cause no stenosis. The operation, in fact, resembled a pyloroplasty, the excised portion involving one-third to one-half of the circumference. So far from lengthening the time of the operation, the satisfactory closure of the stomach was actually made easier and more rapid. In perforations near the pylorus, whether on the gastric or duodenal side, I regard excision and suture as the best routine treatment, and far superior both in its immediate and remote results to gastro-enterostomy, which is sometimes recommended.

When the perforation is high up towards the cardiac end closure is always difficult, and the ulcer is usually too large to excise, but whenever the size of the ulcer and the mobility of the surrounding parts render it feasible, I believe that excision is the best and most rapid procedure, since the attempt to close the perforation by purse-string sutures passing through the indurated area is perfectly futile. I commend these considerations to those who are interested in this subject, because so far as I can gather from current literature they are opposed to the teachings of present authority.

THE CLINICAL MANIFESTATIONS, DIAGNOSIS, AND TREATMENT OF HYDATID DISEASE OF THE LIVER.

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Hydatid disease (*Taenia echinococcus*) more frequently affects the liver than all the other organs of the body put together. Thus, in a series of 420 hydatid cases taken consecutively from the records of the Royal Prince Alfred Hospital, Sydney, 267, or 63.4 per cent., were affected in the liver. Further, in 74 the peritoneum was affected, and of these many had been previously operated on for hydatid of the liver.

As regards sex incidence, female patients seem to be somewhat more liable to liver hydatid than males; the latter, on the other hand, suffer more from hydatid of the lung. Out of 215 males, 128, or 54 8 per cent., were affected in the liver; while of 205 females, 139, or 67.8 per cent., were so affected. The results of a statistical inquiry into the general incidence and fatality of hydatid disease, and the probable causes at work, are fully given in a paper by the present writer in the *Australasian Medical Gazette* of October 21st, 1907, and need not here concern us further.

Of the 132 cases here studied, the vast majority—137 cysts out of 156—were in the right lobe; probably this is because the right lobe is so much the larger of the two

Ninety cysts presented on the upper surface, 66 on the lower. In one case there was a cyst in the gall-bladder wall; in 3 there were gall stones, in 4 cholecystitis; in 1 case the gall bladder contained daughter cysts and pus.

SYMPTOMS.

General Symptoms.—These are due to toxaemia (*a*) from interference with the digestive tract; (*b*) from absorption of toxins produced in a dead and suppurating or infected hydatid; (*c*) in rare cases from absorption of toxins produced in an apparently healthy hydatid. The last condition is one of great interest, which, so far as my knowledge goes, has not yet been adequately studied. Furthermore, toxaemia may be produced after operation on a healthy cyst, even though the case may run an aseptic course. In these cases the hydatid rash and a remittent temperature, lasting four or five days, are well-marked symptoms.

Local Symptoms.—These are pain, swelling, and dyspepsia. Other complications may be met with, due to affections of the pleura or peritoneum, to pressure on the great abdominal veins, or to displacement of abdominal and thoracic viscera either by the size or the weight of the cyst. In a few cases the presence of an old dead and calcified cyst may lead to neurotic phenomena.

Pain.—In adults this is common; in children, rare. About 60 per cent. of adults complained of marked or severe pain. In about one-sixth of the adult cases the pain was so severe as to be comparable with that of biliary colic; in all these cases except four the cysts were deep in the surface of the liver, or presenting on its upper surface. In the other four cases one cyst had ruptured into the gall bladder, two were suppurating, and one showed old calcified cysts in the wall of the gall bladder. Where no pain was complained of by adults the cysts were usually on the lower surface of the liver. The pain is described as shooting, acute, dull, aching, stabbing, intermittent, or sickening. It was usually worse on exertion, such as moving the arm; stooping especially aggravated it; deep breathing often brought it on or made it worse. In many of the severe attacks vomiting occurred, and in one instance daughter cysts were passed per rectum a fortnight after a severe attack of colic. The usual site of the pain was in the liver. In eighteen cases it was in the right shoulder, in two in the left, and in one case it was referred to the right iliac fossa. Commonly the attacks of pain preceded the appearance of a swelling, in one case by as much as fifteen years. On the other hand, a hydatid may exist for many years without causing the slightest symptoms beyond an indolent swelling, and then, without apparent cause, it may suddenly start to grow, give pain, and even to cause grave constitutional disturbance, although at operation nothing is to be found to account for the change. The question of pain in connexion with hydatids is a difficult one. Probably several factors are at work. The most important seem to be: Subphrenic peritonitis, diaphragmatic pleurisy, stretching of the peritoneum, pressure on small bile ducts, infection of the gall bladder with micro-organisms, kinking and pressure on the bile ducts with stasis and concretion of the bile, and, in rare instances, the passage of fragments of cyst wall along the biliary canals. It cannot always be ascertained to which of these factors the pain is due; it is frequently observed in the case of an entirely healthy cyst with no surrounding adhesions or other apparent abnormalities.

Swelling.—This is an invariable symptom, which, however, is often overlooked or disregarded by the patient. One frequently meets with cases in which the patient has noticed a swelling for years, yet has sought no advice till the hydatid has ruptured, suppurated, or commenced to cause severe pain. A rounded swelling beneath the ribs, moving with respiration, dull to percussion, hard, or at least tense, often rather tender, continuous with the liver dullness, may be looked on as typical. What is felt may, however, not be the cyst at all, but merely the lower edge of the liver pushed downwards by a cyst on the upper surface, and it is frequently a matter of great difficulty to decide by palpation on the exact site of the cyst. There may be no definite rounded mass, but only general enlargement or displacement of the liver; this is especially the case where the cyst is on the upper surface. In a few instances, where the cyst is almost pedunculated, it appears as a smooth, globular, mobile swelling. The tension to palpation varies with the age and thickness of the walls; thus, in an old cyst, the wall is often excessively thick, and in these cases the hydatid feels densely hard from outside. The lower edge of the liver may sometimes be felt running continuously below the costal margin, and frequently this edge is unusually hard. The subcostal angle is often flattened, and the diseased side larger than the other. The thoracic viscera are by no means constantly displaced; the apex beat is often felt in its normal position. In these cases the cyst is usually on the lower surface of the liver. When, however, it grows upwards the thoracic viscera are more commonly displaced, but even in these cases the liver may be rather pushed downwards than the heart upwards. Epigastric bulging is a very characteristic sign of liver hydatid, and frequently there is a distinct furrow above the mass.

Hydatid Thrill.—This was observed eight times, or in about 5½ per cent. of the cases. Of these, one cyst was on the upper surface of the left lobe; the others were all on the lower surface of the right. In the first of these cases the cyst pointed towards the front. Only one of the eight contained daughter cysts. The conditions which cause the hydatid thrill are not very well understood, but it probably occurs only in thin-walled cysts in which there is comparatively little tension. Daughter cysts have nothing to do with it. It seems to be more easily elicited in cysts protruding into the abdomen than in those whose growth is in an upward direction.

Rapidity of Growth.—This varies greatly, without any apparent reason. The cyst may remain apparently quiescent for many years, and it may then suddenly take on rapid growth; it may grow slowly from the time of first observation, or it may grow with great rapidity from the first. In one case there was a perceptible increase between examination in the out-patient department and operation.

Digestive Disturbances.—These occur with great frequency. Nausea, vomiting, distension after meals, acidity, and heartburn are common complaints in hydatid disease. The cause of these would appear to be, at least in some cases, splanchnoptosis from the weight of the cyst; in others, reflex spasm of the pylorus.

Vomiting.—This was noted in 28 cases. It may occur after food, or independently thereof; sometimes it accompanies the attacks of intense colicky pain. Often it signifies some change in the welfare of the cyst, as sudden rapid growth, rupture, or suppuration.

Diarrhoea.—This only occurred twice.

Jaundice.—This was observed 14 times. It was generally intermittent, and accompanied the violent attacks of colic, but occasionally it was persistent. It was not always possible to observe any pressure on a gall duct; in one instance it was accompanied by profound wasting, and in another it was the only symptom present.

In *children* there was never any severe pain, and none complained of biliary colic. Probably the soft and yielding tissues offer less resistance to the growth of the hydatid than it meets with in adults. Three-fourths of the children suffered no pain; the mothers brought them for treatment on account of the swelling. In children the average duration of symptoms before operation was only eleven months, whereas in adults it was over two years.

The hydatid rash occurred in about 10 per cent. of the patients, and never except when hydatid fluid was absorbed. Usually this happens after operation, but it may also signify leakage from a cyst. A very small dose of fluid seems to be sufficient to cause the rash. Commonly it resembled urticaria, and was itchy, but it may also appear like scarlet fever or measles. Grave toxaemia occurred four times. The symptoms were wasting, sweating, and loss of weight, with profound cachexia in two cases. Recovery ensued after operation.

COMPLICATIONS.

Suppuration had occurred in 14 per cent. of those submitted to operation. It generally followed on some trifling injury to the cyst, such as sudden exertion, a blow over the liver, or a fall. One case occurred after parturition; three after operation on the liver. One of these operations was for gall stones; the other two for other hydatids. The commonest organism present was the *Bacillus coli communis*, but staphylococci were also found. In some cases the pus was apparently sterile, but unfortunately

no examination was done for anaërobic organisms. There is a tendency among Australian surgeons to distinguish between suppurating cysts, which are merely the subject of leucocytosis, and infected cysts, which have been primarily invaded by bacteria. This classification seems to me to be doubtfully correct; the presence or absence of anaërobic organisms should first of all be ascertained; and, secondly, it is possible that organisms may have been present and have killed the parasite, only to be themselves in turn destroyed by leucocytosis. The first change noticed in a hydatid about to suppurate is probably the presence of coagulable albumen in the fluid. This is always a sign of disease in the cyst. Healthy hydatid fluid contains extremely little coagulable albumen—not enough to show by ordinary clinical tests. If albumen is thus present, either the fluid has been contaminated or the hydatid is dying or already dead. A preliminary rigor is rare in suppurating hydatid. Commonly the first indication is aggravation of whatever symptom was present; if there had been no symptom, then pain appeared in the liver or shoulders, daily more severe, occasionally with remissions. Vomiting, wasting, remittent temperature, hectic, earthy complexion or jaundice, and prostration complete the picture. Operation is usually dramatic in its success. In one case metastatic abscesses were observed.

Rupture of the cyst is the gravest complication that can ensue, and is probably fatal, sooner or later, in the majority of cases, either by immediate peritonitis, or by multiple scolical infection of the peritoneum. It had occurred in about 10 per cent. of those cases submitted to operation. The cause is generally an injury, often apparently trifling. Mere muscular exertion, such as running or swimming, is, in some cases, sufficient to bring it about; or there may be no definite history of injury at all.

The fluid may escape through the diaphragm into the pleura or thoracic viscera, into the biliary passages, into the vena cava, into the urinary passages, into the gastro-intestinal canal, or into the general peritoneal cavity. Of the 14 cases here studied one was into the lung, resulting in sudden coughing up of hydatid fluid, with shortly afterwards vomiting of bile and pus from the stomach, so that evidently there were two perforations, one into lung, the other into the stomach; two were into the stomach, due one to sneezing, the other to coughing; and eleven into the general peritoneum. Three of the latter died of general peritonitis. In rare cases the escape may be extremely gradual, probably little more than capillary oozing. Around the fluid, as it leaks out, a thin adventitious membrane forms, which gradually distends, till it comes to lie in front of the whole abdominal viscera from the liver to the pelvis, though within the peritoneum. This adventitious sac is found on operation to be filled with thin syrupy fluid, containing pultaceous cottony material with amorphous remains of daughter cysts, and, in the only case which I have seen, live scolices in considerable numbers. The abdomen appears to be full of fluid, and the diagnosis from tuberculous peritonitis is a matter of some difficulty. This condition has been observed independently by Professor Watson of Adelaide, Dr. MacCormick of Sydney, and the present writer, but I cannot find any reference to it in any publication to which I have access. Rupture appears to be much more common in youth than in middle or old age. The usual history is that the patient has been in normal health until, after some small strain, there is a feeling as though something had given way inside, followed by symptoms of local or general peritonitis. General peritonitis is likely if the hydatid in bursting ruptures the biliary channel, localized if there is no such communication. Suppurating hydatids very rarely seem to rupture into the peritoneum, no doubt because of the dense network of adhesions which rapidly comes to surround them. The density of the adhesions in hydatid patients far exceeds anything that I have ever seen in any other cases. One would hazard the guess that the reacting power of the patient has been increased by the presence of the parasite. Both our cases of rupture into the stomach and of rupture into the gall bladder, however, occurred in suppurating cysts.

Pleurisy with effusion occurs in about 8 per cent. of cases, and must not be taken as implying rupture through the diaphragm.

Ascites was present in two cases, and disappeared after operation.

No daughter cysts were ever found in healthy hydatids, and I believe them to be evidence of death of the mother cyst. Does it die in propagating itself? Or do the scolices, when the mother cyst is dying, take on active growth in the attempt to preserve the continuity of the species?

In rare cases dyspnoea occurs; only one, apart from those who suffered from pleurisy, complained of this symptom.

Diagnosis.

Commonly the diagnosis is not difficult, if one is on the look-out. The following conditions may be confused with hydatid disease: Pleurisy with effusion; diaphragmatic pleurisy; liver abscess; cancer of the liver; gall stones, cholecystitis, and cancer of the gall bladder. I have also seen some difficulty caused by pyloric cancer and pancreatic cyst. It should never be forgotten that liver hydatid may, even when non-suppurating, be accompanied by great pain, resembling gall-stone colic, wasting, and earthy complexion. Valuable assistance may be given by the *x* ray, especially when the cyst points on the upper surface of the liver a characteristic dome-shaped shadow may be obtained, which differentiates the case from pleurisy. In hydatid disease the edge of the liver has rarely the dense hardness and nodulated character noticeable in cases of cancer. Frequently a bulge is obvious at the site of the cyst, and in cancer jaundice is deeper and more persistent. An enlarged gall bladder is usually somewhat lower than a hydatid cyst, is less tense, and often more mobile. The history may be of value in clearing up the case; thus, a hydatid cyst on the lower surface of the liver is, in my experience, usually painless or nearly so, which cannot be said of gall-stone disease. I doubt if it is possible by clinical methods to diagnose between deep-seated suppurating hydatid and ordinary liver abscess. The history may give one a hint. Exploratory incision is in either case imperative. Attempts have been made to obtain information from the examination of the blood. In some cases of hydatid marked eosinophilia is present; but it is so often absent as to be an uncertain sign.

A precipitin reaction has been worked out by Welsh, Chapman, and Barling, of Sydney.[1] It appears to be absent in cases of suppurating hydatid, and to that extent fails; but we have obtained a positive reaction in nearly all our cases. Professor Welsh has kindly given me his latest conclusions, which, based on a very large experience, may be taken as authoritative.

1. The precipitin reaction does afford evidence of some specific antisubstance in the blood serum, indicating a specific interaction between the parasite and its human host.
2. That in our experience a positive reaction is conclusive of hydatid invasion.
3. That in many cases the reaction is too slight to be conclusive in diagnosis; and this result is only to be expected in view of the long years that a hydatid may lie quiescent in the tissues, since in such conditions the amount of antisubstance is likely to be scanty.
4. That the marked variations and not infrequent absence of the eosinophile reaction are probably to be explained in a similar way.

Clinically, we regard, with Professor Welsh, a positive reaction as diagnostic, a negative as inconclusive. Weinberg has experimented in the direction of fixation of the complement. Flashman and Butler of Sydney have modified his process, and consider it a marked advance on former reactive methods. Their report appears in the *Australasian Medical Gazette*, vol. i, 1910. The process appears to be more troublesome than the Wassermann reaction for syphilis.

Prognosis.

The immediate mortality of liver hydatid at the Royal Prince Alfred Hospital over a series of many years has averaged about 6 per cent., but in the course of the last five years it has been reduced to between 1 and 2 per cent. The only cases which now die are some of those which were ruptured and a few which have suppurated. But the ultimate results are far otherwise. Some patients suffer from recurrent hydatid of the liver, and it is noteworthy that one-fourth of all cases of multiple hydatid infection of the peritoneum—a grave, almost malignant, disorder—have at some time been operated on for liver hydatid. We hold, therefore, that hydatid of the liver is to be looked on as a most serious disease, of which the ultimate

outcome is uncertain. Such cases should not be accepted for assurance for five years after operation.

TREATMENT.

No other means than operation can be considered nowadays. In all cases the mother cyst should be removed.

The possible methods of treatment of the adventitious cyst are as follows:

(*a*) Marsupialization.
(*b*) Allow it to drain into the peritoneum.
(*c*) Fill it with saline solution and sew it up.
(*d*) Obliterate it by sutures, as is done with the cavity left by myomectomy of the uterus.

In the present writer's opinion, marsupialization is the operation of choice. The objections to the other methods are as follows:

1. Bile canaliculi are frequently partly eroded by the pressure of the hydatid; these may give way after some hours or days, leading to the outpouring of bile into the peritoneum.
2. The liver may contain organisms from the portal system, which may become extruded into the vacant cyst cavity, and, if they reach the peritoneum, cause fatal peritonitis. It is notoriously difficult to keep liver hydatid cavities aseptic.
3. Mainwaring of Adelaide[2] has pointed out that exogenous formation of cysts, even in the liver, is by no means uncommon. These cyts should be allowed to escape outside, and not into the peritoneum.
4. Delbet's operation of suture of the adventitious cavity is excessively difficult—in my experience, usually practically impossible without a large incision. Furthermore, there is the danger of implantation of live scolices into the adjacent liver tissue.

The objections to marsupialization are as follows:

(*a*) Hernia may occur. In an experience of over a hundred cases I have never seen it.
(*b*) Convalescence may be protracted. The usual period, in my experience, is from three to six weeks. Those cases which require longer are those in which either there is imperfect drainage (that is, faulty operating), or in which the adventitious cyst wall is calcified or greatly thickened. Such cases are no better suited for any other method of operation.
(*c*) Adhesions may form. This objection applies equally to all the above methods.

With increasing experience I think every surgeon tends to attack these cases more and more from the back, usually through the pleura; better drainage is thus obtained, and there is less risk of general peritoneal infection. I should be inclined to express the opinion that the transcostal route is the route of choice, preferably, if possible, at the "bare area" of the liver.

The anterior route will be first described, as it is the simplest.

(*a*) Locate the cyst. This is often difficult, sometimes impossible.
(*b*) Anterior vertical incision, three inches long, over the prominent swelling. Open peritoneum.
(*c*) The cyst appears as a tense, yellowish, fibrous area on the surface of the liver.
(*d*) Carefully pack off all around with gauze pads.
(*e*) Inject 5 c.cm. of pure formalin with the finest aspirating needle thrust as deeply as possible into the cyst. The assistant carefully covers the minute puncture with his gloved finger.
(*f*) Wait a few minutes, meanwhile packing off the abdomen still further, with scrupulous care, and covering also the parietal wound. The best packing for this is sheets of rubber darn sewn into gauze pads.
(*g*) Turn the patient on his side, and have a large bucket ready. Stab rapidly the cyst with a knife, the finger following immediately, and hook the cyst as far as possible outside. Every one must stand clear of the fluid, which may gush forth with immense violence.
(*h*) Enlarge the wound in the cyst with the finger, and allow the fluid to escape; as it does so, draw the cyst further and further outside.
(*i*) When empty, remove the mother cyst with ovum forceps.
(*j*) Swab the inside of the adventitious cyst with 1 per cent. formalin. Examine the liver for other cysts. If quite near, puncture through the first with sinus forceps, enlarging orifice as required. If far away, leave to a subsequent operation.
(*k*) Sew edge of cut adventitia to aponeurosis of external oblique or rectus; not to skin. We use No. 3 iodine catgut.
(*l*) Drain with a large-holed rubber tube passed deeply into the cavity. If the cavity extends right back to the loin, make a posterior puncture opening, and pass the tube through that also.

After-treatment.—We usually put these patients on a verandah and allow them up in a fortnight.

Commonly there is an evening rise of temperature for three days. The tube should be left in while this occurs, but the sooner afterwards it is taken out the better.

It is seldom that serious difficulties are encountered. Occasionally there are adhesions, but these are rarely troublesome. The most difficult cases are those in which the cyst has presented at the transverse fissure of the liver, but very rarely does it cause real operative trouble. Cysts in this position are apt to press upon the bile ducts, causing early jaundice, so that they are discovered early; if the cyst be yet quite small, it may be difficult to bring it to the surface. Again, in very rare cases, such cysts may remain latent, causing great thickening of the adventitia in the course of many years—Watson's "leather-bottle hydatid"—and it will then give rise to a good deal of difficulty at operation.

When the hydatid is in the portal fissure, and the edges of the cavity cannot readily be lifted to the surface, the best plan is to incise the suspensory ligament of the liver; the viscus is then mobilized to a remarkable extent, and can be rotated on its transverse axis, so that even its posterior edge can be brought forward. I have never seen any ill result follow this. In course of time the liver seems to regain its normal attitude. If the cyst cannot even be approximately localized, an anterior exploratory incision is justifiable; but unless the cyst wall is definitely pointing on the surface of the liver when thus exposed, I think it wiser to close the anterior incision and attack it from the back, rather than make deep exploratory punctures into the liver from the front.

THE POSTERIOR OPERATION.

(*a*) Incision usually parallel to eighth rib; resect some 3 in. of eighth and ninth ribs. I usually do this from about the posterior axillary line forwards.
(*b*) Incise costal pleura; if the edge of the lung presents push it upwards. The risk of pneumothorax is very small; I have never seen it. If it should occur, the lung can easily be drawn out into position by compression of the ribs; but it would probably be wiser not to do this till the hydatid is empty, owing to the grave danger of intraperitoneal rupture.
(*c*) Incise diaphragmatic pleura and diaphragm; retract margins of the deep wound widely.
(*d*) The hydatid presents on the surface of the liver: stitch the edges of the diaphragm to the costal pleura all around the wound, so as to avoid pleural infection.
(*e*) Inject formalin, and treat exactly as before.
(*f*) The hydatid does not present. If necessary enlarge wound, removing sufficient ribs to obtain a free exposure of the upper surface of the liver.
(*g*) Palpate liver; where it is hardest introduce a large aspirating needle. When fluid is struck take off the syringe, leaving the needle *in situ*, and inject strong formalin as before. Remove syringe, still leaving the needle as a guide.
(*h*) Incision of the liver, alongside the needle, can be done with an ordinary knife. I have had to go through over 1 in. of liver substance before reaching the hydatid. Let out the fluid, as before; enlarge the wound in the liver with the fingers to the necessary extent; remove the cyst; stitch to the intercostal muscles, the sutures perforating the tough adventitious capsule as well as the liver substance.

Scrupulous care should always be taken to prevent any hydatid fluid from touching any raw surface. It may be infective—one never knows.

The after-treatment is much the same as for the anterior operation, except that we generally now let the patients get up on a couch at about the end of a week.

After exposing the hydatid, it has been suggested to aspirate it and then refill the cavity with 1 per cent. formalin solution. The objections to this course are as follows:

It leaves the parasite, even though dead, inside the patient. The cyst walls may be degenerated or contain calcareous plates, in which case it will be probably necessary to reopen the wound and to deal with a liver abscess. In nearly one-fourth of the cases there are more than one cyst; these may not be detected until after the first one has been cleared out, and for this reason the liver should always be palpated bimanually, with one or two fingers inside the empty cavity. Again, exogenous formation of cysts may have occurred, and it is very doubtful whether injection of formalin into the original cyst will kill those outside it. They are more likely ultimately to suppurate and give trouble. Finally, there may be intra-abdominal leakage from the needle puncture.

After careful review and trial of all the methods suggested, I believe that the original Lindemann operation is still the best for liver hydatid, provided that efficient drainage is secured, and that calcareous and degenerated patches are removed at the primary operation, by curetting, if necessary. In certain other situations the newer methods may be preferable, but our present subject is hydatid of the liver.

Occasionally a persistent sinus may remain, alternately

opening and closing. These cases may give rise to much trouble. In my experience they represent three types:

(*a*) The cyst wall is so immensely thickened that it cannot completely contract. This is analogous to the condition seen in an old chronic cystitis, where the bladder is almost turned into fibrous tissue, and has contracted adhesions to the surrounding parts. Such cases tend to cure in course of time, most of the fibrous tissue being ultimately absorbed and healthy granulations obliterating the cavity. We find it best to lay the cavity entirely open, if necessary resecting several ribs, scrape its walls, and pack from the bottom.

(*b*) There is an abscess cavity containing calcareous plates, which may lie free in the cavity or may line its walls. This will heal up if free drainage is provided and the plates are removed.

(*c*) There is a long, tortuous, branching sinus leading deeply into the liver; it may or may not depend on a lime plate, but there is frequently a deposit of lime on the walls.

These latter cases may be extremely troublesome, and may require several operations. We usually scrape, provide free drainage, straightening the sinus as much as possible, and try to get it to heal from the bottom. In rare cases the wound heals up, but the cavity is not quite obliterated. If at any subsequent time the patient is invaded by septic bacteria, as, for instance, from a whitlow, the old cavity becomes infected, breaks down, and gives rise to a discharging sinus. This should be laid open and packed from the bottom. These persistent sinuses are, however, not common.

Treatment of Ruptured Hydatid.

The abdomen should be thoroughly explored, and probably it is best to wash it out with normal saline solution. In all cases the primary hydatid should be sought for and removed. The outlook is, however, not favourable, as multiple peritoneal hydatid is apt to follow—an extremely dangerous condition. In this connexion, which, however, is so important that it deserves a monograph for itself, it may be mentioned that whenever multiple hydatids are found in the abdomen, the liver should always be thoroughly exposed and examined. Often a primary leaking cyst will be then discovered.

Treatment of Suppurating Hydatid.

This requires no special mention. Operation is generally followed by magical improvement, and the great majority do very well. It is usually necessary to drain for some weeks. Hamilton Russell, of Melbourne, has published a successful case in which, after removing the pus, daughter cysts, and true capsule, he merely filled the cavity with saline solution and sewed it up again.

Finally, mention should be made that Welsh has experimented in the production of, I believe, an antitoxin for the treatment of multiple hydatid of the liver—a fatal and inoperable condition. In these cases the liver is riddled with great numbers of small hydatids; if one is removed the others suppurate, and the patient soon dies. Fortunately it is extremely rare in Australia.

References.
[1] *Australasian Medical Gazette*, August, 1905. [2] Ibid., January, 1910.

SECTION OF TROPICAL MEDICINE.

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RUPTURE OF HEPATIC ABSCESSES INTO THE LUNGS.

By James Cantlie, F.R.C.S.,
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Mr. J. Cantlie showed *x*-ray photographs of two cases of liver pus. In one the pus had found its way upwards through the right lung—a frequent method of spontaneous exit; but in another case the *x*-ray photograph showed the pus had pushed up the diaphragm on the left side, and the pus had followed the unusual course of gaining exit by way of a bronchial tube in the left lung. He then said:

At one time exit of pus by way of the lung was regarded as a favourable issue, and one to be waited for when a liver abscess was suspected or diagnosed. The day for expectant treatment of the kind is, and ought to be, a thing of the past, for to allow of a contingency of the kind means either neglect of the physical signs and symptoms of suppurative hepatitis, or an unjustifiable delay in operating. When pus has found exit by way of the lung, unless when it is first actually taking place, it is useless to attempt to reach the abscess by a needle whilst free expectoration is present. I have on several occasions, when hepatic pus was in the very act of being coughed up through the lung for the first time, been able to reach the pus by a needle introduced from the side, and through a trocar and cannula introduced a rubber tube and applied siphonage, thereby relieving the lung symptoms and determining the pus to the tube instead of allowing its further exit by the lung. When, however, the pus has been coughed up for even a few days it is useless trying to reach the abscess cavity in the liver. The walls of the cavity, now relieved of the pus, fall together and it is well-nigh impossible to find the cavity by introducing a needle under such conditions, for the needle point may pass above, below, or beyond the area of the burst abscess. In such conditions it is necessary to wait until the pus reaccumulates. This may never occur, for the pus may continue to be expectorated in gradually lessening amounts whilst the cavity contracts and may finally heal and no further trouble occur. A favourable termination of this nature is but rarely seen.

The usual course is for the pus to find exit by the lung for some time—it may be a few weeks—when suddenly the cough abates, or more often the expectoration ceases; the cough is no longer of a "loose" nature, but dry, hard, and irritable. The temperature goes up two or three degrees, and there are the usual signs of feverishness. What has happened is that the opening of the abscess cavity has become blocked, obstructed, or closed from some local congestion, and the pus is retained. After a few days—two or three—it is usual for the expectoration to again appear, the cough to become loose, and the feverishness to subside, showing that the temporary collection of pus in the cavity of the abscess has found its way upwards once more through the lung. The patient in the interval recovers appetite, gains weight, and is able to go about as he pleases, the pus from the liver causing only an occasional attack of coughing. After the recurrence no more trouble may ensue; the pus gradually lessens, expectoration ceases, and the patient completely recovers.

This may, again, be a delusion, for recurrences of collections of pus may occur again and again with intervals of relief from fever, etc., extending over weeks, or it may be several, even six or more, months. Under such circumstances it is necessary to operate—that is, to reach the pus and drain it off from below, instead of allowing it to drain upwards through the lung.

To attempt to reach the cavity in the intervals between the febrile attacks, when the pus is gaining free exit by way of the lung, will only lead to failure. The walls of the cavity are in contact, and to pass a needle into an area in width perhaps the thickness of a piece of paper is quite hopeless. It is during the febrile attack only that an attempt should be made to reach the cavity by a needle. The communication of the abscess with the lung channel is for the time being shut off; the pus is collecting in the abscess, and when it has attained sufficient dimensions it will overcome the obstacle to exit, and again become expectorated.

The instructions to a patient who has once coughed up hepatic pus should be that the moment the temperature goes up and the pus ceases to be coughed up the doctor should be sent for. Delay may mean that when the doctor arrives the pus is again being coughed up, and another long period of waiting to ascertain if a recurrence of pus collecting in the liver is or is not to take place. The rule is, when the temperature goes up and the patient ceases rather suddenly to expectorate pus—operate.

To find pus that has gained exit by way of the lung is no easy matter, more especially if the channel of exit is of long duration. In the first place, the tract of the pus is deeply situated; as a rule it is close in contact with the pericardium between the inner aspect of the right lung and the right side of the pericardium. In some cases the pus would appear to be conducted upwards between the layers of the ligamentum latum pulmonis, and to gain entrance to a bronchus near the root of the lung; in other

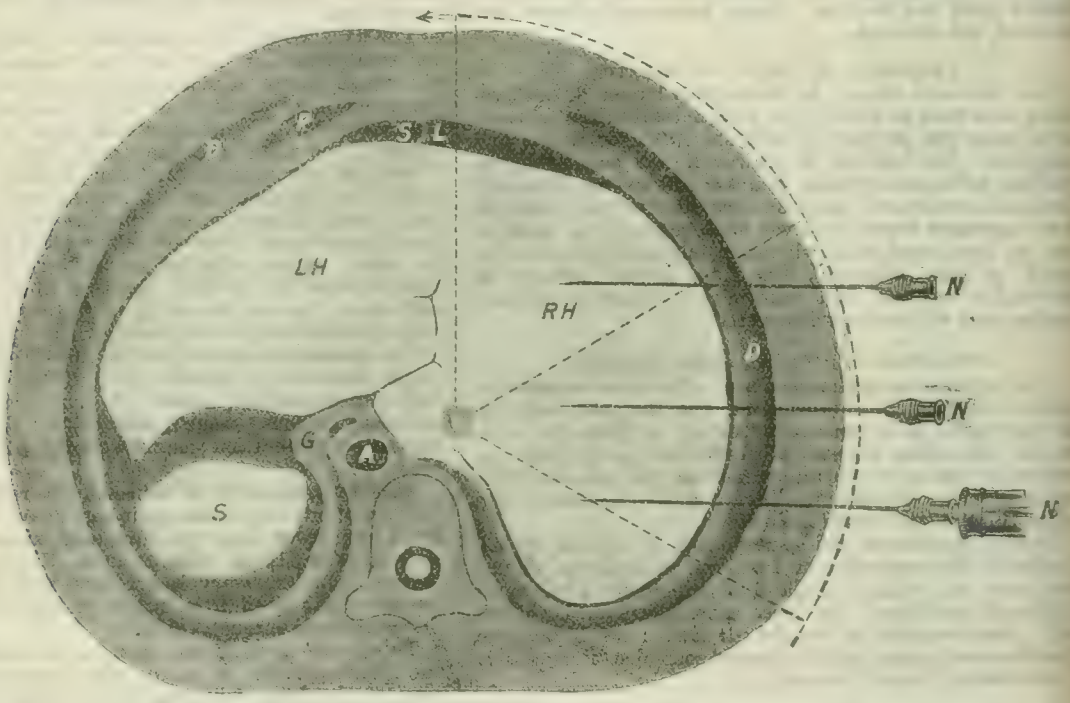
cases the track traverses a wavy course through the inner aspect of the lower lobe of the right lung, and ends in a bronchus near the root of the lung. In any case the path is deeply placed and difficult to reach.

There are three paths by which the abscess track can be reached: (*a*) By opening the abdomen and, after searching for the area of adhesion between the liver and diaphragm, through the centre of which no doubt the pus has escaped, proceed to find the actual channel. This is always difficult, often impossible, and, if found, fraught with the danger of infecting the peritoneum by pus that has been freely in communication with the air for weeks or months. (*b*) By attempting to reach the track by removal of the rib cartilages or ribs themselves in front. This is a proceeding at once dangerous, harassing, and seldom successful. (*c*) By searching for the pus, when a febrile attack is on, and when there is evidence that the abscess cavity has filled, with the hollow needle of an aspirating syringe, and, when it is found, drain the cavity by siphonage. The great difficulty to be encountered is the depth of the cavity and the track from the surface of the chest.

In several cases in my experience the track was so deep that considerable hesitation ensued in proceeding with the guide there is in such a proceeding is the toughness and rather rugged feel of the wall of the pus channel as the needle reaches and punctures it. Once the track is reached by the needle the introduction of a large trocar and cannula, and the introduction of a large drainage tube stretched on a metal rod through the cannula is a comparatively easy matter.

When the pus from the liver traverses the left lung to gain exit by the air passages the danger of searching for the track by a needle of an aspirating syringe is, as can be readily understood, greatly increased. The natural bulging of the heart to the left, increased undoubtedly by adhesions pulling the heart still further towards the left side, renders searching for pus, deep-seated in the inner aspect of the left lung in juxtaposition to the pericardium, a matter of difficulty and threatened danger. The writer failed to hit the track after three separate attempts, though some half-dozen punctures were made on each occasion.

The only safe method, when transthoracic punctures made from the left side of the chest have failed to reach the track, is to make an incision through the left rectus muscle in the epigastrium, open the peritoneum, pass the finger between the liver and diaphragm, locate the site of the adhesion between the liver and diaphragm, and, holding



Transverse section of body through the liver. A, Aorta; V, inferior vena cava; S, stomach; D, diaphragm; S L, suspensory ligament of liver; P, pericardium; L H and R H, left and right halves of liver; dotted arc on right side of chest is operable area over liver; dotted radiating lines of equal length showing inferior vena cava to be equidistant from surface of right chest wall; N, N, N, needles consecutively introduced horizontally into liver whilst searching for pus.

operation. If the operation is undertaken at the period when the cavity has refilled, there should be no real anatomical difficulty, but in long-standing cases, when there are no refillings of the cavity and the track of pus through the lung is kept permanently open, when the walls of the track become hard and thickened by fibrous tissue, reaching the track is a difficulty to be seriously considered.

In more than one case of the kind I have had to traverse the chest for a distance of 7 inches from the surface before the track of the pus was struck. No needle of sufficient length being procurable to accomplish the distance, after an incision made in the right side of the chest and a portion of two ribs removed, it was possible to introduce a 5 inch (the longest available) needle sufficiently deep so that the tough wall of the track could be made out, and a puncture made therein recognizable only by the fact that pus was met with. A needle introduced to the depth of 7 inches from the side of the chest must come precariously near the pericardium in even a fair-sized man; yet it is along the side of the pericardium that the track for the pus between the liver and the root of the lung exists, and it is necessary to strike it if a cure is to be made. The only

the forefinger of the left hand against the point of adhesion introduce the needle of an aspirating syringe from a point on the chest wall level with the lower end of the track and push it onwards and inwards until (with the left finger as a guide) the track is reached. When pus is found a trocar and cannula is inserted, a drainage tube introduced through the cannula in the usual way, and siphonage applied. The last stage of the operation is the closing of the abdominal incision. This procedure is safer than attempting to drain the track through the abdominal cavity to the surface of the abdomen, for pus that is in contact with air in the respiratory passages is highly infective, and therefore calculated to cause a septic peritonitis.

Washing out the cavity of a liver abscess which has gained exit by way of the lung is, of course, not to be attempted on any consideration, for the fluid will reach the respiratory passage however gently it is done, and the patient's life is placed thereby in imminent danger. Whilst on the subject of washing out a liver abscess cavity, I may say that I have long ago given up the practice. In the first place, washing out the cavity with a solution of quinine or any other drug does not hasten the recovery. The contention that the

amoebae met with in the abscess wall are killed by the quinine may be true, but that there is danger in the proceeding is well known to any one who has had much experience. The wall of an abscess cavity in the liver, if the disease is progressing, presents no barriers. The broken-down tissue of the liver, with many open-mouthed veins, is the only so-called "sac-wall," and the injection of fluid into the space, should it find its way into the open mouth of a branch of the hepatic vein, will cause symptoms so alarming that should the operator once experience the occurrence he will never again attempt to "hasten" the cure by washing out the cavity of a liver abscess.

The dangers of haemorrhage from puncturing the liver in search of pus is a subject that crops up every now and again. Cases of serious haemorrhage have been recorded from time to time, with the effect of causing doctors to hesitate puncturing the liver when pus is suspected in that organ. That such an accident should deter the search for pus in the liver would be a still greater calamity, as the only positive means of recognizing the presence of pus would be denied us. There is no known single sign or symptom, nor any group of signs and symptoms, by which we can positively diagnose deep-seated pus in the liver; they may lead us to suspect with some certainty the presence of pus, but by the needle alone can the suspicion be actually confirmed. Some condemn the use of the needle for this purpose and favour cutting down upon the liver, and actually, as they say, seeing the seat of the lesion. Exposure of the liver by an incision in the abdomen does not, unfortunately, give much, if any, aid to the recognition of pus in the substance of the liver, nor when it is situated between the layers of the broad ligament of the liver posteriorly.

At the Tropical Medicine Section of the British Medical Association some years ago Colonel Macleod, I.M.S., referred to this point, and mentioned a case in which a well-known surgeon in London, despising the search for pus in the liver by a needle and condemning it as a cowardly and unsurgical procedure, cut down upon the liver, and after a careful inspection and palpation of the liver said there was no abscess in the liver. He sewed up the wound in the abdominal wall, but within forty-eight hours the abscess burst, fortunately into the colon, and the contents of the cavity escaped with the faeces.

When pus is deep-seated in the liver, neither inspection nor palpation will reveal the presence of pus, and if search is made when the liver is exposed there is more danger of haemorrhage from the puncture points than when the punctures are made through the skin and the abdomen is intact, the very contact of the abdominal wall with the liver tending to allay the escape of blood. In an attempt to allay the alarm caused by the reports of haemorrhage following punctures made in the liver by a needle, and believing that severe and sudden haemorrhage is due to the needle wounding the inferior vena cava, I proceeded to examine frozen sections of the body on a level with the liver to ascertain, if possible, how to avoid wounding this vessel. Inspection of many sections of the body showed that the inferior vena cava is situated at an equal distance from the surface anywhere in the operative zone for liver puncture through the chest wall. In a chest of 32 inches circumference (the most common size of the chest in museum specimens examined), the distance of the *centre* of the inferior vena cava from the surface of the chest is 4½ inches at any given point in the operable area. It is, of course, evident that the needle employed in the search should never be introduced to this depth, otherwise the cava will be penetrated. The length of the needle should not exceed 3¾ in., and thereby the distance traversed will fall short of the caval wall, and no element of danger need arise from haemorrhage. Another point to be noted is that the needle should be directed horizontally into the liver from the right side; a more thorough search is thereby ensured, and the needle is not directed towards the cava, as in the usual methods of puncture.

DISCUSSION.

Dr. LAWRANCE D. PARSONS (Gibraltar) said Mr. Cantlie's statements concerning the position of the inferior vena cava were not only interesting anatomically, for by the adoption of the rules he laid down for puncturing the liver more confidence would be given to operators to search for liver pus by a hollow needle in any case in which pus in the liver was suspected. He had followed Mr. Cantlie's plan of operating with success.

SANDFLY FEVER (PHLEBOTOMUS FEVER OR "PAPPATACIFIEBER") IN CAIRO.

By LLEWELLYN PHILLIPS, M.A., M.D., F.R.C.P., F.R.C.S.,
Professor of Medicine, Egyptian Government Medical School, and Senior Physician, Kasr-el-Ainy Hospital, Cairo.

FOR the last two or three years I have had to treat many cases of a short fever, accompanied by pains in the trunk and limbs. At first I was accustomed to make a diagnosis of dengue, though they differed from cases of that disease in running a shorter course, in not relapsing, and being unaccompanied by rashes, but I regarded them as being atypical instances of dengue, which had been epidemic in Cairo in the autumn of 1905 and 1906 in a typical form. In the late summer and autumn of 1909 they were particularly numerous, both in the Egyptian Government Hospital and among my private patients. I tried to identify them as Rogers's "seven-day fever," though, as a rule, they were much shorter: one case, however, lasted nine days, but the differential leucocyte count was not convincing. Dr. Wakeling told me that in October, in Mena House at the Pyramids, he had many cases of a short fever to treat, and he himself fell a victim to it; this he put down to infection by sandflies, which were very numerous at that time. (I am uncertain whether he published his observations or not.) During the winter, in one of the medical journals, I read an account of sandfly fever in Malta; the description of the disease fitted the disease as seen by me and described by Dr. Wakeling.

Again this spring I had a further series of cases to treat of a fever, lasting about three days, which was not influenza and certainly not dengue. Some were in hospital; they were either hospital orderlies or policemen (such people would have to report sick immediately on feeling ill).

The private cases were of a similar nature. The details of a few cases are as follows:

CASE I.

L. B. was taken ill on May 20th with pain in the back, headache, diarrhoea, and a dirty tongue. The fever disappeared on the 23rd; on the 24th the tongue was still furred but the pains had gone. There was leucopenia, which made a differential count a tedious operation. There were 61 per cent. polymorphonuclears, 22.5 per cent. large mononuclears and large lymphocytes, 15 per cent. small lymphocytes, and only 1.5 per cent. eosinophiles. Recovery was complete and rapid.

CASE II.

N. B. had slight diarrhoea on May 12th. On the 16th he had a chill and was feverish; he shivered again on the 17th and kept in bed. The symptoms were vomiting, frontal headache, discomfort and soreness of the eyes, pains in the shoulders, and abdominal discomfort. The temperature became normal on the 19th. When I saw him on the 20th his temperature was 99.6° F., with a pulse of 68; he looked ill and drowsy, but there was no rash. His tongue was furred and flabby, and he then was perspiring freely. The temperature finally left him that afternoon, and he recovered quickly. (In the autumn of 1906 he had two attacks of dengue, one in a typical form.) A differential blood count on the 20th showed leucopenia with an abundance of platelets and 64 per cent. of polymorphonuclears, 30 per cent. of large mononuclears and large lymphocytes, 5.3 per cent. small lymphocytes, and 0.6 per cent. eosinophiles. There were no parasites. The duration of the disease was five days; this was preceded by some days' malaise.

CASE III.

A. H., an Egyptian, was taken ill on June 6th with pains in the back and limbs, headache and pain in the eyes; the temperature rose to 102° F. On the 7th it was 99.8° F., with a pulse of 84; his eyes were sore and eyelids puffy, and the tongue was very furred and flabby. Examination of the blood showed leucopenia; there were 66.4 per cent. polymorphonuclears, 30.2 per cent. lymphocytes and large mononuclears, transitional cells 2.2 per cent., and 1.2 per cent. eosinophiles. The temperature that evening became normal, but rose on the 8th and 9th to 99.2° F., and became normal on the 10th (fifth day).

CASE IV.

W. B., was taken ill on May 25th with pains in the loins and back; he felt feverish, and the temperature rose to 102.5° F. that evening. His throat became sore. I saw him the next morning; his temperature was then 102° F., and his pulse 84. He was complaining of general aches and pains, and his tonsils

were inflamed, particularly the left one, which was enlarged. The fever came down that day, and the next day he was well. I made a leucocyte count, and Professor Ferguson kindly checked it. He reported as follows; Slide 1—Polymorphonuclears, 55 per cent.; small and medium-sized lymphocytes, 27.5 per cent.; large mononuclears (hyaline), 10 per cent.; transitional cells, 3.5 per cent.; and polymorphonuclear eosinophiles, 4 per cent. Slide 2—Polymorphonuclears, 60 per cent.; small and medium-sized lymphocytes, 21.43 per cent.; large mononuclears, 14.2 per cent.; transitional cells, 1 5 per cent.; polymorphonuclear eosinophiles, 2 86 per cent. There is a very decided leucopenia; probably the number of leucocytes per cubic millimetre falls between 2,400 and 3,000. This was a short, sharp case. He had last autumn an attack of fever which lasted nine days.

CASE V.

J. R., was taken ill on June 15th with fever, pain in the neck, soreness in the eyes, and some diarrhoea. I saw him about three hours after the onset of the fever. His temperature was 103° F.; his eyes were slightly congested, more especially at the sides of the cornea; his pulse was 120. (He had had endocarditis after an attack of influenza a year ago.) The temperature fell during the day to 99.2° F.; the next morning it was 98° F., and 97.8° F. in the evening. A few days before this he had had an attack of diarrhoea. A blood count on the second day showed polymorphonuclears, 50.75 per cent.; large lymphocytes, 30.75 per cent.; hyaline mononuclears, 4.25 per cent.; small lymphocytes, 11 per cent.; transitional cells, 2.25 per cent.; eosinophiles, 0.5 per cent.; mast cells, 0.5 per cent. There was a decided leucopenia. This also was a short, sharp case. He told me that others in the same house had suffered from a similar illness.

These cases correspond very closely with the description of the disease as described in Doerr's monograph, *Das Pappatacifieber*, published in 1909, and Lieutenant Colonel Birt's "Phlebotomus Fever in Malta and Crete," published in the *Journal of the Royal Army Medical Corps*, March, 1910. I have studied both papers. They are each of them excellent accounts of the disease, with complete experimental proof of the part played by sandflies in the spread of the disease.

Further, Captain Rahilly, R.A.M.C., showed the charts of many cases which had occurred amongst the troops and which had been in the Citadel Hospital.

Sandflies abound in certain parts of Cairo, and Mr. Willcocks, of the Khedivial Agricultural Society, kindly identified and mounted for me sandflies caught on Gezireh. These flies were *Phlebotomus papatasii*.

A short summary of the symptoms of the disease as given by Doerr is as follows: Onset sudden, perhaps with a shiver; disinclination to do anything; pains in the calves, loins, back, and neck, frequently with tenderness of the peroneal nerves, or brachial plexus, or over the intercostal spaces; frontal headache, with tenderness of supraorbital and infraorbital nerves; pain in the eyes, with tenderness of the globes; injection of the conjunctiva, particularly on either side of the cornea; there may be some injection of the soft palate and fauces or some tonsillitis; vomiting frequently occurs; constipation is the rule, though there may be a gastro-intestinal form with diarrhoea; the tongue is usually coated and flabby; bradycardia may occur, or the pulse be infrequent in relation to the temperature; the blood shows leucopenia, with a diminution of the polymorphonuclears and the eosinophile cells, and an increase of the large lymphocytes and large mononuclears; platelets may be abundant; as a rule there are no rashes, though the face and eyelids may look swollen, and an erythema may occur. Relapses occur occasionally. Sandfly bites and lesions produced by scratching may be noted. Defervescence is usually rapid in from three to five days, though abortive attacks may only last a few hours or one day, and may even be afebrile; longer attacks up to seven or eight days may occur, but these may be due to some complications. In contradistinction to influenza, catarrhal symptoms are very rare. The mortality is practically *nil* and the incubation period usually five to seven days.

In contradistinction to dengue, the latter disease in a typical form only occurs in the late summer and autumn, and then generally in well-marked epidemics, whereas this disease occurs throughout the whole of the hot weather from the spring to the autumn. The absence of rashes and the extreme rarity of relapses helps also to differentiate it. The blood picture too is slightly different; whereas in sandfly fever there is a slight diminution in the polymorphonuclears, 50 to 60 per cent., and a great diminution in the eosinophiles, with an increase in the lymphocytes and large mononuclears; in dengue, according to Dr. Balfour, there is a very great diminution in the polymorphonuclears even as low as 27.75 per cent. in one case, with a very great increase in the lymphocytes even up to 53.25 per cent. The eosinophiles were usually diminished.

The blood count enabled me to distinguish a mild case of scarlet fever which rather closely resembled this disease, as the polymorphonuclears were up to 83.75 per cent. and the eosinophiles to 3.75 per cent., nor was there leucopenia.

That there is a third disease present in Cairo which is neither influenza nor dengue is certain. Dr. Sandwith refers to simple continued fever in his book on the medical diseases of Egypt; the shorter forms so described are, in my opinion, this disease. From the foregoing descriptions it seems to be certain that it is identical with Doerr's *Pappatacifieber*. It is said to attack most especially new comers. Many of my cases were, however, oldish residents or Egyptians.

One more disease, probably common to the whole Mediterranean basin, must, therefore, be added to the nosology of Egypt, but luckily a milder disease than the dreaded Mediterranean fever.

DYSENTERY.

By G. H. FINK, Major, I.M.S.(ret.).

THE old observers classified dysentery under the heads (1) acute and (2) chronic, and riveted their attention, in tropical regions especially, on climate and season of year, clothing, water supply, and diet. This disease, through the light of bacteriological investigation, serum tests and therapy, has undergone a great change in the methods of diagnosis and treatment, both local and general, and therapeutic as well as dietetic. There is also a suggestion in such a method as the latter, of the etiology of the disease, its degree and character, as well as the suitable treatment. The disease has been divided into (*a*) catarrhal, which is said to be simple and requires simple remedies, (*b*) the bacillary, which responds to the agglutinative reaction, which is negative in (*a*) and in (*c*) the amoebic. The treatment for the two latter, namely, for (*b*) is by the anti-dysenteric serum, and for (*c*) by local applications (enemata), which are useless in treating the bacillary form.

The factors of old, namely, climate, clothing, water supply and food, in tropical countries cannot be neglected even though we have a clearer differential diagnosis and a more appropriate treatment through the tests applied.

Notwithstanding this, there is in tropical countries an endemic zone or area present where some of the worst types which would come under the term suggested lately as "paradysentery" and also the term "malignant." This zone or area is not quite defined in our maps, but is well known among tropical observers, and circumscribed in their mind's eye.

I venture to affirm that of the worst types some are associated with malaria; and if scurvy be present at the same time the term "malignant" is more applicable to this form of the disease.

Then, again, we shall find that some of the types are associated with malaria of the intermittent and the remittent forms of malarial fever—in water-logged, clayey soils the former, in sandy soils with extremes of temperature by day and by night the latter, to which scurvy (in the latter) is often superadded. Why? Because the country is generally devoid of vegetation to a great extent, and antiscorbutic vegetables are not to be found, nor much fruit, except in certain cases scattered over the valleys. In such a country, as a rule, the water supply is charged with saline matter and foreign particles, and boiling has little effect on them. Physically the water presents every appearance of being good and pure and is clear as crystal. Even the native inhabitants of these regions I refer to are careful in drinking it freely; they wet their tongues simply.

As a rule, in these parts the troops and followers (natives) are usually the sufferers. The disease first breaks out among followers; they are enlisted all over the plains, and without any discipline, and their diet, which is scanty in their villages, is suddenly raised to a higher standard on service; hence the fact of over-eating and over-drinking the water of these regions sets up diarrhoea of a violent form, followed by catarrhal dysentery later,

which lastly terminates in malignant forms when the system has been very greatly lowered. Malaria and scurvy play a further part in draining the blood, hence the condition of the intestines and their glandular system can be well imagined. Nature endeavours, therefore, to relieve herself of the trouble, and eventually the mucous membrane pours out mucus, the arterioles are opened out, and, blood and mucus commingling, a sphacelus is set up which soon terminates fatally if not properly treated.

In the case of the European and some of the agricultural races of native soldiery, monotony of diet plays a part as a factor in the production of this disease in bad forms.

We can readily understand that if the disease breaks out among followers in the form mentioned above the water-courses require guarding, and the foci of bad or defective sanitation—those who know the habits of these people can fully appreciate how difficult it is to enforce rules—attract carriers of infection; hence the disease soon spreads.

Such types of dysentery are not witnessed in those regions with a clayey soil and intermittent malarial fever, although at times among the civil population (perhaps in gaols) it does assume almost as bad a form as I have just described. But some of the worst forms occur without evidence of malarial attacks, and I believe are due to something defective in the dietary. They may or may not start with diarrhoeic trouble first; vegetables and fruit are withheld, catarrhal dysentery is set up, and, with a further restriction of vegetables and fruit, scorbutic taint sets in and the disease turns chronic and of the worst type.

Treatment.

What is the treatment in such cases? Here we are bound to assert that our old masters have taught us much when they riveted their faith in clothing, water supply, and food. If the clothing be suitable (flannel close to the skin and over the abdomen), the water supply good (either properly filtered water or boiled and filtered), and the food nourishing and bland and simple, as well as appropriate to the stage of the disease, then the older medicinal remedies (ipecacuanha, Dover's powder, laudanum, etc.) would benefit, and in the case of modern methods, too, benefit would follow, not otherwise. As to monotony of diet while on service or in standing camp, we all know how monotony of diet operates, for if a person does not enjoy his food full nourishment does not follow. The gustatory nerves are not excited to action, and the gastric juice is either deficient or of poor quality, since the secretions of the human body are the result of proper nourishment if they must be healthy and of good quality and quantity. The other organs besides the stomach react in a similar manner, hence the digestion of food is improper, and decomposition must set in more rapidly, and auto-intoxication must follow in consequence. Some of the native remedies in the early stages of the disease cut it short; but the usual routine treatment in the tropics is, I think, a safe one to start with—namely, castor oil with either peppermint water alone, or a teaspoonful of brandy added if the griping is severe, followed by ipecacuanha in powder, and preceded with a mustard sinapism over the epigastric region to prevent vomiting. Later, Dover's powder in proper doses according to the patient's age, etc. Magnesium sulphate, liquor hydrargyri, bismuth, and soda, with tinctura cannabis indica, etc., have also been valuable. I would mention three drugs which are indigenous and are valuable—namely, aesofgole, tukmā, and the boel fruit (*Aegle marmelos*). The two former are given in the acute form, and boel fruit in the chronic form.

There was also a very noted powder in use in the chronic form which did good, and I have seen a case of three years' standing (no malarial fever) cured, though the patient was reduced to a shadow. The constituents of this powder were on ready analysis found to be caraway, cummin, and aniseed, parched lightly and ground to a powder, to which was added liquorice powder, which gave it a sweet and pleasant taste, compounded with the rest of the ingredients. Of this powder a tablespoonful was taken three times a day with powdered sugar candy.

Diet.

Nourishing food (chicken broth, milk, or milk and mucilage of tragacanth mixed, but passed first through a fine sieve; jelly) used to be given, and the patient taken on to the more easily-digested meats—first fish, and so on—gradually feeling one's way. No tea or coffee, but only cocoatina, and no starchy substances like cornflour, blancmange, etc., were allowed. Later, if alcohol were required, port wine with jelly was given, and gradually increased.

If monotony of diet plays a part as factor in the case of the disease in the regions mentioned, and water is a powerful cause in creating diarrhoea, I would suggest that, to break the monotony in the case of the European, perhaps he would be better off under such circumstances to take kindly to the native diet twice a week merely as a change. In the case of the agricultural native soldier, if he could be induced to partake of tinned milk and canned vegetables and fruit—provided he was shown how tinned articles were prepared, to remove that prejudice there is—I feel sure that under such trying conditions (as many of our native soldiers see no objection on service) he would also take kindly to the articles. As a rule, the agricultural class have a very much better standard of diet than others (milk, vegetables, and fruit are added to flour, pulse, and clarified butter).

Monotony of diet cannot play any part in the case of followers whose diet is the same at home as on service, only perhaps more liberal at times in the case of some while on service. But I would strongly recommend tea as rations to all, for they will not boil their water before drinking; if tea were the excuse, they would, I feel sure, and it would benefit all arms of the service under such circumstances as the above. Alcohol is not a substitute for coffee and tea, although valuable in many cases medicinally, and also in the case of those who are accustomed to it in the tropics, after sunset.

I do not discuss the subject, for we have lately had the limit of this substance experimentally tested under healthy conditions, to show that there is a limit in health.

In the case of an outbreak of diarrhoea on the march, or the standing camp, the cause can be defined as a rule; but it seems sound to run no dangers to the fighting line, hence segregation from the start is necessary, and a special base for the treatment of the worst cases. Too many cases treated together on the lines of communication or standing camps create a danger for the reasons given above, and the most careful attention to sanitary principles in the matter of latrines and water supplies are often broken through, except at the base, where it can be enforced. This is due to infective causes and the carriers of infection in camp.

Whether *Aegle marmelos* (boel fruit) in the chronic form acts merely as a demulcent and food, or is also antiscorbutic, is a point for further inquiry; its seeds in the ripe fruit are very much surrounded by a sticky gum which is somewhat astringent, and I am of opinion that this element in the ripe fruit is the valuable agent. It is the ripe fruit made into a sherbet that is drunk and is useful in dysentery, and not the raw fruit. Some people, when the ripe fruit cannot be obtained, place the raw fruit over a sharp charcoal fire to ripen or rather soften it, and then use it in the same manner; but it is a poor substitute for the ripe. I see that mangosteen (*Garcinia mangosteen*, nat. order, Guttiferae) has been recommended of late.

THE INCIDENCE OF BILHARZIOSIS IN EGYPT AND ITS CLINICAL MANIFESTATIONS.

By Frank Cole Madden, M.D.Melb., F.R.C.S.Eng.,

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Reliable statistics of any disease are notoriously difficult to obtain in Egypt, owing to the ignorance and suspicion of the mass of the people, and their deep-rooted objection to having their names or affairs set down and perpetuated in any paper or book that may form part of the Government archives; and there is a further difficulty with bilharziosis in that both the (Egyptian) medical man and the patient, or his friends, may not think it worth while mentioning the existence of such an ordinary everyday condition as this, in addition to any other disease the patient may wish treated or which may have been the cause of death. It is possible, too, though difficult to

prove—owing to a peculiar reticence on this subject—that, as in certain parts of the Transvaal (Brock), haematuria is looked upon as a sign of manhood and without which the begetting of children is impossible. This belief appears to be prevalent to a considerable extent in Egypt, particularly among young men, and not infrequently leads to a concealment of the fact of infection with bilharzia.

Whether from this reason or from ignorance of its effects, there is no doubt that, among all classes of the people, many cases of bilharziosis go entirely untreated, and so the risk of infection to others is enormously increased. In this connexion I may mention that at the present moment I am attending a pupil of one of the public schools in Cairo with severe bilharziosis of the bladder, and he was frankly amused when I reminded him of his possibilities of infecting others and suggested his taking certain precautions to prevent this happening. He told me that the disease was so common among his fellow students that any isolated attempt on his part to take precautions would not only be quite futile, but would also undoubtedly subject him to the ridicule of his fellow sufferers.

Sometimes, also, the disease may exist in such an early stage as to give rise to no symptoms. Some years ago my former colleague, Mr. Frank Milton, found that of 100 consecutive admissions to hospital, irrespective of their disease, 35 had bilharzia ova in the urine, and only 2 of this number complained of symptoms of bilharziosis;[1] and in a school near Cairo Kautzky found eggs in the urine of 79 per cent. of boys out of 124 examined, although all professed themselves to be in perfect health.[2]

The publication of the annual reports of Kasr-el-Ainy Hospital, by Dr. H. B. Day, the Medical Registrar, gives me the opportunity of arriving at a fairly accurate estimate of the frequency of the disease among in-patients; but these figures do not include the large number of patients with bilharzia ova in their urine, or suffering from painless haematuria. They really only comprise those in whom the symptoms have become so urgent as to compel them to seek hospital treatment, and then only because the increasing gravity of their symptoms entirely prevents them from carrying on their everyday work. The Egyptian fellah—to use an appropriate colloquialism—will go on till he drops; and when he does at last give in his condition is such as to almost absolutely preclude the possibility of any relief being afforded him either by medical or surgical measures. The prognosis in such cases can well be imagined, and only the very mildest operation is required to upset the condition of unstable equilibrium, on which the whole urinary tract has been balancing for so long, and to hasten the fatal issue. Any such intervention, to relieve pain or other distressing symptoms, usually means an opening of the bladder or pelvis of the kidney, after which the introduction of sepsis from without is almost certain to occur, with rapidly fatal consequences.

I have added to Dr. Day's figures a certain fair proportion of patients classified under other heads, such as renal colic, vesical calculi, hydronephrosis, pyonephrosis, etc., conditions we know from experience to be in the main bilharzial in origin or certainly associated with the presence of bilharziosis in the bladder.

I have studied the figures for the three years 1907-9 inclusive, and find that in 1907 the total number of admissions for medical and surgical diseases was 3,400, and of this number 336, and probably more, had bilharziosis; in 1908 the admissions were 4,003, with 465 of bilharziosis; in 1909 the admissions numbered 4,295, of which 469 had bilharziosis; making a total of 11,698 admissions, of which 1,270 had bilharziosis—that is to say, a proportion of 10 per cent.

Males predominated in the proportion of 93·2 per cent. as against 6·8 per cent. females—a fact to which I have drawn attention elsewhere.[1] It is probable, however, that there are more untreated cases among females than males (Elgood[4]).*

These figures do not touch the large number of bilharzia patients treated as out-patients, who are quite impossible to trace, so that the only real conclusion we can draw from them is that in the largest hospital in Egypt 10 per cent. of the total number of admissions for medical and surgical disease are suffering from the last stages of pathological destruction of kidneys, ureters, bladder, urethra, and rectum, produced by severe and repeated bilharzial infections. At least another 30 per cent. are infected in varying degree, but are not absolutely prevented from working or are only temporarily disabled. Looss found that 30·5 per cent. of boys in a Cairo school had haematuria, and 80 per cent. of the boys in the outskirts of the same town.[3] It is probable that a far larger proportion of cases would be found among the agricultural labourers, from which class the majority of our patients are recruited.

The mortality from bilharziosis *per se* or its immediate complications was just over 10 per cent.; but this hardly gives one even an approximate idea of the real mortality, as many cases, when they do not appear to be improving, are taken out of hospital to die at home, the native population here as elsewhere having a strong prejudice against dying in hospital. All such cases are entered as unrelieved; but had they been left in hospital many of them would certainly soon have been included in the mortality tables.

The cause of the severity of the symptoms and the resulting mortality is the repeated reinfection to which the fellaheen are particularly liable. A single infection may be, and often is, entirely recovered from, especially in females (Elgood[4]), but it is difficult to see how such a happy result can be expected in the agricultural labourer, whose very work and habits render him all too liable to a long series of infections. It is not uncommon to find very old bilharzial lesions in bladder and rectum, and at the same time quite young worms in the portal vein, with intermediate stages in the chronological sequence of bilharzial pathological changes scattered throughout various parts of the body.[1]

Post-mortem records afford rather a striking confirmation of the figures just quoted. Dr. A. R. Ferguson, Professor of Pathology in the medical school and pathologist to the hospital, tells me that in a careful record of a series of 500 autopsies on male subjects between 5 and 60 years of age, he found that 8 per cent. of all cases died of the effects of severe bilharzial infection. He cannot give exact figures of the number of cases in which bilharzia worms were found in the portal vein or its nearest tributaries, but they certainly are present in a very large proportion of autopsies of all natures, and that, too, without being necessarily associated with any very obvious bilharzial manifestations. So convinced is he that bilharziosis is really the scourge I would have you believe that, from his experience in the *post-mortem* room, he would venture to affirm that about one-half of the agricultural population of Egypt are shedding their blood and bilharzia ova, in urine and faeces, daily into the fields, a very serious drain on themselves and a constant menace to their neighbours as a source of infection and reinfection.

My contention, then, is that among the Egyptian people generally there exists a widespread endemic disease, responsible for much suffering and a very considerable mortality, among the agricultural population particularly, which we, as the controlling powers of the public health of the country, have done nothing to try and prevent. Good work is being done in the investigation of the life-history and mode of infection of the worm by Professor Looss, and in the demonstration of its pathological effects by Professor Ferguson and others, but no determined effort has ever yet been made to deal with the prevention of its ravages throughout the country. Only those who are conversant with the habits and ways of the people are capable of judging of the apparent hopelessness of the task; but it is surely time that a beginning should be made with it, though along what lines it is not easy to indicate. Unfortunately, though the harvest is ripe and ready for the hand of the reaper, the labourers are few, and there is no money to pay others; so once more, as so often in Egypt in such matters, we must leave the poor fellah to his bilharziosis—a decision he will doubtless accept with his accustomed equanimity and indifference, and his inevitable—in this case almost accusing—"maaleesh!" †

Clinical Manifestations.

To understand the sequence of events in the general distribution of bilharziosis throughout the body one must

* It is true that these hospital patients are, in the main, drawn from the class of the population most liable to infection and repeated reinfection; but in estimating the frequency of the disease in general it is well to note that many patients of the better class are either able to be medically treated outside or are content to look upon their affliction as an inevitable result of their living in Egypt, and take no notice of it at all.

† "Don't worry about it!"

remember the centrifugal distribution of the worms from the portal vein, which may be considered the distributing centre. For a detailed account of this interesting subject I must refer you to Looss's article in Mense's *Handbuch der Tropenkrankheiten*, but the main facts are these:

The worms set out on their travels, heading against the portal circulation, for the most part unattached; but as they reach the mesenteric veins (and get out of reach of home) they choose their partners, and then seem to steer by mutual consent for the veins of the pelvis, where they take up their permanent residence, especially in the submucous tissues of the bladder and rectum. Pathologically these organs are the two main dépôts of sexually mature bilharzia couples, and in and around them the various morbid changes produced in the tissues by the presence of the worms and their ova are most frequently and severely manifested. But these viscera are not true centres from which the disease radiates into surrounding tissues, extension really taking place by the coalescence of individual areas of disease, each produced by a couple of worms or a colony of worms, which have reached their particular focus by way of the veins of the portal system.

The effects are limited by the extent of surface or area over which each couple is able to disseminate its ova. Large areas of disease are due to the combined action of many couples, working side by side, each taking charge of a particular area for destruction.[1]

Fresh supplies of couples with their potentialities of danger and destruction are constantly arriving from head quarters—the portal vein—and may be distributed to any part of the body on the lines of communication of the portal system; or some may even slip over into the systemic circulation, through the numerous anastomotic channels with the portal system, and so bring about the general dissemination of the disease throughout the body.

(*a*) The symptoms of bilharziosis of the genito-urinary tract may be considered separately, though it very frequently happens that they are associated with symptoms of equal or, at any rate, considerable severity in the intestine. The first suspicion of the disease may be an almost insignificant haematuria, and that only in the last few drops of urine. It may be entirely painless, but is very soon associated with a feeling of irritation in the neck of the bladder and an increased effort to empty the viscus of urine. This irritation leads almost naturally to a muscular spasm, which produces an abrasion of the much-softened and infiltrated mucous membrane of the trigone and neck of the bladder and so provokes the haematuria. Gradually the symptoms of "irritability of the bladder" manifest themselves, with a steady increase in frequency and urgency of micturition, and the urine, though still acid in reaction, becomes cloudy and so remains. The subjective symptoms of irritability in the urethra and neck of the bladder steadily increase, the only real pain being just after the voiding of the urine, from the spasmodic muscular contraction of the bladder sphincter. In the earlier stages the severity of the symptoms is often quite disproportionate to the extent of visible pathological change, there being sometimes very little abnormal to be seen in the mucous membrane of the bladder. As the disease progresses—and it generally does so, slowly, to be sure, but with a steady persistence—the disproportion is just contrariwise: indeed, it seems remarkable that the symptoms should be so comparatively mild when so complete a disorganization of the bladder, ureters, and kidneys is proceeding. The condition is now one of chronic cystitis, with blood and ova in the urine as distinguishing features.

It would be tedious to describe the successive stages of the increase in severity of the symptoms and the variations in the character of the urine; but there is a peculiar grey-green urine, characteristic of the advanced stages of the disease, which is worthy of special mention. This urine has entirely lost its normal redness, and is turbid with muco-pus, is of low specific gravity, and very deficient in urea; and one is accustomed to look upon it as an indication that septic involvement of the whole of the urinary tract exists in a very severe degree.

Only too frequently we are not privileged to see the case till he has reached an even later stage than this in his downward path. At this stage

The ever-present symptoms of cystitis and the almost constant micturition, from the irritation within and the small size of the contracted bladder, the scalding in the urethra during the passage of urine, the pain above the pubis, in the perineum and rectum, and tenesmus, all combine to make the patient's life an absolute misery to himself.

The condition may at any time become aggravated by the deposit of phosphates on the abraded mucous membrane or on the ragged tops of papillomata or sessile masses. The whole interior of the bladder may be thickly crusted with these phosphatic masses, which go on increasing as the cystitis persists, and the urine is always alkaline. Pieces of these incrustations may break off and form the nucleus of phosphatic stones, which are a frequent accompaniment of this disease, and are formed in exactly the same way as a stone forms on any other foreign body. A great many stones are, however, met with in bilharzial bladders which consist of uric acid or oxalate of lime, with sometimes alternating layers of phosphates. Such stones would appear to form in the bladder or pelvis of the kidney on a nucleus of bilharzia ova, or more probably on a small piece of papilloma, at a time when the urine is still acid, the layers of phosphates being deposited during a mild attack of cystitis which has subsequently yielded to treatment.

The conditions found on abdominal, rectal, or combined examination and with the sound will vary with the pathological changes within the viscus and its immediate neighbourhood. Many of the grosser lesions, such as tumour masses, sandy patches, concretions, and stones, can be felt with a sound, and the extent and contour of the bladder cavity and the thickness of its wall determined.[1]

In certain cases there may be an almost constant oozing of blood from the shaggy surface of degenerated papillomata, and the urine may be almost entirely blood altered by decomposition. This may clot in large masses in the bladder with acute retention and necessitate a free opening through the perineum for its removal.[1]

The last stage of all presents a truly dreadful picture. The patient is usually a prematurely aged man in the last stages of weakness, emaciation, and exhaustion.

He has constant micturition, really an incontinence and dribbling, with pain in the penis and deep down in the perineum near the rectum. He very often carries his scrotum in his hand, feeling that the support affords him some alleviation of his pain. A very small quantity of water is voided at a time, which is very offensive, dark brown in colour (or grey-green at times), and turbid, and on standing it deposits phosphates, débris, blood corpuscles, and ova. On examining the abdomen, a hard mass may be felt in the suprapubic region, which is not at all tender, is very irregular and stony, and may extend upwards as far as the umbilicus and to any extent laterally. One or both kidneys will be found enlarged and tender, and the much-dilated and thickened ureters may be felt through the unusually thin abdominal wall. The whole course of the urethra may be hardened, or, on the other hand, it may be quite unaffected. On rectal examination the bladder will be felt firm and contracted, and bimanually the great thickening of and around the bladder will be well appreciated. On introducing the sound, it can often only be passed just beyond the neck of the bladder into a very much contracted cavity. Masses of bilharzial tissue may be felt crusted with concretions, but in many cases such is the contraction of the space within the bladder that, beyond feeling that the end of the sound is free in a small cavity, very little else can be made out.[1]

In such cases a perineal opening is made in an attempt to relieve the patient, after which he quietly melts away with a marked increase in his emaciation, and all the usual evidences of a septic urinary tract.

The *post-mortem* appearances of these advanced cases are quite appalling in their severity, with all the results of mechanical obstruction to the outflow of urine superadded to the filthiest septic condition imaginable, extending along the whole length of the urinary tract. There are found destructive and obstructive changes in the bladder, enormously thickened and dilated ureters full of decomposing urine and pus, with hydronephrosis, and more often pyonephrosis, of varying grades of severity; septic dilated pelves, with secondary cystic atrophy of both kidneys, which are full of collections of pus, and imbedded in purulent infiltration of retroperitoneal tissues, extending even down into the pelvic cavity. Enormous fibrous thickenings of the bladder wall and its surroundings, and hard cancerous masses in the same situations, these often with secondary cancerous deposits in the heart muscles (Ferguson), constantly occur; but, though they are interesting pathologically, they do not, or cannot, increase the distressing symptoms to any great extent. The hopelessness of treatment of any kind in such conditions is only too evident; the mystery is how the poor unfortunate patient could have lived so long.

In a considerable number of cases, either in addition to the bladder symptoms or entirely apart from them—though in all cases there is some infection of the bladder or other part of the urinary tract—there are signs of involvement of the urethra in the general bilharzial dissemination. Attention is first drawn to this in most cases

by the presence of urinary fistulae, but the usual pathological manifestations common to mucous membranes may, and must have, existed for some time in the urethra before there is any outward and visible sign of their presence.

A very early case will present a somewhat tender lump in the perineum, corresponding with an ulcerated surface or pouch in the mucous membrane of the urethra, with a hard fibrous induration around and beneath it. The edges of this crater in the urethra are rough and may be coated with phosphates and give rise to a grating on the introduction of a sound, but there is no obstruction. The lump gradually increases in size and softens to form an abscess which bursts externally and forms a fistula, usually only the forerunner of many others which originate from the urethra in a peculiarly restricted area, from the anterior layer of the triangular ligament to the posterior margin of the scrotum, in a large majority of cases. These fistulae comparatively rarely come from the floor of the urethra and involve the corpus spongiosum to open in the middle line of the perineum. They generally start from the urethra either laterally or even from the roof and then track round between the corpus cavernosus and the corpus spongiosum and open to one side of the middle of the perineum; or not infrequently by more extensive burrowing at more distant orifices anywhere round the anus, out on to the buttocks or scrotum, or even on the front of the pubis or groins.

Obstruction is quite the exception, but must occur when there is much destruction of portions of the urethra and also in floor fistulae.

The severest cases of multiple fistulae give rise to a false elephantiasis of the scrotum and perineum which is very characteristic. The anterior portion of the urethra does not entirely escape and its involvement is associated with a series of changes which are best described as bilharziosis of the penis.[5] Pathologically these appearances are all due to obstruction of lymphatics, by destruction of or pressure on existing lymphatics by the peculiarly dense bilharzial fibrous tissue, which develops around the infected urethra or around its many tortuous fistulae. When the first inch or two of the urethra is involved, the hard oedema remains localized to the glans penis and the prepuce, giving rise to a bulbous appearance, the end of the organ being sharply separated from the rest of the body of the penis by a deep furrow at the junction of the healthy skin. From the much scarred and contracted meatus pus is sometimes discharging, indeed this condition is sometimes taken for gonorrhoea, with concomitant balanitis and inflammation of the prepuce.[6]

If more of the organ is involved, the swelling usually extends as far back as the root of the penis, which is sharply separated from the skin over the pubis by another deep furrow. In these cases there may be evidence of the involvement of the lymphatics of the scrotum, or these may escape entirely. Running through the swollen tissue fistulous tracks may be traced, communicating at various points with the penile urethra. When these tracks are multiple the structure of the body of the penis may be largely destroyed, and masses of swollen tissue appear, intersected in various directions by fistulous tracks or by bands of scar tissue where fistulae originally existed. Sometimes, especially in young boys, the swelling of the skin may be present without any sign of fistulae, though ova are found in the urine and there is infection of the urethra to a mild extent.

In all these conditions much can be done by decortication of the whole body of the penis from just behind the glans to the pubes and subsequent grafting, while in a non-septic case lymphangioplasty has been practised.

Localized nodules may be met with in the subcutaneous and erectile tissues of the penis; and ulcerations, which may end in epithelioma, are by no means uncommon on the glans.

Again, the last stage of all in this series of lesions is a truly awful condition. There is a permanent distorted erection of the penis from the extensive irregular infiltration of the erectile tissue with bilharzial induration. The whole length of the urethra runs a tortuous course in the midst of a fibrous mass of stony hardness, which is pierced with many fistulae, and from the meatus a thick purulent and sanious discharge is issuing. The false elephantiasis is not particularly marked, the disease appearing to vent itself on the erectile tissue along the track of the urethra. Micturition is very difficult indeed, and must be agony, to judge by European standards, especially as superadded to these essentially urethral symptoms are all the dreadful bladder troubles already enumerated.

Obviously nothing can be done, but mercifully the end is not far distant.

(*b*) Bilharziosis of the intestinal tract in most cases gives rise to the presence of bilharzia ova in the faeces, but, clinically, its symptoms are those of dyspepsia, enteritis and colitis.

Though bilharzial cysts in the mucous membrane of the stomach[12] and ova in its muscular walls (Goebel) have been reported, the most common seat of infection is the lower part of the small intestine and the large intestine generally.

The most common lesion in the intestinal tract is the presence of papillomata of varying sizes and characters along the whole length of the intestine from the ileum to the anus, sometimes thickly scattered or again sparsely distributed throughout the mucous membrane. Beyond some general irritation and a tendency to diarrhoea, with the passage of blood-stained mucus from time to time, this condition gives rise to wonderfully few symptoms, and symptomatic treatment is all that is possible. Sometimes, however, the symptoms come to resemble dysentery very closely, with frequent motions, the passage of blood and mucus, with colicky pains and tenesmus. The similarity of symptoms corresponds with a similarity of pathological appearances, for over quite extensive areas of certain parts of the large intestine the papillomata have necrosed and separated off at their pedicles, resulting in ulcers of dysenteric appearance. It is an open question if these ulcers ever heal.

Sometimes, again, certain lengths of the large intestine become infiltrated, together with their peritoneal attachments, with hard bilharzial tissue. There is an enormous thickening of the walls of the gut, a dense packing of its interior with papillomata, and deposits of bilharzia tissue in the appendices epiploicae, and on the serous surface of the gut, and a fixing of the intestine with massive deposits behind it and between the layers of its peritoneal attachments. The line of demarcation between the healthy and diseased gut is usually very distinct.[7] The symptoms are those of dysentery, as a rule, with a hard, painless tumour in the line of the gut in the different regions of the large intestine. There are never any signs of intestinal obstruction, and in most cases the symptoms improve and the tumour disappears after a laparotomy and an exploratory enterotomy, with immediate suture of the incision, in the gut. In the rectum large masses of papillomata may develop and protrude, either permanently or during defaecation, from the anus. The sphincter is at first well contracted, but later becomes patulous and allows the freer exit of pedunculated growths or rings of swollen and infiltrated mucous membrane with all stages of prolapse.[8] At other times the only lesions are ulcerations with scattered papillomata, or a number of fistulous tracks, extending into the ischio-rectal fossa, the perineum, or the buttocks. Ulceration may occur at the anal margin, and is dangerous owing to the possibility of epithelioma developing upon it—a very real danger indeed.

Finally, two unusual anal conditions have been noted recently. The one a large irregular mass of fibrous tissue, encircling the anus and tunnelled throughout by skin-lined depressions, filled with sebaceous material in various stages of decomposition. The surface of the mass was hard, the anus patulous, and the rectum free of bilharzial papillomata or ulceration. The only possible treatment was removal of the lower portion of the rectum, including the anus, which was inseparably involved in the mass. Complete return of control occurred some weeks after the operation. The other condition looks like a crop of papillomata sown all round the anus, perineum, and scrotum, without any fistulae or marked urethral infection. The appearance resembled that of a very profuse venereal warty condition.[9]

(*c*) A somewhat similar papillomatous condition is sometimes found around the external female genitals,[10] though here, as is usually the case, there is more tendency to a localization of the growths. Such papillomata have been described on the labia, in the vagina,[11] and on the cervix

uteri; while softening and infiltration of the mucous membrane may occur in the vagina and around the meatus and clitoris. Ulcerations may also be present at the vaginal outlet, and these may become epitheliomatous. Though, so far as I am aware, no definite lesions have been described in the uterus, deposits of ova with fibrous thickenings do occur in the broad ligaments and in the ovaries.

(*d*) Deposits of ova appear to occur also in the skin and subcutaneous tissues,[1] rather like tubercle, giving rise to shallow ulcerations or sinuses, which may eventually communicate with the urethra or rectum, and produce fistulae. Such ulcerations, particularly on the glans penis, may end in epithelioma.

Such is my indictment of bilharziosis, and I trust I have succeeded in convincing you that there is ample justification for my contention that it is high time an attempt should be made to rid ourselves and our disintegrating patients of this, perhaps the most dreadful, as it is one of the most ancient, of the remaining plagues of Egypt.*

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* The assumption of the antiquity of bilharziosis is justified by Dr. Ruffer's recent paper on the discovery of ova in ancient Egyptian mummies (British Medical Journal, January 1st, 1910).

TYPHOID AND PARATYPHOID FEVER IN EGYPT.

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There are many lacunae in our knowledge of typhoid fever among the native inhabitants of hot countries, and most discordant views are held on the subject. Thus, in India, Roberts thinks the native possesses natural immunity, partly due to anatomical differences in the intestines, partly due also to a different dietary and different habits influencing the toxic and putrefactive processes in the intestine, and partly due to the fact that the native suffers much from dysentery and diarrhoea and thereby gains immunity to the typhoid bacillus. Rogers disagrees with him, finding typhoid fever widely spread amongst Indians.

Sandwith, in his book *The Medical Diseases of Egypt*, expresses his opinion that the disease is comparatively rare in Egyptians, but that now the town dweller is getting more susceptible to the disease. In the preface he mentions it with Malta fever as being a sporadic disease. He thinks the theory erroneous that the Egyptian suffers from it in childhood and gains thereby immunity, basing his views on the *post mortem* results of Kasr-el-Ainy Hospital. I am afraid I entirely disagree with him, as I will show later. The statistics of the Public Health Department do not give a true picture, as many cases undoubtedly escape notification, and in the provinces proper diagnosis.

Taking these various views into consideration, it is obvious that our knowledge is deficient, and if the real facts about the disease in different tropical countries could be laid bare an advance towards its more efficient control and prevention could be made. The actual state of affairs in Egypt I will try to lay before you.

During the last seven years I have treated, both at Kasr-el-Ainy Hospital and in private, many Egyptians with typhoid fever, and in addition I have seen many other cases in consultation. All grades of society are attacked, fellaheen, servants, policemen, students, and people of no occupation. The disease, though usually mild, has sometimes been severe; I have seen haemorrhage, perforations, and one or more relapses in the same patient. Spots are rare, and constipation is the rule; chest complications, which in my experience are rare in European residents in Egypt, are much commoner in the hospital cases, due probably to improper care before admission and less skilled nursing in hospital (the nursing being done by male orderlies or by pupil nurses). Defervescence seems to be rather rapid and convalescence quick.

The diagnosis has been amply confirmed by the Widal reaction and by *post-mortem* findings. At the Fever Hospital, Cairo, the Widal reaction is repeatedly tried until a positive result is obtained; thus, in 1909, a positive result was noted in 53 out of 54 cases. In Kasr-el-Ainy Hospital the diagnosis is most carefully considered, and the heading "typhoid fever" only put to the case after mature consideration. Owing to stress of work and lack of sufficient assistance in the pathological department, the Widal reaction cannot always be investigated, or often repeated if found negative. It is the practice, when sufficient blood is available, to test the blood against typhoid, paratyphoid B, and Malta fever. In 1910, owing to an epidemic of relapsing fever, it was generally examined also for spirilla. The following are the figures:

Fever Hospital, Cairo.

1908.—Fourteen cases, with 2 deaths. A positive blood reaction was obtained in 12 cases. One negative reaction was seen in a case otherwise typically typhoid. The 2 deaths were from heart failure, 1 within two days of admission before the blood was tested. Two cases relapsed once and 1 twice; there was 1 with haemorrhage. One of the cases that recovered was a Soudanese, the rest were Egyptians.

1909.—Fifty-four cases, with 5 deaths; the Widal reaction was positive in 53. In the other case the patient died before it was attempted. Many of the cases came from the lunatic asylum. On further investigation some of the kitchen attendants gave a positive Widal reaction; they were isolated and no more cases occurred in the asylum, so presumably they were carrier cases. Three Soudanese recovered, the rest were Egyptians.

1910, January to June 30th.—Nineteen cases, with 1 death from heart failure; 18 had a positive reaction and 1 negative, but he had rose spots and a typical temperature chart. One relapsed and 1 had haemorrhage.

Total, 87 cases, with 8 deaths, or 9.2 per cent. Widal reaction positive in 83 cases. The details of 1909 are meagre; of the 33 cases in 1908 and 1910, 4 relapsed and 2 had haemorrhage, or 12.12 per cent. and 6 6 per cent. respectively.

Kasr-el-Ainy Hospital.

1907.—Twelve cases, no deaths; 1 was taken out "relieved," and 1 before the temperature was quite normal. The other 10 recovered. In 6 the reaction was positive, in the others the disease was clinically typhoid with enlarged spleens and diarrhoea, and 1 relapsed. A child of 3 had a strongly positive reaction and bronchopneumonia as a complication. One of the patients was a Berber.

1908.—Sixteen cases, with 1 death from perforation. The Widal reaction was positive in 6, negative in 1, and not done in the rest. One case was discharged before complete recovery, 9 cases at least had chest complications. Two cases relapsed (1 being an intercurrent relapse).

1909.—Seventeen cases, with 1 death. He was admitted dying with a temperature of 42° C. (107.6° F.). One went out before complete recovery.

1910, January to June 30th.—Four cases with 1 death (a Berberine servant with perforation). One of the patients on admission resembled meningitis, but the subsequent course was that of typhoid fever. One other case gave a positive Widal reaction, and 1 negative.

Total, 45 cases, with 3 deaths, or 6.6 per cent. The 4 cases discharged before complete recovery are not included; relapses 5, or 11 per cent., haemorrhages none.

Private cases (Egyptians) 5, all recovered. In 1 there was a long relapse. The case was clinically typhoid, though the reaction showed paratyphoid B. Two of the others were children and 2 boys of about 16, 1 with high fever and 1 with haemorrhage. (Both occurred during the hot weather.)

Totals.	Number of Cases.	Recoveries.	Deaths.
Fever Hospital	87	79	8
Kasr-el-Ainy...	45	42	3
Private cases	5	5	0
	137	126	11

Percentage of deaths, 8.02.

Complications.	Number of Cases.	Relapses.	Haemorrhage.
Fever Hospital	33	4	2
Kasr-el-Ainy	45	5	0
Private cases	5	1	1
	83	10	3

Percentage of relapses, 12; of haemorrhages, 3 3.

Typhoid fever with 8.02 per cent. of deaths, with 12 per cent. of relapses, and with 3.5 per cent. of haemorrhages, must be regarded as a mild disease. I hold that this mildness is chiefly due to attacks in infancy or childhood, for the following reasons:

1. I have seen many Egyptian children ill with the disease, and in whom a positive Widal reaction was found. Thus, in 1907, there were admitted into Kasr-el-Ainy Hospital, with typhoid fever, five children aged 3, 3, 4, 12, and 13 years respectively; in four the reaction was positive, in one of which it was described as being very strong; in the fifth case it was not tried. At the time of writing I am seeing in consultation the two sons of an Egyptian doctor, aged 7 and 10, with a typical attack of typhoid fever, though mild, in whom the reaction is positive.

2. Some three years ago I had a number of agglutination tests done on the blood of out-patient children suffering from fever with diarrhoea, a few of them were positive. I have been unable since to complete the research. It was impossible to induce these children to enter hospital, as Egyptian mothers have the greatest objection to allowing their children to enter hospital, otherwise we should have had still more cases in the wards.

In the summer of 1909 there was an enormous infantile mortality from intestinal complaints, at one time in Cairo the deaths exceeded the births; it will be seen that last year there were 71 cases of enteric admitted to the Fever Hospital and Kasr-el-Ainy, a larger number than the preceding years. May not some of this mortality have been due to enteric?

At present among the more affluent Egyptians the disease is frequently seen, and young lads are often the victims. May not this be due to increased care in infancy changing its incidence?

Further, if typhoid fever be a new disease introduced by foreigners, since the typhoid bacillus will flourish luxuriously in hot climates (it being one of the principal menaces to health to strangers), it would probably become rampant, as other infectious diseases have done when introduced into virgin soils. The sanitary conditions in the villages and towns of Egypt leaving very much to be desired, every inducement is offered to its spread. It is different with scarlet fever, which in no hot country flourishes even among Europeans (I have only seen one case in an Egyptian in a typical form). I hold, however, that typhoid fever is common in Egyptians, but occurs in a mild form as a rule, this mildness being due to individual immunity acquired from an attack early in life and due partly to hereditary immunity through ancestral attacks. A similar parallel can be drawn with malarial diseases, the adult native being relatively immune, but the children and the foreigner suffering.

The change of incidence of a disease is well illustrated by small-pox, which formerly was a disease of childhod, but which has now changed its incidence—and, amongst unvaccinated adults, its severity. It may be that in England also typhoid fever, with the great modern improvement in sanitary matters, has also changed its incidence, now being chiefly a disease of adolescents or adults. (This might account for the comparatively late differentiation from typhus fever.) Among European children in Egypt, even though brought up with the greatest care, it is common; I have even seen cases in infants under 1 year old.

For comparison with the above I give a short summary of my experience of typhoid fever in Europeans treated by me in my private practice or in the practice of the Anglo-American Hospital. Only those are included in which I was responsible for all or most of the treatment; the many cases merely seen in consultation are not included.

I have so treated 50 Europeans, with 7 deaths. Of these 50 cases, 31 were mild—a larger proportion than Dr. Sandwith experienced. In 3 there was a relapse; 1 with a strong Widal reaction had a previous attack in Vienna three years before; in 1 case the duration was with certainty only thirteen days; she was about three months pregnant but did not abort, nor did another patient who had a mild but long attack. Another case, lasting only sixteen days, was positive to paratyphoid B. In one case, lasting twenty-three days, jaundice appeared on the thirty-ninth day; this seems to be a very rare complication of convalescence; Murchison only recorded very few cases of it. After convalescence she went home to Denmark, so I had no means of finding out if she became a carrier.

One case, though clinically typhoid, gave no agglutinations; from the stools a bacillus was isolated in almost pure culture, which was neither the typhoid bacillus nor the colon bacillus, and he had not been taking lactic acid bacilli; it was not agglutinated by his serum. For such a condition the term "pseudo-typhoid fever" seems appropriate.

The other 19 cases were severe, and 7 died.

1. A man admitted to hospital about the twelfth day of the disease during the hot weather had haemorrhage the same night; this was repeated, and he died on the fifteenth day.
2. A missionary who worked during the first week of his fever in the provinces in the hot weather died in the third week of toxaemia.
3. A male admitted to hospital in August on the eighth day with high fever had haemorrhage on the sixteenth day, and perforation on the twenty-first day.
4. A female struggled about for seven days before giving in; was, when first seen, very ill. At first her blood agglutinated paratyphoid B strongly, and the typhoid bacillus weakly; she had haemorrhage, followed by perforation. This time the blood was strongly positive for typhoid, and gave only a weak agglutination for paratyphoid fever bacillus. A case of double infection.
5. A male continued at his work for a week, in spite of feeling very ill. When admitted to hospital he was very ill, and had diarrhoea. The temperature rose to 105.2°, and on the fifteenth day he developed purpuric spots and some bleeding from the rectum. The Widal reaction was negative. He died on the seventeenth day from toxaemia. Another from the same house had a typical attack of typhoid with a positive reaction. So this was probably also typhoid fever. This case also occurred during the summer.
6. A young girl late in the autumn had fever, which was thought to be dengue; she got up and had haemorrhage, after that the disease took on a toxaemic form, with high fever, and a fatal result ensued.
7. A female developed an intercurrent relapse, and died of heart failure.

Thus 5 of the fatal cases were ambulatory patients; 6 of them were during the hot weather. Four others had a single relapse, 1 two relapses, the second being very severe; the blood reactions were throughout negative. One had two relapses, due to a mixed infection of typhoid and Malta fevers. (Dr. Dreyer has also published a case of double infection of Malta fever and typhoid in an Egyptian.)

I have had 2 cases of severe hyperpyrexia; both occurred during the summer. In one, a girl of 17, the temperature rose to over 105° on sixteen days, and over 106° on three days, in spite of cold baths. The total duration was seven weeks; complete recovery ensued. The other case was that of a nurse; the temperature was extremely refractory in spite of iced baths, and delusions developed which lasted into convalescence. The duration was thirty-seven days. Two summers ago I left a patient to the care of one of my colleagues; she developed after I left hyperpyrexia (over 107°), but she recovered. (This case is not included in my series.) These three very severe cases with hyperpyrexia all occurred during the summer, possibly due to the excessive heat.

Delusions persisting into convalescence occurred in one other severe case; the patient, a Scotsman, thought himself to be a Russian, and actually wrote a letter to his banker on the subject of his proper signature.

As in the Egyptian cases, rashes are infrequent and constipation the general rule, chest complications or abnormal signs in the lungs are rare (possibly in consequence of the dryness of the climate, the better station of life of the average European patient, and the excellent nursing). Two patients only developed thrombosis; both were women with varicose veins. Mortality, 14 per cent.; relapses, 20 per cent.; haemorrhage, 8 per cent.

Long residence does not cause immunity. One of my patients had lived thirty-three years in Egypt.

Dr. Sandwith had a mortality of 7.7 per cent., but his cases included some Egyptians, and mine included several very severe ambulatory cases. Most of the severe cases occurred during the hot weather, the patients being below par through overwork, the heat, and need of leave.

The disease seldom occurs in epidemic form, though small milk epidemics have been noted or a water cistern become infected. Probably green salad and strawberries are to blame for isolated cases and fly infection for others.

Conclusions.

Typhoid fever is common among Egyptians, though generally mild. This mildness is due largely to immunity acquired by attacks in childhood and to hereditary immunity of a partial nature. The clinical course is

not otherwise remarkable, though complications are not frequent.

My thanks are due to the Director-General of the Public Health Department, Mr. Graham, and to Dr. Bitter for kind permission to use the records of the Fever Hospital; and to Dr. Day, late Registrar of Kasr-el-Ainy Hospital, and Dr. Sabongy, resident at the Fever Hospital, for their help.

HUMAN BOTRYOMYCOSIS.

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Within the past year opportunities occurred of studying a peculiar pathological condition in certain tumours which had been sent to the Wellcome Tropical Research Laboratories from various parts of the Sudan. The first of these was a tumour removed from the scalp of a native. Stained sections made from this specimen showed the presence of agglomerations or collections of circular disc-like masses lying irregularly throughout the tumour mass. When stained by the aniline dyes they exhibited a homogeneous appearance without any apparent intrinsic structure and closely resembled collections of staphylococci of varying sizes. They had been previously observed by Dr. Balfour in a growth removed from a camel.

After reference to all the available literature had been made the conclusion arrived at was that these collections of coccal-like masses represented a pathological entity met with in a somewhat rare disease named botryomycosis, and in fact were pathognomonic of it; the disease itself deriving the name of botryomycosis from the resemblance that these collections of coccal masses bear to a cluster of grapes. Since this first case no less than seven other tumours, removed from the breast, arm, hand, foot and scrotum, have been found to contain similar coccal-like agglomerations. Three of these tumours had, in addition, all the pathological macroscopical appearances associated with *Streptothrix madurae* and its presence was subsequently confirmed microscopically. In the others there was no evidence of a streptothrix existing although a careful search was made through a large number of sections taken from various parts of the growths.

It may be stated that one was somewhat diffident in naming the condition botryomycosis but for the fact that the pathology of these growths closely simulated the description given of this disease by Ernst[1] and other observers, who found these collections of coccal-like masses present in certain lesions in animals, notably the horse, cow and hog, and who, for some time, described them as staphylococcal in character. This staphylococcal view, however, is no longer tenable, for special staining reactions have shown them to be of a different nature. Cultural and inoculation experiments would doubtless assist in clearing up the exact nature of these bodies, but, unfortunately, opportunities of examining fresh pathological material have not occurred, resulting in the work embodied in this paper being somewhat incomplete. Kitt,[2] in his textbook on comparative pathology, defines botryomycosis as a productive inflammation leading to the formation of fibrous growths attended invariably with suppuration and fistula formation, or the production of yellowish-red foci of softening caused by infection with the *Botryomyces ascoformans*.

As already mentioned, its pathological effects in animals have been studied by a few Continental observers. The horse, cow, and hog appear to be more susceptible to the disease than other animals. More recently its occurrence in man has also been noted by Bureau[3] and Labbé.

The Clinical Signs of the Disease.

Males seem to be more commonly affected than females. One case occurred in a native woman aged about 45, who had suffered from a swelling in her breast since childhood. For the past two years, however, the condition had occasioned her annoyance, and on presenting herself for treatment the breast was found to be considerably inflamed, exhibiting sinuses which exuded a greyish-white pus. The whole of the breast tissue was involved, the growth simulating a fungating carcinoma, but the lymphatic glands in the axilla and neck were not enlarged. The breast was excised by Dr. Hodson, of the Sudan Medical Department, who kindly sent the specimen.

From the histories obtained in the other cases the disease appears to be more or less of a chronic one, commencing, as a rule, in the form of a superficial nodule, which increases in size, and invades the deeper tissues, eventually involving fascia, muscle, tendon, and sometimes bone. Specimens illustrating this are seen in the appended photographs* of the disease affecting the hand and foot, where the resemblance to mycetoma is a somewhat striking one.

The tumour of the scalp kindly sent by Captain Thomson, R.A.M.C., involved the left occipito-temporo-parietal region. The history of this case is of interest.

The growth commenced about twelve months previously as a small lump about the size of a date, and remained unchanged in dimensions till the patient was advised to have a red-hot iron passed into the tumour to kill it. This drastic treatment was carried out, with the result seen in the photograph*—namely, a marked increase in size. The tumour was movable, but appeared to be adherent in parts to the subjacent bone. When the growth was excised the subjacent bone was found to be soft and slightly infiltrated. The sinuses on the surface exuded a thin watery pus containing yellow-white granules.

The surface of this tumour was covered with sinuses, around which were heaped up masses of white fibrous tissue. This proliferating fibrous tissue was also present around the openings of the sinuses in all the other specimens. The sinuses extended to varying depths, and were lined by granulation and necrosed tissue. In the hand and foot specimens they extended down to tendon and bone, leading to considerable contracture and deformity. If a section be made through one of these growths, its fibrotic nature will be at once apparent, the intervening tissue between the sinuses consisting for the most part of white fibrous tissue. This is frequently arranged in whorls sharply demarcating yellow hyaline-looking areas, which microscopically are seen to be composed of groups of fat cells. Further, lying in this fibrous tissue, masses of yellow-brown pigment are visible to the naked eye.

The microscopical pathological changes are very constant, and consist of:

1. Marked proliferation of fibrous tissues which in certain parts of the section appear to be undergoing myxomatous degeneration, more especially in the areas surrounding the sinuses. Lying in this fibrous tissue are reticulated areas, which contain fat globules.
2. Round cell proliferation of a lymphoid type, suggesting the appearance of a tubercle nodule. Giant cells are occasionally met with.
3. Changes in the blood vessels, there being a periarteritis and a proliferation of the tunica intima and tunica media.
4. Presence of pigment scattered irregularly throughout the tissue in the form of yellow-brown granules lying free and also phagocyted. Special staining methods showed this to be an iron-containing pigment.
5. The presence of large cells of an epithelioid type lying in necrosed tissue and infiltrating the surrounding fibrous tissue. These epithelioid cells are, for the most part, oval in shape, and contain a nucleus and nucleolus, and some show vacuoles in their cytoplasm. They measure 0.8 μ to 12.8 μ, and appear to have considerable phagocytic properties, for many of them contain ingested pigment.
6. Groups of botryomyces lying irregularly scattered throughout the section. These, as already stated, resemble large staphylococci, and occur sometimes singly or more frequently in clumps of coccal masses, three to twelve in number. They vary in size from 0.8 μ to 12.8 μ. On focussing one of these clumps one finds that all the coccal masses do not focus in the same plane, some appearing more superficial than others.

By the ordinary staining methods these coccal-like masses show no differentiated structure. They retain Gram's stain. Owing to their structureless appearance and the fact that their presence in various parts of the section was not associated with any surrounding inflammatory changes, the possibility of their being amyloid or glycogenic in nature indicated that special staining reactions should be employed. The results of these, however, threw no light on their chemical composition, for they gave neither the amyloid nor the glycogenic reaction.

All were acid-fast, and by using special stains a zoogloea-like mass could be seen holding together, as it were, these coccal-like bodies.

Several sections had been examined before any idea was obtained as to the probable method of origin of these coccal masses.

When Muir's method of capsule staining is employed they

* These photographs proved unsuitable for reproduction.

take up the fuchsin stain, the methylene blue staining what is evidently a thin rim of protoplasm around each coccus. Parts of the section, however, when stained by Muir's method, also show two, three, and four coccal discs lying in different focal planes, and clumped together within what appears to be a cell envelope, the whole representing what one may assume to be the botryomycogenous cell described by the French observers. These botryomyces, when intracellular, appear to multiply within the cell envelope till the latter eventually ruptures, allowing escape of the individual cocci, which in turn appear to be taken up by the blood and lymph stream and carried to various parts of the tissues. Sections made from the growth in the scrotum showed these individual coccal masses occupying the lumen of blood vessels. This method of transmission by means of blood and lymph vessels possibly explains the presence of some of these botryomyces in apparently healthy fibrous tissue, their presence there, as already stated, not being associated with any inflammatory changes. While, however, these botryomyces are intracellular, they apparently bring about degenerative changes in the surrounding tissue which is more or less necrosed. After the cell envelope has ruptured, these coccal masses evidently undergo some form of degeneration of a hyaline type and assume different staining reactions, for in sections stained by haematein and eosin the intracellular coccal masses take up the nuclear stain of the haematein, while the escaped extracellular ones show an affinity for eosin and appear more hyaline in consistence. Even when enclosed within the cell and prior to rupture of the cell envelope these coccal masses sometimes undergo degenerative changes, taking on almost a neutral staining tint, showing neither a distinct affinity for the haematein nor for the eosin.

Similar staining reactions were obtained with Leishman's stain, the coccal masses taking up the nuclear stain when occuping a position within the cell envelope, and showing an affinity for the eosin when extracellular, appearing at the same time more hyaline looking and structureless in contrast to the granular and often vacuolated appearance exhibited when occupying their intracellular position. Sections stained with iron haematoxylin alum and counterstained with saffranin show very well the central nuclear structure of these individual botryomyces surrounded by a saffranin staining rim of cytoplasm, which, in some cases, appears striated.

Further work requires to be done to establish the exact nature of these botryomyces, and their possible mode of transmission to man. As already stated, considerable assistance would be obtained if one had access to fresh pathological material, but so far opportunities for this have been lacking. In animals the disease is transmitted by direct infection through a wound or abrasion of the skin, especially in those parts of the skin subjected to friction. Man, in all probability, becomes infected in a similar manner, but the possible rôle played by ticks and other biting insects would have to be considered.

CONCLUSIONS.

From the fact that a streptothrix condition was present in three of the tumours sent for examination, one is inclined to come to the conclusion that botryomycosis is really a streptothricosis, and that the clumps of botryomyces in reality represent the gonidia of possibly a new and hitherto undescribed species of streptothrix.

Reference has been made to all the literature available here, including Brumpt's[4] excellent monograph entitled *Les mycetomes*, but one has failed to find any work giving a similar description of these botryomyces.

Further, the clinical appearances of three of the tumours certainly support the streptothrix theory of this disease. Before concluding, reference may be made to the amoebic theory of the disease put forward by Bureau and Labbé.[5] These observers found in a case of botryomycosis of the finger a large amoeba measuring 50 to 60 μ, thus apparently confirming Letulle's[6] previous view that possibly botryomycosis is amoebic in origin. Several staining methods have been employed with the view of confirming, if possible, Labbé and Bureau's amoebic theory, but so far without success. Certainly it is difficult to associate such a large amount of destruction of dense tissue as is met with in botryomycosis with the presence of an amoeba.

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THE EFFECT OF A MOSQUITO NET ON THE AIR WITHIN IT.

(BASED UPON EIGHTY ANALYSES OF THE AIR INSIDE AND THE AIR OUTSIDE THE NET.)

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[ABRIDGED.]

IT might be thought at first that this question was one of theoretical interest rather than of any practical value, but in these days when "plenty of fresh air" has become a household phrase, when the "open-air treatment" is still the most generally approved method of treating tuberculosis—in these days it must be obvious that it is a matter of considerable importance if (in spite of thorough ventilation of the bedroom) the air which one breathes when sleeping within a mosquito net is hourly becoming increasingly vitiated.

If in the case of a healthy European—who only lies within his net for six to eight hours nightly—this constant breathing of increasingly impure air has a bad effect, how much more powerful will the evil influence be in the case of a sick native who lies within his mosquito net all day and every day! The effect will be further increased if, as in many Chinese families, there are several occupants of the same bed.

In studying the effect of a mosquito net upon the air within it attention was therefore concentrated upon these two points, namely: (1) The percentage of carbon dioxide in the air inside the net, and (2) the amount of organic matter contained therein. The other points wherein expired air differs from pure air, namely, added moisture and increased temperature, are obviously of small moment.

Whether the air was being examined for carbon dioxide or for organic matter, the air sample was secured in the same way. Specimens of the air inside the net were obtained by taking a 5-litre jar full of pure water and emptying it of its contents within the net, so that the air inside the net took the place of the previously contained water. The test solution was also introduced while the bottle was still inside the net. Specimens of the air of the room (outside the net) were obtained in a similar way. In each case the air sample was obtained between 6 and 7 a.m. The same bedroom and the same mosquito net (one of coarse native manufacture) were always used, and the bed was only occupied by one person. The entire capacity of the room was 1,500 ft., and the cubic capacity of the net 80 ft. In calculating results, due allowance was made for variation in temperature and barometric pressure.

Amount of Carbon Dioxide.—In investigating the amount of carbonic acid within and without the net, the barium hydrate test was used. For carbonic acid air tests were made on thirty occasions.

When the investigations were begun the air of the room was examined—as a "control"—on each alternate night, the state of window, door, etc., being the same as on each preceding night, when the air *inside* the net had been examined. Later on, arrangements were made for both these examinations to be made simultaneously. During the period when the comparative tests were made on successive nights the air within the net showed frequently a higher percentage of carbon dioxide than the air outside. The difference was but slight, however—the air inside the net containing only from 2 to 5 per cent. more CO_2 than the air of the room—and might be attributed to alterations in the direction and force of the wind. When the comparative tests were made simultaneously, *no difference* in the amount of CO_2 was found. One's figures for successive testings differed from day to day according to the state of doors and windows, but the air inside the net contained no more carbon dioxide than that outside.

One would not venture to generalize on the result of only thirty tests were it not that, although not one showed an appreciable difference that could be attributed to the mosquito net, all the tests proved sensitive to each alteration in the state of ventilation.

The Organic Matter.—In testing the effect of the mosquito net in retaining organic respiratory products, the Forchammer process was applied to 100 c.c.m. of distilled water shaken up vigorously for five minutes in a 5-litre amber coloured jar of air.

The tests were conducted in identical fashion each day. The *absolute* amount of oxygen absorbed from the potassium permanganate varied on different days, but as regards the *relative* amounts of organic matter contained by the air inside and that outside the net, all the figures agreed—agreed in showing throughout fifty analyses that the air within the net contained about twice as much organic matter as the air outside.

In cold weather the organic matter contained in the specimen obtained from the air inside the net only absorbed from 0 11 mg. to 0 23 mg. (average 0 16 mg.) of oxygen, but the specimen obtained from outside the net failed to absorb any oxygen at all. This average figure and each of the following averages is based on six double analyses, that is, twelve examinations.

In warm weather—35° to 37° C.—a certain amount of potassium permanganate was decomposed in each specimen, but that from inside the net always showed the presence of more oxidizable organic matter. More oxygen—from 0 2 to 0.7 mg. more—was always required to oxidize the organic matter contained in the specimen from within the net.

(*a*) When the bedroom was well ventilated the specimen from the air *outside* the net absorbed on the average 0.13 mg. of oxygen in six hours at a temperature of about 30° C., while the specimen corresponding to the *inside* of the net absorbed 0.59 mg. of oxygen when exposed to similar conditions.

(*b*) When, on the other hand, the room was ill-ventilated and the air of the room was very impure, 0 41 mg. of oxygen was required to completely oxidize the organic matter contained in the specimen derived from the air *outside* the net, but twice as much oxygen was required —0.80 mg.—for the oxidation of the specimen from the air *inside* the net.

(*c*) A similar difference—outside 0 39 mg , inside 0 65 mg. —between the amount of potassium decomposed is shown when, only the window being open, the room was only moderately ventilated.

If one assumes that *all* the organic matter contained in the air in the 5-litre jar is absorbed by the 100 c.cm. of water, one may state the above results in another way, and say that: When the room was ill-ventilated, organic matter was present in the air of the room to an extent that would have required 0 0075 part of oxygen for the complete oxidation of every 100,000 parts, but the air inside the net would have required 0 014 part—that is, about twice as much—for the complete oxidation of its organic matter.

It may seem to some that this effect of the net upon the air breathed is insignificant, but such an impression is due to the limited power of figures to express adequately the results of the investigation. One must not take this last figure (0.014 part of oxygen required for the complete oxidation of 100,000 parts of air) and say, "There were only 0.014 part of organic impurity in the air." Such a statement is quite unjustifiable. Of all the impurities in the air only a certain proportion were absorbed by the distilled water; only some of the impurities thus absorbed were incompletely oxidized, and these incompletely oxidized impurities are the only ones that possess the power to reduce potassium permanganate. Thus it is only of a fraction of a fraction of the impurity of the air that we have been able to make a rough estimate by this modification of Tidy's process.

In spite of this limitation, if water from a well were found to contain as much oxidizable organic matter as the specimens of distilled water that had been shaken up with the air inside the net, and if no further tests were possible, the well would assuredly be condemned as "unfit for drinking purposes"; but the individual sleeping within the mosquito net has been inspiring this impure air for the last few hours of his sleep!

One would not dream of questioning the value of a mosquito net for the freedom it gives both from the irritation of mosquito bites and from malaria, filariasis, and dengue, but I think our eyes should be open to the harm that is being wrought by the net simultaneously.

We have not done our best for a patient when we have obtained ample ventilation for the bedroom, unless we have also secured that he is no longer poisoning himself by inhaling the waste products that are accumulating within his mosquito net.

In some cases of tuberculosis it will be found best to dispense with the net and make use of preparations of oil of citronella, etc., to secure freedom from mosquitos.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

NEEDLE PENETRATING ABDOMINAL WALL AND ENTERING INTESTINE: EXTRACTION AND RECOVERY.

On February 3rd, 1910, a Chinese man, aged 28, was needling himself in approved Chinese style for a pain in the abdomen, when the needle accidentally slipped beyond his reach and entered the abdominal cavity. An attempt was then made by his friends to extract the needle through a small incision made with a Chinese razor, in the anterior abdominal wall, going right down to peritoneum. Into this opening they thrust filthy fingers, probing for the needle, the patient's own unwashed hands assisting in the search in the depths of the wound. After the injury the man partook sparingly of food for fear of dislodging the needle, although is caused him no pain. Pressure over the spot was painful, and there was a similar pain on defaecation, probably due to contraction of the abdominal wall in straining and consequent pressure upon the needle.

The operation did not take place until the third morning after the injury, chloroform being the anaesthetic given. It was hoped to avoid an extensive operation, so for fear of losing the needle the original wound, which was slightly to the right of the middle line just below the umbilicus, was enlarged sufficiently to admit two fingers into the abdominal cavity, and the needle was found lying transversely across the lumen of a loop of small intestine. This was brought up into the wound, and the needle extracted through the smallest of incisions. It proved to be an ordinary sewing needle, 1¾ in. in length. There was very little haemorrhage, and no ligatures were required. Drainage was provided, and the wound partly closed.

As was anticipated, an attack of acute general suppurative peritonitis supervened, with a temperature rising to 103°, quick small pulse, intense pain and tenderness, constipation, and distension of the abdomen, but there was very little vomiting. The patient looked extremely ill, and it was feared that he could not recover. Expectant treatment seemed the only resource, since the wound was draining freely, and the man had to be nursed by his own friends. Fomentations were tried, and small doses of calomel and salts, since there was little vomiting, and that soon ceased. Recovery eventually occurred, progress being gradual and imperceptible at first. On March 1st he was well enough to leave his bed, and went home seventeen days later. Four months after the injury he was in good health.

This case, besides showing the good resisting power of the Chinese constitution, illustrates also the dangers to which they subject themselves by their indiscriminate practice of acupuncture. It is a mode of treatment much in vogue here, practised by any man, woman, or child, at his or her own discretion, for any and every kind of ailment, joints receiving special attention, and even the eyeball being so treated in certain cases.

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THE TREATMENT OF SLIGHT WOUNDS BY IODINE.

Iodine as an application to abrasions, cuts, deep scratches, and the like, has been, I think, but little exploited; I therefore venture to suggest the following method of using it in such cases—a method which I have used extensively in practice for over eighteen months, and which offers many advantages from its extreme simplicity and economy of time and material.

As soon as possible after the occurrence, the wound, without being in any way cleansed, is painted with the following solution:

Tinct. iodi (*B.P.*)	...	...	2 parts
Ether	...	...	3 ,,

A second coat is given after about a minute. An ordinary clean camel-hair brush is used, and the application made well around the wound. No further dressing is required in cases where the wound is not liable to be soiled or rubbed (for example, wounds about the face); in other cases a simple pad of sterile gauze is used. If uncovered (and this gives the best results, when feasible), a single fresh application of the iodine is made three times a day: if covered, only twice. This method also yields very good results in impetiginous eruptions and in the treatment of boils.

I have at present under my care over 400 imbecile patients, amongst whom casualties of widely varying degrees of severity and of sepsis are necessarily of frequent occurrence, and treatment as above described has given most excellent results, which have in many instances been checked by comparison with the behaviour of similar lesions (sometimes in the same patient) under treatment with (1) sterile dressings alone, (2) boracic, and (3) cyanide gauze and perchloride of mercury dressings.

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Reports
on
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.

A CASE OF PARTIAL GASTRECTOMY: RECOVERY.

(By G. Bertram Muriel, M.B., B.C.Cantab., M.R.C.S., L.R.C.P., Honorary Surgeon.)

The patient, a miner, married, aged 47, was admitted into the infirmary on May 29th, 1909, complaining of weakness and indigestion, which had been troubling him for eight months.

History.—He had noticed that during that time he had been getting thinner and weaker, and a feeling of weight after eating food had gradually come on. For a few months before he was admitted he had been vomiting, at first a few hours after food, and then immediately after it. Vomiting relieved his pain, but taking food never did. He had never vomited blood, nor was there any history of melaena. The ordinary treatments for indigestion did him no good.

On admission he was emaciated and sallow in appearance; temperature 98°, pulse 68, respirations 18. Abdomen not distended, but stomach was dilated a little upwards. No succussion splash. He had some arterio-sclerosis, otherwise circulatory and other systems were apparently quite healthy.

Treatment.—With rest in bed and stomachic treatment he at first improved slightly, but then signs of dilatation increased, he having visible peristalsis. Also a test breakfast revealed the absence of free hydrochloric acid and the presence of lactic acid. In addition, a light supper, in which thirty currants was given one evening, on being siphoned off next morning was little changed. A doubtful lump was then felt over the region of the pylorus, he was also having more pain and losing weight. The condition was considered to be one of pyloric obstruction, probably malignant in nature.

Preparation for Operation.—For five days prior to the operation the patient was dieted on peptonized milk and Benger's food, these being sterilized. He was also given an antiseptic mouth wash. Liquor strychninae ♏ v. was given four times a day. The stomach was repeatedly washed out, the last time being one hour before the operation. At this latter time an enema of 10 oz. of normal saline solution with 1 oz. of brandy and liquor strychninae ♏ x also being given.

Operation.—June 16th, 1909. A small mesial incision was made above the umbilicus and a preliminary examination made. The pylorus was found to be very hard and thickened, and apparently carcinomatous. It was wonderfully freely movable, however, and it was considered to be the right thing to do to remove the growth, with about two-thirds of the stomach. There were glands, but none were very large, and they also were not fixed. The incision was enlarged up to the ensiform cartilage above, and down to below the umbilicus. The rest of the abdominal cavity was carefully shut off by flat sponges, the stomach and growth being drawn out as much as possible. The gastro-hepatic omentum, together with the coronary artery, was tied, and the lesser curvature of the stomach freed to the duodenum well beyond the growth. The duodenum was then clamped by two clamps and divided between the clamps, the superior pyloric and gastro-duodenal arteries being also tied. The distal end of the duodenum was then closed by a double suture—first a continuous one through all its coats, and then a sero-muscular suture outside that, as recommended by Mr. Moynihan. The great omentum was next tied off well away from the stomach, and so as to remove quite two-thirds of this organ. The stomach was now clamped at this point with two clamps, divided and sutured, as the duodenum had been, by double sutures, two Halsted stitches being also put in at each end of the division. A posterior gastro-enterostomy was then performed and the wound closed up.

After-Treatment.

The patient was returned to bed and his head slightly raised. Pulse 108, respirations 26, temperature 98°. Every three hours he had an enema of normal saline solution half a pint, brandy 6 drachms, and adrenalin half a drachm. These were continued for three days, and then given for two days longer every five hours. He was gradually propped up more in bed, and next morning, as there was no sickness, he was given by the mouth ʒss. albumen water every half-hour. During the day and next evening he brought up, without retching, on several occasions mouthfuls of blood-stained fluid. For this he was given adrenalin ♏ xv, aqua ad ʒj, every half-hour for three hours. The fluid by the mouth was gradually increased, so that by the fourth day he was taking ʒiv of peptonized milk, whey, albumen water, meat extract, cream, or Allenbury's No. 3 food every hour. On the fifth day he had some milk pudding, and after the first fortnight a little minced meat. On the second day after the operation he strained violently with retching, and the abdominal suture gave way, completely re-exposing the stomach. He was given ether, and the wound stitched up again, and it healed by primary union without further trouble. For the first two days there was considerable shock. Pulse 120 to 132, respiration 30, temperature 102° to 99°. The temperature remained from 99° to 100° for a week longer, then became normal, and the pulse fell to 95, at which rate it remained until he was discharged.

As a further complication it should be mentioned that four days after the operation he had a general convulsion, which lasted about a minute, and subsequently he had two to three a day for five days. It was considered that this was due to arterial spasm, he having a high blood pressure and his brachial arteries being decidedly atheromatous. Potassium iodide and bromide relieved the condition.

The patient got up five weeks after the operation, wearing temporarily an abdominal belt, and he was discharged from hospital on August 5th, having an exceedingly good appetite, and expressing himself as feeling better than he had done for years.

After-History.

He remained well for several months, despite the fact that on one or two occasions he gave way to some excess of drinking. In January, 1910, however, he showed signs of recurrence apparently in the wound, which became very indurated, a hard mass being felt in the whole of the scar extending deep down in the wound to the stomach. He also had persistent vomiting. He gradually got worse, and died on March 13th of this year—nine months after the operation.

Further Notes on the Case.

At the operation a diagnosis of carcinoma seemed absolutely certain, and the previous and after-history of the case apparently confirmed this. However, microscopical examination of the growth was not so certain. A piece was sent away for investigation, and the report thereof stated that "it showed the mucous membrane and muscle to be infiltrated by small round cells, like lymphocytes, without any evidence of destruction of tissue."

I think, however, the subsequent history leaves no doubt as to the nature of the disease. I regret that a *post-mortem* examination was not obtainable. The general interest of the case has tempted me to report it.

Reviews.

ORTHOSTATIC ALBUMINURIA.

This essay by Dr. Fritz Götzky on orthostatic albuminuria contains the result of a prolonged study of twelve cases undertaken at the suggestion of Professor Heubner, in whose wards the work was carried out.[1] Dr. Götzky says that in spite of many careful studies the subject is still obscure, but the work of Heubner and Langstein has placed its non-inflammatory nature beyond doubt; the work to which he refers was apparently published in a volume of Professor Heubner's, entitled *Die chronischen Albuminurien im Kindesalter, Ergebnisse der Inneren Medizin und Kinderheilkunde*, and is not generally known in this country. He appears to have been able to follow a case of orthostatic albuminuria to the *post-mortem* room, and to have proved that the kidneys were absolutely intact. The history of the subject dates from the statement made by Sir William Gull in 1873 at a meeting of the Royal Medical and Chirurgical Society, where he is reported to have said that "albuminuria was frequent in boys above puberty but was not found out because it was not looked for, but in weak, delicate persons the urine might be loaded with albumen; what was the cause he could not say." The condition was afterwards the subject of a well known paper by Dr. Moxon, but it was Dr. J. Morley Brooke, of Cheltenham, who first drew attention to the influence of rest in the recumbent position in causing the disappearance of the albuminuria (British Medical Journal, October 19th, 1878). In his paper he said, "when the body is in the upright position the weight of the column of blood is too much for the weakened vessels." Dr. Götzky has omitted this bit of history, which is important, as it is the influence of position upon the albuminuria of young persons which has been recognized of late years to be the dominant factor in its production. But he notes the work of Moxon and Pavy, and that of Leube and Posner; he admits that we are still ignorant of the reason why healthy kidneys excrete albumen, but he mentions von Noorden's theory of a non-assimilable albumen which is excreted by the kidneys, and his reference to the frequency with which the albumen in these cases is precipitated by acetic acid. Recent investigations have shown that precipitation by acetic acid is probably the result of a combination of the proteid with other substances, and has no definite pathological significance. The most interesting experiments quoted are those of Erlanger and Hooker on the effect of increased venous pressure in causing albuminuria, and on the influence of lordosis of the lumbar vertebrae as a cause of venous obstruction; the critical angle was 40°, and the lordosis had to be sufficiently great to stretch the abdominal muscles. Orthostatic albuminuria disappeared when the body was upright in water or when upside down, or when the lower part of the body was encased in pneumatic trousers under a pressure of 50 mm. Hg., the albumen appearing when this pressure was removed. Jehle has called the condition "lordotic albuminuria" in order to give prominence to the lordosis, as he holds that all the conditions found to produce albuminuria in orthostatic cases produce lordosis, and when lordosis is prevented albuminuria is absent, and albuminuria can be shown to follow lordosis even when the body is in a horizontal position. But if the lordosis can be produced without causing obstruction there is no albuminuria, as when the body is placed in a horizontal position in lordosis with the legs higher than the head: he believes that he has proved that venous obstruction is the essential cause, and he would explain in the same way the albuminuria of pregnancy and that which follows cold bathing. Götzky's observations were on twelve cases in which the condition of the urine was observed from day to day, and almost from hour to hour; the patients were made to pass water five or six times a day, and the samples kept distinct and examined separately. Seven of the cases were true orthostatic albuminuria in which, so long as the patient was in the horizontal position there was no albumen in the urine, but on getting up the albumen appeared; there were no casts, except in the seventh case, which had a slight intercurrent attack of nephritis due to diphtheritic infection, but it is noteworthy that after it passed off pure orthostatic albuminuria recurred. In all seven cases, when the patient was in the horizontal position, albuminuria could be caused by inducing lordosis. The other five cases were examples of what Heubner calls "chronic nephritis of children," and were distinguished by the presence at times of albuminuria when recumbent, and of casts. Dr. Götzky quotes statistics as to the relative frequency of the condition as influenced by sex and age, and he summarizes the general symptoms which are commonly observed in connexion with it. With regard to lordosis, he points out that there are many cases of orthostatic albuminuria which have no lordosis, and that there are many lordotics without albuminuria, giving a list of seven cases observed by him. He emphasizes the importance for diagnosis of excluding the "chronic nephritis of children" and tuberculous nephritis; this may be done by the microscope and by looking for tubercle bacilli. He agrees with the general view that the prognosis of these cases is favourable if we allow for the fact that many occur in children of debilitated constitution. He thinks there should be no special treatment for the albuminuria, but recommends careful supervision of the clothing, avoidance of damp shoes, and interdiction of violent exercises—swimming, skating, and, according to Heubner, of cycling, rowing, and riding. The monograph deserves the attention of those interested in this subject.

[1] *Zur Kenntnis der orthotischen Albuminurie.* Von Dr. Fritz Götzky. Berlin: S. Karger. 1910. (Sup. roy. 8vo, pp. 193; M. 5.)

URIC ACID AND DISEASE.

This book, which is entitled *Uric Acid in the Clinic*, is an endeavour on the part of Dr. Haig to record some part of the clinical material upon which he based the conclusions to be found in his larger work on *Uric Acid as a Factor in the Causation of Disease*, and in fact he gives it the subtitle of a clinical appendix to that volume.[2] After describing the principal methods he employs for clinical investigation, including his capillary dynamometer for measuring the capillary reflux and his colour card for determining the blood decimal (that is, the proportion of haemoglobin and blood cells), and explaining his method of classifying diseases according as they are due to (1) "collaemia," or the obstruction of the capillaries by the presence of uric acid, and (2) the precipitation or retention of uric acid in the various tissues or organs of the body, which includes all that would be ordinarily called local gout, he prints formidable lists of diseases under both headings and explains how in his view various factors react on the constitution by producing one or other of these conditions. For example, speaking of the effect of climate, he treats its influence as mainly in causing retention or solution of uric acid. After this explanatory and introductory portion, he gives the notes of cases under these headings, with comments upon them. The first, and by far the most important, chapter is on headaches, for which Dr. Haig has unquestionably been successful in indicating a valuable method of treatment. His own case was most instructive and that of his son which he gives in the present book is equally so. Many similar cases are susceptible of benefit by treatment on these lines. On the other hand, his account of the treatment of other diseases is less convincing, for example, epilepsy, neurasthenia, mental depression, etc. A purin-free diet is useful in many conditions besides migraine for which it was originally devised, and it benefits some cases of epilepsy and many of Bright's disease, but it is not a panacea. Speaking generally, the notes of the cases are too brief to enable us to discuss them. We wonder what is meant by such a statement as "the stomach is down to the umbilicus and there is a slight splash" or "the stomach is

[2] *Uric Acid in the Clinic.* By Alexander Haig, M.A., M.D.Oxon., F.R.C.P., and E. G. Haig, L.R.C.P.Lond., M.R.C.S.Eng. London: J. and A. Churchill. 1910. (Med. 8vo, pp. 306; 5s.)

down nearly to the umbilicus"? Are these to be regarded as abnormal physical signs or not? On page 89 a native of India is made to say that native soldiers in India eat 3 lb. of beans a day! There is surely some mistake about this; 3 lb. of *rice* would be a large amount, and the daily allowance of beans or dhal would not exceed half a pound.

URINARY THERAPEUTICS.

THE latest addition to the Library of Therapeutics, edited by Gilbert and Carnot, *Thérapeutique urinaire: Reins: Vessie: Urètre: Urétre: Organes génitaux de l'Homme*, deals with the diseases of the urinary system, including the male genitals, and is the joint production of two physicians, Drs. ACHARD and PAISSEAU, and a surgeon, Dr. MARION.[3] The result of their labours is a cyclopaedia in miniature. It is really remarkable how much the authors have managed to crowd into the small space between these covers without being "scrappy." The section dealing with nephritis should prove valuable to consulting physicians and general practitioners alike, for the authors have been at pains to go into minutiae concerning the various régimes proposed by theoretical considerations such as the desirability of excluding chlorides from the diet; they give not only data from physiological and pathological examples, but even go the length of suggesting daily menus; they discuss the general and special treatment of the various types of nephritis, and also of particular aspects and incidence of the disease; for example, the dangers as well as the advantages of mercury in the nephritis of syphilis are displayed, and again the symptomatic basis of lumbar puncture as a measure suitable for coma is indicated. The surgical section of the book, from the pen of Dr. Marion, extends to more than three-quarters of the whole. It deals not only with hygienic and pharmaceutical remedies but also with the technique of operations. The student who has read this little compendium will be familiar with most of the conditions he is likely to be called upon to treat, and if he follows the author will not wander from the paths indicated by sound notions of pathology. So far, too, as all the smaller operations go he can rely on the directions he has here given, but of course for complicated procedures such as are required by plastic operations he will be obliged to supplement his information. The principles of the use of the catheter, the urethroscope, and the cystocope, and methods of irrigation are clearly inculcated; a formulary is appended which should prove useful even though a good many of the drugs are not to be found in the *British Pharmacopoeia*. Altogether a capital little book.

OLD AGE AND LONGEVITY.

THE subject of old age is one which possesses universal interest for mankind, but though speculation has afforded many explanations of its occurrence, and has suggested numberless plans to delay its advent, it still remains true that the measure of a man's life is three score years and ten, and that this limitation is probably the approximate gauge of average human tissue resistance to the processes of degeneration which are constantly going on as part of the wear and tear of daily life. Among the most recent treatises on the subject is one entitled, *Vieillesse et longévité*,[4] from the pen of Dr. P. ROESER of Paris, in which an attempt is made to focus much of what has already been written on the subject, and to present the reader with a concise and well-arranged epitome comprising the views of many previous writers, as well as those of the author himself.

The volume is divided into three parts, of which the first is devoted to etiology, the second to anatomy and physiology, and the third to therapeutics. It is pointed out that the intestine is the seat of manufacture of many poisons, the absorption of which depends upon a variety of indeterminable circumstances. Some poisons so formed, says the author, are at once cast out of the body, and their absorption is exceptional; others are absorbed and immediately neutralized by the formation of antitoxins; while others, again, provoke no antitoxic reagent, but are tolerated by the organism at the cost of gradual impairment, both in function and structure of the living cells. Abnormal autointoxication only results when the intestinal mucous membrane is either functionally feeble or the seat of organic change. Toxins find their point of entry from many other sources than the intestinal tract, but from whatever origin they are derived, the ultimate result is to promote the approach of senility by a gradual enfeeblement of cellular energy. Failure of vitality varies in intensity according to individual proclivity, inherited tendency, and hygienic environment, but is powerfully augmented by habits of excess, especially those that involve alimentation. When discussing the influence of an overfilled stomach on tissue degeneration, the author suggests that more attention should be directed to the effect produced by this viscus, when distended, upon the solar plexus. He thinks it not impossible that, entirely apart from toxaemic absorption, such pressure may be often responsible for capillary disturbance in the various organs which derive their innervation from this source, and that the vasomotor instability thus produced may play no unimportant part in cellular instability.

Dr. Roeser, while advocating strict moderation in dietetic habits for those who desire to attain to old age, is no supporter of fads and fancies. He has no toleration for exclusive regimens, but believe that every man must find out for himself his dietetic limitations and by daily self-denial keep himself well within the boundaries of his digestive and absorptive capacity. He deprecates the exclusion of animal food as a means of prolonging life, and gives sound reasons for regarding a vegetarian diet as totally unsuited for the ordinary individual. He believes in the value to be got out of alcohol, especially in the form of wine, when used wisely, and discourages total abstinence as a habit, except under circumstances peculiar to the individual.

His researches offer no panacea for securing a prolongation of life, but they strengthen the generally accepted view that the attainment of old age, though influenced by many conditions, both congenital and acquired, is otherwise a consummation largely dependent upon frugal habits, accompanied by a philosophical spirit of contentment with things as they are; to use Dr. Roeser's own words: "La seule recommandation—et elle s'addressera encore plus aux adultes, et même aux jeunes gens, qu'aux vieillards—sera de s'habituer à la modération en toutes choses, aussi bien dans l'alimentation, quelle qu'elle soit, que dans les exercices du corps, et dans toutes les pratiques capables des produire la fatigue. Ainsi on se préparera une vieillesse plus tardive, exempte de maladies, et une vie plus prolongée."

CORRECTION.—In the fourth line of the review of Dr. Stelwagon's *Essentials of Diseases of the Skin, including Syphilodermata*, published in the BRITISH MEDICAL JOURNAL of September 24th, p. 882, "Lumsden Question Compends" should have been "Saunders's Question Compends."

NOTES ON BOOKS.

WASTAGE OF CHILD LIFE.

IN his pamphlet on the *Wastage of Child Life*,[5] Dr. J. JOHNSTON offers a concise and withal eloquent summary of most of the admitted factors which go to produce our still disgraceful infant mortality and the well-known degeneracy of the industrial classes in the present and the rising generation. His arraignment of the "half-time" system would be especially valuable if only it could penetrate to the ears of those to whom it is mainly addressed, that is, the working men who not only tolerate but resent any interference with the exploitation of the labour of their own children. Although published under the auspices of the Fabian Society, the book is purely critical and expository, and brings together a number of important facts and statistics in a very small and convenient compass.

[3] *Thérapeutique des maladies urinaires.* By Drs. Achard, Marion, and Paisseau. Paris: Baillière et Fils. 1910. (Post 8vo, pp. 516; fully illustrated; 204 figs. Fr 12.)

[4] *Vieillesse et longévité.* Par le Docteur P. H. Roeser. Paris: A. Maloine. 1910. (Post 8vo, pp. 320. Fr.4.)

[5] *Wastage of Child Life as Exemplified by Conditions in Lancashire.* By J. Johnston, M.D. Fabian Socialist Series, No. 7. London: A. C. Fifield. 1909. (Cr. 8vo, pp. 95. 1s.)

Nova et Vetera.

A MEDICAL DIPLOMATIST.

THE recent death of Florence Nightingale naturally reminded us of the Crimean War, and the terrible hardships endured by the allied armies during that disastrous campaign. Whilst fully recognizing the inestimable value of the noble work accomplished by the Lady with the Lamp and her devoted band of followers, it is fitting that we should recall the memory of Sir John McNeill, who did at least as much to lessen the sufferings of the sick and wounded. In striking contrast to the brave woman who was his firm friend and ardent admirer to the end, he received the usual reward of the reformer—ingratitude and non-recognition during life, and afterwards complete oblivion. Yet Sir John McNeill deserved a better return for his labours; even apart from his work in the Crimea, he has a claim on the gratitude of Englishmen. It might with truth be said of him that he devoted his life to the welfare of his country, for almost the whole of his long career was spent in unceasing toil on its behalf; and the man who later was to be set aside and see his work disregarded, endured years of constant hardships and anxiety, and the loss of child after child, and the ruin of his own health in his successful and unremitting endeavour to further British interests and uphold British prestige in the East. An account of his life has been published recently by his grand-daughter,[1] whose charmingly sympathetic account of her grandparents forms a fitting memorial to one who was not only an able and successful diplomat, but a devoted husband and father, an upright and honest gentleman, and an ornament to the medical profession of which he was a prominent member.

Sir John McNeill was born on the island of Colonsay, on August 12th, 1795. He was the third child of John McNeill, Laird of Colonsay, and came of an ancient Highland stock, which claimed descent from Torquill McNeill of Taynish, who was Keeper of the Castle of Sween in Argyllshire about the middle of the fifteenth century. In course of time the Keeper's descendants appear to have acquired considerable landed property, but it was not until the year 1701 that the islands of Colonsay and Oronsay came into the family by means of a "Disposition" from the Earl of Argyll. The story goes that the McNeills consolidated their new possessions by the simple if barbarous process of massacring the former owners, who belonged to another clan. John McNeill spent the first eleven years of his life in his island home, for which, throughout all his wanderings in after-life, he always cherished an intense affection. He was a delicate child, with a tendency to consumption, which seems to have been overcome by the healthy outdoor life he led during his boyhood, since he grew up a very strong and very active man. His mother, an extremely able woman, had charge of his education till he left home for the first time to be boarded, probably as a private pupil, with the Rev. George Jardine, M.A., Professor of Logic at the University of Glasgow. Thence he passed on to St. Andrews, where he won the good opinion of his teachers. In 1811 he proceeded to Edinburgh to study medicine. He received the degree of M.D. in 1814, at the age of 19; and in the same year he married, much against the wishes of his family, Innes, the fourth daughter of George Robinson of Gask and Clermiston, a girl three years his junior. This hasty marriage was followed by two years of poverty, but in 1816 his father obtained for him an appointment in the East India Company. Six months after his departure from Scotland the young husband was left a widower, and the next three years were spent on active service.

From an early period in his career McNeill seems to have extended his activity beyond the sphere of purely medical work. His grand-daughter, quoting from a note made by himself, tells us that

> during the campaign Mr. McNeill was employed in various duties—communicating with native chiefs, heads of villages, and others, and sometimes in negotiations with chiefs of tribes who had the power of giving annoyance or of interrupting communications. He was frequently directed to accompany detachments sent to a distance, in order to facilitate their intercourse with the native authorities, obtain information, procure trusty guides, get supplies, etc.

It is clear that, even at this early period, the young doctor was giving striking proofs of his exceptional capacity for diplomacy, and his appointment as Assistant Surgeon to the British Mission at Teheran towards the end of the year 1820 gave him full opportunities of perfecting himself in the rules of that art. He did not neglect to profit by them, and it was not long before the new assistant surgeon became a man of mark in the little English colony. Thanks to his absolute integrity, and to his never-failing tact and good judgement, McNeill was soon the right-hand man of his superior officers, and during the fourteen years of his sojourn at the Court of Persia he was always "in the confidence of, and a great assistance to, three successive Envoys. He knew far more about Persian politics than any living Briton, and his diplomatic talents seemed to fit him especially for the first position himself." Small wonder, therefore, when he returned home in 1834, "the poor and little known Medical Assistant had developed into a prominent diplomat, whose opinions were listened to with attention, and whose rôle it would be in future to confer favours rather than to receive them."

It must not be imagined, however, that McNeill's interest in Eastern politics absorbed his whole attention to the detriment of his own profession. We learn that, more particularly during the first years of his appointment at Teheran, he did his utmost to encourage vaccination, and devoted much of his leisure to the study of cholera, at that time but recently introduced into Persia. But there can have been no doubt in the minds of those who knew him that his real vocation was diplomacy; and when he returned to the East, in June, 1836, it was as "Minister Plenipotentiary and Envoy Extraordinary from the Court of St. James's to the Shah of Persia." Two little incidents which took place on the voyage out, when his honours were new upon him, deserve mention for the characteristic picture they afford of the man himself:

> As he was embarking at Dover he heard some guns firing, and criticized the irregularity of their practice, but quite forgetting that they were the usual salute to one of His Majesty's Ministers leaving the country, and were therefore fired in his honour. The first act on reaching Boulogne was to "ferret out" an old Indian friend who was living there after being ruined by bank failures, and for whom he had been making efforts in London.

This is hardly the proper place to discuss at any length McNeill's career as British Envoy. It may be fitly summed up in the words of his biographer:

> When Mr. McNeill left England in June, 1836, his hope had been to carry out the instructions given him regarding the Commercial Treaty, etc., and to have left Persia for good in two years, feeling that British prestige was restored there. He was now leaving it after two and a half years of great anxiety and a seeming failure, his hair whitened, his health broken, but with the knowledge that he had done his best, and with the satisfaction of knowing that Lord Palmerston considered he had done the best possible.

"His best" included the saving of the city of Herat, after a nine months' siege, by means of which he successfully again put off the day when Britain should acknowledge Russia as the paramount Power in Persia.

In 1842 Sir John McNeill, G.C.B., as he now was, was compelled by the state of his health to leave Persia for good, but it was only to devote himself to fresh work at home. With the same zeal that he had displayed in his political duties he now gave himself up to work of another and more philanthropic nature. He became Chairman of Her Majesty's new Poor Law Department, the Board of Supervision for Scotland, and was appointed head

[1] *Memoir of the Right Hon. Sir John McNeill, G.C.B., and of his second wife, Elizabeth Wilson.* By their Grand-daughter. Published by John Murray, Albemarle Street, London. 1910. (Pp. 417.)

of the Highland Emigration Society. Sir Henry Rawlinson, whose words are quoted here, says of him that "it was partly owing to his (McNeill's) admirable management that the famine of 1847, which decimated Ireland, was so little felt in the sister island."

But Sir John McNeill's great work was yet to come. The terrible mismanagement in the Crimea during the first months of the war, and the frightful sufferings it entailed upon our hapless soldiers, aroused a storm of indignation throughout the United Kingdom; and on February 12th, 1855, a Cabinet meeting was held, at which it was decided, amongst other resolutions, that "A Commission of which Sir John McNeill is to be head, is to be sent out (to the seat of war) to inquire into the working of the Commissariat in all its branches of supply and issue, and every other detail."

Sir John McNeill (says his grand-daughter) was at this time in his sixtieth year, and a man who was not in robust health; twenty-three years in the East and many hardships while there having left their mark upon his constitution. Yet he did not hesitate a moment. Summoned to London by telegraph, not knowing for what purpose, he was requested to undertake the proposed inquiry. At great personal inconvenience, he accepted. Two days afterwards he learned that Colonel Tulloch was to be his colleague, and in three days more they were on their way.

It was no pleasant or easy task that the two Commissioners had before them. Their instructions from the Government were extremely vague, and, though sent expressly to rectify abuses and to indicate to the authorities at home the proper course to pursue with regard to supplies, care of the sick, etc., they were, in reality, "armed with no powers beyond the taking of evidence and of making suggestions, and were in the disagreeable position of being civil Commissioners examining military men."

McNeill's first impressions in the Crimea were not unfavourable. Writing of the hospitals at Scutari, he says: "I have never seen the sick of an army in the field so well cared for"; and in a letter to Lord Panmure he writes that "it seems as if the worst were already past and everything mending."

The worst was past; but things were still in a state of confusion. The Commissioners' first act was to supply the urgent need of the army for soft bread and fresh meat. And then came a far more difficult and unpleasant task—the inquiry into the cause of mismanagement. The two Commissioners

sat, sometimes on board the steam-transport *Gothenburg*, and sometimes in a hut at the camp, for fifty-five days, taking evidence, and patiently recording and collating it. They examined, either separately or collectively, the Commanding Officer, the Surgeon, and the Quartermaster of every Corps in the Crimea; also officers commanding brigades and divisions; principal medical officers and commissariat officers attached to brigades and divisions: and, finally, the Quartermaster-General, the Senior Assistant Quartermaster-General, the Commissary-General, and the two Deputy Commissaries-General—over 200 officers in all.

Though McNeill did all that lay in his power to make this cross-examination as little offensive as possible, it aroused furious resentment on the part of the officers interrogated. In a letter to his wife, Sir John tells us that the principle upon which he worked was

to keep in the background myself, and privately to push on the Commissariat, and let them do everything as if on their own movement. In this way I get hearty co-operation instead of opposition, and what I want is *to have the thing done* without seeking to have the credit of doing it.

The result of the inquiry was embodied in two reports—one finished in June, 1855, and the other in January of the following year—which were drawn up with infinite care by McNeill and Tulloch, before being sent home to be laid before Parliament.

Every fact stated in it was verified, a reference in the margin in each case being made to the evidence of the officers, which was printed at the end, and the returns were given in an appendix separately. The evidence was given in the words of the officers themselves, was revised and corrected by them at their leisure, in their own quarters, and attested by their signatures.

There was a good deal of delay before the reports appeared, but when they did they caused a tremendous sensation. Though the tone throughout both was studiously moderate and impartial the evidence of the officers themselves made it impossible not to implicate several of those who had been in command during the war, and who were naturally incensed at the charges brought against them. The public, on the other hand, were full of indignation, which found expression in the House of Commons, at the alleged carelessness and incompetence on the part of these officers, whilst the Queen and Prince Consort were alarmed lest the army should in consequence of these revelations be placed under the control of Parliament instead of the Crown. The situation of the Cabinet, between those conflicting interests, was an extremely awkward one.

The choice was forced upon them of upholding their own Commissioners by assuming an attitude hostile to the army and displeasing to the Crown, or of denouncing the Report of their own Commission, facing hostile motions in the House of Commons, while satisfying "those in high places" and the army.

In these circumstances it was considered advisable to hold an inquiry on the reports themselves, and a "Board of General Officers" was formed for the purpose. No intimation of these proceedings was given to the two men most intimately concerned with them.

Up to this time not one line of official approval of their work had been sent to the Commissioners, nor had one word of public approval been spoken, yet Sir John McNeill . . . in spite of newspaper notices regarding the appointment of the Board of General Officers, and the curt refusal of Lord Panmure to reward his colleague, believed it impossible that the Government would not see that justice was done. . . . Still no communication was made to the Commissioners; they were left to gather what was being done from the newspapers, along with the rest of the public.

Colonel Tulloch, roused to fury by this underhand treatment, at once rushed into the fray; but McNeill, in spite of the urgings of his friends, resolutely declined to take any steps to vindicate his position. Throughout the whole sordid business he remained proudly aloof, refusing even to leave his home in Edinburgh, lest his presence in London should prove embarrassing to the Government, which he still trusted implicitly. His advice to Tulloch to follow his example was of course disregarded; the gallant Colonel appeared before the Board of General Officers, called and cross-examined witnesses, and soon landed himself in the "inextricable maze" predicted by McNeill.

The Royal Warrant appointing the Board of General Officers was dated 25th February; they had a preliminary meeting 3rd April. At first it was intended to have held these meetings with closed doors, but the indignation in the House of Commons was so great that the Government were obliged to yield, though it was much against the Queen's wish. Eventually the first twenty-three meetings were open; during these witnesses were examined. The last twenty-three meetings were closed, and the Report was issued on 4th July, 1856. The record of the public proceedings of the Board exhibit a very great contrast in spirit to that which animated the Commissioners. . . . From the first, base motives were attributed, personal recriminations were allowed, and unfair advantages taken, and unworthy inferences were drawn. In their final Report the General Officers made deductions not borne out by the evidence, and, very obviously, were intent only upon clearing the officers of all blame at the expense of the Commissioners or of the Treasury.

The result of the inquiry into the Crimean Report was such as might have been anticipated from the first under these conditions. To put it plainly, the Government threw over the two men whose only fault consisted in a faithful discharge of an unpleasant duty, and the blame which should have been accorded to others was shifted on to the shoulders of the "damned doctors," whilst every possible means were taken to belittle and call down scorn upon them, their profession, and the work they had carried out with such signal success. Popular feeling, however, was on the side of the Commissioners, and ran very high. Moreover,

Questions regarding matters connected with the Crimean Report continued to be asked in the House of Commons; whenever any allusion was made to the Commissioners, as frequently happened, it was received with cheers; but the Government steadily resisted making any sign of approbation or mention of reward.

When at length an acknowledgement of their services was made, it was in the insulting form of £1,000 to each Commissioner, which, it is hardly necessary to add, was indignantly refused by both. Their supporters, however, continued to agitate for justice, and in the end obtained it. Though Lord Palmerston referred to the Crimean Report as "an old story of what happened two years ago," and doubted if "their (the Commissioners') services were of such a peculiar nature as to require any extraordinary recognition," the tide of public opinion had risen so high that the Ministry, for very fear, were obliged to give way before it. In March, 1857, McNeill was given his choice between a baronetcy and a Privy Councillorship, and chose the latter; whilst his colleague became Sir Alexander Tulloch, K.C.B. A letter of McNeill's regarding his own reward is worth quoting, inasmuch as it shows the attitude he adopted during the whole of this disgraceful episode. He writes:

"If they feel the necessity of doing what is right, let them act like men and gentlemen. It is beneath both their position and mine to be chaffering and huckstering like Jew old-clothes men about such matters. If they do not feel that they have made a mistake, let them keep their honours and rewards. I can live without them. I do not choose to be bid for at auction. I have not put myself up for sale.

Sir John McNeill lived to enjoy for many years the honours so reluctantly accorded to him by an ungrateful Government; and much of this time was devoted to active and useful work among his poorer countrymen. He died at Cannes on May 17th, 1883, at the age of 88, having preserved his mental faculties and his interest in public affairs almost to the end.

So far little or nothing has been said of the nature and extent of the work accomplished by McNeill during the Crimean war, a work of which it is almost impossible to over-estimate the importance. Briefly, he found the Crimea a wilderness of disease and death and unnecessary suffering, where men lay dying within a few miles of the food and medicine which would have saved them: and he and his companion left it with the hospitals, the commissariat, and the transport system in perfect working order. It was McNeill who first obtained fresh meat for the starving soldiers by the simple process of having it sent from the southern side of the Black Sea, a country well known to him.

He made use of the British Consuls there, asking them to have tenders sent in to the Commissariat officials, who had hitherto made no use of this rich district so near the seat of war, and capable of supplying fresh meat, forage, fuel, and vegetables, in quantities sufficient for a much larger army than that which lay before Sevastopol.

The scurvy-stricken men, whose diseased gums rendered impossible for them to eat the hard biscuit which formed part of their daily rations, were supplied with soft bread from the field bakeries immediately erected by the Commissioners, an obvious solution of the difficulty which seems never to have occurred to those in command. It was McNeill, too, who was the first to discover "incidentally that the supply of quinine which should have been in Balaclava was practically non-existent. As the warmer weather approached, cases of malarial fever became frequent, and but for his 'timely discovery' and for 'the steps he had taken to call attention to it,' as Lord Raglan said in his letter of thanks, the troops would have been without this valuable drug."

Perhaps the result of the Commissioners' joint labours is best described in the words of one who had been an eye-witness of the state of things both before and after their inquiry.

General Sir De Lacy Evans, who had commanded a division during the war—and was for that reason, at the Queen's express wish, excluded from the Board of General Officers—defended the Crimean Report in Parliament, and testified in vigorous terms to the beneficial changes which its authors had effected during the short time they were at the seat of war:

I must say that the comment of the hon. gentleman the Under-Secretary of State for War, as the representative of Government, as well as the conduct of the noble Lord the War Minister, towards these Commissioners is the most ungrateful and unjust that I ever heard of. . . . The noble Lord at the head of the War Department said: "See what a vast superiority there is in the material state of the army in the present year as compared with last year!" He carefully omitted saying how it was brought about. . . . I now most distinctly say that it has been mainly brought about by those Commissioners whom the hon. gentleman has this night been instructed to deprecate and disgrace. . . . Who was it also that caused fresh provisions to be sent for along the various coasts of the Black Sea and the Bosphorus? Why, the Commissioners! There were fifteen hundred miles of coast along the Black Sea, and upwards of a thousand along the Bosphorus, covered with cattle and provisions; there never was an army in the world that had such vast means of transport at its command: we had unlimited command of the sea and an enormous amount of vessels at our disposal, and although these things were known, it was the Commissioners who have been disparaged to-night who first convinced the Government of the facts. I speak therefore of the Commissioners with gratitude because of the material benefits which they conferred upon the troops. . . . I rejoice that the Government have committed the gross blunder, injustice, and inconsistency that they have upon this occasion by publishing those Reports, because, independentiy of the proceedings of the Commissioners having saved the lives of some thousands during the last six or eight months, and having immensely contributed to the efficiency of the troops, the Reports of the Commissioners . . . will remain on record, as a menace to Governments who may be willing to place favourites instead of competent men in high stations, and will point to the staff, commissariat, and military of other armies, and perhaps of other ages, what ought to be done to protect the lives and health of an army in the field.

One who had even a better right than General De Lacy Evans to speak with authority on this subject did not hesitate to call the work of the two Commissioners "one of the noblest labours ever done on earth." In the same letter in which she pays this generous tribute of admiration, Florence Nightingale adds:

I saw how Sir John McNeill's and Sir A. Tulloch's reporting was the salvation of the Army in the Crimea. Without them everything that happened would have been considered "all right."

Sir John McNeill was a man of fine presence—tall and dignified, with a beautiful head of long grey hair. Sir James Paget said to his grand-daughter: "He was the handsomest young man and the handsomest old man I have ever seen." His portrait was painted by G. F. Watts; and a writer in the *Scotsman* said that the painter had "found a rare type in one who was considered the handsomest man of his day."

We cannot conclude this account of Sir John McNeill's career without mentioning a curious incident which occurred long after he himself had been laid to rest. Twenty years after his death, the Christian Scientists in America paid the old diplomatist the doubtful honour of adding to the number of his descendants the leader and originator of their creed. They declared, and Mrs. Eddy herself supported the claim, that she was his great-grand-daughter, in the face of the fact that Mrs. Eddy having been born in 1821, and McNeill in 1795, her alleged great-grandfather was but 26 years her senior. In an article which appeared in an American magazine, *The Ladies' Home Journal*, of November, 1903, is the following remarkable statement:

Among Mrs. Eddy's ancestors was Sir John MacNeil, a Scottish Knight, prominent in British politics, and Ambassador to Persia. Her great-grandfather was the Right Honourable Sir John MacNeil, of Edinburgh, Scotland.

Called upon to rectify this amazing misstatement, Mrs. Eddy contented herself with a very qualified denial in the *Christian Science Sentinel* for March 12th, 1904. It is there stated that Mrs. Eddy had had the matter carefully investigated, and having obtained no positive proof that the Right Honourable Sir John McNeill was her ancestor, she requests that all others writing upon her biography shall in future observe this correction. One would like to know what is Mrs. Eddy's notion of "positive proof." This might enable us better to estimate the value of the evidence on the claims of Christian Science in regard to the healing of disease. The impudence with which an absolutely baseless statement, so easily disproved, is made is a measure at once of the Priestess's regard for truth and of the credulity of her disciples.

INTERNATIONAL CONGRESS ON DISEASES OF OCCUPATION, BRUSSELS.

(*Continued from p. 885.*)

The Question of Illumination.

THE influence of occupation on the eye and vision, and the lighting of workplaces generally, provided subject matter for the fourth discussion. Mr. L. GASTER, Honorary Secretary of the Illuminating Engineering Society, advocated co-operation between the medical expert, the architect, and the engineer on the question of lighting, pointing out that it was no use the engineer bringing out an efficient and economical light which would afterwards prove to be injurious to the eyesight. He discussed the effects upon eyesight of intense light on the one hand and insufficient lighting on the other, and advocated the desirability of establishing standards of lighting. He exhibited an apparatus which he claimed would efficiently measure any degree of illumination.

Dr. MASSARELLI (Rome) discussed the general principles which should regulate artificial illumination, and spoke very highly of the Cooper-Hewitt mercury lamp for use in such industries where it was not necessary to distinguish colours.

Professor GALLENGA (Parma) advocated the supervision of eyesight in trades which were calculated to cause injury, and recommended as a general principle that the eyesight of all young people commencing work should be properly tested. He discussed the trades and conditions which created or aggravated defects of vision.

Dr. WILLIAM ROBINSON (Sunderland) described the causation of glass workers' cataract, and summarized his own investigations on the subject.

Dr. A. BROCA (Paris) and Professor F. TERRIEN (Paris) also presented interesting communications.

Miner's Nystagmus.

The most animated discussion, however, took place on the consideration of the subject of miner's nystagmus. Drs. ROMIÉE and THIBERT (Liége) and Dr. MORET (Charleroi) contributed papers, the two former concluding that the affection is due to insufficient lighting, is benign in nature, and rarely interferes with ability to work. They strongly objected to the theory that nystagmus involves an increased liability to accident. Dr. Moret discussed the causation, concluding that the affection was a neurosis produced by ocular fatigue due to darkness, combined with fatigue of the muscles, notably the elevators, from the strain of looking in an abnormal direction. A number of French representatives insisted on the risk of accident from this condition, and Dr. F. SHUFFLEBOTHAM pointed out that nothing had been said respecting the subjective and objective symptoms which occurred apart from ocular symptoms.

Compressed Air and Decompression.

The first discussion on September 13th was on the effects of compressed air and the relative merits of decompression by stages or by the gradual method.

Lieutenant G. C. C. DAMANT, R.N., described the principles on which the system of decompression by stages is based, and demonstrated very clearly the success of the method from the experience of the English Admiralty during the last two years, without any accident directly due to the system, though work had been done at a depth of 62 metres. The greater the depth the less time is allowed in the water, no diver being allowed to remain more than twenty minutes at a depth of 47 metres. He considered gradual decompression an absolute waste of time. He stated that in cases where diving was likely to prove risky it was customary to provide a small recompression chamber on the diving boat.

Dr. G. WALLER (Amsterdam) said that gradual decompression was used with success in Holland, but he was in favour of "stages" in suitable cases.

Dr. A. BORNSTEIN (Hamburg) held that decompression by stages gave the best results, that oxygen was very useful in case of accident, and that physical exercise immediately upon leaving a caisson was an important prophylactic.

Professor CATSARAS (Athens) pointed out that the "stages" method was not new, as he himself had utilized it in 1899. He was a strong advocate of this system.

Industrial Poisoning.

The last discussion was on industrial poisoning, the first part dealing with the early diagnosis of lead poisoning.

Dr. T. M. LEGGE gave the results of ten years' notification of lead poisoning in England. He showed that the notified cases had diminished by one-half during this period, but this diminution had been limited to those industries placed under special rules and where periodic medical examinations are compulsory. He pointed out that where such restrictions are not enforced there is a tendency to increase. He explained that fatal cases do not diminish at the same rate as non-fatal cases, this being attributed to the tendency to consider lead as an accelerating cause of death in persons suffering from other diseases, such as chronic nephritis. He considered that nine-tenths of the cases had been due to inhalation of fumes or dust.

Dr. S. KING-ALCOCK (Burslem) discussed the early symptoms of lead poisoning. He was of opinion that the blue line could only be of service as a diagnostic factor when taken in relation to others associated with it. He regarded anaemia as a more trustworthy symptom of poisoning, and that "Pepper's granules" are of no practical use for diagnostic purposes. Headache, when other causes could be eliminated, he considered to be a grave indication of lead poisoning. As regards colic and constipation, though specifically associated with lead, he mentioned that diagnosis of causation was often very difficult.

Sir THOMAS OLIVER described two cases of lead poisoning where diagnosis had proved to be very difficult, and stated his opinion that the examination of blood corpuscles for basophile granules was quite unreliable.

Professor STERNBERG (Wien) mentioned as essential symptoms the presence of lead in urine and faeces, the blue line, the presence of basophile granules, anaemia, peculiar complexion, haematoporphyrinuria, and alimentary glycosuria, and that when none of these exists and the administration of iodide of potassium does not produce lead in urine, one can safely say that there is no lead poisoning.

Dr. BUSCHOLD (Berlin), Dr. MEILLÈRE (Paris), Dr. GOADBY (London), and Professor CRISAFULLI (Bologna) also contributed to this discussion.

Professor GLAISTER (Glasgow) read a paper on industrial poisoning by gases of arsenic and phosphorus. He mentioned different trade processes which had given rise to the occurrence of 120 cases of poisoning by arseniuretted hydrogen, and referred particularly to two fatal cases that he had met with. He described the symptoms and *post-mortem* appearances. He also described two fatal cases of poisoning by phosphuretted hydrogen and some experiments with this gas on animals.

Dr. R. PROSSER WHITE and Dr. A. SELLERS contributed a joint paper on industrial aniline poisoning, describing a fatal case and a number of experiments made at the Manchester Public Health Laboratory with the object of showing that symptoms have been due to inhalation of the fumes of aniline in cases where they are supposed to have been caused by absorption of aniline oil through the skin.

A large number of interesting papers, which had no direct bearing on the subjects for main discussion, were taken on September 14th, among these being a valuable contribution by Dr. T. D. Lister, on Phthisis as a Disease of Occupation.

SCIENCE NOTES.

DIPHTHERIA in fowls is a disease which possesses a peculiar interest. Not unlike human diphtheria in respect of the lesions which it causes in the mouth and the eye, it yet bears a character of its own, for it is distinguished by the extreme chronicity and waywardness of its course. Several organisms have been accounted responsible for its origin, and amongst these the most likely seems to be that isolated and described by Bordet and Fally three years ago. The organism is remarkable for its very small size and the difficulty of getting it to grow on artificial media. It refuses to grow on ordinary and even on most blood media, and under the most favourable circumstances as yet discovered a hardly appreciable growth is the most that is obtained. The difficulty of

getting pure cultures is very considerable. It is impossible to do so from the mouth, and the most successful method hitherto devised is to break up one of the mucous patches in water, dip a sterile thread in this, and pass the thread between the closed eyelids. A comparatively pure culture can be obtained from the conjunctival lesion. The medium used is the same as that employed by Bordet and Gengou in the case of whooping-cough. It contains rabbit's blood, and, curiously enough, gives better results than a similar medium containing hen's blood. Under the highest magnification the microbe appears as little more than a point, although occasionally it assumes the form of tiny rods. It has a tendency to form large clumped masses. Its resisting powers are considerable, and it retains its virulence even after several months' growth on artificial media. For some time after the discovery of this organism there was a doubt as to whether it actually multiplied in the diphtheritic lesions, but the authors are now able to announce that this certainly does occur. Attempts to produce immunity have been made, but the results have not yet been published.

Four or five years ago a Canadian inventor made the suggestion that steamships should be furnished with brakes capable of stopping them instantaneously, even when travelling at full speed. When it is considered that a large proportion of marine disasters are due to the inability to stop a ship in its course, the importance of such an invention will be obvious. From preliminary trials made with small steamships, it would appear that some measure of success may be achieved by such appliances as have been experimented with. They take the form of a kind of shutter constructed of steel plating and mounted on hinges on each side of the vessel. They are placed in such a position that the upper border of the shutter is flush with the water line. When the ship is in motion they lie flat against the hull, but, being controlled by an electrical apparatus, they can be opened instantaneously, so as to project straight out. Both may be opened simultaneously, bringing the vessel to a dead stop, or only one may be opened, in which case the ship is diverted abruptly from its course. Such appliances have recently been installed on the American ironclad, the *Indiana*, and it will be interesting to see of what use they will be in vessels of such size. The most natural thing to expect would be that in the case of such large vessels travelling at full speed the sudden opening of the shutters would cause them to be torn violently off. A series of photographs depicting the new invention is shown in a recent number of *La Nature*.

LITERARY NOTES.

At the Teatro Metastasio of Rome there was recently performed with great success a play called *Novelletta Antica*, of which the author, Dr. Licurgo Tioli, is a member of the medical profession.

The Oxford University Press has obtained no fewer than seven of the Grands Prix awarded by the jurors at the Brussels Exhibition to British exhibitors in the domain of book production. It may be recalled that at the Paris Exhibition three Grands Prix were awarded to the Oxford University Press.

Professor Osler's *Principles and Practice of Medicine* has been translated into Chinese by Dr. P. B. Cousland, President of the China Medical Missionary Association, Shanghai. This undertaking has engaged Dr. Cousland's energies, with frequent interruptions, for several years past. It is the only first-class work on the principles and practice of medicine that has so far been translated into Chinese. The following works are also in course of translation: Heath's *Anatomy*, by Dr. Cochrane of Peking; Stengel's *Pathology*, by Dr. McAll of Hankow; Hutchison and Rainy's *Clinical Methods*, by Dr. Cormack of Peking; Fuchs's *Ophthalmology*, by Dr. Neal of Tsinan. A new and compact *Systematic Anatomy* is passing through the press. An atlas of beautiful anatomical plates has just been printed for the China Medical Missionary Association by the Oxford Press and Messrs. Hodder and Stoughton, at a cost, apart from the letterpress, of £500, part of which has been contributed by the China Emergency Appeal Committee. As dissections of the human body are not yet allowed in China, such plates are of the utmost importance.

There has always been a wide diversity of opinion regarding the precise nature of the disease from which Pascal suffered and the illness of which he eventually died; and for many years the subject has proved a fruitful source of discussion amongst medical men. But although both the physical and mental health of the great mathematician and mystic have received much attention from medical writers, the riddle has not yet been solved with any degree of certainty, and any fresh light thrown upon the matter must always be welcome. In the *Tribune médicale* for August 27th M. Carry has advanced a new theory as to this vexed question. To begin with, he differs entirely from those who maintain that Pascal succumbed either to tuberculosis or neurasthenia, and brushes aside, as unworthy of serious consideration, the theory, founded upon an account given by Pascal's own mother, that all the strange nervous troubles with which he was afflicted throughout his short life were due to the "magic and spells" of an old witch-woman who wished to be revenged upon M. Pascal *père*, and accomplished her desire by injuring the health of his son, then a child of two years old. M. Carry explains his rejection of these theories by his firm belief that they have no foundation in actual fact, and are borne out neither by the symptoms displayed during life nor by the signs of disease found in the body after death. In his opinion, Pascal suffered, and finally died, of lead poisoning, a disease which, though unrecognized, was very frequent at a period when plates made of pewter or glazed with litharge were always used by the middle and lower classes. This opinion is based upon a very striking fact, for M. Carry has actually seen and commented upon a whole series of lead poisoning cases amongst girls who earned their living by winding cotton upon reels, and who were gradually poisoned by the absorption of dust arising from cotton which was dyed yellow by means of chromate of lead. Their symptoms were identical with those of Pascal, and were due, without a doubt, to their dangerous occupation. It seems, therefore, at least probable that Pascal was, during the whole course of his life, undergoing a process of slow poisoning, and that his various digestive troubles, headaches, vertigo, and general state of weakness and languid depression, were due to this cause. His illness in early childhood and his impressionable nervous system would do much to render him peculiarly susceptible to such an infection, and moreover, as M. Carry tells us, a very small quantity of lead will produce symptoms analogous to those of nervous diseases. The paraplegia from which Pascal suffered as a young man might possibly have arisen from the same cause; but what M. Carry regards as conclusive evidence in favour of his own diagnosis is the nature of Pascal's last illness, which presents the salient features of lead poisoning—the terrible *coliques sèches*, lasting for several days, and the final attack of brain disease accompanied by convulsions. The result of the autopsy also bears out the diagnosis of lead poisoning, the gangrenous—that is to say, bloodless—intestines, and the dried shrivelled liver, being due to the colics, and the two central haemorrhagic foci on the surface of the brain to the encephalopathy. These foci, says M. Carry, had been caused long before death by a vascular atheroma, obviously due to the action of lead, since no other disease could have produced it save malaria or syphilis, of which there is no question in this case. "We can therefore believe," says M. Carry, "that Pascal was thus slowly and interruptedly poisoned, the only result at first being intermittent troubles, but later gradual arterial alterations took place, and ultimately an attack of lead colic and a final attack of headache with haemorrhages caused by vascular alteration." The author closes this interesting little article by enumerating the conclusions to which M. Paul Savy has arrived after studying the case of Pascal. From them we gather that the intellect of this famous man cannot have suffered in the least from the cerebral disease, since it has been proved that it commenced only a few days before his death.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

MEDICINES FOR RHEUMATISM, GOUT, AND NEURALGIA.

We have already published, in the British Medical Journal of October 10th, 1908, a report on the analysis of a number of proprietary preparations advertised for the cure of rheumatism and allied complaints, and bath salts for rheumatism have also been reported on in a separate article in the Journal of February 12th, 1910. There are many others no less widely advertised, some of them having been established many years, and others being of quite recent introduction; we give here the results of the examination of a further selection of such preparations, with some specimens of the claims made for them.

Dr. Hoffman's Rheumatic Powders.

These powders are supplied by 'The International Chemical Co.," 324, Caledonian Road, London, N. They are advertised in the following terms:

Greatest and latest discovery in medicine.
Dr. Hoffman's Celebrated Rheumatic Powders.
Great German Rheumatic Cure.

Will cure permanently all forms of Rheumatism, Gout, Neuralgia, Sciatica, Excess of Uric Acid, etc.

Highly endorsed by the leading Medical Profession, Analytical and Consulting Chemists, and general public in all parts of the world. Contain absolutely no injurious drugs, poison, or any kind of Narcotic. Its manufacture is based on scientific principles.

Relief is felt after the First Dose.

There is nothing known in medicine which will compare with it.

A circular enclosed in the package contained statements similar to the above, accompanied by a so-called "analysis" in the following terms:

I hereby certify that "Dr. Hoffman's Rheumatic Powders" have been tested in these laboratories, the data obtained being of a most satisfactory character, and indicating them to be judicious and skilful preparations that are well suited for the purposes for which they are designed. They are valuable powders for rheumatism, gout, and kindred complaints. These powders are free from narcotics, poisons, or undesirable constituents, but are powerful uric acid solvents. I consider them to be perfectly safe, reliable, and effective medicines.

This recommendation, or testimonial, bears the name of an individual who has made himself conspicuous by giving such puffs under the name of analyses: his name is followed by a long paragraph setting forth his title to speak with authority, commencing with "Ph.D.," and concluding with "Ph.D., etc." but with no mention of the University which conferred this duplicate degree. Such distinctions as "author of . . . 'The Physiology of the Invertebrate,' 'Respiratory Proteids,' etc. . . . Analytical Chemist, Assayer and Chemical Engineer, Consulting Chemist and Expert Adviser to Foreign Governments, Corporations, Collieries, Companies, Pharmaceutical and Chemical Manufacturers: . . . Bacteriological and Agricultural Expert," are no doubt intended to display his ability to pronounce with authority on the merits of powders for rheumatism or on any other subject whatever.

The powders are supplied in boxes at 1s. 1½d. and 2s. 9d. A 1s. 1½d. box was found to contain 12 powders. The directions are:

Take one powder every three or four hours: place on the tongue, and wash it down with a draught of water.

It would appear that the amount taken at one time is not regarded as of great importance, as the powders in one box varied in weight from 11.3 to 20.8 grains, the average of the 12 being 15 8 grains. Analysis showed the powder to have the following composition:

Acetyl-salicylic acid	66.4 per cent.
Phenacetin	11.4 ,,
Caffeine	1.3 ,,
Sugar	20.1 ,,
Moisture	0.8 ,,

Acetyl salicylic acid is also known by the shortened name of the *B.P.* Codex, acetosalic acid, and by the trade names Aspirin, Xaxa, etc. The estimated cost of the materials for 12 powders is 1d.

Eade's Gout and Rheumatic Pills.

These pills are prepared by George Eade, 232, Goswell Road, London, E.C. In an advertisement it is stated that they

instantly relieve and rapidly cure the worst form of gout, rheumatism, rheumatic gout, pains in the head, face, and limbs.

The extracts which follow are from a circular enclosed in the package with the pills:

They are especially recommended to the afflicted, with confidence arising from experience, as one of the valuable results of the improved state of medical science, and the only efficient remedy ever discovered for these disorders.

The never-failing effects of Eade's Gout and Rheumatic Pills in curing these distressingly painful diseases have secured to them a celebrity unequalled by any medicine of past or present times. They not only give relief in a few hours where the patient has been driven to madness by the horrible, excruciating tortures of this disease, but restore to perfect health in an inconceivably short space of time—in most cases giving relief from the intolerable pain in one or two hours; one bottle will frequently carry off the attack in two or three days, even when the patient has kept his bed for as many weeks, and sometimes months.

These Pills have repeatedly succeeded after all the usual internal and external remedies have failed; and it is their peculiar property that the first dose completely arrests the frequent tendency of those diseases to attack some vital part while, if attacked, the symptoms are immediately and effectually removed.

The pills are supplied in bottles at 1s. 1½d. and 2s. 9d.; a 1s. 1½d. bottle was found to contain 18 pills, and a 2s. 9d. bottle 60 pills. The directions are: "Take one Pill three times a day, and two at bedtime; for delicate females and weak persons, one Pill night and morning."

The pills were not coated, as ordinarily understood, but had a thin irregular layer of adherent powder, which proved to be carbonate of magnesia; the average weight of one pill was 5.4 grains. Analysis showed the presence of aloes, powdered colchicum corm, and extractive, with cane sugar, glucose, gum and dextrin, various characters indicating that the sugars were added in the form of treacle; the amount of colchicine was determined (and the alkaloid identified) and was found to be considerably more than would be proper to the amount of corm present, and this fact and the presence of an extract pointed to extract of colchicum being present as well as the corm. The amounts of the different constituents were determined as accurately as possible; the amount of aloes, not being determinable with any exactness, was arrived at by comparing the pills by various tests with a mass of known composition. The formula was found to be as follows:

Barbadoes aloes	10 per cent.
Extract of colchicum	18 ,,
Powdered colchicum corm ...	35 ,,
Treacle	27 ,,
Gum and dextrin	10 ,,

Estimated cost of materials for 18 pills, ¾d.; for 60 pills, 2½d.

Uricura Drops and Liniment.

These preparations, also known as Hammond's Specifics, are made by the Hammond Remedies Company, Barry, Glamorganshire. An advertisement inquires:

Have you tried to eliminate the cause of Rheumatism, Gout, Lumbago, and Sciatica? Uricura Drops will do this for you, being the finest cure for these complaints.

The price of each is 1s. 1½d. A bottle of the drops contained half a fluid ounce, and of the liniment 4 fluid ounces. On the package of the former appears:

N.B.—In conjunction with the drops it is strongly recommended to use Uricura Liniment.

And on the package of the liniment:

N.B.—It is strongly recommended that for Rheumatism, Lumbago, and Sciatica, Uricura Drops be taken in conjunction with the Liniment.

In a circular enclosed in each package it is stated that:

"Uricura" Liniment and Drops (Hammond's Specifics) Cure

* Previous articles of this series were published in the following issues of the British Medical Journal: 1904, vol. ii. p. 1385; 1906, vol. ii, pp. 27, 1645; 1907, vol. i, p. 213; vol. ii, pp. 24, 160, 209, 393, 530, 1653; 1908, vol. i, pp. 833, 942, 1373; vol. ii, pp. 86, 505, 1022, 1110, 1193, 1285, 1566, 1697, 1875; 1909, vol. i, pp. 31, 909, 1128; vol. ii, p. 1419; 1910, vol. i, pp. 151, 213, 393, 1005, 1063, 1120.

Rheumatism, Gout, Sciatica, Lumbago and Neuralgia When All other Remedies fail.

These invaluable preparations have permanently cured many bad cases of from One to Twenty Years' standing. They give immediate relief, and effect a Cure quickly if Regularly and Persistently used as directed. . . .

For Colds in the Chest, Sore Throat, and Swollen Glands, nothing better than the Liniment can be used.

Athletes and others will find the Liniment a most efficacious remedy for Sprains, Bruises, Stiffness and Cramp. It has been used with remarkable results by leading Football Players.

Uricura Drops.—The directions are:

Dose.—Four Drops on sugar, night and morning. Increase two drops each day up to 10, and then reduce two drops each day.

Analysis showed the liquid to contain oil of turpentine, terebene, and oil of amber; no other ingredient could be detected. The proportions of the constituents were ascertained as nearly as possible by analytical methods and checked by comparison with made-up mixtures. The approximate formula arrived at was:

Oil of amber	5 per cent.
Terebene	47.5 ,,
Oil of turpentine	47.5 ,,

Estimated cost of ingredients of half a fluid ounce, ½d.

Uricura Liniment.—The directions are:

To be gently rubbed in for 10 to 15 minutes, night and morning.

The liniment consisted of a partly separated emulsion, which was found to contain oil of turpentine, acetic acid, ammonia, alcohol, egg-substance (as emulsifying agent), and water; a trace (under 0.01 per cent.) of alkaloid was found, but this did not possess any properties by which it could be identified, and may have consisted of bases derived from the egg. The acetic acid and ammonia of course combine, but the former was in excess and the liniment moderately acid, that is, about one-fourth of the acetic acid being in the free state. The quantities of the different ingredients were determined (the egg-substance only approximately) and the formula arrived at was as follows:

Oil of turpentine	42 parts (by measure)	
Acetic acid (*B.P.*) ...	10	,, ,,
Strong solution of ammonia	2.3	,, ,,
Alcohol	9.0	,, ,,
Egg-substance	2 0	,, ,,
Alkaloid (?)	0.01	,, ,,
Water, to	100	,, ,,

In estimating the cost of ingredients, the alkaloid is neglected; if the alcohol present were added in the form of rectified spirit, the cost of the ingredients for 4 fluid ounces would be about 1½d.; but if, as is more likely, "non-mineralized methylated spirit" were used, the different odour and other characters would be covered by the other ingredients, and the cost would be about ¾d.

Chameleon Oil.

This is made by the Chameleon Oil Company, Limited, 4, Albany Courtyard, Piccadilly, London, W. It is advertised as "The Only Perfect Liniment," but the directions show that it is intended to be taken internally as well as applied externally. Besides being recommended for human patients, it is described as "The Best Veterinary Medicine known."

It is stated on the package that:

Chameleon Oil Relieves and Cures Rheumatism, Sciatica, Lumbago, Neuritis, Neuralgia, Toothache, Headache, Earache, Backache, Colds, Sore Throats, Sprains and Strains, Stiff and Swollen Joints, Chilblains, Chapped Hands, Insect Bites, etc., etc.

A pamphlet enclosed in the package gives further particulars; paragraphs headed "The Story of its Birth" and "Discovery of an Ideal Liniment" do not actually give much information, but the references to the heart of Nature and herbs used by native tribes seem to indicate a method of discovery common to a very large number of nostrums. The following are extracts from these paragraphs:

When a Roman Scholar coined the word "Liniment" which, literally translated, means "to anoint," he had in mind the germ-idea of what a perfect liniment should be. In his day the physician anointed his patient with a healing balm which had the magical effect of curing muscular trouble without the aid of that tiresome modern invention—massage. Such a thing was totally unnecessary with the Romans, who possessed a supreme knowledge of the curative action of simple herbs upon the human frame. . . . But the priceless secret of that painless balm was lost, and so it happens, at the present day, when an embrocation or a liniment is mentioned one instantly conceives of some crude preparation which must be rubbed into the skin violently.

. . . it was left to Dr. Chas. F. Roberts to bring the word back to its original meaning, as being an ointment whose sole method of action would consist of simply anointing the affected part, and thus painlessly effecting the cure. The task he had set himself was to produce an external application which, to the two other virtues of being "soothing and pain-killing" should add a third, and the most important of all, "a healing power." As an advanced medical man he realized that the ideal of the healing art should be to relieve human pain by natural means. And so, like the ancient physician, he went back to the heart of Nature in an endeavour to wrest from it the secret of an ideal liniment. In the course of his searches he was favourably impressed with the healing properties of many herbs used by native tribes, because being a rational person he believed, like the late Rev. Charles Spurgeon, that there was a deal to be gained from the use of "sanctified commonsense," which after all is the sum of a man's own tried and trusted experience. Armed with this knowledge, which he further tested by very careful laboratory research, his industry was at length rewarded in finding a perfect liniment with the treble merit of being "healing, soothing, and pain-killing," the result of which is embodied in Chameleon Oil Liniment.

The action of Chameleon Oil is simplicity itself. Immediately the Liniment has been applied, it sets out upon its message of discovery and healing, travelling with lightning rapidity to the seat of the trouble. This found, it restores to the affected part all that pristine freshness which pain and suffering has caused it to lose, quickens the action of the blood, and renews the patient's vitality. . . . The principle of Chameleon Oil Liniment may be summed up in a few words—it releases those healing powers which nature itself has set in the human body in order to overcome the constant wastage and ravages of disease.

The general directions are:

Shake the bottle thoroughly until the contents become cream coloured. Rub the Oil gently into the affected part (use plenty of the Oil) until the pores of the skin refuse to take any more and sweating begins; then cover with a layer of wool, flannel, or other porous material, and fix with a bandage. For Stronger Effect, wash affected part with hot water and apply Oil as above after drying. For Very Powerful Effect, wash first with very hot water, apply Oil as above after drying, and bandage with flannel or absorbent cotton wool soaked in the Oil or solution of it. Keep on bandage as long as possible; note that if kept on too long it will raise a blister.

Special directions are given for its use in various complaints. The following will serve as a sample:

For Coughs and Colds. For Cold on the Chest.—Rub the throat, chest, and the back between the shoulder blades thoroughly with the Oil, and while the skin is still moist apply a fold of warm flannel; take 15 to 20 drops of the Oil in a little sweetened water, or gruel, at bedtime. For Catarrh or Cold in the Head.—Mix one part of the Oil with eight parts of warm water, gargle the throat, inhale the fumes up the nostrils, and a few applications will cure. For Continued Colds.—Rub the chest thoroughly every night with the Oil and cover with a piece of flannel. Take 15 drops of the Oil in a wineglassful of water three times a day between meals.

A 1s. 1½d. bottle which was examined contained 3 fluid ounces, and a 2s. 9d. bottle 9¼ fluid ounces. The liquid in the two bottles differed in composition; it consisted of an oily and an aqueous layer, these being in the ratio of 1 to 1.66 in the one case and 1 to 2 in the other. The figures given below refer to the mean composition of the two.

The oily layer consisted of a mixture of essential oils; this was submitted to fractional distillation, and the following were recognized: Oils of turpentine, camphor, mustard, spearmint, pimento, and cassia (or cinnamon). The aqueous layer contained some alcohol, free ammonia in considerable quantity, and a resin in combination with ammonia as a soluble resinate; some of the resin was extracted and examined, but its characters did not agree with those of any single resin in ordinary use; various mixtures were made and compared with it, but complete agreement in all characters was not arrived at, and it is not possible to speak positively as to the nature of the resins present. By making a mixture of balsam of tolu (4 parts) and storax (1 part), boiling with ammonia, and filtering from the undissolved portion, a solution of ammonium resinates was obtained which agreed fairly well with that present in the chameleon oil.

The amounts of all the other constituents were determined with as much exactness as is possible

with such a mixture, and the following formula was arrived at:

Essential oil of mustard ...	0.75 part by measure		
Essential oil of spearmint	0.45	,,	,,
Essential oil of pimento	1.5 parts by measure		
Essential oil of cassia ...	1.5	,,	,,
Essential oil of camphor	15.0	,,	,,
Oil of turpentine ...	15.0	,,	,,
Alcohol (90 per cent.) ...	7.5	,,	,,
Strong solution of ammonia	8.0	,,	,,
Resins (as above) ...	1.6	,,	,,
Water, to	100	,,	,,

A mixture prepared by this formula agreed in physical and chemical properties with the original, except in regard to some minor characters of the resins.

Assuming the resins to be of the nature indicated, the estimated cost of the ingredients for 3 fluid ounces is $3\frac{1}{10}$ pence if rectified spirit were used, and about 2½d. if non-mineralized methylated spirit were used.

LEVASCO.

The address given on the package of this article is merely "Levasco Dépôt, Dover"; it is described as "The Great Indian Gout and Rheumatic Cure."

The following extracts are from a pamphlet contained in the package.

Levasco.—This wonderful preparation is the discovery of a Hindu Doctor in the Himalayan Mountains, and if you but give it a trial you will find yourself Quickly freed from pain and anguish.

Levasco is for outward application only, is not an oil, and requires no rubbing, it can be conveniently used at any time. Two or three applications daily Cures the most Chronic cases. . . .

Levasco is not being advertised altogether as a business venture, but partly from extreme gratitude of one who for many years was a great sufferer.

Levasco has an exhilarating effect on every nerve and muscle, similar to a soothing electric current, which diffuses a gentle warmth, goes direct to the pain centres, and gives immediate relief.

Levasco penetrates the skin, breaks up the Uric Acid, causing the blood to flow freely, the pain then ceases.

Levasco will effect a permanent Cure after years of suffering if the directions are followed and persevered with. . . .

Levasco has a pleasant and invigorating odour, the relief is marvellous. Sufferers will sometimes resort to ordinary remedies, and the continual pouring of drugs into an already weakened system will snap the vitality, and cause their lives to become a misery which brings habitual users to an early grave.

Gout cured in a few hours.—Apply Levasco upon the affected parts. . . . The first application will give immediate relief. After a few hours' treatment—during which time Levasco should be applied as often as possible—your Gout will have entirely disappeared.

Levasco applied freely will cure Lumbago or Sciatica in one night.

Neuritis.—Levasco rubbed upon the affected part gives immediate relief, and after three or four applications the pain will be gone, but do not cease using to effect the cure. You must continue to use for a week or two—two or three times daily, or when the pain is felt. This is a most difficult complaint to cure, and some great authorities say it is incurable, but we have evidence where perseverance and regular use of Levasco has effected the cure.

No athlete should be without a bottle of Levasco. A little rubbed on the limbs previous to and after any extra exertion, ensures your fitness for the next event.

Headache Cured in a few minutes.

Earache Cured in 2 minutes.

Toothache Cured in 2 minutes.

Great care should be taken that Levasco is not applied to wounds, cuts, or embrasures (*sic*).

A 1s. 1½d. bottle was found to hold rather less than 1 fluid ounce. Analysis showed the presence of oleo-resin of capsicum, oils of rosemary and lavender, camphor, alcohol, and what appeared to be a trace of soap. The quantities of the different ingredients were determined as exactly as possible, and the results indicated the following formula, and a mixture prepared in accordance with it was practically indistinguishable from the original:

Oleo-resin of capsicum	3 grains.
Camphor	6 ,,
Oil of lavender	3 minims.
Oil of rosemary	4 ,,
Soap	½ grain.
Methylated spirit, to	1 fluid ounce.

Estimated cost of ingredients, ½d.

DYXOL.

This preparation is supplied by Dix and Co., Slough. It is stated on the package that:

Dyxol cures Neuralgia, Toothache, Cold in the Head, Headache, Stiff-neck, Lumbago, Rheumatism, etc., etc.

Further particulars are given in a circular enclosed with the bottle, from which the following extracts are taken:

This is a simple Preparation of great value for the removal of all kinds of Pains. Most of these are caused by Congestion of the Blood in certain parts of the body. Relieve this Congestion and you drive away the Pain.

Dyxol has the power, above all other known preparations, of almost instantly dispersing congested blood. Its efficacy in this direction can be easily demonstrated. Rub one drop of Dyxol on the face, when, in less than one minute, the spot will temporarily redden through the flow of blood to the surface.

In another advertisement the following statements occur:

Simply rub on or inhale Dyxol according to directions, and neuralgia vanishes like magic. Muscular Rheumatism is speedily relieved by rubbing in a little Dyxol. Dyxol quickly removes the most obstinate cold in the head and on the chest, and it is an excellent remedy for Headache, Toothache, and Earache. Dyxol inhaled prevents influenza.

A 1s. 1½d. bottle contained 2 fluid drachms. The general directions are:

No rubbing is necessary. Apply one or two drops to the part affected. When using, fan away the vapour which arises. This will prevent discomfort to the eyes. To produce a milder action add a small quantity of Dyxol to an equal quantity of pure Olive Oil.

Analysis showed the principal constituent to be volatile oil of mustard, others being oils of pimento and nutmeg, liquid paraffin (heavy and light), and a fixed oil; the latter appeared to be cottonseed oil, but the quantity was too small for positive identification. The results of quantitative analysis indicated the following formula, and a mixture prepared in accordance with it was practically indistinguishable from the original:

Essential oil of mustard ...	20 per cent. by volume.		
Essential oil of nutmeg ...	20	,,	,,
Essential oil of allspice ...	4	,,	,,
Cottonseed oil	6	,,	,,
Liquid paraffin, yellow ...	17	,,	,,
Kerosene	33	,,	,,

Estimated cost of ingredients for ¼ oz., 2d.

POND'S ARTHRITICUS.

This preparation is supplied by G. P. Pond and Son, 68, Fleet Street, London, E.C. It is stated on the label that it

cures Gout, Rheumatism, Rheumatic Gout, Lumbago, Sciatica, and all Rheumatic Affections. . . . It contains no drugs, no colchicum. Arthriticus neutralizes all Gouty and Rheumatic Acidity in the Stomach, Liver and Bowels; removes the offending matter from the System, the Blood is purified, the Liver and Kidneys are relieved, the Joints become supple, and there is a general freedom from pain. The Skin, participating in the improvement, loses any Gouty Eczema which may exist, and assumes a healthy appearance.

A pamphlet enclosed in the package bears the title:

Gout and Goutiness. Their cause, treatment, cure, and prevention. By Geo. P. Pond, M.P.S., Surgeon-Chiropodist. In practice since 1857.

The degree of enlightenment to be obtained from this treatise may be judged from the following extracts:

No food or drink is gouty; yet, no alcoholic drink can be said to be good for gout; that is, anti-gout; it is the quantity and quality which are so. . . .

No one can reasonably deny an instinctive knowledge and a physical power exerted in the stomach by a conscious principle which selects and rejects, and which in its natural purity may be ranked as a nerve of sense. . . .

Air, again, is as necessary with every mouthful, in the process of digestion, as the gastric juice itself; it mixes with the saliva which pours out of four different glands of different kinds and forms a powerful solvent for the food. . . .

Water, like air, is nourishing. . . .

Cold is death, warmth is life. Cold is, perhaps, the greatest cause of disease. . . . Of all supposed remedies to strengthen the body, cold baths in cold weather are the most dangerous.

Several other preparations from the same maker are recommended in the pamphlet.

The price of "Arthriticus" is 2s. 6d. per package; this was found to contain a bottle holding nearly

13 fluid ounces of liquid and 16 powders. The directions are:

One of the Powders to be taken with every dose, mixed thus: In a tumbler pour a wine-glassful of water, mix with it a sixteenth part of the Arthriticus, then add one of the Powders and drink immediately, while effervescing.

It is ordered to be taken night and morning for gravel and affections of the kidneys and bladder, and all abnormal conditions of the urine; twice or thrice daily for rheumatism, sciatica, lumbago, etc.; and similarly in other cases.

The powders varied in weight from 10.9 grains to 17.4 grains, the average being 14.2 grains; they consisted of tartaric acid. Analysis showed the mixture to have the following composition:

		In one dose, approximately.
Lithium citrate	1.4 parts,	5.0 grains
Potassium citrate	0.9 part,	3.0 ,,
Sodium citrate	0.2 ,,	0.7 grain
Sodium salicylate	1.5 parts,	5.3 grains
Potassium bromide ...	1.6 ,,	5.6 ,,
Potassium bicarbonate ...	8.0 ,,	28.0 ,,
Glycerine	5.1 ,,	18.0 ,,
Chloroform water, about ...	10 ,,	by measure
Water, to	100 ,,	,,

On mixing a dose of the liquid with one powder, the resulting draught would be alkaline even with the heaviest powder; the alkalinity would of course be greater when the lighter powders were used.

Estimated cost of ingredients for mixture and powders, 2½d.

Magic Foot Drafts.

This is the name by which plasters, to be applied to the soles of the feet for the cure of rheumatism, are supplied by the Magic Foot Draft Co., Bangor House, Shoe Lane, London, E.C., the price being 4s. 6d. per pair. In addition to the numerous advertisements of the article by name, others have appeared recently, offering in the name of R. A. Oliver, Bangor House, Shoe Lane, London, E.C., to send "my Celebrated External Treatment [for Rheumatism] . . . to try free" to any one sending his name and address. On sending a name and address, a pair of the "Foot Drafts" was received (differing from those sold in the ordinary way by bearing no revenue stamp), together with a long letter and a printed sheet of testimonials; the letter states:

the Drafts cannot be purchased for less than 4s. 6d. per pair anywhere, and you can see that we could not afford to send them on approval if they did not really cure.

To introduce our great discovery most favourably to you, and through you to your friends, we are going to make this extraordinary inducement: Give this pair of Drafts a careful trial; if the results give you faith in our wonderful absorption method, as they must, we shall be pleased to send you three more pairs of our Foot Drafts on receipt of 11s., and as we make no charge for the first pair to all those who accept this offer, this will make four pairs (18s. worth) of Magic Foot Drafts for only 11s. . . . We have found by careful study of this disease, based on years of experience, that this number of Drafts will effect a cure in nine out of ten patients, because it nearly always takes all the power of the first two pairs to open up the clogged pores and start the removal of the poisonous acid urates. It is the third and fourth pair that invariably bring that sense of relief and freedom from pain that every poor sufferer is looking for.

This was followed at short intervals by other letters pressing for money to be sent. In the second it is stated:

We take a sincere interest in your case [no case had been even mentioned in sending for the "cure"], and we are going to cure you. Now that the cure has been started, every day's delay makes it more difficult for the Drafts to do their work and we trust that we shall hear from you by return post.

From the third letter:

We prefer to think that the promise you made us two weeks ago has escaped your memory.

[Of course no sort of promise had been made.]

From the fourth:

We think that we are justified in asking to hear from you, for we have spent some considerable time and money in your case; frankly, because we were interested in it. . . . According to our terms, which you accepted when writing for the first pair of Drafts, we must have by return either 4s. 6d. (for which another pair of drafts will be sent) or your statement on honor that you received no benefit. . . . We guarantee to cure you.

The letters quoted freely from alleged testimonials, and further printed sheets of these were also sent. On one of these is printed in large capitals: "We guarantee Magic Foot Drafts to cure any case of rheumatism!"

Curious discrepancies are shown by some of the testimonials. Thus in the advertisement, referred to above, in which the name "Foot Drafts" is carefully avoided, we read:

A marvellous cure has been effected in the case of Mr. James Bodman, 8, The Mount, Frome. Mr. Bodman writes: "I have suffered from Rheumatism for the past seven years, and was almost a helpless wreck. I tried all sorts of remedies and doctors, but to no avail, and was sinking fast when I tried your treatment. I am glad to say that it has cured all my sufferings, and I have had no aches or pains since. I may add that I am 72 years old, and feel as supple in my joints as a young man.

The following is printed on one of the sheets mentioned above:

8, The Mount, Frome.
1st Feb., 09.

The Magic Foot Draft Co.,
Shoe Lane, E.C.

Dear Sir,—I received your letter of recent date, and am pleased to give you the following account of my case of Rheumatism. I have suffered from this complaint for the past seven years, and was almost a helpless wreck. I could neither dress nor undress without help. I could get no rest in bed or up, and my life was a perfect misery. I tried all sorts of remedies, too numerous to mention, which did not give me the least comfort. I also saw a doctor, who stated that he could not cure me. He, however, gave me something to relieve the pain for a couple of nights, but then I became even worse than before. At last I gave up all hopes of ever getting better, in fact, I felt I was fast sinking, until a kind friend called to enquire after me. She said it grieved her to see me walk about such a pitiful sight, and asked if I would try Magic Foot Drafts, as she had received such good results from them. I consented, and she wrote to you for me. I only used three pairs, which cured me of all my sufferings, and I have had no aches or pains or any other complaint since. I may add that I am in my 72nd year, and feel as lissom in all my joints as a young man. I cannot estimate the value of your Magic Foot Drafts to sufferers from Rheumatism. I have highly recommended them to several sufferers since my cure. I scarcely ever go out without some one asking me how I got so well. It makes me feel almost like an agent of the Magic Foot Draft Co. Please send me another of your books, so that I may bring your treatment more directly before my friends and acquaintances. Again thanking you,

I remain, yours faithfully,
James Bodman.

Yet again, in one of the letters from the Magic Foot Draft Co., already quoted from, dated "June 2nd, 10," it is stated that:

Mr. James Bodman of 8, the Mount, Frome, Somerset, has just written us regarding the result of three pairs of Drafts. "I have suffered from Rheumatism for the past seven years and was almost a hopeless wreck, as I could not rest in bed nor when I was up, so that my life was a perfect misery. I tried various remedies and also saw a doctor who, while he could not cure me, gave me something to relieve the pain for a couple of nights, but I became worse after this. I had given up all hope when a friend who called to see me, stated that she had received wonderful results from Magic Foot Drafts, and asked for permission to send for a pair for me. I am now delighted to tell you that after wearing three pairs of Drafts, I have not an ache or pain and I am completely cured of all my sufferings. I am in my 72nd year and I feel as supple now in all my joints as a young man. I cannot estimate the value of your Magic Foot Drafts and I can never thank you enough for the benefit they have given me."

This had been "just received" on June 2nd, 1910. The phraseology has not changed much in the interval of sixteen months: but as the gentleman is still in his 72nd year, evidently time stands still with him; curiously, though, in the letter first quoted, which appeared in a newspaper advertisement on May 18th, he is already 72 years old.

One wonders how Mr. Bodman was induced to send three variants of his letter, one of them obligingly omitting any reference to Foot Drafts by name and substituting "your treatment."

The same differences are shown in other letters; in one place is a letter over the name J. W. Ludell, ascribing two cures to Magic Foot Drafts, while in the advertisement in which the latter name is not used he is represented as saying that one cure was due to "your Antiseptic Plasters" and the other to "your treatment"; two variants are given in different

places of a letter from Mr. J. Bull, in one of which he says: "I am thankful to think I tried the Foot Drafts, for they are worth double what you charge for them," and in the other: "I am thankful that I tried your Foot Drafts, for they are worth a good many times the money that I paid."

A booklet which is also sent, entitled "Rheumatism, Its Cause and Cure," contains various plain and coloured pictures professing to represent nerves, arteries, etc., of the leg and foot, and gives an account of how the "Drafts" are supposed to act; the following extract will suffice:

The rheumatic sufferer faces this situation:—His or her system has become more or less clogged with rheumatic poisons—lithic acid, uric acid, lactic acid, or any other toxin, as the case may be. This poison may be either driven out or drawn out. Certain agents—salicylic acid, for example—will sometimes accomplish the former result; but the system will then contain a poison worse than the rheumatism. In fact, remedies which are strong enough to be effective against rheumatism almost invariably ruin the digestive organs. Magic Foot Drafts, as the name implies, draws the poisons out through the pores of the tender skin on the bottom of the feet. The Drafts absorb this poison. A pair should be worn only six days, as they become filled with the waste matter from the body and need renewing in that length of time, if the case is a bad one. . . . Physicians are already using them in their regular practice, and recommending them.

The "drafts" consisted of plasters spread on a sort of jaconet backing, of oblong shape and measuring about 5 in. by 3½ in.; the darker central portion measured about 3¾ in. by 2½ in. The margin was coated with about 10 grains of sticky material, which had the physical and chemical characters of "Venice turpentine"; the darker portion, or the plaster itself, weighed about 80 grains, and was found to be a mixture of Stockholm tar and the powdered rhizome of white hellebore (*Veratrum album*); determination of their proportions showed the formula to be, approximately:

Powdered white hellebore ..	...	40 per cent.
Stockholm tar	...	60 ,,

No other ingredients could be detected.
Estimated cost of ingredients for one pair, ⅛d.

CELMO.

This preparation is supplied by the Celmo Company, 1, Carlton Street, Regent Street, Waterloo Place. London, S.W. It is in the form of tablets, of which a 2s. 9d. bottle contained thirty-six. In a booklet contained in the package the tablets are described as:

Specific for all uric acid ailments, viz.: Gout, Rheumatism, Rheumatic Gout, Lumbago, Gouty Dyspepsia, Sciatica, Eczema, Neuritis, Gouty Eczema, Suppressed Gout, etc

Other extracts are:

In order to effect a cure the first requisite is to remove the cause. This can only be accomplished by administering a remedy which has the power of dissolving uric acid, and which will also restore the normal alkalinity of the blood so as to prevent fresh depositions. This remedy we present in "Celmo" Tablets. It is the One remedy that achieves a complete and permanent cure, and is the only medicine in the world that has a direct and combined action on the Kidneys, Liver, Stomach, Bladder, Bowels, and Digestive Organs. . . .

We find, in the large majority of cases, from five to eight bottles, 4s. 6d. size, sufficient. The tablets must be taken with absolute regularity, and there should be no interval whatever between the bottles. It is always advisable to state your ailment and order of us direct. We then can change the dose as and when required to expedite a cure.

A so-called "analysis" is published, which is as follows:

I have made a careful Chemical examination of the above-described sample of Compressed Tablets known as "Celmo," and from my results I am able to certify that they are absolutely free from Arsenic, Mercury, Opium, Digitalis, and Colchicum.

I find that these tablets have been prepared from pure drugs of the best possible quality, and contain nothing of an injurious nature whatsoever. The formula from which they are made has been submitted to me, and I am of opinion that it is an excellent one in every way, and one which is not capable of improvement.

After reading in the booklet quoted from that Celmo is "the One remedy," and "the only medicine in the world that," etc., it is somewhat surprising to read, in another circular also enclosed in the package, that:

Every intelligent person is aware it is impossible to prepare any one medicine for Rheumatism, Gout, etc., to suit every system. We overcome this difficulty by supplying "Celmo" Tablets in two forms, both for Uric Acid ailments.

It further appears that there is also a "Celmo No. 2" for indigestion, etc., "Celmo Laxative," "Celmo Ointment," and "Celmo Liniment."

The directions are:

In commencing treatment, take two tablets with half an ordinary glass of water just before or after each of the three meals, making six tablets per day. In very severe cases three tablets can be taken at a dose until pain is relieved, then two as above. A child's dose, one-half to one tablet at times stated.

The tablets had an average weight of 5½ grains. They had a slight smell of oil of juniper, but the amount present was far too small to be determined, and can only be described as a trace. Analysis showed the presence of acetyl-salicylic acid (commonly known as aspirin), powdered charcoal, maltose, glucose, and dextrin (these three being evidently present as malt extract, used for binding the powders together), magnesium silicate, alkaloid, extractive, and the mineral constituents commonly found in vegetable extracts; a slight trace of a pungent substance resembling capsicum oleo-resin was also present. Ordinary talc is magnesium silicate, but the mineral of that composition here present did not have the physical properties of ordinary talc; it is, of course, quite inert, talc being commonly added to tablets as a lubricant to facilitate their production by a machine. The alkaloid and extractive did not show any characters by which they could be certainly identified; the alkaloid did not agree, in its behaviour to various tests, with any of the alkaloids in ordinary medicinal use.

The proportions of the various constituents were determined as accurately as practicable, and indicated the following formula:

Acetyl-salicylic acid ...	...	35.5 per cent.
Powdered charcoal, about	...	8.0 ,,
Malt extract, dry ...	...	18.0 ,,
Magnesium silicate ...	...	14.5 ,,
Other mineral constituents	...	2.8 ,,
Water	...	12.3 ,,
Alkaloid	...	0.5 ,,
Extractive, about ...	...	8.0 ,,
Oleo-resin of capsicum ...	...	trace.
Oil of juniper	...	,,

DR. BENGUÉ'S BALSAM.

This preparation, made by Dr. Bengué and Co., Paris, and 91, Great Titchfield Street, London, W., differs from most of those dealt with here in the important respect that the principal constituents are stated on the label. It is, however, rightly included in this series, since it is advertised to the lay public as

"A Wonderful Remedy for Rheumatism, Gout, Neuralgia."

In a circular enclosed in the package it is stated that:

The following is an enumeration of the different diseases in which Dr. Bengué's Balsam has proved to be the most effective scientific remedy.

Acute or Chronic Rheumatism; Gout; Various forms of Neuralgia; Facial, Intercostal, Lumbar, Ovarian, Sciatical; Locomotor Ataxy; Various forms of Hyperaesthesia; Saturnine Colics; Nephritic Colics; Peritonitis; Gastralgia; Torticollis; Zona.	Spread the Balsam on the affected part and cover up carefully with cotton wool. After two or three applications the parts affected should be cleansed with warm water so as to facilitate the absorption of the Balsam when the next dressing of the Balsam is applied.

The "Balsam" is supplied in collapsible tubes: a 2s. package contained 1⅛ oz. On the label, following the

name, are the words "Menthol, Methyl-Salicylate, Lanolin," and these three substances were found to be present. Analysis showed the composition to be:

Menthol	18 per cent.
Methyl salicylate	20 ,,
Lanoline, anhydrous	54 ,,
A fat, apparently lard	8 ,,

Estimated cost of ingredients, 1½d.

Box's Pills and Golden Fire.

These preparations are supplied by W. H. Box, 161, King Street, Plymouth. The "Golden Fire" is more especially recommended for rheumatism, but it is stated that "in severe cases of Rheumatism, etc., Box's Pills should be taken in conjunction with the 'Golden Fire,'" and the two are associated in many of the statements made. The following specimen extracts are from circulars enclosed in the packages, and other advertisements:

Box's Golden Fire is a New Discovery for the removal of diseases, being an Electric Fluid of Intense Power in rapidly attenuating, dissolving, and removing obstructions in any part of the system.

Box's Golden Fire, which is used internally and externally, is a subtle extract from the vegetable kingdom, the hidden fire or life of plants and flowers, the "Quint-essence of Life!" Call it, if you please, "Bottled Fire!" "Bottled Health!" "Bottled Life!"

This Great Remedy and its accompaniment are sure cures for rheumatism, diphtheria, etc.

In some advertisements the medicines are described as "The Giant Remedy," and it is explained that

The Giants have declared war against unbelief, and are determined to push the battle to the gate. The Giants ask for no quarter nor will they show any, therefore one of the contending parties must be wiped out. The Giants in fight are a noble race and are of ancient origin. Their fathers lived in Eden, and their seed, rising upon the wings of the wind, ultimately spread over the whole earth.

They have lived since the days of creation in the fields, without a covering, sipping the dew and drinking in the sunshine and the rain. When in their prime they were translated to 161, King Street, Plymouth, where they sleep. And when the proprietor of the Giant Remedy calls them they awake, and, springing upon the foe, they quickly overwhelm and annihilate him, and joyfully hand back the captive to his friends in perfect health. Their origin is Divine. As you now see them so they came from the hands of their Creator, filled with the nectar of health and life from root to leaf.

In a circular dealing more especially with the pills directions are given for their use for costiveness, bad taste in the mouth, heart disease, corpulency, sick headache, wind and swelling after meals, toothache, influenza, inflammation of brain, stomach, bowels, lungs, kidneys, etc., fevers, sore throats, diphtheria, and tumours. One of the "testimonials" is headed, in large letters, "Cancer Cured." The full directions in the case of influenza will serve as a sample:

Take as directed on the label. Also make a strong tea of Elder Blossom and Peppermint Herb, and drink a pint at bedtime. Repeat the tea at bedtime for two or three nights, if necessary. It seldom requires repeating. This will save when on the brink of death.

The thrilling nature of some of the testimonials may be judged by an extract:

My brother-in-law had his leg jammed in South Africa between rocks, just above the ankle. He came home, and feared he would be a cripple for life. I advised him to get your Pills and "Golden Fire," which he did, and after 6 days a spot came out under the heel as Black As Your Hat. He has since left for America Quite Cured.

Another circular states:

As certain medical men have done their best by tongue and pen to persuade the public that Box's Golden Fire is poisonous, the said Golden Fire in consequence has been submitted to a rigid Chemical Analysis. The following Report from the Eminent Analyst will effectually sew up the lying lips.

Then follows the report, which is in the usual style of such "analyses," and states that the "Golden Fire" was found to consist of "certain carefully selected and powerful, but perfectly innocent, ingredients, which combined (as in the mixture) may be taken internally or applied externally without fear or hesitation."

The circular continues:

Those who raise the cry of "Poison" are wholesale traffickers in the same—it is their stock-in-trade: Poisons bring grist to their mills, while the poor victims who swallow them perish by thousands.

The directions for use are:

For Rheumatism, Lumbago, Gout, Neuralgia, Sprains, Chest Affections, Asthma, Bronchitis, Swellings, Tumours, Enlarged Joints, etc., the Golden Fire should be rubbed in briskly three or four times a day; and in extreme cases a piece of flannel should be saturated with the Golden Fire and applied after each application.

For Sore Throat, Quinsy, and Diphtheria, rub in several times a day; and to one tablespoonful of Golden Fire add one tablespoonful of water and gargle every two hours.

For the above, Golden Fire should be taken internally three times a day, in a little water, beginning with six drops and increasing a few drops each dose until a teaspoonful is reached, and continue until well.

For toothache, apply Golden Fire to the Tooth and rub it well into the gums. For Neuralgia, Bruises, Sprains, etc., rub it briskly over the seat of pain. For Polypus, apply with a camel-hair brush, and rub in on the outside twice a day.

A 1s. 1½d. bottle of the "Golden Fire" contained nearly 2½ fluid ounces of liquid. Analysis showed this to contain acetic acid, sodium chloride, volatile oils, a little alcohol, starch, dextrin, extractive, and the pungent principle of capsicum. The mixture of essential oils appeared to consist of oils of camphor, eucalyptus, rosemary, and amber. After determining the quantities of the other ingredients, the amount left to be described as starch, dextrin, and extractive was about 7 per cent. of the liquid; this part possessed no characters by which its source could be determined, but the liquid contained solid particles which appeared to be due to defective straining, and microscopical examination of these showed them unmistakably to consist of barley, lobelia, and capsicum, and the liquid appears, therefore, to be a decoction of these, with the addition of the other ingredients named. The pungency was just similar to that of an aqueous decoction of capsicum; the proportions of barley and lobelia could not be determined; the amounts of the other substances found are given in the following formula:

Oil of amber	0.16 per cent.
Oil of rosemary	0.16 ,,
Oil of eucalyptus	0.32 ,,
Oil of camphor (essential) ...	1.3 ,,
Sodium chloride...	6.4 ,,
Glacial acetic acid	6.4 ,,
Alcohol	1.0 ,,
Decoction of capsicum.	
Barley.	
Lobelia.	

It is hardly necessary to point out that lobelia is a dangerous drug to be administered and taken by ignorant people.

A 1s. 1½d. box of the pills contained fifty-three of various sizes and shapes, roughly coated with talc, and having an average weight of 2½ grains each. The directions on the label are, "Dose—Two pills morning and evening, after meals." Analysis showed the presence of powdered capsicum in considerable quantity, this drug forming, in fact, so large a proportion of the pill, that the recognition of other ingredients was a difficult matter; microscopic examination showed also powdered gentian, and a flour which did not agree perfectly in character with any ordinary flour, though having a considerable resemblance to barley flour; small quantities of soap and aloes appeared to be prseent, and a trace of an essential oil or other aromatic substance which was not identified. The following formula gave a pill substantially agreeing in characters with the pill under examination:

Powdered capsicum	35 parts.
Powdered gentian	15 ,,
Flour	15 ,,
Aloes	20 ,,
Soap	5 ,,
Water...	to 100 ,,

British Medical Journal.

SATURDAY, OCTOBER 1st, 1910.

METROPOLITAN ASYLUMS BOARD REPORT.

The signs of the times seem to point towards a determined attempt in the near future to break up the Poor Law, and possibly it will not be long before boards of guardians become, like the parish beadle, merely a bygone incident in the social history of England. On the other hand, it is not unlikely that after a passing acquaintance with the melting pot, these boards will continue to flourish until, with the advent of the millennium of social reform, both the poor and their guardians alike disappear into the limbo of forgotten things.

Meantime, neither detractors nor admirers can well afford to forget that on the credit side of the account of Poor Law guardians lies the work of the Metropolitan Asylums Board. It covers a very wide field and is done on thoroughly business-like lines. The Board's latest annual report, for instance, shows that, despite an increase in the average daily number of persons maintained in its institutions, the total expenditure was reduced last year by between forty and fifty thousand pounds. From end to end the volume positively bristles with statistical matter of more or less medical interest, double or treble page tables abounding; but, on the whole, the most attractive part for medical readers lies in the supplement, edited for the Board by Drs. E. W. Goodall and F. M. Turner.

In addition to sundry papers, it provides an account of the united diphtheria experience at all the Board's hospitals during the year 1909, in the shape of a number of tables. They are, indeed, so numerous that a hurried glance at them might easily leave an impression that the antitoxin results were disappointing. It is seen, for instance, that among 453 cases not treated with antitoxin the death-rate was only 4.2 per cent., while out of 4,215 cases submitted to antitoxin the death-rate was 9.7 per cent., or over double the non-antitoxin figure. Similarly, among 299 cases of post-scarlatinal diphtheria, there were 4 deaths among 262 cases treated with antitoxin, and no deaths among 37 cases not so treated. It is only by due attention to the footnotes and by study of the tables relating to laryngeal cases and those in which operations were performed that the truth is discovered. It is these that offer the least questionable test of the gravity of attacks of diphtheria and of the value of any method of treatment adopted, and the impression which the tables relating to them leave is of a very different order to that just indicated as initially possible.

Of such laryngeal cases there were 910, and, while the death-rate among the cases treated with antitoxin was only 15.6, the death-rate among cases not so treated was very nearly cent. per cent.—in precise terms, 99.3 per cent.

Similarly, when the cases in which tracheotomy, or intubation, or both, had to be performed are taken separately, it is found that in cases in which antitoxin was not used the death-rate was cent. per cent., while the rate in the antitoxin series was only 33 per cent.

The foregoing figures relate only to the one year, and should be read in connexion with the charts supplied in the report of the Statistical Committee of the Board. These summarize the Board's experience during twenty years, or the mortality-rates from diphtheria for the four years before and the sixteen years subsequent to the introduction of antitoxin treatment.

The average mortality from all forms of diphtheria for the four years (1890–3) immediately before the introduction of antitoxin was 30.4 per cent.; it has dropped so steadily and continuously that for the last seven years it has never been as high as 11, and is now—that is, at the end of 1909—as low as 9.2.

The same tale is told by the laryngeal cases; in 1894, when antitoxin had begun to be used occasionally, the mortality was 62 per cent. This was a sufficient improvement on previous experience to encourage the use of antitoxin, and in the following two years, when such treatment became general, there was a rapid fall to about half the previous figure. This fall has since continued, so that the figure now stands even for laryngeal cases as low as 15.6.

Nor is the chart relating to operation cases any less striking. In the four years previous to the introduction of antitoxin the death-rate in these cases averaged 66 per cent., and in the year in which it was first used tentatively was as high as 70.5 per cent. As soon as antitoxin began to be used regularly there was a rapid fall, and now for the past ten or twelve years the mortality figure in these, the gravest of all cases of diphtheria, has been in the neighbourhood of 30 per cent., and below it in four out of the last seven years. The precise figure now is 30.7.

When the period covered by these charts is borne in mind, and it is remembered that the figures relate not to the work of one man but to that of a number of institutions, it is difficult to conceive how any person who studies them with a desire to learn the truth can fail to come to the conclusion that the introduction of diphtheria antitoxin must have been of incalculable benefit to mankind.

The other contents of this medical supplement are also of interest. Thus the subject of return cases is dealt with by Dr. Turner on the experience of the South-Eastern Hospital since the date of its reopening in July, 1906, a period of three and a half years. During this time the return-case rate has shown a slight fall in respect of scarlet fever, while the diphtheria return-case rate has remained stationary. Throughout this period the scarlet-fever cases have been discharged quite irrespective of the amount of desquamation of the legs and feet, and the routine employment of a bacteriological examination of swabs from the throats of diphtheria patients has been omitted. The results are considered to show that the precautions which used to be taken in these respects were unnecessary. The advice given to parents has been that for three weeks after their return from hospital the patients should not sleep in the same bed, nor, if possible, in the same room, as children who have not had scarlet fever; that the articles used should be kept distinct, and that the patients should not attend school. Dr. Turner considers that the chief effect of these precautions, in conjunction with the abolition of a bath on discharge, has been to postpone the occurrence of return cases.

A sidelight is also thrown on the treatment of scarlet fever advocated by Dr. Milne at the recent annual meeting. It was tried for a considerable period in two wards set aside for the purpose, but return cases occurred.

There are two papers on Vincent's angina, in the first of which Dr. J. D. Rolleston makes out a very strong case for regarding this particular form of throat affection as a separate entity. It is characterized, he says, by deep ulceration of the tonsil and adjacent structures, usually unilateral, a peculiar fetor, and enlargement of the corresponding lymph glands; etiologically it is associated with the symbiosis of two organisms, a fusiform bacillus and the spirillum described by Vincent in 1896. Among the patients treated during the three years ending with 1907 the number of cases diagnosed as Vincent's angina numbered 95; but these figures, the writer considers, probably underestimate the frequency of the disease. The other paper on the subject is by Dr. Goodall, who is not disposed to regard this affection as a distinct disease.

Dr. Goodall also deals with 35 cases of a fatal variety of ulcerative sore throat, which seem to him to constitute a distinct clinical group. They occurred chiefly during the years 1906 and 1909, and presented considerable difficulties in diagnosis. Most of them were sent to hospital as cases of diphtheria, but in Dr. Goodall's opinion they were really scarlet fever.

When the diagnosis of infectious diseases connected with the throat presents so much difficulty even to experts, it is not surprising that general practitioners should occasionally make mistakes. The details given on this point indicate, however, that it is in connexion with cases of enteric fever that errors of diagnosis most frequently occur; on the whole, this is not remarkable, considering the social class which supplies most of the patients in the institutions of the Metropolitan Asylums Board.

These number, it may be noted, fifteen hospitals and bacteriological establishments for infectious diseases, four asylums for imbeciles, including an infirmary for aged patients, a training school, and an industrial colony for Poor Law children, one ringworm school, two ophthalmia schools, one infirmary, three seaside homes, seven homes and working colonies for the mentally deficient, one training ship and three homes for juvenile offenders. A large number of ambulance stations are also maintained. Of the seventy-three members of the Board, fifty-five are elected by the various boards of guardians in the metropolis and the rest nominated by the Local Government Board. It does its work through committees, and does it so well that we are disposed to think that its existence will form a serious stumbling-block in the way of those who desire not to amend but to end all Poor Law institutions.

THE DOCTOR AND THE PUBLIC.

In an article entitled "The Widening Sphere of Medicine," but which might as appropriately have been entitled "The Doctor and the Public," read last year as the Shattuck Lecture before the Massachusetts Medical Society, and now printed by the Department of Neurology of Harvard University,[1] Dr. E. W. Taylor of Boston indicates and attempts to estimate the significance of various well-defined tendencies in present-day medicine. Dr. Taylor was led to this subject by a consideration of the rapidly widening scope of medical theory and practice, with its new and unique opportunities, and the apparent disinclination on the part of many men of promise and varied attainments to take up medicine as a career. What, however, must strike every reader of Dr. Taylor's wise and scholarly address is not so much the natural extension and development of the scope and attainments of medical science, extraordinary though these have been, nor the avoidance of medicine as a career by men of outstanding ability—an economic problem possibly more felt in America than here—but the manner in which the writer discerns the new conceptions and ideals which have accompanied the development of medical science, lays bare the significance of certain economic adjustments, and, as if from some point of vantage, scans the signs of the times and foretells the dawn of a new era in the aims and practice of medicine.

Archbishop Trench said that a man might fairly be assumed to remember clearly and well for sixty years back, and that only five of these sixties would carry us back to the age of Spenser, and not more than eight to the time of Chaucer and Wiclif. In that time the English language has become metamorphosed; yet any one of the imagined series of eight men, Dr. Trench said, would have denied that there had been in his lifetime any change worth mentioning. It cannot be said that the statement holds good for medicine. The changes in a single lifetime have been so great, the innovations—anaesthesia, antisepsis, bacteriology, and in the minute anatomy of the body, to name only a few—so startling, that new sciences have sprung into being and the medical man of to-day speaks a different language even from his immediate predecessor. These changes strike everybody, but changes—perhaps more revolutionary, though less noticeable—are now in process, and they concern the relations subsisting between the medical man and the public. It is to this altered phase that Dr. Taylor draws attention, and it is to meet the altered conditions that he desiderates corresponding adaptations in the teaching faculties.

One of the first of these changes to which Dr. Taylor alludes is the absence of secrecy. From time immemorial medicine has been a secret art. Even a generation ago the apprentice was bound by agreement "not to reveal or to divulge any of his master's secrets *or the secrets of his profession*"; to-day the medical practitioner, in his relations with a private patient, frequently explains not only the nature of the case, but the *rationale* of the treatment, with the hope of securing the patient's willing co-operation. What Dr. Taylor calls this gradual removal of mystery has had far reaching effects. The doctor's mere dictum no longer carries weight; "his Latin prescriptions, if he still writes them, are doubtfully scrutinized, and the patient more and more demands to know what he is taking and why; he readily seeks other advice outside the profession if the expected benefit does not result from the treatment prescribed. . . . The doctor of the present day shares the practice of medicine as never before with persons wholly without or with inadequate medical training." As a consequence of this changed relation, Dr. Taylor says that the profession stands at a parting of the ways, and he asks, "Will it proceed, fenced in by conventionality and the

[1] The Widening Sphere of Medicine. The Shattuck Lecture before the Massachusetts Medical Society, June, 1909. By E. W. Taylor, M.D.Boston. Department of Neurology, Harvard Medical School, vol. iv, 1910.

traditions of the past, or will it respond to the insistent demands of the times and widen its sphere of activity?"

As a natural extension of this "letting in of the light," the public has become increasingly interested in medical affairs. Public lectures are given, and magazine articles for popular reading are printed, on the greatest variety of medical topics. Concerning these Dr. Taylor says that it is a striking sign of a changed attitude that not many years ago any popular exposition of medicine by a physician was looked upon as a doubtful procedure, indicative of personal self-interest. This narrow state of mind, he says, is happily past, and he looks for the development of a useful, if small, number of physicians who have the capacity and inclination to widen the scope of medicine by these means.

The entering wedge of this movement, however, Dr. Taylor considers to have been the campaign against tuberculosis. He quotes Professor Osler as having said that tuberculosis was no longer a medical, but a social, problem. A recent tuberculosis exhibition in New York had an attendance of 750,000 people, and these figures have been approached in many smaller cities throughout the United States. In this campaign against tuberculosis the profession has enlisted not only the sympathy and practical support of the public, but its active co operation.

In America, Dr. Taylor cites also the development of "Social Service" as one of the most significant features of the widening of medical activity. Beginning some years ago in the Massachusetts General Hospital, and since adopted at a number of institutions in Boston, departments have been formed for the purpose of studying the underlying causes of disease and the social problems connected therewith, through the agency of trained workers under medical direction. The abandoning of secrecy, the shifting of medicine from an empiric basis to one founded on scientific conclusions drawn from data accessible to every one, and the enlistment of the public in many medical activities is making the profession less and less a closed body of experts who, to quote a letter which appeared in the JOURNAL of August 20th, "practise medicine as between man and man, accepting individual responsibility and accepting individual reward," and more and more an organized department of public and social service, with ramifications extending in every direction.

This change is naturally not without its attendant disadvantages. The response to the public demand for information has not always been wise either in matter or form; the writers of popular treatises have too often provided empty dogma in place of proved fact; the susceptibility of the public mind to the potent influences of suggestion has at times been overlooked, and in one important department, that of psychotherapy, the public has been left largely to its own devices, to become the victims of Christian Scientists and other dabblers in the occult, or, occasionally, the sacrificial offerings of well-intentioned but misguided clergymen.

A field grows at its fringes, and it is here that the weeds abound. As a recent correspondence in our columns will show, the sphere of "spiritual" or "mental" healing is at times, and quite erroneously, supposed to be a kind of "no man's land." Such a designation cannot be too strongly rebutted. What usually passes under the name of "spiritual healing" is at bottom—unless it be miraculous—nothing other than treatment by suggestion, a department appertaining solely to medicine, and one to be undertaken by no one unless specially conversant with psycho-analytic and psycho-therapeutic methods. Surely the clergyman who undertakes the spiritual healing of diseases—such as, for example, myasthenia gravis—does not realize the loss he and his patients suffer by his exchanging his honourable calling for another in which he has no proper training. Doubtless, as Dr. William Salmon says in his *Ars Chirurgica* (London, 1698), there have always been those who, "Whatever their Qualifications were before, whether a Preacher, a Reader of Prayers . . . or a Bellows-blower, or Nothing at all, it matters not much, for at once, in the twinkling of an Eye, as it were, after a Miraculous manner, they can mount from the profundity of Ignorance to the Pinnacles of Knowledge; from the Abyss of Nothing, to the Altitude of being Doctors of Physic, intruding into our Business with all the Impudence imaginable, to the great Abuse and Scandal of the Medical Art."

But the point which Dr. Taylor wishes to press home is that the enormous spread of these irregular practices at the confines of the medical art is permitted by the failure of teaching bodies to adjust their curriculums in harmony with the fullest requirements of the community. "The profession at large is rising to a clear recognition of its widening responsibilities in the broadest social and even political relationships. The medical schools are still bound by the traditions of medical education as it was thirty years ago." So far as psychiatry and this country are concerned, we hope that the successive resolutions of the Medico-Psychological Association and the British Medical Association will not be in vain, and that ere long thorough tuition in all branches of psychological medicine will be offered by every medical school. For the broader issues of Dr. Taylor's discourse we would refer readers to the article itself, but it is pertinent to the occasion to say here that he prophesies the development of an elective system of medical education. "It is not to be doubted that the wasteful method of demanding a detailed course in surgery, for example, from the prospective internist, or of obstetrics from the future bacteriologist, will give place to a more rational conception of the use of time. An elective system, modified to meet the special demands of the situation, is an inevitable outcome of the present state of affairs if our medical schools are to be the centres of educational activity which their equipment justifies."

In the foregoing we have of set purpose attempted merely to adumbrate the changing relations between the profession and the public as indicated by isolated instances selected from an address which should be read in its entirety. Although descriptive of American conditions and intended for American ears, Dr. Taylor's address is in some degree applicable to this country. The same changes are observable, and there is the same need for constant readjustment of medical teaching to meet these changes. Nebulous as yet, the altering conceptions of the functions and practical duties of the medical man may take this or that shape, may be guided by a united profession into fertilizing rains or crystallized by one-sided legislation into the first snows of the winter of our discontent. Readers of the deeply interesting correspondence in our columns upon proposed legislative changes will have observed the sharp cleavage of opinion even amongst medical men upon these proposals. It is outside the purpose of this article to

discuss these matters, but it is evident that if the profession is to secure in the future the just reward of its labours and to maintain its rights in the approaching conflict between individualism and collectivism, it must frankly recognize the altering status of the medical man in the social economy, decide upon a common plan of action to meet changing conditions, and present a solid front to all attempts to encroach upon its legitimate territory.

THE "MEDICAL REGISTER."

Mr. H. E. Allen, Registrar of the General Council of Medical Education and Registration, asks us to draw the attention of members of the profession to the importance of keeping their addresses correct in the *Medical Register*. He points out that circulars are not issued every year, and practitioners should themselves notify changes. Failure to do this may result in the removal of the name, though every possible effort is made to avoid such a course, because it is impossible to communicate with the practitioner. No person whose name is not on the *Register* can give a valid certificate, and the signatures upon certificates of death are now compared with the *Register* by local registrars. Any practitioner who has any doubt as to the correctness of his address should at once communicate with the office of the General Medical Council. An acknowledgement of the receipt of all communications will be sent.

ADMINISTRATION OF THE POOR LAW.

A first glance at the thirty-ninth annual report of the Local Government Board on the administration of the Poor Law, the Workmen's Compensation Act, and the Old Age Pensions Act, which was issued this week, reveals several interesting facts. The first is that, though the general increase in the number of persons receiving relief noted in the year 1908 was maintained during the first two-thirds of the year 1909, there was a considerable decrease in the latter third of that year. The net result was that on January 1st this year the ratio of paupers to population, exclusive of lunatics, was as 26.4 to 1,000, against 25.3 to 1,000 at the beginning of 1909. As for rate-supported lunatics, the increase in these which has been noted ever since the year 1886 still continues. In respect of expenditure, the gross outlay seems to be equal to an annual contribution by every single member of the population of England and Wales—man, woman, and child—of a sum of 3s. 4d. It may be added that there would seem to be the same marked difference in the cost of a pauper in London and in the cost of a pauper outside London as exists in the cost of beds in London and provincial hospitals respectively. It is also legitimate to conclude that the very large number of persons classed in the returns as able-bodied bears no strict relation to the number of workhouse inmates really capable of work. The term "able-bodied," in short, would seem to be rather more than less a conventional expression. Vagrancy, we note, is showing a tendency to diminish in southern and south-eastern counties, but is increasing in the eastern and western areas of England. Formerly, for instance, the tramp was hardly known west of the Tamar, but he is now a common and unattractive wayside object there, despite the efforts of the Cornish guardians. In view of the spread of education and the publicity given on posters to the claims of Cornwall to be regarded as a second Riviera, this is perhaps scarcely remarkable. A satisfactory feature in the report is the evidence of success of the movement against retaining children in workhouses and their annexes. Only one-sixth of the children for whom London unions are responsible now pass their lives amid the depressing influence of the workhouse ward. The progress is less notable in the provinces, but even there the number of children retained in workhouses has been reduced to only one-third of the total. On the other hand, an increase is to be noted in the number of children thrown upon the parish, as the phrase runs. One explanation of this would appear to be the stringency with which the Children Act of 1908 is now being enforced. In regard to the feeble-minded, our brief glance at the report only enables it to be said that this factor in the difficulties of Poor Law guardians is clearly increasing, and that the authors of the report seem alive to the importance of dealing with this portion of the rate-supported population on lines more satisfactory than those at present followed. The report also enters fully into the operations of the Pensions Act, and quotes here and there expressions of opinion from a large number of inspectors and other authorities on the subject in different parts of the country. None of them appear to have made up their minds finally as to what the effect of the Pensions Act will be on the call for indoor workhouse accommodation; a majority, however, seem inclined to think that the effect will be found to be practically nil, the workhouse population being neither increased nor decreased by the fact that persons who have reached the age of 70 years can, in ordinary circumstances, obtain a grant of 5s. a week. In this connexion a quaint circumstance is brought out, namely, that a woman who has married an alien remains an alien in the eye of the law even after his death, and is thus permanently disqualified for receiving an old age pension, however pure her Anglo-Saxon blood may be, and even though she herself has never left the country for an hour.

NOSTRUMS FOR RHEUMATISM.

Elsewhere will be found a further instalment of the series of analyses of proprietary medicines which have been published at intervals during several years. The present report deals with a number of the nostrums recommended for rheumatism and allied complaints. Both old and new preparations are included, and there is considerable variety in the nature of the articles, which comprise powders, pills, liquids for internal administration and external application, ointment, and plasters to be applied to the soles of the feet. The report gives extracts from the somewhat elaborate advertisements which are employed in most cases, and it will be seen that these usually show great ignorance on the part of the advertisers and assume no less ignorance on the part of the public. Other features which are common to many are the claim to be the only effectual remedy, succeeding where all others fail, the effrontery of the references to the medical profession, and the attempts to turn to account the popular prejudice in favour of wonderful discoveries by "natives," the mysterious curative power of "herbs," the knowledge possessed by the ancients and since lost, and so forth. The pseudo-scientific statements made in the advertisements include such nonsense as "Levasco has an exhilarating effect on every nerve and muscle, similar to a soothing electric current, which diffuses a gentle warmth, goes direct to the pain centres, and gives immediate relief. Levasco penetrates the skin, breaks up the uric acid, causing the blood to flow freely, the pain then ceases" (this liquid, essentially a strong tincture of capsicum with small quantities of essential oils and camphor, is not to be

applied to "wounds, cuts, or embrasures," the latter being presumably the advertiser's rendering of abrasions); "immediately the liniment has been applied it sets out upon its message of discovery and healing, travelling with lightning rapidity to the seat of the trouble"; "Dyxol has the power, above all other known preparations, of almost instantly dispersing congested blood. Its efficacy in this direction can be easily demonstrated. Rub one drop of Dyxol on the face, when, in less than one minute, the spot will temporarily redden through the flow of blood to the surface"; "Arthriticus cures Gout, Rheumatism, Rheumatic Gout, Lumbago, Sciatica, and all Rheumatic Affections. It contains no drugs"; "no one can reasonably deny an instinctive knowledge and a physical power exerted in the stomach by a conscious principle which selects and rejects, and which in its natural purity may be ranked as a nerve of sense"; "the rheumatic sufferer faces this situation: His or her system has become more or less clogged with rheumatic poisons—lithic acid, uric acid, lactic acid, or any other toxin, as the case may be." The mutually destructive claims made for different nostrums include the following: "Greatest and latest discovery in medicine . . . there is nothing known in medicine which will compare with it"; "the only efficient remedy ever discovered for these disorders"; "the finest cure for these complaints," curing "when all other remedies fail"; "we guarantee Magic Foot Drafts to cure any case of rheumatism"; "it is the One remedy that achieves a complete and permanent cure": "the most effective scientific remedy." References to the medical profession are divided between claims of medical support for the particular nostrum in question and declarations of hostility. The former include such obvious falsehoods as "highly endorsed by the leading Medical Profession"; "physicians are already using them [Magic Foot Drafts] in their regular practice, and recommending them." The opposite attitude is shown in the following gross libel: "As certain medical men have done their best by tongue and pen to persuade the public that Box's Golden Fire is poisonous, the said Golden Fire in consequence has been submitted to a rigid Chemical Analysis. The following Report from the Eminent Analyst will effectually sew up the lying lips. . . . Those who raise the cry of 'Poison' are wholesale traffickers in the same—it is their stock-in-trade; Poisons bring grist to their mills, while the poor victims who swallow them perish by thousands." It is needless to say that analysis has not shown the presence of anything but quite familiar medicines in all the nostrums examined, and in almost every case the claims made for the curative powers of the compound are extravagant, often to a fantastic degree. The faith of the purchaser is not only stimulated as far as possible by reiterated assertions, but the price charged is usually enough to lead him to expect something of real value, and is quite out of proportion to the cost of the ingredients. Generally speaking, the greater the discrepancy between cost and selling price, the more numerous and lengthy are the advertisements; for example, one of the most persistently and blatantly advertised of these articles is the one sold under the name "Magic Foot Drafts," consisting of plasters to be worn on the soles of the feet, to draw out the "lithic acid, uric acid, lactic acid, or any other toxin—as the case may be"; the material of these is found to be a mixture of tar and powdered white hellebore root, the ingredients for a pair—for which the price is 4s. 6d.—being valued at one-sixth of a penny. The evidence of the lucrative nature of the making of quack medicines is abundant, and the advertisement columns of newspapers and other periodicals show the magnitude of the trade. The series of disclosures made in the BRITISH MEDICAL JOURNAL furnishes further evidence of the necessity for dealing with this evil by legislation.

INSURANCE ON THE CHEAP.

IN our issue for September 17th attention was drawn to the fact that the Pearl Insurance Company was endeavouring to persuade certain medical men to enable it to put a new venture on an assured footing by supplying the company with opinions as to the health of candidates for small policies in return for fees of the surgery cash price order. It was indicated that there was no need whatever for the medical profession to extend its benevolence to institutions of this order, and that the correspondents in question should refuse their co-operation on the terms offered. Communications have since reached us from other medical men to whom the same propositions have been made, but who had apparently overlooked the article in question, and also from certain medical men to whom another company seems to be making much the same proposal. Attention is therefore again drawn to the subject. The net effect of the article mentioned was that medical men should look after themselves and treat the applications received by them in precisely the same business spirit as those which instigate the making of them. It is just as much trouble to report on a candidate for insurance for a trifling sum as for one of £100, and the mere fact that the number of questions which have to be separately answered is reduced to a minimum, makes no difference in the amount of work required before a sound opinion can be formed, more especially if that opinion has to be given in such fashion as will allow of its wisdom being tested. There would seem to be reason to believe that the two companies in question are merely "trying it on," and that if they find they cannot get reports on their own terms they will pay those demanded, unless prepared—as does not seem to be the case—to continue a cheap policy adventure without the assurance of medical examination of candidates. This view is upborne by a recent correspondence with a company of quite a different order, one of the large well-known companies which do not cater especially for small policy seekers. The correspondence turned on the question why the company's agent had tendered a half-guinea fee in a certain case, and the fact was revealed that he had done so merely because in the locality where the case arose medical men proved quite ready to accept that sum instead of the guinea, which their fellows elsewhere habitually demand, and which the same company pays elsewhere without question.

MEDICAL CERTIFICATES AND SCHOOL CHILDREN.

DIFFICULTIES in connexion with this subject are constantly arising. At the Stafford Borough Police Court recently several parents were summoned for the non-attendance of their children at school, and evidence was given by two medical practitioners that such absence was due to illness. According to a report of the proceedings given in the *Schoolmaster* of September 17th the chairman of the bench said that Dr. Miller, one of the practitioners present, might easily have given a certificate of illness, and have saved the time of the court, which in his opinion had been wasted. Dr. Miller answered that he did not see why he should work for nothing, or why the medical profession should be exploited for any Education Committee, and in taking up this position he said he had the medical men of the town behind him. All fair-minded people must acknowledge that Dr. Miller's contention is unanswerable. If the State requires

certificates for the purpose of working the Education Acts it should be prepared to pay for them. At present it throws the onus of securing them on the parent, and when parents are willing to pay the doctor no trouble need arise. When, however, parents will not, or cannot, pay, it is unreasonable for magistrates or education authorities to expect medical practitioners to do the work for nothing. It is satisfactory to learn that the medical profession in Stafford are united in this matter. If the time of the courts is constantly "wasted" in this way, it may be found cheaper in the long run to pay medical practitioners their just claims rather than defray the costs of much unnecessary legal procedure throughout the country.

ROYAL PORTSMOUTH HOSPITAL.

At a meeting held in the Town Hall, Portsmouth, on September 26th, it was proposed by Sir John Brickwood, and supported by Admiral the Hon. Sir A. G. Curzon-Howe, K.C.B., Commander-in-Chief at Portsmouth, that the Nurses' Home at the Portsmouth Hospital, which has been built at a cost of about £8,000, and will be opened on October 5th, should be the local memorial to King Edward VII. Towards the amount required, a sum of £3,500 has been promised, so that £4,500 is required to complete the work, the urgent necessity of which is fully recognized by all who know the work of the nurses and the inadequate accommodation hitherto provided for them. It is a happy coincidence that the opening of this local memorial to the late King should take place on the sixty-third anniversary of the laying of the foundation stone by His Royal Highness Prince Albert. Since then the hospital has enjoyed royal patronage, and King George has conspicuously displayed his interest in it.

THE EARLSWOOD ASYLUM.

All interested in the good work carried on at Earlswood Asylum will sincerely regret that its financial position, sufficiently gloomy at the time of the last annual report, has not improved during the year 1909. The Board of Management, in fact, in its report lately published (1) say that the loss of income has been so considerable that a modification of the rules and by-laws of the society to tide over their present difficulties has been necessitated. The annual subscriptions were £240 less than usual, and in addition there were reduced receipts from legacies amounting to £3,250 less than the usual average. Rule 88 provides that 25 per cent. of all legacies shall be invested to create a reserve fund; but because the ordinary income—to some extent diverted to meet exceptional expenditure for repairs—had become insufficient to meet the maintenance expenses, this rule had to be suspended. In these circumstances we join with the board in hoping that the sympathy and liberal help of the friends of this charity will be continued. It may be of interest to some of our readers to know that the senate of the University of London has recognized the asylum as an institution at which appointments may be held for the purposes of the M.D., Branch 3 (mental diseases) examinations, and has approved the appointment of the junior assistant medical officer for the purposes of that examination.

ANTITOXIN IN DIPHTHERIA.

We learn from the *Boston Medical and Surgical Journal* of September 15th that in the last Monthly Bulletin of the State Health Department the attention of medical practitioners of the State is directed to the advisability of a more prompt and general use of antitoxin in the treatment of diphtheria. The mortality from diphtheria treated by State antitoxin for the last two years was practically 10 per cent., while before the period of antitoxin the mortality in cases of diphtheria was at least 45 per cent. In 1909 there were 2,036 deaths from the disease in the State of New York, which could not have come from less than 20,360 cases, or fully 235 cases of diphtheria for every 100,000 of the population. The following comparative figures as to mortality are then given:

	1902.	1903.	1904.	1905.
State of New York	37.7	39.02	38.04	28.04
City of New York	53.0	56.0	57.0	38.0
City of Paris	20.0	15.0	9.0	6.0

Since 1905, it is stated, there has been no appreciable change in these relative proportions:

	1908.	1909.
State of New York	28.9	27.05
City of New York	37.1	38.00

It is argued, therefore, that if the mortality from the disease in New York State and City exceeds that in Paris, the fault is most likely to be found in the extent or method in which the diphtheria antitoxin is employed. Careful investigation of the quality of antitoxin would indicate that Paris has no advantage in this respect over that of the antitoxin supplied by the New York State Health Department. The reasonable conclusion, therefore, would seem to be that the cause of the excessive mortality in New York State, at least over that of Paris, is for the most part to be attributed to a failure to utilize antitoxin in the treatment of this disease to anything like the extent which prevails in Paris.

DAY CAMPS AND NIGHT CAMPS FOR TUBERCULOUS PATIENTS.

In the *Medical Record* of New York for September 3rd, 1910, Mr. N. Gilbert Seymour describes the work of the day and night camps for the tuberculous in the City of New York. Several of these are arranged on board abandoned municipal ferryboats, given by the city and maintained by various clinics. He states his belief that these camps are in at least three ways a very important part of the crusade against tuberculosis. They provide the essentials of treatment—that is, rest in the open air under proper supervision; they provide a place where sanatorium discipline and methods may be taught the patients; they provide a place for sanatorium treatment for those persons able to work during the day. One called the Southfield is maintained by Bellevue Hospital; another called the Westfield by the Gouverneur Clinic; a third, the Middleton, by the Presbyterian Hospital. These boats were renovated and provided with the necessities for a day camp, to be used summer and winter; there are sanitary arrangements, water, steam heat, and kitchen facilities, together with the necessary beds and bedding. Each is visited daily by the physicians, and maintains a staff of nurses and attendants. Those able to do so assist in the work, and others sit in steamer chairs and read, sew, or talk, except during meal or rest hour, when silence is maintained. The cost is moderate. Some patients remain both night and day. A hot noon meal is provided and milk and eggs between meals. A school for children is held in the open air. The results in improvement of general condition and physical signs are very encouraging.

ANTIVIVISECTIONISTS AND SPORT.

OUR antivivisectionist friends have the "gift of the gab," but they have not the saving gift of humour. We read in the *Aberdeen Daily Journal* of September 16th that an address entitled "Our Animal Friends and Vivisection" was recently delivered at Balavil House, Kingussie, by Miss L. I. Lumsden, of the National Antivivisection Society. "There was," it is added, "a large and fashionable gathering of ladies and gentlemen, most of the shooting parties and other visitors to the district being represented." Miss Lumsden, it is stated, made an earnest appeal to those present to support the society in the work it was doing in the interests of animals, and strongly denounced the methods adopted by the medical profession when experimenting on animals. We are sure the sportsmen present were loud in their applause of her eloquent fulminations, but we think it probable that Miss Lumsden took care not to condemn the torture of wounded animals lingering in agony to make a sportsman's holiday. But what would the grouse and the deer say if they could speak! The situation recalls a famous caricature of the Revolutionary period where a peasant, with a murderous-looking weapon in his hand, appears in the farmyard and blandly asks the frightened denizens: "My dear animals, with what sauce would you like to be cooked?" To their unanimous reply that they would prefer not to be cooked at all, the cook answers: *Vous vous écartez de la question!* A similar answer would probably be given to sportsmen by their "animal friends" if the question was put to them. Let the people who delight in maiming birds, wounding deer, and dragging salmon about, it may be for hours, with a hook in their mouths, take the beam out of their own eyes before they speak of the mote in those of vivisectors.

OPTIC NEURITIS OF MENSTRUAL ORIGIN.

IN the *Recueil d'ophtalmologie* for June, 1910, L. Ronnaux draws attention to the connexion which can sometimes be traced between optic neuritis and menstrual irregularity. In a previous number of the BRITISH MEDICAL JOURNAL we pointed out that cases of optic neuritis occasionally occurred in chlorosis, a disease constantly associated with amenorrhoea. These somewhat rare cases are possibly allied to those described by Ronnaux, who ascribes the inflammation of the optic nerve to the action of toxines secreted by the ovaries at the time of disordered menstruation. The optic neuritis may be a retrobulbar neuritis with little or no ophthalmoscopic change, or it may take the form of choked disc with haemorrhages in the retina. The author describes three cases which came under his notice. In the first patient, aged 30, menstruation had been perfectly normal. There was then an irregular loss which lasted four days, and then menstruation became irregular, rarely passing ten days of the month without loss. This condition lasted a year, after which the sight began to fail. The right visual acuity sank to zero, the left to $\frac{1}{4}$. There was a definite central scotoma. The loss of vision was due to a retrobulbar neuritis, which caused no alteration in the appearance of the retina. As soon as menstruation again became regular, vision improved to $\frac{3}{4}$ and remained good. The second case was one of severe metrorrhagia in a woman of 30, who had always had normal menstruation. When seen she was much blanched, and had severe optic neuritis (choked disc) with retinal haemorrhages, very like an albuminuric retinitis. A small amount of albumen was present in the urine. When the uterine condition was treated and the haemorrhage arrested the vision rapidly improved. The third case was one of sudden amenorrhoea following a chill. The lids were found red and swollen. The right pupil was dilated and acted sluggishly, vision being reduced to finger counting at 50 cm. A central scotoma was present. The left eye had a good pupillary reflex V. = $\frac{1}{5}$, but here, too, there was a central scotoma. The fundi were normal. A diagnosis of retrobulbar neuritis was made. Three days later all vision was lost and there was violent headache. The eyes were congested, tender, and painful. Choked discs and retinal haemorrhages were now detected. The vision improved under treatment and menstruation returned. Eventually sight became normal. Ronnaux advises that whenever optic neuritis is discovered in a female the condition of the menstrual functions should be investigated, and any irregularity should receive adequate attention.

JURIES AND MEDICAL EVIDENCE.

IN the *Daily Telegraph* of September 27th there is an account of an inquest held in the Battersea Court before Mr. Troutbeck. Dr. Freyberger, who had made an autopsy, said that death was due to heart failure following erysipelas, set up by injury to the knee when the deceased was suffering from the effects of chronic alcoholism. The coroner pointed out that on the evidence the death was clearly due to an accident. The foreman of the jury, however, after consulting with his colleagues, said: "We find it was caused by the medical evidence." That this was no Malapropian "derangement of epitaphs" was shown by the fact that on being questioned by the coroner, the jury refused to agree that the death was the result of an accident, and persisted in declaring that the injury had nothing to do with the fatal issue. How they arrived at the sapient conclusion that the medical evidence was the cause of death does not appear. This verdict may be added to those cited in the Report of the Select Committee on Death Certification where Dr. Ogle is quoted as saying: "One verdict came before me a little time ago, which was this: 'A man died from stone in the kidney, which stone he swallowed when lying on a gravel path in a state of drunkenness.' That was given as a verdict. I thought some joke had been played, and I wrote down about it and found it was an absolute fact. Another one is this: 'Child 3 months old found dead, but no evidence whether born alive.'" Juries may, however, be excused if they sometimes find the medical evidence puzzling. We have recently come across an example in an American journal. A "leading citizen" in a certain town was taken before the magistrate charged with assault and battery. One of the witnesses was a local doctor whom the prosecuting attorney proceeded to worry, suggesting that he was prejudiced in favour of the defendant and had therefore wilfully distorted his evidence in his favour. The doctor denied this, and went on to say that the defendant was suffering from "phalacrosis." The word caused a sensation in court, and, asked to define the disease, the doctor described it as "a sort of chronic disease of an inflammatory nature which affects certain cranial tissues." Asked if it affected the mind, the doctor said he was not posing as an expert, but he had known some persons who were suffering from the disease become raving maniacs, others merely foolish; some showed destructive and pugilistic tendencies, while many others had suffered for years and had never shown any mental abnormalities. He refused to say anything further, and the jury promptly acquitted the "leading citizen," because

as the foreman explained, "Doc said there was something the matter with his head." When the case was over the prosecutor sought enlightenment as to the mysterious disease, and found that "phalacrosis" meant—baldness!

AUTOCHTHONOUS AMOEBIC DYSENTERY IN FRANCE.

In a recent number of the *Semaine médicale* (No. 34, August 24th) Dr. Ch. Garin, of Lyons, has published a case of amoebic dysentery which was in the Red Cross Hospital at Lyons under the care of Professor Paviot early this year. The patient, who was a woman aged 41, had never been out of the city except to visit her native village, and had had no relations with persons who had lived in the colonies. For nine years she had suffered from chronic diarrhoea, with consequent great wasting and loss of strength. The stools were very liquid, yellow, with glairy flakes in them, and microscopical examination showed the presence of numerous amoebae, which threw out pseudopodia very actively in freshly emitted stools. The amoebae are believed by Dr. Garin to differ from the *Amoeba histolytica* or *Amoeba tetragena*, and to constitute a separate variety, to which he thinks this autochthonous dysentery is due, but he proposes to publish a further note upon the morphology of this organism. He was able to produce the disease in kittens by rectal injection of dysenteric faeces. The disease developed in ten or eleven days, and proved fatal in two or three weeks. In all cases lesions were found in the large intestine, most marked at the caecum and at the terminal portion of the rectum, but they were neither severe nor in proportion to the gravity of the disease. They consisted of a sort of adherent exudation under which the mucous membrane was swollen and thickened, showing in places little red ulcers of the size from a No. 8 shot to a lentil. This case is interesting, as last year we published[1] a paper by Professor Saundby and Dr. Miller, of Birmingham, on a case of amoebic dysentery which had occurred in a man who had never been away from Birmingham, but the authors seem to have had no doubt that the organism present was the *Amoeba histolytica*. We shall therefore be curious to learn the distinguishing points upon which Dr. Garin relies for his belief that the organism in his case belongs to a separate variety.

ANTIDIPHTHERIA SERUM IN OPHTHALMOLOGY.

Dr. A. Yvert[2] has obtained most encouraging results from the administration of serum to patients suffering from infective inflammations of the eye, such as corneal ulcer, iritis, infected wounds, and sympathetic ophthalmia. Our knowledge of the para-specific or polyvalent action of various serums is due largely to the energy of Darier, who for the past seven years had advocated their use in ophthalmic surgery. Deutschmann, of Hamburg, too, has published wonderful results which he has obtained from a special serum obtained from rabbits which have been fed upon yeast. Yvert points out that the value of antidiphtheria serum rests not in the antitoxin it contains, but in the serum itself. Almost all serums are active. Human serum is the best, and ox serum the worst, but horse serum is the most convenient and practical. The antidiphtheria serum is generally used because it is the most easily obtained. It may be administered either subcutaneously or by the mouth or subconjunctivally. The buccal method is the most convenient; 10 c.cm. can be given daily for eleven days, but Darier gives this dose every hour at first, and then when the disease shows signs of improvement, every two hours. There is an interesting paper upon the administration of antitoxin by McClintock and King in the *Journal of Infectious Diseases*, February, 1909. Yvert describes a case in which the condition of an eye after a perforating wound was so bad that at the patient's own request enucleation had almost been decided upon. But serum was tried and the eye at once began to recover. It has proved eminently useful in cases of severe hypopyon ulcer. Darier states that since he has used serum as a routine adjunct to other methods of treatment he has (in seven years) never seen a single case of sympathetic ophthalmia follow an accident or an operation. We ourselves have recently seen an inflamed eye rapidly improve under Paton's serum given by the mouth.

[1] British Medical Journal, March 27th, 1909, p. 771.
[2] *Recueil d'ophtalmologie*, May, 1910.

THE PROPHYLAXIS OF ANKYLOSTOMIASIS.

In a supplement to the *Ceylon Observer* of June 25th, 1910, a summary of the steps taken for the prevention of ankylostomiasis in Ceylon and other places is given. Sir Patrick Manson, it will be remembered, opened a discussion on this subject at the meeting of the British Medical Association at Sheffield in 1908, and copies of the reports of this discussion were sent out to the different colonies by the Earl of Crewe, Secretary of State for the Colonies. Sir A. Perry reports from Ceylon that the planters (as far as he knows) have taken no action to improve the health of their labour forces along any of the preventive lines indicated. One would have thought that they of all people would have been the ones to support measures of this sort, because after all, they are the losers when ankylostomiasis becomes rife amongst their coolie labourers. However, they have not, and Sir A. Perry believes that nothing short of an ordinance will force the hands of employers of labour to introduce latrines for their coolies. As this is the crux of the ankylostomiasis problem, nothing of practical value can accrue until such works are put in hand on plantations and in other places, and for the general health of the population in these localities it is to be hoped that this will not be long.

The annual dinner of the Association of Public Vaccinators of England and Wales will be held at the Hotel Cecil, Strand, on Friday, October 28th, at 6.30 p.m.

Field-Marshal Viscount Kitchener of Khartoum will distribute the prizes at the opening of the seventy-sixth winter session of the Middlesex Hospital Medical School on Monday, October 3rd, at 3 p.m.

We regret to announce the death of Madame Pasteur, the widow of Louis Pasteur, at the age of 84. For many years she was an enlightened helpmate to her husband in his scientific researches, and took an active interest in philanthropic work.

A new centenary wing of the West of England Eye Infirmary, Exeter, was opened on September 21st by Earl Fortescue, Lord Lieutenant of Devon, in the presence of a large and distinguished attendance. The infirmary was founded in 1808.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LEEDS.

THE UNIVERSITY.

THE classes in the Faculty of Medicine will be resumed on Tuesday, October 4th, when the opening address to the students will be given by Mr. Howard Marsh. It is hoped that many former students of the school will be present. The annual dinner of the medical profession of Leeds and district takes place the same evening, when Mr. Howard Marsh will be the chief guest, and Mr. R. Lawford Knaggs, Professor of Surgery, will be in the chair.

WEST RIDING MEDICAL CHARITABLE SOCIETY.

The annual meeting of the West Riding Medical Charitable Society was held on September 22nd in Bradford, under the chairmanship of Dr. R. Hamilton. Last year the society had to record the death of its valued Treasurer, Mr. C. G. Wheelhouse, and the appointment of Mr. G. H. Rowe, who had so long acted as Mr. Wheelhouse's right-hand man, to succeed him as Treasurer. It was hoped and expected that for many years there would be no change in the office. The untimely death of Mr. Rowe has destroyed this hope, and the meeting was held under the shadow, one may say, of a double loss. Dr. Eddison, who, though he has retired from practice, retains a keen interest in the affairs not only of this society but in the management of the infirmary and in that of the Medico-Chirurgical Society, was selected to fill the position of Treasurer, and Mr. Michael A. Teale was reappointed Secretary. It is not necessary to comment at length on the work of this admirable society. Grants amounting to £1,645 were voted to some 50 applicants, on the recommendation of the stewards, and after careful investigation of the claims by the committee of stewards. Last year the grants made amounted to £1,625. The total amount of grants voted since the inception of the society amounts now to the handsome sum of £49,595 10s. The amount of good done by the association is really incalculable. Its work stands high in the affections of all its members, and, large though its membership is, it is matter of lasting surprise to those who know how it is managed and who know the amount of good work it does, that every medical man in the West Riding does not at once join its ranks.

PROSECUTION OF AN UNREGISTERED MIDWIFE.

Because it is the first of its kind in Leeds, it may be of interest to make reference to the conviction of a woman for habitally practising as a midwife without being registered. The accused had been practising as a midwife up to the time of the Midwives Act in 1902. She applied for registration to the Central Midwives Board, but her application was refused. On the same day that her application was refused, she attended a case and was paid. Some attempt was made to set up a defence on the ground that though confinements were attended, it was the *nursing* that was charged for, but a conviction followed. A penalty of £5 was imposed, but the fine was not to be enforced if the defendant ceased practising as a midwife.

WALES.

GLAMORGAN COUNTY COUNCIL.

IN his annual report for 1909, Dr. W. Williams, the County Medical Officer of Health, states that there has been no change in the area of the administrative county during the year. The population of the administrative county according to the census, 1891, was 467,954; in 1901 it was 601,092; whilst the estimated population in 1909 was 689,343. (The Merthyr Urban District, with a population of 77,219 was constituted a county borough during 1908.) There were 24,190 births registered, equivalent to a birth-rate of 35.09, whilst the number of deaths was 9,809, giving a general death-rate of 14.22, which is 0.28 lower than the average death-rate for England and Wales, and 0.28 lower than that of the seventy-six great towns. Of the total deaths registered, 2,834 were those of children under one year, and 1,098 of children 1 year of age and under 5 years. The infantile mortality-rate was 117, as against 152 in 1908. The causes of the relatively high infantile mortality are discussed at some length. The county rate for zymotic diseases is 1.14, as compared with 2.21 for 1908, and 1.12 for England and Wales. The death-rate from small-pox is the same as that for England and Wales—namely, 0.00. The number of deaths from the various forms of tuberculosis was 800, or about one-twelfth of the total number of deaths from all causes; and yet, compared with the action taken against the ravages of scarlet fever, diphtheria, and typhoid fever, which altogether accounted for 211 deaths, very little is being done towards stamping it out. Considerable progress has been made in the matter of isolation hospitals. In dealing with the inspection of meat and other articles of food, particulars are given of the generous scheme of the Glamorgan County Council, whereby all sanitary inspectors within the administrative county are enabled to specially qualify, free of all cost, as inspectors of meat and other foods. The scheme provided for a course of twenty-four lectures and demonstrations, which were held at a public abattoir situated in a convenient centre of the county, these classes being followed by further classes and practical demonstrations, etc., held at the Metropolitan Cattle Market, Islington, and the Billingsgate Fish Market; these latter classes covered a period of three weeks. Provided 80 per cent. of the total attendances were made, the student's train fares were paid to the local centre, together with return rail fares to London and a maintenance allowance of 30s. per week each during their three weeks' stay in London. These privileges were open to all persons residing within the administrative county of Glamorgan who already held the inspectors of nuisances' certificate, or that of the Sanitary Inspector's Examination Board, London. As only about one-half of the number of sanitary inspectors in office were able to leave their districts, it is the Council's intention to hold a further course of instruction. The County Education Committee (on the representation of Dr. W. Williams, the County Medical Officer and Chief Medical Inspector of Schools) rightly regarded food inspection as a branch of technical education, and the above scheme was approved by the Board of Education. It is worthy of note that this scheme is the most generous one that has yet been initiated in the United Kingdom, and it is to be sincerely hoped that it may prove a forerunner of many others in the various counties, so that uniformity of inspection may be carried out in this important branch of public health work. The work at the Cardiff and County Public Health Laboratory has been systematically carried on and is highly appreciated by medical officers of health and others.

In his annual report to the Education Committee as school medical officer Dr. Williams states that the three medical inspectors paid 367 visits to schools, the number of children examined being 13,407—namely: boys, 4,280 entrants, and 2,595 leaving; girls, 4,144 entrants, 2,388 leaving. At the routine examination no less than 3,488, or 35.39 per cent., were found to be physically defective, minor ailments not being included. In addition to the above, 3,638 children have been presented to the medical inspectors by the head teachers at the various schools to be specially examined on account of (*a*) physical and mental defects; and (*b*) uncleanliness. As to clothing and footgear, the figures given are rather better than those for 1908, the girls giving better results than the boys. Overclothing is more prevalent than underclothing, and many of the smaller boys wore children's corsets. Boots could most frequently be found fault with. Shawls, scarves, and mufflers are frequently worn, but, believing them to be unhealthy to wear, their use was discouraged. The results under the heading of Nutrition are better than those for 1908; the nutrition of

the girls being slightly better than that of the boys. In very few cases was there reason to believe that subnormal nutrition was due to underfeeding. In almost every case there was an adequate cause, such as bad teeth, digestive disturbances, improper diet, tuberculous diseases, or discharging ears. The general physical condition of scholarship candidates is said to be usually superior to that of the ordinary child. Children dirty in person and clothing were often found to be well nourished, but there was a marked falling off in the nutrition of the older children from the same families, showing that the home conditions took years to produce marked deleterious effects, but they were produced none the less certainly. In respect of cleanliness and condition of the skin, the figures agree very well with those for 1908, showing that no great improvement has taken place, though verminous condition of body and head is less frequent. There is an improvement in the cleanliness of the girls' heads, but there is still a greater improvement needed. The condition of the children's teeth is said to be deplorable, but among children from very poor districts seem somewhat less bad than in children of schools of better class districts. The figures relating to the nose are much the same as those for the preceding year, while the percentage for external eye diseases is lower, and defects of vision are more common in girls than in boys. On the whole ear disease was rare, the figures being: boys 2.9 per cent., while that for girls is 3.1 per cent. Out of 13,407 children medically inspected only 8 were found to be mentally defective.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

The Medical and Dental Defence Union of Scotland.

The eighth annual report of the Medical and Dental Defence Union of Scotland has just been issued. The council report that the past year has been a prosperous one, and that substantial progress has been made. The membership has continued to increase, and the financial position is a thoroughly sound one. The policy which the Union has adopted in dealing with claims made against members, and in difficulties which arise out of professional practice, has become recognized amongst claimants and their advisers, and there has been ample evidence that during the past year this policy has been a great benefit to the members. The financial report, as shown in the balance sheet, shows a satisfactory result. The income for the year is £630 7s. 10d., and the expenditure £241 9s. 5d., leaving a balance to the credit for the year of £388 18s. 5d.

The membership at the close of the financial year was 1,189, and 76 new members were admitted. In response to numerous applications by members of the English defence societies as to terms on which they will be accepted as members of the Scottish Defence Union, the council some time ago agreed to admit without entrance fee any practitioner residing in Scotland who was an active member of an English society. During the year under review, a considerable proportion of the new applications for membership has been from practitioners who were members of such societies.

Caledonian Medical Association.

The annual meeting of the Caledonian Medical Association was held at Fort William on September 23rd. Dr. A. C. Miller, Fort William, was elected president for 1910–11.

A paper entitled "The Physician in Fiction" was read by Dr. Miller. Other contributions, including one of special local interest by Professor McKendrick on "Reminiscences of Lochaber," were submitted.

The members dined together in the evening. The toast of the society was proposed by Provost Mackenzie, Fort William, and amongst other speakers and guests were Sir Hector Cameron; Dr. Alexander Carmichael, Edinburgh; Dr. Macphail, Derby; Dr. Macnaughton, Stonehaven; and Dr. Cameron Gillies, London.

Glasgow and the Tuberculosis Exhibition.

The Town Council of Glasgow, at its meeting on September 22nd, adopted the recommendation of the Committee on Health that the Corporation should pay the expenses of the Tuberculosis Exhibition, estimated at about £250, and that the exhibition should be held in the city in the spring of 1911, instead of in October of this year, as originally contemplated. A special subcommittee was appointed to make the necessary arrangements in conjunction with the District Branch of the National Association for the Prevention of Consumption. An educational programme of special popular lectures will be a feature connected with the exhibition, and every effort will be made to obtain valuable results of a permanent nature.

Dundee.

Sidlaw Sanatorium.

Sidlaw Sanatorium, as mentioned in the Journal of September 24th, p. 902, is about to be reopened under the sway of the directors of Dundee Royal Infirmary, for cases of tubercle, both medical and surgical. The fact makes interesting the question of its medical and administrative organization. Three schemes have been suggested. The appointment of a superintendent who should be personally responsible for both medical and administrative management would recall the condition previously existing, while the opposite proposal is the appointment of a senior house-surgeon and physician who would be under the medical direction of certain members of the medical staff of the infirmary, and under the administrative control of its medical superintendent. An intermediate suggestion is that while the medical and surgical treatment should be under the advice of the medical staff, the medical officer appointed should in administration be responsible only to the directors.

Between Nursing Home and Infirmary.

The difficulty of providing for those able to pay small fees for treatment, but unable to face a charge of three or four guineas a week, has given rise to a lively newspaper correspondence apropos of a forthcoming bazaar for a small local hospital which was established to provide for women who wished to be attended by women practitioners. A suggestion has been made that the time has come for the establishment of a co-operative home somewhat on the lines of the one recently organized in Edinburgh. So far nothing definite has been done in the matter.

Lawyer and Doctor.

Though the Fatal Accidents Enquiry Act conferred on Scotland some of the doubtful advantages of the procedure of the coroner's court, the medical profession has not been greatly vexed by judicial *obiter dicta* such as are so familiar in the South. Apropos of a case in which a man who, having had two injured toes amputated at the infirmary, was sent home, and who, after readmission a few days later, died of tetanus, the sheriff-substitute, seemingly more in sorrow than in anger, made some severe strictures on the young doctors of the institution. The injustice of the remarks would have evoked resentment had they not, as the local newspaper pointed out, been born in ignorance of the facts; it is a circumstance to which, in medical and sanitary matters, this judicial personage has so accustomed Dundee, that each new decision, however absurd, is received without astonishment.

The Local Government Board Inspector and the Slums of Inverness.

Severe strictures have been passed by the Local Government Board Inspector in a report which he submitted to the Board, and which has been forwarded to the Town Council of Inverness for information. In the course of his report Mr. Jeffrey

refers to the housing accommodation of the paupers and the sanitary arrangements provided for their use. Dealing with the general question, he reports as follows:

"A considerable proportion of the aged poor are in houses which are in a dirty condition; some are so bad, in fact, as to call for the intervention of the sanitary authority, and it might afford a salutary esson if a few cases were reported to that authority and action taken with regard to them. With regard to the housing accommodation and sanitary arrangements generally, I may state that, in the course of my experience on the Poor Law Commission, I have, along with the Commissioners, visited the homes of paupers in the principal towns of England, Scotland, and Ireland, and that I have never witnessed urban paupers living under worse conditions than those obtaining in Inverness. That some very bad slums exist in the towns is notorious."

The Local Government Board, in forwarding this report to the Town Council, states that the condition of matters disclosed by Mr. Jeffrey's report appears to call for the immediate attention of the local authority, and the Board trusts that the local authority will at once put itself in communication with the Parish Council, and act in hearty co-operation in removing the insanitary conditions under which the paupers live. The sanitary inspector, in his remarks on the letter, says the strictures of the Local Government Board report are too general and too highly coloured. Dr. MacDonald, medical officer of health, also criticized the report.

GREENOCK CORPORATION AND PHTHISIS.

A subcommittee appointed by the Greenock Town Council to consider the question of the treatment of phthisis cases in the public interest has recommended that an endeavour should be made to isolate and treat certain cases; that an outdoor dispensary be provided for pulmonary phthisis, where medical advice and medicine will be obtained free of cost; that a nurse should be appointed to work in connexion with the dispensary and to follow up the home conditions of the cases; and that compulsory notification of phthisis should be adopted by the local authority. It also reported that Councillor Orr had intimated his intention to offer to erect a pavilion to accommodate ten paying patients on certain conditions. With a sum of £500 the committee thinks it would be possible to begin operations for the control of the disease in the town, and it recommended the provision of this sum in the council estimates. The Town Council adopted the committee's recommendations.

SCOTTISH VITAL STATISTICS.

In the detailed report which has now been issued some interesting information is given regarding the births, deaths, and marriages registered in Scotland during 1908. That the report should be issued some eighteen months after the close of the year is explained by the fact that the abstracting of the various details cannot be completed and the compilation of the statistical tables therefrom commenced until the expiration of twelve months after the registers are closed.

Among the more noteworthy features of the year under review were the lowness of the birth-rate, the marriage-rate, and the death-rate. The birth-rate—27.22 per 1,000—was slightly above that of 1907, but was lower than those of all previous years since the institution of national registration, and that is since 1855. The marriage-rate was lower than those of all previous years, with the exception of five—those of 1858, 1879, 1886, 1887, and 1888. The death-rate—16.13 per 1,000—was lower than the death-rates of all previous years, with the exception of 1905 and 1906.

Scottish Centenarians.

Among the recorded deaths there were those of 21 reputed centenarians, of whom 5 were men and 16 women. In the previous year deaths of reputed centenarians numbered 17—3 men and 14 women. Of 1908 centenarians, 6 women and 1 man were stated to be 100 years old; 6 women and 2 men between 101 and 105 years old; 3 women and 2 men between 106 and 110 years old; and 1 woman, the widow of a crofter, was stated to be 112 years old.

The Declining Birth-rate.

Mr. Alexander M'Kinlay, clerk of the statistical department, contributes an article on the decline of the birth-rate, and he gives the following deductions which he has drawn from a study of these tables: (1) That the decline of the birth-rate is to some extent due to the decreasing number of illegitimate births; (2) that the decline of the legitimate birth-rate is not due to the alteration in the numbers of married women of child-bearing age; (3) that the decline of the rate based on these numbers is only to a small extent due to the increased age of women at marriage; (4) that it is almost entirely due to a declining fertility of marriage; (5) that this declining fertility of marriage is more marked in urban than in rural districts; (6) that during recent years the variations of the marriage-rate have had less influence on the birth-rate than was the case in earlier years.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

PAYMENT FOR EXTRA PROFESSIONAL ASSISTANCE.

IN May of this year the Drogheda Board of Guardians passed a resolution to the effect that if dispensary doctors required extra medical assistance in urgent cases they must requisition the services of another dispensary doctor, and that no fees would be paid for other assistance. A case illustrating the injustice of this resolution came before the guardians at their last meeting. It appears that a dispensary doctor, Dr. Smyth, was attending a difficult maternity case, and sent for assistance to a brother dispensary officer. This dispensary officer was not at home, and, in consequence, the services of Dr. Hunt of Drogheda were obtained. On application being made to the guardians for payment they refused Dr. Hunt's fee, and decided to adhere to their resolution. We are surprised that the guardians do not realize that an action of this sort is directed more against the interests of the poor, whom it is their duty to protect, than against the medical profession, and we hope that the matter will be taken up strongly by all the medical men concerned.

WATER SUPPLY FOR LABOURERS' COTTAGES.

Some weeks ago we referred in these columns to a correspondence that had taken place relative to the approval of sites for labourers' cottages in various parts of Ireland, in spite of the fact that no water supply was available. The question has again been raised owing to summonses having been served on a number of tenants of district council cottages at Killakee, who refused to pay rates on the ground that there was no water supply to their houses. The nearest water supply was stated to be two miles distant, and although application had been made to the South Dublin Rural District Council six months ago nothing had been done. The magistrates—amongst whom was the Right Hon. T. W. Russell—expressed themselves in favour of sending a strong protest to the Rural District Council, and also expressed the opinion that no place is a suitable site for the erection of a cottage if there is not a proper supply of water convenient to it. A solicitor present said that he had been present at many inquiries regarding suitability of sites, and had never heard a want of water supply put forward as a reason why a site should not be acquired. The present publicity will, we hope, induce Local Government Board inspectors to be more careful in this respect.

South Australia.

[*FROM OUR SPECIAL CORRESPONDENT.*]

The South Australian Branch of the Association.

The medical year has been tranquil, and comparatively uneventful. The annual meeting of the local Branch took place on June 29th, when Dr. W. A. Verco delivered a thoughtful and original address on the influence which the medical profession might, could, and should bring to bear upon the national life in Australia; it was an able discourse on eugenics, broad in its purview and elastic in its application. His successor as President is Dr. W. T. Hayward, the Senior Physician to the Adelaide Hospital, who occupied the same chair just a quarter of a century ago. Dr. Hone was elected Vice-President. The usual dinner took place in the evening.

Australian Army Medical Reserve.

Surgeon-General Williams, C.B., paid a visit to Adelaide last month, and addressed a large special meeting of the Branch with a view to bringing up the reserve to its proper war footing. General Williams's reputation as an administrator stood the test of comparison with the British authorities both during the Soudan Expedition and the South African war. The present scheme for a reserve is comprehensive, and seeks to enrol all medical men, chemists, dentists, and medical students, together with members of the St. John Ambulance Society. There is plenty of material to choose from, and there should be no difficulty in filling the ranks.

Diphtheria.

The outbreak which commenced two years ago seemed to abate last Christmas; but with the reopening of the State schools it broke out again immediately, and has during the past six months assumed the proportions of an epidemic in Adelaide and its suburbs, whilst small outbreaks have been reported in many country schools. The Children's Hospital increased its accommodation from about a dozen to over forty beds, and the General Hospital has had to provide another 60 beds. Nor is the outbreak confined to South Australia, for it has affected the Eastern States as well—so much so that there is a threatened scarcity of antitoxin. A simple way of ending it would be to close all the schools for a few months, and probably then the epidemic would be speedily stamped out.

Hospital Appointments.

The post of Superintendent of the Adelaide Hospital, vacant by the resignation of Dr. Wells, has been filled by the appointment of Dr. de Crespigny of Victoria, who adds considerably to the strength of pathology in South Australia. A former superintendent, Dr. Bronte Smeaton, has been appointed Assistant Surgeon, vice Dr. Frank Magarey, resigned.

District Nursing.

This subject has been invested with considerable interest lately on account of the scheme proposed by Her Excellency the Countess of Dudley for supplying nurses in bush districts. To give effect to her scheme Lady Dudley induced Mr. Harold Boulton, M.V.O., and Miss Amy Hughes to travel out to Australia to spy out the nakedness of the land. The scheme has rather hung fire for various reasons. In the first place, everyone was informed that it was to be, and no one was asked whether it would be either practicable or acceptable. Then when it did hang fire an unwise attempt was made to tack it on to a memorial to the late King. Ultimately the "bush" idea was allowed to subside into the background, and the memorial suggestion was dropped, because the various States had already contributed handsome sums for statues and other objects. In its latest form the scheme is simply one of extension of district nursing, and opposition to this was at once manifested in South Australia, where a very succesful society has been in existence for some sixteen years; it was thought that it would be a pity for it to become absorbed into a bigger organization, and that obvious advantages would accrue from loss of its individuality.

Special Correspondence.

BUDAPEST.

Professor Forel on Heredity and Education.

The aged apostle of anti-alcoholism and the sexual enlightenment of senior schoolchildren seems to be fond of Hungary. For a third time Professor Forel has left Switzerland for a European tour, and though he did not intend at first to come to Hungary, his friends in that country persuaded him to change his mind, the result being that he visited Budapest once again, and gave a lecture on heredity to the Medical Society. His lecture commenced with a dissertation upon the theory of heredity, the laws of which, in his opinion, are precisely the same as the laws of all organic life. Heredity is not merely the mutual action of the qualities possessed by both parents, but a process which began hundreds of thousands of years ago, which continues to-day, and which will continue as long as there is organic life in this world. The life of every one of us at this present moment is nothing more than the result of lives which were over and done years before we came into being. If we seek the traces of these former existences which have had such an influence upon ours, we find a mighty library wherein we can trace their every detail. This library is simply the whole earth, each layer of which is a page, the words thereof consisting of the relics we find there—skeletons, fossils, stones, etc. The human body is made up of millions of cells. Our bodies do not differ very greatly from those of animals; it is only the brain of the human being that separates him from the brutes. The progress of biology and natural history enables us to speak with certainty of the general affinity of all living things, and affinity which exists through our common ancestors. It is true that the original races and their various offshoots have become widely different during the course of ages, but this is owing to external influences. For instance, suppose a lady of Budapest marries a negro, and has by him two children. These children may be as utterly unlike each other as if they belonged to two separate families in different hemispheres. One child may be white, like his mother, but with curly hair, flat nose, and blubber lips; the other might be a mulatto, with a finely-cut Greek nose and the lips of a European. Thus, in spite of the tie of blood between them, it is possible for the children of such parents to differ greatly from one another. Consequently, it is an axiom of eternal truth that Darwin gave us when he said that the different races have been in process of formation for thousands of years. Even at the present time there are new developments in the process of formation. For example, in Hagenbeck's zoological garden at Hamburg, a successful experiment was made by mating a lion with a tiger; the result was that one of their two cubs was a cross between a lion and a tiger. From this a new breed has been established. Though the mule has been known for 3,000 years, mankind did not recognize this great fact of natural history in its full completeness. The mating of dogs with cats was tried for a long time, but without success. This proves, therefore, that they are not akin, though no one can deny their organic affinity. Their skeletons resemble each other very closely; they possess the same organs; whilst their mode of life and even of reproduction is so alike as to be almost identical. Cats, also, are not akin to mice, though more features in common can be found between these two classes of animal than between cats and birds. No affinity whatever has ever been found between the feline and the feathered race. One could go on in this way till it came to

comparing the cat with the butterfly, etc., and it would still be possible to find some feature common to all living things, whether cat, butterfly, or microbe. All these different species owe their existence to the desire of life inherent in every living creature, and their endeavours to maintain it in spite of the dangers and difficulties encountered at every step. The biogenetic law of Haeckel proves that all animals originate from one common root. Haeckel regards the womb as the book in which the history of evolution is written. From the moment of conception the embryo goes through every stage of that development, which it has taken the human race it may be as much as half a million years to accomplish. At the time of conception the human being is a two-celled being, one on the father's and one on the mother's side; but after a few hours these two cells fall into two parts and begin their propagation. This state of the two cells is the most ancient form of human life, and what goes on the womb is the development of the human species. Some three hundred thousand years ago man was just like the three months old embryo: magnify this seven or eight times, and we get the atavistic man, who has reached his present form only after continued and continual evolution. When the uterine embryo reaches that stage of development which corresponds to the state of development of present-day mankind it is born. Now, if we examine the development of the eggs of fish or salamander, and the ova of the bear, ape, or hare, we see plainly that at a certain stage of development it is quite impossible not to recognize the affinity. But if that is so—and present-day science has proved the truth of it—then it is clear that heredity has its origin in infinity, rather than in the mutual action of the parents. The cells from which we originate bring into our organism the universal forces of those cells from which they themselves evolved, and in their turn the same process of heredity had been gone through by these latter. Experiments have been made to find out what changes can be brought about on the single formation of cells by external influences; and by these means it has been proved that the cells in themselves are susceptible to external influences, and this susceptibility is transmitted from cell to cell as a latent energy. This energy enters, either wholly or in part, into those cells which are united. The truth of this statement is illustrated in a striking manner by the manifestation in a child of qualities inherited from his parents or very often from ancestors of five or six generations earlier. It is seldom that characteristics are inherited from any earlier generation, say the seventieth or two-hundredth; but it sometimes occurs, and this is atavism—the resurrection of the ancestor. Forel then spoke of the present system of education, which he regards as harmful from a morphological point of view, and which, in his opinion, never seems to accomplish its real object. The present school system, he says, which overburdens but does not develop the brain of the child, will have to be abandoned, and the modern school must be run on quite different lines. It is only in this way that the evil tendencies of heredity can be checked in our children, and in the course of a generation or two be overthrown and completely stamped out.

The next meeting of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Tuesday, October 11th, at 4 p.m., when Mr. John Newton, Secretary of the United Committee for the Prevention of the Demoralization of Native Races by the Liquor Traffic, will open a discussion on Alcohol and Primitive Races. Each member and associate is at liberty to introduce a visitor.

The Lettsomian Lectures will be delivered in the rooms of the Medical Society of London on February 6th and 20th and March 6th, 1911, by William F. Haslam, F.R.C.S., on a Review of the Operations for Stone in the Male Bladder. The anniversary dinner will take place at the Whitehall Rooms, Hotel Métropole, on Wednesday, March 8th, 1911, at 7.30 p.m.

Correspondence.

THE MIDDLESEX HOSPITAL.

Sir,—I am happy to be able to inform you that I have now received the £20,000 I asked for to enable me to remove the debt from the Middlesex Hospital, a generous friend, who desires to remain anonymous, having just handed me a cheque for £231 in order to complete that sum.

I find some difficulty in suitably expressing the deep sense of gratitude I feel towards all those who have so loyally responded to my appeal on behalf of an institution in whose activities they have now shown, by their practical sympathy, the highest confidence and appreciation.

Rich and poor alike have contributed to the success of my effort, for the sums I have received range from one thousand guineas to threepence. It has afforded me the greatest gratification to observe the generosity of those who owe their present freedom from disease or relief from pain to the hospital's kindly influence, and I venture to say that no stronger proof could be found of the value of this ancient charity than that those who were once under its care should have come forward, cheerfully and often with much self-sacrifice, to share its burden in its hour of need.

To each and every contributor I once again offer my sincerest thanks, and I also take this opportunity gratefully to acknowledge my indebtedness to the press for the valuable assistance they have afforded me by bringing the needs of the hospital prominently before their readers.

But my task is not yet finished. The debt of £20,000 has, it is true, been removed, but that liability represented the accumulated deficits between income and expenditure for three years, and from this it is obvious that, until a steady and permanent addition of £7,000 per annum is made to the hospital's income, its financial position is not secure, and every third year the Governors will find themselves face to face with a crisis similar to that which has now happily been averted.

It is my ambition to substitute, for such a hand-to-mouth administration as this, one which will provide the Governors with an income sufficient to meet the normal expenses of the year, so that they may apply themselves solely to seeing that it is expended to the best advantage in the interests of those whom the hospital serves, and, directly I am able to do so, it is my intention to devote my time and energy to building up an adequate annual subscription and donation list. I feel sure that my confidence in the generosity of those to whom I apply will again be fully justified.—I am, etc.,

Francis of Teck,
Chairman of the Weekly Board of Governors.
Middlesex Hospital, Sept. 25th.

CORONERS' LAW AND DEATH CERTIFICATION BILL.

Sir,—I have read the correspondence under the above heading, and am surprised that so few practitioners have expressed themselves, and those so mildly. As "A Country G. P." says, "It will be indeed iniquitous if we are to be burdened in the public interest without adequate remuneration." Much outcry has been made, and quite rightly, against the Births Notification Act, yet what does it involve? Just filling up a postcard in regard to a visit already made; whereas the proposed enactment will frequently require a journey over rough roads or no roads at all, for a distance of anything up to ten miles and back, in any weather, and however busy one may be with paying patients. Such a journey when snow is deep may well occupy half a day, and be ill paid at a guinea; yet, forsooth, we are to go for nothing, and have as solace the reflection that the journey has not been and could not be of the smallest benefit to a single creature. It is said that "we are out for fees." Personally I have not the smallest desire for such journeys at any fee; but if I have to make absurd expeditions to satisfy a few nervous faddists, I see no reason why I should not be paid for them, and adequately, too. Dr. Humphrey Davy's suggestion to charge the ordinary visiting fee will not do at all. It is just the

people who pay nothing or wholly inadequately, and who live in out-of-the-way places where no good-class patients would abide, for whom these corpse-viewing expeditions would most often have to be made. There should be a fixed fee, and mileage extra, with special addition for places to which there are no proper roads. There is just now much outcry all over the country about "the land tax," passed presumably in the public interest. It seems generally agreed that legal assistance is necessary in order to fill up Form IV, and yet we must suppose that it is to the public interest that it should be filled. Why, then, are not lawyers compelled to give gratuitously this assistance and to travel many miles to their clients' houses for the purpose? Because they are not such fools as to submit to nonsense of this kind; on the contrary, they are reaping a rich harvest. Why are we to be compelled to do our professional work for nothing? Solely because the public consider that we are fools enough to do it. Let us for once show that we are not quite so silly as they think.

I would suggest that country practitioners everywhere combine to write to their members of Parliament, stating the plain meaning of the proposed legislation as it will affect them, and their determination to resist it. If only we can combine we cannot fail, and not only will this gross injustice be prevented, but our legislators will receive a much-needed lesson, which will be of incalculable benefit to the profession in the near future, when Poor Law reform and similar measures come to be considered.—I am, etc.,

September 26th. ANOTHER COUNTRY G. P.

SANATORIUM TREATMENT OF TUBERCULOSIS.

SIR,—Although tempted to answer at length some of the points raised in Professor Pearson's last letter in the JOURNAL of September 24th, I do not think you would thank me for so far trespassing upon your space; you will probably agree that to continue this correspondence would serve no useful purpose. May I, however, before quitting the subject, give expression to the thought which has been uppermost in my mind throughout this discussion? My anxiety is, lest the provision of sanatoriums for the poor should suffer a serious check owing to unfavourable criticisms levelled from time to time at sanatorium treatment and its results. Those institutions, like our own, which have been established for some years, and whose work is well known and fully appreciated, can well take care of themselves, but there are at the present time, throughout the country, many districts anxiously debating whether they shall establish sanatoriums for their consumptive poor. If any such districts should be deterred from taking up the work in consequence of such criticisms, I should regard it as a matter for profound regret. Those who discourage the provision of sanatoriums, unless they do so with the strongest possible evidence to back them up, naturally incur a grave responsibility. All I ask for is a judicious reticence on the part of the sceptical.

The matter may be fairly summed up as follows. The encouragement of sanatoriums can only be productive of good. Even should they fail to realize to the full the expectations formed as to their curative value, they still remain as a great educational force, and if no longer used for consumption would form excellent convalescent homes. On the other hand, the discouragement of sanatoriums would be doing a serious injury to the consumptive poor of this country, if any value at all is to be attached to the opinion of those who have made this subject their special study.

Thanking you for your courtesy in allowing space for so much correspondence.—I am, etc.,

Kirkby Lonsdale, Sept. 26th. WM. S. PAGET-TOMLINSON.

SIR,—We all recognize and highly appreciate the great service Professor Karl Pearson has rendered to medicine by his clear and very important contributions to the discussion on sanatorium treatment. It is, therefore, with great regret that I see, in his letter to the BRITISH MEDICAL JOURNAL of September 24th, he lends the support of his great authority to the theory that "the constitution liable to tuberculosis is inherited." That is, indeed, an old and something more than "verbally inaccurate" view, for it is untenable. Statistics of the *post-mortem* examination of children at and shortly after birth do not afford any evidence in its support, and the statistics to which Professor Karl Pearson refers do not allow for the factors of environment and the reactions it calls forth, factors that are in themselves known to produce a constitution liable to tuberculosis and something more.

Professor Klebs of Heidelberg, in his Croonian Lecture on Alterations of the Development and Forms of Plants as a Result of Environment, referred to in the BRITISH MEDICAL JOURNAL of June 4th, shows the great part environment takes in the phenomena of life, and that by ascertaining the conditions under which the phenomena are produced and applying that knowledge, we can produce those phenomena at will. In 1887 I read a paper at the meeting of the British Association on the Experimental Production of Chest Types in Man, in which I showed that after birth the type of chest in man solely depended upon the conditions to which it was subjected, and could be produced at will by submitting it to the conditions that produce that type; and I subsequently demonstrated at the Polytechnic the practicability of applying that knowledge in ordinary life. Environment and the reactions it calls forth have long been employed, under various names and in a vague and general manner, in the presanatorium treatment of tuberculosis. Definite application of the knowledge of man's environment and his reactions thereto, and the due consideration of *all* the factors in the case, give effective treatment in phthisis. That fact I have personally experienced and seen in other cases, and I hoped to have brought it before the recent meeting of the Association, but, to my great regret, I was informed that time did not permit.—I am, etc.,

London, E.C., Sept. 24th. GODFREY W. HAMBLETON.

DEGREES IN DENTAL SURGERY.

SIR,—I hoped that some official would call attention to an omission, with regard to dental degrees, that was made in your Educational Number.

During the present year the University of London has dealt with the problem, so that for the future any student who is M.B., B.S.Lond., can upon completion of a prescribed curriculum present himself for the "M.S. in Dental Surgery."

This is in keeping with the regulations for the M.D., which for some years has been divided into many branches of medicine at the option of the candidate.

By this arrangement the ambitious dental student is provided with a degree in dentistry worthy of his abilities, and has the advantage of allowing him a place on both the medical and dental registers.

Although this is the first branch formed in the M.S., it is to be hoped that the gynaecologists, the ophthalmologists, and the laryngologists will apply to the Senate of the University for similar arrangements for their respective specialities in order that the public and the profession may be in a position to select those who by the possession of this degree show they have had special education and examination in their special department, which is not provided at present by either degrees or diplomas.—I am, etc.,

London, W., Sept. 26th. MORTON SMALE.

*** Mr. Morton Smale does not seem to have read the issue which he criticizes with sufficient care. So far from the possibility to which he alluded having been overlooked, reference to it was made on p. 679, and the fashion in which a B.S.Lond. may proceed to the mastership via dental work was set forth fully on p. 680.

THE USES AND DANGERS OF TEETH AND PROSTHETIC APPLIANCES.

SIR,—Your article on dental surgery on p. 800 of your issue of September 17th encourages me to trespass on your courtesy in an attempt to remove the misapprehension which I find exists as to my views on the uses of teeth and the abuse of prosthetic appliances. Referring to my paper, published in the same issue, on the value of teeth to the human economy, you were kind enough to accuse me of "humour and common sense." In many quarters I am accused of humour only, and sorry humour at that, in having sustained before a learned society so self-evident a fallacy as "that a man can fare just as well under present-day conditions of civilization in the edentulous as in the fully dentulous condition." This thesis you have found to be based on common sense—it is, indeed, based on observed fact—and I am very content to be able to leave it at that. I should like, however, to

point out why I hold the right appreciation of this thesis—that the edentulous need have no fears for their nutrition—of such importance.

The main reason lies in the single word "sepsis." At any period and in any class of life, once the mouth has become septic it is very difficult to regain and maintain even the state of unstable asepsis which we accept as clean. In hospital practice, after many years' experience, I find it impossible with practically cent. per cent. of the patients. By persistent treatment asepsis may have been reached, but relapse occurs in a very short time—the more surely the more teeth there are present. Moreover, cases which have been pronounced clean may often be shown to be hotbeds of sepsis owing to accumulations of germs and débris in unsuspected pockets alongside apparently healthy teeth. It may be asserted that among hospital patients of any age the state of oral cleanliness once lost is practically impossible of re-establishment except by wholesale extraction.

A second reason, equally cogent but practically swamped by the first, is that the efforts of all the dentists in the kingdom would be insufficient to cope with the conservative and prosthetic needs of the poor—scaling, filling, treatment of pyorrhoea alveolaris, making of artificial dentures.

Extraction of children's teeth merits special notice. Sepsis of a temporary tooth often determines a spreading inflammation, which kills the developing tooth of succession before it ever erupts, or so injures it that it falls a prey to caries immediately on its eruption; extraction of septic teeth eventuates in a clean mouth, into which the remaining permanent teeth may erupt, and with intelligent supervision the child may be induced to maintain this state of cleanliness indefinitely. Conservative work (fillings) will be badly done, since children are apprehensive and intolerant of pain, and recurrence of caries around the fillings inserted is inevitable.

When, however, circumstances are favourable, I need hardly proclaim my opposition to ruthless extraction. I believe, indeed, I was the first to offer a systematized explanation of the injury done to the permanent dental arch by early extraction of teeth. My second point—abuse of prosthetic appliances—depends again on sepsis. Tooth plates, unless cleaned beyond what is common practice, are themselves septic; often their very construction renders them uncleansable. Their septicity is evidenced by the decay of teeth at the points of contact between teeth and plate, and by the inflamed state of the mucous membrane underlying the plate whereby the area of the plate is often accurately delineated. Gold caps, crowns, and bridges lie under the same ban of sepsis. In my opinion the fashioning in the mouth of the perfect join passes the skill of man. The perfect join is a flush end-to-end join; there should be no overlap of the crown beyond the edge of the root, and to ensure accessibility for cleanliness the join should be as remote as possible from the gum. The rest of the apparatus, crown or bridge, should be so designed that every part is accessible for cleansing, avoiding all receding angles and concave surfaces. Practically all the specimens of crowns and bridges I have seen have been the merest travesties of these principles of asepsis.

In the very nature of things the most perfect collar join—the form most frequently used—leaves a minute overlap, and in practice this overlap varies up to ¼ in.; end-to-end joins are made equally irregular, and both forms are thrust up under the gum out of sight and out of mind. Inaccessible stagnation follows, resulting in caries both of the tooth or root supporting the crown or bridge and of the neighbouring teeth, in tissue infection and destruction producing pockets filled with germs, putrefying débris and pus, and in the local and general results of septic absorption. To all this must be added the dirt that stagnates on the inaccessible parts of the apparatus itself.

The basis of mouth hygiene is avoidance of stagnation; every prosthetic appliance introduces a possibility of stagnation, and its use is of the nature of a compromise in which the claims of beauty and necessity of tooth mastication are weighed against those of cleanliness. Far too often, and especially so in the case of crowns, gold caps, and bridge work, cleanliness finds no place in the final settlement.—I am, etc.,

London, Sept. 27th. J. G. Turner.

SICKNESS AND INVALIDITY INSURANCE.

Sir,—A cloud no bigger than a man's hand in an otherwise cloudless sky is often very disconcerting to the traveller who is far from his destination, and who has not an umbrella with him.

So Professor Moore's letter reads like the cloudless sky, full of promise of glorious weather for the profession; but alas! the cloud appears in what appears to me to be the all-important passage in his communication, "It is certain there would be some small ups and downs in income inevitable."

Most of us will agree with the certainty; some of us may disagree with the estimation of the ups and downs being small.

I congratulate Professor Moore, who has escaped these ups and downs, and who is in the happy and enviable position of being the possessor of an assured income.

Experience in worldly matters has frequently taught us that human prophets are very fallible. We still remember that during the South African war there were plenty of military prophets who prophesied a three months' campaign. There were prophets who told us at the time of introduction of the Midwives Bill that our interests were safe, and that only cases which the medical man would prefer to leave alone would seek the assistance of a midwife. Experience has proved to many the falseness of his prophecy.

And after all Professor Moore can only express his pious opinion upon the subject.

The Government bill has not yet been introduced. There is even a possibility that it may not run on the lines drawn out by Professor Moore—that he has reckoned without his host.

However, from past experience—Midwives Act, Inspection and Treatment of School Children Act—we may assume that the interests of the medical profession will not be unduly emphasized. This experience will lead any thinking medical man who has experience in private practice to regard any proposal of the Government affecting his interests with suspicion.—I am, etc.,

Bedford, Sept. 27th. S. J. Ross.

SPIRITUAL HEALING AND THE "GUILD OF HEALTH."

Sir,—I am anxious to convince your readers, even if I am unfortunately not able to convince Dr. Bousfield, that the Guild of Health is a perfectly sane body of people whose position and aims have been seriously misrepresented in your columns, and that the charges against myself personally and my action in a particular case were unfounded. Any one who has followed this correspondence will observe that Dr. Bousfield continues to assert what I have repeatedly denied—namely, that I act "independently of medical control." I must repeat, therefore, once more that I do nothing of the kind, and I unhesitatingly assert that no sane man could attempt to take such a responsibility. To justify myself in the case referred to, I must add that when the lady in question first came to me she told me she was not then under any doctor, that she had been to many but that there was no treatment of any kind, and that the last time she had seen a doctor she was told that nothing more could be done for her. Under the circumstances, I did the only thing I could do. I consulted a medical friend of mine, who told me all that is, I believe, known about the disease. If I had been told that Dr. Bousfield was her doctor, I would certainly have communicated with him. I do not know what difference it would have made or what "medical control" he would have exercised. The point is simply this, that I am just as opposed as any of your readers could possibly be to any one attempting to heal by any means whatever who is not himself qualified or is acting in co-operation with some one who is qualified.

As far as the guild is concerned, I am glad Dr. Bousfield should quote all or any of the memorandum which sets forth its position and aims. He need not "prove" that the guild believes that there is such a thing as spiritual healing and desires to see it restored. That is the explicit object of the guild's existence, and it would welcome the co-operation of Dr. Bousfield or any other doctor who would help forward that restoration on wise lines and with proper safeguards. We do not—let me repeat once more—

exist to "put you in the way to obtain spiritual healing," but to study this difficult subject and to forward the revival of spiritual healing on the sanest and best lines.

Dr. Buttar's letter opens a larger question. I pass over his initial paragraph, because it is wanting both in good taste and in accuracy. He asks me to define the limits of spiritual healing. Of course I cannot; neither can he. We would agree, I imagine, that there are mental and spiritual forces available for the cure of disease. But if he will read again the original articles that appeared in your pages, he will find how impossible it is to define their "effective range." I cannot accept "J. W. T.'s" limit of hysteria, or the difference between organic and functional disease, as we are continually being told on the highest medical authority that the distinction is invalid. Of course there are limitations to spiritual healing as there are to every subjective method, and it is part of this difficult problem to define them. For the present I ask Dr. Buttar to agree to the general statement that inasmuch as there is in every case of illness a subjective element, which in some cases is even the dominant factor, mental, and still more spiritual, forces may be operative in contributing to the case. From that point we can get to work and discuss sympathetically the form in which, the conditions under which that contribution can be most effectively employed, the range and limits of its usefulness, the protection of the public, and a dozen other questions that can only be solved by the united endeavours of those who represent religion and medicine.—I am, etc.,

Francis Boyd,
Warden of the Guild of Health.

Clifton, Sept. 25th.

THE CATHOLIC CHURCH AND THE LOURDES CURES.

Sir,—In the article with this title, published in your issue of August 20th, Abbot Gasquet states:

> The supernatural character of facts alleged as miracles is tested by every possible means, the evidence is sifted with minute care, and facts reputed to be miraculous are rejected which do not fully stand the requisite tests.

Further on the abbot adds:

> What is true of the attitude of the authorities of the Roman Congregation towards alleged miraculous facts is true in regard to what are known as Lourdes miracles.

In the case of a patient who was under my care and observation, and who is entered among the list of cures miraculously effected at Lourdes, the conditions mentioned were not fulfilled.

This patient, a woman, S. A., was in 1895 in bed with functional paralysis of the legs, and she was under my care till the time she went to France. One day the patient informed me that through the kind assistance of friends, among whom was Lady Margaret Howard, she was to be taken to Lourdes.

She had no certificate from me that the disease was incurable; but I was informed later that such written testimony had been given by a doctor under whose care the patient had been previously to my acquaintance with her. Result a cure, and the patient walked again.

Subsequently I was asked to give my opinion, with a view, I understood, to publication; and as in conversation misconceptions arise, I asked permission to submit my observations in writing.

In my memorandum, besides giving my own view, I mentioned the fact that this patient had been in two London hospitals, and that the records of those institutions should be referred to, and the opinions of the able men under whose care the patient had been could be ascertained. This manuscript I sent, but it was returned to me without any note or comment. But a little later a representative of the *Pall Mall Gazette* called and said that in the *Tablet* my name had been given as testifying to the miraculous nature of the cure. I verified the information, and my name had been unwarrantably used. In the face of these facts one cannot agree with the learned prelate that—to quote him for the last time—"the utmost care is taken to secure the full medical history of the patient."—I am, etc.,

Henry H. Sturge.

London, W., Sept. 26th.

SHIP SURGEONS.

Sir,—Dr. Rentoul's letter on this subject, in your issue of September 24th, is very much to the point, and worthy of the notice of every ship surgeon. The facts which he mentions concerning Liverpool are interesting, the more so as these conditions relating to the official recognition of fees do not obtain, as far as I am aware, anywhere else; indeed, your correspondent had, in common with his colleagues in one of the largest lines, to sign a declaration that he would not charge or expect to receive fees from passengers. This was some years ago, certainly; but things at sea change slowly, and doubtless, as far as this particular line is concerned, surgeons still conform to the regulation. I travelled home on an Austrian liner from Natal some years ago, but was not aware that any such official notice granting permission to charge was placed in the saloon. The exhibition of such a notice is hardly consistent with our ideas of professional dignity, and the further provision by some British shipping companies empowering captains to form a court of appeal in the (not unusual) event of a passenger objecting to his bill for medical attendance, also goes to prove that it would be well if some measures of reform were introduced into the system that at present governs the seagoing branch of the profession.

Steamships are sailing almost daily from English ports bringing across the Atlantic immense numbers of passengers, some of the big boats carrying close on 3,000 souls, and the medical care of these people must be a great tax upon the time and thought of the ship surgeon who has, practically unaided, to look after what ashore would be considered a very fair practice with its accompanying advantages.

It is to be hoped that Dr. Rentoul's plain speaking will have effect, and that ship surgeons will now accept the chance which offers of combination. All communications will be answered by myself or the members of the provisional committee formed for the purpose of organizing a movement amongst the members of the marine branch of the profession.—I am, etc,

John F. Elliott,
Acting Secretary Subcommittee Medico-Political Committee, British Medical Association.

Rostrevor, co. Down, Ireland, Sept. 24th.

THE INTERNATIONAL HYGIENE EXHIBITION.

Sir,—I note with satisfaction your remarks as to the action of the Government with regard to the International Hygiene Exhibition at Dresden.

It is, to say the least of it, remarkable and significant that a Radical Government, supposed to have the welfare of the people so much at heart, should ignore every opportunity of this sort.

It may interest you to hear that, for the recent Congress of School Hygiene, held in Paris, three official delegates were appointed by the same Government. They were strictly enjoined to hold their tongues and not to speak at any of the meetings. Only one of them attended the Congress, and he carried out the policy of silence entrusted to him with singular ability. Therefore, at an opening meeting, where were heard speeches from official delegates from every country in the world, including obscure South American States, there was no word whatever from any representative or delegate from Great Britain, save, of course, that Sir Lauder Brunton spoke, in his non-political capacity as retiring president of the preceding Congress.

No doubt this policy is consistent with that displayed in 1907, when the Government did its best to wreck the second School Hygiene Congress.—I am, etc.,

Indignant Briton.

September 24th.

THE USE OF IODINE SOLUTIONS FOR ANTISEPTIC PURPOSES.

Sir,—With many surgeons a practice has recently come into vogue of using iodine for antiseptic purposes. It is always interesting to recall how practices periodically repeat themselves, and how probably this particular one had its origin in the pre-Listerian days. It was within my memory that, as a student at Guy's Hospital, Mr. Thomas Bryant was using iodine solutions at the time when carbolic acid solutions were being introduced by Lister, and being very generally employed by all who were then

following his methods. To make sure that my memory served me truly, I wrote to Mr. Bryant on the subject; and received the following reply which I think may interest many who have revived this old custom.

Kensington, W.,
September 23rd, 1910.

My dear Maylard.

You are quite right in saying that the use of the solutions of iodine in surgical antiseptics was generally employed by me in 1876 in the treatment of all wounds and most operations, but not in the way you mention—by the local application of the solution of iodine to the skin of the part preparatory to operation. If you will refer to the fourth edition of my book on *Surgery*, published in 1884, vol. i, when Lister's splendid work was first introduced, you will find on pages 23-24 that I had adopted the use of iodine five or six years before, and I may add have adhered to its use with some small modifications up to 1908 when I retired from practice—a period of forty years. I was led to use iodine as an antiseptic from having acted as dresser to Mr. Aston Key in 1850, when Guy's, with all the London hospitals, had a plague of hospital gangrene; and Mr. Key allowed his dressers who had charge of those cases to use the local application they thought to be the best. I selected iodine; and I say now that the results obtained in the treatment of gangrene were better with iodine than with any other drug.

Upon this experience, acquired twenty-seven years before, in 1850, the use of iodine as an antiseptic for general purposes naturally came before me in 1872; and I am pleased to express the opinion, after forty years' experience, that it is without doubt the best antiseptic drug surgeons of the present day possess.

Among its other advantages, iodine in the form of a solution can always be obtained in any chemist's shop. The lotion may be used as a spray or otherwise, with or without a sponge. As an antiseptic it is excellent, and when warm has a marked tendency to arrest capillary bleeding or oozing. I have always made the iodine lotion by adding its strong solution to water to render it of a light sherry colour, and in septic cases I make the solution of a darker colour. In recent years, in cases of bad compound fractures and septic wounds, I have used iodine in the form of iodol, finely powdered, with boracic acid in equal parts, dusting the wound inside as well as outside with the powder before it is finally closed and dressed, using a dry dressing of some antiseptic gauze to cover the whole. Under this treatment my results have been very good—my dressers used to say that they were better than my colleagues'—but I am satisfied with saying that they have been good. I should like to add that I have used in all my cases torsion of the arteries, which may have done much to bring out the good result.

With kindest regards,
Sincerely yours,
T. BRYANT.

I am, etc.,

Glasgow, Sept. 26th. A. ERNEST MAYLARD.

A CAUSE OF DEATH AFTER OPERATION FOR APPENDICITIS.

SIR,—I am sorry I should have misunderstood Mr. Brown, but on re-reading his paper I must say I think the meaning I attributed to his words was the obvious one. Mr. Brown says:

> I believe this lymph acts as a filter, allowing soluble toxins to pass through into the lymphatics and blood stream of the surrounding viscera, but presenting a barrier to the passage of the bacilli, like the porcelain of a Berkefeld filter.

This certainly seems to me to express the idea that the bacilli are harmful apart from the toxins they produce, for even while the lymph is there, Mr. Brown says, toxins are passing into the blood and lymph stream. But Mr. Brown tells us that that is not what he meant, but rather that more toxin would be produced if the organisms themselves gained entrance to the circulation. He, however, admits that he has no evidence that when these symptoms of grave toxaemia come on after an operation for appendicitis organisms are multiplying in the blood stream. He says he has never examined the blood for organisms. The fact that perhaps many hours may elapse between the time of the operation and the onset of the symptoms seems to me an insufficient reason for regarding the process rather as a septicaemia than toxaemia from the suppurating area. It is very likely that the time of the onset of symptoms depends largely on the rate of absorption of the toxins, for until a sufficient dose had been absorbed symptoms would not arise.

I mentioned the two cases of death with symptoms of toxaemia after removal of a gangrenous appendix, without suppuration, to show that these grave toxic symptoms may arise when there is no question of the removal of a layer of protective lymph lining an abscess, and therefore that Mr. Brown's theory that they are due to such removal does not cover all the facts. One of these cases is really most instructive. The source of toxic poisoning—the gangrenous appendix wrapped up in omentum—was removed at the operation, and there was no infecting area left behind, and yet the girl died in twelve hours with symptoms of profound toxaemia. It seems to me that probably some toxin had entered the circulation before the operation, but not in sufficient dose to cause serious symptoms, but that the anaesthetic increased its virulence so that it became very rapidly lethal in its action. I have now abandoned the use of chloroform in all cases of acute appendicitis in children, and they have ether by the open method, as most cases of delayed anaesthetic poisoning have been after the administration of chloroform, and the symptoms of toxaemia following operation for acute appendicitis are very similar.

Mr. Brown says that in the four instances I gave in which symptoms of toxaemia followed the evacuation of an appendix abscess at the end of a week from the onset of the symptoms, I have no evidence that the abscess had been present all the time. That is quite true. But I quote the cases to show that if we wait for a week after the onset of the disease, we do not necessarily avoid the occurrence of toxaemia after operation. Mr. Brown himself says: "When a definite abscess has formed, wait until after the first week; when about ten days have elapsed it is probable protection will be complete." Now, surely, he means the first week of the disease, for who shall say on what day suppuration actually started, the difficulty rather is to tell if it is present at all, in fairly early cases. Therefore, I say, that even a week after the onset of symptoms, death from toxaemia may occur after operation. The lesson which I think this teaches us is that it is useless to wait for a week, as Mr. Brown advises, as a safeguard against toxic poisoning when the operation is performed. I feel sure that as soon as pus is present the patient's greatest chance of recovery lies in its speedy evacuation.—I am, etc.,

Bristol, Sept 24th. CHARLES A. MORTON.

MECHANO-THERAPY.

SIR,—I have more than once been on the point of sending you a note upon this subject, and Dr. Bryce's excellent article in the issue of September 3rd has decided me to do so. The previous impulse to write you was supplied by my own observation and that of others here in connexion with osteopathy, which, however, affects the writer personally not at all. I have several times before a local medical society insisted on the grave error of the medical profession in neglecting mechano-therapy—an error made the more glaring by the very remarkable commercial success of the osteopath, into whose hands at one time or another fall, it might not be too much to say, the majority of well-to-do Americans. These patients are generally eager in their support of a system whose basic theories are even more ridiculous than their practice may be beneficial. To this active voluntary support on the part of the "best" people is due the universal (I believe) success of the osteopath in obtaining legal recognition. In order that the British people (who themselves, as the history of bonesetting proves, are not above supporting irregularity in medicine) may obtain the benefits of mechano-therapy without the very real dangers—such as rupture of an appendical abscess—of falling into the hands of the osteopath, one of two things appears necessary; either British medical men must themselves undertake to supply mechano therapy, or widely-trained masseurs must be more commonly employed by them. Now, there can be no doubt that one reason which operates against the more frequent prescription of such treatment is that it may to a considerable extent remove the patient from the surveillance of the medical profession. But is that necessary? Is there anything derogatory in doctors including mechano-therapeutics among their own personal methods? Is such work less worthy of the educated doctor than much of the routine of general practice? One may doubt it. One's experience of the work of persons who devote themselves to an individual cure-all seems to prove that so-called osteopathic, balneological, and dietetic treatments, when carried on under favourable circumstances, very frequently re-establish health after the family physician, who has not used one or all of these, has ignominiously failed. Such methods have been long

established as sound treatment, and have fallen too generally into the hands of ignorant and sometimes immoral practitioners only because scientific men have neglected them. There is a wide and useful field of employment, especially for the younger members of the profession, in at least directing such work, should it be considered insufficiently dignified for their own hands. It would appear that, besides home treatment, there is in Great Britain room for scores of institutions in which such methods might be carried on, and that the people and the profession alike would greatly benefit from them, because in them there would be no divorce between the prescription of drugs, etc., and the really scientific use of active and passive exercise, baths, and so on. Certain friends of mine now have such an institution operating with great success. Such institutions might be enhanced in scientific interest in the eyes of the profession, and prove of increased value to the public, if they were fitted up for the examination of the dejecta, of test breakfasts, pathological specimens, and so on. As patients frequently need not be resident within such institutions many people would be willing to visit them merely for treatment who would not care to stay away from home for the purpose. Each of the smaller cities, therefore, could probably support one. If the American profession had possessed imagination enough it need never have been in the position of competing with the osteopath, who, when he asks to be legalized blatantly proclaims his entire dissociation from the medical profession, and afterwards may demand the right to sign death certificates, though so far as I know still unsuccessfully. The mere fact that the profession is at present better protected against such as the osteopath in Britain than in America (where, however, the profession's position is improving by leaps and bounds) is no reason for refusing to patients the benefits of a treatment often used by irregular practitioners with marked advantage.—I am, etc.,

Atlanta, Georgia, U.S.A., Sept. 18th. A. W. Stirling, M.D Edin., D.P.H Eng.

TREATMENT OF CHOLERA.

Sir,—Professor Leonard Rogers is evidently not a voluminous reader of current medical literature, otherwise he need not be troubling any pharmaceutical firms as to the best form of "putting up" calcium permanganate. Messrs. Allen and Hanbury have for a long time put it up at my suggestion in capsules, being mixed with a paraffin. Messrs. Oppenheimer have also put it up as palatinoids for over two years.

I first of all published a monograph on the drug in 1907; in 1909 there was a short notice of it in the British Medical Journal as to its value in gastritis and *enteritis*. On April 1st, 1910, in the *Journal of Tropical Medicine*, I published its value in malaria, as well as the fact that Allen and Hanbury capsulized it.

In the British Medical Journal for May 14th, 1910, is an article on Calcium Permanganate in Plumbism, on its value being due to its action on the alimentary canal. The *Dublin Journal of Medicine* this month allows me its place of honour, with an article on calcium permanganate.—I am, etc.,

Swansea, Sept 26th. G. Arbour Stephens.

HOW TO USE THE "JOURNAL."

Sir,—I have read with interest Dr. Carey Coombs's description of his method of "making use of the Journal," and venture to add to it my own experience. Like Dr. Coombs I get rid of the advertisements, but I go further, and get rid also of so much of the matter as I do not wish to preserve. In short I tear out the pages I desire to keep and hand over the remainder to the custody of the waste-paper basket. These pages I then thread on a "perfect" file, having first removed from the file the ledger index supplied with it, and I number the pages in due order with a pagination from right to left. To make serviceable the material thus collected I keep a large folio volume (index volume) and allot in this a page (or pages) to each subject, the reference to the various subjects being entered in a ledger index at the beginning of the book. Then each week, or as often as may be convenient, I enter in the corresponding pages of the index volume the articles filed from the current Journal. Say, for example, these include a paper on pneumothorax: my ledger index tells me that the page in the index volume allotted to this subject is page 300, and I therefore enter on this page the title of the article and the number and page of the file where it is to be found. This procedure only takes a few minutes each week, but if regularly followed secures ready to one's hand all the articles which have appeared on each selected subject during the period of time within which the method has been pursued; and, of course, the more periodicals which are treated in the above fashion the more comprehensive the supply of references. The filing and indexing can readily be undertaken by a dispenser or secretary, and all that the practitioner himself needs to do is to mark the articles which he wishes to preserve: while reference is as simple as turning the pages of a book. At the same time, all untidy and dust-gathering bundles of periodicals are avoided, and the files stand orderly and cleanly on the bookshelves and ready for reference at a moment's notice. There are several helpful details in working this plan which will readily be discovered by any one who adopts it. I will mention one which is distinctly of value: it is to enter in the index volume not only the title of the article and the number of the file in which it is to be found, but to add also a few words indicating its direction or scope. This can readily be done if one starts with a sufficiently large index volume, and particularly if while the left hand pages are made to carry the name of the article the corresponding lines on the right hand pages are reserved for such brief synopses as are here advised. An additional advantage of the method is that while it may be made to include any number of current periodicals it need not be confined to these. Any reference, as from a book or annual publication, may be duly entered on the appropriate page in the index volume with the certainty that its utility will be secured at the very time when the practitioner desires to revive the memory of his reading for some particular end or purpose. I have practised this method of filing and indexing various periodicals for a number of years, and can strongly commend it to any one who wishes to have for ready reference and in compact and manageable form the material which has attracted his interest and attention from week to week.—I am, etc.,

London, W., Sept. 12th. C. O. Hawthorne.

CASE OF VIPER OR ADDER BITE (*VIPERA BERUS*).

Sir,—Referring to the case of snake bite which I reported last year and which appeared in the Journal of August 14th, p. 412, and September 11th, p. 654, 1909, Dr. Peck tells me in the following December (1909) a furrow appeared in all the nails, both hands and feet, and when the furrow reached the end of the fingers and toes the nails broke off at the line of the furrow. This took place in the hands first, the toe-nails breaking off about a fortnight later. I thought with Dr. Peck that this observation might be of interest.—I am, etc.,

Baslow, Derbyshire, Sept. 18th. R. S. C. Edleston.

SECONDARY INFECTION IN PHTHISIS.

Sir,—If Dr. Penn Milton (see British Medical Journal, September 3rd, p. 623) will try the effect of an autogenous vaccine (made from the patient's sputum) in place of or subsequent to an antistaphylococcic or antistreptococcic serum I fancy he will soon see that the vaccine is a preferable means of combating the mixed infections of phthisis.

As regards staphylococcus, Andrews and Gordon have shown that immunity against it almost wholly depends on phagocytosis, which is increased by a vaccine. As regards streptococcic infections Meakin says that immunity from this organism is secured by two agencies, bacteriolysis and phagocytosis, of which the latter is probably the most important.

Pottinger, after treating a number of cases of mixed infection, says:

I do not doubt but that the true remedy will be obtained by a vaccine made from the strain of the particular organism found in each individual patient.

Allan says:

Not only do staphylococci lead to softening and disintegration

of lung tissue but they may also increase the rate of growth of the tubercle bacilli.

It seems to me that no serum (however polyvalent) can possibly give the patient as good a chance as he would get from the use of a vaccine (probably a mixed one) made from the very organisms that are causing his disease; properly dosed he will get the value from each of them if more than one exists.—I am, etc.,

Keynsham, Somerset, Sept. 5th. GEO. WILLETT.

THE HEARING AFTER OTECTOMY.

SIR,—On Saturday last I had occasion to perform otectomy in the case of a married lady who had suffered from an infected ear since childhood. To-day she came to see me, and her first remark was, "Oh, doctor, I can hear with my bad ear; I always thought it was stone-deaf." I said that, although I had not mentioned any probable improvement in the hearing, the fact was not surprising, about 70 per cent. of my cases having improved hearing after otectomy. "But why," went on the patient, "did not any of the other specialists I have consulted tell me something could be done?"

This is a complaint I have heard before from patients.

I could have told her that there is a fashion in surgery as in other things, and that the vogue of the radical mastoid operation has caused a deplorable neglect of intrameatal surgery.

This, however, is not an excuse for those who have advised against otectomy on the ground that it would destroy the hearing—an argument that could with greater truth be brought forward against the radical operation.

I have recently seen four old cases—and four only; all of them report improved hearing.

There is no deafness like that of those who won't hear. It is now a good many years since I first showed cases of recovery from suppurative otitis with improved hearing, but it is the most difficult thing in the world to convince those who wish to think otherwise.—I am, etc.,

London, W., Sept. 21st. F. FAULDER WHITE.

DANGERS OF THE ELECTRIC CURRENT.

SIR,—A common cause of the experiences that Dr. Hubert Pinto-Leite underwent in his bath room as related in the BRITISH MEDICAL JOURNAL of September 24th (on the happy issue from which he is to be congratulated) is that the metallic cover and other parts of the switch that are designed to be free from the electric current or "insulated" therefrom have by some means come into contact with parts of the switch that are designed to be either charged with or to convey the electric current, or to be, in other words, "live."

This often occurs through carelessness of the workmen in allowing the free ends of the electric wires to be left too long and so touch portions of the switch that they should not, or, as I have found, screws become loose and fall into such a position inside the switch as to form a contact between "live" and "insulated" portions of the switch.

The whole of the "live" and "insulated" metallic portions of the switch are insulated from "earth" by the porcelain base of the switch, and in consequence no test as applied by the electric supply companies or corporations will reveal such a state of affairs as above, and, moreover, the light would in no way be affected.

Whilst standing on a wood floor or a floor covered by linoleum or matting a switch thus defective can be handled with impunity, even with the current at 210 volts pressure; but as soon as this protection is removed, as in the case of standing in a bath which is in free contact with "earth" through the medium of the water pipes, etc., and at the same time the body is well connected electrically with the bath by the water in the bath, a current can easily pass through the body only limited in amount by the resistance of the body electrically, or, in technical terms, the body experiences an "earth shock."

Such shock would in no way affect the light in the lamp, and would occur whether the lamp was alight or not.

The remedy for such a risky state of affairs in bath-rooms or anywhere where a good "earth" contact can be easily made by any person's body is:

1. That all fittings should be made of some non-conducting material—for example, porcelain, vulcanite, etc.—wherever they come into contact with the person.
2. All fittings should be placed far enough distant from any "earthed" body as to prevent the possibility of contact being made.
3. All metallic portions of switches that are not necessarily "live" should be efficiently "earthed."

It would be of interest to know if Dr. Hubert Pinto-Leite found any defects as mentioned above in the switch in question.—I am, etc.,

Portsmouth, Sept. 25rd. GEORGE F. MORLEY, M.R.C.S.

PHTHISIS AND DIABETES.

SIR,—While looking into the family histories of diabetic cases I was much struck by the frequency with which phthisis and diabetes occur in the same family. Leaving out all those cases of phthisis transplanted on diabetic soil, I find in one family four deaths from phthisis and one diabetic. The latter's child died diabetic. Another family three phthisical, one diabetic, and one nephew diabetic, and so on. Knowing that diabetes is caused by altered metabolism, probably deficiency of oxygen, and seeing the results attained by giving oxygen or pure air to phthisical patients, is there not some common factor governing the appearance of the two diseases? In diabetes we have formed a fatty acid—namely, B. oxybutyric acid—on growing tubercle bacilli on certain media a fatty acid has also been produced. Phthisis is decreasing, whilst diabetes is decidedly increasing in number of cases. Is the open-air treatment, with its forced appetite, responsible? Are we trying to strengthen the relatives of phthisical patients and overstraining their powers of metabolism?

I have often noticed the typical strumous complexion, the long eyelashes, and brilliant complexion on delicate skin in many diabetics. Also is there any significance in the appearance of B. oxybutyric acid in the urine in diabetics and the absence of sweating? I believe a small amount of butyric acid is found in normal sweat. At a time when acidosis and its kindred diseases are justly claiming so much attention, I think the discussion of the above points might help in the question of causation, if not prevention.—I am, etc.,

West Southbourne, Hants, Sept. 24th. FRANK C. CLIFFORD.

FEE FOR MEDICAL EXAMINATION FOR INSURANCE.

SIR,—Letters appear from time to time in the JOURNAL relating to the interference of insurance agents with the medical duties of referees. "Clean Hands" returns to this subject in your issue of September 17th, p. 821. This matter is of vital importance to all concerned, involving, as it does, the stability of the insurance companies and the honour and dignity of the profession. Steps should be taken by circularizing the Divisions to find out if such interference is of frequent occurrence. If found necessary, concerted action could then be taken and representations made to the various companies. In my opinion, it is not so much increase in remuneration that is desirable in insurance work as security of tenure, independence of local officials, and that the applicants should be, as far as possible, directed to call on the examiner.

In the city with which I am familiar the Prudential has mapped out a separate district for each medical referee, and favouritism is practically impossible. "Clean Hands" probably goes too far in suggesting that the directors connive at the methods of the agents, but there is no doubt that minor officials demand business at all costs. We can well believe that proposals to checkmate the unscrupulous section of our profession will meet the hearty support of the directorates of companies which transact accident as well as life insurance.—I am, etc.,

September 20th. REFEREE.

POOR LAW BABIES IN LONDON AND BERLIN.

SIR,—May I be allowed to point out that the remarks made in an editorial article of the BRITISH MEDICAL JOURNAL of September 24th in regard to an article of mine in the *Nineteenth Century* do not represent what I stated?

In the first place, the mortality figures I dealt with are not those of the Minority Report, but of the Local Government Board. I quoted the Minority Report, but I made no deductions at all from them. I also pointed out that it was in reply to a question in the House of Commons upon the figures of the Minority Report that a Local Government Board Memorandum was published, giving the mortality statistics of infants under 1 year in the Metropolitan Poor Law institutions; it is these figures which I took. These figures, therefore, are not those of a "heterogeneous collection of ordinary workhouses situated in various parts of England," as stated in your editorial, but are the official figures for the London Poor Law institutions for infants under 1 year. These will include maternity wards and workhouses. In order as far as possible to eliminate the mortality in the maternity wards, with which I was not concerned, I omitted all the figures dealing with the mortality during the first week of life; this, on the statistics given in the Memorandum, worked out at 78.8 per 1,000 (the figure is mine, not Dr. Parsons's, as you appear to suggest).

I further pointed out that the same source of error attaches to the Local Government Board statistics as to the Minority Report, namely, that the figure for the *total number of children born* includes obviously all those born in the workhouse; but the *mortality* figure does not deal with the deaths among all these, but only with that proportion of those born in the infirmary who remain under the infirmary or workhouse and die there. It does not include any of those children who, although born in the workhouse, leave it at any period during the first year of life, and subsequently die outside. Inasmuch as a very large proportion of the children born in the workhouse do not remain there very long, it is evident that 78.8 per 1,000 is an entirely unreliable figure, because it omits all consideration of a large proportion of the children.

For those reasons it is impossible to compare at all accurately the mortality statistics given in the Local Government Board Memorandum with those of the Poor Law children in Berlin, and this I also pointed out in my article. I forbore entirely to make any numerical comparisons for those reasons. It does not seem to me that I can, therefore, be accused of being "unfair to London."

Also, in regard to the unfit children, if my article had been carefully read, it would have been seen that I stated "less than half of all the children who are brought to the Asyl are even approximately normal in size and weight." That is to say, over 50 per cent. of the children are physically inferior. Comparing this with the 21.9 per cent. of physically inferior infants in the Fulham Infirmary, again I hardly think that I can be accused of making statements which are unfair to London.

In conclusion, Sir, it seems to me a pity that such scathing criticism should be passed upon an article when I think I have shown that the statements can scarcely have been carefully read.—I am, etc.,

Janet E. Lane-Claypon, M.D., D.Sc.Lond.

London, S.W., Sept. 24th.

Public Health AND POOR LAW MEDICAL SERVICES.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Huddersfield County Borough.—Dr. Samson Moore considers that there is good reason to believe that the population of Huddersfield in 1909 was 103,000, and not 94,740, the estimate of the Registrar-General. He advocates the taking of a census every five years. Based on the latter estimate the birth-rate in 1909 was 24.6 per 1,000 and the death-rate 16.3 per 1,000. The infantile mortality-rate was 96 per 1,000 births. Dr. Moore points out that the gratifying reduction which has taken place in the rate of infantile mortality during the past few years has coincided with the special attention devoted to the subject in Huddersfield. Accommodation has been provided for consumptive patients in a wooden pavilion in the grounds of the infectious diseases hospital. The intention is to retain the patients for six or eight weeks, during which period they will be trained to lead a hygienic life, to appreciate the advantages of an open air life night and day, and to take the necessary steps to protect their relatives, friends, and fellow workmen from the danger of contracting the disease.

BOOKS FOR A PUBLIC HEALTH DEPARTMENT.

Dr. Petgrave Johnson.—The following works might form the nucleus of a small library for a public health department: *Practical Guide to the Public Health Acts*, by Hime (Baillière, Tindall and Cox); *The Public Health Acts* (Knight); *Theory and Practice of Hygiene*, by Notter and Firth (Churchill); *Practical Sanitation*, by Reid and Manley (Griffin); *The Food Inspector's Handbook*, by Vacher (Sanitary Publishing Company); *Food Inspection*, by Macewen (Blackie); *Walley's Meat Inspection* (Green and Sons); *The Purification of Sewage*, by Barwise (Crosby Lockwood); *Vital Statistics*, by Newsholme (Sonnenschein); *The Prevention of Infectious Disease*, by McVail (Macmillan); *Water Supplies*, by Thresh (Rebman); *The Health Officer's Pocket Book*, by E. F. Willoughby (Crosby Lockwood); *The Public Health Acts Amendment Act, 1907*, by Clery and McWalter (Ponsonby); *Housing and Town Planning*, by Willis (Butterworth); *Hygiene and Public Health*, by Whitelegge and Newman (Cassell); *A Handbook of Hygiene*, by A. M. Davies (Griffin); *Sanitary Law and Practice*, by Robertson and Porter (Sanitary Publishing Company. Periodical literature devoted to public health matters includes *The Medical Officer* and *The Sanitary Record* (weekly); *Public Health*; *The Journal of the Royal Sanitary Institute* and *The Journal of the Royal Institute of Public Health* (monthly); *The Journal of Hygiene* and *The British Journal of Tuberculosis* (quarterly); *Transactions of the Epidemiological Society* (annual).

The Services.

THE ST. JOHN AMBULANCE ASSOCIATION IN INDIA.

The St. John Ambulance Association came into existence in 1877, and about ten years later its work had extended to India. It was not, however, until 1900 that the St. John Ambulance Association in India was organized on a definite basis; at the present time the organization of the Indian branch of the association, specially adapted to the requirements of the country and the constant changes amongst the European residents, is most complete and efficient. This is largely due to the work of Lieutenant-Colonel A. C. Yate, the Honorary Organizing Commissioner for India. The general scheme of organization is based on the peculiarities of life amongst the Europeans in India, where individuals are liable to sudden transfers. The Indian Empire has been divided, for the purpose of ambulance organization under the St. John Ambulance Association, into nineteen areas, and in each, instead of private individuals who may be interested in the work, the local authorities and official heads of the community are *ex officio* the local leaders of the association, the Viceroy being President of the branch.

The "White Book" published by the Indian branch gives particulars of the organization and work of the association in India for the information of those who take an interest in ambulance training. In addition to the necessary information as to the formation and training of classes and other details referring to the work in India, it includes an interesting sketch of the history of the Order of St. John from the eleventh century and of the resuscitation of the English branch of the Order in 1830. The St. John Ambulance Association has done much for ambulance work, and the Indian "White Book," which is now in its second edition, shows that the Indian branch will well maintain the traditions and reputation of the parent association.

BRITISH RED CROSS SOCIETY: SCOTTISH BRANCH.

An important circular has been issued by the Scottish Red Cross Executive dealing with the recent War Office Amendments regarding the formation of voluntary aid detachments. It is recommended that these amendments should be adopted in connexion with the formation of all new detachments of the Scottish Territorial Red Cross Brigade, leaving it optional for detachments already organized to adopt or not the new formation. In the amendment the composition of the detachments has been much simplified, and the personnel will now be as follows:

(a) Men's Detachment.—1 commandant; 1 medical officer; 1 quartermaster; 1 pharmacist; 4 section leaders; 48 men, divisible into four sections of 12 men each.

(b) Women's Detachment.—1 commandant (man or woman), and not necessarily a doctor; 1 quartermaster (man or woman); 1 trained nurse as lady superintendent; 20 women, of whom 4 should be qualified as cooks.

It is recommended that in the case of the men's detachments commandants should, where possible, be ex-officers of any branch of His Majesty's service not liable to be recalled for service. The concession that the commandant of the women's detachment may be a woman and the lady superintendent a trained nurse should assist in the raising of detachments, and by the term "trained nurse" is meant a certificated professional nurse who has undergone three years' training.

With regard to the training of detachments, details were given in the Journal of September 24th, page 919.

The circular also states that the proposal of the War Office that courses of instruction in home nursing can be given by

trained nurses has been very fully considered by the Executive, and they have decided to give their sanction to it, one of the points that has weighed most with them being the fact that in country districts the services of a medical man as lecturer might be difficult to obtain. The recommendation is, however, to have the nursing course given by a medical practitioner wherever it is possible. The examination for the Home Nursing Certificate must be conducted by a medical examiner or matron of a training school. The executive propose shortly to issue a new edition of the regulations for the Scottish Territorial Red Cross Brigade embodying the amendments above referred to. They will also publish from time to time the results obtained in the various counties, so that full credit may be accorded to those counties taking the lead in the Red Cross movement in connexion with home defence.

The circular is issued from the new head quarters of the executive in Glasgow and signed by Major C. C. Fleming, the recently-appointed secretary.

LOWLAND MOUNTED BRIGADE FIELD AMBULANCE.

ADVANTAGE was taken of the autumn holiday in Glasgow on September 26th to have a useful week-end for a number of the non-commissioned officers and men of this unit. Some twenty-five members left Glasgow on Saturday, September 24th, and proceeded by rail to Stirling, where quarters were provided in the Castle by the courtesy of the officer commanding the Argyll and Sutherland Highlanders' dépôt there. Two of the rooms in the ancient royal palace were placed at their disposal. Lieutenant-Colonel Halliday, commanding the unit, was in charge of the party, with Staff Sergeant Jewell, R.A.M.C. On arrival barrack beds and bedding were drawn, cooks, etc., told off, and a most instructive training begun. The men were conducted over the stores by the quartermaster-segeant in charge, and the whole procedure of issuing material on mobilization of special reserve, etc., was explained. Instruction was also afforded in cooking and issue of rations. Monday forenoon was spent in the military hospital, where Lieutenant-Colonel Greig (formerly of the Royal Army Medical Corps), the officer in charge, explained the routine work of the hospital, after which the hospital steward instructed the men in the details of work connected with the pack store, linen store, diets, army forms, etc. The party returned to Glasgow late on Monday evening, after a most profitable and pleasant week-end.

Medico-Legal.

THE WORKMEN'S COMPENSATION ACT.

Place and Method of Examination.

IN our issue for August 13th an account was given of a case in which the main issue tried was whether the solicitor for a claimant to compensation has a right to dictate the time and place at which the claimant shall be examined on behalf of the defendants, and to be present thereat. It was ruled by the county court judge concerned that no such right exists, and that if a plaintiff declines to be examined except in such circumstances, that fact is ground for declining to pay further compensation. In the same issue the general considerations connected with the point were the subject of a short note in another part of the JOURNAL.

Since then another case has been tried of the same general order, and with the same result. As, however, the judge in this case entered somewhat fully into details, his verdict is now given at some length, for, taking the two cases together, they are a useful guide to medical men in their conduct in the matter of such examinations.

The case in question was decided at the Clerkenwell County Court at the beginning of September, when the judge was sitting as arbitrator. It was one in which the applicant for compensation had been admittedly injured during the course of his employment, and had been paid compensation for some months; compensation was then stopped, on the ground that the applicant, without alleging any proper reason for his refusal, declined to be examined by the employer's medical adviser, either at the medical man's house or at the claimant's own house, although the defendants were willing that a medical man should be present at the examination on the claimant's behalf. It was stipulated that the examination must take place at the offices of the claimant's solicitors, and in the presence of a representative of them.

Subsequently in letters, and when the case first came before the notice of the court, the making of this stipulation was supported on the ground that the medical man in question, Dr. Collie, acted with brutality towards workmen in the course of his examination. The solicitors based this charge on information they said they had received from workmen in several cases during a period of four or five years. The kind of brutality complained of was that Dr. Collie called the men shammers, and treated them like dogs. It was also alleged that his use of an electric battery to test the genuineness of a man's alleged sensations occasionally caused unnecessary pain; that his opinions were prejudiced and therefore untrustworthy; that his statements were unreliable and inaccurate; and that on one occasion he had examined a workman without proper notice to the solicitors, and on another had endeavoured to induce the workman to settle the case without consulting them.

After recording these facts, the judge said that even if he assumed that the particular complaints and allegations made were well founded he was unable to see how the presence of the workman's solicitor would be a more efficient protection than that of his medical man. Whatever the solicitor could properly do the medical man could at least do equally well; he could interfere if necessary during the examination, and he could observe (far more intelligently than a solicitor) what was being done and the workman's conduct, and make a note of what was said and what passed. No instance had been given of a medical man having failed to do what a solicitor could have done if he had been present; in all the cases relied upon no medical man had been present on behalf of the workman. Another medical man called on behalf of the claimant had said that if a doctor was present there was no necessity for a lawyer to be present, and that in his opinion the patient's doctor should always be present. The plaintiff's solicitors had also said, in answer to a question as to why they insisted on being present, that they wished to prevent improper questions being put or answered, and improper advice being given, and to take shorthand notes in order to check inaccuracies. The court was not convinced by that answer. It had also been suggested that the workman's medical man might be young and inexperienced or the workman might for some reason or another be unable to get him to attend; that might be so in a particular case: but the stipulation made in respect of the circumstances of the examination were not really based on any such narrow ground. They were really an attempt to bar out a particular examiner.

Continuing, the judge said that so far he had assumed that the charge of brutality and other allegations were well founded, but he was satisfied that this was not the case. There was no real foundation in his opinion for this charge of brutality. Dr. Collie had on several occasions expressed strong opinions upon the prevalence of malingering, and he might sometimes have mistakenly charged a man to his face with being a shammer or malingerer who in fact was not; such a man might not unnaturally perhaps resent the suggestion, and complain to his solicitor; but it was unfair and unreasonable to base upon this a serious charge of brutality. There was no objection in the court's opinion to the use of the battery as causing unnecessary pain. As to the other allegations, Dr. Collie's opinion might often be mistaken, and his recollection of what passed at an examination might be defective; but the court was satisfied that it was untrue that Dr. Collie had improperly examined a workman behind the solicitor's back or improperly tried to induce a workman to settle without consulting his solicitor. In the court's opinion, the offer by the defendants to conduct Dr. Collie's examination in the presence of the workman's doctor was a reasonable offer, and the solicitor's presence was quite unnecessary for the workman's protection.

But the court had also to consider what was a refusal under the Act. Was it a refusal if the man refused to be examined under the employer's conditions, these conditions being unobjectionable and reasonable, although he was willing to be examined under other conditions also unobjectionable and reasonable? If it was, then it followed from what the court had already said that in this case there was a refusal. But if the refusal was not a refusal so long as the claimant was willing to submit himself for examination under unobjectionable and reasonable conditions, then the court must determine whether the conditions required by the workman in the present case were in fact unobjectionable and reasonable. The court had been at first disposed to think that there could be no objection from the defendant's point of view to the examination taking place at the solicitor's office in the solicitor's presence, but Dr. Collie's evidence had satisfied it that the examination would probably be less effective and thorough if made under those conditions. Hence the court held that the conditions required by the workman were open to objection, and therefore, having regard to the conditions offered by the employer, were unreasonable.

The court added that it had also been contended for the workman that the case was analogous to that of a workman declining on his doctor's advice to undergo an operation, and that as this was not unreasonable, it should be held that the workman in the present case should be held to have acted reasonably in acting on his solicitor's advice. The court was of opinion, however, that the analogy alleged did not exist, and held that a workman could not excuse or protect himself by saying that he had acted on his soliciter's advice when that advice was mistaken.

Medical Referee not to Decide whether there has been an Accident or Not.

In a case at Dunfermline (August 5th) it appeared that an accident was alleged to have been sustained by a workman in December, 1909. A dispute having arisen as to (*a*) the extent of the injuries; (*b*) whether there was an accident or not, the employers agreed to refer the whole case to a medical referee. The workman refused to go to the medical referee until his employers admitted that there had been an accident. In the result the sheriff held that the workman was justified in so refusing, and mulcted the employers in the costs of abortive legal proceedings.

COMPENSATION FOR HERNIA.

A CORRESPONDENT asks what compensation a gardener ought to claim for an incipient hernia caused during his occupation. An insurance company offers him 30s. to settle.

*** The sum offered appears very trifling, but it would be impossible to suggest any equitable compensation from the data. The character of the hernia, the amount of disability

produced, and the nature of the man's occupation, would all have to be considered, and if the case came before a court of law there would probably be a great conflict of evidence on these points.

CONTRACT FOR ATTENDANCE IN CONFINEMENT.

A CORRESPONDENT writes that he was engaged to attend a lady in her confinement, and a little later was called in to the same patient, because her husband was ill-treating her. He has since received notice that his services will not be required at the confinement, and wishes to know whether he can claim the fee.

*** According to the principle laid down in *Hochster* v. *De La Tour* (22 L J Q.B. 455), our correspondent might sue for his fee at once, and should succeed. The fact that the patient had engaged another practitioner, if proved, would show that the contract made with him had been definitely renounced. But medical practitioners have other things to consider besides their strict legal rights, and there might be circumstances which would make it wiser to waive the breach of contract.

LOCUMTENENTS AND FEES FOR MEDICAL EVIDENCE.

"LOCUMTENENT" writes that in a paragraph on the subject of inquest and *post-mortem* fees received by the locumtenent on behalf of the principal it was not mentioned that the *usual custom* was to share these fees between the two.

*** We have never heard of such a custom. There can be no more reason why these fees should be shared than any of the other proceeds of the practice during the time the locumtenent is in charge. It is not, however, unusual for the fees to be shared when the locumtenent is perhaps required to give evidence at an inquest the day after his engagement with the principal has terminated. Perhaps our correspondent is thinking of this.

ESTIMATION OF VALUE OF A PRACTICE.

SENEX JUNIOR asks the following questions: (1) Is the value of a partnership in a medical practice usually reckoned on the gross receipts, or on the net profits? (2) Should the half share of a practice be estimated on two years' purchase or on one and a half year's purchase?

*** (1) On the gross receipts. (2) This depends on the nature of the practice, and is a matter for agreement between the vendor and purchaser.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

THE MULTIPLICATION OF DOOR-PLATES AND THE TITLE OF "DR."

ISLE OF WIGHT.—We have many times condemned the practice of putting up door-plates where there is no bona fide tenancy. This is a matter which should be dealt with in the first instance by the local Division of the British Medical Association. The vexed question of the right of diplomates to call themselves "Dr." is not likely to be settled except by the greatly increased facilities now given to all English medical students to obtain university degrees. It is not probable that the Royal College of Physicians of London would deprive a Licentiate of his diploma for styling himself "Dr." on his door-plate.

MEDICAL PRACTITIONERS AND CLUBS.

NOVICE writes that he has recently started in practice, and he has reason to believe that the clubs in the district are not satisfied with their present medical men, and he has been unofficially advised to apply for the clubs. He wishes to know: (1) Whether it is usual for a medical man to apply for a post as club doctor; or (2) to wait till officially offered the post by the club.

*** (1) It is contrary to medical ethics and custom to apply for any post that at the time of the application is held by another practitioner. (2) It is usual to wait till the post is declared vacant by the proper authority, and applicants are invited to apply.

SUPERSESSION.

JUSTICE.—While the patient has undoubtedly the right to choose his medical adviser, it is a breach of etiquette for a medical man who is summoned in an emergency to a patient already under the care of another practitioner to assume possession of the case until the practitioner originally in charge has been informed shat his services are no longer required. The proper tribunal for dealing with such offences is the local Division of the British Medical Association.

Obituary.

WILLIAM THOMAS LAW, M.D EDIN., F.R.C.S ENG., BOURNEMOUTH.

IN Dr. William Thomas Law, whose death took place at Bournemouth last month, the medical profession has lost a member who was never happier than when lending a helping hand to a brother practitioner, or to any one needing aid and counsel. As such, and as a man of culture and many intellectual acquirements, his death must be a subject of general regret.

A son of the late Mr. Henry Compton Law of Allington, and born in 1845, he commenced the study of medicine as an articled pupil to the late Mr. S. S. Varcombe of Castle Cary, and later on entered Guy's Hospital. Mr. Varcombe being a Licentiate of the Society of Apothecaries, William Law in virtue of a regulation existing at that time, was enabled as his apprentice to take the diploma of L.S.A. after a shorter period of hospital work than his fellows, and thus emerged from Guy's as a qualified man early in 1870. His contemporaries at the hospital included many men who, like himself, afterwards became well known. Among them were Golding-Bird, Jacobson, Mahomed, R. T. Pye-Smith, Arthur Cooper, Paramore, Connolly, Ewart, while a little senior to him were Alan Manby, George Eastes, F. Taylor, Goodhart, and F. Durham.

From Guy's, Law migrated to Edinburgh to go through the course for a degree, working first in the wards of the late Sir T. Grainger Stewart, and afterwards in those of Lister. At a later date he served as a Resident Physician in the Royal Infirmary for a year, first in Dr. D. Haldane's wards, and afterwards in those of Dr. G. W. Balfour, of cardiac pathology fame. Those were great days in Edinburgh, for though Goodsir, Syme, and Simpson had passed away, the glories of its school were safe with Lister, Christison, Hughes Bennett, Matthews Duncan, Laycock, Maclagan, P. H. Watson, Annandale, and Joseph Bell, to say nothing of pure scientists such as Turner, McKendrick, Crum Brown, Dewar, Allman, P. G. Tait, and others.

Law at this period had little idle time on his hands, for, besides continuous work in the wards, lectures in plenty, and class examinations, he had to get through four examinations for the M.B., and in Greek and Logic for the M.D., as well as three examinations in London for the diploma of the Royal College of Surgeons. At that time this college demanded a special preliminary examination for its Fellowship, comprising Greek, one modern language, and other extra subjects. Some of his examinations came very close together, as in April and May, 1871, when the First M.B., the Final M.R.C.S., and the Primary Fellowship were crowded into about five weeks. It was at this last examination that a noted anatomical conundrum was set and aroused much hostile comment; it required an exact description of the dissection required to expose from the outside the otic ganglion. As only four questions were set and all had to be adequately answered, there was apparently some ground for complaint.

These obstacles surmounted, Law was able to devote his attention to the duties of Resident Physician, which included the care of Dr. Matthews Duncan's gynaecological ward. Finally, having graduated M.B. in August, 1872, Law was appointed Assistant Medical Officer at the Chorlton Hospital, Manchester—then a large, newly created building on the pavilion plan—and remained there until he had taken the M.D. degree with "special distinction" for a thesis on mitral stenosis. Shortly afterwards he was appointed House-Physician at the Seamen's Hospital at Greenwich, where at that time the late Dr. Stephen Ward and Dr. C. H. Ralfe, of the London Hospital, were the

visiting physicians. The latter was then investigating scurvy, and a good deal of urinary analysis was carried out by Law in furtherance of these researches.

While at Greenwich Law passed the final examination for the Fellowship, and in 1876 sent in his name as a competitor for the post of Resident Medical Officer at the Brompton Consumption Hospital. The appointment—a very desirable one—was at that date filled by open competition from without, and the applicants were very numerous, but Law was appointed on the recommendation of the Medical Committee. A number of young house-physicians passed through the institution during his term of office, and in a letter concerning him one of them observes that Law's post called for tact as well as administrative skill, and that he filled it with great ability and success. "He had the saving grace of humour, and nobody who served the hospital at that time can have forgotten his cheery optimism and readiness to look on the lighter side of things in an atmosphere which was inevitably depressing, since the true nature and pathology of tuberculosis was not then understood and treatment was systematic and unprofitable."

After several years' work at Brompton Law became somewhat anaemic and was advised to live at St. Leonards. He was a firm believer in the value of open air in the treatment of consumption and before the Nordrach boom began in the English press treated patients on similar lines, publishing one such case treated in the early Eighties. His health having become re-established, he returned to London in 1885, and while waiting for patients occupied himself with clinical work at Soho Hospital for Women, the Skin Hospital, Blackfriars, after which he went to the Rotunda Hospital, Dublin. Subsequently he became interested in ophthalmology, and worked for a year at Westminster Ophthalmic Hospital.

He also visited Professor Landolt's clinic in Paris, and in conjunction with that ophthalmologist translated some of his French and German papers on the subject of convergence, one of them was published in the *Ophthalmic Review*. Until 1895 he lived in Norfolk Crescent, Hyde Park, but after that date he, for family reasons, spent a good deal of time in the country, and also for a short time was in Bury St. Edmunds and Northwood; he retained, however, his consulting rooms in Weymouth Street, and did not attempt local practice.

In 1902 Law became the central figure in what was at the time something of a medical *cause célèbre*; he was made defendant in an action of the "heads I win, tails you lose" order, huge damages being claimed by a morphine patient. After four days' hearing the jury stopped the case, saying the action ought never to have been brought, while the judge expressed his opinion of the manner in which the case had been got up in terms which those who were present will not readily forget. As is too often the case, Law, though awarded costs, was unable to obtain them, and thus suffered heavy financial loss. Under the auspices, however, of Dr. Richard Paramore, who gave much of his time, thought, and energy to the matter, a handsome sum was subscribed by the profession and was presented to Dr. Law on behalf of the donors by the President of the College of Physicians, Sir William Church, at a public meeting of sympathisers.

A few years later there was a still more trying incident in Dr. Law's life; his only son, a promising Cambridge graduate of 25, died of typhoid fever. This event left him childless, and seemed immediately to light up a chronic appendicular trouble. It was successfully removed by an operation at the hands of Sir Watson Cheyne, but Law was never again quite the same man. He had long been subject to attacks of biliary colic, and it was a few days after an operation undertaken for that condition that his life ended. Law, who at that time had been living for about a year at Bournemouth, seems to have had a premonition that he had run his course. He died on September 6th, and was buried near his son at Ripley, his Surrey home. He is survived by his wife, a daughter of the late Mr. Price, Q.C., Recorder of York and County Court Judge for West Norfolk.

In a letter respecting Dr. William Law, a correspondent other than the one whose communication has been mentioned, aptly quotes the words:

> A life well spent! Whose early care it was
> His riper years should not upbraid his green!

He adds that Law ever showed himself interested in good causes, and not only those of a purely professional kind, but in any of a social and philanthropic nature. Though naturally delicate, Law, he continues, by avoiding all things doubtful which trip up so many in the journey of life, was able to do much useful and solid work, and it is to be regretted that so amiable a man and so valuable a life should be lost to the profession.

CHARLES ALFRED SELBY DALGLIESH, M.D.,

SUNDERLAND.

WE regret to announce the death of Dr. Charles Alfred Selby Dalgliesh, which took place at Sunderland on August 27th after a short illness. About a week before his death he contracted a chill, which developed into pneumonia, and he died from cardiac failure.

Dr. Dalgliesh was the son of Dr. Jonathan Dalgliesh of Newcastle-on-Tyne. After leaving school he studied medicine at Newcastle, and took the degrees of M.B., C.M. of Durham University in 1890. Two years later he obtained the degree of M.D. After graduating he held the posts of Junior and Senior House-Surgeon at the General Infirmary, Leeds, and later was appointed Resident Medical Officer to the Radcliffe Infirmary, Oxford. He was also for some time House-Surgeon at the Ophthalmic Hospital of the same city. Desirous of travel, he took a voyage to India as ship surgeon on a P. and O. liner. When the war broke out between China and Japan he acted as surgeon on board H.M.S. *Victoria* when the latter vessel was cruising in Chinese waters for the purpose of safeguarding British interests. During the Boer war he had charge of troops going to South Africa, and was surgeon on board the vessel which brought Dr. Jameson to this country. On his return to England in 1899 he was appointed House-Surgeon to the Sunderland and Durham County Eye Infirmary, which post he continued to hold until 1909, when he was appointed Honorary Surgeon to the institution. He then commenced practice as an eye specialist. In that branch of practice he was acquiring a wide reputation, and his undoubted ability and clinical knowledge promised to place him in the front rank of authorities on diseases of the eye. His opinion was much sought after, and his loss will be keenly felt by his brother practitioners. His services were frequently in request in connexion with medico-legal matters. Of a modest and retiring disposition, he was respected by all who knew him, and by those who were privileged to know him intimately his friendship was held in the highest esteem. He was married so recently as November last year, and much sympathy is felt for his widow in her sad bereavement.

MATTHEW B. MACKENZIE, B.A., M.D., R.U.I., L.R.C.S.I.,

MEDICAL OFFICER, LISBURN UNION HOSPITAL AND INFIRMARY; CONSULTING MEDICAL OFFICER OF HEALTH TO THE LISBURN UNION.

IT was with much regret that the profession and the public heard of the sudden death of this well-known and much-respected practitioner, which took place on September 13th at Lisburn.

On that date Dr. Mackenzie had been paying his daily visit to the infirmary, but evidently did not feel well; he returned home, and, going to his consulting-room, lay down on the couch, saying that a rest would soon make him all right. But the symptoms rapidly became alarming, and his near neighbour, Dr. St. George, was hurriedly summoned; however, Dr. Mackenzie died a few minutes after the latter's arrival, evidently from apoplexy.

Dr. Mackenzie had been in practice in Lisburn for nearly forty years. On starting, he soon made hosts of friends and gained several appointments. He was a diligent and painstaking officer, and was instrumental in bringing about the enactment of several measures for the improvement of the condition and brightening the lives of the inmates of the infirmary. For several years he took a prominent part in municipal affairs, and was a member of the old Board of Town Commissioners. A pathetic interest is added to his death by the fact that a very sub-

stantial testimonial was being widely supported, and was to have been presented to him at an early date.

He was a widower, and leaves two sons and two brothers, with all of whom much sympathy is felt. One of the brothers is Dr. W. G. Mackenzie, of Belfast.

THE LATE DR. LOMBE ATTHILL.

The following particulars of the ancestry of Dr. Lombe Atthill, kindly supplied by his son, the Rev. William Atthill, form an interesting supplement to the obituary of the distinguished obstetrician which was published in the Journal of September 24th.

Dr. Lombe Atthill's father, the Rev. William Atthill, was an only son and orphan, and was possessed of the estate and residence of Brandiston Hall, Norfolk, held by his ancestors for centuries. He went to Ireland, after his ordination by the Bishop of Lincoln of the day, as Chaplain to his relative, Dr. Porter, who had been appointed Bishop of Clogher. Dr. Lombe Atthill's mother was Henrietta Eyre, daughter of Dr. Maunsell, Dean of Leighlin, whose wife was sister to the first Countess of Bantry. Dr. Lombe Atthill's grandfather, the Rev. William Atthill, is buried at Brandiston, where also lies his wife. Dr. Lombe Atthill's eldest brother, the Rev. W. Atthill, who succeeded to the estate, are also buried at Brandiston, and several other members of the family. Dr. Atthill's Christian name, Lombe, is really a surname. He was called after the Lombes of Bylangh Park, Norfolk. An ancestor, Sir Anthony Lombe, married an Atthill. Anthony is a common name in the family. The Lombes still own Bylangh Park, a large landed estate in Norfolk. It is a fine mansion, let, we believe, to an American millionaire named D'Arcy.

The following appreciations, which by the courtesy of the Rev. William Atthill we are allowed to publish, will help to show something of the regard in which Dr. Lombe Atthill was held by those who had the best opportunities of knowing him:

Dr. Walter C. Swayne (Clifton), after expressing the grief with which he had heard the news of Dr. Lombe Atthill's sudden death, writes to the Rev. William Atthill: "Your father's wide experience and freshness of mind will be much missed by the profession. He always struck me as one of the most valuable types of medical man one can meet with, namely, one of age and enormous experience who was at the same time quite without that conservatism which looks askance at all advances as new-fangled notions, and often refuses to examine modern methods by the light of past experience. I have never met a man of his age and experience who was better able to give reasoned attention to new methods or more willing to examine them. That, however, is the necessary mental qualification of the pioneer, but he, unlike many of that class, did not lose his adaptability of mind with advancing age. I think I may say that I personally received more encouragement and support from talking to him and hearing his views than from any one I know, quite apart from his charming personality and broadminded views on medical matters and life generally. I hope you will allow me to say that I feel I have sustained a personal loss, and that every member of the profession with whom he came in contact will feel the same."

Miss S. E. Hampson, sister of Sir Robert Hampson, Mayor of Liverpool from 1903 to 1904, for many years matron of the Rotunda Hospital, writes: "I am more sorry than I can say at the loss of one who was such a kind friend to me when I first came to the Rotunda Hospital, and ever since. I am sure you know, without me saying, how keenly I appreciated the honour of his friendship, of his help, and his advice; and that I always realized how great a measure of my success was owing to the deep interest he took in my work of reorganizing the nursing and housekeeping departments. My sorrow for the passing of your distinguished and eminent father is very deep and sincere."

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Farabeuf, formerly Professor of Anatomy in the Paris Medical Faculty and Member of the Académie de Médecine; Dr. Leopold Oser, Extraordinary Professor of Clinical Medicine in the University of Vienna, Physician in Chief to the Rothschild Hospital, in his 71st year; Dr. Sigmund Mayer, Professor of Physiology in the German University of Prague, aged 67; Professor Hermann Schwartze of Halle, one of the pioneers of scientific otology, aged 73; Dr. S. Nagayo of Tokio, President of the Japanese Society for the Study of Gastro-enteric Diseases, and director of an institution for the treatment of diseases of the stomach; Dr. James Nevins Hyde of Chicago, one of the leading dermatologists of America, aged 70; and Dr. Emily Blackwell, a sister of the late Dr. Elizabeth Blackwell, in conjunction with whom she founded the New York Infirmary for Women and Children, aged 84.

Medical News.

The formal opening of the winter session at the West London Post-Graduate College, on October 10th, will be marked by the delivery, by Dr. Basil Hood, of an address on specialism in medicine.

The Child Study Society (London) announces a series of lectures and discussions on the Recreational Activities of Children, from October to December, 1910, at the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W. The honorary secretary is Mr. W. J. Durrie Mulford.

On the occasion of the first winter meeting of the North-East London Clinical Society an address is to be delivered by Dr. Frederick Taylor on the diagnosis of prolonged pyrexia. The meeting takes place at 4.15 p.m. on October 13th at the Prince of Wales's Hospital, Tottenham.

The autumn meeting of the South-Eastern Division of the Medico-Psychological Association will be held by the courtesy of Dr. T. E. K. Stansfield at the London County Asylum, Bexley, on Wednesday, October 5th, 1910. A communication on heredity and insanity will be presented by Dr. T. E. K. Stansfield, and one on sterilization of the insane by Dr. E. Faulks.

The *London Gazette* of September 23rd announces the following further appointments in Queen Alexandra's household: Sir Francis Henry Laking, Bart., G.C.V.O., K.C.B., to be Physician in Ordinary and Surgeon Apothecary to the Household; Sir Frederick Treves, Bart., G.C.V.O., C.B., to be Surgeon in Ordinary; Sir Alan Reeve Manby, to be Physician Extraordinary and Surgeon Apothecary at Sandringham; Milsom Rees, Esq., F.R.C.S.Edin., to be Laryngologist.

The usual Monthly Meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on September 16th, at 4.45, Dr. de Havilland Hall in the chair. The accounts presented showed that the sickness experience of the society during the summer months had been as usual well under the expectation, and this, combined with the moderate claim list of the early months of this year, has produced a good margin in favour of the society. In the later months of the year a larger number of sick claims must be expected. A large number of the members have reached the age when the effects of exposure to hard weather are apt to compel a cessation from work; but it is a very satisfactory feature of the experience of the society that the number of sickness claims of the kind has been less than was anticipated. The claims in winter are always more numerous than those in summer, but the difference is not as great as the large proportion of the members who have passed mid age might lead us to expect. The financial condition of the business is most satisfactory. Although the amount paid away in sickness claims necessarily increases with the number and average age of the members, and in addition a substantial cash bonus is paid to all members reaching age 65, yet the funds are steadily growing, and now amount to over £240,000. Prospectuses and all information on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Mer writes: I would be glad to have the names of a few drugs that have the best reputation for the treatment of sea sickness.

Omega asks for information as to the absence of fogs and the longest record of clear atmosphere in English coast towns.

Bahia would be glad to know what are the results of prostatectomy, namely, the percentage of cures, unsatisfactory results, and mortality; also if any correspondents can suggest any other good method of draining the bladder in cases where the prostate and urethra are tender and resent the passage even of a soft catheter.

Licence Duty on Motor Cars.

W. A. H. states that he possesses a 12-h.p. Humber, which according to the Government measurement is rated as 19.6-h.p., with the result that instead of benefiting by the concession to medical men in regard to licence duty he finds his duty increased. He inquires whether anything can be done in the matter.

*** Under the Finance Act for 1909–10 the unit of horse power for the purpose of licence duty is required to be calculated in accordance with the regulations made by the Treasury, and against those regulations there is no appeal. There is, of course, a very considerable increase in the duty on motor cars under the Finance Act, but the increase has been greatly tempered to medical men by the rebate of one half the duty.

ANSWERS.

Dr. John E. Garner (Preston) writes to advise "Aphorism" (British Medical Journal, September 10th) to purchase a small publication written by C. Mansell Moullin, M.D.Oxon., F.R.C.S., in 1900, *On When to Operate in Cases of Inflammation of the Appendix* (London Publishing Company, Ltd., *Clinical Journal* Office, 2½, Bartholomew Close, E.C.) All the necessary information required would be obtained from that work.

Fleas and Flies.

Dr. Arthur Haydon (London) writes, in reply to "M.D.": I would suggest that a piece of cotton wool impregnated with carbolic acid be kept in the pocket of the pyjamas.

Immuniser writes: "M.D." has evidently impaired resisting powers to these insects. May I suggest that he have estimations made of his opsonic index to "*Pulex*" and then try vaccine therapy? Probably an initial dose of one thousand (*dead*) might be of service.

F.R.C.S.E. (Liverpool) writes: I should recommend "M.D." to use a well-known and simple method which I learnt while doing dispensary work. Pour a few drops of chloroform down the sleeve immediately after being in contact with a dirty case. Also, when the insects bite, press the clothes against the body and drop on a little chloroform. It is safer to shake out the flea lest it be only anaesthetized.

D.. Foster Owen (London) writes: In reply to your two correspondents in the British Medical Journal of September 24th on fleas and flies, I can give an opinion and a partial advice on these questions which are worthy of trial. I am amongst these pests continually, but they do not give me much trouble. Of one thing I am convinced, that the great cause of the immense armies of flies in the poor rooms is the fact that the people will not keep their windows open, and the fly, as we know, hates a draught and never thrives in the current of air, which would be the case if they kept their windows well open continuously. This I have noticed and proved to my satisfaction as the main cause of their infesting the rooms of the poor, which are generally stuffy and close, warm, and smelling, which are just the conditions to favour these pests. In addition, it has often been proved satisfactorily that ol. thymi vulgaris, used as a spray about the room, or even ol. eucalypti in the same way. But the main enemy to the fly is open windows and good draughts, and carbolic or sodium hyposulphitis in the wash for the ceilings and walls. And in the question of the fleas, which I see very frequently by the hundreds, the prescription for making acetum cevadillae combined with the oil of thyme, as spray or lotion, will, I think, prove satisfactory.

LETTERS, NOTES, ETC.

St. Paul's Thorn in the Flesh.

Dr. F. D. Welch (London) writes: Will a supporter of the defective eyesight theory answer this question? If "plucked out your own eyes" is to be taken literally, why should not "I bear in my body the marks of the Lord Jesus" (Galatians, vi, 17) be taken literally to mean that St. Paul had holes in both hands and both feet and a spear wound between his ribs (see St. John's Gospel, xix)? It is, to my mind, ridiculous to interpret these passages in Galatians literally. Will Dr. George Jones say on what evidence he makes the statement that St. Paul added the last lines "in a large hand similar to that used by some myopes" (British Medical Journal, September 17th)? I have not time at present to search carefully all the Epistles; but what evidence is there that some one else wrote Galatians, and St. Paul only added with his own hand the verse, "Ye see with how large letters," etc. (chap. vi, 11)? This statement occurs *in the middle of chap. 6, followed by six verses of argument, and the final salutation.* This statement in Galatians is quite different from 2 Thessalonians, iii, 17, "the salutation of Paul with mine own hand . . . so I write," which occurs *at the end* of the chapter. There is also in 2 Thessalonians *no statement about large handwriting* either just before or after the salutation; neither is there in 1 Corinthians, Romans, Philippians, Colossians, and in these also the salutation is *at the end* of the epistle. These points seem to me strong evidence that the words "with how large letters" mean what I have stated, and that St. Paul wrote the *whole* of Galatians with his own hand. It is many months since I read all the Epistles through, but I do not remember ever noticing the words "with how large letters" in any epistle except Galatians. My memory may have failed me, however, on this point, and possibly some reader may correct it. It was of the greatest importance that every word in Galatians should be quite distinct, and there should be no correction, and if St. Paul's eyesight had been so defective that it was always necessary to write in large letters, he would never have attempted to write the last seven verses himself, but would certainly have entrusted it to some one with good eyesight. *I do not believe or wish to suggest that St. Paul had epileptic or other fits as well as the headaches.* Dr. George Jones seems to be of the opinion that it is quite impossible to get very severe headaches in a non-fatal case recurring at intervals, as I suggested. I have met with several such cases, some following concussion of the brain. A comparison of the first part of 2 Corinthians, xii, with Acts, xiv, shows that St. Paul was thinking of what had happened on his missionary journey with St. Barnabas (Acts, xiv, 8–18). St. Barnabas is the man referred to as "caught up to the third heaven" and "into paradise." St. Paul healed the cripple at Lystra (recorded immediately before the stoning, I would point out), and the people fell into error and named "Barnabas Jupiter and Paul Mercurius." Lest the readers of 2 Corinthians should fall into a similar error he would not tell them details of his own revelations, but goes on to the "thorn in the flesh." In all the cases of the severe headaches I have met the patients, men and women the mothers of families, said they were the worst pains they had ever had, and one woman attempted suicide because she dreaded their return. Such headaches would be the best way to prevent St. Paul being "exalted above measure." Now Satan's strongest attacks on a believer's faith in Christ are when bodily pain is either present or likely to come in the near future, and before Christ rose from the dead the faith of His gallant soldier, St. Peter, failed for a time at the thoughts of his own crucifixion. St. Paul thought his own faith in Christ might fail for a time if these headaches continued, and so on the three occasions prayed for them to depart. Christ's reply, "My strength is made perfect in weakness," meant that resisting temptation during bodily pain and weakness would strengthen faith in Christ, and repeated resistance would make that faith perfect. Hearing this St. Paul gloried in these headaches.

Brussels International Exhibition.

The products of Messrs. Burroughs Wellcome and Co. have been awarded eight Grands Prix, three diplomas of honour, and one gold medal at the Brussels International Exhibition. Messrs. Edward Cook and Co., Limited (London), were awarded the Grands Prix in the Class of Applied Chemistry and Pharmacy and in that of Perfumery; in the Class of Hygiene they were awarded a diploma of honour. The Grand Prix of the Brussels Exhibition has been awarded to Apollinaris. Messrs. Liebig's Extract of Meat Company, Ltd., have been awarded three Grands Prix for Oxo and Lemco. The ceremony of distributing the prizes has been fixed for October 18th.

The Society of Apothecaries of London.

In one of the references to the Society of Apothecaries of London in the recent Educational Number, the word "royal" was accidentally prefixed to its title. The society possesses a royal charter, but technically is not entitled to use the word "royal."

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The Huxley Lecture

ON

HEREDITARY ASPECTS OF NERVOUS AND MENTAL DISEASES.

BY

F. W. MOTT, M.D., F.R.S., F.R.C.P.,

PHYSICIAN TO CHARING CROSS HOSPITAL; PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; FULLERIAN PROFESSOR OF PHYSIOLOGY, ROYAL INSTITUTION.

Mr. Chairman,—Permit me to thank you and my colleagues of Charing Cross Hospital Medical School most heartily and cordially for the great honour conferred upon me by the request to deliver the Huxley Lecture this year. When I look back on my distinguished predecessors I feel that, with this honour, there is a great responsibility, for it is not an easy task for me to deliver a lecture worthy of the occasion; I felt, therefore, some difficulty in the selection of a subject. I was, however, guided in my selection of the hereditary aspect of nervous and mental diseases by the following facts. Heredity is the subject that the master mind of Huxley illuminated in several of his essays, and it is fundamental in the study of the origin of species and natural selection, which he did so much to forward. Next, recent developments in our knowledge of the subject of heredity, owing to the labours of Galton, Pearson, and their followers in the study of biometrics, and Bateson and his followers in Mendelism, have aroused the keenest interest in the subject of human inheritance, not only in the medical profession, but in the thinking and intellectual portion of the nation. Another reason was that none of the illustrious lecturers in the past have dealt with the subject of heredity in relation to disease. Lastly, it is a subject to which I have recently devoted a large amount of attention in the study of the causation of nervous and mental diseases, and more especially the relation of heredity to various forms of insanity. The wealth of material in the London County Asylums has permitted a biometric investigation in a novel manner. The subject is one of national importance and interest, and it affects many social and legislative questions. The interest taken by the general public in the question of heredity is a sign of social progress. People are recognizing the truth of Thomson's saying, "The present is the child of the past; our start in life is no haphazard affair, but is vigorously determined by our parentage and ancestry; all kinds of inborn characteristics may be transmitted from generation to generation."

Fifty years have elapsed since Huxley wrote an essay on the Origin of Species in the *Westminster Review*, and the doctrine of natural selection which he upheld with such remarkable force remains unshaken and unshakable, but mutations or discontinuous variation has replaced in great measure the continuous accumulation of small differences to which Darwin attributed so much importance in evolution; and it is interesting to note that Huxley in this same essay said, "Mr. Darwin's position might, we think, have been even stronger than it is if he had not embarrassed himself with the aphorism, *Natura non facit saltum*, which turns up so often in its pages." We believe that Nature does make jumps now and then, and a recognition of the fact is of no small importance in disposing of many minor objections to the doctrine of transmission. Huxley cites the case of the Ancon sheep, also an interesting pedigree of polydactylism narrated by Réaumur. I will show a diagram (Fig. 1) illustrating this condition in three generations. Réaumur narrates this case only as far as the third generation, and Huxley remarks:

> Certainly it would have been a curious thing if we could have traced this matter any further. Had the cousins intermarried a six-fingered variety of the human race might have been set up.

In the light of the Mendelian law of gametic segregation even this would not be necessary, for a variation is "not swamped out." But sexual selection would tend against the perpetuation of this variation, which does not serve a useful purpose nor is it an ornament. Huxley, in another essay on Hereditary Transmission and Variation, refers to the different product of crossing a stallion with a she-ass and a male donkey with a mare. "Here, you see, is a most curious thing. You take exactly the same elements, the ass, and horse, but you combine the sexes in a different manner, and the result is modified accordingly. Here, then, is one, and perhaps a necessary, cause of variation." There is in these instances a prepotency of the male in certain physical characters; for, on the one hand, when the donkey is the sire, a mule is produced with the head, ears, and voice resembling that animal; when, on the other hand, the horse is the sire, a hinny is the product, with head, ears, legs, and voice like the horse.

Again quoting Huxley:

> A certain amount of variation is the necessary result of sexual propagation itself: for inasmuch as the thing propagated proceeds from two organisms of different sexes and temperaments, and as the offspring has to be either of the one sex or the other, it is quite clear it cannot be a diagonal of the two or it would be no sex at all; it cannot be an exact intermediate form between that of each of its parents; it must deviate either to one side or the other. You will have noticed how very often it may happen that the son shall exhibit the maternal type of character, or the daughter possess the characteristics of the father's family.

The law of ancestral heredity of Galton supposes that every ancestor of a particular individual contributed its quota to the heritable qualities of the individual. The law also states that the average amount of resemblance between an individual and any particular ancestor is capable of definite numerical expression. Thus the mean

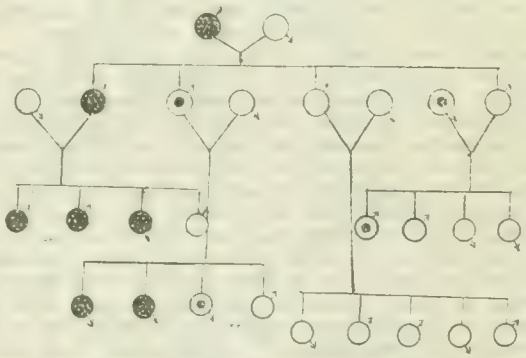


Fig. 1.—Polydactylism. The black figures indicate complete polydactylism; the circles normal; the circles with black centre partial polydactylism.

amount of correlation between (1) the two parents and the offspring, (2) the four grandparents and that offspring, (3) the great-grandparents and that offspring, and so on, backwards in the ancestral lineage, is believed to diminish in a geometrical series one half, one quarter, one eighth, which is the same for all organisms and their characters. Pearson represent sa more rapidly diminishing series (1) for the two parents 0.6244, for the grandparents 0.1988, for the great-grandparents 0.0630, etc. We thus have a mosaic of ancestral characters.

It is quite possible that the above represents correctly the average total contributions of ancestors when applied to the race as a whole, but it cannot be universally applied to individuals, for according to Mendel's theory of inheritance certain ancestors may contribute nothing to the constitution of certain offspring in respect to certain characters. Moreover, as Maudsley truly says:

> It is a conclusion which, however true on the average of such simple characters as height, is manifestly not true of individual cases. Any one selecting for observation different characters, e.g., noses or ears, can see plainly the nose may be like the father's or the mother's or perhaps one of the grandparent's or further back.

This fact was well known to the ancients, and, according to modern ideas of heredity, there is not much to be said against the teaching of Lucretius:

> Sometimes too the children may spring up like the grandfathers, and often resemble the forms of their grandfather's fathers, *because the parents often keep concealed in their bodies many first beginnings mixed in many ways, which first proceeding from the original stock*, one father hands down to the next father, and then proceeding from these, Venus produces forms after a manifold chance, and repeats not only the features but the voice and hair of forefathers; and the female sex equally springs from the father's seed and males go forth equally from the mother's

body; since these distinctions no more proceed from the fixed seed of one or other parent, than our face and bodies and limbs. Again we perceive that the mind is begotten along with the body and grows up together with it and grows old along with it.

The individuality of every human being depends upon the mingled natures of two separate parents, and Goethe poetically refers to his own hereditary endowments in the following lines:

Vom Vater hab ich die Statur,
Des Lebens ernstes Führen,
Vom Mütterchen die Frohnatur
Und Lust zu fabulieren

According to the Mendelian doctrine of dominant and recessive, the corresponding character of the second parent always exists in the offspring side by side with the character which finds expression, only the former, termed "recessive," is obscured by the latter, the "dominant." This is the explanation of a characteristic feature of a particular grandparent which was not visible in the parent reappearing in the child (see Fig. 1). It also accounts for those heritable diseases and abnormalities which are transmitted by the females in ancestry and appear in the males—for example, haemophilia, Daltonism, pseudo-hypertrophic paralysis. As it passes from a father through a daughter to a grandson, and so on, it must be latent in the germ cells (concealed in the body), though for some obscure reason it has not found expression. In fact, non-expression of a disease does not necessarily imply non-inheritance of a disease, rather a predisposition to disease.

It is well known that a hereditary tendency to nervous disease may have different expressions in successive generations for example, insanity and epilepsy. The hereditary transmission of nervous or mental disease is rather of the nature of a neuropathic tendency, the character of the disease being largely determined by the exciting cause. I have not time to discuss further the large question of Mendelism in relation to human inheritance, and so far I have not met with cases in entire support thereof in the study of the hereditary aspect of nervous and mental disease, but, as pointed out by Professor Bateson, there are many reasons why it has not been found applicable. Of its enormous importance to biology and heredity there can be no question; even Professor Pearson, its most strenuous opponent, says: "The importance of Mendel's work and his followers lies in the observation of segregation." This great fact holds, whether Mendelism in its simple form remains or not.

The Rarer Nervous Diseases and Heredity.

Among the rarer nervous diseases in which it is generally recognized that heredity plays an important part may be mentioned: Myotonia congenita, pseudo-hypertrophic paralysis, progressive muscular dystrophy, especially the Landouzy-Déjerine facio-scapular type, the neuritic type of progressive muscular atrophy, hereditary ataxia, Huntington's chorea, and family periodic paralysis.

In nearly all the recorded cases of myotonia congenita (Thomsen's disease) the disorder has existed in several relatives of the patient, generally in one of the parents and in the patient's brothers, sisters, and children. More than twenty cases of the kind occurred in the family of Dr. Thomsen in four generations. It is to him that we owe the first accurate description. As in Huntington's chorea (a remarkable pedigree of which I will show you) other neuroses frequently occur in the family tree. Many of Thomsen's relatives were affected mentally.

Sir William Gowers, in the discussion on heredity in relation to disease,* referred to the frequency with which pseudo-hypertrophic paralysis is hereditary; he likewise pointed out that the disease is characterized by sex-limitation—citing a very remarkable case. The disease, although not affecting the females, passed through to the males in several successive generations; there were two families, and probably both originated in the same stock. Again he referred to a remarkable case of facio-scapular humeral atrophy (Landouzy-Déjerine type), which could be traced for six generations.

Family periodic paralysis is a rare disease with a well-marked hereditary tendency: it is characterized by periodic attacks of more or less extensive flaccid motor paralysis with a loss of electrical excitability in the paralysed muscles and of the reflexes, but without sensory affection or disturbance of consciousness. Between the attacks the patient is well. In a family recorded by E. W. Taylor there were 11 cases in one generation; in the family of a patient of Goldflam there were 11 cases on the maternal side, and Holtzapple observed 17 cases in four generations. The disease may be transmitted indifferently through the father or the mother, although occasionally there has been limitation of transmission to the same sex. As in other diseases with a similar hereditary character, individual cases may occur in which there is no family history of the disease.

A remarkable case of neuritic progressive muscular atrophy, showing that it might be of an hereditary character, was reported by Herringham; the disease was transmitted by females, but only males were affected. The disease, however, may be transmitted by both males and females, and both sexes are affected.

Friedreich's disease, although called hereditary ataxia, is seldom directly hereditary; it is a familial disease. Several families and several isolated cases have come under my observation, but in the isolated cases no family history of the disease in ascendants was found, nor was it in the two cases affecting a number of members of the family; in one of these there was a history of consanguinity, the parents of this family of hereditary ataxia cases being first cousins. A remarkable pedigree of hereditary ataxia worked out by Sanger Brown, however, shows the disease occurring in five generations of a family. Gordon Holmes states that Schoenborn found a family incidence in 114 of the 200 cases he analysed. Yet in a not inconsiderable number of recorded cases the same disease occurred in the ascendants or in the collateral lines. It may be transmitted through either males or females. Occasionally there is not direct heredity, but the disease occurs in families in which there seems to be a proclivity to spinal disease; for instance, a pedigree which I obtained at Darenth Asylum showed this relationship. Moreover, occasionally, as this pedigree showed, it may be associated with idiocy. Nolan and Pritzsche have recorded cases associated with progressive idiocy. I will now pass on to the consideration of a disease which I have met with occasionally in the asylums—namely, Huntington's chorea—in which a direct heredity has been found practically in all the cases studied. The accompanying pedigree (Fig. 2) is a striking one, kindly furnished to me by Dr. Bond, of Long Grove Asylum, under whose care is the patient of the fourth generation. Huntington, who first gave a complete picture of the disease, remarks:

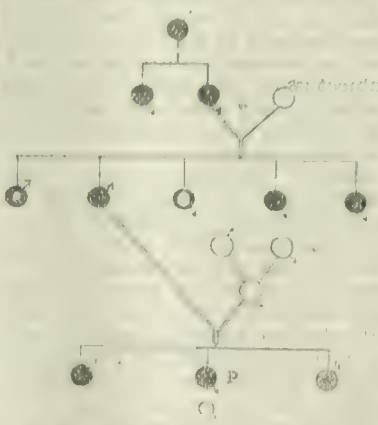


Fig. 2.—Huntington's chorea. Four generations. P is the patient insane and in Long Grove Asylum, suffering with chorea. The black figures indicate patients suffering with chorea; several died in asylums or in the infirmary. The black figure with white centre indicates nervous affection, but not chorea. The shaded figure with black centre indicates death at an early age of convulsions.

> If one or both of the parents have shown manifestations of a serious nature, one or more of the offspring almost invariably suffer from the disease if they live to adult life; but if by any chance these children get through life without it, the thread is broken, and the grandchildren or great-grandchildren may rest assured that they are free from the disease. Unstable and whimsical as the disease may be in other respects, in this it is firm; it never skips a generation to manifest itself in another; as soon as it has yielded its claims it never regains them.

Huntington also remarks upon the presence of the nervous temperament in all or nearly all of the families in which there is the taint of this disease, and says "that nervous excitement to a marked degree almost invariably attends upon every disease these persons may suffer from, although

* *Proceedings of the Royal Society of Medicine.*

they may not in health be over-nervous." Heilbronner states that there is a tendency in successive generations for the onset of the disease to be delayed, and Wollenberg has shown—as this pedigree very clearly indicates—that choreic heredity in some cases may be transformed into other neuroses, such as epilepsy, imbecility, paranoia, grave hysteria, etc. This disease is more common in men than women, and Wollenberg's collected statistics of 128 cases in 22 families showed a proportion of 74 men to 54 women. Isolated cases of Huntington's chorea occur in the asylums, and it has been observed that the tendency to insanity, and sometimes that form of insanity which leads to suicide, is marked.

In several cases microscopic examination revealed a marked neuronic atrophy, with some neuroglia hyperplasia of both the frontal lobes, including also the central convolutions. Changes in the Betz cells have been described; these changes, no doubt, would be sufficient to account for the motor disorder manifested during life.

The forms of nervous disease I have briefly described are usually due to characteristic morphological defects, and for the most part are best explained by germinal defects in the specific vitality of groups of muscles or systems of neurones, whereby they waste prematurely. Sir William Gowers has introduced the term "abiotrophy" for this condition. From a practical point of view, on account of their rarity, abiotrophies are of little importance as compared with insanity and epilepsy, to which I shall now direct your attention.

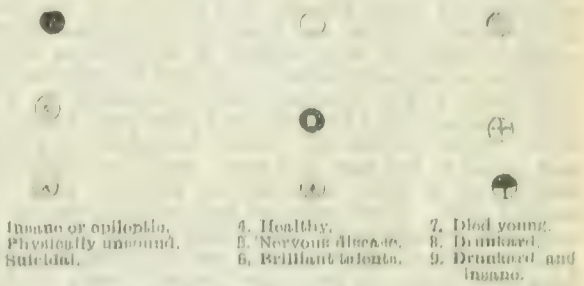
Epilepsy and Heredity.

With regard to epilepsy, I feel convinced from my own observation and experience that Sir William Gowers is correct when he asserts that there are few diseases in the production of which inheritance has a more marked influence, and the traceable influence is always far less than that which exists. Voisin, Féré, Nothnagel, Dana, Peterson, and Aldren Turner express similar opinions.

In the discussion of the subject of heredity and disease, Sir William Gowers said: "In my own inquiries into the heredity of epilepsy I have limited myself to these two maladies, epilepsy and insanity. Heredity was ascertained in 39 per cent. of 1,195 males and 43 per cent. of 1,207 males. When epilepsy itself occurred in a parent, it was the father who was epileptic in 49 per cent. and the mother in 51 per cent. The cases with insanity in a parent are only one-third the number compared with parental epilepsy. Of the cases with parental insanity the father was insane in 37 per cent. and the mother in 63 per cent. One effect of heredity is to increase the female cases. When it was absent the excess of males amounted to 4 per cent., but in cases of heredity the same excess was presented by females. This is partly due to the fact that inheritance is more frequently from the mother's side by 17 per cent., and that females are in excess by 18 per cent." These facts (obtained by Sir William Gowers) are in many ways in striking conformity with the results obtained by my investigation of insane relatives in the London County Asylums as regards certain types of insanity which I shall shortly relate. Moreover, I have observed that a similar heredity occurs in a considerable number of cases of insane epileptics. Spratling, from his large experience at Craig Colony, gives 16 per cent. of similar heredity.

Heredity and Insanity.

There are a few alienist physicians who do not have a strong belief in the hereditary causation of insanity, and my esteemed colleague, Dr. Mercier, at the discussion on heredity, said: "When we are confronted with the percentage of persons among whose near relatives insanity is known to exist, we cannot fail to be impressed with two remarkable facts—first, how relatively small their percentage is, and, secondly, that the statistics, even if taken at their face value, do not purport to be anything but an *enumeratio simplex*, and cannot be made the basis of any valid conclusion until they are compared with similar statistics of the percentage of insane relatives among the sane." He also stated that the published statistics are of no value at all, for any practical or scientific purpose. With this I would entirely agree, but in taking statistics among the same population we should find that insanity and epilepsy would often occur in families where there were neuroses, eccentricity, and even genius, all of which are variations from the normal average of the species. I have endeavoured to ascertain what is the proportion of insane, feeble-minded, and epileptic members occurring in the pedigrees of my hospital patients; and I am greatly indebted to my house physician, Dr. Thomas, for the careful and painstaking way in which he has obtained information from the friends. In 32 pedigrees, which would include about 1,000 living representatives and 250 dead individuals, there were 8 who had been in asylums, and in 8 others fits were chronicled. In no case was either parent of the patient insane or epileptic. Two of the pedigrees furnished most of the cases. One was a patient suffering from neurasthenia, in which there were, besides insanity and epilepsy, migraine, hysteria, deaf-mutism, and imbecility, and the other a patient with exophthalmic goitre with several neuropathic members in the stock (Fig. 3). I must confess that, had I to prove my



1. Insane or epileptic.
2. Physically unsound.
3. Suicidal.
4. Healthy.
5. Nervous disease.
6. Brilliant talents.
7. Died young.
8. Drunkard.
9. Drunkard and insane.

Key to all figures except Figs. 1 and 2.

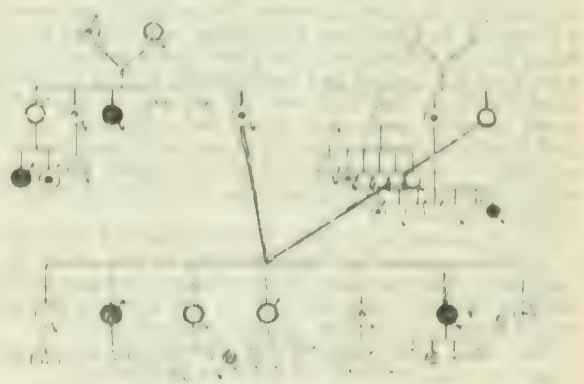


Fig. 3.—The pedigree of a neuropathic patient, P., suffering with neurasthenia and slight mental symptoms. It will be observed that she comes from neuropathic stocks on both sides, maternal and paternal.

case by comparing the pedigrees thus obtained with some pedigrees obtained at the London County Asylums and Imbecile Asylum at Leavesden [25 non-selected pedigrees were kindly taken for me by Dr. Elkins and his medical officers], I should not have a very strong case; for in a very considerable proportion of the cases admitted to these asylums interrogation of the friends elicits no evidence of insanity on either side. Yet most alienist physicians would not agree with Dr. Mercier in casting doubt upon the importance of heredity in the production of insanity. I would rather say certain types of insanity. Many of the inmates of asylums are suffering with congenital or post-natal organic brain disease; these conditions are certainly not due to inheritance. General paralysis of the insane, syphilitic brain disease, and softening from vascular disease are acquired conditions and should not be classed among the inherited insanities, nor should Korsakoff's psychosis and chronic alcoholism. In all attempts, however, to ascertain what forms of insanity are especially due to inheritance there is always the difficulty of finding out by inquiry of the friends what *was* the nature of the insanity, not only because the friends do not know, but also because different opinions may be held by the medical men who have had charge of the cases and different systems of classification and terminology have been used. Therefore any statistical inquiry formed upon pedigrees the data of which are based *solely* upon information which has been obtained of friends of the patient may have several radical faults. The lack of statistical evidence of heredity in relation to

feeble-mindedness was noticed by Sir Francis Galton in his comments upon the Report of the Commission on the Feeble-minded, and yet the opinion of experts was unanimous in favour of the importance of heredity as a causal factor.

Two years ago an experienced biometrician and scientist, Mr. Edgar Schuster, kindly undertook to co-operate with me in the study of the convolutional pattern of the brains of relatives dying in the asylums, with a view of seeing whether there is a similarity in the convolutional pattern in the members of the same family, just as there is a similarity of physiognomy. An inquiry was initiated concerning relatives at the various asylums, and a request was made that brains of relatives should be kept for examination after the autopsies had been made. Isolated instances of two or more members of the same family were known to exist by me in the various asylums; but it soon became evident that a properly co-ordinated card system would reveal the fact that a *very large number* of parents and offspring and brothers and sisters, besides collateral relatives, were resident in the London County Asylums, or had been recently. In June the numbers had risen from a few hundred known instances to 1,834 (763 males, and 1,071 females); and since then, owing to a newly opened asylum not having furnished full reports, and owing to the fact that fresh cases are continually turning up at other asylums, the numbers have now reached 2,000. These instances have been afforded by the records of patients under observation during the last two years, and include their relatives who have died in, or who have been discharged from, the London County Asylums previously. A large number of cases of recurrent insanity are included in these instances—for example, one case has a record of twenty-three admissions, and during the time taken for the collection of the above cases several of them have been discharged and readmitted; but at the present time it is computed that over 60 per cent. of the relative cases are still resident in the London County Asylums. And this list does not include patients with relatives in the asylums of the Metropolitan Asylums Board, nor patients with relatives in other asylums in Great Britain and Ireland.

Before proceeding to give further details of the inquiry, I wish to express my indebtedness to the Clerk of the Asylums Committee and the superintendents and assistant medical officers of the asylums for the valuable assistance they have afforded me in obtaining information.

The total 1,834 cases living, discharged, and dead in June are made up from 854 families, as follows:

2 instances of 6 of a family.			
3	,,	5	,,
12	,,	4	,,
85	,,	3	,,
752	,,	2	,,

Of the 752 instances of two of a family, making in all 1,504 cases, it will be observed that the vast majority are directly and not collaterally related. Another fact stands out prominently in an analysis of the 752 instances of two of a family, and that is, the much greater incidence of transmission from parents to offspring through the female side, as the following figures show:

Parental Heredity.

	Instances.	Males.	Females.
Father and son	44	88	—
Mother and son	51	51	51
Father and daughter	58	58	58
Mother and daughter	104	—	208
	297	197	317

It will be observed that the mother transmits to the offspring in the proportion of 60 7 per cent., the father 39.3 per cent. This is not accounted for wholly by the fact that there are more females in the asylums insane than males, for the ratio of females to males in the asylums is rather less than 11 to 9. Sir William Gowers, in his statistics regarding insanity in the parents and epilepsy in the offspring, observed that in cases with parental insanity the father was insane in 37 per cent, and the mother in 63 per cent. This, he says, is partly due to the fact that inheritance is more frequently from the mother's side by 17 per cent., and that the females are in excess by 18 per cent. It will be observed that these figures of mine *closely* correspond with his on the transmission of insanity from mother and father to offspring.

Co-fraternal Heredity in Two of a Family.

	Instances.	Males.	Females.
Two sisters	130	—	260
Two brothers	87	174	—
Brother and sister	136	136	136
		310	396

The above table shows when pairs of offspring of the two sexes are affected, the proportion of males to females is 43.9 per cent. to 56.1 per cent., a difference of 12 2 per cent. But the percentage in which the mother transmits insanity to the offspring as compared with the father is as 67.7 per cent. to 39.3 per cent., a difference of 26.4 per cent, and this increase of 14.2 per cent. is mainly due to the fact that she transmits to the daughter nearly twice as often as the father does. It may well be asked whether this may not partly be due to the fact that the daughter, at the time of life when insanity is manifested, is more at home than the son, and therefore has more to do with her insane mother.

Grandparents' Heredity.

Female with insane grandfather ...	1 instance.
Male ,, ,, ,, ...	1 ,,
Females with insane grandmother...	6 instances.
Males ,, ,, ,, ...	5 ,,

This is undoubtedly very much below the proper ratio; it is due to the fact that there is far more difficulty in obtaining records. The hereditary transmission from females, however, markedly preponderates.

Collateral Insanity.

	Instances.		Instances.
Female with uncle ...	12	Male with uncle ...	11
Female with aunt ...	33	Male with aunt ...	11
	45		22

There is here a more marked preponderance of females affected than males than in direct heredity, but the numbers are too few to draw any very decided conclusions, except the fact that the females with aunt affected are as numerous as all the rest combined.

The proportion of collateral relatives discovered in the London County Asylums is comparatively small for several reasons; the information is not so readily obtainable, and they are less likely to come into the same asylum as their residence is not nearly so likely to be in the same district as that of parent and offspring.

I have analysed the above figures, only taking into account near blood relations (parents and offspring, brothers, sisters, or brothers and sisters), where two or more representatives of the family *are now* resident in the London County asylums. The following figures show that of an average insane population of approximately 20,000, 717 cases are thus related, representing 342 families. We may ask the question, Should we find in 20,000 adults, living in the county of London, which some random non-inheritable cause had collected together, this proportion of direct relationship? I think not.

The figures, to my mind, are in a broad way eloquent in favour of the importance of heredity as a cause of insanity; and the numbers being great, the data indisputable facts, independent of the personal equation of the inquirer, enable satisfactory statistics to be made and inferences to be drawn in regard to certain points relating to the hereditary aspects of mental disease.

Analysis of Instances where Two of a Family (Near Blood Relations) are now Resident in the London County Asylums.

Father and son	34
Father and daughter	58
Mother and son	44
Mother and daughter	102
Two sisters	144
Two brothers	80
Brother and sister	160
	622

Total, 622 cases, representing 311 families.

In addition to the above there are 95 cases in which *three* (and in two instances four) members of the same family *are now* insane residents in the London County asylums—31 families.

Grand total, 717 cases, representing 342 families.

A mother, two daughters and a son have been sent to an asylum since this table was compiled.

When taking part in the discussion at the Royal Society of Medicine on heredity and disease, I expressed the opinion that, without being then able to give any precise data, the investigation I was conducting had led me to conclude that we should find among these relatives in the asylums certain types of insanity exhibiting a more marked tendency to inheritance than others, and I enumerated recurrent or manic depressive insanity, delusional insanity and the insanity of adolescence (dementia praecox) and imbecility as having this tendency most marked. Moreover, I observed that cases of general paralysis were relatively few in number. In the light of modern views as regards the causation of general paralysis being due to syphilitic infection I was not surprised to find my inference was correct. Again, in the evidence which I gave before the Royal Commission on the Feeble-minded I pointed out that during the eight years ending December 31st, 1902, there were 8,933 patients discharged from the London County Asylums as recovered, the percentage of re-admissions was 25.59, and one half of these cases were readmitted within twelve months of their discharge. The clinical records showed that a considerable number of these readmissions were cases of recurrent insanity termed "recurrent mania" and "recurrent melancholia"; the more modern term for this periodic insanity is "manic depressive insanity." But whatever term it is called there is one feature, namely, periodicity. When I inquired into the family histories of these cases, I found insanity in other members of the family in 55 per cent., even though I did not eliminate those cases which were not visited by friends, and there was no record regarding inheritance; moreover, I found particulars of many relatives of patients being in the asylum at the time or who had previously been in there or died there. These observations were made at Colney Hatch Asylum, where the Superintendent, Dr. W. J. Seward, had for a long time been in the habit of taking the history himself from the friends who visited. I may add that this asylum has afforded valuable information in this research, partly because it is an old asylum, with records often of three generations, and partly because, containing, as it does, all the Jews, one has the opportunity of comparing the incidence of inheritance of this race with the non-Jewish population. I am indebted to Dr. Seward for the following statistics relating to the percentage of relatives among the Jewish and non-Jewish population: The number of cards belonging to Jews is 80; the number belonging to non-Jewish inmates is 254. The total number of inmates is 2,450, and of these 459 are Jews, so that rather less than one-fifth of the total population is Jewish. A little more than one-fourth of the relative cards belong to Jews, so that the incidence of ascertained relationship among the Jewish inmates is considerably more than among the non-Jewish. No doubt the temperament of the Jews renders them, as a race, more liable to the neuropathic tendency, but the greater incidence of ascertained relationship among the Jews is partly due to the following facts: They are more often visited by their friends; they have more pride of family, know more about their family, and, as a general rule, are more intelligent and anxious to afford information.

Statistics are often distrusted when an inquirer sets out to find something. I was, therefore, fortunate in having the co-operation of such an unbiassed statistician, skilled in biometrics, like Mr. Edgar Schuster. The cards were all sent to him for an independent and unbiassed investigation. His valuable report is published in the forthcoming annual report of the Asylums Committee. But I will summarize his results in great part in his own words:

There were 319 pairs of parents and children; of these, the children in 69 cases suffered from periodic insanity. Of the 69 so afflicted, 28, or 40·6 per cent., had parents similarly affected, while in 59·4 per cent. the nature of the parents' disease was different. Of the remaining 250 children, only 41, or 16·4 per cent., had parents suffering from periodic insanity. Bratz, working at Wuhlgarten Asylum, Berlin, on similar lines, has obtained similar results, but as yet has not published any statistics. He speaks of this similarity of insane inheritance as a *Vererbungskreis*.

There was even greater similarity of insane inheritance between brother and brother, between sister and sister, or between brother and sister when suffering from this form of insanity than between father and mother and son and daughter. Thus there were 200 pairs in which the first brother or sister was periodically insane, and in 92, or 46 per cent., of these pairs the second member also suffered with manic-depressive insanity, while in the remaining 108, or 54 per cent., the two members differed in the nature of their disease.

Where the first brother and sister suffered from some other form of insanity, in only 13.8 per cent., as compared with 46 per cent., was the other member afflicted with periodic insanity, while in 86.2 per cent. were other forms associated together. This indicates similar cofraternal inheritance more than three times as frequent in recurrent insanity as in other forms. Allowing that the term "recurrent" may have been used sometimes for a second attack of mania or melancholia which was not truly a manic depressive insanity—still it would not account for this vast difference when dealing with such a number of cases.

Delusional Insanity.—Although the numbers dealt with are many fewer, yet Mr. Schuster's statistics show that the tendency of this disease to run in families is more strongly marked than between parents and offspring. The tables he gives show that delusional insanity occurs with almost four times as great a frequency (33·3 per cent. instead of 9 per cent.) than among the insane parents of other insane people, while among the brothers and sisters the frequency is just six times as great (43.2 per cent. instead of 7.2 per cent.). There is a decided tendency for the brothers and sisters of imbeciles to be also imbecile.

In dementia praecox there is a strong correlation between members of the same cofraternity (*vide* Fig. 5); seeing, however, that quite 80 per cent. of the cases of this form of insanity occur before the age of 25, it is not surprising to find Schuster "had no available material for statistics on parents and offspring." Perhaps the term "insanity of adolescence" is a better one than "dementia praecox." The report also shows a strong correlation between brothers and sisters when affected with chronic mania or melancholia, but the numbers are perhaps too small to draw any very definite conclusions.

With regard to general paralysis, he found no indication of this disease running in families. The brothers and sisters of general paralytics seem no more likely than anybody else to be themselves general paralytics, and the same may be said about their children. Of the very few cases of juvenile general paralysis recorded, only one is the son of a general paralytic.

The second problem enunciated was, "Is there any tendency for members of the same family (as in some hereditary nervous diseases) to become insane at similar periods of their lives?" Seeing that adolescence is the period in which stress is likely to affect the individual with an insane inheritance, it is not surprising that Schuster in his report states that "a strong tendency exists for brothers and sisters of the same family to become insane at similar periods in their lives, and only a slight one between parents and children."

Since certain forms of insanity exhibit a much greater tendency to similarity of type in parents and offspring and brothers and sisters, it may be concluded that *these are the types* in which an inheritance of a tendency to insanity is three or four times as great as in other forms. Now we may ask ourselves the question: "Is there any correlation between the macroscopic and microscopic appearances of brains of persons suffering from manic

depressive insanity, delusional insanity, epilepsy, and insanity of adolescence where there is no terminal dementia?"

It would be difficult in the vast majority of cases to discover any abnormal morphological change, nor would microscopic investigation afford much (if any) help in the elucidation of these psychoses. Indeed, I know of only one form of insanity that is really (as I have already said), an acquired organic disease, namely, general paralysis, which, on macroscopic and microscopic investigation of the brain *post mortem*, shows such change in the organ of mind as to justify a diagnosis of the form of insanity which had affected the individual during life. I do not mean to say that these psychoses may not eventuate in a dementia, and then changes may be found in the brain.

There is a disease affecting Jewish infants which is quite specific in the changes observed in the brain and nervous system; I refer to so-called "Amaurotic Idiocy," four cases of which I have investigated. Why it should affect only Jewish children, and occasionally occur in several members of the same family, is not known; nor is it explicable unless it be by an abiotrophy due to some racial hereditary condition. This disease shows a pathological change quite unlike any other disease of the nervous system that I have seen; the Nissl substance disappears from without inwards towards the nucleus, and eventually the nucleus itself dies and the whole cell undergoes a true fatty degeneration; the neurones which were the last developed are the first to go—thus the pyramidal layer of the cerebral cortex shows this fatty degeneration much more markedly than the subcortical neurones.

Pedigrees Illustrating Insane Inheritance.

Every insane patient should be considered as a biological study. To say, merely, that one of his ancestors was

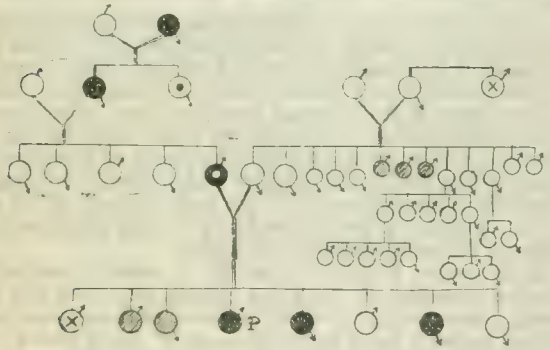


Fig. 4.—The pedigree of an insane family with homicide and suicide. The patient, P., was insane and committed a murder; a brother committed suicide; two sisters were insane. The insane inheritance was obviously from the maternal side.

insane, and therefore he has a bad heredity, and to label him thus, as is the common custom, is absurd. What we wish to know is what he was born with, and what has happened to him since birth. I have found that a conversation with the mother will very much help in understanding the causes which have led up to the mental breakdown, and she is often able, and generally very willing, to tell all she knows about the family. I am speaking only of the poorer classes.

The causes of insanity are seldom simple; they are in varied degrees inborn tendencies combined with some form of mental or bodily stress. I use the word "stress" in its widest sense as implying a strain on the important organs and functions of the body. But it is not within the province of this lecture to deal with these causes of insanity, for my object is to dwell upon the elucidation of what were probably the inborn tendencies. The construction of a pedigree will often answer the question, Did the patient come from a good stock on both sides, or was there physical or mental defect, or both, on maternal or paternal or on both sides? The fact that a cousin was insane, or even several members of a large stock, does not show a bad heredity; often, indeed, with several insane members there will be found men of genius and men and women of great civic worth (Fig. 6). A bad stock is where we find degeneracy, insanity, drunkenness, and criminality in the pedigree (Fig. 4), or a general low standard, mental and physical, in both stem and branches of the family tree. The general tendency is for insanity not to proceed beyond three generations, and I have only three such records. As a rule, there is either a regression to the normal or the stock dies out (Fig. 4). Not infrequently the stock dies out by the inborn tendency to insanity manifesting itself in the form of congenital imbecility or insanity of adolescence—dementia praecox. Such patients are especially prone to die of tuberculosis. Thus rotten twigs are continually breaking off the tree of life, and I will now illustrate these facts by some examples of pedigrees (*vide* Fig. 5).

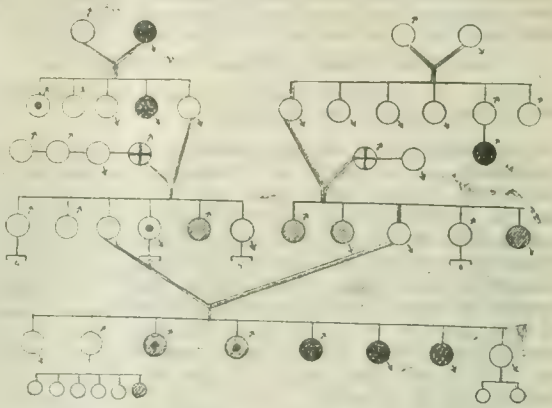


Fig. 5.—The pedigree of two sisters and a brother now in an asylum suffering with dementia praecox. It will be observed that two other members of the same generation have healthy children. Both the parents were sane, total abstainers, but there is abundant evidence of insanity in collaterals on both sides.

Consanguinity does not appear to produce insanity or nervous disease provided both stocks are free from taint; but if there is insanity or epilepsy (not necessarily in the first ascendants, but even in the collaterals), then intermarriage of first cousins from these two stocks with collateral insanity will tend to insanity or epilepsy in some cases in the offspring of the two sane related parents.

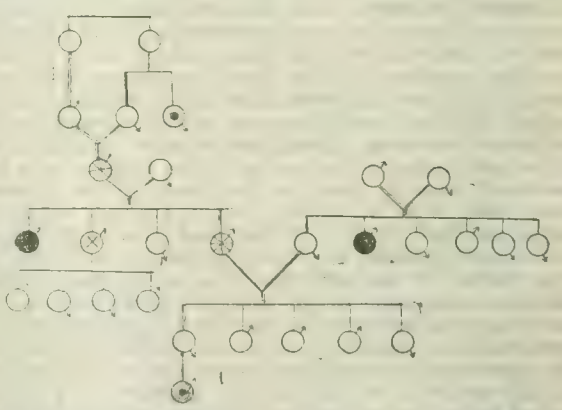


Fig. 6.—This pedigree shows the marriage of cousins; there are two members of the stock showing brilliant talents, but there is also insanity and suicide in two members. The regression to the normal is shown in the youngest generation.

I have observed in many of these pedigrees, but have not as yet compiled precise data, that manic depressive insanity in a stock is frequently associated with suicide in the members so affected, and even in others not affected. The tendency to suicide often runs in families, and some remarkable pedigrees have been published in which members of families in successive generations have taken their lives in a particular way, and sometimes even at a particular age; there is a suicidal obsession. Morel mentions an instance where seven brothers destroyed themselves, though in good positions and suffering no misfortune. Mudge, in the first number of the Mendel journal, has published a remarkable pedigree of two families that were united by marriage. In one the members committed suicide by drowning, the other by shooting. I would explain this by initiative suggestion acting on a neuropathic stock. A member of a family of four generations of suicides of which two were inmates of

London County asylums—namely, Colney Hatch and Cane Hill—and the pedigree of which I will now show you (Fig. 7), affords a striking example of suicide and insanity in successive generations. It will be observed that in three successive generations suicide was attempted or committed by cutting the left arm.

Another interesting case of a suicidal family in which a member developed impulsive obsessions of suicide and auto-mutilation occurred at Cane Hill Asylum, and was published by Dr. Devine, accompanied by interesting observations on the subject. The development of the obsessions in the patient dated from the aunt's suicide, which is a proof that suggestion was the cause, acting in conjunction with insane inheritance.

The vexed question of transmission of acquired characters, specially in relation to alcoholism, is one of great importance and interest. The assumption that the germ cells are sequestered in the body and not of the body, therefore do not participate in the biochemical changes which occur therein, and that in prolonged toxic conditions are uninfluenced in their nutrition and their specific vital energy, is contrary to reason. It may therefore be asked how it is, as so often happens, a chronic

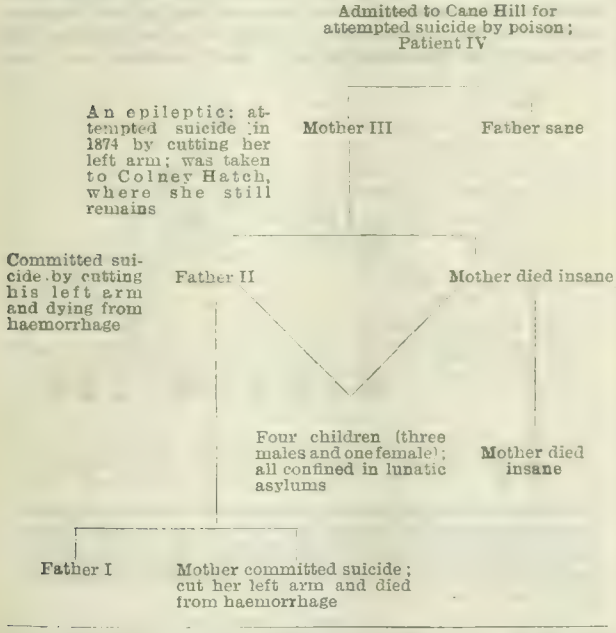


Fig. 7.—Pedigree of four generations of suicide and insanity. The stock dies out.

alcoholic may have offspring mentally and physically sound. The question is wrapped up in the causes which lead a man to drink, and my observations seem to show that a man who can drink continually for numbers of years and keep out of a lunatic asylum, a prison, or a hospital, must have possessed an inherent stable physical and mental organization, and he transmits this, the virility of the stock remaining potent in spite of the vicious habit, although it is undeniable that his offspring in all probability would have been stronger and better had he been a temperate man. Drunkenness in successive generations would indubitably lower the virility, and mental and physical degeneracy would result. Dr. Archdall Reid has expounded the tendency of the uncontrolled alcoholic type to work itself out, and the same is true of other types.

I have often noticed in the pedigrees that the children of chronic drunkards (especially when the father drank and the mother was temperate) are total abstainers. There can be no question that chronic alcoholism does figure largely in the pedigrees of patients admitted to asylums; but the same occurs—though, I think, not with such frequency—in the pedigrees of hospital patients. The accompanying pedigree was always regarded as a proof that alcoholism is productive of insanity in the offspring. The institution of the card system led to the disclosure of collateral insanity (Fig. 8). Further unbiassed inquiries on these lines are very necessary. Occasionally I have met with a pedigree (Fig. 9), such as the one I show you, in which a woman has had two husbands. By her first husband (a temperate man) she had a family of healthy children and numerous grandchildren; by her second husband (a chronic drunkard and one of a family of drunkards of several generations) she had three children, one with a muscular dystrophy, another an epileptic imbecile, and another apparently

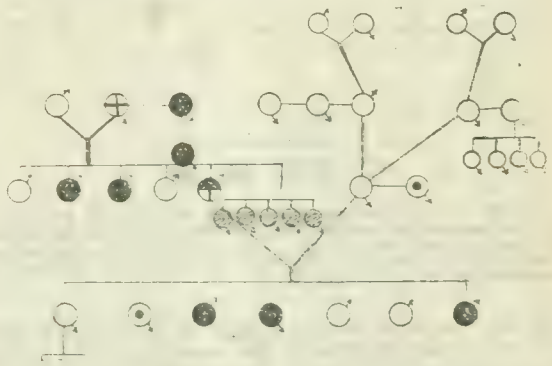


Fig. 8.—This pedigree shows three insane patients, the progeny of a drunken insane father, who, with two brothers, was in an asylum. They were, as the figures show, the offspring of a drunken mother; it was not until the card system of relatives was established that it was discovered that her sister had been an inmate of this asylum, and had died there; also it was discovered that she had had one child, who was an imbecile. Seeing that the maternal side is free from any taint in the second generation and the paternal in the first, it was regarded as evidence in favour of a drunken mother being the exclusive cause of the insane children and grandchildren. But, in the light of the doctrine of heredity, the collateral insanity must be taken into consideration.

healthy. A few instances such as this may be mere coincidence; but multiplied, seeing that they are almost of the nature of an experiment, they would form a convincing argument in support of the injurious effects of alcohol on the germ cells. It has long been the opinion that chronic drunkenness of the parents leads to mental degeneracy in the offspring in the form of feeble-mindedness and epilepsy. With this I should agree, but that the desire for alcohol is transmitted from

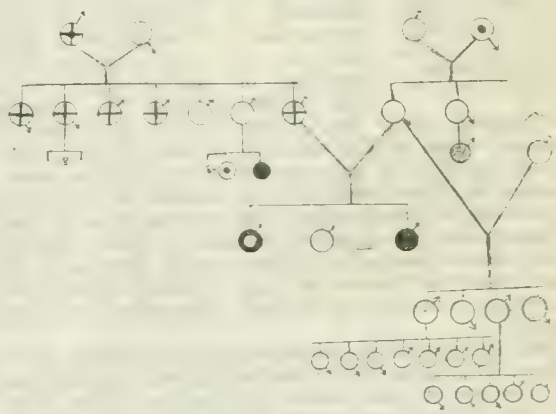


Fig. 9.—This pedigree is almost of the nature of an experiment in regard to the effects of alcohol. A woman has two husbands. By the first she has healthy children and grandchildren; by her second husband, a drunkard, one of a family of drunkards, descended from a drunkard, who died of Bright's disease, she has three children—one fairly healthy, one suffering with a muscular dystrophy, and another an epileptic imbecile.

parent to offspring, in the form of like begetting like, instead of like begetting *a tendency* to like, is without foundation. What may be transmitted is *the temperament* that induces alcoholism, namely, a lack of will power and moral sense. The transmission of an acquired character, such as the desire for alcohol, is contrary to the doctrine of heredity. In twenty-five pedigrees obtained from an imbecile asylum (Leavesden)—for which I am indebted to Dr. Elkins, the Superintendent—I observe (though the numbers are not sufficient yet to give any precise data) that the families are prolific, quite as prolific as those of

the pedigrees of hospital cases, but there is relatively a larger number of deaths from various diseases, especially tuberculosis. Some pedigrees show a large number of miscarriages and stillbirths associated with imbecility and epilepsy, and occasionally juvenile general paralysis

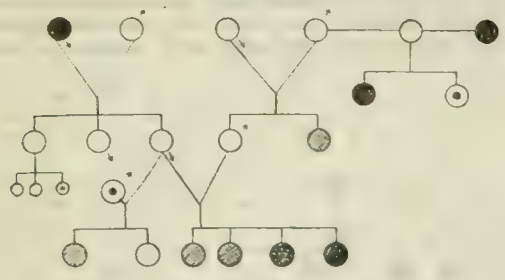


Fig. 10.—This is a pedigree of a woman who had two husbands; by the first she had one living and one dead child; by the second she had two dead children, then a juvenile paralytic, and lastly a feeble-minded epileptic. The stock of the second husband is unsound, and he was syphilitic.

(Fig. 10); the cause of such is syphilis. The mental defect in a considerable number of the cases in imbecile asylums is undoubtedly due to organic brain disease and injuries at birth, and after.

I have still another pedigree to show; it illustrates the transmission of a similar character and life in two generations, and possibly three. The grandfather was a most distinguished man who lived to a great age, much respected. He had a daughter, concerning whose mother no particulars were obtained. This daughter was a drunkard, and of a defective moral character. She had a daughter, whose conduct was similar; she has married twice, and is at present in an asylum. By her first husband she had two stillborn children; by her second husband no children; fortunately this stock has died out (*vide* Fig. 11).



Fig. 11.—Pedigree of a drunken, insane woman, married twice, but no children living. She was the grand-daughter of a distinguished man.

A study of pedigrees teaches us the truth of the conclusions which Maudsley in *Pathology of Mind* emphasizes: "First, that a person does not inherit insanity, but a tendency or predisposition to it; and, secondly, that the tendency is inherited from the stock." . . . "Nor need the unsound strain in the stock show itself in any form of actual insanity; it may appear in some allied nervous disorder, in hypochondriasis, in suicide, in epilepsy, in dipsomania, in weakness of mind, in neuralgias, in chorea, in stammering, in spasmodic asthma, in some periodical nerve storm of abnormal character; and conversely these disorders of one generation may in their turn forebode some form of insanity in the next generation" (*vide* Figs. 6 and 12).

With the spread of the knowledge of heredity and the interest shown among the intellectual and thinking classes by the study of such works as Whetham's *The Family and the Nation*, more care will doubtless be taken in marriage selection; moreover, the cult of eugenics—literally good breeding—a term employed by Sir Francis Galton to denote the science and art of the improvement of the human race by the double process of multiplying the fit and eliminating the unfit, is daily gaining ground. Again, the study of heredity teaches that the measure of the physical, mental, and moral capacity of the individual for civic worth and usefulness depends largely upon inborn characters; you do not gather grapes of thorns or figs of thistles. Bateson has truly said, education, sanitation, and the rest are but the giving or withholding of opportunity. The diminishing birth-rate of the professional and middle classes with the high birth-rate and diminished infant mortality of the lower classes is now agitating the minds of many, but the fact nevertheless remains that Nature cares little about individuals or societies: it is mindful only of the species, and the instinct to propagate is so rooted in our animal natures that in the process of the mental evolution of man it has become the root and stem of the tree of life, upon which has been grafted the moral virtues and altruistic sentiments which are most nobly personified in maternity.

An intellectual development, whether of the individual, or community, or race, that starves the natural instincts of love, marriage, parentage, and pride of family—these the noblest of all human aspirations—will pay the penalty, and one way in which the penalty for the starvation of this instinct will be paid for by advanced civilization is the increase of the neurotic, self-regarding type of temperament, the forerunner of neurosis and insanity.

We are constantly reminded of the fact that insanity is on the increase; in the last fifteen years the London County Council have opened four new asylums and an epileptic colony, and are now building another huge asylum, and loud is the cry of national degeneracy; but when people are feeling most pessimistic of a *natural* decay of the race, it would be well if they would remember this passage from a lecture by Huxley on Harvey and the discovery of the circulation of the blood:

"I myself am of opinion that the memory of the great men of a nation is one of its most precious possessions, not because we have any right to plume ourselves upon their having existed, as a matter of national vanity, but because we have a just and rational ground of expectations that the race which has brought forth such products as these

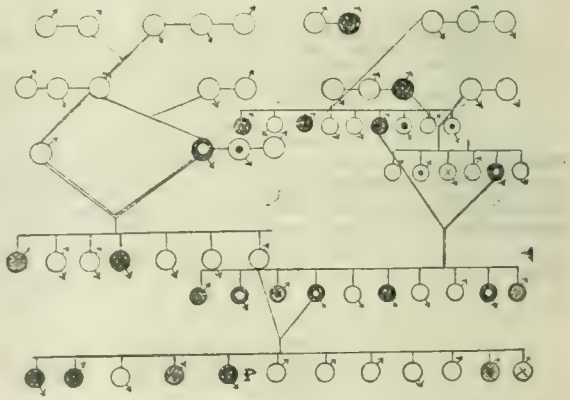


Fig 12.—This pedigree of four generations is interesting from its completeness, and the number and variety of the mental and bodily diseases afflicting both the maternal and paternal stocks. There is insanity, epilepsy, suicide, nervous disease, eccentricity, and physical unsoundness; but there was not one drunkard in the four generations.

may, and in good time, under fortunate circumstances, will produce the like again. I am one of those people who do not believe in the *natural* decay of nations; I believe, to speak frankly, that the whole theory is a speculation invented by cowards to excuse knaves. My belief is, that so far as this old English stock is concerned, it has as much sap and vitality and power as it had two centuries ago; and that with due pruning of rotten branches, and due hoeing up of weeds, which will grow about the roots, the like products will be yielded again. The weeds to which I refer are mainly three: the first of them is dishonesty, the second is sentimentality, and the third is luxury."

CREMATION does not appear to be making much progress in Victoria, although both that State and South Australia are ahead of New South Wales in having a public crematorium. The crematorium in Victoria is at the Spring Vale Cemetery, and although it has now been established for four years, it has averaged only six cremations a year.

IT would appear from steps which are being taken in some of the Australian States that the old method of taking the oath by kissing the Bible will shortly be a thing of the past. The new form of swearing under the Evidence Act (1906), W. A., is for the witness to hold up his hand and declare: "I swear by Almighty God to tell the truth, the whole truth, and nothing but the truth." The matter is also receiving attention in Tasmania, and we learn that the Evidence Bill, which is before the Assembly, contains a provision that kissing the Bible for oath-taking be discontinued, and that the utterance of the words "I swear" should be sufficient.

The Schorstein Lecture

ON

CONGENITAL PYLORIC STENOSIS.

Delivered at the London Hospital, October, 1910,

BY

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The title of this lecture is "Congenital Pyloric Stenosis," but it must be admitted that the term "congenital" is really a "question-begging epithet," for it assumes as proved what is one of the most disputed points in the natural history of the disease. Nevertheless I have resolved to adhere to it, not only because it was the title by which the condition was christened when it was first seriously introduced to professional notice, but also because the alternatives which have been suggested ("congenital gastric spasm," "congenital spastic hypertrophy of the pylorus," etc.) are all open to the same objection in an equal degree. At all events, and whatever one chooses to call it, this form of pyloric stenosis exhibits clinical and pathological problems of the most interesting and baffling character; indeed it would not be going too far to speak of it as a morbid mystery. It presents, too, a conspicuous example of the difficulties of clinical observation and of the humiliating possibility of the whole profession overlooking for years something which must all the time have been lying, so to speak, under its nose. In this respect the history of the disease has a lesson for us all. That history is soon told. Although the *flair* for medical antiquities which characterizes my distinguished predecessor in this lectureship—Professor Osler—has enabled him to unearth[1] a probable example of the disease published so long ago as 1788 by one who bore the prophetic name of Hezekiah Beardsley, and although more unequivocal examples were published by Williamson[2] and by Dawosky[3] in the middle of last century, it was not until the year 1888 that Hirschsprung[4] first really attracted attention to the condition. Even after that some years elapsed, so slowly did it attain recognition, before its existence was at all widely acknowledged, the result being largely brought about—in this country, at least—by the writings of my old teacher, Dr. John Thomson. It has now at last attained a place in the hierarchy of disease, and almost every day adds, with almost embarrassing profusion, to the published examples. I have said that this record is painful reading for the clinical physician, but lest any pathologist present should be inclined to scoff I hasten to add that it reflects no great credit on *them*, for undoubtedly babies must have been dying—dozens of them—from congenital pyloric stenosis every year, and yet its existence was as completely, and less excusably, overlooked on the *post-mortem* table as at the bedside. You say that it may be a new disease, or, as is sometimes said of appendicitis and duodenal ulcer, that it has greatly increased in frequency. I am afraid I do not believe it, for my personal experience gives me only too good reason to believe that it was simply overlooked. It was only some six or seven years ago that I was disposed to regard congenital pyloric stenosis as a myth, or, at all events, as a clinical occurrence of the greatest rarity. Then suddenly I learnt how to recognize it, and since that time I have seen a large number of cases, including twenty in private alone. Now, the only possible interpretation of this experience is, not that cases suddenly began to occur in my practice six years ago, but simply that up to that time I had been blind to their existence, and this, I believe, has also been the experience of the profession at large. Even yet it does not seem to be recognized everywhere. Cases have been published in abundance in Germany, America, and England, but in the Latin countries scarcely one. Is it conceivable that congenital pyloric stenosis does not occur in France and Italy? Is it not much more likely that, like some other diseases of Teutonic nativity, it has found difficulty in establishing its identity outside the Fatherland except in England and America, which are notoriously favourable to the admission of aliens?

Clinical Features.

In the study of the clinical features of this disease one is met at the outset by two curious facts. One is its greater frequency in boys, the available statistics giving about 80 per cent. of all cases as occurring in the male sex, whilst the other is the relatively large proportion of first-born children who are thus affected. Thus, out of 19 cases recorded by Davidson,[5] no fewer than 10 were in the first child of the family. I had almost added to these peculiarities the frequency with which the children of doctors are affected. At all events, in my own experience, no less than 6 out of 20 cases seen in private were the children of medical men.

That the greater frequency of the condition in boys and in the firstborn is without significance one cannot believe, but no plausible explanation of these facts has yet been offered, nor am I prepared to suggest one.

The symptoms are few and suggestive, the most prominent being persistent *vomiting*. It should be specially noted that the vomiting rarely dates from birth, but usually makes its appearance between the second and fourth weeks. This, as we shall see later, has an important bearing upon the pathology of the disease. The vomiting is often what is called "projectile" in character, and more material is apt to be brought up than was swallowed at the last meal. It usually comes on soon after a feed, the vomited material consisting of curdled milk, mixed sooner or later with mucus, and occasionally with streaks of blood. There is one curious fact about the vomiting which I do not remember to have seen described, but which I have often verified—namely, its tendency to cease for some hours with any change of food and to recur again as violently as ever. This is another of the many anomalous features exhibited by the disease.

At the outset, at least, the vomiting is accompanied by constipation, which helps to distinguish it from dyspeptic vomiting in which diarrhoea is usually present. The constipation is sometimes spoken of as a pseudo-constipation, inasmuch as it is not due to any disorder of the intestine, but simply to a failure of the food to find its way into the bowel at all.

Meanwhile the child rapidly loses weight and soon becomes extremely emaciated. The wasting, however, is not like that met with in cachexia. The child is not anaemic, but simply looks starved, and often remains surprisingly bright in spite of it. In this respect it differs from the wasting of most forms of organic disease, and to the experienced eye the difference often suggests a correct diagnosis.

The physical signs are few but sufficiently characteristic. In the first place, the stomach is dilated and may cause a swelling in the upper part of the abdomen, which is all the more striking in contrast with the attenuation of the rest of the trunk. On light percussion it can often be found that the greater curvature reaches down to or even much below the level of the umbilicus. Most characteristic of all is the appearance of waves of visible peristalsis. These are best seen shortly after a feed has been given, and if they are lazy in making their appearance they can often be called forth by a little gentle massage of the upper abdomen. The waves of contraction begin at the left side, where a rounded swelling about the size of a golf ball appears below the left costal margin and travels somewhat leisurely across the abdomen in an oblique direction and downwards and to the right. Before one wave has disappeared another makes its appearance, so that an hourglass-shaped swelling can be seen reaching across the abdomen. Sometimes three waves are present simultaneously. These peristaltic waves are often so marked as to attract the attention of the mother or nurse, and I have even been assured in one case that the swelling they caused was so great that it could be seen through the clothes.

This vigorous peristalsis is pathognomonic in the child, as in the adult, of some obstruction at the outlet of the stomach, and is therefore of great diagnostic value.

Curiously enough it does not seem to cause much, if any, pain, and the child will often lie quite placidly whilst the waves course in succession across the organ.

The third sign is the presence of a pyloric tumour. It should be felt for to the right of the middle line, and one should try to get underneath the stomach and compress the pylorus against the right side of the vertebral

column. As the late Dr. George Carpenter pointed out, it is often best felt by trying to pinch up the deeper structures. Sometimes the pylorus is so tucked up under the liver that no tumour can be felt, but if one is successful it feels like a hard lump almost the size of a hazel nut, but somewhat elongated.

Ibrahim[6] has pointed out that there is often a pronounced diastasis of the recti muscles in these cases, but this is no doubt due simply to the distension of the upper abdomen and is of no special value in diagnosis.

The combination of symptoms and signs, then, on which one relies for establishing the existence of congenital pyloric stenosis is: (1) Vomiting of the character already mentioned coming on within the first few weeks of life and accompanied by "pseudo-constipation" and wasting; (2) the presence of visible stomach peristalsis; (3) the existence of a pyloric tumour, if it can be felt.

Pathology and Pathogeny.

Morbid Anatomy.—The stomach in early life exhibits very clearly the division of the pyloric portion into the two segments known as the pyloric vestibule and the pyloric canal. The latter is particularly well marked, forming a tube about 3 in. long, which begins at the sulcus intermedius and ends at the pyloro-duodenal junction. If one examines the stomach from a case of congenital pyloric stenosis after death, one is at once struck by the enormous development of the whole pyloric canal, which forms a dense, almost cartilaginous, tube, the extremity of which projects into the duodenum in much the same way, it has been remarked, as the cervix uteri projects into the vagina. In addition, the wall of the pyloric vestibule is also thickened, and, indeed, that of the whole stomach to some extent, including even in some cases the lower end of the oesophagus.

It will be observed, too, that the mucous membrane of the pyloric canal is thrown into longitudinal folds, the ends of which often project into the vestibule.

On microscopic examination, it is found that the thickening of the wall of the pyloric canal is due almost entirely to an enormous development of the circular muscular fibres, although the longitudinal layer is also thickened, and the mucous and submucous coats to some extent. More careful examination shows that the muscle fibres are not only increased in number, but that each individual fibre is also broader than normal (Davidson).

So far all observers are agreed, but it is when one passes on to inquire how these changes are brought about that differences of opinion begin. Two distinct views are held:

1. That the thickening of the pyloric canal is to be regarded as a congenital malformation.
2. That it is due to overwork, the consequence of a long-continued spastic contraction.

We shall consider immediately which of these views best fits in with the clinical history and symptoms of the disease, but meanwhile we may examine them in greater detail.

1. A study of the "architecture" of the thickened muscle layer of the pyloric canal shows that it is certainly not to be regarded as a tumour formation (Wernstedt[7]), but rather as a hyperplasia. As Cautley[8] has put it: "Nature in her extreme anxiety to provide an efficient pyloric sphincter has over-exerted herself, and produced too great a quantity of muscular tissue." Granted that this were so, it is difficult to see why obstruction should result, for the mere thickness of the muscular coat should not prevent its relaxing to allow the escape of the stomach contents when required. It has also been pointed out as an *a priori* objection to this theory that infants who suffer from congenital pyloric stenosis have no special tendency to exhibit malformations elsewhere, although it is well known that, as a rule, a malformation in one part of the body is apt to be accompanied by congenital abnormalities in others.

2 The supporters of the spasm theory have got to show: (*a*) How spasm may be set up; (*b*) that it is capable of leading to consecutive hypertrophy.

(*a*) As regards the cause of the spasm, it has been suggested that it is due to an inco-ordination in the pyloric mechanism—a sort of "stammer" of the pylorus—beginning, perhaps, in intrauterine life (Thomson[9]), whereby, when the waves of peristalsis reach it, instead of opening, as it should do, it remains closed. It has also been attributed (Shattock[10]) to a hyperaesthesia of the mucous membrane in the neighbourhood of the pylorus, which induces reflex contraction—a "hysterical" pylorus, as it has been called. A third group of writers would attribute the spasm to a disorder of the chemical mechanism of the pylorus. They have tried to show that there is hyperacidity of the gastric contents in these cases, and that this hyperacidity induces the spasm (Engel,[11] Pfaundler[12]). This theory, however, will certainly not hold water, for (i) it has been shown that there is no real hyperacidity of the gastric juice in these cases at all (Miller and Wilcox[13]). (ii) Where hyperacidity exists it is almost certainly the result of the pyloric obstruction, and not the cause of it (Ibrahim,[14] Feer[15]), being comparable to the hyperacidity found in cases of benign stenosis of the pylorus in adults, which is now admitted to be due to the continuous stimulation of the gastric mucous membrane by the retained contents. (iii) In any case experimental evidence (Cameron[16]) goes to show that acid on the gastric side of the pylorus induces relaxation of the pyloric sphincter, and not contraction of it.

(*b*) The assumption that prolonged spasm of the pyloric canal can lead to hypertrophy of its muscular coat also involves certain difficulties. It would be contrary to pathological law that this should happen, unless the muscle is not merely contracted, but contracted *upon* something, so that its fibres are kept in a state of "extension" at the same time. If it be admitted, however, that the pyloric canal in infancy is a regulating mechanism which controls the passage of the gastric contents from the stomach to the duodenum, this difficulty disappears, for in that case it would be comparable to the arterioles which regulate the flow of blood from the arteries to the capillaries; and it is admitted that prolonged contraction of the arterioles can lead to hypertrophy of their muscular coat.

A greater difficulty is to explain the rapid development of the hypertrophy by this theory. Operation within as short a time as three weeks from the first appearance of symptoms has shown the hypertrophy to be already present in a marked degree, and it is difficult to conceive how "overwork" of the muscle could have led to so great an overgrowth of it so quickly.

It will be observed that there are great difficulties in the way of accepting either the congenital hyperplasia or the spasm theory, whilst the compromise suggested by some—that there is both hyperplasia and spasm—has the difficulties of both combined.

Putting aside these prima facie objections, let us now inquire which theory best fits the clinical facts.

We have already seen that there is some difficulty in understanding how a mere hyperplasia of the sphincter can produce obstruction at all; but, waiving this objection, any acceptable interpretation of the pathological appearances must explain these two important facts in the clinical history of the disease:

1. That the symptoms are not truly congenital, but often only come on some weeks after birth.
2. That the condition is capable of being recovered from without operation.

Now it is obvious that the spasm theory fits in best with both of these facts. Granted that spasm can be brought about somehow it is really easier to understand its supervention some time after birth than its occurrence congenitally or *in utero*, whilst there is no reason why, when it passes off, a return to a normal state should not be possible. On the other hand, no plausible reason has been advanced for the delay in the appearance of the symptoms on the assumption that the obstruction is due to a congenital abnormality of structure, nor can we understand how, if that were the true pathology, cures without operation, such as I shall have to describe immediately, would be possible.

The *a priori* difficulties, therefore, are all in the way of spasm; the clinical difficulties in that of hyperplasia.

Meanwhile I have no alternative theory to offer, and the part of wisdom is to suspend judgement and wait for more information. In particular we want observations with the *x* rays which might throw light on the mechanism of the pylorus in such cases, and we want also more evidence as to the state of the pylorus in those which have recovered without operation and have subsequently died some months or years afterwards from some other disease.

Treatment, Prognosis, and Course.

I propose to consider the treatment of the disease and its prognosis together, because I believe that the mortality depends very much upon the line of treatment adopted.

When I first began to recognize cases of congenital pyloric stenosis I was deeply imbued with the idea—derived from one's preconception of the pathology of the affection and the writings of others—that surgical treatment alone offered any chance of success. In the first case which I recognized in private, therefore, I strongly advised that an operation should be performed. To this the parents objected, and the case passed from my care. I subsequently learned that the child had made a complete recovery under medical treatment carried out by someone else. I need not say that this experience made a deep impression upon my mind. I was, in fact, converted to a belief in the efficacy of medical measures in this disease, a belief which subsequent experience has only deepened and strengthened, for since that time I have seen 20 cases in private practice, 17 of which were treated at home, and all these recovered without operation. Of the 3 sent into hospital for treatment 2 died.

I have perhaps been unusually fortunate, but the experience of others has not been dissimilar. Thus Heubner[17] records 19 recoveries out of 21 cases treated medically, and Starck[18] 11 out of 12, whilst of 6 cases reported by Bloch[19] and not operated upon all did well, and Bendix[20] has had no fewer than 30 recoveries out of 32 cases treated by medical measures alone.

The more enthusiastic advocates of operation have not hesitated to explain away such results as these by the assumption that the cases which recover under medical treatment are not true examples of congenital hypertrophic stenosis, but merely instances of pyloric spasm. Assuredly, however, this explanation will not do. Of my own cases, at least, I can say that they all exhibited the classical features of pyloric stenosis in a pronounced degree; and in most of them the severity of the condition was shown by the extreme illness of the child, which in many cases hung literally between life and death for weeks together. I do not propose to trouble you with particulars of these cases, but three[21] of them have been published in detail by the practitioners under whose immediate care they were, and I would ask any unprejudiced person who will take the trouble to study their descriptions whether there can be any doubt that we were dealing with extreme examples of the affection.

I have given you the results of my own experience of cases treated in private, but I admit that hospital statistics present much more unfavourable reading. In the Children's Hospital, for instance, where medical treatment alone is adopted, our mortality has been 78 per cent. in a series of 64 cases. The great majority, too, of those we have had here have died. The greater mortality in hospital cases is partly to be explained, I think, by the fact that they tend to come later under treatment when the child's strength has already been greatly reduced by the constant vomiting. I have also an impression that these babies stand the conditions of hospital life badly. They seem to become "hospitalized," and even if one succeeds in stopping the vomiting, they hang on in a miserable marasmic condition and readily fall victims to intercurrent disease. This fact, however, does not invalidate the claims of medical treatment to be successful when begun early and carried out under favourable conditions.

One may contrast with the statistics I have put before you the results yielded by operative treatment. Of these the most favourable with which I am acquainted are those of Mr. Burghard[22] who had 11 recoveries out of 16 cases—a mortality of 31 per cent. Cautley[23] reports 6 recoveries out of 7 cases operated upon in private, but a mortality of 4 out of 5 hospital cases. Of 23 cases under the care of Dr. John Thomson[24] which were treated by operation (most of them by Mr. Stiles) 15 died—a mortality of 65 per cent. We will probably not be far from the truth if we accept Ibrahim's estimate of 50 per cent. as the probable mortality amongst all cases submitted to operation.

I fully admit that such statistics do not do justice to the surgeon, for no doubt in many of the cases operation was only performed as a last resort and when the chances of recovery in any event were but small, but they are the only material available for forming a judgement.

I shall return again later on to the question of operation, but meanwhile I propose to describe briefly the medical treatment usually adopted. The essentials are careful feeding and daily lavage of the stomach. As regards the kind of food, breast milk is probably the most suitable, but owing to the frequent intervals at which food must be given suckling is impracticable. The breast milk may be drawn off and given by a spoon, but usually this practice results in a speedy cessation of the appearance of milk and has to be abandoned. In that case, or if, as often happens, the child has already been weaned before the diagnosis has been made, thoroughly peptonized and diluted cow's milk is the best substitute, but I have also used dried milk, such as glaxo, and mixtures of whey, egg-albumen and lactose, supplemented occasionally by somatose.

The marked fat retention, which has been found to take place where there is a block at the pylorus,[25] has induced some to exclude all fat as much as possible from the food. It has not been found, however, that this is of any great benefit in practice, and if the stomach is being regularly washed out I believe it to be unnecessary.

One must feel one's way as to the amount to be given at a time, beginning, perhaps, with an ounce every hour, and gradually increasing the quantity and intervals as the vomiting subsides. I think this plan is much better than feeding at long intervals, as some advise. After the feed the child should be kept lying flat and not moved about, in order to minimize the chance of vomiting.

I am convinced of the great value of regularly washing out the stomach once or twice a day, according to the frequency of the vomiting. That it is possible to treat cases successfully without this the results obtained by Heubner, who does not employ it, clearly show, but it certainly adds to the comfort of the patient, and, by lessening the frequency of the vomiting, diminishes exhaustion and facilitates sleep. By removing retention products and mucus it also lessens the catarrh and swelling of the mucous membrane, and may in this way favour the escape of the contents through the narrowed pylorus.

The technique of gastric lavage in infancy is now so well known that I need not describe it.

As subsidiary measures, I believe in the value of the German plan of applying continuous poultices to the epigastrium, and great care should be taken, as in all underfed babies, to maintain the body heat.

If vomiting be severe and the amount of food which passes out of the stomach very small, fluid should be supplied per rectum in the form of normal saline enemata, 2 to 3 oz. being given at a time twice or thrice daily. These are of great value in supplying a sufficiency of fluid to the tissues and in promoting elimination of waste products by the kidneys.

Drugs are of little help. I have tried most of them—alkalis, on the assumption that there is hyperacidity of the gastric contents; atropine and bromides as antispasmodics, carminatives and antiseptics—but the only one which has ever seemed to be of any use is opium. It may be given in minute doses (say, $\frac{1}{20}$ minim before each feed), and seems sometimes to help in allaying the vomiting, besides diminishing restlessness and promoting sleep, but I believe one can get on quite well without it. It is more highly esteemed in Germany than it is here, perhaps because lavage is less systematically employed in that country.

Under such a plan of treatment as the above the vomiting usually ceases quite soon; but it will be found that in spite of this the infant does not gain weight; indeed, it may even go on losing, and there may be little or no progress for weeks, sometimes not until the fifth month. It is at this period that one's faith in the efficacy of the treatment is most sorely tried. With perseverance, however, improvement finally sets in, and often quite suddenly the child starts to gain weight. This sudden change for the better is often very striking, and has also been remarked by Heubner.

Sometimes, on the other hand, and but all too often in hospital cases, the issue is not so happy, and, in spite of the cessation of vomiting and the consumption of a fair amount of food, the weight refuses to rise, and the child eventually succumbs apparently as the result of an "alimentary toxaemia" which seems to be the consequence of an atrophy of the bowel with impairment of the

power of absorption, probably brought about by the long period of virtual starvation through which the infant has passed. In other cases, again, one is disappointed by a sudden and inexplicable collapse just when all seemed to be going well.

What, it may be asked, is the ultimate result in those cases which recover under medical treatment? Are they entirely cured, or is there only a state of compensation established with some persistent narrowing of the pylorus and dilatation of the stomach? In some cases, at least, I believe that the cure is both complete and permanent. At all events I have examined some of my cases—and those of the worst type—five years after treatment, and found them to be perfectly healthy children, with no sign of gastric disorder or dilatation of the stomach. I know that it seems incredible, when one examines the stomach from a typical case after death, that the almost cartilaginous thickening of the pylorus which is present should entirely disappear, and a complete return to a normal condition be brought about. But we have no right to set a limit to the powers of the *vis medicatrix Naturae*, and I can only repeat that, as far as clinical observation can determine it, such a restitution to the normal does, in fact, take place. But not, probably, in all; I have certainly seen one case in which three years after apparent recovery the stomach was still somewhat dilated, and I was told that the child was subject to "stomach upsets," although well nourished and otherwise in good health. Some of the cases described by Russell[26] and Maylard,[27] in adults, and to which Dent[28] also has referred, may, perhaps, have originated in this way, although others probably belong to the Landerer-Maier group, and it is quite certain that compensation can be established with a gain in weight and disappearance of all symptoms even although some degree of pyloric obstruction, as shown by the persistence of visible peristalsis, persists. Most cases, indeed, pass through this phase, although in the great majority, probably in all, the peristalsis finally disappears. What we really need to determine the question is more *post-mortem* evidence as to the state of the stomach some years after recovery under medical treatment. Such evidence is not yet forthcoming, but we shall no doubt get it in time, and meanwhile the fact of clinical cures is undoubted whether they be real anatomical cures or no, and that, after all, is all we want.

To return, then, to the question of surgical treatment. Is operation never to be recommended in these cases? In practice I think not. I fully believe that there may be some cases which would have been saved by operation that die without it; but I know of no method by which such cases can be recognized, for one can never say of any given case that it is so bad that operation alone can give a chance of life. Of that experience has thoroughly convinced me. As a practical policy, therefore, one is obliged either to operate upon all cases in which the symptoms and signs are well marked or upon none of them, and that the former plan would result in a much heavier mortality than the latter I have not a shadow of doubt.

The only alternative to this dilemma is to treat all cases medically at first, and then to advise operation upon those that do not show any improvement after a certain lapse of time—three or six weeks have been given as the limit beyond which the surgeon should be called in. The objection to this plan, however, is that it means operating at a time when the child's strength is already much reduced and when success is not likely to be achieved, whereas, on the other hand, my own cases show that no case of the disease can be pronounced to be incurable by medical means until the patient is dead.

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An Address
ON
PRIZES AND PERFORMANCES.

Delivered at the Opening of the Medical Session at St. George's Hospital, on October 1st.

BY

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EDITOR OF THE "LANCET."

Gentlemen,—I will not waste your time by expressing at any length my sense of the high honour that has been done me in allowing me to present the prizes at my old medical school, and to address you at the beginning of the new session. It would be ungracious of me, however, not to acknowledge my feeling in the matter, as the position in which I find myself is one so totally unexpected—I am, then, surprised at myself for being in this position, and I know that a good many of you, having regard to the scientific eminence of my distinguished predecessors in this function, and to their services to St. George's Hospital, must share my sentiment.

The ceremony which we have just witnessed—the award to the successful students at the medical school of the prizes which their industry, their ingenuity, and perhaps a happy blend of both qualities, which I will call their wisdom, have enabled them to win—I will take as a suggestion that to look a little into the significance of prize-giving might be interesting. All the year round, and in every class of academic, institutional, and professional training, men are winning prizes, losing prizes, competing for prizes or scratching for those competitions; and a system that is so universally in employment among us may easily become accepted by us in a mechanical way, may cease to have a reason which appeals to us, and be merely regarded as one of those things that happen in the course of education. It is these frequent and general features in the scheme of life that pass unnoticed by us because of their very familiarity. If familiarity with such a ceremony as we have just seen were all that were needed to grasp its full significance we should all know all about prizes—their uses, their abuses, and their relation to the spread of wisdom generally, and to the efficiency of students and scholars in particular. Our opinion upon the matter would be unanimous, and there would be no need for any discussion. But although we cannot conceive any system of professional training without them and their attendant troubles—namely, examinations—such clear comprehension is not ours with regard to prizes and the principle of rewarding early merit in examination by gifts, for among my hearers it is perfectly certain that there are those who have expressed opinions of diametrically opposite natures on the value of prizes, upon the system under which they are awarded, and upon the utility of examinations generally. I am certain that many of us have said that prizemen are too often found not to fulfil their early promise. This is when we hear of the insignificant future which some brilliant student has made for himself—perhaps when we find the first mathematica scholar in our batch at school as an under-master in a second-rate seminary, or notice the best classic of his year at our college dozing away a valueless existence in front of a club fire, or using his recollection of the classical dictionary in an acrostic competition. It is equally certain that many of us, in congratulating a prize winner, or perhaps, in the case of those of us who are middle-aged, in congratulating the father of a prize-winner, have said that nowadays, in a world of stress and competition, there is nothing like making a good start. And some of us have certainly said both these things, suiting our words to the circumstances. And the same diversity of view is expressed by us with regard to the value of examinations as a test of present merit or as a guide to prognostications of future success. Inevitably those who profess to hold cheaply the winning of prizes believe that the easy and rapid passing of examinations must not be credited as furnishing any sure ground for future honours.

There is, then, a considerable difference of estimate with regard to the value of prizes and the significance of passing

examinations, and this is worth a little consideration, as it happens that our educational schemes are largely founded on the promotion of the prizeman and the nurture of the successful examinee. How can thoughtful persons be found uttering such opposite opinions? But observe that, whichever view we take, we all of us accept regular examinations and regular prize-givings as the best and most practical way in which education can be conducted, though when we are called upon to express an opinion concerning the matter we are not necessarily consistent. We take one side or the other—whichever one suits the particular case—congratulations or condolences coming with equal readiness from us, but we never suggest that education can be carried on to a practical end in any other way. Verbally we may be willing to sacrifice a lightly-held conviction as to the value of prize-winning to a desire to be agreeable to some one who has not been a winner, but even then we are almost sure to endorse the principle of examinations and rewards by alluding to it as a time-honoured abuse—one of those perpetual sources of grumbling that we should all be sorry to lose. Now, all this is really an admission that there is no way of ascertaining whether students are up to a certain standard save by examinations, and that there is at least no surer way of stimulating the work of a group of students than by appealing to an honourable, as well as to an inevitable, spirit of rivalry. We have the position that a very important part of our educational system is regarded in two perfectly opposite ways by reasonable people, while at the same time those who have the most to say against it do not come into the open with any alternative proposal. And that fact should put them out of court to a great extent. But it does not. There is a feeling that there is much in both views, so much, indeed, that sincere people sometimes express one view and sometimes another upon the true value of early successes. Of course, the explanation of the divergency is the usual one where sensible people disagree, and I apologize for its simplicity—both parties are not talking about the same thing.

Those of us who cry out most clearly and persistently against the need of examinations and the reliability of prizes as a gauge of future success are regarding education, I expect, as a thing which begins at a certain time and ends at a certain time—begins, say, with the majority of us who are assembled here with our going to a boarding school, and ends with the day when we pay £5 to the Registrar of the General Council of Medical Education and Registration for the right to have our names placed upon the statutory roll of the medical profession. If this view of education be taken, it is easy not only to show that success in examinations is no certain gauge of success in life, but also that the whole system of examinations and prizes is wrong. But education does not happen to end with registration, or qualification, with the obtaining of a commission, a diploma, or a degree, and there is no professional life in which this truth can be seen more clearly than in the medical life, in relation to which it is stark staleness to say that education never ceases and that the longer we practise our calling the more we have the opportunity of learning, of testing that learning, and of obtaining its rewards. This, at any rate, is the fortunate plight with most: a few may get out of sympathy with progressive medicine as time goes on. They often began in a particularly brilliant way, and their later plight is analogous to the condition which the athletic trainer calls "muscle bound," where the muscles under excessive training in some given direction become hypertrophic, and lose their elasticity, reducing the quondam champion to a melancholy inertia. These unfortunate exhibitions of reaction, I believe, however, we shall all agree, are no longer often seen. Modern conceptions of medicine are such that all men, in whatever walk of life they are practising, feel that their life is one long education, and that all that they have learnt in the past may be regarded to some extent as an introduction to all that they are likely to learn in the future. No profession opens so many paths as medicine of a totally different sort, though they all converge to one objective—the discovery, maintenance, and practice of truth; and, as a consequence, this feeling that the whole of professional life is one long course of education appeals to us medical men with particular force. The colonel feels it as well as the medical officer of health; the operating surgeon shares it with the consulting physician, the bacteriologist, and the bio-chemist; while to none can it come more home than to the general practitioner, whose five-hundredth case of whooping-cough may give him some practical hint for the relief of a certain symptom met with in a certain type of case. Alas! that we do not get these valuable experiences recorded in any regular and systematic manner. The notebooks of a general practitioner, now that the educational level for entering the medical profession is so good, would, I am sure, make most valuable reading; but the translation of their message from the private to the public—the collation in any public manner of things in themselves so often shrouded in professional secrecy—is a matter of such difficulty that at present the clinical experience of large numbers of our calling is but little exhibited for our instruction.

This, however, is a digression, and the point which I wish to bring again to your attention is that the winning of prizes and the passing of examinations mark the results of education at one stage of a long race—the earliest stage of that race. Those who look upon education as a short race, starting in the case of the medical man with his school curriculum and ending with registration, and consider the professional life that follows as a long but completely separate race—another item on the race-card—will hold on the soundest of sporting grounds that the man who wins the sprint need not win the staying contest. And in support of this self-evident proposition we have quoted to us the instances of the various failures in after-life of men who vastly flattered their friends and tutors at the outset of their careers. Those who regard education in a more comprehensive sense, as one long event beginning with the dawn of our consciousness and ending only as our senses and powers fail us, will regard prizes and success in examinations differently. They will see in them proofs of good training, and evidence that the competitors are gauging their strength aright and endeavouring to run the trying course with judgement; and they will appreciate after-successes in life at different stages in the long race with due regard to the way in which the whole track is being covered. Regarding education in this comprehensive way, as medical men must, we find that the two contrary acceptations of the value of examinations and prizes become at once reconcilable. Examinations and prizes have their necessary place in the early educational scheme, because they are a necessary part of our determination that no one shall enter the ranks of our profession who is not so far educated that he can take full advantage for his own benefit, and notably for the public benefit, of the greater tuition which is to proceed for him during the rest of his lifetime. Examinations are a means to this end and no more; prizes are an incentive to this end and no more. Their purport being so good—namely, the standardizing up to a proper level of the knowledge of those who enter our ranks—we ought to be very sure of our ground before we abuse the means or the incentive. But while we must recognize that examinations in their place are not only necessary things but good things, we are not obliged to acquiesce in their endless and vexatious multiplicity. And those of us who admit that examinations are a valuable—and, in fact, the only—way of testing our young men may also without inconsistency deplore the present tendency of the medical curriculum, the strictly student's curriculum, which leans towards over-examination. The system is too hardly worked, because of the unfortunate feeling that all the modern development of medical science, general and special, laboratorial and clinical, ought to be represented in the examination papers. The mesh of the net spread by the examiners has become too delicate; they catch in their elaborate toils too many. We need not commend the multiplicity of examinations any more than we need lay too much stress upon them.

There is an old story of a senior wrangler who happened to enter a playhouse at the same time as King George III, on the evening when the few newspapers of the time had chronicled the scholar's success at Cambridge. The senior wrangler solemnly bowed to the audience before he sat down, believing that the national anthem was being played out of compliment to himself. Inasmuch as we must all find that senior wrangler ridiculous, the story contains in itself an exact illustration of the points which I have been

labouring at too great a length to bring out. In Georgian days a senior wrangler was a made man. There was no need for him to do more. His college made him a Fellow for life, and he became its master, or a bishop, or a judge, or did nothing, exactly as he liked. His educational prize, won at the end of his first lap, counted as a success in the long race. We see how foolish it was now, but in times much nearer than those of Good King George it was perfectly in order for the successful scholar not to try to do anything more; and Thackeray's inimitable university snobs, viewed in this light, were not failures so much as victims of a narrow view.

I am aware that here I am on somewhat delicate ground, as I may seem to be regarding knowledge pursued for its own sake and with no materialistic proposal as of little account. I may seem to slight the erudition of a Porson prizeman who is no longer a made man because of his dexterity in iambics. This is not my desire at all. The subtlest classic and the most transcendental mathematician has his place in the scheme of our education in the broad humanities, and that place is, I think, comparable to the one occupied by the elaborate bio-chemist or statistical eugenist in medicine. Their knowledge is required by us as a reinforcement of ordinary learning, as a proof of its basis, as an index to the direction of its expansion. If such learning could be regarded as a thing apart we should have the right to ask what it is for, but no thinking man should take this view. So far from wishing to say a syllable against learning pursued for the sake of learning, with no eye to a market, I wish to protest against this undiscerning and huckstering attitude. It is unfortunate that the highest ranges of philosophical research seldom bring their due return in money, and their devotees must largely depend for their reward upon the sweetness of their labours, the keen and splendid delight in the exposition of the rarest wisdom.

> The mountain sheep are sweeter but the valley sheep are fatter,
> We therefore deemed it meeter to carry off the latter,

sang the marauder. He was a wise man within his limits, for he knew what he wanted, but he was a marauder, and the triumphs won on the bleak mountain-top, though lean when viewed from a financial aspect, have a flavour of their own compared to which the more material victories of the valley are insipid. In the commercial world, where men are engaged in what Henry James has termed "the horrid vulgarity of getting in or getting out first," the creation of interests is too often intended merely to extinguish other interests. In the world of medicine the gains of one man are used for the good of all, and the supreme type of this altruism is the worker in the highest planes of research. Here, especially in this country, those engaged are far away from the pleasures and lures of tangible prizes. Unless the philosopher can by his learning show the capitalist or the shareholder how to transmute baser material into gold, it is little enough gold that he will get in return for his toil. And this is not because the exponent of the highest wisdom is necessarily a visionary, but because the application of his researches is never quickly obvious to a nation that is still in the ancient attitude regarding education—a nation which still believes that education is something like measles, which you get young and get done with. To such the man who continues in the laboratory or the library appears to be a sort of permanent invalid, removed by a malady of interesting duration from connexion with the real problems of life.

It is to my mind one of the greatest glories of modern medicine that we have taught our generation, as far as medicine is concerned, a broader view, for the whole story of pathological progress, which has been so striking during the last twenty years, may be summed up in the statement that scientific research of the highest and broadest kind in physics and chemistry—in which is included physiology—has been made to play a part in practical medicine, therapeutical and preventive. But although the profession of medicine is showing the way by which in its workaday proceedings the finest flowers of its philosophy can be gathered and used, the fact remains that prizes—material prizes—come no more in medicine than in other walks of life to the actual exponents of that philosophy. The simple way in which this great wrong could be in part set right would be by some wider endowment of teaching. Into the hands of the leaders of our thought falls the duty of teaching our students, but the duty is largely discharged as a gratuitous one. The shortsightedness and false economy of encouraging students freely with exhibitions and scholarships, while making scanty provision for those who teach them, is simply an exhibition of the old and narrow view of education. The successful student is rewarded with prizes at the end of his first lap—if I may be allowed to harp on my obvious simile; "let him rejoice and be glad in them," for assuredly his strictly academic career will bring him few more emoluments. It is an absurdly wrong policy which leads wealthy and generous persons so much more frequently to found scholarships for the students than lectureships, readerships, fellowships, and professorial chairs for their teachers. Both are wanted, but the needs of the instructed always appear in this country to appeal much more powerfully to donors than the needs of the instructors—a position which seems not to obtain in the progressive educational centres of the United States. What right have we to expect that the highly endowed student will receive adequate instruction if we fail to endow his masters. The course of education is a long one. Those who once were the taught become the teachers; they have the right to expect some continuance of the encouragement which they received at the early stages of the race.

The value of prizes during the educational career is that they help us to standardize our candidates. They are the rewards of industry and intelligence, and in this way may stimulate study. And, above all things, to my mind they do great good to those who do not get them; they persuade those people, often unconsciously, to do better work. They raise the general level of learning by forming a direct object for assiduity. Probably the fact that those who win prizes at the beginning are not always those who do well afterwards has had too much stress laid upon it. With every apology for the obviousness of what I am now about to say, it must be pointed out that the future success of a prize-winner is so taken for granted — despite the cynicism that pretends to hold the other view—that the failure of a prize-winner in after-life is always chronicled as an event. It is talked of; it is remembered; it is used to prove that prize-winners often expend themselves hopelessly in their early efforts; and yet if such were often the case none of these particular episodes would be remembered and chronicled, for it would not be worth the trouble to do so. Similarly when the man who has won no academic or scholastic prizes of any sort comes to the front in later life, the very people who beg you to mark the fact that the race is not to the swift but to the enduring, and who quote proverbs about the glitter of base metal and the staying power of the tortoise and the depth of still water, prove by their puzzlement that the event is really in their minds a rare one. As a matter of fact, of course, as we all know when we pause for a moment to think, the men who make a good start do to a great extent throughout life enjoy the advantage of that start; the fallacy lies in our not remembering how long the race is. To win prizes is only to lead at the first lap, but to say this is not to depreciate their significance; and, indeed, I now ask you to join with me in congratulating the prize-winners of the day upon the just due with which their efforts have been crowned.

A humorist once said, with regard to the success of a lady of fashion, that she progressed in comparative degrees: First she got on, then she got honour, and then she got honest. The process by which success is achieved in the great profession to which we belong is reversed, and all three degrees of comparison may never be reached. But, first, we must be honest, then we shall get honour; and lastly, though it does not follow, we shall get on. And it is not so perfectly easy to be honest at first. The medical curriculum is an exceedingly strenuous test. There is a multiplicity of subjects to be dealt with. There is confessedly inadequate time within which to acquire more than the rudiments of any of them. There is therefore an enormous temptation before every student to slur over the difficult parts, to quote in parrot-wise the phraseology of others in which to clothe personal nakedness. The very scope of the schedule within which examination questions may be set makes the neglect of numerous subjects a matter of no great risk, and many a man

among you here has left out whole slabs of a textbook with a fervent "hope that we shan't get that in the paper." Faced with this situation, the honest, or I should perhaps say *wise*, student—for here the two adjectives have the same meaning—resolves that, come what may, he will understand what he sees, what he hears, and what he reads before he proceeds to the next stage in his education. This costs him a great deal and entails upon him a rigorous process of self-examination, a determination to know himself, which constitutes his wisdom. There are things which he must know and must never forget. He will go over them until they are a very part of himself, despite the drudgery of the process. There are points which are not clear to him although they appear to be perfectly clear to his fellows. He must not be ashamed to ask, and, if necessary, to ask in public, very simple questions. In this way he lays a solid foundation for future knowledge until he finds perhaps, when erecting some higher structure upon this foundation, that he has not built so well as he thought. Later reading and later clinical experience prove to him that he has not grasped part of his back work; that he has misread it; or that he has accepted it without understanding it. Back he must go to the foundations, and cement them or shore them up, regardless of the labour and expense entailed. Here we have drudgery, accompanied possibly with a dispiriting sense of failure, but the student who is honest—that is, the student who is wise—faces the situation, and is repaid by finding that, when he returns to the higher work on which he was engaged, he can execute his task with an ease and a pleasure unknown to him before he had the support of the feeling of security. The next stage follows, and honours come; such honours as those which we have this afternoon seen distributed, and the significance of which, viewed in this light, becomes quite clear. Prizes are the sign that the student is learning to know himself; that he has subdued the natural tendency to go in the direction of the least resistance, and has determined to attack and master the allotted task. Prizes do not prove that he has succeeded in life, but they indicate that he has properly prepared himself to do so. In the long race many prize winners are passed by those who did not start so brilliantly, but let us not forget that it was the example of the prize winners, their methods, and their conception of mental training which aroused in others a proper spirit of emulation. To discuss whether the man who began as being honest, and who early acquired honour, will, in the end, get on, would be to discuss the whole race of life, and we are here only considering the early stages. But it is my belief, and I hope to carry you with me, that the honesty of purpose, the self-denial, in short the wisdom, of the prize winner, in most cases stays by him during life. Gentlemen, in our education, that education which ends only with the grave, let us echo the desire of David that our days may be so numbered that we shall incline our hearts unto Wisdom.

An Address
ON
WOMAN'S SPHERE IN MEDICINE.

DELIVERED AT THE LONDON SCHOOL OF MEDICINE FOR WOMEN.

BY

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AFTER some preliminary remarks Mr. Roughton said: The distinguishing feature of this school is that it is for women students and for women only. It is therefore appropriate that I should say something about medicine as a profession for women, and about the suitability of women for medical work. Of late one has heard so much about the equality of the sexes that one can hardly help thinking that in the minds of many people sex distinction is chiefly a matter of costume and political disability. For such, medicine is just one of the numerous occupations which may be taken up equally well by male or female.

On the other hand, there are still some old-fashioned people who believe that woman's place is in the home, and that no occupations outside the domestic sphere are suitable for her. They are apt to forget that owing to the preponderance of the female sex there are not enough husbands to go round; moreover, there is no reason why a woman should get married if she prefers to remain single and earn her own living. Sixty years ago it may have been necessary for Bob Sawyer to engage in pugilism, cock-fighting, wrenching off door-knockers, and such like pastimes in order to make himself sufficiently brutal to be able to perform a major operation whilst the patient was writhing and shrieking in agony. Such a profession was scarcely suitable for the Early Victorian young woman, whose chief occupation seems to have been keeping her hands white and making her mouth a pretty shape by diligently repeating the words "pears," "prunes," and "prisms." The invention of anaesthetics and antiseptics has made surgery a gentle art which can be practised by the most tender-hearted man or woman.

Over and above the fact that medicine is a suitable profession for woman, there is a very cogent reason why there should be a female section of the profession. I suppose that everybody (including even the opponents of medical women) would agree that it is desirable that women should be attended by persons of their own sex, if only one could be sure that the female practitioner was as efficient and reliable as the male. The need for medical women in countries where men are not allowed to attend the female sex is, of course, obvious. Custom accounts for a good deal, and I feel sure that the present custom of women being attended by men has only grown up through sheer necessity, and that when in the course of time there is a plentiful supply of medical women, people will wonder how their grandmothers could have submitted to the services of the male obstetrician and gynaecologist.

Although there are many ailments where the sex question hardly comes in, I feel strongly that the more the sexes are separated in medical matters the better. For my own part, I should be glad to see a complete division of male from female in hospital work. The example set by the New Hospital for Women is an excellent one. I should like to see the male counterpart—namely, a hospital for men, with male officers and nurses; but I very much doubt whether a sufficient number of men would ever be found with the necessary qualities for making good nurses; but that question, though an interesting one, is outside the scope of this address.

I also think that mixed classes of medical students are undesirable, and I congratulate you on having joined a school where there are women students only. I would go even further, and would say that it is desirable that your teachers should all be women; at present such perfection is not possible, but it will come some day.

Granting, then, that medicine is a suitable profession for women, the next consideration is the suitability of women for the profession. Many women will, no doubt, be inclined to dismiss the question by saying confidently, "Of course they are suitable, just the same as men." I crave your indulgence for a few minutes in order to discuss this question, for, although I shall arrive at very nearly the same conclusion, I may be able to lay before you some propositions attention to which may tend to increase your suitability for the profession you are aspiring to enter. First, let me remind you that there are radical differences between the sexes, and that these differences are not comprised by what are usually known as the primary sexual characters; there are other differences between male and female, which are called secondary sexual characters. Some of these are self-evident and therefore well known; for instance, the greater muscular development of the male, the deeper voice, the beard, and so on. These obvious characters have little or no bearing on the practice of medicine.

There are other more subtle differences between the sexes, which are sometimes known as tertiary sexual characters, and which, I think, are more important in deciding the suitability of the sex for the work in question. These characters are especially worthy of attention, because they are not so radical and unalterable as the more obvious secondary characters; they are, to a large extent, capable of being influenced by education and by discipline. In order to understand them, it is

necessary to remember that in primitive races the different parts taken in the reproduction of children by the two sexes has made the occupations of man and of woman essentially different. Of necessity the woman has been obliged to stay at home and nurse the babes, whilst the man has had to go out and procure food by hunting and fishing; having got the food he often has to fight with his neighbours to protect his belongings. Male and female have therefore been thrown amongst different surroundings, and, in obedience to the law that organisms must adapt themselves to their environment, have developed different qualities. Thus the male has developed muscular strength, courage, and cunning in the chase; whilst the female who would rear her children successfully could only do so by unselfishness, solicitude, and sympathy. As an Australian Kurnai is reported to have said, "A man hunts, spears fish, fights, and sits about; the rest is woman's work." One of the most obvious results of this division of labour is the woman's sense of dependence upon the man.

> She has so long looked to the man as protector, breadwinner, almost as owner, as the one to initiate, to lead, to control, that her capacities have been dwarfed in these directions, her powers of self-reliance, origination, invention, have found no outlet and have in consequence remained quiescent, or at least have but feebly developed, her mental growth being rather in the direction of such qualities as are comprised under what has, in consequence, come to be called womanly sweetness, or, more briefly, womanliness.[1]

Evidently these qualities are more suitable for a nurse than for a doctor; if all women were alike in this sense of dependence upon men it is faily certain that there would be no women doctors. But the history of the woman's medical movement shows clearly that there are many women in whom the qualities of independence and self-reliance are very fully developed. The mere fact of a young woman desiring to enter the medical profession shows that she possesses these qualities in some degree; but it will be well for you to remember all through your career that there is a tendency to revert to the primordial type; therefore, take every opportunity of increasing your self-reliance by doing things for yourselves as much as possible whilst you still have your teachers to fall back upon in case of failure. Very lucky indeed are those young women who will have an opportunity of strengthening themselves in this respect by holding a resident post at the Royal Free Hospital.

Women appear to adapt themselves mentally to varying surroundings more readily than men. This peculiarity has been attributed to the necessity she has been under of adapting herself to man, always her superior in strength, and always, therefore, possessing the authority which strength confers. This mental adaptability shows itself chiefly in the greater tactfulness which the woman has no doubt acquired through the moulding influence of the stronger sex, for, finding herself opposed to brute force, and being no match for her husband in this respect, she has had to depend on other resources, defensive and offensive.

Closely allied to her tactfulness is another quality which is not so commendable. It is her capacity for dissembling. There are many reasons, which I need not enter into, which account for the undoubted fact that women are more clever at deception than men. There can be no doubt that in the practice of medicine it is sometimes necessary to deceive a patient in her own interest, but as a general rule I strongly advise you to say what you mean and mean what you say. Although this sounds quite simple and easy I can assure you that it is really very difficult and requires a great deal of practice. You will find this out when, as dressers or clerks, you write records of the cases in the wards. You will find it difficult enough to record your own observations accurately, and when you come to writing down the patient's account of his symptoms and history, and comparing it with the answers he gives to the physician or surgeon at his afternoon visit you will realize the truth of what I say.

Another result of the primordial differences in the male and female environments is that the woman's mind retains more of its child-like characters than does that of the man. All through the animal kingdom the adult female is more like the young of either sex than the adult male, and this is so in the human species. Up to the time of puberty the development of the two sexes runs fairly parallel, although from the earliest age there is a foreshadowing of essentially masculine and feminine traits. At puberty the unlikeness of the two sexes suddenly increases, the male departing much more than the female from the previous childlike characters. Thus it comes to pass that some women are inclined to be weak-willed, acting upon the impulse of the moment without due reflection on ulterior consequences; some, again, are highly emotional, passing rapidly from one phase of feeling to another—from tears to laughter, from frowns to smiles; others are wanting in control, wayward and petulant. These childish women are no use at all in the medical profession, but there are others who possess the child-like qualities of sincerity, modesty, simplicity, honesty, and trustfulness; such possessions should be carefully preserved, lest in the development of the higher faculties they be crowded out.

Coming now to the more purely intellectual powers, there are some interesting points to be noted. There is no doubt that in European races the absolute weight of the brain in men is considerably greater than in women, but when we allow for the greater size of the male and compare the proportion of brain weight to body weight, we find that women's brains are at least as large as men's, and, indeed, often a trifle larger. It is therefore not surprising that our students do just as well as, if not a little better than, the men students presenting themselves for the London University examinations. Allowance must, however, be made for the marked precocity of the female brain in childhood and adolescence. Girls between the ages of 4 and 7 have already gained 92 per cent. of their final brain weight, whilst boys of the same age have only reached 83 per cent. The girl's brain grows but little after the age of 7, and has practically ceased to grow about the age of 20, whereas the man's brain does not reach the maximum size until the age of 30. It is not surprising, therefore, that girls are often intellectually ahead of boys of the same age. It may be fairly assumed that girls of 16 or 17 have arrived at the same stage of mental evolution as young men of 21 and 22.

It is probable that there is very little difference between the intellectual capacity of the average man and the average woman. The boasted superiority of men only shows itself when we pass into the region of genius. Genius of the highest order is almost limited to the male sex, and this is in harmony with the well-known law—namely, that natural variations are more common and pronounced in the male. A genius may be regarded as an extreme natural variation, in a sense an abnormality. In harmony with this view is the fact that the opposite mental type—the idiot—is much more frequently met with amongst boys than girls.

In the matter of rapidity of perception the advantage is distinctly with the female sex; thus it is by no means uncommon for a woman to be able to take in another woman's costume at a single glance, and to do it so thoroughly that she is able to give a minute description of it to a friend. Such powers brought to bear upon the clinical aspect of a difficult case cannot fail to be of the greatest use.

In selecting things for various purposes there is a marked difference between the sexes. As a general rule a man selects a thing because it is useful, whilst a woman chooses an article because it is pretty, or because it conforms to some artificial standard which happens at the time to be in vogue.

I have never been able to find out why a woman usually prefers a delicately sharpened chisel to a screw-driver for turning a screw or for forcing a packing case open; but I am inclined to think it is due to lack of education in such matters. The problem of the screw is also a difficult one to decide, but as I have so often observed a woman attempt to turn a screw the wrong way before turning it the right way, I am inclined to think that the peculiarity must rest on some essentially sexual basis.

Women do not, as a rule, seem to be so handy as men in looking after pieces of mechanism and in keeping instruments in good order. They have a dislike for oil, and a tendency to administer a violent bang to anything that will not work. This again may be to a large extent due to the fact that girlhood has nothing to do with carpentering or any other form of handicraft except dressing dolls. In my operative surgery class I usually have some preliminary

sawing of pieces of wood before we proceed to the amputations.

There are many other points of difference between the sexes which I could tell you about, but it would take up too much time. I think I have said enough to convince you that man and woman are very different persons, and that in some respects perhaps man is at present more suited for medical work than woman, but that these differences are not all of them essential, but are capable of being overcome by education and assiduous practice. There are many men and many women who are quite unfit for the practice of medicine, and no doubt there are fewer women than men who have the necessary qualities. Nevertheless, when I compare the young women of to-day with the young women of Dickens and Thackeray, I feel confident that there will always be a sufficient and a steadily increasing number of women taking up medicine.

Just as there are differences between the medical man and the medical woman, so there must be differences in the kind of work they are most suited for. For many years to come men will continue to attend both sexes as they have done hitherto, but *you* must limit your activities to your own sex and to young children. I do not know any medical woman who professes to treat all comers, but if there is such a person I hold her to be an abomination.

More especially will you devote yourselves to the diseases peculiar to women, for they are indeed the justification for your existence. Obstetrics, of course, is a subject in which our students ought to shine. Any student from this school who failed to satisfy the examiners in obstetrics and gynaecology ought to be heavily fined. Many of you, of course, will eventually go to India and engage in Zenana work, but there is plenty of work in this country for those who wish to stay at home. There are good posts to be had under the county councils and other public bodies. I do not mean that they are very good from the point of view of remuneration, but the work required is admirably suited for the average medical woman. Although it is responsible work, it is mainly of a routine nature, and is not likely to unduly tax the woman's self-reliance by suddenly calling upon her to assume responsibility of the first magnitude.

The teaching of elementary hygiene, especially that part of it concerning the home and the care of young children, is essentially woman's work. You must not be downhearted if your teaching is spurned by some woman who will boast of having had twelve children and having buried nine of them. You will not find it wise to inquire after the odd three, as it often happens that one is a cripple, another a lunatic, and the third is "doing time."

There are many valuable resident posts in hospitals for women and children, in sanatoriums, infirmaries, asylums, etc., scattered all over the country. Although valuable from the point of view of experience, they are mostly of a temporary nature, and do not therefore offer much opportunity of earning a livelihood.

Many women are now established in general practice in most of the large towns in England, and I understand that all of them are earning a living, and some of them are doing very well indeed. I do not think all medical women are suited for general practice. The successful general practitioner must be able to work hard all day and a large part of the night year in and year out; he (or she) must be able to dispense with regular meals, a full night's rest, and an annual holiday. He must always be ready to listen to anybody's tale of woe in such a way as to give the patient the impression that his is the only interesting case in the world; he must never be impatient or lose his temper, even when, after driving several miles on a cold night, he is told he is not wanted. He must be capable of carrying any amount of responsibility on his shoulders, and of giving people the impression that he knows a good deal about his work. At the present time the majority of women employ male doctors because, having little or no confidence in themselves, they find it difficult to place any in their medical sisters; if, therefore, you have any doubt about being able to do all the things I have just mentioned, you had better think twice before putting up a brass plate. As time goes on the sex will become better educated, and there will be room for more and more women practitioners. The number of women suitable for the higher branches of professional work is necessarily small, though not smaller in proportion than in the opposite sex. Major surgery is only for the few, and I advise you not to attempt it unless you have confidence in yourself, your apparatus, and your assistants. That there are women whose operative work is of the highest excellence is proved by the statistics of the New Hospital, which, I believe, are as good as those of any other hospital, special or general.

REFERENCE.
1 *Differences in the Nervous Organization of Man and Woman.* By Harry Campbell, M D.

An Address
ON THE
EVOLUTION OF SURGERY.

DELIVERED IN THE MEDICAL DEPARTMENT, UNIVERSITY OF MANCHESTER.

BY

WILLIAM THORBURN, F.R.C.S.,

PROFESSOR OF CLINICAL SURGERY.

To-day, gentlemen, we are concerned, not with our personal losses, but with the gains of that art which so many of you will practise in the years to come, and I hope to trace with you something of the evolution of surgery as I have seen it since the time when I had the privilege to be one of Mr. Southam's students. In those days we used as our guide in all surgical matters a textbook which was not only by far the best of its day, but which still in many respects presents a model of what a textbook should be. All of us—even the least industrious—read the first two pages of this work, and there we found the following statement as to the point of evolution which surgery had then reached.

"Operative surgery," says Erichsen, "like every other art, can only be carried to a certain definite point of excellence. There cannot always be fresh fields for conquest by the knife. There must be portions of the human frame that will ever remain sacred from its intrusion. That we have nearly, if not quite, reached these final limits there can be little question. To my mind it appears as if we had already reached something like finality in the mere manipulative art of surgery and in this direction the progress of modern surgery is nearly barred."

These words were written, or at least published, in 1884. The work of Lister was already known, and his methods practised throughout the world; the new surgery had begun, but few, if any, foresaw its rapid evolution. The very word "aseptic" was then not used of operative measures. Local anaesthesia was as far removed from our thoughts as was chloroform from those of Hippocrates; and when we seek for information upon the diseases of those organs whose surgical treatment now constitutes most of the work of our hospital, we find an absolute and complete blank. Let us take but two examples—the familiar and almost friendly adenoids of our childhood, and the appendicitis which brings so much of interest to all our lives and so much of profit to the surgeon. Neither of these diseases is mentioned, or was then known; while, so far as the latter is concerned, probably any attempt at surgical treatment would have been very promptly fatal. Were it profitable it would be easy by continued quotation from the textbooks of that day to show you that the changes which some of us, who are yet far short of the allotted span of human life, have seen with our own eyes and practised with our own hands, have implied an evolution in surgery not less wonderful than the development of rapid locomotion, of distant communication, or even of aërial navigation. But it will, perhaps, be of more interest if I try to indicate to you from a comparatively short personal experience what this growth has been; and although I do not wish to trouble you unduly with statistics, I would first invite your attention to a few figures which may bring home to you what the human race has gained in one quarter of a century.

In the year 1883 I became a house-surgeon at the old Manchester Royal Infirmary, and in 1908 we saw that building closed for ever. With some personal bias in

favour of such landmarks, I have tried, therefore, by comparing the registers of these two dates, exactly a quarter of a century apart, to learn what the gain has been in our hospital alone—the gain in saving of life, in saving of limb, in saving of suffering, and in the mere economic saving of disablement from ill health which bears so heavily upon our breadwinners.

Let us first look at the mere volume of surgical work in the two years which we are to compare. In 1883 the Manchester Infirmary had one operating theatre, which was used about three times weekly, and the annual number of operations of all kinds was about 600. In 1908, in the same old building, about four times as many operations were performed, and their importance was far greater, as many of the slighter ones were no longer entered in our registers. Or, again, in the first period, about one-fourth of all surgical patients were operated upon, while in the second the number was nearly three-fourths. In spite, however, of this great increase in the amount of work the percentage of deaths *after* operation had fallen from about 10½ to about 8½, these numbers including deaths from all causes whatever and not by any means only those *due to* operation, which, could we define them, would be far fewer. Thus in 1883 we find that nearly one-fifth of the deaths after operation were due to infective conditions which are now so far preventable that we cannot possibly attribute more than 1 per cent. of the present mortality to such causes.

It is, however, when we turn to special classes of disease that we find still more striking evidence of change. In 1883 the abdomen was opened with fear and trembling, and abdominal operations were performed only in the hope of averting directly threatened death, while they were rarely, if ever, resorted to in order to relieve suffering, to restore true health, or to prevent future catastrophes. Thus, in the year of my house-surgeoncy, we find but 12 operations on the abdomen, of which 7, or more than half, died, while in 1908 we find nearly 500 of such operations, with a mortality of about 11 per cent., the mortality including deaths from such conditions as hopeless cancers, injuries, and the like, and the larger number due to too long delay in securing treatment. When you reflect that in one hospital alone this means an average of between one and two persons relieved daily from diseases of the abdomen, which would otherwise have been almost certainly either fatal or a cause of lifelong disablement, you will appreciate what such figures mean.

I will not weary you by tracing similarly the surgery of all regions, but I may tell you briefly a few other facts of this class. Many of the diseases of the kidney are very fatal or very painful, or both. In 1883 three such cases were operated upon; in 1908 we operated upon 92. The liver and its ducts are not mentioned in the registers of 1883; in 1908 there were 52 operations for such painful and dangerous conditions as gall stones and other affections of these organs. The thyroid gland, whose swellings constitute so great a source of disfigurement, of general ill health, and of fatal pressure, was equally neglected in the early period, while 27 cases were operated upon in 1908

True you may say the fact that we operate does not prove that we cure; but I could show you, were it not that I should weary you with details, how, in every case the safety of the operations themselves has also increased. As an illustration we will take a single instance. In 1883 there were removed 29 cancers of the breast, and of the patients 3, or say 10 per cent., died; in 1908 we removed 62, by a far more radical method, giving far better ultimate results, and we had no deaths at all.

I hope I have succeeded, then, in showing you by these figures—figures eloquent in themselves, however inelo-quently presented—the gain in the saving of life and in the removal of causes of lifelong suffering.

Let us next see what has been done as regards the saving of limbs. In a great manufacturing centre like ours there are constantly occurring severe accidents, some of which will always necessitate the amputation of damaged limbs, while amputation has also to be resorted to as the only hope of saving life in some incurable diseases. So common were such cases in the recent past that many people still regard a surgeon as a man "who cuts off legs." But yearly he is becoming more and more a man who prevents the necessity for cutting off legs. In 1883 one-sixth of all the operations performed were amputations, and of these again one-sixth died. In 1908 only one operation in fifty was an amputation, and the death-rate had fallen to one in twenty-five, so that not only were many limbs saved, but the mortality was reduced in a similar ratio. Closely analogous to amputation from our present point of view is the operation known as the "radical cure of hernia," which by curing ruptures increases greatly the efficiency of the man or woman who has any form of work to do, relieves him or her from the disagreeable necessity of wearing a truss, and removes a definite risk to life. In 1883 this operation was performed three times, and the results were very uncertain; in 1908 it was performed 264 times, and nearly all cases are permanently cured.

And lastly, in order that once and for all I may have done with statistics, let me show you how far time has been saved to the disabled worker, when I tell you that in the earlier of our two selected years the average hospital treatment of a surgical in-patient was twenty-one days, where now it is but nineteen days—not a great difference, you may think, in the case of each individual, but a very definite gain to the whole community.

You will be as pleased as myself that I cannot show you by means of figures what has been saved in pain and suffering. Those only who remember the time when every wound required an almost daily dressing, with the recurrent handling of more or less inflamed and intensely painful surfaces, can realize what it means that we now leave our operations untouched for a week, and then uncover the wounds we have made, to find with certainty a perfectly healed surface. The operation of to-day implies, as a rule, a few hours of slight smarting and about two days of discomfort from the effects of the anaesthetic and the early stages of confinement to bed, after which the tedium of convalescence is almost the sole remaining trouble.

Thus it is, then, that almost imperceptibly, and year by year, we of this generation have seen the outcome of Lord Lister's great work, and have seen results from it of which he himself could have had no conception. For surgical advance unquestionably owes itself to two great fundamental discoveries, anaesthesia and asepsis. Of anaesthesia I shall say nothing; I am thankful, indeed, that it came long before my day. Whether the future may hold for us a perfection in the methods of local or spinal anaesthesia which will entirely replace general narcosis or not, at least we have now means of relieving immediate pain and shock so perfect, and on the whole so safe, that we can always operate slowly, carefully, and with precision. The hurried and brilliant surgery of bygone days is past for ever, and never again need we sacrifice accuracy to the fact that human agony could only be endured for a very limited period.

But as regards asepsis, the full value of Lister's work had not been realized in 1883, and the evolution of surgery in the five and-twenty years of my personal experience has been mainly the development of this great advance—a development the lines of which I hope to be able to trace to-day.

It is, of course, notorious that life and limb are saved by preventing the diseases of wounds, and by the practical abolition of pyaemia, septicaemia, erysipelas, spreading gangrene, and suppuration. But it would seem to me that the operative technique of surgery owes much of its progress to a less well-recognized result of completely aseptic wound treatment. Apart from the graver infections, almost every wound was formerly associated with at least some surrounding inflammation. Even in the slightest of cases there was an area of redness extending for about half an inch from the cut surface. This area presented some swelling, it was painful and tender and the tissues involved had lost something of their normal vitality, so that if at all freely detached from their blood supply they were liable to slough or die. It matters not for our present purpose how far this was due to imperfect asepsis, or how far it resulted from the irritant action of chemicals used to prevent the more severe infections; the fact remains that five-and-twenty years ago most wounds did present some such change, and that, therefore, we could not be certain when we operated that the injury inflicted would be absolutely located to the tissues mechanically divided. To-day this is no longer the case. To-day we know that the injury done by the knife is limited to the track of the knife itself, and that it will be repaired with a

rapidity so great that after a very few hours the most extensive dissections have left no obvious trace.

It is probably to this fact above all others that we owe the comparatively recent extension of surgical dissection. The surgeon of to-day must avoid the cutting or bruising of structures essential to life. There are tracts in the brain and in the spinal cord which he must not divide; there are a few—a very few—great blood vessels which he must not tie or cut. But with these reservations he finds no barrier to his work. He can safely open, divide, and restore the great canals and ducts of the body. He can freely expose all its cavities and work in their interior with calm and confidence. He is not limited to a short direct incision giving an imperfect view of what lies beneath; he can fully reveal the parts he has to attack. Imagine to yourselves the study of a picture covered by a sheet, if, on the one hand, you must be satisfied to look through a hole in the covering, or, on the other hand, you can raise or draw aside that covering, exposing the entire picture to view, and then replacing it with accuracy and without injury. It is by raising the covering sheet that we now commence most operations of importance; the tissues of the body can be laid bare as in the dissecting room; great joints can be opened up and closed again with almost every fibre in its original position; the abdomen is opened without cutting its muscular walls; the brain can be exposed, not through a hole of, say, an inch in diameter, but by turning down the side of the skull like the lid of a box and replacing it at the end of our operation; the heart itself has of late been similarly dealt with. The perfection of asepsis has so wholly altered our methods that the greatest advances in the mechanical art of surgery in my day have, I think, been due to a freedom of action and an exposure of the field of operation which were formerly incredible.

Following this accuracy of dissection we take a further step which has also greatly assisted the evolution of our art. We now obtain a complete view of the effects of disease and of diseased areas which our predecessors did not possess and dared not seek, and in this way modern surgical operations have taught us much of the real nature of disease. So long as treatment is confined to the use of drugs or to a few comparatively simple operations with a minimum of anatomical dissection we rarely become thoroughly acquainted with pathological processes: the affected parts are never seen during life, and we have either no visual knowledge of them at all or such knowledge as we do possess is derived from an examination made after death, when the ultimate stage alone is seen, and seen under conditions far different from those of life. But let surgery enter the field and we acquire at once an actual concrete picture—certainty replaces conjecture, and we act with confidence instead of groping in the dark. How many centuries of "clinical observation" went by without the recognition of appendicitis, of the results of pyloric obstruction, or of the diseased conditions of the gall-bladder! But now that the surgeon has fully explored the once-dreaded abdomen all these things have become commonplaces of our knowledge.

We smile to-day at Aristotle's view that the brain was an organ destined to cool the heart, and that the latter was the organ of the mind, and we find it hard to believe that there could be rational therapeutics before Harvey discovered the circulation of the blood; but surely our knowledge of many diseases with which surgery now deals daily is almost as much a revelation to the present generation as were the fundamental facts of physiology to a former day. The acquisition of this knowledge of diseased processes during life and during their early stages, and the precision of observation obtained in recent years have, I think, altered our whole mental attitude and given us a clear conception of the objects of surgery, which marks a further stage in its evolution. What the skiagram has taught us about the bones the human eye has taught us about the rest of the body, and we no longer think and speak of pathological conditions as our fathers imagined them to be, but as we ourselves have seen them.

And again we are led by a most natural transition to another factor in the evolution of surgery. The extension of operative treatment has demanded and obtained an accuracy of diagnosis which was formerly not required and not obtained. The operating surgeon has been obliged to make a call upon the physician which the latter has had to meet. Perhaps I may say, without offence to my medical colleagues, that in the great majority of diseases not capable of surgical treatment exact diagnosis has little but an academic interest. Five-and-twenty years ago, if a man had a tumour of the brain or spinal cord, it was of no practical importance where it lay or what it was. But the moment that surgery can undertake to remove some of these tumours, and thus to cure the patient, it becomes absolutely essential to know their exact size and position, and as far as possible even their shape and consistency. This knowledge is urgently required in order that we may answer the questions—Can it be removed? and Where is it to be looked for? Or, again, let us consider the acute diseases of the abdomen. A quarter of a century ago all, or nearly all, of these were fatal—death was assigned to peritonitis; certain drugs were used to relieve symptoms, but nothing radical could be done, so peritonitis held the field, and was a general expression for many conditions which were not distinguished because they were of no practical importance. But now we know that to use the term "peritonitis" as describing the disease is about as enlightening as to speak of failure of the heart or cessation of respiration, and we recognize that it is but the late result of many diseases, most of which are curable by operation if the latter be performed promptly and the true starting point of trouble be attacked. Hence surgery has called for the early diagnosis of all the causes of peritonitis, and to day the diagnosis can be made and is made. The extension of our mechanical technique has not only taught us pathology, it has made us learn diagnostic medicine.

Thus, then, the lines of advance after the elimination of pain and wound infection have been mainly the free exposure of diseased parts, the fuller knowledge gained thereby, and the greater necessity for prompt recognition of the early stages of disease. Each factor has reacted upon the other. Each step has called for the next, and has made the next more easy; as quickly as the trail is made it is trodden by many feet, and in a very few years the jungle has become a network of solid roads, from which again new byways are ever opening out.

Lastly, much has been gained in these past years by the education of the public. Some time ago I tried to show how the mortality from strangulated hernia had been diminished in a short twelve years, not only by improvements in the method of operating, but also by an increased appreciation by the profession and the public of the necessity for promptitude. Not many years ago the patient "submitted to operation," as it was called, only after long delay, after many conferences with friends and with those surgeons who were almost regarded as foes, and after a prolonged trial of methods differing little from those of the days of Galen. To-day there is little question of "submitting to operation"; it is now often more difficult for the surgeon to discourage the useless than to urge the necessary. The laity has learnt what can be done, and the consequent demand for the surgeon's service has tended ever to increase the value and the readiness of that service.

And thus we now attack nearly all the strongholds of disease, while new triumphs and new conquests follow with bewildering rapidity. In 1876 Lawson Tait first removed some stones from the gall bladder, and the daring operation was regarded as one which might be occasionally adopted. In 1909 Mayo Robson had collected 3,000 of such operations performed by three surgeons alone, and with a mortality of less than 2 per cent. Some twenty years ago the operation of gastro-enterostomy was introduced to surgery; it is now one of the commonest of remedial measures, and many thousands have been rescued by it from the slow martyrdom of so called dyspepsia. In 1896 an Italian surgeon, Farina, made the first attempt to suture a wound of the heart itself, and in 1909 Vaughan collects 150 cases, with 35 per cent. saved from certain death. Still more recently we have seen successful operations for the diseases of the heart, while an ingenious device now makes it possible to open the chest with the surrounding atmospheric pressure reduced to that in the bronchial tubes, and thus to operate upon the lungs and pleura. Not long ago the diseases of the brain and spinal cord were beyond the reach of surgery; but they are now attacked with no inconsiderable measure of success, although we must admit that in this branch of our work we have had many disappointments, mainly,

perhaps, because diagnosis has here not kept pace with surgical requirements. And of the other great organs of the body we have said enough. Surely operative surgery had not reached finality thirty years ago, and surely we may look to the future for an evolution not less wonderful than that of the past.

But, gentlemen, there are few gains which carry no losses in their train. When we speak of our triumphs and our hopes let us not forget our perils and our pitfalls, and let us pause for one moment to ask ourselves what may be the greatest dangers of modern surgery.

In the first place, we have, perhaps, a tendency to operate too readily, and without due care for preliminary diagnosis. Doubtless it is better to "look and see" than to "wait and see," but it is better still to look with the clearest possible certainty of what we look for. Haphazard explorations and operations undertaken because "something must be done" are a moral crime from which we are, perhaps, not altogether exempt. The very safety of surgery tends to diminish the sense of responsibility with which such operations are undertaken. The fact that in so many cases an operation is performed with ultimate recovery may also make us lose sight of the fact that recovery might have occurred without the operation, and that the latter is not in itself a good or a desirable thing, even in the twentieth century. At the outset of your career, gentlemen, I would beg of you always to ask yourselves before operating, "Is this necessary?" and to remember that unless you can answer in the affirmative even the modern operation is a thing to avoid, while it should never be undertaken without a clear and definite aim.

A closely allied danger is that of extreme specialism, which is another term for limitation of thought. Our bodies are not made, like our ships, in water-tight compartments. You cannot derange one organ or one function without also injuring others. Specialization is to some extent inevitable, because the ground to be covered in the study of medicine is so enormous that no human being can be equally familiar with all its parts; and in surgery especially the acquirement of technical skill requires the concentration of our attention on certain regions. But although inevitable it is none the less a misfortune of modern surgery. It tends to narrow our view, to make us lose sight of the human being in the consideration of our own favourite corner of his frame, to lead us into locating all his ills in that corner, and sometimes perhaps to make us operate upon that corner when it would have been wiser to adopt other measures. Is there not reason to fear that there are to-day some well-known, greatly distinguished, and exceedingly brilliant surgeons whose reputation for—let us say amputating the little finger—is somewhat shadowed by the suspicion that they may amputate that digit when it was hardly worthy of such honour. This tendency we all have to resist, and resistance is not made more easy by the attitude of the laity, who almost demand that our work shall be thus one-sided, although they are not always so crude in their reasoning as the gentleman who, having been told that he was suffering from neurasthenia, looked up that condition in an encyclopaedia, and then consulted a well known surgical "specialist" on the ground that he found it in the appendix.

On the other hand, it is also doubtful whether our present lines of professional cleavage are the best. To-day we make a sharp division between medicine and surgery—a division dating from long before the dawn of modern surgery. We have physicians who devote themselves to one branch of therapeutics, and surgeons who, perhaps, tend to exaggerate the other. Is this a good thing or is it a permanent condition? This question I for one am not prepared to answer. We may admit that in many cases the patient would probably be the gainer if the physician were ready and able to perform his own operations—if, for example, the great neurologist could remove the cerebral tumour. On the other hand, we must admit that a wide experience of general surgery is essential to one who would perform any operation, and that if the physician is to operate at all, the members of the senior branch of our profession must condescend to soil their hands with all the details of the work which we surgeons have evolved from the homely task of the mediaeval barber. That this could be done, and might be done, is possible, and I think it not improbable that ultimately it will be done. At least there is a great precedent in its favour in the fact that a large section of the surgical work of twenty-five years ago has now been cut adrift under the name of "gynaecology," in which branch of medicine the old distinction of physician and surgeon has almost disappeared.

However this may be, let us not lose sight of the fact that, after all, the greatest surgeon is the greatest healer, and not necessarily or invariably the most dextrous operator. And we may humble a little our pride in our art when we consider that it is, after all, an imperfect means towards one great end—the extinction of disease. Great as have been its triumphs, and greater still as we hope to make them, the greatest triumph will be when a fuller knowledge of the causes of disease, a more perfect development of preventive medicine, a higher evolution of social law, and a nobler gift of individual self-control shall finally eliminate, or shall truly cure, those human ills with which in our imperfect knowledge we still deal so crudely. The removal, the readjustment, and even the replacement of parts of the human frame are not in themselves our ultimate ambition. At the best we may venture to hope that they are but a passing phase, for, however skilfully we may handle the knife, it must always be an evil in itself, and the day may come when it can be laid aside for ever. Surely we may trust that in the endless war against disease, the scalpel and the suture are no more the final hope of medicine than are the *Dreadnought* and the rifle the last resource in the civilization and progress of mankind.

Doubtless, gentlemen, it is too much to hope for the realization of such a dream in the lifetime of any who are here to-day; but it is not too much to expect and trust that you, who are now devoting yourselves to the great study of medicine, may hereafter play a worthy part, not only in advancing the art of surgery, but also in replacing that art by the still more perfect methods which it is our duty to seek, and to which ultimately we may attain.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE.

R. W. Philip, M.A., M.D.Edin., President.

PRESIDENT'S INTRODUCTORY REMARKS.

In the course of his introductory observations the President said: The Section of Medicine—sometimes known as Internal Medicine—had formerly a more preponderating position at the annual meeting than to-day. With the growth of specialism and the advances of surgery the realm of medicine has been invaded and new Sections have been created. Such invasion, far from limiting the activities of medicine, has widened its horizon. We may certainly anticipate that year by year the deliberations of this Section will become of greater scientific value. It is significant of the present-day outlook in medicine that the two subjects selected by the Committee for discussion this year concern groups of symptoms rather than distinct affections of one or other organ. The physician of to-day is not content to wait for completed pathological processes. Short of the determination of fixed changes within an organ, he has to deal with the latent period of disease—the period when disturbance of normal function is not yet stereotyped in gross anatomical change. It is the *métier* of the physician to detect such fugitive manifestations. The physician is primarily a physiologist. His knowledge of normal processes makes him quick to recognize slight divergencies from the normal. His pathological knowledge enables him to interpret these, and

frequently to offer successful opposition to the progress of tissue change. In respect of treatment, *Obstare principiis* is his watchword. Every day his attitude becomes more definitely preventive.

If we ask wherein especially the present-day outlook of medicine differs from that of former times, even of a generation ago, the answer which occurs most readily is, in the part assigned to toxic influence in the production of disease. The answer is readily made, but how many of us realize its far-reaching meaning? Take as illustration the phenomena of tuberculosis. Gradually we have come to larger and truer views of the tuberculous process. The local lesion, whether in lung, intestine, kidney, or other organ, is getting its proper place. The local lesion is accidental. The essential element is an advancing toxaemia. The toxin is common to all the varying manifestations of tuberculosis. In proportion to the degree and intensity of the toxaemic process the illness is serious. On this account a small focus of disease may be of vastly greater moment than disease involving a much larger area. It is for this reason that exception is to be taken to the usually accepted classification of pulmonary tuberculosis, which has regard to extent of anatomical change rather than to degree of systemic intoxication. Before anatomical changes are registrable by clinical methods, or while anatomical changes are so slight as readily to be missed, there may be evidence of toxaemic disturbance. The influence of the toxin may be traced more or less certainly in every function of the body. The toxin I believe to be a neuro-muscular poison. Hence the advancing muscular dystrophy, the loss of muscular tone, the increased myotatic irritability, the disappearance of flesh—that is, muscle, not necessarily fat—the sense of tiredness, disinclination for effort, gastro-intestinal disability, and circulatory enfeeblement. The onset of these slighter systemic disturbances is the time for successful opposition. At this stage antagonism is relatively easy. It may be too late when the system has become saturated with toxins or when gross anatomical changes have developed in the lung or elsewhere. In this sense there is special significance in the latter-day view that tuberculosis is much more common in childhood than is generally supposed, and that the manifestations of its presence may be at first comparatively slight. The frequency of tuberculosis in childhood explains many points previously obscure. The grave character assumed sometimes by so-called minor ailments is in large part referable to pre-existing tuberculous disease. I am much impressed by the frequent coincidence of one toxic influence with another in childhood. The high mortality of measles is chiefly due to pre-existing tuberculosis. Take another disease not commonly regarded as related to tuberculosis—namely, chorea. Up to the present I have, with careful search, failed to meet a case of chorea which has not responded positively to the cutaneous tuberculin test or has not yielded other proof of the presence of tuberculosis. Cases have been sent to me as offering negative evidence, but fuller examination has shown the evidence to be positive. It may be that this is not a universal statement, and for the present I content myself with the suggestion merely. It seems worthy of record that for a prolonged period I have departed from the recognized therapeutic methods, and have treated pronounced cases of chorea—some of gravest character—by means of tuberculin, with uniformly satisfactory result. The same outlook has guided treatment in certain obscure illnesses of childhood. The significance of tuberculosis in childhood is, then, not limited to the tuberculosis as such. Widely distributed as the infection is, it is to be interpreted—even when itself not of immediately aggressive character—as a devitalizing factor, lowering the tone and resistance of the individual, so that he succumbs more readily to other infection and less successfully resists its advance.

DISCUSSION ON ACIDOSIS.

OPENING PAPER.

By Professor David L. Edsall,
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It is not uncommonly true that when the knowledge of a subject is relatively new, the whole matter appears clearer than when more has been learnt in regard to it. This has been very true of acidosis; a few years ago certain large facts seemed quite well established, and in many ways easy to comprehend. Since that time an enormous amount of work has been done upon the subject. It has among other things developed the fact that the question is one of the most complex in all medicine, and in the course of this work most of the points of importance in regard to acidosis have fallen more or less into dispute, and some of those that seemed relatively clear in the earlier stages of our knowledge of it are now decidedly unsettled. It is so complex a subject, and one which has been so very actively worked upon, that I shall have to speak in a very sketchy way, and of only a limited number of matters that bear upon it. Most of what I shall have to say will deal with the physiological and pathological sides of the matter, as these, rather than any purely clinical questions, are at present the things of chief importance in any discussion of the subject. It is not necessary to go into the history of the development of a scientific conception of acid intoxication out of those vague ideas that referred all conceivable things to acids in the system, ideas that are still widespread among the laity, and among even a fraction of the profession. We now know clearly, since the work of Walters and of many since his time, that acids as such, experimentally used, are capable of producing a somewhat peculiar train of symptoms when ingested in large amounts. We know also that the organism normally meets the presence of acids in the system by using an available alkali that is not essential for other purposes, namely, ammonia, and that those animals that have from their food considerable ammonia available, have the greatest power of withstanding acid intoxication, while those that have less ammonia can stand less acids. As a consequence of the use of ammonia to neutralize the acids, ammonia is excreted in abnormally large amounts in the urine, and the presence of ammonia in the urine in abnormal quantities becomes therefore an index of the extent of the acid intoxication.

In regard to human beings, we know that similar circumstances maintain in certain pathological conditions. Only one form of acid is known to occur in the body in quantities that are sufficient in themselves to be dangerous from the effects as acid. The acid in question, since the time of Stadelmann and Minikowski's first work upon the subject, has been clearly recognized to be β-oxybutyric. It has likewise been abundantly shown that the acetone and diacetic acid which occur in the urine in these circumstances, and which were recognized long before the β oxybutyric acid itself, are oxidation products of the latter, and, contrary to earlier views, they have little if any importance in producing symptoms in the conditions in which they are found. Diacetic acid is not directly toxic, and it occurs in too small amounts to be of very noteworthy importance as an acid. Acetone probably occurs in only very small quantities in the organism, possibly never in more than slight traces, and as it is of only mild toxicity, at any rate it may at most be considered to have but a small direct share in any severe toxaemia that may occur, but it may perhaps damage the kidneys (Satta, Ewing), and thus perhaps complicate matters by tending to add renal insufficiency to the pre existing toxaemia.

The evidence that we have, then, leads by exclusion to β-oxybutyric acid as the important one of these three substances, and there is also very direct positive evidence that it is an important cause of symptoms. The chief points in this evidence are that the amounts found are at times so large as to be clearly dangerous (Magnus-Levy); that the organism is known to respond freely to its presence by neutralizing it with ammonia and to some extent with other alkalis, and the administration of alkalis in large amounts often does good, and not infrequently does very striking good, even in the presence of very severe toxaemia, their effects having been especially demonstrated by the Naunyn school, and their value being admitted even now by those who do not grant that acid intoxication constitutes the whole story in those conditions in which acids are present in very large amounts. As further evidence of the importance of this acid, the symptoms produced when signs of intoxication accompany its presence are similar to those in experimental acid intoxication. We may say, therefore, without question, that β-oxybutyric acid has a large share in producing the intoxication that occurs in diabetes and occasionally

in other conditions, and that its acid effects are an extremely important factor in the intoxication. This acid, as Taylor has noted, has the dignity of producing the only distinctly recognized form of intoxication arising within the organism—namely, the only recognized form of autointoxication.

When, however, we come to ask whether the coma of diabetes, and the exactly similar coma occasionally seen in other states, is due wholly to acid intoxication, we have a somewhat different question; and it is still another question when we ask what is its importance in the variety of conditions other than diabetes in which it is often found, but usually in amounts too small to be the evident cause of symptoms through its acid effects.

I do not think we can say that excess of acid produces all the intoxication symptoms in diabetes. In some instances it seems to be practically the whole cause, as the use of large amounts of alkalis temporarily overcomes even profound symptoms in occasional cases, and certainly postpones them frequently; and, as I stated, the amount present is known in some instances to be large enough to be dangerous from the effects as acid. Also, there are in these cases no other known causes to which the symptoms may be attributed. So far as the evidence goes, then, it is the only known cause of the symptoms, and at times seems to be a sufficient explanation. In some instances, however, treatment with alkalis, even when carried out before the symptoms have become dangerous, is extremely unsatisfactory, and it is only occasionally successful in desperate cases; indeed, the therapeutic evidence is looked upon by a number of important students of the question as being amongst the strongest evidence that acid intoxication alone does not wholly explain the conditions.

Sometimes, of course, the intoxication is undoubtedly a mixed one, the kidneys particularly being liable to failure, and a uraemia complicating a previous intoxication. But even when this is not the case the acid intoxication must be admitted to be a severe cause of secondary disturbance of metabolism, and hence, in addition to the effects as acid, other intoxications may secondarily arise, and it is possible that these help to explain those cases in which a pure acid intoxication is not sufficient explanation. At any rate, at present we must admit that in the first place the matter is, from the pathological standpoint, too complex to make it probable that the symptoms are always due purely to an acid intoxication alone, and the clinical evidence is too equivocal to permit it to be used to support such a contention. While we do not know other causes of symptoms in these conditions, and cannot separate those cases in which there is probably a pure or almost pure acid intoxication from those in which this is not the case, we must admit that other causes probably act in a considerable proportion of instances together with the acid intoxication.

As to those conditions other than diabetes in which the evidences of acidosis are relatively slight, this is the case in a variety of states: In starvation, in various poisonings, especially from some of the narcotics; in digestive disturbances, in cyclic or periodic vomiting, which is almost certainly not a simple digestive disturbance; in acute yellow atrophy and phosphorus poisoning, in eclampsia, in the vomiting of pregnancy, and in other conditions. In considering these I think we must grant that there are two types of acid intoxication, looked at from the pathological standpoint. I shall speak somewhat more at length later of the well-known fact that the occurrence of large amounts of acids in diabetes is known to be dependent upon two main factors—the inability to use carbohydrates and the coincident excessive use of fats. I have already mentioned also that no tissue lesions sufficient to explain the intoxication symptoms are found in diabetes. These same conditions obtain in starvation, for in starvation no carbohydrate is taken, and large amounts of body fat are burned. Starvation acidosis is, therefore, to be looked upon as of the same type and significance as that which occurs in diabetes, though nearly always of milder form, probably chiefly because of shorter duration. Starvation also plays an important part in many of the other conditions mentioned in which acidosis occurs, for the patients are often taking little or no food, or they are at times on a diet so distorted as to contain little or no carbohydrate. Hence this type of acidosis, that is clearly due to an abnormal diet, frequently plays some rôle in all these states.

But in many of the conditions under discussion the diet plays a secondary rôle, and at times none at all, for the outbreaks with which the acidosis is associated may occur while the patient is taking a normal diet. I have seen the acidosis clearly marked with the very beginning of the symptoms when there has been no change in the diet. In this point, then, these cases may clearly differ from the diabetic form.

Furthermore, and still more important, these conditions often show very serious lesions that may of themselves evidently be enough to produce violent symptoms; and, as noted, the signs of acidosis are quantitatively too slight to make it probable that the acid plays a large rôle in producing the serious symptoms. These are the various sorts of cases in which, following the Naunyn school, it is often customary to speak of acidosis as distinct from those cases in which the acids evidently themselves cause the symptoms, and which are said to show acid intoxication. As I have noted, there is clearly a reason for making such a distinction between them, for in these varied conditions the acids are unquestionably of secondary importance, but I think there is a tendency on the part of many writers to speak too lightly of these milder acidoses.

There are practical as well as theoretical grounds for believing that the acidosis, though a secondary matter, cannot wisely be neglected, and may be important in producing or at least in keeping up symptoms. One reason for this that may perhaps have some importance is that von Noorden, Satta, Ewing, and others have given evidence that the acetone bodies in moderate amounts may produce some damage to the kidneys, and hence their presence may be of importance in this regard.

Then, too, I have suggested, and I think upon reasonable grounds, that the severe autolytic changes that are so very common in all these various conditions may be furthered by the acidosis, for we know that acids favour autolysis, and, granting that an abnormal autolysis is once set up, it is surely likely to be increased by excessive amounts of acids in the organism. Indeed, in delayed chloroform poisoning, for example, it is possible now to form a picture, still hypothetical to a considerable extent to be sure, but suggestive of the course of events. The work of Howland and Richards on chloroform poisoning, together with Howland and Richards's work showing the remarkable heightening of the effects of indol when substances that cripple oxidation are used previously (such substances as cyanide and chloroform), would indicate the possibility that in this form of intoxication autolytic processes are set up in the liver particularly by means of substances that may perhaps come from the digestive tract, and may be of the indol group, under circumstances not clearly known but apparently likely to be accompanied by decreased oxidation processes. Further, the work of Reicher on the influence of narcotics upon the fat content of the blood shows that such substances as chloroform mobilize large amounts of body fats. The oxidation processes being probably reduced by the chloroform. the fats are not properly oxidized, and acids accumulate in large amounts. There is every reason to think, then, that these acids would increase the previously existing autolytic changes. That the acids do harm in these conditions is shown by the fact that in a fair proportion of cases Wallace and Gillespie and others have shown that treatment directed against them (carbohydrate food and alkalis) will go far towards preventing post-anaesthesia intoxication. It is not improbable that a similar course of events may occur in periodic vomiting. Alkalis do good in some of the latter cases, and if the explanation that I have suggested be correct their good effects would be due more to their preventing the acids from furthering additional autolytic tissue change than to the amount of acid that they neutralize. This view would harmonize the fact that they do good in some cases with the fact that the acidosis seems to be too slight to be the main cause of symptoms.

The lack of good effects from alkalis in many cases of this disorder could then be explained by the fact that the autolytic changes and the very complex intoxication that must be associated with them have become so pronounced that the acids play but a minor rôle.

I wish it to be understood that what I have just said is largely hypothetical, and I introduce it only to show that acids in these cases may theoretically have importance, and alkalis are known therapeutically to be useful at times. When we are dealing with cases of this group, we need to look upon them as being of a separate type from diabetic acidosis, because we are always dealing with most complex conditions and commonly with very severe tissue lesions. The acidosis is certainly usually a minor feature, while in diabetes it seems to be the major feature; but even though a minor feature, it is one we can attack with occasionally great usefulness therapeutically, and it would appear that it sometimes assumes the major rôle in determining the course of the illness, probably not so much from the quantitative effects of the acids directly as acids as through their effect upon other pathological processes. While of a separate type and of a slighter degree of severity, these forms of acidosis cannot be considered of negligible importance practically or theoretically.

It is of much pathological interest to note the very great frequency with which changes in the liver, probably autolytic, are associated with the varied conditions that exhibit this type of acidosis. This, together with the observations of Geelmuyden, Embden, and Michaud, and others, on the relative amounts of acetone bodies found in the liver, as compared with other organs, and on the results of perfusion of these bodies through the liver, indicate a probable close relation between the liver and the formation or distribution of acetone bodies; and the fact that Mosse, Heiberg Ewing, Rott, and Tugendreich have all found basophilia of the liver protoplasm in a variety of acidoses of this type and absence of the basophilia in other organs when looked for, suggests also that the acids may exercise especially damaging effects upon the liver. This again is evidence that they may be very active in furthering the autolysis or other changes that occur there, and without being produced in very large amounts, for in many of the cases studied by the authors mentioned there was but a mild grade of acidosis.

I have said nothing about any form of acidosis except that due to β-oxybutyric acid. I think there is nothing concrete to say about any other acids as causative of symptoms. Many persons have attempted to attribute pathological importance to lactic acid. This question was very justly dealt with by Bainbridge in his Arris and Gale Lecture in 1908, and I can only agree with him that it is impossible now to show that this acid is of any pathological importance. We have, to be sure, some general evidence that unknown acids other than oxybutyric are probably important at times, but at present it is fruitless to attempt to attribute a rôle to any particular individual acids.

I would now turn to one or two other questions that are of especial interest in this subject.

First, the question as to the manner in which the acids produce their effects. Much work has been done on this point in England in recent years, and I may well leave the details of its discussion to some of the gentlemen present who have contributed to this work. I will only say that I believe it is impossible to attribute the symptoms to any one effect or to any one substance such as CO_2 accumulated in excess. We may readily—particularly in view of the work of Beddard, Pembrey, and Spriggs—believe that the respiratory disturbance is to a large extent the result of the action of the organic acids on the respiratory centre, affecting it much as CO_2 normally does but in excess. This point is of interest in some other connexions, and especially, as I have previously suggested, it is desirable to study the curious air hunger occasionally seen in the absence of any clear cause, but usually associated with digestive disorder and most commonly occurring in children, to determine whether moderate grades of acidosis may not be active in producing it. Acidosis of mild form is certainly common in the conditions in which this occurs, and alkalis appear to help overcome it.

The general nervous symptoms occurring in severe acid intoxication, and especially in coma, I think we cannot yet safely pin down to any precise effect. It may be due to direct effect of the acids upon the brain tissue (the protein). Or it may, in view of what we have recently learned of the influence of the fixed alkalis upon the nervous system, be due partly at least to their abstraction by the acids; and it is extremely desirable that the relation of the fixed alkalis to the acid intoxication and its symptoms be much more thoroughly studied than has been the case, especially in view of Taylor's observation that an ash-free diet may set up signs of acid intoxication—an observation which is made more pertinent by the fact that Bunge and Lunin have made similar observations experimentally on animals.

Again, the nervous effects may very readily be due in large part to a mixed complex disturbance secondary to the accumulation of acids, just as in lead poisoning violent cerebral and some other symptoms seem to be due less to the direct effect of the lead than to the secondary effects of its influence on the tissues. Further, it is not yet ruled out that these symptoms are due in part to a directly toxic action of β-oxybutyric acid or its salts.

Finally, we need to give attention to the possibility that the effect may be directly analogous to that of the narcotics. In view of Reicher's demonstration that the narcotics flood the system with lipoids, and Wilbur's work indicating that the sodium salt of β-oxybutyric acid is toxic, and in view also of some well-known facts regarding the effects of small amounts of soluble soaps of lower fatty acids in dissolving or emulsifying neutral fats and lipoids, I have suggested the possibility that the attack of the organic acids may in more or less considerable part be upon the lipoids of the nervous system, and resemble that of the narcotics. I find that this question has been very suggestively worked upon from another point of view by Winogradoff in Freidrich Müller's laboratory, and he has kindly given me the main results of his as yet unpublished work, which indicates that the organic acids act in part as acids through their free hydrogen ions, but in part as narcotics through the influence of the undissociated molecules upon the lipoids. If this interesting work is confirmed it will go far towards explaining the fact that alkalis do good but are not completely satisfactory, and at times even wholly unsatisfactory, in controlling the symptoms. The manner in which the acids exert their effects is far from settled, and it is quite probable that the effect is complex. So far as we yet know the acid influence would seem to be often predominant, but in different instances the results may vary.

Finally, and in many ways the most important practical question of all, In what manner does the large accumulation of acid occur? and as a corollary to this question, How far are we advanced toward controlling this accumulation? The prominent demonstrated points are that a lack of ability to use carbohydrate, or a lack of carbohydrate food in the diet, and especially the consequence of this, which is the use of a large amount of fat in the food or the consumption of a large amount of body fat in order to make up the deficiency, is the main cause of the accumulation of fatty acids. As is well known, there are two possible explanations advanced for this—either the organism is overtaxed in its powers of utilizing fats because of the large demands that are made upon fat metabolism, or some interaction occurs normally in the combustion of carbohydrate and fat, and in the lack of the former the latter are not properly burned. There is difference of opinion still as to which of these is the case. The evidence shows that the latter almost certainly occurs in many instances. In some cases, however, as with the anaesthetics, the organism does apparently become flooded with fats, and in most of these cases there is no evidence of inability to use carbohydrate, and at times no lack of carbohydrates. It is probable that in these cases the fat metabolism is crippled by too much labour thrown upon it, or by disturbance of oxidation and the like, and the carbohydrate metabolism may play no direct rôle. In the more severe cases, particularly the diabetic cases, the disturbance in the carbohydrate metabolism probably secondarily causes the disturbed fat combustion.

It has been difficult to understand the accumulation of β-oxybutyric rather than diacetic acid or acetone. β-oxybutyric acid may be readily burned by the diabetic organism, while diacetic acid readily forms acetone, and the latter does not burn. It is especially difficult to understand this point, since no general disturbance of oxidation can be demonstrated. Within a few months some highly interesting contributions have been added to our knowledge

of this matter, which have very important physiological significance, and already some suggestive clinical bearing. Almost coincidently, Maase, Blum, and Dakin showed that the administration of diacetic acid to animals and perfusion of their livers with this acid results in the formation of β-oxybutyric acid; and Neubauer has demonstrated, in a paper read at the German Congress of Internal Medicine, and of which he kindly showed me the manuscript, that in his own cases, and in all the cases that he could study properly, the amounts of oxybutyric and of diacetic acid run in a certain almost constant relation to each other, and he also showed the transformation of ingested diacetic acid to β oxybutyric acid in diabetic subjects. In other words, the reaction appears to be clearly a reversible one, and a definite equilibrium is maintained between the amount of β-oxybutyric and of diacetic acid. This shows why an accumulation of oxybutyric rather than of diacetic acid or acetone occurs, and it makes it evident that in acid intoxication there is a hitch in the oxidation beyond diacetic acid, or, more probably, that normally the oxidation does not go over diacetic acid, but that the latter is a transitory stage, and it is all reduced back to oxybutyric and then directly oxidized. Woodyatt believes that it all goes back over dioxybutyric, which very easily oxidizes, as he has demonstrated *in vitro*. Neubauer's results have a more directly practical bearing also, in that they show that the easy estimation of acetone (which is chiefly an estimation of diacetic acid, as Folin showed) is, contrary to previous teaching, a satisfactory clinical method of determining the degree of acid intoxication, since the relation to oxybutyric is constant in the same individual.

We do not yet know what the hitch is in this process when acidosis develops, nor the rôle that the carbohydrate plays. We have, however, some important sidelights upon that matter that have a certain degree of practical value even now, and that offer the most hopeful outlooks toward prolonged and successful control of acid intoxication. The use of carbohydrates has long been known to restrain the acidosis, and in mild cases to cause it to disappear, but it has the unhappy disadvantage that it is very likely ultimately to do harm through making the diabetes itself worse. Three main methods of attacking this difficulty have been used. It was shown by Schwartz and others that different fat foods vary in the amount of acid that they produce, those containing much of the lower fatty acids being especially harmful. This is of some practical value, as the diet can be modified somewhat in accordance with this. But its value is limited, and is likely to remain limited, if for no other reason because the diet of the diabetic is already sadly restricted, and we need to seek to add more to it rather than to eliminate from it. Aside from such simple and useful measures as the use of fresh and washed butter instead of old butter, which contains more lower fatty acids, not much has come of this. In regard to nitrogenous foods, it has been shown that they vary greatly in their influence upon acidosis. It is now quite clear that protein foods, as well as fats, may increase the acidosis, though they are certainly of much less importance than the facts in this regard. It is, at the same time, clear that proteins have two contrary effects, one to produce more acids, the other to reduce the amounts of acids—that is, they have both the so-called ketogenic and the antiketogenic effects. So far as we have learnt, these effects are exerted, on the one hand, from splitting off carbohydrate groups, which act like ingested carbohydrate, though they are more easily burned by all except severe diabetics. On the other hand, the amino acids of which proteins are composed have a two fold influence, some of them increasing acidosis apparently simply by yielding the fatty acids of their molecules, some of them, however, having a restraining effect. The idea naturally arises that the choice of proteins in the diet can be made largely with a view of their effect upon acidosis. This plan can be used in severe cases to add a fraction of help to other measures, and is useful to that degree, but the practical limits upon this line of work must again be very narrow because of the marked restrictions that it adds to the diet.

It is in the third method that has been used—namely, in the attempt to provide a practical substitute for sugar-yielding foods—that real success seems most likely ultimately to be reached. It is quite clear that sugar itself is not the special thing that controls the acidosis, but rather some of the combustion products of sugar. There has been a lively search for one or more normal products of sugar, or some substitute for these, that would serve to control acidosis. A variety of substances have been found to act in this way, and some are perhaps normal combustion products of sugar—gluconic and glutaric acids, alcohol, glycerine, etc. For a variety of reasons none of these has proved to be of noteworthy practical value except alcohol. Some investigators denied earlier that alcohol was antiketogenic, but Neubauer has clearly proved that it is, and there can be no doubt of its value in controlling acid intoxication when quite generously used. There is, however, an important toxic element in alcohol, and at times it seems to make the diabetic worse, though the observations that showed this were usually temporary, and it is possible this effect may pass off, particularly in view of the studies of Dixon and those recently made by Richards, which indicate that an immunity develops to the toxic effect of alcohol. At any rate, alcohol is limited in its effects, and is far from perfect, and has a toxic element, and the search for a better substitute goes on. Woodyatt, in work as yet unpublished, of which he has given me an abstract, has done perhaps the most suggestive work upon this line which has yet been accomplished. He believes, for various reasons that he advances, that glycerine aldehyde is probably a normal combustion product of sugar. He finds that it very largely reduces acidosis, and is not toxic in any evident way, and he has also noted the very interesting fact that it is apparently transformed into sugar. His work is very valuable and encouraging. It is possible that his figures indicate that the effect is really a toxic one on the kidney, and that it suppresses the excretion of acetone bodies rather than diminishes their amount; but this is less likely, since some of the glycerine aldehyde is built up into sugar.

In this latter line, then, there has been very useful progress, and while we have not yet reached extremely important results, the outlook for finding the key to the puzzle is very encouraging. It should not be overlooked, however, as Joslin insists, that our strongest point in overcoming acid intoxication in spite of all this work is still, for the present, the very careful treatment of the diabetes itself and the attempt gradually to train the carbohydrate metabolism back to the point where it can utilize more carbohydrate, and thus do away with the acid intoxication.

DISCUSSION.

Dr. E. I. SPRIGGS (London), after referring to the able and comprehensive introduction of Professor Edsall, said that he thought the distinction between the acidosis of starvation or of diabetes and the acidosis incidental to the acute diseases mentioned was a superficial one, as in the latter group there was abstention from food and vomiting, and therefore deprival of carbohydrate. Acidosis came on very rapidly when vomiting was severe. He doubted whether the presence of oxybutyric and diacetic acids had much to do with the disintegration of the liver in acute yellow atrophy, phosphorus poisoning, post-anaesthetic vomiting, recurrent vomiting, and the toxaemic vomiting of pregnancy; for although it was true that an acid reaction had been shown experimentally to favour autolysis of the liver, yet in diabetes these acids were known to be present in the body for months and years without causing disintegration of the liver, and this even in the forms of diabetes which ran a rapid course. The presence of degeneration of the liver could not be looked upon as a distinguishing feature of importance in separating the various forms of acidosis, because in those forms in which no gross lesions of the liver were found there was, nevertheless, a failure, through overwork, of the important liver function of elaborating fats previous to their oxidation. Dr. Spriggs then referred to a series of experiments carried out in the years 1903–06 by Dr. Beddard, Dr. Pembrey, and himself upon 25 cases of diabetes, including observations on the urine, the blood, and the respiratory exchange of severe diabetes, with controls upon mild cases and upon normal subjects. They held the view that diabetic coma was due to poisoning by acids, and thought the points referred to by Professor Edsall against that view were of less weight than the

evidence for it. In severe diabetes the alkalinity of the blood was depressed; the tissues, the blood, and the urine contained abnormal acids, and analyses of the urine showed that the body suffered a depletion of bases. Moreover, much alkali could be given without rendering the urine neutral or alkaline, and the only means which had resulted in rescuing many patients from coma and restoring them to a further period of life was the administration of large doses of alkali. It was sometimes pointed out that the symptoms of diabetic coma were not identical with those of the other acute diseases associated with acidosis. If this implied a doubt as to the presence of acid poisoning it must rest upon the other conditions and not upon diabetes, in which disease the metabolism had been more thoroughly investigated. In diabetes the acidosis was of long standing, whereas most of the other diseases were acute, and different effects were often produced by the same cause, according as its action was gradual or sudden. Acidosis in diabetes might arise in two ways: First, from indulgence in carbohydrate above that amount which could be burnt in the body, the power of burning that food became gradually lost, so that the body had to use an excess of fats; the complete oxidation of fats then failed, with the production of oxybutyric acid, diacetic acid, and acetone. Secondly, acidosis might be brought on if the patient was too suddenly deprived of carbohydrate food. When a patient was placed upon a strict diet, within a few days the appetite failed, nausea, pain in the abdomen, and constipation appeared. This was due to a development of acidosis from the strain thrown upon the oxidation of fats. Curves were shown from analyses of the urine by which it could be seen that at such a time the ammonia rose, whilst the total nitrogen often fell. The CO_2 in the blood was lessened, and the alkalinity of the serum also fell. These phenomena were the initiatory phenomena of diabetic coma. They usually passed off, but putting a patient suddenly upon a strict diet involved the risk of coma, and had, in his opinion, often led to it, especially in institutions where the patient was put into bed. He never put a diabetic into bed if he could help it. In private practice patients did not carry out dietetic restrictions to the letter, and had sometimes saved their lives by their disobedience. The risk of acidosis in diabetes could be combated in two ways: First, by preventing or postponing its onset; and, secondly, a valuable but only palliative method, by treating it with alkali. The prevention of acidosis lay in determining how much carbohydrate the body could use, and in allowing that amount and no more. By this means, with regulated short periods of a strict diet occasionally, the assimilative power of the body could often be retained for long periods and even improved. [A diagram was demonstrated showing that giving bread and potato in limited quantities had reduced enormously the excretion of oxybutyric acid and diacetic acid.] The dietetic treatment of diabetes required, therefore, to be carried out with great discrimination between restriction and allowance. The treatment was laborious; it was expensive. It required skill, and, what was more than skill, persistent and watchful care. It was, however, in the present state of our knowledge, the rational way of preventing or postponing the onset of acid poisoning.

Dr. Langdon Brown (London) said it could be definitely asserted that acidosis due to oxybutyric acid and its derivative was due to starvation. A patient receiving nothing but salines per rectum would always develop acidosis within forty-eight hours. It was particularly due to deprivation of carbohydrates, but was also seen in oxygen starvation, as in mountain sickness and broncho-pneumonia. Probably the aldehyde structure of the sugars enabled them to combine directly with oxygen, and therefore in the absence either of carbohydrate or of oxygen incomplete oxidation followed. During starvation autolysis came into play and less important tissues such as the fats were largely drawn upon, and the fatty acids resulting from their breakdown were completely oxidized. To be eliminated they drained ammonium from the proteins or drew on the fixed alkaline bases. The amount of alkali which had to be given in excess of two drachms of bicarbonate of soda before the urine was rendered alkaline afforded a convenient measure of the degree of acidosis. Even the cases due to severe liver disease might be explained by an "internal starvation" when the large part played by the liver in preparing the foodstuffs for the use of the tissues was considered. A diabetic might be able to metabolize laevulose, oatmeal, or potato starch when unable to assimilate other forms of carbohydrates. In other forms of acidosis dextrose must be given, if necessary per rectum. Citric and glutinic acids could replace carbohydrates to a certain extent. In giving alkalis, sodium should not be given alone, but half as much potassium and one-twentieth as much calcium and magnesium should be added.

Dr. Leonard Guthrie (London) dealt with the subject of acidosis in cases of delayed chloroform or post-anaesthetic poisoning. The view emanating from anaesthetists that fatalities after chloroform anaesthesia were due to overdosage or to over concentration of the drug at the time of administration was untenable. Were this the cause such fatalities would be of frequent occurrence. None of the patients in his own experience who died of delayed chloroform poisoning had shown the ordinary signs of overdosage at the time of operation; and, conversely, none who actually received an overdose developed fatal symptoms later. Chloroform given in massive doses and for lengthy periods no doubt produced fatty liver in animals, but it was impossible to believe that in a healthy child profound fatty metamorphosis in the liver and other organs could be the result of chloroform given in doses not exceeding a drachm during a period of from ten to fifteen minutes. The theory that idiosyncrasy accounted for delayed chloroform poisoning had to be abandoned when it was shown that similar effects followed administration of ether, ethyl chloride, and nitrous oxide. Moreover, some patients who succumbed after administration of chloroform had been chloroformed with impunity on previous occasions. Idiosyncrasy could not be present at one time and absent at another. He thought that perhaps too much had been made of carbohydrate starvation as the cause of post-anaesthetic acidosis, although he agreed that long fasts before operations increased the dangers of anaesthesia. Dr. William Hunter had stated his opinion that if a patient "had always a very nutritious and easily digestible meal, well sweetened, two or three hours before operation, the fatal effects of delayed chloroform poisoning would in all probability be completely prevented." But this was precisely the kind of meal which had usually been given except in cases of operation of extreme urgency. Were starvation alone responsible for deaths after anaesthetics, operations, for instance, on patients suffering from intestinal obstruction who had often been unable to retain nourishment for several days, would necessarily be fatal. He was interested in the remarks of Dr. Spriggs on excess of carbohydrate diet as a cause of acidosis. He believed that an excessive carbohydrate diet was the cause of one form of cyclical or recurrent vomiting with acidosis, in children, and that these were potential victims to "delayed chloroform poisoning." Such children craved for carbohydrates, which they seemed unable fully to metabolize. Consequently the liver became loaded with fat and glycogen. At intervals the hepatic machinery for the metabolism of food broke down, and the result was a fit of cyclic vomiting and acidosis. He believed that operations under anaesthetics on the eve of an attack of cyclical vomiting were particularly dangerous, though in the intervals between the attacks they might be safe. Any anaesthetic, by interfering with oxidation and metabolism in general, might act as the last straw on a liver already overtaxed, and annul its functions in dealing with fat, glycogen, proteids, toxins, and micro-organisms. No operation of expediency should be performed on a child without inquiry as to history of past attacks of cyclical vomiting. When such a history was forthcoming the operation should be delayed for a week or two, during which appropriate diet, with limitation of carbohydrates and fat, should be provided. A similar course of treatment was advisable even when no history of cyclical vomiting could be elicited, as an anaesthetic might precipitate an impending first attack. In regard to the treatment of post-anaesthetic poisoning, not being a believer in the carbohydrate starvation theory, he doubted the efficacy of dextrose, which had been recommended. As to alkalis, he could only say that all patients in his experience had received large injections of normal

saline solution, with a view to neutralizing the acids supposed to be present, without the slightest benefit.

Dr. M. S. Pembrey (London) said it was necessary to remember that the acidosis of disease was not a condition which had no representation in physiological processes. There was a great increase in the production of carbon dioxide and lactic acid during muscular work. In the acidosis of diabetes there was a relation between the alkalinity of the serum and the amount of carbon dioxide in the venous blood, the two rising and falling together without being actually parallel. It was not surprising, therefore, that the theory was advanced that the blood was unable, owing to its diminished alkalinity, to take up the normal amount of carbon dioxide, and the tissues became overcharged with the gas; deep breathing would result from the increased pressure of the carbon dioxide in the blood which supplied the respiratory centre in the medulla, and the nervous system generally would be affected by the excess of that gas. In short, diabetic coma might be considered to be a narcosis produced by carbon dioxide. The observations made by Dr. Beddard, Dr. Spriggs, and the speaker did not support this view, and they had suggested an entirely different explanation of the phenomena. The observations upon the blood showed that there was no evidence of an increased pressure of carbon dioxide; the blood in the arm of a diabetic patient could take up as much as 60 volumes per cent. of carbon dioxide. Moreover, blood from cases of diabetic coma absorbed carbon dioxide when it was exposed at a temperature of 37° to an atmosphere containing 4 to 6 per cent. of carbon dioxide. Further evidence could be obtained by an examination of the air from the alveoli of the lungs. Analyses of such samples would give the pressures of the carbon dioxide and of the oxygen in the alveolar air, and these would afford evidence of the condition of the blood in the capillaries of the lungs. The alveolar air was an index of the severity of the acidosis, and during the typical breathing of a patient in diabetic coma the percentage of carbon dioxide might be as low as 1.5 or 2 per cent. The respiratory quotient was about 0.6. Their view was that the respiratory centre was stimulated by the other acid bodies present in addition to carbon dioxide; that the resulting hyperpnoea reduced the carbon dioxide in the blood and in the alveolar air. The results would indicate that it was useless to give oxygen, for there was plenty of oxygen, 17 to 18 per cent., in the alveolar air. The deep breathing was a response to the stimulating action of the acid substances, both the abnormal and the normal acid carbon dioxide. Observations made upon the effect of muscular exercise upon healthy men and diabetic subjects would indicate that in some cases muscular work would be useful, for it increases enormously the processes of oxidation in the body; in others it would be a danger, especially if it were excessive and suddenly undertaken in a patient who had led a sedentary life. The exercise increased the carbon dioxide and also the lactic acid; these factors acting with the abnormal acidosis might produce coma. The law of excitation must be remembered; the greatest effect could be produced by a sudden change. In a patient whose power of accommodation was limited, safety lay in a slow progressive change in diet or muscular activity.

Dr. J. H. Ryffel (London) said pathological acidosis had its physiological analogue in the acidosis of starvation and of exercise. In starvation the acidosis was very slight, being mainly due to the acetone bodies, which caused an increase in the acidity and a relative rise in the ammonia of the urine. Mild exercise caused no acidosis unless associated with starvation, the effect of which it exaggerated. Violent exercise, such as running for four to five minutes at a pace sufficient to cause dyspnoea, produced all the signs of acidosis, except coma. The acidity of the blood, the acidity and ammonia of the urine were increased, and the alveolar carbon dioxide was markedly reduced at the end of the period. The cause of these changes was lactic acid, the amount of which in the blood was increased, with the result that it was excreted by the kidneys, so that the urine frequently contained 0.5 per cent. The administration of oxygen had no effect on the appearance of lactic acid under these conditions, so that this effect was not due to lack of oxygen. Moreover, lack of oxygen only caused an appreciable formation of lactic acid if extreme and long continued. The effects of the acidosis of violent exercise formed a useful confirmation of the views of Drs. Beddard, Pembrey, and Spriggs on diabetic coma, that the coma and increased respiration are the direct result of the acidity of the blood, and not due to carbon dioxide, of which the quantity in the lungs and blood is much reduced. The acidosis of exercise produced exactly similar effects on respiration, which were best explained by supposing that the activity of the respiratory centre was regulated by the acidity of the blood. Increased carbonic or other acid raised the acidity of the blood. That increased respiration, with the result that the carbon dioxide of the blood fell, and the blood became less acid. If, however, other acids than carbon dioxide were present in such quantity that the blood was still too acid, respiration continued increased until these acids disappeared from oxidation and excretion.

DISCUSSION ON CHRONIC CONSTIPATION AND ITS TREATMENT.

OPENING PAPER.

By J. F. Goodhart, M.D., F.R.C.P.

Constipation is an unnatural delay in the passage of the intestinal contents along the colon. In the small intestine the contents travel rapidly. If, as occasionally happens, a fistulous opening exists between the lower part of the small intestine and the abdominal wall, it can be seen that but a few minutes elapse between the imbibition of coloured fluid, such as stout, and its appearance in part at the fistulous orifice. Six to ten minutes has been about the time in the one or two cases I have seen. Dr. Hertz has of late made many observations on this matter by means of bismuth meals and the *x* ray screen, and the actual passage of the intestinal contents has been watched *in transitu*, and it is now certain that the chymey contents of the small intestine pass rapidly along that length of the bowel, and that delay does not occur there. The small intestine can therefore be dismissed from consideration. Constipation concerns the colon only.

But what constitutes delay? This is by no means an easy question to answer; but we can again appeal to the extremely instructive observations of my colleague Dr. Hertz, for by these the physiological rate of movement of the intestinal contents along the canal has been shown by demonstration. It would appear that the average time taken by food in passing from the caecum to the rectum is, say, fifteen hours. From the time when the food is taken into the stomach will be five hours extra, and the actual defaecation will be several but an uncertain number of hours more, owing to delay in the ampulla or collecting chamber. Dr. Hertz gives forty hours as the time by which a meal taken in, ought to have been completely passed out.

Constipation falls into two groups of cases: constipation in the colon and constipation in the collecting chamber or rectum. The one is dependent upon an automatic reflex outside the control of the will; or indeed, if volition can be said to have anything at all to do with it, it would seem to be pretty nearly always in opposition. The other is largely aided by voluntary effort, and the trouble only or chiefly comes into being when this fails.

Of the latter form not much need be said; it is mostly present in old people or in women of lax habit who have borne children, and in such as have habitually neglected themselves, and it is best dealt with by local measures, such as enemata.

Constipation of the main tract of the colon is a much more intricate and, I may add, interesting affair, and is in the main a physiological one. Its causes concern themselves with: (*a*) The nervous and muscular apparatus of the intestinal wall; (*b*) the intestinal contents and their movement under muscular propulsion. There is the mucous membrane to be considered also, but inasmuch as absorption, secretion, and excretion are conditioned by the nervous energy supplied to the glands, the mucous coat may be considered to be included when we deal with the nervous circuit.

It hardly needs to be asserted that the nervous element is a preponderating one, for it is clear that the temperament of the subject, his nervous vigour, habit, each and all need consideration, if, indeed, it be at all possible to give it them. For instance, take the temperament of the individual: some are always constipated, it is their natural habit; in others the nervous centres have been taught to respond, perhaps frequently (a most inconvenient habit), but for present purposes let us say at too long intervals, and thus the habit of constipation has been *acquired*. Others in the daily, even hourly, expenditure of nervous vigour and the oscillations of energy that come thereby, easily become so. Thus will it come and go in accord with the presence or absence of mental stimulus, as looseness again may equally do. Excessive muscular effort or nervous discharge of varied kind may produce similar results, either way, and thus lead to constipation in some, as the result of too prodigal expenditure of force upon the preceding effort. It is no uncommon observation that excessive exercise on one day may be followed by constipation on the next: the current supply of nervous energy in the accumulators has been overdrawn, and some of the natural functions are damped down as a direct sequence. Once again, constipation is often the very earliest indication of an oncoming mental derangement of a severe kind, and I cannot but think that the boot is too often put on the wrong leg when the mental depression is ascribed, as is so much the fashion, to the toxic effects of an intestinal poison. I may appeal also to an even commoner condition of the same sort, where many will tell, in the mental exhaustion and general neurasthenia that is apt to succeed to many febrile conditions, that they are much worse on those days when the bowels act—thus showing that by the mere effort of this natural function virtue has gone out of them—than on those days when they are confined. This most intimate dependence of the action of the bowels upon the equable flow of nervous energy, and the easy switch-off that takes place between cerebral and abdominal centres, is beyond dispute, and yet it is often forgotten or taken no account of. In association with this point is another interesting one that must surely be of like kind: accompanying nervous bankruptcy, even of temporary character, such as a sudden shock, there may come a change in the character of the colonic contents, which may, I think, be not incorrectly described as *immediate*, and the output, from being soft and healthy, is converted into scybala of the most compact and painfully inspissated kind.

Related also to nerve failure as causes of constipation are many of the disturbances of secretion, absorption, and excretion, associated as they are with flatulence, pain, and muscular cramp.

I must not say more on this head, except this, that a function so delicately sensitive to impulse as is this, must necessarily be largely ordered and controlled by *education*—that is, by *acquired habit*—and so we know that chronic constipation is in many the result of long neglectful irregularity.

And now for a moment let us consider the physiology of muscular propulsion in the colon. It is largely aided, and even initiated, by outside agencies, such as the vigour of the body generally, the tone and development of extrinsic muscles, and sufficient exercise. Into these details I cannot enter, since I am more concerned to allude to the *intestinal muscle* as taking the dominant part.

I doubt if peristalsis ever receives its due meed of appreciation, in its constancy, its deliberation, its strength, and its directness of purpose. It seems to me such a sublimely dogged action that towards it a respectful and expectant attitude—an attitude of trust—should be the dominant trend of management. In the state of health it is probably always in action, but so impalpably that even its own convener does not know it. But though so deliberate for the most part, it rouses itself into considerable effort in shifts after each meal, and sends on the intestinal contents at a quite appreciable rate; and on occasion, as we too well know, it is a veritable sleeping dog, which, when waked, is capable of exerting a really terrific force. Call to mind how the bowel when in travail will knot up into such hard masses that the unwary may easily mistake the lumps so formed for solid tumours; and how, in the churning action that then goes on, all solid matter is invariably converted into sludge, in the persistent effort of the intestine to pass it on. And so it happens that if in a supposed case of obstruction scybalous masses are to be felt in the rectum, it is very probable that there is no obstruction, or at any rate none low down in the bowel, as had been thought. I have often found this useful.

It also occurs to me to say, when speaking thus of the movements of the intestine, how seldom in the treatment of constipation do we take its complement—diarrhoea—into consideration. The two apart are but the natural rhythm disintegrated—a disintegration that is apparently very easy to effect, so that the bowel has ever at command its own remedy—namely, this enormous reserve of power of action if it should consider it necessary.

I have yet one word more on the function of the intestinal muscle. We talk much of kinks and adhesions as causes of constipation and obstruction, not discerning, as it seems to me, that the especial function of peristalsis is to *get round corners*, and that all day long it is making crooked paths straight. Surely a muscular tube that plays vermicularly—that is, engages all its attention upon one minute length at a time—does not know what a corner is. I take it that any ordinary kink or adhesion cannot be such a ready explanation either of constipation or obstruction as might at first thought appear, for the intestinal muscle is only performing its main duty in dealing with it. Thus it happens that intestinal growths, *by destroying a definite length of muscle*, are mostly provocative of these evils.

There are two periods of life when the muscular power is especially likely to be wanting, and thus to become an important factor in the onset of constipation; in infancy and early childhood the muscle has not yet acquired its strength or its habit, both which come largely by education; and in old age it has lost much of what it had. And yet in either will it rapidly make it up if in the one there should come any local irritant, in the other an intestinal stricture.

The *contents* of the bowel still remain for mention. It is obvious that the muscular peristalsis is largely dependent for its due performance upon adequate contents. It has been said that, although there is a continuous muscular propulsion always at work, impalpable, unrecognizable, albeit capable of being roused when necessary into a force of no common order, yet on the whole the intestinal action is largely also a matter of shifts at or after meals. A man who has a headache and lives on tea and toast, or a little soup on one day, has no reason to expect, and probably will not get, any action on the next; no coal has been worked to yield it. It is a matter of common observation, and I may add of common sense, that if a man starves one day he will be constipated the next; and I even make bold to say that the absence of even *one* meal on any one day in properly educated bowels may delay the output the next. All clinical evidence goes to show that to ensure regularity of the bowels *the colon must be full*.

My conception of a natural colon is that of a canal moderately distended by pultaceous or softly scybalous gas-permeated contents, upon which the mucous surface is always feeding. Even the rectum feeds upon its contents, and if, when it arises, the natural impulse to defaecation be not gratified, the material becomes reduced in quantity by further absorption, and the impulse vanishes until such time as a further shift takes place. The muscular coat of the bowel, like that of the pregnant uterus, is always in action, and so makes insensibly for the slow propulsion of the contents, but it is probable that the muscular play *between the shifts* is more concerned with *keeping the food in contact* with the mucous surface, and the pouches of the bowel well filled, than in passing the material onwards.

I do not think that this view of the function of the colon is in accord with a very large proportion of everyday practice, and a great deal of the chronic constipation we are here to discuss comes about, to my thinking, because of this divergence. Let me say a word or two more in support. If I am right in the contention that the colon should be *full*, not empty, then an adequate intake of supplies is the first necessity for its health. And this is just what is often wanting. There is much ill-considered talk about people eating too much. No doubt some do eat more than is good for them, but our organs (liver and kidney, and so on) are made nice and roomy to allow for this; and it is quite certain that those who live by strict rule are mostly little better than scarecrows to look at, however herculean

they may tell you they feel. But take by far the largest group of the constipated—it is found in women, especially of the upper classes—and go into their diet. It is so skimpy that they cannot but be empty, and they are expending a great part of their energy upon trying to achieve the impossible—that is, to produce what they consider a good daily output when the colon is empty. In all probability this applies also to the constipation, in part, of old age. Another large class, maybe, eat *enough*, but, having got an ideal of output which they are unable to satisfy, they call themselves constipated, and, as soon as they have had a decent meal, send pills after it to hurry it on, and so they bring about a similar condition. By so doing they create a constipation that would not otherwise exist. The colon, to be happy and contented, must be *full*. It needs occupation, and if, when it is feeding, you worry and distract it by thought or deed and put it out of its stride, no wonder that it knows not which way to turn, and that constipation, mucous colitis, and all sorts of intestinal ailments come into being.

But modern teaching has gone further than the advocacy of the *empty* colon—it has saddled it with a reason for being so, and that reason is a bad one. "Keep the colon empty," it is said, or "do away with it altogether; it is a mere cloaca. It absorbs water, but very little else that is good, and that little is as nothing in comparison with the harm it does as a poison bag." "Exclude it," which means, in plain speaking, cut it out; "you can very well do without it." I am here to-day to hold a brief for the colon. I am one who thinks that the colon is a most important organ of nutrition. There are those here who will bear me out when I say that the contents of the small intestine are never solid, and that from the caecum onwards they at once alter in consistency, and may be solid even in the caecum. The amount of absorption that goes on must therefore be enormous, and I cannot think that the only loss is that of water. But there is another little fact worth a thought. In attempting at autopsies to clear the bowel for the purpose of examining the mucous surface, the contents are often hugged with such tenacity that it is difficult to clean the surface even under a strong stream of water, and much firm smudging with the finger. Often, too, have I felt a similar condition during life when examining the rectum, but this is, I think, sometimes, but by no means always, due to a dry mucous membrane from lack of the proper formation of mucus. These conditions suggest that the colon is a great feeder. So much so that it would seem to clutch its food until the last particle of nutriment be sucked from it. Moreover, an over-gluttony of this kind, if we may suppose such a condition to exist, may in part explain the undue formation of scybala that is found to be present at times, especially so in those mental states to which I have alluded, and where the body is obviously starved into extreme juicelessness and emaciation.

Our tendency is, I think, to picture the colon as a gaping, sacculated tube, inside the abdomen, for the reception and temporary storage of the excreta, and the saccules are by many regarded as evidence of constipation and dilatation. But the saccules are surely an adaptation, as in the lung, that increases the mucous area of the surface, which folds around its contents and in the effort of extracting their juices, squeezes them on slowly towards their output.

Thus it is in the highway that the larger scybala are formed; the little pouches probably account for the pills or "sheep's droppings," as they have been called. When the inspissation is in *excess* these fail of being remoulded in the bowel below, and then the stool becomes an unnatural one.

Thus far as regards absorption. But one must not omit mention of that other, possibly even the greater, function of the colon—its excretory acts, too often viewed to-day in half-lights, as it were. Excretion is no mere *refusal* of certain inappropriate articles of the ingesta; it is in part an *active casting out* of by-products that clog the machine. Can it—not a mere crank here and there—do without this cleansing agency? And is it conceivable that the dog will so early return to his vomit again, as must be assumed if maleficent extrusions are so readily re-assimilated? It would seem that the present opinion, on the one hand, minimizes the value of the colon as thus acting beneficially, and, on the other, over-estimates its powers of absorption in the causation of toxaemia.

There are other points that need to be considered besides the quantity of food necessary for the efficient working of the intestinal muscle—the quality and the variety of food, and all the associated states of bowel, such as spasm and flatulence, all factors in one way or another in the production of constipation. I can, however, mention only one that interests me. It must have occurred to all of us to be told by those who have been treating themselves by a vegetable diet for the relief of their constipation that it has made them worse rather than better. A diet of this kind may act either way. It may, by filling the canal, promote intestinal action; it may, too, by promoting indigestion of sorts, get the bowel into a temper and so induce expulsion. But it is worth while to remember that vegetable food requires longer digestion for its proper appropriation, and I have often thought that when it is associated with more constipation it may be because the colon, as a feeder, is unwilling to pass on the foodstuff until it has been thoroughly exhausted, and thus in a fair proportion of cases may cause delay.

In respect of the treatment of chronic constipation, in discussing first causes thus, the way to deal with them will more or less have suggested itself, but now, and first, this may be said, that it is not every case that needs or ought to be treated. Men and women were not born into this world for the one supreme object of procuring a daily evacuation of their bowels, as so many seem to think. Nor do I believe that "the instinct of death" hovers over those who do not realize this seemingly revivifying hope. It is obvious that, although we have no certain knowledge of what Adam did, a habit has been gradually formed that largely owes itself to convenience. But some there are, nay many, whose natural rhythm is a two or three day one. Even a weekly interval is by no means so very phenomenal, without ill health; and, personally, I make bold to affirm that there is many a one with a small appetite who would be in much better health if he or she accepted a habit of some days' interval and kept themselves meantime unharassed by aperients. There are many *constipated* who are *very healthy*, and there would be thousands more so if, instead of assuming disease because they are constipated, they called themselves healthy and ceased to self-centre. And this large group seems to me to hit hard the doctrine of intestinal auto intoxication. Carried to the extent that it has been of late years, I cannot but think it unsound and baneful. I will go further, and say that the treatment of the supposed condition by so-called intestinal antiseptics has seemed to me decidedly inconclusive; and as to surgical measures for its relief, based, as I believe them to be, upon unsound principles, except for the relief of quite occasional organic results, they are destined to fall into oblivion. I quite admit that "the intestinal flora," as I see is the vogue just now, may not be all that is desirable, but in the neighbourhood of a stercorin factory one can hardly expect the wilderness to blossom as the rose. Nay, more, if it were to do so, one might confidently predict that the departure from the normal would be so wide that death would be lurking in the bushes.

When treatment is necessary it is of importance to bear in mind that although we have drifted into the routine of aperients of one sort or another, each case needs to be considered on its own merits, from a physiological standpoint; and if so, many will be found where simple rules and a little patience together will suffice.

For instance, a large number are obsessed with the necessity of a daily stool of certain proportions, and that if this is not effected a block, as it is termed, appears upon the near horizon. For such the simple maxim "never look behind you" will often suffice. No doubt the sight of a diurnal evacuation of cylindrical proportions is an objective evidence of health, as a man learned in the law once said, and it carries comfort and even happiness to many a wistful heart. But there are other thousands who, looking to procure their daily bread of confidence, are disappointed with the result, and what then? They go away discontented, suppose themselves constipated, and slide into the curse of pill-taking. We must bid these people remember that there is a meaning in the fact that the rectal nerves are gourmets; that they are endowed with a palate for *quality*, but that they are but poor judges of *quantity*, and thus it is that the *uncentred* man will often pass a copious stool when it has seemed a little

one, and a little one when it has seemed a big one. The differentiations made by our rectal sensations seems to me to be a very valuable asset. It is thus that so many people who are not constipated within the meaning of ill health, pass on into the habit of taking aperients, and by thus keeping the colon *empty* bring on the very fault they strive to cure. It is often urged as an objection to the use of castor oil that it makes for constipation afterwards. This is a fact turned the wrong way. The complaint is a real testimony to the worth of the drug, for it shows that the colon has been emptied so completely that, until it has filled again, there is nothing to come away. All colonic aperients in proportion to the thoroughness of their service make for subsequent constipation, and may it not be that the universal use of aloes as an expulsive is a sort of unconscious testimony to its value, as on the whole tending to leave the colon alone, and expend its energies upon the *rectal qualitative centre.*

For that large group of cases where the fault is really that of starvation, they need to accept the advice given to St. Peter, and call nothing common or unclean. A more generous and varied diet—more fat, more water—will help them back to health. In such cases, too, the various juices poured into the canal are poor in quality and deficient in quantity, the mucous membrane being dry and irritable, the muscular force erratic, and griping. These maybe are cases for salines to encourage secretion, and for tonics and antispasmodics, such as belladonna and so forth. While for purely sluggish conditions of the colon, when they exist, and for the lessened impulses of decadence, some mild stimulant—even of the pepper class—may sometimes be useful, and even necessary. In this class of cases, also, massage and electricity find their use, as inciting the *vis a tergo*, while enemata come in as local rousers for the purpose of clearing the collecting chamber.

In thus dealing with my subject, I have more than a suspicion that many who have listened may have thought "this is all very well, but it is not business"; and I must now confess that—persuaded though I be that I have said the right thing, and that it needed saying—I am too often almost in despair when dealing with one who, having tried all the aperients that were ever heard of, even down to the very latest boom, it may be of sour milk, is still asking for something fresh. He or she and I could hardly be farther apart in thought and intention, and often have I wished that, like our present Prime Minister, I had aplomb sufficient to rigidly confine my utterances to "Wait and see." I know of course too well that in the life that advancing civilization seems compelled to lead, aperients will be always with us; my lament is that we have so far diverged from the wisdom of our forefathers with their *occasional* "tuto, cito et" (let us hope) "jucunde" into a chronic niggle that is none of these. But how to make this bad habit better, or at all events as little baneful as possible, I leave to those who follow me.

DISCUSSION.

Professor Bäumler (Freiburg) said that on the whole medicine might be regarded, in respect to the matter under discussion, as emerging from crude empiricism into the stage of scientific clearness, thanks to experimental physiology and clinical investigations based thereon. Of the greatest help for the latter had been the observation of the motor processes in the gastro-intestinal canal by the aid of the Roentgen rays with the bismuth method devised by Cannon. By means of this method of observation it could be ascertained in any individual case whether the ingesta left the stomach and travelled along the intestine in the proper time, and whether constipation was due to a want of motor power in the intestine, or to a mechanical impediment to the passage of its contents, or to some defect in the complex function of the rectum which brought about defaecation. Dr. Hertz had admirably cleared up this side of the question and done away with many errors which had prevailed until recently. One point of particular importance was the revelation that not only in elderly people or those with definite enteroptosis, but also in young people with good abdominal muscles, the transverse colon sometimes hung down below the navel in the shape of a garland. Another point demanding consideration was the great influence of sleep over the tone of the sympathetic nervous system. This, as was shown by the experimental work done by Dr. Langley, Drs. Bayliss and Starling, commands by reflex and automatic action the movements of the bowels. And just as on the vasomotor part of the sympathetic nervous system a loss of tone showed itself in the state of capillary circulation in the face and elsewhere, so it showed itself in its intestino motor part by impairment of the normal motion of the intestinal contents, including their expulsion from the pelvic colon into the rectum. His advice to a patient would be to eat enough of a plain mixed diet with a sufficient quantity of vegetable food, to sleep enough, to take regular exercise and a cold bath in the morning—a most excellent tonic for the sympathetic nervous system—and generally to put to use the experience which he had acquired regarding the influence of various kinds of food by trying regularly and at the proper time to empty his bowels. It was an old saying, with regard to this and some other matters, that a person of 30 or 40 years ought to be his or her own doctor. If he was not, let him apply to a conscientious doctor, who had experience in medicine generally, and who was not a mere specialist. If such a medical man found something beyond his understanding or his powers of treatment, especially surgical treatment, he would call the specialist or the surgeon to his assistance. To young medical men he would say, "Examine the patient carefully, try to form a correct diagnosis on which to base your treatment, keep always in mind the great powers which the organism possesses to correct deviations from the normal functions, if only it is given time to do its work by itself without interference and constant tampering by medicine or by some systematic cures." Such may be necessary in certain cases, and if a patient could not guide himself in this as in other matters, if he required props of various kinds, then he should be sent into a clinic or sanatorium, where the complicated machinery of his gastro-intestinal organs could be examined and where appropriate means could be devised and carried through according to what was found.

Sir James Sawyer (Birmingham) said constipation was retarded progress of faeces from the caecum to and through the anus. In a conception of habitual constipation must be included the fact that human faeces consisted in great part of matters excreted by the glands of the intestinal mucous membrane, as well as of insoluble and superfluous food, mixed with intestinal mucus and pancreatic and biliary excretions. The physician recognized both these factors, while heroic intestinal surgery contentedly contemplated the dietetic effluent only. The errors of habits of life, of alvine effort, and of diet, which caused constipation, were known to medical men. In their persistent rectification lay the cure, without drugs, of most of the slighter forms of costiveness. In those severer cases in which drugs and even instrumental aid could not be avoided, all that well ordered habits, well directed efforts, and well-chosen diet could accomplish, were indispensable adjuvants of physicking. In the treatment of habitual constipation there were three canons: (1) The medicinal treatment of constipation should not be left to patients. (2) Drugs, in the treatment of habitual constipation, should not be prescribed until it was found that the constipation could not be cured without. (3) Drugs should not be prescribed without the judicious combination of the numerous adjuvants of natural alvine relief at disposal. These should be selected according to experience, and combined in each particular case of costiveness, according to the individualties of the patient. None but a skilful prescriber could treat constipation successfully. To open the bowels cured not constipation, but only relieved for a few hours one of its symptoms. The second of these canons—that of withholding drugs until drugless methods failed—was a counsel of perfection which was wise in its aim, and should be followed generally; but the insistence of patients for a purgative dose was proof that patients were sometimes right in this matter (*fas est ab aegro doceri*), and that a cathartic might give a fair start for a cure by disciplinary and dietetic methods. In costiveness therapeutic clues arose from an old definition of it—namely:

> In constipation the faeces are hard, and may be retained from that cause, from weakness of the muscular coat of the large intestines, or from diseases of the anus, making defaecation difficult or painful.

Habitual constipation was a penalty of imperfect civilization,

and due to habitual abstinence from emptying the rectum whenever the natural impulse thereunto was felt; to habitual defaecation when seated upon a high seat; to habitually diminished activity of the psoai and iliaci; of the respiratory muscles, and of the muscular fibres of the large intestines, or to habitual abstinence from fruit and their likes. Each of these causes was avoidable and should be avoided before a drug was taken for the cure of habitual costiveness. If the avoidance of these causes was not curative the avoidance should nevertheless be continued when drug treatment commenced. By habit in health the act could become to some extent a rhythmical process, occurring at a fixed time, each twenty-four hours. Perhaps the best time was after breakfast. But before bed was the best for those with piles—defaecation strained and protruded piles, and the horizontal rest of a night in bed procured haemorrhoidal subsidence. Chosen the time, the voiding effort should be made daily, at the usual time, whether the need to defaecate be felt at that time or not. Besides this, defaecation should always be attempted whensoever the local urgency. By putting it off the rectum emptied itself, if it could, into the sigmoid flexures, and habitual constipation was caused and kept up. Perhaps this holding up of returned faeces in the sigmoid flexures might be a determinant of cancer there. Cancer there was much more frequent in men than in women. Women were more likely to neglect to try defaecation at a rhythmical time, but men put off the act more than women do. Men liked to defaecate at a fixed time, and at no other time. Habitual costiveness was more frequent amongst women than amongst men, from irregularity in the time of alvine effort, from procrastination therein, from feebleness of the muscular factors of defaecation, from the wearing of waistbelts, of "stays," and of corsets, and from inimbition. The best position of the body for defaecation was the natural one in crouching. Then the parts acting in the voidance of faeces were in the best position for doing it. Failure of defaecation upon the usual seat, eighteen inches high, would often issue successfully if the effort be renewed forthwith in the physiological attitude. Certain faulty and habitual postures of the body favoured a faecal sluggishness; namely slouching, stooping, and especially that form of arching backwards the lower spine and doubling up of the belly, when sitting "all in a heap" in a large and low easy chair. Such habits were declared by transverse wrinkles in the epigastric skin. This posture hindered movements in the belly contents in many ways. It tended to the production of two more angles in the greater gut, one in the ascending colon and one in the descending colon, by an antero-posterior bend on each side, below the hepatic and splenic flexures respectively. Daily bodily exercise, especially out of doors and in sunshine, favoured alvine normality. In habitual constipation further helps might be given by exercises which promote biliary flow, such as respiratory movements, those bringing into play the muscles of the abdominal walls, and by those which promote movements of portions of the large intestine in which faecal stagnation was most apt to occur, that is, in the caecum and in the sigmoid flexures, for which last the psoai and the iliaci must move well, as in running upstairs two steps at a stride, or as in "knees up" exercises. The best diet in the cure of costiveness was a mixed diet. If, with such a diet, habitual constipation did not yield to habitual and suitable alvine effort, aided by suitable physical exercises, then food of a laxative tendency, that is, foods full of cellulose, should find place in the dietary or be increased therein—cooked green vegetables, fruits, fruit jams, and, chiefly, marmalade of oranges. Among purgatives, if these had eventually to be used in a case of habitual constipation, a good one was aloes. Myrrh, aloes, and cassia would still make the Coprostatic glad. Myrrh, with its old repute of "giving an impetus to the digestive organs, and an increase of muscular power to the intestinal canal," Socotrine aloes, and cassia pulp, of each a grain and a half, made up into a pill with castor oil, of which pills one or more at bedtime, as found to be needed, with a gradual reduction and omission of them so soon as possible. No case of habitual constipation could be cured by rule of thumb. Each must be investigated in all its details and relationships.

Dr. H. D. ROLLESTON (London), whilst agreeing with the importance of avoiding an exaggerated view of constipation, its sequels, and of the necessity for treatment, considered that the results of intestinal autointoxication must not be neglected; their influence in inducing visceral changes in the liver and pancreas, in the etiology of arterio-sclerosis and other diseases, was too obvious to require detailed consideration. The personal factor was most important with regard to the production of symptoms by constipation; some patients were unaffected by constipation, even of weeks' duration; others suffered severely: in some nervous subjects mucous colic seemed to be a direct result of constipation. It was impossible to discuss the subject in its protean aspects, and he proposed to say a few words only on the following points: (1) Want of tone in the muscular coats of the intestine, the result of nutritional, toxic, and nervous factors. In these cases tonics such as strychnine were of value. In connexion with this he referred to cases of benign hypothyroidism in women in which thyroid given for other reasons was found incidentally and, so to speak, accidentally to relieve constipation. A valuable means of re-educating the atonic colon was washing out the bowel by large enemas, as in the Plombières treatment. (2) Excess of tone; spastic constipation, particularly in nervous subjects, was sometimes due to some source of reflex irritation in the abdominal cavity; these were the anomalous cases in which rest in bed relieved constipation whilst exercise aggravated it. In these cases belladonna sometimes had a good effect; he quoted cases in which minute doses of opium had been successful, it was thought, by counteracting inhibitory influences on peristalsis (Brunton), and others of malignant stricture in which ¼-grain doses of opium acted as a violent purge (Rouse). (3) Diminished secretion of intestinal mucus and insufficient intake of fluid. The treatment of such cases was universally recognized to be increased intake of fluid. Lubricants and oil and remedies such as regulin were also employed, but vaseline had not given good results in his hands.

Dr. G. NEWTON PITT (London) said that knowledge of the mechanism of defaecation and of the way in which the food passed down the alimentary canal had greatly increased in recent years through the study of the process by *x* rays, after the administration of 2 oz. of bismuth carbonate or oxychloride. In this country the researches of Dr. Hertz had been of great value. It was now known that the intestinal results of each meal should reach the caecum in about four hours, and be passed on and packed away in the descending colon and the sigmoid in eighteen hours. Normally the rectum should be empty except during defaecation, in which case both the descending colon and the sigmoid should contract vigorously and eject the whole of their contents through the rectum. This being the case, it is easy to understand how a tender kidney or ovary or a flaccid abdomen might disturb the process. It would also explain the not infrequent cases in which a patient had two or three motions within an hour, and then none for the rest of the day. If the normal stimulus to the act were ignored, the imperfection of the later muscular contraction can be demonstrated by means of bismuth. It is only recently that sufficient cognizance had been taken of the fact that on an ordinary diet only one-third of the faeces consisted of food débris, while one-third consisted of bacteria, dead or alive, and one-third of intestinal epithelium and secretions. The amounts varied with the diet—in many cellulose would increase the first item, but in others the food débris was very small. So also the last factor varied greatly. Some intestines seemed capable of doing their work with the production of very little waste products. It was curious that the amount of bacteria was least with the habitually constipated, and the defect might be a cause of the constipation. In many the greater part of the faeces depended more on the condition of the intestine than on the diet. Hence the effects of the constipation varied greatly in different individuals. When the habits were extremely regular, the slightest delay, of even half an hour, led to great discomfort, and retention for a moderate period even, might lead, especially in children, to pyrexia, foul tongue, and toxaemia. In those habitually constipated, and whose bowels acted at longer intervals than one day, there need not be any toxaemia or discomfort. In many such patients the discomfort occurred on the days when the bowels acted, and they felt well when the bowel was quiescent. Indican was often absent from the urine of those whose

bowels acted at long intervals, and might occur with quite slight degrees of retention. The speaker had known patients who were most comfortable when their bowels acted once in two days; others when the action was once a week, and a few when the interval was a month or more, and any attempts to produce daily action upset them. While in early cases much might be done by regulating the diet and the habits, the existence of these other cases must not be ignored. The association of constipation with melancholia must not be ignored, and during the stage of mental depression no drugs would prove effectual, but with the return to a normal mental condition the bowels would become regular. That the most active absorption goes on in the large intestine was well shown in a case of chronic lead poisoning in which the small intestine was of normal colour, but the whole of the large intestine was very dark from the presence of lead sulphide in the wall of the colon. In some cases, especially in women, the constipation was due to defective intake of liquid, in others to defective amount of faeces, and these latter were relieved by giving liquid paraffin or agar-agar to increase the bulk. In conclusion the speaker related the following case:

The patient was a woman, aged 23, who had been under his observation for the last two years, and who had been three months at a time without a proper action of the bowels. The trouble dated from an attack of diphtheria at the age of 18, since when she had not passed normal motions. At intervals a loose blackish fluid could be washed out of the bowel. The abdomen did not become distended, the rectum was empty, and the food could be shown to pass down to the caecum in the normal time, and generally also there was no delay till it reached the sigmoid flexure. All sorts of diet, laxatives, and enemata had been tried without much success. A very slight action could be obtained generally once a week with an enema. The woman ate a normal amount of food. At Christmas, 1908, she was given 12 grams of agar-agar to increase the bulk of her faeces. Later, when 25 grams of regulin were given, she had severe intestinal colic, with vomiting and profuse perspirations, and her temperature ran up to over 111° F. She recovered her normal condition when it was stopped. From time to time there was a period when occasionally fair-sized motions were passed. Between July and September, and again between September and November, 1909, there was practically no action of the bowels; only a slight staining of the water of the enema given once a week was detectable as a rule, with occasionally minute fragments of débris and skins. The total amount was not one-twentieth to one-fiftieth of the normal. She was kept in bed and carefully watched, and there was no evidence of any deception. When 50 grams (2 oz.) of bismuth was given in December, 1909, practically the whole was collected later from the faeces; of 56 grams taken on January 16th, 1910, only 2·5 could be obtained from the faeces by February 3rd; and of 56 grams taken on February 23rd, 25.5 were recovered on February 26th with a copious motion. The explanation would appear to be that the patient produced a remarkably small amount of faeces.

Mr. W. Arbuthnot Lane (London) said that constipation was a symptom, and the most common symptom, of intestinal stasis as affecting the large bowel. By intestinal stasis he meant such a delay of the contents of the intestine in the gastro-intestinal tract, but more particularly in the large bowel, as allowed of the absorption in the circulation of a larger quantity of toxic material than could be dealt with effectually. This delay was brought about by an alteration in the arrangement of the drainage apparatus. In early life it resulted from an abnormal distension of the intestines by too frequent feeding, or by the use of unsuitable articles of diet. Later it was produced and accentuated by the erect posture of the trunk. The changes were primarily mechanical and secondarily toxic. The mechanical were: (1) Kinking of the pylorus by the development of a new ligament which attached it, and frequently a portion of the transverse colon, to the under surface of the liver in front of the transverse fissure, and frequently to the cystic duct and gall bladder, interfering with their normal functioning. (2) A dilatation of the stomach consequent on the kinking of the pylorus. (3) The development of areas of engorgement of the mucous membrane of the first part of the duodenum and of the lesser curvature on either side of the attachment of the acquired ligament. (4) The formation of an ulcer at a later period in these areas of engorgement. The ulcer in the duodenum readily reacted to treatment by rest, while that in the stomach was much more chronic, and on that account became infected with cancer or other germs. (5) The development of a kink in the ileum within two or three inches of its termination. This was associated with a dilatation of the entire small intestine. This dilatation was frequently very marked in the duodenal area of the small bowel. (6) Fixation or kinking of the appendix, producing the several conditions comprised under the term "appendicitis" (7) Dilatation of the caecum, which usually occupied the true pelvis. (8) Kinking of the hepatic and splenic flexures. (9) Occasional kinks of the ascending and transverse colon. (10) The transverse colon was placed at an abnormally low level, part of it frequently in the true pelvis in the erect posture. (11) The sigmoid was subject to great variations with its fixation by acquired bands and mesenteries. If the process was complete the loop was obliterated and replaced by a short, fixed, straight, narrow tube through which faeces were driven with difficulty; or the ends of the loop might be fixed and approximated and result in a condition called volvulus; or the loop, besides being attached by its extremities, might be interrupted by an intermediate fixation and two so-called volvular arrangements resulted. There were other variations. (12) The development of the adhesions and mesenteries which fixed the lower part of the sigmoid and upper part of the rectum anchored the left ovary and appendix and dragged them out of place. This anchoring resulted in the fixation of the ovary and later in its cystic degeneration. (13) The condition of the rectum varied very greatly. The general tendency was for it to elongate in direct proportion to the fixation of the colon. The more effectually the rest of the large bowel was fixed by adhesions the greater was the elongation and mobility of this portion of the bowel and the less capable was it of performing its normal function of transmitting the faeces at a mechanical advantage. (14) At any point of stress in the large intestine areas of abrasion and ulceration of the mucous membrane might occur and produce abscesses in the vicinity, especially in the fixed sigmoid or rectum. These areas might later become infected with cancer or other germs. (15) The stasis in the stomach and in the small intestines produced most definite clinical symptoms. Associated with the latter especially there was a considerable ascent in the level of deleterious organisms in the small bowel, with occasional infection of the biliary and pancreatic drain pipes producing gall stones, pancreatitis, and later cancer of the structures. How great a part was played in the production of gall stones and pancreatitis by the direct infection of the ducts from the intestine and by depreciation of the resisting power of the organs and their secretions by autointoxication was difficult to determine. The speaker had no doubt that one or both factors brought these changes about, and that mechanical interference with the functioning of the gall bladder and duct by adhesions might facilitate the formation of gall stones. It was well to bear in mind that the deleterious organisms of the intestine readily migrated through the blood stream—as, for instance, to the genito-urinary tract in both sexes, from which they were expelled with the greatest difficulty, while not infrequently they were ineradicable. (16) Constipation was chiefly associated with stasis in the large bowel and was more marked the lower the area of stasis. In some localities diarrhoea might result from the stasis, or constipation might be replaced by periods of diarrhoea. Or, again, definite infections might result in an inflamed condition of the mucous membrane of an acute or chronic character. Besides the symptoms resulting from the mechanical interference with the normal functioning of the intestine those resulting from autointoxication were of vital importance, not only in ageing the individual, but also in reducing the resistance to the entry of organisms of various sorts into the tissues. Among them was loss of fat, with its innumerable very serious consequences, the mental misery, the complete physical and mental disability, the staining of the skin, the loss of the appetite, the marked alteration in the respiratory and circulatory system, the cold clammy skin, the degenerative changes in the breast which might sooner or later become infected with cancer, infection of the gums, decay of the teeth, the development of tubercle, rheumatoid arthritis, etc., and all the symptoms generally comprised under the term "indigestion." Life to these people had no attraction. These symptoms could be relieved by the removal of the factor which determined them. In some cases a gastro-enterostomy, in others the division of the ileal or other kink, in others the removal of the appendix, in others the division of the ileum and its connexion with the rectum

as low as possible, and in others the removal of the large bowel was called for. These operations could be done at a risk ridiculously small considering the miserable physical and mental condition of the sufferer, and which would be still further reduced with increasing experience. The relief afforded was out of all proportion to the risk. In the year ending June, 1910, the speaker had operated for constipation at Guy's Hospital on 15 patients, dividing the ileum and putting it into the rectum in 4 and removing the large bowel as well in 11 cases. He had lost only one patient, and that through an accident.

Dr. MANTLE (Harrogate) said they had heard very much of the happy side of constipation. It was his experience, not from any choice of his own, to see the unhappy side, for he had a large number of cases of chronic constipation and colitis sent to him for treatment at Harrogate. Little had been said about the local effects of faecal accumulation in the colon, for catarrhal inflammation was not infrequently set up with an abnormal secretion of mucus. Mucus when normally secreted was invisibly mixed with the faeces, and when seen in large quantities was abnormal. He had several cases of colitis under treatment at the present time which had been operated upon for appendicitis. The appendix had been removed, and the symptoms of constipation and colitis remained; they undoubtedly existed long before the appendicular operation took place, the appendix having been affected by extension of the colitis. Sir Frederick Treves had pointed out colitis as the cause of failure of the operation for appendicitis; and he had also said that if they had less constipation they would hear less of appendicitis. Autointoxication was a reality; he wished he could think otherwise; although there were lines of defence against the absorption of toxins in the cells of the mucosa, and in the antitoxic function of the liver and kidney, yet when one or all of these defences were weakened, symptoms arose, and he believed that the nervous and circulatory systems suffered most. The toxins had a special affinity for the vasomotor centres, and there was a loss of balance of the circulation—too little blood in the extremities, with cold extremities, and too much in the splanchnic area, which aggravated the bowel disturbance, and frequently gastric symptoms and gastric dilatation were present. Arthritis was not uncommonly produced by the toxins, and these cases were rightly or wrongly called rheumatoid arthritis. He found such cases improve in a marvellous way with intestinal lavation, combined with other treatment. He also pointed out that skin manifestations were not uncommonly traceable to toxin absorption in chronic constipation, and in the *Lancet* of that week he was publishing a series of cases of eczema, psoriasis, and chronic urticaria successfully treated by colon lavation. The treatment adopted at Harrogate was the washing out of the colon with 30 to 40 oz. of sulphur water, which very soon, in most cases, produced a better condition of the mucous membrane, and this was followed by an immersion bath of the same water, which opened out the peripheral circulation. Massage to the colon and electricity were also resorted to, as well as attention to diet, green vegetables and fruit being recommended. New habits should be formed, for this was an important factor in treatment of many of these cases. He strongly deprecated the pernicious habit of aperient drinking, for undoubtedly this was on the increase as a short cut to a daily evacuation, which ought to be accomplished in a natural way.

Dr. ARTHUR F. HERTZ (London) said: For the rational treatment of a case of constipation it is necessary to know what part of the alimentary canal is at fault. I have found by means of the *x* rays that the undigested residue of a meal passes through the small intestine in approximately four and a half hours, and through the colon in twelve hours. Having once reached the pelvic colon it remains there until the act of defaecation expels the contents of the whole of the large intestine beyond the splenic flexure.

All cases of constipation can be divided into two groups. In one there is delay in the passage of faeces through part of the colon, and occasionally through the small intestine; in the other, to which I have given the name of "dyschezia," the faeces reach the rectum in the normal time or even with unusual rapidity, but their expulsion is difficult or impossible owing to weakness of the muscles of defaecation or impairment in the defaecation reflex. For the former group of cases treatment by diet, massage, and drugs will probably be successful; in dyschezia these are only useful in so far as they make the faeces softer and easier to expel, the more important means of treatment being re-education in regular habits, the assumption of a squatting position during defaecation, exercises for the abdominal and pelvic muscles, enemata, and suppositories.

In constipation due to errors in diet, the effect of giving food which is greater in bulk and in chemical and mechanical stimulants to peristaltic activity, is to hasten the passage through all parts of the alimentary canal, but especially the colon.

Massage is of great value, if it be applied to the part of the colon in which delay occurs; the reason why it so often gives disappointing results is that it is applied to parts of the bowel which are already working well, or to a part of the abdomen in which the colon is not situated at all. Palpation can sometimes give information as to where the massage should be applied, but accurate knowledge of the position of the colon and of the region in which delay occurs can only be obtained by the use of *x* rays. The contrast between two cases, *x*-ray pictures of which I throw on the screen, demonstrates how necessary it is to individualize in treatment. The first shows the position of a colon in which delay occurred in the distal part only; it is clear that massage should be applied in such a case to as much of the second part of the transverse colon as could be reached and also to the descending and iliac colon. In the second case the delay occurred only in the ascending colon and proximal half of the transverse colon. These parts were dropped far below their normal position even when the patient was examined lying down. In this case massage applied to the part of the abdomen in which the colon is generally situated would be useless, but if applied along the ascending and transverse colon, as localized by the *x* rays, it would be of great value.

As most of the nutritious part of food is absorbed in the small intestine, and as any considerable delay very rarely occurs in this part of the bowel even in severe constipation, treatment should be directed to hastening the passage through the colon without interfering with that through the small intestine. It is for this reason that diet and massage, which act mainly on the colon, are preferable to aperients, the majority of which act equally on the small and large intestine. (The effect of a dose of cascara, which was just sufficient to produce a single soft and bulky stool a day, was here shown in a series of *x*-ray tracings.) The rapid passage through the whole alimentary canal must result in a considerable loss of nutritive material. It is therefore essential to order the smallest dose of an aperient which will give a daily formed stool, and to instruct the patient to diminish the quantity used as improvement in the condition of the bowels occurs.

If for any reason it is desirable to produce a very soft stool, saline aperients should be used, as the experiments I have carried out with Messrs. Cook and Schlesinger show that sodium and magnesium sulphate completely empty the large bowel without hastening the passage through the small intestine.

In the very rare cases in which all other methods of treatment have failed to give relief and the patient is suffering severely from pain and autointoxication, the question of operation has to be considered. In several of the worst cases of constipation I have seen the colon was normal in size, shape, and motor power, dyschezia due to paresis and anaesthesia of the rectum being the sole cause of the symptoms. It is clear that in such cases no operation could help, as the colon was performing its functions quite efficiently. After dyschezia has been excluded it is necessary to find what part of the large intestine is at fault; frequently the mischief is quite local, and in such cases it would clearly be unsound treatment to do such a radical operation as ileo-sigmoidostomy or colectomy. In the only case I have yet seen in which all non-operative treatment failed to give relief I found that the passage of faeces was normal as far as the middle of the transverse colon, but beyond this point delay was extreme. The transverse colon fell into the true pelvis when the erect position was assumed, so on consulting with Mr. Steward we decided that a lateral anastomosis should be made

between the most dependent part of the transverse colon and the pelvic colon.

At the operation Mr. Steward found that, in spite of all the efforts which had been made to empty the bowels before the operation, the distal part of the transverse colon and the descending colon were packed with small and very hard scybala, and that the wall of this part of the bowel was greatly atrophied, the remaining part being normal. After the operation, *x* rays showed that about three-quarters of the faeces passed through the lateral anastomosis into the rectum. An interesting point is that the short-circuited part of the bowel is able to deal quite efficiently with the small quantity of faeces which still passes through it. This shows that a lateral anastomosis acts as well as an excision, so long as the short-circuited part of the bowel is not excluded by cutting across the proximal segment of the bowel.

Dyschezia is a much more common condition than is generally believed. It not only occurs in women who have weak abdominal muscles and injured pelvic muscles as a result of many pregnancies, and in old and enfeebled individuals, but it is frequent among girls, who for various reasons have not obeyed the call to defaecation with sufficient promptness, and so have impaired the sensibility of their rectal mucous membrane, and lost the normal defaecation reflex. I have even seen it in athletic and otherwise healthy young men who had neglected to give sufficient attention to their bowels. These cases, in which the defaecation reflex is impaired, can be readily cured with the patient's intelligent co-operation. All aperients should at once be discarded. An attempt to defaecate after breakfast should be made, even if, as is generally the case, no desire is felt. When the attempt is unsuccessful or only partially successful a glycerine enema should be given. This affords the necessary additional stimulus to the defaecation reflex. On alternate days the glycerine should be more and more diluted, and the bulk of the injection diminished until natural defaecation without artificial help returns.

In the treatment of dyschezia it should be remembered that the ptosis of the colon, which is frequently associated with it, does *not* cause constipation by producing kinks; both the dyschezia and the ptosis are due to weakness of the abdominal and pelvic muscles. In such cases an abdominal belt, though it gives comfort by increasing the intra abdominal pressure, and though it helps the weak abdominal muscles to recover their tone, rarely if ever holds the dropped colon in position. This was well seen in the case of the patient on whom Mr. Steward operated. Although her transverse colon was only just below the umbilicus in the horizontal position, the *x* rays showed that an excellently fitting abdominal support applied whilst she was lying down did not prevent the transverse colon falling into the true pelvis as soon as she stood up.

Finally, I should like to refer to the important condition of pseudo-constipation, in which the patients are obsessed with the idea that their bowels will only open with the aid of aperients or enemata; to this is often added—particularly in medical men—the obsession that they have all manner of adhesions, kinks, and strictures of their bowels. To several of these I have given relief by demonstrating to them with the *x* rays that, even when they take no medicine, the passage through their bowels is normal in rate, and that their colon is not fixed by adhesions and has no kinks and no strictures. The picture thrown on the screen is from one such patient, who was hesitating between suicide and colectomy when he was sent to me by his doctor. He took no medicine during the series of *x*-ray examinations, the result of which was to show that his colon was in every way normal. Rectal examination twenty-four hours after the bismuth meal confirmed what was seen with the *x* rays, that the bismuth had already reached his rectum. Protesting that it was quite impossible for him to get his bowels opened without large doses of aperients, he was persuaded to try at once; his attempt was successful. The same thing happened the next day. Whether he will remain convinced that he is not constipated I do not know. Some of these patients are permanently cured; a few, in whom the obsession has almost reached the dignity of insanity, cannot be persuaded, and continue taking their pills and their injections until their bowels at last revolt against this perpetual ill usage and become genuinely diseased.

6

Dr. William Ewart (London), referring to the mechanism, pointed out that fullness with faeces was perhaps not so important as the proper amount of fullness with gas. He regarded the caecum as the air-pressure chamber, and its abnormal deflation as answerable for some of the cases of constipation. As regards tone and atony, did they ever hear of constipation in the labouring man? They heard much of it in women with deficient physical work. This opened a physiolcgical consideration. The training of the function of strain was provided for in man by the constant practice of muscular work. In women constipation was constitutional—nay, physiological. It might be regarded as given to them as a constant education for the ordeal of parturition.

Dr. George Herschell (London) said there was a simple method by which the general practitioner, who had not access to a radiographer, could diagnose the two groups of constipation enumerated by Dr. Hertz, namely, delay in colon or sigmoid respectively. It was by giving a test meal in conjunction with a dose of carmine. If this was found in the stools next morning the time of transit was normal. If the stool passed with no carmine, the delay was in the upper colon. If no stool passed a small injection was given, sufficient only to empty the sigmoid. If this brought away carmine-coloured faeces the delay was in the sigmoid. He was astonished that, with the exception of Drs. Rolleston and Mantle, none of the speakers had alluded to colitis in connexion with constipation, as it was one of its most constant concomitants either as cause or effect. Colitis was indeed a stage in the evolution of an ordinary case of atonic constipation. The first stage was atony, the second, colitis, was set up by the irritation of retained faecal matter, the third was a hypertonic condition of the intestinal muscularis, producing the so-called spastic constipation. As later stages there might be muco-membranous colitis, etc. The diagnosis of chronic colitis depended upon the examination of the stools, which contained an excess of inorganic ash, mucus, not necessarily in large amount, a relative excess of Gram-positive organisms, in many cases attended with putrefaction, and a condition in these cases of alkalinity. No reference had been made by any of the speakers to the use of olive oil injection in the treatment of constipation, especially of the spastic form, in which it was the most reliable remedy. In these conditions purgatives were contraindicated, but instead, injection every night of a few ounces of warm olive oil, which should be retained all night. No mention had been made by any of the speakers of the use of the sigmoidoscope in the diagnosis of constipation. In all cases mechanical causes should be excluded, and they could be excluded by its aid, and they had no right to prescribe until they had done so. In the case mentioned by Dr. Goodhart, in which every kind of pill had been tried without effect, either some mechanical condition was present or some colitis would have been found if a proper examination had been made. None of the speakers had alluded to proptosis of the left broad ligament as a common cause of constipation in women. This cause had been worked out by Miles, who recently presented his results to the Chelsea Clinical Society. The symptoms were left iliac pain, abdominal flatulence, gastric disturbance, and in many cases mucous colitis. In 150 cases in which Miles operated by obliterating the ligament cure resulted in all except two.

Dr. Guelpa (Paris) said that although he acquiesced in the majority of Dr. Goodhart's views, he would ask permission to add some words to defend the theory of intestinal auto-intoxication, so unjustly condemned by him. It seemed to the speaker that Dr. Goodhart's analytical conception of the causes of constipation had made him lose sight of the *primum movens* of those to which he attributed the origin of this pathological process. Certainly these causes were true, but if an attempt was made to consider what had produced the pain, starvation, disturbances of peristalsis, secretion, absorption, excretion, etc, rightly attributed by Dr. Goodhart to the perverted nervous element, it would be found that these nervous, sensory, motor, and trophic modifications were determined and supplied by the intoxication—chiefly by the auto-intoxication—which acted, directly or indirectly, especially by the nervous tract, on the intestinal functions. This

was proved by the fact that the disorder of these functions, after a short apparent increase, was quickly ameliorated and almost always cured if the patient would submit himself during two, three, or even more days to absolute privation of food, associated with daily purgation. These favourable results occurred because the digestive system was afforded the maximum of rest and disintoxication, and thus allowed to recover its healthy sensibility—the consciousness of its functions. Without the supply of any medicament, merely with the help of an appropriate belt, which corrected the frequent defects of the abdominal statics, and keeping the patient for a certain time to the liquid and semi-liquid diet, after these repeated periods of rigid treatment, the drawbacks of constipation usually disdisappeared. It was unnecessary to say that this assertion was only true when there was no question of constipation dependent on organic lesions, medically incurable (fibrous adhesions, tumours of the brain, cancer, tuberculosis, etc.). When the speaker used purgation it was not for the purpose of producing regular evacuations, but only to hasten the disintoxication effected by the privation of food. Repeated purges without protracted and simultaneous privation of aliments increased the constipation with all its unfavourable effects.

Dr. Stuart Tidey (Montreux) said that constipation was so common as to be almost universal among all classes of people who lived under conditions of close social aggregation—master and man, mistress and maid, shopkeeper and waitress, the concierge and the lift boy—all suffered with constipation. The less gregarious and the more isolated the life of the individual, the less did he suffer with constipation, while the peasant whose life was passed in the pursuit of isolated outdoor occupations performed his intestinal function in a normal manner. This difference in the performance of the intestinal function depended on the different amount and kind of exercise, on differences of diet, or on the isolated as distinguished from the gregarious life. In the first place, there was, in his opinion, no exercise, not excepting golf, more conducive to the maintenance of the tone of the abdominal and intestinal muscles than those involved in agricultural pursuits. In the second place, the ordinary food of the peasant contained a good quantity of fibrous and indigestible matter, forming a bulky mass, which stimulated the intestine to contractive effects, and afforded a substance on which the bowel could contract with effect. In the third place, isolated outdoor pursuits permitted the timely escape of intestinal gases, the habitual retention of which caused dilatation of the large intestine and that chronic flatulent distension with which all were so familiar.

ANEURYSM OF THE AORTA COMMUNICATING WITH THE SUPERIOR VENA CAVA.

By Laurence Humphry, M.A., M.D.Camb., F.R.C.P Lond.,
Physician to Addenbrooke's Hospital, Cambridge.

The patient in the following case was a man aged 49, married, a coachman, who had previously been in the army for 15 years. There was no history of previous illnesses, but he had probably had syphilis. On July 30th, 1908, he drove into the country, and after returning stabled his horse and ate his supper. About 9 p.m. he felt a sudden feeling of suffocation, as if his throat was swollen. He was admitted that night into Addenbrooke's Hospital by the house physician, who noted that he was very short of breath, that there was some swelling of the neck, and that a loud systolic murmur was audible over the chest, but he complained of no pain, but much distress.

Condition on Examination.—When seen the next morning his condition was as follows: The patient was sitting up in bed with evident dyspnœa, the eyeballs were staring; there was extreme cyanosis of the face and ears, and the neck looked thick and swollen; there was some swelling of the right arm and the right side of the chest, and the right hand was cold. The right pupil was larger than the left, the pulses were equal, and the pulse rate 100. On examination of the chest, the apex beat was in the fifth interspace, ¾ in. external to the nipple line, and there was visible pulsation over the second, third, and fourth right intercostal spaces; over this area there was dullness to percussion, and a systolic thrill could be felt. On auscultation there was a systolic murmur at the apex, and over the pulsating area at the aortic base there was a loud continuous murmur of a whizzing character with marked systolic intensification; the murmur could also be heard behind over the spines of the upper dorsal vertebræ; the second sound could be heard feebly. The lungs were emphysematous.

Progress.—After a few days the more urgent symptoms were relieved, but there was still marked cyanosis of the face, and there was some oedema of the right side of the chest and right arm. The superficial veins were becoming visible over the chest, and the external jugular veins, especially the right, were prominent. At first there appeared to be some slight systolic pulsation in this vein, which soon ceased. During the next few weeks the patient's condition gradually improved, so that by September 28th he was able to be up and about, and was discharged from the hospital. The physical signs then showed that the pulsation to the right of the sternum was less marked, and the continuous murmur had much diminished in intensity; the oedema was also passing off, but the superficial veins were becoming more visible.

Readmission.—He was readmitted the following November for an attack of bronchitis following a chill, and it was then noted that the cardiac signs were much the same, except that the thrill and murmur had much diminished in intensity, but that the collateral circulation in the veins had visibly increased. These latter consisted of three large channels on each side of the abdomen, passing up from below from the iliac veins, four on the front of the abdomen, and one situated laterally on each side; the lateral veins passed up to the axilla and veins of the arm, the two in front joined the epigastric and internal mammary veins on the front of the chest wall; there were also some large channels from the thyroid veins. All these large veins were tortuous, and the current of blood was shown, on exercising pressure, to be travelling from above downwards.

Result.—The patient left the hospital again and enjoyed fairly good health for the next twelve months; he could walk about with comfort, but was not capable of exertion or active exercise.

After-Progress.—In November, 1909, he began to be troubled with cough and dyspnœa, and was readmitted to the hospital. There was then increasing cyanosis and oedema of the right arm, neck, and chest, and the lower part of the abdomen was also swollen, but not the legs. The veins were all more distended and loaded, and the intercostal veins were very prominent, but no pulsation could be seen or felt in the external jugulars. The heart was noticed to be markedly displaced downwards; the apex beat was in the sixth intercostal space. He complained of pain round the left side of the chest and under the scapula. He now got rapidly worse, and signs of hydrothorax supervened. He died on January 13th, 1910, having lived close on eighteen months from the time the aneurysm ruptured into the vein.

Autopsy.—The *post-mortem* examination was made by Dr. Aldren Wright. The body was cyanotic and oedematous except the lower extremities. There was hydrothorax but no pericardial effusion, and the left lung was somewhat adherent to the chest wall in the infrascapular region. At the upper part of the right side of the thorax there was a mass consisting of the aneurysm, distended superior vena cava, right auricle, lung and pleura, intimately adherent together; the heart was greatly displaced downwards and was placed somewhat transversely, so that the upper border of the right auricle was at the level of the fourth interspace. All the external veins were greatly dilated as previously described, and the vena azygos, major and minor, were also much distended. The heart was slightly enlarged, and on separating the mass at the base the condition was as follows: The aorta was dilated and very atheromatous, and from the right and posterior part of the first part of the arch an aneurysm of the size of a Tangerine orange protruded towards the right side, pressing upon and partly enveloping the superior vena cava; above, this vein was greatly dilated, and it has been opened to show the extremely small constricted orifice by which it communicated with the right auricle. The aneurysm has been slit open to show the communication with the superior vena cava, which would admit a No. 8 gum elastic catheter. The aortic valves were competent. There was a second aneurysmal dilatation at the junction of the second and third parts of the aorta. The other organs were healthy.

Observations.

Although, no doubt, this complication in a case of aneurysm of the aorta is a rare one, there are now a fair number of cases recorded, and the symptoms at the time of rupture are very similar to those which have been just described, namely, the sudden onset of a sensation of suffocation, cyanosis, and dyspnœa, with swelling of the neck and right arm; subsequently, at a later stage, if the patient survives, of very characteristic collateral venous circulation. The physical signs of pressure on the superior vena cava, and of the auscultatory signs over the aortic area, consisting of a peculiar continuous murmur with systolic intensification, made the diagnosis of an arterio-venous aneurysm of the aorta almost a certainty. From the state of the veins and the course of the blood stream in this case it was thought that thrombosis of the vena cava had possibly taken place at a later stage, as the blood from the head and upper extremities was evidently being returned in large measure by the dilated superficial abdominal veins and iliac veins through the inferior vena

cava. This, however, proved at the autopsy to be due not to thrombosis but to the gradual narrowing and contraction of the trunk of the superior vena cava just above the right auricle, owing to the pressure of the aneurysmal sac and adhesion of the surrounding tissues. A point of further interest was the slight systolic pulsation noticed at first in the distended right external jugular vein and its subsequent disappearance. The patient was too ill for a polygraph tracing to be taken in the early part of his illness, and unfortunately this was omitted later on. It is probable that the great constriction of the trunk of the vein near the heart may have prevented pulsation being visible in the external jugular. The extreme cyanosis noticed in these cases is due to the obstruction of the circulation.

The prognosis is very unfavourable; in a considerable number of such cases death takes place in a few hours or soon after the rupture. In the case of those who survive the immediate dangers, the length of life depends largely upon a sufficient collateral venous circulation being established. In the case just recorded a year and a half was certainly remarkable; the rupture occurred at the end of July, the venous channels were becoming visible on the surface during the next two months, but it was not till November, or two months later, that the large trunks running between the iliac veins and the veins of the chest and upper extremity were fully developed. For a year after this the patient was able to walk about and enjoyed comparatively good health. During the latter part of this time the intercostal veins became very distended, indicating that the vena azygos was suffering from the backward pressure and the oedema of the chest wall was increasing. Soon afterwards hydrothorax gradually supervened. It would seem that very little of the blood from the head and upper extremities was able to return to the heart via the superior vena cava, and that the bulk of it had to travel downwards and up again by the inferior vena cava.

As has been found in other cases of this kind, the aneurysm had been latent, and had not produced any symptoms to induce the patient to take advice.

DISCUSSION.

Dr. Morley Fletcher commented on the unusual duration of life after rupture was supposed to have taken place. He had seen several cases of thoracic aneurysm with similar signs of pressure on the superior vena cava, with eventual rupture. In these cases, and in most recorded instances, the communication between the aneurysmal sac and the vena cava occurred a few days at most before death.

A CASE OF ACROMEGALY WITH HYPERTROPHIED HEART; PRESSOR SUBSTANCES IN THE URINE.

By Laurence Humphry, M.D., and W. E. Dixon, M.D.

The patient in the following case was a man aged 39, a haberdasher, married, no children, the youngest of four, his mother being 49 at the time of his birth. He sought advice for indigestion and attacks of shortness of breath, from which he had suffered for the last six months. He had noticed also some obesity, with increasing mental and bodily lassitude. His relatives had observed a gradual change in his appearance which had been coming on slowly during the last ten years, consisting chiefly in enlargement of the face, hands, and feet. He himself had not been conscious of this change, but he remembered that he had to have his ring enlarged for his finger, and that his boots had to be made bigger. His habits, as regards alcohol and tobacco were moderate.

He was a tall man, 6 ft. 1 in. in height, about 15 st. in weight, and largely built. The appearance was characteristic of acromegaly, the face was large, especially the lower part, the alae of the nose thickened and coarse, the eyelids rather puffy; the lower jaw was prominent and the chin square; on opening the mouth the tongue was flabby, large, and fissured, the teeth in the lower jaw spaced and on shutting the mouth the lower teeth closed in front of the upper set. The head and ears did not look abnormally large. The hands and feet were squared, and the great toe was large in proportion to the rest of the foot; the wrists and ankles were also thickened. There was no spinal curvature, but there was enlargement of the sternum and costo-sternal articulations from bony outgrowth. The skin was coarse, there was a thick growth of hair on the shoulders and back, and he suffered from molluscum contagiosum. There were no cerebral symptoms, no hemianopia or changes in the optic discs. The pulse was 84, regular; the blood-pressure rather increased, 150 to 160 mm. on two occasions, and the artery wall was thickened. The heart was greatly enlarged, the apex beat in the sixth interspace ½ in. outside the nipple, the impulse heaving; the precordial dullness extended from the third to the sixth rib. There was a short systolic murmur at the apex, and an accentuated second sound at the aortic base. There was some dullness over the upper part of the sternum which it was thought might be due to an enlarged thymus, but this proved not to be the case. The thyroid and genital glands appeared normal. There was no dropsy. There was slight nocturnal diuresis; the urine was 1018, acid, no albumen or sugar, and the total quantity was about three pints in the twenty-four hours. The attacks of shortness of breath frequently occurred during the night, were cardiac in character, accompanied by quickend pulse-rate, some cyanosis, and precordial distress, and lasted for a few minutes. The lungs were normal, except for slight emphysema. The abdomen was normal, the liver dullness rather increased and the spleen was not felt. The general muscular system was not unduly developed. The reflexes were normal. The skiagrams of the hands and feet showed general enlargement of a uniform nature, without changes in the density of the bones. The shafts of the metatarsals, except that of the great toe, showed some diminution in diameter, whilst the shafts of the metacarpals were if anything thickened. Small osteophytic outgrowths at the bases of some of the bones of the phalanges were evident, but not more than may occur in some normal hands and feet. The skull was not taken.

The patient was shown at a meeting of the Cambridge Medical Society in May, 1910, as a case of acromegaly, and subsequently, at Dr. Dixon's suggestion, it was decided to ascertain if there were any pressor substances in the urine.

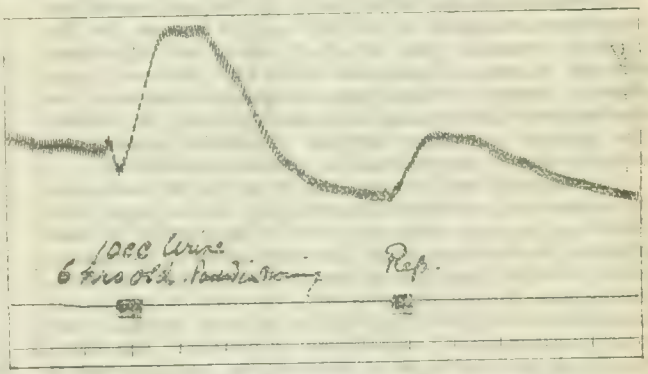


Fig. 1.—Cat pithed. Blood pressure shows the effect of injecting 10 c.cm. urine on two occasions. Time, 30 sec.

It has been shown that the urine of the cat contains pressor substances after the injection of pituitary extract,[1] and it has been assumed that this is evidence that the active principle of the pituitary gland (posterior part) is excreted in the urine. We therefore examined the urine of the patient for substances inducing a pituitary-like action. For this purpose the cat was employed; its brain was completely destroyed by pithing, artificial respiration was performed by a pump, and the blood pressure recorded from the carotid artery. If 10 c.cm. of the urine of the patient were injected into the jugular vein the blood pressure rapidly rose some 70 to 80 mm. of mercury, and the pressure remained high some two minutes before it fell to normal (Fig. 1). This effect was associated with very definite acceleration of the heart and constriction of the peripheral arterioles. Before the rise in blood pressure started there was seen usually a small fall of blood pressure; this corresponds exactly with the fall of blood pressure which results when normal urine is injected into the circulation and is caused by the presence of potash salts. Second and third injections caused a diminished rate of blood pressure, a phenomenon which is characteristic of pituitary extracts. It made no difference to the pressor action whether the urine was injected immediately after being passed or whether it was six or eight hours old. Even after the urine had been kept for four weeks, putrefaction being prevented by a crystal of thymol, the pressor substance was easily detected. All samples of the urine, whether passed first

thing in the morning or at other times, contained the pressor body, which was quite unaffected by boiling the urine. The question of the nature of the pressor substances is very difficult to decide; it may be, of course, that it is pituitary extract, or it may be that it is one or more of the bodies which occur in traces in normal urine and which it has been suggested might arise from putrefaction in the bowel. These pressor bases have been extracted from normal urine by Abelous, who refers to them as "urohypertensine," and the action of one such body obtained from putrefying meat or from ergot (p. hydroxyphenyl ethylamine) has been described in detail.[2] The amount, however, of pressor substance in normal urine is quite different from the amount in the urine under discussion. Normal urine injected into the vein of an animal causes an immediate fall of blood pressure, of a degree depending to a large extent on the amount of potash salts lately taken, followed by a gradual rise to normal (Fig. 2). To observe a distinct pressor effect, large amounts of urine—a litre or more—must be extracted with suitable solvents, which, while dissolving the pressor substances, will leave the depressor substances.[3] The urine in this case, in spite of the depressor substances present, caused a marked rise in systemic blood pressure.

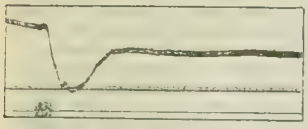


Fig. 2.—Cat pithed. Blood pressure shows the effect of injecting 5 c.cm. normal urine. This urine contained more potash salts than usual, probably on account of eating vegetables.

The evidence on the whole points to the conclusion that the pressor substance is not pituitary in nature, for the following reasons: The effect of subsequent injections, although causing a diminished effect, still induces a considerable increase of blood pressure, greater than would be obtained were the pressor substance pituitary in nature. The pressor substance inhibits intestinal movements, whilst pituitary extract is said to increase peristalsis.

We have only had the opportunity so far of examining one other case of reported acromegaly in a young girl. This was an early case, but the urine showed distinct evidence of the presence of abnormal amounts of pressor bodies, though less than in that of the patient described. In this case 20 c cm. of urine were required to be injected to produce a marked effect. After such an injection the blood pressure slowly rose 43 mm. of mercury; the blood vessels showed evidence of constriction, and the rate of the heart was considerably increased. All the evidence we could obtain pointed to an effect similar to that obtained from the urine of the first patient. We only mention this case as affording evidence that the presence of large amounts of pressor substances in the urine is not an accidental association of acromegaly.

The patient went to the seaside for a change at the end of May and came back feeling much better. He went to work, but died suddenly on the night of June 15th.

The *post-mortem* examination was made on June 17th, forty hours after death. The skull showed marked thickening of the calvarium, but the brain and meninges appeared normal, and there was no increase in the amount of cerebro-spinal fluid. On lifting the brain from the base of the skull the pituitary gland was seen to be much enlarged and protruding, and of a purplish colour, and the sella turcica was thinned and somewhat worn away. The heart was greatly enlarged, the weight being 2 lb. 13 oz.; the valvular orifices and cavities appeared normal. The wall of the left ventricle was greatly hypertrophied, the thickness on section measuring 1⅜ in. There was slight early atheroma at the root of the aorta, but the rest of the arch appeared healthy. The pericardium contained a considerable quantity (about 45 oz.) of fluid. The liver was slightly enlarged; the spleen was very large, and weighed 1 lb. 7 oz. The kidneys were also enlarged, weighing 9 oz. each; the capsule was rather adherent, the cortex was not diminished. The adrenals were not examined. The thyroid was normal, and there were only a few remnants of the thymus body. The radial vessel was somewhat thickened but the cerebral vessels were normal; the other organs were normal. There was nothing obvious to account for the sudden death. The pituitary gland was greatly hypertrophied; it weighed 8.6 grams, the average normal weight being ½ gram, and measured 4½ cm. in length by 2½ in width; the capsule was thickened. On section it was soft and diffluent, and there were signs of an old haemorrhage. The anterior lobe was especially enlarged.

It was decided to ascertain if there were any pressor substances in the tissues. Saline extracts were made of several tissues soon after removal from the body—spleen liver, and pituitary gland—as 2 per cent. solutions. These were injected into the circulation of a cat with a view to determining the amount of pressor substance present. The pituitary gland was separated into anterior and posterior lobe, and injections were made of extracts from both these. The injections of the pituitary gland caused an immediate fall of blood pressure, with some cardiac slowing and rapid recovery; with neither lobe was there any evidence of a pressor action (Fig. 3). Extracts of other organs, liver and spleen, caused a typical effect, namely, a fall of blood pressure, but this was followed by some rise quite in excess of that which may occur normally, and suggesting the presence of pressor substances in the extracts (Fig. 4). Now as the *post-mortem* examination was performed about forty hours after death, it is hardly likely that the active principle of the pituitary gland would be destroyed in that time, yet not a trace of pressor substance could be found.

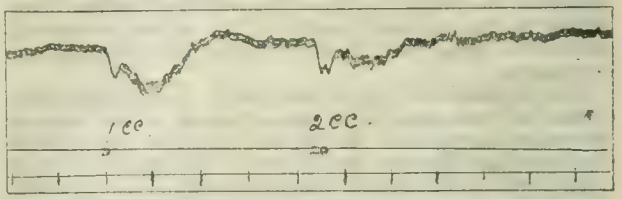


Fig. 3.—Cat pithed. Blood pressure shows effect of injecting a 2 per cent. solution of pituitary extract (posterior part). Time, 30 sec.

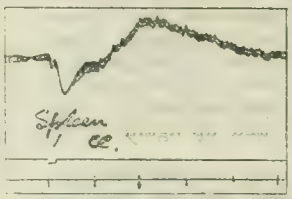


Fig. 4.—Cat pithed. Blood pressure. Shows the effect of injecting 1 c.cm. 2 per cent. spleen extract into jugular vein. Time, 30 secs.

The presence of pressor substances could, however, be determined readily enough in other tissues. This appears to afford further evidence that the pressor substances described in the urine are not secretions from the pituitary body, but are substances either absorbed from the alimentary canal or produced in the tissues, for the reason that the tissues contain an excess of such bodies, whereas the pituitary gland was deficient in pressor substance.

Histological examination of the pituitary gland showed the enlargement to be mainly of the anterior part of the gland, which was compressing the posterior and intermediate parts; the general appearances were those of hyperplasia of the gland tissue of an adenomatous type, the chromophile cells being greatly increased in number in common with the other cells. In the pars intermedia were follicles containing colloid substance, not numerous, and widely distributed some distance apart; the posterior part was also enlarged, and the connective tissue increased in amount.

The kidneys showed some fibrosis, but the gland cells and secreting tissue were healthy; the spleen showed simple hyperplasia. The radial artery was thickened, especially the muscular coat. The heart muscle showed pure hypertrophy.

Conclusions.

We believe that the observations made in this case may throw some new light on the phenomena associated with acromegaly. The patient had undoubtedly been suffering from this disease for the last ten or more years, but, not being a hospital patient, opportunity for observing him had been on only two or three occasions during the few weeks before his death. Interest had rather centred round his greatly hypertrophied heart, his blood pressure, and the pressor bodies in the urine. The only two observations of his blood pressure we were able to make are not sufficient, and, although the measurements of 150–160 mm. of mercury are rather high for a man under 40, it does not appear adequate to account for the excessive hypertrophy of the left ventricle; at the same time we are not able to say what his blood pressure may have been registering during the previous ten years. The attacks of dyspnoea were suggestive of cardiac asthma, not uncommon in these patients, and probably due to waves of high blood pressure associated with considerable limitation of the field of cardiac response. With

regard to the pituitary gland, the pars anterior was greatly hypertrophied, and with this we connect the growth of the skeletal tissues, including bone cartilage and connective tissue; the constant association of these two phenomena, especially in adults and when active growth has ceased, is strong presumptive evidence that they are in some way related together. The pars intermedia and posterior are much less affected, and forty hours after death gave no evidence of containing the specific pressor substance of the gland.

The second phenomenon of importance was the constant presence of very large amounts of pressor substances in the urine and the fact that *post mortem* evidence of pressor substances was also obtained in the tissues. The evidence is against this substance or substances being related in any way with the posterior portion of the pituitary body for several reasons: (1) The vascular effects are much more characteristic of other substances, such as p. hydroxyphenyl ethylamine, than of pituitary extract. (2) If the pressor substances were pituitary in nature, the flow of urine should have been more decidedly increased; and (3) perhaps most important of all, the gland contained no active principle at a time when the other tissues contained a pressor body.

It is almost impossible to regard the presence of pressor substances as accidental, because of the second case which shows the same condition.

The third condition which is important in this case is the hypertrophy of the heart and blood vessels in the absence of valvular disease and atheroma. It is important to remember that this is a common feature of acromegaly, although in descriptions of the disease the more pronounced bone changes have overshadowed all other conditions. The liver, spleen, and adrenal bodies are also frequently enlarged.

We have thus four main points to correlate:

(1) The presence of pressor substances in the urine and tissues in great excess.
(2) General hypertrophy of organs, liver, spleen, and especially the cardio-vascular system.
(3) Hypertrophy of the pituitary body out of proportion to the hypertrophy of other organs.
(4) Bone changes.

(1) and (2) are obviously closely associated together. Indeed, we may say that given (1), then (2) follows as a natural sequence. Harvey, working in the pharmacological laboratory at Cambridge, has shown that pituitary extract, ergotamine, and other pressor substances administered to rabbits, caused marked hypertrophy of the heart and a smaller effect on other tissues. With regard to (3) and (4), however, we have no positive knowledge. It may be that the hypertrophy of the pituitary is primary in acromegaly and the bone changes secondary to it, or it may be that its hypertrophy is secondary, as is probably the case with the heart, liver, and spleen.

If the latter were found to be true it is conceivable that the whole series of phenomena are the result of vascular changes induced by pressor substances. But whatever explanation we are going to adopt it must be remembered that in no other condition that we are aware of have large amounts of pressor substances been found in the tissues and urine, amounts probably one hundred times greater than those which are normally present. No attempt has been made to give any references to scientific papers on the action of pituitary extracts, for these we would refer to Schäfer's Croonian Lecture, *Proceedings of Royal Society*, 1909, lxxxi, 442

We are indebted to Dr. W. H. Harvey for his assistance in the *post-mortem* examination and in the histological examination of the tissues.

References.

[1] Dale, *Bio-Chemical Journal*, iv, 427, 1909. [2] Dale and Dixon, *Jour. Physiol.*, xxxix, 25, 1909. [3] Bain, *Lancet*, August 7th, 1909, and April 30th, 1910.

DISCUSSION.

Professor Bäumler (Freiburg) thought that the two most important features of this case were the great hypertrophy of the heart and the presence of a substance in the urine causing great increase of blood pressure. As regards the hypertrophy of the heart, one could imagine it might be a direct effect of the change in the pituitary body brought about like the hypertrophy of other organs. As to the absence of any pressor substance in the diseased gland, which Drs. Humphry and Dixon had demonstrated, one had to think of some as yet unknown influence of the disease on organs in which, as they had shown, pressor substances were formed.

EVOLUTION OF RACIAL TYPES OF EUROPE: ITS BEARING ON THE RACIAL FACTOR IN DISEASE.

By J. S. Mackintosh, M.R.C.S., L.R.C.P.,
London.

It has been estimated that the great ice age, when Europe was covered with glaciers, came to an end about 40,000 years ago. This was brought about by a gradual change of climatic conditions from a uniform humid cold to an era characterized by great dryness and extreme ranges of temperature, with hot summers and frosty winters, not unlike those of Canada or Manchuria at the present day. I would call particular attention to the low degree of humidity; it was this that caused the recession of the ice. With the ice disappeared the ape-like Neanderthal type of man. He was replaced by a higher type—the common ancestor of our long-headed races of Southern, Western, and Northern Europe—this type being supposed by some anthropologists to have found its way into Europe from North-Western Africa, possibly driven thence by the drying-up of the Sahara or the modifications of the Mediterranean Sea. Others think he was directly evolved from the Neanderthal type. The old idea, founded on philological grounds, of a great Aryan invasion from Central Asia, is, of course, nowadays practically abandoned

At the present day European dolichocephalics approximate to one of two chief types—the Iberian (small, slender, leptorrhine, and brunette), and the Teutonic or Nordic (tall, muscular, leptorrhine, and blonde). I believe the Iberian—the "Italian organ-grinder" type, which is found as far north as the Hebrides—to be the evolutionary product of the milder Atlanto-Mediterranean influences, the Teuton of the more rigorous climatic conditions, whose gradual retreat he followed to the North East, as, through the centuries, Western Europe grew milder and damper. The purer types of this Teutonic race are, therefore, now mainly found in the Baltic regions, though there is clear evidence that in prehistoric days they were spread right across the great northern plain of Europe. This is shown by the distribution of their characteristic "*reihengräber*," or "graves in rows," from France to the Urals.

But, apart from climatic influences, another factor contributed towards the separation of Iberian from Teuton. This was the appearance of the Alpine race—short, thick-set, snub-nosed, brachycephalic, and brunette. The "Alpines" came from the East, along the mountainous regions of Central Europe, and drove a wedge between Iberian and Teuton, penetrating in force as far west as Brittany, and undoubtedly settling to some extent in the British Isles. It is supposed by some that they came from the mountainous regions of South-West Asia, brachcephaly being an Asiatic racial character. Their invasion was peaceable, and they intermarried on their frontiers with the dolichocephalics, skulls intermediate in type being found in ancient burials. Here, then, we have three radical racial types, whose respective evolution took place under radically different climatic conditions. Their social conditions also differed. The Alpines were given to dwelling in communities from the earliest times in which their traces are found—first as cave or pit-dwellers, later in the well-known lake dwellings. The Iberians were also troglodytes and pit-dwellers, those on the Atlantic coast requiring in particular shelter from the weather. With the Teutonic types the case was far different. De Mortillet, writing of their presumptive ancestors of the Magdalenien period in his well-known work, *Le Paléolithique*, lays special stress on the fact that they were not troglodytes, but wandering hunters and dwellers in the open. In historical times Tacitus, and later on, Strabo, bear witness to the "Germans'" nomadic habits and their aversion from communal life.

In this country the Iberian was the aboriginal of the post-glacial era. Following him came the Alpine and a tall, sub-brachycephalic type, probably a cross between Teuton and Alpine, or some other brachycephalic race. Lastly came the great historical invasions—mainly Teuton. The Teuton, broadly speaking, came last, and he came from a drier climate, therefore he should be more

susceptible to climatic influences than the other types. Recorded observations have borne this out.

Dr. Shrubsall has concluded, from a wide and careful survey of statistics, which he presented in a paper entitled Physical Characteristics and Morbid Proclivities, in the *St. Bartholomew's Hospital Reports*, 1903, that blonde types in this country are specially liable to tonsillitis, rheumatism, heart disease, and osteo-arthritis. From my own observations I would add catarrhs. It is notable also that the damper districts of Eastern England are populated mainly by a small dark type as seen in the fens, the great clay districts of the Sussex Weald, in the boulder-clay region to the north of London, Romney Marsh, etc. The same phenomenon occurs in Holland, the brunette types being concentrated on the marshy levels west of the Zuider Zee. This is well shown in a diagrammatic map in Professor Ripley's *Races of Europe*. Blonde types, again, as is well known, fare ill in towns, tending to die out. Is this surprising in view of their 40,000 years of open-air wandering, and their historic aversion from communal life? Their tendency to claustrophobia is explicable on the same grounds, agorophobia being rather a complaint of brunettes, and much rarer than claustrophobia. The blondes came as conquerors; the older brunette types form in the main the lower classes. The special complaints of brunettes, according to Shrubsall, are phthisis, nervous diseases, and malignant growths. The first two, at any rate, are mainly social diseases, the dusty trades claiming many victims; but nevertheless the Ibero-Alpine types thrive, or at any rate survive, in the life of the city for which their evolution has to some extent prepared them. In hybrid races the dominant or preponderating type of the individual will determine his pathological bias in certain directions: the children of hybrid parents often revert of course towards one or other pure ancestral types. On the other hand, where a community originally of mixed race has been long settled and long undisturbed, recognizable local subtypes tend to be evolved by a process of selection, presenting a combination of traits best suited to local climatic and social conditions.

Can any practical use be made of the study of disease in its racial aspect? Most certainly! What is the "open-air" treatment of phthisis but an empirical attempt to restore the patient to his natural racial environment? Cannot its successes and failures be explained on racial lines, such as, for instance, the progress of certain consumptives made in the cold, dry winter and lost in the damp summer of the Alps? What is the meaning of the present popularity of the high Alps in winter as a holiday resort, or the old saw that a green winter makes a fat churchyard, if not that a dry, frosty winter is a physiological necessity to at least a section of our population, and was probably more so formerly?

Dr. Trudeau, after injecting rabbits with tubercle, found that in those kept in a damp cellar the disease progressed, while those restored to the warren rapidly recovered.

The cow, like the Teuton, is essentially a nomad. Yet our dairy farmers persist in trying to breed a race of troglodyte cows, immuring them in dark, stuffy sheds, with results familiar to us all.

I suggest that in studying the racial characteristics of our patients we can act on a cardinal principle in the choice of locality for school, home, holiday, health resort, or migration. We can anticipate the course certain diseases are likely to follow, we can understand the restlessness of our blondes when we keep them long in bed, and the futility of their attempting a "rest cure" in a London nursing home. We can discern why certain cases of tuberculous joint disease do well on the coast while others do not, but improve in a London hospital, or, as Sir William Bennett has noted (*Practitioner*, June, 1910) on returning to their place of nativity. We can comprehend why Jews and other races from warmer latitudes have a pathology of their own when resident in this country, and why we have one when we go to live in theirs. I believe the success of certain special diets has a relation to the racial type. Perhaps we have here a clue to certain cravings for stimulants, alcohol counteracting the sense of chill to the skin in types susceptible to damp. In short, we can hold in our hands a master key to the secret of many pathological mysteries, and the racial factor in disease is, if the points I raise hold good, of an importance hardly to be overestimated.

STARVATION AND PURGATION IN THE RELIEF OF DISEASE.

By Dr. G. GUELPA,
Paris.

IN modern science (teaching, literature and medical practice) certain facts and corresponding deductions are received as undoubted truths, which, when examined with a little care, prove to be absolutely false and pernicious for the preservation of health and for the cure of disease.

I am going briefly to sum up some facts which have served as a basis for the method which I present.

1. Emaciation is almost always looked upon as unfavourable, even dangerous. On the contrary, it is generally useful, and often it should certainly be encouraged because it enables the body to rapidly remove the intoxications which are the cause of the disease.

2. Weakness is not a manifestation of deficient nutrition as one understands it to-day, but is the result of imperfect removal of toxins.

3. Hunger is not the expression of need of the body for repair of its waste, but it shows us the degree of active intoxication in the digestive system. The incontestable proof of this is that cleansing of the digestive tract, especially repeated cleansing, causes the disappearance of hunger instead of an increase.

4. As a corollary, one must cease to limit the rôle of food to simple compensation of the waste of the body, for first of all it serves the purpose of absorbing and neutralizing the toxic products which are produced in the alimentary canal. It is only then that it performs its second rôle, which is to repair the waste of the body.

5. There is absolutely no danger in remaining deprived of food for several weeks provided care be taken to relieve the digestive tract of waste products and poisons which are daily formed there. When death occurs after only several days or weeks of starvation, it is not brought about, as some think, by the fact that the waste of the body has not been replaced, but it is the result of the excess of toxins which have accumulated and have not been excreted.

6. Purgation, when it is thorough and not drastic, is never a cause of dangerous inflammation of the digestive tract, even if repeated during several days in succession. It has, on the contrary, the advantage of securing disinfection of the digestive tract when that function is performed imperfectly, or not at all, by the food.

7. Purgation and deprivation of food, when their duration is not too prolonged, do not cause anaemia, but, on the other hand, they are the best means of increasing the red corpuscles, the haemoglobin, and the leucocytes in their most vital form—the mononuclears.

These principal statements, together with a number of others of less importance, all of which have been long and carefully controlled, have led me to the conception of the method which I present,[1] the chief idea of which is to ensure the most regular and rapid elimination possible of the waste products and poisons of the body by means of privation of food and purgation at repeated intervals during three, four, or even more days.

This method of treatment is never harmful; it is nearly always useful, and it sometimes gives truly marvellous results. Thus it brings about the cure of diabetes, even when accompanied by the most serious complications. It speedily arrests its development, and causes complete disappearance of all its manifestations in several days or weeks.

Owing to the limited time at my disposal I cannot give you clinical observations to illustrate all these interesting points. I will confine myself more specially to the subject of diabetes, and quote you a single case, which demonstrates how active and quick is the action of judicious purgation with deprivation of food in the treatment of this disease.

Three months ago an American gentleman, passing through Paris, slightly injured the end of his little toe in getting into a carriage. Acute inflammation soon developed, and rapidly involved the whole foot. The patient had been suffering from diabetes for many years, and had 300 grams of sugar and more than 4 grams of albumen. Drs. Suzor, Vignat, and Levassort (surgeon), being unable to arrest the gangrene, arranged for amputation. But before this radical measure was undertaken they called me for consultation.

We decided the treatment of "*Désintoxication*," and I predicted confidently the speedy arrest of the progress of the disease and its early cure. In fact, next day the livid appearance of the foot had given place to a more healthy tint, and a fortnight later the patient was no longer passing sugar in the urine, and only 50 cg. of albumen, this being due to the fact that he would not consent to a total deprivation of meat. It was only necessary to remove the terminal phalanx of the little toe, which was already necrosed when I began my treatment. At the end of a month the patient went out, in possession of his foot and having no sugar in the urine, to take a holiday on the Mediterranean coast. A few days ago he wrote to me that his recovery remained complete. The same result is so easily and always realized when the *désintoxication* is seriously applied.

This treatment exercises the same influence against all diseases by reducing nutrition. It brings about the disappearance of tophi and ankylosis of long standing when applied in cases of gout with the necessary rigour and persistence.

I cannot refrain, in connexion with this, from quoting briefly the case of a patient who came to me from the Hospital Tenon, where he had been for more than a year, and whom I kept in my house in order to bring about the result which I foresaw, but which at first seemed impossible. He was a man, aged 48, a house painter, who since the age of 18 had been afflicted with pains, and for the last twenty years had been unable to work for more than five or six months during the year, owing to exceedingly painful attacks of gout. For the last five years he had been unable to work at all, and he had spent the last two years in bed, either at home or in the hospital. The joints were so fixed that he could not even dress himself, and the condition of his hands and arms prevented him from feeding himself. The erect position was very irksome on account of the semiflexed condition of his knees. Nearly all the joints were more or less fixed and deformed, as though embedded in deposits of urates. Owing to the condition of his vertebral column he had lost generative sense and he could not write or read, on account of sensations of burning, of flickering, and of lacrymation of the eyes, which came on after a few minutes of trying to read. His power of comprehension was also very slow, and his memory was much impaired. He was subjected to various periods of my treatment, which lasted during a week. In five months he underwent *ninety* days of absolute fasting and about *seventy* purgings. His weight diminished from 87 to 60 kilos. Simultaneously with this, an immense improvement in his general condition took place. As a matter of fact the gouty patient could now read and write without the least difficulty for several hours at a time, he could dress himself without anybody's assistance, and he could walk and occupy himself with all kinds of work. Almost all the joints have become supple and mobile; the uratic deposits have almost entirely disappeared. The tissues, which previously were oedematous and fixed like those in a case of long-standing paralysis, have now returned to normal. He is absolutely changed. He recovered his generative sense, and is now in a position to earn his living.

This treatment is also very useful in a number of other diseases, and it should be used with great advantage in surgery, especially as a preparation for operation and as a powerful factor in inflammatory resolution.

Finally, this method is of great utility in the preservation of health. It specially rejuvenates the body by rendering all the functions more facile—respiration, digestion, sight, hearing, and above all, thought and activity.

There is certainly no more rapid and more efficient means of combating distraction, somnolence, and cerebral lassitude. It will, without doubt, have a great place in the hygiene and therapeutics of the future, and it will certainly contribute to the prolongation of *healthy* longevity.

REFERENCE.

[1] Guelpa, *Auto-intoxication et désintoxication*, Paris, 1910. O. Doin, editeur.

DISCUSSION.

The PRESIDENT (Dr. R. W. Philip) congratulated Dr. Guelpa on the results he had recorded. Since the report of Dr. Guelpa's observations in the *Bulletin de thérapeutique* last year the speaker had adopted the principle proposed in certain cases of diabetes. The results had been corroborative of some of the speaker's contentions.

THE INJECTION TREATMENT OF NEURALGIA AND SCIATICA.

By WILFRED HARRIS, M.D., F.R.C.P.,
Physician to St. Mary's Hospital, and to the Hospital for Epilepsy and Paralysis, Maida Vale.

BOTH experimental and clinical work have shown that the injection of strong alcohol into a nerve trunk causes immediate paralysis, both motor and sensory, of its distribution, by destroying the nerve fibres at the point of injection. This method of local destruction of a sensory nerve by alcohol injection is therefore eminently suitable for the arrest of a chronic and obstinate pain due to sensory impulses generated at the periphery of a nerve, such as tic douloureux, fibrositis, rheumatic neuralgia, supraorbital neuralgia, etc. When the pain is of more central origin, as in post-herpetic neuralgia, unless the alcohol can be injected into the posterior root ganglion, which is a difficult though possible operation, the neuralgia will not be benefited. When the pains are due to posterior root lesions or to sclerosis of the posterior spinal columns, injection of alcohol into the distal portion of the nerves will be of no avail.

During the last two years I have used Schlösser's method of deep alcohol injection of the main branches of the trigeminal nerve in 62 cases of recurrent pain affecting the fifth nerve in one or more of its branches, and on June 11th last I published in the BRITISH MEDICAL JOURNAL my results with this method in trigeminal neuralgia only. Of these 62 cases 41 were cases of tic douloureux or trigeminal neuralgia; 38 of these were completely relieved of all pain for periods varying from two months to fourteen months and upwards. The shorter periods of relief of pain were obtained in those cases in which the injection was perineuritic, not into the substance of the nerve, as proved by the absence of any detectable anaesthesia. Such perineuritic injection of the deep trunks in trigeminal neuralgia is very variable in its effects. Sometimes it produces no effect at all on the pain, and in others the relief is immediate and complete but its duration is quite uncertain, though I have seen it last two months, four and a half months, seven months, and twelve months. On the other hand, if the nerve is properly hit by the injection, as proved by the presence of deep anaesthesia of the skin and mucous membrane supplied by the nerve injected, then we shall be quite safe in promising a minimum of six months' cessation of all pain, and in all probability much longer, even as long as three years having been recorded by Kiliani. In a few cases the pain will recur after a successful injection in another of the three main branches of the fifth; thus, when the pain appeared to be at first localized to the lower jaw, and perhaps the tongue, after successful injection of the foramen ovale, the pain may recur at any time in the second division, affecting the upper jaw and nose, necessitating injection to the foramen rotundum. This does not often happen but may do so; or, after arresting the pain in the upper jaw and nose by injection of the foramen rotundum, it may be found necessary to inject the supraorbital nerve on account of pain recurring in the forehead. Two main trunks should never be injected at the same sitting, because, although pain may be complained of in both upper and lower jaws, yet the pain is generally due to either the second division or the third division being involved by the neuralgia, the pain in the other jaw being a reflected pain, which may disappear entirely after injection of the chief offender.

In two of my cases the tic douloureux was bilateral, in each case affecting the third division on each side alternately. In one of these cases the Gasserian ganglion had been removed ten years ago, leaving the ophthalmic portion. After nine years' relief the pain recurred in the opposite lower jaw, and then returned in the original position in the left lower jaw with furious intensity, although this area was quite anaesthetic. This is the only case in which I have seen the pain of true tic douloureux return in a deeply anaesthetic area, yet injection of 90 per cent. alcohol into the foramen ovale under chloroform completely arrested the pain on that side. The pain after three days reappeared on the opposite side in the third division, and I then injected the right foramen ovale, producing

anaesthesia of the lower gum, lip, and tongue, with complete cessation of pain, which has now been absent for six weeks.

Similarly, in my other bilateral case, a lady of 57, the pain has persisted for nineteen years—first in the right and then in the left lower jaw and tongue. Under choloroform I have injected the foramen ovale on both sides, so that at present she is quite free from pain, and anaesthetic on the whole of the front of the tongue, the whole of the lower jaw, chin, and lower lip. This makes eating and drinking a somewhat slower process, and she is apt to dribble, though she enjoys her food now thoroughly. The youngest age for the start of the neuralgia that I have met with is 17, in a lady now aged 37, who had suffered from third division neuralgia for the past twenty years. She is still free from pain, fourteen months since I injected the right foramen ovale. My oldest patient commenced to suffer at the age of 81, and had been suffering from characteristic spasms of intense pain in the right lower jaw for six months, when injection of the right foramen ovale under chloroform completely relieved her, nine months ago. Injection of the foramen ovale I prefer on the whole to do under chloroform, and I can now make practically certain of always finding and recognizing the foramen ovale with my needle. Injection of the first and second divisions at the supraorbital notch and foramen rotundum should always, if possible, be done without a general anaesthetic. These two operations are distinctly less painful than injection of the foramen ovale, or rather, the finding of the nerve at the foramen ovale is often much more painful, though the stinging pain of the injections is much the same in each case.

Beyond the sensations of numbness of the skin treated, no disabilities follow the use of injections. I have never seen any trophic effect after injection whatever, except in two cases slight temporary falling out of hair above the forehead in injection of the supraorbital notch.

Considerable itching, and inability to relieve the itching by scratching I have seen follow on the anaesthetic area of the forehead and scalp in four cases of injection of the supraorbital nerve; this may last some weeks.

In addition, I have used deep injection of strong alcohol into the tissues for the relief of the pain in over 150 other cases of persistent neuralgia, in rheumatic costal neuralgia, so-called intercostal rheumatism, and interscapular, lumbar, and sacral fibrositis. The relief in a large number of these cases is almost instantaneous, becoming apparent as soon as the pain of the injection has passed off—in half a minute or less. In four cases severe neuralgia spreading from the shoulder down the arm, associated with areas of intense tenderness to pressure over the back of the shoulder and arm, which had persisted in one case for seven years, in another two years, and in a third for twelve months, were completely cured by deep injection of strong alcohol. In treating the shoulder and arm, however, care must be taken not to inject either of the main nerve trunks to the limb, or inevitably muscular paralysis of the limb will follow.

Fibrositis of the buttock may simulate a sciatica, or may precede and then accompany a rheumatic sciatic perineuritis. Deep injection of strong alcohol in many such cases is of almost instant benefit, the relief from pain and limping gait being complete and generally lasting, though sometimes requiring repetition. Great care must be taken not to inject alcohol, or sulphuric ether, or carbolic acid solution into the sciatic nerve, or paralysis of the leg will inevitably follow. I have seen these treatments recommended, but if their injection is not followed by paralysis this is undoubtedly due to the needle having missed the nerve.

In 34 cases of chronic sciatica I have used a modification of Lange's infiltration of the nerve with warm normal saline solution and eucaine. Sometimes two or even three saline injections will be required, at intervals of a week, especially if the sciatica has persisted for six months or more. Twenty four cases were completely cured, 7 considerably improved, and 3 received no definite benefit. Lange's method was to find the nerve with a long needle in the neighbourhood of the notch, and then inject into it 100 c.cm. of 1 in 1000 eucaine β in normal saline. This is, however, a very painful process, and I find it far preferable, after finding the nerve, to anaesthetize the nerve by injecting it with 2 c cm. of 1 5 per cent. eucaine, and then after waiting some fifteen seconds to continue the injection of 100 c.cm. of normal saline into the nerve, which is then quite painless. I use a needle 9 cm. long and 0.7 mm. in diameter, and insert it at the lower gluteal fold immediately over the anatomical position of the nerve; the needle is pushed in obliquely upwards so as to strike the nerve at an angle of about 60 degrees just below the point where it passes over the ischium. The patient will instantly complain of a sudden painful tingling in the foot, in the heel if the internal popliteal portion has been struck, and in the ankle and top of foot if the external popliteal half has been pierced. Care must be taken to hold the needle quite still, and then a syringe filled with normal saline is fitted on and 2 or 3 c cm. slowly injected. If this causes definite pain in the foot then the point of the needle is still within the nerve, and the syringe is then changed for a smaller one ready filled with 1 5 per cent. eucaine β solution, and 2 c cm. slowly injected into the nerve. After fifteen seconds the nerve is sufficiently numbed to bear without pain the further injection of 100 c cm. normal saline, care being taken all the time to hold the needle steadily without shifting its position.

The immediate result is a sensation of slight numbness and heavy feeling of the whole leg, with a slight ache at the point of injection. The patient should not get up for at least twelve hours after the injection. Next day it will generally be found that the pain is very much less; that the leg can readily be raised to an angle of 30 degrees or more without pain; and in some cases, especially those which have not lasted more than six weeks to two months, the cure may be complete. In only two cases have I seen a rise of temperature to 100° or more within two or three hours of the injection, in one case with a definite rigor. This is described by Bum and other German writers as of frequent if not regular occurrence. In any case the temperature falls again within two or three hours.

I have never used this method for an acute sciatica of less duration than five weeks, as I consider that rest, especially on a water bed, cataphoresis, local heat, and other medicinal measures should first be tried. If these fail after three or four weeks, then injection of the nerve with eucaine and saline as above described is, I believe, the best remedy.

DISCUSSION.

Dr. O'SULLIVAN (London) said that Dr. Wilfred Harris had been eminently successful in his treatment of trigeminal neuralgia by alcoholic injection. The method mentioned in the removal of the Gasserian ganglion necessitated the use of chloroform—the patient being necessarily perfectly quiescent. Dr. Harris had operated on many occasions without the aid of chloroform and with very good results. The operation for the relief of trigeminal neuralgia was effected by the passing of a minute trocar through the foramen ovale and the foramen rotundum. The speaker's information had been principally derived from Dr. Wilfred Harris's able paper in the BRITISH MEDICAL JOURNAL of June 11th, 1910, and from his work "Alcoholic Injection Treatment for Neuralgia and Spasm," *Lancet*, May 8th, 1909.

THE EFFECTS OF ELECTRICAL CURRENTS UPON BLOOD PRESSURE.

By ETTIE SAYER, M B Lond.

ARTERIAL blood pressure is the product of cardiac systolic force and peripheral resistance. It is regulated by the vasomotor mechanism.

It is lowered in :

(1) Cardiac weakness.
(2) Loss of body fluids—haemorrhage, cholera, etc.
(3) Exhaustion of the vasomotor centre—surgical shock.
(4) Fatigue of the vasomotor centre—some neurasthenias.
(5) In fevers from excessive metabolism.

It is raised by :

(1) Cardiac stimulation.
(2) Increased peripheral resistance.
  (*a*) *Temporarily*—Cerebral compression; violent emotions; any strong sensory stimulus, as pain, etc.
  (*b*) *Chronically*—Hypertonus, which if left to itself goes on to arterio-sclerosis, finally ending in apoplexy, Bright's disease, or heart failure.

It is the object of this paper to deal with certain cases of hypertonus in which the vasomotor spasm was relieved by high-frequency currents.

Auto-Intoxication in Neurotic Subjects.

Case I.—The patient was about 55 years old. Climacteric at 40; attacks of giddiness since. Frequent headaches; very run down. Micturition every two hours. "Never does, never has, and never intends to take any exercise." Drives everywhere; smokes a great deal; likes "wine and all good things." Slight albuminuria. Heart *nil*.

Before treatment the systolic blood pressure was 238 mm. after treatment it was 156 mm.

After-History.—After 36 treatments the blood pressure fell to 156 mm. Subsequently the patient had an attack of bronchitis, after which the blood pressure, which had reached 188 mm., dropped to 170 mm. She then went abroad for a year. On her return she felt well, but complained of rheumatism in her knees. The blood pressure was 198 mm.; it dropped to 150 mm., where with an occasional treatment it has remained six months.

Case II.—The patient, who was 52 years old, was seen on January 9th, 1909. She had been taken ill three weeks before, probably with influenza. She had not seen a doctor, but had kept to her bedroom. She was fed exclusively on eggs, caviare, lobster, Brand's essence, and champagne; says she now feels "as weak as a cat." She faints frequently, and is giddy on walking. The periods are irregular. She has for years drunk a quart of champagne daily, sometimes more. She is very tremulous, overstrung, and lacrymose. Heart feeble, slightly irregular, dilated one inch to left. She received twenty-five treatments of high frequency, together with cardiac tonics, Nauheim exercises, and a strict diet.

The systolic blood pressure before treatment was 202 mm.; after treatment it was 140 mm.

After-History.—On February 9th she returned to the country quite well. She comes to town every few months. The blood pressure keeps down satisfactorily. She now takes only one wineglass of champagne a day; says she cannot sleep without this.

Chronic Bright's Disease.

Case III.—The patient, who was 60 years old and had had two children, was suffering from asthma and bronchitis. She has not been out since an attack of influenza twelve months ago. Sleeps in a small stuffy room with the window shut. Complains of bad headaches and is often giddy. Drinks much tea and stout. Moist râles all over chest; very emphysematous. Heart, liver, and stomach enlarged. Thickish cloud of albumen.

Before treatment the blood-pressure was 253 mm.; after treatment it fell to 168 mm. It required thirty-four treatments to bring it to this; after twenty more it was practically no lower.

After-History.—In November, 1909, the blood pressure was 184 mm.; one treatment reduced it to 173 mm. She kept to her room all the winter; came out for the first time in April, 1910. Blood pressure ranged from 214 to 192 mm. Says she feels well but hates coming out.

Case IV.—This patient, aged 59, has always had "something": pneumonia twice at school, then pleurisy and bronchiectasis. Has complete transposition of all viscera; is subject to malaria. Comes for Bright's disease; albumen ½. Muscular rheumatism.

Before treatment the systolic blood pressure was 198 mm.; after two months' treatment (twice weekly) it fell to 140 mm.

After-History.—During the subsequent nine months the patient has had one dose weekly; the blood pressure keeps about 140 mm. Feels well, but has occasional rheumatism.

Case V.—The patient, aged 61, was seen on February 2nd, 1910. Sickness and giddiness had been present for a week. She complained of cough, headache, and lumbago; was feverish at night. One dose of high frequency reduced the blood pressure only from 203 to 202 mm., but the headache and lumbago were relieved, and she could see all round the room, which was previously quite dim.

The systolic blood pressure, which before treatment was 203 mm., after fourteen treatments fell to 140 mm.

After-History.—The patient feels quite well. The albumen rapidly disappeared from the urine and there has been no return. There had been a history of slight albuminuria at times for years.

Lumbago and Sciatica in Gouty Subjects.

Case VI.—This patient, aged about 60, had had influenza, which left her feeling weak and low, and with sciatica and lumbago. Heart feeble; slight albuminuria.

Before treatment the blood pressure was 192 mm.; after eight treatments it fell to 158 mm.

After-History.—The patient is quite cured. She was placed on special diet, and remains well twelve months after.

Case VII.—This patient was aged 61, and suffered from lumbago, dyspepsia, and rheumatism. There was slight albuminuria.

The blood pressure before treatment was 184 mm.; after treatment, 135 mm.

After-History.—This patient was cured by twenty treatments. Three months later there had been no return of the symptoms, and she has kept well.

Gouty Eczema.

Case VIII.—The patient had suffered from attacks of gout and liver congestion once or twice a year for several years, for which I prescribed colchi-sal, and it usually cleared up quickly. One month ago he sprained his ankle. This cutting off his exercise brought on gout in both ankles and in the left knee, with patches of eczema. He received six treatments, which quite relieved all symptoms.

The blood pressure, which before treatment was 165 mm., after treatment fell to 133 mm.

After-History.—Six months later the patient feels quite well; there has been no return of symptoms. Blood pressure, 135 mm.

Case IX.—The patient, aged 28, was seen in July, 1909. For ten years has had patches of eczema on hands and forearms; never free. Dyspeptic, gouty. On August 30th she was practically well, and going for a holiday.

The blood pressure before treatment was 142 mm.; after treatment, 122 mm.

After-History.—October 30th, cured. Three months later no return; feels well.

Acute Urticaria: Ptomaine Poisoning.

Case X.—This patient had been under treatment on and off for several years, for slight rheumatism. On the night of June 24th, 1908, she went to the Carlton to supper. At 3 o'clock the next morning she woke with violent pruritus and nettlerash. During treatment the pruritus vanished; there was a slight return the following night, but the next treatment effected a cure.

The blood pressure, which was 142 mm. before treatment, fell to 132 mm. after treatment.

After-History.—Three months later the same thing occurred again. The moment I turned the current on she said she was cured. This *must* have been due to suggestion!

Kraurosis Vulvae.

Case XI.—The patient, aged 70, was seen in February, 1910. She had had pruritus vulvae since the climacteric, and had lately been getting much worse. There was a patch of kraurosis of about 2 square inches. She also complained of insomnia and dyspepsia.

The systolic blood pressure was 201 mm.; after treatment it fell to 134 mm.

After-History.—In seven weeks the kraurosis had quite gone, and she felt quite well. June, 1910: No return of the kraurosis; the blood pressure still 134 mm.

Climacteric Flooding.

Case XII.—The patient was 53 years of age; periods very irregular. In July, 1909, there had been flooding for five weeks. The second dose stopped this. The patient had been subject to migraine all her life.

After the sixth dose the blood pressure, which before treatment had been 166 mm., fell to 137 mm.

After-History.—December 3rd, 1909. No period till six weeks ago; flooding since. The period stopped on the fourth day; by the sixth day the blood pressure, which before had been 157 mm., had fallen to 140 mm. January 14th, 1910: Period four weeks, brought on by journey. Blood pressure before treatment 168 mm.; after treatment, 141 mm. June 22nd: No more periods but worry raised blood pressure.

Case XIII.—The patient, aged 45, was seen in September, 1909. Periods irregular; flushes; insomnia; dyspepsia; headaches.

The blood pressure before treatment was 205 mm.; after treatment, 143 mm. She went home to the country feeling well.

After-History.—The patient returned in February, 1910. There had been a period during the last three weeks. High frequency put an end to the period and acted as a strong tonic.

Blood pressure: before treatment, 169 mm.; after treatment, 151 mm.

Case XIV.—The patient, aged 51, was seen in September, 1909. She is subject to floodings, which last two or three weeks and completely exhaust her. Heart feeble and irregular; very plethoric. She was greatly relieved by the reduction of the blood pressure, which from being 198 mm., as the result of treatment fell to 140 mm.

After-History.—May, 1910: Patient returned to London in the same condition as before; blood pressure, 201 mm. A course of high frequency relieved the symptoms and cleared her head, the blood pressure now being 150 mm.

Neurotic.

Case XV.—A widow, aged 58, an actress, was seen on April 12th, 1909. She was intensely neurotic, garrulous, and excited. It was almost impossible to quiet her. She complained of giddiness, constant burning headache, and cold extremities, and that her arms and legs often became numbed. Her nose bled frequently, and she had attacks of diarrhoea and flatulence.

Blood pressure, 256 mm.

After-History.—April 13th to 16th: Blood pressure falling, but the patient was still terribly excited and worried over her affairs. April 17th: Pressure fell of its own accord from 188 to 140 mm.; she was absolutely quiet, serene, and happy; her affairs had taken a pleasant turn. April 18th: Affairs all wrong again; blood pressure rose to 218 mm. She went to the country that night, and had some sort of a seizure, for which the local doctor was called in. He kept her in bed three weeks, and I have not heard of her since.

Methods of Application.

The great trouble in the administration of high-frequency currents has been the want of instruments for accurately measuring the dosage. The dosage of electricity is quite as important as the dosage of drugs. Like them, in some

cases a large dose has precisely the reverse effect that a small one has. The idiosyncrasy of the patients is also as variable.

At first I used about 450 to 500 milliampères from a condensation couch (from the handles of which one obtained a soft spark of about ⅜ in.) alone for five minutes, and then added an effleuve, breezing it all over the patient, especially directing it over the splanchnic area, for another five minutes. Since the invention of Professor Doumer's instrument for measuring electro-magnetic oscillations inside a solenoid I have used this instead, employing 0.028 to 0.03 units for six minutes. It is important to have the cage of adequate dimensions and the wires forming it sufficiently far apart to prevent self-induction, or in addition to the electro-magnetic oscillations which produce a fall of blood pressure there will be produced inside the cage a powerful electro-static field which will have the effect of raising rather than lowering the pressure.

A rise instead of a fall is also likely to occur if a longer or a stronger dose be given. In this case the patient may either experience no sensation or else feel a giddiness with headache and sense of fullness. This rise is sometimes followed a few hours afterwards by a fall to below where it was. Great care must be used not to give too long or too strong a dose to old people with high pressure, especially if the heart be feeble.

People with subnormal blood pressure generally find the treatment disagreeable. For instance, I once gave a highly strung anaemic girl (who was accustomed to apparatus, as I was treating her for neurasthenia with static electricity, and who was therefore quite trustful) a local high-frequency breeze on to some chilblains on her toes. Although there was no general connexion, in about two minutes she said she felt faint, and broke into a hysterical fit of crying, which rapidly changed to laughing. Simultaneously she burst into so profuse a perspiration that we had to dry her with towels. Blood pressure 96 mm. Hg.

The day before, Case XII had called, not for menstrual troubles, but also for chilblains. The same dose as was given above—only for longer—had made this lady feel, to use her own expression, "light and exhilarated—it is delicious, and fills one with vitality." Blood pressure 147 mm.

Dr. Samuel Sloan makes use of the resonator effects to raise blood pressure in cases in which it is below normal, and by making the patients rest well before and after treatment gets a rise of 5 to 10 mm. Hg from a single sitting.

Personally, through fear of putting any sudden strain on the heart (which has generally been debilitated in my cases of low tension), I instead have used static electricity for them, combined with tonics, massage, diet, rest, etc.

There is never any measurable change from a single dose of static, but the blood pressure, when subnormal, gradually rises during a course of it. Probably this is part of its general tonic effect, as in cases needing static electricity where the pressure is above normal (140 to 150—not sufficiently high to call for high frequency) it often falls to normal as the patient improves.

Mode of Action of the Currents.

Since so little is known about the physiology of the vasomotor mechanism, the exact *rationale* of the reduction of high blood pressure is still largely a matter of theory.

Vaso-constriction can be produced either directly by substances (for example, pituitary extract) circulating in the blood, or reflexly through the vasomotor nerves.

Almost any source of irritation, mental or physical, may act as a stimulus to provoke reflex vaso-constriction. It may be purely emotional (worry, Case XV), or purely local (pain, Case XI). Cerebral compression, when Nature is endeavouring to keep blood pressure above intercranial pressure, and where relief, of course, can only be obtained with the trephine, acts as the strongest stimulus of all, producing blood pressures of 300 to 400 mm. Hg. These types of case may be considered to be of a temporary nature. When one comes to consider the chronic cases of high blood pressure which one comes across in practice, one finds that the stimulus is a chronic one—namely, *auto-intoxication* from errors in a diet in which the nitrogenous elements are in excess of the requirements of the body and of the powers of elimination of the excretory organs.

Apparently the circulating toxins raise blood pressure:

1. By themselves irritating the nerve endings in the vessels, which reflexly throw the latter into a state of spasm (Russell).
2. By blocking the capillary circulation (Haig).

Here one comes to the whole question of molecular concentration and osmotic pressure, which it is beyond the limits of this paper to discuss. Suffice it to say that with a normally acting heart the capillary reflux is one-twentieth the mid-diastolic pressure. Uric acid toxins circulating in the blood—a condition the amount of which can be estimated by drawing a drop and comparing the number of granules with the number of red corpuscles—retards the rate of flow, and so slows the capillary reflux and raises blood pressure.

The vasomotor spasm will protect the tissues and organs from toxins, and thus prevent the various gouty and rheumatic manifestations which are the inevitable result of increasing accumulations; but at the same time it deprives them of the normal flush of blood necessary to healthy metabolism, and if long continued damages the arteries.

During digestion the vasomotor dilatation in the splanchnic area is accompanied by complementary systemic constriction. Excessive feeding may set up excessive systemic reflex, which oft repeated becomes chronic and so intensifies the action of the toxins.

The fall of blood pressure which occurs from a dose of high frequency must be due to one of three things:

1. Decreased action of the heart.
2. Alterations in the blood itself.
3. Decreased peripheral resistance from the arterio-capillary walls.

1. That the fall is not due to enfeeblement of the heart (as in the action of antipyrin) is shown:

   (*a*) By the sense of stimulation, exhilaration and well-being which the patients experience from the treatment.

   (*b*) By the fact that blood pressure and capillary reflux retain their normal ratio.

2. With regard to alterations in the blood itself we may look upon the action of high frequency in reducing blood pressure as being in some way analogous to the action of a rise of temperature, when, unless there is dyspnoea and cyanosis, the rapid metabolism caused by the onset of any fever is always accompanied by a fall in blood pressure, an increased excretion of uric acid, and a quick capillary reflux—exactly what happens on a small scale with a dose of high frequency.

I might here allude to one or two experiments. If two electrodes from a galvanic or faradic current are placed in a bowl of water decomposition occurs with bubbles of gas at either pole. Even if quite weak, a hand placed between them experiences painful electrolytic sensations. If these electrodes are replaced by high-frequency ones hardly any electrolysis occurs. The water merely gets warm, and a hand placed between them experiences no sensations whatever excepting those of warmth, even with currents so strong that were they galvanic or faradic they would cause chemical and electrolytic changes capable of destroying the tissues.

Placed on each side of a mass of white of egg or a piece of meat, very strong high-frequency currents cause streaks of coagulation due to heat along their line of action. Such experiments indicate that the action of high-frequency currents is to a large extent *thermal*. By special arrangement of application it is possible to obtain local heating only, or to raise the entire body temperature. By means of D'Arsonval's anemo-calorimeter it can be shown that when in the cage the amount of heat given off by the body is increased.

In the entire course of the current we probably augment the normal temperature of the cells and tissues, different centres of heat being engendered in each of the cells according to the specific electrical resistance of each. It is not an increased combustion which secondarily raises the temperature, but a foreign energy has been introduced the rapid oscillations of which cause heat and intense vibratory effects, augmenting the temperature of the cells, and so secondarily increasing cell-metabolism. In a similar way cell-metabolism is increased in fever when

Nature makes a protective effort to stimulate the fires of life in order to burn out invading micro-organisms.

3. *Changes in the Arterio-Capillary Walls.*—In addition to their thermal effects, high frequency currents have definite effects upon the nervous system. They oscillate, however, with such rapidity that no sensory nor motor effects are produced; for all electrical vibrations beyond ten thousand per second lie beyond the limits of the range of frequencies to which these nerves can respond. But though no direct effects can be demonstrated, yet their application to any muscle or nerve does in some way affect it, for it is found afterwards that its excitability to all ordinary electric (galvanic or faradic) stimulation is lessened.

The most noticeable effects which high-frequency currents produce upon nerves are upon those of the vasomotor system, and the splanchnics and the great sympathetic trunks seem to be most sensitive to their influence. Certainly when reducing blood pressure by means of an effleuve, it is concentration over these areas which produces the greatest fall.

Crile has demonstrated that with ordinary electric stimulation of nerves like the splanchnics, which contain both dilator and constrictor fibres, it is always the dilator fibres which respond more quickly, and to currents of weaker strength than the constrictors do, which fact may help to explain the different effects of different dosages of high frequency.

Either the vaso-dilator fibres must be stimulated or else the vaso-constrictor fibres must be inhibited; or else the effect may be partly due to the inhibitory influence (which is possibly comparable to some sort of trophic influence) which these currents have been proved to exert upon all muscles and nerves, lessening their excitability to all ordinary stimulation, and consequently lessening or entirely preventing their response to the source of irritation which is throwing them into excessive action.

Duration of Cure.

This depends upon the removal of the cause. If it be accepted that, in the huge majority of cases, high blood pressure, with all the allied gouty symptoms, can be traced to the presence of toxins in the system, due to a want of balance between the food taken in, the bodily metabolism, and the excretory organs, a real and permanent cure can only be effected by properly adjusting the diet to the bodily requirements.

Given a case where the heart has not as yet failed to the extent of producing dyspnoea and cyanosis, but in which the tissues are loaded up with the products of defective metabolism, producing a state of vasomotor spasm, causing depression, headaches, insomnia, fatigue, irritability, goutiness, and attacks of giddiness, and which, if left to itself, would go on to cardiac or renal failure, high-frequency currents can be relied upon to release that spasm in a satisfactory manner, not only without any ill effects but acting as a stimulant and exhilarant to the patient. There is no drug which can do this. The salicylates and the alkalis are perhaps the most satisfactory, but both are depressing. Mercury and the iodides only act as retentives, storing the products in the tissues for a fresh outbreak later on. Vaso-dilators are transitory in their action, and, if persisted in for long, damage the heart muscle, so that the condition of the patient is worse after than before taking them. I do not wish to imply that electricity can replace these drugs in other conditions, as I constantly prescribe all of them, only never for the specific purpose of bringing down blood pressure.

Having arrived at a healthy state, if the patients can be made to adhere to a suitable diet and mode of life, there is no reason why they should not permanently remain in it.

But, as they are generally people getting on in life, and bad habits are generally pretty firmly established, it is not easy to break them, a repetition of indiscretions cannot be expected to do anything else but cause a repetition of the symptoms. Perhaps the most difficult task of all is to induce middle-aged ladies (who have dropped such a thing for ages) to take exercise.

I always begin by ordering a course of Nauheim exercises with the idea of completely exsanguinating the muscles, so as at least once a day to create in them an absence of any capillary blood pressure. This can lead on to Ling's exercises, and, if possible, to sports, as golf, etc.

In conclusion, I may say that when patients have had a dangerously high blood pressure, the vasomotor mechanism will probably remain hypersensitive for a long while; therefore it is as well to see them again, at least three or four times a year, first, in order to keep them up to the mark with regard to diet and exercise, and, secondly, to measure the blood pressure, so as to be able to check any threatening rise.

TUBERCULIN IN PULMONARY TUBERCULOSIS.

By W. Camac Wilkinson, M.D.Lond., F.R.C.P.

[*Abstract.*]

Dr. Camac Wilkinson said that in testing the value of any system of treatment no experiences and no records were of real value unless these experiences and records had been controlled by yearly examinations for at least three or four years. In respect of sanatorium treatment medical officers of health were among its outspoken advocates. Such officers were not in a position to form any opinion of their own on this problem of practical medicine. Nor should the views of sanatorium authorities be accepted, for they judged mainly by initial results. The right judges were the family physicians; they witnessed the results, whatever these might be, in their daily practice, years after the patients had left the sanatorium. A collective investigation based upon the experiences of such practitioners would establish the real value of the claims made. The speaker himself was a convinced advocate of specific treatment for two solid reasons: First, sanatorium treatment was no ideal treatment, and failed in the majority of cases; secondly, specific treatment could achieve far better results at far less cost and needed no selection of favourable cases to demonstrate its enormous value.

He had seen even very advanced stages of pulmonary tuberculosis complicated with fever and, worse still, with severe laryngeal lesions—even extensive ulceration—yield in a very remarkable way to the action of different kinds of tuberculin; and he had not yet seen an early stage that did not yield more or less promptly to specific treatment without the aid of sanatorium methods, and sometimes even without any suspension of daily work. It could not be that he was a magician, so what he had done and seen could be done and seen by others. Some authorities stated that certain states of health contra-indicated the use of tuberculin, but the speaker knew of only one contraindication, and that was despair. Tuberculin acted like magic in cases of haemorrhage, apart from complications. Haemorrhage might, indeed, be the first sign of a mixed infection, in which case tuberculin would be contraindicated, but by the mixed infection, not by the haemorrhage. Nor was heart disease a contraindication. It might cause pulmonary haemorrhages, and then also tuberculin might not arrest the haemorrhage. He had reported a case of morbus caeruleus complicated with pulmonary tuberculosis—a frequent combination, which he treated with tuberculin. The haemorrhages ceased and the boy put on about a stone in weight and improved greatly in appearance. In other cases of heart disease tuberculin would act just as well upon the tuberculous process as if there were no heart disease, but if the heart disease were of a serious form it might not be wise to use tuberculin, because it might only postpone death, and there was no virtue in prolonging life when life had lost all its uses and was but a living death.

Others, again, urged that neurotic and neurasthenic states rendered the use of tuberculin undesirable and risky. The treatment of all neuroses was difficult, but it was better to save the patient's life than to pander to the morbid tendencies of an ill-nourished—at any rate an ill-conditioned—nervous system, and more than once, by means of tuberculin, he had dissipated to the winds all the symptoms of a marked neurosis. So far he had not had a chance of treating an epileptic. If he refused to treat one it would be because treatment could not make the patient a useful member of society. A neurosis *per se* was no contraindication in his experience, but care should be taken that the mental instability and perversity were not

due to an organic lesion of the brain. If this, however, were a tuberculous lesion, he would use tuberculin. Even the worst complications did not contraindicate tuberculin, especially if they were due to tuberculosis. A mixed infection was one of the worst complications, and might be the prelude of death. But even in some cases of mixed infection tuberculin might be used with benefit. However, on the whole it was better to try and get rid of the mixed infection before tuberculin treatment was attempted. In cases of severe mixed infections treatment in sanatoriums might be indispensable, but, apart from these cases, its value was much over-rated.

In principle there was no difference between tuberculin treatment for the purposes of curing tuberculosis and the use of Haffkine's fluid or similar agents for the purpose of preventing such diseases as plague, cholera, or typhoid. If, therefore, the method was advocated in order to protect a healthy person against a disease which, in a mathematical sense, he had a very small chance of contracting, it was not unreasonable to urge its use if it offered even a small chance of cure to one who had already fallen a victim to the disease. In most cases the work of sanatoriums was patchy and unfinished. Patients were discharged—improved, no doubt, but with the disease still potential, if not active, and merely awaiting a favourable opportunity to assert itself. Moeller, of the Belzig Sanatorium, near Berlin, and a recognized authority on tuberculosis, was ten years ago an utter sceptic on tuberculin treatment, but was now one of its most earnest advocates. He had said that in cases where sanatorium methods had entirely failed tuberculin had been proved to possess undoubted curative properties, and that while sanatorium treatment never cured in three months, permanent cures were often obtained with tuberculin. Strange to say, Dr. Moeller used tuberculin mainly in cases where sanatorium methods had failed, but if tuberculin succeeded where sanatorium methods failed, why should tuberculin fail where sanatorium methods succeeded? Experience had proved to the speaker that tuberculin never failed where sanatorium methods succeeded. In the first stage pulmonary tuberculosis could be cured with certainty by tuberculin; in the second stage, which Moeller maintained was never cured by sanatorium treatment alone, tuberculin gave permanent results in 40 to 60 per cent. of the cases; and even in the third stage it sometimes yielded remarkable results that could not be approached by sanatorium methods.

For the evidence on which the speaker based his views he referred the audience to a book published by him; to the results described by him in a paper on laryngeal tuberculosis read before the Section of Laryngology; to the improvement shown in the blood when examined by Arneth's system in some tables handed round; and to the evidence of complete healing of the lungs after frequent and large doses of tuberculin in a patient who died from an accidental pneumothorax which caused death by cardiac failure.

DISCUSSION.

Professor SAHLI (Berne) wished to draw attention to the too little known fact that in addition to lung affections, tuberculous spondylitis, and commencing renal tuberculosis, could be greatly improved by tuberculin given in so small doses that reactions were avoided. He was satisfied that the tuberculin treatment applied in an appropriate manner was a real progress, the greatest progress they had realized during the last twenty years. But it was necessary to treat the cases early. For that purpose it was necessary to make the diagnosis early. In consequence the progress to be realized with the tuberculin would depend essentially on the family physician, who alone got the cases early enough for the tuberculin to play its prophylactic rôle. He had treated thoroughly of the principles of the tuberculin treatment in a small book, of which an English translation of the third German edition would, he hoped, soon appear. He had had one case of Addison's disease which had been treated by tuberculin at intervals during two years. The patient was improving, and he had increased in weight and strength It was to be said that at the same time he used adrenalin in small doses during many months internally, in doses of ½ mg. a day.

Dr. HERON (London) could not agree with the author of the paper in the views there expressed concerning sanatoriums. It was of the first importance in treating a case of pulmonary tuberculosis that, both for his own sake and in the best interests of those with whom he lived, the consumptive should have special knowledge of what he ought to do and also of what he ought not to do. This special knowledge could be best got in a well-conducted sanatorium—excepting, perhaps, in the case of a rich consumptive, who could well afford to get in his own home all that was necessary to the treatment of his disease. For this educational purpose, in the great majority of cases, residence in a sanatorium for at least a month was a most valuable aid to successful treatment. In the public interest it was essential that suitable accommodation should be provided for advanced cases of consumption, where they could be properly isolated and nursed. The view that these advanced cases were most dangerous as sources of infection was held by practically every one entitled to express an opinion about the subject. He did not regard results of treatment as being worthy of serious attention until a period of at least one year had been passed by the patient in which he had, after cessation of treatment, earned his living by his own work. In his opinion the opsonic index had not yet been shown to be of practical importance as a guide to the tuberculin treatment of pulmonary tuberculosis. He had never seen permanent improvement follow the use of tuberculin in far-advanced cases of consumption. The earlier in its history a case of pulmonary tuberculosis was treated with tuberculin the better for the patient. He knew of no drug but tuberculin which exercised any curative influence upon tuberculosis in any of its numerous forms, and he ventured to say that the medical man who did not, in suitable cases, give a tuberculous patient the benefit of tuberculin treatment incurred a grave responsibility.

Dr. ODELL (Torquay) said that he could not agree with Dr. Wilkinson in his condemnation of sanatorium treatment. He believed that open-air treatment was of the utmost value, and, from his experience at the Western Hospital, Torquay, treatment by ichthyol, combined with fresh air and good food, had resulted in most satisfactory results. The speaker had used tuberculin when first introduced by Professor Koch, but had not used it for some years on account of the disfavour into which the treatment had fallen, although he had had four successful cases out of thirteen. He came to the meeting with an open mind, and would give the question of tuberculin treatment further consideration.

Dr. GARSON (Eversley) traversed the statements regarding the results of sanatorium treatment of pulmonary tuberculosis. The great benefits which patients could obtain in no other way than by residence in a sanatorium were, first, the educational training in the hygienic principles he should follow in after-life; secondly, the medical supervision as to what he might do and what he might not do each day, especially as to the exercises he might take; thirdly, the proper feeding, whereby he received adequate quantities of food and of the various food elements. As regards the use of tuberculin it had been in his hands very effective, especially in the early stage of the disease, in assisting the healing process and of reducing the length of treatment required in a sanatorium. His usual plan was to give it by the mouth, beginning with very minute doses and gradually increasing them; the temperature was very closely observed with the view to regulating the dose so as to prevent any severe reaction occurring from the effects of the tuberculin toxin, which was marked by rise of temperature. Taking the temperature in the rectum was the most reliable method in his opinion in all cases of pulmonary tuberculosis. The opsonic index failed in that it afforded no satisfactory indications for treatment, unless tested as frequently as the patient's temperature. The time required for early opsonic determination rendered this impossible.

Dr. GODFREY W. HAMBLETON (London) desired to make an emphatic protest against the reintroduction of tuberculin or any similar substance into the treatment of phthisis. The grounds upon which he based that protest were that tuberculin was known to be very dangerous, and it did not produce any beneficial change in the patient's environment; it was based on a misinterpretation of certain experiments on animals, because

the invariable antecedents to the production of tuberculosis were a suitable animal and a certain environment—not the *Bacillus tuberculosis*—and there was not a sufficient amount of identity of relations between those animals and man to warrant or justify the application of an inference drawn from the former to the latter. Tuberculin and all measures founded on that misinterpretation of a great biological discovery diverted the attention from the consideration of the real causes of phthisis and prevented the adoption of practical and effective measures for the prevention and treatment of the disease.

Dr. Halls Dally (London) thought the discussion on the value of tuberculin in treatment came at a time which was most opportune, since they might now hope to arrive at some more definite conclusions as to the employment of this remedy. Already many of them were convinced of its great practical value, but, at the same time, he thought that they ought to regard the subject with moderation, and to take care lest by excess of zeal in advocacy they tended to damage the reputation of a remedial agent which, although in his opinion the most serviceable of any yet brought forward, nevertheless should not be regarded in the light of a panacea. With the substance of Dr. Heron's remarks he cordially agreed, the only exception being that he did not regard tuberculin (T.R) as an absolutely harmless remedy which could be given in any dosage with freedom from ill effects. If administered injudiciously he believed it to be capable of lighting up fresh foci of disease in cases which up till then had made favourable progress. In the cases which he had in mind this retrogression might have been mere coincidence, but the onset of fresh symptoms following rapidly upon the exhibition of the tuberculin was suggestive. In selected cases he thought it was most useful, the dosage being calculated by the general condition, temperature, and pulse, which, taken in conjunction, appeared to him to be of more practical value than estimation of the opsonic index. This latter method required not only a laboratory installation, which was not always available, but also considerable experience in technique, in order that the results of the observer could be relied upon. If the opsonic index be taken as a guide, however, he would suggest that a minimum of three controls should be taken in order to determine the normal unit. The object of the administration was to ensure, by graduated dosage, the presence of sufficient protective substances; if few in number, these were augmented; if many, a store was laid up which remained dormant until required, though, if the dosage were excessive or too frequent it might possibly cause an outburst of renewed intoxication. His practice was to begin with small doses, and gradually to feel his way, giving progressively larger doses until a definite effect was produced, when it might be desirable to reduce the amount given, or at all events to proceed with caution. Finally, it appeared to him that in the present state of knowledge the indiscriminate and haphazard use of tuberculin, and, for that matter, of any other vaccine, might be productive of most unpleasant results both to patient and doctor.

Dr. Philip (President of the Section) said it would be unfortunate if the impression were conveyed by the discussion that there was an antagonism between treatment on sanatorium lines and treatment by tuberculin. Speaking from a continuous experience of tuberculin during twenty years in hospital and sanatorium, he desired to say that no idea could be further from the truth. Vaccine-therapy and aëro-therapy were not mutually exclusive. The return of the patient to physiological conditions, while possible at home, was rendered easy in the sanatorium. Tuberculin was a specific remedy closely related to the disease, which met the morbid issue directly. Its value and range of application were enhanced when the patient's faulty environment had been corrected. It was likewise undesirable that a feeling should be created by intemperate statement that the advocates of tuberculin conceived no limits to its application. While tuberculin had a large range of applicability in every form of tuberculosis, there were limits. In the case of pulmonary tuberculosis these limits were, on the one hand, physiological, and on the other, anatomical. From the physiological side it would be folly to expect advantage from the injection of tuberculin when saturation of the system by tuberculous toxins already existed. This excluded a large number of advanced cases. No less certainly from the anatomical side there were limitations. It was impossible to expect permanent benefit from the use of tuberculin in presence of pulmonary destruction and excavation beyond a certain degree. They must keep in view that the cure of the local lesion took place by contraction and cicatrization. Contraction had not only to occur in relation to the lung itself, but also in relation to the thoracic wall and adjacent structures. There was a point at which the limits of potential shrinkage of the chest wall, proportionate to the necessary lung shrinkage, were passed. If this point had been reached, or, stated otherwise, if lung destruction were in excess of this potential shrinkage, the value of tuberculin was correspondingly restricted. The action of tuberculin was, therefore, much greater in early cases. Subject to such qualifications, he was satisfied that tuberculin was a specific remedy of first importance, and that, used with knowledge and caution, it was thoroughly safe.

DEMONSTRATIONS.

I.—ON PERCUSSION OF THE VERTEBRAE.

Dr. Wm. Ewart gave a demonstration of the normal vertebral percussion sounds—that is, of the sounds to be elicited under normal conditions from each of the vertebrae by percussing their spinous process, and showed that they could be used for the purpose of diagnosis in two directions: (1) For the diagnosis of intrinsic disease of the vertebrae themselves, and (2) thanks to each of them acting as an insulated pleximeter capable of conducting vibrations from structures in contact with its body, for the diagnosis of a great variety of deep-seated visceral affections not accessible to any other form of physical examination. This implied two stages in the inquiry:

1. A study of the normal individual percussion sounds special to each of the vertebrae; and
2. The study of the clinical inferences to be drawn from any departure from the normal percussion result.

In the course of his remarks he said that *the history* of dorsal plexigraphy, a method practically originated by Piorry (1794–1879), established an essential distinction between "spinal column percussion," which Piorry practised, and "vertebral percussion," which he never attempted; and a further distinction between v. Koranyi's "vertebral percussion in sections" (1906) and "single vertebral percussion," first described in 1899, which was the subject of this paper. Actuality had recently been given to the clinical aspect by J. C. da Costa, jun.,[1] in his paper on The Practical Diagnosis Value of Spinal Percussion in Diseases of the Mediastinum. *The technique* was simple. It was based on the fact that the vertebra acted as a natural pleximeter, and that its pleximetric vibrations were more suitably and successfully conducted through a Sansom's pleximeter than through an interposed finger; whilst they were better elicited by striking the pleximeter with the finger than with a plessor or hammer. Moderate strength of stroke was required for the average of the work, but the strength had to be varied for its details. A rigidly "identical technique" was useless where the material differed so greatly. The percussion was to be strictly localized to the spinous process by the small flange of the pleximeter.

I.—The Normal Percussion Values of the Several Vertebrae.

Without entering into finer analysis, the individual percussion notes were as follows:

First to sixth cervical: Subresonant dullness.
Seventh cervical and first dorsal: Less resonant than the above.
Second to fourth dorsal: Definitely resonant.
Fifth dorsal ("infratracheal"); Definitely dull.
Sixth dorsal: Subresonant.
Seventh and eighth dorsal ("upper cardiac"): Less resonant than the sixth.
Ninth dorsal ("auricular"): Dullness.
Tenth dorsal ("cardio-hepatic"): Subresonant dullness.
Eleventh dorsal ("hepatic"): Duller than tenth.
Twelfth dorsal ("hepatic"): Duller than eleventh.
First lumbar: Subresonant dullness.
Second lumbar ("pancreatic"): Definitely dull.
Third to fifth lumbar ("intestinal"): Mainly resonant.
Sacral: Of varying resonance.
Coccygeal: At varying times resonant, subresonant, or dull.

[1] *Amer. Journ. Med. Sci.*, December, 1909.

The prominent features in the series were:

1. The isolated dullness of the fifth, of the ninth, of the twelfth dorsal, and of the second lumbar spines; and the associated existence (*a*) of a small "infratracheal dull patch," (*b*) of a "left auricular dullness," and (*c*) of a "pancreatic dullness."
2. The isolated resonance of the second to fourth dorsal, and of the third to fifth lumbar, of the sacrum and of the coccyx.
3. The isolated subresonance of the sixth dorsal; of the seventh and eighth dorsal; and of the tenth dorsal ("cardio-hepatic" vertebra).
4. The mitigated dullness of the eleventh and twelfth dorsal ("hepatic" vertebrae).
5. The "lozenge-shaped upper interscapular dullness," the "supracardiac interscapular dullness," and the "post-cordial dullness," all of them relatively, not absolutely, dull, are of great clinical importance. The "paraspinal bands of subresonant dullness" extend the whole way, as originally described by Piorry.
6. The "lower dorsal dull patch" was grafted pathologically in pericardial effusion upon the central hepatic dullness. Normally it was sometimes to be traced in small children as a dulling influence conveyed from the heart itself.

II.—Abnormal Percussion Results.

The inferences were mainly surgical or medical, according to the clinical context.

(*a*) The *surgical* question was as to the *intrinsic* dulling of the vertebral note, as evidence of *early* disease of the vertebra itself (tuberculous, cancerous, or inflammatory infiltration, etc.). The later developments were traceable by percussion carried beyond the spinous processes themselves to the paraspinal region.

(*b*) The *medical* diagnosis dealt with vertebrae manifestly free from intrinsic disease, and with their pleximetric conduction of any abnormal dullness arising in the thoracic and abdominal viscera in contact with the deep surfaces of the vertebral bodies. A special inquiry was also directed to the dullness of the spinous processes in pleural effusion (Grocco) and in ascites.

(*c*) New fields for diagnosis by the surgeon and by the physician alike were opened up by "vertebral" percussion in two most important regions inaccessible from the front—namely, *the posterior mediastinum* with its glandular, inflammatory, aneurysmal, tracheal, oesophageal, and other affections, and the no less vital and no less remote "mesenteric" region, in connexion with the varied affections of the central abdominal organs. The examination of the "iliac" region, which was of special importance in these days of *epidemic appendicitis*, belonged to the wider subject of "dorsal" percussion, specially dealt with in a paper read before the Medical Section of the Royal Society of Medicine.[1] An accurate knowledge of the normal percussion note of the individual vertebrae might often afford the means of detecting at an earlier date various centrally-situated affections, for example, vertebral or glandular disease before the formation of paravertebral abscess, oesophageal or tracheal disease before the advent of perforation and of pulmonary gangrene, and biliary, pancreatic, or pyloric disease, etc., before their later stages which alone could yield any definite indications to a physical examination conducted from the front.

II.—AN IMPROVED FORM OF GASTROSCOPE.

Mr. Souttar demonstrated an improved form of the gastroscope devised by himself in conjunction with Dr. Theodore Thompson and shown by them last year at the Belfast meeting. It consisted of a long straight limb, with a short nose-piece projecting forwards from this at an angle of 30 degrees. It was indicated that while the instrument was being passed its nose and angle lay snugly in the dorsal concavity of the spine. After introduction the nose lay well forward in the lumen of the stomach and clear of the spine. Its nose could be deflected from side to side by turning the whole instrument, or could be made to rotate independently about its own axis. The joint at which the rotation took place was protected by a rubber band, which also covered as a valve an aperture for inflation.

A window was placed in the side of the nose-piece, and the optical arrangements were such that through this window a very large area of the stomach wall might at one instant be seen in its natural size. Rotation and deflection of the nose-piece enabled all portions of the stomach wall to be brought into view successively. A metal filament lamp of 2 volts provided brilliant illumination and would remain cold for an indefinite period.

The actual nose was of soft rubber and bent easily in any direction. It thus acted as a guide and greatly facilitated the passage of the instrument. It was stated that the instrument, with instructions for its use, could be obtained from Messrs. Allen and Hanburys.

[1] Vol. iii, 1910, p. 211.

III.—THE INFLUENCE OF AIR IN TREATMENT.

Dr. Leonard Hill first pointed out that breathing carbonic acid up to 1 or 2 per cent. was harmless. Experiments of Haldane, Pembrey, Benedict, and himself showed that this was so. He had recently enclosed eight students in a chamber holding about 3 cubic metres (84 cubic feet) with no ventilation. After 45 minutes the CO_2 equalled about 5 per cent. and the wet bulb stood at 85° F. The distress was relieved altogether by putting on a powerful electric fan in the roof and whirling the hot, moist air. The distress felt in badly-ventilated rooms was due to heat and moisture not to chemical impurity. He demonstrated how breathing through a tube increased the pulmonary ventilation; the tube was lengthened by adding segments. The pneumograph showed increasing excursions. He urged that this was a simple, harmless and valuable method of giving respiratory exercise to expand the lungs. Oxygen could be passed into the tube, when a long one was used to ensure a good supply. There was no harm in rebreathing the air like this. He next demonstrated his apparatus by which a bag full of oxygen could be made out of oxylithe whenever wanted. Two blocks of oxylithe were put in the generator (a small metal box), and a pint of water into the rubber bag. The oxygen generated when the water was allowed to enter the box, and filled the bag. A solution of caustic soda was formed, and this absorbed the CO_2 when the subject breathed in and out of the bag. This apparatus had been used with success for mountain sickness, and was good for places where cylinder oxygen could not be obtained. Messrs. Down had made a small apparatus of this kind for anaesthetic use, which he now showed, for oxygen greatly increased the safety of chloroform anaesthesia. He next pointed out that the ordinary method of giving oxygen with a small funnel was of little good. A hospital sister gave him oxygen in the ordinary way, and there was scarcely 1 per cent. more oxygen in his alveolar air. He showed a little light mask made of celluloid, with a detachable and washable curtain which lightly dropped on to the forehead and cheek. The handle formed the oxygen inlet. Using a current sufficient to wash away the CO_2, this mask gave 70 per cent. of oxygen in the alveolar air. An ill patient like a case of pneumonia could tolerate such a mask in comfort, and get much benefit. Playing oxygen near the mouth or into a room were useless proceedings. The fact that the cases of pneumonia in high altitudes must be at once rushed down to the plains, showed the importance of the oxygen supply.

The mask method was too wasteful to be employed continuously. For patients who could bear a mouthpiece he used a big bag fitted with inlet and outlet valves and a tin containing soda lime for absorbing CO_2. This was a very economical apparatus. For ill patients he had made a chamber into which the whole bed could be put. There was a special bellows contrivance and a fan which allowed one to get 50 per cent. of oxygen in circulation through the chamber. There was a window allowing easy access to the nurse. The CO_2 and water vapour were absorbed. With such a chamber the patient could breathe 50 per cent. oxygen continuously. Lastly, he demonstrated the rescue apparatus for use in mines made by Siebe Gorman and Co. He had done much work in perfecting on physiological lines this apparatus which was originally invented by Mr. Fleuss. The man could wear the apparatus and do good work for four hours and be quite independent of the outside air. The apparatus was in use at the Howe Bridge Rescue Station, and some scores of men had been trained in its use. These men breathed oxygen for hours at a time, and there was abundant evidence that oxygen so breathed did no harm. It only increased the efficiency to do rapid work, as in sprint running. High pressures of oxygen produced an acute pulmonitis, but there was no fear of this from breathing pure oxygen for some hours or 50 per cent. as long as one liked.

SECTION OF SURGERY.

Sir Victor Horsley, F.R.C.S., F.R.S., President.

DISCUSSION ON THE OPERATIVE TREATMENT OF SIMPLE FRACTURES.

OPENING PAPER.

By W. Arbuthnot Lane, M.S., F.R.C.S.,
Surgeon to Guy's Hospital, and to the Hospital for Sick Children, Great Ormond Street.

It can be truly said of the treatment of fractures that the evil that men do lives after them, since their patients rarely die. The subject is a very simple one. We have to determine whether the treatment of simple fractures by manipulation, splints, massage, and active and passive movements is satisfactory in securing a useful limb, or whether it is advisable to obtain accurate apposition of fragments and a restoration of the skeleton to its normal form and functions by operative measures.

Personally, I am convinced that in the very large majority of cases of simple fracture of the long bones a perfect result can be obtained by operative treatment alone. However much the bulk of the profession may oppose the operative treatment of simple fractures, the growing demand for a more efficient treatment than the present one will oblige surgeons to improve their technique in this branch of surgery.

That the operative treatment of simple fractures has been opposed so virulently and for so long is merely an evidence of the intense conservatism of our profession and of the great difficulty it experiences in discarding its creeds in the face of proved facts. However, the facts, supported by the growing intelligence and experience of the general public, assisted by radiography and the action of the courts of law, have driven the profession to reconsider their position, and to wonder whether after all the beliefs on which they have based their practice up to the present, to the detriment of their patients, are any longer deserving of credence.

I will first call your attention to the supposed possibility of effecting accurate apposition of fragments and the restoration of a broken bone to its original form by means other than operative. That this should be done has been accepted as a portion of the surgical creed up till quite recently. For instance, the late Mr. Christopher Heath wrote in the *Lancet* of January 4th, 1896, the following:

> I would remind you how important it is in fractures of the leg particularly that the fracture should be set thoroughly and accurately. . . . Unless that is done and done accurately the surgeon has not treated the case properly.

As regards the necessity of obtaining perfect apposition of fragments I am entirely in agreement, and I cannot urge the truth of this teaching too strongly upon you. But as to the possibility of effecting such accurate apposition by the methods usually employed, there is now no doubt whatever that the principle was not and never has been carried out in practice. In fractures of the shafts of the long bones, where there exists any considerable displacement of the fragments, it is almost always impossible to restore the broken bone or bones to their original form by manipulation.

If anyone would still wish us to believe that he is able to obtain accurate apposition by such means let him produce *x*-ray photographs of his cases. That the inability to obtain accurate apposition of fragments is now fairly generally recognized is shown by the fact that the opponents of the operative treatment of fractures have changed their ground. They now assert that the functional result does not depend on the perfection of the restoration of the form of the skeleton, but upon causes which they do not clearly define. These surgeons seem to have a very vague idea of the mechanics of the skeleton. They experience a great difficulty in arriving at a correct conclusion as to the amount of benefit their own cases derive from the treatment they themselves have employed.

The same difficulty does not always exist when they are considering the results of the treatment of others. As an excellent illustration of this, I would call your attention to an address which was delivered by Mr. Clinton T. Dent before the Medical Society of London, published in the *Clinical Journal*, Wednesday, October 7th, 1908. In it he deals with the after-results of fractures of the bones of the leg. I quote from the *Clinical Journal* the following extracts:

> Recovery from the point of view of the surgeon and that of the patient does not always coincide in date. . . . The standard of efficiency is high in the police, the class of men principally under consideration. The work demands fair activity. Thus, for either two periods of four hours, or for one tour of eight hours, a man must be continually on his legs day after day, though with frequent short spells of leave. Judged by this standard and desirous of keeping well within the mark, my estimate is that at least 30 per cent. fail to attain this standard after simple fracture of both bones of the leg; very few regain it under six months. . . . Fracture of the leg, involving the knee or ankle joints, or fractures of the femur uniformly lead to permanent unfitness for the work that devolves on these men; fractures occurring in the neighbourhood of these joints nearly always have the same result. I can hardly recall a case of Pott's fracture or a Dupuytren's fracture where recovery has been complete enough to enable a man to resume police work. . . . My experience with regard to fractures of the leg has led to the expression of rather gloomy, perhaps pessimistic, views.

If these statements of Mr. Dent's are true in the case of men whose duty is merely to patrol the streets, how much more is it true of men whose life depends on the perfect accuracy of their ability to climb ladders, stand on heights, etc. These latter form a very large proportion of our labouring class.

Now contrast this with the following remarks from Sir William Bennett's opening address on the treatment of fractures at the meeting of the British Medical Association in August, 1900, just ten years ago.

> The result of my inquiries in this respect is that I find the real disability following upon fracture is not so great as one would be led to suppose from recent writings on the subject. It is, for example, distinctly stated by a surgeon, who has perhaps a better opportunity for observing badly united fractures and conditions of that kind in sailors of all nations and in all circumstances than perhaps any other, that he had not noticed any particular disability in this class of patient, and that in fact the majority of the seafaring people with whom he has to deal, who have been subjected to fractures, although the union may in the true surgical sense be faulty or even vicious, are able to earn their full pay as ordinary seamen.
>
> The exact words used are as follows: "We see here a great many cases of old badly-united fractures of leg bones, such as those treated at sea, and, after careful inquiry, I have never yet been assured, excepting, of course, cases of greatly exaggerated deformity needing osteotomy, of serious incapacity or of interference with the full discharge of the onerous and active work of a sailor."

These conclusions of Mr. Dent and Sir William Bennett are clearly contradictory, and if Dent's statements are true then Bennett's conclusions are necessarily false. I have no hesitation in repeating the statement contained in a paper I read before the Clinical Society in 1894 which called for Bennett's criticism. In it I urged on the profession the folly of continuing the old method of treatment, and the necessity of having recourse to operative procedures. I stated:

> That the treatment of fractures, as it exists, is a disgrace to surgical practice, because those who have sustained fractures, especially of the leg, only too often experience enormous physical disability. When dependent on labour for their income, they frequently suffer great financial depreciation in their wage-earning capacity. In not a small proportion the depreciation in certain occupations amounts to 100 per cent.

All my subsequent experience of fractures, treated by means other than operative, has fully borne out the accuracy of the conclusions I arrived at many years ago. The advent of *x* rays compelled surgeons to be more careful of their statements as to the necessity of effecting accurate apposition of fragments, and the temptation to cast discredit on the interpretation of *x* rays became too great to be resisted by the surgeon. If these surgeons could have shown that the nature and amount of displacement of fragments were exaggerated by *x* rays, then the surgeons would have believed that they had succeeded in propping up a creed which was rapidly slipping away. Now as far as *x* rays are concerned, when taken by competent operators on up-to-date apparatus, the results are in my experience perfectly intelligible, and give a thoroughly reliable indication of the displacement of the fragments. Far from exaggerating the difficulties of replacement, they often underestimate them very greatly, since they do not

afford any evidence of the soft parts which intervene between fragments and oppose their replacement.

I would therefore assume that the *x*-ray photographs taken in planes crossing each other at right angles by an efficient *x* ray expert with an up-to-date apparatus afford sufficiently accurate evidence of the displacement for the purposes of the surgeon, and also that the same amount of information cannot be obtained by any manipulation of the surgeon, however experienced and skilful.

The advantages gained by operative interference are that the broken bone is restored to its original form and is capable of performing its normal functions. However opponents of the method may argue and attempt to obscure the clear issue before us, there is no doubt whatever that if the operation could be performed easily and safely by an average surgeon the operative treatment of fractures would have become popular long ago. I would again quote from Mr. Christopher Heath's paper as evidencing his confidence in the conservatism of the profession, which has been thoroughly justified by time, namely:

> But I cannot conceive how anybody can believe that it is justifiable to convert a simple into a compound fracture; and of this I am quite certain, that the majority of surgeons for the present will remain content with the usual methods of treatment.

The difficulties that beset the operative treatment of fractures are that to ensure success an asepsis which is much more perfect than suffices for other operations is requisite when a foreign body is left in a wound, as it is in the operative treatment of fractures, and the degree of asepsis requisite varies directly with the bulk of the foreign body. Also, it is not possible to ensure this degree of asepsis and to perform the large majority of these operations with the appliances in ordinary use, and instruments specially adapted for the purpose must be employed. Otherwise we would not hear so much about plates and screws coming out of wounds, of the development of rarefying osteitis about screws, etc.

If infection of the wound takes place, the result may be disastrous to the patient. Many of the operations are difficult to perform, especially when there is much comminution of bone and swelling of the surrounding soft parts, and unless very great care is taken a failure to secure perfect asepsis may arise during the course of a prolonged and complicated procedure. Till this is generally recognized by surgeons, much harm will result from the general use of the operative treatment of fractures, but with an improved technique and an increasing familiarity with the operative procedure the danger of sepsis will cease to exist.

As to the best method of retaining the fragments of broken bones immovably in position, the buried steel plate is, in my opinion, the most effective and simple of application. A plate is readily secured to the fragments by screws, which in the adult engage the proximal compact tissue alone. These are threaded along their entire length. If properly introduced, they produce no irritation in an aseptic wound.

The skin of the patient should be carefully excluded from the wound area by means of sterile cloths fixed to the margin of the incision. The incision should be of ample length, so as to avoid damage to important structures and to minimize any risk of infection. The instruments used for bringing the fragments into position for the introduction of the plates and screws for controlling haemorrhage, etc., should be very long and powerful. No ligatures are required, and no portion of the instrument, sponges, etc, which have touched even the gloved hand should come into contact with the wound. By these means these operations can be performed without any risk of infection or of danger to the life of the individual as far as the operation is concerned.

An epiphysis, if separated, rarely requires to be retained in position by a plate and screws; but should it be necessary to employ such means, the plate should be removed as soon as union has taken place, to avoid any interference with the growth of bone at the epiphysial line. In fractures of the ends of long bones it is also rarely requisite to retain the fragments by means of a plate, once accurate apposition has been effected, provided the joint be fixed in a suitable position.

What are the limits of the operation? It is obviously no use to attempt to retain fragments of broken bones in apposition by any such mechanism as a wire or screw if the texture of the fragment is such that it would not hold. Therefore, in the scrunch fractures of the lower end of the tibia and fibula in feeble old people and in alcoholics, or of the intracapsular fractures of the neck of the femur where no hold can be obtained, any attempt to use these means may be useless or worse than useless. The same applies to the rachitic child in whom the bones are still soft and in whose bones the screws can obtain no efficient hold.

One must always remember that, whatever means are used, it is absolutely requisite to immobilize the fragments. Otherwise, as a matter of course, the condition called rarefying osteitis will take place about the screw or wire perforating the bone. Also it is necessary to so bend the steel plate that it will lie accurately on the bone and will not be separated by an interval. The inaccurate adaptation of the plate to the surface of the bone must necessitate a constant strain on the screws, and this must bend it and force it to assume the outline of the bone to which it is attached.

DISCUSSION.

Professor Lucas Championnière (Paris) said that Mr. Lane had demonstrated the safety and utility of his operation. Such a surgical treatment of fracture, therefore, became a useful and correct practice. He did not agree with him, however, as to the generalization of the procedure. Perfection of movement was not generally allied with perfect rectification of the bones. Other conditions must be provided, if the best result was to be obtained. For example, while agreeing completely with him as to certain difficult fractures of the lower part of the leg with great deformity, or the upper part of the humerus, he had frequently demonstrated cases both with slight and severe deformity, in which there was no disturbance of function, and was quite satisfied with the results. As one of the first to advocate suture of the patella, and one who had in fact sutured as many as any surgeon—more than eighty—he had yet never sutured a simple fracture of olecranon, because good and solid results at the end of a fortnight had preserved his patient from an operation. Operation, then, should be exceptional; performed often by certain surgeons perhaps, but certainly not so often by others. Mr. Lane had shown specially two things. First, that an able surgeon like him might operate with perfect safety. Safety was quite necessary. Surgeons had no right to kill a patient who had not death before him. Secondly, he had demonstrated a simple plan for the operation that would be satisfactory for his successors. Even the cases in which he personally did not advise operation had afforded them excellent demonstrations. It would not be possible to have a better demonstration of the importance and usefulness of the method. For a long time yet surgeons would disagree on the treatment of fractures, but all would now be induced to use more frequently an operation such as that proposed, and so commonly performed with success, by Mr. Lane.

Mr. Gilbert Barling (Birmingham) said that in view of the absolutely contradictory opinions held concerning the disability following fractures—which, on the one hand, was estimated as being *nil*, and in the other as depreciating the usefulness of the patient from 30 to 70 per cent.—the British Medical Association might well appoint a committee to report on the question. The conservatism of the profession was greatly justified by the fact that operative measures implied danger to life in some cases and suppuration with necrosis and delayed recovery in others. Every year saw improvement in method and in asepsis, so that it might be justifiable now to advocate open operation, whereas ten years ago it would not have been so. In view of the revelations made by the *x* rays as to the position of parts in fractures, diagnosis in many parts had to be reconsidered, especially in fractures about the upper end of the femur and in complicated joints like the elbow. The bogey of deformity shown by *x* rays should not frighten a surgeon into operation if he could attain a useful limb for the patient when the bone looked rather ugly by the rays. As to the method of operating, that formulated by Mr. Lane was infinitely superior to others. If a fracture under his care had to be operated on some

weeks after the accident because of deformity and want of union, he felt that there was, originally, want of good judgement on his part. The operation at the primary stage would have given an infinitely better result.

Mr. Deanesly (Wolverhampton) said it could hardly be disputed that a broken bone treated by non-operative means seldom or never united with perfect apposition. Radiography showed that a variable amount of overlapping or distortion was a permanent result. The practical question, therefore, was this: Was perfect apposition a matter of such vital importance that the ordinary methods of treatment ought to be superseded by more direct and efficient operative means? No candid surgeon could contend that the average results of the treatment of simple fractures by ordinary methods were worthy of modern surgery. The greatest improvement introduced of recent years into the treatment of fractures had undoubtedly been the abandonment of too prolonged immobilization and the use of early movement and massage. By these means much earlier and more perfect restoration of function had been obtained. The non-operative methods of treatment were also capable of improvement, but no improvements were likely to alter the fact that in *certain* fractures perfect apposition was essential to perfect restoration of function, and that there was no means of obtaining perfect, or even approximately perfect, apposition without operation. Speaking generally, results which were practically though not theoretically perfect could be obtained by non-operative methods in the majority of fractures of the upper limb, except those in the neighbourhood of the shoulder-joint and elbow-joint. In the lower limb simple fractures in the middle portion of the femur could almost always be efficiently treated without operation, and with a perfect functional result. Fractures of the femur near the hip or knee joint seldom gave good functional results without operation. The common broken leg below the knee was one of the most difficult fractures to treat. Shortening and distortion were common, and the amount of disability caused was often very serious. These results were not all due to necessary causes, but sometimes to want of skill and experience. Many of them would be better treated by operation, especially those in or very near the ankle-joint. The difficulties and risks of the operative treatment of fractures were neither few nor slight, and must be weighed well against its advantages in a given case. The risk of sepsis was greater than in the majority of operations, and the consequences of even a mild sepsis might be disastrous. At the least it almost certainly involved the eventual removal of the wires, screws, or plates, either by the operator or quite possibly by some other surgeon. Even when the wound healed without apparent infection the metallic bodies inserted often failed to be tolerated permanently, and sooner or later formed sinuses and called for removal. Lastly, the inexperienced surgeon should not imagine that all the difficulties of reducing an intractable fracture disappeared on opening the skin. Operations of this kind called for a very high degree of skill and resource, and even when the difficult job was completed the mended bone required the gentlest handling and the most skilful external support until bony union was some way advanced.

Dr. C. Willems (Ghent) said he was a warm advocate of the bloodless method of treating fractures. In the majority of cases reduction, and maintenance of reduction, should be possible without having recourse to operative interference. The open method of reduction, accompanied by fixation of the fragments, not only exposed the seat of lesion to infection, but in leaving foreign bodies on the surface stimulated rarefactive osteitis, excess of callus, and compression of nerves. Frequently it led to the slow removal of the foreign body. Deplorably slow results from such treatment were known to most surgeons. Instead of directing energies to the perfecting of the technique of fixing fragments, surgeons would be better employed in making themselves conversant with the many varieties of perfect apparatus which had been introduced during the last few years for the bloodless treatment of fractures and with their method of application. Such excellent apparatus, applied with the help of an anaesthetic, made it possible to reduce, and to maintain in reduction, a great number of very difficult cases for which the advocates of the open method deemed it imperative to resort to operation with some mechanical device. In very rare cases operative interference was required:

1. In recent irreducible fractures. In the vast majority of cases true irreducibility was produced by the interposition of muscle tissue, aponeurotic or tendinous material.
2. In fractures which had united in a very faulty position.
3. In certain fractures, either intra-articular or juxta-articular, which required perfect reduction for the normal mechanism of the limb.

In these exceptional cases it was enough to do the operation of open reduction, without using any mechanical device for fixing the fragments. The fragments should be freed and brought once more into apposition. Then, instead of fixing them by some mechanical means, a bandage should be applied to maintain the position. On removal of the obstacle to reduction the fragments remained in apposition quite easily, just as in simple cases where the bloodless method was sufficient. The application of apparatus was a difficult thing when a wound existed, but not impossible. As soon as the reduction was obtained, it should be ascertained which position of the limb yielded the best fixation, and in that position the limb should be held exactly by the assistants. The wound should be closed except for a bit in the middle, and before the dressing the plaster bandage should be applied above and below the wound. Rolled plaster bandages, applied over a simple flannel bandage without cotton-wool, were employed. For example, in case of fracture of the thigh the plaster bandages were carried round the pelvis and the upper part of the limb first, then round the knee, the leg, and the foot. When these two parts of the apparatus were firm, after making quite sure once more that the fragments were in perfect apposition, the wound was closed. A small dressing was applied, and the plaster bandaging completed by carrying it over the dressing. For the success of this method it was necessary to bear in mind that the maintenance of the apposition of the fragments was entirely dependent on the apparatus, and not on the operation. The operation facilitated reduction of the fragments; the plaster maintained the apposition. Without claiming that this method of procedure yielded such mathematical accuracy as that obtained by mechanical fixation of the fragments, such accuracy was by no means necessary for the complete function of the limb. The bloodless method rarely attained such perfection, nevertheless it often re-established function very well. The plaster method should conform to the following conditions: It should be moulded to the limb, involving all prominences and depressions. It should be applied without the intervention of wool, which would eventually shrink and the plaster bandage would no longer maintain the position of the limb. This apparatus should be left in position for a short time; in fact until the callus began to harden, in order that immobilization of the adjacent joints should not be prolonged. On removal of the apparatus, the joints should be moved, and recovery was generally as quick as with the bloodless method. The advantages of this method over that of fixation with mechanical devices, were as follows: The operation was simpler and shorter, and there was less damage to, and exposure of, the parts to infection. The presence of foreign bodies gave rise to excessive callus formation and was not always tolerated indefinitely. Formation of callus was more rapid and the callus itself was of firmer type.

Mr. W. G. Spencer (London) opposed the general application of the open method to fractures of the shaft of the femur and of the leg, including Pott's fracture. With regard to other parts of the subject—fractures of the patella and olecranon, the humerus in its upper two-thirds, and perhaps some cases about the hip-joint—operation was proper. For fracture of the shaft of the femur it was unnecessary to employ fixation; the long splint with weight extension, increasing until shortening had disappeared, was efficient. One case, in which the femur was telescoped so that the lower fragment protruded by the side of the great trochanter and the lower by the patella, after reduction gave a good result in six months. Two cases which had been treated by the "ambulant" method showed 4½ in. of shortening. One was refractured by osteotomy; the other spontaneously in a fall. After treatment by a long splint and an extension up to 30 lb., with elevation of the foot of the bed, both united well

with ¾ in. of shortening. One recent case had 3½ in. of shortening until 20 lb. of weight had been applied, but union took place without shortening of more than ½ in. Fixation of the femur must rank as a major surgical operation. For young children Mr. Robert Jones's adaptation of Thomas's knee-joint splint was an improvement on the gallows splint. For fracture of both bones of the leg, including Pott's fracture, in his hands no open operation had been necessary; he had succeeded by manipulation, including the division of the tendo Achillis. Cases were sometimes difficult. In a recent case the patient required a brief anaesthetic four times, but a very good result was obtained. As for Pott's fracture, his cases had been reducible under an anaesthetic without or with division of the tendo Achillis. They had not shown, with careful nursing, a tendency to relapse, and they could generally be treated by massage and early movement.

Mr. Whitelocke (Oxford) said the treatment of fractures was too often relegated to the care of members of the junior staff of hospitals. In many cases operative treatment was quite necessary. Loosening of mechanical appliances sometimes occurred after the most aseptic operation—it might be even months later. This was not surprising if the pathological dictum were borne in mind, that constant pressure was productive of atrophy. He understood that Mr. Lane now advocated the removal of the plates later in the treatment, lest they should interfere with the growth of the epiphysis, and quite concurred with this necessity. Operation should be performed in all cases of patellar fracture with much tearing of the lateral extensor apparatus, in fractures of the olecranon, and separations of the tubercle of the os calcis. For those fractures he had for years used nothing but the open operation, and with the most gratifying results. At first kangaroo tendon was used as the suture; now, ordinary catgut, prepared either by the iodine or kumol methods. In the long bones, as at the upper end of the humerus, and in the lower third of the tibia or fibula, and in some other situations where much strain was liable to occur, and where there was difficulty in reposition and fixation, Mr. Lane's plates were probably the most helpful. In the future absorbable sutures would be more and more used, as their use was ideal in situations where the strain was not great. The technique was simple as contrasted with the application of wire or other mechanical appliances, and the time involved less. The open operation allowed the surgeon to examine thoroughly the precise local condition of affairs, to reduce the deformity more accurately by removing all interposed soft tissues, such as periosteum, muscle, nerve or blood vessels. In many cases the simple plan of exposing the fracture, clearing away all intervening tissues, suturing the periosteum and overlying muscles, closing the wound and treating afterwards as a simple fracture, was all that was necessary.

Mr. H. J. Paterson (London) said it was a sign of the times that a subject should be brought up for discussion to which only a few years back reference was made in the columns of the Journal in such terms as "meddlesome and dangerous surgery," an "unjustifiable and unnecessary operation." When any proposal of this sort was brought forward, there were usually two stages in its progress. The first stage, in which men shook their heads, and said that the introducer of the proposal had a "bee in his bonnet"; and the second stage, when every one turned round and said, "this was nothing new, they had been doing it for years." Mr. Lane had survived the first stage. Doubtless, future surgeons would look back and wonder why they continued so long to employ such unsatisfactory appliances as splints. The decision as to the advisability of operative treatment was dependent on the answer to two questions: (1) What were the end results of treatment without operation? (2) What were the risks? In the past too much attention had been paid to the immediate results and too little to the remote; and yet the end results were no less important than the immediate. It mattered little to the patient if he left the hospital with a limb which pleased the surgeon, if, subsequently, he was unable completely to utilize his full working capacity. Mr. Spencer had only spoken of the condition of affairs when the patient left the hospital. What was wanted were the end results. In a paper published in 1909, in the *Annals of Surgery*, two writers gave the end results in over sixty cases of fracture of the femur, and they actually congratulated themselves that only one in three of their patients limped! The seriousness to the patient of impaired utility of a limb was obvious. But impaired utility was a serious matter for the surgeon. They had heard a good deal about good functional results. They must aim at more than this. The objective should be perfection, even if it were not always attained. It must be recognized that the courts of law were not satisfied with good functional results if the *x* rays demonstrated that the anatomical result was imperfect. Referring to results of fractures of both bones of the forearm, followed up some years back, it was found that in no single instance in which there had been a fracture of both bones of the forearm had the patient regained his full range of pronation and supination. Operation taught the difficulty, if not the impossibility, of getting accurate apposition. The displacement found at operation, and the extent to which muscles and tendons were interposed between the fragments rendered adjustment of the fragments in such fractures difficult even by means of an open operation, and impossible without. The results of the operative treatment of these fractures were very different. After operation it was the rule for the patient to regain full range of pronation and supination. A well-known surgeon, alluding to the operative treatment of fractures, had written that in the upper limb a shortening of 2 in. was not of great importance. Had he seen a few such cases in working men, or had such a limb himself, he would not have written such rubbish. What were the risks of operation beyond the infinitesimal risk of the anaesthetic? There was no risk if the operation was carried out as practised by Mr. Lane. To raise such a bogey as septic osteomyelitis requiring amputation, in connexion with the operative treatment of fractures, was utterly ridiculous. It was not a question of an emergency operation. There was ample opportunity to cleanse the skin and to judge of the patient's fitness for operation. To suggest that in operating under these circumstances septic osteomyelitis was to be feared was a suggestion of the surgery of a bygone generation. Operation should be the rule rather than the exception. All fractures of the extremities sustained during the active period of life should be treated by operation, with the exception of fractures of the neck of the humerus or femur, and some fractures without displacement about the ankle-joint.

Dr. Charles J. Morton (London) said he must first of all prove that *x*-ray appearances were not deceptive. He exhibited a femur with a T and an oblique fracture and invited comparison of the skiagrams with the bone. The bone was plated to hold the fragments in position. He demonstrated that the skiagram gave an accurate representation of the fracture, and that, therefore, if skiagrams were properly taken there were no deceptive appearances. This fact was taken for granted in the Radiography Section, but in papers and textbooks it was constantly stated that *x* ray appearances were deceptive. Thus a popular textbook of surgery, by Miles and Thompson, warned the student against relying too implicitly on the evidence that radiography seemed to afford, and went on to state that the shadows were necessarily distorted. Walsham and Spencer again said due allowance must be made for deceptive appearances. There must, of course, be some enlargement, because the rays were divergent, but by making proper allowance for this enlargement, separation, etc., could be estimated to a millimetre. Two views or more were necessary, or a stereoscopic view. Textbooks gave the impression, generally held by the profession, that the treatment of a simple fracture was a simple matter. From the number of badly united cases he saw, he believed that outside the practice of those who used *x* rays in the treatment as well as in diagnosis, the results to-day were no better than those of the early Egyptians as described by Professor Elliot Smith in the British Medical Journal of March 28th, 1908. [Radiograms of cases treated without *x*-ray control were then exhibited.] Such cases as those he had shown were by no means exceptional; they occurred every day. In the very common fractures.

Colles's and Pott's, reposition of the fragments was the exception, and a stiff joint was the usual result if the displacement was at all marked. Colles's fracture, so-called, was the most common, and probably more mistakes in diagnosis and treatment occurred in this than any other. It was frequently complicated with fissure into the joint. The lower fragment was very frequently rotated back as well as displaced back and impacted; if left in that position malunion and stiffness were the results. The only satisfactory way of treating the fracture of the lower end of the radius was to break down any impaction and lever the lower fragment into position, by operation if necessary, and then treat by free movement and massage. Splints in these cases were not only unnecessary but injurious. An undiagnosed Colles's fracture did better than a recognized and unreduced one with splints. The same might be said of the very frequent fracture of the external malleolus without displacement. In these, again, free and early movement was essential to prevent stiffness, and splints were useless. In Pott's fractures the rotation of the astragalus was to be noted. Fortunately displacements only occurred in half the cases examined, but when displaced he was often asked if operation was necessary. In answering, he had been influenced by the fact that it did not ensure a good result. A second operation was not infrequently required to remove the plates, etc., which caused irritation; again, plates and screws sometimes broke, or wires gave way. He might have been unfortunate, but he had seen a considerable number of these cases and had often wondered if good results could not be obtained by operation and replacing without plates. In deciding the question of treatment, the chief factors from the *x*-ray point of view were, in order of importance: (1) If the fragments were in alignment, or, on the contrary, if there were any angular displacement, affecting the lower extremity, it must be corrected; (2) rotation of fragments in the upper extremities; (3) implication of joints. Of considerably less importance, and depending for this on their amount, were overlapping, separation, and comminution. If excessive they must be reduced, but frequently good functional results were obtained with ½ in. shortening in the leg.

Dr. Shenton (London) said that for many years it had been his daily duty to examine fractures with the *x* rays, and he had had thereby unique opportunities for comparing methods of treatment. As a routine his patients were examined before, during, and after treatment, and in the case of operation it had been customary to photograph before, just after, and at a long interval after operation. The vast majority of patients operated upon were under Mr. Lane's care, and in making comparisons conclusions were based entirely on Mr. Lane's work. In all cases precautions had been taken to exclude distortion and other vagaries of the *x* rays, and the radiograms truly represented the actual conditions present. He photographed his fractures in two planes crossing at right angles, and frequently supplemented this by photographs in other planes to demonstrate particular displacements. The primary object had been to show the maximum displacement before and after treatment. In comparing the results of fractures treated with and without operation the first consideration was accurate apposition of the fragments—a point upon which the radiographic evidence was overwhelming. In the observation of a very large number of fractures it became clear that fractures were practically never replaced in perfect position by external manipulation. Probably it was not realized how little the position of a fracture was affected by external manipulation. Those who had watched their own efforts by means of the *x*-rays screen would bear him out in this. A very ordinary case followed this course: (1) Treatment by manipulation and splinting. (2) Long convalescence. (3) Gradual restoration of function which was rarely complete, followed in a few years by more or less trouble in the nearest joints, due to traumatic or mechanical changes in the joints which had been influenced by the alteration in the axes of the fragments. The joint changes were of importance in proportion to the age of the sufferer. On the other hand, the fracture treated by operation had a short convalescence and rapid restoration of function which in nearly every case was complete and permanent. Cases of simple fracture operated upon at once never returned to complain of joint changes. It was possible that the radiographer saw more of "ultimate results" than the surgeon. A patient might leave the hospital with restored function, but what of the after-changes in joints due to the altered position of the bones from inaccurate position? If apposition was perfect joint changes need not be feared; but unless apposition was obtained there was always a great risk of ultimate trouble. Personal observation extending over a period of thirteen years had quite convinced him that efficient operative treatment gave incomparably better anatomical and functional results than any other form of treatment. The wasting of the bone which took place in all cases of fracture was reduced to a minimum when the fragments were brought into perfect apposition. The period of convalescence was naturally shortened by operation. The formation of callus, which depended not only upon the degree of displacement but also on the degree of mobility of the broken ends, was much reduced. It had been stated on many occasions that rarefying osteitis was at times developed around the screws or plates. In his experience of Mr. Lane's cases no such condition had ever arisen. There was no means so delicate or so accurate for determining the onset of osteitis as the *x*-ray examination. It arose only in cases in which sufficient aseptic precautions had not been taken.

Mr. Ernest W. Hey Groves (Bristol) said it was at present almost impossible to arrive at any exact comparative estimate of the value of operative and non-operative methods of the treatment of simple fractures. The bad results obtained in a large number of cases were due not so much to the methods employed as to the careless or faulty application of these methods. Simple fractures were too often relegated to the category of uninteresting and unimportant cases, and having been once "set" were not further examined, nor the after history inquired into. Mere skiagraphic delineation of the bones after the healing of a fracture gave no adequate idea of functional efficiency, because apart from mere shortening or angulation, the function of a limb depended chiefly upon the lesions of the soft parts. The bone might be perfectly united but if the nerves were injured or the muscles matted together in the fibrous tissue of the scar the result was bad. On the other hand many cases, the skiagram of which looked very ugly and misshapen had perfectly good functions. As judged by their after-history, cases of simple fracture of the bones of the leg treated by non-operative measures showed very poor results, but there was not yet available a similarly extensive series of cases treated by operative means to effect a just comparison. The point of primary importance was to adapt the treatment of each case to its own special requirements.

Fractures of the Lower Jaw.—For cases of fracture of the body of the mandible, with much separation of the fragments, an enormous variety of complicated splints, both internal and external, had been devised. The multiplicity of such methods proved how unsatisfactory they were. They should be reserved for cases in which an operation was impossible, and direct operative union of the fragments should be regarded as the treatment of routine. The dense substance of the lower jaw was admirably adapted for the fixation by short screws, which need only penetrate the outer table of the bone. A small flap of soft parts could be turned up from the lower margin of the jaw, and a metal plate fixed by screws without opening the septic area of the mouth. It was far easier than the employment of wire, because the wide separation of the fragments necessary to manipulate the ends of the wire on the deep surface involved invasion of the oral cavity. As ordinarily practised, the simple straight division of the bone in Syme's operation for excision of the tongue usually led to non-union. But if the mandible were divided by a <-shaped incision it could subsequently be united by wire, which need only penetrate the outer table in such a way as to give a perfectly firm union.

The Use of Internal Bone Splints.—After an accidental section of the entire diameter of the femur in the operation of osteotomy, instead of leaving a part of its thickness to be fractured, he had found it absolutely impossible to keep the ends of the bone in apposition, and it had occurred to him that the most efficient way of dealing with this difficulty would be to

make a peg which would fit into the medullary cavity of each fragment, and so hold them in line. This was done with complete success. The method proved to be one which had been adopted before, especially in France, but it was hardly referred to at all in this country, and he therefore brought it before the Section. [Mr. Groves then demonstrated some radiograms of cases in which he had employed the method.] This method was especially applicable to fractures of the femur and humerus. The bone splints, of which he showed three sizes, had a small transverse peg to prevent them slipping too far into one fragment. In cases where there was not much comminution their application was exceedingly simple, and could be performed through quite a short incision. This method was very much easier than fixation by wires or screws, and it was based on a much more sound mechanical principle than the latter. When once in place the bone could not be put out of line, and hence, with the use of some simple splint, massage and movement could be adopted within a few days of the operation. The material of the splint was such that it was absorbed and replaced by living tissues.

The Application of Direct Extension by Means of Transfixion of the Lower Fragment.—In cases of fracture of the femur, and especially old cases of malunion, this was a method of the greatest possible value which had been extensively adopted in Germany, but which had not met with the attention it deserved in this country. In the thigh of powerful working men the muscular tension was so great that it was impossible very often to produce sufficient extension by external strapping and bandages, and there was always a risk of damage to the ligaments of the knee by bands which had their chief application to the lower part of the leg. In the case of an old fracture with non-union, matters were still more difficult. Direct transfixion of the lower fragment of bone by a long steel needle overcame this difficulty. It could be done through a minute opening, and 20 lb. weight applied in direct extension of the bone. There was far less pain than that with the ordinary method. It was, of course, applicable to the tibia as well as to the femur.

Mr. C. H. Fagge (London) said that the indications for operative treatment of simple fractures were inability to replace and to maintain in accurate alignment the fractured extremities of any bone; even if replacement was sometimes possible, splint treatment often failed to maintain the good position. The non-operative treatment of Pott's fracture, for instance, had not altered in the last twenty years at least, and he had been much struck by the faulty apposition and bad mechanical results obtained after this injury even by such a master of the common lines of treatment of such injuries as the late Mr. Davies Colley, than whom no one was more conscientiously careful to supervise the treatment personally and to watch the results for many months; he had also had the opportunity of investigating a series of results of splint treatment of fractures of the shaft of the femur which had been under the care of another of his senior colleagues, who had paid particular attention to these injuries. No doubt in both these instances the results obtained were the best possible at that time, but operative treatment as introduced by Mr. Arbuthnot Lane had now placed a better method in their hands, and it was their duty to aim at getting a perfect result, if possible.

He regretted that some previous speakers should be satisfied by any result which they could themselves only describe as *practically* perfect. Inability to restore the normal outline of the bone must end in shortening and in some deformity, and altered the mechanics of the limb so that often after many months degenerative changes in the adjacent joints were induced; these changes were the cause of persistent pain so often met with after the ordinary splint treatment of fractures, and by which an injured workman was so often gravely depreciated in his wage-earning capacity. Mr. Spencer was either more skilful or more fortunate than the speaker in being able in all cases to obtain good apposition in fractures of the lower end of the humerus in children by fixing them in splints in the fully-flexed position, for the speaker had been called upon to deal with a good number of such cases and had frequently failed with the patient under an anaesthetic on the *x* ray couch to bring the broken ends together, though this could readily be done by open operation, when the fragments could usually be levered into position with a long bone elevator, and when so apposed would remain in good position without the support of any mechanical appliance; in fact, it was generally inadvisable to insert screws or wire into the growing ends of young bones. He thought that open operation had the advantage of evacuating the blood which had been poured out between the shaft and the detached periosteum, and which often produced later a large amount of external callus, unnecessary in the presence of a plate, and also injurious, in that in many cases it caused harmful adhesions of superjacent tendons or nerves to the underlying bone.

With regard to technique, he had the unique opportunity during the last five years of acting as assistant surgeon to Mr. Lane, and of closely observing and following his methods; satisfactory results could only be obtained by the strictest attention to absolute asepsis; grave mechanical difficulties were met with in the course of such operations, and in all cases elaborate and carefully designed instruments were essential; such procedures could not be carried out by surgeons who had small opportunities for such work, and were not suitable for treatment of fractures in cottage hospitals or country districts; it only did the progress of surgery a disservice to suggest that to plate a fracture was a matter lightly to be undertaken, but at the same time, in capable hands, the risks, such as sepsis, mentioned by previous speakers and writers, should not enter into the question at all.

It was difficult to appreciate the logic of the attitude of the opponents of this method, for whereas, in the words of one of them, they "hesitated to convert a simple into a compound fracture"[1] in the case of a long bone (presumably owing to the risk of sepsis in their hands), they uniformly undertook to carry out an open operation in cases of fracture of the patella and olecranon—in either of which the results of sepsis were, if possible, even more deplorable than after an operation on the shaft of a long bone—with a light-heartedness which some of their results even in the last ten years were scarcely good enough to justify.

He had no experience of rarefying osteitis either among his own or in those of Mr. Lane's cases which he had during Mr. Lane's absence been called upon to deal with; on no occasion had he been called upon to remove a plate or screw from any case of simple fracture, but when in other cases this had been necessary he had been much struck by the firmness with which most of the screws were still fixed in the bone, usually requiring their extraction with the screw-driver. He laid especial stress on this point, as several surgeons in writing or speaking of this question assumed on quite inadequate grounds that after a few days the thread of a screw no longer held, and that it only acted as a peg. He had no knowledge of any fatalities after such operations either in his own practice or in that of his colleagues who carried out such treatment at Guy's. He hoped that this meeting would strongly assert that where ordinary means had failed to restore the fragments in accurate alignment operative treatment should be undertaken without delay, as late operation for malunion or non-union could never obtain a result so perfect without shortening and with the fragments in such good alignment as could be got by operative measures undertaken within a few days of the accident.

Mr. A. S. Barling (Lancaster) said it might be useful to clear their vision, which had been somewhat blurred by detail, and narrow the field of the discussion. Let it be assumed (1) that the patient was able to stand the operation without undue risk, (2) that the fragments could not be restored to their position by external means, (3) that he had to earn his living by the use of the injured limb. In such a case did this meeting think that they should always operate, and were they prepared to go into court and advise that the patient, if receiving compensation, should have that stopped unless he consented?

Mr. Andrew Fullerton (Belfast) said there seemed to be a general consensus of opinion that the surgery of

[1] See Mr. Waterhouse, British Medical Journal, July, 1910.

fractures had not made the advances that had characterized other branches of the surgeon's art—abdominal surgery, brain surgery, genito-urinary surgery, and orthopaedic surgery, for instance, not to mention the more special departments. Yet the number of fractures compared with other surgical affections was very large indeed. The reason for this comparative want of progress was not far to seek. Not a great deal of interest was taken by the average hospital surgeon of to day in these commonplace accidents. Indeed he often complained that his beds were filled with fracture cases, occupying room that he more than hinted he would prefer to see taken up with more interesting cases. Was it not a fact that they were often relegated to the house-surgeon for treatment, and that the staff surgeon was only called upon when something went wrong? The wholesale condemnation of the older methods affected by some surgeons was not called for. It had only recently been fully recognized that these methods had been imperfectly applied, that inefficient efforts had been made to obtain accurate apposition of the ends of the fractured bones, and that splints had in many cases been kept on too long, with consequent wasting and degeneration of muscles, pressure effects, and adhesions. The common instance was Colles's fracture. There was the greatest difficulty in getting students to understand that splints were simply for the purpose of holding the fragments in position, and that they ought not to be put on with the idea of forcing them into position by their pressure. The fragments must first be manipulated into position. If this were done thoroughly, as it could be done in 99 per cent. of the cases, and if the splints were removed at the end of a week or ten days and properly regulated massage and movements carried out to prevent stiffness and wasting, the patient would be able to return to his work in a month or six weeks with practically no deformity and with good movement. It was astounding to learn that the surgeon to the Metropolitan Police stated that he "could hardly recall a case of Pott's fracture or a Dupuytren's fracture where recovery had been complete enough to enable a man to resume police work." Surely this was not the universal experience of surgeons. What treatment or want of treatment had resulted in this lamentable state of affairs? His experience of fractures of the leg bones had not been that of Mr. Dent. Hundreds of patients in the city of Belfast were working in shipyards and elsewhere after fractures of the leg bones treated by the non-operative methods with no disability whatever. He urged a little more attention on the part of surgeons to these somewhat uninteresting but nevertheless very important cases before adopting a wholesale policy of open operation. With the greatest care and skill, however, cases occurred in which no amount of safe manipulation would reduce the deformity, and in which no apparatus could be found that would keep the fractured ends in position. In these, which were only a small proportion of the whole, some form of open operation must be undertaken. Fractures of the clavicle at the junction of the outer and middle thirds were very unsatisfactory to treat. Sayer's method was the method of choice, and appeared to reduce the deformity at the time. Next time the patient came, however, the deformity had almost, if not completely, recurred. He had not operated on these cases—first, because the deformity, in the male at any rate, did not seriously interfere with the patient's comfort or capacity as a wage earner; and, secondly, because operation left a more or less conspicuous scar, which, while unimportant in the male, was very undesirable in the female. The proximity of the subclavian vein was a serious drawback to the use of plates or screws. There was a transverse fracture of the upper third of the humerus which was very difficult to treat. In some of these cases the upper end of the lower fragment became buttonholed through the periosteum, and lay on the outer or inner side of the upper fragment. This occurred both in children and in adults, and had been treated by sawing off just enough of the lower fragment to allow of reposition. It might be sufficient to sew the periosteum over the replaced ends, or plates and screws might be used. He had had successful cases illustrating both methods. Most cases of fracture at the lower end of the humerus and of the condyles could be successfully treated without operation, but if the deformity was great and could not be reduced, and especially if one or other fragment projected in front, interfering with full flexion, the question of operation would have to be considered. In cases of fractured olecranon with much displacement, wiring was adopted, but if the displacement was slight and the patient a female, mechanical appliances combined with massage could be trusted. Until recently he had advised operation in all cases of fracture of the head of the radius. He had, however, had under his care a case in which perfect movement was restored to the joint after a perpendicular fracture taking off a segment of the head of the radius. The orbicular ligament here acted as a splint. In cases with much displacement he had excised the head of the bone. Fractures of the neck of the radius, if the displacement was marked, were very unsatisfactory to treat, and would in many cases require operation if the patient were to have a useful limb. Fractures of the upper third of the radius with displacement were among the most difficult cases that had come under his notice. Splints, in a bad case, were hopelessly inadequate to control the deformity. In fact, fractures of the bones of the forearm with much displacement were the bugbear of the out-patient surgeon. In many cases the power of rotation was entirely lost, and he had seen non-union occur. He believed the best treatment in these cases was open operation, and had found the plates and screws of Mr. Lane far superior to wiring. Less difficulty was experienced than in wiring, and the fragments were kept more accurately together. The results of manipulation and fixation for a short time in most cases of Colles's fracture were satisfactory. In a few rare cases the question of operation might arise. Fractures of the carpal bones frequently gave trouble. In some cases of fracture of the scaphoid swelling of the joints surrounding the broken bone persisted after rest and massage. Removal of the fractured bone gave excellent results. The removal of a carpal bone was not attended with any interference with the free use of the wrist and carpus. The older methods of treatment in cases of fracture of the metacarpal bones were not quite satisfactory. Frequently the extensor tendons became involved in the callus during healing, and permanent damage to the movements of the corresponding finger resulted; satisfactory extension was difficult to apply. Operation in these cases was often desirable and was not attended with much risk. Similarly with some of the bad fractures of the phalanges. With regard to the risks of operation, while they might be small, even infinitesimal, in the hands of such brilliant exponents as Mr. Lane, other operators did not enjoy the same immunity from disaster. Surgeons attached to large hospitals with well-equipped theatres and abundant help might, perhaps, be tempted to undertake what was quite inadmissible under other less favourable circumstances. All practitioners treated fractures, and, if the practice of operating became universal, the death-rate from these common injuries would enormously increase. It was to be hoped, in the interest of the public, that this debate might have the effect of impressing upon those undertaking operative proceedings that the dangers were neither trivial nor theoretical. One of the most important, if not the most important, of these was sepsis. Sepsis occurring as the result of an operation for fractured patella or fractured femur was terrible to contemplate, and the surgeon incurring this risk had no light responsibility on his shoulders. He would rather open ten abdomens than one knee-joint. There might be some margin left for error in the former, but none in the latter. At the same time surgeons must not be unduly deterred from doing what was right for their patients. The advent of railways, steamships, motors, and the development of electricity had resulted in the death of thousands, but who would go back to the Middle Ages because the risk to life was less in those days? Rather should surgeons endeavour to increase their vigilance so as to be prepared to meet every danger with improved methods of operating and the most minute attention to aseptic details.

Mr. A. H. Vernon (Bournemouth) said the duty of a surgeon, when called upon to attend a fracture, was—at any rate, from the patient's point of view—to "set the bone." If this could be done without operative means, well and good; but, if not, it became the duty of the surgeon to operate and restore the bone, as nearly as possible, to its natural state. The experience of ten years'

work at these operations was that, although not always easy, they had, if conducted properly, most successful results. The secret of success was only obtained by the most thorough asepsis.

Dr. J. Crawford Renton (Glasgow) said he was satisfied that in every case of fracture not easily put into perfect position an anaesthetic ought to be given, and in a great many cases this, with proper fixation and attention to Lucas-Championnière's recommendations, was found to be quite sufficient to ensure good results. Cases of oblique and comminuted fracture were very difficult to keep in position without internal splints, applied as Mr. Lane recommended. X rays and screening had greatly added to the facility with which difficult fractures could be diagnosed accurately, more especially when antero-posterior and lateral photographs were obtainable, and when these means were available they ought always to be used and the results translated by an expert. When they were not available, careful examination under an anaesthetic must be made. When the alignment of a fracture was not satisfactory, and when the bones were not able to be put in good position, with every prospect of obtaining a useful limb, then, other things being suitable, an open operation ought to be undertaken. Since Mr. Lane's methods were adopted, the excellent position into which fractured bones were put and kept was striking. Where the operation was aseptically done, no after-trouble occurred with the steel plates. Sometimes a steel nail had given an excellent result, as in oblique fracture in the lower third of the tibia, as also in oblique fracture of the thigh. It was most unfortunate to keep a patient lying in bed for four weeks where the position of the fracture was not quite satisfactory, in the hope that some sort of union would take place. It was far better to operate at once, and be satisfied that the four weeks were being well spent towards recovery. No one hesitated to use silver wire or steel plates in compound fractures, though personally he preferred silver wire in such cases.

Mr. G. M. Huggins (London) quoted an eminent surgeon to the effect that after much careful thought he had come to the conclusion that simple fractures of the lower extremity, where there was much shortening, should be treated by open operation, but that in the case of such fractures of the upper extremity, where there was not the same need for equality in the length of the limb, the risk of infection should not be taken; they should be treated by the older method. On the other hand, all cases of compound fracture in which there was noticeable shortening of the limb he had no hesitation in advising fixation by wire, screws, or plate. He did not agree with these conclusions, because, in the first place, with regard to simple fractures of the lower limb, it was absolutely wrong to make the amount of shortening the only indication for operation, for some of the worst results were seen in cases where the shortening was very slight or even absent. Witness the so-called torsion fractures of the tibia or tibia and fibula. Treatment of these fractures by the older methods was notoriously unsatisfactory, and often left adduction or abduction of the foot. The difficulty of getting accurate apposition of the fragments even by modern means was great. There was, however, instant return of the foot to its normal relations to the leg as soon as apposition was obtained. Yet in these cases the distinctive feature was the relative absence of shortening. It had been the custom of some of the surgeons on the staff of the Hospital for Sick Children for some years past to operate on simple fractures whenever there had been any chance of improving the ultimate result by doing so. In none of these cases had there been cause to regret the line of treatment, and in no case had there been suppuration, nor had there been any need to remove the plate on account of its causing a sinus. Therefore there was no need for any fear of infection if the surgeon cleaned his hands, wore sterile rubber gloves, and never put his fingers in or near the wound; took care to shut off the skin round the wound by the use of clips and muslin, and never allowed his fingers to touch anything that was going to be placed in the wound permanently such as a screw, or temporarily, such as a mop for removing blood. It was very important not to kill the living tissue cells by means of chemical poisons used for killing pyogenic micro-organisms, which were not there to kill if proper precautions were used. Sepsis was no argument, therefore, against operation in the case of either extremity. Further, many fractures of the upper extremity called for treatment by the open method. Fractures around and into joints must often be treated so of course. There was a specimen in the Royal College of Surgeons Museum added only last year of a fractured humerus in the lower third, with very little displacement and no shortening, yet the musculo-spiral nerve had been involved in the callus. This specimen spoke for itself; it was not a very rare one. The proximity of the musculo-spiral nerve to the lower two-thirds of the humerus was a very powerful indication for fixing the fragments by a plate. Another fracture in the upper limb that called for open operation was a fracture of the radius above the insertion of the pronator radii teres such as occurred from direct violence. In this case the upper end of the lower fragment rode upwards and inwards and could not be dislodged by any manipulation unless the ulna was fractured, and yet unless reduced the movements of pronation and supination were lost for ever. These two instances indicated that there was often no choice as to the line of treatment—it was imperative to operate. On theoretical grounds it was bad treatment to screw, wire, or plate a compound fracture if it could possibly be avoided, and the results of this treatment had been far from satisfactory. In ordinary compound fractures the bone was infected before treatment has commenced, so that in a certain number of cases the resisting powers of the body were overtaxed and the wound suppurated. If a wire or screw were placed through the infected bone, infection was carried into uninfected areas, and the risk of a septic osteomyelitis was increased a hundredfold. There were certain cases in which screw or wire must be used, and in these cases the right line of treatment—having, of course, thoroughly cleaned the wound—was to enlarge it very much and use a long plate, so that the screws might be introduced through uninfected bone, but wherever possible it was better to wait fourteen days so as to operate through clean skin and correct the deformity and fix the fragments with a plate. It should be borne in mind that after the operative treatment of simple fracture, the temperature might go up to 103°, 104°, or 105°, and the highest point might not be reached until the third or fourth day. If the wound were left alone the temperature settled down; if opened up, a permanent sinus might result. A radiogram was just as likely to show less displacement than really existed as it was to exaggerate the displacement. It did not show that jagged piece of bone which was found at the operation, and which had effectually prevented reduction of the fragments without an operation. In conclusion, every case of fracture required treatment with common sense. Some might be treated by splints and massage only with excellent result, but a large and ever-increasing number, as the technique of the surgeon improved, must be treated by open operation to get anything like a good result. Shortening was only one of many indications for operative treatment. In the case of children, at any rate, the fear of infection was no contraindication to operation in the year 1910. A radiogram might be very misleading as to the actual condition of affairs at the site of fracture—it would not show muscle or fascia between the fractured ends.

Mr. Archibald Young (Glasgow) presented a communication, in which he said the use of the term "operative treatment" did not necessarily imply open operation. In spite of what had been said and written by Mr. Lane and others, it must be recognized, and therefore admitted, that there were many fractures which did not now demand, and which could not therefore be justifiably submitted to, open operation. No one could claim that open operation should be the routine procedure to be followed in the treatment of fractures of ribs, of the pelvis—in the absence of complication—of most fractures of the scapula, of most fractures of the clavicle, of many fractures of phalanges, and of a considerable proportion of fractures of the forearm. It might, however, be conceded at once that a very large proportion of all fractures, whether of the trunk or of the extremities, should be examined and corrected under an anaesthetic. This manipulation might be quite justifiably included under the term "operative treatment." While admitting that a very considerable proportion of

fractures of the long bones could only be efficiently treated by open operation, he altogether demurred from the idea that the profession was to be stampeded into the adoption of the position which Mr. Lane appeared to advocate—namely, that all simple fractures must be submitted to the open operation. He took up this attitude, not because he held any specially conservative brief. His own statistics for the last few years showed a greatly increased proportion of fracture cases submitted to operative interference, whether by open operation or merely by manipulation correction under an anaesthetic. Nor did he demur against the whole-hog view of the Lane school from any fear of septic difficulties. The time had long gone past when this might even require to be considered. In his own practice he did not even take the question of asepsis into consideration. He operated on a fractured bone by the open method when the case demanded it. He gave no precedent thought, nor post-operation consideration to how the case would proceed, for he knew all would be well. During the past three years not even the most trifling stitch abscess had occurred in his own hospital practice, and he therefore dismissed this possibility from further discussion. But the very title of the subject brought forward for consideration of itself implied that there *were* cases which did not demand open operation, or even any operation at all. The former he certainly recognized; the latter called for more justification. What principles should guide them in deciding upon open operation? *First of all*, and of chief importance, was the *obliquity* of a fracture. In the leg this was a factor which called for open operation in every case. By this means alone could an efficient result be obtained; by its means an efficient result could be obtained every time. Absolute correctness of apposition, removal of effused blood, freeing of muscles and tendons, and, where necessary, artificial fixation by plates, by screws, by wire, or by other approved means could be assured; and by no other means could these be achieved. Pain was at once relieved, the nursing of the case subsequently was rendered easy, and the period of incapacity was enormously shortened. The same might be said of many, if not all, oblique fractures of the humeral shaft, and of certain fractures at the upper end of the humerus, and of the upper and lower thirds of the femur. He did not at all concede that in these latter situations open operation was the only justifiable line of procedure. Nor did he believe that the open operative procedure was often necessary in most fractures of the humerus near the lower end, whether involving or not the elbow joint. By manipulation under an anaesthetic, checked by the *x*-ray screen and photographs, both at the time of operation and subsequently, he had found it possible in a now fairly large number of such fractures, to obtain not merely a most satisfactory and efficient readjustment of fragments at the time, but to ensure a subsequent result in excellent function which could not readily be improved upon. To his mind, the main cause of limited or impaired function following such fractures was to be sought, not in incorrect replacement of fragments, but in the redisplacement of these produced by too early movements of the joint. Reduced and corrected under an anaesthetic, checked at once by radiography, and put up by some such method as Scudder advised and illustrated in his textbook, kept fixed in the position of flexion for at least three weeks, and thereafter allowed almost complete freedom of voluntary (but not of passive or forcible) movement, such fractures of the lower end of the humerus, especially in young people, had, in his experience and practice, given satisfactory results. The cases of this injury which demanded open operation were chiefly those where much extravasation of blood had occurred, whether into the elbow joint or merely into the peri-articular or para-articular structures. This suggested what he would advance as the *second important indication* for the open operation—namely, the presence of considerable *extravasated blood*, especially if accompanied by much comminution of bone or displacement of fragments. The risks here were the production of excessive callus around the site of fracture, even if the fragments were effectively adjusted; and the occurrence of a variable degree of *myositis ossificans* which would deleteriously prejudice recovery of function. Osteoblasts were distributed through the clot and into the surrounding intermuscular and musculo-tendinous planes. The removal of all this clot and potentially ossific or callus-producing material, was most certainly imperatively demanded. *A third guide* to the adoption of open operation was, in his view, the *failure to elicit*, even under anaesthesia, most unmistakable and satisfactory *crepitus*, rough and unexceptionable, such as made quite clear the fact that no soft tissues were between the fractured surfaces. In the case of the femur, for example, failure to elicit crepitus was the chief guide in determining upon the adoption of the open operation in fractures of the shaft. Fractures of the upper and lower ends of the femur came into a quite different category. The tilting of the smaller fragments in these situations was so troublesome as to call for replacement and fixation by open operation in a very large proportion of cases. Frankly, and with all confidence, he confessed that, given good coarse bony crepitus elicited under an anaesthetic, in the average case of fracture of the middle of the femoral shaft he found the method of treatment by powerful and increasingly powerful longitudinal extension, aided by various torsion and transverse extension pulls—the method, in fact, associated chiefly with the name of Bardenheuer—gave results which could hardly be improved upon, if, indeed, they could be equalled by, an open operative procedure, even if this included artificial fixation by plates, screws, wire, or other instrumental means. These were, in his view, three important indications for open operation. They were not all, but they were the chief factors which mattered. He was quite clear that many transverse fractures do not require open operation. He had abundant evidence that it was often quite possible to obtain accurate adjustment without open operation, provided anaesthesia were employed and the correction was checked by radiographic screen or plate. He was equally clear that the correct adjustment so obtained might be quite efficiently maintained thereafter—also by non-operative means. He did not admit that in such transverse fractures, so replaced and so fixed, the period of functional incapacity was any longer than if open operation were adopted. He feared no open operation. Possible sepsis did not enter into his calculations. There were many fractures which he recognized ought always to be dealt with by the open method, but equally he wished to enter his protest against the idea that it was the only justifiable or efficient line of treatment. He had endeavoured to indicate what were the chief considerations which should guide the adoption of the open method. He found no place in his armamentarium for the complicated instruments of Mr. Lane. All he required was a competent assistant (a plurality of competent assistants was even better), simple but reliable bone instruments of the ordinary kind, reliable wire, plates and screws, an efficient bone drill, and a set of screw-drivers. He thought the powerful bone crushing instruments devised by Mr. Lane formed perhaps the least effective argument he could put forward in advocacy of his methods. He had carried out a now pretty considerable number of open operations on fractures, principally of the leg, and had not used them. They seemed to him more like instruments which would find an appropriate place in the tool-chest of a workman on metal, rather than in the instrument case or operation tray of a surgeon dealing with a sensitive living tissue such as bone. He was quite sure, from his own experience, that they were at least unnecessary.

DEMONSTRATIONS.

I.—RADIUM IN THE TREATMENT OF CANCER.

Dr. Louis Wickham, of Paris, gave a lantern demonstration on radium-therapy in connexion with cancer. In the course of it he pointed out that a burning effect, such as was sought by many radium-therapeutists was of little moment, since the same effect was obtainable by other agents. The chief interest of radium lay in its power of selection. Illustrations of this action in the case of cancer were supplied by slides cut from a voluminous tumour of the breast, some at a depth of 3½ in. They showed that the cancer cells were degenerating and being replaced by connective tissue. The operator added that the depth at which radium acted depended on the quantity of radio-activity absorbed. In the case just mentioned 19 cg. of pure radium were applied on the same place for forty-eight hours.

In conclusion, he said that: (1) The excellence of the result depended on the possession of great experience and a large quantity of radium. (2) In the great majority of cases surgery should be associated with radium. If the radium therapeutist was in the presence of a case of grave cancer, he should first consult the surgeon, so that the patient might not be deprived of the prompt help of surgery. If the surgeon was in the presence of a case presenting operative difficulties, he should have resource to the radium-therapeutist to diminish the virulence, and again, afterwards, the surgeon could also in his turn prepare the ground for radium, and his help should be utilized for making the perforation, incisions, and partial extirpations, to diminish the thickness of tumours which the rays had to traverse, or to allow of tubes being inserted in the depths of growths. (3) The tumours must be deluged with rays either by cross-fire action or by insertion of several applicators simultaneously. (4) Like surgery, radium did not affect the general state, neither did it prevent recurrences and metastases. It should be clearly understood that the term "cure" (which should be but rarely used) was only a general way of speaking, and involved a risk of deceiving the patient and the doctor. (5) Even with all its limitations, radium was a precious weapon which should be taken into serious consideration.

II.—A NEW TREPHINE.

Dr. DE MARTEL demonstrated a new trephine with which he said the skull could be perforated very quickly and without danger. It was so constructed that all sawing action ceased automatically as soon as the bone was nearly penetrated. There was a further arrangement in the form of a kind of collar which prevented the trephine injuring the dura mater and underlying brain owing to simple weight and pressure.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CASE OF DISLOCATION OF A SENILE CATARACT.

MAHOMED HASSAIN, a Pathan, age about 50, came to the Church Mission Hospital, Quetta, on July 23rd, 1910, with a senile cataract, dating from three years ago, in the right eye, and a cataractous lens in the left eye, dislocated downwards and inwards, exhibiting oscillation upon movement of the eyeballs and a distinct space between the margins of lens and undilated pupil at the upper and outer periphery. The patient stated that the sight of this eye, like that of the other, diminished gradually, but began four years ago, and that previous to this gradual loss beginning his sight was perfectly good in both eyes. No history could be obtained to account for the dislocation, and apparently this must have succeeded and not preceded the onset of cataract.

The right eye was operated on on July 29th by capsulotomy, and made an uneventful recovery. On August 4th, there being perception of light in the left eye, this also was operated on. After the usual incision and iridectomy the lens was seen to be lying in the posterior chamber free of its capsule, and it was easily expressed by means of a strabismus hook applied upon the cornea. The patient could then count fingers easily, and the pupil appeared perfectly clear.

Tested on August 15th—that is, eleven days after the second operation—the patient could count fingers with the left eye without a glass at a distance of 6 ft., and with a +11 lens at 40 ft., without hesitation, the operation on the right eye being equally successful.

As I am told that what would appear to be a *senile* cataract occurring in conjunction with a dislocation is unusual, I thought it might be worth while to communicate the case.

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Reviews.

THE GROWTH OF A GREAT HOSPITAL.

THERE is one subject which can never fail to be interesting to the student of human nature, and that is the growth of charity, in the modern sense of the word, as a factor of human existence. Nowhere is the contrast between the charity of the past and that of our own times more clearly marked than in the treatment of the sick poor, and this is particularly the case with regard to hospitals, where even the last few decades have witnessed greater and more important changes than in almost any other sphere of human activity. Mr. E. W. MORRIS'S *History of the London Hospital*[1] gives striking proof of the complete revolution which has taken place in hospital administration since the early days of the eighteenth century. The able and accomplished secretary of the "London," in his most interesting and instructive book, has traced the gradual development of this vast hospital from a "little house in Featherstone Street" into the huge block of buildings which to day dominates the Whitechapel Road; and the most salient feature of its whole history is precisely this difference in the treatment of its patients. It is a matter of common knowledge that the sick poor in all our large towns, and particularly in London, suffered severely from the dissolution of the monasteries, where they had formerly found both shelter and medical attendance. Their plight was so pitiful that a very short time after the disappearance of the monks the public was forced to open hospitals especially to receive the sick and dying beggars who lay helpless about the streets. But the generosity of the public seems to have been exhausted by this one effort on behalf of the weaker members of the community, for during the next 200 years little was done to support and improve the hospitals, which soon became indescribably noisome and neglected. The middle of the eighteenth century, however, witnessed a revival of public interest in the disposal and treatment of the sick, and the result was the foundation of a group of hospitals, amongst which was the London.

The London Hospital, Mr. Morris tells us, "is the result of a little meeting of seven men which took place in the bar-parlour of the Feathers Tavern, Cheapside, in the evening of September 23rd, 1740, when . . . a motion was made whether with the sum already subscribed (100 guineas) it would be proper to begin the said charity. And unanimously agreed it was. A hundred guineas!—that sum would to-day 'run' the hospital from breakfast to dinner-time!"

One of the seven men who were present on this historic occasion was John Harrison, a surgeon, to whose untiring and ceaseless efforts the hospital practically owes its existence. It was he who, when, all the necessary arrangements having been made, the whole scheme was about to fall through owing to capital at their disposal being reduced to "only one shilling in the bank," managed to procure ten guineas to carry on the work, together with the Duke of Richmond's promise of an annual subscription. Thanks to John Harrison, therefore, a small house was taken in Featherstone Street at a rent of £16 a year, and the "London Infirmary," as it was first called, was opened on November 3rd, 1740. The number of beds is not known, but there could not have been many, for no nurses were considered necessary, a married couple who were engaged to look after the house also fulfilling the duties of a nursing staff. The hospital staff consisted of physician, surgeon, and apothecary, which posts were filled respectively by Dr. Andrée, John Harrison, and Josiah Cole. Their duty was to spend a couple of hours daily at the infirmary, from 8 to 10 in summer, and from 9 to 11 in winter; whilst the apothecary, in addition, devoted one afternoon a week to "the practice of midwifery and the distempers incident thereto."

From the beginning the new enterprise was successful in every way, though the first secretary abused his trust by

[1] *A History of the London Hospital.* By E. W. Morris, Secretary of the London Hospital. London: Edward Arnold. 1910. (Pp. 296; with 16 pages of illustrations and several plans. 6s. net.)

appropriating £400 out of the hospital funds. Even at this early date it had gained many wealthy and influential patrons, and we may note in passing that in several cases the descendants of these first subscribers still retain an hereditary interest in the London.

An account was soon opened with a banker in Lombard Street, and five months after its foundation, in May, 1741, the infirmary was moved from Featherstone Street to a larger house in Prescott Street, Goodman's Fields. In the following year the first organized appeal for money was made, in which help was asked for "an infirmary set on foot by subscriptions in Goodman's Fields for charitably relieving poor manufacturers, sailors in the merchant service, their wives and children, with medicine and advice in case of sickness or accident."

It was at this date, to all appearance immediately after the removal of the hospital into its new premises, that was formed the nucleus of the first medical school attached to a hospital in London, when Harrison asked permission for one of his apprentices to study in the wards. His request was granted, and six months later this same apprentice took the place of Cole the apothecary, who wished to retire.

The beginnings of the present out-patient department can likewise be traced to this period, for in 1742 "a rule was made that certain diseases which were considered 'unclean' should 'not be taken under the care of the infirmary.' It was agreed, however, that such cases might be *treated*, but not admitted." Also about this time nurses were first introduced into the London Hospital. The first day nurses who were ever appointed were paid 5s. a week and lived outside the hospital; whilst the night nurses received a weekly salary of 3s. 6d. They were, almost without exception, women of the type of Betsy Prig and Mrs. Gamp, and it was no uncommon thing for them to refuse to do the smallest service for a patient without first extracting a "tip." The place of head nurse, called the matron, was filled by the wife of the hall-porter; and the first to hold the office nearly starved the patients and then decamped, after having run up bills at the hospital's expense. The lot of a patient at the London in those days must have resembled that of Gilbert's policeman, inasmuch as it was "not a happy one."

For instance, one pair of sheets only was allowed to each bed, and it seems doubtful if these were ever washed, seeing that the beds were never empty. Cleanliness was so utterly disregarded that in 1770 one of the House Committee reports that "The nurses in New George acquaint me that they have had no water for several days past, pump being as they say out of repair. Ashes has not been cleared away this 2 months which the Cook say blows in at the windows the top of the dust hill being raised above the level of the windows." In 1789 we hear that "there are no towels allowed in any of the women's wards, nor soap for the hands, etc., of any of the patients"; whilst another visitor reports that "the house was very offensive, so much so that I could not Bare the smell!" Long before this remark was made the hospital (after 1747 it was no longer called the "Infirmary") had been removed from Prescott Street to its present site in the Whitechapel Road, then surrounded by open fields. The foundation stone was laid in 1752, but the building was not completed till 1759. "The long time taken in building," says Mr. Morris, "was due to the repeated stoppage of the work from lack of funds." It contained 161 beds at its opening; to day there are nearly 1,000.

It is interesting to compare the difference in the yearly cost of the beds at that period and in our own days. In 1754 a bed at the London Hospital cost £12 a year; thirteen years later it was £17 15s., and in 1822 £26 9s. 4d. To-day some £90 is required for the yearly maintenance of each bed in the hospital. The years following the opening of the new building witnessed many changes and reforms. As late as 1768 "no medical qualification or degree was demanded of gentlemen who were candidates for appointments on the staff"; but at that date it was decided that "no person be in future admitted a candidate for the office of physician until he has been examined by the College of Physicians in London, has their approbation, and has been admitted by them to practise." Twenty years later, in 1785, William Blizard founded "the first regular medical school connected with a great hospital—namely, that connected with the London. The House Committee gave the ground; the building was erected at the expense of some thousands of pounds, chiefly supplied by himself, at a time when he could ill afford it."

Strangely enough "at first Blizard's anxiety to teach in the hospital met with no favour from the committee. He was not allowed to teach on cases *in* the hospital, and, although he was permitted the use of a room for his lectures, he had, at first, to bring his cases with him." It was not for some years, till 1837 or so, that the medical school "seems to have been fairly started," whilst for nurses "there was no proper and systematic training until 1880, when courses of lectures on nursing subjects were commenced by the present matron, Miss Lückes, and, at her instigation, by members of the medical and surgical staff."

No trace of the old London Hospital remains to-day. The whole place has been rebuilt within the last fifteen years, and there can be little resemblance between the original foundation and the palatial buildings which now occupy its site. Everything has changed, even to the types of patient who nowadays fill its wards, and who would doubtless bitterly resent being referred to as "miserable objects," the usual designation of their predecessors. But the charity which helps to maintain this great institution is the same as that which prompted its foundation, and the spirit which animated John Harrison and his colleagues surely exists to-day in those who are carrying on their work.

Among the most interesting chapters in the book are those entitled "The Administration of a Modern Hospital" and "The Future of Voluntary Hospitals." In these a number of questions of the greatest importance are ably discussed. Though we may not agree on all points with the author, his views must be taken into account as being the expression of an exceptionally large experience.

Mr. Morris is to be congratulated upon his "History." Apart from the interest belonging to the subject matter itself, the book should do useful work in giving the general public a glimpse into the workings of a great hospital, and correcting many of the false notions which still linger in people's minds concerning them. The "History" is well bound and clearly printed; and the illustrations, photographs, plans, etc., are not only interesting, but extremely well reproduced.

MEDICINE.

This translation of Professor Dieulafoy's *Manuel de pathologie interne*[2] is from the fifteenth edition of that now famous work. It is perhaps to be regretted that the translation has been postponed so long, as the veteran professor has passed the meridian of life; and although in some respects his textbook has been brought up to date, that cannot truly be said of it as a whole. This is especially noticeable in the section on diseases of the stomach. Nothing is said about *x*-ray diagnosis; there is no description of Hodgkin's disease, although it is referred to on p. 1833, nor is there any reference to splenomegalic polycythaemia, often called Widal's disease, and there are other omissions. Otherwise it is an excellent book, clearly written and illustrated by admirable diagrams, drawings, and photomicrographs, while the translators deserve praise for their work. Professor Dieulafoy throws Broca overboard, and fully accepts Pierre Marie's position on aphasia, but he does this at the end of a chapter with which it is somewhat inconsistent. Nervous diseases are well done, but on p. 1236, in describing tabes, he speaks of Babinski's sign for the loss of the Achilles jerk, a cause of confusion to readers who are accustomed to hear it used to mean extensor plantar reflex, as indeed Professor Dieulafoy himself uses it on p. 1325. The chapter on kidney diseases is full and interesting, as it is a subject

[2] A Textbook of Medicine by G. Dieulafoy. Authorized English Translation from the Fifteenth Edition of *Manuel de pathologie interne*. By V. E. Collins, M.D.Lond., M.R.C.S., L.R.C.P.; and J. A. Liebmann, Ph.D., M.A., LL.D. In two volumes. London: Baillière, Tindall, and Cox. 1910. (Roy. 8vo, vol. i, pp. 1–1045+xiv; vol. ii, pp. 1045–2081+x; coloured plates, 105. 25s.)

to which Professor Dieulafoy has devoted much attention. We do not agree with him in the importance he attaches to the so-called minor symptoms of Bright's disease, as we believe that they occur in many people whose kidneys are healthy. It is a mistake to say (p. 1090) that Grainger Stewart said that 15 per cent. of all his cases of cerebral haemorrhage had interstitial nephritis. What he did say was that 15 per cent. of his cases of interstitial nephritis died of apoplexy—a very different statement (see *Bright's Disease*, second edition, 1871, p. 235). All the evidence goes to show that the percentage of cases of apoplexy with damaged kidneys is high. Dickinson gives it as 41 per cent., and quotes Ridge Jones's figures, 66 per cent. We have noticed few printer's errors, and there is a well-arranged index. The book is one which all who value the perspicuousness of French teaching will appreciate.

SYPHILIS OF THE NERVOUS SYSTEM.

THE first three volumes of D'ARCY POWER and MURPHY'S *System of Syphilis* were each the work of several writers; the fourth volume[3] is from the pen of Dr. F. W. MOTT alone. The editors and managers of the enterprise are to be congratulated upon the result of their choice of Dr. Mott to discuss the pathology of syphilis of the central nervous system. No more experienced or careful pathologist could have been found; Dr. Mott's volume is a monument of thorough and painstaking research, and affords much suggestive reading for the student who wishes to know the latest views on this singularly difficult and far-reaching subject. Dr. Mott is convinced that the so-called parasyphilitic diseases, such as tabes and general paralysis, are essentially due to syphilis, and holds that the Argyll Robertson pupil or a pupil with an irregular contour (if congenital anomalies can be excluded) almost proves that the patient has had syphilis. Discussing the general pathology of syphilis of the central nervous system, he draws instructive parallels between the lesions caused by Schaudinn's *Treponema pallidum* and those due to other trypanosomes such as *T. gambiense* and *T. equiperdum*. Numerous cases of syphilis of the brain, cord, and meninges are related, with the addition of figures showing the naked-eye or microscopical appearances of the lesions found after death. Dr. Mott lays stress on the association of epilepsy with parasyphilitic manifestations, and supports it by quoting several cases from the literature. In the chapters given to tabes and general paralysis he gives reasons for supposing that both affections are parasyphilitic, although antisyphilitic treatment is more likely to do harm than good; he also comments on the present impotence of treatment of whatever kind in general paralysis. The greater part of the volume deals with the morbid anatomy of syphilis as it affects the nervous system, both macroscopically and microscopically. Dr. Mott has done more original work in this department of pathology than any other man of science, and his careful and cautiously-worded conclusions will, no doubt, meet with general acceptance. His work is illustrated with a number of excellent photographs, and with first-rate coloured reproductions of *post-mortem* material. Special chapters are given to the diagnosis, prognosis, and treatment of syphilis of the nervous system, and to nervous disease in congenital syphilis. The printing and general get-up of this handsome volume leave nothing to be desired; it seems to contain very few misprints and has a good index. A bibliography is given at the end of most of the chapters. Here, perhaps, room for improvement does exist, for the authors are not arranged in alphabetical order, in chronological sequence, or strictly in the order in which they are quoted in the text; further, authors are quoted with the reference "loc. cit." when as many as five of their works have previously been mentioned, nothing showing to which of these works reference is being made. But these trifling imperfections in no way detract from the scientific value of the book, which is indispensable to the neurologist as well as to the student of syphilis.

[3] The Oxford Medical Publications. *System of Syphilis*, in six volumes. Edited by D'Arcy Power and J. K. Murphy, with an introduction by Sir Jonathan Hutchinson. Vol. iv. *Syphilis of the Nervous System*. By F. W. Mott. London: H. Frowde, and Hodder and Stoughton. 1910. (Roy. 8vo, pp. 514, £2 2s. 6 vols. £10 10s.)

NOTES ON BOOKS.

THIS volume on *Childhood*[4] contains twelve short articles dealing with growth, psychology, hygiene, diet, preventable diseases, tuberculosis, alcoholism, physical and mental defect, legal protection, and moral health as affecting young children. The articles are evidently mainly intended for lay readers, and are of varying length and educational value. Taken as a whole, it is an excellent little book for the purpose intended. There is appended for each chapter an exceedingly good list of works for reference and study. Several of the chapters are well worth perusal by the professional man, and the chapter on the moral health of the child, by Dr. Mary Scharlieb, shows deep knowledge of and sympathy with the young child, and could not be too widely circulated among parents and teachers.

The *Omnicert*[5] is the name given to a very convenient little certificate book, which by means of one of two forms contained in the book enables one to certify persons of either sex for inability to work or attend school for any period, or for removal to hospital or infirmary. The arrangement is quite ingenious, and deserves to become popular.

On the first appearance of *Brassworkers of Berlin and of Birmingham*,[6] we made it the subject of an article of some length (BRITISH MEDICAL JOURNAL, February 17th, 1906, p. 385). Since then it has passed through four editions, and has doubtless had a large circulation, mainly, we fear, because its conclusions give support to the views of a political party, but as was well said in the *Times* criticism, which is quoted by the authors in their preface to the third edition: "The chief causes of the better social conditions of the Berlin brassworkers may be summed up in the words, duty, responsibility, discipline, work, order, and method." Its appreciation of modern industrial Germany is confirmed, according to the newspapers, by the report of a much larger body of working men who have recently been to that country on a similar quest of information. There is no political nostrum which can be prescribed to produce the admirable results which visitors to Germany have good cause to admire. These are due to character and conduct, and we can only hope to imitate them successfully in so far as we can correct the defects of duty and discipline, of order and method, which lie at the bottom of the causes of those two obtrusive evils—slum-dwellings and the degraded people who inhabit them.

The Sleeping Sickness Commission of the Royal Society, 1908–09, in addition to their other work, conducted many experiments on the trypanosome diseases infesting the domestic animals in Uganda, and they have now established some of these results in a paper entitled *Trypanosoma pecorum*.[7] The commonest trypanosome disease among cattle in Uganda is caused by a parasite of the dimorphon type, which the authors propose to call *Trypanosoma pecorum*. This parasite when stained is short and stout in form, the posterior extremity being blunt, or rounded, or pointed and angular. The anterior end is narrower. The undulating membrane is fairly well developed, and the flagellum arises near the micronucleus and passes along the edge of the undulating membrane. There is no free flagellum. It sets up a rapid and fatal disease amongst cattle, less so perhaps in sheep and goats, and still less so in monkeys, which usually survive for two and a half months. From experiments made in the laboratory at Mpumu it seems probable that *Glossina palpalis* may be capable of acting as a carrier of this trypanosome, while there is also some circumstantial evidence to show that it may be carried by *Tabanidae*.

[4] *Childhood*. Edited by T. N. Kelynack, M.D. National Health Manuals. London: Charles H. Kelly; The Methodist Publishing Co. (Post 8vo, pp. 152. 1s.)

[5] *The Omnicert*. London: Stone and Cox.

[6] *Brassworkers of Berlin and of Birmingham*. By R. H. Best, W. J. Davies, and C. Perks. Fifth edition. London: P. S. King and Son. 1910. (Demy 8vo, pp. 94. 6d.)

[7] *Trypanosome Diseases of Domestic Animals in Uganda: I. Trypanosoma Pecorum*. By Colonel Sir David Bruce, C.B., F.R.S., Army Medical Service; Captains A. E. Hamerton, D.S.O., and H. R. Bateman, Royal Army Medical Corps; and Captain F. P. Mackie, Indian Medical Service. (Sleeping Sickness Commission of the Royal Society, 1908-9.) Read before the Royal Society, June 16th, 1910.

BRITISH HOSPITALS ASSOCIATION CONFERENCE.

The meeting of this association was held in Glasgow on September 29th and 30th. The association is a resuscitated body, having for its objects the discussion of matters connected with hospital management and affording opportunities for the acquisition of a knowledge of hospital administration, both lay and medical. In the unavoidable absence of the President (Mr. H. Cosmo Bonsor, Treasurer, Guy's Hospital), the conference was presided over by Mr. J. D. Hedderwick, Chairman of the Royal Infirmary, Glasgow, and senior member of the council of the association.

Official Welcome.

Lord Provost M'Innes Shaw, in officially welcoming the members, said that in a city like Glasgow, which saw the birth of antiseptic surgery, and which was associated with the distinguished name of Lord Lister and other physicians and surgeons too numerous to particularize, it would be strange if such an association were not welcome, especially meeting as they did within the precincts of the university that had sheltered and trained men whose names were synonymous all over the world with the highest exemplification of medical and surgical science.

Voluntary Hospitals.

The first subject of discussion was the social policy of voluntary hospitals, introduced by Mr. C. S. Loch, the Secretary to the Council of the London Charity Organization Society. Mr. Loch said that no people were more grateful than members of the Charity Organization Society to hospitals and their staffs for their constant help and advice in cases of illness and distress. The criticism of out-patient departments by medical men and laymen during the last forty years was having its effect. Hospital almoners were introducing a new discrimination and better methods of general assistance. Hospital finance was better regulated and accounted for. And in London they had the King's Fund, which, with the grant of its aids and subsidies, was assuming powers of inspection. Here, then, were indications of a social policy. The questions which he desired to submit were whether consistently with these indications some more definite social policy should not now be developed and accepted by hospitals generally, a policy consistent with the principles of charity and our social and economic knowledge; and if so, what that policy should be. Defining a hospital broadly as a place for the free or part payment of the medical and surgical treatment of poor people, Mr. Loch first discussed the hospital in relation to the medical profession and education. In London there had arisen proposals that were receiving much support for a revision of the method of medical remuneration, and of the system of hospital admissions. In general terms the proposals come to this: That the letter system should disappear; that every patient at a hospital should pay according to his ability; that in what was called contract work medical men should be remunerated for their services according to certain standards accepted by the profession locally; that there should be local provident clubs or dispensaries with which the members of the profession should be associated; that in general patients should be sent to the hospitals (be referred more especially to out-patients) from such dispensaries or from general practitioners; that medical men who took part in the work of the hospital should be remunerated for their work, for, since a payment would be required from the patient when it was right that he should pay, the staff should be remunerated relatively at least. Thus, the outlying gratuitous relief of the hospital would to a large extent be brought into the economic field of normal payment and remuneration. In contrast to that policy was that of the supply of free medical relief at the cost of the State. Next discussing the hospital in relation to the Poor Law and medical charities, Mr. Loch pointed to the change that had taken place in the temperament of the people. The standard of comfort was higher; a claim was made to a yet higher standard. It was a question, indeed, whether in all classes there was not a desire to take out of salaries and wages a higher return in comfort than existing salaries and wages could produce. The word "destitute" had come to be a Poor Law word, and as such had been used in an ill-defined and most exaggerated manner by the Minority of the Royal Commission. All the evidence showed that at a hospital there was a large number of patients altogether above the level of "destitution," using the word broadly. If the difficulties of the situation were to be met, there seemed, Mr. Loch thought, but one way of proceeding—that recommended by the Majority of the Royal Commission on the Poor Laws and Relief of Distress—namely, "that representative medical assistance committees should be established to co-operate, and, when necessary, supplement the medical institutions of the county or county borough, and to support methods of co-operation with the sanitary authorities, etc." In that way a social policy would be carried out which would, consistently with the interests of the medical profession, place accommodation at hospitals and infirmaries respectively within the reach of patients who, paying according to their ability, could on medical grounds be referred either to the hospital or infirmary. The third point in Mr. Loch's contribution to the discussion was the hospital in relation to the individual case and its proper assistance, in regard to which he spoke of the institution of hospital almoners, who would see that assistance was properly given, and that the hospitals were not misused. The policy he had outlined would lead, he believed, as experience had shown, to a better remuneration of medical men, to a better division of labour among institutions for the sick, and to a very serviceable association in charity. It would help the individual physically and morally as, he believed, no other policy could do, for it was based on the principle of a proper treatment of the individual, not as a social item but as a member of a family, and as the member of a society which would have all its members hale and independent.

In the discussion which followed the reading of Mr. Loch's paper, Mr. James Cunningham, a member of the Glasgow Parish Council, said that they were, he thought, all agreed that in many cases medical men acting under the Poor Law authority were not properly remunerated for the work they were called on to do. Mr. Cunningham insisted that there were many people using the voluntary hospitals who should be made to pay something, and he went further and said in connexion with the city health department the hospitals for infectious diseases should not be free to every ratepayer. It was well that they should call very strong attention to the evils attending the State provision of everything for everybody—a tendency which was encouraging thriftlessness and was sapping the whole independence of the Scottish people.

Professor Jones (Glasgow University) said the great social changes expressed themselves in the use of their hospitals. There was a fundamental transformation going on in the use of the medical skill that the community as a whole had at its command. The same kind of change was going on in the organization of labour—the supplanting of individual endeavour by organized endeavour. They could not arrest the development of hospital aid on the ground that it would throw medical men out of work. He thought the question was how far it was possible to extend the infirmary system in such a way as would enable all citizens to make use of them if they desired, and also to pay for them.

Hospital Abuse.

Mr. A. Scott Finnie (Aberdeen) contributed a paper on the abuse of the hospital and its cure. In the course of his remarks he said: In five of the Scottish hospitals the in-patients had increased by 15,569 in twenty years, while the out-patients had increased more rapidly. The advances are suspiciously suggestive of an abuse of charity. Of course there were people who were in-patients who were able to defray the cost of their treatment elsewhere. What is needed is the reorganization of charitable medical relief on a plan which would to the fullest possible extent conserve the interests of the really poor and deserving, under which those partially, but not wholly, able to provide for themselves would be assisted in the manner best calculated to preserve their independence and self-respect; and also under which the members of the medical and surgical staffs should feel that they were neither bestowing their generosity on the undeserving, nor indirectly contributing to the impoverishment of their professional brethren, the general practitioners. The enunciation of some general essentials of reform seems more appropriate to the present

occasion than any attempt to arrive at agreement on minute details. Among the first is uniformity of practice in all hospitals engaged in similar work. It would greatly help if a scale of maximum fees for the treatment of particular ailments could be adopted. By this means the approximate cost of treatment, either at a patient's own or a nursing home, could be readily ascertained. The eligibility of applicants would then be determined upon a comparison of financial position with probable cost of private treatment.

Dr. Dewar (Edinburgh) said hospital abuse was very prevalent in Edinburgh, and had been for some time. He detailed the action taken by the combined Divisions of the British Medical Association in Edinburgh to combat the mischief being done to the charitable public and the medical profession. The result of the agitation was the movement to erect a paying hospital, for which they aimed at raising £10,000, and which would be a boon not only to Edinburgh but to the East of Scotland.

Mr. J. A. Roxburgh (Glasgow Western Infirmary) said there was no abuse of the hospitals in Glasgow. A proposal to have paying wards in the Western Infirmary had been discussed and found unworkable. All were agreed as to the need for paying hospital accommodation, but until they revolutionized the present system they could not have free and paying wards in the same hospital.

On the second day Mr. J. A. Roxburgh (Glasgow) presided at the outset, the chair being afterwards taken by Mr. J. D. Hedderwick, Chairman of the Royal Infirmary, Glasgow.

A Unified County Medical Service.

In the absence of Mrs. Sidney Webb, Dr. D. J. Mackintosh, Western Infirmary, Glasgow, read her paper on "The Coming of a Unified County Medical Service, and how it will Affect the Voluntary Hospital" Mrs. Webb, in the course of her paper, said that the Royal Commission on the Poor Law brought out very forcibly three facts: First, that our Poor Law and our pauperism (on which we were this year spending out of the rates and taxes of the United Kingdom close upon £20,000,000) was to the extent of at least one-third, and perhaps one-half, dealing with the destitution of people stricken with preventable sickness, which we were to-day not preventing. Secondly, that in our public arrangements for dealing with sickness we had got into a muddle far greater than was commonly realized of duplicated services, rival authorities, overlapping of work, waste of public money, and confusion of principles. We maintained on the one hand an ubiquitous rate-supported Poor Law medical service, with 4,000 badly paid Poor Law doctors, forbidden to treat sickness unless and until it was complicated by destitution, and then charged to give "medical relief"; on the other hand, an equally ubiquitous, rate-supported public health medical service, with several thousand doctors, nurses, health visitors, etc., now dealing largely with the very same diseases as the Poor Law medical service, but on the diametrically opposite principle of "searching out" the incipient case, and treating yearly some hundred thousand or more of patients from the standpoint not of relief but of prevention. Thirdly, that, notwithstanding the ubiquitous existence of these two rate-maintained medical services and public hospitals—notwithstanding also the co-existence of more private medical practitioners than ever, and of a bewildering host of medical charities in the form of voluntary hospitals, dispensaries, convalescent homes—an enormous amount of illness went untreated. Such being the case the nation had before it the customary three courses. We might do nothing, or next to nothing, in the way of reform. There is, secondly, the policy of "one authority, and one authority only, for all necessitous persons." Finally, there was the policy of breaking up the Poor Law into its constituent services and transferring each of these services to the rival department that was actually already in existence for dealing with that particular section of the population. Continuing, Mrs. Webb said that she did not think it needed much gift of prophecy to see that, sooner or later, it was the last policy, which was that of the Minority Report of the Poor Law Commission, that was destined to prevail. Mrs. Webb proceeded to discuss the question of how the coming of a unified county medical service would affect the voluntary hospitals.

Considerable discussion followed the reading of Mrs. Webb's paper and also on the papers read on the previous day by Mr. Charles Stewart Loch and Mr. Scott Finnie.

Mr. Motion, Clerk of the Glasgow Parish Council, considered Mrs. Webb's conclusions were principally drawn from her experience of England, of which he did not presume to speak, but applying the same opinion to Scotland was, he thought, very wide of the mark. The Poor Law medical service in Scotland did not deal with the same diseases as the Public Health Department. He hoped that the Minority Report would never be adopted in this country, where the local administration had all along been ahead of the sister country.

Councillor MacPherson (Edinburgh) drew attention to the great abuses which were found in connexion with voluntary hospitals. The abuses consisted in a great many well-to-do selfish citizens who were well able to pay for their own medical treatment and hospital assistance, taking advantage of the contributions of the charitable public.

Dr. Robertson (Leith) and Dr. Nathan Raw (Liverpool) also spoke.

Dr. D. J. Mackintosh (Superintendent, Western Infirmary, Glasgow) said that they could not look at this hospital question entirely from the side of the medical profession. He agreed that every medical man should be paid adequately for whatever he did; but they must not view too narrowly what was said to constitute abuse in the use of hospitals as long as they did not make any other provision for the middle class. As a superintendent of a hospital he was quite prepared to say that the bulk of the cases that one might regard at first glance as unsuitable for an ordinary charitable institution were sent by the medical men themselves; and he did not blame them, because they were in the best position to judge whether the cases could be better treated in the hospital. There was no abuse until they made provision for the middle class for such special treatment as the poor and the rich had.

Professor Glaister would be sorry if the day should ever arrive in this country when the voluntary hospital should be put down or discouraged.

Institutional Treatment of Tuberculosis.

Dr. Nathan Raw (Liverpool) read a paper on institutional treatment of tuberculosis, in which he said it was absolutely vital to the scheme of prevention that all consumptive children should be removed from the ordinary schools and treated in special open-air schools. All the voluntary hospitals in the country should take their share in the treatment of consumption. He said that it was absolutely necessary that some simple and inexpensive institution should be provided where advanced cases could be received until the end. They were the chief means by which the disease was spread to healthy persons, and should be removed from their poor homes, by compulsion if necessary.

Dr. Ebenezer Duncan (Glasgow) said in the Victoria Infirmary there were two wards for the open-air treatment of phthisis, and he thought the principle might be very much extended to the hospitals in Glasgow.

A paper was read by Mr. Nicol Brown (Chairman of the Council of the St. Andrew Ambulance Association) on What are the best ambulance arrangements for hospitals? and Is the motor ambulance quite reliable? In the discussion which followed most of the speakers dealt with the advantages of the motor over the horse-drawn ambulance.

Private Rooms in Fever Hospitals.

Dr. Ebenezer Duncan (Glasgow) spoke on another question suggested for discussion, "Should private rooms be provided in fever hospitals for patients who are prepared to pay for them? Can they be attended by their own medical man?" He said that they ought to have paying patients in their hospitals. He did not see any reason whatever why if a person went into a hospital and got a private room the family doctor should not be permitted to attend.

Election of Office-Bearers.

The office-bearers were re-elected as follows: *President*, Mr. H. Cosmo Bonsor, treasurer, Guy's Hospital, London; *Honorary Treasurer*, Mr. Conrad W. Thies, Royal Free

Hospital, London; *Honorary Secretaries*, Mr. William West, London, and Dr. D. J. Mackintosh, Glasgow.

The conference closed with votes of thanks.

Visits to Hospitals.

Visits were paid during the conference to the Western Infirmary, Royal Asylum, Gartnavel, Royal Infirmary, the Maternity and Women's Hospital, and the Victoria Infirmary.

Luncheon.

The members of the conference were entertained at luncheon by the directors of the Western Infirmary and the Corporation of Glasgow.

It was agreed that this fresh conference marked the successful inauguration of what should prove a profitable series of annual meetings. The subjects discussed were not only of interest to the medical profession and those connected with hospital administration but of great general and educative importance.

Nova et Vetera.

JEWISH DOCTORS IN THE MIDDLE AGES.

Outcasts as were the Jews in every European country during the whole period of the Middle Ages, there was always one profession in which they were recognized as the equals, and in many cases the superiors, of their persecutors. That was the profession of medicine. They did not, however, gain this position of equality without a struggle. It is true that the mass of the people appear always to have reposed a peculiar confidence in the knowledge and skill of the Jewish doctor; but the practice of calling in a physician belonging to the Chosen People was discouraged by the Church, which regarded any *rapprochement* between Jews and Christians as undesirable, if not actually dangerous. Again and again in the thirteenth and fourteenth centuries the French ecclesiastical councils forbade any Christian, under pain of excommunication, not only to consult a Hebrew practitioner, but even to take medicine prepared by him. The fulminations of the Church, however, seem to have had very little effect. In the opinion of Dr. P. Pansier, of Avignon, who published in the July number of *Janus* an article on "Les Médecins Juifs à Avignon aux XIIIme, XIVme, et XVme Siècles," these fulminations were inspired not by fear of the spiritual dangers arising from the contact between Christians and Jews, but by the dread lest the medical profession should degenerate into a happy hunting ground for members of the latter race. This was by no means a remote contingency, especially in the South of France, where the Jewish element in the profession was particularly strong in mediaeval times. From very early days a Jewish school of medicine had existed at Lunel, near Montpellier, and to use Dr. Pansier's expressive words, it had "flooded the south with its physicians." Some of these even taught at Montpellier, where the faculty, in certain cases, granted them a licence (*magister in medicina de Montepessulano*). The extent of the popular faith in the Jews as physicians may be measured by the fact that, notwithstanding the threat of excommunication, nearly all the great nobles went to them for advice in preference to Christian practitioners, some of them going so far as to appoint Jews as their household physicians. Even Alphonse de Poitiers, the brother of St. Louis of France, when suffering from eye trouble, did not hesitate to consult Habrahym, a Jew of Aragon. The Jewish physicians became so numerous in the fourteenth century that the Church was obliged to mitigate her laws concerning them. In 1341, at a synod held at Avignon, it was decided to raise the interdict against them in consideration of the fact that "at the time when this prohibition was made there was a great number of Christian physicians; but they were now so greatly diminished that the sick who wished to obey the laws of the Church and refused to be treated by Jewish doctors were unable to obtain any medical aid at all." This declaration marked the commencement of the golden age of the Jews in Avignon, which lasted over a century. During that period even the convents were under the care of children of the Ghetto; the convent of the Cordeliers, for instance, had as its medical attendant the Jew Abraham de Carcassonna, who received the princely salary of 4 florins a year. This same convent in the course of one century had four different doctors, of whom three were Jews. Later the Jewish doctor played a prominent part in looking after the plague-stricken patients during the epidemic which raged at Avignon during the latter years of the fifteenth century. Curiously enough, however, those attached to the hospitals at this time were not so well paid as the Christian doctors, the latter sometimes receiving as much as 12 florins a month, whilst their Jewish colleagues only had 9 or even 6. It is at this period, and with regard to a Jew, that we have an interesting glimpse of the system of quarantine as it was practised in the Middle Ages. One Léon Botarel had been engaged by the town authorities to treat sufferers from plague either in hospital or in their own homes; and besides the salary of 17½ crowns a month allotted him, and the fees he was allowed to take from rich patients, he was given free quarters in the Ghetto. By the terms of his agreement, however, he had to bind himself, when the epidemic ceased, to endure a month's quarantine, which he was to spend shut up in his own house. The relations between Jewish doctors and their Christian *confrères* appear to have been quite friendly, and the same may be said with regard to their patients. Many of the former managed to amass large fortunes, but this was not by the exercise of their profession alone. True to the instincts of their race, the Jewish physicians frequently carried on a thriving trade as merchants or usurers, assisted, in many cases, by their wives. It was not until the fifteenth century that the Christian Jew appears as practising medicine in Avignon, but even then there were still many countrymen who preserved the faith of their forefathers. Their glory had departed, however, and the opening years of the next century witnessed a notable diminution both of their numbers and their importance, and in 1555 a Bull was issued which forbade Jews to practise medicine either in Avignon or in the Comtat Venaissin. Later, whoever wished to receive the degree of Doctor of Medicine was obliged to make a profession of orthodoxy—a fact which explains the total disappearance of the Jewish practitioner in the seventeenth century. The reason of the Jewish physician's marked success in his profession is not far to seek. In the thirteenth and fourteenth centuries he was far superior in every way to his Christian colleague. At a time when the line was very sharply drawn between physicians and surgeons, when the physician knew nothing of surgery, and the surgeon nothing of physic, the Jewish doctor had studied both and practised both indiscriminately. Moreover, unlike the Christian physician of that period, the Jew did not disdain to enter into the smallest and most unpleasant details concerning the workings of the human body; and as a natural result the Jewish portion of the medical profession was, on the whole, far the ablest and most efficient. Another point to be observed with regard to the Jewish doctors of that time is that they frequently came of medical families. In such a case the son learnt his profession from his father; where this was not possible, the Jewish student was apprenticed to some practitioner of his own race. Dr. Pansier quotes a fifteenth century contract which may serve as an example of the usual sort of agreement made between master and pupil. It is dated June 25th, 1472, and is drawn up between two Jewish surgeons, Jessé Ferrussol and Jacob Léon de Cavillon, of Avignon, and their fellow countryman, Antoine de Bale, by which the latter agrees to spend a year at their school, where he is to go through a course of medical literature, three books being specially mentioned. These are: (1) The work known by the name of

Lanfranc, (2) Maitre Guy de Chauliac, (3) the fourth part of Avicenna. For these privileges the father of the young apprentice had to pay three golden crowns. One of the most interesting points of Dr Pansier's article is his exposure of an old fallacy. It has been long believed that the Popes, during their exile at Avignon, had Jewish physicians in their service. This, as Dr. Pansier points out, was clearly impossible, since the Pope's doctor was likewise his chaplain, and nominated by a Papal Bull, which could not be accorded to any one outside the Church. The only foundation for this belief appears to rest upon the fact that Benedict XIII had as medical attendant Joshua Lurki, an Aragonese Jew; but it is apparently forgotten or not known that not only was this long after the Papacy had returned to Rome, but al o that Lurki had renounced his own faith and become a Catholic under the sonorous name of Hyeronimus de Sancta Fide.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

During the past week the doors of nearly all medical schools and faculties have been reopened, both in London and in the provinces, and work for the winter session is now in full swing. This year a prize-giving ceremony has marked the beginning of the winter session at a rather larger number of schools than usual, and a tendency is also evident to return to the custom of giving in one guise or another an introductory address. Practice, however, in this direction shows a constant tendency to vary. At some of the principal schools work has been recommenced without any ceremony whatever, but at most institutions the beginning of the winter's work has been marked by the holding of an assembly of old students, if in no other way. When addresses were delivered some reference to their contents will be found in the following paragraphs under the title of the hospital to which the school at which they were delivered is attached, while several of them appear in full in the earlier pages of this issue. Pressure on our space renders the holding over of a certain number of accounts until next week a matter of necessity.

ROYAL FREE HOSPITAL.

No school gatherings are better attended than those of the London (Royal Free Hospital) School of Medicine for Women, and the inaugural ceremony this year lacked nothing of its customary animation. It took place on Monday, and consisted, as usual, in the giving of a short account of the position of the school and of its prospects and in the delivery of a formal address, followed by a tea party and a general exploration of the school premises. Mrs. Garrett Anderson, M.D., president of the school, took the chair, and received, as usual, a very warm greeting. She was able to give a very satisfactory account of the school, and to show that everything points in the direction of the continued and increased prosperity of this institution. The number of new students, she said, was the highest on record, and all the entrants, with one exception, were aiming at the highest degree of all—that of the University of London. Possibly they would not all succeed in their ambition, but at any rate they would strive manfully, and those who failed would find themselves in the company of many other most excellent people. Another good omen was that for the second time the Fishmongers' Company had informed the school of its intention to award to one of the students a scholarship of £60 a year, tenable for three years. The formal address, which came from Mr. E. W. Roughton, one of the surgeons to the hospital, dealt with woman's sphere in medicine. It will be found in full in the early part of this issue. On the conclusion of the address a vote of thanks, proposed by Dr G. H. Savage, and seconded by Miss Aldrich Blake, M.D., M.S., Vice-Dean of the school, was passed, and the company then adjourned to the library, where tea was served.

CHARING CROSS.

The Medical School of Charing Cross Hospital made a new departure this year, the prizes being distributed by a lady, Lady Juliet Duff, wife of the chairman of the hospital. She was introduced to the assembly by the chairman of the School Committee, and justified the wisdom of the authorities in asking her to undertake the task by a very pretty speech. Before the distribution took place Mr. Wallis, the Dean of the school, gave a brief account of its progress during the past year. A money grant towards the school expenses had been obtained from the Board of Education, Mr. Stanley Boyd had taken up the chairmanship of the School Committee in place of Dr. Mott, and Dr. Eden had been elected to the post of Lecturer on Midwifery, made vacant by the resignation of Dr. Routh after eleven years' service. On the conclusion of the prize-giving the Huxley Lecture was delivered by Dr. Mott. It will be found in full at the beginning of this issue. The annual dinner took place the same evening at the Criterion Restaurant, where about a hundred past and present students assembled under the chairmanship of Mr. Peter Daniel, a former Llewellyn scholar of the school and now its Lecturer on Practical Surgery. In proposing the toast to "The Hospital and School," he mentioned that in establishing the school its founder had been partly influenced by the fact that in former days, when apprenticeship was in vogue, every student was faced by the risk of his principal dying before his articles had expired, and of his being unable to find someone else to take up these articles and thus make it possible for him to qualify without entering a fresh period of apprenticeship. Allusion was made, too, to the regretted illness of the school secretary, Mr. Pink, a universal favourite, who had been connected with the school before some of those present were born, and who had always proved a faithful servant. All hoped that his recovery would be speedy and complete. The toast of "The Visitors," proposed by Dr. Eden, was acknowledged by Professor William Osler, who said that despite the fact that the medical profession kept stamping out diseases, fresh ones made their appearance with each generation, so that, on the whole, the outlook for future members of the medical profession seemed quite fair. He regretted that an idea should have arisen among the public that there should be no intimate association between hospitals and medical schools, for the right place for senior students was not the school but the hospital. In no hospital in the country were patients better cared for, and better treated, and better looked after generally than in those which had medical students in their wards. Particularly absurd was the pretension that support should be specially withheld from hospitals having medical schools in which vivisection was carried on. Vivisection was absolutely essential to the furtherance of medical knowledge, and it was impossible to imagine any proper hospital in which the treatment used was entirely independent of discoveries due to vivisection. The toast of "The Chairman" having been proposed by Mr. Stanley Boyd and duly acknowleged, the formal proceedings ended with a vote of thanks to the honorary secretaries of the dinner, Drs. R. Cock and E. S. Calthrop.

KING'S COLLEGE HOSPITAL.

This year, as last year, the opening of term at the medical school of King's College Hospital was marked by nothing in the way of an address or other formal ceremony. The annual dinner of past and present students, however, duly took place, and once more the Waldorf Hotel in Aldwych was selected as the place of meeting. The company, which included Dr. Ferrier, Sir Watson Cheyne, Dr. Tirard, Dr. Urban Pritchard, and Dr. StClair Thomson, numbered about 106 persons, the chair being occupied by Dr. John Phillips, Obstetric Physician to the hospital, and Professor of Obstetric Medicine to King's College. The idea underlying this assembly of old King's students being that it should be a meeting of old friends rather than a

ceremonious gathering, the toast list only numbered two items, the "Health of the King," and "Success to the Medical School." The evening was distinguished from its predecessors by the opportunity being seized of presenting Dr. Urban Pritchard with a testimonial on his retirement from the staff after many years' service. During the course of the evening some excellent music was supplied by Dr. Harry Davis and by the Hospital Musical Society.

ST. GEORGE'S.

St. George's was the first of the medical schools to commence work, the inaugural proceedings taking place on Saturday, October 1st. They consisted of a prize-giving ceremony, at which Mr. Clinton Dent presided, followed by the annual meeting of the St. George's Club. The prizes were distributed by Dr. Squire Sprigge, an old student of the hospital, now Editor of the *Lancet*, who aptly completed his task by the delivery of an address on the subject of prizes; this appears in full in the early part of this issue. The annual old students' dinner followed on the same evening at Prince's Restaurant, Mr. G. R. Turner being in the chair. He took charge himself of the toast to "The Hospital and Medical School." It was acknowledged by Mr. A. William West, the Treasurer, on behalf of the hospital, and Dr. E. I. Spriggs, the Dean, on behalf of the medical school. The latter described the school as prosperous and as continuing to grow. A toast to "The Orator of the Day" was submitted by Mr. Brudenell Carter, Consulting Ophthalmic Surgeon to the hospital, and met with a suitable response from Dr. S. Squire Sprigge.

MIDDLESEX HOSPITAL.

For several years past the authorities of Middlesex Hospital have been conspicuous for their success in attracting to the ceremonies at the opening of the winter session popular personages of one kind and another. This year the company included two Field Marshals—Lord Grenfell and Viscount Kitchener—the Lord Mayor of the City of London, the Lady Mayoress, and the Sheriffs. The chair was taken by Lord Grenfell, the prizes distributed by Lord Kitchener, and the annual address delivered by Mr. Salmon Nowell, dental surgeon to the hospital.

The latter, in the course of his address, after giving an outline sketch of the history of medicine, and of the part played therein by sundry of its great men, said it would be observed that the profession of medicine was not only ancient and honourable, but throughout the ages had, broadly speaking, maintained a remarkable continuity of purpose in its aims, ambitions, methods, and work. The two former had been by studying Nature to discover the cause and origin of disease, and by putting such knowledge through the sieve of practical experience to render the tested residue available for preventive and curative treatment. Its method had been to observe intelligently and reflect on the phenomena of life in health and in disease, and to verify these by experience, experiment, and reasoned research. Its practical work or function, especially in the eyes of the public, had been, and still was, to prevent and eradicate disease, to heal the sick, and to relieve suffering. These seeds of purposeful energy had always borne good fruit. The men who each in his day, and usually in a quiet, unobtrusive way, had added to the total sum of medical knowledge, or upheld the dignity of the profession, or elevated it a notch or two up the social grade, had effected these things not merely by profound medical learning, but also by blending into their characters methods of work, habits of life, and certain high ideals which might aptly be termed "the professional attributes." To acquire and cling to these was the more desirable because professional work of any kind was prone to narrow the mind of those whom it occupied. In the case of medicine, those least exposed to the danger of narrowness of outlook were perhaps the busy, cultivated, general practitioners, who were at once the flower and the backbone of the profession. For these reasons every student should endeavour to cultivate the good habits which he already possessed, and gradually to assimilate such characteristics as might, and indeed must, from time to time favourably impress him in others. But perhaps the wisest habit of all was the habit of care in the formation of good habits, inasmuch as it was often harder to unlearn than to learn, while to uproot a bad habit was sometimes more painful and more difficult than to reduce a dislocation; moreover, it could not be done under an anaesthetic. In forming "methods of work" the student should not allow his thoughts to wander or worry over future difficulties, such as the examinations looming ahead. He should instead concentrate his attention on the day's work. If he was playing golf, then let the ball represent the day's work for him, and let him keep his eye on the ball; even then he might occasionally foozle a shot, but he would play a steadier game and would hole out on the green, or at Examination Hall, in a shorter time than otherwise and with less waste of energy. A factor in successful work was the interest taken in it, and the student who became interested in medical work was bound in natural sequence to become interested in human nature, and, consciously or unconsciously, to say with Terence, *Nihil humanum a me alienum puto*. In this spirit he would acquire the gentle art of gleaning knowledge from every one he met, whether lecturers, teachers, nurses, fellow students, or patients, until he could truly say, like Tennyson's Ulysses, "I am a part of all that I have met."

Lord Kitchener, when he had completed his task of distributing the prizes, delivered a short address, in the course of which he said he belonged to a service which was perhaps more closely connected than any other with the medical profession. It was the duty of soldiers not only to care for the health of their men in war time, but also in peace to work together with, and second the efforts of, their medical *confrères* in the treatment of disease, in the taking of precautions against epidemics, and in the prevention of disease in camps and barracks. To much of what had been accomplished in recent years towards improving the health conditions in the army he could himself bear witness. In India enteric fever was at last definitely yielding to improved sanitary methods and inoculation, and this disease, together with cholera, would, he anticipated, be before long entirely banished from barracks. A measure of the success which had attended medical work in India in the army was afforded by the fact that the ratio of "constantly sick, invalided, and deaths" to the whole strength of the army had been reduced during the last ten years by no less than 50 per cent. But efforts to reduce the dire effects of malaria had so far been baffled. The disease was endemic, and it was, unfortunately, impossible to adopt the measures suitable for dealing with it in a country where sanitation and water supply among the natives were not under the control of the authorities. Possibly it would fall to the lot of some of those present to work out some means which would prove both practical and effective in stamping out malaria without affecting the susceptibilities of the vast native population. He was sorry to think that England lagged behind other nations in the struggle for the prevention of disease, by means of improved treatment and improved sanitary methods. But this conclusion forced itself upon him when he saw what America had achieved, not only generally, but even in so apparently hopeless an area as the Isthmus of Panama.

The annual dinner, which took place the same evening at the Trocadero Restaurant, was by far the largest on record. It had as chairman Dr. Kellock, who, in proposing the toast to "The Middlesex Hospital and its Medical School," congratulated Mr. Andrew Clark on his appointment as Honorary Surgeon to the King. This was the first recognition His Majesty had made on the medical side of the Territorial Force, and it was one of a particularly welcome kind to Middlesex. The school itself was prospering as it had never prospered before, and, thanks to the large increase in the number of students, had become almost self-supporting. In the course of the

response made by him on behalf of the Weekly Board, Viscount Duncannon mentioned the notable fact that during the past year as many as 305 out of a total of 318 beds had been constantly occupied. During the course of the evening a telegram, wishing him a speedy recovery from his illness, was dispatched to Prince Francis of Teck, the chairman of the hospital, who has recently succeeded in clearing the institution of its debt of £20,000.

UNIVERSITY COLLEGE HOSPITAL.

THE medical school carried on in connexion with University College Hospital opened its winter session nominally on Monday, the library of the new school buildings being the scene of a prize-giving ceremony. Previous to the distribution Mr. Raymond Johnson, the Dean, stated that in the past year there had been 284 students on the books of the school. He expressed, too, the general regret at the retirement of Sir Thomas Barlow, senior physician to the hospital and Holme Professor of Clinical Medicine. Only his colleagues, he said, could perhaps adequately appreciate the immense value his sound judgement and unfailing courtesy had been to the school, but many of those present were aware of his brilliant powers as a teacher and had benefited from them. Following the distribution of prizes an address was delivered by the Very Rev. the Dean of Salisbury, who pointed out that while the bridge between the present and the hereafter was Thought, the subjects on which medical students had to concentrate their minds were in some degree an impediment in the way alike of independent thought and of complete self-development. For this reason it was especially necessary that they should pursue mental culture and not allow themselves to be totally immersed in the sciences which formed the basis of medical knowledge. A useful prescription for them would be a bit of Wordsworth every day. It would teach them that the heart was more than muscle, and the eyes of a girl something more than a study in optics. The arts, too, might well engage some of their attention. Those who took his advice should not be afraid of having the word "dilettante" thrown at them. The word itself would not bite, and they could reply that dullness had always detested the versatile and brilliant. Was a little knowledge less desirable than complete ignorance, or was a dunce more admirable than a dilettante? He would like to see an eight hours bill introduced in all professions, and every professional man forced to retire at a certain age, in order that he might pay some homage at least to mental culture.

The annual dinner took place the same evening at the Gaiety Restaurant. Sir George Hare Philipson was in the chair, and the guests included the Dean of Salisbury, and the Provost and several professors of University College. In the course of his remarks in proposing the toast of "The School and Hospital," Sir George Philipson, now Professor of Medicine at Durham, mentioned that he joined the hospital as far back as the year 1855. In his day the teaching staff included such great men as Sharpey and Ellis, and he gave an interesting description of their ways and drew a contrast between the life of the medical student as it was and as it now is. The toast was acknowledged by the Dean of the medical school, Mr. Raymond Johnson, while that to "The Guests," which was moved by Dr. Herbert Spencer, met with a reply from Professor Sir William Ramsay. Before the company separated the health of the chairman, whose speech had been very much appreciated, was drunk, on the motion of Sir John Tweedy.

ST. THOMAS'S HOSPITAL.

THE medical school of St. Thomas's Hospital was one of those which commenced the winter session without other ceremony than the holding of the annual students' dinner. This took place at the Hotel Cecil on Tuesday, under the chairmanship of Mr. Haslam of Birmingham, who, in proposing the toast to "The Hospital and School," said these appeared on the toast list together because in his mind, and in those probably of most of his audience, the two institutions were inseparably connected. Speaking of the practice of holding annual dinners, he said that he was himself experiencing one of its advantages, namely, the possibility it afforded to old students who lived far away of meeting numbers of old acquaintances and renewing old friendships. In responding to the toast, Mr. Wainwright, Treasurer of the hospital, compared the position of the hospital as it was in 1890, and as it is at the present day. In the interval, he said, five empty wards had been occupied, two children's wards had been added, and a debt of something like £40,000 had been cleared off. In addition, they now had a maternity ward, which had been opened that day, and in which students would have the opportunity of being thoroughly and efficiently taught the art of obstetrics. The only department which remained unchanged was that devoted to out-patient work. It remained much as it was when the hospital had been first built, while every other department had been reorganized, amplified, and improved. To make the out-patient department what it should be would be a very expensive undertaking, and nothing short of £40,000 would be of any service at all. The hospital had suffered in late years from lack of legacies; the establishment of the King's Fund had seriously affected this source of income, and would do so more in future. In former days people left money to certain hospitals in which they were more directly interested; now they were led to believe that by making a bequest to the King's Fund for distribution they were making better use of their money. But, alas! for reasons past the comprehension of any ordinary man, St. Thomas's Hospital and its special work and needs were absolutely ignored. The toast to "The Guests," proposed by Dr. T. D. Acland, was acknowledged by Mr. Butlin, President of the Royal College of Surgeons, who in the course of his reply mentioned that he was present for the first time in his life at an annual dinner other than that of his own school.

ST. MARY'S HOSPITAL.

THE proceedings inaugural to the commencement of the work for the winter session at the school of St. Mary's Hospital took place on Monday under the chairmanship of the Senior Physician, Dr. Sidney Phillips. They included a prize distribution and the presentation of the annual report by the Dean, Sir John Broadbent, who observed that for the sixth year in succession a St. Mary's student had carried off a gold medal at one of the examinations of London University. The prizes were distributed by Sir Conan Doyle, who, after giving some account of his own medical career, which included a period of work as an unqualified assistant, said that the £1,000 which went to a medical man's education were not wasted even if he never practised. The work done by a medical student tinged the whole philosophy of life, and induced a healthy scepticism or desire to reason only from proven facts. It also taught a man to keep a confidence inviolate, to act promptly on a sudden call, to keep his head at a critical moment, and to be kind yet strong. Where outside medicine could he get such training? Moreover, a medical curriculum set such a high standard of strenuous work that to one who had completed it all other work came easy. On the other hand, it involved some dangers, one of them being intellectual priggishness, such as was represented by the young medical man who had all his diseases nicely tabulated, and all his remedies nicely tabulated so as to fit those diseases. But such weaknesses were set right by the post-graduate course known as life. This would teach him that there were agencies outside things which he could see, handle, and explain, and that a strong and kindly personality were as valuable an asset as actual learning. He would learn, too, that a reasoned optimism was essential to his success. It had been known from all time that the cheery man was the healing man, but now in unconscious hypnotic suggestion came the physical explanation of that fact. A medical man who could convey to his patients the expectation of cure served those patients well.

Another advantage of medical knowledge was that those possessed of it had a private lantern which threw a light of its own on their general reading. In every transaction of the world they were likely to discover some medical fact which influenced its origin. For instance, how came about such a custom as the wearing of wigs? A skin disease on the top of his head compelled Francis I of France to cover himself with artificial hair; his courtiers followed suit, and thus arose a custom which was absurd in itself and unknown to antiquity. But apart from such facts there was a wide field for the writer who would explore the influences of medical facts on social customs and historical incidents. Julius Caesar and Mohammed were both seemingly subject to epilepsy, and such conjunction of the highest human qualities with a humiliating disease had surely both its pathological and its moral interests. Medicine would probably also throw a sidelight on the history of Napoleon—possibly, too, on the inhuman actions of the movers in the French Revolution. They were a diseased company, a pathological museum.

The annual dinner took place the same evening at Prince's Restaurant, when Mr. Ernest Lane, the chairman, found himself faced by a company of 151 persons, which included as guests Sir Arthur Conan Doyle, Surgeon-General Gubbins, Sir Alfred Keogh, and many others. In proposing the toast of the evening, Mr. Lane mentioned the great loss both the hospital and the school had experienced through the death of Mr. Henry Harben. In replying, Sir John Broadbent, the Dean, paid a tribute to the thankless and often unappreciated labours of the permanent staff; and this reference to Mr. Matthews, the honorary secretary, was very heartily endorsed by the company. He also dwelt on the unnecessary obstacles at present placed in the path of London students who desired to obtain a degree in medicine. They were seriously interfering with the prosperity of London schools, and in the interests of all concerned, including London University itself, should be removed. The formal proceedings ended with a toast to the chairman, proposed by Dr. Luff.

THE POLYCLINIC.

The Post-Graduate College and Polyclinic in Chenies Street, though its work is scarcely interrupted throughout the year, was one of those which marked the commencement of the winter session. It did so by arranging for the delivery of a special address by Dr. Robert Jones of Claybury. He chose as his subject the Teaching of Insanity to Medical Students and Practitioners in Relation to the Prevention of Mental Diseases, and as a kind of text took a passage in the latest, or sixty-fourth, annual report of the Commissioners in Lunacy. In this, after dwelling on the number of uncertified weak-minded women and girls to be found in workhouses, the Commissioners expressed the opinion that reluctance to certify such cases must arise largely from inexperience among local medical officers as to the requirements of certifiability. Dr. Robert Jones indicated that his own experience as a recognized teacher of London University in the subject of psychological medicine and as resident physician of one of the largest London asylums, supported the belief that the Commissioners were correct. In the course of his remarks he threw an interesting light on the genesis of the present legal status of lunatics and imbeciles. There were many people who still supposed that the insane population consisted solely of two classes—the ramping, raving lunatic, and the incurable drivelling idiot. In the recent past this was the universal belief. In the first class were included all cases in which brain development was arrested, with consequent arrest of the mental faculties; while under the latter were classed the cases in which the brain was born healthy but suffered later from some of the morbid processes capable of affecting it, either directly or indirectly, through the diseased states of the general system. In regard to the cause of insanity the corporeal character of the condition was generally admitted in the early history of medicine; it was looked upon as a disease primarily of the brain, and not as an immaterial disorder of the intellect. It was only with the growth of superstitious ignorance in the Middle Ages that the purely psychical origin of insanity arose. Curiously enough, the law in remote times also agreed with these two recognized divisions of insanity, for it classified all mentally-afflicted persons as of two types—that is, idiots and lunatics. The first appearance of the term "lunatic" in the Statute Book did not appear until the reign of Henry VIII, although under the Statute Book *De prerogativa regis* the King was to have rents and profits of an idiot's land to his own use during the life of the idiot, subject merely to an obligation to provide him with necessaries. In the words of the Act of Edward II, "the King shall have the custody of the lands of natural fools," and this custody was said to be permanent. In the case of the lunatic, on the other hand, the King was his trustee, holding the lands and tenements for his special benefit and that of his family. It was on account of this difference in the legal consequences of the two mental states that, on inquisition, two distinct writs were framed, one *De idiota inquirendo* for the idiot, and the other *De lunatico inquirendo* for the lunatic. Owing to the different results to the estates in the two findings juries avoided, whenever they could, a verdict of idiocy, because of this virtual confiscation to the Crown, and so the *De idiota inquirendo* fell into desuetude. This statute of *De prerogativa regis* was still an unrepealed Act, the care and custody of the insane still belonging to the Crown. Nowadays, however, the term "lunacy" had a wider connotation, as Dr. Samuel Johnson had probably foreseen would be the case when he said that madness frequently discovered itself merely by unnecessary deviation from the usual modes of the world. At the same time the Crown had also widened its prerogative by delegating the control of the insane to the Lord Chancellor, not as the head of the Court of Chancery, although many insane persons were its wards, but as the representative and delegate of the Sovereign. To-day, therefore, the jurisdiction of the Sovereign was exercised by the Lord Chancellor and also by such of the judges and lord justices as might be invested by the sign manual, by two Masters in Lunacy, and in certain clearly defined cases also by county court judges.

LITERARY NOTES.

The chief feature of interest in the August number of *L'Hygiène* is a long and extremely able article by Madame A. Paul Juillerat on the work-girls, more particularly the seamstresses, of Paris. Madame Juillerat has evidently studied her subject closely at first hand, for she writes with the sympathy and insight of one who knows the difficulties against which these girls—wage-earners from childhood—have to contend; and she paints their hard and narrow lives with the force and realism only possible in one who has actually been an eye-witness of its dreary monotony. Step by step, from the day when, as a child of 12 or 13, she takes her place in the workroom, Madame Juillerat follows the career of the "midinette," and without exaggeration or over-emphasis she shows us the dangers and hardships, both moral and physical, which beset the girl on all sides, and which are borne more often than not with infinite patience and courage. Whilst full of praise for the efforts made of late years to lighten the lot of these humble toilers, Madame Juillerat finds one great drawback to the whole system of woman labour—a drawback which appears at first sight to be inevitable, and yet which, if disregarded, will ultimately affect the community at large. Viewed in its proper light, it constitutes a grave national danger, and it is as such that Madame Juillerat denounces it in no measured terms. For it is surely a menace to the well-being of any race that its future wives and mothers should grow up totally unprepared for their primary duties in life; and Madame

Juillerat leaves no doubt that this is too frequently the case amongst the women of the working classes in Paris. She says:

> The great fault of the Parisian work-girl—[This remark she applies not only to the seamstresses, but to every type of woman worker]—is that she can do nothing at all outside her own particular occupation; and if, on the one hand, she who earns her living by her needle knows nothing of housekeeping, the factory girl, on the other hand, cannot even sew.

The French *ouvrière*, therefore, like her English sister in the same circumstances, marries in a state of utter ignorance as to the most elementary laws of domestic economy, and with the same result: a squalid, miserable home, neglected children, and a husband who is driven to drown his sorrow in alcohol. The manifold evils due to such ignorance are now being resolutely combated through the practical charity of a handful of ladies, who have realized that the only way of procuring a permanently better state of things for the future is by teaching the rising generation how to avoid the faults and mistakes of its predecessors. Through their efforts schools have been opened, where the potential "mères de famille" of the Paris slums, in the interval which elapses between their leaving school and going out to work, are being instructed in the different branches of housework—cooking, housekeeping, laundrywork, and the like, a step which should ensure an accomplished and efficient race of "ménagères" in the next generation. Madame Juillerat's interesting article is charmingly illustrated with photographs of the little scholars at their work in these schools of housewifery. Considerable space is also devoted to an interesting article by Professor Albert Calmette on the serious dangers incurred by the human race through the common brown rat, and the means which are being universally adopted all over the civilized portion of the globe to exterminate these bearers of disease. It is now a recognized fact that the brown rat not only carries the plague (a fact which, as Professor Calmette points out, has been remarked by historians from very early times), but is also capable of imparting trichinosis, tinea, and even hydrophobia. Mankind has at length realized the danger in which it stands, and a war to the knife has been declared against the whole race of rodents. Various methods of extermination have been adopted. Not only are the natural enemies of the rat—such as cats, terriers, ferrets, owls, etc., and such serpents as the boa constrictor and others who devour rats—enlisted on the side of man and encouraged in their work of destruction, but their victims are also destroyed in vast quantities by means of poisonous gases and the introduction amongst them of certain microbes. Another and very effective method is the payment of a certain sum for every rat killed in a certain district. Experience has proved that this poll-tax is almost as effectual as poison or germs in helping to rid the world of this deadly scourge. Where so much is excellent it is difficult to pick out anything for special praise, but mention must be made of M. Alexandre Derecq's "Hygiène et la beauté chez les impératrices de Byzance." These great ladies, it appears, owed the long duration of their charms as much to a strict attention to personal hygiene as to cosmetics. Another interesting article is one by Dr. Lucien Nass on "Les sports d'hier et d'aujourd'hui," in which the author traces the popularity of swimming as a means of exercise from Greek and Roman times down to the present day, and urges the advantages of a more universal proficiency in that useful accomplishment; whilst in "Hygiène et la vie" Dr. Maurice de Henry discusses the somewhat startling proposition brought forward by the late Dr. Jules Chéron, to the effect that one can get all the benefit popularly supposed to result from mountain air by the simple process of remaining quietly at home and receiving injections of a saline solution. *L'Hygiène* is, as usual, beautifully illustrated, both with photographs and reproductions of famous pictures. Not the least interesting amongst the latter is the head of Venus, from Botticelli's famous representation of the birth of the Goddess of Beauty.

The Edinburgh Pen and Pencil Club have, by permission of the owners, cut an inscription on the house in 23, Rutland Street, Edinburgh, occupied by the late Dr. John Brown. The inscription runs: "Dr. John Brown, author of 'Rab and His Friends,' lived in this house from 1850 to 1882."

SCIENCE NOTES.

In the *Archives d'électricité médicale* of June 10th, 1910, Dr. T. Nogier of Lyons describes a somewhat paradoxical series of results which he has arrived at in an attempt to determine the effect of ultra-violet radiation upon plants. On submitting certain plants to two or three short daily irradiations from a Kromayer lamp, he found in every case the action of the lamp to be baneful. It had a manifestly inhibitory effect upon the floral organs, and made the plants appear dry and withered, although other plants of the same species, kept under identical conditions, save that they were not subjected to irradiation, retained their normal vigour. The most sensitive plant among those with which he experimented was the haricot and the next the geranium. The same investigator followed this up with some experiments upon plants and algae irrigated with irradiated water. He found that water which had been slowly circulated in the refrigerator of the Kromayer lamp possessed no deleterious influence upon the development of certain grass seeds, that adult geraniums were in no way injured, and that the vitality of the species of algae (*Cladophora*, *Spirogyra*) and of infusoria (*Colpoda*, *Paramecium*, *Volvox*) living in the irradiated water was not perceptibly lessened. In this connexion an interesting note was furnished by Professor R. W. Wood, of the Johns Hopkins University, in his Traill-Taylor lecture before the Royal Photographic Society (see *Photographic Journal*, October, 1910). He found that under ultra-violet light, using special quartz lenses, and blocking out all visible light with metallic silver, white flowers appeared black on the photographic plate. The power of white flowers to absorb ultra-violet light might, he thought, play some part in the plant's economy, but he was unable to discover any difference when, during the life of a white flower, he withheld its accustomed quota of ultra-violet from the light that reached it. But, possibly, if the procedure were carried out over some generations of the plant, the deprivation would induce some vital changes.

Following upon certain investigations which went to show that *x* rays, unlike ultra-violet rays, possessed no bactericidal action, Bordier and Horand, of Lyons, have turned their attention to the action of these two agents upon protozoa, as observed with the ultra-microscope.[1] They selected for experiment the amoeba and the flagellata, the former having a certain pendulous movement which it was easy to watch, and the latter—the *Xiphacantha alata* (*acantharia*)—having two flexible flagella, which, in the author's opinion, serve not only as organs of locomotion but also as organs of prehension. Living organisms of these two classes were submitted to the action of the *x* rays, the rays numbering 9 on the Benoist scale, and in quantity being sufficient to turn the barium-platino-cyanide pastille of the Bordier chromo-radiometer to Tint No. 2. Under this irradiation the movements of the protozoa went on as before. The experiment was repeated until the pastille turned to Tint 4—a very massive dose indeed—and still the rays were absolutely without effect. In the case of the ultra-violet rays the Kromayer lamp was employed. The amount of irradiation upon the culture in two separate experiments was respectively 18 and 12 units of quantity, according to the method recently expounded by Bordier[2] for quantitatively measuring the ultra-violet rays. After each experiment all movement, both of the amoeba and the flagellata, was at an end. The results, the authors point out, are identical with those obtained with the bacteria, and they propose to pursue the study, ascending the rungs of the zoological scale until they arrive at the first living thing to be deprived of life by the *x* rays. The difference in the effect of these agents upon the infinitely little is probably due to the fact that the ultra-violet rays have a chemical action, more particularly a reducing action, which, being exercised upon the protoplasm, brings about the destruction of the irradiated organisms. The *x* rays, on the other hand, produce chiefly the effects of ionization, which, doubtless, are only influential upon higher organisms than those with which the investigators have hitherto been dealing.

[1] *Archives d'electricité médicale*, September 10th, 1910.
[2] Ibid., May 10th, 1910.

British Medical Journal.

SATURDAY, OCTOBER 8th, 1910.

WOMAN'S SPHERE IN MEDICINE.

This week has seen the commencement of another winter's work in the medical schools and the delivery of numerous introductory addresses. Several of them appear in full in the earlier pages of this issue, and extracts from others will be found in the section headed Opening of the Winter Session at the Medical Schools.

We confess to a considerable degree of sympathy with those on whom school authorities call on these occasions. It is not given to every one to treat such a subject as prizes with the same degree of felicitous originality as that with which it was handled by Dr. Squire Sprigge; and yet when introductory addresses are not merely of the hortatory order, a certain element of paradox almost inevitably attaches to them. They are addressed to young men whose knowledge of life is brief and of medicine *nil;* and these neophytes, in the very nature of things, are the persons least likely to appreciate the wisdom and experience which formal addresses commonly represent. Nor is much of what they have heard likely to remain even dormant in their brains to bear fruit at some future time, for on the day following the delivery of these addresses these young men plunge into a confusing sea of new work and new ideas.

Of the addresses delivered this year the most novel in point of subject is that in which Mr. Roughton, speaking at the London School of Medicine for Women, set himself the task of defining the sphere of women in medicine. It is one of those which appear in full in the early part of this issue. It will be found that Mr. Roughton did not include in his purview the admirable work done by women as nurses, and, not unnaturally perhaps, allowed himself to be led off into a consideration of what in essence and in etiology are the differences between men and women. With his illuminating and clear sighted treatment of this question he coupled some brief allusions to the bearing of those differences on the suitability of women for the profession of medicine. Summed up, his net conclusion would seem to be that while the average man is at present more suited for medical work than the average woman, the time will come when this will no longer be the case, except, perhaps, in regard to the more harassing forms of private practice.

For the rest, beyond pointing to obstetrics and gynaecology as subjects with which all women should be conversant, he practically contented himself with mentioning the directions in which medical women have so far found most outlet for their energies—in appointments under county councils, in resident posts in hospitals for women and children; in sanatoriums, infirmaries, and asylums; in India, and, to a more limited extent, in private practice. In speaking of what women have already done, he did not, however, mention, as might have been expected, the invaluable services many of them have rendered as co-operators in the conduct of elaborate scientific investigations. The mental attributes which have contributed to this result possibly lie also at the root of another fact which has come under our notice—namely, that when given a definite task, which, although of a routine character, requires for its satisfactory performance both intelligence and strict attention to detail, medical women commonly make most excellent workers.

In respect of qualities which make for success in practice, Mr. Roughton, it may be noted, mentioned rapidity of perception as distinctly characteristic of the feminine sex. He pointed out, for instance, that it is not uncommon for a woman to be able to take in another woman's costume so accurately as to be able to describe it in detail even after a single glance. This is perfectly true, and even more striking instances of woman's rapidity of perception might be given.

On the other hand, rapidity of perception and the faculty of intuition which either results from or is closely allied to it, must certainly be included in the class of tertiary sexual characteristics, and these Mr. Roughton prophesied would disappear as time went on. If this prove the case—and it seems exceedingly likely—the advantage in question will vanish likewise. Indeed, in the case of intuition, which is presumably the outcome of the working of the subconscious mind, we have witnessed what appeared to be its progressive diminution in specific instances. In the young women in question, as the force of their ordinary mental processes became augmented by studies of a very advanced kind, their power of instantly reaching an unreasoned but accurate conclusion seemed to lessen, or, at all events, became less evident.

Another point of interest in Mr. Roughton's address is his belief that if things were as they should be, men would in no circumstances render medical assistance to women, and his assumption that everyone will certainly take the same view. The grounds for this belief not having been put forward, we can only consider them hypothetically.

If considerations of Propriety be one of them, they are a little unconvincing in an age when practically every subject on earth is discussed in the newspapers and novels which go the round of a family, and when there is literally no subject which is not at times quite frankly and openly discussed by persons of opposite sex, who, however well they know one another, meet not on a professional but merely social footing. Grounds of propriety, moreover, seem still further undermined when it is remembered that the whole tendency of modern life is to destroy the few remaining vestiges of the fences of custom and convention which, rightly or wrongly, our fathers erected between the sexes, and steadfastly maintained on every possible occasion.

If, on the other hand, the ground of the view is that women know more of women physically and mentally than men do, the argument will to many thinkers seem scarcely more convincing. The knowledge of physical life possessed by the average man is certainly greater than that of the average woman, whatever the nature of her education. Indeed, there are but two matters with which medical women may be acquainted and with which medical men are necessarily ignorant One of them is what it feels like to become a mother, and with this subject most medical women remain as dependent on objective evidence as men.

The question of mental comprehension is more difficult. It takes a very clever woman to deceive her sister, but a very ordinary woman can easily deceive an average man. At the same time a capacity for seeing through a person instantaneously and unfailingly is not quite the same thing as comprehending him or her. Absolute comprehension of individual by individual, whatever the sex of the parties, probably never exists, but that degree of comprehension which consists in getting into touch with points of view and grasping motives and feelings with a certain amount of sympathy is often possible. Indeed, it commonly exists, even when women are concerned, in the case of those who, like most medical men, see much of the opposite sex, and in most circumstances of medical life is more useful than merely seeing through a person. It may be that as a guide to action mental skiagrams are none the worse for being a trifle blurred.

The fact that medical treatment has so far rested in the hands of men Mr. Roughton seems disposed to ascribe to custom and the persistence of tertiary sexual characteristics. This may be the case, but it does not seem to us fully to explain that preference for male medical attendants which certainly predominates among women. Part of this preference, at any rate, may be due to the fact that neither a purely male man nor a purely female woman is other than an exceptional being. The average man certainly contains in his composition something of those qualities which are commonly regarded as feminine, and these are very likely of assistance to him in dealing with women in a fashion which appeals to them. On the other hand, the converse condition in women may be a definite source of difficulty to them when dealing with their sisters. This converse condition is commonest in the higher types of women, and it is from the higher types of women that medical women are drawn.

The eventual outcome of the woman doctor movement still remains to be seen: meantime we are disposed to believe that the time at which the true sphere of women in medicine can be safely assessed has not yet arrived. But there is one thing which can already be said with assurance: they make not only very intelligent, but pleasant and admirably loyal colleagues. If the degree of *esprit de corps* habitually exhibited by medical women were universal among men, the difficulties of the medical profession in holding its own against organized bodies of the public and Government and municipal authorities would be infinitely lessened.

THE PHYSICO-CHEMICAL THEORY OF LIFE AND SPONTANEOUS GENERATION.

ALL natural sciences follow the same process of evolution. They begin by the observation and classification of natural objects and phenomena; this is the descriptive stage. They then attempt to resolve these phenomena, to determine the cause of their production, and thus they become analytical. When the mechanism of a phenomenon is understood it becomes possible, by the proper application of natural forces, to reproduce it; the science has then become synthetic. Biology has lagged behind the other sciences in its development, and has not yet advanced beyond the first two stages. The idea of biological synthesis is a bold one, and yet it is no novelty. It has cropped up in the imaginative literature of all ages, but, considered as a scientific possibility, its conception is of very recent date. Only forty years ago Traube of Breslau discovered the osmotic properties of certain chemical precipitates, and he was the first to construct an artificial cell. His work, however, was ignored. The same fate befell that of the Dutchman Harting. From that time until the beginning of the present century only a few isolated attempts were made at investigation along this line. Within the last few years, however, a number of works dealing with morphogeny have appeared, and several well-known names are now associated with the subject. Amongst these may be mentioned Quincke of Heidelberg, Benedikt of Vienna, Dubois of Lyon, Lehmann of Karlsruhe, and Leduc of Nantes.

The last named has just published the most recent book[1] on the matter, and he gives in it a summary and review of our present knowledge. Beginning with the consideration of some of the fundamental facts of physical chemistry, he proceeds to discuss the nature and properties of solutions, devoting special attention to the phenomena of diffusion and osmosis. Numerous instances are given of the morphogenetic power of the simple process of diffusion. By spreading a layer of salt solution on a glass plate, and placing in it several drops of a more concentrated solution coloured with ink, diffusion pictures of remarkable complexity may be obtained, depending for their structure on the arrangement of the drops. In such a way a highly complex cellular structure may be produced, consisting of a large number of hexagonal cells, each with a nucleus and cell-contents. If gelatine be added to the layer of salt solution, a permanent record can be obtained. Allied to this is the phenomenon of periodic precipitation. When the drops which are added to the layer of salt solution contain a substance which forms a precipitate with the salt, it is found that the precipitate is thrown down in concentric rings around the drop. In this way the addition of a number of drops regularly arranged gives rise to most elaborate precipitation figures. The process of karyokinesis can be simulated by a simple diffusion experiment. A layer of saline solution is spread on a plate, and this represents the cytoplasm. The nucleus is formed by a drop of the same solution, coloured with ink. The presence of the ink lowers the molecular concentration and the osmotic pressure of the drop. On each side of the nucleus is placed a drop of a more concentrated salt solution, slightly tinted. These form centres of attraction, and represent the centrosomes of an actual cell. The colouring matter in the nucleus thereupon begins to form a long, closely-rolled, spiral ribbon; this breaks up into long strands, which arrange themselves in the shape of the familiar mitotic spindle. The strands converge towards the centrosomes, and gradually the spindle divides into two along its equator, until finally the nucleus is completely divided, and in its place are two new nuclei represented by two darkly-coloured drops in the positions originally occupied by the centrosomes.

It is to osmosis, however, that Leduc attaches most importance as a morphogenetic force. It is, as he argues, the very motive power of all forms of life. Upon it essentially depend the vital processes of assimilation and nutrition. An animal or plant can live and grow only by virtue of osmosis. Not only is osmosis responsible for the maintenance and continuance of life, however, but it is also capable of creating living matter from its elementary con-

[1] *Théorie physico-chemique de la vie et générations spontanées.* By Stéphane Leduc. Paris: A. Poinat. 1910.

stituents; it is, in fact, practically equivalent to the vital force which we term life. Leduc does not commit himself to such a definite statement, but there can be little doubt that that is his tacit opinion, and his experiments and deductions give sufficient ground for such a belief. His argument is somewhat as follows:

The whole theory of evolution would be a dead-letter were the possibility of spontaneous generation, in some form or other, denied. Evolution admits of no break in continuity, and it is absolutely necessary to connect the simplest forms of living matter with inert matter. Lamarck recognized this and was the first to give it definite expression. Lamarck, Darwin, Haeckel, and many others have investigated the laws of evolution, and have shown, amongst other things, that natural selection acts upon variations, but they have not sought to probe the question of how those variations have arisen, how they have been produced. This is evidently a matter the explanation of which must be sought for amongst the most elementary of vital processes. In osmosis we have a fundamental physico-chemical force capable of elaborating not only simple shapes, but also shapes resembling highly organized animals and plants. The morphogenetic power of osmosis is best illustrated by some simple examples. When a substance soluble in a concentrated solution is placed in a liquid with which it forms a colloidal precipitate, it becomes surrounded by a thin layer of this precipitate, which forms an osmotic membrane. Water penetrates this membrane from without, and, being retained, causes it to distend. In this way an artificial cell is produced, the original substance being, as it were, the nucleus and the osmotic membrane the cell wall. Such a cell can be produced by placing a fragment of calcium chloride in a concentrated solution of potassium carbonate. The osmotic membrane in this case is composed of calcium carbonate. The cell may grow to a large size, but more frequently it gives rise to another cell and yet another, until a perfect tissue is formed. A great variety of other substances and solutions may be used in the same way, each giving rise to a characteristic formation. Thus, by dropping a pellet composed of copper sulphate and sugar into water containing sodium chloride, potassium ferrocyanide, and gelatine at 35° C., a highly complex, plant-like form will be evolved, consisting of roots, branches, and leaves. Corals, seaweeds, mushrooms, shells, etc., can all be formed by a similar procedure. The resemblance to living beings does not end at outward appearance, for the internal contents of these structures consist of a viscid fluid displaying movements like those of protoplasm. Further, when the osmotic membrane is ruptured this fluid escaping forms a coagulum which closes the wound just like a blood clot. There are other analogies between these osmotic productions and living beings, and the only essential difference would appear to be that they do not consist of protoplasm, and are therefore not living matter as we understand it.

Leduc's experiments are elementary and even crude, but it cannot be gainsaid that were the proper substances and solutions to be discovered, osmotic structures consisting of actual living protoplasm might be created. Such substances must have been present at the first appearance of life on earth. When the earth was cooling it was the seat of constant electrical discharges, most powerful synthetic agents, which caused the atmospheric nitrogen to enter into combination with other elements to form nitrogenous bodies, and eventually with carbonic acid to form albuminoid material. The elaboration of this into living matter thereupon took place through the agency of osmosis. Apart from this speculation Leduc advances many ideas that might be followed up with interest and advantage, and if he has not succeeded in creating life he has at least indicated a possible scientific explanation of its origin.

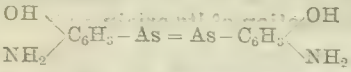
THE ASYLUM WORK OF THE LONDON COUNTY COUNCIL.

The twenty-first annual report of the Asylums Committee of the London County Council, which has just made its appearance, brings the history of the ten asylums under the jurisdiction of the Council up to the end of March this year. The appendices number eight, and include reports from each of the medical superintendents, and from the Director of the Pathological Laboratory, Dr. Mott. One of them is made up of about one hundred pages of statistical tables, which are drawn up in the form prescribed by the Medico-Psychological Association, and show in the fullest detail the nature of the cases with which the medical officers of the Board have had to deal. They are preceded by a useful memorandum in which the clerk of the committee, Mr. H. F. Keene, analyses the statistical tables in their turn, and brings out the salient features of the figures for 1909–10 as compared with corresponding data in earlier years. The diminution in the progressive rate of the call on the accommodation provided by the Council, which has been noted during the past few years, seems to be continuing, the average annual increase in the accommodation in the past twenty years being 490, while in the present year the increase has only been 198. The proportion of male to female patients is greater than it was twenty years ago, thanks apparently to the fact that the death-rate, which has decreased for both sexes, has decreased considerably more among the males than the females. The female population, however, still considerably outnumbers the male population, the percentage of males being 43 and of females 57. The plans for the two additional villas at the epileptic colony have been approved, and the work is expected to be carried out during the present year. Regret is expressed that the committee has not yet been able to secure a suitable site for the proposed mental hospital, towards which Dr. Henry Maudsley promised to contribute a sum of £30,000. It is stated that many sites have been considered, and that one site which the committee believed it had secured was withdrawn by the vendors at the last moment, and after the Council had voted the necessary purchase money. Considerable space is devoted to dealing with an allegation which was made against the committee by one of the London boards of guardians last year It was to the effect that the fashion in which the committee operated its system of admitting private patients was detrimental to the interests of ratepayers. It is shown that, so far from this being the case, the committee's practice is a source of relief to the rates. It is also indicated that the probable effect of the introduction of the Asylum Officers' Superannuation Act last year will be a financial saving, inasmuch as the scale which it lays down is less liberal than that hitherto in vogue in the asylums of the Council.

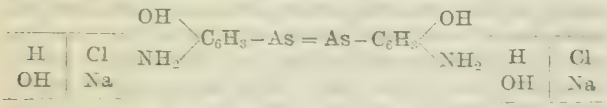
EHRLICH-HATA'S REMEDY.

There seems to be an impression in this country that the remedy known as "606" is a chemical mystery. This idea probably owes its origin to the fact that

Ehrlich has refused to allow it to be offered for sale until its therapeutic value has been thoroughly studied by competent authorities in large clinics, where the number of syphilitic patients renders investigation easy. In order to dispel the error, we append the chemical formula of the substance. Dioxy-diamido-arseno-benzol has the following chemical constitution:



The chloride of this substance is put up in sealed tubes, and before injection the sodium salt is prepared by the addition of sodium hydrate before solution, so that the material injected has the following formula:



Wechselmann[1] has now treated over 900 cases with this preparation. He has a few important observations to record. In the first place, the death of two infants who received 0 03 gram for syphilitic pemphigus having been attributed to a sudden setting free of the products of the spirochaetes, caused him to diminish the dose for infants affected with hereditary syphilis. Giving 0.015 to 0 02 gram and repeating the dose after from eight to twelve days, he succeeded in removing all the symptoms without producing toxic signs. Since the Wassermann reaction in one of these cases persisted, he gave a third injection, which converted this into a negative reaction. Next he reports that, although a certain number of patients improved with one injection of 0.3 or even 0.25 gram, some of the signs did not clear up. He therefore repeated the dose, giving 0 4 or 0.5 gram this time, with satisfactory results. He gives some details of these cases. In critically surveying his results, he comes to the conclusion that the number of patients who have proved resistant to the treatment is very small, and that he has only been compelled to give a second injection in a very few cases. Recurrence of symptoms after injection is much less common than after treatment with mercury. His cases show that there is but little danger of hypersensibility to the drug or of the spirochaetes becoming refractory to it, like they do to atoxyl and other drugs. It therefore appears that the best dose for males is 0.5 to 0 6 gram and for females 0.45 gram, and that when required this dose can be repeated without danger and with advantage. He considers that the second dose should be given not less than three or four weeks after the first. Emil v. Grósz[2] points out that Ehrlich has warned the clinician not to give "606" unless the eye has been found to be absolutely intact. While he agrees that the drug is contraindicated in cases of simple atrophy of the optic nerve, he has come to the conclusion that it is eminently suited for cases of syphilitic affections of the eye. He has used it in 14 cases of ophthalmic conditions, including a conjunctival chancre, syphilitic iritis, syphilitic keratitis, syphilitic scleritis, syphilitic chorio-retinitis, and parenchymatous keratitis arising in congenital syphilis. The result was excellent in all these cases. Kromayer,[3] who has employed it in 250 cases, advises a dose of not exceeding 0 5 gram and not more than 0 9 gram total quantity to any one patient. He gives the larger dose at the first injection, and follows this up with doses of 0.1 or 0 2 gram if necessary. He has not met with any signs of a toxic effect of the remedy by his method of fractionated doses.

[1] *Deut. med. Woch.*, September 15th, 1910.
[2] Ibid., September 15th, 1910.
[3] *Berl. klin. Woch.*, September 26th,

WELSH MEDICAL DINNER.

THE annual Welsh medical dinner was held on September 30th in London, under the presidency of Mr. Robert Jones, of Liverpool. Among those present were Sir William Allchin, Mr. Butlin (President of the Royal College of Surgeons of England), Dr. Lloyd Owen, Birmingham; Mr. Lynn Thomas, Cardiff; Dr. Owen Pritchard, Gloucester Square; Fleet Surgeon Lloyd Thomas; Dr. Richard Williams, Bangor; Dr. Williams, Llanberis; Dr. J. Williamson Pugh, Brighton; Dr. J. T. James, Harley Street; Dr. S. Cromwell Jones, Merthyr; Dr. D. J. Thomas, Acton; and Drs. D. L. Thomas, Stepney, and J. Howell Evans, Berkeley Square, the honorary secretaries. After the loyal toasts the President proposed that of "Meddygion Cymreig a Meddygion Cymru" (Welsh doctors and doctors in Wales). There was always, he observed, about the Welsh medical dinner an atmosphere of irresponsible joviality which was the outcome of close kinship. It was only the few unfortunates who were expected to say a few words who felt the burden of life heavy on these occasions. Referring to his eminent predecessors in the chair, the President mentioned Sir John Williams, who, after an illustrious professional career, was devoting himself with renewed youth to the formation of a great national library; Sir Richard Douglas-Powell, one of the most distinguished physicians of the day; Mr. Edmund Owen, the renowned surgeon; Dr. Frederick Roberts, the genial author of a monumental work on medicine; Sir Isambard Owen, whose work and patriotism were national assets; and Dr. Lloyd Owen, who spread the gospel of surgery in far-off Jerusalem. He was glad to announce that they had been able to found the Welsh Medical Club, which would help to cement the Welsh medical fraternity in the bonds of brotherhood. The toast was cordially honoured, and was responded to on behalf of the profession by Fleet Surgeon Lloyd Thomas. Dr. Horron Thomas, of Leicester, proposed the toast of "The Visitors," to which Sir William Allchin and Mr. Butlin responded, and the health of the President was musically honoured on the proposal of Mr. Lynn Thomas.

THE HIGHER CLEANLINESS.

IT is a mere truism to state that the domestic and the surgical conceptions of cleanliness are leagues asunder. Yet, little by little, the higher ideal which we owe to the researches of Pasteur and Lister may confidently be expected to permeate society, reacting in innumerable ways upon the habits of gentle and simple, until a time may come when our descendants may look back upon us with something of the incredulity, not to say horror, provoked in us by the records of unwashed mediaevalism. To the man of that halcyon age the vision of a twentieth century youngster picking an apple from the ground and eating it, skin and all, after a preliminary polish with the palm of a grubby hand, will appear typical of our primitive disregard of matters hygienic. In those days all barbers will sterilize their implements as a matter of course. The humble necessary loaf, exempt from the contamination of promiscuous handling, will no longer be carried in dirty baskets, taking its chance of a roll in the mud or of contact with an errand boy's jacket of uncertain age but undeniable griminess. Nor will it, in the absence of the housewife or servant, be deposited in its unprotected state upon dusty window sill or filthy doormat. Freshly cooled from the cleansing oven, it will be enclosed in a sealed paper bag, and lovers of crust will partake thereof without dread of enteric or diphtheria. To eat strawberries bought in the public mart without precautions against infection will be regarded as the act of a lunatic.

Incredible, without doubt, wil[illegible] than Christian probably of Dr. W. H. Symons in a [illegible]utions for disease were *Medical Officer* to the effect t[illegible]sts in India. Hospitals by the Bath Tramway Comp[illegible]educed the death-rate, labels to parcels, are in the ha[illegible]e duration of human gum by spitting upon it. After[illegible]he healing art would to ask the men to lick the labels [illegible]would be no trained that the company will act upon [illegible]t from its special Symons and provide proper damper[illegible]iding in it the too, to be said for his further sugge[illegible]ical carrying of checking the dangerous practice o[illegible] came to stamps, the gum used might with adva[illegible] for a with some pungent substance, such as ca[illegible] they or aloes. The Postmaster-General has for [illegible]rnt. provided stamp dampers in all the principal [illegible]i- offices. But it is one thing to take a horse to the water and another to make him drink.

MEDICAL TERMS IN THE "NEW ENGLISH DICTIONARY."

THIS quarterly part[1] of the great dictionary is edited by Sir James Murray himself, and covers, roughly speaking, the *ta's;* it is also the first portion of the ninth volume of the whole work. Here together, within the same boards, we find words old and new of the English language, the old Greek word *taxis* rubbing shoulders with *taxi-cab*, babe of yesterday, the latter showing its neonatal character by holding on to its hyphened state. But it is with medical terms alone that we are here concerned. To begin with *taxis*, it is perhaps worth while to emphasize its definition—"a manipulative operation employed for replacing parts which have quitted their natural situation, for replacing hernia, etc."—for there is reason to believe that the manipulation is not always free from force, although force is not in any way indicated either by the definition or by the etymology (Gr. τάξις, arrangement). *Taxis* should be no more than a methodical pressure by means of the hand. *Tay or tey* is a curious obsolete medical word, meaning "a web or cataract in the eye," or "the outer membrane of the brain" (cf. Fr. *teie dure*, dura mater), and it comes from the Latin *theca* and the Greek θήκη, a sheath or covering. Lowe, in his *Chirurgerie* (1597), has the interesting phrase, "Some cataract or taye which covereth the prunall called the windowe of the eye." In turning over the pages of the *Dictionary* one is struck by the labyrinth of words with different meanings and etymological relationships which surround the term *tartar:* there is *Tartar*, the inhabitant of Tartary, with all its curious shades of meaning—vagabond, military valet, savage, and a kind of cloth; there is also *tartar*, the infernal regions, from Tartarus, with its little family of words, *tartarean*, *tartarize*, and *tartarology;* there is the medical or chemical *tartar*, perhaps of Arabic origin, so common in such "phrasal combinations" as *cream of tartar*, *salt of tartar*, *spirit of tartar;* and lastly, there is Daudet's bombastic character-creation *Tartarin of Tarascon*, with all his present-day boastful and loquacious progeny and successors. The reader may easily and entertainingly spend half an hour in a ramble among these *tartarean* words. *Tarsus* is given as an incompletely naturalized word; but many of its derivatives, such as *tarsal*, *tarsectomy*, *tarso-metatarsal*, and the like, have been admitted to full membership in the language, so to say; the Greek ταρσός means the flat of the foot between the toes and the heel, and also the rim of the eyelid, explaining the double signification of the adjective *tarsal*. Another interesting term is *tarantism*, concerning several things to say. derived from *Taranto* , but is popularly asso- rantula spider, which, in ted with the town. It is tion of the safeguarding of alady, characterized by an ce, which prevailed as an the surgeon need not lo tely the scene of the out- menter for new methods tal malady, cholera—" and those which yield goo y from the fifteenth to the perfect method has be opularly attributed to the bite wound infection from antula." The Editor adds the for in many cases ng note that "the dancing was accident, or wit eld to be a symptom or conse- skin, has t the malady, sometimes practised as a and a sovereign cure for it," leaving us to conclude that rational therapeutics are hardly to be found in this direction. But "music hath charms," and Cowley, in his poem *Davideis*, writes: "And true it was, soft Musick did appease Th' obscure fantastick Rage of Saul's Disease," and places in a footnote this further: "If it were not for this Example of David, we should hardly be convinced of this Physick, unless it be in the particular cure of the tarantism, the experiments of which are too notorious to be deny'd or eluded, and afford a probable argument that other diseases might naturally be expelled so too, but that we have either lost, or not found out yet that art." In this connexion, although it has no immediate bearing upon the *New English Dictionary*, the curious reader may turn to Professor La Torre's book, published this year, entitled *La Musica al Tribunale d'Igea*, for much that is concerned with the curative effects of music. Among the many other medical terms dealt with by Sir James Murray in this instalment of his great undertaking may be named (there is no space for more than a naming) *tabacosis*, *tabefaction*, *tabefy*, *tabella*, *tabes*, *tabescent*, *tabid*, *tablet* (in its pharmaceutic meaning at any rate), *tabloid* (a word with as strange and eventful a history as the far-famed and comfortable word Mesopotamia), *tacamahac* (an aromatic resin), *tache*, *tachycardia*, *tachythanatous* (killing quickly), *take* (in its medical meanings), *Taliacotian operation* (the plastic procedure devised by Tagliacozzi, the Bolognese surgeon), *talipes* (literally, ankle-foot), *tamarind* and *tamarisk*, *tampon* (a doublet of tampion), *tangle-tent*, *tannin* and the *tanno's*, *tapetum*, *tapotement*, *taraxacum* (with its interesting etymology), and *tar-water* ("formerly in repute as a medicine").

[1] *A New English Dictionary on Historical Principles.* Edited by Sir James A. H. Murray. T—Tealt. (Vol. ix.) Oxford: At the Clarendon Press, etc. Double section, price 5s. October 1st, 1910.

A NEW TUBERCULIN.

IN the course of experiments undertaken for another purpose, F. J. Rosenbach found that trichophytes (*Trichophyton holosericum album*) grew freely on cultures of tubercle bacillus, and after a time, during which they not only formed a mycelium at the point of oculation but also permeated the whole culture, the bacilli showed certain marked changes. They take on a darker staining than usual and reveal other signs of undergoing involution.[1] Rosenbach believes that the culture of the tubercle bacillus is altered owing to the trichophytes destroying the toxic labile portion of the tubercle product, while the immunizing stable portion, which forms antitoxin, is unaltered. It may here be stated parenthetically that he does not adduce any evidence of the existence of these two fractions, nor indeed that any antitoxin formation can take place at all. After reciting the manner of preparation of the new tuberculin from this mixed culture, he proceeds to compare its action with that of other tuberculins. Normal guinea-pigs tolerated the new tuberculin in "very large" doses. The only quantita-

[1] *Deut. med. Woch.*, August 18th, 1910.

l appear the comp
tive datum given is the recent number o aint
does not kill. Guinea at the men en the
with tubercle bacilli (by, before a ployed
culin," but this is probt of moist ttaching
fourteen days later to all, it is l aning the
the reaction disappear e hop hardly fair
reappear when the in e a , therefore,
On *post-mortem* examinat T vice of Dr.
from twenty-six to fifty weeks here is much,
tuberculous lesions of cons that, by way
tuberculous human beings tole king postage
large doses without disturbance e be mixed
the tuberculin to tuberculous pe e pepper
tion subcutaneously at some distance ears
of disease, and also locally into the lesion. quence of
that his observations with the latter method require
further time before deductions can be drawn. He
claims that his tuberculin exercises an elective action
when applied subcutaneously for phthisis and surgical
tuberculosis. First a leucocytic inflammation takes
place locally with the formation of an exudation, then
absorption sets in and cure results, provided that
caseous or granulating degeneration is not present.
The same process, only more intense, was seen in
lupus and surgical tuberculosis when the tuberculin
was injected locally. He gives details of cases, from
which it appears that the curative process takes place
slowly after the injection of from 0.2 to 0.9 c.cm. of the
tuberculin. He claims that the results obtained are
very remarkable, but neither in the 3 cases quoted
in which the tuberculin was applied locally nor in the
12 cases in which it was injected subcutaneously do
the records reveal the "very remarkable" curative
process. He concludes by stating that where no
caseation, tuberculous granulations, or suppurative
processes exist, a number of injections is capable of
restoring tuberculous joints, tendons, etc., to a normal
condition. Early lupus can also be cured almost com-
pletely, and the remains which resist cicatrization can
be removed surgically. Caseating foci discharge their
pus, and after casting off the unabsorbable products
heal up by contraction.

CONGRESS OF OBSTETRICS AND GYNAECOLOGY.

THE fifth International Congress was held at St. Petersburg from September 22nd to the 28th. The Congress was well attended by members and delegates from many nations; some exception was shown by the few from France and Austria, in which countries meetings of a similar kind detained those who otherwise might have been present. The order of the business was admirably arranged, with a completeness and precision which left little to be desired, either in the scientific and technical work of the Congress or in the fullness of the social functions which supplemented the visit of those participating in the occasion. The following British delegates were present: Dr. Amand Routh, representing the Royal College of Physicians, the Royal College of Surgeons of England, and the Obstetrical Section of the Royal Society of Medicine; Dr. Jervoise Aarons (London) and Dr. Thomas Wilson (Birmingham), representing the Royal Society of Medicine; Sir Alexander Simpson, representing the University of Edinburgh; Professor Edward Malins, representing the University of Birmingham; and Dr. McElligott (Wigan), representing the Royal College of Surgeons of Ireland. Besides the literary and scientific duties of the Congress, full opportunities were given for visiting the various hospitals and clinics, which are numerous, well equipped, and ably conducted. The administration maintains 15 refuges (homes or hospitals) for which Sir James Murray has 347 beds, in which during the Its etymology is involved; it is 19,347 patients admitted and (Tarentum), the Italian towne of these institutions private ciated with *tarantola*, the ta or payment of arranged amounts. its turn, may also be connec ives includes the whole attendance defined as "a hysterical mil days, or smaller sums are charged extreme impulse to dan umstances of the patient. Thus it epidemic in Apulia"—la early 42 per cent. of all the confine- break of the more f sburg take place in the municipal adjacent parts of Ital e advantage of this cannot be over- seventeenth century, pr all means are given for the safety of or sting of the tar, h e best medical skill, careful nursing somewhat disturb Dr tic arrangements, all combined with atten- sometimes has, so convenience and comfort of the recipients. place demands special admiration—the Institute of Gynaecology and Obstetrics. It is a large and elaborate building, founded in 1898 and removed to the present site in 1907 under the auspices and patronage of the highest in the land. It consists of 130 rooms, of which 66 are given to patients, the others being large operating rooms, rooms for various kinds of treatment, officers, and staff. In some of these it is possible to disinfect with a current of steam under high pressure before the place is used. The opportunities for physical treatment are very perfect, such as all kinds of electricity, light of sundry kinds, baths of many diverse methods, and massage arrangements—indeed, every appliance and apparatus calculated to combat disease and facilitate recovery. But beyond the many and interesting opportunities of witnessing the most advanced methods of treatment the members of the Congress were received with the utmost courtesy and consideration by their medical brethren and the Russian authorities. Public places of great interest were made easily accessible; Royal palaces were thrown open to their inspection; museums and galleries were ready for visiting, without restriction. A spectacle gala at the opera-house, opportunities of hearing the most delightful music in the best churches, all tended to supplement the pursuit of knowledge combined with the finest aesthetic tastes.

HOSPITALS AND THE HEALING ART.

A NEW cottage hospital was opened at Bangor, co. Down, on October 1st, Lady Clanmorris, President of the Hospital Committee and the giver of the site and the grounds, being in the chair. The building is in the early Georgian style with red brick walls and sandstone trimmings. In the planning of the various wards especial care has been taken to ensure ample light and air. Access to the hospital, which has a frontage of 130 ft., is gained through a spacious entrance hall situated in the centre of the block, from which corridors extend right and left to the medical and surgical wards, eight in all. An operating-room, with dressing-rooms attached, is centrally placed and lighted by large plate-glass windows. Behind the main block are arranged the kitchen, offices, and laundry; the matron's room, adjoining central fire-proof staircase and front entrance. Ample accommodation for the nursing staff is provided on the first floor, with dining-room on ground floor. Lady Clanmorris said it was now many years since the first cottage hospital in Ireland was started there by her mother, who had sympathetic interest in all that concerned the well-being of Bangor. Sir John Byers, after congratulating the people of Bangor on their new hospital and on their progressive spirit, went on to speak of the necessity and usefulness of hospitals. He said the earliest Christian examples of hospitals were those of the Knights Templars and Knights of St. John in Jerusalem and other places in Palestine at the time of the Crusades

while of those hospitals other than Christian probably about the first of such institutions for disease were those founded by Buddhist priests in India. Hospitals had, by saving life, not only reduced the death-rate, but they had also added to the duration of human existence; without hospitals the healing art would come to a standstill, and there would be no trained medical men in the future. But apart from its special function, a hospital taught people residing in it the value of discipline, it showed the practical carrying out of the gospel of cleanliness, and so it came to have an indirect effect in making those who for a time were within its walls put in force when they went home some of the lessons they had learnt. Finally, an institution like theirs increased the experience and improved the skill of the medical men connected with it—factors which were of advantage to the whole community. Sir John reminded his hearers that Bangor in ages past was a great seat of learning, to which people came from all parts to be taught—it was believed that Alfred, King of Northumbria, had been educated there—and from which Irish missionaries carried knowledge all over the world. The remains of the primitive glory of Bangor—as a great place of education founded in the sixth century by Comgall, who was born at Magheramorne—were now slight, but fortunately one monument had survived the injury of time in the form of a manuscript Antiphonary, or book of anthems, compiled expressly for the use of that community, and written about twelve centuries ago. It was believed by some that this famous work was taken to Bobio, in the Appenines, by Columbanus, an Irishman of distinction, who received his education under Comgall, and who afterwards founded a monastery at Bobio, or it may have been that the book was taken out there by some of his followers or disciples. In the seventeenth century it was removed to the well-known Ambrosian Library in Milan, where it now remained. It contained hymns, prayers, anthems, etc. In early ages, in such seats of learning as existed at Armagh, Bangor, and Downpatrick, some of the teachers had also the only knowledge of medical science which existed in these early times, and Sir John Byers stated that some years ago, while making a research into the existence in former years of leper hospitals in Ireland, he found that there had been such institutions in Armagh, Carrickfergus, Kilclief near Downpatrick, and many other places, and his venerated friend, Bishop Reeves—the most accurate of Irish ecclesiastical antiquarians—had told him that he had evidence of there having been a leper hospital long ago at Bangor. Columbanus and others had gone out from Bangor as missionaries in early days, and in their own day they had the Dowager Marchioness of Dufferin, who had also gone from Bangor to do so much in establishing hospitals in India. In conclusion, while they had not in that town such a great educational centre in their midst as formerly, he congratulated them on the fact that they had now in Bangor a good technical institute and a most efficient modern cottage hospital.

IODINE DISINFECTION OF THE SKIN.

One of the most serious problems in aseptic surgery is that of removing all sources of wound infection from the hands of the operator and from the skin of the patient. There is strong reason to believe that perfect disinfection of the hands is a practical impossibility. But the surgeon does not aim at theoretical results obtained in the bacteriological laboratory; he merely insists on primary intention healing of wounds in 100 per cent. of his cases. Many surgeons no doubt obtain in clean operations such a result in a variety of ways; but in those cases in which this result is not obtainable, all that is required is that the operator should wear sterile gloves. Since, therefore, the question of the safeguarding of the patient from infection from the hands of the operator is practically solved, the surgeon need not look anxiously to the experimenter for new methods, but should be content to use those which yield good results until a theoretically perfect method has been worked out. The danger of wound infection from the skin is not settled so easily, for in many cases the patient, after a machinery accident, or with an infective process affecting the skin, has to subject himself to a surgical procedure, and a satisfactory method of disinfecting his skin then becomes imperative. The perchloride of mercury with or without alcohol, ether and alcohol, and various other processes, fail to ensure healing by first intention in soiled areas of skin. For such a condition some special method is required, and it is interesting to note that no less an authority than Professor F. König of Altona has given the method of disinfection by iodine evolved by Grossrich a trial with excellent results. Dr. W. Müller reports this experience.[1] The method has been applied not only in cases of infected skin, but in all kinds of cases, since disinfection by the older methods takes a long time, is disagreeable or even painful to the patient, and has other disadvantages. Grossrich's method is as follows: On the day before the operation, provided there is no urgency, the patient is bathed and shaved. As soon as the patient is brought into the operating theatre on the following day, the area of skin involved is energetically painted with a 10 per cent. tincture of iodine. About fifteen minutes later, when the patient is asleep, a second painting is performed. Five minutes later the operation begins. After the skin has been sutured, the incision is again painted before the dressings are applied. When there is urgency the skin is shaved dry. This is important, as the action of the iodine is impaired if the skin is moist. In certain cases it may be wise to paint before shaving, so that no infected hairs may fall on a contused or open wound. If great urgency exists, the time between the painting and the commencement of the operation may be shortened. By using iodine disinfection, linear scars, we are told, can be obtained even in operations which affect areas of skin badly soiled by dirt. Müller claims that the iodine method can be carried out without difficulty in any place, in a few seconds, that it becomes active in a few minutes, that it can be applied successfully in all kinds of wounds, that it is absolutely certain—we should feel more confidence in the method if he had not claimed infallibility—and that it is so simple that an untrained attendant can carry it out. Being an army medical officer, he pleads for its application on the field of battle. Whether this account be exaggerated or not, this method seems to deserve an extensive trial in infected accident and other cases in which the present day procedures are admittedly insufficient.

YELLOW FEVER IN WEST AFRICA.

On October 3rd Sir Rubert Boyce, who recently returned from West Africa, gave an address to members of the African Trades Section of the Liverpool Chamber of Commerce on yellow fever in West Africa. He said they would soon be in possession of facts that would throw new light on the diseases of the West African Coast, and as the result they would probably before long be taking radical steps to suppress one of the chief causes of mortality on

[1] *Deut. med. Woch.*, August 25th, 1910.

that coast. He had come to the conclusion that yellow fever was endemic in West Africa, and that for years it had been mistaken for malaria. Many men must have died on the coast from yellow fever, whose deaths had been attributed to malaria. Yellow fever had never been absent from Sierra Leone since 1806, and it was described by natives as "the disease of the newcomers." He went on to say that the mortality returns in Sierra Leone had greatly improved. One cause of this was that now people used mosquito nets and exercised greater care in living generally. *Stegomyia canopius* was the cause of all the trouble. Although it had been said that this mosquito was most difficult to tackle, as a matter of fact it was the easiest to get rid of. If they kept on attacking it, not only would they never hear anything more of yellow fever, but the death-rate on the coast would go down with a run, and many other diseases would disappear also. It was not expensive drainage that was required. Getting rid of the disease would be comparatively easy if they all co-operated, and did not leave the matter entirely to be dealt with by the Government.

A LOURDES "CURE."

IN the *Tablet* of October 1st there is a letter signed Francis Izard, O.S.B., of St. Thomas's Abbey, Erdington, Birmingham, which we publish in full as it points a moral which has often been enforced in this JOURNAL. The writer says: "Some months ago, in response to a letter in the *Tablet* for funds to enable a necessitous patient to go to Lourdes, I received generous alms from several people. Accompanied by a nurse, the patient was at Lourdes for ten days at the beginning of August. She now asks me to thank heartily all those who so kindly contributed towards the expenses. She was suffering from phthisis of a rather chronic type, had also tuberculous caries of the bones of the left foot, and was extremely deaf. The following describes her condition on her return: According to the report of the radiographers, Dr. Hall-Edwards and Dr. Emrys-Jones of Birmingham, there was no improvement in either the condition of the lungs or foot, as evidenced by *x*-ray examination. A letter, however, received from the patient during the past week says: 'I feel very much better and stronger of myself; I never felt better, I think. The cough is very much better, indeed; the breathing is so much better; it never troubles me in the least; I am quite pleased about that. Before I went to Lourdes if I went upstairs I could not get my breath; if I walked about outside I could hardly speak to any one, I was so short of breath; now it has gone. The foot discharges yet, only I have not much pain of it. I have been in pain more or less for three years. I was twelve months and never put it down; then I got crutches for a short time only. I can walk very well indeed now, and much better; only if I walk too much it makes it a little angry and swollen at the ankle.' In another letter she says: 'All people here are quite pleased to see me much better and walking about.' The deafness, she says, is not improved. Contributors, I thought, would be glad to learn that there has been some practical result for their kindness." The case may be taken as a type of the cases which are accepted by devout believers as miraculous cures, wrought at Lourdes and elsewhere. Of objective amelioration there was none; the disease remained just as it was before the visit to the shrine. But there was considerable subjective improvement, though not more than is often observed, even in cases of cancer, when a new treatment which excites fresh hope in the patient's breast is tried.

FOR the convenience of members who have occasion to telegraph to the Medical Secretary, it may be stated that a telegraphic address, "Medisecra, London," has been registered for the purpose.

THE Harveian Oration before the Royal College of Physicians of London will be delivered by Dr. H. B. Donkin on Tuesday, October 18th, at 4 p.m.

A MONUMENT to Abbot Mendel, whose name is much in the mouths of students of heredity nowadays, has recently been unveiled at Brünn, where he died in 1884.

THE first woman who has qualified as a *Privatdocent* in Hungary is Dr. Irene Markbreiter, of the University of Kolozsvar (Klausenburg). She has worked for some years as assistant in the University Clinic.

THE President of the Metropolitan Counties Branch of the British Medical Association has accepted the Lord Mayor's invitation to serve upon the Mansion House Committee of the King Edward Memorial (London) Fund.

ON September 29th Dr. Robert Charles Brown, of Preston, whose public benefactions include not only munificent gifts to the infirmary of that town, but the foundation of a scholarship for research on special diseases at Cambridge, received the honour of the freedom of the borough. Dr. Brown was born at Preston on October 2nd, 1836, in the house in which he now lives.

ON September 30th Dr. Robert Marshall, Medical Officer of Health for Douglas, Isle of Man, was returned at the head of the poll as a member of the House of Keys. His programme was largely on public health. We understand that Dr. Marshall is the first practising medical man to be returned.

THE winter session of the London School of Tropical Medicine will open on Friday, October 14th. The Inaugural Address will be delivered by Dr. H. A. Miers, Principal of the University of London, at 3 o'clock. Sir West Ridgeway will be in the chair. The school dinner will be held the same evening at the Hotel Savoy under the presidency of Mr. James Cantlie. Among the guests will be Dr. Miers, the orator of the day; Sir West Ridgeway; Mr. E. Blessig, by whose generosity the school has been enabled to double the size of its laboratories; and Lord Sheffield, a munificent benefactor of the school.

A COURSE of clinical lectures and demonstrations will be given by the medical staff of the National Hospital for the Paralysed and Epileptic, Queen Square, on the Tuesdays and Fridays of October, November, and December, at 3.30 p.m. These courses are open free to practitioners and students. A special course of lectures and demonstrations will be given on the Tuesdays, Wednesdays, and Thursdays during November and December by Dr. Gordon Holmes (The Clinical Anatomy of the Nervous System); Mr. Donald Armour (The Surgery of the Nervous System); and Dr. James Collier (The Clinical Examination of Cases of Disease of the Nervous System). The fee for the whole course will be five guineas; for any one of the three parts of the course, two guineas. Application should be addressed to the Secretary at the Hospital.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

MANCHESTER.

The Manchester Royal Infirmary.

At a meeting of the Board of Management of the Royal Infirmary, held last week, the question of the advertisement for an honorary assistant surgeon was considered, and a letter was read from the Association of Fellows of the Royal College of Surgeons of Ireland containing the following resolution:

> The attention of the Association of Fellows of the Royal College of Surgeons in Ireland having been drawn to an advertisement of the Manchester Royal Infirmary and Dispensary for an honorary assistant surgeon, where it was stipulated that the candidates must be Fellows of the Royal College of Surgeons, England, this association hereby protests against such invidious distinctions being drawn between the Irish and English colleges, inasmuch as the fellowship of the Irish college is in every way equal to that of the English college, and also that some of the most eminent surgeons in England at present are Fellows of the Royal College of Surgeons in Ireland.

A letter was also read from Dr. S. Wesley Wilson, of Dublin, late Registrar to the Medical Council for Ireland, congratulating the board on excluding Fellows of the Royal College of Ireland from the post of assistant surgeon, and commenting on the way in which that diploma had been given previous to the year 1902. Both letters were referred to the Medical Board for consideration. The Medical Board afterwards met, and after considering the letters recommended that no action should be taken in the matter.

Pensions for Nurses.

On September 27th, in the Manchester Town Hall, the Lord Mayor presided at a large meeting of nurses at which Mr. Louis M. Dick, the Secretary of the Royal National Pension Fund for Nurses, gave an address on pensions for nurses. He said that after the age of 40 nurses began to find difficulty in getting work, most failed to do so after 45, and very few could earn a living at 50. The National Pension Fund was essentially co-operative, and no money was paid to agents. It was more of a club than a company, though it was run on strictly business lines, and through it nurses could not only secure pensions, but could insure against sickness and accident. Bishop Welldon, Dean of Manchester, said that more than 1,000 nurses joined the fund every year, and many who were already members were constantly taking out fresh policies increasing the sum to be drawn when they received their annuity. Over 1,000 nurses were now drawing annuities, and each year more than £2,000 was distributed in sickness and accident allowances. The Lord Mayor earnestly advised all nurses to join the fund, which offered opportunities for providing for old age that no nurse should neglect.

Monsall Hospital.

The Manchester City Council recently applied to the Local Government Board for permission to borrow £5,600 for the erection of a convalescent pavilion at Monsall Hospital, and on September 27th Dr. E. P. Manby, Local Government Board Inspector, held an inquiry at the Town Hall. The Town Clerk explained that since 1898 the urban districts of Withington, Moss Side, Gorton, and Levenshulme had been added to the city and the population had thereby been increased by nearly 200,000 which to some extent would account for the additional accommodation needed at the hospital. By the erection of the proposed pavilion about 48 beds would be released. The building was to be a substantial one, and it was thought that the thirty years generally allowed for repayment of the loan was too short a period. In the present state of the Manchester rates it was most important that every assistance should be given, and it was hoped that the time for repayment would be extended to at least forty years. Evidence in support of the application was given by Dr. Niven, the Medical Officer of Health, and there was no opposition. The inspector said that before giving his opinion he would visit the hospital.

The daily average number of patients in the hospital during 1909 was 341, which is much higher than the previous year. The most remarkable feature of the year has been the great pressure on the accommodation for scarlatina, as for many weeks the hospital was quite full and fresh cases had to be refused admission. The accommodation for diphtheria was also so heavily taxed that for a time one of the other large wards had to be used. During the year there were admitted 1,981 cases of scarlatina, 332 diphtheria, 236 enteric fever, 57 erysipelas, 54 puerperal fever, and 193 other diseases, a total of 2,853 admissions, of which 363 remained in hospital at the end of the year. As is usual during epidemics the mortality of the scarlatina cases was high, being 5.7 per cent. This high rate is also partly explained by the selection of the most urgent cases for removal. The percentage of septic complications, such as otorrhœa, is also high, being 17.2 per cent. Only one case of post-scarlatinal diphtheria occurred during the year, which is by far the lowest recorded, and is remarkable, seeing that in 1901 no less than 104 such cases occurred. The return cases were also lower than previously, numbering 113, the number of alleged originating cases being 105, or 5.68 per cent. But as 25 of the "secondary" cases only commenced over three weeks after the discharge of the alleged primary case, it is highly probable that the figure 105 is too high, and that some of the so-called secondary cases were infected from some other source. The Medical Superintendent, Dr. Arnold, says that in all probability the return case figure should be put at about 3.9 per cent. He sees no reason for believing, what is often stated, that the association of patients together in hospital may increase the virulence of the specific organism. It is possible that more than one disease is often isolated under the name of "scarlatina," which may account for some of the return cases. The mortality from diphtheria was 18.3 per cent., which is lower than the previous year, but is still far too high. Tracheotomy was performed in 100 cases, out of which 29 died. Some form of post-diphtheritic paralysis occurred in 6.8 per cent. of all the cases, and otorrhœa in only 1.5 per cent., the last figure being remarkably less than in the scarlatina cases. All patients with diphtheria or scarlatina are examined for diphtheria bacilli before being discharged from the hospital.

Lancashire Poor Law Unions.

At the conference of the North-West Poor Law District, held last week at Morecambe, Mr. J. H. Sinkinson, Clerk to the Haslingden Board of Guardians, dealt with the proposals of the Right Hon. Charles Booth for Poor Law Reform. He said that many of the reforms urged by the Royal Commission had already been set afoot; for instance, the giving of more adequate relief, the case-paper system, abolition of pay stations, appointment of women officers, co-operation with local charities and nursing associations, removal of children from workhouses, and the extension of the boarding-out system. Some of the major reforms, however, such as the problems of vagrancy, of the feeble minded, the sane epileptics, and the ablebodied, could hardly be grappled with by the unions as at present constituted. To deal properly with these problems larger areas of administration were needed or combinations of unions. The proposal of Mr. C. Booth for urban Lancashire was to set up three great Poor Law boards as follows:

(1) The Manchester District Poor Law Board, which would cover parts of Lancashire, Cheshire, and Derbyshire, and would embrace ten existing unions—namely, Manchester, Salford, Chorlton, Prestwich, Stockport, Glossop, Barton-on-Irwell, Ashton-under-Lyne, Bucklow, and Hayfield. The population of this district at the last census was 1,467,089.

2. The Liverpool, Birkenhead, and South-West Lancashire District Poor Law Board, covering parts of Lancashire and Cheshire and embracing nine unions with a population of 1,618,237—namely Liverpool

that coast
Newton Park, West Derby, Birkenhead, Wigan, Prescot, Warrington, Leigh, and Ormskirk.

3. Mid-Lancashire District Poor Law Board, embracing ten existing unions, with a population of 1,584,314—namely, Bolton, Rochdale, Oldham, Bury, Blackburn, Haslingden, Burnley, Preston, Fylde, and Chorley.

Some parts of North Lancashire were to be grouped with Northumberland and Cumberland or with the North and West Ridings of Yorkshire. The three great district boards were also to combine to form a joint committee to provide and administer institutions for lunatics, the feeble-minded, sane epileptics, and the able-bodied. Mr. Sinkinson emphatically declared that he did not think it possible for boards of this description to administer the present or a revised Poor Law as efficiently as the present boards of guardians did their work to-day. He was astounded to find that when Mr. Booth turned from dealing with rural England to schemes for urban England, the principle of strong local control was thrown to the winds.

It may be mentioned that within the last fortnight the Chorlton Guardians, in future to be known as the South Manchester Guardians, have received a communication from the Local Government Board informing them that the Board has made an order constituting the seven townships of Burnage, Chorlton-cum-Hardy, Didsbury, Gorton, Levenshulme, Moss Side, and Withington into one township for Poor Law purposes, to be named the South Manchester Township.

BIRMINGHAM.

GUILD OF ST. LUKE.

THE annual festival service of the Birmingham Ward of the Guild of St. Luke will be held on Tuesday, October 18th, at 4.15 p.m. in the Worcester Cathedral, when the sermon will be preached by the Very Rev. the Dean of Worcester. All medical practitioners are cordially invited to attend.

BRISTOL.

REPORT OF MEDICAL OFFICER OF HEALTH.

THE annual report of the medical officer of health for 1909 contains, in addition to the usual survey of the health of the city, special reports on outbreaks of small-pox and typhoid fever that occurred in the city during the year. Small-pox appeared in January, and continued to recur at intervals till May, the total number of cases being 39, of which 9 proved fatal, with several more cases in the neighbourhood. The first case was observed in a labourer working in the dock. He unfortunately took a tram journey of three miles, coming in contact with 395 persons, all of whom were kept under observation, involving 5,147 visits. From this man 9 cases were traced. During these cases 2 cases occurred in St. George, and inquiry into these brought out the following circumstances:—On February 12th, a case of variola nigra appeared in a village called Wick, and the patient died on the 16th without the nature of the illness being recognized. Twenty-four cases were traced to this one—2 of the workers at the Cossham Hospital, 2 ambulance men, 2 nurses, a patient in the hospital, the patient's two sons, 2 men who carried his coffin and 3 that attended his funeral, 1 of these taking the disease to Yeovil and infecting 5 persons. The third group of cases occurred in Bedminster, the family being related to the patient at Wick, though the actual source of infection could not be traced. Nineteen cases occurred in all with 4 deaths. A photograph is reproduced to show the mildness of an attack in 2 vaccinated children who had taken the disease from their unvaccinated brother—a confluent case. Dr. Davies points out that the type of the disease was an extremely virulent one, there being 3 haemorrhagic cases, this virulence being specially marked in the Wick case, where practically every one who came in contact contracted the disease. He further calls attention to the decreasing vaccination-rate and the risks that the city runs, and the possibility of some day it having to pay the penalty. The cost of the epidemic to the city appears to have been ridiculously small, for in non-small-pox days the hospital costs £695 for six months, and only an additional £14 when fully engaged in nursing small-pox. This is for the hospital alone, for the outbreak in one way and another cost £134 to the city. The amount of work involved was enormous, over 16,000 visits being paid by the inspectors to suspected cases, and 209 by the medical officers. The fright caused by the epidemic had the salutary effect of 22,000 persons being vaccinated.

Of enteric fever there were 66 cases, the smallest number since 1890. The most notable cases were those of one family of which 5 members suffered, and a second family in which 6 members contracted the disease, the two families living in the same street; 19 cases were traced in all from one source.

Coming, then, to the general matters of the report, Dr. Davies tells that the population of the city is 377,642 (estimated), that there were 8,507 births (rate 22.5, a decrease), 4 869 deaths (rate 12.89, a decrease). Of these deaths, 860 were of infants under one year—a rate of 101 to every 1,000 born. The zymotic death-rate was 0.9 per 1,000 living, the lowest on record for Bristol except for 1907.

Of diphtheria there were 712 cases with 55 deaths, or 7 per cent.—a great difference from 1894, when it was 39 per cent.; in fact, since that date the case mortality has continuously fallen. Infantile diarrhoea accounted for 116 deaths, a rate of 0.3 per 1,000 living.

From tuberculosis, 391 deaths from phthisis and 133 from other tuberculous diseases were recorded.

The report ends with the usual meteorological report supplied by Mr. H. Harding. It will suffice to say the rainfall was 4 in. above the average.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

OPENING OF THE WINTER SESSION.

THE classes in the Faculties of Medicine and of Science in the University of Edinburgh, and the medical classes in the Extramural School of Edinburgh, were opened for the winter session on Tuesday, October 4th. In most cases the work of the session was entered on without the formality of introductory lectures.

CONTROL OF THE MILK TRADE.

A committee of the Scottish Chamber of Agriculture has issued an interesting report on the Sale of Food and Drugs Act in relation to milk. The committee considers that there would be no objection to the present law if the composition of milk were constant, or if it were possible to foresee or prevent variations. Unfortunately this is not the case. Since the passing of the Act of 1899 it has been proved conclusively by experiments conducted in all parts of Great Britain that the milk of single cows frequently varies within wide limits, and that marked variations occur occasionally in the mixed milk of considerable numbers of cows, so that such milk does not in every case contain the presumptive percentage of butter fat. The committee considers that the following are the principal objections to the present law:

1. That the person who sells milk which is genuine but poor is unduly exposed to the risk of being charged under the same section of the Acts, and made liable to the same penalties and subject to the same stigma as a person who is guilty of fraudulently adulterating milk or fraudulently selling adulterated milk.
2. That the position of a milk seller is aggravated by the fact that he has very often no means of knowing whether the samples taken from his milk fairly represent the bulk.
3. That in many cases prosecutions are instituted without the consideration which so serious a step demands, and on the advice of officials who have not the necessary expert knowledge.

4. That part of the evidence brought against farmers and others, when charged with the sale of adulterated milk, is presumed against them, whereas in most other proceedings of a criminal character the prosecution are under the obligation of proving the whole of their case.

5. That the dismissal of a case against a retailer, on the evidence of himself and his servants, may involve the seller to him in a prosecution for false warranty.

6. That (in Scotland) the farmer who successfully defends himself in a milk prosecution has to pay his own costs.

7. That under the law, as laid down in Smithies *v.* Budge, it appears that a seller of genuine milk is always liable to be convicted of an offence if the court holds that the milk is not of the quality demanded by the purchaser.

In suggesting measures to be taken to meet the above complaints, the committee has kept in mind the following considerations: The change must either be (1) an improvement in administration, or (2) an amendment of the law. As to (1) the committee, while believing that improvement in the administration of the existing law is needed, and can be effected, is of opinion that no such improvement can be suggested as would fully meet the needs of the case. There is no method of discriminating with certainty between cases where milk is adulterated and cases where it is poor but genuine. The task of attempting to discriminate is so difficult as to be beyond the power of many officers of local authorities. The risk that sellers of genuine milk may be prosecuted is, therefore, inherent in the present system. They are further of opinion that any method of administration which entailed prosecution for selling genuine but inferior milk would have the effect of rendering the law a dead letter, so that dishonest persons could adulterate with impunity. As to (2) the committee has carefully considered whether any amendment of the law is possible and desirable, and it has come to the conclusion that the answer to both questions is in the affirmative.

It appears to the committee that it is necessary to provide for two distinct subjects: (1) the adulteration of milk; and (2) the sale of milk of poor quality with regard to which there is no evidence, except the quality, that adulteration has taken place. With regard to adulteration, the committee is of opinion that the law might be strengthened in several respects. With regard to the sale of milk of poor quality, the committee desires to point out that at present, when a public analyst certifies that milk is of a poor quality, the local authority must either take no action at all (beyond cautioning the vendor) or it must resort to criminal proceedings. The committee has come to the conclusion that it is to the interest both of the public and of the milk seller that local authorities should be in a position to control the sale of such milk without instituting criminal proceedings. This object might be attained by setting up a standard of quality in place of the existing limits, on which a presumption of adulteration is based, and allowing local authorities to enforce the standard of quality by claiming from any seller of milk below the standard a sum of money by way of compensation or damages. To carry out the suggestion above laid down, the committee suggests, among other provisions, that in cases where a criminal prosecution is instituted in connexion with the sale of milk, it should be incumbent on the prosecuting local authority to show guilt on the part of the person charged; it should be made an offence to permit separated milk or skimmed milk to be in or on any public place except in vessels clearly marked; it should be made an offence for any registered milk seller, or his servant, to mix with water or separated milk, or with skimmed milk, or with any other extraneous substances, or to have in his possession a mixture of such milk with water or with separated milk or with other extraneous substance, unless he proves that it was not intended for sale; that officers of local authorities should have the same right as under the Butter and Margarine Act to enter premises used as premises of a milk seller to ascertain whether water or skimmed or separated milk or other extraneous substance is being mixed with milk therein; a fixed standard of quality of milk, namely, 3 per cent. of butter fat and 8.5 per cent. of solids not fat, should be set up in place of the limits on which, under the present law, a presumption of adulteration is raised; to enforce the standard of quality referred to, it should be provided that, if milk containing less than the prescribed percentage of fat and solids is sold as milk, the seller should be liable to pay to the local authority of the district a sum of money not exceeding forty shillings for each sample taken under the sale of Food and Drugs Act and found defective, which sum should be recoverable, if necessary, in a county court, but not as a penalty on conviction. The committee are also satisfied the proposed changes would bring about a better milk supply, both directly by preventing adulteration and discouraging the sale of poor milk, and indirectly by making the business of producing and distributing milk a more suitable occupation for men of the class who object to have their names associated with police court proceedings.

The Smoke Abatement League of Great Britain.

The first annual conference of the Smoke Abatement League of Great Britain was held in Glasgow on September 28th. The members and delegates attending were received in the City Chambers by the Lord Provost. Among those present were representatives from 30 English municipalities, 160 delegates from various parts of Scotland, 2 from Ireland, and 70 members of the Glasgow and West of Scotland Branch of the League. The different phases of the smoke question were dealt with, the health aspect being particularly emphasized by the Glasgow Medical Officer of Health and Councillor Shelmerdine, chairman of the Health Committee of Liverpool Corporation. There was a consensus of opinion that uniform legislation was required for city and county authorities alike, so as to grapple adequately with the admitted evils of smoke pollution.

The Lord Provost, in his opening address, referred among other evils to the destruction of life caused by the smoke pollution, and said that the Registrar-General took special notice of the last fog visitations to Glasgow, and in his report called the attention of the Secretary for Scotland to the sudden rise which took place in the death-rate of the city. He noted that while in September and October the death-rate was 13.5 and 13 per 1,000 respectively, it rose in November and December to 24.9 and 25.1. The children under 5 years who died in September and October in the city numbered 851, while the number rose in November and December to 1,492. These official figures spoke all too plainly of the mischief due to the condition of the atmosphere.

Dr. A. K. Chalmers, medical officer of health for Glasgow, in his paper dealing with the medical aspect, also emphasized the danger by recording the death-rates of those months when fog was prevalent, extending the reports over a series of years. He also stated that while in November and December the maximum possible hours of sunshine which could be recorded on a sundial were 210 and 172, and above the horizon 247 and 216 respectively, the hours of bright sunshine recorded in November and December last year were only 63; in 1908, 43; in 1907, 36; and in 1906, 46. He advocated the establishment of a meteorological station in the Clyde Valley similar to that already existing in the Thames Valley, whereby it would be possible to foretell by a few hours the advent of conditions which produced these dense fogs.

Veterinary Problems and Public Health.

The annual meeting and conference of the Association of Veterinary Officers was held in the City Chambers, Glasgow, on September 29th. Mr. J. S. Lloyd, President, was in the chair, and representatives were present from all parts of the United Kingdom. After the business meeting the conference discussed various veterinary problems in their relation to public health. The President, in his address, referred to the representations made to the Local Government Boards of England, Scotland, and Ireland for the appointment of a veterinary surgeon to each Board, and also urged the establishment of a uniform system of meat inspection. As the outcome of these representations

Scottish local authorities had arranged for a combined deputation to meet the Secretary for Scotland in the course of this month.

Papers were contributed on the eradication of animal tuberculosis by Professor Bang, of Copenhagen, and Professor Ostertag, of Berlin, and after discussion a resolution was adopted urging the Government to take immediate measures to diminish the frequency of tuberculosis in food animals by the slaughter of all cases of open tuberculosis, by encouraging the formation of tubercle-free herds, and by the universal enforcement of the Dairies, Cowsheds, and Milkshops Orders. A resolution was also adopted stating that it was imperative that the manufacture of tuberculin should only be permitted in approved laboratories, and that permission should be issued only to members of the medical and veterinary professions.

Dr. J. A. Murray, of the Imperial Cancer Research Fund, read a paper on cancer in domestic animals, and Professor John Glaister, Glasgow University, dealt with the standard by which the fitness or unfitness of flesh meat for human food should be gauged. The important question to be decided, he thought, was whether the standard was to apply to the nature and quality of the food when purchased, or was to be used as a criterion of fitness after efficient cooking. The sale of meats covered with moulds differed from the sale of cheese which was mouldy. Moulds on meat might or might not be rendered innocuous by cooking. He did not think, however, that the question of efficient cooking should ever enter into the standard of fitness, and the conference supported the proposal that all meat covered with moulds should be condemned. Professor Dick (Edinburgh) contributed a paper on the relation between scarlet fever, diphtheria, and sore throat in man and diseases of the udder and teats of cows, dealing with the question of infection through milk.

Edinburgh was chosen as the centre for next year's conference, Mr. Wm. Robb, F.R.C.V.S., Glasgow, being selected as president. Mr. A. M. Trotter, Veterinary Surgeon to the Corporation of Glasgow, was re-elected secretary and treasurer.

The late Dr. Robert Spence, Burntisland.

A public memorial to the late Dr. Spence has been fully subscribed for at Burntisland, and has taken the form of an ionic cross about 12 ft. high, of symmetrical proportions, in grey granite. Ornamental metal tablets with suitable inscriptions will be placed in the free library and in the parish church. The Memorial Committee at Aberdour have chosen a public clock, which will adorn the wall in front of Aberdour parish church.

Medical School Inspection.

The annual reports of the medical school inspectors are now making their appearance. Dr. Finlator, the School Medical Officer for Clackmannanshire, has just issued his first annual report. Since his appointment only one medical inspection has been possible. The number of routine cases examined was 397, and the cases specially presented numbered 193. Of the 397 routine cases, 107 required medical attention, 83 had four or more decayed teeth, and 65 had verminous heads, 57 of whom were girls and 8 boys. Referring to this in particular Dr. Finlator says: "The figures relative to verminous heads are instructive. The high percentage of girls affected compared with boys is due to the fashion of wearing the hair long. If fashion ordained that school girls should wear the hair short, the evil of verminous heads would be easily stamped out." It is also stated in the report that a large number of children suffer from defective vision, and the number of cases of ear disease and defective hearing is fairly large. The objections to medical inspection on the part of parents did not average more than ½ per cent.

Cryptogamic Society of Scotland.

As showing the numerous varieties of fungi and lower forms of plant life encountered in a day's ramble, it may be mentioned that at the thirty-fifth annual conference of the Cryptogamic Society, held on September 27th at Crieff, over 100 different species were identified and catalogued. The attention of the Cryptogamic Society is devoted to the lower forms of plant life (ferns, mosses, etc.), but particularly to the fungi which abound in woods and pastures during the autumnal season.

Treatment of Phthisis at Greenock.

At the meeting of the Greenock and District Combination Hospital Board, held on September 30th, reference was made to the offer of Councillor Orr to erect a sanatorium for the treatment of phthisis within the hospital grounds. Dr. Whiteford, while appreciating the offer, was of opinion that the site was not a suitable one in the interest of the convalescent patients of the hospital, and it was considered desirable to go into the whole matter thoroughly and have a detailed report. A committee was appointed for this purpose.

Epileptic Colony at Bridge of Weir.

At the biennial thanksgiving and commemoration day in connexion with the Orphan Homes of Scotland at Bridge of Weir an interesting statement was made regarding the Colony of Mercy for Epileptics. A new house, costing about £4,000, was nearing completion, and would accommodate 30 epileptic boys and girls. There are now three houses in the colony, one each for men, women, and children. In addition, houses have been erected for the use of the doctor and the superintendent-physician. In addition to the 1,350 children in the Orphan Homes, there are 122 phthisis patients in the adjoining sanatoriums and 54 inmates of the epileptic colony, the income for the past eleven months for these being £25,169 for the orphan homes, £7,222 for the sanatoriums, and £3,147 for the epileptic colony. During the thirty-two years of the existence of the homes £853,290 had been gifted for their upkeep and 15,000 orphan children had passsd through them.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Philanthropic Reform Association.

Speaking on the subject of Poor Law reform at a recent meeting of the Philanthropic Reform Association, held by the invitation of the Countess of Meath at Kilruddery, Bray, Lord Meath stated that amongst the reforms which he regarded as most essential was that there should be a more complete and thorough classification of the inmates of Poor Law institutions than at present existed. By classification was meant that the aged, the lunatics, the invalids, and the able-bodied were to be kept in separate buildings and under different treatment, and in order that this might be carried out it was necessary that the unions should be amalgamated into larger districts, and the rates for these institutions levied over larger areas. The simplest and most radical way of effecting the change would be to give the county councils the whole of the duties now discharged by the Poor Law guardians, and the committee of the Philanthropic Reform Association was in favour of this proposal with certain reservations. As far as the question of unemployment was concerned the committee concurred in the recommendation of the Royal Commission that the care of the able-bodied should be withdrawn from local authorities and entrusted to the State. As regards sane epileptics, Lady Meath's offer to establish a home for a certain number of sane epileptics on condition that some body of persons could be found willing to maintain it and carry it on, was still open, but so far no such body of persons had accepted the offer. The Belfast Corporation had, indeed, agreed to build such a home provided that the cost of maintenance would be borne by the Government and the Poor Law guardians, but the Government had not only objected to contribute but had also pointed out that it was illegal for the guardians to do so. On this subject a

bill had been drafted, and the association hoped that it would shortly be passed as a non-contentious measure. Subsequent to Lord Meath's speech a resolution was proposed and adopted calling on the Government to give powers to boards of guardians to maintain sane epileptics, and requesting that a capitation grant of 4s. a week should be made by the Exchequer towards their maintenance.

Honour for Sir Charles Cameron.

At a special meeting of the Corporation of Dublin held on Friday, September 30th, the following resolution was proposed and passed unanimously:

> That this Council, recognizing the distinguished services given to the City of Dublin by Sir Charles Cameron, C.B., M.D., and the fact that these services have conferred lasting benefit upon the citizens: That almost half a century of devoted exertion on his part to the extermination of disease and everything inimical to public health within the city has resulted in a courageous and efficient public health organization: That, owing to his ceaseless efforts, Dublin, which at one time had, from the sanitary point of view, an unsavoury name, can now boast of comparative freedom from almost all of the malignant diseases which assail mankind: And, as it is due mainly to the untiring enterprise of Sir Charles Cameron, and to the advice which he gave to, and upon which the Municipal Council acted, that so excellent a state of public health now obtains in Dublin: Therefore, Sir Charles Cameron be, and he is, hereby, constituted an Honorary Freeman of the City of Dublin; and that he be, and he is, hereby elected and admitted an Honorary Burgess of this County Borough, pursuant to the provisions of the Municipal Privileges (Ireland) Act, 1875.

Asylum Capitation Grants.

Under Section 58 of the Local Government Act of 1898 capitation grants are made to each county council which has kept its lunatic asylum well managed and in good order, but this year, owing to the insufficiency of the amount paid to the Local Taxation (Ireland) account for the financial year to meet the sums payable thereout in the same period, considerable reductions in the grants are anticipated, with the result that the deficit will necessarily be made good by local taxation. Already the County Councils of Roscommon and of South Tipperary have been notified of a reduction of 32 per cent. of the grant, and a still greater reduction has been made in the case of the South Riding of Tipperary. The South Tipperary County Council has passed a resolution of protest against the reduction.

The Health of Bundoran.

Rumours concerning the existence of numerous cases of "fever" in Bundoran have lately been widely disseminated, and have apparently affected that seaside resort adversely as far as summer visitors were concerned. In consequence, some of the well-known residents have, through the medium of the daily press, informed the public of the actual state of affairs. It appears that sixteen cases of typhoid fever actually occurred during the month of August, but that no fresh case has appeared since then. Only one case of scarlatina has been notified during the present year, and there has not been a single case of typhus or diphtheria. The water supply is stated to be absolutely pure, and in comparison with neighbouring towns the record of Bundoran, as far as febrile diseases are concerned, is said to be extremely good. The residents complain of the wild stories that have been current, and are anxious that the actual facts should be known.

Longford Workhouse.

Following on an inquiry recently held by the Local Government Board into alleged irregularities in the management of the Longford Workhouse, and into the death of a patient whilst being removed to the fever hospital in the ambulance, the Board called upon the guardians to request the master of the workhouse and one of the nurses to resign. As, however, the inquiry in relation to the death of the fever patient had not been completed, the guardians replied that in their opinion the conduct of the two officials referred to was not such as to call for their resignation, and that they had decided to postpone the matter until all the questions at issue had been inquired into. To this the Local Government Board replied that the charges proved against the master and the nurse—namely, total incompetence in the management of the workhouse, and the misappropriation of clothing belonging to patients—had no connexion with the subject matter of the impending inquiry, and that it again called on the guardians to obtain the master and nurse's resignation. Following upon this the guardians have drawn out a long reply to the Local Government Board refusing to carry out the Board's recommendation, and here the matter rests for the present. As no attempt is made to deny the charges made by the Board, although numerous excuses are forthcoming, the position of the guardians is certainly unedifying, and forms a commentary on the methods of Poor Law administration in some parts of Ireland.

Dwelling-houses in Portumna.

In consequence of an outbreak of typhus fever in the Portumna district, Dr. Kennedy, the medical officer of health, was requested to inspect some of the houses, and he has now reported to the District Council that many of the dwelling-houses are in a condition dangerous to health. In one house a bedroom had been converted into a stable. It was full of straw and manure, and a donkey was housed there. In another house a portion of a bedroom was devoted to the rearing of chickens, while in many houses the roofs were leaking, the floors irregular, and there were no sanitary arrangements. As a result of this report the council has decided to have an inspection made of all the houses in the town, and to defer action until this is completed.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

Paludism.

The proceedings of the important conference on malaria which was held in Simla in October, 1909, have been referred to in the British Medical Journal (vol. i, 1910, p. 597), and the recommendations which resulted from the deliberations of that representative assemblage summarized. The provincial committees whose organization was suggested by the conference have been embodied, and a central scientific and advisory committee appointed at Simla, consisting of Lieutenant-Colonel J. W. W. Leslie, C.I.E., I.M.S., President; Lieutenant-Colonel D. Semple and Captain Christophers, I.M.S., members; and Major S. P. James, I.M.S., Secretary. These names are an earnest of solid, continuous, and fruitful endeavour to promote the cause of malaria prevention by means of persistent study and the application of feasible measures. A course of instruction was conducted at Amritsar in the Punjab by Captain Christophers in March last, which was attended by delegates from the various provinces, and appears to have been very successful and much appreciated. A central malarial bureau for the storing of books, collections, and apparatus relating to malarial research, is to be established at Kasauli, and it has been decided that a journal or bulletin shall be issued every three or more months in order to give publicity to the results of work done by the various agencies which have been instituted in connexion with this systematic investigation.

The first number of this periodical has been published. It is edited by Major James, and entitled, *Paludism: being the Transactions of the Committee for the Study of Malaria in India.* There is a prefatory note by the editor giving a clear summary of the deliberations and recommendations of the Simla conference and of the orders and events which have been the outcome of the congress. Then follow articles on investigations relating to quinine; a short syllabus of the work done at the malaria class held in Amritsar during March and April, 1910; suggestions on the use of available statistics for studying malaria

in India, by Captain Christophers; notes on mosquitos, by Major James, including the description of a new anopheline (*Christophersia halli*); and the number concludes with a list of papers relating to malaria, published in India and elsewhere, with critical *précis*. This statement of the contents of *Paludism*, No. I, indicates its valuable scientific and educational character. The study of malaria is now being prosecuted in India with great intelligence and industry, and, in view of the serious sickness and mortality caused by paludal disease, no subject is deserving of closer and more anxious research than this. There is every hope that the movement so energetically started will be productive of great saving of suffering and life in India and elsewhere.

Lahore Medical College.

The *Tribune* of Lahore in several recent leading articles, sent to us for comment, makes a complaint regarding hardships alleged to be suffered by Indian medical students who fail to pass the final qualifying examinations for the licence in medicine and surgery at the Lahore University.

It would appear from what our contemporary says that there is a general impression in India that if such "failed" students can only go to England they will have no difficulty in passing one of the "easier" professional examinations in the United Kingdom and in getting on the British *Register* with a British diploma and all the attendant advantages. The difficulty, we are told, which lies in their way is that the Punjab Government has ruled, in the official prospectus of the Lahore Medical College, that when such "failed" students apply for certificates of the attendance at all the courses of lectures required by the British qualifying bodies, they must pay a fee of Rs.35 (£2 6s. 8d.) for each certificate of a course of lectures or of hospital instruction.

The *Tribune* seems to assume that when a student has failed to pass at Lahore such failure is final, and that his only chance to become a qualified medical man is to incur the heavy expenditure of (1) a journey to England and back; (2) a stay there of at least six months; (3) medical school fees, and (4) the examination fees. The "failed" student, we are told, is unable to take this step because at the outset he has to provide himself with certificates costing, according to the *Tribune*, about Rs.350 (£23 6s. 8d.), and this is called "monstrous and inhuman," and the "failed" student "adds to the wastage of Indian youth."

It seems to us that what the "failed" student has to do is to buckle to work again and try to satisfy the Lahore examiners at a subsequent examination. But if he can afford to come to England to obtain one of the "easy" British qualifications, surely he can afford to pay the relatively small sum of £23 odd to provide himself with the certificates which the British examining bodies require.

We have referred to the prospectus of the Lahore Medical College for the year 1908. We find that for full courses of instruction similar to those at British schools, "each student shall pay a fee of Rs.50 (£3 6s. 8d.) in advance each year, and, in addition, a fee of Rs. 5 (6s. 8d.) for each course of dissection." The curriculum extends (or extended in 1908) over four years, so that a complete medical education is offered by the Punjab Government to students for, to European ideas, the absurdly low sum of £13 6s. 8d. plus 13s. 4d., for two courses of dissection including "parts." A subsequent rule lays down that "any matriculated student who leaves the college with the object of continuing his studies elsewhere, may receive certificates of attendance at lectures on payment of fees at the following rates: For each certificate of attendance on a course of lectures or hospital instruction, Rs.35."

The complaint seems to us an unreasonable one, because for fees amounting to another Rs.50 (£3 6s. 8d.) the "failed" student can attend at Lahore lectures and hospital instruction for another year, at the end of which he ought to be able to pass. The above-mentioned alternative of a journey to England would surely cost him or his friends fifty times as much at the lowest estimate. If he had small hope of passing at Lahore, we really must be allowed to think he would have no greater chance in Great Britain, though we are told the British examinations are so much less severe.

Our contemporary also brings what appears to be an unfounded complaint against the University of Lahore. The articles sent to us appear in several consecutive issues of the *Tribune*, and are not quite easy to follow, but the following would appear to be the facts of the case:

The Indian Universities Act of 1904 rules all the duties and functions of the Lahore University. We have obtained a copy, and have read through the Act. Sec. 25 (1) permits the Senate, with the sanction of the Government (in this case that of the Punjab) "to make regulations consistent with the Act of Incorporation as amended by this Act"; and (2) "such regulations may provide for" (amongst previous items) "(*i*) the inspection of colleges, and the returns, reports, and other information to be furnished by colleges"; and "(*j*) the registers of students to be kept by colleges affiliated to the university."

On May 8th, 1908, the syndicate decided that, as the rules of the Medical College (affiliated to the university) did not permit of the issue by the college of certificates of attendance except on payment of Rs.35 for each course, the university should grant such certificates for a nominal office fee of Rs.10, apparently for the whole series. This rather extraordinary action of the syndicate, not authorized anywhere in the Indian Universities Act of 1904, and overriding the rules of the affiliated Medical College, was reaffirmed at a meeting of the syndicate on January 15th, 1909, according to the *Tribune*. What happened subsequently is not quite clear, except that the Principal of the Medical College is said to have refused the request of the university to supply the certificates, presumably gratis, as the students were only to pay Rs.10 (13s. 4d.), and that to the university! It goes without saying that such certificates usually have to be signed by the professors who deliver the lectures. Thereupon the Vice-Chancellor appointed a subcommittee to reconsider the question. The subcommittee duly reported, and the syndicate meeting on March 18th, 1910, rescinded its former order, which, as far as we can judge, was clearly *ultra vires*.

It seems to us that the desire of the Government in India is to offer students their complete medical education at a cost probably lower than in any other country, and at the same time to exact a standard of knowledge from those who obtain Indian degrees or diplomas which will compare favourably with that required for British degrees or diplomas, especially as these Indian university qualifications entitle their holders to admission on the British *Register*. It is quite easy to understand, therefore, that the authorities of the Lahore Medical College and the Punjab Government do not approve of students availing themselves of the very cheap Indian medical education, and then, after failing to reach the necessary standard for an Indian diploma, going to England and passing one of the "easier" British examinations. The number of diploma-granting bodies in the United Kingdom is an acknowledged anachronism, if not something worse.

We cannot offer our sympathy to the protegés of the Lahore *Tribune*, and we think our contemporary's articles show unnecessary warmth in an erroneous line of argument.

Under the will of the late Mr. William Bell, the following Liverpool hospitals each receives a bequest of £1,000: The David Lewis Hospital, Royal Southern, Stanley, Royal Infirmary, and Bootle Borough Hospital. A corresponding sum is left to the University of Liverpool.

Under the will of the late Mr. William Henry Kirkham, of Keymer, Sussex, gifts of £200 each are made to the Sussex County Hospital and the Royal Alexandra Hospital for Children, Brighton; and of £100 each to the Brighton, Preston, and Hove Dispensary, the Brighton Throat and Ear Hospital, and the Hospital for Women, Brighton.

Special Correspondence.

PARIS.

The Law Concerning Industrial Accidents.

The French law on labour accidents, which makes employers responsible in regard to their employees who have met with an accident, is not exactly a new law; in it the scattered provisions have been consolidated into a definite and special law. In particular a tariff of pecuniary responsibility has been established which extends to the most immediate and commonest effects. This means that if formerly the law courts were able to judge of the indemnity payable in cases of permanent disablement or death, they had nothing to guide them in cases of claims made by physicians and surgeons, which are of far greater general importance and more extended application. In fact, accidents followed by a complete restoration of the power to work form the immense majority. There remain, therefore, from the point of view of damages, only the medical and pharmaceutical costs. This, especially in practice, is the object of the law, and it is for this reason that its action has excited so much interest among members of the medical profession.

If a workman has met with an accident, it is obvious that the medical attendants can claim to be paid for their services at the ordinary rate, since it is not a question of treating a destitute man on whose behalf we have made a special contract with the State which provides assistance. As a matter of principle there is no reason why they should make any reduction in such a case. In practice it is a different matter. The law has limited the employer's financial responsibility according to a tariff, the details of which cannot be given here; it need only be said that it ranges between the ordinary scale of fees and that of free assistance for the poor.

If they ask ordinary fees which are on a higher scale, the employer, or the insurance company which takes his place, can refuse to pay the excess. Can they in such a case demand payment from the patient? Unfortunately, in most cases the workman is a poor man, who has been rendered poorer still by his accident. This is, therefore, practically out of the question. Moreover, the workman would not understand and would not submit to a law which did not free him entirely. Both the employer and the doctor understand the utter impossibility of such an arrangement.

The doctors, therefore, seemed obliged to accept the tariff laid down by the law, which bears the name of the Minister whose work it is, M. Dubief. In other words, they seemed obliged, as in matters of medical assistance, to bear a part of the cost of social generosity. It will be admitted that there is no reason founded on principle by which this enforced charity can be defended. Still more, it was unwise, because French doctors, who are at present too numerous, are justified in thinking that they are not rich enough to give alms so lavishly. When the doctor once discovers that, behind the workman who excites his interest and perhaps his pity, or the employer who he knows well is not always a flourishing manufacturer, and often needs just as much consideration as his employees, there is the anonymous insurance company with a capital amounting to millions, he is no longer disposed to let the benefit of the reduction of his fees fall into its coffers. Leaving aside, therefore, the legal tariffs, the doctors have taken the plausible course of presenting their real client, the insurance company, with accounts on the ordinary scale. On the other hand, the insurance company, relying on the terms of the law, and apparently failing to realize the enormous profit which it derives from fire and life insurance, has resisted the action of the doctors. Hence a conflict has arisen. At first sight the medical profession seems unarmed for this struggle. On the contrary, it is equipped with formidable weapons, and the insurance companies are not ignorant of this. Its interest is the same as that of the victim of the accident, inasmuch as both he and the doctor are equally indemnified in proportion to the duration of disablement, since both of them benefit by the care and frequency of medical attendances, the urgency and necessity, and the length of this—always freely claimed by the patient—are left to the discretion of the doctor, whose appreciation of them is controlled only by his conscience. A doctor may be tricked, but it is in his power never to be duped with impunity, and elementary prudence dictates that he should not be provoked too far, and that his scruples should be treated with as much delicacy as is expected of him. Thus, certain insurance companies, reckoning with the factor of competition, attempted to form advantageous arrangements with certain doctors whom they afterwards forced on their clients, with all the moral compulsion and persuasion which they could use—even going so far as to found special clinics with staffs paid on contract scales—thus destroying the bond between the doctor and the workman; and the others strove to tire out and discourage any opposition on the part of medical men to their rule by dragging them at every turn into the law courts. But wiser companies tried to establish a necessary agreement, and one at least of them even thought the difficulty solved by simply making the doctors their sole shareholders. This dainty device has not yet produced any remarkable results.

During this time the doctors have not been idle, and it may be said with perfect truth that it is their struggle with the insurance companies which has caused the great friendly society and syndicate movement of the past six years. They did not at first cease to safeguard the principle of free choice decreed by the law, proclaiming that they themselves intended to stand between the workman and the insurance companies, exempt from all pressure, without compromise or surrender. And gradually they are succeeding in securing recognition for a new conception, more precise and less sentimental, of their professional interests. Formerly, French doctors willingly adapted their fees to the means and social position of their patients, practically imposing on themselves, before the law required it, a sort of income tax—a procedure which was greatly to the taste of the public. At the present day society claims assistance for the poor. Therefore, medicine modestly attaches an intrinsic value to its work, independently of the individual who profits by it. On this value medical men have no longer any reason to allow a rebate, and they can therefore divest themselves of the privilege of paying a tax twice over.

VIENNA.

The Cholera Scare.—Professor Strümpell.

The recent outbreak of Asiatic cholera in Russia has caused general alarm here, on account of the close commercial relations which exist between the two countries. The common frontier line between Russia and Austria extends for over 250 miles, and as it frequently happens that members of the same family dwell on either side of it, the strictest precautions are necessary to check any importation of the disease. According to the latest rules laid down by the Board of Health, not only must all persons crossing the Russian frontier into Austria submit to an eight days' quarantine and all goods imported from Russia be disinfected, but the importation of any article of food from the zone of infection is also absolutely prohibited. A special commission has been sent to each cholera centre in Russia, with the object of reporting on the spread of the epidemic and the measures taken to check it. In spite of all precautions, however, two cases have already been reported from Galicia (which lies along the border between the two empires), and this has given rise to some anxiety among the inhabitants, though it has been proved that in both cases the patients had quite recently been in Russia, and evidently had contracted the disease there. An official description, therefore, of the measures to be taken to prevent the importation of cholera germs, together

with an official assurance of the efficacy of these measures, has been distributed in the form of leaflets among the population of the frontier. All cases of gastro-intestinal disturbances have to be reported to head quarters, and the patient is sent to the State laboratory in order to be examined for cholera microbes. As far as can be judged from former results under similar circumstances, it seems quite certain that all danger of a cholera epidemic in Austria can be averted.

The news of the resignation of Professor von Strümpell, the successor of von Schrötter, has caused much surprise, not only amongst the members of his own profession, but also among the general public. It is only eighteen months since this eminent scientist most reluctantly consented to take over the third medical clinic, after the sudden death of von Schrötter, which occurred during the Laryngological Congress. His reluctance was so great that it was not overcome until he had received a solemn assurance that he would be at perfect liberty to bring the clinic up to the standard he required to make it a first-class teaching institution. From the very first, Strümpell found many obstacles to his work in this city; most of them were due to the officials, who were jealous of his position and the unusual honour which had been accorded to him. The money he required for the scientific researches of his clinic was paid only after repeated demands; and when finally, to crown all, he was refused a few hundreds for his work, his patience gave way and he sent in his resignation. He has accepted the offer made him by the clinic at Leipzig, where, instead of the 80 beds and three assistants, and the 1,000 marks a year, to which he has been accustomed at Vienna, he will have eleven assistants and nearly 200 beds, with a yearly income of 20,000 marks, besides ample laboratory and library facilities. It is easy to understand how tempting the offer of such a position must be in comparison with his position at Vienna. His students here lose an honoured and respected teacher, his patients a most genial physician, and his colleagues a wise leader and an excellent consultant. Above all, his departure leaves us with the bitterly humiliating conviction that once more medical science in our country has received another blow from men who ought to know that no sum of money is ever too great to spend upon education, and that it is never thrown away if the spending of it ensures good and efficient teaching.

Correspondence.

THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

SIR,—I have received a notice to attend a meeting of the General Committee on Wednesday, October 12th, at 5 p.m., in the Library of the Royal College of Physicians. I notice that the date selected for the Congress—July 29th to August 6th, 1913—is the usual date of meeting of the British Medical Association. This must have been well known to the coterie whose identity is hidden under the cloak of W. P. Herringham, and therefore the selection of this date cannot possibly have been otherwise intended than as a direct insult to the British Medical Association.

I understand that the annual meeting of the British Medical Association in 1913 will be held in Aberdeen, and my very high opinion of the Aberdonians will considerably wane if they yield one inch or one hour to a comparatively mushroom institution like the International Medical Congress—a society without a home and without any backbone.

Although not the duty of the Council of the British Medical Association, I think it would be well if that body announced at once that the annual meeting of the Association in 1913 will be held at the usual time, and then, if we are to have a conflict between the two associations, let it be short, sharp, and decisive, and there cannot be much doubt as to the issue of the fight.—I am, etc.,

Liverpool, September 30th. JAMES BARR.

SIR,—A meeting of the General Committee has been summoned by Dr. W. P. Herringham for October 12th at 5 p.m., to meet in the library of the Royal College of Physicians.

There is a report from the Advisory Board, but no mention is made as to the constitution of this board or the names of the members who attended the meeting and selected the office bearers. These gentlemen also propose: "That the date to be submitted for the approval of the Bureau de la Commission permanente des Congrès Internationaux de Médecine as the date of the Seventeenth International Congress be the date July 29th to August 6th, 1913."

This is the usual date for holding the meeting of the British Medical Association, and there is a strong probability that the meeting may be held that year in Aberdeen; but wherever it be held the selection of that date by this "Advisory Board" cannot be looked upon otherwise than as a studied insult to the British Medical Association.

From the BRITISH MEDICAL JOURNAL of February 12th, 1910, we learn that this Advisory Board was constituted as follows: Sir T. Clifford Allbutt, Sir William Allchin, Sir Charles B. Ball, Sir Thomas Barlow, Bart., H. T. Butlin, Sir W. Watson Cheyne, Bart., Sir W. S. Church, Bart., Clinton Dent, Inspector-General J. Porter, Surgeon-General W. L. Gubbins, Surgeon-General A. M. Branfoot, G. A. Gibson, M.D., A. Pearce Gould, Percy Kidd, Sir William Macewen, G. H. Makins, Norman Moore, Sir Malcolm Morris, Sir Shirley Murphy, George Newman, Arthur Newsholme, Professor Osler, F. W. Pavy, Sir Douglas Powell, D'Arcy Power, Seymour J. Sharkey, Charters J. Symonds, Sir John Tweedy, and Sir William Whitla.

It would be very interesting to learn the names of the members of this Advisory Board who attended the meeting and made the recommendations. Anyhow, the London members of this Advisory Board had recently an opportunity of showing their interest in the British Medical Association, and that interest may to some extent be gauged by the amount of their subscriptions to the local fund for promoting the success of the London meeting. There has, perhaps, never been another annual meeting of the British Medical Association where the local subscriptions from leading members of the medical profession have been on such a niggardly scale; but for the generous allowance of £2,000 from the Association the meeting would probably have been a financial fiasco.

It need scarcely be said that the general statement here made does not apply to Mr. Butlin, because there has never been a more generous President of the British Medical Association, and we know that he has not been well and could have taken no part on the Advisory Board in selecting the date.

If this Advisory Board start an opposition to the British Medical Association, then I hope every loyal member of our Association will boycott the International Medical Congress, and when the hat goes round the provinces, as it is sure to do, be careful to take no notice of it.—I am, etc.,

September 29th. MEMBER OF THE B.M.A.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—As one of the rank and file of general practitioners who knows nothing of the inner workings of the Association beyond what appears in the JOURNAL, I am anxious to know what position is now to be taken in regard to the future of medical attendance. We are told that a deputation is to wait on Mr. Lloyd George, probably some time next month, in reference to the State Insurance Bill which the Government have told us they intend to introduce. Can this deputation express the mind of the profession, or even of the Association, on this subject? So far as I can see, they can only give their individual opinions, and are not entitled to speak in the name of a profession whose views have not yet been ascertained. Can they say whether the profession or the Association desire that medical attendance should be included in the State insurance bill, whether medical men wish compulsory payment to be made only by workers or by their wives and families, and what is the limit of income to which State insurance should apply?

These and other matters might well have been brought before the last meeting of Representatives. To myself the

resolutions then brought forward by the Special Poor Law Committee were most disappointing. Though a new member of that body I ventured to say then, and now repeat, that these recommendations might have been framed ten years ago, as they have almost no bearing on the present position. It is quite true that the discussion was merely academic, and no decision binding the Representatives was made. This was plainly stated in the second resolution, which reads as follows:

> That the Report and Recommendations be discussed by the Meeting, and afterwards referred to the Council for further consideration prior to reference to the Divisions, and that the Resolutions of the Meeting be forwarded for the assistance of the Council as expressions of the opinions of the Representatives present, but not as decisions of the Representative body.

The leading resolutions were presented in a form that did not appear to be generally understood, and were not discussed, and though I have puzzled myself not a little to ascertain the meaning of some of the others I have as yet failed. Did the Council send down to the Divisions the recommendations in this form it is doubtful if members would attend the meetings, or if they would ever be seriously considered. This is not as it should be. Never was there a time when issues so seriously affecting the welfare of the profession depended more on the action now taken, and this is my excuse for putting the matter so plainly and writing at some length. Every member of the Association must get to know the position in which we are now placed, and recommendations must be so formed that there can be no difficulty in giving an opinion. Can we say that this is possible if in the recommendations or questions sent down the reports of the Poor Law Commission and the Government proposals are entirely ignored? Hitherto medical men themselves have done little to solve the problem of medical attendance as it affects the working-classes. The Poor Law Commission has been spending years on this question. The Government have evidently had it under serious consideration, and if the time and energy thus expended is to be ignored, and recommendations or questions sent out which do not even refer to matters so long and earnestly discussed, I cannot but regard an action of this sort as a deliberate insult to the Government and the Poor Law Commission, the consequence of which it is not difficult to foresee. It is certainly the best possible means of playing into the hands of the friendly societies whose methods are more practical than ours.

My reason for writing is to make a humble appeal to the Council and the Poor Law Commission to give further consideration to the recommendations or questions to be sent down to the Divisions, and also to elicit, if possible, the mind of those on whom the responsibility now rests.—I am, etc,

Greenwich, Oct. 3rd. J. H. Keay.

THE ENEMY WITHIN OUR GATE.

Sir,—It is a truism that our most formidable enemies are inside the profession. How are we to deal with the type of man who, although doing never less than one hundred visits a day, as proved by the production of his visiting list to the clergy, chemists, and other good advertising media, is yet eager to undersell his opponents for any wretched little appointment which crops up? The most solemn promises have no restraining influence where the pocket is concerned. Expulsion has no terrors for a man of the type referred to. He never has "time" to attend a meeting of the Branch. The society of self-respecting practitioners produces a feeling of discomfort. Boycotting is also ineffective, as some one can always be found for the sake of "humanity" or the half fee to help this very lame dog over a stile. What is the remedy?—I am, etc.,

Falkirk, Oct. 3rd. George C. Stewart.

CONTRACT PRACTICE AND THE MEDICAL PROFESSION.

Sir,—There is a good deal of unrest in the ranks of the medical profession at the present time, due no doubt to the fact that the income of the general practitioner is getting less year by year, and to the uncertainty as to what the Government may do in the future in regard to the reports of the Royal Commission on the Poor Law.

During the last ten or twelve years the income of the general practitioner has fallen about 30 per cent. This is due to many causes, the chief being:

1. The lower death-rate, brought about almost entirely by the efforts of the medical profession, and meaning far less serious illness to attend. In Leeds twenty-five years ago the weekly death-rate was often 24 or 25 per 1,000; now it is nearly always about 12 or 14 per 1,000.

2. The lower birth-rate. The birth-rate has gone down exactly 30 per cent. in the last thirty years in Leeds. This means one-third fewer confinements for the profession to attend. The midwife has taken a much larger share of the midwifery than formerly, so that in Leeds there has been a reduction in the number of cases attended of from 30 to 60 per cent., as ascertained by actual inquiry.

3. The Notification Act is responsible for the removal of all infectious cases to the local fever hospital. As a rule a practitioner sees these cases only once, whereas formerly a prolonged attendance was necessary.

Along with diminished income there has been a great increase in the expenses incurred by medical men in the conduct of their practices. Drugs are dearer, or more costly drugs are used. The salaries of assistants and the locumtenents have nearly doubled during the last ten years. Rates and taxes are much higher. The cost of getting about is greater. Tramway facilities have undoubtedly, in the provincial towns at least, had the effect of causing the working classes to live further away from the workshop, thus affecting most medical men doing friendly society work. The cost of medical education has also increased a good deal these last few years, thus affecting those who are putting their sons into the profession.

There is now, also, a good deal more competition from hospitals and dispensaries.

The future of the profession appears to be somewhat gloomy. Apparently the Government contemplates legislation which will have the effect of still further reducing incomes, and so far as I can see we shall all take it "lying down."

In the past we have allowed public bodies, such as corporations, boards of guardians, etc., and friendly societies to sweat the profession just as they like, and we are going to allow the Government to do the same.

Dr. Bateman, in his letter in the Journal of September 24th, says:

> Surely we are sufficiently powerful to put a stop to the long continued exploitation of medical practitioners.

I am afraid we are not sufficiently well organized as to be powerful enough to do so. The British Medical Association does its best as a voluntary organization to guide legislation in a proper direction, but I fear with not much success.

To my mind, the root-cause of the disorganization, lack of interest, etc., which we find in the profession, is due to the absurd and ridiculous manner in which we are governed. It is an outrage on common sense.

Has not the time come when the General Medical Council, as at present constituted, should be done away with? As individuals and as a profession we have not the slightest power to govern ourselves, and until the profession is governed by a body of men elected on a democratic basis—a body representing the desires and aspirations of a great profession—so long shall we be exploited by any "Tom, Dick, and Harry" who comes along.

No doubt the General Medical Council filled a useful position many years ago, but there is no doubt it has long outgrown its usefulness. It is now a costly, useless machine, doing little useful work in its limited sphere, and the sooner it is swept away and replaced by a body more representative of the rank and file of the profession the better it will be.

What can be more absurd than the whole of the practitioners in England being represented by three members on the Council? One may respectfully ask, What good are they; what power do they wield? If we had a council elected by the profession, and thoroughly representative, at this important crisis in our affairs, it would wield a great influence, and no doubt guide legislation in a legitimate direction.

The General Medical Council is composed of men representing only the interests of the various instructing and

examining bodies—men who have no more knowledge of the trials and difficulties of the general practitioner than a board of guardians. The Privy Council elects five representatives. Why it should have this power I really cannot see, and it would be instructive to know who directs the Privy Council when it is electing.

In the sister profession of the law the General Council of the Bar is elected by the votes of the barristers—so many of the Inner Bar, so many of the Outer Bar, of which a certain number must be of less than seven years' standing. Why should not the medical profession have the same right of election, and so be allowed to manage its own affairs?

I do not think it would be very difficult to bring about this desirable change if the profession showed an earnest desire for alteration. A strong committee of the British Medical Association could do a good deal by securing pledges from every Parliamentary candidate throughout the country in favour of a reform of this kind.

A resolution, if the standing orders permitted, should be moved at a meeting of the General Medical Council by one of the direct Representatives calling for legislation on the lines indicated in this letter, and I feel sure it would meet with support from some of the members. If the Government saw that the profession was united in a demand for reform, I am quite sure it would be possible to get an Act passed sooner or later. I think the Association should at once take this question up, formulate a bill which would deal adequately with the whole question, secure the help of those medical men now in Parliament, then keep pounding away until success is achieved.

In conclusion, I am quite sure we shall never have a "united profession," or speak with "no uncertain voice," as Dr. Bateman puts it, until we as a profession have the control of our own affairs, instead of being in the hands of an unelected oligarchy.—I am, etc.,

Leeds, Oct. 3rd. ARTHUR HAWKYARD, M.D.

SANATORIUM TREATMENT OF TUBERCULOSIS

SIR,—There are, I think, certain statements made in Dr. Dutton's letter appearing in your issue of September 24th which should not go unanswered. May I therefore, as a former sanatorium doctor, be allowed to speak on behalf of the class of sanatorium doctors as a whole?

In the first place Dr. Dutton asks, "Does Dr. Collier, or the advocates of this treatment, sleep in the cold, damp air themselves? Now, Sir, I was for some time Resident Physician at the Royal Victoria Hospital for Consumption, Edinburgh, and for the whole twelve months of my stay there I slept outside in the grounds, doing so of my own accord, in all weathers, in preference to sleeping in a bedroom, though one was provided for my use in the hospital building itself. I can only say—and those who have had any experience of sleeping out will not need to be told—that I derived infinite benefit *and* enjoyment from so doing. Further, Sir, I was told that every resident who had been there before me had done the same thing.

Before commencing work in London I made a tour of inspection of most of the working-class sanatoriums in the southern and eastern counties to which patients are sent from London—visiting, amongst others, Frimley, Ventnor, Bournemouth, Benenden, Kelling, Coppin's Green, Maltings Farm, and Maitland Cottage—and without exception I found that the doctors in charge of these sanatoriums themselves carried out the open-air treatment.

This should, I think, be a sufficient answer to the above question, as to what the doctors who advocate this treatment do themselves.

But Dr. Dutton goes on to say: "Why, therefore torture these poor unfortunate victims by exposing them day and night to cold damp air, which renders (in my opinion) their breathing more difficult and their cough more distressing."

Now, Sir, the unvarying experience at the Victoria Hospital in Edinburgh was that the patients considered it a promotion to be moved out of the wards (themselves as open to the four winds of heaven as an architect can make them) to the shelters in the grounds, and clamoured for the privilege of being allowed to sleep out of doors. These same patients, Sir, would laugh louder than anybody were the word "*torture*" but mentioned. In the course of my work in London I have in several cases induced working-class patients to sleep out of doors—in their gardens or back yards, on flat roofs, or on leads outside their windows—and for this purpose my committee have provided them with simple open-air shelters. Without exception, Sir, though the conditions of a London back yard are far from perfect, these patients are enthusiastic as to the pleasure and benefit derived. Some weeks ago Professor Howard Marsh, of Cambridge, wrote and asked my permission to see a shelter in use. I was away at the time, but he was taken to see one in the Queen's Park district. He was so much impressed by what the patient told him concerning the advantage of sleeping out of doors that, in writing to me later, he declared that he would have liked to have taken down in shorthand and published the whole of the conversation which took place.

From such experience, Sir, I can draw but one conclusion, and that is that Dr. Dutton's letter was absolutely unjustified.—I am, etc.,

D. J. WILLIAMSON.

Paddington and Kensington Dispensary for the Prevention of Consumption, London, W., Sept. 27th.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

SIR,—In reply to the invitation of Dr. Lees (BRITISH MEDICAL JOURNAL, September 17th, p. 822), I regret it is impossible for me, owing to the loss of my record of cases, to publish anything like a complete list of patients suffering from pulmonary tuberculosis and successfully treated by continuous inhalation.

The combination of antiseptics used varied according to the nature and idiosyncrasy of each individual case, but, generally speaking, guaiacol, carbolic acid, and spirits of chloroform formed the principal ingredients, oil of turpentine being added when any haemorrhagic tendency existed. I quite agree with Dr. Lees that failure in the past by this form of treatment has been largely due to inefficiency in carrying it out. To be successful the inhalation must be continuous for not less than twenty-two hours daily, the only intervals allowed being during meals, and during the first fortnight the patient should be rigorously confined to bed.

The period of repose is to be regulated entirely by the temperature; if any considerable evening rise persists it will be necessary to prolong the patient's stay in bed, and, on the other hand, when the temperature approaches the normal graduated exercises are recommended, and the inhalation is suspended at regular intervals during the day.

I think my own case may be cited as a fair example of the efficacy of this form of treatment. Twelve years ago I was seen by five physicians of eminence, and all agreed that I had pulmonary tuberculosis, the bases of both lungs being affected. The usual classic symptoms were pronounced, and the bacilli were present in the sputum.

I believe at that period the bacilli inspired more dread than they probably do at the present time, and that a gloomy prognosis was frequently founded simply on account of their existence in the sputum. However, a residence abroad of some months was prescribed, and faithfully carried out, but on my return to England my condition was worse in every respect. I then determined on my own initiative to continuously inhale a combination of creosote, carbolic acid, and tincture of iodine, using ten drops every two hours in a Yeo's inhaler. For the first fortnight the inhalation was almost continuous during the twenty-four hours. At the end of the first week there was a marked improvement in all the symptoms, and at the end of the fifth week the cough had subsided, the expectoration had ceased, the temperature, which was always over 101° F. in the evening, had fallen to normal. Since then there has been no return whatever of any of the symptoms—an example of the efficacy and permanency of the results obtained entirely by *continuous inhalation*.

My most recent case was a gentleman, aged 54, occupying a high position in the Indian Civil Service. He had been treated in India for malaria and typhoid fever, and was about to be operated on for supposed liver abscess, when one of the physicians present examined the chest and found a consolidated patch at the base of the left lung and another in the second (left) intercostal space. The patient was losing flesh and had suffered from fever of obscure origin for eleven weeks previously. He was ordered home immediately, and on arrival here, on

March 7th, consulted me. The diagnosis was easily confirmed, and the condition of the patient appeared to be very serious. He lost 23 lb. in weight. The cough was very distressing, especially during the night, and the expectoration abundant. There was a daily rise of temperature to 101.5° F., usually between 4 and 6 p.m. The voice was husky and there was considerable tumefaction of the epiglottis and arytenoid regions.

Treatment was commenced immediately. The patient was confined to bed for ten days in his hotel, and continuous inhalation of a mixture containing guaiacol, carbolic acid, tincture of iodine, and spirits of chloroform was ordered, and faithfully carried out. At the end of that period there was marked relief from all the symptoms, and the patient was sent to a district outside Cairo. Here he was confined to his room, but not to bed, for another week as the temperature still remained high, but the inhalation was continued, the only intervals allowed being during meals.

At the end of the third week the cough had completely disappeared, as well as, of course, the expectoration. The temperature was normal for the first time for fourteen weeks, and remained so until his departure three weeks later. The weight increased by 11 lb, and careful physical examination of the chest revealed nothing abnormal. As the voice continued somewhat husky the patient was ordered to Salso Maggiore, and, although I have not heard from him recently, I have every reason to consider that his condition continues very satisfactory.

In conclusion, I wish to emphasize the fact that I have no wish to claim any originality with respect to this form of treatment, and it will be easily admitted by any one who has read the remarkable series of cases published by Dr. Lees in the British Medical Journal of December 11th, 1909, that the credit of having brought it prominently before the profession is entirely due to him.—I am, etc.,

Cairo, Sept. 25th. T. Gerald Garry, M.D., M.A.O.

SECONDARY INFECTION IN PHTHISIS.

Sir,—I am much obliged to Dr. George Willett for his advice to me contained in his letter in your issue of October 1st.

Andrews, Gordon, Meakin, and Pottinger may be correct and myself wrong. Results are the point, however, and up to the present I have been most satisfied with the results of my own method—namely, the giving of a polyvalent serum for that organism in the sputum which is found to be in the majority, excluding the tubercle bacilli, as I hold that the disease the latter causes tends to get well of itself, if mixed infection is absent and the patient living under good hygienic conditions. When my results cease to be good, then will I assuredly follow Dr. Willett's advice with pleasure.

I have been much gratified with the letters I have received from all parts of the British Isles concerning my method and theory.—I am, etc.,

Yelverton, Oct. 2nd. J. Penn Milton.

THE PREVENTION OR ABORTION OF CATARRH.

Sir,—If Dr. Hardman will persuade his patients to reduce their daily diet from 2 lb. or upwards of solid food—a common allowance—to 12 oz., he will find the prophylactic and treatment he sighs after. This quantity should be taken in two meals, and only liquids at other times, but milk must be reckoned as one third solid. Much could be said on mastication, kinds of food, and other considerations, but quantity is the important point. Under this régime the patient may catch cold, but with ordinary care the effect will pass away harmlessly in a day or two. Not only do catarrhs and influenzas yield to it, but a vast variety of maladies, such as bronchitis, asthma, and piles. The subject of catarrh is treated from this point of view by Dr. Rabagliati in *Conversations with Women* (William Byles and Sons, Bradford, 1910), p 240, and by writers in the British Medical Journal and elsewhere.—I am, etc.,

Philip Miall,
Consulting Surgeon to the Bradford Infirmary.

September 28th.

LONDON UNIVERSITY AND DEGREES IN DENTAL SURGERY.

Sir,—May I endorse the suggestion in last week's Journal that now the London M.S. is open to dentists it shall also be open to various surgical branches—gynaecological, ophthalmic, etc., just as the M.D. is to medical branches. A far larger number of men would take it, as considering the now large fee, many men cannot afford to trifle with it until they are some way on as specialists, and their general surgery is somewhat rusty. From the numbers taking the gynaecological, pathological, etc., branches of the M.D., one can see what a want the division of that examination has met.—I am, etc.,

October 3rd. H. B. H., M.D., B.S.

THE USES AND DANGERS OF TEETH AND PROSTHETIC APPLIANCES.

Sir,—Mr. Turner's sweeping condemnation of certain teeth, and apparently all prosthetic appliances, is so startling that one feels it should not pass unchallenged, though one would prefer the task to have been undertaken by more worthy hands. After reading Mr. Turner's letter almost every dentist would reach the conclusion that he considers the major portion of the time spent in dental education to have been wasted; and that if he is able to extract teeth, and perhaps do a few simple operations, he is fully equipped to serve the public in the best possible manner: a truly extraordinary position to take up.

In the letter under discussion are many points with which the dental profession is in accord, but there are many others upon which one is left to comment.

It is well known that edentulous persons are able to carry on the function of alimentation with success, but one also finds these same individuals ready to use artificial substitutes when the opportunity arises, and it is equally well known that it is not for aesthetic reasons alone, for the health is improved by the ability to take food which requires mastication as well as by removal of septic teeth.

Mr. Turner's attention was drawn to this subject by an aged and edentulous relative eating pork crackling. He does not say how long this individual had been edentulous or how well the crackling was comminuted by those edentulous jaws. It is a clinical fact that old edentulous persons maintain metabolic equilibrium with little or no difficulty, but young individuals in the same condition do not, as a rule, succeed so well; and these latter would, in later life, undoubtedly have much difficulty in manipulating pork crackling (unless prepared in small pieces ready to swallow), because the relative sizes of the upper and lower jaws change as the alveolus is lost, so that the lower is on a curve much external to the upper, and so it must be with other food, unless taken into the mouth in a condition ready, except for insalivation, for swallowing.

The statement that "at any period and in any class of life, once the mouth has become septic it is very difficult to regain and maintain even the state of unstable asepsis which we accept as clean" may be true, but the fact remains that it *can* be done, and *is* done, in the routine of everyday practice. This fact is apt to be overlooked whilst reading Mr. Turner's letter. One does not say that it is done in every case, but in more than sufficient to justify the treatment necessary to maintain the unstable asepsis suggested by Mr. Turner. One agrees that in hospital practice, as conducted at the present time, it is impossible to maintain this unstable asepsis to any degree; but is that any reason why the high standard of conservative dentistry of to-day shall be lowered? It has been pointed out that nutrition with mastication by artificial substitutes is better than nutrition in an edentulous person; how much more important is the power of mastication in patients who attend hospitals than in those who belong to the wealthy classes, who can pick and choose their food and its mode of preparation, needs no argument. Suffice it to say that the former supply the larger number of units to the army and navy, for which surely the standard of dental efficiency is low enough, and yet Mr. Turner would have it believed that if it were still lower there need be no fears for nutrition. Mr. Turner mentions in his paper that he has been endeavouring to settle how many opposing teeth may reasonably be considered as affording sufficient tooth mastication power; somewhat paradoxical in view of the later statement.

Because this unstable asepsis is not possible of attainment in hospitals is no argument that it is impossible of attainment, and once attained it must be maintained by means of treatment whenever necessary. "As for cases which have been pronounced clean and are hotbeds of

asepsis," one can only assume the person making such a statement is guilty of gross carelessness in his examination, for pockets, though unsuspected, can be found.

Because all the dentists in the kingdom would be insufficient to cope with the conservative and prosthetic needs of the poor is rather an argument that steps be taken to secure sufficient and competent dentists to do this work. Of its necessity there can be no doubt. One recognizes that Mr. Turner is advocating for the present, but the trend of his remarks leads one to assume that there is no solution of the problem except in an edentulous race—a condition which one doubts whether he could look upon with equanimity.

In the latter half of the letter the abuse of prosthetic appliances is discussed. It is not difficult to absolutely sterilize a tooth plate, and if necessary the dentist should instruct the patient to do this as well as clean it in the usual manner; there is no need to construct a tooth plate so that it is uncleansable—if it is so then only the dentist is to blame. Decay of teeth and an inflamed mucous membrane are both preventable, except, perhaps, in a very small percentage of cases, so that one would say that these sequelae are the exceptions rather than the rule, as Mr. Turner seems to suggest. The next point refers to the join with the root in the cases of crowns; collar crowns can be made so that there is no overlap if the root is correctly prepared and the collar properly made, the surface of root and crown being so near one (being one to all intents and purposes) that no damage accrues to the soft tissues. This join should be $\frac{1}{32}$ in. to $\frac{1}{16}$ in. below the gum margin. The anatomy of the teeth precludes one from making a satisfactory crown with the join remote from the gum, and, apart from this consideration, were such a course possible, other conservative treatment is available whereby such a tooth could be made a healthy functioning organ. Flush end-to-end joins can certainly be made, for one has an impression of the root, and the operation may be completed outside the mouth. One agrees that receding angles and concave surfaces in certain directions (under which category all inaccessible parts are included) must be avoided—they can and are avoided. Because practically all crowns and bridges Mr. Turner has seen "have been the merest travesties of these principles of asepsis" is not a reason why they should be condemned; one much regrets that he should not have had the fortune to come across good examples of such work as he condemns almost unreservedly; condemn, if he will, the men who overlook the necessity and feasibility of cleanliness, but not crowns, bridges and prosthetic appliances in general, which with the natural teeth can all be maintained in a satisfactory and clean condition with reasonable care.

In conclusion, it appears that Mr. Turner has argued from the exception rather than the rule throughout; individuals need have no fears for their nutrition if edentulous just as one may survive without four limbs, but many will have a happier existence if not edentulous; there are many cases in which it is quite unnecessary from the point of view of sepsis, *per se*, for these individuals to become edentulous and if such a condition does arise, whether total or partial, it also is unnecessary from the point of view of sepsis, *per se*, for the individual to remain so, for artificial substitutes can be adjusted which, as well as any remaining natural teeth, are capable of being kept perfectly clean and healthy with reasonable care, the result being a nation more efficient and more pleasant to behold. Has not the position Mr. Turner assails arisen through the failure of the dentist to carry out those principles which it is his duty to be fully acquainted with and to teach his patients, and not to any inherent defect in prosthetic work in general? We live in an age in which teeth are demanded—natural ones must be retained where possible, and artificial ones substituted where necessary; these facts have to be confronted and need cause no alarm; they can be complied with and with advantage to the individual and with few, if any, disadvantages, not one of which need be sepsis. The fault lies in the paucity of the dental profession and the slowness with which its numbers are being increased, as well as in the fact that more advanced clinical instructions is needed for those who are willing to undertake the more difficult types of dental work.—I am, etc.,

London, W., Oct. 5th. HAROLD CHAPMAN.

THE HEARING AFTER OTECTOMY.

SIR,—Every few years a note appears in the JOURNAL from Mr. Faulder White advocating in cases of chronic middle-ear suppuration a resort to what he terms *his* operation of "otectomy," and deploring "the vogue of the radical mastoid operation." As a voice crying in the wilderness, Mr. White's piteous appeal appears to fall on deaf ears; no one often takes the trouble either to controvert or endorse either his claims or his criticisms of current practice. The reason of this is not far to seek. Mr. White is a very loose writer who uses an eccentric terminology, and does not present his thesis before us in such a way as to command serious consideration. When Mr. White writes of "my operation of otectomy" it might be inferred by any one knowing nothing of his methods that he could claim to have brought forward and practised some original operation, or, at all events, to have modified by marked improvements in technique some previous form of operation. The term "otectomy" might suggest the former to be the case, for this word literally means excision of the auditory apparatus. So far, however, from Mr. White in fact advocating any so formidable an operation, he really only wishes to call attention to the value of various minor operative procedures performed on the tympanum by way of the meatus. These permeatal procedures Mr. White characteristically designates "intrameatal." "My operation of otectomy" (*sic*—singular) turns out then to mean quite a number of diminutive otectomies. And as a matter of fact Mr. White as far as I can gather from his writings, cannot claim to have originated any new operative procedure whatever, whether in the surgery of the meatus or in the permeatal surgery of the tympanum. Aural surgeons have been performing for many decades most of these various operations in and through the meatus which Mr. White alludes to under the very comprehensive term "otectomy." There is, however, a difference in the practice of individual surgeons in the frequency with which they resort to a certain type of permeatal operation—namely, ossiculectomy, with or without atticotomy. Many aural surgeons perform this operation only very rarely; others, like myself, resort to it with more frequency, but not very frequently, and not in any way as a more or less routine procedure, whereas I think "routine" correctly describes the practice of Mr. White. Although it is true Mr. White sometimes includes under the term "otectomy" a number of minor operations on the tympanum and meatus which we have many of us done in thousands, we may be sure that when he alludes to his "500 otectomies" he is using the term in a narrower sense, meaning some form of permeatal tympanic exenteration, an operation often spoken of for short as "ossiculectomy," and which has in the opinion of most otologists a comparatively restricted field of usefulness. The confusion caused by the use of the term "otectomy" may best be illustrated by a quotation from Mr. White's monograph, entitled "Infected Ears" (p. 99) ". . . the removal of an ossicle is not an essential step in an intrameatal (*sic*) operation; for the cure of otorrhoea I prefer to use the term 'otectomy' which signifies a cutting out from the ear, and, as every case should be treated on its merits, in one case all that may be required is a curetting of a carious patch, in another perhaps the removal of the outer attic wall."

To say that permeatal surgery is neglected in this or any country is inaccurate, and if on the other hand Mr. White really means to suggest, as I believe he does, that a more or less routine resort to permeatal tympanic exenteration in chronic middle-ear suppuration would reduce the necessity for more radical post-auricular measures to a minimum I can only say that it is contrary to first-rate experience at home and abroad.

In opening a discussion in the Otological Section of the British Medical Association at Exeter in 1907, I as clearly as I could in the short time at my disposal advocated permeatal tympanic exenteration (ossiculectomy, etc.) in certain conditions occasionally met with, so that I am not an out-and-out opponent of these operations, but actually perform them in some carefully-selected cases with more or less success. Experience, however teaches me that in the larger number of cases seriously demanding operative interference either "complete radical" or "mitigated radical" operations have a much wider field of usefulness.

I suggest that it would be more convincing in speaking of percentages if Mr. White would give us a really adequate presentation of, say, his last 100 cases in which he performed a permeatal tympanic exenteration where he believes most otologists would have resorted to more radical post-auricular operations. Let him state his case before the Otological Section of the Royal Society of Medicine if he still thinks he has a case.

Mr. Hunter Tod's able communication to the *Lancet* (September 3rd, 1910), recording the results in fifty cases in which this type of operation was performed, is a model of clear exposition and accurate observation which any one might with advantage endeavour to imitate.

Mr. White's claims and his uncomplimentary references to the methods of leading aural surgeons might safely be ignored by me as by others, and I should not have troubled to challenge his contentions did I not recognize that Mr. White, however uninformed, is thoroughly in earnest and sincere in this matter.—I am, etc.,

London, W., Oct. 4th. WILLIAM HILL.

SIR,—I was much interested in Mr. Faulder White's letter in your issue of October 1st anent the beneficent results of otectomy. There are no doubt many cases of chronic aural suppuration with antral empyema, simple or coupled with a mild degree of bone disease, where patients might be spared the radical mastoid operation. Of course, every case should be dealt with on its merits. The minor operation would need to be vigorously tabooed in the presence of the slightest evidence of intracranial complication, active mastoiditis, extensive bony involvement, labyrinthine suppuration, tuberculosis, facial paralysis, etc., but there is in my experience a very large class of cases where chronic aural suppuration has its origin in, and is maintained by, antral empyema, diseased attic and ossicles, in which a complete clearance of the aditus, attic, and tympanum, followed by antiseptic treatment, yields the most gratifying results in every respect.—I am, etc.,

London, S.W., Sept. 29th. CLAYTON FOX.

THE MEDICAL SICKNESS SOCIETY.

SIR,—In a letter which appeared in the BRITISH MEDICAL JOURNAL of July 2nd last, Dr. E. D. Kirby asked for information about the rate of interest earned by the funds of the Medical Sickness and Accident Society and the average age of the members.

The rate of interest earned by our funds is £3 8s. 0d. per cent. per annum and has not appreciably varied for some years past. As we are compelled by the provisions of the Friendly Societies Act, and also by our own rules, to invest only in first-class securities, I do not think this rate can be increased.

The average age of the members was in 1898, 41 years 6 months; in 1903 it had risen to 42 years 1 month and in 1908 to 44 years 11 months, but many of our members are approaching the age of 65 years, on which, by our rules, they go out of sickness benefit, whilst those who join as new members are, for the most part, less than half that age. It is doubtful, therefore, whether the average age will rise much further.—I am, etc.,

F. ADDISCOTT,

London, W.C., Sept. 30th. Secretary, Medical Sickness Society.

SPIRITUAL HEALING AND THE "GUILD OF HEALTH."

SIR,—However much Mr. Boyd may question the taste of the first paragraph of my former letter, I venture to think that his communication of September 24th fully justifies the statement to which he objects. In nearly a column of words in your issue of October 1st there is nothing tangible or really helpful to be found.

Mr. Boyd begins by asserting that he did not act "independently of medical control" in the case of myasthenia gravis, because, forsooth, he asked a medical friend about a disease the name of which he had obtained from a patient who stated that she was no longer under the care of any doctor. Does Mr. Boyd really think that such tortuous argument justifies him in undertaking treatment? Does he really consider that there is much difference between a society that "aims at forwarding a revival of spiritual healing," and one that exists to "put you in the way to obtain spiritual healing?" Is it decent to retort to a request for a definition of proposals of his own making that I am as unable as himself to define the limits of spiritual healing?

I hardly like to suggest that Mr. Boyd is making use of this correspondence as an advertisement for his methods, but I am sure that until he repents, deals honestly with himself, and attempts to use his reason, neither the Guild of Health nor its warden will succeed in awakening the interest or enlisting the sympathy of thinking men.—I am, etc.,

London, W., Oct. 2nd. CHARLES BUTTAR.

SIR,—I am content to refer your readers to the whole correspondence, which has followed my article published under this heading on August 20th; and to assert confidently that the Warden's letters have only made it clearer that we should not co-operate with this Guild.

I think the normal clergyman will share the regret that our common earnest desire for greater union should be handicapped by certain of their number attempting to "revive" so-called spiritual healing by the methods that I have criticized.

To give one more instance of these methods: my sister having written as a stranger to the secretary for some of the society's publications, received also their printed memorandum in which we find this statement: "We do not as a Guild supply healers, though we are ready to give any information we can about those who are engaged in that work." Here is the unqualified use of the word "healer," and a definite open offer to recommend my sister to a healer, whether he might be the warden or some clerical colleague; and I hold that it is most undignified for ministers of religion to use such a society in order to bring any stray patient, who may happen to hear of this guild, to them for healing.

I am speaking plainly, as this guild, according to its last report, had 53 clergymen, with 351 ladies, but no members of our profession, amongst its 429 members; and although certain clergymen have boomed Mr. Hickson and other lay healers, hitherto none have openly placed themselves at the head of such a society as this.

The last letter from Mr. Boyd offers most significant agreement with the statement of the Organizing Secretary who wrote to a lady inquirer: "We don't consider any disease, however incurable it seems to be, beyond the reach of spiritual healing." For Mr. Boyd never hesitated as to whether the case of myasthenia gravis was suitable for his treatment, but was satisfied that he was well qualified to treat it because he says: "I consulted a medical friend of mine who told me all that is, I believe, known about the disease"!

Further discussion of this guild would not serve any useful purpose, as obviously only the intervention of the bishops can check this bad precedent set by some of their clergy.—I am, etc.,

London, W., Oct. 3rd. STANLEY BOUSFIELD.

*** We think that further discussion of the aims and methods of the "Guild of Health" would be unprofitable.

"SPIRITUAL HEALING."

SIR,—The Rev. F. Boyd says in your last issue that he cannot accept my limit of hysteria. I placed no limit to hysteria, but only to his ability to "heal."

Faith may remove mountains, but hysteria can remove continents!

His remarks about organic and functional disease I do not understand, but "the highest medical authority," whatever that may mean, will hardly assist his position.

The difference between organic and functional disease he, at least, is quite unable to distinguish, nor is he, as a clergyman, expected to be able to do so. Could he do so, it is time he changed his occupation. As for the proposal to act "in co-operation with some one who is qualified," that is absurd, as no medical man may cover an unqualified person.

The correct correspondence between "subjective" and "objective" phenomena is hardly to be expected from many, and the clergyman least of all; this disability is by no means derogatory to "the cloth."

The province of the clergyman is to minister to the spiritual needs of his flock when so needed, to help them to bear pain when such may be their sad fortune, to help them not to exaggerate their symptoms by undue subjectivity, and to "heal" them spiritually of spiritual ills if

he can do so; but by his methods or by his results never to mislead them to believe he has done more than the duty of a clergyman—a profession the following of which entails no time or inclination for the indulgence in quackery.—I am, etc.,

October 3rd. J. W. T.

SYCOSIS: SO-CALLED "BARBER'S RASH."

Sir,—I have read with great interest the series of experiments made by Dr. Wishart, but I am unable to agree that they absolve the barber from blame in many cases of sycosis.

To my mind, neither the lathering nor the use of the razor—except as accessories before the fact—play any great part in the conveying of infection from one customer to another, but it is the sponge used when the shaving has been completed and the skin more or less abraded which carries the infective matter.

Sufficient care is frequently not taken in disinfecting the sponge; sometimes after having been used it is carelessly thrown into the basin, where it may remain until, after a casual rinse, it is used on the next customer. If the customer should prefer a cold sponging, the sponge is merely held under the cold tap for a few seconds, and any infective matter upon it loses little of its power.

I am aware that the higher class hairdressers are more careful, as a rule, but until all hairdressers are compelled to pay more attention to the sponge cases of sycosis will continue to be laid to their doors.—I am, etc.,

Great Malvern, Sept. 6th. J. N. F. Fergusson, M.B.

HOW TO USE THE "JOURNAL."

Sir,—The letters you publish from Drs. Carey Coombs and C. O. Hawthorne describing how they use the Journal induce me to mention my plan. I have found the "Athenaeum News Cutting Album" (bound in green cloth and costing 3s. 6d.) most convenient for keeping those parts of the Journal that I want for reference. The album contains fifty stout numbered leaves, gummed on each side and interleaved with waxed paper to prevent adhesion. The leaves are the same size as those of the Journal. Those pages of the Journal that I want to keep are cut out, the gummed surface of the leaf is moistened, and the pages at once stuck in the book. Either whole pages or parts of single columns are arranged with equal ease, and, as five whole pages can be stuck to one gummed leaf surface, the book will hold a large number of cuttings. The title of the article and the number of the page on which it occurs are written in the alphabetical index provided, and a tidy, handy, bound book of reference is at once formed.—I am, etc.,

Horsham, Oct. 1st. A. J. Fairlie-Clarke.

INTRACELLULAR SALINE INJECTIONS.

Sir,—I have read with much interest the article on a simple curative treatment of cholera, by Professor Leonard Rogers, a work that is classical.

I do not, however, here intend speaking of cholera, of which I have had no experience, but I would plead for a more general use of saline injection, not intravenous but intracellular.

Numbers of lives are lost for the lack of this treatment. *Post-partum* haemorrhage, change of life, loss of blood from injury, etc., how many of these cases might have been saved by this treatment, lives in all cases valuable, if not to the public, to someone?—I am, etc.,

Paignton, Sept. 28th. Griffith C. Wilkin.

THE AIR INSIDE A MOSQUITO NET.

Sir,—In his interesting paper on the effect of a mosquito net on the air within it, published in the last issue of the Journal (p. 972), Dr. Duncan Whyte makes a comparison between the organic impurity in the air within a mosquito net and that in a polluted water. He says:

> If water from a well were found to contain as much oxydizable organic matter as the specimens of distilled water that had been shaken up with the air inside the net, and if no further tests were possible, the well would assuredly be condemned as "unfit for drinking purposes"; but the individual sleeping within the mosquito net has been inspiring this impure air for the last few hours of his sleep.

So far as I know, there is no evidence to show that the organic matter in water *as such* is deleterious; its importance is what it indicates—namely, the probable presence of undesirable micro organisms. I venture to think that Dr. Duncan Whyte's analogy is a false one. At the same time I do not suggest that such organic impurity in the air is of no moment. I would agree with him that it is highly undesirable, and that adequate ventilation of the mosquito net should be ensured.—I am, etc.,

King's College, W.C., Oct. 1st. R. Tanner Hewlett.

Universities and Colleges.

UNIVERSITY OF LONDON.

Professor E. A. Minchin, Professor of Protozoology in the University, will give a general course of about twenty lectures on the protozoa, at the Lister Institute of Preventive Medicine, at 5 p.m. on Mondays, Wednesdays, and Fridays during the second term (January to March). The lectures are free, and will be addressed to Honours B.Sc. students and to medical men, and will be followed by exhibits of preparations as occasion requires.

The Services.

LOWLAND DIVISION, R.A.M.C., TERRITORIAL FORCE.

Major-General Spens, C.B., commanding the Lowland Division of the Scottish Command, has issued his official report on the annual training of the territorial troops under his command during 1910. With regard to the annual training in camp of the Royal Army Medical Corps he says it "was thorough, practical, and well carried out. Those sections of the field ambulances that attended manœuvres in Haddington and Fife marched and carried out their duties very well indeed. Officers gained experience as to the principles of employment of a field ambulance by these manœuvres, and it is hoped in the coming year they will increase their knowledge by means of regimental exercises."

VOLUNTARY AID DETACHMENTS.

At the annual meeting of the council of the County Territorial Associations of Scotland held in Glasgow on 28th September, Sir George T. Beatson, M.D., K.C.B., gave an address on the formation of voluntary aid detachments in connexion with the Scottish Territorial Red Cross Brigade, and the work of the British Red Cross Society.

Medico-Legal.

CHRISTIAN SCIENCE TREATMENT.

An inquest was held at Urmston by Mr. J. F. Price, Manchester County Coroner, on September 29th, into the death of Mr. Walter Statham, aged 53, described as an adherent of the Christian Science Church. Mr. Statham's son, in his evidence, said that up to seven years ago his father had generally good health. Then he broke down with nerve trouble, and about three years ago his left leg became lame. He never sought medical advice until May 10th of this year. In the interval the leg grew worse, and Dr. Clegg was called in. The doctor advised him to see a specialist, and on the same day Mr. Statham went to Manchester, and saw Dr. Burgess, who told him to lie up. Dr. Burgess also said the leg would probably have to be amputated. For a fortnight Mr. Statham was under the care of Dr. Clegg, who advised him to have the leg amputated, saying if the operation was not carried out the limb would probably waste away. Witness said his father refused to have the leg amputated and gave two reasons, the first being that he always had a horror of amputations, thinking them unnecessary, and the second reason was that he was a Christian Scientist. The witness went on to say that his father commenced Christian Science treatment, and on May 25th he sent for Mr. Pitfield, a Christian Science practitioner. In reply to the coroner he said Christian Science treatment consisted of reading Scriptures and Christian Science books and prayer. The treatment took place, perhaps, two or three times a week. There was no actual treatment of the leg, which was only bathed by Mrs. Statham. The patient never showed any sign of improvement, and death took place on September 25th. Payments were made, but witness did not know what they were. He proceeded to say that Mr. Pitfield saw his father very often, and the latter seemed to be thoroughly satisfied with the treatment. His father had great faith in Christian Science and was quite convinced, at any rate until a few days before his death, that there was always a hope of recovery. Asked if he was in any way coerced into the matter, the witness said his father sent for Mr. Pitfield, and it was distinctly understood by all of them that any treatment he underwent from the Christian Science was entirely at his own responsibility, and the responsibility for not taking the doctor's advice

entirely rested with him. His father was in much pain at times. Nothing was done to relieve him but prayer and what Mrs. Statham could do.

Dr. Clegg, who then gave evidence, said he went to see Mr. Statham on May 14th, and found him suffering from a tuberculous disease of the left knee, and after Mr. Statham had seen Dr. Burgess both the specialist and witness advised the patient to have the leg amputated. He took a day to consider the matter, and then decided not to have it done. The witness said it was clearly pointed out to the patient by himself and Dr. Burgess that if he did not have the leg amputated it would inevitably wither away and kill him. The doctor went on to say that he attended Mr. Statham for two or three days and then was told not to come again as Mr. Statham was about to undergo Christian Science treatment. Witness saw him a few times afterwards, but never discussed the disease with him. When told that it would end in death he said he had great faith in the treatment he was about to undergo. As a matter of fact, from time to time he said he thought he was improving—even up to a few days before he died. The doctor considered that death was caused by septic poisoning through absorption from the diseased knee joint. It was the same practically as consumption in the lungs. In reply to the coroner, the witness said that if the patient had had his leg amputated it would certainly have prolonged his life, though the leg had got very bad. At that time it was a local condition. The system was only affected eventually.

William Pitfield, a Christian Science practitioner, of Brockhurst, West Didsbury, said he went to see Mr. Statham on May 25th, and was told the doctors had advised amputation of the limb. He was told they had said that was the only hope. Asked by the Coroner if he and the patient did not believe this, the witness said it was no business of his to advise him what to do, but Mr. Statham decided not to have it done. The witness attended him up to September 24th, and the treatment consisted of prayer, the reading of Scriptures, and the Christian Science textbook, *Science and Health*. No treatment was given to the leg, but he showed no improvement, though he said once or twice that he felt he was better. He had no faith whatever in medical science, but he had the greatest respect for the doctor.

We give the rest of the proceedings as they are reported in the *Manchester Evening News* of September 29th:

The Coroner: Did you expect Mr. Statham to recover without any treatment whatever?—I do not consider that prayer to God is "without treatment."

The Coroner: I mean actual local treatment?—I consider prayer to God is local as well as general treatment.

And then to what do you attribute your treatment?—I cannot say it has been a failure.

The Coroner (emphatically): It has been an absolute failure.

Mr. Pitfield: The case has not been "met."

Mr. Price: I ask again is it success or failure?—The man has not been healed.

I take it, then, it has been failure?—I am dealing with it spiritually. The case has not been "met."

Then, if it has not been successfully treated, it has been a failure?—Yes.

Do you attribute that to a want of faith in the deceased himself?—No, I would not say that.

Do you agree with medical men that they have been given the powers from the Almighty to effect cures?—I say that their treatment is not science.

Where do you say, then, their gift comes from, God or the devil?—I can't say.

Do you say that they have no knowledge?—I say it is not science; they practise according to their own light.

The Coroner: I was taught that God helps them who help themselves. If this man had had his leg amputated he would have probably been living to-day. Quite apart from your prayers, would you think he had faith?—I would rather not argue the point.

The Coroner (warmly): You cannot argue it. Do you ever have children?—I have had.

The Coroner: I would advise you to drop it in future, because if you do not you may probably find yourself in the dock.

Witness: I would obey the law.

The Coroner: Yes, and leave it to the doctors. I certainly "would" advise you to obey the law. Why obey the law if you have faith in your own treatment? It only shows the shallowness of the whole thing. You dare not do it in the case of children.

The Coroner added that this man, if he had been foolish enough not to take the advice of the doctors' powers, which he suggested God had given to them, he took the risk. He was an adult and could choose what he liked.

In reply to a juror, Mr. Pitfield said he had practised Christian Science for four years. He had passed no examination nor held any diploma.

The Foreman asked what witnesses he had to bring to prove that his powers were successful?—You can hear testimonies of people who have been healed of all diseases.

You have juggled with this man's life. How can you cure a man suffering from a compound fracture?

Witness simply said they did not juggle.

Another Juror: You said there was no hope at the finish?—I said I saw the case was not being met.

The Coroner observed that if that had happened in the case of a child the witness would in all probability have been sent for manslaughter.

The witness further said that at the end he suggested sending for a doctor.

A Juror: And if he had died because of the amputation you would have put it down to the doctor.

Other jurors strongly commented upon Mr. Pitfield's conduct, one saying that he had killed Mr. Statham.

Mr. Price: I would not say he has killed him.

A Juror: But the deceased would have been living to-day had the leg been amputated.

Another Juror: It is a case of weak-minded people.

The Coroner: It is a question of pounds, shillings, and pence.

The Foreman: We have the power to stop a great evil.

The Coroner said he thought the case would be echoed throughout the land.

The Foreman said if a man was out of work he could not expect to get it by lying in a field and holding out his arms to pray. The whole business was blasphemous; that was chicanery.

In reply to other questions, Mr. Pitfield said that was the second death he had had.

The Coroner: How many have you cured?—I can't say.

A Juryman thought Mr. Pitfield was responsible for Mr. Statham's death, and asked if something could not be done.

The Coroner replied that as Mr. Statham was an adult he was responsible for his own action. It would be different in a case of children.

The Foreman (hotly): Here is a man who gives treatment which we would not give to a horse or a cow.

Another Juryman suggested the lethal chamber for Christian Scientists, and the Foreman said to Mr. Pitfield, "I pray God you will never cross my doors. If you do you will have to pray God for something."

Another Juryman: You can't educate fools.

The Coroner added that it was just as a juryman had said. It was a question of "plucking pigeons," and that was the top and bottom of it.

The Coroner said the only verdict they could bring was death from septic poisoning, and added that as Mr. Statham acted upon his own responsibility, the jury could not add a rider.

The jury thereupon returned a verdict in accordance with the medical evidence.

LOCUMTENENTS AND AGENTS' FEES.

A CORRESPONDENT writes that some medical agents not only expect extra fees from locumtenents on re-engagements, but also from principals. He states that some time ago he got a locumtenent through a provincial medical agent; and two years later, happening to meet this gentleman while in charge of a neighbour's practice, he requested him when disengaged to come again to him for a week end. A little later he received a demand from these agents for half a guinea. He took no notice till he was summoned in the county court, when he placed the matter in the hands of the Medical Defence Union. After some correspondence he was advised to pay the demand by that society.

*** Our correspondent is to be sympathized with, but it is his own fault that he was liable to this imposition. If he had troubled to read the agent's terms before employing him, by declining to do business under such conditions he would not have subjected himself to such a claim. If medical practitioners enter into such agreements with their eyes open, it is no good complaining afterwards; they must be prepared to abide by the agreement, however unreasonable.

POLICE REGULATIONS AND MEDICAL FEES.

A CORRESPONDENT writes that he was called in recently by the police to attend to a bicycle accident, where two people were injured. His professional services were required by both, and later he received *one* certificate entitling him to a single fee. On complaining to the police authorities he was informed that it was only *one case*—that, therefore, he was only entitled to one fee.

*** It is to be feared that this is in accordance with the general police regulations, although we have been informed that extra certificates are sometimes issued in such cases.

CONTRACT IN RESTRICTION OF PRACTICE.

A CORRESPONDENT sends the following query: A is assistant to B in charge of a branch practice, and signed a bond not to practise within a given radius for a specified time. A resides six miles away from B, but only B's name appears on his doorplate. B has recently died, and A, who is without capital, wishes to put up his own name on the doorplate and carry on practice in this village. He wishes to know: (1) What is A's legal position? (2) What is A's position apart from the legal aspect?

*** (1) This depends on the bond A has signed. If the restrictive covenant was with B only, on B's death he would be freed from the obligation, but it would be otherwise if B's executors and assigns were included in the covenant. (2) Apart from its legal aspect, it could not be regarded as an honourable way of starting a practice, unless the consent of B's executors was first obtained.

Obituary.

ALEXANDER JOHN ALLIOTT, B.A., M.D.Cantab., SEVENOAKS.

Dr. Alexander John Alliott, of Sevenoaks, died in September in the town in which he had passed considerably over half of a highly useful existence. A son of a Nonconformist minister in Bedfordshire, well known in his time as a Greek and Hebrew scholar, he received his general education at Bedford Grammar School, which he left as the winner of a scholarship at Pembroke College, Cambridge. There he graduated B.A. in 1870, taking honours in Natural Science, and then entered St. Thomas's Hospital. As a student of the hospital he became M.R.C.S. in 1872, M.B. of his own university a year later, and served a term of office as Resident Accoucheur. Later on he became in turn Resident Clinical Assistant at Bethlem Royal Hospital, and Assistant Medical Officer to the Three Counties Asylum in his old county. To the M.D., Cambridge, he proceeded after he had been some years in practice.

In Sevenoaks he settled down some thirty-five years ago. He soon became a well-known and successful practitioner, and continued to live in the town after his retirement from active practice some two years ago. That event was marked by the presentation to him of a widely supported testimonial in acknowledgement of his services to the locality, and by his appointment as Consultant on the staffs of the Hip Hospital for Children and the Sevenoaks Cottage Hospital. Apart from medical work he had done a good deal for the town in other connexions, being a Church Warden and a member or Vice-President of several local societies. After his retirement he did still more in this direction, and also accepted a seat on the urban district council.

His death is naturally a matter for general regret, for he possessed many points of contact with his fellows, and in addition to being a markedly upright, honourable man, had an attractive and sympathetic personality. He also possessed much musical talent, and was always ready to employ it to the general advantage. As a student he acted as organist in the Chapel of St. Thomas's, and he occasionally played violincello parts at local concerts in Sevenoaks, and was vice-president both of the Musical Union and of the Choral and Orchestral Society. Besides being well known in Kent, Dr. Alliott's name and personality were familiar in medical circles in London, and more particularly among specialists in lunacy. The professional subject in which he took a special interest was diseases of the mind, and at one time he made a practice of receiving resident patients. His skill and success in managing them was well recognized.

Dr. Alliott married in 1875 a lady of Sevenoaks, by whom and by several children he is survived. His funeral, which was attended by a large concourse, bore ample evidence to the high esteem and affection in which he had been held both by his patients, the general public, and by his professional colleagues.

We regret to announce the death of Professor Rudolf Chrobak, of Vienna, which took place on October 1st. The famous gynaecologist was in his 68th year.

We regret also to announce the death of Professor Raymond, of Paris, a recognized authority on nervous diseases. He was in his 69th year.

Just as we go to press comes the news of the death of Professor von Leyden, of Berlin, at the age of 78. His name was known throughout the whole medical world as one of the foremost physicians of his time.

Professor Bombarda, of Lisbon, has, it is stated, been assassinated in his consulting room by a former patient. All who attended the International Medical Congress, of which Dr. Bombarda was General Secretary, will deeply deplore this tragic end of a brilliant career.

A further death to be announced with regret is that of Mr. C. H. Leaf, M.B., B.C.Cantab., F.R.C.S.Eng., Surgeon to the Cancer Hospital, Brompton. It occurred at Eastbourne on October 5th. We hope to publish an obituary notice in a later issue.

Medical News.

The first lecture at the Hunterian Society this winter will be delivered at the London Institute, Finsbury Circus, E.C., on Wednesday, October 12th, at 8.30 p.m., by Dr. H. D. Rolleston, the subject being Acute Arthritis of Doubtful Origin. All members of the medical profession are invited.

The first evening meeting of the present session of the Pharmaceutical Society of Great Britain will be held in the Lecture Theatre, 17, Bloomsbury Square, W.C., on Tuesday, October 11th, at 8 p.m., when Mr. E. W. Lucas, F.I.C., F.C.S., and Mr. F. C. J. Bird will read a paper on The Fixed Oils, Fats, and Waxes of the *British Pharmacopoeia*.

The anniversary lecture of the American Academy of Ophthalmology and Oto-Laryngology was delivered at Cincinnati, Ohio, on September 19th by Mr. Sydney Stephenson, who took as his subject Sloughing Corneae in Infants. Mr. Stephenson was presented by the academy with a suitably-inscribed gold medal.

A course of lectures on Army Sanitation will be given in the Royal Sanitary Institute and Parkes Museum by Lieutenant-Colonel C. H. Melville, M.B., C.M., D.P.H., Professor of Hygiene, Royal Army Medical College. The course will commence on Thursday, October 20th, 1910, at 7 p.m., and will be concluded on November 24th.

A meeting of the Manchester Royal Infirmary Old Residents' Club will be held at the Midland Hotel, Manchester, on Saturday, October 15th, at 6.30 p.m. The meeting will be followed at 7 p.m. by a dinner, at which Mr. Southam will preside. Any old resident who has failed to receive a notice is requested to apply to the secretaries, Royal Infirmary, Manchester.

The next meeting of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Tuesday, October 11th, at 4 p.m., when Mr. John Newton, Secretary of the United Committee for the Prevention of the Demoralization of Native Races by the Liquor Traffic, will open a discussion on "Alcohol and Primitive Races."

The Bradshaw Lecture before the Royal College of Physicians of London will be delivered by Dr. G. Newton Pitt on November 1st, the subject selected being the Results of Bronchial Obstruction. Sir T. Clifford Allbutt, K.C.B., will deliver the FitzPatrick Lectures on Greek medicine in Rome, on November 3rd and 8th, and the Horace Dobell Lecture will be given on November 10th by Dr. W. Bulloch, who has selected as the subject, the Problems of Pulmonary Tuberculosis considered from the Standpoint of Infection. The hour of the lectures is 5 o'clock.

As already stated, the opening address of the winter session at the Central London Throat and Ear Hospital will be given at 4.30 p.m. on Monday, October 17th, by Dr. Purves Stewart. The subject is Certain Intracranial Diseases associated with Nasal, Aural, and Laryngeal Symptoms, and the lecture will be illustrated by lantern slides. The annual dinner of the medical staff of the hospital will take place the same evening at the Trocadero Restaurant, Mr. Stuart-Low in the chair. Past and present students desiring to attend are invited to apply to the secretary.

On September 26th presentations were made to Dr. J. H. Marsh, medical officer of health, Macclesfield, and Mrs. Marsh, in recognition of Dr. Marsh's kindness to many children of Prestbury during a recent epidemic of scarlet fever. The gifts were made all the more gracious by the fact that the idea came from the children themselves. Dr. Marsh was the recipient of a silver-mounted walking stick and leather letter case, and to Mrs. Marsh were given a handsome lady's handbag and a large basket of choice flowers. The silver mount of the walking-stick bears the following inscription: "Presented to Dr. Marsh by the children of Prestbury, 1910."

Evening meetings of the Eugenics Education Society will be held at Denison House, 296, Vauxhall Bridge Road, on Wednesday, October 19th, at 8.30 p.m., when Mr. J. H. Koeppern will read a paper on The Eugenic Value of Maternity Insurance; and on Wednesday, November 16th, 8.30 p.m., when Dr. F. W. Mott, F.R.S., will read a paper on Heredity and Insanity (giving the results of a recent inquiry). On Wednesday, December 14th, at 8.30 p.m., there will be a discussion on The Biological Factor in Infant Mortality. Afternoon meetings will be held in the Caxton Hall, Westminster, on Tuesday, November 1st, at 5.15 p.m., when a paper on Woman's Progress in Relation to Eugenics will be read by Dr. Murray Leslie; and on Tuesday, December 1st, at 5.15 p.m., when Mr. Edgar Schuster, M.A., will read a paper entitled Methods and Results of the Galton Research Laboratory.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Lecturer would be glad to hear of a recent, up-to-date book on medical nursing.

Southampton writes: I should be pleased if any of your readers could tell me the true nature of a tumour of the kidneys, known as hypernephroma, as I am unable to find the term in any modern textbook on surgery. The point I particularly wish to know is: is it malignant or not? Or, if innocent, is it inclined to become malignant if not removed; or, if removed, is there any likelihood of any recurrence of the same kind of growth in any other part of the body?

*** We have referred this question to a surgical authority, who writes: "The word is used glibly enough, and loosely. Some mean by it what the Germans call 'struma suprarenalis,' which refers to a curious tissue of very large, well-nucleated cells having the general arrangement of suprarenal columns, but 'magnified,' as it were. Sometimes these masses exist in otherwise normal adrenal as islands, one or many. Sometimes there is a large tumour mass. Others use the term for the 'renal' tumours of Wolffian, or at least 'nephric' origin, which are found in or on the kidney. They are exceedingly vascular, sometimes villoid, with cells and structure such as are found in endotheliomata. Some of these are found *post mortem* in those dead of other causes, sometimes they are removed surgically as 'renal' tumours, being within the capsule and sometimes invading the renal tissue proper, sometimes encapsuled within the kidney. It is not possible, therefore, to say definitely that they are 'malignant.' When recognized clinically they are removed as malignant tumours, for they generally are so when growing rapidly, but the malignancy is relative. I removed a large one some three or four years ago, and the man has not yet had any recurrence. I believe recurrence is generally local by direct extension, but some, at least, give rises to numerous metastases, especially, I think, in children."

Sour Milk Treatment.

Navy writes: Could you give me any advice on the following points: (1) What is the best literature to be obtained about the sour milk treatment and dieting? (2) Is a special diet necessary while taking sour milk? (3) Is this dieting (sour milk) of any value in obscure rheumatic (?) pains probably due to gastro-intestinal disorder?

*** (1) We may refer our correspondent to the discussion which took place at the Therapeutical and Pharmacological Section of the Royal Society of Medicine last winter, published in the *Proceedings of the Royal Society of Medicine*, Vol. iii, No. 3, January, 1910, and to the discussion in the Section of Pharmacology and Therapeutics at the recent annual meeting of the British Medical Association; a brief notice of the latter was published in the British Medical Journal of July 30th, 1910, p. 289, and a full report will be published shortly. There is a book on the sour milk treatment, *Soured Milk and Pure Cultures of Lactic Acid Bacilli in the Treatment of Disease*, by Dr. G. Herschell (London: H. J. Glaisher. 1909. 2s. 6d.) (2) No special diet is necessary whilst taking sour milk, but it is advisable to reduce the amount of meat taken. (3) Opinions on this point differ. Some allege that sour milk may aggravate chronic rheumatism; others have found benefit from it in cases due to gastro-intestinal fermentation. It is worth trying.

ANSWERS.

F. H. S. G.—For the examination in physiology for the Fellowship of the Royal College of Surgeons in Ireland, any standard textbook on the subject is suitable. Halliburton's *Handbook of Physiology* (John Murray and Co., London) or Howell's *Textbook of Physiology* are those most frequently read.

"Hatton" will probably find any of the following works suit his purpose: (1) G. H. Stout, *The Groundwork of Psychology*, London, 1903; (2) E. B. Titchener, *A Textbook of Psychology*, 1909; (3) W. James, *The Principles of Psychology*; (4) H. Münsterberg, *Grundzüge der Psychologie*: (5) W. Wundt, *Grundzüge der Psychologie*; (6) H. Ebbinghaus, *Grundzüge der Psychologie*.

Destruction of Fleas.

Dr. G. H. Mapleton (Goudhurst) writes: "M.D." will find powdered pyrethrum roseum an excellent thing to keep fleas away. I should advise him to sprinkle a very little on the upper parts of his socks, and also on his sheets.

Sea Sickness.

Dr. F. de Havilland Hall writes: In answer to "Mer," I would say that I have had most excellent results in a large number of cases from the administration of chloretone, 5 grains in capsules, one capsule to be taken every three hours for three doses, so arranged that the last dose shall be taken on going on board. This usually suffices for crossing the Channel; for longer voyages more doses may be necessary. I have never seen any ill effects from the drug.

C. K. B. writes: In reply to "Mer's" query in this week's British Medical Journal, I can strongly recommend capsules chloretone gr.v, and tabloid tri-bromides effervescent (Burroughs, Wellcome, and Co.) I was surgeon on the R.M.S. *Port Kingston* to Jamaica and back, and found the combination most useful. The tabloid must be powdered, then added to half tumbler of water, and taken at the same time as the chloretone. The dose may be repeated every three or four hours if necessary.

Papagei writes: In reply to "Mer's" query in the Journal of October 1st, I can strongly recommend chloretone (tri-chlor-tertiary-butyl alcohol) from personal experience of its use, when I get a chance, which unfortunately is not often, as I live in an inland county. I indulge in sea-fishing from a boat, and from a fairly large experience on the sea in various craft, I think there is nothing more trying than being seated in a small anchored boat in a choppy sea for several hours; formerly I used to take potass. brom. half a drachm in soda-water before starting, but I find by taking a 5-grain capsule of chloretone (P. D. and Co.) about half an hour before starting, and another on getting into the boat, that I do not feel at all ill, and can eat and smoke in comfort.

Dr. Oliver Carlyle (Liverpool) writes: Probably "Mer" will get the best results from bromides and chloretone, commencing administration a couple of days before the voyage, and restricting the diet, giving a purgative the night before embarking, using an abdominal binder, and, if necessary, a vaso-constrictor. The list of drugs recommended includes:—Gastric sedatives: Minute doses of iodine tincture, carbolic acid, creosote, menthol, hydrocyanic acid, resorcin, various bismuth preparations. General sedatives: Bromides, bromidia, hydrobromic acid, etc.: chloral hydrate, chloralamide, chloretone, chlorobrom, chloroform, and its compound tincture; phenacetin, phenazonum, orexin tannate, morphine, and other opium preparations. Stimulants: Strychnine, brandy, etc. Others, acting on the various theories, give atropine to dilate one or both pupils; jaborandi and pilocarpin nitrate; (?) quinine to act on the semi-circular canals. Vaso-dilators: Amyl nitrite, sodium nitrite, etc. Vaso-constrictors: Digitalis, adrenalin, epinephrin, pituitary extract. Smelling salts, blisters on the mastoid or epigastrium, etc.

Turtle Back writes: "Mer" will find hyoscine hydrobrom. $\frac{1}{250}$ grain by the mouth or otherwise a capital preventive of sea sickness. Large doses of bromide thrice daily for two days before sailing have also proved useful.

Atmosphere of English Coast Towns.

Alpha writes: For the information he requires, I should advise "Omega" to apply to the Meteorological Office, Victoria Street, S.W.

Home for Sane Epileptic Women.

T. W. H.—Application might be made to the following institutions: (1) The National Society for Epileptics, Secretary, G. Penn Gaskell, Esq., Denison House, Vauxhall Bridge Road, S.W. (2) The David Lewis Epileptic Colony, Sandlebridge, Knutsford, Cheshire; Secretary, E. W. Marshall, Esq., 38, Burton Arcade, Manchester. (3) Meath Home for Epileptics, Godalming: apply to the Lady Superintendent. (4) St Luke's Home, 36, Parkwood Road, Bournemouth East (for Epileptic Churchwomen); apply to the Deaconess in Charge.

Erythema Multiforme.

Dr. H. J. Thorp (Ipswich) writes: In reply to "X." (British Medical Journal, September 17th, p. 827), erythema multiforme has a great tendency to get well without treatment. The following I can recommend: Calamine lotion with liq. carb. detergens, rest in bed to ensure complete protection from alteration of temperature, diet of the plainest character. Salicine or salol if there is rheumatic diathesis.

West Coast of Africa.

Clyde.—The West Coast of Africa cannot, even at the present day, be looked upon as a health resort, but the description of conditions in 1897 referred to by our correspondent no longer applies now. With improvements in sanitation, especially mosquito sanitation, conditions are steadily becoming better, and many people go out and do fairly well there. Climate, however, apart from disease, plays a very important part in West African life, and this necessitates a leave home after every year's work. Quinine prophylaxis has greatly reduced malaria, but blackwater fever is still fairly prevalent in some parts of the Coast, The hinterlands of Nigeria, Sierra Leone, and the Gold Coast are, on the whole, healthier than the coast lines. The climate of West Africa is worse than that of the Malay Peninsula. People can stay out in the latter place for much longer periods of time than in the former, and can do so without any serious detriment to their health. If an appointment can be obtained in the East it is preferable to one in West Africa.

TREATMENT OF INFLAMED ARM AFTER VACCINATION.

DR. H. J. THORP (Ipswich) writes: I have for very many years used the following antiseptic paint: Liq. fer. perchlor. fort., ac. carbol., sp. terebinth., aā 5j; glycerine 5ij. It is also an infallible application for septic wounds generally; if the wound is very acutely inflamed I usually encircle it instead of applying the paint directly to the wound; it is well to apply it to the neighbouring glands besides.

PATHOLOGY OF ALOPECIA AREATA.

STAFF SURGEON.—Views as to the etiology of alopecia areata are still divided. There are partisans in the nervous camp, and others in the parasitic one. On the whole, the swing of the pendulum appears to be in favour of the "*nervous*" view. Jacquet, of Paris, strongly supports his "dental" origin of alopecia areata, and brings forward much evidence in its favour. His minute analysis of the *parasitic* (and epidemic) position is very destructive. In conclusion, the essential etiological factor (or, perhaps, factus) is still *sub judice*. We would suggest that "Staff Surgeon" ought to publish his experiences which lead him to conclude the disease is contagious.

ANTITYPHOID INOCULATION.

AGMONO.—In view of the great prevalence of enteric fever in India, a large number of persons elect to submit to a preventive inoculation before going out. There is a vast amount of data which goes to show that antityphoid inoculations reduce both case incidence and case mortality. In reply to the first question, it may therefore be said that it is advisable for a European travelling to the East to a district where enteric fever is rife to be inoculated before departure. In reply to the second question—namely, where the material can be obtained, what apparatus is required, and how many inoculations are necessary—it may be pointed out that in this country Wright's vaccine is employed, while in Germany, Pfeiffer and Kolle's vaccine is preferred. In the former case the vaccine prepared by the Lister Institute of Preventive Medicine can be obtained from Messrs. Allen and Hanburys, while other well-known firms—for example, Messrs. Burroughs, Wellcome, and Co.—also produce and sell typhoid vaccines. The apparatus required is a good sterilizable hypodermic syringe. According to Wright, two injections should be given with an interval of from one to two weeks, 750 to 1,000 million bacilli being injected at the first, and from 1,500 to 2,000 million at the second, injection. In reply to the third question, there is no reason to believe that antityphoid inoculation will in any way interfere with antivariola vaccination. Lastly, it is preferable to perform the first injection at least before the person starts, so that the malaise which follows this may have passed off before going on board ship. Many give both doses beforehand. The prevention is believed to last from eighteen months to two years, and for this reason there is no advantage to wait until the person has arrived, while the advantage of having the inoculation performed before starting is that the negative stage will have passed before arrival, and the protection will be fully developed.

TREATMENT OF GRAVES'S DISEASE.

DR. F. C. MCNALTY (Winchester) writes: I see in the discussion following Professor Kocher's paper on the surgical treatment of Graves's disease not a few physicians advocate medical treatment. I wish to say that I have found the continuous application of elastic bandages a very useful adjunct. I generally use a cold-water pad on the thyroid gland, over it an elastic bandage. It is wonderful the amount of pressure (after a while) that is borne without inconvenience, and the result is undoubtedly good.

DRAINAGE OF BLADDER FOR ENLARGED PROSTATE.

DR. GEOFFREY R. WILSON (Chipping Ongar) writes: In reply to "Bahia's" query in the current number of the BRITISH MEDICAL JOURNAL, I would like to recommend the practice of suprapubic cystotomy and the permanent drainage of the bladder subsequently by means of Buckston Browne's suprapubic drainage apparatus. I have a patient, aged 72, who has been treated in this way since April last with excellent results. His bladder has remained perfectly comfortable, and his nights are undisturbed. The use of this apparatus does away with the necessity for cumbersome dressings and all unpleasant urinous odours. The bladder is irrigated daily, and from time to time the apparatus is removed and thoroughly cleansed, and replaced without difficulty or pain. In this case the use of the catheter was prohibited by the tenderness and congestion of the urethra, and prostatectomy was considered too hazardous on account of the patient's general condition. This method of dealing with such cases is perfectly easy and simple to use, and involves no great surgical skill.

LETTERS, NOTES, ETC.

A GRAND prize has been conferred upon Messrs. Burroughs, Wellcome, and Co. for their exhibit at the International Hygienic Exhibition now being held in Buenos Aires.

HYDATID DISEASE OF LIVER.

DR. J. REID (London) writes: In the JOURNAL of October 1st, p. 957, there is an article by Dr. Maclaurin on hydatid of the liver. Has he any experimental proof of the reproduction of an echinococcus from an echinococcus? One used to see echinococci spit up frequently, but *not* reinfection. Negative proof counts for little; but a deviation of the *cyclical* history of a taenia ought to be well authenticated.

TRAMWAYS.

LONDON writes: The London trams have so many points of excellence that I hesitate to criticize. Still, I heartily agree with your remarks. The outside or top of the tram is highly dangerous to health on account of the extreme draught. I have heard many complaints of this nature. Seats that close up with a spring would avoid wet sitting accommodation after rains. Lastly, I think all screws should be flat-headed and countersunk—that is, flush with the seats, and not projecting, to tear and wear clothes. Otherwise, I think the trams admirable.

A DISCLAIMER.

DR. HECTOR MUNRO (Welbeck Street, W.) writes: In the *Daily News* of last Thursday an interview with me is reported on the effects of systematic fasting. In publishing this a mistake has been made, and I write to express my sincere regret. An article appeared in the *Daily News* some weeks ago describing a fast cure undertaken by the writer. He mentioned certain very interesting facts, and suggested that a committee of medical men watch a number of selected cases and report. Now, I am much interested, having had 18 such cases during the last two and a half years, and so I got in touch with the writer of the article. Last Wednesday a gentleman called on me from the *Daily News* by appointment, and I understood that it was to have been a talk preliminary to the formation of this committee of inquiry. I greatly regret my carelessness in not stating the terms of the interview quite clearly, and I am sure that the fault is entirely mine.

THE "DENTISTS' REGISTER."

MR. FREDERICK SMALL (Hackney) writes: In the year 1878 my name was duly placed upon the *Dentists' Register*. For the past twenty-five years I have practised as a dentist at the above address. My attention was recently called to the fact that my name did not appear in the *Register*, and I at once put myself into communication with the Registrar, with the result that it was discovered that my name had been inadvertently omitted from the *Register*. The Registrar at once rectified the omission, and I hold his certificate, dated September 21st, 1910, of restoration of my name to the *Dentists' Register*. As the omission has been very detrimental to me in my practice, I shall esteem it a favour if you will help me to put the matter right by kindly inserting a suitable paragraph in the JOURNAL as to the omission from and the restoration of my name to the *Register*.

POTATO CHEESE.

DR. C. H. FOLEY (Ardrahan) writes: I wish to bring to the notice of your readers who may be advocates of the sour milk treatment the following preparation, which I first became acquainted with by reading in the *Monthly Gazette of Practical Medicine* (for February, 1831). Taken with water or milk, in its results it is as satisfactory, while easier to take, than soured milk obtained naturally or prepared:

"In Thuringia and part of Saxony a kind of potato cheese, made in the following manner, is generally preferred to that obtained from milk:—Boil good mealy potatoes, and when cold peel and reduce them to a uniform pulp with a rasp or mortar. To 5 lb. add a pint of sour milk and the requisite portion of salt; knead the whole well, cover it, and let it remain three or four days, according to the season; then reknead it, and place the cheeses in small baskets, that the superfluous moisture may run off; then dry them in the shade, and place them in layers in large pots or kegs for a fortnight. The flavour is improved by age. This cheese has the advantage of never engendering worms, and of keeping in good state for many years in a dry place and in well closed vessels. The addition of potato pulp would, no doubt, render the butter-whey cheese used in many parts of this country more easy of digestion."

In reality this is a culture of the lactic acid bacillus on a nutrient of potato mash, first sterilized by the boiling. Added to milk heated to 10° C. the "cheese" soon produces a characteristic acidity.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *postes Restante* letters addressed either in initials or numbers.

An Address

ON

THE EDUCATION OF THE STUDENT OF MEDICINE.

Delivered at the Opening of the Winter Session (1910—1911), in the Medical Department of the University of Leeds,

BY

HOWARD MARSH, M.A., M.C.Cantab., F.R.C.S.,

Master of Downing, and Professor of Surgery in the University of Cambridge.

Mr. Vice-Chancellor, Ladies, and Gentlemen,—I am aware that I am standing in a position of much responsibility. But when your Council did me the honour of inviting me to present the prizes, and give the introductory address to-day I felt that I ought not to decline. Duty must be done. But there was a consideration that at once presented itself to my mind which made the task I was undertaking thoroughly congenial. I remembered I should be speaking in Leeds, where one of the most interesting and worthy of the men whose names stand clearly inscribed on the pages of the history of our profession lived and worked, and where his successors have made the medical department of the University of Leeds a foremost centre for the cultivation of the science and art of surgery.

William Hey.

The seniors among you must be familiar with all, and with much more than I can tell, about William Hey, but in speaking to the young pilgrim warriors who set out to-day I wish, as one who has borne the burden and heat of the journey, to tell what I seem to have learned and the conclusions which I have formed, touching those things about which, when the time for a retrospect shall come, there may be as much as possible to remember with satisfaction and as little as possible to regret.

And for this purpose the life and personality of William Hey furnish me with a most suitable text. Even advanced students know Hey only as the inventor of a saw which is never used and an operation which is never performed. Let me try to say more than this about him.

He was one of three brothers, each of whom attained high distinction. John, the eldest, born 1734, came up to Cambridge, was Eighth Wrangler, and, later, a Fellow and Tutor at Sidney Sussex. In 1780 he was elected as the first Norrisian Professor of Divinity, and William Pitt attended his lectures on morality—a training of much value to a politician, as we shall all no doubt agree, not only in Pitt's time, but at the present day. John became a Doctor of Divinity, and wrote several treatises, which went through three editions. To this day he is high on the list of Cambridge worthies.

Richard was also a Cambridge man. He was Third Wrangler, and won the Chancellor's medal in Mathematics in 1768, became a Fellow and Tutor at Magdalene, and Esquire Bedell, and took the degree of LL.D. He wrote three dissertations—on the pernicious effects of *Gaming*, on *Duelling*, and on *Suicide*—for each of which he received £50 through the university from an anonymous donor. These essays, after the manner of the time, were compositions in which the subjects were elaborately worked out under a number of heads, and from every point of view. They display much ingenuity and close argument, and are written in a clear, copious, and robust style. He shows not only that these things are wrong in every aspect in which they can be regarded, but that they are foolish, and, indeed, contemptible. It seems certain that no one who reads them with an open mind will ever game, fight a duel, or commit suicide again. He also wrote a novel. Richard Hey was the kind of man one would have much liked to know. His conversation must have been highly interesting and entertaining. He attained the ripe age of 91.

Your William Hey, born in 1736, had from the first a single eye to his profession, for he lost his right eye when he was 4 years old. This must have been a heavy handicap, but the calamity was diminished by the circumstance that it occurred in infancy, so that the remaining eye had time to prepare itself for its future responsibilities.

This is not the occasion for alluding to Hey's individual contributions to surgery; their value is well known in Leeds and widely recognized elsewhere. But of the man himself I should like to offer some estimate for which our business to-day affords ample justification. After having been a student at St. George's Hospital, he came at once to Leeds, and was soon engaged in active practice. He was brought in contact with that extraordinary man, Joseph Priestley, the discoverer of oxygen, who had become, in 1767, Presbyterian minister of Mill Hill Chapel in your town, and, through him, he was elected a Fellow of the Royal Society in 1775. In 1767 Hey was prime mover in founding the Leeds Infirmary, where afterwards he was senior surgeon for thirty-nine years—from 1773 to 1812. He was twice Mayor of Leeds. In this office he so vigorously denounced vice and profanity that the populace burnt him in effigy and threatened him with personal violence. He was a skilled musician, and for some time President of the Leeds Literary and Philosophical Society.

He was a sound patriot, for he had eleven children. He died, at the age of 83, in 1819.

His works, published in 1810, are written in language which is so clear, graphic, and vigorous that to this day it is a genuine pleasure to read pure English turned to so good an account. He owed the respect in which he was held for so many years not only to his ability and culture—these, indeed, never suffice—but to his honourable and high character. He may be taken as an example of the man whom Horace, in one of the gems of classic literature, has pictured, in the lines which he addressed to Aristius Fuscus, and which every young man would do well to bear in mind:

> Integer vitae scelerisque purus
> Non eget Mauri jaculis, neque arcu
> Nec venenatis gravida sagittis
> Fusce, pharetra.

Of these lines Sharp has given the following translation: "Fuscus, he who hath integrity of life and is free from wickedness, needs not the javelins of the Moor, nor bow nor a quiver laden with poisoned arrows"—"for" (he adds) "in the Sabine Wood a wolf fled me, though unarmed."

We must, without hesitation, assign to Hey a place on the list of those who have left great names in English surgery, beginning with Richard Wiseman, and coming down to the most renowned among them all, Lord Lister. Reckoning that a surgeon is at his prime at the age of 50, we may, I think, take the following names and dates as correct: Wiseman 1672, Cheselden 1738, Pott 1764, Hunter 1778, Hey 1786, Astley Cooper 1818, Lawrence 1833, Syme 1849, Paget 1864, Lister 1877. To be one of ten worthies distributed over a period of 205 years is assuredly no mean distinction. With Hey before him no Leeds man can, if he fails or goes astray, plead the want of a high ideal that he might have followed.

It will, I think, be interesting at the present day to recall for a moment who our predecessors have been, and the conditions under which they worked. What were the qualities which brought these ten men, each in his generation, into the first place, and set them apart—*longo intervallo*—from the rest, who, though good men in their day, have now sunk deep into the forest shade?

First of all, they were men of orginality and enterprise. It could not be said of them that

> With packhorse constancy they kept the road,
> True to the jingling of their leaders' bells.

They were leaders, not followers. They were genuine students, who aimed at advancing and improving the surgery of their day, without the low ambition of personal notoriety, or over-much financial success. Wiseman, Astley Cooper, and Lawrence were the handsome men of the group; Cheselden, Hey, and Lawrence probably the best read and most accomplished. Others were from the first so absorbed in the work immediately before them, that they had no time to wander in the shady groves of the Academia vetus and listen to the teaching of Plato. They picked up their own sterling philosophy, and

acquired, not sham, but real culture as they went along. Many a fop and many a prig in philosophy, or the fine arts, would have found his true level with, for instance, Sir James Paget, whose society was sought by the most cultured people of his day. Hunter had no accomplishments, nor did he desire them; at least we know, from what occurred at Oxford, that an academic career had no attractions for him.

It is often asked how the early surgeons could have operated without anaesthetics. That they did so is claimed by the ignorant and uncharitable as a proof that they were callous and brutal. It is easy to prefer such charges against the pioneers of what surgery has now become, or for the antivivisectionists of our time to bring accusations against such benefactors of mankind as Paget and Lister. The truth is they know not what they say. History will assign to them their proper place when the day of reckoning comes. But to those who in good faith and Christian charity ask how these things could be done, the answer is that the old surgeons were impelled by what they witnessed of the sufferings caused by disease, and of which we of to-day can have only a faint conception, to find, if possible, some means of relief; that they attained in many instances a reassuring and encouraging measure of success; and that they were well aware that they were laying stepping stones which their happier successors should tread

William Hey, junior, was, like his father, a man of ability and culture. He will be remembered chiefly for his treatise on puerperal fever. Of him and of the able and conscientious men who were associated with him in the study of this dread disease, which played such havoc in Leeds and its neighbourhood in 1809 to 1812, we can only say that the time was not yet. They could only study results, and all their efforts to learn the real nature of the disease were null and void, and their best attempts at treatment can now only affright and fill us with distress. The case is but another example of the truth that great discoveries, that is, excursions into the hitherto unknown, must wait till the agency through which alone they become possible has been provided. Without wings, however keen the gaze, the point to point flight cannot be made. It was so with William Hey, junior, and his colleagues. The main questions around which their discussion circled were whether the disease was or was not infective; then, if it was, how did it arise? The search was close and earnest, but it was foredoomed to failure. Something was wanting before the riddle could be solved. How often on like occasions has that something been a contribution from one of the other sciences—in astronomy, telescope or a photographic plate; in pathology, a microscope or an *x*-ray picture; in physiology, an electric current, or a chemical agent such as chloroform.

In the instance before us matters had to wait for another sixty years until the microscope was so far perfected as to furnish the means for new methods of research, and to render Pasteur's investigations possible. After that Lister could follow the same lines of close observation and reflection which Hey and his contemporaries had pursued, and was able to succeed where they had failed, and so the tremendous event—the discovery of the nature of infection in surgical practice—was attained.

Does not all this remind us that there can be no partition walls in the field of intellectual progress; that all the sciences are but parts of one stupendous whole?—

> Children of divers kind
> We, sucking on earth's natural bosom, find
> Many for many virtues excellent,
> None but for some, and yet all different.

Many dialects yet a common language. May not the devotees of science well exclaim with the Galileans, How hear we every man in our tongue wherein we were born? Parthians and Medes and Elamites—and the rest—we do hear them speak in our own tongues the wonderful works of God. Are we not, indeed, come we whence we may, all pilgrims travelling to the same shrine, where the cry is still, as it was with Goethe—Light, more Light and where we hear, ever in clearer and clearer tones, the responsive mandate, Let there *be* Light?

PRESENT POSITION OF MEDICAL EDUCATION.

I now turn to the present position of medical education, and I think that even a cursory examination of this supremely important question must give rise to serious misgivings. As medicine has now become a department of biology, its pursuit necessarily demands a sound acquaintance with the broad principles of the other departments of biological science with which it is intimately connected, which are, in fact, the foundations on which it rests—chemistry, anatomy, physiology, and pathology. Here are four sciences each of which has a horizon to which no limit can be assigned, and which is constantly undergoing expansion. Every year, to their honour be it said, the pioneers of all of these sciences are forging ahead and initiating new methods of investigation, so that the work is always increasing in novelty, complexity, and amount. But things are always at first seen, as it were, through a glass darkly, and new facts cannot at once have their proper place allotted to them, or be brought into harmonious relation with their environment. They are therefore difficult to teach, and infinitely more difficult to learn. In other words, in the borderland between the former and the new, the material in hand is plastic and has not as yet had time to crystallize into its ultimate form. Now the difficulty which the student experiences is to keep pace with his subjects. He does not doubt that lecturers are master hands, but he finds that the material dealt with covers so much ground, and is, as I have said, so novel and complex, that he is conscious that he is being left behind. It seems to him that his teachers are like the giants of old, and, in their attempts to scale the heavens, are heaping Ossa on Pelion, and inadvertently crushing his prostrate form beneath the superincumbent weight. And may it not sometimes be that recent advances are so seductive to the teacher that they tempt him to introduce them to his class, with the result that he does not dwell with sufficient emphasis and repetition on the more prosaic principles of his subject, albeit they are all that the embryonic student can fully grasp or even partially understand? A class which has passed through one of these preliminary courses may be divided into the abler and the average man. The former, in many instances, has acquired an amount of knowledge which does him infinite credit. But it is knowledge of a particular kind. It is almost all on the surface. It has not had time to eat its way in and become deep set. It is very largely a question of mere memory. Take such a man off the line along which he has been rapidly conducted, and turn the subject round and present it in a fresh aspect, and he is soon beyond his depth. It becomes obvious that, though he has remembered much, the knowledge has not become his own; he has not, indeed, had leisure in which to read, mark, learn, and inwardly digest it. He has not, in the words of Richard Wiseman, "been able to set some time apart for reflection upon his labours."

With the average man the whole business has from the first been hopeless. His mind is not a sensitive photographic plate on which, however good the lens, a short exposure will secure a clear and abiding picture. He has been outpaced, and, with all sympathy be it said, he has been spending many an hour, *strenue nihil agendo*, in strenuously doing nothing. All along he has been conscious of a mental surfeit, and as soon as he has happily got through his examination he turns from his depressing task with a feeling of profound relief, and discards his subject without even the forms of regret. I am anxious to avoid anything like exaggeration, and particularly to keep, with a good margin, clear of even the appearance of criticizing teachers whose only fault is that they cannot achieve the impossible. I desire only to raise the question once again whether some modification of the present system is not urgently required.

I know that a large number of the ablest teachers of the day are anxious that a satisfactory solution should be found. The problem is how to cut the garment according to the cloth—how to arrange the work so that the curriculum of the student of medicine shall lead to satisfactory results. We have to remember *ars longa, vita brevis*. Professor E. H. Starling (and where can we find a higher authority?) has put the matter in a nutshell (let the medley of metaphors be forgiven) when he says "You cannot put a quart of fluid into a pint pot."

The difficulty which we have to face is of no recent origin. On the contrary, it is one of the oldest in the whole field of education. Confessing that no one can learn everything, it becomes a question of *selection*, and of determining in any given case what is really *ad hoc*, what is the particular knowledge which the student requires, and how much of this he can be taught in the circumstances in which he is placed.

But this is not the only matter before us. We have to consider the result of the present system not merely in reference to what the student has learned, and will retain in a serviceable form for future use, but what kind of mental training he has been passing through, and what effect his work has had on his mental evolution. Is not this a matter of urgent importance? Is there any calling which demands a wider diversity of well-matured mental qualities, a more many-sided education, in the true sense of the word, than ours? How can a profession which has its foundations laid in the four sciences which I have mentioned, and which constantly avails itself of them and uses their methods, be adequately followed by any one who has not had a scientific education, whose higher mental faculties have not been judiciously developed and cultivated? As practitioners of medicine we are frequently called upon to deal with problems which are in a high degree complex, in which the underlying facts are numerous, widely diverse, and often, as it seems, contradictory, while our knowledge is, as we are often painfully aware, rudimentary, so that we are working in dim twilight or even wholly in the dark. Moreover, however unconscious or forgetful of it we may be, we are invariably face to face with facts, which always claim to say the last word. In the practice of the law facts are as clay in the hands of the potter; in theology facts and dogmas are often convertible terms; but with the surgeon, as with the engineer, facts are stubborn things. Let the engineer build too flimsy a bridge, or the surgeon overlook a fracture or an appendicitis, and the fact will avenge itself. In both cases alike the penalty will have to be paid in hard coin—of the surgeon's regret and the patient's injury. If all this is true, does not the training of the student of medicine claim a foremost place? Mere information is, so to say, but raw material and of little value to him unless he can manufacture it for his own use. But how can he do this when he is constantly in active pursuit, when, to put it in another way, he is being constantly overfed with material which he cannot assimilate?

May not his condition be fitly compared to a round-celled sarcoma in which only disorderly growth but no development is taking place? Instead of training his powers of observation, which in most of us, when we compare them with those of a portrait painter, a naturalist, a Red Indian, or many of the birds and lower animals, are conspicuously rudimentary and defective; instead of forming the habit of thinking closely over what he has observed; instead of learning to collect, analyse, and arrange evidence, and acquire a judicial habit of mind, we see him leaving his higher faculties in abeyance, and surcharging his memory with what are to him mere crude and amorphous details—*rudis indigestaque moles*—with the result that in hours of depression he emphatically endorses the statement of the preacher that "much study is a weariness to the flesh."

Importance of Essentials

All this forces itself on my mind alike at examinations and in class-teaching in surgery. I find that men who are quite obviously intelligent and serious students show an altogether deficient acquaintance with, for instance, the essentials of surgical anatomy. They evince little sense of proportion, and seem to have paid as much attention to the interlacement of small nerves in the side of the neck as to the landmarks in the middle line; to the details of the origin and insertion of the abdominal muscles as to the anatomy of inguinal hernia; to the anastomosis of arteries around the knee as to the relative position of the important structures in the popliteal space, or the mechanism of the knee-joint; with the result that, having tried to learn everything, they have mastered hardly anything—anise and cumin seem in their eyes to be of very much the same value as the weightier matters of the law. Was not Sir William Turner the foremost anatomical teacher of his day because he drove home the principles of his subject in carefully selected examples, and because he kept to essentials and largely eschewed detail? His idea seemed to be that as it was impossible to teach the whole of his subject (and that, if he could, a great deal would be entirely useless to medical students), his proper course was to take what was essential and to sternly leave the rest. Under this regimen his pupils had time to assimilate what he taught them, and the result has been that many men who passed through his hands have, in their turn, become distinguished teachers of the subject. I have heard that Lord Leighton, when a young man, on returning from Italy, brought ten copies of pictures which he had made in a fortnight. Asked how he could possibly have done so much in the time, he replied that he had thoroughly learned the first principles of painting.

In alluding to this question I cannot refrain from saying that the present rate of rejections, taking into account the, to my mind, unquestionable fact that the students of to-day stand at a high level of intelligence and industry, is very notable. The rejections in anatomy and physiology at the conjoint examinations of the two Royal Colleges in the last five years have been between 39 and 47 per cent.—last year they were 45 per cent.—while those in surgery are nearly 50 per cent. Ought we not to inquire how these figures can be explained? How is it that little more than half the number of students who present themselves have reached the standard of a mere pass examination? I was myself for some years an examiner in anatomy and in surgery at the College of Surgeons, and I am convinced that the standard is not at all too high. I venture to say that the high rate of rejections is, at least in some degree, due to the circumstance that these men have been from the first struggling under the incubus of an overloaded curriculum; and I know I am merely agreeing with many prominent leaders that if we could throw out some ballast the ship would make better ocean way. Could there be some adjustment, the teaching of the preliminary subjects would become in the highest degree valuable to the student of medicine; for he would not only have had the foundations of his work laid on a broad and lasting foundation, but he would have been made in a real sense a student of science. The difficulty has for some time attracted general and earnest attention, and the authorities concerned have had the matter long in hand. It is with this movement that, in all humility, I desire to associate myself. The time seems to have come for taking the bull by the horns, and considering where the line should be drawn, by general consent—is this really beyond the wit of man to achieve?—between that which is of primary and that which is of secondary or even of third-rate importance, and then for concentrating the attention of the student on the former only. Does not every great pleader, in addressing a jury, dwell on chief considerations, and by frequent, or as it may seem tiresome, iteration drive home the main points of his case instead of watering them down, and washing out their colour by mixing them up with too many details? Does he not know that his success lies, not in an elaborate argument, in which, like Burke, he goes on refining, but in his being able to make the jury see clearly three or four points which, as he labours to convince them, entitle him to a verdict in his client's favour?

Proposed Conference.

Might not a Medical Education Conference be held at which all who are interested should be represented? No one can be more conscious of the difficulties of the situation than myself. Yet I believe there is good ground for hoping that great advantage might be secured if a conference could be held. The objects would be—to consider the question of the education of the student of medicine as a whole; to recognize limitations necessarily imposed by the period beyond which the curriculum cannot be extended; and to agree as to what is essential and what can be dispensed with without real loss, or even with advantage. But there are some considerations which I think would have a weighty influence in promoting the success of such a conference:

1. The mere meeting together of the representatives of the general body of teachers would in itself emphasize the

fact that the object in which all alike are engaged is, not the training of specialists in the individual sciences concerned, but the education of students of medicine.

2. As medicine has now become a department of biology, and as the responsibility of its leaders to the community is yearly increasing, are they not justified in making—are they not, indeed, constrained to make—an earnest appeal to specialists in other subjects for their generous concurrence and assistance, seeing that without their co operation the adequate education of medical students is no longer possible?

3. Each teacher—subject to the limitations imposed by the object in view, medical education—would be absolutely independent and in every sense unfettered.

4. Each would enjoy the satisfaction of knowing that he could make his teaching thorough, and turn out students who had acquired not merely an evanescent smattering, but a sound and permanent grip of the principles of their subject. To take anatomy, on which, as a former teacher, I may venture to speak, I cannot but believe that professors in the universities and lecturers in the medical schools would find this amended programme a great relief. Not being medical men, they would welcome some definite information as to the lines on which their teaching of the subject would be most valuable, and as to the areas which would furnish the best illustrations, for medical purposes, of the principles they desired to enforce.

5. Demonstrators of anatomy would have constant opportunities for going beyond mere tedious anatomical facts to their meaning as to function, and their bearing on medicine and surgery. The value of such teaching would be at once apparent when the student began his clinical work, and when a sound knowledge of anatomy is essential. To speak plainly, is it not a farce to discuss femoral hernia, flat-foot, or the deformity of the knee-joint in tuberculous disease with a student who has never thoroughly known or who has forgotten his anatomy?

As to surgery (I will not venture a word as to medicine), is the teaching of this subject in all instances well organized and sufficiently methodical? My feeling is that it is not. Surgery, as I have already said, makes special demands on the power of observation, a trained eye, a delicate touch of hand, skilful manipulation, a familiarity with the use of instruments and appliances, and the technicalities of aseptics, while some straight hints to the student as to his duties and responsibilities when he becomes a clinical clerk or dresser, are urgently required. Moreover, is it not advisable that pains should be taken to fully instruct the beginner in the principles which underlie the collection and use of evidence, to emphasize the difference between the forms of evidence—between, for example, the direct and the circumstantial—and to show in what cases the one or the other, or a combination of the two must be depended on, and what difficulties have to be met, and what pitfalls avoided? Most men are naturally very unobservant. It is startling to see what they can overlook. How true it is that the eye can see only what the eye brings the means of seeing; how real is the danger that he who is untrained to observe critically, and discriminate accurately, will see what he is looking for! Before he begins the study of medicine and surgery, should not the student pass through a preliminary course in which the matters I have briefly alluded to are thoroughly and systematically taught? Would he not keenly appreciate such instruction, and would he not find it of inestimable value in the out-patient rooms, the wards, and the operating theatre? As all these things are necessary, ought the student to be left to pick them up haphazard? Would such a happy go-lucky proceeding be allowed in the instance of a lieutenant on board a cruiser, or an apprentice at Elswick? Yet are not such cases to all practical purposes the same?

I pass over the out-patient room and the special departments, for I believe that they are, in all important medical schools, admirably conducted, and that they contribute in a degree that can hardly be exaggerated to the education of the student.

In the wards—though there are many exceptions—teaching could with advantage be remodelled. Every hospital ward teems with material for clinical teaching. Every case will serve as a text. And it is in the wards that the student should gain a very large share of his professional education. The surgeon in charge—and the more eminent he is the more will it be so—cannot possibly give much time to systematic teaching. Would not three hours a week be quite an outside figure? To provide him with the vital necessity of thorough and ample clinical instruction should not the student, fresh from the preliminary class, pass into the hands of a Ward Tutor? This appointment has been made already in some hospitals. The ward tutor is a junior teacher. He has a class limited to about ten. These he instructs in a suitable number of cases in note-taking, surgical anatomy, symptoms, methods of examination, special appliances, and so forth. His aim is to be thorough, and to work out the cases he selects with deliberation and completeness.

Such work as this would not only interest but educate a man, while there can be no doubt that it would be highly valued by every intelligent student. The work of the tutor, when properly and loyally performed, would not interfere with cases in which the visiting surgeon was interested, or with his authority in the wards. Such cases as the surgeon desired would be left entirely alone. The tutor would take only cases in which the surgeon, for teaching purposes, did not concern himself. Nor would this be any drawback, for the simplest cases, after all, are the most suitable for the instruction of beginners.

A special word to those who from to-day are to have the University of Leeds for their Alma Mater. You who have won the prizes which it has been my pleasant office to present must recollect that there has been a *proxime accessit* close on your heels. You have won your first obstacle race, but you will find many more in front of you as the years roll on, and if you are still to win you must keep in mind the fable of the hare and the tortoise. Those who have not won this time, no doubt mean to do so on the next occasion. For them the fable must be Bruce and the spider. But let both sides note that prizemen often fail, and that men who do not get prizes often succeed, later on. All must remember that duty is the stern daughter of the voice of God, and that the best asset for any man is a high and honourable character.

A CASE exhibiting the clinical phenomena of true cholera was admitted to the Royal Free Hospital on October 4th, and ended fatally on October 11th. The autopsy seemed to confirm the clinical diagnosis. The outcome of the bacteriological investigation will be awaited with interest. The previous history of the patient has not yet been ascertained.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.—The twenty-ninth annual convention of the American Electro-Therapeutic Association was held at Saratoga Springs, New York, on September 13th, 14th, and 15th. The President, Dr. Thomas D. Crothers of Hartford, Connecticut, took as the subject of his inaugural address the Physics of Light-Therapy. Reports of standing committees were read by the chairmen as follows: Dr. G. Betton Massey, on Direct Continuous Current, including Electrolysis, Electro-chemical Surgery, Ionization, and all apparatus connected therewith; Dr. Frederick de Kraft, on Induced Currents and Apparatus; Dr. T. Harris Cannon, on Static Currents and Apparatus; Dr. S. M. McCollin, on Photo-therapy, Radio-therapy, and Apparatus; Dr. Fred. H. Morse, on Mechanical Vibration-therapy, Exercise-therapy, and Apparatus; Dr. Francis H. Munroe, on Hydro-therapy, Thermo-therapy, and Apparatus; Dr. Byron S. Price, on Dietetics; Dr. Thos. D. Crothers, on Research; Dr. Wm. Benham Snow, on Standard Therapeutic Measures. Among the papers read were the following: Dr. Louise G. Robinovitch, New York: Electric Anaesthesia in Human Surgery; Electric Sleep by Wireless and Unipolar Currents; Displacement Currents. Dr. Frederick de Kraft, New York: Electricity in the Treatment of Gout. Dr. A. W. Baer, Chicago, Illinois: Treatment in Infantile Paralysis. Dr. William J. Clark, Philadelphia, Pennsylvania: Oscillatory Desiccation in the Treatment of Accessible Malignant Growths and Minor Surgical Conditions. Dr. G. Betton Massey, Philadelphia: Remarks on the Electrical Treatment of Interstitial and Haemorrhagic Fibroids of the Uterus. Dr. Frederick C. Tice, Roanoke, Virginia: The *X* Ray and Light in the Treatment of Infection. Dr. Arthur W. Yale, Philadelphia: Modern Malpractice in Gynaecology.

Remarks
ON
ACUTE ARTHRITIS OF DOUBTFUL ORIGIN.*

BY

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We must all have met with cases which, at first assumed to be rheumatic fever, have failed to react to salicylates, and yet, as shown by the sequel, were not pyaemic, gonococcic, or due to any other obvious infection. It is in connexion with these cases of acute arthritis of doubtful origin that I propose to speak. But as a preliminary consideration it may be worth while to refer briefly to the value of a reaction to salicylates as evidence of true rheumatism. There is no doubt that one of the main clinical characters of acute rheumatism or rheumatic fever is that it reacts to salicylates; a case which reacts permanently, as regards fever and articular pain and effusion, may for practical purposes be regarded as one of rheumatic fever. But cases occur, particularly in young women, in which full salicylate treatment fails to produce any effect for two or more days, so that the question arises whether the fever and joint disease are not of a more severe nature than was thought, and yet persistence in treatment is eventually followed by a complete reaction and recovery. The delayed reaction has in some instances appeared to me to depend on constipation.

On the other hand, vigorous salicylate treatment may produce a reaction, more especially as regards the fever, in cases of arthritis due to other causes. The fall of temperature, which, no doubt, is largely due to the profuse perspiration induced by the salicylates, is, it is important to remember, temporary. Further, the remarkable power of aspirin in relieving pains due to such widely different causes sufficiently proves that it is unsafe to argue that everything relieved by salicylates is necessarily a manifestation of rheumatism.

Arthritis of Doubtful Origin (*a*) Complicating or (*b*) Directly Supervening on Rheumatic Fever.

In these cases, which are not very rare, the sequence of events is somewhat as follows: (*a*) An attack of multiple arthritis clears up under salicylates except in one or two joints which progress in spite of treatment, and at first suggest suppuration, which, however, does not occur, and eventually the joint or joints present some fibrous ankylosis. When seen for the first time in the later stage of fibrous ankylosis these cases seem incompatible with the history that the primary affection was rheumatic fever, as it is generally agreed that rheumatic fever never induces fibrous ankylosis. But when the progress of the disease is watched from the outset it must be admitted that there is no reason, except the unusual sequels, to doubt that the primary disease was rheumatic fever. (*b*) In other cases the primary attack yields satisfactorily to salicylates, and after an interval is followed by what at first appears to be a relapse, but the arthritis does not subside under salicylates, and signs suggesting suppuration, and subsequently fibrous ankylosis, follow. The explanation of these cases leaves much room for discussion. The most obvious view is that a primary rheumatic synovitis becomes complicated by a secondary infection. Thus a patient with rheumatic fever who has oral sepsis may recover from the rheumatic attack and subsequently suffer from arthritis due to infection derived from the mouth. I have long considered that patients with oral sepsis are specially prone to relapses of rheumatic fever. In the following case rheumatic fever was followed after an interval of quiescence by inflammation of a joint not affected in the primary attack.

A woman, aged 27 years, was admitted to St. George's Hospital with pain and swelling of fourteen days' duration in both shoulders, elbows, shins, and the back. She had tonsillitis and several decayed teeth. On full salicylate treatment she rapidly recovered, and was about to leave the hospital, when she was attacked with pain and swelling of the left wrist. This was at first regarded as a relapse of rheumatic fever, but salicylates entirely failed to relieve the pain and swelling. The joint became more swollen, the skin over it red, and the movements very greatly restricted. With local treatment—an icebag followed by a Watson's splint—the inflammation subsided, and subsequently passive manipulations and massage restored the power of movement. Dr. E. L. Hunt found that the blood serum agglutinated a laboratory culture of *Bacillus coli* in a dilution of 1 in 50 in one hour.

In the following case it is possible that there was a double infection at work, first that of rheumatic fever, later that of syphilis.

A married woman, a barmaid, was admitted to St. George's Hospital with what was thought to be acute rheumatism, and was treated with salicylates; the joint pains and fever disappeared, but one ankle and one elbow became painful and red, and suppuration was so far suspected that arthrotomy was discussed, though not carried out. The movements of these joints became restricted, and the adhesions in the ankle were broken down under an anaesthetic. Some months later a cutaneous syphilide appeared and iodide of potassium was given, with the result that the movement of the elbow greatly improved. Was this a case in which syphilitic arthritis supervened on rheumatic synovitis?

On the other hand, it might be argued that in group (*a*) the joint or joints persistently affected are the primary site of an infection which gives rise to a transient and secondary toxic arthritis in the other joints, and that the toxic joint affections, being essentially transient, subside while salicylates are being taken, though not because of the influence of this treatment.

A man, aged 50, was admitted under my care with what appeared to be multiple rheumatic arthritis. He had been treated at home with salicylates for a month without any improvement. In the hospital he was again put under salicylates, and the joints improved with the exception of one knee, which steadily got worse and was thought to be suppurating. Puncture failed to bring away any pus, but from the few drops of blood removed a coliform bacillus was cultivated; the patient was then treated with a vaccine, and slowly recovered.

Other Arthritides of Doubtful Origin.

Acute non-rheumatic arthritis may conveniently be divided into two groups: (1) Infective, in which micro-organisms are present in the affected joints; (2) toxic, in which the joints are sterile, and in which the inflammation is presumed to be due to poisons brought from some other part of the body.

I.—*Infective Arthritis.*

Besides the recognized forms of infective arthritis, such as gonococcic, pneumococcic, streptococcic, and staphylococcic, there are others which are less often seen, such as that due to the *Diplococcus intracellularis* of cerebro-spinal meningitis. A rare form of infective arthritis is that due to *B. coli* or allied organisms. I have seen two cases in which coliform organisms were obtained from the joints; in one of these, in which the articular effusion was purulent, the same organism was obtained in a blood culture.[1] Suppurative arthritis due to the colon bacillus has been observed as a result of appendicitis (Sevestre and Thomas[2]), and the *B. coli* has been found in two cases of arthritis occurring in dysentery (Salle[3]). As an exceptional occurrence arthritis is seen in some common acute infective diseases, such as measles, mumps, and diphtheria; this arthritis is so rare that it seems probable that some added infection, rather than that responsible for the primary disease, has given rise to the joint affection. It is less rare in enteric fever.

It is rather remarkable that influenza, which so commonly gives rise to arthralgia and is so prolific in complications and sequels, has very rarely been proved to give rise to arthritis. It is true that arthritis complicates or follows conditions called influenza; G. A. Wright[4] has collected seven cases in point, but bacteriological proof that the joint affections were due to the influenza bacillus was not provided. Dudgeon and Adams,[5] however, have recorded the case of a child, aged 10 months, with multiple arthritis and meningitis; pure cultures of *B. influenzae* were obtained from all the sites of infection except the lungs. Thursfield,[6] who quotes Slawyk's case of pyaemia and purulent arthritis due to *B. influenzae* suggests that Dudgeon and Adams's case was due to Cohen's bacillus or the organism which is found in cases of so-called influenzal meningitis and resembles

* The first Hunterian Society's Lecture, delivered on October 12th, 910.

B. influenzae morphologically and culturally, but can be differentiated from it by its pathogenetic effects upon rabbits and guinea-pigs.

It is noteworthy that in pyaemia, apart from purulent arthritis, the joints may become painful and swollen without anything further taking place; this synovitis, for such it appeared to be in the few joints I have examined after death, may pass off during life. Possibly the synovitis is due to small quantities of micro-organisms in the synovial membrane, which do not manage to multiply sufficiently to set up suppuration. Another possibility is that the synovitis is toxic and not due to microbic invasion of the articular tissues.

An example of pyaemic arthritis, fortunately somewhat rare, is that seen in cases of acute epiphysitis in children; the condition is exactly the same as acute infective periostitis or acute necrosis of the long bones, except that instead of attacking the shafts of the long bones it falls on their epiphyses, and thus spreads into the adjacent joint. The mention of acute periostitis reminds me of a case in which acute necrosis of both fibulae near the ankle-joint and a temporary reaction to salicylates led me for a time to make the mistake of regarding the disease as rheumatic fever.

Perhaps this is the best place to mention cases of multiple arthritis which do not react to salicylates but respond well to injections of polyvalent antistreptococcic serum. In a case under my care reported by my house physician, Dr. H. Robinson,[7] there was multiple arthritis with fever which went on for a month in spite of full salicylate treatment. The state of the joints did not justify aspiration so there is no proof as to the exact cause of the arthritis, but the rapid improvement after injections of polyvalent antistreptococcic serum strongly suggests that the condition was due to streptococci.

Acute synovitis in *generalized miliary tuberculosis* must be extremely rare.

A man aged 52 was admitted to St. George's Hospital with a temperature of 103° F., pain and swelling in the wrists, knees, and ankles, and delirium. He was at first treated as a case of rheumatic fever and given salicylates freely, with a temporary fall of temperature. The temperature, however, rapidly rose, and remained between 101° and 105° F. until his death, which occurred five days after his admission to the hospital. After death he was found to have generalized miliary tuberculosis. The left knee-joint contained an excess of fluid, and the synovial membrane showed petechial spots; unfortunately no bacterial examination of the synovial fluid or of the synovial membrane was made.[8] Poynton[9] has recorded the case of a boy aged 5 years, with tuberculous meningitis and acute tuberculous arthritis of the left knee, the synovial membrane of which was swollen. It does not appear that the arthritis was proved to be tuberculous. Dr. S. J. Ross of Bedford has given me the details of a case of acute arthritis of the knee-joint in a man aged 21, which came on three weeks before death from generalized miliary tuberculosis. Clear fluid aspirated from the joint was sterile on various culture media.

Although none of these cases have been proved to be due to an eruption of miliary tubercles in the synovial membrane, this would seem the most probable explanation.

Reference may be made here to a different form of arthritis supposed to be connected with tuberculosis; by the term "*tuberculous pseudo-rheumatism*" French writers—Poncet,[10] Bezançon,[11] Griffon—describe an acute synovitis resembling that of rheumatic fever, which does not react to salicylates and may eventually go on to ankylosis or to a typical tuberculous joint. There are two views as to the relation of tuberculosis to this form of joint affection: (*a*) That toxins absorbed from tuberculous foci in other parts of the body are carried to the joints, and there induce lesions; in other words, that it is a toxic arthritis. (*b*) That tubercle bacilli are present in the articular tissues. On this hypothesis of an infective arthritis, the resulting condition would be regarded as comparable to acute tuberculous pleurisy with effusion. By examination of the fluid in a case of tuberculous pseudo-rheumatism, Griffon[12] found that the cytological formula was the same as in the fluid of tuberculous pleurisy—namely, a great predominance of lymphocytes, and that injection of the fluid into guinea-pigs induced experimental tuberculosis.

Still's disease,[13] or the special form of chronic arthritis with enlargement of the spleen and lymphatic glands, has been thought to be a tuberculous manifestation, and to represent in children the tuberculous pseudo-rheumatism of adults. But it is not yet decided whether it is due to an actual invasion of the joints by tubercle bacilli, as was suggested by a local arthritic as well as a general reaction to tuberculin in Edsall's case,[14] or whether it is a toxic result, as is suggested by the occurrence of a general reaction only to tuberculin injections in Parkes Weber's case.[15] An obvious difference between tuberculous pseudo-rheumatism of adults and Still's disease is the relatively acute nature of the former and the chronicity of the latter. This may perhaps be paralleled by the more acute course of tuberculous meningitis in children than in adults. It is also interesting to compare the hyperplastic tuberculosis of the intestines, which is so different from ordinary intestinal tuberculosis, with Still's disease, which is equally unlike tuberculous arthritis. It is conceivable that the changes in Still's disease are due to a mixed infection, of a low grade of virulence, of tuberculosis and some other micro organism.

II.—*Toxic Arthritis.*

The first point to establish is that such a condition really occurs. In support of its existence we can point not only to gout, but to the occurrence of articular pain, and in a few cases of effusion, after the subcutaneous injection of antitoxic serums. It has been mainly noted after the use of antidiphtheritic serum. McClure[16] points out that, whilst this is rare in patients confined to bed, it is common in patients who, having had prophylactic injections, are up and about. He also refers to its occurrence after injections of Yersin's anti-plague serum. The pain of this toxic form of synovitis is not relieved by salicylates.

It should, however, be borne in mind that the deduction that a given case of joint disease is toxic rather than infective, because the fluid aspirated from the joint is sterile, may be fallacious, for the micro-organisms may be in the inflamed serous membrane, or be so intimately connected with it that they are not obvious in the fluid. This is fully recognized as regards the effusion of acute tuberculous pleurisy, and may well be true in the rare cases of acute arthritis in generalized tuberculosis referred to above.

As is well known, two forms of arthritis may complicate scarlet fever: (*a*) The suppurative form due to pyaemic infection, which does not concern us here; and (*b*) the form usually called rheumatic. With regard to the latter, McClure, from an analysis of 170 cases, disagrees with the general opinion (Osler,[17] Garrod,[18] Caiger[19]) that the joint affection is rheumatic and is relieved by salicylates. He considers it toxic, and supports this on the negative results of blood cultures and cultures from the joints of 30 of his cases. In its toxic origin he compares it with the arthritis due to serum disease.

Intermittent hydrarthrosis, in which attacks of pain and swelling occur so regularly that they can be accurately foretold is a rare condition, but is of special interest in that the obscurity of its pathogeny has led Garrod[20] to formulate the notion of articular erythemas. There is much that is attractive in the view that intermittent hydrarthrosis, which has occurred in patients who have had angioneurotic oedema, and in others who have had urticaria, is an affection of the synovial membrane analogous to a cutaneous erythema. As skin eruptions, and especially the erythemas, are so commonly due to toxaemia, it is tempting to assume that the toxins which commonly induce cutaneous erythema may, when the synovial membranes are a place of diminished resistance, give rise to congestion and effusion.

Here we may recall the association between arthritic manifestations on the one hand, and purpura and other skin eruptions, such as urticaria and erythema nodosum, on the other hand. Originally the presence of the arthritic lesions was given undue prominence and was regarded as evidence that the whole syndrome was essentially rheumatic fever; this is shown by the old names peliosis rheumatica (Schönlein's disease) and purpura rheumatica. Doubt has been thrown on this conclusion: Osler's[21] description of the erythema exudativum multiforme group, which includes cutaneous, arthritic, visceral, and cardiac lesions, was perhaps the first step in this direction; and more recently Pratt,[22] after examining all the evidence, cannot find any reason to believe that the arthritis of purpura is rheumatic in origin.

The characters of toxic arthritis are that the manifestations are more transient and less severe than in

infective arthritis; that pus is not produced, and that the inflammation is apt to flit from joint to joint.

Arthritis associated with Lesions of the Alimentary Canal.—In some rare instances there may be evidence that a micro organism has been absorbed from the alimentary canal and carried to the joints, so that an infective arthritis is set up, as in the cases of dysentery in which a coliform organism has been isolated from the joints (Salle). Apart from these exceptional cases the arthritis associated with lesions of the alimentary canal may, perhaps, be assumed to be toxic and due to the action of poisons, usually of microbic origin, absorbed from the alimentary tract. Oral sepsis is well known to be an antecedent in some cases of a disease closely resembling, and often said to be, rheumatoid arthritis; the joint changes are usually chronic rather than acute. But occasionally attacks of acute arthritis are seen in patients who have pyorrhoea alveolaris or suppuration draining into the mouth. I have seen recovery follow removal of such an infective focus. Acute arthritis in association with the common disorders and lesions of the stomach and intestines is extremely rare. According to Salle,[3] dysentery is accompanied by some degree of arthritis in about 4 per cent. of the cases. Ulceration of the rectum has in some instances been noted to be associated with acute arthritis, which has been observed to disappear when the bowel condition was cured (Wallis[23]).

Considerable interest attaches to the association of appendicitis with arthritis, for it has been interpreted in two different ways: it has been thought that the appendicitis is a manifestation of rheumatism (Grant[24]), and conversely that the joint manifestations are secondary to absorption from an inflamed vermiform appendix. The association is undoubtedly rare, but it is worth bearing in mind.

Similarly there is considerable scope for discussion as to the relation of the association of arthritis with the various forms of colitis. The French school regard mucous colitis as a manifestation of the arthritic diathesis, on the grounds that the subjects of mucous colitis have a hereditary or personal history of joint affections. On the other hand, arthritic lesions may follow in the wake of colitis, and may be explained as due to the absorption of intestinal toxins. This arthritis is commonly chronic, an acute form is rare. I have seen two cases in which acute arthritis was associated with colitis, but in both instances the two conditions were probably independent of each other and due to some common infection. Both began with fever, at first thought to be influenza.

In one, a woman aged 50, widespread peripheral neuritis was first observed, then oedema of the legs, and then arthritis and severe mucous colitis with the passage of intestinal sand. Recovery was very slow, the movements of the joints being much impaired for more than a year after the other symptoms had disappeared.

In the other case, a man aged 32, sore throat and multiple arthritis first appeared, accompanied by constipation; this was followed by diarrhoea and the passage of blood and mucus from the bowels. About a week later a large round worm was discharged from the bowel. After a long convalescence he recovered completely.

In conclusion, acute arthritis may be a manifestation of various diseases; but whilst some fevers are so constantly characterized by obvious cutaneous changes as to be grouped together as the exanthemata, the occurrence of arthritic changes are less constant in well-recognized diseases. I do not know if it has ever been suggested from a teleological point of view that the object of cutaneous rashes is to give warning that the individual is infectious; but the same spirit of final causes might urge that the reason why certain diseases, such as acute rheumatism and in some instances scarlet fever, affect the joints is that, by limiting movement, rest for the heart may be ensured. Teleological explanations though attractive are dangerous, and this one will not stand much criticism.

The other point on which I wish to insist is that a weakness in resistance on the part of the joints, whether inherited or acquired, may determine inflammation in the joints in certain persons when attacked by an infection or disease which in ordinary persons is not characterized by arthritic manifestations. This probably accounts for the rare form of arthritis exceptionally seen in hemiplegia and paraplegia.

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EXPERIMENT AND OBSERVATION IN MEDICINE.*

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In selecting a subject for the presidential address, it is sometimes the practice to take one definite subject and to follow it out fully, but in other cases a retrospective view is taken, recalling some points of interest that have occurred in the president's own career, or a general survey of the progress of medicine or some branch thereof. It is my intention to take the latter line, and to put in order some of the reflections that have from time to time engaged my attention.

When we compare the advances made in the strict sciences with those made in medicine, we must admit that, brilliant as are the latter, they cannot compare with those of the pure sciences. We have to remember that medicine is not only a science but also an art, and it is with the latter that most of us are chiefly concerned, and art is long. The laboratory worker is concerned with science, but the clinician is almost wholly concerned with the art or practice of medicine. Much of this distinction in results is due to the nature of the material we deal with. The personal equation of the patient is so variable, there are so many difficulties in the way of making adequate controls. The human factor is a variable and not a constant, and so the equation never works out accurately.

"Science is measurement," but measurement with the accuracy of a chemical balance or a Kelvin electrometer is impossible to apply to clinical methods. We can, it is true, count pulses and respirations, and record temperature and weight, and these observations are very useful. But other measurements, such as sphygmographs and haemomanometers, have many sources of error, and the error of experiment bears such a large proportion to the actual measurement as to render the latter of dubious value.

And our observation, as a rule, does not take the form of measurement, but of signs that have not an absolute value, but only a relative one. A resonant note in one person would be a dull one in another. The note elicited over the lung of a thick-set, muscular, or fat subject would, if heard over the lung of a thin patient, suggest disease. There is a great variability in the standard of resonance in different patients, and for each patient it is necessary to have a standard of normal resonance. I believe that in the early stages of phthisis, where the signs at each apex are exactly the same, there is a danger of overlooking the signs, owing to our habit of comparing the resonance of one apex with the other, instead of relying on a standard of absolute resonance.

In all scientific operations the element of control is largely represented. Two substances of exactly the same composition, weight, and appearance can be placed side by side, one experimented on and the other retained as control, and the two can be compared at every stage. This can be done in testing urine and laboratory work, but in treating patients it is very difficult. The scientific method of study would be to have two patients exactly

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alike, having the same disease and the same stage and virulence of the disease, and one should have the proposed treatment and the other left alone as a control. But many difficulties present themselves against carrying out this course. (1) No two persons are alike in appearance or constitution, and so the test would be somewhat invalid. It is impracticable to catch the disease at the same stage, and to be sure that it is of the same virulence. Even with the most careful opsonic tests, we could not be assured that both cases would run exactly the same course if left alone. (2) If the proposed form of treatment or any other would be likely to do good, it would not be justifiable to leave the control patient alone, if the disease were of great severity or danger. (3) The *vis medicatrix Naturae* upsets our calculations. Many worthless drugs owe their reputations to the fact that the patients on whom they were first tried got well in spite of them. The old argument, *post hoc, ergo propter hoc!* Parenthetically, we may remark that many a practitioner also owes his reputation to the same sequence.

About ten or fifteen years ago there was a great "boom" in pharmacology. Each useful drug was to have its action in health studied carefully. Experiments were made of a very comprehensive and exact character, firstly on animals, and finally on the experimenters themselves. Great expectations were aroused that they would put medicine and therapeutics on a sound and scientific basis. If we knew exactly how they acted in health, and then observed what happened when they were exhibited in disease, the net result would surely indicate their influence on disease processes, independently of the *vis medicatrix Naturae*. This work has done much to amplify our knowledge and to make more exact our trains of thought, but it has not quite realized our expectations. Many drugs only show their potency in disease. Antipyretics reduce a temperature abnormally raised, but have no action on the normal temperature. Anodynes and analgesics relieve pain, but have precious little effect when there is no pain. So all drugs that have a specific action on certain diseases often do not show anything analogous to this action in health.

While there is abundant evidence of the old empiric attitude among us, yet there has also been abundant evidence of the rise of a more critical spirit, amounting in many physicians to scepticism. I was once handed a text-book by Marshall Hall which was represented to me as a type of thought and practice well worthy of study and imitation by a young physician. I found in this book that everything was cured by mercury, antimony, and bleeding. Moreover, each disease had its proper number of ounces of blood to be extracted. While the ranges at either end of the scale were very far apart, yet many of the indications for different diseases in the scale differed only by 2 oz. of blood that required extracting. Everything was nicely cut-and-dry. Pneumonia required, perhaps, 30 oz. of blood extracted, and bronchitis only 28. It is wonderful that, with every disease having its treatment expressed so exactly in ounces of blood, and with such a limited pharmacopoeia as mercury and antimony any one ever died. I am afraid that the young physician saw more of the humour than the value of this excellent work. The sublime and artless credulity of this system of therapeutics smacks very strongly of the Chinese medicine of the present day, which appears to be a kind of organo-therapy gone mad—each disease has its cure in a certain organ of a certain animal.

We have advanced considerably beyond that stage. Pharmacological researches have carried our knowledge very far. We can define with certainty the precise action of many drugs, but we cannot tell the how and we cannot tell the why. We know that curare causes paralysis by paralysing the end-plates of the muscles, but we do not know how it does so, what precise anatomical or chemical changes take place. We know that strychnine exalts the anterior cornual cells of the spinal cord and that physostigmine depresses them, but here, again, we cannot tell how they do it, and what relation between the chemical structure of the alkaloid and that of the cell protoplasm causes this action. I do not know of any observations that have been made showing anatomical changes in the nerve cells as the result of the action of these powerful drugs, though such changes have been shown in the case of alcohol.

Another point of interest is, Why do plants elaborate out of their simple food—carbon dioxide, water, and ammonia — these highly complex alkaloidal poisons? What can be the item in the scheme of natural selection that results in the elaboration of these substances, and how does it come to pass that they should have such a powerful action for good or evil on our bodily functions? It is very difficult to understand how in a purely mechanical theory of natural selection this wonderful symbiotic relation should come to pass. Why does the nux vomica produce strychnine and the belladonna elaborate atropine? What can it have to do with the plant's economy? Can it be some form of protective device to prevent them being eaten up by animals? and, if so, how does it happen that atropine has no poisonous effects on rabbits? Who so likely to eat them up as this voracious rodent? If this were so, one would expect poisonous plants to flourish much more than non-poisonous ones. And yet one finds that the plant least harmful to animals, and one on which they feed more than any other —the common meadow grass, *Lolium perenne*—is the most widely distributed of all plants. The action of natural selection in plants is more concerned with effective reproduction and distribution of reproductive products than with the security of the individual plant from injury or destruction.

One can scarcely compare the elaboration of the poppy alkaloids to the pungent odours and taste developed by certain moths, or the protective colouring assumed by other and more innocent lepidoptera to resemble their more nauseous relatives. The teleological doctrine in its old frank statement finds little favour now, but it is difficult to escape it in this context. We know that the strawberry does not don its crimson luscious receptacle for the benefit of our palates, but to attract birds to devour it and its contained achenes, so that after passing through the alimentary canal, the hard, dry, indigestible achenes may be deposited with a good dollop of fixed nitrogen in a favourable position, and giving them a wide distribution.

The lovely hues and exquisite odours of the violet and rose are not for the gratification of the lord of creation, but simply to attract the lowly insect, who is an efficient agent in securing fertilization, and especially that more potent agent, cross-fertilization.

All these gratifications derived from the floral world which we enjoy have been evolved by the pure mechanical agency of natural selection. But the evolution of the alkaloid-producing power appears to be on quite another platform. So far it does not seem practicable to compare etiologically or teleologically the plants producing these powerful principles with those that do not, and to have regard to the great variety of these substances that are produced, and to account for them merely on the theory of the survival of the fittest.

It is also remarkable how few really useful drugs and powerful alkaloids are derived from the animal kingdom. With the exception of cantharidin, there does not appear to be one drug derived from it, except vehicles. The matters relating to organo-therapy, toxins, antitoxins, and vaccines, of course, do not come in this category. The relation of these to the organism producing them is easily understood.

It is a strange and happy circumstance that so many of these powerful active principles have the power to cure disease and mitigate symptoms. The theory has been advanced in more remote times that wherever there was an endemic disease, there grew a plant that cured the disease. Wherever nettles abound, there alongside grows the dock, ready at hand for the cure of the unfortunate stung by the nettle. In fenny country, where rheumatism is prevalent, there grows freely the willow, yielding salicin. Where malaria abounds, there the cinchona grows, accessible for the relief of the sufferer. I am afraid that the cinchona does not adapt itself to the would-be users quite so well as this, but I believe in some parts of South America the disease and the cure grow side by side. But I am afraid, as far as our present knowledge goes, instances like these (even if we take them for granted) could not be multiplied very much. There are very few indigenous plants that we use, and I believe the ground has been fairly well covered. If one reads Bentley's *Botany* (where the known therapeutical

use of each plant is described along with its anatomical features), one is surprised to find how many of them have been extensively employed for various ailments, most of them without success. Most of our knowledge of these things has been derived from the careful observation of keen-witted natives, many of whom have been accustomed to use plants found in their district, and to use them successfully for many generations before the advent of the European. It would almost appear that we have reached the limit, and that we are in possession of almost all the facts relating to the galenicals and the preparations derived from them. Very few serviceable additions of this description to our *Pharmacopoeia* have been made during recent years, the only notable one being the Malayan plant that was reputed to be of such value in the cure of the opium habit, but of which we have heard very little since the first boom.

Our advances in recent years have been along the lines of the products of the chemical laboratory and those of the pathological laboratory. I suppose drugs of the former class far outnumber the galenicals, and every week new ones are being introduced and disturb our breakfast tables. When they are all reviewed and added up, they resolve themselves into one or other of the following groups: Antipyretics, anodynes, anaesthetics, diuretics, antiseptics, hypnotics, and purgatives—not a very large field, I am afraid. Each new one professes to be an improvement on its predecessors in that class. Take the phenetidine group—phenacetin, lactophenin, citrophen—all acid esters of phenetidine, but of increasing complexity. It was held that as the acid radicle advanced in complexity, so the drug increased in its analgesic power. It has occasionally happened that conditions that failed with phenacetin have yielded to lactophenin, but the fact remains that phenacetin still is the most popular of the three.

So in the sulphonal group: it was held that the more ethyl groups there were, the greater the hypnotic effect, and that therefore sulphonal, or diethylsulphondimethylmethane is exceeded by trional (diethylsulphonethyl-methylmethane), and this, again, exceeded by tetronal (diethylsulphon-diethylmethane). But the fact remains that sulphonal, with its two ethyl groups, is still the most popular, and that trional is more popular than tetronal, the latter being seldom used. Possibly the greater cost, in the absence of very marked difference in effect, has something to do with the relative frequency of use.

The want of correlation between chemical affinities and pharmacological affinities is very marked. The halogens, Cl, Br, and I, are, of course, closely related chemically and so are their compounds, but the pharmacological and therapeutic properties of their compounds are very different. Methyl-morphine has very similar action to morphine, while methyl-strychnine has quite an opposite action to strychnine. The chlorine derivatives of methane, however, have similar actions. Monochloromethane is an anaesthetic, but is little known. Dichloromethane had a great vogue twenty years ago, when it was brought into prominence by Sir Spencer Wells. Trichloromethane still shares with ether the position as premier anaesthetic. Tetrachloromethane has earned itself recently an unenviable notoriety as a profound anaesthetic in the hands of hairdressers—much too profound!

The old adage, "Of making many books there is no end, and is much weariness to the flesh," applies also to organic compound breeding. They are very many, their full names very much exceed that of a royal personage; their therapeutic activity exceeds that of any other drug hitherto introduced. If our credulity were equal to the claims put forward by their introducers, our whole time for months might be occupied in experimenting with one week's output in new drugs. Perhaps this is the origin of the expression, "It is a drug on the market." The only difficulty is to sift the wheat from the chaff, and the danger is to overlook a few valuable grains of wheat, owing to the abundance of chaff and its capability of concealing.

One of the most remarkable transformations in medical practice in the last ten years has been the decline in the use of alcohol. The statistics of the large London hospitals, the Metropolitan Asylums Board, and the London County asylums are a most convincing record of the fact that a great change has come over the practice and convictions of the medical officers of these institutions, who number among them—if not entirely composed of—the best elements of our profession, the best type of professional efficiency, and to whose opinions we look up with the greatest respect, and whose practice may be fairly taken as a standard representing that of the profession of the nation at large. In the London County asylums, while the patients and staff had gone up from the year 1885 to the year 1906 from 8,107 to 19,457, the wines and spirits had gone down from 1,902 gallons to 250 gallons, and the beer from 255,486 to 1,281 gallons. This is not the practice of a few cranks, but the outcome of the increasing conviction among all classes of the profession of the uselessness and harmfulness of alcohol; as the result, not of preconceived prejudice, but of added knowledge due to careful experimental work, carried on under the finest modern scientific conditions, and better clinical observation, from which the obscuring bias of ages has been put away. The International Congress of July, 1909, gave evidence of the great amount of work that had been done, with the desire, not of fortifying a position, but of ascertaining the truth, and recent research in immunity and kindred subjects has given to these workers a very potent instrument for unravelling these mysteries. The work has been slow in method, sparing no pains to gain accuracy in result, but the accumulation of facts has been sure, and the facts have been marshalled with unerring fidelity and relentless energy, and it is now clear to us that alcohol is a narcotic and not a stimulant, that it is a protoplasm poison of the first order even in very dilute solution, and even under such circumstances leaves indelible marks and lowers the immunity index of the individual.

Bias has to some extent hindered the revelation of the laboratory being transferred to the bedside in all its fullness. There are many human traits in our clinicians which I need not specify more particularly, but which have in the past caused the frequent and almost universal exhibition of this drug, and, even with recent illumination, we must expect a certain clinging to this old idol for a time. The foundations of society still depend on the free exhibition of alcoholic beverages at social gatherings. Till recently the passing of the wine denoted the muff. Perhaps this does not obtain to the same extent now. But even now it is regarded as social heresy of first order not to offer your guest what you consider a powerful poison. You are not obliged to offer him opium, hashish, or cocaine, but if you do not offer him alcohol you are a social pariah. With this spirit still prevailing, it is hopeless to expect the revelations of the laboratory to be transferred very readily and universally to the bedside. In the laboratory observations are so exact that bias and sentiment have no place, but in clinical work sentiment and fashion are bound to influence us to some extent. Observation cannot be so accurate without the control element.

The scope of the physician has been inevitably narrowing during recent years, and the process is likely to continue. At one time he had it all his own way, and the surgeons were merely only the descendants of the barber-surgeons. The gold-headed cane and other symbols were no doubt the important elements in the physician's armamentarium. But in spite of all the humbug, there were doubtless many able clinicians in those days, all the more so because they were dependent on their native wits, and not on the aid that modern instruments and researches give.

With the introduction of anaesthetics and antiseptics a great change took place, and since then the surgeon has continually encroached on the ground hitherto occupied by the physician.

In more recent years, with aseptic methods and improved technique, the advance of surgery has been enormous, and much of it has been at the expense of the physician. McGill used to preface his lecture on the surgical treatment of intestinal obstruction with the remark, "Formerly the treatment of intestinal obstruction was left to the physicians, and the result was that the patients nearly all died." The same may be said of many other things that have now been relegated to the surgeons in like manner, and many other cases that in the physician's hands received only palliative treatment, but with surgical treatment the cure has been complete. This has not been

due to the relative capacities of the two classes, but to the limitations that have been imposed on the physicians. Each year the surgeon invades some branch of the physician's work, and this is as often due to the physician's improved method of diagnosis as to the improved technique of the surgeon. In fact, the chief reward the physician gets for increased precision in diagnosis is to get his territory raided and that class of case annexed. It will be but a short time when most of the diseases of the stomach (formerly regarded as sacred to the physician) will be treated by the surgeon, and I look forward to the time when the diseased lobe of the tuberculous lung will be removed. With this very much diminished field, with the prospect of a still further rapid contraction of the field of work, what is the outlook of the physician? However narrow his work may be, there is, of course, still some scope for research and acquiring greater precision of diagnosis, but if the *clientèle* is reduced severely, the income necessarily becomes narrowed, especially as the physicians' fees bear such a small ratio to the fees obtainable for operations. Treatment by drugs, whether galenical or synthetic, is likely to be restricted. There are, however, certain lines of advance which he can reasonably develop.

The field of physical therapeutics is one which is sufficiently large to occupy the whole attention of medical men practising in very large populations, but in smaller areas the *clientèle* would be too small, and in such cases the work is very aptly undertaken by the physician. Electrotherapeutics offers a very useful, though limited, field, especially in the relief of neuralgias and neurites, and other painful conditions when they are not caused by too gross a lesion. Even in the latter case much relief may be afforded. Paralytic conditions often meet with much better results with scientific treatment than when treated in the rule-of-thumb method with a small battery. Cataphoresis, or ionization, has also a good prospect in effectively carrying the medicament to the affected part without permeating the organism.

Radio-therapy is a field that may suitably engage the physician's attention, and requires skill of the highest order. It does not involve the mere turning on of the switch, but requires first-class specialized technique, and accurate observation and judgement. There are terrible potentialities for evil as well as for good in radio-therapy, and the work calls for specialized attention, not by druggists and other non-medical operators. The cure of lupus, rodent ulcer, tuberculosis of the skin, and other skin lesions by this means has come within the knowledge of most medical men. Recently much has been done in the cure of deeper lesions by means of filters which cut off the soft rays which do not penetrate and which injure the skin, but allowing the harder rays to penetrate the skin and permeate the diseased structures. Tuberculous glands, provided they stop short of suppuration, can be cured, and even after excision irradiation of the site of the glands effectively prevents recurrence. A case of this nature well illustrates this.

> The son of a medical man came to me with glands in the neck which were caseating or even suppurating. I applied *x* rays for a time without lessening the swelling. I then advised that they be removed, and this was done, and the glands were found to be suppurating and adhesions formed, and some of the pus escaped into the wound. Previous to this, at the same operation, the other side was opened and some non-suppurating glands removed. Both sides were cleared out completely. The wound healed by first intention. Within a month the side that had not been irradiated relapsed and several glands enlarged. The other side that had been irradiated, in spite of the suppuration and the adhesions, never relapsed. Further irradiation of these glands cleared them up.

I believe that routine irradiation of the sites of malignant disease that has been removed would materially lessen the chance of recurrence.

Many excellent results have been obtained in Graves's disease, some of the cases doing remarkably well, others being intractable. There are at least two types of this disease, and it is those with a large feebly throbbing goitre, with proptosis and tremor and erythrism that seem to do the best. In ringworm, sycosis, and favus, *x* rays is easily *facile princeps*.

In radiography, too, the physician finds an excellent field of work. The chief trap he has to beware of is the temptation to buy every new piece of apparatus that is going to revolutionize radiography and its allied spheres of work. If the surgeon or the anaesthetist will make a mental picture of the new gags that have been offered to him during the last ten years, he will realize a fraction of the number of new brakes that have been offered the radiographer during the last five years, at from ten to twenty times the cost of the gags. Each is going to beat all the others quite out of the field. So, too, the question of tubes is a constant source of anxiety to the radiographer. You can pay anything you like for tubes (on the high side), and a slight accident or misjudgement may consign it to the scrap-heap. A physician (failing a specialist in radiography) is the likeliest man to undertake the work. His work is much more limited in scope than the surgeon's, and as the radiographer's work is largely concerned in surgical diagnosis, and it is his business to make the diagnosis and return the patient to the surgeon for treatment, there is less likelihood of friction than if the radiographer were a rival surgeon to the one who sent him.

It is remarkable how large a proportion of the radiographic work I do both at home and at the hospital is kidney work. I estimate that I do more kidney work than all other forms of radiography put together. There have been great improvements in radiographic work recently in getting more rapid exposures. The use of the new accelerating screen has reduced the exposures very much, and has shown practically no grain in the radiograph; and this great reduction has enabled much more current to be sent through the tube, but not so much but that ordinary heavy anode tubes can be used, and the valve tubes have been so improved lately that no harm happens to the tube when this heavy current passes. Consequently, we are approaching instantaneous radiography without needing to use the very expensive tubes and costly interrupters. The more nearly they approach the instantaneous, the sharper the definition in chest and kidney work, when the breath can be held and movement arrested.

There is one sphere of work for the physician that is full of promise. Much has been done in the past, but over a somewhat limited sphere, but in the larger sphere the results are not sufficiently developed to justify conclusions. I refer, of course, to antitoxin, toxin, and vaccine-therapy.

This is work of an eminently scientific nature. It consists of the searching out of the means which Nature has provided, ramifying into all her secrets, and adopting her own methods. We have hitherto, in using galenicals and synthetic products, been guided by rule of thumb and pure empiricism. By trying every conceivable and inconceivable drug we could lay our hands upon, a few have been found useful and have been retained. But by studying the principles that underlie the *vis medicatrix Naturae*, work has been done in recent years which has shown in the large number of diseases that are of bacterial or parasitical origin the actual processes adopted by the organism and its constituent tissues in the warfare against bacterial invasion. They have been carefully studied, and the very weapons themselves have been taken from Nature's armoury and by the resources of the laboratory reinforced a thousandfold, and used with greater precision and independently of the resisting power of the patient, which is an ever-changing variable.

The antitoxin treatment of diphtheria rests on sound experimental evidence, backed by extensive and irrefutable clinical results, and there can be but little advance in this direction. The antitoxin of tetanus rests on the same sound basis, but clinical success is hindered by the rarity of the disease and the fact that supplies of fresh serum are not always available at the earliest moment. But, except in the case of the vegetable ferments, abrin, ricin, etc., the other antitoxins have not proved very serviceable. Certainly pneumonia, typhoid, and streptococcic and staphylococcic antitoxins have not. There seems to be evidence that certain bacteria do not part with their toxins to the culture fluid, but only yield them when in contact with the cells of their host, when they readily pass out and manifest their toxic effects.

In these cases it is necessary either to inject living bacteria in small and increasing doses into the serum-producing animal, and get from them an antibacterial serum, or to kill the bacteria and inject an emulsion of them into the patient. The latter is the favourite process

at the present moment, and has great promise of success. The toxins are liberated from the dead bodies of the bacteria and stimulate the formation of numerous receptors or side chains in the cell, and some of these latter are thrown off into the blood stream as antitoxin, and in a position to seize upon and unite with and neutralize the toxin molecules, not only those that have been artificially introduced, but those that are being constantly produced by the invading germ.

In many cases the diagnosis is very difficult, and in others the strains of what is apparently the same bacterium are very numerous, and though their effects may appear the same, the species or variety is not the same. I suppose the strains of streptococci and staphylococci are as numerous as the varieties of Rubus, and the distinction of the colours, "aureus," "citreus," "albus," etc., which their cultivations show, do not by any means represent their numbers. Antitoxins of the cocci have failed partly because of their infinite variety. The stock antitoxin did not come from the same strain as the disease. So the practice of using polyvalent serum resulted, making antitoxins of every conceivable strain of coccus, mixing them together like a plum-pudding and throwing them at the patient, hoping that one at least might hit the mark; like firing a shot gun at a grouse, hoping some of the pellets will go home.

But in this, as in other diseases, vaccines have proved more useful than the antitoxin, but even here there is the difficulty in getting the right strain. There are also cases where a strange organism is found, or one that has been regarded as non-pathogenic is in a particular case found to be pathogenic. In fact, we must recognize the possibility, or even the probability, that natural selection is frequently producing new species, causing new diseases, or very definite modification of recognized disease. We do not know when any given germ attains its specificity for the first time—certainly not all of them in prehistoric times.

In all these cases where the stock vaccines do not appear to be of avail, the practice is to take some of the diseased organ or its secretion or contents, make pure cultures of the germ, and use one or more of these cultures as vaccines, giving back to the patient vaccines from the exact organism that has attacked him. This is a method of precision as keen as could be attained and the most scientific in its practice, and, *a priori*, most hopeful in its outlook. It is comparable in all its details for scientific spirit and method to the best work in chemical or physical research.

While much of this work will lie in the hands of the pathologist, the final utilization will rest in the hands of the physician; and it is to this line of vaccine-therapy that we must look as the most promising line of the future that will redeem the physician from the somewhat secondary place to which I fear public opinion has relegated him, as compared with his brilliant colleague the surgeon.

ON FEVER CAUSED BY THE BITE OF THE SANDFLY (PHLEBOTOMUS PAPATASII).

BY

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CAIRO.

Definition.

A NON-FATAL, three days' fever, with a week's convalescence and certain sequelae, due to the bite of the *Phlebotomus papatasii*.

Distribution.

It is known to exist in Egypt, part of Austria, Malta, and in Italy; and it will probably be found widely distributed.

Symptoms.

These are local and general.

Local.—The bite is followed by intense itching and irritation of the part, which persists, and which is followed by the formation of a raised lump with a small watery head, and with a surrounding zone of inflammation. As the flies bite at night, sleep may be prevented for some hours.

General.—The illness begins with a feeling of tiredness, loss of appetite, malaise, headache, aching in limbs, chilliness, disinclination to do things; rigors are uncommon; vomiting takes place sometimes. The temperature rises sharply to 101° or 104° F. (less in recurrent attacks). There is a disordered digestion, furred tongue; constipation is marked, occasionally there may be diarrhoea; the hands and feet are hot, the pulse is bounding and increased in rapidity. Blood pressure is probably raised from the beginning. Later there is well-marked anaemia and rapid loss of weight.

Special Symptoms.

There is a tendency to inflammation of synovial and pleural cavities, and to neuritis and headache. The micro-organism is probably not got rid of easily, and months after an attack chill or exposure to wet may bring on another attack of fever, accompanied by effusion into synovial or pleural cavities, or neuritis.

Blood Examination.

I have failed to find any organism.

Residence.

Newcomers are more affected by the bite of these insects, both immediately and more remotely, than those who have been in the country for years.

History.

For many years these symptoms had been noted, but were variously attributed to other causes and described under the name of dengue, influenza, malaria, and Egyptian fever, but upon careful observation the above diseases will be found to have different clinical symptoms, the nearest being influenza. There is, however, usually the definite history of the bites, and an absence of catarrh of the air passages. It differs from malaria in that there are no definite stages of the rigor, and no parasites to be found in the blood.

In dengue fever the severe rheumatic pains in joints, bones, and muscles, with injection of the eyes and slow, tedious convalescence, help the diagnosis.

Influence of Season.

The fever is prevalent during the hottest and driest part of the year, from April to November, when the flies are most prevalent.

Etiology.

Bite of the sandfly, *Phlebotomus papatasii*.

Incubation Period.

About four days. Three days' fever in cattle is well known in Egypt; and it is possible that the disease may be conveyed from them to human beings, as the flies are found in large numbers in the vicinity of dwellings and stables.

Habitat.

I could not find the larvae, but they will probably be found in latrines, human and other excrement, which is cast so freely round villages. From the nature of the fly it is manifest that, wherever the larvae may be found, the eggs must be laid in moist material, and the breeding time of the fly is during the hot, dry months of the year, beginning in April. For some years past it has been noticed that rooms nearest to the rough latrines of the Arab servants were the ones most infested. Last summer there were a large number of native workmen engaged in altering a premises. No latrines were provided; they used the desert, and sandflies swarmed. The banks of the Suez Canal, alongside of which the sweetwater canal runs, are favourite haunts of the sandfly.

Description of the Fly.

It is said to be called by the natives "akhl-uskut," silent eater. This is hardly true, as the fly makes a high-pitched noise similar to that of the *Culex* mosquito, only much higher pitched. The fly is light brown in colour, so small that it can pass through the meshes of a mosquito curtain. The wings are held up away from the body, and are covered with hairs. The head is joined to the body by a narrow neck. The eyes are very large and prominent. The proboscis is about twice the length of the head, and contains a fine stiletto. The antennae are three times the length of the proboscis, and are covered with hair. The body of the fly is of the same colour—light brown—and hairy. The thorax gives the impression of humpback. The abdomen is narrow, but when the fly is fed it becomes very prominent and darker in colour from the ingested

blood. The genital organs show an extraordinary difference between male and female; the male being provided with large and powerful clasping apparatus. The legs of the fly are long, hairy, and provided with a terminal hook, which enable it to hold on and obtain purchase for driving in its proboscis. The proboscis of the male is somewhat shorter than that of the female. The fly runs quickly, and is possessed of much intelligence in hiding or endeavouring to escape. The female phlebotomus bites. It is not certain at present whether the male does or not. The flies are usually to be found in pairs.

Preventive Treatment.

Human and other excrement should be destroyed or buried. Latrines should be sprayed with paraffin twice in a week. Although the fever does not tend to a fatal termination, the sequelae may be troublesome or even serious, and there is no doubt that it incapacitates a considerable percentage of the population.

The clinical observations have been made upon a number of cases, and confirmed by observations upon myself. I have a peculiar attraction for these flies. Last year, after a sea voyage, and when in the best of health, after carefully excluding the possibility of bites from other insects, I was bitten by six of these flies. Within forty-eight hours symptoms set in and followed the usual course.

I much regret that, owing to an accident, my experiments in breeding the flies were brought to a premature close. I hope, however, to continue them shortly.

I append a description of the fly, kindly sent to me by Mr. Newstead, of the Liverpool School of Tropica Medicine.

The members of the genus Phlebotomus may be recognized by the following characteristics: Small hairy flies; thorax humped, wings long and narrow with ten veins, all of which, including the costal vein and hind margin, are clothed with long hairs. There are no cross veins as in mosquitos or other allied flies, and the veins are never clothed with scales. Legs long and slender. Antennae setose of fifteen segments in male. Palpi of four segments. Proboscis twice the length of the head consists of mandibles, maxilla, labrum, labium, and hypopharynx. The buccal organs of the male are shorter than those of the female; the colour is a light brown with hardly any variation.

I much regret that I have been unable to read the recent publications of Drs. K. Franz and Taussig on this subject.

Treatment.

This is symptomatic, there being no specific. When the digestion improves, iron and arsenic are useful to combat the resultant anaemia.

SKIAGRAMS OF MULTIPLE RENAL CALCULI AND OF FRACTURES DUE TO MUSCULAR VIOLENCE.

BY

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The two skiagrams illustrated were obtained with exposures of two minutes, no compression being used, and the breathing being natural. The print showing the renal calculi is of special interest to radiographers, inasmuch as the small calculi were so clearly defined, in spite of the movements of the diaphragm, that 27 of the 28 stones found at the operation could be counted on the plate. In this, and in many other cases, an exact outline of calculi has been obtained by exposures of about two minutes, and though in some subjects the kidney was abnormally well fixed, in others where the condition was not of long standing there was practically no movement of the kidney.



Case I.—Two-minute exposure. Print shows—*Right kidney*: One large calculus, weighing 123½ grams, and 28 small ones. *Left kidney*: One calculus.

Case I.

This skiagram is of the kidney regions of a middle-aged collier, who was under the care of Mr. William Sheen at Cardiff Infirmary. In the right kidney Mr. Sheen found the large calculus seen in the print and twenty-eight small faceted stones. The large calculus weighed 123½ grams, and measured 7 cm. in its longest and 5.4 cm. in its shortest diameter; it had an almost smooth surface. In the left kidney there was a single stone, about as large as a pigeon's egg. All were phosphatic deposits

The print does not show another interesting appearance which is easily seen on the plate, and which is also seen in the skiagram of Case II. This is an apparent separation of half of the right transverse process of the first dorsal vertebra. This man had had no injury to the back.

Case II.

This man was a collier, aged 32, who strained his back five years ago. The strain was caused by his lifting a tram of coal off his mate, who had fallen below it. He lifted this weight with his hands behind him underneath the tram, and his back against its side, and remained for some time supporting the weight until help arrived. He walked home, and worked for some days afterwards, but ever since has complained of pain in the *left* loin, and has not been able to do very heavy work. I took a skiagram of his left loin some months ago, when renal calculus was suspected, but did not notice any abnormality. He lately came to the out-patient department under Dr. Herbert Cook, and was again radiographed for stone. This plate showed both kidney regions clear, but several fractures of the *right* transverse processes of the lumbar vertebrae. The second, third, and fourth are separated from their bases and lying far below, and external to their normal position, though at the usual distance from each other. The tips of the processes remain blunt, while the inner ends of the separated part are thinned, or appear so in the plate. The tip of the fifth right transverse process has also been separated, but not displaced.

This man had received no blow, so that the fractures are

apparently due to excessive action of the psoas magnus and quadratus lumborum muscles.

I have not heard of a similar case, nor can I find an explanation of the fact that all the pain complained of is



Case II.—Two-minute exposure. Shows fracture of right transverse processes of second, third, fourth, and fifth lumbar vertebrae due to muscular violence.

on the left side. This latter fact partly explains why the fractures were not noticed previously, as the plate taken some months ago shows the condition very faintly, but the opposite side was the more minutely examined.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF DISEASES OF CHILDREN.

Archibald E. Garrod, M.D., F.R.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

Dr. Garrod initiated the proceedings by a few observations on the peculiar interest and importance of a study of the phenomena of disease in children; he then drew attention to the subjects which had been selected for special discussion, and declared the session open.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF NON-TUBERCULOUS JOINT DISEASES IN CHILDREN.

OPENING PAPERS.

I.—J. A. Coutts, M.B.Cantab., F.R.C.P.

The diseases of the joints in children are the same as those occurring in adults, however much they may differ in the younger subjects in frequency of incidence, severity, and consequences. Their very number, then, must prohibit me from dealing with any single one at any length, and the utmost in my power is to select some of the more salient points of the more important ones that may suggest themselves as suitable for discussion.

Amongst the joint complaints of children those due to rheumatism hold the foremost place. They are the first in importance, not from any local severity of their own, but from their numerical frequency and their association with serious heart lesions. There are few other joint diseases in children, too, that are not apt to be mistaken for rheumatism in some of their phases, and differentiation from the last plays an important part in the diagnosis of most.

The mildness of the rheumatic joint affections often leads to their being neglected or missed by parents and nurses, and it is a common experience that in many a case of serious cardiac mischief it is only close inquiry that calls up the memory of growing pains, slight limping, or some such history in the past. Although never excessive in young children, the severity of the joint affections varies between narrow limits, and I would state that, in my opinion, in the younger subjects the frequency of heart complications is in some degree proportional to the extent and severity of the arthritis. In children under the age of 7, for example, where the rheumatism is so definite as to cause obvious joint swelling, it is exceptional, in my experience, for the heart to escape. In older children, and especially towards the age of puberty, the joint lesions take on the more severe and painful form of the adult type of the complaint.

The mildness of the joint symptoms in average cases has led, I believe, to an under-estimation of their frequency, even on the part of members of the profession. Not infrequently one hears of cases of rheumatism in children where endocarditis or pericarditis is described as the primary and sole manifestation of the disease, as *the* disease in fact, and where it is confidently assumed and asserted that no joint symptoms had at any time existed. I would only state that in my experience cases of unequivocal rheumatism are extremely rare where adequate inquiry does not reveal a history of some degree of joint pain, however slight and evanescent the last may have been. Even in cases starting with such a painful affection as acute tonsillitis the joint pains are ordinarily present, although they may be obscured by those of the more prominent disorder. Slight and evanescent, then, as they often are, and never leading to any local changes of any moment, the joint symptoms are of high importance from their being invariably present, and from their being usually the first to call attention to a disorder with such disastrous consequences as rheumatism in childhood.

In many textbooks rheumatism in children is classified as acute, subacute, and chronic. Such classification must surely be mainly based on the nature of the joint involvement, if it be based on anything at all. Now rheumatism in the child is singularly uniform in its manifestations, there being but little variation in one case from another as regards the severity of the joint troubles, the suddenness of onset, or the degree of pyrexia. This being so, any division into acute and subacute is to me unnecessary and uncalled for. Even rheumatic fever is a misnomer when applied to rheumatism as ordinarily portrayed in children, in whom attacks presenting the symptoms of the adult type of the complaint are of exceptional rarity. Still less justification can I find for the use of the term "chronic" as applying to rheumatism in children. The joint symptoms rapidly and completely disappear under appropriate treatment, and any remaining effect, such as even a slight temporary stiffness, is wholly exceptional. Children, too, are free from the vague and annoying nerve-muscular pains, so common in their elders, which are frequently, for no adequate reason, diagnosed as chronic rheumatism. Any chronic joint affection in the child is, I would say, certainly not rheumatic, and where any joint trouble persists, after say three days' treatment with salicylate of sodium, I would be induced to reconsider the diagnosis.

In the treatment I have found the moderate doses of salicylate of sodium ordinarily employed so entirely efficacious that I have never found occasion to use the massive ones advocated by Dr. Lees.[1] With him I quite agree that the drug does more than merely relieve pain and lower temperature, but is in some sense a specific in rheumatism, and I further agree with him that its depressing effects have been exaggerated. But these large doses are apt to cause alarming symptoms akin to

those of the so-called "air hunger" associated with diabetes, and where these can be prevented by the simultaneous employment of still larger doses of sodium bicarbonate, other undesirable complications may arise from the presence of a mere constipation, the last a contingency difficult of avoidance in every case. So far as the joint troubles are concerned, these large doses are, in my opinion, neither necessary nor desirable. Still, if evidence should be forthcoming that the heart complications are in any way lessened, either in frequency or severity, by their employment, I would not hesitate to use them.

In the year 1883 Dr. (now Sir Thomas) Barlow[2] called attention to an affection of the joints occasionally occurring in anterior poliomyelitis, which is prone to be mistaken for rheumatism. The affection is an interesting one which up to the present has received but little notice at the hands of writers on children's diseases. More than one form of joint disorder occurs with anterior poliomyelitis. The special one referred to here is an acute swelling, restricted ordinarily to a single joint in a paralysed limb. The onset of the joint swelling is generally synchronous with that of the paralysis itself, but may come on after the latter has lasted for several weeks. It usually attains considerable dimensions, is not attended by any local heat or redness, and persists for weeks or even months. The contrast then presented between the distended joint and the wasted limb is a striking one.

In the year 1885 I wrote a paper in the *Medical Times and Gazette*,[3] with an account of three cases, and suggested a connexion between such joint affections and what is known as Charcot's disease. In each of my cases the paralysis came on suddenly without any disturbance of the general health, and was restricted to the muscles of one leg below the knee. In each, too, the ankle on the paralysed side was the sole site of the special arthropathy alluded to. From the character of the paralysis and its onset without any disturbance of the general health there is justification for the belief that in such cases the lesion in the cord is a strictly limited one, and confined to the cells in the anterior cornua. Now, Charcot's joint disease is so much more frequently seen with locomotor ataxia than with any other complaint that with many tabetic arthropathy has come to be synonymous with it. But Charcot[4] by no means confined the joint affection to tabes, but described it as occurring in syringomyelia, transverse myelitis, tumours of the cord, and other complaints. The essential for its production, according to him, was the involvement of the anterior cornua, by extension to this region of lesions arising in other tracts of the cord. The occurrence of these arthropathies in cases of anterior poliomyelitis, where the cord lesion is confined to the anterior cornua, would seem to me an interesting confirmation of the correctness of Charcot's views.

The distinction between such joint affections and rheumatism is obvious. The infantile age of most of the patients, the limitation of the swelling to a single joint in a paralysed limb, its dimensions and persistence, should be sufficient to negative a diagnosis of the last complaint.

Joint affections may occur in infantile palsy where the cord lesions are much more widely distributed than in the last mentioned cases, and where the onset is attended by pyrexia and severe constitutional disturbance. A few years back an infant, aged 15 months, was admitted into hospital under my care. There had been high fever for about a week, and the child was evidently extremely ill. One or two of the larger joints were distinctly swollen, and a provisional diagnosis of rheumatism had been arrived at in the out-patient department. The age of the patient and other considerations did not commend this diagnosis to me. In discussing the possibilities of the case, with some hesitation I put forward the suggestion that it might be one of anterior poliomyelitis. The infant died two days later, and extensive changes, conclusive of that disease, were found in the spinal cord. In one or two other instances I have known the joint disorders in the early stages of anterior poliomyelitis to be mistaken for those of rheumatism. In the rare event of anterior poliomyelitis occurring in children above the age of puberty, or in young adults, indeed, a diagnosis of rheumatism is usually the first arrived at.

Another form of joint disorder associated with anterior poliomyelitis may be mentioned. Some years back a brother and sister, aged 8 and 6 years respectively, whilst on holiday at Margate, were seized with sudden illness, attended with high fever, within a few days of one another. After some weeks they recovered sufficiently to allow of their being removed to London and admitted to hospital. There it was found that each was extensively paralysed, and, as is not unusual in severe cases, the symptoms were almost as much suggestive of peripheral neuritis as of a purely cord affection. Amongst other paralysed parts was the right arm in the one child, and the left arm in the other. During their stay in hospital both brother and sister had more than one attack of severe pain down the course of the nerves in the paralysed arm, accompanied by pyrexia and distinct swelling of the phalangeal and metacarpo-phalangeal joints of the corresponding hand. The fever and joint swellings lasted for about a week, and were uninfluenced by salicylate of sodium, the heart sounds remaining clear and unaffected. Similar attacks occurred in an older boy, with extensive anterior poliomyelitis, under the care of a colleague, some few years earlier, and where, in addition to the small joints of the hand, the wrist in the paralysed arm was swollen as well. That these attacks were not rheumatic, but due in some way to the nervous disorder these children were the victims of, is, I think, sufficiently evident.

Joint affections occurring in purpura, infantile scurvy, and haemophilia are alike in that they are due to effusion of blood. Many varieties of purpura are described, but the distinguishing marks between them are often, in my opinion, somewhat fanciful and uncalled for. I will take, then, "purpura haemorrhagica" in its widest sense as denoting any complaint in which the haemorrhagic skin affection is liable to be associated with visceral haemorrhage. Involvement of the joints in any such form of purpura is so exceptional that its occurrence has been doubted by authorities. In one case that I have published,[5] however, the joint affection was primary and the first to call attention to the complaint.

A boy, aged 9 years, was admitted into hospital with symmetrical swellings of both elbows and knees. In the out-patient department no diagnosis was made, but it was suggested that the case might be one of some form of epiphysitis. Careful examination in a good light in the ward revealed what looked like fading bruises in the front of each elbow, and a needle inserted into one of the joints drew off pure blood. Whether the blood clotted or not after withdrawal was, unfortunately, not ascertained. The boy was placed on calcium lactate, but, in spite of this, in the course of a week developed a profuse purpuric rash over the body, along with severe abdominal pain accompanied by haematemesis, melaena, and haematuria. At the same time a huge haematoma formed over the entire scalp which thrust the ears forward. He was then given a dose of polyvalent antistreptococcic serum by the rectum, with the result that he was speedily well, although a second dose of serum was given as a precautionary measure.

The diagnosis of any joint affections in such cases is dependent upon the recognition of the underlying purpuric condition. The treatment, of course, is that of the associated purpura haemorrhagica; but here a difficulty may arise from the fact that cases presenting the same outward symptoms may own a totally different etiology. In half a dozen severe cases I obtained excellent results from polyvalent antistreptococcic serum, a line of treatment for which the profession are indebted to Drs. Soltau Fenwick and Porter Parkinson.[6] Whilst the value of this treatment in certain cases is undeniable, it is claimed that the choice of serum is immaterial, and that equally good results can be obtained from normal or diphtheritic serum as by any other. This is contrary to my experience. During the past year I had two children in hospital at the same time with moderately severe purpura haemorrhagica, both having skin eruption and visceral haemorrhages. Each was freely dosed with normal serum on several occasions, and calcium lactate with appropriate intermissions, turpentine, adrenalin, and saline purgatives given a trial to, with the result that at the end of four weeks each child was still in bed and unimproved. Then antistreptococcic instead of normal serum was given, and at the end of another week both children were out of hospital. The difficulty at the present moment is to discriminate between the cases that will benefit by the serum and those that will not. And here I would suggest a matter for discussion. There can be no doubt that in the

future further advances in serum treatment will play a large and increasing part in treatment, not only in diseases of the joints, but in many other complaints in children. The mode of administration of the serums, then, is not a matter of unimportance, and on this there is a wide difference of opinion. Personally, I think they are equally as efficacious given by the mouth as by any other route, whilst many regard them as valueless unless administered subcutaneously. It would be of interest, then, to have the experience of those present on this point.

An eminent authority, Sir Thomas Barlow, in his Bradshaw Lecture,[7] stated, if my memory does not mislead me, that haemorrhages into the joints were unknown in infantile scurvy. My experience would lead me to the conclusion that, whilst they are rare, they do occasionally occur. In an infant, seen in consultation some years back, the right lower femoral epiphysis was detached; and, whilst the corresponding epiphysis on the left side was apparently intact, the left knee was distended, presumably with blood. In another severe case, which died a few hours after admission to the hospital, where both upper and lower epiphyses of both femora were found detached, some blood was discovered *post mortem* in the right knee-joint. Dr. Still,[8] too, has recently met with a case where blood was discovered in a knee-joint *post mortem*. In a complaint where haemorrhages between the epiphyses and shafts of the bones are so frequent a feature, it is matter for surprise, not that the joints should occasionally be involved, but that they should so almost constantly escape. The treatment is naturally that ordinarily pursued in cases of scurvy. In addition, where there is any epiphysial detachment, or likelihood of any occurring and the pain is severe, I sometimes advise splints to be applied to the affected limbs under anaesthesia. Any slight risk from the anaesthetic is more than counterbalanced by the lessened pain and the greater surety of a freedom from permanent limb deformity gained by the infant.

My experience of haemophilic arthritis is limited to a single case where considerable distension of a knee occurred as the result of a slight accident. The effusion was satisfactorily absorbed, leaving the joint intact. Repeated haemorrhages into the joints, however, may lead to weakness of the ligaments, thickening of the synovial membrane, changes in the cartilages, which may become thickened, rough, and fibrous, along with nodulation of the bones and crippling. One or more joints may be affected, and I can well understand such cases being mistaken for osteo-arthritis, and that a correct diagnosis may only be arrived at by the discovery of the haemophilic condition. Treatment in severe cases is reputedly unsatisfactory. It is summed up in the forced immobility of the affected joint or joints, along with the application of icebags and the administration of such drugs as calcium lactate.

Into the question of the identity of the different forms of chronic joint disease in children, described under the name of "rheumatoid arthritis," I do not propose to enter. I would merely state my conviction that two at least of the forms included under such designation are distinct and separate complaints. The form ordinarily described as osteo-arthritis, or chronic polyarthritis, resembling that seen in adults, is fortunately exceedingly rare in children. It is more common in girls, is unknown under the age of 10 years, and mostly commences about that of puberty. It usually begins insidiously with pain and stiffness in the small joints of the hands, but sooner or later the larger joints become involved. In other cases the complaint begins with fever, along with pain and swelling of the joints, which may closely simulate rheumatism. Such febrile attacks subside and recur, but each one adds its share of damage to the affected joints. In whichever way it commences, the ultimate results are the same in the course of time. The joints become deformed, creaking is felt on movement, and permanent ankylosis takes place. In addition, the cartilages disappear, osteophytic growths form at the ends of the bones, and there is atrophy of the muscles acting on the joints. In well-established cases the diagnosis is clear. In the early stages of those commencing with pyrexia the differentiation from rheumatism may be difficult, and it is only the persistence of fever and joint swelling, in spite of salicylate of sodium, that the latter complaint is negatived. Treatment is generally unavailing. Goodhart,[9] however, has knowledge of a case where recovery took place under large doses of iron. That drug, with or without the addition of arsenic, should be given a trial, and the chronic malnutrition, which is a marked feature of the complaint, might be benefited by a course of cod-liver oil, especially during the winter months. For local measures to the joints, some form of dry heat is the most useful. In addition, Bier's treatment and massage may prove beneficial.

There is no doubt in my mind that the joint affection first described by Dr. Still,[10] and called generally by his name, is a complaint *sui generis* and totally distinct from any form of osteo arthritis. It is much more common than is generally supposed, and during the past year I have had three cases in hospital under my care. Glandular enlargement, more or less extensive, is a constant accompaniment of it, and there may be enlargement of the spleen as well. The glandular enlargement at first shows a special proclivity for the epitrochlear glands and those in the axilla and the posterior triangle of the neck. Afterwards there may be general glandular enlargement, the glands in the interior of the body being involved as well as the external ones. The complaint usually commences before second dentition, and in one case mentioned by Goodhart and Still it was recognized as early as the age of 15 months. In a boy still under my care the initial symptoms were first noticed at the age of 8½ years, and it was not till six months later that unmistakable signs of the complaint were recognized. The joint lesions are probably painless in most instances, so that they have progressed to a considerable degree before coming under notice. In the boy just referred to, however, I had an opportunity of observing some of the earlier phases of the disease. He was admitted into hospital with some slight puffiness over the dorsum of each wrist and what seemed some swelling of the metacarpo-phalangeal joints, and I learnt that a request had come from Dr. Clive Riviere that my attention should be called to these points. As the boy, however, had some pyrexia, and the knees and some other joints were swollen and painful, I came to the conclusion that the case was an ordinary one of rheumatism—an opinion in which I was confirmed by the apparent ready yielding of the symptoms to sodium salicylate. The boy after discharge came up from time to time to report himself, when my attention was mainly directed to the condition of his heart. It was only after he had left the hospital about three months that his profound anaemia led to his being stripped and thoroughly examined, when he was found to be the subject of undoubted Still's disease, although still in an early condition. That all, or even most, cases have symptoms at any time resembling rheumatism is improbable from the histories, but the case seems worthy of mention when our knowledge of the earlier manifestations of the complaint is still defective. One other point I may mention. Most of the textbooks refer to effusion of fluid into the joints as a feature of the disease, but whether this is so in the later stages is open to question. To test this, and with a view to possible further bacteriological examination, an exploring needle was twice used on the right knee of a little girl at present in hospital with the complaint, and with negative results as regards fluid on each occasion. The same needle used on the upper part of the swelling surrounding the joint allowed of the withdrawal, without any difficulty, of a syringeful of chocolate-coloured, grumous-looking blood, which proved sterile.

The essential characteristic of the disease is a chronic degenerative change occurring in the synovial membranes and the adjacent soft tissues within and surrounding the joints, the bones being unaffected. This leads to fusiform, pulpy, very obvious swellings surrounding the joints, and ultimately, possibly, to dislocation or disabling flexion in some of the larger ones.

To any one who has seen a case the diagnosis is easy. The symmetrical fusiform soft swellings surrounding the joints, both smaller and greater, along with the marked glandular enlargement, and possibly that of the spleen, are features unobservable in any other complaint. Other symptoms are a profound anaemia, local sweating over the

large joints, patchy discoloration of the skin most marked in the neighbourhood of the joints and over the dorsum of the hands, and in advanced stages, most often perhaps with splenic enlargement, a persistent pyrexia of the intermittent type.

Treatment at present is unsatisfactory and inefficacious. The measures suggested in rheumatoid arthritis would seem those most likely to afford relief. The symptoms and course of the disease suggest its origin in some chronic infective process, the discovery of the source of which may lead to improvement in treatment.

In diseases of microbic origin the greater relative frequency of joint involvement in children is readily accounted for by the epiphysial conditions obtaining in childhood affording extra sites for the invasion of micro-organisms or their products. The same reason, too, is accountable for the more frequent greater severity of such joint troubles in the younger subjects. In tuberculous joint diseases it has been established that cases starting in the epiphyses are of greater gravity than those commencing in the synovial membranes, and I believe the same rule can be proved to hold good in other infectious disorders besides tuberculosis.

Syphilitic epiphysitis in infants seldom leads to noticeable synovitis. In one case I met with it was associated with suppuration of the elbow joint, for which the arm was amputated, with fatal results. Similar cases, where more than one joint was affected, have been published by Lees and others. In one recorded by Carrington and Lane there was multiple suppurative synovitis, with an absence of epiphysitis. The painless multiple synovitis of older children with inherited syphilis is easily recognized. It occurs from the ages of 8 to 15 years, and is always symmetrical, though not necessarily so at the outset. The diagnosis presents no difficulty, and is confirmed in a majority of cases by a concomitant interstitial keratitis or the presence of Hutchinsonian teeth. Other forms of syphilitic joint disease common to both the acquired and inherited varieties of the complaint have been called attention to mainly by Mr. Betham Robinson.[11] They may commence in the bone ends with secondary involvement of the joints, the last being shown by effusion only, or with gummatous infiltration as well. In other cases the lesion is limited to the synovial membrane, either as discrete gummata or more or less extensive infiltration. Cases where the bones are involved are the most common in children. Mr. Robinson rightly calls attention to the difficulty there may be in distinguishing such cases from tuberculous disease, and of the necessity of a careful inquiry into the past and family histories before definitely deciding as to their nature. Assistance may, perhaps, be got from a von Pirquet's skin test, especially in cases with a negative result in older children. If any doubt exists a trial should be made of a course of mercury and iodide before resorting to other measures.

Up to the end of the first five years of life purulent arthritis is commonly pneumococcal.[12] The pneumococcus is the organism responsible for most cases of acute suppurative arthritis in infants in this country, but in America Holt[13] finds the gonococcus the most frequent cause and the pneumococcus a very rare one. Such cases naturally come within the province of the surgeon, and I leave it to Mr. Corner, as the more competent person, to deal with them.

Pneumococcal arthritis in medical practice occurs under several widely different aspects. It may, on the one hand, be the most acute and virulent form of joint disease the physician meets with, and on the other be so persistently chronic that the pneumococcus has been recognized as the offending organism in cases of osteo-arthritis. Between these extremes there are cases of all grades of severity. In children dying in the early stages of croupous pneumonia I have on several occasions known *post-mortem* examination reveal pus in one or more joints, along with empyema and purulent pericarditis. As showing the virulence of the arthritic implication, in one case the upper epiphysis of the humerus was found *post mortem* to be detached and so excavated by necrosis that little more than a shell of its substance was left. That the joint lesions are usually missed during life in such cases of acute pneumococcal septicaemia is not surprising, for the children are ordinarily so desperately ill from the start that adequate examination is neither possible nor admissible. In less severe cases purulent arthritis appears later, usually towards the end of the second week after the onset of the pneumonia, and then ordinarily presents no difficulty in the way of recognition. In one infant admitted for pneumonia under my care both a shoulder and hip joint were opened and drained, and the child recovered with the joints apparently intact. A similar fortunate result occurred in an elder child, where a knee joint was the one involved. But arthritis indicates a severe infection, and the majority of such patients die.

Very rarely a pneumococcal arthritis has occurred many weeks after a pneumonia has subsided, and here the joint affection has been so little acute that it has been taken for tuberculous. Pneumococcal arthritis usually takes a similar subacute form when it arises in connexion with a focus of some longer standing, such as an empyema or pneumococcal otitis media. The same rule applies, I believe, to other lesions besides those of the joints arising from such foci, and in 13 cases in which I have been mainly responsible for the pericardium being opened, 12 of them associated with empyema, in most of them I was able to watch the gradual development of the pericardial symptoms for several weeks before I felt justified in advising operation. On two occasions I have known a pneumococcal peritonitis operated on under a mistaken diagnosis of tuberculosis, the focus in both being, probably, an unobtrusive otitis media;[14] and Annand and Bowen,[15] in their able and exhaustive paper, suggest that such a mistake has not been very uncommon.

The diagnosis of pneumococcal arthritis is obvious when it occurs in connexion with pneumonia or empyema. In other cases it may only be made on an examination of the pus. Dudgeon[16] and Branson, however, have pointed out several characteristics of pneumococcal arthritis that may aid a diagnosis—such as that the constitutional symptoms are less than might be expected from the local ones, that there is an absence of circumarticular inflammation, and that the patients are of that peculiar pallor so often seen with empyema. According to them, too, a thin character of the pus is of ominous significance. The treatment is entirely surgical.

At this stage my remarks on the joint affections of the acute specific fevers must be of the briefest. Joint affections of various kinds may occur during the course of each one of them, and a suppurative arthritis has been known many months after influenza, and, in the case of enteric fever, even years after recovery from that complaint. But it is with scarlet fever that joint affections are the most frequent, and where the most uncertainty exists regarding them. To that complaint, then, I will restrict myself. Suppurative arthritis may occur quite early in the disease, and such cases are generally, but not necessarily, fatal. Such cases are undoubtedly pyaemic, and generally associated with grave destructive lesions of the palate and fauces. But the commonest joint affection is that which was formerly, rightly or wrongly, known as scarlatinal rheumatism. According to Caiger,[17] "it usually affects adults and older children, especially females. Its time of onset is remarkably constant, namely, the fifth, sixth, or seventh day of attack, just when the temperature is falling to normal. The arm is more often affected than the leg, the smaller joints than the large, and the wrists and metacarpal joints most of all; the heart and pericardium are very rarely affected, and recovery is rapid." In an analysis of more than 30,000 cases, he found this form of arthritis present in 3.75 per cent. In 2,840 cases in children Ashby[18] found it in 3.5 per cent.—a wonderfully close agreement with Caiger's figures. Caiger, apparently, does not regard this arthritis as rheumatic, and there are several points in his description that do not tally with my experience of that complaint. Ashby, moreover, only judged 14 out of the 103 cases of synovitis he observed to be really rheumatic, and taking his total number of cases this would mean that only 1 out of 200 cases of scarlet fever was complicated with rheumatism—a percentage that mere coincidence would account for. In a recent excellent paper by Dr. Graham Crookshank,[19] he strongly combats the idea that scarlatinal rheumatism is diverse from acute rheumatism, or rheumatic fever, and attributes the first to a mixed infection with the two organisms of scarlet fever and rheumatism. He quotes with approval a paper by Dr. Poynton in which the notion is supported that scarlatinal rheumatism

is as damaging as other forms of acute rheumatism. In this direct conflict of opinion the question of the nature of this scarlatinal arthritis would seem to me an interesting one for discussion.

With regard to treatment, all suppurating joints should at once be opened and an appropriate serum freely administered. For the slighter and more usual form of arthritis sodium salicylate will be given or not, according to the views held as to its rheumatic character. Dr. Crookshank is a strong advocate for the administration of the drug in all cases of scarlet fever, and claims that it not only abolishes scarlatinal rheumatism, but has a favourable influence over the primary complaint.

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The distinction between the diseases of joints which come within the provinces of the physician and the surgeon is very indistinct. Apart from operation, the surgeon uses the same or similar methods to those which the physician employs. Hence in assisting to open this discussion, desiring strictly to keep within my province, I intend to speak of the joints which demand operation.

The subject may be approached in at least two ways: dealing with the rarer conditions, such as haemophilic joints, pneumococcic joints, etc., or with the more common septic diseases of joint. The former are the more infrequent and fascinating; the latter are the more frequent and plebeian. As practical men we are more interested in beef, mutton, and bacon than in venison, sturgeon, and crab. Therefore I would present to you the "beef, mutton, and bacon" of the surgical part of this discussion rather than attempt to charm you with the infrequent delicacies.

With regard to the diseases of joints which occur in surgical practice, tuberculous disease is responsible for about five cases to every one non-tuberculous. In adults this proportion is less, being about two to one. Hence in the surgical arthro-pathology of children tuberculous disease includes over 80 per cent. of the subject, and forms what may be called the "daily bread" of the joint surgery of children's diseases. If, as in this discussion, we are rid of tuberculous disease, comparatively little is left to us except what may be termed "delicacies"—pneumococcic joints, haemophilic joints, etc. To keep the discussion in its most useful plane, it is obvious that I must deal with the next more frequent, after tuberculous disease, class of case which occurs in surgical practice. Naturally this will differ in the practices of different surgeons. Next to tuberculous disease of joints I have found the most frequent affection is that (or those) which has (or have) been or may be mistaken for tuberculous disease. And in this category I would place a large number of instances of the inflammation of a joint due to some infection.

These infective arthrites form a field of pathology of which we have at present but little knowledge, and which generally is only now becoming recognized, and which has hitherto been only partially recognized. It is only necessary to turn to a leading textbook to illustrate this. The description of the signs of what are described as those of a "tuberculous hip" is the description of the signs of a "diseased hip," but that that disease is tuberculous is merely a presumption and a probability. Hence it has come that almost all diseased joints which fit in with these textbook descriptions are labelled tuberculous without further inquiry. It is this unintelligent diagnosis which has led to my theme in this discussion—infective diseases in joints mistakable for tuberculous disease. Such cases, in my experience, rank next in frequency to the incidence of tuberculous diseases itself, and therefore form the most practical and useful method of entering upon the surgical side of to-day's discussion.

To do this it will be most practical if I recount to you some cases which illustrate some pseudo-tuberculous diseases of joint due to an infective agent other than the tubercle bacillus.

Cases Due to a Streptococcus.

Case I.—The patient, aged 12 years, a healthy-looking, well-nourished boy, was first seen on September 14th, 1907. He then complained of pain on the outer side of the right thigh. He could move about the room with the aid of a stick, holding the right leg flexed at the hip and knee so that the toes only touched the ground. Pain was felt in the thigh only; none in the hip or knee. On examination, there was found to be no tenderness of muscle in the area of pain and no tenderness of the femur. The hip-joint was held flexed, and any attempt to move the joint or to extend the knee caused the occurrence of pain in the thigh; no fullness or fluctuation in connexion with the hip could be detected; there was lordosis of the spine. Eight days previously the patient had complained of pain in the thigh, which had caused him to be somewhat lame for three days, when it disappeared entirely, so that he could run about and play lawn tennis. On September 13th he had again become a little lame, and was kept awake that night by pain in his thigh. There was no history of illness; he was in particularly good health, having recently returned from a holiday at the seaside. There was no definite history of injury beyond that ten days previously he had been on a water-chute. On the first trip he sat in front, and when he got off he said his back hurt him: however, he made other trips, taking a back seat so as not to feel the bump so much; he also made some trips on a switchback railway. He seemed quite well on arrival home, and made no further reference to pain.

As a result of extension the limb became quite straight, and pain subsided in a few days. Deep pressure over the hip-joint elicited some signs of pain. On October 5th a skiagram was taken by Mr. A. H. Greg. This revealed nothing abnormal in the hip-joint. From September 14th to November 26th (the ninth to eighty-second days of illness) the patient, treated with rest and extension, was practically free from symptoms, except for occasional attacks of sickness lasting one or two days. There was at the latter date no real or apparent difference in the length of the legs. The temperature was only slightly above normal. On November 26th (the eighty-second day of illness) a soft semi-fluctuating swelling appeared in the right groin; there was great tenderness over and around the swelling, and over the great trochanter. The temperature at night was 103° F. This swelling rather quickly subsided, and had disappeared by December 3rd. On the 11th (the ninety-seventh day of illness) the patient complained of pain in the left side, particularly after coughing, and that he had been kept awake by throbbing pain. Examination revealed a tender swelling, which gave a doughy sensation to the touch; its centre was a little to the inner side of the middle of Poupart's ligament; it encroached two or three inches over the abdomen, obliterating resonance; also over the upper part of Scarpa's triangle. There was no tenderness on the posterior aspect of the hip. The swelling appeared to be confined to the tissues over the joint, the joint itself not being involved. The boy looked ill and flushed. The morning temperature was 99°, that of the evening being 102°. This swelling gradually subsided, leaving the inguinal glands hard and tender. On the 16th (the one hundred and second day of illness) there was a similar tender swelling at the upper part of the inner side of the thigh on the same side, which gradually extended downwards along the inner side of the thigh from the apex of Scarpa's triangle to the popliteal space, and eventually as far as the middle of the back of the calf. As the swelling passed down the leg it cleared up above. After all swelling had disappeared, hard, tender glands could be felt in the popliteal space, and eventually as far as the middle of the back of the calf. Whilst this train of symptoms was in progress the temperature was fairly consistently in the morning 100° and in the evening 101°: at its conclusion it fell practically to normal. On January 4th, 1908 (the one hundred and twenty-first day of illness), a blood examination was made by Dr. E. E. Klein with cultures on surface agar plate, surface agar tube, and broth tube. The result showed the blood to be quite sterile, no microbe of any sort having developed in these cultures after forty-eight hours at 37° C. In the meanwhile the right hip, treated with rest and extension, had given rise to little trouble. There was some enlargement of the great trochanter, which was a little tender on pressure; there was also some tenderness over the posterior aspect of the joint. On February 6th (the one hundred and fifty-fourth day of illness) the patient complained of painful twitchings in the right thigh, the pain being chiefly felt on the outer side of the thigh (the original site of pain); there was also some pain in the knee. On examination

there was found to be a more general enlargement of the trochanter, which was also more tender; pressure upon it elicited spasms in the muscles of the thigh. These starting pains were not severe; they occurred only during the daytime, at intervals of two or three hours, and ceased entirely after a few days. On the 16th (the one hundred and sixty-fourth day of illness) there were obvious differences in the bony relations of the two hips, and the right leg showed nearly 1 in. of shortening. Mr. A. H. Greg took another skiagram, concerning which he made the following report:

"The femur is displaced upwards, the upper lip of the acetabulum is absent. The whole surface of the acetabulum is rough. The femur is intact, but very much rarefied, not however with the rarefaction typical of caries. The dislocation is accompanied by extreme external rotation. The points, unlike ordinary tuberculous disease, are the dislocation without any destruction of head of femur (this I have not seen in tubercle) and the rarefaction not being typical. The destruction of the acetabulum has been very rapid. The *x*-ray examination strongly supports the view that the disease is not tuberculous."

On February 23rd (the one hundred and seventieth day of illness) an operation for excision of the hip was performed by Mr. E. M. Corner, the anaesthetic being administered by Dr. Z. Mennell. An anterior incision was made over the joint, upon opening which a little clear fluid escaped. The head of the femur having been cleared with an elevator and the neck sawn through the head of the bone was extracted. The bone removed was exceedingly light and friable; portions of it were immediately placed in a sterilized bottle for examination by Dr. Klein. Exploration of the acetabulum showed it to be extensively destroyed. A false acetabulum had been formed above the real one. The old acetabulum was removed entire; it consisted merely of a shell of friable bone. The new one was also easily removed almost entire; above and around these acetabula there was much destruction of bone. Only remnants of ligamentous structures remained. No pus was encountered during the operation. The cavity was thoroughly curetted, much diseased tissue being removed. The wound was completely closed with Michell's sutures and healed by first intention.

On March 6th (the one hundred and eighty-third day of illness) the patient's right knee was found to be swollen. Examination showed the knee to be tender to touch; downward pressure upon the patella so as to bring its posterior surface in contact with the condyle of the femur caused much pain; there was no pain except when the knee was touched. There was a considerable amount of fluid in the joint. The synovial membrane appeared distinctly thickened, so that the condition of the joint seemed to be the result of an inflammatory process, and not due merely to accidental breaking down of adhesions, formed during the long period of inactivity, by the manipulations necessary during the operation. The synovitis showed no inclination to clear up, but rather tended to increase. The knee gave a doughy sensation to the touch. Dr. Klein reported as follows:

"I received on February 24th a sterile bottle containing pieces of bone and bone scrapings. Film specimens stained showed numerous minute cocci, chiefly as diplococci, but also some isolated and in small clusters. Cultures were made at the same time on the surface of nutrose ascitic agar (nasgar) set previously in a plate dish; this plate culture was incubated at 37° C. Twenty-four hours after—that is, February 25th—the plate exhibited numerous round translucent minute colonies, very slightly raised, and of a more or less homogeneous texture. On staining these colonies appeared composed of minute cocci—Gram-positive. Subcultures were made on nasgar and ordinary agar, with the result that planted on the surface of these media a translucent, very thin, filiary growth was produced, which, examined in cover films, showed the same Gram-positive cocci—either in clusters or isolated, or as diplococci; but the condensation fluid contained small flocculi which under the microscope exhibited distinct streptococci; some of these were short, composed of four cocci; others were longer, up to thirty-two constituent cocci. On the average eight to ten cocci constituted the chains. In ordinary broth the microbe grows slowly at 37° C., forming in several days only very faint turbidity. On nutrient gelatine kept at 20° C. the microbe grows fairly well, forming round translucent colonies, which in two days caused distinct liquefaction. When liquefaction has well progressed—that is, after about a week—the liquefied material is clear with a granular sediment of growth. In this sediment streptococci can be recognized.

"From this account it appears, therefore, that we were dealing with a Gram-positive coccus, which, although on the solid media forms a growth of staphylococcus, in the fluid parts exhibits the characters of streptococcus. This coccus in culture does not enable us to identify it with the known pathogenic species, either of staphylococci or streptococci. I have injected a whole agar culture subcutaneously into a rabbit but no result was produced thereby either locally or generally. The vaccine was prepared thus: From an agar surface culture (sloped ordinary agar) one loop—2 mm.—was distributed in 8 c.cm. of sterile saline solution. This emulsion was kept at 60° C. for half an hour. Doses of 1 c.cm. were filled into eight phials; the phials were then sealed and heated again for thirty minutes at 60° C."

From the Louis Clinical Laboratory, to which Mr. Corner sent portions of bone, the reply, as the result of an examination of the microscopic sections, was that they presented "no evidence of tuberculosis." Throughout this long illness, though the patient's general condition varied, he was steadily losing ground, so that at the time of the operation he was in a very wasted condition. The face was generally flushed, the appetite was very poor, and any attempt to increase the amount of food resulted in troublesome sickness. A curious symptom which persisted through the illness was desquamation of the skin; this occurred constantly all over the body, but was most marked on the right leg; so much was this the case that the sheet upon which the patient lay was covered with epithelial scales. The right foot peeled several times to such an extent as to leave raw tender places on the toes. Associated with this desquamative process was a marked tendency to the formation of sores. These sores would result from the pressure of the softly-padded leather used in connexion with the extension apparatus. The sores were shallow with shelving sides, healing slowly under a thick scab; they proved a difficulty in carrying out treatment by extension. The first injection of vaccine was given on March 1st; they were continued for eight injections at intervals of four days. The progress of the case from this time onward was entirely satisfactory. The boy's condition wonderfully improved, he rapidly regained the loss of flesh, the sickness ceased, the sores healed, and the desquamation disappeared.

One year after operation the patient is able to walk with the aid of a walking-stick; there is shortening of the right leg to the extent of about 1 in.; the right knee is somewhat enlarged, its range of movement has steadily increased so that it can now be almost completely flexed.

I am indebted to Dr. O. W. Beddard for the above account of the case, which has been extracted from his article in the *Lancet*, 1909, i, 1108–1109.

CASE II.—A. L., a little girl aged 5, was sent to me by Dr. J. D. Shapland, having been ill for nine or ten days previously. Dr. Shapland had come to the conclusion that there was a condition of infective inflammation in the hip-joint. Her maternal grandfather had died from phthisis. When 5 months old she suffered from "consumptive bowels," and later she had rickets, measles, chicken-pox, and whooping-cough.

Nine days previous to her admission to St. Thomas's Hospital she complained of pain in the back of the right knee. Four days before admission she complained of pain in the right hip. The fever which accompanied the condition ranged between 100° and 103° F. At the time of her admission it was 101 6° F., the pulse-rate 120, and the respiration-rate 32. The temperature quickly rose to 103° F. The child lay with both thighs flexed. The left leg could be straightened, but any attempt to move the right leg caused pain. There is nothing abnormal about the right knee. The right thigh is a little full in its upper part. In fact there was a great paucity of physical signs. On the third day after admission the temperature was 102.4° F., and the pulse-rate 120, whilst some swelling appeared over the great trochanter. It was decided to make an exploratory incision. Under chloroform an incision was made through the swollen tissues down to the trochanter, which was opened with a gouge. No pus was found. By raising the structures in front of the neck of the femur the hip-joint was opened and explored, no pus being found. The wound was then closed partially. As a result of this not obviously successful operation the temperature fell to 97.6° F. and the pulse-rate to 100 on the second day. The patient became very comfortable and had no pain. An extension apparatus with a weight of 4 lb. was put on the limb.

On the fifth day after operation the wound, which had been left open in part, began discharging freely, the temperature varying from 97° to 102° for the next seventeen days. The condition of the part did not appear to warrant such a temperature, and my colleague, Dr. C. R. Box, saw the case. He could find nothing except a slight tonsillitis, and decided that the cause of the pyrexia must be sought in the local condition of the hip. On the twenty-second day after the operation the temperature began to decline steadily, becoming normal on the thirty-second day. Marked fullness was found in front of the hip joint. There was no pain so long as the leg was not moved. The right leg was a little more than ½-in. shorter than the left. A skiagram taken by Mr. A. H. Greg showed extensive disease in the head and neck of the right femur. On the fiftieth day after her admission Mr. J. E. Adams explored the right hip-joint through the usual anterior incision. The head of the femur was found practically separated and was removed. It consisted of a shell of hard bone destoyed in parts, and filled with soft granulation and gritty débris. Immediately after operation the temperature rose to 102°, was 102.4° on the following day, after which it became normal. The hip was allowed to ankylose to the pelvis in the abducted position. The child was discharged on the eightieth day after her admission with a slight discharge from both incisions. Dr. L. S. Dudgeon examined the head of the femur, which he reported as a chronic granuloma with some acute inflammatory signs present, "no evidence of tubercle." Streptococci similar to those described in the previous case were found.

The account of this case is extracted from a paper by the author in the *Medical Press and Circular*, 1909, p. 368.

Cases Due to a Staphylococcus.

Examples of pseudo-tuberculous arthritis in childhood which may be mistaken for tuberculosis, due to a staphylococcus, are rather hard to find, as the disease is so obviously septic that it cannot be mistaken for tuberculous

disease, or clinically does so very well that its causation is never discovered.

There is an exception which has been found by careful examination of cases at St. Thomas's Hospital. If cultures are taken from what are clinically obvious tuberculous joints which came to operation, the tubercle bacillus is not found, but the *Staphylococcus pyogenes albus* often is. This staphylococcic infection is an auto-infection through the blood stream, and may be the dominant factor in preventing the tuberculous disease of joint subsiding. In such cases the staphylococcic infection is purely secondary to the tuberculosis, as has been shown to be the case by Dr. Dudgeon and Mr. Sargent in peritonitis and haematoceles, and is true of haematomata in general, such as the extravasations round fractures and in joints. But this discovery affords a great field for speculation and treatment. If the vaccine treatment is of any use in these cases they should be treated with a vaccine made from the *Staphylococcus albus*, and not with tuberculin.

As an illustration of this, a case will be quoted which was under the care of my colleague, Mr. Battle:

Case III.—R. C., a boy aged 13, came to St. Thomas's Hospital in April, 1910, and was seen by my colleague, Mr. C. A. R. Nitch, in the children's department, on account of a fixed hip and a bent knee. An *x*-ray examination was made by Mr. A. H. Greg, who reported that there was disease in the upper part of the head of the femur and the acetabulum. He was then admitted.

Six months before he was admitted to the hospital he was kicked by a horse on the hip, and attended the out-patient department for a "bruised hip and swollen knee." At first the hip got a little better, and after four months the patient was kept in bed. He never had pain and slept well. Whilst in bed the knee became bent. The left knee is 1½ in. more in circumference than the right; it is flexed, the synovial membrane thickened, a little hotter than the right knee; the muscles of both thigh and calf are wasted; the tibia has become displaced outward and backward on the femur. The joint is capable of little movement. The right hip (the other side to the knee) is fixed and tender; at the head of the femur there is a swelling. The temperature was about 100°.

Both the knee and the hip were incised, granulations removed, and the wounds closed. The *Staphylococcus albus* was grown from each joint. Von Pirquet's reaction was negative. About fourteen days after operation the temperature became normal and remained so.

In this particular case it is doubtful if any tuberculous infection of the joints preceded that with the staphylococcus. Indeed, it would appear that the staphylococcic infection of the right hip was an autoinfection after trauma, and that the infection of the left knee-joint was pyaemic, through the blood stream.

The *Staphylococcus pyogenes albus* has frequently been isolated from undoubted tuberculous joints.

The following three examples in adults indicate what is meant:

Case IV.—A lady of between 50 and 60 years of age fractured her patella, and underwent the operation of wiring the fragments of bone together. When I saw her the wound was healed, but the joint was swollen and painful; the temperature was slightly raised—100°. The patient was extremely nervous, slept badly on account of the pain in the joint, and shrieked at the slightest movement. A sample of the fluid in the joint was taken, and the *Staphylococcus albus* grown from it.

Before I saw the case, and between that time and the presentation of the bacteriologist's report, both joint and patient improved; no operative treatment was done. The patient made a slow recovery—six months—and, refusing all massage and movement, got a stiff knee. During the course of the disease, had we not known of the presence of the staphylococcus and the operation, we should have decided that the joint was tuberculous. The case illustrates a further point—namely, that the *Staphylococcus albus* may be present in wounds which heal by first intention clinically.

Case V.—A man of 40 years of age injured his knee, and, as a consequence, had some blood extravasated into the joint. The joint was incised, a culture taken from the blood present in it, and flushed with sterilized saline solution. The *Staphylococcus albus* was grown from the blood.

The wounds healed by first intention, but the joint remained somewhat warm to the touch, and contained some fluid, presumably also the *Staphylococcus albus*. Subsequently the patient recovered full movement in the joint.

Case VI.—The sixth case was that of a young man who had some cellulitis in front of his knee, which healed but left a swollen, puffy condition of the joint, with wasting of the surrounding muscles. This persisted for some months. The joint was tapped, and the *Staphylococcus aureus* grown from the fluid withdrawn. Operation with lavage was done, but the joint became fixed.

It is noteworthy that nearly all staphylococcus infections are conveyed inward from without, as by operation or disease, with the exception of the *Staphylococcus albus*, which is an autoinfection as it is in cases of peritonitis. Thus staphylococcus infections lead on clinically to a large variety of cases in which the disease of joint is introduced from without by a disease in the body elsewhere. As a general rule it must be said that there are no diagnostic or pathognomonic clinical signs appertaining to any of these infections. As a very general rule, syphilitic joints are undiagnosable, unless it is indicated by the patient, the patient's history, or perhaps his response to treatment. We should not diagnose inflammations of joints due to the typhoid bacillus unless we find that organism or there was a very obvious history of typhoid fever. A similar remark applies to influenzal joints, colon bacillus joints as after appendicitis, gonorrhoeal joints, etc., all of which joints may be mistaken for tuberculous disease. Thus there are all varieties of joint infection—from the chronic and most frequent tuberculous disease to the most acute septic joints. We can diagnose arthritis, that the joint is inflamed, but we cannot diagnose what form of arthritis it is unless a culture is made from the fluid in the joint and the infecting organism grown and identified. Short of this, clinically we can only make a guess as to the nature of the arthritis. Thus, if the patient is syphilitic, we guess syphilis to be the cause of arthritis. If the patient has gonorrhoea, we call it gonorrhoeal arthritis. Thus, in diagnosis, arthritis is a certainty, and the nature of the arthritis usually a guess in clinical work. Moreover, the bacteriologist at times fails us, as in the following case, which I saw in consultation with our President at the Children's Hospital, Great Ormond Street.

The patient then had fluid in both knees, an acutely tender swelling on his right forearm, and a raised temperature. What was the condition? Was it pyaemia? From the fluid in one knee-joint, removed with a syringe, pus cells were obtained, but, although cultures were taken, no organisms grew. The boy's knees, one hip joint, one ankle-joint, and the swelling on his right forearm have all disappeared spontaneously. The cause of the disease is still undiscovered. But we can safely say that it was due to some infective agent.

In this case the difficulty in diagnosis was between an infective joint which would get well with medical treatment and one which would demand surgical attention as a septic, not a tuberculous, joint.

In the following case, called a tuberculous joint, we have no knowledge of the nature of the arthritis. It came on after an injury, which suggests the possibility of an infection with the *Staphylococcus albus*, was diagnosed as tuberculosis, did not yield to "antituberculous treatment," but did yield to massage and movement, with perfect recovery of the joint.

Case VII.—*Pseudo-Tuberculous Disease of Knee.*—A young girl was sent to me with the following history. Two years ago, whilst going downstairs, she fell over the last four steps, injuring her knee. The accident was followed by two years' treatment, during which the knee was painted with iodine, in plaster-of-Paris splint for three months, massaged for two weeks, in plaster splint again for three months, moved under an anaesthetic, put in a gutta-percha splint, kept in bed with massage, etc.

She was a pale-looking girl, whose left knee was swollen. The movements of the joint were limited and caused pain. The muscles of the thigh and calf were wasted. The long history, the presence of chronic swelling of the joint, and the other signs suggested, according to the textbooks, that the disease was of tuberculous origin. Skiagrams showed no changes in the bones. With rest, massage, and movements the knee improved quickly and wonderfully. In the end the joint recovered completely.

Was the disease tuberculous? Or was it of an infective origin, such as are the group of cases on which I am laying stress? According to the rules laid down in the leading textbooks for the guidance of students, the case would be called one of "simple synovitis." But I would suggest that many such cases are really due to a non-tuberculous infection.

The non-tuberculous joint diseases of children, such as may follow specific fevers, have a peculiarity of their own by which they differ from corresponding diseases of adults.

In children the acute arthritis is frequently secondary to acute bone disease. So that the cases are really examples of acute infective bone disease, the invasion of the joint being secondary.

Sufficient has been said and sufficient examples have been quoted to illustrate that there is a large class of infective joints which in the symptoms, signs, and treatment clinically lie between the chronic arthritis of tuberculosis and the acute arthritis of suppuration; and that the autoinfection of a joint after an injury or a disease with the *Staphylococcus albus* may account for the non-subsidence of the arthritis and its non-response to the recognized forms of treatment. The autoinfection is usually due to the *Staphylococcus albus*. Thus a number of diseases of joints regarded as due to tuberculosis are really due to some other infection and require different treatment—by operation and, perhaps, vaccine-therapy.

DISCUSSION.

Mr. J. KEOGH MURPHY (London), confining his remarks to pneumococcal arthritis, pointed out the frequency of pneumococcal periarthritis, with large acute abscesses not communicating with joints. Prognosis was excellent when early and complete surgical interference had been undertaken. In the case of a child under his own care both knees had been opened when the child was just over 1 year old. Gonococcal arthritis, on the other hand, was extremely rare in children.

Mr. H. TYRRELL GRAY (London) also limited his remarks to pneumococcal arthritis; he divided the cases encountered into three classes: (1) Acute multiple infections of pyaemic nature; the pus is usually thin, turbid fluid with flakes of lymph. (2) Acute uniarticular infections in which the pus is of the characteristic thick consistence. (3) Chronic infections which so much resemble tuberculous arthritis. In the first variety an attempt should be made to treat the infected joint like any other pyaemic arthritis by incision, flushing with 1 in 2,000 perchloride followed by saline solution, and suture of the wounds. Fluid will recollect in the joint after about twenty-four hours, but will often be found sterile on aspiration. The function of such a joint, if recovery ensues, is better than after drainage. In the second group, diagnosis of hip-joint infection rests in the suppression or modification of the usual signs of acute arthritis, for movements are possible to a considerable extent in all directions *except extension*. The frequency of associated intrapelvic abscess communicating with the hip-joint was noticed. The late results, hopefully referred to by Mr. Murphy, were questioned, and a case was quoted where the head and neck of the femur, intact on dismissal from hospital, had largely been absorbed two years later, and led to a dorsal dislocation. The association of tuberculous disease with secondary infections, referred to by Mr. Corner, seemed to be rare, for routine cultures from tuberculous lesions in a great many cases have failed to yield any cultural growth.

Mr. R. C. ELMSLIE (London) called attention to the importance in diagnosis of distinguishing between joints which simulated tuberculosis but were really suffering from some other condition, and tuberculous joints whose condition was first ascribed to some other disease such as rheumatism. All diagnostic methods, including joint puncture and Wassermann's reaction, should be tried. It was most important also to identify completely the organisms isolated, particularly to prove that the *Staphylococcus albus* was not simply the common skin organism, *Staphylococcus pyogenes albus*. In the London County Council cripple schools the proportional importance of tuberculous and non tuberculous joint disease as a cause of crippling was well shown; out of 2,000 children, 599 were cases of tuberculous joints, while there were only 45 cases of aseptic arthritis, the small balance including 7 of haemophilic joints. These cases showed that early surgical interference, especially excision, must be a frequent cause of deformity. Among 285 cases of infantile paralysis seen there were no instances of joint lesions. Those lesions which were referred to by Dr. Coutts must therefore be temporary; this was an argument against their identity with Charcot's joints.

Dr. ESSEX WYNTER (London) drew attention to the prevalence of suppuration in pneumococcic infections apart from the lung, particularly in serous cavities and joints. Such suppuration, however, was not invariable, and he had had a case of pneumococcal infection in a boy of 7, who recovered under treatment by hypodermic injection of camphorated oil, gr. 15 ad ʒj. The joint affection in infantile paralysis might easily be confused with rheumatism, since pain was a leading feature, and it was usual in rheumatism to find such disability as suggested paralysis. He cited a recent case which bore out this difficulty in diagnosis, and by recovery proved the temporary nature of the condition. Similarly between tuberculous and rheumatic arthritis of the hip confusion was easy, and only removed by the course of the case.

Dr. PARRY-JONES (Derby) wished to emphasize one of Dr. Coutts's points—namely, the great importance of recognizing in children the very mildest forms of rheumatic arthritis and of rheumatism without arthritis, but with tonsillitis only, and the frequent association of cardiac lesions with these ambulatory cases. It had always been taught that cardiac dilatation normally took place even without endocarditis or pericarditis in acute rheumatism. And all knew of the association of acute and subacute carditis with this illness. But the existence of these ambulatory forms of carditis was not, he thought, sufficiently well known. For the last twenty-five years he had been familiar with cases of mild pericarditis in children and young adults who were going about with it; they were nearly always rheumatic, though they might never have had sufficient arthritis to lay them up. But it was only within the last couple of years that he had seen a number of cases of marked cardiac dilatation in children who were going about and in whom it was difficult to get any rheumatic history. The children had very few symptoms, were anaemic, ailing, listless, but very seldom with pain. Their temperature was not raised, and the pulse when in bed might not be much quickened, though it was irregular when up. After weeks in bed, most of them got well. The disease he believed to be chiefly a myocarditis, though in some an endocarditis was added, and some valve lesion remained. As to sodium salicylate, moderate doses were generally enough. But undoubtedly in some cases this drug added to or even caused dilatation of the heart, and was a danger.

Dr. COUTTS having briefly replied, Mr. E. M. CORNER, in answer to Mr. ELMSLIE, stated that the organism to which he had referred was *Staphylococcus pyogenes albus*, not *Staphylococcus epidermidis albus*. He also said that formal excisions of tuberculous joints were rarely done at the present time, and then only as an alternative to amputation. The PRESIDENT, in winding up the discussion, observed that no speaker had referred to joint affections due to the meningococcus.

THE CONSERVATIVE TREATMENT OF TUBERCULOUS CRIPPLES.

By H. J. GAUVAIN, M.A., B.C.Cantab., M.R.C.S.Eng., L.R.C.P.Lond.,

Medical Superintendent, Lord Mayor Treloar Cripples' Hospital and College, Alton, Hants.

THE problem of the tuberculous cripple is one which should engage alike the attention of the surgeon and the educationalist, and the assistance and co-operation of the State and the philanthropist. The problem is by no means a simple one. Many factors must be considered before deciding what means can best be employed for the amelioration of any particular case, and co-operative treatment is essential if results which should be most beneficial to the patient and least costly to the State are to be obtained. I propose in this brief paper to particularly refer to the aid which the surgeon can give, more by patient, long-continued, logical treatment than by the employment of radical measures, and will only in the briefest manner touch upon the assistance which must be obtained from other sources.

From the medical aspect the treatment of the tuberculous cripple should follow the indications which patho-

logical observations and clinical experience alike proclaim most beneficial. It is therefore necessary to grasp the nature of the tuberculous process which is crippling the patient. At first, when the identity of the disease was not understood, and tuberculous inflammation of the bones was confounded with other conditions causing bony deformity, treatment was almost futile. Later, from the combined researches of bacteriologists and clinicians, a clearer conception of the tuberculous process was evolved, and tuberculous bony disease was removed from the chaos of other chronic bony diseases, became clearly defined, and took its proper place. A tuberculome theory arose, and from it was deduced a treatment which appeared a rational one. Tuberculous lesions were considered of such a nature as to be best treated by their complete removal. This treatment involved, as is well known, those extensive operations which were previously so much in vogue, and which by their nature frequently produced such extreme mutilation and such evil secondary results that they are now by most surgeons abandoned. Few operations have yet been devised by which tuberculous disease affecting a large area can be safely and successfully removed, and extensive operations on the spine and hip designed to remove the disease are now, happily, very rarely attempted.

There is, however, still too much radical treatment employed, and too little is left to those powers in the organism which, when properly brought into play, themselves may combat and overcome the disease. A tuberculous lesion commonly evokes a reaction. There is the production of a zone of resistance about the focus of the disease by the formation of fibrous tissue which encysts, limits, and tends to prevent the progress of invasion. Thus the issue is the result of two opposing forces—the disease which attacks the organism, and the reaction which this attack provokes. It appears reasonable to reinforce this natural defence and diminish the virulence of the attack of the bacillus, limiting in this way its progress.

In very localized and easily accessible lesions total removal of the disease is both justifiable and logical, notably so in disease of the tarsal or metatarsal bones. When, however, the lesions are more extensive and many vertebrae are involved, as in spinal caries, or a large joint such as the hip is implicated, then radical methods can only be employed with the knowledge that the ultimate prognosis is utterly unsatisfactory. It is probable that very few realize how bad the ultimate results of major operations for this disease are, for if the extremely serious final results were thoroughly grasped, then radical treatment would only be undertaken in very limited and specially selected cases.

In the treatment of the tuberculous cripple every means should be employed to enable the patient himself to overcome the disease with which he is attacked, and the least mutilation possible will eventually in most cases be productive of the best functional results.

This leads me to the consideration of conservative treatment, and of primary importance in the economical and practical application of conservative measures is the recognition that they should be conducted in large specially equipped and specially staffed institutions devoted entirely to this work. Such institutions must be situated in a healthy locality, either at the seaside or in the country. They must be managed by medical men prepared to devote their whole time to this work, for the work is of a special, tedious, and exacting nature, which requires long training and close attention. I believe only one institution in this country meets the requirements of these patients fully and completely, and that is the special hospital at Alton, founded in 1908 by the foresight and energy of Sir William Treloar, where now 270 patients are under treatment.

The conservative treatment of tuberculous cripples may be summed up under two heads:

1. The employment of those general measures, now so well understood, which will increase the patient's resistance, namely, open-air treatment, combined with administration of ample and easily digested food, and where necessary the exhibition of those tonics and drugs which experience has shown have, if not a specific, at any rate a beneficial effect on the tuberculous child. In fact, all general measures which will improve the patient's resistance and so enable him to himself make the whole fight against the disease should be adopted. But while these measures are of great importance, of greater importance still is the proper application of—

2. Local treatment designed specifically for each individual case. A tuberculous lesion is an inflammatory lesion, and those principles which govern the treatment of inflammation from other causes especially hold good in the treatment of inflammation caused by the tubercle bacillus. Rest is of primary value, and absolute rest should be enforced if the best results are to be obtained. The affected part must be completely immobilized, and this immobilization consistently carried out for a long period under the best hygienic conditions. Not only must this immobilization be insisted upon to ensure the arrest of the disease, but also to prevent the onset of deformity, and where possible, if deformity exists, that should be corrected. Each case is a law unto itself, and no one method or appliance should be adopted blindly for every case, but, the general principles being grasped, special means of applying these principles adopted for every lesion.

I propose here to briefly show you those forms of apparatus which in my hands have been most useful in securing the best results in spinal caries.

I choose spinal caries because it is perhaps the most severe and also perhaps the most common form of tuberculous bony disease which exists. While the disease is active the patient is kept recumbent, but mere recumbency does not by any means ensure rest; and not only is the



Patient immobilized and hyperextended on "swinging backdoor splint." The splint is so constructed that the necessary attention can be given to the back without in any way moving the patient.

patient recumbent, but he is also immobilized, and immobilized in that position which will prevent deformity. For this purpose I use a board which has been in use for a long time at Berck-sur-Mer, but which I have modified in various ways, and now employ largely at Alton. The use of this board combined with the jacket attached ensures that the patient is immobilized. Properly adjusted, it hyperextends the spine of the patient to such an extent that the spasm of the muscles about the spine is gradually diminished, and the increase of the deformity arrested; and that deformity which is due to muscular spasm may thus be corrected. Muscular spasm, which is so well recognized as producing deformity in other joints, is often almost ignored in cases of spinal caries, and yet, in my opinion, there is no factor which is so productive of deformity in spinal caries as muscular spasm about the inflamed focus of disease.

While this board answers all necessary requisites, yet it has some defects—inasmuch as the patient has to be constantly liberated for hygienic reasons, and for the prevention of bedsores, and to overcome this defect I have designed a splint which is made specially for each patient, and adapted to meet his individual requirements. When applied it will be seen that the necessary attention can be given to his back without in any way allowing any movement of his spine, and at the same time progressive hyperextension can be obtained by properly padding the splint, as from time to time may be indicated. Various modifications of this splint will be suggested for particular cases. When as much deformity has been corrected as is possible, and when the disease is not only not active but apparently arrested, then the child is immobilized in some form of jacket which will act as an exo-skeleton, and

relieve completely the pressure on the injured point. No form of jacket is more suitable for this purpose than a plaster jacket, if properly applied. On the screen I shall demonstrate the application of such a jacket, and you will see from the slides that not only is adequate support obtained, but the functions of respiration and digestion can proceed unimpaired. When evidence is obtained that not only is the disease arrested, but that repair has taken place about the site of the lesion, the permanent support of the plaster jacket may be discarded, and a light removable splint substituted in its place, and later worn only when the patient is walking about.

These methods being rigorously adopted, it can be definitely stated that the onset of angular curvature as the result of spinal caries is an absolute impossibility; that deformity, when it already exists, can often to a considerable extent be corrected; and, further, that that deformity which cannot be corrected may be rendered less perceptible by the production of compensatory curves in the spinal column, or, rather, in that part of it which remains unaffected.

There is one point in the treatment of these tuberculous lesions to which I would call special attention, and that is of abscess formation complicating tuberculous bony disease. Abscess formation occurs in a very large percentage of cases, and, when dealt with by ordinary radical methods, only too commonly leads to sinus formation. With the formation of a sinus the prognosis becomes exceedingly grave, and in quite a number of cases the sinuses will never heal, no matter what treatment be adopted. That radical treatment of a tuberculous abscess should be so common is to be deplored when other methods which are capable of application to nearly every abscess, and which will reduce the risk of sinus formation, are available. Quite often adequate immobilization under good hygienic conditions will so modify the abscess that it will not only not increase but become spontaneously absorbed. Should absorption not take place, then aspiration should be performed in preference to incision. I have practised this method of treatment now in very many cases with consistently good results.[1]

I must now just briefly allude to the education of the patient while under treatment. This is a point which is almost always neglected in ordinary hospitals, where, indeed, these children should, in my opinion, only be admitted for diagnosis and demonstration, and not for prolonged treatment.

The education of the tuberculous cripple should go hand in hand with his treatment. It should be conducted entirely under medical supervision, and when wisely applied will be an aid to treatment, by stimulating the child's interest and removing him from the lethargic and ignorant condition into which these patients so commonly drift. Already means have been adopted for the education of the tuberculous cripple in at least one special hospital in London. I refer to the Alexandra Hospital for Diseases of the Hip, where specially trained teachers are delegated to this task. But this method of dealing with the problem does not appear to me to be altogether satisfactory, and is certainly costly. Teachers specially trained for this work cannot hope to earn their livelihood by other means, and therefore the training required and the prospects in front of them make the salary which they receive necessarily a relatively high and indeed in many cases a prohibitive one. In my opinion much better results may be obtained by entrusting the education of these children to the nurses who are in constant contact with them, and who, while being trained to nurse, should also be trained to teach the crippled child. The nurse in charge has a much greater sympathy with the patient and greater knowledge of the disease from which he is suffering than could a woman who has no training as a nurse and no acquaintance with the duties which a nurse has to perform.

I believe the difficulties encountered in endeavouring to secure the education of tuberculous cripples will be overcome by entrusting their education to specially selected nurses, trained to teach the child simultaneously with their training to nurse the patient.

The technical training for older cripples is another branch of their education of the highest importance, and, if properly undertaken, most hopeful in its results. It must be dictated by very many considerations, and cannot be dealt with in the short time at my disposal.

[1] Calvé and Gauvain: The Treatment of Tuberculous Abscesses of Bony Origin by Conservative Measures, *Lancet*, March 5th, 1910.

DISCUSSION.

Mr. W. B. Parsons (London) was glad to hear that the principles of immobilization and hyperextension of the spine in the treatment of spinal caries were being recognized as a necessary part of treatment. These principles had been carried out for the last seventy-five years in London, at the City Orthopaedic Hospital, by means of an apparatus in which half-tempered steel was used so as to allow of rapid and easy alteration of adjustment of the appliance. By this method deformity was to a great extent prevented, as exemplified in the case published by the late Mr. Noble Smith, in which a specimen was described and figured showing deposit of new bone in the spine to take the place of that lost by caries. Although a great advance had taken place in the technique of application of plaster-of-Paris, he doubted if the disadvantages of it as a spinal jacket would ever be overcome; nor was this necessary, since so many equally effectual methods of obtaining immobilization and extension were now in use.

SPINAL CARIES AND HIP DISEASE:

A POINT IN DIFFERENTIAL DIAGNOSIS.

By W. B. Parsons, M.R.C.S., L.R.C.P.Lond.,

Surgeon, All Saints' Boys' Home and Hospital, Margaret Street, W.; late Clinical Assistant, City Orthopaedic Hospital, etc.

In exceptional cases active disease of the lower region of the spine in children may set up spasm of the muscles about the hip, so that it may be difficult to decide whether the irritation is in the spine, or the hip, or in both. This difficulty is to a great extent overcome by considering the nervous supply of the structures about the hip joint and the cutaneous distribution of the same nerves, and by remembering the statement of John Hilton made about fifty years ago, "The same trunks of nerves the branches of which supply the groups of muscles moving any joint furnish also a distribution of nerves to the skin over the same muscles and their insertions and the interior of the joint receives its nerves from the same source. Hence arises an accurate, consentaneous and physiological harmony in those various co-operating structures."

It is to this consideration concerning pain and spasm about the hip-joint that I desire to direct attention, and incidentally to emphasize the good results which follow careful and adequate direct fixation of the spine in inflammatory affections of the vertebrae, such fixation as I think cannot be obtained through the indirect method of recumbency with or without extension.

It may be said that disease or abnormality of the hip-joint is expressed by pain and lameness. When these symptoms coexist the disorder is of an inflammatory nature, and when lameness is present alone there is abnormality in form or position of the bones. The converse is not so certain, for pain in the hip with lameness may arise from inflammatory disease connected only obscurely with the hip-joint and indirectly manifesting itself.

In 1906 I was consulted as to the treatment of a boy, aged 6 years, who suffered acute caries of the spine.

When 3 years of age he was taken to one of our great children's hospitals "on account of tuberculosis of the left hip-joint." He was put into a Thomas's splint and remained so for eleven months, during which period he underwent much improvement. Then, following an examination of his condition by two surgeons, the splint was discarded on the ground that it was no longer necessary. About a year afterwards "he complained of pain in the back and return of pain in the hip," and it is also stated that "he began to develop signs of spinal disease." This was in February, 1906. When I first saw him, in May of the same year, he had acute caries of the spine in the lower dorsal region, with paraplegia; and in every respect he was extremely ill. I immediately provided him with an appliance for immobilization of the spine, carefully fitted to the back and adjusted so as to take up the weight of the spine by transferring it from the diseased bodies of the vertebrae to the articular processes, which in spinal caries, in the majority of cases, are unaffected. In addition, he was placed upon a prone couch with angle of slope adjusted to the degree of

flexion of the thigh, as is necessary in all cases where the disease is in an active condition.

He has been under my care since, and is now running about practically recovered, as we consider recovery in spinal caries—that is, the child is strong and upright and when clothed there is no noticeable deformity, although, as is to be expected, in the affected region of the spine one can easily detect loss of substance and posterior protrusion. There was no disease of the hip-joint and I am sure there never had been. The cause of the hip symptoms was a prevertebral inflammation. It is evident that this case was difficult to diagnose at the beginning, although when I saw the child the difficulty had vanished, as the disease was in active progress and obvious. Although the first treatment was directed to the hip and not to the spine, the latter was probably treated in the best possible way.

As everybody knows, Thomas's hip splint reaches well up into the axillae and is a most efficient appliance for obtaining fixation of the spine as well as of the hip, especially when, as in this case, the disease is situated moderately low in the back. This would sufficiently account for his early improvement. It was, however, the faulty diagnosis in the first place which caused the real disease to be overlooked by those into whose hands the patient next came.

During the course of his gradual and very satisfactory recovery, about nine months after I first saw him, when he had begun to walk about a little again, he had a wakeful night due to pain in the left hip. This was followed by some very conflicting and puzzling symptoms—pain in the knee, startings at night, spasm of some of the muscles, but no true rigidity of the joint. The pain was not definitely localized, but distributed over the region of the joint, and felt more particularly over the trochanter and in the groin, and there was a slight but definite swelling over the same area.

An *x* ray photograph of the joint disclosed a small area in the head of the femur, which was slightly more translucent to the rays than the corresponding area on the other side. In other respects there was no difference between the two joints. Having regard to the existence of this rarefaction, which might quite conceivably be the beginning of an inflammatory process, the child was put to rest again with the hip joint as well as the spine in fixation. The need for retaining fixation of the hip was soon over, and the boy has since made rapid and continuous progress, until he is now in the happy condition already stated.

The hip joint is controlled by muscles that perform their functions in groups. Each group has a nerve trunk of its own, and each nerve contributes a branch to the hip-joint itself. Thus it is easily seen how pain and spasm in the hip may be the expression of irritation of the trunks of the nerves, and not an indication necessarily of disease in the joint.

In these cases it will be found that there is a superficial pain as well, confined and exactly localized to the skin in the cutaneous distribution of the same nerves—namely, the front of the lower part of the abdomen, the whole of the front of the thigh, the region over the great trochanter in front and to the inner side of the knee, and also through the obturator nerve, in the knee joint itself. The skin over the back of the hip joint, in the gluteal region, and upper part of the back of the thigh does not obtain its nerves from the same source. It is supplied by the first, second, and third sacral nerves, and would be unaffected.

The hip-joint receives a supply of nerves from the sacral plexus through the nerve to the quadratus femoris and the great sciatic near its origin. These enter the back of the capsule of the joint in the region of the buttock. In an inflammation of the joint it is impossible that these should escape, whereas when the joint is unaffected and the disease is in vertebrae considerably removed from the sacrum they are not involved.

I need hardly state that this consideration did not present itself to me at the time. My acquaintance with the progress of the case made it necessary for me to account to myself for the acute and puzzling symptoms connected with the hip-joint. Once during a severe and sudden return of this cutaneous pain, accompanied by "startings" at night and pain in the knee joint, there was a definite oedema of the left thigh extending down into the calf—a region, you will note, of cutaneous distribution of nerves derived from the lumbar plexus. When this occurred I had not seen the patient for about two months, and the spinal instrument was in need of readjustment, which before that time I was carrying out at intervals of one month. Upon readjustment the symptoms rapidly subsided.

I do not claim to do more than point out, with the example of this case, the application of a well-known and well-recognized phenomenon in surgery. When forming a diagnosis in the case of a child, we are almost entirely dependent upon our own observation of conditions that are present, but success or failure in difficult cases comes more from the ability to detect the absence of necessary signs and symptoms than from a recognition of the causes of those that are present. In the case described the absence of involvement of the sacral nerves was a most significant fact, imperatively calling for the exclusion of hip-joint disease.

The beneficial and entirely satisfactory effect of mechanical rest in bringing about a cure, and the harmful effect of the want of fixation of the inflamed structures is well exemplified. This was so in spite of the fact that the method of fixation was carried out for many months in the vitiated atmosphere of London, whereas the other was practised in the health-giving air and surroundings of Margate.

The occurrence of symptoms indicating that fixation of the diseased bones was inadequate from time to time, and their immediate disappearance upon readjustment of the mechanical appliance, shows the absolute dependence of the mechanical method of treatment upon careful and frequent inspection and adjustment of the apparatus, and this remark applies to all cases in which mechanical contrivances are used, no matter for what condition, if the best results are to be expected and obtained.

It is unjust, when unsatisfactory results are obtained from methods of instrumentation, to put upon the apparatus the blame which should attach to the surgeon who employs such a method without recognizing the necessity that will immediately arise for frequent and careful readjustment. And opportunely comes the example.

Since writing the above, as lately as June 17th, when the time for this boy to pay another visit to me was somewhat overpast, I received a letter from my colleague, Dr. Webb of Margate (who also has charge of him), asking if he should apply a weight extension to the thigh.

> On the 16th the boy had great pain and tenderness of the left thigh, which ran down to the foot occasionally, his temperature was 100.6°, and he could not bear manipulation. In the evening his temperature rose to 101.4°, and on the 17th the pain and muscular spasms were still severe, with temperature 101°. It appears to me that the old hip trouble has lighted up

I suggested that the pain was reflected from the spine, asked particulars as to its exact locality, and advised that the boy should be put to rest in the prone position. On the 22nd I heard as follows: "His temperature has been normal since the 19th, and he has no pain now; he took to the prone position naturally, and I let him remain in it."

In answer to my inquiry as to the locality of pain, Dr. Webb states:

> Little W. had pain over the hip, knee, and down the shin, and a gnawing pain over the front of the foot; there was also a noticeable swelling of the calf; there was no pain over the abdomen, but down the *front* of the thigh, *and there was no pain over the buttock*, but pain complained of down the calf. The boy seems quite well again.

He was ready to travel to London on June 27th, when I saw him and readjusted his appliance. He has remained well since.

Nowadays we are too much concerned with the germs of disease and too little with the local manifestations and local treatment. In spinal caries and hip disease we are inclined to look upon tuberculosis as the essence, and the spine or hip as the accident. Although the general constitutional treatment of a patient is a necessary and important factor in the cure, those who have had much to do with these cases will agree that the local treatment is of the two perhaps the more imperative.

DISCUSSION ON INFECTIONS OF THE URINARY TRACT BY BACILLUS COLI IN INFANCY AND CHILDHOOD.

OPENING PAPERS.

I.—Charles R. Box, M.D., F.R.C.P.,
Physician in Charge of the Children's Department of St. Thomas's Hospital.

Infections of the bladder, ureters, and kidneys by the colon bacillus are the commonest of all infections of the urinary tract in childhood. The condition may occur at all ages—from infants a few weeks old to children in their teens. It is usually uncomplicated, the cases where it is secondary to other urinary lesions being exceptional.

The sex incidence is very characteristic:

Morse in 50 infants found 30 females, against 20 males.
Abt found 21 females, against 1 male.
Escherich found 10 females, and no male.
Finklestein found 7 females, and no male.
In 18 consecutive cases of my own there was only 1 male.

These figures strongly suggest the ascending character of the infection.

The disease may reveal itself in childhood either as an acute or as a chronic condition. In the acute infection either the constitutional or the local symptoms may be predominant. In the chronic infection the local symptoms may almost sink into abeyance, and the constitutional symptoms may remain slight for long periods. The acute infections show a great tendency towards complete recovery, but relapses occur occasionally. The chronic infections show periodic exacerbations of symptoms, either local or general.

Acute Infections with Constitutional Symptoms.—Cases of acute infection in which the constitutional symptoms predominate may come under observation as sharp febrile attacks accompanied by headache, malaise, and often by vomiting. Shivering, sometimes amounting to actual rigor, is present and recurrent, particularly in older children; it is very characteristic of the disease. The onset is frequently abrupt. The skin may either be hot and pungent or moist; the pulse is rapid and the respirations are hurried, but not out of proportion to the pulse-rate. Herpes may appear on the lips. Frequently the abdomen is moderately distended; the edge of the spleen may just be felt, and the bowels may be irregular. Nervous manifestations are marked in some instances. These take the form of broken sleep and extreme restlessness, muscular twitchings, and, in older children, delirium. In infants slight stiffness of the neck has often been noticed accompanied by sharp cries and sometimes even by convulsions. The temperature chart assumes various forms. The pyrexia may be sustained for several days and then abruptly terminate, as in lobar pneumonia, or considerable oscillations of temperature may be present with chills and sweats, suggesting either a malarial or a pyaemic condition. The course of the disease may be marked by intermissions and relapses.

Constitutional disturbances with the foregoing characteristics are said to be more common when the urinary infection occurs as a pyelitis than when the less absorbent mucous surfaces of the ureters and bladder are involved; but in most instances the clinical aspect of the disease is rather that of a cysto-pyelitis, a sharp differentiation of the renal from the vesical infections being impossible.

Acute Infections with Local Symptoms.—Acute infections in which the local symptoms are obtrusive are easier of diagnosis. As a general rule micturition is frequent and painful, incontinence being early developed. Vulval inflammation is often present. If the bladder is chiefly involved the child screams during the passage of urine and may attempt to evade the act. Tenderness is present in the hypogastrium and perineum; it may also be elicited in the neighbourhood of the bladder by rectal examination. The lower parts of the abdominal wall may be rigid and rigors may accompany micturition. When the pelvis of the kidney is involved, pain may be referred to the subcostal and epigastric regions—rarely, in my experience, to the loins. Slight rigidity of the upper part of the abdomen may be present, and it may even be possible to determine that one or other kidney is somewhat enlarged and tender. The renal enlargement is sometimes transitory or intermittent, and in such cases it may be due to distension of the pelvis of the kidney. In some instances the intermittent discharge of pus in the urine has confirmed this view as to its nature.

Chronic and Persistent Infections.—These are mostly met with in older children, but are occasionally seen in infants. Fortunately they are much more rare than the acute varieties of the disease. They assume the form of a persistent bacilluria with but slight signs of inflammatory reaction of the urinary tract and with little constitutional disturbance. Although incontinence of urine may have existed in the earlier stages of the infection it does not always persist. Children who are the subjects of this chronic infection are poorly nourished and may show slight elevations of temperature which persist over long periods. Rigors or shivering are mostly absent and there is little or no complaint of local pain or tenderness. Some of the sufferers are shy and nervous, others are dull or apathetic. Periodical exacerbations of symptoms are very apt to occur. These may assume the form of "bilious attacks" characterized by headache and nausea or vomiting, or they may occur as "feverish attacks" which are often attributed to slight bronchitis or to bowel disturbance. Complaint may also be made of pains in and slight swellings of the joints, supposed to be "rheumatic." If the joint swelling is persistent the presence of tuberculosis may be suspected. Transitory fidgetiness and inco-ordination, very suggestive of chorea, have occurred in some of my patients. The resemblance between the recurrent attacks of sickness and the disease known as periodic vomiting has been emphasized by Dr. J. H. Thursfield. My experience has taught me one important fact, and that is, that ultimately these patients with chronic bacilluria may pass into a condition of uraemia. I had one child under observation for three years. Bacilluria persisted all the time and at the end of the period she developed night blindness, which an ophthalmic surgeon conjectured must be congenital, although there was no history of the defect in the family. Ultimately a condition of air hunger supervened and she died in coma. The result of the *post-mortem* examination is mentioned below.

Morbid Anatomy.—Although the morbid anatomy of urinary infections by the colon organism is fairly well known in the case of the adult, there are very few observations on the conditions present in childhood. In a case recorded by Abt cystoscopic examination of a baby girl, aged 13 months, is said to have revealed a normal bladder with pus exuding from both ureters. The same observer records a fatal case in an infant six weeks old, in which a fused kidney was found containing pus and miliary abscesses. Our knowledge of the pathological conditions which underlie or result from chronic bacilluria is also very imperfect, but I think there are grounds for the belief that the explanation of certain obscure cases of hypertrophy and dilatation of the urinary bladder and ureters without obstruction, and also of certain cases of hydronephrosis and renal atrophy, may be found in the occurrence of these infections. The *post-mortem* examination of one of my chronic cases revealed widespread changes in the urinary passages. The right kidney was shrunken and its pelvis dilated; the left was swollen, mottled, very coarsely granular, and partly hydronephrotic. The ureters were dilated and thickened, the bladder hypertrophied from chronic cystitis. There was no obstruction in the urinary passages.

Diagnosis.—The diagnosis of these urinary infections must be made by an examination of the urine itself. Drs. Dudgeon and Ross conclude that although the opsonic and phagocytic indices of the patient's blood are low, they are not very reliable; also that the agglutination test is of no value. They point out that normal human serum has no bactericidal effect on the *Bacillus coli*.

The urine is acid. It is opalescent, and when shaken may show a "mucous sheen." When it is allowed to stand a slight sediment may fall; sometimes the sediment is rather abundant and consists of pus and epithelial cells, more rarely only a faint mucous cloud separates, containing the bacilli in its meshes. The opalescence of the urine is not removed by acids like that due to phosphates and carbonates, neither does it clear up on heating, which serves to exclude the milky uratic urine often passed in childhood. The effect of boiling is rather to increase the turbidity

owing to the precipitation of a small amount of albumen, but this precipitate, being slight, is often overlooked. Filtration only diminishes the opalescence in so far as it removes epithelial and pus cells. The bacilli pass through.

Microscopical examination shows, in the acute cases, pus and epithelial cells from various parts of the urinary tract, a few casts may possibly be recognized and swarms of bacilli which are more or less actively motile. In cases of chronic bacilluria the cells are scanty, but a few polymorphs are always found if the centrifuge be employed. Dr. Dudgeon has shown that the phagocytosis is feeble, the bacilli being extracellular—a fact which contrasts strongly with what is seen in cases of typhoid infection. The presence of casts points to infection of the renal parenchyma, but their absence does not prove that the kidney has escaped injury.

Differential Diagnosis.—When the symptoms of the infection are general or constitutional, the true cause is apt to be entirely overlooked. When the symptoms are local they are liable to misinterpretation.

Constitutional symptoms of acute onset may suggest the presence of an infective fever, of pneumonia, of cerebro-spinal meningitis, or of otitis. Constitutional symptoms of a more chronic nature may give rise to a suspicion of pulmonary or glandular tuberculosis. The occasional exacerbations with headache and sickness may suggest periodic vomiting.

Urgent local symptoms, referred to the urinary apparatus, may simulate the presence of a calculus, whilst the persistent presence of pus in acid urine may cause suspicions of urinary tuberculosis to be entertained. The key to successful diagnosis is, as already mentioned, a routine examination of the urine in every case, coupled with the knowledge that, in childhood, by far the most common infection of the urinary tract is that due to the colon bacillus.

Pneumonia may be suggested by the rapid onset of fever with a chill, acceleration of respiration, and the occasional presence of labial herpes. But signs of pulmonary consolidation do not appear, the rapidity of respiration is only proportionate to the high fever present, and the chills or rigors are apt to be repeated.

Typhoid fever may be simulated by the coincidence of fever with splenic enlargement and slight abdominal distension. But the course of the fever is different, the typhoid spots are wanting, there is no agglutinative reaction with typhoid bacilli, and the recurrence of chills or rigors in typhoid is decidedly uncommon.

Meningitis may be suggested by the restlessness, fever, headache, crying, and slight stiffness of the neck noticed in some cases. But paralysis and coma do not supervene, and the fluid obtained by lumbar puncture is normal.

Several cases of the disease have been reported in infants where, on account of the restlessness, evident pain, screaming, shivering, and fever, acute otitis media has been suspected and the drums punctured, but with negative result.

Turning to the more chronic cases, it is evident that continued malnutrition, which may be associated with slight febrile disturbance and unaccompanied by obtrusive signs of urinary inflammation, is calculated to raise a suspicion of the presence of some deep-seated tuberculous focus in the mediastinal or abdominal glands or possibly in the lung. In such cases the urine should be carefully examined.

The presence of recurrent attacks of headache and vomiting, with lassitude, slight fever, abdominal pain or discomfort and some degree of constipation, may produce a condition which closely conforms to that of periodic vomiting. The resemblance is rendered more complete by the fact that the condition is more common in girls than in boys, and that the exacerbations usually pass off in a few days (J. H. Thursfield).

When the urinary symptoms are prominent the diagnostic problem is very different. The occurrence of pus in acid urine, coupled with signs of irritation of the urinary passages, naturally suggests the presence of calculus or of tuberculosis in the bladder or kidney.

With regard to urinary tuberculosis, it is fortunate that this condition is very rare in childhood. Calculus is more common, but does not occur with anything like the frequency of cysto-pyelitis due to invasion by the colon bacillus.

There is another condition which, in childhood, may give rise to dysuria, and this is appendicitis. When a pelvic abscess has formed, the symptoms, which consist of deep-seated pain and frequent, painful micturition, may strongly suggest a primary cystitis. The true nature of affairs is revealed on making a careful rectal examination.

In countries where malaria is prevalent the chills and fever of colon cystitis may closely simulate malarial paroxysms.

In discussing and comparing the different methods of treatment which have been advocated it is important to bear in mind that in childhood many of the most acute attacks clear up spontaneously or yield to the simplest treatment. To get an idea of the efficiency of any particular method it should be employed in a chronic and persistent case. I believe that a failure to realize this is responsible for the discrepant accounts as to the virtue of various remedies which have been employed.

Treatment.—The main methods of treatment may be summarized as follows:

1. The administration of sufficient potassium citrate to make and keep the urine permanently alkaline.
2. Treatment by urinary antiseptics.
3. Treatment by serums and vaccines.

In my experience all that is necessary in the treatment of cases with acute local symptoms is the administration of potassium citrate in doses of 10 to 20 grains three or four times daily. With this may be combined an antispasmodic drug, such as belladonna or hyoscyamus.

With regard to the effect of urinary antiseptics accounts are discordant. Some observers claim successes with urotropine and others with sodium salicylate, but it is always in cases such as I have just mentioned—that is, those with acute local symptoms. To judge of the intrinsic value of antiseptic drugs they should be tried in the chronic persistent cases; their effects will then be found to be most disappointing. I have systematically used for long periods most of the antiseptics of the formalin type—that is to say, hexamethylene tetramine (urotropine); its methylene citrate (helmitol), which is supposed to combine the advantages of its three constituents; and also its benzoyl derivative (hetraline). None of these had the slightest effect on chronic cases. I have also made trial of ammonium benzoate, sodium salicylate, and boracic acid, with no better results.

It is worthy of note that Dr. Dudgeon found from his bacteriological researches that urotropine, although highly effective against typhoid bacilli, was powerless against the common colon organism, and gave, in fact, a means of clinical differentiation.

Next, with regard to the use of serums and vaccines. Hitherto I have found it unnecessary to use these for any of my acute cases in children. In two cases of chronic bacilluria I have, with the co-operation of Dr. Dudgeon, given both autogenous vaccines and anti-*Bacillus coli* serum a fair trial. No permanent improvement could be effected in either case, but incidentally we discovered that washing out the bladder with the serum instead of with urinary antiseptics produced a marked, though temporary, diminution in the number of bacilli present.

Mr. Shattock and Dr. Dudgeon have at present in hand a scheme for the acclimatization for the lactic acid bacillus in the urinary passages in the hope that it may expel the colon organism.

There is one point in treatment which I believe to be important: Many of the older children have thread-worms, and I have suggested elsewhere that possibly these parasites are actually the cause of an ascending urethral infection with the colon bacillus. The discovery of the worms or their ova, and effectual treatment, are therefore desirable. By this means incontinence of urine may be put an end to even though bacilluria persists.

II.—John Pardoe, M.B.Aberd., F.R.C.S.Eng.,
Assistant Surgeon at St. Peter's Hospital and at the West London Hospital.

Infections of the genito-urinary system of children appear to be less frequent than similar infections of adults. This, no doubt, is partly due to the fact that children are not so liable to certain conditions of the urinary and genital tracts which are strong predisposing factors to the

occurrence of these infections. There is no question that in adults the occurrence of stricture of the urethra, enlargement of the prostate, and central nervous lesions, all giving rise to obstruction of the natural outflow of urine, accompanied by the injurious back-pressure commonly present with them, are strong predisposing causes of these infections. Calculi in any part of the urinary tract, from the urethra to the kidneys, are similarly only too frequently attended by bacterial invasions; whilst there can be no doubt, I think, that gonorrhœa is often the starting point of an infection with *Bacillus coli*, the gonococci disappearing from the genito-urinary tract long before the *Bacillus coli*.

Although children are liable to all these conditions, they are not of nearly so frequent occurrence, and as predisposing factors of infection they are, therefore, not nearly so important.

There remain to be considered, however, those cases of what one may term autogenous infections, not dependent upon any gross disease of the urinary passages, nor accompanied by conditions interfering with the freedom of micturition.

With regard to the frequency of such occurrences I speak from a very limited experience, for I have only seen eight cases where the infection was present uncomplicated by other conditions, such as those I have just mentioned.

This is in striking contrast to the frequency with which I have met these autogenous infections, both acute and chronic, in the case of adults. In the last two years alone I have seen 106 such cases in hospital and private practice.

No doubt this is accounted for in some measure by the fact that the acute infections show the same tendency to rapid subsidence in children as they do in adults, and that many children are seen only by their regular medical attendants, or by physicians rather than surgeons. Still the disparity in numbers is striking, and leads me cautiously to suggest that these autogenous infections are not so common in children as in adults.

Infections uncomplicated by other conditions, and where the *Bacillus coli* is the only organism recovered from cultures, follow very much the same course as do similar infections in adults.

1. *Acute* infections are commonly ushered in by a rigor, which may be considerable or very mild in character. The temperature rises rapidly, more quickly and to a greater height than in adults; but I have seen one case of hyperpyrexia in an adult where the thermometer registered 108°. A temperature of 104° is not uncommon in children.

During the first twenty-four or forty-eight hours there is frequently no complaint of urinary symptoms, and the urine to casual observation appears normal.

But if the urine is closely examined it will be seen to have a certain sheen or lustre, which I am accustomed to compare to the lustre of shot silk, there is usually a faint but very distinct odour which is almost indescribable, the nearest I can approach to it being a mixture of the odours of weak carbolic lotion and rotting fish. On bacteriological examination the urine is found to be swarming with the micro-organisms. In this early stage there is little or no pus formation, and the urine is invariably acid in reaction, sometimes strikingly so. These two features—acidity and small amount of pus—persist throughout the duration of the case so long as the infection remains pure. With the addition of other micro-organisms, such as the *Bacillus faecalis*, I have found marked pyuria and an ammoniacal decomposition in the bladder.

Very soon symptoms referable to the urinary tract manifest themselves. Frequency of micturition is often very marked, every half-hour both day and night being quite common. Pain, during and at the close of micturition, referred chiefly to the penis, is usual. Haematuria is not at all uncommon, varying from a mere staining of muco-purulent shreds, to a few drops of bright blood at the close of micturition, or even a decided bright-red haematuria.

The infection in some cases appears to run riot throughout the whole urinary tract, one or both kidneys becoming involved. They may be felt to be enlarged and tender, and the patient complains of steady lumbar pain. It is in these cases where there was no doubt that the kidneys were involved, that I have noted the highest temperatures.

In adults these acute infections may be ushered in by other symptoms, the first to draw attention being some uneasiness of micturition, an acute epididymitis, or an acute prostatitis, and in three cases I have seen an acute urethritis with profuse purulent discharge as the first sign of the condition, giving rise to quite unwarranted suspicions of the patient's moral character. I have never seen an acute *Bacillus coli* infection commence in any of these ways in children.

The course of the case is very similar in children to what I have observed in adults. Fortunately the majority of cases show a tendency to fairly rapid and complete subsidence. The fever lasts for a variable period, seldom for more than ten days or a fortnight, and the symptoms of pain, frequency of micturition, pyuria, and haematuria usually disappear within a month. During the first week or ten days the child's condition may appear to be alarmingly grave, but I have not yet met with any cases of renal, prostatic, or testicular abscess in children.

2. *Chronic Autogenous Infections.*—Of the eight cases of autogenous infection in children, which is the limited number I have at my disposal, only three were definitely chronic in character. It is obviously rather dependent upon one's own view as to what should be termed chronic rather than acute cases. In these three instances I was unable to obtain any history of an acute attack, and the symptoms had been in evidence for more than six months before I saw the patients.

In these three cases the signs and symptoms were identical with those observed in adults—namely, periods of illness alternating with periods of freedom from subjective signs, although when searched for quite typical symptoms were apparent. Fever was entirely absent during the periods of comparative health, and only a very slight rise of the thermometer was noted during the exacerbations of the disease, and then only at night. During the attacks the same symptoms are to be noted as in the acute infections, only much milder in character—namely, slight discomfort on micturition, usually penile in situation, slight increase in the frequency of micturition, slight abdominal discomfort, and a general appearance and feeling of malaise. It is difficult in the case of small children to elicit from them a description of their own sensations without putting leading questions to them, to which you can get whatever answer you desire. But no doubt exists in my mind that these symptoms are all present in a very mild degree during the remissions of the disease, as they undoubtedly are in a definite form during the periods of exacerbation. Added to these symptoms must be the fact that the children were anaemic and ill-nourished.

I have no doubt that there must be a considerable number of such cases under the treatment of medical men in general, perhaps from the very slightness of their urinary symptoms not recognized as what they are, and in some cases considered more suited for the treatment of a physician than of a surgeon. This would explain the small number of cases I can bring forward.

In this connexion it may be well to emphasize the fact that during the periods of quiescence the urine may appear to be absolutely normal, and even in the acuter phases of these chronic cases may show very little naked-eye evidence of the infection. A little of the typical odour which I have described, a little cloudiness in the urine, and a little deposit on standing may be all that is visible, yet, even at its clearest, colonies of *Bacillus coli* can be grown from the urine, and in some cases the turbidity is due to the presence of the micro-organisms in amazing numbers.

This is exactly similar to the state of affairs in similar cases in adults. None of these cases are well; one of them has been under my observation for more than four years, one for two years, and the other for fifteen months. From my experience in adults I much doubt if they will ever be well, strictly speaking.

Bearing upon this question of the intractability and incurable character of these chronic infections I will mention two cases.

The first, that of a child, now aged 14 years, whom I first saw in 1900. At that time he was suffering from uric acid storms, during which he passed immense quantities

of cayenne pepper crystals with all the typical symptoms of vesical calculus. I cystoscoped him and found nothing wrong with the bladder. However, his bladder was opened suprapubically a little later, in the country, and from that date has persisted a chronic cystitis. The urine now is loaded with *Bacillus coli*, but the child is otherwise perfectly well. He has practically no symptoms.

The second case is that of a man, aged 40 years, who commenced with cystitis during an acute attack of measles at the age of 15, and has had cystitis ever since. At the present time he has quantities of *Bacillus coli* in his urine, and, less fortunate than the child I have just mentioned, his bladder is contracted to a capacity of only 3 oz., and cystoscopy shows a mild pyelitis on both sides.

These two cases show the obstinate persistence of chronic autogenous infections, exactly similar to the apparent incurability of similar chronic infections in adults.

Chronic Infections Associated with other Conditions.—Inasmuch as other diseases of the urinary tract, such as stone, stricture, and enlargement of the prostate, are less frequent in children than in adults, so too are chronic *Bacillus coli* infections less common.

But in addition these infections show a marked difference in children to their behaviour in adults. In adults *Bacillus coli* infection coincident with stone, stricture, and enlargement of the prostate is exceedingly common. Moreover, it is in too many cases desperately intractable. It is well to be upon one's guard in these cases against giving too favourable a prognosis with regard to the complete cure of the patient. The stone can be cleanly and thoroughly removed, the stricture cut or dilated, and the prostate enucleated with complete removal of the symptoms referable to stone, stricture, or prostate, but a chronic infection present before the operation, or in some cases induced by the operation, is only too often there to remain.

In the chronic autogenous infections of adults I am now accustomed to give a bad prognosis as regards cure and a moderately favourable one as regards relief of symptoms. In the chronic infections accompanying these other conditions in adults the prospect of cure is brighter, but in similar cases in children the prognosis is most definitely brighter still. The removal of stone from the bladder or kidney the subjects of *Bacillus coli* infection have been followed in most instances in my own practice by the cure of the infection.

An excellent illustration of this type of case is that of a boy aged 9 years recently under my care in the West London Hospital.

He was admitted on February 18th, 1910, suffering from pain in the hypogastrium, pyuria, and pain on micturition. For about four months he had been ailing, and had complained of pain in the stomach. For a week the mother had noticed that the urine was very thick. No blood had been seen. The temperature was 100°, and the pulse 116. The abdomen was rigid, and tenderness was elicited by moderate pressure above the pubes and over both kidneys, which were both felt to be enlarged. The urine was found to be swarming with *Bacillus coli*.

The patient's condition improved until March 2nd, when he had a rigor, and the temperature rose to 101° F. Four days later some soft phosphatic débris was passed, and a considerable increase in the pyuria was noted.

On March 11th I cystoscoped him, and found a considerable amount of soft phosphatic material in the bladder, a general cystitis, and a turbid efflux from both ureters, indicating double pyelitis. I crushed and removed the phosphatic calculi in the bladder. The general condition then much improved and the right kidney subsided, but the left remained large, and a radiogram showed irregular dense shadows. A little later I therefore explored the left kidney, and found it to be very large, practically converted into a multilocular cyst, the cysts being filled with purulent urine and phosphatic débris. I therefore removed the kidney and the greater part of the ureter.

Ten days after this operation the urine was free from pus and albumen, but a few colonies of *Bacillus coli* were grown from it. Now, nine weeks after the operation, the urine is perfectly bright and clear, and recent cultures failed to show the presence of *Bacillus coli*.

This is an excellent example of the way in which very unpromising cases of this infection will clear up in children once the exciting cause is removed.

I do not mean to suggest that similar cases do not occur in adults, but I do not experience the same success with them as with children.

Treatment.

1. Infections dependent upon or coexisting with other conditions cannot be cured without the removal of the exciting causes, such as stone, strictures, etc. When these exciting causes have been removed the treatment should be the same as that for the autogenous infections.

2. The treatment of autogenous infections may be divided into the treatment of the acute and the chronic forms.

From so small an experience as I can lay claim to, it would obviously be improper for me to dogmatize, but I have now worked out a course of treatment in adults which gives reasonably satisfactory results in them, and applied to the cases of the few children I have had under my care has answered equally well.

A. *Acute Infections.*—The main points I rely upon in the treatment of the acute cases are:

1. Absolute rest in bed.
2. The induction of free diuresis.
3. To render the urine alkaline.
4. The use of urinary demulcents and sedatives.
5. Abstention from instrumental interference.
6. Practically a milk diet.

The first essential is unquestionably complete rest in bed. I do not allow patients to get up at all until all acute symptoms have completely subsided. I have seen quite a number of cases of adults where, on the partial subsidence of symptoms, permission was given to sit up for a little, a relapse occurred.

A copious secretion of urine should be induced by the use of such waters as those of Contrexéville, Vichy, Wildungen, and the like, together with the use of spirit of nitrous ether, ammonium acetate, and squills. The milk diet involving the ingestion of large amounts of fluid helps the diuresis. The urine should be rendered alkaline by the use of considerable doses of potassium bicarbonate or citrate.

To relieve the scalding sensation experienced during micturition I have found that plenty of barley water, taken plain or with milk, assists, and better still the use of decoction of *Triticum repens*, a wineglassful every two hours being taken.

The best sedative drug seems to be oil of sandalwood. Many adults and most children find this exceedingly disagreeable and provocative of indigestion in the pure form, but the most delicate child can take it in the shape of Santaletto, a proprietary preparation, the composition of which is well known.

The well-known urinary antiseptics such as urotropin, helmitol, cystamin, cystopurin, and the like, I have found practically valueless in pure *Bacillis coli* infections, but on the other hand, the benzoates of sodium and ammonium prove of value when exhibited with alkalis. Liquor potassae must not be used with the benzoates.

I cannot lay too strong an emphasis upon the inadvisability of instrumental interference in these cases. Some years ago I tried thorough irrigation of the bladder, but very soon found that the symptoms were aggravated rather than relieved, or at the best were only slightly relieved, without in any way shortening the duration of the attack. For some years now I have scrupulously abstained from local interference, and find the results just as good, and in most cases better, without causing the distress to the patients which bladder washing entails in the presence of an acute cystitis.

Lastly, I am convinced that the diet should be practically a milk one, very cautiously and tentatively increased to fish, chicken, and lastly meat, as the symptoms improve. I have seen quite a number of cases where a most definite relapse occurred on a too early increase in the dietary. The temperature should be normal, pain a thing of the past, and the urine well on the way to a clearance before the admission of solids to the dietary.

I have tried vaccines in a considerable number of acute cases in adults. I have found them of no value, and I do not see that they are likely to be of any more value in the case of children.

B. *Chronic Autogenous Infections.*—Here, again, I can only speak from a large experience of adult cases; but probably what is sauce for the goose will prove to be equally sauce for the gosling. I am sorry to

say that I cannot find in my case-books of private patients nor in my hospital notes a single instance of real cure of this condition. No doubt many of these cases pass from one's observation, and some of these may be truly cured. Since I commenced the preparation of this paper I have communicated with a considerable number of patients whom I had not seen for periods varying from five years to two years, and in every instance an infection varying in severity still remained. Most cases of chronic infection can be much improved. I wish to make it quite clear that I am speaking now of autogenous cases and not of those where the removal of the cause in some instances removes the infection.

The lines upon which treatment should be pursued are, in my opinion, the following:

1. In mixed infections, particularly where the pyuria is considerable, thorough washing of the bladder with one of the mild antiseptics is useful, inasmuch as it relieves the frequent desire and the pain after micturition.

2. The drugs mentioned as useful in the acute cases are also useful in those more chronic forms—namely, benzoates, sandalwood oil, hyoscyamus in large doses; and when the infection is mixed with more pus-producing organisms, such as the staphylococci, *Bacillus faecalis*, and the like, urotropin, helmitol, cystamin, and similar drugs are of value.

3. In these cases I have found the use of a vaccine of the greatest possible benefit. I cannot say that I have known a case of complete cure; but undoubtedly a vaccine carefully administered is capable of ameliorating symptoms to a remarkable degree—to a degree unattainable by any other methods in my experience.

Not only have I found vaccines of value in relieving symptoms, but I also look upon them as prophylactic of those eruptions of activity to which these cases of chronic *Bacillus coli* infection are so liable. I am speaking, of course, of adult cases, but I think it is reasonable to suppose that children afflicted in the same manner will be influenced in a like degree.

I have now quite a large collection of adult cases where, but for the presence of the bacillus in the urine, and occasional increases of frequency of micturition and slight discomfort, the patients themselves would not be aware that any disease was present. These patients receive periodic doses of vaccine, and by its help I feel assured that they are kept in this state of comparative comfort, a condition previously unattainable by other methods.

To sum up the conclusions which I have at present reached, which I hope are no conclusions but only a stepping stone to better results in the future:

1. The acute autogenous infections with *Bacillus coli* are less common in children than in adults. These acute infections show the same tendency to comparatively rapid and complete cure as is observed in older patients.

2. Chronic autogenous infections in children are also more rare than in adults. They also show the same intractability to treatment.

3. Chronic infections dependent upon, or occurring coincidently with other conditions of the genito-urinary tract, show a much greater tendency to complete cure than is the case in adults, after the cause (that is, stone or obstruction to micturition) has been removed.

4. Local treatment in autogenous infections is of small value.

5. Vaccines are of little value in acute cases, but are most valuable in chronic cases.

III.—J. Porter Parkinson, M.D.,
Senior Physician at the Queen's Hospital for Children.

The various forms of infection of the urinary organs by the *B. coli* have been known for at least twenty years, but it is only comparatively recently that much attention has been paid to it.

It has been shown that most cases arise almost certainly from an ascending infection through the urethra; but it has been shown by Sir A. E. Wright that normal urine tends to inhibit the growth of the bacillus; he considers that such urines contain a factor of a nature like an opsonin, which tends to prevent their growth. It has been suggested by Box that threadworms in the rectum seem to predispose to a *coli* infection of the urine, and others have shown that colitis is frequently complicated by bacilluria; so the infection from the rectum is not quite such a simple matter as appears at first sight; other factors take part in the etiology.

The symptoms group themselves into three classes: (1) Those where symptoms are absent or slight. (2) Where general symptoms, such as fever, restlessness, anaemia, anorexia, are present, but there are no urinary symptoms, and it is only by careful systematic examination of the urine that these cases are recognized. (3) Where urinary symptoms are prominent, such as frequent and perhaps painful micturition, abdominal colic, bladder tenderness; these may be combined with fever, constipation, shivering attacks, perhaps rigors, vomiting, and such like.

The difference in symptoms depends upon the locality of the disease in the urinary tract, the most severe cases being those where the kidney itself is affected.

The difficulty of diagnosis is increased by the fact that pus may be absent from the urine at the commencement of the illness, and also at intervals in its course; so that repeated examinations of the urine may be necessary. The diagnosis may be a matter of extreme difficulty. In America some cases have been thought to be malaria; sometimes appendicitis is simulated. The following case shows this:

A girl, aged 10 years, was admitted under my care into the Queen's Hospital for Children with a history of constipation, abdominal pain, and loss of flesh of three months' duration. Three days before admission she had an attack of abdominal pain with vomiting. On admission she was collapsed, with a rapid and feeble pulse and pallid face. The abdomen was rigid, and there was pain and tenderness on the right side. Temperature 102.6° F. The urine was normal in appearance, and contained a trace of albumen. The lungs and heart were normal and no tumour could be felt in the abdomen or by rectal examination. The next day the abdomen was less rigid and an indefinite swelling was discovered in the region of the right kidney. The urine contained pus. This pus increased in amount till there was a deposit of 1½ in. in the urine glass and numerous *coli* bacilli were found in it. The abdominal pain continued and there were four to six stools daily, not unduly offensive. The temperature rose to 102° daily during the first fortnight, then was as a rule normal, with occasional rises to 100° F. The pus continued to be passed daily. Urotropin was given without effect, then 20 million *Bacillus coli communis* were injected beneath the skin of the abdomen, followed twelve days later by an injection of 30 million, and after another twelve days 40 million. The pus began to decline three days after the first injection, and the temperature, which had begun to rise again, fell to normal. The child went home a fortnight after the last injection, all the symptoms having disappeared for a fortnight previously. Three weeks later the child returned with more bacilluria and pyuria, and was treated with large doses of potassium citrate, under which the symptoms again disappeared. The child has been lost sight of for eighteen months, and is presumably well.

In this case appendicitis was considered at the first examination, as the symptoms seemed to be intestinal, but in a day or two the appearance of pyuria and the discovery of the organism made it clear that we had a case of infection of the genito-urinary tract, while the kidney enlargement and tenderness suggested that pyelitis and perhaps nephritis were also present.

The treatment in this and other cases I have had by the injection of the dead organism was disappointing, as although the pus often lessened a relapse was frequent. The use of large doses of potassium citrate was more efficacious, though it is difficult to say how this acts if it be true, as Sir A. E. Wright states, that the *Bacillus coli* grows best in alkaline media.

DISCUSSION.

Dr. E. Cautley (London) expressed himself as so closely in agreement with Dr. Box and Mr. Pardoe that he had little to contribute to the discussion. He regarded it as important to differentiate cases of bacilluria from those of secondary systemic infection. In his experience bacilluria was not very uncommon, whereas symptoms arising therefrom were comparatively rare. In other words, bacilluria occurred without giving rise to cystitis or secondary infection of the urinary tract. Most cases occurred in girl babies, rarely in males. In older girls the urinary infection was generally a cystitis, and associated with vulvitis or vulvo-vaginitis. Such patients got well rapidly, but were liable to relapses. In girl babies the affection was almost always a pyelonephritis. The symptoms were acute, and the temperature chart might be identical with that of typhoid fever, a differential diagnosis being

impossible without the assistance of a blood count and an examination of the urine. The prognosis of acute cases was good when they were treated by rest, milk diet, and alkalis. Urotropin and its allies were of little value, but the benzoates apparently did good. Secondary attacks in such babies were rare. This was noticeable in comparison with the frequency of the relapses in *coli*-cystitis. He emphasized the importance of not overlooking other diseases because bacilluria was present. In one such case the patient was found later to have diphtheria of the stomach.

Dr. J. Graham Forbes (London) said that the bacteriology of urinary infections in cases occurring at the Hospital for Sick Children showed a marked prevalence of the *Bacillus coli* group of organisms. Out of a total of 88 cases of urinary infection examined in the last six years, *B. coli communis* was found to be the only infecting organism in 56; in 10 others it was combined with staphylococcus or streptococcus. In 12 cases staphylococcus only was obtained: in 5 cases *B. proteus vulgaris*; in 3 cases streptococcus; and in 2 cases Gaertner's *B. enteritidis*.

In the present discussion he proposed to include with the infections due to *B. coli communis*, which form 75 per cent. of the total above mentioned, the 5 cases due to *B. proteus vulgaris*, and the two due to Gaertner infection. The pathological conditions which the *B. coli* gave rise to were in the majority of cases cystitis; in a smaller number, which ran a severe and fatal course, there was also infection of the ureter, pelvis of the kidney and the renal tissue itself; and in 2 cases there was evidence of a general septicaemia. Out of 7 cases which proved fatal and came to *post-mortem* examination, 2 were urinary infections by *B. coli* complicating general tuberculosis, one showing advanced lardaceous disease; in one, death was due to an intercurrent pneumococcal meningitis, and in the urinary tract the bladder alone showed chronic inflammatory change. In the 4 remaining cases the pathological conditions found did not present quite the same features, and might therefore be briefly detailed.

Case I.—Girl, aged 6. Urine during life contained much pus, and yielded typical *B. coli*. *Kidneys*: Both enlarged, right more than left; renal substance was pale and soft but showed no purulent foci. *Pelves* much dilated, and contained purulent fluid. Both ureters were equally dilated along their whole length, and measured ½ in. in diameter; each showed kinking in two places—(1) 2 in. from the renal end, and (2) just after passing over the brim of the pelvis. The openings of the ureters into the bladder were of normal size, and showed no evidence of obstruction. The bladder contained a small quantity of purulent urine, and its wall was much hypertrophied, the mucosa thickened and congested. *Liver* enlarged, pale, and fatty; other organs appeared normal.

Case II.—Boy, aged 5½ months. Four days previous to admission circumcision had been performed, apparently to relieve phimosis: died the day after admission; body emaciated. *Kidneys:* Both swollen and nodular, showing patchy pallor on the surface. *Ureters* much dilated, and taking a corkscrew course to the bladder; equally distended throughout their length. *Bladder* much hypertrophied. Urine taken from the bladder *post mortem* yielded a deposit of pus and typical *B. coli* in culture.

In the first case the condition was possibly due to obstructive malformation of the ureters and secondary infection of the urinary tract. In the second case the condition was possibly the result of phimosis.

Case III.—Boy, aged 4 months, died two days after admission, previously having suffered from diarrhoea and vomiting. *Kidneys:* Capsules stripped easily; a few pale circular areas seen on cortical surface. Pelves not dilated, but contained thick purulent fluid; the renal substance showed pale tracts running through it. *Ureters* not dilated, but both contained pus. *Bladder* not thickened, mucosa congested and swollen in upper part; orifices of ureters appeared normal. Stomach and intestines were normal. Cultures taken from the heart's blood, spleen, and pelvis of the kidney yielded a typical *B. coli*.

Case IV.—Girl, aged 7 months. During life there was vomiting and diarrhoea; the urine contained pus, and yielded a bacillus whose reactions were not typical of *B. coli*, but rather of Gaertner's *B. enteritidis* variety. *Brain* showed thrombosis of superior longitudinal sinus. *Lungs:* There was a small area of infarction in the left lower lobe. *Kidneys:* Left pelvis smaller than usual, ureter not dilated; renal substance contained a large purulent infarct and several smaller foci of pus. Right pelvis contained soft purulent fluid; there were numerous pale areas containing pus underlying the capsule. Right ureter larger than left, and congested. *Bladder* healthy. Cultures were taken from the heart's blood, and yielded a bacillus whose reactions resembled a variety of Gaertner's *B. enteritidis*.

The two cases just described were in all probability due primarily to a gastro-intestinal infection, with later general systemic infection including the kidneys, giving rise to pyelitis and descending infection of the urinary tract—in the one case due to *B. coli* and the other to *B. enteritidis*.

Two cases were submitted to operation, the urine having for some time contained pus, and an enlarged kidney having in each case been distinctly felt. In one, the organism present in the urine gave typical reactions of *B. coli*. Nephrectomy was performed. The excised kidney was much enlarged, and its substance studded with numerous large, firm collections of pus, which yielded *B. coli* on cultivation. The bacillary infection had caused pyelitis and multiple renal abscesses. In the other case, in addition to pyuria, a purulent vaginal discharge developed; the bacteriological examination of both the urine and vaginal pus yielded a bacillus giving the typical reactions of Gaertner's *B. enteritidis*. The kidney was later opened and drained, and the pus which was evacuated also yielded the same organism.

General Bacteriological Investigations.

In the great majority of cases the bacillus isolated yielded the typical reactions of *B. coli communis* as follows:

1. The formation of *indol* in broth culture—identified by the intense redness produced by addition of paradimethylamido-benzaldehyde (1 per cent. solution in absolute alcohol and hydrochloric acid) and saturated solution of potassium persulphate.
2. The coagulation and acidifying of litmus milk.
3. The acidifying of McConkey's fluid with gas formation.
4. The reduction of neutral red to yellow fluorescence.
5. The growth of red colonies on Conradi-Drigalski's neutral bile salt agar.
6. The formation of gas in glucose gelatine shake culture at 22° C. without liquefaction of the gelatine.

Variations of these typical reactions were occasionally found to occur.

Indol formation, the acid coagulation of litmus milk, the reduction of neutral red broth, were obtained in every case of *B. coli* so tested. But in 4 cases no gas formation occurred in glucose gelatine; in 3 cases inoculation of McConkey's fluid yielded no acid fermentation nor gas formation. In 2 of these no gas formation occurred in either McConkey's fluid or in glucose gelatine; in 2 there was no gas formation in glucose gelatine, and in 1 no gas formation occurred in McConkey's fluid. In all other respects the organisms giving these variations behaved as typical *B. coli communis*, and they are, therefore, justified in being included in the *coli* group. Repeated tests showed these variations to be constant.

The fermentation tests yielded acid with isodulcite, glucose, lactose, maltose, and mannite; acid or no change with cane sugar, raffinose, glycerine, and salicin. In 4 cases vaccines were prepared from the organisms isolated in each case, and yielded marked improvement in 3 cases. In the fourth case there was no apparent improvement, and subsequently a streptococcus was isolated in addition to *B. coli*, but the mixed vaccine produced little or no effect.

In one of two cases referred to above the organism was identified as belonging to the Gaertner or *B. enteritidis* group by means of the following reactions:

1. *Litmus Milk.*—Early production of acid with alkaline surface ring, later becoming strongly alkaline, and finally limpid without coagulation.
2. *Indol* formation.
3. Gas formation in glucose gelatine without liquefaction.
4. Acid and gas formation in McConkey's fluid.
5. Fluorescence with neutral red.

In the other case the organism obtained from the urine during life and the heart's blood *post mortem* gave the typical reaction with litmus milk, but failed to form indol, produced no gas in glucose, gelatine, or McConkey's fluid, and did not reduce neutral red.

It was possible, therefore, that this organism might have belonged to a variation of the *B. enteritidis*. The 5 cases placed in the *proteus* group were identified by the production of indol, the acid coagulation of milk, the reduction of neutral red, the formation of gas in glucose

gelatine, and the liquefaction of gelatine. In one case a vaccine was prepared from the organism isolated, and yielded very beneficial results.

In conclusion, the speaker said that the cases thus analysed showed that the *B. coli communis* was by far the commonest organism found in urinary infection, though variations in the strain isolated might occur, and mixed infection with *B. coli* and streptococcus and staphylococcus might exist. In rare cases *B. proteus vulgaris* or the *B. enteritidis* might be the infecting organism; though clinically the cases might at first appear the same, the further course was usually more severe than with *B. coli* infection. Treatment by means of vaccine prepared from stock vaccine might in some cases produce good results temporarily, but owing to the possibility of variation in the *coli* group a vaccine prepared from the patient's own organism was undoubtedly to be preferred.

Dr. W. M. JEFFREYS (London) said that he proposed to give an analysis of the cases collected from the Hospital for Sick Children, Great Ormond Street, with a few conclusions. He had collected 37 cases in which the organism had been identified, and full notes made. Four of these were due to the *Bacillus proteus* and the rest to members of the *Bacillus coli* group. He included the *proteus* cases because they so closely resembled the *coli* cases clinically. In the present series there was no special age incidence, nor was the disease more prevalent at one season of the year than another. The sex incidence in the series was similar to that reported by others; there were 31 females and only 6 males. The youngest was 4 months, the oldest 11 years. Twenty-two cases were associated with gastro-intestinal trouble, as evidenced by diarrhoea, vomiting, constipation, mucous colitis, or ulcers in the colon. One case occurred after an attack of appendicitis and recovered after removal of the appendix; 20 cases commenced with bladder symptoms, such as painful micturition, incontinence, or frequency; 7 commenced with symptoms of renal infection, and 10 with general symptoms not pointing to any system in particular. Of the 20 cases that commenced with bladder symptoms 7 later showed signs of pyelitis, and of the 7 that commenced with symptoms of pyelitis 3 later showed signs of cystitis. Of the pyelitis cases 11 began in or were confined to the right and 3 to the left kidney.

In 10 cases the disease ran a severe course, and of these 3 died of the disease. The rest ran a mild course—that is to say, the symptoms soon disappeared, and there was never any cause for apprehension. Of the 27 cases that ran a mild course only 8 had symptoms suggesting pyelitis; these symptoms were pain and slight tenderness in one or both loins of a temporary nature, the rest showed evidence of bladder affection only.

Of the whole series of 37 cases only 11 left the hospital cured—that is to say, without symptoms and with normal urine. Of the remaining 26, 20 left the hospital apparently in good health but with pus in the urine, and 6 died, 3 of the disease and 3 of some other illness of which the *coli* infection was a complication. In 3 cases the trouble dated from birth, and these 3 children were all over 4 years of age. Of the severe cases, No. 11 had nephrectomy performed and made a slow recovery, but the urine still contained pus on her discharge from the hospital. Case No. 19 had high fever with jaundice, which rapidly disappeared after an injection of vaccine. She later had a rigor with another rise of temperature; this was again overcome with an injection of vaccine, and she made rapid progress, but the urine still contained pus on her discharge from hospital. Case No. 27 became uraemic after a prolonged illness and died. There was double pyelitis, both ureters were dilated and tortuous and the bladder hypertrophied. Case No. 29 developed a pyonephrosis which was opened; she got well except for a fistula, and the urine still contains pus. Case No. 30 died the day after admission, and double pyelitis, distended ureters, and hypertrophied bladder were found *post mortem*. Case No. 31 began with abdominal pain on the right side, vomiting and jaundice, the urine was normal on admission, but a few days later there was albumen, and after that pus appeared, next she had frequency and incontinence of urine, and then pain in the other loin; she became uraemic, but made a good recovery under vaccine treatment. The urine still contained pus on her discharge from hospital, however. No. 34 had a nine days' history of diarrhoea and vomiting, and died two days later; at necropsy there was pus in the pelvis and ureters, but no dilatation or tortuosity. In this case there were inflamed patches in the colon at the hepatic and splenic flexures. Case No. 36 gave a history of vomiting for a week, the feet were swollen, there was a double murmur at the apex and great tenderness in both loins, both kidneys could be felt and the urine contained a considerable quantity of blood, the temperature was high, but fell gradually under vaccine treatment.

The earliest case occurred in 1902. There was only 1 that year; in 1904 there was 1; in 1906 there were 2; in 1907 there was 1; in 1908, 5; in 1909, 15; and there had been 10 this year. Hence the question arose, Was the disease becoming more common? or were the cases formerly overlooked? The speaker was inclined to think that they were mostly overlooked, for on examining the older case-books of the hospital he found a number of cases of a similar nature, in which very little attention to the urine was noted and no bacteriological examination made; there were also a number of *post-mortem* records, showing changes similar to those found in the fatal cases of the present series. It was especially likely to be overlooked in small babies, because the symptoms did not point to the urinary tract, and it was only by searching for pus in the urine that they might be discovered. On the other hand, there was evidence suggesting that the disease was becoming more severe. Of the 10 severe cases of the present series, only 1 occurred out of 12 cases up to the end of 1908; 2 occurred out of 15 cases in 1909; and there had been 7 out of 10 this year.

As to the path of infection, the evidence was in favour of an ascending infection in the majority of instances. First, the sexual incidence was in favour of this, the short female urethra favouring a cystitis more than the long male urethra; next, the fact that 20 commenced with bladder symptons, and only 7 with renal. Nevertheless, a certain number appeared to start with a pyelitis. No. 31 was a good instance. Here pain in one loin with jaundice was the first thing noticed, then pus appeared in the urine, then bladder symptoms appeared, and, lastly, pain in the other loin. This looked as if the right kidney had become first infected and that the infection spread down the ureter to the bladder and up the other ureter. The cases varied very much in intensity; 1 case cleared up spontaneously after a three weeks' history, and 1 died at the end of ten days. The majority recovered from the acute symptoms and appeared to get quite well, but it seemed almost impossible to get rid of the pus from the urine. As regards treatment, the severe cases responded best to a vaccine; the mild ones appeared to lose their symptoms on any form of treatment, but pus remained in the urine often for a long time, in spite of all attempts to get rid of it.

Dr. J. MCCAW (Belfast), speaking of the exhibition of alkalis to young children, said that he had given them with success per rectum where infants would not take or swallow drugs; by this method the drugs seemed to act as well as by the mouth. In *coli* infections a most important objective symptom, and generally an early one, was *a rigor with a high temperature*. The absence of urinary symptoms was significant in children. It was most frequently seen in females, and was generally an ascending infection. He had not had any satisfactory results from giving antiseptics, but he was satisfied that urotropine would clear and deodorize a cloudy and fetid urine.

Dr. J. STAVELEY DICK (Manchester) said that in his experience the theory of ascending infection would not satisfactorily account for all cases, and especially for cases of pulmonary infection with a bacilluria, but without bladder symptoms. His experience was that *coli* infections were much commoner in adults. He thought that an autogenous vaccine was of great value in acute cases where for some reason alkalis could not be taken. With regard to the reason why alkalis did good in these infections, he thought the true explanation was to be found in the direction recently indicated by Dr. Thomas Houston, who had shown that ingestion of *B. coli* by leucocytes was much more active in an alkaline than in an acid medium.

Dr. J. H. Thursfield (London) remarked that the chronic cases were not, in his experience, of such gloomy prognosis as had been thought by previous speakers. It might be that this was due to a difference of material, his own material being chiefly of the out-patient class, while that of other speakers was chiefly among in-patients, and of course the slighter cases of the disease, which formed by far the largest proportion, did not reach the wards. He suggested that in chronic cases following operation it was possible that adhesions between the intestines and bladder might afford an explanation of the chronicity. Lastly, though bacilluria was not necessarily, as Dr. Cautley had said, an infection of the urinary tract, yet bacilluria, in view of what they knew of the sudden recurrences of the infection, must be looked upon as a dangerous condition.

Dr. C. R. Box, in reply, said he did not think that the members of the Section took so gloomy a view of the treatment of *B. coli* infections as Dr. Thursfield's remarks implied. His own impression of the discussion was that the failures in treatment referred to the chronic cases only, and fortunately these were much less common than the acute ones in which treatment was successful. It was interesting to speculate why vaccines failed in the chronic cases. His impression was that it was owing to some failure in reaction on the part of the patient, the very presence of which reaction was the cause of the easy recovery of acute cases under simple treatment without vaccines. The hypothesis of ascending infection had been accepted by most of the speakers, but of course no one would be so rash as to assert that the infection was an ascending one in every case. The occurrence of colon bacilluria during the course of such infective conditions as diphtheria, measles, and scarlet fever had been referred to. It was well recognized by those who had to deal with fever hospitals, and it was important to recognize it as a cause of unexplained fever and incontinence in fever patients.

Mr. J. Pardoe, replying to the questions of various speakers, said that he was particularly struck by two points. The first was the extraordinary sex incidence in children, with its bearing upon the mode of infection. This was in striking contrast to his own experience of adults, where he saw many more males than females. In this connexion he might mention three cases where the disease began as an acute urethritis due to a mixed infection of *Bacillus coli* and staphylococcus, the rest of the genito-urinary tract being apparently uninfected. If the infection was commonly an ascending one, why, he asked, did they not get more cases commencing as a urethritis pure and simple? The second point was the apparent faith that some of the speakers felt in the use of vaccine in the acute cases. He would ask what evidence was there that the good results were due to the vaccine; for the whole course of this discussion had led him to conclude that the general experience showed a tendency to spontaneous cure in the acute cases.

A COMBINED QUININE AND HYDROPATHIC TREATMENT OF WHOOPING-COUGH.

By Theodore Zangger, M.D.,
Zürich.

The results of treatment in whooping-cough enjoy a good reputation neither among laymen nor in the medical world. We are fighting a disease the mortality of which, especially among infants under 1 year of age, is alarming.* In Vienna 25·3 per cent. succumbed during the years 1899 to 1901. Though the death-rate of all ages taken from 15,711 Viennese cases is but 6.6 per cent., yet this does not represent the real detriment caused to the children's health. A goodly number of deaths are secondary and therefore registered under the headings pneumonia and phthisis.

In a great number of patients a severe attack of whooping-cough definitely reduces the elasticity of the lung, weakens the heart and produces malnutrition of long standing.

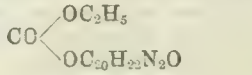
The number of remedies recommended against whooping-cough is appalling. Advertisement columns of medical journals tend to increase them quite apart from the puffs which chemical works send us, supported often by the slenderest of clinical proofs. The young practitioner is often in a very awkward position. The routine treatment recommended by his clinical teachers which gives him fairly good results, fails in severe cases. The frightened relatives and nurses urge him to a change of treatment, and he is liable to vary his remedies from week to week or even from day to day. Yet the way out of this difficulty seems to me to lie in the adage: *Non multa, sed multum!* I wish to make a plea for simplification in the treatment of whooping-cough, and lay before you a combined medicinal and hydropathic treatment which has given me satisfactory results in several hundred cases in my general practice. It is based on the pathology of the disease.

Whooping-cough is an infectious disease with an important neurotic element. The latter is so much in evidence that some observers have made vain attempts to shut their eyes to the infective factor. Such an opinion is neither acceptable from a pathological nor a therapeutic point of view. Moreover, the infective factor is no more in question since the discovery of an ovoid-shaped bacillus by Bordet and Gengou and the additional and corroborative evidence of Klimenko, Arnheim, and Fraenkel. The simplest explanation of the neurotic element evidenced by the convulsive attacks of cough seems to be the following: The toxins secreted by the whooping-cough bacilli act as irritants on the spinal cord, and the convulsive attacks are due to reflex action transmitted to the spinal cord and back through the vagus nerve to the lungs and the larynx. Further pathological investigation of the upper part of the spinal cord at the origin of the pneumogastric nerve seems desirable.

To combat the infective factor in whooping-cough I have, after a good many comparative experiments made as Physician to the Out-patient Department of the University Hospital in Zurich, returned to the old quinine treatment advocated by Professor Buiz in 1868 and recommended by several clinical textbooks. I use quinine in the form of a 1 to 2 per cent. solution of quinine hydrochlorate in doses of 2½ fluid drachms, administered at 8 a.m., 2 p.m., and 6 p.m., in severe cases also at 11 a.m.

The 1 per cent. solution can easily be administered diluted with milk or water to children under 1 year of age. For older cases I also prefer this preparation of quinine, but the objection of the patients and relatives to its bitter taste is great. I have therefore been glad to substitute a preparation called "enquinine," which can be administered in powders of 2 to 4 grains three or four times a day, according to the age of the child.

It was first recommended in 1896 by Professor von Noorden, then in Frankfort. It has a very complicated formula,



and is composed of almost tasteless crystals, and contains 82 per cent. of quinine. It has the advantage over the hydrochlorate of quinine in being almost non-irritative for the mucous membrane of the stomach, which is of great importance.

To influence the neurotic element of the disease, which is most distressing and wearisome in the convulsive stage, I have given up narcotics and bromides in favour of simple hydropathic "packs." They have a most sedative influence on the nervous system. Their application may be shortly described as follows: Spread a child's blanket crossways over a bed, lay on it a sheet, once doubled, and soaked in tepid water of 54 (or even 52) to 60° F.—13 (12) to 15° C.—and well wrung out. Lay the patient on this sheet and wrap him in it; the wet pack must reach from the armpits to the knees, and be well covered by the blanket. The latter is fastened with safety pins, but not so tightly that the patient cannot sit up when a convulsive attack comes on. These packs I have had applied at 6 p.m. or 7 p.m., and renewed at about 10 p.m. and left till the morning.

In cases where the cough is especially distressing, later on in the night I have them applied at 9 or 10 p.m., and removed two to three hours later, when the first convulsive whoops again supervene. The attendants are invariably most happy to make these applications, as they ensure

* During 1908 there were 9,851 deaths registered in England and Wales.

a better night, not only for the patients but also for themselves.

I will shortly summarize the results of this treatment after adding that both the quinine treatment and the hydropathic treatment separately give good results, but the combined treatment decidedly better results. I refer now only to the combined treatment.

The convulsive stage of whooping-cough is shortened to ten to twenty days in medium and severe cases. The number of attacks in twenty-four hours rarely exceeds 20, and is rapidly reduced to 16, 12, 10, 8, etc. The intensity of the separate attacks diminishes at the same time—also the disposition to vomit. Of complications, I have only bronchitis to mention, and this is generally due to variation of outdoor temperature, or exposure to dust, wind, or rain. I have not seen a single case of pneumonia. Half a dozen cases which came under my treatment with bronchopneumonia as a complication of a whooping-cough of long standing rapidly recovered. The "half bath" treatment which I described at length in the *Lancet* (June 28th, 1902) proved very efficacious in all these cases. The mortality of all the cases I have treated has so far been *nil*, which seems exceptional, as the cases range over quite a number of epidemics.

The number of deaths from whooping-cough in Switzerland has varied between 1901 and 1908 from 433 to 846.

I continue the quinine or euquinine treatment in half doses for several weeks after the cessation of the convulsive stages in order to avoid relapses and also as a general tonic. The patients were almost without exception then greatly improved in their general health. Of course, hygienic factors received all possible attention.

I have tried quinine as a preventive in some of those cases where we can make an early diagnosis, but have been disappointed. It is true I have only used medium doses. The attack was warded off for a week or two, but came on afterwards with apparently increased severity. It may be worth while to renew the experiment with euquinine in full doses as strongly recommended by Dr. Heckel, of Vienna, in 1903.

Let me conclude by expressing the hope that a persevering combined quinine and hydropathic treatment may benefit many little sufferers.

DISCUSSION.

Dr. ESSEX WYNTER, commenting on the results of treatment, suggested that the worst complications were seen in neglected cases of whooping-cough. Nevertheless Dr. Zangger was much to be congratulated on such an excellent result of his method of treatment. For his own part, after trying various remedies, he had found the most immediate benefit result from the employment of chloretone in 2½ grain doses, dissolved in petroleum or cod-liver oil emulsion, which banished the paroxysms in two or three days. Its combined anaesthetic, sedative, and antiseptic properties suggested its employment.

THE EARLY DIAGNOSIS OF TUBERCULOUS BRONCHIAL ADENOPATHY IN THE CHILD.

By Professor ADOLPHE D'ESPINE.
Geneva.

THE frequency of latent enlargement of bronchial glands of a tuberculous nature in the child is greatly in excess of the ratio founded on *post-mortem* statistics. Thanks to a method of examination that I have practised for more than twenty years, on the worth of which I propose to make a few remarks, I can state that I have often diagnosed the condition in children who apparently were in good health, and whose lungs were unaffected.

This bronchial enlargement is curable, though not so easily as tuberculous enlargement of the cervical glands. Clinically, from the point of view of prognosis, it may be considered a scrofulous affection, and influenced in the same way by sea air.

I published 119 cases of enlargement of the bronchial glands in a paper entitled "La cure marine de la scrofule à l'asile Dollfuss de Cannes," in *Arch. de méd. infantile*, December, 1904, the first of which dates from 1881. These cases have, I think, established the great frequency of the latent form without concomitant lung lesions and the beneficial influence of eight months of sea air. Of 119 cases, cure both local and general has occurred in 55 children—that is, 46 per cent.

In 54 children the physical signs of enlargement have remained, but the general health, often seriously impaired, has been re-established.

The main importance of early treatment in this condition lies in the frequency of the spread of tuberculosis to the meninges, bones, lungs, and pleura, and in the flood of bacilli poured out from the primary lesion latent in bronchial glands, which is favoured by measles or whooping-cough and in a more general way by any cause which diminishes the vitality and defensive mechanism of the body.

In the larger number of cases of surgical tuberculosis I have been able by my method of auscultation to discover the presence of enlargement of the bronchial glands, as also apparently primary in tuberculous meningitis.

Further, this latent glandular tuberculosis can recrudesce at puberty, and become the source of a pulmonary consumption in the adolescent or adult, as one of my cases of my paper proves.

I cannot sufficiently emphasize the practical importance of the method of examining the bronchial glands in the differential diagnosis in the child between simple anaemia and lymphatic anaemia of tuberculous origin, in order to select the cases for the seaside and mountain sanatoriums.

The special sign which permits us to diagnose the condition at an early period is based on the auscultation of the changes in the voice sounds at the level of the seventh cervical or first dorsal vertebrae. This posterior glandular region, so well described by Guéneau de Mussy[1] and his pupil Baréty[2] is that most often and earliest attacked by tuberculosis, corresponding to the first part of the trachea; the bifurcation of the trachea, where large caseous glands are often found, corresponds in horizontal section to the third dorsal vertebra. The sign is most obvious when one makes the child speak or count in a low voice. The voice is then accompanied by an added whispering sound localized to one or two vertebrae, or possibly extending to the fourth or fifth. A bronchial quality of the respiration at the same place has the same diagnostic value as the whispering sound. One must be content with this, if the child is too young to speak, but the bronchial breathing is a sign of enlargement already more considerable and more extensive. It is the same with vertebral percussion, which I have also described in my paper at the Academy, 1907. A definite dullness at this level coincides invariably with a loud bronchophony, and is pathognomonic of the presence of a large glandular mass, uniting the trachea with the vertebrae.

Dullness at the level of the manubrium has been long recognized as a sign of enlargement of the bronchial glands. It is, nevertheless, much less frequent than the vertebral dullness.

One of my pupils, Mlle. Oscherovitch,[3] has found it only 24 times in 86 children in whom the characteristic whispering sound in the posterior glandular region was present. Another sign of the condition, described already by Rilliet and Barthez and by Baréty, is the area of dilated veins, often marked, seen on the front of the thorax; its frequency has impressed me, nevertheless, that it is invariably associated with a bronchial enlargement I cannot admit.

As for Eustace Smith's sign—a venous hum beneath the clavicle when the head is thrown back—I have scarcely ever found it; without denying its existence, I will assert that it is not a usual sign of the condition.

The differential diagnosis of the tuberculous enlargement of the bronchial glands must be made on the one hand from simple enlargement, the symptoms of which I described in my note to the Academy of Medicine,[4] and, on the other hand, from tuberculous lesions of the apices of the lungs.

Simple enlargement, as seen following measles, whooping-cough, and influenza, gives physical signs less marked and more ephemeral than those of tuberculous enlargement. Von Pirquet's reaction, which I use daily, will settle the question if negative.

Tuberculous lesions of the apex may, in fact, be present in addition to enlargement of glands. But in many cases an uncomplicated glandular lesion may simulate disease of the apex. I have already insisted on this important point, and have shown that the glandular lesion often extends

to the right more than to the left, and may be so large as to give rise by pressure to a weakening of the vesicular murmur at the right apex, sometimes even to a loud bruit, which can be heard not only in the suprasternal fossa but also under the clavicle.

The absence of râles, the presence of the normal but weakened vesicular murmur, easily distinguished from the deep bruit, establishes the integrity of the lung.

Such is, briefly, the mode of diagnosis of tuberculous enlargement of the bronchial glands.

The truth of these observations has further often been demonstrated *post mortem*. I will give in conclusion one single instance—a case of a child who has just succumbed to tuberculous meningitis in my wards at Geneva:

A boy, aged 2½ years, the subject of scrofulous eczema, was sent to me on June 25th, 1910, from the skin department. He had had measles lately. His scrofulous appearance led me to examine carefully the bronchial glands. I found a dullness limited to the first and second dorsal vertebrae; at this point I heard clearly a localized bronchial breathing. Vesicular respiration was weak at the right apex in front and behind. I heard in addition to a normal vesicular murmur a deep bronchial breathing. The skin reaction was positive. The diagnosis of tuberculous enlargement was certain.

His weight diminished progressively, although he took food well. He weighed 28 lb. on May 5th, only 27 lb. on June 2nd, 26 lb. on July 3rd, and 23 lb. on July 12th.

On July 9th I made the diagnosis of tuberculous meningitis, basing it on the fixed gaze, the vomiting, and the infrequency and irregularity of the pulse.

The signs of posterior enlargement of the posterior bronchial are the same. Besides I find an absolute dullness over the manubrium; some râles in the lungs; no signs of infiltration at the apices.

The child died of tuberculous meningitis on July 13th.

I asked my colleague, Professor Askanazy, who performed the *post-mortem* examination on July 14th, to take away the vertebral column between the last cervical and sixth dorsal vertebrae. There was visible then, as we expected, a yellow caseous glandular mass, displacing the oesophagus to the right and folding the lung in between the heads of the first two ribs. In front the sternum was removed, and behind the manubrium was a mass of yellow caseous glands 3 cm. long and about 1 cm. thick. The lungs were not at all infiltrated; they were congested, and thickly sown with miliary tubercles. These were present also on the pleura and in nearly all the viscera, liver, spleen, kidney, thyroid, meninges, lining of the ventricles, etc. At the root of the lung there were large tuberculous glands and a very small focus of caseous pneumonia at the lower margin of the right lung. The two diagrams I pass round show the tuberculous glands *in situ*, just as was diagnosed in life.

REFERENCES.

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DISCUSSION.

Dr. C. R. Box remarked that in his experience little value could be attached to the presence or absence of Eustace Smith's sign in a child.

ACETONAEMIA: AN ACCOUNT OF AN ACUTE ATTACK IN A YOUNG CHILD.

By JOHN MCCAW, M.D., L.R.C.P.

Senior Physician, Belfast Hospital for Sick Children; Clinical Teacher of Diseases of Children, Queen's University, Belfast; Ex-President, Ulster Medical Society, etc.

ATTACKS of sickness and vomiting in young children are, perhaps, amongst the commonest complaints met with at this period of life. Generally speaking, they are the outcome of errors in diet, and yield to correction of these errors by the substitution of more rational methods. That a considerable number, however, of such attacks cannot be so simply accounted for seems certain. The presence of acetone and diacetic acid in the vomit and urine and their detection in the breath of those affected have lent much interest to and thrown considerable light upon the etiology of such seizures. Acetonaemia, acetonuria, acidosis, and cyclic vomiting are names which have been proposed, each and all descriptive of various symptoms found in these cases. As the history of the following case serves very well to illustrate the most important features of the malady, I will give it in some detail.

Betty W., aged 3 years and 8 months, is a first child of healthy parents. She was born at full term and normal in all respects. She was breast-fed entirely for nine months, and thereafter oat-flour and milk, alternating with Neave's food and milk, were substituted. When a year old a little mashed potato with butter was allowed, and she had oatmeal porridge and milk every day. Afterwards ordinary diet, consisting of egg, a little meat, some fish and soups, was gradually reached, and the child made satisfactory progress in all respects.

1. On May 31st, 1909, when 2 years and 9 months old, she was at the seaside with her parents. Without any known cause, the child was seized with sickness and vomiting. The breathing was much affected, and the medical man in attendance said she was suffering from acute bronchitis. The symptoms lasted two days, when the attack came to an end abruptly, and the child almost at once seemed quite well. Sickness and vomiting were not severe.

2. The following November a similar attack occurred, for which no cause could be assigned. On this occasion vomiting and sickness were very severe, and the seizure lasted three days. As before all the symptoms passed off quite suddenly and left the child apparently little the worse. During this attack the breathing was little, if at all, affected.

3. The next month, on December 10th, a third attack was experienced. It was mild as regards the urgency of the sickness and vomiting, but the breathing was much embarrassed and very hurried, and the child was considered by the medical man to be suffering from pneumonia.

4. On March 10th of the present year a fourth attack occurred. Vomiting and sickness were very severe and continuous for thirty-six hours. Breathlessness or bronchial symptoms were not observed. The attack passed off quickly. A fortnight afterwards, on March 24th, the child was brought to me for advice on account of these recurring attacks of sickness and vomiting, which, in an otherwise healthy and strong child, were most perplexing to the parents. I found her to be a well-nourished, bright, intelligent youngster, with an excitable temperament, and the mother admitted that she herself was inclined to be nervous. Examination of the chest and abdomen revealed nothing abnormal. Inquiry regarding the diet showed that the child was being fed largely upon farinaceous foods in accordance with medical advice and having regard to the gastric attacks to which she had been subject. I felt little doubt but that she was suffering from carbohydrate indigestion and that the attacks described were of the nature of cyclic vomiting. The diet was changed accordingly in the direction of cutting down the carbohydrate and substituting more proteid and fatty elements. For drugs I gave her 1 grain of calomel at bedtime on alternate nights and a rhubarb and soda mixture during the day. She improved very much on this line of treatment, and when she was brought to me again at the end of a month she looked the picture of health, and had remained quite free from any return of sickness and vomiting. In the meantime the family had removed from the country to live in Belfast, and this brings me to the fifth and most severe attack, and the only one in which I had an opportunity of seeing the symptoms and attending the illness.

5. On the morning of Monday, May 2nd, I was telephoned for, and on reaching the house obtained the following history: The child had been quite well in every respect, lively and running about, until the previous Saturday night, when she showed some symptoms of an ordinary cold. Nothing was thought of this, as the day had been a very cold one, and she had been out more than usual with an aunt who was visiting in the house. She was, therefore, kept indoors on Sunday, and all went well until Monday morning, when she vomited once or twice, and already it was observed that the breathing was much hurried. I found the child in bed and breathing rapidly, the respirations being 45 per minute; the temperature in the axilla was 100° F., and the pulse 130. The face was greatly flushed, and of a bright red colour; the breath smelt strongly of acetone, and so also did the basin that had caught the vomit. The breathing was much embarrassed, and accompanied by loud tracheo-bronchial stridor—so much so that the respirations were easily heard outside the room, and recalled very vividly the breathing of one suffering from an acute asthmatic seizure. Already the homely mustard and linseed poultice had been applied both back and front, and this, together with efforts of the child to obtain breath, had produced free perspiration. A thorough examination satisfied me that it was not a chest complaint I had to deal with, and looking at the symptoms all round and remembering the suspicion I had when I first saw her, I diagnosed "acetonaemia." A mixture containing 10 grains of sodium bicarbonate to the dose was ordered every hour until I saw her again. The poultices were dispensed with as adding to the difficulty of breathing, and cotton-wool substituted. The bowels had been freely purged with castor oil given the previous night. Nourishment was to consist of hot milk and soda water, and nothing else. The urine and anything vomited was to be retained for me. An urgent message was received at 6.30 p.m. to come at once. On arrival, I found the child in a much more serious condition than in the forenoon, and a fatal issue seemed imminent. She was breathing with the utmost difficulty, and had now become deeply cyanosed, her face, hands, and lips being a deep purple colour, which naturally caused the parents and friends the greatest concern. The respirations were very hurried and had become quite shallow; the pulse was 180 and feeble; the temperature in the rectum was 98° F. The extremities were cold and clammy, and the child was semi-comatose. The condition was now desperate, and stimulation

seemed the most urgent need in view of the evident involvement of the respiratory and cardiac centres. This was fulfilled by giving whisky and water, which she took readily and retained, as well as by applying warmth to the extremities by means of hot flannels. I had brought with me a syringe, a long tube, and a supply of sodium bicarbonate, and 2 drachms of the salt dissolved in 4 oz. of warm water were injected high up into the bowel at once. No difficulty was experienced in doing this owing to the semi-comatose condition, and happily it was all retained. In the meantime, I had sent for a mixture containing digitalis and ammonia, and this was begun and given every hour for three doses. The quantity of urine passed since morning measured only 2 oz.; it was muddy-looking and smelt strongly of acetone. The child had not been sick, and had not vomited anything since the onset of the illness in the morning. I returned to the case at 9.30 p.m., and was gratified to find some improvement in all the symptoms. The purplish colour of the face and extremities was not so deep, the respirations were less hurried, the pulse was 160, and the temperature in the rectum had risen to 99.6° F. She was decidedly more conscious now, and answered promptly when spoken to. The breathing was still much embarrassed and very noisy, but the respirations were deeper and more effectual. Three ounces of muddy-looking urine were passed in the last two hours and brought away for examination. I repeated the rectal injection of sodium bicarbonate exactly as before and left for the night.

I visited the child at 10 o'clock the following morning. The night had been got through fairly well, and while the condition was still bad enough it was evident that a considerable change for the better had set in. I need not describe the symptoms in detail; suffice it to say that they were not nearly so urgent, the difficulty of breathing and the loud rhonchus being the most obtrusive. The child was now very thirsty and calling out frequently for drinks: she was given milk and soda water and allowed cold water freely. The mixture of sod. bicarb. gr. x to dose was now resumed and given every two hours. The day passed without any return of urgent symptoms, and when I saw her at 10 p.m. an all-round improvement was apparent. The face was greatly flushed and of a vivid red colour, and with rapid breathing was suggestive of a high temperature, but this was found to be exactly 100° F. in the rectum. At 10 o'clock the following morning when I called to see her a veritable transformation scene was presented. She was actually sitting up in bed playing with a miniature tea-set. I was informed that the child had slept soundly the greater part of the night and that the difficulty of breathing had steadily diminished. The secretion of urine was now much freer; it still smelt of acetone and had become clear and light in colour. The temperature was normal, the pulse quick at 100, and the face was flushed. The respirations were almost normal, the rhonchus had disappeared, and no difficulty in obtaining breath was now apparent. From this time forward all the symptoms rapidly subsided and convalescence became quickly established.

The Urine.

I am indebted to Mr. J. Harold Totten, B.A., B.Sc., analyst to the city of Belfast, who kindly examined a specimen of the urine which I obtained each day. The first specimen was passed on the first day I saw the case. It was very cloudy, smelt strongly of acetone, and was loaded with phosphates. The quantity passed measured only 5 oz. in twelve hours.

Lieben's test for acetone gave a copious precipitate of iodoform, when a watery solution of iodine with potassium iodide was added to the urine previously made alkaline with a few drops of liquor potassae.

Legal's test, which gives a ruby-red colour with a freshly prepared solution of nitro-prusside of sodium in the presence of sodium hydroxide, was also easily obtained.

The presence of aceto-acetic acid was also determined by the ferric chloride test, which turns the urine a deep red-brown or claret colour. Owing to the phosphates present, it was necessary to filter the urine after adding the ferric chloride solution.

These tests were applied each day, when it was found that the acetone was becoming gradually less for the first three days, and had entirely disappeared at the sixth day. The quantity of urine passed steadily increased after the second day, and became quite free on the fourth day.

REMARKS.

On comparing the symptoms in the five attacks related the following points seem worthy of notice. In attacks 1, 3, and 5 sickness and vomiting were not marked. On the other hand, the respiratory apparatus was much involved. In 1 the attack was said to be acute bronchitis, in 3 pneumonia, and in 5 the condition was indistinguishable from the breathing seen and heard in an acute asthmatic seizure. In attacks 2 and 4 vomiting and sickness were very severe, and lasted until the child was exhausted. It is noteworthy that in these seizures the respiratory apparatus was very little, if at all, affected. From this it would seem that in those attacks in which the breathing is much affected vomiting and sickness are slight, and that when vomiting and sickness are severe the breathing is little interfered with. On the basis of these facts have we two different types of this rather obscure affection—the one, in which the respiratory and cardiac centres are chiefly involved, or the *cerebral type;* the other, in which the stomach suffers most, or the *gastric type?*

Again, in attack No. 5, the secretion of urine was very much diminished, a circumstance which the mother had noticed, as she told me the child was making little or no water. It responded at once to the tests for acetone and aceto-acetic acid. The quantity of acetone was not estimated, but presumably it was considerable. The parents cannot now remember if the urine was scanty or otherwise in the other attacks. I suggest that in those attacks in which the urine is scanty the acetone is absorbed into the blood, that it acts upon the respiratory and cardiac centres, and is the cause of the pulmonary and cardiac symptoms described. It is for these reasons that I have chosen the name "acetonaemia" as indicating the presence of acetone in the blood. I should like to direct particular attention to the breathing in attack No. 5, as I am not aware that the symptom has been described before. I know that breathlessness or air-hunger has been noted, but this would not at all give any adequate idea of the difficulty of obtaining breath, and the loudness of the stridor, which were very marked symptoms in this attack. As I have said, the breathing recalled that associated with an acute asthmatic seizure, and this simile, I think, best describes it.

Another point worthy of mention is the prompt and beneficial effect of the injection of sodium bicarbonate into the bowel. In this attack, at a time when a fatal issue seemed imminent, the effect was as speedy as it was gratifying, and in future I would certainly adopt this method of treatment in the first instance rather than rely upon giving the drug by the mouth, at least until the attack was under control, and acute symptoms had subsided; then it might be given in 10-grain doses to keep up the effect.

DISCUSSION.

Dr. R. HUTCHISON (London) said that the case described by Dr. McCaw was certainly an unusual one. He had not himself ever seen such marked respiratory phenomena as were present in Dr. McCaw's case; nor did he even think that air-hunger was at all frequently seen in cases of ordinary cyclical vomiting. The other point of interest raised by the case was the relation of acidosis to cyclical vomiting. In the present case it seemed evident that the acidosis preceded the vomiting, and was really the primary cause of the symptoms. This, however, was certainly not true of all cases of cyclical vomiting, for in many either no acidosis occurred at all, or it only supervened as a late and secondary phenomenon. He (Dr. Hutchison) was of opinion that under the title "cyclical vomiting" several different conditions were lumped together, and Dr. McCaw's case represented an extreme example of one type of these.

Dr. F. W. LANGMEAD (London) said he had been in the habit of dividing the cases in which the acetone cases were present in the urine into three groups. Group 1, Cases in which, although abundant acetone and diacetic acid were present in the urine, yet no symptoms whatever of acid intoxication were present. Group 2, Cases in which these bodies were present as symptoms of a definite and well-known condition, such as pneumonia and epidemic diarrhoea, septic tonsillitis, and more especially diabetes. Group 3, Cases of so-called cryptogenetic acid intoxication—that is, general vomiting and delayed anaesthetic poisoning. He thought that most of the causes which had been suggested to explain cases of so-called cryptogenetic acid intoxication were insufficient. To explain delayed chloroform poisoning it had been suggested that it was merely produced by the poisoning effect of the drug. But similar symptoms had been noted after administration of ether, ethyl chloride, and even of nitrous oxide gas. Moreover, only very little anaesthetic had been given in fatal cases. Idiosyncrasy to chloroform was an inadequate explanation, since in some instances this anaesthetic had been given to the same patient without untoward effect on a previous occasion. Starvation was not usually a precursor; nor was there, as a rule, carbohydrate deprivation; vomiting did not always precede, but occasionally followed, the appearance of acetone bodies in the urine.

Cyclical vomiting he regarded as potential delayed anaesthetic poisoning, and a patient who had been subject to repeated attacks of so called "bilious vomiting" was very likely to develop severe acid intoxication if an anaesthetic was administered. The most fatal cases occurred in very well-nourished children. He had often been disappointed by the effect of administration of alkalis, as frequently no good effect followed. Probably the symptoms of acid intoxication were only an outward and visible sign of a more profound alteration of metabolism, possibly the result of an obscure intoxication. The chief lesion common to both delayed anaesthetic poisoning and cyclical vomiting was an intense and striking fatty degeneration of the liver. Possibly the liver was unduly vulnerable. The condition of so-called cryptogenetic acidosis was probably not a simple acid intoxication, but a complex condition, partly at least explained by the putting of the liver *hors de combat*.

Dr. W. Essex Wynter (London), referring to delayed chloroform poisoning, said he thought it had been accepted that the direct effect of the anaesthetic was not responsible, but rather the accompanying cyanosis, which intensified a condition of suboxidation and which was common to all general anaesthetics. He referred to a case in a young woman admitted comatose and presenting acetonuria who recovered on thyroid extract. She was readmitted in delirium four months later, and again recovered on thyroid, and had remained well for three years while taking it regularly. The thyroid gland was deficient, there was a deep voice and some solid thickening of the skin of the face, but the general aspect scarcely suggested myxoedema.

The President (Dr. Garrod) expressed the opinion that the acetonaemia of children could not be attributed to carbohydrate starvation alone, and that the vomiting which so often accompanied the condition could not be regarded as an adequate cause, acting indirectly through carbohydrate starvation. In some cases children who suffered from frequent vomiting for days together acetonaemia was absent; in not a few cases with severe acetonaemia vomiting was insignificant, or even absent. He agreed with Dr. R. Hutchison in thinking that the cases described under the name of cyclical vomiting were not examples of a single morbid condition. The respiratory trouble in Dr. McCaw's case suggested uraemic asthma, rather than any symptom commonly seen in cases of cyclic vomiting. Even the generally-held theory of acidosis might require revision as time went on, and might prove to be inadequate. He referred to the fatty changes found in the liver in fatal cases of acetonaemia, whether due to delayed chloroform poisoning or other causes.

Dr. Eric Pritchard (London) thought that the respiratory symptoms described in Dr. McCaw's case bore a distinct analogy to those observed by Professor Finkelstein in infants fed with an excess of fat.

HUMAN MILK AND BREAST FEEDING.

By Dr. Olive M. Elgood, M.S.Lond.,
Birmingham.

The work, certain results of which I propose to figure before you on the lantern, was commenced with a view of making periodic examinations of as large as possible a number of samples of *human breast milk* with regard to their content in (1) fat, (2) solids not fat, including protein, carbohydrate, salts taken collectively; and, further, if possible, to watch coincident conditions of the infant and mother relative to the variations found in the milk.

The work was started at the request of Dr. Robertson, Medical Officer of Health for Birmingham, who has taken such an eminent part in the recent combative study of infant mortality; and the facilities for working in the laboratories of the Birmingham University, the services of one of his health visitors, and the necessary apparatus for the carrying out of the work were all supplied by him. The actual procedure and technique of the work have been as follows:

Mothers registered as recently confined were visited about fourteen days after confinement, and the time taken in each case by the infant to empty the breast was noted.

At subsequent appointed times the mothers were directed to leave one breast untouched for four hours before the time appointed for the health visitor's visit. She then had the baby put to the breast for half the time already noted, and then drew 10 c.cm. by digital expression. Thus this sample was supposed to represent the middle milk of the total breast content, and should, consequently, present an average composition for the whole.

In later cases this procedure was slightly altered, in that the whole breast was emptied by an exhauster, thoroughly shaken up, measured, and a sample taken.

The technique of examining each sample was as follows:

For Fat.

Ten c.cm. of sulphuric acid of specific gravity 1080 are put into an acido-butyrometer, such as the one before you (specimen shown). Five c.cm. of the sample of milk under examination are then drawn into a pipette and made up to 11 c.cm. with distilled water and this added to the acid; and, lastly, 1 c.cm. of amyl alcohol. The whole is then thoroughly shaken till all trace of casein deposit has vanished, and placed in the compartment of a Gaertner and Hugershoff's milk tester, two or four tubes being necessary to keep the balance. This apparatus is a powerful centrifuge worked by means of a catgut. Three revolutions are performed as a routine practice, and the tubes are then removed to a hot-water bath, and the layer of fat that has risen to the surface is read off by the graduations on the neck. A spirit lamp may be kept under the centrifuge to keep up the heat already generated by the action of the acid in the tubes.

For the Solids not Fat.

The rest of the sample may be poured into a small polished metal dish of known weight and weighed. The dishes containing weighed quantities of milk are then placed in a hot-water oven. After about ten hours the dishes are weighed again from time to time, and when successive weighings show no further decrease, this weight indicates that drying is complete. From the total weight of dry solids the percentage is obtained, and by deducting the already determined fat percentage that of the solids not fat is obtained.

The first series figures the results of the periodic examinations of the maternal milk in four cases. These four cases were chosen at random, and neither mother nor infant was specially healthy nor otherwise—just the usual kind seen in the city slums.

SERIES I.

Case A (*Fifth Child in Family*).

Period of Lactation:	2nd Month.		3rd Month.		4th Month.
Percentage of fat	1.9	3.1	4.6	4.0	5.9
Percentage of solids not fat	8.0	3.5	8.5	8.7	9.0

Average: Fat, 3.1 per cent.; solids not fat, 8.54 per cent.
The infant was weaned at the fifth month.

Case B (*First Child in Family*).

Period of Lactation:	2nd Month		3rd Month.		4th Month.	5th Month.	7th Month.	8th Month.
Percentage of fat ...	3.5	5.6	4.0	2.4	2.9	4.7	7.0	3.5
Percentage of solids not fat	8.5	8.7	8.0	10.0 (?)	8.5	8.3	9.4	

Average: Fat, 4.2 per cent.; solids not fat, 8.7 per cent.

Case C (*Fifth Child in Family*).

Period of Lactation:	1st Month.		2nd Month.	3rd Month.	Average.
Percentage of fat	4.7	6.6	5.9	6.3	5.7
Percentage of solids not fat ...	9.1	9.3	9.0	10.0	9.35

Mother went out to work after the third month.

Case D (*Seventh Child in Family*).

Period of Lactation:	1st Month.		2nd Month.	3rd Month.		4th Month.	7th Month.	8th Month.
Percentage of fat ...	5.8	3.2	3.9	3.2	5.1	5.5	6.8	3.5
Percentage of solids not fat	8.5	8.4	—	8.3	8.7	8.5	—	8.4

Average: Fat, 4.6 per cent.; solids not fat, 3.45 per cent.

Average on the four cases: Fat, 4.4 per cent; solids not fat, 8.75 per cent.

On examination of these figures I venture to deduce three points:

1. Very considerable variations in percentage of fat exist in the same and in different cases at the same period of lactation. Therefore, the average fat composition quoted in nearly all textbooks has probably very slight value.

2. On the other hand, a marked constancy in the solids not fat exists in the same case, and, though variable in different cases, not to nearly the same extent as the variation of fat.

3. The variations of fat do not depend upon the period of lactation—that is, the fat does not increase in quantity necessarily as lactation proceeds; neither do the solids not fat. Therefore, the old method of gradually increasing the strength of cow's milk in hand-fed infants is subject to criticism.

The second set of observations which I offer in this paper arises from the four following charts, Series II of my cases.

The charts shown in this series all indicate respectively:

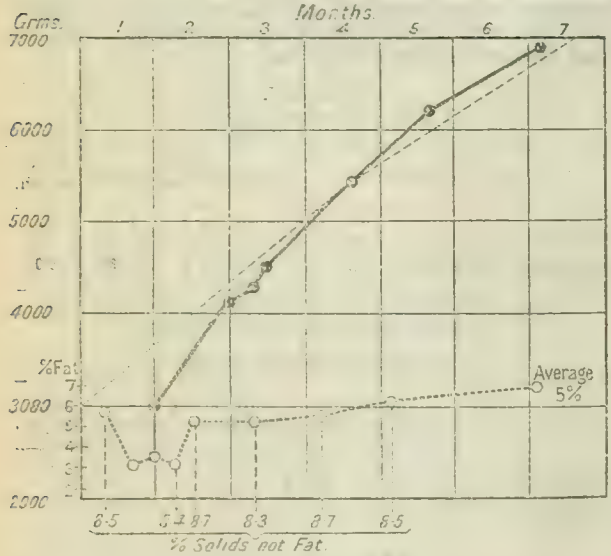
1. The weight curve in grams of different infants, compared in each case with the normal standard curve as estimated by Budin during the lactation months.

2. The percentages of fat and of solids not fat in samples of the natural milk, on which the infant was nourished, collected periodically.

The *fat* is shown in dotted curves corresponding to percentage figures on the left-hand side of the chart; the *solids not fat* shown in percentage figures along the bottom of the chart, corresponding to the dotted ordinates.

Each black upright line represents one month of lactation; therefore the periods at which the examinations have been made are clear in each case.

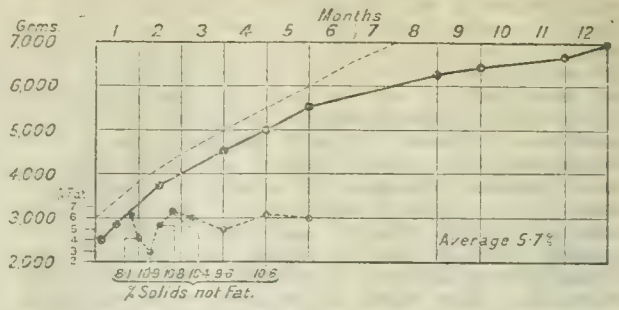
Series II, Chart I.



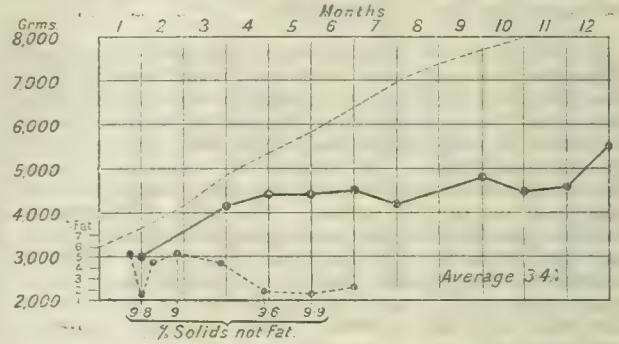
Series II, Chart II.



Series II, Chart III



Series II, Chart IV.



Note in Charts I and II how slight are the variations in the milk while the weight of the infant is normal. In the latter part of Chart II and in the following two charts, III and IV, while the rate of increase of weight is below the normal healthy rate, the content of fat and solids not fat both show greater fluctuations.

Of these, the most obvious facts patent in Chart I are the constancy of fat composition of the milk and the high level of the infant weight curve; and one may suggest the deduction that the healthy rate of infant growth is dependent to some extent on the constancy of fat composition of the breast milk.

This is again borne out in the first half of the second chart (Series II, Chart II); but note that at the end of the fifth month, poverty overcame the family, the mother went out to work and some of the breast-feeding was discontinued. The fat percentage now falls to a lower level, *becomes subject to fluctuation*, and the rate of infant growth coincidentally falls.

The last of this series (Charts III and IV, Series II) show this again, that is, that variable fat composition determines a low level of infant growth.

With regard to the importance of the solids not fat, these may be seen to fluctuate in Chart III, but in all the other three cases they are very constant, irrespective of the rate of infant growth.

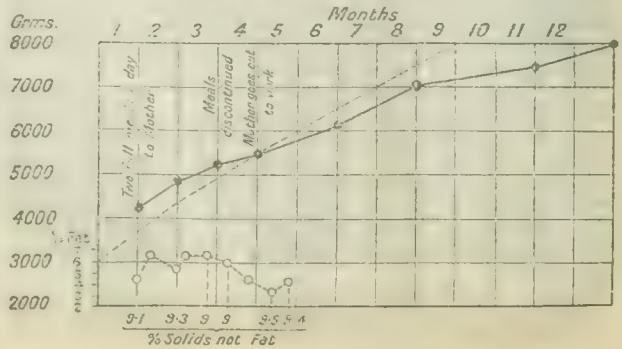
It is not, therefore, possible to generalize on the importance of the solids not fat thus far.

In the third series I put before you three successive charts, each representing infant weight and milk compositions in the same way, but in each the mother was given for a

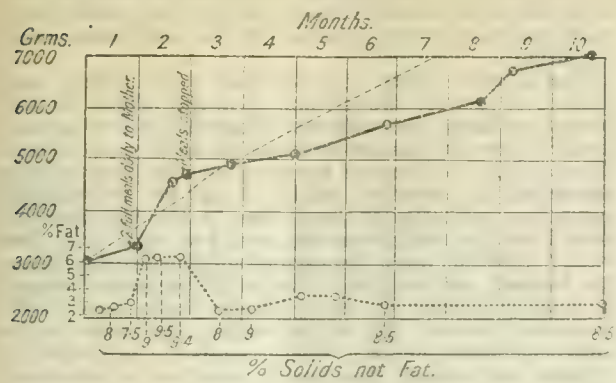
SERIES III.

To show the Good Effect of giving Regular Meals to a Nursing Mother: (a) On the Quality of the Milk; (b) on the Curve of the Weight of the Infant.

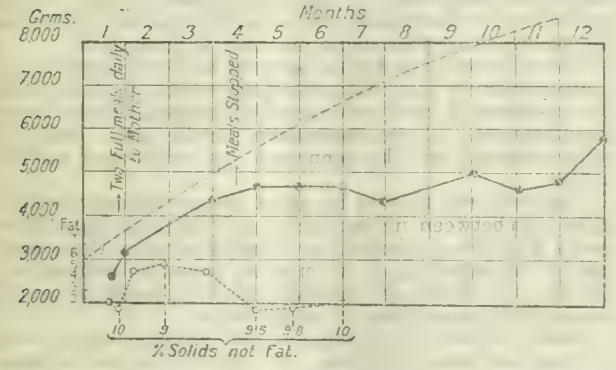
Series III, Chart I.



Series III, Chart II.



Series III, Chart III.



stated period two full meals a day. In each case the effect is seen on: (*a*) The weight curve of the infant; (*b*) the quality of the breast milk with regard to the fat percentage.

It is very interesting to notice that the solids not fat are not quantitatively affected by giving the mother regular meals, this suggesting that the fat is the more important constituent for the infant's welfare.

The last series shows some figures illustrating the ratio of fat content to total quantity of milk at any time in the breast, and is also interesting as showing how much a breast contains at different periods of lactation.

Engel, who seems to have done the most complete work on human breast milk that I can find recorded, states that the percentage of fat is entirely dependent on the total

SERIES IV.

Tables showing Time of Day when Breast Emptied and Specimen of Milk was taken.

Case I.

	1st Month.		2nd Month	3rd Month	6th Month.	
	12.15 p.m.	11.30 a.m.	11 a.m.	11.30 a.m.	11.45 a.m.	
Total quantity in c.cm. expressed	86	43	57	57	43	50
Percentage of fat content	1.8	3.8	3.0	4.7	6.2	4.6

Case II.

	1st Month	2nd Month.	3rd Month	6th Month	7th Month.
	12.30 p.m.	11.30 a.m.	11.15 a.m.	11.30 a.m.	11.30 a.m.
Total quantity in c.cm. expressed	86	114	43	72	43
Percentage of fat content ...	4.6	3.8	5.0	2.9	6.4

Case III.

	1st Month.		2nd Month.		
	11.30 a.m.	2.30 p.m.	12.15 p.m.	11.45 a.m.	11.45 a.m.
Total quantity in c.cm. expressed	140	114	114	86	140
Percentage of fat content ...	2.0	3.5	2.5	3.0	2.0

Case IV.

	1st Month.		2nd Month.	
	12.30 p.m.	2 p.m.	12.30 p.m.	12.30 p.m.
Total quantity in c.cm. expressed	43	43	57	43
Percentage of fat content ...	3.0	2.0	2.3	2.8

Note also, from above, that the time of day does not necessarily affect the quantity of milk in the breast; for example, Case III, at the same time, under the same conditions, on days both included in the same month of lactation, 86 c.cm. are drawn in one day, 140 c.cm. on another.

quantity, that is, a high average percentage means a concentrated milk, a low average percentage means a dilute milk, and that the ratio is mathematically exact. My figures do not agree with this. That there is a certain inverse relation is apparent; thus in Case I, Series IV, with 86 c.cm. drawn off, there is 1.8 per cent. fat, with 43 c.cm. 3.8 per cent., but again with 57 c.cm. 3 per cent.; but that it is a definite secretion determined in quantity by variations in tissue metabolism, and is not a mere concentration in the fluid milk is, I think, clear. With regard to quantity obtained, this apparently varies very largely, the variation being not dependent on either (1) *time of day* (this being given in each case) or (2) *period of lactation*.

I found on inquiry that it did depend largely on the feeding, and especially the amount of milk the mother had. To see, if possible, whether the amount removed by the exhauster represented actually the amount removed by the infant suckling, I obtained some figures from the Birmingham Maternity Hospital, where, up till the twelfth day, when the mother and infant are discharged, it is the routine practice to weigh each baby before and after every meal, so as to get the exact amount of milk obtained by the infant.

This I found increased progressively from the first to the fifth day from 2 to 10 grams on the first, to from 50 to 70 on the fifth, and then remained about the same till the tenth or twelfth day. These figures may all be slightly reduced for speaking in c.cm., so that we may say from 45 to 70 c.cm. is an average quantity for an infant to obtain during the first fortnight.

None of my own observations were taken until after the first fortnight, but in each case one observation was taken within the second fortnight, and since in three of them the figures are well above 70 c.cm. it is probable that the breast exhaustor can actually extract as much as the infant is able to withdraw by suckling.

To sum up briefly, it may be said that the chief points elucidated by these practical examinations are the following:

1. The constituent of human milk most important to the healthy growth of the child is the fat.

2. To maintain the healthy growth the percentage of fat content in the milk must be kept at a constant level and not be allowed to fluctuate. Therefore in treating any given case the examinations must be made frequently to ensure that this constancy is present.

3. To maintain both the necessary constancy of fat percentage, and a good quantity of milk in the breast, the nursing mother must be fed with regular meals.

4. Lastly—a point of physiological interest—that the variations of fat are not dependent upon increasing concentrations of the milk as lactation proceeds, but are actual variations in the secretion dependent upon some accidental and temporary variation in the physical condition of the mother.

LESIONS OF THE ISOLATED APPENDIX VERMIFORMIS IN THE HERNIAL SAC.

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INQUIRY into this subject was prompted by an unusual, and in many ways interesting, case which, by the kindness of Mr. Corner, came into my hands at Great Ormond Street about two years ago.

On the morning of August 25th, 1908, the mother, whilst bathing a male infant of 8 weeks, noticed that the right side of the scrotum was swollen; the child, however, was lively and well up to the 27th, and the swelling did not appear tender. On the 27th, the medical man, in attendance for vaccination, noticed the swelling and sent the child to hospital. The bowels acted on the 26th, and, beyond a little regurgitation of food, there was no vomiting. No hernia had been noticed previously.

On Admission.—On the right side was present a large inguino-scrotal mass, tense, hard, and tender; the skin over it was red and the percussion note was dull.

There was no impulse. The temperature was 97° F. and the child did not appear ill.

Operation revealed brawny, oedematous and friable tissues which could not be easily identified, and, on opening what subsequently proved to be the sac of a right inguinal hernia, nothing but a solid mass resembling bacon fat was encountered. Imbedded in this plastic exudate lay rather more than the distal half of the otherwise free appendix vermiformis. It was acutely inflamed, kinked, and perforated all but the peritoneal coat at its distal extremity. The appendix and caecum were drawn out of the wound, appendicectomy performed in the usual manner, the sac ablated, and the wound completely closed. Recovery was uninterrupted save for the occurrence of a stitch abscess which rapidly healed.

There was no evidence of strangulation of the appendix, and the previous attempts at reduction by taxis, which fortunately failed, impressed me with the danger of practising such manipulations unless a definite opinion as to the exact nature of the lesion can be arrived at; for death has been known to follow manœuvres which, as in the present instance, were unsuccessful.[1]

An examination of the literature was undertaken to ascertain the relative frequency of appendicitis to strangulation (a point on which great difference of opinion is expressed), and, further, to estimate the possibility or impossibility of suspecting the nature of the lesion, and so perhaps to minimize the dangers of routine taxis. Again, these cases are deceptive at the time of operation; the inflamed appendix, for instance, has been mistaken for the spermatic cord, left alone, and caused the death of the patient, though the rest of the contents of the sac had been reduced.[1] These cases of hernia are rare, as may be judged from the remarks of Thiéry,[2] who, speaking in 1892, states that neither he nor Lucas-Championnière had ever seen an appendix as the sole content of a hernial sac. The differences of opinion as to the nature of these lesions is illustrated by the looseness with which the term "strangulation" is applied. Thus Knowles[3] applies this term to a clear case of primary inflammation; Quénu[4] demonstrated microscopically that his case was one of primary strangulation; Delore and Chalier[5] state that appendicitis is frequent but strangulation rare, and they deny that strangulation follows inflammation. Clogg[6] reports the successful reduction of the incarcerated appendix on fifteen occasions, and states that the appendix is usually free of adhesions, though Coley[7] says it is adherent in eight out of every nine cases; but such disastrous results as those reported by Bichat[8] and Bouglé[9] should deter us from attempting reduction by taxis unless a definite diagnosis can be arrived at. In support of the view of Delore and Chalier (loc. cit.), McAdam Eccles[10] thinks that many cases of "strangulation" are really inflammatory in origin—a view coinciding apparently with the majority of expressed opinions.

I have collected 58 cases from the literature, which, with the case just reported, makes up a total of 59; of these only 54 are available for analysis. Cases in which foreign bodies have been the exciting cause have been, with one exception, excluded from the list, because, unless the article is large enough to produce a typical acute attack (for example, a cherry stone), the majority present a mild clinical picture similar to the case published this time last year;[11] further, the real nature of many of these cases is often not established until the formation of an external faecal fistula.[12]

Now, taking the series as a whole, the following appear to be the salient features serving to distinguish these cases more particularly from Richter's hernia and incarcerated omentum.

The extreme rarity of these lesions in children and infants is one of the striking features shown in the analytical table; for, with the exception of four infants under 2 years, no cases were found under 30 years of age. The onset is insidious, and the symptoms are progressively increasing in severity, unlike cases of strangulated omentum; indication of this is seen in the fact that the duration of the final illness was over five days in no less than *15 cases* (six weeks, twenty-one and fourteen days being the longest), and over three days in 28 instances. Again, a large proportion of these herniae have never been previously noticed; this is particularly applicable to the cases of strangulation, which, contrary to prevailing opinion, are exactly *twice as frequent* as inflammatory cases.

The size of the hernia progressively increases, often to a large size (especially in the inflammatory cases), it is either hard or fluctuating, tender, and invariably there is an absence of impulse and a dull note to percussion.

The skin over the hernia becomes red or oedematous at a comparatively early date, vomiting occurs in about half the cases and is rarely severe, while intestinal obstruction is infrequent. These statements, serving as a basis of differentiation, will be confirmed by a reference to the table.

Diagnosis will further be aided by an attempt to discriminate between inflammation and strangulation. The cases have been divided, for tabulation, into these two groups on pathological evidence at operation or autopsy (Table C), foremost amongst the indications being evidence of constriction of the appendix.

Table B gives the symptoms and physical signs, and A gives the history, sex, etc. The figures require a little amplification, but show, I think, that due allowance has been made for doubtful cases.

Turning to the table, Table A, it will be seen that adult life is naturally responsible for more than half the strangulation cases, 75 per cent. of which are in femoral herniae, and nearly all of these in females; the inflammatory cases, on the other hand, show an impartiality for both age, sex, and the situation of the hernia, in fact the inguinal herniae predominate (55 per cent.). In the majority of inflammatory cases the previous existence of a hernia was noted, unlike the strangulation cases; while the gradual onset during rest in the former contrasts effectively with the fulminating nature of the attack during exertion or activity in the latter—facts which agree with the age incidence already referred to. Again, it will be seen that appendicitis was more frequent in adult females than males, which is in accordance with their sedentary lives and the resulting constipation; curiously, however, strangulation, is also five times more frequent in adult women than men. The conclusion arrived at, therefore, is that *strangulation is most likely to occur in femoral herniae* on anatomical grounds.

Turning now to the symptoms and physical signs (Table B), it is evident that an examination of the local signs, while affording evidence for the identification of these cases collectively, offers no means of differentiating them from one another.

Vomiting also occurred with equal frequency (48 per cent.) in both groups, but intestinal obstruction accompanies strangulation far more often than appendicitis; for, whereas in the former there was retention of faeces in 44·5 per cent., and of flatus in 51.5 per cent., in the latter both these features show a frequency of only 14 per cent. These figures are independent of sex or age.

The appearances at operation or autopsy (Table C) sympathize closely with the details of narrative, symptoms, and physical signs, in their respective divisions of the table; they show, moreover, that this grouping is supported by every kind of evidence. Thus oedema and friability of all the tissues, though only mentioned in 3 cases, occurred in 100 per cent. of appendicitis but is never referred to in strangulated appendices. Further evidence is apparent on a comparison of the contents of the hernial sac; for, on the one hand, pus was present in 85 per cent., and, on the other, in 25 per cent. of cases, of which, it must be remembered, strangulation had

A. ANALYTICAL TABLE OF RECORDED CASES.

APPENDICITIS CASES.

	Cases.	Femoral.	Inguinal.	Chronic.	Gradual Onset.	Rest.	Male.	Female.
Infants ... ... (0—3 years)	2	0	2	0	1	—	2	0
Children ... ... (3—16 years)	0	0	0	—	—	—	—	—
Adults ... ... (30—60 years)	9	5	4	5 (62 %)	6 (66.5 %)	1 (100 %)	3	6
Advanced Age ... (over 60 years)	7	3	4	5 (100 %)	4 (80 %)	1 (100 %)	4	3
Male	9	1	8	6 (85.5 %)	5 (62 %)	2 (100 %)	—	—
Female...	8	6	2	2 (40 %)	5 (71 %)	—	—	—
Actual percentage where mentioned	18	8 (44.5 %)	10 (55.5 %)	10 (81 %)	11 (73 %)	2 (1[illegible]	—	—

STRANGULATION CASES.

	Cases.	Femoral.	Inguinal.	Recent.	Acute Onset.	Activity.	Male.	Female.
Infants ... ... (0–3 years)	2	0	2	2	2	—	2	0
Children ... ... (3—16 years)	—	—	—	—	—	—	—	—
Adults ... ... (30—60 years)	24	18	6	8 (40 %)	18 (85 %)	13 (56.5 %)	4	19
Advanced Age ... (Over 60 years)	10	9	1	9 (90 %)	8 (80 %)	4 (80 %)	0	10
Male	[illegible]	1	5 (2infants)	2 (66.5 %)	5 (100 %)	1 (100 %)	—	—
Female...	29	27	2 (1 sex unmentioned)	16 (59 %)	24 (85.5 %)	15 (88 %)	—	—
Actual percentage where mentioned	36	27 (75 %)	9 (27 %)	19 (65 %)	28 (82.5 %)	17 (68 %)	—	

B.

APPENDICITIS CASES.

	Cases.	Femoral.	Inguinal.	Tender.	Dull.	Fluctuation, Inflammation or Oedema of Skin.	No Impulse.	Vomiting.	No Faeces.	No Flatus.
Infants...	2	0	2	1	1	0	1	1	0	0
Children	0	0	0	—	—	—	—	—	—	—
Adults	9	5	4	7 (100 %)	4 (100 %)	3 (100 %)	1 (100 %)	4 (57 %)	1 (14 %)	1 (14 %)
Advanced Age ...	7	3	4	5 (100 %)	2 (100 %)	4 (100 %)	1 (100 %)	2 (40 %)	0	0
Male	9	1	8	6 (100 %)	4 (100 %)	4 (80 %)	3 (1[illegible]	2 (33 %)	0	[illegible]
Female...	8	6	2	[illegible] (100 %)	2 (100 %)	4 (100 %)	0	4 (80 %)	1 (20 %)	1 (20 %)
Actual percentage where mentioned	18	8 (45.5 %)	10 (55.5 %)	13 (100 %)	7 (100 %)	7 (100 %)	3 (100 %)	7 (48.5 %)	1 (14 %)	1 (14 %)

STRANGULATION CASES.

	Cases.	Femoral.	Inguinal.	Tender.	Dull.	Fluctuation, Inflammation or Oedema of Skin.	No Impulse.	Vomiting.	No Faeces.	No Flatus.
Infants...	2	[illegible]	2	2	—	—	1	2	2	1
Children	—	—	—	—	—	—	—	—	—	—
Adults	24	18	6	18 (100 %)	2 (100 %)	4 (65 5 %)	2 (100 %)	11 (41.5 %)	3 (43 [illegible])	7 (36 %)
Advanced Age ...	10	9	1	9 (100 %)	1 (100 %)	6 (85.5 %)	[illegible] 2 (100 %)	5 (55 %)	4 (44 %)	3 (37.5 %)
Male	[illegible]	1	5	2 (100 %)	—	0	1	3 (75 %)	2 (50 %)	2 (50 %)
Female...	29	27	2	25 (100 %)	—	10 (83 %)	8 (100 %)	14 (50 %)	13 (52 %)	10 (40 %)
Actual percentage where mentioned	36	27 (75 %)	9 (27 %)	29 (100 %)	3 (100 %)	10 (76 %)	5 (100 %)	18 [illegible]	15 (44.5 %)	11 (51.5 %)

C. ANALYTICAL TABLE OF RECORDED CASES (*continued*.)

APPENDICITIS CASES.

	Cases.	Femoral.	Inguinal.	Friability of Tissues.	Contents of Hernial Sac. Pus.	Lymph	Turbid or Blood-stained Fluid.	Adhesions.	The Tumour. Small. Previous Size of Tumour.	Large. Size at Operation.	The Appendix. Evidence of Constriction.	Congestion	Gangrene.	Perforation.	Evidence of Inflammation.
Infants	2	0	2	1	1	1	0	1	0 or —	+ =1	0		0	1	2
Children	0	0	0	—	—	—	—	—	—	—	—	—	—	—	—
Adults	9	5 (100 %)	4	1 (100 %)	5 (71 %)	1 (25 %)	1 (33 %)	3 (60 %)	0 or —	+ =4 (55 %)	0	0	3 (37 %)	6 (75 %)	8 (100 %)
Old age	7	3	4	1 (100 %)	6 (100 %)	0	0	3 (100 %)	0 or —	+ =2 (50 %)	0	0	4 (57 %)	3 (43 %)	7 (100 %)
Male...	9	1	8	3 (100 %)	5 (62 %)	3 (37.5 %)	0	5 (100 %)	0 or —	+ =3 (60 %)	0	0	4 (66 %)	5 (55 %)	9 (100 %)
Female	8	6	2	—	6 (85.5 %)	0	1 (14 %)	2 (100 %)	0 or —	+ =4 (80 %)	0	0	3 (60 %)	4 (57 %)	7 (87.5 %)
Actual percentage where mentioned	18	8 (44.5%)	10 (55.5%)	3 (100 %)	12 (85.5 %)	2 (28 %)	1 (33 %)	7 (50 %)	7 (41.5 %)		0	0	7 (47 %)	9 (59 %)	17 (100 %)

STRANGULATION CASES.

	Cases.	Femoral.	Inguinal.	Friability of Tissues.	Contents of Hernial Sac. Pus.	Lymph.	Turbid or Blood-stained Fluid.	Adhesions.	The Tumour. Previous Size of Tumour.	Size at Operation.	The Appendix. Evidence of Constriction.	Congestion	Gangrene.	Perforation.	Evidence of Inflammation.
Infants	2	0	2	—	1	0	1	—	0 or —	+ =1	2	2	0	0	0
Children	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0
Adults	24	18	6	—	0	0	15 (62.5 %)	0	0 or —	+ =6 (31 %)	18 (90 %)	12 (57 %)	10 (47 %)	1 (5 %)	7 (31 %)
Old age	10	9	7	—	4 (50 %)	0	2 (25 %)	0	0 or —	+ =2 (22 %)	8 (100 %)	4 (44 %)	5 (55 %)	2 (22 %)	4 (44 %)
Male	6	1	5	—	0	0	2 (66.5 %)	0	0 or —	+ =2 (33 %)	4 (100 %)	3 (60 %)	2 (40 %)	1 (20 %)	1 (7 days) (20 %)
Female	29	27	2	—	4 (12.5 %) 1=14 days; 2=8 days	0	16 (69.5 %)	0	0 or —	+ =5 (20 %)	25 (96 %)	13 (50 %)	13 (50 %)	1 (3.5 %)	6 (22 %) (All over 8 days except 1 case)
Actual percentage where mentioned	36	27 (75 %)	9 (27%)	—	5 (25 %)	0	18 (56.5 %)	0	9 (26.5 %)		28 (95 %)	18 (50.5%)	15 (51 %)	3 (13.5 %)	11 (37.5 %)

been present in one for *fourteen days* and in two for *eight days*. Abundant lymph formation and adhesions, recent or of long standing (all signs of primary inflammation), were a prominent feature of appendicitis but *never* occurred in strangulation. Again, the nature of the hernia gives distinct assistance in the differential diagnosis; for, of the inflammatory cases, 52 per cent. show a rapid increase in size of the hernia from its original size or from zero. In appendicitis the hernia is nearly always of considerable size, while in strangulation it is usually small except in cases of long duration.

Finally, evidence of inflammation was found in 100 per cent. of appendicitis cases and in 37.5 per cent. of strangulated appendices, the high figure in the latter being explained by the long duration of many cases.

Gangrene occurred with equal frequency in both, but perforation rarely occurred in strangulation (13 5 per cent.), frequently (59 per cent) in appendicitis; on the other hand, in the former evidence of constriction and congestion of the appendix occurred in 95 per cent. and 50 5 per cent. of cases respectively—pathological evidence which was never seen in appendicitis. On such statistics it cannot be doubted that the grouping is a correct one.

CONCLUSIONS.

1. Strangulation is twice as frequent as inflammation.

2. *Diagnosis* (collectively) rests on the symptoms and local signs.

3. *Differential diagnosis* rests on a combination of the following points:

(*a*) Age and sex.
(*b*) Situation of the hernia.
(*c*) Narrative, past and present.
(*d*) Local signs, particularly in regard to *rate of increase* and actual size of the hernia.

4. Even at operation appearances are deceptive, the appendix is sometimes difficult to identify, and accidents may occur unless this possibility is borne in mind.

Finally, death occurred in seven instances, and in every case resulted either from failure to realize in time the serious, though insidious, nature of the lesion or from attempts at reduction by taxis. These fatalities warn us against routine taxis, stimulate us to aim at a more detailed diagnosis of the contents of the sac in *irreducible* herniae, and call for earlier operation in doubtful cases.

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DISCUSSION.

Mr. R. CAMPBELL (Wark) said that in a series of about 4,000 cases of operation for inguinal hernia in infants and young children he had only once met with an instance of acute appendicitis in a hernial sac. In this case attempts had been made to reduce the hernia by taxis, and at the time of operation the appendix was found to be gangrenous. Appendicectomy was performed, and a satisfactory recovery ensued. In two other cases the appendix was found adherent by its tip to the sac, and presented evidences of previous severe inflammatory trouble. It was interesting to note that in all three cases the hernia was being treated by a truss. He was of opinion that strangulation of an appendix by constriction due to the sac or the abdominal apertures must be exceedingly rare, as the opening was usually large enough to permit the caecum to descend.

BANANA FLOUR AS A FOOD FOR INFANTS.

By ERIC PRITCHARD, M.D.Oxon.,
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FOR many years past I have recommended the addition of mashed banana to the milk mixtures of artificially-fed infants; for I have found its antiscorbutic properties of value in the maintenance of nutrition. More recently I have been making experiments with banana meal made into a gruel or decoction as a substitute for the more expensive proprietary infant foods. The results so far have proved quite satisfactory. The chief objections to proprietary foods are, first, that they are expensive, and secondly, that they are either employed as substitutes for cow's milk, or added in too large quantities. It is of great importance that infants should be taught early to digest cow's milk; artificial substitutes for cow's milk do not achieve that end, for they are mostly predigested. The digestion of cow's milk is undoubtedly made easier for the infant by the addition of cereal decoctions and solution of gum or gelatine. The recent studies of Alexander and Bullowa[1] on the protective action of colloids in milk have afforded a scientific explanation of the empirical experience that gum, gelatine, or cereal gruels, added to milk, facilitate the digestion of casein.

It is, however, of importance, if cereal gruels are employed for this purpose, that they should not be given in excessive quantities before the infant has developed its power of diastatic digestion. Very thin gruels should be employed at first, and their strength progressively increased; if this precaution is taken the cereal gruel serves the double purpose of promoting the digestion by casein and of developing the infant's power of diastatic digestion. As cereal gruels I have employed barley water, bread jelly, oatmeal jelly, and barley jelly; all these are excellent in their way, but the time and trouble required to prepare them properly deters many a poor mother from using these particular diluents. A decoction of banana gruel can be made more expeditiously owing to the solubility of the major portion of the carbohydrate elments. A satisfactory gruel can be made in a few minutes by rubbing up a heaped tablespoonful (1 oz.) of banana flour with a pint of water, and then boiling for five minutes. A gruel made in this way has excellent colloidal properties when added to milk in equal quantity; it thickens the milk, and prevents formation of a leathery coagulum of casein, and satisfies the appetite of hungry infants more effectually than simple milk dilutions. The decoction made in this way has not an attractive appearance, for it is of a light chocolate colour, owing to the presence of a pigment which tenaciously adheres to the starch molecules, and which cannot be bleached by ordinary bleaching reagents. It has been urged against bananas and banana flour that the contained fibre has an injurious influence on the delicate mucous membrane of the infant's intestine. I cannot say that my personal experience supports this view. And I prefer the crude flour to the more highly refined preparations which are sold under fancy names as banana meal freed from all fibre. The whiteness of these preparations and their general character leads me to suspect that they contain very little of the original banana, and a large proportion of ordinary cereal flour.

The nutritive properties of banana flour are high, as is shown by the following figures, which represent those of an analysis made by Professor A. H. Church of a sample of banana meal (Jamaica):

Water	15.5 per cent.
Albuminoids	2.5 ,,
Starch, sugar, gum, etc.	77.7 ,,
Oil	1.0
Fibre	0.7
Ash	2.7

Many analyses give a higher value for the albuminoids; this, according to Professor Church, is due to the fact that the whole of the nitrogen present in banana meal does not exist in albuminoid form, but part in the form of amides, and allowance for this has not been made by those who have conducted the analyses.

With the exception of the lower proteid content, banana meal compares favourably as a food with most cereal flours. Although occasionally used in the West Indies as an exclusive food for infants, it is obviously highly unsuited to this purpose, but in the form of a decoction it is an excellent diluent of cow's milk.

REFERENCE.
[1] Protective Action of Colloids in Milk, *Archives of Pediatrics*, January, 1910.

DISCUSSION.

The PRESIDENT and Dr. J. H. THURSFIELD asked questions as to the age at which starchy foods might safely be given to infants. Dr. PRITCHARD replied that in small doses they might be begun when the child was no more than a week or two old, and be given in increasing amounts as the infant's tolerance for them grew greater.

THE RADICAL TREATMENT OF TUBERCULOUS DISEASE OF THE TARSUS AND ANKLE-JOINT.

By JAS. KEOGH MURPHY, M.A., M.C.Cantab., F.R.C.S.,
Senior Assistant Surgeon, Paddington Green Children's Hospital; Surgeon to the Miller General Hospital for South-East London.

LIKE all who are brought into close contact with the surgical aspect of disease in children, I am far from even dreaming of the radical surgical treatment of tuberculosis generally; for example, in the treatment of the hip, the spine, and, above all, the knee, I am conservative (to the backbone?); here, of course, the reasons for conservation are apparent to all. Still, in dealing with tuberculosis, if we leave these regions behind and consider those of the shoulder and elbow, we may find ourselves involved in honest doubt and scepticism, although when we consider the treatment of the metacarpal and metatarsal bones—the so-called spina ventosa—our conservative views are restored. Still, I venture to think there are two situations where we may well think of other measures—that is in the diaphyses of the long bones and in the short bones either of the carpus or more especially of the tarsus as well as in all the joints in connexion with them, more especially the ankle-joint.

With regard to the diaphyses: It appears to me that we surgeons in the South of England see very little of diaphyseal tubercle, although it would seem to be comparatively common in the North of England and in Scotland. The brilliant results obtained by my friend Mr. Harold Stiles of Edinburgh, by Mr. Chiene and others, show that here at any rate the radical treatment by removal gives the best possible results, and it would be difficult indeed to withstand their conclusions.

With regard to tubercle in the carpus, I cannot claim to have any experience of this condition in the young. In the past ten years I have not seen a single instance of it in my practice, therefore I do not feel myself justified in including this joint, although, from what I have seen of its results in adults, either when untreated or else treated

radically at a later stage, I admit I have a great longing to observe the effects of radical treatment by excision in an early stage—I mean before the tuberculous process has spread out its claws and gathered tendon sheaths, ligaments, and all surrounding parts into one chaos of destruction.

I therefore turn to the treatment of tubercle in the ankle and tarsus in the young. I am interdicted in the scope of the present short communication from including statistics obtained from various sources; I will, therefore, merely state my own views and the results obtained from following them out.

The subject of tuberculous disease of the tarsus and ankle-joint is curiously ignored both in textbooks and other works which deal with the subject. Amongst them I find two remarkable statements, which are of interest:

(1) The os calcis does not regenerate; (2) when the common synovial membrane on the inner side of the tarsus is involved, amputation is necessary.

Both of these are quite incorrect.

It is difficult to obtain definite statements as to either the prognosis or the frequency of tuberculous disease of the tarsus. My own personal knowledge of the affection has not been a happy one, and I approached the condition four years ago with a knowledge of its gravity and an impression that amputation, after much local surgery of a minor character, was almost the rule. My investigations subsequently have convinced me that my first conclusions were very nearly right as the *frequency* of this condition. All would seem to be agreed that it is rare. Here, again, I will not roam into statistics, but I may be allowed to point out that out of the large number of cases of tuberculous disease which have passed through my hands in the past four years I can only produce the following instances of disease of the tarsus or ankle-joint:

"Internal" tarsal disease, 3 cases; all primary (using the term for cases not previously operated on).
Disease of os calcis, 2 cases; 1 primary, 1 secondary.
Tubercle of ankle-joint, 4 cases; all primary.

No other cases of tubercle in this region were seen by me; thus I can refer only to these few cases, although they form a complete series.

In these I have adopted one uniform line of treatment, and one only. At the first possible moment I have endeavoured to find the extent of the disease in the bones by skiagrams (and here I would wish to acknowledge my great indebtedness to my friend, Mr. A. D. Reid, for his skill in this most difficult department). This having been settled, I tried first the results of rest and general treatment for a varying time, keeping a careful check on the condition of the bones, not only by external examination, but by skiagrams. In not one case did the condition improve; on the contrary, in the tarsal cases there was a rapid extension of the disease, while in the ankle-joint cases the knowledge that the bones were comparatively free, together with an obvious increase in the swelling about the joint, allowed no further hesitation.

Operation.

The aim of all such operations, if undertaken at all, should, of course, be to remove every particle of tuberculous tissue, whether synovial membrane or bone. In practice this is a matter which is very difficult to accomplish. In my experience tubercle of the tarsus is essentially a diffuse process, extending to, and involving, bones and synovial membranes alike, and spreading rapidly. I have entirely failed to find those sequestra which have been spoken of, nor have I found any definite inflammatory barrier between healthy and tuberculous tissues. How, then, is one to be guided?—partly by the skiagram (here the blurred periphery and outline of a tarsal bone is of great value as indicating disease, while the general rarefication is of little value, as this is common in the neighbourhood of all tuberculous disease, as well as in bones which, whether tuberculous or not, have been kept for prolonged periods at rest). Apart from the skiagram, I would contend that there is a very different tactile impression conveyed by healthy tarsal bones at all ages, from that of tuberculous bone, even in the early stages of infection. Little else need be said with regard to the question of tarsectomy. I have made use of curved incisions across the tarsus, and have not hesitated to divide tendons where I could not draw them conveniently aside, subsequently bringing them together. Ligaments and periosteum, where possible, have been left, but it is right to state that I have not attempted in these cases to perform a set subperiosteal resection. In the earlier cases I used a drain for thirty-six hours.

Arthrectomy of the Ankle-Joint.—I would wish to call attention to the method in which this has been done. It will be conceded that if such an operation be performed it is essential that every fragment of tuberculous tissue should be removed, and not only that, but that the bones which enter into the joint should be most carefully examined.

Now in this joint skiagrams, however excellent, will give us but little idea of the particular part of the astragalus and the ends of the tibia and fibula. From what I have seen of tuberculous disease in this joint, the following appears to hold good:

1. Although in young children the disease appears to begin in the synovial membrane, the broad upper surface of the astragalus is almost always affected, and the tuberculous disease is here, as in the rest of the tarsus, a diffuse process extending down to the neck, and extending rapidly at a very early date.

2. The inferior tibio-fibular joint is almost always affected.

3. The tuberculous synovial membrane is particularly thick at the back of the capsule of the joint, and tends to be herniated through the openings in the capsule which here exist.

I do not propose to enter here into the general results of arthrectomy of the ankle-joint for tuberculous disease, but it will, I think, be admitted that they are not altogether satisfactory. To quote from Kocher, "It does not always give satisfactory results, and hence constant endeavours have been made to improve the technique." Numerous incisions have been advised, such as the antero-lateral incisions of Vogt; the bilateral incisions with chiselling off the malleoli of Koenig and Rideal; the same with posterior incisions (Schmidt); transverse incisions of various authors with or without posterior vertical incisions; the external curved incision of Kocher himself, etc. All these I have tried—some on the cadaver and some in other cases, and as a result, in the series of cases I now submit I have made use of a curved anterior incision, turning up a large anterior flap. The lower end of this incision corresponds to the mid-tarsal joint, and its sides are rather to the posterior aspect of the malleoli. The skin flap is turned up a short distance and all the tendons in front of the ankle-joint are divided one by one and their ends secured; the deep tissues in front are now turned upwards, the vessels being secured and divided. The bulging capsule of the joint is now incised freely from side to side and the lateral ligaments nicked in front. The joint is now forcibly extended and an easy and perfect view is obtained of the entire joint cavity. The next step of the operation consists in the removal of what is necessary of the astragalus.

It has not been found necessary to remove the entire astragalus in any of the cases I submit, but in all four its upper portion was removed right down to the neck. Every particle of tuberculous synovial membrane is next readily removed from the back of the joint, and the only difficulty which remains is clearing the inferior tibio-fibular joint. I found that a wedge-shaped piece of the tibia had to be removed in two of my cases in order to clear out all the synovial membrane. The capsule of the joint is now closed with sutures, if possible without drainage. I drained only one of my cases, as in this case there were acute abscesses outside the joint as well as acute suppuration inside the joint (case of a boy aged 1½ years). The tendons are then united and the flap closed. The operation is a severe one, but I submit that it offers by far the best view of the joint and allows a complete and thorough operation to be readily performed.

My results in four consecutive cases show what may be expected, and I am gratified to know that my friend and colleague, Mr. Burghard, and Mr. Harold Stiles of Edinburgh have now both adopted this plan.

After-Treatment.—One uniform plan of after-treatment was employed—to keep the joint at rest for at least one year.

Results.—Out of nine cases, one of which was an old case of disease of the os calcis with sinuses on both sides of the

ankle, and tuberculous masses extending along the tendons on both sides of the ankle and under the tendo Achillis, the following bad results now remain: (1) Slight flat-foot in a girl aged 4½. There was flat-foot before the internal tarsectomy; a large amount of the tarsus was removed, and tuberculous material was found in the sheaths along the tibialis posticus tendons, some of which had to be divided. (2) Slight equino-varus in a boy, aged 1½, who had acute tubercle of the ankle-joint. There is good movement of the ankle-joint, and the condition can very soon be remedied.

Good Results.—With the exception of the above recovery has been perfect in all nine cases. Nearly all have passed through the probationary period, and are now walking about with perfect use of the feet. In none of the series has there been the slightest return of tubercle, and skiagrams have shown that the joints are perfectly healthy, and that there has been remarkable regeneration of the bone. Thus I am led to submit that, so far as this series of cases is concerned, the results of tarsectomy are satisfactory, and the results of a complete arthrectomy of the ankle-joint for tubercle most gratifying.

SECTION OF ANATOMY.

Professor Arthur Keith, President.

PRESIDENT'S INTRODUCTORY REMARKS.

The President, Professor Arthur Keith, after addressing a few words of welcome to those present, brought forward the question of the supply of anatomical material. The informal discussion which followed ended in decisions to the effect that it was desirable that concerted action in the matter should be taken by the representatives of all medical schools in the country, and that such of those present as were licensed teachers should constitute themselves a committee to consider the supply of material for anatomical work and the teaching of operative surgery throughout the United Kingdom.

THE PHARYNGEAL TONSIL.

By J. Symington, M.D., F.R.S.,
Professor of Anatomy, Queen's University, Belfast.

The position and relations of this mass of lymphoid tissue have not been investigated with the care that might have been expected from its clinical importance, and our textbooks of anatomy are singularly deficient in illustrations of its appearance and topography. The pharyngeal tonsil must be studied in children, as it generally undergoes almost complete atrophy soon after puberty, and its position is such that it cannot easily be exposed so as to admit of a thorough examination either during life or after death. It is owing to these circumstances that the description and figures of this structure are so defective.

The following observations are based mainly upon the examination of specimens in which this organ was exposed either by making median sections of the head or by means of a special dissection of the naso-pharynx from below.

In a median section of the head of a child 3 years old the pharyngeal tonsil is seen in the roof of the naso-pharynx extending backwards and downwards from the posterior edge of the nasal septum to a point opposite the middle of the basi-occipital bone. Its upper or attached surface is in direct contact with the thick periosteum covering the basi-occipital and basi-sphenoid bones, and its free surface looks towards the upper two-thirds of the soft palate. It ends posteriorly in close relation with the upper border of the superior constrictor of the pharynx, and at this level the roof of the naso-pharynx may be conveniently described as becoming continuous with the posterior wall.

The position of the pharyngeal tonsil in the median plane is obviously of importance in connexion with operations for its removal, yet textbooks on the applied anatomy of this region either make no attempt to define the extent of the pharyngeal tonsil or contain misleading and erroneous statements on the subject. Thus Chauveau[1] states that the pharyngeal tonsil occupies the posterior two-thirds of the roof of the naso-pharynx, and encroaches behind upon the anterior arch of the atlas, and Disse[2] defines the posterior wall of the naso-pharynx as ending at the lower border of the anterior arch of the atlas, and to be destitute of muscle.

The posterior wall of the naso-pharynx may be regarded as extending from the level of the middle of the basi-occipital bone to the lower border of the anterior arch of the atlas. A naked-eye examination shows that this part of the pharynx contains the superior constrictors, and is lined by a thin mucous membrane which in microscopic sections is found to be practically devoid of lymphoid tissue.

The definition of the pharyngeal tonsil given by Chauveau does not place its anterior border sufficiently far forwards, and makes it extend too far downwards and backwards.

The best method of obtaining a surface view of the pharyngeal tonsil is to expose it from below by cutting through the cheeks horizontally backwards from the angles of the mouth, dividing the muscles of mastication, removing the lower jaw, separating the atlas from the skull, and then carefully taking away the soft palate. In a specimen prepared in this way made from a child 18 months old, the pharyngeal tonsil forms a triangular prominence in the roof of the naso-pharynx with its blunt apex near the nasal septum and its base at the junction of the roof and posterior wall. It is bounded on each side by a well-defined groove which separates the lateral wall from the roof of the naso-pharynx. This prominence is composed of a number of folds radiating outwards and forwards from a median recess commonly known as the pharyngeal bursa of Luschka. The number and position of these folds and of the deep fissures separating them vary somewhat. Thus a median fold may pass forwards from the pharyngeal bursa towards the nasal septum, or a fissure may extend forwards from the bursa so as to divide the pharyngeal tonsil into two lateral halves. The fissures passing forwards often form curves with their convexity outwards, while those near the base of the tonsil are generally straight and nearly transverse in direction. The pharyngeal bursa lies close to the base of the tonsil, and so far as a naked-eye examination can determine, it appears to form a simple blind recess.

On microscopic examination these folds are composed mainly of a dense mass of diffuse lymphoid tissue traversed by the ducts of more deeply placed mucous glands, and covered superficially by epithelium. The pharyngeal tonsil is distinctly visible to the naked eye during the later months of fetal life, and it usually increases gradually in size during the first six or seven years after birth. Not infrequently it begins to atrophy after this period, so that by the tenth year the roof of the pharynx is smooth.

A much more abundant supply of material than I have had at my disposal is necessary before I could form any satisfactory estimate of its normal size at different periods of life. The points of practical importance are the degree to which it extends downwards and forwards towards the soft palate, so as to diminish the lumen of the naso-pharynx, and also to what extent the lymphoid tissue of which it is mainly composed is liable to invade the neighbouring mucous membrane.

In a well-developed boy, 3 years old, the distance from the cranial periosteum, where the tonsil was attached, to the posterior surface of the soft palate was 15 mm., and this space was about equally divided between the tonsil and the cavity of the pharynx. I know of no data by which such a development of the pharyngeal tonsil could be defined as normal or pathological, but in my limited experience it does not represent an excessive growth for children about this age. I have never seen the pharyngeal tonsil to project forwards on to the posterior surface of the soft palate so as to exclude the naso-pharynx, but in a median section of the head of a boy 9 years old it was about twice as large as the corresponding diameter of the naso-pharynx. In this case there was an obvious hypertrophy of the lymphoid tissue, and the naso-pharynx was nearly full of mucus, so that nasal breathing must have been practically absent.

Hypertrophy of the pharyngeal tonsil is often credited with causing obstruction to the Eustachian tube. It might conceivably do this (1) by the tonsil projecting downwards sufficiently far to cover over their orifices; (2) by the tonsil extending outwards into the fossa of

Rosenmüller and pressing against the postero-internal wall of the tube; or, lastly, by an extension of the lymphoid growth on to the lateral wall of the naso-pharynx and into the lining membrane of the tube. I have not had the opportunity of seeing any specimens in which I could satisfy myself that obstruction was produced in any of these ways.

REFERENCES.
[1] *Le Pharynx*, Paris, p. 150. [2] Heymann's *Handbuch der Laryngologie und Rhinologie*, Bd. II, p. 20.

DISCUSSION.

Professor ELLIOT SMITH (Manchester) pointed out that the pharyngeal tonsil was frequently seen in the adult. He had seen it well developed in a person 50 years of age.

Professor FAWCETT (Bristol) said he was particularly interested in the microscopical anatomy of this region, and asked for further information regarding this, and also the pharyngeal bursa of Luschka. It was generally accepted that this bursa, or pit, was too far back to be associated with the pouch of Rathke; but what was it?

Mr. P. T. CRYMBLE (Queen's University, Belfast) said the usual adenotome could not in a large number of cases reach the posterior border of the septum, owing to the handle pressing on the lower incisors, and therefore it was not sufficiently recognized that the tonsil was situated immediately behind the septum.

In his reply, Professor SYMINGTON quite agreed that the bursa was sometimes seen in adults, but in his opinion this was infrequent. Histologically the folds he described were compressed lymphoid tissue and mucous glands, and from a consideration of this, as well as from its topography, he would limit the operation for removal to the middle line. In reply to Professor Fawcett, he was not prepared to explain the full significance of the interesting bursa first described by Luschka.

THE EARLY DEVELOPMENT OF THE EUSTACHIAN TUBE AND NASO-PHARYNX.

By J. ERNEST FRAZER, F.R.C.S.,
Lecturer and Senior Demonstrator of Anatomy, King's College, London.

The Eustachian Tube.

IT is generally stated that the Eustachian tube and tympanic cavity are derived from the first inner cleft recess, but writers have not been wanting who claim the second cleft as that immediately concerned in their formation. In the course of investigations into the development of the respiratory areas of the early human pharynx I have had reason to adopt a more extended view of the origin of the tube and middle-ear cavity, and to regard them as derived from a recess that is really a part of the pharyngeal cavity, containing in its walls first, second, and probably third arch elements.

In this investigation use has been made of reconstruction models and of examination of serial sections; the embryos employed have been of various ages and sizes, from 5 mm. upwards, but as the object of this paper is best served by studying embryos after the first month I have merely used the younger specimens for comparison.

Models have been made, of various sizes, of the following stages: 12 mm., 16 mm., 17 mm., 20 mm., 22 mm., 27 mm., 35 mm., 40 mm., 48 mm., and separate models have been made of the cavities only in some cases.

Figs. 1 to 4 illustrate the change in shape that the pharynx undergoes in the course of the first month of development. The drawings are in outline, but are made to scale from the models in my possession, and the transition from the early form to that of the end of the first or beginning of the second month is easily followed.

At the end of the month the cavity in front of the position of the third arches shows a relatively great widening reaching toward the surface, and the first and second lateral pouches project from this area; the first pouch is situated about halfway along its antero-posterior length, and practically comes into contact with the surface at the first outer cleft, while the second pouch is placed just internal to the posterior angle. This broad recess on each side is modified to form the tube and tympanum, and can be referred to for brevity as the "Eustachian recess."



Fig. 1.—Embryo 5 mm. Numerals indicate visceral arches.

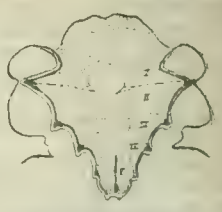


Fig. 2.—Embryo 7 mm.



Fig. 3.—Embryo 8.5 mm.



Fig. 4.—Embryo 12 mm.

At this stage it is easy to trace the second inner cleft a a groove leading from the lateral pouch to the middle lin The pouch itself is well marked and distinct, and th groove runs along the floor of the recess near its posteric margin; the roof and floor are nearly in contact at thi period, so that the line of the groove almost correspond with their line of junction, and this area is almost cer tainly composed of third-arch elements.

It is evident that the floor of the recess is formed by th lateral parts of the first and second arches; its front pa rests on the mandibular mesoblast, now about to gro rapidly, and the bar of the second arch passes inward under the hinder part of the floor. Above it, the auditor vesicle, with its surrounding mesoblastic capsule, extend inwards as far as the junction of the recess with th general cavity of the pharynx, and the dorsal aorta i front of the third aortic arch (internal carotid) ru forward over it, between it and the under part of th capsule. The seventh nerve, passing down in front of th main mass of the capsule (and giving the great superfici petrosal nerve forwards and inwards) turns back betwee it and the recess, some little distance outside the arte and immediately internal to the vena capitis lateralis; it then turns down behind the first pouch to enter the mass of the second arch, giving the chorda forwards and inwards under the floor of the recess.



Fig. 5.—Scheme of upper rela tions in fourth to fifth week I, II, First and second pouches VII, Facial nerve (this shoul turn down further forward) IX, Glosso-pharyngeal nerve IC, Internal carotid giving o stapedial artery. O, Indicate the position of the inner par of otic capsule. M1, M2, Meso blast of first and second arches

The mesoblastic condensation of the second arch bar turns up from below outside and in front of the second pouch and close to it, while the rudiment of Meckel's cartilage is immediately in front of the first pouch. A scheme of these relations is shown in Fig. 5.

The ganglionic mass of the glosso-pharyngeal is behind and below the auditc capsule, just outside the artery, and above and rath behind the recess, and nearly in contact with it; t nerve itself passes down a little distance behind th back margin of the recess, and then bends inwards a forwards under the pharyngeal floor. It gives its tympa ramus above the ganglion downwards and forwards the roof of the recess.

A large artery—the stapedial—runs out on the roof fr the internal carotid, under the auditory capsule and o the ramus tympanicus, to pass into a thick mesobla

mass—the future stapes—connected with the end of the styloid condensation; it then turns forward over the roof and is lost.*

By the sixth week the shape of the Eustachian recess has been slightly modified; it shows (Fig. 6) as a more evident diverticulum of the pharynx, but its various parts are recognizable and easily comparable with those of the fourth and fifth week. The first pouch is external, and the second at its posterior angle, and from this a groove can be traced mesially to run into that between the tongue and epiglottic rudiments. The front part of the recess, which shows in the fourth to fifth week a slight upward



Fig. 6.—Model of cavity from above; sixth week. I, II, first and second pouches.



Fig. 7.—Scheme of upper relations in sixth week. M, IN, S, Rudiments of malleus, incus, and styloid bar. Other references as in Fig. 5.

inclination, is more decidedly bent up in the sixth week, owing to the growth of the mandibular condensation that forms its floor. For the same reason, and owing to the growth of the tongue rudiment, the inner end of the first groove is somewhat flattened out, but the outer end remains as a well-defined sulcus, leading to the lateral pouch, and with a broad but slight elevation behind it and in front of the second groove, marking the position of the second arch, where the floor lies on the styloid bar.

The upper relations at this stage are shown in Fig. 7. The upward bend of the front and outer part of the recess tends somewhat to uncover the chorda tympani.

Mesoblastic thickening has led to a partial separation between the recess and the outer cleft, and has caused a prominence (? incus) behind the first pouch, with a secondary diverticulum between this prominence and the original prominence of the styloid bar; the incus rudiment is continuous with Meckel's bar above the first pouch.

The constitution of the recess remains as described with but little alteration till the ninth week. It does not grow in breadth—which was originally its antero-posterior length—at the same rate as the growth in length of the



Fig. 8.—Model of cavity from above; seventh week.



Fig. 9.—Wall of pharynx and recess in ninth week, looked at from above, showing the area (X) where the wall of the recess is disappearing.

general cavity, so that its opening becomes slightly smaller in proportion, but its length is very slightly increased in proportion to the width of the general cavity. As a result it forms a more prominent and definite process, directed outwards and backwards and very slightly upwards, and somewhat twisted on its long axis, so that its sharp front border tends to be antero-superior (Fig. 8).

In the ninth week changes occur that modify considerably the structural value of the parts. The hinder and lower part of the wall of the recess, including the second groove and part or the whole of the second arch, atrophies and disappears in part—that is, the atrophy affects the central and inner part of the region, leaving the outer or tympanic part unaffected. The extreme inner end of the recess also escapes, so that the second cleft is still represented at the opening into the pharynx. The extent of this atrophy in a model from a 35 mm. embryo is shown by Fig. 9, but it must be remembered that only the general shape of the recess is shown from the outside, owing to the thickness of the walls in the model. The atrophied portion is found microscopically as a definite band of cell layers, staining darkly, extending from the pharyngeal wall to the tympanum and running through some dozens of sections.

The condition is still visible in a specimen slightly older, but I have not yet been able to find it in a less advanced stage. Its appearance under the microscope suggests that the cavity is obliterated by epithelial adhesion, with subsequent disappearance of the walls. In this way the future narrow *tube* is marked off for the first time from the larger *tympanic* cavity, which is in contact in its lower and inner part with the external depression (tympanic plate): the cartilaginous ossicles separate the two in the upper part.

Whatever may be the cause of this atrophy it does not affect the tympanum, and here the second pouch and outer end of the groove can be found, bearing the same relations as before. The inner end of the second groove also remaining runs out of the pharyngeal opening, downwards and backwards, as in earlier specimens, but now an extension of the palatine ridge has taken place, cutting across it and dividing it into a part *above* the ridge in the mouth of the recess, and one *below*, which is the future tonsillar fossa.

To make clearer the operation of this new factor, it will be convenient to consider here the pharyngeal opening of the recess as seen from within. It is evident from its mode of formation that the recess will open in the early stages as an elongated slit. The front end of this slit is slightly turned up, resting on the mandibular arch, which is forming the maxillary process here, and thus the palatine ridge of the maxillary process commences below the front part of the slit-like opening, and separates it from the general mouth cavity.

The earliest stage of the palatine ridge is visible in the fourth to fifth week model as a slight rounded prominence in this situation. The palatine ridge grows rapidly, and extends back below the opening of the recess (which maintains its slit-like appearance) till, in the eighth week, it reaches the front of the second groove. This is emerging from the opening and running to the glosso-epiglottic sulcus, but is obliquely directed owing to the growth of the tongue structures and the proportionately smaller size of the opening.

By the end of the eighth week the palate fold has extended back across the second groove, and in the ninth week forms a thick bar across it, both behind and above it, on the side wall and roof of the pharynx.

The nature of the backward extension cannot be made out definitely after it has become superficially visible, but examination of an embryo of 17 mm.—but undoubtedly older than this measurement indicates—gave a clue to its mode of formation. The palatine and maxillary processes were composed of condensed undifferentiated mesoblast, into which a sharply marked wedge of loosely arranged cells—evidently early muscle—was extending from the similar cells that formed the pharyngeal wall behind the second cleft, passing under the floor of the groove, and probably therefore owning a third-arch origin. This observation suggests that the "backward extension" is in reality a forward one, secondarily reaching the palatine process, and carrying muscle cells into it from the pharyngeal wall (third arch).

The change of position of the opening and the palatal extension—becoming the posterior pillar of the fauces—is seen in the models at various stages in embryonic life; the position of the opening is said by Kunkel† to lie below the palate in the fetus, on the same level at birth, 3 to 4 mm. above it in the fourth year, and 10 mm. above it in the adult.

* Many of these relations are visible in a model made for other purposes from a 12 mm. embryo that was kindly lent to me by Professor Fawcett, and for which I desire to take this opportunity of thanking him.

† Quoted in Cunningham's *Textbook*. I have not been able to refer to the original, so do not know in what sense he uses his terms of position: I suppose he alludes to the hard palate.

The line of the slit-like opening changes its direction with the plane of the recess as a whole. The commencement of the change is seen in the figures, and is due apparently at first to the rapid growth of the underlying mandibular arch; later, possibly, the atrophy of the lateral parts of the second and third arches may join with the growth of the otic capsule and change in the direction of the pharynx as a whole to continue the change. The result is that the original front border of the recess becomes the upper margin of the tube and its original roof becomes its inner or posterior wall, while its floor forms the front wall and lies against mandibular structures.

The tube increases in length, probably owing to its association with the growing auditory cartilaginous capsule, and this increase appears greater because of the very slight addition to its breadth; the depth of the recess in the sixth week is about three-quarters of the breadth of the pharynx internal to it, equals it by the end of the second month, and is more than half as much again by the middle of the third month. This later more rapid increase in length seems to occur principally in the tubal portion, and may be accounted for by the atrophy of this part rendering it less resistant.

The Naso-pharynx.

This region has not got such a definite developmental value as the tube and tympanum, and is to be regarded as a secondary enlargement of the primitive pharynx, mainly affecting its roof. It would be necessary to enter into some account of the development of the nose if a full description were required of that of the naso-pharynx, but for the purposes of this paper it will be sufficient to give a more general outline of its formation, and show that if a line is drawn from the pyriform fossa (third lateral pouch) upwards behind the pharyngo-epiglottic fold to the lower part of the Eustachian orifice, and then from the upward part of the opening forwards and inwards to the lower end of the septum, the structures lying above and behind that line are derived from the roof, and those below from the floor, of the primitive pharynx; thus, in the naso-pharynx, practically the only parts not derived from the primitive roof are the upper surface of the soft palate, the front wall of the tubal orifice, and the levator cushion.

The mode of formation is shown schematically in Figs. 10, 11, and 12.

The primitive pharynx is fairly closely applied to the ventral aspect of the brain capsule, and has its floor and roof almost in contact, so that, when the cavity is "opened up" by the tongue growth, the roof will become somewhat concave from side to side, but the greatest amount of increase in vertical depth will be brought about by downward displacement of the floor. The depression of the lower jaw in forming the front part of the mouth cavity is, from this point of view, of essentially the same nature.

The original stomadaeum is in continuity with the curved line of the foregut in direction (Fig. 10), and, at the junction of the two areas, the maxillary process of the first arch projects laterally into the cavity, causing a rounded prominence between the "pharynx" and the "mouth cavity." The last-named part is roofed at first by brain capsule; the maxillary process grows rapidly into its roof and develops there into nasal structures, and thus the "mouth cavity" is pushed back (Fig. 11) till its upper end is below the front end of the "pharynx," and at the same time it forms nearly a right angle with the latter; the maxillary process separating the two areas is more prominent, overlapping the top of the "mouth cavity," and thus giving the earliest appearance of the palatine ridge.

It is evident that the palatine ridge can be looked on as an outgrowth from the original floor. The palatine ridge extends back, and crosses the junction of the roof and floor where the pharynx narrows behind the Eustachian recess; beyond this it is prolonged on the roof (Fig. 12). On comparison with the completed naso-pharynx the developmental values of the various parts can be made out (Fig. 13).

The naso-pharynx of descriptive anatomy is thus seen to be only a part of the secondary dilatation that lies above and outside the palatal ridge, and the line of junction of roof and floor passes through the upper part of the posterior pillar of the fauces and enters the Eustachian orifice, to emerge again from its front (upper) end; therefore the structures below and in front of the orifice are derived from the primitive floor.

Rathke's pouch originally opens in front of the roof covering the first-arch region, and arises from the stomadaeum, so that the primitive roof must end behind it. Its track passes through the cartilaginous basis cranii, and is fixed there, but the site of its opening is carried forward by the maxillary extension in the roof of the mouth cavity, and is thus brought down the back of the septum for some distance.

Sagittal mesial sections in the fifth, sixth, seventh, and eighth months show an increasing projection of the Eustachian cartilage into the naso-pharynx, and a corresponding increase in depth of the lateral fossa behind it. There is some indication of the fossa in a model from a 48 mm. embryo, where the cartilage is being laid down as a cell-condensation, and causes an internal projection.

Without stating definitely that the fossa of Rosenmüller owes its presence only to the projection of the cartilage,

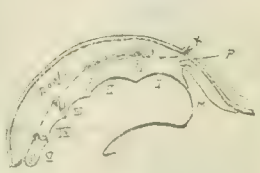


Fig. 10.—Scheme of what might be seen on looking into an early pharynx from the right side. The cavity is supposed to be divided longitudinally and the roof and floor separated. The arches (I to V) are seen in the floor, separated by the grooves (1 to 4), ending in the black dots that represent the lateral pouches. The interrupted line connecting these pouches marks the junction of roof and floor, and is carried forward to the infundibular pouch (X). M, Mouth cavity roofed by brain capsule, under which the maxillary process is beginning to extend, arising from the first arch, where it forms the early palatine fold (P) separating the "mouth" from the "pharynx."

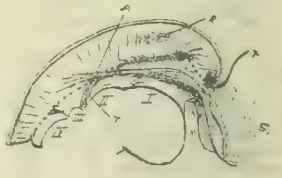


Fig. 12.—A later stage still. The palatine process has extended back on to the roof of the pharynx, crossing the line of junction of roof and floor at A, and cutting off the lower part of the second groove as the tonsillar fossa (T). The upper part enters the recess opening. The palatine ridge has met and fused with its fellow over the dotted area, and has also met the lower border of the septum (S). R, Position of early indication of fossa of Rosenmüller. In Figs. 10, 11, and 12 the floor is represented as practically unchanged for the sake of simplicity.

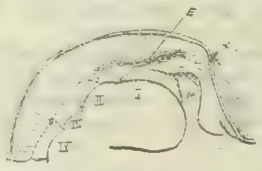


Fig. 11.—A later stage. The first and second grooves are lost in the opening of the "Eustachian recess" (E), and the palatal ridge is more marked, extending backward below the opening, and forward to form nasal structures, which are pushing the general mouth cavity back.

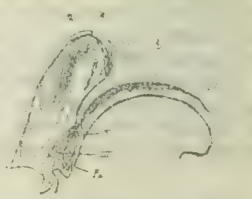


Fig. 13.—Sketch of naso-pharynx to show its developmental values. III, Pharyngo-epiglottic fold, third arch. Pp, Posterior pillar of fauces, "backward extension" of palate. Other references as in previous figures.

it can be said to certainly increase in depth with the growth of this structure. It also certainly does not correspond with any visceral groove, but is apparently a purely secondary fossa in the *roof*, originally situated on the dorsal side of the Eustachian opening (Fig. 13).

It is impossible to deal adequately within the limits of this paper with such important details as the development of the tube cartilage, the muscular walls of the naso-pharynx, etc., and I have not attempted to describe them, but leave them for a later communication. I have not pursued the development of the tympanum further, for this will be considered in a future paper by Dr. G. J. Jenkins and myself on the anatomy of the tympanum. I desire to thank Dr. Jenkins for the use of some of his material and for the model that I am showing for him to-day of the early conditions and relations of the tympanic structures.*

DISCUSSION.

Professor PETER THOMPSON (Birmingham) said that Mr. Frazer's paper brought out clearly several points of much interest. The way in which the Eustachian recess was

* Exhibited earlier in the year before the Otological Society.

formed with the first and second pouches at its fundus seemed to partially settle the question of the meaning of the fossa of Rosenmüller. At any rate, from a consideration of Mr. Frazer's reconstructions, it was not at any time connected with the second pouch.

THE SIZE OF THE ANTRUM AND THE POSITION OF THE PERMANENT TEETH.

By A. C. Geddes, M.D.,
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[Abstract.]

The communication was based upon the condition found in two subjects dissected at the Royal College of Surgeons in Ireland. In both of these the antra of Highmore were very small and, whether as cause or effect, the bodies of the superior maxiliae were also small.

Measurements were given to show that in each case the small size of the bodies of the maxilla had occasioned a marked diminution in the height and a slight increase in the breadth of the nose. The orbits were, however, of approximately normal size and shape. The disproportionate growth of the orbit and the maxilla, as a whole, had produced a deep concavity on the facial surface of the bone. The zygomatic surfaces of the bones were shallow, and in association with this the pterygoid processes of the sphenoid were extremely short.

In spite of the non-development of the maxillary antra a complete set of teeth was present in one of the skulls, and a complete set on one side of the other. To accommodate them there had been an unusually great growth of the alveolar processes. In spite of the crowding to which the teeth were necessarily subjected there was no overlapping. The whole row had evidently pushed outward to gain as great an advantage as possible from the convexity of the alveolar process, and in doing so the labial aspect of the roots had broken through the outer plate of the alveolar process, and were exposed upon the surface of the bone. Some of them, indeed, had travelled outwards so far that they were only held in projecting brackets of bone. This appearance was particularly well marked in the case of a left first molar.

It therefore appeared that, contrary to the commonly accepted view, the movement of the teeth into position and their eruption were not dependent upon the growth of the antrum.

SIX ABNORMALITIES FROM THE DISSECTING ROOM.

By A. C. Geddes, M.D.,
Professor of Anatomy, Royal College of Surgeons, Dublin.

1. *Clavicles with Epiphyses at their Acromial Ends.*

As a second communication Professor Geddes demonstrated six specimens of abnormal bones and soft parts. The first of these was a pair of clavicles from a dissecting room subject. Both of these had epiphysial plates not only at their sternal, but also at their acromial ends. The epiphysial plate at the acromial end of the right clavicle was a right-angled triangular plate of bone, which was placed with its base superiorly and the right angle at the anterior end of the base. It was 9 mm. in antero-posterior length, 7 mm. in vertical height, and 1.5 mm. in thickness at its superior border. The corresponding epiphysis of the left clavicle was oval in shape. Its long axis measured 8 mm., its short 4 mm., and it was slightly over 1 mm. in thickness.

This condition was extremely rare. What its significance might be was not clear. If Gegenbauer's belief that the clavicle was of secondary dermic origin were correct, it seemed as if these epiphyses at the acromial ends of the clavicles must be regarded as of no morphological significance. But the cartilage at the sternal end of the clavicle was believed to represent a part of the precoracoid, and Goethe and Hoffman had suggested that the whole clavicle either was developed from or directly replaced the primitive anterior segment of the pectoral girdle and was homologous with the pubic element of the pelvic girdle. If Goethe and Hoffman's view ultimately be proved correct, these abnormal epiphyses would occupy a position homologous with that occupied by the os acetabuli.

2. *A Case of Third Occipital Condyle of Unusual Form.*

The second abnormality was on a skull obtained from the dissecting room. On the basi-occipital just to the left of the mesial plane there was a third occipital condyle. It was separated from the normal left condyle by a distinct interval of 3.5 mm. in breadth. Its transverse diameter was 7.5 mm., its antero-posterior not less than 6 mm. The inferior surface was smooth and articular. The structure that articulated with this condyle was a small pyramidal bone 9 mm. in height by 7 mm. broad. This little pyramid lay base up and apex down. To its apex was attached the suspensory ligament of the odontoid process (lig. apicis dentis). The presence of the small mass of bone had caused some slight distortion of the anterior arch of the atlas.

The presence of a similar ossicle did not seem to have been recorded, although to find a small cartilaginous nodule (Luschka's nodule) in the suspensory ligament was not rare. The most nearly comparable condition on record appeared to be that described by Guerri. The morphological significance was doubtful. The fact that the ossicle was situated in the course of the suspensory ligament indicated that it was a medial structure. On this view the lateral position of its articulation with the occipital would be regarded as secondary. This seemed a perfectly legitimate view to take, for the undoubtedly medial anterior tubercle of the anterior atlantal arch was displaced to the right through as great an angular interval as the ossicle was to the left. The probability was that the bone was developed by the ossification of Luschka's cartilage, which was in all probability the representative of the body of the hindmost occipital vertebra.

The left superior articular surface of the axis vertebra from the same subject had upon it a small epiphysial plate roughly circular in form, and about 7 mm. in diameter.

3. *A Case of Bicipital Rib of Unusual Form.*

The third abnormality was a bicipital rib of unusual form. It was obtained from a dissecting-room subject which had twelve ribs on each side. All the ribs and cartilages on the left side were normal, as were the first to third and sixth to twelfth on the right side. The fourth right rib was normal in its cartilage and shaft, but from the neck midway between the tubercle and head a descending branch was given off at right angles. This descended vertically, and articulated with an abnormal bracket-like process, which projected forwards from the neck of the fifth rib. Through the foramen enclosed by the abnormal process and the body of the fourth dorsal vertebra both rami communicantes, a small branch of the intercostal artery, and some veins passed. The speaker was ignorant of any morphological significance possessed by the abnormality. During life the projection caused by the descending head of the fourth rib and the bracket-like process of the fifth deeply indented the lung.

4. *A Case of Os Tibiale.*

The fourth abnormality was a case of os tibiale from the right tarsus. This was described as an abnormally fully developed vestige of the prehallux.

5. *The Position of the Bronchus of Supply to Wrisberg's Lobe.*

The fifth abnormality was a well marked case of Wrisberg's lobe. The point which it was particularly desired to illustrate was the position occupied by its bronchus of supply. This lay immediately subjacent to the pleura forming the floor of the groove for the vena azygos major, to which level it descended about ¼ in. from its point of origin as an internal branch of the bronchus of supply to the apex of the lung.

6. *The Significance of the Vasa Aberrantia Superior and Inferior.*

The sixth abnormality was a case of abnormal subclavian artery associated with persistence of both vasa aberrantia. The superior vas aberrans arose, as usual, from the right superior intercostal, the inferior from the aorta by a short stem common to it and the intercostal artery of the third left intercostal space. The usual explanation of the development of the abnormal right subclavian artery was that the normally

obliterated portion of the right aortic arch persisted, whereas the normally persistent part was obliterated, and there could be no legitimate doubt that this explanation was correct. It was often stated, however, that the obliteration of no portion of the right aortic arch was complete, and that it was represented by the right superior intercostal or the aberrant branch of the subclavian and the vas aberrans of the aorta. The condition found in this specimen was evidence against the accuracy of this view, and favoured the belief that these aberrant arteries were just what they appeared to be—small and not very important branches for the supply of the thoracic parietes.

THE ANATOMY OF THE TRIGONUM VESICAE.

BY

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AND

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On opening the contracted bladder the trigonum is clearly distinguishable from the rest of the bladder, owing to the absence of wrinkling of its mucosa. The distinction is more marked in certain cases than in others, and is especially clear in those cases in which Mercier's bar—which forms the base of the trigonum—is separated from the posterior wall of the bladder by a tranverse scaphoid depression.

In these cases the trigonum actually seems to be laid upon the posterior wall of the bladder, and after stripping off the mucous membrane this relationship becomes still more apparent. Union between the trigonum and the rest of the bladder is effected by muscular fibres common to both regions. The union is most distinct below at the apex, which seems to serve as a common point of attachment for muscular fibres of trigonum and bladder generally. The union is intimate along the lateral margin of the trigonum, but is, on the contrary, loose at the base. In fact, it is possible with the handle of a scalpel to break down with ease the muscular attachment here and to throw the trigonum forward. This easy separation, in conjunction with the different microscopical structure, imply the different developmental origin of the two parts which embryologists proclaim.

It should be here remarked that the trigonum in a small percentage of cases is only slightly evident with the closest observation. Mercier's bar may be represented by a few sparse transverse fibres, almost indistinguishable from the surrounding fibres of the bladder wall proper. In other cases the downward convexity of Mercier's bar is so acute that it reaches the uvula vesicae and the trigonum is represented simply by an eminence at this junction.

Position of Ureteral Orifices.

The ureteral orifice is always situated on Mercier's bar, but its position on the bar is subject to variation. It may be at the extreme outer limit of the bar as seen from the inside of the bladder, or it may be as far median as midway between that limit and the middle line.

Musculature Around Ureteral Orifice.

After or before dissection of the mucous membrane, close inspection of the ureteral orifice shows that a number of the muscular fibres of the bladder are arranged in an arciform manner around the orifice, but they seem quite insufficient to close that orifice effectively and to maintain it closed. The posterior longitudinal detrusor fibres of the bladder usually cross the intramural portion of the ureter posteriorly.

Ureteral Sheath.

If the ureter at a little distance above the bladder be closely examined it will be seen to be enclosed in a loose fibro-muscular sheath, first noted by Waldeyer, and frequently referred to as Waldeyer's sheath. This sheath, if traced upwards an inch or so, gradually disappears blending with the outer fibrous coat of the ureter. Traced downward the sheath follows the ureter into the bladder wall, in the submucous coat of which it ends. It does not appear to possess any connexion with the trigonum. The muscle fibres of the sheath are longitudinal in direction, and collected into distinct bundles. The anatomy and relationships of the sheath are readily made out by dissections under water. Although there are a number of small vessels in this ureteral sheath, the vessels are not confined to it, but are also found throughout the wall of the ureter proper. It would thus appear that the vascularity of the sheath is not of prime importance. The space between the sheath and ureter is crossed throughout by numerous loose fibrous trabeculae. Within the sheath at its lower end a stout bundle of muscle enters, and is attached firmly to the inner and posterior aspect of the ureter. This bundle can be clearly made out to be directly continuous with the muscular bundle known as Mercier's bar.

The Trigonum Vesicae.

When cleared of mucous membrane this presents the appearance of a closely packed sheet of fine muscle bundles, running parallel and in a transverse direction. At the base of the trigonum the fibres are usually collected into a definite transverse ridge—Mercier's bar. At the apex the muscular tissue is denser and occasionally forms a slight eminence—the uvula vesicae. The prominence of the uvula is very variable, and it may be pointed out here that it immediately overlies the middle lobe of the prostate, and, as will be seen, blends with it. On account of its position, a slight hypertrophy of this part of the prostate increases the prominence. The uvula is also very well marked in cases in which the trigonum is much hypertrophied, and here gives a false appearance of enlargement of the third lobe of the prostate.

The Muscle of Bell.

In only one specimen was this muscle found to be present. In this case the trigonum was very poorly developed, and the muscle of Bell consisted of a few fine bundles continuing down the course of the ureter as far as the apex of the trigonum. The fibres of this muscle overlay the transverse bundles of the trigonum.

Microscopical Examination.

In a transverse section through the middle of the trigonum there is not a great deal of muscular tissue present, but what there is consists of fine muscular fibres. The muscular fibres are collected into transversely running bundles joined by a loose network of connective tissue. Bundles are finer towards the anterior surface and are overlaid by a small amount of loose submucous connective tissue. Weigert's elastic stain shows the presence of fine elastic tissue fibres scattered throughout the submucous and intermuscular connective tissues. Immediately behind the trigonum is a well-defined connective tissue plane external to which are seen the large detrusor bladder fibres cut in cross section.

The presence of this connective tissue plane is of importance, since by removing the loose tissue behind the upper part of the trigonum and by cutting in a transverse vertical direction through this connective tissue plane it is possible to separate the whole trigonum with its ureteral orifices from the rest of the bladder and implant it wherever it is desirable.

It is well further to remember that the middle of the trigonum is the thinnest portion. The basal portion is thickened by the fibres of Mercier's bar while at the apex the trigonum contains the fibres of the sphincter vesicae.

A transverse section at the apex of the trigonum differs from the above-described section in that the muscular tissue is greater in amount, the bundles are larger and more closely packed. Posteriorly the trigonal musculature merges into a mass of fibrous tissue which is interspersed with longitudinal fibres—seen cut in cross section—derived from the breaking up of the detrusor fibres. This fibro-muscular mass is permeated with prostatic tubules. There is thus in this situation a complete blending of trigonal, detrusor, and prostatic musculature.

It may here be remarked that the apex of the trigonum in the opened bladder is truncated, and possesses two lateral angles. In the closed condition these two lateral angles would come together in the antero median line, and in that way the apex of the trigonum becomes a tube, and the transverse muscular fibres of the trigonum constitute the sphincter vesicae. The muscular tissue of the

trigonum with its downward prolongation to form the sphincter, and the longitudinal fibres at the back known as the detrusor, are the most definite muscular layers of the bladder. It is impossible to separate into planes the other fibres of the bladder wall. They seem to be chiefly interlocking fibres between the other more constant tracts.

In longitudinal section of the intramural portion of the ureter, the muscle of the ureter consists of fine longitudinal parallel bundles The bundles are inserted into the submucous tissue close around the orifice, and terminate there. The large muscle bands derived from Mercier's bar are seen ascending and attaching themselves to the posterior aspect of the tube. No circular fibres are present. There is in consequence nothing in the way of a true sphincter.

It is of interest to note that the fibro muscular tissue of the prostate is directly continuous with the trigonal and detrusor fibres. In other words, the main muscular bundles of the bladder radiate out from the prostate, which gathers them together and holds them firmly in very much the same way that the hand of a coachman gathers up the reins. It would further appear that in removal of the prostate the muscular fibres must lose their *point d'appui*, and that for a time at any rate the patient must empty his bladder by contraction of his abdominal muscles.

The limits of this paper do not permit of a detailed account of the mechanisms of all of these muscular arrangements. It may, however, be pointed out that the action of Mercier's bar is evidently to draw the lower ends of the ureters into the bladder and towards the middle line. This increases their obliquity, and at the same time brings a greater length of ureter into the grip of the fibres of the bladder wall, and under the control of the intravesical pressure. Thus it prevents regurgitation in cases of increased bladder pressure. The changes of position which the ureter undergoes in contraction of Mercier's bar would appear to have as a consequence the wearing of a more or less free space around the lower end of the duct, and in this way Waldeyer's sheath is formed.

It is also evident from the above investigations that there is the closest connexion—even up to continuity—between the muscular tissue of the prostate, the circular muscle at the neck of the bladder, and the musculature of the trigonum.

The Origin of the Trigonum.

The shape of the trigonum vesicae is so similar to the shape of the uterine cavity, which it is known is formed by the fusion of the two Müllerian ducts, that it suggested itself to us that the trigonum may have been formed in a similar manner by the fusion and opening out of the distal portions of the ureters. This speculation found support from the following facts:

1. In certain cases Mercier's bar is so low that it actually reaches down in the mid-line to the uvula; the usual form of trigonum is not present and the ureters in these cases appear to be continued down below their orifices to the uvula.

2. In other cases the ureters actually do open very much lower down than usual, suggesting that the present relatively high position of the ureteral orifices is not the primitive one.

3. In the horse one of us noted that from the ureteral orifice a distinct gutter was traceable downward to the urinary meatus, strongly suggestive of the groove being the remains of a formerly-existing tube or duct.

4. The verumontanum, according to this theory, is capable of an easy explanation. It would be the remains of the original septum or division between the ureters, Müllerian and Wolffian ducts of either side, when these opened side by side with each other, in what is now the prostatic urethra. The direct continuity of trigonum, uvula, and verumontanum to be made out in many instances supplies additional support to the view.

5. The absence of a true sphincter at the ureteral orifice and the somewhat makeshift method by means of which the orifice is made competent suggest that the present orifice is not the original one.

6. Lastly, the theory supplies a ready explanation as to how the ureters and common ejaculatory ducts open now so far apart, whereas formerly they opened so close together; for, briefly stated, all that one has to assume is, first, that the ureters or metanephric ducts have acquired an accessory higher opening into the urogenital sinus by the lower portions of the ureters having fused, opened out, and become incorporated in the posterior wall of the sinus, so forming the trigonum vesicae. Bell's muscle would, according to this view, represent the former site of the lower part of the ureter, which then opened low down by the side of the orifices of the common ejaculatory duct.

DISCUSSION.

Professor Arthur Robinson (Edinburgh) remarked that the main objection he had to the theory put forward of the development of the trigone was the relationships of the Müllerian and mesonephric ducts as they lay in the genital cord. The latter were not median structures, but placed laterally to the Müllerian ducts. The ureters formed from the mesonephric ducts were placed more lateral still.

EMANUEL SWEDENBORG AS AN ANATOMIST.

By M. Ramström,
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To the majority of scientific men Swedenborg is known, I think, mainly as a mystic seer and founder of religion. Swedenborg was really, however, a polyhistor and thinker who penetrated so deeply in many departments of natural sciences that not only did he seek out all the knowledge of his time concerning them, but also investigated them so thoroughly that he succeeded in conceiving and drawing conclusions which men of our times have not been able to make except with the help of the most ingenious methods of a highly developed technique.

As is well known, Swedenborg was born in Stockholm in 1688 and died in London in 1772. Mathematical subjects, especially geometry and mechanics, at first occupied him, and then mineralogy, geology, chemistry and physics, and philosophy were the objects of his interest and untiring zeal for research. In the year 1734 he published a great work in folio, *Opera Philosophica et Mineralia*, printed in Dresden and Leipzig, in which he put forth, for instance, a nebular hypothesis which closely reminds one of the theory brought forward later on by Kant and Laplace. In regard to this work, Professor S. Arrhenius of Stockholm, in his introduction to vol. ii of the new edition of Swedenborg's writings of the Swedish Academy of Sciences, writes:

> If we briefly summarize the ideas to which expression was first given by Swedenborg, and which afterwards (although in a much modified form consciously or unconsciously) have been taken up by other authors in cosmology, we find them to be the following: The earth and the other planets have gradually removed themselves from the sun, and received a gradually lengthened time of revolution; the earth's time of rotation, that is to say, the day's length, has been gradually increased. The suns are arranged around the Milky Way. There are still greater systems in which the Milky Ways are arranged.

In the field of geology and palaeontology Swedenborg put forth observations so remarkable in scope and importance that, according to the declaration of Professor Nathorst of Stockholm,[1] they alone would have been sufficient to assure him of an honoured name as a scientist.

But Swedenborg did not stop here: having searched through inorganic he turned to organic nature. Breaking away from all his other work he threw himself with intense zeal into anatomical and physiological studies, working in the Netherlands, France, and especially in Italy.

In 1740–41 he published in Amsterdam the results of these statistics, his famous work, *Oeconomia Regni Animalis*. In this work he made many remarkable statements. For instance, as Professor T. A. Hammar of Upsala has shown, he put forth the epigenesis theory. Here Swedenborg expresses himself very decidedly against the "pre-formation theory," and emphasizes the fact that the development consists by no means merely in a growth or expansion of the germ ("seminis extasio") or of a prototype of the future creature existent in the germ ("non . . . aliqua realis effigies maximi in minimo, seu in aliquo primo typus futuri corporis, qui simpliciter expanditur," *Oec. R. A.*, I, No. 249); but there is in the germ a certain formative substance or power, by means of which

the various parts of the embryo are developed one after the other—that is, organ after organ (". . . singula membra successiva seu unum post alterum producuntur." *Oec. R. A.*, I, No. 247). It will be seen that Swedenborg here puts forth essentially the same theory as that presented by Caspar Friedrich Wolff some twenty years later in his well known *Doctorsdissertation* for the year 1759.

In the same work, *Oeconomia Regni Animalis*, Swedenborg made the important statement that both the sensory and motor activities of the soul had their seat in the cortex of the cerebrum not in the medulla of the brain, as was the general opinion at that time ("Substantia corticalis est ipsum cerebrum, seu sensorium et motorium commune"; see *Oec. R. A.*, III, No. 133). In the cortex of the brain all sensory impressions must ultimately be gathered together to become conscious perceptions (see *Oec. R. A.*, II, No. 153). And, to be more definite, he says that the activity of the soul actually has its seat in the innumerable small cortical elements of which the cortex as a whole is made up, and which Swedenborg named "sphaerulae," or "cerebellula"; these are what we now call "the nerve cells of the brain." In the lecture given before the Congress of Scientists and Physicians in Hamburg in 1901 by Professor Max Neuburger of Vienna, and in the address of Professor Eustace Retzius of Stockholm, as President of the Congress of Anatomists at Heidelberg in 1903, are fuller accounts of this and other remarkable anatomical statements by Swedenborg.

But, although the brain would then be able to govern every muscular action, the brain itself would not exert itself every time that such action was to be performed. No; in the grey substance of the medulla oblongata and the spinal cord there were subordinate secondary motor centres, and these governed the automatic and habitual movements, so that, for the performance of these, the brain need not to be disturbed in its higher functions. Only for the purely voluntary motions were impulses from the cerebrum necessary (see *Oec. R. A.* II, No. 151, 157).

But all the regions of the cortex were not of equal value: some regions governed the higher, others the lower, functions; some received the sensory impressions and others sent out the different kinds of motor impulses—that is, the different departments of the psychical activity were localized in different places in the cerebral cortex. The most important part of the cerebral cortex was the anterior (superior) region of the cerebrum, that which we call the frontal and pointed lobes. He says it is here that the psychical phenomena take place. And Swedenborg succeeded in carrying out the localization within this region still more in detail, his doctrine of localization being, word for word, as follows:

> The muscles and actions which are in the ultimates of the body (or the soles of the feet) depend more immediately upon the highest parts (of the brain); upon the middle lobe, the muscles which belong to the abdomen and thorax; and upon the third lobe, those which belong to the face and the head.
> (*De Cerebro*, No. 63.)

By the three lobes he meant the three sections into which he divided the anterior (superior) region of the brain, and of which the first lobe was situated highest up—that is, in the crown of the head, and the third lobe lowest down—that is, along the fissure of Sylvius. Keeping this in mind, it will be seen that Swedenborg's doctrine of localizations coincides in its leading features with the doctrine of localizations into which men of our own time have succeeded in obtaining an insight only after the most comprehensive and complicated work during the last century. We are, therefore, astonished to find that Swedenborg more than a century and a half ago could advance this doctrine. Whence did Swedenborg derive all this information? They could not have been loose suppositions, because so many of his statements, one after another, have been fully confirmed by the thorough investigations and experiments of succeeding times. As Professor G. Retzius said in his Croonian Lecture in London, in 1908, some actual experiments must lie at the root of Swedenborg's detailed and precise statements. Swedenborg himself, in the introduction to the *Oeconomia Regni Animalis*, gave some intimation regarding the matter in these words:

> Here and there I have taken the liberty to throw in the results of my own experience, but this only sparingly; I deemed it best to make use of the facts supplied by others. Indeed there are some that seem born for experimental observation, and endowed with a sharper insight than others, as if they possessed naturally a finer acumen; such are Eustachius, Ruysch, Leeuwenhoek, Lancisi, etc. There are others, again, who enjoy a natural faculty for contemplating facts already discovered and eliciting their causes. Both are peculiar gifts, and are seldom united in the same person. . . . I therefore laid aside my instruments, and, restraining my desire for making observations, determined rather to rely on the researches of others than to trust my own.

In consequence of all these statements I have undertaken to investigate in some measure the literature which Swedenborg had at his disposal, in order to ascertain, if possible, what were the experiences which served as the basis for his assertions; and I have made it the special object of my research to try to find out how his detailed doctrine of localizations had its origin. Time does not permit me to enter into close detail; all that I can do is to lay before you some of the results of this investigation. Any one desirous of entering further into this fascinating study will find a fuller account in the Proceedings of the Swedenborgian Congress held in London this summer.

As regards attributing the soul's activity to the cerebral cortex, that was a conclusion which Swedenborg drew from premisses collected from many quarters. Above all, he had the clinical descriptions by Wepfer and Pacchioni of diseases of the brain and injuries of the head affecting the cortex; the symptoms of disturbances in the power of sensation and motion mentioned in these descriptions Swedenborg connected with the injuries of the cortex, and thus came to the correct conclusion that loss of sensibility and mobility depended upon the injuries of the cortex, and that the cortex was the seat of the soul's activity!

Swedenborg also made a very careful study of a great many cases of apoplexy and hemiplegia, which naturally, inasmuch as they affected the cortex, gave him direct guidance in judging its function. Moreover, he had studied the descriptions of some experiments on animals which had been performed by the English anatomist and physician, Henry Ridley, and the Italian professor, Baglivi, and others. These experiments were by no means made in order to find out the function of the cerebral cortex (for this was thought to be a gland secreting the "spiritus animalis"), but for other purposes—namely in order to find out the causes of the brain's pulsations, or the properties and functions of the membranes of the brain, etc. But when they happened to be touched and injured the cerebral cortex there appeared symptoms of contractions of muscles, etc., which the observers themselves had described only as it were in passing, but which Swedenborg connected with the cortical lesions. Thus he came into possession of much stronger evidence for the idea that the psychical phenomena had their seat in the cerebral cortex. But besides these clinical and experimental observations Swedenborg had a very intimate knowledge of the structure of the brain, and this led him to the same conclusions. Through the investigations of Leeuwenhoek, Malpighi, Ruysch, and others, he knew that cortical substance consisted chiefly of small rounded bodies which put forth processes like threads or vessels into the medullary substance and that the medullary substance was for the most part composed of fibres which were in connexion with both the sense organs and the muscles. Now Swedenborg connected the cortical elements with the medullary fibres and stated that it was through the activity of these cortical elements that the perception of sense-impressions and the impulses to voluntary motions took place. As to the reference of the soul's activity to the anterior (superior) region of the brain, it partly depended upon the anatomical situation of this region just above the corpora striata and the close connexion of this region with this great group of nuclei by which, as Thomas Willis said, the cerebrum coheres with the medualla oblongata, and through which, according to Vieussens, the nerves pass on the one side to the different parts of the brain and on the other to the different parts of the body.

This reference was also partly based upon clinical experience—that is, paralysis in connexion with injuries of the cortex of the anterior region of the brain; these clinical results he summed up in the utterance: "If this (anterior) region of the cerebrum is wounded, then the internal senses—imagination, memory, thought—suffer; the very will is weakened and the power of determination

blunted; . . . this is not the case if the injury is in the back part of the cerebrum" (*De Cerebro*, No. 88).

The idea of detailed localization was not entirely new at the time of Swedenborg. The philosopher Descartes (A.D. 1650) thought that the images of perception, memory, etc., which the soul conceives were formed at those areas of the inner wall of the central ventricle of the brain, from which, in his opinion, the respective nerves proceed. In the same way Swedenborg's contemporary, Boerhaave (A.D. 1738) thought that as every sense had its own external sense organs, so there were regions in the brain separated in situation according to the different senses.

Finally, as to the localization of the three motor centres in the cortex, we may keep in mind that R. V. Vieussens, of Montpellier, in his *Neurographia Universalis*, described three regions in the medullary portion of the brain; the regio superna formed of the nerve tracts of the upper part of the corpora striata and capsula interna, regio media of the middle part, regio infima of the lower part of them; moreover, Vieussens had followed the fibres of the highest region into the posterior region of the spinal cord, the fibres of the middle region through the pons Varolii down to the anterior part of the spinal cord, where they came into connexion with the anterior origins of the spinal nerves, and the fibres of the lowest region into the nerves which proceed from the medulla oblongata and some of the anterior origins of the spinal nerves. On the basis of these facts Swedenborg could now construct his doctrine of localizations. He only needed to extend the regions of Vieussens along the nerve fibres to the regions of the cortex which correspond to them, and now he had his three cortical lobes. When he followed the medullary nerve tracts from these lobes, through the corpora striata and capsula interna, the medulla oblongata and the spinal cord, and the anterior origins of the spinal nerves, he perceived the correspondence of the cortical lobes and the parts of the body. Now he had his doctrine of localizations complete and therewith put the crown on his work, holding that the cerebral cortex, and more definitely the cortical elements (or nerve-cells) form the seat of the activity of the soul and are arranged in departments according to their various functions.

REFERENCE.
[1] New edition of Swedenborg's writings, published by the Swedish Academy of Sciences, vol. i, p. 29.

AN ANENCEPHALIC FETUS, WITH A MENINGOCELE AND FACIAL CLEFT.

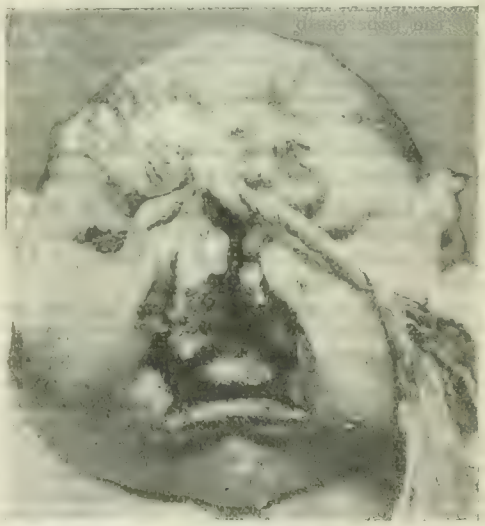
By REGINALD J. GLADSTONE, M.D., F.R.C.S.,
Middlesex Hospital, London.

THE remarkable specimen of an anencephalic human monster with facial cleft, shown in the annexed engraving, was sent to me by Dr. J. Strickland Goodall, with a note from the practitioner, Dr. S. W. Thompson, who attended the case, saying that the mother was a primipara, aged 35, that there was a vertex presentation and no hydramnios, that the placenta and membranes appeared to be normal, and that there was no history of any specific or other illness.

The fetus was female and appeared to have been born at full time. The head was bent downwards and forwards, so that the chin rested upon the manubrium sterni. The most noticeable features are the small size of the cranial portion of the head and the presence of a deep cleft, which passes through the upper lip and then upwards to the palpebral fissure on the left side of the nose; in this cleft there lay the twisted pedicle of a membranous sac attached to the frontal region, and containing two flattened vessels. The cleft in the lip is continuous with a cleft between the premaxilla and the left maxilla, and with a cleft palate. The cleft in the palate is continuous with both the left and right nasal cavities. The premaxilla is, however, attached to the right maxilla in front, and is rotated considerably to the right. The alveolar processes of the maxillae are approximated, while the imperfectly developed palatal processes are separated by a narrow cleft not more than 2 mm. in width at the narrowest part. The tongue is well developed and projects upward into the angular gap between the maxillae. There is an incomplete cleft of the upper lip on the right side; the right nostril is, however, completely formed. Attached to the pedicle of the membranous expansion on a level with the right ala nasi is a cutaneous nodule, which appears to represent the left ala. This nodule is to the right of the pedicle; another smaller nodule is placed to the left of the pedicle between it and the left palpebral fissure. The eyelids ar complete on both sides; on separating them a conjunctival sac is visible but no eyeball.

In the frontal region and on each side of the attachment of the pedicle there were two thick-walled vesicles about 15 mm. in diameter, which were continuous at their bases externally with the skin of the scalp, and internally with the membranes of the brain. These vesicles looked not unlike misplaced eyeballs, but on making an incision into them, it was seen that they were filled with a naevoid tissue, containing a reddish-brown clot, and the thick white wall which appeared like the sclerotic coat was not lined by an inner pigmented layer. The stalk of the membranous sac is continuous with the membranes of the brain, which are exposed at the vertex of the head within the limits of a large fontanelle which is bounded behind by the occipital bone, and laterally by the imperfectly developed parietal and frontal bones.

The continuity of the sac with the membranes of the brain was clearly shown by turning the scalp forward from behind, removing the vault of the skull and at the same time cutting through the attachment of the membranes to the margin of the fontanelle. On doing this, just to the right of the attachment of the pedicle, a small dermal



An anencephalic fetus, with facial cleft and a membranous sac attached by a twisted pedicle to the frontal region. ♀

inclusion was exposed, from the centre of which a minute tuft of hairs projected. This was tubular in form, and looked like the end of a vessel cut transversely; on close inspection, however, the hairs were seen to be coming out of the lumen of the supposed vessel, and its true nature was revealed.

The membranes of the brain were of a dark reddish-brown colour. The dura mater externally contained a plexus of large irregular veins which ended in the usual way in two lateral sinuses. Internally to the dura mater was the pia arachnoid, which enclosed the characteristic reddish-brown naevoid tissue which takes the place of the brain in these monsters.

An examination of the thoracic and abdominal viscera showed no abnormality. The suprarenal bodies which are sometimes absent in anencephalic monsters were present in this specimen, and appeared to be normal.

This case differs from the more common forms of anencephalus in the presence of the membranous expansion with its twisted pedicle. This is presumably the proximal part of an originally closed sac, which formed a meningocele attached by a narrow stalk to the vertex of the head. The stalk of the sac appears to have lain in the fissure of the face, and probably caused it by interfering with the proper union of the facial processes. The sac must have ruptured before or at the time of birth, and its distal part appears to have been cut away.

THE MUSCLE OF TREITZ AND THE PLICA DUODENO-JEJUNALIS.

By P. T. Crymble, M.B., F.R.C.S.Edg,
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My attention was directed to the muscle of Treitz on account of the contradictory statements regarding its attachments, and to the plica duodeno-jejunalis by reason of its importance to the surgeon as a landmark in the operation of posterior gastro-enterostomy.

Material examined consisted of twenty-one adult subjects, two six-month fetuses.

Muscle of Treitz.

Quain's Anatomy states:

The upper end of the ascending portion of the duodenum is maintained in position by a strong fibrous band descending from the *left crus* of the diaphragm and the tissue around the coeliac axis. This band is called the musculus suspensorius duodeni.

Cunningham's *Anatomy* states:

The duodeno-jejunal flexure is fixed by a thin band of unstriped muscle, which is attached above to the strong connective tissue around the coeliac axis, as well as to the *left crus* of the diaphragm, and below joins the muscular coat of the duodenum at the flexure. This band is known as the suspensory muscle of the duodenum (musculus suspensorius duodeni).

Ellis (Addison) states:

The duodeno-jejunal flexure is firmly held up to the inferior surface of the pancreas by a strong band of fibres, the suspensory ligament (Lockwood) which passes upwards behind the pancreas. In the child this band consists largely of unstriped muscle fibres, and is readily defined. It passes upwards to the left of the coeliac axis, and blends with the diaphragm to the right of the oesophageal opening.

Treves (Hunterian Lectures, 1885) states:

The muscle of Treitz passes to the left crus of the diaphragm.

Treitz, in his article "Ueber einen neuen Muskel am Duodenum des Menschens" (*Vrtljschr. f. d. prakt. Heilk. Prag.*, 1853, xxxvii, 113–114, 1 pl.), makes the following statement:

The muscle is thin, of triangular form, and springs with broad base from the upper edge of the duodeno-jejunal flexure, and from a portion of the pars transversa inferior. Ascending from these towards the hiatus aorticus, it changes into a tendon which becomes gradually smaller, and loses itself in the thick connective tissue which surrounds the stem of the superior mesenteric artery and coeliac axis, and which fixes and encloses the ganglia and nerves of the coeliac plexus. In order that the connective tissue around these arteries may offer a sufficiently firm seat of origin for the muscle, without the arteries and ganglia being torn during a strong pull on the flexure, numerous fibrous bands pass down from the diaphragm and interweave themselves with the connective tissue covering of the arteries and ganglia. This support is in many cases still more striking, in that a pretty massive muscle bundle from the diaphragm comes to meet the duodenum muscle. This *Hilfsmuskel* springs usually from the right edge of the oesophageal opening, descends on the left side of the coeliac axis over the anterior surface of the solar ganglion to the superior mesenteric artery, and diffuses itself tendinously in the connective-tissue covering of the latter. In this way it acts as a counter-support for the duodenal muscle, for the fixation of the ganglion, and as a point of origin for the diaphragm.



Fig. 1.—A photograph of the plate appearing in Treitz's original article. MS, musculus suspensorius duodeni. HM, *Hilfsmuskel*.

The muscle is poorly developed at birth, but develops with age and with dragging on the flexure. It is continuous with the longitudinal muscle fibres of the duodenum, and is probably only the pulled-out longitudinal muscle fibres. It is a fixation apparatus, and is most suitably named "musculus suspensorius duodeni."

In only one subject examined was I unable to find the musculus suspensorius duodeni. In eight subjects the structure was examined in its whole extent. In two of these it ended in the connective tissue around the coeliac plexus. In six it was traced into the diaphragm, and in these six cases it had a similar course.

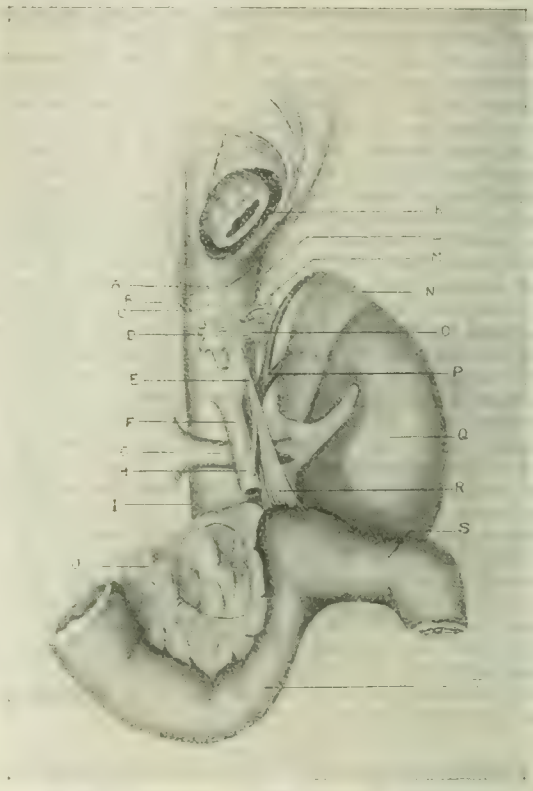


Fig. 2.—A dissection of the musculus suspensorius duodeni, intermediate tendon and *Hilfsmuskel*. A, *Hilfsmuskel*; B, right crus; C, right phrenic artery; D, coeliac axis; E, intermediate tendon; F, superior mesenteric artery; G, left renal vein; H, mesenteric slip of Treitz muscle; I, aorta; J, pancreas; K, oesophagus; L, left crus; M, left phrenic artery; N, left suprarenal body; O, left semilunar ganglion; P, left capsular vein; Q, left kidney; R, muscle of Treitz; S, jejunum; T, duodenum.

If the duodeno-jejunal flexure be pulled downwards, and the anterior layer of peritoneum forming the plica duodeno-jejunalis removed, a number of pale muscular-looking fibres will be seen, passing upwards from the superior surface of the duodeno-jejunal flexure. This small muscle-like mass has a free left edge, lateral to which is the inferior mesenteric vein. On tracing it to the right one is unable to define its right edge, as it forms a continuous sheet with the structures passing on the one hand to the concavity of the duodenum, and on the other hand into the mesentery of the small intestine. This is evidently the musculus suspensorius duodeni of Treitz.

The greater part of it ends superiorly in a small elastic tendon (intermediate tendon), which lies to the left of and opposite the origins of the superior mesenteric and coeliac axis arteries. A small portion of it is attached to the connective tissue surrounding the superior mesenteric artery. The intermediate tendon passes upwards in front of the nerve cord connecting the two semilunar ganglia, and ends in a small muscular bundle (*Hilfsmuskel* of Treitz) which springs from the right crus of the diaphragm or from the lower part of the oesophageal opening. In the latter case most or all of the fibres sweep round the right side of the oesophageal opening. In one of my subjects some fibres also passed to the left side of the opening. Instead of a muscular attachment one may

find a fibrous band connecting the intermediate tendon to the diaphragm.

There is therefore a band of tissue passing from the duodeno-jejunal flexure to the diaphragm. Treitz subdivided this band into three parts:

1. Lower, consisting of involuntary muscle fibre (the musculus suspensorius duodeni).

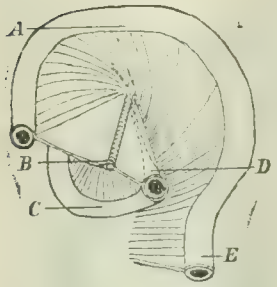


Fig. 3.—A diagram resembling Fig 466, Poirier, Tome IV. The Treitz structure shown by dotted lines. A, Transverse colon; B, superior mesenteric artery; C, duodenum; D, muscle of Treitz; E, descending colon.

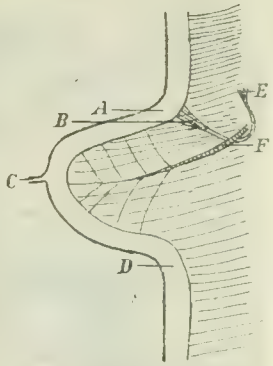


Fig. 4.—The Treitz structure in the position it would occupy before the twisting of the bowel around the superior mesenteric artery. A, Duodeno-jejunal flexure; B, muscle of Treitz; C, vitelline duct; D, midpoint of transverse colon; E, *Hilfsmuskel*; F, superior mesenteric artery.

2. A middle tendinous portion formed of yellow elastic fibres.

3. An upper part, composed of striated muscles (the *Hilfsmuskel*).

By a microscopical examination of fresh material from a six months fetus and an adult, Treitz's statements were in great part confirmed. Involuntary muscle fibre was plentiful in the fetal structure, but could only be found with difficulty in the adult, yellow elastic fibrous tissue being the main material in the latter.

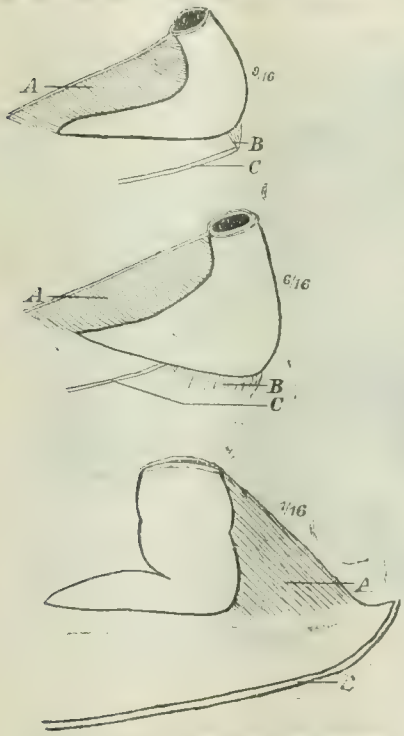


Fig. 5.—Shows the three conditions found. In one the plica was absent. A, Mesentery; B, plica duodeno-jejunalis; C, inferior mesenteric vein.

Relations.

Posterior: Left renal vein; left suprarenal vein; nerve cords connecting semilunar ganglia; inferior phrenic arteries; aorta.

Anterior: Inferior mesenteric vein; body of pancreas; splenic vessels; lesser sac of peritoneum; coronary artery.

Mesial: Superior mesenteric artery; coeliac axis.

Lateral: Inferior mesenteric vein.

Development.

As I have not examined the Treitz structure at an earlier stage than the six-month fetus, the views on the early development are theoretical. During the development of the alimentary tract the small intestine and a portion of the large intestine revolve around the superior mesenteric artery in a direction opposite to that of the hands of a watch through 270°.[1] If one mentally untwists this loop of bowel and remembers the adult position of the Treitz structure (lies to the left of the superior mesenteric artery), it is evident that if the Treitz structure exists at such an early stage as that represented in Fig. 4, it will present the relation to the superior mesenteric artery there depicted.

If Fig. 4 is correct, it is quite probable that the Treitz

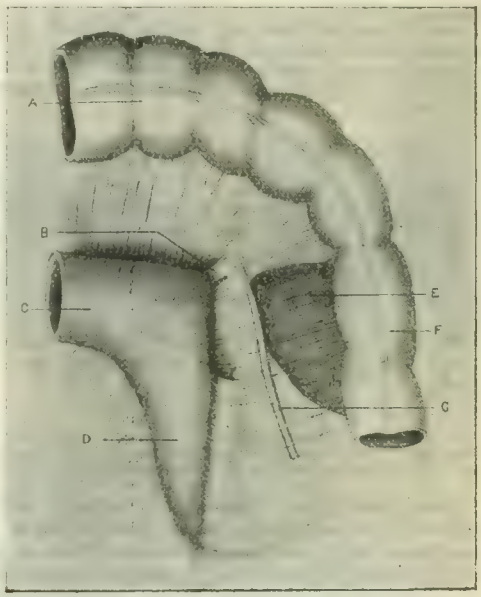


Fig. 6.—The transverse colon has been thrown upwards, and the small intestine has been thrown to the right. A plica duodeno-jejunalis of small extent is exposed. A, Transverse colon; B, plica duodeno-jejunalis; C, jejunum; D, fourth part of duodenum; E, left kidney; F, descending colon; G, inferior mesenteric vein.

structure is an important factor in pulling the duodeno-jejunal flexure round the superior mesenteric artery and into its final position. Its action would then be of a similar nature to that of the gubernaculum testis. It further resembles the gubernaculum testis in that in the fetus the musculus suspensorius duodeni consists chiefly of involuntary muscle fibre, whereas in the adult this has almost entirely disappeared, fibro-elastic tissue being the chief component.

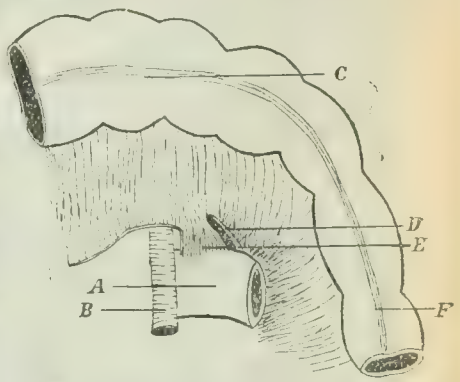


Fig. 7.—The same subject as Fig. 6. The transverse colon has been thrown upwards and the small intestine pulled downwards. The anterior surface of the plica is seen. A, Duodeno-jejunal flexure; B, superior mesenteric artery; C, transverse colon; D, inferior mesenteric vein; E, plica duodeno-jejunalis; F, descending colon.

Function.

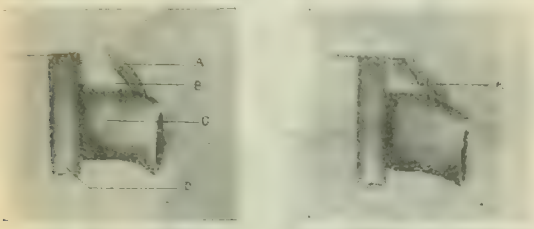
The *Hilfsmuskel*, contracting synchronously with the diaphragm, will during inspiration prevent the solar plexus from moving downwards (in one subject the intermediate tendon split to enclose and support the nerve cord connecting the two semilunar ganglia), and will support the duodeno jejunal flexure and the mesentery of the small intestine.

The Plica Duodeno-jejunalis.

This is a small fold of peritoneum which has received several names; for example, Jonnesco refers to a fold of peritoneum attached to the flexure, and assisting in the formation of the superior duodenal fossa, as the superior duodenal fold. One could, however, only apply this term to the plica shown in Fig. 6, where it is of small extent and attached only to the duodeno-jejunal flexure, and not

to the plica in Fig. 9, where the jejunum has an extensive attachment to the fold. Many surgeons refer to it as the ligament of Treitz in describing the operation of posterior gastro-enterostomy; for example, Bingham's *Operative Surgery*, 1908:

> The beginning of the jejunum is now sought for, and is most readily found by temporarily displacing the great omentum upwards and to the left, and the transverse colon and mesocolon upwards and to the right, and by following down the under surface of the mesocolon to its base from left to right, as the finger passes beneath the *ligament of Treitz*, a loop of small intestine is encountered, which is the commencement of the jejunum.



A, Inferior mesenteric vein; B, plica duodeno-jejunalis; C, duodeno-jejunal flexure; D, superior mesenteric artery. A, Muscle of Treitz.

Fig. 8.—The same subject as Fig. 6. The anterior layer of the plica has been removed to expose the musculus suspensorius duodeni. The plica was entirely filled by the latter structure.

As I have been unable to find in Treitz's article any description of such a ligament, it is probable that a mistake has been made, the plica duodeno-jejunalis having been mistaken for the musculus suspensorius duodeni.

Plica duodeno-jejunalis is the term used to describe this fold in the Spalteholtz atlas, and, as it is suitable for either of the common forms of fold, it should be generally adopted.

This plica was absent in only one of the bodies examined. Two types of the fold may be described:

1. The plica connects the summit of the flexure to the posterior abdominal wall immediately inferior to the body of the pancreas. It does not extend to the left of the inferior mesenteric vein, and it accurately surrounds the musculus suspensorius duodeni (see Figs. 6, 7, and 8).

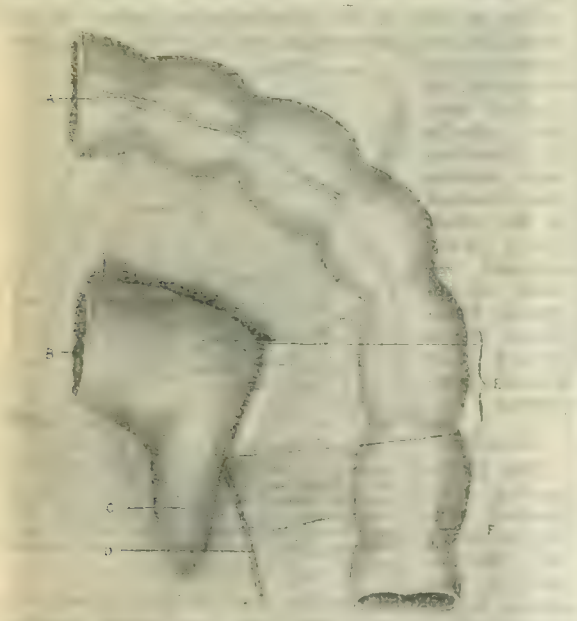


Fig. 9.—The transverse colon has been thrown upwards and the small intestine has been thrown to the right. A plica of Type 2 is exposed. A, Transverse colon; B, jejunum; C, fourth part of duodenum; D, inferior mesenteric vein; E, plica duodeno-jejunalis; F, descending colon.

2. The plica is more extensive than in (1). It connects the summit of the flexure to the posterior abdominal wall and the antimesenteric border of the first inch or inch and a half of jejunum to the inferior surface of the transverse mesocolon. It extends to the left of the inferior mesenteric vein, and the musculus suspensorius duodeni is enclosed only by its mesial portion (see Figs. 9, 10, and 11).

In 9 cases out of 16 a plica of Type 1 was present. In 6 cases out of 16 a plica of Type 2 was present.

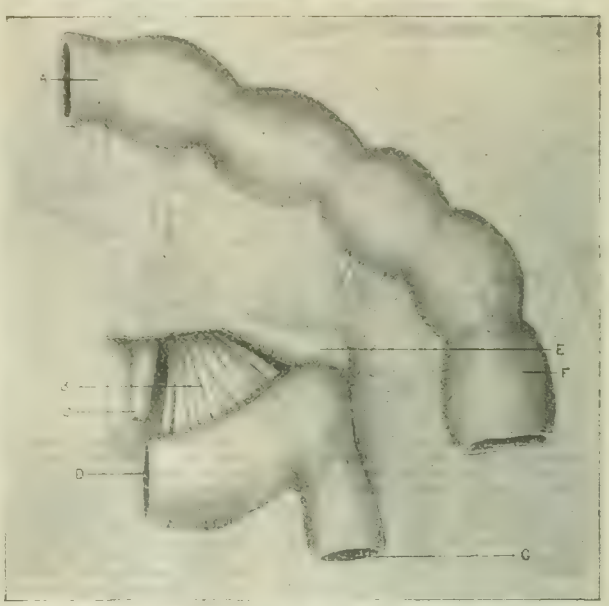


Fig. 10.—Same subject as Fig. 9. Small intestine pulled downwards and transverse colon thrown upwards. A sufficient amount of the anterior layer of the plica has been removed to completely expose the musculus suspensorius duodeni. Note that the latter structure is very large, but only occupies the mesial portion of the plica. A, Transverse colon; B, muscle of Treitz; C, superior mesenteric artery; D, duodenum; E, plica duodeno-jejunalis; F, descending colon; G, jejunum.

An interesting point arises in deciding the exact commencement of the jejunum. Does the jejunum begin at the left edge of the musculus suspensorius duodeni or at the left edge of the plica duodeno-jejunalis? These two points may be separated 1½ in. (Figs. 10 and 11). Are these 1½ in. of bowel to be included in the flexure or in the jejunum?

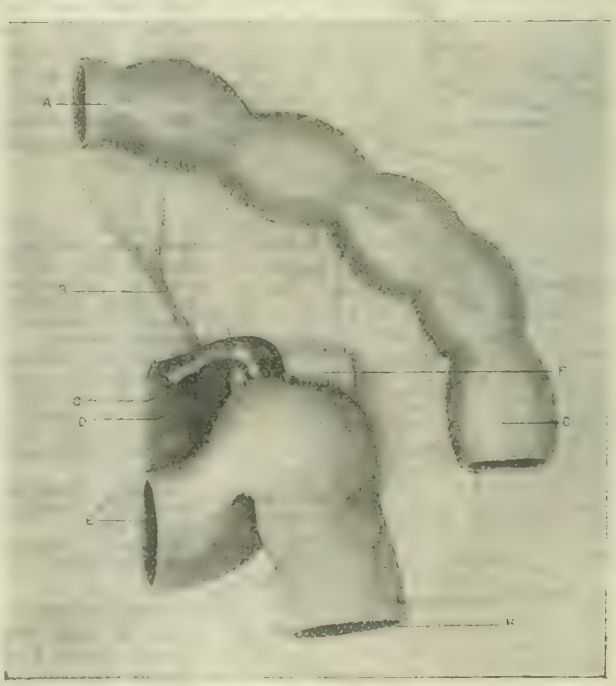


Fig. 11.—A different subject to Fig. 10, but dissected and viewed in the same way. An extensive plica of Type 2 is present, but the musculus suspensorius duodeni is very small. Note that the latter structure is sharply limited laterally by the inferior mesenteric vein. (This relation is always present.) A communication between the middle colic and inferior mesenteric veins is present. A, Transverse colon; B, middle colic vein; C, inferior mesenteric vein; D, muscle of Treitz; E, duodenum; F, plica duodeno-jejunalis; G, descending colon; H, jejunum.

From a study of my material I would include them in the flexure, and therefore begin the jejunum at the left edge of the plica. The duodeno-jejunal flexure should not be defined by the attachment of the musculus suspensorius duodeni alone, but its limits should depend also on the attachment of the plica duodeno-jejunalis.

REFERENCE.
[1] Poirier, Tome iv, Parts II-III, Figs. 463-466.

DISCUSSION.

Professor JOHNSON SYMINGTON, F.R.S. (Belfast) thought that, while Mr. Crymble's theory as to the function of the muscle of Treitz during early fetal life was a very probable one, its subsequent partial conversion into elastic tissue was hardly what one might expect. If in the adult it acted mainly as a ligament, one would expect the change would result in the formation of ordinary fibrous tissue.

Dr. WILLIAM WRIGHT (London Hospital) asked if Mr. Crymble had seen a well-marked plica passing from the transverse mesocolon down to the duodeno-jejunal flexure, and containing a large vein passing from the middle colic area, to open into the inferior mesenteric vein. This plica Dr. Wright had found to bound anteriorly the duodeno-jejunal fossa.

Professor D. WATERSTON (King's College, London) remarked upon the variations existing in the interval between the duodeno-jejunal flexure on the one hand and the root of the transverse meso-colon on the other. In certain cases the flexure was adherent to the transverse mesocolon; in others there was an interval of some inches. This was frequently associated with varying degrees of development of the muscle of Treitz.

Professor ARTHUR KEITH (Royal College of Surgeons, London) had regarded the muscle of Treitz as having a double origin: (1) The upper part formed along with the diaphragm, and, like it, composed of striated muscle; and (2) the lower part formed from the subperitoneal layer of muscular tissue—from the same layer, in fact, as that which gave rise to the gubernaculum.

Mr. N. C. RUTHERFORD (Royal College of Surgeons, Dublin) asked Mr. Crymble at what period of development the muscle of Treitz exercised a function in producing the position and shape of the normal duodenum. The early appearance of the flexure representing the duodenum was too early for complete development of muscular fibres. In late adult life, on the other hand, the lower (mesenteric) portion of the muscle was atrophied. Against these two facts the muscle was easily demonstrable in youth. The speaker was of opinion that the muscle exercised its function in early youth, when it was common to find the attachment of the root of the mesentery horizontal, and the fourth part of the duodenum practically unrepresented—a fact which might be of significance in relation to the difference between the intestinal digestion of the adult and that of the child—a difference due, therefore, to the presence of the fourth part in the former and its absence in the latter.

Mr. P. T. CRYMBLE, in reply, said that the involuntary muscle fibre did not change into elastic tissue, but atrophied, leaving the elastic tissue in great preponderance. A vein running between the middle colic and inferior mesenteric, as mentioned by Dr. Wright, he had seen, but it did not raise a fold of peritoneum. Had it done so, a fossa duodeno-jejunalis would have been produced. He agreed with Professor Keith's view of the morphology of the muscle of Treitz. He believed that it acted similarly to the gubernaculum, and drew the duodeno-jejunal flexure into position. He could not say, in answer to Professor Waterston, if any relation existed between the extent of the plica duodeno-jejunalis and the size of the muscle of Treitz. The largest Treitz muscle was, however, associated with an extensive plica. He had found that the first part of the jejunum ran to the left in a large percentage of cases, but it must be noted that he defined the flexure by the attachment of Treitz muscle. If one were to make a new definition, and define the commencement of the jejunum as the first free part of the bowel, then the course of the first part of the jejunum would frequently be to the right or straight downwards. In reply to Mr. Rutherford, he did not believe that Treitz structure ceased to develop shortly after birth, but he believed that it continued to exert a fixative action on the flexure.

A CYCLOPS AND AGNATHOUS LAMB.

By REGINALD J. GLADSTONE, M.D., F.R.C.S.,
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THE occasional birth of monsters, and especially the cyclopean variety which forms the subject of this paper, has from the earliest times given rise to intense curiosity, and much speculation as to their cause. Geoffroy St. Hilaire describes an anencephalic monster which was preserved by the Egyptians as a mummy; we find frequent allusions to them by Grecian and Roman authors; and in more recent times Samuel Pepys records how "A gentleman told us he saw, the other day, and did bring a draught of it to Sir Francis Pridgeon, a monster born of a hostler's wife at Salisbury; two women children perfectly made, joyned at the lower part of their bellies, and every part as perfect as two bodies, and only one payre of legs coming forth on one side from the middle where they were joined. It was alive twenty-four hours, and cried, and did as all hopefull children do; but being showed too much to people was killed."

The specimen (Fig. 1) which I shall now describe is the



Fig. 1.—Head of fetal lamb, showing cyclops combined with agnathia. A, Bone arch formed by the fusion of tympanic plates; B, hyoid arch; C, closed external auditory meatus.

head of a male lamb, which was presented to Mr. J. Bland-Sutton by Mr. Eric Fazan. There is, in addition to the cyclops, the interesting defect of "agnathia" or absence of the lower jaw.

A single eye elongated in the transverse direction is present in the front of the head. The frontal region above the eye is small, and slopes backward to the occiput. Below the eye is a median projection with a bony nodule at its base. It juts upwards in front of the eye, and is covered on its superior surface by a smooth mucous membrane continuous with the conjunctiva; the under surface is covered with hair, which is directed downwards in the form of a beard. A groove on each side separates the median process from the maxillary process. This groove appears to represent the lateral angle of the mouth, which is normally formed between the mandibular and maxillary processes of the developing face. The median projection will thus be formed by the fusion of the labial portions of the mandibular processes, and the nodule at its base will represent a rudimentary lower jaw.

The palpebral aperture is lozenge-shaped. A rounded angle is present above, where the right and left halves of the single upper eyelid become continuous. The superior conjunctival fornix runs up beneath the lid for about 6 mm. A crescentic fold of conjunctiva is present beneath the upper angle, the horns of which extend downwards to the upper margin of the cornea. The lateral angles of the single palpebral aperture correspond to the outer canthi of the right and left eyes. The margins of the lower lids slope downwards to the base of the median projection. Two vertical folds of conjunctiva descend from the eyeball

to the base of the median process; between them is a slight depression, and on each side a small pigmented area which appears to represent the caruncle. This pigmented area is situated between the lateral fold and the margin of the lower lid. The cornea, which is elongated transversely, is somewhat triangular in outline, the base of the triangle being situated below. Below the median projection the two external ears are connected together by an oval depression, the floor of which is formed by smooth skin, continuous with that lining the inner surface of the ears. The depression is bounded in front by a transverse cutaneous fold By making an incision into this a cavity was opened, which appeared to be formed by the fused cartilaginous portions of the two external auditory meatuses; these are closed at each side externally, and internally are continuous with one another in the middle line. The depression is bounded behind and laterally by a rounded eminence raised by a bony arch composed of the right and left tympanic plates or bullae, which are fused in the middle line so as to form a horse-shoe shaped bar, with the concavity directed upwards and backwards.

In three specimens in the museum of the Royal College of Surgeons (England), 252, 253C, and 253D, this bony arch is seen to enclose the fused right and left tympanic membranes, with rudimentary tympanic ossicles. In specimen 253D, the handles of the right and left malleus are clearly visible, and are placed vertically one on each side in the common membrane.

On making a dissection of the neck, it was seen that the pharynx (Fig. 2) terminated blindly above, and that the vestibule of the larynx opened into the anterior wall of the pharynx in the usual situation. Above this was a rounded tubercle, the rudiment of the tongue; above this again the soft palate and a blind pointed recess in the position of the naso-pharynx. The hyoid arch and larynx were found to be normal.



Fig. 2.—Pharynx of agnathic lamb. A, Blind recess in naso-pharynx; B, vestibule of larynx; C, occipital condyle; D, soft palate; E, rudiment of tongue; F, Pharynx laid open from behind; G, trachea.

On removing the vault of the skull, the two cerebral hemispheres were seen to be fused together in the median plane; a single large anterior cerebral artery sank into the obliterated longitudinal fissure a short distance in front of the optic chiasma and lamina terminalis.

The posterior part of the brain and cerebellum, and the mid-brain appeared normal.

The crista galli and cribriform plate were seen to be absent, the roof of the orbit being formed by a fusion of the two halves of the frontal bone. A single optic nerve passed forward from the chiasma through an optic foramen in the median line. The thoracic and abdominal viscera appeared to be normal.

In discussing the causes which lead to the defects of cyclops and agnathia two varieties of the condition must be distinguished. First, the presence of a median eye, fusion of the ears, and absence of the lower jaw, which sometimes occurs in twins united with one another face to face and sternum to sternum (cephalothoracopagus); and, second, the same conditions occurring in a single fetus, such as the cyclops lamb which I have described. In the former two secondary faces are formed, each of which may be perfect, one half of each face being formed from one fetus and the other half from the other fetus (Fig. 3). More commonly, however, the two fetuses are united with one another at an angle so that one secondary face is imperfectly developed, whereas the other may be perfectly formed (Fig. 4). In these cases it is the central portion of the secondary face marked *A* in Fig. 4) which is defective; arrest of growth of the ethmoidal and mandibular regions of the face takes place, with the result that all degrees of approximation of the eyes and ears occurs, from the normal to cyclops and synotia, or there may be a total absence of the eyes and ears. When cyclops and synotia occur in a single individual we have, I think, the same mechanical cause coming into play, namely, an arrest of growth in the part of the developing head, which will become the ethmoidal region, and lower part of the face, including the mandible, accompanied by a symmetrical growth and fusion of the outer parts of the right and left sides of the face. Thus, the outer half of the right eye will be joined with the outer half of the left eye, the growth of the inner halves of the two eyes and the parts between them being suppressed owing to the arrest of growth of the part from which they should normally be developed.

The exact cause of this arrest in growth and why it should affect a particular part is not yet, I think, satisfactorily explained, but the trend of opinion seems to be in favour of external influences, such as a faulty implantation of the ovum, dependent, perhaps, on endometritis, giving rise to an imperfect formation of the chorion, and consequent interference with the nutrition of the embryo. In different stages of development different parts of the growing embryo or its appendages will be more susceptible to this interference in its nutrition than others, and hence suffer while other parts remain unaffected. When the arrest of the normal processes of development has once

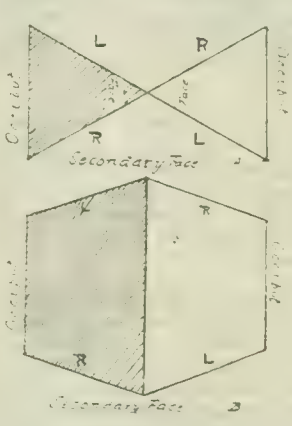


Fig. 3.

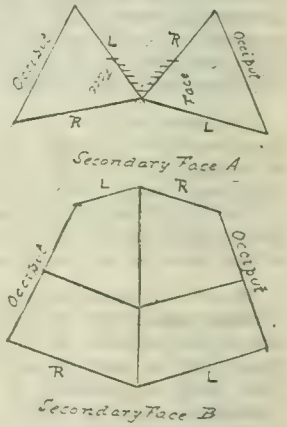


Fig. 4.

taken place, many of the further stages in the development of the monster are secondary to the primary defect. In the case of cyclops, as pointed out by Huschke as early as 1832, the arrest of growth apparently takes place in the very early stages of development when the optic evaginations are continuous with one another across the ventral aspect of the forebrain.

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A CASE OF CONGENITAL ABSENCE OF THE TRANSVERSE MESOCOLON.

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The following case of absence of the transverse mesocolon, as found in a dissecting room subject, seems worthy of record, for two reasons: (1) Because of its rarity; (2) because, by virtue of its combination with other anomalous features in the disposition of the intestinal tract, it illustrates the mode of development of such an anomaly in a striking manner.

The subject was a female, aged 60 years; cause of death, chronic bronchitis.

When the abdomen was opened it was noticed that the caecum was enormously distended. It occupied almost the whole of the lower right quadrant of the abdomen. After some search the terminal portion of the ileum was found to open into the caecum at an unusually high level —namely, at a point on the mid-Poupart plane, one inch above the level of the umbilicus. To permit of this, the lower part of the ileum with its mesentery had undergone a partial volvular twist upwards over the front of those coils usually found in the cavity of the pelvis. The appendix was retrocaecal, its terminal inch being extra-peritoneal; it had no mesentery, and was about 10 cm. in length.

The opening from the caecum into the ascending colon was small and lateral in position. The ascending colon, 10 cm. in length, led directly upwards to the under aspect of the liver, where it turned downwards into a sharply curved, S-shaped flexure, which lay directly in front of the ascending colon. A few adhesions were present at the angle between the ascending colon and S-shaped curve, connecting it with the gall bladder and the anterior abdominal wall. The S shaped flexure seemed to form the first part of the transverse colon; it had a long, narrow mesentery. To the left of this the transverse colon disappeared behind the peritoneum. From this point to its termination, just above and to the left of the duodeno-jejunal flexure, it was closely applied to the posterior abdominal wall. The splenic flexure had the form of an open curve round the duodeno-jejunal junction, and was three inches removed from the spleen. The descending colon lay on the front of the psoas muscle.

The peritoneum covering the transverse colon, and throughout the rest of the abdomen, with the one exception at the hepatic flexure above noted, was fine in texture and free from the effects of disease. The walls of the strongly contracted transverse colon were hypertrophied. The longitudinal muscular coat was continuously disposed around its circumference although it was thicker in the normal position of the taeniae, giving an appearance comparable to that obtaining in the wall of the rectum. The same appearance was noted in the walls of the descending colon.

Among the other viscera the stomach occupied, for a female, an unusually horizontal position in the upper abdomen. Its pyloric end lay 3 in. to the right of the mesial plane, opposite the tip of the ninth costal cartilage. The gall bladder lay further to the right, and bore its wonted relation to the pylorus. The second part of the duodenum covered the mesial half of the right kidney. The left kidney lay nearer to the mesial plane than usual, and was rotated so that its axis was vertical.

On dissection no right colic artery was found, but otherwise the distribution of the mesenteric vessels was normal. The abnormal S loop of the colon was supplied from the middle colic. The pancreas showed a distinct impression on the lower part of its anterior surface, the resultant flattening in that part of the gland obliterating the inferior surface of normal anatomy; this was due to the pressure of the abnormally placed colon.

To understand the production of such an arrangement of the abdominal viscera it is evident that two sets of factors must be considered—namely, (*a*) primary, of embryonic origin; (*b*) secondary, of mechanical origin. The latter, being the least important, may be summarized briefly as merely tending to exaggerate the pre-existing malformation, and are referable to the incarceration of the transverse colon. Their results are seen in the dilated caecum and the hypertrophied muscular coats of the adjoining great gut. Further, the high position of the ileo-caecal valve has probably been exaggerated by reason of the dilatation of the caecum.

The primary features and ultimate causation are, however, only referable to some obstacle to the rotation of the primitive gut, and as such occurred in early embryonic life. Judging by the position of the splenic flexure and descending colon, the early excursion of the mid-hind-gut junction to the left was incomplete, and consequently the space within the coelom necessary for the foldings and growth of the mid gut towards the right of the cavity was unduly limited. To this is attributable the production of the abnormal subhepatic bends, and the crowding back of the remainder of the caudal limb of the mid-gut loop against the dorsal wall of the cavity. The dorsal mesentery of this portion of gut accordingly adhered to the dorsal wall and disappeared. During this process, and equally a result of the overcrowding, the still mobile duodenum was carried further to the right than is normally the case.

To judge from the abnormally high ileo-caecal valve, the retro-peritoneal tip of the appendix, and the lack of a meso-appendix, the usual downgrowth of the caecum was restrained and remained incomplete.

This series of abnormalities is only referable to:

1. Shortness of the primitive dorsal mesentery of the mid and hind gut.
2. Curbing of the developmental excursion of the originally mesially-placed tube.
3. The production, during the period of the most rapid growth of the gut, of a series of loops inordinate in number and form.

On the other hand, the dorsal mesogastrium appears to have developed a normal bursa omentalis. Its attachments are, however, abnormal, because in the absence of a mid-gut mesentery it has adhered, not only to the ventral aspect of the transverse colon, but also below it to the front of the definitive mesentery at its root. Thus the colon in this situation comes to lie concealed behind the peritoneum just above the abnormal base of attachment of the great omentum.

Further dissection of this subject has revealed congenital anomalies of the diaphragm and lumbar plexus. To what extent, if any, these are correlated with that above described is not apparent. The condition of the gut moorings is one of interest to the clinician, and as such seems worthy of record.

I am indebted to Professor Geddes for his courteous assistance in the preparation of this report.

DISCUSSION.

Dr. Elliot Smith (Manchester) remarked that such cases were very rare, and that he had seen but one similar case, in an Egyptian subject.

RECENT RESEARCHES ON THE ANATOMY OF THE BIRD'S HEART.

By Ivy McKenzie, M.B., and Jane I. Robertson, M.B.

There is no department of medical science in which the co-operation of anatomy and physiology with clinical observation has been more fruitful than that which concerns the heart. The foundation of this progress was laid by the researches of Gaskell, McWilliam, and Engelmann. Following the work of Stanley Kent and His, the investigations of Retzer in America, of Aschoff, and his pupils, Tawara and Koch in Germany, and those of Keith and Flack in this country, have gone far to interpret a structural basis for the complicated movements of cardiac contraction. To McKenzie and Wenckebach is due the credit of applying the results of these investigations in the domain of clinical medicine. Mönckeberg, Sternberg, and others have succeeded in establishing in many cases a correlation between clinical phenomena and structural change. The attention of the anatomist has been chiefly concentrated on a specialized form of cardiac muscle—on that structure which is regarded as preserving the muscular continuity between the primitive chambers of the heart. A muscular connexion between auricles and ventricles was first described by Stanley Kent in 1893, and in the same year His published his observations on the bundle that goes by his name. It is to the Aschoff school, however, that anatomy is indebted for the most extensive and thorough exposition of the morphological distribution and histological structure of the auriculo-ventricular connexion. It has been definitely proved that in the mammalian heart the auriculo-ventricular connexion is preserved by a bundle of muscle fibres, which at one end are in continuity with the muscle fibres of the coronary sinus, and at the other with the subendocardial muscle fibres of both ventricles; it has also been shown that in ungulates the Purkinje fibres represent the terminal distribution of this bundle. It has been stated that the seat of distribution is for the most part at the bases of the papillary muscles. The

individual fibres of this muscle system may be distinguished from ordinary cardiac muscle by the following characteristics:

1. They are as a rule narrow on the auricular side of the bundle. They contain glycogen, but do not possess such a strong affinity for the myosin stain (with van Gieson) as the ordinary muscle fibre.

2. Transverse striation is not so well marked, may only be present at the edges of the fibres, or may be absent altogether.

3. The fibres contain a relatively large number of nuclei which are round or kidney-shaped, as contrasted with the rod-shaped nuclei of the ordinary cardiac muscle fibres.

4. The fibres in the muscle bundle are in places interlaced in a kind of network.

5. An accompanying network of nerve fibres with ganglion cells has been described in some cases.

6. The Purkinje muscle cells differ from the fibres of the main bundles in being broader and in containing more protoplasm; they are also, however, deficient in striation, have a short rounded nucleus with very often a clear space in the protoplasm round the nucleus.

7. This specialized muscle system is sharply demarcated in its main course from the ordinary cardiac muscle by an envelope of connective tissue; and it further has a special blood supply.

8. This particular muscle does not participate in hypertrophic or atrophic changes in the ordinary cardiac muscle.

9. Experimental and clinical evidence proves that it is associated with the maintenance of co-ordinated movement between the auricles and ventricles.

Until 1906, when Keith and Flack published their researches into the muscular connexions of the primary divisions of the heart, the bundle of His and its associated fibres were regarded as the only form of this type of specialized cardiac muscle. These authors, however, have described the existence of another bundle, or node, at the junction of the superior vena cava with the right auricle. Koch has confirmed the original view of Keith and Flack, that this node corresponds in structural detail with the auriculo-ventricular bundle; and the experiments of Einthoven, Hering, and Lewis indicate that functionally it has to do with the origin or regulation of the auricular contraction. What function or combination of functions are to be attributed to these nodes is still a matter of dispute. Whether they are cardio-motor, cardio-regulatory, or conductors of muscle stimuli is a problem without the scope of the present communication; probably, conceptions of cardiac action which are formed as the result of arbitrarily attributing single functions to single structures are too elementary to afford explanation of the complicated phenomena involved in co-ordinate contraction of the heart.

Keith and Flack have also examined the muscular connexions between the primary divisions of the heart in the lower vertebrates. They have found that at the sino-auricular junction and at the auriculo-ventricular groove the musculature is specialized, although there is this point of distinction, that, as one proceeds from fish to mammals in the animal scale, the special tissue becomes more concentrated. Keith and one of us (McKenzie) have more recently carried out an extensive investigation into the hearts of the lower vertebrates. In all vertebrates, with the exception of birds, we have found specialized tissue at the junction of the primary divisions of the heart, and we have elsewhere emphasized the close relationship between muscle and nerve in these regions; to this combination of structures we have given the name of "nodal tissue." In the bird's heart, however, there is no bundle of His, and there is no evidence of a specialized musculature at the auriculo-ventricular junction. At the posterior aspect of the right auriculo-ventricular groove it would appear that a small thin leash of ordinary cardiac muscle fibres connect the right auricle with the right ventricle; these fibres are best seen in the region of the opening of the left superior cava. The heart of the monotreme Echidna was examined to see whether it threw any light on the condition in the bird's heart; here it was found, however, that the nodal tissue was present in much the situation and extent as in the higher mammals. Tawara in his monograph on the subject leaves the reader with the impression that the bird's heart resembles the mammalian heart in the possession of a special muscle system. He does not give a detailed description of the situation of the main bundle; he refers, however, to the presence of large non-striated fibres of the Purkinje type in the neighbourhood of the blood vessels.

In view of the somewhat inconclusive character of these findings, and more especially in view of the interesting results obtained with the electro-cardiogram by Dr. F. Buchanan in the Physiology Laboratory at Oxford, we decided to make a further examination of the bird's heart from the anatomical side. We have been able to confirm the previous finding that in the bird's heart there is no bundle of His, such as is present in the mammalian heart. In the pigeon's heart the large pale fibres accompanying the blood vessels, and referred to by Tawara as Purkinje fibres, do not constitute a muscular connexion between auricle and ventricle. The right auricle is connected with the right ventricle by a thin band of fibres of ordinary cardiac muscle in the region of the opening of the left superior vena cava. There is no special system of muscle fibres connecting the right or left auricles with the bases of the papillary muscles of the left ventricle. We have not been able to discover any specialized musculature in the region of the superior vena cava corresponding to the node of Keith and Flack. Although there is no specialized muscle in the usual sites, there was noted in some cases a very intimate association between nerve and muscle in the region of the opening of the superior vena cava, and also in the region of the auriculo-ventricular groove where the bundle of His lies in the mammalian heart.

The heart of a bird is thus to be regarded as distinct from that of fish, amphibians, and reptiles on the one hand, and from that of mammals on the other. Examination of the ventricular base of the bird's heart, however, revealed the presence of structures which may be worthy of attention. These structures are associated (1) with the nerves at the bases of the aorta and pulmonary artery, where these vessels are contiguous; and (2) with the muscle tissue at the points where the semilunar valves rest on the ventricular muscle.

1. *Nerve Structures at the Ventricular Base.*

In close association with the main nerve trunks as they descend between the aorta and pulmonary artery, where these arterial stems are contiguous, there are small round bodies not unlike touch corpuscles (Fig. 1); in the pigeon's

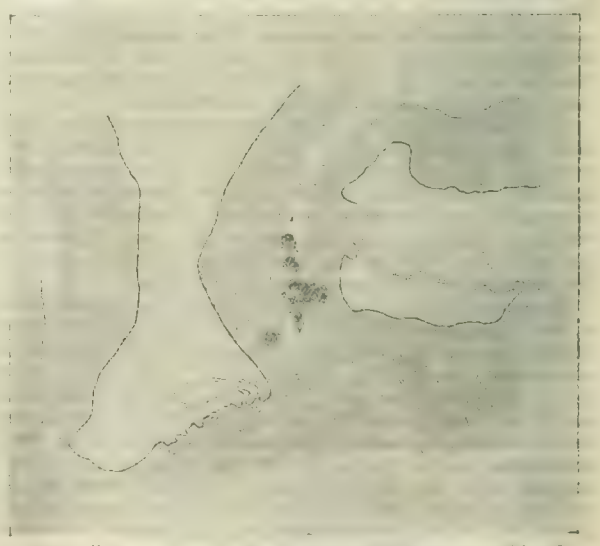


Fig. 1.—"Cardiac corpuscles" at the root of the aorta (left) and pulmonary artery (right).

heart they are somewhat smaller than the glomeruli of the human kidney, are surrounded by a layer of fibrous tissue, and where a number occur together it is seen that they possess a very abundant blood supply (Fig. 2). The cells of these "cardiac corpuscles" are epithelioid in appearance, and take on the yellow stain with van Gieson. They are in some instances seen to be very closely associated with nerve fibres (Fig. 2). In some instances they are embedded in the wall of the pulmonary artery or aorta. They are also to be found in the course of the large nerve trunks which wind round in front of

the aorta and have been observed accompanying the large nerve trunks at the entrance of the superior vena cava. What their actual significance is it is difficult to determine, and in the absence of more detailed examination by special histological methods it is futile to speculate. In any case, they are situated in close association with the nerves and at places where they are exposed to the varying intracardiac pressure; in view also of their very rich blood supply, the possibility of their exercising some nutritional function must be kept in mind.

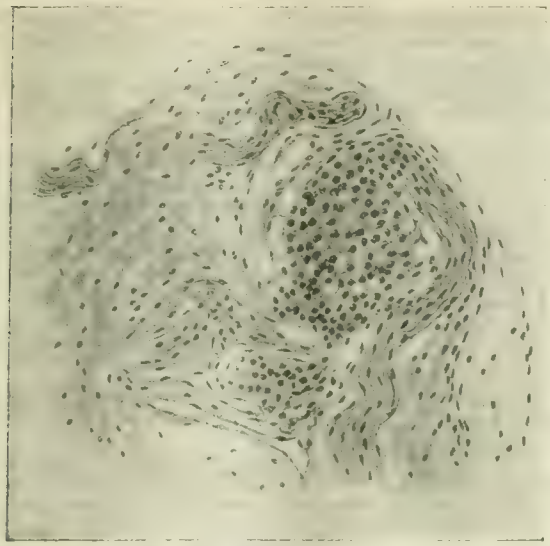


Fig. 2.—"Cardiac corpuscle," consisting of a round mass of epithelioid-looking cells in close association with nerve fibres, and a rich capillary blood supply.

2. *Muscle Tissue at the Ventricular Base.*

At the ventricular base of the heart, in the region of the attachment of the aorta and pulmonary artery, a mass of peculiar muscle tissue surrounds the opening of these vessels. This tissue lies between the valves and the ordinary cardiac muscle, or forms a kind of cushion on which the valves rest. It completely surrounds the apertures leading from the ventricles and is continuous for some distance in some cases on the under surfaces of the semilunar valves (Figs. 3 and 4). In older animals it has a loose areolar appearance, contains a considerable amount of connective tissue, and comparatively few narrow muscle fibres. The muscle fibres are deficient in striation and the nuclei are somewhat rounded; the fibres are continuous with the ordinary cardiac musculature on the ventricular aspects of the cushions, and there are in places considerable prolongations into the lumena of the ventricles. In the hearts of young birds, from a few days to a few weeks old, this structure stands out very distinctly from the surrounding muscle. The fibres are in such cases arranged in whorls, and the muscular elements are relatively more abundant than in the same situation in the adult heart. The fibres themselves, however, are smaller and more irregular than the ordinary fibres, and they do not possess such a strong affinity for the myosin stain (van Gieson). The tissue is relatively rich in muscular elements. So far as has yet been determined there is no evidence of this special blood or nerve supply to the structure. As regards the function of this special musculature two possibilities suggest themselves: (1) It represents the remains of the bulbus cordis in the bird; or (2) it a specialized muscle tissue concerned in some way with the regulation of cardiac rhythm.

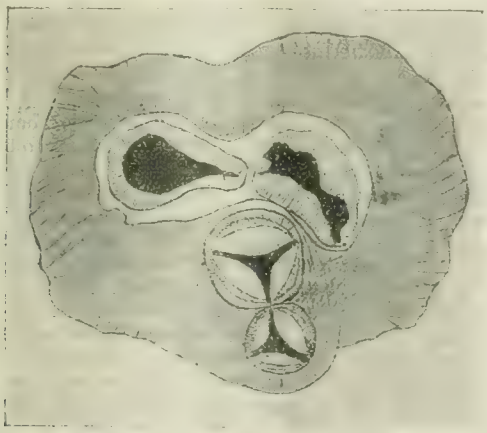


Fig. 3.—Section through the ventricular base of the bird's heart. The dotted masses at the bases of the semilunar valves show the situation of the peculiar muscle tissue.



Fig. 4.—Peculiar muscle tissue at the opening of aorta same as figure 3).

The bulbus cordis, which is the fifth chamber of the primitive vertebrate heart, is supposed to be absent in the hearts of birds and mammals. The researches of Keith and of Greil render it probable, however, that the infundibulum of the right ventricle of the mammalian heart is the homologue of the fifth chamber. We have recently made an observation which lends support to this view. We have made a systematic examination of the dying hearts of about fifty guinea-pigs and on one occasion the following phenomena were observed: The heart had taken on a regular auriculo-ventricular rhythm of four to one, the auricular rate being about 160 per minute and the ventricular 40; it was observed, however, that following each auricular beat there was a contraction of the infundibulum of the right ventricle; it was possible to determine whether the auriculo-infundibular rhythm represented true auriculo-ventricular rhythm, but so far as could be observed it seemed to do so; it was impossible to decide whether the ventricular base below the aorta participated in the infundibular contraction on the right side. There is thus in the dying heart of a mammal evidence that the infundibulum is functionally distinct in one respect at least from the remainder of the ventricle, and this is true whether the remainder of the ventricle contracted invisibly or not. The fact remains that there was visible pulsation of the infundibulum and no visible pulsation of the rest of the ventricle. This observation is in conformity with the conclusions to which Keith has come and which he has substantiated in his lectures on the congenital malformations of the heart. Gaskell emphasizes the fact that there are two kinds of cardiac muscle, distinct both as regards structure and function. Cardiac muscle is believed to vary in its excitability to stimuli and in its power of conductivity. The muscle tissue of the auricles and ventricles becomes modified into a reticulated meshwork of striated fibres with a relatively low degree of excitability and high degree of conductivity, whereas the muscle tissue of the canalis auricularis, or auriculo-ventricular ring, and of the bulbus, remains undifferentiated or more embryonic, and possesses a higher degree of excitability and a lower degree of conductivity. A stimulus sufficient to excite contraction of the more embryonic muscle would produce no effect on the striated

muscle. Thus, although the infundibulum of the mammalian heart is composed of ordinary striated muscle fibres, it would seem to be in some respects distinct from the rest of the right ventricle: (1) In some cases of heart disease it is hypertrophied either alone or to a proportionately greater extent than the remainder of the right ventricle; (2) in some hearts it can be anatomically delimited from the remainder of the right ventricle by a distinct ridge; (3) it corresponds to that portion of the heart representing the fifth chamber in congenital deformity, and may be present, although the remainder of the right ventricle be absent; (4) in the case of the guinea-pig referred to, the infundibulum alone appeared to contract in co-ordinated rhythm with the auricles.

These points are emphasized because the bird's heart in this particular region is morphologically indistinguishable from that of the mammal; and if we are to attribute to the infundibulum properties which in the lower heart belong to the bulbus, then we have in the bird's heart both the infundibulum, with its striated musculature, and a special mass of muscle tissue, which suggests anatomically the remains of the bulbus. It is to be further noticed that in the bird's heart this special musculature surrounds both the aorta and pulmonary artery, and does not appear more abundant at one side of the apertures than at another. It is customary to explain the torsion in development which ultimately gives its form to the adult four-chambered heart in this region as being due to an atrophic or absorptive process occurring in the bulbus. If this be literally the case, then one would expect, in the event of persistent bulbar tissue being present, that it would be unequally distributed round the orifices of the arterial trunks. Either this is not bulbar tissue or the statement about atrophy of the embryonic bulbus cannot be accepted in a literal sense.

Whether this tissue is functionally active it is impossible to say. In the adult its loose reticulated appearance does not suggest power of strong contractility, and its fibres are not arranged in the form of a sphincter, although the tissue surrounds the orifices of the large vessels. It would be necessary to determine its appearance and its relation to nerve fibres in a large series of different birds before suggesting further as to its possible nature and function.

Dr. Buchanan has suggested that a difference in the histological structure of the muscle fibre of hearts of different rapidity might account for the great variations in rate of beat. We have not been able to detect any such structural difference. On the whole, it might be said that the muscle fibre of the auricle approaches more nearly that of the ventricle in birds than in mammals. Miss Buchanan finds that on examination with the electro-cardiogram the heart of the bird can be distinguished from that of the reptile on the one hand and from that of the mammal on the other.

From the anatomical side we have found that:

1. There is no bundle of His, or other specialized form of muscle tissue connecting the auricles with the ventricles. The sino-auricular node is also absent.

2. There are peculiar nerve structures, or structures in close association with nerves, at the root of the aorta and pulmonary artery.

3. The aorta and pulmonary artery are surrounded at the bases of the semilunar valves by a loose reticulum of poorly-striated muscle fibres in a cellular matrix.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A POSSIBLE FALLACY IN FEHLING'S TEST FOR SUGAR.

A SAMPLE of urine was recently sent to me from a patient in India. I had instructed him to put in a little formalin to prevent decomposition, and the sample arrived well preserved. Although the symptoms did not point to glycosuria, I tested for sugar as a matter of routine, and was surprised to find the Fehling's solution reduced. The Fehling's solution was tested and found to be good. Wondering if the formalin might be the cause of the reduction, I heated some Fehling's solution and added a few drops of pure formalin and at once got reduction. The deposit with formalin appears of a darker shade than usual, and falls to the bottom of the test tube more readily.

P. HAMILTON ROBERTSON, M.B.,
Assistant Regius Professor of Surgery, Glasgow University.

CASE OF HYDROCEPHALUS WITH SPINA BIFIDA AND DOUBLE TALIPES.

ON August 22nd I attended Mrs. B., aged 29, in her confinement. Her three previous confinements had been perfectly normal, and all the children healthy.

The midwife told me that the membranes had ruptured, and that the patient had been in strong labour for six hours.

The presentation was a breech, quite low down, and the os fully dilated. The child was soon delivered as far as the shoulders by the natural expulsive efforts of the woman, the right arm being in the nuchal position then gave some trouble. The head refused to budge, and eventually required perforating, this was followed by a gush of fluid and the almost immediate delivery of the dead child.

The child was a large full-term male, having a hydrocephalic head, spina bifida of the lumbar region, and double talipes equino varus.

The mother had fallen down some cellar stairs during the fourth month of pregnancy, and to this she attributed the child's abnormalities.

R. BARING DAVIDSON, L.R.C.P.,
Congleton, Cheshire. L.R.C.S.E., D.P.H.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

BUTTERWORTH HOSPITAL, TRANSKEI, SOUTH AFRICA.

CASE OF REGENERATION OF THE FEMUR IN A CHILD OF 5 YEARS AFTER REMOVAL OF 3¼ IN. OF THE SHAFT.

(Under the care of C. PERCY BLIGH WALL, M.D., Ch.B.)

Y. C., European, aged 5 years, was admitted to the Butterworth Hospital on July 20th, 1909, suffering from a fracture of the left femur which had been sustained two and a half months previously.

On admission the thigh was curved and shortened, the convexity of the curve forwards and upwards. There was a point of bone projecting into the popliteal space. *X*-ray examination showed the upper end of the femur to be partially flexed on the trunk, and, from the end of this, bone showed passing down with its end lying in the popliteal space. The shadow of this piece of bone was somewhat obscured by that of what was taken to be bone formation in the stripped periosteum.

There was a small swelling in the popliteal space rather inflamed in appearance, and this had apparently been discharging before admission. On the third day this spot commenced to discharge a thin, watery pus. Fomentations were applied, and on August 18th, 1909, the leg was opened and a piece of the complete shaft of the femur 3¼ in. long extracted. This was partially stripped of periosteum before the operation, and care was taken to complete this stripping process during the removal of the bone. The leg was put into a Liston splint and the wound drained. It discharged fairly freely, but by September 14th was completely healed.

From September 10th to 28th extension was applied to the leg; the extension was then taken down, and massage with flexion movements commenced. On October 12th the patient was allowed to walk with crutches. On November 4th she was supplied with a boot with a thick sole and encouraged to walk without crutches. The shortening in the leg was found to be ½ in. A few days later she could walk without a stick, and at the present time is able to run about. *X*-ray examination showed solid bone formation uniting the ends of the femur.

Reviews.

ABDOMINAL SURGERY.

THE twenty-fourth volume of Le Dentu and Delbet's new treatise on surgery is from the pen of AIMÉ GUINARD, Surgeon to the Paris Hôtel-Dieu, and deals with surgical diseases of the abdomen, more particularly those of the peritoneum, the stomach, and the intestine.[1] It is not a little remarkable that an author who is so well versed in modern pathology, who can describe so admirably the experimental, the histological, and bacteriological data upon which recent progress has relied, should nevertheless arrive at conclusions so different from those generally accepted in this country, in America, and in Germany as to treatment. A clear conception of the work of Durham and his followers on the physiology of peritoneal defence, backed by a knowledge of the practical applications we owe to Murphy and Fowler, could hardly have left room for the advice to employ morphine and ice applications in the presence of general peritonitis or in the presence of an acute attack of appendicitis. Yet that is the advice of Dr. Guinard—modified in contradictory fashion elsewhere, it is true. Carried along on the swift stream of the author's easy prose, in complete agreement page after page, delighted with the skill and address employed to drive home some point in pathology apprehended but not before so clearly enunciated, it is a shock to find oneself in complete disagreement when it comes to treatment. After an admirable introduction to the etiology, the pathological anatomy, and the dangers of appendicitis: after an admirable endeavour to strip the disease of some of its mystery and some of its redundant classification, the author gives advice for treatment which on his own showing seems to us indefensible. At any rate, it "gives one furiously to think." He advises immediate operation only in the presence of acute peritoneal infection or where pus is demonstrable: he is dreadfully afraid the peritoneum will not be able to take care of itself *after* operation and removal of the source of the mischief, but he is quite content to obscure the issues so far as the clinical aspects are concerned, and trust blindly to the peritoneum to take care of itself in the closed abdomen with the *fons et origo* still active. In other words, he gives opium in some form to quiet down the peristaltic movements, and aids this end by ice. It is forced upon us that the course of appendicitis is different in France. We have spoken at length on this point because appendicitis takes up a hundred and seventy of the six hundred pages of the volume. Intestinal obstruction, apart from hernia, it is true, is then dismissed in less than forty pages. The author discusses the various surgical procedures that have been practised for "megocolon," himself favouring ileo rectostomy—that is to say, an insertion of the divided ileum into the gut below the distended loop. In speaking of ileo-caecal tuberculosis, a method of intestinal suture by permanent invagination is described. Despite the authority of the name of Delbet, we cannot help thinking the danger of further invagination by peristalsis must damn such a method when so many others are available. There is a very good chapter on methods of exclusion of the intestine for neoplasms and other causes of obstruction, and also on methods of dealing with the faecal fistulae and the artificial anus. The section dealing with the stomach and duodenum is really not adequate; some of the operations described are antiquated, and in some instances are contemptuously dismissed after a page or two has been wasted in the account of them. The author mentions some interesting experiments of his own made on dogs to elucidate the mechanics of gastro jejunostomy: their purport was to show that in the absence of pyloric obstruction the artificial opening was not used; but that is an old story. In dealing with contusions of the abdomen, the author still advocates the button-hole puncture above the pubes as an exploratory measure. We cannot but feel the objections raised by his colleagues when the idea was first promulgated, and, frankly acknowledged here, would deter most surgeons from its adoption.

[1] *Nouveau traité de chirurgie. XXIII.—Affections chirurgicales de l'abdomen.* Péritoine, Estomac, Intestin. Par A. Guinard. Paris: J. B. Baillière et Fils. 1910. (Sup. roy. 8vo. pp. 582; 115 figs. Fr 12.)

PATHOLOGY OF APPENDICITIS.

PROFESSOR CARL WINKLER, of the Imperial Pathological Institute of Breslau, is an author whom it is a delight to read. So many excellent German books are involved in their phraseology, overladen with detail, and marred by comments and allusions of no interest to the general reader, however gratifying or annoying they may be to the rival professor at whom they may be levelled. Here we have a book on the pathology of the appendix vermiformis,[2] written in the simplest language, invariably to the point, by an author thoroughly conversant with recent literature and yet not overwhelmed by its enormous mass. In the light of the enormous importance of anatomical conditions for the development and course of appendicitis, fifty pages devoted to normal anatomy is not too large a slice of a volume on diseases of the organ. A short chapter on pathological anatomy merely leads up to the study of inflammation of the appendix, more particularly from the histological point of view. The great point which the author makes is the remarkable similarity of early appearances, the unity, as it were, of the essential process and the accidental character of the various terminal divergences. No one who has examined a hundred consecutive appendices can have failed to be struck by the general similarity of all varieties, with the predominance of the round-celled infiltration of the successive layers of the wall, with the easy transition to abscess formation in the wall, and the small circumstances that have determined its rupture towards the lumen or towards the peritoneum. He will find here an admirable summary of his own observations which, like those of Winkler, have probably been suggested by the work of Aschoff. There is a very instructive discussion of the significance of "faecoliths," from which emerges a general support of Sprengel's views. We note, as the only omission of moment we have come across, an absence of reference to the work of Maaloe (published in such lavish style by the Carlsberg fund) on the formation of diverticula and on obliteration of the appendix. It is noteworthy that nothing like the importance attached by French authors to intestinal parasites in the initiation and maintenance of the inflammatory process is admitted in Germany. There are separate sections dealing with tuberculosis, actinomycosis, syphilis, and tumours of the appendix. Typhoid fever in Germany, unlike the state of affairs in America, is seldom responsible for acute attacks of appendicitis; similarly syphilis, which some French authors have accused of malign influence on the appendix, can be almost entirely exonerated in Breslau. The plates that illustrate this excellent text are almost, if not quite, as good as those previously issued by Aschoff; they have been selected with the greatest care, and are really instructive. References to recent literature are given at the end of each section. It should be understood that the author is not concerned in this volume with either etiology or treatment.

[2] *Die Erkrankungen des Blinddarmanhanges (Processus Vermiformis).* Von Professor Dr. Med. Carl Winkler. Jena: Gustav Fischer. 1910. (Roy. 8vo. pp. 340, 10 Tafeln, 22 figures in text. M.18.)

POST-OPERATIVE TREATMENT.

"As a rule, the end of the operation marks the beginning of the surgeon's care and anxiety." This is the first sentence in Dr. CRANDON'S *Surgical After-Treatment*.[3] "Tout doit entrer en ligne de compte apres une intervention chirurgicale," said M. Salva Mercadé in his very similar work *La période post-opératoire*, written quite independently of the treatise now under our notice, and issued but a few months since. The almost simultaneous appearance of two valuable works shows that they represent a

[3] *Surgical After-Treatment: A Manual of the Conduct of Surgical Convalescence.* By L. R. G. Crandon, A.M., M.D., Assistant in Surgery at Harvard Medical School, etc. With 265 original illustrations. Philadelphia and London: W. B. Saunders Company. 1910. (8vo. pp. 805.)

supply called for by a demand. That demand, that want, was not until recently felt so keenly as circumstances indicated. Once, not half a century ago, the surgeon felt anxiety after his operations because nursing was so bad. Now he may, perhaps, be a little too careless, at least in his hospital practice, because nursing is relatively so good: whilst when thrown on his own resources he is often more helpless than his predecessors. *Surgical After-Treatment* therefore supplies a distinct want, for, as Dr. Crandon says in his preface, he writes for house-surgeons in hospitals and general practitioners in communities which are not surgical centres. His work is written in English, illustrated after the best pattern of American art as familiar to us in the publications of the Johns Hopkins Medical School, and is more complete than Mercadé's treatise, which, on the other hand, is perhaps a little more skilfully condensed. Dr. Crandon introduces admirable photogravures demonstrating slinging, bandaging, and strapping. Drainage and lavage are also made very clear in his illustrations; some, however, are hardly instructive, such as the photographs explaining subcutaneous saline infusion where the needle and the reservoir tube should have been made plain, and the two illustrations representing the introduction of the female catheter. An honourable mention must be made of two highly didactic photographs, Fig. 12 and 13, "From operation room to bed." Under the second is written the explanatory legend, "Exposure and neglect of patient: vomiting unattended." These photographs deserve to be hung up in every hospital, well out of sight of patients, but well before the notice of the medical and nursing staff. Turning from the illustrations—so essential a feature in a work of this class—to the text, we find that the limits of the treatise are by no means narrow, as a long chapter on therapeutic immunization and vaccine-therapy is included, its author being Dr. Sanborn of Boston, who gracefully adds, under his name at the head of the chapter, the information that he was formerly a laboratory assistant to Sir Almroth Wright in St. Mary's Hospital, Paddington. It is an excellent, though by no means an elementary, chapter, useful for the staff of a cottage hospital. The simplest subjects are the best treated in this work: thus, the directions for the drainage of wounds are exceedingly good, and the close relation of preliminary to post-operative treatment is made clear. "There can be no question but that a clean mouth lessens the probability of post-operative parotitis," remarks Dr. Crandon, who personally investigated a recent epidemic of noma, and he gives a photograph of a child subject to that disease, due, he reminds us, to "*Bacillus fusiformis* and *Spirochaeta gracilis*, normal inhabitants of the mouth." Rinsing the mouth and brushing the teeth are very essential features of after-treatment, sometimes overlooked even in these days of high-class skilled nursing. Dr. Crandon rightly dwells on bad habits, alcoholism, excessive smoking, etc., in relation to surgery. We agree with him when he reminds us that "sudden deprivation of tea and coffee in those who are accustomed to use them in excess is sometimes followed by the occurrence of a tremor accompanied by nervous excitation and wakefulness without delirium." Even an allowance of "one pipe of tobacco" is granted (p. 272) under certain circumstances. In England and, we believe, in America, there are no scruples about tea after operations. Tremors, palpitations, and nightmares are less frequent now that the patient is not fixed for days in the same position—a bad practice once very prevalent in abdominal surgery. Dr. Crandon considers that the convalescent surgical case should be reckoned as recovery from a wound, not from a disease, so that the patient should be surrounded as soon as possible by an atmosphere of normality. We need not dwell on Dr. Crandon's chapters relating to the after-treatment of special operations, amputations, abdominal surgical procedures and trephining, but we will in conclusion make some mention of the author's teaching in respect to contested questions. He believes that a trained nurse who takes up the administration of anaesthetics as a speciality is more satisfactory than most male specialists, and is distinctly safer than the average doctor; on the other hand, he urges in the interests of humanity that the patient's doctor or the operator himself should start the administration of the anaesthetic. Dr. Crandon treats ligature of haemorrhoids almost with contempt, dismissing it in half a dozen lines, yet in this brief paragraph he admits that "in the after-care arise, as a rule, only two complications," haemorrhage and pain. The reader must feel that the limits of the subject of this treatise have been, perhaps, not very judiciously overstepped, as anaesthesia and the surgery of haemorrhoids do not come essentially under "after-treatment." It is quite the contrary with "Abdominal Swathes: Their Use and Abuse," to quote the heading of Chapter XXXV, which treats of matter entirely to the point and is well worth the consideration of every surgeon. As a whole, *Surgical After-Treatment* is an admirable work, reflecting high credit on its author.

We must congratulate M. Mercadé as the author of a work which bears the stamp of originality. *La période post-opératoire*[1] is a comprehensive manual which will supply a great want. As the illustrious French surgeon who writes the introduction most justly remarks, there are plenty of general treatises on surgery where the operative treatment of disease is demonstrated with great minuteness of detail, but full information about post-operative nursing and complications is excluded owing to want of space. There are also numerous monographs on special operations, including chapters where the same kind of information is discussed in full. M. Mercadé has prepared a synopsis which is a general review of operative surgery as it affects the patient immediately after it is put into practice. What should be done and what may be expected after each class of operation is reported systematically under the headings of Immediate Treatment, Post-operative Accidents, Results, Sequelae, etc. Although systematic, the manual, as is usual in French works of any kind, is readable, for the author has evidently taken great pains to weed out the crops of personal and controversial matter in which the monograph of the specialist is so fertile, whilst statistics are reduced to a reasonable minimum, and we are spared the jungle of references which is familiar and necessary in a special treatise, but out of place in a manual which professes to teach plain directions and clear information. The big type, in which this work is published, is another feature in its favour, but the illustrations, as medical illustrative art now stands, are decidedly below those which adorn the pages of many current Anglo-Saxon and Teutonic publications devoted to surgery. We admit, however, that they are clear, especially the diagrams and drawings representing the use and application of drainage after operations on the mastoid cells and abdominal section, and some are really instructive, such, for instance, as the woodcut of a case of echinococcus in the cicatrix after incision and drainage of a hydatid cyst of the liver, the microscopic section of a sloughy ureter from a fatal hysterectomy, and similar sections from an instance of post-operative kraurosis. They are taken from special papers, it is true, but it is the duty of the general surgeon to make special work general where it deserves to be generalized. M. Mercadé includes an important chapter on post-anaesthetic accidents, the paragraphs relating to spinal anaesthesia being of the highest importance for obvious reasons. The subject is very familiar to our readers, but not from the perusal of textbooks. M. Mercadé has felt that it is time to determine how far the use of stovaine, cocaine, etc., should be taught, which is a step beyond explaining how it may justifiably be practised by experts. The chapter on accidents due to antiseptics is profitable reading. House-surgeons may peruse with advantage the author's reference to Coudrain's case where secondary abscesses developed after the removal of the vermiform appendix. The wound had been washed out with peroxide of hydrogen, and so the liberated gas created spaces into which microbes managed to introduce themselves. Lastly, from time to time M. Mercadé drops judicious hints about the reliability of the statistics of experts. In regard to stricture of the rectum after one operation for haemorrhoids he

[1] *La période post-operatoire: Soins, suites, et accidents.* Par Salva Mercadé, Ancien interne lauréat des hôpitaux de Paris, médaille d'or de chirurgie. Introduction par M. le Professeur Lannelongue, membre de l'Institut. Paris: Masson et Cie. 1910. (Med. 8vo, pp. 583, 82 figures. Fr. 12.)

makes an observation which shows that he is in accord with some of our own correspondents. The initiator of the operation has no doubt never had a case of cicatricial stricture, but others less dextrous do not publish their results. M. Mercadé writes in the correct spirit which distinguishes him throughout this manual. He does not dispute the merits of the arguments used in favour of the operation, but directs the surgeon how to avoid stricture of the rectum.

INTERNATIONAL CONGRESS OF OBSTETRICS AND GYNAECOLOGY.

The brief account of the International Congress of Obstetrics and Gynaecology given in the Journal of October 8th may be supplemented by the following longer report:

The Fifth International Congress of Obstetrics and Gynaecology was opened at St. Petersburg on September 22nd, with an unusual amount of pomp, in the Great Hall of the Imperial Clinical Institute of Obstetrics and Gynaecology.

Under the august patronage of His Imperial Majesty the Tsar, and graced by the presence of the representatives of the Russian, the French, the German, the United States, the Italian, the Dutch, and even of the Servian Governments, and under the presidency of Professor Dmitri de Ott, this fifth congress may justly be said to have been, from the scientific as well as the social point of view, a brilliant success.

Foreign Representatives.

With its Government unrepresented, Great Britain and Ireland sent altogether some half a dozen delegates, namely:

Sir Alexander R. Simpson (representing the Obstetrical Society of Edinburgh).
Professor Malins (University of Birmingham).
Dr. Amand Routh (University of London, and Royal Colleges of Physicians and Surgeons).
Dr. T. Wilson of Birmingham (the Royal Society of Medicine).
Dr. Jervois Aarons (the Royal Society of Medicine).
Mr. Maurice MacElligott (the Royal College of Surgeons in Ireland).

An ovation was accorded by the entire gathering to Sir Alexander Simpson when he stepped into the tribune and addressed the Congress in a very happily-phrased speech in French. Professor Malins and Dr. Routh, who were equally well received, were complimented by being made "Présidents d'Honneur du Congrès." The remaining British and Irish delegates were also accorded a most favourable reception.

Representing the United States Government was Dr. E. Parker Davis of Philadelphia, while Dr. Weatherill of Denver came on behalf of the American Medical Association.

Provision for the housing of the numerous foreign delegates was admirably made by the General Secretary (Professor de Sadowsky), who had secured in advance a hundred bedrooms in the elaborate, if expensive, Hôtel de l'Europe.

The weather, though somewhat cold, was fine, a fact which contributed materially to the enjoyment of the congressists.

Work of the Congress.

The work of the Congress may be said to have been divided into five sections:

I. The therapy of inoperable uterine cancer.
II. Caesarean section.
III. Influences of the nervous system on the origin and control of uterine haemorrhage.
IV. The vaginal route in obstetrics and gynaecology.
V. The comparative value of different operative measures in the treatment of displacements and deviations of the uterus.

In addition to these main sections were a great number of subsidiary subjects, the so-called *rapports individus*, scarcely secondary in importance and interest to the former.

Amongst the British delegates the feeling was that Germany, in the person of its representatives, dominated the Congress. Numerically, the German-speaking element was exceedingly strong, while many of the greatest of German gynaecologists took a very active part in the scientific as well as the social side of the gathering. The names of Martin, Döderlein, Bumm, Opitz, and Strassman occur to one's mind while writing of Germany; whilst amongst our hosts were Professors de Ott (President of the Congress) and Rein, as well as our ever-obliging Secretary, Professor de Sadowsky. France was represented by Doléris (there were but too few of our lively neighbours present), while Italy sent both Pestalozza and Mangiagalli.

British Communications.

Of British communicatians, that of Dr. Amand Routh on "Caesarean Section in Great Britain and Ireland" attracted great attention. Dr. Routh, from the tribune, gave an admirable résumé of his long and exhaustive monograph, which was listened to with deep interest by the English-speaking members of the Congress.

Dr. Macnaughton Jones had promised a communication on the Influence of the Nervous System on the Causation and Control of Uterine Haemorrhage, but was, at the eleventh hour, unable to be present.

Dr. Aarons gave a "Démonstration des ampoules qui contiennent l'extrait hypophysaire."

Clinical Demonstrations.

Each day's work commenced at half-past eight with operations by Professor de Ott in the magnificent theatre of the Imperial Institute of Clinical Obstetrics and Gynaecology. This gorgeous institution, in which the séances of the Congress were held, is the *dernier cri* in hospital construction, and most justly called forth from Martin these words of praise: "Dieses glanzvoll Heim hat heute nicht seines gleichen auf dem gauzen Erdengrund!"

In addition to the operations, Professor de Ott gave his audience a series of demonstrations of his method of "éclairage" of the abdomen and pelvis, which were followed with the most lively interest by every one present.

It certainly did seem very marvellous to be able to look at the appendix and ascending colon through a hole in the posterior fornix; to inspect the lower bowel for quite 15 in. of its course, and to see the interior of the urinary bladder as if it were on view in the dead house. These and similar other marvels were shown by Ott to his admiring *confrères*.

As German speakers far outnumbered those of any other language except Russian, so did the German tongue become the most popular means of communication between the Congressists. English was understood by comparatively few, while one of the Italians (Mangiagalli) addressed the Congress in Russian.

Social Functions.

To recall the social aspect of the gathering is indeed a most agreeable duty.

First and foremost must be mentioned the hospitality of His Imperial Majesty the Czar, who invited the Congressists to the Winter Palace and the Hermitage, where they were shown his art treasures by various polyglot guides drawn from the curator's staff; subsequently, having been entertained at a superb *déjeuner*, the guests were dispatched in one of the Imperial yachts to view another magnificent palace, the Peterhof, overlooking the Gulf of Finland and the fortress of Cronstadt.

Next might place of honour be given to the dinner party to some fifty foreign delegates, given by the President at his beautiful home.

Mention must also be made of the splendid reception at the Duma accorded to the Congress by the Municipality, the gala performance at the Imperial Marievski Theatre, after which Monsieur Sakkhar, a celebrated St. Petersburg lawyer, entertained the British, Irish, and American delegates to a supper, "in order" (so ran the invitation), "that they might see a little of the social life of Russia prior to their return home."

Then, again, there was the concert of the Imperial choir, the reunion in the Salle of the Hôtel de l'Europe, where leading Russian actors, singers, and musicians delighted

the gathering; and also subscription dinners in honour of the delegates, and many private parties.

Closing Sitting.

On Wednesday, September 28th, the Congress came to an end with the final "Séance de Clôture," and the great and distinguished gathering dispersed, but not before it had been decided to hold the sixth International Congress of Obstetrics and Gynaecology in London in 1915.

Nova et Vetera.

SPANISH MEDICAL FOLKLORE.

A belief that seems to have been firmly rooted in the human mind from time immemorial is that the unpleasantness of a prescription is a gauge of its efficacy. Nowhere do the traces of this curious article of faith appear more markedly than in the ancient superstitions, charms, and medical lore which are to be found amongst the peasantry of any race or country. The truth of this is brought home to us very forcibly by two articles on Spanish superstitions, by Dr. Martin Carrera y Dellunder, which appeared in the *Gaceta Medica Catalana* of February 15th and March 15th, 1910. He gives a number of striking instances.

The majority of these strange rites concern the proper treatment of the newborn infant and its mother, and the only wonder is that either the one or the other ever survives these well-meant attentions on the part of their own attendants or their officious neighbours and friends. For instance, if the baby appears to be dying immediately after birth, the Spanish midwife endeavours to keep life in the little body by burning the placenta, with a portion of the umbilical cord, by its side, taking care to direct the smoke towards its nostrils; or else she introduces tobacco smoke into the child's rectum, whilst in some parts of Tarragona and Lerida nothing is considered so efficacious as to put the beak of a living fowl into the anus of the infant. Another means of reviving a dying child is to suck its left nipple, a practice which even if it saves life must frequently infect the baby with diseases it might otherwise have escaped. A crowd of superstitions surround the washing of the Spanish baby. Sometimes he is anointed with oil, or bathed in white wine, and then wrapped in the skin of a wolf or a roe; at other times his nurse rubs him all over with salt (a practice recommended by Galen) whilst his head and chest are sprinkled with blood from the umbilical cord, which, it is fondly hoped, will ensure him bodily health and strength. In certain parts of Spain the newborn baby is given the flesh of a cooked apple to eat before he is allowed to take his natural nourishment. The fruit is supposed to contain magic properties, which will influence his future character, and the child who has undergone this absurd rite will not only be preserved from the sin of gluttony, but will grow up polite and well-mannered towards women.

All sorts of quaint customs are observed as the child grows up. He must be weaned on a Friday, so that he may not lose his sense of taste, and to prevent his fretting for his mother he should be fed on soup made from a fowl which has been thrown into the pot alive and with all its feathers. The bird is then opened and the body laid upon the child's stomach and left there for twenty-four hours. When the Spanish baby begins to cut his teeth his gums must be rubbed with three different rags soaked in salt water and burned after use, or with blood from the comb of an old cock, with the brains of a hare, or the cinders of dogs' teeth mixed with honey. Snails' horns, the teeth of serpents, or of black sheep, are considered efficacious if worn by the child at this period, whilst care is taken when the milk teeth fall out never to throw them where they can be eaten by rats or dogs. If this happens, the second teeth will resemble those of the animals who had dined off the first; but a beautiful set may be ensured by the simple method of throwing the milk teeth on the roof. There is a widespread belief that if the top teeth appear first, the child is doomed to an early death. Death, too, or at any rate dumbness, is the result of cutting the child's hair before he learns to speak; whilst backwardness in speech may be cured by dressing up the little patient and taking him for nine days running to ask for alms. The unpleasant habit of biting the nails, far from being regarded with disgust, is an occasion of rejoicing for the family of a young child, since this ensures his rapid growth.

If Spain is full of charms and superstitions to ensure the safety of the child during the first years of his life, there are just as many for his mother, and these seem to be even more unpleasant, if that is possible, than those which the child to whom she has given birth is obliged to undergo. A woman who wishes a plentiful flow of milk is dosed with the milk of a sow mixed with wine, the fried flesh of a female owl, soup made of the dried and powdered udder of a cow, or even with soup in which a couple of rats have been cooked. Mercifully, in the last instance, the whole efficacy of the prescription lies in the fact that the patient is kept in ignorance of what she is eating. Another way of increasing the milk of a nursing mother is to anoint the breasts with an oil partly composed of earthworms, or rats cut into small pieces, entrails and all, whilst another ointment should only be used when it is possible to apply the heart of a toad to the patient's chest. Yet another method is by giving the woman parts of her own placenta to eat. It is a common belief amongst the Spanish peasant women that baths are injurious to their milk and are frequently followed by the loss of it. They believe, too, that the milk suffers if the mother becomes pregnant whilst nursing her child, and a means of warding off harm in such a case is to give the baby a cup of soup made from a puppy of less than nine days old boiled in salt and water, and a little of the flesh of the animal, from which, however, the coat must on no account be removed. Moreover, the nursing mother should never eat the flesh of hares, since this will result in her child's eyes being troubled with anomalous movements.

If there is difficulty in getting the milk to flow, the Spanish woman has many methods to induce it. One very quaint one is to put on her husband's shirt immediately after he has taken it off. Another way is to suckle two children at once, and yet another to squirt the milk on to the wall, or into the flame of the candle which lights the room, so that it may burn. Another method is to use fomentations of sage boiled in urine, or to place a hollow key filled with mercury between the shoulders. In certain districts of Valencia there is a curious belief that the milk of the woman may be drawn out by means of feeding a cat or a dog on the bones of a fowl which has been made into soup. Another strange superstition is to be found in the province of Galicia; this relates to the cure of mammitis, which is brought about effectually by placing a man's hat upon the head of the sick woman.

METROPOLITAN WATER BOARD AND DUTIES OF DISTRICT MEDICAL OFFICERS.

The regulations governing the duties of district medical officers in the service of the Metropolitan Water Board were discussed at the Board's meeting on Friday last, on a report presented by the Works and Stores Committee. The committee reported that the revision of these regulations had been under consideration, particularly in connexion with the fees to be paid for attendance in cases of accidents to the Board's men whilst on duty. The committee had arrived at the conclusion that the fee to be paid in ordinary accident cases should be 3s. 6d. in respect of each attendance, except in special and serious surgical cases in which a higher fee might be justified. In the latter case the Board's chief medical officer should be entrusted with the duty of considering the charges made by the district medical officer, and advising whether such fees were reasonable.

Dr. R. M. Beaton (London County Council) contended that a copy of the regulations should have been circulated amongst members of the Board, in order that they might have an opportunity of studying the question, which was intimately connected with the health of the Board's workmen. He asked that the matter might be postponed for a month with this object in view.

Mr. C. E. Hearson, Chairman of the Works and Stores Committee, hoped that Dr. Beaton would not

press his request, because there was nothing hidden behind the committee's report. The only difference that was being made was in regulating the fee for surgical cases. The whole question had been carefully considered with the assistance of the Board's chief medical officer, Dr. Collie, and it was only in cases where there had been a very serious accident, which required more work than was usual, that Dr. Collie would be asked to consider what was a fair fee. The committee's object was to regulate the charges in surgical cases. In medical cases the fees remained as previously.

Dr. Beaton asserted that the committee had no right merely to present a statement to the Board that these changes were proposed, with no other facility for investigation than that a member interested should be compelled to ask for a copy of the new regulations. It was against that he protested, and not necessarily against the wisdom of the regulations.

Mr. Hearson repeated that it was only in the event of a serious accident occurring which required special attention that Dr. Collie would be consulted, with a view to preventing any excessive charge by the district medical officer. In all ordinary cases the fee of 3s. 6d. for each attendance would be paid.

The Chairman of the Board, having pointed out that the question was very fully considered in committee for many hours, Dr. Beaton withdrew his request, and the recommendation of the committee was agreed to.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

In our issue of last week (page 1074) an account was given of such events as marked the commencement of a new medical year at the majority of the medical schools. Reference to some other occurrences of the same order now follows. Work in all medical schools and faculties throughout the British Isles now appears to be in full progress.

ST. BARTHOLOMEW'S.

In common with many other medical schools, St. Bartholomew's initiated the new session on October 3rd by an old students' dinner. There is a certain sameness about all dinners in London, and especially all old students' dinners, but these gatherings at St. Bartholomew's have a moral atmosphere which distinguishes them from others of like kind. They are the only dinners which take place in an ancient building and at the hospital itself. The walls of the dining room are covered with pictures of hospital celebrities, painted by masters dating back to Holbein: and the guests are almost invariably persons familiar to all present. Everything, in short, helps to secure a back-once-more feeling impossible of attainment at a restaurant. This year the chair was taken by Mr. C. B. Lockwood, who announced after dinner that His Majesty King George had consented to become patron of the Royal Hospital of St. Bartholomew. The entry of new students for the year was good, and this was a point worth noting, since of late years all London schools had experienced some difficulty in obtaining a full quota of students. In every provincial centre students now found medical schools at their doors, and the fact that living in London was more expensive was also a factor in the situation. Particularly satisfactory was the fact that the arrivals from Cambridge and Oxford were more numerous than ever before. The old universities knew if any one did what good teaching was, and their opinion of St. Bartholomew's was made obvious by the number of men they sent up. The new clinical block offered unrivalled facilities for work, and the new pathological block was one of the finest in the kingdom. The post-graduate classes which had been started a year or two ago had proved a great success, despite the fact that their existence was comparatively little known; the number of men attending them this year had reached fifty. The next task of the hospital was to get out of debt. A great surgical block was a real necessity, and a new nursing home was much needed. The institution was situated on the margin of the richest square mile in the world, and if its needs were realized there should be no hesitation in supplying them. The toast to the guests was proposed by Dr. Norman Moore who mentioned Professor Hill, Vice-Chancellor of the University of London, as the editor of a work which he proceeded to describe in terms evocative of much curiosity as to what that work could be; it turned out to be Euclid. The literary work of Sir Clifford Allbutt was compared with that of some of his predecessors in the Chair of Medicine at Cambridge. They, too, were the authors of works of great renown and with the contents of which every one present was presumably acquainted. When one of them proved to be a rendering by Glisson of the aphorisms of some ancient master of medicine into Greek iambics, and the rest to be of the same order, the lambent truth of this theory became self-evident. The health of the Chairman having been drunk, on the proposition of Mr. Bruce Clarke, the formal proceedings ended with an impromptu toast to Mr. H. J. Waring, the honorary secretary of the dinner. The balance of the evening was spent as usual in the library.

THE LONDON HOSPITAL.

The opening of the winter session was marked at the medical school of the London Hospital by the delivery of the second Schorstein lecture and the annual gathering of old students. The lecture, which was delivered by Dr. Robert Hutchison, will be found published in full in our last issue. The dinner, held at the Hotel Cecil, brought together over one hundred and fifty old London men. Mr. Mark Hovell was in the chair, and in proposing the toast of the evening mentioned the honour which the King and Queen had done the hospital by making a visit to it their first public engagement after their accession. The lecture to which some of them had listened that afternoon had been instituted in memory of one whom many present remembered with affection—Dr. Gustave Schorstein. The first lecture had been delivered last winter by Professor William Osler. Among the many honours gained by the hospital in the past year were appointments to the Royal Household of as many as five men more or less connected with the hospital—Sir Frederick Treves, who was appointed Sergeant Surgeon; Sir Robert Burnet, Physician to the Household; Dr. Bertrand Dawson, Physician Extraordinary to the King; Mr. Rigby, Surgeon to the Household; and Mr. Hewitt, Anaesthetist to the King. The entries of new students for the year were larger than for several years past, and in all ways the school was in a flourishing condition. The Chairman's was the only speech of the evening, with the exception of one made by Sir Robert Burnet in proposing the toast to the Chairman.

LEEDS.

The opening of the new session on October 4th was marked by a prize distribution, the delivery of an address, and the holding of a dinner. The prizes were distributed and the address delivered by Professor Howard Marsh, of Cambridge, who was introduced to the large audience by the Vice-Chancellor, Sir Nathan Bodington. When doing so, the Vice-Chancellor said that changes had recently been made possible which would much increase the efficiency and usefulness of the school. Its authorities had succeeded in convincing the Board of Education that it should receive its support, and the Board had agreed to make a contribution of a sum amounting to about £1,000 a year on certain conditions. These included the appointment of a professor of anatomy who would devote the whole of his time to the work, and arrangements by which the clinical teaching of the school at the General Infirmary would be brought into more direct relation with the university, administrative control of the whole of the clinical teaching of the students being thus secured. Certain additional teachers would also be appointed. The Board furthermore required that more stringent registration of the

attendance of students at classes and lectures should be introduced, and the Vice Chancellor expressed a hope that all students would co-operate with the authorities to enable this desire on the part of the Board of Education to be fulfilled. Professor Marsh in the course of his address expressed his discontent with the present condition of medical education. It was exceedingly difficult for students to keep pace with the growth of knowledge in the four sciences, chemistry, anatomy, physiology, and pathology, on which medicine rested, and the attempt to make them do so led to a mental surfeit. Some change in the system of teaching was needed. It should be such as to secure the development of the higher mental qualities of the students, and thorough knowledge on their part of the essentials of the sciences underlying medicine and surgery. His experience as an examiner showed him that at present even intelligent and serious students were liable to exhibit deficient acquaintance with, for instance, surgical anatomy, because they had endeavoured to learn so much that they had learnt nothing thoroughly. The ideal in teaching should be to stick to essentials. At the examinations of the Conjoint Board in England the rejections in surgery were as high as 50 per cent., but not because the standard was too high but because from the beginning of his career the student had been struggling with an over-weighted curriculum.

The dinner of the medical profession of Leeds and its district took place the same evening at the Queen's Hotel. It was well attended, the guest of the evening being the orator of the afternoon, Professor Howard Marsh, and Professor R. Lawford Knaggs being in the chair. The toast list was shorter than usual, being limited to the King, the Faculty of Medicine, the Guests, and the Chairman. The toast to the guests was submitted by the chairman, who was able to relate many personal experiences of Professor Marsh's eminence as a teacher. In his reply Professor Howard Marsh paid a high tribute to the great men whom Yorkshire had contributed to other parts of the kingdom. Among them was Sir Clifford Allbutt, whose name was received with hearty applause; another was the late Mr. Timothy Holmes; a third was Sir Jonathan Hutchinson, and a fourth was Hughlings Jackson, whose name would be quoted a century hence as that of a man who had done almost more than any other of his time to promote the scientific study of medicine. A response to the toast also came from Dr. Barth of Christiania, who was the guest of Mr. Moynihan. He made an admirable short speech in English. A toast to the Chairman, proposed by Mr. Harold Collinson, brought the formal proceedings of the evening to a close.

BIRMINGHAM.

The new session in the Medical Faculty of the University of Birmingham was opened on Monday, October 3rd; it is the eleventh since the university charter was granted. The event was marked in the evening by a *conversazione* given at the university buildings, Edmund Street, by the Dean and other officers of the Faculty. The guests, who numbered about 300, were received in the Founder's Room of the University Club by Professor Gilbert Barling, the Dean, and Professors Robert Saundby and Jordan Lloyd, and Mr. John Humphreys; among those present were the Lord Mayor, the Vice-Chancellor and various members of the council and academic staff of the university, and representatives of the managing committees of most of the Birmingham hospitals. The evening entertainment included a glee concert, and in other respects was of a kind familiar at *conversaziones*. In the various departments of the building there were scientific exhibits and demonstrations of matters relating to the science of medicine and surgery. Among those who contributed their assistance by providing demonstrations were Professor Leith, Dr. Sholto Douglas, Drs. J. Robertson, W. J. McCardie, and Fraser Harris, and Messrs. J. Humphreys, Hewetson, Hall-Edwards, Emrys Jones, and J. F. Brailsford. Work started in all departments the following day.

WESTMINSTER HOSPITAL.

As has been the practice for several years past, the school carried on in connexion with Westminster Hospital contented itself with marking the opening of a new winter session's work merely by an old students' dinner. This took place at Oddenino's Imperial Restaurant on Thursday, October 6th, under the chairmanship of the Vice-Chairman of the hospital, Mr. Vaux Graham. The dinner was well attended, and the Dean, in speaking to the toast of the evening, was able to give a highly satisfactory account of the present position and prospects of the school.

ENTRANCE SCHOLARSHIPS AT THE MEDICAL SCHOOLS.

St. Bartholomew's Hospital.—The competitive examination for entrance scholarships, which commenced on September 22nd, resulted in the following awards: The *Entrance Scholarship in Arts*, value £100, to David Constantin, of the Royal College of Mauritius; the *Jeaffreson Exhibition in Arts*, value £50, to Richard G. Morgan, of Newport Intermediate Boys' School; the two *Senior Entrance Scholarships in Science*, value £75 each, to G. L. Keynes, B.A., of Pembroke College, Cambridge, and R. Stansfield, B.A., of St. John's College, Cambridge. The *Junior Entrance Scholarship in Science*, value £150, was divided between F. G. L. Barnes, of St. Bartholomew's Hospital, and H. L. Cronk, of Jesus College, Cambridge, who were bracketed equal.

Charing Cross Hospital. — The following entrance scholarships have been awarded: The *Universities Scholarship*, value 50 guineas, to Mr. C. J. Marshall; and the *Huxley Scholarship*, value 50 guineas, to Mr. R. V. Bevan.

St. George's Hospital.—The two *University Scholarships* in Anatomy and Physiology, of the combined value of £123 10s., have been divided equally between Mr. E. F. W. Grellier, of Downing College, Cambridge, and Mr. W. E. Waller, of University College, Oxford.

Guy's Hospital.—The following entrance scholarships have been awarded: The *Scholarship for University Students*, value £50, to Mr. R. C. Ozanne, of Hertford College, Oxford; the *Junior Science Scholarship*, value £150, to Mr. A. L. Punch of the Preliminary Science class of the hospital; the second *Junior Science Scholarship*, value £60, to Mr. A. G. Simmins, of the same class; the two *Entrance Scholarships in Arts*, of the value of £100 and £50 respectively, to Mr. A. B. Bond, of Bradfield College, and Mr. J. A. M. Alcock, Radley College.

King's College Hospital.—The only entrance scholarship awarded this year is the *Entrance Scholarship in Science*, value £50. The winner was Mr. L. E. Pimm of King's College School, Wimbledon. The usual second scholarship in science was not awarded.

The London Hospital.—The competition resulted in the following awards: The *Price Scholarship in Science*, value £120, Mr. A. C. Perry; the first *Entrance Science Scholarship*, value £60, Mr. P. C. Cloake; the second *Entrance Science Scholarship*, value £35, Mr. S. Batchelor; The *University Scholarship in Anatomy and Physiology*, value £60, Mr. H. H. Mathias, of King's College, Cambridge. The entrance scholarship in Arts has not yet been awarded.

St. Mary's Hospital.—Of the two *University Scholarships*, each of the value of 50 guineas, one was awarded to Mr. M. O. Raven, of Trinity College, Cambridge, and the other equally divided between Messrs. J. P. Davies and W. H. Edmunds, both of University College, Cardiff. The open *Scholarship in Natural Science*, value £145, was awarded to Mr. D. Menzies, and a second *Scholarship in Natural Science*, value £25, to Mr. H. B. Taylor, of St. Paul's School.

The Middlesex Hospital.—The competition for entrance scholarships resulted as follows: The *First Entrance Scholarship* of £100 was awarded to Mr. D. C. Ogilvie, Bedford Grammar School; the *Second Entrance Scholarship* of £50 to Mr. R. H. Fleming, East London College; the *Third Entrance Scholarship* of £25 to Mr. L. G. Phillips, William Ellis Endowed School, Gospel Oak; and

the *University Scholarship* of £50 to Mr. G. E. Beaumont, University College, Oxford.

St. Thomas's.—The winners of the scholarships offered this year are as follows: The *University Scholarship in Anatomy and Physiology*, value £50, Mr. M. C. Petty, of Downing College, Cambridge; the first and second candidates for the two *Preliminary Science Scholarships* were Mr. A. L. Blunt, of the school itself, and Mr. C. O. H. Jones, of the Technical Institute, Walthamstow. The combined value of the two scholarships is £210. The *Merchant Taylor Scholarship* was awarded to Mr. C. G. Learoyd.

University College.—The competition for entrance scholarships in the Faculty of Medical Sciences resulted in the following awards: The *Bucknill Scholarship and First Medical Exhibition*, combined value 190 guineas, were divided equally between Mr. W. A. E. Karunaratne and C. J. H. Sharp. The second *Medical Exhibition*, value 55 guineas, was awarded to Mr. H. A. Fawcett.

University College Hospital.—The *First Entrance Exhibition in Anatomy and Physiology* has been awarded to Mr. G. R. Dobrasbian, and the second to Mr. R. L. Horton.

Westminster.—This year four £60 Scholarships have been awarded; one in *Arts* to Mr. A. Hart, one in *Science* to Mr. A. R. Hacker, and two in *Anatomy and Physiology for University Students* to Messrs. A. M. M. Davies and C. M. Jones, respectively.

SCIENCE NOTES.

An investigation of considerable pathological importance on "the bacteriology of the blood after death" has been undertaken by Strauch, and his results are published in the *Zeitschrift für Hygiene und Infektionskrankheiten* (vol. lxv, 1910, pp. 183–219). From an examination of 2,000 cases he has found that in well-preserved bodies the bacteria found in the heart blood within forty-eight hours after death are essentially the same as those which had been present during life, so that the idea of a *post-mortem* invasion of bacteria into the blood is incorrect. About half the cases, in no wise selected, showed positive bacterial findings. The proportion was higher in childhood and old age and lower in the intermediate years. In chronic diseases the blood was almost invariably sterile, exceptions being found only in children and old people. With regard to the frequency of the various bacteria, streptococci were found in more than half the positive cases. Next to them, but much less frequently, came pneumococci, then colon bacilli and staphylococci. Mixed infections were found in a certain number of cases. In the case of tuberculosis the presence of bacilli in the blood depends on the seat of infection. Thus in laryngeal tuberculosis the blood was always sterile; in miliary tubercle 72 per cent. of cases were sterile; in uncomplicated phthisis 63 per cent., and in intestinal and urinary cases 50 to 60 per cent. On the other hand, 65 per cent. of cases of bone tuberculosis showed bacilli in the blood, and where the lymphatic glands were affected almost every case gave a positive result. In typhoid fever the blood always contained bacteria, typhoid bacilli in more than half the cases; in the others, streptococci, colon bacilli, and staphylococci were present. In three out of four cases of anthrax the bacilli were found. In infective endocarditis streptococci were almost always obtained. In scarlet fever 80 per cent. of cases showed bacteria (chiefly streptococci), in measles 65 per cent., and diphtheria 45 per cent. Diphtheria bacilli, however, were only rarely obtained. Croupous pneumonia gave 80 per cent. of positive cases, and in half of these pneumococci were found. In peritonitis there were 70 per cent. of positive cases, mostly streptococci and *colon* bacilli. Almost half of the cases of peritonitis after perforation were sterile, but here it may be remarked that anaërobic methods were not employed. In post-operative peritonitis a positive result was usually obtained, especially after gastro-enterostomy.

The question of the relation of the Negri bodies to rabies has been raised once again by Hans Ganslmayer, who in a short paper in the *Centralblatt für Bakteriologie* gives the result of a series of experiments he performed to test the virulence of the salivary glands in infected dogs. The fact that the saliva and salivary glands of infected animals are highly virulent is now generally recognized, although there have not been wanting statements to the contrary. Ganslmayer's experiments are a complete substantiation of the general belief, for he succeeded in infecting guinea-pigs and rabbits to the extent of well over 90 per cent. by injecting an emulsion of the submaxillary gland of rabid dogs. This emulsion has a virulence as high as that obtained from the brain of the same animals, but while Negri bodies are constantly present in the latter, and have been regarded as a possible causal agent, they are entirely absent in the submaxillary and parotid glands. Three years ago a case was reported in which Negri bodies were said to be present in the parotid, but against this is the negative testimony of numerous other observers, and Ganslmayer's work is entirely in concordance with the latter.

LITERARY NOTES.

In the *Australian Medical Journal* of August 20th the following reference is made to the issue of the Journal of June 18th:

> A recent number of the British Medical Journal contained a very admirable symposium upon faith healing from the medical point of view, several of the articles being as conspicuous for their exceptional literary quality as their handling of the immediate topic. The quality of faith is always a most precious possession, and the only deplorable attribute of its presence in more than average quantity is its liability to be misplaced.

Our contemporary goes on to say:

> Nor, must we candidly admit, is there wanting evidence of excessive faith in other methods than those outside the recognition of the profession. Dr. Douglas Shields, in his paper on the "Surgery of Gastric Ulcer," tells of a patient who underwent eight operations for the same lesion at the hands of different surgeons. In the British Medical Journal for July 16th a correspondent—himself a medical man—seeks information regarding the electrical treatment of gastric ulcer, and mentions that he has already undergone three gastro-enterostomies for the same condition. Surely these, and such as these, cannot be classed as of little faith. It is as well to reflect occasionally that the faith we smile at, when placed in the unknown, may easily, in right hands, be turned to the assistance of the known, and vastly increase the effect of logical methods. Scientific medicine aims at the surest sort of faith healing—the knowledge that makes prediction easy.

With the publication of its October number, the *Baby's World* completes the first half-year of its existence, and the originators of this most attractive magazine are to be congratulated upon the well-deserved success of their venture. This month's number fully upholds the reputation gained by its predecessors; and, as usual, its table of contents includes much that is both interesting and useful. Amongst the many different articles which are worthy of praise, one on tuberculosis, by Dr. Leonard Parry, deserves special attention. In the simplest language, such as cannot fail to make his meaning clear to the least scientific of his readers, Dr. Parry discusses the dangers run by small children and infants from this terrible disease, and gives some valuable advice concerning the efficacy of fresh air, good food, and proper clothing as the best means of rendering children proof against its attacks. Another important subject, the heating and ventilation of nurseries, is treated by the editor himself in his description of "The Healthy Nursery"; whilst Mary Macleod Moore has contributed an excellent article which should prove invaluable to the mother of a young family, or anyone in charge of children, who is preparing to travel with them to Canada. Much useful information also may be gathered from the pages devoted to cookery and dress making, whilst the portion set aside for "What Other Mothers can tell us," contains much sound advice regarding the care of children from those who have earned the right to proffer it by their own experience. The *Baby's World* is, as usual, delightfully illustrated, this month's number containing photographs of some seventy children of varying ages; whilst besides the more serious articles for its grown-up readers it offers a varied assortment of stories and verse for the little ones themselves.

British Medical Journal.

SATURDAY, OCTOBER 15TH, 1910.

A CANDID FRIEND ON FEMINISM.

THE French have a neat way of expressing themselves, and the term "Feminism," by which they habitually allude to and sum up what in England we call the woman's movement, is none the worse for having, like many other Gallic phrases, a half-concealed sting in its tail.

On this subject there was contained in the first issue of the Woman's Supplement, now occasionally to appear in connexion with the *Times*, an article in the form of a letter. The whole of the arguments used by the writer are of a biological order, and if the world recks little of science in general, it pays still less heed to biology. Nevertheless, there are a certain number of persons, especially among our own readers, to whom biological arguments appeal; the writer of the article in question may therefore perhaps thus gain a few recruits for the cause which she has at heart.

The object of that cause is to stem the tide of feminism and to endeavour to avert, by a return to the social and educational practices of an earlier date, the national danger which it is held to import. Additional interest is lent to the advocacy of this cause on the present occasion by the fact that it comes from a woman—a medical woman, who herself has taken a prominent part in the movement which she now deplores. Moreover, the criticisms are of so trenchant and outspoken a character that it may be doubted if any man not a professed and hardened misogynist would have ventured to indulge in them.

To put matters as briefly as possible, Dr. Arabella Kenealy indicts the woman's movement as bound to bring disaster in its train, because no sociological development can be beneficial if biologically unsound; and as biologically unsound she regards the whole of the activities which have led, or are leading more or less rapidly, to the elimination of sex differences in point of physique, mind, and avocation, and, finally, to what she calls the commercialization of women.

The central point of her argument, though not in itself altogether new, is set forth in somewhat striking fashion, and may be summed up as follows. In the course of the natural evolution of living things the tendency is for the male species to become more male, the female more female, and among men and women such increasing differentiation would accompany the development of civilization at the present time, were it not for the counteracting efforts of the advocates of all things which tend to produce apparent identity in the sexes. In early life boys and girls are very much the same kind of animal, but when they reach a certain age Nature endeavours to effect a great differentiation between them with the direct object of fitting each for its future life. As the young animal becomes mature the girl evolves, while the boy in a fashion degenerates; he loses, that is, the superficial physical attractions which are characteristic of the young of both sexes, and tends to revert to the primitive type of man; he is thus made better fitted for a strenuous existence. The crude hoyden girl, on the other hand, truly evolves when Nature takes its own course. She becomes a more lovely, refined and complexly organized creature, charged with new powers, emotions, and values, as the result of a process of locking up or investing in her organization a proportion of her force.

But, according to Miss Kenealy, this locking up of force or process of involution, which is equally essential to the right development of the girl herself and to racial progress, does not in present circumstances take place, for the forces of the average girl are squandered in educational efforts and in strenuous games, and in aiming at achieving the same goals as those of a sex which has been specially differentiated to attain them. Influenced by educational authorities and their companions, they expend in abnormal effort the constitutional capital which should remain invested in their organization in the form of health and of womanly aptitudes and emotions.

The immediate net results, she indicates, are two: A large number of modern girls are weedy, anaemic, spectacled and ineffective neurotics, or large, crude hoydens—excellent "fellows," no doubt, but not women in any of the higher senses of the word. The second is that many women are to be met who have become psychologically, if not physiologically, sterilized while still young, and who have undergone a premature climacteric or reached middle age while hardly out of their teens. This, we are told, is the reason of the ever-increasing and deplorable plainness of women in the British Isles; of their discontent and lack of zest in life; of their neurotic, impoverished condition, and their abnormal distaste for the natural rôle and functions of their sex.

The final result is to afford an explanation of the tendency towards degeneration exhibited by the nation at large. The cure lies in modifying present educational methods and aims, and in dissuading women from entering "de-sexing" industries and professions. Each woman should be left to do as she pleases, but if she prefers a masculine type of existence, and thus exhausts her evolutionary reserves, let her make it a point of honour to refrain from being the mother of constitutional bankrupts.

We wish to make it quite clear that in thus summarizing Dr. Arabella Kenealy's arguments, we have in no wise added to their force or frankness. There are many who will acclaim them wholeheartedly, and others who, like ourselves, admit their ingenuity, but do not accept them as expressing the whole truth. The chief weak point we see in the position taken up is in respect of the relation of the effects Dr. Kenealy so trenchantly describes to any Woman's Movement which can truly be so called. Possibly they are the outcome of causes which lie much deeper or date much further back than the day on which the standard of feminism was first raised.

However this may be, many medical men are persuaded that, so far as infertility among women is concerned, much of it is due not to intentional prevention of conception, but to actually lessened proneness to conceive: and that in respect of the nursing of children the number of women whose mammary organs are inefficient is really on the increase.

It is also true that many clinical observers have learnt to look somewhat askance not only on the educational pressure to which growing young women are subjected, but on the active forms of amusement in which they are invited to take part. It is also a common experience to meet in "intellectual" circles

numbers of women who look, and indeed are, singularly old for their age. This is a point of some interest when it is remembered that in circles in which the chief object of education is the acquirement of social accomplishments, and in which a considerable proportion of women pursue a normal existence by marrying comparatively early, there have been complaints for many years past to the effect that the girls have no chance because their mothers are as young and as pleasure-loving as themselves.

As for good looks, we do not presume to offer an opinion, but our attention happened to be drawn recently to a lack of prettiness and grace in London society and streets by a friend who had recently returned from the East. We are bound to admit that the only defence we could set forth was that the type was changing, and that the lathy and keen-faced, if sometimes tired-looking, type of woman now so common possessed superior attractions for those who had grown accustomed to it.

In respect to the physiological effects of the higher education of women there are some American statistics which suggest that they tend to impair the capacity to bear and rear children. On this and other points mentioned by us many of our readers could probably bring forward data which would help to settle a matter of much interest. The problem is one of the greatest social importance, and the time seems to be ripe for a full discussion of the subject.

SANDFLY FEVER.

Still another fever has been run to earth and definitely proved to be due to the bite of an insect; the fever in question this time being the well-known three-day fever of India, Egypt, Malta and other places. Though clinically these short febrile ailments have been recognized under different names for a long time past, yet nothing definite was known about their true nature and how they are spread, until about the end of 1908 Doerr was able to show conclusively that the virus, whatever it may be, was carried by the small sandfly, the *Phlebotomus papatasii*. Large numbers of Austrian soldiers, while on the Dalmatian coast during the summer months, were constantly going down with this type of fever, and Doerr being interested took the subject up, and worked on lines similar to those which had been adopted in the elucidation of malaria and yellow fever.

By such experiments he was able to show that phlebotomus fever is caused by an invisible virus present in the blood during the first day of the fever, the virus being conveyed from sick to healthy by means of the sandfly. Immediately after this interesting and important discovery, the army authorities sent Lieutenant-Colonel Birt to Malta to make a detailed study of a similar sort of fever found in that island, and locally known as Pym's fever. The results of that investigation were mentioned by Lieutenant-Colonel Sir David Bruce at the annual meeting of the Research Defence Society, held at the Royal College of Physicians on June 3rd, 1910, when the speaker laid stress on the plucky conduct of the soldiers who came forward and offered themselves up to be bitten by the infected flies.

Lieutenant-Colonel Birt had written, he said, as follows: "Science and humanity owe a debt of gratitude to the self-sacrificing courage and zeal of the gunners of the 99th Company of the Royal Garrison Artillery. When the object of the research was explained to them, they vied with one another in offering themselves as cheerful victims for the sake of mankind. The men of the company are of splendid physique, and they rejoice in rude health, which they maintain by the enthusiastic pursuit of athletics. Those volunteers who were selected for experiment had resided less than a year in the island. They were all exceptionally healthy, strong, and muscular men. The aches and pains during the acme of phlebotomus fever make the sufferer an object of our profound pity. Those who of their own accord knowingly submit to them are martyrs indeed." The detailed accounts of Lieutenant-Colonel Birt's work, with the experiments mentioned by Sir David Bruce, formed the basis of a paper on "Phlebotomus, or Sandfly Fever," read by the former at the recent meeting of the British Medical Association held in London, and will be found in the Journal of September 24th, 1910.

At that same meeting Dr. Phillips of Cairo described the three-day fever of Egypt, the account of the Maltese form fitting exactly the Egyptian variety as seen by him and described by Dr. Wakeling.

A further paper on this interesting disease will be found in the current issue of the Journal by the latter observer, Dr. Wakeling. He carefully describes the fly and indicates the preventive treatment that should be adopted. Latrines, it will be seen, are inculpated, and these will have to be attended to. Although this fever is never fatal it incapacitates a considerable percentage of the population, and it should be dealt with, especially as it is just possible that the vector, the sandfly, may transmit other diseases. From the scientific point of view Doerr's discovery is of special interest, as it brings another disease into the category of the ultramicroscopical group of infections dependent on insect carriers, of which well-known examples are dengue and yellow fever.

LORD GRENFELL AND ARMY MEDICAL OFFICERS.

In answer to several correspondents who have drawn attention to the remarks made by Field Marshal Lord Grenfell, when presiding at the prize-giving ceremony at the Middlesex Hospital, we think it well to point out that his remarks were not derogatory either to officers of the Royal Army Medical Corps or to British medical men of any kind. The supposition to that effect is due to the brevity of the reports which got into several of the lay papers. The reference made by Lord Grenfell was to the old Egyptian medical department, which at the time of the outbreak of cholera, shortly after the close of the Egyptian war, remained just as it had been before the Arabi Pasha revolution. It was the revelation thus brought about of the absolute inefficiency of this old medical department which led to prompt reorganization under officers of the Royal Army Medical Corps seconded for that purpose. The present medical department of the Egyptian army is thoroughly efficient, the spirit which the British medical officers have inspired into it being admirable; Lord Grenfell has himself testified to the ability and devotion to duty exhibited by its officers of all ranks.

HEREDITY AND SOCIAL RESPONSIBILITY.

The Church Congress at its recent "Jubilee" meeting devoted a morning to the consideration of questions of parenthood and inheritance in relation to ethics. The discussion was opened by Dr. G. E. Shuttleworth, who, showing how Christian civilization and the

advance of medical science had tended to the preservation of the unfit, argued that, considering the transmissible character of neuropathic defect, marriages of persons so tainted should be strenuously discouraged, and in the case of congenital feeble-mindedness absolutely barred. No method short of segregation in industrial colonies of proved degenerates would be effectual in limiting the multiplication of such in future generations, and although special schools had been of signal advantage, wherever established, in the early detection and ameliorative training of feeble-minded children, the majority would still need some form of permanent care. Society owed it to its weaker members that they should be protected from drifting into the ranks of profligacy and crime, and the community would in the long run be compensated for the initial expense of custodial establishments by not only a diminution of the delinquency of to day, but by the prospective prevention of the reproduction of the unfit in future generations. Christian civilization had rightly insisted on parental preservation of child life, and improved hygienic conditions and the advance of medical art tended to preserve weaklings whose lot would formerly have been an early grave. Mrs. Hume Pinsent pointed out how a quickened feeling of corporate responsibility in the past had eventuated in lowering the average standard of humanity by tending to conserve baser elements which Nature unhindered would have eliminated. A still larger conception of corporate responsibility had become necessary, and one which would prevent the increase of our population from defective and degenerate stocks. Illustrating her argument by a pedigree chart of four generations, she showed how from a single defective ancestress no fewer than fourteen defective members had arisen in the family, and the community had been saddled with the maintenance of these through the humanitarian sentiment of non-interference with the liberty even of the unfit. Thus, good, efficient citizens had to bear the brunt of supporting incapables, and evidently the tendency was to limit their own progeny and also the educational advantages they could afford them. The great facts of heredity could no longer be ignored, and the Royal Commission had sketched out a legislative scheme which would enable society to exercise at any rate a measure of control over the reproduction of undesirable elements in the body corporate. The Bishop of Ripon followed with an eloquent paper on the declining birth-rate and the serious misgiving to which it gave rise. The decline was most marked among those classes in which England would welcome large families; in three West End (of London) residential districts it had fallen nearly 25 per cent. in the last thirty years, while in the East End it had gone up by 2.24 per cent. It seemed no exaggeration to say that, if present tendencies continue, the proportion of the fit to the unfit would steadily diminish. Even our colonies showed a similar tendency. Yet we ought to encourage an Imperial ideal of national life, promoting by all possible means the increase of the fit, and discouraging—even preventing, if need be—the reproduction of the unfit. After remarks by Mr. W. C. D. Whetham, an interesting discussion followed.

COUNTY MEDICAL OFFICERSHIP IN THE ISLE OF WIGHT.

It is quite clear from the report of a meeting of the County Council which appears in the *Isle of Wight County Press* of October 1st that the proposed dual appointment of a county medical officer and schools medical officer is likely to cause considerable dissatisfaction among the medical profession in respect of the salary offered. The appointment of a county medical officer is necessitated by the provisions of the Housing and Town Planning Act, 1909; and it is proposed that such appointment should carry with it that of a school medical officer with all its attendant duties and disabilities. At present the school medical officership is held by Dr. J. A. Gibson, who also holds the position and emoluments of rural district medical officer. The salary attached to the appointment of rural district medical officer of health is £300, and to that of school medical officer £400; but from the total amount of £700 has to be deducted travelling expenses, which, owing to the difficulties of transit in the island, amount to not less than £200, leaving a net income from the two appointments of £500. When he obtained these appointments Dr. Gibson had to sell his private practice, and was debarred from again returning to general practice in the island. The Local Government Board is not prepared to permit the holder of a county medical officership to retain that of rural district medical officer. The Council of the Isle of Wight has now offered Dr. Gibson the salary of £500 a year for the dual appointment. If he were to accept this amount—described by one councillor as "princely"—he would have at once to give up the remuneration of £300 a year as rural district medical officer, and be required to pay all expenses, travelling and otherwise, in connexion with both appointments. This "princely" salary is made up as follows: As county medical officer, £100; as school medical officer, £400; which, deducting expenses estimated at the minimum of £200, would give a net amount of £300 a year! At the meeting of the Council some opposition was made by certain members who saw the injustice of the position; but a division being taken, the resolution was carried by 18 to 15; and, failing rescission of the resolution, it rests with Dr. Gibson to accept or refuse it. We venture to express the hope that Dr. Gibson will not only decline to accept such a meagre salary for the heavy and responsible duties involved by the dual appointments, but that no medical practitioner will aid the Council by agreeing to the miserable terms offered and accepting office. In all such appointments the expenses should be in addition to the salary, or a sufficient amount be included in the salary to cover the outlay. To ask a medical officer who has done his duty so ably as Dr. Gibson to reduce his income by the sum of £400 a year is an insult both to him and to the medical profession. It is gratifying to find that one member of the Council during the debate "strongly protested for the honour of the Council and the credit of the island against the resolution, and moved that Dr. Gibson should have a salary of £500 clear." It will be to the credit and honour of those members of the Council who have the interests of public health and of the island at heart to cause the resolution just passed to be rescinded and to offer Dr. Gibson a salary commensurate with the important duties of his office and the dignity of the position.

FORLORN HOPE OPERATIONS.

To the average man the reasoning of coroners' juries often seems peculiar—to use a harmless phrase—but for real quaintness nothing could be more attractive, perhaps, than that of a Preston jury at an inquest at the end of September. The object of the inquiry was to ascertain the cause of the death of a patient in the infirmary which occurred not long after an operation, undertaken with the patient's consent and in the hopes of relieving an acute intestinal obstruction. It was shown that such obstruction was due to causes which rendered a rapidly fatal end inevitable unless

they were removed, and that this had not proved possible. This being the case, the inquiry might have been expected to end promptly in a verdict of death from natural causes; but, on the contrary, it went on quite a long time. This was because one of the witnesses indicated that, though forlorn hope operations of the kind in question were often successful, medical men were loth to undertake them; if not successful, and followed by an inquest, there was a tendency on the part of the public to blame the medical man concerned for undertaking the operation at all. This statement led to an expression of much indignation on the part of the jury, and of a threat that subscriptions to the infirmary should be withheld if its medical officers did not do everything they could for its patients. The reply was to the effect that so long as coroners' juries showed a tendency to blame medical men when admittedly unpromising operations failed, it was only human nature that they should desire to avoid work which was of no benefit to themselves and which might involve them in unpleasantness. In view of this trenchant *argumentum ad hominem* it might have been expected that the jury would have taken care to remove, so far as it could, all ground for such fear by returning a verdict which could not possibly be interpreted as in any sense inimical to the medical men concerned in the case; it might also well have added a rider to the effect that the public should not be needlessly alarmed by the holding of inquests in cases in which the cause of death could be ascertained by other means, and when such cause, whether acting directly or indirectly, was a natural circumstance in human existence. Instead of this it returned a verdict which, so far as the initial object for which the jury had been summoned is concerned, is no verdict at all, for it did not state the cause of death, merely that it occurred after the performance of an operation and that the operation had accelerated the death. In the circumstances one wonders if the hard-headed common sense with which the North is credited is a delusion, or whether a Preston man is merely an exception to the general rule.

SOCIETY OF OFFICERS OF "INFANT CONSULTATIONS."

On June 23rd a meeting was held at the Marylebone Dispensary, 77, Welbeck Street, W., to consider the advisability of starting a society consisting of those interested in the work of "Infant Consultations." The following resolutions were put to the meeting and carried unanimously, subject to amendment at the general meeting to be held on October 19th, 1910, at 6 p.m.: "(1) That a Society of Officers of 'Infant Consultations' be and is hereby constituted. (2) That the aim and object of such society be to (*a*) bring into closer relationship all those engaged or interested in the work of such institutions; (*b*) to promote the establishment of similar institutions, and to advise as to their organization; (*c*) from time to time to hold meetings for the reading of papers and the holding of discussions on subjects germane to the work of 'infant consultations'; (*d*) for the recording of experience gained by individuals engaged in the work; (*e*) for the collection of literature, statistics, and reports bearing on the subject. (3) That the society consist of a president, vice-president, honorary secretaries, treasurer, librarian, and ordinary members. (4) That the expenses of the society be defrayed by an annual subscription of 2s. 6d." An executive committee has already been formed. All communications should be addressed to one of the Honorary Secretaries, Dr. Ronald Carter, 11, Leonard Place, Kensington, W., and Dr. J. Lane-Claypon, 69, Prince of Wales Mansions, Battersea Park, S.W.

DISINFECTION OF THE HANDS.

The number of methods of disinfecting hands for surgical purposes has become extraordinarily large during the past few years. H. Selter[1] holds that among all the methods those which depend on the action of alcohol are destined to play the chief part. The work of Ahlfeld on this subject is said to prove this. Fürbringer's method is also a good one. It consists in washing the hands in hot water with a nail-brush for five minutes, then washing in alcohol for a further five minutes, and finally disinfecting in a 1 per cent. solution of perchloride of mercury for two minutes. Ahlfeld's method is to wash the hands in hot water with a brush for from five to ten minutes, then to dry them, then to treat them by scrubbing them in concentrated alcohol for three minutes, and, lastly, washing them for two further minutes with a flannel dipped in absolute alcohol. The two methods have, in Selter's opinion, certain disadvantages. First, a considerable time is taken up in the disinfection; and, secondly, the quantity of alcohol required for the process is cumbersome to carry about and costly. He first determined to compare the value of the various methods when tested by Klapp and Dönitz's method. Washing and subsequent disinfection with lysol or perchloride yielded unsatisfactory results. Fürbringer's, or other alcohol methods, diminished the number of bacteria very considerably, and the results were equally good with absolute alcohol, denaturated spirit or soap spirit. Tannin alcohol produced good results on the surface, but failed in a deeper action. In order to overcome the disadvantage of carrying a large quantity of alcohol about, the author had an ointment prepared, consisting of 75 per cent. alcohol and 25 per cent. potassium soap. This could be put up in collapsible tubes. First the hands were washed with soap, cold water, and nailbrush, and special attention paid to the cleaning of the nails; then 5 grams of the ointment was rubbed well into the hands until quite dry, and again 5 grams twice, so that at least 15 grams of ointment would be used. The whole process occupied about five minutes. The hands were then rinsed with sterile water or perchloride of mercury solution. The tests showed that 15 grams of ointment secured a diminution of the number of bacteria by over 99 per cent. of the original number. During hot weather it appeared, however, that this ointment failed; the alcohol separated spontaneously from the soap. He thereupon prepared a paste, containing 80 per cent. alcohol and 20 per cent. soap, gained from pure palmitic and stearic acids. The results were as good as those with the ointment. More recently he succeeded in making a paste with 86 per cent. alcohol, with which the results were still better. He claims from his investigations that the disinfection gained with 20 grams of this paste are as good as that obtained with 150 c.cm. alsolute alcohol.

RADIOGRAPHY FOR CALCULUS IN URETER.

The surgery of the ureter has greatly advanced during the present century. MM. Proust and Infroit[2] have published an important report on two cases of calculus in the lumbo-iliac portion of the ureter removed by extraperitoneal uretero-lithotomy. The report is adorned by some fine illustrations demonstrating the surgical anatomy of the ureter and the steps of the extraperitoneal operation, also by some radiographic sketches. The latter show how the situation of the calculus was defined in the two patients submitted

[1] *Deut. med. Woch.*, August 25th, 1910.

[2] Deux cas de calculs de la portion lombo-iliaque de l'urétère, *Revue de gynéc. et de chirurgie abdominale*, vol. xv, No. 3, September, 1910 p. 273.

to operation. MM. Proust and Infroit also dwell on their anatomical researches on the "radiographic topography" of the upper part of the ureter. They have discovered that there are individual variations in the course of the duct, very perplexing, as they admit, and they have come to the conclusion that the point of minimum variation is at the level of the fifth lumbar vertebra, just internal to the point of its transverse process. Above that point, according to the belief of most surgeons and anatomists, the ureter runs somewhat internal to the transverse processes of the lower vertebrae. This is usually the case when the subject is free from anomalies and diseases of the genital tract; but the authors show that when a calculus obstructs the ureter the course of that duct becomes considerably altered. The bigger the calculus the more the ureter tends to run external to the transverse processes of the lumbar vertebrae. The kidney is itself displaced, and the ureter makes a curve as it passes down anterior to the psoas. The calculus, however, is by no means big as a rule. Proust and Infroit find that calculi lodged in the iliac portion of the ureter usually lie internal to the point of the transverse process of the last lumbar vertebra, whilst stones in the lumbar part of that duct lie external to that process. The drawings show that localization by the radiograph requires great skill, and the authors remind the surgeon of a conspicuous source of error pointed out by Voeckler. Calcified retroperitoneal glands, ileo-caecal or others, make dark spots very suggestive of ureteral calculus; the above-named observer defined three such spots on the level of the fourth lumbar vertebra, one at the point of the transverse process, and the others a little internal to it. Alglave, almost simultaneously with Voeckler, indicated the same source of fallacy. Their communications were published only a year ago. Other sources of error will probably be demonstrated, and Proust and Infroit admit that ureteral catheterism, after the latest improved methods, must sometimes be called in to ensure diagnosis.

DAMAGES FOR NERVOUS SHOCK.

It has long been the custom for the lawyer who is drawing a statement of claim in an action for personal injuries to add a general count for damages for "shock to the system," but such a claim has usually been ancillary to a claim for compensation in respect of an actual physical injury. There is reason to believe, too, that juries have been accustomed to give weight to the claim when assessing the quantum of damages. The law now applicable to the question has undergone a kind of evolution during recent years which it is somewhat interesting to follow. The first important decision was arrived at in an Australian case which reached the Privy Council in 1888. In that case a gatekeeper of a railway company had negligently invited the plaintiffs to drive over a level crossing when it was dangerous to do so, and the jury, although an actual collision with a train was avoided, nevertheless assessed damages for physical and mental injuries occasioned by the fright. The Privy Council refused to allow the verdict to stand, holding that "damages for a nervous shock or mental injury caused by fright at impending collision are too remote." Eight years later, however, the English Court of Appeal came to what appears to be a different conclusion. In a case heard in that year (1896) the plaintiff was a signalman in the employment of the defendants, a railway company, which entered into a contract of insurance with him, by which it agreed to pay a weekly allowance in case of his being incapacitated from his employment by reason of accident sustained in discharge of his duty in the company's service, such insurance to be absolute for all accidents, however caused, if this occurred to the insured in the fair and ordinary discharge of his duty. The plaintiff, in the discharge of his duty, endeavoured to prevent an accident to a train by signalling to the driver, and the excitement and fright arising from the danger to the train produced a nervous shock which incapacitated him from employment. In an action to recover from the defendants the weekly allowance it was held that the plaintiff had been incapacitated by accident within the meaning of the policy. Here, then, was a clear ruling that nervous shock may be an accident within the meaning of a policy of insurance. As might have been expected, the question was raised anew in relation to the Workmen's Compensation Act. In one case which was heard in 1909, it was held that, in assessing the amount of compensation to be paid, the nervous and mental, as well as the physical, condition of the injured workman must be considered in estimating the extent of his recovery and consequent earning capacity. It is not sufficient for the employer to show that the muscular and physical mischief caused by the accident has come to an end. It is only recently, however, that mere nervous shock causing no physical injury has been held to be an accident within the true meaning of this extraordinary Act. The facts were as follows: In October, 1909, the applicant, a collier, 46 years of age, who had been engaged in coal mining all his life, and who for twenty-seven years had been working at the face of the coal in the pit belonging to the respondents, while working as usual heard a shout for help from the next working place. He ran round and found a fellow collier lying full length on the ground, having been knocked down by a fallen timber prop and some coal; he was bleeding all over his head and from his ears and eyes. The applicant picked him up in his arms and, with assistance, carried him away; he was not dead at the time, but died in a quarter of an hour. The effect on the applicant was such that he suffered a nervous shock, which incapacitated him from working at the coal face. The Court of Appeal held that the collier was the victim of an accident arising out of and in the course of the employment, and declared that he was entitled to compensation. The Master of the Rolls said: "I think the decisions of this Court do show that when a man in the course of his employment sustains a nervous shock producing physiological injury, not a mere emotional impulse, he meets with an accident arising out of and in the course of his employment. It is something unexpected no doubt, in this sense, that I do not suppose the applicant thought for a moment, when he was doing what was plainly his duty in going to the rescue of his fellow-workman, it would have this physiological effect on his system, but it had that effect." He concluded by saying: "I can see no real difference in principle, when once you get rid of the danger of malingering, between that case and the case where a physiological injury—physiological damage—is produced by reason of what happened to this man when he went in the course of his duty to the neighbouring stall and saw what had happened to his fellow-workman." In the light of these decisions it is clear that, among other duties imposed upon them by the Compensation Act, practitioners will have to consider the claims of workmen who allege that they are suffering from the effects of nervous shock.

DRAUGHTS.

In the JOURNAL of September 24th, page 894, there appeared an article drawing attention to tramway cars as now being constructed by the coachbuilders of the London County Council. It was pointed out

that these cars no longer provide an easy means of securing a cheap and healthy drive in open air, because "outside" passengers have to sit in a chamber which one day is as stuffy as "inside" and on another is traversed by piercing draughts. For this article a correspondent, whose letter appears elsewhere in this issue, gravely rebukes us. He holds that the notion that draughts are dangerous is merely an exploded superstition, and demands the production of our authority for taking any other view. Since the letter itself admits that a draught may "depress the vitality of an individual and so make him more susceptible to the onslaught of the influenza or some other fiend," we shall be quite content to take our esteemed correspondent himself as our authority if he will permit us to do so. If not, we can only plead that there are views which it is legitimate and wise to hold even though no great man pledges himself to their accuracy. Many beliefs merely depend on common observation, and the fact that a certain amount of superstition has at one time attached to them does not alter their essential truth. Our correspondent's further statements that the "so-called draught is only a concentrated dose of fresh air," and that millions suffer for want of fresh air, certainly represent profound truths. Nevertheless they leave us unimpressed, for much the same statements might be said of so many other things. Lead, for instance, when distributed through the substance of india-rubber gloves is as useful to *x*-ray workers as fresh air to ordinary individuals, but when concentrated in the form of a bullet exposure to its impact is apt to prove inconvenient. But however these things be, we adhere to our belief that draughts are dangerous so strongly that we refrain from suggesting to so valued a correspondent that he should put their powers to the test in his own person. It seems to us that the only point of superstition which attaches to the question is in respect of the mode of operation. It is not commonly understood that the draught is merely the *primum movens*, the immediate cause of the ill results experienced being in some cases perhaps a micro-organism, in others perhaps a toxin, with which the system would have been able to deal effectively but for the local depression of vitality, brought about by exposure to a "concentrated dose of fresh air." But though draughts are dangerous, other things are worse, and for this reason we sympathize with the efforts of the Women's Imperial Health Association to obtain relief for those who rightly prefer a draught to the fetid and nauseating atmosphere inevitable when many persons together occupy the limited cubic space represented by an ordinary railway carriage. The question of a passenger's right to insist upon the opening of a window has, so far as we are aware, never been tried, and the usual fashion in this country is meekly to give way to any blusterous person who insists upon closing all apertures. The public does not apparently realize that while draughts are merely dangerous, fetid air is a direct and certain cause of physical injury to all who inhale it. Nor in their turn do air seekers commonly realize that the persons most exposed to draughts in a railway carriage with open windows are not those sitting next the doors, but the occupants of the middle seats.

"ANTITUMAN" FOR CANCER.

New "cures" for cancer are announced in the newspapers almost every day, but the disease we have always with us. In some instances the treatment has been evolved quite empirically, and the results vary according to the mental constitution of the physician employing the remedy. In others, the "true cause" of the disease is discovered, and from the cause the cure follows. In these instances, also, the cures recorded at times follow the death of the patient and at times precede it. A somewhat new turn is presented to us by Professor Oestreich, who, having conceived an ingenious idea of the natural immunity to cancer, has built out of this theory a possible treatment, and having applied this treatment, records what at first sight appear to be negative results, and, finally, basing his request on these almost negative results, desires others to test the efficacy of his remedy.[1] He noticed in his work in the *post-mortem* rooms of the Königin Augusta Hospital in Berlin that, although carcinoma invades every other tissue in the whole body, it never grows in cartilage or in the walls of the arteries. His deduction from this observation is that these tissues must contain a substance which inhibits the growth of cancer. Reasoning still further, he found that chondroitin-sulphate of sodium, being a common constituent of these tissues, might be the immunizing substance. He found experimentally that this substance is well tolerated when injected in doses of 0.1 gram. This substance he calls "*antituman*." The injections were given in advanced inoperable cases of carcinoma of the breast, stomach, rectum, and uterus, but not in operable cases, as he did not feel justified in postponing the operation, and if given after operation the results are not easy to determine. The immediate result of the injection was severe pain in the tumour. This he interprets as a proof of the action of the medicament on the cancerous tissue. Another result was a moderate rise of temperature and slight acceleration of the pulse. In some patients there was a distinct temporary arrest of the disease, others showed some improvement, and others died. The only definite statement with regard to the effect of the treatment given is that *post mortem* in all the cases the small, not ulcerated cancerous nodules showed a marked infiltration with polynuclear leucocytes, with degeneration and necrosis of the infiltrating cancer cells. Oestreich almost apologizes for the smallness of the results by stating that a cure in these advanced cases was out of the question. It may be that "antituman" is capable of curing carcinoma in a reasonably early stage, but if this be so we certainly have no evidence of the fact before us. In the absence of even a suggestion of a curative action, one is inclined to ask, Why does the author publish this account? Surely it is time enough to speak of a treatment of cancer when some tangible results have been obtained.

MEDICAL WORK AMONG WOMEN IN INDIA.

The affairs of the Dufferin Fund came under consideration at a meeting of the home branch of the Association of Medical Women in India held last week under the chairmanship of Mrs. Scharlieb, M.D. It resulted in the passage of resolutions to the effect that the secretary of the fund should be a qualified medical woman; that at least one such woman should have a seat on the central council of the fund; and that an efficient service of medical women for India should be organized. There is but little in these resolutions to which those interested in the prosperity of the fund can well take exception, though the first of them may possibly be a stumbling-block. The filling by a woman of such a function as that of secretary to a fund as important as the one in question is comparatively novel even on this side of Suez, and everywhere, except perhaps in France and America, there is a certain prejudice in favour of

[1] *Berl. klin. Woch.*, September 12th, 1910.

laymen for appointment to business offices as against persons of medical training. The prejudice is slowly passing away, and certainly should not be allowed to exert any influence in regard to the Dufferin Fund. The objects of that fund are so purely medical in character, and demand so wide a knowledge of medical needs that there is initial reason for employing a person of medical experience as secretary. Laymen, it is true, often make successful secretaries to such funds, but only when, besides being persons of special ability, they have served for some years in a subordinate post in the office of the fund, and thus got into touch with its work before taking up a position of responsibility. In India, where changes among the white population are frequent and subordinates are commonly natives, it must be difficult to secure among laymen a secretary with the knowledge necessary. Given, therefore, a certain amount of luck and wisdom in their choice the authorities of the fund would probably find that a medical woman as secretary was an advantage, more especially as many women have a natural aptitude for detail, which is always of advantage in secretarial work. That a medical woman should have a seat on the central committee goes, as the French put it, "without saying," for the whole work of the fund deals with women. Hitherto the only woman member has been its president, who is always the wife of the Viceroy. The suggestion that there should be organized an efficient service of medical women for India will sound curious to many people; the sole object of the fund is to place medical aid by women at the service of the women of India, so it may well be supposed that such an organization must have been the very first step taken. In a measure this, no doubt, was the case; but in the twenty-five years that have elapsed since the fund was started conditions in India have somewhat altered; the services of many more properly trained women are available, and the machinery itself would appear to have grown rusty. In any case, since a new Viceroyship is about to commence, and will necessarily bring with it a change in the personnel of the fund, an excellent opportunity presents itself for overhauling an organization which might do much more for India than it does.

A BIOLOGICAL PROCESS IN PHOTOGRAPHY.

MEDICINE is being constantly drawn more closely to allied sciences, and each year new adjuvants to medical procedures are introduced. Photography can scarcely be considered an allied science of medicine at present, except in so far as this art is the means of recording the appearances of diseased conditions, and for this reason acts as a handmaid to medicine. Radiography, however, is an almost purely medical art, and the science underlying it has, therefore, an interest for the physician. Although the doctor does not, as a rule, trouble himself much about the chemistry and physics of photography, a new discovery in this field will probably interest the medical world as well as the photographic, and the possibilities of this discovery may be of considerable importance to medical science. It is well known that a photographic plate acts by the reduction of the bromide of silver after exposure to light. This reduction is effected by what are known as "developers." Direct darkening of a sensitized surface can be obtained by the exposure to light of the chloride of silver, as in some printing processes. A third photochemical process depends on the alteration of chromized gelatine by exposure to light from an easily melting condition into a condition which resists the action of warmth. The processes of carbon and other pigment printing, both in artistic photography and in illustrations, depends on this action. Now, since gelatine belongs to the chemical group of the albuminous bodies, it occurred to Dr. L. Jacobsohn[1] that it would be worth while to see if the characters of the proteid group were impaired by exposure to light. He thereupon soaked strips of photographic films in a 3 per cent. solution of potassium bichromate and later exposed some portions of these strips to light. All of them were subjected to peptic digestion with 1 per cent. pepsin and 0.5 per cent. of hydrochloric acid. He found that the exposed portions did not show any signs of digestion, while the unexposed portions were completely digested by the mixture. The digestion takes place well at about 40° C., and as this temperature softens and melts the gelatine, it was necessary first to harden it with 10 per cent. formalin or some other hardening mixture. In order to obtain a good print from a photographic negative, Dr. Jacobsohn used a paper covered with gelatine in which very fine insoluble pigment granules had been suspended. The gelatine having been chromatized, a contact print was made. On digesting the gelatine with the pepsin mixture those portions which had not been acted on by light were digested and those which had been exposed to full light remained intact, while the intermediate shades were proportionately affected. On washing away the dissolved or digested gelatine, and with it the imbedded pigment particles, a fine half-tone picture resulted.

MILK STANDARDS.

THE difficulties of securing a satisfactory milk supply are well evidenced by the latest report of the Medical Officer for the City of London, Dr. W. Collingridge. Despite the knowlege of milk producers that all milk reaching the city is subjected to very careful examination, much of it still contains active tubercle and a good deal of dirt. Moreover some 69 per cent. of it continues to arrive in the old-fashioned ventilated variety of churn, although churns dust-proof and otherwise suitable for railway transit are readily obtainable. Neglect of this facility is the more curious as the milk purveyors are themselves liable to suffer. Milk very readily absorbs any odour in its vicinity, and may do so to such an extent as to lead to its rejection by householders. Instances of such absorption are supplied in the report, the milk in one case having been damaged by travelling in ventilated churns in trucks used for the conveyance of fish. A case is also noted in which damage by acquired odour was due to milking the cows in a shed recently sprinkled with a strong-smelling disinfectant. Possibly, however, the point of greatest interest in the report is the evidence it affords of the disadvantages of standards in connexion with articles of food when those standards represent the average composition of foods not of fair but of the lowest possible quality. The standard laid down by the Board of Agriculture and Fisheries in the regulations published by it in 1901 is very low in respect of fat, and farmers seemingly take advantage of this fact to make an additional profit by toning down their milk by the addition of skimmed or separated milk, so as to keep the fat contents just within the standard. The nett outcome appears to be that the average quality of milk now obtainable in the city, and certainly elsewhere, is, apart from other defects, certainly lower than it used to be. From both the latest annual report of the Local Government Board and that of the Intelligence

[1] Dr. L. Jacobsohn, *Deut. med. Woch.*, August 18th, 1910.

Division of the Board of Agriculture and Fisheries for 1909, it is clear that the authorities are quite alive to the fact that the official milk standard is being used for the purpose in question, and, this being the case, it seems hardly too much to ask them to devise regulations which will make the practice more difficult to put into operation.

PANTOPON.

Sahli's opium preparation, which bears the name of "pantopon," and which he described in a publication in the *Therapeutische Monatsheft* in January, 1909, is said to represent all the alkaloids of opium in the form of chlorides. According to C. A. Ewald,[1] the claims made for this preparation by its introducer are quite justified. They are: (1) That it does not cause vomiting, constipation, or excitement in the large majority of persons; and (2) that it frequently exerts a sedative action when morphine has failed. In only one case in which he prescribed the preparation did it produce excitement. In all others the usual beneficial action of opium or morphine was well marked. It did not produce vomiting or constipation when applied subcutaneously, but when given by the mouth was found to be useful in checking diarrhoea. The dose which he employed was from 0.01 gram to 0.02 gram. In some of his cases it acted much better than morphine, both as a narcotic, as an analgesic, and in suppressing cough. In one case of diabetes insipidus he gave two tablets containing 0.01 gram each, and succeeded in reducing the quantity of urine from between 7 and 11 litres to 3½ litres within a fortnight. The other symptoms were also ameliorated. Ewald does not consider that pantopon will replace morphine at present because of its price. Bought in sterilized solution in ampullae, and compared with morphine bought under the same conditions, it costs from two and a half to three times as much as the latter. E. Gräfenberg[2] has also employed it freely, and has been satisfied with the results obtained. He made certain observations on patients, and from these considers that he is able to measure the activity of the preparation. In his gynaecological cases, after operation, he gave some morphine and scopolamine, some pantopon alone, and some pantopon with scopolamine before the anaesthesia. In each case the anaesthetic was administered on a Wanscher-Grossmann's mask, and was ether. He measured the time between the commencement of the ether inhalation and the abolition of the corneal reflex. With plain ether it was 16.8 minutes, with one dose of morphine and two of scopolamine it was 14.6, with one dose of pantopon it was 14.4, with two doses of pantopon it was between 4 and 5 minutes, with one dose of pantopon and two of scopolamine it was 12 6, and with two doses of pantopon and two of scopolamine it was between 4 and 6 minutes. He therefore concludes that two injections of 0.02 gram of pantopon shortens the preanaesthetic stage most markedly. In obstetric practice he found the preparation of value. He injected 1 c cm. of the 2 per cent. solution twice, with an interval of about three hours. The pains were not diminished in strength, and all the children were born alive and well. The injection should not be applied during the period of expulsion, as the pains are so little felt by the patient that she does not bear down properly. Lastly, he states that the preparation is valuable after operations for the relieving of pain. The narcotic action was not less well marked than that of morphine in his cases, and since pantopon does not paralyse the muscular coat of the intestine, flatus passed very early when it was given. In conclusion it may be mentioned that Rodari, Heimann, Hallervorden, and Bürgi have also published favourable reports of its action. The preparation is in the hands of F. Hoffmann, la Roche and Co., of Basle.

[1] *Berl. klin. Woch.*, August 29th, 1910.
[2] *Deut. med. Woch.*, August 25th, 1910.

DEMONSTRATIONS AT THE ROYAL COLLEGE OF SURGEONS, ENGLAND.

By order of the Council of the Royal College of Surgeons, England, an autumn course of demonstrations will be given in connexion with the Museum. The course arranged is as follows: (1) Friday, October 21st (Professor Keith): Specimens illustrating obstruction of the bowel caused by (*a*) defects of the diaphragm, (*b*) peritoneal pockets, (*c*) imperfect attachment of the mesentery. (2) Monday, October 24th (Professor Shattock): Specimens illustrating the various lesions of syphilis. (3) Friday, October 28th (Professor Keith): Specimens illustrating the various forms of imperfect differentiation of sex in man. (4) Monday, October 31st (Professor Shattock): Specimens illustrating the pathology of rickets, cretinism, and allied conditions. (5) Friday, November 4th (Professor Keith): Specimens illustrating acromegaly and some allied conditions. (6) Monday, November 7th (Professor Shattock): Specimens illustrating injuries and diseases of arteries. The course, which will be given in the theatre of the College at 5 p.m. of each day, is open to all medical men and advanced medical students.

We are authorized to state that the announcement made in certain lay papers to the effect that Sir Patrick Manson has retired from the office of Medical Adviser to the Colonial Office is unfounded.

Dr. F. M. Sandwith, Gresham Professor of Physic, will deliver four lectures on Ancient and Modern Surgery, on Tuesday, October 25th; Wednesday, October 26th; Thursday, October 27th; and Friday, October 28th, 1910. The lectures are free to the public, and will begin each evening at six o'clock.

We are requested to state that any member who may wish to have a copy of the Guide Book prepared for the use of those who attended the annual meeting of the British Medical Association, held in London last July, can procure one free of charge (except 3d. for postage) on application to Dr. Lauriston Shaw 429, Strand, London, W.C.

We are asked to state that the Council of the Royal Institute of Public Health, with a view of affording medical practitioners possessing the Diploma in Public Health opportunities for a more extended experience in bacteriological methods, has decided to admit yearly two such persons gratuitously for a period of six months each. Applications should be forwarded to the Principal, 37, Russell Square.

We are informed that the Governors of St. Thomas's Hospital have at considerable expense prepared a ward specially intended for lying in cases. The authorities state that they are anxious to work in the closest sympathy with general practitioners, and are prepared to accept for treatment in this ward cases of anticipated difficult labour if strongly recommended for admission by a general practitioner when the circumstances of the home make hospital treatment desirable. General practitioners who desire to apply to the hospital are requested to give due notice and to find out whether there is a vacant bed for the case in which they are interested.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Rearrangement of Coroners' Districts.

The Public Control Committee reported to the London County Council on October 11th with regard to the rearrangement of the coroners' districts in Central London, and the appointment of a successor to Dr. G. Danford Thomas. Under the Coroners Act, 1892, a vacancy must be filled within three months of its occurrence; the new appointment must therefore be made not later than November 5th. In consequence of the size of the central coroner's district the Council in 1891 decided that when vacated the district should be divided into two, the division to be made as nearly as possible on the basis of the number of inquests. Owing to the Council being in recess when the present vacancy occurred, time did not permit of the necessary steps being taken before November 5th to effect an alteration of the boundaries of the district. The Committee proposed, therefore, that a coroner should be appointed to the district as at present constituted, but at a salary based upon the work in the portion of the district which would be left to him after the boundaries had been rearranged.

In 1895, the report continued, the Council passed a series of resolutions directed at improving the conditions under which the duties of coroner were performed. It was then pointed out that in London there were ten coroners whose duties and salaries varied considerably, that it appeared probable that a smaller number would suffice under new arrangements, and that it would be more dignified if the position of coroners approximated more to that of stipendiary magistrates, with districts about equal in the amount of work, and salaries not dependent on the number of inquests held, and with proper courts, including a clerk and other officials necessary in a court of inquiry. The recent departmental committee largely endorsed this view, and a bill now before the House of Commons put the matter in a definite shape. As to the new appointment, therefore, regard should be had to the possibility of alteration of the law.

The Committee had come to the conclusion that the arrangement foreshadowed in 1891 was hardly desirable, and that instead of forming an additional district, certain modifications should be made in the coroners' districts north of the Thames. The boroughs of Paddington and St. Marylebone should be transferred from the central district to the western district, and the portion of Finsbury known as the parish of St. Luke should be transferred from the north-eastern to the central district. This rearrangement would divide the work about equally between the four coroners' districts north of the Thames, and the work of each district (the Committee thought) would not be beyond the powers of a coroner who devoted his whole time to the duties of his office. The new western district would comprise: Hammersmith, Fulham, Kensington, Chelsea, Paddington, and St. Marylebone with an aggregate population of 839,024, a total of deaths in 1909 of 11,220, and an average number of inquests during five years of 1,035. The new central district would contain Hampstead, St. Pancras, Islington, Holborn, and Finsbury, with a population of 831,903, a total of deaths of 11,927, and an average number of inquests of 1,118.

On the question of salaries the Committee stated that it had been the practice to calculate a coroner's salary upon the basis of a definite sum per inquest and the average number of inquests held, but the Committee proposed that a departure should be made from this practice. Hitherto the basis had been 30s. per inquest until the salary reached £1,350, but no salary went beyond that amount unless the average number of inquests held, on a basis of 21s. per inquest, would produce a higher salary. The earlier basis of £1 6s. 8d. per inquest, with an allowance of 9d. a mile for travelling expenses, had been reverted to in the case of some of the districts. The Committee recommended that the salary of the new coroner for the central district should be £1,250 a year, this amount to be regarded as including £250 to meet the expenses of the office, comprising payment of deputy, provision of office accommodation, clerical help, etc. If the Council made the proposed rearrangement of districts, additional work would fall on Mr. C. Luxmoore Drew, the Coroner for the Western District, whose salary should be raised from £1,126 to £1,400. In fixing these salaries the Committee had in mind the possibility that an amendment of the law might provide for the pensioning of whole-time coroners without requiring them to contribute by a deduction from their salaries. The adoption of the scheme outlined would effect a saving of nearly £800 a year.

The Committee recommended that a petition be presented to the King praying him to order the alterations proposed in the coroners' districts; that notice thereof be given to the coroners, and that they be consulted before the petition was presented; and that an advertisement be issued inviting applications for the appointment to the Central District.

When the report came up for consideration at the meeting of the Council, a member asked whether persons who had written to members of the Council asking for votes in furtherance of their candidature would be disqualified under the standing orders from offering themselves for election.

The Chairman replied that if such letters had been written they were highly improper, but, as the position had not yet been advertised, technically no breach of the standing orders had been committed.

The recommendations of the Public Control Committee were then agreed to.

Medical Treatment of School Children.

The Council approved the recommendations of the Education Committee that arrangements be entered into with the Poplar Hospital for Accidents and a local committee at Deptford for the dental treatment of a certain number of local school children.[1] The proposal to transfer the experimental scheme for the treatment by the "Queen's" nurses of children suffering from suppurating ears from the Hackney to the Paddington district[2] was also approved. The Finance Committee observed, with reference to this matter, that the apparent failure of the experiment in two districts raised the question of the general efficacy of the policy, and the Education Committee had been asked to give further particulars as to its reasons for thinking that a change of districts would solve the difficulty.

MANCHESTER.

East Lancashire Territorial Field Ambulance.

It is announced that men of the Field Ambulance of the East Lancashire Territorial Division are invited to attend a course of lectures on field ambulance work at the Manchester Royal Infirmary. The course will begin on November 2nd, and the class will be held on each succeeding Wednesday for six weeks. Members of the field ambulance who wish to attend this course are asked to send in their names to the orderly room as soon as possible. The efficiency year ends on October 31st, and men who have not completed the minimum number of drills required by the regulations, or have not fired their musketry course, will be liable to the penalties which attach to non-efficiency.

Sanitary Inspectors' Association.

At a meeting of the North-West Centre of the Sanitary Inspectors' Association, on October 8th, an address was given by Dr. F. Vacher, who is President of the Centre, and who recently retired from the post of Medical Officer of Health for the County of Cheshire.

[1] British Medical Journal, July 23rd, p. 220.
[2] Ibid., August 6th, 1910, p. 345.

Dr. Vacher said the sanitary inspector of to-day needed much higher training and qualifications than formerly. Among other qualifications he should be able to recognize cases of infectious disease. It might be said that this was rather the work of the medical officer of health or the medical practitioner, but there were many cases of infectious disease which never came under the care or notice of medical practitioners, and unless they were discovered by the sanitary inspectors they would never receive the attention needed, and would certainly never be dealt with as they ought to be in the interests of the community. It was pleasing to see how well women sanitary inspectors had been received wherever they had been appointed. The inspection of common lodging-houses used by women was only possible and satisfactory where there were women sanitary inspectors. They were also necessary where prompt notification of births was required, and they alone could best advise and instruct young and ignorant mothers as to the care of children. The sphere of their usefulness would in the future certainly be greatly extended. With regard to training, he suggested that boys proposing to become sanitary inspectors should leave school at the age of 12 in order to get a knowledge of office work. When asked to explain this, Dr. Vacher said he thought that the curriculum of modern schools was burdened with many unnecessary subjects. Boys left school with a smattering of Latin, Greek, French, German, mathematics, or physics, and to make room for these things not so much care was being bestowed on the three R's and on simple English history and geography as there used to be. It was not creditable that a boy should have a smattering of subjects of which he would make but little use and no more than a smattering of the really important things.

LIVERPOOL.

Appointment to Brownlow Hill Workhouse.

The Select Vestry of Liverpool has appointed Mr. Arthur J. Evans to succeed Dr. W. Alexander as Surgeon to the Brownlow Hill Workhouse. Mr. Evans is 39 years of age; he was educated at University College, London, and took his qualification as M.R.C.S. and L.R.C.P. in 1899; last year he took the Fellowship of the Edinburgh College of Surgeons. During the present year Mr. Evans was elected Honorary Surgeon to the Liverpool Stanley Hospital. Mr. Evans was a volunteer surgeon during the South African war, and in 1904 was a member of an expedition to investigate tropical disease in West Africa; he was also present in 1907 during the earthquake at Kingston, Jamaica, when he rendered distinguished service. The appointment is important, as the surgeon is in charge of half the wards of a hospital which contains about 1,000 patients, and the surgical half includes, besides surgical beds, wards for maternity cases, for infants, for epileptics and lunatics. The duties were not defined in the advertisement, but are presumably the same as those performed by Dr. Alexander except that the vaccinations have been given to the physician, Dr. Nevins. Considerable public interest has been shown in the election, letters and leading articles having appeared in the local papers evincing some distrust in the elective body on account of its alleged tendency to settle appointments on party and religious lines. It is a matter for regret that this opportunity has not been taken to divide the duties among a larger and more specialized staff, as it is impossible to find the qualifications for such varied work combined in one individual.

Appointment of Assistant to Medical Officer of Health.

Another important appointment has been made in Liverpool, which in one respect is in contrast with the workhouse appointment—that is, in the number of candidates. In the one case eleven men applied for the post, all of whom were local practitioners except one, while for the second appointment there were fifty-eight applicants. The new post that has just been formed is that of Assistant to the Medical Officer of Health to undertake the following duties:

To visit the homes of persons suffering from tuberculosis who have been in-patients at Fazakerley Hospital, or notified under the Order of the Local Government Board, with a view to ascertain that medical instructions are being followed, and to remind or advise the patient, when necessary, as to the precautions to be observed.

To note and report to the medical officer of health any home conditions likely to influence the disease, either in regard to the patient or to those living with him.

To keep systematic records of visits or revisits, and of the conditions found, and to submit these to the medical officer of health, and to carry out any other duty or investigation which the Health Committee may direct.

The choice of the Health Committee fell upon a local candidate, Dr. W. L. Hawksley, who has held appointments as house-surgeon and house-physician in the David Lewis Northern Hospital, and as resident medical officer in the Liverpool South Dispensary. He was also in charge of the special tuberculosis wards of the Corporation at Fazakerley Hospital for nearly two years. He was then appointed one of the school medical officers. The new appointment is a whole-time one at a salary of £250 per annum, rising to £300.

Medical Service.

The annual special service for medical men will be held in St. Luke's Church on Sunday, October 23rd, St. Luke's Day being Tuesday, the 18th. The preacher will be the Right Rev. Francis Paget, Bishop of Oxford, and a son of Sir James Paget, the surgeon. A collection made will be devoted to the Medical Benevolent Fund. Academic garb will be worn.

LEEDS.

Fire at the General Infirmary.

An outbreak of fire occurred at the General Infirmary on the morning of Friday, October 7th; it resulted in the destruction of the roof of one of the blocks, but was happily unattended with loss of life or injury to any of the inmates. Some doubt must exist as to the exact origin of the fire, but in the opinion of some of the firemen engaged it must have been smouldering for some time in the false roof of the block where it was first detected from the outside. Flames were freely arising from the roof before those on duty in the ward grasped that there was anything wrong; and, indeed, information was first conveyed to the nurses on duty by the firemen who had been promptly summoned. The removal of the patients from the block was, of course, at once decided on, and so speedily was this effected by the nurses, residents, and porters that at no time was there any danger to the inmates. The prompt removal of some 90 patients from the three floors of the block without at any time the slightest manifestation of panic, without undue fuss, and with a deliberate celerity which must have been most reassuring to the patients, was a proceeding which reflected great credit on every one, and illustrates the fact that good discipline, to whatever cause it may be primarily directed, can be usefully employed in emergencies of any kind. Although many offers of help from neighbouring institutions were kindly offered it was found possible to find accommodation for all the patients removed from the block. Some were sent to the semi-convalescent hospital, from which those who were sufficiently well were sent to their homes; others found accommodation in one of the large wards which had just been overhauled and was almost ready for occupation, and the remainder were distributed in the other wards. Beyond the closure of the out-patient department for the afternoon the work of the infirmary was not interrupted. At a meeting of the board held on Friday afternoon, a few hours after the fire had been got under, instructions were given to the architect to get out specifications for the restoration of the block. The damage will probably be represented by a sum of £3 000, and though the building is insured some financial loss to the institution is bound to occur. Leeds and Yorkshire at large is, however, proud of this hospital, whose

official title is not the "Leeds Infirmary," but "The General Infirmary *at* Leeds," and practical manifestation of sympathy will not be wanting in the emergency.

BIRMINGHAM.

A New Sanatorium for Consumptives.

The Health Committee of Birmingham has now completed the necessary alterations at the Emergency Hospital, Yardley Road, and has thereby provided a sanatorium which will accommodate fifty patients suffering from phthisis. Dr. W. H. Wynn has been appointed Visiting Physician, and Dr. Dixon as Resident Medical Officer. The building was opened by the Lord Mayor on October 5th. There are two large wards, one being set aside for twenty-four women, and the other for twenty-six men. Each ward is divided into four divisions, three for sleeping and one to be used as a dining and recreation room. Attached to the westerly side of each ward is a covered verandah, under which, even in wet weather, patients may be in the open. There is also a separate shelter in connexion with each ward, so constructed that in very inclement weather those who are able to be out will be protected from the wind. A room has been set apart for the examination of patients, and a small laboratory has been provided together with a dark room for throat examinations. The most recent methods of investigation and treatment will be provided.

Admission to the sanatorium is open to any Birmingham resident who is suffering from tuberculosis of the lung in a rather more advanced stage than would entitle admission to Salterley Grange Sanatorium. The treatment will be for a definite period of six weeks, and during this time not only is it expected that the general condition of the patient will be improved by the open-air or other treatment, but also the patient will receive instruction in the methods of preventing the spread of infection during coughing and spitting. In this way 350 patients suffering from consumption should be treated yearly. It is hoped that the institution will be able to teach these patients how to look after themselves when they return home, and be the means of preventing infection spreading, and also of prolonging directly or indirectly the wage-earning capacity of a considerable number of consumptives. If any patients are found to respond sufficiently to treatment they may be transferred to Salterley Grange Sanatorium, where only patients in the earliest stage of tuberculosis of the lungs are received.

WALES.

Llandaff and Dinas Powis.

Dr. R. Prichard, Medical Officer of the Llandaff and Dinas Powis District Council, reported on October 5th that the number of births during the five weeks ended September 30th had been 91, equal to an annual birth-rate of 33.46 per 1,000, as compared with 22.09 and 29.8 in the corresponding periods of the last two years. The deaths registered numbered 31, giving a mortality of 11.67 per 1,000, as compared with 6.11 and 10.09 in the corresponding periods of the last two years. Fifteen cases of scarlet fever and three of diphtheria had been notified during the month.

Typhoid at Pontypool.

An outbreak of typhoid is reported from Pontypool, and half a dozen persons have been removed during the week to the Newport Isolation Hospital. No further cases are reported, and it is hoped that the present outbreak—the cause of which has not yet been traced—is not the beginning of another epidemic similar to the one which overspread the district four years ago.

Hydro for Builth Wells.

A few Birmingham capitalists who recently visited Llanelwedd, Builth Wells, are negotiating for a site for the erection of an up-to-date hydro on the grounds above Gwernyfed, within five minutes' walk of the railway stations at Builth Road, and overlooking the picturesque river Wye. The scheme will cost about £15,000, and it is suggested, should the site be obtained, that the hydro shall be connected with the Park Wells saline and sulphur springs by a bridge across the Wye, near the old Llechryd ford. Plans have been submitted to the owner of the estate; if terms can be arranged, the hydro—170 ft. frontage with 50 bedrooms and extensive grounds—will be a great boon to Builth Wells.

University College of South Wales and Monmouthshire.

At a special meeting of the Council of the University College of South Wales and Monmouthshire, held on October 7th, the committee appointed to consider the duties and the salary to be attached to the registrarship presented its report. The registrarship will become vacant on October 13th, on the resignation of Mr. J. Austen Jenkins, B.A. The committee recommended that a salary of £400 per annum be offered to the new registrar, the appointment to be subject to three months' notice on either side. The Council adopted the committee's report, and it was arranged that Mr. D. J. A. Brown (Chief Clerk, Registrar's Department) should carry on the work attached to the office of registrar from October 13th until such time as the vacancy is filled.

The Council confirmed the appointment of Mr. Harold A. Haig, M.B., B.S., as lecturer in histology and embryology, and of Mr. G. Douglas Brooks, B.A., as assistant lecturer in Greek.

Sanitary Inspectors' Association.

On October 8th Sir J. T. D. Llewelyn, Bart., entertained at Penllergaer the South Wales and Monmouthshire Branch of the Sanitary Inspectors' Association for the thirteenth annual meeting. Dr. W. Williams, county medical officer, the president, took the chair. He was subsequently re-elected president of the centre. Dr. Williams, in the course of the proceedings, stated that, to his regret, the status and pay of the sanitary inspector still showed no progress. He had arranged for a deputation to wait upon the Right Hon. Mr. John Burns, and he hoped to elicit his sympathy on their behalf. Something should be done. No body of men did greater good for the country than they did. They should be properly paid, and there ought to be some fixed scale of remuneration. Sir John Llewelyn also spoke of the onerous work of the sanitary official, and the tact that he had to display in carrying out strictly his duties to the public. Their services really could never be rightly estimated, for the more successful they were in preventive work, the less there was to give proof of it. Speaking of his own district, Sir John remarked on the change from arable to pasture land, and said he had pointed out to the farmers that the public now required better accommodation for cattle. The farm buildings which used to be chiefly for horses and for corn had to be adapted for cattle, and he had of recent years spent hundreds of pounds on his home farm in this direction. The landowners had their responsibilities in this way, but the farmers had also their share. They were responsible for the cleanliness of the houses and the persons who attended to the work. Mr. D. R. Thomas, Chief Sanitary Inspector of the Swansea Rural District Council, read a paper on Sanitary Progress in the Swansea Rural District during the past fifteen years, etc., and was heartily thanked. Mr. J. Towy Thomas, the honorary secretary of the centre, was the recipient of a purse of gold from the members in recognition of his services. After the luncheon provided by Sir John Llewelyn, Dr. Williams, the president, spoke of the crusade against consumption which had been initiated by Mr. David Davies, M.P., of Llandinam. He took the opportunity of telling them, on the authority of Mr. Davies himself, that it was a real crusade, not a scheme to consist of bricks and mortar, but a scheme of work—a scheme of work beginning in the school and in the home, and dealing with hygiene and the laws of health. It was to be

an educative and preventive scheme to a very large extent. People, he said, passing from sanatoriums recovered did not often care to do the work they were able to, but under this scheme people who went in for curative treatment would have to do a certain amount of work.

The sanitary authorities, however, would look after the milk and meat supplies, for purity in both these articles would greatly prevent the disease. There was the housing question also, but that was more a matter for the sanitary authorities. Sanitary authorities should be stimulated to do more than they had done in the past in regard to the housing of the people. He believed that there were consumption houses, dwellings in which it was a most difficult matter to keep away from consumption—houses with old thick walls and windows never made to open. Merionethshire, his own county, and Cardiganshire were said to be the two blackest counties in Wales in this matter, and before they could hope to expect to stamp out consumption from those houses they must disinfect them with fire and brimstone. There the residents got plenty of fresh air in the daytime, but at night the windows were stopped up—it was at night the mischief was done. He hoped those present would remember what he was saying—that this scheme was not one merely of sanatoriums, but a preventive and educative scheme.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

EDINBURGH.

Nurses' Registration.

In the nurses' recreation room of the Royal Infirmary of Edinburgh, on Friday afternoon, October 7th, Lord Ampthill, G.C.S.I., G.C.I.E., distributed the prizes to those nurses who had successfully come through the recent examinations. The Lord Provost of Edinburgh, who presided, said they were greatly indebted to Lord Ampthill for his good offices in the House of Lords, and for the generous manner in which he had championed the cause of the registration of nurses. Though that Bill, carried through the House of Lords, never came in definite form before the House of Commons, perhaps something had been gained by that, because they all hoped that they were going to get a better bill by waiting a little longer.

After distributing the prizes, Lord Ampthill said nurses' work was essentially women's work, and, highly organized as it was now, he was not quite sure that nurses did not require some of those qualities which used to be thought only essential to the occupations of men—courage, fortitude, endurance, and self-reliance. Nursing was a noble and inspiring profession. Nurses owed a duty to their profession. Each owed a duty to all the rest. When they finished their training they went out into the world, and many of them would find themselves in positions of considerable independence, and they might forget that they belonged to a great calling. In these circumstances the nurse's position was like that of a sentry or the look-out man in the bows of a ship, upon whom the safety and welfare of their fellows depended. It seemed to him that the nursing profession required still further organizing. They needed the protection of the law in the same way that other professions needed that protection. Every one of them was naturally anxious that nothing should be done to discredit it, and the only way to preserve the honour of any profession was to ensure that none but those who were worthy should be able to call themselves of it. That was the first thing. Secondly, they had very properly a feeling of self-interest. They wished to preserve to themselves the privileges which they had earned by their hard work, self-sacrifice, and devotion, and as public-spirited members of the community they were anxious that the public should not be in any way deceived or misled by people who called themselves fully-trained nurses but had not taken the trouble to acquire the qualifications. All these things could only be secured if they got the sanction and protection of the law of the land. Why should they not have registration if registration was accorded to midwives? Midwives had to get far less training than nurses, and, generally speaking, they were women of lesser intellectual attainments and of lower social standing. They were told that nurses did not require to be registered by the State because they could not register character, and that the only qualification that was required for a good nurse was a pleasing character. The ladies who had been working so hard for the prizes he had presented knew better than that. They knew that efficiency in their profession was not simply a matter of character, and that there was a great deal which they had to learn. He asked them to think over that question, and to remember that as members of a noble calling each owed a duty to herself and to one another. They should make themselves thoroughly acquainted with it, and make up their minds whether they thought it necessary or not necessary. If they left it to others to settle for them, he thought they would be failing in their duty as members of their profession, and as associates in a great calling.

After Mrs. Kerr, one of the managers, had said a few words, Mr. W. B. Blaikie, another of the managers, moved a vote of thanks to Lord Ampthill. It was, he said, a great satisfaction to him to know that they had added a new nurses' home to the institution, that they had increased the dining-room accommodation, and that on last pay day for the first time the nurses took the whole of their pay home with them, and that there had been instituted a pension scheme, inadequate to the services of the profession, but less inadequate than any pension hitherto given to the nurses.

The Lord Provost was thanked for presiding.

New Clinical Laboratory at the Royal Infirmary.

Considerably over a year ago it was stated in these columns that a generous and unknown donor had offered to place in the hands of Dr. George A. Gibson a sum of money sufficient to equip a clinical medicine laboratory in the Royal Infirmary of Edinburgh. After innumerable difficulties and prolonged delay the laboratory is now an accomplished fact. The laboratory will be formally opened by Sir Clifford Allbutt, K.C.B., Regius Professor of Physic in the University of Cambridge. The managers of the Royal Infirmary placed two rooms at the disposal of the trustees of the laboratory. These are conveniently situated near the main corridor in the medical part of the infirmary. Hitherto only the laboratories of the University and Royal College of Physicians here possessed the necessary appliances for carrying out advanced scientific methods of research, and patients who were very ill could not be taken from the wards to these laboratories. It was therefore highly desirable that patients under treatment in the Royal Infirmary should reap the full benefit of the newer methods of research, and that students should have opportunity of making themselves conversant with these new methods of investigation. The New Clinical Medicine Laboratory has been equipped with the most modern appliances for the examination of patients, and provision has been made for the addition of any new apparatus that is likely to prove useful in the study and relief of medical diseases. Since laboratories already exist in which chemical and bacteriological investigations can be carried out, the trustees have not provided further facilities for such research, but have confined themselves to lines of inquiry which necessitate the actual presence of the patient in the laboratory. Amongst the apparatus already in the rooms, a very sensitive recording galvanometer, which registers the electric currents produced by each beat of the heart, attracts special attention. It has, in the hands of Einthoven and other observers, thrown light on a group of heart conditions whose mechanism was previously obscure, and has thereby led to much greater success in their treatment. Another instrument, involving similar principles in its construc-

tion, is provided for the study of small changes in electric potential in living organs, and its use is expected to help to a clearer appreciation of the changes which occur in them. There are also various instruments for the study of blood pressure, some being available for use at the bedside, and others calling for the presence of the patient in the laboratory. There are also several forms of kymograph for the registration of pulsations and other movements that cannot be studied accurately save by graphic methods. One room is entirely devoted to such methods. The second room is given up to electrical apparatus. There is a powerful installation for the screen examination by *x* rays of various internal diseases. Important features of this installation are the elaborate precautions to guard the patient and the observers from any possible injury by exposure to the powerful radiations, and the appliances for moving the patient into convenient positions for examination with the least possible fatigue and discomfort. A dark room is a further part of the equipment. In addition to these provisions for laboratory work, the trustees have supplied for use in the clinical medicine theatre an elaborate Leitz projection lantern, which can be used to demonstrate microscopic specimens, solid objects, and diagrams, or printed matter, as well as ordinary lantern slides. In this, as well as in the arrangements of the laboratory itself, they have been mindful of the needs of medical students, on whom the reputation of the Edinburgh Medical Schools and Royal Infirmary so largely depends. The laboratory will be under the charge of the junior assistant physician for the time being (now Dr. Matthew) and an assistant. The Carnegie Trust has undertaken to provide £100 a year for the payment of the latter. The trustees of the new laboratory are Sir Thomas R. Fraser, Dr. George A. Gibson, and Dr. Harry Rainy.

New Appointments at the Royal Infirmary.

At the weekly meeting of the managers of the Royal Infirmary of Edinburgh, on Monday, October 10th, the following gentlemen were appointed clinical tutors for the current winter and ensuing summer sessions: D. P. D. Wilkie, F.R.C.S.E., to Professor Caird; Lewis Beesly, F.R.C.S.E., to Mr. Hodsdon; W. G. Porter, B.Sc., F.R.C.S.E., to Dr. Logan Turner.

The following appointments were made as from October 1st: Duncan M. Morrison, M.B., Ch.B., non-resident house surgeon, to Dr. Malcolm Farquharson; and H. J. Dunbar, M.D., clinical assistant to Dr. George Lovell Gulland in the medical waiting room.

GLASGOW.

Tribute to Sir Hector C. Cameron.

At the meeting of the Glasgow University Court, held on October 6th, the Court, on the motion of Principal Sir Donald MacAlister, passed a minute with reference to the resignation by Sir Hector Cameron of the Chair of Clinical Surgery in the following terms:

> The members of the Court, on the resignation by Sir Hector Clare Cameron of the Chair of Clinical Surgery, desire to express to him, as their colleague, their cordial recognition of the distinguished manner in which since 1900 he has fulfilled his duties as a professor of the University. By his skill as a surgeon and his power as an exponent of surgical principles he has increased the reputation of Glasgow as a centre of medical science and professional training. The Court has also had the advantage during various periods of office from 1889 onwards of his co-operation in the government of the University, and it values highly the share he has taken and still takes in its deliberations. His colleagues have no doubt that, though freed from the educational responsibilities of his Chair, he will continue to further the cause of surgical science, and to enforce and apply the beneficent teachings of his illustrious master and friend, Lord Lister.

Principal Sir Donald MacAlister left Glasgow on October 6th for Berlin, where he represented the Senate of Glasgow University at the centenary celebration of the Berlin University. He also represented the country, as President of the General Medical Council, at the meeting of the International Committee for the Extension of Post-Graduate Medical Instruction.

The ordinance of Glasgow University Court of July 7th, 1910, containing the regulations for degrees in medicine, was issued as a parliamentary paper on September 6th.

The Medical Faculty and Medical Women.

At the monthly meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, held on October 3rd, it was resolved to admit women to the Fellowship of the Faculty on the same terms as men.

The Motor Ambulance Question.

The motoring correspondent of the *Glasgow Herald* traverses in the weekly review of motoring and engineering in that newspaper the statements as to motor ambulances made by Sir George Beatson at the conference of the British Hospitals Association. At the discussion on motor vehicles for ambulance purposes, Sir George Beatson, ex-chairman, and Mr. N. Paton Brown, present chairman of St. Andrew's Ambulance Association, referred to the experience of that association with regard to motor vehicles, which was most unsatisfactory. The St. Andrew's Ambulance Association, whatever the cause, has been much less fortunate than public bodies in many other places, or even in Glasgow, where, in the corporation fire department, a clean sweep is being made of the horse-drawn fire engines, and a whole fleet of motor vehicles substituted. This change is based on the saving effected, both in time and money, and the much greater efficiency secured after an experience of several years of these vehicles. The *Herald* correspondent states that some three or four years ago, when the motor ambulance was supplied to the association, it was strongly advised to get a skilled motor-car engineer to drive it, but it preferred less expert and less expensive service. It is not possible now to verify this statement, as the chief actors on the maker's side are dead or in America, and whether neglect of his advice has caused the trouble cannot be decided. But it is claimed that from the figures given as to the cost of running there must be something radically wrong either with the machine or the way it is run, as the figures are quite abnormal. In any case, generalization cannot fairly be made from a single instance. The controversy is exciting some comment among practical motorists. The Corporation of Glasgow Health Department has just ordered a motor ambulance for diphtheria cases requiring removal, and some figures as to running on Glasgow streets will eventually be available for a fair comparison.

Hostel for Senior Medical Students.

We are glad to know that a hostel for senior medical students is to be opened near the University and Western Infirmary on October 17th. It is situated at 9, University Avenue, and is in telephonic communication with the Western Infirmary, so that the students can be communicated with and get the advantage of seeing urgent medical and surgical cases, and in this way add to their practical experience. The charge for residence is £1 1s. per week.

DUMBARTON COUNTY COUNCIL AND QUACK MEDICINES.

At a meeting of Dumbarton County Council, held at Dumbarton on October 3rd, Mr. Alex. Wylie of Cordale referred to patent medicines, which, he said, were inflicting a great amount of injury on the health, life, and morals of the community. The trade in them flourished to a large extent by advertisements being allowed to disfigure the highways and railway stations, and, in addition, interspersing copiously the current literature, including, he was sorry to say, many religious publications. It had been found by the British Medical Association that not only were exorbitant prices charged, but that there were a great many deleterious materials in these remedies. In some cases the prices charged were 1,400 times as much as the cost of the ingredients, and the trade was largely increasing. When he was in Parliament he had intended to move in this matter, but was told that very likely the Government would take steps. This, however, it would not do unless considerable pressure were put on it. In this connexion Great Britain was far behind other countries, as there was complete prohibition in Denmark, Norway, and Sweden, and great

restriction in Germany, Austria, Italy, and some of our own colonies—for example, Canada. Under the Food and Drugs Acts they were compelled to prosecute poor hard-working farmers for having a small excess of water in their milk, sometimes through natural causes, while the wealthy, luxurious patent medicine vendor, who was making his ill-gotten thousands by deliberate fraudulent representations, was not touched. He moved that the County Council take steps to impress upon the Government the urgent necessity for amending the Food and Drugs Acts so as to include restrictions on the trade in secret remedies, and, this motion being unanimously carried, it was decided to communicate it to the Local Government Board and to the Association of County Councils.

School Sanitation in Lewis.

A statement has been forwarded to the Secretary for Scotland on behalf of the Council of the Educational Institute of Scotland, dealing with the recent reports on education in the island of Lewis. Much of the matter in these reports, and in this statement founded upon them, is of little interest to medical men: but the question of the sanitation and water supply is referred to, and the practice apparently approved by the local medical officers. The institute is a powerful organization with a roll of 15,000, to whose efforts both education and its teachers owe a good deal. It has always strived to raise the efficiency of the education and of the teachers, and to ensure the provision of healthy schools; its report will, therefore, receive due consideration. The institute appointed a commission of its own members to visit the island and report on the educational condition, and in this report the findings were that the existing system of managing the schools was unsatisfactory and the staffing and salaries inadequate; that in almost every case the condition of school buildings as regards cleaning, water supply, sanitation, and disinfection was bad, and in some cases even dangerous. This was submitted to the Secretary for Scotland on July 26th, and the local school boards prepared a memorandum in reply controverting the damaging statements of the commissioners. To this memorandum the institute has again prepared a reply now submitted as a statement. This statement deals with numerous educational and administrative details, but the concluding portion of it is devoted to sanitary affairs. The statement claims that the commissioners, from their knowledge of school buildings and equipment, and from their experience in the work of administration, not to mention their possession of the senses of sight and smell, are quite as well qualified as the medical officers of Barvas, Lochs, and Uig to judge of the efficiency of the sanitary arrangements of schools. The statement of the three medical officers as evidence of effective sanitation was that "last year every school was treated at least once with cyllin, and this year and in future all will be so treated." The institute points out that the Departmental Memorandum on the Cleaning of Schools demands regular weekly, and in some matters daily, use of disinfectants; "the medical officers of Barvas, Lochs, and Uig are satisfied with an *annual* application. Need more be said." The institute insists that as a rule school premises were only brush cleaned and floors seldom washed. "At the visit of the commissioners there was visual evidence to this effect." As to the sanitary condition the institute "would gladly welcome further investigation by an independent commissioner, to whom it would be prepared to submit all documents, including signed statements by all the head teachers (except one) in the three parishes." The statement concludes:

> In conclusion the institute would assure your lordship that its action in the matter of the island of Lewis was intended wholly to increase the efficiency of education, and to improve materially the position of both teachers and pupils. It therefore trusts that your lordship will take such action as will secure these ends.

In view of its dealings with those in authority in the island of Lewis and adjoining islands, and of the report on the sanitary affairs in the island by the medical officer of the Local Government Board a few years ago, it is probable that the independent report suggested will be ordered either by the Secretary for Scotland or the Local Government Board. It is to be hoped in the interest of the children, and of the medical officers involved, that a thorough investigation into the whole conditions will be instituted without delay.

Ayr County Council and its Medical Officer.

A discussion arose at the meeting of the Ayr County Council on October 5th in connexion with the work of the county medical officer of health. A motion was made to reconsider the terms of the appointment. Dr. Macdonald was appointed in 1891 at a salary of £450, which was increased to £500 two years later, and to £600 in 1902. Since then he has been appointed medical officer to a number of burghs within the county, the emoluments of which amount to another £100 per annum, and now the Education Committee has appointed him superintendent of the medical inspectors of schools at an additional salary of £100. There is no complaint whatever as to Dr. Macdonald's administration of his office, but the mover of the motion wished a decision that there should be some finality about the number of appointments which the medical officer could accept. It was pointed out during the discussion that in each case the County Council and the Local Government Board had given consent to the appointment before it was accepted by the medical officer, but the motion to reconsider the matter was carried by a majority.

Presentation to Dr. Taylor, Keith.

On October 5th Dr. Taylor of Keith was the recipient of handsome gifts from friends and patients. These gifts consisted of a motor car for Dr. Taylor, and a pair of silver candlesticks and gong for Mrs. Taylor.

Medical Inspector of Schools for Kirkcudbright.

Dr. D. Johnston, Ipswich, has been appointed school medical officer for the county. Dr. Johnston is at present assistant medical officer of health and medical inspector of school children at Ipswich.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Royal Veterinary College of Ireland.

There was a large attendance at the opening of the eleventh session of the Irish Veterinary College, over which Sir Christopher Nixon presided, a few days ago in Dublin. In opening the proceedings the Chairman stated that during the six years that the college had been conducting examinations 96 pupils had been passed, and every one of these had been successful in obtaining appointments. Some of their students had been appointed to important posts in South Africa, and at home eight of their graduates were working under the Department of Agriculture. The establishment of veterinary dispensaries throughout the congested district would open up fresh opportunities for employment, and already six out of sixteen officers appointed had been educated in the college. He hoped that in future the Department of Agriculture would recognize the courses of instruction given by the Veterinary College for the purpose of grants under the regulations for the conduct of technical schools. After Sir Christopher Nixon's remarks, the prizes for the past session were distributed by Professor Mettam, and Professor McWeeney delivered an address on the tendencies of modern research. The proceedings then terminated.

Fatal Cycling Accident.

Much sympathy is felt with the relatives of Dr. P. J. Smith, of Stamullen, who was killed as a result of a fall from his bicycle on October 1st. Dr. Smith was cycling home in the dark, after attending to a call, and apparently mistaking the way at the corner of a by-road, ran into a wall, and, falling, was instantly

killed owing to a fracture dislocation of the neck. Dr. Smith had been for many years dispensary medical officer for the district of Stamullen.

Lunacy in Ireland.

The fifty-ninth report of the inspectors of lunatics for Ireland for the year 1909 shows that the certified insane on January 1st, 1910, numbered 24,144, and on January 1st, 1909, 23,931, giving an increase for the year of 213, which is identical with the increase for the previous year, but is 150 less than the average increase for the previous ten years. These figures relate to the actual numbers of the insane under care, but do not include the insane wandering at large. The insane at the end of 1909 were distributed as follows: In district and auxiliary asylums, 20,270; in the Criminal Lunatic Asylum, Dundrum, 174; in private asylums, 901; in workhouses, 2,655; and Chancery patients, 144. An increase took place during the year in all classes of institutions except workhouses, in which the numbers decreased by 68. A similar decrease has been steadily taking place for several years past, the percentage number confined in workhouses having declined from 27 per cent. in 1880 to 11 per cent. in 1909.

Proportion of Insane to General Population.

A table is furnished under this heading showing that the number of insane under care has increased from 250 per 100,000 of the population in 1880 to 552 per 100,000 estimated population in 1909. These figures probably include about 85 per cent. of all the insane in Ireland, as at the last census it was estimated that about 15 per cent. of the total insane were unregistered. It is satisfactory to note that for the past four years the rate of increase has been only 5 per annum, whereas the average rate during the twenty years included in the table was over 10 per annum. During the same period the total population has diminished by about 830,000. As already stated, the insane in Ireland are distributed over district and auxiliary asylums, the criminal lunatic asylum, private asylums, and in unlicensed houses as Chancery patients. The statistical information concerning these separate classes does not follow one uniform plan, and it is therefore necessary to deal with these classes separately.

District and Auxiliary Asylums.

On December 31st, 1909, there were in these institutions 20,270 patients, including 10,937 males and 9 333 females. This shows a total increase of 232 persons during the year. The relative proportion of males to females (54 per cent. and 46 per cent. respectively) is about the same as during the last twenty years. Analysis of the returns from individual asylums shows that male lunatics are proportionately more numerous in rural districts and female lunatics in urban districts.

Admissions.—These numbered 3,601 during the year, a decrease of 197 from the previous year. Of these 2,842 were admitted for the first time; while 759 had previously been under care. The recovery-rate per 100 admissions was 38.4. The admissions were classified according to the forms of mental disorder into: Mania of all kinds, 1,733; melancholia of all kinds, 1,323; dementia, primary, secondary, senile, and organic, 201; general paralysis of the insane, 55; epileptic insanity, 118; congenital mental deficiency, 155; insanity doubtful, 16. Heredity was returned as a probable cause in 27 per cent. of the admissions, or 973 cases in all; alcoholic excess in 336 cases, of which 273 were males; while in 754 cases no definite cause could be assigned. Other stated causes were: Venereal disease, 47; pregnancy and the puerperium, 47; puberty and the climacteric, 86; old age, 119; previous attacks, 343; various diseases, 208.

Discharges and Deaths.—The total number of patients discharged during the year was 1,817, of which 1,382 were discharged as recovered. The proportion of recoveries to the daily average number of residents was 6.8 per cent. By far the greater number of recoveries was in patients who had been in confinement for a period less than twelve months. These totalled 1,125; 119 recoveries occurred in cases in confinement over one year and under two years, while one case was discharged recovered after a residence of over forty years. During the year 1,542 patients died, giving a death rate on the average number resident of 7.6; 2 of the deaths were by suicide, and 4 resulted from misadventure Of the total deaths, 446 were due to cerebro-spinal diseases, including 79 from general paralysis; 350, or 22.7 per cent. of the total, were due to phthisis; 377 were due to thoracic diseases other than phthisis, 42 to abdominal diseases, and 268 to general diseases, including 114 from senile decay.

Average Cost.—The average cost per patient per annum, less loan repayments, receipts from miscellaneous sources, and receipts on behalf of paying patients, was for district asylums £22 11s. 11d., and for Youghal Auxiliary Asylum £14 1s., showing an increase of 4s. per head for the district asylums, and a reduction of 21s. per head for the auxiliary asylum. A total profit of £14,532 12s. 3½d. was made on the working of the asylum farms during the year.

Superannuation Act.—During the year the Asylums Officers' Superannuation Act came into operation. This Act entitles asylum officials in the future to superannuation and other allowances, and at the same time calls upon the officials to make a contribution towards their pensions. The officials are to be divided into two classes—the first consisting of all established officers and servants who have the charge of patients in the usual course of their employment, and the second class to include all other established officers and servants. Those of the first class are entitled to a superannuation allowance after twenty years' service and if not less than 55 years of age, at the rate of one-fiftieth of their salary for each completed year of service. Those of the second class receive a superanuation allowance in similar circumstances, except that the pensionable age limit is raised to 60 years, and the rate is one-sixtieth for each year of service.

State Criminal Lunatic Asylum, Dundrum.

The number of patients resident in Dundrum Asylum at the end of 1909 was 174, an increase of 6 over the previous year. Twenty-one cases were admitted, 13 were discharged, and 2 died. Of the 21 admissions, 8 were found insane on arraignment; 7 were acquitted of the offences with which they were charged, on the ground of insanity, or were found guilty but insane when the offences were committed.; 6 became insane while undergoing sentences, and were transferred to the asylum. Seven of the admitted patients were classified as suffering from mania; 2 from melancholia; 6 from dementia; 1 from general paralysis; 1 from idiocy; and 4 doubtful or not insane. The offences with which they were charged included 9 cases of murder or manslaughter, and 2 of attempted suicide. Only one admitted patient was well educated; 3 could read and write well; and 15 could read and write indifferently. Of the 13 patients discharged 10 were transferred to district asylums, and 3 were liberated or given up to care of friends. The average cost of maintenance per patient was £41 5s. 6d.

Persons of Unsound Mind in Irish Workhouses.

On January 1st, 1910, the pauper lunatics in Irish workhouses, exclusive of those boarded out under contract between the committees of district asylums and the Poor Law guardians, numbered 2,655, including 1,014 males and 1,641 females. This number shows a decrease of 68 as compared with the previous year. In addition, 94 cases were boarded out as above indicated. The report calls attention under this heading to the need of special accommodation for pauper idiot and imbecile children, whereby they could be removed from the contaminating influence of association with the adult lunatics in asylums, or with the pauper inmates of workhouses.

Private Asylums.

In Ireland accommodation for the insane who are able to contribute towards their maintenance is provided in licensed houses, of which there are twelve; in lunatic hospitals not kept for profit, of which there

are four; and a certain number are received into district asylums. On January 1st, 1910, there were 901 patients in licensed houses and lunatic hospitals—an increase of 38 on the previous year. Admissions numbered 258; 176 were discharged, and 44 died. The admissions were classified according to the forms of mental disorder into: Mania of all kinds, 102; melancholia of all kinds, 107; dementia, 20; general paralysis, 1; epileptic insanity, 3; congenital insanity, 24; not insane, 1. Hereditary influence was assigned as the cause in 133 cases, and alcoholic excess in 79 of the total number of cases under treatment during the year. The percentage of recovery on admissions was 34 5, as compared with 29.7 in the previous year. All the deaths were due to natural causes, but no statistics are furnished as to the actual cause in each case.

Belfast.

King Edward Memorial.

The sum for this project now amounts to close on £13,000, and its success is practically assured. A new block with special vaccine and electrical departments and some residential rooms in the upper stories is to be added to the Royal Victoria Hospital.

Public Health Action.

At a special meeting of the City Corporation held on October 6th, an omnibus bill was discussed, amended, and passed. Among its many clauses are several important hygienic measures which comprise by-laws preventing undue exposure of articles of food or drink; insuring officers in the infectious diseases hospital; obtaining from registrars of births and deaths returns of deaths registered by them; providing that rundlets, baskets, etc., used for the conveyance of food shall not be carried in carts used for the conveyance of manure; enforcing that no house shall be let to two or more tenants unless and until separate sanitary accommodation is provided to the satisfaction of the sanitary authority; restricting the collection of shellfish on the shores of the Lough; granting similar powers as regards private slaughterhouses as the council have with respect to public slaughterhouses. The most vexed question is that of double tenancies, as political issues have been introduced into it; the revising barristers have animadverted on this problem, and test cases have been taken before the higher courts by the City Council and lost. It is sincerely hoped that legislation may be effected which will tend to bring an end to an old scandal.

Whitehouse New Sewerage Works.

These works were opened on October 4th. They consist of the modern bacterial systems, sedimentation tanks, and automatic sprinklers. Formerly there was no proper sewerage scheme for this large area on the north side of the Lough; now an excellent filtered water of a high degree of purity is finally discharged into the river at its outfall into the sea. The measure should help to lessen the pollution of the Lough, which forms such a serious problem to the health authorities of Belfast. The total cost is £9,850.

Medical Officer's Report.

Dr. Bailie has recently issued his report on the health of Belfast for 1909. It is a volume of 222 pages with an index of five pages, and numerous maps, diagrams, charts, and tables of statistics.

Vital Statistics.

The population is estimated at 386,576, the birth-rate 28.2, and the death-rate 18.2. For comparison, Dr. Bailie gives the population, as estimated by the English method of calculation, as 427,458, and consequently the death-rate as 16.4—it is not often that the Irish understate their case; the birth-rate is 1.5 below that of 1908, and 2 9 below that for the ten years 1899 to 1908. The death-rate is likewise 1.3 below that of the previous year, and 2.6 below the average rate for the same decennium.

On examining the causes of death, it is very satisfactory to note that amongst zymotic diseases, in all but whooping-cough, there is a decrease; the deaths from cancer have risen from 281 in 1908 to 298, and this is the fourth consecutive year in which an increase has been recorded. As in previous reports, a large number of deaths pass without note, the cause unaccounted for; of 3,026 deaths, no information is obtainable—the usual apologetic sentence appears:

> This is a matter for much regret, but is still receiving the earnest consideration of the Public Health Committee, and hopes are entertained that arrangements proposed to be made with the registrars will give a large amount of the information required pending legislation on this much desired reform.

A very similar sentence appeared in the Health Report for 1899, and probably in many previous years, and has since appeared in every consecutive report.

Typhoid Fever.

Undoubtedly the most satisfactory pages in the whole report are those dealing with typhoid fever. Only 90 cases were notified, and this is a great reduction from 842 in 1903—a number which pretty steadily fell to 274 in 1908. Commendable activity has been shown in making inquiries as to the cause in each individual case, and in the increased number of those where sufficient home isolation and nursing could not be obtained, who were removed to hospital. Dr. Bailie was able to trace a number to the milk supply, and again insists on the absolute necessity of a supervision of the city's milk supply by the sanitary officers. The number of deaths from typhoid that have occurred in the last four years is 249 (90, 82, 57, 20); the number in the preceding four years was 544, and in the four years preceding that was 1,505; the death-rate for 1909 per 10,000 was 0.5, which is one-third of the minimum death-rate from typhoid ever published in any preceding year, and yet grave fault was found with those who ventured to say, four years ago, that public hygiene was not as it should be, and that the condition of Belfast as regards typhoid was a scandal. The mortality-rate was 22 per cent. of those attacked; this is undoubtedly too high, and points to the non-registration of cases.

Whooping cough and Measles.

Dr. Bailie draws noteworthy attention to the neglect of whooping cough and measles as causes of mortality; 213 deaths occurred from the former and 186 from the latter. Many of these deaths, he says, would be quite preventable if due care were taken. Parents cannot be induced to take precautions, and both diseases are infectious long before they are recognized. He advocates, as methods for combating the disease, the immediate isolation of all cases, the exclusion of all contacts from schools, and cautioning parents against allowing infected children to play with others.

Tuberculosis.

The record of tuberculosis is also satisfactory. The number of deaths was 811—the lowest on record. The decline has been steady from 1904, when it reached 1.120; the death-rate—2.1—is also a record for Belfast, although still high for English towns. The causes of this decline are probably numerous—for example, the distribution of circulars in national schools and factories and workshops; the work of the Women's National Health Association and their nurses; the enlargement of the Forster Green Hospital, and, probably most important of all, the establishment of the Poor-Law Sanatorium at Whiteabbey, with over 200 beds.

Infant Mortality.

The deaths of children under 1 year number 1,510, or 139 per 1,000; this is high, and undoubtedly indicates a deplorable waste of infant life. Out of seventy-six great towns of England and Wales, only ten are higher, and it is hoped that the establishment of babies' clubs, the labours of the health visitors, and various other philanthropic and municipal enterprises will materially lessen this sad loss of life.

Bacteriological Examination of Milk.

Among other matters of great interest dealt with may be mentioned the very satisfactory report of Professor Symmers on the bacteriological examination

of the milk: 158 specimens were examined; in 40 of these the sedimented and centrifugalized milk was used to inoculate guinea-pigs with the view of determining the presence of tubercle. In no case did the animals show this infection. Up to June 1st, 1910, 163 guinea-pigs have been inoculated with the Belfast milk, and in one case only have tubercle bacilli been proved to be present.

Water Examination.

The water examinations also showed a very satisfactory freedom from coliform bacilli.

Sweating in Linen Industries.

Pages 167–170 contain Dr. Bailie's now much questioned report on sweating amongst the local linen industries: some 5,563 visits were paid to the homes of out-workers and suitable sanitary measures enforced. Dr. Bailie insists that such underpaid labour as the inspector found must inevitably cripple and in great part nullify the good effects of any schemes of health reform. He draws attention to the anomaly as regards the trades listed as notifiable to the local authority in the order of the Home Secretary; an outworker sewing a handkerchief has to be inspected, while another sewing a sheet is exempt. It is said now that much out-work has been stopped, and so the workers are worse off than before; still there can be no doubt that the rate of wage reported in some cases was scandalous. It will be remembered that the generality of the offence was promptly denied, and the report modified to show that branches of the industry were not charged, before it passed the Health Committee.

Expenditure.

As regards expenditure, £70 423 seems a large sum for this department; of this Purdysburn Fever Hospital cost £7,846 10s. 2d. As undoubtedly 1909 has been one of the most successful years as regards public health, one will not cavil as to expense; it will be hoped that the other reforms which have been advocated now for many years, and either are, or are promised to be, taken in hand, will be carried through as successfully as the problems of typhoid and tuberculosis.

Special Correspondence.

FRANCE.

Progress in Infantile Hygiene.

There can be no doubt that the number of cases of infantile gastro-enteritis has decreased enormously of late years in France. The most active season for this slayer of infants used to be from the middle of July to the middle of October, and there is no exaggeration in saying that fifteen years ago no child brought up by hand escaped from its clutches. Not all died, but all young children suffered from it at one time or another. Nowadays, cases of this disease are few and far between. They still occur among children who are reared by the mother, but hardly at all amongst children put out to nurse. At least, this is the case in the part of France which I know well, where the inhabitants, both in intelligence and in knowledge of hygiene and the art of rearing children, may be taken as fair examples of the average French citizen in any part of this country. (Probably the ravages of the disease are as great as ever in places where modern ideas have not yet penetrated, as, for example, in some districts of Brittany.) To what is this immense change for the better due? It is undoubtedly owing to the great advances made in the hygienic education of those professionally concerned in the bringing up of children. The distinction made in a previous sentence proves the truth of this. Whilst the nurse is under the close supervision of a doctor, listens to his advice and is obliged to follow it, the mother, on the other hand, calls in the practitioner only in case of actual illness. Any advice he may give her offends her sense of independence; she avoids following it without any punishment for her omission save the tardy one of experience. Even now too many women are content to remain in their ignorance and apathy, and never recognize the doctor's authority till the event has justified his warnings.

Among nurses the medical profession has at length succeeded in suppressing the chief cause of infantile diarrhoea, the rubber-tubed feeding bottle, formerly in general use. Its dangers were twofold. First, the tube itself was impossible to clean and was very seldom renewed, so that the milk fermented in it and became infected. In summer, above all, this infection was more intense and worked more rapidly. Another, and equally dangerous drawback to the rubber tube was that it fostered in babies the habit of over feeding. Indeed, it was invented for that purpose, so that the child lying in his cradle could feed himself in the absence of his mother or his nurse, and the latter had no further trouble with him beyond that of filling his bottle from time to time. Her care being thus confined to one small duty, she devoted all the more attention to it, and justified her neglect of the child by giving it an inexhaustible supply of nourishment, and calmed her conscience by saying that it must be quite safe and right, since the child could feed whenever it wished to do so. This system of feeding, however, led inevitably to dyspepsia. The child, at first enormous, collapsed in a twinkling when his exhausted stomach finally rebelled against this systematic stuffing—an event which naturally occurred when the arrival of hot weather caused the loss of appetite and also changed the quality of the milk that was swallowed. The suppression of the rubber tube in the feeding bottle has thus eliminated two great causes of disease in children, and nurses have been forced to devote more attention to the proper feeding of the baby. The public service of the supervision of nurses in a very short space of time obliged them to abandon the use of the rubber tube, for disobedience in this respect could be punished by the withdrawal of the child from their care. On this account, the doctor had to send in more regular and frequent reports to the departmental authority. Ten years ago the book which the nurse had obtained from the mayor was kept by her in her own home. The doctor wrote his report on a special sheet, and these were only seen once a year, and sometimes far less frequently, by the departmental inspector in the course of his tour of inspection. Nowadays the doctor has to send each month to the Préfecture a brief report on a specially printed sheet. The nurses, thus placed under more efficient supervision, are more careful in following the advice of the doctor and obeying his orders, and consequently, with them at least, infantile hygiene has made considerable progress.

The mothers, however, had still to be taken into account. At the instigation of Professor Budin an effort was made to establish dispensaries where poor women could get advice free for their infants. They were invited to bring their babies every month to the office of the mayor of their district, where they could obtain both individual advice and collective instruction from the doctor of the Service of Protection. This enterprise, which was set on foot in a certain number of departments, has had variable results. It has proved extremely useful in towns where the distances are small and where the distribution of sterilized milk has helped to attract the mothers. But it has been far less successful in country places where the population is scattered, where the commune consists of hamlets often separated from each other by considerable distances, and where the road to the mayor's office may be rendered doubly difficult by the bad weather. Finally, it is just the women who stand most in need of advice and supervision who, from natural carelessness, shame, or vanity, do not go to the consultations. Will a time come when it will be necessary to make this compulsory? I do not know if such a measure would be effectual.

The practical truth of the matter is that the chief hope of progress lies in the private work and personal

initiative of the doctors themselves. Many of these, particularly in our country places, are at once physicians, surgeons, and accoucheurs, and such men do not think their obstetrical duty ended when they have helped the baby into the world. Taking advantage of the friendly relations which exist between them and their patients, they continue to take an interest in "their" children, never hesitate to visit them when the occasion arises, and, using the authority which their disinterestedness imparts, they quietly accomplish the work of the public consultations in the intimacy of the home.

The most difficult part of the doctors' work lies in making themselves thoroughly understood. The natural tendency of the public is always to rush from one extreme to another. Our denunciations on the subject of over-feeding babies made a very great impression—so great that quite recently one of our leaders, Dr. Variot, was obliged to demonstrate the dangers of under-feeding, which now threatens to cause evils quite as great, though of a different kind, as the former excess in this respect. This shows how necessary, in the doctor's teachings upon this subject, it is to insist upon the observation of the happy mean.

VIENNA.

Women and Children in Factories.—Reform of the Medical Service.—Strike of Physicians.

A NEW bill, dealing with "social reform," has been recently introduced into the Legislature. Its object is to improve the present condition of the lower classes by suppressing some of the rules which now exist in regard to work in factories and different trades. Amongst other clauses, it contains an interesting one concerning the employment of women and children in factories. One of the two most important points in this reform bill now under consideration is that which refers to the treatment of pregnant women. The bill stipulates that there should be a sort of "close season" for such women, and that no woman whilst in this condition should be employed in any kind of work (other than household duties) from the thirty-eighth week of pregnancy till a fortnight after the birth of the child. As all employers are obliged to contribute to a sick club (*Krankenkasse*), their female employees receive a certain amount of pay during these four weeks. It may be remarked, in parenthesis, that of the premium paid weekly or monthly into these sick clubs two-thirds are paid by the employees and one third by their employer. The other important part of this new bill concerns child labour. Not only is it strictly forbidden to employ any child under 14 in a factory, but no child may be employed to work at home at any kind of labour which necessitates violent muscular exertion or which is at all dangerous in any other way. No child may work more than six out of the twenty-four hours, whilst school children may not be employed during school hours. The years from 14 to 18 are designated "youthful age," and this critical period is the object of special consideration. Thus, girls of this age may never be employed in hard work for more than eight hours a day, and a rest of a clear thirty-six hours a week must be ensured to them. There are no stipulations regarding the kind of work done by boys at this time of their lives, but their employers are bound to give them a rest of sixteen out of every twenty-four hours. In order to ensure a uniform period of leisure for all shop assistants, an "early closing bill" has been introduced and passed. This bill renders the closing of all shops at 8 p.m. compulsory in this country, and no shop, save such as deal in articles of food, which are allowed to start business between 5.30 and 6 a.m., may be opened before 8 a.m. Shopkeepers who employ women assistants only are bound to give them one and a half hours' freedom at dinner-time between the hours of 12 and 2, and the working time of their employees must not exceed eleven hours a day.

The difficulties under which the hospitals of this country are labouring arise principally from the way in which they are managed. All hospital management is undertaken by a corporation called the "Krankenhausfonds," instituted about 130 years ago, whose funds are nowadays quite inadequate to meet the enormously increased expenses of a modern hospital. As the majority of in-patients at any hospital are too poor to pay for their maintenance there, the parish from which they come has to do so for them. At present the rate of payment is about 2s. a day, though each patient costs the hospital about 2s. 6d. The difference so far has been partly made up by the higher fees paid by middle-class patients, but in spite of this there is always a chronic deficit. In order to effect a radical improvement in the financial condition of our hospitals, the political party in power at present proposes to take over the entire management of all charitable institutions, not only in Vienna, but in the whole of Lower Austria. To help forward this work of reform a loan of 38 million crowns (£1,600 000) has been made by this district, and a public health tax is to be levied in order to raise more funds. The most important part of this change, however, is the proposal to put the management of the hospitals into the hands of a board of non-medical men, elected by the ruling political party. This board would possess the power, when a vacancy occurred, to choose the hospital physician from amongst the doctors recommended by the medical staff of the hospital. The net result of this would be nothing more nor less than the political control of charitable institutions, and therefore the medical profession, as a class, has refused to countenance the scheme. It is well known that in all other institutions owned by the State the only thing considered in a candidate for any post is his political opinions; and therefore the proposed innovation has been definitely declined, though the present Government is doing everything in its power to bring it about.

For the first time since the foundation of the medical union known as the "Wirtschaftluhe Organization" the profession has been called upon to support its members in a dispute between the doctors and the clubs over a question of some importance. In a small industrial town near Vienna (St. Pölten) the doctors refused to work any longer under the terms of the *Krankenkasse*, and boycotted it so effectually that it could obtain no medical assistance at all. The doctors were quite willing to attend the patients of the club at reduced fees, but not on behalf of the clubs. The club tried to get help from the police, but with no result. Now the existence of such *Kasse* is required by the law of the country, and their members were in urgent need of medical attention, so after some negotiation the dispute was settled, and the managing board of the *Kasse* agreed to recognize the right of the doctor to charge his own fees for his attendance upon their members. It was decided that 6s. a head should be paid to the doctor for every member treated by him, whilst all disputes arising between doctors and members are to be referred to the *Aerztekammer* (medical council), thus safeguarding the doctor from all suspicion of mercenary motives. The successful result of this first conflict ought to have a useful effect on the future of the medical profession in Austria.

A MEETING of the China Emergency Appeal Committee will be held in the Guildhall, London, E.C., on October 18th, at 4 p.m., when the chair will be taken by Alderman Sir Walter Vaughan Morgan, Bart. The object of the meeting is to render sympathetic aid through existing societies to the Empire of China, now entering upon a new era in her history, by (*a*) the establishment of union medical training colleges for Chinese students, (*b*) the providing of union normal training and theological institutions for the education of Chinese Christian school teachers and pastors, and (*c*) the translation and publication of the best Western literature. Addresses will be delivered by the chairman, by Mr. S. Lavington Hart, M.S., D.Sc., on the opportunity of the educational movement in China; by the Right Reverend the Lord Bishop of London; by Dr. D. D. Main, of Hang chow, on medical education in China; and by Sir Robert Laidlow.

Correspondence.

CONTRACT PRACTICE AND THE MEDICAL PROFESSION.

SIR,—Dr. Bateman, in the JOURNAL of September 24th, and Dr. Hawkyard, in the JOURNAL of October 8th, have both written excellent letters, and I am sure we agree with all their sentiments, at any rate all those of our profession who are active members of the British Medical Association.

Many members attend our meetings, giving up a good deal of their time planning and working out schemes to try and prevent this continued exploitation of medical practitioners. A scheme is worked out, a deputation of our leading men wait upon the authorities concerned, or letters are sent in the name of the local Branch of the Association. What happens? Absolutely nothing: and I, amongst many others, have lost faith in both deputations or letters ever doing any good. Why are we beaten back at every turn, and why is it that apparently we can be insulted with impunity? Simply because that by our disorganization we have no power behind us. The time has passed when, with the slightest degree of success, we can send a polite letter and beg, as it were, cap in hand, that some gross abuse may be remedied. There is no other section of the community that even dreams that such a method in their own case would be productive of the slightest good. Why do we continue to follow such foolish and useless methods?

What is the remedy? There is only one remedy, and that is the formation of a "trade union" amongst us. I use these words "trade union" because they express without further elaboration exactly what I mean. We have all the machinery planted for such a union, and it simply needs putting in motion. The British Medical Association is the nucleus of the whole scheme, and its offices would be the head quarters of our "trade union." A council would be elected by this union, which would replace the present General Medical Council.

Such a scheme would give us enormous power, and would make us once more a dignified profession. Our troubles could be efficiently and firmly dealt with in one quarter of the work and time now spent upon them so uselessly. In our local Branches great interest would be aroused, and we should be able to do splendid reform work. Then there would be far more notice taken of our requests written on half a sheet of notepaper and sent to the authorities concerned, than is taken now of a begging petition presented by a deputation of our most worthy members, grovelling in the dust before a committee of "Tom, Dick, and Harry."

This is the only remedy we have; it will have to come to pass, and it is a waste of time to try any other plan. Why not do it now, at this most critical time in our history? All our difficulties would then be three-quarters won already.—I am, etc.,

Liverpool, Oct. 11th. A. STANLEY PARKINSON, M.D.

THE AIR INSIDE A MOSQUITO NET.

SIR,—There is no trustworthy evidence which proves that the organic impurities found in traces in the air of rooms occupied by men have any harmful effect. The evil smell of a close atmosphere undoubtedly is depressing to one who enters in and smells it, but the occupant of such a close atmosphere does not continue to smell it. The whole ideas of our ventilation systems are based on one ideal—chemical purity of the air. Physiologists who have studied this matter recognize that 0·5 to 1 per cent. more CO_2 and less O_2 in the air breathed is of no importance and cannot be sensed. The whole discomfort of ordinary close atmospheres (unvitiated, of course, by CO_2 or any such dangerous impurity) is due to the strain of the heat-regulating mechanisms of the body. A close atmosphere is hot and moist and windless. The discomfort, as I have recently shown in my laboratory, is entirely removed by whirling the stagnant, warm air by means of fans, even when the CO_2 in the experimental chamber has risen 4 to 5 per cent., the wet bulb temperature being 85° F. In a crowded room the stationary warm moist air means diminished loss of heat by evaporation, convection, and radiation; this entails more blood in the skin, a quicker pulse, sensible perspiration, and depressing cutaneous sensations. Whirling the air immediately increases the heat loss by evaporation and convection, and makes one comfortable.

If one goes into my airtight chamber, and by means of the electric stove raises the temperature to 85° F. (wet bulb), the discomfort so induced is completely relieved by putting on the fan. The letting loose of CO_2 from a bag, enough to raise the percentage by 2 per cent., cannot be sensed; and although it increased the depth of respiration it contributes nothing to the discomfort.

The whole influence of open-air treatment, in my opinion, depends on its effects on body temperature. The moving cool air continually braces the cutaneous circulation, makes us active to keep warm, makes our metabolism greater, and makes us eat more. The greater muscular activity increases the vigour of the circulation, for our muscles help to pump the blood round. It increases the respiration, the intake of oxygen, and output of CO_2. The whole body lives at a higher plane. The result is an increase of the immunizing power of the blood and increased resistance to infection.

Chemical purity of the air is desirable on bacteriological grounds to lessen the chance of infection by massive doses of pathogenic bacteria. Still more important is the provision of cool moving air which maintains our bodily vigour and immunity.—I am, etc.,

LEONARD HILL.

London Hospital Medical College, Oct. 11th.

SIR,—With reference to Dr. G. Duncan Whyte's remarks on the subject in the JOURNAL of October 1st, it would be interesting to know the following:

1. What is a coarse net of native make in China?
2. Was the series of analyses on a ground or top floor?
3. What were the surroundings of the building like?

In India there are three kinds of mosquito nets or curtains: (*a*) Coarse netting with meshes around the top of *mulmul* to prevent insects, bits of plaster from the ceiling, rats and snakes from falling into bed at night. The border of the net where it reaches the floor has a hem of the same material (about a foot broad) to tuck under the mattress. (*b*) Of *mulmul* or muslin throughout. (*c*) Of *dusooti* (coarse duster cloth). (*a*) will keep out mosquitos, but not Simulidae or Psychodidae; (*b*) and (*c*) will keep out the former and the latter.

I rather think that Dr. Duncan Whyte's analyses were made within (*b*) or (*c*) forms, which do not permit of free perflation of air like (*a*) does. The moister the climate the more the damp clings to the cotton material, swelling the fibres and rendering perflation of air and the escape of impurities difficult.

Besides this, it is always well in the case of either a mosquito room or mosquito nets hung around a bed to untie the curtain, dry it, and fold it up daily, or to roll it up to the posts where it is securely tied, otherwise day by day the damp accumulates, dust gathers and renders it useless, while the material rots.

The two points (2 and 3) regarding the height of the floor or the building where the analyses were made and the immediate surroundings are important, for obvious reasons in tropical countries which are damp and malarious, and it is a curious fact, that where a patient does not convalesce if under treatment—for fevers particularly—on a ground floor, a change to a higher floor becomes beneficial, while the temperature falls in a short time. The (*a*) and (*b*) forms of mosquito nets or curtains are useful; but the (*c*) is wholly injurious and bad. It is useful to adhere to the rule, not only of folding up the curtain daily, but putting it up at a particular time also—namely, just before sunset—for insect life is astir very soon after, as darkness comes on very suddenly in India.—I am, etc.,

London, S.W., Oct. 7th. G. H. FINK, Major, I.M.S.(Ret.).

SANATORIUM TREATMENT OF TUBERCULOSIS.

SIR,—I maintain and always have maintained that amongst good-class patients as good results can be obtained by judicious treatment at home as at the various open-air sanatoriums. What has to be guarded against is

exposure to draughts and damp. Damp air, whether cold or warm, has a tendency to lower vitality, and should therefore be avoided. Every one knows when rheumatism, pneumonia, bronchitis, pleurisy, etc. mostly prevail. Are those who are debilitated by disease able to withstand the varying atmospheric conditions better than the healthy? Are they likely to benefit when the healthy suffer? It seems to me that we, as a profession, have always been in the habit of following, somewhat blindly for a time, various forms of treatment which have been brought to our notice.

Once bleeding was indiscriminately resorted to, then excessive alcoholic stimulation, then excessive feeding, then excessive use of mercury, antimony, etc. Now it appears to be indiscriminate exposure to fresh air. After all it is only by careful thought and recording of facts that the proper treatment of disease can be arrived at —I am, etc.,

Bexhill-on-Sea, Oct. 8th. F. P. Atkinson.

THE HEARING AFTER "OTECTOMY."

Sir,—I would like to add a few words in support of Dr. Hill's excellent letter protesting against the annual effusion of Mr. Faulder White. Students will find in the *Transactions of the Sixth International Otological Congress*, held in London in 1899, some remarks by Mr. Faulder White upon p. 105, as well as a communication on p. 467. In the former he is stated to have said (and there is no reason to believe the report to be inaccurate) that "it would be a subject for regret if an impression were created that otologists were against any treatment but operative." In the paper, which was printed and not read, he says:

> The principle of my treatment is simple, namely, to purify the diseased parts and to arouse the dormant vitality of the poisoned tissues.

And further on:

> Even when the bone is affected, a cure will sometimes follow simple irrigation.

He states that he uses irrigation, by the quart, of silicofluoride of potassium, "a saturated solution diluted with from 1 to 6 parts of hot water," and the reader of the paper can only infer, from the way in which it is written, that this is his universal remedy:

> Otologists would not denounce the douche if they had the opportunity of seeing their patients daily and attending to the treatment themselves.

This remark is in Mr. Faulder White's usual method of controversy, which presupposes an attitude on the part of otologists which does not exist, and then tilts at it, as Don Quixote fought the windmills. What otologists really do denounce is the advocating (apparently) of a universal operation or a universal remedy—in other words, a return to the empiricism of our forefathers. The communication ends thus:

> In spite of the teachings and practice of some otologists, we have in antiseptic irrigation the best hope of curing this troublesome disease. *The large majority of cases* will yield to irrigation if that be carried out with energy, gentleness, and perseverance.

The italics are mine.

In his remarkable work, *Infected Ears*, Mr. Faulder White states that he has not given up irrigation (p. 13), and I owe him an apology for having suggested that he had, although his subsequent writings certainly convey that impression. Yet the fact that he is now constantly advocating what he calls "my operation of otectomy" seems somewhat at variance with the finish of his 1899 paper, from a perusal of which the reader is left with the impression that all operative interference is to be condemned. It is significant that the communication contains no mention whatever of any permeatal procedure.

Now otologists are doing "otectomies" every day, although we do not call them by so high sounding a name. The removal of granulations, the curetting of a carious spot, the extraction of diseased ossicles or the outer attic wall, are all "cuttings out" from the ear. Moreover, otologists have been doing these small manipulations ever since otology began. Therefore, Mr. Faulder White has no more claim to be the inventor of "my operation of otectomy" than he has to the discovery of the North Pole. In fact, to use another icy simile, his claim to "otectomy" as a new operation, done exclusively by himself and ignored by otologists, is like selling frozen mammoth as fresh meat. Where Mr. Faulder White does stand alone is in his ruthless scraping out of the tympanic cavity through the meatus, "a method condemned by all modern otologists as contrary to the elementary canons of surgery," as Dr. Milligan has admirably described it.

Mr. Faulder White has not infrequently complained of "unfair treatment" at the hands of his colleagues. Any resentment that they may have shown has been due to the fact that he discredits our speciality by loose statements, loose phraseology, and inaccurate pathology. In no single case that he has published has he ever recorded improvement of hearing as proved by reliable tests that are scientifically acceptable to otologists. As an instance of his inaccurate pathology, I need only quote his statement (*Infected Ears*, p. 33) that the incus is comparatively rarely diseased, whereas that ossicle is the one most frequently found carious.

Permeatal surgery is, perhaps, more frequently practised by otologists than any other method, seeing the large number of minor manipulations comprehended in that term. I read a paper at the recent meeting of the British Medical Association in which I advocated, as I have long done, the value of ossiculectomy in selected cases, and, although I did not receive a full measure of support of my contentions, I have the satisfaction of feeling that I have the approval of men of such acknowledged skill and experience as Dr. William Hill and Mr. Hunter Tod. But neither those gentlemen nor I would be rash enough to suggest ossiculectomy or any other permeatal operation as a universal panacea for chronic middle-ear suppuration.

It is to be hoped that Mr. Faulder White will take up the gauntlet thrown down by Dr. Hill, and bring his case forward before the Otological Section of the Royal Society of Medicine. If he has the courage of his convictions he will surely do so, but he should understand that his usual loose way of recording clinical observations will not be tolerated in that society.—I am, etc.,

Macleod Yearsley,
Senior Surgeon to the Royal Ear Hospital.

London, W., Oct. 7th.

DRAUGHTS.

Sir,—In the Journal of September 24th you have a leading article on tramways, and after speaking of the want of ventilation in the cars, you go on to speak of the danger of draughts. I always thought that that idea was only a superstition, and shall be glad to know on what authority the writer makes that statement?

It appears to me that a so-called draught is only a concentrated dose of fresh air. I grant it may not always be pleasant, but it is always easy to guard against any disagreeable sensations which may be caused by it. For one person who is made merely uncomfortable by a draught of fresh air millions have suffered, and are suffering, from the want of it.

Seeing that the British Medical Journal is read by the general public a good deal, it seems to me a great pity that such a misleading statement should be put forth in such an authoritative manner.

The utmost that can be said against a draught is that it might depress the vitality of an individual, and so make him more susceptible to the onslaught of the influenza or some other fiend.

People are only too ready to shut up doors and windows to prevent the possibility of a draught, so that it appears to me to be bad policy to say anything which may encourage them in this bad habit.—I am, etc,

Plymouth, Sept. 29th. Geo. Jackson.

*** If our correspondent will read the paragraph in question again he will see, as others have seen, that its whole point is a complaint that the present structure of the London County Council tramcars deprives passengers of the opportunity of enjoying fresh air which they formerly possessed. The question of the innocuousness or otherwise of draughts is dealt with at page 1176 of this issue.

SHIP SURGEONS.

Sir,—In the Journal of October 1st Dr. Elliott takes grave objection to part of the efforts I have made as to the arranging that first-class passengers should be made to

pay fees to the ship surgeon, in so much as he seems to object to the passenger who thinks he has been overcharged by the surgeon to have the right of appeal to the ship's captain. He says:

> The provision by some British shipping companies empowering captains to form a court of appeal in the (not unusual) event of a passenger objecting to his bill for medical attendance. . . .

Now, to whom is the passenger to appeal? To the cook? On shore every patient has the legal right to refuse to pay any and all medical bills, except through the county court. But does Dr. Elliott contend that the American first-class passenger will remain in London or Liverpool to have his medical bill settled by the county court! I think few doctors will fight for this. Perhaps next it will be contended that every passenger steamer must carry a county-court judge. Are not cases known of ship surgeons "on the make" who have demanded absurdly large fees?

Dr. Elliott uses an expression that stinks in the nostrils of every honest man and woman, even including ship surgeons—that is, "is hardly consistent with our ideas of professional dignity." I take it the ship surgeons are "out" to have an increase of pay. Well, let us say so. The sewer cleaner, either of the human body or of the street sewer, wishes to improve his position. But neither should, like the rat-catcher, talk of "professional dignity."

The position of the ship surgeon will not be improved by small or large doses of "dignity." He is the only seaman who remains fixed at the same pay for years—no matter how long he may serve—all the other ranks do obtain increased promotion and pay. But if the ship doctor serves for thirty years he generally retires on the pay he began with. But whose fault is this? I ask—whose fault is this? They know that only those classes who organize, succeed. He and his brethren (?) by their actions say—"Great is the power of disorganization." Well, be it so.

I would suggest that there is little use in "beating the air" with lame and impotent discussion. I would suggest that Dr. Elliott's committee take up the plan adopted by the Liverpool steamship companies and write to all the other companies who have not yet adopted this payment arrangement—publishing a list in the JOURNAL of the companies who do not grant it.—I am, etc.,

Liverpool, Oct. 2nd. R. R. RENTOUL.

THE DIAGNOSIS AND TREATMENT OF SYPHILIS.

SIR,—With reference to the discussion on the above subject at the meeting of the Dermatological Section of the British Medical Association this year, may I trespass on your valuable space with the following remarks? With regard to diagnosis, in the light of our present knowledge, the demonstration of the *Spirochaeta pallida* in a chancre is, I think, universally admitted as *proof positive* of syphilis, but in the early primary stage, before development of rash and before the stage of systemic generalization, the classical signs of induration in the chancre associated with bullet glands (discrete or hyperplastic matting) are, in my opinion, more reliable signs of early infection with syphilis than the Wassermann serum diagnosis test. The test at this period is, unfortunately, very uncertain, and not infrequently in my experience when a *negative* result has been recorded syphilis has later supervened.

Further, in some ten to twelve instances recently at Malta, in which the result was reported to me as *positive* in cases of chancres, and where mercurial or other treatment was not employed, syphilis did not supervene even after close observation for six months; the chancres and the glands in these instances were not indurated or discretely enlarged. It may be said that the test was defective. Possibly; but the pathologist got 98 per cent. of positive results in secondary cases—that is, after rash had occurred.

In the case of an officer quite recently who suffered from parasyphilis associated with a clear history of antecedent syphilis the test was strongly positive according to one reliable laboratory opinion in London, and yet a few weeks later (without treatment) a negative result was reported from another laboratory.

In other instances, the test may be negative, and later positive, or vice versa, without any material change in the immediate surroundings of the patient. The test, therefore, in order to be conclusive, requires, I think, to be standardized. In order better to ensure scientific accuracy it might be preferable that the clinical signs should be unknown to the pathologist who performs the test. Such independent results are more convincing.

Treatment.—As a rule, I give a thorough inunction course to in-patients before the rash develops. I strongly endorse Dr. Pernet's view "that cases for intramuscular treatment should be selected. It was not a routine treatment." At one time in the army some supporters of the injection method essayed to make it a routine treatment. The civil and military aspects of this important question are fundamentally different. In private practice the convenience of the patient has frequently to be considered. In military practice we are more concerned in ascertaining the relative *therapeutic adequacy* of the remedy—and personal convenience is necessarily subordinated to the efficiency of the soldier and the interests of the State.

The question of injections *versus* inunctions in the treatment of syphilis was dealt with at length in the *Lancet* of July 24th, October 9th and 16th, 1909, by Drs. Pernet and Stopford Taylor. As for eighteen years past inunctions have proved invaluable in my army practice, whilst the patient is necessarily in hospital in the early contagious stages of the disease, I took, on clinical grounds, the part of inunctions.[1] I am glad to see, therefore, that Mr. McDonagh (London Lock Hospital) at the Meeting of the British Medical Association in 1910, records such valuable testimony when he says that a patient "should, before the disease has become generalized, receive the most active and vigorous form of treatment possible. Mercury, in the form of *inunctions*, is more potent in this respect than when given in any other form. . . . Working at the Wassermann reaction on the Continent, I found that it was almost a rule to obtain a 'negative' reaction after a patient had had a course of inunctions, or *less frequently injections*." As Mr. McDonagh has applied the Wassermann test in over 5,000 cases his words carry very great weight. Dr. Feibes (Germany) in his opening paper at the Section of Dermatology, 1910, states: "For a thorough mercurialization I am of opinion the method of *Schmierkur* (rubbings) is the most efficient. With no other treatment can we so thoroughly regulate the admission of mercury. We can stop it, at a moment's notice, and easily prevent the discomforts and dangers of acute mercurial poisoning. How different is this with injections of insoluble mercurial preparations which, when once injected, will go on producing their effect though the patient may be threatened with the worst." As this is in absolute agreement with my views already expressed in the *British Journal of Dermatology*, November–December, 1908, I can add but little to the soundness of such facts.

In a series of several hundred cases treated by injection of insoluble grey oil or by inunction under identical conditions, I find that the duration in hospital is commonly twice as long with injection as compared with the inunction method, and relapse is much more frequent with injection than inunction. These facts are now being more thoroughly realized and verified.

There are on record 26 deaths, and, according to the Advisory Board reports on venereal diseases in the army, 110 cases of pulmonary embolism after injection of insoluble preparations of mercury. I have also known several instances of pneumonia followed by death, and other incidents which naturally do not find their way into print.

My experience of the arylarsonates (soamin and arsacetin) is that they may exert a *tonic* action in the early phases of syphilis, and amongst in-patients may cause a temporary gain in weight of 5 to 7 lb. Severe relapse, with loss of weight, is common, and even epileptiform convulsions may occur. The arylarsonates were very extensively tried in the British army in 1907–1909, and the consensus of opinion is that they are very much inferior to mercury in treating *early* syphilis. In later syphilis Donovan's solution (liquor arsenii et hydrargyri iodidi, *B.P.*) has been prescribed by the mouth with advantage for fifty years past. I have had excellent results in late syphilis with this drug during eighteen years' practice in venereal diseases. I do not anticipate

[1] *Lancet*, September 25th, 1909, and January 8th, 1910.

that atoxylate of mercury, because it is more novel and is injected, will prove superior. There are on record a very large number of total and partial cases of blindness due to optic nerve atrophy caused by the use of arylarsonates in treating sleeping sickness, but, as Mr. Ernest Lane has recently called attention[2] to this toxic sign in the treatment of syphilis, I do not dwell on the point.—I am, etc.,

Harrogate, Sept. 30th. H. C. French, Major, R.A.M.C.

CANCER AMONG THE AFRICAN CREOLES.

Sir,—I do not know whether it is wise to enter into a newspaper controversy five weeks after undergoing a serious surgical operation; but the temptation offered by the interesting article of my friend Dr. Renner on the subject of the spread of cancer among the descendants of African creoles in Sierra Leone in the Journal of September 3rd is too great for me to resist.

I do not know if Dr. Renner meant his article to be limited to the resident creoles of Sierra Leona exclusively, or whether he meant to include also the very large proportion of Sierra Leone creoles who are scattered all over the West Coast of Africa, and who are known as Coasters —of whom I am one; or, better still, whether he meant that malignant diseases are spreading amongst that ever-increasing and very large portion of the natives of West Africa who are in eager pursuit of whatever is meant by civilization.

These particulars, though they may be trifles, would, I think, add more to the interest of the subject.

It is a pity that Dr. Renner, in quoting the statistics of the Colonial Hospital, Freetown, in regard to the spread of malignant diseases, did not specify whether they occurred amongst creoles only; for, though rare amongst the aborigines, one can hardly imagine that not one of them is included amongst the number here cited. It would be a little interesting, also, if he had pointed out how many of the number mentioned in those statistics were children of liberated Africans as distinguished from descendants of those children. One would then better realize how malignant diseases are gaining ground among the generations who are aping after civilized life.

I wish it to be clearly understood that I do not wish to minimize the fact that there are malignant diseases amongst the creoles in Sierra Leone, the Sierra Leone coasters, and the civilized natives in West Africa But what I wish also to affirm is that malignant diseases are not a rarity amongst the aborigines in any part of West Africa.

The statistics that Dr. Renner quoted show that there have been 20 cases of malignant disease in thirty years—from 1870–1900—whilst there have been 22 cases of similar diseases in nine years—1901 to 1909 inclusive. This increase in the ratio is very striking.

But if these statements are correct, does the interpretation of these facts mean that malignant diseases are increasing among the creoles of Sierra Leone, whilst they are absent or rare among the aborigines of Sierra Leone and its hinterland? I think not. To my mind, I think the explanation lies in another direction. The handful of us who are qualified natives in the medical profession are as yet pioneers among our countrymen. If we realize the serious responsibility involved on us by our education we shall be thankful if by tact and judgement, earnestness and assiduity—in short, by true patriotism—generations of us who have been trained in scientific institutions are able after a hundred years to instil the light we possess—even dimly—in our countrymen.

At present we are nowhere in comparison to the country-fetish doctors, whose stronghold amongst our people is as yet unconscious of our assault. One is sometimes surprised at the appalling ignorance, rank superstition, that one does find even in high places.

The application of the 22 patients in nine years as compared with the 20 in thirty years for medical aid amongst the creoles in Sierra Leone may be due to education and to the confidence which qualified native medical practitioners have inspired in them during recent years, whilst the indifference or total neglect to apply for treatment by the aborigines may be due to a want of confidence in or possibly scorn by them for a class of medical practitioners who discard all ideas of fetishism. Malignant diseases were far more common amongst the aborigines in Sierra Leone in 1874–1877 during the days of my apprenticeship in the hospital in Freetown than the statistics quoted by my friend would lead me to believe.

Aborigines from various parts of the West Coast of Africa were taken and liberated in the peninsula of Sierra Leone, and if one could show that malignant diseases exist amongst the descendants of these aborigines, and who were still living in primitive conditions, it will be conclusive evidence that these diseases were and are not a rarity amongst the liberated Africans of Sierra Leone.

As I said above, I am just recovering from a serious surgical operation; I am here without any books or notes, and am writing from memory.

Most of the liberated Africans of Sierra Leone were of the Aku (Yoruba) tribe. A branch of this is the Ijebu, some of whose descendants are in Sierra Leone to-day. Of all the Akus (Yorubas), the Ijebus were the most conservative. They were the middlemen between the native traders of Lagos and those of Ibadan. They would not brook the idea of free trade in or through their country; theirs was a rigid system of protection. After the British Government used all persuasive means to induce them to adopt the policy of the "open door" in vain, an expedition was organized against them in 1892 or 1893. Immediately after the country was conquered I was sent up as the medical officer for the garrison that was stationed in their capital. Among such a conservative people I saw a chief, a male, with cancer of the breast. I persuaded him to permit me to remove it, but after I had done so the disease recurred, and subsequently killed him. Now this occurred in a man who was a typical aborigine. Again, about two years ago, this man's son, a pure aborigine, applied to me for treatment of cancer in its last stages, and from this disease he also died. I know a case of an aboriginal woman at Accra who died from cancer of the uterus in 1879. I can go on citing cases, but I hope that these will show that malignant diseases are not a rarity amongst the aborigines in any part of West Africa.

Permit me to digress from the subject of malignant to benign tumours. With the passion for getting children amongst all negroes of West Africa, one is surprised at the relative sterility of the negro female. I think that one may say that, generally, three, or perhaps four, children are a very high average for a negress in West Africa.

I do not think that naturally this is generally so in other parts of the world. One is accustomed to attribute this to venereal diseases and bad attention during the puerperium and such like. But my experience of late years has led me to the conclusion that amongst others uterine fibroids must also be reckoned as an important factor in causing sterility—relative, secondary, or absolute—in our females.

But I cannot see how Dr. Renner has benefited his subject by introducing the people of the Gold Coast into it. He has contrasted the people of the Gold Coast with those of Sierra Leone to the detriment of the latter.

If I may be allowed to borrow the language of the *Spectator*, I am afraid that we creoles of Sierra Leone are always in "danger of self-depreciation." He says that:

> Yet, after so many centuries of close contact with the Europeans, they (the people of the Gold Coast) have by virtue of race instinct and race unity resisted as one people the inroads of European civilization into their social life, and as a result we find the absence, or rather rarity, of cancer and other new growths amongst them.

Dr. Renner has based his essay on the statistics of the Colonial Hospital of Sierra Leone and its Hinterland. It would have been profitable if he had also published alongside it the statistics of the hospitals of the Gold Coast and its Protectorate, as that would justify him for coming to such a conclusion.

I have cited one case amongst many of cancer of the uterus in an aborigine of the Gold Coast, and would drop the discussion of the subject from a medical standpoint. From an ethnological point of view, I think his glowing description of the people of the Gold Coast as compared with those of Sierra Leone brings out strikingly the tendency to self-depreciation so frequently indulged in by some of the Sierra Leone creoles, one finds that amongst negroes from the river Gambia right down to the Congo, the Sierra Leone creole or his children has always been at the top of the tree in all works of life.

[2] British Medical Journal.

He deplores the want of combination and unity amongst the creoles in Sierra Leone. Do they exist amongst the people in the Gold Coast, and, indeed, amongst the peoples in any other part of West Africa? Let him inquire from those who have experience of such matters.

Dr. Renner says that by virtue of their race instinct and race unity the people of the Gold Coast resisted as one people the inroads of European civilization into their social life. Can he point out any other place in West Africa where there is as large a number of mulattos —born in the country—as on the Gold Coast? I lived at Accra from 1877 to 1884, and I can assure my friend that it will be difficult for him to find a place in West Africa where there is more indulgence, soaking in alcoholic liquors, as amongst the Accras; nor is this imported habit peculiar to the Accras, for the American barques, which gloriously unfurled their sails, plied their trade from one end of the Gold Coast to the other, were laden chiefly with American rum and tobacco. These they exchanged mostly for gold and palm oil. The amount of smuggling of alcoholic liquors in the Gold Coast used to be a standing menace to the Government of that colony. The American sailers may have given way to European steamers, but Customs returns will show how spirituous liquors are consumed on the Gold Coast.

But, better still, if my friend will persuade Downing Street to send out a commission of inquiry on the liquor traffic on the Gold Coast Colony, the publication of the evidences will be interesting reading for the world.

When I was a resident at Accra the prevailing vices were litigation and potations in alcoholic liquors. Since then gold mining and cocoa industries have brought sudden riches to many a man. The report I have heard from time to time were that matters have become worse in those directions. This is what has happened under similar circumstances in other parts of the world. At any rate, after twenty years, I visited Accra last December, and it was a pitiful sight to see a man raving mad in his verandah from the effects of alcoholic imbibitions.

A friend of mine said, What can be done to restrain alcoholic intemperance in this people?

Dr. Renner says that the people of the Gold Coast are one in language, habits, and customs.

There is, I believe, a polyglot of languages in the Gold Coast. Otchwi, Fanti, and Ashantee may be dialects of the same language. But the Accra language is certainly distinct from them. Nor am I aware that the languages of the Appolonians and Adangbes bear any relation to these.

The ethnographical distribution of the tribes of the Gold Coast is a fascinating study, but I have said enough on this subject, which is so interesting, medically or otherwise. The present state of my health forbids my doing it that justice which it deserves. My friend Dr. Renner has given food for much thought to us all. If worse luck does not befall my health, I hope I may be able to resume this subject on some future day.—I am, etc.,

Tonbridge, Sept. 9th. JOHN RANDLE, M.B., C.M.Edin.

IODINE DISINFECTION OF THE SKIN.

SIR,—In your leaderette on the above subject[1] you do not mention the method described by me in your issues of August 14th, 1909, and June 4th, 1910.

I have now used the 2½ per cent. solution in upwards of 500 cases, and I can confidently speak of its efficiency. There are many people in this country whose skin is too sensitive to endure the treatment with a 10 per cent. solution, as recommended by Grossrich. This strong solution has also the disadvantage of causing excessive lacrymation in the surgeon and assistants.

The shaving which you refer to is unnecessary. If the hair is very thick and likely to impede the operation, a portion of it may be clipped with scissors. It cannot be too strongly insisted upon that the previous washing is not only unnecessary, but opposed to the success of the method.—I am, etc.,

J. LIONEL STRETTON,
Senior Surgeon to the Kidderminster Infirmary and Children's Hospital.

Kidderminster, Oct. 10th.

[1] BRITISH MEDICAL JOURNAL, October 8th, p. 1085.

EXTRACTION OF THE LENS IN ITS CAPSULE.

SIR,—With reference to the article in the JOURNAL of August 27th, p. 565, "Extraction of the Lens in its Capsule," its conclusion reminds me of the judge giving his decision when only the evidence of the prosecution has been heard and before the cross-examination of the prosecution witnesses and before the defence has been produced, as the conclusion is based on Major Kilkelly's paper. Major Kilkelly's paper is the the subject of controversy at present, and those wishing to see the other side of it will be able to do so in an early issue of the *Ophthalmic Record* of Chicago. Of Dr. Knapp's 104 cases, about 97 of them were done by himself without iridectomy before me and under my instructions, and if he did not state so I am sure it was an oversight on his part.

Conclusions such as the writer of your article draws are premature. The subject is but in its infancy, and from what I know and from the amount of attention it is engaging, it is a very risky verdict to say that it will not before many years be the operation of election over the civilized world.—I am, etc.,

HENRY SMITH, Lieut.-Col., I.M.S.,
Civil Surgeon.

Amritsar, Punjab, Sept. 15th.

INSURANCE AGENTS AND THEIR METHODS.

SIR,—A life insurance agent called upon me last month proposing that if he brought me cases for medical examination he would promise substantial increase to my professional income if, in return, I took out a policy on my own life with him.

I point blank refused to do so.

He introduced three or four cases, and this morning, when accompanying a case for examination, he again broached the subject of my own insurance, and on my repeating my former refusal to be so bound, he declared, in a manner intended to be threatening, and in front of the insured, that this was the last case he would bring to me!

This incident confirms the correspondence recently appearing in your valuable issue relative to the methods of insurance agents.—I am, etc.,

Plymouth, Oct. 6th. W. FR. MACCARTHY.

COMMISSIONS TO MIDWIVES.

SIR,—A few nights ago a certificated midwife called upon me, and asked me "what commission I was prepared to give her for cases she called me in to." She said that she had received commissions from several other doctors, and wanted to know what I would give her. She was quite candid in the matter, and was quite surprised when I pointed out the enormity of the offence, and said she thought there was nothing wrong in taking commissions.

I went to the medical officer of health and told him of my experience. He said he was afraid he could do nothing unless he had evidence. He promised, however, to notify the nurses whom he controlled that it was illegal to accept bribes—or commissions, as they called them—from doctors for work introduced. He pointed out that it was the doctors who were the sinners. He said he had suspected for some time that this had been going on.

Now this is a very serious matter. There is no doubt that a number of unscrupulous medical men are bribing these women, and in this way getting the patients of other doctors. It should be discussed at every medical society, and strong measures taken to stop the practice.—I am, etc.,

October 6th. VERITAS.

EUROPEANS IN THE TROPICS.

SIR,—In the discussion which took place after the reading of the paper of Sir R. Havelock Charles, on special factors influencing the suitability of Europeans for life in the tropics, Professor Fülleborn (Hamburg) said that "it was customary in Germany to give those who were about to live in the tropics 1 gram of quinine in order to see whether they could take the drug or not."[1]

To say nothing about the dose advised, as a trial, may I be allowed to say that the method is not quite reliable? One sometimes meets with people who cannot take quinine *per os*, who, however, get the full benefit of it when given hypodermically.

I remember the case of a German doctor, a medical missionary, who during a visit paid to our hospital in

[1] BRITISH MEDICAL JOURNAL, September 24th, 1910.

Tungkun, South China, suffered from very bad attacks of malaria. Fearing the after effects, he refused to take even small doses of quinine. As he was getting worse I insisted on trying the drug hypodermically. This was done with a double result. Not only was the fever checked, but our patient, having felt no untoward action, became more hopeful with regard to his suitability for life and usefulness in China.—I am, etc.,

Moers Rheinland, Oct. 3rd. JOHN E. KUHNE, M.D.

"LILY RASH."

SIR,—In his valuable paper on the "Lily Rash in the Scilly Islands," published on September 24th in the BRITISH MEDICAL JOURNAL Dr. David Walsh complains that I do not name the toxic substance contained in *Primula sinensis*. I fear that he mistakes the purport of my handbook, *Poisonous Plants of all Countries*.

It professes only to summarize concisely such knowledge of the toxic principles as is available; therefore he can hardly expect the author personally to investigate the plant with a view to the isolation of its toxin.

Having satisfied myself that the published cases of irritant poisoning by *P. sinensis* were reputable, I had no hesitation in including the plant in my list, but left its ultimate analysis to the original-research workers. I hope to record the fact of the isolation of this particular toxin, amongst others, in the forthcoming edition of my book.—I am, etc.,

London, S.W., Oct. 1st. BERNHARD SMITH, L.M.S.S.A.

ETIOLOGY OF IRITIS.

SIR,—It was with surprise I read Dr. Kenneth Campbell's letter in the JOURNAL of July 23rd, that is, that he had never known, nor heard of, "rheumatic iritis," when such an authority as the late Henry E. Clark, C.M.G., Senior Surgeon and Lecturer on Surgery, Glasgow Royal Infirmary, made a special point in his lectures on the differential diagnosis of syphilitic and rheumatic iritis, and often illustrated his points with cases.

How does Dr. K. Campbell account for "single iritis," that is, iritis in one eye only, clearing by the administration internally of sodium salicylate, four-hourly?

I myself, having I may say only limited experience, have only within the last few months had no fewer than three cases of single iritis, one, a young boy aged 7; others are a man and a woman, and all cleared on the internal administration of sodium salicylate, four-hourly, and all following rheumatics.

I think his statement is too sweeping, for if he lived in a damper part of the country, as a general practitioner, his statement would be modified.—I am, etc.,

October 2nd. ANCHISES.

SYCOSIS: SO-CALLED BARBER'S RASH.

SIR,—I am indebted to Dr. Fergusson for lending his support to my letter on this subject. The exact stage of the shaving process at which infection is supposed to take place is undoubtedly a matter of opinion. Dr. Fergusson believes it to be mainly at the sponge stage, while others blame the razor stage, the brush stage, or the towel stage. Has no one ever blamed the razor strop for causing sycosis? It seems as if we can only suspect and think. We do not actually know, and yet the barber has to bear the brunt of our ignorance when we advise our patients that sycosis is usually got at their hairdressers' establishments. Knowledge is required. Hence the need for proper research on the lines of the Bristol hairdressers' scheme.—I am, etc,

Newcastle-on-Tyne, Oct. 8th. JOHN WISHART.

IS ECZEMA ON THE INCREASE?

SIR,—Is eczema increasing? In my experience no ailment has become more continuously prevalent for the last ten or fifteen years, and not so much amongst the poor and the unworked as with the more cleanly, the more brainy, and the more careful living of our population.

Nobody dies, I suppose, of the disease, though it gives rise to so much distress, but at least we ought to have some statistical means of arriving at its prevalence. Have we any possible way of knowing whether there are 3,000 or 300,000 cases of eczema in the British Isles? I think not, though we can tell to a minute fraction the number of fatal cases of cerebro-spinal fever.

In submitting my query as to whether practitioners generally do not find eczema more widespread than a few years ago, I suggest that a complete public health scheme should be able to state not only what persons died of during a given week, but also the prevalence of the various diseases, such as bronchitis, influenza, conjunctivitis, venereal disease, etc. A plan something like this is already in operation at Buenos Aires, and could easily be carried out by the medical officer of health submitting a detailed list of diseases to each practitioner in his district, and requesting him to specify the number of cases of each kind he had attended during the week or month, a small fee being paid.—I am, etc,

Dublin, Oct. 10th. J. C. MCWALTER, M.D. Brux., D.P.H.

Medico-Legal.

WORKMEN'S COMPENSATION CASES.

Alleged Accident in a Surgery.

IN a case at Wrexham (September 15th), Alice Phillips, a domestic servant, claimed £12 6s. 6d. compensation from Dr. Arthur Roberts, Wrexham. The claimant said she was in the employ of the defendant, and on February 20th the thumb of her left hand became very painful. She noticed a crack on it, and she thought she might have got something in it while washing the surgery floor. Her thumb became worse, and it had to be amputated. She thought the crack was caused by using soda and hot water in washing the floors, and that dirt so got into the thumb. His Honour, without calling on the defence, said he was very sorry for the applicant, but he could not do anything but nonsuit her. She had not the remotest idea how she received the poison into her thumb, nor could she establish an accident. It was mere guesswork that the soda and water caused the crack, and that the poison thus got into the thumb. Judgement would therefore be for the defendant with costs.

Heart Trouble or Accident?

In a case at Birmingham (September 21st) an engine driver claimed compensation from the London and North-Western Railway Company in the following circumstances. He was between 60 and 65 years of age, and it was stated he had been in the employ of the company forty years.

The evidence showed that on April 5th he had occasion to lift a piece of coal, but he dropped it and received a wound on the right ankle. He attached no importance to the matter at the time, and continued work. On April 12th the wound began affecting him seriously, erysipelas having set in. The company paid him compensation at the rate of £1 a week down to the end of June, when they sent a doctor to examine him. He was certified as recovered from the accident, but unfit for work from other causes. The heart had become dilated. It was stated by Dr. Barling, who gave evidence for the respondents, that such a condition of the heart was frequently produced by chronic bronchitis, from which applicant suffered. If the condition of the heart was due to erysipelas, he should expect the heart to resume its normal condition after the poison had passed out of the system.

After hearing counsel, His Honour, in giving judgement, said the question at issue was really a medical one, and he should not have been sorry if, under the circumstances, an assessor had been sitting with him for the purpose of forming a conclusion as to whether the view he took of the case was correct. He was bound to say he doubted whether any assessor would have differed from that view. After reviewing the evidence, His Honour pointed out that there was a serious difference of opinion between the medical witnesses called as to the heart trouble. As arbitrator he had to bring common sense to bear on the facts as they had been established. It seemed to him quite clear that the present condition of the applicant, and the heart trouble from which he suffered, were in consequence of the accident. He held the applicant was entitled to an award, and he should make the amount £1 a week, to take effect from the time when compensation ceased in June, 1910.

Alleged Injury to the Stomach.

At the Wrexham County Court recently, an application by the Vauxhall Colliery Company was heard for the review of a case in which they were paying compensation to a miner named Collis. The man said he met with an accident, and injured his back at the colliery in 1906, and a day or so later his stomach became swollen between breakfast and dinner. He could not do any work, or even lace his boots up. The case was before the court in April, and was adjourned in order that Collis might undergo what is known as the "Bantling treatment." He had undergone this, and his solicitor said he was apparently worse for it. The company contended that the incapacity resulting from the accident no longer existed, and the doctors who examined Collis could not find that he was suffering from injury. Dr. McAlister (Liverpool) said he thought the man's condition was due to constantly thinking about his trouble, and that he was obsessed with an idea that there was something

wrong with his abdomen. He suggested the man should do light work first, and then continue to work as a miner. His Honour found that the man was partially and almost wholly recovered from the accident, and he would improve in strength and condition if he did light work. He revised the agreement entered into in 1906, and awarded the man 8s. per week for eight weeks, after which 6s. per week for a like period, and then 4s. per week during partial incapacity.

A Monkey's Bite.

In a case at Newcastle (September 17th) a washerwoman alleged that on May 15th she was handing some scraps of food to a monkey that the respondent kept in his house, when the animal bit her right hand. The tendons were very badly and permanently injured, and the applicant would never again be able to do the hard work of a charwoman. The claim was, therefore, for half of the amount she was able to earn per week before the accident. His Honour made the award asked for.

TUBERCULOUS HIP DISEASE AFTER INJURY.

MORBUS COXAE.—We presume that the condition is permanent and that sufficient proof is forthcoming to establish the relationship of the disorder to the injury. If, as would seem, this relation is admitted, then, in accordance with paragraph 17 of the first schedule of the Act, the employer can redeem his liability for compensation by payment of a lump sum of such an amount as, where the incapacity is permanent, would purchase an immediate life annuity securing to the workman an annuity equal to 75 per cent. of the annual value of his weekly pay.

FEES TO MEDICAL WITNESSES.

A CORRESPONDENT draws attention to a mistake on page 825 of the JOURNAL of September 17th, where it is stated that the expenses allowed to a medical witness, residing at Enfield, for attendance at the Middlesex Sessions, would be 1 guinea a day. Since December 28th, 1903, medical witnesses "attending to give evidence elsewhere than in any town or place where the witness resides or practises, whether in one or more cases, not more than *two* guineas per diem." (In this regulation "town" means municipal borough or urban district, and "place" means the area within a radius of three miles from the court at which the witness attends to give evidence.—*Statutory Rules and Orders*, 1903, No. 1,064.)

PAYMENT FOR ATTENDANCE ON INJURED SCHOLAR.

A. B. C.—Taking the queries of our correspondent (who writes from Scotland) *seriatim*, we reply as follows: (1) With regard to the person from whom he can get a fee for attending the injured scholar, we are afraid that in the circumstances, and seeing he had no written instructions from the clerk acting for the School Board to attend the child, he could not recover in a court of law. Our correspondent's experience in a previous case seems to have been rather costly. In any case he could not recover more than the fee for the first visit. With regard to (2) the Clerk of the School Board cannot on his own responsibility incur any expenses on behalf of the Board; he must summon a meeting of the Board for that purpose unless definite instructions are given empowering him to do so in cases like that under review. The proper procedure is for the parent to sue the School Board for any expenses she may have been put to, the doctor's attendance being included, in consequence of an accident arising out of the negligence of the Board or those acting for them. Our correspondent might try to get an emergency fee out of the Board, but the proper procedure is that which has been indicated. The members of the School Board as individuals are not liable.

LAW COSTS IN SALE OF PRACTICE.

ROSLYN.—A. negotiates for sale of his practice to B., together with a lease of a house. On preparing contract by B.'s solicitor, which included sale and purchase of practice and agreement for lease, A. instructs B.'s solicitor to act also for him. The lease was also prepared in pursuance of contract. How should the law costs be borne?

*** The law costs should be shared equally, with the exception of those relating to the lease. The cost of preparing this should by established custom be paid wholly by B.

CLUB MEDICAL OFFICERS AND ACCIDENTS.

E. F. sends us the following query: (1) Is the medical officer of a club bound to attend accident cases in workmen whose employers are insured against medical and surgical expenses under the new Acts? (2) Are clubs liable for full sick pay under these circumstances?

*** (1) Under the usual contract, club surgeons are bound to attend accident cases, except where accidents are specially excluded, as in some mines and works where a special contribution has to be paid to meet such risks. Under the Acts referred to, employers insure against the payments they are required to make to injured workmen—namely, half their usual wages—not against medical and surgical expenses. (2) Clubs are liable to pay full sick pay in illness due to accident, unless under the rules accidents are specially excluded.

CLUB PATIENTS.

CLEAN HANDS asks whether it is not contrary to medical ethics, as well as derogatory to the profession for a medical man living five miles from our correspondent's district, to attend club patients, paying 3s. 6d., 2s. 6d., and 2s. respectively per annum, travelling for that purpose six or even seven miles. Among the number are several publicans, freeholders, and capitalists. Would he be justified in bringing such conduct before the Division of the Association, of which both of them are members?

*** That it is derogatory to the profession to accept such appointments there can be no doubt. That it is a breach of medical ethics is not so certain, seeing that practice of this kind is unfortunately not uncommon. Our correspondent might introduce a discussion on this subject in his Division, but the conduct he complains of does not seem to us to constitute an offence that could be directly dealt with by that body.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

GRATIS MEDICAL CERTIFICATE.

VIRTUTIS AMORE.—We do not know of any ethical rule which obliges medical practitioners to give health certificates to children who are candidates for charitable institutions. Doubtless the practice varies in different institutions; some may require children to be examined by their own medical referees, while others may be satisfied with a certificate produced by the child. In the latter case the persons interested in promoting the candidature of the child would doubtless be prepared to pay a reasonable fee.

VISITING CARDS.

R. A. H.—A medical practitioner who holds the diplomas of the Conjoint Board might put "L.R.C.P., L.R.C.S." after his name on cards to be used for professional purposes only, or if he preferred it he might style himself "Physician and Surgeon." In regard to calling on newcomers to the town, we would point out that such a practice cannot be commended as consistent with the dignity of the medical profession.

MEDICAL ADVICE IN THE LAY PRESS.

A CORRESPONDENT draws our attention to a series of articles appearing in the *South Wales Daily News*, purporting to be written by an "M.B., F.R.C.S.," giving general and medical advice on what are called "Autumn Ailments," such as colds, sore throat, backache, muscular rheumatism, neuralgia. The advice includes not only general recommendations, but prescriptions such as could be made up by any chemist. We agree with our correspondent in regretting that any medical practitioner should encourage the practice of self-drugging. In these cases the diagnosis must be made by the patient, and valuable time may be lost, while the promotion of the delusion that the possession of a prescription is all that is essential to the treatment of disease is not beneficial to the public.

MEDICAL PRACTITIONER AND MECHANO-THERAPY INSTITUTES.

D. S. P. writes that a doctor has invented various forms of vibratory massage machines, and proposes to form a company to sell them to the public and to found an institute at which purchasers of the machine can have free medical examination and advice. Our correspondent asks whether it would be correct for a medical practitioner to hold the post of medical examiner to the institute. He goes on to say that the institute would not be advertised, but purchasers of the machine from the company would have the right to go to the institute and be examined and advised.

*** There is no general principle which would forbid a medical practitioner holding such a post. Everything would depend upon the way in which the company was conducted. It must be borne in mind that the object of the company is to sell its machines; it is difficult to believe that it could do this without advertising, and its advertisements might bring it into conflict with professional opinions of propriety.

Obituary.

CECIL H. LEAF, M.B., B.C., F.R.C.S.,

SURGEON, CANCER HOSPITAL, BROMPTON.

Cecil Huntingdon Leaf, whose death we announced last week, was born at Streatham in February, 1864. He was educated at Marlborough, Trinity College, Cambridge, and the London Hospital. He graduated M.A., M.B., B.C. Cantab. in 1891, having qualified at the Conjoint Board in 1890. He became Fellow of the Royal College of Surgeons in 1895. During his London Hospital career Leaf was House-Surgeon and House-Physician, and later acted for some time as Demonstrator of Anatomy in the Medical School. Whilst acting in the last-named capacity Leaf became much interested in the anatomy of the lymphatic glands and in 1898 he wrote a monograph on *The Surgical Anatomy of the Lymphatic Glands*. He also translated Cuneo's *Les lymphatiques* five years later. The enormous importance of the lymphatic system in the spread of cancer served to maintain Leaf's interest in the anatomy and physiology of lymphatic glands throughout the whole of his professional life. As recently as July, 1908, he was engaged upon a research into the relative alkalinity of lymphatic gland juices in health and in cancerous subjects, and he carried out a number of experiments at the Cancer Hospital upon lymphatic glands removed during operation upon malignant breasts.

In 1899 Leaf was appointed Assistant Surgeon to the two hospitals with which he was actively connected for the eleven years immediately preceding his death—the Cancer Hospital and the Gordon Hospital for Diseases of the Rectum. He became full Surgeon to the former institution in 1905, and to the latter in 1904. At both of these hospitals Leaf had a very large experience of cancer work, and was keenly interested in all the questions—etiological, clinical, pathological, and therapeutical—connected therewith. He tried upon his own cases many remedies other than surgical procedures, some of them of a very novel kind. But he was always alive to the latest improvements in surgical technique, seeing that at present the only hope of cure lies in early diagnosis and complete removal whenever possible. As one result of his large experience he contributed valuable papers to various medical journals. Up till the very commencement of his summer holiday this year Leaf was busy with his private and hospital work, and the problem of cancer and its effective treatment loses a most assiduous student by his untimely death at the early age of 46.

From his schoolboy days Leaf was a very keen sportsman. At Marlborough he was in the gymnasium eight for two years; he was also in the cricket eleven. He represented the school at racquets in the public schools championships. Racquets remained his favourite game; in 1906 and 1907 he entered with one of his brothers for the amateur doubles championship and played in the semi-final ties. In 1908 he won the singles racquet handicap at Queen's Club, starting from scratch. Leaf was a Captain in the London Division of the R.A.M.C. (Electrical Engineers).

Socially Leaf was a popular man with all his colleagues; when a student at the London he was called affectionately "Daddy Leaf," and the term expresses that mixture of benevolence with quiet modesty which won him much warmth of friendship from a large number of those with whom he worked. He was a quiet man, passionately fond of home life and its many interests, but with a lively sense of his duty to the important offices which he held in the outside world. He hated to be fussed, even when, towards the end, it became clear to those who watched him that his disease was taking a most serious course. The history of his fatal illness adds one more instance to the number of those distinguished medical men who succumb to affections of the organs they specially study. Eighteen months ago, whilst swinging on a horizontal bar he had erected for his daughter's exercises, Leaf noticed unusual aching in his right arm and shoulder, and on closer examination found some enlarged glands in the axilla. He attributed these to a recent "septic" finger which he had had. As the glands became larger a colleague removed them; they were found to yield the histological features of lymphadenoma. Leaf's health remained good for some twelve months after this time, though it was apparent to his more intimate friends that his customary robustness had left him. Early in July of this year slight fever showed itself, and a few enlarged glands appeared about the right clavicle. The condition yielded to treatment indifferently, and a month later the disease began to advance with alarming rapidity, ending fatally on October 5th. Leaf leaves a wife and daughter, to both of whom he was greatly attached; by the former he was lovingly cared for night and day during the last weeks of steadily failing strength.

Dr. A. J. Rice-Oxley writes: The death of Cecil Leaf will have come as a great surprise and shock to many of his friends, and is a distinct loss to our profession. It seems but yesterday that he came to talk over with me the *pros* and *cons* of the medical career and his fitness to embark upon it. Nor can I regret persuading him to adopt the course he did, for although churlish Death has taken him from our ranks just when a larger sphere of activity was opening out for him and his work was beginning to be heard of and noted outside the profession, yet in the comparatively short span of his professional life he has left a sufficient mark upon the scientific work of his time and more than amply proved his title as a surgeon of the very best type. Others will no doubt speak of his sterling qualities as a surgeon and as a keen and patient investigator. These were notable, but still more so was his personal and professional uprightness, his unselfishness, his modesty, his intense interest in his patients rich and poor alike, and his absorbing devotion to his scientific work, to which last, I fear, his early death may be almost directly attributed. There is little doubt that Cecil Leaf adds one more to that distinguished list of those medical men who have lost their lives in the effort to save those of others.

An old Cambridge friend of Leaf's, writing about his death, gives in a sentence a good description of him: "*Vir integer vitae;* by merely living he did good all round him by his clean example."

T. B. H. writes: Others, I hope, will do justice to the work of Cecil Leaf in his all too short career. It is of the man himself as friend and colleague that I would write, from a real friendship of several years. Of friends he must have had many; of enemies I know not. He was one of those few who speak no evil of any man, and with a rare generosity he would make allowances for frailer souls whose ways were not of that answering straightness and honesty which were written in his face and characterized his life. Visionary he was, and with more than a touch of that idealism which wins scant monetary reward in a strenuous professional career, but which binds to its possessor the hearts of men. As a cricketer and a racquet player he had achieved that spirit which in the stern and complex game of life means victory at the end.

JOSEPH HIGHAM HILL, M.D.Brux., F.R.C.S.Edin.

Dr. Joseph Higham Hill, whose death took place at his residence in Bedford Square at the end of September, was a Lancashire man by birth—a son of a vicar at Royton—but received his general education at Glasgow, rounding it off in London and abroad. He became a Licentiate of the College of Physicians of Edinburgh in 1879, L.S.A. in 1868, F.R.C.S. Edin. in 1872, and some seven years later one of the earlier of the foreign Brussels graduates. Dr. Hill, who was in his 65th year, had passed most of his life as the occupant of official positions of one kind and another. At the time of his death he was one of the Medical Inspectors of Emigrants at the Port of London, and earlier in life had served Australia as a Government Medical Officer in Sydney, New South Wales. He had also served the American Government as Medical Officer to its Consulate-General in the United Kingdom, and as Examiner of Pensioners and Emigrants, and for many years was Senior Medical Officer and Medical Superintendent at St. Pancras Infirmary. Earlier still he had held the offices of Resident Physician and Resident Surgeon at the Royal Free Hospital, and of House-Surgeon at the Glasgow Maternity Hospital. He remained up to the time of his death a

member of the Royal Society of New South Wales, of the Sanitary Institute, and of the British Medical Association. He was also ex-President of the St. Andrews University Medical Society at Glasgow, and had contributed to our columns some articles on the use of strophanthus in cardiac disease, and of amyl nitrate in chloroform syncope.

DR. WILLIAM MUNDEN ALLAN,

NEWFOUNDLAND.

WE regret to record the death of Dr. William Munden Allan, a leading spirit of Newfoundland, a member of its Medical Board, and an active member of the local Branch of the British Medical Association. He was a Newfoundland man by birth, but after the completion of his general education at St. John's, and some experience in his father's surgery, was sent to Edinburgh to commence a formal medical career, and became L.R.C.P., L.R.C.S.Edin., in 1867. On his return to Newfoundland he worked in several parts of the island, and was then sent to Labrador by the Government to grapple with a serious outbreak of typhus fever. His ability was made very evident on that occasion, and subsequently he distinguished himself in several allied connexions. In 1881 he succeeded his father—an equally prominent and popular medical man in his time—as Medical Officer of Health, Gaol Surgeon, and District Surgeon for Harbor Grace, and held those offices up to the time of his death; he also remained President of the Conception Bay Medical Society, which he founded as far back as 1883. The work which he did in the earlier part of his career required and proved him to be a man of limitless energy and endurance, and up to the time of his death, which took place in his 67th year, quite suddenly, he continued to be a very busy man. Apart from general recognition of his professional skill, his personality was one of a kind bound to make him a general favourite; to geniality of an absolutely genuine kind he united both wit and humour.

ISABEL THORNE,

FORMERLY HONORARY SECRETARY, LONDON SCHOOL OF MEDICINE FOR WOMEN.

THERE has passed away this week one who, though not a member of the medical profession, did much to smooth the path of many medical women and to promote the success of a movement which has since proved so successful that its early difficulties are almost forgotten. This is Mrs. Isabel Thorne, the mother, we believe, of at least two well-known members of the medical profession, Dr. Mary Thorne, President of the Association of Registered Medical Women, and Dr. Atwood Thorne, Surgeon to the London Throat Hospital. Mrs. Thorne was first attracted towards medicine by her experience in the East, where she spent several of the early years of her married life. She saw for herself the need that existed among women in India and China of the services of trained medical women. On her return to England she endeavoured, with the co-operation of her husband, to obtain a medical qualification, and actually pursued a course of study at Edinburgh; but at that time—the end of the Sixties—it was very difficult for women to obtain a medical qualification, so Mrs. Thorne at length determined to devote her energies in another but allied direction. Together with some of her former fellow-students, she took steps which eventually led to the starting of a school of medicine for women in London, and this school, now so well known under the title of the London (Royal Free Hospital) School of Medicine for Women, Mrs. Thorne continued to serve for so long a period as thirty years. For such a post Mrs. Thorne was eminently and happily fitted, for besides being steadfast in purpose and possessed of sound judgement, she had the faculty of disarming hostility. To her long co-operation much of the great success of the school is due, and she had the satisfaction of knowing that in her work she had the sympathy of her husband and his relations, and of many of their common friends.

WE regret to announce the death of Dr. JOHN ANDERSON, C.I.E., on October 10th, at the age of 70. Dr. Anderson was formerly Lecturer on Diseases of Tropical Climates at St. Mary's Hospital, and Physician to the Dreadnought Seamen's Hospital, Greenwich.

The Services.

TERRITORIAL FORCE.

FIRST LONDON DIVISION.

THE Adjutant of the R.A.M.C. School of Instruction informs us that the following officers' classes have been arranged, and will be held at the head quarters of the School, 51, Calthorpe Street, Gray's Inn Road, W.C.

For subjects A., B., and D., on Tuesdays and Thursdays, from 4 to 6, commencing November 10th, and continuing to the end of March, with an interval at Christmas.

If a sufficient number of officers apply, an evening class from 8 to 10 will be arranged, and a morning class from 11 to 1, each on one day in the week.

From October 17th to 31st, a course in lieu of camp, 1910, will be held on Monday, Tuesday, Wednesday, and Thursday, from 7 to 8, 8 to 9, 9 to 10.

Those wishing to attend any of the above classes should submit their names to the Commandant of the school, through their commanding officers.

Universities and Colleges.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examination indicated:

D.P.H.—*A. Alexander, *T. Sebastian, T. Fehily, H. R. Gogte, R. T. Herron, O. G. F. Lahn, Jane R. Shaw, G. T. Shepherd, S. B. Surti, W. R. Wilson.

* With honours.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

BIOLOGY.—W. Fox.
CHEMISTRY.—W. Fox.
MATERIA MEDICA AND PHARMACY.—J. E. S. Sheppard-Jones.
ANATOMY.—A. Barry, H. H. Fairfax, G. L. Lawlor, R. V. Martin
PHYSIOLOGY.—A. Barry, J. F. Bourke, A. E. Bullock, G. L. Lawlor, R. V. Martin.

Public Health AND POOR LAW MEDICAL SERVICES.

MEDICAL OFFICERS OF HEALTH AND INFECTIOUS DISEASES.

CYMRO asks if a part-time medical officer of health for an urban district council is compelled to visit all cases of infectious diseases notified to him.

*** It is entirely within the discretion of a medical officer of health whether he visits every case of infectious disease notified to him or not. We believe it is not the custom of medical officers of health to do so either in urban or rural districts.

Medical News.

MR. J. STROUD HORSFORD, F.R.C.S.Edin., will deliver a lecture on some points in the diagnosis of orbital disease at the Royal Eye Hospital, St. George's Circus, Southwark, on Friday, October 21st, at 5.15 p.m.

THE winter course of lectures at the Brompton Hospital for Consumption is to be opened at 4 p.m. on October 19th by an address from Dr. Habershon on bronchiectasis. The lectures are free to all qualified practitioners and students of medicine.

IT is stated that the City Corporation has resolved to provide a supply of antitoxin to be kept at the Guildhall for issue, at the medical officer's discretion, to City medical practitioners for use in the case of persons suffering from diphtheria or exposed to infection. It has been decided to issue a circular emphasizing the importance of prompt treatment with the antitoxin with a view to save life.

THE Page May Memorial Lectures in Physiology will be delivered at University College, London, on October 24th and 25th, November 7th, 8th, 28th, and 29th, at 4.30 p.m. The first course, dealing with neurology, will be delivered by Professor C. S. Sherrington of the University of Liverpool, and will be open to the public without fee. A syllabus can be obtained on application to the Secretary of University College.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

M.B. asks whether Warwick is a suitable climate for a somewhat delicate child; whether during the winter it is bracing and dry or damp and warm.

R. M. H. writes: I would be much obliged if any reader would kindly inform me as to the usual salary of a lady dispenser, who is occupied entire day for six days weekly?

LOCAL TUBERCULOUS INFECTION FROM A COW.

T. J. B. writes: I am interested in a case of query contact tuberculosis and would be glad of any information on the subject. The case is as follows: A labourer attending to a sick cow developed a "chap" (broken area of skin) on his hand. In feeding the cow with bran mash his hand became contaminated with the phlegm spat up by the cow. His arm swelled up and had to be poulticed by his wife. After this attack the man never picked up, felt tired, and has now developed phthisis. The cow was slaughtered and found to be suffering from tuberculosis. If you know of any similar cases or references to cases of phthisis due to bovine infection I shall be very grateful. The man is 66 years of age, and has always been very healthy.

*** It is quite possible that tubercle bacilli from the cow infected the hand; but probably the local trouble was set up by access of dirt containing bacteria of other sorts. Theoretically it is not impossible that tubercle bacilli travelled from the hand to the lungs, but it is much more likely that the phthisis was due to an independent infection. We are not aware of any cases of human phthisis which have been conclusively proved to be due to cutaneous infection with bovine bacilli. Tubercle bacilli of the so-called "bovine" type have, however, been isolated from human lungs. Very probably the portal of entry in these cases was the alimentary tract.

DETECTION OF TUBERCLE BACILLI IN MILK.

TUBERCLE would be glad to know if there is any reliable method known now for the detection of tubercle bacilli in milk, without having recourse to animal inoculation. Is it possible, either by long decolorization with mineral acid, or by alcohol, or by special staining methods, to distinguish between tubercle bacilli and the ordinary acid-fast grass bacilli? He would like to know the composition and use of Pappenheim's stain, which he understands is used for distinguishing tubercle from other acid-fast organisms.

*** There is no method which is so reliable as guinea-pig inoculation. Possibly cultivation of the centrifugalized deposit after treatment with antiformin might be useful, as the cultural characters of the tubercle bacillus would be different from those of other acid-fast bacilli, which might also resist the bactericidal action of the antiformin. Authorities differ as to the amount of reliance which may be placed on differentiation by long decolorization or special staining methods. Bacilli less strongly acid-fast than the tubercle bacillus may, no doubt, be excluded by such methods; but when bacilli which stain like tubercle bacilli are found it is generally thought desirable to confirm the diagnosis by inoculating another portion of the material into a guinea-pig. We are not acquainted with the stain of Pappenheim's to which the writer refers.

THE CAUSES OF POVERTY: REMEDIAL MEASURES.

MRS. ELIZABETH WOODRUFF (care of Mr. Webb, Printer, 125, Stroud Green Road, N.) writes: Will you permit me, through the valuable medium of your paper, to ask your readers, of every school of thought, to favour me with their theories and views as to *causes* of poverty, remedial measures, etc., at the same time touching upon any other points of importance bearing upon the subject? I am preparing a book for publication on this immense subject, and I shall be glad of the assistance of medical men and women interested in the welfare of their country and fellow-creatures.

ANSWERS.

"M.R.C.S., L.R.C.P." and "Auto-intoxin" have omitted to enclose their cards.

INCOME TAX.

C. L. was assessed in November last on a sum under £400 at the rate of 1s. 2d. for the year 1909-10. On appealing she was allowed the abatement of £160, but no reduction in the rate of duty.

*** There is no remedy. The claim to assessment at the rate of 9d. in the £ should have been made before September 30th, 1909.

A. HAS bought a practice and is called upon by the surveyor to furnish a return based on the average profits of his predecessor. He inquires whether he is under obligation to furnish these figures.

*** A. should notify the surveyor that the profits of the practice are less (if such be the case) by reason of the change, and that he claims to have the assessment adjusted to the actual amount of his own profits on that account. It is not the custom of the Inland Revenue to insist on treating the profession exercised by one person as a strict "succession" to the profession of another, and in the case of a medical man it is impossible for him to render an accurate account of the taxable profits of his predecessor.

DIET IN OLD AGE.

SENEX.—There should be a general reduction in the diet of old people, which should affect the proteids most, and next the carbohydrates. The proteids should be reduced because of the diminished wear and tear in the tissues; the carbohydrates because of the lessened muscular energy. The quantity of fat taken will depend on digestive power, but should not be much altered from the normal, as it is a useful source of heat. About 90 grams of proteids, 45 of fat, and 330 of carbohydrates should be an ample supply. The question of digestibility is of great importance, especially where mastication is much impaired; but there are such marked individual differences in this respect that general rules cannot be laid down.

VACCINE TREATMENT OF ASTHMA.

E. E. M.—Dr. R. W. Allen reported in the *Lancet* of September 11th, 1909, that he had treated some twenty cases of bronchial asthma with a vaccine prepared from the micro-organisms isolated from the bronchial secretion of the individual patients. He gave the details in regard to one patient, a medical man, whose case he described as one of the most successful of his series. Later he stated that the majority of the other cases were still under observation, and that in two or three of them the bronchitis had improved, but no beneficial effect whatever had been exercised upon the asthma. In his book (*Vaccine Therapy*, third edition, 1910, p. 177) he states that the vaccine treatment of asthma is justified by the effect produced by the injections of calling forth an attack of asthma, which he considers as proof of the specific action. For details he refers to his *Lancet* article. In the case of the medical man referred to above the bronchial secretion contained pneumococcus, *Streptococcus mucosus*, *Micrococcus catarrhalis*, and a diphtheroid. The vaccine prepared was a composite one, that is, it consisted of all these organisms. Injections of this composite vaccine were applied every ten days, and each injection was followed by a sharp attack of asthma, lasting for two or three hours. The attacks supervened about twelve hours after the injections. "With these exceptions, the patient has been entirely free from attacks, which previously were frequent, violent, and lasted for three or four days." It would thus appear that, as far as we are aware, the only attempt to treat asthma by means of vaccines has resulted in the substituting of short attacks for longish ones in one case, which by the way was treated on June 21st, while the report was published on September 11th of the same year. We are unable to say whether good results were obtained in other cases, since no mention is made of such, either in the article under discussion or in the book just published. Lastly, it would appear that the vaccine treatment is somewhat modified in this treatment by the employment of a mixture of several micro-organisms, and it would seem probable that this mixture does not represent the bacterial flora of the bronchial secretion, but the bacteria picked up by the phlegm on its way to the outer world. Whether such a mixture is likely to do good or harm must be left to the physicians who are bold enough to employ it.

SEA SICKNESS.

DR. P. MCDOUGALL (Manchester) writes: I would call the attention of "Mer" to an article by Dr. W. W. Skinner on naupathia or sea sickness in the December numbers of the *New York Medical Journal*, 1893, in which he recommends the hypodermic injection of strychnine and atropine together, as prophylactic and curative. I have tested this remedy in more than 50 cases with very good results. Its superiority over the sedatives which it is the fashion to recommend is that it encourages people to avail themselves of the natural stimulants—food and exercise—the symptoms of sea sickness being symptoms of circulatory depression. I used strychnine sulphate, grains $\frac{1}{60}$ to $\frac{1}{30}$ with atropine sulphate, grain $\frac{1}{150}$, by mouth preferred (but then less efficient), and repeated in a few hours if necessary. The surface of the body should be kept warm.

DR. H. J. THORP (Ipswich) writes: In answer to "Mer," I believe he will find cocaine, grain $\frac{1}{6}$, with chloroform water 3j every three or four hours beneficial in sea sickness. I have used the same with excellent results in the sickness of pregnancy.

PRACTICE IN CANADA AND CALIFORNIA.

CANUCK.—(1) The general essential to legal practice in the Canadian provinces is not the possession of a Canadian qualification, but admission to the local register of the province concerned. To such admission the possession of a

registered British qualification sometimes constitutes a better claim than a Canadian qualification, should the latter not have been obtained in the province concerned. Particulars can be found in an article headed Practice in British Colonies, commencing on p. 726 of our issue for September 10th, 1910. (2) Those desirous of practising in California must obtain a certificate from the State Board of Medical Examiners and register the same in the office of the clerk of the country in which he proposes to practise. It is a mixed board, containing representatives of eclectic, osteopathic, and homeopathic institutions. (3) In Canadian provinces practice without registration may be punished by fine; in California by fine or imprisonment. The fact that a medical man possessed of qualifications registrable in Great Britain and Ireland had practised in the colonies or in foreign countries without being registered there would not affect his rights in this country.

PATHOLOGY OF ALOPECIA AREATA.

D. M. writes: I am interested in the note upon above subject in the BRITISH MEDICAL JOURNAL of October 8th, p. 1104. Some four years ago I was working at skin diseases, including many cases of alopecia areata, in the skin department of a certain hospital. Some few months after I took charge of a practice for an old friend of mine near London, my wife being in Ireland. When she returned in about two months she noticed several round patches at the back of my head. Curiously enough the hairdresser, who delighted in remarking any hirsute blemish or defect, never mentioned it, and my friend the doctor and his wife told me after they did not like to mention it; consequently it had spread considerably at the back and at the sides, and was beginning to show in front a little. I attacked it and finally routed it, except a slight patch of white hair still above the left ear. I naturally have particularly strong and luxuriant hair, requiring cutting about once in a week or ten days, and I do not think the nervous element comes in except it be excessive smoking, but I have a very shrewd suspicion that it was conveyed to my head either by absently scratching my head after touching affected heads, or through the clipping machines of the barbers, which I never allow now to be used, as I think them a fertile source of conveying infection, if such can be conveyed, as they cannot be easily, and certainly are not properly, cleaned. I have studied and been interested in skin affections for the past twenty-eight years, and have been much struck with the number of cases of alopecia areata one sees almost every day in trains, 'busses, and the streets. I sometimes notice two or three in a morning in this way, and cannot help thinking that the origin is not nervous but infective, and that the barbers' clippers may not be wholly innocent.

LETTERS, NOTES, ETC.

THE CAUSATION OF SEX.

DR. W. A. E. HAY (Bridport) writes: Regarding the letter of Dr. Oliver Beddard, the saying, "Any fool can have a boy, but it takes a man to get a girl," is quite common in West Dorset.

DR. A. STAYT DUTTON (Oxford) writes: In Dr. Martindale Ward's letter on the causation of sex in the BRITISH MEDICAL JOURNAL of August 27th, he asserts in support of his theory that many more female than male children are born. I am under the impression that the reverse is the case, and Dr. Galabin states in *A Manual of Midwifery*, p. 95, sixth edition, that 106 males are born to each 100 females, and that in primiparae between the ages of 30 and 50, the disproportion is greater and varies between about 125 and 135 to 100. In view of the latter statement it would be interesting to know from what source Dr. Ward obtains his information with regard to this point.

ST. PAUL'S THORN IN THE FLESH.

DR. GEORGE JONES (Lee) writes: (1) In Galat. vi, 11. Theodore of Mopsuestia, Bishop Lightfoot, and Mr. R. Whitelaw, of Rugby, take πηλίκοις γράμμασιν to refer to the size of the writing and not to the length of the letter. Bishop Lightfoot also says *ad loc*—"ἔγραφα, I write . . . the epistolary aorist . . . marks the point at which St. Paul takes the pen into his own hand." (1) The late Dean Stanley, in 2 Cor. xii, 2, οἶδα ἄνθρωπον, κ.τ.λ., treats the words as "the most general term to designate himself in the third person." There is nothing to point to St. Barnabas. (3) The Fathers quoted by Lightfoot (Galatians, p. 186, edit. 1876) from Tertullian downwards were acquainted with a tradition that St. Paul had severe headaches; and ophthalmic surgeons know how common is the association of headache and eye trouble of all kinds. I offer no opinions of my own on the subject, except that I see no reason to increase the difficulties of Scripture by rejecting physical explanations in favour of metaphysical speculations. (4) Any one interested in Aramaic, the language of Aram, spoken from the days of Laban the Syrian (Heb. Ha arami), had better look at Gesenius's Hebrew Grammar, Section 1, 2. "Aram" is a common name for a North Semitic language closely akin to the Hebrew. The Hebrew for Mesopotamia is "Aram naharaim, Syria between the two rivers."

DR. W. J. YOUNG (Cambridge) writes: Instead of examining the abundant evidence in the case, the sources of which I gave in my letter, Dr. Batteson contents himself by saying there is absolutely no proof of my statement that Christ spoke Greek. He produces no evidence whatever to the contrary, for Clodd's assertions, Renan's "not probable," and his own "fair surmise" are like what the soldier said—not evidence. I believed as Dr. Batteson does until I investigated the matter and found myself in error. The woman is described in the text as Ἕλληνις. If this meant one who did not speak Greek, then Britisher should mean one who does not speak English. "Abba" is, of course, Aramaic, but what is ὁ πατήρ? Paul twice uses the same expression, "Abbâ ὁ πατήρ" in his letters—written in Greek; are we to conclude that it is Greek when Paul uses it and Aramaic when spoken by our Lord? But whatever room for difference of opinion there may be regarding the language used by Christ, there is none as to that employed by Luke in his narratives. The universally accepted view of antiquity (Irenaeus, for example) and of modernity is that he wrote in Greek, as did Philo before him and Josephus after him, as did his friend and companion, the Apostle Paul. In what other language would he record Paul's speeches and words at Antioch, Lystra, Ephesus, Athens, Miletus, and Caesarea, to Claudius Lysias, before Felix, Festus, and Agrippa, to those on the ship of Alexandria? Even when he records the special circumstance of Paul addressing the mob in Aramaic he employs Greek for the purpose. The themes of Luke's style, his choice of words, the Lucan terms of expression, are all familiar to students. The most violent higher critic and the most rabid of the orthodox agree that Luke's Gospel and the Acts were written in Greek. Dr. Batteson will not question my statement that Greek was the universal language under the Pax Romana when he has investigated the subject. The letters of Clement of Rome (A.D. 96) and of Ignatius of Asia (A.D. 107) are both written in Greek, as was also Paul's own letter to the *Romans*. The Roman lady liked to be styled ζωὴ καὶ ψυχή by her lover; education and all the arts were in the hands of Greeks, who were distributed over the whole Roman Empire; Rome itself was full of Greeks. But the proof is much too long to give here, and I must not trespass further on your space.

ERNAL.

WE have received from Messrs. Fassett and Johnson, of Clerkenwell Road, some samples of ernal, for which they are agents. The term "ernal" represents a powder for the home production of sparkling pine baths. When placed in a bath the powder slowly dissolves, giving off large quantities of carbonic acid, and filling the bathing chamber with a pleasant odour of pine forests. The effervescence continues for from twenty minutes to half an hour. The product is so easy and pleasant to use that it seems likely to become popular.

POISONING BY CYANIDE OF POTASSIUM.

DR. ALFRED MANN, M.D. (Chester), writes: Called on August 19th to a supposed case of suicidal poisoning, I arrived within ten minutes of the attempt, to find a man lying on the floor, unconscious, breathing stertorously, becoming blue and apparently dying. I was told that my patient had come home the worse for drink, and while sitting over the kitchen fire had been seen to swallow something out of a paper packet, and immediately fell over unconscious. Having with difficulty opened his jaw with a wedge of wood, I passed the stomach tube, emptied the stomach, and hearing something about salts of lemon, washed him out with lime water. I then gave an injection of strychnine. To my surprise he began to recover, and in about an hour could speak, but he was manifestly drunk. I went to see him the next morning, and he then told me the substance he took was cyanide of potassium, which he was in the habit of using to clean the gold braid on uniforms. This was verified by the chemist from whom he was accustomed to obtain it, and by a crystal which I found in the paper on the floor. He told me that as soon as he had put the stuff in his mouth, it burnt his throat and tongue so much that he spat it all out. His mouth, gums, palate, and tongue were much corroded, and he could hardly swallow a teaspoonful of milk. I ordered him into the Chester Infirmary, and he is now doing well. Some absorption must have taken place from the mouth, but not quite enough to kill him. I believe a drop of Schiel's acid on the tongue of a cat will kill it at once. A wound on my hand from his teeth, in opening his jaws to pass the tube, and a broken barrel of my hypodermic syringe, are probably the only remuneration I shall get for my share in the episode. I wonder whether the fact of the man being drunk saved him. If so, this would make a "temperance" story after the late Sir B. W. Richardson's own heart.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

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NOTE.—It is against the rules of the Post Office to receive *poste Restante* letters addressed either in initials or numbers.

An Address
ON
SCIENTIFIC OBSERVATION.

Introductory Address delivered at the London School of Tropical Medicine.

BY

HENRY A. MIERS, D.Sc., F.R.S.,

PRINCIPAL OF THE UNIVERSITY OF LONDON

I am conscious that the address which I have been invited to deliver at the opening of the session of the London School of Tropical Medicine is not expected to be like those addresses which are delivered at the various medical schools in London, where many of the students are entering for the first time upon the course which admits them to their profession. I am aware that I have the honour to address those who are for the most part advancing in their career, and who come here to perfect themselves in the latest developments of a comparatively new and very difficult branch of medicine. Consequently, I am addressing those to whom it would be an impertinence for me to give advice as though they were ordinary students, and for whom my views concerning the pursuit of medical studies could scarcely possess either interest or authority.

On the other hand, I cannot be expected to devote my address to any subject connected with tropical medicine, for I have no knowledge of this branch of study—or, indeed, of any branch of study directly connected with the profession of medicine.

Perhaps I may claim to have a certain personal reason to understand the value and importance of your studies, for both my grandfather and father passed a great part of their lives in South America, and I myself was born there; so that I have heard much from my relations of the ravages of yellow fever, and was the better able to appreciate the remarkable story of the suppression of the fever in Rio de Janeiro as narrated in the first South American supplement of the *Times*.

But I take it that I am asked to address you because I happen to be Principal of the University, and I have to think how I can best say something useful to you in that capacity.

Now, the University of London is charged with the duty of organizing higher education and research in the London area, and, in the attempt to discharge this duty, is brought into close contact with your profession in all its branches and in many of its aspects.

I think that the universities have a very special duty in relation to the professions—whether of engineering, law, or medicine. For these professions they cannot hope to supply, and it is not their duty to supply, the complete educational course. The engineering student and the legal student can no more dispense with the practice of the engineering shops and the law courts than the medical student can dispense with the clinical practice of the hospital. It is the first duty of the university to provide the introductory scientific training in each profession, which will be supplemented and completed by this practical training and experience. Further, in these professional subjects it is of the greatest importance that the university teaching should be in intimate association with the practice. Only under such conditions will the university be able to keep in touch with the latest developments, to appreciate the problems of most pressing importance which claim investigation, and to keep itself properly equipped for these purposes. It is, after all, only at a university that a class of man exists who has the requisite professional and scientific knowledge as well as the leisure and opportunity to conduct such investigations; and at the university he is sufficiently aloof from active and exacting professional work to be able to take a wide scientific survey of the subject. Moreover, he is there in an intellectual atmosphere among the teachers and investigators of other subjects, with whom he can compare methods and discuss results, whom he can interest in his problems, and from whom he can often obtain most valuable assistance.

This co-operation of workers in different subjects, whether merely by advice and criticism, or by direct collaboration, should be one of the most valuable and effective features of university work, and one which can scarcely be secured under any other conditions. I think it is a strange and most unfortunate fact that on the whole so little use is made of their colleagues by university investigators, considering what opportunities lie to hand.

The professions should, I think, more consistently and systematically take their problems to the universities for solution, and more frequently claim the interest and assistance of university workers. For it is also the duty of the university to encourage that advanced work and investigation which cannot be conducted in the courts, the shops, and the hospital. There will always be much such work to be done, for in places which are devoted to practice there is little time or opportunity to carry on researches of which the practical outcome is not evident, and yet a great deal of the most important investigation is of this character. Nothing can be more desirable than the development of departments of research at the hospitals and in the engineering shops, as, indeed, in all manufacturing and business establishments where the practical applications of science are conducted; but these will never diminish the necessity of similar departments in the universities, even from the point of view of the practical requirements of industry and commerce.

No work can better engage the energies of a university in the various branches of science than pioneer work of which the outcome is uncertain, but which frequently turns out to be in the end the most fruitful of all. One cannot expect professional men or professional institutions to devote much time to such work, for it would lead them too far from the track of their professional duties. But let such pioneer work, involving new problems, new methods of research, trial trips into the unknown, be undertaken by ardent and sanguine young men in the university laboratories, and it often develops in a short time into results of the greatest possible importance for the professional man, and becomes part of the regular practice of the hospital, the engineering shops, and the centres of manufactures and industries.

Let me only quote, confining myself to things with which I have some acquaintance, such work as the microscopic study of rocks and metals, which have revolutionized the sciences of geology and metallurgy. They could scarcely have been taken up and pursued successfully in their initial stages except by university professors and investigators, but they have now, under the name of metallography, become part of the regular work of practical and professional engineers. Many of the most prominent of recent discoveries, such as the rare earths used for the incandescent gas-light, the x rays, radium, and radioactivity, etc., have resulted from researches which could scarcely have originated except in universities. There must be numbers of similar examples in the range of medical science.

And so the closer the connexion which is maintained between professional and technical institutions on the one side and the universities on the other, the greater will be the benefits secured both by pure science and professional practice. Their two intimate points of contact, to which I have already called your attention, being the general scientific education which the university provides for professional men at one end of their university career and the research to which it invites them at the other.

If, however, the investigations at the universities are to be carried on by men who are subsequently to be leaders in their profession—and this is much to be desired—it is clear that there is the greatest need for such provision as will enable those who have completed their university course to stay on for one or two years engaged upon this work in the university laboratories before they become absorbed by their professional duties. If we are to maintain a high order of advanced work at the universities and to supply the professions with men who have learnt to know the meaning and the method of such work while they are still able to learn, nothing can be more useful than scholarships and fellowships for advanced study and research which will enable students to remain for a post-graduate period.

In the medical profession I am glad that opportunities are now being provided to an increasing extent, and fore-

most among these we have to acknowledge the great debt which the profession—and, indeed, the whole world—owes to Mr. Otto Beit for the noble benefaction which he instituted early in the present year in memory of his brother. I believe that that and similar schemes are destined to play a tremendous part in the intellectual advances and the professional development of our country; the universities in whose schools the Beit Fellows will carry on their researches will also receive a great impulse, which will enable them to fulfil more adequately their duty to higher learning and investigation.

I venture to hope that the London School of Tropical Medicine, a school whose energies are so largely devoted to special and advanced study, values its connexion with the University of London, and derives real and substantial benefit from an intimate association with the university.

These considerations all point to some aspect of scientific research as the subject to which I should devote this address. Although it is difficult to find anything new to say on so well worn a theme, and although my own work has been carried on in a very different field, and one in no way related to medical science, I feel that, in accordance with what I have said about universities and the desirable intercourse between teachers and researchers, it is possible that views which I have been led to form as the result of my own experience may be of use to you; even if what I have to say may prove to be only an elaboration of what has been said before.

Let me, then, direct your attention to an aspect of scientific research and of training in scientific investigation which seems to me in danger of escaping notice.

In proportion as research has become more and more highly organized, and the various departments of knowledge have become more completely and systematically mapped out, so have investigators been continually compelled to fix their eyes upon more definite and restricted problems. It is now, more than formerly, true that workers know what they want, that they bring trained intelligence to interpret what they expect, and trained eyes to see what they are looking for. In the early days of scientific research the new methods and the new instruments were powerful resources of unknown capabilities which could be exercised in any field and without any definite plan. The telescope and microscope, for example, could be turned upon almost anything in the hope of discovering new and suggestive fields of study. Scientific experience consisted largely in the effort to interpret the thousands of new objects of inquiry which crowded themselves upon the attention of the investigator. Alertness of sense and intelligence ready to exert themselves in any direction were required, and the best scientific workers were those who were quick to follow any trail into the unknown region.

But under the present conditions scientific research is seldom pursued save by those whose object is clear, and whose minds are concentrated upon a special line of investigation in which they are alive and alert to the exclusion of any distracting side issues. As in a modern railway, the objective is fixed, the route is surveyed, the materials are prepared, and the energies are concentrated, and we congratulate ourselves that we are no longer in the position of the old pioneers venturing without certain plans and ignorant of the goal towards which the ill-equipped caravan was venturing.

All this means that each new discovery is pursued with ever-increasing rapidity, and with a system which is fruitful in results; the searchlight of investigation is turned with mechanical precision upon every new problem, and it would appear unlikely that anything of importance should be overlooked.

But I think that teachers and investigators do not sufficiently bear in mind two possible dangers that beset them under modern conditions of work. It is inherent in our senses and our intelligence, first, that those whose attention is too minutely fixed upon one thing will fail to perceive other things which are equally discernible and equally important; and, secondly, that those who look or listen too intently for a thing may actually see or hear that which they desire, even though it be not there.

Let me illustrate what I mean by one or two homely examples. The conjurer and the spiritualistic performer know well the need of concentrating the attention of their audience upon an unimportant thing if they wish to render them blind and deaf to those actions which would betray the trick. In fact, every illusion depends for its success upon the distraction of the attention from one thing by the simple artifice of concentrating it upon another. The person who is best able to see through the illusion is the trained conjurer, who is in the habit of noticing everything in order that his victims may notice nothing. One of the most fascinating chapters in the autobiography of the famous conjurer, Robert Houdin, is the account of the manner in which his father trained him to observe with rapidity every possible detail in passing through a room, so that the knowledge thus instantaneously acquired could be used afterwards to confound those ordinary folk who only see what interests or attracts them, and do not observe trivial details. And this training was undergone not with the object of understanding the illusions of others, but of deceiving them with illusions that depended for their success upon the insignificant details so absorbed. And then Houdin further narrates how he was always educating not only his sight, but his touch and the other senses, in order that they might constantly be on the alert.

Baden Powell's book on scouting, the rapid growth of the boy scout movement, the vogue of Sherlock Holmes and of detective stories in general, in which the unsuccessful detective notices the obvious things and fails to observe the essential details, all indicate that the public have become keenly aware of the principle of which I am speaking, and are vastly interested in it. Everyone is familiar with the fact that absent-mindedness is generally the result not of a wandering mind, but of one concentrated upon some absorbing object, and that what is true of the senses is also true of the intelligence: concentration may induce temporary mental blindness.

And then there is the other defect which I have mentioned, and may illustrate by two examples of which I read at the time of their occurrence, and which indicate that expectation may deceive the senses and actually create impressions of what does not exist. One of these is quoted by Carpenter in his *Mental Physiology*. When the French airship, *La Patrie*, was blown from her moorings and drifted derelict across England, her passage across the Bristol Channel was witnessed by a number of persons who, in the early morning light, were able to identify her, and naturally assumed that she was being navigated across the country. They were not only able to read her name, but persuaded themselves that they could discern two aeronauts on board, and could see them sending out carrier pigeons.

Again, when the tropical annexe of the Crystal Palace was burnt down, a large concourse of people witnessed the conflagration, attracted by the extraordinary spectacle of the streams of molten glass. It was known that a number of animals—parrots and monkeys—were kept in that annexe and were burnt to death. One ape had escaped to the roof, where it clung for a long time unable to escape, and was literally roasted to death before the eyes of the agonized spectators, who were not only witnesses of its contortions but also heard the poor creature's screams. After the conflagration it was found that the object which had excited such interest and compassion was a piece of tarpaulin.

This defect also belongs not only to the senses, but to the intelligence. It frequently happens that an acute and eager mind is so obsessed by some idea which distorts the judgement that the victim of it is led to explain everything in the light of the fixed idea, and to ignore other possibilities. In fact, many of the mistakes of investigators are made in this way.

Now, I do not venture to suggest that scientific men are often deceived by their senses to see and hear what does not really exist, or be blind and deaf to phenomena that play an important part in their experiments or observations, though I do think quite seriously that this may sometimes occur; but I wish to remind you of the danger that scientific training and experience may quite easily predispose both the senses and the mind to this weakness. So far from being a good training for mental receptivity and alertness of sense, so far from fitting the observer to notice and interpret every trivial detail that may have a significance, the training of scientific observation both in the laboratory and in the field, unless wisely conducted and corrected, may easily unfit the student for this very

purpose. In science, as elsewhere, familiarity may breed contempt for important details. He who is practised in a certain line of observation may, in proportion as his senses and his intelligence become more acute in the appreciation of the events or the objects for which he is watching with expectant attention, become less and less able to appreciate properly anything else. I speak from some experience, for I have noticed both in myself and many of my pupils this failing. A mineralogist like myself, although quick to notice in laboratory experiments on minerals and crystals the slightest indication of the result that he expects, so that he sees things that would not be visible to the untrained observer, and although quick in the field to notice the minutest specks of the mineral for which he is searching—specks which would not be discerned by the unpractised eye—may be in other respects a deplorably unobservant person, and fail to see the most obvious things. How far may this be partly the result of cultivating observation of a special sort?

The fact is, I think, that the faculty which is cultivated by much of our scientific training and work is not readiness and certainty of observation so much as specialized memory. If I walk down a street and force myself to notice things which would otherwise escape my observation, I find that I have forgotten most of them next day, and am unable to recall them; and it would only be by repeating the process several times that I could fix them with any permanence. But if I walk through a mineral collection, the specimens which attract my attention will impress themselves on my mind, and remain there without any effort on my part. I daresay that most persons who have made a special study of any subject can confirm this experience.

Let me illustrate my meaning by an example from fine art. The power which enabled the archaeologist Furtwängler to make so many remarkable discoveries and identifications was not so much quickness of observation as an extraordinarily accurate memory of all the antique statues which he had seen in the various museums, so that he could recall their details and compare them without the necessity of seeing them beside one another. He, of course, also possessed a remarkably quick perception.

In science, the work of systematists and those who are mainly occupied in identifying old species and determining new ones does cultivate a special memory and lead to a profound knowledge of characteristics, but I do not think that this should be confused with the faculty of observation.

Taken as a whole, I do not think that scientific men are better general observers than other people, though some among them undoubtedly are. It has been too often assumed that scientific training has a special value as developing the general powers of observation, and that because students have been exercised in special observations they have become practised observers of things in general, whereas the reverse may be nearer the truth, and in many instances certainly is so.

For example, I am inclined to believe that the senses of a boy may be better fitted to perceive minute and unexpected details by practice in field sports than by the special practice of a laboratory; and that the alertness of mind and eye cultivated by active country life is an excellent training in all-round observation. Indeed, I do not know why one should limit this suggestion to life in the country, for any one who is really compelled to exercise his observation in the rapidly changing scenes of a busy town may possibly have his wits and his senses still more successfully sharpened. But how small a part of education is devoted to the cultivation of these general powers!

I would not have you to understand me to mean that any such training should be substituted for laboratory and field observations in scientific education; I only wish to suggest that some practice in all-round observation should be incorporated in the training of the specialist if we are to have our students quick to observe details that do not form part of their conscious exercises; neither should they be led to suppose that because they have been practised in observing one thing they are therefore good observers of everything else. To him who has eyes to see, the most trivial detail may be the germ of an important discovery. Our laboratory training gives the student his eyes, but does not always teach him to use them widely or wisely. These are the days in which the importance of unconsidered trifles is beginning to be realized, and neglected details, like the traces of moisture in a chemical reaction, or of foreign metal in an alloy, are found to be the really important factors.

Although scientific men do not like to confess it, a great number of discoveries are made by what is commonly called accident or chance. While looking for one thing the observer lights upon something else which proves to be really more important. He may think this beneath the dignity of a scientific researcher, and may endeavour to persuade both himself and the world that this discovery was made by a most logical process. But I believe that, if the discoveries thus made by a lucky chance were summed up, they would be found to be considerable both in number and importance. Of course, they are not really matters of chance—the same trifling detail may have been seen by hundreds of eyes before, the same little variations of an idea may have occurred to hundreds of minds before, but because they were intent upon some other quest the real significance of the trifle was not appreciated by them. Familiar examples of such chance discoveries are those associated with the names of Haüy, Malus, Galvani, and Oersted. Many persons before Galileo must have watched the swing of a hanging lamp, although they did not see its interpretation. Other observers before Sir William Ramsay saw the spectrum of helium in pitchblende, but they failed to recognize it. The fullest credit is surely due to those who possess the readiness and alertness of mind and sense, the quickness of interpretation, to see what others miss, and we do wrong in calling this chance. The story of Newton and the apple is, I suppose, to be regarded as an exploded myth, but it nevertheless remains true as an allegory.

One of the most remarkable things about all discoveries is that there were so many people who might have made them, but just failed to do so; how often it appears afterwards that the failure was due to the mistake of passing by a new thing and assuming that it was a familiar one! Analyse this mistake, and you will see that it is often due to the two causes which I have mentioned: the observer not only failed to notice some distinguishing feature, but also, owing to his familiarity with the known object or event, actually supplied in his mind certain missing details. Every one knows that trivial misprints or other errors in a proof are more likely to be passed by an author than by any one, for he, knowing what he meant or what he intended to write, fails to observe that something is missing, or actually sees something different from the print.

What we need is the continual cultivation of the power of keeping the mind and the senses open, ready for all impressions, and prepared to interpret them—the power of divesting ourselves of expectation or preconceived notions in scientific work, so that we may be neither ready to accept the obvious nor prone to ignore the obscure.

It always seems to me that in this, as in so many other respects, Charles Darwin presents an example to be followed by all scientific workers; for, although all his observations were illuminated by the great idea which made him quick to see in everything the working of the process which he was tracking, yet he always kept his mind open to see with an equally clear vision the exceptions, the apparently negligible details, the trivial features which might militate either for or against his own view, and was always prepared to consider these as carefully and as honestly as those more obvious facts which supported his theory, and which he was prepared to see because he was searching for them.

Now I take it that the studies and researches which are specially cultivated in your school are, as much as any, dependent on obscure and apparently negligible minutiae, that many of the microscopic objects which have played a most important part in bacteriological discovery might have been seen by others than those who first saw their significance, and that nowhere are the qualities which I have referred more needed than in your science.

No doubt, in the field of microscopical work which concerns you so closely, the photographic record has greatly reduced the risk of mistakes of the eye, though I doubt whether it has entirely removed that risk; and I suspect that in experiments and observations relating to living organisms it is not wise to rely too confidently on the photographic record alone. For though the photo-

graph does not share the errors of the human observer to which I have called your attention, it fails in that critical and expectant attention which only the human observer can exercise, and which, if it sometimes leads him into error, yet makes him more efficient than any mechanical recording apparatus.

You cannot afford to ignore any detail, you have to be on the alert for every trifle, you have to be quick to interpret anything that is new. I may, therefore, hope to be pardoned for reminding you that these qualities may be actually deadened by a too rigid adherence to the methods by which we identify and study what is known. I sometimes feel that many scientific workers and teachers forget that advance is made not so much by studying the known as by seeking the unknown, and that it is the differences, the novelties, the eccentricities if you like, which characterize the new thing that should excite our expectations. The object of studying a known form with minute precision is not only that we may recognize it again when we see it, but also that we may distinguish from it the new form when it presents itself, however closely it may resemble the known; and, unless this object is constantly kept in view, we may fall into the error of either noticing the resemblances more than the differences, or of attaching undue importance to differences that are inessential but easily discernible.

I feel that it is somewhat presumptuous on my part to make such suggestions in regard to a science of which I know nothing; but I am so fully conscious of their validity in the history of mineralogy, a science with which I am familiar, and it is so probable that the ways of discovery and of error are the same in all the sciences, that I have little doubt that what I say is also applicable to bacteriology and to the subject of tropical medicine.

Those who are students here come, I understand, with the object of acquainting themselves with the best and newest methods of research, and their further studies are pursued in distant parts of the world, where they have not the advantages of the elaborate equipment and excellent opportunities which are afforded them in this school. Many will be doing pioneer work under difficult and novel conditions, in which, far more than in a well-equipped hospital or school, new problems are to be expected, and the faculty of observation is on its trial.

In all scientific work we should be on our guard; not let our knowledge get the better of us; but be on the alert for something new even in that which is most familiar, and in the routine study of that which is best known.

An Address

ON

CERTAIN INTRACRANIAL DISEASES ASSOCIATED WITH NASAL, AURAL, AND LARYNGEAL SYMPTOMS.

Delivered at the Central London Throat and Ear Hospital on October 17th, 1910.

BY

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My first duty is to offer my sincere thanks for the honour that has been done me in inviting me to address you to-day, and to express the pleasure with which I accepted that invitation. At the same time I cannot help recognizing that my task is difficult, not only in view of the distinction of the orators who have preceded me in former years, but also from the character of the audience that I now see before me.

Of late years the study of diseases of the throat, nose, and ear has made great advances—advances in which many of yourselves have played an important part. To the average practitioner of medicine the special domains of laryngology, rhinology, and otology may well seem a labyrinth to which only the chosen few can hope to possess the clue. My object to-day, however, is not to illustrate the importance of rhinology, otology, and laryngology to the expert. I would rather indicate the value of an elementary knowledge of these special branches to the general physician or surgeon, and more especially to the neurologist.

In a hospital such as this you have to deal usually with patients who come to you complaining of symptoms which they themselves associate with the ear, the nose, or the throat. A certain small proportion of these cases is associated with intracranial complications—as, for example, temporal or cerebellar abscess, meningitis, lateral sinus thrombosis, etc., secondary to ear suppuration; frontal brain abscess or cavernous sinus thrombosis, secondary to nasal infection, and so on. With cases of this sort I do not propose to deal. I propose to direct your attention to some primarily intracranial diseases, where the aural, nasal, or laryngeal symptoms only transpire incidentally, as it were, in the course of the malady, and where, nevertheless, the recognition of symptoms connected with the special domains of rhinology, otology, and laryngology is of the utmost importance for a correct diagnosis.

I trust you will forgive me if I recall to your memory a few of the more important points in the anatomy of the nerve tracts which are in special relation with the nose and ear.

The olfactory nerves ramify in the mucosa of the upper and back part of the nasal septum, and over the surface of the upper turbinal body in the outer wall of each nasal fossa. They perforate the cribriform plate of the ethmoid bone. Piercing the dura mater, they reach the superjacent olfactory bulb of the corresponding side. The olfactory nerves are enclosed in lymphatic spaces which are directly continuous with the subarachnoid space, so that the lymphatics of the upper nasal mucosa can readily be injected from the cranial cavity by means of substances such as Prussian blue introduced into the cerebral subarachnoid space. Notwithstanding this free communication, it is curious how relatively rare it is for intracranial infections to arise from nasal as compared with aural conditions.

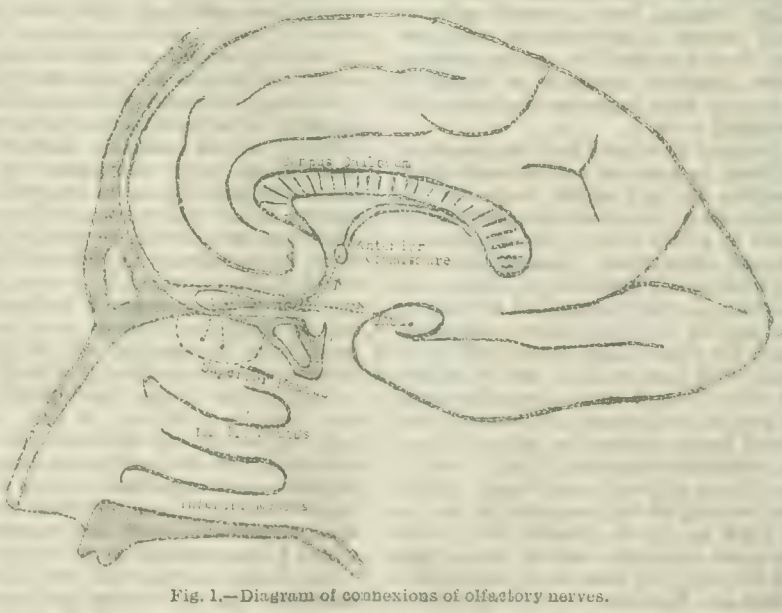


Fig. 1.—Diagram of connexions of olfactory nerves.

From the olfactory bulb the olfactory tract or peduncle

leads backwards to the anterior perforated space, or olfactory tubercle, on the under surface of the frontal lobe. There it bifurcates into a mesial and a lateral root. Most of the fibres in the lateral root run to the olfactory cortex at the tip of the hippocampal region (uncinate gyrus). Other fibres, in the mesial root, run to the anterior commissure, where they cross the middle line and reach the uncus of the opposite side. We note that the olfactory path does not traverse the internal capsule, and that, therefore, in the ordinary type of organic hemiplegia, smell is unaffected.

The course of the gustatory path is still a subject of dispute. Most of us believe that impressions of taste enter the brain partly through the sensory root of the trigeminal nerve, partly through the nervus intermedius or sensory root of the facial, and partly through the glosso-pharyngeal nerve. We know also that the cortical centre for taste is situated towards the tip of the temporal lobe, close to the centre for smell. The exact course of the intracerebral gustatory path is in dispute, but it is probable that it does not traverse the internal capsule. Not far from the centres for smell and taste in the temporal lobe there appear to be cortical centres for hunger and thirst, which are sometimes of considerable diagnostic importance, as we shall presently see.

The auditory apparatus has to deal with two distinct sets of impressions. First, cochlear or acoustic impressions, and secondly, vestibular impressions of equilibration from the semicircular canals. These two sets of impulses have different paths within the brain.

The acoustic path from the cochlea passes along the cochlear nerve. This bifurcates to embrace the restiform body between its arms. Some of its fibres pass internally and go to the ventral auditory nucleus in the upper part of the medulla; others pass along the outer side of the restiform body and go to the dorsal auditory nucleus. From these two medullary nuclei the fibres of the central acoustic path lead upwards towards the higher auditory centres. Most (but not all) of them decussate to the opposite side and ascend in the lateral fillet, which conducts them to the posterior corpus quadrigeminum and the mesial geniculate body. From these nuclei new acoustic fibres traverse the sublenticular region of the internal capsule (the auditory fibres being posterior to the fibres for ordinary cutaneous sensations), and ultimately reach the cortical auditory centre. Formerly the cortical auditory centre was supposed to be located in the superior temporal gyrus on the convex surface of the temporal lobe. Recently, however, we have come to recognize that another important part of the auditory centre is in the anterior transverse temporal convolution of Heschl (or Flechsig's auditory gyrus), situated on the upper or Sylvian surface of the temporal lobe at the bottom of the Sylvian fossa, close behind the insula. Heschl's gyrus is directly continuous with the superior temporal gyrus. Each cortical centre receives auditory messages from both ears (although more extensively from the ear of the contralateral side), so that a lesion of one temporal lobe does not cause deafness. Finally, in right-handed people there is a specially differentiated portion of the left auditory centre, where memories of word-sounds are stored up. This is of special importance in temporal abscess—a not uncommon complication of otitis media.

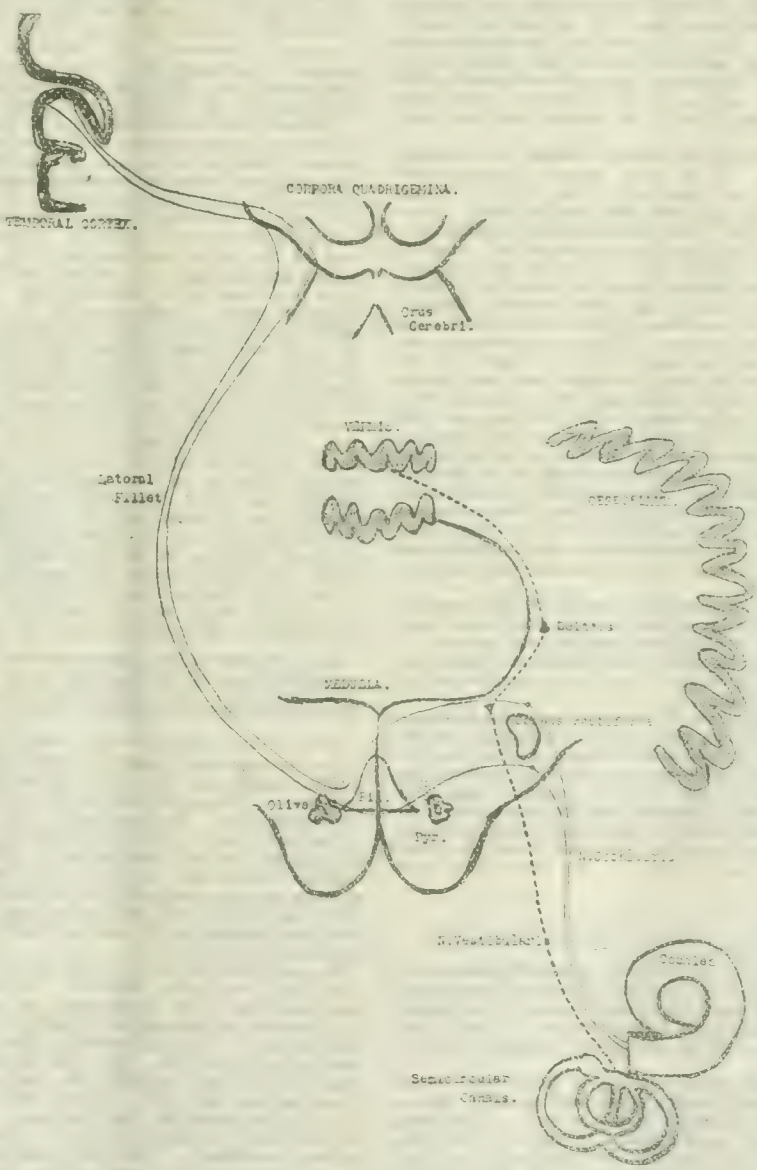


Fig. 2.—Diagram of connexions of cochlear and vestibular nerves.

The vestibular path from the semicircular canals penetrates the medulla and reaches the vestibular nucleus. Thence it passes to Deiters's nucleus of the same side, from which a new path leads up to the vermis or middle lobe of the cerebellum.

Let me now relate a few cases of intracranial lesions in which the nasal, cochlear, vestibular, or laryngeal symptoms were of special diagnostic value.

CASE I.—*Tumour in Region of Optic Chiasma.*

A widow of 61 noticed gradual failure of vision some thirty years previously, so that the right eye became totally blind. Some four or five years ago she noticed impairment of vision in the left eye. Two years ago she began to have attacks of overwhelming drowsiness and used to fall asleep at meals. Her appetite became voracious. Giddiness and an unsteady gait developed, and she used to run into people in the street, apparently owing to hemianopia in the eye which was still able to see. Causeless vomiting supervened. Vertical headaches appeared. The drowsiness continued, and when she came to us at Westminster Hospital she slept almost continuously, requiring to be wakened for meals.

On examination, she could smell aromatic substances easily in the left nostril, less in the right. There was optic atrophy in both eyes, with total blindness of the right eye and temporal hemianopia of the left—signs pathognomonic of a lesion of the optic chiasma. The pupil in the blind eye did not react to light, the other reacted sluggishly. All the other cranial nerves were normal. There was no deafness. There was slight weakness of the left lower face, cerebral in type. There was no paralysis or ataxia of any limb, and the reflexes, deep and superficial, showed no abnormality.

She was mentally dull, slept almost constantly, but retained a remarkably keen appetite. In spite of this, however, when being fed, she would fall asleep between mouthfuls.

The prolonged course of the disease, the headache, vomiting, and optic atrophy, pointed to an intracranial growth. The blindness of the right eye and temporal hemianopia of the left, were characteristic of a lesion of the optic chiasma, more on the right side. The voracious appetite suggested upward extension towards the temporal lobe on one or other side. The slight facial hemiplegia suggested that the growth pressed

against the motor path in the right hemisphere. An attempt was made by my colleague, Mr. W. Turner, to reach the growth from the right frontal region, but two days after the first stage of the operation the patient died from heart failure.

At the autopsy our diagnosis was amply confirmed, for we found a large tumour in which were embedded the optic chiasma and right carotid artery. It compressed the third ventricle, and pressed upwards against the crura cerebri and temporal lobes, especially on the right side. This growth seemed to have arisen from the infundibulum, the anterior lobe of the pituitary body being normal in size, situated within the sella turcica.

This case is of interest to us, as exemplifying the importance of recognition of the cortical centre for hunger, situated in close proximity to the centres for smell and taste.

Case II.—*Right-sided Extracerebellar Tumour arising from Auditory Nerve.*

A married woman, aged 32, complained of unsteadiness in walking for about two years. For twelve months she had had occasional cervico-occipital headaches, with nausea and vomiting independent of food. She had never had an attack of unconsciousness. Within the last five months the unsteadiness in walking had rapidly increased, and she occasionally fell without unconsciousness, noticing at these times a transient weakness of the right arm. For three months she had been blind in the right eye.

On examination, she was an intelligent woman with normal speech and articulation. There was intense double optic neuritis, with 3 dioptres of swelling in the right eye, and 1 dioptre in the left. The right eye was totally blind; vision in the left was reduced to $\frac{6}{12}$. The left visual field was normal. The pupils were large and contracted on convergence. The left pupil reacted normally to light; the right pupil reacted consensually with the left, but not on direct illumination. There was slight nystagmus on turning the eyes towards the right side. Hearing in the right ear was slightly diminished, both to aërial and to osseous conduction. The muscles of mastication, face, palate, and tongue were normal. There was no cutaneous anaesthesia or analgesia; nor was there any motor weakness of the trunk or limbs. The gait was unsteady and reeling. There was slight clumsiness in the right upper limb on attempted rapid alternate rotation and supination (dysdiadocokinesia). The head was held in the cerebellar attitude, tilted sideways to the left, with rotation of the chin towards the right. The supinator-jerks, knee jerks, and ankle-jerks were brisk, slightly more so on the right side. There was no ankle clonus, and the plantar reflexes were flexor in type. The sphincters were normal. The cerebro-spinal fluid, which was under increased pressure, contained no abnormal constituents on microscopic examination.

The patient complained of occasional transient blindness in the right eye, and of occasional subjective feelings of numbness in the left face, but without objective anaesthesia on testing.

In view of the intense optic neuritis, the blindness of the right eye, and the occasional ambiyopia of the left, operative interference was urgently indicated.

The cerebellar gait and posture of the head, the slight deafness of the right ear, and the dysdiadocokinesia of the right hand, inclined us to a diagnosis of right-sided extracerebellar growth. Accordingly the right cerebellar fossa was explored, and at the second stage a cystic tumour, the size of a pigeon's egg, was removed from the region of the internal auditory meatus. The patient unfortunately died without regaining consciousness. *Post mortem*, recent haemorrhage was found all round the pons and medulla. The right lateral lobe of the cerebellum was indented by the growth.

Case III.—*Bilateral Extracerebellar Tumours arising from Auditory Nerves.*

A glass-cutter, 40 years of age, noticed gradual deafness in both ears, more marked in the left ear, of about five years' duration. Twelve months ago he became frequently giddy and staggered in his walk, occasionally falling down. He had occasional occipital headache, but no nausea or vomiting and no affection of vision.

On examination he had optic neuritis in both eyes, more intense in the left. The pupils were equal and normal. There was nystagmus on lateral deviation to either side. There was nerve deafness of both ears, more marked in the left ear. He complained of vague bilateral tinnitus. He complained also of vertigo when he tried to stand or walk; there was no vertigo at rest. The muscles of mastication, the face, palate, and tongue were normal. There was no cutaneous anaesthesia or analgesia. There was moderate dysdiadocokinesia of the left upper limb. The gait was reeling and unsteady; he did not fall to one side more than the other. The posture of the head was suggestive of cerebellar disease, the chin being elevated and deviated to the left side. The knee-jerks and ankle-jerks were brisk; there was no ankle clonus. The left plantar reflex was extensor in type; the right was doubtful.

The diagnosis made was that of left-sided extracerebellar growth. Antisyphilitic treatment having been negative in its result, it was decided, in view of the advancing optic neuritis, to perform a decompressive trephining. This was accordingly done in the left cerebellar region by my colleague, Mr. W. G. Spencer. At the second stage, when the dura mater was opened, the cerebellum bulged and did not pulsate. The cerebellar protrusion rendered exploration of the cranial base difficult. A fortnight later the patient died. At the autopsy there were two large tumours—one, the size of a hen's egg, in the left ponto-cerebellar angle; the other, about the size of a cherry, in the corresponding position on the right side. These tumours were on the auditory nerves, and compressed the cerebellum without infiltrating it. In addition there were multiple small tumours scattered on the roots of numerous spinal nerves throughout the spine, and one on the spinal accessory nerve on the left side.

In contrast with these two extracerebellar cases, in both of which we had cochlear or vestibular symptoms, let me now quote an intracerebellar case where there were no symptoms referable to either division of the auditory nerve.

Case IV.—*Right-sided Intracerebellar Tumour.*

A girl of 23, who had always been thin, began to feel specially exhausted about seven months ago. Four months ago she developed occipital headache and causeless vomiting in the mornings, which persisted daily for about three weeks. Three months ago she consulted an eminent physician, who put her in a nursing home for a month's rest-cure. Six weeks ago this physician discovered optic neuritis, and advised a decompressive trephining, there being at that time no definite localizing symptoms. The operation was not done, and the occipital headache and the vomiting continued.

On examination the patient, who was of normal intelligence, had marked optic neuritis in both eyes. The visual fields were normal. Smell, taste, and hearing were acute on both sides. The pupils and external ocular movements were normal. There was no nystagmus and no squint. The muscles of mastication, face, palate, and tongue were all normal. There was no motor paralysis of the trunk or limbs. There was doubtful unsteadiness of the right hand on touching the nose. The gait was reeling and unsteady, the patient lurching to the right, and the right leg was more unsteady than the left on touching the opposite knee. When standing on one leg she did so less securely on the right foot than on the left. The deep reflexes in upper and lower limbs were normal and equal, and the plantars were flexor in type. There was some tenderness on pressure in the occipital region, more marked on the right side. The reeling gait and the unsteadiness of the right arm and leg pointed to a right-sided cerebellar lesion. Accordingly Mr. C. A. Ballance explored the right cerebellar fossa. At the first stage, on removing the bone, the dura mater bulged with special intensity at a spot about one inch to the right of the middle line. Two days later respiration became alarmingly slow (six per minute), and the second stage of the operation had to be done urgently. On opening the dura mater at the site of the local bulge, a jet of fluid escaped from a cystic growth within the lateral lobe of the cerebellum. The posterior half of the right lateral lobe, including the growth, was removed. The patient made an uninterrupted recovery, although the optic neuritis was somewhat slow in subsiding.

Let us now pass to some examples of syringomyelia or central glioma of the medulla and spinal cord, associated with laryngeal and palatal symptoms.

Case V.—*Syringomyelia with Nuclear Paralysis of the Larynx.*

The patient was a married woman of 48, who complained of tingling pains in the right upper extremity of two years' duration. These pains appeared also in the left upper limb six months ago. Twelve months ago, when having treatment by radiant heat to the right shoulder, the skin was burnt in that region, but produced no pain. Eight months ago her gait became feeble, and she tended to drag the right leg. Four months ago she began to have difficulty of swallowing, especially with fluids, and had occasional regurgitation. At this time she became husky, and had marked dyspnoea on exertion, together with stridor.

On examination, the patient's voice was husky, and there was occasional inspiratory stridor. The optic discs were normal, and there was slight nystagmus on looking to the left. The face, palate, and tongue were normal, also the sterno-mastoids and trapezii. On laryngoscopy, there was bilateral abductor paralysis of the cords. She had an area of dissociated anaesthesia in the head, upper limbs, and upper part of the trunk, excluding the left face. There was no tactile anaesthesia. The upper extremities were normal. The lower muscles were slightly feeble, especially the left. She tended to drag the left toe when walking. The deep reflexes were normal, and the plantar reflexes were flexor in type. Under treatment by *x* rays to the cervical region of the spine she improved considerably. The lower extremities lost their weakness, and the area of dissociated anaesthesia receded, so that the whole face became normal in sensation.

This was a fairly typical case of syringomyelia, in which the gliomatous process had extended into that part of the vagal nuclei which supplies the laryngeal muscles.

Case VI.—*Syringomyelia with Nuclear Paralysis of Palate, Larynx, and Tongue.*

A lady school teacher, 28 years of age, had noticed for seven years that she had been able to hold her hands closer to the fire than ordinary people, and within the last four years she had frequently burnt herself when ironing linen, not noticing the burns until she saw the blisters. Seven months ago her voice became hoarse, and five months ago she developed inspiratory stridor. Later she had occasional nasal regurgitations when swallowing fluids.

On examination, the voice was particularly husky, with occasional attacks of inspiratory stridor and of choking, especially when excited. Smell was normal on both sides. The optic discs and visual fields were normal. The pupils reacted normally. There was marked lateral nystagmus in all positions of the eyes. The facial muscles were normal. Hearing was acute. The right side of the palate was paralysed, and laryngoscopy showed bilateral abductor weakness, almost complete on the right side, slight on the left. The false cords came together well on explosive coughing. The sterno-mastoids and trapezii were normal. The tongue was wasted, especially on the right side, and showed fibrillary twitchings.

There was no cutaneous anaesthesia, but a characteristic area of therm-anaesthesia and analgesia in the head, upper limbs, and upper part of trunk. This area of dissociated anaesthesia was much less intense in the face than elsewhere. In the upper extremities, there was slight wasting of the first dorsal interosseous muscle of the left hand, and the nail of the left thumb was in process of detachment, following a painless whitlow a fortnight previously. The lower limbs were normal in their movements. The deep reflexes were normal, and the plantars were flexor in type.

This was evidently a case of syringomyelia in which the gliomatous process extended upwards in the medulla to the nuclei of the hyperglossal and vagus, being more marked on the right side.

The next case is a remarkable one of congenital malformation of the medulla and spinal cord, in which we were fortunate enough to obtain anatomical confirmation of our diagnosis.

Case VII.—*Congenital Unilateral Intramedullary Lesion of the Medulla.*

A man of 41, a hot-potato hawker, came to hospital suffering from chronic bronchitis and chronic nephritis. His voice had always been hoarse. What struck us particularly when he came was the curious deformity of the right side of his neck and jaw. On examination the upper cranial nerves were normal. The right pinna, as you will see from the photograph, was much smaller than the left, and the external auditory meatus was narrower and situated higher up than on the left side. The right mastoid process, together with the sterno-mastoid muscle, was absent. The right side of the mandible was smaller than the left, and he had never had any lower bicuspid or molar teeth on the right side. The facial muscles were normal. The right palate was paralysed. The right vocal cord was fixed in the cadaveric position. The right trapezius, save for a small bundle of its middle fibres, was absent. The right side of the tongue was atrophied, and the omohyoid, stylohyoid, and posterior belly of the digastric were absent, so also were the depressor muscles of the hyoid bone on the right side. As a result the common carotid was practically subcutaneous, save for the covering of the platysma, throughout its whole extent, and in a photograph could easily be seen its bifurcation into internal and external carotids. There were no sensory or motor abnormalities in the trunk or limbs, and the reflexes, deep and superficial, were normal.

The absence of the right sterno-mastoid and trapezius, together with the paralysis of the palate and vocal cord in the same side, led us to diagnose a congenital lesion of the spinal accessory and vagal nuclei on the right side. Further, the atrophy of the right half of the tongue, and the absence of the depressor muscles of the hyoid bone, showed that the lesion extended downwards through the hypoglossal nucleus to the anterior cornu of the upper two or three segments of the spinal cord. We associated the deficient development of the mandible and the absence of the back teeth with an affection of the spinal root of the trigeminal nucleus, which extends down the lateral aspect of the medulla and upper segments of the spinal cord.

Some six weeks later the patient died unexpectedly from pontine haemorrhage, and we had an opportunity of verifying our diagnosis. There was absence of the motor nuclei of the vagus, spinal accessory, and hypoglossal on the right side, together with diminution in size of the anterior cornu on the right side of the upper cervical part of the spinal cord, and atrophy of the spinal root of the trigeminal nucleus.

Let me now quote two or three examples of acute vascular lesion within the medulla, in which the laryngeal and palatal symptoms gave us the key to the diagnosis.

Case VIII.—*Right-sided Thrombosis of the Medulla.*

An unmarried lady, aged 63, who had a chronic mitral regurgitation of many years' standing, developed acute abdominal discomfort during afternoon tea. Some hours later, during supper, she found a difficulty in swallowing, and a tendency for fluids to regurgitate through the nose. The next morning her own medical adviser, Dr. McHattie, found the palate severely paralysed. He also noted that the right vocal cord was immobile, and that the patient had loss of sensibility to temperature and pain on the left side of the body. The urine contained a considerable quantity of albumen.

When I saw her, four days later, there was no unconsciousness, nor any affection of any of the higher cerebral centres. The patient's speech was normal. The articulation was perhaps a little thick. The optic discs were normal. In connexion with the eyes, there was evidence of paralysis of the oculo-pupillary division of the cervical sympathetic on the right side, there being contraction of the right pupil, enophthalmos of the right eye, and slight drooping of the right upper lid without paralysis of the levator. The pupils reacted normally. The only other abnormality in the domain of the cranial nerves was that the right side of the palate lagged behind the left on phonation, and that the right vocal cord moved less freely than the left. There was no cutaneous anaesthesia to the lightest touches. There was, however, total analgesia and therm-anaesthesia on the left side of the head, trunk, and limbs, except in the territory of the fifth nerve. There was no giddiness. The motor functions of the arms and legs were normal. The knee-jerks were normal and equal, and the plantar reflexes were extensor in type. The temperature was normal. The blood pressure was 164 mm. of Hg. The heart, which was normal in size, was very irregular in rhythm, and had a systolic mitral bruit.

In this case the total interruption of the paths for temperature and pain on the left side of the body pointed to a lesion on the right side of the pons or medulla close to the surface. The escape of the fifth nerve showed that the level of the lesion must be below the middle of the pons. The absence of vertigo or other aural phenomena, together with the presence of paralysis of the right palate and vocal cord, pointed to a lesion of the vagal nucleus.

A week later the patient had another attack in which there was superadded a complete right hemiplegia, evidently from a second lesion higher up. This second attack proved fatal in a few hours.

Case IX.—*Left-sided Bulbar Thrombosis.*

The patient was a man of 50, of exceptional intelligence and culture, who, twenty years previously, acquired syphilis in the left eye (by infection from another syphilitic patient who coughed in his face). Irido-cyclitis with subsequent blindness followed in the affected eye, in spite of assiduous anti-specific treatment. Ten years ago, when convalescing from an attack of diphtheria, he suddenly developed acute nystagmus, vertigo, and vomiting, and fell persistently to the left. The vertigo lasted a few months, since when it had been intermittent, but after the attack he noticed that he had complete loss of sensibility to pain and temperature in the right side of the body. He also had at the start some temporary weakness of the left arm and the right leg, which soon cleared up. The left side of the palate and the left vocal cord were completely paralysed. About three years ago nerve deafness appeared, probably syphilitic in origin, and has since become complete.

On examination, the right optic disc and right pupil were normal. There was atrophy of the left optic disc with old choroido-retinitis. The pupil in the blind eye did not react to light, and there was an external strabismus, such as we often observe in a blind eye. There was no true ocular paralysis, however, nor any nystagmus. Both pupils reacted to light. The face, palate, and tongue were normal. The paralysis of the left palate had cleared up, but the left vocal cord was fixed in the cadaveric position. There was no cutaneous anaesthesia, but there was total analgesia and therm-anaesthesia of the whole of the right side of the body, with the exception of the trigeminal area of the face and anterior half of the scalp. There was no motor weakness or ataxia of the limbs or trunk; the knee-jerks and ankle-jerks were normal. The left plantar reflex was extensor in type, the right was doubtful. There was both delay and precipitancy of micturition. The cerebro-spinal fluid contained a large excess of lymphocytes, numbering 28.2 per cubic millimetre. The heart was normal, so also was the urine.

The symptoms in this case pointed clearly to a lesion in the left ponto-medullary angle, apparently of the nature of a syphilitic thrombosis of the posterior inferior cerebellar artery, interrupting the path for temperature and pain from the opposite side of the body, and leaving unaffected that for tactile sense, which runs more mesially in the formatio reticularis. The lesion also implicated the part of the vagal nucleus (nucleus ambiguus) associated with the motor innervation of the palate, which cleared up, and of the vocal cord, which remained paralysed. At the time of onset the adjacent inferior peduncle of the cerebellum was also temporarily implicated, producing the reeling and forced movements to the left, nystagmus, and vertigo, whilst there appears to have been some interference with the pyramidal paths, which largely cleared up.

Case X.—*Left-sided Thrombosis of Medulla.*

A German waiter, 28 years of age, became violently sick one morning when drinking a cup of coffee. Two hours later he suddenly felt intensely giddy, saw double, and when he tried to walk felt himself pulled strongly towards the left side. When I saw him later in the day I found him perfectly intelligent, with normal speech and articulation. The optic discs were normal. There was coarse rotato-lateral nystagmus even with the eyes at rest, not specially exaggerated on looking in various directions. The diplopia had passed off. The external ocular movements were fully executed in all directions. The face, muscles of mastication, and tongue were normal. The left side of the palate was paralysed. The larynx was not examined. There was no cutaneous anaesthesia or analgesia; nor was there any

weakness or ataxia of the arms and legs as he lay in bed. On asking him to sit up he at once fell to the left. When attempting to walk with support on both sides he also fell to the left, feeling himself forcibly drawn to that side. The knee-jerks and plantar reflexes were normal. The blood pressure was low. The heart was not energetic. The urine was free from albumen.

The above signs pointed to a sudden vascular lesion in the region of the left side of the bulb, implicating the inferior peduncle of the cerebellum and the adjacent nucleus of the vagus, as evidenced by the forced movements and the unilateral paralysis of the palate.

In a man of his age the likeliest cause was a syphilitic thrombosis. The patient denied all venereal disease, but a local examination showed the scar of an old chancre, together with a chronic gonorrhoea in full flood. He was therefore at once placed upon energetic antisyphilitic treatment. Unfortunately I did not see him again.

The last group of cases to which I would direct your attention is that of extramedullary lesions, in which you will note the presence of bulbar symptoms implicating the palate, larynx, and other parts, but without implication of the long sensory or motor tracts of the brain-stem.

CASE XI.—*Right-sided Extramedullary Lesion: Caries of Sphenoid Bone.*

A man 42 years of age, who denied venereal disease, began to suffer, twelve months before he came under observation, from continuous vertical headache. The pain spread later to the bridge of the nose and to the right infraorbital region. Seven months ago the hearing in the right ear began to be impaired. Five months ago he developed difficulty in swallowing, and soon after this his voice became hoarse. Three months ago he noticed a subjective sensation of numbness together with loss of feeling in the right side of the face, starting below the right eye, and at the same time he observed that his jaw swung to the right when he opened it. Two months ago he developed double vision. There was no vertigo. He felt generally feeble and weak on his legs, but had no localized weakness of any limb.

On examination he was thin and haggard. Mentally, he was intelligent, and his speech was normal. The voice was very hoarse. Smell was acute in both nostrils. Taste as tested with a gentle galvanic current was lost all over the right side of the tongue. A tuning-fork on the vertex was heard louder in the right ear: and there was also slight deafness aërially to a watch-tick in the right ear. The optic discs and pupils were normal. There was total paralysis of the right external rectus with diplopia on looking to the right. The right side of the face and scalp was practically anaesthetic over the right supraorbital region, right upper lip, and right side of nose, in the area of the second division of the fifth. There was wasting and paralysis of the right masseter and temporal muscle, and also of the right external pterygoid, as evidenced by the swinging of the jaw towards the right side when the mouth was opened. There was slight weakness of the right facial muscles, upper and lower. The right palate and right vocal cord were paralysed. The voice was husky. The patient could not cough explosively. The right sterno mastoid and right trapezius were paralysed. The right half of the tongue was moderately wasted, and the tip of the tongue, when protruded, deviated to the right side. There was neither anaesthesia nor motor weakness of the limbs or trunk. The reflexes in the limbs were normal and equal on the two sides. The sphincters were normal. There was some dullness at the apex of the right lung.

The above signs pointed clearly to an extramedullary organic lesion involving all the cranial nerves, from the fifth to the twelfth inclusive, on the right side, but not implicating the cerebro-spinal axis itself.

The patient died suddenly from haemoptysis. This we expected to be due to preliminary haemorrhage, but an autopsy showed that the sphenoid bone was carious and suppurating, and ulceration had occurred in the naso-pharynx, such ulceration being the immediate cause of the fatal haemorrhage. The brain and membranes were normal, and the cranial nerve palsies had been produced by disease of the bone traversed by the foramina of exit.

CASE XII.—*Extramedullary Gumma of Right Side of Medulla.*

The patient, a photographer, 29 years of age, acquired syphilis seven years ago, for which he underwent two years' treatment. Two months ago he began to have intense frontal headache, day and night, without vomiting. Four weeks ago his voice became husky, and he had some difficulty in swallowing, but no nasal regurgitation.

On examination the optic discs, pupils, external ocular movements, muscles of mastication, and facial muscles were all normal. Smell, taste, and hearing were acute on both sides. There was total paralysis of the right palate, and the right vocal cord was immobile in the cadaveric position. In addition the right sterno-mastoid and right trapezius were paralysed and devoid of reaction to faradism. Only a few strands, about the breadth of a pencil, survived in the trapezius—fibres probably supplied, separately from the spinal accessory, by the third and fourth cervical nerves. This wasting of the trapezius rendered the levator anguli scapulae and rhomboids subcutaneous, and changed the outline of the neck and shoulder, owing to the outward displacement of the scapula. The right half of the tongue was wasted, and when protruded it became curved so as to point to the paralysed side. There was no cutaneous anaesthesia or analgesia. The motor power of the trunk and limbs was unimpaired. The knee-jerks and ankle-jerks were normal, and the plantar reflexes were flexor in type.

In this case the combination of symptoms pointed to paralysis of the lower roots of the vagus, the spinal accessory, and the hypoglossal nerve on the right side. The absence of anaesthesia or motor weakness of the limbs, together with the absence of vertigo or ataxia, showed that the great conducting tracts of the brain stem were unaffected, and that we had to do with an extramedullary lesion of these three cranial nerves, probably syphilitic in origin.

Cases like the above might easily be multiplied, but time does not permit me to detain you longer.

Gentlemen, I have offered you no new facts. Nevertheless, I trust that the cases which I have quoted may be of some interest, and that they will serve to exemplify how we may utilize old and familiar facts for the elucidation of less common maladies.

INJURIES TO THE EYE.*

BY

ARCHIBALD STANLEY PERCIVAL, M.B., B.C. CANTAB.

SENIOR SURGEON TO THE EYE INFIRMARY, NEWCASTLE-UPON-TYNE.

I ONLY propose to speak about a few of the most common injuries of the eye. If a patient should present himself with one eye that has suddenly become very red, always suspect the presence of a foreign body in it. Let the source of light be on the temporal side, and concentrate it into a cone by means of a large lens on to the eye. If the foreign body is not seen on the cornea, draw down the lower lid and look in the lower fornix; the upper lid should then be everted, and the foreign body will usually be found in the furrow behind the margin of the lid. Finally, it may be situated in the upper fornix. Bodies may lie here undetected for weeks, as the fornix is never disclosed by merely everting the lid. The everted lid may either be grasped longitudinally with a pair of forceps and rotated again upwards, or a wad of cotton-wool wound round the end of a probe, to form a sort of brush, may be inserted into the fornix, and the whole space wiped out; any particle that lies there will almost certainly be found adhering to the cotton-wool. Incidentally I may say that the easiest way of getting a particle of dust from one's own eye, when lodged in the furrow of the upper lid, is to draw down the upper lid over the lower lid, when the eyelashes of the lower lid will brush out the dust.

The cornea is covered with a layer of epithelium that lies on Bowman's membrane, immediately beneath this is the substantia propria of the cornea. Now, if an abrasion of the cornea occurs which has not perforated Bowman's membrane, no scar will result. If, however, Bowman's membrane be injured, a scar or nebula will certainly result. Injuries with twigs of trees or particles of stone or coal are peculiarly liable to give rise to hypopyon ulcers. In such cases where Bowman's membrane has been injured, I think it well to give drops of atropine and quinine; of this I shall speak presently. It may be noted that abrasions of the cornea with the finger-nail are especially liable to give rise to recurrent irritation or traumatic keratalgia, as it is somewhat ponderously named.

When removing a foreign body from the cornea always use a lens. A spring glass like this [shown] is what I recommend. There is no necessity to fix the eye; the patient, if his eye has been cocainized, will keep his eye quite still, and in most cases the spud will easily lift the foreign body out. Sometimes one will have to use the needle if the particle has got under a flap of the cornea but in every case I would urge you to use the spring glass. With it difficult cases become easy, and one avoids doing unnecessary damage to the cornea. If the foreign body be very deeply embedded, or if it protrude through Descemet's membrane, attempts to displace it with a spud alone will almost certainly push it through into the anterior chamber, and it will probably wound the lens. In such a case a narrow keratome must be introduced into the anterior chamber near the corneal margin, and it will be found that when its flat surface is under the foreign body its removal will be easily effected.

* Read at the all-day scientific meeting of the Northern Branch of the British Medical Association.

If the foreign body have penetrated the eye, when magnetic it should be removed by a magnet. When not magnetic, it must be seized by forceps through a suitable incision, and once seized must never be let go until outside the eye. Should the opening be too small to allow its withdrawal, the scissors or knife must be used with the other hand, but the attention on the forceps must be maintained. Nothing will excuse the release of a foreign body that has once been grasped; the opportunity of seizing it will probably never occur again—until the eye is excised.

In some cases the foreign body need not be removed at once. Whenever it is embedded in the lens it should be left until the time arrives for dealing with it and the cataract at the same time, for in such cases, unless the body be virulently septic, there is practically no danger of sympathetic ophthalmia. Of course, if the lens be much swollen and the tension be raised, operative interference must not be delayed.

The most important point on which we may at any time have to give our opinion is what cases of injury should be regarded as liable to give rise to sympathetic ophthalmia, and under what circumstances the injured eye should be removed at once. One may read two or three hundred pages on sympathetic ophthalmia in different books, and be no better able to give a definite, decided opinion upon the specific case before one. After a prolonged study of the literature and of the cases in my own experience I find that a sound opinion can be formed on applying a few simple and easy principles.

In almost every case of sympathetic ophthalmia the exciting eye has been previously perforated either by injury or by ulceration. Hence, every perforating wound which is not known to be aseptic is always a source of great anxiety. The risk is extreme—

1. If the wound be in the *ciliary region*; this dangerous area may be defined as the zone ¼ in. in width that surrounds the margin of the cornea.

2. If the wound be *septic*—often this can only be recognized by its consequences; it should, however, be noted that wounds giving rise to suppurative panophthalmitis are not liable to induce sympathetic ophthalmia.

3. If a *foreign body be retained* in the eye, its removal being impossible.

Immediate excision of the eye is indicated by the concurrence of two of these conditions, even though some sight be retained; by the occurrence of one of them if sight be irreparably lost, provided that the vision of the other eye be good, and that it shows no sign of iridocyclitis. Under other circumstances excision of the eye may be delayed until symptoms arise without much risk, but operative interference is necessary when there is persistent severe or recurrent iritis, when the eye is tender or when it becomes soft, or when the other eye is the seat of sympathetic irritation.

If iridocyclitis have already occurred in the other eye, excision of the exciter should only be performed if vision be absolutely lost beyond hope of recovery, as often the exciting eye will have eventually the better vision. If the other eye be blind or absent, intractable pain is practically the only condition of the injured eye that demands its excision, and neurectomy may sometimes be advantageously substituted for this.

In this district we very often have septic injuries to deal with, and in such cases we should use a powerful germicide. The most effective for use on the cornea are the actual cautery and pure carbolic applied with a wooden match to the injured part. Zeal for asepsis does not excuse unnecessary meddlesome interference. Before adopting, or indeed withholding, any active treatment we should ask ourselves two questions—What good will it do? and What harm may it do? One should *not* cauterize a central corneal perforating wound leaving an indelible opaque cornea scar just over the pupil, except as a last resort, when all other methods have failed. The cornea when touched with pure carbolic becomes white, and by the next day will have gained its normal transparency, but the greatest care must be taken that none of the carbolic touches the conjunctiva, or an intense irritation will result. However, carbolic is by no means always successful, as will be seen in some of the cases I will show. With them hypopyon or pus in the anterior chamber resulted. Now, owing to the work of Leber, we have learnt to distinguish two kinds of hypopyon. In one there is no perforation of Descemet's membrane, and in these the pus is sterile. In fact Descemet's membrane behaves like a Pasteur-Chamberland filter—it prevents the passage of micro-organisms, but it allows their toxins to transude through it, and so poisons the leucocytes that crowd into the anterior chamber. In such cases I am convinced that the best treatment is to sterilize the wound with carbolic if central or the actual cautery if peripheral, to give mercuric iodide lotion (1 in 6,000) and quinine bihydrochloride gr. 5, atropine drops ½ per cent. ad ʒss. The quinine, although not a powerful antiseptic, gets through into the anterior chamber unchanged, whereas corrosive sublimate becomes changed into a perfectly innocent albuminate, and does no good in the anterior chamber.

If there is a perforation of Descemet's membrane the pus is certainly septic, and one can incise the cornea when necessary to let it out. If the pus is thick and sticky, one is much more sure of getting it all evacuated if the incision be radial than if it be horizontal at the corneal margin. After incision the anterior chamber will be infected, and consequently I delay doing it in cases of sterile hypopyon.

As the hypopyon, if at all extensive, will certainly leave an opaque cornea, it is clear that evacuation should be done before the pus has covered up the pupil.

I have deferred speaking of prolapse of the iris through a wound until the end, as my practice differs essentially from that recommended in the books. If seen within two hours after the injury, one can be almost certain of getting it replaced by using eserine or pilocarpine if the wound is peripheral, or atropine if the wound is central, aided, if necessary, by a little prodding with the repositor. Replacement is hopeless twelve hours after the injury. Now the books recommend immediate excision of the protruded part. If we ask ourselves, What good will it do? we see that it will remove the tag, but leave an anterior synechion, the lips of the corneal wound being separated by the intruded stump of the iris. When we ask ourselves, What harm may it do? we see that we open up a ready path for infection of the whole eyeball. I have seen too many eyeballs destroyed in this way to speak in its favour. If the prolapse is left, it will wither in a little time, and when necessary can be cauterized.

If the injury be due to some chemical substance, one must be prompt in applying the readiest chemical remedy. For instance, after a splash of ammonia don't send out for HCl, but apply an acid that is to hand—vinegar, for instance. For injuries with lime which may lead to absolute loss of sight and to a cicatricial union of the eyeball to the lids you will find in nearly all the textbooks a solution of sugar advised, on the ground that an innocuous saccharate of calcium is thereby formed. Some of the authorities—it would be invidious to name them—say it is insoluble, others say it is soluble. Those of you who have actually tried to make saccharate of calcium will know that it cannot be formed on applying it to the eye. Parsons now tells us that it is harmful.

I think all we can do is to try and remove every particle of lime and give some simple lotion like boric acid.

Some years ago a member of our profession in this district lost one eye from a splash of chromic acid. In such a case H_2O_2 ought to have been used.

At a meeting of the Harveian Society on October 13th, the exhibits included two cases of rodent ulcer shown by Dr. Graham Little. One had healed after two applications of zinc ions at an interval of a fortnight, and the other after three applications of carbonic acid snow similarly interspaced.

In the course of his presidential address at the annual meeting of the Society of Medical Officers of Health on October 14th, Dr. W. G. Willoughby said that he looked upon friendly relations between medical officers of health and local practitioners as of the utmost importance, and matters such as school clinics should not be allowed to interfere with them. Co-operation not only made the duties of the medical officer more pleasant, but also more efficacious. The commencement of many useful public health measures had been made possible only by the self-sacrificing action of the medical profession, and it was a mere truism to say that the help of the general body of practitioners was essential to a perfect health service.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF GYNAECOLOGY AND OBSTETRICS.

Mrs. Mary A. D. Scharlieb, M.D., President.

DISCUSSION ON THE CAUSES AND TREATMENT OF DYSMENORRHOEA.

OPENING PAPER.

By G. Ernest Herman, M.B.Lond., F.R.C.P.,
Consulting Obstetric Physician to the London Hospital, etc.

The frequency with which I have put my views on this subject before the profession has the advantage that I can excuse myself for speaking in what might seem too dogmatic fashion by referring to former papers as containing the reasons for what I say; while if those who take part in this discussion happen to have read my former papers,[1] their criticisms will at least not be hasty.

The first question that arises is, What is dysmenorrhoea? Some take it to mean any kind of pain or discomfort when the patient menstruates. They say that it is a symptom, and that for its treatment the cause must be discovered. If it means this, my comment is that our discussion would range over the whole field of disease in woman; there is scarcely any disease of any part of the body that may not, as one of its manifestations, cause some increased trouble when menstruation occurs.

I hold that there is but one disease to which the term "dysmenorrhoea" ought to be applied. This disease is one *sui generis*. It consists in terribly severe spasms of uterine colic at the time of menstruation. It is often associated with absence of sexual feeling and sterility in marriage. It is in most cases cured by dilating the cervical canal, by which treatment often sexual feeling is produced and sterility cured.

According to the best numerical estimate that I can form, rather more than a third but less than a half of English women menstruate without pain. About one woman in eight is accustomed to lie up during part or the whole of the time that she is menstruating. But not every woman who lies up when she menstruates suffers from dysmenorrhoea. Discomfort of which a strong woman will take no notice will prostrate a weakly one.

Patients with dysmenorrhoea usually suffer from more than one kind of pain. Beside the spasms of dysmenorrhoea they have the general lassitude and pelvic aching that precedes and accompanies menstruation in all but the fortunate minority. But even if the sufferer had at the beginning no other pain than that of dysmenorrhoea, yet when the terrible spasms of pain have recurred month after month for years, the resistance of the central nervous system to pain becomes reduced, and reflected pain is felt over the area supplied with sensory nerves from the tenth, eleventh, and twelfth dorsal, and the first lumbar, segments of the spinal cord. There is tenderness over the skin supplied from these segments.

The characteristic features of the pain of true dysmenorrhoea are its sudden onset, its short duration, its extreme severity, and its not being relieved by lying down. Sometimes the pain suddenly wakes the victim up at night. I have known the pain only to last ten minutes, but in this brief period it was enough to make the patient vomit. It is exceptional for it to last more than twenty-four hours. It is not relieved by lying down. Patients' friends often describe how they roll about and writhe with pain. Often the patient vomits, sometimes faints. There is hardly any disease of the pelvic organs which causes pain so severe.

The extreme severity of the pain is one of the best criteria of genuine dysmenorrhoea. At the time when Mackintosh practised he had neither anaesthetics nor antiseptics, and operative treatment was not so freely advised or so readily accepted as at the present day. I think that we may assume that the young women who before 1836 allowed Dr. Mackintosh to dilate the cervical canal in order to relieve their monthly pain almost certainly suffered severely. Dr. Mackintosh[2] up to 1836 had thus treated 27 patients, 24 of whom were cured. I doubt if the records of any gynaecologist of the present day could show such a large proportion of cures. The reason is that anaesthetics and antiseptics have so removed the objections to local treatment that it is now employed in many cases, not because the operator is sure that it will do good, but because he thinks it may do good and knows of nothing else that will. This is a good reason for dilating the cervix, for it is a harmless procedure, which leaves the patient none the worse. But a series of cases selected on this principle is sure to include many which are not dysmenorrhoea, but merely monthly pain or discomfort due to psychasthenia or neurasthenia. In the early years of the nineteenth century young women would suffer a good deal before they would submit to a painful operation on the cervix uteri, and their mothers would have had to be convinced that the suffering was real before they would have let them incur the risk; so that I think Mackintosh's cases were carefully selected, hence his large proportion of cures.

There is a kind of dysmenorrhoea which writers of textbooks are almost unanimous in accepting, which in my judgement does not exist, namely, "obstructive dysmenorrhoea." Cases occur of obstruction to the outflow of menstrual fluid; but such obstruction does not produce pain so severe as the terrible spasms of dysmenorrhoea. Pain in this condition is usually slight; sometimes there is none. The condition generally lasts for months or years before the patient's mother or guardian thinks it necessary that she should see a doctor; and then it usually is because menstruation has not arrived, although the external signs of puberty have long been present. Sometimes the doctor is consulted because a swelling in the abdomen has been noticed, but hardly ever on account of pain. The fact that there is pain usually has to be elicited by questions.

Membranous dysmenorrhoea is another thing which I hold not to exist. The passage of a membrane from the uterus during menstruation is common. Robust women pass them without pain. Pain accompanying the passage of a membrane is usually an indication of neurasthenia or psychasthenia. Such pain is hardly ever so severe as that of true dysmenorrhoea. When in a patient who passes membranes with pain the tone of the nervous system can be restored, by rest, plenty of food and sound sleep, she will pass membranes without pain. In abortion, the substance to be passed is larger than a menstrual decidua, and there is pain; but the pain is seldom severe. The patient usually sends for a doctor because the haemorrhage alarms her, not because the pain is intolerable. The passage of a membrane each month is commoner than dysmenorrhoea. But dysmenorrhoea may afflict a patient who passes a membrane each month. In such a case it is possible for a woman to be cured of her dysmenorrhoea, and yet go on passing membranes. Membranous dysmenorrhoea is usually only a manifestation of neurasthenia or pyschasthenia.

Dysmenorrhoea depends not upon the size, shape, or position of the uterus, or upon the size of the cervical canal, or the os externum. It occurs when the uterine canal is straight as well as when it is bent. The angle in the canal, and the dilatation of the uterine cavity behind it, which at one time were shown in diagrams in many textbooks, have never been found to exist in an actual section of a uterus. I have seen cases, and so have other people, in which the os externum was round and so small that an ordinary uterine sound could not be passed through it, but there was no dysmenorrhoea. In some of the worst cases of dysmenorrhoea the os externum is of ample size, and the sound can be passed easily.

Many other kinds of dysmenorrhoea have been described. Gebhard[3] says the causes of dysmenorrhoea

may be disease of the tubes, the ovaries, the serous covering of these organs, or the pelvic connective tissue. These he would class together as "inflammatory dysmenorrhoea." Its characters are pain seven to ten days before menstruation begins, lessened when the flow appears, and ceasing when the flow has become free, a dull pain, a feeling of weight and fullness; in many cases there is also head and stomach pain.

This is a correct clinical picture; but it is not dysmenorrhoea. It is pelvic pain due to inflammation, made worse by the premenstrual vascular tension. It should be called by the name of the local morbid change which is present.

Among other things which, according to Gebhard's view, we should include under the term "dysmenorrhoea" are hysterical contractures and paralyses, psychoses of various kinds, disorders of the stomach, enlargement of the liver, jaundice, biliary colic, tuberculous disease of the lungs, heart failure, movable kidney.

Doubtless a monthly aggravation of the symptoms of these different maladies under the strain of menstruation has been observed. But this is not dysmenorrhoea. I think that nothing but confusion can result from calling such different conditions by the same name, even though qualified by different adjectives.

This, then, is the answer I give to the question, What is dysmenorrhoea? It is spasms of uterine colic, recurring with each menstruation. It is a disease *sui generis;* unlike any other. I think that there is an absence of the dilatation or relaxation of the cervix which ought to accompany contraction of the body, and these contractions are therefore violent and painful. There is no mechanical hindrance to the escape of blood. There is plenty of room for the patient to bleed to death if enough blood escaped from the vessels.

The next question we are invited to discuss is the *cause* of dysmenorrhoea. Much has been written about this, and many causes assigned. I know nothing about the cause or causes of dysmenorrhoea.

The test of knowledge is the power of prediction. Let me illustrate. If an oculist examines the eyes of a young girl and finds a high degree of hypermetropia and astigmatism, he can predict what will happen if she spends much time in reading without proper spectacles. But, given an apparently healthy young girl who has not yet menstruated, I know of no criteria which will enable any one to predict that this particular girl when she menstruates will suffer pain, or that she will not.

In about two-thirds of the cases dysmenorrhoea dates from the beginning of menstruation; in about one third it begins later. It is rare for it to develop after 25. Dysmenorrhoea is thus a disease of adolescence. If the patient is questioned closely enough as to what she thinks may have been the cause of her pain, she can generally recollect something on which she can put the blame. But I know of no antecedent so constant or so clear in its mode of action that I can explain by it the production of pain. I think dysmenorrhoea occurs chiefly in what are called "neurotic" people—that is, in the people with the most highly developed nervous systems; for, the more complicated a machine is the more easily it is put out of order. Although I think this general assertion is in harmony with clinical experience, yet I can formulate no criteria by which these people are to be distinguished from others.

Dysmenorrhoea has no tendency to spontaneous cure. On the contrary, in the words of Dr. Mackintosh, who wrote what I think must have been the first good description of the disease:

> These periodical sufferings, however slight at first, afterwards became more severe and of longer duration, so that at length some women are beginning only to recover from the effects of one period when the approach of the next is close at hand.

The explanation given by modern neurologists is that the spasms of pain felt along the nerves running from the uterus to the spinal cord so disturb those segments of the cord, that reflected pains are felt in regions supplied with sensory nerves from those segments. As the pains recur month after month the disturbance becomes more and more severe, is sooner and more easily provoked, and more slowly quiets down.

When dysmenorrhoea occurs late in life, the most common cause is a fibroid or fibroids.

The only natural cure for dysmenorrhoea is pregnancy. By the birth of a child the cervical canal is dilated to the fullest extent, the dilator being the child's head. I am told that among the negro population of the West Indies this is well known, and a girl suffering from dysmenorrhoea will be told by older women that she should have a baby. But the laws which govern social life among the more highly civilized races prevent this remedy being available for every patient, and sterility is often part of the disease.

I have now to discuss the *treatment* of dysmenorrhoea. The first proposition that I have to lay down is that every case of dysmenorrhoea can be cured. This has to be tempered with the admission that in many cases the cure is worse than the disease. The radical cure is to stop menstruation by removing the ovaries. This is a thing seldom to be considered. The thing that is desirable is to preserve menstruation but to stop the pain. From this point of view there are two aims in treatment: (*a*) The relief of the pain when it has arrived, and (*b*) to prevent the pain from coming.

First, (*a*) the pain, when it has arrived, can always be abolished by the hypodermic injection of sufficient morphine. The objection to this is the danger of setting up the morphine habit, which is a worse disease than dysmenorrhoea. The best analgesics are the coal tar derivatives—antipyrin, phenacetin, aspirin, pyramidon. I know of no harm from these drugs. But in the worst cases they do not relieve, and sometimes the patients vomit and cannot keep the drug down.

The general aching and malaise and lassitude that comes in weak patients from the raised vascular tension and reduced nervous tone that precedes and accompanies menstruation is not cured by anything except restoring the nervous tone, if possible, by food, rest, and sound sleep.

There is one drug which will often cure dysmenorrhoea—namely, guaiacum. The least disagreeable way in which patients can take it is in cachets. I prescribe in this form 10 grains of guaiacum resin to be taken three times a day. Sometimes this causes a little flatulence, colicky pain, and diarrhoea. If so, it is well to add to each dose 1 grain of pulv. ipecac. co. I have been accustomed to advise the patient to begin taking it a week before menstruation was expected. I doubt if it is necessary to begin it so long before; but I have thought it better to give the drug the best possible chance.

I cannot give numerical results on account of the difficulty of following up the cases. But I will relate illustrative reports:

One patient, a very intelligent lady, as will appear from the details she gives, first consulted me in 1895. She began to menstruate at the age of 17, but had no severe pain till the age of 21. Then she began to have pain, which she compared to "dagger thrusts." She was married at the age of 25. When she was 26 the cervical canal was dilated. After this she menstruated three times without pain, then the pain returned. At the age of 30 she became a widow. She was married a second time at the age of 34. In January, 1908, she consulted me again about her menstrual pain. She said it was "awful," and lasted four hours. I prescribed guaiacum. For the purpose of this discussion I wrote to ask her the result, and I epitomize her reply. She takes the guaiacum every month. The best results are always when she takes it a couple of days beforehand, though she only takes it once a day for those two days, unless she specially wants to make sure of being very well for some particular engagement, when she takes it twice a day. When she takes it three times a day she is ever so much better, and can almost say she has *no* pain at all. Being so much better she forgot about the medicine about six weeks ago, and had a very bad three hours. She has suffered, she thinks, "as much as anybody could do"; had tried nearly everything else, and had almost given up hope of being any better. She can now get about while menstruating if she has to; for instance, she went on the first day to see the late King's funeral procession, without any bad result.

I relate another case:

An unmarried patient, aged 21, I saw on March 1st, 1909. She began to menstruate at the age of 12; had always been regular, with a copious flow lasting six days. She suffered from slight aching a week before; severe pain for two days. Guaiacum was prescribed, as in the preceding case. In answer to inquiry, I have a letter dated June 6th, 1910. She says, "While I took the cachets I had no pain whatever." She has not taken any since July, 1909, and the pain has since been so slight that she has not thought it necessary to take them.

In another case which I quote for the sake of illustration, the report is:

> My daughter still has rather a trying time; she says *the actual pain has not been so severe*, but the backache, lassitude, and general upset is not much improved.

This report clearly defines the two kinds of pain—the spasms of dysmenorrhoea, which were made less severe by the drug, and the reflected pain called out by the reduced resistance of the nervous system incident to the vascular disturbance accompanying menstruation which was not improved.

Guaiacum will not cure every patient. Even if each month when it is taken pain is lessened or abolished, yet the patient cannot be said to be cured so long as she is still dependent upon medicine.

The cure of dysmenorrhoea is by dilatation of the cervix. In the most complete form of the disease dilatation of the cervix will abolish the menstrual pain, develop sexual feeling, and cure sterility.

The best way of dilating the cervix is by metallic bougies, as recommended by Mackintosh. He used "metal bougies of different sizes, from that of the ordinary small silver probe to No. 14." I think the gradnation of the bougies according to the English catheter scale is better than increasing the size by a millimetre in diameter, as in Hegar's dilators. The difference in size being less, the dilatation is more gradual and gentler. In dilating the cervix by bougies the force used is appreciable by the operator's hand. This is not so in the case of a tent. The tissue forming the os internum is sometimes so rigid that even the enormous pressure exerted by a laminaria tent, which Duncan found by experiment to be over 600 lb. to the square inch, fails sometimes to dilate it. The tent in such a case expands above and below the os internum; and surgeons have found themselves obliged to cut through the cervix in order to remove the tent.

I do not think a tent is in these cases the best way of dilating the cervix; but, if a tent is used, it should not be too thick a one. Two slender tents side by side are better than one thick one. Still less do I approve dilators, of which many have been devised, of composite blades made to diverge by a screw after being passed into the uterus. These instruments tear the cervix instead of stretching it. The operator with one of these weapons cannot measure the force he is using.

Dilatation with metallic bougies is, in my opinion, the best treatment. The next question is, How much dilatation? Mackintosh used no bougie larger than No. 14. In this he did more, rather than less, than was necessary.

The following case may be interesting on account of the long period during which the patient's history is known, and also as illustrating the amount of dilatation which is effective. The patient was born in 1851. She began to menstruate in 1867. Was married in 1875. Menstruation was always painful, laying her up every month, worse after marriage. In November, 1878, bougies 6, 7, and 8 were passed through the os internum without any anaesthetic. The dilatation was not carried further, on account of the pain it caused. With the next menstruation the pain, though not quite absent, yet was described by the patient as nothing compared with what it used to be. In December, 1878, bougies from 6 to 10 were passed. No. 10 was firmly gripped, and produced acute pain, said by the patient to resemble that of menstruation. I last saw this patient in the autumn of 1903. She then told me that menstruation had ceased in 1901. She had never been pregnant. She had had no menstrual pain since the last dilatation in 1878.

There are cases in which the os externum, instead of being a slit such as suggested to our forefathers the name "*os tincae*," is a small circular opening. The smallness and the circular shape do not denote dysmenorrhoea, for they have been observed in many women who menstruated without pain. Nor are such women sterile. But if a patient with such a small circular os externum becomes pregnant the membranes cannot effectually bulge into the small os externum, and we have a case in which labour pains go on for twenty-four or forty-eight hours or more without appreciable dilatation.

In the early Seventies the routine treatment in London of dysmenorrhoea was to divide the vaginal portion. Some did this bilaterally; some in one place only. In many cases this proved successful. It was dropped because cases were met with in which, after the vaginal portion had been divided without curing the patient, dilatation of the internal os did cure her. But the cases of small circular os externum are those in which it seems to me good practice to divide the vaginal portion as well as dilate the os internum, so that, should pregnancy afterwards occur, morbid prolongation of the first stage of labour may be prevented.

There is a more dangerous way of dilating the cervix, which is putting a stem into the uterine canal and leaving it there. The lower part of the vagina of every woman contains millions of micro-organisms of many kinds; and therefore, although it may be possible to make a stem or bougie aseptic for a short time, it is not possible to keep it so while its lower end remains in the vagina.

Every case of dysmenorrhoea can be cured by stopping menstruation; that is, by removing the ovaries. The danger from the operation is so small, and the suffering involved so slight, that it would be a delightful thing to be able to tell the patient that she could be cured so easily were it not for the very serious ulterior consequences. These are of course the loss of the potentialities of marriage and motherhood. This means the loss of the patient's greatest potential happiness. If the patient is young, she will, if rightly instructed, summon up all her fortitude and bear the pain as long as she possibly can. But when a patient has passed the age of greatest fecundity and has still no prospect of marriage; still more if she has reached the age (35) at which, if she marries, she is more likely to be sterile than to have children, then I think she is entitled if she chooses to ask to be relieved of menstruation and the sufferings attending it. She alone knows how much she suffers; and she alone can judge of the value to herself of what she is renouncing.

There are cases in which even at an early age it may be proper to stop menstruation. If a young woman has no relatives who can support her, has to earn her living, and cannot keep a situation because every month she is prostrated by pain, she may fairly claim to decide for herself, and, if she thinks fit, sacrifice the possibilities of marriage and motherhood.

In patients who have grown accustomed to be invalids for some days each month, being reduced to that condition by the dysmenorrhoeal spasms and the reflected pain which precedes and follows them, the segment of the spinal cord which was disturbed by the menstrual pain does not at once regain its normal tone. Reflected pain recurs at monthly intervals as before. But it gets less and less each month, and usually after six months is either absent or trifling.

Before advising oöphorectomy it is necessary to be quite sure that the case is one of dysmenorrhoea; that the pain has arisen out of menstruation and nothing else; that it is not merely a monthly manifestation of psychasthenia, neurasthenia, or hysteria, nor pain, such as biliary, renal, or intestinal colic, due to some local disease which independently of menstruation would cause pain. If the pain is not dysmenorrhoeal, removal of the ovaries will not cure it.

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DISCUSSION.

Professor GOTTSCHALK (Berlin) said that in the treatment of dysmenorrhoea it was of great importance to recognize the cause. General treatment was indicated in cases of anaemia, hysteria, neuralgia, and general nervous debility, while in cases of tuberculosis vigorous tonic treatment and improved hygiene should be followed. In some cases with nervous debility cauterization of the septum nasale (Fliess) might be successful. In cases with increased blood pressure, oxygen and air baths might calm the pains. Aplasia of the uterus could produce dysmenorrhoea. A narrowing of the internal cervical os was a frequent etiological factor in mechanical dysmenorrhoea, as also was pathological anteflexion of the uterus and anteflexion of the cervix caused by deep insertion of the ligamentum sacro-uterinum on the cervix. In these cases local treatment was to be followed. The speaker obtained dilatation of the internal os of the cervix by means of laminaria tents increased in size on three successive days. On the fourth day the uterine cavity might be packed with iodoform or isoform gauze; this gauze should be removed at the end of forty-eight hours. He kept the patient in bed for six days. He believed that manual treatment would be the best to adopt

in dealing with anteflexed cervix. In some of his cases there had been great elongation of the cervix; here only the resection of the cervix could calm the pains. In one case of dysmenorrhoea membranacea he found numerous venous thrombi in the expelled membranous discharge. They had led to the bursting of the thin-walled capillaries at the fundus of the spongiosa by back pressure, combined with diffuse haemorrhage. The case was one of stagnating thrombosis, induced by functional weakness of the cardiac action. A corresponding general treatment (gymnastics, baths, diet) strengthened the heart, and cured the dysmenorrhoea membranacea, after curetting and intrauterine therapeutics had failed. The speaker believed that dysmenorrhoea membranacea was not necessarily inflammatory. Concerning the so-called "middle pains," he distinguished between a genuine, severe form and a pseudo, slight one. The real middle pains were induced by an intermediate ovulation at a time when the uterine mucous membrane was not yet ready to menstruate. Some time ago he had seen a 30 years old virgin with healthy genitalia who, since her puberty, had suffered regularly from severe abdominal pains, up to six days in duration, a fortnight after menstruation; the latter did not induce any pain. These spasms never appeared if a profuse intermediate haemorrhage of one week's duration set in a fortnight after menstruation. That happened, therefore, at a period when the uterine mucosa had loosened sufficiently to make menstruation possible. The slight form of "middle pains" was induced, without any intermediate ovulation, through the commencement of the menstrual wave and the growth of the mature follicle, either in women who were neurasthenic or hysterical, or in whom there existed an inflammatory sexual disease. Relief could be obtained by scarification of the cervix. These slight forms were curable, while the genuine middle pains only stopped when intermediate ovulation ceased.

Professor W. Nagel (Berlin) said that, unless he had misunderstood Dr. Herman, the latter denied the existence of membranous dysmenorrhoea as a separate disease, but the speaker held that cases were met with, though not very frequently, in which, under great pain, a fully developed membrane was expelled every month. He had seen a case of the type in which all kinds of treatment—including intrauterine faradization, dilatation, and curettage—had proved useless. He was compelled to extirpate the uterus, and by this operation the patient was at last cured. He would further ask him whether he had had any experience of nasal dysmenorrhoea, about which there was much discussion in the Berlin Obstetrical Society. Opinions as to the occurrence of nasal dysmenorrhoea differed very widely. It was, however, a fact that dysmenorrhoea and affections of the nasal mucous membrane occurred in the same individual simultaneously, and that when the nasal affection was cured the dysmenorrhoea would disappear.

Dr. Curtis Webb (London) said he was glad to hear Dr. Herman so strongly express the view that true dysmenorrhoea was of the nature of a spasm—a cramp of the uterine muscle. No doubt there were objective causes that might bring about this cramp, such as clots of blood retained in the uterus, but the speaker would solely refer to the menstrual pain where no such cause could be diagnosed. He acknowledged the suggestion made in the speech by Dr. Herman, and also in a previous publication of his, of the great benefit frequently derived from the administration of guaiacum resin, and said that he himself had often prescribed the drug with great advantage. He also referred to the *comprimes d'alcool* often employed in France to allay the pain at the menstrual period. His special wish, however, was to draw the attention of the Section to the excellent and permanent results that could be obtained in a very large percentage of cases of true dysmenorrhoea by the use of suitable electrical treatment. The fact had been long recognized in America and on the Continent, but in this country any reference to the use of electricity in gynaecology was anathema to the profession. In the cases of unmarried girls, where for obvious reasons local examination was undesirable, and operative interference only to be used as a last resource, the regular application of the static wave current, as described by Dr. Morton of New York, by means of a smooth, metallic, rectal electrode, coupled with abdomino-dorsal applications of the constant current—30 to 60 m.a. for ten minutes three times a week—would very often cure the tendency to irregular spasm of the uterus, and thus remove the pain. The treatment was painless and simple, but the writer laid stress on the absolute necessity of having an efficient static machine of ample power. (Details of the technique will be found in the British Medical Journal, May 1st, 1909.) Dr. Webb had employed this procedure in 13 cases of dysmenorrhoea in unmarried girls with only one failure; and he considered that the present prejudice against the use of electro-therapeutics in gynaecology should be put aside, and a fair trial be given to a recognized branch of treatment that recent advances had removed from the realm of empiricism to that of scientific therapy.

Dr. R. J. Johnstone (Belfast) welcomed the restriction of discussion to the spasmodic form of dysmenorrhoea, since the inclusion of all cases of painful menstruation would cover the whole field of gynaecology. To the definition of Dr. Herman, he would add that no definite and constant anatomic lesion was discoverable. The cause of the pain was spasm of the muscular tissue of the internal os uteri, and might be compared to the painful contractions of the sphincter ani in cases of fissure of the anus. The treatment of the condition should be very similar to that of anal fissure, and should be by means of dilatation of the canal. Some tearing of the fibres of the muscle was necessary for a permanent cure, and in many cases it was necessary to divide the cervix. This operation the speaker usually performed when a previous dilatation had failed to give lasting relief. There was also a form of dysmenorrhoea arising two or three years after puberty, and gradually increasing in severity, which was almost invariably associated with "cervical erosion." The only cure was the removal of the new growth, and the part of the cervix from which it grew.

Dr. Inglis Parsons (London) said that he preferred to take a wider view of the definition of dysmenorrhoea, because of its clinical importance. A case came into his wards that had been dilated several times without benefit; he found a diseased appendage, and after removal of this the pain disappeared. For purposes of diagnosis he divided the cases into occasional and persistent. The occasional cases were due to anaemia, neuralgia, and gout. When persistent there was always a definite cause. The principal causes were anteflexion of the uterus, diseases of the tube and ovaries, and fibroma. That some cases of anteflexion had no pain he was quite aware, and one patient of 35 with anteflexion came to him on account of sterility, but with no pain. Dilatation cured the sterility. On the other hand, the vast majority of cases were due to anteflexion; possibly the cervix failed to retract so as to allow the menstrual fluid to pass, and this failure caused the pain. His best results were obtained by a gradual dilatation under an anaesthetic. If there was any erosion, curetting was done and a glass stem inserted and left in for a fortnight while the patient was in bed. It was removed before the patient got up. A glass stem was quite innocuous in these conditions, he was quite sure. He knew of one patient who went out wearing a stem, against his colleague's orders, and she actually became pregnant while wearing it. One of the worst cases he had seen was due to a small fibroid in a young woman of 25, who implored him to remove her ovaries. A myomectomy was done and the patient cured. She subsequently married and had a child. Two similar cases had come to him, and both were cured by myomectomy. One of these was a woman of 35 who had two children, and the other was a young woman of 26. He recently showed a fibro-adenoma of the Fallopian tube, at the Royal Society, occurring in a tuberculous subject, where he had to remove both appendages. In this case and in all the others he had mentioned the only symptom complained of was dysmenorrhoea. With regard to membranous dysmenorrhoea, he could not agree with Dr. Herman that it did not exist. It was undoubtedly rare, but one case which had been in his wards used to pass a complete cast of the uterus about once in two or three months. When the membrane

was passed she had severe pain; when there was no membrane there was no pain. The treatment of occasional cases consisted in giving iron for anaemia and salicylate of soda or aspirin for gout. After a chill a hot bath with a purge and a mixture of carminatives produced the best results.

Dr. FREDERICK EDGE (Wolverhampton) considered faulty nutrition from the age of 7 to 17 the chief cause of spasmodic dysmenorrhoea, which was due, as Dr. Herman had pointed out, to uterine contraction, painful because ineffective and irregular, and opposed at the sphincter of the cervix. This defective muscular development was found in malformation and atrophy of the uterus. Girls should have three good meals a day. Discission, including internal division of the sphincter of the internal os, was successful in these cases of dysmenorrhoea. At the same time, examination for small myomata and other lesions could be made, and curetting would make sure that some small mucous polypus was not to blame.

Dr. BLAIR BELL (Liverpool) said that he could not agree with Dr. Herman's statement that there was only one form of dysmenorrhoea. To do that would be to admit that dysmenorrhoea was a disease, whereas it was a symptom of many conditions. He classified dysmenorrhoea into two large groups: (1) Disorders of the normal physiological conditions. (*a*) Exfoliation of the endometrium (membranous dysmenorrhoea). (*b*) Atony of uterine muscle, with the formation of clots *in utero*. (*c*) Deficient contractility of the uterine muscle, due to bad development of the uterus, or to contortions, such as acute anteflexion. In these uteri there was a ring of non-contractile tissue. (2) Acquired pathological conditions, such as salpingitis and fibromyomata. He considered that obstruction did occur, especially when the uterus was distended by clots or a membrane; in these circumstances, the pains were "labour-like" in character and lasted until the cervix had dilated sufficiently to allow of the escape of the uterine contents. If the cervix was very small, it should always be split anteriorly or posteriorly. The question of successful treatment was chiefly dependent on the recognition of the causal factors and their scientific treatment. He was strongly opposed to the removal of the ovaries, which was often followed by disastrous results to the mental stability of the patient; nor ought the uterus to be removed. Morphine and alcohol should never be given, lest a habit be established. Further work on the ductless glands—which so largely influence the menstrual function and development of the genital organs—would lead to important advances in the treatment and prevention of dysmenorrhoea.

Professor MURDOCH CAMERON (Glasgow) could not limit dysmenorrhoea to the spasmodic form. There was also a membranous form. The symptoms to which it gave rise were more severe and alarming than those of any other form of dysmenorrhoea. Anteflexion was the most common cause. He treated it by dilatation and the introduction of a stem pessary between two periods. In cases of sterility due to anteflexion this treatment was very effective. He entered a protest against removal of the ovaries.

Miss M. H. FRANCES IVENS, M.S. (Liverpool), thought acute anteflexion was the commonest cause of dysmenorrhoea, but that a great many cases were associated with extreme constipation, and were much improved by free purgation. For other cases dilatation under anaesthesia was in a very large proportion of cases successful.

The PRESIDENT (Mrs. Mary A. D. Scharlieb, M.D.) could not agree that spasm was the only cause for dysmenorrhoea. All present must have seen cases which appeared to be true obstructive dysmenorrhoea due to sharp flexions *plus* swollen mucous membrane, and also cases where a small polypus acted like a ball valve. As to membranous dysmenorrhoea, when the membrane was passed whole or in two large pieces it became rolled into a ball, which might be half an inch or more in diameter. This must necessarily cause pain when it excited muscular contraction strong enough to force it along the undilated cervical canal of a virgin. It was true that every case of dysmenorrhoea could be cured by arresting the function, but such arrest involved the removal of either both ovaries or the uterus. Conceivably, in cases of absolutely incapacitating dysmenorrhoea in a woman who had to earn her living, one of these operations might be necessary. Naturally no one would propose it until all other available means had been tried and had failed. If a major operation had to be performed, hysterectomy should be preferred to oöphorectomy, because the uterus was only the sac intended for the protection of the developing ovum, and was not, as far as was known, essential to the woman's health, whereas the ovaries were certainly of value, not only as subserving menstruation and conception, but also on account of their internal secretion, which appeared to exercise a profound influence over the general health of the younger women. It was certainly true that the general health was often profoundly disturbed by nasal and retropharyngeal troubles, and it was therefore not possible to deny that in some cases dysmenorrhoea might ensue, and be cured by nasal operations. The spasm of the circular muscular fibres surrounding the os uteri internum, to which Dr. Johnstone had alluded, and which he treated by division, might be treated by valerianate of zinc and belladonna pills. She agreed that the membranous dysmenorrhoea was usually accompanied by excess of loss due to the stripping off of the endometrium in bulk and not in the usual minute fragments.

Dr. HERMAN, in reply, said that the distinction between menstrual pain and dysmenorrhoea was important. Pain from anaemia, neuralgia, tuberculosis, pelvic inflammation, adenomatous growth, etc., might accompany menstruation, but these conditions were not dysmenorrhoea. Healthy women often passed membranes without pain. There were cases in which menstrual pain was so severe as to prevent young women from earning their living, and to make older women chronic invalids. Such cases could be cured by removing the ovaries. They also probably could be cured by hysterectomy. He had had no personal experience of the effects of hysterectomy for dysmenorrhoea; but he knew that oöphorectomy would cure it. It had been said that atrophy of the ovaries followed hysterectomy. As to this question, he had not been able to satisfy himself. There were cases in which it was necessary to stop menstruation; but there was room for difference of opinion as to the best way of doing this. Anteflexion he regarded as the natural shape of the uterus in most virgins; it would, therefore, be surprising if it were not found in cases of dysmenorrhoea. He had been much interested in the results of nasal treatment of dysmenorrhoea, but had not himself been able yet to come to a conclusion as to its value. Electricity, applied two or three times a week for three months, seemed to him a less simple treatment than dilatation, even if the dilatation had to be repeated. Intermediate pain he thought probably due to ovulation; but this, so far as he knew, was conjecture, he knew no proof. Stem pessaries were happily now little used, but in the past they had often caused fatal peritonitis.

THE STRUCTURE OF THE STROMA OF THE ENDOMETRIUM, AND ITS BEARING ON THE MENSTRUAL CHANGES.

By JAMES YOUNG, M.D., F.R.C.S.E.,

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THE stroma of the uterine mucosa is composed of an aggregate of cellular elements which are intimately united by protoplasmic communications with their neighbours. The orthodox conception regards it as a connective tissue of a primitive or an embryonic type, the intercellular spaces of which intercommunicate freely to form a vast and complex system filled with lymph fluid. Whilst the view just stated may, I think, be fairly taken to represent the commonest idea, Leopold has considered the stroma as constituted of two structurally distinct entities, a connective tissue network composed of branching and communicating fibrils, the meshes of which are lined by the stroma cells; these are flattened endothelial plates.

The researches here recorded in brief were carried out for the purpose of testing the validity of these conceptions. The results coincide with previous teaching in interpreting

the stroma as a poorly differentiated, embryonic tissue, but they differ from this in many points which are fundamental for a proper appreciation of the functional changes which the mucosa exhibits during menstruation and pregnancy. To-day I propose to refer more especially to the menstrual function.

The *blood vessels* of the mucosa in the resting state are lined by cells which are usually flattened like the endothelial layer in other regions. In vessels thicker than capillaries the media is composed of one or more layers of cells arranged concentrically. Immediately external to this is the ordinary stroma. Whilst the appearances at first sight would seem to justify the conclusion that in the formation of the vascular wall there has been a specialization of structure, I have been convinced by my investigations that such is not the case, and that the vessel wall is constituted, throughout its entire thickness, of elements structurally identical with those of the surrounding stroma. In support of this I would advance the following observations, all of which are figured in the plates and photomicrographs which I show.

1. In the first place it is a matter of common finding that in the premenstrual and the menstrual conditions the media elements become opened out by the escaping blood fluid. In some cases the cells become stripped off the wall in successive layers, the process naturally commencing on the outside. It progresses inwards until the entire circumference of the vessel wall becomes teased out. In other instances the opening out involves one part of the wall more than, or prior to, the other parts. In these circumstances it is found that the cellular elements forming intima and media are identical in every respect with those of the ordinary stroma. The intimal cells are seen to communicate freely by protoplasmic bridges with one another and with the adjacent medial cells. In many instances it is impossible to tell with certainty which were the original intimal, which the medial, and which the ordinary stroma elements.

A study of the changes during this teasing asunder of the vessel walls reveals, in addition, a fact of moment in regard to the structure of the stroma. This is found in the great ease with which the opening-out and displacement of the tissue can occur. So much is this the case that one is forced to the conclusion that the stroma must be looked upon as a soft, mobile protoplasm.

2. The second fact in support of the structural identity of the intima and stroma elements is found in the observation that, in many instances, the blood vessel wall, even in the resting state, is seen to be composed of tissue clearly similar to the ordinary stroma. In such instances even the apparent differentiation of structure is absent.

3. It is clear that if the description of the structure of the vessel wall which I have just given be correct we would expect to find an absence of the supporting tissue elements encountered in vessels in other regions. From the beginning it seemed to me certain that in this respect the endometrial vessels must diverge from the typical structure, and with the object of testing this belief I have carried out an extensive investigation. The results coincide with those of other workers with regard to the fibrous and muscular elements. In no part of the mucosa, except in the region immediately bordering on the muscle, are these tissues ever found to enter into the structure of the vessel walls or the stroma. With regard to elastic tissue, I have stained and examined seventy-five specimens of the mucosa. In no part except again in the very deepest regions is this tissue ever found. In the vessels, just after they reach the mucous membrane from the muscular coat, a fine elastic lamina just under the intima is not infrequently seen.

We can now understand how it is that the vessel walls can become opened out so readily. More than that, as structure subserves function, it would seem likely that this peculiar structure must be intimately bound up with the vascular gaping during menstruation and pregnancy.

4. To complete the evidence in favour of the structural identity of the intima, media, and stroma elements, it is necessary to refer to the discovery that during pregnancy the intimal and medial cells can enlarge in a manner identical in every respect with that associated with the decidual increase in those of the stroma. This change, as in the stroma, is accompanied by a proliferation of the intimal and medial cells.

The escape of the fluid constituent of the blood with a teasing out of the stroma and the vessel walls is such a constant precursor of the haemorrhagic infiltration of the tissues associated with menstruation that it was thought likely that any light thrown on the processes underlying the oedematous infiltration would provide us with a clue to the causation of the menstrual changes. The importance of the oedematous opening out of the structures is recognized when we remember that in the stage of the menstrual cycle which immediately precedes the blood flow, that is, the premenstrual phase, there is a widespread and extensive watery infiltration of the upper layers of the mucosa.

How does this watery infiltration occur? In considering this question we are brought face to face with the varying beliefs entertained with regard to the production of lymph and of oedema in general. Briefly stated, these fall under one or other of three headings:

1. That the fluid element of the blood escapes in response to the laws of filtration; that it is due to a mechanical squeezing of the fluid through a vessel wall from the lumen, where the pressure is higher, to the tissue space, where it is lower. Under this heading would seem to fall the orthodox conception regarding the production of the menstrual oedema and haemorrhage—namely, that they are due to a congestive process.

2. According to modern teaching, a fluid escape across the vessel wall is dependent, in addition to the factor just noted, on tissue changes which determine an osmotic diffusion from the vessel lumen. The establishment of the osmotic streams is induced by a liberation of crystalloidal elements in the tissue spaces, which are retained by the protoplasmic films, and the outward passage of fluid tends to continue until the osmotic pressures on either side of the fine membranes are equalized.

3. The third theory advanced to explain the transmission of fluid from vessel to tissue supposes the existence of a vital and selective secretory activity on the part of the vessel endothelium.

In the vessels from the mucosa of a uterus removed entire during menstruation the walls are markedly thickened; and I refer to this case in the first place because in it the stages of the process are forced into prominence. There is a marked vacuolar swelling of the intimal cells, which is clearly due to an active fluid imbibition. This is proved by the bulging of the cells towards the lumen. In some of the vessels, in addition to this fluid imbibition by the endothelial layer, there is present an escape of fluid into the surrounding tissues along tracks produced by a displacement of the vessel wall and stroma. In some instances these clear tracks lead directly from the intima into the surrounding tissues; in other cases they are interrupted by fine protoplasmic films which bridge across the oedematous space. The presence of these fine membranes, it seems to me, contraindicates the possibility that the fluid escape is due to mechanical causes. A squeezing of fluid from the vessel lumen sufficiently strong to tear up the surrounding tissues in the manner present could not leave these films undamaged.

The arguments just advanced against the mechanical explanation apply with equal force to the theory which traces the oedematous escape to a specific secretory activity of the lining cells.

So far, then, the structural changes suggest that the fluid escape is not dependent on mechanical factors, and the alterations in the intimal elements prove that, at any rate all along the inner aspect of the vessel wall, there is taking place an active fluid imbibition by the cell protoplasm.

That, under normal circumstances, the oedematous escape from vessel to stroma is due, not to a mechanical filtration, but to protoplasmic changes resulting in an active imbibition, is proved by a careful histological study of the mucosa in the premenstrual and the menstrual states.

The condition that I wish particularly to call attention to is the extraordinary tissue change associated with the fluid escape. The typical appearance of the stroma, in the shape of more or less well-formed cells united by comparatively simple protoplasmic processes, has become completely modified. Instead of the comparatively small number of fluid areas, the protoplasm is beset with a multitude of spaces which in some cases are so infinitely small as to be just recognizable under a magnification of 1,000, whilst in other places they attain dimensions as large as, or larger than, the ordinary intercellular space.

These facts show that the fluid which has passed into the stroma is contained not in freely communicating spaces, according to the orthodox conception, but in an immense number of chambers completely walled in on every side. In other words, we see that the intercellular bridges correspond not to filaments but to films of protoplasm. That such is the case was suggested to me by the observation that in most instances the confines of the spaces are complete and not interrupted as they would inevitably be, in most cases, if the sections were carried across tissue threads. This observation, then, would indicate that the explanation of the oedematous infiltration is to be found in the existence of an active imbibition by the stroma, and not in a filtration from the vessel lumen with a consequent mechanical displacement of tissue. That this is the correct interpretation of the changes is proved, in addition, by finding that the fluid increase is represented not only by an expansion of the intercellular regions, but that in the process the perinuclear cell protoplasm often becomes transformed into a number of fluid spaces, bounded by the displaced and thinned-out cytoplasm. This change implies, without doubt, an active fluid imbibition, and according to modern teaching (see Moore, Adami, etc.) it can be explained in one way, and in one way only, namely, that there has occurred a change in the cell substance associated with a liberation of crystalloidal elements and a consequent osmotic transference of fluid from the adjacent vessel or tissue space.

To understand the manner in which the tissue changes result in a continual stream through the vessel wall into the stroma, leading to the ploughing-up present, it is only necessary to appreciate the manner in which the fluid escapes from the intimal layer into the immediately external tissue. As already stated, the fluid enters the intimal cell in an endeavour to readjust the osmotic pressure discrepancy between the protoplasm and the blood. From this it would seem clear that the imbibition of the fluid results in a lowering of the osmotic tension of the lining cell. This establishes a discrepancy between it and the immediately external protoplasm with a diffusion of the fluid outwards. The fluid which it thus loses it must again imbibe from the blood vessel. These changes, advancing in an outward direction, will determine, so long as there are tissue bridges present, a continual stream of fluid. The fact that changes such as I have described are occurring is indicated by the observation that, with an opening out of the vessel wall, the swollen intimal cells in the corresponding region are invariably seen to collapse. The most markedly distended intimal cells are always in a vessel, or in that part of the vessel wall which exhibits the teasing out in the least degree. These facts indicate that the fluid imbibition of the lining cells is to be taken as a sign of the existence of such osmotic changes in the tissue. They also explain the influence of the condensation of the vascular walls in determining the degree of the intimal changes in the specimen referred to, and conversely why in the finer vessels with easily opened out walls the process is apt to be obscured. I have pointed out that the vessels in the normal stroma consist merely of tracks through a protoplasm which is easily opened out, and this, I believe, explains why the real nature of the changes in the endometrium during menstruation has hitherto evaded detection. When the intercellular spaces become enlarged and the cells are widely separated, it is often difficult to determine that this has occurred in any way but by a mechanical leakage of fluid into the tissues.

It would seem that the investigations just recorded provide us with an explanation of the structure and function of the intricate "network" which many authors have described in connexion with the endometrium. By Leopold it is held to be a structural entity independent of the cells and to constitute a scaffold on which the stroma is built; this idea would seem to commend itself to some more recent writers. By the majority of authors, however, this network is recognized as composed of finely-drawn-out fibrils in direct structural communication with the cell protoplasm.

As the result of the investigations which I have recorded in brief I would contend that we must recognize in this network, with its many and varying changes, an index of the intricate functional alteration for which the stroma is especially adapted. These appearances are not merely incidental, but are of profound importance from the point of view of a proper understanding of the changes in menstruation and in pregnancy. The considerations advanced suggest strongly that the network of previous writers in reality corresponds to the spaces in the protoplasm with their thinly-drawn-out but complete envelope of cytoplasm enclosing the fluid which has been actively imbibed. The presence of this complete shell of cell substance was an absolute certainty in the case of the swollen intimal elements.

In some vessels the bulging fluid vacuoles are richly scattered along the inner aspect of the vessel wall. The manner in which the cell protoplasm of the stroma swells up with the imbibed fluid, often to many times its original size, indicates beyond doubt that the water absorbed is contained within complete films of cytoplasm. These appearances, it seems to me, prove that the so-called network formed by interlacing threads of cell protoplasm in reality corresponds to an agglomeration in the cytoplasm of fluid which has been actively imbibed, and which is contained in spaces separated by complete walls. The fact that the fluid imbibition is exhibited by the stroma elements in a manner similar to that present in the intimal cells indicates that the alterations in these are to be considered more as an incident in, than the cause of, the increased fluid escape; in other words, that there is nothing to favour the recognition of a local secretory influence on the part of the lining cells.

The fact also that the protoplasmic changes during menstruation are found to be exhibited in an identical manner by all the different elements of the stroma (intima, media, etc.) furnishes additional confirmatory evidence in favour of the interpretation of the structure of the stroma which I have previously advanced. The lining and supporting cells of the vessels were seen to be *structurally* similar to the stroma elements. They are now seen to be *functionally* identical.

The escape of the fluid element of the blood into the stroma is due to a complex protoplasmic change resulting in an active fluid imbibition. How are we to account for the exodus of the red cells from the vessels into the adjacent tissues? Is it due to a mechanical leakage of the red cells into the stroma as far as this is opened out by the oedema, or is it not rather due to an active dragging out of the cells by the force which I have shown to determine the fluid escape? This, I believe, accounts for the process, and many of my sections would suggest that the red cells can pass bodily through the stroma protoplasm, leading to no more rupture or displacement of this than if it were a jelly-like medium.

SUMMARY.

The following statements summarize my conclusions:

1. The stroma of the endometrium consists of a soft semi-fluid protoplasmic mass imperfectly differentiated into cellular elements.

2. The cells anastomose freely with one another by means of protoplasmic processes. They present many and varying alterations in shape, but these are easily dispelled, and the cells then approximate to the typical stellate shape. The differentiation of the stroma cells is, thus, probably more apparent than real.

3. The intercellular spaces, in all probability, do not communicate directly with one another. The anastomosing processes are not, as is usually stated, filaments, but films of protoplasm, which under ordinary circumstances close in the fluid cavities.

4. The intima and media of the vessels are nothing more than ordinary flattened stroma cells. This shape they easily lose.

5. Except in the deepest layers of the mucosa the vessels have no specialized supporting coats (muscle, elastic tissue).

6. The vessels are obviously so constructed as to allow a ready and universal opening up of their walls, and the structure and consistence of the stroma such as to permit its ready displacement by fluid or blood.

7. The oedematous infiltration of the tissues, which precedes the haemorrhagic escape, is due neither to a mechanical displacement or filtration of fluid from the vessels, nor to a secretory activity of the intimal cells. It is dependent on protoplasmic changes, which result in an active imbibition of fluid from the vessels, by a process of osmosis. So far as we at present know, this change is due to a widespread liberation of crystalloidal elements in the tissues.

8. The infiltration of the stroma with blood corpuscles is, in all probability, due to exactly the same cause. In consequence of its peculiar structure, the uterine mucosa must be looked upon, throughout its entire extent, as a potential blood sponge.

In conclusion, I would state that my investigations have revealed that the peculiar structural conformation of the endometrium is intimately bound up with the changes

which occur during pregnancy. The vascular gaping round the young ovum occurs in a manner identical in nature to, and differs only in degree from, the mode in which the vessels open up during menstruation. These observations, and also their bearing on the function of the decidua, I shall shortly publish elsewhere.

DISCUSSION ON TREATMENT OF FIBROIDS COMPLICATING PREGNANCY.

OPENING PAPER.

By Walter W. H. Tate, M.D.

There has been a tendency among some gynaecologists and operating surgeons to overestimate the probable dangers to which a pregnant woman is exposed if afflicted with fibroid tumours. Others, perhaps, may be inclined to minimize the risks.

In order to arrive at a fair and trustworthy conclusion it is essential to consider the following points: (1) The unfavourable changes which may occur in fibroids during pregnancy; (2) the frequency of miscarriage and any special dangers arising from this accident; (3) the increased risk of labour, whether due to *post-partum* haemorrhage, septic infection, suppuration, or sloughing of the fibroid.

Risks from Changes in the Tumour.

We will first consider the unfavourable changes which may occur in fibroids where pregnancy coexists. It is obvious that the natural enlargement of the pregnant uterus when associated with a large fibroid will be a cause of discomfort, and may occasion serious distress. It is difficult in these cases to estimate to what extent increase in the size of the actual fibroid is responsible for the whole uterine enlargement. Some are of opinion that the enlargement is only apparent, others are of opinion that fibroids undergo oedematous infiltration during pregnancy. It is fair, however, to say that where the fibroid is of only moderate size before pregnancy and forms an abdominal swelling there is every reason to hope that it will not give rise to any serious distress from its size alone. When, however, a woman has a very large fibroid the chance of her becoming pregnant is small, but should such an event occur, it is quite possible that serious symptoms might arise in the latter half of pregnancy from upward pressure on the diaphragm, owing to the rapid increase in size of the uterus. Necrobiotic change may occur during pregnancy and may cause serious discomfort or persistent pain, which may make interference with the pregnancy necessary. It has been suggested by Donald that owing to rapid increase in the size of the fibroid during pregnancy, pressure on the renal veins with albuminuria may result. We know that enormous tumours, either ovarian or uterine, may be present in the abdomen without giving rise to any albuminuria, and it seems therefore unnecessary to suggest pressure on the renal veins to explain the symptom, as the albuminuria may have been the result of the ordinary toxaemia of pregnancy. So far as pressure symptoms are concerned the patient is undoubtedly exposed to serious dangers of this nature where the fibroid encroaches upon or is entirely situated in the true pelvis. It is easy to understand that where pregnancy coexists under these circumstances, pressure symptoms may occur at an earlier date than would otherwise have been the case. Torsion of the pedicle of a fibroid tumour during pregnancy is so infinitely rare that it need not be regarded as a practical danger. Cases of this accident have been recorded by Ribemont-Dessaignes and Grosse, by Malherbe and Grosse, and by Ivanoff.

Miscarriage Risks.

The next series of risks to be considered are those associated with miscarriage. The actual frequency of miscarriage where fibroids are present has been a matter of some difference of opinion. According to Kelly, 25 per cent. of the patients abort. Pinard put the figure at 21 per cent. As the average for all women is stated to vary between 20 and 25 per cent., any increased frequency due to the presence of fibroids can only be very trifling. This opinion is also held by Herman. Presuming next that a patient with fibroids does miscarry, does the presence of the fibroid materially increase the risk of this accident? Cases have been recorded where portions of placental tissue have been retained *in utero*, and extreme difficulty has been experienced in evacuating the uterus owing to the fibroid blocking the lower part of the canal. As a result severe sapraemic symptoms have supervened. Although one is bound to admit that this difficulty with its unfavourable results may occur in exceptional cases, it need not and ought not to be regarded as anything more than an exceedingly rare complication. Should it be found impossible to evacuate the uterus of retained products, and sapraemic symptoms persist, the timely removal of the uterus by the abdominal route will almost certainly cure the patient if the operation is not postponed too long.

Labour and Puerperium Risks.

The third series of risks are those associated with labour and the puerperium. Where the fibroid is situated in the pelvis, below the presenting part, it is bound to cause obstruction to delivery, with the probable sequence of rupture of the uterus, if suitable treatment is not undertaken. Cases of this kind, however, are most likely to occur where the existence of the fibroid or fibroids is unknown to the patient or her medical attendant before the onset of labour. The dangerous complications which may ensue from obstructed labour might be entirely avoided by an examination during pregnancy. Such an investigation would give timely warning of the difficulties which must inevitably occur, and would prevent one from being suddenly confronted with a case of this kind at a stage of labour too far advanced for successful treatment. Elbrecht holds the view that rupture of the uterus is a serious risk in cases of interstitial fibroids, owing to thinning of the uterine wall over the tumour, quite apart from the question of the fibroid causing any obstruction to delivery. I think the majority of obstetricians would consider this a more grave view than is warranted by practical experience. The risk of severe *post partum* haemorrhage where fibroids complicate labour has been a cause of grave anxiety to medical practitioners for a long time, and the balance of opinion seems to show that there is some increase in the frequency of this complication. There is, however, no need for any serious alarm, but special care should be exercised in the management of the third stage of labour.

During the puerperium a fibroid tumour may become extruded and present in the vagina. If this happens it will certainly slough and sapraemic symptoms will follow. An interesting case of this kind was seen by me in October, 1909.

The patient, a primipara of 37, had a normal though prolonged confinement, which had to be assisted by forceps. During the first two weeks of the puerperium the temperature ranged between 99° and 100·5°, the lochial discharge being free all the time. When examined by her doctor a tumour could be felt projecting down into the cervical canal. A few days later the temperature fell to normal but the vaginal discharge became offensive, and, when seen by me, a large sloughing mass as large as the closed fist was found in the vagina. The whole mass was removed with scissors under an anaesthetic, and the patient made an uninterrupted recovery.

Necrobiotic change occurring in fibroids after delivery is not usually a cause of urgent symptoms, but occasionally the pain and tenderness over the tumour with elevation of temperature may suggest pelvic inflammation. In a case under my care at St. Thomas's Hospital, where the three symptoms mentioned were unusually marked, the temperature ranging between 100° and 103°, the necrotic fibroid was situated between the layers of the right broad ligament, but there was not a sign of any surrounding peritonitis. Clinically the case suggested an inflamed, and possibly suppurating, dermoid cyst of the ovary. True suppuration of a fibroid tumour is an extremely rare complication. It is invariably due to some failure in the antiseptic technique, and is, therefore, an avoidable complication.

I have seen one case of true suppuration of a fibroid following delivery, in a patient aged 37.

She was delivered of a stillborn child in March, 1906, following which a parametritic abscess formed which burst into the vagina. A fibroid tumour was discovered at this time. The patient continued to have a hectic temperature, and steadily lost flesh. She had a continuous vaginal discharge of blood, and occasionally clots. When seen in September the tumour had increased very greatly in size, and was then as large as a six months pregnancy. It was very tender on pressure and quite elastic. Abdominal hysterectomy was performed by me early in October, and on incising the tumour after removal it contained 3½ pints of foul-smelling pus, with a large slough from

the fibroid in the middle of the abscess cavity. The temperature, which had varied between 100° and 102° and 103° for months, fell to normal on the eighth day, and the patient made a good recovery.

I have endeavoured to give a fair and I hope unprejudiced criticism of the several dangers to which women are exposed where pregnancy and labour are associated with fibroids. A thorough and correct appreciation of these can alone form a reliable basis for successful treatment. It will be evident from what has been already said that in my opinion only a very small number of cases call for any interference whatever during pregnancy. This is the view held by Murray and Donald, who maintain that in the majority of cases pregnancy and labour are not seriously influenced. The grave warning words which have been expressed by some writers on this subject are contrary to experience, and would not, I believe, be accepted by practical obstetricians. The weighty words of Hofmeier may with advantage be repeated at the present day. Hofmeier says:

> I believe most positively from my experience that the complications which myomata present during pregnancy, birth, and the puerperal state, cause actual earnest dangers in only a few cases, and may be quite essentially diminished by patience, a cautious treatment of the birth, especially by its strict antiseptic conduct, and by careful attention to the puerperal period.

At the International Medical Congress at Budapest held last year, this subject was considered very fully. Schauta of Vienna considered that in the majority of cases fibroids caused no complications during labour, and therefore he was of opinion that active interference during pregnancy is generally unnecessary. Engström dwelt on the reduction in the size of fibroids which may occur during the puerperium, but considered that they may take on fresh growth after involution is complete. Pozzi found that some of these tumours increased in size during pregnancy, but rarely to such an extent as to endanger life. He considered the increase due either to oedema or to increase in the actual elements of the tumour. Pozzi thought that in the majority of cases no special supervention was necessary.

In considering the treatment of these cases, it will be convenient to divide them into three groups:

Group A.—Cases in which the fibroid tumour is situated in the pelvis and *must necessarily* obstruct delivery unless the condition is relieved. These cases will include fibromata of the cervix.

Group B.—Cases in which the fibroids arise from or encroach upon the lower uterine segment, and may *possibly* cause obstruction to delivery.

Group C.—Cases in which the fibroid or fibroids are entirely abdominal tumours, and will *certainly not* interfere with delivery *per vias naturales*.

In the first group, where the fibroid is growing from the posterior wall of the uterus and occupies the sacral hollow, the symptoms will be slight or severe according to the extent to which the tumour fills the pelvis, and the presence or absence of degenerative change. Two methods of treatment are available. If there is some mobility of the tumour, it is usually possible under anaesthesia to push the tumour up above the pelvic brim. When this has been done the further course of the pregnancy is usually uneventful. If the tumour is firmly impacted in the pelvis, and great force would be required even under an anaesthetic to push the tumour up out of the pelvis, it is safer to perform abdominal section with a view to enucleation of the tumour from the uterine wall. It has been pointed out by John Phillips that there is considerable risk of tearing the peritoneum over the tumour and lacerating small vessels where forcible attempts are made to push these tumours out of the pelvis. In the case of small fibroids of the cervix, when discovered during pregnancy, it may be possible to enucleate these tumours *per vaginam* without interfering with the course of pregnancy. Olshausen is of opinion that the removal of polypi, and especially the enucleation of submucous fibroids from the cervix, should be postponed till the end of pregnancy, as labour may be expected to follow closely upon such operative interference. Where the tumour is of larger size, and not causing any definite pressure symptoms, it is certainly best to postpone interference till the time of labour, when Caesarean section followed by enucleation of the tumour, or complete hysterectomy, may be performed. The enucleation of large cervical fibroids *per vaginam* during pregnancy or labour is not to be recommended, owing to the risk of severe haemorrhage, which may be difficult to control. Where the interference becomes necessary during pregnancy, and the cervical fibroid is of large size, filling up the pelvis, the pregnancy will probably have to be sacrificed, and total hysterectomy will be necessary. In actual practice these cases are very rarely met with, as the patient is usually sterile where large cervical fibroids are present.

The second important group of cases are those in which the fibroids are often multiple, and one or more of them are found encroaching on the lower uterine segment. In this class of case some anxiety must be felt as to whether the tumours, by reason of their position, will cause any obstruction to delivery. The fact, however, that we cannot predict with certainty the behaviour of these tumours during labour is no justification for advising surgical interference during pregnancy in the absence of urgent symptoms. Experience shows that an expectant attitude is followed by the most encouraging results to both mother and child. It not uncommonly happens that fibroids materially alter their position during labour in such a way that the tumours gradually recede from the dangerous zone. The presence of a fibroid encroaching on the lower uterine segment does not necessarily cause disaster. It is our duty in these cases to allay unnecessary fears, and not to excite dread and anxiety. My late colleague, Cullingworth, recorded four interesting cases in support of the expectant policy during pregnancy. In the first case the patient, who had a fibroid situated low down and behind the uterus, was advised to have abortion induced. Cullingworth decided against any interference and advised the patient to wait events, with the satisfactory result that she had an uncomplicated labour, and moreover had three subsequent children at term. In the second case, when arrangements had been made for the performance of Caesarean section at the thirty-ninth week for an obstructing fibroid, Dr. Cullingworth predicted that the tumour would probably recede during delivery. This prediction proved to be correct, the child being delivered at full term, with most favourable results to both mother and child. The third and fourth cases were of a similar nature and had equally satisfactory results.

The third group consists of those cases in which the fibroids are entirely abdominal tumours. These include cases of subperitoneal pedunculated fibroids and also interstitial fibroids. In the vast majority of these cases the absence of severe symptoms makes operative interference unwarrantable. Cases in which the tumour is subperitoneal may complain of constant pain or severe discomfort. The greater number of these lend themselves readily to the operation of myomectomy, which is equally available in cases where the tumour is pedunculated and where it is sessile. When the subserous growths are of small size, and causing no symptoms, their removal is unnecessary. Condamin has reported four cases of myomectomy during pregnancy and concludes that severe and lasting pain may demand this operation. He further adds that if the presence of a fibroma makes normal labour impossible, operation should be undertaken as soon as possible to prevent abortion and to remove the obstacle to delivery. If a fibroma has already caused abortion more than once, operation in his opinion is undoubtedly justifiable.

The cases in which interstitial fibroids justify interference during pregnancy are few and far between. These cases must be very carefully investigated, and one must recognize the fact that where operative treatment is undertaken in these, it will very probably be necessary for the whole uterus to be removed and the pregnancy sacrificed. Mere prophylaxis, that is, operating for dangers which may arise, where there are no urgent symptoms, has, as Howard Kelly says, no field here. The mere fact that a patient suffers from a certain amount of inconvenience or increased discomfort, without any serious effect on the cardiac or respiratory organs, is not a sufficient reason for sacrificing the pregnancy. Hence the importance of postponing operative interference in all cases where hysterectomy may be necessary till full term or at least till the child is viable. In all these cases, if it should seem possible to enucleate the tumour when the abdomen is opened, the operation of myomectomy is still to be preferred. There are, however, a certain number of cases

where the tumour is of large size or where the fibroids are multiple and have shown marked increase during pregnancy, in which operative interference is not only right, but imperative, and in which abdominal hysterectomy is the only suitable operation to undertake.

The induction of abortion has been almost universally discountenanced as a method of treatment in these cases. The pregnancy is sacrificed, and the patient is not relieved of her tumour. In this connexion one may mention an interesting case, reported by Webster in 1905.

r The patient, aged 31, had a history of twelve days' haemorrhage. On examination a fibroid of the cervix was found complicating a four and a half months pregnancy. As Webster considered the uterus ought to be emptied, and the necessary manipulation could not be safely undertaken *per vaginam*, the abdomen was opened, and the fibroid enucleated by an incision low down on the posterior surface of the uterus. An incision was then made through the raw surface then exposed, and the uterine contents evacuated. The raw surface was subsequently brought together with sutures, and finally the peritoneum closed over these.

The induction of premature labour in the case of fibroids causing, or likely to cause, some obstruction, is equally to be condemned, as a difficult delivery with a premature child is almost certain to end in the child being stillborn, which constitutes an obstetrical failure.

Having strongly advocated the operation of myomectomy in all cases in which it is feasible as the operation of selection where surgical treatment has become necessary during pregnancy, the next question is whether myomectomy should be done for an obstructing fibroid, or for one causing severe pain and probably necrotic, where other fibroids of moderate size are present in the wall of the uterus, but not in themselves causing any symptoms or likely to interfere with delivery. In my opinion the answer to this question should be in the affirmative. There is in such cases no certainty that the tumours left in the uterus will be a cause of further trouble after delivery, and it is known that occasionally fibroids may disappear during involution. Cases have been recorded—one by Amand Routh—where a myomectomy had been done during pregnancy, and at the time of labour a second tumour was discovered in the lower segment of the uterus, obstructing delivery and rendering necessary further surgical interference. In every conservative operation there must be a little uncertainty as to the future. If we are going to determine our surgical procedures on such lines that all possible risks of further trouble is to be excluded, conservative operations would have to be abandoned. Every ovariotomy would have to be made double, and certainly myomectomy could under no circumstances be advised, for fear of embryo fibroids developing later and necessitating the more radical operation. The employment of such radical measures as those indicated would, of course, be denounced by us all.

In advising myomectomy during pregnancy we have more than the mere conservative operation on the uterus to justify our selection. The pregnancy which is under consideration may be the woman's only chance of bearing a child. With such a possibility in one's mind it is our duty to exercise the same jealous care in interfering with the course of pregnancy as is generally the practice in the case of pregnancy uncomplicated by fibroids, in which cases the induction of abortion is not regarded as a justifiable operation, unless the patient's life is endangered by the continuance of the pregnancy. In the discussion of a paper by Donald, read before the Obstetrical Society in 1901, Bland-Sutton referred to the case of a patient who had aborted on three occasions, and in her fourth pregnancy was found to have a fibroid impacted in the pelvis. Myomectomy was performed by him, and the patient went on to term. When the patient was delivered the uterus was found to be tuberose with fibroids, and when seen by Bland-Sutton ten days later he found this unfortunately the case. Bland-Sutton cited this case as a failure for myomectomy. I, however, should congratulate Bland-Sutton on his good judgement in selecting the conservative operation and preserving the life of the child. The patient, after having had three fruitless pregnancies, succeeeded in carrying a child to term. Whether the tuberose uterus discovered after labour was the cause of any symptoms requiring further surgical treatment was not stated. In the interest of the child, quite apart from the advantage of a conservative operation on the mother, the operation of myomectomy should always be selected where this operation is possible, even though there may be in a certain number of cases a possibility—and it is not more than a possibility—that further surgical treatment may at some future time become necessary.

If any are of opinion that this is too great a risk to subject a woman to for the sake of the child, consider for one moment the change of practice that has taken place during the last decade in the matter of sterilizing the patient when performing Caesarean section in cases of contracted pelvis. At the present time the majority of obstetricians not only do not recommend it, but are of opinion that it is unjustifiable to sterilize the patient as a safeguard against future pregnancy. During the last seven years the old practice of sterilizing the patient has been entirely abandoned at Queen Charlotte's Lying-in Hospital. That is to say, we deliberately refrain from adding a simple procedure to the operation of Caesarean section, which would save the patient from the inevitable risk associated with a further pregnancy, in cases where we know that delivery of a living child by the natural passages is impossible. This change of practice, which is done entirely with a view to future child-bearing, has become justifiable in consequence of the greatly diminished mortality in abdominal surgery in recent years. If, then, it is right to leave a woman with the inevitable risk which a second Caesarean section must involve, surely the conservative operation of myomectomy during pregnancy is more than warranted in the interest of the child, in cases where it can be performed, even though other fibroids are present in the wall of the uterus, which though causing no symptoms at the time, may conceivably necessitate a more radical operation at some future date.

While we must always hold it to be our paramount duty in every case of pregnancy to ensure the safety of the mother, there are special circumstances in the case of fibroids complicating pregnancy which compel us to regard with almost the same consideration the preservation of the child. We ought thoroughly to appreciate the responsibility which we take when the course of treatment decided upon involves the sacrifice of the pregnancy. When one remembers the serious conditions to which a patient is often reduced before it is considered advisable to interfere with a normal pregnancy, in such cases as albuminuria, cases of cardiac disease, hyperemesis gravidarum, and other grave conditions, it can hardly be maintained that in the majority of cases the patient with a fibroid tumour complicating pregnancy is allowed to be exposed to nearly so great a risk to her life or to her future health before interference with the pregnancy is recommended.

One ought never to forget that the occurrence of a further pregnancy in any woman suffering from fibroids must be a doubtful matter, and the only chances of motherhood may depend on the patience and good judgement exercised by her medical attendant in the management of the existing pregnancy. Although it has been necessary to refer to the treatment of fibroids during labour on several occasions in the course of this paper, I have not attempted to discuss it at length, as it seemed to me that the discussion would lose in value if it extended over too wide a range. Moreover, the treatment of fibroids during labour is a very important subject, and might well be considered on some future occasion by itself.

DISCUSSION.

Dr. Amand Routh (London) was in almost entire agreement with the views expressed. If any operative treatment was required during pregnancy it should take the form of a conservative myomectomy, and the pregnancy be allowed to proceed to full term. He had never removed a uterus during pregnancy for this complication. Torsion of the pedicle leading to acute changes of the fibroid could be treated by myomectomy with very little risk of premature labour being induced. Imbedded fibroids undergoing necrobiosis or red degeneration could be enucleated, but the risk of premature labour was greater. Dr. Tate had raised a very important question as regards the correct treatment when myomectomy had been found to be necessary during pregnancy or labour, and other fibroids were found to be present. If the child was not viable, myomectomy of the degenerating fibroids should alone be done, and the case.

allowed to go to full term. For this was probably the only chance of the woman bearing a child. If, however, the woman was at or near full term, and the child likely to recover if Caesarean section were performed, the uterus should be removed at once if the circumstances—that is, competent skill of the operator and good condition of the patient—permitted. It was hardly fair to compare hysterectomy in these cases with sterilization after Caesarean section for contracted pelvis, for the fibroids were not fixed, unalterable structures, but were liable to undergo degenerative changes, to cause severe pressure symptoms, and another pregnancy was very unlikely to occur. In such cases hysterectomy was advisable. He hoped that this discussion would lead to the absolute discontinuance of hysterectomy before fetal viability, and that every chance would in future be given for the pelvic fibroid to rise up out of the pelvis. The only fibroids which did not rise up out of the way were cervical, some intraligamentous fibroids, and fibroids adherent to the pelvic floor.

Dr. HERBERT SPENCER (London) agreed generally with the treatment of fibroids complicating pregnancy as presented by Dr. Tate. In the speaker's experience, the complication of pregnancy with fibroids was fairly common; he had four such cases under his care at the present time. In twenty-three years he had seen a large number of such cases; a considerable proportion of all primiparae of 35 years of age or more would be found to have one or more fibroids in the uterus, if carefully examined, especially after labour. In the short time at his disposal he would not enter into details, but would give a general view of his experience, which he thought supported Dr. Tate's views. He (the speaker) had only once performed myomectomy during pregnancy. It was on account of a tumour in the broad ligament, the solid portion of which weighed nearly 18 lb. The operation was done at term six hours before delivery. The patient recovered well. The speaker had only three times found it necessary to perform Caesarean section for uterine fibroids, and once for ovarian fibroid mistaken by Sir John Williams and himself for uterine fibroids. All four women recovered. Dr. Tate had not called attention to inversion of the uterus produced by submucous tumours which caused abortion. The speaker had seen two such cases, and had enucleated the tumour and replaced the fundus, and the patients, who had fetid discharge, recovered well, and one had had children since. He had had a case with a temperature of 105° very like Dr. Tate's, and he had treated it similarly by enucleation with success. Too often in these cases of septic submucous fibroids it was considered to be necessary to remove the uterus. He had never found it necessary to do it. Of the large number he had seen he had only known two patients die from fibroids complicating pregnancy, labour, or the puerperium. One of these had septic peritonitis from torsion of the pedicle of a subperitoneal tumour. Though operated on immediately, death followed. The other died from intestinal obstruction caused by the gripping of intestine between two subperitoneal tumours.

Mr. ALBAN DORAN (London) said that Dr. Tate had shown that the question was to be settled by common-sense surgical and obstetrical principles. Hysterectomy for fibroid in pregnancy might seem difficult and dangerous to a surgeon not used to operate on the gravid uterus, on account of the formidable array of big blood vessels running over the tumour; but to those accustomed to abdominal sections on female subjects, those who expected to meet with huge engorged veins, the operation was perhaps too easy because of the hyperplasia of the pelvic connective tissue, which made the dissection of peritoneal flaps easy, far easier than in a subject not pregnant. It was clear that when the fibroid was in or near the fundus operation was rarely called for. When near or in the lower segment below the fetus delivery without danger was, as Dr. Herbert Spencer had shown, quite frequent. But when the uterus was riddled with fibromyomas of all types—submucous, interstitial, and subserous—it was a spoilt organ, a source of immediate and future danger to the patient, and therefore, as a rule, such a uterus should be removed in early pregnancy. Mr. Doran turned attention to a specimen of gravid uterus of this type on view in the museum, and belonging to the College of Surgeons. There was a pedunculated subserous fibroid, and if that had been the sole growth in this case, hysterectomy would have been absolutely unjustifiable. But there was also a big growth beneath the fetus, burrowing in the left broad ligament; the uterine wall was riddled with small interstitial fibromyomata; and, above all, the fetus was ill formed, and there was placenta praevia. Mr. Doran, after consultation with Dr. Hubert Roberts, had removed the uterus, and thus saved the patient from much risk. In the other cases where Mr. Doran had operated there were similar complications. Lastly, he insisted that the ovaries should always be saved if possible, and that the cervix should not be sacrificed save in exceptional cases.

Mr. CHRISTOPHER MARTIN (Birmingham) said that severe uncontrollable vomiting may be caused by a small interstitial fibroid complicating pregnancy. In two such cases he had had to induce abortion to save the mother's life. Acute red degeneration of a fibroid might come on during pregnancy and cause symptoms which urgently called for surgical interference. In one case the patient was a young woman recently married, and was three months pregnant. She suddenly became very ill. She had acute abdominal pain, vomiting, quick pulse, fever, and a rapid increase of the tumour. The symptoms, in fact, resembled those of a strangulated ovarian cyst complicating pregnancy. He opened the abdomen, and found the tumour was a fibroid which was undergoing acute red degeneration. He performed myomectomy, and preserved the uterus. The patient aborted on the second day, but otherwise she made a good recovery. A year later she became pregnant, went to full time, and had a living child without any difficulty. Myomectomy during pregnancy was often a more difficult and risky proceeding than hysterectomy; but in most cases it was well worth the risk, in order to give the patient the chance of a living child. Where the fibroid was impacted in the pelvis it might greatly impede labour and call for Caesarean section. Even if the child were delivered *per vias naturales*, the tumour might be so bruised and crushed that it underwent necrosis. Only recently he had opened the abdomen and removed a necrotic fibroid during the puerperium. The woman had been previously delivered by craniotomy at full term on account of a fibroid blocking the pelvis. After delivery she became acutely septic, and developed peritonitis. When he opened her abdomen the fibroid was found to have undergone complete necrosis. After it was removed all her grave symptoms subsided, and she got quite well. He quite agreed with Dr. Tate's views on the conduct of pregnancy complicated with fibroids. He thought that when surgical interference was necessary myomectomy should be the operation of choice, and hysterectomy only done when the former operation was not feasible.

Dr. ARTHUR J. WALLACE (Liverpool) joined in the discussion merely to mention a case and show the specimen that illustrated the tolerance of the pregnant uterus to operative interference. A patient of 45, four months advanced in her only pregnancy, suddenly suffered from a peritoneal crisis and became very ill. On a diagnosis of probable torsion of the pedicle of an ovarian tumour, the abdomen was opened, and a large oedematous fibroid (14 in. × 10 in. × 6 in.) found to be sessile on the fundus uteri. Its attachment was extensive (8 in. × 6 in.) and so deep that a circular patch of decidual tissue was exposed during the enucleation. Recovery ensued, followed five months later by delivery of a healthy child at term. Despite the extensive wounding of the uterus there was never the slightest indication of any tendency on the part of the organ to empty itself.

Dr. J. NIGEL STARK (Glasgow) said the question of treatment depended on the position of the tumour and also upon the size. This latter point was of importance; when the tumour was very large and interstitial there might be good reasons for inducing labour first of all and then in doing myomectomy afterwards. One of his patients, a woman aged 38, who had a very large interstitial tumour near the fundus, and was six months pregnant, was breathless and very ill, and myomectomy was performed.

The haemorrhage was most alarming, and after all abortion occurred in a few days. Probably it would have been better to have induced labour first of all and then performed myomectomy.

Dr. Hubert Roberts (London) expressed himself as in entire sympathy with Dr. Tate's views as to the small proportion of cases of pregnancy complicated by fibroids that required interference. The latest statistics of Pinard showed that fibroids complicated labour in 84 out of 13,915 consecutive cases of labour = 0·6 per cent. Champneys, Spencer, Herman, Routh, Olshausen, and others had shown that interference was rarely necessary, and that merely because fibroids *were present* this in itself did not indicate operation. The whole question resolved itself into two main points: (*a*) What is the effect of fibroids on pregnancy and labour and the puerperium? (*b*) What is the effect of pregnancy, labour, and the puerperium on fibroids? Dr. Tate had pointed out the rarity of such complications as torsion of the pedicle, pressure symptoms, and degeneration. As regards obstruction to labour, Dr. Roberts agreed that his was uncommon, and that at Queen Charlotte's Lying-in Hospital operation was rarely needed, though plenty of women were delivered naturally who had fibroids. Munro Kerr's and Spencer's statistics showed that in two series of 35,000 cases of labour abdominal section was only required four times. The speaker pointed out that fibromata of the ovary might also complicate delivery. A fatal case of this nature was recorded by Griffith, the specimen being in St. Bartholomew's Hospital Museum. As to malpresentation, inertia, and the risks of *post-partum* haemorrhage, it was not quite certain that these were commoner with fibroids than in ordinary labour. The effects of pregnancy on fibroids were important, and had been fully discussed by Dr. Tate. The speaker did not think that the red degeneration described by Fairbairn and Bland-Sutton was a very serious matter, but that septic infection after labour of a fibroid uterus might lead to very grave results. Some of the most dangerous cases were those in which labour was obstructed by cervical fibroids or fibroids of the broad ligament, as described by Doran. As regards treatment, abortion and premature labour were not to be advised, as the child must be considered. If obstructed labour occurred, they had to choose between myomectomy and hysterectomy. The hysterectomy might be partial or complete. There were grave risks in attempting to deliver a child by forceps or craniotomy when a fibroid obstructed delivery, and should septic infection occur the best course seemed to be removal of the whole uterus. This should also be done in cases of Caesarean section where repeated attempts had previously been made to deliver the patient per vaginam.

Dr. Arnold W. W. Lea (Manchester) pointed out the gravity of fibromyomata complicating pregnancy and the puerperium. The mortality had no doubt been diminished by recent improvements in technique, but danger might arise at any moment in the course of pregnancy or after delivery. In a series of 8 cases which he had arranged in tabular form, operation was required in 5 during pregnancy and in 3 during the puerperium. In only one case was myomectomy performed; in all the others hysterectomy was necessary. In the 7 instances the tumours removed showed degenerative or inflammatory changes: Myxomatous degeneration with cysts, 1 case; red or carneous degeneration, 4 cases; suppuration, 2 cases. The opportunity for making bacteriological investigations occurred in 4 instances: In 2, examples of red degeneration during pregnancy, cultures from the interior of the tumour were found to be sterile; in another case of extirpation after delivery diplococci were found on microscopic section; in a suppurating subperitonea myoma removed by vaginal hysterectomy, streptococci and colon bacilli were found in the tumour. A decision could often only be made after opening the abdomen. In cases of infection of all tumours after delivery there could be no doubt that abdominal hysterectomy was the only effectual method of treatment. All the cases made good recoveries. With regard to the mode of operation during pregnancy, the choice lay between myomectomy and hysterectomy. Myomectomy was suitable if the tumour was pedunculated; but all statistics showed that in tumours impacted in the pelvis, involving the cervix or invading the broad ligament, myomectomy was a much more dangerous procedure than complete hysterectomy.

Dr. Arthur Giles (London) said that the tone of the speakers struck him as one of undue optimism, and he was glad to hear Dr. Lea sound a somewhat different note. The dangers of fibroids complicating pregnancy were no doubt relatively slight when patients were under the care of expert obstetricians and gynaecologists; but it was necessary to consider the matter on a broader basis than this, and discuss the risk of patients under ordinary conditions. He ventured to say that of all cases of pregnancy associated with fibroids, at least 50 per cent. would be found to present some complication. The way they should regard the question was this: If a woman were known to have a fibroid, would they advise her to marry and run the risk of pregnancy? Or, if a patient were known to have a fibroid when pregnant, would they sanction her going into a remote country district beyond the reach of expert assistance? He felt sure that the combination of the two conditions was one involving very serious risk, and that the only chance of safety lay in the patient being kept under close observation, so that interference could be resorted to at any time if dangerous symptoms should arise. He shared the view of those who deprecated the induction of abortion or premature labour; he would advocate that a watchful attitude should be assumed if there appeared to be a chance of pregnancy going to full time; that if acute symptoms showed themselves during pregnancy a conservative myomectomy should be resorted to if possible; and that, if interference were required during labour, a Caesarean hysterectomy should be carried out. If the abdomen had to be opened on account of obstructed labour, he thought it a pity to leave a uterus with fibroids, exposing the patient to all the dangers of a repetition of pregnancy with fibroids.

Dr. Lloyd Roberts (Liverpool) said myomata were not common in pregnancy. Often they were not detected during pregnancy, and occasionally not even during labour. As myomata occurred about the age of 40, the woman was generally sterile. Pregnancy with myoma was often not dangerous, but this was not invariably the case. The myoma might prevent the development of the uterine muscle, or cause haemorrhage, abortion, premature labour, and localized peritonitis from impaction. This latter trouble often rectified itself as pregnancy advanced; the uterus and the tumour was crowded out of the pelvis out of harm's way into the abdominal cavity. If the tumour did not rise with the uterus out of the pelvis it might be lifted out. Myomectomy was the ideal treatment, by abdominal section if the tumour were situated in the upper segment of the uterus, and by the vaginal route if the growth was attached to the lower segment of the womb. He would not interrupt the progress of the pregnancy by inducing abortion or premature labour, as there was more risk of septic infection by this method of treatment than any other. The last thing he would do was the removal of the uterus. These tumours often became lessened, and sometimes disappeared altogether after labour. Removal of the uterus took away the chance of this hoped-for result and also the possibility of a future pregnancy. If these growths showed signs of necrosis, and there be septic infection, he would advise operative measures at once. As to sterilization, he would not in these days sterilize the patient.

Dr. W. C. Swayne (Bristol) said it was obvious that a large proportion of cases in which fibroids complicated pregnancy did not need interference, but occasionally symptoms were produced which demanded operative interference. The following cases were instances in point:

In a patient, a primipara aged 33, four and a half months pregnant, a large fibroid filled the entire upper portion of the abdomen; pain, dyspnoea, rapid pulse apparently rendered the continuance of the pregnancy likely to be fatal. A large pedunculated fibroid was removed from the fundus uteri. The patient made a good recovery, and was safely advanced in pregnancy three months later, after which she was lost sight of.

In the next case, a primipara aged 27, pregnant five months, acute abdominal symptoms occurred, and on opening the abdomen axial rotation of the uterus was found under a large fibroid attached to the right cornu lying in the left iliac fossa. This

was enucleated, and its bed sewn up with two layers of catgut sutures. The patient made a good recovery, but her pregnancy was interrupted one month after the operation.

In a third case, a primipara aged 23, pregnant about two and a half months, suffering from dysuria and pain in the pelvis, was found to have a fibroid growing from the supravaginal portion of the cervix the size of the fist. As while she was under observation the fibroid rapidly increased in size, and the symptoms became more severe, the tumour was enucleated after opening the posterior cul-de-sac pouch of Douglas. The patient went to term, and was delivered without any complication of a living female child.

The question of operative treatment must be decided on the conditions present in the individual case, and the question of the exact method of dealing with the fibroid must be decided after laparotomy had given access to the tumour itself. He had a previous similar difficulty to that described by Dr. Lockyer on the removal of the placenta in a case of fibroid.

Mr. J. FURNEAUX JORDAN (Birmingham) said that it had fallen to his lot to have to deal with the following cases: A woman six months pregnant with a very large fibroid, weighing over 8 lb. after removal; a case of labour obstructed by a pedunculated subperitoneal fibroid which filled up the pelvis; a case of inversion of the uterus after labour due to a fibroid in the fundus; and a case of a large sloughing submucous fibroid causing profuse, almost fatal, haemorrhage after labour. In all of these the treatment adopted was myomectomy, and in each case a good result followed. In the first two cases there had been a subsequent pregnancy. On this experience he would support his colleague, Mr. Martin, in his advocacy of myomectomy. He would also remind Dr. Giles that the expert gynaecologist was everywhere or almost everywhere; that they did not minimize the gravity of these cases, but realized as the years went by that they were better and better able to treat them safely and satisfactorily without having to resort to hysterectomy.

Dr. MARY SCHARLIEB (President) cordially agreed with Dr. Tate. As a rule, fibroids caused no great difficulty during pregnancy, parturition, or puerperium, but each case must be judged on its own merits. A cervical or intraligamentous growth which would cause obstruction to labour would call for operation, whereas a tumour in the upper part of the uterus would not cause obstruction, and did not offer an indication for operation, unless by its size, or by reason of some accident (such as torsion or degeneration), it was a source of danger. The operation of election was certainly myomectomy, which ought to be preferred to hysterectomy, unless the uterus were infected or so riddled with fibroids as to be a useless organ and a source of danger. She had performed myomectomy on several pregnant women, sometimes for symptoms due to degeneration of the growth, and once for a fibroid which coexisted with an ovarian dermoid and pregnancy. The two growths were removed. The patient was safely delivered at term of a living child.

Dr. TATE, in reply, said he was gratified to find that he had the support of nearly all the speakers in the remarks he had made in opening the discussion. In reply to Dr. Spencer, he thought that in a few cases the pain caused by fibroids was sometimes so severe that operative interference became necessary. Dr. Tate did not agree with Dr. Martin that the fibroid in his case was the cause of the uncontrollable vomiting owing to the tumour interfering with the expansion of the uterus. If this were so, why did not the tumour cause vomiting in the subsequent pregnancy?

THE ORIGIN AND PREVENTION OF PUERPERAL FEVER.

By Professor D. DÖDERLEIN,
Munich.

Of the large number of the factors in puerperal infection two stand out with ever greater clearness: these are the danger of (1) infection from within the female generative organs themselves, and (2) inoculation by pathogenic organisms from without during labour or the puerperium.

As for the former, the flora of the vagina afford extensive protection against virulent infection, at least during pregnancy, during normal labour, and also during the early and most dangerous period of the puerperium. Only one definite micro-organism has its natural habitat here—the *Bacillus vaginae*, which was first described by me, and which plays the important rôle of preventing the development of other micro-organisms, especially those of a pathogenic kind, by the production of lactic acid. This circumstance must be our guide in treatment. If we find abnormal conditions of the flora in the vagina during pregnancy we should try to favour the propagation of these normal inhabitants of the vagina.

Measures for the disinfection of the internal organs of generation at the time of birth are, however, much more important than the prophylactic measures to be taken during pregnancy. On this very contradictory views are held. While on the one hand some aim at avoiding danger of infection by special measures of disinfection—irrigation and rubbing the vagina with disinfecting substances—others maintain that such measures are of no advantage, and that Nature has surrounded the physiological act of birth with all necessary protection. In favour of this latter opinion—which I also hold—are the results of the bacteriological examinations of the secretion of the female genitalia, which show that the antagonistic relations of the bacteria to each other afford the simplest and best means of combating this autochthonic danger of infection.

Practical experience also favours this natural method of treatment of normal parturition, though statistical evidence on the point must be examined with care if false conclusions are not to be drawn.

The comparison of clinics employing fundamentally different methods of treatment may easily lead us astray. Different results do not authorize the conclusion that the cause for these differences lies in special principles of treatment. Conditions in different hospitals vary too much for general conclusions to be formed from single measures.

Whether prophylactic treatment of the genitalia of the parturient woman is advantageous, or, on the contrary, even injurious, can only be decided by comparing the results of different methods at one and the same hospital and during the same period.

I have at different times made such investigations in my clinics at Tübingen and Munich. Alternately one parturient was disinfected and the other not, so that there were always at the same time lying-in women of both classes together in the hospital who had been confined at the same time, and in other respects than that of vaginal disinfection under exactly the same conditions. The results in the Tübingen clinic, published by Baisch,[1] covered 500 births, during which the parturient women were irrigated with 1 litre of sublimate solution, 1 in 1,000. During the irrigation the walls of the vagina were rubbed with two fingers of a gloved hand carefully and cautiously, but still as thoroughly as possible. As all internal examinations of these women were made exclusively with a gloved hand, and the external genitalia were previously disinfected, the introduction of microbes from without was excluded.

In the same period there were 500 lying-in women not subjected to vaginal disinfection. Of the 500 disinfected women, 12·8 per cent. had fever, while of the 500 not disinfected, only 8 per cent. had fever. After deducting those who had fever not originating from the genitalia, there remained 5.2 per cent. with fever among the non-disinfected and 10 per cent. among the disinfected.

The investigations recently made in the Munich Lying-in Hospital in the same way, and published by Eisenreich,[2] furnished similar results. We used here an irrigation of ½ to 1 per cent. solution of lactic acid. The results showed that, of 460 parturient women disinfected therewith, 6.29 had fever, while of 477 not irrigated, only 3.5 per cent. had fever.

Thus, in both series of observations the disinfected women were twice as badly off as those who were not disinfected. These results force us to the conclusion that the disinfection of the internal organs, by whatever means carried out, is not only of no use, but rather causes injury.

If we had not the theoretical bacteriological investigations of the flora of the female genitalia, these clinical results would be extremely puzzling, as being opposed to all our fundamental views of antisepsis. But, as things are, they are readily explicable.

The protective action of the natural flora of the vagina is disturbed by the disinfection. Moreover, as the result of the energetic and repeated disinfection with watery solutions, the secretions of the genitalia are removed, the vagina becomes dry and its epithelium swollen. The probability of the mucous membrane being abraded during birth, and thereby more exposed to invasion of bacteria, is consequently increased. But however matters be explained, the fact remains that when the flora are disturbed by disinfective measures, the chances of parturition remaining entirely physiological are decreased. As for infection from without, the irrigation tubes or other instruments introduced into the genitalia during labour may contain microbes which have remained on them from former use. If such instruments have been recently used on infected cases, and have not since been sterilized, the danger is obvious, but it is so easy to prevent this that the risk only need be mentioned.

It is much more difficult to prevent the danger from the examining hand. This danger was discovered and proclaimed by Semmelweis, and though his views were at first disputed, it is now fully established that he was right; in other words, the examining hand is the principal source of infection of parturient women, and serious cases of puerperal fever are caused almost entirely in this way.

There are two ways available of avoiding this danger—either to give up the internal examination of the parturient woman entirely, or so to prepare the examining hand that it can carry no poison into the genitalia. It has long ago been shown by numerous clinical observations what an advantage lying-in women have when their internal examination can be and is avoided.

By developing methods of external examination it might be possible to render the establishment of a complete diagnosis so far possible that internal examination might be prohibited altogether; but, though the danger of infection would thus be reduced to a minimum, faulty diagnosis would so frequently occur that the renewed introduction of internal examination would again take place as the lesser of two evils.

It is all the more fortunate, therefore, that a means exists of making the internal examinations which are necessary for a proper diagnosis without incurring danger of infection.

Different hands vary in the extent to which they can be disinfected, but many investigations have shown that no hand whatever can be completely freed from all organisms, whatever the labour and care taken.

In my opinion, therefore, reliance should not be placed on hand disinfection, and we should make it a routine practice to conduct all vaginal examinations with a gloved hand.

In making such examinations gloves are not liable to be torn and infected fingers exposed as they may be during operations, and the manufacture of very thin gloves does away with the objection against their use, that the sense of touch is diminished and the examination thereby made more difficult. It requires only very slight practice, and we have been fully convinced in the case of the numerous students in our hospital, as well as of those studying midwifery, that they can feel just as well as without gloves. The difficulty that midwives experience in putting on thin gloves I have endeavoured to eliminate by constructing a two-fingered examination glove, which protects the examining fingers in the ordinary way and the rest of the hand by a kind of mitten. With this simplification, which renders it perfectly easy to put on, the cost is also reduced and that further objection to their use done away with. These two fingered "touching" gloves* are disinfected in the wholesale manufactory by streaming superheated steam and then packed in a triple cover, impervious to air and bacteria, in a way directed by me. I think that no valid objection can now be made to the universal use of this very important means of preventing the danger of internal examinations.

If we avoid too refined measures of disinfection on the one hand, and on the other deprive the necessary vaginal examinations of their danger, for which purpose the use of the touching glove is not only the simplest, but also the surest means, the result everywhere, in the statistics of all countries, must be to reduce the morbidity and mortality of puerperal fever to a minimum.

* To be had of Zieger and Wiegand, Rubber Manufacturers, Folkmarsdorf, Leipzig, Kirchstrasse.

REFERENCES.
[1] *Arch. f. Gyn.*, Bd. lxxix. p. 325. [2] *Zentralbl. f. Gyn.*, 1910, vol. v. p. 14.

DISCUSSION.

Dr. BALLANTYNE (Edinburgh) agreed with Professor Döderlein in practically all the remarks he had made, and followed, with one or two exceptions, the methods he had recommended. The difficulty which had always faced him was the almost absolute impossibility of applying *all* aseptic precautions in the serious cases of midwifery—for example, third stage haemorrhage, and the risk of leaving out essential protective details. So it often came about that obstetricians took the most complete precautions in the cases that needed them least, and ran the risk of omitting them in the cases in which they were most essential. He would counsel the young obstetrician not to feel that because there was no time to fulfil the whole aseptic technique he could omit all precautions. He regarded the use of rubber gloves to extract pieces of membrane as very difficult.

Dr. PURSLOW (Birmingham) had used gloves for operative midwifery, and found that there was no difficulty, except in cases of removal of adherent placenta. He believed British obstetricians were generally agreed that preliminary disinfection of the vagina in midwifery cases was unnecessary, but there was disagreement as to the advisability of preliminary cleansing of the vagina before performing Caesarean section. Personally, he did not consider it necessary, unless there had been preceding vaginal manipulation. The textbooks written for midwives did not draw sufficient attention to the extreme importance of keeping their hands, as far as possible, from contact with infectious matter in their daily work, and the midwives formed the idea that contact with all forms of organic and inorganic matter was equally dangerous.

Dr. HERMAN (London) quoted Dr. Kocher's operative surgery to the effect that the use of india-rubber gloves to the surgeon was to wear them when he was not operating. The expense was prohibitive to the poor midwife. The very best results had been attained without gloves.

Mr. S. G. KIRKBY-GOMES (Straits Settlements) said that in the East, where his own work lay, asepsis was even more difficult to obtain than in this country, and consequently gloves were largely used both in surgical and obstetric work. Much of his own success in both directions he could attribute to the use of gloves. He had not experienced the mechanical difficulty reported by those who spoke against the use of gloves in surgical practice, and firmly believed that with a little practice nobody else should either. Gloves, he thought, should be worn in all surgical procedure put into practice by surgeons, obstetricians, and gynaecologists alike.

Dr. FREDERICK EDGE (Wolverhampton) said that it was in the third stage that infection was most commonly incurred. This failure in the management of the after-labour stage was due to over-anxiety about shreds of placenta and membranes being left in the uterus, and consequent unnecessary interference with the uterine cavity. The greatest reluctance to interfere with the uterine cavity should be strongly inculcated by teachers. Meddlesome douching, and especially douching with inadequate cleansing of the vagina and vulva, should be specially forbidden. If the uterine cavity had to be entered, the procedure should be carried out as carefully as an abdominal section.

Dr. HASTINGS TWEEDY (Dublin) said that there was no operation in obstetrics and gynaecology that could not be performed with rubber gloves. The most adherent placenta could thus be removed, and to facilitate this, finger-tips could be cut away, and the bare tips painted with "new skin." If the glove were filled with methylated spirit, it slipped on to the hand with great ease. The spirit hardened the epithelium, and prevented the maceration of skin, therefore it was a mistake to suppose

that a glove must contain or did contain pools of septic fluid. Some complained that spirit blistered the skin, but the blistering was due to the incomplete removal of the antiseptic by spirit before the hand was placed in gloves.

Dr BLAIR BELL (Liverpool) said he was sorry that a discussion on puerperal infection should resolve itself into a discussion of the advantages and supposed disadvantages of rubber gloves. The question had passed beyond a matter of judgement or opinion. The surgeon and obstetrician who did not wear them was exposing his patients to unjustifiable risks, and could not possess an aseptic conscience. If there were difficulty in removing an adherent placenta it could be overcome by putting a sterilized cotton glove over the rubber one. He called attention to the fact that surgeons were not nearly particular enough about the cleanliness of their hands in everyday life. No surgeon should do gardening or clean motor cars with uncovered hands. Further, he thought the habit of wearing leather gloves week by week an extremely dirty one—every one was more particular about his footwear. Personally he always wore white washable cotton gloves which he had had specially made. Such details of personal cleanliness should come natural (aseptic conscience) to the aseptic surgeon.

The PRESIDENT (Mrs. Scharlieb) said it was pleasant to learn that Professor Döderlein disapproved of the so-called preliminary disinfection of the birth passages, because in England it was believed that antiseptic douches or gauze scrubbing of the vagina were likely to do more harm than good. His suggestion of the limitation, but not the abandonment, of internal examinations, and the wearing by the obstetrician of india-rubber gloves, or, in the case of midwives, of a special form of protection for the half-hand, seemed to her wise. Several speakers had enlarged on the difficulty of removing scraps of placenta and fragments of membrane when wearing gloves—a trouble which others thought to remedy by wearing a sterilized cotton glove over the rubber. She did not think this difficulty was very great, especially if a roughened variety of glove were worn. It seemed advisable that when the whole hand had to be introduced into the uterus the glove should reach up to the elbow. Some speakers feared that the wearing of rubber gloves would tend to cause carelessness in the disinfection of the hands, but surely hands should be disinfected as carefully as if gloves were not going to be worn, and the gloves should be worn as if no attempt to cleanse the skin had been made. The suggestion of filling the gloves with methylated spirit to ensure their sterilization and to facilitate the introduction of the hands would certainly not suit all skins, and if the obstetrician got his hands sore or rough there was an end to the possibility of surgical cleanliness for some days to come. Probably glycerine that had been boiled was a safer lubricant.

ADDITIONAL CASES OF RUPTURE OF THE UTERUS.

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THIS short communication has special reference to three additional cases of rupture of the uterus upon which I have operated during the last two years. In the *Journal of Obstetrics and Gynaecology of the British Empire* in July, 1908, I recorded 14 cases. In that paper I referred in considerable detail to the symptomatology of the condition. On the present occasion, however, I shall only refer to the treatment.

CASE I.

Mrs. F., aged 37 years, 4-para, was admitted to my ward in the Glasgow Maternity Hospital on March 31st, 1909. Her first three children were born without difficulty. She was seen by the house-surgeon twenty-four hours after labour had started. Forceps had been tried, but failed. On her arrival at the hospital she was in a collapsed state. The vagina was full of blood clot; the fetal limbs could be palpated easily on one side of the abdomen and the uterus on the other. When the abdomen was opened, it was found that the head was still in the uterus and the trunk free in the abdominal cavity. There was difficulty in getting the child's head through the rent in the uterus. Complete hysterectomy was performed, and the left parametrium drained per vaginam by means of gauze and tube drain. The patient made an excellent recovery. The child weighed 12½ lb.

CASE II.

Mrs. S., 7-para, admitted on October 10th, 1909, in a very collapsed state. The child's body was born, but the head remained above the pelvic brim. Several futile attempts at delivery were made. When sent into hospital, it was recognized that the head was hydrocephalic. The head was therefore perforated and easily extracted. The child had spina bifida. After the birth of the child the hand was passed into the uterus to remove the placenta, and a tear was discovered, extending up the whole of the left side. The abdomen was opened, and an incomplete tear discovered; the peritoneum was intact. The abdomen was closed and the tear packed with gauze per vaginam. The patient died in five hours.

CASE III.

Mrs. R., aged 38 years, multipara, was admitted into hospital in a collapsed condition. The child had been in the transverse position, with arm prolapsed and shoulder impacted. Internal version attempted before admission. On examination a large mass was found on the left side of the abdomen, and in front and to the right of it another less movable one could be palpated. Per vaginam, the vagina was full of blood, and no fetal parts could be felt. Abdomen opened. A large complete tear, involving cervix and lower uterine segment, and extending to the insertion of tube, was discovered. Hysterectomy; left parametrium drained. The patient made an excellent recovery.

REMARKS.

It is a matter of great satisfaction that the results obtained from operative treatment have greatly improved in recent years. Since my paper dealing with fourteen cases which I had treated appeared, the most valuable contribution in English on the subject is Eden's paper read before the Royal Society of Medicine on May 13th of last year. Eden strongly supported operative treatment, and in the three cases he detailed was able to record two recoveries. There is little doubt that in the slighter degrees of incomplete rupture plugging still gives the best results, but in the severe cases of complete rupture abdominal section is pretty generally admitted to be better. Some really very brilliant results have been obtained in recent years by such treatment, as will be seen by consulting the table compiled by Petrén of Lund.[1]

The majority of cases of rupture of the uterus operated upon by abdominal section, which die, die of sepsis, not of shock. Taking my own cases, I have performed hysterectomy 11 times with 5 recoveries—that is to say, a mortality of 55 per cent. Now of the 6 fatal cases, 4 died of sepsis and 2 from shock.

Putting aside the cases of slight incomplete rupture, let us consider only the graver forms of rupture and the most satisfactory methods of dealing with them. Since I commenced to perform abdominal section for such cases my results have steadily improved. The first 6 I tried by supravaginal amputation, and with that treatment 1 had 4 deaths—a mortality of 66 per cent. In these 6 cases I was struck by the fact that 3 of them died, not of shock but of sepsis. I therefore determined to try and improve my operative treatment so as to lessen this. Thinking the matter over, it appeared to me unsound to leave behind the cervix, the part of the uterus that in many cases was probably chiefly infected by the operative procedures and examinations that had taken place prior to the rupture. I therefore determined to remove the cervix. In this way I treated 3 cases, but still had 2 deaths—exactly the same percentage as with supravaginal amputation. I therefore thought I should go a step further, and, in addition to removing the cervix, that I would drain the lacerated broad ligament and completely cover the lower part of the pelvis with peritoneum. My last 2 cases I have treated in this way, and both of them have recovered. The drain used has been a thick rubber tube brought out through the vagina and loosely surrounded with gauze. I am in the habit of leaving this drain in for three or four days. As far as my experience goes, this is the treatment I have found most satisfactory.

REFERENCE.

[1] *Monats. f. Geb. u. Gyn.*, Bd. 29, Heft 3, 1909.

AIR EMBOLISM DURING LABOUR.

By JOHN CAMPBELL, M.A., M.D., F.R.C.S.Eng., LL.D.,

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AIR embolism probably occurs more frequently during labour than is commonly supposed. Very little attention is paid to it in most of the ordinary textbooks, and the

practitioner is thus led to look upon it as so very rare that the possibility of its occurrence escapes his memory, and he fails to recognize a case when he meets with it. While the accident is admittedly rare, the prevention of it is of so much importance, and the treatment of it requires to be so definite and prompt and decided, that the subject is worth more attention than it generally gets.

Symptoms.

The symptoms are usually described as being similar to those of pulmonary embolism from clot. No doubt this is the case where the condition is of an extremely grave character and proves suddenly fatal. Here recognition of the cause of the trouble is not of so much importance, because the end comes so quickly that nothing can be done to save the patient. Cases which are of the milder type and have a chance of recovery under treatment show symptoms which are by no means like those of pulmonary embolism. In fact, the difference is quite remarkable. Instead of a sudden and severe attack of spasmodic inspiratory efforts, with perhaps convulsions and sudden death, as occurs in the case of the worst forms of both air and blood embolism, there are a series of recurrent attacks of dyspnoea. The recurrent character of the spasms, and the fact that intervals of comparative well-being are for a time to be observed, serve to differentiate the air embolism from the blood embolism.

In the case of the ordinary pulmonary embolism the clot gets driven into that part of the pulmonary circulation in which it becomes wedged, and remains there, producing infarction and giving rise to a train of symptoms which retain their urgent character for a considerable time and gradually subside. The worst of the attack is at the onset if the patient has any chance of recovery, and symptoms slowly become less pronounced with lapse of time. On the other hand, while the onset of an attack of air embolism resembles that of blood embolism, its future progress is quite different in cases that recover. The spasmodic inspiratory efforts and the convulsions, if such be present, pretty rapidly pass off. The patient seems but little the worse. In half an hour or so the attack is repeated. Again it is over in a few minutes. Again the patient seems comparatively well for a time. Soon another seizure follows, and the whole thing is gone over again; but after each attack the patient gets more exhausted. The cyanosis does not completely pass off in the intervals. The pulse becomes gradually more frequent and more feeble. The heart becomes more and more dilated. Ultimately death takes place if the condition has not been relieved. This tendency for acute symptoms to comparatively rapidly pass off, and to recur again and again, is what one would naturally expect in the case of air.

The blood clot forms a permanent block in that part of the circulation into which it has been driven, while the air has a tendency to get broken up or to escape through the lung tissues. The air lock has thus a natural tendency to disappear somewhat rapidly. In that respect we might look upon it as not so serious as blood clot. On the other hand, air embolism is prone to recur again and again, and ultimately wear out the patient, unless it be recognized and energetically treated. This tendency to recur, which is so characteristic of air embolism, is, as we shall see later, due to the recurrent contractions of the uterus. These elementary points have been so much dwelt on because they bear both upon preventive and remedial treatment. In the case of pulmonary embolism from blood clot but little effective treatment is possible. The patient must fight it out for herself to a large extent. In the case of air embolism treatment is all important, because without active interference by the medical attendant death will in many cases follow in spite of the best efforts of Nature, and will indeed be hastened by those efforts.

Cause.

The causes assigned as being concerned in the production of air embolism during labour are numerous, but practically the only important cause is the delivery of the patient under anaesthesia in the left semiprone position and failure to turn her over on her back as soon as the child's head is born. Retention of the placenta within the uterus is a necessary factor in causation. When a patient is delivered in the left semiprone position under anaesthesia expulsion of the child is immediately followed by an inrush of air into the vaginal and uterine cavities. This is brought about partly by gravitation of the pelvic organs, as a result of the semiprone position, and partly by the relaxation of the uterine walls. So long as the placenta is not detached, the entrance of air will not produce embolism. When, however, the placenta has become detached and has got driven down into the cervix, the danger to the patient begins as soon as any air gets above the placenta. The uterine cavity then contains a certain amount of air. The placenta in the cervical canal acts as an effectual cork, holding the air imprisoned within the uterine cavity. In these circumstances a uterine contraction is bound to compress the air. The air will escape by the path of least resistance. This path is most likely to be through the venous sinuses in the placental site, and thence along the veins to the right side of the heart, and so to the pulmonary artery. The embolism will thus show itself during a uterine contraction or during an attempt to express the placenta. In a non-fatal attack the symptoms will soon pass off, the air getting broken up or absorbed in the lung. As soon, however, as another uterine contraction comes on or another attempt at expression of the placenta is made, the symptoms reappear with all their original force. These phenomena will be repeated until all the air in the uterine cavity is disposed of in the circulation, or until the placenta is removed, or until the patient has succumbed to numerous recurring paroxysms. Attention to these elements in causation will easily convince the obstetrician of the importance of preventive treatment and of the necessity for a prompt and definite line of action when the symptoms have appeared.

Prophylaxis.

Preventive treatment consists in completing the delivery of the child's body with the patient on her back, and in performing all obstetrical operations with the patient on her back. The possibility of air embolism occurring is practically banished by adhesion to these simple rules. The possibility of air embolism following delivery in the left-side position is a very strong argument against the posture which is usually adopted by English women during delivery.

Treatment.

When air embolism has taken place the placenta should immediately be removed by hand. Attempts at expression are not only useless but positively dangerous. They are very likely to force more air into the venous sinuses, and, as the influence they exert on the placenta must be through the volume of compressed air, they can have but little effect in dislodging the placenta. The air in the uterus is more likely to enter the venous sinuses than to transmit the force to the placenta. When the placenta has been removed by hand, the uterus should be washed out with a large flushing loop curette and plenty of sterile saline solution.

When a number of spasmodic attacks have occurred ancillary measures may be of service in enabling the patient to recover from her state of exhaustion. Saline infusion, the hypodermic injection of strychnine, the use of oxygen, and the administration of digitalis have an important place in this connexion. It must, however, be clearly recognized that removal of the placenta by the hand introduced into the uterus takes precedence of all other methods of treatment, and is the first thing to be done.

After-effects.

When the immediate anxieties have been overcome a long course of after-treatment will be required. Above all things, rest in the recumbent position for five or six weeks should be insisted on. The dilated heart requires time to recover from the strain. Anaemia is mostly a pronounced feature and will require attention.

After-effects do not seem to be noticeable even in severe cases. In course of time the patient regains her usual health and goes successfully through her future pregnancies. The acute dilatation of the heart subsides. Any murmurs noticeable during convalescence disappear. While it is unlikely that the organism can go through such a terrible ordeal as air embolism without some permanent damage, nevertheless no appreciable effect is left behind.

The following two cases fairly illustrate the accident of air embolism occurring during labour. One was more

severe than the other, and nearly proved fatal. The other was moderate in severity. Both recovered under treatment.

Case I.—Severe. The patient was a strong, well-made, healthy woman. She had had one child, delivery being normal and unaided. Her second confinement was also normal and unaided throughout the first and second stages. She lay on a narrow bed with a wire mattress, which was much depressed in the centre. Consequently when she lay on her left side the semi-prone position was considerably exaggerated. She had a little chloroform during the later stages of the descent of the head, the anaesthesia being fairly deep during the expulsion of the head. She was not turned upon her back until after the child was completely born. Within a few minutes of the birth of the child she had completely regained consciousness and looked and felt perfectly well. With the onset of a uterine contraction she exclaimed that she was dying, made several intense spasmodic inspiratory efforts, became cyanosed, and had a general convulsive seizure ending in opisthotonos of the most pronounced description. The pulse became frequent, feeble, and irregularly intermittent. The spasm almost immediately passed off, and in a few minutes she felt well and looked none the worse. Attempts to express the placenta were made about twenty minutes later, and were followed by a uterine contraction which brought on the same series of events as before. Several uterine contractions followed at intervals of fifteen to thirty minutes, and each of them formed the starting-point of a new spasmodic and convulsive seizure. The cyanosis soon became permanent, though deepening during the spasm. The pulse was in every respect worse. The dilatation of the heart became very noticeable. Vomiting occurred at intervals and gave slight temporary relief. The patient appeared to be at the point of death. At this stage the placenta was removed by hand and the uterus washed out with saline solution. A vein in the arm was opened and a pint of saline run in. Strychnine was given hypodermically and small quantities of hot milk and a little whisky administered. After removal of the placenta no further spasmodic attacks came on. The colour and general condition slowly and gradually improved. Vomiting took place several times during the first three hours after removal of the placenta. The temperature never rose a point, but the pulse remained at 100 for about two weeks. At the end of four weeks the patient was apparently quite well though still anaemic. Six weeks after the confinement she was able to go about. Since then she has had a normal labour, and is now in good health and apparently not in any way permanently affected by the experience through which she passed.

Case II.—Moderate in severity. The patient had always been a delicate girl, subject to anaemia and easily run down. Labour proceeded normally until the head began to press upon the perineum. As progress ceased and she became exhausted, chloroform was given and delivery accomplished by forceps, the perineum being somewhat torn. She lay upon an ordinary double bed with wire mattress. The mattress sagged slightly in the centre, but not to an unusual degree. Delivery of the child took place in the left-side position, the hips being supported by the firm edge of the bed, while the knees and abdomen sank into the hollow of the wire mattress. After the child was born the first uterine contraction was followed by a pronounced spasm, marked evidence of air hunger, and frequency and irregularity of the pulse. These symptoms soon passed off, but the patient complained of severe pain in the region of the left shoulder-blade. Examination of this area by auscultation and percussion revealed nothing. Attempts to express the placenta were followed by uterine contractions and a return of the spasmodic symptoms. Vomiting took place several times. Dilatation of the heart became marked. Ultimately the placenta was removed by hand, and the uterus washed out with normal saline solution. No spasmodic attacks occurred after removal of the placenta. Gradual and slow improvement went on, and apparently complete recovery ensued. This case differed from the preceding chiefly in the absence of cyanosis and severe convulsions. In neither case was there albuminuria.

INTRAPERITONEAL HAEMORRHAGE IN CASES OF UTERINE MYOMATA.

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[Abstract.]

Apart from operation, the escape of blood from the vessels of a uterine fibromyoma into the peritoneal cavity is so rare an event that textbooks and monographs are silent concerning it. Few cases are recorded in the literature, and some of these only in the briefest manner. Yet it has long been known that haemorrhage can take place directly from veins and sinuses in the tumour itself, probably the earliest instance being that reported in 1866 by Matthews Duncan, in which death followed bleeding per vaginam from a large vessel in a submucous fibroid. It is also known that a cystic fibroid can bleed into its own cavities, especially after torsion of the pedicle of a pediculated fibroid. Specimens of subserous fibroids have been exhibited—notably by Treub and H. R. Spencer—which show varices on their peritoneal surfaces. Rupture of such varices, or laceration occurring in a tumour the seat of degenerative changes, may lead to serious intraperitoneal haemorrhage.

Such an accident occurred to a patient under the writer's care in the Hospital for Women.

She was a single woman, aged 31, who had always enjoyed good health, and in whom the existence of a fibroid had never been suspected. Early in the present year she began to suffer from "bilious attacks," and then on March 23rd, after severe exertion, acute abdominal pain with vomiting came on. After resting for a day the attack passed off, but ten days later a second followed the act of sitting up in bed to consult a watch. Some hours later the patient's medical attendant saw her and sent her into hospital. When admitted the temperature was normal and the pulse-rate 76, and there was no sign of internal haemorrhage. The abdomen was tumid and tender, and a hard tumour projected upwards out of the pelvis. The provisional diagnosis was an ovarian tumour—probably a dermoid cyst—the pedicle of which had undergone torsion.

Laparotomy revealed a fibroid which sprang from the posterior wall of the uterus. About 6 or 7 oz. of dark red fluid blood were free in the peritoneal cavity. A small projection was felt on the left side of the tumour, but no particular attention was paid to it. Myomectomy was performed and the uterus was reconstructed. So far the most careful exploration had failed to disclose the source of the bleeding, and now a fresh and minute search was no more successful. The uterine appendages were normal, and there was no recent ruptured follicle on either ovary. The abdomen was closed and the patient sent back to bed. It was only now, whilst handling the tumour, that the origin of the bleeding became clear. Mention has been made of a small projection on the otherwise smooth rounded surface of the mass; from this blood was noticed to be oozing. Closer investigation showed that the projection was situated immediately over a large superficial vein that coursed visibly beneath the peritoneum. Gentle pressure on the vein was followed by further oozing of blood from the projection, and on the summit of the latter was visible a small rent with thinned and ragged edges. The projection was therefore a varicosity of the superficial vein; the wall of the varix had yielded under the increase of blood pressure caused by severe exertion, and intraperitoneal bleeding had occurred, fortunately for the patient, only in limited amount. After the specimen had been hardened the continuity between vein and varix was further established by the passage of a probe. The patient recovered and returned home on the ninth day.

Rokitansky (1861) was probably the first to mention this condition, but he merely stated that "the tearing of the superficial vein of a fibroid tumour, with bleeding into the peritoneal cavity, has been observed." Five cases have been recorded in which the diagnosis was not verified either by operation or autopsy. Albert Martin, Amann, and Albrecht have each mentioned instances in the briefest manner, those of the latter two being rapidly fatal. With similar brevity, cases have been mentioned by H. R. Spencer, A. H. N. Lewers, Mrs. Scharlieb, Döderlein, Pean, and Gusserow and Zweifel.

Jaschke recently recorded an instance of bleeding from a varicose vein in a woman of 43. This is the only known instance in which a diagnosis of intraperitoneal bleeding from a uterine fibroid has been made prior to operation. An immediate and rapid hysterectomy failed to save the patient.

The existence of a varix is not essential for the occurrence of bleeding, for in three fully reported cases the rent has been found in the wall of an apparently normal vein (Stein's and Tedenat's two cases). In two cases (A. H. N. Lewers and R. M. Littler) there have occurred in myomata superficial lacerations involving blood vessels. In Lewers's case the presence of fresh blood in the peritoneum and the existence of the laceration in the myoma were totally unexpected. In Littler's, the injury was caused by a fall, which was followed by an acute peritoneal crisis.

A very rare cause of bleeding must be ulceration of the surface of the myoma as the result of pressure on the tumour, as in the case reported by W. Bruce Clarke. The tumour was wedged against the sacral promontory, and the area pressed upon by the promontory became ulcerated. When the abdomen was opened an artery and vein were bleeding at the site of ulceration. Finally, mention may be made of rupture of a superficial sinus as the result of increase of local blood pressure consequent on torsion of the pedicle of the fibroid, as in the case recently recorded by Steinbüchel.

Diagnosis.

In several cases operation has been undertaken for myomata only, the occurrence of intraperitoneal bleeding

being unsuspected. In other cases the complication has been mistaken for dermoid cyst with torsion of the pedicle; for perforated gastric or duodenal ulcer; for tubal gestation. In two cases the patients suffered from inexplicable and advancing anaemia that could not be explained by external losses of blood or by general disease. In both of these operation showed the cause to be oozing of blood from superficial veins of myomata. When the losses of blood have been in greater amounts, the patients have a history of repeated peritoneal crises, as in Pean's case. The diagnosis depends on the existence of a myoma, *plus* the symptoms and signs of internal haemorrhage. In some cases it may be possible to recognize the presence of free fluid in the peritoneum, but this implies great shedding of blood. In every case the possibility of the occurrence of ectopic gestation in a patient suffering from a myoma requires consideration. Cases may be divided, roughly, into two classes:

1. The fulminating, in which the escape of a large amount of blood into the peritoneal cavity is followed by an acute peritoneal crisis and collapse.

2. The subacute, or even chronic, in which the oozing of small amounts of blood, or of the escape of very moderate quantities, are evidenced either by inexplicable anaemia, or by mild signs of peritoneal disturbance of short duration.

Mortality.

In 16 cases the termination of the case has been stated after operation or autopsy. Eight of these are briefly, 8 fully, recorded. Of the former 3 died, of the latter 2. Five deaths out of 16 patients yields a mortality of 31·25 per cent., a rate that indicates how serious the condition is.

It is scarcely necessary to add that in every case immediate laparotomy is indicated.

LOCALIZED NECROSIS OF AN ADENOMYOMATOUS RIGHT TUBE, WITH A LEFT TUBAL MOLE AND FIBROID UTERUS.

By FRANCES IVENS, M.S.Lond.,
Liverpool.

THE patient in the following case was a woman aged 31. She had been married eighteen months, her periods before marriage being regular, not profuse, and lasting two to three days. She had married in November, 1908, and menstruation continued to be regular until February, 1909, and then ceased for three months.

First Illness.—In May, 1909, flooding with the passage of clots occurred, but stopped with rest in bed. As the abdomen continued to increase in size and a further period of amenorrhoea ensued until the following November, the patient imagined she was still pregnant, and having felt what she thought were fetal movements, expected her confinement in November. Instead, however, a dark red discharge began lasted for three weeks, and was followed by a further period of amenorrhoea. On March 1st, 1910, haemorrhage with the passage of clots again occurred. Between this date and the preceding November the patient thought her abdomen had decreased in size.

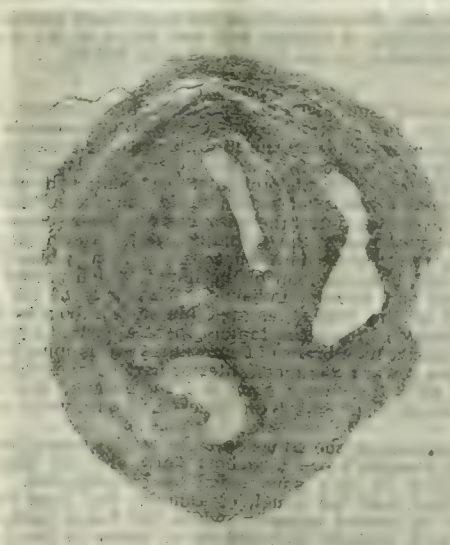


Fig. 1.—Section taken through the adenomyomatous nodules showing the normal lumen pushed to one side by a mass of unstriated muscle fibres in which gland spaces are scattered irregularly.

Admission to Hospital.—As the haemorrhage and passage of clots continued, the patient, after a fortnight, was sent to the Stanley Hospital by Dr. Huey, of Millom, Cumberland, being admitted on March 14th, 1910.

State on Examination.—She was a short, stout woman of rather unhealthy appearance and sallow complexion. There was an extremely thick layer of abdominal fat, and a satisfactory examination was impossible. Bimanually a tender, ill-defined swelling could be felt in the left iliac region, and the uterus was enlarged and rather hard. There was a copious dark red discharge.

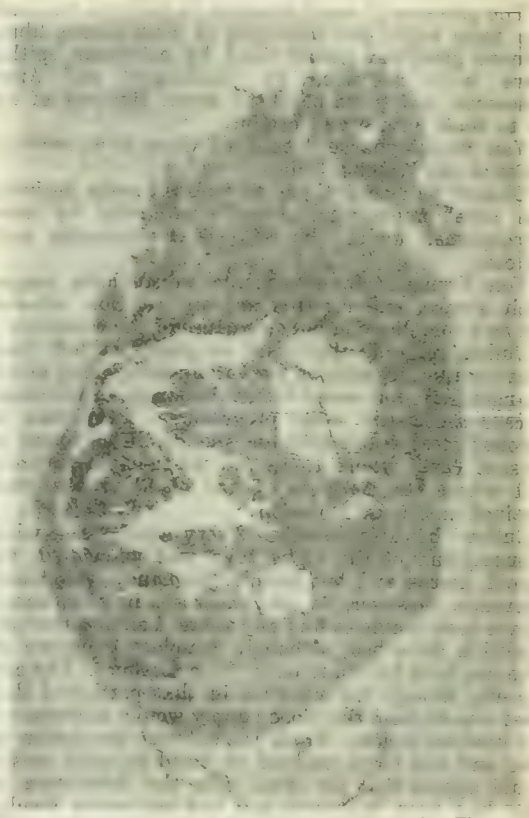


Fig. 2.—Localized necrosis in adenomyomatous tube. The section is taken through the edge of the perforation, and shows thinning of the mucous membrane at one point.

Operation.—A diagnosis of ectopic gestation having been made, on March 17th I opened the abdomen by a median subumbilical incision. The stomach was very much dilated, being dragged down by an omental adhesion which was firmly fixed to the left tube. After separating this, the tube was seen to be closed and distended, dark red in colour, and firmly adherent to a cystic left ovary. Both were removed. There was no haematocele, though it was evident that the omentum had adhered to a rupture about the middle of the tube. The uterus was rather large and thick, and a small subperitoneal fibroid was enucleated from the fundus. On drawing up the right tube a small circular perforation was seen in its middle third, opposite to the attachment of the mesosalpinx. The edges of the opening were greyish brown in colour. The tube itself was thickened and not dilated, though the fimbriated end was closed and rather bulbous-looking. At the uterine end of the tube, close to the cornu, was a nodular thickening whitish in colour, and not exceeding ⅛ in. in diameter. The tube was removed, but as the ovary looked healthy it was left *in situ*.

Parts Removed.—The left tube measures 5 in. along its convexity, and the lumen contains firm dark clot in which are a few degenerate villi. The right tube measures 2½ in. A section through the nodule shows a normal lumen, pushed rather to one side by a mass of unstriated muscle fibres in which are scattered, irregularly, gland spaces varying in size (Fig. 1). These are lined by a single layer of low columnar epithelium, which in some lies directly on the muscle, while in others a densely infiltrated stroma resembling that of the uterine mucosa intervenes. In the gland spaces are red blood corpuscles, desquamated epithelium, and leucocytes laden with blood pigment. A section taken through the edge of the perforation shows thinning of the mucous membrane at one point, with intensely congested vessels, and cloudy swelling of the epithelium which has partly disappeared (Fig. 2). Masses of blood pigment are scattered through all the layers of the tube wall. The lumen shows no sign of previous dilatation. Separated from the tube lumen by a thin layer are several gland spaces containing desquamated epithelium, blood, and coagulated serum. They are not surrounded by muscular tissue.

Progress.—The patient's convalescence was uninterrupted, but on returning home further uterine haemorrhage occurred, and she was readmitted for hysterectomy.

Readmission.—On June 2nd I removed the uterus by a supravaginal operation. It was interesting to note that the stomach had regained its normal size. The uterus was thickened generally, and especially the posterior wall, but no encapsuled tumours could be seen. The mucous membrane was thicker than usual, but no glands were seen in the deeper muscular layers. The patient made a good recovery.

REMARKS.

The presence of small tumours in the tube situated near the tubal angle, and consisting of plain muscle fibres and minute glandular canals lined by columnar epithelium, have been described by Continental and American observers, and there has been much diversity of opinion as to their nature and origin.

Von Recklinghausen[1] believed them to be derived from relics of the Wolffian bodies.

Chiari[2] described them as isolated cysts derived from the tubal mucous membrane surrounded by muscular hyperplasia, under the title of "salpingitis isthmica nodosa."

Von Franqué[3] found chronic tuberculosis present in such a case, and on this account regards tuberculosis not as a complication but as a cause of the condition.

Cullen[4] regards the cysts as glands cut off from the tubal or uterine mucous membrane undergoing menstrual changes. He has noted decidual changes in the stroma in a case associated with pregnancy. This view would account most reasonably for the condition found in the present case, where there are no signs of tuberculosis, and where the contents of the gland spaces resemble retained menstrual secretion.

Cullen[5] has also described a very similar case where an adenomyoma of the right tube was associated with a fibroid uterus and left ectopic pregnancy. He makes no reference, however, to any necrosis in that case, and I have been unable to find anywhere a similar pathological condition described, although complete gangrene of the tube has been known to occur from torsion.[6] The cause is obscure, though the situation in that portion of the tube most remote from the blood supply would indicate that it is a vascular lesion. From the extreme congestion of the tube and the large amount of blood pigment present, it would appear that for some time the circulation in the tube had been defective, and had ultimately resulted in complete stasis and necrosis.

As far as could be ascertained, no infection of any kind was present. No organisms could be demonstrated in the tissues, no adhesions were present, and microscopically there is complete absence of any round-celled infiltration indicating an inflammatory origin. The fibroid uterus and ectopic pregnancy of the left side may have been contributory factors in increasing the congestion.

In analysing the history it is somewhat difficult to explain the prolonged periods of amenorrhoea alternating with profuse haemorrhages, but it is conceivable that two early miscarriages followed by a tubal pregnancy occurred, the final haemorrhage taking place coincidentally with an intratubal abortion.

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CASES OF INTESTINAL OBSTRUCTION DUE TO THE UTERUS.

By Professor SIGISMUND GOTTSCHALK,
Berlin.

I.—OBSTRUCTION DUE TO A FIXED RETROVERTED NON-PREGNANT UTERUS TREATED BY LAPAROTOMY.

THE patient in the following case was a woman, aged 31, who had been six years married, but had no children. She had had one miscarriage five years previously, and had undergone a laparotomy in Königsberg four years ago for a right ovarian cyst, the size of an orange; there had also been hydrosalpinx of the right tube, which was treated by salpingostomy. The position of the uterus was then quite normal, and she made a good recovery.

Since the operation, patient sometimes complained of pains in the lower abdomen, constipation alternating with diarrhoea; menstruation was irregular and painful, from eight to ten days' duration, great loss of blood, sometimes accompanied by headache.

On February 18th, 1910, sudden intensification of pain in the lower abdomen, passing soon, but a tiredness remained until February 20th, 10.30 p.m. At this hour there suddenly appeared very violent pains in the abdomen, which became weaker at times, but which returned with increased severity and lasting all night. At first the lower abdomen alone seemed affected, but gradually the pains mounted higher, and finally there was a very strong cardialgia. Soon a slight diarrhoea appeared, after which the pains increased almost to causing unconsciousness. Two hours later a strong nausea appeared, followed by violent vomiting. I heard a few days later that the vomited matter had a decided excremental odour. At 1.30 a.m., on account of the grave condition of the patient, a physician was called, who prescribed morphine cones, which, however, did not bring the least relief. On the following morning, 8.30, Monday, February 21st, I was called to the bedside.

State on Examination.

I found patient collapsed, with thin, frequent pulse, alarmed expression, and writhing in spasmodic pains of the abdomen, reaching as far as the stomach, while backache was present as a reflex pain. The lower abdomen on the right only showed slight swelling, but was very sensitive to the touch; increased peristalsis was indistinct. I found on examination the uterus retroverted and behind; within the peritoneal fold (Douglas) I found a diffuse resistance, in which liquid and solid parts could be felt, similar to a fresh haemorrhage.

Although one could be inclined to think of an internal haemorrhage on account of this result of my examination and the collapsed state, the livid colour of the lips were against such a diagnosis, besides the fact that the menstruation had appeared in time.

On account of the grave condition of the patient I had her removed in an ambulance to my private clinic, where I examined her again immediately.

Diagnosis.

The result was that I did not think an internal haemorrhage on account of extrauterine pregnancy had taken place, for the mass in Douglas's pouch could not be felt any more now, although at the previous examination it had felt to the touch like a fresh haemorrhage. Instead of that I now felt within the peritoneal pocket, behind the retroverse fixated uterus, an elastic excrescence, shaped like a sausage, extremely sensitive to touch. After I had given 1 grain of opium per rectum, in order to overcome the pains, I tried carefully to accomplish a reposition of the strangulated vermiform growth. By manipulating it, it gradually became less distinct.

The contents of the bowel could be pushed gradually to the right, upwards. Two high camomile enemas then induced stool. After that appeared a notable improvement; in the evening the pulse went down from 120 to 96, became stronger, and the abdominal pains decreased.

In spite of the fact that I now had no doubt that there had been a strangulated bowel within Douglas's pouch, one could think, after the favourable turn had set in, that the strangulation had been overcome now by my attempts of reposition. At any rate, I now could conscientiously attempt to wait until the next morning. However, during the night there appeared once more a vomiting of phlegm and new pains in the abdomen, which were not so severe, though, as those before.

Operation.

On February 22nd, at 8 a.m., I performed laparotomy, diagnosing the case as a strangulated bowel within Douglas's pouch. The longitudinal cut from the umbilicus to the superior part of the symphysis passed to the left of the old laparotomy scar through the left rectus abdominalis. In opening the abdominal cavity a small quantity of ascitic liquid ran out, mixed with a few fibrine flakes, but otherwise clear. There were no adhesions of intestines to the abdominal wall. Above the inferior pelvis on the right there appeared, within a bloody-brown liquid, a full, blue-red loop of the ileum, which passed behind the uterus and became invisible. The body of the uterus, especially at the fundus, showed bluish-red, too; its position was retroverted; from the fundus there appeared a wide peritoneal adhesive membrane of 1 cm. width, overlapping the pouch of Douglas, toward the upper anterior part of the rectum. On pressure with the finger upon this membrane, one had the feeling of a cystic growth lying beneath, of thin walls, and very elastic.

After separating the adhesion close to the uterus, upon the bottom of Douglas's pouch, a short, dark, blue-red loop of the ileum could be seen surrounded by transudation. It was strangulated, and the pouch of Douglas had been stretched by it to its utmost capacity, while the lower parts of the uterus were entirely flattened by it down to the posterior cavity. After freeing the loop, and after emptying the transudation, the widened Douglas's pouch resembled the interior of the bladder. At its left half, between the posterior wall of the uterus and rectum, it was surmounted by numerous low-embedded strong peritoneal adhesions, which mostly could be separated with the scissors, *while on the right, where there did not exist any adnexa, there were no adhesions.* On account of the superior peritoneal bridge of adhesions, there existed at this spot a hole, through which the

loop of the ileum had passed. The left Fallopian tube and the left ovary, which was partly degenerated by cystic tissue, were so closely grown together with the sigmoid flexure that it was hardly possible to separate them carefully. Considering that there existed a possibility that *Bacillus coli* already had entered the abdominal cavity from the strangulated bowel, it was resolved not to separate the left adnexa.

In order to prevent a repetition of strangulation, the mobilized body of the uterus was fixed to the abdominal wall, near the inferior angle of the wound. At this spot the peritoneal wound margins were fixed with one catgut suture symperitoneally with the middle of the anterior uterine wall, so that no space was left between the anterior corpus wall and abdominal wall. The old laparotomy scar was excised and a compression bandage applied.

After-Progress.

Temperature, being 37.6° before the operation, mounted up to 37.9° on the evening of the same day; on the next day it reached 39.5°, while the pulse went to 140 from 98. The pulse was thin; there were decided symptoms of cardial weakness. This danger was happily overcome by an infusion of 600 c.cm. of 0.9 per cent. NaCl solution into the left infraclavicular region, and two injections of caffein, natr. benzoic, furthermore 8 gutt. digalen. On the next day, February 24th, the temperature went down to 38.1°, the pulse to 120; after another twenty-four hours they had decreased to 37.8° and 100, and from that time on became normal again. The stimulation of intestinal activity made little difficulty; the day after the operation wind was expelled after an enema of camomile.

Result.

The abdominal wound healed by first intention, and on March 19th the patient was discharged as cured in a good state of health. On the fourth day after the operation the menstruation set in regularly.

Remarks.

Four years ago the patient had undergone a laparotomy operation for right adnexal tumour, probably gonorrhoeal. The closed left Fallopian tube had been opened by salpingostomy in order to create a possibility for conception. The consequence was that on the left side numerous peritoneal adhesions formed, and the newly-formed ostium of the tube was again closed definitively through adhesion with the adjoined sigmoid flexure. The strong left peritoneal adhesions, easily inflamed, allow the deduction that from the artificial ostium infectious micro-organisms emigrated into the pelvic cavity in a secondary manner; the extended formation of adhesions had nothing to do directly with the laparotomy, otherwise, no doubt, they would have established themselves upon the right side, where the diseased adnexa were removed, and in the neighbourhood of the laparotomy wound. There was not the least sign of any adhesive formations. There remained a void space, because on the right side no adhesions formed; through this hole the loop of the ileum slipped into Douglas's pouch, which was surmounted by adhesions and by the retroverted and fixated uterus. The retroversion was formed in a secondary manner in connexion with the operation, no doubt on account of the pelvic peritonitis of the left side, for I heard from the surgeon who had performed the first laparotomy that the uterus had been found in a normal position.

The case is of importance, not alone through the strangulation of the ileum by the retroverted uterus, but because it shows that salpingostomy is not without danger under certain circumstances—namely, that inflammatory micro-organisms may penetrate through the new ostium into the pelvic abdominal cavity. The case, therefore, serves as a warning example to be very careful with the indication for salpingostomy. It also shows how difficult it is to predict in advance whether an artificial tube ostium will remain open.

In regard to differential diagnosis, it should be remarked, furthermore, that the faeces within the strangulated loop, in the middle of the transudation surrounding the bowel, at first felt to the touch like a fresh haemorrhage.

Of great interest also is the marked improvement of the general condition induced by me through manipulation, attempting a reposition, followed by a high enema. Very likely this improvement may be explained in the following manner: During the manual attempts to obtain a reposition, the pent up contents of the bowel were moved beyond the impediment, inducing a diminution of the abdominal pains and an improvement of the pulse by a movement of the bowels, which could be induced by those high enemas. The impediment, namely, the strangulation, however, remained. The patient was lucky in so far that the conspicuous improvement did not induce me to forego a laparotomy.

In this respect the case shows many interesting features, too, for it proves that a passing, pronounced, objective and subjective improvement by no means needs be synonymous with the overcoming of the trouble, in this instance the impediment.

II.—Obstruction due to a Retroverted Puerperal Uterus: Simulation of Peritonitis: Treatment by the Knee Elbow Posture.

The patient in this case was a secundipara, aged 33, with medium flattened pelvis. Her first labour, three years previously, was normal. During the last months of her second pregnancy she had much discomfort, and during the last weeks profuse suppurating discharge. Labour occurred spontaneously on March 29th, 1910, and after rupture of the membranes the midwife made a manual examination by means of a sterilized rubber glove.

On March 30th—second day of childbed—pronounced abdominal and dorsal pains, coming in jerks; the midwife diagnosed them as after-pains. The nurse had to force the patient to take food. In the afternoon there was vomiting of compact matter and singultus; jerking pains in abdomen and back, which increased in intensity; lochia stopped. Rectal enema of camomile without success. No faeces or flatus.

March 31st—third day of childbed. The general aspect became worse; vomiting and singultus; pain in the abdomen, still jerky, became so much more severe that injection of morphine did not bring relief, in spite of the fact that temperature did not increase; pulse 84. At mid-day I visited the patient for the first time in consultation with the family physician.

State on Examination.

A small, graceful woman, with a frightened expression; at intervals she writhed in severe pain in the abdomen and back. Lower abdomen strongly inflated as far as the umbilicus, and sensitive to pressure in its lower lateral parts. The corpus uteri cannot be palpated from the outside, and lies retroverted, surmounted by strong inflated loops of bowel. Temperature normal, pulse about 90; tongue is tolerably dry. Diagnosis arrived at, namely, commencing puerperal peritonitis; the relatively good pulse, however, appeared favourably but conspicuous. In puerperal peritonitis it is not absolutely essential that the temperature rises. No increased peristalsis of the bowels could be observed.

Treatment.

The treatment consisted in cold applications upon the abdomen; further, a subcutaneous infusion of 500 c.cm. of physiological salt solution and repeated collargol enemas, all without avail. Vomiting and singultus became uncontrollable on the following day, the transverse colon was strongly inflated, and on the evening of April 1st the entire abdomen distended to a great size, while the vomited matter possessed a faecal odour. At 10 p.m. I found the patient very much collapsed, the abdomen still inflated to a maximum, very sensitive to touch, while the patient vomited incessantly, groaning on account of the jerking pains, short breathing; pulse 120, temperature 37.5°; no flatus, in spite of high enemas.

Diagnosis and Result.

I now diagnosed the case as one of obturated ileus, caused by the retroverted uterus. I placed the patient in the knee-elbow position, alternated with abdominal position, and in the latter I ordered a high enema of camomile. The result was that abundant flatus was soon expelled, while the patient immediately felt relief. I left her about midnight, and she thanked me smilingly for the relief. The epigastrium yielded to pressure. Vomiting and singultus had disappeared entirely since the knee-elbow position.

Upon my advice the family physician injected during the same night 0.001 atropine, which was repeated twice during the following day. On three further days 500 c.cm. of physiological salt solution was injected subcutaneously, while high enemas were continued. During the critical night the pulse already became normal, while the temperature was normal during the entire attack. On the tenth day of childbed a gratifying stool was induced by castor oil; several oil enemas were given later. From the fourteenth day of childbed patient was able to feed her baby. Good recovery. In regard to differential diagnosis the relatively low pulse spoke against peritonitis; the normal temperature stood in strong contrast to the uncontrollable vomiting, singultus, and severe colics.

THE CAUSAL TREATMENT OF DYSTOCIA IN CASES OF PELVIC CONTRACTION.

By Otto von Herff, M.D.,
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The degree of dystocia in cases of pelvic contraction is essentially determined by three principal factors: First, the extent and character of the contraction; secondly, the size and compressibility of the fetal head; thirdly, the force of the labour pains. The principal factors are sometimes accompanied by others of a secondary and more accidental nature, such as are caused by malpresentations and faulty positions. Such cases demand special treatment.

A causal treatment of dystocia occasioned by pelvic contraction must choose as the object of its attack one or more of the above-mentioned factors. The third factor—namely, the force of the labour—is the factor we are the least able to influence with the remedies at our command.

Pelvic dystocia can therefore only be causally treated by dilating the pelves or by reducing the size of the fetal head, and, if possible, simultaneously enhancing its configurative capacity. Dilatation of the pelves, attained either by placing the patient in a special position or by division of the pelves, obviates pelvic dystocia without, as a rule, endangering the life of the child. By employing a special posture—for instance, the Walcher-Klein hanging posture for dystocia caused by a narrow superior strait, or the forced lithotomy position for dystocia due to a narrow inferior strait—dilatation can be produced, but unfortunately only in a slight degree. Still, even within such narrow limits these methods produce excellent results. They are disagreeable for the patient, it is true, but accompanied by no danger whatever for the mother and the child. The employment of these two postures as a causal treatment is so natural that it is superfluous to expatiate on them.

The various forms of pelvic section dilate the pelves in all their dimensions, but they jeopardize the life of the patient in no small degree. The mortality of mothers, at all times considerable, is increased by symphysiotomy to 8 per cent., by subcutaneous hebosteotomy to 4 per cent., and probably by subcutaneous symphysiotomy also to 4 per cent. The latter has, however, not yet been sufficiently employed to obtain definite statistics. Moreover, the lying-in period is by no means without its dangers. Often enough it is attended by complications, and unfortunately numerous injuries, more or less grave, often affect the health of the mother permanently. Amongst other unpleasant effects, we may mention as some of the most important an injury to the locomotive powers, bone-suture hernias, prolapsus of the vagina and the uterus, and last, but not least, the incontinence of urine. Should not one single case of this execrable complaint discredit the operation? There is no doubt but what the mother suffers disproportionately if the pelves are divided; at the same time 8 to 9 per cent. of the children are lost. Under these circumstances pelvic section, as a causal treatment, can only be valued as a last resource, when the mother absolutely desires a living child, and when the asepticism of the case is too doubtful to admit of any other form of delivery. Division of the pelves certainly has one advantage—namely, that a special posture, for instance, the Walcher-Klein hanging posture, can be employed as a preliminary procedure, and subsequent events left to time and Nature. In the event of immediate danger to mother and child, the operation can be made. This advantage cannot, however, make up for the danger to the life of the mother and the disproportionate loss of children. Pelvic section should only be employed as a last resource for multipara.

A further causal treatment of pelvic dystocia makes the child the object of attack. This can be done by the induction of premature labour about four weeks before the term, never by any means earlier, rather later, or by reducing the size of the child by an obstetric operation.

The diminution of the fetal head must ensue in all cases in which the life of the child is extinct. On this point all are unanimous. It is another thing if the child lives. Theoretically, and in all well-managed clinics, the sacrifice of a living child should be a thing of the past. As a fact, I have never in my life sacrificed a living child, except in the case of hydrocephalus. Still I must own that this rigid standpoint cannot be absolutely maintained in general practice, not even in clinics. Such extreme procedure should, however, be reduced to a minimum, at any rate, much more strictly avoided than it is at present.

By means of inducing premature labour a smaller head circumference can easily be attained, the head being at this period more compressible. This fact cannot be denied. In 80 to 90 per cent of such cases delivery occurs spontaneously. It is only necessary to operate in exceptional cases—for instance, in the case of a faulty position, or unfavourable presentation, or if some mistake has been made in calculating the obstruction. I have had to perform such secondary operations in 13.5 per cent. of 120 cases of induced labour. Puncturing the bag of membranes to induce premature labour is in itself such a simple affair that I should be ashamed to speak of it as an operation. For the same reason subsequent spontaneous delivery must be fully valued as such.[1]

The object of this causal treatment of pelvic dystocia is the child; the child is therefore liable to injury, the same as the mother is when pelvic section is performed. And, in fact, of the above-mentioned 120 children I was not able to dismiss more than 80 per cent. alive in the second week after delivery. Yet the chances of life of these children are in no way less favourable than those of children delivered by Caesarean section or symphysiotomy. In spite of this, we hear on all sides that children delivered by means of induced premature labour have slighter chances of life than others, and that, in consequence, this mode of causal treatment is of inferior value. One might feel inclined to present all who still believe in this myth with a thaler.

Even if 20 per cent. of the children born in premature labour die, which is about 11 to 12 per cent. more than in the case of pelvic section, we must not forget that the mother is hardly inconvenienced. Not only are the trials of a painful delivery considerably diminished, if not completely removed, but the lying-in period passes without any complication, the same as after delivery at full term. Neither is there any danger of a permanent injury to the patient, in strong contrast to the results of pelvic section. As regards mortality, it is *nil*, as in itself puncturing the membranes does not in the least endanger the life of the mother. Deaths occur as they do after other births, subsequent on haemorrhage or infection. It is true the latter should never occur. I myself lost but 1 of my 120 patients before mentioned, who died of haemorrhage after delivery, making a death-rate of 0.9 per cent. On consulting literature we find 0.6 per cent. quoted as the total proportion of deaths by infection, a number which is certainly too high for the present day.

Undoubtedly the causal treatment of pelvic dystocia with the induction of premature labour is somewhat more than twice as dangerous for the child as division of the pelves, but the mother is spared in every way. To deny this would be to aim a blow at truth.

One disadvantage of premature labour must certainly be mentioned—namely, that in some cases spontaneous delivery might have occurred at the end of the full term. Still there is no harm done; for such patients delivery is simply made easier; they enjoy, in fact, an advantage from the standpoint of humanity. The children are also less likely to suffer injury.

Theoretically the two forms of causal treatment can be combined, but the only practical and recommendable combination is with pelvic dilatation by means of the Walcher-Klein hanging position. Otherwise there is too much risk for mother and child.

A causal treatment cannot succeed if the dystocia is too severe; if a living child is the object it cannot even be recommended. All such cases necessitate a delivery which goes out of the way of obstructions—namely, the Caesarean section, subject as it is to the many modifications of fashion. By avoiding the obstructions the child is less endangered; its chances of life are excellent. The total losses amounted to 7.5 per cent., in 150 specially-chosen *Schauta* cases to 0 per cent. The mother, however, is exposed to considerable danger. The total death-rate shows 7 per cent., and even a strictly impartial choice of, for instance, *Schauta* cases shows 2.6 per cent. Moreover, the lying-in period is more troublesome and often accompanied by unlooked-for

HOSPITAL FOR WOMEN, BASLE.

TABLE I.

Author.	Number of Contracted Pelves.	Per-centage.	Spontaneous Labour.	High Forceps and Premature Labour.	Caesarean Section and Division of the Pelves.	Maternal Mortality.		Infant Mortality.		Remarks.
						Total.	Reduced.	Total.	Reduced.	
		Per Cent	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent	
DÖDERLEIN (Tübingen) (3,375 births)	759	24	80	2.3	6.9	0.5	0.1	11.2	6.7	Mother died: 1 = Tuberculosis 1 = Gangraena cutis et pyaemia, 1 = Peritonitis, infected at home 1 = Peritonitis
v. HERFF (Basle) (1902–1909) (10,289 births)	1425 Without 150 children below 2,500 grams 1275	13.8	79.5 With spontaneous labour after induced premature labour 86.2	10.4 Only with operations during premature labour 3.7	1.5	0.4	0	7.3	5.7	Mother died: 1 = Pyelonephritis calculosa 1 = Carcin. ventriculi 1 = Myodegeneratio cordis (kyphoscoliosis) 1 = Ruptura uteri, at home 1 = Atonia uteri 1 = Bacteriaemia, peritonitis, infected at home

Remarks.—(a) The statistics of Tübingen do not include 14 cases of placenta praevia, eclampsia, nephritis and phthisis with 13 deaths of children, all irregular contracted pelves and such with a conjugata vera measuring less than 6.5 cm. — number? —, all macerated fetus and children below 2,500 grams. (b) In the statistics of Basle all contracted pelves are included without any exception; all children below 2,500 grams are not included.

TABLE II.

Author.	Spontaneous Labour.	Operative Labour.	Forceps.		Podalic Version.		Premature Labour.	Breech and Footling Presentation.	Craniotomy Decapitation.		Division of the Pelves, Symphysiotomy. Pubiotomy.	Caesarean Section.	High Forceps, Prophylactic Version, Premature Labour.	Division of the Pelves, Caesarean Section.
			High.	Low.	Indicated.	Prophylactic.			Child Dead.	Child Alive.				
	Per Cent.	Per Cent.	Per Cent	Per Cent.	Per Cent	Per Cent	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent	Per Cent.	Per Cent.	Per Cent.
DÖDERLEIN (Tübingen)	80	20	1.0	3.8	3.2 (a)	0.6	0.5	1.1	1.4	0.6	2.1	4	2.3	6.9
v. HERFF (Basle) 1902–1909	79.5 resp. 86.2	20.5 resp. 13.8	1.8	3.1	3.1	0	8.7	3.0	1.2	0	0.5	0.9	10.4 resp. 3.7	1.5

Podalic version in cases of transverse presentations: In Tübingen 13, in Basle 27 = 1.8 per cent. Version in cases of prolapsus of the umbilical cord or extremities: In Tübingen 12, in Basle 16 = 1.2 per cent. Version in cases of abnormal head presentations: In Basle, 5 = 0.3 per cent. (b) Tübingen? Breech and footling presentations of children of more than 2,500 grams = 28, and 17 of children below 2,500 grams = 45.

complications. Another thing to be feared is rupture of the uterus at a future birth, not to speak of cicatricial hernias. It is true the latter can be avoided by employing suprasymphysial section.

This summary shows that the accoucheur who, as I do, places the mother first must employ artificial premature labour as the causal treatment of pelvic dystocia. Those who place more weight on the life of the child must employ in the first place the Caesarean section, in the second place pelvic section. The choice of methods depends essentially on the personal value placed on the life of the mother; it does not depend on the results, of which I am now about to speak.

Numerous forms of pelvic dystocia permit a spontaneous delivery. This fact is not by any means new, as is often trumpeted abroad, but has always been known and taught. The general aim in treating pelvic dystocia should therefore be, in the first place, the promotion of spontaneous delivery; causal treatment must be reserved for graver cases. Nowadays the Parisian schools preach the strictest and most radical conservatism, as if it were an eminent achievement of modern surgery. According to them, we are to await delivery with eventual recourse to the Caesarean section, and to exclude the induction of premature labour, the use of the high forceps, and prophylactic version. As an example of the success of this method they quote Döderlein's results in Tübingen with 80 per cent. spontaneous deliveries, the mortality of mothers 0.5 to 0.1 per cent., that of children as 11.2 to 6.7 per cent.

We cannot but own that these are good results. But the fact is continually overlooked that the same results are to be obtained with less danger to the health of the mother by means of a moderate conservatism in the form of induced premature labour, and the use of the high forceps, leaving on one side prophylactic version. This has been sufficiently proved by the results of the hospital for women in Basle.[3] And just the fact that these results have been ignored induces me to appear before your forum with new material in the hope that my new statistics may receive more attention.

A glance through the above tables will show that a moderate conservative treatment of pelvic contraction by means of induced premature labour is productive of at least as good results as a radical conservatism combined with division of the pelves and Caesarean section. It will also prove that it is very easy to obtain a large number of spontaneous deliveries by means of premature labour. Basle, for instance, can show 87.6 per cent., Tübingen only 80 per cent. At the same time it entails much less danger to the life of the mother. The risk to the child is about the same.

There can be no doubt that accoucheurs who estimate the life of the mother higher than that of the child, who sympathize more deeply with all who suffer in consequence of contracted pelves, must certainly employ the induction of premature labour, a method so easily carried out by means of puncturing the membranes.

I sincerely hope that this very salutary mode of procedure, of which English science can be proud, may also in future prove a blessing to many, and rise again some day to a place of honour in the medical world.

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DISCUSSION

Dr. Tate (London) agreed with Professor von Herff in his strong advocacy of the induction of premature labour when a moderate degree of pelvic contraction was present and there was a reasonable chance of delivering a living child. Caesarean section and other surgical procedures for enlarging the pelvis should not be undertaken unless the induction of premature labour had ended in failure to deliver a viable child on previous occasions.

Dr. Walter Swayne (Bristol), after drawing attention to the influence of locality on the number of cases of dystocia due to contracted pelvis and the marked difference exhibited by the statistics of various large towns in this respect, referred to variations in the number of the severer operations in different localities due to local conditions. He considered that undoubtedly there had been of late a tendency to resort to the severer operative measures, such as Caesarean section and symphysiotomy, rather too freely, and that in some cases the former operation had been done in the absence of the "absolute indications" of marked pelvic contraction. He was of opinion that the narrow limits between which the operations for widening the pelvis (for example, symphysiotomy and pubiotomy) were admissible, and the fact that these operations did not in all cases lead to the result hoped for militated strongly against their more general adoption. He rather welcomed von Herff's advocacy of the less drastic methods set forth in his paper.

Dr. R C. Buist (Dundee) said that if the indications for division of the pelvis were the desire of the mother for a living child or doubtful asepsis, the verdict on the operation would be unfavourable. In cases of moderate pelvic contraction Prochownik's method of restricted diet was a valuable adjunct. If premature labour was to be induced, puncture of the membranes was the method of election.

The President (Dr. Mary Scharlieb) said that in minor degrees of pelvic deformity the induction of premature labour was a valuable treatment. As soon as it was evident that the child's head had reached the size at which it was a tight fit for the pelvis, labour should be induced. The necessary condition was that the child should be not only viable, but so far developed that it was likely to survive. The operations of symphysiotomy and pubiotomy had no doubt a place in modern midwifery, but they were only advisable for a skilled practitioner and under favourable circumstances. Removal of the child at full term per abdomen had become a safe and successful operation since aseptic surgery and rapidity of operation had reduced the maternal mortality to 5 per cent. or thereabouts. She could not agree with Dr. Buist that treatment by restricted diet was likely to reduce the size of the child. During famines in India emaciated and even dying women gave birth to well-nourished children.

FIBROID TUMOURS OF THE UTERUS AS A COMPLICATION OF PREGNANCY.

By Cuthbert Lockyer, M.D., F.R.C.S.,

Lecturer on Practical Obstetrics, Charing Cross Hospital: Senior Officer in Charge of Out-patients, Samaritan Hospital for Women and the British Lying-in Hospital, etc.

The subject of this paper is based on the experience gained in the treatment of fibroids of the uterus observed during pregnancy. The details of 9 cases are recorded. For 4 of these operation was performed; in 2 cases this consisted in the removal of the entire uterus in the gravid state together with the tumour, in one instance retro-peritoneal hysterectomy was carried out, whilst in the fourth myomectomy with conservation of the uterus was performed, the uterus subsequently bearing the child to term, when a normal labour and puerperium followed.

Of the 5 cases for which no operation was deemed necessary, 3 were delivered of full-term children and did well in the puerperium and afterwards. One is still pregnant and is being watched, and the fifth aborted; in this case it was necessary to remove the placenta piecemeal, an operation which proved to be very difficult. From a careful survey of the literature on this subject and from my own experience, I have drawn the conclusion that in the majority of cases where fibroids coexist in the gravid uterus no operative interference is called for; therefore my own experience is somewhat unusual, inasmuch as in 4 of the 9 cases recorded there *was* urgent need of operation. In one instance the urgency of the case was in no measure due to the fibroid but to the coexistence of a large ovarian cyst, and if the latter had not existed the fibroid might have been left alone, as it was situated at the fundus, where it would have caused no trouble; moreover, its size was inconsiderable. The above remarks apply to Case III, in which myomectomy was performed. This case is only of interest here as showing that the gravid uterus need not be disturbed by the enucleation of a subperitoneal fibroid.

In Cases I, II, and IV the fibroids were incarcerated in the pelvis. In Case I the fibroid was of the typical cervical type, and was embedded in the posterior lip, and furious haemorrhage had led to a missed abortion.

In Case II I had hoped to save the case for Caesarean section, but severe bleeding necessitated immediate interference, and it was found that incomplete abortion had occurred before operation, as only decidual tissue was discovered in the enlarged cavity at the time of hysterectomy. In Case IV (Mr. Meredith's case), as the illustration shows, the tumour was of the burrowing type. It lay partly in the right broad ligament, and had pushed its way behind the bladder, the cervix lying at a higher level than the pubes. Retention of urine, loss of flesh, and constipation were the indications which justified Mr. Meredith for operating before the child was viable.

Whilst fully realizing that in most instances fibroids may safely be left alone when met with in pregnant women, Cases I, II, and IV show that there are exceptions where the risks of non-interference are great. These risks are well known to gynaecologists, for so long ago as 1901 Dr. Archibald Donald read a very able paper before the Obstetrical Society of London, pointing out that these risks may be summed up as follows:

1. Rapid increase in size of the tumour causing severe pain and great distress.
2. Incarceration of the tumour in the pelvis.
3. Serious pressure on the bladder.
4. Degeneration of the tumour through diminished nutrition.
5. Excessive rotation of the pregnant uterus.
6. Abortion or premature labour as a result of pressure or of submucous development of the fibroid.

In my cases incarceration of the tumour occurred in Cases I and II; in Case IV "severe pain and great distress," with "retention of urine," were the complications; whilst abortion occurred in Cases II and VIII.

Due regard should be taken of the situation of the tumour when deciding what course is to be pursued in the treatment of the case. If the fibroid lies above the pelvic brim, as it did in my cases No. III and No. VII, it is not likely to give rise to trouble. If it lies in the pelvis and cannot be pushed up, the case should be watched in the hope that the pregnancy will continue to term, when Caesarean section followed by hysterectomy should be performed. If any of the above risks supervene and the patient's wellbeing becomes imperilled, immediate interference is called for. The nature of such interference will depend upon the character of the growth. Myomectomy, wherever possible, should be tried; if the tumour is localized and not embedded too deeply in the uterine wall, and if the bleeding can be effectually stopped, this operation has proved successful in allowing pregnancy to continue. This is proved in Case III of this small series, whilst Cullen, Bland-Sutton, Walls, and Donald have recorded like successes. It is, however, highly probable that such cases are comparatively rare, and more often hysterectomy would be the safer operation. In no instance can I conceive it right to induce abortion in cases of fibromyomata of the uterus complicating pregnancy. The details of the 9 cases above referred to are as follows:

Four Cases of Fibroid Tumours complicating Pregnancy for which Operation was Performed.

Case I.

F. C., aged 33 years, four children and one miscarriage, was sent to my out-patient clinic by Dr. Cardy Bluck, with a note saying that the patient had miscarried, but that the uterus was large and required curetting for persistent haemorrhage which had continued for three weeks.

On admission into the Great Northern Hospital on January 20th, 1910, the patient complained of pelvic pain, but the haemorrhage had ceased. She stated that five weeks ago she had a very severe flooding which ended in an abortion at the second month of gestation. She was very weak and ill, and remained in bed for three weeks, losing blood the whole time. The bleeding gradually stopped, and for the past fortnight had not recurred.

The patient had been treated for haemoptysis in the Brompton Hospital on two occasions—once in 1905, when she remained in hospital for three months, and again in 1906, when she stayed in for a similar period.

Examination on Admission.—Cervix uteri is low down and pushed to the left side by a pelvic tumour which lies in front and to the right, and which has expanded the portio and drawn it up. The cavity of the uterus is eccentric, peing pushed to the left by the tumour; the sound passes 5½ in. There is a soft cystic tumour lying high up in the iliac fossa on the left side. It is freely movable, as if pedunculated, but does not influence the pelvic tumour by its movements, the latter being fixed. I made the diagnosis of fibromyoma uteri occupying the pelvis, and considered that the abdominal tumour was an ovarian cyst, owing to its semicystic nature, and to the fact that it seemed pedunculated and detached from the fixed pelvic mass. The indications for operation were great pelvic pain extending over a period of five weeks, with pressure symptoms relative to bladder and rectum.

Operation.—On January 29th, 1910, I opened the abdomen, and found that the abdominal tumour was the gravid uterus, whilst the pelvic mass was a typical cervical fibroid. Panhysterectomy was performed. The fibroid had completely drawn up the lips of the cervix, and had commenced to open up the external os, through which it was already bulging. The growth occupied the posterior wall of the cervix, so that the cervical canal lay in front of it. The appendages on both sides were removed. On stripping down the peritoneum with the vessels on the left side there was furious haemorrhage for a few seconds issuing from the uterus itself (backward flow). The cervical fibroid shelled out easily from the connective tissue of the parametrium. Much time was spent in suturing the lateral angles of the amputated vagina. The abdominal wound was sewn in four layers, and two interrupted sutures were inserted to close the cavum Retzii. The operation occupied fifty-five minutes, including the abdominal suturing. The patient stood the ordeal well, and made an uninterrupted recovery.



Fig. 1.—Case I. Cervical fibroid beneath a gravid uterus. Seen from the back. A, amniotic cavity; P, placental attachment; C, cervix; F, fibroid; L L, lips of cervix; D D, areas of degeneration.

The cervical fibroid shows on section a wide horseshoe area of black (not red) degeneration (vide Figs. 1 and 2).

Case II.

C. A. was sent to me by Dr. Hardy, of Barnet, for abdominal tumour complicating pregnancy. I first saw her at the Great Northern Hospital on January 26th, 1910, when she gave the following history: Aged 39 years, married twelve years, one child born dead eleven years ago, no miscarriage. Menstruation started at the age of 13 years, always regular, always profuse, with the passage of clots. Menstruation ceased on November 29th, 1909, and the patient considered herself two months pregnant. She had consulted Dr. Hardy for a painful lump in the right side of the pelvis above Poupart's ligament, which was first observed in November, 1909. On examination the uterus was much enlarged, and projecting from it was a lump the size of a hen's egg, which lay above the pelvic brim on the right side. The size of the uterus did not correspond with the dates of gestation, and this was attributed to another fibroid lobe lying in Douglas's pouch; the body of the uterus could not be made out apart from the fibroid mass. I wrote to Dr. Hardy agreeing with his diagnosis, and advising that the case be watched, explaining that I could not raise the pelvic mass, and that it might be necessary to deliver the child at term by abdominal Caesarean section.

Quite suddenly, however, the patient was taken with severe uterine pains and profuse haemorrhage, and thirteen days later (February 8th, 1910) had to be admitted for an alarming flooding. On examination in the ward the cervix was found to be patulous and soft; the mass in Douglas's pouch extended into both lateral fornices; it was still impossible to make out the body of the uterus apart from it.

On February 9th, 1910, I removed the uterus by supravaginal retroperitoneal hysterectomy after the method of Howard Kelly. On opening the cavity of the uterus it was found to be empty, excepting for some adherent shreds of tissue in the left cornu. These on examination proved to be bits of decidual tissue; the embryo was never seen, but must have escaped in the severe haemorrhage from which the patient suffered a day or two before admission. The patient made a smooth recovery.

Case III.

Mrs. X. was sent to me by Dr. Hodges, of Watton-at-Stone, on November 27th, 1909, on account of difficulty in micturition, which almost amounted to retention, very small quantities of urine being passed at a time. The lady was 40 years of age; she had missed two periods, and considered herself pregnant. She had been married fifteen years, had had four children, the youngest being 6 years of age. Constipation was complained of, and there had been pain in the left iliac fossa for fourteen days. On examination a prominent oval swelling could be felt in the left iliac fossa, with a hard lump projecting on its right (mesial) side above the otherwise smooth surface of the tumour. Dr. Amand Routh kindly saw the case with me, and we discovered in addition to the above that there was a cystic growth in the posterior part of the pelvis, which pushed up the cervix under the symphysis pubis and pressed strongly upon the rectum posteriorly. This tumour could be pushed up into the pelvic brim and above it to the right of the uterus; but whilst in this position a portion of the cyst still lay in the pouch of Douglas, which it depressed below the level of the cervix. Dr. Routh agreed that this was a cyst of the right ovary, and that the tumour lying above the pelvic brim high up in the iliac fossa and lumbar region was the uterus with a fibroid at its right cornu. On November 30th I removed a right-sided ovarian cyst with papillomata projecting through its wall, and also a fibroid from the right cornu of the uterus. The fibroid shelled out easily, and its bed was sewn together without notable haemorrhage. Convalescence was uneventful, and the patient got up on December 15th and motored home next day. The confinement took place on July 13th, 1910. It was spontaneous, a female child being born before Dr. Hodge's arrival at the patient's house. The puerperium is progressing satisfactorily.



Fig. 2.—Case I. Cervical fibroid beneath a gravid uterus. Seen from the front. Note the dark area of black pigmentation ("red degeneration").

October, 1910.—The patient is now in perfect health.

I am indebted to my late colleague, Mr. W. A. Meredith, for his kind permission to publish the following case:

Case IV.

Mrs. McC., aged 39 years, married eight years, no children. Complaint: Pain and enlargement in the lower abdomen for four months; enlargement increasing rapidly. Retention of urine, loss of flesh, constipation, leucorrhoea. Mr. Meredith saw this lady in August, 1902, when she stated that the catamenia had been regular until May 8th, 1902, since when she had seen nothing. On examination there was a hard mobile nodular tumour reaching 8½ in. above the pubes; transversely it extended 6 in. to the right and 3½ in. to the left of the middline at the level of the umbilicus; there was also an elastic fluctuating swelling in Douglas's pouch continuous with the abdominal swelling. The cervix was high up in front above the pubes.

Mr. Meredith diagnosed fibromyoma complicating pregnancy. The need for immediate operation was obvious. The fluctuating pelvic mass proved to be the pregnant uterus, from the upper

and front part of which grew a sessile multiple fibromyoma. The anterior and right-sided portions of the tumour had burrowed behind the bladder and into the right broad ligament. The ovaries were not removed. In this operation Mr. Meredith was assisted by Mr. Corrie Keep. The patient made a good recovery, and in a letter from Mr. Meredith he tells me she is quite well at the present time—that is, eight years after the operation.

The specimen is illustrated in Fig. 3.

Five Cases of Fibroid Tumours complicating Pregnancy for which no Operation was Performed.

CASE V.

S. M. was sent to me by Dr. Ward Clarke for pelvic tumour. I first saw her in August, 1904, and found a fibroid in the pouch of Douglas, which appeared to be pedunculated and attached to the posterior wall of the uterus. As this tumour was only the size of a hen's egg, and had caused no haemorrhage nor pressure symptoms, I advised against interference. Three months later the patient married (November, 1904), and I heard nothing of her until February, 1905, when she suspected that she was pregnant. The last period began on December 1st, 1905, and lasted one week. Sickness, starting in the morning and, lasting all day, set in after the period ended, and continued all through January, when she came to the Samaritan Hospital. On examination I discovered two fibroids in connexion with a bulky uterus, about the size of an eight weeks gestation. One fibroid lay in Douglas's pouch, from which it could not be pushed up, and another lay to the left of the uterus higher up. The patient was admitted in August, 1906, when it was found that the pelvis was quite free, the growths had ascended into the abdomen, and she was sent into Queen Charlotte's Hospital, where a normal confinement took place a month later (September, 1906). The child, now nearly 3 years of age, is a healthy girl, the patient is well, the fibroids cause no symptoms, but she has never again become pregnant, and is now 42 years of age.

I examined this patient in July, 1910, and found that the fibroids had shrunk to a quite negligible size.

CASE VI.

Mrs. W. O. B. was brought to me by her husband without an appointment on February 25th, 1909. Mr. O. B. stated that the family doctor had sent his wife to a consultant, and that they had just left this gentleman very dissatisfied as to the result of the interview, and wished for a second opinion. The husband explained that his wife was formerly a patient of Dr. Mailer's, of New Southgate, and that he had wished her to consult me before taking up her residence in Essex, where she lived at present. This statement was afterwards verified by Dr. Mailer.

I obtained no information as to the cause or nature of the want of confidence in the former consultant until after giving my opinion in the case. The patient was aged 34 years; she had been married twelve years; there was one child aged 9, and a miscarriage occurred four years ago. There had been amenorrhoea since November, 1908, and the patient had been ill in bed for the past six weeks; the family doctor had examined and told the patient she had a fibroid tumour and was pregnant.

I found her looking very thin and ill; the uterus was the size of a three and a half months gestation; there was fluid in the breasts and a fibroid in the anterior wall of the isthmus of the uterus. I advised the patient not to worry about the growth, saying that I thought it would move out of the way as pregnancy advanced, and it was then that I learnt from the husband that consultant No. 1 had urged an immediate operation. My advice was more acceptable, and the patient was safely delivered by forceps of a strong, healthy female child on August 29th, 1909. Dr. Smellie, of Westcliff-on-Sea, by whom the patient was delivered, wrote to me to say: "The fibroid gave no trouble, but the patient was in a very indifferent state of health at the time, and I had to use forceps when she had been in labour about eight hours. It was a low forceps case, and everything went well until I was just about to leave, when the patient became sick and almost pulseless, but there never was any bleeding. The pulse, however, remained rapid for twenty-four hours, yet there was no obvious reason for the collapse, and the husband says the same thing happened with the first child nine years ago."

This patient is now in good health and has not again become pregnant.

CASE VII.

On March 7th, 1910, Dr. Duncan, of Richmond, asked me to see a case of pregnancy with an extrauterine swelling which caused him some anxiety. The patient was aged 33 years, married thirteen months; had had an abortion in August, 1909. Menstruation was regular every thirty days, lasting for five days. Two or three towels were used daily; the last menstruation dated from the 23rd to the 28th October, 1909, and the patient dated her conception from November 16th. Morning sickness started on November 30th. There had been increased frequency of micturition since February, 1910. On March 1st sharp pain was felt in the right iliac fossa accompanied by sickness. The pain kept the patient awake all night, and was accompanied by great tenderness in the right iliac fossa. The pain came in attacks, and three such were experienced on March 2nd. On March 3rd, when Dr. Duncan saw the patient, she told him she was four months pregnant, and said that when the pain and tenderness started on the right side her attention was first drawn to a swelling there, which she had not noticed before; the swelling caused extreme pain on movement in bed. The abdomen was rigid, but moved freely on respiration. Dr. Duncan noted a swelling the size of a fetal head above Poupart's ligament and extending under the right rectus muscle towards the mid-line. The fundus was at the umbilical level. The swelling was extremely tender, and rendered examination difficult. The temperature was normal. On examination under anaesthesia on March 7th, I found a gravid uterus reaching to the navel, and somewhat deflected to the left by a solid, hard growth projecting from its right wall just above the pelvic brim, but not in any way encroaching on the pelvis; the vaginal vaults were empty, and there was in fact nothing abnormal in the pelvis, and the latter was not contracted. I diagnosed the presence of a fibroid and advised leaving it alone. The pain soon subsided, and Dr. Duncan writes to say that the patient is at present (July 12th) in excellent health. The confinement is due in August next.

N.B.—I have since heard from Dr. Duncan that he delivered the patient by forceps of a full-term child. The labour was difficult, as the child was a large one, but the puerperium ran a normal course.

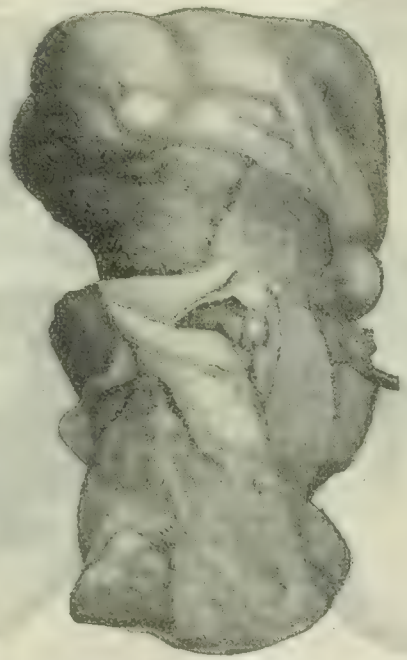


Fig. 3.—Case IV Mr. Meredith's case of total hysterectomy for fibroid complicating pregnancy. The raw area, devoid of peritoneum, shows the extent of burrowing.

CASE VIII.

In 1903 Dr. Victor Sapp asked me to see a case of severe uterine haemorrhage caused by an incomplete abortion. The woman was a primipara aged 30 years. She had been pregnant for two and a half months when she was seized by a severe flooding in which the fetus escaped; the patient was put to bed and ergot was administered, but the bleeding continued. On arrival I found the patient blanched from loss of blood, but well nourished and very muscular. The uterus was well above the pubes; in fact, its size was equal to that of a sixteen weeks gestation. The os was patulous and the vagina full of blood clot. Under anaesthesia, administered by Mr. Anderson, I found a large interstitial fibroid growth in the right uterine wall projecting into the cavity of the uterus. I could feel the placental mass high up above the fibroid, tucked away in what appeared to be the right cornu. I could not get my finger above the mass, and digital separation was quite impossible. Accordingly I used ovum forceps with a view to delivering the placenta piecemeal, but at the conclusion of the operation I was quite uncertain as to whether the entire structure had been removed, as I could not get my finger around the growth and up into the recess in which the placenta was situated. I flushed the cavity out with a solution of iodine through a flushing curette, and packed the uterus with iodoform gauze soaked in iodine pigment (1 to 4), and the patient made a good recovery. I mention this case as an illustration of the difficulty of removing the placenta in some cases of abortion occurring in cases of fibroids of the uterus.

CASE IX.

Mrs. H., sent to me by Dr. Fuller, of Crouch End, for fibroids of the uterus, with possible pregnancy. The patient was 38 years of age, had been married for fourteen years; sterile. The patient was seen by me in July, 1910; she complained of pain in the left iliac region, and a sense of bearing down. She had rested in bed for one week on account of the pain, and the latter had abated completely. The periods had always been quite regular and never profuse, but always painful. The last menstrual epoch occurred in March, 1910, since when there had been no loss whatever. There was a certain amount of leucorrhoea and chronic constipation, but no urinary symptoms beyond slight increased frequency, and no piles. On examination the patient was well nourished. There was fluid in the breasts, a greasy semilune at the base of the nipples, and general mammary congestion. At the umbilical level there was a rounded fibroid proceeding from the fundus uteri about the size of an orange, and freely movable. The fundus reached halfway up to the navel, and growing from the anterior uterine

wall were two other fibroid growths about the size of golf balls. Behind, in the pouch of Douglas, was another growth, starting apparently above the isthmus, and which ascended with pressure, and therefore led to the belief that it would not give rise to obstruction in delivery. I counselled leaving the case to go to term, in the belief that pregnancy, labour, and involution would not be influenced adversely by the four growths.

PAPILLARY OVARIAN CYSTS: SHOULD BOTH OVARIES BE REMOVED?

By Professor W. Nagel,
Berlin.

Since the investigations of Wilson Fox, Waldeyer, and Thornton, papillary tumours have taken a special place among ovarian tumours; for papillary growths are signs of an increased cellular proliferation, which in the clinical sense always implies a certain stage of malignancy. To be sure papillary cystomata have since the above mentioned investigations received a different classification, though it is not yet quite clear whether they originate from the par.

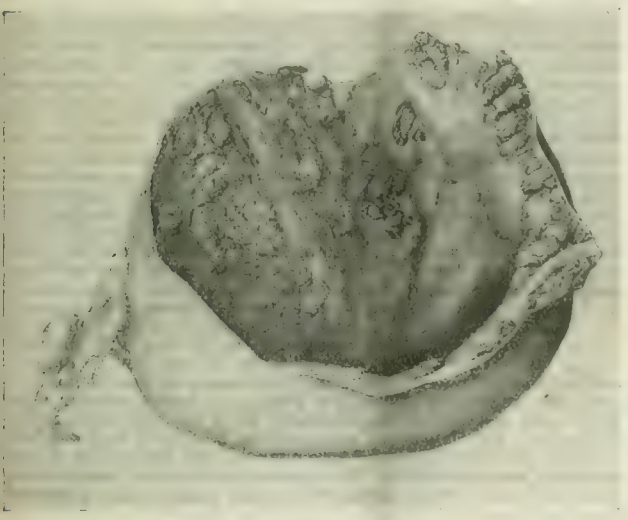


Fig. 1.

ovarium, from the epithelium of the tubes, or from the germinal epithelium. Yet their anatomical and clinical appearance have remained the same. Almost the half of all papillary ovarian tumours are adeno-carcinomata; the others only represent a particular kind of cystadenoma,



Fig. 2.

inasmuch as any group of cystadenoma may produce papillary growth. They are unilocular or multilocular cysts with more or less thin walls, and the formation of villi is found within the cysts as well as on the surface of the tumours. Sometimes the villi are spread diffusely, ex-

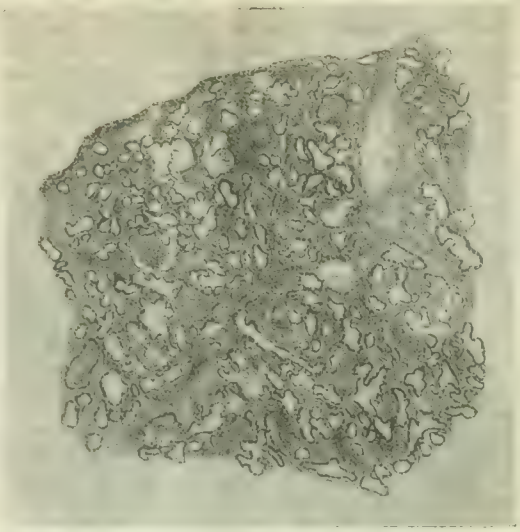


Fig. .

tending more or less over the inner surface of a larger cystic cavity (see Fig. 1); sometimes a more or less large

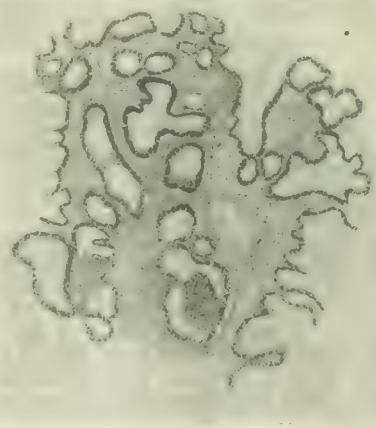


Fig. 4.

cyst is almost entirely filled by a very much ramified tree of villi, the amount of fluid being very small (see

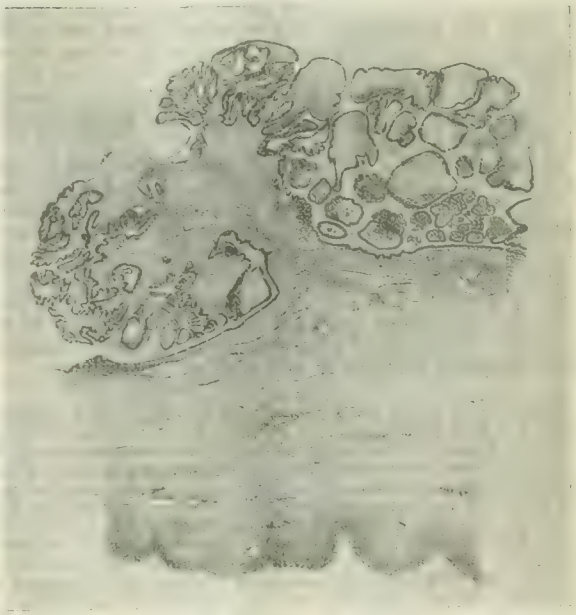


Fig. 5.

Fig. 2). The villi consist of a connective tissue substratum, rich invessels, and covered by an epithelial layer. (Figs. 3, 4, 5).

The contents of the cyst are sometimes colloid, and sometimes serous. In one kind of papillary tumours (cystadenoma pseudo-mucinosum papillare (Pfannensteil)) the chief constituents of the contents are various kinds of pseudo-mucin secreted by the epithelium of the tumour. In another type of papillary tumours the cystic contents are serous, containing, however, no pseudo-mucin, but copious amounts of albumen. The internal wall of the papillae is mostly lined by ciliated epithelium (*cystadenoma serosum papillare*, Pfannensteil). Pfannensteil[1] in his classification has chiefly considered the composition of the cystic contents, yet it is still an open question whether his classification of papillary cystomata is justified histogenetically. The frequency of papillary cystomata, according to Schmidtlechner's[2] statistics of Tauffer's clinic, is 8·33 per cent. of all ovarian neoplasms, both ovaries being frequently involved at the same time. According to Tauffer, the papillary adenocystoma serosum was unilateral in 33 per cent., bilateral in 67 per cent of his cases. Glockner[3] (Zweifel's clinic, Leipzig) found bilateral tumours in 60 per cent. of all cases.

The prognosis after operation is not bad. Of 34 women with papillary cystoma, according to Höhne[4] (Gynaecological Clinic of Kiel), 18 have had no recurrence. Of 45 cases of papillary adenocystoma, 31, or 83 per cent., were alive five years after the operation (Tauffer).

According to these figures we certainly cannot deny that papillary cystoma frequently involves both ovaries at the same time. On the other hand, it seems to me that the alleged frequent post-operative development of a tumour in the remaining healthy ovary depends more upon subjective impressions than upon well-established facts.

I learn, for example, from Hofmeier's[5] statistics that of 8 unilateral operations for papilloma, 7 have remained healthy, and only in 1 case a tumour had developed one year after the operation. Tauffer[6] could trace 17 of his cases, of whom 12 lived more than five years after the operation, and the development of a tumour in the other ovary has only been observed in 2 cases.

These facts are less striking if we consider that even in carcinoma the post-operative affection of the ovary which is left in the body is not very frequent. Of Hofmeier's 30 patients with unilateral ovarian carcinoma 15 (= 50 per cent.) were alive; 15 died in the course of the first eight years after the operation, and 7 of them died of carcinoma. Tauffer traced 2 of 9 patients with unilateral ovarian carcinoma; both were well nine and ten years respectively after the operation.

Of Fromme's[7] 21 cases of unilateral ovarian carcinoma only in 2 cases had a unilateral ovariotomy been performed. One of them had died, but the other patient was still healthy. Such complete statistics as might allow us to state the percentage of permanent cures are indeed lacking; according to Hofmeier, however, to whom we owe thorough investigations, the tendency of the second intact ovary, left in the body at the operation, to become carcinomatous, is not great enough to indicate the extirpation of the second ovary.

In the discussion on the permanent cures after ovariotomy at the Eleventh Congress of German Gynaecologists in Kiel, 1905, some cases of pregnancy after unilateral operation for carcinoma, or papillary cystoma, were reported, namely: Hofmeier, 3 cases (2 after carcinoma, 1 after papillary cystoma); Tauffer, 3 cases (1 after carcinoma, 2 after papillary cystoma); Fromme, 1 case of papillary cystoma. To these I should like to add 2 cases of my practice. These are of a particular interest, as the patients have remained completely well after the operation.

CASE I.

Marie M., 37 years old. The patient has borne five children, three are alive and healthy. Two years ago she had an abortion. Since that time she had suffered from pain, chiefly at the right side. She thinks that her abdomen has become larger. There is no discharge. Her menstruation has always been regular, lasting for three days, and being not very profuse. The patient does not look very bad, and states that the tumour has only caused great distress during the last few months, especially in going upstairs. She complains of constipation and of frequent micturition. On external exploration a tumour could easily be palpated, which extended up to a handbreadth above the umbilicus. Bimanually the tumour can be defined from the anteverted uterus, showing a slight fluctuation.

I performed laparotomy April 5th, 1902. The tumour was of the size of a man's head, and there were no adhesions. After emptying the colloid contents by means of a trocar the tumour collapsed, and was easily removed in the usual way. The left ovary I left behind. Uncomplicated recovery took place.

The cystic wall is of a solid consistence, several millimetres thick. One cyst, the size of a walnut, was encapsulated in the chief cyst. The tumour was connected with the tube by the intact mesovarium, which gradually passed over into the surface of the cystoma. No trace of the ovary was to be found. On the internal surface the wall of the tumour was lined with copious papillary proliferations, not spread uniformly, but lying more on the side facing the hilus. Microscopically, the cystic wall exhibited the well-known structure. The internal layer consisted of the papillae proper, in some places so slender that it was difficult to recognize the connective tissue substratum, and in others forming nicely ramified villi; moreover, tubules were seen in cross section invaginated in the wall. The villi, as well as the tubules, were only present in a very small number, and did not extend very deeply into the stroma. After the operation the patient recovered very rapidly. In March, 1903, menstruation failed, and the patient had an easy and successful confinement on December 22nd. The child is doing well. I examined the patient for the last time on June 25th, 1910. The uterus was at that time in normal anteversion and not enlarged, left appendages normal, no resistance to be felt. She was in perfectly good health.

CASE II.

Auguste B., 30 years of age. The patient had been married for one year; she had not borne children, nor had any abortions. One year before the wedding she suffered temporarily from pain in the abdomen, mainly on the right side. Her menstruations occurred every third or fourth week, lasting for six to eight days, with profuse haemorrhage, and sometimes associated with pain in the loins. This continued for some time, even after the wedding, until the pains in the loin became intense, and a copious discharge ensued. The pain in the abdomen, continuous during the last months, was described by the patient as being like a girdle sensation—spasmodic—so that she sometimes fainted. The pain deprived her of sleep, she lost her appetite, and broke down in a short time. The patient appeared very miserable and anaemic. Her abdomen was somewhat distended. The virginal uterus was anteflexed. On the right side there was a scarcely movable tumour of an elastic consistence, not quite spheroid, and of the size of a child's head. I operated on March 10th, 1902. The tumour was located at the right side, intraligamentary and immovable. Its surface was smooth. There was no ascites. The enucleation of the tumour offered some difficulties, as it was closely adherent at many places to the peritoneum of Douglas's pouch. After loosening the adhesions, the tumour was separated from its surroundings by ligatures. The left ovary appeared to be intact, and was left behind. The wound healed per primam, and the course of the recovery was uneventful. The general condition of the patient, who had been very miserable at the beginning, improved gradually, and she was able to leave the clinic after four weeks. During the operation I had noticed the hardness of the tumour, and had therefore suspected a carcinoma. The tumour contained a small amount of colloid liquid. On its surface we found the above-mentioned adhesions, but no papillae. Its wall was from 1 to 3 mm. thick, and the unilocular cyst was almost entirely filled with papillary proliferations. In the microscopic picture the large amount of invaginated glandular tubules is especially noticeable; they are ramified here and there and form complicated figures. In addition we found many villi of various length and breadth. The connective tissue stroma is relatively scanty and shows at many places myxomatous degeneration. At other places it is of a distinctly fibrillary structure and rich in cells. The epithelium lining the lumen of the tubules is of a cylindrical shape, mostly in one layer, at some places in several layers. The cells are cubical, and project more or less into the stroma. The villi are uniformly lined with one layer of columnar epithelium. Ciliated epithelium was not to be found. One is inclined to consider the tumour as probably a carcinoma (papillary adenocarcinoma), although the original purely papillary form is still distinctly marked.

Two years after the operation the patient became pregnant for the first time, and was delivered by forceps of a girl on October 24th, 1904. I examined her again on March 20th, 1909. In the meantime she had borne two more children. The last confinement was in November, 1907. The uterus was in a normal position, not enlarged, and the left appendages were intact; she felt perfectly well.

(When inquiring about her present state a few days ago her husband wrote me that she died on April 28th, 1909, of acute pneumonia.)

From these observations I conclude that in papillary cystoma the extirpation of the other healthy ovary is not, as laid down by Pfannenstiel, Glockner, and others, necessary. Even in carcinoma similar affection of the remaining ovary after the removal of the primary tumour is not frequent. I therefore agree with Hofmeier and others that the danger of a possible second operation is in a young woman outweighed by the advantage of preserving the other ovary. This is proven by the above cases of pregnancy after unilateral operation.

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1 *Handbuch der Gynäkologie;* herausgegeben von F. Veit. 2 *Monatsschr. f. Geb. u. Gyn.* Bd. xxviii. 3 *Verh. der deutschen Ges. f. Gyn.*, Band x. 4 Ibid, Band xi. 5 Ibid., Band xi. 6 Ibid. 7 Ibid.

DISCUSSION.

Professor Gottschalk (Berlin) agreed that when removing a proliferating papillary ovarian cyst one might leave the other ovary if it appeared unchanged. He had operated twenty-one years ago upon a girl 23 years old on account of a large proliferating papillary ovarian cyst. He saw her again six months ago in good health, and she was now the mother of three children. Another case on which he operated eight years ago was still in good health. It was, however, necessary to keep the patient under strict observation, so as to operate without delay if the other ovary became enlarged. In cases in which it was doubtful whether the other ovary was sound he would recommend that the second ovary be split for the purpose of examination. If the ovary proved sound it could be stitched up with catgut and left in its place.

Professor Kynoch (Dundee) said that most gynaecologists must have seen malignancy occur in presumably healthy ovaries left after the removal of what appeared at the time of operation to be ordinary multilocular cysts. But those cases were so rare as not to warrant the removal of apparently healthy organs in multilocular cysts, as pregnancy might occur. But in papillary ovarian cysts, of which so many were malignant in character, the question of removal of the apparently healthy ovary deserved more consideration. He had had two cases in which cancer of the peritoneum and ovary followed four and seven years after removal of a unilocular papillary ovarian cyst. In patients under 40 or so he left the second ovary if it appeared healthy, but in patients at or about the menopause he always removed the apparently healthy ovary. All cases of removal of unilocular papillary cysts required to be more carefully observed than when only ordinary ovarian cyst was in question.

Dr. Munro Kerr (Glasgow) agreed with Dr. Nagel that if the papillary ovarian cyst seemed to be not very malignant, then the other ovary should be left if it were apparently absolutely healthy. But on the other hand, if the tumour appeared to be malignant (of course this was often difficult and frequently impossible to determine), then the other ovary should be removed, and not only the ovary but the whole uterus should be extirpated. At present the generally accepted operative procedure in malignant disease was to remove as much surrounding tissue as possible. Surely, therefore, in malignant disease of the ovary the whole of the internal reproductive organs should be removed.

Dr. Herbert Spencer (London) said he had not looked over his material to see in how many cases of unilateral ovariotomy for papilloma the other ovary had been affected, but his practice had always been in accordance with Professor Nagel's view, and he had never since the days of oöphorectomy for myoma removed an ovary which appeared to be normal, whatever the nature of the growth in the ovary removed. Papillomatous ovarian tumours were very common; in 200 cases he had found no less than one-fourth of the cystic tumours contained papilloma. Most of these cases were non-malignant, and he had seen a case with large masses of papilloma outside and inside the cyst which was quite well after seventeen years; on the other hand, he had seen a smaller tumour, to the naked eye and microscope exactly similar, in which the patient died in a few months with the pelvis full of growth. In these cases he did not think the removal of the other ovary would prevent recurrence, for he did not think, when both ovaries were carcinomatous, it was sufficient to remove the ovary; in these cases the uterus should be removed as well. This, however, was not the question raised by Professor Nagel.

Dr. Walter Tate (London) was of opinion that in the majority of cases of malignant papillomatous cyst of the ovary the disease affected both ovaries, and there was therefore no chance of saving one. These cases usually occurred in patients between 35 and 50 years of age, and clinically showed rapid formation of ascites. The cases in which intracystic papillomatous growth was found affecting one ovary were of a different character and presented all degrees of malignancy, and it was not possible to say whether they were malignant or not till they had been examined microscopically. In those cases he would agree with Professor Nagel in leaving the other ovary if it appeared to be healthy.

Dr. Blair Bell (Liverpool) said that the surgical procedures were in this, as in all cases in which neoplasms were dealt with, based on pathological considerations. The question of "malignancy" in papillomatous ovarian tumours had never been accurately defined. There were undoubtedly two classes of growth—the locally malignant or innocent disease and the adeno-carcinomatous. Sometimes these would be distinguished macroscopically during operation; often this was impossible. Sections, however, readily demonstrated the nature of the growth. The usual teaching that proliferation of the surface epithelium was evidence of real malignancy was erroneous, for this was a condition usually seen in "innocent" villous growths of the bladder. Absolute malignancy only existed when the stroma was invaded. A rapid section at the time of operation might decide the question in many cases, but a negative result was not to be relied upon, as adenocarcinoma might be confined to a small portion of the tumour. The ovary should always be left when the tumour on the other side appeared to be innocent; but if the growth was definitely malignant, or the second ovary showed the slightest departure from the normal (such as a small cyst) both ovaries and uterus should be removed. It would probably be wise to make this radical operation the routine practice in cases occurring in women over 40 years of age.

Dr. Louise McIlroy (Glasgow) said that, from examination of numerous specimens of carcinoma of the ovary, she had come to the conclusion that the disease in the majority of cases was bilateral, as in some specimens examined the opposite ovary, although appearing perfectly normal to the eye, showed early carcinomatous degeneration under the microscope. Professor Nagel had not drawn a sharp line between malignant and non-malignant papillomatous ovaries; but in one case in which the speaker had assisted at the operation ten years ago there was a large adeno-cystoma of one ovary removed; the other ovary, which did not appear malignant, was left *in situ*. Eight years later the patient returned with a mass in the pelvis and carcinomatous nodules in the peritoneum with ascitic fluid. She died six months later. The source of the disease was certainly the ovary which had been left. She also would advocate, in a doubtful case, not only the removal of the opposite ovary, but the uterus at the same time, for in two cases examined by her there was malignant infiltration of the broad ligament and uterine wall.

Dr. Felix Meyer (Melbourne) said that while Professor Nagel's collected experience was in favour of leaving the other ovary, an absolute rule could not be established. In this contention he found support in the remarks of Dr. Louise McIlroy. Macroscopic appearances were often misleading; he recalled two cases in point—one that of a young woman of 24, where on conservative principles he left the small apparently healthy ovary, with the result that within a few months of the operation the pelvis filled with an inoperable growth. In the other case he removed a large proliferating papillomatous cyst of the ovary in a woman of 54, leaving the other ovary, which appeared quite normal. From this ovary there developed an adeno-carcinoma, which recurred after removal, filling the abdomen. In his opinion, the uncertainty of macroscopical appearances should be as far as possible minimized by microscopical examination of sections of the second ovary made rapidly at the time of operating. He would like to share Professor Nagel's favourable view, but could not accept it as final. In the case the speaker had mentioned there was no doubt that the recurrence originated in the ovary left, and not in the stump of the one removed.

Professor Nagel, in reply to Dr. Munro Kerr, said he had certainly seen cases of far advanced carcinoma with infection not only of the other ovary but also of the uterus, and quite agreed that in such cases hysterectomy must be performed. In reply to Dr. McIlroy, he said that nearly 50 per cent. of all papillary ovarian tumours were carcino-

matous, but if only one ovary was affected at the time of operation, the danger of the other undergoing malignant changes also was not very great.

INVOLUTION OF THE UTERUS.

By C. Nepean Longridge, M.D., F.R.C.S.,
Cheltenham.

If one reads the accounts of involution in modern textbooks one fact seems to stand out from the description given—namely, that the uterus loses half its weight in a week. For the sake of exactness I may quote Whitridge Williams, who states that after delivery the uterus weighs 1 000 grams; at the end of the first week 500 grams, 375 grams at the end of the second week, and at the end of six to eight weeks when fully involuted it weighs 60 grams.

One can therefore distinguish two distinct stages in the process of involution—a rapid stage lasting about a week, during which the uterus loses 50 per cent. of its weight, and a slow stage, lasting about six or seven weeks, during which the uterus loses 45 per cent. of its weight. No explanation of the physiology of this process is to be found in textbooks. Involution is, of course, a physiological process, and I venture to state that as such it is perfectly unique, since no other healthy organ in the body can lose half its weight in a week. A satisfactory explanation can be found in the application to the problem of the known facts concerning autolysis of tissues. The little knowledge of autolysis which is necessary may be summed up in a few words. If an extract with normal saline be made of a piece of fresh tissue a certain amount of nitrogenous extractives can be obtained in the filtrate from the extract. If, however, taking every precaution against bacterial action, one incubates the tissue with saline for some hours and then examines the filtrate the amount of extractives which can be obtained is very much increased. Therefore, some change has taken place in the tissue which is independent of bacterial action, and which results in the transformation of insoluble nitrogenous bodies into soluble nitrogenous extractives. This change is called autolysis. The rapidity of the change is determined by definitely ascertained factors. In an acid medium the change is much more rapid than in an alkaline one, and the presence of fresh blood or serum causes a marked diminution in the rapidity of the process. It is not certain whether the change is due to the action of tissue ferments which are set free from their zymogen by an acid, but such a theory provides a sufficient working hypothesis.

If we apply this knowledge to the involuting uterus the problem is at once simplified. After delivery the uterus is anaemic and has developed in its walls a certain amount of sarcolactic acid due to its muscular contractions—conditions which are ideal for rapid autolysis to take place. It seems, therefore, that the explanation of the first or rapid period of involution lies in the fact that the uterus is anaemic and of an acid reaction during the first five or six days after delivery. At the end of this period it is conceivable that the uterus has softened down to such an extent that the blood begins to circulate again through the uterine walls. When this happens the second or slow stage of involution begins, because the reaction of the tissue becomes alkaline. It is further conceivable that at the re-establishment of the uterine circulation the products of autolysis—that is, a considerable amount of nitrogenous extractives—should find their way into the blood stream and be excreted.

Such, then, is the explanation of involution when looked at in the light of autolysis, and there is a certain amount of evidence which appears to support it. First of all, as regards the anaemia of the uterus, I have been met with the objection that the uterus cannot be anaemic after delivery because lochia and clots come out of it. That objection can be met in several ways: First, inspection of the parts with a speculum will assure any one that the blood in the lochia is as much due to small lacerations of the vagina and cervix as it is to leakage from the uterus. Secondly, Nature has, as I have shown elsewhere, provided a double line of defence against bleeding, so that the uterus may remain "blood-tight" after delivery. Thirdly, I have myself had the not uncommon experience of attending cases of labour in which the patient had no lochia at all with the exception of a little mucous discharge; and this experience is shared by all veterinary surgeons, who find that it is a most uncommon thing for any cow, mare, bitch, or other female mammal to have any discharge after labour comparable to the lochia of the human female. Therefore there are grounds for believing in the possibility of a blood-tight uterus. Moreover, in one or two of the cases I have had in which there has been an absence of lochia I have noticed a slight red discharge at the end of the first week, which was probably due to the re-establishment of the uterine circulation.

Two or three years ago I was enabled with the help of a grant from the British Medical Association to carry out some such dealing with the excretion of nitrogenous material during the puerperium. To be brief, I may say that the work was carried out upon the puerperal women who, with the kind permission of the late Dr. Rivers Pollock, I placed upon a creatinin free diet, containing 13·5 grains of nitrogen a day. The total nitrogen and creatinin excretion were determined in these patients daily, and the result of the research went to show that there was no rise in the excretion of endogenous creatinin, but that about the end of the first week of the puerperium there was a marked rise in the excretion of total nitrogen. This rise occurred in every case examined, and the time of its occurrence coincided with the period at which the uterine circulation becomes re-established and washes out the products of autolysis.

More work remains to be done before the seal of certainty can be set upon these views, but they appear to me to afford a reasonable explanation of the facts of involution, and from them a practical lesson in the management of labour may be deduced. It is to aim at a dry and blood-tight uterus at the end of labour. I think that we should hold the uterus for at least an hour after delivery, and then give ergot the charge of holding it for us; also that we should endeavour to finish a labour with a uterus as strong and as full of "buck" as possible, by not letting the uterus tire itself unduly; and lastly, that we should not allow the uterus to be pushed up into the abdomen by a full bladder. By these means the uterus is kept anaemic, and the first stage of involution is able to pursue its rapid course.

THE SURGICAL TREATMENT OF FIBROSIS OF THE UTERUS.

By A. Louise McIlroy, M.D., D.Sc.,
Gynaecologist, Victoria Infirmary; District Obstetric Physician, Glasgow Maternity Hospital.

The term "fibrosis" is applied to that condition of the uterus in which the whole organ is uniformly enlarged, hardened, and the walls under the microscope show increase in the stroma with or without muscular hypertrophy and thickening of the arterial coats. Clinically there is menorrhagia with dysmenorrhoea. I do not propose to enter into a discussion as to the use of the terms "chronic metritis" and "arterio-sclerosis of the uterus," a complete account of the literature and pathological condition being found in the papers by Gardner and Goodall,[1] Donald, Shaw, and Macdonald.[2] It is only necessary to state that the term "fibrosis" is applied to a uterus which has an increase in the fibrous stroma. Other areas in the same uterus may show hypertrophy of the muscular tissue and thickening of the outer coats of the vessels.

In taking up the treatment I have excluded those cases which were associated with marked pathological changes in the uterine appendages, and have confined my remarks to those cases where the uterus is the primary organ affected. For the treatment of uterine haemorrhage when not due to malignant or benign neoplasms the usual routine method is that of drugs, followed in some cases by the use of the curette. In cases of fibrosis this mode of treatment is of little use, the patient's symptoms being relieved for a time only, often to return with all the greater severity. In the early stages of the disease, when congestion is present and when the uterus tends to become retroverted, ventrisuspension may be of use; as far, however, as my experience goes, this operation is not of permanent benefit.

Fibrosis usually occurs in women during the child-bearing period of life, and for this reason the expectant method of treatment—that is, by waiting for the onset of

the menopause—is to be condemned, as the patient is a chronic invalid from repeated and prolonged haemorrhage.

The surgical treatment of fibrosis of the uterus resolves itself into two divisions—namely, removal of both sets of appendages in order to get rid of the haemorrhage, or the extirpation of the uterus along with or without one or both ovaries. In the first division it is true that in the majority of cases the haemorrhage is stopped, but the patient may still complain of pelvic pain, leucorrhoeal discharge, and general discomfort. By the operation of hysterectomy the pathological tissue is altogether removed, and if the patient be a young woman one or both ovaries may be left, thus obviating the discomfort of an artificial menopause.

Four cases of fibrosis of the uterus have come under my care, and in one of these I was enabled to verify my diagnosis by subsequent examination of the uterus by means of the microscope. In all four cases there was marked menorrhagia with dysmenorrhoea. Two were young unmarried women and two were multiparae.

In Case I the patient, aged 25 years, was curetted without any relief for the pain and haemorrhage. Eighteen months later I performed ventrisuspension of the uterus, that organ being enlarged and hard. There was no disease of the appendages. The patient reported herself as improved for several months, but complains of a return of the pain at her menstrual period.

In Case II the patient, aged 30 years, had suffered from dysmenorrhoea and menorrhagia for two years, the haemorrhage being alarming at times. I curetted the uterus and suspended it to the abdominal wall, and removed at the same time a small haemorrhagic cyst of the right ovary. The patient reported a return of the symptoms a few months after the operation. Owing to the age of the patient I was unwilling in either case to perform a sterilizing operation.

In Case III the patient, aged 37 years and multiparous, had an abdominal section performed by me for the suspension of a retroverted uterus. Both ovaries were found to be small and sclerosed, but were left *in situ*. The patient's symptoms still continuing, I removed both sets of appendages nine months later. There was a subsequent cessation of the haemorrhage, but some pelvic discomfort is still present.

In Case IV, a multipara aged 42 years, the patient had been curetted by a gynaecologist three and a half years previously. I advised a second curetting with the object of examining the endometrium microscopically. An interstitial endometritis was found, and a few days later the uterus was suspended, as there was some retroversion present. The uterine appendages appeared perfectly healthy. The patient was kept under observation, but the menorrhagia still persisted, and I advised hysterectomy with removal of both appendages, which I performed over a year ago, and the patient has reported herself to be perfectly well.

In two of the cases the operation of curetting and subsequent ventrisuspension gave temporary relief only. In one case oöphorectomy gave relief from the haemorrhage, but not from the pelvic pain. If combined hysterectomy had been performed in this case the pain would have disappeared. In the fourth case a complete cure was obtained by hysterectomy. The point of importance in the treatment of cases of fibrosis is the early recognition of the condition, and although it seems a somewhat drastic procedure the operation of hysterectomy is the only one which will give a satisfactory termination to the symptoms.

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DISCUSSION.

Dr. Walter Tate (London) said he had seen many cases of fibrosis of the uterus, and in his opinion, when medical treatment and curetting the uterus had failed, removal of the uterus was the only operation to recommend. He would not expect any improvement from the operation of ventrifixation when the patient was suffering from menorrhagia and dysmenorrhoea. The majority of cases who came up for treatment were about 40 years of age; but it was to be remembered that the menopause was often delayed till well over 50 in many of these cases, so that they could not be left to wait for natural cures. In the case of young girls the matter became a very serious one, particularly when they had to earn their living, and the severe menorrhagia and dysmenorrhoea made this quite impossible.

Dr. Comyns Berkeley (London) had performed hysterectomy for several cases of fibrosis of the uterus after all other methods of treatment had failed. He did not understand how ventrifixation or suspension could relieve these cases, and he would not expect it to do so, neither did he think removal of the ovaries justifiable. An alternative treatment to hysterectomy which should be seriously considered was the removal of a wedge-shaped piece of the uterus, after the method of Kelly, so that its size and cavity were materially reduced. He had knowledge of three cases in which this treatment had been very successful.

Dr. Curtis Webb (London) said he ventured to speak on the subject of this paper on account of one case that he had treated by intrauterine electrical applications of the constant current. The case had been sent to him by Dr. John Phillips, who had made a diagnosis of fibrosis uteri.

The patient, a lady of 47, had had four children and seven miscarriages, the last at three months six years ago. For three years there had been menorrhagia, the periods lasting ten days. Afterwards metrorrhagia came on; for the past year the haemorrhage had been almost continuous, so that the patient, who lived in the country, had for the eight months previous to coming to London for the consultation been confined to bed and sofa in one room. After examining the case, Dr. Phillips advised hysterectomy, but, as the lady was very anxious to avoid operation, and as she was very anaemic, she was sent to the speaker for electrical treatment. A zinc intrauterine electrode of the speaker's own design, and of the largest size that could be painlessly inserted into the uterus, was used. This sound was amalgamated with mercury, and a current of 100 milliampères passed for eight minutes to each successive segment of the cavity. Treatment was commenced on January 21st, 1908, and repeated three times a week for five weeks. Haemorrhage ceased on February 3rd, and the patient returned home on February 26th. From that time onwards the periods were regular, lasted four days without any excessive loss till February of the following year, when they ceased. The patient made an uninterrupted return to health and vigour.

It was known that during the passage of a constant current there was a determination of the acid radicles of the constituent salts of the body fluids towards the positive pole, and it was the cauterizing and styptic effect of this acid that brought about the haemostatic action that always occurred at this pole; but no doubt the ionization of the zinc and mercury ions had a strong antiseptic action on any irritating bacterial infection that might have been present. It must be remembered that, if it was desired to resolve fibrous tissue by ionic methods, the negative pole must be used, and one would like to be able to employ this procedure, but one was barred by the fact that this pole encouraged haemorrhage. The speaker entered a strong plea for the judicious use of electrotherapeutics in suitable gynaecological ailments, markedly in certain forms of haemorrhage. He did not know whether ionization was a surgical procedure because instruments were used, or medical because chemical substances were introduced. Perhaps it might be called a "borderland" treatment, and he feared that, in the opinion of many gynaecologists, those who considered that electro-therapeutics could play any useful rôle in the treatment of gynaecological affections were themselves "borderland cases"—in the alienist's use of the term.

Dr. Herbert Spencer (London) agreed with Dr. Tate that no good was to be expected from ventrisuspension or ventrifixation in these cases. The cases were not rare, and were very intractable. He had been driven to do hysterectomy in these cases, but was not proud of it—indeed, he thought it was an operation of which gynaecologists ought to be ashamed. He had only done it with great reluctance, and thought it should not be done in any young woman, and that in women approaching the menopause it would be wise to wait as long as possible. He had seen remarkable results in a few cases from steaming the uterus; in one case—the only case of haemophilia he had seen—the patient remained quite well after many years. The operation, of course, had the drawback of sometimes causing stenosis. He also thought that Dührssen's operation of excising portions of the mucosa and Kelly's operation of making a utriculus were preferable to the removal of the uterus.

Dr. Blair Bell (Liverpool) expressed surprise that none of the previous speakers had called attention to the fact that not only was there no evidence of "fibrosis uteri," in the true sense of the term, in 3 out of the 4 cases

quoted by Miss McIlroy, but, further, that in point of fact 2 of the cases could not have been of this nature. The term had been seized upon as an explanation of many cases of menorrhagia and metrostaxis, without the slightest justification. For this reason also the question of treatment had not received proper consideration in the discussion. If care were taken to consider the disease from a proper pathological standpoint the best methods of treatment could not remain in doubt, and the question of removing the uterus from young married women should never arise. The condition termed "fibrosis uteri" only occurred, in the vast majority of cases, in women who had been pregnant. It was due to three contributory factors: (1) Imperfect involution, probably the result of slight (2) infection subsequent to parturition; (3) uterine fibrosis in excess of the normal age changes. The condition was therefore usually found in women over 40 who had borne children. The uterus was usually normal in position or anteflexed; it was extremely rare to find the organ retroflexed. The treatment consisted, first of all, of curettement and the administration of calcium lactate (gr. xxx every night for a week, and then on alternate nights for a month or two). Should this treatment be not entirely successful, ionization of the uterus should be tried; this often gave excellent results. In extreme cases hysterectomy should be performed to save the patient from the excessive loss of blood. This operation was perfectly justifiable, since the woman had usually almost reached the climacteric age and had had children. In the exceptional cases in young women in which fibrosis was present it was due to metritis, but this itself was excessively rare in nulliparae, for gonorrhoea (the common infection in this class of patient) rarely affected the muscle walls of the uterus except after parturition. In "congenital" flexions and in infantile uteri there was, of course, more fibrous tissue than normal, but this was not the same condition as acquired "fibrosis uteri," nor was there menorrhagia with these conditions. The uterine haemorrhages seen in young women were frequently not local in origin, but arose as the result of derangements of the ductless glands, and should be treated on appropriate lines; this subject was beyond the range of the present discussion.

Dr. PURSLOW (Birmingham) said he had published two of the earliest recorded cases of fibrosis of the uterus eleven years ago in the BRITISH MEDICAL JOURNAL, June 10th, 1899, under the heading of Two Cases of Intractable Uterine Haemorrhage in which Vaginal Hysterectomy had been Performed. He had been compelled to perform hysterectomy on several cases since then, but these had all been in parous women, and he had not so far found it necessary to perform this operation on a nullipara. As regarded drugs for uterine haemorrhage, he had sometimes seen good results from styptol (cotarnine phthalate) when ergot and other drugs had failed.

Professor J. A. KYNOCH (Dundee) said that in cases of fibrosis of the uterus in which all medical means had failed to arrest the haemorrhage and cure only resulted after hysterectomy he considered the radical treatment justifiable, especially in hospital patients. By removing the uterus and leaving the ovaries the results were most excellent. Radical treatment was, of course, only justifiable as a last resort.

Dr. HASTINGS TWEEDY (Dublin) was glad to hear Dr. Herbert Spencer approve of vaporization of the uterus. He had seen most remarkable results from the application of superheated steam in menorrhagia and metrorrhagia. The treatment was painless and apparently perfectly safe when employed with due and necessary precautions. A uterus should never be removed for fibrosis until steaming had failed to effect a cure; when it was tried there would be no occasion to remove the uterus afterwards.

Professor GOTTSCHALK (Berlin) recommended in cases of severe bleeding sterilized injections of gelatine.

Mr. S. G. KIRKBY-GOMES (London) had under his care at the present moment a case which exhibited the symptoms described by Dr. McIlroy, though the uterus was anteverted, not retroverted. It was one of three cases of fibrosis of the uterus which had come within his personal observation. The present case had severe haemorrhage and had been in the hands of a medical practitioner for several months. All available remedies supposed to be suitable, including styptol, had been applied, but without result. She was now in the speaker's hands for surgical treatment. He had thought of trying Kelly's method, but having heard what Drs. Herbert Spencer and Tweedy had to say about atmocausis in these cases, would try this before going any further. He regarded both ventrifixation and oöphorectomy as quite unsuitable in connexion with cases of this order, and hysterectomy as an unsurgical procedure in fibrosis, if that condition was really a pathological entity, in a woman under the age of 55.

Dr. MARY SCHARLIEB (President) could not understand why ventrifixation should be expected to cure a case of uterine haemorrhage if the cause were degeneration of its vessels. She agreed that drugs, curetting, and ionization should first be tried, but if a radical operation were necessary it was surely better to remove the uterus, or to form a utriculus by Kelly's method. Oöphorectomy might fail to arrest the haemorrhage, and deprive the woman of the internal secretion of the ovaries, a product which appeared to be of value. The removal of the uterus certainly arrested the haemorrhage, and grievous as it was to remove that organ, its loss had less evil influence on the woman's health than was caused by removal of the ovaries.

Dr. A. LOUISE MCILROY, in reply, said she had limited the discussion to the surgical treatment, as it would have been interminable had drugs and local applications been brought forward. In reply to Dr. Herbert Spencer, in the case of young women where ventrisuspension had been done there was slight retroversion of the uterus. The application of medication to the endometrium might be associated with an increase in the severity of the symptoms. That hysterectomy should be the last resource only was the general opinion of the meeting, but much valuable time might be lost by postponing this operation for a length of time. Dr. Blair Bell had brought up an interesting question—namely, the relationship of the thyroid gland. The speaker herself had under treatment at present a case of uterine haemorrhage which she was treating by thyroid extract, and at present it seemed to act as relief to the symptom.

DEMONSTRATIONS.

I.—EROSION OF THE CERVIX.

PROFESSOR SIGISMUND GOTTSCHALK (Berlin) gave a lantern demonstration of photomicrographs illustrating various stages of erosion of the cervix, and formulated the following conclusions. Erosion of the vaginal portion of the uterus is inflammatory, and due to irritation; the glands in the erosion are true ectopic cervical glands. The normal stratified squamous epithelium perishes owing to (1) subepithelial extravasation of blood; (2) copious round cell subepithelial infiltration, or (3) rupture under pressure of retention cysts arising from such cervical glands (ovula Nabothi). The nude surface of the vaginal portion becomes covered, in a secondary manner, with cylindrical epithelial cells, with vibratile cilia arising from the ectopic cervical cells, which are opened on the nude surface. In some instances cylindrical epithelium may arise from the surface of the cervical mucosa also, but the squamous epithelium of the portio is never transformed into cylindrical secreting epithelium, and is never the origin of glands deep in the connective tissue (Ruge, Veit). In the third stage, newly formed stratified squamous epithelium is pushing off the cylindrical epithelium from the surface of the portio, and sending out strong papillae deep into the connective tissue, and crushing the ectopic glands. There is a contest between the two forms of epithelium in which the newly formed squamous epithelium usually gets the victory. But this contest may not always be without danger to the patient, for malignant degeneration may occasionally take place. It is therefore better in such severe cases of glandular and papillary erosion of the portio to make a wedge-shaped excision of the diseased tissue.

II.—EXTRAPERITONEAL CAESAREAN SECTION AND HEBOSTEOTOMY.

PROFESSOR DÖDERLEIN, of Munich, exhibited a series of pictures, illustrating his extraperitoneal method of performing Caesarean section and subcutaneous hebosteotomy, which he explained was the correct term to apply to what was sometimes called pubiotomy. Descriptions of these operations would, he said, be found illustrated and set forth in the third edition of the book on operative gynaecology by Krönig and himself.

In the discussion which followed, Dr. HASTINGS TWEEDY said obstetricians had to thank Professor Döderlein for the very great help he had given them by introducing the operation of pubiotomy. It was a most satisfactory operation, but in the speaker's opinion the true subcutaneous method of performing it had many marked advantages over that now demonstrated. It was so easy to perform that any well-trained practitioner should be prepared to undertake it. There was little haemorrhage, and the convalescence was easy and painless. Hysterotomy, too, was a splendid procedure, and could be undertaken in cases where classical Caesarean section would be most dangerous. The speaker had successfully performed three such operations, two symphysiotomies, and five pubiotomies, and so far as convalescence and subsequent results went, there seemed to be nothing to choose between any of them. Dr. MUNRO KERR agreed that pubiotomy was a most valuable operation, but did not regard it as one which a practitioner could employ with only the ordinary appliances to be found at the patient's home. He had employed Professor Döderlein's method, and believed it to be the best method though it could not accurately be called subcutaneous. The method of performing Caesarean section described should certainly be tested by all obstetric surgeons, but he was doubtful if it would prove to be such a great advantage. Ordinary Caesarean section gave most excellent results in all except infected cases. It did not seem likely that this method of hysterotomy would be attended by less infection. It opened up the cellular tissues and their infection could not possibly be prevented. It was, moreover, a complicated procedure. Dr. HERBERT SPENCER agreed with Dr. Munro Kerr that probably there was no great advantage in the extraperitoneal Caesarean section; but it had also, he thought, the disadvantage that it took longer to deliver the child. He (the speaker) had often delivered the child by the classical operation in one minute or a few seconds more. He thought it important that the child should be delivered quickly, so as to avoid asphyxia. Professor DÖDERLEIN, in reply, said that in his method of performing Caesarean section the time occupied, from the first incision to the delivery of the child, was about five minutes.

SECTION OF PSYCHOLOGICAL MEDICINE AND NEUROLOGY.

THEO. BULKELEY HYSLOP, M.D., C.M., F.R.S.E., Senior Physician, Bethlem Royal Hospital; Lecturer on Mental Diseases, St. Mary's Hospital, President.

PRESIDENT'S INTRODUCTORY REMARKS.

As President of this Section, allow me to bid you a hearty welcome to this our annual gathering.

In view of the fact that anything in the nature of a presidential address is discouraged by the Executive Council of the Association, it appears to me that I shall best serve the wishes of all concerned if, instead of addressing you on any special topic, I confine myself to a few remarks on the general philosophy of the subject-matter with which our combined Sections of Psychology and Neurology have to deal.

Firmly convinced, as I am, that no great or effective progress can be made in any one science otherwise than by a method and logic common to it with all others, I propose testing the present state of the relationship of psychology to neurology by the light of those principles of universal philosophy which have guided the sister sciences of Nature to their present state of maturity.

Within comparatively recent years the experimental and statistical study of mental phenomena, aided by measurement and mathematics, has enabled psychology to rank as one of the exact sciences—a position which the philosopher Kant expressed himself in despair of its ever reaching. The numerous physiological and psychophysical laboratories which have sprung into existence, and the methods whereby an empirical psychology without metaphysic—or a psychology without a soul—have served, as Professor James says, "to pull the pall over the psychic half" of the phenomena, have enabled psychophysics and even psychology to assume a dignity and importance all their own, and which would appear to place them outside the realms of conjecture, metaphysics, and philosophy.

The total exclusion of metaphysics from the so-called exact sciences is in reality however, an impossibility. The physicist accepts mere hypotheses, such as those of the existence of luminiferous ether, conservation and correlation of energy, gravitation, etc., as hypothetical entities on which to base his science, denying at the same time any hypothetical entity, such as the soul or spirit, on which the psychologist would, or ought, to base his science.

It is not my object, however, to plead either on behalf of psychology or of physiology. A commonsense and uncritical dualism would appear to be the legitimate position for the worker in science, and it is only when this standpoint is exceeded, and, in an unthinking way, all epiphenomena and their metaphysical bearings are condemned, that a halt should be called, and that they should be told to refrain from giving judgement on matters outside their own legitimate province.

The "principle of concomitance" or of "psycho-physical parallelism" is now regarded as being at the very base of modern psychology, and to some writers this acknowledged principle of complete psycho-physical parallelism is a crushing refutation of all metaphysics whatever. Let us look, however, at the question more closely, and we shall see that, no matter how perfect the concomitance or parallelism may be, we are still very far short of any solution of the main problems of life and mind.

With regard to the evolution of mind, or the dawn of consciousness, from the world of inorganic matter, with its stores of indestructible energy, two hypotheses present themselves:

1. Mind existed and exists throughout the extent of space (if there are limits) and through all time from the very beginning (if there ever was a beginning), as a hypothetical entity differing from, and yet for its manifestations depending upon, other hypothetical entities such as energy, gravitation, electricity, and even life itself. That is, mind has had an existence parallel to that of energy and of the various other hypothetical entities granted by the so-called exact sciences. This would form the basis for the hypothesis of an exact and complete parallelism, and it would have no limits in time or space. Mind would exist as a hypothetical entity, being neither translated from nor into any other hypothetical entity whatsoever.

2. The other hypothesis would be that mind is evolved from energy as a transformation, and therefore comes within its law of indestructibility, which would necessarily involve the supposition that just as it is evolved from, so it must return to, the source from which it came. If the latter theory be true, it is but fair to assume that if mind is derived solely from physical hypothetical entities it must have existed as a potentiality concomitant to and dependent upon all space and time, and, moreover, it could never die, inasmuch as it would of necessity be merely translated back to the source from whence it came.

Energy, with its numberless transformations, knows no limits in space or time. Of the complex host of undulatory stimuli which are derived from myriads of sources to stimulate the respective organs of special senses and to be ultimately translated into the physical concomitant of a sensation in consciousness none are lost. Our physical organism is dependent on the stimuli of light and heat for its very existence. The energies it abstracts it also gives back, and the sum total of energy is always a fixed quantity. Mind, as a hypothetical entity, can neither abstract from nor add to the sum total of available energy.

For polemic purposes the two theories are about on a par. Mind is either coeval with the world or it is evolved in a manner which would necessitate either the supposition that it is created out of nothing, or, if out of something, the favourite dogma of the exact sciences as to the indestructibility of energy must be erroneous.

The physiologist climbs to the top of his own special ladder, and, when he has noted with care the characteristics of each particular rung, he is satisfied, and views all else in nature from the summit he has attained. Similarly, the psychologist climbs his ladder and, by noting and measuring each step of his progress, ultimately crows loudly from the topmost rung that he alone stands above all others. The dualist or psycho-physical concomitance advocate, on the other hand, binds the two ladders together, step by step, and rung by rung, and, when mounted at the summit, he is satisfied that parallelism is the one and only solution of the world's enigma of consciousness.

The enthusiast in psycho-physics — owing to the apparent completeness of the concomitance or parallelism, and even dependence—is apt to wander from legitimate conjecture into realms which are fanciful and even absurd. The parallelism can be traced so far and no further. The record written in the rocks of our own earth permits us to trace the history of the spread of life where inorganic and organic matter have been intimately combined, as if the inorganic were the structure or instrument for the manifestation of the phenomenon of the organic. But how are we to carry out the theory of parallelism in its entirety? An adequate theory would have to conceive the universe as being but a sea of innumerable waves of motion having various interpretations, as energy, gravity, electricity, co-extensive in space and in time with life and mind.

The universal laws of physics do not make exceptions for the benefit of life and mind, and it is just as inconceivable that any combinations or transformations of energies can produce life as that inorganic matter can produce energy, gravity, electricity, etc. In the abstract they are all capable of being spoken of in different terms, but in the sum they are interwoven so inextricably that they cannot be conceived as existing apart. Life and mind ought therefore to be as abstract principles, co-extensive in time and space with those other principles on which the physical sciences are based.

To regard mind as being evolved from energy, and as something different from and incapable of being spoken of in terms of energy, would necessarily involve the confession that the law of the conservation of energy is untrue, inasmuch as energy would be thereby surrendering itself in part to the construction of something totally different. Refusal to acknowledge this objection would necessitate the granting that if mind comes from energy in some subtle and inconceivable manner as a mere translation or transformation of energy, then it must assuredly return to the source from whence it came, and this would necessarily involve the conception that everywhere throughout space and time we have the potentialities of mind, in which case the one would be as indestructible as the other.

When we attempt to explain the so-called epiphenomena of mind and endeavour to find some physical basis for the alleged occurrences of thought transference and telepathy we can but confess to failure, or, at most, to some faint glimmer of insight as to possibilities. Physics have either helped or deluded us concerning ether, that bewildering hypothetical entity filling all space and permeating the inmost recesses of all matter, solid, liquid, and gaseous, with its function of propagating the transverse vibrations which constitute light, its duty of transmitting the pull of gravity from particle to particle and from world to world, and its myriads of phases and electrons as electricity.

Certain it is that modern research shows us that electric disturbances like those made use of in wireless telegraphy can be propagated, like light, at great velocities through vast distances, even though there be no tangible connexion between the source of the disturbance and the distant receiver. Similarly, biological science—and possibly psychical research also—has made us aware that both in the animal kingdom, and possibly also in man, communications can be made at great distances and apparently without the aid of any medium as yet hypothetically conceived by us.

We await the coming of another Newton who shall formulate for psycho-physics laws comparable to that of universal gravitation, and draw a comparison between the mechanism of the infinitesimally minute atoms and the infinitely great cosmos. In time it may yet be realized that the problems of life and mind are as dependent upon all-pervading principles as are the problems of gravitation, energy, and magnetism.

In psychological science we await the coming of a second Darwin who shall enunciate a theory as to the origin of *specific qualiae* (or the perception of qualitative differences between sensations). Up to the present all efforts to solve this problem have been futile, and philosophy seems to indicate that the main problem of the evolution of mind is as yet unassailed. The recognition that the nervous system is not a generator, but merely an instrument for the transmission of force (the so-called *vis nervosa*), is one step in the right direction towards a better conception of the possible relationships between mind and matter and the abstract principles pertaining to each. When life gives place to decay and its living combination of "organic molecules" again becomes transformed or translated to the so-called inorganic world, mere disintegration of structure does not destroy its energy, its magnetism or any of the ultimate chemico-physical factors upon which it depends for its being. It remains open, therefore, to ask whether life or mind can logically be assumed to be capable of being added to or subtracted from those other principles known to physics as quantitatively eternally fixed.

Philosophy, science, and even religion, therefore, must necessarily come in due course to terms of agreement. Philosophical psychology demands that physical science shall either agree to its claims for the existence of a soul or give up its greatest dogma—the indestructibility of energy. When philosophy and science shall meet on common ground, much that is now vague and uncertain must in time, by becoming definite items of knowledge, not only tend to abolish agnosticism, but even give rise to positive articles of faith.

DISCUSSION ON INSANITY AND MARRIAGE.

OPENING PAPER.

By G. H. SAVAGE, M.D.Lond., F.R.C.P.,
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THE subject of marriage and insanity is one which is at present beyond practical legislation in this country, but is of immense importance for the social stability and for individual welfare. Though we cannot legislate we have to advise, and our advice is sometimes taken. The lay public as a whole, and the majority of medical men, would at once reply to the question as to the insane ever being allowed to marry in the negative, but I shall contend that a dogmatic statement of this kind is unscientific and unpractical. Such a declaration is taking it for granted that all insanity is alike and is to be treated as of equal value. I shall begin, then, by saying that in my belief certain persons who have suffered from a degree of mental disorder which may be classed as insanity may yet recover and marry with no real increase of risk to their partner or to their children. If I say this, you will next expect me to give examples of the forms of insanity which I should consider as not being of vital importance.

First, then, I have seen a good many adolescent cases with melancholic symptoms, many with marked hypochondriacal ideas who have recovered, and have after the interval of some years married and have borne the burden and heat of the world with sanity and well-being.

Again, I have met with a good number of adolescent cases with maniacal excitement who have recovered completely and have had no recurrence of mental disorder, and who have married and have remained healthy and sane.

Rather apart from such cases, I have met with cases of women who, having had attacks of insanity before the menopause, have married when past child-bearing and have remained well; but few would recommend such unions.

I have seen a few cases in which there was acute delusional insanity, probably toxic in origin, in which recovery has taken place and in which satisfactory married life has followed, but I admit at once that I should hesitate before advising marriage in such cases. I think in all these cases the question of family neurosis must be considered, and would influence one's advice. Again, cases in which after recovery the patient has been free from dread of recurrence are more favourable than those whose dread may act as autosuggestion. Doubtless many of my audience can give examples of other forms of cases of insanity in which marriage might be justified.

And now as to the cases in which marriage should be hindered or prevented. In no case should it be allowed where there is a history of periodical recurrences, and it is certain that there is very grave risk in those cases of adolescents who at puberty and with adolescence have periods of depression and buoyancy. I have seen a good many such cases in which there has been marriage in haste with a leisure of repentance. I think suppression of the facts as to such attacks should really be a ground for declaration of nullity.

It is so firmly established in the public mind that direct heredity is the chief cause of insanity that the question as to marriage of persons with insane relations is constantly brought before one. It is impossible to prevent marriage of all related to the insane; if you did you would not benefit the race, and I have seen many instances of breeding out of neurotic types.

Neurotic heredity certainly must influence your advice when you have to decide when the patient has symptoms of some form of insanity, such as delusional insanity, which is generally met with in members of insane families.

I would never allow marriage in any cases where there are fully-organized delusions or hallucinations. I have met with cases in which a man has slowly isolated himself as the result of concealed ideas of persecution, and in one case I have known such a one marry with the one idea that he thus was getting a protector between him and his tormentors. In this case a nullity was decreed. I learnt some years ago of the danger of acting on what appeared to be justifiable grounds in such a case.

A middle-aged man of independent position had developed general alopecia, and had become terribly sensitive to the notice of the persons whom he met. Doubtless they looked at him, but he misinterpreted their looks and gradually shunned society. He would only go out after dark, and then alone. He had hallucinations of hearing, and was profoundly suspicious. He contracted influenza, which was followed by pneumonia, and during his very severe illness he was nursed most carefully by a woman of middle age. He was very grateful, and was persuaded that there was at least one human being who did not detest him. He offered her marriage, and after seeing her I decided that, being past child-bearing and understanding the possibilities of a future redevelopment of the disorder, she might marry him. It was arranged that in any case a fixed income should be settled on her. All went well for a time, but again the delusions arose, and he nearly murdered his wife, and had once more to be sent to an asylum. Next, I cannot think that marriage should ever be permitted in cases in which there has been epilepsy with any mental symptoms. I am in doubt whether any epileptic should be allowed to marry, but I have in my mind at present several instances of women subject to *petit mal* who have lived and had healthy children though epileptic. Yet the risk is very great. There can be no doubt that with any form of mental disorder epilepsy should be a bar to marriage

It is, I admit, difficult, and apparently hard, to say to a girl of 20, subject hitherto only to nocturnal attacks, that she ought not to marry, but my experience makes me say this strongly.

I feel equally strongly about marriage in cases of moral perversions; I have seen so many wrecked lives of women who have married drunkards with the notion of reforming them. Marriage, like other events in life, may check a few in their downward course, but I should be strongly opposed to advise the risk to any one whom one loved. Again, in cases of sexual perversion and in cases of impotence the advice to marry is certain to be dangerous, or worse.

Nearly allied to these cases one has to consider those of general paralysis of the insane, and I fancy many of us have had difficulties in these cases. Men with early acute symptoms may apparently recover before you are really certain that the disease is general paralysis of the insane, and then after a short period with the feeling of buoyancy and with general amorousness the patient wishes to marry, and I have to admit that I have been obliged in some cases to say, "Well, I think it is a mistake, but I cannot be certain as yet that the disease is general paralysis of the insane." I have known disaster follow rapidly after marriage in such cases. In fact, I always feel grave risk in not preventing marriage in any case in which there has been clear evidence of constitutional nerve trouble depending on syphilis. I have seen miserable results following marriage of tabetic subjects, as well as in those who have had some local cranial nerve affections.

Marriage should never be recommended as a means of cure. In so-called hysterical cases the prospect even of relief is small and the risk of permanent alienation is great. I have seen several cases in which after such marriages there has been separation, and others in which application for divorce has been made. I would speak equally strongly against marriage as relief for so-called neurasthenia or hypochondriasis, and I have already said that for sexual disorder it is dangerous.

Allied to the above subject is that of insanity and divorce, but as this is likely to be brought before the Commission at present sitting I shall not speak on the matter.

I leave, then, the points for discussion to be:

Should any one who has been certified as of unsound mind be allowed to marry? If so, which cases or which forms of insanity may be considered as not barring healthy unions and healthy offspring?

Should not the recurrence of any form of insanity be a bar?

Should evidence of syphilitic affection of the central nervous system bar marriage?

Should marriage ever be recommended in cases of mental disorder?

Should insanity be a plea for divorce?

DISCUSSION.

Dr. Shuttleworth (London) said that his experience of the subject was derived from the care of the unfortunate products of ill-assorted marriages rather than that of the contracting parties. The well-known reticence (sometimes misrepresentation) of parents of mentally defective children as to the existence of neuroses and psychoses in their family histories tended to obscure exact statistics, but undoubted evidence existed as to the large part neuropathic heredity played in this matter. His friend, Dr. Fletcher Beach, and he had many years ago reviewed the history of 2,380 of their cases at Darenth and the Royal Albert Asylums respectively, and had arrived at the conclusion that at least 21.38 per cent. came of stocks in which there was a definite history of insanity or imbecility, and 20 per cent. more in which there was a history of epileptic or grave neurotic inheritance, making 41.38 per cent. in which there was evidence of serious nervous abnormality. Dr. Tredgold, who devoted much time as research scholar in tracing out to three generations the family history of imbeciles in the London County Council and other asylums, found there was a larger percentage of definite neuropathic inheritance—namely, 64.5 per cent. That neuropathic inheritance was a far more potent cause than the personal mental conditions of the parent was shown by another study of his as to children born in asylums of insane mothers. In 38 cases of this kind, of 14 born of mothers whose insanity was of an accidental or transient character, 10 were passing through childhood without evidencing physical or mental impairment and there was no trace of morbid inheritance, and 4 died. In the other 24, in which there was a neuropathic family history only, 3 were alive and well; while 21 had succumbed, with one exception, a few months after birth. The mating of neuropathics should undoubtedly be discouraged by public opinion if not by legislative enactment. The mutual attractiveness of neurotics for each other was long ago remarked by Dr. Clouston, and attachments between such should, if possible, be nipped in the bud. Consanguineous marriages, where there was a neuropathic tendency (what

family nowadays, as a learned judge lately remarked, had not at least a second cousin insane), should be specially denounced. In-and-in breeding had had a baneful effect in certain communities—for example, the Society of Friends. The speaker also adduced instances from his practice in which a sort of craze for cousin marriages extending over more than a single generation had been productive of the most disastrous results to the physical and mental condition of the progeny. He supposed the time was not yet ripe here for laws regulating marriage and prohibiting that of the unfit, such as even now were in force in some of the American States; but it was incumbent on the medical profession to do their utmost to educate public opinion on the subject.

Dr. ROBERT JONES (Claybury), whilst agreeing that in the main the marriage of people who had been insane was undesirable, and that he would consider delusional insanity (paranoia) and all kinds of epilepsy as an absolute bar, thought that the tendency of Nature to an average type should not be overlooked—that is, that the progeny even of those with a neuropathic heredity might be normal. Mendelism, which ought to be a help, was rather unfair in that it took too exclusive cognizance of the parents and neglected the fact that there was no such thing as gametic purity. From a study of his own cases he had arrived at the opinion that heredity was not so important a factor as was generally esteemed, and that the really important determining factors of insanity were the influences of environment, alcohol, and tubercle.

Dr. RISIEN RUSSELL (London) said that he was, of course, more especially interested in the questions raised in regard to epilepsy, syphilis of the nervous system, and impotence. Although it was his custom to discourage the marriage of epileptics, he thought that some distinction ought to be made between confirmed epileptics or those with a bad family history and what he might possibly be allowed to speak of as curable cases—on much the same lines as Dr. Savage had advocated in cases of insanity. He thought that permission to marry could not reasonably be withheld from a patient who had suffered from only a few epileptic attacks and in whom there had been no recurrence for several years after all treatment had been discontinued. It seemed to him that the same must be said of syphilis of the nervous system, as there were cases of the kind that were capable of cure under proper treatment. He did not, of course, refer to such late sequelae of syphilis as general paralysis of the insane or tabes dorsalis. As to impotence, he thought that a clear distinction ought to be drawn between congenital and acquired cases, and in the latter group a further distinction should be made, both in regard to the age of the patient and the cause that had been responsible for the condition. The congenitally impotent should, of course, never be allowed to marry, and the same rule should apply to acquired cases in which the condition still obtained. But when a cure had been effected in an acquired case, the person ought to be allowed to marry.

Dr. FLETCHER BEACH (London) was of the opinion that syphilis in the parents was not a cause of mental defect in the children. Some years ago he inquired into the subject, and was surprised to find that only about 2 per cent. of mentally defective children had parents in whom syphilis had existed. In this opinion he was fortified by other authorities, such as Dr. Shuttleworth and the late Dr. Langdon-Down.

Dr. GREENLEES (London) said that in South Africa representations were made to the Government with the object of introducing legislation to prevent consanguineous marriages in a race with marked neurotic tendencies, or else to provide adequate accommodation for the progeny of such marriages. The Government declined to legislate on the matter, but provided excellent accommodation for imbeciles.

Dr. DAVID BLAIR (Lancaster) maintained that insufficient use was made of the force of public opinion in attempting to check the marriage of the unfit, and that every one before marriage should be obliged to take medical advice as to their fitness.

Dr. STANLEY BARNES (Birmingham) expressed the opinion that a large group of insane and epileptic individuals need not be debarred marriage. He referred to those cases in which insanity or epilepsy had developed as the result of some great mental or physical shock. He instanced cases of temporary insanity following fractured skull or cerebral laceration, and also those who had been subjected to the excessive physical and psychic stresses of the battlefield.

Dr. A. R. DOUGLAS (Royal Albert Asylum) agreed with Dr. Blair that many marriages of unfit people were due to ignorance, but suggested the establishment of local authorities in place of individual medical men for the pronouncement of a definite affirmative or negative opinion on the question of the marriage of persons with marked stigmata of degeneration.

The PRESIDENT, in closing the discussion, said that the time for legislation was not yet ripe. By the efforts of the medical profession the public had been enlightened as to the evil effects of alcohol, and legislation had followed as a matter of course. Similarly with regard to phthisis and many other important factors in the etiology of disease, all of which were now being adequately dealt with, but only after public opinion had been fully educated and public sympathies enlisted. He believed that the Church and medicine would fall into line as to the prohibition of marriage between certain degenerates. The Church was glad to thwart all departures from biological laws which were natural laws, and, therefore, for them, "laws of God." In fact, the Church would welcome any legislation which would relieve it of its great responsibilities in this connexion. Unfortunately, they had to recognize the fact that very few of those who consulted physicians as to whether they should be allowed to marry ever took the advice given them.

PARANOIDAL SYMPTOMS AT THE FEMALE CLIMACTERIC.

By LEONARD D. BAUGH, M.B., Ch.B.Edin.,
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SYSTEMATIZING of delusions is a symptom often present in insanity; it, like other signs of mental abnormality, is frequently intensified at the climacteric. If systematizing starts during this epoch the relationship is usually incidental; on the other hand, a few cases seem to be definitely associated with menstrual cessation; to the consideration of these attention will briefly be paid.

In the cases regarded as definitely associated with the climacteric I hope to show the marked blending of systematized delusions and depression. Illustrations of it came under notice when examples of depression were being investigated, and in a paper read to this Section of the Association at Sheffield in 1908 they were briefly referred to as paranoidal.

Paranoidal symptoms appear to be only met with in some of those in whom mental illness occurs for the first time during the climacteric period. They are certainly not common; nevertheless, they are very marked, and have not received the mention in literature they merit. The blending of symptoms termed "paranoidal" must not be confused with systematization found in:

(*a*) Some melancholics where ideas of persecution are systematized to even a considerable extent.
(*b*) What some have called degenerate paranoia, of which the victim to chronic alcoholism is such a good example.
(*c*) Other delusional states.

The salient points which mark off paranoidal from the delusional types referred to are best brought to your notice in the review submitted. That at periods of stress potentialities hitherto latent become evident, and that certain epochs tend to colour the mental outlook, are statements which have been made and are generally accepted. They are now mentioned as they appear to be the factors which determined the character of the mental symptoms in the patients to be dealt with.

The outstanding feature in the paranoidal is the systematizing of delusions. The systematization differs

from true systematized delusional insanity in that the slow evolution so typical of the true disease is not present; instead, they show the sudden onset and the rapid expansion of the delusions which Magnan [2] associates with systematization in the degenerate. The fact that the expanded delusions persist in full bloom, if one might be allowed to use a nonscientific simile, is not usual in the degenerate; it more approximates to the condition in (true) paranoia, and is a point which suggests that they as individuals belonged to what Soukhanoff [3] has termed the "ideo-obsessive constitution."

The depression present, although real, is not typically melancholic; it lacks the mental pain and concentration of ideas of melancholia, for nothing that happens around such a case escapes her notice. No matter how depressed, they never show self-accusation; they are always the wronged, and bitterly resent the injustices heaped upon them.

The five who showed this paranoidal grouping of symptoms came under institutional care during the climacteric period; they were the only illustrations from among 750 females of all ages admitted. Examples of degenerate paranoia tinged with depression at or about the climacteric are the cases which at first on superficial observation are most likely to be mistaken for paranoidal. Differences are easily brought out, however, as besides those in systematization and progress, the past records afford valuable means of differentiation; about the degenerates accounts of excesses were obtainable; the paranoidal had been well-doing.

Investigation into the histories of the paranoidal cases supports the suggestion that they belonged to the ideo-obsessive constitution. They had always been indecisive, anxious, impressionable, touchy, scrupulous, introspective, self-satisfied, and reticent. They from time to time had been obsessed by an idea or ideas, and when so obsessed showed pedantism and dogmatism. As far as could be discovered, none had ever overstepped the obvious borderland until approaching their climacteric. Four of the five suffered from functional menstrual disorders during the period elsewhere referred to as "preclimacteric." [1] That they systematized their delusions around the reproductive system tempts the hypothesis that menstrual irregularity focussed their attention on their reproductive organs, obsession followed, systematization succeeded that, and that the depression was the manifestation of epochal phenomena. In all a neuropathic family history was elicited. In one only was there mental worry apart from the menstrual before the breakdown; in her it was considerable. In another there had been transitory recent illness before being sent to the asylum. She, it may be mentioned, showed some degree of confusion. Although none are stout, all have maintained fair health.

With regard to the delusions of persecution, all systematized from the past, building on trivial incidents recalled, which on their own statements they had not attached any importance to at the time, and had not thought of for years. After the delusions had expanded rapidly there was no tendency to add from the present. The persistence of the delusional state has already been mentioned. None have shown signs of evolving notions of grandeur, neither are there symptoms of dementia. When placed under care they spoke openly of their delusions, now they write about them, but reticence in speech is marked, a form of self-control gained as the resentment against their ill-usage is strong, and ideas of public vindication still hold their place. Three are married, two came safely through the stresses of parturition and lactation, the third is childless.

The depression shown throughout has been fitful, both as to duration and intensity. The occurrence of periodic waves of emotional depression, noticeable at somewhat irregular intervals, recalls Clouston's [4] query as to whether in the periodic exacerbation of excitement in senile women there was a basis of origin in association with memory of former menstruation.

The prognosis with regard to recovery is hopeless, and their chances of returning unrecovered to family life are very poor, as the nature of their delusions, and their determination to be vindicated, precludes their liberation from institutional care.

I do not pretend to have gone into the subject in full, but systematized delusions are always interesting, and I trust that the points brought to your notice may have been of interest; and in conclusion I must thank the Medical Superintendent of Gartloch Mental Hospital (Dr. W. A. Parker) for permitting me to use the records of cases.

References.

[1] Vera and Praesenilis Melancholia at the Female Climacteric, L. D. H. Baugh, M.B., British Medical Journal, September, 1908. [2] Chronic Delusional Insanity of Systematic Evolution, Magnan, translated by Drs. A. Marie and John Macpherson, *American Journal of Insanity* vol. li, No. 4, vol. lii, Nos. 1, 2, 3. [3] Dr. Serge Soukhanoff, *Revue Neurol.*, June 30th, 1903. [4] Dr. Clouston, *Mental Disorders*.

THE VESTIBULAR APPARATUS AND THE CEREBELLUM.

By Privat-Dozent Dr. Bárány,
Vienna.

I wish to describe two methods of examination confined to the diagnosis of cerebellar diseases. The first of these methods investigates the equilibrium of the body, the second the movements of the extremities during vestibular irritation. The disorders of equilibrium are tested by Rhomberg's test—that is, the patient has to stand with closed eyes and feet together—and we must first distinguish between (*a*) spontaneous disturbance of equilibrium, (*b*) disturbance of equilibrium experimentally produced.

(*a*) If a man has by any disease of the labyrinth a strong rotary nystagmus to the right, he will fall to the left on assuming the position for Rhomberg's test; that means he falls in the plane of the nystagmus, but opposite to the direction of the quick component of the nystagmus. If, maintaining the same position, only the head is turned 90 degrees to the left, the patient falls backward; if the head is turned 90 degrees to the right he falls forward. This is the law characteristic for the vestibular disorders of equilibrium which I have detected.

(*b*) The experimental disturbance of equilibrium can be produced in every normal man by eliciting a vestibular nystagmus through turning or syringing. There is only to say that, just as the spontaneous disturbances of equilibrium with different people are of different strength, also the experimental one with normal individuals shows great personal differences. I have seen normal men with the strongest nystagmus stand without moving, and others with slight nystagmus fall like a tree. If we produce rotary nystagmus to the right by syringing the left ear with cold water, or by turning ten times to the left with the head bent 90 degrees forward, the patient, on assuming the position for Rhomberg's test, will in falling follow the rules given under (*a*).

In cases with cerebellar disease we observe spontaneous disturbance of equilibrium which, at first sight, is just the same as in vestibular disease. But, as I have shown, there are very important differences if you examine exactly. In cerebellar disease there is: (1) no connexion between the mostly present spontaneous nystagmus and the direction of the falling. The patient may have nystagmus to the right—after the rule above given—and should fall to the left, but he really falls to the right. (2) The influence of the position of the head upon the direction of the fall is absent. Change of position of the head does not change the direction of the fall.

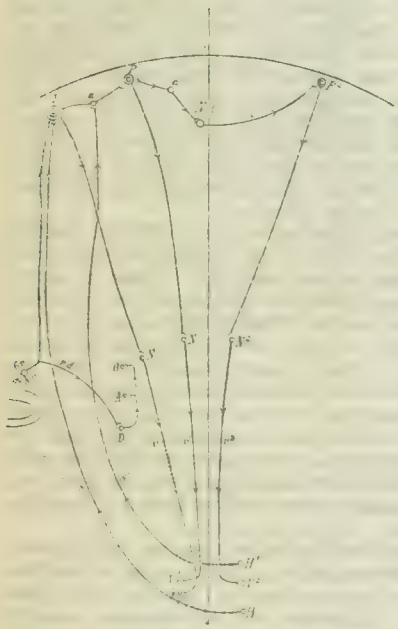
In the last year I have examined a great number of cases with cerebellar troubles, and I always tested also the experimental nystagmus and its influence upon the falling. I have found that very often syringing with cold water produced quite normal nystagmus, but the influence upon the falling was abnormal. If I syringed the left ear with cold water I got strong rotary nystagmus to the right, but nevertheless the patient did not fall to the left, but fell forward. Turning the head 90 degrees to the left side did not make him fall backward, but he still fell forward. If I can produce a definitely abnormal reaction, I make the diagnosis that a disease of the vermis of the cerebellum is present. At the last meeting of the Vienna Neurological Society I was able to present the cerebellum of a patient where alone from this behaviour I made the diagnosis tumour of the vermis of cerebellum, which was found in the dissection.

How is the behaviour of the cerebellar cases to be explained?

To understand it, we first must understand the normal. We have heard that with a certain vestibular nystagmus falling in a certain direction is combined, when the head is

erect in the ordinary position. When the head is turned, the nystagmus does not change, but the direction of fall changes—that is, other muscles of the trunk are innervated. What produces this change of innervation? It is surely not a vestibular irritation, elicited by the turning of the head, because the fall changes its direction just in the same way if the head remains quiet and the body is turned under the head. It can only be the irritation of the joints and muscles of the neck, caused by the turning of the head, which produces this change of falling. For this purpose the centripetal innervation arising from the neck muscles and joints must on some spot of the brain act together with the vestibular innervation.

It would go beyond the scope of this paper if I discussed all the possibilities which the finer anatomy of the brain and experiments on animals suggest. I will mention one possibility which seems to be the most probable. This is, that the fibres of the cerebellar lateral tract and the fibres of the nervus vestibularis come together in the cortex of the cerebellum (Cajal), and that here this influence takes place. I show a diagram which illustrates these conditions. You see the semicircular canal, and from this goes the nervus vestibularis through the vestibular ganglion, then dividing in two parts, the ramus ascendens and the ramus descendens (Kölliker). The latter goes to the Deiter's nucleus and produces the vestibular nystagmus by means of the posterior longitudinal bundle. The ramus ascendens after Ramon y Cajal enters into the cerebellum and ends round a Purkinje cell P. From there the axon of this cell goes down to a cell of the vestibular nucleus, the axon of which descends into the spinal cord (vestibular spinal path). In this way with a certain nystagmus a certain innervation of the muscles of the trunk is combined. Now we still have to consider the influence of the change of the position of the head; s represents a fibre of the cerebellar lateral tract which goes to the same Purkinje cell P, where the ramus ascendens of the vestibular nerve ended. This is the fibre which is innervated in the ordinary position of the head; now the head is turned. In this moment the fibre s^1 is innervated, the fibre s prohibited. The fibre s^1 goes to an association cell which brings into connexion Purkinje's cell P with P^1. You have only to imagine that the prohibition in fibre s hinders the vestibular innervation to pass through the axon of the first Purkinje cell P, and that the innervation of the association cell A makes the innervation pass to cell P^1. From here it goes down to another cell of the vestibular nucleus, and to another cell of the spinal cord. Like that, other muscles are innervated with another position of the head. If you consider how many muscles are innervated, how exactly the change of position of the head changes the position of falling, you can imagine that this mechanism is a very complicated and delicate one.



Median line.

According to Nothnagel and other authors, especially Bolk, Horsley, etc., the vermis of the cerebellum has to do with the equilibrium of the body. Therefore, I believe that the cortex of the vermis of the cerebellum is the place where this mechanism is situated. Diseases of the vermis, therefore, will damage, more or less, this mechanism, and it seems that the proof for the correctness of my reasoning is given by the above-mentioned dissection. I know quite well that only a number of cases and dissections will make out how much this hypothesis is true.

If we cause a normal individual with closed eyes to stretch out his arm and touch with the forefinger an object held in front of him, and then draw back his hand and point again at the object, we find that nearly every one—even the uneducated and children—can, with a small amount of practice, point with accuracy at the object. If we turn a normal individual ten times on a turning chair to the right and stop suddenly, we observe a strong vestibular nystagmus to the left. If at this moment we repeat the "pointing experiment," the man will no longer point correctly to the examiner's finger, but point to the right side. This pointing to the side is surely due to a vestibular innervation of the arm muscles. It is only the question from where this innervation comes. Again I do not wish to tell you all the possibilities which I have discussed in a paper read before the Neurological Association in Baden-Baden, 1910. I only tell you the result of my reasonings—that this innervation comes from the cortex of the hemisphere of the cerebellum. The most important fact which made me assume this hypothesis is, that in two cases of operated healed cerebellar abscess of the right hemisphere the patient who did not show any trouble from the standpoint of the neurologist, after ten times turning to the left, did not point to the right side with the right hand (the hand of the diseased side), but pointed absolutely correctly, whereas the hand of the healthy side showed the usual error. I supposed that by the abscess the centre in the cerebellar hemisphere was destroyed, which in the normal delivers the desired innervation.

A second important fact that I have observed in fresh cases of cerebellar abscess and of probably cerebellar trauma: The patient without turning did not point correctly, but always pointed to the side of the examiner's fingers with the hand of the diseased side. I thought that this "spontaneous fault" was due to an irritation of the same centre, which if destroyed shows no influence after turning.

Another fact which made me suppose that the cerebellum is the centre for this innervation is that just in the same way as the disorders of equilibrium are influenced by the change of position of the head, also the pointing movements are influenced. If after ten times turning to the right the head of the individual is bent 90 degrees to the left shoulder, he will mostly not point to the right, but upward from the examiner's finger. If the head is bent 90 degrees to the right he will point downward. This influence is sometimes very clear, in other cases not so evident, but to explain it you must suppose exactly the same mechanism in the cortex of the hemisphere as in this of the vermis.

I have still to tell you another interesting result which I have got with this new test. If after ten times turning you let the patient point, with closed eyes, to the tip of his nose, he always will point correctly, even if he makes a very big fault in pointing to the examiner's finger. How is this possible? Also in pointing to his own nose the vestibular innervation of the arm muscles must take place. But still no mistake is made. That can be only understood if you assume that the effect of the vestibular innervation is corrected by the cortex of the cerebrum. But the cerebrum can only correct the cerebellar innervation if this innervation is known to it. It seems to me that the brachium conjunctivum which travels from the cortex of the cerebellum through the red nucleus to the cortex of the cerebrum may have this function. I draw the further conclusion that if this is true, a case with hemiathetosis, where, according to our present view, the brachium conjunctivum is interrupted, the patient should not be able to correct the cerebellar innervation, and should also, in pointing to his own nose, make an error, as in pointing to the examiner's finger. I was so fortunate as immediately to find such a case among the rich material of our Vienna clinics, and my supposition was confirmed.

Whereas before the turning the patient pointed correctly to the examiner's finger and his own nose, after the turning he made the usual fault in pointing to the finger, and he could not reach correctly the nose with his finger, but touched it always with the back of the hand.

DISCUSSION.

Dr. STANLEY BARNES (Birmingham) asked if Dr. Bárány had yet come to any conclusion as to the causation of the tremor in disseminated sclerosis. He expressed the opinion that it was due to diseases of the fibres connecting the cerebellum and the cerebrum, but had had no opportunity of applying Dr. Bárány's new tests in investigating which of these tracts was affected. He instanced a case of cerebral (posterior parietal) tumour with symptoms characteristic of lateral cerebellar tumour, as showing the need for the adoption of fresh tests to indicate the position of disease in conditions where equilibration was disturbed or ataxia was present.

Dr. DRAPES (Enniscorthy) gave some details of a case under his care which had an intimate bearing on the facts which formed the subject of Dr. Bárány's address, and in which the diagnosis presented exceptional difficulty. It was that of a lady who, some three years ago, without any definite prodromata, fell into a state of unconsciousness which continued for two or three hours. Since then she had had two similar attacks at long intervals, and had suffered from headache and giddiness at variable intervals. Eight months ago the giddiness had become very distressing, and on examination she was found to have a moderate amount of hypermetropia, and also slight deafness and tinnitus. There was no vomiting and no optic neuritis. The visual defect was corrected by suitable lenses, and she had no attack of giddiness for three months. She then began to suffer from it again, and also from headache. The plantar reflex in both feet was found to be *nil*, and the knee reflex was absent on both sides. These symptoms pointed to central disease, but in order to eliminate other possible causes a consultation with an aural specialist was held. On testing the patient in a revolving chair she was found to have rotatory nystagmus. The test caused intense giddiness and bewilderment. The consultant was of opinion that the symptoms were due, mainly if not wholly, to labyrinthine trouble, possibly depending on the action of intestinal toxins, and advised injections of pilocarpin and sour-milk treatment. Result: no attack of giddiness or headache for the last three months and great improvement in the general health. But the same condition of the reflexes continued, and it was a question still whether there might not be cerebral or cerebellar disease coexisting with aural trouble. It was in a case of this kind that the exquisite tests detailed by Dr. Bárány would be of the highest value in arriving at a differential diagnosis.

Dr. ALEXANDER BRUCE (Edinburgh) said that knowledge of the anatomical connexions and physiological associations of the nervous mechanism of the vestibular system was still in its infancy. Dr. Bárány had shown that what was already known might be justly utilized for diagnostic purposes both by the otologist and the neurologist. He had shown what might be done in the localization of tumour and abscess in the cerebellum. His method of investigation would seem likely to be of special value in the early diagnosis of insular sclerosis when it invaded the pons and medulla before the appearance of the classical symptoms of nystagmus, intention tremor, etc.

The PRESIDENT said he had great difficulty in eliminating the cortical factor from consideration. He had seen many cases of loss of co-ordination, giddiness, nystagmus, and other symptoms which might have pointed to vestibular or cerebellar disease. In these cases, however, the symptoms had proved to be due to cortical irritative lesions or implications of the cranial nerves at the base of the brain. Dr. Bárány's paper was of very great value to neurology, and his references to traumatism were of particular interest, inasmuch as the questions of nervous disorders which had arisen in consequence of the Workmen's Compensation Act had increased enormously in number. They were as yet in the infancy of their knowledge as to the direct and remote mental and physical results of traumatism.

Dr. BÁRÁNY, in reply to Dr. Stanley Barnes, said that he had not been able to come to any definite conclusion with regard to the causation of the tremor of multiple sclerosis. Concerning Rhomberg's test, it would be very easy, by making this test more difficult, to discover still more patients who would fail to carry it out, but in his opinion only such tests should be employed which a normal person could easily perform. Hence the making of Rhomberg's test more difficult could not be recommended. The speaker stated also that he was not sure that the vertigo which was considered cortical was really cortical, the vestibular apparatus being so exceedingly sensitive that very slight changes of the circulation in a region of the vestibular nuclei might possibly produce such attacks. They were, as a matter of fact, at the beginning of their knowledge of traumatic cases, and he could only hope that fresh methods would be discovered which would more and more elucidate the causation and nature of the so-called traumatic neuroses—a category which would finally disappear by the relegation of cases of this kind to classes of a more strictly scientific character. He trusted that the methods which he had described might form one step in this direction.

ON THE TEACHING OF PSYCHIATRY.

By D. G. THOMSON, M.D.Edin.,
Medical Superintendent, Norfolk County Asylum.

My thesis is that the various universities and other qualifying bodies should establish post graduate curricula and diplomas in psychiatry or psychological medicine. It is surely a striking fact that, while various special branches of medical practice have such curricula and diplomas, the speciality in which we practise has none. In public health, tropical medicine, naval and military surgery, and hygiene, there are special recognized post-graduate courses of study and diplomas and commissions, without having undergone and obtained which no one would think nowadays of practising those specialties.

It would be ungracious not to allude to the fact that certain qualifying bodies have made some move in this direction—for example, the Universities of London and Dublin permit their Bachelor graduates to proceed to the Doctorate in psychological medicine; that for the M.B. degree in Edinburgh and in some other universities it is compulsory to attend a course of lectures in psychological medicine; and that the Medico-Psychological Association has instituted an examination and certificate in psychological medicine; but while the half-loaf provided by those purveyors of intellectual food may be better than no bread, the fact remains that there is no definite post-graduate curriculum and diploma open to a young medical man who wishes to equip himself to deal with the problems of the pathology and treatment of mental disease which will face him from the moment he begins lunacy practice.

The constantly increasing number and extent of the subjects comprised in the five years' medical curriculum—a load on the student's back already almost more than can be borne—renders anything more than a general summary of each subject impossible; therefore, if a young graduate wishes to engage in any special department of medicine, he must of necessity make a further study of that speciality.

Teaching authorities have already recognized this as regards public health and other specialities; in the first-named the law even demands it, and so we have post-graduate curricula in public health and tropical medicine at the medical schools. But, under present conditions, a young graduate is pitchforked into the midst of the most bewildering and difficult of all specialities without any special training whatever. I cannot help believing that if the public realized that the some 130,000 insane of this country are given over to the care of medical men for whom no special teaching and qualifications are provided by the teaching bodies, or demanded by those who appoint them to the medical charge of the insane, there would be a legitimate outcry.

Years ago I remember eloquent appeals being made by Sir James Crichton-Browne, Dr. Clouston, and others for the promotion of the medical spirit in asylums; there is as much, and more, need to-day for such an appeal, but there will be no adequate response to that appeal till we have joining the junior ranks of our speciality young men specially and highly trained for the work. We want the flower of the young graduates to enter this difficult speciality, and these, I hear, are actually advised not to enter it as it is at present constituted.

I do not for one moment undervalue the splendid work which has been done, and is being done, in asylums, both in scientific research and in medical and administrative work, but it is as a drop in the ocean to what should be done, and I doubt if 10 per cent. of us—and I include myself among the remaining 90 per cent—are capable of carrying out modern clinical and pathological research necessary to the study of a case of acute mental disorder.

It appears to me that the time is opportune for such a movement; recent researches in general medicine, the infinite possibilities arising out of the new sciences of bacteriology, haematology, bio-chemistry, inspire in us fresh hope that if we could only get our ranks recruited by trained and able young workers, the great fields for work in our asylums would be harvested in a way, and with results, which at present are impossible. However, I need not labour this point further; I think it is obvious to all of you. I should rather employ the remaining time at my disposal in considering some of the objections raised to the scheme. No objection has been, or can be, raised to this proposal on principle; the arguments against it are purely utilitarian, one I am often met with being that the difficulty of obtaining assistant medical officers in our public and private asylums is already sufficiently great, and that if a post-graduate course and diploma become necessary qualifications, assistant medical officers will become unobtainable. At first sight this might appear so, but when this subject was first discussed several speakers were of opinion that so far from this fear being justified, it is more likely to be the means of increasing the supply of candidates. It might be stated here that the more highly qualified men might expect higher emoluments, although I would point out that there seems to be no dearth of candidates possessed of Public Health diplomas for school medical officerships, where the prospects are much poorer, where the emoluments are very similar to those of assistant medical officers entering the asylum service—namely, £250 per annum.

Another objection put forward is that under present conditions asylum medical officers are overburdened with more or less necessary routine and secretarial duties, that they have no time for purely medical, clinical, and pathological work among the recent and acute cases. This is true to some extent, yet the same applies to public health, army medical, or any other branch of official and administrative medical work; moreover, there is a decided trend in the direction of alleviating this state of affairs in the shape of separation of the acute and recent cases either in separate mental hospitals or in wholly separate departments of the general asylums, whereby much more skilled attention can be given to such cases, correspondingly less medical attention being necessary for the chronic, incurable insane. Such trend is seen in Dr. Maudsley's munificent, but, I fear, not sufficiently appreciated, gift to the London County Council for the establishment of a mental hospital, and also in the findings of the Royal Commission on the Feeble-minded.

Another utilitarian objection is that committees of visitors would look askance at the scheme, involving as it would increased cost, to some extent in more medical officers, and to a greater extent in the provision of facilities for clinical and research work; but this can be met either by a change in the law regulating appointments to asylums such as obtains in the Public Health Act, or by educating committees, either individually or collectively, through the county councils to an appreciation of the advantages to the insane, and the probability of a higher recovery-rate by a higher standard of ability in their medical officers.

Another objection—that of the pessimists, who, like the poor, we always have with us—is to the effect that insanity is a hopeless mystery, unknown and unknowable, like religion; that the curable cases recover whatever we do, or do not do, to them, and incurables do not; that "we are very well as we are," and so on and so forth. This position I can sympathize with and understand, while I have no patience or common ground with those who pretend that insanity is a bodily disease, and yet see no advantage in having a preliminary post-graduate training for those whose life's business it will be to investigate and treat this disease.

And now briefly to report progress in this movement. My original paper was, as I have stated, read in April, 1908, at the annual meeting in London the matter was brought up at a meeting of the Educational Committee of the Medico-Psychological Association, and a subcommittee was appointed to consider the matter and report; this subcommitteee to consist of Drs. McDowall (Chairman), Bedford-Pierce, Bevan-Lewis, Robert Jones, David Orr, Percy Smith, D. G. Thomson, and Whitcomb. Drs. Mercier, Rows, and Stoddart were subsequently added to the subcommittee. This subcommittee held meetings at York, Leeds, Norwich, Cambridge, Leicester, and London, and submitted a report to the annual meeting of the Medico-Psychological Association at Leeds in July, 1909, in which it strongly recommended the institution of a post graduate curriculum and diploma in psychiatry, and that the universities and medical schools be approached with a view to their instituting the same.

This was approved by the association, and the President was authorized to send the following letter to the universities and medical schools of Great Britain and Ireland.

Medico-Psychological Association of Great Britain and Ireland,
11, Chandos Street,
London, W.,
August, 1909.

Sir,—I am instructed by the Council of the Medico-Psychological Association of Great Britain and Ireland to approach the Universities and other Examining bodies on the subject of post-graduate instruction in Psychiatry.

It has long been felt by those most intimate with the subject that there is in this country no adequate systematic instruction in Psychiatry. The evils of this neglect become year by year more and more manifest. This Association is impressed with the urgent necessity for post-graduate teaching in Psychiatry in Medical Schools and for the granting of a special diploma to candidates after examination, as has already been done with such conspicuous success in Public Health and Tropical Medicine. The position of Psychiatry as a branch of Medicine is unsatisfactory; it is not properly affiliated to other departments of medicine, to their mutual detriment; and under present conditions cannot make full use of those modern methods of research which have resulted in such advances in general medicine.

Young medical men on their appointment as medical officers to asylums find themselves face to face with work and problems of which they have had no previous knowledge, and in preparation for which they can obtain no systematic and scientific training or teaching. As is well known, lectures on Psychological Medicine, and pathological laboratories have been established here and there, and, in one or two Universities, Chairs of Experimental Psychology have been founded; but there is no systematic course of instruction and no recognized diploma at the end of such course. It is submitted that the time has now arrived when such a course and diploma should be established in the principal medical schools of this country, and a diploma in the subject should be instituted by the examining bodies. My Association is of opinion that the institution of a diploma would impose a high standard of acquirement in the officers of asylums, would stimulate the scientific study of insanity, and would have an effect in widening and deepening our knowledge of the subject, comparable with the effect produced in Public Health and Tropical Diseases by the institution of diplomas in these subjects.

In this letter it is unnecessary to enter into details as to the time required for this post-graduate work, and the subjects to be studied; probably each University and examining body will form its own views on these points. I may say, however, that my Association considers that the minimum period should be one year; that provisionally the subjects should be divided into (*a*) compulsory and (*b*) optional; that in the former should be included (1) Anatomy, Physiology, and Pathology of the Nervous System; (2) Psychology, Normal and Morbid; (3) Clinical Pathology; (4) Clinical Neurology; (5) Psychiatry, Systematic, Clinical and Medico-Legal. The optional subjects suggested are (1) Experimental Psychology; (2) Bio-Chemistry; (3) Bacteriology; (4) Comparative Anatomy and Physiology of the Nervous System; (5) Eugenics. It is suggested that only one optional subject be required of candidates. The Council of my Association respectfully asks that its proposals may receive earnest consideration, so that in the near future it may be possible to place the teaching of Psychiatry on a sound scientific basis, and so bring it into line with other special departments of Medicine in this country.

I am, Sir,
Your obedient servant,
CHAS. MERCIER,
President (1908-9).

The response to this letter has been gratifying, the Faculty of Medicine of Edinburgh University and of the Victoria University, Manchester, having already gone so far as to recommend the Senate to adopt the recommendation, and regulations for a curriculum and diploma in psychiatry have been approved. The Universities of Cambridge and Durham have nearly completed their arrangements.

During the past year the subcommittee which was reappointed has held further meetings to formulate a model syllabus of post-graduate study and to consider further matters connected with the movement, and to discuss how best to obtain the support and influence of the Commissioners in Lunacy, the county councils, and the committees of visitors of public asylums and other bodies and persons concerned in asylum administration.

Such, then, is the movement and its progress for the institution of a post-graduate curriculum and diploma in psychiatry; and with your permission, Mr. President, I would like to propose the following resolution:

> That this meeting of the Section of Psychological Medicine and Neurology, assembled at the annual meeting of the British Medical Association in London, 1910, believing that it would tend to advance our knowledge of the pathology and treatment of mental diseases, strongly approves of, and recommends the institution of, a post-graduate course or curriculum and a diploma in psychiatry; and, further, that this resolution be brought before the Council of the British Medical Association.

DISCUSSION.

Dr. Cole (London) spoke of the state of post-graduate study as it existed at present in London in this special branch of medicine. Occasional lectures were delivered and clinical demonstrations were given, but no definite course covering the whole ground of psychiatry was available for the qualified medical man. He had to visit different asylums, hospitals, and laboratories to obtain his knowledge, and the certificate of the Medico-Psychological Association had not carried the weight that it deserved in the competition for an appointment. He considered that a university diploma involving a recognized course of study would lead to far-reaching beneficial results, both as regards the better training of the asylum medical officer and the more scientific treatment of the insane.

Dr. Pasmore (Croydon) agreed that something was necessary as regards a systematic training of psychiatry. One saw every day the appalling ignorance of the general practitioner in signing certificates. He thought, however, that the curriculum was too elaborate, and that in the modern method of training a good deal might be left out and the curriculum made to consist of elementary psychology and psychiatry. He felt, however, that some systematic training was necessary, and he had much pleasure in supporting the resolution.

Dr. J. F. Briscoe (Alton) supported Dr. D. G. Thomson on a post-graduate curriculum and diploma in psychological medicine, believing that a vast number of general practitioners were ignorant of psychological medicine, and that such a diploma was necessary to insure adequate skill and knowledge on the subject from those who practised psychiatry.

Dr. Shore (London), after expressing appreciation of Dr. Thomson's paper, remarked that he had been for about twenty years in general practice. He wished to take the point of the attitude of so many general practitioners to melancholia—for example, the lack of appreciation of the fact that the melancholic was a potential suicide, and that the burden of proof lay on the medical adviser to show that a given case was not suicidal. As things were, the general practitioner could not know everything, and it would be well to recognize the limitations in certain mental cases, and call in a medical man having special experience of mental diseases. As regards teaching psychology, Dr. Shore referred to the teaching of psychology at King's College, London, in the course for the B.D., as an illustration of how not to do it. It would be better if a simpler textbook were chosen, and the class carried on step by step, as it were. There seemed to be a lack of present security that the students there were able to follow the subject of psychology satisfactorily.

Dr. Seymour Tuke (London) wished to join in every way with Dr. Thomson and the proposals embodied in his paper. There seemed to be two points in the proposal for a diploma—first and foremost, the benefit to the insane, and next the benefit to the profession. There could be no doubt that the insane were not benefiting by the present condition of things. For the time, at any rate, knowledge of neurology seemed in some cases preferred to actual clinical knowledge of mental disorder, and if this proposed diploma could bring together in one individual a good knowledge of the two (for they ought to go hand in hand), they might be spared many curious experiences. The profession must benefit, for whether the possessor of the diploma made insanity his special study or not, he would be there to be consulted by men whose knowledge was less. The speaker was happy to see so many young medical men—medical officers of asylums in most cases—combining most successfully a knowledge of the whole subject, and showing that a combination such as was looked forward to by the originators of the proposal was possible. If there was any fault to find with the details, it was with the apparent preponderance of the psychological and neurological knowledge required, compared with the knowledge of clinical and other knowledge of mental disorders, but doubtless this was more imaginary than real, for though occupying a small space in the syllabus the ground covered was really large.

The resolution was then adopted.

DISCUSSION ON THE TREATMENT OF TABES DORSALIS.

OPENING PAPER.

By J. S. Risien Russell, M.D., F.R.C.P.,

Professor of Clinical Medicine and Physician to University College Hospital; and Physician to the National Hospital for the Paralysed and Epileptic, Queen Square, London.

The only rational treatment of a disease is that which is based on a correct view of its etiology and pathology, so that a discussion on the treatment of tabes carries with it the necessity of a clear conception of the cause of the malady and the morbid process responsible for the symptoms.

The vexed question as to whether tabes is or is not of syphilitic origin continues to exercise the minds of not a few, despite the evidence which seems to some of us well-nigh overwhelmingly in favour of the view that syphilis is the important etiological factor, without which there would be no such disease as tabes. In my own experience it has so rarely happened that I have not been able to obtain a definite history of syphilis in patients who have come under my observation suffering from tabes, that I find it impossible to convince myself that any view of the genesis of the disease is correct other than that which ascribes the affection to syphilis. Nevertheless, it has to be admitted that isolated instances are met with from time to time in which the clinical picture precludes the possibility of any opinion other than that the patient is suffering from tabes; and yet it is impossible to obtain a history of the primary syphilitic infection, even where the patient wishes to be helpful and has no reason to conceal the truth. Here it is that the modern tests for syphilis may be appealed to in reason; but no one who has had much experience of these tests is surprised to find that while in some instances they supply us with the positive information that we saw reason to expect, in others the results are negative, and we are, accordingly, no nearer to the solution of the problem that is before us. Such negative results cannot, however, allow us to abandon a position that has so much to support it. For it must have been the experience of some at least of those who are to take part in this discussion that, with the unmistakable signs of tabes and the certain history of syphilis, these tests have, nevertheless, supplied us with negative instead of positive information in some cases.

Although I hold no special brief for the defence of the position that tabes is due to syphilis, nevertheless I am compelled to enter on these considerations in view of what I have to say in regard to the treatment of the disease; and I find it impossible to make myself believe that because it is the experience of most of us that from time to time we are confronted with what appear to be otherwise typical instances of the affection, and we are unable to prove syphilis, we are therefore to abandon the position that syphilis is *the* etiological factor that is to be blamed in the vast majority of cases of the disease.

Whether or not such negative cases should be treated for syphilis is open to question, so that I do not propose, if possible, to allow them to obscure the main issue that is before us. I say, without the slightest fear of legitimate contradiction, that no one in this room with any real knowledge of the disease is in a position to deny that the majority of those who are the subjects of tabes have had syphilis. This raises the important question as to whether, with this knowledge before us, we ought to have these patients treated for syphilis or not. I make no hesitation in answering that, with certain reservations, it is our duty to do so; and, moreover, that it is unfair to our patients to allow them to go untreated for syphilis when they consult us in consequence of tabes, especially when we are able to determine a positive history of the primary infection which has led to this more remote consequence.

One of the reasons that I accepted with such alacrity the invitation to open the discussion was the hope that this would prove an opportunity not to be lost of waking the profession in this country, and of making practitioners realize the importance of antisyphilitic treatment in tabes, and what is meant when we speak of thorough treatment of the disease.

It commonly happens that I see patients suffering from this disease who have been under treatment for years, and in whom the treatment for syphillis has been altogether neglected or so imperfectly carried out as to be quite useless. Moreover, it is often difficult to persuade practitioners of the need and efficacy of antisyphilitic treatment, in view of the fact that some of our authorities have laid it down that, in spite of the syphilitic origin of the disease, antisyphilitic treatment is useless, and is even calculated to do harm. In reality nothing could be further from the truth, always observing certain reservations in this connexion.

I do not propose to enter into any lengthy discussion of the merits and demerits of one method of antisyphilitic treatment as opposed to another, but must content myself with saying that, in spite of all that can be urged against it, I have seen the best results from inunction, as carried out at Aachen either alone or supplemented by intramuscular injections of one of the soluble salts of mercury. It would not be right for me to contrast this method of treatment with that in which intramuscular injections alone are relied on, for the reason that the inunction treatment has, as a rule, yielded such satisfactory results that I have not been inclined to depart from it without considerable reluctance, with the natural result that my experience of the injection treatment is small as compared with the other method. My reluctance to abandon inunction for the injection treatment has been accentuated by the fact that I have met with an occasional case in which the patient previously was treated by injection without notable result, and in which, nevertheless, success has attended inunction subsequently carried out.

Whatever room for question there may be as to the value of inunction, as contrasted with injection treatment, I can admit of no such uncertainty with regard to the inferiority—indeed, I might almost say inefficacy—of mercurial treatment by the mouth, as contrasted with inunction, and it may be, injection. For I repeatedly see patients in whom mercury has been given by the mouth for long periods without any benefit, and in whom, nevertheless, subsequent treatment by inunction has yielded excellent results. All that I would ask, therefore, is that the patient should be thoroughly treated by inunction or injection, and that valuable time should not be thrown away in pills or potions administered by the mouth.

The details of the inunction treatment I propose to leave to others who are to take part in this discussion; but I may, perhaps, be allowed to say that I advise patients to go to Aachen for their treatment when this is possible, and that when there are reasons which prevent this, I try to secure for them the treatment in this country on as nearly as possible the same lines as obtain at Aix-la-Chapelle. I mention this for the reason that much of what is spoken of as inunction treatment in this country is little short of a farce, and that many of the patients that are so treated might just as well smear themselves with lanoline or vaseline as with the mercurial ointment which they are advised to rub into this or that part of their bodies. Moreover, that even where someone is secured to rub in the ointment, this is done in such a perfunctory manner as to be practically useless.

When there is nothing to contraindicate this, I usually advise the patient to undergo a course of 100 rubbings, to be followed in three to six months, as is found best, by another course of not less than 50 rubbings, which should be repeated every six months for about three years if nothing happens that appears to contraindicate a course of treatment of this duration. When intramuscular injections are combined with inunction, an injection is given once a week, while the inunction is persevered with for the remaining six days in the week. The important adjuncts that are called for in the treatment I must leave to those who are to follow me in the discussion.

It has not been my experience to meet with any of the bad cases of salivation which have been ascribed to this method of treatment, so that I can only suppose that there must be some radical difference between the way in which the mercury has been exhibited by those who have recorded such untoward results and the plan which is in vogue at Aix-la Chapelle.

The next question that arises is as to what cases of tabes should be submitted to the treatment. My own experience does not in the least support the view that appears to prevail in this country, and which supposes that it is useless to submit a patient suffering from tabes to antisyphilitic treatment, except when the tabes follows closely on the primary syphilitic infection. I have met with notable instances in which the primary infection has been remote, and in which, nevertheless, the patient has improved under antisyphilitic treatment in a manner that has made it impossible for me to believe otherwise than that the result has been due to the treatment. The not uncommon history of tabes following on a primary infection ten, fifteen, or even twenty years before is, to my mind, no contraindication to the antisyphilitic treatment, provided there are no other reasons which make it inadvisable to submit the patient to a cure of the kind.

Another important question that arises in this connexion is as to how far our advice in the matter should be influenced by considerations as to whether the patient was treated for the primary syphilis; and if so, with what degree of efficiency. I find it difficult to make any dogmatic statement on this point, for the reason that it is so difficult to estimate how thorough the treatment of the primary disease has been. As is to be supposed, the majority of the patients I see suffering from tabes have had their syphilis treated according to the method that hitherto prevailed in this country, and thus they had been put through courses of mercury by the mouth for varying periods. In addition to this, no small proportion of the cases have either not been treated at all or but for a few months, so that they may practically be regarded as having been untreated.

As to whether a patient will develop tabes or not, does not appear to be in the least influenced by the severity of the primary infection, or the subsequent secondary manifestations of the disease, for, in reality, a large proportion of the tabetics are drawn from the class of case in which the primary infection and secondary manifestations have been so slight as to lead to very imperfect treatment. Even if we feel that it is possible to conclude that the treatment of the primary syphilis has been thorough, however, it would seem to me a logical conclusion at which to arrive that the fact that tabes has nevertheless developed is evidence that the syphilitic taint has not been completely removed, and that, accordingly, further antisyphilitic treatment is called for, if we accept the position that tabes is syphilitic in origin, in spite of the fact that there are those who contend that antisyphilitic treatment of cases that have had their primary syphilis well treated is practically useless.

Intimately related to this aspect of our subject is the view of those who consider that syphilis is an incurable disease, and that accordingly it becomes necessary to combat the virus of the disease from time to time by the antidote that has proved most effective. If this view is to be accepted, then there would be no room for question as to what should be done in the case of a patient suffering from tabes, no matter how thorough the treatment of his syphilis has been.

Another consideration that forces itself on us at this stage of our inquiry, and which demands our attention, is

the outcome of the investigations of Krön, who finds that tabes occurs at increasingly shorter intervals after the primary attack of syphilis, the longer the antisyphilitic treatment has been kept up.

This naturally brings us face to face with the suggestion that has not been wanting in supporters, that the mercury used in the treatment of syphilis, rather than the syphilis itself, is responsible for the affection of the nervous system. No better argument can be adduced to controvert this view than the fact that cases are not wanting in which the patient's syphilis has gone untreated by mercury or any other drug, and in which, nevertheless, tabes has developed.

This would appear to be as favourable an opportunity as any for considering the view that tabes is not due to the syphilitic virus itself, but rather to the antibodies which result in the blood as a consequence of the syphilis. The question that thus arises is as to whether we may reasonably suppose that antisyphilitic treatment can have any effect under such circumstances.

If we are justified in considering that tabes is due to syphilis, the question as to whether or not antisyphilitic treatment may reasonably be expected to do good is intimately associated with what view of the pathology of the affection finds acceptance. For it is reasonable to suppose that mercury will be more likely to have an effect on the lesion if it be of the nature of a meningitis with interstitial inflammatory affection of the neuroglial tissue than if we are to regard it as a neuronal degeneration, primary in origin, and not secondary to affection of the meninges and interstitial tissue. However this may be, the fact remains that patients suffering from tabes have, to my knowledge, improved to such an extent that even their knee-jerks have returned under mercurial treatment, and, in the experience of others, not only have the knee-jerks and ankle-jerks returned, but even the pupil reflex to light, which had been lost, has been re-established. With such evidence before us, it is impossible to believe otherwise than that, whatever the true pathological changes which occur in the early stages of the disease, mercury has a potent influence for good on the lesions of tabes, for I must decline to accept the view of those who maintain that the cases in which good results from treatment by mercury have been obtained are cases of pseudo tabes due to syphilis, and not the genuine disease with which we are concerned to-day.

DISCUSSION.

Dr. David Ferrier, F.R.S., said: It will, I think, be generally admitted that in proportion to the ignorance which prevails as to the etiology and pathology of a disease, its natural history and course, and in proportion to the imperfection of its differentiation from other maladies, the wider the scope for blind empiricism, vaunted specifics, and quackery of all kinds; whereas the more precise our knowledge on these points, the more we recognize the limits that are set to our therapeutic measures. The therapy of tabes hitherto illustrates these propositions in a remarkable manner.

The rational treatment of tabes must depend on its intimate pathology and its cause. On these points we have learnt much in recent years. I would take the year 1875—the date of the publication of Fournier's first paper on the relation between syphilis and tabes—as the starting-point of our knowledge of the true etiology of tabes and its rational treatment.

The causal relationship between syphilis and tabes indicated by Fournier, at first disputed, has steadily gained acceptance, and syphilis is now admitted by all as the most frequent antecedent of tabes; while every day adds to the list of those who believe, as I do, that not only is syphilis the most frequent antecedent, but that without syphilis, whatever other causes may be co-operative, there is no tabes. I need not here repeat the arguments on which I base this opinion, as I have elsewhere detailed them at length (Lumleian Lectures on Tabes, 1906). The intervening years have only added confirmation of the views I have there expressed.

Next, as to the nature of the process itself. This has been conclusively shown to be a degenerative atrophy, more particularly of the intramedullary tracts of the spinal sensory protoneurone, the so-called exogenous tracts of the posterior columns of the spinal cord. The process is primarily parenchymatous; there is no active hyperplasia of the neuroglia, and such sclerosis as ultimately ensues is only that which occurs in any organ consecutive to the degeneration of its true parenchyma. The tabetic degeneration has none of the features usually considered characteristic of tertiary syphilitic lesions. There are no cellular infiltrations or gummatous changes, and the ordinary antisyphilitic remedies have, as is generally acknowledged, little or none of the striking influence that they exert on syphilitic lesions of the usually recognized type. Hence, it is customary to regard the tabetic degeneration as parasyphilitic—that is, of syphilitic origin—but not syphilitic proper in the ordinary sense in which we use the term. It is supposed that the degeneration is the result of a toxin developed by the living syphilitic virus, but as to its nature and mode of origin we have yet much to learn.

If these views as to the pathology of the tabetic degeneration are correct, it seems hopeless to expect that by any means in our power we can restore *ad integrum* tracts or cells which have undergone degenerative atrophy. I know of no such regenerative process in the central nervous structures. Once gone they are gone for ever.

It follows, therefore, that an *anatomical* cure of tabes (as Grasset terms it) is an impossibility. Hence, medication and measures with a view to the absorption of active proliferations, vascular and gummatous processes which do not exist, are of no avail, and may be worse than useless.

I would classify the principles of the treatment of tabes as follows:

1. Prophylactic measures.
2. Measures calculated to arrest further degeneration.
3. Measures calculated to alleviate distressing symptoms; and—
4. Such as tend to compensate for the degeneration of the tracts which are essential to motor co-ordination.

1. As to prophylaxis, I believe that the efficient treatment of *early* syphilis offers the most hopeful prospect of success in combating tabes. In this disease *par excellence* prevention is better than cure. The investigations of Fournier have shown that the cases of tabes diminish in proportion to the effective treatment of the antecedent syphilis. I quote the following from the *Gazette Hebdomadaire*, December 19th, 1891. An examination of 321 cases of tabes showed that—

1. Sixteen cases had had no treatment of any kind.
2. Eight cases had had KI only, and no mercury.
3. Of those treated with mercury, or more often a combination of mercury and KI,

70	were treated	from a few days to two months	
108	,,	,,	three to six months
51	,,	,,	seven to twelve months
23	,,	,,	about twelve months
20	,,	,,	from one to two years
5	,,	,,	from two to three years
6	,,	,,	for three years
2	,,	,,	for four years

These statistics absolutely disprove the tabetogenic effect which some have attributed to mercurial treatment, and strongly favour the view that a still more thorough and effective treatment might prevent the development of tabes altogether. It must be admitted, however, that, in spite of what most syphilologists would consider satisfactory treatment, tabes may develop, just as some syphilitic lesions prove refractory to the most energetic antisyphilitic treatment. But this leads to the consideration of what is effective treatment, and what test there is, if any, of the complete eradication of the syphilitic virus.

So much mercury by the mouth, so many intramuscular injections, so many inunctions, or so many "cures," are only rule-of-thumb guides, and give us no definite information as to what they have actually accomplished. Nothing better, however, was possible until the great discovery of the Wassermann reaction. In this, though there may be some questions still unsolved as to its exact significance, we appear to have a precise test of the existence or not of a specific virus; and the treatment of syphilis should be continued till the positive reaction is converted into a permanently negative one, as determined by repeated examinations, and, if necessary, antispecific treatment, extending, it may be, over a long series of years. Seeing that only a relatively small percentage of those infected

by syphilis subsequently become tabetic (1 to 5 per cent.), this may seem an excessive precaution, but there are few, I should imagine, who would hesitate between this and the risk of becoming tabetic.

Hitherto our most effective antidote to the syphilitic virus has been mercury in some form, administered either by the mouth, by intramuscular injection, or by inunction. I will leave to syphilologists to determine which of these is the most successful. Something may be said for and against each, and perhaps individual cases may necessitate variations or alterations, according to the conditions that prevail.

But it is undoubted that mercury may fail to abolish the positive Wassermann reaction; and this occurs more particularly in the later stages of syphilis, and in the so-called latent stage, which may exist for many years (thirty to forty) without any active manifestations whatever (Bruck).

The most successful results are attained in the primary stage, when the presence of spirochaetes has been verified, even before the positive reaction has declared itself. Therefore, an early and thorough antispecific treatment is indicated in all cases of syphilis, if we would wish to prevent after-effects. It is a question whether the combination of mercury with arsenic, as in Lambkin's atoxylate of mercury, or the *therapia sterilisans magna* by the dioxy-diamido-arseno-benzol of Ehrlich, which has been recently so much extolled in Germany, will prove more effective than mercury alone, and without deleterious effects, such as those caused by atoxyl.

Time will show, and if our anticipations and hopes should be realized, we shall have in Ehrlich's remedy one of the greatest triumphs of the day in rational therapeutics. For the present, however, we had better "wait and see."

2. When tabes has actually declared itself, the uniform presence of the positive Wassermann reaction in the serum, and frequently in the cerebro-spinal fluid, is in itself a proof of the syphilitic origin of the disease, and naturally indicates the advisability of antispecific treatment, especially if this has not previously been carried out. And there is, I think, little doubt that in many cases mercurial treatment is not only well borne, but may cause a distinct alleviation of the symptoms. But whether it ever converts the positive into a negative Wassermann reaction, and finally stays the further progress of the disease, is a question. My own experience, so far as it has gone in this relation, has been rather unfavourable, and the positive reaction in the serum has resisted the most energetic mercurial inunction. And I should not be inclined to push mercurial treatment unduly, for I have seen, as the result, such anaemia and lowered vitality as have, I think, rather favoured than retarded the progress of the disease. But one is not without hope that some modification of the mercurial or arsenical treatment, or other agent, may yet be found which will successfully neutralize the toxin which is causing such havoc in the nervous system.

I have myself seen no good results from nitrate of silver, or most of the drugs which have been at various times recommended and employed. I have for many years been in the habit of prescribing a combination of arsenic, mercury, and gold, in the form of a triple bromide of each (sold under the name of hydraurum; Bell and Croyden). This remedy, given in 10-minim doses ($\frac{1}{12}$ grain of each salt) three times a day continuously (with occasional intermissions) for some years, has, I think, been productive of beneficial results in many cases. I am well aware how difficult it is to establish the efficacy of any particular drug; and I am bound to say that in my practice I have thought more of the interests of my patient than of any therapeutical experiments, and have, therefore, not neglected anything that might conduce to his well-being. But my clinical experience would lead me to believe that many of my patients have owed their relative recovery and their continued ability to transact all the duties of life largely to the remedy I have mentioned. As I am quoting from the experience of years back, I have not investigated the condition of the blood and cerebro-spinal fluid before and after treatment, as I should now think necessary. In one recent case, however, after several years' treatment, though the patient has much improved, and is able to perform all his duties (that of schoolmaster) in comparative comfort, the Wassermann reaction is still positive in the blood and cerebro-spinal fluid, and there is a moderate degree of lymphocytosis. In another the Wassermann reaction is negative.

I have seen the knee jerks return in one case after two years hydraurum treatment, but I cannot say that I have ever seen the disappearance of the Argyll Robertson reaction of the pupil when it has once set in. Yet though an anatomical cure of tabes is practically impossible, one might with justice speak of a *clinical* cure in many cases. And it is a fact that, notwithstanding absence of knee-jerks and the presence of the Argyll Robertson pupil, the patient may be neither ataxic nor exhibit any obvious tabetic symptoms.

A clinical cure should be considered possible in every case of incipient tabes, and it would, in my opinion, be decidedly unwise to dash any patient's hope of this desirable result in his own case. Along with medicinal remedies one would naturally, in the treatment of tabes, prescribe such hygienic and other measures as are calculated to maintain the general health and nutrition, and, above all, to guard against or forbid such modes of life as we know from clinical and other grounds favour the degeneration of the centripetal spinal tracts, more particularly over-exertion, sexual excess, etc. The experiments of Edinger and Helbing as to the effects of over-exertion in debilitated states of the system are of great importance in this relation. And if there be any truth in Benedikt's dictum, *tabicus nascitur non fit*—that is, that constitutionally certain victims of syphilis are predestined, as it were, to tabes—one would endeavour to discover such constitutional or hereditary predisposition, and take extraordinary precautions accordingly. The difficulty, however, is to ascertain beforehand the existence of such predisposition, for tabes may, in my experience, attack to all appearance vigorous specimens of manhood, and not those only who might be justifiably termed degenerates in any sense of the term.

3. As to the symptomatic treatment of tabes, I will deal with some only of the more common symptoms. The distressing lightning pains are notoriously favoured and intensified by cold and wet and atmospheric vicissitudes. Hence climate forms an important element in treatment. In my experience, sunny, dry, and uniform climates are especially suitable. To soothe the pains when they occur I have found nothing better than a combination of bromide with antipyrin or phenacetin.

Gastric crises are still more distressing and at times even dangerous, and in general require injections of morphine. The dangers of morphinism are, however, great, and I have seen a patient in the course of a year and a half increase his morphine consumption from 1 grain per diem up to 60.

In such cases Förster's heroic treatment by division of the posterior roots of the seventh to the ninth or tenth intercostal nerves seems a justifiable one. I have myself had no experience of this treatment, but the reported cases seem to show that it is effective and does not lead to any obvious evil after-results; and I should therefore be disposed to recommend it where milder measures fail. With a view to improve the muscular tone, which is so often impaired in tabes, and to which many of the characteristic attitudes and actions of tabetics are due, as well as to stimulate the sensibility, cutaneous and muscular, of the limbs, on which co-ordination so essentially depends, there is nothing better, in my opinion, than systematic massage and faradization, combined, perhaps, with hydropathy.

But the most important indication of all in the symptomatic treatment of tabes is to endeavour to restore the faculty of co-ordination which is failing by reason of the impairment of the kinaesthetic impressions; sharpening these by appropriate exercises, or compensating their loss by exercises under the direction of vision according to the methods laid down by Fraenkel. These are now so well known that they require no detailed description. The principles on which they are based command our approval, and the practical results are such as to repay their general adoption.

Dr. FEIBES (Aix-la-Chapelle) said that in by far the largest number of cases of tabes the disease was of syphilitic origin, and most probably all were of this origin, though this had not yet been definitely proved. He had

seen a number of cases in which a repeated specific course, alternating with tonic treatment, had produced indubitably good results, although not absolute cures. The patients regained full capacity for business. He also knew of patients who formerly suffered from severe gastric and laryngeal crises, but remained quite free from them for years after mercurial treatment. The same was true of ataxy and bladder troubles. His very experienced colleague at Aachen, the late Dr. Mayer, found among 202 cases treated with mercury about 3 per cent. almost completely cured, 20 per cent. very considerably, and 33 per cent. a little improved, and held that owing to refusal to admit the connexion between tabes and syphilis many patients suffered needlessly.[1] Experiences at Aachen showed that treatment with mercury and iodide proved harmless as a rule. The stupid fable that tabes was a consequence of too strong treatment with mercury and iodide had been rejected long ago, lastly by Neisser.[2] Courses of treatment must, of course, be administered prudently. In a large number of cases the insidious progress of the malady could not be stopped, but in no case did specific treatment prove harmful if carefully conducted. He did not like intramuscular injections in nervous diseases, and preferred inunction. If the mercury were given orally and were sufficiently energetically administered, digestive trouble would arise. Potassium iodide alone occasionally had a good effect in lessening the shooting pains. Injections of strychnine and thiosinamin seemed a favourable adjunct, but he had never seen any good result from silver nitrate. The shooting pains could be combated also with phenacetin, aspirin, and like drugs, and, if everything else failed, with morphine. Electricity and massage were of much assistance, especially if applied in the fashion recommended by Erb. Fraenkel's exercises were also a powerful factor in dealing with the ataxy. In conclusion, he would repeat what he had said at the International Congress in London in 1896:

> Therefore in all cases, if there is a history of syphilis, a mercurial treatment must be insisted on, especially if we are convinced that it will not prove harmful. I fully endorse Erb's opinion that the specific treatment of tabes will not be hurtful or aggravate the affection if there is no atrophy of the optic nerve. A properly conducted cure, even if extended over a long period, is almost always well borne, and it is just in cases of this kind that it has always appeared to me that the greatest improvement takes place after eighty and more rubbings. According to my experience, if any improvement shows itself, it is then that the treatment ought to be prolonged, and I see no reason advocating with Erb a stoppage after fifty to sixty rubbings more than any other number, provided that the patient is not affected by the treatment.

Dr. Lievin (Aix la-Chapelle) said: According to our modern views, tabes is not the direct product of syphilis, but is caused by the action of the antibodies elaborated by the body in response to the presence of the *Spirochaeta pallida*. Accepting this view, we can but conclude that the correct thing is to administer mercury in tabes, just as we would employ it as the recognized specific in more recent syphilis. Mercury has a direct destructive action on the virus as well as on the toxins produced; therefore, the treatment of syphilis which is commenced at a sufficiently early date in the disease to ensure the destruction or diminish the vitality of the microbe, thus decreasing the production of toxins, should prevent tabes. Secondly, if tabes be already present, it should be possible by mercurial treatment to arrest its further progress. To put it tersely and in a few words: "No spirochaetes, no toxins."

What I have just said is fully borne out by my personal experience. I cannot sufficiently emphasize this fact, that to prevent tabes a thorough and efficient treatment must be carried out in its entirety as soon as the diagnosis of syphilis has been made. In an experience now of twenty years all my 251 cases of tabes, with the exception of 11, give a history of no treatment whatever, or of insufficient, neglected, or inadequate treatment. I may mention that I consider treatment by the mouth as insufficient.

Coming to the second question with which we are concerned—namely, whether tabes, having clinically shown itself, can be favourably influenced by mercury, I must urge the difficulty of forming a definite opinion on this point, when one takes into account that no two cases are alike in their many manifestations, and that there are so many different ways of administering mercury—one method may be more effective than another giving good results, whereas another fails. I think my own experience will be borne out by my *confrères*, that, within the limits of anatomical possibility, no other remedy can replace mercury. These limits are always to be considered, and the physician cannot expect the replacement of lost nerve tissue any more than of a lost finger.

In all cases of tabes, especially in recently developed ones, a favourable influence is undoubtedly effected by mercury. In fact, as to early cases, I go so far as to say that the further development of symptoms can be completely prevented; and even in cases of a more pronounced type we succeed not rarely in doing the same, and even curing one or the other of the fully-developed symptoms as also mentioned by Dr. Risien Russell.

I invariably find great advantage and benefit derived from the inunction treatment when combined with hydrotherapeutic measures as we are in the habit of prescribing In some patients the shooting pains disappear for months or they lose their intensity; other cases get rid of their gastric symptoms, and generally in most the ataxy is improved. A frequent observation that I have made is that the quality or nature of the pain is changed from a lancinating to a duller or more bearable one. I find that I have notes from both lay and medical patients who had undergone a course of inunctions, telling me of this change in the character of their pains.

In my opinion, for tabetic cases the inunction method is the only suitable one. I have used injections of "grey oil" with far less gratifying results. These were in local patients at Aachen, where the patient could not be "rubbed" for social reasons. I know full well that good results may be obtained by injections of concentrated 40 per cent. "grey oil," but I must "drive it home" to you that a great risk is run of a sudden mercurialism resulting through the passing and absorption into the system of an old and unabsorbed dépôt of mercury in the gluteal region; this is quite unavoidable even by the most skilled operator. This accident, being sufficiently serious in the case of an ordinary syphilitic patient, may turn out with disastrous results in a tabetic, who is already quite run down and unbalanced.

On the other hand, with inunctions, such a dangerous degree of mercurialism can always be avoided by medical supervision. For at its first indication a good "soaping" and thermal bath will put a stop to further absorption and its dangers by at once removing the unabsorbed mercury on and in the skin.

Sulphur water taken internally, as well as sulphur baths at a proper temperature—which, by the way, must neither be too low nor too high—materially aid the absorption of mercury and lessen the risk of its employment. The chemical and other reasons for the use of sulphur water in combination with the inunction of mercury I cannot go into here.

In addition to the specific treatment, the necessity of constant medical supervision is a *sine qua non*. One's first duty is to maintain and improve the general condition and strength of the patient. If there should be a loss of weight, this is a definite indication to revise the method of treatment in regard to diet and exercise, and to employ the injection of tonic arsenical preparations, strychnine, fibrolysin, or lecithin, which I use freely. The economical expenditure of the patient's strength and power has especially to be considered if we prescribe in addition Fraenkel's exercises. The patient, if considerably ataxic, should be enforced to rest for prolonged periods, such rest to be interrupted by the prescribed exercises only.

Every voluntary movement, such as moving from one chair to another, should be undertaken as a task of the Fraenkel's system, the patient exercising control over each muscular act just as if he were carrying out his prescribed Fraenkel's exercise. Patients with wasting of the muscles of the legs I always get gently massaged.

Now as to the duration and general plan of treatment. The first course should be from seven to eight weeks. In the case of weak and debilitated patients, after having undergone a preliminary course of one to five weeks' treatment, there should be a rest, and treatment interrupted for a week or so and then renewed. With the continuance of treatment these interruptions become less or unnecessary.

[1] *Prognose der Syphilis*, Berlin, 1903.
[2] *Therapie der Gegenwart*, and Paul Cohn, *Berl. klin. Woch.*, 1903.

It is at these junctures that the physician must unswervingly persevere and insist on the continuance of the treatment, and to gain, above all things, the untrammelled confidence of his patient. This weakness and debility experienced by the patient can always be overcome by tact and a little "persuasive assertion." It has been the stumbling-block in the treatment of tabes, and the reason given that mercury does harm in this disease, but the gravamen lies on the medical attendant and not on the drug or remedy. Mercury does no harm to sensory nerves, its action being confined to the motor ones, as proved by all cases of chronic mercurialism.

If the tabetic cases be pronounced, a second "cure" should be commenced four weeks after the first, in milder cases after three to four months' interval. There should be a repetition of the cure after a year's interruption, which the patient is invariably pleased to undergo.

Dr. Judson Bury (Manchester), referring to the aphorism, "no syphilis, no tabes," pointed out that it was impossible to find evidence of syphilis in about 2 per cent. of cases of tabes, and that, as shown in an investigation by himself and Dr. Ramsbottom on the cerebro-spinal fluid, lymphocytosis was absent in about 15 per cent. of cases of tabes and general paralysis. Drs. Orr and Rows had shown that in the peripheral nerves, spinal roots, and cranial nerves there was a constant flow of lymph ascending to the central nervous system, the main current of which lay in the lymph spaces of the perineural sheath, and that toxins reached the spinal cord more readily by the posterior than the anterior roots. This important investigation suggested the necessity of looking for any peripheral septic focus—as, for example, cystitis in tabes—which might set up or aggravate lesions of the intramedullary sensory fibres. The speaker alluded to the difficulties attending the forming of an opinion with respect to the efficacy of any treatment in tabes, mainly owing to the temporary improvement, the arrested progress, and the partial recovery which were constantly observed in the natural course of the disease. He agreed with Dr. Russell as to the value of mercurial tincture treatment in tabes, and he hoped that in his published address Dr. Russell would, by the reports of cases, give ample evidence of the importance of this method.

Dr. J. Michell Clarke (Bristol) said: The question as to the treatment of tabes dorsalis necessarily depends upon the view taken as to its causation. If syphilis is accepted as the prime cause, we have to inquire whether the relation between the two is of such a kind as admits of successful treatment by antisyphilitic remedies, and, further, up to what interval of time after syphilitic infection is such treatment likely to be effectual.

It seems to me that the weight of evidence from clinical and cytological investigation is in favour of the view that syphilis is a necessary precursor of tabes, in spite of the fact that, like others, I have found it impossible to get a direct history or evidence of syphilitic infection in a certain percentage of patients. Again, like others, I have obtained a history of syphilis in a greater proportion of private than in hospital patients. The reason why patients ignore the fact of a previous syphilitic infection are various and have been fully discussed, and in my opinion are sufficient to account for the percentage of negative histories in tabes. It is, further, a point of interest as to how often patients had been infected with syphilis when held to be suffering from gonorrhoea only. Just as the percentage of syphilis is greater in tabetics in private than in hospital practice, so in those of my cases who denied syphilis a history of gonorrhoea was more than twice as frequent in private patients. A further point, about which more information is urgently needed, is whether patients who have been treated thoroughly for syphilis by mercurial inunction or injections develop tabes later in the same proportion as those treated by other methods, or in whom the disease has not been recognized. There is no doubt that persons who have been treated by mercury given by the mouth, carried out thoroughly for long periods, may subsequently develop tabes; in one case under my observation the lightning pains which were the early sign of the disease first began to show themselves towards the end of the three years during which the patient took pills of hydrarg. c cret.

A point of possible importance is that those who get syphilis young—say, before the age of 21—in my experience often develop tabes at a relatively shorter period after infection than persons affected at a later age. It is also worthy of remark that in my patients the age of onset of tabes in those who denied syphilis, possibly because, at any rate in some of them, the infection was so mild as to escape notice, works out at an average of nine years later than in those who admitted it.

With regard to the antisyphilitic treatment of tabes, I have carried it out hitherto, provided there are no other reasons to the contrary, in cases where other manifestations of syphilis were present, where the patient came under observation within about five years after infection, or where, with a rather longer interval since infection, the tabetic symptoms had developed rapidly, or where the patient had either been insufficiently treated for syphilis, or had had no treatment. In taking the history of these and similar cases, it is often found that many persons have not persevered with the treatment advised them for their syphilis; and this is especially the case in hospital practice. I should further take as evidence of active syphilis and of need for specific treatment the coexistence with tabes of signs of disease at the origin of the aorta in a person under 40 years of age. In cases in which there has been a long interval since infection, I have not hitherto tried mercurial treatment; nor in the class of cases in which the symptoms are mild, have come on later in life, and show little or no tendency to progress; in which, for instance, the chief symptoms are loss of knee-jerk, pupil signs, pains, slight disturbance of micturition, with, perhaps, Rhomberg's symptom, a slight degree of ataxy, or none at all. Many of these cases have suffered for years from lightning pains attributed to rheumatism or gout. I think further evidence is required to show that such cases would derive benefit from mercury, and from the often stationary character of the disease it is difficult to judge of the effect of any treatment.

Returning for a moment to the question of mercurial treatment in cases that come under observation at a long interval after syphilitic infection, one argument in its favour is derived from the results in women with tabes. In my experience, with, of course, a much smaller number of cases than in men, the results where it has been carried out have been favourable. This may partly be due to the difficulty of recognition of syphilis in women and consequent absence of treatment. Recently I have had examples of remarkable improvement in two women—in one ten years, and in the other eighteen years after the probable date of infection. They were treated by injections of mercury perchloride and by inunctions respectively. The latter was emaciated and cachectic, and the improvement in general nutrition was striking, but she was also under better conditions in hospital than at home.

I may add that, provided due care is used, I do not consider that anaemia and malnutrition contraindicate mercurial treatment; the result is often as in the above case.

Whenever I have thought mercurial treatment advisable, I have always employed the method of inunction. Although this mode of administration is by some authorities objected to as dirty and inconvenient, I have not found patients object to it as a rule, nor persist in such objection if the necessity for treatment is explained to them.

Quite lately I have also used injections of mercury perchloride without any trouble, and there is the advantage that the administration is less frequent. I have not, however, yet had sufficient experience to speak of the results. Lately the patients have been tested by Fleming's modification of the Wassermann reaction, but the number of cases is too small to be able to say anything about it as a guide to treatment.

With regard to the use of potassium iodide, large doses have not given good results in my hands, and I believe they may be distinctly prejudicial. Small or moderate doses continued for some considerable time are useful, especially in the more chronic class of cases, in diminishing the frequency and severity of pains, of gastric crises, of some of the late syphilitic sequelae, and in improving the general health. It is necessary to say, however, that it is extremely difficult in a disease like tabes, where there is so much variation in the severity of

the symptoms in the natural course of the disease, to judge of the results of any treatment by its effects upon symptoms. For example, treatment by suspension seemed to do good in many cases at the time when it was in vogue, but has now, I believe, practically gone out of use. Two or three of my old patients always insisted that nothing else was of so much benefit to them, especially in the relief of pain and of weakness of the bladder.

Difficult, however, as it is to estimate accurately the value of particular modes of treatment, there can be no doubt as to the efficacy of Fraenkel's exercises for the relief of ataxy. I should be inclined to put this in the first place amongst the advances that have been made in treatment of individual symptoms of tabes, and in it we have fortunately a remedy for that symptom which was formerly one of the most disabling and intractable. The severest forms of ataxy are met with more often in hospital than in private practice, and several times I have seen a patient who has been admitted to hospital bedridden and unable to walk or to stand without support, and, after four to six weeks' treatment by exercises, able to walk out unaided or with the help of a stick, and others, incapacitated by extreme ataxy, able to return to work. It is worth while to add that, although a well-equipped gymnasium is an advantage—elaborate apparatus is not essential—good results can be obtained with simple means.

In cases incapacitated and unable to take exercise from ataxy, arthropathies, or other causes, massage is also of considerable service.

In certain cases where the difficulty of getting about was aggravated by loss of sensation in the feet and legs, the application of a strong faradic current by the wire brush has brought about a considerable recovery of sensation, and the benefit was permanent. In others, this treatment failed to be of benefit; the reason for the difference I could not determine.

In symptomatic treatment, next to the advance in the treatment of ataxy by regulated exercises, or of equal importance with it, I should put the relief of pains by means of the modern analgesics. Of these, the best in my hands have been antipyrin and aspirin. The use of these remedies renders the employment of morphine rarely necessary, and enables one to reserve it for those very severe attacks of pain from which some unfortunate people suffer for two or three days at a time.

As a rule, the "girdle pain," though often constant and wearing, is not very severe, but sometimes it has been in my experience most intense and intractable to all forms of treatment, making the patient's life unbearable. In a persistent case of this kind, I am inclined to think that it might best be treated by division of the corresponding posterior root or roots.

It is unnecessary to speak of the importance of the care of the bladder in tabes, and of the early use of the catheter where there is retention or residual urine; but I may mention that such cases are occasionally complicated by infection with *B. coli*. In a recent case under my care the patient was taken profoundly ill with rigors, and a temperature reaching 104° to 105°; the condition was relieved by a vaccine made from cultures of the organism from the urine. I think it possible that this secondary infection with *B. coli* will turn out to be of not very rare occurrence in cases with bladder complications.

Lastly, whilst I think that the weight of evidence goes to show that syphilis is a necessary precursor of tabes, I also believe that there is some other agent at work adjuvant to the syphilitic poison, and that this may be of various kinds. I may therefore add a few words as to the great importance of maintaining the general health at the highest possible level, of putting the patient under the best possible conditions as regards habits of life, activities, and climate, and of looking after the state of nutrition. For this there is no doubt to my mind of the value of an occasional course of arsenic, and for the same purpose no remedy is more effectual than cod-liver oil taken regularly throughout the winter months.

Dr. E Farquhar Buzzard (London) said: From personal experience of the use of mercury in tabes, I feel convinced that it is not only the most rational, but the most successful means at our disposal of staying the course and relieving the symptoms of that disease. No one would maintain that mercury or any other drug can restore to life neurones which are already dead. On the other hand, when tabes exists it is our duty to use such measures as are most likely to check the spread of the morbid process. In spite of the opinion expressed by some observers that antisyphilitic treatment is useless and sometimes harmful in parasyphilis, clinical experience has led me to believe that while the iodides are comparatively inactive, real benefit can in most cases of tabes be derived from the employment of mercury. If it occasionally fails, one has to remember that failure is not so uncommon when we are dealing with ordinary syphilitic affections of the nervous system by the same methods; and most of those present to-day must have seen, as I have, severe cases of cerebro-spinal syphilis go from bad to worse during the administration of antisyphilitic remedies. While agreeing with Dr. Russell that inunction is on the whole the most satisfactory method of giving mercury to patients suffering from tabes, I have not formed quite so poor an opinion of the results which can be obtained from giving the soluble salts by the mouth as he has expressed. In out patient hospital practice this method is often the only one available, and I have seen most satisfactory improvement follow in many cases, even when no other form of treatment has been associated with it. I have now under my care patients who have been taking mercurial salts in this way for seven or eight years with short intermissions, and who have been relieved of many of their symptoms while continuing to carry on their work and supporting their families. It is usual to find that the administration of mercury by any method is attended by great improvement in general health: the body weight increases, the colour improves, energy is restored, lightning pains become very much less severe and sometimes disappear, and even trophic disturbances such as perforating ulcers rapidly heal. In endeavouring to explain the difference of opinion which undoubtedly exists as to efficacy of this treatment, I would emphasize the importance of persevering with it. One is constantly told that tabetic patients have had mercury at some time or other, and often that it has appeared to be of benefit; but the treatment has been discontinued, with the result that symptoms have returned in just the same way as they are certain to do in any case of cerebro spinal syphilis which does not submit to repeated courses of mercury for prophylactic reasons. When asked as to how long treatment must be continued, I can only answer that we have no means of deciding when it is safe to give it up, and that it is much wiser to go on repeating the courses indefinitely than to run the risk of allowing fresh exacerbations of the disease to present themselves. This statement is true of syphilis in all its manifestations, and great harm has been done in the past by the too arbitrary pronouncements of medical men that two or three or four years' treatment is sufficient to effect a cure. I agree with Dr. Russell when he states that the distance of time between the primary sore and the tabetic symptoms ought not to influence the doctor against prescribing mercury; and I would go further and say that the presence of optic atrophy is no contraindication to the use of that drug. In conclusion, may I suggest that the necessity for the use of numerous valuable remedies which we possess for the relief of the distressing symptoms of tabes would be very much diminished if patients suffering from this disease were universally and perseveringly subjected to efficient mercurial treatment, preferably by means of inunction?

Dr. Gordon Gullan (Liverpool) said: Undoubtedly the most important factor in the causation of tabes is syphilis; and I support Dr. Ferrier's view of "no syphilis, no tabes" as being strictly true. On that account most authorities have tried antisyphilitic treatment with great diversity of opinion; the majority appear to have obtained poor results, but others have found it useful in certain cases. Professor Erb believes that antisyphilitic treatment is of value in many cases, and that it is usually unattended with bad effects, but he admits that in a not inconsiderable number of cases it does not produce any good results. He advises it (1) in cases in which tabes has developed within a comparatively short time of the syphilitic infection; (2) in cases in which syphilitic symptoms or lesions are still present, or in which symptoms of cerebral or meningeal syphilis occur; (3) in cases in which the patient has not

previously had a satisfactory treatment for the syphilis. Collins recommends antisyphilitic treatment where tabes has developed within a period of five years of syphilitic infection.

During the past few years I have been trying the effect of regular intramuscular injections of mercury in cases of early locomotor ataxia over prolonged periods, and the results I wish to bring before you. The cases, seven in number—with two exceptions—were in an early stage of the disease—that is, the pre-ataxic. This is naturally the time when such treatment is most likely to be of any benefit. I will briefly record the cases and the results obtained:

Case I.

X. Y., aged 52, a member of a foreign diplomatic service, consulted me in September, 1907. He stated that for six months he had been suffering from shooting pains down the legs, but had been greatly benefited by mercurial intramuscular injections given him by a physician abroad. He had contracted syphilis more than twenty years previously. On examination I found a complete absence of knee-jerk, Argyll Robertson pupils, slight unsteadiness on turning round quickly or walking backwards, and slight anaesthesia in the lower part of his legs and feet. He complained, however, of the lightning pains, which, he said, had become much worse since he had been in this country, as he had not continued the treatment. The pains were so bad and persistent that his sleep was disturbed and he was unable to attend to his duties with regularity. As he had been having the soluble form of mercury, I gave him an intramuscular injection of ♏ xx of a mixture of R Hydrargyri perchloridi gr. viij, aquae ℥j, three times a week. The result was most marked, the pains at once diminished in severity, and within six weeks had quite gone; his knee-jerks gave a distinct response, and any little ataxia completely disappeared. Then, on the pretext of returning to the Continent, he gave up treatment, agreeing on my advice to continue it abroad. Three months later, however, he consulted me again for a return of his lightning pains, and I found him in the same state as when he first came under my observation. The same treatment was carried out with the same beneficial results, and this time it was continued for two months until he did actually depart for Italy, leaving me with the assurance of the continuance of it there.

Case II.

F. J., aged 39, a cashier, married, with no children, was sent to me in August, 1908, by Dr. Glover, of Waterloo, suffering from severe shooting pains down both legs, which were worse at night; knee-jerks were absent and the Argyll Robertson reaction present. When 20 years of age he had contracted a hard chancre, and had undergone a course of mercury for three years, and he does not remember any secondary manifestations. When he first came under my notice he had been troubled with lightning pains for the past thirteen months, which, with one intermission of six months, had steadily become so intense that he was obliged to give up work. His weight was 9 st. 9½ lb. Grey oil, ♏x (gradually increased to ♏xx), was injected into each buttock alternately every week, with the result that the pains immediately diminished in severity, and after five injections vanished altogether, and he slept undisturbed all night. After the first seven the injections were reduced to once a fortnight for three months, and since that time up to the present he has had injections every month or six weeks, and his condition has greatly improved. Any recurrence of the pains has been slight and of such rare occurrence that he has been able to work constantly. His nutrition is good, his weight has increased 7 lb., and slight knee-jerks can also be obtained.

Case III.

J. B., aged 47, merchant, consulted me three years ago for severe lightning pains which he called sciatica, and which were so intense that on several occasions he had been compelled to stay away from business. These pains were shooting in character and came on very suddenly, and had been present for a period of two months. He had contracted syphilis, but, as the symptoms had been slight, antisyphilitic treatment had been discontinued after a few months. His knee-jerks were sluggish, but no other symptoms of tabes dorsalis existed. I injected ♏xv of grey oil weekly for a period of eight weeks, and the pains rapidly subsided—in fact, were not at all severe after the third injection. His knee-jerks returned, and in the course of three months he was perfectly well, and he has had no recurrence. It is only fair to state that in addition I prescribed gr. xv of potassium iodide thrice daily. Although this is not a conclusive case of locomotor ataxia, yet, judging from the character of the pains, the reaction of the knee-jerks, and the history, it seems to me that this is not improbably a very early one of that complaint.

Cases IV and V.

V. Z., aged 42, dock labourer, and John S., aged 40, carter, both applied for treatment at the out-patient department at the Stanley Hospital. Each was in the pre-ataxic stage of tabes dorsalis, and gave a definite history of syphilis several years previously. Their symptoms were typical, and in both the shooting pains were the feature of which they most complained. In both cases grey oil was injected weekly with considerable benefit. Case IV steadily improved as regards the pain, and after three months' treatment ceased to attend the hospital. No improvement in the knee-jerk or Argyll Robertson pupil was detected. In Case V a similar improvement occurred, but, after having discontinued the treatment for three months, the pains occurred in their original severity, and he was obliged to undergo another course of injections. He has now been free from all pains for several months.

Case VI.

A. B., a seaman aged 50, came to the Stanley Hospital in January, 1909, complaining of severe shooting pains which prevented him following his occupation. On examination he was found to be suffering from locomotor ataxia, and mercurial injections of grey oil were administered once a week. In the course of three months his pains had altogether gone, and nothing more was seen of him until the end of April of this year, when he returned to the out-patient department, and requested that he could have some more of "them there" injections, as his pains had recently returned. During the interval of twelve months he had been quite free from all pain, and had been going to sea as an ordinary seaman. We found on examination that the pains were not as intense as formerly, and that a slight knee-jerk could be obtained, though when first seen this was completely absent. Since the renewal of this treatment his pains have steadily subsided, and he has now, after two months' treatment, returned to sea.

Case VII.

C. N., aged 40, baker, is the first case in which I have tried the treatment in a well-maked second stage of the disease, and I did so because of his complaining of very severe lightning and girdle pains. He has been under treatment for three months—April to June of this year—and has certainly greatly improved as far as the subjective symptoms are concerned, and, moreover, he feels and says he is very much better. His nutrition has improved, he has gained in weight, and his ataxia, which was very marked indeed when he first came to the hospital, has decidedly diminished. The anaemic condition of his blood also greatly improved under treatment.

Case VIII.

X. Y. Z., aged 65, a man engaged in a large wholesale business, was noticed by his doctor (Dr. Jackson, of Carnforth) in September, 1909, to be suffering from steppage gait, shooting pains, etc. He had a hard chancre when 30 years of age. He was sent to me a few weeks ago and was suffering from well-marked symptoms of the second stage of tabes, and was tremulous and hesitating in his speech. He was most anxious that he should not have what he called a "nervous breakdown," as he could not conveniently take his holiday till September, and last year he was obliged to be away from work for nearly three months. Although he has only had four injections, his nervousness of speech has greatly improved, his pains are better, and he has gained 3½ lb. in weight. His general condition has correspondingly improved, his ataxia is distinctly less, and the anaesthesia of his feet and legs is not nearly so marked. He is now continuing his work with comfort and much greater ease.

The record of these cases, though of course by no means conclusive, owing to the difficulty of forming a true judgement of the effects of treatment in a chronic disease of this type, yet strongly support the opinion that the mercurial treatment of locomotor ataxia, if persisted in over a sufficiently long period, will give good results, and I would strongly repeat the view that Dr. Farquhar Buzzard has just expressed—namely, that mercurial treatment on tabetic patients must be long continued. I am confident that the more this is done, the better will be the results. When we consider the pathology of locomotor ataxia, especially in its early stage, when there is probably inflammatory thickening of the meninges of the spinal cord, I do not think that we need be surprised that improvement should take place. For the same reason I should like this line of treatment to be adopted in early cases of general paralysis of the insane. It stands to reason that the earlier mercury is administered in tabes dorsalis, the better will be the results. Hence the importance of recognizing the condition as soon as possible; and I believe that the excellent results obtained in Cases I and III were due to the fact that they were both seen and treated in very early stages.

Concerning the technique of the administration of mercury by intramuscular injection, I have followed the lines so ably advocated by Colonel Lambkin in the treatment of syphilis. It is important that the skin is carefully cleansed with ether and some antiseptic solution. The syringe (preferably a glass one with a platinum needle) must be carefully sterilized, and grey oil, if used, must be most carefully prepared, as bad results have been recorded from the mercury in this preparation not being sufficiently mixed and in a sufficiently fine state of subdivision. The posterior third of the buttock was invariably chosen as the site for injection, and each buttock used alternately.

With these precautions I have never seen any inconvenience beyond occasionally a little pain down the leg or at the site of the injection, but this has invariably passed off within twenty-four hours.

Frequency of Administration.—As grey oil is usually slowly absorbed, and its cumulative effects may be serious, I usually give it once a week for six to eight injections, then once a fortnight for two months, and then for once a month or six weeks for twelve months; after which it should be continued occasionally as the condition and convenience of the patient indicate. If the mercury perchloride injection is used there is not the danger of mercurialism, as it is more rapidly absorbed and equally rapidly eliminated, but it has the disadvantage that the injections must be given three times instead of once a week, and, as far as my experience goes, is more liable to be followed by a little pain.

Of course, attention must be paid to the condition of the teeth and gums as well as the heart and kidneys, just as in using any other form of mercurial therapy. Patients should be advised to use a mouth-wash of potassium chlorate or of hydrogen peroxide.

The great advantages of giving mercury by this method are:

1. Its *simplicity and cleanliness*, both for private and hospital cases.

2. Its more rapid and effective action. I am confident that the results appear quicker when the drug is given by intramuscular injection than when given by the mouth, and, moreover, gastric and intestinal disturbance is less liable to result.

As regards the method of inunction my experience is very limited, but it always appears to me that it must be difficult to regulate the quantity of mercury absorbed; moreover, in this country we have not the advantages of possessing the professional rubbers, who are so expert at Aachen and other places on the Continent. Moreover, intramuscular injections, when given with care, must certainly appeal much more readily both to the patient and his doctor. It is a form of treatment which can also be adopted in the out-patient department.

In conclusion, I would join with other speakers in urging that mercury, in whatever form, should be perseveringly persisted with in the treatment of tabes dorsalis, and am confident that if this is done the disease will not progress at the same rate or be held in such dread by patients and physicians.

Dr Reginald Hayes (London) said that in cases of tabes, early tabes especially, his experience of mercurial inunction, well performed in combination with the use of sulphur water internally and externally, as administered at Aachen, was in many respects favourable, and bore out the views expressed by Dr. Risien Russell in opening the discussion. At Aachen some years ago, thanks to the courtesy of Dr. Feibes, he had the opportunity of seeing and interrogating many of these patients when under treatment, and subsequently in London he had employed precisely similar methods in a considerable number of cases. Most of the patients had previously taken mercury by the mouth for long periods, or had tried injection, auto-inunction, or the application of the drug by means of glass rubbers or gloves, the latter being the method in favour at Hot Springs in the United States of America. The results obtained—subjective and objective—pointed conclusively to the superiority of the Aachen methods. It should not, however, be supposed that Aachen treatment and treatment at Aachen were convertible terms, for the ritual there was carefully adapted to the needs of each individual case, and as a prolonged course was necessary, gentle handling was essential. One hundred rubbings, or, indeed, a greater number, were frequently required to obtain the best result. Improvement was usually slow in manifesting itself, and he had seen two cases of ptosis remain unaltered until seventy rubbings, and then completely recover. In a case kindly referred to him by Dr. Risien Russell, the knee-jerks returned in the ninth week. He had also observed gastric crises to cease under treatment. An interesting feature in several instances had been the marked improvement in the patient's ability to play games involving delicate co-ordination, such as golf and billiards. For many patients a visit to Aachen might not be possible, and for them the treatment could be carried out efficiently in London—Aachen methods being closely followed, and allowing for the difference of atmosphere between the pleasantly situated German Spa and that of our four-mile radius, the results compared very favourably with those obtained abroad. This was a point upon which he desired to lay stress, for he was frequently brought into contact with practitioners to whom it was a revelation.

Dr. Alexander Bruce (Edinburgh) drew attention to the position of the discussion. The problem before them was whether mercurial treatment acted upon the tabetic lesion or upon some syphilitic process which might accompany it. It would be admitted by all that where there had been untreated syphilis it was right to employ antisyphilitic treatment, as in a considerable proportion of the more rapidly developing cases of tabes there might be definite syphilitic meningitic disorder present. Treating the tabetic patient was not necessarily the same thing as treating the tabes.

Dr. Harry Campbell (London) found himself in full sympathy with Dr. Alexander Bruce's remarks. While admitting that all cases of tabes should periodically be put through a rigorous course of antisyphilitic treatment, whether in the form of mercurial inunction or injection, in order to remove any tertiary effusion that might be present, he much doubted whether such treatment touched the actual disease, which, when once started, tended, in spite of any treatment hitherto suggested, steadily to progress to the end of the chapter. In estimating the effect of mercurial treatment, many factors had to be taken into consideration. Cases of pseudo-tabes from tertiary lesions naturally benefited by it. It had further to be remembered that many of the symptoms of tabes were largely functional, in the sense that they were not constant, but varied from time to time, or even entirely disappeared. That was the case, for example, with the urinary and sexual disturbances, the ataxia, and, above all, the lightning pains. Such symptoms were influenced by climate and suggestion quite independently of mercurial treatment. They could also be benefited by local mechanical means, whether reflexly or by suggestion could not be said. An American physician had suggested that many of the symptoms of tabes were kept up by the irritation caused by urethral stricture, and that could be improved by dilating the stricture. This treatment had been adopted recently in three of the speaker's patients under the supervision of Dr. Jensen, and the results were quite as striking as any which had been recorded that morning. There had, for example, been marked alleviation of pains, ataxia, and gastric crises, and one patient had put on weight. In the light of this experience, the speaker could not help wondering whether the rapid effects which had been mentioned as resulting from mercurial injections might not have been equally well obtained by injecting distilled water.

Dr. Risien Russell, in his reply, said that he had purposely limited the scope of the discussion to whether or not mercurial treatment was of advantage in tabes, for the reason that it was impossible to hope to overtake the whole of the treatment of the affection in the time allotted for the discussion. He was glad that he had received such strong support, both in regard to the syphilitic origin of tabes and as to the efficacy of mercurial treatment in the disease. At least 19 per cent. of the 20 per cent. of cases in which it had been claimed that the patients had not had syphilis could be disposed of by the fact that patients commonly denied syphilis when questioned by the family doctor, while they admitted the truth when they sought the advice of the consultant. While gratified to receive so much support in his advocacy of the inunction treatment from those most competent to speak on the subject, he wished to repeat that he did not feel himself competent to contrast the inunction with the injection treatment, for the reason that he had obtained such good results from the former that he was loth to abandon it for the latter. What he did wish to insist on, however, was the superiority of either of these methods of treatment to that of administering mercury by the mouth. He welcomed the criticism that no time limit should be placed as to how long the treatment should be continued, but thought it well to fix some such limit as he had

suggested when advising patients, as otherwise it might be difficult to persuade them to undertake the necessary cure. Age was no necessary bar to the treatment, for he had seen excellent results in people who had passed the middle period of life. When the treatment was properly carried out the general condition of the patient was favourably influenced, so that they commonly improved in colour and put on flesh. In selecting such phenomena as return of the knee-jerks and of the pupil reaction to light, he did not mean it to be understood that these were the only ways in which patients so treated showed improvement. In reality, pains, crises, ataxy, and sphincter affection all improved in a notable manner under this plan of treatment. It might, however, be said with reason that all of these symptoms were known to improve in some cases in which the mercurial treatment had not been carried out, so that he preferred to quote return of the knee-jerk and of the pupil reaction to light as the best evidence that he could adduce in favour of the view that mercury influenced the lesions of tabes for good, as no other plan of treatment could claim such results as these. There were, of course, many useful adjuncts in the treatment, to which reference had been made by some of the speakers, but it was impossible to pretend to deal with them in the time at his disposal. In conclusion, he regretted that any one should have introduced into a discussion of the kind the suggestion that dilatation of the urethra was capable of affecting tabes in a favourable manner. His only experience of this treatment was in a case in which the tabes had evidently been made and cured by those who had so "treated" a patient in whom, to his own knowledge, there had never been the slightest indication of the disease for which the patient had been so treated, and of which he was persuaded that he had been cured.

ON THE PSYCHOLOGICAL TREATMENT OF CERTAIN FUNCTIONAL CONDITIONS.

By EDWIN ASH, M.D.Lond.,
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THERE has lately been considerable discussion at various meetings of the medical societies as to the propriety and value of using psychological methods in treatment, particularly in cases where disordered health appears to be dependent on some functional nervous disturbance. And as I have myself devoted much time to the investigation and practice of psychological methods of treatment, perhaps my experiences may be of interest to others who wish to investigate this particular aspect of therapeutics.

My own interest in mental methods of treatment was aroused when as a student I saw the remarkable effects of such factors as hope, encouragement, confidence, and personality, in helping people to throw off their ailments; and since then I have never ceased to examine the possibilities and practical application of mind influence in medicine.

In this connexion I was led to investigate the question of the hypnotic sleep state, but although I found it a remarkable agent for psychological experiments and analysis, on applying it to medical work I found that its uncertainties were such that it did not appear worthy of the place in medicine which some authors have endeavoured to obtain for it. So that when my investigations were directed from the experimental aspect of the influence of suggestion to its therapeutic application, I endeavoured to confirm the observations of numerous contemporaries that suggestive therapeutics can be successfully practised without the induction of hypnotic sleep. And the results obtained have shown me that by the careful application of a certain technique direct suggestion will do much to relieve a large number of functional disorders. Indeed, it is remarkable to find how pain and hyperaesthesia of special senses can be alleviated by a simple system of suggestive therapy, in the application of which one's patients are conscious of all that is being done, and, moreover, retain perfect liberty of thought and action.

Suggestion in Practice.—With regard to the actual application of suggestion in treatment, the practical technique to be followed must be carefully varied according to circumstances. In its simplest form suggestion may be brought to bear on a patient by placing him in a comfortable chair, telling him to close his eyes and relax every muscle as far as possible; all distracting noises should be avoided, and the patient instructed to fix his attention solely and earnestly on what is being said to him by the physician, who, in a quiet, persistent voice enumerates the particular symptoms for which relief is sought, and confidently gives reasons why these will shortly disappear, and assurances that they will undoubtedly do so.

It must be remembered that under ordinary conditions of life the mind is a sort of kaleidoscope of ever-changing ideas and thoughts, few of which attain great intensity of ideation. Impressions are accepted and fade away as they are replaced by others. We know that if we have to think out some difficult problem in diagnosis we want to be left alone for a while—we want other people to stop talking to us, and distracting sounds to be shut out—so that by withdrawing our attention from all outside impressions and wandering thoughts we may be able to *concentrate* our attention on the points in question.

Supposing one is making a digital examination of some cavity of the body—I will mention rectal and vaginal examinations as examples, for they are part of the routine work of practitioners—is it not a usual thing to fix the attention by gazing steadily at some distant object, and, by freeing the mind from disturbing impressions, to allow it to concentrate on the sensory impulses that are being sent up to it from the finger-tip?

Hence when we wish to present with force a *curative suggestion* to the mind of a patient, we must endeavour to quiet his thoughts, and protect him from the disturbing influence of impressions coming in from without. An orator trying to make a speech in a roomful of talking people will not make very much impression; but when his audience has been quieted, the ideas he presents will have some definite weight. In suggestive therapeutics the physician is the orator, and the restive audience is represented by the turbulent thoughts of his patient.

Now to obtain the necessary calm, receptive condition of the patient's mind, it is in practice found best to let him rest in a perfectly comfortable restful condition, so that no stimuli from skin or limbs will disturb him; to get him to close his eyes, so as to shut out visual impressions; and similarly to have the room as quiet as possible so as to avoid disturbing auditory impressions.

Then we shall have only to deal with thoughts and ideas arising from within; but as a matter of fact, when any one is resting comfortably with their eyes closed and in a quiet room, thoughts always tend to quieten down, and with many people definite drowsiness quickly comes on. In such a state of mind the patient is ready and receptive for any idea that may be presented to him, and one endeavours by repetition to implant curative suggestions which will take root, as it were, and manifest their beneficial effect even when his mind resumes its usual activity.

As one would expect, functional diseases particularly lend themselves to treatment by suggestion, because they appear to be invariably dependent on a mental factor, especially those very common functional neuroses which come under the headings of neurasthenia and hysteria. Indeed, as the leading factor in the treatment of neurasthenia and hysteria, I have found suggestion to be more reliable in its effects than any other principle, and I have had a good many cases through my hands who have improved very quickly under its influence.

Enuresis Nocturna.—I should like to emphasize the fact that in the treatment of the functional incontinence of urine so commonly met with in children and adolescents suggestion is remarkably successful.

Among the first cases I treated by suggestion were two of functional enuresis nocturna. The first of these was a girl, 15 years of age, who was unable to remain in service owing to the unpleasant nature of her affliction. She had fourteen sittings during three months, suggestions being given that she should awaken with intent at a certain time each night. There was definite improvement after the third sitting, and complete recovery after the tenth. At no time during the treatment was the patient unconscious. The other case of this description was also relieved, and was very interesting, because I first treated him in the hypnotic sleep state without result. So I tried suggestion in the waking state with fixed attention, and obtained immediate improvement, with ultimate cure. The condition of these young people with enuresis

nocturna is most distressing, and if no organic cause can be found it seems desirable, after a consideration of such results, that they should be given the benefit of treatment by suggestion.

In cases of drug habit, particularly in morphinism, suggestion is a most potent help in enabling patients to recover their self-control. I have had successful results in cases of morphine habit, but have never undertaken the treatment of alcoholism by this means. Others have reported very good results from the use of suggestion in cases of alcoholism.

In mental disturbance, not amounting to actual insanity, I have found the treatment give very good results—better than, I suppose, could be expected from any other method. In several instances I have found auditory hallucinations quickly yield to direct suggestion; these to me, I must confess, were surprising as well as gratifying results.

Where there is much depression of mind I have invariably found the treatment had to be persevered in for a much longer time than otherwise when one is dealing with states of mental excitement. Still, I have had encouraging results with melancholic patients, and have seen apparently hopeless cases recover speedily under the influence of suggestion. I remember one case in particular—that of a young lady who developed extreme depression with suicidal impulses—who reacted in a remarkable manner to the treatment by direct suggestion, and has had no attack since—that is, during the last three years.

In cases of sleeplessness where the condition is not due to painful organic disease or to circulating toxins, the method of treatment I have outlined is usually productive of excellent results; and I most strongly recommend it in all cases where insomnia of a functional kind is prominent.

Similarly, direct suggestion will relieve headaches and neuralgic pains of various kinds when these are not directly due to organic disorder. And other functional conditions in which I have personally used the method with success include dyspeptic symptoms and neurotic disorders of the heart, chiefly of the nature of what is popularly known as "palpitation"; various kinds of muscular twitchings and spasms, notably cases of severe blepharospasm; painful scars; dominant ideas and obsessions; and aphonia.

I find that constant practice of psychological treatment and increasing experience of the cases which it will relieve is, of course, a great help to success, and I look forward to the time when these methods of treatment will be more generally used in our profession than they are at present.

THE KNEE-JERK AND SIMPLE REFLEXES.

By W. A. Jolly, M.B.

(From the Physiological Laboratory of the University of Edinburgh.)

The object of the research, which was undertaken on the suggestion and with the help of Professor Schäfer, has been to record the interval of time elapsing between a tap on the patellar tendon and the beginning of the electrical variation indicating activity of the quadriceps muscle, and to compare this interval with the delay occurring in the case of reflex action of the thigh muscles in response to mechanical stimulation of the skin of the foot.

The knee-jerk has been timed in the human subject, rabbit, intact and decerebrate, the decapitate cat preparation and "spinal" cat, and comparison has been made in the decapitate and spinal cat with the homonymous flexion reflex of the hind limb and the heteronymous extension reflex. The latent period of contraction of the quadriceps has also been measured in the decapitate cat when the anterior crural nerve is stimulated by a mechanical tap close to the muscle.

The records have been made in the following manner: In the case of the knee-jerk a piece of rubber covered on the upper surface with silver foil is attached to the skin over the tendon. A light metal hammer falls upon this, producing the stimulation and at the same time closing the circuit of an electrical signal. The wicks of two non-polarizable electrodes are held in position by rubber bands upon the shaved skin over the thigh muscles, and the electrical variation recorded by means of Einthoven's string galvanometer. The movements of the string and of the signal, which consists of a small string galvanometer, are recorded together upon a photographic plate, which is shot by a spring past a horizontal slit at a rate of 850 mm. per second. The shadows of a tuning fork giving 120 double vibrations per second and of the teeth of a revolving disc are also thrown upon the slit.

Measured in this way, the time of the human knee jerk, as determined in three subjects, ranges from 18.6 to 23.7 thousandths of a second (σ). In the intact rabbit the time varies from 5.2 to 6.6 σ; in the decerebrate rabbit from 6.0 to 7.8 σ; in the spinal cat from 5.3 to 7.9 σ; and in the decapitate cat preparation from 6.2 to 12.4 σ.

The homonymous and heteronymous reflexes of the hind limbs are elicited by attaching to the dorsum of the hind paw a vulcanite plate, bearing several needle-points on the lower surface, and covered on the upper surface by silver foil. The stimulus is given by the falling hammer, which, striking the plate, drives the points into the skin and closes the signal circuit. The non-polarizable electrodes are placed upon the skin of the thigh over the adductor and extensor muscles.

The following figures were obtained in one experiment on the spinal cat, where the knee-jerk and homonymous reflexes were elicited alternately:

Knee-jerk.				Homonymous Reflex.
(1) 6.37 σ	...	...	...	(2) 13.18 σ
(3) 6.83 σ	...	...	...	(4) 12.36 σ
Mean 6.85 σ	...	...	...	12.77 σ

The averages of 12 observations on two spinal cats are: Knee-jerk, 6.62 σ; homonymous reflex, 12.75 σ.

The averages obtained in a series of observations on a decapitate cat preparation are: Knee-jerk 8.49 σ, and homonymous reflex 16.75 σ.

The heteronymous reflex was studied in the spinal cat, and the times obtained range from 11.9 σ to 19.9 σ. The delay was found to be long soon after the cord was cut. It progressively diminished until, three weeks after section, the times of homonymous and heteronymous reflexes were closely alike.

The delay in the knee-jerk is found to be more variable when the decapitate preparation is used than in the case of the spinal animal. Nine preparations have been employed in the investigation, and while the shortest times obtained are similar to those given by the spinal animal, intervals twice as great have also been observed.

For the purposes of measuring the latency of muscular contraction in decapitate preparations, after the knee-jerk has been measured the anterior crural nerve is exposed and cut 2 cm. above the muscle. The peripheral end is placed between two vulcanite bars, the upper of which bears a metal plate, and is struck by the falling hammer. The latent period obtained in this way ranges from 2.2 σ to 3.2 σ.

The following figures were obtained in two experiments:

1. Knee-jerk, 12.4 σ; latency on nerve stimulation, 2.2 σ.
2. Knee-jerk, 10.5 σ; latency on nerve stimulation, 2.7 σ.

Here the latency of the jerk exceeds that of the muscle stimulated through its nerve by 10.2 σ and 7.8 σ respectively.

The fact that the time of the knee-jerk may sometimes be so lengthened while the muscle itself responds to nerve stimulation in a much shorter time, together with the well-known dependence of the jerk upon the reflex arc, raises anew the question as to whether this phenomenon can be regarded as due to direct stimulation of the muscle. At the same time we must bear in mind that the time required for a simple reflex, such as flexion of the thigh determined in the same animal, is found to be, roughly, twice as long as for the knee-jerk. The conclusions of previous observers, that the time of the knee-jerk is much shorter than that of such a simple reflex, are therefore borne out by this research.

In order to ascertain whether there is sufficient time for nervous conduction to the spinal cord and back to the quadriceps muscle, the animals used were dissected and the distances measured from the patellar tendon along the muscle and anterior crural nerve to the cord and back to the position of the proximal electrode which lay over the upper end of the vastus internus.

Piper[1] has recently determined the rate of conduction in human nerve to be from 117 to 125 metres per second. Assuming this rate to be applicable to the animals experimented with, we must deduct from the times found for the knee-jerk in spinal and decapitate cats a period of about 2σ, varying with the size of the animal, for nerve conduction. We are left with a period of 3.32σ in the case of the shortest time observed and 10.1σ in the longest, which, if we regard the knee-jerk as a reflex, would include the time occupied by the impulse in its passage through the central nervous system.

In the case of the homonymous and heteronymous reflexes the nerves have also been dissected out and measured, and the time occupied in nervous conduction calculated at the same rate. We have, then, for the averages in the spinal cats — knee-jerk, $6.62 - 2 = 4.62\sigma$; homonymous reflex, $12.75 - 3 = 9.75\sigma$; and it will be observed that the latter remainder is almost exactly double the former. In cases where the determination of knee-jerk and flexion reflex are made alternately and rapidly, the duplication is still more exact—for example: Knee-jerk, $6.85 - 2 = 4.85\sigma$; homonymous reflex, $12.77 - 3 = 9.77\sigma$.

A period of 3.32σ appears to be very short to include passage of an impulse through the spinal cord, but, as we have seen, this period may be increased to as much as 10.1σ—doubtless owing to unfavourable conditions of circulation, temperature, etc., obtaining in the decapitate preparation—a figure which exceeds the remainder left after deducting conduction time in the flexion reflex.

It is difficult to explain times of 11 and 12σ for the knee-jerk when the latency of the muscle at the same time and under the same conditions to stimulation of its nerve can only account for 2 or 3σ, except on the hypothesis that we are dealing with a reflex whose path in the spinal cord is simpler than that of the flexion or crossed extension reflexes. It may be—and the ratio of the periods lends support to the view—that the knee-jerk mechanism involves one spinal synapse or set of synapses, while the other reflexes mentioned involve two.

REFERENCE.
[1] *Pflüger's Archiv*, Bd. 124, S. 591, 1908.

DEMONSTRATION ON SCLEROSIS OF THE ADVENTITIA.

By A. Bruce, M.D.,
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Dr. Alexander Bruce gave a lantern demonstration illustrative of a sclerosis of the adventitia of the vessels of the spinal cord, associated with multiple (amputation) neuromata in the substance of the cord. The specimens were obtained from a patient who had been under the care of Dr. Affleck in the Longmore Hospital for Incurables, Edinburgh. She had died at the age of 30. Her illness had commenced apparently about the age of 7, with "water in the head." About the age of 10 weakness of the lower extremities began to develop, followed by muscular wasting and loss of the knee-jerks. The weakness gradually extended upwards to the trunk and upper extremities, and the patient ultimately became bedridden.

Pathological examination of the cord showed that the condition had apparently begun as a sclerosis of the membranes in the neighbourhood of the points of emergence of the anterior and posterior roots, from which points it had spread along the membranes, and had entered the substance of the cord by the lymphatic system of the adventitia of the vessels, and had extended along these vessels irregularly as far as their ultimate terminations, producing a great thickening of the outer wall with a connective tissue. The result was a series of areas in the grey and white matter differing from those of typical disseminated sclerosis in this respect, that the patches of sclerosis contained actual fibrous tissue which had grown in from them, and were not due to mere overgrowths of the neuroglia.

In addition, the lower portion of the cord, and, to a lesser extent, the cervical region, showed numerous microscopic tumours, nodular or spindle-shaped or irregular, situated in the antero-lateral part of the cord and its membranes. The tumours were composed of spindle-shaped cells associated with medullated nerve fibres. In every instance small tumours were situated in the adventitia of the blood vessels. The connexion of these nodules could be traced along the adventitial cells of the blood vessels outwards to the pia mater, and along this as far as the anterior roots, from which they were clearly derived. It appeared probable that the neuromata were simply secondary results of the deflection of some of the anterior root fibres by the sclerotic tissue; that these aberrant fibres had grown in the lines of least resistance along the membranes, entering the substance of the cord by the lymphatic system and the adventitia of the vessels, and passing inwards until their growth was sufficiently resisted, whereupon the neuromatous tumours were formed, of essentially the same character as those formed in a scar after amputation.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

HAEMORRHAGE OF THE NEWBORN.

A strong, healthy male child, 3 days old, sleeping quietly by the side of its mother, began recently in the early hours of the morning to vomit blood. This coming on without any warning or apparent cause naturally alarmed the parents, and they sent for me. Later on the child passed blood by the bowel, some of it gushing out and passing through the diapers. The child was blanched and anaemic, and a very unfavourable prognosis was given. The haemorrhage from the bowel kept on for the next two days, and then ceased as suddenly as it had begun. No treatment by drugs of any kind was undertaken, the only thing being that the nurse was directed to keep the child warm and as quiet as possible. The child took the breast well all the time the bleeding was going on. There was no idea of the child drawing the blood from the breast or of injury at birth, and there were no symptoms pointing to ulcer of the stomach or bowel. There was no jaundice. The child is now healthy and well. I am unable to give any reason for the haemorrhage and the pathology seems equally obscure. The rarity of this haemorrhage in the newborn perhaps justifies the publication of the case.

Dalton-in-Furness. T. F. Forster.

CASE OF LINSEED POISONING.

I was called to see a boy, aged 13 years, by an urgent message one morning, the parents suspecting scarlet fever.

When I saw the boy he was acutely ill and distressed. His arms and face were covered with a red flush and with some papular eruption scattered about. The face and eyelids were swollen and oedematous. He had vomited once. On investigating the rest of the body the diagnosis was apparent as acute urticaria from some cause. The upper part of both back and chest was one huge wheal raised about $\frac{3}{16}$ in. and of a yellowish colour, the wheal of the back extending from the neck to the lower dorsal region. There were numerous small wheals and patches all over the rest of the body and legs; the tongue and fauces were swollen and red. I saw him at 1.40 p.m. Questioning him and his parents as to ingested materials, etc., the boy admitted having eaten a piece of linseed cake as big as a barcelona nut at 11.30 a.m. The red rash and discomfort began to appear at 12.30 p.m. He vomited once at 1 p.m. With calomel and salines he was all right the next day.

H. B. Willoughby Smith, M.B., F.R.C.S.

Gainsborough.

The presidential address at the opening of the twenty-ninth session of the West London Medico-Chirurgical Society was delivered by Dr. Phineas Abraham, who dealt with specialism. He regarded this as an inevitable outcome of the rapid advance of science, but not one which in any wise made the work of the general practitioner unnecessary. On the contrary, the general practitioner, with his wider study and experience of disease, could greatly advance medical knowledge if he would record facts that came under his notice. He could help the specialist by testing the results of his work, just as the specialist could in his turn help the general practitioner by dealing with particular cases.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

METROPOLITAN COUNTIES BRANCH: HAMPSTEAD DIVISION.

Dr. Ford Anderson in the Chair.

Ehrlich's Remedy for Syphilis.

At a meeting of the Hampstead Division held at the Public Library, Arkwright Road, on October 14th, a discussion on recent advances in the treatment of syphilis, especially as it affects the Wassermann reaction and treatment by "606," was opened by Mr. J. E. R. McDonagh.

Dr. Claude Taylor, before the paper was read, spoke of a man who had contracted syphilis ten years ago and who had undergone treatment for the disease. Recently he had again exposed himself to infection, and four weeks later had noticed a sore. Dr. Taylor raised the question whether this sore was the manifestation of a second infection. The patient was present, but did not submit to an examination.

Mr. McDonagh asserted that syphilis was produced by the *Spirochaeta pallida*. This was admitted at present by all, although Koch's postulates were not yet fulfilled, since the spirochaete could not be cultured artificially. The nature of a sore need not be dubious in any case at present, since the presence or absence of the protozoon would definitely decide the diagnosis. Treatment could and should, therefore, be commenced as soon as the case was seen. The question of excision of the chancre was one which had been seriously considered. It was important to recognize that, when excision was suggested, the infection might have spread to the regional lymphatic glands, and therefore the removal of the primary sore would not remove all possibility of a spread of infection. Even a gumma in tertiary syphilis had been shown to be infective. However, it was possible to check the disease by excision of the primary sore, and he instanced two cases in which this had been done after fourteen days. No secondary symptoms occurred. Syphilis could be treated by the application of mercury either in the form of inunction, injection, or internal administration. The speaker was satisfied that the inunction method was the most efficacious, that the treatment by injection was rapid and powerful, and that medication *per os* was the least effective. Turning to the Wassermann reaction, he said that effective treatment converted a positive reaction into a negative one. The positive reaction was frequently found after energetic internal treatment, and the speaker supported his view of the feebleness of the *per os* medication by showing that chronic glossitis with a positive reaction was more common in England, where internal medication was the rule, than in Germany, where inunction was the standard method of treatment. Further, he contended that the degree of anaemia was more marked after prolonged internal administration of mercury than after inunction or injection. Potassium iodide did not affect the Wassermann reaction. Mr. McDonagh next traced his method of applying an intermittent mercurial treatment in ordinary cases of syphilis. With regard to congenital syphilis, the reaction was often positive for several years, even in the absence of signs of the disease. A positive Wassermann reaction recorded the death of a quantity of spirochaetes and the liberation of a product which was not a true antibody. In practice he considered that when the Wassermann reaction in acquired syphilis was positive there was reason to treat the patient. The necessity of this was well exemplified in cases of women who were infected by their infants *in utero* and who showed no sign of syphilis save that they habitually aborted and showed a positive Wassermann reaction. In these cases gummata frequently appeared at or after the menopause. He then proceeded to deal with Ehrlich's new remedy. Ehrlich, in his search for a remedy, resolved that the drug found must be parasitropic, but not organotropic. Parasitropic bodies fell within three groups: the first including the metals arsenic and antimony; the second, bodies containing an azo group, such as trypanrot; and the third containing the complex basic triphenylmethane dyes. *In vitro*, the substance which was popularly called "606," namely, the dioxydiamido-arseno-benzol, killed spirilla in a dilution of 1 in 6 million. Atoxyl acted quite differently from "606" in that it failed to exercise the same action on the spirochaetes in the body as it did in the test tube. When Ehrlich introduced arsacetin, it had been suggested that, in order to exclude those persons who were susceptible to its toxic action, a percutaneous or conjunctival test, of the nature of the von Pirquet or Calmette test, should be employed. This preliminary testing, however, was not necessary in the case of "606." The parasitropic substances acted partly by killing the parasite, and partly by liberating the chemical substances contained in the bodies of the parasites, which kill off the remainder. That "606" acted in this way was shown by the fact that larger doses were required to heal an early case with a primary sore than a late case with gummata. Again, the cases reported of an infant suffering from congenital syphilis being cured by suckling at its mother's breast after she had been injected with "606," in which case it was proved that no arsenic passed into the milk, supported this view. In dealing with the question of dose, he stated that at first the doses employed were too small. He now gave 0.5 or 0.6 gram, and believed that the latter dose was satisfactory. Ehrlich was now sending out capsules with 0.7 and 0.8 gram in each. Mr. McDonagh spoke of the pain produced by the injection. The substance in solution had to be rendered faintly alkaline, which he effected by means of sodium hydrate. He preferred to inject in the substance of the trapezius rather than into the glutei, but in some cases it was necessary to choose the latter situation. In emphysematous patients he had seen dyspnoea, some cyanosis, and other distress lasting for a short time after an injection between the shoulder-blades. Krohmayer has recommended giving the substance in emulsion in liquid paraffin; but theoretically it would appear likely that the absorption from such injections would be too slow. Finally, he pointed out that "606" was inert as a prophylactic. He then turned to the clinical side of the question. In the primary stage every case he had treated had responded immediately to one injection, and the result had been most striking. In no case had a secondary rash developed, and the Wassermann reaction had invariably become negative. In a few cases the inguinal glands became temporarily enlarged after the injection. In septic cases the drug acted most promptly and extraordinary results had accrued. He did not recommend out-patient treatment with the drug, as the patients would not rest after the injection. In the second stage cases all the signs usually disappeared after one injection of 0.6 gram. This was more especially true of malignant syphilis. He cited cases to show the extraordinary effect of a single injection. Even cases of lichen syphiliticus responded well to it. The characteristic of the action in tertiary syphilis was its rapidity. Here, again, the speaker illustrated his remarks by citing cases which he had treated, and which showed the effect of the treatment. In particular, cases of ulcerative sore throat, elephantiasis with gummata, and syphilitic meningitis were mentioned. In reviewing his cases of active syphilis in the three stages he found that the pain produced by the injection varied very much in different individuals, and he also emphasized the fact that syphilitic eye affections yielded readily to the treatment. No case of amaurosis had resulted from "606," although Ehrlich had up to the present received reports of over 12,000 cases. Turning to parasyphilitic conditions, he found that tabes was rarely seen early enough to render an action possible. He had, however, a remarkable case to record. The case was seen with Mr. Shillitoe. The patient had fixed pupils, which did not react to light, loss of knee-jerks, loss of control of the bladder and rectum, ataxy, and impotence. An injection of "606" had resulted in the return of the potency, the reflexes, and of control over the sphincters, and in the marked improvement of all the other signs. In speaking of congenital syphilis, he quoted Taege's case of the syphilitic infants being cured by the milk of the treated mother, and also emphasized that small doses should be given to the infants themselves later. Complicated syphilis had proved a favourable field for treatment with "606." The tuberculosis, sepsis, etc., complicating the attack appeared to improve with the healing of the syphilitic manifestations. The drug, however, did not confer

any immunity to septic infections, nor did it influence a gonorrhoeal affection. He had had one death in connexion with the injection. Diagnosis of cerebro-spinal syphilis had been made; the patient was *in extremis* and the Wassermann reaction was negative. The man died, but *post mortem* the case was discovered to be one of disseminated sarcoma. He had further experienced 2 cases of recurrence in 80 cases. These cases had received only 0.4 gram. The second dose given did not exercise anything like the effect that the first dose exerted. With regard to the question of the cure of syphilis, he expressed himself cautiously. Neisser it is true had proved that apes were definitely cured of inoculated syphilis, but in man this might be different.

Dr. FORD ANDERSON (the Chairman) referred to the many features of resemblance in the histological changes said to be found in the sections of brains in cases of acute general paralysis, syphilis, and sleeping sickness. This and the question of danger to life and to eyesight required further inquiry in connexion with treatment by "606." He then proceeded to describe a case of syphilis of the tongue which he had seen in conjunction with Mr. Shillitoe. In this case the fissured condition and the other pathological signs had cleared up after one injection, administered by Mr. McDonagh, although two distinguished surgeons had advised excision of the organ. Both surgeons, however, agreed to a preliminary trial of "606."

Mr. SHILLITOE made a few supplementary remarks with regard to the tabes case and the glossitic case. In the former the Wassermann reaction had since become negative.

Demonstration.—At this stage Mr. MCDONAGH showed seven patients, all of which he had mentioned in the course of his paper. They were: A case of congenital syphilis in a girl of 15 years; a woman who had been affected with a serpiginous syphilide with paresis of the arm: a case of elephantiasis with gummata of the leg; a case of glossitis with leucoplakia; a case of recurrence after injection; a case of syphilitic iritis [it may be mentioned that the members present had to be informed which eye had been affected]; and, lastly, a case of phagedaena with primary chancre.

Dr. FLEMING expressed belief in the reliability of the Wassermann reaction. He believed that treatment should be regulated by the reaction. The treatment might be stopped permanently if after twelve months the reaction remained negative. He spoke of the beneficial results which had followed the injection of "606" in a few cases at St. Mary's Hospital.

Dr. OTTO GRÜNBAUM stated that he had had but limited experience of the preparation "606." He had followed the directions supplied with the drug, and dissolved it in methyl alcohol, added 25 c.cm. of water and 7 c.cm. of decinormal solution of sodium hydrate. The injection had been in the gluteal muscles in all cases. With one exception no complications had arisen. The pain varied very markedly, some cases having to remain in bed for four days, whilst others had no pain on the following day, and would have liked to have got up and returned to work. One man complained of loss of the use of his legs on the third and fourth days after the injection, but this was transient and of no real importance. He spoke of the necessity of using pure methyl alcohol, and warned his audience against accepting what the chemist sold as pure methyl alcohol. He believed that the bad effects which had followed the injections had at times been due to the impurity of the methyl alcohol. In his experience the Wassermann reaction did not become negative until three or four weeks after the injection. In dealing with the possibility of optic atrophy, he had been unable to obtain authentic evidence of a single case, but, he added, a few days ago a colleague told him that a well-known physician had seen a case of this kind. Being well acquainted with the latter gentleman, he wrote to him to inquire about details, and in reply was informed that "X. must have misunderstood me. I have not seen a case." He thought it his duty to refer to any adverse cases that he had heard of, and wished to impress upon the meeting that he did not doubt that some of the members might have already heard of the cases he was going to refer to from some other source, and therefore they must not add them, without first making inquiry, to the list of fatal cases. He had heard directly of one case of advanced leukaemia in which death had taken place twelve days after the injection, but he was under the impression that not even the most biassed would attribute this to the injection. The second case was at Copenhagen, and the pathologist carrying out the *post-mortem* examination attributed this death to arsenic poisoning. He presumed that some people might possess an idiosyncrasy for dioxy-diamino-arseno-benzol, and be able to split off from it the arsenious ion, but he anticipated that this would be extremely rare. In support of this view he referred briefly to the existence of cases of cystinuria, pentosuria, and other errors of metabolism. He finished by stating that, although he personally believed that Professor Ehrlich had given to the world a drug which would exterminate one of the most serious diseases, that the first injection had taken place only eleven months ago, and that it would be quite logical to take the view that at present there was not sufficient evidence of the permanency of the cure of syphilis by means of "606."

Dr. G PERNET pleaded for a more individual method of treating syphilis with mercury. He advocated the employment of calomel, benzoate of mercury, etc., in selected cases. He considered that Ehrlich had performed a great service in introducing "606"; and proceeded to discuss the method of application.

Dr. DORRELL asked whether cases of choroiditis were benefited by "606."

To this Mr. MCDONAGH replied in the affirmative. After briefly touching on the various points referred to by those who took part in the discussion, Mr. McDonagh received a hearty vote of thanks from the meeting.

Reviews.

GYNAECOLOGY.

PROFESSOR STOECKEL'S textbook of gynaecological cystoscopy and urethroscopy[1] is a sign of the times. In it we see a specialization of specialities. First of all gynaecological surgery branched off from surgery, then genito-urinary surgery became another branch, and here we have evidence of this latter acting as a subdivision of a subdivision. Though we hold that specialization is necessary, particularly in those branches of medicinal art where the use of a delicate and special instrument has become essential, yet we believe that when a man specializes in any particular subject he only saves himself from becoming narrow-minded by taking a far wider view of the study of that particular organ than can the general surgeon who treats all organs. Thus the man who studies eyes should be an ophthalmologist, not an ophthalmic surgeon. The gynaecologist should appreciate that cystoscopic examination may help him as well as the general surgeon, and the urinary surgeon should study the bearing of his branch on gynaecological subjects as wel as upon the purely urinary surgery. But to devote a textbook of three hundred pages and twenty-five plates to this aspect seems to us an unnecessary undertaking and an excess of specialization. The book is written with a characteristic German thoroughness. After introductory chapters on the relation of urology to gynaecology, a complete account of the structure of all the instruments used in cystoscopy occupies some seventy-five pages. Then follows a description of the appearances of a normal bladder, and of anatomical variations from the normal. The same order then follows with regard to ureteral catheterization and segregation of the urine. Three chapters are then given up to the conditions found on examination which are purely urinary surgery. It is not till we come to page 215 that the object for which the book was written is apparent, where thirty pages are devoted to the changes found in the bladder in diseases special to women. There

[1] *Lehrbuch der gynäkologischen Cystoskopie und Urethroscopie.* Von Professor Dr. W. Stoeckel. Berlin: August Hirschwald. 1910 (Demy 4to, pp. 300. Taf. 25; Textfig. 107. M.16.)

remain chapters on female urethroscopy and on treatment that may be done by means of the cystoscope and urethroscope. The same plan is followed in the plates; out of twenty-five plates, twenty are taken up in demonstrating the way to pass these various instruments in the woman; while of the twenty-one cystoscopic fields shown in the remaining five plates, twelve are devoted to conditions seen in ordinary urinary work, and only nine refer to actual gynaecological conditions. From this epitome it will be seen that the part of the book referring especially to the subject on the title-page might be condensed into about fifty pages, while the rest of the work is a description chiefly of technique. Further, we cannot but think that twenty plates on the way to pass these instruments is unnecessary; for instance, six plates are given up to the passage of the ureteral catheter, each separate manipulation is indicated by a separate one, and the relation of the cystoscope to bladder, ureter, and pelvis is indicated at each alteration of position; such a series can only be necessary under a system where practical instruction in the use of the instruments under a skilled demonstrator is very limited.

DIET IN DIABETES.

We have had the opportunity recently of speaking favourably of the diet tables prepared by Drs. Hermann Schall and August Heisler, former assistants in the medical clinic at Marburg, and the book now before us on the practical dietetic treatment of diabetes is by the same authors.[2] It is meant to explain in detail how the practitioner may construct dietaries for his diabetic patients, so as to give definite quantities of albuminous, fatty and carbohydrate food of a certain total heat unit value. They profess that they do not write for specialists, but no one who had not plenty of time to devote to his patients could carry out the minute and careful observations they recommend. On their chart they record day by day the total excretion of ammonia, the presence or absence of aceto-acetic acid and acetone, the body weight, the amounts of urine, sugar and urea, the quantity of water drunk, the value of the food consumed in heat units and grams of fat, albumen, and carbohydrates. Few practitioners outside an institution, and not every one on a hospital staff in this country, could get these facts accurately recorded day by day, nor are we sure that they are necessary. The authors complain of the difficulty in Germany in feeding diabetic patients in general hospitals, as the kitchen department declines to prepare individual diets; they urge that there should be special institutions provided for their treatment by the authorities of the State Insurance Fund, to whom are due the sanatoriums for the treatment of tuberculosis. With our smaller hospitals and more elastic management we do not find this difficulty; but the dieting of diabetic patients in general wards is not satisfactory, as it is impossible to enforce dietetic restrictions if the patients are unwilling to adhere to them voluntarily. The authors recommend that a diabetic patient admitted to hospital should be put upon a test diet containing 50 grams of carbohydrate, 120 grams of albumen, and 170 grams of fat, giving a total of 2,200 heat units, in order to estimate the tolerance of the patient. This contains no bread, and the large amount of fat, chiefly in the form of butter, has to be taken with radishes, kidney beans, salad, and less than 1 oz. of potato! Their carbohydrate-free diet contains only 18 grams of carbohydrates; breakfast consists of coffee, diabetic milk, two softly-cooked eggs, and ½ oz. of beef suet; it contains no bread or potatoes, and the vegetables are sauerkraut, salad, pickled cucumbers, onions, and tomatoes; the diet can be modified by the addition of starch-free bread or biscuits, so as to be tolerable. The authors devote attention to the question of diabetic cookery, which they think is a subject which deserves more attention, and could be elaborated in the sanatoriums which they hope to see established in Germany. They would make these institutions places of instruction, not only for practitioners, but for the patients and their wives and daughters, who should be allowed to attend courses of diabetic cookery.

They hold that, intelligently constructed, a diabetic diet may be not only greatly improved by increasing the number of available dishes, but may cost relatively little. They condemn the still too frequent practice of removing all sugar-forming substances from the diet, and point out that the object of the practitioner should be to ascertain the limit of tolerance for each individual patient, and, having ascertained this, to give the patient a diet which shall leave a reasonable margin below the limit; this should be 10 or 15 grams. When sugar does not disappear on a carbohydrate-free diet, the albuminous food must be diminished; and, if this fails, it must be restricted to vegetable albumen and raw egg albumen. In estimating the assimilation of sugar, that formed from the albuminous food must be reckoned, and they take this to be equal to five times the total nitrogen estimated by Kjeldahl's method; but this takes too long, and, in our opinion, it suffices to estimate the urea, and take the amount of sugar derived from the abuminous food as equal to twice that amount; for example, if the urea is 600 grains, the total amount of sugar from the albuminous food may be taken to be 1,200 grains. Diabetic patients must not be allowed to eat an unlimited amount of albuminous food; in no case should it exceed 150 to 160 grams per day. In some cases the albumen sugar is tolerated worse than that derived from carbohydrates. Even fat, which is the great source of supply of heat to diabetics, must not be given in unlimited quantities, as not only may it upset digestion, but it favours acidosis. Carbohydrates are tolerated best in the following order—levulose (fruit sugar), lactose and starch, while cane sugar, grape sugar, and galactose are badly borne. The tolerance for milk sugar may vary with individuals, and it is suggested that its tolerance in severe cases may be due to the absence of lactase, no absorption taking place. The authors recommend alcohol, but exclude such alcoholic drinks as contain sugar. A diabetic can live on a relatively low diet, and when in bed a diet containing 1,800 to 2,000 heat units is sufficient; von Noorden's oatmeal cure is recommended somewhat dubiously, as they admit that it may cause a great increase in the amount of sugar.

While many of the directions given in this book could not be followed by a private practitioner, and the diets suggested are not altogether suited to English patients, yet it is useful because it tells the reader exactly how to carry out each investigation, and to calculate the diet; and although he may be content to follow a long way behind the authors' standard, he will find it quite easy, by following their directions, to determine for each case the optimum diet.

PHYSIOLOGY THE SERVANT OF MEDICINE.

Dr. Waller has published the Hitchcock Lectures, which he delivered at the University of California, in a volume entitled, *Physiology the Servant of Medicine*.[3] The relative toxicity of alcohol, ether, and chloroform forms the central subject of the lectures, and Dr. Waller's experiments and conclusions are given in an interesting and lucid style, and are admirably illustrated. The physiological equivalence, gauged by the sartorius muscle, is, chloroform 1, ether 8, alcohol 40 grams; gauged by the effects on blood pressure, 1, 8, 32.

"The instantly dangerous augmentation of percentage that can occur with chloroform, when the mask or towel is closely applied to the face, either to accelerate induction, or through simple inadvertence, for however short a time, during perhaps no more than two or three inspirations, has never been sufficiently realized. Under such conditions accidents have occurred, and are likely to occur again. One deep inspiration of, say, 2,000 c.cm. of air at, say, 5 per cent. of chloroform vapour, conveys into the lungs 100 c.cm. of chloroform vapour, and thence into the pulmonary blood (already more or less charged with

[2] *Die Praxis der Ernährungstherapie der Zuckerkrankheit.* Von Dr. Hermann Schall und Dr. August Heisler. Würzburg: Curt Kabitzsch, 1910. (Sup. roy. 8vo, pp. 87-150; 1 Kurventafel. M. 1.50.)

[3] *Physiology the Servant of Medicine.* Chloroform in the Laboratory and in the Hospital. Hitchcock Lectures for 1909. By A. D. Waller, M.D., LL.D., F.R.S. London: The University of London Press. Hodder and Stoughton. 1910. (Demy 8vo, pp. 151. 5s.)

chloroform) something like 50 c.cm. of chloroform vapour. Two or three deep inspirations of this sort will at once overcharge the blood with chloroform, and this overcharged blood may at once arrest the action of the heart. And a heart arrested under these conditions, overloaded with blood which is overcharged with chloroform, is not likely to beat again."

"The margin between anaesthesia and death is relatively narrow for chloroform, because chloroform is a most powerful drug, with which it is easy to overcharge the blood. The margin between anaesthesia and death is relatively broad for ether, because ether is a less powerful drug, with which, therefore, it is difficult to overcharge the blood."

These facts cannot be insisted on too often or too strongly. Dr. Waller describes his ingenious densimetric method of obtaining continuous administration of chloroform vapour and air between the limits of 1 and 2 per 100, an apparatus which has been used safely on hundreds of animals, and can easily be applied to hospital practice.

In addition to his work on anaesthetics, Dr. Waller recounts other of his interesting researches, such as the use of the galvanometer to determine the vitality of seeds. To report on a seed sample by the germination test takes ten to thirty days, whereas by this method the seeds only require a day or two before the test can be required.

"If I were a seed merchant, I should put up the dollars to send a capable young man or woman to this laboratory to learn this test, and I should expect to add to the dollar value of my business in due time."

BIO-CHEMISTRY.

WE have already twice noticed the issue of the parts of Professor OPPENHEIMER'S[4] ambitious work on bio-chemistry; the fasciculi have continued to appear rapidly, but as there is a lull in their issue just now, it appears a favourable moment to briefly indicate their contents. The idea was to complete the book in twenty parts, but the number has already reached twenty-four and the volumes are not yet finished. Anything of the nature of an extensive review of each of the articles would be impossible here; suffice it to say that all the numerous collaborators are men who have made their mark in bio-chemical research, and that all have endeavoured to maintain the high standard of excellence set them in the earlier fasciculi. The various *Lieferungen* may be taken in the order of their issue, although this is not necessarily the order in which they will ultimately be bound together. No. 14 continues the third volume, and deals with digestion and absorption. E. S. London concludes his article on digestion in the mouth and stomach, O. Prym deals with that in the small intestine, and A. Scheunert with that in the large intestine. The last-named author also contributes an article on the comparative physiology of digestion, and the subject of the chemistry of faeces is dealt with by Max Schreuer. The fasciculus concludes with the commencement of an article by Professor E. H. Starling on absorption. No. 15 treats of secretory glands and their secretions. The pancreas falls to the pen of S. Rosenberg, the liver to that of J. Wohlgemuth, the digestive glands of the invertebrates to F. N. Schulz, and the thyroid and adrenal to R. Hirsch. Nos. 16 and 17 appear together as a thick fasciculus, and contain portions of several of the volumes. The articles are briefly as follows: Integuments of the lower animals (F. N. Schulz); muscular tissue (O. v. Fürth); the central nervous system (G. Peritz); nerves and sense organs (K. Steindorff); the adrenal, thymus, and pituitary (R. Hirsch); the male generative organs (H. Gerhartz); the female organs (L. Zuntz); the mammary gland and milk (W. Völtz); the conclusion of Professor Starling's article on absorption; parenteral absorption (U. Friedemann); and digestion and absorption in invertebrates (E. Weinland). No. 18 takes us back to Volume ii, which has the bio-chemistry of cells as its subject. Martin Jacoby concludes his memoir on cellular metabolism; L. Michaelis deals with the staining reactions of cells; A. Kanitz with protoplasm as a chemical system and with blood corpuscles and spermatozoa. Hans Sachs starts an exhaustive article on antigens and antibodies. Nos. 19 and 20 contain the conclusion of Sachs's article, and the other articles in them deal with related subjects; toxins and antitoxins, by Carl Oppenheimer: the physical chemistry of the toxin-antitoxin union, by L. Michaelis; agglutination and haemolysis, by C. Landsteiner; cytotoxins, by the same author; precipitins, by L. Michaelis; bacterial agglutinins and precipitins, by P. T. Müller; and immunity against bacteria, a general article, by the same author. No. 21 treats of the chemistry of eggs (J. Paechtner); skin glands and tears (F. N. Schulz); the chemistry of the kidneys (L. Pincussohn); the activity of the kidneys (R. Magnus); and normal urine, by Alex. Ellinger. Nos. 22, 23, and 24 treat of a variety of subjects—the chemistry of the lungs, the chemistry of new growths, the urine, the relationship of mother and fetus, antiferments, milk curdling, and poison glands. The authors of these articles need not be enumerated; they are selected from those whose names have been already mentioned. These fasiculi also contain a useful article on energy exchange, which is written by Professor Tigerstedt, and a consideration of the metabolic conditions in various morbid states (fever, myxoedema, Addison's disease, etc.) concludes the fasisculus. From this rapid review of its contents we at once see the important character of the work, and must congratulate the editor and his colleagues on the excellence of their output.

This last addition to Longmans's series of Bio-chemical Monographs, *The Simple Carbohydrates and the Glucosides*,[5] will be very welcome to students and investigators. Dr. FRANKLAND ARMSTRONG has a name which indicates the chemical atmosphere in which he has been reared, but, what is more to the point, this, his first book, shows him to be worthy of it. The biological meaning of all the complex chemical changes which carbohydrates undergo is still far to seek, but it would be impossible to discover it without the chemical basis so ably expounded in the present volume. The bibliography provided enhances its value to the researcher.

[4] *Handbuch der Biochemie des Menschen und der Tiere.* Herausgegeben von Professor Carl Oppenheimer, Berlin. Lieferungen 14-24 Jena: G. Fischer. 1909-10. (Sup. roy. 8vo, pp. 626-783, vol. xii. 97-192. M. 5.)

[5] Monographs on Bio-chemistry. Edited by R. H. Aders Plimmer, D.Sc., and F. G. Hopkins, D.Sc., F.R.S. *The Simple Carbohydrates and the Glucosides.* By E. Frankland Armstrong, D.Sc., Ph.D. London, New York, Bombay, and Calcutta: Longmans, Green and Co. 1910. (Roy. 8vo, p. 122. 3s. 6d.)

THE *London Gazette* of October 18th announces that the King has been pleased to appoint William Gilmore Ellis, Esq., M.D.Brux. (Principal Civil Medical Officer), to be an Official Member of the Legislative Council of the Straits Settlements.

A COURSE of four lectures with experiments on tissue respiration will be delivered in the Physiological Laboratory, King's College, London, by Joseph Barcroft, M.A., F.R.S. on October 31st, November 14th, November 21st, and December 5th. The course is free to all students and members of King's College, London, to all internal students of the University of London, to all medical students in London, and to medical practitioners on presentation of their visiting cards.

THE Brighton and Sussex Medico Chirurgical Society has commenced this winter its six-hundredth session. The presidential address, delivered on October 6th by Dr. Hinds of Worthing, included the history of 17 cases of exophthalmic goitre which the speaker had watched for several years. They were held to show that a large majority of cases of Graves's disease got well spontaneously or as the result of medical treatment, so that Professor Kocher's recent dictum that it was the duty of practitioners to submit all cases of Graves's disease to operation at an early stage did not seem justified.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

A MEETING of the General Committee was held on Wednesday, October 12th, at 5 p.m., in the library of the Royal College of Physicians. Sir THOMAS BARLOW, Bart., M.D., took the chair.

The minutes of the last meeting were read and confirmed. Letters of regret for absence were read from the following: Mr. C. A. Ballance, M.V.O., Dr. J. W. Ballantyne, Mr. Gilbert Barling, Sir John Byers, M.D., Dr. Wm. Collier, Sir J. Halliday Croom, Mr. Clinton Dent, Dr. Gordon Dill, Mr. Frederic S. Eve, Dr. Ferrier, Dr. J. Magee Finny, Dr. G. A. Gibson, Professor J. Glaister, Dr. Dundas Grant, Mr. J. W. B. Hodsdon, Dr. W. Allan Jamieson, Sir Donald MacAlister, K.C.B., Professor Howard Marsh, Dr. J. Marnoch, Dr. Alexander Miles, Sir Geo. Hare Philipson, Professor R. W. Reid, Dr. J. Lloyd Roberts, Mr. A. W. Mayo Robson, Professor Saundby, Sir James Sawyer, Mr. W. G. Spencer, Professor W. Stirling, Mr. John Lynn Thomas, C.B., Sir W. J. Thompson, Professor Arthur Thomson, and Dr. Wethered.

Election of President.

On the report of the Advisory Board, which was appointed on February 7th, 1910,[1] it was moved by Dr. PAVY, and seconded by Dr. NORMAN MOORE, that Sir Thomas Barlow be asked to become President of the next International Medical Congress. This was carried unanimously, and Sir Thomas Barlow accepted the position.

Election of Treasurers.

Mr. H. T. BUTLIN proposed the next resolution of the Advisory Board:

> That there be two treasurers of the Congress, of whom one should be a layman of high financial position and the other an eminent medical man.

He said that he felt considerable doubt as to the advisability of appointing a lay treasurer. Dr. PASTEUR seconded the resolution for purposes of discussion. Dr. NORMAN MOORE spoke against the appointment of a lay treasurer, although quite willing to invite men of science who were not medical to take part in the work of the Congress.

Sir MALCOLM MORRIS said that the Advisory Board had had in mind the desirability of inviting laymen to bear some part of the expense of the Congress. There was no doubt that International Congresses were of enormous benefit to the public of the countries where they were held, and in other countries were generally supported by public money.

Dr. KNOWSLEY SIBLEY proposed:

> That there should be two treasurers to the Congress, and that they should both be medical men.

Dr. SAMUEL WEST seconded the amendment, which was carried.

Mr. BUTLIN then proposed that one of the treasurers be Mr. G. H. Makins, C.B., F.R.C.S., and in doing so alluded to the work performed by Mr. Makins at the previous International Congress held in London. Dr. PAVY seconded this proposal, which was unanimously carried; and it was agreed to leave the appointment of a second treasurer to the Executive Committee.

Election of Honorary General Secretary.

Sir RICHARD DOUGLAS POWELL proposed, Dr. HALE WHITE seconded, and it was carried, that Dr. Herringham be elected Honorary General Secretary of the Congress.

Dr. HERRINGHAM said that he could not accept that position without publicly expressing his great indebtedness to Mr. D'Arcy Power, who had hitherto been secretary of the national and general committees, for his extreme courtesy and patience in explaining the details and mechanism of the work. He hoped that Mr. Power, who, he supposed, would be promoted to the Executive Committee, would continue to afford him similar assistance.

Dr. PAVY wished to add his testimony to the great amount of labour which Mr. D'Arcy Power had already for many years given to the work of the committee

[1] BRITISH MEDICAL JOURNAL, February 12th, 1910.

Organizing Committee.

Sir HENRY MORRIS proposed:

> That an Organizing Committee be formed which shall select a small executive committee and shall have power to add to its number.

Dr. NORMAN MOORE seconded. The following gentlemen were appointed on the Organizing Committee: The officers of the Congress, Dr. T. D. Acland, Sir Clifford Allbutt, K.C.B., Sir William Allchin, Sir Charles Ball, Mr. C. A. Ballance, M.V.O., Dr. Freeland Barbour, Professor H. G. Barling, Sir James Barr, Dr. A. G. Barrs, Sir William Bennett, K.C.V.O., Mr. G. A. Berry, Mr. L. A. Bidwell, Mr. A. A. Bowlby, C.M.G., Mr. Stanley Boyd, Dr. J. Rose Bradford, Surgeon-General A. M. Branfoot, C.I.E., Dr. Byrom Bramwell, Sir James Crichton-Browne, Dr. Alexander Bruce, Dr. Mitchell Bruce, Sir Lauder Brunton, Dr. Dudley Buxton, Mr. H. T. Butlin, P.R.C.S., Sir John Byers, Professor F. M. Caird, Sir H. Cameron, Dr. R. Caton, Sir Francis Champneys, Bart., Sir Havelock Charles, K.C.V.O., Sir Watson Cheyne, Bart., C.B., Sir William Church, Bart., K.C.B., Mr. Andrew Clark, Professor Michell Clarke, Dr. T. C. Clouston, Professor James Craig, Dr. P. J. Cremen, Sir Anderson Critchett, Bart., C.V.O., Sir Halliday Croom, Dr. H. Davy, Mr. Clinton Dent, Dr. J. Gordon Dill, Sir Dyce Duckworth, Bart., Professor Wm. Dyson, Mr. F. S. Eve, Mr. Hurry Fenwick, Dr. Ferrier, Professor D. W. Finlay, Dr. Magee Finny, Dr. J. Kingston Fowler, Sir Thomas Fraser, Professor S. Gemmell, Dr. G. A. Gibson, Professor T. R. Glynn, Mr. R. J. Godlee, Dr. Edwin Goodall, Mr. A. Pearce Gould, Dr. W. S. A. Griffith, Director-General W. L. Gubbins, C.B., M.V.O., Dr. F. W. Hewitt, M.V.O., Dr. G. E. Herman, Mr. J. W. B. Hodson, Sir Victor Horsley, The President of the Royal College of Physicians of Ireland, Dr. W. A. Jamieson, Dr. Robert Jones, Sir Alfred Keogh, K.C.B., Dr. Macnaughton-Jones, Dr. Percy Kidd, Sir Francis Laking, Bart., G.C.V.O., K.C.B., Mr. Ernest Lane, Dr. H. A. Latimer, Professor J. A. Lindsay, Professor James Little, Professor H. Littlejohn, Director-General C. P. Lukis, Sir Donald MacAlister, K.C.B., Sir William Macewen, Professor Dixon Mann, Sir Patrick Manson, K.C.M.G., Professor Howard Marsh, Dr. C. J. Martin, Dr. Charles Mercier, Dr. Alex. Miles, Sir J. W. Moore, Dr. Norman Moore, Sir Henry Morris, Bart., Sir Malcolm Morris, K.C.V.O., Dr. F. W. Mott, Mr. B. G. A. Moynihan, Professor R. Muir, Sir Shirley Murphy, Sir T. Myles, Professor J. Musgrove, Dr. A. Newsholme, Sir Christopher Nixon, Bart., Sir Thomas Oliver, Professor W. Osler, Sir Isambard Owen, Dr. F. W. Pavy, Dr. R. W. Philip, Sir George Hare Philipson, Inspector-General Sir James Porter, K.C.B., M.V.O., Sir R. Douglas Powell, Bart., K.C.V.O., Mr. D'Arcy Power, Sir W. H. Power, K.C.B., Mr. J. H. Pringle, Professor J. P. Pye, Professor R. J. Pye-Smith, Dr. Guthrie Rankin, Sir James Reid, Bart., G.C.V.O., K.C.B., Dr. C. J. Renshaw, Mr. J. Scott Riddell, M.V.O., Mr. A. W. Mayo Robson, Dr. H. D. Rolleston, Ronald Ross, Esq., C.B., Dr. Amand Routh, Dr. William Russell, Dr. F. M. Sandwith, Professor R. Saundby, Dr. G. H. Savage, Professor E. A. Schäfer, Dr. S. J. Sharkey, Professor T. Sinclair, Dr. Percy Smith, Dr. Walter Smith, Sir William Smyly, Dr. Dr. Herbert Spencer, Dr. Squire Sprigge, Dr. J. E. Squire, C.B., Professor A. M. Stalker, Professor E. H. Starling, Mr. H. J. Stiles, Professor J. Swain, Sir Henry Swanzy, Mr. Charters Symonds, Dr. F. Taylor, Professor G. D. Thane, Professor Alexis Thomson, Professor Arthur Thomson, Professor W. Thorburn, Sir Frederick Treves, Bart., G.C.V.O., Dr. Logan Turner, Sir John Tweedy, Dr. J. C. Uhthoff, Dr. C. T. Vachell, Dr. Norman Walker, David Wallace, Esq., C.M.G., Dr. W. Hale White, Dr. B. A. Whitelegge, Sir William Whitla, Dr. Dawson Williams, Sir John Williams, Bart., K.C.V.O., President Bertram Windle.

Distinguished Laymen and the Congress.

Sir DYCE DUCKWORTH then proposed:

> That it is advisable that distinguished laymen be invited become members of the Congress.

This was seconded by Sir MALCOLM MORRIS.

After some discussion, in which Sir ANDERSON CRITCHETT,

Dr. Pasteur, Mr. Makins, Dr. Squire, Mr. Pearce Gould, Mr. Armit, and Dr. Bashford joined, it was resolved:

That it is advisable that distinguished laymen be invited to associate themselves with the work of the Congress, and that such invitations be in the hands of the Executive Committee.

Date of the Congress.

The date of the Congress led to considerable discussion. The date proposed by the Advisory Board was from July 29th to August 6th, 1913, and a resolution to this effect was formally moved by Mr. Makins. He said, however, that the choice of a date was extremely difficult for several reasons, and he hoped the General Committee would carefully consider the matter before coming to any resolution. On the one hand, the Congress could not be earlier than the date proposed, as our German colleagues could not attend if it were, and, indeed, the date proposed was earlier than that which Dr. Pavy, after conference with the German representatives, had originally proposed in the Advisory Committee; secondly, Bank Holiday came in the middle of the proposed meeting, which might possibly lead to considerable inconvenience; and a third difficulty was that the proposed date clashed with the meeting of the British Medical Association. He therefore moved the resolution rather to open the subject for discussion than to support strongly the date originally fixed. Dr. Norman Moore seconded the proposal.

Mr. Butlin said that he had been present when the date had been fixed by the Advisory Board, and had himself not realized that the British Medical Association made it so regular a custom to meet at that date, as he had since found was the case. He thought it would be a pity if some arrangement could not be come to with the Association.

Sir Malcolm Morris pointed out that if, as was customary, royal patronage was sought for the Congress, the date of the meeting could not be settled without consulting the wishes of royalty.

Several speakers emphasized the extreme undesirability of creating ill-will in a matter of this kind, and said that it was of the utmost importance that the spirit in which the Congress was to be got up should not be impaired by any feeling of hostility.

It was officially resolved, on the motion of Sir Henry Morris, that this matter be not decided that day, but that it be left in the hands of the President and of the executive officers to settle the date, and that they be at liberty to receive any communications from, and to confer with, the officers of the British Medical Association.

THE INTERNATIONAL CANCER CONFERENCE.

The second International Conference on Cancer was held in Paris from October 1st to 5th, under the patronage of the President of the French Republic. The opening ceremony attracted a large audience, presided over by M. Doumergue, Minister of Public Instruction, who was supported on the platform by His Excellency von Czerny, President of the International Association for Cancer Research; Professor Bouchard, President of the Association Française pour l'Etude du Cancer; Professor Pierre Marie, Vice-President; together with Professor Delbet and Dr. Ledoux-Lebard, its Secretaries, as well as by Professor George Meyer, who is the Secretary of the International Association and of the German Committee in Berlin. In addition, there were present on the platform, at the invitation of the French Foreign Office, the official representatives of some twenty foreign Governments. A gratifying feature was the fact that the official delegates of European Governments were, in several cases, active investigators whose scientific achievements in the study of cancer have obtained for them an international reputation. The countries represented, in addition to France, comprised Great Britain, the German Empire, Würtemburg, Bavaria, Austria-Hungary, Denmark, Sweden, Russia, Greece, the United States, Japan, Argentina, Bolivia, Brazil, Chili, China, Peru, Luxembourg, Mexico, Turkey, and Persia. Great Britain was represented by the Director of the Imperial Cancer Research Fund.

Welcome to Delegates.

M. Doumergue, in opening the Conference, emphasized the importance of the disease it had been called together to discuss; statistics showed the extent of its ravages, and proved that it was the cause of deaths ascribed in earlier times to other diseases. He welcomed the delegates from twenty-two foreign countries, mentioned the work of Czerny, of Ehrlich, and that of the Imperial Cancer Research Fund, directed by Dr. Bashford with so much zeal and science, and whose presence M. Doumergue stated was of good augury for the success of the work of the Conference and an honour and a pleasure to them all. M. Doumergue then outlined the history of organized cancer investigation in France, alluded to efforts made by Verneuil and Duplay in 1892, and to Poirier's initiative in 1906 carried through successfully, after his death, by Delbet. M. Doumergue instanced as a characteristic of our generation the reunion in spontaneous congresses of the representatives of various nations for the purpose of relieving physical, social, and moral miseries; he enlarged upon the significance of the unanimity of these humanitarian endeavours, extolled the advantages accruing from exchange of views, and from the dissemination of discoveries, and pointed to the futility of isolation. In his opinion the publicity obtained for the proceedings of such conferences was bound to bear fruit in a profitable collaboration between the medical profession, the public in general, and those actually suffering from cancer.

The President of the Conference, Professor von Czerny, followed. He thanked the French Government, the French Association, and the Medical Faculty of the University of Paris for the invitation to hold the Conference in Paris. He stated his opinion that cancer was increasing, that there were "cancer houses" and "cancer districts," and that a parasitic etiology appeared probable. Having alluded to the association of cancer with irritants and trades, v. Czerny referred to the possibilities of surgical treatment, both alone, and when combined with electro-therapeutics. Professor Landouzy spoke on behalf of the Faculty of Medicine, and Professor Bouchard as president of the French Association. M. Doumergue then called upon the foreign delegates in turn, commencing with the British representative. Dr. Bashford said that to His late Majesty King Edward must be assigned a large share in awakening interest in Great Britain, in its colonies and dependencies, as to the great importance of solving the problems of cancer, and to King George must be assigned great credit for maintaining and stimulating that interest. Cancer research in England enjoyed, in consequence, a very large measure of official and public support, and Dr. Bashford's presence was a sign of the sincerity of British sympathy with their efforts.

In Great Britain they had not a society or committee modelled upon the lines of those affiliated with the International Association, and Dr. Bashford explained that, as he was there as the representative of the British Government at the invitation of the French Foreign Office, therefore he was not present as an actual member of the International Association, but rather as a guest of the French Association. As was well known to his fellow delegates, Great Britain had hitherto held aloof from membership of the International Association. That abstention implied no unwillingness to collaborate, practically, with other nations; on the contrary, it was common knowledge how materially British investigators had assisted their foreign colleagues. The abstention of Great Britain from affiliation with the International Association had no political significance whatsoever, no matter what might have been inferred to the contrary; it was based upon purely scientific grounds only. The presence of an official representative of the British Government was due to the importance attached in all quarters, from the highest to the lowest, to the study of cancer in England, and was, on the one hand, an official recognition of the success with which it had been organized in Great Britain by a number of institutions in addition to the Imperial Cancer Research Fund, of which he (Dr. Bashford) had the privilege to be the Director. On the other hand, the presence of an official representative of the British Government was evidence of the interest of all in England in the proceedings of the International Association, and, in particular, in the proceedings of this Second International Conference. Although not at present a member of the Inter-

ational Association—a fact which he felt bound to nphasize—Dr. Bashford stated that he esteemed it a gh honour, a privilege, and a pleasure to be the guest of e French Association; in previous years he had enter- ined the same sentiments when he had been the guest the German Association in Berlin and in Heidelberg. Although in England they inclined to the belief that the esent was rather a time for work—much work—in the pe of advancing knowledge of a disease of which they ew practically nothing, and could do little or nothing prevent, rather than a time for the holding of con- esses, which they thought were premature, since they d nothing revolutionary to discuss or to agree upon, ill such a conference as the present might fulfil—indeed, s presence proved that he hoped it would fulfil—a useful rpose.

The other delegates followed. The opening pro- edings occupied the entire forenoon of Wednesday, tober 1st, and concluded with the reports of Professor eorge Meyer of Berlin and of Professor Delbet of Paris, e official secretaries of the Conference. Professor MEYER counted the number of committees which had been ganized in different countries after the plan of the rman Cancer Committee founded in 1900, and ex- ained his conceptions of their relations to the Inter- tional Association—its most important development— th which many of those committees are affiliated. ofessor DELBET protested in courageous terms against e extent to which quackery was permitted to debar ncer sufferers from the only rational treatment available the present time—namely, a surgical operation, which, performed early enough, gave good hopes of lasting re.

Scientific Proceedings.

The scientific proceedings were taken in six sections, hich met consecutively: (1) Histology and Histological iagnosis; (2) Statistics; (3) Clinical Diagnosis;) Treatment; (5) Etiology and Experimental Patho- nesis; (6) Comparative Pathology. As the outcome of proposal made by Professor VON HANSEMANN of Berlin, d supported by Professor DELBET at the meeting of ction (1), the Conference appointed a committee to aw up an international nomenclature of new growths. his was the only resolution adopted by the Conference.

The discussion on statistics and statistical methods vealed wide divergences of opinion, the methods and sults expounded by Professor GEORGE MEYER of Berlin eeting with such adverse criticism that no progress peared to be made towards the compilation of com- rable international cancer statistics advocated by him- lf and Dr. LEDOUX-LEBARD.

Dr. OTTO of Copenhagen gave an interesting account of e duration of malignant disease of the digestive tract, monstrating the shortness of the period between the st symptoms and death in 196 cases, and concluding at the first symptoms appeared and the clinical agnoses were made subsequent to a long latent period, which the duration depended on anatomical and other ctors.

The papers contributed to Section 3 on clinical diagnosis PALTAUF of Vienna, WEINBERG of Paris, and on the emistry of cancer by BEEBE of New York, illustrated e impotence, as yet, of biochemical and serological pro- dures to replace older methods of diagnosis. Several eakers expounded their views on the necessity of lightening the public as to the early symptoms of ncer, one speaker going so far as to claim that his pro- ganda during the past ten years had resulted in many omen seeking advice for cancer of the uterus at an rlier stage than formerly, with the result that a marked provement had taken place in the results of operation. Von CZERNY laid emphasis on the fact that the education the medical profession was just as essential to the early agnosis of cancer; he instanced cases of the imperfect amination of patients for its presence. An unpleasant ature of this direct appeal to public opinion was the tribution of a number of competing brochures drawn up different authors, some of whom set forth their special alifications and their membership of cancer committees. advisable at all, it seemed certain that such brochures ould be issued anonymously to the public, after careful mpilation and scrutiny, by a responsible body of men, and not by individuals whose practice may benefit thereby.

Treatment.

The section on treatment listened to some very able papers notably by Professors DELBET, KORTEWEG, ROVSING, MARIE, VIDAL, and RECAMIER. They were followed by lively and interesting discussions turning mainly upon the value of such adjuvants to surgical treatment as fulguration, *x* rays, radium, Coley's fluid, etc. SEGOND and others had little to say in favour of fulguration, which was defended with some heat by KEATING-HART. The possibilities of radium were very fully discussed without any definite conclusion being arrived at; it seemed that few of the speakers were prepared to employ it, without previous resort to surgery, in other than small superficial lesions. The general impression conveyed by the discussion was that, although many speakers had employed radium, they had in their possession quantities far too small to enable them to resolve the apparent contraindications they discussed!

Immunity.

In the fifth section V. DUNGERN of Heidelberg gave a lucid and impartial account of the immunity reactions to transplanted cancer; he disagreed with the pessimistic conclusions arrived at by Ehrlich as to the existence of "atreptic" immunity, and associated himself with the more optimistic conclusions of the Imperial Cancer Research Fund, to the effect that the phenomena in question were due to active immunity. Dr. HARVEY GAYLORD, of Buffalo, brought forward evidence which he thought showed also the existence of a passive immunity having therapeutic possibilities. Dr. FICHERA described observations in which he had applied the results obtained by immunizing animals with normal tissues to the treatment of cancer in man. He claimed to have caused the disappearance or reduction in size of true malignant new growths in man by repeatedly inoculating human placenta and human fetal tissues.

Cancer Carriers.

Dr. BORREL gave an account of his well-known views on the possibility of cestodes and *Demodex* fulfilling the part of intermediate hosts or carriers of a hypothetical cancer virus. Dr. Borrel's guarded statements called forth a vigorous criticism on the part of DURANTE. STICKER described a village in which he stated 50 per cent. of the deaths had been due to cancer of the stomach during eighteen years.

Cancer in Animals.

In the section of comparative pathology PETIT and Miss PLEHN described a number of tumours in animals; V. HANSEMANN and BORST pointed out that certain fish tumours, admitted by Miss Plehn to be due to myxobolus infection, could throw no light upon cancer.

Dr. HARVEY GAYLORD described epidemics of enlarged thyroid in trout which he appeared inclined to regard as epidemics of cancer of that organ.

Professor C. O. JENSEN described certain tumours occurring on the sugar and other beets; no causative parasites were found in them. These tumours he had been able to transplant into other beets, and, from their general biological behaviour, he was inclined to assign to them an analogous position in the vegetable kingdom to that occupied by cancer in the animal kingdom.

Throughout the whole scientific proceedings it was evident that there were two distinct schools of thought, representing respectively those who cautiously, and perhaps more vaguely than in the past, believe in a parasitic etiology, and those who regard such an etiology as quite incompatible with the natural history of cancer. Discussion on these lines was even more animated in the private intercourse between the delegates, as, indeed, it was on many other topics arising out of the communications to the Conference, and on the method of its organization, and its relations to the International Association.

Entertainments.

The French Association pour l'Etude du Cancer must be heartily congratulated on carrying through a very difficult task with *éclat*. The hospitality extended to the delegates was of the most lavish and enjoyable nature. Dr. Henri de Rothschild and Baroness de Rothschild

entertained all the delegates at their Chateau l'Abbaye des Valx-de-Cernay, whither they were conveyed by special train on Sunday, October 2nd. His Excellency von Czerny entertained at the Palais d'Orsay in true Parisian and most attractive style. Professor Bouchard conveyed the delegates to Chantilly, where they were conducted over the treasures by the keeper of the famous chateau, and invited by Professor Bouchard to one of those déjeuners for which he is renowned, even in France. The Paris Municipality held a reception in the Hôtel de Ville, and much private hospitality was shown by the officers and members of the French Association.

Closing Meeting.

The closing phases of the Conference took place at the official dinner at the Palais d'Orsay, presided over by Professor von CZERNY and attended by all the officials, official delegates, and most of the members of the Conference. Having thanked in French all who had contributed to the success of the Conference, and especially its Paris hosts, von Czerny continued in German and made a direct appeal to Dr. Bashford, than whom there had been no more diligent attendant at their proceedings, to use his influence to obtain the adhesion of Great Britain to the International Association. He praised the organization of cancer research in England and its colonies, and placed a high value upon the work the Imperial Cancer Research Fund had performed and was accomplishing, saying that the International Association had need of Dr. Bashford's support, experience, and assistance. As President he expressed his hope that the objections which hitherto had stood in the way would be removed during the three years elapsing before the Conference again met in Brussels or before a preliminary meeting was held in Dresden next year; and in feeling words appealed to Dr. Bashford as his personal friend to be present with them then, not only, he hoped, again as a Government delegate and a guest, but also as a member.

In reply, Dr. BASHFORD, speaking in English, spoke of the interest with which he had followed the proceedings of the Conference and assured his hearers that his presence attested to the fact that in England they had no objection, in principle, to such conferences, provided that they fulfilled a useful purpose, nor had they the least objection to an international association for the study of cancer, provided its international character was assured, and it was the outward expression of a workable, practicable scheme of collaboration. Speaking as the Director of the Imperial Cancer Research Fund, Dr. Bashford said that he need hardly remind them how substantially that institution had endeavoured to support foreign workers, great and small, and in many countries, by distribution of material and other means, as well as by receiving them as guests in its laboratories. This had seemed to them international collaboration of a practical and useful kind. Addressing the more prominent German delegates by name, and speaking in German, Dr. Bashford assured them how highly he valued the foreign membership of the German Committee and his intercourse with its members. Having expressed the honour and the pleasure it had been to him to be again associated in Paris with his German colleagues, he congratulated von Czerny on the fruitful result of ideas first mooted at the opening of his Cancer Institute in Heidelberg in 1906, from which had sprung this second, larger and successful international conference. Speaking in French, Dr. Bashford thanked the President, officials, and members of the French Association for their magnificent hospitality.

Graf v. HUTTEN-SCHAPZI made a most felicitous speech in French on behalf of his German colleagues, and Dr. HARVEY GAYLORD spoke on behalf of the American representatives, in the absence of the official representative of the United States Government; he also appealed to the British delegate and assured him of American backing. After the other delegates had spoken the company separated. Shortly before they did so the death of von Leyden, the founder of the German Cancer Committee, was whispered round the tables.

Great credit is due to the organizing ability and to the tact of Professor Delbet and Dr. Ledoux-Lebard for the success of a conference bringing together, in intimate intercourse, strong men of varied nationality, holding strong and conflicting opinions on a subject regarding which they were agreed on one point only—the pressing need for the solution of problems which almost each delegate stated in a different formulary.

LITERARY NOTES.

ON October 7th *Public Opinion* entered on its fiftieth year of journalistic existence. In honour of the occasion it has issued a special number containing interesting contributions by Sir Oliver Lodge, Mr. Walter Crane, Dr. J. Holland Rose, and others. The writers mainly deal with the events and the development of knowledge in the past half-century.

The practice of sending their patients to go through a course of treatment at some well known Continental spa seems to be on the increase among doctors in every part of Europe, and France offers a wider choice of places for this purpose than almost any other country. But the habitués of Vichy, Cauterets, and Plombières are probably quite unaware of the fact that the "cure" to which they return summer after summer was as fashionable in the later days of the Roman Empire as it is now in the opening years of the twentieth century. The September number of *L'Hygiène* contains an interesting account of the French spas by Francis Chevassu, in which their history is traced from its commencement during the time of the Roman occupation of Gaul down to the present day. It is hardly too much to say that nearly every one of the health resorts now existing in France owes its origin to Roman colonists who discovered the health-giving properties of the various springs, and who appear to have visited them assiduously to drink the water. The *villes d'eaux* thus created by the conquering race flourished exceedingly until the advent of the Franks, "simple people," says M. Chevassu, "who, knowing nothing about the luxury of the table, were preserved from the ills of a sedentary life through their habitual state of constant warfare." The stalwart followers of Clovis or Pharamond had neither the need nor the inclination to restore their health by the drinking of mineral waters, and the spas so flourishing at an earlier period, fell into disuse and obscurity. But with the advance of civilization valetudinarianism reappeared upon the scene; and 500 years after the Frankish invasion of Gaul the spas once more began to be thronged with invalids. Their popularity once recovered, seems never again to have deserted them but it was not until the sixteenth century that they became really fashionable. We read of Montaigne visiting Plombières, whilst Forges, some years later, counted Louis XIII and Anne of Austria amongst its patients. The latter place, by the way, was regarded by the Bourbons as peculiarly efficacious to members of the family, and tradition says that Louis XIV owed his existence to a visit paid there by his childless mother. During the reign of the "Roi Soleil" the popularity of the spas increased enormously. Madame de Sévigné's delightful letters contain many references to her yearly visits to Vichy, and Boileau spent many weeks at Bourbon-l'Archambault in the hopes of curing some throat trouble with which he was afflicted. The unfortunate man was kept on a diet of asses' milk for five weeks and then copiously bled and purged before he was allowed to begin his treatment proper and take the waters daily. It is sad to learn that, after all, the waters did him no good. This severity was by no means peculiar to Bourbon-l'Archambault; the régime at every "cure" was unpleasantly strict. At Vichy, for instance, the patients were obliged to rise at three in the morning; at Spa they were roused at four; whilst at Forges they were allowed to sleep till five. At this last-named place members of the royal family appear to have enjoyed the privilege of an extra hour's repose, for we hear that Mademoiselle de Montpensier's rest entitled her to remain undisturbed until six o'clock every morning. In addition to the discomfort of early rising, the patients were strictly dieted, beef, pork, pastry, fruit, peas, and cheese being amongst the prohibited articles of food. This dieting, however, was in the course of time abandoned, owing in great part to the scoffs of the encyclopaedists, who, moreover, did much to weaken the prestige of the spas by their outspoken comments upon the futility of the treatment and the ignorance of the doctors.

All the rules and regulations had not prevented the *villes d'eaux* from becoming, in the majority of cases, mere pleasure resorts, and during the second half of the eighteenth century popular belief in their use and efficacy diminished almost to vanishing point. Another interesting article in the same number of *L'Hygiène* which should delight every animal lover is a long and charmingly written account of "Les animaux domestiques," by M. Henri Benjamin; whilst Dr. F. Marot, Dr. Georges Luys, and Dr. Maurice De Fleury have respectively contributed useful and instructive articles upon "La prophylaxie de la scarlatine," "La gravelle," and "L'Hygiène et la vie."

The midsummer address to the Abernethian Society, which this year was delivered by Dr. Norman Moore, has just been published in the September number of the *St. Bartholomew's Hospital Journal*, under the title of "St. Bartholomew's Hospital and Dr. Caius." In it Dr. Moore has given a very interesting account of the close connexion which once existed between that ancient hospital and the famous physician. For many years, in fact, during the whole of the latter's London career, these relations seem to have been primarily those of landlord and tenant, as from the year 1551 till his death in 1573 Caius lived just within the Smithfield gate of the hospital in an old house which he rented from the hospital authorities, and for which, as we learn from an old rent roll of "Bart.'s" he paid £4 a year. Here several of his books were written, and here in 1556 he gave the first feast of the College of Physicians, of which he had been elected president a year before. He had previously, at his own expense, caused the college statutes to be handsomely bound with silver, and on this occasion he presented his colleagues with a silver cadeuceus. It is interesting to learn that this same cadeuceus has been in use ever since, and that it is Caius's gift which is set before the President at all the meetings of the college. Caius's life was not a very eventful one. Born at Norwich 400 years ago, he went to Gonville Hall, Cambridge, in 1529, and four years later was elected a Fellow of his college. He seems at this period to have devoted most of his attention to the study of Greek, of which he remained passionately fond during the whole course of his life, and it was not until the year 1539 that he entered the University of Padua as a medical student. Here he had the good fortune to study anatomy under the great Vesalius, in whose house he lived for eight months. His medical studies were made under John Baptist Montana, of Verona, to whom, Dr. Moore suggests, Caius may have been attracted by the enthusiasm of the Veronese physician for Greek literature. Caius himself, during his sojourn in Italy, examined every Greek medical manuscript to which he could gain access; and though he graduated at Padua in 1541, he did not return home for another three years. Once back in England and settled under the shadow of the great hospital of St. Bartholomew, his life seems to have passed very peacefully and successfully; to use Dr. Moore's words, in "prolonged private study and public service." He became a Fellow of the College of Physicians in 1547, and President in 1555; and he was also elected Master of his former college at Cambridge which he refounded and endowed, and which now bears his name. He died at St. Bartholomew's on July 29th, 1573, and was buried in the chapel of his own college at Cambridge. He left a legacy to the hospital which had been his home for so many years. Caius seems to have been the best type of sixteenth century physician, and was a man of most varied tastes and pursuits. Besides his translations of several books of Galen, and his work on the pronunciation of ancient Greek, he wrote a book on his own university and its antiquity, of which he was very proud. It was in the year 1552 that his treatise on the epidemic of sweating sickness, then prevalent in England, appeared. One book, which was written in Latin, was intended solely for members of his own profession, whilst another was published in English for the instruction of the general public. This work is the first of which the materials are drawn entirely from the author's own observations, and for that reason is greatly in advance of the medical literature of the time. Caius was also fond of natural history, and contributed two books on British dogs to a *History of Animals* which his friend, Conrad Gessner, the naturalist, wished to publish. Gessner died before his project could be carried out, and Caius's two volumes were translated into English and published separately. Dr. Moore quotes several extracts from them as fair specimens of Caius's style. His description "of the Dogge called Turnespete, in Latine 'Verunersator,'" is well worth quoting. He writes:

> There is comprehended, under the curres of the coursest kinde, a certaine dogge in kytchen seruice excellent. For when any meate is to bee roasted they go into a wheele which they turning rounde about with the waight of their bodies, so diligently looke to their businesse that no drudge nor skullion can doe the feate more cunningly. Whom the popular vort hereupon call Turnespets, being the last of all those which wee haue first mencioned.

SCIENCE NOTES.

The metamorphosis of insects must be accounted amongst the most marvellous phenomena of nature. The mysterious process which results in the transformation of the worm-like larva into the perfect imago has baffled explanation, and it is only of late that we have obtained satisfactory knowledge of the changes that actually take place. Within the past year or two a considerable number of papers have appeared dealing with the histology and bio-chemistry of the various phases of larval and pupal life. One of the most exhaustive accounts was published not long since by Charles Pérez in the *Archives de Zoölogie expérimentale et générale*. It is a lengthy monograph of nearly 300 pages, and it deals exclusively with the common "blue-bottle" (*Calliphora erythrocephala*); yet, in spite of its great length, it is not complete, for the heart and nervous system have been omitted from consideration. Beginning with the muscles Pérez shows that they disappear by a typical process of phagocytic absorption, the phagocytes having their origin in the blood cells. The phagocytes make their way through the sarcolemma of the intact muscles, separate and break down the fibres and proceed to absorb and digest the débris. They thus become enormously distended, but they still retain their amoeboid movement and are capable of further action. Swarms of them invade the other organs and tissues and continue their devastating work. This general process of phagocytosis presents a great variety of aspects, some organs, like the muscles, being attacked while still unimpaired, and others, like the epithelium, only after a preliminary process of degeneration. The phagocytes themselves, too, show a wide diversity of appearance, but their fate is a common one. They gradually digest the particles which they have absorbed, and eventually become degenerated within the newly formed tissues. They never, as has been affirmed, take any part in the formation of new tissues. It is needless to say that the whole larval body is not subjected to this phagocytic process; some elements must remain to give rise to the tissues of the imago, and, generally speaking, it is only the structures most specially adapted to the needs of the larvae that completely disappear. The corresponding organs in the imago arise *de novo* from embryonic cells which have remained latent during larval life. They develop by active multiplication, accompanied, at the same time, by somewhat numerous abortions. Although these embryonic cells are sister cells of those which gave rise to the tissues of the larva, their descendants differ from the corresponding larval cells in their smaller size and more perfect development. Besides these destructive and constructive processes going on alongside each other, there is a third process of what might be termed "reconstruction," that is to say, certain of the less specialized larval structures are remodelled so as to fit them for the use of the imago. It is in this reconstructive process that some of the most interesting histological phenomena are to be observed. In the case of the Malpighian tubules, for instance, the cells change into a pupal condition and then return more or less to their larval state as development proceeds. The cells of the rectal papillae, on the other hand, lose a part of their substance in the transition and appear like new cells in the imago. From these observations Pérez ventures to express the opinion that the phenomena of reconstruction, which are comparatively isolated occurrences in the complete metamorphosis of the fly, probably have a preponderating influence in insects with less complete metamorphosis.

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THE EXPERIMENTAL METHOD IN DIETETICS.

ALTHOUGH the human race has been for ages making experiments in diet, and although much may be learnt by wide observation and comparison of the habits of mankind, yet it cannot be doubted that new facts may be discovered and hypotheses tested by the aid of the experimental method. In fact, most valuable data have been accumulated by these means, and, although the inferences from them must be drawn with care, and their application to human beings can be verified only by actual experience, yet we do not doubt that useful suggestions may be obtained and light thrown upon many obscure questions by laboratory investigations. The Government of the United States has taken a most enlightened view of its duty in promoting research, and in particular the work that has been done under its auspices has been of great value in the study of foodstuffs and of agriculture. One of its recent publications has been issued by the Hygienic Laboratory, and is a study of the effects of various diets upon the resistance of animals to certain poisons by the professor of pharmacology, Dr. Reid Hunt.

It is well known that a well-constructed diet containing its due proportion of protein, fat and carbohydrate, of sufficient amount and with a proper surplus of heat units, sometimes fails to maintain growth or body weight, and this failure has been attributed to the absence of certain amino acids. It is probable that such constituents of food as lecithin and iodine, although present in only minute quantities, exert an altogether disproportionate influence upon nutrition. There is, moreover, reason to believe that susceptibility to disease may be influenced by diet. The experiments of Haaland and Stahr appear to show that the degree of susceptibility of mice to transplantable tumours may depend upon the diet on which they are fed. We know little about the relations of such diseases as beri-beri and pellagra to the rice and maize with the use of which they are associated, but it has been made probable by recent investigations that these diseases are not so much due to the presence of a food poison as to the absence of some constituent which renders the organism more resistant to the disease.[1] The experiments of Delafoy, Lewin, Mansfeld, and others have shown that starving animals exhibit a greatly diminished resistance to many poisons, and Dr. Reid Hunt's first series of investigations was conducted along these lines. The poison he employed was acetonitrile (CH_3CN). This substance is believed to be poisonous as the result of the formation of hydrocyanic acid in the body, and this process Dr. Reid Hunt believes to be brought about by oxidation, an increased power of oxidation being accompanied by a more abundant liberation of hydrocyanic acid. On the other hand, in partial inanition it might be thought the intensity of the processes of oxidation would be lowered, and consequently less acetonitrile decomposed, and the animal be rendered more resistant to the poison. This hypothesis, on being tested by experiment, was found to hold good both in mice and guinea-pigs. It was further found that the guinea-pigs on a restricted diet excreted less sulpho-cyanate than those on full diet, this being taken as a measure of the degree of breaking up of the acetonitrile molecule.

In his next series of experiments Dr. Hunt tried the effect of different diets, the result being to show marked variations, the resistance of some animals being increased forty-fold by changes in diet. Dextrose, oatmeal, liver, kidney, and thyroid gland greatly increased the resistance of mice to the poison. The action of thyroid gland was remarkable, and it is interesting to observe that the effect of certain diets was increased by the addition of iodine compounds, among which the extract of bladderwrack was the most potent, and the author believes that the increased resistance mainly depended upon the action of the thyroid, and that the influence of iodine compounds and of various articles of diet was due to their power of stimulating the function of this gland. Certain diets, such as eggs, meats, cheese, and some fats, greatly lowered the resistance, and seemed to have an effect opposed to that of the thyroid. Other glands acted in the same way—notably the prostate, ovaries, and testes—while the thymus, parathyroid, and suprarenals had the opposite effect. Similar experiments carried out with morphine showed distinct but not very marked differences in the effects of diet. But perhaps the strongest influence observed was that of season, which the author attributes to seasonable variations in the activity of the thyroid gland.

These effects are not to be understood as being general but are specific to the particular poison employed, and depend upon the fact that the poisonous character of acetonitrile depends upon its molecule being broken up under the influence of certain metabolic processes. The experiments are none the less interesting and suggestive; they indicate that we have much to learn before we can safely construct artificial diets, that there are factors entering into the composition of food which are more complicated than its protein, fat and carbohydrate composition, or its calorific value, but they also give ground for the hope that continued research may enable us to discover some means of increasing the resistance of the body to the poisons of disease, and possibly of preventing diseases by methods hitherto unthought of.

[1] See BRITISH MEDICAL JOURNAL, June 4th, p. 1371.

FLIES AS CARRIERS OF INFECTION.

THE latest report of the Local Government Board on this subject deals mainly with Dr. Graham-Smith's elaborate experiment on artificially-infected flies. So far as it goes, for the investigations are by no means complete, it constitutes one of the most important contributions which have been made to the subject. Common and familiar enough as the housefly is, its habits and mode of life are still in many respects remarkably little known, and Dr. Graham-Smith has done well to study these, and especially the feeding habits, in some detail. Flies appear to feed with great rapidity and their crop acts as a reservoir, capable of great distension, in which in a few seconds they can store sufficient food to last several days. This fact suggests the possibility that

when infected material has been ingested it may be carried about for a considerable time and to some distance, and this is borne out by the experiments. The process of digestion, however, is comparatively slow and the food takes several hours to pass through the intestine. This alone admits of a wide spread of any infective matter on which the fly may have been feeding. The various spots and marks made by flies have also been investigated, and of these the most important are the faecal and "vomit" spots. Defaecation takes place on an average about four times a day, but "vomiting," which is apparently regurgitation of fluid from the crop, occurs much more frequently. These vomit marks are particularly plentiful after liquid food has been taken. Solid food is moistened with "vomit," or saliva, and then sucked dry.

These curious habits of feeding indicate that flies possess possibilities of contamination quite beyond those involved in mere mechanical transference, and, indeed, it is shown that the latter is of relatively small importance. Flies do not necessarily soil their legs and wings when feeding, and any external contamination is either cleaned off by the fly itself or dries up fairly quickly. With regard to the actual infection experiments, a considerable number of organisms were used, amongst which may be mentioned *Bacillus typhosus*, *B. enteritidis* (Gaertner), *B. tuberculosus*, *B. diphtheriae*, and *Vibrio cholerae*. These represent most of the infections which flies have been accused of carrying.

Naturally, most interest attaches to the typhoid germ, and we receive the definite information that under the experimental conditions flies ingested typhoid bacilli into their intestine, and that these could usually be recovered two days afterwards, and in one case as long as six days afterwards. The bacilli were found in the flies' faeces during the space of two days. In the case of Gaertner's bacillus corresponding results were obtained, but the bacilli were not recovered from the faeces. The tubercle bacillus, from sputum, was found to live for three days in the intestine; but if a pure culture were used, it could be recovered nearly a fortnight afterwards in the intestine. The diphtheria bacillus, as a rule, was much shorter lived, but in at least one case it was found nearly a week afterwards; the cholera vibrio was isolated two days afterwards.

These results show conclusively that all these pathogenic organisms can be carried about in a living condition by flies for the space of a few days, provided they obtain an entrance into the intestine. It must, however, be remembered that these experiments have been made under exceptionally favourable conditions, the flies being fed on syrup containing pure cultures of the bacilli. Much less striking results are to be expected under natural conditions. The complications of climatic conditions, temperature, vitality, and environment of the organism, and so forth, have all to be reckoned with. At the same time it is not to be forgotten that many observers, notably Faichnie in the case of typhoid, have shown that flies may become naturally infected, and, taking those observations along with the experimental investigations of Dr. Graham-Smith, it is obvious that we have an increasingly strong chain of evidence as to the rôle played by flies in carrying infection.

Accompanying Dr. Graham-Smith's paper is a note by Dr. Bernstein on the bionomics of *Empusa muscae*, the parasitic fungus which kills off flies in large numbers in autumn, and the suggestion is advanced that this might be employed as a destructive agent. The scheme, however, would be difficult to work, and, in view of the failure of similar methods in the case of locusts and other insects, it would appear advisable to direct attention along other and more promising lines.

TROPICAL MEDICINE.

The London School of Tropical Medicine held its annual festival last Friday, the proceedings in the afternoon and evening being equally successful. The suggestive address delivered by Dr. H. A. Miers, Principal of the University of London, appears in full in this issue. As introducer, Dr. Miers had Sir West Ridgeway, whose experience as former Governor of Ceylon enabled him to pay personal testimony as to the need for the study of tropical medicine; while his acquaintance with the excellence of the work which this school is performing rendered him justly eloquent in appealing to public bodies for more generous support. The dinner in the evening took place at the Savoy Hotel, and the nature of the assembly, as in previous years, threw into strong relief a fact which is always of happy significance. Affection for the school in which they have been trained and *esprit de corps* are common among ordinary medical students, but they are notable when exhibited in connexion with a school whose students remain for a comparatively short time thereat and then scatter again all over the world. They are both very evident among old students of the London School of Tropical Medicine, and are a sure sign of the character of the work which is being done within its walls, and of the fashion in which its affairs are administered. As already indicated, the school requires much more financial support, but it was gratifying to learn from Mr. Cantlie, who was in the chair, that its finances are on a more stable footing than they were this time last year. This is due to the financial support accorded by Lord Sheffield and his family, and to a liberal gift from Mr. Blessig, which has greatly facilitated laboratory work. Mr. Cantlie also mentioned that the school is at the present moment represented by two expeditions abroad, Dr. Wenyon being in charge of a party which is carrying on research in regard to kala-azar in Bagdad, while Dr. Bahr is studying dysentery in Fiji. The toast of "The School," of which Mr. Cantlie's speech was an acknowledgement, was proposed by Mr. W. H. Lever, of Port Sunlight fame. He was anxious to see an element of commercialism introduced into the conduct of the school and a recognition by its authorities of the value of advertisement. Of what advertisement can do he gave many examples from his own experience and career, and concluded by promising the school his own support and that of his friends. Other speeches came from Lord Sheffield, who proposed a toast to "The Orator of the Day," from Mr. Perceval Nairne, chairman of the Seamen's Hospital Society, whose toast to "The Guests" was acknowledged by Sir Richard Havelock Charles, and from Professor W. J. Simpson. The latter proposed a toast to the chairman, Mr. Cantlie, and it need scarcely be said that it was well received. The session seems likely to prove a busy one, for thirty-four new students have already joined and ten more are expected. Some details supplied by Mr. Cantlie in the course of his speech indicate the extent of the influence which the school, apart from other ways, must now be exercising on the progress of knowledge of tropical medicine through its students. Over eleven hundred of these have now passed through the hands of the teachers of the school and have returned to their work in various parts of the world. Some four hundred and twenty are in the employment of the Governments of different

colonies, ninety-three are officers in the Indian Medical Service, thirteen are officers in the Royal Army Medical Corps, five are surgeons in the Royal Navy, and fifty-four were sent to the school by foreign Governments.

MEDICAL INSPECTION IN LONDON SCHOOLS.

THE Board of Education has addressed a letter to the London County Council, in which, after reference to the fact that no reply has been received to the Board's official letter of May 17th relating to the Council's provisions for medical inspection during the year ended on July 31st last, it is pointed out that the Board's medical department has had opportunities since that letter was written of observing the actual working of medical inspection in the London schools, and has seen the work of twenty-four of the fifty-six school doctors and assistant school doctors employed by the Council. As regards the individual inspections, the Board is informed that the work of the inspecting officers is generally satisfactory and thorough. But, on considering the facts reported by its medical department, the Board thinks that the work of the staff of the inspecting officers is not adequately organized and controlled, and that there is little or none of that effective supervision or guidance in the primary work of medical inspection which is absolutely necessary if a large staff of part-time officers are to be employed. It is added that the arrangements for following up the defects and ailments disclosed by inspection to the stage of treatment, and for securing the maximum advantage from the Council's own expenditure and treatment, have been ineffective and unsatisfactory. The Board goes on to say that the visits of its officers fully confirm the view that the arrangements of the Council for submitting scholars to inspection do not comply with the requirements of the Education (Administrative Provisions) Act of 1907 and of the Code for 1909–10. On a review of all the facts before it, therefore, the Board cannot resist the conclusion that by adopting or acquiescing in a scheme of medical inspection widely different from the schemes which have approved themselves to other great education authorities the Council has not only placed itself in direct conflict with the Code and the Act, but has also failed to lay a satisfactory foundation for the work of amelioration which it had in view. The Board has no doubt that if the Council is to avoid waste, confusion, and embarrassment in its efforts to promote the physical welfare of the children a radical change in the organization of the work of medical inspection is required. Further, it is pointed out that the Board is aware that the Council has had before it proposals recommended to be adopted as from January 1st, 1911, for strengthening and to some extent reorganizing the staff of the school medical service. It is stated that the Board has no means of judging whether adoption of these recommendations will in fact ensure the satisfactory direction and organization of the work of medical inspection and the other branches of the school medical service of London. But as regards the proposal to increase the staff of school doctors, the letter states that it appears to the Board that the number of inspecting officers recommended cannot by any possibility suffice to carry out within the year the number of inspections required by the Board's minute made under Section 13 of the Act of 1907 on June 25th last, modifying Article 58 (B) of the Code for 1909, unless they are to be available for the whole of the twelve months of that year. It is observed, however, that the proposals before the Council are recommended for adoption, not as from the reopening of the schools after the summer holidays, but as from January 1st next. In these circumstances (says the letter) it is imperative that consideration should be at once given by the Council to the question of supplementary schemes before them, and that such further medical assistance should be provided as may be necessary to secure that the requirements of the Board's minute of June 25th shall in fact have been fully and not partially satisfied in all public elementary schools during the current year (that is, the year ending on July 31st next), and that compliance with those requirements shall not be confined to the later months only of that year. The letter, which is signed by Mr. L. A. Selby-Bigge, one of the assistant secretaries, ends with the following paragraph: "In view of the urgency and importance of the matter, the Board must ask that an early reply be sent to this letter giving precise information as to the changes that are to be brought in operation during the present autumn to remedy the many and grave defects in the present system of medical inspection in the metropolis, and to bring to an end the Council's long-continued failure to carry out the requirements of Parliament in this respect, so gravely affecting, as it does, the health of the rising generation in London, for which the Council is responsible."

THE DANGERS OF FLANNELETTE.

A PARLIAMENTARY paper issued recently contains a report on an inquiry into the question of the danger arising from the use of flannelette for garments, by the Committee appointed by the Home Office in 1908 to consider the law relating to coroners and inquests, and the practice in coroners' courts; the chairman of the Committee was Sir Mackenzie Chalmers, and the other members were Sir Malcolm Morris, Sir Horatio Shephard, Sir Thomas Bramsdon, and Dr. W. H. Willcox. The facts put before the Committee fully established the extremely inflammable nature of most varieties of flannelette, and the conclusion is formed that "a woman or child whose skirt or dressing-gown of flannelette comes into contact with fire must, unless prompt and effective measures are taken, inevitably suffer serious injury, and is not unlikely to be burned to death." Statistics as to the actual number of deaths caused by flannelette were only obtainable to a very limited extent. In the judicial statistics for 1904, on figures collected from coroners at the suggestion of the Coroners' Society, the number of deaths caused by the ignition of flannelette is given as 412; in the Registrar-General's returns it is only in and since 1907 that deaths attributable to or connected with flannelette are classified separately, and the figure given for 1907 is 120, but the Committee regards the accuracy of this figure as open to grave question, as, according to the coroners for Manchester and Liverpool, the deaths under that head in those two cities amounted to about 90 in that year; and there is evidence that in October and November, 1909 and January, 1910, the deaths in which flannelette played a part were 176. Evidence was put before the Committee in regard to certain makes of flannelette which are treated in such a way as to be uninflammable, and the only one which was found to comply with proper requirements as to duration of the protection after repeated washings and moderateness of price was the material prepared by Dr. Perkin's process and known as "non-flam" flannelette, which has been several times referred to with approval in our columns. The Committee adds, however, that "at present it does not appear *fully* to satisfy the conditions," but the only respect mentioned in which it does not comply with them is that "'non-flam,' it appears from the evidence, is not in general use, and we are not in a position to say whether it or any flannelette subjected to a similar process, which must necessarily

increase the cost of the article, will succeed in establishing itself in the general market." In regard to legislative measures for reducing the mortality due to the use of flannelette, it is recommended that a provision should be added to the Merchandise Marks Act, making it penal to describe as uninflammable a material which will not stand certain prescribed tests; but the Committee is not prepared to go beyond this. It has been recommended by the British Fire Prevention Committee[1] that all flannelette which is shown by specified tests to be highly inflammable should be marked in such a way that the attention of purchasers could not fail to be drawn to the dangers of the article bought; but the present report gives no support to such proposals, for reasons which appear rather negative in character and scarcely sufficient; it is stated that "it is not in the least likely that words of warning or disparagement, such as some of the witnesses have proposed to have printed on ordinary flannelette, would influence the minds of the public, or that, on seeing them, they would any the less buy what they have been accustomed to buy at the accustomed price. Accordingly, there being no sufficient reason to suppose that a compulsory system of marking goods would either influence the public in their choice of material, or make people more careful in avoiding the risk of fire, it would be unfair to single out for restrictive regulations one of the many more or less dangerous things that are in common use. . . . Legislation of the kind suggested is the less justifiable in view of the fact that matters may, in course of time, be expected to right themselves. . . . There is also the possibility that new and cheaper methods of diminishing the inflammability of the material may be discovered." In view of the seriousness of the danger, incurred in ignorance by many people, it must be regretted that proposals for preventing that ignorance did not receive fuller consideration from the Committee.

PSYCHIATRY AND PRIVATE PRACTITIONERS.

Among the other interesting discussions in the Section of Psychology recorded elsewhere in this issue will be found one on the establishment of a diploma in psychology. This question first assumed definite form about a year ago, and we believe that many of the university bodies to whose notice it was brought are disposed to take the suggestion that they should establish a diploma into favourable consideration. This is as it should be, for while there are many persons who quite reasonably object to the granting of diplomas in sub-departments of medicine, the considerations which influence them do not apply in any wise to psychiatry, which is almost as independent a study as State medicine. The latter fact was well, though incidentally and very briefly, brought out in the address by Dr. Duncan Greenlees which, under the title of "The Ethics of Insanity," appeared in our columns on August 6th. It need scarcely be said that in the field of psychiatry minds of the highest type have long been engaged, and that among the rank and file of the workers there have been of late years a high proportion of scientific and earnest students. Nevertheless, psychiatry as a career cannot be regarded as having proved so attractive to the general body of those who annually complete their general education as might be expected; and it would, perhaps, be true to say that a smaller proportion of medical men have considerable knowledge of mental disease now than, *caeteris paribus*, was at one time the case. There are, doubtless, many reasons why this should be so, but one factor in the situation is probably the circumstance that few of the young men who apply for, and receive, asylum appointments have sufficient initial knowledge of the work to enable them to realize its great and many-sided interests forthwith. The result is that, while some abandon psychiatry after a very fleeting acquaintance, others only become thoroughly useful to their seniors after a very considerable period of practical pupilage. This particular weak point in the organization of psychiatry would seem likely to be removed if diplomas in the subject of psychiatry were established. The possession of such a diploma would soon become a *sine qua non* among candidates, and vacant appointments would never be filled except by those who had already acquired a theoretical knowledge at least of the work they were undertaking. Indeed, while the advantages of establishing a diploma are numerous, they are, as far as we can see, only counterbalanced by one possible risk—namely, that of asylum appointments being filled by men disposed by their training to study mental disease too exclusively from the laboratory standpoint. No one is less disposed to undervalue laboratory methods than ourselves, and it is to the laboratory worker alone that we can look for true knowledge of the processes of mental diseases; but clinical knowledge of them and of their possibilities is at least equally important. Among indirect advantages of the establishment of diplomas in psychiatry might possibly be that study of the subject from an examination point of view by those who are experts might lead to the formulation among them of definite findings on various matters of primary importance. The performance of this task is not only very desirable in the interests of psychiatry itself, but is one which must certainly be performed before alienists are entitled to accuse general practitioners of ignorance, as have several of them recently. One expert who a few weeks ago dilated on the importance of the part which general practitioners have to play in connexion with insanity and on their extreme ignorance of the subject, indicated that, by way of forming the foundations of sufficient knowledge to preserve them from reproach, it was their duty to take up psychology, sociology, heredity, and various other simple subjects of that kind. This seems to us, to say the least of it, a counsel of perfection. Every man who has been long in general practice is something of a psychologist, something of a sociologist, and has some notion, at any rate, of the views of those who enlarge upon heredity. What he primarily requires to enable him to do his work efficiently in dealing with cases of possible insanity which come under his notice are definite practical statements from psychologists on such points, for instance, as what phenomena constitute certifiable insanity and what do not. There is a good deal more information which the general practitioner might well expect to receive, but even this little would go a long way.

CENTENARY OF DR. JOHN BROWN.

The occasion of the centenary of Dr. John Brown of Edinburgh has been the signal for a revival of public interest in the author of *Rab and His Friends*, and in view of the torrent of literature which has already appeared during the last few weeks it is useless to expect to find anything new or original to say about him. But it may not be out of place to add a few words of appreciation to this universal chorus of praise, and to give our readers a brief sketch of the career of one whom Mark Twain described as "the most extensive slave-holder of his time, and the kindest; and yet he died without setting one of his

[1] British Medical Journal, July 23rd, 1910, p. 216.

bondmen free." John Brown was born in Lanarkshire, at the old Secession Manse of Biggar, on September 22nd, 1810. He came of clerical stock—his father, grandfather, and great-grandfather having been ministers of the Scottish Kirk, the latter well known as the author of the "Self-interpreting Bible," a fact of which his famous descendant was extremely proud. According to a correspondent in the *Glasgow Herald* of October 12th, he was connected by marriage with the Gladstone family, one of his mother's brothers having married an aunt of the famous statesman. The first years of the boy's life were spent in the little country town amongst the Lanarkshire hills; but when he was about 12 years old, his family removed to Edinburgh, and he was sent to the High School, and in course of time to the university. At 17 he was apprenticed to Syme, and it was in the hospital for surgical cases that the great surgeon had established at Minto House that he began his clinical studies, and incidentally made the acquaintance of the dog he has immortalized. He seems to have been influenced in his choice of a profession by the fact that his mother's father, William Nimmo, and one of his uncles were surgeons at Glasgow, but the horrors of the operating theatre in the days when chloroform was unknown quickly proved to him that his vocation was not surgery. He therefore left Syme, of whom, however, he always spoke with gratitude and veneration, and at the age of 21 he went to Chatham as assistant to Dr. Martin. Miss Sarah A. Tooley, in a charming article published in the October number of the *Cornhill Magazine*, relates how, an epidemic of cholera having broken out in the town, Brown earned universal admiration by the services he rendered to the sufferers, and how many years later, at a dinner party in Edinburgh, Charles Dickens "spoke of the deep impression made on his mind by the conduct of 'a young Scottish doctor' during a cholera epidemic at Chatham, and told how he had ministered to the needs of a poor woman whom all had forsaken." The "young Scottish doctor" happened to be one of the great novelist's fellow guests, and was promptly introduced to him. Brown spent two years at Chatham, and then returned north to set up practice in Edinburgh, where he remained until his death in May, 1882. It is easy to understand his success and popularity as a physician. The genial charm of his manner, his deep sympathy with every form of suffering, and his ever-ready and kindly wit made him welcome with every class of patient, and he usually managed to transform those who consulted him professionally into his own personal friends. "He spoke to a' body as if they were bluid relations," was the tribute paid to him by one of his humbler admirers, and no doctor could wish for a better one. Great as was his love of literature, Dr. Brown did not begin writing at a very early stage of his career, though his many friends constantly urged him to do so. Hugh Miller, then editor of the *Witness*, succeeded where so many had failed by offering him £20 in advance for some articles at a time when Brown was badly in need of money. Miss Tooley tells us that whilst he was hesitating over the matter, his wife made up his mind for him by calmly appropriating the cheque and telling him to sit down and write. In all probability, therefore, it is to Mrs. Brown that the English-speaking world owes her husband's delightful writings, for he himself confessed that but for her practical way of clinching the argument "very likely . . . I should never have written a word." "Rab" first appeared in 1858, in the first series of the *Horae Subsecivae*. The story was, of course, taken from life, and was originally written as a lecture, which the author delivered in his native town. It is characteristic of his modesty and his utter unconsciousness of his own power that John Brown thought it necessary to apologize for publishing the sketch which has done more to make him famous than all his other writings put together.

RECENT EXPERIENCES WITH "606."

It is well known that the discoverer of a valuable process or material and the inventor of an important object frequently enrich the world, while others reap the harvest of their genius. The exploitation of suffering humanity by the medical profession, we are happy to believe, is not a frequent occurrence. We learn, however, from the *Muenchener medizinische Wochenschrift* (No. 38, 1910) that, according to Dr. Pionski, a few medical men have succeeded in obtaining from Professor Ehrlich samples of "606," and are using the remedy not for hospital cases, but for their private patients, who have to pay exorbitant fees for the treatment. The Committee of the Berliner ärztliche Standesvereine (Berlin Medical Professional Associations) has resolved to refer to the various societies for discussion a motion to the effect that it is unethical for medical practitioners to communicate their observations on new drugs to the daily press. We learn from the same source that a certain quack firm advertises that, as soon as "606" can be obtained, the advertiser will at once begin to treat his patients with it. As the treatment will be undertaken in the order of application it is advisable for patients to enter their names without delay. A doctor of Bucharest is reported by the *Vossische Zeitung* to have advertised that he had obtained quantities of "606" from Ehrlich and was prepared to treat patients with it. Large numbers flocked to him, until it was discovered that he had never obtained the drug at all. He was prosecuted and imprisoned. These sad stories of the ignoble side of our profession convey their lesson. The private practitioner, whether in general or special practice, must realize that it is directly in the interest of the public that the greatest caution should be exercised before the verdict on a new drug should be passed, and that when the disease which the drug is supposed to cure is a common one, as is the case with "606," a thorough investigation should be conducted by a chosen few before the drug should be used by all and sundry. In the meantime favourable reports from clinicians of all nationalities are being published in almost every issue of the German medical papers. Thus in the *Muenchener medizinische Wochenschrift* of October 4th Favento, writing from Trieste, states that exact observations on 156 cases have convinced him that "606" is the most powerful antisyphilitic remedy known. He finds that it does no harm to the human organism. Cases of neuro-retinitis and nephritis did well under its action. Apart from its curative action on syphilis, it strengthens the organism, increases the weight of the patient, and acts beneficially in every way. Ehlers, in No. 41 of the same journal, speaks highly of the preparation, and further reports some interesting observations made by Bjarulyédinsson of Reykjavik (Iceland). In leprosy the clinical manifestations are not perceptibly affected, but the bacilli are found to undergo a granular degeneration. The author has not yet been able to determine whether or not the bacilli are alive. Herxheimer and Reinke[1] have analysed two cases of congenital syphilis. The patients were in a hopeless condition from the first, and died two and four days after the injection respectively. No spirochaete

[1] *Deut. med. Woch.*, No. 39, 1910.

were found in the organs save the lungs, where they showed marked agglutination and advanced degeneration. In the opinion of the authors, these cases prove the powerful action of the preparation in destroying spirochaetes, since the parasites are always present in overwhelming quantities in such cases. Werner, in the same issue, finds that "606" acts powerfully as an antimalaria remedy. It is more active in tertian fever than in tropical fever. These are only a few of a large number of favourable reports on this preparation. The last number of the *Deutsche medizinische Wochenschrift* is devoted to "606," and contains the speeches and discussion which were delivered at Königsberg at the Naturforscher und Aerzte Versammlung this summer. A short summary of their contents will be given later. Lastly, mention should be made of a paper published by Karl Greven in the *Muenchener medizinische Wochenschrift* of October 4th dealing with the excretion of the preparation. Arsenic appears in the urine very rapidly after the injection. The excretion continues for from fourteen to eighteen days, but the period is shorter after subcutaneous than after intramuscular application. Simultaneous application of mercury delays the excretion, while simultaneous application of iodides shortens its duration.

THE SOCIETY OF APOTHECARIES.

The Master and Wardens and Liverymen of the Society of Apothecaries attended divine service on St. Luke's Day, Tuesday, October 18th, at St. Anne's by the Wardrobe. They dined together in their hall in the evening, the occasion being the induction of Mr. A. T. Norton, the new Master. The guests were the Deans of the Medical Schools, and the Court of Examiners. After the customary loyal toasts had been duly honoured, "The Society of Apothecaries" was proposed by Mr. Parker Young, and responded to by the Master. Mr. Norton took the opportunity of discussing two subjects. One was the removal of names from the *Medical Register* for "infamous conduct"; the other was the object of the private bill recently promoted by the Society. In reference to the former, the Master said there were some pitiable cases of hardworking men having their names removed from the *Register* for allowing an unqualified man to see patients. The removal of these names was a just punishment for breaking the law, a very proper law made for the benefit of the people, that no general practitioner should allow an unqualified person to visit his patient. The Master went on to say that such painful cases should be prevented; the circumstances leading to the breaking of that law could be avoided, and as there were present many general practitioners in large practice and many lecturers and teachers on the staff of all the large hospitals and medical schools, it behoved every one to impress on the students about to enter into general practice that they should never have in their establishment any sort of assistant unqualified and yet, in his own estimation, capable of visiting and prescribing for a sick patient; should they do so they would be sure to make use of his services at a pinch, and thus render themselves liable to be removed from the *Register*. Assistants without a qualification should be allowed only to do the dispensing and to keep the books. Mr. Norton said the Society of Apothecaries held an examination for dispensing assistants of both sexes—a searching examination, the knowledge of drugs, poisons, doses, incompatibles, dispensing, etc., qualifying candidates to assist medical men, but not to act as pharmaceutists or to keep shops. He had no doubt that if any medical man required such an assistant he might hear of one through the secretary of the Court of Examiners. The second matter dealt with by the Master was the private bill recently promoted by the Society. The object of the bill was to place the Society of Apothecaries on a par with other examining bodies in the granting of diplomas in public health, dentistry, etc. The Act contained words to the effect that examining bodies holding examinations in medicine and surgery might grant diplomas in those subjects registrable by the General Medical Council. Other examining bodies had taken care that they should be specially mentioned in an explanatory clause: Colleges, faculties, faculties of physicians and surgeons, universities, etc., and as a Society of Apothecaries did not come under one of these titles, counsel had given the opinion that the General Medical Society could not register these diplomas if granted by the Society. Mr. Norton added that the diploma of the Society was on a par with that of the two Royal Colleges and with the degrees of the provincial universities, and there could be no doubt that the Act was never intended to exclude the Society of Apothecaries, singly among all the examining bodies. He was given to understand that the private bill was not proceeded with, not on account of objectors, but owing to the fact that it would override the Act of Parliament, which no private bills were permitted to do. Readers of the British Medical Journal would realize that the whole profession was in a state of unrest with regard to the Medical Act, and that the Act would undergo revision as soon as a Government of either political creed could give time to its consideration. Then the Society must see that it stands in by name with the other examining bodies. The other toasts were "The Deans of the Schools," "The Court of Examiners," proposed by the Senior Warden, and responded to by Sir John Broadbent for the Deans, and by Mr. Carr for the Court of Examiners; "The Chaplain, or Preacher of the Day," proposed by the Junior Warden, and responded to by the Chaplain. Between the toasts the company were agreeably entertained by well-rendered songs and violin solos, the musical entertainment being under the management of Miss Bramley Taylor.

CHOLERA AND PLAGUE.

In last week's issue attention was drawn briefly to a case in which the death of a patient at one of the general hospitals in London had been certified as being due to Asiatic cholera. At that time the bacteriological investigation of the case, and the search into the past history of the patient, were not complete. We are now able to state that the laboratory findings did not support the diagnosis, or, in other words, that a thorough investigation of the intestinal contents did not reveal the presence of the comma bacillus of Koch. In the circumstances the history of the man's recent movements loses its interest, but it may be stated that the investigation conducted by Dr. J. F. Sykes, Medical Officer of Health for St. Pancras, revealed neither communication with shipping, the docks, aliens, or rag picking, nor any other circumstance which might, had the case proved to be one of cholera, conceivably have explained the occurrence of a case of this disease in the middle of London. The fact that the certificate given at the hospital has proved to be inaccurate is, of course, no reflection whatever on those who gave it. The clinical phenomena were those of a case of true cholera of moderately acute type, and though a

microscopic examination of the intestinal secretions introduced an element of doubt, a broth culture gave the cholera red, or indol reaction. The diagnosis, in short, was based on a very careful consideration of the facts, and neither hasty nor ill-advised. The episode has an interest of its own, because it shows that the public is far more level-headed than it used to be in these matters. The announcement of the case in the papers was not treated on scare-line principles, and no tendency was shown to view the matter as of special interest to other than sanitary authorities. This is as it should be, for isolated outbreaks of "foreign" diseases are nowadays only to be expected. The rapidity of modern communication has introduced a new factor into questions of epidemiology, and active and keen as are our port medical officers, it is not to be expected that they will always succeed in keeping persons infected with cholera, plague, and like diseases, from landing except in quarantine. The incubation period of cholera is so short that the probability of any person suffering from it getting ashore is not very great; but, on the other hand, the presence of a cholera carrier is always a possibility. The fact that some people are capable of carrying about the cholera vibrio in their intestines without suffering from the disease themselves was pointed out, we believe, by Professor Simpson in his book on the *Principles of Hygiene* several years ago, and the outbreak last year which produced so much loss of life among the nurses at the European Hospital in Calcutta was believed to be traced to cholera-carriers among the native servants of the hospital. The occurrence of cases of plague is even more probable, apart from definite outbreaks such as that which was brought about by ship rats in Glasgow a few years ago. Indeed, during the last month a case of plague in a man who had come ashore from a Bombay boat was under treatment at the Seamen's Hospital, while almost at the same time another case which had been detected on arrival was under treatment in the port isolation hospital. The recent series of cases of "septic pneumonia" in some cottages not far from Ipswich would also appear to have been cases of the same order. None of these outbreaks, however, has had any sequences. It hence becomes clear that while isolated cases of diseases which elsewhere prove of a most formidable character to the community ought to be expected, the sanitary organization of this country is sufficiently advanced to justify the public in regarding them as of no material importance to itself.

CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY.

THE annual meeting of the Continental Anglo-American Medical Society was held in Paris on October 15th. Reference was made to the death of two valued members, Dr. Mary Adamson Marshall of Cannes and Dr. William Bagnell of Pau. The following new members were elected: Drs. Beddoe and Phillips (Cairo), Dr. Blaydes (Venice), Dr. Dunn (Luxor), Dr. de Marville (Paris), Drs. Molyneux and Ricketts (Naples), Dr. Morland (Arosa), and Dr. Roman (Berlin). The annual dinner was held in the evening at the Carlton Hotel. The chair was taken by Sir Frederick Treves, who warmly congratulated the society on its excellent work, laying stress on its usefulness in uniting and in bringing to the notice of the profession at home responsible men to whom patients travelling abroad could be safely entrusted. This very successful gathering was brought to a close by two happy speeches from Professor Tuffier of Paris and Dr. Alexander Lambert of New York; both of them assured the members of the regard of their colleagues in France and in America.

INFANTILE PARALYSIS.

AT a meeting of the Medical Association of the District of Columbia, on Tuesday, August 23rd, 1910, a committee was appointed to investigate and report on the status of epidemic anterior poliomyelitis in Washington, with a view to throwing whatever light may be possible on its etiology, epidemiology, course, diagnosis, treatment, etc. An appeal has been made to all medical practitioners who have seen cases of infantile paralysis in hospital or private practice for help in the investigation. The committee desires particularly to appeal for active co-operation in its efforts to determine certain important circumstances with respect to this disease: (1) Whether the secretions of the nose and throat are capable of carrying the disease, and, if so, when the period of infectivity begins and when it ends? (2) Whether it is possible by any method to recognize the disease with certainty before the onset of paralysis, and, if so, how? (3) Whether it is possible by any method to identify abortive or atypical cases, and "carriers," if "carriers" exist, who present no clinical symptoms? (4) Whether any intermediate host, such as insects or domestic animals, may be responsible for the transmission of the disease? To this end the committee has arranged with several laboratories to make such investigations as may be necessary. It is pointed out, however, that laboratory investigations are impossible without clinical and pathological material to work with, and such material, if obtained at all, must come through the courtesy and active co-operation of the attending physician.

INTERNATIONAL MEDICAL CONGRESS.

A REPORT of a meeting of the General Committee of the International Medical Congress will be found at p. 1265. We are glad to note that the date of the Congress is left open for arrangement.

ON October 18th the Earl of Aberdeen unveiled in St. Patrick's Cathedral, Dublin, a bronze medallion in memory of Dr. Conolly Norman, who for many years was medical superintendent of the Richmond Lunatic Asylum.

IT is announced that Sir Francis Lovell, Dean of the London School of Tropical Medicine, intends to make a further tour on behalf of that institution during the winter. For this purpose he will visit the Bahamas, Bermuda, and British Honduras.

WE regret to announce the death of Dr. Sydney Ringer, F.R.S., sometime Holme Professor of Clinical Medicine at University College, London, and author of the well-known *Handbook of Therapeutics*. He died at Laslingham, Yorkshire, at the age of 76. We hope to publish an obituary notice of the distinguished phsyician in a later issue.

WE also regret to have to record the death of Dr. J. J. Macan of Cheam, a valued contributor to our pages and an elected Member of Council. He fell ill on Friday, October 14th, and died on the following Sunday.

WE are requested to state that any member who may wish to have one or more copies of the Guide Book prepared for the use of those who attended the annual meeting of the British Medical Association, held in London last July, can procure the volume free of charge (except 3d. for postage on one copy and 1d. for each subsequent copy) on application to Dr. Lauriston Shaw, Honorary Local Secretary, 429, Strand, London, W.C.

England and Wales.

(FROM OUR SPECIAL CORRESPONDENTS.)

LONDON.

London County Council.

The Milk Supply.

During the three months ended September 30th, 1910, 753 samples of milk sent to London from the home, Midland, and Western counties were taken by London County Council inspectors at the principal railway termini. The report submitted respecting them showed that the examination of 641 samples had been completed, with the result that 79, or 12.3 per cent., proved to be tuberculous. The total number of samples taken since Part IV of the General Powers Act came into operation on July 1st, 1908, was 4,915; 4,126 had been examined, and 435, or 10.5 per cent., were tuberculous. Of 3,152 cows examined on farms during the quarter, 38, or 1.2 per cent., were found to be suffering from tuberculosis of the udder. The percentage since the Act came into operation, based on 23,978 examinations, was 1.8 per cent.

MANCHESTER.

The Royal Albert Institution.

The annual meeting of the Royal Albert Institution, Lancaster, was held at Rochdale on October 11th. Up to last year it was known as the Royal Albert Asylum, but it was then felt that the word "asylum" gave a wrong impression, and it was changed to "institution." The institution, which is just outside Lancaster, was established about forty-five years ago for the care and training of the feeble-minded of the seven northern counties of England. Paying patients are admitted at charges which vary with the requirements and the circumstances of the relatives. Free patients between the ages of 6 and 15 whose friends are unable to pay for them are elected by the subscribers for periods of seven years or over. There is accommodation for 715 inmates, and besides school instruction, training is given in various useful occupations, such as tailoring, shoemaking, joinery, printing, and farm and garden work, and also for girls in housework, needlework, and laundry work.

Lord Richard Cavendish, the chairman of the committee, in presenting the annual report, showed that during the year the number of patients had risen to 693, and of these only 299 were liable to discharge at the end of their term of seven years. The remaining 394 were retained indefinitely, and 188 of them had already been in residence for from seven to forty years. The institution was not primarily intended for permanent cases, but it was actually providing permanent care on a larger scale that any similar institution in the seven counties. This applied both to paying cases and to those elected for free treatment, and the committee had decided to increase the number of cases resident indefinitely. As a result of the training at the institution it was stated that 10 per cent. of the cases discharged had become able with friendly supervision to maintain themselves either wholly or partially, and only 15 per cent. had shown no perceptible improvement, the other 85 per cent. having been classified as more or less improved. The income of the institution had advanced over £1,000 during the year, and though the weekly cost of maintenance had decreased from 14s. 3½d. to 14s. 1½d. per patient, the increased number of patients made it necessary to make an appeal for additional income. Of the total number of cases now in residence, 459 were males and 234 females, and the numbers from the several counties were: Lancashire, 288; Yorkshire, 201; Durham, 63; Cheshire, 60; Cumberland, 31; Northumberland, 25; Westmorland, 16; and other counties, 6. The medical superintendent's report shows that of the 80 cases discharged during the year, 29 were much improved, 12 moderately improved, 13 slightly improved, and 26 not improved. The report lays special stress on the urgent need for legislation providing for the continuous supervision, care and control of the feeble-minded on the lines laid down by the Royal Commission on the Feeble-Minded. The chairman pointed out at the public meeting held after the annual meeting, it was perfectly clear that institutions such as the Royal Albert Institution largely failed because so many patients had to leave before they were really capable of mingling with the outside world, and once deprived of proper care and protection many of them inevitably deteriorated and found their way to workhouses or lunatic asylums.

Fire at St. Mary's Hospital.

On October 13th, while a spirit lamp was being used to generate vapour to relieve a child suffering from acute laryngitis at St. Mary's Hospital, the flame was blown against the drapery of the cot, and instantly the fire spread. In their terror some of the children attempted to climb out of their cots, and the nurses had difficulty in keeping them out of danger. The child in the cot where the fire originated was quickly snatched up by one of the nurses, and the fire appliances of the hospital were sufficient very quickly to extinguish the flames. Unfortunately, the child first in danger died about two hours afterwards. At the inquest the resident medical officer said the child had received some severe burns, and he attributed its death to acute laryngitis accelerated by shock due to the burns. A verdict was returned in accordance with the medical evidence.

South Manchester Guardians and Consumptive Cases.

The South Manchester Board of Guardians has recently decided to purchase some small estate with a mansion upon it to be used for the treatment of consumptives. It is said that the workhouse accommodation has been so overtaxed recently, that beds have had to be made up on the floor for consumptives. The guardians have no particular site in view at present, but are on the look-out for one suitable. It is suggested that any permanent building found on the estate chosen might be used for administrative purposes, at any rate to a great extent, and movable shelters suitable for consumptives could be placed in the grounds. There is some idea of obtaining a sufficient amount of land to enable the patients to obtain graduated exercises in open-air farm work, much on the same lines as at Benenden in Kent. The South Manchester guardians have been waiting for some time to see what the Manchester Corporation would do in the matter, and whether the Manchester Board would join them; but the pressure on their present available space has become so great that, as one of the guardians says, they have got into a state of desperation, and are going to act for themselves.

LIVERPOOL.

Opening of the Medical Institution.

On October 13th the session of the Liverpool Medical Institution was opened by the President, Dr. T. R. Bradshaw, giving his inaugural address. The subject chosen was "Thomas Sydenham, his Life, his Work, and Influence." The paper proved exceedingly interesting to the 150 members present. Dr. Bradshaw laid special emphasis on the contrast between the equipment of Sydenham and that of a medical man of our own time, and upon the change that had taken place in the type of disease. In Sydenham's time practice was mainly occupied in treating fevers which now formed but a small place in the work of the ordinary practitioner. Practice was still founded on the teaching of the grand old man, Hippocrates. One of Sydenham's greatest claims to our gratitude was due to his teaching that the direct observation of disease was the only

means by which the treatment could be improved. Dr. Bradshaw touched upon Sydenham's idea of the periodicity of types of disease and his methods of bleeding and purging. In some cases Sydenham adopted expectant treatment with admirable results. At the conclusion of the address Dr. Bradshaw showed some excellent lantern photographs of various portraits of his subject, of his birthplace, and the scenes of his youth, also some views of the Oxford colleges where he played his part as student and Fellow, and, lastly, of his resting place in St. James's, Piccadilly.

After the address the President entertained the members at supper, which was enlivened by some excellent music.

LIVERPOOL MEMORIAL TO MISS FLORENCE NIGHTINGALE.

A town meeting was held on Thursday to decide what form the memorial in honour of Miss Nightingale should take. It was found that a small majority of two in a meeting of about eighty voters were in favour of adding a seventh district nursing home to those already existing. An alternative scheme was put to the meeting as an amendment—namely, to found and endow a home of rest for aged nurses. Considerable feeling has been manifested in the local papers, as hitherto it has been the custom at such a town's meeting to decide first that a memorial should be established, leaving the form it should take to a committee appointed by the meeting. This procedure was departed from, and the scheme decided upon was put to the vote and carried by the above-mentioned majority of two. To many it seemed that an entirely new scheme, and one directly benefiting nurses, would be a more appropriate memorial to Miss Nightingale than the mere addition to an already existing institution, which is, moreover, already associated with the name of Queen Victoria. No doubt it may be possible even yet to reconsider the decision, if it be felt that it has been arrived at by somewhat hasty procedure.

BIRMINGHAM.

REBUILDING OF THE CHILDREN'S HOSPITAL.

THE King Edward VII memorial fund has reached the large sum of £28,480, and although the fund is now closed, yet there are a few more donations to come in, so that it is hoped that the fund may be made up to £30,000. The memorial will take the form of a statue of King Edward VII and the rebuilding of the Children's Hospital. The statue has been designed by Mr. Albert Toft, and will be erected within two years at a cost of £2,600. The site for rebuilding the Children's Hospital was bought with the money obtained as a result of an appeal two years ago. It is estimated that £50,000 will be required for the building and fitting up of a hospital of a suitable size. In addition to the money which will be received from the King Edward VII memorial fund, the hospital committee has £4,000 or £5,000 in hand from its own appeal, so that there now seems good prospects of the hospital being rebuilt. Plans of the hospital have already been drawn up and approved of by the hospital committee. The general wards are all open-air wards, and there are a few small wards for special cases. The wards are to be constructed so that they can easily be added to in the future.

WEST YORKSHIRE.

NOTIFICATION OF BIRTHS ACT IN BRADFORD.

TWO prosecutions of Bradford medical men by the local health authority for not notifying cases of the births of children in which they were in attendance have recently caused a great feeling of resentment in the profession. It was understood by the local medical men that the medical officer of health would never be a party to the prosecution of his professional brothers for not carrying out the clause in the Act in which it is attempted to place the onus of notification on their shoulders. It is difficult to see how the health authority has acted without his sanction. The stipendiary magistrate, who had reserved his decision for a month, gave judgement in his court on October 11th. He drew attention to the part of the Act which appeared to be material to the cases he was reviewing, from which it was evident that the father, if actually residing in the house at the time of birth, was required to give notice to the authorities, and any person in attendance on the mother. The local authorities were required to supply postcards for this purpose duly addressed to the proper officials. The Bradford authority had printed on the postcards which they issued an abstract of the material provisions of the Act. The abstract was, however, not correctly printed, an "or" being substituted for "and," which completely misrepresented the Act. "He dismissed the case, because it would be harsh to inflict a penalty on the doctors for not doing what the postcard told them it was not necessary to do."

BRADFORD DENTIST FOR LONDON SCHOOLS.

Mr. B. North, L.D.S.Eng., who has practised as a dentist in Bradford for some years, and who has been Chairman of the Elementary Education Subcommittee of the Bradford City Council for a considerable period, has been appointed as Superintendent of the School Dental Clinic of the London County Council at Deptford. Mr. North is the first dentist appointed for this purpose who is to devote the whole of his time to the duties.

YORKSHIRE HOME FOR INEBRIATES AT CATTAL.

In a case of a man sent to this home in July last, Dr. F. P. Hearder, the medical superintendent, made a charge against him at the Knaresborough Petty Sessions on October 12th of escaping from the institution on the 7th of the same month. The presiding magistrate made some strong remarks on the absurdity of sending cases of the class to which the prisoner belonged to the home. This led the public to believe that the home was useless as a reformatory, and that the public funds were wasted. As a matter of fact, the home was started by the West Riding County Council as an institution for the cure of inebriety and making drunken people into respectable members of society. It seemed to be developing into a penal institution for keeping drunken people from doing mischief. The prisoner in this case had been convicted over fifty times for various offences, and in 1905 had been sent to an asylum. There was no hope of effecting a cure in cases of this kind.

There can only be the greatest sympathy with the magistrate in these very wise remarks. The home is really a medical institution to attempt to cure diseased minds, and it is most unfortunate that it appears to be utilized as a peculiar form of prison for incorrigibles.

BRADFORD CORPORATION SANATORIUM FOR CONSUMPTIVES.

At a meeting of the Bradford City Council, held on October 11th, it was decided to buy forty-six acres of land at Hebden, Grassington, as a site for a new sanatorium. It is intended to provide 50 beds for women in the new building. The Bradford Board of Guardians already accommodate a large number of male phthisis patients in sanatoriums, and the new corporation institution is to form part of a scheme arranged for between the city council, the Education Committee, and the board of guardians.

WEST RIDING COUNTY COUNCIL CONSUMPTION SANATORIUM.

The West Riding County Council decided, at a meeting held on October 12th, in favour of a scheme for the provision of a sanatorium for consumptives in the West Riding. The Council has considered various schemes for some years past, but consideration of the great expense involved has always acted as a

deterrent. It has now been agreed to submit to a conference of local authorities a definite scheme for a sanatorium to be erected at Dacre Banks, in Nidderdale, at a total cost of £16,000. It is anticipated that the maintenance of each patient will be about 25s. per week, towards which the sum of 20s. per week will be provided by the local authorities from whose districts patients are sent to the institution, the rest to be borne by the county funds. The local authorities will again consider the question at a conference to be held at the Philosophical Hall, Leeds, on November 29th.

WALES.

Need of Water Storage.

Mr. C. H. Priestley, M.I.C.E., Waterworks Engineer to the city of Cardiff, has just presented an instructive report on the storage of water in the various reservoirs and on the rainfall to the Waterworks Committee. On October 1st there were 797,000,000 gallons in the Beacons, Cantref, Llanishen, and Lisvane reservoirs, being a decrease of 178,000,000 gallons on the storage on the corresponding date last year. The consumption during the past three months was as follows: July, 208,750,000 gallons; August, 199,030,000; September, 197,930,000. The average total consumption per head per day was 29.15 gallons for July, 27.79 for August, and 28.56 for September, on an estimated population supplied of 231,000 persons. The total consumption for the three months was 27,000,000 gallons in excess of that during the same months of 1909. The total quantity of water sold for trade and municipal purposes for the quarter ending June 24th, 1910, was 216,504,000 gallons, against 227,914,000 gallons during the same period in 1909—a decrease of 11,000,000 gallons. The rainfall at Lisvane reservoir from January 1st to October 1st was 26.56 in., the mean for the past forty-six years during the same period being 26.97 in. At the Beacons reservoir during the same period the rainfall was 59.76 in., as against a mean of 50.50 in. for the past twenty-five years. September of this year was exceptionally fine and dry, and established a local record for the lowest rainfall since 1865, when only 0.11 in. was recorded at Lisvane. The rainfall at the Beacons was the lowest they had registered for September since the gauge was fixed in 1885, the nearest approach thereto being 2.12 in. in 1907. The Chairman said the report showed the absolute necessity of a large reservoir to impound the water when they wanted it, and they had not decided a day too soon upon the construction of the new Llwynon reservoir, the tender for which had been accepted at the last meeting.

Urgent Need for Nurses.

An important meeting to further the aims and objects of the South Wales Nursing Association was held at the Shire Hall, Carmarthen, on October 11th, under the presidency of Sir James Williams Drummond, Bart., C.B. (Lord Lieutenant of Carmarthenshire). The chairman referred to the importance of having nurses in their country districts and to his own personal interest in the work. It was no good, he said, importing nurses from England or elsewhere. They must not only speak Welsh, but they must know the customs of the people. Mrs. De Rutzen (London), treasurer, moved a resolution recognizing the urgent need for the extension of district nursing in South Wales, and cordially approving of the aims and objects of the association. There were, she said, hundreds of people in Wales only too ready to take up the profession of nursing if funds only permitted. A lady, in seconding, emphasized the great need of better sanitation and better nursing for women and babies, who were badly neglected simply through want of knowledge of elementary cleanliness. Lady St. Davids, the secretary, in reviewing the work of the association's first year, stated that they had trained, or were training, eleven candidates as village nurses. They had appointed a Queen's nurse as superintendent, who had the advantage of speaking the Welsh language, and whose duties included the all-important one of inspecting the village nurses in their district work. When Wales gave adequate support, arrangements might be made for all candidates to be trained in Wales; at present some went to the excellent training home at Plaistow. They had had the advice and sympathy of distinguished men and women throughout the Principality in helping them to establish a reliable information bureau on subjects connected with nursing. They had undertaken the inspection of midwives in Breconshire and Radnorshire under the county councils of those enlightened counties, and they had placed their scheme before all the county councils of South Wales, and had received gracious promises of help from several, including that of Carmarthenshire, where there were at present five parishes that had Queen's nurses, and fourteen that had trained, but non-Queen's nurses. In the other parishes there were neither Queen's nurses nor other trained nurses. There was in all these districts an urgent need, for in some there was no resident midwife. The unnecessary mortality of infants was a national danger. Many of those who did survive in districts where infant mortality was heaviest were often sickly. The national call had been made, and it was for them to be up and doing to help the blind, now that great oculists had shown that infantile ophthalmia might be prevented. The immediate need was for the formation of local nursing associations in every district, and they required funds to aid them in following in the footsteps of Florence Nightingale. Many other ladies spoke in support of the resolution, which was carried with acclamation; many subscriptions were obtained.

Cardiff Infirmary Finances.

At the monthly meeting of the Cardiff Infirmary Committee, held on October 12th, Colonel E. M. Bruce Vaughan made the important announcement that a gentleman, who wished to remain unknown, had subscribed 5,000 guineas to endow five beds in the new wing, and also that the same benefactor had given £400 towards beautifying one of the wards. The overdraft of £20,000 would be likely to interfere seriously with the opening of the new wing in May or June, 1911. This overdraft cost them between £700 and £800 a year, and they had lost during the last two years nearly £1,000 in subscriptions due to removals, deaths, etc. When they noted that they wanted at least another £2,000 annually to work the present number of beds without exceeding the income, and another £6,000 a year when the new wing was ready to be occupied, they would realize how great a task was before them. If they were to do the work so urgently needed to be done, a sum of £9,500 must be found annually for this purpose over and above the present income. The secretary, Mr. Rea, reported that Lady Aberdare, who had been endowing a bed in the Thompson (Women's) Ward each year, had now written stating that she had decided to pay over the sum of £1,050 as a perpetual endowment. Colonel Bruce Vaughan, in supporting the hearty thanks of the committee, referred to the generosity of Lady Aberdare in regard also to the pathological theatre, to which she had contributed £1,050. He thought it would be most fitting to ask her ladyship to perform the opening ceremony of the theatre. It was further decided to accord very hearty thanks to Lady Ninian Stuart for £23, the proceeds of the sale of her poem on the death of King Edward; and to Mr. Alcock for £100 from the Executive Committee of the Welsh National Pageant. There are now 710 patients awaiting admission.

Monmouthshire Public Health and Housing Committee.

At the meeting of this committee held at the County Council Offices, Newport, Dr. Mulligan in the chair, the question of providing isolation hospitals at Tredegar, Rhymney, and in certain areas of the Afon Llwyd Valley was deferred. Dr. Rocyn Jones, county medical officer, submitted a report on the sanitary conditions in the Llanfrechfa Urban District, and recommended: The early revision of the existing

by-laws—particularly those of new streets and new buildings—and the framing of new by-laws upon the models laid down by the Local Government Board. The existing by-laws were not, he said, sufficiently lucid and stringent to prevent "jerry-builders" from invading the district. Other communications related to the adoption of the following Acts: The Private Streets Works Act, 1898; the Public Health Acts Amendment Acts, 1890 and 1907; the Infectious Disease Prevention Act, 1890; the joining with neighbouring councils for the purpose of making adequate provision for the isolation of the infected sick; the provision of an efficient disinfecting apparatus for the disinfection of houses after cases of infectious disease; the strict enforcement of the regulations adopted on March 16th, 1909, under the Dairies, Cowsheds and Milkshops Order.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Scottish Memorial to King Edward.

A proposal is receiving much support in the press, that Scotland's memorial to the late King Edward should take the form of a fund for a national crusade against consumption. It is claimed that no more lofty or noble purpose could be sought whereby fittingly to immortalize a beneficent reign than a national endeavour to grapple with such a peril as tuberculosis. It is realized that to fight this peril in earnest there must be a great fund of a quarter of a million pounds, so that it could be combated on an effectual scale. The proposal is at present being discussed in the press, and whether it will reach the stage of "deeds not words" remains to be seen. The fight is certainly before us, whether the funds are to be provided in this way or in another.

Edinburgh.

Opening of New Clinical Laboratory.

On October 13th the opening ceremony of the New Clinical Medicine Laboratory was performed by Sir Clifford Allbutt, K.C.B., Cambridge. Professor Rankine presided, and amongst those present were: Principal Sir William Turner, Sir Ludovic Grant, Professors Schäfer, Ewart, Robinson, MacGregor, Wyllie, Greenfield and Hunter Stewart, Lord Salvesen, Dr. R. McKenzie Johnston, Dr. Clouston, Dr. Byrom Bramwell, Dr. John Playfair, Dr. A. Bruce, Dr. MacGillivray, Sir John Batty Tuke, and others. Dr. Harry Rainy intimated apologies for absence from the Lord Provost, the Earl of Rosebery, the Earl of Elgin, Mr. A. J. Balfour, etc.

Dr. George A. Gibson briefly explained the manner in which the donor had indicated his intentions and the amplitude of the provision that had been made.

Sir Clifford Allbutt said he felt this was one step towards the integration of pathological research with clinical medicine. These two essentials of medicine had been most unfortunately separated, perhaps less in the thoughts of men than in the laboratories. Seeing that pathology, speaking broadly, was merely one side of medicine, there was something more than illogical, something actively mischievous, in the separation. He was for many years a practitioner in the West Riding of Yorkshire, and he met there a considerable number of Edinburgh graduates in medicine; and he had felt ever since a sense of the admirable training Edinburgh provided. It seemed to be remarkably good, partly from the love of learning that had long characterized the North of the Tweed, and also because the organization on medical lines produced a remarkable type of man, one who was intensely practical, thoroughly matter of fact, and yet had a philosophical training which made his mind flexible, which enabled him to look not only on medicine but on human affairs all round in the proper proportion and light. The university seemed to him to be singularly happy, not in burdening the students with an enormous amount of cram, but in developing their minds and making them efficient instruments. He remembered not long ago they had a gathering of that kind to celebrate the other scientific parts of the medical side of the university. Now they were again showing a continual activity, a constant growing age, a thrusting forward of antennae into the future to see and realize what further knowledge could be attained. Medicine was of all callings in life the most inaccessible, depending on "arms of precision" which had only been forged within our own generation. It had great difficulties in getting its knowledge; and at the same time no profession had such instant, poignant claims made on it to relieve suffering and remove deformities in human life. While they were called upon, perhaps a little too imperatively, in connexion with those evils in the individual and social body, people forgot that their knowledge was exceedingly inaccessible. It was to try to get more and inaccessible knowledge that this laboratory was instituted.

He was sure that the managers of the great hospitals were beginning to see that many of these investigations, which seemed to them to be fanciful, or merely academic, had enormously enlarged their knowledge within the past thirty or forty years; that there were no limits to this means of investigation; and that the researches were often fraught with enormous benefits to the sick with whom they had to deal. The feud between the active practising physician and the pathologist had extended through the last 2,000 years. It was strange that the professor of pathology in some cases seldom entered the wards of the infirmary. That seemed to him a ghastly contradiction of their duties in life. He thought a reconciliation was coming about; and by the establishment of such a department as this they were really bringing the pathologist and the physician together. Such apparatus as was going to be put down there recorded those electrical changes in muscle which were proving to be of the greatest importance in investigating the state of the heart muscle. They saw how such investigation suddenly sprang into practical use. They could not tell round what corner they might find themselves in presence of a discovery of widespread importance. The action of the heart would be shown on a screen in an unequivocal manner. They now had for the first time some definite means—at least, the promise of some definite means—of ascertaining precisely the functional value of that particular muscle on which all other functions and muscles of the body depended.

Professor Schäfer moved a vote of thanks to Sir Clifford Allbutt, and expressed his congratulations on the establishment of the New Clinical Medicine Laboratory, which, he believed, would be of very great value in the advancement of medical knowledge.

The company thereafter proceeded to inspect the new laboratory.

Royal Medical Society.

The one hundred and seventy-fourth session of the Royal Medical Society was opened on the evening of Friday, October 14th, when an address was given by Sir Clifford Allbutt, K.C.B., Cambridge, on "Blood Pressures and Arterial Disease." There was a large attendance. The history of the subject was briefly alluded to, and then the lecturer laid stress on the importance of regarding the cardio-vascular system as a whole, and especially of estimating the arterial factor in cardiac function. This arterial factor had only been directly studied in recent years, and definite endeavours made to measure its value. For some time physicians had very confused conceptions on this subject. Arterial disease was regarded too closely and exclusively as connected with Bright's disease. The various instrumental means of exhibiting and recording, first, the character of the movements of the blood in health and in disease; and, secondly, the state of the arteries themselves. The arterial coats were liable to injury by changes in the motion of the blood, and in particular by abnormally high blood pressure. The prevalent idea that arterial disease was a consequence of excessive blood pressure was considerably wide of the truth. Nor was it

true that disease of the arteries necessarily or generally raised blood pressure in any considerable degree. The arterial coats often degenerated from many obscure causes, and, if so, no doubt the moderate blood pressures of ordinary life would prove to be relatively too much for the weakened walls and would accelerate their destruction. Arterio-sclerosis was thus not, what it was usually called, a disease; it was but an anatomical result of various diseases. Excessive blood pressure, a disease of a very insidious kind, but quite curable if detected early, was discussed. When delay occurred excessive blood pressure injured arteries and heart till recovery became impossible. The dietetic and therapeutic means of counteracting this condition were alluded to in conclusion.

Glasgow.

Town Planning Record.

In connexion with the Town Planning Conference held recently in London, Mr. A. B. Macdonald, the City Engineer of Glasgow, has prepared a comprehensive statement as to Glasgow's work, and this is being circulated in the transactions of the conference. Mr. Macdonald says that the Corporation of Glasgow had always been regarded by municipal authorities in England as pioneers in the endeavour to ameliorate the conditions of life in urban localities. As early as 1846 the Corporation laid aside the sum of £30,000 to be applied in purchasing unhealthy dwellings within the more congested areas of the city and demolishing those places which had become centres of zymotic disease. Later the impulse of the advanced sanitary opinion caused the Town Council of Glasgow to bring forward the great measure of city improvements which dealt in what may be described as a heroic manner with the older parts of the city of Glasgow, and received the sanction of Parliament in 1866. This important measure, devised by the late Mr. John Carrick, which became the model on which was based similar legislation in reconstituting all the great centres of population in England, including the metropolis, enabled the Corporation to clear 80 acres of unhealthy dwellings, to widen 16 old streets, to form 29 new streets, and to provide open spaces in different areas of the city, which together absorbed about 100 000 square yards of ground formerly densely occupied by squalid habitations. Later, in 1872 and 1877, other special statutes for the improvement of the streets of Glasgow enabled the Corporation to make very ample provision for the future requirements of the city. Under the terms of these separate Acts of Parliament no less than £2,000,000 had been expended by the Corporation of Glasgow.

Second only in importance to the improvement schemes the operations conducted under the authority of the Glasgow Parks and Galleries Acts have exercised potent influence on the external aspect of the city. For generations prior to 1846 Glasgow Green, with an area of 136 acres, was the only open space available for the recreation of the inhabitants. Since that time no fewer than 48 parks and open spaces within and beyond the city, with a gross acreage of 1,115 acres, have been acquired, for the most part by purchase, at a cost of upwards of £650,000. This large acreage contrasts remarkably with the restricted municipal area of Glasgow itself, which is only 12,975 acres. In the environment of these parks wide areas of land have been laid out for residential purposes on the most advanced modern principles.

The Corporation and City Congestion.

At the meeting of Glasgow Town Council held on October 13th a motion was agreed to, after some discussion, that the Health Committee consider and report as to the necessity (in the matter of public health) for the immediate removal, so far as this can be done under existing legislation, of all insanitary and obstructive buildings in congested areas. The original motion was to throw the sites of these into children's playgrounds, but this part was deleted. The report of the medical officer of health for the city was quoted as to special areas in which the death-rate was abnormally high. A communication was submitted to the Corporation from the Glasgow and District Societies Council of Public Health, representing a number of working-class organizations in and around the city, calling for a vigorous inspection of the districts in order to discover all habitations which were not habitable, and asking that the powers conferred by the Housing and Town Planning Act be put into operation. This communication was remitted to the special committee engaged in this work.

Centenary of the Royal Asylum.

The Glasgow Royal Asylum has recently completed 100 years of existence, the foundation stone of the original building in Parliamentary Road, Glasgow, having been laid on August 2nd, 1810. The present building at Gartnavel dates from 1842. In this connexion it is interesting to note that Glasgow was the first town in Scotland to provide special accommodation for the mentally afflicted. In the first report published by the directors of the town's hospital in 1737 it is stated that a portion of the building was set apart for those "who had lost the use of their reason, which is a thing very much wanted, there being nothing as yet of that kind in North Britain." The special apartments thus provided might also be useful, the report states, "not only for people under that calamity who belong to this place, but also for such people from other places on reasonable terms." While the building of a special asylum was begun in 1810, it was not opened till 1814 for the reception of patients.

Blawarthill Hospital.

The Local Government Board has sent a letter to the Clydebank Town Council urging that action should be taken at once towards the extension of the accommodation at this hospital.

A Council of Public Health.

An organization has been formed in Glasgow, under the title of "The Glasgow and District Societies Council of Public Health," representing a number of societies, ward committees, and other bodies interested in public health questions. At a general meeting held on October 8th it was stated that four subcommittees had been appointed by the executive. One would look after all matters affecting the food and milk supplies of the people; the second would deal with the housing question; the third with hospitals, sanatoriums, and public dispensaries; and the fourth with sanitation and air. These committees would gather as much information as possible on the subjects with which they had been entrusted, and from time to time they would put this information in leaflet form, so that it could be circulated among the community. Some time ago a circular was sent out with a list of questions to ward committees, trade unions, friendly societies, etc., with the object of securing detailed information on public health matters, more particularly with regard to phthisis. From the replies to these questions an interesting statement is in process of compilation to be submitted to the next meeting.

At the meeting Mr. William C. Menzies, the manager of the Glasgow Corporation Improvement Trust, read a paper on the housing question, illustrated by lantern slides, and pointed out the difficulties in the way of securing in cities a healthy dwelling at a small rental for the classes with 22s. to 25s. per week of wages. He showed what the Improvement Trust had accomplished in providing nearly 2,500 houses of three apartments and under, housing nearly 9,000 citizens, and what the building regulations of the City of Glasgow aimed at.

Rescue Work in Mining Accidents.

A general meeting of the Mining Institute of Scotland was held in Glasgow on October 12th, when a discussion was resumed on the papers contributed on the Composition of the Atmosphere in Coal and Shale Mines in Scotland, and on the Possibilities of Rescue Work in Mines. The latter paper was contributed by Dr. J. S. Haldane, while those taking part in the discussion included several of His Majesty's Inspectors of Mines in Scotland.

ABERDEEN.

Presentation of Portraits to Emeritus Professor Ogston.

The portraits of Professor Ogston, subscribed for by medical graduates all over the world, were presented on October 14th, one to the university and the other to himself. The ceremony took place in the Picture Gallery, Marischal College, in presence of a large gathering of ladies and gentlemen, presided over by Professor Finlay, in the absence in Berlin of Principal Smith.

The Right Hon. Robert Farquharson made the presentation. Professor Hay, in accepting the portrait on behalf of the university, said they who were members of the staff of the university frankly admitted there was no one among them who had done more to increase its educational efficiency and to advance its reputation throughout the world than their former colleague. No surgeon that he knew of in this country, except Lord Lister, laid more deeply and more surely the scientific foundations for his surgical practice; and, indeed, Lord Lister owed not a little of the ready acceptance of his great revolution in surgical treatment to the penetrating and illuminating researches of Professor Ogston.

Professor Ogston, in reply, said they had given him a position in the pantheon of their university which, however little he might deserve, he most deeply appreciated.

The portraits are the work of Mr. Fiddes Watt, A.R.S.A. The university portrait depicts the professor in buttoned frock coat, the left hand lightly resting on a table on which are a book and one or two other accessories. In the personal gift he is represented in the household uniform as a Surgeon in Ordinary to the King in Scotland and the robe of M.D.

Old Mill Poorhouse Appointment.

Owing to the united action of the medical practitioners in Aberdeen no applications were received by the parish council for the vacant appointment. At a meeting held on October 11th the parish councillors resolved, as they are about to demit office, to leave the filling up of the appointment to their successors. The profession in Aberdeen is to be congratulated on the stand it has taken in connexion with this matter.

IMPROVEMENT OF ARBROATH INFIRMARY.

At a recent meeting of the Directors of the Arbroath Infirmary it was reported that an anonymous donor had offered a gift to the infirmary of an installation of Roentgen-ray apparatus. This gift was gratefully accepted. It was resolved to set aside a room for the purpose, which will entail some alterations in the infirmary. It was also decided that accommodation for the nurses might be provided on the ground floor, and that the present mortuary should be converted into a store, and a new mortuary erected. It was also resolved to consult an expert in respect to the general condition of the infirmary buildings, and what he considered necessary to bring the structure up to the requirements of a modern institution.

PROPOSED SANATORIUM FOR PAISLEY.

A proposal is at present on foot to open Gockston Hospital at Paisley as a sanatorium for advanced cases of phthisis, in order to obviate in a measure the spread of the disease to relatives of those afflicted. The estimated cost would be 30s. to 40s. per week per patient. It was agreed at the last meeting of the Town Council to delay matters meantime, pending an inquiry as to the treatment of phthisis in other places, and to consider the subject with the local branch of the National Association for the Prevention of Consumption.

GREENOCK'S WATER SUPPLY.

An exhaustive report has been submitted to the Greenock Corporation on the question of increasing the water supply. In order to meet the increasing demands of the town a new reservoir capable of holding thirty days' supply is considered desirable, the cost being estimated at £100,000. An alternative scheme was referred to, providing for an eight days' supply at a cost of £40,000. The magnitude of the scheme is causing a good deal of apprehension in local circles, and it is likely that no attempt will be made in the meantime to give effect to either of the recommendations.

STIRLING DISTRICT LUNACY BOARD.

The report of the Stirling District Lunacy Board for the year ending May 15th states that the work of the asylum is in a highly satisfactory condition. On May 15th there were 717 inmates—398 males and 319 females. The credit balance for maintenance was increased by £539 during the year, due to the economical administration of Dr. Campbell. The rate for board for pauper patients is continued at £27.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

DUBLIN.

Royal Academy of Medicine.

THE annual general meeting of the Royal Academy of Medicine in Ireland was held on October 14th for the purpose of electing officers for the ensuing session. After the transaction of the ordinary business a resolution was passed placing on record the deep sense of the loss that the Academy has sustained in the lamented death of the late Dr. Lombe Atthill. Dr. Atthill was President of the Academy for the triennial period commencing 1900, and made many valuable communications to the Obstetric Section. A vote of thanks to Dr. James Craig for his valuable services as Secretary to the Academy during the last six years was then proposed and passed by acclamation. Subsequently the following resolution was adopted:

> That the General Council is of opinion that a quinquennial enumeration of the population is most desirable, and recommends the Academy to make representations to this effect to the Government, and to invite the assistance of the Irish Universities, the Royal Colleges, the Irish Medical Association, and such bodies as the Royal Dublin Society and the Dublin Sanitary Association, in attempting to attain so important an object.

Pasteurized Milk.

A report from Dr. Dunne, Medical Officer to the South Dublin Union, showing the number of admissions and percentage of deaths in the nursery and crèche of the union during the last four years, was lately considered by the board of guardians. The figures supplied show that the percentage of deaths was in 1907, 19.4; in 1908, 17.1; in 1909, 16; and in 1910 (to date), 20 1. It appears that during the years 1908 and 1909 the children were fed on ordinary cow's milk, and that during the last twelve months pasteurized milk supplied from a Dublin dépôt has been substituted for this, and some of the guardians have jumped to the conclusion that the increase in the mortality-rate during the current year is attributable to the change. In consequence a notice of motion has been handed in for consideration at the next meeting of the guardians advocating a complete discontinuance of the pasteurized milk, and the furnishing instead of a supply of pure untreated cow's milk. The increase of mortality is attributed, on the other hand, by Dr. Dunne to the fact that large numbers of nurse children are now sent to the workhouse by lady inspectors, and that the condition of many of these on admission is extremely bad. Having regard to the fact that pasteurized milk from the same dépôt which supplied the South Dublin Union has been used elsewhere in Dublin on a large scale with excellent results, we hope that the guardians will carefully weigh all the facts of the case before coming to a conclusion which may shake the confidence of many of the poorer mothers of the city in a milk supply which has of late become extremely popular, and which, by the method of its distribution, inculcates the importance of care and cleanliness in infant feedin

Women's National Health Association.

At a meeting of the Executive Committee of the Women's National Health Association, held last week at Ballsbridge, Her Excellency the Countess of Aberdeen announced the intention of the association to hold next year, from May 24th to June 7th, a great health and industries show, to which the name of "Hy Brassail" is to be given. The show will be held in the grounds of the Royal Dublin Society, and its objects will be to illustrate all movements or enterprises which may conduce to the health or prosperity of Ireland. There will be exhibitions relating to nursing, food, cooking, school hygiene, and clothing, and in addition a programme of amusements. The Countess of Carrick has consented to be general manager, and has already obtained numerous offers of voluntary help.

Special Correspondence.

PARIS.

Doctors in Parliament.

THERE are about sixty doctors who are members of the Chamber of Deputies. Except the law, no profession contributes a greater number of deputies than the medical, a fact which would not have pleased Montaigne, who, in one of his essays, quotes with approval Plato's saying: "Lawyers and physicians are a bad provision for a country." I do not know if Plato goes on to give a fuller explanation of this remark; but, in any case, it certainly did not need Montaigne to convince us that both he and Plato were right with regard to doctors who play the part of politicians. At the present moment there are 20,000 doctors in France, which makes an average of 1 for every 2,000 inhabitants. They compose, therefore, one-tenth of the national representatives, and just lately two of their number have held the post of Prime Minister. Our parliamentary importance is thus enormously greater than it would be if every profession in France was represented in Parliament in exact proportion to the number of its members. What causes can be assigned for this rush of doctors into politics? At the risk of being thought disrespectful, I must say that medicine and politics being as it were sister arts, I do not consider it at all surprising that those who follow them should pass easily and naturally from one profession to another. As a matter of fact, are there any other two arts which resemble each other more closely? Both are identically the same in the complexity of their aim, the uncertainty of observation in each of their two provinces, the difficulties of experimentation, the obligation to promise and to deceive exacted by precisely the same kind of *clientèle*, the uncertainty of remedies, the suggestion exercised by deeds and by words, the necessity to humour the same sort of egotism and stupidity, and the same method of bolstering up hazardous facts by an imposing array of statistics. The therapeutics of the social body, with its mingling of science and quackery, does not differ from the therapeutics of the human body. The qualities necessary for success, the natural gifts of verbal persuasion, personal magnetism and authority, are nearly the same in both cases; whilst it is obvious that the very nature of the medical profession serves as a preparation for a political career, when one considers that the physician is brought into contact with every class of society, mixes intimately with the people, and is the recipient of their confidence and complaints. It is easy to understand how many of our colleagues become politicians when one remembers that the entire career of the French doctor, and, in consequence, the whole of his civic life, is spent in the same town, village, or district, where he is the best known and most familiar person in the place, where he is constantly appealed to for advice and assistance, and where his intellectual superiority is recognized and accepted above all others. The great majority of these medical politicians are country doctors; it is noteworthy that very few medical celebrities ever find their way to the Palais-Bourbon. There are some in the Senate, but I seek for them in vain in the Chamber. Either they are absorbed in their great scientific labours, or their ambition is satisfied by the magnitude of their fees. Even such parliamentary doctors as have obtained the highest honours in their political career are not those who had previously made their mark in their own profession. I am not afraid of offending my two eminent *confrères*, Dr. Combes and Dr. Clemenceau, who have long ago ceased to care about the matter, if I say that their medical fame never extended beyond the limits of their quarter. It is not, therefore, altogether surprising that the doctor should have taken so little active part in the discussion of the numerous laws connected with medicine which have been passed during the last fifteen years. Even in the Senate, when two years ago an effort was made to establish a legally organized resistance against lead poisoning, the Minister of Labour and Social Providence appointed as Government commissioner a man outside Parliament, Professor Dieulafoy, to support by his authority and experience the proposed measure. Similarly, it is somewhat surprising that both the Director of Public assistance and the Director of the Board of Public Health, who are chosen from members of Parliament, should not be medical men. The first, M. Mesureur, is a lawyer; and the second, M. Mirman, a former professor of secondary education. But, it may be expected that even if the doctors who sit in the Chamber do not dazzle it by their scientific light, they at least show the professional side of their character by the particular interest they manifest in all that affects the social interests of the medical body, and the great questions which at present agitate our syndicates and congresses find an echo in the hearts of our brothers in arms. Those who have escaped from the common ruck of medicine, those who have lived the obscure and laborious life of an ordinary practitioner, those who, by a caprice of their constituents, may to-morrow be sent back to the yoke, surely they strive to better the common lot of their colleagues, and even to defend us from the exploitations of the State administrations and friendly societies. Being relatively so numerous, they could be a valuable support and tower of strength to us. But, alas! their delicacy, no doubt, forbids them to interest themselves in these almost egotistical questions, and, introducing into politics the traditional disinterestedness of the disciples of Hippocrates, they show their medical spirit in piously abandoning us to our misery. And, after all, the Chamber of Deputies is not composed of the delegates of corporate bodies; these doctors are the servants of their constituents, and not those of the profession. They have escaped from the cares of their calling by a side path. They practise another sort of medicine—a little different, a little better remunerative, and perhaps not very much pleasanter. We have nothing to expect of them. The French medical members of Parliament are not the representatives of our profession; they are only deserters.

A QUARTERLY court of the directors of the Society for Relief of Widows and Orphans of Medical Men was held on Wednesday, October 12th, Dr. Blandford, President, in the chair. Fourteen directors were present. The audited accounts of the half-year ending June 30th, which were read and passed, showed that the income derived from investments during the period amounted to £1,497 18s. 6d.; £254 14s. had been received in ordinary subscriptions, and £46 4s. in life subscriptions; £1,130 10s. had been distributed amongst the annuitants of the charity. The sum of £534 was voted to be paid in December as a Christmas present, each widow to receive £10, each orphan £3, and each orphan on the Copeland Fund, £5. Two medical men were elected members of the society. Membership is open to any registered medical practitioner who at the time of his election is resident within a twenty-mile radius of Charing Cross. Relief is only granted to the widows and orphans of deceased members. Letters are being constantly received from widows of medical men asking for assistance, but this has to be refused as their husbands had not been members of the society. Full particulars and application forms for membership may be obtained from the Secretary, at the offices of the society, 11, Chandos Street, Cavendish Square, W.

Correspondence.

THE FIFTH INTERNATIONAL CONGRESS OF OBSTETRICS.

Sir,—In your interesting article in the Journal of October 15th on the fifth International Congress of Obstetrics and Gynaecology, recently held at St. Petersburg, there is one rather important error.

In the concluding paragraph, on p. 1168, it is stated "that at the Séance de Clôture on September 28th it was decided to hold the sixth International Congress in London in 1915."

I was present as a delegate with Sir Alexander Simpson and Professor Malins at a meeting of the Organizing Committee of the Congress when the formal invitation from Germany to have the sixth International Congress held in Berlin in 1912 was considered. The invitation was accepted and was ratified by the general meeting of members of the Congress at the Séance de Clôture on September 28th.

No allusion was made on either of these occasions to subsequent meetings of the Congress, though I heard hopes expressed privately that in the not distant future the Congress would meet both in Great Britain and America.—I am, etc.,

London, Oct. 15th. Amand Routh, M.D.

STATE SICKNESS AND INVALIDITY INSURANCE.

Sir,—In a memorandum appearing in the British Medical Journal for September 17th, 1910, on 748 and following pages, the terms and conditions for a State medical service were referred to.

As many find it difficult to debate the subject satisfactorily, with a view to formulating their opinions, without the help of definite questions, the endeavour of this communication will be to submit such questions as may be considered to fairly cover the field for discussion as it affects the medical profession.

It is not satisfactory to try to obtain the opinion of the medical profession by giving that of a few of its members and asking the rest if they approve it or no. Such a procedure does not place the person questioned in a position to grasp the points at issue, even if a memorandum accompanies it; a negative answer leaves matters unsettled, and therefore will lead to no finality; whilst an affirmative reply is open to the criticism that it has been given through apathy or ignorance, from indolence in thought, or from a desire to agree with those who have submitted their opinion.

The subject of medical attendance under a State invalidity and sick insurance scheme has to be faced by all branches of the medical profession, and not only by the general practitioner, although possibly it is on his decision principally that the scheme will ultimately be drafted.

As it is not proposed to discuss the possible replies—that being no doubt done in due course through the correspondence columns of the medical papers and at meetings of the medical societies—the questions will be given as concisely as possible:

1. Is it desirable that a State invalidity and sick insurance scheme should include medical attendance
   (*a*) In the interests of the community;
   (*b*) In the interests of the medical profession?
2. Should the scheme include the Poor Law medical service?
3. Should the scheme
   (*a*) Include women and children;
   (*b*) Be compulsory;
   (*c*) Be contributory?
4. Should the central promotion, organization, and control of the medical attendance portion of such a scheme be in the hands of
   (*a*) The State; possibly by special commissioners being appointed or a special health department being formed;
   (*b*) A special board, formed of representatives of all interests (State, employers, employees, and medical profession);
   (*c*) The British Medical Association, directly or as an agent;
   (*d*) Permanent friendly societies, directly or as agents;
   (*e*) Any other body?
5. Should there be formed central and local conciliation (advisory) boards having on them representatives of all interested parties, and which will consider questions referred to them?
6. Should the medical attendant make his contract with
   (*a*) The central board controlling the service;
   (*b*) The patient; or
   (*c*) Should it be made on his behalf with the central board controlling the service by the British Medical Association?
7. Should the contract made with the doctor in general practice be
   (*a*) In the form of a capitation grant;
   (*b*) On a tariff of fees for work done;
   (*c*) A whole-time appointment;
   (*d*) A part-time appointment?
8. Should the contract made with the consultant (physician, surgeon, specialist, bacteriologist, etc.) be
   (*a*) In the form of a capitation grant;
   (*b*) On a tariff of fees for work done;
   (*c*) A whole-time appointment;
   (*d*) A part-time appointment?
9. Should the liability for the remuneration of the medical practitioner rest
   (*a*) With the body controlling the service;
   (*b*) The patient?
10. Should the selection of the medical practitioner be made
    (*a*) By the party making the contract with him;
    (*b*) By the party paying the fees in part or in whole;
    (*c*) By the patient?
11. Should contributions, if any, to be made by the employers or (and) employees be paid
    (*a*) To the body controlling the service;
    (*b*) To the medical attendant?
12. Should the benefits of the medical service be restricted to
    (*a*) All members of certain scheduled employments;
    (*b*) Those under a certain wage limit?
13. If in answering questions 7 and 8 it is decided that the contract should be in the form of a capitation grant, should it be uniform, or should it vary with the age, health, wealth, or (and) trade of the beneficiary?
14. Should the contract made with the medical practitioner (general practitioner or consultant) cover
    (*a*) Only medical services and incidental clerical work as it occurs in private practice;
    (*b*) Medical services, as also drugs;
    (*c*) Medical services, drugs, and the clerical work contingent on a State service?
15. If in answering questions 7 and 8 it is decided that the contract should be on a tariff of fees for work done, should there be one tariff throughout the service or should there be several tariffs based on
    (*a*) The incomes of the beneficiaries;
    (*b*) The number of dependents on the worker?
16. If in answering questions 7 and 8 it is decided that the contract should be on a tariff of fees for work done, should any steps be taken
    (*a*) To prevent excessive attendance by the medical practitioner;
    (*b*) To discourage beneficiaries from unnecessary calls on the services of the practitioner;

and if so, what steps?

17. If in answering questions 7 and 8 it is decided that the contract should be in the form of a capitation grant to the practitioner, should any steps be taken to provide a maximum limit to the amount of benefits which can be obtained; and if so what steps?
18. Should the scheme include any provision for inspection of beneficiaries with a view to prevention of disease?
19. Should an attempt be made by means of a referendum to obtain the opinion of all the members of the medical profession in the United Kingdom on any one or more of the above questions before approaching the Government?
20. If the reply is in the affirmative, which questions should be so referred?
21. Should the British Medical Association conduct that referendum?

If additional questions affecting main principles occur to others, it would be most desirable to have them enunciated as soon as possible.

The elaboration of a scheme to carry into effect the ultimate decision of the medical profession would be a matter for negotiations between the Government and some body representative of the profession, as the British Medical Association.—I am, etc.,

Southfields, S.W., Oct. 12th. E. Rowland Fothergill.

Sir,—Amidst the torrents of eloquence (and of ink) that are being poured out in the advocacy of rival plans for the provision of a national scheme of medical attendance one thought emerges.

It is that, whatever scheme we may eventually agree upon, we shall—if it tends towards a better state of things

for our profession—almost inevitably have to put up a fight for it. For such a fight a war-chest is necessary—and a full one. Then, and then only, can we put forward any programme at all without a sense of impotence, paralysing to ourselves but stimulating to those with whom we have to bargain. Without funds to support those who will suffer loss of income through their loyalty to their colleagues, and to organize such expert and clerical assistance as will be required, we but waste time in formulating demands that we have no power to enforce. The nucleus of such a fund exists in the Central Emergency Fund of the British Medical Association, which, however, is voluntary, and therefore, I am afraid, much neglected. Why should we not take a leaf out of the book of trades unionism, even though the name may jar on the finer sensibilities of some, and make the fund an essential of membership?

In the meantime those of us who are in any way interested in medical eugenics cannot with consistency, I submit, refrain from subscribing to our Emergency Fund. The reduction of public vaccinators' fees, the lack of provision for payment of birth notification fees and for death certification under the proposed Act of Sir W. J. Collins, M.D., and other instances we can all recall show only too clearly the typical attitude of the State towards us.—I am, etc.,

Bristol, October 13th. T. A. Collinson.

CONTRACT PRACTICE AND THE MEDICAL PROFESSION.

Sir,—We all appreciate the tone of Dr. Parkinson's letter, and all thinking members of the profession will agree with his advice; *but* there is one great difficulty—all the members of the profession are not members of the Association, and a great number remain outside the fold, for reasons, alas! which are only too obvious.

We have only to take up this week's Journal for an explanation. First, then, let us read the letter of Dr. MacCarthy on insurance agents and their methods. Dr. MacCarthy very properly refuses to take out an insurance policy for his own life—in plain English he refuses to bribe the agent. The result is that he loses the insurance examinations of this agent's clients. But the would-be insured must be medically examined. Who, then, examines them? Then we read a letter by "Veritas" on "Commissions to Midwives." Here, again, we have an illustration of the moral standard of certain members of the profession. If these commission mongers are members of the Association, they should be expelled therefrom.

Instead, however, of recording such matters as these in the Journal they should be taken up, and dealt with locally.

A member of the profession living in Bedford could not ascertain who stepped into Dr. MacCarthy's shoes, nor can he take any steps to trace the commission mongers mentioned in the letter of "Veritas." In such cases a meeting of all the local members of the profession should be called and the matter should be thoroughly investigated and drastic measures should be taken to end the abuse. Only good could result from such local gatherings, and they would go a long way towards consolidating the profession as a whole.—I am, etc.,

Bedford, Oct. 14th. S. J. Ross.

Sir,—I am pleased to see that your outspoken exposition of the present state and future prospects of general medical practice, in the Educational Number of the British Medical Journal, is calling forth strong expressions of opinion for the urgent need of "protection" from members in divers parts of the country, and not a moment too soon. Surely, when a hospital teacher (Dr. William Ewart) felt it incumbent on him three years ago to devote his inaugural lecture at St. George's Hospital to emphasize the increasing undesirability—if I may coin a phrase—of general medical practice as a means of earning an honourable and adequate living wage, and when a lay "daily," commenting on your article above referred to, sarcastically observed that general medical practice appeared to offer a less lucrative field of work than "rat-catching" or "crossing-sweeping"—surely, I say, it is high time for us general practitioners to be up and doing our level best to agitate for the much-needed reforms and safeguards so urgently desired.

I read with much interest Dr. Hawkyard's trenchant letter in the Journal of October 8th, which by a curious coincidence embodies, to a great extent, views and suggestions set forth in an article on the "Decadence of the General Practitioner," contributed by me to the *Manchester Medical Guild Quarterly* for November, 1905, in which I specially emphasized the need of loyal union in our ranks. Therefore I cordially endorse Dr. Stanley Parkinson's letter in the British Medical Journal of October 15th affirming "trade unionism" to be the one and only means to *compel* that union and *esprit de corps* in our ranks which the laudable efforts of the various Branches and Divisions have so far failed to achieve.

Solicitors possess statutory protection and powers to rule themselves in the shape of the "Incorporated Law Society," which fixes a scale of fees and deals with all who break its by-laws.

Why, then, should we not have an "Incorporated Medical Society," which shall possess similar statutory powers to fix a *minimum* fee standard and deal drastically with all who break its by-laws, ethically or otherwise? The General Medical Council is but a fossilized relic of antiquity, and does nothing for us general practitioners. Then, by all means, sweep it away and let us have a legalized governing body on a democratic basis, elected from our own ranks, who know our wants and our difficulties, and will possess the confidence of us all, and who will have statutory powers to ensure us getting adequate protection in every legitimate direction. I sincerely hope and trust that every Branch and every Division throughout Great Britain will delay no longer in agitating for a measure which is absolutely necessary to save the general practitioners from being slowly but surely starved out of existence within the next two or three generations. Their increasing *res angustae* is a matter of common knowledge, of which the pages of the Journal itself furnish painful evidence, each spring and summer, in the large number of advertisements offering "hospitality for doctor and wife" in lieu of salary as locumtenents, because they cannot afford the four to five guineas a week which locumtenents now demand, as against two which was the customary fee twenty years back; while, on the other hand, the unfortunate principals have to accept to-day one-half or one-third the fees which prevailed a generation back.

I would remind my brethren that a general election is not far off, and that it behoveth us to come to a general and unanimous decision as to the line of policy to be adopted and the questions to be put to each candidate; and let us sink *all* political leanings, and support, and also canvass our patients to support, only the candidates—Tory, Radical, or Socialist—who will pledge themselves to concede our legitimate and necessary demands.—I am, etc.,

C. Stennett Redmond, L.R.C.P. and S.I.

London, N., Oct. 16th.

Sir,—Dr. Parkinson's letter in the Journal of October 15th is a simple solution, and I heartily agree with him, and let us call it "a trade union." I know medical men who gladly take a tip of 10s. from a working man who pays 1½d. a week contract work. I don't blame them, but I am certain we should get more "respect" from the working man if we had a "trade union," and should not want his tip. Unfortunately, the powers that be in the profession are only too ready to sneer at their poorer brethren for such acts as the above, but never think of helping to get at the cause.—I am, etc.,

October 16th. Disgusted.

FEMINISM.

Sir,—It is noteworthy that some of the contentions brought forward by Dr. Arabella Kenealy in the *Times* (Woman's Supplement) for October 8th, and referred to in a leading article in this Journal,[1] have recently been advanced from another quarter. Dr. Berry Hart, in his *Phases of Evolution and Heredity*,[2] a volume in whose pages Darwin and Weismann, Mendel, Galton, and the Modern Woman jostle each other, has a chapter entitled "The Handicap of Sex," and in this chapter he comes to

[1] British Medical Journal, leading article, p. 1178, October 15th, 1910.
[2] *Evolution and Heredity*. D. Berry Hart, pp. 195–206, 1910.

conclusions somewhat similar to those reached by Dr. Kenealy, although approached from a slightly different standpoint. At puberty the girl evolves, says Dr. Kenealy, into "a more delicate, beautiful, and more highly organized creature," whilst the boy degenerates, "descending a rung lower in the ladder of evolutionary organization." Dr. Berry Hart states the change thus: "The boy remains thin, but more aggressive in his proceedings, is the delighted anxiety of his feminine relatives . . . he is then usually averse to formal instruction, which he terms 'rot,' and displays great contempt for his sisters and their school friends, who often easily surpass him in his tasks . . . when approaching manhood, however, he begins to draw up in the race, sees the responsibilities facing him, and easily overtakes and keeps ahead of his once formidable feminine opponents. . . . On the other hand, the girl at this age increases in weight and becomes plump and not so lanky as the boy, although the *Backfisch* or "flapper" is often with us as in Germany; she becomes more reticent and shy, eager at her school work, often toiling far beyond her strength . . . after seventeen the girl usually slackens her efforts after knowledge, and devotes more of her time to adornment or even to coquetry; at any rate, the boy's superior physical strength and more robust nervous system give him a staying power she does not possess." As to mental powers, Barry Hart quotes Waldeyer, and states that the general conclusion at present is that in the sexes the brain capability of women more nearly approaches that of men than the lord of creation fondly imagines. But there are functional differences: "women are more eager and intuitive than men; they come to conclusions more rapidly and weigh the result of their thoughts less. *Fiat justitia* seems to them so strong that the *ruat coelum* is not considered enough. Men would endeavour to avoid the latter by a compromise, but for women that is anathema; they would push on logically, and then adjure men to clear away the celestial débris and free them." Dr. Hart goes on to consider two things—woman's staying power, and how far her mental capabilities are modified by her sex; and he makes this significant statement: "Woman can certainly do what man does in ordinary life, but how far she can go on doing so without damage to her nervous system or her sex characteristics is quite another matter; certainly she will suffer more than a robust male and more even than the neurotic man." It is admitted that she can outclass man as a nurse and makes a better patient; but "it is really in motherhood that Nature is justified; here the woman is all grace and power—is worshipable." Here, finally, is Berry Hart's summing up: "Man and woman are equipotential, but not equivalent. The differentiation of sex has handicapped woman more than man; yet, for all that, she has the greatest influence on man, and at one stage of his primitive career turned the development of the race heavenwards, and formed the most sacred thing in the world—home and hearth. Nature has made woman's life one of special sacrifice, and has so tightened the bonds for this purpose that the attempt to break them and lead what some feminine leaders ingenuously believe to be the higher life of a man, can only end in that most dreadful of catastrophes—Nature's revenge."—I am, etc.,

Edinburgh, Oct. 17th. J. W. BALLANTYNE.

SIR,—I have been deeply interested in the article on the above-mentioned subject published in the JOURNAL of October 15th. Though neither "medical" nor "scientific," but only an ordinary person, I have made my own observations and thought my own humble thoughts on the most marked decline in good looks and good figures amongst women for many years. It has often presented itself to my mind as a very simple possible explanation of the (supposed?) decreasing marriage-rate instead of the deeply learned causes suggested.

When in public places, as restaurants, waiting rooms, etc., I look around me and think—were I a man, neither honour nor riches would induce me to spend my life with one of the vague-featured, plain-faced, flat-figured, large-footed, anaemic women one sees in dozens and hundreds. When I do see a good-looking girl, I cannot help staring almost rudely at her, in pure pleasure.

As causes of these decreasing "good looks," I often think lack of good air and ill-regulated exertion are largely responsible. Women in offices—both private and public—owing to want of proper ventilation, breathe for many hours daily a vitiated atmosphere composed largely of human breaths, emanations from human bodies and clothes, and often most horrible ones from gas stoves and gas burners.

The one or two half-days "off" in the week are most frequently spent in violent exercise, as hockey or excessive cycling. For these exertions the sedentary, airless lives led during the other days of the week befit them ill. Their muscles are not in order for violent exercise, neither are their habits of breathing.

Some three years ago the female librarians in a free library in one of our largest and most important towns complained bitterly to me of the injury done to their health by the intense heat—it was really comparable to a "forcing house" for tropical plants—and lack of ventilation in the building. Their ailments were chest complaints and anaemia. One of them was a really naturally beautiful girl, but her complexion was a yellow-white.

This town has a sanitary committee and medical officer of health, and the library has windows in dozens—unopened! (Heating apparatus is usually left to an uneducated man, who allows it to be unbearably hot or nearly cold, as it happens.)

Some twenty odd years ago girls of the class I am speaking of were not "shorthand typists," clerks, librarians, etc., nor did they take such violent physical exercise as playing hockey, and cycling with men, which means keeping up in pace and play with men.

"Looks" depend very largely on health; and I have noticed that the skin of women living in badly ventilated places gets a "pitted" appearance, and hangs loose, to say nothing of tired eyes and "strained" expressions. Over-tire and that terrible thing "weariness"—a combination of bodily and mental tire—one sees only too often on otherwise young faces.

The ancient Greeks were noted for personal beauty; but Pericles says (Funeral Oration):

> We have also found out many ways to give our minds recreation from labour, by public institution of games all the days of the year, by the daily delight whereof we expel sadness.

"Daily delight" is not being sedentary for five or six days, and violently active for one or two. Of course these words were written for men, but as the modern idea is the "man-woman," one may apply them to this latter-day creation.

Fortunately, if the modern novel is the expression of "the times," the "leisured classes" have no need to continue the acquirement of social accomplishments at the expense of money and brains. In a novel I have lately read, the heroine is described as going bathing with a party of young men in her father's pink pyjamas, and her "long white feet and straight toes" captivated the heart and hand (we will leave out head) of a youth with riches and a title. This is certainly a contrast to the "swooning" lady of older novelists, who, though she must have been an extremely irritating person, did, I verily believe, secure more masculine attention than the present type, though her "muscles" do "ripple beneath the tight-fitting sleeve."

It may be that "sentiment" has more effect upon the physical conditions of the body than is known, and that the constant throwing together of the sexes at school, and after, and the supposed "equality," and modern withdrawing of all "fences of custom and convention," have so largely done away with "sentimental" feelings of one sex towards the other, that, as a result of "mind over matter," certain functions of the body cease to be excited, and marriage and parentage become undesired.

Or, it may be the other effect—that the licence permitted in conversation, manners, and morals, with nearly all barriers of what was once considered "propriety," removed—emotions are unrestrained, and a prematurely worn-out mind, body, and nerves result, and no desire for the moral relation of marriage, with its ties and parental cares.

I earnestly believe the "man-woman" to be a disastrous creation, destructive of true and healthy and beautiful womanhood.—I am, etc.,

October 18th. A PLAIN WOMAN.

THE HEARING AFTER OTECTOMY.

Sir,—I welcome Dr. Clayton Fox's testimony as to the value of otectomy, and accept nearly all his reservations. I have, however, found it useful in some cases of tuberculosis of the ear, and when there has been facial paralysis. With regard to Dr. Hill's remarks, I should like to point out that I have never claimed to be the first to perform intrameatal operations—the term, by the way, was in use before my time. A good many of my cases had had "something done" by way of the meatus before they came to me. Dr. Hill's remarks—at Exeter, for instance—have generally seemed to mean that in the great majority of cases he placed no faith in permeatal methods of treatment. But if my sincerity be admitted, and Dr. Hill kindly admits he believes I am sincere, it must be accepted that the great majority of my cases have been cured by the "diminutive" operation of otectomy. Practical results are worth a lot of theory. I have published several series of consecutive cases, and I will now only say that the results of the past two years are still better. Otectomy is from two Greek words, and literally signifies "a cutting out from the ear."—I am, etc.,

London, W., Oct. 13th. Faulder White.

EXPERIMENT AND OBSERVATION IN MEDICINE.

Sir,—In Dr. Codd's address printed in the British Medical Journal of October 15th last there are some curious and problematical statements of which I should like an explanation.

First, to quote the speaker, "Much of this distinction in results is due to the nature of the *material* we deal with." What material?

Again, "The personal equation of the patient is so variable," etc. Is not the personal equation of the observer also of importance?

"The human factor is a variable and not a constant, and so the equation never works out accurately"—that is, I take it x does not always $= y$ where x is the doctor and y the patient. This is an extraordinary mathematical problem.

Is not the "chemical balance" absolutely necessary in our clinical laboratories? And without these laboratories and research ones also, where would our "clinical methods" be?

I suppose by "haemomanometers" Dr. Codd means sphygmomanometers. That the latter "have many sources of error" is true, but these sources may depend on two factors x and y_s, x being the observer and y_s the instrument. If x is skilled in its use and y_s is a reliable instrument, much is learned, which nothing else can teach. Would it be wise to give digitalis if a man's mean pulse tension (systolic) was over 160? A study of Sir Lauder Brunton's *Therapeutics of Circulation* might help $a - x$ to become $+$ after its study.

It would be very interesting "to have two patients exactly alike having the same disease and the same stage," etc., but here it is difficult to make $y^1 = y^2$.

By "catch the disease," does that mean that x is to equal y^1 when the latter is diseased?

Pharmacology "has not quite realized our expectations." True, but why? Simply because it is a progressive science, and would progress faster were it not for anti-vivisectors, who will be delighted at this paragraph of the speaker.

I am afraid there are many "analgesics and anodynes" which have more than "precious little effect when there is no pain."

I do not quite know what a "good dollop" of fixed nitrogen means.

Are not hemlock, henbane, belladonna, etc., "indigenous plants"? What "ground" is "well covered"—the surface of the earth in the British Isles?

With regard to the alcohol question. True, the fashion is to decry alcohol, and to neglect it to-day in many a case in which the writer knows it has saved life. Hale White's *Materia Medica*, etc., would do some good to "cranks." But the wave of medical thought may soon go to the opposite extreme; but let us hope it will finally settle at the equilibrium of the chemical, medical, and mental balance of doctors.

Lastly, were the old clinicians "humbugs"? No, Sir, there were giants in those days, and but for those "humbugs" where would medicine be now? We have a grand inheritance from them, and I for one bless their memory.—I am, etc.,

October 15th. Iatro-Chemist (not of the ancient sort).

SHIP SURGEONS.

Sir,—In reply to Dr. Rentoul's letter, published in the Journal of October 15th, I would refer him to a statement of the aims and objects of the proposed combination of ship surgeons which appeared in the British Medical Journal of July 9th. There he will find that one of our first aims is the establishment of a fixed fee system; this does away with an appeal to anybody, captain or company. The existence of this rule could be made public to passengers in a proper way; but, as referred to in a former letter on the subject, I would not think it consistent with ideas of professional self-respect to have a scale of medical fees "posted in the saloon" alongside the notices generally connected with the stewards' department. I am sure that all ship surgeons will be most grateful to Dr. Rentoul for the efforts he appears to have individually made "to arrange that first-class passengers should be made to pay fees to the surgeon." It is, however, a pity that at the same time he did not arrange for a better administration of his system. What experience would a captain have in the deciding of a question of correct medical charge? It would be a very unfair position to place him in, for he is not a free agent; there are always the owners and the company to consider, and letters of remonstrances to head quarters from passengers with grievances are never desirable. The one great check to a patient on shore offering frivolous objection to payment of a fair fee is the fact that he will be mulct in costs by an even-minded judge; a ship's captain would have no power to exact this penalty for the waste of his time, and if the skipper of a liner is to spend his spare moments off the bridge on the last night at sea somewhere off Ushant or the Irish coast in settling a dispute over a bill, a new danger to navigation will be introduced, and it would indeed be better—from the underwriters' point of view at least—if, as Dr. Rentoul suggests, a county court judge was carried as an extra hand.

I regret if I should have annoyed your correspondent by reference to such a thing as dignity; one can see from the tone of his letter that he is absolutely genuine in his dislike to the term, but I cannot follow his line of argument, embracing as it does sewer cleaners and rat-catchers. Dr. Rentoul has, however, performed a very useful service in drawing attention to the necessity for organization, which I trust will be recognized by every ship surgeon.—I am, etc.,

Rostrevor, co. Down, Oct. 16th. John F. Elliott.

Sir,—Why Dr. Elliott's last communication should have aroused a state of irritability in the mind of Dr. R. R. Rentoul I am at a loss to imagine.

What is the matter with this discussion—labelled "lame and impotent" by Dr. Rentoul? The only impotence that I can detect is that gentleman's suggested lightning method of dealing with the matter—namely, that the various steamship companies should be written to, and those not adopting the Liverpool plan should be posted on the "black list" in the Journal. Does Dr. Rentoul really suppose that steamship companies are to be terrorized into granting sweeping changes in this sort of way by a small, irresponsible, self-constituted committee? As a matter of fact, this committee should be encouraged to do what it set out to do—that is, to invite discussion on certain important questions affecting ship surgeons, to ascertain their views, and to lay the whole matter before the British Medical Association, which body, as representing to the public a certain organized authority in the profession, was to appoint a committee to consider the present position of ship surgeons, and eventually formulate certain reasonable demands to be conceded by all shipping companies employing doctors on board their ships.

I entirely agree with Dr. Elliott that the captain should not form a court of appeal. To begin with, I am quite sure that he would very much object to filling such an invidious position; also I fail to see what qualifications he

possesses for the post; and, finally, in what way is the passenger more effectually tied up than if his appeal were to the "cook" as Dr. Rentoul suggests?

But no question of appeal need arise at all if the Liverpool method is set aside and the plan of at least one premier steamship company is adopted—namely, that of allowing the surgeon to charge certain definite stated fees to first and second class passengers.

It is undesirable, I think, to argue any point of "professional dignity" with Dr. Rentoul; it might be well, perhaps, to leave him in sole possession of the "sewer."—I am, etc.,

London, W., Oct. 16th. STANLEY NOBLE, M.D.Brux.

DRAUGHTS.

SIR,—Your interesting article on draughts suggests to me some reflections which I venture to think it may be profitable to consider at the present stage of evolution of medical thought.

I do not think that many will dispute the proposition that draughts, in the majority of persons, are capable of setting up or precipitating unpleasant bodily conditions such as so-called "colds," neuralgias, etc.

It must be distinctly understood that the draughts here referred to are not highly concentrated doses of very cold air. Such may undoubtedly depress vitality, and thus directly bring about disease. Very frequently draughts, which are afterwards held responsible for the production of illness, act quietly and almost imperceptibly, so that the person may be hardly conscious of them at the time, and may have to search his memory afterwards in order to recall the exposure. It is a common experience to hear it said by one who is trying to account for, say, a stiff neck, "I must have been sitting in a draught." In any case, all the concession I ask for in this connexion is that a draught, to be effectual for harm, does not need to be a strong concentration of cold air such as one would naturally expect to have a depressing effect on vitality.

Granted, then, that draughts are to a certain extent and to the majority of individuals a source of danger, it would appear to be an important matter to get at their *modus operandi*, in order that we may, if possible, so fortify ourselves as to be immune to their influence.

I advance the theory, neither original nor new, that the power for evil which the draught possesses resides in our belief in that power for evil, and in the vast majority of cases has not any other foundation.

Why should a current of air, impinging on some particular part of one's anatomy, give rise to any reaction beyond the slight reflex one which does not of itself upset the bodily equilibrium? I cannot conceive of any possible explanation except the one I am setting forth.

Is this, then, an explanation which can be accepted as possible? I am aware that to the majority of the members of the profession it may sound far-fetched and even ridiculous. Nevertheless it is, I maintain, a psychologically sound one, and if it can be shown to be psychologically sound, it is surely worthy of careful attention, especially in view of the absence of any other satisfactory theory.

I base my statement as to psychological soundness on well-recognized psychological facts which may be summed up in the following quotation from James's *Textbook of Psychology*:

> The fact is that there is no sort of consciousness whatever, be it sensation, feeling, or idea, which does not directly and of itself tend to discharge into some motor effect. The motor effect need not always be an outer stroke of behaviour; it may be only an alteration of the heart beats or breathing, or a modification in the distribution of the blood, such as blushing or turning pale, or else a secretion of tears or what not. But, in any case, it is there in some shape when any consciousness is there, and a belief, as fundamental as any in modern psychology, is the belief, at last attained, that conscious processes of any sort, conscious processes merely as such, must pass over into motion, open or concealed.

If this is scientific truth, then an idea of fear, which is a conscious process, is capable of setting up bodily processes such as circulatory disturbance, and alterations in the secretion of glands. So that, at any rate, it must, I think, be granted that it is possible that the fear of a draught might produce a series of symptoms such as a person exhibits when he suffers from what is called a "cold."

We have no difficulty in believing that a sudden fear can create such disturbance as to cause death. Why should it be difficult to believe that milder forms of fear should have their effects on the organism?

It will conduce to a better understanding of the principles involved if one realizes that the subconscious mind may play a large part in the processes under consideration.

We perceive many things subconsciously; we are not really conscious of them in the ordinary way, but our nervous systems are impressed by and react to them nevertheless. Thus we may subconsciously perceive a draught; and if the nervous system, in addition to normally reacting to it, also reacts to ideas which the draught may subconsciously suggest, the whole result may come about without our having been aware of the original exciting cause.

Personally, I like to sleep with a draught of cold air blowing over my face. I have no conscious fear of draughts; I hope I do not subconsciously fear them. If that hope is justified, then draughts, in my opinion, cannot harm me, and I do not think they will have any power for harm over anyone who consciously and subconsciously has ceased to fear them.

It is important in this connexion to note the probability that for some time after conscious fear has gone it is possible to fear subconsciously; by that I mean that the organism is capable for a time of reacting to a fear which has been consciously outgrown.

If our theory of the *modus operandi* of draughts is correct, we might speak of the whole list of diseases caused by them as habit-neuroses—that is, a neurosis dependent on habitual faulty thinking. Morton Prince,[1] in speaking of habit-neuroses, says: "These occur in all sorts of forms, and involve all the functions of the body," and he refers to an instructive example:

> One of the prettiest of these habit-neuroses is a type of hay fever. A case which has been frequently quoted is that reported by Dr. McKenzie, of Baltimore. The patient was subject to hay fever in a most intense form, brought on by exposure to roses. To demonstrate the functional character, on one occasion, at a time when the patient was free from the disease, Dr. McKenzie produced a bunch of roses from behind a screen. At once the patient was thrown into a violent paroxysm, in which lacrymation, congestion of the mucous membranes, secretions, dyspnœa, etc., made up the complex. The patient did not know that the roses were made of *paper*. The interpretation is obvious: the nervous centres had been excited over and over again until the elements had become so strongly organized that the whole reproduced itself like a mechanical mechanism at a given stimulus.

Dr. Prince goes on to suggest that a very large proportion of hay-fever cases are of this habit and character. In this connexion the late Professor James said:

> There seems no doubt that we are each and all of us to some extent victims of habit-neurosis (The Energies of Man, *Philosophical Review*, January, 1907).

It is, I think, an easy matter to understand how this fear of draughts has arisen. It would appear to have sprung from a mental confusion between cause and effect. The feeling of chilliness which ushers in a so-called "cold," and which is one of the symptoms of the "cold" just as the more severe rigor is one of the symptoms of pneumonia, has led, through misconception, to the chill being held responsible for the "cold" and the pneumonia. The chilliness experienced on such occasions is often localized to particular parts, especially to the posterior aspects of our bodies, as in the common comparison of the sensation to the feeling that cold water is running down the back. In some such way the fear of draughts probably arose.

The time has come when we must more systematically examine many old theories and reconsider them in the light of modern knowledge. We must weigh them in the balance, and, if found wanting, they must be cast out. We of the medical profession are on the threshold of great changes in our modes of thinking, and one of the results of the change that is coming will be a greater faith in and dependence on the power within ourselves and a lessened fear of such external things as draughts.

We must continue to wage war against unfavourable environment, but we must also fight against false beliefs, and we will be the more impelled to do this if we realize and understand more fully their power for evil.—I am, etc.,

Edinburgh, Oct. 16th. H. TORRANCE THOMSON, M.D.Edin.

[1] The Unconscious, *Journal of Abnormal Psychology*, 1908-1909.

Sir,—In your editorial on October 15th, and in a letter from a correspondent on the same date, appear a misapprehension as to the pathology of chill.

When it was realized that all chill diseases are bacterial in origin, the conclusion was often arrived at that a draught in itself could not cause a disease such as nasal catarrh, which is essentially a bacterial disease, and consequently the evil effect of exposure to chill in the shape of draughts was frequently ignored.

Taking the commonest chill disease, nasal catarrh, which is due to the growth of bacteria in the upper air passages, it may be due either to direct infection from another case, or exposure to the effects of draughts playing on an exposed surface of skin. The way in which exposure to draught causes catarrh is worked out in a paper of mine entitled The Pathology of Chill, which appeared in the *Clinical Journal*, and which embodied some experiments on the subject. Briefly, what happens is as follows:

The nasal secretion in health is sterile, and has an inhibitory power on the growth of the bacteria normally present in the mouth; after exposure to chill there is a reflex increased secretion of mucus in the upper air passages, this secretion has lost the inhibitory power possessed by the normal secretion, and micro-organisms readily grow in it probably because it possesses additional albuminous material. These bacteria, originally normal inhabitants of the mouth, owing to their altered environment, become pathogenic and infectious—thus the catarrh spreads from person to person. If the mouth were sterile, exposure to draught would only produce a temporary increased flow of mucus.—I am, etc.,

Llandrindod Wells, Oct. 17th. W. Ringrose Gore, M.B.

Sir,—It is much to be feared that the crusade started to induce people to obtain better ventilation in their dwellings will be seriously prejudiced by the views of the extreme ventilationists, in the same way as the temperance question has been injured by the out-and-out advocates of total abstinence. What can be the use of telling a poor man, who has not sufficient money to purchase coal or suitable clothing to keep his house and family warm, that he ought to keep his door and windows open in all weathers? Yet that is what is being done by many of the extreme advocates of ventilation. I recently read in a medical work by a well-known physician a recommendation that, no matter what the weather was outside, doors and windows should be kept open day and night. A few pages further on in the same book it was stated that muscular rheumatism was often caused by sitting in draughts—*Ex uno disce omnia.*—I am, etc.,

October 16th. Doctor.

A LOURDES CASE.

Sir,—As a member of the British Medical Association, and in justice to other Catholic members, I must ask you to find space for the following.

It would seem that I have unwittingly done what I particularly wished should be guarded against. In a letter to the *Tablet* (May 11th) asking for monetary help to send the patient in question to Lourdes, and at the same time suggesting the formation of an association to send patients regularly, on the lines of the French and Belgian pilgrimages, I said:

> Such association should appoint a doctor to examine specially all cases sent, and keep careful records by means of photographs, radiographs, etc.

Again:

> It must be a *sine qua non* that all cases be carefully and scientifically examined and records kept. Not infrequently it happens that cases of a miraculous nature occur, which Catholics know to be such, but are to Protestants occasions of scandal, causing jibes at the credulity of Catholics, simply from the lack of sufficient scientific evidence.

In the paragraph headed "A Lourdes 'Cure,'" in the Journal of October 8th, there seems to me to be an unjustifiable misrepresentation. The case in point was never considered to have anything about it savouring of a miraculous cure. This was precisely what my letter was intended to show, and at the same time to let interested contributors know the present condition of the patient; that she felt better, and could get about better, is surely some "practical result" as regards herself, even though (and as I should cordially agree) it has only a subjective basis.

That "the case may be taken as a type of the cases which are accepted by devout believers as miraculous cures wrought at Lourdes and elsewhere" is an absolutely false statement.

I should very much doubt if any other reader than the writer of the paragraph in question can have put this interpretation on my letter—no Catholic of average intelligence would do so.

Should any of your readers wish to study seriously the miraculous cures of Lourdes, I would advise them to consult the records published by Dr. Boissarie and Dr. Cox *as miraculous cures*. They will there see how carefully neurotic and hysterical cases are excluded, and how great is the evidence for the miraculous cure of organic disease.

Perhaps next year the British Medical Association, during the time of the great pilgrimages, might send out a small commission of absolutely sceptical medical men to the Lourdes medical bureau to examine for themselves; that they would return believers in the miraculous would be, perhaps, too much to expect, but they would, at any rate, be able to tell us that Catholics were not such unscientific and credulous people, after all.—I am, etc.,

Francis Izard, O.S.B, M.R.C.S., L.R.C.P.

Birmingham, Oct. 8th.

P.S.—My letter in the *Tablet* was headed "A Lourdes Case," not "A Lourdes Cure," as some of your readers might be led to believe.

*** The interpretation placed on Dom Francis Izard's facts was of course our own. Having studied Boissarie, Bertrin, and other works on Lourdes, we are confirmed in the opinion, which has already been expressed in the Journal, that the Lourdes "cures" are of the same nature as the case related by him.

COMMISSIONS TO MIDWIVES.

Sir,—I think the profession, and more especially the great body of general practitioners, is much indebted to your correspondent "Veritas" for bringing forward this matter. The subject is not a pleasant one, for there can be no getting away from the fact that members of our own profession are the real sinners, while the midwives play an almost passive part.

Nevertheless the subject cries out for ventilation in your columns, for, while your correspondent mentions only one solitary instance, there can be no question the evil is widespread, as my experience of practice both in London and the provinces proves.

If those members of the profession who practise giving commissions to midwives can be brought to see the evil of their ways, and further, that the offering of the commission brings them under the Bribery and Corrupt Practices Act, a very useful purpose will be served.

Besides this, there is the injustice suffered by those practitioners who act "straight," for should his less scrupulous brother succeed through the agency of the midwife in getting himself called in to the confinement it probably constitutes him the attendant of the family for all time.

The matter might well be brought before the Central Midwives Board for consideration, and all medical officers of health be asked to issue a warning to midwives under their control to accept no commission from medical men for work introduced.

The practice should be stopped while in its infancy in view of the wider sphere of usefulness of the trained midwife in the future.—I am, etc.,

October 17th. Lecturer to Midwives under the C.M.B.

A POSSIBLE FALLACY IN FEHLING'S TEST FOR SUGAR.

Sir,—In the Journal of October 15th, p. 1164, Dr. Robertson speaks of formalin in the urine as being liable to be mistaken for sugar, using Fehling's test. For those who do not possess a polarimeter the following means of differentiation may be found of use:

1. Smell.

2. Render urine alkaline with liq. ammon. fort. and boil. Then repeat with Fehling's solution The formalin is decomposed by the ammonia, and a negative result should now be got if formalin alone were present.

3. Do Xylander's test. In the presence of sugar the fluid should become a deep yellow colour before darkening and finally causing a precipitate. With formalin alone the preliminary yellow colour (Moore's test) does not appear.

4. Fermentation test. A positive result confirms the presence of sugar. A negative result may be due to presence of sugar and formalin, to the presence of formalin alone, or to the absence of both substances.—I am, etc.,

Dublin, Oct. 17th. W. D. O'KELLY, M.B., D.P.H.

THE VALUE OF TEETH IN THE HUMAN ECONOMY.

SIR,—The paper by Mr. J. G. Turner in your issue of September 17th is scarcely likely to help his professional brethren, and to the lay mind it is very misleading. Mr. Turner may have proved to his own satisfaction that *even* in children teeth are non-essential to nutrition, but to the observer of Nature his conclusions are erroneous and somewhat farcical. There is a trite saying, "An empty house is better than a bad tenant." It would, however, be difficult to prove to landlords that tenants are not essential. Unfortunately we find it necessary to deprive children—as well as adults—of teeth in order to save their lives, but to draw conclusions as to the *necessity* of teeth is as wise as discussing the utility of other organs because at times they are sacrificed for the body's welfare.

It is a wholesome rule in surgery to save as much of a limb as possible, and the dental student imbibes this teaching from start to finish. Any departure from this doctrine is distinctly dangerous.

The inspection of teeth by the school medical officers in more than three hundred educational centres renders it more than ever necessary that the medical students should know how teeth can be *saved* as well as lost. This, coupled with the fact that teeth are being sacrificed all over the country by men who have no hospital training, is my reason for suggesting that Mr. Turner's paper is far more likely to do harm than good.—I am, etc.,

R. DENISON PEDLEY, F.R.C.S.Edin., L.D.S.Eng.,
Consulting Dental Surgeon to the Evelina Hospital for Sick Children, Southwark.

London, S.E., Oct. 17th.

IODINE AS A DISINFECTANT.

SIR,—The use of iodine as a disinfectant of the skin has, I think, a wider application than has been alluded to in recent discussions on its use for this purpose. A rapid and, judging by results, an effective sterilization of the skin can be secured by first painting the site of the proposed incision with the liq. iodi fort., *B.P.*, and then washing this off with sulphurous acid.

Such a method has the advantage of being equally applicable to the hands of the operator (where gloves are not used), and after a preliminary scrub with soap and water, seems likely to prove as effective as a more elaborate ritual, not always easily obtainable in emergency practice.

Painting the affected parts with tincture of iodine and a subsequent bleaching with sulphurous acid has, in my experience, proved a very rapid and effective, if somewhat painful, treatment, not only for impetigo, but also, when several times repeated, for sycosis.

The secondary circle of small boils, which so frequently follow a larger boil, can be avoided if the skin surrounding the primary boil is treated at intervals in a similar manner.—I am, etc.,

Old Hill, Staffs, Oct. 11th. THOS. E. MITCHELL, M.B.

THE FIRST OPERATION UNDER ETHER IN EUROPE.

SIR,—I am collecting materials for a description of the first operation under ether in Europe—that performed by Robert Liston on December 21st, 1846—and should be glad to hear from any surviving witness. At present Lord Lister is the only one known to me. The dresser, whose notes of the case are now before me, was Edward Palmer.—I am, etc.,

London, W., Oct. 15th. F. WILLIAM COCK, M.D., F.S.A.

HOW TO USE THE "JOURNAL."

SIR,—As I am one of those who adopt the cutting out from the JOURNAL the articles that appeal to me as being useful in my practice, might I suggest that the Manager ought to issue an album to suit them, as I am sure that a great number adopt this system?—I am, etc.,

Louth, Oct. 11th. THOMAS CONNOLLY.

The Services.

ROYAL NAVY MEDICAL SERVICE.

DISTRIBUTION OF PRIZES AT HASLAR.

ON Friday, October 7th, the course of instruction to the acting surgeons, R.N., was brought to a close and the prizes were distributed by Admiral Sir John Durnford, K.C.B., D.S.O., who was accompanied by Sir James Porter, K.C.B., the Medical Director-General of the Navy. Luncheon was first served in the Medical Mess, and the prizes were distributed in the Medical Library in the presence of the Commander-in-Chief, Sir A. G. Curzon-Howe, Lady Curzon-Howe, his staff and a large number of the medical officers of his fleet who were stationed in Portsmouth. Inspector-General T. D. Gimlette, C.B., having read a list of the successful candidates, the prizes were then presented by Sir John Durnford, the awards being as follows:

The gold medal for the highest aggregate of marks at the London and Haslar examinations: Surgeon W. H. King of University College Hospital.

The silver medal for the second highest aggregate: Surgeon H. E. R. Stephens of Manchester University.

Hygiene Group: Surgeon C. F. Sankey of St. Thomas's Hospital.

Tropical Medicine Group: Surgeon J. S. Ward of Edinburgh.

Analysis Group: Surgeon H. E. R. Stephens of Manchester University.

The following is a list of the marks and seniority of the candidates:

	Marks.
1. Surgeon King of University College Hospital ...	3,625
2. Surgeon Stephens of Manchester University ...	3,558
3. Surgeon Ward of Edinburgh	3,539
4. Surgeon Alton of St. Thomas's Hospital	3,496
5. Surgeon Laughlin of London Hospital	3,430
6. Surgeon Sankey of St. Thomas's Hospital... ...	3,419
7. Surgeon Horgan of Queen's College, Cork	3,381
8. Surgeon Mitchell of Guy's Hospital	3,292
9. Surgeon MacEwan of London Hospital	3,240
10. Surgeon Joy of Belfast	3,208
11. Surgeon Paterson of Edinburgh University ...	3,147
12. Surgeon Caldwell of Belfast	3,134
13. Surgeon Markham of Durham University... ...	3,045

Surgeon Biddulph, owing to illness, was unable to complete the examination.

Admiral Sir John Durnford delivered the following address:

I understand that on this occasion I am expected to say a few words, and in the first place, on behalf of those who have been good enough to attend this prize distribution, and in my own name, let me offer our congratulations to the medical officers who have now successfully qualified for commissions in His Majesty's navy. I can assure them of the high esteem in which the naval medical branch is held by the whole service, and also by those who control it. You have, at a considerable pecuniary outlay, selected a profession of great importance, and a responsibility devolves on you which is not surpassed, and rarely equalled, in any other calling. You will have to depend mainly on your own judgement and skill, to act promptly, generally without any one to consult as to the steps to be taken. So far you are circumstanced as many of your professional brethren who practise on shore.

But you, gentlemen, have undertaken a further responsibility, that of accepting a definite share in the defence of the Empire, by joining His Majesty's navy, a profession which is rightly and justly esteemed of incalculable importance, as the safety of the Empire depends on the strength and efficiency of its fleet. It should be your aim throughout your career, by careful study, research, and practice, to keep abreast of the times in your profession, and to maintain the personnel of the fleet in the highest state of physical fitness reasonably possible. You should remember the prospect of ultimate success will be much greater if the occasional somewhat monotonous periods that occur during peace are spent in preparation for the supreme moment. I have, during my experience, found the advice of the medical officer of great value in the conduct of the service. I have always considered him one my most trusted advisers, and this confidence has never been misplaced.

It is desirable you should pay much attention to the training and advancement of the sick-berth staff, on whom much depends. Encourage their attention to the sick, their industry, and laudable ambition.

In the presence of so much medical and surgical talent, who can better tell you, I find it difficult to offer you professional advice, and would therefore merely say that if you have a special leaning for medicine or for surgery, or any particular branch of either, by all means cultivate it, provided you can do so without interference with your excelling as general practitioners. This proviso is necessary, for, though we welcome a limited number of expert specialists who devote their whole time to some particular branch, the bulk of the naval medical officers should be constantly working at all available subjects both in medicine and surgery, as they have cases of all descriptions to deal with, and must be independent of outside expert assistance.

A matter of deep interest to the Naval Medical and Nursing Services, and one of very considerable importance to the nation, is the question of the provision and organization of these services in peace, and also in war, and whether any steps are considered necessary to render them more efficient. In short, whether we are reasonably and satisfactorily ready for emergencies.

These questions have been carefully considered by a committee with which I have been connected. Our discussions extended over nine months. Besides subcommittee meetings to elaborate details, we held some sixty sittings and produced a unanimous report. I am glad of this opportunity to say how greatly our deliberations were assisted by officers of the services and eminent members of the civil medical profession, who, in response to requests, gave us the benefit of their opinions, the outcome of long and valuable experience.

It is not only the oral evidence I allude to, but also the carefully prepared papers and numerous letters received in reply to inquiries. I should also like to mention the valuable advice afforded by the matron-in-chief of the Army Nursing Service, the senior head sister of the Naval Nursing Service, as well as similar authorities of the highest standing in civil life. Their assistance was of great value in considering H.M. Queen Alexandra's Royal Naval Nursing Service, a service of such highly proved use in peace, and one on which a still greater reliance must be placed in war. The help and assistance from the St. John Ambulance authority was also most useful, and I must not forget to include also the Royal Naval Volunteer Reserve.

The prompt and ready response from the home hospital authorities in the matter of furnishing information and statistics was of much assistance, and I am glad to express our thanks to the inspectors-general and officers of the hospitals for their share in this matter. Beyond the allusions made in Parliament by the First Lord of the Admiralty, it has not yet been possible to make public the recommendations which have been made, and you will not therefore expect me to go into them. I have good reason to hope, however, that, having now been considered by the Admiralty, effect will be given to the committee's recommendations as soon as arrangements can be made.

May I say that though undoubtedly you will find some difficulties in a naval career, there is much to recommend it?

You cannot fail to appreciate the associations, your work, and the opportunities and advantages incidental to a life of travel. You may not obtain the reward a Harley Street reputation sometimes carries with it, but if you persevere you will obtain the most satisfactory recognition a naval officer can aspire to—I mean the good opinion of the great silent sea service, which, when merit is deserved, communicates its appreciation in no uncertain voice.

This and the gratitude of the officers and men you serve—and sailors are not ungrateful—will, I trust, stimulate your zeal in what I hope you will find a satisfactory career.

In conclusion I desire to express sincere thanks for the kind welcome you have given me. It is always a pleasure to visit this establishment, in which I have taken so great an interest, and I particularly appreciate the opportunity the Director-General and your Inspector-General have afforded me to meet old friends. I am confident Haslar will continue to maintain its high position in the future.

You will all, I am sure, join with me in thanking the Commander-in-Chief and Lady Curzon-Howe for their kind attendance here this afternoon; their presence greatly enhances the situation, and is another proof of the kindly and affectionate interest in the personnel of the service, which they have always displayed throughout my old friends' distinguished and conspicuous career.

BRITISH RED CROSS SOCIETY: SCOTTISH BRANCH.

WORK is progressing steadily in connexion with the formation of voluntary aid detachments of the Scottish Territorial Red Cross Brigade, this being the method of organization under the auspices of the Scottish Branch of the British Red Cross Society. Meetings are being held in many of the country districts by the county associations of the society at which the aims and objects of the Red Cross Brigade are explained. Last week Miss Haldane, sister of the Secretary of State for War, lectured in the Drill Hall, Dollar, commending the scheme as worthy of support. The Marchioness of Tullibardine, and Captain Sloan, R.A.M.C., gave addresses on the scheme at the Tullibardine Institute, Blair Atholl. Lady Anne Kerr is organizing a voluntary aid detachment of women at Dalkeith, and a demonstration by the members was given at Dalkeith on October 12th. Lieutenant-Colonel Greig, R.A.M.C. (retired), delivered an address at Stirling, when two voluntary aid detachments were inaugurated; and in several districts in the county of Perth the Marchioness of Tullibardine has during the past month been busy lecturing and organizing.

GLASGOW UNITS, R.A.M.C. (T.F.)

A COURSE of instruction as an alternative to camp, for those members of the Glasgow Territorial Medical Units unable to attend the annual training during the past summer, began at the School of Instruction, Gilbert Street, Glasgow, on October 10th. Captain A. N. Fraser, R.A.M.C., Adjutant of the School, was in charge of the arrangements, and gave the course of lectures.

LOWLAND MOUNTED BRIGADE FIELD AMBULANCE.

A COURSE of special lectures for officers and N.C.O.'s of this unit was arranged last year by the commanding officer, on subjects outside the ordinary training. The lectures included "Transport and Supply in Peace and War," "Intercommunication in the Field," "Maps and Map Reading," etc., and were delivered by regular officers of Engineers, Army Service Corps, and other branches. Owing to the success of the course a series of monthly lectures will also be given on the first Tuesday of each month during the ensuing winter at the head quarters, 17, Royal Terrace, Glasgow, and medical officers of other units and of regiments are cordially invited. The first lecture took place on October 4th, when Captain F. S. Garwood, R.E., Adjutant of the Lowland Divisional Engineers, dealt with "Camps." On November 1st, Mr. Alex. Trotter, M.R.C.V.S., Veterinary Surgeon to Glasgow Corporation, will give a lecture and demonstration on "The Inspection of Meat." Among other lecturers during the season will be Major A. Trotter, M.V.O., Brigade Major of the Lowland Mounted Brigade, and Major H. McMicking, D.S.O., Staff Officer of the Lowland Division. In order to suit medical practitioners in the city the lectures begin at 8.45 p.m.

Public Health
AND
POOR LAW MEDICAL SERVICES.

PAYMENT FOR ATTENDANCE ON A PATIENT WHO HAS SINCE BECOME A PAUPER LUNATIC.

T. N. K. writes saying he attended a man whose illness terminated by his being certified as a lunatic, and at this stage of the case he became a pauper. The relieving officer then took possession of £3 in cash, and also of the patient's savings bank book, which showed a credit balance of £15. Our correspondent asks to whom he ought to apply for payment for professional services rendered previous to the patient's pauperism.

*** We apprehend that after all expenses already actually incurred by the guardians have been paid our correspondent will have a prior claim on any overplus there may be; this, however, will probably be soon exhausted, especially if there are other similar claims on the patient's belongings. The guardians have no power to retain any funds now in hand in order to safeguard themselves against possible future liabilities. We think it probable, however, that the funds will be exhausted by the guardians' claims before our correspondent can establish his own.

MEDICAL OFFICERS AND CASES OF INFECTIOUS DISEASE.

MEDICUS.—The Local Government Board has stated that it is undesirable for a medical officer of health to undertake a personal diagnosis of every notified case of infectious disease, and that if such personal diagnosis is made the medical practitioner in charge of the case should always be communicated with and his co-operation secured if possible.

MISS JANE BELL, first assistant lady superintendent of nurses in the Royal Infirmary of Edinburgh, has been appointed matron of Melbourne Hospital. She was matron in a Sydney hospital before coming to this country three and a half years ago.

Medico-Legal.

NOTIFICATION OF BIRTHS ACT.

A CASE recently heard by Mr. Paul Taylor emphasizes a genuine grievance from which the medical profession is suffering. According to a report in the *Times* it appears that Dr. Jaffe and Dr. W. W. Don, of Sutherland Avenue, Maida Vale, were summoned at the instance of the Paddington Borough Council, for that, having been present at the birth of certain children in the parish, they failed to give notice in writing to the Medical Officer of Health, Dr. Dudfield, within thirty-six hours after it took place. Dr. James Daly, of Walterton Road, and Oreste Dragonetti, of Craven Terrace, the fathers of the children were also summoned for failing to give notice.

Mr. Dennis, for the Council, pointed out that under the Notification of Births Act it was the duty of the father of the child, and also of any person in attendance upon the mother, within thirty-six hours of the birth to give notice of the birth to the medical officer. Over sixty summonses might have been issued against defaulting doctors and fathers, but the Council had contented themselves with four, their sole object being to call the attention of doctors and the public to their obligations.

In reply to the magistrate, who asked if there was any objection on the part of the medical profession to give notice of births, Dr. Dudfield said that there was no fee. He added that the Notification of Births Act had the effect of greatly reducing infantile mortality.

The defence was that Dr. Jaffe told the nurse in attendance to give notice, and thought that she had done so.

Mr. Paul Taylor held that Dr. Jaffe had not complied with the Act, and fined him 5s., with 2s. 6d. costs, but pointed out that there was not the slightest suggestion against him of unprofessional conduct.

Dr. Don urged in defence that he understood from the midwife in attendance that the father had given notice. The summonses against Dr. Don and Mr. Dragonetti were withdrawn, but Mr. Daly was fined 1s. and 2s. costs.

FEES TO MEDICAL WITNESSES.

A CORRESPONDENT writes that he has been served with subpœna, accompanied by a guinea, to appear in London and give evidence in a divorce case. He resides at Worcester. He wishes to know what fee it would be right to charge under the circumstances.

*** Three guineas a day and travelling expenses is all that can be recovered at law, unless the party requiring the evidence has given an undertaking to pay a more liberal fee. The charge made should be based on the probable expense he will be put to, with something over for the increased work and worry.

FEES FOR CERTIFICATES.

A CORRESPONDENT writes that certain certificates were required in connexion with the appointment of a curator bonis for one of his patients. One of these was given by his locumtenent and the other by himself. He wishes to know: (1) Whether he is entitled to the fees for both certificates. (2) What is the usual fee for such certificates.

*** (1) If the locumtenent gave the certificate in question while in charge of his practice our correspondent is, of course, entitled to the fee. (2) We do not know of any recognized fee for such certificates. The best guide would be what is usually charged in our correspondent's district.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

MEDICAL PRACTITIONERS AS AGENTS FOR INSURANCE COMPANIES.

M.D.—A medical practitioner may act as an agent for an insurance company, but obviously he could not be at the same time agent and medical examiner.

PARTNERSHIPS AND CLUBS.

A CORRESPONDENT sends the following query: A. was in good private country practice in a district where a coal-pit was sunk. He then accepted a colliery sick club appointment and worked it up to the value of £500 per annum. To do this A. had rented a furnished house in a village near the pit, and later he put an assistant there. Following some complaints against his assistant, a demand was made by the men's club to reduce the medical fees, and acting on the advice of the local Division of the British Medical Association, A. refused his consent, and received in consequence a three months' notice of dismissal. At this time A. takes B. into partnership on the following terms: B. is to have half the fees paid by this club, but is to receive no share of A.'s private practice. He is aware of A.'s notice of dismissal, but at that time, owing to A.'s great influence, it is thought that it will not be maintained. As a matter of fact it is enforced, and this club appointment comes to an end, but B., by careful attention to his patients, gains so much popularity in the district that another club is formed for him, which in a short time pays £400 per annum. A.'s original agreement with B. was for five years, and the only concession made to B. after the loss of the original club was leave to practise in the district of the works on his own account. B. is not satisfied with this, and does not think he should share half the profits of the new club with A. during the five years. It is asked what would be a fair arrangement between A. and B.

*** This case presents some difficulties. A. is entitled to some share of the profits of this new club, but hardly to the same as if the original club had continued. The original agreement might be so modified as to allow A. to take one-third, instead of one-half, of the club profits.

Obituary.

DAVID HALKET STIRLING, M.D.EDIN., PERTH.

A NOTABLE personality has been lost to the profession by the death of Dr. D. H. Stirling, on October 14th, at the age of 81. His long and important life of service to his native city has closed, to the profound regret of all who knew him. Dr. Stirling was born in 1829, and was educated at the Perth Academy, whence he proceeded to the University of Edinburgh, where he graduated as M.D. and obtained the diploma of the Royal College of Surgeons in 1853. He thereafter proceeded to Paris and Vienna in pursuit of further professional instruction and study, and served for a term in Gray's Hospital and the District Asylum, Elgin. For fifty-five years he devoted himself to general medical practice in Perth, although of late he had to restrict his engagements in consequence of advancing life. He wrote upon leprosy in Norway, upon medico-legal investigations, and upon tuberculosis, maintaining his many interests in medical and social work till the end. Dr. Stirling was also an indefatigable traveller in various regions of the globe.

The activity which he displayed in earlier life was manifest throughout his career, and led him to undertake a heavy burden of duty, which he always regarded as a pleasure and a right, even when his friends thought him tired and exhausted as the long day closed. There was a time when Dr. Stirling felt that he should move to a larger centre of activity; but, happily for Perth, he remained a leading citizen where his professional abilities and sterling character were recognized and appreciated, and his services were sought by a wide circle in the surrounding country.

Appointed to the staff of the Royal Infirmary in 1868, he continued in office until 1884, and left the impress of his service there, and continued to advise the directors, when called upon, after his resignation of his appointment. Early in the Seventies, greatly on his initiative, the nursing arrangements were reorganized, and the new era opened in Perth.

Dr. Stirling's experience had convinced him that the infirmary required to be supplemented by a home for incurable cases. That became, and continued to the end, his chief avocation. From small beginnings the Hillside Homes grew, under his fostering care, to be a refuge and succour for many sick and sorrowful cases. The fundamental idea was found to be unduly restricted, and the element of hope was admitted and fostered. The Homes multiplied, and received all kinds of patients suffering from chronic diseases. Eventually a sanatorium for tuberculous cases was added, and the whole group of buildings scattered over the Hill of Kinnoull were never far absent from his thoughts. He attended to the patients, he controlled their affairs, he found money for additions and improvements, and even instituted a substantial endowment. In his latter years he continued keen as ever on the advances of medicine in regard to tuberculosis, and lost no opportunity of maintaining his interests in all hospitals and homes of healing. Only a week or two since he travelled to Glasgow to attend a conference on hospital work. It

is remarkable that Dr. Stirling should have built up such a memorial, that his enthusiasm should have touched so many to aid him in his crusade. It is stated that 246 cases were treated in the Hillside Homes last year alone, a remarkable testimony to the doctor, who found friends to aid him wherever he went.

Dr. Stirling was a man of deep religious convictions, which were broadened with his life. He founded the City Mission of Perth half a century ago, and remained its honorary secretary. A tribute of respect was paid to him by the presentation of an illuminated address by more than 400 poor persons some months ago. Nor were his professional brethren unmindful of his jubilee as a medical practitioner, when they presented him with his portrait as a mark of their esteem and regard.

Although Dr. Stirling was a Liberal in politics, he did not hesitate to avow his Unionist opinions, and he spoke strongly on the subject on suitable occasions. He had many interests, and maintained his mental activity in following them.

Dr. Stirling married the sister of the late Dr. Lauder Lindsay, both of whom predeceased him. Although long, his connexion with Murray's Royal Asylum was unbroken till his death. Indeed, one of his last friendly visits was paid to an old comrade there who had always placed himself at Dr. Stirling's service in connexion with the Hillside Homes. Mr. James Stirling, a son in the Indian service, also predeceased him, but his son, Dr. Robert Stirling, happily continues the family traditions in Perth. His daughter is unmarried, much occupied with work undertaken in assistance of her late father. A. R. U.

Dr. Frederick William Dyce Fraser, of Weymouth Street, London, died suddenly on Friday, October 7th, at Borthwickbrae, Roxburghshire, aged 55 years. Dr. Fraser was the eldest surviving son of Emeritus Professor Campbell Fraser, and was educated at Prague and Edinburgh. He received the Edinburgh degree of M.D. in 1883 with commendation, and became a Fellow of the Royal College of Physicians of Edinburgh in the same year. Dr. Fraser was formerly Professor of Anatomy and Physiology at the Imperial University of Osaka, Japan, and had held appointments in the Skin Department at Charing Cross Hospital, the Victoria Hospital for Children, and the Teddington and Hampton Hospital.

Universities and Colleges.

UNIVERSITY OF GLASGOW.

Medical Graduation.

The first of the autumn graduations in medicine at Glasgow University took place on October 14th. Under the former arrangements one final examination was held each year in July and one graduation immediately after. Now two final examinations are held, one in spring and the other in autumn, with, consequently, two graduation ceremonies. On this occasion Principal Sir Donald MacAlister presided, and the degrees of M.B., Ch.B. were conferred upon 48 graduates, 1 with honours, 3 with commendations, and 44 ordinary degrees, 4 of these recipients being ladies. The most distinguished graduate of the year and Brunton Memorial Prizeman was Thomas Jones Machie, who secured honours. The degree of Doctor of Medicine, with high commendation, was also conferred on John Ronald Currie, B.A., M.B., Ch.B., whose thesis was entitled "Serum Anaphylaxis."

The following are the pass lists:

First M.B., Ch.B. (B., Botany; Z., Zoology; P., Physics, C., Chemistry).—R. Aitken (B., P.), G. K. Allan (B., P.), J. Anderson (Z., P., C.), A. D. Blakely (Z.), J. Bradford (B. P.), M. S. Bryce (B., Z., P., C.), *J. Cameron (B., Z., C.), J. Campbell (Z.), J. M. Campbell (B., P.), T. W. Carstairs (B.), A. M. Clark (B., P.), R. Clark M.A. (B., Z., P., C.), A. Climie (B., P.), W. Combe (B., P.), J. P. Crawford (B., P., C.), H. P. Crow (B., P.), F. V. Daeblitz (Z., P.), M. Devers (B.), A. H. Donaldson (B., P.), T. I. Dun (Z.), D. Ferguson (B., P., C.), T. Ferguson (Z., C.), H. T. Findlay (B., P.), J. J. Finlay (B., P.), G. Fleming (B., Z., P., C.), R. Forbes (B., P.), I. M. Frazer (Z., C.), *R. Frew, B.Sc. (B., P.), W. W. Galbraith (Z.), D. G. Gardiner (B., P.), L. W. Gemmell (Z., P.), J. A. F. Gibson (B., C.), *R. S. Gibson (B., P.), W. Gibson (B., P., C.), J. A. Gilfillan (B., P.), P. Gordon (B., P.), *R. T. Grant (B., P.), A. H. Hall (B., P.), D. C. Hanson (B., C.), J. W. P. Harkness, M.A. (B.), F. L. Henderson (B., P.), R. Isbister (B. P. C.), A. C. Jebb (B., P.), D. R. King (Z., P., C.), G. Kirkhope (B., P.), W. F. Kivlichan, M.A. (C.), R. Kyle (B., P.), H. B. Lawrie (B., P.), *B. Lindsay (B., P.), A. T. Logan (B., P.), G. M'Callum (B., P.), J. M'Culloch (B., C.), *A. M. M'Cutcheon (B., P.), R. W. MacDonald (B., Z.), D. J. Macdougall (B., Z., C.), D. K. MacDougall (B., P.), G. J. M'Gorty (B., P.), D. M'Intyre (B., P.), D. Mackie (P.), *J. G. M'Kinna (B. P.), J. A. Maclean (B., C.), M. B. Macleod (B., P.), D. M'Neill (B., P.), J. K. Manson (Z., C.), W. J. May (C.), T. D. Miller (B., P.), J. W. Moffatt (B., P.), P. J. Moir (B., Z., C.), L. S. Morgan (B., Z., P., C.), H. A. Munro (P.), T. F. Noble (Z.), W. O'Brien (Z., C.), J. R. Pate (B., P.), J. Paterson (B., P.), *A. Picken (B., P.), *J. M. Pinkerton, B.Sc., (B., Z.), J. S. Prentice (C.), H. Quigley (B., Z., C.), A. M. Ramsay (Z.), F. B. Rankin (B.), A. Rankine (B.), T. F. B. Reid (B. Z., P., C.), D. B. Robertson (Z., C.), G. W. Ronaldson, (P.), R. Rowan (B., P.), A. M. Russell (B., P.), W. J. Scade (B., P.), S. C. Shanks (B., P.), W. F. Shanks (B., Z.), T. R. Sinclair (B., Z., P.), J. Smith, M.A. (B., Z.), N. M. Smith (B., P.), J. B. Steven (B., P.), J. F. Steven, M.A. (B., P.), H. Stewart, M.A. (B., Z.), R. S. Strachan (B., P.), R. Taylor (B., P.), D. F. S. Thomson (B.), R. N. Thomson (B., P., C.), J. Vallance (B., P.), J. Walker (C.), W. S. Wallace (B., Z.), W. J. C. Watt (Z.), J. A. White (Z.), *R. H. Williamson (Z.), A. S. Wilson (P.), J. G. Wilson (P.), R. J. Wilson (B., P.), T. M. Wilson (Z.), J. Wylie (B., P.), A. Young (C.), *G. Young (Z., C.). Women: *D. F. Curjel (B., P.), M. O. Gallagher (B.), E. W. Gompertz (B., P.), F. S. Kirk (B., P.), J. G. M'Laren (B., P.), J. L. Munro (B., P.), H. Y. Murdoch (B., P.), M. I. Sinclair (C.), G. B. Whish (B. P.), M. F. Wood (Z.).

Second M.B., Ch.B. (A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics).—W. L. Anderson (A., M.), J. Angus (M.), S. H. Bloom (A.), W. Brown (A.), A. Grahame-Buchanan (A., M.), J. W. Burton (A.), N. Cameron (A., M.), G. W. Clark (A.), R. Craig, M.A. (M.), D. A. Cush (A., M.), A. H. Davidson (A.), J. H. Dible (M.), P. Figdor (A.), J. M. Forsyth (A., M.), W. Fotheringham (M.), J. Fraser (A.), A. R. H. Geyer (M.), L. Glushak (A., M.), C. W. F. Greenhill (A.), J. F. Hutton, M.A. (A.), T. P. Inglis (A., M.), C. J. H. Kirk (A.), J. F. Lang, M.A. (A., P., M.), W. J. B. Lavery (P.), F. W. K. Lawrie (A., P., M.), R. A. Lennie (A., P., M.), C. J. van Lingen (A., P., M.), J. A. M'Connochie (M.), J. R. M'Curdie (A.), J. H. Magoveny (A., M.), W. Montgomery (A.), K. D. Murchison (A., M.), A. Neilson (A., P.), J. B. Orr, M.A., B.Sc. (M.), A. Peden (A., M.), J. Purdie (A., M.), J. F. Quigley (Lambhill) (A., P.), D. W. Reid (M.), J. R. R. Ritchie (M.), A. L. Robertson (M.), J. G. M'G. Robertson (A.), *J. H. Robertson (M.), F. Shearar (A.), J. F. M'G. Sloan (A.), H. C. van der Wat Smit (A., P., M.), J. A. Smith (A.), J. K. Smith (A., P., M.), G. Taylor (A., P.), W. Taylor (M.), A. Walker (M.), J. C. Walker (P., M.), *T. Walmsley (M.), F. J. Whitelaw (P., M.), A. Wilson (A.), W. F. Wood (A., M.). Women: J. R. Anderson (P., M.), J. M. Davidson (M.), L. B. Hardie (A.), J. K. M'E. Hunter (M.), M. A. Kirk (P.), M. L. Kirkwood (M.), M. H. M'Kilop (A., P., M.), P. Stewart (A., M.), J. M. Walker (P., M.).

Third M.B., Ch.B. (P., Pathology; M., Medical Jurisprudence and Public Health).—M. J. Aitken (P., M.), J. B. Alexander (P., M.), J. C. H. Allan (P.), A. J. Archibald (P., M.), W. E. H. Beard (M.), J. Bower (P.), C. Brash (P.), A. D. Buchanan (P.), W. M. Buchanan (P., M.), G. Cochrane, M.A. (P.), J. A. J. Conway (P., M.), J. Findlay, M.A. (M.), R. Findlay (P., M.), D. T. C. Frew (P., M.), J. J. Gibb (M.), J. Graham (M.), C. H. Haddow (M.), A. S. Hannay (M.), D. C. Hayes (P., M.), A. G. Henderson (M.), A. G. Holms (P., M.), W. H. Howat (P., M.), J. Johnstone (M.), F. A. Kerr (P., M.), T. J. Kirk (M.), A. Kirkhope (M.), M. H. MacLeod (M.), S. A. MacPhee (P.), G. H. M'Robert (P.), S. S. Meighan, B.Sc. (M.), J. Mitchell (P., M.), M. J. Murray (P.), A. Naismith (P.), *J. E. Paterson (P., M.), A. Rae (M.), H. C. D. Rankin (P., M.), H. Y. Riddle (P.), J. L. Scott (M.), W. L. Scott (M.), J. Smith (P., M.), M. Sommerville (P.), L. T. Stewart (M.), T. L. G. Stewart (P., M.), W. Tudhope (M.), A. G. S. Wallace (P.), T. Waterhouse (M.), H. F. Watson, L.R.C.P. (M.), T. Whitelaw (P.), D. Wilson (M.), H. G. Wilson (P.), W. P. Yates (P.). Women: B. Macgregor (P., M.), E. B. Orr (P., M.), L. M. Ross (P., M.), C. H. Shearer (P., M.), I. J. Stark (P., M.).

Final M.B., Ch.B.—Mary Alexander, M.A., R. R. Archibald, M.A., M.A., B.Sc., J. Atkinson, R. B. Austin, J. A. S. Burges, T. S. Campbell, B.Sc., *R. H. Deans, Louisa E. Dodge, P. Drummond, W. D. Dunlop, A. S. Findlay, T. S. Forrest, A. Fraser, N. Gebbie, J. Gray, A. C. Haddow, J. R. Haldane, W. Hamilton, *J. Hendry, M.A., B.Sc., *J. Jack, J. Macallan, *D. C. Macdonald, A. Macintyre, *B. M'Kean, J. G. Mackenzie, *T. J. Mackie, A. B. MacLean, W. A. MacLennan, A. T. M'Whirter, F. N. Marsh, C. L. Miller, M.A., *A. R. Muir, C. Nicholson, M.A., J. Paterson, T. Paterson, R. R. K. Paton, J. Penman, J. F. Quigley, Rutherglen, D. W. Ritchie, J. I. Russell, Margaret E. Rutherford, Florence E. Sexton, J. D. S. Sinclair, G. I. Strachan, J. N. M. Sutherland, W. O. Taylor, S. V. Telfer, H. Yellowlees.

*Passed with distinction in one or more subjects of the Examination.

UNIVERSITY OF ST. ANDREWS.

Graduation Ceremonial.

On October 12th a graduation ceremonial was held, when Sir James Donaldson, the Principal, capped the graduands.

The degrees of M.B., Ch.B. were conferred on: Gilbert Norman Anderson, Edinburgh; Thomas Bowman Edgar, St. Andrews; William Martin Nairn, Dundee; and Douglas David Ritchie, M.A., Dundee.

The degree of D.Sc. was conferred on David Heron, M.A., Perth. The degree of B.Sc. was conferred on: David Cuthbert Barron, Leven; Andrew Dargie, Leven; Mary Rollo Mitchell, Perth; and James Bonnyman Ritchie, Arbroath.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A quarterly meeting of the Council was held on October 13th, Mr. H. T. Butlin, President, in the chair.

The late Mr. John Langton.

The Council expressed their deep regret at the death of Mr. John Langton, past Vice-President of the College, and past member of the Council and of the Court of Examiners, and their sincere sympathy with his widow and family in the loss which they have sustained. The Council recorded also their

appreciation of his services rendered to the College, and their respect for the devotion which he displayed in the work which the above offices imposed upon him.

Donations.

The best thanks of the Council were given to the President for the gift of his collection of sketches of early cancer of the tongue and conditions which may be mistaken for early cancer. Also to Professor F. W. Bird, of Melbourne, for a gift of stereoscopic radiographs of anatomical and pathological subjects. Also to Dr. C. G. Seligmann for a presentation of New Guinea skulls.

Dental Examinership.

The Council elected Mr. J. F. Colyer a member of the Board of Examiners in Dental Surgery.

The Great Northern Central Hospital.

This institution was recognized as a place of instruction for the final Fellowship Examination.

Jenks Scholar.

Mr. Gerald Gibbons, late of Epsom College, now of St. Bartholomew's Hospital, was elected Jenks scholar.

International Congress at St. Petersburg.

A vote of thanks was given by the Council to Dr. Amand Routh for representing the College at the recent International Congress of Obstetrics and Gynaecology held at St. Petersburg.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Schools of Surgery.

The commencement of term on October 15th was marked by a prize distribution, the following being the winners of the principal awards: *Barker Anatomical Prize* (£26 5s.), T. Mather Thomson; *Carmichael Scholarship* (£15), M. J. Hillery; *Mayne Scholarship* (£8), J. S. Pegum; the Gold Medal in *Operative Surgery*, J. S. Pegum and F. W. Warren (equal); *Stoney Memorial Gold Medal in Anatomy*, M. J. Hillery; *Practical Histology*, G. N. Smythe; *Practical Chemistry*, C. F. Coyne and M. J. Loftus (equal); *Public Health and Forensic Medicine*, J. C. Sproule; *Materia Medica*, M. J. Hillery; *Biology*, L. S. O'Grady; *Systematic Anatomy*, D. J. Flanagan; *Descriptive Anatomy*, W. I. Adams; *Practical Anatomy*, W. Morrow; *Practice of Medicine*, J. T. Duncan; *Surgery*, J. T. Duncan; *Midwifery*, J. T. Duncan; *Physiology*, J. D. Cherry; *Chemistry*, J. Lanigan; *Pathology*, V. J. White; *Physics*, A. Merrin.

Except when otherwise stated, the award was in each case a medal and £2 in money, second awards of a certificate and £1 being also made.

The prizes were distributed by the President of the College, Mr. R. H. Woods, who picked out for special commendation Mr. J. T. Duncan. In the course of his four years at the school this student, he said, had won no fewer than fourteen first prizes, including the Carmichael Scholarship, the Stoney gold medal in anatomy, and twelve silver medals. He had, in fact taken, with one exception, a first prize in every subject taught in the school.

CONJOINT BOARD IN ENGLAND.

The following candidates have been approved at the examinations indicated:

First College (*Part I and Part II*).—E. Atkinson, *K. R. Batra, *J. H. Bayley, †J. Behesnilian, *O. St. L. Campion, P. Cheal, G. S. Deane, †R. E. B. Denny, *C. J. G. Exley, *M. Fahmy, †F. E. Feilden, †L. H. Garcés, G. T. Garraway, †H. J. Grimshaw, G. H. Haines, B. J. Hallowes, *L. Horsley, *E. G. Howell, *J. S. Leslie, *A. J. V. McDonnell, *A. R. Muir, J. N. Puri, *M. M. Shaffi, †H. H. Silley, *R. R. Sy-Quia, G. S. Terry, K. J. F. Westman.

* Part I only. † Part II only.

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The following candidates have been approved at the examinations indicated:

D.P.H. (Both Parts).—T. G. Shand, G. M. B. Liddle, J. A. M. Clark, J. E. Spence, Jessie H Gellatly, G. Y. Richardson, A. McKendrick, Mary J. Menzies, F. Anderson, J. W. Cairns, R. Fraser, D. J. McLeish, L. Gibson, F. P. Lauder, S. G. McAllum, M. B. G. Sinnette, Jane R. F. Gilmour, R. Hannah, B. S. Tarapurvalla, E. H. Cramb, C. S. Hunter, B. Nath.

CONJOINT BOARD IN IRELAND.

The following candidates have been approved at the examinations indicated:

First Professional.—C. F. Coyne, F. Freeman, C. E. H. Gater, F. G. Kelly, D. F. Lucey, F. M. Taylor.

Second Professional.—E. Connell, W. Dowse, J. McDonagh, L. L. McKeever, B. J Mullin, C. L. Sproule, S. T. Sullivan, P. F. Ward.

Medical News.

Mr. E. Hurry Fenwick, Professor of Urology at the London Hospital Medical College, will deliver two lectures on clinical surgery in the clinical theatre of the hospital, on November 8th and 15th. The first will deal with the diagnostic aspect of the pain in kidney disease; the second with removal of the urinary bladder.

The opening lecture of the winter session of the North-East London Post-Graduate College will be delivered at the Prince of Wales's General Hospital, Tottenham, N., on Thursday, October 27th, at 4.30 p.m., by Sir Lauder Brunton, Bart. A cordial invitation is given to any member of the profession desiring to be present who will communicate his wish to the Dean of the school at the hospital.

Sir William Treloar informs us that he is again promoting the Christmas Hamper Fund for Crippled Children. Reached through the mayors of the metropolitan boroughs and the London City Mission, the children receive their hampers in the morning, and are entertained at the Guildhall in the evening. The honorary secretary of the fund is Miss Treloar, 69, Ludgate Hill, E.C.

The annual dinner of the staff and past and present students of the Royal Dental Hospital of London will be held on Saturday, November 26th, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. H. Lloyd Williams. Gentlemen either now or formerly connected with the hospital or medical school who may through inadvertence not have received special notice, and who desire to be present, are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester Square, London.

The Cambridge University Press has already issued its new diaries. Their early appearance is due to the fact that the year covered by them is the academic year commencing in October, and not the calendar year commencing in January. This arrangement offers advantages for others than university men. The diaries are in three forms—a watch-pocket diary, an ordinary pocket diary with a pencil and receptacle for stamps, and a large block diary for table use. The latter has all printed matter on the left-hand side and plenty of room for notes. They are all inexpensive.

The eleventh annual dinner for medical men residing in West Somerset will be held at the London Hotel, Taunton, on Friday, November 4th, at 7 p.m. sharp. The chairman will be Dr. W. H. Maidlow, of Ilminster. Guests, medical or otherwise, will be welcomed. At intervals after dinner light entertainments will be given by some of the artistes now appearing at Poole's Empire Theatre of Varieties, Taunton. Those intending to be present are requested to communicate, on or before October 31st, with the honorary secretary, Dr. W. B. Winckworth, Sussex Lodge, Taunton.

The Medical Society of London commenced its winter session on October 10th, the presidential address being delivered by Mr. Charters Symonds, who drew attention to the value of metal drains in treating the cavities left by central osteitis. No doubt the ideal procedure was to render the cavities aseptic and close them forthwith, but when this could not be done, metal drains, he said, secured an exit for pus and enabled the patient to resume his occupation. They caused no irritation, use of the limb promoted rather than retarded recovery, and the patient could himself attend to the cleansing and management of the tube.

The Northumberland and Durham Medical Society is to hold a meeting in the Connaught Hall, Newcastle-on-Tyne, at 4.30 p.m., on November 3rd, for the purpose of hearing an address on the hospital unit in university work from Professor William Osler, F.R.S., who in the evening is to be entertained at a dinner in the King's Hall, Armstrong College. Members of the medical profession resident in the North of England are invited by the society both to be present at the address and to attend the dinner. The honorary secretaries of the latter are Dr. William Hume and Mr. R. J. Willan, 25, Ellison Place, Newcastle-on-Tyne.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

E. S. would be much obliged if any motorist would kindly give him a recipe for a mixture for use in the radiator of a motor car, which will not freeze.

H. D. J. writes: I should be much obliged if any reader would kindly inform me how formalin can be used as a spray for asthma.

E. B. F. would be glad to know the name of a good work on electricity in connexion with the treatment of nervous disorders, such as neurasthenia, hysteria, etc., especially if associated with treatment by "suggestion."

Aëronaut asks: (1) What literature there is to be consulted dealing with the medical and surgical aspects of aëronautics; (2) suggestions as to contents of a surgical and medical aid bag to be carried on board an airship—with special regard to its compactness and lightness; (3) suggestions as to the food supply to be carried on board for a crew of seven, and for a twelve hours' flight.

Inhabited House Duty.

W. G. asks whether inhabited house duty is rightly charged on his surgery, which is a cottage next door to his house with separate entrances and no direct entrance from the house. The cottage is rented at £15 and is not slept in.

*** If the cottage is distinct from the house and accessible only from the street, there is no liability to inhabited house duty. If, however, there be also a private entrance through W. G.'s garden, the surgery would be held to have been brought within the curtilage of the house and to be chargeable to duty as an appurtenance to the house.

ANSWERS.

Inquirer has omitted to enclose his card.

A. M. writes: In answer to "Lecturer" *re* up-to-date book on medical nursing, I have found that Mr. Welham's book, *A Handbook for Nurses*, published by Mills and Boon (Rupert Street, London), a most excellent volume. It is very readable, quite up to date, and efficient.

Detection of Tubercle Bacilli in Milk.

R. E. H. R. Harries (Liverpool) writes: "Tubercle" will find the composition of Pappenheim's stain and the method of employment (as regards faeces) given under the article Tuberculosis in the *Medical Annual*, 1908, p. 582). The stain in question consists of "a 1 per cent. solution of rosalic acid in *absolute* alcohol, to which is added methylene blue to the point of saturation and a small quantity of glycerine." The preparation is previously stained in the cold by carbol-fuchsin for fifteen to twenty minutes and the excess drained off. Pappenheim's stain is then applied until the colour of the preparation is that of the counterstain (methylene blue). The slide is then "thoroughly washed in water, dried, and mounted in balsam." Using this method, I have examined the faeces of children for tubercle bacilli. Provided the film of faecal material is very thin, the bacilli retaining the red stain show up well on a blue field, though of course prolonged search of several preparations may be necessary. I am not prepared to state that the method excludes other "acid-fast" organisms, as claimed by Rosenberger, but certainly I have succeeded in finding by its use what were presumably tubercle bacilli in the faeces of children suffering from clinically definite tuberculous peritonitis and general tuberculosis, and have failed to find red-stained bacilli in the faeces of children in whom the diagnosis of tubercle was doubtful or in whom the question of tubercle did not arise. I have not employed the method for milk, but obviously if it *is* reliable it should be very useful in this case, preliminary centrifuging of the sample and removal of fat by ether from the smear being performed in the ordinary way.

LETTERS, NOTES, ETC.

In the annotation published in the issue of October 15th, p. 1174, entitled "County Medical Officer in the Isle of Wight," the amount by which it was proposed to reduce Dr. Hobson's income, was printed on the twelfth line from the end as £400, whereas it should have been £200.

The Order of the White Elephant, Third Class, which Dr. Hugh Wright recently received the Royal permission to accept, was conferred upon him by the Emperor of Siam and not the Emperor of Japan, as erroneously stated in our issue of August 13th.

Opacline.

It has been pointed out to us that the excellent hospital furniture with patent indestructible joints, to which we drew attention in describing the exhibits of the Hospitals and General Contracts Company, was mentioned as "porcelite" both in our notice and in the exhibition catalogue. The correct name is "Opacline," the firm which builds it for the Hospitals and General Contracts Company being Messrs. Teske and Company.

Electric Heating Stove.

Dr. Edward Phillips (Coventry) writes: Some months ago a correspondent called attention to an electric heating stove, and on his recommendation I purchased one. The stove is constructed of resistance wires ingeniously enclosed in quartz tubes, and from what I have seen the maximum amount of heat is given off from the small amount of current used. I have nothing but praise for this stove: it is inexpensive and superior to anything of the kind. It is made by Drake and Gorham, of 66, Victoria Street, S.W.

Poisoning by Potassium Cyanide.

Dr. J. Cockburn Syson (Glasgow) writes: Apropos of Dr. Alfred Mann's case of recovery from the effects of potassium cyanide, the following case was related to me some years ago by a well-known veterinary surgeon in Paisley (where the poets come from), who vouched for its veracity: An old lady brought her favourite dog, a black retriever, to be poisoned. My friend, just starting on a journey, handed the animal over to his assistant, with instructions to administer hydrocyanic acid. The order was promptly carried out, the dog immediately "died," and the corpse was thrown on the dung heap. What was my friend's surprise, therefore, when next day the old lady in high dudgeon returned with the dog at her heels, indignantly demanding to know why her instructions had not been carried out. A visit to the manure pit revealed the fact that the "corpse," like the ghost of Hamlet's father, "had faded on the crowing of the cock." And the dog was a teetotaler, too

"Novel Vaccination Problem."

Dr. Ruata, Regius Professor, University of Perugia, writes: What you think a "novel vaccination problem" in your issue of September 24th (p. 894) is certainly not, as the Italian wife of the English husband does not know the laws of her country. Article 52 of our Sanitary Law says: "Vaccination is compulsory and is performed after the rules of a proper by-law." Now the Article 12 of this by-law says: "Newly-born children must be vaccinated *at least* during the first solar semester following that of their birth." Our Sanitary Law has the date of December 22nd, 1888. The "problem" would be "novel" when the *English* husband was a conscientious objector and the *Italian* wife was not. As you see, in Italy we have not yet made the progress of having a law admitting "conscientious objectors," but I hope that not a long time will pass for making a greater progress—that is, to abolish every kind of compulsion for this great superstition which England presented to all the world, that is called *vaccination*.

"Pantopon."

The Hoffmann-La Roche Chemical Works, Ltd., write: The preparation of opium referred to in the Journal of October 15th as "Pantopon" is known in Great Britain as "Omnopon." Owing to opposition of a legal nature, we were unable to register the name "Pantopon," as in Continental countries, and were therefore compelled to use the name "Omnopon." This preparation is exactly the same as "Pantopon," and the references which you enumerated apply to it with equal force. "Omnopon" represents the total alkaloids of opium in the form of hydrochloric salts. The average dose is ½ to ⅔ grain three times a day. For internal medication, tablets have been prepared consisting of "Omnopon" $\frac{1}{10}$ grain triturated with sugar of milk. This form is suitable for continuous use of "Omnopon" in suitable cases. Ampoules of 1 c.cm. of a 2 per cent. solution "Omnopon" are placed on the market; 1 c.cm. of this sterile solution equals ⅓ grain "Omnopon." "Omnopon" has also taken the place of morphine in scopolamine narcosis, according to Dr. Brüstlein (*Correspond. Blatt. f. schweizer Aerzte*, 1910, No. 26).

Hypernephroma.

In respect to the query by "Southampton," a summary of standard literature on hypernephroma will be found in a paper by Mr. Doran, Malignant Vaginal Polypus Secondary to an Adrenal Tumour of the Kidney, published in the *Journal of Obstetrics and Gynaecology of the British Empire*, June, 1907. Gräfenberg reported a case of hypernephroma of the left kidney in *Virchow's Archiv*, vol. cxciv, 1908, where also secondary growths developed in the vulva, metastatic deposits in the liver, lungs, and other viscera, are frequent. We must remember Mr. Bland-Sutton's warning against confusing a primary tumour of the adrenal or suprarenal body (or "hypernephron" if we choose to call it so) with a primary hypernephroma of the kidney, where adrenal or hypernephric "rests" develop in that organ. The former is Henschen's "struma suprarenalis" and is not necessarily malignant; the latter is the tumour generally known as hypernephroma, and is highly malignant. Speedy removal of the kidney is demanded, unless there are metastases already, and, as the "surgical authority" testifies, it may prove successful.

ST. PAUL'S "THORN IN THE FLESH."

DR. ROLF CREASY (Windlesham, Surrey) writes: As medical men, we naturally look for a medical explanation of the thorn in the flesh. Not so Mr. Henry Frank in his recently published *Modern Light on Immortality*. Therein he explains, with evidently complete satisfaction to himself, that St. Paul's "thorn in the flesh" was none other than—Simon Peter.

R. C. writes: I have been reading with great interest the correspondence in your columns on "St. Paul's Thorn in the Flesh." The discussion seems now to have drifted from the original subject to the question as to what language Our Lord spoke. May I be permitted to write on this point?

Dr. Batteson, in reply to Dr. Young, says that the Greek language "was very little spread in Judaea beyond those who participated in the government and the towns inhabited by pagans, like Caesarea." Now, Professor Gwatkin, in his *Early Church History* (vol. i, page 36), points out that Syria was largely influenced by Hellenism; surely Palestine would be influenced by Syria? Moreover, the Jews of the Dispersion talked in Greek—in fact, their knowledge of their mother tongue was so limited that the LXX Version had to be made for their benefit. Many of these Jews occasionally came up to Jerusalem, and there would always be a good number of them at the feasts.

Dr. Young is right when he says that Greek was "the universal language of the time." There is no need to add much to his proofs. It might be added that Greek was not only the language of commerce but of educated men.

As for Virgil's works and Cicero's being brought forward as proofs against the prevalence of Greek, it need only be said that the *Æneid* was based to a fairly large extent on the *Iliad* and *Odyssey*, and swarms with reproductions of Homeric expressions; whilst Cicero is greatly influenced by Panaetius. Professor Gwatkin, in the work already mentioned (vol. i, p. 37), says: "The educated Roman wrote, talked, and laughed in Greek as freely as in Latin."

Referring to Section II of Dr. Batteson's letter, where he speaks of the names of the seven deacons, I doubt whether there is a single Hebrew parallel to any of them, whilst Nicolaus is especially mentioned as a proselyte—that is, he was not a Jew. Moreover, the seven were appointed after "the murmuring of the Hellenists"—this is, Jews of the Diaspora, who were greatly influenced by Greek civilization, and it is more likely that Greeks would be selected for their special benefit than Palestinian Jews.

I am inclined to think that Our Lord spoke in Aramaic. Dr. Batteson has elucidated the question of the Syro-Phoenician—Ἕλλην is capable of being translated "Gentile." The Greeks in John xii. 20-22, approached Jesus through Philip, who seems to have known Greek; his residence at Caesarea is sufficient to show this.

The word ἐπιούσιον is a real difficulty. Its exact meaning is still uncertain. Plummer suggests that in the original Aramaic form there was nothing equivalent to it.

Several of Our Lord's most intimate disciples were Galilean peasants, who would naturally speak Aramaic, and a great part of His ministry was spent in Galilee. It is certain that Aramaic would be chiefly spoken there, for Galilee was the country district, and therefore less likely to be influenced by modern tendencies in the way of language.

Finally, in St. Luke's Gospel, which was written by Luke in Greek—see any good commentary thereon—his Aramaic sources, whether written or oral it does not concern us here, can be in many cases traced back through the Greek. To give two instances: Luke xii, 49, the Aramaic *mah* is behind τι, and Luke xiii, 32, *shalum* is probably behind τελειουμαι. This last example is less certain, but I give it, as it is one of the most interesting of its kind. Many others can be found mentioned in Plummer's Commentary on St. Luke. These sources, therefore, used by Luke were either told to him or read by him in Aramaic; their authors, therefore, would speak Aramaic; and, moreover, their authors would be eye-witnesses or personal disciples of Our Lord. This is certain both from Luke's care in selecting material—vide his Preface—and from the fact that Our Lord's generation had not passed away when Luke wrote.

It seems clear, then, that Our Lord conversed with His disciples in Aramaic, and in passages where His words are quoted, whenever we can get back to the original Aramaic, we have His own words.

COLOUR CINEMATOGRAPHY.

A HANDSOME trade production reaches us in the shape of the handbook of the Natural Color Kinematograph Company, Limited (80-82, Wardour Street, London, W.). This firm holds the Urban-Smith patents for "kinemacolor," a method of producing cinematograph films in the colours of Nature. The transparencies are made in such a way that by their gradations of tone they sift the light, and when they are passed in the path of coloured rays they screen or filter them so as to reconstruct for the eye the various proportions of colour luminosity in the original. With the motion of the picture and the natural colour representation, together with a certain amount of stereoscopic relief, all rolled into one, it is difficult to see what further conquests in this direction realism has to make. It is a fact, however, as we had the opportunity of testing some time ago at the Royal Society of Arts, that moving pictures in natural colours are much less fatiguing to the eye than the ordinary monochromatic presentment. The absence from the latter of the continuous chromatic glow with which we are ordinarily surrounded may account for "picture palace headache." The booklet before us gives a lively account of "kinemacolor," together with the usual catalogue; while another pamphlet furnishes instructions for operators of cinematograph appliances.

CANCER.

DR. W. B. GARVIN (Sileby, Leicestershire) writes: Kindly give me a little space for a note on a treatment I respectfully suggest for cancer. Briefly, cancer is due to glandular derangement. Where the cause seems to be due to irritation and to it alone—and every one who smokes a cutty does not get epithelioma of the lip—some derangement of the glands close by is the real cause. There are several forms of glandular insanity—myxoedema; Addison's disease, which has all the vice of a cancer without its corrosive power; Hodgkin's disease, in which the glands are manifestly implicated; and cancer, with its substage of sarcoma, in which the glandular system can be universally affected. The glands are cancer lanes. I think the salivary glands, by a vicious perversion of their secretion, cannot digest the cancer microbe, and so cancer ensues. Bad teeth, and the lack of them, are responsible for many diseases. I wonder what is the state of the teeth in cases of cancer. I have no statistics. It would be interesting to know if they are defective, or decaying, or both in such cases. The treatment I suggest is salivary gland tabloids, like thyroid gland tabloids. The requisitioning of the pancreas is based upon the same idea, though it is of the order of closing the stable door after the steed, etc. Dogs will lick away tumours to all appearances, cancerous or sarcomatous. Stimulate the chorda tympani of a dog, collect the salivary secretion, use this as a lotion diluted or not on cancerous ulcerations, and note the effect. The success of my theory does not depend so much on a partial or total abolition of a glandular secretion, but on its vicious perversion unanalysable. Death is static atomicity, thus:

A B C
D E F
G H I

Life is dynamic atomicity, thus:

↗ → → ↘
↖ A B C ↙
D E F
G H I

Take a pleuritic effusion: no drug will absorb the fluid because the sheet of fluid is in static atomicity; now the insertion of a needle changes the static into dynamic atomicity, and the serum is absorbed. A vicious perversion of a glandular secretion I figure thus:

← A B C
↓ ↙
D E F
G H I

The lines of atomic movements are transverse, longitudinal, and diagonal. As a sign of a hot day one sometimes sees a pyramid of living, shifting, ephemeral flies; this is, to my mind, like a vicious perversion of a gland—the atoms go mad and run amuck.

A CURIOUS COINCIDENCE.

MAJOR S. F. CLARK, R.A.M.C. (Maritzburg, Natal), writes: How is this for an example of the smallness of the world? Ten years ago I stitched up a woman's perineum after her first labour, and yesterday the child of this confinement brought me a note which took me to his mother's second labour (completed) just in time to sew up her perineum once more. The first child was born in Hong Kong, and this second one in Pietermaritzburg, and I had never set eyes on the mother during the ten years' interval. In fact, owing to the Boxer troubles causing me to go North, when I last saw her she was still in bed, and, naturally, she was in bed again when I found her yesterday. Given a certain doctor and a certain woman, revolving round the world in different orbits, what are the mathematical odds in favour of them meeting twice under the circumstances described above—two consecutive labours, each necessitating stitching, at a ten years' interval?

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *poste Restante* letters addressed either in initials or numbers.

Remarks
ON
DIAPHRAGMATIC HERNIAE.

BY
ARTHUR KEITH, M.D.Aberd., F.R.C.S.Eng.,
CONSERVATOR OF THE MUSEUM AND HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS, ENGLAND.

If one may judge from current medical literature, the passage of viscera from the abdomen to the thorax through a defect in the diaphragm is not an uncommon form of hernia. Dr. J. W. Ballantyne found records of 100 cases published between 1888 and 1900; an excellent article on 63 cases was published by Mr. Lawford Knaggs in 1903; in the same year M. Paillard was able to give references to 481 described cases. In spite of the extensive literature, the cause and significance of the defects of the diaphragm which render such hernia possible are ill understood—a natural result of our present imperfect knowledge of the origin and history of that muscle. The history of the diaphragm is linked up with that larger and still unsettled problem—the origin of the mammals, and especially of their peculiar respiratory mechanism. At the present time the diaphragm is regarded by most anatomists as a septum which has grown across the coelomic cavity, dividing it into pleural and peritoneal compartments. When, however, one begins to account for the various characters of the diaphragm, its origin in the neck of the embryo, its nerve supply from the fourth and fifth cervical nerves, and especially for the manner in which this effective part of the mammalian mechanism gradually assumed its present functional character, it becomes evident that its origin as a trans-coelomic partition provides a very imperfect working hypothesis. The explanation I offered in the *Journal of Anatomy and Physiology* some five years ago still appears to me the most satisfactory. The pleural cavities are, to my way of thinking, similar in many respects to the tunicae vaginales; both are extrusions or extensions of the primary coelomic cavities, but whereas the testicles have extruded in front of them an extension of all three primary layers from the hind-end of the primary abdominal cavity, the lungs perforate only the inner of the three layers of the fore end of that cavity, and instead of being extruded in the neck push down this inner layer to form the diaphragm. The lungs as they develop thus become lodged as it were in the body wall, as one might conceive happening in the case of an imperfectly descended testicle at the groin. The inner or transversalis layer at the cervical end of the primitive abdomen was originally composed, as one may see in some modern amphibia, of a dorsal and ventral sheet of musculature, both of which were attached to and acted on the pericardium and roots of the lungs. Hence, with the downward dislocation of the cervical inner sheet to form the diaphragm, the pericardium and heart are also carried within the body cavity. Clinicians are well aware that all nerve manifestations connected with the diaphragm, and with the diaphragmatic aspect of the liver, are still referred to the areas supplied by the original (fourth and fifth) nerve segments.

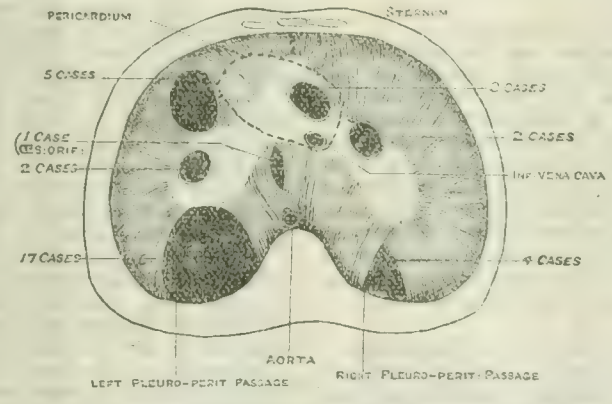


Fig. 1.—Diagram to show the sites of diaphragmatic hernia, as deduced from 34 museum specimens in London. The upper or thoracic aspect of the diaphragm is represented.

I.—*Hernia through the Pleuro-peritoneal Passage.*

My purpose here is to refer to this migration theory of the lungs merely as far as it helps us to understand the various forms of diaphragmatic herniae. In Fig. 1 I have summed up in a diagrammatic manner the results of an examination of thirty-four specimens which show defects of the diaphragm. These specimens are preserved in the medical museums of London. It will be observed that seventeen of these specimens show a defect at the dorsal or spinal part of the left side; four at a corresponding position on the right side. These two defects or openings I have named the pleuro-peritoneal passages, and I regard them as similar to the internal abdominal rings—namely, the points at which the right and left lungs made their escape from the primitive abdominal cavity. The muscle of the crura of the diaphragm which separates these orifices represents the dorsal part of the cervical transversalis, while the sterno-costal fibres of the diaphragm represent a ventral part of the same sheet. In the normal course of development these orifices are closed before the end of the second month; but one can understand, as is the case with the internal opening of the tunica vaginalis, that the process of closure may be delayed or fail. The cause of the failure we do not know, but one may safely presume that it is of the same nature as the cause which arrests the union of the primary elements of the upper lip and leads to the condition of harelip. It is not the respiratory movements at birth which draw the abdominal contents into the thorax; the atelectatic and compressed condition of the left lung (when hernia is situated on the left side) shows that the abdominal contents had entered the left thorax long before birth, probably owing to the spasmodic movements which are known to occur in the fetus *in utero*. The size of the aperture in those children which died at birth is larger on the left side than on the right; on the left side the deficiency varies from one to two thirds of the floor of the left pleural cavity; on the right side the size is rarely so much as a third of the right pleural floor. The explanation of the larger orifice on the left, and of its greater frequency (17 on the left to 4 on the right in the present series) is the same as leads to the greater frequency in the displacement of the right kidney in the adult. The contents of the left hypochondrium are much more movable and plastic than those of the right; hence, when the contents of the abdomen are compressed in the fetus with an open pleuro-peritoneal passage, the massive liver blocks the orifice on the right, while the left contents may easily slip through. The case is otherwise when dislocation of the kidneys in the adult is considered. The mobility of the contents of the left hypochondrium safeguards the left kidney; the relative immobility of the liver renders the right kidney subject to all compressing influences which act on the right hypochondrium.

Of the 4 cases of hernia through the right pleuro-peritoneal passage, 2 died at birth, 1 lived one and a half hours, another 4 hours. Of the 17 cases on the left side, 12 died at birth or were stillborn, 1 lived six hours, 1 six weeks, 1 three months, 1 to the age of 34, and 1 to old age. Dr. Penrose Williams has recorded a case in a man of 77, and a case of Dr. Edmund Cautley, recorded by Mr. H. D. Williams, lived to 9 months. Dr. R. J. Gladstone has described the case of an anencephalic fetus where the fused kidneys had entered the left side of the thorax by the pleuro-peritoneal passage; and also the case of a woman of 96 where the right passage was distended by a fatty hernia. Professor A. M. Paterson of Liverpool and Professor Arthur Robinson have dealt with the anatomy of this form of diaphragmatic hernia. Mr. Lawford Knaggs, when he reported a series of 63 cases seven years ago, said he was aware of only two cases in which an operation had been attempted—a case of his own and one recorded by Mr. James Berry. Neither of these cases was congenital hernia of the pleuro peritoneal passage. From an examination of the present series of cases I am of opinion that a considerable number of these cases might be successfully operated on if the condition were recognized at the time of birth.

II.—*Hernia through the Oesophageal Orifice of the Diaphragm.*

As may be seen from Fig. 1, there was only one specimen in the series of 34 which showed a hernia at the oesophageal orifice. This specimen is in the museum of Guy's Hospital, and shows the greater part of the stomach in the right pleural cavity. Mr. Lawford Knaggs has described several cases; Mr. W. A. E. Waller has recently placed a remarkable one on record in a young man of 19; Dr. Barclay Smith found the condition associated with great dilatation of the sigmoid colon. Mr. Rigby and the writer have recorded a case in which a partial hernia of the stomach through the oesophageal orifice was associated with enteroptosis.

III.—*Herniae through the Right Leaflet of the Diaphragm.*

As shown in Fig. 1, there were only two cases of hernia through the right leaflet—one in a child of 4 months, where a process of the liver, about the size of a cricket ball, occupied a sac formed from the expanded central tendon; and another, also in a child, where a process of the liver lay free in the floor of the right pleural cavity. There can be little doubt that both of these were congenital in origin and were produced by an abnormal development of the liver within the septum transversum of the embryo. Professor Arthur Thomson has recorded a similar occurrence in the rabbit, the abnormal process of liver resembling an accessory heart.

IV.—*Hernia into the Pericardium.*

There were three cases of hernia into the pericardium through a perforation of the central tendon of the diaphragm. In the case of a man of 50 a process of omentum occupied the orifice; in a man of 47 a process of liver formed the extruded part. In neither of these cases was there a hernial sac, but in the third case, in a child at birth, the process of liver was enclosed in a sac formed by the central tendon. It is possible that the two cases in adults were the result of a former injury. Elder and Postlethwaite report a case where the lobe of a malformed liver occupied a diverticulum of the right central tendon, the diverticulum reaching the level of the second rib.

V.—*Hernia through the Left Dome of the Diaphragm.*

Herniae through the left pleuro-peritoneal passage are four times more common than through the right, and the same statement holds true as regards the various forms of hernia which occur at the domes and sterno-costal parts of the diaphragm. As may be seen from Fig. 1, herniae occur at two sites on the left dome—an anterior or sterno-costal site, and a posterior or central site. In the present series of 34 cases there were 5 at the sterno-costal site and 2 at the central. Of the sterno-costal form all were in adults varying in age from 19 years to 50, and in every case there was a history of a former injury by which the abdomen had been suddenly and forcibly compressed. There was no specimen of hernia at this site in a newly-born child. Cases of hernia in adults as the result of a former injury have been recorded by Mr. Lawford Knaggs, Professor A. M. Paterson, Mr. J. P. Roughton, and Mr. Don. In the two central cases the abdominal contents were enclosed by a sac formed from the extended diaphragm in one case (a child which lived forty-three hours), and in the other (a child at birth) the orifice in the diaphragm was free, and there was no sac. Both of these cases were clearly of congenital origin.

SUMMARY.

Herniae through the diaphragm fall into two groups, the congenital and the acquired, the former being to the latter in the present series of 34 cases as 26 : 8. The congenital herniae are chiefly those which occur at the unclosed pleuro-peritoneal passages (21 cases), the others being formed (5 cases) by developmental extrusions of the abdominal viscera, chiefly liver, through the septum transversum. In a certain proportion of congenital cases it appears possible to adopt surgical measures for the cure of the condition.

I should like to avail myself of this opportunity of expressing my indebtedness to the curators of the various hospital museums in London for the facilities given me of examining the valuable specimens under their care.

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TYPHOID PERFORATIONS AND PERFORATIONS OF THE GALL BLADDER.

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PERFORATION of the intestine in typhoid fever demands our most careful study because of its frequency and danger. Physicians and surgeons are together bound to do their utmost to lower the high mortality-rate that obtains at present in this the most lethal of all the complications of typhoid.

Osler says that 1 out of every 3 deaths occurring during typhoid fever is due to perforation, and this estimate of its frequency is confirmed by the studies of the late J. Allan Scott. If the same percentage of deaths occurs in Canada as are estimated by Brown and Taylor to obtain in the United States, we have 1,875 deaths each year in our Dominion from typhoid perforation.

The locus is generally in the terminal two feet of the ileum, but, of course, it may occur at any part of the ileum, jejunum, large intestine, or appendix. The pathogenesis of typhoid perforation is well known. The coagulation necrosis of the lymphoid tissue opposite the mesenteric attachment, where the blood supply is poor, has been clearly described by many writers.

The problem before our profession is to lower the mortality-rate; therefore, the first question is, What are the causes of the high death-rate in typhoid perforation?

1. The condition of the patient at the time of its occurrence. Towards the removal of this cause we can do little, although it adds greatly to the difficulties of recognition.

2. The difficulties in diagnosis. This is almost the whole question at the present time. Once perforation has occurred, we may agree pretty well on the remedy to be applied and on most of the details of carrying that remedy into effect; but how to make the diagnosis—that is the question above all others in typhoid perforation.

To begin with, let us clear the ground of one or two erroneous ideas. We must not expect perforation of the intestine in typhoid to be announced by definite and distinct symptoms. So long as we look for the same abrupt onset that takes place when a stomach or appendix ruptures in a patient who is in full health at the time, and for symptoms that are unmistakable, so long we may go on as we have been doing, and make our diagnosis when it is too late to be of benefit to the patient.

My second point is that we must clearly appreciate the difference between perforation and peritonitis. The time has passed when we could say that perforation could only be recognized by the resulting peritonitis. A third-year student can diagnose peritonitis; the master should be able to diagnose perforation.

It is generally a good rule to doubt a diagnosis when the symptoms lack in harmony, but in typhoid perforation the absence of harmony is a diagnostic point in favour of perforation. The change for the worse in the patient is often out of all proportion to the abdominal symptoms. The first symptom is pain, and, as a rule, it comes on suddenly. Abdominal pain is the danger signal, and should always receive immediate attention. In rare cases the pain comes

on gradually; this is the exception, however. It is commonly referred to the lower abdomen, often to the right side, but may be referred to the umbilical or epigastric regions. Tenderness is usually present, and at first is localized. The initial pain and localized tenderness are the most important indications of perforation, and should be considered and differentiated from the more widely diffused pain and more generalized tenderness that appear later, and indicate the presence of peritonitis.

Rigidity and muscle spasm are now to be looked for. Greater resistance of one rectus muscle is significant. The difficulty is that typhoid patients often complain of the abdominal pain, and are generally more or less tender in the right iliac region. A differential point is that the pain and tenderness of perforation are associated with an altered condition of the patient. The nurse or the friends generally notice that something has occurred. The expression is different. There may be a clammy perspiration. If the pain, tenderness, and rigidity are accompanied by nausea or vomiting, as is the case in a considerable percentage of cases, their importance as a diagnostic sign is greatly enhanced.

One should not conclude that there is no tenderness present without a rectal examination. In some cases the perforated loop lies low down in the pelvis. The patient may then not complain much of pressure upon the abdomen, but forward pressure of the finger in the rectum will at once cause him to cry out. It is in these cases that complaint may be made of frequent and painful micturition.

Later on, when the infection of the peritoneum has become diffused, and peritonitis has developed, careful inspection may note lessened abdominal movement during respiration, particularly of the lower abdomen and in men. The absence of liver dullness is only of value when the abdomen is quite flat, and especially if its presence has been previously noted. Alteration in the pulse, temperature, and respiration may be confirmatory, but it is often remarkable how little they are disturbed. The blood pressure is sometimes increased. I have not found the presence or absence of leucocytosis a symptom upon which much reliance can be placed. It may be present without perforation and absent when perforation is present.

None of these symptoms are new. They are mentioned in all textbooks. The point is to be on the alert, and not to allow them to pass unnoticed.

There were treated in the Montreal General Hospital from 1897 to May, 1910, 2,051 cases of typhoid fever. During this period there occurred 93 cases of perforation. In this series, then, perforation occurred in 4.53 per cent. of the cases. In addition, I operated upon three cases of typhoid perforation in another hospital and upon one case in a private house; of these four, three recovered. We have, then, 97 perforations, of which 78 were operated upon, and 24, or 30.76 per cent., recovered.

If we now examine the statistics for the various years, we find that the percentage of recoveries has steadily increased. During the year 1909 there were 16 perforations; 9 were operated upon, and 9, or 56.25 per cent., recovered. Our figures for the year 1909 and four months of 1910, or up to May last, are the best of all. During this period there were 22 perforations, 19 of which were operated upon, with 9, or 47.36 per cent., recoveries. In this series of 22 perforations there were two very promising cases lost, apparently, by delay in obtaining consent after the perforation was diagnosed.

Annual deaths in Canada from typhoid fever	1 875
Montreal General Hospital, 1897 to May, 1910:	
Cases of typhoid	2,051
Cases of typhoid with perforation	93 (4.5%)
Cases of perforation in Montreal General Hospital	93
Author's cases outside hospital	4
Total cases of perforation	97
Cases submitted to operation	78
Cases not operated on	19
Recoveries after operation	24
Percentage recovery (24 out of 78)	30.7

Recent Results.

Perforations, January 1st, 1909, to May, 1910	22
Submitted to operation	19
Recoveries	9
Percentage recovery (9 out of 19)	47.3

Type of Fever in which Perforation Occurred.

Severe	50
Moderately severe	20
Mild	1
Ambulatory	6
Type not described	16
	93
Associated with severe haemorrhage	26
Multiple perforation—6 cases (per cent.)	7.7
Secondary operation for secondary perforation in 4 cases: Recovery	1

The increased percentage of recoveries is, no doubt, in part due to the character of the epidemic, but chiefly to earlier diagnosis and earlier closure of the opening. The earlier diagnosis has been due largely to the development of the idea among the resident hospital staff that it is a serious reflection on their skill and professional attainments to fail to recognize a typhoid perforation, no matter how slow and chronic may be its appearance. The final step towards lessening the mortality-rate in typhoid perforation is the recognition by every one of us that it is a serious and humiliating oversight to fail to recognize a perforation when it occurs.

The difficulties are greatly increased by the dull and apathetic state so common in typhoid, but these difficulties should only stimulate us to greater watchfulness.

I think it may be said that the diagnosis is, in many cases, to a certain degree uncertain. For this reason, in all cases in which we think a perforation is present, but where there is a reasonable doubt, an exploratory incision is to be recommended. I have twice opened the abdomen without finding any perforation. So far as I could observe, no harm resulted. This exploratory incision, undertaken after due and careful consideration, may sometimes save a life.

While it is quite true that the earlier the perforation is closed the more limited is the infection and the better the prognosis, yet some of our cases have been operated upon and have recovered when the condition, because of delay and advanced peritonitis, has seemed almost hopeless. Our experience in these cases would indicate that we are not justified in withholding the only chance there is unless they are really *in extremis*.

It may be said, I think, that if perforation occurs into the free peritoneal cavity the patient cannot recover unless the opening is closed. The only perforations that do not prove fatal unless closed by the surgeon are those occurring in the large bowel and between the layers of the mesentery. It has been demonstrated at the operating table that a small perforation in the small intestine may be temporarily closed by omentum, but that such cases would have recovered if they had been left alone is open to very serious doubt.

I have opened one abscess in the loin—post-typhoid—that seemed clearly to have been secondary to typhoid perforation of the colon.

If now we analyse our cases we find that perforation is more common in the severe forms of typhoid. Fifty of the perforations have occurred in cases described as severe, twenty in moderately severe cases, and one in a mild case. Six perforations occurred in ambulatory cases, and in one of these it seemed highly probable that perforation had occurred sixty hours before admission to the hospital. Strange to say, this man recovered.

Of the 97 cases in which perforation occurred, only 78 were submitted to operation. Nineteen cases were not operated on for various reasons, the chief being failure to obtain consent from the patient, parents or guardians, the desperate condition of the patient, and non-recognition of the lesion.

In several instances the patient's chances have been lessened by the delay in getting consent. One conspicuous example was a man, a patient in the Typhoid Emergency Hospital. The perforation was promptly recognized, and the patient sent to the Montreal General Hospital. He then refused operation, and insisted upon being removed to his home in a distant part of the city. At his home better counsels prevailed, and he was brought back to the hospital. Two long rides in the ambulance and a delay of twelve hours changed an early promising case into an all but hopeless one. These delays from failure to obtain consent are of too frequent occurrence, one reason probably being that we do not promise enough

and one of my objects in this paper is to show that our extreme pessimism is wrong, unscientific, and not sustained by our later experience. Surely, if 50 per cent. of these desperate and otherwise hopeless cases can be saved, our pessimism should give way to a good, vigorous optimism.

Twenty-six of our cases of perforation were associated with haemorrhage. Among these are not included instances of small blood-stained stools but only those cases in which the quantity of blood lost amounted to several ounces. As a class they are unfavourable. Three of them, however, recovered.

In six cases, or 7.7 per cent., more than one perforation was found at the time of operation. The perforations were generally not far removed from each other.

In four cases a second operation was undertaken for second perforation. One of these recovered. In two, recovery would have followed the second operation had not a third perforation occurred—in one case seven days after the second operation and in the other twenty-one days after the second operation. In one case two operations were performed. At the first operation one perforation was closed. At the second operation two perforations were closed. The child finally died, and at the autopsy the lower two feet of the ileum were necrotic, twelve perforations being counted.

Haemorrhage and perforation occurring subsequent to the operation for closure must be placed among the causes contributing to the high death-rate. Can they be prevented?

This raises one of the questions of technique. Is it enough to simply close the perforation found? What other procedure may be adopted?

It has been my practice to close the opening in the simplest way, that is, by one or two sutures through all coats, and a row of Lembert sutures placed transversely at right angles to the long axis of the bowel. I then infold in a similar manner with a row of Lembert sutures all the ulcers found to have a thin, suspicious, necrotic-looking base. Two alternatives suggest themselves, and have been carried out in a few of our cases. In two the suspicious portion of gut was resected with end-to-end anastomosis. They both died. In two the suspicious-looking gut was delivered, and cared for outside. The gut was wrapped in gauze, and allowed to rest on the abdominal wall. These two, after doing well for a time, eventually succumbed, one of them from pneumonia.

Resection should probably be reserved for special cases in which the danger of further perforations over a considerable section of intestines seems imminent, and the patient's general condition warrants undertaking an operation that requires a little more time and a little more shock. I have not seen a report of any series of cases treated by resection, but I am under the impression, from conversations held with surgeons, that resections in typhoid perforations have not been followed by any improvement in the mortality-rate. I believe, however, that it should be carried out under favourable circumstances and in selected cases.

The variety of anaesthesia to be employed is a question of more than passing interest.

We will all, I think, agree that all preparations, including the wash-up, should be done before any general anaesthesia is used.

Local anaesthesia possesses many advantages, and should be used whenever possible. In the case of foreigners who cannot understand our language, and in children, it is difficult, but it undoubtedly should be the method of choice. I must say, however, that most of my cases have been operated upon under general anaesthesia, and I cannot say that I have seen much harm from it. On the contrary, these cases are almost all surprisingly well during the ensuing twenty-four or forty-eight hours. If the patients are vomiting, this is a very forcible reason for using local anaesthesia, as we thus lessen the danger of an aspiration pneumonia.

There is one point to be remembered when operating for typhoid perforation under local anaesthesia, and that is, that when the abdomen is opened there may not at first seem to be any indication that a perforation has occurred. No gas or fluids may escape, and, so far as can be seen through a small incision, the peritoneum and intestine may present a nearly normal appearance. This occurred to me on one occasion. The symptoms in this case had been unusually well defined, and that there was a perforation seemed almost beyond question. On pulling up the lower end of the ileum the patient complained so loudly that I gave a little ether. Then, when the ileum was finally delivered, a small perforation was found nicely closed by adherent omentum. If this had been overlooked, doubtless a leakage and peritonitis would have followed soon afterwards.

The subject is one of great interest. The death-rate must necessarily remain high, but watchfulness, exploratory incisions in doubtful cases, and prompt closure should save a goodly number of typhoid perforations.

I take this opportunity to report a case of typhoid perforation of the gall bladder.

The patient was a little girl 10 years of age, referred to me by Dr. Molson. The typhoid had been of moderate severity. At the end of the third week, after three days of normal temperature, she complained of pain in the right hypochondrium. The following day an ovoid swelling appeared in the situation of the gall bladder. It felt as large as a turkey's egg, was exquisitely tender, and moved up and down during respiration. It was accompanied by a rise of temperature and acceleration of pulse. Under local applications the tumour became less tender and perhaps a little smaller. There was no jaundice. On the fourth day of the tumour another accession of pain decided me to operate. I opened directly into an abscess cavity, and in the abscess lay the gall bladder perforated in three places. The walls were everywhere necrotic. There were no stones. I did a cholecystectomy, and the little girl made a smooth and uneventful recovery.

The following is the report of Dr. Wolbach, pathologist in chief to the hospital:

The specimen is slightly enlarged, thin-walled gall bladder 10 by 4.5 cm. in its greatest diameters. The outer surface is much congested and presents numerous yellowish raised areas, in a few of which there are perforations extending through the wall. The mucosa is dark red, and contains, in addition to the perforations, many ulcers, 0.1 to 0.5 cm. in diameter. The large ulcers have yellow necrotic bases with undetermined edges. The thickened floor and the surrounding puriform infiltration of these ulcers produce the swelling noted on the external surface of the gall bladder.

Incision through the serous coat into the wall of the gall bladder in the neighbourhood of the perforations and ulcerations shows extensive oedema and puriform infiltration into the surrounding tissues.

Kaiserling specimen preserved.

Microscopic Examination.

The epithelium of the mucous membrane is nearly wholly absent; a few islands of epithelium represent deeper parts of folds in the mucosa. The line of the basement membrane is everywhere intact, except over the ulcers; so that the general loss of epithelium is probably post-operative. Throughout the sections examined there are evidences of oedema and many small areas of haemorrhage.

In thickened parts of the wall there is marked infiltration with lymphoid and plasma cells, and large mononuclear cells, many of which are finely vacuolated (compound granular cells).

Young connective tissue cells are present throughout the sections where there is oedema. The large mononuclear cells (endothelial cells) are occasionally grouped in large numbers about vessels, in lymphatics, and in areas of haemorrhage.

The above changes are most marked in the outer half of the gall-bladder wall—that is, subserous tissues and the elevated areas noted in the gross specimen are due to necrotic areas in this region, surrounded by granulation tissue. Near one large necrotic area there is a large vein with an early organized and canalized thrombus.

In the areas of surrounding necrotic tissue there are many polymorphonuclear leucocytes, but even here the number is not greatly in excess of the large mononuclear cells.

A few short bacilli are present in necrotic areas (methylene blue stain). No other bacteria can be found.

The blood vessels everywhere are engorged, but there is no evidence of recent thrombus formation.

SUMMARY.

Necrosis of gall-bladder wall following marked infiltration of the outer half with lymphoid, plasma, and endothelial cells, in which respect it differs from an ordinary suppurative process. The extensive oedema is possibly due to thrombosis of vessels, though only a single organized thrombus could be found. The character of the cellular reaction supports the theory of a direct infection of the gall-bladder wall by the typhoid bacillus as against pyogenic infection, or infection secondary to a cholecystitis.

The only demonstrable bacteria in the lesions are bacilli consistent in morphology with the typhoid bacillus.

The route of infection could be either through the blood stream or through lymphatics from infected lymph nodes which may be incorporated in the wall of the gall bladder.

BACILLUS COLI INFECTIONS, WITH SPECIAL REFERENCE TO THEIR RECOGNITION AND COMPARATIVE FREQUENCY.

By J. STAVELEY DICK, M.B.,
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During my first fourteen years in practice I did not meet with, or at all events recognize, any case of infection by *B. coli*. This is not surprising in view of the inadequate treatment which the subject receives in the average text-book. I am really indebted to my friend Dr. Houston, of Queen's University, for directing my attention to the subject some three or four years ago. As my observations have been restricted to cases occurring in an ordinary general practice, my experience may afford some index of the frequency of these infections, and possibly also some indication as to the numbers which are either overlooked or misunderstood. That they are frequently overlooked at present is, I think, certain; and until more accurate clinical pictures of various types are forthcoming I fancy that it will be so in the future.

I have found that the number of these cases has increased in my practice as I adopted the culture method of investigation with greater uniformity. This method is, in my experience, not inconvenient, and the increased interest which it arouses more than outweighs the extra trouble involved. It will be observed that an accurate clinical diagnosis of some (if not all) of the cases referred to below would be impossible, and that Case IV illustrates the striking benefit which may be anticipated from appropriate vaccine treatment, and thus accentuates the practical importance of accurate diagnosis in this type of infection. I propose at present to deal with some of the cases I have met with in the last *six months*.

Case I.

A child of 10 months, scalded on buttocks and legs, developed diarrhoea on the third day; next day convulsions, with temperature 104°; died on sixth day, apparently from broncho-pneumonia and cardiac failure. Some hours prior to death large wheals appeared all over the body with petechiae. One of the wheals (on the front of the chest) was painted with lin. iodi, about two hours prior to the fatal issue, in order to sterilize the skin; and a hypodermic syringe, previously boiled, was used to obtain a specimen of the exudate. An agar tube was inoculated with a loopful of the contents of the syringe; it proved to be a pure culture of *B. coli*. At the same time one of the blisters on the leg was snipped with sterile scissors, and the platinum loop (previously flamed) was passed into the blister, and then used to inoculate a second agar tube. This also yielded a pure culture of *B. coli*.

Cover-glass preparations from the contents of the blister and the syringe showed a Gram-negative bacillus; no staphylococci or streptococci were seen. There is, therefore, strong presumptive evidence that this was a pure *coli* infection, its source being the child's own motions, and the route of infection being the extensive raw surface on the buttocks and legs.

With regard to the pathogenicity of *B. coli*, one need only note in this connexion that it has been shown by several observers that the virulence of these organisms is increased in typhoid fever and catarrhal conditions of the intestine. There are, therefore, theoretical grounds, as well as the specific evidence afforded by this case, for the statement that in cases where diarrhoea is associated with scalds, especially of the buttocks and lower extremities in young children, there is a grave risk of a fatal septicaemia from *B. coli*, a fact which, I confess, I had not properly appreciated.

The next case appears to raise some points of interest in connexion with "anomalous" febrile attacks and aberrant types of pneumonia.

Case II.

Man, aged 56; sore throat and fever for a week; rigor tenth day; consolidation of left lung; abundant prune-juice sputum; temperature 103–104° for next four days; then attack aborted. Seven days later became delirious, and temperature reached 105°, but again touched normal in three days. There were occasional subsequent rises to 100°, but he gradually improved and eventually recovered. He was in bed about seven weeks.

A cover-glass preparation from the sputum in the first twenty-four hours of the pneumonia showed a diplococcus (without obvious capsule) and a bacillus in large numbers. A culture was grown from the sputum in the hope of isolating the pneumococcus; the bacillus grew luxuriantly and the attempt proved futile. It was not until the patient had been convalescent for a month that I accidentally discovered that this culture had a slight odour and contained a motile bacillus. I at once obtained a sample of the patient's urine. It also contained a motile organism. I made a culture from the urine and submitted it with a subculture from the sputum and some of the patient's serum to Dr. Sidebottom, of Victoria University, who very kindly agreed to investigate the matter for me, and to whom I take this opportunity of expressing my thanks. His report is as follows:

"The two cultures were plated and found to be pure. They consisted of a small bacillus, motile and Gram-negative. Both organisms fermented glucose and lactose with production of gas. They produced clotting and acidity in litmus milk. The production of indol was not clear. Both organisms appeared to belong to the *B. coli* group; but there were small differences between them, the organism isolated from the urine showing a tendency to form long filaments. There was no indication of agglutination or stoppage of motility when the organisms were brought into contact with the patient's blood (10 : 1)."

With regard to the agglutination reaction, it is well to recollect that it was about three months from the onset of the illness until the agglutinating capacity of the serum was tested. Dudgeon and Sargent[1] failed in 52 out of 68 cases of peritonitis due to *coli* organisms to obtain any reaction with a dilution of 1 in 10. Wilson's results[2] were similar in the case of coliform organisms isolated from the urine. A negative reaction in this case, therefore, is not evidence of any great weight against the conclusion that the bacilli isolated from the sputum and urine had a specific connexion with the patient's illness. A trace of albumen was found in the ordinary routine examination of the urine in the acute stage of the pneumonia, but I wish to state emphatically that there were no bladder symptoms all through. I suggest, therefore, that the case was one of mixed infection by the *B. coli* and *pneumococcus*, that the primary focus of infection was the throat or lung, and that the infection of the urinary tract was secondary when comparative immunity had been achieved, and consequently no obvious inflammation of the urinary tract resulted.

My experience points to the conclusion that in cases of primary infection of the urinary tract there are some signs of cystitis, which may be so slight as to be easily overlooked altogether, or so severe as to cause grave anxiety about the patient's life. But whether the infection of the urinary tract be primary or secondary, mild or severe, the bacilluria appears to persist in most cases for weeks or months. I have recently seen a patient suffering from persistent recurring headaches who has a history of typhoid fever sixteen months ago. He has had no bladder symptoms since, but he has a *coli* bacilluria. I have not been able to find typhoid bacilli, though, of course, it was with the idea of possibly finding typhoid bacilli that I made cultures from his urine.

The following is a good example, I think, of the mildest type of infection of the urinary tract:

Case III.

A primipara, aged 32, had a normal labour; she was unable to pass urine, however, during the first week. A silver catheter, boiled immediately before use, was passed night and morning. Temperature and pulse were normal until the fourteenth day, when she had a scarlatiniform rash interspersed with urticaria-like wheals which "burned" slightly but did not itch; her temperature was 99°, and pulse 86. Careful inquiry from the patient and the nurse elicited the fact that there had been slight dysuria on the first three or four occasions on which she urinated naturally. She had also appeared a little feverish on the evenings of the twelfth and thirteenth days, but she had not felt ill, and my attention was not called to the matter until the rash appeared. A specimen of the urine (obtained by catheter) was found to be acid; it contained a little pus and a motile Gram-negative bacillus, which on culture was found to be one of the colon group. The patient's blood in dilution of 1 in 10 agglutinated the bacillus, but did not completely inhibit motility; it was found, however, that the observer's blood had an almost equal agglutinating effect upon this bacillus. Beyond rest in bed for another week no treatment was adopted, and no further symptoms developed. The bacilluria persisted for five weeks afterwards, during which the patient appeared in perfect health. No further observations were made.

With regard to the rash, clinically it appeared to be related to the slight febrile condition. If it were, the case suggests that some of the erythemata of the puerperium may be due to a mild *coli* infection which escapes notice. Of course it may be urged that erythemata are uncommon in this kind of infection, but an obvious reply is that the great majority of people do not develop urticaria after eating shell-fish, whereas a minority do. Similarly bacterial toxins may in patients of a certain idiosyncrasy

produce puzzling erythematous eruptions, but fail to do so in the majority of patients suffering from the same form of toxaemia.

The next case illustrates the severe type of infection of the urinary tract. It represents a class of case which might easily be, and I believe has been, mistaken for appendicitis, and be submitted to a useless operation.

CASE IV.

Woman, aged 28; pregnant five and a half months; had vomiting and rigors. Temperature 103°, pulse 150, respirations 32, abdominal tenderness, especially over the right iliac region and towards the right kidney; some dysuria. During the first week, sleeplessness, persistent vomiting, abdominal pain and dysuria were the most prominent features. The urine was acid, contained some pus, which increased in quantity later, and a motile bacillus in enormous numbers, which was Gram-negative, and on subsequent culture proved to be one of the colon group—that is to say, it produced acidity and dotting of litmus milk; fermented lactose; gave a luxuriant brown growth on potato, and did not liquefy gelatine. A three days' broth culture gave a deep purple colour when 1 c.cm. of a 0.02 per cent. solution sodium nitrite and 1 c.cm hydrochloric acid were added.

In this case alkalis and morphine (by the mouth) proved valueless, owing to the persistent vomiting, and at the end of the first week the case was looking very grave. It was then decided to try the effect of a vaccine made from a six-hours' subculture of the patient's own bacillus. A dose of fifty millions (approximately) was injected on the morning of the seventh day of the illness.

The patient slept well that night without a narcotic. Next morning she said she felt "perfectly well." Her temperature, etc., were normal; the vomiting, the dysuria, and abdominal pain had disappeared. On getting up, however, a week later, there was some return of these symptoms, and, after repeated entreaties on the part of the patient, another dose of vaccine was given, and was followed by the same rapid and gratifying improvement as before. Her subsequent convalescence was satisfactory, and her accouchement was normal.

Before giving the first vaccine injection, the agglutination reaction of the patient's serum was tested against the bacillus grown from the urine. It was found that, whereas observer's serum in a dilution of 1 in 10 had no appreciable effect on this bacillus at the end of one hour, the patient's serum agglutinated it instantaneously—that is to say, it was found to be agglutinated as soon as the preparation was focussed. A considerable number of similar observations with different dilutions were subsequently made in this case. The general result may be stated thus: Obvious clumping occurred in a dilution of 1 in 50 in a few minutes; but even with a dilution of 1 in 10 motility was not completely inhibited at the end of two hours. Careful comparisons with a normal serum or serums are, I think, imperative if any definite conclusions are to be drawn in *coli* infections from the agglutinating capacity of the patient's serum.

CONCLUSIONS.

I do not propose to elaborate further any of the points raised in connexion with these cases at present; but I may briefly summarize the conclusions at which I have arrived from personal observations:

1. These infections are commoner and more important than the average textbook would lead one to believe.

2. They vary within wide limits in respect of their virulence, and therefore in respect of their clinical features.

3. Their recognition is important, not merely from the standpoint of accurate diagnosis, but also from the standpoint of efficient treatment in the severer types.

4. The slighter cases are apt to be overlooked altogether, the severer cases are apt to be misunderstood.

5. Clinical observations alone, however conscientious, are at present quite inadequate; bacteriological evidence is a *sine qua non* of decisive diagnosis.

REFERENCES.

1 *The Bacteriology of Peritonitis*, p. 147. 2 *Journal of Hygiene*, vol. viii, September, 1908.

WE have received from Continental Travel, Limited, a handbook giving an account of Swiss resorts open in the winter, together with information as to the facilities they offer for winter sports and as to the accommodation offered at hotels. Also dealt with are the cruises to the Mediterranean which the company organizes during the spring. The book is of value since, apart from other points, exact information as to Swiss winter resorts is not elsewhere easy to obtain. It is edited by Sir Henry Lunn, and includes a number of articles on winter experiences by different writers, and also a record of a tour round the world. Another similar tour is now it seems in preparation, the leader being, we note, Dr. Thwaites, a former army medical officer.

ON THE DIET OF A PATIENT BEFORE OPERATIONS UNDER GENERAL ANAESTHESIA.

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I DO not propose to deal here with special cases, each of which must be treated on its own merits; however, as ordinary healthy patients who have to undergo some simple operation are so frequently subjected to an absurd period of starvation, or are given such totally unsuitable food before an operation, I think it is worth while devoting a little consideration to the subject.

I am fully aware that many members of the profession, especially those of the older school, will disagree with my views; and surgeons, anaesthetists, and general practitioners will be found to have opinions differing widely, not only from mine, but also from those of each other on this important question.

It is a peculiar fact that, though the diet of a patient before an operation is regulated mainly on account of the anaesthetic, it is quite exceptional for the anaesthetist to be consulted on the matter at all. In spite of this, however, he and his much maligned drugs are given all the blame for any unpleasant symptoms that may arise during or after the operation. Of course, a careful and experienced anaesthetist will obtain far better results under any system than one who is less competent; but his results might be enormously improved by subjecting the patient to a more reasonable and thoughtful preparation.

In an able article in the *Lancet* of April 4th, 1908, p. 993, Dr. William Hunter pointed out that the so-called "delayed chloroform poisoning" was actually due to starvation before and immediately after operations; and as this opinion emanated from a credited physician and pathologist, and not from an anaesthetist, I presume it will be accepted as being at least unbiassed. In the general conclusions at the end of his paper, he lays down that post-anaesthetic vomiting is essentially toxaemic, due to the profound depression of the liver function, which will be greater if a liver, already weakened by disease or by poor nutrition, be further unduly weakened by food having been withheld for many hours before the administration. This enforced abstention from food before the administration of an anaesthetic is, he says, largely responsible for the fatal effects of "delayed chloroform poisoning," and such effects could probably be completely prevented by taking care that the patient always had a very nutritious, well-sweetened, and easily digestible meal, two or three hours before the operation.

Moreover, the Sisters in the wards of the hospitals inform me that a result of the preparation of all ordinary operation cases by a routine method is that the patients whose turn comes at the end of a long list in the afternoon are always much more sick, and have far more straining than those who are done earlier, and have therefore not been over-starved to the same extent. It is the practice in many hospitals to prepare every patient as though he would be operated upon at 2 o'clock; whereas, if there be five or six cases to be done one after the other, the unfortunate victim who comes last on the list will be starved for some four or five hours longer than is actually intended. The old idea was that he would therefore have an absolutely empty stomach, and so would probably not vomit at all. Experience, however, shows that instead of suffering less after the operation, he really has far greater discomfort than the patient who is done first, and who is thereby saved from the miseries of the prolonged starvation.

At nursing homes, also, I am told that the patients nearly always suffer more after an anaesthetic if they are prohibited from taking anything by the mouth on the morning of the operation when the latter takes place at 10 or 11 a.m.

The usual errors in preparing patients for an anaesthetic, however, are by no means confined to the length of time during which they are made to abstain from food. They are frequently also given an unsuitable *kind* of food for their last meal. Thus, one sometimes hears of healthy patients being made to swallow some concentrated meat essence at 6 o'clock in the morning. This might be

possible at lunch time, but the stomach is not accustomed to this kind of food at the earlier hour, and it will certainly resent it on a day of such anxiety.

Besides, why should it be concentrated? A little extra water in the stomach can certainly do no harm. As every medical man knows, if a patient be starved all night, and given nothing whatever by the mouth in the morning, he can still bring up fluid which would be at least as likely to choke him as the extra water would; while, on the other hand, the amount of straining required to bring up this thick viscid mucus is greatly in excess of that required to get rid of the more liquid substance, and the patient's discomfort is increased accordingly.

Contrary to the usual belief, ether cases generally suffer less discomfort after regaining consciousness than chloroform cases; and this, I think, is partly explained by the fact that the secretion in the stomach is more copious and liquid when ether is employed. So I have gradually been converted to the opinion that the want of food, and particularly of fluids, is an important factor in causing the disagreeable after-effects which are usually falsely ascribed solely to the anaesthetic.

It should further be remembered that the stomach develops a habit of expecting, and demanding in no uncertain manner, a meal at regular definite times; and that, if it be disappointed in this expectation, it will cause its owner to suffer if he takes an anaesthetic, goes on board ship, or often even if he merely happens to encounter some unpleasant smell. Hence I think it is most important that the patient's usual meal-times should never be upset immediately before an operation. The quantity of food allowed, and to some extent the actual kind of the food, should be carefully regulated, but the hour at which it is administered should not be altered.

Thus, supposing an operation (in a healthy subject) is to be performed at 9 o'clock in the morning, the patient should be left asleep, unless he awakes of his own accord, until at any rate 7 30, when he may be given his enema. Then, if he be accustomed to breakfast at about 8 o'clock, he may have a thin slice of bread-and-butter, or a small piece of toast, with as much tea to drink as he desires. He will then be able to settle down much more contentedly to his newspaper until the surgeon arrives. Tea is, I think, preferable to coffee, as the former is usually taken with considerably less milk than the latter.

If the operation be at 10 or 11 o'clock, he may have a similar breakfast, but with (say) two thin slices of bread-and butter, if he wishes, or a somewhat larger piece of toast, provided his usual breakfast hour be 8 o'clock. If, however, he be accustomed to breakfast at 9, the amount of solid food should be as in the first case, unless the excitement of the approaching ordeal has caused him to awake earlier than usual, under which circumstances he may also have his small meal a little earlier.

If the operation be arranged for 12 or 1 o'clock, he may be given an ordinary light breakfast at the usual time; meat, however, being avoided. A glass of water might, in this case, be taken with advantage at about 11 o'clock.

For an operation at 2 or 3 o'clock, the ordinary breakfast should be taken at the usual time, and a cup of hot clear soup or beef-tea at 1 o'clock, together with a little water to drink.

This same arrangement is suitable for a case to be done at 4 o'clock, except that in this instance a little toast, bread, or biscuit may be given with the soup.

If 5 o'clock be the appointed hour, the breakfast and lunch should remain the same, but in addition a cup of tea may be taken at (or a little before) 4 o'clock.

If 6 o'clock be chosen, the patient may have his ordinary breakfast, and then a light luncheon consisting of fish or poultry at about 1 o'clock, followed by tea with bread-and-butter at 4 o'clock.

Finally, a patient who is to be operated upon at 7 o'clock may partake of his usual breakfast, lunch, and tea, simply avoiding currant cake or anything rich at tea-time. No fruit of any kind should ever be taken on the day of the operation.

I need not carry this list further, as it is unusual to perform operations of the class I am now considering after 7 p.m., and I trust I have said sufficient to make it clear that more attention should be paid to the ordinary habits of the individual patient, in order to relieve him as far as possible from the discomforts of anaesthesia. I have mentioned definite hours for the meals (8 a.m. for breakfast, 1 p.m. for lunch, and 4 p.m. for tea) merely for the sake of convenience. If the individual patient under consideration be accustomed to take his meals at some other hours, these should be substituted for the ones I have indicated. An exception may be made in the case of breakfast if the patient should awake much earlier than usual on the morning of the operation. In this case, if he feels inclined for food at an earlier hour than usual, there is no objection to his having it then instead of later.

In private practice there is not the slightest reason for neglecting to devote the requisite amount of attention to each case in order that the patient's habits may be upset as little as possible, though the matter may be somewhat more difficult in a hospital; first, because some definite routine is far more necessary in a large institution, and secondly, because hospital patients are more apt to swallow lumps of solid food without sufficient mastication than are the people one meets with in private practice. I do not think, however, that these difficulties would prove to be insurmountable if a genuine attempt were made; and the additional mental and physical comfort of the patient would be ample compensation for the extra trouble involved.

OPHTHALMIC SCHOOL CLINICS IN THE COUNTRY.

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School medical inspection cannot be regarded as complete unless the defective children receive the treatment they require. However interesting it may be to know the percentage of children in our schools who are suffering from various physical ailments, it is quite clear that the practical value must certainly lie in alleviating these. A nation's future depends on its children, and having found that many of them are physically defective, we must see that these are enabled to become healthy and useful citizens.

The treatment of defective school children has been occupying our attention for the past few years, and the question is still being debated as to who are to treat these children, and where the treatment is to be carried out. There are two classes of children to consider—namely, those dwelling in the towns and those who live in the country districts.

With regard to the town children, in some places the treatment is being carried out at the hospitals. At some of these special assistants have been appointed to cope with the much increased work, especially in ophthalmic departments, where the increase of refraction cases has threatened to strangle the routine work. Objection has been raised to the use of the hospitals for the purpose of treatment of these cases, though they are mostly drawn from that part of the population who rightly belong to the hospital class.

Another alternative to treatment at the hospitals is that of holding "school clinics," and paying medical men for undertaking the work. Such is being done in some parts of the country. It is of my experience in this matter that I wish to write. I do not intend to discuss the merits of one system as opposed to another. What the medical profession want to know is what is being done in different parts of the country, and how is it working with regard to all parties concerned. Then, perhaps, we shall be able to evolve some scheme which will work smoothly.

The question arises, What is to be done for the children in the country districts where there are no charitable institutions, and where cases demand special treatment? Of course, the children can be sent up to the towns to attend the hospitals. In the remoter country districts this has obvious disadvantages. Some parent or relative will have to accompany the child, thus adding to the expense. The greater part of a day has to be given up, often entailing a loss of wages to the parent. The expense in many cases is too heavy to be borne, and out of all proportion to the wages earned. There are other disadvantages, too, such as the "ticket system" and limitation of numbers, which are in vogue at some hospitals. In such cases the child runs the risk of not being seen after all. If the treatment can be carried out in these cases free

rom many of these disadvantages, I think an effort ought to be made towards that end.

In the autumn of 1908 a voluntary association was formed in North Worcestershire, called the "School Medical Association." It was formed with the object of raising funds to undertake the medical treatment of the children found defective in the Bromsgrove District Council Schools. The success of the enterprise was largely due to the very energetic chairman. An appeal for funds was sent out, and on this was a statement with regard to the objects of the association, from which I quote the following:

This voluntary association was formed to follow up the education authority's medical inspection of elementary school children in the Bromsgrove and Lickey district. Up to now the authority has merely pointed out the existence of defects, and beyond informing the parents that defects existed which should be attended to, has taken no action as regards prescription or treatment, and it was found that many parents were—owing to lack of means and other causes—quite unable to take the necessary steps. The association deals more particularly with the treatment of defective eyesight, and the Worcestershire County Council have given permission for the free use of a room at the various schools for the carrying out of the oculist's work.

In the event of the parents not bringing the child for the initial examination, one of the association's visitors calls and endeavours to influence the parents.

The association considers cases where parents are unable to pay for the spectacles or drugs, and where thought advisable, make a grant towards part or the whole of the cost. Hospital notes are procured for any special cases that can be better treated at a Birmingham hospital, and drugs, etc., are supplied if required.

It is not the intention of the association to assume the responsibility which properly belongs to the parent, and where assistance is given towards the provision of spectacles they will be retained in care of the head teacher for the use of the children at school only.

The association now appeals for annual subscriptions, guaranteed for a period of three years, or for such shorter time as may be necessary, until the work may be provided for by the regulations of the local authority or the Board of Education, and invite your co operation in the work.

It will be seen from the above that the association wished to remove certain of the disadvantages which I have spoken of, but intended that the parents should defray most, if not all, of the cost of drugs and glasses, the association paying the medical man for his services. This has worked well, and I believe over 80 per cent. of the parents have paid for the spectacles and drugs ordered. The necessary funds having been raised, a start was made late in the autumn of 1908, when the association appointed me as their oculist.

With a view to undertaking the treatment locally, I made a tour of the schools to see what accommodation there was for the work, and decided that it could be carried out there. For this purpose, permission was obtained to use the schools on Saturday mornings, when the pupils were not at work.

As only a few of the children attending the schools had been examined by the school medical inspector, it was decided to test the vision of all the children attending, and this was done by the teachers using Snellen's test types. A list was made of all children whose vision was not $\frac{6}{12}$. Children whose vision was better than this, if complaining in any way of their eyes, were also included. At the time of the examination the children attending these schools were as follows:

School.	Boys.	Girls.	Mixed	Infants.	Total.
Stourbridge Road C. S. ..	207	194	—	129	530
Catshill C. S.	106	110	—	102	318
Lickey End C. S....	—	—	195	88	283
Dodford C. S.	—	—	79	40	119
Sidemoor C. S.	—	—	—	128	128
Totals	313	304	273	487	1,378

Out of these there were found at that time 80 suffering from ocular defects, or 5·8 per cent. They were distributed thus:

School.	Boys.	Girls.	Total.	Percentage of School Total.
Stourbridge Road C. S. ..	12	15	27	5·0
Catshill C. S.	11	12	23	7.2
Lickey End C. S....	9	9	18	6.3
Dodford C. S.	—	4	4	3·3
Sidemoor C. S.	3	5	8	6.2
Totals	35	45	80	

With regard to these percentages, I should like to make a few remarks. Lickey End and Stourbridge Road Council Schools are modern brick buildings, well lighted, though faulty in arrangement in places, and with good ventilation and usual accommodation. They are well situated and have good playing grounds. On the other hand, the Catshill Council School is bad. Situated in the midst of a poor village, low, and beside a stream, it had a damp air about it in winter. The building of brick is small and totally inadequate for the numbers attending. The ventilation in consequence, especially in winter, is very bad, and the lighting, especially in the infants' school, insufficient. The cloak-room accommodation is too small, and the playing grounds suffer in like manner. It is not surprising, then, that this school should yield the highest percentage of ocular defects. It was decided that the school should be rebuilt over a year ago, but this has not yet taken place. The inhabitants of Catshill are nail-makers, and the standard of living very bad. The low percentage of defectives at Dodford is accounted for by the fact that they are all young children.

The arrangements made for the work were as follow: I attended at one of the schools at 9.30 on a Saturday morning. The number of children, whose parents had been notified, were in attendance at that time for examination and treatment. The refraction cases were first dealt with, homatropine or atropine drops being instilled. As each child had to be measured for the spectacle frames and a record kept of all particulars, for future reference, it was found that not more than 12 to 15 cases could be seen in a morning. While the cycloplegic was taking effect the cases of external diseases were examined and prescribed for, and any necessary instructions were given to the parents, who in many cases then left, returning later, if necessary, to fetch the children. I made it a rule to find out if any child was under the treatment of a local medical man, and always gave him the opportunity of undertaking the treatment where possible. All the children seen by me were of the poorest and bona fide hospital patients. For refracting purposes one of the smaller class-rooms was selected as a dark-room, and was rendered so by blinds and screens where necessary. For a portable lamp I used a Priestley Smith candle-lamp which I mounted on a telescopic metal camera tripod. This enabled me to put the lamp at any height desired. There was nothing to go wrong, and I found it worked admirably and gave quite an excellent light for refractive work. It was necessary to see some of the cases more than once, and in all eight visits were required to complete the work for that year.

I will now refer briefly to the defects found in these 80 children.

The sex incidence was: Males, 43.75 per cent; females, 56.25 per cent. These figures correspond exactly to those given by Bishop Harman.[1] Of these, the majority required glasses—namely, 69, and they were made up as follows:

Hypermetropia	37	= 64, or 92 75 per cent.
Hypermetropic astigmatism	27	
Mixed astigmatism	1	= 5, or 7.25 per cent.
Myopia	2	
Myopic astigmatism	2	

The percentage of myopes is low. Harman[1] found that they formed 29 per cent. of the refractive errors. It has been maintained that the country children tend to be long-sighted and the town children short-sighted, and these figures help to bear this out. Of the 5 cases of myopia, 3 occurred in the Stourbridge Road School, which belongs to the town of Bromsgrove. The one case of mixed astigmatism was in a child of 4; of the other myopes, 1 was 10 years old, and 3 were 12 years old. With regard

to the ages of the children affected, 18 were 6 or under, and came under the division known as infants. The vision of 7 of the children was less than $\frac{6}{18}$.

The next most common condition was squint. There were 13 cases, and of these 10 were left, 2 right, and 1 alternating. In connexion with this it is interesting to note that the number of cases of anisometropia was 20, and the proportion of worse eyes was 4 right to 16 left. By the term "anisometropia" I mean all cases where one eye differed from the other by one dioptre or more, the worse eye being that with a higher degree of refractive error.

There were 5 cases of nebulae of the cornea. One was due to traumatism, 2 to ophthalmia neonatorum, 1 to phlyctenular keratitis, and 1 of doubtful origin—probably phlyctenular. The other conditions found were: Spasm of accommodation, 2; conjunctivitis, 4; blepharitis, 7; ankyloblepharon, 1; hordeolum externum, 2; heterochromia, 1; congenital cataract, 1; fundus disease, 2 (1 myopic); retrobulbar neuritis, 1; and nystagmus, 1 case (nebulae of cornea).

This year the work has been continued, the total number of children attending the above schools being 1,410. In addition two other schools have come into the scheme—namely:

Linthurst Church of England School with 94 children
Rubery St. Chads " " " 213 "

The total number of defectives treated this year has been as follows:

School.	Boys.	Girls.	Total.
Stourbridge Road	13	9	22
Catshill	—	7	7
Lickey End	1	4	5
Linthurst	2	1	3
Rubery	—	2	2
Totals	16	23	39

The number of visits made has been five. One was a tour of inspection of all the schools to see all the children who had been treated and the way they were progressing. It was extremely gratifying to hear from the teachers how well they were getting on. I may record the case of one of the school "dunces," a child who had given much trouble to the teacher, and who was regarded as a naughty and unmanageable child. A pair of spectacles to rectify the marked refractive error cured the moral and mental deficiencies and rendered the child an industrious pupil! How many children have suffered in like manner in times gone by when a pair of spectacles rather than the "rod" would have rectified matters! The number of glasses prescribed this year has been 39, and of these there were 5 cases of myopia as follows: Myopic astigmatism, 3; myopia, 1; mixed astigmatism, 1.

In addition there were: Squints 8, of which 2 were right, 5 left, and 1 alternating. Other cases were: Spasm of accommodation, 2; nebulae, 1; blepharitis, 1; conjunctivitis, 3; corneal ulcer of strumous variety, 2; fundus disease (tuberculous), 1; and epicanthus, 1.

With regard to the treatment of squint, the best had to be done under the circumstances. Some eyes were hopelessly amblyopic, and others greatly improved with glasses and education by occluding the good eye. The improvement was noticed when the cases were inspected a year later. Except in a few of the younger children, atropine ointment was not given for home use. The majority of the children were over 8. The scheme has worked smoothly, and there has been very little opposition from the parents, who, as a whole, took an intelligent interest in the work and willingly paid for the glasses and treatment. The chairman, Mr. Beesly, usually attended when I went over to do the work, and ably assisted me.

A letter from Mr. Hugh Thompson in the British Medical Journal of April 16th, 1910, showed that school clinics have been carried on in Woolwich on similar lines. That school clinics can be carried on successfully for ophthalmic cases I have no doubt, and they have much to recommend them for the country districts.

REFERENCE.
[1] Bishop Harman, *Proceedings of the Royal Society of Medicine*, May, 1909.

SUBMUCOUS RESECTION OF THE SEPTUM NASI.

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Submucous resection of the septum nasi is an operation of comparatively recent date, but is already in extensive use. Little information is as yet forthcoming as to the after-results. For example, does any regeneration of tissue take place in the septum after removal of the skeletal part? Opportunities of investigating this latter point do not often occur.

On July 2nd, 1910, amongst my other operations at the hospital was a man aged about 38, whom I had not myself previously seen. His complaint was nasal obstruction and "irritation," and the operation proposed was submucous resection of the septum. For this purpose his nose had been anaesthetized with cocaine and adrenalin hydrochloride in the ordinary way. On removing the packing

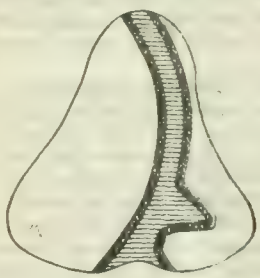


Fig. 1.

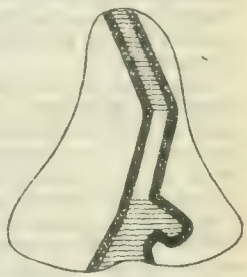


Fig. 2.

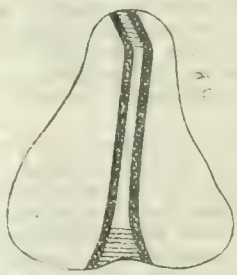


Fig. 3.

The thick black lines represent muco-perichondrium or muco-periosteum, the shaded areas bone or cartilage of the septum.

to make a beginning of the operation, I found a deviation of the cartilage to the left and a projection, also to the left, along the line of the ethmo-vomerine suture, preventing a good view of the interior of the nose on that side (see Fig. 1). The usual incision was made, and elevation of the muco-perichondrial flap begun and continued for about $\frac{1}{4}$ in. all along the wound. It was then seen that the cartilage was deficient, as though part of it had been removed at a previous operation, for the elevator was now between two layers of unresisting tissue (see Fig. 2), and also the appearance of the deep surface was not like that of cartilage. The separation was, however, continued as far back as the perpendicular plate of the ethmoid. After this separation, the most projecting part of the cartilage in front and above and the spine below were cut away and the wound closed. It seems clear that a partial resection had been done previously in this case. The patient stated that he had had several intranasal operations, and that after one of them, three years ago, he had worn a rubber splint in each nostril for some time. This latter operation must have been a resection of the septum. In that case

there are two points of interest: (*a*) the comparative ease with which the muco-perichondrial layers were separated from each other after nearly three years in contact—I came across only a few feeble strands of fibrous tissue crossing between the two flaps; (*b*) the entire absence of any regenerated cartilage, bone, or fibrous tissue beyond the weak fibrils above mentioned. This case also illustrates the occasional impossibility of making the septum hang truly vertical in the middle line without endangering the integrity of the bridge. When the deviation extends up to the very bridge of the nose it cannot be entirely corrected without removing the entire cartilage. A compromise has, therefore, to be effected, and the final condition is something like that shown in the diagram (see Fig. 3).

THREE BAD PROGNOSTIC SIGNS IN ECLAMPSIA.*

By WILLIAM FLETCHER SHAW, M.D.,

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On no subject in obstetrics is there more modern literature than eclampsia. From wild guesses at its causation we have narrowed our conception of it down to a toxaemia, though the nature of this toxin, and even its origin, has still to be proved. Research in this direction now belongs to the chemist; for a clinician to attempt to elucidate the problem is mere waste of time, his results being worthless without a long special training. But the clinician can be of service in directing the chemist's efforts, by noting any special train of symptoms or the results from special lines of treatment.

The object of this short paper is to draw attention to three bad prognostic signs in eclampsia—namely: (1) A small amount of albumen in the urine; (2) a high temperature; and (3) *post partum* onset of symptoms—the first two of which I cannot find mentioned in the literature.†

Soon after it became my duty to attend a large number of cases of eclampsia, I was struck with the bad results in patients with these symptoms, and, as time went on, I was more and more convinced that these patients had a much greater mortality than the others. Knowing that our convictions are very often unconsciously formed from isolated cases rather than from the whole, I have now looked up the notes of all the cases of eclampsia admitted to St. Mary's Hospital in the years 1906-7-8, numbering 46 altogether, and find my observations much more strongly confirmed than I could have expected.

I.—*Small Amount of Albumen in the Urine during the Eclamptic Stage.*

For the purposes of this investigation I have taken 10 grams of albumen per litre of urine as the standard, any amount above that being considered large, anything below small. My reason for choosing this standard is solely that it seems a convenient one and one which gives a good cloud on boiling.

Of these 46 cases, 21 had a slight degree of albuminuria, 18 a large degree, and in 7 cases it was not recorded. The results of these cases were:

21 patients with *less* than 10 grams per litre; 13 died, 8 recovered—mortality 61.9 per cent.

18 patients with *more* than 10 grams per litre; 3 died, 15 recovered—mortality 16.6 per cent.

These figures show an enormous difference in the mortality. Is it not probable that we are dealing with two entirely different classes of cases, though they both have many of the same clinical symptoms?

II.—*A High Temperature.*

100° F. has been adopted as the standard, and only the readings noted which were taken during the eclamptic state; a high temperature during the puerperium, after the eclamptic period has passed, being necessarily of other origin.

Of these 46 cases, 26 had a temperature of, or above, 100° F., while 19 did not reach this temperature, and 1 was not recorded, as the patient died immediately after admission. The results of these cases were:

26 patients with a temperature *of* or *over* 100° F.; 15 died, 11 recovered—mortality 57.7 per cent.

19 patients with a temperature *below* 100° F.; 1 died, 18 recovered—mortality 5.2 per cent.

The results are even more striking than these figures indicate, as several of the 11 recoveries with a temperature of over 100° F., could really be discarded. In two of them the temperature only just reached 100° F. for one reading; in two others there was only a single rise just at the time of delivery; in one the patient had pneumonia and another was septic from a macerated fetus.

The patient who died without the temperature reaching 100° F. was moribund when admitted to the hospital, and died in less than two hours; so it is quite possible her temperature may have been raised before admission.

The temperature of these patients is recorded four-hourly. Several of the fatal cases had only a single rise during the eclamptic stage, but the majority had a progressive rise until death, and this sign warrants the very gravest prognosis. When these two symptoms, a small amount of albumen and a high temperature, occur separately, they are, as shown by these figures, bad prognostic signs; but when they occur together they give the very worst prognosis, while without either the prognosis is extremely good.

Of these 46 cases, 12 combined these two symptoms, while 7 had neither. The results in these cases were:

12 cases with *less* than 10 grams per litre and temperature *over* 100° F.; 12 died, 0 recovered—mortality 100 per cent.

7 cases with *more* than 10 grams per litre and temperature *below* 100° F.; 0 died, 7 recovered—mortality 0 per cent.

III.—*Convulsions Commencing after Labour.*

Very divergent opinions are held of the prognosis in those cases in which convulsions commence only after labour. Recently Johnstone[1] has collected statistics from many of the large clinics, with a varying mortality of 5.2 per cent. to 43 per cent. The author points out that the earlier the onset the milder the attack, and it is quite probable that in many clinics these mild cases are not received, so their mortality is really based on the severe cases. Of these 46 cases, in 8 only did the convulsions commence after labour, and of these only one recovered; in fact, this is the only recovery from this condition in four years at St. Mary's Hospital.

The motive of this short communication has not been an attempt to explain these phenomena, but simply to record them, to see if they are confirmed by the experience of other observers, and, if so, to give some further clinical data to direct the work of the chemical investigator.

REFERENCE.

[1] *Journal of Obstetrics and Gynaecology of the British Empire*, January, 1910.

* Read before the North of England Obstetrical and Gynaecological Society, May, 1910.

† Since writing this Galabin and Blacker's *Midwifery* has been published, in which attention is drawn to the bad prognosis with a high temperature.

THE formal opening of the chemical and physiological wing of the University of Bristol by the Pro-chancellor Lord Winterstoke will take place on Tuesday, November 15th, at 3 p.m.

AT the half-yearly meeting of the governors of the University College of North Wales, held at Chester on October 26th, it was announced by the treasurer that Sir T. Pritchard Jones had presented the new college with a great hall at the cost of £17,000.

WE understand that the authorities of the Heritage School of Arts and Crafts for Crippled Children at Chailey, Sussex, are finding themselves in difficulties, and require support. The school undertakes to educate both boys and girls, the object being so to train them as to render them capable of supporting themselves by hand crafts. The girls' school is a new building, and both schools have full recognition from the Board of Education; but the boys' school has been carried on in an old house which was only passed by the Board of Education as satisfactory during the experimental stage of the school's work. The authorities of the school are now faced by the necessity of transforming this old house at a cost of about £5,000. The honorary treasurers of the school are Lord Llangattock and Miss Alice Rennie, 36, Westbourne Terrace, Hyde Park.

SEVENTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF OPHTHALMOLOGY.

Charles Higgens, F.R.C.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

The President reviewed the changes in the practice of ophthalmology that he had known during his experience of forty years. In some branches there could be no doubt that they had made great advances both in theory and practice; in others the advance, if any, was small. Considering this second group, he instanced the grave diseases of trachoma and glaucoma. In respect of the first something more had been learnt of its histology and possibly of its pathology, but, save for the fact that the old name of "granular lids" or "ophthalmia" had been dropped for the more classical name of "trachoma," there had been no alteration in practice regarding it that was worth the name. Of glaucoma it could be said they had learnt a great deal of its pathology, but as regards its treatment he was sure that a "bad" iridectomy was now, as it was forty years ago, the very best and most successful operation; and by a "bad" iridectomy he meant one that left a minute fragment of iris in the scar, so that the wound never properly healed, but maintained constant leakage proportional to the tension of the eye. In other diseases, such as inflammation of the anterior uvea, there was little advance to record; these cases were as mysterious and intractable as ever, but he would not say much on this, as the subject was to be considered in a set discussion of the Section. In diseases of the lacrymal apparatus the only improvement in methods he could cite was the very general cessation of the practice of splitting up the canaliculi for every form of epiphora; it was a good change. The greatest advances had, without doubt, been in the realms of optical work. The treatment of squint had been revolutionized, correction of defects of vision was uppermost, and operations had become proportionately rare, with the best results.

In quite recent years their methods of testing colour vision had been improved greatly, thanks largely to the labours of Dr. Edridge-Green; but the matter was still the subject of inquiry, and it was without doubt a complicated one. The establishment of the universal use of the metrical system of measuring lenses had been of the greatest value and convenience in practice; younger members of the profession could scarcely conceive the worries in fractional calculations they had escaped by the substitution of dioptres for inches. Again, much had been gained by improved and standardized test types. The appliances for this work had been improved by the universal use of electricity; it was a boon not to be forgotten. Coming to operative measures particularly, he could not see very much change. To judge by the makers' catalogues, it would seem that every man invented instruments of his own, but the essential tools of their craft remained unchanged; Graefe's knife, the keratome, forceps, and cystotome were the basis of most modifications of cataract instruments. But in the introduction of the giant magnet of Haab there was a real gain, notwithstanding that it was an appliance for hospital work rather than private practice. In some fields of labour there had been a recrudescence of old operations. Sclerotomy for glaucoma bade fair to be fashionable once more, but it was no new thing. Bader and himself had practised it by incision and by the use of trephines; they mostly did it to relieve tension in blinded eyes, and the effects were undoubtedly good, but the practice had been overlaid by the fashion for iridectomy. Again, removal of the lens in its capsule was an old operation; it was described in Macnamara's textbook, and then mentioned as old. The speaker did not favour the method himself, but he had practised it rather by way of accident than purposely, and no harm had resulted; the human eye would withstand a lot of handling. In the treatment of syphilitic affections changes were to be observed; at one time the use of mercury was grossly excessive. Then came the inevitable reaction and its replacement by infinitesimal doses of potassium iodide; now their practice seemed to be rational and successful. In local anaesthetics a great gain had been obtained. The contrast to operating with badly administered general anaesthetics and the former risks to post-anaesthetic vomiting to their present invaluable cocaine was immense; it appeared to him to be the greatest advance of his time. Antiseptics had also done much for them, asepsis little, for the attainment of this in the conjunctiva was wellnigh impossible. Then, in the objective diagnosis of refractive errors the substitution of retinoscopy for the use of the direct ophthalmoscopy had been invaluable; he remembered the time when such a master of the refraction ophthalmoscope as John Couper was not ashamed to spend hours over a few cases, which to the surgeon of to-day would occupy but minutes. One other point was worthy of remark, that was the enormous increase in the number of ophthalmic surgeons. In his early days there were but a handful in London, now there must be more than a hundred. He hoped competition would have no ill effect upon their work. In this connexion he wished more power to the British Medical Association and an increase of its efforts to prevent abuses both within and without the profession.

DISCUSSION ON
THE FUTURE OF OCULAR THERAPEUTICS.

OPENING PAPER.

By G. A. Berry, M.B., P.R.C.S.Ed.,
Edinburgh.

Local and General Measures.

If we consider what has been the history of therapeutics in the past, we may well hesitate to predict what, in either a general or a special sense, it may come to be in the future. The title chosen for the discussion which I have the honour to introduce, if taken literally, would be absurd. The obvious idea which underlies it is: How far do our knowledge, our aspirations, and the directions given to our scientific and practical views of to-day, indicate the direction in which any real advance may be expected to take place in the near or more remote future?

First, I think we must remember that practical therapeutics, unless it advanced to a stage which present experience would hardly lead one to conceive possible, can never be brought within the limits of very definite rules. A great deal will always depend upon the individuality, the temperament, the judgement, and the resourcefulness of the medical man. I do not say his experience, because, according to the degree in which the qualities to which I have referred are developed, either alone or combined, what he calls his experience may be of little or no use, or may be of the highest value to himself and to others. Then there is almost infinite variety met with in the temperament, the toleration, vulnerability, diathesis, and so on of the patient he is called upon to treat. Even in eye affections, the diagnosis of which is usually attended with comparatively little difficulty to the specially trained surgeon, and a better insight into the pathology of which is constantly being acquired more and more as science advances, one has to subordinate the treatment of the disease to, or at all events to correlate it with, that of the patient. How much scope all this leaves, and always must leave, for differences in treatment, is familiar to everyone whose daily work is chiefly clinical.

The progress of science—in the domains more especially of physiology, pathology, and bacteriology, but also in those of chemistry and physics—is constantly affording new *indications* for treatment. As these sciences advance improvements are also suggested in the methods of carrying out, or at least explanations are afforded of the effects of, a therapy which has hitherto rested on a more or less purely empirical basis. Nevertheless it is

a common, and I believe a true, remark that the main advances in treatment are those which clinical experience has established. The mere fact that some scientific discovery has led to a change or a modification in the treatment of some particular affection does not ensure such new treatment being any better than, or even as efficacious as, other methods which do not seem in the same way to comply with the conditions which a more accurate, or presumably more accurate, acquaintance with the pathology of that affection would seem to demand. The clinical experience of many, often indeed a prolonged experience, may be necessary to demonstrate its utility or its failure.

There are many reasons why an indication afforded by scientific observation and experiment should therapeutically prove disappointing. If it is afforded by some new discovery in physiology, it is often found that it will not adapt itself to pathological conditions. Not infrequently a chemical or physical interference with the functions of the healthy organs, which is found to produce most marked stimulating, or sedative, or other effect, may, when applied to the same organ in a diseased state, have little effect, or its effect may even be one that is more or less decidedly detrimental to the course of the disease. And after all, although an advance in the knowledge of the pathology of any disease will often evoke a whole train of ideas suggestive of how that disease may be *rationally* treated, it is comparatively seldom that a conspicuous advance on the methods of treatment established by practical experience is the result. Even the definite antiseptic properties which some particular substance may have been experimentally demonstrated to possess, as a destroyer of the specific micro-organism that is known to cause more or less characteristic and localized symptoms, do not necessarily prove it to be a suitable remedy as a local application where the symptoms show themselves. The problem of attacking the micro organisms in the tissues, and in presence of the altered conditions caused by local tissue reaction, is one of greater complexity than can usually be simulated in a laboratory experiment.

And when we come to the application of toxins, antitoxins, serums, vaccines, etc., for which there appear to be scientific indications, it is perhaps less extraordinary that the very complicated, difficult researches which give rise to inferences as to the possible therapeutic value of such substances should meet with even greater practical discrepancies. The indications are themselves often less apparent, and it is hardly to be wondered at that the outcome, so far, of these newest resources of therapeutics should be far from commensurate with the expectations which have been entertained.

Our art, which at one time existed on a firmer basis than did the accurate scientific knowledge of the time, now lags, and will no doubt continue to lag, behind our science. Yet it cannot well be doubted that even as an art advance is real and steady. However true it is that clinical experience must in both cases determine the value of any kind of treatment, and that accurate clinical observation is, in therapeutic matters, of an order of complexity and difficulty exceeding that of other inexact experimental sciences, it is surely also true that treatment initiated in response to the indications which science affords, is on a surer, and more necessarily progressive, basis than that which owes its origin to blind empiricism.

If we exclude what may be termed operative or surgical, and also optical, treatment, our resources, so far as the treatment of eye disease is concerned, may be considered under the two heads of *local* and *general* treatment. Both are probably older than history. Local medical treatment, at any rate, was practised by the Egyptians from the earliest times of which we have any record, and general treatment was apparently resorted to in India and China long before it became the main sheet anchor of Hippocrates and his school.

Of local agents it is curious that so many, even in their original form, and still more in the simplified and purer forms which chemical advance has made possible, have survived the test of time. As regards others, there has, for example, come to be, and as the result of the modern knowledge of bactericides, a more extended and on the whole a more rational use of antiseptics.

Mydriatics and miotics, especially the latter, have comparatively recently come into prominence as topical agents, while local anaesthetics, analgesics, vaso-constrictors, and vaso-dilators are almost entirely of recent introduction. Still, it can hardly be said that as yet the use of drugs having these properties as local applications has been established on a basis which admits of no difference in practice. Their various physiological actions, it is true, are understood, but their therapeutic uses are still in varying degrees insufficiently established to preclude their being improperly used or needlessly resorted to. An abuse of mydriatics and a too prolonged and too powerful application of local antiseptics seem to me to be not uncommon in practice.

Although the future may bring about a change in the particular mydriatics and miotics used—for example, possibly, in the more general substitution of the alkaloids themselves for their salts—it is at present hardly conceivable that the local application of drugs having their properties can ever fall altogether into disuse.

Much, however, remains to be done with regard to suitable and efficient local antiseptics. It is somewhat remarkable that, with the number of such substances which are already available, the oldest should, to a great extent, still appear to hold the field. Corrosive sublimate, which was in use long before its antiseptic properties were dreamt of, and boracic acid, one of the first substances known to have antiseptic properties, and to be used on account of these properties as a local agent in eye affections, appear still to be the prime favourites.

It seems not improbable that a selection of the most suitable antiseptics as bactericides for the particular micro-organisms which can now often be recognized as the cause of the symptoms observed, may become possible to a greater extent in the future than is the case to-day. It has, however, to be remembered that the bactericidal property of an antiseptic is not its only, perhaps not its chief, value as a local application. It is possible, therefore, that the combining of different antiseptics may in practice turn out to be not only not superfluous, but of real advantage. It is only recently that the superlative efficacy of zinc preparations in diplobacillary conjunctivitis has been established. Apart from this, there has been no further differentiation which has received general recognition. Surely in future we may look for some progress in this direction.

One point, of great importance as regards local applications to the eye, is that, generally speaking, one is apt to be comparatively ignorant as to the course which some affections would take in the absence of local interference altogether. It is not so very uncommon to hear from a patient that he got well after giving up everything in the way of treatment. Again, one may fail to appreciate the very great differences which exist in the virulence of the same affections, according to individual and other circumstances, which may be of influence in this respect. I need only remind you of the differences which are met with in cases of conjunctivitis and of serpiginous corneal ulcer. Even when those affections owe their origin to the same micro-organism, great variations occur in their persistence and in their destructive tendencies, apart altogether from the influence of any local treatment which may be adopted. Up to a certain point—that is if the tissues are able to overcome the insult caused by the particular irritant—the more acute and more pronounced their reaction, the more rapid and more effective is the natural cure. Again, the effect produced by the same micro-organism is subject to variations within wide limits. This may depend either upon differences in their virulence or upon differences in the soil which they attack.

These facts contribute greatly to the difficulty that exists in correctly appreciating the effects which are obtained by various local applications. They call for the greatest caution before arriving at any sweeping conclusions as to the value of any particular method of interference. They also, however, point in another direction and in one which, in the course of time, has received fuller attention and appreciation—namely, the necessity for studying, aiding and intensifying so far as possible, the curative action of Nature In this direction we have already seen advance made. There can be little doubt that further important advances will be made in the same direction in future.

In connexion, then, with ectogenetic poisons: we now recognize the indication for destroying the micro-organisms,

by which many are elaborated, as well as for fostering the natural tissue reactions, and for supplementing the antidotes and antitoxins which such tissue reactions bring into play.

Except as regards cauterization our antiseptic measures generally fall short of the requirements indicated. They do so because of their irritative, more or less destructive effects, and because of their failure to penetrate sufficiently deeply into the tissues to reach the organisms which they are meant to attack. Some of them probably fail, too, in rather arresting than stimulating the supply of the active combatants which are provided by the resources of Nature.

Cauterization, though capable of reaching and destroying the germs, only does so at the expense of the tissues in which they are located. It is only justifiable, therefore, where these tissues are necessarily lost, as the result of the intensity of their reaction, or are doomed in any case, in the absence of interference, to invasion and destruction. The justification in the latter case being similar to that which, in a threatened conflagration, would lead to the destruction of property surrounding the area on fire, in order to limit the loss which must otherwise be inevitable.

Greater penetration and less general irritation by the antiseptics employed is, then, a direction in which much is called for and not unlikely to be eventually attained. In two ways some steps have already been made towards complying with these indications—namely, by ionization and by subconjunctival injection.

In ionization we appear to have a useful means of accelerating and amplifying diffusion. The efficacy, on the other hand, of subconjunctival injections seems to depend, to a great extent at least, if not mainly, on other factors. Both methods of treatment are capable of greater precision than they have as yet arrived at. They may be expected to develop and figure more largely in the ocular therapeutics of the future.

As regards serum and vaccine therapeutics, etc., as to which no one can doubt that the future has much in store, I do not intend to say much, as that part of the subject for discussion will be opened by Dr. Earle.

A great deal has been done in this direction already. It may, indeed, be looked upon as the main direction which is being followed by the newer therapeutics. Comparatively little result has, however, followed, so far, the local application of these substances. The methods of treatment at present may be divided into the specific and the non-specific, or so-called para-specific.

The latter, which have been mainly advocated by Darier and Deutschmann, whose conclusions are, I fear, more often dictated by an enthusiastic credulity than by critical insight, have so far received little acceptance or support by those who have been induced to give them a practical trial. As regards specific serums, we may admit, I think, that good results not infrequently attend the use of Koch's tuberculin T.R. and of diphtheria antitoxin; while those got by graminol, pollantin, and jequiritol have been at least encouraging.

Turning now to the means employed for increasing the resisting powers of the tissues. In addition to the old-established application of dry or moist heat, we have at present subconjunctival injections of physiological saline solutions or other substances, or of air, paracentesis of the anterior chamber, and dionine.

It is curious that the old and purely empirical practice of paracentesis should, in the light of modern knowledge as to the characteristics of freshly formed and rapidly poured out aqueous, have received a scientific justification. The advantages, too, of locally induced congestion have long been known, and the present interest in this lies more in the better knowledge of the causes which make it valuable in treatment. As to dionine, which, on the other hand, is a recent introduction, though certainly not without use, I am personally unable to agree in ascribing to it the advantages which have been claimed for it.

There is some reason to believe that subconjunctival injections may stimulate the outpour of protective substances from the surrounding blood vessels. In addition, therefore, to their effect of scattering, and thus possibly aiding in the absorption of inflammatory products, and of admitting, as I have already mentioned, of the better penetration of antiseptics into the tissues, they have other effects which as yet are only imperfectly known. As a method of applying antisyphilitic remedies, I believe the value of subconjunctival injection has been greatly exaggerated.

Of other methods of local treatment which may be referred to we have electricity, *x* rays, radium, and massage.

As regards electricity, I must confess to the utmost scepticism as to any good having ever been done, in any eye affection whatever, by the use of either the continuous or interrupted electrical current, applied in the ordinary way. The possibility of any advance in this connexion taking place in the future is certainly not, I should say, foreshadowed by any benefit conferred in the past. Yet there may, no doubt, be much to learn of the influence of electrical currents on vital phenomena, so that an expectant attitude may not be unreasonable. Electrolysis, though of limited applicability, has, however, proved of undoubted service. Something, too, may be expected of iontophoresis.

It is, perhaps, too soon to attempt to define the sphere of radium. It seems, at least, to have the advantage over Roentgen-ray treatment of being readily and more safely circumscribed in its action. The future will, no doubt, see an extension of its application in the treatment of ocular disease. There will, at all events, be greater opportunities of forming an opinion as to its value and limitations.

From all time, so far as there are any records, diseases of the eye and its surroundings have been treated not only locally but *generally*. It is curious how, at different times and in different schools, the relative merits of the two kinds of interference have been differently estimated. While many of the local measures employed of old have survived—at least, in some more simplified form—this cannot with equal truth be said of general treatment. Excessive purging, bleeding, blistering, the use of emetics, the carrying of mercurial treatment to the extent of seriously injuring the system generally—these have all but disappeared. Sweat cures are also not so frequently resorted to as formerly. Perhaps this is a mistake. I am not sure that they may not figure again in the future more largely than they do at present. Are we, however, much further advanced since we have been led to adopt less drastic measures? I think we see more clearly what is to be aimed at. The indications afforded by present-day pathology are more precise, and we may at all events expect to achieve more satisfactory results in the future. So far there is not much to congratulate ourselves upon. The old methods of depletion, though empirical in their origin, were found to be of value. Hence it was, no doubt, difficult to escape overdoing them. In the natural reaction that has followed some may possibly be too little used. Whilst bleeding and purging, and even the more localized depletions by counter-irritants—such as setons and blistering, or by leeching—have probably had their day, sweat cures, as I have already said, are not likely to be altogether abandoned.

The poisons which may have a selective affinity for the tissues of the eye, and which may have been weakened by the old methods of depletion when not carried too far, are more and more likely in the future to be attacked by antitoxins or by methods which may increase the resistance of the tissues themselves to the toxins. The era of serum, vaccine, antitoxin, and cognate treatments may be said to have only begun. What is done in this direction to-day is insignificant compared with the possibilities which the rapidly accumulating discoveries in pathology seem to open out for the future. To take one example: A three or four years' experience of the now popular sour milk cure has gone far to convince me that endogenetic toxins are not only factors of no little importance in connexion with ocular manifestations of disease, but that much may be expected from a more complete knowledge of how they may be counteracted or prevented from originating.

The future advances of therapeutics generally will necessarily, too, be in great measure available in the treatment of diseases affecting the eye. We seem to be within measurable distance of time of being able to arrest the progress of tuberculous lesions, and may even hope eventually to learn the means of preventing their occurrence altogether. Syphilis and cancer may also, quite conceivably, yield to curative and prophylactic measures which the future has in store, and perhaps it is not too Utopian to think that the day is not so very far distant

when alcoholism as a factor in disease will be practically unknown.

Other factors, which at the present time are not prominent or even non-existent, may possibly arise to take the place of the four potent ones to which I have just referred when these have been weakened or overcome. But as to any new factors, we may say, "Sufficient unto the day is the evil thereof." Again, a more extensive knowledge of the influence of climatic conditions may lead to an extension of the treatment of eye diseases at baths and other health resorts.

As regards operative treatment, it would be rash to say that we have reached finality. Yet it is difficult to foresee what may be the direction of future advance. At the present moment various attempts at supplementing or supplanting the operation of iridectomy for glaucoma are being made. These aim at providing a safety valve for the escape of aqueous from the eye, by means of a more efficient cystoid cicatrix than could with any degree of certainty be obtained by older methods of operating. A more prolonged experience of the efficacy of these modifications in operative procedure is required before their value can be gauged with certainty. This is, however, also possibly a line in which there may be future advance.

One would fain hope, too, that some operative means may be devised for checking the advance of detachment of the retina, so that complete blindness may not be such an almost constant result as it is at present. For a number of years—ever since the publication of Deutschmann's first results—I have in my own practice adopted the plan of repeated double puncture, which seemed to me the element in his plan of treatment from which some good might possibly be got. Though far from being brilliant, the results have occasionally been encouraging, at least in what seem to be suitable cases, namely, cases of extensive detachment in individuals not beyond middle life. They have been encouraging, I mean, in regard to the permanency of the effect produced, because it has always to be remembered that there is usually some temporary improvement got just from lying in bed for some weeks. Perhaps there is more reason to hope for future advance rather in the prevention than in the treatment of retinal detachment, by the discovery of means which will prove prophylactic as regards the condition of the vitreous and choroid which precedes the actual detachment.

Another direction of advance, though not, perhaps, one of very wide possible scope, is that of preventing blindness from neuritis as well as from direct pressure on the optic nerves or tracts. This is a line on which brain surgery is advancing.

In one other important direction there can be little doubt that ocular surgery will some day triumph—namely, in the permanent improvement of defective sight caused by corneal leucomata alone. When this can be done, the sphere of usefulness of the ophthalmic surgeon will be materially widened.

In the very fragmentary and desultory manner in which I have ventured to introduce the subject of discussion, I have purposely avoided anything of the nature of a personal advocacy of any method of treatment. To others who may take part in it other lines of advance in treatment than those to which I have briefly referred—advances which I believe may reasonably be expected to be made sooner or later by complying with the indications of science—may suggest themselves. There are, of course, many other directions in which one would like to see advance made, and in which, one is fain to think, revolutionary changes must come in the course of time. But such as I now have in view do not appear to me to come so directly within the scope of our subject as indicated by its vague title. They are the cases in which, while improvement in treatment is more or less desirable, there are as yet no indications afforded as to how it is to come about. I shall, in conclusion, take one example illustrative of this kind of case—namely, the cure of cataract without operation. Although claims have been made by irresponsible and ignorant people unconnected with our profession, and even by some unprincipled members of the profession itself, that such a cure is possible, I am convinced that these claims have never been in the smallest degree justified. Yet I do not consider that the nature of cataract makes it in any way inconceivable that it may eventually be possible to arrest it at an early stage, or prevent its occurrence altogether. There is, however, nothing yet known which affords any indication as to how this may be done.

DISCUSSION.

Dr. J. W. H. Eyre (London) took up the consideration of "bacterial produces," saying scientific therapy depended upon accurate diagnosis; it was hopeless to expect improved methods of treatment without this as a basis. Take, for example, the well-known conditions of ophthalmia neonatorum; this was not a specific entity, but one that depended on the infection of several organisms—the gonococcus, streptococci, staphylococci, and others. Clearly any specific treatment needed a particular diagnosis. There were two groups of bacterial remedies—antitoxic serums and vaccines. He could not recognize local and general applications. What they did was to imitate Nature so far as possible. Their methods were the outcome of observations of general disease produced experimentally, of a close study of the course of infection, and of the production of antibodies directed against the invading organism. Careful inquiry showed that antibodies were specific; Nature was very strict in her methods in these infections, and one antibody would not serve against an alien organism. Hence the primary necessity for accurate diagnosis. Serum-therapy seemed to have only a limited applicability. There was one undoubtedly valuable serum for diphtheria, and it was of value in diphtheritic conjunctivitis. Of other serums little good had come—at least, in eye work. The antipneumococcic serum was not antitoxic, but antibacterial; it had proved of some service. But in his experience pneumococcic affections of the eye were uncommon in England, though more common on the Continent. One of the difficulties of obtaining specific serums was the inability to immunize animals of sufficient size. Vaccine-therapy seemed to present a much more fruitful field. Its object was to provide a stimulus to the natural processes, to provoke the production of antibodies within the affected subject in larger quantities than were naturally formed. They obtained cultures of the invader, destroyed them by heat, standardized the preparation, and injected known quantities of the vaccine into parts of the body distant from the original infection. The reaction caused a local production of antibodies, which, circulating throughout the body, exerted a beneficial effect upon the distant lesion. Of those most useful in eye work he would cite the old tuberculin T.R. of Koch, which they had only recently learnt to use in a proper manner; staphylococcal and streptococcal vaccines had proved of great value, in direct contrast to the inutility of the serums. Gonococcal vaccine had proved of value in iritis. The applicability of tuberculous vaccine was increasing, and he looked to it to afford a better means of treating tuberculous conjunctivitis than any surgical method. Lastly, he dealt with the relations of the ophthalmic surgeon to the bacteriologist. Harm was done by isolated individual action, for each failed in a knowledge of the other's line of work. To obtain the best results they must work hand in hand: the surgeon to observe the clinical aspects of the case, the bacteriologist to carry out the specific diagnosis and the indications for specific treatment.

Mr. Angus MacGillivray (Dundee) said he thought that Dr. Berry was rather inclined to be pessimistic of the prospects of advance. He regarded the advance in bacteriological methods of diagnosis of the highest promise—for example, in the case of corneal ulcer their action should be entirely determined by it; if the pneumococcus was found it was an indication for the immediate use of the cautery; but if the diplobacillus was the infecting organism, then the cautery was injurious and zinc became their sure weapon. Again, in conjunctivitis the finding of the Koch-Weeks bacillus indicated an inflammation that would speedily depart even without treatment; but the diplobacillus would keep up inflammation for long periods unless effectively treated with zinc. Fibrolysin injection he had found of great service in reducing scars of old interstitial keratitis; in this he disagreed with Dr. Berry. But he was entirely in accord with him in his strictures on the use of electric currents. The co-operation of bacteriologist and eye surgeon was likely to be of great value; but they should not hasten to discard all the laboratory expert

condemned—for example, he found argyrol of value in ophthalmia neonatorum, notwithstanding its feeble bactericidal power.

Dr. R. A. Reeve (Toronto) held that the efficacy of dionine had not been fairly tested unless the powder itself was used in direct application after the use of cocaine. In acute iritis with synechiae solutions of dionine might prove useless, but the powder produced speedy and gratifying effects; they must not be afraid of a marked reaction; the best result followed it. Again, he questioned the pessimistic view of electricity; high-frequency currents had been of service to him. Also fibrolysin injections had been followed by resolution of vitreous opacities responsible for detachment of the retina with resultant improvement in field and acuity of vision.

The President remarked on the use of electricity in early optic atrophy; he saw no justification in it—it was rather like flogging a dying horse.

Dr. G. S. Ryerson (Toronto) said he had had gratifying results in the use of radium in cases of epithelioma of the conjunctiva; these were cases that spread to the surrounding tissues, and incision did not secure cure without great loss to the tissues. Naevus of the lids also yielded readily to radium.

Mr. Hill Griffith (Manchester) said he had had the most gratifying result from the use of tuberculin in cases of tuberculosis of ocular and palpebral conjunctiva; complete cures had been obtained.

Mr. A. W. Ormond (London) referred to four cases of tuberculous periostitis of the orbit in which there was proptosis of the eye and loss of vision. In all cases part of the mass had been excised and proved to be tuberculous. Tuberculin injections had been used with unvarying improvement of the conditions. In two cases complete cure had been obtained and the other two were improving more slowly.

Mr. Leslie Paton (London) said that in the treatment of detached retina it was important not only to get the retina back into place but to fix it there. To lack of this, methods that at one time promised fair were eventually disappointing. He recommended the use of the cautery for perforating the sclera and retina, and the attempt to draw the retina into the lips of the wound. This method presented an ideal means of sealing the retina to the scleral cicatrix.

Dr. G. Montague Harston (Hong Kong) confirmed the beneficial effects of argyrol in 25 per cent. solutions in the treatment of ophthalmia neonatorum. The use of powdered dionine he considered too drastic; not only was the reaction severe, but there had been in one case he had seen a severe reaction of the patient against his doctor! He confirmed absolutely the conclusion of the President as to the uselessness of high-frequency currents, or any other electrical current in optic atrophy. In one case, however, he had seen some success from intramuscular injections of succinamide of mercury, but it was rash to draw conclusions from one case.

Major H. Gidney, I.M.S., considered dionine of great value in corneal opacities; the chemosis it caused need not alarm one. Fibrolysin he considered, after an extended trial, useless. He emphasized the necessity of restricting the use of the cautery to the advancing edge of pneumococcal ulcers of the cornea, and leaving the central portions, which had been shown to be free of organisms, untouched.

Dr. G. A. Berry, in reply, said that in regard to the possibility of cure or retardation of optic atrophy, he believed that those cases in which improvement was believed to have been effected by treatment were really retrobulbar neuritis and of the same order as those described by von Graefe in 1850 as amblyopia *sine causâ*.

THE USE OF CARBON DIOXIDE SNOW IN EYE WORK.

BY

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AND

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Amongst the newest of new remedies for external diseases is the application of carbon dioxide snow. Of its use in cases of capillary naevus there have already been put on record many cases; the extension of its use to papilloma and rodent ulcer is of quite recent date, and, so far as we know, the notes we present to you of its use in trachoma are the first records of the kind.

Carbon dioxide snow was first made use of for surgical purposes by Pusey, a dermatologist of Chicago. He used it successfully for the treatment of naevus; it was used in this country by Morton in June, 1909, at the London Hospital, and a paper was published concerning the usage in the *Lancet* of December 4th. The efficacy of this caustic in naevus can be gauged by the fact that one of us (E. R. Morton) has treated over 200 capillary naevi with 90 per cent. of cures at the first application.

The *rationale* of the usage of the snow is easily understood. Intense cold is as destructive of living tissues as is heat, and after the withdrawal of the destroying influence the destroyed part is exfoliated by the reaction of the surrounding undestroyed tissues. This puts briefly and somewhat crudely the maximum action of the snow. But its action need not necessarily be destructive of the tissue to which it is applied, for the duration of its application, and therefore of its action, can be regulated to a nicety, so that every degree of reaction can be obtained—from a scarcely detected blanching at the point of contact, with a subsequent sign of reaction in a delicate blush, to the complete freezing of the tissue and its almost instantaneous death.

Mode of Preparation and Use of the Snow.

Solid carbon dioxide is easily prepared. The gas can be procured in plenty, thanks to the aërated water industry. The compressed gas is sold in iron cylinders; it is cheap and clean. No other appliances are necessary for the production of the snow than a cylinder of gas, a towel, a cork, a brass tube, and a ruler that will fit into the tube.

The towel is rolled loosely around the ruler, the ruler withdrawn, and the resulting tube of towelling closed at one end with the cork. The towel-tube is held mouth-up beneath the vent of the gas cylinder, which being opened emits the gas into the tube, wherein a large deposit of snow appears. This is removed from the towel, broken up, and then shaken into the brass tube and rammed down with the ruler. To make the snow pencil quite hard it may be hammered forcibly into the tube. Then the pencil is pushed out from the tube by the ruler. The snow pencil can be handled safely or covered with lint; its extremity can be cut with a penknife to any desired shape. The hard pencil will gradually dwindle as it reassumes the gaseous form, but it will last for effective use from one to two hours.

In treating new growths the pencil is shaped to the surface to be treated and then pressed down on the tissue for about forty seconds; this is sufficient to completely freeze the tissue. In treating trachoma the lid is everted and separated from the globe by a non-conducting spatula. Then the pencil is lightly pressed down upon the portion of the conjunctiva selected for treatment for from fifteen to thirty seconds—for the shorter time at the beginning of the course, the longer time after a graduated increase with each weekly sitting.

In the use to which carbon dioxide snow has been put in the cases we now record these two extremes of effect have been made use of: In the case of trachoma the action is of a delicate order, and is used to promote a well-defined shock to the tissues with a subsequent brisk reaction; no actual destruction of the tissues by the snow is permitted. In the case of papilloma and rodent ulcer, an action of the snow just short of its full extent is obtained, to ensure the death of the new growth without damage to the surrounding healthy tissue. In trachoma the duration of the application at each sitting is short and repetitions are frequent; in the case of new growths one full application is sufficient to obtain a cure when the growth is of small size.

Treatment of Papilloma and Rodent Ulcer.

A. G., female, aged 67, seen March 23rd, 1910, in the ophthalmic department of the West London Hospital with a large papilloma of the left lower lid. The growth was separated from the lid margin by 2 mm. of healthy skin. The tumour was as large as the half of a full-sized green pea, measuring 4.5 to 5 mm. in diameter, and raised 4 mm. from the skin level. Its surface was hard, harsh, and file-like. At first it was supposed to be a "horn" growing from a sebaceous cyst, but on detaching the hard surface it was proved to be a true papilloma. The old lady demurred to excision, so she was sent to Dr. Morton for treatment with the snow. The next day 40 seconds' application was made, and again another of 15 seconds a fortnight later. Three weeks from the date of her first attendance the scar was healed without puckering; indeed, a faint redness alone indicated the site of the destroyed papilloma.

Four cases of rodent ulcer have been treated by Dr. Morton. Of these two are private cases and are not available for publication; the other two are West London Hospital cases, one diagnosed by Dr. Abraham of the dermatological department, the other by Mr. Etherington Smith, one of the assistant surgeons.

J. E., female, aged 42. Rodent ulcer on the right temple, rather larger than a sixpenny piece. Duration six years. Treatment with the snow for 40 seconds on April 29th. The one application effected a complete cure.

H. A., male, aged 65. Rodent ulcer on side of nose. Roughly the shape of a parallelogram, measuring ½ by ⅝ in. Treatment with snow for 40 seconds on June 29th. To-day the surface is completely healed, and one can scarcely believe that such a thing as a rodent ulcer has ever affected the skin.

Treatment of Trachoma.

A. C., male, aged 29. Seen at the West London Hospital January 12th, 1910. Complained that his right eye was "bleary"; it had been troublesome for several months. Examination showed roughness of the upper part quadrant of the cornea and invasion of new vessels, in fact pannus. Eversion of the lids disclosed a full-blown trachoma in each eye; the conjunctiva of both upper and lower lids was papillated, and there were numerous follicles, particularly over the upper tarsi. On that day, January 19th and 26th, the conjunctivae were rubbed with bluestone. The man felt the pain of this application greatly, and said it incapacitated him from his work. He was then treated with carbon dioxide snow, beginning on February 2nd; applications have been made each week with a few intervals. The time of application was at first 15 sec., then 25 sec. No pain was felt at the time of the application, and there was no "after-pain" at first, but with the increase to 25 sec. he complained of pain setting in twelve hours after, "an intermittent aching and shooting with watering of the eyes." His wife said "the eyelids swelled up and got red as though he were going to have a black eye." Subsequently 15 sec. was given and the time increased by gradual stages until he now has 30 sec. without experiencing any after-discomfort. No other treatment has been given save a lotion for home use, for some time copper sulphate drops, but for the longer time boric lotion only, and more as a "placebo" than by way of effective treatment. The trachoma is now scarring steadily and evenly; the pannus is quite gone.

L. W., a Jewess, aged 11. Her mother said her eyes had been bad several years. There was well-marked trachoma of each eye, with papillae, follicles, some early scarring, and pannus of the right eye. She was treated with the snow from the outset. Beginning with 15 sec., she now has 30 sec. once a week; but for a lotion for home use she has had no other treatment. The condition of the lids shows considerable improvement. At no time has she complained of any pain either at the time of the application or subsequently.*

Two other girls, both aged 11, inmates of an orphan home, with fresh papillary trachoma and a sprinkling of follicles, are now under treatment. At the date of the first examination there was some gummy discharge, so the lids were painted with silver nitrate; subsequently the treatment with the snow was begun.

On this short experience of the use of carbon dioxide snow in the treatment of such a chronic disease as trachoma we are not disposed to wax enthusiastic. When it is proposed to put forward a new treatment for a disease which, when it is full grown, takes on an average two years in which to effect a cure even with the most established form of treatment, and when that disease is one which has been treated in an innumerable variety of methods from time immemorial, we must require that the new form of treatment should be investigated with the utmost caution, and that any preliminary announcement of it should be made with all reserve. With this in mind we are content only to state the facts of the case as they have been seen by us. If its effects prove to be only half as good as those now obtained by the use of blue stone, then it has a future before it; first because it is painless, secondly because it is simple and cheap. Of the use of the snow in cases of new growth of the skin we can speak emphatically. The results are truly phenomenal, indeed they need to be seen to be believed.

* The cases were shown to the Section on the succeeding day.

DISCUSSION.

Dr. G. H. Fink (London) commented on the use of carbon dioxide when in solution in water. It had been proved by Hankin of Agra to be destructive of micro-organisms.

Dr. Berry (Edinburgh) said he had been much interested to hear of carbon dioxide snow. As a manager of the Edinburgh Infirmary he looked on new remedies from an economic point of view, and the heavy expense they had anticipated by the need of securing radium had been obviated by the advent of the snow.

Dr. Reginald Morton (London), in reply, said that in addition to what had been said in the paper just read on behalf of Mr. Bishop Harman and himself he would like to add that even now, after having made over 1,000 applications with solid CO_2, the way in which papillomata, naevi, and rodent ulcer disappeared after this treatment continued to surprise him. He would not have believed such results possible had he not seen them himself. He did not ask the members of the Section to take his word, but rather advised them to use CO_2 in suitable cases and judge the result for themselves. He did not consider that CO_2 had any "selective" action on abnormal cells any more than he believed such to be the case with radium or the *x*-ray tube. In treating a rodent ulcer, for instance, provided the application was correctly timed, all the cells were damaged, but only the abnormal cells were unable to recover, by virtue of their lower vitality. The application of solid CO_2 was almost painless, and the thawing out of the tissue was disagreeable for a few minutes, but that was all. The great advantage in eye work was the ease and certainty with which the reaction could be circumscribed and controlled as to depth and intensity. Its greatest advantage of all was its efficiency.

ON THE CONDITIONS WHICH MAY ACCOUNT FOR THE GREATER PREVALENCE OF CATARACT IN INDIA.

By Lieutenant-Colonel L. J. Pisani, I.M.S., F.R.C.S.

I.—Distribution of Cataract.

It has appeared to me that it might be of interest to this Section if I brought before it some statistics regarding the prevalence of cataract in India, and if I incidentally discussed some points in connexion with its geographical distribution. There are no statistics available showing the actual prevalence of cataract, but an approximate estimate can be made from the number of operations performed in the various medical institutions. I have here a statement showing the number of operations performed in all Government and State-aided institutions of British India for the last five years for which complete records are available. You will see at once the great difference in the number of operations. In one of the Northern Provinces, the Punjab, the number of operations averaged 7,636 annually, or a ratio of 308.43 per million of population; on the other hand you have Burma showing only a ratio of 4.74 per million. When the data are mapped out it is seen that cataract is much more prevalent in the northern and central divisions of India than in the lower provinces and in Burma.

The difference between these northern areas and the others is so marked that it cannot be an accidental circumstance. I take for example the three more Northern Provinces, namely, the Punjab, the North West Frontier, and the United Provinces; these with a population of 74,571,999 show a yearly average of 13,481 operations; the remainder of India, with more than double the population—namely, 165,622,924—shows less than half the number of operations—namely, 6,216. Certain hospitals in India have a great reputation as eye hospitals, and some well known operators attract a large number of cases; but my personal experience is that among the class of patients who attend hospitals very few

Number of Cataract Operations Performed in the Government and Aided Institutions of British India during the Five Years 1904 to 1908.

Provincial Administration.	Population.	1904.	1905.	1906.	1907.	1908.	Total for the Five Years.	Average Yearly.	Ratio per million Population.
Punjab	24,754,737	7,164	7,680	8,009	7,577	7,753	38,183	7,636.3	308.43
North-West Frontier Province ...	2,125,480	301	249	308	545	346	1,749	349.4	164.38
United Provinces	47,691,782	5,023	4,994	6,421	5,568	5,474	27,480	5,496.0	115.23
Central Provinces and Berar ...	14,627,045	681	777	828	871	973	4,130	826.0	55.78
Bengal	50,528,446	2,194	2,239	2,714	2,883	3,268	13,304	2,660.4	52.45
Bombay	25,424,235	1,012	917	1,010	962	985	4,886	977.1	38.03
Madras	36,744,483	1,346	1,149	1,232	1,404	1,034	6,165	1,235.0	33.58
Eastern Bengal and Assam ...	29,812,735	62*	347	519	708	749	2,384	476.4	15.89
Burma	8,485,980	24	31	37	56	65	213	42.3	4.74

* Assam only.

go beyond their own province. Such may not be the case in some parts of India, but as more operations are performed in Northern and fewer in Southern India it is unlikely that migration to any great extent can take place, owing to the very great distance. I regret that I have been unable to obtain statistics for the native States of Central India and Rajputana. The statistics dealt with in this paper refer entirely to British India. The conditions in the native States are generally different, and the medical institutions are partly maintained by the Government of India and partly by the durbars of the native States.

II.—*Climatic Conditions.*

It has been stated that cataract may be less prevalent in the rice-eating areas than in those parts of India where wheat and other similar grains is the staple food of the people; but the fact that Mohammedans, who are meat eaters, suffer as much (Dr. Neve of Kashmir, who has investigated the subject, has stated that Mohammedans suffer more) is against this theory, and I think the general opinion of medical officers in India is that diet has no connexion with cataract.

Briefly it may be stated that there are three seasons in India: a hot, a rainy, and a cold season. In Northern India the winter is colder and the hot season hotter than in Southern India, where the variations of temperature are comparatively slight all the year round. The south-west monsoon winds bring rain to India, extending up from the south, but not reaching the extreme north. In addition Burma and North-East India receive rain from the north-east monsoon. One thing I wish particularly to draw attention to is the extreme dry heat which prevails in Upper India from April to June; the dry areas include the North-West Frontier Province and Scinde, the Punjab, the United Provinces, and the immediately adjacent parts of Bengal and the Central Provinces. If you will look at this statement, which shows the meteorological records of various stations in India, you will see how widely the humidity varies. The *lowest* monthly mean percentage humidity, for, example, in Burma is in the neighbourhood of 70; in Eastern Bengal, which is close to Burma, it is about the same; in Madras it is between 55 and 70; whilst in the Punjab, North-West Frontier Provinces, United and Central Provinces, it reaches 30 to 40, or even less. These last-mentioned provinces also record generally the highest maximum temperatures.

III.—*The Probable Connexion between Climatic Conditions and Geographical Distribution.*

Now if we look again at the previous statement of cataract prevalence we find that the areas of greater cataract prevalence correspond with the areas of great dry heat, and that in the areas where the air is saturated with moisture cataract is not common. There is one exception, however—the Central Provinces. I think that the conditions which exist there account for the smaller number of operations; it has a comparatively small population of 14 millions, and there are large areas of wild country where the means of communication are bad and the population is widely scattered.

It is generally believed that in the Himalayas where the heat is never great, cataract is never very prevalent; but statistics of the scattered hill villages are difficult to obtain, as patients frequently wander to the adjacent submontane districts for treatment. I think also that the well-to-do, in proportion, suffer much less from cataract than the ordinary cultivators, who are much more exposed to the heat, working all day, and sometimes living in the fields. This has generally been attributed to deficient nutrition among the poorer classes, but the same conditions of poverty are found all over India without causing a particular prevalence of cataract. There are two factors which may account for the prevalence of cataract in the dry and hot areas, namely: (1) The intense light and glare; (2) the great dry heat.

IV.—*The Influence of Intense Light.*

The light in India is intense, not only directly from the sun, but also reflected from the dry ground, which in the hot season is devoid to a great extent of vegetation. Light has for many years been considered as one of the causes of cataract; even in the eighteenth century writers mentioned it as a probable cause. The condensation of the nucleus and discoloration of the lens, which take place in old age, have been attributed to the continued passage for years of light through the lens. Becker suggested that the ultra-violet rays might have some influence in causing senile changes.

Widmark[1] working with an electric arc lamp of 1,200 candle power at 25 cm. distance, produced lens opacities in 3 out of 12 cases experimented on, and he attributed the opacities to the ultra-violet rays.

Birch-Hirschfeld[2] similarly produced lens opacities with an electric arc lamp, but the ultra-violet rays were removed by means of a glass plate.

Herzog[3] also, with electric light deprived of the ultra-violet rays, experimented on three rabbits. After two hours' action of strong electric light one had total and permanent opacity of the lens; the others after three hours had noticeable opacities, but these subsequently completely disappeared.

Ogneff[4] made a number of experiments on frogs, pigeons, and rabbits, with electric lights of 5,000 to 8,000 candle-power and failed to produce opacities of the lens.

Strebel,[5] Hertel,[6] and Birch-Hirschfeld[7] (using the Finsen or magnesium light) were not successful in producing an opacity with ultra-violet rays even when all the symptoms of intense action of the rays were evident in the anterior part of the eye.

Widmark is the only experimenter who has claimed to have produced opacities with the ultra-violet rays. It is noticeable, however, that he used an electric arc lamp.

Terrin[8] has very carefully recorded his experience in 45 cases occurring among the employees of the Paris Metropolitan Railway. In many of his cases there had been an accidental exposure to intense light from currents up to 550 volts at a very short distance from the eye; and although most of these men suffered intensely, and many permanently, from the effects of the exposure, in not a single case was the injury followed by cataract. He, working with Weiss, also failed to produce opacities in dogs with the electric light.

The experiments of Birch-Hirschfeld with ultra-violet rays are also of particular interest. He produced in animals with these rays electric ophthalmia, electric blindness, and the symptoms of snow blindness, but he utterly failed to produce opacities in the lens.

There are no cases on record of the artificial production of lens opacities by means of sunlight.

V.—*The Influence of Heat.*

Heat may act directly on the eyes, or it may act indirectly by modifying the composition of the aqueous. During the hot season the shade temperature sometimes rises in India to 120° F., and the temperature in the sun's rays to 160° to 165°. The percentage humidity may only be 40°, or even as low as 15°. At times, especially in the early part of the hot weather, westerly winds are very prevalent and are almost unbearable from the high temperatures. As an instance of the great heat, I may mention that I was never able to wear dark glasses owing to their getting so heated as to produce an intensely uncomfortable action of dryness in the eyes. Under these conditions which prevail in Upper India it can be imagined that there must be an intense local action on the eyes and indirectly on the composition of the aqueous by the excessive loss of fluid from the system. However frequently this loss may be replaced, there must be derangements, and these, even if temporary, may, when frequently repeated, modify the composition of the aqueous.

Outside the body the lens albumen coagulates at a temperature of 52° to 62° C. (125.6° to 143.6° F.), but with gradual heating the lens can stand a temperature of 65° C. (149° F.) without becoming cloudy.

It will now be necessary for me to consider some of the theories connecting the formation of cataract with an alteration in the composition of the aqueous. That an alteration of the composition of the aqueous may be the cause of cataract has been stated by many writers. That such a belief should exist is not to be wondered at, as a concentration of the aqueous artificially produced has so frequently been shown to produce opacities in the lens. The alteration in the composition of the aqueous has been believed by some to be due to an increase of albumen, by others to an increase of its saline constituents. Peters,[9] who has written extensively on the subject, believes that there is primarily a senile change in the epithelium of the ciliary body which produces an increase of sodium chloride in the aqueous. Troncoso,[10] who has more recently examined the aqueous in 9 cases of cataract, found an increase of saline constituents, and he believed that cataract was formed by a dehydration of the lens.

In naphthalin cataract both Peters[9] and Manca and Ovio[11] also found an increase of sodium chloride in the aqueous.

Romer[12] believes that cataract is formed by an accumulation of decomposition products in the body, which he names cytotoxins, and which act injuriously on the lens.

Quite recently Scalinci[13] has devolved a new theory based on the chemical properties of the lens. He considers the lens to consist of a mass of "organic hydrogel" consisting of two colloids, which he calls phacoproteine; of these one is soluble and swells out, the other is insoluble. In normal conditions these colloids are found in a state of alkaline proteine. He believes that faint organic acids such as acetic, oxybutyric and formic acids, find their way to the aqueous, and that these by neutralizing the phacoproteine form precipitates in the lens of neutral phacoproteine which is the cause of the opacities. He explains tetanic cataract by the formation of lactic acid, and glassblowers' cataract by an excess of carbonic acid in the aqueous.

In connexion with alteration of the aqueous it may be mentioned that in the last stages of cholera a cataract is sometimes found from dehydration consequent on the large loss of fluid from the system.

VI.—*Experimental Cataract.*

The lens is, as well known, extremely susceptible to changes when exposed outside the body or when immersed in fluid. Opacity of the lens has been experimentally produced in animals by the injection of various substances into the body either subcutaneously or into the anterior chamber.

Many years ago Kunde[14] showed that the lens could be rendered opaque in a frog by the injection into the system of chloride of sodium, nitrate of soda, or even of sugar. By placing the animals subsequently into water the lens became clear.

Magnus produced opacities in young cats five hours after the injection of 10 to 20 grams of salt.

Deutschmann produced an opacity by the injection of salt solution into the anterior chamber, and Hess has also produced it with a 4 per cent. solution.

Kuhnhorn and others have produced an opacity with calcium chloride.

Naphthalin cataract has been frequently produced in rabbits, and the aqueous found to contain an excess of salt.

The opacity of the lens in experimental cataract is generally found in the anterior part of the lens, and is caused by a dehydration of the lens; a similar dehydration occurs if the lens in its capsule is placed outside the body in a solution of sugar or salt.

As regards diabetic cataract, it may be stated that the amount of sugar found in the aqueous in man is very small—in fact, an amount which would not produce an opacity in an experimental case; but there is no doubt that the presence of sugar, however slight, must be the cause of the cataract, either directly by affecting the capsular epithelium, or by interfering with the nutrition of the lens.

VII.—*Cataract in Bottle Makers.*

A particularly interesting condition, which has been attributed to the great heat devolved in the manufacturing process, is the cataract found in bottle makers. In 1886 Meyhoffer[15] first prominently brought to notice that the workers in this industry were particularly subject to cataract, and the condition has since been frequently described. Meyhoffer believed that it was due to the enormous sweating and local abstraction of fluid, especially on the left or more exposed side of the body. Hirschberg[16] believes that in long exposure to high temperature so much heat is absorbed by the lens as to cause fine internal changes and subsequent loss of transparency. Robinson,[17] who published a number of cases in 1903, believes that heat is the cause. According to him, it is the maker of "ordinary bottles," and not the workers on fluid bottles, who suffer most, as they are subjected to a much more intense and prolonged heat. These workers have to look into tanks evolving a temperature of 2,500° F., and to protect them from the glare they look into the tanks through dark glasses. It may be stated that as cataract is not prevalent among other workers exposed to great heat, such as in steel and iron works, some writers (Snell[18]) believe that Robinson's conclusions are incorrect. Robinson,[19] however, explains the non-prevalence of cataract among steel-workers by the period of exposure to intense heat being very short, and not sufficient to cause cataract. This form of cataract has by some been explained as being due to a degenerative change in the vessels due to the hard work and exposure to great heat. The opacity is situated at the posterior part of the lens, in fact, at the nodal point, and has for this reason been believed to be produced by the light rays.

VIII.—*Conclusions.*

As regards light, our present knowledge may be summed up as follows:

1. In those parts of India where light and glare are intense cataract is very prevalent.

2. The position of the opacity in glass-blowers' cataract suggests that light may be the cause of this form of cataract.

3. Cataract has not been artificially produced by sunlight.

4. Cataract has been artificially produced by electric light in animals.

5. Exposure to intense electric light in man does not produce cataract.

6. No reliable case has, up to the present, been recorded of the production of lens opacities by the ultra-violet rays.

7. That the inhabitants of mountainous regions, where ultra-violet rays abound, would, if these rays were the cause of cataract, be the greatest sufferers, which is not the case (Birch-Hirschfeld).

As regards heat, we may sum up as follows:

1. That great dry heat prevails in those parts of India where cataract is common.

2. That direct heat has not been proved to produce cataract.

3. That glass-blowers' cataract can be as well explained by a heat as by a light theory, as both conditions coexist.

4. That concentration of the aqueous by the introduction of sodium chloride into the system, or into the anterior chamber, produces lens opacities.

5. The aqueous has been found to contain an excess of sodium chloride in men suffering from cataract.

6. That great loss of fluid from the system in cholera has been known to produce cataract.

There may be more than one form of cataract, each produced by a different cause, as suggested by Hess, but whatever the cause or causes may be, one condition is necessary, the presence of a "senile lens"—that is, a lens undergoing nuclear condensation. It is at the time when accommodation fails that cataract commences. The anterior part of the lens and its capsule are the parts which for years have been subjected to the greatest strain in connexion with accommodation, and this is perhaps the most vulnerable spot during the period when senile changes are taking place in the lens.

The conditions existing in India, which I have already described, suggest that exposure to prolonged intense dry heat may produce an alteration in the composition of the aqueous, either by producing a concentration of its normal constituents or by the addition of something abnormal to its composition, which may injuriously act through the anterior capsule starting the formation of cataract.

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DISCUSSION.

Mr. Charles Wray (London) said the relation of humidity to cataract was in confirmation of his observations that cataract in England was most frequent in subnormal water drinkers.

Major Gidney, I.M.S., thought the essential factor in the production of cataract was premature senility, and that climatic influences were of little consequence. He said little reliance could be placed on official statistics of cataract extraction, because they took no account of the enormous number of cataracts that were operated on by quacks.

Mr. Angus MacGillivray (Dundee) said he had a considerable knowledge of Anglo-Indians engaged in the jute trade. He did not find a residence in India increased their liability to cataract.

Mr. Cecil Shaw (Belfast) said that reference should be made to the recent report of the Belgian Ophthalmological Society into the causes of accidental injuries to the eyes by electricity. There was an admirable summary of the influence of extreme light effects, and there appeared a large number of cataract cases.

Colonel Pisani, in reply, said that the jute trade was carried on in the moistest part of India, where cataract was least prevalent.

DISCUSSION ON THE DIAGNOSTIC VALUES OF OPHTHALMOPLEGIA, PARTIAL AND TOTAL.

OPENING PAPER.

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In opening this discussion it seems to me advisable that I should try to evoke definite expressions of opinion on certain points that are generally accepted as proved, as well as on others on which we may be in some doubt. The way in which statements are apt to be handed down from one textbook to another, without question as to their accuracy, until at last some one sees reason to doubt the truth of what has been for long accepted as a fact, makes it particularly important that the chance of a critical review on an occasion like the present should not be lost. To the neurologist no aspect of the subject set down for discussion to-day is more important than that to which I propose to direct attention at the outset; for no problem that he is asked to attempt to solve so often presents itself as that which requires him to determine whether an affection of the nervous system is organic, or merely functional.

Paralysis of ocular muscles has been regarded as one of the most reliable signs of organic disease, as opposed to a functional affection of the nervous system, and I have never had reason to question the correctness of this view. This is, however, a fitting occasion for the reconsideration of this important question, and for an authoritative pronouncement that may further establish the truth of the view that has been hitherto accepted, or for the chronicling of any facts that may legitimately be regarded as discounting the value of ocular paralysis as a sign of organic disease. The question becomes especially important when considered in connexion with the early manifestations of disordered functions of the nervous system that are to be attributed to disseminated sclerosis, for diplopia and ocular paralysis are among the earliest clinical manifestations that may be the outcome of this grave disease. There is much in the fleeting character of many of its earlier manifestations that suggests the probability that a functional rather than an organic affection obtains. So that it is not possible for us to have too many reliable signs of organic disease on which we can rest assured of our diagnosis. Would paralysis of one or more eye muscles, amidst a variety of subjective symptoms that might as readily be accounted for by functional disturbance rather than organic disease, be an adequate reason for the latter diagnosis, in spite of the absence of any other sign on which we have learnt to place reliance as an indication of organic changes in the nervous system? It is only by placing ourselves in a position of the kind, and by eliciting a definite reply to such a question, that we can be in a position to feel secure of our ground when in any case we allow paralysis of eye muscle to weigh in the favour of the diagnosis of organic disease. For my own part, as I have already indicated, it would be impossible to arrive at any other conclusion than that the affection is organic in the presence of ocular paralysis, no matter how isolated this manifestation might be, in so far as the other organic signs are concerned, and no matter how strong the temptation otherwise to regard the affection as functional.

The question as to whether a disability is due to spasm, as opposed to paralysis, naturally enters into our considerations in this respect, and the need for distinguishing disability due to the one cause as opposed to a defect that is due to the other, is too evident to need emphasis from me. I cannot, however, refrain from referring to an interesting case that bears on this question, in which a woman with other signs of disseminated sclerosis was unable to move the right eye outwards, although the left eye moved inwards to the full extent, on her attempts to look to the right. There seemed nothing remarkable in this, for the reason that paralysis of the external rectus was what might reasonably have been expected in a case of the kind. On further examination of the patient, however, she proved to have, in addition to the signs which pointed

to disseminated sclerosis, a condition of myotonus, such as is characteristically seen in the malady known as Thomsen's disease, so that when she squeezed an object with either hand she was unable to relax her grasp for some seconds. In the light of this information, and remembering that I had tested her power of convergence of the eyes before I attempted to elicit the lateral movements of the globes to the right, I reinvestigated the ocular movements, with the result that the right eye now moved outwards to the full extent, and in a way that was altogether impossible when I first attempted to elicit this movement. There seemed no reasonable doubt that in this case the inability to turn the eye out at first was due to the restraining effect of the internal rectus, which would not relax so as to allow the globe to be moved in the direction in which the external rectus was attempting to displace it.

It is not only with hysteria that we are concerned, however, when we speak of a functional affection of the nervous system. And so many of the organic affections are for a time hidden under the guise of what appears to be neurasthenia, that ocular paralysis affords us one of the means of determining whether neurasthenia alone exists, or whether some organic affection of the nervous system underlies the symptoms which appear to be due to nervous exhaustion. Thus it comes about that two affections like neurasthenia and myasthenia gravis, closely similar, it may be, in so far as the patient's complaints are concerned, but widely different in their nature and prognosis, may be at once distinguished from each other in the presence of ocular paralysis; for while such paralysis is one of the recognized features of the serious disease myasthenia, no such paralysis is to be accounted for by the uncomplicated condition of neurasthenia.

The fact that there is paralysis of eye muscles does not only exclude functional affections, but it also serves to rule out of court many organic disorders of the nervous system, some of which may resemble, in certain of their other manifestations, diseases in which paralysis of eye muscles forms part of the recognized clinical picture. I need only remind you in this connexion of affections like subacute combined degeneration of the spinal cord, and the ordinary varieties of peripheral neuritis, excluding in this connexion the diphtheritic form, in which paralysis of eye muscles forms no part of the clinical picture, as contrasted with diseases like disseminated sclerosis in the one case, and tabes dorsalis in the other, in which such paralysis of ocular muscles is common. In this way the number of diseases to be considered as possible in any given case can be considerably reduced. But although I heartily invite adverse criticism, and welcome proof to the contrary, it is my belief that we cannot go much further in diagnosis from a consideration of the ophthalmoplegia alone, and that to arrive any more closely to a diagnosis than this it is necessary for us to take into consideration at least concomitant ocular phenomena, or even, it may be, evidence that it is only to be secured by an examination directed towards ascertaining the state of the whole of the nervous system, and possibly of the internal viscera as well.

Do not let it be supposed that these remarks are intended to belittle the value or importance of ocular paralysis in diagnosis, for all that is intended is that we should be fair to ophthalmoplegia if we are to expect help from this source in our clinical work, and that we should accordingly consider the ocular paralysis in conjunction with all the evidence that we can collect, rather than attempt to divorce it from everything else that may obtain in the case, and expect it to do the impossible. We are all fully alive to the extreme importance of ocular paralysis in the diagnosis of intracranial tumour; and the patients subject to attacks of severe headache, whether this be accompanied by vomiting or not, cause us the greatest anxiety if ocular paralysis should appear, for intracranial tumour, or some equally grave condition, would naturally be suspected. Nevertheless, the knowledge of that rare but well-recognized affection, migraine ophthalmoplégique, in which recurring ocular paralysis forms part of the clinical picture, affords a possibility of escape from a diagnosis so grave. It would be idle, therefore, to suppose that we do not welcome any other evidence that can be expected to assist us in arriving at a correct conclusion on so important a question, and thus we search for optic neuritis, paralysis of other cranial nerves, or evidence of pyramidal or other tract involvement. I have not been guilty of the error of mistaking as intracranial tumour a case in migraine ophthalmoplégique, but I have to confess to a mistake in the opposite direction in one case, in which recurring headache became complicated by ocular paralysis, which improved and then relapsed in a way that made it seem probable that migraine ophthalmoplégique, rather than intracranial tumour, was to be held responsible for the symptoms. The absence of all other signs that could assist me, and the fact that the patient seemed in no way gravely ill when her headache was not severe, permitted me to fall into an error that would have been averted had there been paralysis of any other cranial nerve, optic neuritis, or one or other of the various other signs on which we depend for the diagnosis of an intracranial tumour.

Not only in the diagnosis, but also in the localization, of intracranial tumours, however, do we look for assistance from ocular paralysis, as is as well illustrated by what obtains in connexion with the cerebellum as by any other example that I can suggest. The indications of intracranial tumour may be clear, and those pointing to the region of the cerebellum equally so, but to cranial nerve paralysis, among other signs, we look for assistance in our attempts to determine whether the tumour be intracerebellar or extracerebellar; and no such paralysis is more common than that of eye muscles—a condition of things which obtains in the former variety but not in the latter.

Mode of Onset and Progress of Paralysis.

At the first glance, here, at least, we would appear to have reliable data on which to base a positive diagnosis; but only a few moments' consideration are necessary to make it evident that fallacies are once more liable to creep in, which can only be avoided by treating the subject in a much more liberal spirit than by attempting to arrive at a diagnosis in this evidence, unsupported by information of a more general character.

It is tempting to assume that a vascular lesion is to be held responsible for a paralysis of sudden onset, and that to a sclerosis can only be assigned such paralysis as is slow in onset and progress. A few moments' consideration will, however, be sufficient to make it obvious that such a position is quite untenable, and, at the risk of wearying you by repetition, I must once more remind you of what so often occurs in disseminated sclerosis. It seems incredible to many who are not conversant with the vagaries of this disease, that a malady that has as its anatomical basis a sclerosis can possibly occasion a paralysis of ocular muscles that is sudden in its onset, and which possibly results in recovery after persisting for a time. Nevertheless, this is what commonly happens; and, although the true pathology of disseminated sclerosis has yet to be determined, there is in this, and in other known facts with regard to the disease, something which justifies the assumption that some other morbid process is at work and interferes with function antecedent to the establishment of the sclerosis, however much difference of opinion there may be as to what the precise nature of that process is.

The Significance of the Combination in which Ocular Muscles are Affected.

At the risk of being regarded as altogether too destructive in my methods and not sufficiently constructive, I am compelled to question how far we can rely on such a combination of paralysis of ocular muscles as is supposed to indicate an intramedullary lesion which involves the nuclei, rather than an affection of the peripheral nerve, that is to be held responsible for the paralysis which is present in any given case. On our being able to be assured which is the seat of the lesion much may depend, not only in regard to diagnosis, but also as to prognosis and the possible effects that are to be expected from treatment. Are we justified in placing much reliance on the combinations of ocular paralysis usually supposed to indicate that the lesion is intramedullary, as opposed to its being peripheral? Or have others who are to take part in this discussion had experience similar to my own, which makes it impossible for me to accept such evidence without a certain amount of hesitation and reserve as apart from many other considerations which must enter into our

deliberations if a correct opinion is to be formed? It has been my experience that a combination of ocular paralysis, supposed to be pathognomonic of a central lesion, has in reality been accounted for by a peripheral affection. This affords me an opportunity of referring to a case the true pathology of which is obscure, and in which, coupled with certain other signs of organic disease of the nervous system, was paralysis of the lateral movements of the eyes, which made it in every degree probable that an intramedullary lesion of the pons must be present to account for this and the other phenomena that obtained in the case. That the inability to move her eyes to the right or left was not due to any want of appreciation of what was required of her was made abundantly evident by the way in which she carried out all other commands during the investigation of her case, including the movements of her eyes in the upward and downward directions. Nevertheless, on necropsy no lesion could be determined in the pons to account for the clinical phenomena. It is true that the paralysis was recovered from before the patient died, but the interval that elapsed between the occurrence of this paralysis and the time of the patient's death was not sufficient to make it possible that any gross lesion in the pons could have so far recovered as to leave no traces of its former existence. The woman suffered from valvular disease of the heart, which proved to be due to malignant endocarditis; but the onset of her symptoms, though somewhat rapid, was not sudden, so that embolism could not reasonably be entertained as the probable cause, although thrombosis was quite possible.

Although pointing to such fallacies as may arise in connexion with ocular paralysis in such combination as would suggest an intramedullary lesion, I do not wish it to be supposed that one would do otherwise than regard as important in diagnosis and localization such combinations as we usually ascribe to intramedullary lesions, although always keeping in mind the possibility of such errors as those that I have tried to indicate as possible.

The Value of Associated Ocular Phenomena as Aids to Correct Diagnosis.

This affords us a suitable opportunity of eliciting information as to how far non-reaction of the pupil to light in a case in which reaction and accommodation is preserved justifies our proceeding with diagnosis. What evidence is there that this phenomenon can obtain in the absence of syphilis? It will, I take it, be admitted that the Argyll Robertson pupil is met with in persons who have had syphilis, and in whom there may or may not be associated paralysis of the external ocular muscles. The important question that arises in this connexion is as to how far such persons are likely to escape diseases like tabes and general paralysis of the insane if with syphilis they have developed this state of the pupils. Here the ophthalmic surgeon must have opportunities of supplying information that is of the greatest possible value in prognosis that those of us engaged in other departments of practice cannot lay claim to.

The frequency with which we are confronted with this sign as part of the clinical picture of two such grave diseases as tabes and general paralysis, must naturally cause us great anxiety when we discover the sign in a person who has had syphilis. The question on which we should like information in this discussion is as to how far persons who have had syphilis and who have developed this sign have been known to escape the progressive diseases that are to be feared. Put in another way, Does this sign mean the beginning of one or other of these progressive degenerative diseases, or is it compatible with a lesion of syphilis which does not carry with it of necessity the tendency to progressive degeneration?

It is impossible for me to leave this part of our subject without inviting discussion on yet another point on which an important issue may hang, on the co-existence of the Argyll Robertson pupil and paralysis of external ocular muscles. It is as to how far this state of the pupils is compatible with the diagnosis of disseminated sclerosis, a disease that is non-specific in origin, as contrasted with diseases like tabes and general paralysis, that are. The undecided manner in which statements are made in some of our textbooks which deal with the differential diagnosis of disseminated sclerosis raises the suspicion in one's mind that the authors are none too certain of their ground, and I confess that, when obliged to express a dogmatic opinion on this subject, I experience no small amount of hesitation in doing so, for the reason that I so often see patients suffering from disseminated sclerosis in whom this phenomenon does not exist, that I can excuse myself for the scepticism which arises in this connexion which makes me wonder whether the exceptional cases in which the phenomenon has appeared to exist are to be ascribed to faulty observation.

Let me add that I welcome in our discussion any evidence that can be adduced pointing to the existence of the Argyll Robertson pupil in other affections of the nervous system in which syphilis plays no known part in their etiology.

Deductions Warranted by Concomitant Affections of Other Cranial Nerves.

Concomitant affection of other cranial nerves would appear at once to remove the case from the category that concerns the ophthalmologist to the exclusion of those engaged in other branches of medical and surgical practice, and it will probably be conceded that this is the case if we make one exception in so far as the ophthalmic division of the fifth nerve is concerned. Moreover, the fact that other cranial nerves are involved in conjunction with those which control the eye muscles, serves to reduce the number of affections that must enter into our deliberations in attempting to arrive at a diagnosis. So that whereas the fact that there is ocular paralysis at once rules out of consideration a number of affections that otherwise would have to be borne in mind, a still larger number of diseases may be excluded when we find added to the ocular paralysis a similar affection of other cranial nerves.

Importance of a General Examination.

Is a diagnosis ever justified from a study of the ophthalmoplegia in conjunction with symptoms without the additional assistance that can be derived from the general physical examination of the patient? The only hesitation which I experience in giving a decided answer in the negative to this question is the diffidence which I feel in doing so in the presence of an audience that must of necessity be composed very largely, if not exclusively, of ophthalmic surgeons. A discussion of the kind on which we have embarked is, however, intended to assist us in determining what use we are justified in making of ocular paralysis in diagnosis. So that, although the considerations that have engaged our attention this morning appear to me to warrant the conclusion at which I have arrived, no one would be more glad to have the contrary proved. Whether or not it is admitted that a general examination of the patient is necessary before any very accurate opinion can be formed of the significance of ocular paralysis, it becomes necessary for me to invite some of those who are to take part in the discussion to record to what extent they have been aided in determining the significance of ophthalmoplegia by such procedures as examination of the blood and the cerebro-spinal fluid, and by the application of the Wassermann test or one of its modifications. What experience, if any, has there been that such tests have proved of service in determining that isolated ocular paralysis has been of syphilitic origin? It is, of course, no uncommon experience that paralysis of a single eye muscle is met with in the absence of any other physical sign in the individual. Syphilis is commonly suspected under such circumstances, and the fact that the patient recovers from the paralysis under antisyphilitic treatment is often accepted as evidence of the correctness of the diagnosis. In reality, however, no such conclusion is necessarily justified, for it is compatible with a non-syphilitic condition that such paralyses should obtain and nevertheless terminate in recovery. Any information that can be derived from such investigations as can be expected to throw light on the nature of the morbid process responsible for the ophthalmoplegia must of necessity engage our attention in a discussion such as that with which we are now occupied; so that I hope that subsequent speakers will supply us with any information that they have on these points, which must of necessity greatly enhance the value of the discussion.

DISCUSSION.

The President said he had always looked upon these ocular paralyses as indications of grave disease, and he was accustomed to warn patients' medical advisers to that effect, yet subsequent events did not always bear out that prognosis, at any rate for many years.

Mr. L. Vernon Cargill (London) said that he took it for granted that the ophthalmoplegia in question was one in which the reality of the condition had been established, and refraction, concomitancy, and purely functional or hysterical derangements eliminated. Diplopia would be absent in the conjugate paralyses of cortical and subcortical lesions, and replaced by the symptoms of vertigo and false (excessive) projection towards the paralysed side. Diplopia might also be absent in cases of double ophthalmoplegia externa, the patient moving the head instead of the eyes, and sometimes even being unaware of the defect until informed. It often fell to the lot of the oculist to be the first to detect on-coming serious nerve disease by the discovery of pupil derangements in patients who had sought his advice merely for presbyopia or some error of refraction, but in no cases of ophthalmoplegia could reliance for rational and accurate diagnosis be placed upon the ophthalmoplegia alone. The history of the case might give valuable assistance. It might show it to be of congenital origin, or that there had been a sore throat some three or four weeks previously, pointing to diphtheria as the cause. Ophthalmoplegic migraine would be indicated by a lengthy history of recurrent transient attacks of oculomotor paralysis associated with severe headache, recovery after the attacks becoming gradually less complete. In other cases there might be a history of injury to the skull or eyes; or of some infective disease, as, for instance, syphilis, tubercle, and rheumatism; or of some intoxication as by alcohol, lead, or arsenic.

An acute onset with febrile and cerebral disturbance pointed to polioencephalitis superior; a gradual onset, the paralysis slowly attacking one muscle after another, indicated a chronic nuclear ophthalmoplegia. The pupillary reaction and fundus oculi must be examined, paralysis of other cranial nerves looked for, the condition of the reflexes determined, the state of the vascular system ascertained, the temperature taken, and the urine tested for sugar or albumen. Evidences of acquired or inherited syphilis or of tubercle might give valuable help in diagnosis. Furthermore, special tests might illuminate a diagnosis otherwise shrouded in doubt, such as the Wassermann test for syphilis, von Pirquet's skin reaction for tubercle, the opsonic index, and the examination of the cerebro-spinal fluid for lymphocytosis or tubercle bacilli. Lastly, the effect of treatment (for example, antisyphilitic) might yield additional corroborative evidence or elucidate an otherwise incomprehensible case.

Amongst the most difficult cases to diagnose were those associated with myasthenia gravis, in which ptosis or diplopia might be amongst the earliest symptoms, and, if found without discoverable origin, require prolonged observation before this disease could be excluded.

The presence of ophthalmoplegia proved the existence of an organic lesion, although hysteria might complicate the case and its symptoms be the most obtrusive.

In uncomplicated hysteria there was no single muscle paralysis, no reflex iridoplegia, no nystagmus, no morbid condition of either fundus oculi, and no typical hemianopsia. Hysteria being due to a functional derangement of the higher cerebral centres, it simulated the ocular paralyses associated with lesions of those centres. Thus, conjugate paralysis was simulated and also ptosis, but they could be distinguished from true paralysis by their "dissociated" character, the direct and voluntary movements being affected, but not the indirect and involuntary. Hence, with inability to look to the right side, the eyes might be made to continue fixing a stationary object, whilst the examiner slowly rotated the head to the left. The ptosis was apparent or "false," and due to spasm of the orbicularis. This was evident by the resistance offered to the finger on attempting to raise the eyelid, and, in unilateral cases, by the eyebrow on the affected side being lower, instead of higher, than the other. In double hysterical ptosis, if the object was fixed with the head thrown back, the eyes might be made to continue fixing whilst the examiner slowly rotated the head forwards, so that the patient was finally looking from under the eyebrows with the upper lids well elevated. In hysterical cases attempts at fixation might lead to spasm of the muscles associated with convergence; blowing on an anaesthetic eye would cause reflex winking in both, and there was disagreement between the visual acuity and the confines of the visual fields for white and colours.

In the ocular examination alone valuable evidence as to the cause or nature of the ophthalmoplegia might be found. The cornea might show evidence of interstitial keratitis or phlyctenular mischief, indicating syphilitic or tuberculous infection. The reaction of the pupils might be imperfect, or almost absent, in consequence of posterior synechiae resulting from past iritis. If there had been only one attack, the iritis might have been syphilitic; if repeated attacks, probably rheumatic. In the absence of any adhesions, the presence of pupillary irregularity, inequality, or abnormal smallness might be suggestive of tabes or general paralysis, and absence of the light and sensory reflexes or of the convergence reaction were more than suggestive. Reflex iridoplegia, or Argyll Robertson pupils, it was now generally conceded, were almost certain indications of antecedent syphilitic infection, either acquired or inherited, and they were often a danger signal of tabes or general paralysis. Argyll Robertson, or fixed pupils, with or without ocular paralysis, might be met with in focal cerebral lesions, especially in tumours of the quadrigeminal region, but general symptoms of intracranial trouble would be present, whilst tabetic signs would be absent. In the absence of patellar reflexes the existence of external ophthalmoplegia together with Argyll Robertson pupils was sufficient to establish a diagnosis of tabes.

Bilateral ophthalmoplegia interna might be the temporary result of mydriatics or ptomaine poisoning. Similarly unilateral ophthalmoplegia interna might be the temporary result of local trauma, mydriatics, or third nerve paralysis; but if permanent, it might also almost certainly be taken as indicative of previous syphilis.

Bilateral cycloplegia, without iridoplegia and without knee-jerks, and with a history of sore throat a few weeks previously, was sufficient for the diagnosis of post-diphtheritic paralysis. These cases nearly all occurred in children, and the diphtheria might have affected the conjunctiva or vulva instead of the throat. In some post-diphtheritic cases the extraocular muscles (the sixth and third in order of frequency) were affected instead of the ciliary muscles. The history, youth of the patient, absence of knee-jerks, normal pupils, rapid onset, transient variation, and quick recovery, served to establish the diagnosis. The choroid might show active or "obsolescent" tubercle, or old syphilitic mischief, or retinal arterio-sclerosis, or diabetic or renal retinitis. These findings, in particular cases, indicating a tuberculous, syphilitic, diabetic, or vascular cause for a coincident paralysis. In pertussis, cases of paralysis of the sixth and seventh nerves, and also of complete ophthalmoplegia, had been reported; they were probably due to small venous haemorrhages affecting the nuclei. It was not improbable that arterial thrombosis or haemorrhage might also affect the nerve nuclei in cases of high arterial tension, with sclerosis, in adults, and the speaker had seen two or three cases which seemed only explicable in this way.

The presence of papillitis or primary optic nerve atrophy might shed a flood of light on an accompanying ophthalmoplegia. Papillitis with ocular paralysis suggested intracranial tumour or inflammation, and in the former case the side on which the papillitis was first developed or most intense would greatly assist the localization. Papillitis, with paralytic internal squint and optic neuritis, due to basic meningitis, had been reported ten weeks after the primary lesion. Primary optic nerve atrophy with ophthalmoplegia might occur in tabes, general paralysis, or disseminated sclerosis, or in lesions about the chiasma or cavernous sinus. In tabes and general paralysis the pupillary phenomena already alluded to, the state of the knee-jerks, and the presence of paraesthesia, would confirm the diagnosis. In disseminated sclerosis the atrophy might be only partial, and nystagmus, exaggerated knee-jerks, ankle clonus, intention tremor, limb weakness, and spasticity would help, with the paralysis perhaps of an external rectus, to complete the clinical picture. Homonymous hemianopsia might be asociated with oph-

thalmoplegia in lesions behind the chiasma. Hemianopic pupillary inaction would not be present if the lesion were supranuclear, but might be detected with infranuclear lesions. Ocular paralysis from lesions in the vicinity of the chiasma would be associated with temporal hemianopsia, and in lesions of the cavernous sinus unilateral blindness would accompany complete unilateral ophthalmoplegia.

Orbital symptoms might indicate that the ocular paralysis had an orbital origin. There might be local oedema, inflammation, and tenderness, unilateral optic neuritis or atrophy, and proptosis or other ocular displacement; and ophthalmoplegia might accompany the exophthalmos of Graves's disease. The extraocular muscles might be damaged by an injury, and a blow on the eye might cause ophthalmoplegia interna, probably from an indirect traumatic lesion of motor ciliary nerve fibres. Some cases of isolated ocular paralysis (for example, the external rectus) with no other signs and an evident rheumatic "diathesis" might be due to neuritis and compared to "Bell's palsy." The speaker had notes of two cases in which paralysis of the superior oblique was accompanied by marked tenderness over the "pulley" on the affected side, suggesting a fibro-synovitis. There was no frontal sinusitis, and no other evidences than definite rheumatism. Might not a rheumatic myositis or fibrositis also pick out an extraocular muscle and be indicated by local pain on movement and tenderness or even slight oedema over its insertion? Paralysis of the third nerve sometimes occurred as a complication of herpes zoster ophthalmicus, and would therefore be accompanied by the obvious local evidences of the latter. The first division of the fifth nerve would also probably be affected, and recovery take place in the course of a few months.

The peculiar characters of the ophthalmoplegia itself might aid in the diagnosis. For instance, in congenital cases there was no contracture of the antagonistic muscles and in some rare instances there had been reported accompanying rhythmical or cyclical changes in the size of the pupils. In myasthenia gravis there might be a variability in the degree of lateral movement at various times, and a fatigue reaction of the pupil had been reported, in which with successive illuminations the contractions became weaker. Isolated, variable, temporary paralysis was frequently met with in the early parasyphilitic cases; whilst in later stages the paralyses were combined and permanent. Conjugate paralyses were the characteristic of cortical or subcortical and of pontine lesions. In the former there was paralysis to the contralateral side, and the latter to the unilateral side.

Dr. E. Farquhar Buzzard (London) said the value of the Argyll Robertson pupil in the diagnosis of syphilitic and parasyphilitic diseases could hardly be over-estimated, although it was somewhat curious that a satisfactory anatomical explanation of so common a clinical phenomenon had yet to be discovered. The point he wished to emphasize was that absence of the light reflex, unilateral or bilateral, as a solitary ocular symptom might be a most important physical sign, not of syphilis, or of parasyphilis, but of the locality of a cerebral lesion. This fact was impressed on his mind about ten years ago by the observation of two interesting cases, and he had constantly found it of use in diagnosis ever since that time.

A woman was admitted into the National Hospital with a history of paroxysmal headache of great severity, having a duration of only a few weeks. The headache had been associated with vomiting, and examination showed a very slight degree of optic neuritis in each fundus. The plantar response was of the extensor type on both sides, probably due to the increased intracranial tension, but careful examination revealed no further physical signs except in the eyes. The right pupil was larger than the left, and did not react to light; the left pupil reacted sluggishly; all other oculo-motor functions were performed in a perfectly natural manner. The patient died suddenly within a few hours, and the only abnormality found *post mortem* was the presence of a cyst, the size of a hazel nut, lying in the third ventricle, attached to the choroid plexus, adherent to the fornix, and blocking the foramen of Munro.

Within a short time of the death of this patient another woman was admitted into the hospital with a history of epileptic attacks extending over three years, and of headache and vomiting during ten months.

She had optic neuritis and slight left hemiparesis, but it was also noted that both pupils were completely inactive to light, although there was no other form of ophthalmoplegia. This patient died, and at the autopsy there was found, not only, as was expected, a large tumour of the right frontal lobe, but also a small cyst, filled with jelly-like material, lying in the third ventricle, attached to the choroid plexus, and impinging on the superior colliculus and the posterior commissure.

As a result of these observations he had formed the opinion that absence of the light reflex was a valuable sign of gross disease in the third ventricle or in the structures immediately surrounding it, and that it not infrequently constituted the first localizing evidence of that disease. He had already mentioned two cases of cysts within the ventricle but had also observed the same phenomenon in the early stages of tumours involving the optic thalamus. When a tumour originated in this situation and tended to grow backwards towards the corpora quadrigemina, it was usual to find the loss of light reflex quickly followed by paralysis of the vertical movements of the eyeballs, the upward being generally lost before the downward movement. The invariability of this sequence made it certain that these two oculo-motor functions had their anatomical seat in the most anterior part of the oculo-motor nucleus and that their impairment could often be detected before there was any other form of ophthalmoplegia. The combination of these signs was sometimes a clue to the diagnosis of vascular lesions of the mesencephalon, and in one instance within his experience proved of value in determining the presence of an abscess in the optic thalamus secondary to suppuration in the thoracic cavity. Recognition of this clinical point might be of practical value, especially in cases of intracranial tumour. In the first place it must be remembered that the pupillary light reflex was rarely lost as the result of papillitis, in fact it was only impaired when optic neuritis was passing on into optic atrophy. For this reason it was important that the loss of light reflex in any individual case should not be ascribed to the presence of papillitis even when there was an extreme degree of swelling, and that some other explanation of the defect should be looked for. In the second place the absence of the light reflex, when not accounted for by optic atrophy, was a contra-indication to any attempt to remove a tumour because it nearly always signified that the latter was too deep for eradication. If, for example, in two cases A and B both presenting vomiting, headache, optic neuritis, and some degree of hemiplegia, case A showed loss of light reflex, that fact must be regarded as an indication that the growth had either originated in the neighbourhood of the third ventricle or had reached that situation and that removal was out of the question. But in case B it would be legitimate to infer the possibility of the hemiplegia being produced by pressure on the internal capsule from without, and to undertake an exploratory operation with some degree of hope that the growth might be accessible. The question of decompression must, of course, be decided on other considerations. The speaker had found this practical point of use both in forming a decision as to the advisability of operative interference and in giving a reliable prognosis, on more than one occasion.

Dr. W. B. Warrington (Liverpool) commented upon the occurrence of apparently simple cases of single ocular muscle paralyses without indications of grave general disease.

Mr. N. Bishop Harman (London) said he believed that there were many cases of single muscle paralyses which were due to exposure to unusual extremes of cold. He had heard no reference to them in the able papers of the neurologists. Mr. Cargill indicated that he recognized rheumatic cases. He could only suppose that these cases did not come into the hands of the neurologist, or else were they to conclude from such a warning that Dr. Russell had given that these were all precursors of grave disease such as disseminated sclerosis? Mr. Harman instanced the case of a man who had been exposed throughout a whole day to a cold east wind on a motor boat, so that he felt ill. The succeeding day he awake with diplopia due to paresis of one external rectus. There were no other symptoms, and good evidence against syphilis. Was it not more likely that such a case was a genuine peripheral neuritis, similar to Bell's paralysis, rather than a precursor of grave disease? He concluded that these cases did occur, and fairly frequently. Acting upon this view, he discarded anti-

syphilitic measures, and prescribed strychnine. In the cases instanced cure was established in three weeks. To view such cases gravely and to give serious warning to the patient or his medical attendant was to court trouble.

The President said he doubted if these cases ever got to a neurologist; to him the diagnosis was established in that they got well.

Dr. R. A. Reeve (Toronto) concurred in the influence of exposure to cold causing isolated paralysis; often he found evidence of deep-seated pain.

Miss Amy Sheppard (London) said she had seen similar cases and obtained evidence of tenderness in the region of the affected muscle.

Mr. A. W. Ormond (London) questioned whether the cases really got well; was the relief only temporary? And, if exposure could be credited with the occurrence, why were these cases not more frequent?

Mr. Angus MacGillivray (Dundee) said he agreed with Mr. Harman in the existence of the cases. But he found that six weeks was the usual duration. He gave a guarded prognosis until the six weeks was up. If at that time the paresis had not passed, he considered the prognosis was grave and indicative of ultimate central disease. He had not found local pain in the temporary cases, but he was sure syphilis was not a necessary factor; further, some of these cases he had watched for twenty years or more, and there had been no recurrence and no subsequent grave effects.

Mr. Hill Griffith (Manchester) asked if Dr. Russell made use of electrical reactions as an aid to diagnosis. He had seen several cases, and had had them under observation for many years, where monocular mydriasis occurred without other symptoms. To what lesion could such uncomplicated stationary paralysis be due?

Dr. John Hern (Darlington) said he had seen many cases of paresis of an external rectus of one eye, such as Mr. Harman had described, and had watched them for twenty years afterwards, and they had not recurred. It was apparently a peripheral lesion, and should be treated as such, when there were no other manifestations to indicate a central lesion.

Major Gidney, I.M.S., said these cases should present no difficulty if syphilis was excluded by the Wassermann reaction.

Dr. Risien Russell, in reply, said he was sorry more definite information had not been forthcoming as to whether failure of a pupil to react to light, while it preserved its action in accommodation, could be relied on as a sign of syphilis. All would agree that the information supplied by Dr. Farquhar Buzzard in regard to the value of loss of the light reflex as a localizing sign in the case of tumours in the region of the third ventricle, was of very great importance. He was familiar with the cases of monocular paralysis of the pupil and of accommodation, but could offer no explanation for them, and suggested that all cases of the kind should be recorded. In what he had said, he did not, of course, mean to suggest that paralysis of one of the oculo-motor nerves could not result from some simple cause, such as neuritis, for he was quite familiar with the class of case in which the condition was notably due to exposure to cold. He was glad to hear a time limit suggested in which recovery might be expected in this class of case, for he had known of instances in which such paralysis had been one of the earliest indications of what ultimately proved to be sarcoma at the base of the skull. Deep-seated pain in the orbit certainly could not be claimed in support of the diagnosis of neuritis where sarcoma was the alternative diagnosis. Even when comparatively rapid recovery resulted, he could not look on oculo-motor paralysis quite so lightly as seemed possible to one of the speakers. The ophthalmologist saw the paralysis of eye muscle, and watched its recovery, but it was reserved to the physician to see the same patient, it might be many years later, with the unmistakable signs of disseminated sclerosis. It must be very rare to have such paralysis brought about by neuritis due to alcohol, for even in the most severe cases of alcoholic neuritis of the limbs the oculo motor nerves escaped. It did, however, very rarely happen that the nerves supplying the eye muscles were so affected. He had not found electricity of any use in the diagnosis of these cases of oculo-motor paralysis.

THE EDUCATION OF HIGH MYOPES.

By N. Bishop Harman, M.A., M.B.Cantab., F.R.C.S.Eng.,
Assistant Ophthalmic Surgeon, West London Hospital; Oculist, London County Council Blind Schools.

The educational treatment of children who suffer from a high degree of myopia, or of a moderate degree when there is evidence of a rapid progress of the disease, is one of considerable difficulty. Until now we have had to be content with mere negative propositions. The ophthalmic surgeon was wont to tell the parents and teachers that the child must not do this or that kind of work, or in the worst cases the parents were told that the child must not go to school.

Negative propositions are always difficult guides of life. It is all very well to be told "Thou shalt not," but it is infinitely better for the seeker after truth or guidance if he can be helped to know what thing he should do. A definite proposition is one that can be fairly tackled; there is a clear aim in view which is an incentive to endeavour whether or no attainment be reached.

So, in the case of myopic children, parents and teachers are scarcely helped by our "must nots." It is no kindness to the child to cut it off from school life, for though we may look with no kindly eye on our own school curriculum, and remember only too well the burden of the cast iron Latinism which marked the average public school, we ought not fail to recognize that school life and the school curriculum has made immense progress in the last dozen years, and particularly is this true of the elementary schools. We may think in our ignorance that in freeing the child from school we are doing him a good turn. This, in my experience of modern schools, which is fairly extensive, is not true; school life to-day is a pleasure to the child, whilst the loss to him of future good which a decent training can give is incalculable. The negative proposition of "no school" is therefore not good practice.

Next in order for criticism comes the direction "no reading." This direction to parents or guardians is all very well, they may try to carry out the injunction faithfully. But it is quite another matter for the child; an injunction to a parent, and conveyed, let us say daily, to the child, does not necessarily bind him. If he can read, he will read; the difficulty of distant vision, and the degree of loss of free action in play which this entails, tend to direct his attention to pleasures that can be enjoyed alone; and of these reading is the chief, so read he will, though it be in secret, and he will acquire habits of poring over books in dimly-lighted, out-of-the-way corners, where he may escape the attention of his guardians. The second negative injunction of "no reading" is, then, nullified.

These two negative propositions are fair samples of how we do not advantageously control the life of the myopic child.

In the next few paragraphs I will describe an attempt which we are now making in the London County Council schools to solve this difficult problem. Formerly myopic children who were inhibited by their medical advisers from attending ordinary schools were drafted into the blind schools, where the official regulations of the Board of Education required that they should be taught the full curriculum of the blind, including the learning of Braille type. The absurdity of this course must be apparent to every one. In the first place, the children were taught at great labour reading and writing in a script which they were never likely to use once they were free of school. Secondly, because at every opportunity the children were found to bow down their heads and read the embossed type with their eyes, with the result that they learned the bad habit of poring over objects under the very worst conditions. Thirdly, there was a particularly bad effect of this training in a blind school which arose as soon as the Employers' Liability Act came into full force. Employers

are wont to ask prospective employees at what school they have been trained, and mention of a blind school effectively spoiled the chances of these youths at the outset of their careers.

For the past two years we have been experimenting with a new educational scheme for these children. "Myope classes" have been instituted. Into these are drafted such children as are too short-sighted to be educated in ordinary elementary schools and yet are too well sighted for blind schools. For the most part these children are myopes; but there is a sprinkling of children with damaged eyes from interstitial keratitis, phlyctenular keratitis, ophthalmia neonatorum, or purulent conjunctivitis of later years, and some with defective vision from congenital cataract. In all cases where vision can be improved by the use of glasses, glasses are worn; myopes wear a full correction or the fullest their medical advisers

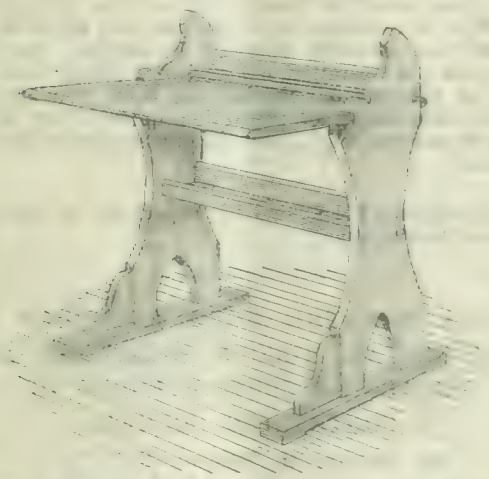


Fig. 1.—Harman's myope desk, in use as table for handicraft.

will allow. The point of view that guides selection of children for this new mode of training is the future prospects of their vision—Will they or will they not be likely ultimately to become blind or nearly blind? If there is a possibility of ultimate blindness they are entered for the blind school; if there is a prospect that they will retain useful vision in later life they are entered for the myope class.

The curriculum of the myope class is arranged under three heads—oral teaching, handicraft, literary work. So much as is possible of mental training is given orally in the ordinary school with their normally sighted mates. The myopic children listen to lessons in history, geography, and nature studies, join in the drill, dancing, and so forth, with the normal-sighted. But the use of class books is forbidden; they are trained to listen and think of what is taught.

The rest of the training is undertaken in their own special class-rooms, which for present convenience and on account of staffing are in a blind school, but in the future and with the growth of these classes they may become independent units.

For the teaching in these special classes two appliances are necessary—tables for handicraft and blackboards for literary work. At first attempts were made to use the ordinary desk furniture of the school, supplemented by a supply of blackboards affixed all round the available wall space, but this was scarcely satisfactory. Now a desk designed specially for this purpose by myself is coming into use. One of these, by the courtesy of Messrs. Hammer, of London, W.C., I show you to-day. This new desk provides the two requirements in one piece; there is a good-sized table for handiwork, which when it is turned up away from the child becomes a large blackboard.

The description of the class furniture gives the clue to the kind of work done in the class. Every sort of educational handiwork, anything upon which a lesson of thoughtfulness and order can be hung, any device of an instructional nature the teachers can bring into usefulness, is taught. Modelling, matmaking, beadwork, simple carpentry, every kind of work which requires a minimum of inspection and a maximum of feeling, is used.

The literary work comes last. In these days some knowledge of the ordinary means of communication is essential to every one; to this end we teach reading and writing and such ciphering as needs script, but as little as possible is taught, for we do not wish to cultivate the desire for literature, and this little is taught in such a manner as will, we believe, inculcate habits of care which may become second nature to the child.

All the reading and writing is done with the use of the blackboards. Copies are set by the teacher in bold thick-lined letters, or with older children subjects are dictated. The child writes free-arm fashion in large characters, each upon his own blackboard.

It is evident that such a scheme of education necessitates a high degree of intelligence—or may I say of common sense?—on the part of the teachers, and, indeed, the teachers have to be taught first. But in our experience the teachers



Fig. 2.—Harman's myope desk, in use as blackboard for literary work.

have taken up the new scheme of work with thoughtfulness and enthusiasm.

Some of our requirements for these classes are not yet supplied. We want a library of large printed books, or rather scrolls, such as can be hung up in the sight of all the children of a class, and printed in letters of such a size that a child with, say, $\frac{6}{24}$ vision can read with ease at the distance of 2 or 3 metres.

These classes are at present in an experimental stage, but they bid fair to fulfil their intention, and we hope it will not be long before several other similar schools are in working order, for the waiting list of candidates is large

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THE OPERATIVE TREATMENT OF HIGH MYOPIA.*

By A. Hugh Thompson, M.D., B.C.Cantab.,
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[Abstract.]

Degree of Myopia suitable for Operation.—The average change of refraction after removal of the lens for high myopia may be represented by the formula $\frac{M}{2}+10.5$, where M represents the degree of myopia before operation. The number 10.5 is an average derived from 22 cases, and in any individual case may be as low as 9 or as high as 13. The degree of myopia which is most likely to be charged into emmetropia is therefore −21 D. The divergence from emmetropia, however, which may be expected to result from needling a myope of, say, −16 D. is not the difference between 16 and 21 or +5 D., but only half it is, or +2.5 D. On the whole, we may regard −16 D. as a reasonable limit, higher than which it is justifiable to operate in young patients in cases otherwise suitable.

Age.—Any age up to 25 is suitable where the degree of myopia and other conditions favour an operation. In

* The full text of this paper will appear in the *Ophthalmic Review* for November.

older patients there are more likely to be difficulties from (1) retinal and choroidal complications and (2) increasing hardness of the lens nucleus, rendering absorption after needling difficult.

Growth in the Long Axis of the Eyeball after Operation.—In seven of my cases I have been able to make a comparison between the rate of growth in the long axis of the eye operated on and that in the long axis of the fellow eye. On the average, the tendency, if it exists, does not appear to be affected one way or the other, though its effect on the refraction expressed in dioptres is only about half in the case of the aphakic eye to what it is in the intact one.

State of the Fundus.—Choroidal atrophy beyond the ordinary crescent, macular degeneration or vitreous opacities are all contraindications to an operation. On the other hand, when we operate on an eye free from any of these changes, the chance of their occurring in the future is not affected one way or the other.

Condition of the Second Eye.—The most suitable cases for operation are those in which the second eye is myopic to a less extent than the eye to be operated on. When it is emmetropic there is nothing to be gained by operating on the myopic eye. When, on the other hand, the second eye is seriously diseased, the risk of both eyes behaving in the same way is so great that operation is contraindicated.

Operative Procedures.—There are three possible methods of operating: (1) By repeated small needlings. This method is tedious, as the number of needlings may have to be considerable. (2) By one free needling, followed in from three to ten days by artificial evacuation of the lens matter, and in many cases by a final needling of the posterior capsule. This is the method which I have adopted in most of my cases. In 5 out of 20 eyes operated on I had to repeat the primary needling. In 4 I have been able to dispense with artificial evacuation, but in 3 others that procedure had to be repeated. In 2 cases there have been adhesion of the lens matter to the corneal scar, and these have required division. In 8 cases a posterior capsule had to be divided before the patient saw well, and in 4 others, after remaining transparent for a year or more, the posterior capsule or a membrane in the position of one had to be divided at a later period. Altogether 65 operations were performed on 20 eyes, or an average of 3·25 per eye. (3) The third method is linear extraction of the lens without a needling at all. The objection to this is the danger of vitreous prolapse. I have only performed this in one case, where, the lens being dislocated, efficient needling was impracticable.

Visual Results.—Of 20 eyes operated on, distant vision was improved in 17 cases, and in 10 cases it was better without any glass than what it had previously been with a correcting glass. Of the remaining 3, one was a failure owing to a thick cyclitic membrane, a second was a complete success for five years, but then developed cyclitis with "K.P." and diminished field—probably a case of detached retina—while the third had a macular haemorrhage eight months after operation, after which, however, the eye so far recovered as to see $\frac{1}{5}$. With regard to near vision, in 5 cases the operated eye was used for all purposes with or without a glass, while in 8 the patient preferred to use the unoperated eye for near vision.

Operating on the Second Eye.—It is doubtful if operation on the second eye should ever be done; in any case it should not take place until the lapse of two years after the first operation. If the first eye has done well, the further improvement to be gained can only be relatively slight. If it has done badly, it is *prima facie* evidence that the risk attending operation on the second eye is greater than usual.

Possible Causes of Failure.—Failure may occur (1) as the direct result of the operation, owing to either infection, secondary glaucoma or cyclitis; (2) from causes unconnected with the operation—for example, macular degeneration, choroiditis, or haemorrhage; (3) from detachment of the retina. Some of the cases of detachment would have occurred quite independently of the operation; others probably would not. Previously published cases show a great preponderance of detachments occurring in the first year after operation, and for this preponderance the operation may be held responsible. In a large proportion of cases with detached retina the presence of vitreous opacities before operation has been noted. In a further large proportion a loss of vitreous at the operation has been recorded. These facts ought to make us careful to choose only cases with healthy fundi for operation, and in our operative procedures to take every precaution against a loss of vitreous.

DISCUSSION.

Mr. Charles Wray (London) said he found that recent statistics confirmed results he published some years ago, that the removal of the lens did not stop the progress of the myopia. He thought the operation seriously increased the risks of blindness, and cited three cases of young subjects whom he had recently seen quite blind.

Mr. Hill Griffith (Manchester) said he had operated upon 40 to 50 cases, and in no case had the eye been lost. He did free needling followed by suction. He never attempted the operation unless No. 1 Jaeger test type could be deciphered. He did not think the operation induced detachment of the retina unless acute cyclitis followed, and this might occur in any extraction, infantile or senile.

Major Gidney, I.M.S., said his experience of the operation was satisfactory.

A PLEA FOR THE MORE EXTENDED USE OF BUCCAL MUCOUS MEMBRANE IN ENLARGING CERTAIN FORMS OF CONTRACTED SOCKET.

By Arthur H. Benson, F.R.C.S.I.,
Surgeon, Royal Victoria Eye and Ear Hospital, Dublin.

There are few more unsatisfactory jobs that one can be asked to perform than the enlargement of a contracted socket, so as to enable it to hold an artificial eye, and so improve the personal appearance of the wearer.

Numerous, and at times terrific, have been the attempts made and advocated for the purpose, and in some instances the results, though surgical triumphs, have proved cosmetic failures.

I need not detail the heroic methods of Grünert, or the more moderate ones of May and Hotz, Weeks, Gullstrand, and the rest, nor yet the ingenious and admirable operation devised by my friend and colleague, Dr. Maxwell. I only wish to enter a plea for the more extended use of mucous membrane in place of skin or epithelial flaps in the plastic operations on the contracted socket.

Of course I am aware that the particular form of operation that suits one case will not be at all suitable to the next, and that each patient must be treated according to the individual requirements of that particular case. And, further, that this fact accounts for the large variety of operations advocated.

A method of operating which I have found useful in a good many cases—modifying it in each instance to suit the requirements of the individual—is something as follows: The floor of the shallow socket is split longitudinally from canthus to canthus. The conjunctiva is dissected down as far as possible towards the lower lid border, and by incision or excision any fibrous bands that are found are removed, and the socket deepened as required. The free margin of the conjunctiva that has been dissected down is now sutured in such a way as to cover as much of the raw surface of the lid as possible. The sutures, with two needles, are passed through the thickness of the lid from within, and are brought out on the superficial (skin) surface, and tied over glass beads. The same thing, if required, is done to the upper lid. It will then be seen what amount of raw surface remains to be covered with mucous membrane.

A large sized Snellen's or Knapp's clamp is next applied to the lip, and a piece of mucous membrane of the required size and shape dissected off. This is sutured in four or five places to the raw edge of the conjunctiva, and the socket is packed with small pellets (the size of a pea) of

cotton wadding impregnated with xeroform. These assist very materially in keeping the transplanted flap in close apposition to the raw surface which it is intended to cover.

The whole socket must be firmly packed with these pellets in every crevice, so that the lids are stretched over the packing. A bandage is used to keep the lids firmly closed. In two or three days the transplanted membrane has become revitalized and adherent in its new bed. The dressing pellets may now be removed and the flap inspected. If all is well, a leaden plate, cut and moulded to suit the requirements of the case, is introduced, and the lids again closed and bandaged. The plate should be as large as possible. A larger plate can often be put in the next day or two, and the glass eye can be used in a week or ten days. If it is preferred, a glass shell can be used from the first, but I prefer the leaden plate.

Various modifications of this procedure may be required. In some cases it is better to leave an island of conjunctiva in the centre of the socket, and make two separate encircling incisions before dissecting up the conjunctiva. In this case, of course, two flaps of mucous membrane must be transplanted. If there is difficulty in obtaining a flap of mucous membrane large enough to cover the raw surface, flaps may be sutured together and applied as one. Again, a deep incision—almost to the external skin—may be made below, and a mucous flap transplanted, and sutured to its lips. A pocket, lined by mucous membrane, is made by passing two or three sutures (with two needles to each suture) from within, and tying them on the skin surface over beads or tubing. Or a well-cut leaden plate may be inserted into the pocket and the lids closed and bandaged. Or the sutures and the lead plate may both be used together. This obtains a mucous-lined pocket something like the skin-lined pocket aimed at by Maxwell, but it avoids altogether any external incision, and any disfigurement from scars, or from the loss of skin. The lids may, if necessary, be sutured together, but this is not always needed. Again, Doyne's sutures may, later on, be employed with advantage in some cases.

Mucous membrane has many advantages over other coverings for a socket. It is much less bulky than skin. It can, without injury, be put on the stretch and dragged into the required shape in a way that skin or a Thiersch flap would not stand. It is very easily manipulated, and is possessed of great vitality, so that sloughing of any part of it is by no means common. It is capable of very rapid revitalization, and so seems to be little provocative of cicatricial contraction under it. Being mucous membrane it becomes at once accustomed to its new surroundings, and having been used to the pressure of the teeth it feels little resentment when a leaden plate or a glass eye is placed in contact with it.

It is, of course, essential that any piece of transplanted membrane should be kept in close apposition to the raw surface to which it has been transplanted, therefore the careful packing of the socket with the pellets is most important. There is no necessity for any elaborate arrangement of warm dishes to hold the mucous membrane when dissected off the lip. The heat of the operator's hand is quite sufficient. Even in winter I usually just lay it on my left hand while I am snipping off all the submucous fat, etc.

If two flaps are required, it is a good plan to partially dissect up *both*, before completely separating *either*, from the lip. This shortens the time of total separation; but, as a matter of fact, buccal mucous membrane will stand a lot more pulling about than skin will. Mucous membrane does not shrink in anything like the same degree that skin does, and also, being thinner, much smaller flaps suffice.

There is not the same tendency to late contraction and interstitial absorption as is found in skin. I should apologize for bringing forward such an old and tiresome subject, but my object is to draw attention to the value of buccal mucous membrane in plastic operations on the eyelids and socket. What I have said regarding its use in the socket is equally true for symblepharon.

In Ireland we see a large number of sockets contracted by reason of the shrinkage following granular ophthalmia, and it is on such that I have found much advantage from mucous membrane transplantation.

DISCUSSION ON THE MORE CHRONIC FORMS OF ANTERIOR UVEITIS.

OPENING PAPERS.

I.—W. T. Holmes Spicer, F R C.S.,
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[Abstract.]

Mr. Holmes Spicer, dealing with the extraocular manifestations, remarked that it was curious that the same subject had been dealt with by Professor Fuchs of Vienna at the last London meeting of the Association. He would exclude the evanescent type of episcleritis described by Fuchs, and also pustules beginning in the conjunctiva which were local affections, also gumma of the ciliary region spreading externally. That left him scleritis and episcleritis. Textbooks distinguish between episcleritis and scleritis. There was no essential difference between them, save the variation in incidence with the time of life and the severity of the inflammation.

So far as their connexion with uveitis was concerned, that depended upon the depth and intensity of the inflammation. He found two types of scleral nodules—one hard and raised, which on incision proved to be mostly solid, though occasionally a bead of pus was found within. The second type presented a boggy, undermined condition; the surface was blue, soft, and yielding. Some cases began as a vesicular eruption. Considering sex and age incidence, he gave figures from 55 cases. Of these, 15, or 28 per cent., were in males; 40, or 72 per cent., females. The difference was striking.

As to the liability of the eyes to inflammation, the right appeared most frequently affected, but he thought there was little in the observation. The decades of maximum incidence proved to be between 20 and 40 years, but in considering this it had to be borne in mind that the duration of the cases was long—it might extend to fifteen years. The features of corneal invasion were of interest. He noted the occurrence of crescentic areas of infiltration separated from the patch of scleritis by a band of clear cornea; these crescents had their concavity towards the limbus. When there were frequent attacks of scleritis in different parts of the eye, a complete ring of these small crescents might result, simulating arcus senilis. He thought they were due to obstructed lymph circulation in the cornea. He had observed similar crescents capping fascicular ulcers. The invasion of the inner parts of the eye was due to extension of the poison. Cyclitis, iritis, and opacities of the cornea were evidence of the severity of the inflammation. Coming to etiology, he found evidence of rheumatism in 24 cases, and a definite absence of it in 26. Indigestion and constipation and pyorrhoea alveolaris were exceedingly common in the affected, but were these not common in most hospital patients of this age and sex?

The preponderance of females suggested the possibility of disease peculiar to female organs; but the most careful examination of many cases brought no evidence of this. The most certain thing was that the subjects were young women of sedentary habits—milliners, dressmakers, and the like. Dealing with pathological features, sections of nodules showed no evidence of tubercle; cultures were most often sterile. In one where the *Staphylococcus aureus* was isolated a vaccine was prepared, but it proved useless. Von Pirquet's reaction was tried four times; two were positive and two negative. In the positive cases tuberculous injections were made; both recovered, though no striking changes in the scleritis appeared after the injections. Three cases were examined for syphilis by the Wassermann test, and all were negative.

As regards treatment: He had excised nodules in nine cases with varying results; on the whole he thought well of it. He suggested incising the patch and touching it with carbolic acid. Injections of mercury cyanide had proved useless. Iridectomy had been done for secondary causes; in one case the scleritis recurred four months later; in another not for several years. Hot vapour baths were very good during attacks, but did not prevent recurrence. It was too early to estimate the value of ionization; he found the reaction severe. It tended to

increase the severity of the attack, but one case appeared to be improved. He was inclined to consider it too painful. Salicylic ionization seemed much more pleasant. In his opinion the disease was toxic, that is, not due to a local organism; and he based his opinion upon the absence of organisms in the nodules. He thought it was a local thrombosis, something like a chilblain, not that it was a cold weather disease or that warmth was a great factor in relief. It was a toxic thrombosis, and possibly the manifestation of tubercle in other parts of the body; yet it was not limited to tubercle. At present they had no means of distinguishing these toxins.

II.—Stephen Mayou, F.R.C.S.,

Senior Assistant Surgeon, Central London Ophthalmic Hospital.

It would be impossible to discuss the whole of such a large subject in the time given to it at this meeting. I therefore propose to confine my remarks mainly to the bacteriological aspect of chronic cyclitis. During the last five years I have had some 38 cases under my care, upon which these observations are mainly based. During the first two years the late Mr. Hancock gave me his valuable assistance in this investigation, some of the results of which have already been published in the *Ophthalmoscope*. There are many deficiencies in the proof of some of the suggestions put forward in this paper, and if some of the statements appear dogmatic I would plead in excuse that it is with the idea of raising discussion.

It is only within the last few years that any attempt has been made to arrive at a scientific diagnosis of the cause of chronic uveitis. Indeed before this time syphilis, and occasionally tubercle, were the ascribed causes, and such cases were treated empirically on their clinical manifestations. I hope to be able to show that some pyogenic organisms may also cause a non-suppurative inflammation of the uveal tract, and can be obtained in the aqueous in those cases. A number of biochemical and tissue reactions have been comparatively recently introduced which assist in the diagnosis. The use of vaccines associated with repeated paracentesis have, I think, made an advance in the treatment of this most intractable disease.

The Nature of the Infection.

Although it is possible that many organisms may be the cause of chronic uveitis, as far as my investigations go there seem to be three chief causes—namely, infection by the tubercle bacillus, staphylococcus, and the *Spirochaeta pallida*. Out of 30 cases in which there was good evidence of the cause, 15 were tuberculous, 10 staphylococcal, and 5 syphilitic.

Apart from external wounds in the globe, infection of the uveal tract must take place via the blood stream, and it necessarily follows that there must be some focus of infection elsewhere in the body from which the ocular affection arises.

The above organisms causing the uveitis have all been demonstrated in the aqueous by different observers. There is no evidence that a toxin alone circulating in the blood can cause inflammation of the uveal tract.

In the tuberculous cases under my care the primary foci were most frequently either in the lung, glands in the neck, or mediastinum. In all the cases there was little evidence of activity in these lesions, which in nearly every instance was a small one.

The staphylococcal lesions which gave rise to ocular affections were usually chronic ones, such as pyorrhoea alveolaris, boils, and leucorrhoea. In a few cases no primary lesion could be found, and in these cases the intestinal tract may have been the source of the infection, or, as is more probable, the original lesion had disappeared, leaving only the ocular manifestations.

Chronic middle-ear disease has been recorded in some instances, but the latter more usually gives rise to a suppurative inflammation, for the reason I shall point out. Although the staphylococcal form of the disease is really of the nature of a very chronic pyaemia, as yet no attempts have been made to demonstrate the organisms in the blood; although the organism has been found in the blood of patients suffering from the associated lesions, such as boils, pyorrhoea alveolaris, which probably accounts for the toxaemic cachexia which so frequently accompanies these diseases.

All my cases of septic origin occurred in females. Whether this is merely coincidence I am not prepared to state, but I think the disease is more prevalent in women.

The probable reason why the primary lesion is of a suppurative nature and the cyclitis non-suppurative is that the organisms become decreased in virulence from their contact with the blood serum, and also to the fact that the organisms are probably free in the blood and are not contained in an embolism or blood clot, and therefore only comparatively few lodge in any individual part of the uveal tract. In contradistinction to this is the cyclitis associated with mastoid suppuration, which is always suppurative; the jugular vein being plugged by a mass of infected blood clot, a portion is carried to the eye by the blood stream, and there forms a local focus containing a large number of virulent organisms which have not first come in direct contact with the blood serum.

Endogenous infections of the more chronic type involving the uveal tract, more especially tubercle, frequently affect both eyes. This seems to be due to the selective action of bacteria to grow more readily on the same soil as that on which they were originally cultivated. Thus, in the case of the tubercle bacillus, it is well known that it will pick out all the joints of the body; so in the same way it may affect both eyes. If, therefore, an eye has become disorganized by tubercle it ought to be removed, as it is a danger to the other eye. Going a step further, if we regard sympathetic cyclitis as being due to a septic infection of the exciting eye, it may be inferred that a chronic pyaemia is set up which causes an infection of the other eye through the blood stream without producing other infective lesions, as the organism has no suitable similar soil on which to grow.

The Intraocular Manifestations.

I do not propose to go into the clinical and histological changes in cyclitis which are so well known, but rather to touch a few special points.

Keratitis punctata consists of the round cell exudation which accompanies all chronic inflammation, being deposited on the back of the cornea. It may be derived from any part of the uveal tract, even from lesion of the choroid near the posterior pole of the globe, the cells making their way forward through the vitreous and suspensory ligament into the anterior chamber. The size of the deposits varies somewhat with the variety of the infection.

In staphylococcal and syphilitic cases it usually consists of a cloud of fine dots which may cover the whole of the back of the cornea, whilst in tubercle the cells tend to collect in large masses which are known as "mutton fat K.P." This does not depend on the amount of exudate, since it may be greater in staphylococcal lesions, but I think is probably due to the agglutination of the cells owing to variety of agglutinin body present in the aqueous.

Interstitial Keratitis.—All forms of cyclitis, especially in their subacute stage, may be accompanied by an opacity in the deeper layers of the cornea. In tuberculous cyclitis the opacity consists of localized nodules of round-celled infiltration in the deeper layers of the cornea. In syphilis an interstitial keratitis may result. In staphylococcal cyclitis a condition known as keratitis profunda may arise; in the latter condition the round cell infiltration is not so large in amount, but more fluid is effused, often giving rise to wrinkling of Descemet's membrane. Descemet's membrane being impervious to organisms it is probable, at any rate in the early stages, that the corneal infiltration is due to the diffusion of the toxins in the aqueous into it; in the case of syphilis this has been proved by the injection of an emulsion from a primary chancre into the anterior chamber, which causes an interstitial opacity; in the case of tubercle, and probably also of syphilis, secondary invasion by the organism may take place from the limbus.

The changes in the iris are essentially those of atrophy following the vascular sclerosis secondary to the inflammation. There is discoloration due to the loss of pigment of the stroma; this I have been able to verify in a piece of iris removed by iridectomy in a case in which extraction of a cataract was performed. In two cases of subacute cyclitis with a quantity of fine K.P. and keratitis profunda,

in which the staphylococcus was found in the aqueous, localized patches of complete atrophy took place in the iris stroma near its root. It is possible that these may have been the seat of the infection.

The cause of the lenticular opacity, as has been pointed out by Mr. E. T. Collins, is probably due to the action of the toxin on the cells lining the lens capsule, causing their death, which allows osmosis of the aqueous to take place into the lens, so that it becomes opaque.

The manifestations in the choroid are of two types: They may be entirely limited to the anterior part of the choroid and are then due to the direct spread of the disease backwards from the ciliary body, or isolated patches may occur near the disc, which must be regarded as separate foci of the disease. The latter are of interest in that they may be of help in the diagnosis. Taken as a general rule, there is less pigmentation in the tuberculous form than in the syphilitic or septic forms.

In two cases where the staphylococcus was found in the aqueous, in one of which the Wassermann reaction was tried and found negative, there was intense pigmentation in the fundus similar to that found in syphilitic cases, except that the patches were localized and not scattered all over the fundus, as is more common in the latter disease.

Two cases of tuberculous origin, and one of staphylococcal, in which nodules were present in the choroid near the disc, and which were under observation for two, three, and five years, exhibited from time to time a change which is probably more frequent than is usually recognized. The patches, after they had become quiescent from the original attack, showed an atrophy of the chorio-capillaris, allowing the large vessels in the choroid to be easily seen; their visual acuity was normal. These patients were subject to attacks of misty vision, and, when examined, the patches were seen as white areas, probably due to subretinal oedema. When this disappeared, the vision became restored. One of these patients had as many as ten attacks, but the size of the atrophic patch did not increase or the vision diminish. Presumably this oedematous change was due to some local vascular sclerosis following the inflammation rather than a recrudescence of the disease.

The Variations in the Tension of the Eye.

There is little doubt that in some cases the albuminous nature of the aqueous inhibits its filtration from the angle of the anterior chamber, and it becomes deepened, and the tension raised. But in some cases, especially in sympathetic cyclitis, the anterior chamber is shallow, and the angle of the chamber occluded. In these cases the alteration in the vitreous seems to play an important part. As a general rule, eyes submitted to histological examination are fixed in formalin, which does not coagulate the vitreous. Recently I have been fixing eyes, where it was desired to examine the vitreous, by boiling, which coagulates the vitreous. In two exciting eyes of sympathetic cyclitis, in which the tension was raised, the vitreous was found to consist of a dense albuminous coagulum. Probably as a result of the alteration in the osmosis through the hyaloid membrane and the increased absorption of water by the albuminous vitreous the lens and iris had been pushed forward, the latter blocking the angle of the anterior chamber.

Atrophy of the ciliary body has always seemed an inadequate explanation of the diminution of tension in the eye. I have only had the opportunity of examining one case of very chronic tuberculous cyclitis in which the tension of the eye was low and yet the eye not disorganized. In this case, although the retina was for the most part in its normal position, the hyaloid had shrunken into a clear membrane behind the lens; the vitreous having been absorbed, the space between the hyaloid and the retina was occupied by a clear comparatively non-albuminous fluid. It may prove on further investigation that in many instances the so-called fluid vitreous, which so frequently accompanies these cases, may not be vitreous at all, but merely fluid between the shrunken vitreous and retina. It is easy to see that the tension in such an eye can be readily disturbed, and is dependent on whether more or less fluid is absorbed by the retinal lymphatics, and the cause of retinal detachment which may take place.

The Means of Diagnosis.

The clinical appearance of the eye is of extreme importance in making the diagnosis. In tubercle the mutton-fat K.P. and the presence of nodules on the iris, perhaps associated with tuberculous lesions elsewhere, is almost diagnostic. On the other hand, where the cornea is covered with fine K.P., with, perhaps, some deep infiltration of the cornea (keratitis profunda) associated with pyorrhoea alveolaris, a staphylococcal lesion must be suspected. Iritic adhesions may be present in all forms of the disease, although they seem less common in the staphylococcal form.

Vitreous opacity is not nearly so dense in the tuberculous form, and may be absent. It is always present in the syphilitic and staphylococcal forms of the disease, especially in the latter. There are a number of cases of cyclitis which, when they present themselves for examination, it is impossible to say from the clinical appearance whether the infection be tuberculous, septic, or syphilitic in origin. In these cases reliance must be placed on various tests.

The first group of these is to determine the presence of the organism within the body. The value of these is principally by a negative reaction to exclude the disease. Thus von Pirquet's reaction for tubercle is given so frequently in apparently healthy people as to make its utility doubtful. Since its introduction this reaction was tried in most of my cases, but two of the cases which yielded this reaction proved subsequently to be staphylococcal in origin.

The Wassermann reaction has only comparatively recently been introduced, and as yet personally I have not had sufficient experience to justify any statement as to its value in the diagnosis of syphilis in cyclitis. I have used it in the later cases to exclude syphilis. The early cases were first submitted to a course of iodide with the idea of excluding this disease. The local reaction of the eye following the injection of the toxin into the blood is a most valuable means of diagnosis. The reaction usually shows itself about forty-eight hours after inoculation by increased ciliary injection, K.P., and vitreous opacity. These generally render themselves obvious to the patient by a slight impairment of vision. If active choroidal mischief is present in the fundus the patches show increased oedema. These changes are usually produced after the first injection if the dose given be sufficiently large, but occasionally they do not make their appearance till the second injection. The dose required to produce the reaction is nearly a full one. Such is administered in treatment—for example, tuberculin T.R., $\frac{1}{1000}$ mg.: staphylococcus, 1,000 millions.

The bacteriological examination of the aqueous is the only means by which absolute proof of the nature of the organisms can be obtained. Probably owing to the scarcity of the organisms, personally I have never been able to find organisms in smear preparations of the aqueous, even after centrifugalization, although cases have been reported in which the tubercle bacillus has been found. The inoculation of the aqueous into animals from a case of tuberculous cyclitis has been followed by positive results. The aqueous in tuberculous cases will also yield the Bordet reaction. In septic cases the method which I have adopted is to inoculate the aqueous on to agar or blood serum. It is obvious that the question of contamination from the conjunctiva must be excluded.

The method adopted in the early cases was, after carefully cleansing the conjunctival sac by frequently irrigating it for three days, the anterior chamber was tapped with a keratome, and as the fluid escaped over its surface it was drawn into a sterile capillary pipette and the media inoculated therefrom. Although the risk of contamination is extremely small, to exclude all possibility of outside contamination in 3 cases a hollow needle with a spear-like point, as has been suggested by Mr. Bishop Harman, was used, the point of entry being first touched with the cautery. The fluid was withdrawn into a sterile syringe and inoculated on to the media. In all these cases the *Staphylococcus albus* grew on the media, and in one instance as many as twenty colonies were present, although, as a rule, there are not more than three or four. I do not adopt this method as a routine, as it is more dangerous than simple paracentesis; indeed, if the needle is not very sharp, and the blade sufficiently broad to make

an incision large enough to admit the shaft, great difficulty may be met with in its introduction, although personally I have had no accidents.

Treatment by Repeated Paracentesis and the Administration of Vaccines.

The routine which I generally adopt on seeing a patient with cyclitis of doubtful origin is to do a Wassermann reaction to exclude syphilis. Von Pirquet's reaction is then performed and if negative the anterior chamber is tapped and cultivation made. If the staphylococcus is found a vaccine is made and administered. If von Pirquet's reaction is positive a dose of tuberculin is given and the local reaction watched for. Mr. Hancock and myself in 1908 published a series of tuberculous cases, both of scleritis and cyclitis, treated by tuberculin T.R. and the beneficial results obtained by it. In the early cases the opsonic index was carefully watched, but I think it is unnecessary since the local reaction in the eye gives a more accurate guide to the effect of its administration and the dose can so be regulated. In patients who had no extensive tuberculous lesions elsewhere $\frac{1}{1000}$ mg. was first administered, and this gradually increased up to $\frac{1}{250}$. In patients who had other extensive tuberculous lesions $\frac{1}{5000}$ was administered, and this often cannot be increased as the local reaction produced is severe, probably owing to auto-inoculation. The vaccine is administered by hypodermic injection into the arm.

Of 15 cases so treated, in 12 the eye or eyes became quiescent, the K.P. disappeared. As some of the cases were more advanced than others, the amount of vision regained depended on the stage of the disease in which the patient sought treatment. In one of the cases in which both eyes were affected the disorganized eye was removed.

Three of the cases were not benefited by the treatment, although one showed an improvement for a short time. One of these was in a patient with buphthalmos, and another in a very debilitated woman. One child subsequently developed other multiple tuberculous lesions, but not till eighteen months after the eye had become quiescent and tuberculin treatment had been stopped.

The *rationale* of treating localized septic inflammatory conditions elsewhere in the body is to evacuate their contents, thereby getting rid of the organisms, toxins, etc., and also to allow the site of the lesion to be flooded with blood serum containing protective bodies. In treating cyclitis of septic origin I have tried to adopt these principally by performing repeated paracentesis of the anterior chamber, and combining it with the administration of vaccine, so as to raise the amount of protective bodies in the blood serum. After evacuation of the anterior chamber these bodies are found in the aqueous. An initial paracentesis is performed to obtain the organism with which to make the vaccine which is administered. Ten days later, when the opsonic index is at its height, another paracentesis is performed, which can be repeated after subsequent inoculation if desired. In 1903 I published a series of cases so treated. The good results have been fully maintained. Out of 10 cases, in 6 the K.P. cleared entirely, although in most a few vitreous opacities remained. In 2 cases one eye cleared, whilst in the other K.P. is still present, although the eye shows a marked improvement. In 2 a marked improvement as regards vision occurred, although the K.P. was still present when last seen. The cases seen in the early or subacute stages yield more readily to treatment, although in one case, in which the disease had existed for over two years, and the vision was reduced to $\frac{6}{60}$, it improved to $\frac{6}{6}$ in eight weeks. Old-standing cases, with marked hetrachromic, deep anterior chambers, and commencing lenticular opacities, improved very slightly under treatment. The K.P. occasionally disappears soon after the paracentesis, but may reform. Wrinkling of Descemet's membrane and slight infiltration of the deeper layers of the cornea may occur after the operation, but subsequently disappear.

In most of the cases a vaccine was prepared from the eye, but in some instances a mixed staphylococcal vaccine was used. Although the latter was efficient the former is more satisfactory; indeed, in one case in which the mixed vaccine was tried and was unsuccessful improvement took place when the patient's own organisms were administered. To summarize the result of the treatment, I should say the method is a distinct advance in treatment as yet far from perfect. In conclusion I have to thank my colleagues of the Central London Ophthalmic Hospital for their help and for allowing me to use some of the cases under their care.

DISCUSSION.

Mr. Arthur W. Ormond (Guy's Hospital) said the main difficulty in these cases lay in the etiology, and, therefore, in the treatment. Syphilis, acquired and chronic, gonorrhoea, rheumatism, tubercle, malaria, leprosy, dental caries, Bright's disease, were all well recognized causes, and many other septicaemic conditions might also be associated with irido-cyclitis, but there was a large number of cases in which the etiology was far from obvious. Maitland Ramsay, among others, had suggested that some of these cases were due to faulty metabolism, and no doubt a large number of cases of uveitis which had been attributed to gout and rheumatism were really due to impurities absorbed from the alimentary canal; probably the prevalence of these diseases at certain periods of the year might be the result of certain foodstuffs then in season. It was generally accepted, however, that irido-cyclitis was often the effect of the general infection of the blood by micro-organisms or toxins; this being the case it seemed rational to examine the blood for evidence of change. The speaker had recently had three cases of sympathetic ophthalmia under his care in Guy's Hospital, and Dr. Pryce Jones had examined the blood of these patients on several occasions. The very marked change which he found consisted in a tremendous increase in the percentage of mononuclear leucocytes. Ehrlich had given the percentage in normal blood as from 2 to 4 per cent., whereas in these cases it ranged from 16 to 20 per cent., which suggested a protozoal and not a bacillary infection. This was shown in the following table. In

Blood Examination of Three Cases of Sympathetic Ophthalmia.

	Lympho-cytes.	Mono-nuclear.	Poly-nuclear.	Eosin.	Mast.
	Per Cent	Per Cent	Per Cent.	Per Cent	Per Cent.
Normal (Ehrlich) ...	22-25	2-4	70-72	2-4	0 5
Case 1.					
February 7th, 1910 ...	33 5	20.2	40 8	4.2	1.2
February 9th, 1910 ...	21.6	20.5	52.6	4 6	0.5
February 28th, 1910	33.3	17 8	45.0	4.4	0.8
Case 2.					
March 15th, 1910 ...	21.6	17 3	57.3	3 3	0.3
March 17th, 1910 ...	43.6	17 3	35 0	3 3	0.6
April 7th, 1910 ...	35.0	13 6	46.0	4 3	1.0
Case 3.					
June 23rd, 1910 ...	21.0	16.0	58.3	4.0	0.6
July 12th, 1910 ...	32.0	7.0	58.3	2.0	0.0
July 18th, 1910 ...	43.3	6.3	47.0	2.3	1.0

In Case 3 between the first and the second examinations an iridectomy had been performed, and large doses of salicylate of soda given, and the patient's condition had very much improved.

sympathetic ophthalmia it was constantly noticed that the condition in the sympathizing eye at once improved when the exciting eye was removed. This improvement might, however, be only temporary; it at least suggested that the exciting eye had a direct and close influence upon the sympathizing eye. This point had lately been called in question by Mellor of Vienna, who, arguing from the existence of sympathetic ophthalmia in cases of intraocular sarcoma—that is, in cases where there was no possible traumatism in question—suggested that the infection might sometimes be endogenous and not exogenous, and that the organism producing sympathetic ophthalmia did not always reach the exciting eye through the perforating wound, but might sometimes do so through an abrasion of the skin or mucous membrane. No very satisfactory explanation had ever been offered to account for the sudden lighting up of sympathetic trouble in a case where there had been no sign of any active mischief for five, ten, or even more years, except that brought forward by Mr. Hutchinson—

namely, that the organisms were encapsuled, and so remained in the tissues in a harmless condition until something happened to disturb this encapsuled condition and they became active once again. To the speaker himself the theory of a fresh infection through skin or mucous membrane was more attractive than the idea of their encapsulation. The frequency with which the aqueous removed from a case of sympathetic ophthalmia was found sterile suggested that toxins were sometimes the actual irritant, and that the organism might be acting at some distance from the eye. With regard to treatment, he would strongly urge the claims of paracentesis and the irrigation of the anterior chamber with normal saline solution; he found this answer excellently in cases with increased tension, and where the iris and filtration angle were clogged with inflammatory débris. The condition was analogous to the formation of an abscess elsewhere in the body, and the same principle of treatment should be adopted—incise the abscess and evacuate the pus; the same idea held good in many cases of irido-cyclitis, and an instance of this he had recently had. A woman, about 50 years of age, had a dense deposit in the anterior chamber from irido-cyclitis, and also increased tension. She absolutely refused to allow any surgical interference whatever, and this deposit was watched gradually making its way through the cornea, which, after three months' time, had a large ulcer on its surface, through which the deposit was discharged; when this had cleared, the eye got quite well again, except, of course, some opacity in the cornea.

Dr. W. H. Brailey (Brighton) quoted a case of unioocular irido-cyclitis, which was probably due to the sting of an insect on the side of the nose. He commented on the difficulty in obtaining certain evidence of rheumatism, and the fallacies of statistics as indicative of the prevalence of any chronic disorder in males and females, owing to the fact that men did not trouble so much about these conditions.

Dr. R. A. Reeve (Toronto) commented upon a case of homolateral irido-cyclitis consequent on follicular tonsillitis. First one side of the throat was affected and the corresponding eye; later, the other side of the throat and the other eye. He had frequently noted correspondence of tonsillar affections with the eye inflammation.

Mr. Hill Griffith (Manchester) said that when using the cautery in cases of scleritis he had found pus in some of the nodules; he thought solid nodules were rare. Commenting on the peculiar corneal scars left in scleritis, he asked if they were analogous to the white corneal lines so frequently seen in dermoid of the limbus. In some cases the interval between the attack of the two eyes extended to many years. He noted that Mr. Mayou accepted the explanation of the occurrence of keratitis with solitary patches of choroiditis he had put forward some twenty-three years ago.

Dr. G. A. Berry (Edinburgh) said the proof of toxic origins of inflammation was much more difficult than the detection of the presence of organisms, and this should have some influence in their judgement of difficult cases. He thought that tuberculous irido-cyclitis had many features in common with sympathetic ophthalmia; the latter might almost be analogous to a malignant form of the former. As regards staphylococcal infections, he was strongly of the opinion that the soil in which these were found as apparently causal agents was prepared by tuberculous infections elsewhere. He agreed in the preponderance of cases in women, but he would put the percentage as high as 90 per cent.

Mr. N. Bishop Harman (London) said, with the aid of Dr. Bernstein, he had investigated a large number of eye cases by the Wassermann reaction. He was much impressed by its reliability. Citing the case of a large family, of which only two members remained, both these women suffered from forms of chronic uveitis. One had scleritis during twenty years, the other posterior inflammation. With the introduction of the test they were each examined twice, and gave a positive reaction. Another woman with granuloma of each iris and the "mutton-fat" variety of K.P. had been thought to be tuberculous, but the Wassermann reaction was positive, and mercurial treatment proved much more beneficial than tonics. It must be borne in mind that the test only signified a general taint; it did not prove that a particular lesion was syphilitic; for this the test must be standardized. His experience of paracentesis was most happy, and in this connexion it was of great interest to read the ancient experiences of Wardrop.

Dr. Cecil Shaw (Belfast) expressed his approval with Mr. Spicer's views that many of the cases of sclero-keratitis were toxic. He had been struck with the number of patients who seemed otherwise healthy, but who led sedentary lives without sufficient open-air exercise—for example, domestic servants. As regards foci of infection in uveal inflammation, he thought the nose should be carefully examined, as it was probably a frequent source of septic infection. Mr. Mayou had referred to boils as primary foci, but he thought both boils and the eye infections were secondary.

Mr. Holmes Spicer and Mr. Stephen Mayou replied.

DRAINAGE AFTER CATARACT OPERATIONS.

By G. H. Fink, M.R.C.S., L.S.A.,
Major, Indian Medical Service (ret.).

[Abridged.]

After speaking of the advantage of efficient drainage in surgery the author, speaking of cataract operations, said: We have to consider whether the drainage in the after-treatment and while at rest in bed is efficient; and whether we cannot produce more efficient drainage to advantage. These are two points of much importance which I will take up and endeavour to show the advantages which can be gained by the assistance of the patient as well as of the operator.

As a rule, the recumbent posture in bed with the head resting on a pillow is one of great importance for the operator to show the patient for the first twenty-four hours after the operation. Some prefer a high pillow, others a low one. What is required is a semi-recumbent position for the first few hours, for the simple reason that the processes of healing are occurring, and there is a certain amount of plastic material being thrown out from the blood, while there is a certain amount of lacrymation occurring to effect drainage.

Healing by first intention is what is aimed at with a perfect coaptation of the edges of the wound, and if posture is necessary to pay attention to in a broken limb, it is also necessary with an eye which is injured or operated on. I maintain that the semi-recumbent position for the first few hours aids Nature in the healing processes, while the complete dorsal decubitus has two grave disadvantages, (*a*) the nervous class of patient who lies flat on his or her back after the operation often has an over-rapid heart action when the blood is driven towards the great arteries and flows with a rapid flow which disturbs the repose of the circulation in the eye so necessary for healing; and if there happen to have been some accident during the operation, as sometimes does occur, then there is graver danger still of the non-union of the wound by first intention. (*b*) With the head thrown back on a low pillow, the stream of discharge flows towards the conjunctival sac under the upper lid; when this is full, the stream flows on either side towards the inner or outer canthus. It is better to prevent this overflow of the upper conjunctival sac, and to instruct your patient to lie on the side of the outer canthus where the flow gravitates and gets absorbed by the dressings and cannot be retained, and this position is what is necessary to adopt after the first few hours subsequent to the semi-recumbent position.

It is a curious fact that in India the patients who were anaemic, and whose eyes were operated on, not only had the wounds rapidly healed by first intention, but there was no redness of the conjunctiva or any indication of any complication of any kind after. The circulatory organs and the blood, therefore, have some influence in this kindly state of things, and it somewhat explains what I have stated above under (*a*) and (*b*). Within twenty-four

hours frequently the opposite sides of the linear incision have united.

The dressings usually employed in the toilet after cataract operations are the pad and bandage. I have used these in my cases which amount to over 1,000 by the eclectic method: and in India I have found the moistened pad better in the hot season, for it is cool, and it has another advantage, that it prevents the patient from trying to shift it, which, in a hot climate, is unconsciously done in some cases. In the cold season the dry pad and bandage is better in my opinion.

But in the majority of my cases I found the antiseptic plaster which I have employed, and which is described in my pamphlet on "The Methods of Operating for Cataract, etc.," most useful in patients in India. I feel that it has special claims to recommend it in the hot months particularly, and for the reasons I am about to adduce, for the majority of patients even in the cold season or winter.

1. It is most easily applied as an antiseptic and cool non-irritating dressing over the closed lids.

2. It prevents patients from trying to remove the dressing, which happens in some cases where the pad and bandage are used, and are either very uncomfortable and hot, or the patient and friends sometimes are anxious to know whether the eye is able to see. Such interference is rendered difficult by the plaster adhering to the skin firmly and is more troublesome to remove.

3. It does not prevent the application of the pad and bandage over the plaster, which, in some cases where escape of vitreous has occurred, may be necessary as an additional precaution.

4. It has two slits or openings at the inner and outer canthus to admit of drainage.

5. It acts like a splint to the eye.

With regard to (4)—that is, the slits for drainage—although this is fairly efficient, I think it is possible to improve in this part of the finishing toilet in our cases, and with greater advantage too, by the introduction of a small india-rubber drainage tube of fine calibre (either round or triangular) with about three to four small openings in the centre pointing upwards towards the linear incision. Such an india-rubber tubing can easily be borne between the upper and lower lids and along the tarsal margins. It in no way creates discomfort in any sense, and if placed as given in the diagram below, it not only permits

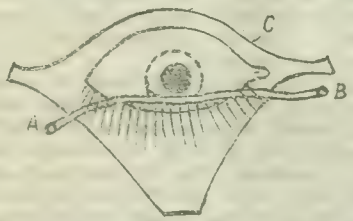


Fig. 1.—A and B, Exits of drainage tube inserted between upper and lower lids and slightly within the upper. C, Plaster over the closed eyelid and drainage tube.

of drainage but it also allows the introduction of a suitable antiseptic lotion gently syringed at the outer end of the india-rubber tube, which irrigates the whole of the surface of the wound and washes it out thoroughly, while the discharges are drained out at the inner canthus. This can be done most efficiently while the patient is lying down, and without removing any dressings which take up much of one's time.

It further admits of any particular medication necessary should there be pain within the twenty-four hours, without the necessity of removing the dressings.

We all know the value of an opiate in major operations at bedtime. It is the routine treatment after surgical operations of any consequence unless contraindicated, and is beneficial. Opium or morphine, in cases after cataract operations, is not administered, unless very exceptionally for particular reasons. The effect of this drug on the pupil is to cause contraction. Some operators use eserine drops after their operations for cataract, and it is doubtless necessary in certain cases where the pupil has been very much dilated, or there is danger of it being caught between the lips of the incision, creating a disfigurement later in the appearance, and, in some cases, also prevents healing by first intention. But, on the whole, a fairly dilated, not an over-dilated, pupil, after cataract extraction or expression, admits of better drainage within the first few hours should there have been any complication, or accident, or bruising of the iris while operating. The irrigation of the anterior chamber gently after cataract extraction has been found to be useful in its results, and I feel, therefore, that the introduction of efficient drainage in the manner mentioned and for the objects stated would promote cleanliness and thereby healing, besides proper medicament, if necessary, without disturbing your patient, by the india-rubber tube of fine calibre within the margins of the closed lids.

Very often the lids get firmly glued together with discharges, especially in a certain percentage of straightforward cases without any complication whatever, and also in a certain percentage of unfavourable cases. There is danger attending such a condition because the secretions and discharges get pent up within the delicate folds of the conjunctiva and prevent healing, besides causing a discomfort and pressure on the eyeball. By the introduction of the fine drainage tube with openings in the manner mentioned such a contingency is greatly averted, and adds to the patient's comfort as well as the operator's in case of any medication of the eye without disturbing the patient by removing the dressings.

It saves much time and labour, besides enabling the operator, if he wish, to examine the character of the discharge from the eye microscopically by syringing out the discharges very gently. This could be effected by inserting the nozzle of a glass syringe, and of the tube shown in the figure.

No special apparatus is necessary beyond the drainage tube of fine calibre and a glass syringe with a nozzle to fit into the drainage tube at A, and, by gentle syringing, irrigate the eye, driving the necessary antiseptic or medicament through the tube which passes through the openings in the centre of the tube, washes out the folds of conjunctiva and the globe of the eyeball, and returns through B. After the tube has been placed in position and held fast by the antiseptic plaster which is laid over the lids in the final stages of the dressing, the ends are passed through two slits in the plaster at the inner and outer canthus respectively, and the ends gently filled with a plug of antiseptic iodoform cotton-wool as a filter. This plug can be inserted with a fine silver probe, and removed when necessary for the purpose of syringing.

SCHOOL CLINICS.

By N. BISHOP HARMAN, M.A., M.B., B.C.Camb., F.R.C.S.Eng.

BEFORE the conclusion of the meetings of the Section, Mr. Bishop Harman brought forward a motion relating to the establishment of school clinics, which ran as follows:

> In view of the importance of obtaining continuity of treatment of defects of vision in school children throughout the period of education, and of proper co-ordination of medical inspection and treatment, it is the opinion of the Ophthalmological Section of the Association that the organization of school clinics is desirable.

In support of the motion, **Mr. Bishop Harman said**: The question of school clinics is at this moment a matter of agitation in municipal circles over the whole country, more acutely in some places than in others. In this, so far as it relates to party politics, we have no concern; but we are concerned with the treatment of the vision of school children in so far as it touches medical practice, the welfare of the child, and the by no means unimportant matter of scientific data concerning vision and the effect of school life thereon.

Since, as members of the British Medical Association, we are interested in economics, we shall not be content with any mode of dealing with this question that is not just between the man who does the work and the State that requires the work to be done. We should clearly set before us this fact, that the treatment of school children as members of a school is not charity but a public service, and as such is to be met by a just remuneration for service rendered, as is the service of the builder who repairs the fabric of the school building. This point need not be elaborated, but it should be borne in mind in any representation that we may make to the Council of our

Association, not that we need fear they are unmindful of it, but to strengthen their hands.

The second point is the economy of time; it is one that concerns us as hospital doctors, perhaps as school doctors, and all of us as citizens. At present much money is expended on medical inspection. This is good work; it is done so that public money spent on education shall not be wasted in inefficient children. So far as my experience goes—and it is a large one for London—the work is done well. But this work is waste of time, energy, and money unless it be promptly followed by efficient treatment.

In the past there have been attempts to turn the whole matter over to the hospitals. But the attempt has failed both because the hospitals were unable to meet this huge addition to their already heavy labours, and also because it was recognized that charities were not the places for fulfilling State requirements.

At the present time there are tentative arrangements being made to meet this necessity for treatment both by private and by public arrangement, and from both of these we are gaining experience. Public arrangements have been made in London and are now on trial. Certain hospitals have agreed to treat certain numbers of children for which capitation grants are made, and also certain grants for the payment of the hospital officers who do the work. Of these arrangements themselves nothing need be said, but the working of them may be examined. One immediate result of the scheme has been that many hospitals will no longer treat refraction cases in school children; they are refused with the intimation that special arrangements are made for their treatment. Parents, most of them poor, often very poor, lose time and wages in attempts to fulfil the demand that their children's defects should be remedied. The following example is no isolated instance of the hardship worked: A father receives a notification for the treatment of his child. He takes the child to a hospital; he is refused there, referred to the special school department; there he is not accepted because he has no voucher, so his visit is wasted; procuring a voucher from the school teacher, he makes a new visit to the appointed place, and then one, two, or perhaps three visits are required for treatment; then there is the business of getting glasses. At least four half days'—and in some trades that means whole days'—work are lost to father or mother, and the cost to the family in wages is out of all proportion to a consultant's fee of two guineas to the well-to-do.

There are a few school clinics already established in different parts of the country. Some are by private, others by public, arrangement. The convenience of their management is in great contrast to the cumbrousness of the hospital *plus* public authority scheme. In these districts children requiring treatment are visited by a specially appointed and paid doctor at their school or at some convenient centre. The work is done on the spot and the supply of glasses is arranged for.

One criticism of the utilization of hospitals—at least, so far as large towns are concerned—is that these institutions are situated in the centres of cities, often several together, and not in centres of population where the children live and go to school. The many difficulties of the hospital scheme and the simplicity of the school scheme are in such contrast that elaboration is not needed.

Lastly, by our present arrangements much of the value of our work to us as investigators is lost, and the loss extends to the schools. Much of the value of medical inspection and medical treatment of school children will accrue in a communal sense as distinct from the benefit to the individual child. We aim at preventive measures; we want to find out causes of defect or influences that increase existing defects. Were the treatment of these children done in some orderly fashion it would be possible to correlate the conditions of the vision of children with different modes of education, different modes of life, varying conditions of well-being, variations in parentage, each and all of which have been asserted to have important influences in the production or accentuation of visual defects which ultimately reduce the efficiency of our future citizens. At present we know nothing of these things except by the laborious efforts of private individuals in isolated regions, and without some system of co-ordination and arrangement, the allocation of places for treatment to given areas, and the continuity of treatment such as clinics would afford, this necessary knowledge is unattainable; so that consequently a great part of our work, possibly that which would prove most fruitful of benefit to the community, is dissipated. The opinion embodied in the resolution is the outcome of personal experiences and those of others familiar with similar work, and it remains to be seen whether it also commends itself to your collective experience.

The resolution was seconded by Mr. Walter Edmunds, and, after discussion, was passed with one dissentient, the whole number of members present being about 35.

SECTION OF PHYSIOLOGY.

Professor W. H. Thompson, M.D., Sc.D., President.

PRESIDENT'S INTRODUCTORY REMARKS.

PHYSIOLOGY AND SCHOOL EDUCATION.

After some preliminary observations, Professor Thompson said: Fifteen years have elapsed since the British Medical Association met last in London. The Section of Physiology was then presided over by Dr. David Ferrier, who took as the subject of his introductory remarks, "The Relations of Physiology and Medicine." In that short address, which might well be repeated to-day, Ferrier illustrated one of his points by reference to the investigations of Pavlov in St. Petersburg, which were then beginning to attract the attention of physiologists in this and other countries. Knowledge of that work is no longer confined to the ranks of physiologists. It is widely known throughout almost every branch of the medical profession. But I do not intend to dwell upon it at any length; I merely wish to refer to Pavlov's conception of the relation between Medicine and Biology. It is expressed as follows:

> In spite of the extraordinary complexity of biological processes when compared with other natural phenomena, in spite of the difficulty of bringing them under control by determining their proper causal relationships, medicine from the beginning has been destined by the inevitable ordinances of life to achieve mastery over biological things, and this even before such things became matters for scientific investigation.
>
> Moreover, medicine has, in large measure, fulfilled what was expected of her. Her task seemed endlessly large and hopelessly complex, but yet it is in no small part accomplished. From amongst the countless number of possible solutions of problems set to her she has fortunately arrived at many correct ones. This unexpected result has only been made possible by the co-operation of two conditions. These are, that man from the earliest times has constantly and passionately striven to maintain life and health; and, secondly, that in this search for health numerous individuals—indeed, I might say, all mankind—have taken part. (*The Work of the Digestive Glands*, Second English Edition, p. 243.)

To Pavlov's statement general assent will, I think, be accorded. Medicine has been driven into the study of biology, and, having learnt the solution of her difficulties, has emerged an altered science. In the early study of this subject she has discovered the rudiments of a new doctrine—that of the science of right living, of hygiene, of preventive medicine. Much the same thought was expressed a good deal earlier by Huxley in the following words:

> Natural knowledge in desiring to ascertain the laws of comfort has been driven to discover those of conduct and to lay the foundation stone of a new morality. (*Collected Essays*, vol. i, p. 31.)

It needs but little consideration to convince us that in these reflections of two eminent men we have a true conception of the evolution of scientific medicine as we know it to-day. Moreover, it has always been a fortunate circumstance for the spread of the new doctrine that the self-interest of man, "the passionate desire to maintain life and health," has secured their extensive adoption. The world at large has not had to wait for the special propagation of the new faith by those upon whose discoveries it has been founded. The laws of biological conduct—of health—are taken up in a general way and applied by mankind everywhere, step by step, as they become known.

Indeed, one of the features of modern progress in these matters is the great advance which has been made within the memory of all of us. Nor is the acquisition of this knowledge left altogether to chance. For more than half

a century means have been placed within the reach of a considerable proportion of the inhabitants, not alone of these islands, but of other civilized countries, to learn something of the new morality, as Huxley has called it. And even now a widespread awakening to the importance of knowing how best to conform to the laws of biology has set in. Nevertheless, I venture to question if the measures taken in this country to spread the truth are sufficient. In Ferrier's address, to which I have referred, the following sentence occurs:

> The inability to appreciate the value of a new truth is a measure of the depth of the individual's ignorance. (BRITISH MEDICAL JOURNAL, vol. ii, 1895.)

If we apply this touchstone to the majority of our fellow men outside the ranks of the medical profession, I think we shall be forced to admit that, notwithstanding all that has been done, there is still a widespread inability to appreciate the value of the laws of biology in their application to the well-being of man. And, if so, are we not called upon to insist that greater endeavours shall be made to remove it?

If we concede this latter point, the next question must be: How is our purpose to be effected? A little consideration will answer the question for us. Hitherto our hygienic efforts have been mainly directed to secure the welfare of communities, and have been due chiefly to the instigation of experts. The individual for whose benefit they have been instituted seldom understands their importance at first, more rarely affords intelligent co-operation, and too often resents their introduction. He has not been educated to appreciate the value of the new truth. In some respects this is not surprising. The science of physiology is comparatively young, and the field of general education has been occupied by older subjects. Nevertheless, we are much behind many other countries, and there appears to be only one way to make good these deficiencies — namely, through the medium of school education.

It is in preparing for this that I venture to think physiologists can be of most use. Teachers must, in the first place, be trained on sound lines, and by helping to do this we can ensure that the next generation, at all events, shall have a more competent knowledge of how to live healthily.

I do not forget that something has been done already, not alone in England and Scotland, but also in Ireland. Indeed, in the matter of preparing teachers for secondary schools Ireland is probably foremost of the three countries. But the work must not be allowed to stop at the training of teachers, nor should it be confined to the secondary schools. We cannot be satisfied till some knowledge of biology in its application to the maintenance of health becomes part of the education of every boy and girl in our elementary schools.

This is not the place, nor is the time at my disposal sufficient, to go into the particulars of any scheme for its accomplishment. But I think we should at least insist upon as compulsory what is now the minimum of knowledge laid down in the education code for those who voluntarily take the subject of physiology. It is expressed as follows:

> No candidate will be allowed to pass who . . . makes gross errors concerning the general build of the body and the relations of its several parts, the structure and working of the heart and the main facts of the circulation, the mechanical and chemical changes of respiration, the chemical nature of food, its changes in the alimentary canal, and its use in the body.

Moreover, we cannot be content with book work alone. It will not suffice to awaken the interest of the children. To be efficient and achieve its object the teaching must be accompanied by what we call practical instruction. No doubt a certain amount of prejudice on the part of teachers and officials will have to be encountered and overcome. Many of them hold that the less physiological knowledge people possess about themselves the better. But it will, I feel sure, rapidly disappear and give place to enthusiasm in the light of fuller knowledge.

One such incident which occurred to my own knowledge in Ireland may illustrate this. In the efforts of the Department of Agriculture and Technical Instruction to provide a training for secondary school teachers in this and other scientific subjects it was fortunate in securing the services of two enthusiasts in these matters. I refer to Mr. R. Blair, now Executive Officer in the London County Council, and Mr. George Fletcher, his successor in the Dublin office. After having overcome the hesitation to adopt physiology and hygiene of some of the teaching orders who conduct a large number of the secondary schools for girls in Ireland, it became necessary to provide teaching equipments for which subsidies were granted. One item in each of these outfits was to be a human skeleton. This, however was not to be a natural one, but a model in papier-maché. Considerable delay arose in providing the model, and the instrument makers lent a natural skeleton in the meantime. This latter would not, however, be admitted to the school, and had instead to be taken by the teacher to his own rooms. After some time, when the pupils got interested in the subject, the teacher ventured one day to bring the upper limb of the skeleton, rolled in paper, to his class. The parcel was not opened till the following day, when a suitable opportunity occurred. The impression produced was favourable, and bit by bit the remainder of the skeleton was allowed in. Later in the year the papier-maché one arrived, but it was so obviously inferior to the natural one that it was not retained. Indeed, some expense was incurred to induce the makers to take it back, and, so far as Ireland is concerned, the model still remains on their hands, though the incident took place several years ago.

Nor should we forget that the present is a very favourable time for making an advance. Never was more widespread interest taken by the public in hygienic matters. We are very conscious of this in Ireland, where we have to thank the remarkable health campaign carried out with signal success by the Women's National Health Association —an organization founded not quite three years ago by Her Excellency Lady Aberdeen. A similar movement, as you are all aware, has spread to England and Scotland under the title of "National Association for the Prevention of Consumption." These movements, however, are not intended to take the place of school teaching, nor can they do so. To produce lasting results they must be accompanied and followed up by systematic educational measures.

Let me now turn to the programme of our proceedings for a few moments. I am glad to think that, although chosen entirely for other reasons, both the subjects selected for discussion by the Section are very appropriate from the point of view of the foregoing remarks. Educational measures such as I have mentioned derive considerable assistance from reliable pronouncements made on questions of general interest by recognized authorities at meetings of this kind. Nothing could be more important from this point of view than accurate information concerning the food requirements of man and how they are to be best met; nor than a knowledge of the factors which make for an efficient circulation.

I must not anticipate either of these discussions, but in connexion with that on food I should like to ask what proportion of even well educated people realize that the main function of food is to supply energy to the human machine in the sense that coal supplies energy to the steam engine? And again, how very much fewer realize the relative energy values of different articles of diet, or that the energy value of food can be as accurately measured as a yard of cloth? Nor do I think that our discussions need be trammelled by any fear that the world's wheat supply is not going to keep pace with the increase of its population. It is more likely that Buckle was right in concluding that the birth-rate is largely determined by the food supply. Moreover, it is said that, to find an outlet for the produce of its wheat fields, Canada has taken measures to educate some of the rice-eating nations of the East to the superior value of wheat as an article of diet. If this be true, Canada, at all events, does not fear a decline of wheat production.

There is one other point upon which I would like to touch, namely, our standards of food value. We have one absolute standard, namely, the *calorie*, which is used to check the tot of the balance sheet on the debit and the credit sides. But this gives no information concerning the distribution of the different items which make up the totals. We want, I am convinced, another standard, indeed, I think three other standards, as measures of what might be called nutritive effects. These should be in the first place a protein standard against which to compare the

corresponding effects of equal weights of other proteins, and similarly a carbohydrate and a fat standard.

The sooner these are decided upon the better, and possibly this Section might see its way in the near future to take the matter up with a view to arriving at some agreement upon it.

DISCUSSION ON THE FACTORS THAT MAKE FOR AN EFFICIENT CIRCULATION.

OPENING PAPER.

By E. A. Schäfer, F.R.S.,
rofessor of Physiology, University of Edinburgh.

In considering the factors which make for an efficient circulation our attention is naturally directed in the first instance to the heart and blood vessels, since the efficiency of the circulation depends immediately upon the condition of these organs. But as their condition depends in large measure upon the condition of the nervous system and this upon the state of nutrition of the body and upon other circumstances which are at present imperfectly understood, the subject which is put down for discussion is wider than might at first sight appear. I propose, however, in the meantime to restrict my remarks to the circumstances which more immediately affect the circulatory mechanism under normal conditions.

The effective action of the heart varies (1) with its rate of rhythm, (2) with the force of the individual beats, (3) with its condition of tone. All these conditions are influenced through the cardiac nerves, by the nervous system. By way of the vagi, influences pass which moderate the rate, diminish the force, and lower the tone; by way of the sympathetic, others which make the rate of contraction more frequent and the individual beats more powerful, and which increase the tone of its musculature. The proper balance of these opposite effects, in accordance with the variations in the work which the heart at any given time is called upon to perform, must be looked upon as one of the most important factors in the maintenance of the efficiency of the circulation. The influences which reach the heart by way of the central nervous system do not originate in the cardio-inhibitory and cardio-accelerator centres. These are themselves excited to action by impulses which come to them from the periphery, or from higher nerve centres, the ultimate source of excitation being in the latter case also, probably, peripheral. These impulses come from all parts: from the skin and other sense organs, from the viscera, from muscles and tendons and serous membranes, from the blood vessels, and even from the heart itself; they may or may not be accompanied by conscious sensation. According to the manner in which they affect the heart-regulating centres, the cardiac contractions are caused to vary so as to promote under the given conditions the efficiency of the circulation to the best advantage.

The action of the heart is also affected by the condition of the respiratory system, along with which may be included the tone of the abdominal muscular wall. The importance of this as a factor in the maintenance of the circulation was shown by the experiments of Dr. Leonard Hill and his co-workers. The respiratory apparatus acts by facilitating the flow of blood to the thorax, and thus to the heart. Within limits the greater the rate of blood flow to the heart the more efficient will be the circulation, for the heart is a machine which reacts to the amount of work thrown upon it, in the same way that a gas engine, by more frequent explosions of its gases, produces a greater amount of energy in proportion to the resistance which it has to overcome. But in the case of the heart the response to increase of resistance does not take the form of increased rate of rhythm; the rate of rhythm tends, indeed, rather to diminish with increase of arterial pressure. This is a regulating effect produced through the vagi. On the other hand, increase of pressure up to a certain point within the coronary arteries is a direct excitant to cardiac activity. An isolated mammalian heart which has ceased to beat spontaneously may be started again by introducing fluid under pressure into the coronary system. Such fluid need not be of a nutrient character for this result to be manifested, since it will show itself even if liquid paraffin be injected into the coronary vessels; although, for the continuance of the contractions, a saline oxygenated fluid is essential.

The condition of the blood vessels, and especially of the arteries, is scarcely, if at all, second in importance to that of the heart. Disregarding the slow rhythmic contractions which the vessels occasionally exhibit, and which may to a slight extent aid in the promotion of the blood flow, a condition of tonic contraction of the vessels is essential to the maintenance of the circulation. With all the vessels fully dilated the blood becomes contained in a system of flaccid tubes quite incapable of passing it on to the heart. The tonic contraction of the vessels adapts the vascular system to the amount of blood it contains, and by exercising pressure upon it, forces it forward, the direction being determined by the fact that the greatest amount of contraction and pressure is on the arterial side and the least on the venous, as well as by the presence of valves at the commencement of the arterial system and in the veins.

When we inquire into the measures by which this tonic contraction of the vessels is maintained, we again find an obvious answer to our inquiry in the nervous arrangements connected with the vascular system. The vessels, and especially the arterioles, are provided with two sets of nerve fibres, operating from a double set of nerve centres, the activities of which balance one another. The one set sends out impulses which increase the contraction of the musculature, the other set impulses which diminish it; these are the vaso-constrictors and vaso-dilators respectively. Their origin and path are for the most part different. The vaso-constrictors follow the ordinary course taken by motor nerves, except that they are distributed through the sympathetic; whereas most of the vaso-dilators, as Dr. Bayliss has demonstrated, follow the course of the afferent nerve fibres and have their origin or distribution along with these, or may even be identical with them. Through these nerves the tone of the blood vessels, and thus the efficiency of the circulation, is maintained by the nervous system. The impulses which start from the nerve centres to produce vaso-constriction or vaso-dilatation originate, as in the case of those which affect the heart, mainly from the periphery—from the skin and other sense organs, viscera, muscles, heart, and even from the blood vessels themselves. The impulses therefore act in a reflex manner, causing either general or local effects according to the nature and situation of the part where they originate and of the particular afferent nerve terminations which are set in activity. But, as in the case of the heart, the several effects may also be produced by the action of higher centres upon the centres of origin of the vasomotor fibres.

In these various ways a balance is maintained in the vascular system whereby at a given time, and for a given set of conditions, the general or local blood pressure and the efficiency of the circulatory mechanism are normally regulated. Not very long ago the above would have been all that could have been postulated regarding the means by which the circulation is maintained in its efficiency. The work of Bernard and of Ludwig about the middle of the last century, and the innumerable researches which were set in activity by their discoveries, established beyond a doubt the important relations which subsist between the vascular and nervous systems, and especially the control which the nervous system exercises over the musculature of the heart and arteries. Certain facts were, however, not easily explained by this, such, for example, as the retention or recovery of some amount of tone after complete severance of parts of the vascular system from the central nervous system; although an attempt was made to explain these phenomena by the assumption of peripheral ganglia acting as reflex centres. Although it is not impossible that such centres may exist it is no longer necessary to assume their existence, since the phenomena they were required to account for may now be otherwise explained. For we know that certain glandular organs—which not long ago were regarded as of little importance and as to the functions of which nothing had been ascertained—yield on extraction materials which when introduced into the blood markedly influence both the rhythm and tone of

the heart and the contraction of the blood vessels. Those which produce the greatest effect of this nature are the medulla of the suprarenal capsules and the posterior lobe of the pituitary body. The action is not entirely similar in the two cases, for while an extract of suprarenal medulla increases both the rate of rhythm and the tone of cardiac muscle, and strongly stimulates to contraction the muscular tissue of the blood vessels (with the exception of those of the heart, and perhaps also of the lungs), an extract of the pituitary body, whilst markedly raising the tone of the cardiac muscle, does not increase its rate of rhythm, but may even diminish it, and while producing constriction of nearly all the arterioles in the body, tends to produce dilatation of those of the kidney, associated with an increased secretion of urine.

Although it has not yet been possible to prove in the case of the pituitary body that the substances which cause these effects are passed into the blood, and are thus normally brought to bear upon those tissues which are affected when the extracts are artificially introduced into the blood stream, such passage into the blood has been definitely proved to occur in the case of the suprarenal capsules. The blood flowing from these can, in fact, be shown to contain a larger amount of the pressor substance of the extract than ordinary blood. We are probably justified in concluding that a similar passage into the blood, either directly or indirectly (through lymph channels or by the cerebro-spinal fluid), occurs in the case of the pituitary body also. In both cases it is probable that the substances secreted exercise a material influence upon the circulatory system; this is, indeed, evidenced in the case of the suprarenals by the weakness of the heart and the low blood pressure which follow their destruction by disease or their experimental removal. And the fact that experimental removal of the pituitary body is equally fatal with that of the suprarenal capsules points to the supreme importance to the organism of the substances which are produced by it, the most active of these substances being those which affect the circulatory system.

The pituitary contains also a depressor substance which diminishes the force of the heart and inhibits the contraction of the arterioles, but the action of this is usually far overbalanced in the artificial extract by the material which produces the opposite effects. It is, however, possible that naturally the two substances may be passed into the blood in such proportions as the requirements of the vascular system and of the organism in general appear to indicate. If this is the case there would be a balancing action caused by the materials of the secretion comparable to that caused by the nerves which influence the contraction of the vascular musculature. It must further not be forgotten that a direct action upon the heart and blood vessels of hormones produced by these organs—perhaps also by other ductless glands—only represents a portion of their influence in increasing the efficiency of the circulation. It is probable that they also assist the nervous factors by their beneficial action upon the nerve centres themselves. In the instance of the pituitary body at least there appears to be evidence, mainly of a clinical character, that its extracts exert a tonic effect upon the nervous system in general. Such an effect is manifest in cases of shock, and may under normal circumstances be presumed to assist in maintaining condition of tonus of the nerve centres, which is essential to the performance of their functions, not the least important of which is, as we have seen, their action in maintaining the proper balance of the circulation.

In the above remarks I have dealt only, as I proposed at the start, with the circulation under normal conditions, and with such factors alone as are more strictly concerned with the vascular mechanism. I have not attempted to deal with the manner in which the circulation is affected by varying conditions of the blood, by variations in the general nutrition of the body, by drugs, or under abnormal conditions of the heart and vessels. I am content to leave the consideration of these to succeeding speakers, who will be better able than myself to discuss them satisfactorily.

DISCUSSION.

Dr. G. OLIVER (late of Harrogate) said: I think it will be admitted by clinicians that most of the leading factors of circulatory efficiency revealed by physiology are well supported by the results of medical observation, and in these days we can speak with much greater assurance on this point than we could do in the past, for now our instrumental methods enable us to follow in man himself some of the laboratory teaching on the physiology of the circulation. I shall touch briefly, and in a general way, on two or three practical aspects of the subject, such as these:

1. Cardio-vascular adjustment.
2. The vascular tone, its deficiency and excess.
3. The relation of peripheral resistance and blood pressure to circulatory efficiency.

1. *Cardio-vascular adjustment* to physiological work is a prominent feature of the efficient circulation. The obvious aim of the harmonious working of all parts of the circulation is to secure optimum efficiency with a minimum of stress on the heart and blood vessels. The adaptations existing within the circulatory apparatus are mainly effected by nerve controls. But I think it is possible that some self-adjustment may be furnished by the diastolic aortic blood pressure, which being proportionate to the peripheral resistance, may link up as it were the periphery to the ventricle, and enable the latter to nicely adjust the force of its contractions to the varying degrees of resistance ahead. The normal circulation as a mechanism thus ensures efficiency by being self adjusting. Hence a rise in the arterial pressure is modified by reduction in the ventricular output, by dilatation of vessel walls, and by filling up of the capacious veins; and a fall of that pressure is counteracted by an increased ventricular output, by a reduction of the calibre of the vessels, and by unloading of the veins.

It seems to me that the reserve capacity of the veins plays an important part in this adjustment, in providing for reduction or augmentation of the volume of blood on the arterial side of the circulation during the conditions of rest and work. All the adjusting factors in the efficient circulation work in harmony to shield the pump from undue stress in effort and to repair it during rest.

In the pathological field, in which the peripheral circulation is frequently thrown out of gear or is crippled, we apply this teaching of physiology to practical ends, when we prescribe resistance exercises, tension exercises, other forms of graduated gymnastics, and various kinds of baths. By these and similar means we endeavour to restore the physiological adjustment which has become impaired.

2. *The Vascular Tone.*—I shall quote some departures from normal arterial tone to illustrate the importance of the vasomotor mechanism in circulatory efficiency. Vascular tone varies considerably in different individuals, and in the same individual under various physiological conditions. It is raised by sleep, rest, good food, and a well-balanced metabolism; and is lowered by work, worry, strain, insufficient rest and sleep, and by whatever impairs the nutrition of the body generally and of the brain in particular.

For some twenty years or more I have found that the study of the effect produced on the pulse by change of posture affords useful guidance in estimating tone. In the earlier years I relied on the finger for appreciating the difference, if any, in the volume of the pulse in the erect posture and in recumbency. I found that there was not much appreciable difference when vascular tone was apparently normal; but the difference was quite marked between the smaller pulse of standing, and the voluminous one felt just as the patient assumed the recumbent position, whenever the system was weakened by any cause, such as haemorrhage, anaemia, asthenia, and especially exhaustion or weakness of the nervous system. Then it occurred to me that it might be possible to measure this difference by instrumental means; and the arteriometer was the outcome of that idea. Now we may go a step further in detecting this postural difference by using the manometer.

During the last year or two of my practice at Harrogate I frequently observed in patients in whom vasomotor control over gravity was diminished that the arterial pressure rose on the assumption of recumbency; but I found it necessary to make the observation without delay, as the pressure was sometimes apt to fall again sooner or later. In this way it can be shown that in normal subjects tonicity diminishes considerably under different physiological conditions, especially those of work and stress, whether

physical or mental; but the normal tone is quickly restored by rest, sleep, and food. These variations of slackened tone are but temporary.

It is quite otherwise, however, in various asthenic ailments and in conditions of chronic fag, of shock and worry; then the lowered vascular tone is not only more pronounced, but is continuous for some time, until, in fact, it is restored by prolonged rest or by rest judiciously alternated by exercise, by extra feeding, by guarded massage, and by vasomotor tonics. Over and over again have I proved the great practical importance of detecting this form of circulatory inefficiency by the postural test, and in successfully applying the appropriate physiological treatment; and repeatedly have I witnessed the perpetuation of it by the prescription of unlimited and unguarded exercise by those who were not cognizant of the inadequate state of the circulation.

I shall just mention that I have observed cases which suggest a probable causal relationship between splanchnic vasomotor inadequacy and syncope, vertigo, and even sudden lapses of consciousness (quasi-epilepsy); and I trust that other speakers will give us their views and experiences on this point, which is of some clinical importance.

Before the work of Leonard Hill in 1894 and 1895[1] there was no adequate explanation available of the postural variation observed in cases of asthenia, shock, and worry.[2] But that work furnished the all-sufficing interpretation, namely, impairment of the splanchnic vasomotor mechanism and diminished tone of the supporting muscles of the abdominal wall, which permit the influence of gravity to come into play in the erect posture.

Clinical observation also furnishes us with several varieties of excessive vascular tone. For examples, we have localized constrictions, such as those of Raynaud's disease and of the allied condition of persistent cold hands and feet; but these, as a rule, do not affect the circulation as a whole, and are generally the tell-tale of nervous disorder. Then there are the generalized constrictions of the faulty conditions of the blood produced by contracting kidney and chronic goutiness.

But besides such forms of persistent excess of arterial tone as these, we often meet with examples of increased contractility—I had almost said irritability—of the arteries, especially in the elderly, in whom we might anticipate some abeyance of vasomotor activity. Nevertheless, I think that a more susceptible state of the vasomotor mechanism may account for the rapid rise of the arterial pressure in many elderly subjects under psychic and other physiological influences. In fact, in the elderly generally I have sometimes thought that the range of the physiological variation of the arterial pressure is on the whole greater than in earlier periods of life. Possibly this increased contractility may in some cases be necessary to secure the requisite speed of the capillary blood flow in the declining years; and therefore it may be a factor which makes for efficiency in the circulation. In connexion with this question of hypertonic contractility of the arteries in the elderly I think that we ought to collate the pathological work of Savill on arterial hypermyotrophy in subjects over 40; for this subject is pathological rather than physiological. The teaching of these observations seems to me to point to the existence during life of a vicious circle of action and reaction between the central bundle of muscular fibres in the ventricle and the distributed muscular tissue in the vessels which maintains a supernormal arterial pressure and readily increases that pressure—the increment of pressure further developing the arterial hypermyotrophy.

3. *What is the Relation of the Arterial Blood Pressure to Efficiency in the Circulation?*—When viewed from the clinical standpoint this is a question of some importance; at the same time it is not one which can be easily answered in general terms applicable to all cases. It can only be satisfactorily solved in each case on its own merits. If we accept as the basis of circulatory efficiency a certain rate and pressure of capillary flow, which ensures adequate metabolism and the complete return of blood to the heart, then it is doubtful if we should regard arterial blood pressure as a necessary factor of circulatory efficiency; for both of these conditions may be secured, though the systolic pressure may have as wide a variation in different cases as from 100 to over 200 mm. Hg. We know that systolic pressures varying in the armlet readings from 100 to 150 mm. Hg are found in the average normal subject, and that such pressures are not only physiologically adequate, but are associated with a more stable form of circulatory efficiency than are the pressures either higher or lower than this range. Peripheral resistance is the most important fact in determining the arterial blood pressure; it may be so low that systolic pressures of from 90 to 100 may suffice, or it may be so great that much higher pressures, for example from 150 to over 200, are necessary. If in the former case we can raise, and in the latter case we can lower, the resistance, we shall probably make for well-being by increasing the stability and endurance of the circulation.

4. *Peripheral Resistance as a Factor in Circulatory Efficiency.*—I am disposed to draw two inferences from my observations on the circulation in man respecting the influence of peripheral resistance on the efficiency of the heart. One is the value of a certain degree of peripheral resistance in maintaining an efficient ventricle; and the other is the injurious effect of an excessive resistance, when sustained for some time, on the integrity of the ventricle as an adequate pump. Peripheral resistance reflexly stimulates the ventricle through nerve agency, and possibly by fluid conduction; and in doing so it should be an important factor in the nutrition of the heart muscle, which, like every other muscle, should grow with work. Would not the ventricular wall fail in nutrition and efficiency if we could considerably reduce the external resistance (the diastolic aortic pressure) say by one-third? for then the elastic recoil of the aorta, the coronary circulation and the stimulus to contraction would all be lessened. In normal man the resistance offered by the periphery of the circulation plays an important part in maintaining the nutrition and vigour of the ventricle—for him work is the best cardiac tonic.

In the pathological field we meet on the one hand with slack arteries and weak ventricles, and on the other with tightened-up vessels and obstructed peripheries with hypertrophied ventricles. In the latter class of cases the nutrition and vigour of the ventricle respond for a time to the supernormal resistance ahead, and this effect is salutary from the standpoint of an efficient circulation. But when the resistance cannot be relieved by treatment, the efficient life of the ventricle is shortened by the continued high grade of work it is called upon to perform.

Dr. Leonard Hill (London) said: Physiologists have been in the habit of studying the circulation of the blood in animals which are anaesthetized, placed in the horizontal posture, and in a state of immobility. They have made artificial schemata and applied to the circulation the data obtained from these directly and often without justice. In the textbooks such statements are made as that the average blood pressure in all the large arteries is the same, and that the pressure in the veins varies from 10 mm. Hg to *nil*. Both statements properly pertain only to the horizontally placed and immobile animal. The changes due to the restless life of the animal, to alterations of posture, the ceaseless squeezing and churning movements of the muscles and viscera, have been left too much out of account, and the student, in consequence, gets no proper insight into the mechanism of the circulation.

The body must be regarded as a wet sponge enclosed in an elastic skin; the pores of the sponge are comparable in size to those of a clay filter, and the lining wall of the pores to soap films. The different parts of this protoplasmic sponge are squeezed vicariously by each muscular contraction, peristaltic or locomotor, and filled or emptied with the ceaseless change of posture which occurs in active life. It is the function of the heart to impel the blood through the arteries to all parts of the sponge, and of the muscles to squeeze the blood out of the sponge and back to the heart through the veins. The venous valves and the anatomical arrangement of the vessels makes the squeezing mechanism an effective one. The rhythmic impulsion to and fro seen in the "veins" of the slime fungi—myxomycetes—the extraordinary flow of water from the cut stems of vines, point to the potent influence of

[1] The Influence of Gravity on the Circulation, *Proc. Roy. Soc.*, and subsequent papers.
[2] *Pulse-gauging*, 1895, pp. 32 and 156 to 164.

tissue metabolism as a factor in promoting and controlling capillary flow. The observation of the capillary circulation is made habitually in transparent membranes, which have a comparatively rigid structure and are fixed in an immobile state; it can give little insight into the nature of the capillary flow in such organs as the liver or spleen. In the liver the varying turgor of the cells and the rhythmic squeezing of the respiratory muscles have a profound effect.

During intestinal absorption the muscle cells of the villi and the varying turgor of the lining epithelium together impel both the flow of blood in the capillary net and of lymph in the lacteals. The gut blanches during peristaltic contraction, and flushes red again on relaxation, and the proper exercise of its motions not only furthers the contents, but pumps the blood through and prevents venous congestion. The respiratory movements act as a pump to the whole of the abdominal organs, squeezed as they are between the diaphragm, the levator ani and the muscles of the abdominal wall.

The outpouring of sweat in a Turkish bath, of urine when diuresis is at its height after drinking much water, must influence the capillary flow very greatly. It is as if fresh outlets were opened and the peripheral resistance is lowered not only by the concomitant vaso-dilatation, but by the escape of water through the gland ducts. The pulsatile expansion of the organs furthers the flow. The whole organ expands, becomes turgid on systole and shrinks on diastole. The living cells separate and transfer the secretion from capillary to ductule. The fluid is moved on both in capillary and ductule by the rhythmic expansion and shrinkage of the organ. The pressure in such an organ as the brain or kidney is the same throughout the organ and is equal to the capillary venous pressure. The tissue fluid, cerebro spinal fluid, lymph and urine is at the same pressure as the capillary venous pressure. The conditions are such that there can be no filtration pressure as is usually supposed. Wet films of protoplasm form the basis of structure and the transference of liquid is by the secretory power of the living cells, at bottom a physical chemical process of the same type as that seen in the formation and extrusion of vacuoles by protozoa.

In the performance of great muscular efforts the muscles of the strong man become hard as iron. Consider the blows which a professional boxer can bear on his abdominal muscles, the squeezes of wrestling giants, the rhythmic squeezes and relaxations of the leg muscles of the runner or bicyclist. The circulation must be so arranged that blood can either be squeezed out of a part without undue congestion of other parts, or held within the compressed and contracted part, the fluid in this case transmitting the pressure equally and in all directions. In the contracting heart and clinched fist we see the blood squeezed out of the capillaries and the pumping action of the muscles demonstrated. In great running efforts the muscles are exsanguined to such an extent that lactic acid is produced, owing to want of oxygen. The pressure, both in the arteries and veins, is high in the forearm when held dependent, while it becomes *nil* in the capillaries immediately after clenching the fist. The capillaries are blanched, and until the sponge refills we have the paradoxical condition of a high pressure in the artery that feeds and the vein that drains the part and no positive pressure in the capillaries. This is a constantly occurring condition of the circulation, and depends on the squeezing effect of muscular movement and the valves in the veins.

I have measured the capillary pressure in man by inserting a hollow needle into the limb or organ; the needle filled with water is connected to a glass tube which contains an air bubble as an index, and this is connected in its turn to a manometer and a syringe. The pressure is raised in this system until the air bubble moves inwards—that is, until the capillary pressure is overcome. Such measurements of the fluid pressure as I have made in cases of oedema and hydrocephalus show a positive pressure of some 50–60 mm. H_2O. When the oedematous limb or hydrocephalus is lifted up the pressure does not fall, but rises, owing to the squeezing effect of the hands that lift it. The pressure pertains equally throughout the limb or skull cavity. In such a case the capillary venous pressure must just exceed the fluid pressure for otherwise the circulation would not take place. The fluid pressure is circulatory in origin, as is shown by the immediate disappearance on death of any positive pressure other than that due to the hydrostatic effect of gravity. On tapping the hydrocephalus the pressure falls to atmospheric pressure, but rises again after two or three days as the choroidal fringes secrete the fluid and once more distend the part. It is the secretory activity of the cells which regulates the pressure, and the pressure in the capillaries must keep pace with that.

In states of metabolic activity, in inflammation, the tissue turgescence and capillary pressure increase together. The tense state of the inflamed part is maintained by the heart beat, but the metabolic changes in the part initiate and entail the increased vascular pressure. In an encapsulated organ such as the marrow, brain or kidney, an increase in the amount of tissue fluid and turgor of cells diminishes the volume of blood in the vessels, while if the fluid pass from the tissues into the blood vessels these dilate and contain more blood. Thus in the infective states bone marrow may exhibit congested vessels with shrunken marrow cells, wasted fat cells resulting from the migration of cell substance from marrow into blood. If there is more tissue fluid in a rigidly encapsulated organ there must be less blood; the blood vessels will be narrower, the capillary venous pressure higher and the blood flow faster. The conditions vary from congested blood vessels, stagnant flow and shrunken cells, to that of taut blood vessels, rapid flow and turgid cells. A sudden increase of arterial pressure does not alter the volume of blood in an encapsulated organ but increases the rate of flow through it. The relative volumes of blood and tissue fluid depend on metabolic changes which are comparatively slow. The capsule of the organ and the skin are parts of no little importance in the mechanism of the circulation. Expansion of the capsule gives room for more blood and more tissue fluid. Hence the relief obtained on opening the skull or incising the skin in pathological states.

The current doctrines of pathology are pervaded with ideas of back pressure, of the transudation of liquid filtered from the capillaries under pressure. There is no evidence that back pressure really exists. On obstructing the flow in the veins the venous pressure rises for a brief period, but quickly goes back to normal. Oedema, dropsy, etc., are the result not of increased capillary pressure and filtration but of deficient blood flow and altered nutrition of the tissue cells.

The man in good condition, like the wild animal, is "hard," with muscles like iron, blood vessels tightened up, a rapid blood flow, little fluid in the tissue spaces, a maximum turgidity of cells, no superfluous fat, and a taut skin. His heart is adjusted in size and power to the needs of his muscles. Observations I have made with the Roentgen rays afford no evidence that the heart is dilated by severe muscular work. The heart appears smaller during the subsequent stage of dyspnoea. Muscular exercise and exposure to cool winds are the causes of metabolic change. Muscular exercise may increase the CO_2 output, the oxygen use, and the rate of blood flow six and even ten times the resting value. Hot, moist atmospheres congest the skin, lessen muscular and metabolic activity, and slacken the cerebral circulation. Studying the effects of very hot baths on man, I have watched the systolic pressure fall to 60 mm. Hg and the pulse-rate rise to 150. Faintness came on when the vertical posture was assumed; all the symptoms were immediately relieved by a cold douche which constricted the cutaneous vessels, even though the rectal temperature remained unchanged at, say, 103° F. I find, when shut in a closed respiratory chamber until the CO_2 percentage reaches 4.5 per cent. and the wet bulb temperature 85° F., an electric fan which simply stirs the stale, warm air affords the greatest relief because it cools the skin and relieves the heat-regulating mechanism.

The vasomotor system regulates the flow in organs in answer to their metabolic activity, maintains a fairly constant aortic pressure under varying conditions of cardiac output, hangs out the signs of sex, regulates heat loss, and lastly, controls the circulation during change of posture.

We have measured the systolic blood pressure in man in the horizontal, standing, and inverted positions. Students have lent themselves to being suspended by the heels. The figures show that the pressure in the brachial artery

is maintained at about the same level in all three postures, while that in the tibial arteries varies very widely. The influence of gravity is compensated for in the inverted posture by the lessened output of heart and dilatation in the splanchnic area, and so perfectly that the pressure in the brachial artery is no higher in the inverted posture than it is in the standing position. And yet the column of blood which divides the arm and leg arteries is equal to some 70 mm. Hg. The nervous mechanism which thus keeps the pressure constant in the ascending aorta must act continually, and demands study in pathological states.

The usual method of recording the blood pressure in man is by observing the obliteration of the pulse. The observations we have made show us that the conductance of the crest of the pulse wave depends upon the arterial wall. A soft artery with open peripheral field will not conduct the wave as well as a more contracted and rigid artery. Local heat can be used to soften an artery and dilate the peripheral field and demonstrate this fact. In all cases of aortic regurgitation we find the systolic pressure in the tibial arteries much higher than in the brachial arteries. The leg arteries in these cases are kept more taut, and the systolic crest is a very high one. We have been able to lessen the difference in these aortic cases by placing the feet in hot water, but only to a limited extent. We have not been able to alter the difference by placing the leg in bent postures, so the difference does not depend on the straighter pathway down the leg arteries. The cause of the difference must be mainly in the conductance of the wave along the aorta. Inequality of pressures due to aneurysm of the arch of the aorta are caused by the soft sac lessening the conductance of the crest.

Sir James Barr (Liverpool) said: Professor Schäfer has wisely emphasized the important part played by the nervous system in maintaining an efficient circulation; this is of paramount importance in the present day, when the influence of the nervous system is neglected in favour of some popular but vague and nebulous ideas on the myogenic function of the cardiac muscle. There is no one likely to overlook the important functions of the cardiac muscle, no matter how exalted an opinion he may hold of the controlling influence of the nervous system. The healthy nutrition and function of the heart muscle are dominated by the nervous system, and the tone and irritability of the muscle enables it to respond to stimuli directly without any necessity for such stimuli being transmitted through the nervous system. In the case of the knee jerk the maintenance of the reflex arc is necessary, but the response is much quicker than could be attained through a nerve reflex. So with a healthy cardiac muscle—the irritability is so great that it responds at once and directly, except during the refractory period, to the variations in the diastolic pressure within the heart.

It is not sufficiently recognized that the two sides of the heart are independent organs linked together for mutual assistance and support, but each side has got its own work to do, and it does it to a certain extent, independently of the other. The right side of the heart is more sensitive than the left, and its rhythmic contraction ordinarily responds to less than an atmosphere of intracardiac pressure, while the left side requires rather more than an atmosphere to start an efficient contraction. The effect of this is that the systolic contraction is almost invariably started in the right side, and when you get doubling of the first sound—which in a healthy heart occurs at the beginning of every deep inspiration—the first element is associated with the closure and tension of the tricuspid valve. If the systolic contraction were due to any myogenic stimulus travelling along the bundle of His, then both healthy ventricles should start their contraction absolutely synchronously; but there is no more common event in cardiac physiology than a slight dissociation in the beginning and ending of the two ventricular systoles.

If a patient faints, do not wait for the sino-auricular node to start ticking again, and do not try any artificial respiration, but simply hang the patient up by the heels; in this way you raise the diastolic pressure within the right auricle and ventricle, which starts their contraction, and the left side soon follows suit. Many a case of sudden death, I am convinced, might thus be averted if any sensible person were at hand to carry out this simple procedure. On the other hand, under such circumstances the popular imaginary myogenic stimulus which is supposed to initiate cardiac contraction leads nowhere but to the grave. Increased diastolic pressure within the heart leads to dilatation, while increased resistance in front induces cardiac hypertrophy. Chronic diseases of the heart most frequently arise from causes acting on the periphery.

The act of respiration renders great assistance to the circulation, especially to the right side of the heart. I have recorded a case of so-called heart-block where we could at any time stop the pulse and bring on an epileptic seizure by simply making the patient take a deep breath and hold his chest fully expanded. Here the capacious lungs acted as a reservoir, and when the left side had emptied itself a sufficient amount of blood did not reach it to stimulate contraction until the feeble right side had raised the pressure in the pulmonary circuit. Both in the Valsalva and Müller experiments the size of the heart is very materially diminished, and if the former experiment be efficiently carried out, the entrance of blood to the chest can be so effectually shut as to cause the disappearance of the pulse as long as the person is able to hold his breath, and the heart becomes smaller and smaller until at last it is not more than half its former size.

For an efficient circulation the maintenance of a healthy elastic aorta is absolutely essential. In my opinion, physiologists have placed too low an estimate on the velocity of the blood in the aorta when they put it down as 320 mm. in the second. They have arrived at this conclusion by a process of guess-work from rather crude experiments on animals, which are not at all applicable to the human subject. In my opinion, the velocity in any individual can be fairly accurately calculated from the fall in the pressure gradient. For an efficient circulation you should have a low systolic, and a relatively high diastolic, pressure; this gives you a slow but steady velocity, and does not strain the elastic coats of the aorta. As the blood is leaving the heart its energy is kinetic, the greater portion of which is immediately stored up as potential in the elastic coats of the aorta and pulmonary artery, and again given out as kinetic energy during the contraction of the vessels. The diastolic pressure in the great vessels fairly represents the resistance to the outflow from the heart, while the difference between the diastolic and systolic pressures is the portion of the cardiac energy which is not stored up in the elastic walls of the vessels, but used as the effective head of the liquid in the production of velocity. If there be no great disparity between the systolic and diastolic pressures then the velocity is comparatively slow and fairly uniform during the whole cardiac cycle, though of course rather quicker during the systolic period. For an effective circulation the arterial diastolic pressure should always be sufficient, and more than sufficient, to overcome the resistance of the arterioles, the capillaries, and the viscosity of the blood. If the diastolic pressure were not sufficient to overcome the resistance, the circulation of the main arteries would come to a standstill towards the end of the diastolic period of the heart. The way to lessen the work of the heart is to reduce the peripheral resistance.

As the arterial velocity depends on the energy or effective head minus the resistance to the outflow (in the aorta the viscosity of the blood can be left out of account), so when there is a great disparity between the systolic and diastolic pressures, such as occurs in free aortic regurgitation, there is defective storage and the velocity becomes very great, especially during the cardiac systole. In my Toronto address I showed that when the difference between the systolic and diastolic pressures exceeds 40 mm. of mercury the elasticity of the aorta is becoming impaired, and it is time to think about repairs. In cases of chronic granular kidneys where the arteries are contracted, and the systolic and diastolic pressures very high, you do not get tortuous arteries; but when the arteries are dilated, and there is a great difference between the systolic and diastolic pressures you get longitudinal straining of the arteries, the greater curve of the arch of the aorta gets dilated, and the muscular arteries become tortuous.

The importance of pressure and velocity in the aorta will be readily apparent from the following calculations: A fall in the pressure gradient in the aorta from 100 to

80 mm. of mercury gives you a theoretical velocity per second of 525 mm. of blood (I add blood because one gentleman thought I meant to reckon the velocity in millimetres of mercury, which, by the way, does not exist in the aorta). This is a very easy going circulation, which would scarcely suit the hurry and bustle of the present day, but it is such a circulation as was probably possessed by Methuselah. With a pressure of 150 mm., and a resistance of 120 mm. of mercury, you get a blood velocity of 640 mm. in the second. This is the kind of circulation which would suit a professor or anyone who had no undue physical or mental strain; it might carry him well into the eighties if he were not foolish enough to get killed in some other way. Now a fall in the pressure gradient from 150 to 100 mm. of mercury gives you a blood velocity of 1,120 mm. per second; by this time the elasticity of the aorta has been seriously damaged, and its repair should not be entrusted to an amateur. With a systolic pressure of 250 mm. and a resistance of 120 mm. of mercury, which often occurs in cases of free aortic regurgitation, you would have a velocity of the blood at the rate of 2,450 mm. in the second, which would chiefly occur during the cardiac systole. This gives rise to a marked recoil of the heart at the end of the systole, and to positive and negative waves in the circulation which obstruct one another. When failure begins to set in you may find the force of this big powerful organ, which may shake the whole chest, and even the bed in which the patient is lying, only poorly represented at the periphery. In such cases the diastolic pressure in the left ventricle is great, this cavity is dilated, the elasticity of the aorta is seriously impaired, and storage of the energy in its wall is very defective, the pressure and the velocity are more or less intermittent, there is an enormous waste of energy, and failure is bound to occur rapidly and perhaps suddenly. In the foregoing calculations, mercury, which is 13.6 times heavier than water, has been reckoned as thirteen times heavier than blood.

Professor Schäfer has told us of two secretions—the suprarenal and the pituitary—which are essential to life. I would like to add the importance of the lime salts in the maintenance of an efficient circulation. The presence of calcium ions is necessary for all effective muscular contraction; all the soluble lime salts increase the viscosity of the blood and lessen its ready transudation through the capillary walls. The arterioles form the first line of resistance to the outflow from the arteries, and perhaps are the main factor in maintaining the arterial pressure; but I am now convinced that the viscosity of the blood in the capillaries is an important element in maintaining high arterial pressure, and one of the most important causes of this viscosity is calcium. This is not readily appreciated, as none of the lime salts quickly raise the arterial pressure. Calcium is a slowly acting drug; it is absorbed with difficulty, and the blood can only hold a limited quantity; moreover the resistance from viscosity is a variable quantity and takes time to develop cardiac hypertrophy. On the other hand, by the free use of decalcifying agents you lessen the viscosity of the blood and rapidly lower the arterial blood pressure; in this way you get indirect evidence of the effects of calcium in raising arterial blood pressure. Since Blair Bell has given us a reliable method of estimating the lime salts in the blood there is no reason for any one remaining ignorant on this important subject.

The capillary circulation is chiefly carried on by the energy derived from the blood in the arterioles and arteries, and to a less and more variable extent by muscular contraction. I have shown that physiologists have underestimated the varying velocity of the blood in the aorta, so I believe they have very much underestimated the velocity in the capillaries, which they set down at 0.5 mm. per second. Their conclusion has been drawn from observations on the frog, which is scarcely comparable with man, and Vierordt reckoned the velocity in the retinal capillaries, a very difficult method of observation, and, moreover, if he had inverted the subject he would probably have found that the velocity was so great as not to be determinable by this method. I estimate the capillary velocity by compressing the blood out of a flat network of capillaries, say the back of the finger or hand, and then time with a stop-watch recording fifths of a second the period it takes the blood to return. You must select a spot where the blood returns equally from all parts of the circumference of the area which has been compressed.

If you divide the radius of the compressed area by the return time of the blood you get the velocity per second. I usually employ a rod 10 mm. in diameter, the radius of which is 5, but as the red cells travel in the axis of the capillaries, and occupy about four-fifths of their lumen, I reckon the actual to be about four-fifths of the observed velocity. Therefore, when you use the rod, if you divide 4 mm. by the time of the return you get approximately the actual capillary velocity. As the capillary velocity is very much influenced by the arterial pressure I always make my observations on the hand or finger held at the level of the heart. If you lower the finger about 320 mm. you double the capillary velocity. You can make a similar observation on the web of a frog's foot; when you are examining the capillary circulation under the microscope you can visibly increase the velocity of the blood by raising the body of the frog ½ in. or 1 in. This does not add a great head to the liquid, but it is quite sufficient to so much increase the velocity that the arterioles are not able to keep the open capillary bed full, and then the blood commences to run backwards in many of the capillaries.

If the velocity of the blood in the capillaries of a warm hand at the level of the heart be less than 4 mm. in a second as a rule there is too much lime in the blood, or the heart's action may be very feeble. When the capillary circulation is less than 1 mm. in the second the blood gets surcharged with CO_2—witness the hand on a cold day or the liver under ordinary circumstances. When the velocity at the level of the heart falls to the physiological standard of 0.2 to 0.5 mm. per second you can take up the refrain, "the hour of my departure's come."

The pressure in the systemic veins depends on three factors: (1) The obstruction to the inflow to the chest; (2) the hydrostatic effect of the column of blood; and (3) the energy transmitted through the capillaries. The velocity depends on the *vis a tergo*, and varies enormously. Here the fall in the pressure gradient from the periphery to the centre is the determining factor. The velocity is calculated by emptying a long piece of vein between two valves and then timing with a stop-watch the period it takes the blood to fill the empty vein. I have seen 23 cm. of a vein in a dependent arm filled in 0.2 of a second, or a velocity of 115 cm. in a second, a velocity greater than ordinarily occurs in the aorta. I claim to have been the first to discover the fact that venous blood runs more quickly up the hill than it does down it; in a vein of the arm the velocity is sometimes five times greater when the arm is hanging than when it is held horizontally at the level of the shoulder. The total amount of blood passing through a limb in a given time may be two or three times greater when the limb is dependent than when it is elevated. Muscular contraction is also an important agent in hurrying on the venous blood. The foregoing observations show how kinetic and potential energy in every part of the circulation are constantly varying, and the cocksure methods of physiologists require considerable revision.

Dr. Alexander Haig (London) said: Among blood conditions that affect the circulation, by far the most important is the quantity of uric acid to be found at any given moment in the circulating fluids. I have been making a similar statement in my writings for some eighteen years, and meanwhile facts tending to prove its truth have been steadily accumulating. I will now mention a few main points.

My early investigations on the causation of migraine showed that it was accompanied by a large excretion of uric acid in the urine, and high blood pressure was the apparent cause of the pain. I afterwards made similar observations in many cases of epilepsy. I then found that the normal daily fluctuations in the excretion of uric acid were accompanied by corresponding fluctuations of blood pressure, and that drugs which increase excretion raise blood pressure, while those that diminish excretion lower blood pressure. I could not only alter the amount of uric acid in blood and urine at pleasure, but found that I could alter and control the blood pressure at the same time.

Then following the observation of Raynaud, I began to measure accurately the rate of the capillary circulation

(having previously used the fatigue image in the eye for the same purpose), and finally invented an instrument and method for measuring capillary circulation in the skin, which I still use. I thus found that the capillary circulation was slow in all conditions in which my previous investigations, and those of others, had demonstrated the presence of excess of uric acid in the blood and urine. Further, I could control by (1) diet, (2) drugs, (3) heat or cold, the quantity of uric acid in both blood and urine, and I controlled at the same time both capillary circulation and blood pressure.

Thus, step by step, I was led to conclude that uric acid had a great influence on capillary circulation and blood pressure, which always fluctuated with it in physiology, pathology, and drug action. Among drugs the salicylates gave the most marked results, for large doses quickly doubled the uric acid in the blood with slowing of capillary circulation and rise of blood pressure, or, on the other hand, by the retentive action of small doses,[1] the blood could be almost cleared of uric acid with quickening of capillary circulation and fall of blood pressure.

It would take too long even to name the drugs which produce parallel effects, and many the action of which can be very simply explained by their influence on the solubility of uric acid in the blood.

Thus, in all directions and by many methods was it proved that the rate of the capillary circulation was a measure of the quantity of uric acid in the blood, and the only possible inference from this fact was that uric acid controlled the capillary circulation. And it does this, not only in relation to pathology and drug action, but in physiology and throughout life.

A patient has high blood pressure, you can lower it by any means that will clear the blood, and at the same time the urine, from excess of uric acid. Your results are rendered visible by the rate of the capillary circulation. Further, there is a definite ratio between the rate of the capillary circulation and the mean blood pressure, which is that the capillary circulation rate, measured in half-seconds, multiplied by twenty, gives the corresponding blood pressure, if the heart muscle is normal. If the heart is hypertrophied, the blood pressure may be above this ratio; if the heart muscle is weak or fatty, blood pressure will be below the ratio, and the amount by which it falls below it is a measure of the heart weakness.

The quantity of uric acid in the blood can be easily measured by the Barker-Smith process, and for its clinical estimation I must refer to my books, especially *Uric Acid in the Clinic* (Churchill, London, 1910), where it will be seen that the capillary circulation is a reliable guide to its quantity.

A single dose of uric acid taken by mouth can be watched as it passes through the blood by means of half-hourly observations of the capillary circulation. It will often be found to pass through it in the next alkaline tide after its administration, and if the circulation results are thrown into curves there will be a quite visible slowing and rise of blood pressure at the time of its passage.

I do not for a moment doubt the effect of the nerves on the tone of the heart and vessels, but this is more or less constant and does not vary, as do uric acid and its effects, with the daily and hourly fluctuations in the solvent powers of the blood for uric acid and its salts.

Thus in every direction is capillary circulation a measure of the quantity of uric acid present in the blood, and this, I submit, could not be the case if the capillary circulation was chiefly controlled by the nervous system, apart from uric acid. I conclude from these and many other facts which there is no time to mention, that the high blood pressure so commonly met with to-day is the result of the numerous uric-acid compounds in our foods and drinks.

Dr. Buckmaster (London) mentioned that in certain experiments where the perfusion of the living lungs was carried out with hirudinized blood of the same animal, in some cases, notably the cat, subsidence of the red blood corpuscles occurred with such ease that, quite apart from the question of the viscosity of the blood, this mechanical separation of the morphological constituents from the plasma might well be a factor that impedes the circulation in any part of the body. Notwithstanding the rate of the flow through the lungs, this subsidence of corpuscles takes place with such readiness that within a few minutes from commencing the experiment the transfusion becomes impossible—that is, an oedema of the lungs occurs and all that can be driven through the lung resembles mud in its consistence.

Dr. Jolly (Edinburgh) described some of the newer methods of investigating the action of the heart by means of the string galvanometer.

Professor Schäfer briefly replied to some of the points which had been raised in the course of the discussion.

[1] See *Proceedings of the Royal Society of Medicine*, February, 1909.

DISCUSSION ON FOOD REQUIREMENTS FOR SUSTENANCE AND WORK.

OPENING PAPER.

By Lieutenant-Colonel Melville, R.A.M.C.

In opening the discussion on the question of "Food Requirements for Sustenance and Work," I propose to take an actual concrete instance of men doing a measured amount of work on a measured amount of food, in which the effect of these two factors on the weight, general condition, and well-being of the individuals experimented on was carefully recorded.

As regards the men who formed the subject of the experiment, these were twenty infantry soldiers of ages between 18 and 38. No special selection as to habits or physique was made, a general examination to exclude any actually unsound man only being carried out. There was also a considerable range of physique, the heaviest man being, at starting, 76·6 kilos (12 st.), and the lightest 55.30 kilos (8 st. 9lb.). The average weight of the party was 64.15 kilos (10 st.). The work done was a daily march averaging between twelve and thirteen miles, carrying a load of 24.55 kilos (54 lb.). This march was executed for six days continuously, then one day's rest intervened before the completion of the experiment by five more days' marching. The external work thus performed was calculated on a formula adapted from Zuntz's work[1] as follows: For every kilo of body weight transported 1 metre horizontally at the rate of 94 metres to the minute (the actual rate practised) 0·0006 calories were expended. For every kilo raised through 1 metre vertical 0.0075 calories were expended. The distances marched and the vertical distances ascended were carefully measured on a 6-in. ordnance map. The horizontal and vertical works were multiplied separately by the average weight of the loaded man, and the sum of these taken to represent the day's work on the march. The average daily amount of energy thus expended came (after various corrections on account of individual men who fell out, or who remained in camp on certain days) to 1,034 calories—that is, roughly, 90 calories per mile of ordinary give-and-take road. It may be noted that this figure has been found to be fairly constant for the South of England, where long or steep hills are the exception, for a man of the average weight, and carrying the average load mentioned. To this a certain amount had to be added to account for internal work and for external work during non-marching hours. This was assumed at 3,000 calories. The grounds for this assumption may be briefly stated. Zuntz gives the expenditure of a man at absolute rest as 1,700 calories, which is increased by 30 to 50 per cent. if a purely sedentary life—confined to one room, reading and writing—be led. This gives us a figure of 2,200 to 2,250 calories. The men of the experiment during the ten non-marching, waking hours (allowing ten for sleep and four for marching) led a distinctly active life. There was, of course, the ordinary work of camp life to be done (on one occasion the camp had to be struck and moved by hand a quarter of a mile to a less exposed site), and a good deal of football and quoits were played. If we estimate this as equivalent to one mile for each working hour in excess of sedentary life, this will give us 800 calories—that is, 3,000, taking the lowest sedentary figure arrived at by Zuntz. I note, since the above was first written, that the same observer places the energy expended by the infantry soldier on a day of rest at the same figure of 3,000

calories.[2] The total work, internal and external, done per diem amounted, therefore, to 4,034 calories.

The food supplied varied somewhat during the first and second periods of the experiment. It consisted essentially of bread, meat, potatoes, jam, and sugar, with tea, pepper and salt, etc. During the first six days tinned meat and biscuit were issued; during the remainder of the period fresh meat and bread. The ultimate constituent principles were as follows: During the first week, proteins, 190 grams; carbohydrates, 510 grams; and fats, 58 grams. During the remainder of the time: proteins, 145 grams; carbohydrates, 450 grams; and fats, 110 grams. The total energy value averaged on the first week 3,426 calories, and on the second 3,503 calories. The averages over the whole period were as follows: Proteins, 168 grams; carbohydrates, 480 grams; and fats, 84 grams. The average gross daily energy supplied was 3,481 calories. From this 10 per cent. should be deducted for unavoidable waste, giving net, say, 3,140 calories.

(It must be noted here that in the above calculation the energy value of a certain amount of alcohol has been included; 2½ oz. of whisky on one occasion, and of rum on another, were issued, owing to weather conditions and extra fatigue.)

Comparing the amount of energy supplied by the food with that expended in work, taking the average per man per day in each case, we find that the former fell short of the latter by about 890 calories.

We now come to the combined effect of the work and food on the men. There was a general and steady rise in weight over the first three days of the experiment, averaging 0.55 kilos, followed by a period of two days during which the weight remained stationary. After this, with the exception of a slight rise the day after the day of rest, the weight fell steadily till the end of the experiment. The average fall was 1 22 kilo for the maximum, and 1 kilo over the whole period. These same features of an initial rise, followed by a subsequent fall, were observed in the case of the officers accompanying the party. These were restricted in food in the same way as the men, but carried slightly less weight; being all older men, and chiefly heavier than the main party, their figures have not been included with the rest, but are useful for purposes of comparison. This initial rise is of considerable interest. It could not be due to an increase in stored fat, since in the earlier days this constituent was markedly lacking in the diet. The most probable explanation is that it was due to retention of water in the tissue. There seems some evidence to prove that a greater amount of fluid was consumed, by some of the party at least, in the earlier days, when corned meat was eaten, than they had been in the habit of drinking prior to the march. This was not universally the case, however, and it is doubtful whether the increased ingestion due to thirst produced by salt meat would not be more than balanced by an increased diuresis produced by the action of the potassium nitrate to which the thirst was attributable. In any case this explanation does not seem sufficient to account for the steady rise that continued for three days, and whose effects persisted till the end of the first phase of the experiment. It is to be noted that the amount of protein ingested per day during the first six days was 190 grams, a distinctly high figure, amounting to a rise of probably 30 per cent. on the amount ordinarily consumed in barracks. At the same time the carbohydrate allowance was increased by about 25 per cent. A storage of protein in the body does not therefore appear improbable, in view of the stimulus to muscle growth afforded by the regular work demanded of the men during marching. Human muscle consisting of about 20 per cent. protein and 80 per cent. water, if we assume that the excess of protein above the customary barrack allowance was retained, this being say 50 grams, the total increase in weight obtained in this manner would if continued over the first three days amount to 750 grams. Since the actual increase averaged 550 grams, this would allow for a certain excess expenditure of fat and glycogen in the production of energy. It must be noted, too, that during the first six days of the experiment there was a distinct increase in calf circumference of, on an average, 0 22 of an inch. The average abdominal girth also increased by 0.54 of an inch, possibly due to increase in the lumbar muscles. Whatever the explanation this point of the initial increase in weight seems a suggestive one for discussion and future investigation. During the last days of the experiment the reduction in weight was marked and continuous. During the last five days the average loss was 234 grams per diem, or just over half a pound. This loss must have been either in fat or flesh, or partly in one and partly in the other. If in fat alone the daily loss of energy would have been $234 \times 9\,3 = 2{,}176$ calories, whereas the estimated daily loss was, over these particular days, under 890 calories. It must also be remembered that during the earlier part of the experiment the ration of fat had been extremely low, only 58 grams. There was, therefore, probably very little superfluous fat available in the bodies concerned in the experiment. It must be added that already by this time there was a generally sunk appearance in the faces of the men, attributable to loss of adipose tissue. If we refer to an experiment lately recorded by Benedict, and quoted by Zuntz,[3] we find that in a seven days' starvation experiment the daily loss of weight was 526 grams, this being represented by a loss of 69.5 grams protein, 139.6 grams fat, and 23 grams glycogen. The protein loss corresponded to a loss of 347 grams of flesh. The total loss of energy (measured by the calorimeter) was 1,696 calories. These figures give a loss of energy of 1,298 calories from destruction of fat, 285 calories from protein, and 94 calories from glycogen. Thus, whilst the greater part of the lacking energy was found from fat, a correspondingly high percentage of the loss of weight was due to waste of fleshy tissues. If we assume that the loss of weight of the men under observation was similarly distributed, we shall find that they should have lost in energy $\frac{234}{525} \times 1{,}696$, that is 756 calories, whereas, as a matter of fact, the calculated deficiency of food as compared with work done was, as already stated, less than 890.

The agreement is fairly close, and we shall probably be justified in concluding that the daily loss of weight was represented by a loss of about 60 grams of fat and 170 grams of flesh. The officers were, as a whole, losing weight about half as fast again as the men, but as already noted they were on the average heavier individuals. The heaviest man in the party lost more rapidly even than the officers. The measurements taken at the end of the experiment showed a distinct wastage. This was most marked in the chest, which fell on the average 0.56 in. in the first week, 0.42 in. in the second week, and 0.98 in. on the whole period. There can be little doubt that this was attributable to wastage of pectoral muscle. In the second week the abdominal girth fell over 1 in., whilst the circumference of the calf fell 0.16 in. Too much reliance cannot be placed on these figures as showing actual quantity of loss, but they have a distinct value as demonstrating the fact that loss occurred, especially when taken together with the loss of weight.

Turning now to the question of the different constituents of the diet. In the first six days the average amount of protein consumed was, as already stated, 190 grams, of which 100 grams was furnished in the form of corned beef, and 75 grams in biscuit. I have no doubt in my own mind that this allowance is ample, and if it errs does so on the side of generosity. A substitution of a certain amount of fat for some of the protein would undoubtedly have been an advantage. In the second week the average amount of protein was 145 grams, supplied in the form of fresh meat and bread. I have no hesitation in saying that this allowance is as low as it is advisable to go, and might well be increased, especially when hard work is demanded of men under conditions of exposure. This is, I am aware, in contradiction to the theory held by many at the present day. I would, however, submit that experiments carried out on men leading sheltered lives, with regular meals, and rest, are no safe guide when we are dealing with the food of men exposed to even the slight hardship of camp life in bad weather (I may remark that throughout the experiment in question the weather was atrocious, and, speaking for myself, I never slept in dry bedding or put on dry underclothing after the first day), and much less so when we are dealing with the inevitable vicissitudes of active service. I need hardly remind you of the fact that the Japanese have been compelled to increase their protein ration in the navy to 150 grams, and have found marked benefit to result

therefrom. As to any possible harm resulting from a high protein diet, speaking here of men leading active animal lives, I must confess I have failed yet to see any positive proof of the fact. I think we are too apt to rely upon isolated experiments as against prolonged experience. The British inhabitants of these inlands have for many hundred years been large meat eaters. Taking the labouring class, certainly we may say that the only check to meat eating has been poverty. When the Englishman can afford meat he will have it; I think I am safe in saying that the enormous majority of my audience, as indeed of any other assembly in the country, are descended from a large protein eating stock, and, when they are able to afford it, a meat eating stock, and I confess I fail to see any marked signs of that degeneracy which, if all the evil tales we hear were true, should be written at large on the bodies and faces of my audience.

Far more important to my mind than the actual quantity of protein is its nature, that is to say, the foodstuffs in which it is furnished. Variety here is the great essential. This is the difficulty that confronts all men who have to lay down a scale of diet under conditions which demand the resort to preserved foods, especially preserved meats. No matter how excellent the quality, a very short experience of the same kind of food rapidly produces an intense distaste for it. The use of milk proteids in the form of cheese, or of the vegetable proteids in the form of the leguminous plants, is, in my opinion, one of the most satisfactory aids to the solution of the problem.

As regards carbohydrates, the average allowance during the first week was 510 grams, during the second 450, with an average of 480. These were supplied in the form of bread or biscuit and potatoes as regards the starchy foods, and in the form of sugar and jam as regards the other division, sugars. As to the absolute amount of carbohydrates to be given, there is of course no regular rule to be laid down. Very much depends on the habits of the nation to which the individual belongs. In our army 1 lb. of biscuit or 1¼ to 1½ lb. of bread are traditional, and date back to the eighteenth century wars if no earlier. The Germans give 1¾ to 2½ lb.; the Russians as much as 2¾ lb. The form in which the carbohydrate is given is of great importance. Certain classes cannot digest a large amount of starchy food, and it was found in this experiment that the officers did not consume more than three-quarters of their biscuit ration, owing to the difficulty of mastication and conversion of the starch. The bread ration was consumed completely, but this was due to the ease with which bread can be swallowed without thorough mastication. There was a distinct craving for more bread, occasionally for more biscuit. The latter was rare, however, largely because biscuit takes much longer to eat, and is therefore not consumed all at once. As regards the officers, the demand for carbohydrates was evidenced by a craving for sugar, which lasted for a week after a return to normal diet.

As regards fats, it will be noticed that the average amount given in the first week was only 59 grams, and if we exclude the first day, when a special cheese sandwich was issued, under 50 grams. This is of course low, and the ratio of fat to carbohydrate during that period was as 1 to 10—a proportion noted in the diets of the poorer classes only. The effect of this low fat ration was distinct in the sinking of the cheeks and hollowing of the eyes of individuals. In one or two of the men and in all the officers, this was very apparent, even during the period when weights were going up. In the second part of the march the fat ration averaged 110 grams, bearing a proportion of 1 to 4½ as regards the carbohydrates. This is a high ratio under ordinary circumstances, though not higher than that which the soldier is accustomed to in barracks. The lack of fat during the first week was severely felt, as was shown by the avidity with which it was eaten during the second week. Even the high allowance of this last period was insufficient, at least as regards the officers. The craving for additional fat continued in their case for at least a week after the experiment was concluded. Foreign armies all give poor fat rations, the Russians as low as 27 grams, Germans 68 ordinarily and 100 on the special war ration, French 72 on the augmented service ration. The United States alone give over 100. The lack of fat is a serious matter when preserved meat is issued. The proportion of fat to meat in fresh meat (beef sides, medium fat, as purchased, Atwater) is about 1 to 4, but in corned beef this is reduced to 1 to 10, and indeed any figure much above this makes the meat unpleasantly greasy. In my opinion, speaking I admit a good deal from experiment *in corpore vili proprio*, a ration of 150 grams of fat would not be found too much if hard work is to be done. A good form of fat ration is cheese, which at the same time helps to do away with the monotony of the protein ration, but lard or suet would also be very suitable forms of supply, since they would assist in the cooking of the other parts of the ration. I should like to elicit from the meeting a pronouncement on the question as to which is the most suitable form of food where a large amount of energy is required, and where portability also has to be considered. Proteins I do not think can be placed higher than the allowance given in the first week of the experiment—that is, 190 grams. Portability demands the use of preserved food, and a larger supply of protein in that form means distaste for the diet, which is wasted in consequence. The choice lies between fats and sugars, or a combination of the two. The Japanese in Manchuria in cold weather relied on large issues of raw sugar, with which the men filled their pockets. The energy value attained in this manner was, I believe, somewhere in the neighbourhood of 6,000 calories or even higher—a figure demanded by the extraordinary cold to which the men were exposed. Sugar has the great advantage that it can be consumed and appreciated raw. Personally I found during the experiment that a mixture of sugar and jam in approximately equal parts formed an excellent and most sustaining diet. Fat is less portable, especially in a hot climate, and cannot of course be eaten by itself or without cooking to any great extent. The problem, as I should put it, is as follows: The energy demanded being 5,000 calories—say, for instance, a forced march of twenty-five miles under severe weather conditions—of which 800 calories is furnished by protein and 1,800 by starchy food (biscuits, as was the case in the earlier part of the experiment), in what form should the remaining 1,400 calories be furnished, by fat or sugar? or, if, as is more reasonable, a combination is used, what proportion should the one bear to the other?

References.

[1] Schumberg, *Sanitäts-dienst und Gesunheitspflege im Deutschen Heere*, 1909, p. 297. [2] Zuntz and Loewy, *Physiologie des Menschen*, 1909, p. 701. [3] Ibid., p. 664.

DISCUSSION.

Dr. Robert Hutchison (London) congratulated Lieutenant-Colonel Melville on the accuracy of his interesting experiment. The results, he thought, were pretty much what might have been expected, for it was evident that the calorie value of the diet was below the needs of the subjects of the experiment. He agreed with Colonel Melville that the protein ration was none too high, for whatever views one might hold as to the protein requirements of the body, all careful investigations had shown that there was an instinctive consumption of large quantities when hard muscular work had to be done. In the diets of football teams in America, for instance, as much as 181 grams of protein had been found, and in the case of Scandinavian athletes as much as 217 grams daily. As regards the question of how much carbohydrate and fat should be supplied, it was largely a question of digestive capacity, and this made it very difficult to construct hard-and-fast rations. Inasmuch, however, as most people found carbohydrates easier of digestion than fats, it was probably best to supply the larger proportion of the balance of calories in the form of a concentrated carbohydrate, such as sugar.

Lieutenant-Colonel A. M. Davies (R.A.M.C., ret.) congratulated Colonel Melville on the solid piece of experimental work which he had carried out, which would be of permanent value from both physiological and service standpoints. He deprecated a too rigid dietary standard based solely on the calorie value of food substances; public dietaries or rations so constructed would be apt to contain too large a proportion of carbohydrates, which were cheap, and too little fat, which was more expensive. He would not advocate a fixed ration or dietary supposed to be complete in every particular, while certain simple foods, such as bread, meat, cheese, potatoes, or biscuit,

could be eaten day after day by ordinary healthy men for an almost unlimited time: his experience was that any concentrated preparation, however theoretically valuable as combining in small space and weight the necessary alimentary constituents, would inevitably pall on the palate in a short time, and become absolutely uneatable only a little later. Let the necessary foundation, or nucleus, of the ration be provided in the shape of bread, biscuit, meat, cheese, sugar (as jam), and let variety be allowed in other food substances as they might be procurable.

Dr. Cathcart (Glasgow) thought that Colonel Melville's paper was very valuable and most suggestive. He found it difficult to believe that hard work necessitated a large intake of protein, as, judging from the examination of the excreta, work seemed to have but little effect on the nitrogen output, provided the calorie intake were sufficient. The majority of experiments, however, did show that there was a slight increase in the output of nitrogen waste matter during hard work. The speaker suggested that this increase came from broken-down nitrogenous tissue, which was essential for the normal working of the muscle, and which, of course, with hard work was freely utilized; that the repair material for this essential substance was present only in very small amount in the ordinary protein of the diet; therefore, in order to obtain a sufficiency of repair material there had to be a high protein consumption. If a perfect protein source could be found, then this high protein intake would not be necessary (vide Michaud's work on feeding dogs with dog flesh). The really important point was the quality, not the quantity, of protein supplied. The cannibal, of all men, was the only one who probably enjoyed a perfect protein supply. In answer to Colonel Melville's question as to which foodstuff should predominate in the diet, he pointed out from some recent work of his own the fact that carbohydrates were not only ready sources of energy, but that they probably played some very intimate part in the metabolism of protein tissue. As fats did not appear to be able—at any rate, with the same readiness—to take part in these metabolic changes, and as carbohydrates were both cheaper and more readily digested, the speaker would supply the bulk of the extra calories demanded in the form of carbohydrate.

Dr. Haldane (Oxford) said that the experiment described by Colonel Melville formed a most valuable contribution to the question of dietary standards. The standards of energy value in the daily food, as laid down by Atwater, were based on observations of what men actually ate when their supply of food was not limited; and it might be contended, and had been contended by Chittenden, that they usually ate more than was sufficient. Colonel Melville's experiment afforded very strong evidence to the contrary. The speaker having himself examined the men before they started, and again at the end of the march, could confirm Colonel Melville's conclusion that many of the officers and men showed evident signs of deficient nutrition. Only in the case of some of the lighter men were these signs absent. He considered the basis of Atwater's standards of energy value in food was absolutely sound, and that the records of cases in which men were placed on a restricted diet showed that not only was weight lost, but working capacity and resistance to epidemic and other diseases was greatly diminished. He would like to emphasize strongly the diminished resistance to infection. This was a factor of enormous practical importance when the food supply of large numbers of persons became for any reason restricted. With regard to standards of protein food, he did not think there was as yet any clear evidence that perhaps half as much protein as was usually consumed by Europeans would not suffice. The experimental data which Chittenden had brought forward on this point seemed to him to possess much weight; and there was no physiological improbability in assuming that a large proportion of the energy usually afforded by oxidation of protein might not be obtained without disadvantage from carbohydrates or fat. The proportion of protein in a diet, like the proportion of fat, was probably to a considerable extent a matter of chance, although a certain minimum of protein was undoubtedly necessary.

Dr. Alexander Haig (London) stated that his experience lay midway between the figures of Atwater and Chittenden. He found that his patients could not go for long periods below 90 and 95 grams of protein per day without breaking down. Some, it was true, did not break down for eighteen months, but then they became weak and anaemic. As regards the proportion of carbohydrates and fats, he referred to the proportions of these substances in the *normal* diet of man (nuts and fruits). In these the proportions found were:

	Proteins.	Carbohydrates.	Fats.
Nuts ...	... 1	0.7	3.2
Fruit ...	... 1	17.0	0.6

The one balanced what was wanting in the other, and in a mixed diet of nuts and fruit—namely 12 oz. nuts and 3 lb. fruit—a sufficient protein diet for a man of 133 lb. was found.

Proteins.	Salts.	Carbohydrates.	Fats.
1	0.5	3	2

This, then, was physiologically correct in all but the fats, which were double or treble the ordinary physiological figure. In a word, one could take too little fat in ordinary diet, and hence, perhaps, had to increase it at once when treating phthisis. Possibly all this fat was not absorbed, and it certainly did not lead to obesity or increase of the body fat. This was seen in the case of the natives of India, who took large quantities of fat and yet kept moderate or thin. Taking what physiologists might consider an excess of fat was often a cure for "the English disease"—constipation.

Dr. Buckmaster (London) doubted whether the primary increase of weight in the early part of the experiment could be attributed to retention of protein. In his opinion, except in the case of convalescence, it was known to be exceedingly difficult, if not impossible, to store protein, and, further, even if it were allowed that this could be retained, simple measurements of the girth of chest or calf could give no evidence of this. He further considered that the amount of fat in human dietaries was a peculiar rather than a general feature of the dietary, since the fat supply for all other animals was very small compared to the carbohydrate supply. The capacity of the individual for utilizing carbohydrate was known to be greatly influenced by simultaneous administration of alcohol. This diminishing of the power of the organism to utilize the administered sugar, evidenced by alimentary glycosuria, was well demonstrated if the carbohydrate, as in the case of the Japanese, were largely cane sugar.

Dr. Joseph Smyth (Dublin) did not think that sufficient appreciation had been shown to the enormous value of Chittenden's experiments. It was not fair to put against Chittenden's experiments with different classes of men over very prolonged periods, Colonel Melville's experiments of six or twelve days. It seemed not to be borne in mind that Chittenden advocated for the success of his restricted diet that the change should not be too suddenly made, and that the diet should be as varied as possible. It was stated in the recent report of the Vagrancy Commission that Atwater had read a report showing that two workers in his laboratory got better results from a diet of 80 grams of protein daily than on the higher standard. Besides, it was not fair to put famine and starvation against a properly "restricted" diet.

Professor A. B. Macallum (Toronto) criticized the view that we should include the instinctive tendency towards proteins as a factor in the composition of a diet. The extraordinary diet of the eighteenth century could be thus defended, although it could not be followed to-day. The character of the composition of a diet should be based on the results of observation alone, and not on the tendency or fashion, erratic or otherwise, of individuals or classes for a period.

Lieutenant-Colonel Melville, in reply, said: I must, in the first place, thank the Section for the very favourable reception they have accorded to my remarks. I should like to say that, though the paper is my own work, I have been greatly indebted to Dr. Haldane and Dr. Pembrey

for much advice and friendly discussion, as well as to Captain Walker of my own corps, for assistance in getting together the figures on which my remarks have been based. I had not the slightest intention of comparing my experiments with those of Professor Chittenden, with which some of the speakers have contrasted them; but since the theories associated with that distinguished observer's name have been rather prominently brought forward I feel that I can hardly sit down without declaring the attitude in which I regard them. Personally I am a small protein eater, and for men engaged like myself in a purely sedentary life I am inclined to agree with these theories; but when I come to the question of the diet of men leading the life of the soldier on service and exposed to the hardships that that expression implies, I confess that I can in no way accept them. As it happens there does exist at the present day a race of men who for as many centuries as we have any record have dieted themselves on a scale in every way consonant with the principles of Professor Chittenden. I refer to the inhabitants of Bengal.

A very excellent examination of the dietary of this people has been made by Captain D. McCay, of the Indian Medical Service.[1] He carried out a series of observations on Bengalis of various classes whose protein metabolism corresponded to 0.113 gram of nitrogen per kilogram of body weight per day. This meets fairly closely the demands of Mr. Chittenden, who states that "a daily metabolism of 0.10 to 0.12 gram of nitrogen per kilogram of body weight is quite adequate for physiological needs, provided a sufficient amount of non-nitrogenous foods is taken to meet the energy requirements of the body." Here, then, we have a whole race of men who for many centuries have been living on a dietetic system strictly in accordance with this rule; and here, therefore, we should have its effects clearly manifested. Captain McCay shows distinctly that the Bengali is in the first place of inferior physical development, being 25 per cent. lighter than the average European, with a smaller chest measurement, though much the same stature. The blood of the Bengali contains about 25 per cent. less haemoglobin than that of the European, and flows at 25 per cent. less pressure. As compared with Anglo-Indian and Eurasian students, the Bengali students showed no progress in development during their period of study between 16 and 20 years of age, though the several classes live in much the same surroundings, differing only, or at least chiefly, in the fact that the Anglo-Indian and Eurasian students consumed about 0.19 gram of nitrogen per kilogram of body weight per day, as against the 0.11 of the Bengali. As regards physical endurance and activity the Bengali labourer is enormously inferior to the European. Insurance offices in Calcutta rate all Bengali lives as being five years worse than European lives, and one large office will accept the policies of well-educated Bengalis of the higher castes only, and even then not beyond the age of 35 to 38 years. A very strict medical examination is made, a slight excess measurement round the waist being sufficient to ensure rejection. At the same time kidney disease is twice as prevalent amongst native patients in the Medical College Hospital, Calcutta, as amongst European patients, though scarlet fever is unknown in India. In powers of resistance to disease I am certain that no officer with any prolonged experience of India will deny that the native is infinitely inferior to the European, living under the same conditions of climate, though these are strange to the latter. I have heard officers with experience of Central Africa make the same remark as regards the negro inhabitants of that part of the world. Livingstone, I believe, noted too that the meat-eating negro was fiercer and more warlike than the vegetable eater. Confining ourselves, however, to the Bengali, the subject of Captain McCay's observations, we have in this race the best exemplar that can be imagined of Mr. Chittenden's theories. Here, if anywhere in the world we should find a race rejoicing in that "healthfulness and longevity that are the rewards of the successful pursuance of a temperate life, modelled in conformity with Nature's laws," which we may here, I think, safely conjecture are identical with Mr. Chittenden's advice. Unfortunately the insurance companies, with an eye to their dividends, decline to recognize either the healthfulness or the longevity, in the only practical method open to them. Rather they with wilful blindness penalize the healthful and long-lived (as he should be) Bengali, as against the European, though the latter must or should be suffering from "gastro-intestinal disturbances, indigestion, intestinal toxaemia, liver troubles, bilious attacks, gout, rheumatism, to say nothing of many other ailments associated with the habitual over-eating of proteid food." Professor Buckmaster drew attention to the difficulty of attributing the rise of weight exhibited during the earlier days of the experiment to laying on of protein since it was well known that in the grown man protein is the most difficult of all tissues to increase. This, of course, I accept as an ordinary rule, but I would submit that under the peculiar circumstances of the experiment there was some reason for anticipating the possibility of such an increase. In the first place there was a considerable increase in the daily amount of protein ingested, probably about 30 per cent. As is well known a sudden increase in protein is followed by a definite retention of nitrogen for a few days before equilibrium is attained. At the same time there was a distinct stimulus to muscle growth as a result of the daily marching, and good reason to suppose that such growth did actually occur, since as already stated the measurements of the abdomen (lumbar muscles) and calf did as a matter of fact show an increase during this period. It is true that these measurements cannot be taken as a measure of the exact extent of that increase, but they are good corroborative evidence of its occurrence. Of course in any case, the increase in weight being theoretically due to an increase of muscular tissue, must be attributable, as regards at least four-fifths of its amount, to a retention of water in the body. I confess that the explanation is only tentative, and demands further investigation of the point raised. It is, however, to my mind the most plausible that can, in view of the evidence attainable, be at present brought forward. On the point of military rations being as a rule insufficient, as suggested by Professor Haldane, I should like to give a word of warning. In war the soldier is given as much as can be obtained. Often this must be insufficient for his wants. In the war lately waged by the Germans against the tribes of South-Western Africa the ration issued after the outbreak of hostilities was only about three-fourths of the value of that issued to the Protectorate troops prior to the war. Again, this war ration was only available for troops on the railway. Troops actually in the field engaged in active operations received what was called the two-thirds ration of about 3,000 calories. Thus we have the paradox that the ration of the men varied inversely as the work demanded of them. This was not because the fact that a high ration is necessary for hard work was not recognized by the German authorities, but because the very conditions that implied hard work, impeded supply. All nations lay down a certain scale of rations for issue on field service, but this must be looked on as merely a minimum scale. So much the supply department can arrange to carry and furnish. The military authorities on the spot will, in addition, procure locally by requisition or purchase, not merely what the soldier needs, but as much as they can get, irrespective of any standard of energy requirements or energy value. In conclusion I can only thank the Section very sincerely for the kind reception accorded to my paper, and express my appreciation of the very interesting discussion of which I have been privileged to furnish the subject.

[1] No. 34 of the Scientific Memoirs of the Officers of the Medical and Sanitary Departments of the Government of India, New Series, 1908.

DEMONSTRATION ON TONOMETRIC DETERMINATION OF DISSOLVED GASES.

By August Krogh, Ph.D.,
Lecturer on Physiology at the University of Copenhagen.

Dr. Krogh described the principles of tonometric determination of gases dissolved in fluids, and demonstrated two new gas tonometric apparatuses. One of these was essentially of Pflüger's pattern, but the volume of gas used had been reduced to 4 to 5 c.cm., while the surface available for diffusion was about 130 sq. cm. By means of this apparatus a tension determination on blood or any other fluid could, it was pointed out, be made in twenty to thirty minutes, during which time about 400 c.cm. of the fluid must pass through the apparatus.

The second apparatus was a so-called microtonometer. The gas volume was reduced to a bubble of 4·5 c.mm. suspended freely in the fluid to be examined. A current of the fluid, emerging from a very narrow opening, was directed against the bubble, which was thereby put in a revolving motion. The tensions could in this apparatus be completely equalized in five minutes or less, and not more than 5 to 15 c.cm. of the fluid needed to be employed. The bubble could be drawn into a very narrow graduated tube where its length could be accurately measured, and after detachment of the tonometric appliance the same apparatus was used as a microanalysis apparatus. The bubble was put in contact with suitable reagents, by which first the carbonic acid and then the oxygen are absorbed. After each absorption the bubble was drawn up into the graduated tube and measured anew, and the percentages of the two gases could then be calculated from the readings. The determinations of the O_2 percentages could be made accurate to within 0·1 per cent., and of CO_2 to within 0.2 per cent. It was, however, a very difficult matter to use the microtonometer for tension determinations on the blood of mammals, because the blood was very apt to coagulate within the narrow tube.

THE FORCES GOVERNING THE GAS EXCHANGE IN THE LUNGS.

By AUGUST KROGH, Ph.D.,
Lecturer on Physiology at the University of Copenhagen.

By means of the apparatus which I have shown you I have endeavoured to solve the problem about the forces governing the gas exchange in the lungs. When I first undertook this investigation, in collaboration with my wife, we had no doubt that Bohr's theory of gas secretion was in the main correct. We expected to find that the oxygen tension in the arterial blood could, in certain conditions, be higher than in the air of the lungs, while the tension of CO_2 could be lower, and we hoped that we should be able to define those conditions more precisely than it had been possible before. In this, however, we were entirely disappointed. We did not find anything which was not in complete accordance with a simple diffusion hypothesis; and after having critically examined the experimental evidence upon which the secretion theory is based, and tested both theories by applying them to all the facts known about the gas exchange in the lungs, we were led to give up the secretion theory altogether.

We began by comparing tonometrically the tensions of O_2 and CO_2 in the arterial blood of rabbits with the percentages of the same gases in the air of the lungs. The tension of CO_2 in the blood was always found to be practically identical with that in the alveolar air. When it was altered artificially in the air the blood followed suit. The O_2 tension in the blood was in all cases lower (by 1–4 per cent.) than in the alveolar air, and also followed any alteration in the latter produced artificially.

I have made a number of experiments on tortoises. These animals are especially adapted for this kind of work in so far as it is possible to work on the air as well as the blood of one of the lungs separately. It had been found previously, in experiments published by Dr. Maar, that after division of one of the vagi the respiratory exchange rose considerably in the corresponding lung, and this was supposed to be due to some influence of the nerve upon the gas-secretory processes. I found, however, by measuring the flow of blood in the left pulmonary vein, that the increased respiratory exchange was due solely to an increased flow of blood. The tensions found were in all cases in accordance with the diffusion theory.

When a tortoise breathes air rich in carbonic acid in one of the lungs, while the other is supplied with ordinary air, the carbonic acid is not liberated but absorbed by the blood, as soon as its tension is above 2 to 3 per cent., and, when it breathes air poor in oxygen, this gas is given off from the blood, when the percentage in the lungs falls below 1.5 to 2 per cent. When the tensions are determined in the venous blood of the pulmonary artery, just those values are found. When the lung is exposed to an atmosphere with an oxygen tension lower than its own it will give off oxygen, but as soon as the tension in the air is higher it will absorb. We find diffusion, and nothing but diffusion.

Now, I do not think that the diffusion theory can be proved or the secretion theory disproved by experiments of this kind alone. Even if we find in all cases that the tensions observed are in favour of diffusion, it is quite conceivable that the processes are, nevertheless, secretory in character. It remains to be investigated whether the quantities of gas passing through the epithelial surfaces of the lungs can be accounted for by diffusion or not. The study of this problem has only just been begun. Bohr has considered the tension differences between the blood in the pulmonary capillaries and the gases in the alveoli in various conditions, and I worked out by very elaborate calculations the most probable mean tension differences. I have worked out, I think, a reliable method of measuring the *diffusion efficiency* of the lungs in man, by which term I mean the number of cubic centimetres of carbonic oxide which will pass through the lungs during one minute, when the difference in CO tension is equal to 1 mm. of mercury (0.14 per cent.).

If the diffusion theory is correct, as I think it is, the diffusion efficiency of an individual will be a reliable index of the respiratory efficiency of his lungs, and I think that valuable facts could be brought to light by measuring the efficiency in a number of individuals both in normal and pathological conditions.

The only lungs which, so far, have been examined are my own, in which I found an efficiency of about 20 during rest and a little above 30 when the lungs were dilated, as during heavy work. Calculated for O_2, that would mean that I should be able to take up during the greatest strain, when the venous blood contains only 2 volumes per cent. oxygen, about 2,600 c.cm. of gas per minute, a figure which agrees well with what has actually been taken up by men in experiments involving very heavy muscular work.

The diffusion-constant for CO_2 is extremely high on account of the great solubility of the gas (in my case about 500 during rest and above 700 during work), and it is therefore a necessary consequence from the diffusion theory that the CO_2 tension in the arterial blood should always be exactly equal to that in the alveolar air. I think that it follows from the work of Haldane, Priestley, Poulton, Douglas, and others in this country, of Yandell Henderson in the United States, and from the actual determinations by my wife and myself, that the equality postulated does, in fact, exist.

DISCUSSION.

Dr. HALDANE (Oxford), after referring to the great interest among British physiologists in Dr. Krogh's methods and investigations, said that the recent investigations of Dr. Douglas and himself on mice, rabbits, and men confirmed Dr. Krogh's conclusions in so far as they referred to normal resting conditions. He thought there would now be general agreement among physiologists that during rest, under normal conditions, the gaseous exchange between blood and alveolar air was by diffusion alone, and the gaseous tensions in the arterial blood was practically identical with those of the alveolar air. On the other hand, Douglas and he concluded that the physiological stimulus of want of oxygen led to actual absorption by the lungs.

Professor STARLING (London) thought that most of the facts pointed to the diffusion theory as being the correct one. He admitted that the experiments of Bohr and Haldane were evidence in another direction. As for the method—the CO method—which Haldane employed, he thought that the animal could not be regarded as being in a normal condition, and that the conclusions drawn from such experiments might therefore be regarded with some suspicion.

Dr. BUCKMASTER (London) thought that the figures published by Drs. Haldane and Lorrain Smith on the oxygen tension of arterial blood as ascertained by the CO method were to be received with caution, since these figures were no less than nine times greater than those given in the textbooks, on the authority of Pflüger and his pupils. At high levels, Dr. Haldane considered that an active secretion of oxygen into the blood might well be an explanation of the ease with which man and animals became accustomed to a lowered tension of oxygen in the atmo-

spheric air; but, in the opinion of the speaker, might not the increase in actual haemoglobin in the volume of circulating blood suffice for this, for in the observations made fifteen years ago on Mont Blanc, in conjunction with Dr. Slater and Mr. Dent, he showed that the haemoglobin control of the blood reached 120 and more (Oliver haemoglobinometer).

Professor Thompson (Dublin) said that, in his opinion, this discussion brought us nearer to agreement on the main points than we had been any time for fifteen years past. He thought the only fundamental difference now outstanding was the possibility of active absorption of oxygen taking place under abnormal conditions.

Dr. Krogh in reply commented on the fact that the epithelial cells covering the blood vessels are very badly adapted for secretory work, as they consist of extremely thin, structureless membranes without any nuclei. He had found by special experiments that his own tonometric determinations could not be affected by any consumption of oxygen in the blood itself, but would not vouch for the determination made by Fredericq in this respect. He pointed out as a possible source of error in the recent experiments of Haldane and Douglas, that the percentage-saturation of the blood with CO when exposed to a definite gas mixture might be variable not only, as has been shown, from individual to individual, but also, perhaps, from time to time in the same individual. He wished to test the results by the direct tonometric method, and in several other conditions which might likewise put a strain on the pulmonary functions.

THE EXCRETION OF CREATINE IN DIABETES MELLITUS.

By M. Ross Taylor, M.D.,
Physiological Laboratory, Glasgow University.

[Preliminary Note.]

The course of protein metabolism in diabetes mellitus has been frequently the subject of investigation, but so far no very definite results have been obtained. This has been due in part to the fact that the diet of the patient has not been kept constant, and in part to the fact that most diabetic diets are very rich in protein, thus causing a large output of nitrogen in the urine, and in this way obscuring any small variations which might have been present as the result of alterations in the metabolic processes.

In the present series of cases—16 in number—it was found that the output of total nitrogen in diabetes was not always greatly increased even with a comparatively high intake of protein; indeed, the nitrogen output was frequently abnormally low. As Cathcart had previously shown that there seemed to be some connexion between the carbohydrate metabolism and the creatine-creatinine metabolism, it was decided to investigate the urine of diabetes for variations in the output of these substances.

As regards creatinine, it was found that the output was not increased to any considerable extent even when the patient was on a highly nitrogenous diet. Creatine, on the other hand, a substance never found in the normal urine if the diet be free from creatine and creatinine, was always found. It was present even when the patient was kept on a creatine-creatinine-free diet.

Some further work has been carried out in conjunction with Dr. E. P. Cathcart on the creatine excretion after the induction of glycosuria by means of injections of phloridzin. Here it was found that if the animal were allowed only a small quantity of carbohydrate in the diet creatine appeared in the urine during the time sugar was being excreted. It disappeared as soon as the sugar excretion ceased. On the other hand, if the animal were given very large amounts of carbohydrate, so that even during the period of glycosuria there was still an abundance of sugar in the body, then no excretion of creatine accompanied the output of sugar in the urine. It was further found that fats, even in very large amount, could not replace the carbohydrate. A liberal supply of fat combined with an amount of carbohydrate, sufficient to prevent the appearance of creatine in the urine under normal conditions, did not check the excretion of creatine when glycosuria was induced.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

URINE AND FORMALIN.

In the Journal of October 15th, p. 1164, appears a memorandum from Dr. P. Hamilton Robertson, of Glasgow, calling attention to the presence of formalin in the urine as a cause of reduction of Fehling's solution, and so forming a possible fallacy in testing for sugar.

May I be permitted to point out that this fact is well known to every one acquainted with the rudiments of organic chemistry? Formalin is an aldehyde, and, consequently, possesses active reducing properties. Glucose is, likewise, an aldehyde, and, naturally, the copper test is similarly affected by the two substances.

There is another reason for avoiding the addition of formalin to urine intended for chemical or microscopical examination. It is that formalin enters into combination with urea and forms a precipitate which adheres in a surprisingly close manner to the sides of the test tube or vessel containing the urine. Under the microscope the deposit appears as lustrous spherical bodies, not unlike leucin. In the *Practitioner* for 1903 I published a note drawing attention to this much less known phenomenon, and gave a figure of the deposit.

For several years past, in my clinical teaching, I have frequently warned students against these two misleading effects of adding formalin to urine, and have demonstrated the results in the wards of Sir P. Dun's Hospital.

Walter G. Smith, M.D.Dub.,
Physician to Sir P. Dun's Hospital; Ex-President, R.C.P.I.

CAUSE OF APPENDICITIS.

As this question is still unsettled, I venture to put forward the view that it is due to eating animal food in which the early stages of decomposition have taken place, this food being particularly dangerous when insufficiently cooked. The following may be classed as dangerous:

1. Meat kept till it is tender.
2. Game "hung" till it is "high."
3. Tinned meat and fish.
4. Nearly all the animal food on which boric acid has been used.
5. Much of the food "kept in cold storage."

A great deal of this is decomposed, or dangerously near being so, before it reaches the cook.

In times preceding the modern increase of appendicitis the first two furnished most of the decomposed animal food eaten, and the affection was comparatively rare.

Tinned meat and fish were introduced some time in the Fifties, and came into fairly general use in the Sixties or Seventies. Some years later appendicitis was noticed to be on the increase; it is quite possible that it was increasing for years before it was noticed to be so, for the advance was very slow at first. Then later boric acid and cold storage were employed to preserve meat and other food, and the increase in the number of cases of appendicitis became more marked. As the consumption of these foods increases so does the frequency of appendicitis, till now it has assumed the proportions of a veritable plague, from which no one is safe.

The actual cause of the inflammation of the appendix is probably microbial. When decomposition of animal bodies sets in a great number of varieties of bacteria appear in the tissues—the bacteria of decomposition. It is almost certain—to judge them from their association with putridity—that some of these are capable of producing disease, and if they gain admission to the alimentary canal while still active—that is, if they survive the cooking process—it is easy to understand how they can get into the cavity of the appendix and set up mischief. Irritation and inflammation follow just as cystitis follows the use of a foul catheter.

It is probable that efficient cooking would always render this dangerous food safe, but then cooking is not always efficient; and the more dangerous food there is in daily

use the more likely we are to have accidents, just as in a magazine the more loose powder lying about the more frequent are explosions.

In many instances the protection afforded by cooking is altogether absent, as in the case of articles which are eaten as they come from the tin. In every case probably the food is cooked before it is tinned, but it may become decomposed and capable of causing disease before it is consumed.

Whatever may be said of this view of the case, the broad facts remain. A great change in the food of the people in recent times. A great increase in the incidence of appendicitis—the one following the other within a short time. The recently introduced food capable of producing appendicitis, and appendicitis following its introduction.

Hove. W. Coates, M.D., R.U.I.

AN UNUSUAL CAUSE OF HAEMATURIA.

Cases of blood in the urine are, perhaps, to most practitioners of frequent occurrence, and very often present difficulty in diagnosis, for it is rare to get classical symptoms of a definite lesion. The following case is somewhat uncommon, and that is my reason for reporting it.

I was called to see a youth, aged 19, suffering from severe collapse, the result of some form of haemorrhage; when I saw him he was quite blanched. I was shown the urine he had passed; there must have been 2 or 3 pints of almost pure blood. He also complained of great pain in his back, and it looked like a case of acute nephritis with haemorrhage, although there was no increased pulse tension, no oedema, and only a slight rise of temperature. The blood continued in the urine for some days in small quantities. Under the microscope what looked like blood casts were seen, but were not distinctive. I made a provisional diagnosis of acute nephritis, no other cause being then traceable. On the fourth day the abdomen and also the penis seemed swollen. On manipulation I was able to express from the urethra a little discharge which, under the microscope, contained gonococci. On further questioning him it was found that infection had occurred about a fortnight previously.

At this time it was impossible to draw back the prepuce owing to inflammatory swelling. After a week's treatment it was possible to draw the foreskin back completely, and then the source of the haemorrhage was seen in the shape of a deep triangular ulcer on the dorsal surface immediately behind the glans, and penetrating deeply into the corpora cavernosa almost to the urethra. This healed completely, with very little scarring and no deformity. Treatment consisted in black wash locally and mercury internally, in view of a possible syphilitic infection.

Birmingham. J. F. Bridge, M.B., D.P.H.

INTRAUTERINE CONTUSION.

Some two years ago you published a paper I read before the Chelsea Division on intrauterine wounds of fetal head with 2 cases. The case I now report differs from those, but is also most important from its bearings on medical jurisprudence.

Mrs. F. was delivered on September 4th, 1910, of a very small female child, weighing under 3 lb., which lived nine hours. She did not expect for another month. It was born in its membranes. On examination, the left pectoral region and the left arm were contused and blackened. The discoloration extended on front and inside of arm to an inch below the elbow. The mother stated that about three weeks previously she fell across the arm of an armchair and bruised her abdomen. There were no visible bruises on her abdomen.

Supposing the case had been attended without a doctor, he might, on being called some hours afterwards, have suspected a fall or other foul play, and thus a charge might be brought against an innocent mother or nurse.

Another rather rare complication was that a few hours after the birth a fetus of about the size of a two-month pregnancy came away with its membranes and placenta complete.

Chelsea James Hamilton, M.D.

Reports

on

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

KASR-EL-AINY HOSPITAL, CAIRO.

TWO CASES OF GANGRENE FOLLOWING SCORPION STINGS.

(By George Thom, M.R.C.S.Eng., L.R.C.P.Lond., late Resident Surgical Officer.)

Of numerous cases I have seen in Egypt stung by scorpions, the following two cases, in which gangrene occurred, are of interest.

The first case, of whom I publish a photograph, is also an excellent example of the condition to which the native will, in his disease, allow himself to reach before seeking advice, through fatalism, ignorance, and fear of hospital treatment:

Case I.

An Arab peasant, aged about 26, admitted to the Kasr el-Ainy Hospital, gave the following history of the condition of his leg, seen in the photograph. About two months previously, when going to work—walking barefooted over the desert—he felt something prick the sole of his foot. He found he had trodden upon the dead body of a scorpion, which was sun-dried and brittle. Examining his foot, he found one of the "bones" had pierced, and was protruding from the thick skin of the sole. This he removed and went to work. Later in the day his foot felt numb, and during the evening noticed it was swollen. The next morning the swelling and numbness had spread up the leg. There was no pain or constitutional symptoms, and he continued working the following two days. He then found the toes becoming black, the discoloration spreading over the area previously swollen. Subsequently the toes separated, and then the foot. The gangrenous tissue he pulled off as it loosened, and dressed the leg with tar and rags. The separation continued to the upper third of the leg, leaving the bones bare. During this time, he states, he was neither ill nor feverish, nor did his general condition on admission suggest any severe illness. After the foot separated, he found he could walk about on the bony stump, the wound at the line of demarcation healing rapidly. After some days' walking, the inferior tibiofibular ligament parted. So as to keep the bones together, he fixed them together with string and rags. Later he found that owing to cicatrization, his knee became bent to such an extent as to prevent him walking. This inability and the suggestion of the police made him seek medical advice at the hospital though he lived within three miles of Cairo.



On admission, the protruding bone—fastened together at the lower end with string—were hard, polished, and blackened. The wound above had healed except for some protuberant granulations around the remains of the interosseous membrane and the margins of the bones. The knee was flexed to the angle indicated in the photograph. The patient's general condition was excellent.

Under stovaine anaesthesia flaps were formed, the necrosed bones removed, and patient discharged to wear a kneeling knee pin.

The interesting feature of this case lies in the sudden onset of a painless spreading gangrene without constitutional disturbance.

Weir Mitchell, in his description of snake poisoning, mentions the occasional localized lesions produced, such as extravasation of blood, gangrene, and the extreme rapidity of putrefaction following such lesions after snake bite.

Gangrene following the introduction of scorpion venom is very rare. It is also mentioned in *Allbutt's System of Medicine* that small doses of snake venom introduced intravenously either produce temporary extensive coagulation of the blood or increased coagulability followed by increased fluidity. This condition, however, does not follow subcutaneous injections in which the remote manifestations upon the nervous system, and thus to the circulatory system, are the common results.

This patient, I presume, received the venom into a punctured venule of his foot through one of the cracks in the thick skin of the sole, so common in native peasants, with the result mentioned. I am indebted to Professor Madden, under whose direction the treatment was carried out, for his kind permission to publish this case.

Case II.

A native child, aged 4, was brought to the hospital stung on the foot about ten hours previously by a scorpion. The parents had incised the point of entry, and fastened a tourniquet above the knee. This tourniquet (composed of a loop of webbing) was twisted with a piece of stick so tightly above the knee that it was practically buried in the thigh. The limb below was swollen and blue—the toes black—the child was screaming with pain. Considering the condition of the limb due to the tourniquet alone I promptly cut it, and the child died instantaneously in the middle of screaming. The treatment should, of course, have been amputation. Unfortunately, there was no *post-mortem* examination to discover the condition of the blood, or whether death was due to embolism.

Scorpion venom produces severe collapse, death being infrequent except in children, and then usually some time after inoculation.

If death in this case was caused by a thrombus, that thrombotic condition may have been caused either by the tourniquet or the venom producing coagulation. The poison alone would not have caused such instantaneous death as the severing of the tourniquet produced in this case.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, October 24th, 1910.

Charters J. Symonds, M.S., F.R.C.S., President, in the Chair.

Metastatic Cancer of the Ovary.

Mr. J. Bland-Sutton, in a paper on the clinical aspect of secondary (metastatic) cancer of the ovary, said the subject of cancer of the ovary had interested him during a quarter of a century; during the whole of that period he had entertained the gravest doubt in regard to the existence of primary cancer of the ovary. Observations published during the last eight years had established the fact that solid tumours of the ovary large enough to be perceptible to eye and hand in the hypogastrium, which on microscopic examination exhibited the structure of carcinoma, were nearly always secondary to primary foci of cancer in the breast, gall bladder, or some part of the gastro-intestinal tract, especially the pylorus and colon. When patients were submitted to operation for solid ovarian tumours, especially if the tumours were bilateral and accompanied by vomiting and ascites, a careful examination should be made of the abdominal viscera, especially the stomach and sigmoid flexure of the colon. When cancer attacked the stomach, caecum, or gall bladder, the cancerous cells permeated the muscular and serous coats in relation with the primary growth, and found their way into the general peritoneal cavity. It must not be imagined that the implantation of cancer on the walls of ovarian cysts was an uncommon event. Within a period of eighteen months (from March, 1909, to October, 1910) seven examples had come under his observation. One of the most striking features in the after-history of patients from whom malignant ovaries had been removed was the rapidity with which the cancer recurred in the pelvis, even in cases where the uterus and pelvic peritoneum seemed free from infection at the time of the operation. When the primary disease was too advanced for removal, the patient's condition was often made more bearable, if not comfortable, by the removal of the ovarian masses, but it must be borne in mind that in attempting to do that the lives of patients were often shortened. A prolonged study of the question had strengthened his conviction that primary carcinoma of the ovary remained unproven. Dr. Bernard H. Spilsbury, who read a paper on the pathology of certain tumours of the ovary, said he had been unable to obtain confirmation of the view held by Mr. Bland-Sutton. Dr. McCann said that in his experience patients operated on for ovarian carcinoma did not live longer than two years afterwards. Mr. Malcolm said that all the evidence he had pointed to the correctness of Mr. Bland-Sutton's views.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Thursday, October 20th, 1910.

Dr. G. A. Berry, President, in the Chair.

Marginal Keratectasia.

Mr. George Coats described the pathological features of a case of marginal keratectasia formerly shown to the Society by Mr. J. H. Fisher. They consisted essentially in a loss of the superficial lamellae in the periphery of the cornea, and their replacement by a loose vascular fibrous tissue. The membrane of Descemet had undergone enormous compensatory thickening, and showed many ruptures plastered over with new layers of hyaline substance. In one area the epithelium was oedematous and desquamating, either as a result of commencing ulceration, or of leakage from the anterior chamber. From a study of recorded cases it was shown that marginal keratectasia is usually the result of "furrow keratitis" (Schmidt Rimpler), of "marginal atrophy of the cornea" (Fuchs), a condition in which, without ulceration, a groove develops in the upper periphery of the cornea, usually between an arcus and the limbus; ectasia, distortion of the cornea, and astigmatism against the rule, are produced by the giving way of the floor of the groove. In respect of pathogenesis, the speaker mentioned two opinions: (1) That the condition was purely degenerative; and (2) that it was inflammatory. In favour of the first there was the common absence of injection clinically, and of round-cell infiltration microscopically, as well as the association with arcus senilis; in favour of the second, the occasional presence of injection and even photophobia, or of pseudopterygium or pterygium; and the fact that vessels crossed the floor of the groove. Actual ulceration was probably excluded by many cases carefully watched over long periods. It was possible that a combination of these two explanations was correct—namely, that the products of degeneration set up a low form of inflammation, or that a low form of inflammation induced degeneration.

The Membrane of Bruch.

Mr. George Coats also read a paper on an unusual instance of colloid excrescences of the membrane of Bruch. The case was reported chiefly because it afforded an opportunity, rarely obtained, of comparing an ophthalmoscopic appearance with its histological foundation.

The patient, aged 58, was achondroplasic and had glaucoma in both eyes. V. R.: Fingers at 3 ft. H. + 7 D. V. L.: Perception of light. In the right eye the media were fairly clear, and the fundus was strewn in every part with flat, scaly, irregular, white or grey areas, with a slightly wavy surface, and with distinct glitter on moving the light. The borders were sinuous and rimmed with pigment; pigmentation also occurred on the surface, especially towards the periphery. The choroid generally was degenerate. In the left eye there was a detachment of the retina; this eye was subsequently excised. Pathological examination showed that the areas were due to an aberrant type of colloid excrescences of the membrane of Bruch. In addition to the ordinary rounded forms, flakes and irregular spongeworks of colloid material were found. The choroid was very degenerate, and showed evidence of the former presence of a flat detachment. All the measurements of the globe were notably small, and in other respects a degree of infantilism was suggested.

In discussing the relationship of these conditions with the glaucoma, the speaker pointed out that the glaucoma itself was peculiar in that there was no adhesion of the corneo-iridic angle, and, so far as could be seen, no hindrance to

drainage. The rise of tension might be due simply to a disproportion between the secretion and the amount of drainage available—normal so far as it went, but insufficient. The other eye, however, though glaucomatous, was not unduly small, at least in its external measurements. Another possibility was that the iris root had been in apposition with the ligamentum pectinatum, but not adherent, and had come away in the fixing fluids. Or there may have been an alteration in the chemical nature of the fluid to be drained.

Reviews.

OPHTHALMIC SURGERY.

The Reports of the Eye Clinic of the Caroline Medico-Chirurgical Institute of Stockholm open with an obituary notice of the late Professor Widmark, the editor and founder of the Reports of the Eye Clinic of the Caroline Medico-Surgical Institute,[1] and Professor of Ophthalmology at the Institute, who passed away on December 15th, 1909. Widmark's name will always be associated with his researches upon the influence of ultra-violet rays upon the eye, upon the nature of jequirity ophthalmia and of gonorrhoeal ophthalmia, and upon the pathogenesis of dacryocystitis and ulcus serpens. He was greatly interested in school myopia, and introduced the sodium salicylate treatment of sympathetic ophthalmia. As a teacher he was unrivalled in Sweden, and the whole nation is the loser by his early death at the age of 59.

The first paper describes a new keratoscope invented by Dr. Hans Gertz of Helsingborg. The instrument is an ingenious adaptation of the well known Placido's disc, which is so useful in demonstrating an irregular astigmatism. The human eye is, however, not sensitive enough to detect the difference in the shape of these rings caused by a low degree of astigmatism. Gertz has been able to make the distortion more evident—first, by using an oval disc instead of a round one, and secondly, by allowing the oval ring to rotate. The disc is fitted to the end of a tube furnished with a magnifying lens, and can be easily rotated with the finger. The angle of rotation can be read upon a graduated arc. The eye is observed with the instrument and the point determined where the image is most circular, and again where it is most oval. This gives the angle of the corneal astigmatism. Then a guess is made of the amount of distortion, and from this the astigmatism is estimated. Four discs are used, each one slightly more elliptical than the last. For slight degrees of astigmatism the slightly elliptical disc is employed. For higher degrees the more elliptical discs are suitable. With a little experience the amount of astigmatism can be accurately gauged.

Dr. Lamm records a case in which orbital phlegmon and total optic nerve atrophy followed syringing out the lacrymal sac. Such accidents are not infrequently seen in countries where trachoma is endemic, and the sac infected and friable, but they are rare in Europe.

Widmark contributes a paper which he heads "Minor Ophthalmic Observations." He records a rare form of conjunctivitis, a benign tumour of the iris, and then discusses the etiology of spring catarrh. He observes that if the disease be due to the action of ultra-violet rays, it ought to be very common in Northern Sweden and Norway during the long summer. He wrote to several ophthalmologists practising in the northern towns, but they all agreed that the disease was most rare in their clinics. Widmark thinks, therefore, that ultra-violet light is not the cause of spring catarrh.

Dalén writes upon evulsion of the optic nerve, which is defined as a forcible dislocation of the nerve from its scleral canal. It is a rare injury. The author adds a case of his own. The eye was enucleated and histologically examined. Two photomicrographs illustrate the paper.

The late Professor Widmark's paper on "Delayed Reformation of the Anterior Chamber after Cataract Extraction" is of great practical importance. The subject has received very little attention, and yet in about 2 per cent. of all operations late closure of the wound will be noticed. It is usual when the first dressing is made to find that the anterior chamber has formed again, but even after operations which are technically correct the wound edges may not have united at the end of the first week, or later. Widmark gives a tabulated list of examples of late union which is compiled from the records of the Seraphim Lazarette at Stockholm. In one case the anterior chamber only reformed on the sixtieth day.

Cocaine has by some been held to be the cause of this abnormal delay in healing, but Widmark thinks the complication is far more frequently observed after corneal than after scleral incisions, and he ascribes it to deficient technique. Very frequently a tag of capsule prevents correct apposition of the wound edges. Delayed union may end in various ways. Most frequently there is no sign of any inflammation, and sooner or later the wound closes, and the final result is uninfluenced. An opacity of the cornea may develop. This may be slight or may be sufficiently dense and widespread to necessitate an optical iridectomy. Or the eye may become infected, and panophthalmitis supervene. The wound may never heal at all, a permanent fistula persisting, followed by gradual decline in visual acuity, until there is complete blindness. Finally, glaucoma may appear. This often comes on after the patient has been lost sight of, and is more frequent after combined than simple extraction. The best treatment is to keep the eye bandaged and await events.

Lindahl contributes a lengthy paper upon traumatic cysts of the conjunctiva, which is illustrated by several woodcuts in the text and by a coloured plate.

Professor Dalén's second paper is a clinical contribution referring to the development of cataract after electric shocks. Cataract following lightning stroke is not included. All cases recorded so far have received a discharge of high potential, in one case 21,000 volts, in the head.

The volume ends with a study of the part played by the anterior part of the vitreous in the embryology of the cornea by V. Knape of Helsingfors.

[1] *Mitteilungen aus der Augenklinik des Carolinischen Medico-Chirurgischen Instituts zu Stockholm.* Von Dr. J. Widmark. Elftes Heft. Jena: Gustav Fischer. 1910. (Sup. roy. 8vo, pp. 142, Taf. 2, Abb. 15. M. 7.)

MICROSCOPICAL EXAMINATION OF THE EYE.

The third edition of Professor Greeff's guide to the microscopical examination of the eye[2] will be warmly welcomed by all ophthalmic students. The first edition was translated into English and Japanese, and has been recognized as by far the best book extant on the technique of ocular pathology. In the third edition Professor Greeff has obtained the assistance of Professor Stock of Freiburg, and of Professor Wintersteiner of Vienna, and in consequence the book may be held to present the best methods in use in Berlin, in Vienna, and in Freiburg. The pages dealing with the examination of secretions and bacteriology are written by Professor Stock, whose association with the Freiburg School of Ocular Pathology is a sufficient guarantee of the excellence of the directions he gives. Professor Greeff's work contains all that is necessary to enable a beginner to learn the details of the microscopy of the eye. The instructions are clear and precise without being verbose. Only sound practical methods which the writers have proved by experience are given, and the beginner is advised to master one or two of them and become proficient in them rather than to waste time over many methods. The book is divided into three chapters, dealing with general details, special methods, and bacteriology, in the order named. Professor Greeff tells us that the necessary armamentarium is small, an accurate technique is more essential than expensive and complicated instruments. It is easier to get satisfactory sections from a well-imbedded specimen with a cheap simple microtome than from carelessly imbedded tissues with an expensive instrument. The author thinks that in such a small subject as ophthalmology every expert should be able to prepare his own sections and decide upon their nature. He lays stress upon the necessity for ex-

[2] *Anleitung zur mikroskopischen Untersuchung des Auges.* Von Professor Dr. R. Greeff. Dritte Auflage. Berlin: August Hirschwald. 1910. (Demy 8vo, pp. 158. M. 4.)

amining tissues in their fresh unstained state, an examination which is carefully taught to all German students, but has been much neglected in England. Professor Greeff's book should be in the hand of every student in an ophthalmic pathological laboratory. It is by far the best book which has come under our notice—short, concise, and yet exhaustive. It is written in easy German which should be within the compass of any man who intends to take up a speciality.

TRACHOMA INFECTION.

Professor Herzog's monograph upon the etiology of trachoma[3] is well worthy of careful study, and opens out a wide field for research. As is well known, v. Prowazek, the late Professor Schaudinn's assistant, travelled to Java, and, working with Halberstädter, discovered in cells obtained from cases of trachoma certain inclusions, small ovoidal granules, which he held to be protozoa, and which he called "chlamydozoa." The bodies he regarded as the organism which gave rise to trachoma. These inclusions have been studied by Greeff and others, and there is now no doubt that they are often present in cases of recent untreated trachoma. Heymann then detected the same cell inclusions in the conjunctival cells of eyes suffering from gonorrhoeal ophthalmia and ophthalmia neonatorum. This discovery has been confirmed by Flemming and others, and it may be consided to be proved that the so-called trachoma bodies are also found in non-trachomatous gonococcal blenorrhoea. V. Prowazek and Halberstädter, Schmeichler, and Lindner, accepting Heymann's work, would have us believe that there is an "acute trachoma of infants," which is non-gonococcal, caused by the chlamydozoon. But Herzog points out that they have overlooked the fact that Heymann found these bodies in cases in which the presence of the gonococcus had been clearly proved by history and by cultural methods. Herzog believes these chlamydozoa not to be protozoa at all, but metamorphs of the gonococcus. He shows how old cultures of the gonococcus which have been passed from tube to tube develop involution forms. First a small metamorphic form develops, and then small bodies exactly like the cell inclusions of v. Prowazek. Among them, too, forms may be found like bent dumb-bells (*Hantelform*). All these involution forms can be detected in cases of blenorrhoea gonorrhoeica. In an example cited at first only normal gonococci were present, then the first involution form was found, and finally all macrogonococci disappeared, and only dumb-bells and microgonococci, the cell inclusions, remained. Finally these two disappeared as the case got well.

Herzog made the following clinical experiment. A pure culture of urethral gonococcus was prepared, and a loopful placed in the conjunctival sac of an eye which had been blinded by absolute glaucoma (the condition of the second eye is not stated). The eye was free from trachoma. The result was severe gonococcal ophthalmia. Fourteen days later typical trachoma bodies appeared. He admits that gonococci are not found in acute trachoma, but he believes that the "microgonococcus," the cell inclusions, are able to obtain a footing in the conjunctiva, and cause trachoma.

Herzog enters fully into all the objections which might be made to his theory, and his conclusions are of a most suggestive and interesting character. There is, however, much against the hypothesis. In the first place, gonococci are practically never found even in the most acute trachoma which is seen in Palestine and the East. Again, in these countries gonococcal ophthalmia obtains as a most violent summer epidemic, so severe that a very large proportion of the cases have corneal ulcers, and at least half the gonococcal ulcers perforate. Yet these severe cases, which often drag on for months, do not lead to trachoma. It has been shown that this gonococcal ophthalmia is not secondary to urethral infection. It is a pure eye disease, and is rampant in districts where gonorrhoea is quite unknown, and where ophthalmia neonatorum is never seen. It is, however, evidence in favour of Herzog's views that in Palestine and Egypt, where fully 90 per cent. of the population have trachoma, this gonococcal blenorrhoea is so prevalent.

Before the theory can be accepted as proved it will be necessary to produce trachoma by inoculating normal eyes with the microgonococci which Herzog has observed in old cultures, or from an old case of gonococcal ophthalmia which has no gonococci left, but only microgonococci.

These investigations would be best carried out in Palestine or Egypt, where trachoma is far more acute than in any European land, and where the material is endless in amount.

[3] *Ueber de Natur und die Herkunft des Trachomerregers und die bei seiner entstehung zu beobachtende Erscheinung der Mutierung des Gonokokkus Neisser.* Von Prof. Dr. Hans Herzog. Berlin. Berlin und Wien: Urban und Schwarzenberg. 1910. (Sup. roy. 8vo, pp 56. M.5.)

THE OPHTHALMOLOGICAL SOCIETY.

The second fasciculus of the thirtieth volume of the *Transactions of the Ophthalmological Society of the United Kingdom*[4] consists almost entirely of records of interesting and rare cases. An exception is Mr. M. L. Hepburn's paper on night blindness. J. H. Tomlinson describes his scotomagraph with stereoscopic fixation. The volume is well illustrated, and contains two very beautiful coloured plates. One illustrates Mr. Hudson's case of an unusual form of retinal disease; the second Mr. Lawford's case of episcleral tubercle and Mr. F. Moore's case of subretinal haemorrhage. Mr. Hepburn in his paper divided xerosis into two groups, one associated with general disease, the other a sequel to a local affection. The first group contains a mild form associated with night blindness and a severe form known as keratomalacia. The paper deals with the first form, idiopathic night blindness. The cases present the following characteristics: Hemeralopia, patches of xerosis, and occurrence of these symptoms between May and September. The complaint is always found in children, and generally in boys. The cases are usually from poor districts. The cornea is always bright and clear. The children are not conspicuously ill-nourished, but are often remarkably healthy-looking. Mr. Levy also finds pallor of the fundus, but Hepburn has not been able to substantiate this. The fields are full, there is no ring scotoma. Hepburn rejects malnutrition as a cause. Perhaps a weak metabolism of the visual purple accounts for the hemeralopia. In favour of this view is the fact that if the eyes be tied up all day the night vision is improved. Albinos do not suffer from night blindness, so we must conclude that the pigment epithelium can regenerate its visual purple without its pigment. The paper is a useful summary of the subject. Major Mould stated that he had seen many cases of night blindness in India. All had the intense retinal pallor described by Mr. Levy. They all improved on strychnine and quinine. Mr. Stephenson had found slight general contraction of the visual fields and a contraction for red and green. Mr. James describes a case of panophthalmitis in which, among other organisms, the *Bacillus aërogenes capsulatus* was found. This produced gas in the eye, which escaped in bubbles from a spot on the limbus.

MENTALLY DEFICIENT CHILDREN.

Ten years have elapsed since the second edition of Dr. Shuttleworth's book on *Mentally Deficient Children*[5] was published. A new edition has been called for, and Dr. Shuttleworth has secured the co-operation of Dr. Potts, who was a medical investigator to the Royal Commission on the Care and Control of the Feeble-minded, in revising this third edition. There is no doubt that this collaboration has proved successful, for the book contains the knowledge of what has been done in former years for the improvement of the mentally deficient class as well as an up-to-date acquaintance with more modern movements.

The report of the Royal Commissioners is frequently referred to, and a chapter has been added on the medical examination of children requiring instruction. The Royal Commissioners recommend that the Lunacy Commissioners

[4] *Transactions of the Ophthalmological Society of the United Kingdom.* Vol. xxx, Fasc. II. London: J. and A. Churchill. 1910 (4s.)

[5] *Mentally Deficient Children.* By G. E. Shuttleworth, B.A., M.D., and W. A. Potts, B.A., M.D. Third edition. London: H. K. Lewis. 1910. (Cr. 8vo, pp. 254, 18 plates and other illustrations. 5s.)

should be replaced by a larger body called "The Board of Control"; they also give various recommendations and definitions with regard to the classes of persons needing care and control. The recent microscopical investigations of the brain of cases of mental defect made by Drs. Bolton and Tredgold are alluded to, and we learn that cellular changes have been found in all regions of the brain, and sclerosis in localized patches.

The prominent pathological conditions of the several types of congenital mental deficiency are now divided into ten classes, instead of seven, the number in the second edition. The two interesting groups of cases spoken of as "word-blind" and "word-deaf" are described, and so are the conditions of "infantilism," which Dr. John Thompson so well pointed out. There is also a very good table for distinguishing the differences between Mongolism and cretinism, which is of much practical importance.

The chapter on the medical examination of children requiring special instruction, as we before mentioned, is a new one. Full information is given with regard to the education of mentally defective children in England and Wales, in Scotland, and in Ireland. The method of examination of children deemed to be defective is described, and the form of certificate prescribed by the Board of Education with regard to defective children is given at length. The *modus operandi* for the medical inspection of mentally defective children is fully described.

It has been found necessary to form after-care committees to look after the children when they leave school at the age of 16, and the results have been very encouraging, but opinion is rapidly growing that the permanent care of the feeble-minded is absolutely necessary.

There are appendices which give useful information respecting the public and charitable institutions in Great Britain and Ireland, in America, the Colonies, and many Continental countries, for mentally deficient children and adults, and there is a copious bibliography. The illustrations are very good.

We have nothing but praise for this book. It will be of use to the medical man, the teacher, and to the increasing number of philanthropists and others who are interested in the care, treatment, and training of mentally deficient children.

PULMONARY TUBERCULOSIS.

Dr. Bardswell's *Advice to Consumptives on Home Treatment, After-Care, and Prevention*[6] contains much sound and practical advice from a man of wide experience in the matters of which he treats. It is chiefly intended to guide the consumptive who has had the advantage of treatment in a sanatorium and is desirous of knowing how to proceed after he has left the control of the institution. The substance of the book consists of a series of lectures given to the patients at the King Edward VII Sanatorium, of which Dr. Bardswell is the Medical Superintendent. The first chapter sums up in brief the main points as to the nature of consumption and the *rationale* of its treatment. Then follows advice as to fresh air: food; rest, exercise, and recreation; occupation; with a chapter on the various factors in sanatorium treatment and one on infection and disinfection. There are some very sound remarks about recreation and games, about clothing, and about temperature taking, among other things. A chapter on emigration contains much information, obtained from past patients who have taken up their abode in various parts of the world, which should be read and considered by any consumptive who contemplates emigrating in search of health or to avoid a further breakdown. It is impossible in a short notice to do justice to the wide range of matters touched on in this useful book, which is full of common sense guided by experience. It should be in the hands of all educated consumptives who, having left the sanatorium with the disease arrested, need to exercise care to ensure against a recrudescence of the disease. It should certainly be read by all who have the charge of sanatoriums for consumptives.

The appearance of a second edition of Dr. Sherman G. Bonney's *Pulmonary Tuberculosis and its Complications*[7] shows that it has been appreciated, and that the favourable impression of the work which we expressed when the first edition appeared has been endorsed by those for whom the book was written. This edition has been enlarged to the extent of over one hundred and fifty pages by the addition of new matter, whilst the whole work has been revised. Amongst the new chapters is one on Tuberculosis and Traffic which opens a question of considerable practical importance. The almost universal adoption of the sanatorium or open-air treatment of consumptives has led to the erection of sanatoriums in various selected localities where the climatic conditions seem favourable for the cure. There are certain risks in the conveyance of consumptive invalids to and from these places if proper precautions are not taken to prevent infection of the railway carriages or other means of conveyance. The greatest danger would seem to be in the sleeping cars on the railways largely used by consumptives, and Dr. Bonney not only advocates sanitary precautions which he enumerates, but brings forward plans for special compartments in the Pullman cars for the use of consumptive invalids. There is reason to consider that some such precautions might with advantage be instituted, not only in America, but on certain lines which are much used by invalids travelling to health resorts in Europe. The recent advances in our knowledge of vaccine treatment has necessitated the addition of a new chapter on the clinical application of tuberculin and bacterial vaccines.

Dr. Epstein has compiled a pocket-book of the diagnosis and treatment of tuberculosis[8] as a guide for the general practitioner. After some general remarks on the requirements, there is a rather long chapter on the early diagnosis of tuberculosis of the lungs, first in adults and secondly in children. This is somewhat disappointing. The various physical signs which may be met with in cases of pulmonary tuberculosis—many of them characteristic of advanced disease—are enumerated and described, but the busy practitioner might reasonably expect the expert to give him a little more practical help from his wider experience to guide him in the diagnosis of the early cases, which generally present considerable difficulties. The section on diagnosis in children is more comprehensive. Other chapters deal with tuberculosis in pregnancy, tuberculosis and marriage, alcohol and tuberculosis, prognosis, duration, and results of tuberculosis. The latter half of the book is taken up with treatment. We doubt whether a compilation such as this, containing a great mass of information obtained from many writers, whose names are given as authority for the various statements for which they are respectively responsible, is of much practical use to the practitioner. What he chiefly wants is the result of the experts' reading and experience condensed and arranged for his guidance rather than a collection of facts and opinions which he must sift, abstract, and appraise for himself.

NOTES ON BOOKS.

The subject of radium is one that must tempt every author to stray into speculation, but Mr. Guy Stephen has placed a severe restraint upon himself in compiling his *Radio-Activity*,[9] and has dealt only with the applications of this substance—or, more properly, this force—to general and specialist practice. Many medical men who, owing to lack of time and opportunity, have been unable to

[6] *Advice to Consumptives—Home Treatment, After-Care, and Prevention.* By Noel Dean Bardswell, M.D. London: Adam and Charles Black. 1910. (Cr. 8vo, pp. 159. 1s. 6d.)

[7] *Pulmonary Tuberculosis and its Complications.* By S. G. Bonney, M.D. Second edition. Philadelphia and London: W. B. Saunders Company. 1910. (Roy. 8vo, pp. 778, 243 illustrations. 30s.)

[8] *Diagnostisch-therapeutisches Taschenbuch der Tuberkulose.* Von Dr. D. Epstein. Berlin and Vienna: Urban and Schwarzenberg. 1910. (Cr. 8vo, pp. 151. M. 5.)

[9] *Radio-Activity; A Brief Guide to its Use in General and Specialist Practice.* Compiled by Guy Stephen, D.P.H.Lond. London: Van Alexander and Company. 1910. (Post 8vo, pp. 44. 1s. 6d. net.)

familiarize themselves with the more or less isolated results of the experts in this field may nevertheless desire to begin to build up a small clinical experience of their own in radium-therapy. In order to assist them the compiler of this pamphlet has analysed the scattered information which is available, levying tribute from the writings of a number of distinguished workers, including such Continental specialists as Wickham, Degrais, and Dominici, as well as British medical men and physicists. There are eight brief chapters, in the course of which we have presented to us an explanation of the physics of radium and radiferous substances; the six or seven different methods by which radio-activity may be turned to therapeutic use; its effect upon normal and pathological tissues; the technique of applicators, dosage, and filtration; the reactions which may be expected; and, finally, the suitability of particular cases for this method of treatment. The last subject is not long-drawn-out, but when, in the experience of a worker who is entitled to speak with authority, radium-therapy has proved of benefit in a given condition, the fact is simply stated. The final chapter deals with the application of radio-active earths, particularly with a by-product which is formed during the process of breaking up uranium ores, and which owes its radiferous quality chiefly to the presence of actinium. The study of mud phenomena has gone on sufficiently long in Paris and elsewhere to make certain conclusions possible, and these the compiler sets down for us. Altogether he considers that, armed with the information which is now available concerning radium in medicine, a medical man may begin to apply the facts in his own practice with not less assurance than that of a newly elected Fellow of a college of surgeons when performing his first independent operation.

It is difficult to be content with even an extended dip into Sir Harry Johnston's book on the *Negro in the New World*,[10] which geographically, and in the nature of its contents, covers a very wide field. The opening chapters deal with the negro and the negroid races from an anthropometric point of view, the middle with the history of his treatment by white races in the past and present, while in the concluding chapters the position that men of colour are likely to take up among civilized races at some future time is considered in detail. Sir Harry Johnston's verdict on the negro is decidedly favourable, though his summing up of various points in the negro character conveys the impression of impartiality. The book contains a certain amount of matter of specific interest to epidemiologists, and much of interest to general readers; in addition, it is excellently illustrated. Among other information, one reads with surprise that if the British race can boast of having brought about the end of slavery, it shares with the Dutch the dishonour of first place among nations which have treated negro races badly in the past. It is also indicated that it is in Great Britain more than in any other European country that the negro is now made to feel the disadvantage of his colour.

After a rather flippant introduction by Dr. Oscar Levy and a brief note by the translator, who appears to have done his best, there follow 335 pages of polysyllabic rhodomontade, entitled *On the Tracks of Life*, by Signor L. G. Sera.[11] An alternative title given is "The Immorality of Morality." The book is unutterably tedious, and without any real medical interest.

[10] *The Negro in the New World.* By Sir Harry H. Johnston, K.C.B., D.Sc.Cantab. London: Methuen and Co. Pp. 500.

[11] *On the Tracks of Life* Translated from the Italian of Leo G. Sera by J. M. Kennedy, with an Introduction by Dr. Oscar Levy. London: John Lane. 1909. (Demy 8vo, pp. 367. 7s. 6d.)

MEDICINAL AND DIETETIC PREPARATIONS.

Lak Cit.

We have received and examined a sample of "Lak Cit," which is a new dry preparation of milk for infant feeding made by Lak Cit, Limited, and supplied by Messrs. Rocke, Tompsitt, and Co. (4, Red Cross Street, London, E.C.). Our analysis showed this to contain 23.2 per cent. of fat and 24 per cent. of protein. It mixes with hot water in a satisfactory manner, the resulting fluid resembling milk; it differs, however, in the important property that when acid is added it does not give a clotted curd, but the curd forms a finely divided light precipitate. The disadvantage which has to be overcome when cow's milk is used for the feeding of infants is that it forms an indigestible curd in the stomach, whereas human milk does not. This objection is fully met in the preparation under notice, and this advantage will doubtless lead to Lak Cit being extensively employed when mother's milk is not available.

Mango Pulp.

We have received from the Oriental Cannery Company (Honavar, India) samples of their tinned mango pulp, and have submitted it to analysis with the following results:

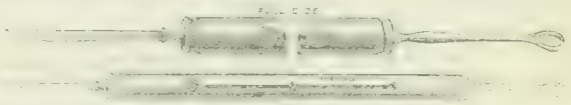
Total solid matter	15.7	per cent.
Sugar (saccharose)	9.1	,,
Fructose and glucose	2.7	,,
Ash	0.6	,,

Salicylic and sulphurous acids, formaldehyde, and other preservatives were tested for and found to be absent. The proportions of the different sugars found are practically identical with those given in published results of the analysis of the pulp of the fresh mango fruit, showing that no addition of sugar has been made, and the material appears to consist of nothing but the pure pulp with its natural juice: the pulp was in an extremely soft condition, the whole forming a uniform semisolid. The flavour was excellent, and the product provides a very satisfactory means of enjoying the mango fruit at any time or place.

MEDICAL AND SURGICAL APPLIANCES.

Combined Tarsal Cyst Knife and Curette.

Mr. A. A. Bradburne (Southport and Manchester) writes: The removal of tarsal cysts (chalazia) from the eyelids is, on account of the smallness of the hold on the lids and the slipperiness which ensues when bleeding commences, an operation which is not as easy as it looks. The difficulty of it is not lessened by having to change instruments, one to incise and another to scrape out the cyst. To obviate this feature I have devised a combined instrument in which both are contained in a metal tube. The knife blade is wedge-



shaped, thus enabling the cyst to be opened by one cut, and instead of the usual sharp spoon, which gets blocked, and so requires removal, a sharp ring curette is used. Each instrument can be protruded from the tube by the fingers of one hand, and in doing so the other is consequently withdrawn into the tube and cannot injure the eye or the hand of the operator or patient. Messrs. Weiss, of Oxford Street, London, have embodied my ideas in a perfectly satisfactory manner, and it can be obtained from them at a moderate cost.

Operation and Clinical Examination Table.

Mr. H. J. Waring, Surgeon, St. Bartholomew's Hospital, writes: The accompanying illustration shows a new portable form of operation and clinical examination table which I have used for some time, and consider to be a great improvement on the models hitherto existing. It is light, weighing only about 40 lb. complete, very portable, measuring when folded up 36 in. by 20 in. by 5 in., so that it can quite easily be placed inside or on the top of a motor car or carriage, and very strong, being manufactured from oak varnished with hard varnish, and steel, nickel



plated; all joints and working parts are made of metal. It is adjustable to almost any position, and that portion of the table which supports the patient's legs is made to adjust to any angle in order to reduce the pressure on the popliteal spaces to a minimum. The head part of the table can be very easily raised or lowered. It will be found to be a very useful table for surgical or gynaecological operations and clinical examinations, especially when the administration of an anaesthetic is necessary, or when it is wished to use a cystoscope, urethroscope, sigmoidoscope, oesophagoscope, or bronchoscope. Messrs. Allen and Hanburys, Ltd., are the makers.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

PREPARATIONS FOR ECZEMA AND OTHER SKIN COMPLAINTS.

WE give below the results of analyses of a further selection of proprietary articles advertised and sold for the cure of eczema and skin affections generally. Some of these are of recent introduction in this country, coming chiefly from America, but are being very largely advertised; others have been established here for a much longer time.

D. D. D.

The preparation supplied under this name is supplied by the D. D. D. Co., Bangor House, Shoe Lane, London, E.C., in bottles at 2s. 3d. and 4s. 6d. per bottle; a 2s. 3d. bottle was found to contain 2.1 fluid ounces.

A press advertisement is headed:

Psoriasis, Dry and Wet ECZEMA, and all skin diseases cured by D. D. D., the new liquid remedy, which gives instant relief, and a positive cure when everything else has failed.

and the following claims are made:

Just a drop or two of D. D. D., the Guaranteed cure for Eczema and all Skin Diseases, applied to the burning skin, and that torturing, endless, nerve-racking itching is at an end. . . . Not only does D. D. D. stop all irritation and pain immediately —we guarantee it—but the cures that invariably follow are permanent—the disease never returns.

The following are extracts from a pamphlet enclosed in the package, entitled "Cause and Cure of Skin Diseases":

D. D. D. is no ordinary patent medicine, but the prescription of the skin specialist, Dr. D. D. Dennis, who used the compound now known as D. D. D. successfully for years on all patients suffering with skin diseases. On urgent advice of his patients, Dr. Dennis was prevailed upon to have the compound put up as a proprietary article for sale through drug stores. It is now manufactured by the D. D. D. Co., London. . . .

Quite a few skin specialists now recommend the D. D. D. Prescription to their patients, and great credit is due to these specialists when they could make so much larger fees by writing out their own prescriptions.

Still, as we find that some doctors prefer to buy D. D. D. themselves and treat their patients with it without telling them what remedy they are using, we cannot, of course, refuse to let such doctors use D. D. D.

The last paragraph does not appear very consistent with the following:

If requested, the formula for D. D. D. prescription will be furnished to medical practitioners for investigation.

In spite of the "guarantee" quoted above that D. D. D. stops all irritation and pain immediately, a caution is given against discouragement:

Occasionally in bringing the disease to the surface, D. D. D. will spread the eruption temporarily over a much larger area. THIS IS NOT A SIGN THAT THE MALADY IS GROWING MORE SERIOUS, BUT ON THE CONTRARY IT SHOWS THAT THE DISEASE IS BEING UP-ROOTED.

It appears that more patience may be required, even when the sufferer is only "in the early stages," than the advertisement quoted above might have led him to suppose:

The person fortunate enough to become familiar with D. D. D. Prescription in the early stages of his disease may commit the error of being impatient of cure. . . . The eruption may have appeared only on a few spots of his body, but this is evidence that the disease germ is lodged in his skin. The germs will grow and multiply and spread; . . . it may take some time to dislodge the germs from his skin. . . . Is it not worth careful study, a few months' patience, to be rid of that horrible malady?

"The germs" are, of course, freely utilized to give an air of scientific knowledge:

The reader familiar with the deeper questions of medical science knows that there is still some dispute among the best authorities on the germ theories, but it is pretty well understood now, largely as a result of Dr. Dennis' discoveries, that eczema is purely and simply a germ disease caused by germs that lodge in the skin. According to the germ theory, there must be several species of eczema germs, causing the several diseases known as eczema, psoriasis, ring worm, dandruff, etc. The germs are all of the same type and produce ailments with varying symptoms, all eczematous. The germs live only in the skin, feeding on the oily ingredients of the epidermis.

It might be interesting to know where "Dr. Dennis' discoveries" were published.

D. D. D. is put up in two forms, called "D. D. D. Ordinary" and "D. D. D. Strong"; the "Ordinary" was taken for analysis. The directions for this are:

The remedy may be applied in various ways; it is best, however, to rub the skin as little as possible while making the application, hence we recommend it to be applied by saturating a piece of absorbent cotton with D. D. D. and dabbing this gently on the parts affected, or applying it with a small camel hair brush, so that the pores will absorb the remedy.

Analysis showed the liquid to be composed as follows:

Salicylic acid	0.75 part
Phenol	1.18 parts
Methyl salicylate (oil of wintergreen)	1.00 part
Glycerin	9.28 parts
Alcohol	65.10 parts by measure
Water, to	100 parts by measure.

It had a slight yellow colour, which may have been due to a trace of colouring matter, or may have been developed from the oil of wintergreen.

The alcohol is by far the most costly ingredient, and the estimated cost of ingredients for 2.1 fluid ounces is 3¾d.

HOMOCEA.

This preparation is made by Homocea, Limited, Willesden Junction, London, N.W. A 1s. 1½d. tin contained about ¾ ounce, and a 2s. 9d. tin about 2½ ounces. It is recommended for a very large number of disorders, as is shown by the following extracts from a circular enclosed in the package:

Homocea . . . Ointment . . . is far and away the best remedy known for Open Wounds, Sores, Cuts, Ulcers, Bad Legs, Burns, Scalds, Chaps, Wasp, Bee, and Insect Stings, Earache, Inflamed Spots, Skin or Flesh troubles of all sorts, Broken Chilblains, &c. In treating any of the above lay Homocea lightly with the finger, or spread some on clean rags or lint and apply to the parts affected. For Bruises, Blotches, Chaps, Chilblains (unbroken), Eruptions, Swellings, Mumps, Croup, Sore Eyes, Rashes, Ringworm, Jelly Fish Stings, Sunburns, &c., &c., smear or gently rub in Homocea where required.

For Piles (bleeding or blind) Homocea stands alone amongst remedies. It affords immediate relief at all times, and in many cases absolutely cures.

For Internal Piles the insertion of Homocea Suppositories is recommended.

Cold in the Head is cured by putting Homocea up the nostrils and rubbing the bridge of the nose well with the Ointment at night.

Soft Corns and Bunions are cured by applying Homocea as a pad to be kept on day and night.

Eczema (in many forms), Hay Fever, Prickly Heat Jigger, and Veldt Sores, Warts, &c., &c., cured by Homocea.

Homocea will cure the Bites and Stings of Mosquito, Gnats, Sand Flies, and, better still, will prevent these pests from attacking you, if the face, neck, hands, and other exposed parts of the body are smeared with the Ointment.

It is impossible to bring within the compass of a short circular all that Homocea in its various forms will do, but we claim, without fear of contradiction, that there are few of the ordinary every-day ailments incidental to the human frame that Homocea, if promptly and properly applied, will not immediately alleviate and cure.

The efficacy of Homocea is easily and unanswerably explained. It kills inflammation immediately it comes in contact with it, and you can readily understand why pain vanishes and wounds heal so quickly.

Analysis showed the presence of eucalyptus oil in considerable proportion, with beeswax, a soft fat, and a very small quantity of ammonia; evidence was also obtained of a small proportion of another essential oil, apparently oil of lemon, though, as essential oils are complex in composition, it is not possible to speak positively on this point. Other medicinal ingredients were found to be absent. The quantities of the ingredients found were determined as accurately as possible, and the results gave the following formula:

Oil of eucalyptus	25 per cent.
Oil of lemon	0.2 ,,
Beeswax	25 ,,
Fat	49 ,,
Solution of ammonia	0.8 ,,

* Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL: 1904, vol. ii. p. 1585; 1906, vol. ii. pp. 27, 1645; 1907, vol. i. p. 213; vol. ii. pp. 24, 160, 209, 393, 530, 1653; 1908, vol. i. pp. 833, 942, 1373; vol. ii. pp. 85, 595, 1022, 1110, 1193, 1285, 1566, 1697, 1875; 1909, vol. i. pp. 31, 909, 1128; vol. ii. p. 1419; 1910, vol. i. pp. 151, 213, 393, 1005, 1063, 1120; vol. ii. p. 982.

The characters of the fat agreed with those of a mixture of lard and cocoanut oil in about equal parts. An ointment prepared according to this formula was practically undistinguishable from the original.

Estimated cost of ingredients for 2½ ounces (2s. 9d. tin), 2½d.

ECZOLINE TREATMENT.

This "treatment" is supplied by W. W. Hunter, Swindon, and consists of ointment, tablets, and soap; the two former were taken for examination.

An advertisement contains the following somewhat disconnected expressions:

A wonderful Remedy. Eczema, Rashes, Pimples, Spots, Sores, Ringworm, Chaps, Chilblains, Rough Skin, Bad Legs. Stops all irritation at once. Cured by the Eczoline Treatment. Worth its weight in gold.

Eczoline Ointment.—A 1s. 1½d. box contained about 1 ounce. On the box it is described as

A positive cure for Eczema and good for all skin diseases.

Analysis showed the presence of zinc oxide, sulphur (flowers), glycerin, a little water, and a fat which agreed well in its characters with lard, with a trace of oil of lemon; no other constituents were found. The quantities of the respective ingredients were determined, and the results gave the following formula:

Flowers of sulphur	39	per cent.
Zinc oxide	3 7	,,
Glycerin	13 5	,,
Lard	39.8	,,
Water	4	,,
Oil of lemon	a trace	

Estimated cost of ingredients for 1 ounce, ½d.

Eczoline Tablets.—A 1s. 1½d. box contained 43 sugar-coated tablets, having an average weight, without the coating, of 5 2 grains each. These are described on the label as

For Cooling, Purifying, and Strengthening the Blood. Dose—One or two Tablets three times a day after meals.

Analysis showed the tablets, from which the coating had been removed, to consist of

Ferrous sulphate	16 5	per cent.
Sulphur (precipitated)	56	,,
Talc	3 4	,,
Starch	7.3	,,
Extractive	16 8	,,

The extractive was bitter, and showed the reactions of extract of cascara sagrada, but it was not bitter enough or dark enough to consist only of this extract, and appeared to be a mixture of extract of cascara sagrada, and an inert extract, the former constituting about 5 per cent. of the substance of the tablets.

Taking the whole of the extract as being of the same price as extract of cascara sagrada, the estimated cost of the ingredients for 43 tablets is ½d.

DR. CASSELL'S MEDICINES.

These are supplied by Dr. Cassell's Medicine Co., Ltd., King Street West, Manchester. This firm is described on its notepaper as "Sole Agents for Great Britain, India, Africa, Australia, and all European Countries for Dr. Cassell's Specialities," and the "Specialities" appear to be really of American origin. The form of advertisement which appears to be most in favour is a small announcement of

An indispensable illustrated book written by an expert, dealing in a clear, commonsense way with a safe and speedy home cure of Skin Diseases of all kinds, with special chapters on Diseased Blood, Ulcers, Bad Legs, and "The Woman Beautiful,"

to be sent free on application. A request for a copy of this brought a pamphlet of 31 pages, together with a "self-examination form," and a letter urging that the form should be filled up and returned. In a further circular the following statement is made with regard to the mode of procedure:

When you consult a doctor he first enquires into the causes leading up to your trouble, then carefully examines all the symptoms and indications. Upon the results he forms his diagnosis which in turn suggests the treatment.

We do exactly the same when you return the examination form filled up; we carefully examine it and from the answers you give to the questions we are able at once to select for you, from the numerous Ointments, Powders, Mixtures, and Medicated Tablets manufactured for this Company from the formulas of that world-famed specialist, Dr. Cassell, a treatment perfect in every detail with the requirements of your case.

It is further stated that:

There is not one among the many healing extracts used which is not highly lauded by skin specialists the world over.

Which seems rather inconsistent with the statement on the next page that:

Several of the medicaments used in the Ointments and Blood Tablets are very rare and not in use in Great Britain and do not form any part of the British doctors' medical outfit, yet are of such incalculable value as to constitute the basic strength and great healing virtue of the treatment.

The "self-examination form" was as follows; the words in italics are the answers which were filled in:

QUESTIONS.

Date 19

Name in full.....

Address in full.....

Age. *37.* Sex. *Male.*
Occupation. *Groom-Gardener.* Stout or thin? *Medium.*
Married or single? *Single.* How long suffered? *About 2 years.*
Are you able to work? *Yes.* If not, how long have you been disabled?
What are you suffering from? *Eczema.*
What was your previous health? *Good.*
Where are you affected? *Arms worst; also neck and shoulders.*
What do doctors call your trouble? *I don't know.*
Have you been treated for it? *Not by doctors.* If so, how? *I have used some lotions.*
Have you attended any hospital? *No.*
Is your general health good? *Yes.*
Are you constipated? *No.*
Have you indigestion? *No.*
Do you stand much? *Yes.*
Are you in contact with much heat? *No.*
Do you perspire freely? *Yes.*
Are your hands much in soap and water? *No.*
Do you use much soda? *No.*
Does your employment entail contact with gritty or irritating material, and if so, what? *No.*
Have you much itching? *Yes.*
Have you a scaly eruption? *No.*
Is the part red or inflamed? *Yes.*
Is there any discharge? *Sometimes.* If so, what colour is it, and does it smell? *Like water.*
Have you any bleeding from the part? *No.*
Have you any pain? *Yes.*
Is your trouble inclined to spread? *Yes.*
Do you suffer from varicose veins? *No.*
Do little blisters form? *No.*
Did the trouble start with a pimple? *No.*
Have you any rash? *No.* If so, where? *No.*
Have you a sore throat? *No.*
Have you recently had measles or any fever? *No.*
Have you ever suffered from any specific blood disease? *No.* If so, what?
What is your usual diet? *Porridge, bread and butter, coffee, meat and potatoes, beer, cheese.*
Do you eat much oatmeal, shellfish, or tinned food? *A good deal of oatmeal porridge.*
Are you a teetotaler? *No, but very moderate.*
Are you worse more at one season than another? *No.*
What is your own opinion as to the cause? *I don't know.*
Here fill in any other details you may think of use.

As the question, "What are you suffering from?" was answered by the word "eczema," it was not altogether surprising to be told in the letter which was received in reply:

Your Examination Form has been duly received and carefully studied. You are suffering from a severe and disagreeable form of eczema.

The letter proceeds with a warning that it is

inadvisable to use ordinary salves, lotions, etc., indiscriminately, as you will readily realize that what will suit one person will not necessarily suit another, and many doctors don't appear to reconize [*sic*] the fact that the complaint should be treated both locally and constitutionally, therefore their treatment often proves ineffective. We make a special point of treating every case entirely upon its merits, and yours is one in which Dr. Cassell's combined treatment will produce speediest and most brilliant results.

It appears, however, that even these "speediest and most brilliant results" are not very speedy, as a further paragraph states:

Although it may take a few months to effect a permanent cure, we are quite confident, if you make up your mind to have yourself properly treated now, it will save much suffering and expense in the future.

The letter further intimated that the treatment would consist of a dusting powder, tablets to be taken internally, and an ointment, and that the charge would be 12s. 6d.

As no reply was sent at once, this was followed about a week later with another letter, offering to send the medicines for 9s. 6d., and containing the statement:

We are quite safe in guaranteeing a cure in your case provided you make up your mind to persevere for a reasonable length of time.

The sum required was then sent, and the articles named were received. The powder, in a pill-box, weighed a little less than 1 ounce; the bottle of tablets contained 90, of average weight 6 grains; and the pot of ointment contained just over 1 ounce. They were accompanied by an intimation that a further supply would cost 9s. 6d., and the following directions:

Ointment. Wash the hands thoroughly clean in hot water and apply a little of the Ointment to the affected parts every night on retiring. It is not necessary to use a great quantity, the chief thing being to have it evenly distributed on the parts requiring treatment.
Powder. A small portion should be dusted on with a piece of clean lint every morning on arising.
Tablets. One to be swallowed whole in water three times daily, between meals.

Cassell's Dusting Powder.—This was labelled "Antiseptic Dusting Powder No. 2." Analysis showed it to contain boric acid, talc, maize starch, and powdered slippery elm bark. The proportions of the first two ingredients were determined and the other two estimated as accurately as possible, and the formula given below was obtained. A powder prepared in accordance with this formula agreed in all respects with the original, except that the latter had a faint perfume and a creamy tint; the traces of colouring matter and perfume were far too minute to be identified.

Powdered talc	... ...	60 per cent.
,, boric acid	...	20 ,,
,, maize starch	...	17 ,,
,, slippery elm bark	...	3 ,,

Estimated cost of ingredients for 1 ounce, ½d.

Cassell's Blood Cleansing Tablets.—The label was marked "Price 4s. 6d. a bottle," and, as stated above, the bottle contained 90 tablets of about 6 grains each.

Analysis showed the tablets to contain:

Phenolphthalein	...	0.75 per cent.
Potassium iodide	...	1.25 ,,
Sugar	...	81 ,,
Talc, approximately	...	11 ,,
Calcium carbonate and sulphate, approximately	... ...	2 ,,
Water	...	1 ,,
Extractive ...	...	3 ,,

The extractive showed no distinctive characters by which it could be identified; the tablets had a faint anise-like odour; no alkaloid or other active principle was found. The dose of phenolphthalein in one tablet is 0.045 grain, the usual dose being 1 to 8 grains; the dose of potassium iodide in one tablet is 0.075 grain, the official dose being 5 to 20 grains.

If the extract present is taken as being of the same price as extract of taraxacum, the estimated cost of the ingredients for 90 tablets is ½d.

Cassell's Ointment.—This was labelled "Ointment No. 2," and the pot contained just over 1 ounce. Analysis showed it to contain oils of wintergreen and eucalyptus, lanoline, a fat or oil, soft paraffin, boric acid, a small quantity of alkali, and a powdered vegetable tissue. The latter appeared to consist chiefly of a bark; it was carefully compared with a number of powdered drugs, but was not found to agree with any drug in ordinary use; it showed a good deal of resemblance to powdered krameria root, and agreed exactly with it in the colour changes caused by various reagents, and while not identical with either of the species of krameria compared with it, the resemblance suggested that it might be from a nearly related plant. The proportions of the different constituents were determined as closely as possible, and the following formula was arrived at:

Boric acid	... ...	8 per cent.
Borax ...	... ...	2 ,,
Oil of eucalyptus	... ...	2 ,,
Oil of wintergreen	... ...	3 ,,
Anhydrous lanoline	... ...	4 ,,
Oil (? olive)	... ...	8 ,,
Soft paraffin	... ...	63 ,,
Powdered drug	... ...	7 ,,
Water ...	... ...	3 ,,

An ointment prepared in accordance with this formula, with krameria root as the drug, closely resembled the original.

SULPHOLINE LOTION.

This lotion is prepared by John Pepper and Co., Ltd., Bedford Laboratory, London, S.E. A 1s. bottle contained 2 fluid ounces. This preparation is advertised in the following terms:

Eczema and all skin ailments are completely cured by Sulpholine Lotion, which directly attacks all forms of Eczema, Eruptions, Pimples, Acne, Spots, Blackheads, or Disfiguring Rashes, leaving the skin in the soft, clear, supple, attractive condition designed by Nature.

And in a pamphlet enclosed in the package it is further stated that

Sulpholine Lotion is the only external skin remedy.
There is no phase of Eczema, chronic or acute, red, dry, scaly or pustular (moist), psoriasis, pityriasis, impetigo, prickly heat, tetter, salt-rheum, or even superficial scorbutic ulcerations, but Sulpholine will grapple with, and in most cases completely eradicate, leaving the skin its natural, clear, smooth, pliable surface.

The directions on the label are:

To be damped on with a handkerchief or piece of cotton wool, and allowed to dry. One application of the Lotion should be at bedtime.

Analysis showed it to contain:

Sulphur, precipitated	...	3 parts
Zinc oxide	...	2.1 ,,
Calcium sulphate	...	0.6 part
Glycerin	...	9 parts
Strong rose water, to	...	100 parts by measure

The rose water is by far the most expensive ingredient, and the estimated cost of ingredients for 2 fluid ounces is 1¼d.

CADUM.

Supplied by Omega, Limited. A 1s. 1½d. tin contained just over 1 oz.

This is described in a circular enclosed in the package as:

The New Medical Discovery for the Treatment of Eczema, Psoriasis, Ringworm, Acne, Pimples, Blackheads, Itch, Facial Eruptions, Salt Rheum, Shingles, Herpes, Hives, Prickly Heat, Boils, Rash, Itching Piles, Cuts, Sores, Burns, Chafing, Sunburn, Scabies, and other Skin Troubles.

Its origin is thus described:

The discovery of Cadum, the wonderful new skin remedy, was not the result of mere chance or accident, but of patient, painstaking investigations, extending over a long period, by an eminent chemist who became possessed of the conviction that the old method of taking internal remedies to cure external diseases was erroneous. After a careful study of all the best-known products, it was discovered that an extract from a particular part of a well-known tree possessed superior antiseptic and curative properties, and exerted a powerful, beneficial effect on the skin tissues. It was, however, found that this valuable vegetable extract possessing such desirable qualities was difficult to compound with other ingredients necessary to present it in a form convenient to use. After further investigations and experiments, a method of special treatment was devised by which this seemingly insurmountable difficulty was overcome, resulting in a unique combination of ingredients, possessing to a marked degree valuable therapeutic properties, the like of which has never before been produced.

Directions are given for the use of this preparation in some thirty affections of the skin.

Analysis showed the presence of zinc oxide, sulphur, boric and salicylic acids, oil of cade, and a paraffin basis. The proportions of the several ingredients were determined as accurately as possible; since oil of cade is variable in composition, and there is no direct means of determining its quantity in such a

mixture, this was estimated from a number of comparisons with known mixtures, and the figure given is certainly not far from exact. The formula arrived at is:

Zinc oxide	11.5 per cent.
Flowers of sulphur	8.0 ,,
Boric acid	3.1 ,,
Salicylic acid	0.3 ,,
Oil of cade	7 ,,
Hard paraffin	10 ,,
Soft paraffin	60 ,,

Estimated cost of ingredients for 1 ounce, ½d.

POSLAM.

This is supplied by the Emergency Laboratories, New York. A 2s. 3d. tin contained ⅔ ounce.

It is described in a circular enclosed in the package as

The Newest Medical Discovery for the treatment of Eczema and all other skin affections.

Some further extracts from this circular are as follows:

It is a singular fact that, notwithstanding the great strides that have been made in medicine for the past decade or two, skin diseases, and particularly eczema—the worst of them—are about as little understood by the medical profession to-day as they were a generation back.

Eczema is one of the most prevalent diseases, and statistics show that at least 50 *per cent. of humanity have it in some form or other*. It may be that physicians have failed to give this trouble the proper amount of study because, not being a fatal disease, they have considered it unimportant enough to wilfully neglect its thorough diagnosis.

Another reason may be that the *advertised preparations for eczema have been so exploited as to convey wrong impressions about the disease*, ascribing it to causes most ridiculous, and harping on the erroneous idea that it is a blood trouble, only curable by internal remedies. Doctors, in the absence of any recognized specific for the disease, have given either internal remedies or ordered the use of special soaps, both of which courses show that the average medical man is helpless to combat the growing trouble of skin diseases. . . .

LOTIONS AND INEFFECTUAL "REMEDIES."—*The potent ingredients of a remedy, which are necessary to the successful cure of eczema, cannot be contained in the form of a liquid. Lotions, besides containing mercury, must necessarily contain some alcohol or water, which are irritants and should be rigidly avoided. . . .*

There is no need of an extended course of treatment in the cure of eczema. If the remedy is the right one, its effects will be apparent immediately, and the progress of its work may be noted daily. . . .

POSLAM, THE CURE.—*The success of Poslam in the cure of eczema and all kindred skin diseases, has been absolute since its first introduction to the public and the medical profession. It is entirely different from anything yet used, and as a remedial agent in skin diseases, may be said to be positively infallible in its action.* Hitherto there has been a common base to all ointments and salves that were supposed to be "remedies" for eczema. *Poslam has a base of its own, and contains no grease, poisons, mercury, or any other harmful constituent.*

The general directions are:

Apply Poslam twice daily, night and morning, directly to the parts affected.

Do not rub or irritate, but apply gently.

Analysis showed the presence of zinc oxide, sulphur, starch, salicylic acid, oil of birch tar, oil of cade, lanoline, and soft paraffin. Since oil of birch tar and oil of cade are both very complex bodies of variable composition, it is not possible to determine exactly the quantities present in such a mixture; it is even possible that some samples of oil of birch tar might possess the properties observed, without the presence of oil of cade, and the latter is given in the formula with this reservation. The various ingredients were determined or estimated as exactly as possible, and the following formula was arrived at:

Zinc oxide	12 per cent.
Flowers of sulphur	8 ,,
Maize starch	18 ,,
Salicylic acid	1.5 ,,
Oil of cade	1.5 ,,
Oil of birch tar	3 ,,
Anhydrous lanoline	25.5 ,,
Soft paraffin	25.5 ,,

Estimated cost of ingredients of ⅔ ounce, ½d.

POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

A Council meeting of the Poor Law Medical Officers' Association of England and Wales was held at 34, Copthall Avenue, E.C., on Tuesday, October 18th. Dr. D. B. Balding was in the chair.

A letter was considered from a country member complaining that the guardians in his district had appointed as district medical officer a practitioner who resided seven miles away from his district. This had been sanctioned for one year by the Local Government Board, but recently he had been re-elected by the guardians for a further period of three years. It was unanimously considered by the Council that the matter required investigation: that on the face of it it was a scandal to appoint a district medical officer living seven miles away from his district, having regard to the necessities of the sick poor. The honorary secretary was instructed to make further inquiries into the matter.

A communication was received from a public vaccinator complaining that, because he had resigned his district medical officership on account of inadequate remuneration, he was now threatened with the loss of his vaccination office. The local Division of the British Medical Association had banned the appointment he had resigned, and so far there had been no applicants; but he felt sure that if no one would take this post at the old rate the guardians would endeavour to attract applicants by adding the post of public vaccinator to it. Strong comments were made by those present on the unprotected position of the public vaccinator, and the unscrupulous use made by the guardians of the remuneration from this source to underpay Poor Law appointments. It was regretted that no assistance could be given to the Council's correspondent. Under the present law only a month's notice need be given by the guardians to determine any public vaccinator's office, and this could be done without any reason, and it appeared that the Local Government Board had no control in the matter at all.

Another correspondent wrote complaining of the refusal of his guardians to allow him the extra fee of £2 for attendance on a long case of phlegmasia dolens, on the ground that he had not attended at the confinement of the patient, having only received the order twelve days afterwards. He quoted from Article 182 of the General Order of July, 1847, which lays down that a district medical officer shall be entitled to a fee of £2 in any "special case where great difficulty may have occurred in the delivery, *or long subsequent attendance in respect of some puerperal malady or affection may have been requisite.*" There was some difference of opinion on this point. It was thought by some that in order to be entitled to this fee the medical officer must have been called to the confinement, or very shortly afterwards. But a majority of the Council thought that under the article any long continued attendance on a puerperal case was sufficient, and the honorary secretary was instructed to write and advise the member to push his claim and proffer the assistance of the association.

A delegate from the district medical officers of a metropolitan borough also attended the Council meeting to ask for assistance. He stated that the guardians, owing to a recent resignation of one of the district medical officers, were endeavouring to reduce the number of district medical officers from five to four, and to force on to two of their number the vacated district under very inequitable conditions. The district medical officers claimed that there should be a rearrangement of the whole area; that, under the present arrangement, only one of their number received about the average payment of the district medical officers throughout the metropolitan district—namely, 3s. per order; that all the others were being paid less than 2s. per order. They had sent in a memorial to their board of guardians, and if this were ignored they proposed to carry it to the Local Government Board. The Council expressed its sympathy, and promised all the assistance in its power.

The Honorary Secretary read a letter from Mr. Shirley Fussell, asking the association to appoint four delegates to meet delegates from the National Poor Law Officers' Association, the Union and Rural District Clerks' Association, and the Workhouse Masters and Matrons' Association in a joint conference to consider the recommendations of

the Royal Commission on the Poor Laws affecting the interests of Poor Law officers, and report as to what action (if any) it is necessary or desirable to take now or in the future to safeguard the interests of the service. The Council appointed Dr. Holder (Hull), Dr. Napper (Cranleigh), Dr. Toogood (London), and Dr. Major Greenwood (London) to represent the Poor Law Medical Officers' Association in the proposed conference.

WORKMEN'S COMPENSATION STATISTICS FOR 1909.

The Home Office Report on Statistics of Compensation and of Proceedings under the Workmen's Compensation Act, 1906, and the Employers' Liability Act, 1880, during the year 1909,[1] has just been issued. This Blue Book provides interesting reading, the facts and figures being simply presented and readily followed and understood.

Full returns from seven great industries—mines, quarries, railways, factories, harbours and docks, constructional works, shipping—are under consideration, and include over 6½ millions of persons employed within the provisions of the Compensation Act. In these industries compensation was paid in 3,341 cases of death and in 332,612 cases of disablement. The average payment in death claims was £154, and in cases of disablement £5 6s.

Taking the several groups together, the annual charge for compensation was about 6s. 10d. per person; it ranged from 3s. 5d. per person in factories to 20s. 1d. in mines. In the coal-mining industry the charge under the Act amounts to about 0.8 of a penny per ton of coal raised. The total amount of compensation paid during the year in all industries appears to be something just under three millions.

With regard to the twenty-four kinds of industrial diseases included in the Act, compensation was paid in 33 cases of death and in 3,313 cases of disablement, 596 being continued from the previous year, leaving 2,717 in which the first payment was made during the year. In the mining industry there occurred 2 290 of these cases, nystagmus cases being 631: ankylostomiasis, 8; beat hand, 570; beat knee, 880; beat elbow, 63; inflammation of synoviae of wrist-joint and tendon sheaths, 128; lead poisoning, 351; anthrax, 22; arsenic, 4; other occupations showing cases of chrome poisoning, 23; compressed air illness, 2; phosphorus poisoning, 1; carbon bisulphide, 1; eczematous ulceration of the skin, 41; epitheliomatous cancer, 3; poisoning by nitro and amido derivatives of benzine, 8. There were no cases of poisoning by nitrous fumes, nickel carbonyl, or African boxwood; no cases of glanders, cataract in glassworkers, or telegraphists' cramp.

The number of cases dealt with in England and Wales by county court judges and county court arbitrators under the Act of 1906 was 4,390, of which 4,201 cases were decided by judges, 42 by special arbitrators; 147 settled by acceptance of money paid into court; in 1908 the figures were 3,795, 3,602, 47, and 146 respectively. In addition to the cases dealt with by judges and arbitrators, there were 1,798 cases which were either withdrawn, settled out of court, or otherwise disposed of in such a manner as to afford no definite evidence to the court officials as to the result, making a total of cases taken into court of 6,188.

With regard to some outstanding cases under earlier Acts, 244 of these were decided by judges, one by a special arbitrator, 76 otherwise disposed of—a total of 321 taken into court.

Of claims for compensation under the Act of 1906, finally settled in 1909 within the cognizance of the courts, the decision in 2,427 cases was in favour of the applicant, and 660 in favour of the respondent. The proportion of cases in which the applicant was successful was 79 per cent. as against 82 in 1908, 84 in 1907, 83 in 1906. In the cases under the Act of 1906 in which payment was awarded, the average compensation for total incapacity was 12s.; for partial incapacity, 9s. 6d. Under the Employers' Liability Act, of the 67 cases in which judgement was given for the plaintiff, there were only 3 fatal cases, the total compensation awarded being £489; 40 were cases of total incapacity, and in these the average award was £79 per case; 24 were cases of partial incapacity, the average award being £56 per case.

The average amount of solicitors' costs was £25 18s. under Employers' Liability Act, and £11 17s. 10s. under the Compensation Acts. During the year, the county courts in which there were the greatest number of arbitrations under the Compensation Acts were Liverpool, 398; Bow, 243; Manchester, 166; Pontypridd, 141; Salford, 122; Tredegar, 144; Wigan, 112; Leeds, 107; Cardiff, 102. There still exists a higher proportion of cases under the Employers' Liability Act in the metropolis. There were only eight courts in which there was no case either under the Employers' Liability or Workmen's Compensation Acts, as against 204 in 1904, 193 in 1905, 203 in 1906, 120 in 1907, 14 in 1908.

The number of cases going to the Court of Appeal in England was 135, or just over 2 per cent. of the cases that came before the county courts; 68 appeals were by workmen, and 67 by employers. Of the former, 23, and of the latter, 23 were successful; 25 were abandoned, withdrawn, or settled before the hearing. In a list of appeal cases, out of 110 in which the point on which the appeal arose is known 33 turned on the meaning of the words: "Accident arising out of, and in the course of, the employment."

There were two appeals from the Court of Appeal to the House of Lords, the workman being the appellant in one case. Neither was successful. The number of medical referees appointed was, on December 31st, 1909: England, 223; Scotland, 82; Ireland, 45. The number of cases referred to them by a judge, arbitrator, or committee was 297.

The number of cases in which a certificate was given in cases referred on the joint request of both workman and employer was 300. The cases in which a workman desired to receive his compensation abroad, and so required a certificate, were only 3. Medical referees sat as assessors under Schedule II (5) of the Acts in 376 cases. It is to be noted that, as in previous years, the great majority of claims were settled by agreement.

[1] Printed for His Majesty's Stationery Office by Darling and Son, Limited, 34-40, Bacon Street, E. To be purchased directly or through a bookseller from Wyman and Sons; Oliver and Boyd; E. Ponsonby. Price 7d.

AUSTRALASIAN MEDICAL CONGRESS.

The ninth session of the Australasian Medical Congress will be held in Sydney during September, 1911, under the presidency of Mr. F. Antill Pockley, M.B., C.M.Edin., M.B.Syd., M.R.C.S.Eng. The session will commence on Monday, September 18th, and end on Saturday, September 23rd. A social function will be held on the Saturday preceding. The Senate of the University of Sydney has granted the use of its buildings and grounds. The Government of New South Wales has given its countenance and support to the congress. Addresses will be given in full congress by the presidents of certain sections, to be decided upon. Special meetings of congress will be devoted to consideration of special subjects, which have still to be selected.

Patrons.

The following are patrons of the Congress: His Excellency the Right Honourable the Earl of Dudley, P.C., G.C.M.G., G.C.V.O., Governor-General and Commander-in-Chief of the Commonwealth of Australia; His Excellency the Lord Chelmsford, K.C.M.G., Governor of New South Wales; His Excellency Vice-Admiral Sir Richard Poore, Bart., K.C.B., C.V.O., Naval Commander-in-Chief of the Australasian Station; His Excellency the Lord Islington, D.S.O., Governor of the Dominion of New Zealand; His Excellency Sir Thomas D. Gibson-Carmichael, Bart., K.C.M.G., Governor of Victoria; His Excellency Sir William MacGregor, G.C.M.G., C.B., M.D., Governor of Queensland; His Excellency Admiral Sir Day Bosanquet, G.C.V.O., K.C.B., Governor of South Australia; His Excellency Sir Gerald Strickland, K.C.M.G., Governor of Western Australia; His Excellency Major-General Sir Harry Barron, K.C.M.G., C.V.O., Governor of Tasmania; His Excellency Sir Everard F. Im Thurm, K.C.M.G., Governor of Fiji, High Commissioner of the Pacific Islands His Excellency the

Honourable J. H. P. Murray, Lieutenant-Governor and Chief Judicial Officer of New Guinea; the Honourable W. P. Cullen, LL.D., Chief Justice of New South Wales; The Lord Plunket, K.C.M.G., K.C.V.O., late Governor of New Zealand; Admiral Sir Harry Rawson, G.C.B., G.C.M.G., late Governor of New South Wales; the Honourable Sir Normand MacLaurin, M.A., M.D.Edin., LL.D., M.L.C., Chancellor of the University of Sydney.

Officers.

The following are the officers of the Congress: *President:* F. Antill Pockley, M.B., C.M.Edin., M.B.Syd., M.R.C.S. Eng., Sydney. *Treasurer:* S. H. MacCulloch, M.B., C.M.Edin., Sydney. *General Secretary:* Arthur Palmer, M.B., C.M., F.R.C.S.Edin., Elizabeth Bay. *Associate Secretary:* A. J. Brady, LL.M., K.C.P., L.R.C.S.Irel., Sydney.

Vice-Presidents.

J. C. Verco, M.D.Lond., F.R.C.S.Eng. (President, Adelaide Congress, 1887); Sir P. Sydney Jones, M.D. Lond., F.R.C.S.Eng. (President, Sydney Congress, 1892); F. C. Batchelor, M.D.Durh., M.R.C.S.Eng., L.R.C.P.Edin. (President, Dunedin Congress, 1896); Hon. G. H. Butler, M.R.C.S.Eng., L.R.C.P.Lond. (President, Hobart Congress, 1902); Professor E. C. Stirling, C.M.G., M.A., M.D Cantab., F.R.C.S.Eng., F.R.S., LL.D. (President, Adelaide Congress, 1905): Professor H. B. Allen, M.D.Melb. (President, Melbourne Congress, 1908); Surgeon-General W. D. C. Williams, C.B., M.R.C.S., L.R.C.P.Lond., Director-General of the Army Medical Services of the Commonwealth, Melbourne; Fleet Surgeon V. Gunson Thorpe, M.R.C.S.Eng., L.S.A.Lond., Senior Naval Medical Officer, Australasian Station; Fleet Surgeon F. Falconer Hall, M.B., C.M., A.M., late Senior Naval Medical Officer, Australasian Station.

Sections.

The work of the Congress will be divided among twelve sections: 1. Section of Medicine: *President*, W. T. Hayward, M.R.C.S., L.R.C.P.Irel. (Adelaide). 2. Section of Surgery: *President*, G. A. Syme, M.B., M.S.Melb. (Melbourne). 3. Section of Obstetrics and Gynaecology: *President*, G. Rothwell Adam, M.D.Melb., C.M.Edin. (Melbourne.) 4. Section of Anatomy, Physiology, and Pharmacology: *President*, E. H. Embley, M.D., Ch.B.Melb. (Melbourne). 5. Section of Pathology, Bacteriology, and Tropical Medicine: *President*, Wilton W. Love, M.B., C.M.Edin. (Brisbane). 6. Section of Public Health and State Medicine; *President*, James W. Hope, F.R.C.S.Edin., L.S.A., D.P.H., R.C.P. and S.Irel. (Fremantle). 7. Section of Ophthalmology; *President*, J. W. Barrett, M.D., M.S.Melb. (Melbourne). 8. Section of Psychological Medicine and Neurology; *President*, W. Beattie Smith, F.R.C.S.Edin. (Melbourne). 9. Section of Diseases of Children: *President*, A. Jeffreys Wood, M.D., B.S.Melb. (Melbourne). 10. Section of Naval and Military Medicine and Surgery; *President*, Colonel C. S. Ryan, M.B., C.M.Edin. (Melbourne). 11. Section of Dermatology, Radiology, and Medical Electricity; *Presidents*, H. F. Lawrence, M.R.C.P.Edin., F. J. Clendinnen, M.D.Brux., L.R.C.P.Lond. (Melbourne). 12. Section of Laryngology, Rhinology, and Otology; *President*, W. L. Robertson, M.B., C.M.Edin. (Brisbane).

State Secretaries of Congress.

The following are the State Secretaries of the Congress:—Victoria: Arthur Jeffreys Wood, M.D., B.S.Melb. (Melbourne). Queensland: Wilton W. Love, M.B., C.M.Edin. (Brisbane). South Australia: John B. Gunson, M.B.Adel., M.R.C.S.Eng. (Adelaide). Tasmania: Gregory Sprott, M.D., C.M., D.P.H.Glasg. (Hobart). Western Australia: A. J. H. Saw, M.A., M.B., B.S., M.D., F.R.C.S.Edin. (Western Australia). New Zealand (South Island): Stanley Batchelor, F.R.C.S.Eng., L.R.C.P.Lond. (Dunedin); (North Island) W. E. Herbert, M.B., C.M., M.D.Edin., F.R.C.S. Edin. (Wellington).

DR. T. L. LLEWELLYN, of Bargoed, Wales, has been awarded the studentship of the Royal Society founded by the late Professor Tyndall for scientific research on subjects tending to improve the conditions to which miners are subject. Dr. Llewellyn proposes to investigate the cause and cure of miner's nystagmus.

SCIENCE NOTES.

THE products of the dry distillation of pure cellulose do not appear to have been studied hitherto in any great detail. In view of the fact that the exact chemical constitution of cellulose is still a matter of dubiety, it is not impossible that a more accurate knowledge of these volatile products might afford some important information, and this consideration has induced Erdmann and Schaefer to undertake an investigation along this line. Their results are published in the *Berichte der deutschen chemischen Gesellschaft* for September. Their initial difficulty was to obtain a pure cellulose, and they eventually decided to use Swedish filter paper. Even this in its purest state contains traces of impurities, which were a source of trouble. These having been removed as far as possible, about a kilogram of the filter paper was cut up, placed in a copper-retort, and subjected to distillation for about two hours. Of the distillate, consisting of tarry products and substances soluble in water, only the latter were considered. The aqueous solution was subjected to a process of fractional distillation, and by this means a series of substances were isolated. Of these, the most important are formaldehyde, furfurol, maltol, oxymethyl-furfurol, and γ-valerolacton. The occurrence of formaldehyde is rather interesting, and it had previously been shown by Pasqualis to be present in the smoke from wood fires. Furfurol was present in considerable quantity, and it is already well known as a product of the dry distillation of wood, while γ-valerolacton is known to be present in wood vinegar. The authors content themselves with the isolation and identification of these substances, and do not venture further on any theoretical speculations.

LITERARY NOTES.

YET another magazine has been added to the already considerable number of periodicals which exist for the purpose of instructing parents, guardians, and teachers in the proper care of their charges. The month of October has witnessed the appearance of *The Child*, a monthly journal devoted to child welfare, ably edited by T. N. Kelynack, M.D., and published by Messrs. John Bale, Sons, and Danielsson, Limited. This most interesting magazine differs slightly in several respects from similar publications, and therefore it "will occupy a position different from any other periodical devoted to child problems. It will not interfere in any way with the excellent journals already dealing with child study, school hygiene, and other special aspects of child welfare, but by affording a medium for co-ordination and co-operation it will endeavour to assist all forms of thought and action directed to the furtherance of the best interest of child life. At present numerous institutions are accomplishing useful service, but their workers remain in comparative ignorance of the results achieved by others, and know very little of methods beside their own. *The Child* will provide all such with a centre for information, co-ordinating experience likely to be of value for the general good, and providing means for the initiation and record of inquiries to elucidate particular problems connected with child life." *The Child*, therefore, aims at constituting a kind of an exchange bureau of general information with regard to all that concerns the welfare of children, and for this reason alone it should prove a welcome and useful addition to the periodical literature of the day. In order that its readers may profit to the full by the experience of others, contributions are welcomed in any language and from any part of the civilized world. This first number contains several interesting articles written by distinguished foreigners, whilst the list of English contributors includes the names of Sir Lauder Brunton, the Earl of Meath, the Bishop of Ripon, the Right Hon. John Burns, M.P., and a host of eminent men and women interested in the moral and physical well-being of the rising generation. In view of this imposing array of well-known names, it is, perhaps, hardly necessary to say that the contents of *The Child* are worthy of all praise, and should prove extremely useful to all those who have children under their care. Its numerous and excellent articles, all characterized by practical sympathy and common sense, should ensure a

speedy popularity for the new journal, and it may be predicted with safety that it will not be long in gaining a wide and appreciative circle of readers. It should be added that *The Child* is beautifully printed, and contains some excellent illustrations.

In a lecture delivered to the Glasgow Eastern Medical Society, and published in the September number of the *Glasgow Medical Journal* under the modest title of 'Notes on some old Glasgow Institutions with Medical Associations;" Dr. Hugh A. McLean, has given an interesting account of the foundation and gradual development of the University of Glasgow. This great seat of learning, the second oldest in Scotland, came into being in the middle of the fifteenth century. It owes its existence to Bishop William Turnbull, who prevailed upon the reigning Pope, Nicholas V, to found a university in his diocese of Glasgow upon the same plan as the famous universities of Paris and Bologna. The charter of foundation was granted by the Pope in the year 1450, but though Nicholas approved of Glasgow as the site for a school on account of "the healthiness of its climate and the plenty of victuals and of everything necessary for the use of man," neither he nor anyone else appears to have taken sufficient interest in the new foundation to render possible the erection of proper buildings for the use of its scholars, and, according to Dr. McLean, at the beginning the classes were probably held in the crypt of the cathedral. It was not long, however, before the college authorities were enabled to take a house in the Rotten Row, on the site of which now stands the Lock Hospital; and in 1459 Lord Hamilton granted them a tenement in the High Street and four acres of land in the Dovehill, on condition that at the end of every mid-day and evening repast the regent and students should pray standing for the souls of their benefactor and his wife. After the first few years there seems to have been no lack of endowments and gifts for the growing college. Only eighteen years after its removal to the High Street it received a grant of land from Sir Thomas Arthurlie, and during the next century not only did Queen Mary make over thirteen acres of land in the Dovehill, with the Kirkroom of the Friars Preachers and the rents of various tenements, but her son, in 1577, refounded and endowed the whole institution. It was not until 1632, however, that the college was rebuilt, the new buildings being erected on the same site in the High Street. In those days, and indeed until much later, there does not seem to have been any "living out" system at Glasgow. All students lived in college, and though at the beginning this privilege cost nothing, later on the rent of college rooms varied from 4s. to 10s. a session. It has already been stated that the Scottish University had been modelled upon those of Paris and Bologna, and this similarity extended to the systems of tuition and examination, and even to the very textbooks in use amongst the students. The power of the college authorities was almost unlimited (they were actually able, upon one occasion, to conduct the trial of a student who had been charged with murder—students being almost outside civic jurisdiction, and entirely under the control of the college), and the discipline they enforced was rigorous to the extreme. For instance, no games were allowed except golf and archery; billiards, cards, acting (at one time permitted), and even bathing, being strictly forbidden, whilst such things as wearing a sword in town or "cutting the gown of another on the Lord's day" were regarded as serious offences. In 1677 an edict was published to the effect that "if any student occupying rooms be found guilty of breaking the glass windows or doing any other detriment to the house they shall be forthwith publickly whipped and extruded from the College." The diary of Josiah Chorley, an English student, an extract from which is quoted by Dr. McLean, gives ample proof that life at the University of Glasgow in the seventeenth century was not so pleasant as it is now. "The good orders of the College," writes the virtuous Mr. Chorley (who one cannot help suspecting was a bit of a prig) "were very agreeable to mine inclination; at 5 o'clock in the morning the bell rings, and every scholar is to answer to his name, which is then called over. The Lord's days are strictly observed, all the scholars called to the several classes, when, after religious exercises, all attend the Primar and Regents to the church forenoon and afternoon. In the evening they are called again, and then come under examination concerning the sermons heard, and give account of what was appointed the foregoing Sabbath in some theological treatise, and then to supper and chambers." Bedtime was at the same time, 9.15 every night in the week, and must have come as a welcome relief after these solemn Sundays. It is to be feared that all Englishmen at Glasgow were not so easily pleased as Josiah Chorley. Early in the eighteenth century the English students appear to have raised a protest against the food provided at the college table, with the result that the Principal was forced to take the matter up, and persuaded Alexander Eagle, the cook, to "furnish with diet all Englishmen to diet within the College, during the continuance of this session, three times a day, with meat and drink, with such changes of diet as is mentioned in a paper apart: The said Englishmen and each of them paying to the said Alexander Eagle £3 for each three months' diet and so proportionally." One hopes that this arrangement worked well, and that the Englishmen were satisfied with the culinary efforts of Alexander Eagle. The price they paid for their privileges cannot be considered exorbitant, as, according to Dr. McLean's reckoning, it only came to 8d. a day for all three meals.

The *Old-Lore Miscellany of Orkney, Shetland, Caithness, and Sutherland* (vol. iii, part iii. Printed for the Viking Club. Published by Curtis and Beamish, Ltd., 50, Hertford Street, Coventry) must be a "feast of nectared sweets" to readers with antiquarian tastes. Indeed, others besides the members of the Viking Club, for whom it is primarily intended, might well be interested in this fascinating little magazine, which is a veritable mine of information on the history, literature, language, and folklore of the North of Scotland. The July number, amidst a great deal that is well worth reading, contains one particularly interesting article—a short account of "Ferchard, Physician to King Robert II," by the Rev. A. Mackay. Froissart mentions somewhere in his *Chronicles* that the Scottish king of that period was troubled with chronic inflammation of the eyes, and here we are afforded a glimpse of the physician who attended him, and who Mr. Mackay is disposed to look upon as "an early example of the eye specialist, whose skill and devotion were highly appreciated by the afflicted king." Who was Ferchard? Mr. Mackay admits that very little is known concerning this fourteenth-century oculist. There seems some reason to believe that he was the son of Iye, Chief of Mackay, in which case he was brother-in-law to the Wolf of Badenock, one of King Robert's sons, who doubtless procured for him his post at Court. The date of his birth and of his death are alike unknown, and no record exists to tell us where he studied medicine. Mr. Mackay suggests that he may have gone to Paris, as did so many Scottish youths during the Middle Ages. All that is definitely known about Ferchard, however, is that in the year 1379 he received from his Royal brother-in-law the lands of Melness and Hope in Sutherlandshire—a gift which was ratified by the King; and seven years later—on December 31st, 1386—Robert II himself granted the Little Isles of Strathnaver (which consist of all the islands along the north coast from Stoirhead in Assynt to Armadalehead in Farr) to "dilecto et fideli nostro Ferchardo leche, pro suo servitio nobis facto et faciendo" (our beloved and faithful Ferchard the leech, for his service done and to be done to us). The possession of these large estates enabled Ferchard to found a landed family of Mackays, and descendants of the old Court physician seem to have survived till as late as the seventeenth century. Some confusion has arisen concerning the identity of Ferchard, owing to a tradition which claims him as a member of the family of Beaton in Isla. These Beatons were hereditary leeches to the great clan of Maclean, and one of them became physician to James VI. Hence it has been frequently asserted that Ferchard and James's doctor were one and the same person—a conclusion which Mr. Mackay has successfully proved to be erroneous.

Mr. Morton Edgar announces the publication of a work entitled *Great Pyramid Passages*, based upon letters written from Egypt and Palestine in 1909. These letters, revised and extended by the late Dr. John Edgar and Mr. Morton Edgar, deal with the Great Pyramid and its symbolical significance. The work contains about fifty photographs of the interior of the Pyramid. Orders may be forwarded to Mr. Edgar, 224, West Regent Street, Glasgow.

British Medical Journal.

SATURDAY, OCTOBER 29TH, 1910.

EXPERT MEDICAL EVIDENCE.

It is not often that we refer in these columns to criminal trials, for though many of them, it is true, present considerable medical interest, it is rarely of a kind which can usefully be discussed. It is otherwise, however, in respect of the poisoning crime which has attracted so much attention during the last two or three months, and which reached its climax last week. Questions of the identification of human remains—few in number and long after death—and of the recognition of organic poisons, despite the processes of putrefaction, always have a special importance and interest of their own. Moreover, the bulk of the evidence on which the whole case turned was of a purely medical character, and was supplied by an unusually large number of witnesses. Indeed, the action was early characterized as a doctor's case, and even the Lord Chief Justice spoke of it in somewhat similar fashion.

For this reason it seemed well to take steps to secure for the information of our readers a fuller report of the medical parts of the evidence than was likely to be given in any lay newspaper; and we now lay before them in another part of this issue a careful summary from a verbatim report specially supplied of the evidence in chief of each of the medical witnesses, of their cross-examination, and of the comments on the medical evidence made in their final addresses by the counsel for the defence and prosecution respectively, and by the Lord Chief Justice himself in the course of his summing-up. It seemed useful to do this, because, apart from features of passing interest, there is much to be learnt from the case both directly and indirectly, and it will be years before its lessons are crystallized out in the form of brief statements in works on toxicology and forensic medicine.

Each reader will judge for himself, but there are few, it seems to us, who will not feel some degree of pride at the fashion in which the medical profession was represented on this occasion by the official medical witnesses for the Crown. Their evidence was given in a manner on which, in point alike of scientific exactitude, lucidity, succinctness, and absolute fairness, it would be exceedingly hard to improve. Especially admirable were the readiness and completeness with which Dr. Willcox proved able to answer the abstruse questions on the comparative chemistry of the mydriatic group put to him in cross-examination. The medical profession, therefore, to this extent has much reason to congratulate itself.

There is, however, another side to the picture—the official witnesses were not the only representatives of medicine engaged in the case. There was imported into it by the defence evidence of the kind to which the term "expert" is usually applied, and the impression it made on the court is unpleasantly visible in the speech of the prosecuting counsel and in the closing observations of the Lord Chief Justice. Since the manner in which evidence is delivered counts for a good deal, readers cannot absolutely judge how far these carefully worded comments were justified; but as many of the statements made by the witnesses in question are given in our report verbatim, they have before them some material, at any rate, for forming a judgement on the point.

The net outcome of the whole matter must be, it seems to us, an accentuation of the grave discontent long felt by the medical profession at the circumstances which render conflict of medical evidence so common in courts of law. We say "circumstances," because it is with these rather than with medical men, either individually or as a body, that the responsibility really lies.

At the same time, however, it may be suggested that the ethical considerations evoked by these conflicts have not yet received the attention they deserve. One reason, doubtless, is that they involve some very fine points, and that in any case distinctions must be drawn between different classes of medical witnesses. When two or more medical men have both seen a case in the ordinary course of their work and differ in respect of it, there is no doubt that in present circumstances each is bound to go into court and uphold his own view as frankly and strongly as absolute adherence to truth will permit. Medical men, again, who are the holders of official positions which necessitate their investigating cases and offering opinions thereon are in much the same position. In either case the evidence given may be "expert" in so far as those who give it are of high scientific attainments and special experience in the matter in question, but it is not to such evidence that the term "expert" is commonly applied. That term is reserved for quite another class of evidence—that given by persons who have no original or essential connexion with the case, but who have been called on behalf of one side or the other. They are persons presumed to possess special knowledge who have been induced to place their services at the disposition of solicitors, first to coach them in questions which may be asked by counsel in the hope of diminishing the effect of the scientific evidence on the other side, or of confusing the issue, and then to appear in court themselves and tender counter-evidence.

For medical evidence of this kind it has sometimes been suggested that there is, ethically speaking, no room whatever. On the other hand, it may be maintained that every man possessed of scientific knowledge is entitled to place it at the disposition of those who think it may be useful to their case, and that a medical man is as much morally justified in using his brains to help to upset either a prosecution or a defence as is a lawyer in defending his client. Against this it might be urged that the analogy does not hold good, and that to use medical knowledge for such purposes is to debase it. It is not being used either for the relief of suffering or in the highest of all scientific objects, the revelation of truth; for the "expert" medical witness must often be aware that though the medical evidence on the other side may be not absolutely unexceptionable in

every particular, it is in essential points absolutely correct.

Those who take this line call to mind, moreover, that a barrister, even when charged with the defence of the life of a prisoner, is fettered by custom in the extent to which he may make suggestions to the effect that black is white, and that even if this were not the case, barristers, as such, are not concerned with the establishment of eternal truth, but merely with the rights or wrongs of cases as judged by the rules of an absolutely conventional procedure. To medical men, however, such rules do not apply; their concern must be simply with scientific facts. These, of course, are open to various interpretations, and on such points doctors are proverbially apt to differ.

At the same time, those who on these grounds condemn expert medical evidence are quite prepared to admit that the tendering of it is fully justified when the motive is a feeling—such as may be assumed to have existed in this case—that, in default of intervention, injustice will be done. They argue, however, that the reasons for this belief must be very strong, and can rarely exist when, since a man's life or liberty is at stake, every person who gives evidence unfavourable to him must necessarily do so with extreme reluctance, and when the medical witnesses in particular are men of the highest ability and experience in the matters to which they are testifying and are known to conduct their work with the utmost care.

There is considerable force in these views, but, as was indicated at the beginning, the ethics of this question are of so difficult a kind that until they have been more thoroughly ventilated and discussed, no one is entitled, either openly or in his own heart, to condemn any man for taking an opposite view to his own, whatever that may be, or for acting in accordance with that view.

Meantime, we merely deplore the conditions which allow such unfortunate conflicts between medical witnesses to occur, and do so not only because they tend to interfere with the dignity of medicine, but because, more important still, the underlying conditions may at any time easily lead to a grave miscarriage of justice.

Given a highly skilled man but a bad witness on one side of a criminal action, and a witness having less knowledge and experience but clearness of head and readiness of wit on the other, a criminal might easily escape or an innocent person be convicted if the medical evidence were of importance and dealt with fine points involving the use of long terms and considerations unfamiliar either to judge or jury. The possibility of this must be obvious to those who, like ourselves, constantly have to study accounts of civil actions turning on medical evidence. It must often seem to them that the verdict would have been different from what it was if the court had better understood the medical bearings of the facts as represented by one side or the other, or if the medical evidence which failed to win the day had been given by a more convincing kind of witness.

We therefore hold, as has long been held by most medical men who have considered the subject, that it would be greatly to the advantage of the public and to the administration of justice if, in trials of a medical kind, the scientific evidence presented to the court were that not of an individual, but of a majority of medical men asked to consider the medical points at issue.

MILITARY MEDICINE.

Judging by some figures supplied in his presidential address by Sir David Bruce on October 12th, the United Services Medical Society is certainly entitled to be considered a very successful organization. It has only been in existence a little over three years, and has a membership roll of over 500. We draw attention to this fact because some of its members apparently regard the society as lacking vitality. It may be added that its meetings, reports of which habitually come under our notice, are of a successful and useful kind; the papers are carefully prepared, and are followed by good debates. Nor has an adequate element of "shop" ever seemed to us to be lacking. It is impossible that the subjects debated shall always be of a kind in which only members of this society are likely to be interested. Military medicine, including in that term surgery, hygiene, and organization of work in peace and war, is by no means a pure speciality, and if the "shop" idea were carried too far the occurrence might be common of debates which were of interest to army medical officers, but of none to naval medical officers, and vice versa.

Apart from other ways, the absence of true specificity in military medicine is happily evidenced by the very material contributions to existing knowledge of the etiology, pathology, and clinical phenomena of disease which have been made by officers belonging to the Services. Most of it has been the outcome of work performed by them in the course of their ordinary duties, and much more may be, and is, expected of them. Unless they unfortunately grow to regard themselves as specialists, there are few, if any, subjects on which they may not throw a light, while they have, as was generally indicated by Sir David Bruce, unrivalled opportunities of studying certain diseases of vast importance not only to the army and navy, but to the community at large. Typhoid fever, dysentery, and the effects of the *Spirochaeta pallida* and the gonococcus are cases in point, quite apart from malaria, phlebotomus or sandfly fever, and other diseases of the tropical medicine order.

The essential unity of military and general medicine is further evidenced by the fact that military and naval medical officers have at times contributed to the solution of problems even of general physiology. For evidence of this statement we need go no further than the present issue, in which appears Lieutenant-Colonel Melville's report on his elaborate investigation of the amount of food required for mere sustenance and work respectively. It is one of the papers published in our account of the proceedings of the Section of Physiology at the July meeting. The author, it may be observed, dealt with the question mainly from the point of view of the effect of measured amounts of work and measured amounts of food, on the weight, general condition, and well-being of the individuals concerned.

Nor is it certain that even subjects which at first sight seem entirely of a "shop" character are really specific to military medicine and have no connexion with general medicine or any bearing thereon. As an example of such a "shop" question, that on the etiology of Soldier's Heart, which was debated at the opening meeting of the society this year, suggests itself. Hitherto it has been regarded purely as a soldier's question, and investigation into its etiology would seem to have been almost entirely confined to the features of life characteristic of a soldier's career;

these two circumstances may possibly be the reason why its causation still remains so much of a mystery.

It is true that in their more recent study of this subject soldiers have had the great advantage of the co-operation of a physiologist in the person of Dr. Pembrey, of Guy's Hospital; but it is possible that he, too, has regarded the matter too exclusively from the soldier's standpoint. It would be quite worth while to make endeavours to ascertain whether the condition known as "soldier's heart" is not fairly common among young civilians belonging to the same class as that from which soldiers are drawn. The alternative phrase by which the disease is known—D.A.H., or disorderly action of the heart—has been fairly familiar among ordinary medical men since the South African war, when this condition led to the sending home of so many otherwise useful soldiers; and it is possible that if their attention were directed to the matter general practitioners might be able to supply records of cases of the same character from among their own patients. Such records, if available, would in any case serve as controls, and investigation of the circumstances of the life of these civilians might possibly throw light on the extreme prevalence of D.A.H. in soldiers; it appears to be recognized as a disabling disorder chiefly in the third year of their service.

Its clinical features, as described by Colonel Simpson in the debate in question, are, in addition to increased rapidity of the pulse and a disorderly action of the heart, cold blue hands, defective muscular development, a low skin temperature, and a general increase in muscular irritability and of the knee-jerk reflex. These phenomena are accompanied by some increase in blood pressure, this averaging about 140 mm. Hg.

Various explanations of its pathogeny have been forthcoming, and to some of these allusions were made by those who took part in the debate. Dr. Pembrey, for instance, observed that soldiers worked at a disadvantage as compared with civilians, since they were heavily clothed. This caused a rise of temperature and dilatation of the cutaneous vessels, and thus threw a strain on the heart. Possibly, too, the sharp tone in which orders were given might not be without its influence, since the necessary instantaneous response caused an increase in the pulse-rate. Such an effect had been demonstrated in the case of firemen.

Surgeon-General Branfoot, on the other hand, attributed the condition to cigarette smoking, while Major W. S. Harrison quoted the opinion of Davy, who, some thirty years ago, attributed soldier's heart to compulsory position of "attention," which, he pointed out, was accompanied by an habitual semi-expansion of the chest and loss of action in the respiratory pump. Lieutenant-Colonel Deane, like several other members, thought clothing had something to do with the matter, but no longer believed that the position of "attention" was a factor, nor yet over-training; the men affected were soft, flabby persons. Personal experience was quoted by Sir David Bruce and others in evidence of the fact that a tight jacket during work raised the number of heart beats. It was also shown by Lieutenant Hayes that the number of heart beats increased after five minutes' standing at "attention," as compared with the rate while standing easy.

It cannot be said that any of these explanations or attributed causes taken separately is of a very convincing nature. The prevalence of soldier's heart does not seem to have decreased of late years, despite the fact that the old-fashioned stock has been done away with and clothing is in every way very much looser than it was at the time when the condition first attracted attention. Cigarette smoking, though it may very well be a contributing factor considering the age of recruits, is too common a circumstance to be a full explanation. The position of "attention," coupled with semi-expansion of the chest, is a circumstance in the life of all soldiers, of whom only a minor proportion acquire soldier's heart, and it is to be remembered in the same connexion that hundreds of men of the upper classes habitually hold themselves with braced-back shoulders and chests thrown forward—in fact, in a position which from the point of view in question is the same as that of a soldier at "attention." Doubtless tight jackets are an added strain during exertion, but the ordinary cyclist and sportsman gets through an immense amount of work in clothing not looser than the fatigue uniform of soldiers.

Indeed, looking at the matter from what may be called an epidemiological standpoint, it would almost seem that, though there may be many contributing factors, the true cause must be individualistic rather than communistic. This being the case, the most attractive suggestion would seem that made by Lieutenant-Colonel Melville, who was disposed to attribute soldier's heart to over-exertion of recruits before they are properly fed. He thought they should be fed up for a month before any work was given them. Given a number of growing youths who suddenly begin to take really hard exercise, perhaps, for the first time in their lives, and when, perhaps, they have been on comparatively short commons for a time, or living on ill-chosen food, it would not be peculiar that a certain number of them should damage their hearts sufficiently at the beginning of their soldier career to account for the after-onset of definite D.A.H.

With this conception, Lieutenant-Colonel Deane's observation that the men affected are generally soft, flabby specimens is in keeping; this type of man is often a heavy indulger in cigarette smoking.

THE ILLNESS OF PRINCE FRANCIS OF TECK.

It is less than a month since we published a letter from H.S.H. Prince Francis of Teck appealing for help for the Middlesex Hospital. In this and other philanthropic work His Royal Highness had always taken a keen and active interest. It is therefore no conventional form of words to say that his untimely death will be mourned by the whole nation, and especially by the suffering poor. It would be an impertinence on our part to present our condolences to the Royal Family, but we are sure we are expressing the views of the whole profession in saying that it sympathizes most heartily with Her Majesty the Queen and his other royal relatives on their bereavement. As some misconception of the facts of the case has found expression in certain quarters, we are glad to be able to publish the following authoritative statement: Prince Francis had been suffering for some time from an affection of the nose. After his return from Marienbad, where it had been recognized as an empyema of the antrum, an operation was performed, and the cavity was drained. On September 28th the Prince went to Balmoral, and soon after arriving there he suffered from occasional paroxysms of cough, with expectoration. He kept quiet, and was not at any time exposed to chill. On October 4th he was suddenly seized with severe pain in the right side. His temperature rose

to 102.5°, and a friction sound was detected at the right base. The signs of effusion gradually developed, and he was unable to travel south when the Court left on Monday, October 10th. On the following day a consultation was held, and it was decided that he probably had an empyema, for which an operation would be necessary. The pneumococcus had previously been found in the expectoration. As there were then no urgent symptoms, and as his general condition had somewhat improved, it was decided, after a further consultation, that he should travel to London on October 13th, and proceed at once to the nursing home. He did not suffer from chill on the journey. He was seen on arrival, and at the examination the physical signs which had been reported were found. On the same afternoon, Friday, October 14th, an exploratory puncture revealed the presence of a condition requiring early operation; this was performed the same evening. The fluid removed contained a pure culture of the pneumococcus. After the removal of the pressure upon the lung by the opening and draining of the pleura, examination showed that an excavation existed in the right upper lobe, and that the pneumococcal infection had spread from the lung to the pleura. The temperature fell to normal on the morning of October 15th, but there were no other signs of improvement. The temperature rose again for three days, and then for four days was normal. The toxic effects upon the nervous system were very pronounced throughout the illness, and in the early hours of Saturday, October 22nd, the heart began to fail, and the Prince passed away at 11 a.m.

THE STATE CHILDREN'S ASSOCIATION.

THE seventh report of the State Children's Association, covering the years 1907–8–9, shows a substantial advance on many points since the last was issued in 1907. The scope of the association's work is constantly widening. Founded in 1896 to advocate the interests of Poor Law children in the metropolis alone, it has of late years extended its operations to the provinces, and from only dealing with dependent children it has gone on to consider the case of young delinquents. The methods and organization of the association are by this time widely known. It continues as fortunate as ever in its officials, and in Lord Lytton and Sir Albert Spicer has secured an invaluable chairman and vice-chairman. Events have of late marched rapidly, and proposals which three years ago seemed counsels of perfection are to-day established facts. The Children Bill has become the Children Act. Before introducing it Mr. Herbert Samuel asked the assistance of the association, and suggestions were made with regard to the amendment of the Infant Life Protection Act, 1899, the necessity of legislation for the children of vagrant parents, the compulsory establishment of separate courts of justice for children and the special treatment of feeble-minded delinquent children. Almost all the amendments to the bill proposed by the association were obtained. The amending of the Infant Life Protection Act is a special case for congratulation, for "one-child cases" are no longer exempt from protection, the age limit is raised from five to seven years, and foster-parents can no longer insure their helpless little charges. The result of these changes has been sufficiently striking. Last year in one union alone the number of registered cases rose from 92 to 389, and the additional 297 were all one-child cases. Like evidence comes from other unions, and to those who can read between the lines this provision and the visits and advice of the protection visitors mean health and happiness and life itself to thousands of little children. The association has given its aid in promoting those courts of justice for children which the Children Act has made compulsory, and a special effort, attended by considerable success, was made to accelerate the working of the Probation of Offenders Act. A letter signed by Lord Lytton was addressed to all Chairmen of Petty Sessions, suggesting measures for ensuring its active working, and for enlisting a large body of voluntary help on its behalf. Lord Lytton was invited to sit on the Departmental Committee which subsequently inquired into the working of the Act, and the State Children's Association was requested to furnish suggestions. The association is urging the compulsory appointment of women visitors and lady inspectors under the Infant Life Protection Act and the Order regulating boarding-out within the union. The State Children's Association welcomes the corroboration of its principles given by the Poor Law Commission Reports, both of the Majority and the Minority, which declare decisively against the extension of barrack schools, and pronounce against the maintenance of children in workhouses—an abuse which, often as it has been exposed, is still too common. The association is combating strongly the use of workhouses as places of detention for young offenders, and its report points out that the Local Government Board has granted permission for their use for a limited period only, so that every effort must be made that this unsuitable arrangement shall not become permanent. Boarding-out continues to increase in popularity, and excellent work has been done by the association in forming fresh committees in neighbourhoods where none were formerly at work. In the report of three years ago fifty-eight unions were mentioned as having adopted the scattered-home system of dealing with children ineligible for boarding out. To-day that number has risen to nearly ninety, and to almost all of these the State Children's Association has been able to send information and suggestion, receiving letters of appreciation which show the hold obtained by the principles of the association. Provincial work grows apace, fresh boards of guardians are being drawn in, meetings are organized in increasing numbers, and leaflets, letters, and answers to all sorts of applications go out constantly from the office. Nothing so concerns a nation as the wellbeing of its children. The three years' record of the association's work justifies an appeal to the public for such support as will enable it to answer the calls to labour which reach it from many sides. The report can be obtained (price fourpence post free) from the office of the Association, 53, Victoria Street, S.W.

ECZEMA "CURES."

THOSE who have seen or read the well-known comedy, *A Pair of Spectacles*, may remember that one of the first incidents in the process of disillusionment by which Mr. Benjamin Goldfinch loses his faith in human nature consists of an interview with two rival shoemakers, each of whom stoutly maintains that the boots he has made are "best calf" and those made by his rival only "cow." Mr. Goldfinch, unable to decide which of the men is lying and strongly suspecting that both are doing so, is impelled logically to the conclusion that at least "they can't both be telling the truth." It would be well if the public could be induced to apply the same reasoning to the claims of competing manufacturers of proprietary medicines, whose statements are so mutually contradictory as to convince any one that "they can't both be telling the truth," and to leave a very strong suspicion that both are lying. The article which appears elsewhere in this issue of the JOURNAL

on nostrums for eczema, etc., gives instances of such statements as those referred to. For example, one maker says "sulpholine lotion is the only external skin remedy"; "eczema and all skin ailments are completely cured by sulpholine lotion"; and another says "the potent ingredients of a remedy, which are necessary to the successful cure of eczema, cannot be contained in the form of a liquid. Lotions, besides containing mercury, must necessarily contain some alcohol or water, which are irritants and should be rigidly avoided." (The implication that all lotions contain mercury is distinctly original.) While one asserts that "it may take a few months to effect a permanent cure"; and others make similar statements, yet another says "there is no need of an extended course of treatment in the cure of eczema. If the remedy is the right one, its effects will be apparent immediately and the progress of its work may be noted daily." In some cases sufficient discrepancy is shown by bringing one statement into juxtaposition with another made by the *same* nostrum seller, as in the instance where it is stated that "there is not one among the many healing extracts used which is not highly lauded by skin specialists the world over," and on the next page of the same pamphlet "several of the medicaments used in the ointments and blood tablets are very rare and not in use in Great Britain, and do not form any part of the British doctor's medical outfit." Serious inconsistency frequently exists between the claims put forward in a press advertisement, the function of which is to get the sufferer into correspondence, and the much more cautious statements that are made later, and which can, if necessary, be pointed to afterwards as showing that the patient was not justified in expecting prompt benefit; as an example of this in one press advertisement cited readers are assured that "just a drop or two of D.D.D., the Guaranteed cure for Eczema and all Skin Diseases, applied to the burning skin, and that torturing, endless, nerve-racking itching is at an end"; "not only does D.D.D. stop all irritation and pain immediately—we guarantee it—but the cures that invariably follow are permanent," while in a pamphlet supplied with this very article it is stated that "the person fortunate enough to become familiar with D.D.D. Prescription in the early stages of his disease may commit the error of being impatient of cure. . . . The eruption may have appeared only on a few spots of his body, but this is evidence that the disease germ is lodged in his skin. The germs will grow and multiply and spread; . . . it may take some time to dislodge the germs from his skin. . . . Is it not worth careful study, a few months' patience, to be rid of that horrible malady?" The medical profession comes in for the usual amount of abuse, as, for example, "many doctors don't appear to reconize the fact that the complaint should be treated both locally and constitutionally, therefore their treatment often proves ineffective" (the writer apparently does not "reconize" the rules of spelling); "notwithstanding the great strides that have been made in medicine for the past decade or two, skin diseases, and particularly eczema—the worst of them—are about as little understood by the medical profession to-day, as they were a generation back." "It may be that physicians have failed to give this trouble the proper amount of study because, not being a fatal disease, they have considered it unimportant enough to wilfully neglect its thorough diagnosis." "The average medical man is helpless to combat the growing trouble of skin diseases." The company making the first of these statements endeavours to prove that its methods are the same as those followed by the qualified medical practitioner: "When you consult a doctor he first inquires into the causes leading up to your trouble, then carefully examines all the symptoms and indications. Upon the results he forms his diagnosis, which in turn suggests the treatment. We do exactly the same when you return the examination form filled up." The trifling omissions of the years of study, training, and experience requisite for a medical qualification, and of personal examination of the patient, are treated as of no consequence; naturally, some illuminating diagnoses may be looked for under such circumstances, as in the case described, where, having received the answer "Eczema" to the question, "What are you suffering from?" and after "carefully studying" the answers to this and other questions, the company gravely informs the patient, "You are suffering from a severe and disagreeable form of eczema"!

ANCIENT ANATOMICAL DRAWINGS IN TIBET.

In a most interesting note reprinted from the *Asiatic Quarterly Review*, October, 1910, Lieutenant-Colonel L. A. Waddell, C.B., I.M.S., points out that hitherto our information in regard to the medical and anatomical knowledge possessed by the ancient Hindus has been derived almost exclusively from the non-illustrated accounts in manuscripts. In the Temple of Medicine at Lhasa, Lieutenant-Colonel Waddell found a set of ancient anatomical drawings which preserve in concrete pictorial form the old-world Indian beliefs in regard to the structure and functions of the internal organs of the human body. These, which were obviously intended for teaching purposes, are essential to a right understanding of the history of ancient Indian medicine. The circumstances under which Lieutenant-Colonel Waddell visited the Temple of Medicine in 1904, and unearthed there these drawings are described and illustrated in his *Lhasa and Its Mysteries* (pp. 376–79). A set of the drawings, which he procured, is now deposited in the India Office Library along with the greater portion of the manuscripts and books collected by him in Tibet, numbering about a thousand volumes, and comprising very many rare works and many unique and hitherto unknown treatises, including several on medicine. Lieutenant-Colonel Waddell says that in Tibet at the present day, as was formerly the case in ancient Europe, the study and practice of medicine is confined to the priests. They are taught this subject in their ordinary curriculum at the monasteries, and those who desire to specialize come to the Temple of Medicine at Lhasa. This fane is dedicated to Buddha. That dispenser of spiritual medicine is represented as "The God of Medicine"—an Esculapius, whose image occupies the chief place in the temple, with the title of "Buddha, the Supreme Physician, the King Beautiful as *Baidurya* (beryl or lapis lazuli)." The author thinks that: This myth possibly incorporates that of the Assyrian healing (?) deity, Enurēstū, who is also associated with this stone. In this form he is a favourite object of worship by most modern Buddhists, and is the popular *Binzuru Sama* of the Japanese. The ancient Buddhist canon contains several treatises on the healing art which are ascribed to the Buddha himself, and these, with their commentaries, form the basis of the art as practised at the present day in Tibet. The source of this Indian Buddhist medical lore has not, says Lieutenant-Colonel Waddell, yet been clearly traced. Ancient Greek influence probably accounts for some of the analogies exhibited to the old humoral pathology, with its flow of the bile and the phlegm. In Buddha's day, in the fifth century B.C., Taxila, near the modern Rawal Pindi, in Northern India, was especially

famous as a centre of medical learning, and one of its most celebrated physicians at that time was Jīvaka. Certainly, after Alexander's invasion in 325–27 B.C., Greek influence was strong and remained so for several centuries before the scriptures of either of the two great branches of Buddhism were reduced to writing. And it was from this neighbourhood that the Sanskrit text of the Buddhist canon, from which the Tibetan version is translated, was first collated and issued. The Indian Buddhist origin of this particular set of pictures is attested by a painted row of twelve monks at its top, as founders of the art, and bearing Indian names of monks of Buddha's Order. They are divided into two groups, one of which is labelled: "Line of the ancient founders (or compounders)." This group commences with a Sākya, but he does not clearly appear to be the great *Muni* himself, as he bears the title of "the great Abbot," and is surnamed the "mighty," which is used in Tibet as the equivalent of the Indian *Iswara*, or *Siva*, an epithet not usually applied to Buddha. The second is called the "King Punya," who possibly may be the Prince Punya-bala, who was apparently a contemporary of Buddha, and in regard to whom there is a tale (avadana) in the Buddhist canon. None of the names of the others, however, are recognizable as those of known personages; nor are any of those of the second group, which is entitled "The thread of the pure ones." Among these latter the chief place is given to a monk, figured in the conventional attitude of Tsongka'pa, the founder of the yellow hat sect of lamas, and inscribed, "Sarvajna, the lord of doctrinal teaching." This latter list probably includes some Tibetan teachers. The date of introduction of these pictures into Tibet is not, according to Lieutenant-Colonel Waddell, evident. According to the current tradition of the temple, as related to him by the high-priest, the original of these drawings was brought from India in the remote past; but he could point to no positive evidence in support. This particular temple, although rebuilt and extended by the regent Sangyas Gyamts'o about 200 years ago, is said to have been founded many centuries before that. It seems to Lieutenant-Colonel Waddell possible that the pictures may have been brought to Tibet in the first half of the eighth century A.D. For it is stated in one of the best of the native histories that in the reign of K'ri-lde Tsug-rtan (A.D. 705–755), in addition to certain Buddhist scriptures which were translated by Indian monks from the Sanskrit into Tibetan, "Pichi- (or Pochi-) Chandra Sri translated books on medicine and surgery, on astrology, and such like subjects." The Lhasa edict of this king's son, found by Lieutenant-Colonel Waddell, states that his father was the first solidly to advance the civilization of his people; and medicine and the treatment of disease, he found, was one of the subjects which Tibetans specially inquired about. Lieutenant-Colonel Waddell gives a general description of the contents as a preliminary note, but he says the complete interpretation of the technical details will require the illuminating aid of a Tibetan physician. The drawing, he says, is made upon a sheet of loaded cloth, which rolls up like a scroll or map, 31 in. long and 26 in. across. The chief figures are three in number, delineated in black ink and coloured. The central figure displays the human body standing with outstretched arms, and in its interior are depicted the blood vessels and bile ducts, etc., as imagined; also the vertebrae. The two lateral illustrations are respectively those of a man and a woman, to show the internal organs, which are supposed to differ considerably in position in the woman. The central figure exhibits an interesting attempt to map out the proportions of the human figure with precision, according to a natural unit scale of measurement by finger-breadths, which are drawn all over the figure in squares. A man's stature is represented as being ninety-six fingerbreadths, and the proportions thus defined for the figure and limbs are accepted and followed as a canon by Tibetan artists. The positions allotted to the internal organs are only very roughly approximate, and have manifestly not been ascertained by dissection. The spinal column extends through twenty-five vertebrae to the level of the tip of the external ear, and the spinal cord to the vertex. The central figure bears the following inscription: "Chart for identification of the internal parts of the body: In the circle of veins of the five [regions], the head, neck, breast or chest, navel and privy parts are 24 superficial 'veins' in each. These are the ten sapless vessels [= arteries ?] and the ten sap (or 'marrow') vessels twenty [in] each, twenty minutely sized ones; [and] the four divisions of the principal [vein], each of which has 25 [subdivisions] which are associated with 500 minute tributary ones. The vessels of the five orifices, the six sense [organs] and of generation, the blood tract of the excellent intellect, etc. The blood area for blood-letting under and in front of the forefinger for pulse-feeling. The vein which menaces life in plague. The running of the various skin-colours, white and red. The plan of the beating pulses in the head, neck, mouth, etc." The right-hand figure (female) is inscribed: "The method of disposition, on the right and left, of the five deep veins for ascertaining the cause [of disease], and the superficial middle vein of the mystical circle of the breast." The left-hand figures bears the legend: "Delineation of the inner vessels [showing] the mode of connexion of the eight great veins of the hidden systems." Among these curious notions of anatomy and physiology Lieutenant-Colonel Waddell finds that of the three classes of blood vessels, the first bears the name of "the sapless" (*roma*), which, he says, recalls the ancient Western conception of the artery as an "*air* duct," from which our name for it is derived, as in the dead body the arteries were always found empty, and hence were supposed to convey air, a mistake which prevailed even down to Harvey's day. He adds that a fantastic result of the notion that the relative position of the blood and bile vessels in a man are reversed in a woman is that the physician feels with his right hand the left wrist for the pulses in a male patient (as the right is supposed to have only bile ducts), whereas he feels the right wrist of a female, employing for this purpose his own left hand.

OPTICAL EDUCATION.

A CORRESPONDENT writes to draw our attention to the claims of technical optics to a better building and equipment at the hands of the London County Council. He supports this by quoting from the Report of His Majesty's Inspectors of the Board of Education for the Session 1909–10, in which they point out that the present accommodation at Clerkenwell Horological Institute is quite inadequate and unsuitable, and that the present department of technical optics in that building is overcrowded. In spite of these conditions surprisingly good work has been done, and, in the opinion of the inspectors, the department is well worthy of the effective aid of a new and suitable building. The Education Department of the London County Council seems to be in favour of this, and the matter has received the support of an important meeting of opticians, over which Mr. James Aitchison presided. There can be no doubt of the national importance of the wellbeing of this trade. Some years ago England was in the forefront as maker of micro-

scopes, telescopes, lighthouse reflectors, and similar instruments, but during the last thirty or forty years a great part of the work has gone to Germany. How far this is due to want of skilled workmen or how far to the question of wages we cannot decide, but that we have to lament the transfer of a large bulk of the manufacturing opticians' trade is beyond question, and we feel sure that improved technical teaching offers the best prospect of bringing it back to these shores.

IRREGULAR MEDICAL PRACTITIONERS.

THERE is one phase of the Crippen trial which should be particularly noted both by the State authorities and the general public. The crime could hardly have been accomplished had it not been for the fact that Crippen, thanks to his American degree, was enabled to procure poisons in any quantity he desired. Despite the fact that he had been associated with the notorious and now defunct Drouet Institute, and that he was an active employee in a quasi-medical institution which figures in *Truth's* Cautionary List, he was accepted as a regular practitioner of medicine even by the chemists with whom he dealt. Indeed the fact that he called himself consultant physician to an advertising American firm, named Munyons, which supplies pilules of which an analysis and full report appear in *Secret Remedies*, seems to have been one reason why they were prepared to deal with him. They did not always even require him to sign their poison book, and supplied him on his demand with a quantity of a highly dangerous drug, such as hyoscine, larger than they kept in stock. But for this circumstance the chemists can hardly be be held to blame, since it has become the custom in this country to accept foreigners who dub themselves medical men at their own valuation. It is quite time that this free trade in medical practice came to an end, and for both the public and the authorities to adopt and maintain the legal interpretation of the term "medical practitioner." This is a person who in virtue of an approved curriculum at an approved institution has obtained admission to the *Register* kept by the General Medical Council. There are certain countries which take just as much care over the education of their medical practitioners as does Great Britain, and exercise over their work the same supervision as is exercised by the General Medical Council in this country; if men known to be the holders of medical degrees from such countries and to be of good repute therein, arrived in Great Britain the public would have no cause to concern itself particularly, and medical men for their part would merely shrug their shoulders. But America is not one of these countries. Attempts have been made of late years to improve medical education in the States, but how small is the degree of success yet reached is amply demonstrated by the recent report of the Carnegie trustees. A large proportion of the degrees obtainable in America are not only absolutely worthless from the point of view of this country, but are frankly admitted to be so by Americans themselves. Nor is the fact admitted only by individuals; it is recognized also by the American State authorities, none of whom permit to practise any one and every one who arrives from some other State claiming to be the possessor of a degree granted therein. Unless the degree which he claims to possess is absolutely known to be a thoroughly good one, and to have been obtained by the claimant after a proper period of education, attempts to practise by him are punishable by fine and sometimes by imprisonment. It is perfectly absurd, therefore, that when America takes so many precautions to protect itself against its own people, we in this country should accept any individual who arrives claiming to be an American graduate of medicine as worthy not only of confidence, but as one whose services should rather be sought than avoided. It may be added that any such individual may be put down with certainty as practically more or less a quack when he adopts advertising methods or poses as a specialist in one department of medicine or another. This is the case because among reputable medical men in the United States medical ethics and etiquette are not materially different from what they are in this country, and no medical man who respects himself and who should be respected is likely to do in a foreign country and among foreign professional men what he dare not for his professional reputation's sake do amongst his own countrymen. These men are dangerous to the community and their existence and the harm they do adds one more to the many reasons which call for an early amendment of the medical Acts. A more practical form of Medical Act would save the public both in pocket and in person and prevent the honourable title of doctor of medicine being so frequently degraded.

WANDSWORTH SCHOOL CLINIC.

WE are informed that the Wandsworth Division is to hold a meeting on December 2nd, in the evening, at the Town Hall, to which all members of the local medical profession, members of school care committees, and heads of departments of all schools in the area, have been invited. The object of the meeting is to discuss any points of difficulty, so that the clinic may open under the best possible conditions on January 1st, 1911.

SIR JOHN BYERS, M.D., has been elected, for the third year in succession, President of the Belfast Natural History and Philosophical Society.

THE King has conferred the honour of knighthood on Dr. James Kingston Fowler and Mr. Alfred Pearce Gould, under whose care the late Prince Francis of Teck was after his return to London. His Majesty invested them with the insignia of the Knight Commandership of the Victorian Order on October 26th. Sir James Kingston Fowler is Senior Physician, and Sir Alfred Pearce Gould Senior Surgeon, to the Middlesex Hospital.

THERE are vacancies for two officers in the 2nd London Sanitary Company (Territorial Force). The Administrative Medical Officer will be glad to hear from any medical man engaged in sanitary work who is willing to join. There are also vacancies in the Field Ambulance, with head quarters at Greenwich, and several regiments in the 2nd London Division are still without their complement of medical officers. Particulars can be obtained from the Administrative Medical Officer, or the Staff Officer, Craig's Court House, Whitehall, S.W.

A CONFERENCE of some leading members of the medical profession in London and clergy is to be held at the Chapter House, St. Paul's Cathedral, this day (Friday, October 28th) to discuss the respective positions of the medical adviser and the minister of religion in cases of sickness. The conference is, we understand, the outcome of a book recently published under the editorship of Mr. Geoffrey Rhodes advocating the close co-operation of the clergy and doctors to cope with the modern tendency for irregular healing of various kinds.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

BOARD OF EDUCATION AND MEDICAL INSPECTION.

THE receipt of the letter from the Board of Education on the subject of the organization of medical inspection in London (summarized in the BRITISH MEDICAL JOURNAL of October 22nd, page 1272) was reported on October 26th to the Education Committee of the London County Council by the Children's Care Subcommittee. After recalling the decision of the Education Committee on July 20th, 1910, to provide for the inspection of entrants and of children between the ages of 8 and 9, and 12 and 13, and of other selected children (BRITISH MEDICAL JOURNAL, July 30th, 1910, page 293), a scheme not yet approved by the Council itself, the subcommittee recommended that a reply to the letter of the Board of Education be sent by the Clerk.

The proposed letter explained that the cause of the delay in replying complained of by the Board was the long midsummer recess, and set forth the result of the Education Committee's deliberations mentioned above. The communication then proceeded—taking for granted, it will be noticed, the future consent of the Council—on the following terms: "A copy of this paper (containing the Education Committee's proposals) was forwarded to the Board in the usual course. In view of the long recess it was found impossible to bring this scheme to the Council before October 25th, and the Council *on November 1st approved without modification* the scheme which had been brought informally under the notice of the Board. The Council gathers from the Board's letter that the Board do not suggest that the number of officers proposed by the scheme referred to will not be sufficient, under normal circumstances, to carry out the requirements of the Education (Administrative Provisions) Act for 1907, and of the Code for 1909–10, as well as to devote attention to the other phases of medical inspection which are not required by the Act and by the Code, but on which the Council lays great stress. It is suggested, however, by the Board's letter that owing to the date on which the last of the staff will be appointed, it will not be possible to carry out before July 31st, 1911, the requirements of the Code for the current educational year. In this connexion I am to state that the Council has devoted great attention to this aspect of the question, and I am to assure the Board that the requirements of the Code as at present understood will be carried out fully within the current educational year."

The draft letter was approved.

OPTICIANS AND SPECTACLES FOR SCHOOL CHILDREN.

With reference to the objections of the Worshipful Company of Spectacle Makers and the British Optical Association to the statement in "Health Hints to Parents," recently issued by the London County Council, to the effect that spectacles should only be worn when prescribed by a doctor, and should never be obtained from an optician or "eyesight specialist" unless prescribed by a doctor (BRITISH MEDICAL JOURNAL, August 13th, 1910, p. 399), the Children's Care Subcommittee reported to the Education Committee on October 26th that it was convinced it was not possible, without risk of error, to test the vision of school children without the administration of a drug which opticians were forbidden by the terms of their diploma to use. The Council, therefore, should advise parents to consult a medical man in respect of any defect of vision in their children. At the same time the subcommittee thought the pamphlet should be so modified as to remove any suggestion which might be taken as a reflection upon opticians. The following wording was suggested:

> The children may require spectacles, but these should be worn only when prescribed by a doctor. The children's eyes should never be tested by opticians or eyesight specialists, as these do not use the necessary drugs.

The suggested alteration was approved.

MANCHESTER.

HENSHAW'S BLIND ASYLUM.

THE increasing demand for fresh accommodation for the blind has compelled the board of management of Henshaw's Blind Asylum at Old Trafford to make additional provision, and on October 18th the Mayor of Salford opened the Hayesleigh Home and Workshops for Blind Men and Women. The Hayesleigh estate was presented to the board about three years ago by Mr. C. H. Scott, and for the last two years the house has been used as a secondary school for blind boys. The board, however, recently decided to concentrate all the educational work at the main institution and to transfer the older inmates to Hayesleigh. The house has been reconstructed and workshop accommodation has been added, where the able-bodied men will be employed in making baskets, mats, and brushes. Henshaw's Asylum is one of the oldest philanthropic institutions in Manchester, and the Mayor of Salford thought that the board was acting on right lines in teaching the blind to work. He also spoke highly of the educational work for blind children at the asylum. The institution was opened in 1837, and there are now about 200 resident pupils—100 in the elementary and 100 in the technical department, while at the new Hayesleigh home there are 42 adults who are either engaged in work or enjoying a rest in their old age. After the ceremony of opening, the company present were conducted over the new home and workshops. Many of the children at the asylum are sent and partly maintained by various educational authorities, Salford sending 16, while Manchester, which has its own day school for the blind, sends 9 children.

ST. MARY'S HOSPITAL.

At a meeting of the Board of Management of the St. Mary's Hospitals, Manchester, held last week, a letter was read from Mr. Edward Hopkinson, who recalled the fact that his father was the predecessor of Sir F. Forbes Adam as chairman of the Southern Hospital before the amalgamation with St. Mary's, and that during his chairmanship he collected funds for instituting a number of beds or cots. Mr. Hopkinson then went on to offer a donation of £2,000 to the funds of the charity for the maintenance of two adjacent beds in the gynaecological wards of the new hospital in York Place, to be named in perpetuity the "John Hopkinson" and the "Alice Hopkinson" beds, in memory of his father and mother. The gift, however, is made conditional on the new hospital being opened for the reception of patients within six months' time. The Dean of Manchester draws public attention to this last condition, and to the fact that he also had been enabled some time ago to offer £500 to the funds, but on the same condition, that the hospital should be opened within six months of November 1st. The coincidence of two offers with the same condition attached is regarded by the dean as showing how wide is the desire of many of the citizens of Manchester that the new hospital, which is completed but remains unused through want of funds, should not remain closed indefinitely.

HOPE HOSPITAL.

The Salford guardians are again in difficulties about Hope Hospital. On the retirement of the late medical superintendent, owing to ill-health, the guardians advertised for a successor, and it was made one of the conditions that applicants must have had "previous administrative experience in a Poor Law or general hospital." A medical man resident in Salford, who would doubtlessly have admirably filled the post, was appointed by the guardians out of something like fifty applicants, but when the appointment was laid before the Local Government Board for the necessary confirmation, that Board pointed out that the necessary condition of having had previous administrative experience was not fulfilled by the candidate appointed, though there was not the least doubt of his general ability as a medical practitioner; the Board therefore refused to confirm the appointment. The guardians

sent a deputation to the Local Government Board to urge it to give its assent, but after reconsideration the Board maintained its refusal. The guardians thereupon passed a resolution reiterating their opinion that their choice was the best possible under the circumstances, and several guardians, especially the chairman of the Hope Hospital Committee, were inclined to defy the Local Government Board. In the end, however, the Local Government Board insisted on its determination not to assent to the appointment, and required the guardians to make a fresh appointment. They have at last seen the futility of defying the Local Government Board, and have decided to advertise again. The new superintendent ought to have commenced his duties at the hospital on October 1st, but owing to the delay caused by the dispute with the Local Government Board the post has not yet been filled up and the hospital has for several weeks been without any resident medical superintendent, and the whole of the work has been in the hands of locumtenents.

Hulme Dispensary.

The annual meeting of the subscribers to the Hulme Dispensary was held in the Lord Mayor's parlour, Manchester, on October 21st, under the chairmanship of the Lord Mayor. The committee state in their report that the number of patients treated during the year was 4,446. According to the rules, persons whose wages are higher than a certain amount, which varies according to their responsibilities, are not accepted as patients. The report says that this rule has been strictly carried out and the committee is satisfied that only proper people were receiving the benefits of the charity. Last year 2,500 persons who were unable to pay the sum of 1s. which is charged for three weeks' attendance were treated gratuitously. The number of accident cases has risen from 85 in 1905 to 315 last year, and this is said to be partly due to the steady work of the house-surgeon, who not only takes charge of all the accident cases but pays frequent visits at the patients' homes. On the advice of the auditors the securities had been revalued, and owing to depreciation of the stock the accounts showed a total loss of £383, but it was explained that this would only affect the charity if it had to realize any of its securities, as had been the case in some past years. There was, however, no need for any such realization this year owing to the success of the special appeal for funds that had been made. Lord Egerton of Tatton drew special attention to the very small cost of administration considering the large amount of good work done. Mr. C. T. Needham mentioned that there were 62,000 people living in Hulme, which worked out at 130 per acre, against only 34 per acre for the whole city. This obvious overcrowding meant a high death-rate and a high disease rate, and he cordially supported a resolution, which was proposed by Mr. Colefax, M.P., thanking the public for the response made to the special appeal of the treasurer and asking for continued support for the dispensary.

Royal Infirmary Old Residents' Club.

In October, 1908, shortly before the demolition of the old Manchester Infirmary, a gathering of old residents was held to take farewell of the old hospital. At the dinner then held a Residents' Club was proposed. On Saturday, October 15th, of this year the first dinner of this club was held at the Midland Hotel, Manchester, 157 old residents being present. Mr. Southam, who was probably known personally to more old residents than any other member present, was president, and Dr. W. O. Jones, Mr. A. Boutflower, Dr. Johnson, and Dr. Pilkington acted as vice-presidents. Excellent speeches were made by Dr. Pilkington, Dr. Arnold-Jones, and the President, but acting on the experience gained at the last dinner, when the speeches suffered from the hum of talking between friends who had not seen each other for years, the committee arranged but little speech-making. There was a general feeling in favour of another dinner being held in three years. It is hoped that members who were unable to be there this year will then make a great effort to be present, for nothing helps so much to the success of the meeting as the presence of all co-temporary old residents.

WEST YORKSHIRE.

Bradford Medical Societies.

Last week saw the inauguration of the work for the session of the Bradford medical societies. On Tuesday, October 18th, the Medico-Chirurgical Society met in the Board Room of the Royal Infirmary. An excellent microscopical demonstration was given by Dr. Eurich, and specimens were shown by Drs. Mitchell, Jason Wood, and Martin. The new President, Dr. W. Mitchell, gave his presidential address, with the title of "X-Ray Diagnosis." This was most interesting and instructive, and was illustrated by numerous lantern pictures.

On Wednesday, October 19th, a meeting of the honorary staffs of the Bradford hospitals was held in the Board Room of the Royal Infirmary. Dr. Campbell was elected Chairman for the ensuing year. The chief subject of discussion was the new infirmary scheme for Bradford. It is held by many people in Bradford that an effort should be made to accommodate all the Bradford hospitals on the new site purchased by the Royal Infirmary Committee. A resolution giving effect to this feeling, but reserving the autonomy of each institution, was adopted after considerable discussion. But it is impossible to ignore the fact that the staffs of the two institutions which it is desired to draw into the scheme—the Children's Hospital and the Royal Eye and Ear Hospital—were either antagonistic or without enthusiasm in the matter. Consequently, the adoption of the resolution could only be considered one of academic interest, and as voicing the feelings of the majority present.

The opening meeting of the Bradford Division of the British Medical Association for the session took place at the Great Northern Hotel, Bradford, on Thursday, October 20th. Previous to the meeting, Dr. Bronner, Honorary Secretary of the Yorkshire Branch, very genially and generously entertained to dinner the retiring Chairman (Dr. Metcalfe), the Chairman (Dr. Bampton), and the Honorary Secretaries (Drs. Dunlop and Willson), officers of the Bradford Division.

Dr. Bampton gave a most interesting address, with the rather unusual title of Medicated Squab Pie. This was an intermixture of personal experiences of, and reflections on, the course of his medical career. Dr. Metcalfe read a report on the two recent Representative Meetings. He pointed out some of the salient features of the meetings, and said that he had no doubt whatever that the Association, in spite of some gloomy prognostications to the contrary, had a great and brilliant future before it. He had been elected as a member of the Central Organization Committee—a compliment he took not only as a personal matter, but as a recognition of the great work done by the Bradford Division for the Association. It was decided to hold a Divisional supper, to be followed by a smoking concert, on Wednesday, November 23rd. This will, no doubt, be as great a success as its predecessors.

Bradford Anthrax Investigation Board.

A meeting of this board was held at the offices of the Bradford Chamber of Commerce on October 20th. Dr. Eurich reported that 6 cases of anthrax had occurred since the last meeting in May. All were of the external variety, and all had recovered. During the same period 151 samples of wool and hair had been tested for anthrax. Of these, 124 were bloodstained, and anthrax germs were cultivated from 9 of the bloodstained samples.

WALES.

Memorial Fountain to a Medical Man.

An interesting function took place at Taibach, Port Talbot, on October 15th, when Sir Arthur Pendarvis Vivian, K.C.B., unveiled a drinking fountain, erected

by the inhabitants of the district, as a memorial to Dr. J. H. Davies, J.P., for the services he has rendered to the district. Sir Arthur P. Vivian, in unveiling the fountain, expressed his pleasure at being able to do such honour to the esteemed doctor. Dr. Davies had laboured amongst them for a great number of years, and had won the esteem of the rich and poor alike, especially the latter, to whom he had been a great and true friend. Dr. Davies, in reply, expressed his thanks to Sir Arthur for performing the ceremony, and also to the inhabitants and committee for erecting such a memorial to himself after fifty-eight years' labour amongst them. He asked Mr. D. Wellington, the Vice-Chairman of the Margam District Council, to accept the fountain on behalf of the council. The fountain is the work of Mr. Goscombe John, R.A., and was subscribed for by the inhabitants of the district, the cost being 350 guineas.

Maesteg Infant Mortality.

At a meeting of the Maesteg Urban District Council held on October 18th, the Medical Officer of Health, Dr. Kirkby, in his report for the month of September, said there were 28 deaths, half the number being of infants under 1 year of age. He was still of opinion that the Notification of Births Act, 1907, should be adopted as a means of reducing the infant mortality, and at the same time a lady health visitor should be appointed. Dr. Kirkby added that he was of opinion that the services of a lady health visitor might be secured for about 25s. per week. The recommendation of the medical officer, however, was not adopted.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Edinburgh.

Edinburgh and Leith Medical Practitioners' Association.

The annual dinner of the Edinburgh and Leith General Practitioners' Association was held at 129, Princes Street, Edinburgh, on Thursday, October 20th, at 7.30 p.m.; the President, Dr. T. R. Ronaldson, was in the chair and Dr. Crawford Renton of Glasgow was the guest of the evening. There were 85 gentlemen present. Dr. Crawford Renton proposed the toast of "The Association," and expressed the desire that Glasgow had a similar, living, and energetic association representing her general practitioners. In reply the President reviewed the work of the association during the past year, specially referring to what had been done in dealing with the evils of club practice, and in regard to establishing a nursing home in Edinburgh, where the rates for maintenance and nursing shall be from a guinea upwards, one-third of the beds available being at the minimum rate. He also referred to the work the association had in view for the coming year, the first being the necessity for the municipal authorities having an adequate control of the milk supply and the sources of the milk supply of the city, which now it certainly had not. The second question was that now being raised by the Local Government Board, in urging that the municipal authorities should forthwith provide an adequate hospital for a possible outbreak of small pox. That hospital might either be one for the city situate in a safely remote locality, or might be a conjoint hospital for Edinburgh, Leith, and the county.

Research Defence Society.

A meeting of the members and associates of the Edinburgh Branch of the Research Defence Society and their friends was held on Friday evening, October 21st, when Mr. Stephen Paget gave a lecture on "Pasteur's Life and Work." The Lord President of the Court of Session, the Right Hon. Baron Dunedin of Stenton, P.C., K.C.V.O., LL.D., etc., presided, and there was a large attendance. On the platform were Sir John Batty Tuke, Sir A. R. Simpson, the President of the Royal College of Physicians (Dr. W. Allan Jamieson), Professor Schäfer, Dr. Geo. A. Gibson, and the two Secretaries. Apologies were intimated from the Duke of Montrose (President of the Branch), the Earl of Cromer (President of the Society), Sir William Turner (one of the Vice-Presidents), the President of the Royal College of Surgeons, Sir A. Conan Doyle, the Rev. A. Wallace Williamson, D.D. (one of the Vice-Presidents), Sir J. Halliday Croom, Professor Alexis Thomson, the Rev. John Kelman, D.D., the Rev. Gavin L. Pagan, B.D., and many others.

Dr. John D. Comrie, one of the secretaries read the annual report, and said that the council suggested the following office-bearers of the branch for the ensuing year: President, the Duke of Montrose, K.T.; Vice-Presidents, Lord Dunedin, Sir William Turner, K.C.B., F.R.S., Sir John Batty Tuke, M.D., LL.D., and the Rev. A. Wallace Williamson, D.D.; Honorary Treasurer, Professor Harvey Littlejohn; Honorary Secretaries, John D. Comrie, M.B., F.R.C.P.E., and R. W. Johnstone, M.D., F.R.C.S.E.

Professor Schäfer moved the adoption of the report, and Mr. J. M. Cotterill, Vice-President of the Royal College of Surgeons, in seconding, spoke very strongly of the deep debt of gratitude that operating surgeons lay under to the research of scientific men, who had enabled them to give themselves the great privilege not only of saving many valuable lives, but also mitigating an enormous amount of human suffering and misery by the exact methods that had been taught by these researches.

Lord Dunedin, in introducing the lecturer, said the Research Defence Society was founded for the purpose of making known the facts relating to experiments on animals, the regulations under which these experiments were conducted, the precautions which were taken to render them, as far as possible, painless, and the benefits both to mankind and to the lower animals which had resulted from them. No doubt, the objects of the society might be in a certain sense described as polemical objects, but they were certainly not aggressively polemical. They were only polemical in defence, and, speaking for himself and for many others who in different departments of life were interested in the general progress of humanity and of their nation, but had no claim to rank themselves among scientists, he should not have assumed, as he had, a position in the society unless he had thought that it was high time such a society was formed. If it had not been formed, there was a real danger that scientific research, with all its beneficent results, might be practically hindered by opposition, no doubt in many cases based on well-intentioned ideas, but based, as he believed, a great deal upon ignorance and upon an inability to make deductions which ought to be drawn. A wish had been expressed to him that at that, the first meeting of the branch, what he might call the polemical side of the branch's operations should not be specially insisted upon, and accordingly the subject of the lecture that night was not any thesis upon the necessity of certain experiments, but was to be a history of actual facts connected with the life and work of the great man who had contributed to research in science, and who, though in a rough way to those who were ignorant, was known as the man who first with success combated one of the most dreadful diseases, which up to his time was practically thought incurable. The lecturer was the son of Sir James Paget—a name revered in the history of English surgery—and was himself a practising surgeon and interested in the movement for the protection of research, and able to give his testimony to its value. Let them remember that what was claimed for research was not that it was an advance in scientific knowledge, although that was in itself something, but that it was the actual, and, indeed, if rightly understood, the only, means for the bettering of the practical strife against death, disease, and pain. It was because research was in the end intended to destroy pain that it was liable occasionally, when it was impossible to avoid it, even to inflict pain.

Mr. Stephen Paget then gave his lecture, illustrated by many lantern slides. He spoke of Pasteur's first great discovery in chemistry in 1848, his study of ferments beginning in 1854, his discovery of the causes

of fermentation of milk in 1856 which led Lister to think of the causes of wound infection and thereby to the methods of antiseptic surgery; Pasteur's work on the diseases of silkworms which were destroying the silk industry of Paris, his studies on the prevention of diseases in man and beast, his studies on fowl cholera and preventive inoculation, his investigation of anthrax and its vaccine and the brilliant results of this, his work on the methods of antiseptic surgery in the Paris hospitals in 1875, his investigation as to the true cause of puerperal fever in 1878, and finally the discovery of the preventive treatment of rabies, which had led to a mortality almost infinitesimal.

Dr. Geo. A. Gibson moved a vote of thanks to the lecturer, and the President of the Royal College of Physicians to Lord Dunedin for presiding.

Epidemic of "Infantile Paralysis" in Edinburgh.

During the last three months a large number of cases of acute anterior poliomyelitis have occurred in the Edinburgh district. So many cases, indeed, have come under notice since the beginning of August that one is justified in considering the condition to have been present in epidemic form. As is not uncommon when such a condition prevails, many of the cases have presented atypical and unusual symptoms. Thus, while the ordinary age-period for the onset of the disease—the second and third year—has been that when many cases occurred the infection has also attacked children of 7, 8, and 9 years. Cerebral symptoms have been comparatively common. These have varied in degree from restlessness and hypersensitiveness to prolonged coma, paralysis of cranial nerves, and, in at least one case, death during the acute onset of symptoms.

Edinburgh Water Supply.

Considerable excitement and anxiety have been created among the citizens of Edinburgh by the premature and unauthorized publication in the daily press of an incomplete report prepared for the use of the Water Trust by Dr. James Ritchie, superintendent, and Dr. J. P. McGowan, bacteriologist to the Laboratory of the Royal College of Physicians, prior to its being in the hands of the trustees. At a committee meeting of the Water Trust on Thursday, October 20th, views were expressed that the publication of a report regarding an investigation which was as yet incomplete was reprehensible in the extreme and detrimental to the interests of the trust, besides being misleading to the public. Thereafter the Lord Provost moved that it be remitted to the Convener, Bailie Cullen, and Councillor Rusk, along with the clerk and law agent, with powers to make the fullest investigation with the view of ascertaining from whom or from what source the public press had obtained a copy of Dr. Ritchie's report or information therefrom, and to report. Meanwhile, to allay public anxiety, Dr. Ritchie has written and published a letter, in which he says:

I think it right to state that there are, in my opinion, no grounds for anxiety. The water delivered from the filters both at Fairmilehead and Alnwickhill is of excellent quality, and will compare most favourably with the water used in any other large city in the kingdom. The only point disclosed by my analyses is that the Fairmilehead water (which constitutes only one-tenth of the total amount daily supplied by the trust) does not come up to the high standards laid down as to the quality of an urban supply. There is reason to believe that the defects noted can be remedied by such steps as the trustees have now authorized to be taken, and the working of the filters during the period of further probation will be controlled by constant bacteriological examination.

In the report referred to there is an account of the results of chemical examination, bacteriological investigation, the presence of excretal organisms — notably the *Bacillus coli* — probably coming from wild animals or farm stock. It is added that coming from such sources they are probably generally harmless to man. It is only when they are derived from human sources that they are a source of danger to consumers of a water. After discussing the relative merits of sand and mechanical filtration, the following general conclusions are tabulated:

1. During the period over which the inquiry extended the raw Talla water was, from the chemical standpoint, relatively pure, and the ingredients on which the filters chiefly act were not present in excessive amount.
2. Filtration had practically no effect on the saline elements of the water or on the free ammonia.
3. The filtration process diminished the organic constituents by about a quarter.
4. The filtration caused a slight rise in the total hardness of the water. It diminished the temporary hardness, and markedly increased the permanent hardness.
5. From the bacteriological standpoint, the raw water during the period of observation contained a very considerable number of bacteria developing at blood heat. It was also constantly under suspicion of containing excretal bacteria in relatively small amounts of the water, namely, 1 to 10 c.cm.
6. The filtration process did not bring the filtered water up to the standard degree of purity usually required in potable waters, namely, that the water shall not contain more than 100 bacteria per cubic centimetre.
7. The filtration process did not satisfactorily remove organisms of the excretal type.
8. There is evidence that after being washed the filters did not at once attain their maximum capacity for acting on the water, and that at the end of the twenty-four-hour period they again were acting unsatisfactorily.
9. The alumina during the period of our observations was of good quality, and did not contain arsenic.
10. The filtered water appeared generally to be free from alumina. When evidence of its presence existed in the filtrate the amount was, from the public health standpoint, negligible. So far as our observations go, most of the alumina passed out in the effluent when the filters were washed.

The Medical Officer of Health (Dr. Maxwell Williamson) gives the assurance that there is no evidence whatever that the health of the city has in any way been affected by the presence of bacteria in the water. The health of the city was never so good in any previous September as in the last.

GLASGOW.

Medical Inspection of Scholars.

The Glasgow local committee of the Educational Institute of Scotland has prepared a report on the medical inspection of school children, which falls to be considered by the meeting of the association next month. This report draws attention to the variation in the methods of conducting the medical examination in the various centres in Glasgow, Govan, Edinburgh, and the counties of Stirling, Dumbarton, Renfrew, and Lanark. Considerable variation is found even in one county. The committee recognizes that in the early stages of the working of the new system criticism must be to an extent withheld, but even at this stage it feels that it is justified in submitting the following suggestions as guiding principles:

(1) The ordinary work of the school should not be interfered with by excessive demands on the teachers' time; (2) the educational work of the teachers should not be brought into disrepute by requirements which might lead to conflict with the parents; (3) duties requiring medical skill, however simple, should not be imposed upon the teachers. Teachers might reasonably be asked to forward to the local education authority or medical officer the names and addresses of the children to be examined; to distribute, by means of the children, notices to the parents informing them of the date of the medical inspection; and to supply such particulars respecting each child to be examined as were contained in the ordinary school records—for example, name, address, age, standard, and regularity of attendance. Teachers should not be required to fill up and sign notices to parents respecting the holding of the inspection or the necessity of future advice and treatment; measure and weigh children; test children's eyesight, examine their teeth, or examine them for vaccination marks; enter on school cards details respecting state of clothing and footgear, cleanliness, nutrition, speech, mental condition, work outside school hours, parents' occupation, number of rooms and of persons in house occupied by the child; dress and undress children as the inspection proceeded; fill in doctors' observations on the cards as the inspection proceeded; enter all the details given on the cards in duplicate in a schedule or register; fill and sign notices to parents advising them that treatment was necessary, or inquiring as to action taken.

The procedure varies in different parts, even as regards the medical details, and it is recognized that some standard method of conducting the inspection should be laid down for guidance.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

CONOLLY NORMAN MEMORIAL.

AN interesting and impressive ceremony took place on St. Luke's Day, October 18th, on the occasion of the unveiling of the memorial to the late Dr. Conolly Norman at St. Patrick's Cathedral. The Lord Lieutenant, who performed the ceremony, made an appropriate and sympathetic speech, to which the Dean of St. Patrick's replied on behalf of the Cathedral Chapter. The memorial, which is placed in the north choir aisle, consists of a medallion portrait in high relief in bronze of Dr. Conolly Norman, and is set in a foliated niche of freestone. The bas-relief is the work of Mr. J. M. Carré, and is surmounted by Dr. Norman's crest, also in bronze. A bronze panel beneath bears the following inscription:

Conolly Norman, M.D. (Hon. Causa), Univ. Dub.: Vice-President, Royal College of Physicians of Ireland; for twenty years Medical Superintendent of the Richmond Asylum, Dublin; President of the Medico-Psychological Association, 1894-5; a true friend, an able physician, an ardent student of science, a man of varied culture and pronounced individuality. Born 12 March, 1853; died 23 Feb., 1908.

In the afternoon of the same day an oil portrait of Dr. Conolly Norman, painted by Miss Harrison, was formally handed over to the President and Fellows of the Royal College of Physicians in Ireland by a deputation of the subscribers to the Memorial Fund, and was accepted on behalf of the college by the newly elected President, Dr. Hawtrey Benson.

NEW DISPENSARY AT JERVIS STREET HOSPITAL.

There was a large attendance of the general public at the opening ceremony of the new extern department at Jervis Street Hospital on October 17th. His Excellency the Lord Lieutenant, who presided, referred in his speech to the excellent work which the hospital has performed during the last two hundred years, and called special attention to the importance of the new department owing to the fact that, from the position of the hospital in the city, large numbers of accident cases are brought for treatment at all hours of the day and night. The new building, which has been erected at a cost of £4,000, contains accident reception rooms, consulting rooms, a pharmacy, and an emergency operation theatre, and has been fitted throughout on the most modern principles. A portion of the necessary funds for its erection was supplied by the trustees of the Pembroke Irish Charities Fund, and the public are now requested to contribute the remainder.

TYPHUS FEVER AT LETTERMULLEN.

At a recent meeting of the Board of Guardians of the Oughterard district, the following resolution was proposed and adopted:

Now that the fever epidemic at Lettermullen is practically at an end, we desire to place on record our deep sense of the obligation under which Sir [illegible]cheson MacCullagh has placed us owing to the able and energetic measures adopted by him to prevent the spread of the fever. We are convinced that the steps taken by him were mainly instrumental in confining the outbreak within the reasonable compass in which it originated. We also desire to express our thanks to Dr. Francis for his able and successful treatment of the afflicted patients under his care.

WE have received from Messrs. A. and M. Zimmermann, 3, Lloyd's Avenue, E.C., copies of three booklets relating to preparations for which they are agents. One contains chemical and pharmacological accounts of all the special preparations of Kalle and Co., of Biebrich-on-Rhine, and the others summaries of the literature relating respectively to Nastin, a product introduced by Professor Deycke for the treatment of leprosy, and to Scarlet R., a dye which many investigators have found useful in promoting the growth of epithelium over the surface of large open wounds.

Correspondence.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—In his letter in the JOURNAL of October 22nd Dr. Fothergill presents a series of questions covering most of the bearings of State Sickness and Invalidity Insurance upon the medical profession, more especially in regard to medical attendance under such a scheme. It is to be hoped these questions will be carefully weighed by every member of the profession. The answers given to some of them are of the most vital moment to our future welfare, and although it is unlikely there will be unanimity of response on all points, it is at least desirable there should be a fairly general agreement on main principles.

The first principle involved is that of *professional freedom*. I am very strongly of opinion that it would be one of the gravest calamities which could befall our profession if we sold our great birthright of freedom for the mess of pottage—contract practice—at so much per head per annum, on the scale which seems to be contemplated by the powers that be. Under contract practice, at whatever fee per head, we bind ourselves to attend for a fixed fee for a long period; we must go whenever sent for, however trivial, however untimely; and however unsatisfactory our patient's behaviour and reception of our treatment, we must continue to attend; we have no authority to ensure that our treatment is given even a fair chance of success, and we have to bear the brunt of its failure. It is difficult, if not impossible, to preserve the proper feeling between doctor and patient under such conditions, and to obtain the best results of treatment. Not only, therefore, would our professional status be lowered, but our scope for scientific work would be greatly contracted, and our practical usefulness be much impaired by the general adoption of contract practice. Moreover, the verdict of experience both in this country and abroad is to condemn contract practice as wholly unsatisfactory.

The principle of professional freedom implies, of course, equal freedom for our patients in choice of medical attendant, and of relinquishing his services if not satisfied with them.

The second principle involved is that of *payment according to work done*. Under contract practice we accept limited pay for a practically unlimited amount of work. Experience shows that services which are to be had for practically nothing are apt to be valued accordingly, and tend inevitably to degenerate to the same level. It is not "the least medical attendance that patients will be satisfied with," but "the most efficient attendance" that should be provided, and this cannot be done unless a reasonable rate of remuneration be allowed to the medical attendants. It is quite a false idea of professional honour to suppose that there is anything "unprofessional" in our opposing, and if necessary combining to oppose, the exploitation of our services either by societies or Governments.

Self-preservation may be "the first law of Nature," but it seems to have been a law which has been largely disregarded by the medical profession, and we are now paying—and are likely, it seems, to pay—somewhat dearly for our neglect of this law. If the medical profession is capable of doing great and noble work for the people of this country—and who doubts that it is?—it is surely worth preserving in the interests of the community as well as of its members. The debt which civilization owes to the medical profession is incalculable, and it is an ever-increasing one; and whilst we are bestowing benefits on our countrymen, we are often enough removing or impairing our own means of livelihood.

The alternatives to contract practice are payment by salary and payment according to work done.

There is, of course, no objection to payment by salary, provided that the salary be an adequate one, the hours of duty reasonable, and a sufficient allowance be made for necessary study, holidays, recreation, and provision for illness, old age, etc. It is, however, of the very nature of medical practice that the hours cannot be limited, there is bound to be a good deal of "overtime," and it is also doubtful if the people of this country would at present submit to treatment by specially salaried doctors—unless, of course, *all* doctors were salaried, and the patients could

have their choice of medical attendant. It would then fall rather hard on the doctor who happened to be a favourite; he would have most of the work to do, and yet only be receiving the same pay as the man who, because he was unpopular, had very little to do. If you try to adjust this, you are introducing the principle of payment for work done. Under present conditions, I fear, therefore, payment by salary is not practicable.

After all, payment for work done—that is, for services actually rendered—is the fairest and most equitable arrangement all round; and I confess I cannot understand or agree with those of my colleagues who maintain "that the Government will never agree to payment according to work done."* The arguments used by these objectors are: (1) That it would be too costly; (2) that it is liable to abuse.

Moreover, the success of the National Deposit Friendly Society proves that payment according to work done need not be too costly.

As regards (1), if a reasonable minimum fee per visit be charged it cannot be too costly, otherwise it means that the work has to be done by the medical profession for less than a reasonable fee, which, again, means exploiting the profession. It would be a very short-sighted policy of any Government to introduce a scheme which depended on exploitation of the medical profession, and any such scheme would be condemned to early failure, and would be unsatisfactory both to patients and doctors.

As regards (2) abuse, no account is taken of the abuse likely to result to the doctor from unnecessary calls, etc., under the contract system, but great stress is laid upon the possibility of medical men making unnecessary visits when they know their fee is assured. It has been repeatedly shown in these columns how readily effective safeguards against such abuse can be devised; but it is surely far better that a few possibly unnecessary visits should be paid than that insufficient attendance should be given, and whilst it would be a grave error to press too hardly upon the individual attendant's judgement of what constituted "necessary" visits, it would not be difficult for properly-appointed medical supervisors to detect and deal with flagrant instances of abuse (for example, by disallowing fees, imposing fines, etc.). The incidence of sickness is so uncertain, the extent of attendance required in any particular instance so unpredictable, and the details of such attendance are so individual and personal, that any system of prepayment for medical services, under sickness insurance, *en masse* or by contract, is bound to be unsatisfactory.

I earnestly urge my fellow practitioners to hold fast to these two main principles—namely, (1) retaining professional freedom, (2) insisting on payment according to work done and not by contract.—I am, etc.,

Bowdon, Oct. 23rd. P. R. Cooper.

Sir,—Your readers will, no doubt, be interested in the details so well and laboriously got together by Dr. Fothergill on this important subject, and I cordially agree that it is a subject that must be faced by all branches of the medical profession. For my own part, as I do not agree with the main proposition laid down, it is unnecessary for me to follow him through all the complexities that arise, if the proposed State sickness and invalidity insurance is to include medical attendance.

With regard to his first proposal, I answer emphatically, No! In the interests of the community, or the medical profession, I think it would be far better that there should be no scheme of medical attendance. It will be quite sufficient if the State institutes a compulsory insurance system whereby all the insured are guaranteed an adequate sick allowance during illness or disablement, it being left to them to provide for themselves the medical attendance they require. The public medical service now being organized by the British Medical Association should, no doubt, if properly worked, attract a good many, but to force all the large class it is proposed to enroll in the State insurance to accept medical attendance proffered by the State would mean ruin to many of the existing medical practitioners of the country. The vested interests of the present practitioners have a right to be considered. There are many now living on the fees paid by members of the class to be insured as private patients; there are more who gain a livelihood chiefly through payments made by the same class in various forms of contract practice, all of which cannot be stigmatized as hopelessly bad. What must be the effect of enforcing contributions from all of these for any form of State medical attendance? It practically deprives them of the choice of a doctor altogether. Though quite satisfied with their present doctors they would necessarily shrink from a double medical burden. They would protest that their means forbade their continuance with their present doctors if they are obliged by the State to contract for special medical services.

The many difficulties that must arise in endeavouring to include medical attendance in State invalidity insurance make me sanguine that the Government will not attempt such an experiment. The friendly societies of the country will certainly oppose it, and I earnestly hope the British Medical Association will not attempt to press it. There are doubtless many defects in our present medical practice—far be it from me to deny them—but they are the growth of many years, and cannot be done away with by a brand new invalidity insurance enactment. Their reform must come by degrees, and can no doubt be largely assisted by our Association, working within its own province, and properly considering the wishes and the welfare of its members. But to more or less ruin the practices of many of its members would hardly promote union. I specially warn those who favour the principle of "payment for work done" against any scheme of State medical attendance. No doubt we all favour that principle speaking broadly, but I allude to the proposed payment of club patients by means of special fees for each item of work, which, in my opinion, must always be inadequate, instead of by capitation fees. If the State took in hand medical attendance in their insurance scheme, the capitation system would be nearly certainly chosen, if it were not a system or whole, or part time salaried officers; as there is literally no reliable experience of any other.

To assume that a State provision of medical attendance for the insured would be best for the community is, in my opinion, a wholly unwarrantable assumption. The State scheme, after all, might be no better than our present. I am certainly not a convert to the modern doctrine that the State can always do better for individuals than they can do for themselves. Objections might easily be raised to compulsory insurance at all; but at least let it be as limited as possible; let the members of the community have as much free choice as possible in the ordering of their lives.

To Dr. Fothergill's second proposal, should the scheme include the Poor Law medical service, I again submit an emphatic negative. The Government scheme is, presumedly, to encourage thrift, to render the working classes more independent. The Poor Law deals with the helpless and should be kept for that class. They can contribute practically nothing towards their subsistence, and are wholly dependent on the State. If this invalidity scheme is a success, it is possible that pauperism may be largely diminished, but it is more than likely that under any scheme there will still remain a sufficient number of the helpless to engage the attention of a separate Poor Law medical service.—I am, etc.,

London, N.E., Oct. 22nd. Major Greenwood.

Sir,—Dr. Fothergill's very pertinent questions in the Journal of October 22nd should be the means of eliciting the opinions of a large number of medical men on the points raised. The whole question is one of vital importance to the medical profession, and its consideration may be involved before any definite conclusions are arrived at. It is imperative that the subject should be tackled at once, so that we can with unanimity urge our views on the Chancellor of the Exchequer. Otherwise we shall be ignored, and probably irreparable injury done to our future position. The perpetuation of the club or the present Poor Law methods of payment would be disastrous to the medical profession. Let us make a supreme effort to obtain definite payment for work done. The objection urged is that the means of regulating this form of payment for medical attendance is impossible. This is a fallacy. The difficulty is not an insuperable one, and the advantages to the medical profession, to the State, and to the indi-

* They forget that the Government at present pays for the vaccination service according to "work done."

vidual are enormous. They cannot be given in a short letter of this character, but many of them are obvious to every one with a wide knowledge of general practice. It would probably be the most suitable method of eliciting the opinions of the medical profession to have a referendum of all its members. This could no doubt be best done by the British Medical Association.

The management of a scheme would be best vested in a board comprised of the various interests involved. The Poor Law Medical Service would, I think, have to be included. There would have to be both central and local management boards, the doctor receiving the confirmation of his appointment from the central board, his directions from the local board, and making his professional arrangements directly with the patient. Payment from the contributories would have to be made through the local board. The benefits would have to be regulated by some form of wage limit.

The whole scheme would have to be compulsory and contributory.—I am, etc.,

Bradford, Oct. 23rd. JAMES METCALFE.

SIR,—While agreeing with Dr. Collinson that in the event of a fight a war chest may be useful and even necessary, I should like to insist on the possibility which the occasion offers of achieving our purpose without a fight. I have confidence that the "sweet reasonableness" of our request for justice and fair dealing may appeal to the minds of our statesmen. We can show very clearly, I think, that cheap medicine and sweating have in the past worked badly for the health of the nation, and it is on this ground that we can appeal to the Government to do really well for the nation by relieving the medical profession of the intolerable conditions under which they do their work. Poor pay means overwork, and overwork means bad work; bad work deteriorates the man who does it, but what of the community he treats? This is the lever to move the Government towards equitable dealing. Let us urge the abolition of contract work for the sake of the nation's health and the progress of medicine, and I think it will not be necessary to insist on our determination to achieve better conditions of practice for our own sakes.—I am, etc.,

Bristol, Oct. 22nd. HARRY GREY.

SIR,—I desire to call attention to the important discussion on this question at the Bath and Bristol Branch, reported in the SUPPLEMENT of October 15th.

Dr. T. M. Carter moved:

> That any scheme of State sickness insurance should be based on the principle of payment for work done, as in private practice,

The resolution, which was ably supported by Dr. Grey and seconded by Dr. Michell Clarke, was carried by 61 to 1. It was thus abundantly clear that the meeting had no confidence in the tender mercies of the Government in the matter of adequate remuneration for medical services.

Dr. Parker's *non possumus* attitude did not commend itself to the meeting. He said:

> It had been suggested that they should oppose the whole idea of the Government with regard to sickness and invalidity insurance. It did not matter what their individual views might be of the right or wrong of the matter, this insurance was bound to come, and, as far as such objections were concerned, they were in the position of a fly protesting against the oncoming steam-roller.

Surely the profession will not adopt the craven attitude suggested by this simile and calmly submit to any vote-catching proposal the Government may bring forward at their expense.

It is time the Association recognized the hand of the Radical politician in the speeches and writings of its more noisy and militant members. The underlying principle with such is State control all round, which, as far as the individual practitioner is concerned, is synonymous with slavery. With any Tom, Dick, or Harry which the exigencies of party may place at the head of the department under which he will have to work, the lot of the medical practitioner will not be a happy one. He will have to work for a miserable pay, with the added horror and worry of official inspection by the emissaries of a heavily-salaried chief.

Let the profession take warning in time, or we shall one day find our independence gone, crushed by the relentless heel of the State, and Dr. Parker's "fly" will verily be under the steam-roller.—I am, etc,

October 21st. FOREWARNED.

THE HEARING AFTER OTECTOMY.

SIR,—I see that Mr. Yearsley goes for me again in the JOURNAL of October 15th with renewed vigour. He quotes from the *Transactions of the Sixth Otological Congress* (1899):

> The large majority of cases will yield to irrigation,

but leaves an important preceding sentence unquoted:

> So long as disease is confined to these spaces and *has not affected the bone*, I believe it may be reached, and consequently influenced, by injections through a large perforation.

I am of the same opinion still. I think moderate men will not approve of attacks that depend upon this sort of thing.

The first paragraph of the paper referred to contains the real cause of offence.

> Some aural surgeons recommend extensive perforations of the bone. In uncomplicated cases I believe these operations to be generally unnecessary.

So far from its being true that I then denounced all operative treatment, this very paper gave several cases in which some minor operations had been performed. I have never said or written that the incus was less often diseased than the other ossicles. I wrote that the incus was comparatively rarely diseased, and that is true of all the ossicles in my experience. In p. 88 of *Infected Ears* I write:

> The ossicles are less often affected than the walls of the middle ear, and I think there is a practical disadvantage in applying the old term to operations that include the removal of disease wherever it may be possible to remove it, and which may or may not entail the removal of an ossicle.

It is still more misleading to suggest that I advise otectomy in every case. I reserve it for cases in which there is reason to believe the bone is affected, and it has proved a most safe and satisfactory aid to cure in such cases.

Having dealt with definite statements, I will not trouble to notice here mere abuse and innuendo. I have, on the other hand, received encouraging support from some of the first men in the profession of surgery, and, indeed, of aural surgery. One eminent surgeon wrote:

> I quite agree. Too much heroic drilling and gouging.

Another, whose opinions are always received with respect, wrote:

> I think you have proved your point most clearly as to what you can do.

I have also a letter from a recognized authority on otology expressing agreement with my views as to the value of intrameatal surgery.

In conclusion, let me say that I regard the watch as a fair practical test of the hearing, and I see Dr. Hunter Tod does so too.

One word more. Mr. Yearsley says I have written of "my operation of otectomy." Let me reply in the words I once wrote to Dr. Hill:

> I cannot find this expression in anything I have by me, but if I have written of "my" operation no objection can reasonably be taken, as my methods were built up without any assistance from any one else, and in spite of the otological teaching of the moment.

—I am, etc.,

London, W., Oct. 17th. FAULDER WHITE.

SIR,—I have read with pleasure the letter of Dr. William Hill, which appeared in the BRITISH MEDICAL JOURNAL of October 8th, on the present-day treatment of suppurative diseases of the ear. It is now recognized by all aural surgeons that, although there are many dangerous cases which can only be successfully treated by either "a complete radical or a mitigated radical operation," still there

are a large number of chronic cases of tympanic disease which can be permanently benefited by minor permeatal procedures.

I cannot agree with Dr. Faulder White that a wave of surgical prejudice in favour of mastoid operations has cast a dark shadow over intrameatal surgery. The details of the special operative procedure practised by him under the title of "otectomy" appear to me to be very similar to the minor operations which are done every day by aural surgeons with considerable success. He tells us in his letter that permeatal surgery has been deplorably neglected in our country, and I am confident he is right if he refers to the practice of thirty years ago, when in every town and village in the land patients could be found suffering from permanent deafness and disorders of the ear which had never received any kind of treatment. Parents then ignorantly neglected the aural troubles of their children and regarded "a running of the ear" as a constitutional error, which ought not to be rashly checked; but fortunately all these old myths are rapidly passing away by the progress of education and the growing influence of our science, and to-day minor operations are performed in the early stages of suppurative otitis with the best results. Dr. Faulder White does not consider it surprising that 70 per cent. of his cases obtain improved hearing power after undergoing the operation of otectomy, and this is certainly a favourable result; at the same time, it does not indicate greater success than that which follows all intrameatal operations, provided the destructive changes have not extended to the nervous structures of the internal ear.

In conclusion, I desire to congratulate Dr. Faulder White on his successful management of the interesting case of a lady who had suffered from an infected ear from early life, and upon whom he performed the operation of otectomy. Dr. Faulder White's silence on this occasion was, indeed, golden. She had consulted many specialists before, and they had acted in the same judicious manner, but the result of the successful operation evidently came upon her as a very agreeable surprise, which, no doubt, added greatly to the pleasure she experienced from the unexpected increase of her hearing power.—I am, etc.,

Portsmouth, Oct. 18th. J. Ward Cousins.

FEMINISM.

Sir,—I have read with much interest the instructive editorial entitled "A Candid Friend on Feminism," in the British Medical Journal for October 15th, and I agree with you that "the problem is one of the greatest social importance," and that "the time seems ripe for a full discussion of the subject."

From Dr. Kenealy's remarks it would seem possible easily to modify important natural functions by external influences, and, as a matter of fact, a condition to be daily taking place. This is, however, doubted by many observers, and, in order to support any such argument as Dr. Kenealy's, definite statistics regarding allied conditions are necessary. Broad generalizations based on impressions are notoriously misleading and often worse than useless.

As regards the ability of women to suckle their children, I have collected the following facts which may be of some interest in this connexion. My statistics[1] (somewhat limited I must admit) refer to 415 cases collected at the Royal Hospital for Sick Children Dispensary. They were unselected cases taken in order as they appeared on the days on which I attend—93·8 per cent. of the mothers had milk at the beginning; 89.2 per cent. had sufficient milk for the first month; 62.2 per cent. suckled their children for at least six months; and 30.5 per cent. for twelve months or longer.

Of the 102 children weaned before six months, 48 were taken off the breast during the first month; 25 during the second month; 19 during the third month; 5 during the fourth month; and 5 during the fifth month.

Of those weaned during the first month the causes were: Disappearance of the milk, 17 cases; abscess of the breast, 7 cases; puerperal fever, 4 cases; illness of the mother, 4 cases; child not having strength to suck, 3 cases; child being sent out to nurse, 3 cases; menstruation, 1 case; mother going out to work, 2 cases; unknown, 7 cases.

Weaning during the second month was occasioned by illness of the mother in 8 cases; milk disappearing in 4 cases; illness of the child in 3 cases; abscess of the breast in 2 cases; mother going out to work in 2 cases; milk not being considered good in 1 case; child refusing to suck in 1 case; causes unknown in 4 cases.

In the third month no cause was given in 5 cases; in 7 cases the milk disappeared; in 2 cases the milk was not considered good by the physician; in 2 cases the child was ill and resident in a hospital; in 2 cases the child did not seem to be thriving; and in 1 case the child would not drink.

During the fourth month illness of the child, abscess of the breast, disappearance of the milk, and the child refusing to drink were each responsible for 1 case of weaning, while in 1 case no cause was assigned.

During the fifth month the child refusing to drink, the milk not being considered good, the milk disappearing, mother menstruating, and unknown cause were each responsible for 1 case.

Perhaps the most interesting feature in the above figures, so far as the present issue is concerned, is the large proportion of children weaned on account of accidental causes—namely, illness of the child or mother. In only 30 per cent. of the cases weaned before the sixth month was the cause due to insufficiency of milk. In only 14 per cent. of all the cases was there at any period before the sixth month an inadequate supply of milk for the infant's needs.

Now, as already mentioned, the above figures were obtained at the Dispensary of the Sick Children's Hospital. The women who attend this dispensary are of the poor or lower working classes, the classes from which we usually consider degenerates are recruited. There is no question of them being over-educated or indulging excessively in sport and games, but neither can one say that their upbringing, education, and hygienic surroundings are conducive to the production of healthy mothers. And so far as "feminism" is concerned they are as innocent of it as their mothers, or perhaps even their grandmothers, were before them. Nevertheless, in their lives they are subjected to many evil influences, and yet there is no evidence that they are degenerating and becoming unfit to perform the duties of mothers.

The above figures of mine are high as compared with those of Keller,[2] who found that 78.6 per cent. of the mothers of the poor and artisan classes in Vienna suckled their children at the outset, but that only 29 per cent. continued breast feeding for at least six months, and would seem to indicate that in Glasgow, at any rate, the industries followed by these classes were not of a "de-sexing" nature.

The great disparity between this class and the upper classes, as estimated by Holt and Vincent, would seem to suggest that there is not universal degeneracy of the race, and that the incapacity of the latter, that is, the upper classes, may be ascribed, as Dr. Kenealy insists, to "feminism." Neither Holt nor Vincent in their textbooks give definite statistics, but merely express general opinions. Holt[3] says that only one out of every four women of the upper classes is fit to suckle her child, and that only for a limited period; and that it is phenomenal to come across a mother who can perform this maternal duty for six months. Vincent[4] is even more general in his reference to the subject.

In comparing figures it is important that we should confine our conclusions to strictly comparable classes. It is thus questionable how far we can arrive at correct opinions by comparing different nations, even different towns, where not only local conditions, but the degree and extent to which "feminism" has penetrated, vary so enormously.—I am, etc.,

Glasgow, Oct. 18th. Leonard Findlay.

[1] *Glasgow Medical Journal*, October 1910, p. 246.

[2] *Wien. klin. Woch.*, xxii, 18. 1909.

[3] Holt. *Diseases of Infancy and Childhood*. London, 1909, p. 168.

[4] Vincent. *The Nutrition of the Infant*. London, 1910, p. 32.

Under the will of the late Captain Henry Boyles Murray, of South Kensington, the West London Hospital benefits to the extent of £1,050, while St. George's, King's College, St. Thomas's, and St. Mary's Hospitals each receive £1,000. Sums of £500 each are left to the London Fever Hospitals, the Great Ormond Street Hospital for Sick Children, and the Victoria Hospital for Sick Children.

Medico-Legal.

THE CRIPPEN TRIAL.

SPECIAL REPORT OF THE MEDICAL EVIDENCE.

IN view of the medico-legal importance of the trial before the Lord Chief Justice of Hawley Harvey Crippen, which ended in a verdict of wilful murder of his wife, known as Belle Elmore, we thought it well to get a verbatim report of the medical evidence. Of this evidence the following is a summary. The main medical issues were whether the remains found were those of a woman, whether that woman was Belle Elmore, how long they had been buried, whether part of the remains were the wall of the sub-umbilical abdomen, whether this part bore a scar, and whether the cause of death was hyoscine poisoning.

The net outcome was that all the questions raised by these issues were held to have been answered in the affirmative. The trial commenced on Tuesday, October 18th, and ended on Saturday, October 22nd. The crime dated back to the end of January, and no suspicion was aroused until the early part of July.

Crippen, it may be noted, gave in evidence and before arrest an account of his career. He was born at Coldwater, Michigan, in 1862, his father's name being Augustus Crippen. His mother was now dead, and his father lived in California. He was educated first in Coldwater, and finished his education at the Homoeopathic College at Cleveland, where he took the degree of M.D. He came over to England in 1885, and attended various hospitals to see operations. He returned to the States, and was assistant for three or four months to a Dr. Porter, of Detroit. After that he went to New York, returning to Detroit, where he remained for three years as assistant to the same doctor. He practised as an eye and ear specialist for some years. Before going there he was married to a woman named Charlotte Bell, in New York. He had only one child by his first wife who died in 1890 or 1891. They were living at the time at Salt Lake City, where he was practising as an eye and ear specialist. Crippen then went to New York as assistant to a Dr. Geoffrey, of Brooklyn, and about 1893, when with Dr. Geoffrey, he first met Belle Elmore, who was being attended by Dr. Geoffrey. Her name at that time was Cora Turner. She was only about 17 years of age, and Crippen was about 30. She was at that time living under the protection of a stove manufacturer named Lincoln, of New York. After getting married they went to St. Louis, where Crippen practised as consulting physician to an optician. After staying there for about a year they returned to New York, where he took the position of consulting physician to the Munyon's Company. He was in New York for only a few months when the company transferred him to Philadelphia. He was there about a year, and was then transferred to the firm's place at Toronto, where afterwards he managed their business. Later on, about 1900, he settled in England in charge of Munyon's Remedy Company. He was also connected at one time with the Drouet Institute, and more recently with a quack aurist business.

In his account of his relations with his wife, Crippen said she suffered from bilious attacks, and he had given her homoeopathic medicines for that.

MR. A. J. PEPPER.

Crown Evidence in Chief.

Mr. Pepper, Consulting Surgeon to St. Mary's Hospital, said that on July 14th he went with Chief Inspector Dew to 39, Hilldrop Crescent. He met Dr. Marshall there. In the cellar he found that part of the floor had been pulled up, and in a hole in the ground he saw what appeared to be animal remains. He looked at the soil to see what it was composed of and found it was partly loam and partly clay. Mixed with these there was lime. The remains were removed to the mortuary in a shell. They included, besides some tufts of hair, a large piece of flesh composed of skin, fat, and muscle from the thigh and lower part of the buttock of a human being, and another small piece. The head was missing, and there was no bone nor part of a bone, but, except the organs of generation, all the internal organs were found.

Counsel: On the 15th July did you find a piece of skin with some fat attached to it?—Yes.

Will you describe what that was?—Well, there was fat attached to all the pieces of skin.

But did you find a piece measuring 11 in. by 9 in.?—Yes.

The Lord Chief Justice: This is in addition to the two pieces that he spoke of before?

Counsel: Yes, my lord. (To the witness) Where did that come from?—That came from the upper part of the abdomen and lower part of the chest.

Did you find another piece of skin 7 in. by 6 in.?—I did.

Where did that come from?—The lower part, the front portion of the abdomen.

Was there anything upon that which attracted your attention?—There was a mark.

Did you afterwards examine that piece with particularity?—I did.

What length of time did you spend in examining it?—Several hours altogether.

In your opinion, as the result of that examination, what was that mark?—It was the mark of a scar.

What was the length of the scar?—A little over 4 in.

That would have been visible upon the piece of skin?—Yes.

When that piece was in position on the human body where would it be?—In my opinion it was in the middle line in front; it may have been a little to the left. It began just above the pubes, and extended for 4 in. or a little over.

Did you come to the end of the scar in that piece, or did the piece end before you came to the end of the scar?—The whole scar was complete.

And was there a piece of flesh beyond it?—Yes.

Was that a new scar or an old scar?—It was quite an old scar.

Was there any trace of any genitals at all?—No.

Or any certain anatomical indication of sex?—No.

Was there any hair on that piece of flesh?—Yes.

In your opinion what hair?—Pubic hair.

The viscera, the witness said, must have been extracted from the body by a person skilled in removing viscera.

The Lord Chief Justice: That is skilled in dissection, I suppose?—Dissection.

Counsel: Of human beings?—Well, I would not like to go so far as that, but certainly in evisceration of animals.

Skilled in the dissection of human beings, or other animals, or both?—Yes, there was no cut or tear in any part, except where it was necessary for the removal.

And it was removed all in one piece?—In one piece.

The Lord Chief Justice: What do you mean by "in one piece"?—The organs I have described.

That is what I want to know; I think it is an important matter. Do you mean all the organs or the viscera only?—All the organs were connected together: and the diaphragm or the septum between the chest and abdomen had been necessarily cut round of course.

That is what you refer to as to what is necessary to get them out; but, apart from that, all these organs had been taken out by some hand so that they were still attached one to another?—Yes, and uninjured.

Counsel: And in your opinion would that require skill?—Certainly.

Now, there were no organs of generation there at all?—No.

May some of them have been removed in life?—Oh, yes; not unlikely.

Would that scar which you saw be in that position if an operation was performed for the purpose of removing some of the organs of generation?—Yes.

The Lord Chief Justice: The scar is in a place which corresponds with an operation for the removal of the ovaries?—Yes.

Counsel: Now, did you form an opinion as to the length of time that those remains had been buried?—I did; from four to eight months. In forming that opinion he had taken into consideration the place where they were buried, the surrounding materials, and the depth.

And the time after death which in your opinion they had been buried?—They were buried very shortly after death.

You took all that into consideration in forming your opinion as to the length of time?—Certainly.

In your opinion is it possible that those remains could have been buried there before the 21st September, 1905?—No.

Continuing, the witness said he put some of the things he had described into jars. Some of the contents could not be produced; they had been used by Dr. Willcox for analysis.

The witness had measured the hair found in the Hinde curler. The longest hairs were 8 in. and the shortest 2½ in.; of course, there are intermediate lengths. In his opinion, being of that length and bleached partly, the hair would be a woman's. The dark brown, the part not in the curler, and light brown in the curler. The dark brown was the hair of the root. The roots were present. The hair that was placed by him in the third jar was now decidedly darker than when he saw it. He was referring particularly to that part in the curler.

Asked to look at the portion of the hair he found in the handkerchief, the witness said he thought it was slightly darker now. This was in both cases partly due to the drying, and being more compressed together. Possibly also the bleaching effect had gone off somewhat. On August 5th he examined some hair at St. Mary's Hospital: the greater part was 2 to 3 in. long; the longest 6 in. The colour was dark brown shading off to light brown. Asked if that had altered since he examined it on August 6th, Mr. Pepper said he thought it was somewhat darker; they were all a little darker, but the first one was very markedly so. On August 8th he examined two loose hairs at the mortuary. They were lying loose on a part of the abdominal wall; one was 5½ in. and the other 8 in. They were of the same colour as the other hair he had seen—dark brown It was a woman's hair. Mr. Pepper added: I do not know whether you wish me to refer to the hair that I examined that I believed to be pubic hair. Those hairs were twenty in number; some were free from the surface, others were still fixed.

The Lord Chief Justice: By "free" you mean not attached to the skin?—Quite so, my lord; dark brown in colour, corresponding with the undyed hair. They were from ½ in. to 1 in.

in length; they showed the roots at one end, and the other end tapered off. In all the other specimens the hair, of course, had been cut—roots at one end, cut at the other. This showed roots at one end, and the other end tapered.

You mean in a natural condition as regards cutting?—Yes, or rather the absence of cutting.

Proceeding, the witness said he found the stomach and the kidneys, and the heart and the liver and the pancreas all healthy as far as one could tell. There was no sign of disease nor anything to account for death. The spleen was very soft as one would expect from decomposition. The intestines were healthy. The lungs were more advanced in decomposition than the other organs, except the spleen, but there was no consolidation and no sign of there having been pleurisy—no marks on the surface. From the remains he examined the person in life was of stout figure. The kidneys were in an exceedingly good state of preservation. On September 9th he was present at St. Mary's Hospital when a piece of the skin, bearing the mark which he said was an old scar, was removed for microscopical examination. He was also present when that piece was microscopically examined on September 13th by Dr. Spilsbury. He examined it himself. Having examined it in that way, he was confirmed in his previous opinion that it was a scar.

Cross-examination

Taking human remains by themselves, it was quite impossible to tell sex except upon anatomical grounds. To remove these organs in the way they were removed would require a practised hand and eye. If a person had once learnt how to do it he could do it. It was not a minute dissection; it was a particular kind of work. He formed an opinion as to the length of burial on July 15th. When he went to 39, Hilldrop Crescent on July 14th Mr. Dew was there, but he did not remember that he was told that the woman was said to have disappeared about February 15th of that year. He agreed that he would have heard that very soon after if not on the 14th. He agreed that it was quite beyond the reach of science to determine with accuracy the period of death from the progress of putrefaction, and that "two different bodies buried in the same soil and under apparently similar conditions frequently presented such differences as to baffle all attempts at generalization."

Asked by the Lord Chief Justice if lime or clay retarded putrefaction, the witness said there were two kinds of decomposition taking place in dead bodies—one where it was freely exposed to the air and warmth, and the other where it was damp and largely excluded from the air. That was what happened in this case. Lime and clay would retard the common form of putrefaction, but the presence of damp clay would favour the change which happened in this case. It was not putrefaction in the ordinary sense. It was a peculiar change; the tissues became converted into a kind of soap, the technical name of which was adipocere.

In reply to Counsel, Mr. Pepper agreed that buried in clay, adipocere would be created more quickly, and ordinary putrefaction would be retarded. Asked if taking a person of Mrs. Crippen's age and build he could form any idea as to what the normal weight of the kidney of a woman like that would be, Mr. Pepper said it would vary from 3 to 4 ounces. It might be as much as 4½ ounces He agreed that that would be the normal weight for a woman of that height and build. He thought the weight of the kidney in this case was 2¾ ounces. It was subject to considerable variation. That would be due largely to removal of moisture from the kidney—desiccation. There was some change in the kidney; he did not want to use the word "putrefaction."

In reply to further questions, the witness said he did not accept the suggestion that there was ordinary putrefaction; there was very decided formation of adipocere. Before he formed an opinion that the mark on the skin was a scar he had already heard that Mrs. Crippen had had an operation. He could not pledge himself as to the date. It might have been close on a week after he had first seen the remains.

Asked if it was not the case that running at right angles to the navel there are what are called tendinous intersections, the witness answered in the affirmative. Those white fibres were at right angles to the vertical axis of the body.

Asked if there were ordinary tendinous intersections at right angles in that sense on a level with the bottom of the breast bone, Mr. Pepper replied in the affirmative.

Asked if there were also as a rule tendinous intersections at right angles between those two points—the navel and the bottom of the breast bone—the witness said, "Yes, three of them."

Asked if there were also tendinous intersections as a rule a little below the navel, the witness said there might be, but that varied very much. It was not so common as the other.

In reply to Counsel, the witness said he believed a navel must originally have been upon that piece of skin. It was possible, of course, that it was not. If his opinion was right, it must have been removed from that piece of skin.

In reply to further questions, the witness said there was no trace whatever there of the tendinous intersection running at right angles to the navel. He added that that scar was not so long as the wound of the operation would have been.

Asked to point out what it was agreed to call the horseshoe depression and the place where the navel was, at the top of the horseshoe depression, the witness did so. He said he must not be taken to say that it was actually the shape of a horseshoe, because one side was nearly straight.

Asked if he would not expect to find at right angles to what he thought was originally the site of the navel, the tendinous intersections, Mr. Pepper said, No; they might not be found, because tendinous intersection did not involve the skin; it only involved the muscles underneath, and there the muscles had been cut away.

Asked if there was any trace of the linea alba in the remains in the tray, Mr. Pepper replied that the linea alba was not on the surface of the skin; it indicated where the tendons underneath were joined. One never saw the linea alba on the chest. It was underneath the surface.

Asked if there was not enough there for the linea alba to exist if the flesh really did come from the lower part of the abdomen, the witness said, "No, because there is only one muscle on one side there."

Asked if very great dexterity would not be required to remove the peritoneum, Mr. Pepper said he did not know what Counsel meant; he never saw any one attempt to remove it. There was no trace of the peritoneum there. He agreed that it must have been removed, but not by itself; it was simply left with some of the fat; the body had been cut up, and it had been taken out evenly in the whole thickness, with considerable quantities left behind, as shown by the preparation. It was there originally underneath that skin. It was not there now.

Asked whether, if it was there, that would be a good indication that that piece of skin really came from the lower part of somebody's abdomen, the witness said he very much doubted if one would recognize it clearly in this condition, but assuming one could see it, of course it would tell one that it was from the abdomen. It was removed during the cutting up of the body. Instead of pieces being taken out at right angles they were cut obliquely.

Asked by Counsel if on that piece of skin some hair was visible, the witness answered, Yes. He had expressed the opinion that those were pubic hairs. They were on one side only of that piece of skin. They were on the right side, as on the body.

It was put to him by Counsel that, if those were pubic hairs, those on the left side must have fallen out. To this the witness answered, Yes. He agreed that if they had fallen out on the left side there might have been hairs over other portions of that piece of skin that had also fallen out. There was only one place where pubic hairs were found in this substance, and that was in a line at the bottom.

In reply to further questions, the witness said the removal of the navel was exceedingly common.

Asked how many times he examined that piece of skin before he came to the conclusion that it was a scar, he said he came to the conclusion immediately—at least, within a quarter to half an hour at his first examination. He had not the slightest doubt it was a scar.

In reply to further questions, he said that on July 15th he and Dr. Marshall examined the remains at the mortuary for two hours and three-quarters, or three hours. On that occasion he did not see the mark. He could not remember when he heard of the operation. He did not agree that the condition of that piece of skin made it very difficult to say whether that mark was a scar at all.

Asked about the horseshoe depression, he said that the left limb of that depression was undoubtedly due to a folding of the skin. The scar began at the lower part, where it was cut across. It was practically straight, slightly curving at the upper part.

Asked by the Lord Chief Justice if that was as high as the navel would have been, or not as high, or above it, he said the navel varied exceedingly. The scar being 4½ in. long, one might easily allow an inch for contraction; that would take it to 5½ in.

Asked if that would be the distance between the navel and the pubic bone, he said he did not know the stoutness of the woman or her age, and it depended upon whether one started from the surface or the bone.

Further questioned by Counsel for the defence and by the Lord Chief Justice, Mr. Pepper said his contention was that the scar ran on the right side, nearly straight, and that the left limb and the curve of the so-called horseshoe were formed by the fold. He had examined microscopically a small piece that was cut out of the centre of what he said was the scar. He had examined the right side with the microscope. There were on the right side of what he called the scar little groups of transverse lines, four lines in each, at regular intervals.

Asked if he had ascertained whether or not those little groups of four lines in each, which he admitted were partly in the area of the so called scar and partly outside it, were exactly similar to the pattern on the elastic material of the underclothing, he said he could not say whether or not the patterns precisely corresponded.

Asked whether, if they did, that would be a clear indication that those marks were caused by the pressure of the materials, he replied that they might on the left side, but not on the right. The scar was not a line; it was ⅜ in. wide at the lower part. The marks in groups were on the left side of that.

The Lord Chief Justice: He says that those marks might be caused at that side by the pressure of the combinations.

Counsel: I understood you to say that those marks are in the area of the so-called scar and travel outside it on one side?—I was just looking: I do not think they go beyond; it is only in a certain light that you can see them. (After examining) I should say they do not go beyond the area of the scar.

You think they do not?—They do not.

Are you examining it now with the microscope or not?—No.

You have not examined it for that purpose with the

microscope at all?—Yes, I have examined a piece which was cut.

Asked if, supposing one limb of the horseshoe mark was due to folding and the other side of it due to an operation, and, therefore, a scar, would he not expect that if a piece was cut across the folded depression and a piece cut across the area of the so-called scar, the cut edges of the piece cut from the so-called scar would be different from the cut edges of the piece of the groove where there never had been a scar at all, Mr. Pepper replied: "Not necessarily, because the folding over would attenuate the skin at that part—the continued pressure of it." Both limbs of the so-called horseshoe were cut across.

Asked if he would not expect the cut edges of that piece that were originally within the scar to be different in appearance from the cut edges of the skin just outside the area of the so-called scar on each side, Mr. Pepper said: "Not necessarily, because the superficial area of the skin has entirely gone, and this has become hardened and horny; the whole skin on the surface is almost like leather now." He went on to say, in reply to further questions, that he himself had examined, both with the naked eye and with the microscope, the bit of skin cut by his directions across and beyond the area of the so-called scar. In the part which he said was the scar the fibres were more densely placed than the fibres forming the skin. A very important point was that there were glands of the skin still remaining in the skin on each side of the scar; there were no remains of glands in the part which he said was the scar. An operation would not necessarily cause an alteration in the size, number, and arrangement of the fibres in the part immediately below the surface. A wound going through the entire wall of the abdomen of a woman might unite very accurately indeed, so that afterwards one could not tell really that an operation had been done, except from the line of the scar. That was not a very unusual thing. There must be new tissue which united the two edges of the wound, of course; one could not get a scar if there was not new tissue; but it might unite, and frequently did, so accurately, that a long time after the operation one could not tell, except by the line on the surface, that an operation had been done. If the scar was not stretched there was a continuous white line. If a scar was stretched, it did not necessarily stretch in a lozenge shape—wider in the middle. A scar at the lower part of the abdomen often did not, because the tendons were frequently separated during the operation, allowing the scar to be wider at the lower end than at the top; it would be somewhat triangular in shape. Asked what the measurement of this so-called scar was, the witness said ⅝ in. at the lower part, ½ in. at the middle, and ¼ in. near the top—narrowest at the top and widest at the bottom. It was exactly the scar that he had many times seen after an operation in this part.

Asked whether, in the majority of cases, if there had been an operation he did not expect afterwards to see marks of the stitches, the witness replied, "In the majority of the cases, yes; in many, no." Asked if there were any marks he could clearly identify as stitches in this case, the witness said, No; there were some marks which were doubtful, and, therefore, he was quite ready to admit that they were not marks of stitches. They suggested stitches, but did not prove it; but where there was a scar which had become broad like that, very often the stitch marks became merged in the margin of the scar. Even apart from that, stitch marks frequently disappeared altogether.

Re-examination.

The presence of the aponeurosis proved that the part came from the lower abdomen in front.

At the request of the Lord Chief Justice, Mr. Pepper described the arrangement of the muscles with the aponeuroses. The reason he said the piece was not above the navel was because there were none of those transverse markings he described, and, further, there were pubic hairs.

In reply to questions by Mr. Muir, he said his knowledge, or want of knowledge, as to the date of Mrs. Crippen's disappearance had no effect whatever upon the opinion he formed as to the time those remains had been in the ground, nor had the information that an operation had been done on Mrs. Crippen any effect on his opinion that a scar was present.

Proceeding, he said the fact that the kidney found weighed about 2½ oz. was, in his opinion, due to loss of moisture. This loss of moisture would be very largely due to the presence of the large quantity of lime there; that would abstract the moisture from the parts. Absolute quicklime destroyed flesh by abstracting the moisture, becoming converted into hydrate. The presence of damp clay round quicklime would tend to convert quicklime into slaked lime. It would make the action of the lime less strong. Where there was a moist ground the moisture was abstracted by the lime. When it became slaked it did not corrode flesh; a great deal of carbonate of lime was formed, and the carbonate of lime facilitated the formation of adipocere. With regard to the protection or otherwise of the tissues, the slaked lime would practically be inert.

Asked if it was or was not possible that the navel might have been outside the area of that piece of flesh, Mr. Pepper said it was quite possible. The distance varied in individuals. In his experience it had varied from about 4½ in. to 6 in; of course in a very tall person or a very stout person, if one took the curve it might quite easily extend to more than that. He thought it most probable that it was within the area of that piece of skin—possibly beyond it. The part of the wall of the abdomen containing the tendinous intersections was not present. Their absence from that piece of flesh did not in any way tend to show that it was not a part of the wall of the abdomen. He was confident that it was part of the wall of the abdomen, and of the lower part of the front of the abdomen. The same observation applied to the linea alba. He had performed many hundreds of abdominal operations. The scar which he found there was such as he had found in his actual practice.

Asked if it would be possible, examining these remains on September 9th, to form an opinion of any value as to how long they had been in the ground—supposing he then examined them for the first time—the witness said he could not have formed an opinion of any value, because at that date they had been largely exposed to the air, and the ordinary putrefactive process—decomposition—had attacked them.

Now, that piece you have before you has been preserved?—It has been preserved from the very date I discovered it.

In reply to further questions, he said he examined the section made by Dr. Spilsbury, and found no glands in the part he said was a scar. There were glands on each side. There were also glands in the left limb of the so-called horseshoe where the fold was.

The Lord Chief Justice said there were two or three questions he wished to ask. First, whether this was a scar, and, secondly, as to its position. As to its being a scar, he understood the witness to say that it was nearly 1 in. wide at the bottom. Mr. Pepper replied that it was ⅝ in., and it tapered up something like ¼ in.

Asked if that was in accordance with his experience as to the shape of a scar when it became a dried and old scar in an abdominal operation, the witness replied in the affirmative. It was bigger at the bottom than at the top; this was the case repeatedly in this situation.

The Lord Chief Justice proceeded: Do you generally find, when it does take place between the navel and the pubic region, that that is the shape the scar assumes?—Frequently.

Now I want to ask you, in operations is the navel ever removed?—Oh, yes; I have done it many times myself.

Therefore, the presence or absence of the navel after the operation will not be conclusive one way or the other?—No, my lord.

You have no doubt that this is a scar?—None.

Will you tell the jury why it was between the navel and the pubes?—In the first place, the scar is wider at the bottom than at the top; and, secondly, there is this line of hair which, in my opinion, is pubic hair.

The pubic hair goes higher up in some individuals than it does in others?—Oh, yes.

Do you see any indication of hair in that specimen above the region which you think is the pubic region?—No, my lord.

Therefore it would confirm your view that it has reached down to the pubes where the hair grows and has gone up towards the navel?—Yes.

Is there any indication of that being a piece of flesh which came from above the navel?—I say absolutely it is not.

The Lord Chief Justice: What is the operation in which the middle line between the navel and the pubes is the seat of the scar—the common operation?—The most common is operation for removal of the ovaries or uterus.

What is the operation in that position which is performed on a male subject?—Removal of stones from the bladder—taking tumours from the bladder.

It would be that class of operation in male subjects?—Yes; it is frequently performed there on male subjects.

Then the scar there would be of the same appearance?—Yes; it would be less likely to be so wide in a male subject, because, as a rule, there is not so much distension.

The width at the bottom would point more to a female than to a male subject?—Yes; the scar usually stretches more.

In reply to further questions, Mr. Pepper said that the part which contained the tendinous intersection was not present. When he spoke of "slicing" he meant vertically. The upper part was cut, so that the muscle was cut lower down than the skin. Asked by the Lord Chief Justice to say on what he based his opinion that the remains could not have been in the ground longer than eight months and not less than four months, Mr. Pepper said he should have thought they might have been in the ground for eight months if he had paid attention to some parts where the decomposition or change was much more advanced; but, looking at certain parts of the skin and the heart, and the kidneys and the liver, he should have said that, if anything, the time was under four months; they were so exceedingly well preserved. Looking at the general conditions of the organs as they were, he came to the conclusion that they could not have been buried more than eight months.

DR. BERNARD EDWARD SPILSBURY.

Crown Evidence in Chief.

Dr. Spilsbury, Pathologist at St. Mary's Hospital, said he had on several occasions examined the piece of skin and flesh, the first time on September 9th. It came from the lower part of the wall of the abdomen, near the middle line. He based that opinion upon the presence and the arrangement of certain muscles. There was the rectus muscle and an aponeurosis, attached to which were other pieces of muscle. Confirmation of his opinion was afforded by the existence at the lower margin of the piece of a row of short, dark hairs. He made a section across the middle of what he regarded as a scar and examined it under the microscope. There was no epidermis on it, but he found a small mass embedded in it at one spot. This indicated to him the line of incision of the skin at the operation which caused the scar. At each end of the section on either side of the scar there were glands, but there were no glands in the scar itself. On the other hand, there

were glands in the groove which had been described as a horse-shoe mark on the skin. The tissue at the place he had called a scar was denser than elsewhere; it was undoubtedly an old operation scar.

Cross-examination.

He commenced his medical work at Oxford University, and went to St. Mary's Hospital about eleven years ago. Mr. Pepper was a lecturer there then, and he had been associated with him for the first five or six years, but not since. The person who removed the viscera must have had considerable dexterity and considerable anatomical knowledge, and must have been accustomed to evisceration. If it were established that there was in the scar a sebaceous gland or a hair and a hair follicle it would be conclusive that it was not a scar. He thought the mark was a scar, even when he looked at it with the naked eye. He believed he had already heard, when he first saw the skin, that Belle Elmore had had an operation. It was more difficult to tell if the scar were a scar when he saw it than it would have been had it been fresh.

Re-examination.

He was only associated with Mr. Pepper by attending his lectures, and acting as a surgical dresser. That fact had absolutely no influence on his opinion; nor did hearing of an operation having been performed on Belle Elmore.

You have expressed the opinion that beyond doubt this is a scar?—I have.

You also said that if any gland or hair follicle exists in that place it will conclusively prove that it is not a scar?—Yes.

Have you examined microscopically the section which you took out?—I have.

To see whether there is any gland or any hair follicle in it?—I have.

He had searched the scar carefully for glands or hair follicles, and must have found them if there were any. There was nothing which could conceivably be mistaken for a gland except the small mass of included epidermis which he had mentioned.

Asked to explain more fully what he meant by included epidermis, he said that in a surgical operation, when the edges of the skin were brought into contact it was common for at least one side to turn in a little, and as the scar formed some of the surface material covering the skin might become enclosed in the scar and embedded in it. There was in his opinion no room for doubt that the mark was a scar. It was quite possible for the inturned edge of the cut to contain both hair follicle and sebaceous glands, though there were none in this instance. The arrangement of muscle and aponeurosis he had described was inconsistent with the piece of flesh and skin being from any part of the body except the lower abdomen. He had the microscopic slides, and would send for a microscope and show them if it were really desired.

Dr. Thomas Marshall.

Crown Evidence in Chief.

Dr. Marshall, Divisional Surgeon of Police for the Kentish Town District, described the fashion in which he had collected the remains with Mr. Pepper. He had heard the latter's evidence as to what took place on that occasion, and agreed with it. He was with Mr. Pepper on August 8th, and saw the piece of flesh bearing a mark. He formed the opinion that it was from the lowest part of the abdominal wall. On the same occasion he noted the mark and regarded it as a scar. In none of the organs found could he see any indication of disease which might cause death.

Cross-examination.

He agreed that some bodies remained in an excellent state of preservation for some years if buried in lime and in a soil like clay which practically excluded all air, and that the possibility of giving a certain opinion as to the length of time that a body had been buried in the earth depended on many circumstances. Before he examined the skin and flesh he had heard that there had been an operation. It was on August 8th he noted the scar, and that was the first time he had examined the skin and flesh. Before he had merely handled it and other remains when taking them from the cellar and placing them in jars, and for other purposes. He had then seen the skin, but not examined it. He expressed his opinion as to the length of time the remains had been buried at the inquest before any other witness and without consulting Mr. Pepper. He placed the time at several months. All he could say further was that it was just possible that the time was as long as seven months.

Dr. W. H. Wilcox.

Crown Evidence in Chief.

Dr. Willcox, Senior Analyst to the Home Office, said that on July 22nd he received from the coroner's officer five jars covered and sealed which he numbered forthwith. In the first was a small portion of liver and one kidney. In the second, a pair of combinations. In the third, hair and a hair-curler, a handkerchief, undervest, and some hair in a piece of paper. In the fourth, a piece of pyjama jacket, and in the fifth two other pieces of pyjama jacket. One piece had a button on it and a neck-piece bearing a tab. These pieces were of flannelette, as also were the two complete suits handed to him for a second inspection in court. The buttons were also the same, though one was a little smaller, having shrunk perhaps a little. It was a circular button with a depression in the centre, from which threads radiated. On July 25th he received from Dr. Marshall another jar, which he numbered 6. It contained some intestine, another curler with hair in it, and a portion of liver, which, together with the other portion, completed the whole liver. On August 8th he received from Mr. Pepper a piece of skin. It was from the lower wall of the abdomen, and showed a horse-shoe mark, of which one limb was a scar—an old scar—and the other limb was a fold. On August 14th he received from Dr. Marshall a seventh jar containing some soil and lime, and the same day an eighth jar containing lungs, a portion of intestines, a piece of muscle, and another piece of hair. He also received a box of carbolic powder. The lungs were in a condition of advanced putrefaction when received. The kidney which he had received much earlier was comparatively fresh, except that it had undergone the process of decay with the formation of adipocere, but there was very little ordinary putrefaction present in it when he received it. The greater putrefaction in the lungs was due to the fact that a longer time had elapsed between their removal from the ground and their being brought to him. Organs removed from burial in the ground and exposed to a warm atmosphere decomposed and putrefied very rapidly. On August 15th he received an unopened bottle of Neville's sanitary fluid, and on the 16th an open bottle containing a smaller quantity. On August 23rd he visited 39, Hilldrop Crescent himself, and procured some specimens of the soils from the excavation, which he put in jars and labelled.

Continuing, Dr. Willcox said that on July 23rd he commenced examining the stomach, the kidney, and a portion of the liver, first looking for mineral and organic poisons. He found traces of arsenic in the intestines and liver, and traces of creosol (which was the chemical name for commercial carbolic acid) in the stomach and kidney, and intestines and liver—small traces. He attached no importance to those. They were due to the disinfectants. He began the same day to examine for alkaloidal poisons. Such an examination required two or three weeks before the final tests could be applied. He took weighed portions of the stomach and intestines and kidney and liver, and treated them by the usual process for extraction of alkaloids, and found an alkaloid present in all the extracts.

Did you then apply further tests to see what kind of alkaloid was present?—Yes, I tested for all the common alkaloids—morphine, strychnine, cocaine, and so on—and I found that a mydriatic alkaloid was present; that is, an alkaloid the solution of which if put into the eye of an animal causes the pupil to enlarge and dilate.

What are the mydriatic alkaloids?—Having found a mydriatic alkaloid I applied a further test and found that it was a mydriatic vegetable alkaloid. There are three mydriatic vegetable alkaloids: atropine, hyoscyamine, and hyoscine. I found that one of those three was present. I applied further tests and found that the alkaloid that I got in the extracts corresponded to hyoscine.

The Lord Chief Justice: You have no doubt it was hyoscine?—No.

Counsel: How were you able to tell that it was hyoscine?—In two ways; one by examining the residue with a lens and microscope; it was gummy; there were no crystals there. Another way was by adding to a solution of the residue some bromine solution—hydrobromic acid—and I got round spheres but no crystals. Hyoscine gives spheres exactly like I have got. Atropine and hyoscamine both give needle-shaped crystals.

The Lord Chief Justice: The two things you have described—the gummy residue and the spheres got from the bromine solution—pointed to hyoscine only?—That is so.

Asked if he could say how much there was, Dr. Willcox replied, Yes; in the stomach one-thirtieth of a grain; in the one kidney one-fortieth of a grain.

That would be in the part that you analysed?—No, calculated out on the whole organ.

Calculating on what you found, there would be in the whole of the organ, how much?—One-thirtieth in the stomach, one-fortieth in the kidney, one-seventh in the intestines, one-twelfth in the liver.

Any in the lungs?—There was the merest trace.

What was the total amount of hyoscine in all the organs submitted to you?—Two-sevenths of a grain.

Is hyoscine used medicinally in the form of hyoscine?—No; it it is gummy, syrupy stuff, which it would be impossible to handle, and a salt is used. The salt which is used is the hydrobromide of hyoscine. That is the preparation given in the *British Pharmacopoeia*.

Are you able to estimate how much hyoscine hydrobromide there was in the whole body?—In the whole of the organs submitted to me the amount was two-fifths of a grain of the hydrobromide.

And in the whole body?—It would certainly correspond to, in the whole body, more than half a grain.

Would that be a fatal dose?—Yes.

What is a fatal dose?—From quarter to half a grain.

Asked what were the effects of hyoscine hydrobromide if taken, Dr. Willcox replied: It is a drug which is a powerful narcotic poison.

The Lord Chief Justice: I think what Mr. Oddie wants you to give us—very shortly, because we do not want to get a medical lecture—is, What are the effects on the subject? If a dangerous dose is given, what course will it take? You say it is a powerful narcotic; what then?

Dr. Willcox replied: If the fatal dose were given it would perhaps produce a little delirium and excitement at first; the pupils of the eyes would be paralysed; the mouth and throat would be dry; and then quickly the patient would become drowsy and unconscious and completely paralysed, and death would result in a few hours.

Continuing, Dr. Willcox said the time within which the drowsy and unconscious state would be reached depended on the amount given and on the condition of the stomach. Assuming to have been given the dose which he thought he could trace, the drowsy, unconscious state might come on in probably under an hour, and paralysis and death in hours.

What do you mean by hours—four or five?—Probably something under twelve hours.

The Lord Chief Justice: Would the patient recover at all during that twelve hours?—No, not if the dose was a fatal dose.

Assuming a fatal dose, there would be the dryness of the mouth and so on, then unconsciousness, and then death, all in one continuous sequence, without recovery?—Yes, my lord.

Continuing, Dr. Willcox said hyoscine was not a commonly used drug. When used it was, if given internally, administered practically always by hypodermic injection. It was used as a powerful sedative for cases of delirium, mania, meningitis (which meant, he explained in answer to the Lord Chief Justice, inflammation of the brain), also for delirium tremens, and very occasionally as a hypnotic for insomnia; sometimes it was given in combination with morphine for sedative purposes. In all these cases it was given hypodermically. The proper dose for hypodermic injection was from a two-hundredth to one-hundredth of a grain. As far as the witness knew, hyoscine was not used as a homœopathic remedy. He had looked through the English and the American homœopathic pharmacopœias, and the drug was not mentioned. He had formed an opinion that the drug was taken in this particular case by the mouth. It was rather salt and bitter, but it could be administered without the patient knowing if given in something with a pronounced flavour and sweetish taste such as starch, beer, stout, spirits, sweetened tea, or coffee.

Counsel: What was the cause of death in this case in your opinion?—Poisoning by hyoscine.

Counsel: Do you know of any legitimate use for hydrobromide of hyoscine except in the doses you have mentioned?—No, not for internal administration.

Cross-examination.

This was the first case where the question of murder by hyoscine had arisen. He had tested for hyoscine before, but had never found it in extracts from dead bodies before this case. There were both vegetable and animal mydriatic alkaloids. The latter were produced after death by the action of bacteria when the organs had reached an advanced stage of putrefaction. He did not discover in the remains sufficient alkaloid to apply the melting point test. He identified the alkaloid as hyoscine about August 20th.

Had you on August 2nd been informed that Dr. Crippen had bought some hyoscine?—Yes.

So that eighteen days before you formed the opinion that it was hyoscine you had been told that Dr. Crippen had bought some?—Yes, that is so.

Now I want to go through your process in the very plainest language that I can. I want to know the process of testing, first of all, to find whether there was any alkaloid in the body at all, next the process to ascertain whether such alkaloid was mydriatic, and, thirdly, the process to ascertain whether such mydriatic alkaloid was vegetable or animal. I want those three stages. Take the first stage. How many days would it take to ascertain whether there was any alkaloid at all?—It would take about a fortnight.

In testing to see whether there was any alkaloid at all, you first, I suppose, weigh the different parts of the remains where it is supposed that an alkaloid might possibly be?—Yes.

And you mix those up quite fine, I suppose?—Yes.

And place them in rectified spirits of wine?—Yes.

Then after they have been for how long in spirits of wine do you drain off the spirits of wine?—Twenty four hours.

And then you place what is left of the mixed-up flesh in another lot of spirits?—Quite so.

You draw that off after another twenty-four hours?—Yes.

And so on?—And so on, as long as the liquid which comes away is coloured—about five times.

Then when the liquid ceases to get coloured you stop?—Yes.

You went through that process, and finally you found that there was an alkaloid?—Yes, there are several other stages to the process; if you would like them I can give them.

I do not think I want them; anything you think fair you will tell me, I know. Now of that substance which you found in this first process, how much did you find in the liver; was it one-twelfth of a grain?—Yes.

And in the intestines?—One-seventh.

In the stomach one-thirtieth of a grain?—Yes.

And in the kidney one-fortieth of a grain?—Yes, that is calculating out on the whole of the organ; I did not find that amount.

That is the opinion you formed?

The Lord Chief Justice: What he said was, Calculating from what he did find in the organs it gave that result.

Counsel: We will call them the calculated results. So that there was comparatively little in the stomach and kidney as compared with what you found in the liver and intestine?—There was less.

Now the second stage. Having ascertained that there was an alkaloid, next you tested to find out whether it was mydriatic. The physiological test would be conclusive on that point, would it not?—Yes.

Pouring a drop into an animal's eye, and finding that it dilated the pupil?—Yes.

Is that the test you used?—Yes; I used cats. I put a drop of the solution into a cat's eye, and then exposed the cat to a very powerful light. One pupil was widely dilated.

Of course, I am accepting what you say up to this point. On the physiological test you found the solution mydriatic; it was quite conclusive because it paralysed the pupil?—Yes, with all the four extracts, the stomach, the intestines, the liver, and the kidney.

Therefore you have ascertained now—first that it was an alkaloid, and secondly that it was a mydriatic alkaloid?—Yes.

I think you have told us that mydriatic alkaloids may be either vegetable or animal?—Yes.

The three vegetable mydriatics that you specified were hyoscine, hyoscyamine, and atropine?—Yes.

Is there a fourth vegetable mydriatic—cocaine?—Yes.

And perhaps there are several other vegetable mydriatics?—Yes, there are, which have slight mydriatic action. May I explain as regards the cocaine, it is not quite the same as the other three.

Tell me why?—Cocaine causes the pupil to enlarge, just as the others do, but if the eye is exposed to a powerful light the pupil contracts; it does not paralyse it.

Then we can quite fairly eliminate cocaine?—Yes, I think so.

Then it comes to this; the three main vegetable mydriatics are hyoscine, hyoscyamine, and atropine?—Yes, I think those are the only three we need consider.

Hyoscine and hyoscyamine being produced by the plant called henbane, and atropine from belladonna?—Yes.

Have those three vegetable mydriatics, namely, hyoscine, hyoscyamine, and atropine, the same chemical composition and exactly the same chemical formulae?—No; up to a few years ago it was thought they had, but in the *British Pharmacopœia*, the last edition, a different formula was given for hyoscine, and all the recent work on these alkaloids points to the fact that hyoscine has a slightly different formula from the other two.

The Lord Chief Justice: You say up to a certain time all three were the same; lately, through further researches, hyoscine has got a different formula?—Yes.

Counsel: When was it that they were discovered to be different?—About eight years ago, I believe.

Now, tell me what is the difference in the formula as ascertained now, in the light of the latest research, between hyoscine on the one hand, and the other two on the other.—Hyoscine $C_{17}.H_{21}.NO_4$, and atropine and hyoscyamine C_{17} H_{23} and NO_3.

In hyoscine, in the light of the latest research, 17 parts of carbon?—Yes.

And in the other two, hyoscyamine and atropine, 17 parts of carbon too?—Yes, the same.

As regards hydrogen, the latest research shows 21 parts in hyoscine and 23 in hyoscyamine and atropine?—Quite so.

The Lord Chief Justice: Is not the difference pretty plain; it is four parts of hydrogen and one part of oxygen; that is right, is it not?—No, my lord; two parts of hydrogen and one part of oxygen.

Counsel: The difference is two parts of hydrogen and one part of oxygen. Until eight years ago it was always recognized that those three had the same chemical formula?—Yes. I will not be certain about the eight years; it is somewhere about then.

Do you know for how many years it had been recognized in the profession that the formula for all three was exactly the same?—For a good many years—a number of years.

Tell me next, do putrefying bodies give off carbon?—Yes.

Do putrefying bodies give off hydrogen?—Yes; they give off compounds containing those elements.

And do putrefying bodies give off compounds containing nitrogen?—Certainly.

Therefore, to that extent, the constituents of a vegetable mydriatic alkaloid exist in animal mydriatics?—The constituents exist, but the combination is different.

I am now going to the processes that you applied in order to find out which mydriatic it was. Did you apply what is known as the Vitali test?—Yes.

Is that a test by which at last you arrive at something which is coloured violet and turns to dark red?—A purple violet colour is produced which fades.

Fades into dark red?—It fades; I would rather not have the dark red in.

The Lord Chief Justice: Purple violet colour produced which gradually fades away?—Fades away to a brownish colour.

Counsel: Is the arrival at that point (violet fading away to a brownish colour) characteristic of mydriatic alkaloids, both vegetable and also animal?—No; certainly not with the animal. It is with the vegetable.

Do you know this book, *Hamilton and Bodkin's Legal Medicine*?—No, I am not familiar with it.

You have heard of it, I suppose?—I am not sure that I have.

Have you heard of Giotto and Spiecke?—Yes.

They are celebrated Italian chemists or analysts?—Yes.

Are they recognized as high authorities?—I believe they are well known chemists.

Have you read that according to Giotto and Spiecke certain bromo atropines do give Vitali's reaction?—I have read that; but I have looked through the work of these gentlemen, and I have been unable to find any record of it. I do not accept the statement. I know that it is present in another book in addition to the one you are reading from, but I have been unable to find the statement in their original papers. Even if it is in them, I do not accept it, because it does not agree with my experience.

The Witness, having agreed with counsel's statement that the

Vitali reaction was common to hyoscine, atropine, and hyoscyamine, was asked whether the important test between them was not the melting point. In reply, he said: It is *an* important test, but not *the* important test. It is a test which can only be applied when one has a considerable quantity of the alkaloid to deal with.

Which do you consider the most important one?—The careful observation, with a lens and a microscope, of the alkaloid itself as to whether it is crystalline or syrupy—gummy—and also the bromine test which has already been mentioned—the obtaining of crystals. This gumminess was characteristic of hyoscine, while hyoscyamine and atropine were crystalline.

You arrived at the gumminess when you found out that it was an alkaloid, but before you had applied any test to find out whether the alkaloid was mydriatic?—Yes, that is so.

In other words, before you applied the physiological test to the cat's eye?—Yes.

Then gumminess, I gather from you now, was the result of these extractions, which resulted in your ascertaining that it was an alkaloid?—Yes.

Supposing that the alkaloid had, in fact, been hyoscyamine or atropine, might not gumminess have been the result, too, at this stage?—I think that most probably there would have been some crystals there.

But might there not, in fact, have only been gumminess?—There might possibly, but, on recrystallization, crystals would have appeared.

Gumminess. Now, that most possibly, if hyoscyamine or atropine, would be crystalline?—Yes.

Continuing, Dr. Willcox said the gummy extract could not possibly be hyoscyamine or atropine if the extracts were fairly pure. If the extracts were impure and had other materials in, then a gummy residue might have been obtained with atropine and hyoscyamine. He had applied the bromine test after the Vitali test—the test for vegetable mydriatic alkaloid. The bromine test was only of value in discriminating between the three alkaloids in question. Other things besides hyoscine gave the spheres of which he had spoken.

Further questioned as to the value of the melting-point test, Dr. Willcox said that if a sufficient amount of alkaloid could be obtained the test was a valuable one, but in toxicological work such an amount never could be obtained. It would mean an enormous dose.

Will you agree that if you could get enough it would be the most valuable test of all?—No, I would not agree with that.

Do you agree that the different mydriatic alkaloids have a melting point of widely different degrees?—Yes, providing that they are in a very pure condition.

Is the melting point of hyoscine 65°?—Yes.

Counsel: 65° Centigrade?—I will accept your figures.

I do not want you to accept them unless they are accurate. Hyoscine is 65° Centigrade; do you accept that?—I would like you to give me the three together, please.

I will put all three together. The melting point of hyoscine 65°, that of hyoscyamine 105°, that of atropine 115°?—Yes, those are right, except with regard to hyoscine; it is a gummy syrup, and it is very difficult to say what the melting point is. I should prefer to leave a stroke against that.

Approximately 65°; would that be right?—Well, it is very difficult to say when it does melt; it is a syrupy-looking stuff.

Then you accept hyoscyamine 105°, and atropine 115°, but you do not accept hyoscine 65° because it is difficult to tell?—Yes.

The Lord Chief Justice: Would not the gumminess get more liquid so that you could approximately tell?—It is very difficult to tell.

You agree that it is lower, but you say it is very difficult to fix the point because with the gummy substance you cannot tell when the point is reached?—Exactly.

Counsel: But you agree that the melting point of hyoscine is lower than that of the other two?—Certainly.

The witness was then questioned as to the gold chloride test, the alkaloid being dissolved in diluted hydrochloric acid, chloride of gold added, and crystallization allowed to take place. He agreed that it was a valuable test as the melting points of the different crystals were very different, atropine 148°, hyoscyamine 160°, and hyoscine 199°. He would also agree that it was perhaps the most valuable differentiating test between the three alkaloids, but always providing there was sufficient alkaloid for its application.

Re-examination.

The gold chloride test was the first process he had contemplated applying, but he found his solutions were not strong enough, and that if he applied it he would waste all his material unsuccessfully. In a poisoning case there was never enough material for the melting-point test in his experience. For the purpose of a poisoning investigation the tests used must of necessity be tests which applied to very small quantities.

Are the tests which you have applied real tests?—Oh, yes.

That is, you can absolutely distinguish this substance from the other substances that you were looking for?—Yes; I tried all these tests on the pure alkaloids themselves before I applied them to extracts from the viscera, and found them reliable and that they gave corresponding results.

Now, as the result of your tests are you able to say whether this substance was an animal alkaloid or not?—It was not an animal alkaloid.

You are able to say that to your own satisfaction?—Yes.

You are quite satisfied?—Yes.

You have told us that mydriatic animal alkaloids are produced in decaying bodies at an advanced stage of putrefaction. What was the most advanced in putrefaction?—The lungs were much the most putrefied of the organs.

Did you test them for animal alkaloids?—I tested them most carefully.

Did you find any at all?—The least trace—not enough to paralyse the pupil, but just to weaken it.

Further questioned on this point, Dr. Willcox said that the traces of mydriatic alkaloids in the lungs were so slight that he could not say whether they were animal or vegetable, and had excluded them from his calculation of the amount of alkaloids present in the organs examined.

You were asked about this process of extraction being long and elaborate, and you said it took about a fortnight; have you been in the habit of applying this test?—Oh yes, a very great many times. In the last ten years I have done it considerably over a hundred times.

Does it present any difficulties which you are not accustomed to deal with?—No.

When you have extracted this alkaloid, is it possible to confuse the gummy residue of the one with the crystalline residue of the other?—Not if you have a pure residue.

And did you have a pure residue?—Yes.

Have you ever found in all your investigations a ptomaine, that is to say, an animal alkaloid, which gave a purple colour with the Vitali test?—No, I have tested several hundreds of times, and recently on some viscera several years old, and I have been unable to obtain it in any single case.

Animal alkaloids never correspond to Vitali's test?—No, I have never found one, and I have tested specially for that hundreds of times

The Lord Chief Justice: Of course a considerable portion of your time is occupied in this kind of investigation; I mean, it is no novelty to you?—Oh no.

You would in the first instance test for animal alkaloids; and you have sworn that you did test to find animal alkaloids in this, if there were any?—Yes.

What I want to ask is this. You told Mr. Tobin, very fairly, that they are produced in what you call the advanced stages or late stages of putrefaction. Apart from your examination, were there any organs in such a stage of putrefaction that you would expect to have alkaloids produced?—No; not those that I examined for alkaloids first. The lung, which I examined two or three weeks later, was in such a state that there might have been some animal alkaloid there.

In that you found only a trace of any alkaloid—not sufficient to test whether it was animal or vegetable?—Yes.

Have you any doubt that it was vegetable alkaloid that you discovered, and that it was hyoscine also?—No.

Dr. A. P. Luff.

Crown Evidence in Chief.

Dr. A. P. Luff, Physician to St. Mary's Hospital, said that for seventeen years he had been Scientific Analyst to the Home Office and resigned about six years ago. He had heard Dr. Willcox's evidence and had repeated his tests with pure drugs. They were absolutely the right tests, and he agreed with Dr. Willcox's results. The poison present was undoubtedly hyoscine, judging by those tests. He had often tested for animal mydriatic alkaloids in every toxicological case during his period of office, but had never found them in a corpse. Before that he had conducted a long series of investigations upon animal alkaloids, and had once found a mydriatic animal alkaloid in some meat which he had put to putrefy in circumstances very favourable to putrefaction. He had applied the Vitali test to the mydriatic found in this meat, and it proved negative. The distinction between the animal and vegetable mydriatic alkaloids was absolute if the Vitali test was applied.

Cross-examination.

Cross-examined, Dr. Luff said that he had written a textbook on forensic medicine and toxicology, which was published in 1895. There had been no subsequent edition. It contained a passage to the effect that it was difficult to state positively the age of remains owing to variations in the depth and fashion of burial, the cause of death, the length of time between that event and burial, and differences in different bodies. He still held that view.

Re-examined, he said that he had not seen the remains in this case, and had not asked to do so for a very good reason. Remains changed so rapidly, that he could not have given an opinion on their age; but he could have done so if he had seen them when Mr. Pepper saw them, and nothing in his book invalidated that statement.

THE DEFENCE.

Dr. G. M. Turnbull.

Defence Evidence in Chief.

Dr. G. M. Turnbull said he was Director of the Pathological Institute at the London Hospital, and also a member of the Pathological Society of Great Britain; admission to it was by vote. The Pathological Institute was the largest in the United Kingdom. Under his supervision in 1907, 1908, 1909, the average number of *post-mortem* examinations was 1,251, and under his supervision complete microscopic investigations were carried out. He devoted his time to the work and the microscopical examination of material sent down by the surgeons. He had seen the piece of skin and flesh on September 9th and on October 15th and 17th. On the first occasion a cut had been made from one side to the other of the horseshoe mark,

including the so-called scar. Three slices had also been made. His examination of them enabled him to say that what was called a scar could not possibly be one. The grounds of his opinion were that he found certain structures which had never been found in a scar before. They were two groups of hair follicles, in which the hairs were visible in cross section. There were also in two of the sections in relation to these hairs a small piece of a sebaceous gland, and another large piece of the same sebaceous or fatty gland in another section. A bay of subcutaneous fat could also be found within the area described as a scar. What was described as a scar was due to the skin having been folded over and something having been between the fold, and thus producing pressure, which dried the skin at the fold. In a cut across what the prosecution called a fold and what was called a scar he found the same horny appearance, whereas the appearance of one and the other ought to be different.

Cross-examination.

Are you able to form an opinion as to what part of the body the skin and flesh under discussion comes from?—I cannot say definitely, but I have a very good idea.

From what part of the body does it come?—I think that the best explanation is the lower part of the abdomen.

The Lord Chief Justice: If you suggest anything else, do so. If you agree that it comes from the lower part of the abdominal wall, there is an end of it.—Well, after that last examination, I considered that the origin from the lower part of the abdomen was the most satisfactory.

Then you do agree that it comes from the lower part?—I will not disagree.

Counsel: But if you are going to suggest any other part of the body, say so. I am most anxious to get this quite clear. You say the best explanation is that it comes from the lower part of the abdomen. Do you, with your great experience, agree that it does come from the lower part of the abdomen?—I will admit——

I am not talking about what you admit. You are not here to make admissions. You are asked to say, with your great experience, to the best of your honest judgement, from what part that was taken?—Then I would say the abdomen.

The Lord Chief Justice: Please remember that you are not here as an advocate but as a witness, and the word "admit" is not the right word to use.

Counsel: When you first examined that piece of flesh did you form a different opinion as to the part of the body it had come from?—Yes.

Did you express that opinion in writing?—May I answer your last question again? When I said, "Yes," I should have said——

Did you form an opinion that that came from a different part of the body?—No; I did not give a definite opinion.

Did you put your opinion in writing?—I did.

The witness then said he had not been present during the evidence of the medical witnesses on the other side. It was not quite because he did not wish to be present; he was not asked to come.

Then it was not by your wish; which do you mean?—It was not by my wish, but I think I had said at the very beginning, when I was asked to undertake this examination, that I hoped it would not mean having to give evidence.

Did you give your first opinion on that understanding?—I had been promised that I would not be called at all as a witness.

You gave your first opinion upon the understanding that you would not be called as a witness?—No, I would not say that. I went to see these remains on that understanding. Before I gave my first opinion I was promised I should not be called as a witness.

The medical witnesses for the prosecution had been cross-examined on what he had stated in his report to the defence. He only knew of the reasons they had since given for their opinions from seeing a copy of the depositions.

You did not hear the questions put?—No.

And you did not hear the answers given?—No.

You had the running record, which is neither question nor answer, which appears on the depositions, to guide you as to what reasons they gave for their opinions?—I had the officially signed depositions, I believe—a copy—and I had an account sent to me.

After you had seen their answers to the questions put upon your opinion, did you alter your opinion?—Not because of any such questions—oh!—it must be so.

Please answer my question.—I altered my opinion considerably after the second time on which I examined that piece.

That is not an answer to my question. I asked you whether you altered your opinion after you had seen the reasons they gave for their opinions?—Yes, it must have been after that.

In your opinion which you first gave, did you state that the aponeurosis was absent from that piece of flesh?—No; I said that I thought there was an absence of the aponeuroses characteristic of the abdomen.

The Lord Chief Justice: That is not the same thing as saying that aponeurosis was absent. If the aponeuroses characteristic of the abdomen are absent, are there aponeuroses there or not?—There are aponeuroses there, or were there, my lord.

Counsel: Your opinion now is that this is part of the abdominal wall—the lower part?—Yes.

Do you find there the abdominal muscle?—I find——

Will you answer the question, Yes or No? Did you or did you not find the abdominal muscle there?

The Lord Chief Justice: You shall add anything you like, but just answer the question first.

Counsel: Did you find there the abdominal muscle?—Which abdominal muscle?

The rectus abdominis?—Yes.

You did?—I think so.

Is that muscle in life attached to the pubic bone by a tendon?—Yes.

Do you find there part of the tendon which had attached that muscle to the pubic bone?—I had not seen that.

Do you see it now?—No.

(Dr. Spilsbury was then asked to point out to Dr. Turnbull what was suggested to be the tendon in question, and did so.)

The Lord Chief Justice: Now, what is your answer?—It is not where I should expect it from the dissections I have made.

You are asked whether you can see the presence or traces of the presence of the tendon which attaches the muscle to the pubic bone. Your last answer is that the abdominal muscle is attached to the pubic bone by the tendon. Do you say that it is there or not?—No.

You say it is not there?—I do not think this is it.

You say you do not find it?—There is a tendon there, and, if the muscle is the rectus, it is.

Please answer this one way or the other; it is most important. Do you find that tendon there or not?—Yes.

Have you any doubt that this piece of skin is part of the abdomen?—Yes.

You have?—Yes.

The Lord Chief Justice: Do listen, Dr. Turnbull.

Counsel: What part of the body do you suggest it comes from if not from the abdomen?—I have told you, but I do not think you can have a better explanation.

What part does it come from if not from the abdomen?—From the upper part of the thigh.

The Lord Chief Justice: I am in a great difficulty here. I understood this witness to say in examination in chief that in his opinion this piece of skin did come from the abdominal wall. That was the best suggestion he could make. I think now we must proceed on the hypothesis that it does come from the abdominal wall, in accordance with the evidence of the other witnesses.

Counsel: Now, will you kindly read me what you said in your original report about this piece of flesh not coming from the abdominal wall?—"We are of opinion that that skin does not come from the abdomen for the following reasons." (The reasons given were that it was too coarse and the sebaceous glands were too large and too prominent; that the structure of the muscles and the arrangement of their fibres would not be easily accounted for, and that the aponeurosis was not present. The term meant Dr. Wall and himself.

And you now tell us that the characteristic aponeurosis is present in that piece of skin?—Yes.

The Lord Chief Justice: What length of examination had you and Dr. Wall made of this specimen before you wrote that report when you said that there was no aponeurosis present?—I should say twenty minutes, my lord.

Counsel: Do you find there some transverse muscles on the left side on the deepest surface of the specimen?—Yes.

The fibres running in two directions, one superimposed on the other?—In one direction, certainly.

Do those correspond with the fibres of the internal oblique muscle and the transversalis muscle of the abdomen?—They could, I think.

The Lord Chief Justice: You are asked do they correspond with what would be shown by the internal oblique muscle and the transversalis muscle of the abdomen?—It is really impossible to say that.

The Lord Chief Justice: What did you mean by saying that they *could* correspond?—I said they might correspond, but they are so altered that you cannot see.

Counsel: If they correspond would not that show beyond question that they came from the abdominal wall?—Yes.

Do you know the method of stitching the abdominal wall used in America?—I have got some fourteen methods down.

The method by which the stitches do not come to the surface except at the beginning and at the end?—There are several methods.

So that there would be only one stitch there if that method of operation were used?—Yes.

Did you find the mark of a stitch there?—I did not.

Is it a common thing for part of the epidermis to be enfolded when the abdominal wall has been divided and sewn up again?—No; not common.

Have you seen it happen?—Yes.

In how many cases have you seen it happen?—I could not say; very few. The surgeon always takes some instruments and turns the edges up to prevent that after he has put in the suture.

I put it to you that it is not at all uncommon?—I do not agree.

It does happen?—It can happen.

And does?—And does; yes.

You have seen it yourself?—I have seen the edges turned in.

The Lord Chief Justice: The result of the edges being turned is that a bit of the epidermis gets enfolded or below the folds of the scar?—I have only read of that. I have never seen it.

So that you are not familiar with the appearance of such a case?—Yes, but not from operation; from accidents it is very familiar.

The Lord Chief Justice: Are you familiar with the appearances of a scar where the epidermis has got enfolded below the

folds of the scar?—Yes; but not an operation scar—an accident scar. The appearances are similar.

How do you know if you have never seen them?—I have read about them.

I am asking you whether you are familiar with the appearance of an operation scar where part of the epidermis has been enfolded in the wound?—I have never seen that at all.

Then you cannot tell me what takes place when such a wound heals?—Yes, I have seen the phenomena when, for instance, a man has fallen upon his hand here and cut his hand, causing an incision like an operation, and it has been allowed to heal, and he has got such an included epidermis—from an accidental incision, not an operation incision.

That is the nearest you have ever come to seeing such a case?—Yes.

Now, I put it to you that the inclusion of epidermis in the incision made for the purposes of an operation might be easily mistaken for sebaceous glands?—For one it might be, but not easily; I disagree from what I have read, and I think we must learn. It might be mistaken for one sebaceous gland, but not for more.

The Lord Chief Justice: I do not quite see why if it may be mistaken for one it may not be mistaken for two, if there happen to be two included in the piece of flesh?

What Mr. Muir is putting to you is that where you get the flesh included you might find one or more sebaceous glands in between the lips of the scar.

You have said that it might be mistaken for one sebaceous gland but not for more. We do not understand what you mean by that. What is it?—I know the appearance of these inclusions because I know that the accidental ones are similar to those in operations. I have never seen one in an operation scar, but I have read, of course, about them; and such an inclusion might be mistaken by somebody unaccustomed to the microscope.

Counsel: We are not talking about people unaccustomed to the microscope. We are talking about people like Dr. Spilsbury; that is the person I am talking about. Do not talk about people unaccustomed to the microscope. I am talking about people accustomed to the microscope, and I am suggesting to you that persons accustomed to the microscope might be deceived?—No, I will not agree with that.

Is epidermis composed of cells called epithelial cells?—Yes.

May those cells be mistaken for sebaceous glands?—I think not.

Or for hair follicles?—Yes; the cells binding hair follicles have a similar appearance.

The Witness introduced with his further answers statements that follicles with hair in them could not be mistaken for epithelium, and finally the Lord Chief Justice pressed upon his notice that he was not being asked about the appearance of hair, but that of the follicular epithelium.

Counsel: Might the one be mistaken for the other if included in a clean scar?—Would you repeat the question to me.

No sir, I won't. The horny appearance you say is due to drying?—Yes.

When did you see it first?—The first occasion we saw it was on September 9th.

It had been out of the grave since July 14th?—Yes.

You never saw it before that?—No.

Might it have dried between these two dates?—No—the skin might have dried, yes.

During re-examination Dr. Turnbull said that from start to finish he had never wavered in his opinion that the mark was not a scar.

The Lord Chief Justice: I want to ask you two questions. You said in your first report that you and Dr. Wall were of opinion that the aponeuroses so characteristic of the abdominal wall were not present. When did you change that opinion?—I had done a great many dissections and had macerated certain portions of the abdominal wall to see whether these aponeuroses would lose what I thought were their characteristics.

I am not asking you that; I am asking you when you changed your opinion?—I definitely wrote a different opinion after the second examination.

I asked you when you changed your opinion. Can you give me a date?—On October 15th.

Up to that time you had let the defence be under the opinion that what you thought was the absence of aponeuroses was conclusive against its being the lower part of the stomach?—No, I had simply said——

Do attend. Had you told them that you had changed your opinion before October 18th?—No.

Up to that time you had let the defence be under the impression contained in your first opinion?—Yes—oh no, I beg your pardon—I had asked if he could not see the specimen again to confirm our opinion.

What I really want to know is this. You have read out a statement in your report that the skin and attached flesh came not from the lower part of the abdomen but from what you call the root of the thigh. When did you first communicate to the defence that that opinion of yours had changed?—On October 15th.

You have now made it plain, but put your hand on your body and indicate where you mean by the root of the thigh.—Just here.

Below the rump, so to speak?—Yes.

The Lord Chief Justice having asked Mr. Pepper to go to the witness-box and show Dr. Turnbull the dimensions of the scar which he had mentioned in the course of his evidence, began to question Mr. Pepper, but first asked Dr. Turnbull if he had himself seen old scars of various operations, and received an affirmative reply.

The questions then put to Mr. Pepper resulted in his stating that at the bottom the scar measured $\frac{7}{8}$ in. About $1\frac{3}{4}$ in. higher up it measured $\frac{1}{2}$ in., and $\frac{1}{4}$ in. at the top of such part of the scar as the skin found showed.

Pins having been inserted by Mr. Pepper at the places mentioned by him, the Chief Justice said: Now, Dr. Turnbull, I will repeat the question that I put to you. Do not assume that that is the whole of the mark, but there is what is pointed out to you there. Is it in accordance with your experience that the mark of a scar from ovariotomy is wider at the lower part of the abdomen than higher up?—No.

That is not in accordance with your experience?—No.

Now you were not here in court, but have you read that one of the witnesses here said that he had performed many hundreds of operations, and that the scar, as a rule, was wider at the bottom than it was at the top?—I read that, but do not agree with it. He added that he had never performed any operation himself, but had examined ovariotomy scars but could not give their number. In his experience it was untrue to say they were generally wider at the bottom than at the top.

Now does the fact that there is that difference of breadth in what I will call a mark affect your judgement at all or not?—Yes.

To what extent does it affect your judgement?—If it is said to be a stretched scar I should have thought it would be stretched to its widest in a different position.

I am talking about the scar on the lower part of the woman's stomach?—It might be stretched 1 in. The fact that the mark was wider at the bottom was, in his opinion, an argument against its being a scar.

Now, I want to ask you this, if you please. Do you say that a mark of that kind could be caused by folding—that is to say, a mark which is wider at the bottom and narrows up?—Yes.

You think it could?—Yes.

The Lord Chief Justice: That is all I have to ask.

Dr. Reginald Cecil Wall.

Defence Evidence in Chief.

Dr. Wall said he was M.A., M.D. of Oxford, F.R.C.P.Lond., and M.R.C.S. He also obtained the Fitzgerald Exhibition, which, in answer to the Lord Chief Justice, he explained was awarded after an examination in classics, and had nothing to do with medicine. He had also obtained the Andrew Clark prize in medicine and pathology at the London Hospital. He was an assistant physician there, and at the Brompton Hospital for Consumption. Until the beginning of this year he was one of the pathologists at the London Hospital, and was one of the examiners in materia medica at the Apothecaries' Hall. He was also a Fellow of the Royal Society of Medicine and of the Medical Society of London, and was the author of various medical works. For two years he had been Demonstrator of Physiology at the London Hospital. He had seen the piece of skin and flesh in question, first on September 9th, secondly on October 15th, and thirdly on October 17th. He was present when the incision was made across each limb of the so called horse-shoe, the site of what was said to be a scar, but not when the pieces were removed for examination. His examination of the skin on October 15th commenced at 11.30 and finished at 4.15. It was not a microscopical examination, simply with the eye and a hand lens. At the second examination on October 17th he and Dr. Turnbull saw the piece of skin for a short time to identify certain points that they wanted to confirm, and the remainder of the time they were present they were examining the microscopic sections prepared by Dr. Spilsbury. The time spent over that examination was a little over two hours.

As the result of his examination he concluded there was no scar.

Asked for the reasons he said: I could not see on inspection by the naked eye or with the hand lens such an appearance as I should have expected to find if there had been a scar in that situation. I found appearances which I could explain much more easily on the supposition that the skin had been folded in that region. Secondly, after the incision which had been made by Mr. Pepper very kindly, I did not on examining the cut surfaces of the edges of the skin find such an alteration in structure as I should have expected had there been originally a scar, and on comparing the cut surface at the site where the scar was alleged to be I did not find that the appearance of the cut surface differed from the appearance of the cut surface of the other part of the groove where it is admitted there is no scar.

Asked to explain what differences he would have expected to find, he said: That is a very different question to answer. The different new tissue may assume various appearances in different circumstances. All that I should have expected would be that it presented a different appearance — not the same appearance. He added that on examination with the naked eye he saw no structures which could not occur in a scar, but on microscopical examination he observed in the region called a scar traces of hair follicles, five in number, and a sebaceous gland, outside that region there were other hairs and other sebaceous glands.

Dr. Wall was then asked to explain what he meant when he had spoken of folding and to show the jury how the appearance of folding might have occurred, and did so. A number of questions and answers followed, from which it appeared that Dr. Wall thought the skin must have been rolled twice, and

that between part of the fold there must have been some substance, some fabric, and that something must have prevented the skin unrolling.

The Lord Chief Justice: We want to follow this evidence closely; it is very important on this particular part of the case. You say to produce what you have described it must have been rolled over twice, and you said accidentally rolled over. Would it remain in the rolled-over position if it was put or thrown down without something being on the top of it?—No, I do not know it would have.

If rolled over twice, as has been described, what would keep it in that position until the superincumbent weight comes upon it?—It might have been rolled over by something falling upon it.

Twice?—Well, if we throw a cloth into a basket it will roll over a good many times.

You think it could have been rolled over twice by something?—I think it is very easy to explain it in that way.

Dr. Wall was then asked whence he derived his information as to the evidence given in the case. He said he had had a copy of the police-court depositions sent him. As for the present trial he had had the evidence sent to him.

The Lord Chief Justice: Do you mean a shorthand note of it, or what?—I have had a copy of the evidence sent to me. I suppose it was taken from the shorthand notes.

The Lord Chief Justice: We must find out what was sent.

Dr. Wall then said: I had a print taken from a newspaper—the *Daily Mail*.

Cross examination.

You have been dependent, have you, for the medical details given by those gentlemen who were called as expert witnesses in this case for the prosecution upon a newspaper report?—I am afraid I did not quite catch what your question was. Have I been dependent for what?

For the medical details given by the other witnesses?—Yes, I have.

Dependent on a newspaper report?—Yes.

Have you had no other means of knowing what the reasons were that they gave for their opinions?—No.

Were you a party to a report before any of those experts were cross-examined at the police-court?—Yes.

Did you hear any of the medical experts for the Crown give their evidence at the police-court?—No. The only medical witness that he had heard examined or cross-examined was Dr. Turnbull. He agreed with him practically entirely. There was no essential detail in which he disagreed, nor any detail at all. He had seen in the depositions sent to him the following statement: "If Dr. Wall and Dr. Turnbull say that there is an entire absence of aponeurosis, I should say it is due to forgetfulness or defective observation." It was a question professedly put in consequence of that report.

He was then questioned as to whether the words used in the deposition and the words used in the report did not amount to the same thing. Counsel suggested that to say that the aponeuroses characteristic of the abdominal wall were not present was the same thing as saying there was entire absence of the aponeuroses of the abdominal wall. But the witness did not agree. He would admit, however, that since the report was drawn up they had modified their opinion as to the absence of the characteristic aponeurosis. At the time he was asked to make an examination of the remains, nothing was said as to his giving or not giving evidence. There was a further examination at the joint request of Dr. Turnbull and himself, after they had read the evidence of Mr. Spilsbury, Mr. Pepper, and Dr. Willcox. They were asked to give evidence on October 15th. This was after they had made the second examination, but before they had made the third. They made a fresh report, a verbal report, not a written one.

Counsel: Withdrawing anything you had said in the first report?—Certainly.

What was it you withdrew?—We said we were not so certain that a piece of skin did not come from the abdominal wall.

What is your opinion now?—My opinion now is that it may have come from the abdominal wall.

What is your opinion as to where it comes from?—My opinion is that there is not sufficient evidence to say definitely where it comes from; I think it does come from the abdominal wall, probably.

The Lord Chief Justice: Now, Dr. Wall, can you suggest at all where it could have come from except the abdominal wall?—The two parts of the body from which it may be derived, as we thought when we first saw the piece of skin, were the lower part of the abdomen and the upper part of the thigh on the inner side.

And you did (quite rightly I dare say according to your then lights) report for the purpose of cross-examination that it did not come from the abdominal wall?—We reported in our opinion it probably did not come from the abdominal wall.

That is the opinion you have modified?—Yes.

With all your present lights with what you now know about the aponeurosis have you any doubt that it did come from the abdominal wall?—I cannot say I have no doubts.

Dr. Alexander Wynter Blyth.

Defence Evidence in Chief.

Dr. A. W. Blyth, in answer to questions, said he was a Member of the Royal College of Surgeons and a Fellow of the Institute of Chemistry, and had various other qualifications, including Fellow of the Chemical Society. He was the author of a work entitled *Poisons, and their Effects and Detection.*

Dr. Willcox told us yesterday that going through the ordinary processes he at last extracted a gummy substance. Now, is a gummy substance characteristic of hyoscine and not of hyoscyamine, atropine, or any animal alkaloid?—Certainly not. You can have a gummy substance in extracting various alkaloids. Often the slightest impurity—especially with regard to hyoscyamine—causes it not to crystallize. By the term gummy substance I presume is meant something that is not crystalline—a sticky substance.

The Lord Chief Justice: Quite right. Dr. Willcox said hyoscyamine might crystallize, hyoscine did not; do you agree with that or not?—I do not agree—emphatically.

Counsel: Do you say that hyoscine may crystallize?—Hyoscyamine may crystallize.

I asked you as to hyoscine?—Hyoscine is very difficult to crystallize under any circumstances.

The point is this. It is said that atropine crystallizes and hyoscyamine crystallizes, but hyoscine does not. Do you agree with that or not?—I do; that would be in a pure state. He added that he knew that Vitali's test was characteristic of the vegetable alkaloids, but had no experience of a mydriatic alkaloid obtained from animal tissues. Whether those alkaloids reacted to the test or not he did not know. No one knew.

It does give the purple colour in the three vegetable mydriatic alkaloids but you have no experience of its giving it in animal alkaloids?—Yes.

Dr. Willcox said that small round spheres were produced. Are those round spheres characteristic of hyoscine alone, or are they also found with hyoscyamine and atropine?—I have not been able to get them. I have attempted to get what Dr. Willcox has stated according to the depositions that have been forwarded to me, but I must confess that I have not been able to distinguish between the atropine, hyoscyamine, and hyoscine by hydrochloric acid, as Dr. Willcox has done. Possibly he manipulated it in some particular way, but——

The Lord Chief Justice: You have not been able to do it?—I have not been able to do it.

Counsel: Does any one know whether those round spheres might be produced at last in the case of animal alkaloids?—No.

Dr. Willcox told us that in the lungs, which were most decomposed, he found a trace only of any alkaloid—so small a trace that he could not say if it was animal or vegetable. If it was animal, would you expect that he would find most of the animal alkaloid in the most decomposed part, the lungs?—I should not have expected so, because animal alkaloids arise, it is well known, at a particular stage of putrefaction, and when that stage is passed any animal alkaloid that has been produced becomes more or less destroyed, so that in the same decomposing tissue at different times of its putrefaction you would never expect to find the same amount. It has gone a stage beyond the time of production.

Cross-examination.

Have you ever tested a mydriatic animal alkaloid?—Never.

Have you read Dr. Luff's evidence?—Yes. I have read all the evidence.

Have you read that he has himself found a mydriatic animal alkaloid in putrefied meat?—Yes.

And has tested it?—Yes.

And that it did not give the purple colour on Vitali's test?—Yes.

Do you agree with that or not?—Oh, I dare say he is quite correct. I do not dispute for a moment that there may be many mydriatic alkaloids.

The Lord Chief Justice: This gentleman has said he had no experience of animal mydriatic alkaloids.

Counsel: Then you are speculating at large?—I do not know about speculating.

Do you know of any animal mydriatic alkaloid except metaline?—That particular one was investigated, but there are others that have not been thoroughly investigated.

The Lord Chief Justice: Do you know of any other?—I know of none by specific name, except under the name of mydriatic alkaloids.

Counsel: Is not that the only mydriatic animal alkaloid that you can give a name to?—Well, one was separated in 1869 by Sonschein, and he gave it no name, but it seems not to have agreed with metaline.

Can you give any name to any other animal mydriatic alkaloid but metaline?—No, I cannot, because they are unnamed.

Have you any experience of them at all?—Not practically.

In your opinion, is it possible to make a mistake between animal mydriatic alkaloids and vegetable mydriatic alkaloids?—I think the evidence points that they are the same thing.

Would you mind answering my question?—Is it possible to make a mistake between the two?—You would like me to answer "Yes" or "No," but that would not be fair. In my opinion some of them are identical, therefore it is possible to make a mistake between the two.

Mr. A. Wynter Blyth's attention was then drawn to the 1895 or last edition of his book. On p. 485 appeared a statement that when the existence of ptomaines first became known it was feared they might interfere with the detection of poisoning cases, but further research had conclusively shown that no ptomaine was known which so closely resembled a vegetable poison as to be likely in skilled hands to cause confusion. Was this a correct statement?—No, not absolutely so. I have altered my opinion since I wrote that book.

Have you published that altered opinion?—I have not; I have not had an opportunity yet.

Not in any paper read before any society?—No.

When did you alter your opinion?—I have altered it lately.

How lately?—During this month, in reading up the various papers—foreign papers.

For the purposes of this case?—In connexion with this case, of course, obviously.

For the purposes of this case you have altered your opinion?—I have, yes; I think there is strong evidence that there is in putrefying tissues a substance very much resembling the mydriatic alkaloids produced.

Did you read that Dr. Luff said this: "I think it quite impossible to mistake animal for vegetable alkaloids if Vitali's test is applied"?—Yes, I have read that.

Was it since you altered your opinion that you read that, or before; he said it yesterday?—What did you say?

Was it since you altered your opinion that you read that? He said it was impossible to mistake vegetable for animal alkaloids if you properly applied Vitali's test.—Oh, I disagree with that entirely, because some of the Italian chemists declare that they have got different reactions.

Who are those Italian chemists?—I forget their names; there is one Giotti.

Have you searched their original papers?—I have not; I have only seen extracts.

Dr. Willcox has said that he searched the original paper, and that statement is not to be found in it?—Well, I cannot help that; I have not searched for it; I have not had time.

The Lord Chief Justice: Can you refer to any book, up to any date you like, which says that animal alkaloids will give the purple colour under Vitali's test?—I have no book.

Speech for the Defence.

In the course of his speech for the defence, Mr. Tobin said that one thing needed for the murder was a dextrous hand, well versed in anatomical operations. Dr. Crippen never conducted a *post-mortem* examination in his life. The Crown had not been able to suggest he had any dexterity in anatomy. Proof positive was also needed that these remains had been buried since 1.30 on February 1st of this year. Dr. Marshall, you will remember, said Mr. Tobin, told us that in such conditions as the conditions obtaining in this case remains might keep in an excellent state of preservation for some years. Proof positive, continued Mr. Tobin, is also lacking that the remains were those of a woman. The anatomical grounds for such a conclusion, Mr. Pepper told you, were wholly wanting.

The Crown case is that Belle Elmore underwent an operation and that there was a scar, which was found upon the flesh. There is also, admittedly, a mark caused by the folding of the skin. Are you persuaded that the other mark was not caused in that way, too? Dr. Turnbull has told you he sees with a microscope structures which could not have been there if the mark had been a scar.

Then there is the hyoscine. Dr. Willcox says he found traces of a vegetable alkaloid. May not the traces have been those of an animal alkaloid produced after death, as a result of putrefaction? Has science probed these matters to the bottom? Eight years ago the chemical formula for the three vegetable alkaloids was the same. Who knows what further research may not bring?

Speech for the Prosecution.

Mr. Muir, in the course of his speech for the Crown, said: No medical man can say with certainty on anatomical grounds that those remains are the remains of a woman. Further, anatomical grounds are the only grounds upon which, as medical men, they would be justified in forming any opinion at all.

The flesh has been produced here, and I observe how bravely you did your duty in regard to that ghastly exhibit. I would not have shirked the ordeal if I could have been of any assistance to you, but fortunately I had the assistance of my friend, whose help is much more valuable than mine, and I was spared the duty. (Mr. Muir was here referring to his junior, Mr. Oddie, who has studied medicine in addition to law.) I sympathized with you in having to do it, and admired the way in which you did it. That piece of flesh was one of the most important things, perhaps the most important thing, in the case.

Was that piece of flesh a piece of the flesh of Belle Elmore? It was said by the witnesses for the Crown to be a piece of the lower abdominal wall, and to bear an old scar. Belle Elmore had been operated upon in that region in the year 1892 or 1893. It was disputed by my learned friend, in opening, that the flesh was part of the abdominal wall. He suggested that his medical evidence would leave your minds in such doubt as to that being part of the abdominal wall of any human being that you would be bound to acquit his client. What is the history of the evidence on that point?

I can summarize it in three sentences. Mr. Pepper, a surgeon of the greatest experience, who in practice in London has himself performed hundreds of operations, and has seen the scars, after they have healed, which have been caused by these operations, said they were just such scars as this—wider at the bottom, narrowing towards the top. Dr. Willcox, a surgeon of great experience, and Dr. Marshall, the police surgeon, also saw this flesh when it was fresh, before it had been preserved, as it had to be preserved, in order that it might be produced in this court.

All three saw it. All three say it is a scar. In the witness-box at the police-court they were faced with cross-examination based upon the report of Dr. Turnbull and Dr. Wall, that that piece of flesh did not come from the abdominal wall at all, but that it came from another part of the body. These two men were obliged to admit in that witness-box that they were absolutely mistaken. Yet these are the two men who did not scruple to give a report of a twenty minutes' examination of a piece of human body to the effect that three distinguished colleagues had been talking nonsense in the witness-box on oath.

Their report having been put to Mr. Pepper, and cross-examination having been based upon it, we have recantation—recantation and confession of incapacity, of the most gross carelessness and rashness on the part of these two gentlemen. These two men, who have so recanted and have so confessed, are the two men upon whose evidence you are asked to say that Mr. Pepper, with his vast experience, and Dr. Willcox, who, acting for the Home Office, has probably conducted more of these inquiries than any other living man, except, perhaps, Dr. Luff, are absolutely mistaken.

Dr. Turnbull has examined the piece microscopically, so have Dr. Spilsbury, Mr. Pepper, and Dr. Willcox. All Dr. Turnbull can do is to say, in answer to me, that a person unaccustomed to the use of the microscope might make a mistake about it. As though I were talking about a person unaccustomed to the use of the microscope! Did he mean to suggest in that innuendo that Dr. Spilsbury was unaccustomed to the use of the microscope? Was that the suggestion? I hope not. You did not see the things in the microscope, because they would not convey to your minds any definite or certain impression, and so you are left to judge between Dr. Willcox, Mr. Pepper, and Dr. Spilsbury on the one hand, and Dr. Turnbull on the other, by the light of what you know of Dr. Turnbull's competence and caution and with regard to that twenty minutes' inspection and that joint report with Dr. Wall.

It was suggested that this was not a scar at all—that it was caused by a fold. You have had the advantage of having the specimen and the surgeons before you, and seeing and judging for yourselves the weight and the authority of the evidence upon that point, and I do not propose to detain you further than simply to point out the mistakes which Dr. Turnbull made. He was wrong as to the part of the body from which this flesh came. He was wrong as to its not having the characteristic aponeuroses of the abdominal wall. He was wrong as to the absence of the tendon and the transverse muscles. All these mistakes he has had to confess in the witness-box. You will judge upon which, the evidence for the Crown or the defence, you can rely.

As for Dr. Wall, I never heard anything more extraordinary in the witness-box in my life than what he was pleased to call his reasons. "If it were a scar," he said, "I should have expected to find something different from what I did find." Nothing more than that, to put against the reasoned evidence of Mr. Pepper, Dr. Willcox, and Dr. Spilsbury. Is that a piece of the lower abdominal wall of a human being? Your answer, in my submission, must be "Yes." Has it got a scar upon it? Your answer is the answer which you have formed upon your careful examination of this piece of flesh, and that is a matter for you. Is it a scar upon the body of a woman? The evidence of Mr. Pepper is emphatically yes, because there is that stretching at the bottom of the scar in a woman which does not take place in the case of a man. Then if a woman—if a scar at the lower part of the abdomen—from whose body did it come?

As for the age of the remains, medical men, exercising the skill and knowledge that they have, who saw those remains at the time they were disinterred, express the opinion that they were buried from eight to four months. What is the suggestion on the part of the defence?

It was said that the prisoner had not the opportunity or the skill necessary to the burial and mutilation of these remains. As to his skill in anatomy or his lack of it, you will have to decide upon the evidence which has been given. His diploma, signed by a professor of anatomy or surgery, showed that he passed or satisfied the authorities of the college upon the subject. There is his own statement that he attended hospitals in London before taking his degree with the purpose of witnessing operations. There are the endorsements on his diploma showing he was practising in different cities in America, which qualified him to practise in all the branches named on it. Mr. Pepper told you that once a man learnt how such removals were done it would not matter whether he practised it for ten years or not. It is not a delicate task which requires constant skill and practice to do it with accuracy. It does require medical knowledge, and some degree of dexterity, such, says Mr. Pepper, as would be acquired by going through the medical school, and would not be lost by ten years of want of practice.

I won't detain you by going at any length into the question of the finding of the hyoscine. What is said by my learned friend, even to the last? It was unfortunate, he says, that Dr. Willcox knew, before he found the hyoscine, that the prisoner had purchased hyoscine. Having made that suggestion, and having said in the same breath he was making no suggestion, what else has he got to set up against the evidence of Dr. Willcox and Dr. Luff?—Dr. Wynter Blyth.

Gentlemen, scientific witnesses, so-called, sometimes make sorry spectacles of themselves in the witness-box, but was there ever a sorrier spectacle than Dr. Wynter Blyth in that box? Having read to him from his own book this passage, "Further research has conclusively shown that at present no ptomaine is known which so closely resembles vegetable poison as to be likely in skilled hands to cause confusion," he says that since he has been instructed in this case he had altered that opinion, upon the authority of some supposed statements of two Italian analysts, which supposed statements Dr. Willcox had investi-

gated, and found that, so far as the original papers went, they had never made the statement at all! That is the evidence on the question of hyoscine, Dr. Wynter Blyth against Dr. Luff and Dr. Willcox, and I do not think I should be justified in taking up your time in going again through the tests which were applied to discover whether this was hyoscine or not, except for this one purpose—to point out that my learned friend, Mr. Tobin, is mistaken in what he addressed to you in regard to Vitali's test. Vitali's test has nothing whatever to do with the brown spheres. It is the test which distinguishes between animal and vegetable alkaloids.

A vegetable alkaloid, says Dr. Luff, gives a purple colour with Vitali's test; an animal alkaloid does not. Dr. Luff has himself experimented with the test, the object of which is to distinguish between the two classes of alkaloids. The bromide and crystalline tests distinguish between the three vegetable alkaloids. Atropine and hyoscyamine form crystals like common table salt with the bromide test; hyoscine gives a gummy residue, like syrup, and forms the spheres instead of crystals. Dr. Willcox says his extracts were pure, because he repeated the experiments with pure alkaloids, purchased from the chemist, and they gave the same results. The only suggestion made by Dr. Blyth that, if there was some impurity, there would be difficulty in getting a crystal deposit from the two others falls to the ground.

Summing up.

The Lord Chief Justice, in the course of his summing up, said that it was not now seriously disputed that the remains were those of a woman; but it was true that Dr. Willcox, or one of the witnesses for the Crown, said with very great candour that a scar would not indicate a man or a woman, because you might have a scar in that place—the middle of the stomach—upon a man.

After indicating the reasons for and against the belief that the remains if those of a woman were those of Belle Elmore, the Lord Chief Justice said he now arrived at the battle-ground in the case, the piece of flesh. I am going to remind you of what the dispute is. For that purpose I will very briefly take the evidence of Mr. Pepper and Dr. Turnbull, who are the two rivals. Mr. Pepper says it undoubtedly comes from the lower part of the abdomen of a woman. It is not to be forgotten that when cross-examining at the police court on the instructions of the report of Dr. Wall and Dr. Turnbull, Mr. Newton, the solicitor for the defence, was instructed that it never came from the abdomen at all, and you heard in court yesterday from Dr. Turnbull and Dr. Wall the reasons for that statement, which they then made with every confidence, that as there were no characteristic aponeuroses it could not be abdominal.

Now, take those two witnesses. I say nothing about the way in which they gave their evidence. It is always unpleasant to criticize expert witnesses. You saw the difficulty they were in. It amounted to this: they could not suggest any part of the body from which it could come consistently with what they found there, except the lower part of the abdomen, and the characteristic answer was given by Dr. Turnbull, which I will read to you from my own note: "The aponeurosis is split in the way it is found in the lower part of the abdomen." Mr. Pepper and the other witnesses for the Crown say that the piece which they examined has got the aponeurosis in it, and that it came from the lower part of the abdomen. That is not now disputed.

Now is that a scar or not? There has been a little misunderstanding about this part of the case, and I want to make it plain to you. It is not now disputed that Belle Elmore had a scar in that place due to an operation for ovariotomy, which means taking out the ovaries. It extended roughly up to, or near, if not as far as, the navel. It was originally 6 in. long, and subsequently contracted. In addition to the suggestion made about the poison, and having heard that poison had been found, it was also suggested before the Crown witnesses made their examination they knew that she had a scar. If they did, it was perfectly right that they should know it, because they had to look for what would identify the body, and I cannot understand what was meant by the suggestion that it was "unfortunate."

Now, you are dealing with the piece of flesh, which is very different from what it was when it first went into the ground, and all the medical men agree that it would have been much easier to judge if the piece of flesh had been seen sooner. The medical men for the Crown saw it sooner, but not much sooner. Mr. Pepper says—and he is supported by Dr. Spilsbury, Dr. Marshall, and Dr. Willcox—"This is a scar similar to that which I have seen over and over again on the stomach or abdomen of a woman who has had this operation done; as a rule, with women it is wider near the bottom than it is towards the top, and it presents exactly the appearances that Belle Elmore's operation would present." Further than that, they said: "I examined it for sebaceous glands and for hair follicles, and in the scar, properly so called, there are none." Further, Dr. Spilsbury said there is enclosed (I think it is called) in the scar a piece of epidermis that has come from the side.

Now, remember, at the time this was before the police court in the first instance the scar was unimportant from the point of view of the defence, because their case then was, "This is not the abdomen at all." When they come into court here they, for the first time, develop this theory. They say, if you examine the scar you will find in the scar, properly so-called, one sebaceous gland and four or five hair follicles. When Dr. Turnbull is cross-examined as to the possibility of there being an included piece of epidermis in the scar he says, "I have read of this happening, but I have never seen it." The witnesses for the Crown tell you that they have seen it repeatedly. You will judge as between these witnesses which is right. It is frankly admitted by the Crown that if in an ordinary piece of scar there are sebaceous glands and hair follicles, that is not a scar proper: but they point out to you that you may have that appearance locally in a part of the scar, and, rightly or wrongly—it is entirely for you—the witnesses for the Crown swear that there are no sebaceous glands. Gentlemen, you and I had a further examination yesterday. There was one remarkable piece of evidence given—not contradicted by Dr. Turnbull, although I do not say he assented to it. Mr. Pepper said you can see under the magnifying glass in that scar, practically speaking, the irregular line of the knife from top to bottom. Now, if that is so, gentlemen (you will be able to judge when you come to look at it again), we need not trouble much more about it.

Mr. Tobin, the counsel for the defence, made a point of this—and he is quite entitled to ask your consideration to it—that on that piece of flesh there is no navel. The witnesses for the Crown admit that the muscle went up as far as the navel and probably round it, but say they think the navel has been removed from that piece of skin. Mr. Tobin, I think, three or four times said to you that Mrs. Martinetti said she saw the woman's navel, and Crippen's evidence—though I am afraid you must take it with some reserve—was that his wife had a navel. You will have to ask yourselves, if a woman looks at another woman's stomach casually and there is a scar which excites her attention which comes up to the position of the navel—navels are a different shape; sometimes there are projections, and so on—do you think what has been said to have been seen by Mrs. Martinetti is sufficient to contradict the evidence which you have heard on the other side if it is satisfactory to you?

Now, I do not propose to read again at length to you the reasons given by the defendant's two witnesses for saying that it is not a scar. I remind you again that they were prepared up to October 7th to say that there was no aponeurosis at all; that there was nothing upon the skin or flesh which would enable you to put the piece of flesh into its place upon the body; that it came from the thigh or from the buttock.

When they are cross examined they entirely abandon that position, and say the best opinion they can give now with all their examination is that it came from the place in which it was sworn that they came from by the witnesses of the Crown, namely, from the lower part of the abdomen. Gentlemen, you will, of course, consider all that evidence, but you must regard with some reserve the evidence of a man who has given such positive evidence that it was not from the abdomen, and has abandoned that, and has fallen back upon there being no scar.

If the appearance of the one sebaceous gland and the five follicles of hair is due to the fact that there was an included piece of epidermis, the whole matter is explained without any difficulty. It is entirely for you. We are dealing with a mark which is some 6 in. long—I do not know exactly, but that is near enough, and in which it is said by the witnesses for the Crown they can see the marks of the knife. If so it is a very remarkable coincidence. In order to satisfy you that it is not Cora Crippen the defence must have satisfied you that there is no scar there, because then, of course, if there was a scar there, coupled with the pyjama and the camisole and the combinations and the vests, you have to ask yourselves have you any doubt that that is the body of Cora Crippen.

Now, I must for one moment consider the theory of Dr. Turnbull and Dr. Wall. I wish to speak with great respect, and it is not for me and it is not for you to judge. You saw Dr. Wall in the witness-box. You saw him roll that piece of flesh over twice. They account for the left side of the horse-shoe, as Mr. Tobin called it, by saying it is caused by a fold; and in order to make it the shape, broader at the bottom and narrower at the top, you have to fold it twice over; and you saw yesterday that with the piece of flesh which then would be freshly cut from the body, it is possible either to extend it or to fold it twice over.

You must ask yourselves why anybody who was burying the body should roll it twice over; one cannot understand why; it is entirely for you. If you think it possible, of course you may attach importance to the theory of the rolling over. But observe what you have to deal with. You have got a mark which resembles a scar, sworn by the witnesses for the Crown to the best of their belief to be a scar similar to scars they have frequently seen, sworn by the witnesses for the defence to be not a scar at all, but to be caused by a fold. Gentlemen, it is entirely for you.

As for the last part of the evidence so far as it depends upon medical testimony. What was the cause of death; who put that body there; was it the same person who killed her or not? Well, these hypotheses only need to be stated to be answered. You will not think, probably, that there was more than one person mixed up in this, and probably you will be of opinion that examining the question of who killed her answers the question who buried her. A great deal has been said, not unnaturally, by Mr. Tobin, as to the skill of the man who did it. It has been sworn by the witnesses for the prosecution that a man who had studied in anatomical schools and had seen dissection, and had a knowledge of anatomy, would have quite sufficient knowledge to do this. The answer by Crippen was, not that he has not sufficient knowledge, but that he has not sufficient practical experience, and has never done a *post-mortem* examination in his life. Again, it is entirely for you, but, as I have said, in all probability you will be of opinion that

the person who caused the death of Cora Crippen took steps to get rid of the body. That is the natural thing that a man would do who had committed a great crime.

Now, was she poisoned or was she not? That is entirely for you. You have got evidence that every organ was healthy, and you have got evidence in the early part of the case that on the night of January 31st, and for weeks before, the woman was in perfect health and spirits; no suggestion of illness or ailment, and no organ shown to be affected. Can you account for death by any natural cause? And again, although Mr. Tobin has cross-examined with great ability as to whether the Crown were right in specializing hyoscine, he has not suggested any other cause of death than poisoning. It is possible, of course, that the woman may have been stabbed, or shot, or something else, but the remarkable thing is that there is no wound on the part of the body that is there, except what is necessary to separate it from surrounding things; showing to a certain extent some medical knowledge, if not very high medical knowledge. The doctors said that there was no wound on any one of the organs they examined; there was the heart, liver, and the kidneys, and one or two things I need not mention, and there was no wound except what was necessary to separate it and take it out.

Now, the Crown start their examination. Here I simply endorse what was fairly put to you by Mr. Muir. When people are conducting an examination by analysis, and the result of which could only be established by analysis, I do not think it is right to suggest that it is "unfortunate" that they knew that the man had bought hyoscine. They were looking for several things. Mr. Tobin did say that he did not mean to pass any imputation, and we ought to make great allowance for Mr. Tobin; but I do not think, if you are satisfied with Dr. Willcox's evidence, that you ought to come to the conclusion that he was influenced one single bit by what he knew; he has sworn he was not.

And what did he tell you? He said, "I examined the remains; I took parts of the liver, the kidney, and so on; I went through a process which lasted a fortnight or three weeks; I found something I was able to distinguish as a vegetable alkaloid. As far as my medical knowledge goes, and as far as the medical knowledge of any book produced up to the present time goes, Vitali's test, which is to find out whether an alkaloid is a vegetable or an animal alkaloid, is only operative in the three vegetable alkaloids—atropine, hyoscyamine, and hyoscine; none of the others give a purple colour." Dr. Willcox says, "I did that; I did not know what I was going to find, but I looked to find a vegetable alkaloid, and I found it must be a vegetable alkaloid."

And remember, upon the question whether it might be an animal alkaloid, the result of putrefaction, the only man who has ever got an animal alkaloid at all from any body, meat or human flesh, is Dr. Luff. Therefore, so far as evidence goes, both of literature and fact, there is no witness who has pretended that an animal alkaloid has been found to respond to Vitali's test. Then, said Dr. Willcox, "I had to distinguish between atropine, hyoscyamine, and hyoscine. I applied the bromine test; I should have applied the heat test if I could, but you do not get in a human body that has been poisoned enough to apply the heat test; I could not use it."

It is not as if he said he did not know of the test or did not think it a good test, but he could not use it. "I used the bromide test, and under that crystals would have come out if it was atropine or hyoscyamine; gummy or resinous matter would be produced if it was hyoscine; I found the gummy matter. I tried it again on pure matter, with the same result." He also said, before he found them vegetable alkaloids, he found that all four of the solutions were mydriatic, that is to say, they affected the eye by paralysing the pupil, and that was not disputed as a test by Mr. Tobin. Dr. Willcox further said, "I took genuine specimens and applied these tests, and they exactly corresponded with what I found"; and Dr. Luff said, "I went through the same operations; Dr. Willcox's tests are the best that can be applied, and they produced the conclusions that he has vouched."

Not one single witness on behalf of the defence has ventured to say that that is wrong. Mr. Wynter Blyth, who came here, said that he quite agreed that Vitali's test identified the vegetable alkaloids as far as present knowledge was concerned, but he said he thought—either on the faith of some Italian book or because he had changed his opinion—that it would be found that there would be some animal alkaloids which might give the same results. Gentlemen, it is entirely for you. You have got to act upon the evidence; you must ask yourselves, Have you any doubt that the evidence of Dr. Willcox and Dr. Luff is right? That of Dr. Willcox is most important upon this—that he found hyoscine in the body, in the stomach, kidney, intestines, and liver. He calculated that in the body there was as much as half a grain, and that is not denied to be a dangerous—in fact, a poisonous—dose, a dose that never ought to be given to any human being. If you come to the conclusion that hyoscine to that extent, or anything like it, was found in the body, you will have to ask yourselves have you any doubt that that woman, by whoever it was done, was poisoned by hyoscine? If the cross-examination of Dr. Willcox leads you to the conclusion that he was mistaken, or anything of that kind, then, of course, you may reject his evidence; but, for your own satisfaction, if you are going to do something of that kind, you probably ought to have some theory of your own as to what else caused the death. The one test as to whether it was a vegetable alkaloid is said by Dr. Wynter Blyth to have been the right test, and, though he says he has changed his opinion, he has never himself found an animal mydriatic alkaloid that acted in the same way under Vitali's test. Given that it is one of the three vegetable alkaloids, I suppose it makes some difference, though not much; we have not been told how much more or less poisonous atropine is than hyoscine; it does not matter, because nobody denies that if you cannot get enough for the melting-point test, the bromide test is the right one. You must make up your minds whether there was hyoscine in the body, and whether death was caused by it. What is the effect of hyoscine poison? how can it be administered? It has a bitter taste, but can be readily given in beer, stout, or coffee, or anything that disguises the taste. It produces pain at first, delirium, paralysing of the pupils, drowsiness, coma, and unconsciousness, and death in anything from one to twelve hours. Therefore, from the point of view we are considering, what happened in that house? Some one gave Belle Elmore hyoscine, and she became unconscious, comatose, and died, and there was the dead woman in the house. Where did that hyoscine come from? It may be a coincidence, gentlemen. Are you satisfied with the account the defendant has given of what he had to do with the hyoscine bought on January 19th—never bought before in England by him, never bought since; two-thirds of it used, made up into hundreds, if not thousands, of little tabloids, put into bottles, kept in a cabinet in his room, and the remainder of the hyoscine left in his room when he went away. Where are those bottles? You must ask yourselves, are you satisfied with that account? He has given his account; it is for you to say whether you believe it.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

PRESS NOTICES OF MEDICAL PRACTITIONERS.

A CORRESPONDENT (Maxim) sends us a cutting from a local paper announcing that a recently-vacated practice has been taken over by a fully-qualified practitioner, whose name and qualifications are given and some details about his past public appointments; we are asked to express our opinion upon it, and to say whether it is serious enough to be reported to the local Branch of the British Medical Association.

*** As we have repeatedly pointed out, it is unfair to suppose that medical practitioners are responsible for everything about them that appears in local newspapers, and in this case our correspondent himself suggests a natural means by which the reporter could have obtained the information without the practitioner concerned being a party to it. If our correspondent possesses any direct evidence that the paragraph was inserted as an advertisement the matter is different, but in the circumstances we think the practitioner concerned should be given the benefit of the doubt, and we may add that his call should be returned.

BRANCH SURGERIES.

P. H.—As often pointed out, it is not in accordance with professional etiquette for a medical practitioner to put up a plate on premises where he has no bona-fide tenancy, but there can be no objection to a branch surgery in a district where the population is so scattered as to have no medical practitioner within five miles.

THE TITLE OF "DOCTOR."

CAPTAIN O. C.—The question of the right of medical practitioners to call themselves "Dr." has been discussed *ad nauseam*. We do not think any of the Royal Colleges has penalized or would penalize a diplomate who used the title of "Dr."

THE General Purposes Committee of the Middlesex County Council has selected Mr. G. A. Cohen, Mr. Ernest Ebblewhite, and Mr. A. M. M. Forbes out of seventeen applicants for the office of coroner of the central district. Mr. George Alexander Cohen is a Bachelor of Medicine of the University of Edinburgh, and a member of the Middle Temple; until recently he was a member of the Middlesex County Council. Mr. Ebblewhite is a barrister and ex-mayor of Hornsey.

Obituary.

SYDNEY RINGER, M.D., F.R.C.P., F.R.S.,

LATE PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND HOLME PROFESSOR OF CLINICAL MEDICINE, UNIVERSITY COLLEGE, LONDON.

On Friday, October 14th, at his house at Lastingham in Yorkshire, died Sydney Ringer, at the age of 75. With his death a once-familiar figure passes from amongst us.

He had been ailing for some two years and had changed not a little, though to the casual acquaintance this might not be very apparent. A few weeks ago he suffered a slight cerebral seizure, from which, however, he seemed to be making an excellent recovery, so much so that it was anticipated that before long he would be able to be moved south, to the house and care of his married daughter, Mrs. Charles Kayler, at Mixbury in Northamptonshire. This move, which was much in his thoughts and wishes, was not to be. On October 13th a fresh seizure occurred, he became unconscious, and sank rapidly, passing away in the early hours of October 14th, happily not before he had been joined by his daughter and son-in-law, who, travelling up at a moment's notice, reached Lastingham just in time. A few days before his death Dr. Rose Bradford, his friend and former pupil, had been summoned to his bedside, much to the patient's pleasure and comfort of mind, and a short time previously, before the occurrence of the first stroke, another old pupil and friend, Dr. Batty Shaw, had visited him. These reminders that he was not forgotten, in particular by those with whom he had worked, were very pleasing to him. Throughout his illness Dr. Tetley of Kirkby Moorside was most kind and painstaking in his attendance.

Sydney Ringer was born at Norwich in 1835. He was one of three sons of John M. and Harriet Ringer; the eldest son was named John Melancthon, then came Sydney, then Frederick. The father died whilst the boys were quite young, leaving the family in very poor circumstances, but bequeathing to them a much-respected name. All three boys belonged to the honourable company of those who carve their own fortunes. John Melancthon —the name is suggestive of a stalwart Nonconformity, which was, in fact, their parents'—went out to Shanghai, and there amassed a large fortune; Frederick Ringer went to Japan, and became so successful and so well known that he was called the "King of Nagasaki," and in the commercial world it was said that his name was as good as a passport from Cairo eastwards to San Francisco and even beyond, right into America; Sydney Ringer was scarcely, if at all, less widely known, for his book on therapeutics carried his name throughout the British Empire and its dependencies, whilst many translations made it familiar in other countries. All three as boys and men were devoted to their mother (the father they could scarcely remember), though to the outside world she seems to have shown an austerity which to the young in particular was rather awe-inspiring. Another old friend and one-time pupil of Sydney Ringer recalls this, together with the fine strong features and strong character of Harriet Ringer; and he is of opinion that the son inherited many of his qualities from the mother. The same informant thinks that Sydney was educated at a school at Norwich kept by a Mr. Brooke, and this may have been so; but another record says that for a time, at any rate, he was under Dr. Brewer, author of the well-known *Guide to Science*. The report goes on to say that this gentleman, unaware of the inquiring mind upon the school premises, made the rash offer of a penny for each most searching scientific question which the boys could produce, and that young Sydney excogitated so many that the offer had to be withdrawn. Whether this was the beginning of the boy's scientific inquiry the present writer cannot say, but it is certain that the stream of questions never ceased until the very end, to the embarrassment of not a few besides Dr. Brewer who came across this eager, agile mind.

By the timely help of a near relative, Mr. Samuel Browne, a medical career was made possible, and after a short period of pupilage at Norwich Ringer came up to London and entered himself at the Medical Faculty of University College in the session of 1854–5. Thence onwards his career was one of uninterrupted progress from post to post. In 1860 he graduated M.B. at the University of London, and in 1861-2 held the appointment of Resident Medical Officer, adding greatly to his growing reputation by the vigour and capacity which he showed during his tenure of this office. In 1863 he graduated M.D., and in the same year was appointed Assistant Physician to the Hospital. In 1866 he became full Physician. Jenner, Wilson Fox, Russell Reynolds, were all members of the staff at this period; Walshe had just left. Of these it was Jenner, another distinguished East Anglian, who gave him his chief lead; indeed, it was upon the example of that great clinician that he modelled his own clinical teaching. In the earlier years of Ringer's work at the hospital it was in the out-patient room that he excited the admiration and enthusiasm of the students by the impressive way in which he taught, and it was a consciousness of this perhaps which caused him to relinquish that department almost with regret when the time came for promotion to the wards. The students, however, had no cause to regret the promotion, for the teaching went on with unexampled enthusiasm and success during the many years which succeeded, until in the year 1900 he retired from active service at the hospital on his appointment as Consulting Physician.

Ringer took much interest in children's diseases, and during the years 1864–69 he was attached to the Children's Hospital at Great Ormond Street as Assistant Physician. This experience of pluralism in appointments does not seem to have impressed him favourably, for the writer recalls a dictum of his that "a man is a fool who holds two hospital appointments"—a pronouncement more forcible than consoling to the medical modernist.

In addition to his work at the hospital, Ringer held for many years the Professorship of Materia Medica and Therapeutics, but it must be confessed that in his lectures materia medica, as such, received scant attention, and that the teaching resolved itself into therapeutics pure and simple. His book was a striking illustration of this attitude of mind; it took its origin in a request from the editors or publishers of Pereira's *Elements of Materia Medica and Therapeutics* that he should undertake a new edition of this monumental work. Ringer's *Therapeutics* was presented in response, and declined, on the grounds that by no conceivable stretch of the imagination could the book stand as an edition of Pereira. The fact was that Ringer was far too eager to get to hand grips with the powers contained within the medicaments to have patience to spend time in describing their outside appearances; in other words, his bent was essentially towards pharmacology rather than towards descriptive and historical materia medica From conversations with Dr. Ringer the writer seems to recall that it was Dr. Parkes, of hygienic fame, who first suggested pharmacological investigation to him as a fruitful field. Coming from such a source, the suggestion would carry great authority, for Ringer had a particular admiration for Parkes, but the sequel showed clearly that the soil was more than congenial, and that here lay natural affinities. Accordingly the step from the lecture room and the wards to the laboratory was quite in the course of things. Upon the resignation of the Chair of Medicine by Russell Reynolds the lectures devolved upon Ringer, who, of course, relinquished at the same time the therapeutic professorship. The lectures on medicine were delivered for some years, but it is more than doubtful whether these were given *con amore;* certainly the genius of the man did not shine so manifestly here as at the bedside, though, for all that, the course was an excellent one, and thoroughly practical. During this period the work in the pharmacological laboratory went on unremittingly, and all those who shared his labours there will agree that these were an unalloyed joy to him, and absorbed the whole man, even to serious conflict with the demands of clinical work. Here lay an unquestionable danger, but somehow it was overcome, and he managed to satisfy the claims of an extensive practice, in addition to those of his hospital duties, and yet found time for his beloved pharmacology. How this was compassed is hard to understand, but the explanation lay partly in his exceptional power of rapid thinking, partly in his mode of life, which was planned for and wholly devoted to his work. Thus, he would rise early, dispatch a hasty breakfast at eight, and the next few minutes would see him on his way to hospital, always on foot, carrying, perhaps, with him some casual co-breakfaster, astonished at the celerity of things. The hospital visit would generally, in

pharmacological days, conclude with a quick-change appearance in the physiological laboratory—Ringer the physician transformed into Ringer the pharmacologist. Upon the patiently plodding laboratory assistant these visits came not unlike electric shocks, from which he would scarcely have recovered before he would find that it was all over: "Fielder!" would have been hailed, a tracing taken, various suggestions made, and off he was again on his way back to Cavendish Place and the morning's consulting work—gradually, very gradually the assistant's breath would revert to fifteen per minute. The afternoon would next be filled with visits, consultations, the hospital round, a *post-mortem* examination, and again, when possible, and for as long as possible, a visit to the laboratory. His attraction to this workshop was quite wonderful. Nothing could withstand it, not even the college palings, over which he clambered in the dark, upon one occasion at least, when the gates would not yield.

A great feature in Ringer's daily life was punctuality; somewhere this has been called *la politesse des rois*. Certainly it is a great virtue, when found, in kings or elsewhere. Ringer possessed it, and whilst economizing his own time respected that of others. The punctual dinner following upon the busy afternoon was itself followed by the post-prandial chat, and then the thinking would go on afresh, either in the armchair or at the table, the materials of a fresh paper spread out before him. At last came the early couch, Ringer showing great wisdom in allowing himself an ample rest; by ten, or soon after, he was generally in bed.

The best obituary notices, the most instructive, are those which the Emperor Marcus Aurelius has given us: "From Rusticus" I learnt this, "from Alexander the Grammarian" that. What, we may ask, did we generations of University College students learn from Ringer? First and foremost to be open-eyed and open-minded; then to be honest. He never confirmed his diagnosis by an avoidance of the *post-mortem* room; on the contrary, he there sought confirmation of its correctness or conviction of its error. He might be hasty, might seem to us to jump to conclusions; this was temperamental. But he never juggled with facts, never consciously strove to make things fit; facts were precious things to him. Further, he taught us by example to be strenuous; his life was full to the brim with energy, which he did not allow to remain potential, but forthwith made dynamic. Those who knew him more intimately—his house-physicians and assistants—saw a great simplicity in his life; he hated display of all kinds and all affectations. In a luxurious age he kept to simple ways, and ruled his life upon the old maxim of "early to bed and early to rise," which maxim did not leave much room for dinings-out, *conversaziones*, theatres, and all the rout of distractions. He saw little of these things in the middle period of his life, nor did he, so far as the writer knows, belong to a single club. To come in contact with Ringer was very tonic, and his daily morning visit to hospital had much of the effect of the cold tub—a little startling but very exhilarating.

Had he chosen to concentrate all his energies upon clinical work, there is little doubt that he would have achieved as great a position as Jenner—he was the same type of man, held the same possibilities. On the other hand, if he had gone through the mill of scientific training from the very beginning, and had spent himself upon science exclusively, he must have gone very far indeed—how far it is only possible to guess from the lengths which he did actually accomplish. Physiologists are realizing more and more the originality and far-reaching nature of his work on the antagonisms and balance of the chemical ingredients of the fluids and solids of the tissues; and amongst a multitude of other investigations, his work on lime salts, their effect upon muscular contraction, upon the act of clotting in blood and of curdling in milk, have thrown a great light upon the chemistry of the tissues and the maximal effects of minimal quantities. But it is not possible to enter here upon an examination of his pharmacological work; it is too extensive; this must fall to others to appraise at its just value. It is, however, interesting to contrast with this work the clinical side of the man, as shown, for instance, in his book on therapeutics. This book went through thirteen editions, and its success was entirely justified, because, in spite of many and obvious defects, it embodied as a fundamental principle the *symptomatic indications and contraindications for the use of and avoidance of the medicaments*. This is what we are all in search of, as practical physicians, and this is the *aim* which he set before us on every page.

Looked at from every point of view of his work, Ringer was undoubtedly a big personality.

What else remains to be said? Much, very much, which must remain unsaid; in the first place because this brief sketch pretends to no more than an impression, and next because Ringer kept so much within, which he did not show to others. Still there are some gaps which may be filled in: he had a strong aesthetic side in spite of the little time which he gave to its cultivation. Notably mention must be made of his great love of music, which a little encouragement might well have developed into a passion; his figure was a familiar one at the Queen's Hall concerts on Sunday afternoons. Ringer disclaimed a knowledge of poetry, yet he had a singularly just appreciation of some of its finest outpourings—for instance, Wordsworth's "Happy Warrior." In like manner he pretended to know little about art, yet he saw and admired proportion above all things, and in the later years of his life he was given to frequent the picture galleries; nay, more, he would, somewhat inconsistently (on his own confession) criticize very daringly—to the writer it appeared that these criticisms showed in many cases a surprising insight. The truth is that no one can come into close contact with Nature in any one of her departments without learning many of the secrets of other departments.

Sydney Ringer was brought up in a severe, almost puritanical, atmosphere of Nonconformity, which one old friend and colleague says he loved to look back upon. This atmosphere clung about him to the end; true, during his married life he was drawn in a direction which seemed, superficially, to be almost exactly opposite—namely, that of High Church, but he never mistook the husk for the kernel, and he did not change really so much as he seemed to do. In later years he reverted somewhat, and the spiritual side of Quakerism drew him a good deal. In any changes he was absolutely honest to himself. The kingdom of heaven has to be taken by violence, it is true, but not by violence to one's own conscience. This Ringer never did, nor would he have done so even to get the kingdom of heaven, had this been possible; he was too essentially honest.

Lastly, it must be added that he was very kind, and in his kindness always most practical.

No mention of Ringer would be complete which omitted the name of Ann Ringer, his wife—Ann Darley was her maiden name; she came of an ancient Yorkshire family. Hers was a very noble character—affectionate, sympathetic, unselfish; her influence upon him was great, and in all crises of his life he turned to her with complete confidence. She was the staunchest of friends. Their home life, both at Cavendish Place and at Lastingham, was absolutely united; its very sufficiency, indeed, seemed to be in great part responsible for the retired life which they both led, and which, after her death, became for him more and more the life of a recluse.

On October 14th Sydney Ringer, the questioner, put the last great question; on the 18th he was buried at Lastingham, on the edge of the moors. He lies in the same grave with his wife and by the side of an elder daughter, Annie Ringer, who died young, and in whose memory the beautiful church of Lastingham was restored "by her father and mother."

A pupil of Dr. Ringer writes:

Ringer, at the outset of his career, devoted himself to the study of clinical medicine, and became undoubtedly one of the most acute clinicians of his time, and he maintained this interest throughout his life. All who came under his influence as a hospital physician had many opportunities of seeing the skill and keenness with which he unravelled the intricacies of a difficult case. It is important to recognize this, as those to whom only his name was known associated him almost entirely with other work, therapeutical and physiological in its bearing; but notwithstanding the very large amount of extremely valuable work that he carried out in the laboratory, he never lost his interest in clinical medicine, especially from the standpoint

of diagnosis, and both as an acute and shrewd observer, and as an interpreter of symptoms, he was pre-eminent. When his position as a physician was thoroughly established, his interest in physiological problems was awakened, and for a period of some thirty years he devoted every available moment spared from a busy professional life to continuous and unremitting work in the physiological laboratory of University College. All the time not actually occupied by lectures, hospital visits, and the calls of private practice, was devoted to experimental investigations, and the results of many of these inquiries may be said without exaggeration to have become part of the common stock of physiological knowledge. Some of his experimental work was purely pharmacological in its scope, and he spent much time in studying the action of various drugs and poisons on the functions of different organs and tissues, as for example, digitalis on the heart and arsenic on the skin. Even with the pharmacological work he did not confine himself to the narrower side of the subject, but was attracted immediately by complex problems such as those of the antagonisms of drugs and poisons, and he was fond of expatiating on the different kinds of antagonism and the significance to be attached to them. It was interesting to observe the different attitude of mind with which he attacked clinical problems on the one hand, and those of the laboratory on the other. In the case of the former he was extremely acute and shrewd in observing, and cautious in drawing conclusions, rarely venturing on that pitfall of the physician—explanation—whereas in the case of experimental facts observed in the laboratory he was fond of advancing theories, to be tested rigorously by subsequent work. His acute mind realized how dangerous theory was in the ward, where it is difficult to test its conclusions, and how useful in the laboratory, where it could be tested and rejected or not by the light of further experiment. Thus he was, perhaps, unduly sceptical of many new clinical observations as compared with the readiness with which experimental facts were accepted. Nevertheless the reason at the back of this difference was a sound one and the old one of the fallacy of observation unchecked by experiment. He was quick to see analogies and fond of drawing general conclusions; thus, no sooner did he discover the action of calcium in prolonging the systole of the heart than he extended his inquiries to all the members of the group calcium, barium, strontium, and further instituted comparisons between the action of these inorganic bases and the action of the members of the digitalis group. Although he did much valuable work in pharmacology and was profoundly interested in this science and anxious to promote its progress, yet the work which will always be associated with his name is that which resulted in the elaboration of what is now known as "Ringer's solution"—that is to say, the great discovery of the important part played in vital processes by the inorganic constituents of the body. Here, again, the wide view he took is shown by the variety and extent of the experimental researches he carried out.

Although the bulk of the work demonstrating the important part played by calcium was done on the heart, and especially the heart of the frog, yet the results were confirmed and extended by similar work on other vital processes, such as the contraction of voluntary muscle, the growth of larvae—for example, the tadpole; the activity of living organisms—for example, tubifex; the coagulation of the blood, etc. He endeavoured to test the action of these inorganic salts on all the processes of living tissues. In this work also the problem of antagonism attracted his attention, and many very striking experiments were devised to demonstrate the different effects produced by calcium and potassium on the frog heart and also on the coagulation of the blood.

Although most, if not all, of this work was done before the modern conceptions of the nature of solutions had been developed, Ringer saw early in his work that, in the action of salts, what was then called the base acted more or less independently of the acid, and in some respects his views, somewhat inchoate as they were, anticipated the more modern theory of solutions, ions, etc. There can be no doubt that all this work was of the very highest value, and it is interesting to note again that it was all done in the intervals of scanty leisure in the course of a very busy professional life.

Ringer was extremely generous and kindly in assisting the original work of younger men, and was always ready to afford any real worker any assistance in his power in order to further any inquiry either in clinical medicine or in physiology or pharmacology, and no one took more genuine interest or a keener pleasure in any new fact observed by his pupils or his friends, as well befitted a man who was so excellent a type of a truly scientific physician.

The following letter, which we have permission to publish, has a pathetic interest, as it was written so near the end; it also shows the graceful courtesy of the man. Its occasion was a reference to Ringer's work made in an address on the Use and Abuse of the Lime Salts in Health and Disease, delivered at the opening of the Post graduate Course at the Glasgow Royal Infirmary on September 1st, 1910, by Sir James Barr, and published in the British Medical Journal of September 24th, 1910 (p. 829).

Lastingham,
Sinnington, R.S.O.,
September 26th.

My dear Sir James Barr,

Thank you, thank you very greatly, for your kind reference to my work in your address. You can hardly imagine the pleasure it gives me. When you have reached my age and have ceased from all work and you receive such a complimentary notice of your work from so great an authority, you will know the pleasure you have given me.

Yours sincerely,
(Signed) Sydney Ringer.

Mrs. Kayler regrets that she is unable to reply personally to the many kind letters of sympathy she has received from the friends and colleagues of her deceased father, Dr. Sydney Ringer. She trusts they will accept this acknowledgement of her sincere thanks.

The Services.

TERRITORIAL FORCE.

School of Instruction R.A.M.C. Second London Division.

The following classes have been arranged in connexion with this school:

Officers' Class.

Preparatory Course for Examination "A."—London: At the R.A.M. College, Millbank (Lecture Theatre), 4 to 6 p.m. Mondays and Wednesdays, beginning on Monday, October 31st. Woolwich: At Head Quarters, Woolwich (Brookhill Road), 3 to 5 p.m. Tuesdays and Thursdays, beginning on Thursday, October 27th.

A preparatory course for Examination "B" will be arranged early in 1911.

A course of instruction will begin on November 8th and will continue until about December 22nd, 1910. It will be held at Greenwich—the drills at the Royal Naval College, the lectures at Vansittart House, Greenwich Road.

Classes will be held in accordance with the following syllabus:

I. *Recruit's Course.*—For men on joining who have received little or no previous instruction.

II. *Junior Course.*—A complete course of elementary drill and first aid for men of under two years' service. Men of over two years' service who require a "refresher" course may attend.

III. *Nursing.*—This course is for members of the nursing section, and is intended as a preparation for the Hospital Courses mentioned in Regulations for the Territorial Force, Appendix 12, 6 (III).

IV. *Clerical Duties.*—Elementary duties of an R.A.M.C. clerk as referred to in Territorial Force Regulations, Appendix 12, 6 (VIII).

V. *Promotion Class.*—Special coaching as drill instructors and in the subjects required for promotion by Standing Orders R.A.M.C., paragraphs 280 et seq.

VI. *Transport.*—Theoretical and practical instruction.

VII. *Sanitation.*—A complete course for all sections and ranks. Privates of the general duty section who attend this course and pass the examination are eligible for the fourth rate of corps pay under Regulations for the Territorial Force, Appendix 12, 6 (IX).

Nominal rolls of those intending to join should be forwarded as early as possible from each unit to the adjutant. Against each name should be stated the courses to be taken.

The Organization of Voluntary Aid.

We have recently had several inquiries regarding the War Office scheme for the organization of voluntary aid and the formation of Voluntary Aid Detachments, and more than one correspondent inquires the attitude taken up by the British Medical Association with regard to the instruction and examination of women to qualify for the nursing certificate, whether it must be by qualified medical practitioners or whether trained nurses, may be recognized as teachers or examiners. As far as we are aware, the Association has so far expressed no opinion on the matter, but we understand that the subject is likely to be raised at the next meeting of the Territorial Forces Committee. According to the present regulations, the only bodies that the War Office is prepared to recognize are the County Associations, and it looks to them to see that the instruction is kept up to the required standard; it, however, publishes a provisional list which, it states, may be added to from time to time, of bodies which it approves for the purpose of granting certificates in "first aid." These bodies are as follows: The St. John Ambulance Association, the St. Andrew's Ambulance Association, the National Fire Brigades Union, the National Health Society, the London County Council, and provincial County Councils, where the conditions as regards instruction and examination laid down in the voluntary aid scheme are complied with, the gist of which seems to be that instruction in first aid must be given by a duly qualified medical practitioner and the examination carried out by a qualified practitioner other than the instructor, the instruction in "home nursing" must be given by a duly qualified medical practitioner or a trained nurse, as may be found most convenient, and the examination must be conducted by a medical practitioner or matron of a training school, both of whom must be distinct from the instructors of the class.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

The following candidates, having passed the requisite examinations, have been admitted to the Fellowship:

E. Adam, Whinneyhill; J. C. R. Braine-Hartnell, Cheltenham; J. C. Bridge, Dunfermline; M. B. S. Button, Deal; B. P. Campbell, Edinburgh; D. Cotterill, Edinburgh; O. C. Dorman, Winnipeg; E. C. Dutton, Manchester; W. Fleming, Shantung; J. S. Goodall, London; W. L. Gordon, Edinburgh; R. Hill, Whiteabbey; E. Le R. Hodgins, Lucan, Ontario; I. W. Johnson, Bury; J. W. McIntosh, London; C. MacLaurin, Sydney; S. MacMurray, Belfast; M. M. Mamourian, Ashton-under-Lyne; H. J. More, Edinburgh; C. C. Murison, Captain I.M.S.; J. O'Doherty, Belfast; S. P. Shroff, Edinburgh; A. Simpson, Tranent, East Lothian; V. F. Usher, Nelson, New Zealand; P. L. Watkin-Williams, Bridgwater; R. Wilkins, Longton; H. J. Williams, Plumstead, Cape Colony.

SOCIETY OF APOTHECARIES OF LONDON.

The following candidates have been approved in the subjects indicated:

Surgery.—*†N. S. Adler, *†D. E. S. Davies, *E. B. Keen, †J. K. Nariman, †H. S. Tumber.

Medicine.—G. A. Crowe, †E. D. Richardson, †C. J. Thompson.

Forensic Medicine.—J. G. Lewis, G. S. Richardson.

Midwifery.—J. E. S. Sheppard-Jones,

* Section I. † Section II.

The diploma of the society has been granted to Messrs. J. K. Nariman, E. D. Richardson, and H. S. Tumber.

Public Health AND POOR LAW MEDICAL SERVICES.

MEDICAL OFFICER OF HEALTH AND INFECTIOUS DISEASES.

Dr. Charles J. Renshaw (Ashton-on-Mersey) writes: In your reply to "Cymro" in the Journal of October 15th, 1910, would it not be as well to add that the Public Health Act now in force obliges all part-time medical officers of health "on receiving information of the outbreak of any contagious, infectious, or epidemic disease of a dangerous character within the district, he shall visit the spot without delay, and inquire into the causes and circumstances of such outbreak," etc. If this be not added some medical men may misunderstand the reason of the visit or the inquiry.

Mr. John Jas. Johnson, Clerk to the Urban District Council of Leyland, writes: My attention has been called to the issue of the Journal of October 15th, wherein on page 1198, in a reply addressed to "Cymro," it is stated it is "entirely within the discretion of a medical officer of health whether he visits every case of infectious disease notified to him." This is obviously wrong in the face of the regulations as to the medical officer of health issued by the Local Government Board on March 23rd, 1891, which are still in force. I particularly refer you to Clause 6 under the head of duties in those regulations. If you differ from me it will be interesting to know how you come to the conclusion that you have as reported in the paper.

*** We were assisted in coming to the conclusion which appeared on p. 1198 by a communication from the Local Government Board, which will be found on page 183 of Messrs. Knight's Decisions of the Local Government Board for 1903, referring to Art. 18 (6) of the General Order of the Board of March 23rd, 1891, in which communication it is stated that the Board does not construe the order as rendering it essential, as a general rule, that a medical officer of health should visit the place of occurrence of every case of infectious disease coming to his knowledge; yet if his information points to an outbreak of any infectious disease of a dangerous character, the Board regard it as his duty to take the steps indicated in Art. 18 (6). The Board points out that in this respect it is immaterial whether the officer's information was obtained under the Infectious Disease (Notification) Acts or otherwise. The Board has not laid down any general rules as to the interpretation to be placed on the words "outbreak of any infectious disease of a dangerous character," as they are in the habit of holding the medical officer of health responsible for the judgement which he forms on the question whether any particular case or cases of such disease constitute an outbreak for the purpose of the section referred to.

Medical News.

The King has graciously consented to become patron of the West London Hospital, Hammersmith Road, in succession to his late father, King Edward VII.

The Honorary Secretaries of King Edward's Hospital Fund received last week an anonymous gift of £10,000.

Under the will of the late Mrs. Sarah Hancock the Middlesex Hospital and the Great Northern Hospital, Holloway, each receives £1,000.

The students' annual dinner of the National Dental Hospital will be held at the Trocadero Restaurant, Piccadilly, on Friday, November 18th, at 6.30 for 7 p.m., Mr. Henry T. Butlin, D.C.L., F.R.C.S., in the chair.

A general meeting of the Medical Officers of Schools' Association will be held at 11, Chandos Street, Cavendish Square, on Thursday, November 3rd, 1910, at 4.30 p.m., when Mr. R. Denison Pedley will read a paper on the Care of the Teeth in School Children. Dr. Stanley Colyer and others will take part in the discussion.

At the opening of the local hospital of the Rockefeller Institute for Medical Research in New York on October 18th it was announced that Mr. John D. Rockefeller had given £764,000 to the institute, making his total endowment £1,800,000. The hospital has accommodation for seventy patients, who will be selected with a view to the scientific study of their cases.

A debate on the treatment of fractures in the neighbourhood of the joints will be opened by Mr. Robert Jones of Liverpool, before the Surgical Section of the Royal Society of Medicine, 15, Cavendish Square, W., on November 8th, at 5.30 p.m. Fellows and members of the Section desiring to take part in the discussion are requested to send their names to the Senior Honorary Secretary, Mr. Jonathan Hutchinson, 1, Park Crescent, W.

At the opening meeting of the Bristol Medico-Chirurgical Society the new president, Dr. Bertram Rogers, delivered an address on Samuel Johnson and Medical Life in the Eighteenth Century. The gout and asthma mentioned in Boswell's *Life of Johnson* seemed to him the same diseases as those now thus termed, and it was unnecessary to introduce suppositions either of chorea and rheumatism or of angina pectoris, as had been done by two American writers, in order to explain his death. The symptoms recorded justified the ascription of Johnson's death to heart disease, consequent on chronic asthma.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

D. G. M. M. desires to know of any monograph or book dealing with iron medication and the absorption and elimination of iron by the system.

Folk Lore would be grateful to members for any information as to books or papers dealing with folk lore in regard to medicine in the West of England.

Asthma asks whether "soured milk" treatment has achieved any success in asthma, in which the digestive symptoms were only very slight. He has a patient of 60 who has had bronchitis and emphysema for several years, with occasional attacks of asthma, which has been very little relieved by the usual remedies or by dieting and spending the winter abroad.

*** We have referred this query to a leading authority who writes: There is no reason to believe that the use of soured milk would be of any help in such a case as our correspondent describes.

Arterio-sclerosis.

Arterio-sclerosis asks as to the best literature on arterio-sclerosis, particularly the involutionary form of disease and its treatment.

*** The following references will probably answer our correspondent's requirements: Articles by Dr. F. W. Mott in Allbutt and Rolleston's *System of Medicine*, 1909, vol. vii, p. 582; by Professor William Osler, in Osler and McCrae's *System of Medicine*, vol. iv, p. 429; by Stengel, *American Medicine*, 1906, vol. ix, p. 195; ibid., 1904, vol. vii, p. 9, and *American Journal of Medical Science*, February, 1908.

ANSWERS.

Country G.P.—We are informed that carbon dioxide can be obtained from the Carbon Dioxide Company, Lea Bridge Road, Clapton. The treatment is applicable to infants. Our correspondent will find details of the technique in an article by Dr. J. M. H. MacLeod, published in the British Medical Journal of January 29th, 1910, page 254.

Detection of Tubercle Bacilli in Milk.

Dr. George Stewart (Blackhall, Midlothian) writes: "Tubercle" will find a description of Pappenheim's method of staining in Abel's *Laboratory Handbook of Bacteriology* (Oxford Medical Publications, 1907), page 93. By this method smegma bacilli are stained blue, tubercle red.

LETTERS, NOTES, ETC.

The Destruction of Rats.

With reference to Lieutenant-Colonel Andrew Buchanan's paper on Cats as Plague Preventers, which was published in the Journal of August 6th, Mr. Alf. C. Greene, of Kirk Michael, Isle of Man, writes: This isle, as you will probably know, has more almost than its fair share of rats and mice. On first coming here, four and a half years ago, we were told that, if we did not keep a cat or two, we should be overrun with them. My housekeeper had a strange fear of cats, more even than of these pests, so it was decided that traps and poison should be used instead. Later, through seeing a reference somewhere as to the fear rats had of the smell of paraffin oil, and knowing also that all these animals disliked any other smell in their runs but their own, for our protection I decided to test the application of it upon them, and did so with most excellent results. At this time we had mice everywhere, bedrooms included. I caught one and sprinkled it with a little petroleum, and let it go otherwise unharmed, when it immediately made for its run and disappeared, and from that day to two years after we had not one! After this time one or two came again. I caught another, sprinkled it as before and let it go, and since this have been quite free from them. We have had no trouble at all with them for four years now, and I shall do the same whenever the occasion may arise in future. Every one of my neighbours keeps cats; one, whose house is not fifty yards away, keeps no less than half a dozen of them, but they also have plenty of both rats and mice too. We have none of any of the varieties. It seems to me that many of your readers would like to know of this very simple and easy-to-hand remedy, and I hope it may be useful to you to give it them. I also hope you may think that if this were done systematically all over the world it would drive these pests away from their usual feeding places, and by so doing stop them from breeding fast, and that it would be likely to lead to killing them off much quicker than the use of traps, poison, and virus to spread disease among them will ever do. There is no chance of their bodies decaying and being left on any premises, and causing disease thereby, because they fly from all their runs which are tainted with the paraffin smell, and will not come near it.

St. Paul's "Thorn in the Flesh."

Dr. F. D. Welch (London) writes: In Romans xvi, 22, "I Tertius who wrote this epistle salute you in the Lord," proves that this writer assisted St. Paul, and I am firmly convinced from the wording that St. Paul wrote with his own hand the verses 25, 26, 27. In my last letter I commented on the negative evidence in these three verses and in the salutations of other epistles, and I would remind Dr. George Jones that he has not, as I requested, yet produced evidence *from the New Testament* in support of his statement that these verses in Romans and the salutations of the Epistles I named were written "in large handwriting similar to that used by some myopes." So far as I know he has none; if there is, will he produce it? Also, why has he not replied to my first question?

So far as I can discover, there is no verse in the New Testament similar to the statement in Romans xvi, 22, above mentioned, which says that another writer assisted St. Paul to write Galatians; and as St. Paul states distinctly in Galatians, "I have written unto you with mine own hand," I am firmly convinced that St. Paul wrote the whole of Galatians right through from the very first word to the very last word with his own hand and without help from any other writer. To have done this his eyesight must have been good, and the evidence that has been produced up till now in support of the opinion that his eyesight was defective is found to fail completely when carefully thought out and rightly interpreted.

In support of my opinion that the words "through infirmity of the flesh" (Galatians iv, 13) mean "because all are sinners," might I point out:

1. In the opening verses of this wonderful epistle St. Paul places very prominently before his readers the words, "who gave Himself for our sins that He might deliver us from this present evil world" (i, 4).

2. That chapter iv consists of a most brilliant oration in support of the gospel of Christ which completely sweeps away all opposition before it, and the words used to mean "because all are sinners" are of exceedingly great value in that oration. If used to mean "because I was delayed by bodily disease," they would be of no value whatever.

3. That in the description of St. Paul's preaching in Galatia (Acts xiv) we are told he "fled unto Lystra" (verse 6), "ran in among the people crying out" (verse 14), from which it is quite certain that nothing serious was wrong with either lower limbs, lungs, or larynx. Even after being stoned "the next day he departed with Barnabas to Derbe" (verse 20), and the whole account of this missionary journey suggests that both St. Barnabas and St. Paul were very active in their movements. I can find no statement that St. Paul was delayed by disease of his eyes!

4 Though not connected with the "thorn," I might point out that when referring to bodily disease in another epistle, St. Paul uses the word "sick" and not infirmity of the flesh. "Trophimus have I left at Miletum sick" (2 Timothy iv, 20).

The following are my reasons for thinking St. Paul refers to the visions of another man in 2 Corinthians xii as well as to his own visions, and that this other "man in Christ" is St. Barnabas: (1) "I knew" suggests a past acquaintance. I am well aware some few people translate the word "know" instead of "knew." (2) "Above fourteen years ago" leads us back to A.D. 45 or 46, when, according to Acts xiii, xiv, St. Barnabas and St. Paul were companions on their missionary journey, part of which was in Galatia. (3) "Whether in the body I cannot tell or whether out of the body I cannot tell" suggests that St. Paul did not see these particular visions himself, but that they were told to him. The description was, I take it, somewhat vague in parts, presumably because the "man in Christ" was very greatly amazed at the visions, and could not in consequence describe everything that had happened very accurately. "Of such an one will I glory, yet of myself I will not glory," proves that St. Paul is referring to another man's visions as well as his own. Of his own visions, all St. Paul tells us is "the abundance of the revelations." The opinion expressed about the "thorn in the flesh" came suddenly into my head in two or three minutes one Friday morning when in my surgery.

I do not intend writing any more on the thorn or St. Paul's eyesight, as it seems to me that all the New Testament evidence has been now discussed.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Note.—It is against the rules of the Post Office to receive *poste Restante* letters addressed either in initials or numbers.

An Address

ON THE

CLINICAL MEASUREMENT OF DIASTOLIC BLOOD PRESSURE AND CARDIAC STRENGTH.

Opening Address of the Winter Session at the North-East London Post-Graduate College, October 27th, 1910.*

BY

SIR LAUDER BRUNTON, Bart., M.D., D.Sc., F.R.C.P., F.R.S.

CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

Mr. President and Gentlemen,—I thank you for the honour you have done me in asking me to address you to-night, and also for the choice of subject which you have given me. I am informed that you would like me to speak on the clinical aspects of blood pressure, a subject in which I am particularly interested. It is said, and I believe with truth, that when a man grows old he reverts to the subjects of which he was fond in his youth, and on the 25th of next month it will be exactly forty-five years since I made my first experiment on blood pressure under the guidance of my friend, the late Professor Arthur Gamgee. At that time instruments for recording blood pressure were very few in number altogether, and there was not such a thing in the three kingdoms. The apparatus that I used was not a recording one, and was of the very simplest kind. It was a crude imitation of Marey's haemodynamometer, and consisted of a pomatum bottle, half filled with mercury, and with three holes bored through the cork. In the first of those was fixed an upright tube, about 8 in. long, in which the mercury oscillated freely, and gave the maximum and minimum pressures. The second was similar in size, but had a constriction at one part, so that the mercury oscillated very little in it, and thus the mean pressure was indicated. The third tube was bent, and communicated with the artery. The instrument was very crude, but was nevertheless very serviceable, and by its means I was able to formulate, I believe for the first time completely, the mode of action of digitalis on the circulation. I concluded that it had a threefold action. First, that it slowed the heart through the vagus nerve; secondly, that it increased the power of the heart; and, thirdly, that it contracted the arterioles, and thus raised the blood pressure. The slowing of the heart through the vagus had been noted by several observers before. Traube had noticed a rise in pressure, but he had attributed this entirely to a more powerful action of the heart, and in his earlier work[1] overlooked the effect of the drug upon the vessels. Von Bezold[2] had also noticed a rise in blood pressure, and Lenz[3] a slowing in the flow of blood, but neither appears to have attributed these phenomena to contraction of the vessels. Blake,[4] twenty years previously, had insisted upon the effect of digitalis upon the vessels, but he disregarded its action on the heart; and thus it was that, I think, the complete idea of the action of the drug, such as is now held, was first formulated in my thesis presented to the University of Edinburgh in 1866. It is true that Traube[5] in 1865 mentioned that he had found digitalis to have an action on the vasomotor nerves (*Digitalis wie ich nachträglich gefunden habe auch auf das vasomotor Nervensystem erregend wirkt*). To him therefore belongs the priority of the discovery of the action of digitalis on the arterioles; and, taken along with his previous work, this passage shows that he had obtained a complete knowledge of the action of the drug, yet he did not formulate it in its entirety until 1871.[6] In 1869 I went to work with Ludwig at Leipzig, and after my return to London I published in the British Medical Journal of June 3rd, 1871, a fairly complete account of the apparatus and methods used for ascertaining blood pressure and all the causes which influence its variations. These papers were republished in a small book entitled *Experimental Investigation of the Action of Medicines*, but only 500 copies were printed, and the book was out of print in about six weeks after it was issued.†

It is very likely that many of you, perhaps most of you, are completely acquainted with the physiology of blood pressure, but there may be some here who are not, and for their sakes perhaps you will allow me to follow the plan which I see is adopted in many magazines. Where a story is continued through several numbers, some of these magazines place at the beginning of each new instalment a short summary of what had gone before. It does not greatly inconvenience those who have read the previous instalments, and it is very useful to those who have not.

I will therefore, before proceeding to the subject proper of my paper, say a few words about blood pressure in general, and the headings into which I shall roughly divide the paper are: (1) Blood pressure—what is it? (2) How is it measured in the laboratory? I shall then discuss (3) how is it measured clinically? (4) what do its variations indicate? and (5) how do they help us in treatment?

I.—*Blood Pressure.*

Blood pressure, or arterial tension, is the pressure at which the blood is kept in the arterial system, and which drives it through the capillaries in the healthy body, or makes the blood spout out in a stream from a severed artery. If we suppose the arteries to be empty and the heart begins to beat, it will gradually fill the arterial system. Very little blood will flow at first through the capillaries, but as the arterial system becomes fuller and fuller and its walls more distended, the point will at length be reached when as much blood will flow out in the interval between the beats of the heart as is driven in by each pulsation. The pressure or tension which then exists in the arteries is the blood pressure. It is a most important factor in the circulation, because by it the flow of blood is maintained during the time the heart is resting, and when we remember that the heart rests—that is, is in a state of diastole—thirteen hours out of the twenty-four on an average, we can readily understand the important part which the blood pressure plays. It drives the blood through the capillaries and thus supplies the tissues with nourishment and removes waste from them.

II.—*Measurement of Blood Pressure in the Laboratory.*

The first estimations of this pressure were, I think, made by watching the height to which the blood would spout from a cut artery, but an improvement upon this method was made by Hales, who connected the artery with a glass tube and measured the height to which the blood would ascend. Poiseuille improved upon the method of Hales by using a bent tube partly filled with mercury, and this tube is constantly used at present in some clinical instruments. Ludwig made an immense advance by putting on the mercurial column a long rod furnished with a writing point, by which the movements of the mercury up and down were recorded upon a revolving cylinder. To this recording instrument he gave the name of "kymographion," or more shortly kymograph. The disadvantage of the mercurial column is that when once it is set in movement it oscillates on account of its own inertia, and these oscillations may either greatly magnify or greatly diminish the alterations in the real blood pressure. In order to get rid of this fallacy several instruments have been invented having little inertia and giving a truer record of the movements in blood pressure. The most important of these are probably Fick's and Hürthli's.

The chief variations which blood pressure undergoes are, first, its amount, and secondly, its oscillation, and alterations in both these factors are instructive. In the British Medical Journal for 1871, June 3rd, vol. i, page 583, I gave a tolerably complete table of the causes of alterations both in blood pressure and pulse-rate, and discussed them much more fully than it is necessary to do here.

III.—*Clinical Measurement of Blood Pressure.*

In a paper in the British Medical Journal, July 20th, 1909, and in other places, I have described most of the instruments used for measuring blood pressure clinically.

* The latter part of this address was also given at the meeting of the Reading Pathological Society on October 20th, 1910.

† Reprinted in *Collected Papers on Circulation and Respiration*. First Series. London: Macmillan and Co., Ltd.; New York: The Macmillan Company. 1907.

With these instruments it is comparatively easy to measure the systolic pressure. With the smaller instruments in which the radial artery is obliterated by the pressure of an elastic bulb I find that the personal equation of the observer counts for a good deal, and that two men taking the same pulse may give values varying by no less than 10, 15, or even 20 mm. of mercury. This, of course, depends partly upon the training of the observers, and with practice the differences will become much less, and truer values will be obtained. But with the broad armlet, compressing the arm until the pulse is obliterated at the wrist, I find that the personal equation counts for very little, and that with two observers, one of whom has had considerable practice, and another who is trying the method for the first time, the difference in the result is rarely more than 5 mm. of mercury. It is thus very easy to ascertain precisely the systolic pressure in the vessels, but it is very different when one comes to take the diastolic pressure, more especially as authorities are not quite agreed as to what is the best method of doing this. According to some, the diastolic pressure is to be found by noting the maximum oscillation of the mercurial column, or of the indicator of the aneroid, by which the pressure is being measured. The chief difficulty in the way of this is, that the oscillations will frequently remain of nearly the same extent for 20 or 30 mm., or even more. It is exceedingly difficult to follow the oscillations accurately by the eye, and although they can be graphically recorded on such instruments as Erlanger's or Gibson's sphygmomanometers, yet these are cumbrous, and although they may be employed in hospitals or consulting rooms, they are not adapted for ordinary clinical work. The point of maximum oscillation can be observed on an ordinary von Basch's instrument, and I think even more easily on Oliver's portable sphygmomanometer. Von Recklinghausen's apparatus is much used on the Continent, but, so far as I can see, the advantage it possesses is that of giving larger oscillations than von Basch's, and I do not think it is quite as good as Pachon's oscillometer, which I have brought to show to you in case any of you may not have seen it before. The advantage of this instrument is that the sensibility of the aneroid indicating the oscillations is always the same whatever be the pressure at which it is working. But with all these instruments there is still the difficulty to which I have already alluded, namely, that the oscillations may continue nearly alike in amplitude over a considerable variation in pressure.

Variations in Pressure.

Even with a recording instrument such as Erlanger's the oscillations continue nearly alike in size through as much as 25 mm. difference in pressure, and in a tracing of his which Janeway[7] reproduces it is not the maximum oscillation but the point where the oscillations abruptly grow smaller which is taken to indicate the diastolic pressure.

Strassburger[8] takes the diastolic pressure by keeping the finger on the wrist while the pressure is being increased, and noting the point at which the radial pulse begins to feel smaller. Here, again, the estimation of the point is not easy. I think perhaps the readiest way is to place a stethoscope or phonendoscope on the brachial artery just above the elbow, and gradually to increase the pressure in the armlet. At a certain point the pulse will begin to be heard, loud and hammering, and the point where the sound increases is generally sharply marked. The loud hammering continues for a while and again ceases. The first commencement of the hammering noise may be taken as indicating the diastolic pressure, and the upper limit as indicating the systolic. On releasing the valve and allowing the pressure to diminish the sound again reappears at the upper level, continues for a while, and again disappears at the lower level. The advantage of this method is that it is easily applied, requires no special apparatus, and gives indications which are more easily appreciated than those of other methods.

A considerable improvement in this method has lately been made by Oliver, who fixes a kind of small phonendoscope over the artery by means of a band, so that the operator's hands are left free.

If we take the point of lower pressure at which the sound of the pulse appears loudly on raising the pressure and again disappears completely, or at least becomes much feebler, as indicating the diastolic pressure, we get a pressure as definitely marked as the systolic is by the disappearance of the pulse when the pressure in the armlet is sufficient. It is possible that the true diastolic pressure may be indicated by the loudest intensity of the sound; but the same objection applies to the estimation of loudness of sound as to magnitude of oscillation—namely, that they seem much alike over considerable differences of pressure, and the personal equation enters too much into the estimation to render the observations of any value.

Further experiments, either on a schema or on anaesthetized animals, will show definitely whether the sudden increase in sound may be taken as the diastolic pressure, or, at any rate, what relation it bears to the diastolic pressure.

For convenience sake, in describing the relations between the diastolic and systolic tensions, we may use as symbols *Ts* for systolic tension and *Td* for diastolic tension or pressure. As the term "pulse tension" is commonly used to signify the pressure within the arteries generally, some other word must be found to indicate the difference between systolic and diastolic tension. This difference, which is indicated in experiments by the oscillations of the mercurial column connected with an artery, has therefore received the name of "pulse pressure." It is obtained by deducting the diastolic from the systolic tension, and it may be indicated as *Pp*. Then $Ts - Td = Pp$.

By adding together the systolic and diastolic pressures and dividing their sum by 2 the mean pressure or tension is obtained—$\left(\frac{Ts + Td}{2} = Tm\right)$.

Diastolic pressure has as yet received comparatively little attention, because of the difficulty of ascertaining it, yet it is a factor of great importance, because by its amount, and by the difference between it and the systolic pressure we obtain valuable data in regard to the strength of the heart and the condition of the arterioles.

Its relation to systolic tension has been worked out by various authors. According to Strassburger,[9] the relationship is very constant, and is nearly 1 to 4, or, more precisely, as 100 to 25.4. Janeway's[10] estimation is very nearly the same. He considers the systolic pressure in young males as varying from 100 to 130, and puts the diastolic pressure from 25 to 30 mm. below the systolic. We may, I think, take roughly the relationship of the diastolic to the systolic as 3 to 4, and the pulse pressure to the systolic tension as 1 to 4. But it is quite evident that the pulse pressure or oscillation will depend very much upon the pulse-rate. If the pulse is slow more time is afforded for the blood to run through the arterial system into the venous system during diastole, and so the arterial tension will sink more than usual in the intervals between each pulse. If the pulse, on the contrary, is quicker than usual, there is less time for the escape of blood, and so the oscillation will be less. This may, perhaps, be made more clear by a diagram. The black line indicates

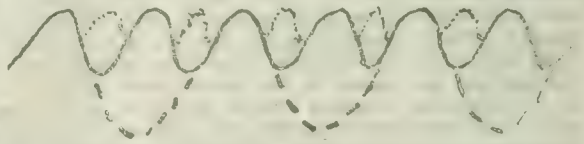


Fig. 1.—Diagram to show the effect of pulse-rate on oscillation of tension or pulse pressure.

such a tracing as one might obtain from a mercurial manometer connected with a vessel when the heart is beating at a moderate rate. If we lessen the beats to one half, as by stimulating the vagus, the oscillations become much greater, as in the line of strokes, whereas, if we increase the pulse-rate, as one can do by dividing the vagus, the oscillations will become much less, as in the finely dotted line. In this diagram I have supposed the heart to remain of exactly the same strength, and I have not taken into account some other factors, such as size of the blood wave, which might complicate the result. When we consider only the pulse rate, we see that with a rapid rate the pulse oscillation will diminish, and with a slow rate it will increase. Another factor which influences the amount of oscillation is the power of the heart. Supposing that the pulse rate should remain the

same, if the heart be feeble it will take longer to drive the blood it contains into the arteries. It will not raise the tension so rapidly, and the time between the end of each systole and the beginning of the next will be shorter. The oscillations will, therefore, be less. If the heart be stronger it would drive the blood in more equally, and the interval between the end of one systole and the beginning of the next will be longer, and thus the oscillations will be increased. Another and perhaps a still more important factor is the condition of the vessels. When

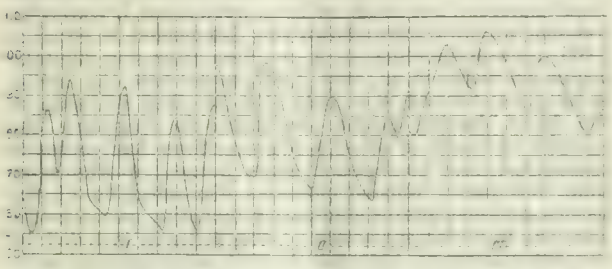


Fig. 2.

these are contracted blood flows slowly out of the arterial system and the arterial tension sinks slowly during diastole. When the vessels are dilated the contrary is the case. I think I may perhaps make my meaning clearer by using as an example some curves of blood pressure which A. B. Meyer and I took in 1867 in Du Bois Reymond's laboratory in Berlin (Fig. 2). The first section of the diagram shows the normal pressure, the second, the pressure after digitalis had begun to exert its action, and the third when the action of digitalis was well marked. The general effect of the drug, as you will notice, is to slow the pulse and raise the tension. The drug has increased the actual force of each beat of the heart, as in the third tracing the systolic tension rises to 100 or 105 as compared with 85 to 93. In the second the oscillation is very considerably diminished. It is diminished, too, in spite of its effect upon the pulse, and in the third tracing it is only about 35 to 60. Thus I may say that diminished oscillation with raised tension such as you see in the diagram indicates the peripheral resistance to the flow of blood. The heart may be actually more powerful than in the normal condition, but it is less powerful relatively to the resistance it has to overcome. If the power of the heart were increased proportionately to the resistance in the vessels the oscillation would be equally great, and if it were increased more than proportionately to the resistance the oscillation would become greater than the normal. If thus we find in a case that the difference between the systolic and diastolic tension is diminished without any further rise, or even with a fall in tension, it is an indication that the heart is probably beginning to fail, while on the other hand, as Strassburger has shown,[11] that if in a case of gouty kidney with raised tension and cardiac hypertrophy the tension itself is increased above the normal it shows that the power of the cardiac beat has not simply increased, but has increased even in relation to the raised tension.

The accompanying tracing (Fig. 3), which was kindly made by Dr. Tunnicliffe some years ago, would appear to show this. The first division shows the commencing action of digitalis; the second when the action is well marked; the third the toxic action where the vagus action is paralysed, and the fourth when the heart is failing. In the second division the pulse is considerably slowed, and pos-

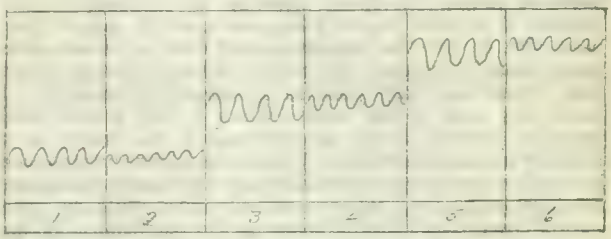


Fig. 4.—Diagram to represent the relation between pressure oscillation and cardiac strength. In *1* the tension is low (as indicated by the slight elevation of the mean pressure above the base line), but the heart is strong, as shown by the amplitude of oscillation; *2*, low tension, heart feeble; *3*, medium tension, heart strong; *4*, medium tension, feeble heart; *5*, high tension, strong heart; *6*, high tension, feeble heart.

sibly this may be the cause of the greater oscillation and not greater comparative strength of the heart.

With a low tension great oscillation shows dilated vessels, with a strong proportion to the arterial resistance, but if with a low pressure we find only a slight pulse pressure it indicates that the heart itself is feeble, and the vessels are not improbably dilated, although, of course, a feeble heart, even with a normal condition of the vessels, would give those signs. For the sake of convenience I have tried to tabulate those different conditions so as to allow of more easy diagnosis. (Fig. 4.).

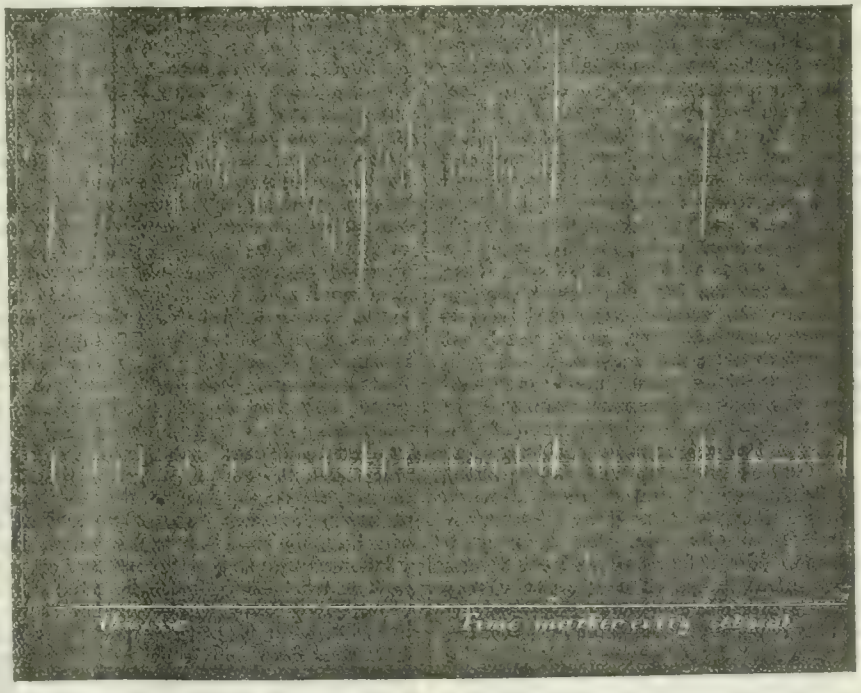


Fig 3.

Supposing that by the aid of our instruments we have made out the condition of the heart and vessels, the question next arises, What has given rise to the too strong or too feeble action of the heart and the contraction or relaxation of the vessels? To attempt to discuss this question would take hours or days or perhaps even weeks, for it involves the whole physiology and pathology of digestion, absorption, metabolism, and excretion, and as Dr. Jamieson Hurry has shown in his admirable paper on vicious circles cardiac mischief deranges the digestion and excretion and this again reacts upon the heart.

Blood Pressure as a Guide to Treatment.

But some of these questions we may perhaps consider with advantage to-night. Beginning with low pressure I find the two conditions that generally produce it are oversmoking and commencing phthisis. Nicotine has got the most extraordinary power of contracting the vessels and raising the blood pressure. One day while A. B. Meyer and I were working at the action of digitalis in 1867, Professor Rosenthal, who superintended the laboratory

in Professor Du Bois Reymond's absence, demonstrated to us the action of nicotine when injected into the veins. The mercurial column immediately shot up with such violence that it drove the float right out of the tube. I never saw anything like it before, and have only once seen a similar occurrence since, in an experiment which Schäfer and Oliver were making on adrenalin. A single pipe appears to raise the tension for the time being, but it seems as if tobacco, and probably also opium, cause the organism to produce antibodies, which in the intervals between taking the drug, exercise an opposed action. Certain it is that in a very large number of cases I have been able to tell the patient, a good deal to his astonishment, that he smoked too much, without having asked him beforehand any question in regard to smoking. I have met with a few cases where I find a low blood pressure without being able to explain it, except as a result of nerve exhaustion. Where the patient has reduced his tension much by over-smoking, it is generally necessary for him to give up tobacco entirely for a while, as even a small quantity, I think, keeps up the condition. If the low pressure is not due to tobacco the lungs ought to be carefully examined, and sometimes, when the results of auscultation are quite negative, the presence of tubercle may be indicated by the tuberculin reaction. In such cases sanatorium treatment should be adopted.

But it is in cases of high tension that I think the sphygmomanometer is most useful, because by early detection of a rise in pressure, and by the adoption of proper regimen and medicines, the tension may be kept at a lower standard, and dangers which would otherwise accrue to the heart or vessels and to the brain may be avoided. In such cases, as the treatment requires to be carried on, not only for months but for years, it is advisable to interfere as little as possible with the patient's ordinary habits. The only rules that I make in regard to diet is that the patient should take very little, if any, red meat or strong soup. He should eat slowly and masticate thoroughly. He should take neither strong tea, strong coffee, strong wines, nor strong spirits. In regard to exercise, what I insist upon is that rest should be taken for at least twenty minutes after meals, and then exercise should be taken very slowly. Sudden strain of every kind should be avoided, but moderate exercise without strain is rather beneficial. Even in patients suffering from angina pectoris, gentle exercise is useful, provided the patient will begin very slowly, and will take care neither to go too fast nor too far. In regard to treatment we must see where the vicious circle may best be broken. It is quite extraordinary how much the heart can do even if its aortic valves are very deficient, provided the myocardium receives good blood and well aërated. But when the blood becomes impaired in quality or by deficient aëration, then symptoms of distress come on. I have had a patient at hospital who was accustomed to carry hods of bricks up ladders for about eight hours daily. He showed no symptoms of distress, and was quite unaware there was anything the matter with him at all till he caught cold, and then interference with the aëration of the blood caused the strong ventricle to yield, the mitral valves to become relatively incompetent, and all the sequelae of venous engorgement to come on. The lungs become congested, increasing the difficulty of breathing; the liver becomes enlarged, the portal circulation sluggish, digestion and absorption are interfered with, the kidneys become congested, excretion impaired, albuminuria and oedema of the limbs come on, and the physical distress and inability to lie down break the sleep and exhaust the patient. Here, of course, the treatment is to keep the patient in bed with perfect rest, to allow him to do nothing that any one else can do for him, to improve his blood by giving him easily digested food and stomachic tonics, to accelerate excretion by mercurials and salines, and to help the return of the venous blood by massage. Elimination of waste is most important, and mercury in the form of blue pill or calomel should be freely used, and diuretics of the purin class, like diuretin, are useful. Here, too, we find the use of digitalis. The tracings I show you indicate that digitalis contracts the vessels and raises the tension. A theoretical objection would, therefore, be—Why give digitalis in a case where the heart is already labouring, where the patient is blue, and where the circulation is deficient? But a consideration of these tracings will show that, although digitalis contracts the vessels and increases the power of the heart, it actually lessens the work the heart has to do. The plan recommended by Strassburger and improved by Josué[12] for reckoning the actual work of the heart is to take the mean pressure as ascertained by adding the systolic and diastolic pressure together and dividing the sum by two, multiplying these by the pulse-pressure and by the pulse-rate. I am not certain that either the formula or the calculation is quite correct, but as far as I can work it out, if I take the tracings which I have shown you, the normal is equal to 1,406 mm. of mercury in a minute, after the digitalis begins to work it is only 1,229, and when the action is fully established it is only 818, so that in spite of the heart having greater resistance to overcome, the amount of work it does in a given time has actually diminished, and so digitalis gives it rest. At the same time the raised tension increases the nutrition of the tissues, and accelerates elimination by acting as a diuretic. The way in which the action of the digitalis is aided by the association of blue pill is still unknown, but as a matter of practical experience there can be little doubt of the efficacy of the combination. Digitalis thus gives rest to the heart, but rest to the heart cannot well be obtained without rest to the body, and so absolute quiet is necessary. It is also a great help to the heart if some of its work can be done for it. Massage, therefore, I look upon as a most important adjuvant to rest in cardiac disease. It is quite evident that another adjuvant where the vessels are too much contracted is vascular dilatation, and in many cases where you wish to restore the healthy circulation of the vessels it is wise to dilate the vessels as well as stimulate the heart. Amongst drugs the best for this purpose are, I think, the iodides and nitrites. In some cases of cardiac asthma nitrites seem to be little or no use, while iodides give great relief at once. The trouble is that iodides frequently derange the digestion and cannot be continued. Sometimes one can get over this difficulty by using the organic compounds of iodide, sajodin, iodipine, iodiglidine. I have just heard of a new drug—beta-sulphopyrin—which prevents iodism, but I have not yet tried it. Where we wish a rapidly-lowered pressure I think the nitrites such as the nitrite of soda, nitroglycerine, nitroerythrol and spirit of nitrous ether are indicated. Of late years a method of treating cardiac disease has come into practice. By some it is much lauded, but by others it is much slighted. This is the so called Nauheim treatment, first introduced by the brothers Schott, and consisting in baths, massage and resistance exercises. It is now twenty years since I first examined into this treatment. An old friend of mine who was an army surgeon in India came home with very bad mitral regurgitation. He took a house in Norwood and came up to me once or twice a week for advice. I did the best I could for him by means of drugs, but he did not improve in spite of all my endeavours, and at the end of the summer I told him he must go across to Nauheim. He accordingly went. I followed him to see the method of treatment and to see how he was getting on. He came back very greatly improved, and before the winter set in he was able to return to India to serve out three years and retire with a pension from that time on. This was a test case, because I had done my best to cure my friend, but the Nauheim treatment succeeded where drugs had failed. In August last, my heart having become dilated in consequence of nervous strain, I went to Nauheim on my own account, and was under the care of Professor Schott. The improvement I made was very great, the dilatation became much less, the shortness of breath greatly diminished, and the general strength correspondingly increased. I tried to analyse the conditions that had brought about this satisfactory result, and I came to the conclusion that baths, massage, and resistance exercises all had a great deal to do with it, but their effect was greatly increased by the rest, mental and bodily, enjoined during the treatment. It may interest you to know the treatment which I followed. Breakfast at 8 o'clock, bath at 9 20. Kirsch's Hotel, where I was staying, was about three minutes away from the baths, so that I slowly walked there. After staying in the bath a few

minutes the attendant rubbed me down with hot sheets. I then dressed and returned to the hotel. I then undressed again, went to bed, and stayed there for an hour, going to sleep if possible, but at any rate lying quiet, and if I read at all it was contrary to orders. It was hardly worth while to dress again, so as a rule I simply lay quiet for an hour or more, and then the masseur came, who after massage put me through a number of resistance exercises. It was then time for lunch, so that the whole forenoon had been taken up with the treatment. After lunch I read a little, wrote a letter or two, took a short stroll in the park, and then returned to dinner at the hotel, and then went very early to bed. The effect of the baths was first of all to somewhat slow the pulse and to dilate the peripheral vessels, as was shown by the skin under water becoming of a rosy colour, while that which was out of the water remained white. The effect upon the blood pressure was not constant, and I was unable always to take it under similar conditions. The effect of abdominal massage was rather to raise the tension, probably by driving blood out of the splanchnic area, while the effect of the resistance exercises was somewhat to lower it. Of course as far as regards the good effect of the treatment in my own case there can be no doubt whatever. It may be said that I might have got the same good results by having it carried out at home, but this is just the point. I could not have had it at home. I might have had the baths, I might have had the exercises, but most certainly I could not have had the rest. I have advised a Weir Mitchell rest cure in a good many cases, and in several of them I have been persuaded by the patients and the patients' friends to allow the cure to be carried out at home, but these cases have all failed with one exception, which was that of a married lady without children. The whole of the first floor was given up to her, and she was as completely isolated there as she would have been in any nursing home, and the same is the case with Nauheim. At present I know of no other place where you can get the same complete combination of treatment with rest and arrangements for gentle exercise as there, and it is this that makes the treatment so successful. The *rationale* of it is that it accelerates the circulation and eases the heart by dilating the vessels, while the heart itself is reflexly slowed by the baths. At the same time the mental and bodily rest which is insisted upon is the greatest of all the factors, and is the one that is the most difficult to obtain at home.

The best treatment for an exhausted heart as for an exhausted body is rest.

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THE late Mr. John Langton, Consulting Surgeon to St. Bartholomew's Hospital, has left estate valued at £6,731 10s. 7d.

AT an extraordinary meeting of the Court of Governors of the Middlesex Hospital, held on October 28th, it was unanimously resolved that the President, Vice-Presidents, Treasurers, Weekly Board of Governors, Medical Staff, Governors, and officials of the Middlesex Hospital, desire respectfully to express their deep sympathy with His Serene Highness the Duke of Teck and the members of His Serene Highness's Family in the sad loss which they have sustained by the death of Major His late Serene Highness the Prince Francis of Teck. They wish to place on record their most grateful appreciation of the valuable services His late Serene Higness rendered to the hospital, first as a member of the Weekly Board of Governors, then as a Vice-President and Deputy Chairman, and, finally, as Chairman. His late Serene Highness exerted all his talents and unsparingly devoted his time, to the furtherance of the hospital's welfare; the fruits of his labours in the cause of suffering humanity will remain as a lasting memorial to his name, which is revered and honoured by all who had the privilege of being associated with him in his work.

The FitzPatrick Lectures

ON

GREEK MEDICINE IN ROME.

DELIVERED AT THE ROYAL COLLEGE OF PHYSICIANS OF LONDON,

BY

SIR T. CLIFFORD ALLBUTT, K.C.B., M.D., F.R.S.,
REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE.

LECTURE I.

PRESIDENT AND FELLOWS,—My last lecture* ended with the name of Soranus, and concerning obstetrics.

SORANUS.

Soranus was of the sect of the Methodists, but was far too great a man to be enthralled in any sect. Galen, who angrily repudiated Methodism, yet spoke of Soranus with unwonted respect. The renown of this great physician, from the centuries of Tertullian and Augustine through the Middle Ages, rested chiefly in this field of medicine; but to confine his distinction to any one part of medicine would do him less than justice. Soranus, who received his medical training in the later Alexandria, was a great physician in all Medicine; and, as many of my colleagues are well aware, no inconsiderable part of his notable work on "Acute and Chronic Diseases" has survived in the transcript of Caelius Aurelianus, who lived some 300 years later. Still upon the gynaecology we may tarry for a moment, as upon this side of his work Ilberg has recently published an interesting essay,† an essay which forms a part of the large and scholarly work upon medical classics undertaken by the school of Diels.

The enormous ascendency of Galen, his vast output in which he even surpassed that which amazes us in the writers on many subjects in the first two centuries of the Empire; his intricate and ardent dialectic, which endeared him to the logicians and rhetoricians of his own and many later centuries; his teleological philosophy, which endeared him to the Church; and, above all, the brilliancy and fertility of his genius, by overshadowing obscured and even effaced the traditions and documents of his predecessors. Lost in the glamour of Galen, in the Middle Ages even the invaluable Celsus was forgotten. Not only so, but the animosity of Galen against Methodism threw the work of this school into the greater neglect. Thus it was, as again in the time of the discovery of printing, that a turn of fashion brought destruction to many a precious manuscript. Yet if in the obliteration of his works Soranus was almost as unfortunate as Asclepiades, he was more fortunate in the upholding of his good name; in all later times he has been regarded as a great if half-forgotten physician. If then we have to appreciate the work of Soranus, we have not to refurbish his character.

FRAGMENTS OF SORANUS ON GYNAECOLOGY.

Of his important work on gynaecology but little survives, nothing directly; but by a Cuvierian process of piecing together fossil fragments Ilberg has attempted, not unsuccessfully, to discern and to rectify some farther part of the relics of Soranus concerning this subject.

In the Bibl. Nationale is a manuscript, dating from the end of the fifteenth century (*Parisinus graecus*, 2153) of a kind of Handbook or Articella, a compilation without author's name, the middle or gynaecological part of which is a document of sixty-seven leaves, upon which is written in a rough hand "Σωρανός ἐστιν." On the several attributions of the constituent parts of this handbook, which in the fifteenth and sixteenth centuries had a great vogue in the practice of midwifery, I cannot here dwell in detail; suffice it to say that their distribution is now more explicit. The first critical edition of the Parisinus, by Dietz, was posthumously published, without the advantage of the editor's own care, in 1833, as being, the whole of it, from

* BRITISH MEDICAL JOURNAL, November 27th, 1909, p. 1515.

† Die Uberlieferung der Gynaekologie des Soranus von Ephesus, von Johannes Ilberg. Leipzig: Teubner. 1910. (Das xxviii Bd. der Abhnl d. Phil.-hist. Klasse d. K. Sach. *Geschlft. d. Wissenschaften*. No. II. mi sechs Lichtdrucktafeln. The appendix contains photographs of two pages of the Parisinus MS., and seven of the illustrations from the Brussels MS. of the uterus in normal and abnormal conditions of pregnancy.

the Περὶ γυναικείων πάθων of Soranus. But the part attributable to the master himself was less than half of it. Ermerins did something to discriminate its contents, especially in comparison with those excerpts of Soranus which are imbedded in the XVIth or Gynaecological Book of the Ἰατρικὰ of Aetius, a compiler of the sixth century as yet imperfectly edited. But the Parisinus contains additions, both of sentences and of chapters, which are significant as to authenticity, and are also of substantial importance; especially those on diseases of children, and on anatomy and physiology. The Aetius chapters (XVI, 50–87) seem to have been, as it were, a canvas upon which certain "Soranea" were worked in.

The next important step in the reconstruction of Soranus was taken by Valentine Rose. In the fifteenth and sixteenth centuries a certain Latin book was familiarly known to obstetricians as the *Gynaecia Muscionis*. Its history is a curious one, for it is the Latin form of it which proves to be the original work, the earliest known copy being an illustrated MS. of the ninth to tenth century now at Brussels.* The Greek rendering, under the fancy ("mundgerecht") title of "Moschion," falsely supposed to be based on the "Genetia" of Caelius Aurelianus, and to be of the eighth to ninth century, is much later. It was the erroneous notion of its antiquity which Valentine Rose corrected in an able study (Soranus, 1882) wherein he proved the "Moschion" to be but a translation of Muscio, and—as Moschion—to have a pedigree not older than the fifteenth century; and moreover to be of very subordinate value. Many of the ignorances and errors of this "Graeculus" are set forth by Ilberg. Getting rid, then, of the Greek pastiche, it is on the Latin midwives' book that we are to fall back for such light as it may throw collaterally upon the Soranus from whose hands it was supposed to have come. Thus to verify the Soranus relics these connexions had to be made clear.

Now "Muscio" professes to have had before him two works of Soranus, a brief and catechetical, and an ampler work. He followed in the main the briefer and more didactic of the two, but also he padded out his rendering from the larger treatise. Soranus, in what we know of him, was prone to be sententious, to utter maxims to be learned by rote; this we perceive, for instance, in the substantial fragments of the "Acute and Chronic Diseases" preserved by Caelius Aurelianus. There are similar reasons to suppose also that, after writing his larger books, he drew up a book of Responsiones, or catechism.† Now, in these features of composition Muscio coincides likewise with Soranus as we know him from other sources. The illustrations probably belonged originally to the smaller or catechetical book of Soranus, and were reproduced to facilitate the abbreviation.‡ They have been carefully studied by many commentators, recently by Sudhoff.§

The outcome of this farther study of the Parisinus compilation Ilberg sums up as follows: Of the original date of it there is no evidence; the Byzantine physician put in nothing characteristic of himself or of his period. A tag from Meletius may well have been inserted later. It may have been written in the decadence of the seventh or in the awakening of the ninth century. The anonymous author had before him in its two forms the work of Soranus—Περὶ γυναικείων πάθων, and also the XVIth Book of Aetius; and these he undertook to blend into a new book. Passing over alteration of chapters, the scissors of the compiler were applied to what were probably four books of the original Soranus. Book I, though with some modification of form, he reproduced nearly in full. Book II was also preserved and its order better retained. Book III was more destructively dealt with, and moreover, after the example of Aetius, suffered interpolations and corruptions. Book IV suffered still worse things ("traurig ruinirt"); it was reduced for the most part to perverted scraps. On the whole, it would seem that the Aetius book was the framework of the compilation, and supplied, indeed, the greater part of it; and, as Ilberg remarks, compilers were far less scrupulous than transcribers.

Up to the time of Oribasius the texts of Soranus seem to have been in fair presentation; so that from this valuable compiler many smaller emendations and additions have been obtained. Probably Oribasius contains also more of Soranus, portions at present beyond identification, though some passages of the common Alexandrian tradition may have passed to Oribasius directly from Philumenos.

Soranus as Physician and Surgeon.

Of the traditions which attached Soranus to the earlier Alexandria, one of the chief was the works of Demetrius of Apamea, a disciple of Herophilus who flourished about 250 B.C., whose teaching, especially in respect of etiology, Soranus cites with admiration. It was the boast of the Methodists indeed, especially of the more empirical section of them, that they looked μόνον πρὸς το πάρων, for in their opinion to pry into causes led off to alien curiosity; while the only anatomy they required for clinical purposes (χρηστομαθείας ἕνεκα) was the state of constriction or relaxation of the tissues affected (χαλᾶν ἢ στεγνοῦν); thus for them immediate clinical observation was all in all, and normal physiology a matter of indifference. But it would have been surprising if, methodist as he was, one standing in the following of Herophilus should have accepted the arid universals of that sect, regarded anatomy as ἄχρηστος, as ministering to mere curiosity, and dismissed the study of causes as otiose. In these respects, as in many others, Soranus, as Galen perceived, was greater than his school. The larger idea of molecular biology, and that of disease as a deflexion from the normal, were being degraded into the arid formulas of the later methodists, a sterility which justly provoked the ire of Galen; and from their shackles Soranus did not shake himself free. He was, I think, more of a captive than Ilberg seems fully to admit—to these empty abstractions, the κοινότητες of *strictum* and *laxum*, under which clinical diagnosis fell into little more than the dilemma of στεγνοπαθοῦν καὶ ῥευματιζόμενον ὀξέως ἢ χρονίως. Still it is no less true that these views—these concentrations on τὸ πάρον—fastened attention upon the masterly clinical observations in which Celsus, Soranus, and Archigenes excelled. The capacity of Soranus as a surgeon we may recognize in his teaching on fractures and luxations as preserved in Aetius and Niketas. In Ilberg's words, then, Soranus "ist kein Toter"; both in learning and practice and in loyal regard to tradition he stands on the heights of ancient medicine. His disciples were taught not only "claudere librum ut cogitent," but also, and yet more, *claudere librum ut videant et curent*.

It is in his therapeutics that the methodist doctrines betray themselves unmistakably, as in the ingenuity of local applications to command the permeability of the tissues of the parts affected. In his surgery we find Soranus cautious and conservative; he did not betake himself to operation until other means had failed.

As to his ethical attitude, which was honourable, Ilberg refers us to a paper of his own‖—one to which I have not ready access—on φθόρα, that is, the decision between the life of mother and child, as illustrated by the maxims of Soranus and Aetius.

Pneumatism.

Passing, as needs must, by leaps from period to period, in the next place I propose to invite your consideration of the sect known as the Pneumatists, and of the doctrine and idealism of the Pneuma. I separate the history of the sect from the history of the idea, because as a sect the phase was brief and its doctrines inconsistent, though the idea is one which in manifold forms has dominated and animated the minds of men beyond the domination and beyond the inspiration of any other idea in physiology, and this with a fervency which has penetrated far beyond the limits of the biological sciences. Indeed, as we utter the word "inspiration" we feel that the glow of the spirit, which from the ancient legends of the creation of life to the messages of our modern ethereal telegraphy, from the hauntings of the Great Spirit in primeval man through the storms of superstition to the haven of the soul in his purer communion with the Divine, has moulded the whole story of man, and embedded itself even in his tongue. Inspiration is just air; but what air? What in air, or of it, can be fraught with creative power? and how

* *Bibl. Roy.*, 3701–3715. (Muscio occupies the second part of it.)

† Cf. the *Interrogationes* of C. A.

‡ There is no difficulty about the date of such illustrations. There were illustrations in Vitruvius. At an earlier date Aristotle refers to σχήματα and διαγραφαί in the *History of Animals*; and at a later Galen seems to have produced diagrams (ὑποδείξεις διὰ γραμμῶν) of the muscles and nerves of the arm, and of optical phenomena. The Alexandrians produced many illustrations.

§ *Studien d. Gesch. de Med.* IV

‖ "Zur gynaekologischen Ethik der Griechen" in the *Archiv für Religionswissenschaft*, xiii, 1910.

can it endow the tabernacle of clay with energy, life, motion, and thought?

One of the most touching aspects of human life is the perennial warfare, the rage between the idealist and the man of affairs; nay, it is even of this war that tragedy and comedy are begotten. It is a materialist prophet of to-day who bewails "the untameable wildness of the good." This is the story of Paul before Festus; of Francis before Elias and the Pope; of the "Lady Helen of Troy pacing to and fro with a nosegay in her golden shawl" before Mrs. Elizabeth Fry; of Garibaldi before Cavour; and in comedy of Quixote before Sancho, or the modern curate preaching Tolstoy before his country rector. "Church," said Mr. Tulliver, "was one thing, common sense was another, and he wanted nobody to tell him what common sense was." The dilemma is *ambulando* insoluble.

And of this kind is the story of the great Ionian idealists, the philosophic dreamers before Hippocrates and Aristotle; and the story of the Greek speculative reason, touched with an oriental mysticism, before imperious Rome. A distinguished modern author of the extremer Western variety has lately reiterated with uncompromising emphasis that in the sphere of ideas we owe all we are worth to the Greeks, a claim, however, which cannot be admitted without profound qualification. The Greek was the prophet of the "*Via Media*"; but to the idealist the *via media* has always been detestable, as detestable to John Knox as to John Henry Newman. The achievement of the Greek was loftiness of the plane on which the seer of both blended and integrated the ideal with the actual; that his *via media* was so high a mean between the imperative categories of the idealist and of the materialist. By an exquisite insight and tact he renounced not only much of the uses of the comfortable and pragmatic kind, but, as we perceive in Plato as well as in Aristotle, he definitely relinquished also the vision of some of the elements pertaining to the ideal society. The Greek saw "the untameable wildness of the good," saw it even with sympathy; but he saw also how much of it would not come into his picture.

The "Practical" Nature of Roman Thought.—Now we observed last year that toward these horizons of blended material and spiritual discernment Rome had not a lofty outlook. We are told, and not without some congratulation, that Rome was too "practical" for such issues; that the average Roman was above all things the practical man. Well, were he as audaciously satisfied as Dr. Archimedes Silverpump of the Lycurgus House Academy, he had notwithstanding his enormous place in the world's history. Still it is true that his work, fundamentally necessary as it was, the necessary foundation upon which modern Europe should be built, was yet but a substructure, and the Roman a labourer to be dismissed when this task was done. And, as we observed also in last year's lectures, while the Roman pavior was wielding his beetle, while with plumb and square he was shaping and laying the great blocks for the edifice upon which we are designing and are building the superstructure, even then ideas could not sleep. We have seen how the leaven of alien minds in Rome was fermenting, expanding, and penetrating to the joints and marrow of her work; and, as if in mockery, displaying upon her sullen atmosphere phantoms of what after her was to be: even then Rome was not permitted to forget that man cannot live by bread alone; not even if the loaf be protected by the policeman. It is this untameableness of ideas, this unconquerable mind of man, which makes the fascination of our story of the Greeks in Rome, as it does of the history of the Jews, or of the ideas of the Jew, in barbarian and in modern Europe. For, if under other guises, the conflict of Pagan, of Jew, of Christian, and of Mammon was never keener or more searching than it is to day.

Now, as in our own land we often congratulate ourselves—too often perhaps—on being above all things "practical" men, and as in respect of the function of Rome this term is often used as sufficient for all explanation, may we tarry for a moment to ask for some notion of its meaning? For instance, is Euston terminus more "practical" than the Pantheon? or the Pantheon more "practical" than Santa Sophia or the Parthenon? And if so, why and how so? To answer this question must we not consider which of these achievements will have the most abiding use for mankind? Furthermore, we might ask if the ideas of the order of Euston, or of an Atlantic steamship, exist for the sake of the ideas of the Parthenon, of Canterbury, or of William Wordsworth? Or conversely? We cannot pursue this train of thought, but we perceive that by "practical" in the Roman sense we mean the immediate needs, the things and devices of to-day as contrasted with things to come; or as an adept calculation and encountering of transient contingencies as contrasted with larger, future, and more consummate ends. While we admit, then, that Rome was laying the material bases of social order and culture, we perceive that with the issue of this material function her civic life began to decay; for to ends she had contributed little. And we are not surprised then to hear that the Greek too, not Aristotle only but Plato likewise, regarded himself as above all men practical; that in all the schools of ramifying philosophy the conscious, deliberate, and prophetic purpose of each was the art of life. Shall we not, then, consider how we defer to the Roman as conclusively the "practical" person? may we not have to describe him rather as the artisan of a material office, as the pioneer before the architect?

The Prophetic Genius of Ionia.—Now to return to the philosophers of the Homeric land: no work, ardent as it was, inspired as it was, could have seemed more visionary and less practical than theirs. In the later Attic reaction, the restraint of a more measured harmony, their exorbitant speculations seemed overwrought and in the void; Socrates explicitly repudiated their physics, and to this day they are too often regarded as vacuous bombinations. Yet to the prophetic genius of Ionia, the *sapienza poetica* of Vico's happy phrase,* we owe at least four cardinal ideas, ideas which lifted the earth into the universe, revealed the universal spirit, the creative process, and the universal order, the four master ideas which within my present limits I must indicate nominally as the Cosmic idea, the Dynamic idea of a Continuum of streaming and indestructible energy, the Atomic hypothesis, and the compound idea of Natural Law and of Evolution. And to these I might almost venture to add the idea of gravitation. As we glance at this childhood of science, idly noting, perhaps, little more than its obvious puerilities, we are apt to forget the ironical question, What is the use of a baby? Yet some further reflection will make manifest to us, behind this inexperience, an insight and a grip of essential principles which 2000 years have enormously developed in principle but hardly regenerated. It is startling to feel how near us these great thinkers are; how much nearer than Abélard and Aquinas, when they unfurl the canopy of heaven into the air of infinity, when they prophesy of celestial and terrestial physics, of natural law, of evolution from rudiments, of condensation and attenuation, of molecular energy, of formative combustion, and even of mind-stuff.

But to bring these radiant visions under some measure of realization (*ποίησις*), and to vindicate the values of medicine and natural science independent of philosophy, in the fifth and fourth centuries respectively two men as great, but of other gifts, arose—namely, Hippocrates and Aristotle. The reader of the greater Hippocratic treatises will find, as Gomperz has generously maintained, the door opened upon a way which to us has become so familiar that we find it difficult to understand how in its own day it revealed the growth of a method of thought and discovery wholly new to the world—namely, the scientific method, as contrasted with scientific imagination.†

Now, who was this great Hippocrates, this prodigious man, and was it by the power of medicine that he was fashioned thus out of the visionaries of the age? That he did not stand alone, that he must himself have been the product of a great school and of a great tradition, our historical sense would bear witness. It is no barren fancy to associate the Father of Medicine in our

*For an interesting and discerning comparison of rational analysis with the instinctive, impersonal insight of myth and poetic tradition, often of deep intrinsic philosophical meaning, see Flint, *Study of Vico*, 1884.

†There is no writing extant which brings this new temper so impressively before us as the Hippocratic treatise on Ancient Medicine. Herein is set forth the way of experience, of careful observation of facts. And somewhat sharply controversial as it is against unbridled speculation, and the deductive application of philosophical ideas to the interpretation of natural phenomena, it is yet interesting to note that this treatise is also of Ionian origin.

imagination with the Father of History. Both inherited the luminous Ionian mind; and the author of Airs, Waters, and Places, cradled on the same enticing seas, had likewise travelled widely and observed shrewdly; both saw common things under the species of a large humanity. Indeed, the Hippocratic scriptures themselves also testify to a great school and a great tradition of medicine which, if sown and watered in a forgotten past, bore its golden fruit in Hippocrates, in Aristotle, and in the scientific schools of Alexandria.

In the anonymous Menonian MS. of London, it would seem that Aristotle attributed a certain book of this heterogeneous Hippocratic collection—namely, the Περὶ φυσῶν—to Hippocrates himself; and it is evident that if we could fasten any one of these books upon Hippocrates we should have therein a clew to his personality, and to the authenticity of other books of the canon. Hitherto, as I said last year, we have assumed that certain works marked by breadth of view, scientific temper, and sagacity seemed by these very qualities to proclaim themselves as from the hand of the great master himself. And perhaps this is not altogether to reason in a circle, for such qualities, by the witness of his contemporaries, were his. But, unhappily, these are not the qualities which mark the treatise Περὶ φυσῶν—a title difficult to translate into English, but which may be rendered *Concerning Airs*. Far, indeed, from breadth, precision, and wisdom, the Περὶ φυσῶν is a popular oration as windy in its rhetoric as in its subject-matter. We recognize in its affectations the rules of phrase, trope, antithesis, and cadence, which with a finer art were observed by all Greek rhetoricians, as, for example, in that masterly treatise of the fifth century, the Περὶ τέχνης of the same collection.* It is, in fact, an inferior product of the stoical physiology afterwards, as a school in Rome, known as Pneumatism; and if Aristotle really did attribute it to Hippocrates—well, says Ilberg, so much the worse for the medicine he was taught in Stagira. But I must not occupy you with the pretentious banalities of the Π. φυσῶν;† I have alluded to this tract, as I might allude also to some sentences in the Περὶ τέχνης, only to indicate the prevalence through the Hippocratic period of the doctrines recognized still later as a school under the title of Pneumatism, doctrines which in Rome were taught by the interesting physician Athenaeus of whom I am to speak.

The Origin of the Idea of Pneumatism.—In my remarks on this school I must begin by acknowledging the debt which, in common with all students of the subject, I owe to Wellmann's essay on "Pneumatism and the Pneumatists."‡ Yet I trust that, although without it my own would have been very defective, this sketch may be no mere reproduction of Wellmann's work. Amid the manifold aspects and schisms of Roman medicine I have chosen to solicit your attention at somewhat greater length upon Pneumatism, because among other qualities of interest its central idea seems to me to shadow forth what I have elsewhere ventured to describe as the pathetic quest for oxygen. In the history of opinion we have to beware not only of shaping the opinions of the past by our own, but also to take heed lest, while thus detaching ourselves as critics, and thus desiring to attribute to each of our ancient forerunners just his own uncoloured ideas, we discriminate them with distinctions to which he was a stranger. The ancients had not distinguished, disentangled, or differentiated concepts, or principles, so as to argue within and around them with the precision and discernment of later generations. In those times ideas were not so much mingled as inchoate, and still implicit together; their rudiments had not extricated themselves into separable strands. Ideas were nebulous, approximate, and blended. Logic came afterwards, only too soon, only too systematically; for many a century only to deprive the earlier speculations of their spontaneity and of their naïveté, while masking with its wire grille the vacuity of fact and the lack of verification.

The origins of the idea known for a while as Pneumatism are lost in the backward of time. The soul itself was an air or vapour. Mr. Barnard Cook tells me that the goddess which escaped from the cleft skull of Zeus may be regarded as his soul. In early Indo-European religions the soul in both sexes was conceived as feminine; as, for instance, the Sirens, the Harpies, the Eumenides, and so forth. Thus from Zeus we move immediately to Ether (Αἰθηρ), or ethereal essence, a dynamic conception having many qualities,§ or developing into many; for the pneuma—if I may anticipate the use of this term—was imagined as a yet more primeval substance (Urkörper) out of which when fertilized by a seminal principle (σπερματικὸς λόγος) particulars emerged. Thus the idea of the pneuma contained more than the several notions of air, of vapour, of fire; it was a world force, a Divine reason. And being in "conciliation" with nature, its works were interpreted teleologically; it was in this connexion that pneumatism became allied to stoicism, an alliance at first sight unlikely, as one without radical coherence; but in consistency stoic physical teaching as a whole was lacking, being rather an eclectic array, a syncretism for pragmatic ends, than an organized philosophy.

It is to Galen, whose value as a source of medical history cannot in our dearth of sources be overestimated, that we owe most of our knowledge of Pneumatism in its more developed doctrine. Our knowledge of the system is also enlarged by a pseudo-Galenic handbook, Ὅροι ἰατρικοί, supposed by Rose and by Diels to represent Athenaeus, as it observes his arrangement. But, being of later date—probably of the third century A.D., it contains more than this, and throws some light upon Agathinus, Archigenes—of whom I have more to say hereafter—Leonides, and Heliodorus; and in the manner of the second century is a fusion or tessellation of pneumatism, methodism, and eclecticism. This treatise deals also with the pulse lore with which, as we shall see, the Pneumatists made great play.

The Doctrines of Pneumatism.—To set forth the doctrines of Pneumatism, from their primeval sources to their completion, chronologically, and with due regard to their several exponents, would within our limits be impossible. I will try to sketch the history succinctly. In advancing, then, from the primeval ethereal essence (Ζεὺς-Αἰθηρ), we have glanced at an early division into active and passive, into primary force and primary substance, the conjugation and products of which opposites played a large part in much of the later philosophy, without as well as within pneumatist circles. And passing on to the farther evolution of these vaporous essences, we find them elaborated in Plato and Aristotle,‖ from whom the dynamic view of life was carried forward to Alexandria rather through Diocles¶ and the Sicilian school by which Plato was especially influenced, than on the Hippocratean tradition, which indeed was soon to petrify into maxims or "dogmatics." Now it is of peculiar interest to us as physiologists that an effort was made by these medical philosophers to conceive of a dynamic essence "between air and fire"; for here it is that we note the beginning of the pathetic quest for oxygen which, from Empedocles to Lavoisier, drove physicists, chemists, animists, and vitalists, like a gadfly.

I have already reminded you of the rapturous idea of flux revealed by Heraclitus. Worlds away was his rushing, teeming, manifold, many-coloured torrent of life from the grey motionless shadows of the Parmenidean unity. But we must drift down on these subtle airs to the Timaeus, whence, and from other sources, we learn that the whole apparatus of breathing was regarded as independent of the animal organization; the "ζῶον" was already "πλάσθεν"—moulded into form—when this dynamic function was added to it.** The structure of the whole body being pervious to both air and fire, as the most subtle of all

* Vide Theodor Gomperz, *Die Apologie d. Heilkunst*, Second Edition, 1910

† I have written more fully of this treatise in the *Classical Review* for 1910.

‡ *Philologische Untersuchungen*, xivtes Heft. Die Pneumatisch Schule bis auf Archigenes; von Max Wellmann. Berlin, 1895.

§ The element was not active primarily, it was but ποσότης; it was on its quickening into a quality (ποιότης) that it became creative. And it is to the qualities, says Wilamowitz, that the platonic term τὰ στοιχεῖα is properly applicable. The pneuma provided, as it were, the λόγος of this conversion. And, as if this were not ingenious enough, the pneuma was itself regarded as consisting in three phases; ἕξις the grossest, φύσις the generative, and ψύχη the finest—sensation and thought. And above these was the ἡγεμονικόν, or ruling quality placed by Aristotle, Chrysippus, and Athenaeus in the heart; but by some Pneumatists this will or mastery was placed in the brain; but how, said the rest, could it energize in the coolest part of the body?

‖ On this period I am indebted to conversations with Professor Henry Jackson and to Mr. Barnard Cook's *Metaphysical Basis of Plato's Ethics*, 1895.

¶ Personally I am disposed to attribute the Περὶ φυσῶν to some follower of Diocles.

** Tim. 78, c., etc. Body, matter, or substance is perhaps most readily defined for this argument as resistance—inertia; it lay between "void" on the one hand and "form" on the other

created things (*πάντων γενῶν σμικρομερέστατον*), fire drives the air through its pores; wherein we find an early allusion to respiration through the pores of the skin (*διὰ μανῶν τῶν σαρκῶν*), an ancient doctrine at least as old as Empedocles and probably older. Without going tediously into detail, Plato's conception was of a double cage of net or wicker, the outer containing air, the inner containing fire (as it were cages of carbonic acid and oxygen) with inlets to the bodily orifices, so that those agents by alternate inflation and depletion (*ἐκπνόη* and *ἀναπνόη*) should palpitate through the body. We start full; then the air, heated by the fiery envelope, drives by the nearest way through mouth and nostrils; then again, to avoid a vacuum, comes a compression (*περίωσις*), so that the air escapes through the tenuous interstices of the flesh (inspiration), and so onwards by oscillation (*αἴωρα*) through the blood vessels (*φλέβας*) and the cavities *διὰ τῆς κοιλίας*): "Making its course from the inwards to the parts extreme." The corpse differs from the plastic but not yet breathing body in that both soul and "form" have escaped to their refuge (*ὑποδοχή*), and left the "matter," which they had temporarily impressed, inanimate. "To die is to be a counterfeit; for he is but the counterfeit of a man who hath not the life of a man": said another authority. Such in rough outline was the remarkable contemplation of these great thinkers upon that primeval miracle the respiration, the inhalation of life from the invisible circumambient ether, essence, air, spirit, soul. "And He breathed into his nostrils the breath of life, and man became a living soul."*

The next considerable step in medical pneumatism was the fusion or adaptation of this dynamic idea with that of the four elements, fire, air, water, earth—termed the *τὰ ἁπλὰ* or rational units, and taken by Empedocles as radical substances (*ῥιζώματα*), the creative qualities of which (*ποιότητες*) were hot, cold, moist, dry. This reconciliation seems to have been due chiefly to a certain Chrysippus, a younger contemporary of Aristotle, who may be taken as the philosophical founder of explicit pneumatism, as interpreted long afterwards for medicine in Rome by Athenaeus. Although the very obscure treatise *Περὶ πνεύματος* is not authentic as a work of Aristotle himself, yet no inconsiderable portion of the doctrine, as we may note by the terminology, is Aristotelian.† Galen‡ speaks of Chrysippus as the father of the sect (*πρόπαππος τῆς αἱρέσεως*), but he attributes no small share of it also to the direct influence of Aristotle. The Chrysippus of whom I am speaking was clearly not Chrysippus the Stoic, who lived a century earlier; but this distinction does not quite satisfy for the identification of this renowned physician so frequently quoted by Galen. For it seems probable that in the later fourth and earlier third century there were in Alexandria at least two of the name, father and son. However, merging the lesser in the greater, the greater Chrysippus, who may have been the master of both Herophilus and Erasistratus—of Erasistratus, if not directly yet at any rate indirectly through Metrodorus—was himself of the Cnidian school of medicine, and a disciple of Eudoxus.§ Although he had travelled much and learnt of many, he seems to have retained the Cnidian habit of minute observation of instant detail, of indifference to Coan reasoning upon remoter causes—such, for example, as on "airs, waters, and places"—and of academic logic. This sedulous obedience to fact may have fortified in Alexandria the bent inherited from Aristotle to anatomy, surgery, and symptomatology; and sowed there, moreover, the seeds of the subsequent empiricism and scepticism to which I have more than once referred. By tacking on many little points of agreement‖ on some of which I shall touch incidentally, as well as by the new ideas with which he enriched medicine, we shall be able to trace the influence of Chrysippus into later times; as, for instance, in the use of herbs and in other notes of therapeutics, especially concerning venesection, on which practice, as I shall show presently, Chrysippus set himself against the whole of ancient medicine, and with the effect on later generations down to Galen, to which, in the history of Asclepiades, we gave some consideration last year. "Chrysippus the Cnidian," says Galen (XI, 150 and 252), "who displaced (*ἐξελών*) phlebotomy altogether from our means of cure." But to this important matter I shall return hereafter in some reflections upon the story of the pulse. The works of Chrysippus were still extant in the time of Celsus.

Now I will pass quickly over most of the interminable stoical and more or less pneumatist dialectic, worthy of medieval times, recorded by Sextus Empiricus, Diogenes Laertius and otherwise, as to modes of generation from those units; how on the dominant idea of generation earth and water were passive substances (*παθητικά*), fire and air (*δραστικὰ*) were powers (*δυνάμεις*), and so forth; over much logic also as to fire, heat, air, and pneuma; as to rarity and density (Zeus); as to heat in organic and inorganic bodies respectively; how far—and this is most interesting—fire (or pneuma) was not always a separating agent, but, as in the technical arts (*θερμὸν τὸ ἐργαζόμενον*), might fuse, temper, construct, and modulate them (make rhythm); passages which remind us of the lofty vaunt of Prometheus—

> . . . in the fiery flame that lends
> Its aid to every art.**

Fire, that is, might work either as an element (or substance, *ὕλη*) or as a tool (*ὄργανον*). And if with some thinkers pneuma was regarded as a kind of fire, with others it was regarded as a fifth element or *ἁπλόν*; in either case by their various mingling and the formative fire the several main tissues of the body (*ὁμοιομερῆ*)—that is, bones, flesh, blood vessels, etc., were evolved †† It was generally agreed, at any rate, that heat, to which at least pneuma could attach itself, was the demiurgic power, and thus that the innate pneuma (*σύμφυτον*) ‡‡ by movement kindled the inward heat (*θέρμον ἔμφυτον*); and by its penetration fused the whole into integration, or uniform harmony (*ἕξις*), promoted growth and propagation (*φύσις*) by way of which thinking comes, "for vapour cannot think," and awakened thought (*ψύχη*); the heat being constantly moderated by respiration. The Sicilians, on the Pythagorean tradition, regarded the heart as the seat of this inner or governing (*ἡγεμονικὸν*) fire, an attribution which I need scarcely say was accepted in the main by Aristotle, and thence was handed down to medieval Europe. It is peculiarly interesting to us thus to trace the fifth element or quintessence through Aristotle to Harvey, who still conceived it as the universal principle of motion §§ animating all things from the starry sphere of the heavens to the tireless orbit of the heart. For of life the Aristotelian doctrine was that of the three spirits—the vegetative, the animal, and the vital—"the vital is begotten of the purest heart's blood, and conveys the glow of life through the other members, which gives them all the capabilities of action which emanate from the heart's vitality, the arteries serving for the transmission of this spirit to all the members"—

> "Spiritus intus alit, totamque infusus per artus
> Mens agitat molem, et magno se corpore miscet."
> —*Aeneid*, VI, 726.

We perceive, then, that pneumatism was a much larger idea than animism, which in its peripatetic doctrine contemplated the vital principle under three particular forms. Pneuma is nearly identical with the primeval principle of *νοῦς* (Anaxagoras), an energizing principle;

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* It is worthy of remark that Laurence Oliphant said, "The sense of union with Christ, of His living in us, was manifested, or became perceptible, in a physical sense, chiefly in changes of the natural respiration."

† On this part of the subject I am indebted to an essay by Neustadt: Ps-Aristoteles, *Περὶ πνεύματος*, Hermes, 1909.

‡ IV. 160; and five or six other passages noted by Neustadt.

§ In his earlier paper in Hermes (1900) Wellmann exposes a certain "chronologische Ungeheuerlichkeit," due to the confusion of the Alexandrian teacher with namesakes; and to his aid I am here again indebted. I may add that Wellmann regards Chrysippus as directly the teacher also of Erasistratus.

‖ Vide Wellmann's useful lists in Susemihl (loc. c t.)

¶ Neustadt, loc cit.

** ΧΟ. *καὶ τὸν φλογωπὸν πῦρ' ἔχουσ' ἐφήμεροι :*
ΠΡ. *ἆφ' οὗ γε πολλὰς ἐκμαθήσονται τέχνας* (261-2).

†† On the Homomeria, or kinds of structure, of Anaxagoras, vide Lucret., I, 830 et seq.

‡‡ The Pneumatists proper (Athenaeus) identified the pneuma with the innate heat (*ἔμφυτον θέρμον*) as a single entity, and also, with Aristotle, accepted the heart as the seat of it (*τὸ ἡγεμονικόν*).

§§ In their several orbits or spheres (circular as being the most perfect form) whirled the sun, moon, and planets, while the outermost sphere of the fixed stars whirled round the others with an enormous velocity animated by the quintessence of ethereal fire. This universe, a plenum, spun in the infinite void. The expansive elements (fire, air), being centrifugal, and the heavier elements (water, earth), centripetal, the whole was balanced, though it is interesting to note that ultimately all things (even fire itself) tended owards the centre of the earth (gravitation).

yet no metaphysical hypostasis, but something physical the finest matter (ether) vibrating in and through all things, but most vivid in living things.

When Aristotle says, and says truly, that cold condenses (*πυκνοῖ*) and heat makes more permeable (*μανότερον*), we seem to be hovering about the edges of Methodism, and to apprehend how and where these outgrowths of doctrine branched away from each other. To the academic student it may seem perverse that with such features in common the various sects of which we are speaking kept so bitterly aloof, each within its own conventional palisade; but in our own day, with far less excuse, are not these tribal animosities still as fierce, almost as stubborn, as they were in certain pneumatists who, according to Galen, put their sect before their country? Many of them, poor things, had no country; and the pneumatists, in the breadth of their ruling idea, seem to us to have been more disposed than men of other sects to sympathize with alien opinion. Thus it was that many of the pneumatist school approached, or indeed joined hands with the Eclectics; but in no period of culture has a consciously eclectic school found the inspiration of life; in all times the doctrines of such schools, like compromises in practical affairs, have formed a mosaic rather than an organic body or synthesis, and have proved therefore to be temporary accommodations, and seminally impotent.

Relations of Pneumatism to Other Doctrines.—So far I have pursued the general story of these ideas without arranging them formally in medical schools, or attributing them exactly to their respective teachers, in order to set forth an explication of so much of the pneumatist doctrine as, with some considerable peripatetic infusion, brought this school of medicine into alliance with the philosophy of the Porch.* For, as I have hinted, it is rather surprising to us to find the quickening leaven of the pneuma so actively at work in association with the Stoics, for whom all emotion was a perversion or a defect of virtue. This inconsistency was not only felt by such later Stoics as Panaetius and Posidonius, but became a subject of apologetic. Diels, however, in his essay on the physical system of Straton, suggests, or rather points out, that the pneumatic doctrine descended to Medicine more directly through this peripatetic teacher to Erasistratus of Alexandria, and thence to Rome. It is in the pseudo-Aristotelian *Περὶ πνεύματος* that we first find the pneuma definitely accepted as a fifth elemental quality.† And we have seen that the undoubted influence of Chrysippus in the Alexandrian schools pointed to him as the moulder of the theory of Pneumatism. The testimony of Galen, as cited by Neustadt and others, is not inconsistent with this attribution to the Peripatetics, for he says repeatedly that Athenaeus drew freely upon Aristotle. Another most interesting link of the tradition we find again in Diogenes of Apollonia‡—namely, that both Aristotle and Theophrastus avoided any radical distinction between pneuma, as the original or even as the one primary element, in which thinking stuff was implicit, and out of which accordingly came order in the universe, and common air; though they soon entered into refinements, notably as concerning that vague but penetrating apprehension of oxygen—the "substance between air and fire"—on which I have already dwelt. More fancifully, airs might be drier or damper, hotter or colder, more attenuated (spirit) or condensing into phenomena; and so on. Thus Diogenes no doubt contributed to the rhetorical sophistry of which the pseudo-Hippocratic treatise *Περὶ φυσῶν*, and others like it, consist; a degradation of lofty and prophetic ideas into coarser notions of blasts and tensions of air compressing, expanding, shaping, or disintegrating an inert matter. Thus by ruder and coarser minds two great dynamic ideas—the pneumatic and atomic hypotheses—were debased; while the sagacious and prudent clinics of Hippocrates were frittered away in frothy rhetoric, barren methodism, or formal and arid dogmatics. In the absence of sufficient tests of premisses and of sources this lapse into sterility was perhaps inevitable; moreover, the Roman temper was for such thumb-rule formulas as Themison and the empirics provided. It is true notwithstanding, as we shall see for instance in Aretaeus (or Archigenes), in Heliodorus, and in Galen, that beneath all this sophistry a substantial medical and surgical art was making its way, propagated in the main by the stream of Alexandrian science from Empedocles, Hippocrates, and Aristotle.

THE ARISTOTELAN INFLUENCE IN ALEXANDRIA.

In endeavouring to elucidate this propagation and course of scientific ideas after Polybus, Diocles, and Praxagorae through the schools of Alexandria to Rome, I have mentioned the name of Straton. Unfortunately for the historian, the name of Straton, like that of Chrysippus, was attached to several individuals. Of these, one, namely Straton son of Arcesilaus, of Lampsacus, tutor of Ptolemy Philadelphus, succeeded Theophrastus (B.C 288) as head of the Peripatetic school, and held this position for 18 years, when he was followed by Lycon. Now this was the Straton who devoted himself so assiduously to natural knowledge as to receive the cognomen of Physicus. And Cicero (*Quaest. Acad.*) upbraids him for so giving himself up to nature as to neglect the study of virtue. But there was also a Straton, the same or another, an eminent physician of the third century, who was associated with Erasistratus. He is important enough to receive frequent mention over the centuries from Themison and Soranus (who quotes him on prolapsus uteri) to Oribasius and Galen, and to Alexander and Aetius. He opposed venesection after the manner of his alleged pupil Erasistratus; he was the first physician, so far as we know, to describe elephantiasis; and Erotian quotes him as author of a lexicon of Hippocrates. Haeser seems to identify these two persons; Fuchs (in Puschmann) separates them. The unity or duality of person may be of no great importance, for, if two, they were both in the line of the same tradition; but the force and direction of Aristotelian influence is a question of the keenest interest.

The Sicilian tradition was never free from magical bias, and the Platonic school, which was impressed by it, set back the inductive side of learning. If, like Bacon, Aristotle may seem never to have apprehended, as the Ionians seem to have done, the infinity of the scope and subjects of knowledge, yet by virtue of this very concentration he restored the method of research by the serial order of facts; and like John Hunter two thousand years later, he brought together a vast collection of facts, acquired in great part by personal experience, but also by cautious inquiry, not of philosophers but of practical men, such as fishermen and huntsmen. Now this, we learn, was the very influence which the efficient, if ambiguous, Straton carried to Alexandria. In his own work Straton attempted to base science on experiment, and, in particular, we learn that he made systematic experiments on a "vacuum." So also Aristotle's extensive dissections of animals must have forwarded the study of anatomy in Alexandria. Furthermore, we know that Aristotle collected a large library, and that it probably became the foundation of the Alexandrian. We know also that in collecting these books he did so with a view to a historical co-ordination of knowledge, for which end he organized writers in several departments — Eudemus was editor-in-chief; Menon compiled the medical literature; Theophrastus that of minerals, of physics, and of botany; Aristoxenus that of music. Sadly we deplore the utter destruction of all these documents. By certain words and phrases we may trace the passage of these ideas through the Alexandrian schools, especially through Erasistratus down to Athenaeus, the last physician, as we have seen, to build directly upon Aristotle—for example, in the meaning of nature (*φύσις*), concerning which Athenaeus definitely cites Straton; in the several kinds of the soul; in the hegemony of the heart; and in the theory of generation we recognize Aristotle.

Unfortunately, hitherto the discoveries of papyri in Egypt have brought forth new ancient records of

* I cannot dwell here on the points of difference: such as that for the Peripatetics heat and cold were drastic, and dryness and moisture passive; that Athenaeus regarded these substances variably as sometimes matter, sometimes as forces; that substances or elements, as *ποσότητες*, were often confounded by the Stoics with their active qualities (*ποιότητες*)—for example, water with moisture, earth with dryness, and so on. Indeed the Stoic hair-splittings amidst these permanent or interchangeable logical entities—as between *ποσοτης* and *ποιότης*, for example—are to us intolerable, and were in respect even of their own time as vain as for his time the logomachies of Duns Scotus.

† In Galen's words (quoted Neustadt, loc. cit.): "*Περίττον παρεισάγει κατὰ τοὺς Στωικοὺς το διήκον διὰ παντων πνεῦμα.*"

‡ Recently well edited, with Introductory Essay, by Krause, Posen, 1908-9. This Diogenes is to be distinguished, of course, from the (later) Stoic. Vid. et Diels. Fragmenta in Ed. of Excerpta Menonia and Axon Nelson, Berlin, 1893. *Περὶ φυσῶν.* Upsala, 1909, p. 101.

Alexandrian medicine.* However, in the British Museum is a papyrus, apparently of just pre-Galenic date (noted by Mr. Kenyon in the *Classical Review* for 1892), which deals with certain points in dispute between the followers of Herophilus and Erasistratus. And Karl Sudhoff (Leipzig, 1909) has recently collected many interesting notes concerning drugs, customs, diet, and baths; and on temple and hospital matters: but no fragment of any great writer, nor any illumination of the history of ideas, has turned up as yet. From such sources as we have, we learn that in the period of comparative peace which ensued in Alexandria after the internecine strife of the Diadochi until the expulsion of the physicians and the *savants* to the islands and Asia Minor from Alexandria by Ptolemy VII (Physkon), a strange contrast to his predecessors, and before the diversion of the main stream of culture from Alexandria to Rome, burst forth that brilliant school of which we know so much by the glory of its notable achievements and so little by its documents. Moreover, under the Empire, and even in the later years of the Republic, the intercourse between the two cities both in trade and culture had become easy and continual. Celsus, for instance, in his therapeutical advice to consumptives, speaks of the voyage from Italy to Alexandria, even in the petty craft of those days, as "aptissime." In Alexandria, then, Hellenism had its fling, touched, however, more and more by Oriental influences, especially of that learned and ingenious race the Jews† and Syrians, of whom even then there were many in the city; influences which a little later, in the Neo-Platonic and Christian schools, became potent, and even ascendant, down to the second great fire of the Alexandrian libraries in the fourth century.

We have seen, then, that the powerful and insatiable mind of the Greek from Anaximander to Plato, before the discipline of observation and analysis initiated by Hippocrates and Aristotle, had achieved certain general ideas of cosmic scope and significance. These ideas once apprehended, the framework of orderly knowledge had to be built up by more laborious methods. The difficulty then lay in the gearing of this tremendous thinking engine to practical work. While unharnessed, it spun about itself with enormous velocity, weaving out of its own dust what Francis Bacon called its cobwebs. These buzzing and ineffectual revolutions are almost more audible to us in the first centuries after Christ than in the thirteenth. For a season in Alexandria this tremendous energy was buckled to the real work of spinning webs, not of notions only, but of facts—of things, that is, which had happened, which were happening, and which experimentally might be made to happen. And in the Aristotelian tradition we know how brilliant were the results of these Alexandrian scientists, not only in celestial and terrestrial physics, but also in biology. For in this college the names of the great anatomists Herophilus and Erasistratus are even more familiar to us than those of Hipparchus, Archimedes, and Heron.

Alexandrian Medicine.

But to proceed with the sketch, so far as relics and fragments enable us, of those features of Alexandrian medicine which appear in Roman medicine, and in our present concern with the pneumatists. Speaking very generally of the two great anatomists, Herophilus—one of whose masters was the Coan Praxagoras—led more directly from the Hippocrateans to Galen; Erasistratus from Cnidists to the Methodists and Pneumatists. And we can get a little nearer, perhaps, to the facts than this, though the respective disciples, or nominal disciples, of these masters perplex the modern historian by their manifold inconsistencies, vagaries in which the Herophileans particularly erred, even forfeiting the birthright of their school by shirking its anatomy and, with the frowardness of the Christians after them, dissipating the master's teaching in sophistries, and elaborating a wiredrawn dogmatic system upon the flimsy foundation of glosses and commentaries on the texts then intact in the vast libraries of their city.‡ The Erasistrateans were more steadfast; they kept closer to their doctrine, and seem to have adopted much of the teaching of Straton the Aristotelian; they kept up at any rate some anatomy, even down to the second century A.D. (Galen), and on their empirical side did better service than their dogmatizing rivals.§ And accordingly the Erasistratean school on the whole prevailed.

Herophilus, born at Chalcedon, lived and worked in Alexandria under the first, and perhaps in part under the second, Ptolemy. In the eastward expansion of Greek scientific culture his doctrines were carried to Pergamon, and later to Laodicea. It is worth noting, in respect of the tradition leading down to Galen, that under the Attalid kings Pergamon was, at some interval, comparable in culture even with Alexandria; and schools were perpetuated there till Galen's time, although apparently with some decline; for we are told that when in Caesar's campaign the library of the museum—not of the Serapeum—was burned, the Pergamene library was brought to Alexandria, only at a later time to be destroyed, with the Serapean, by religious fanatics. The school of Smyrna, on the other hand, by way of which, as we shall see, the prescription of wine as a medicine probably reached Asclepiades and Athenaeus, was founded, as we learn on the contemporary authority of Strabo, in the first century B.C., by Hikesios, and he was an Erasistratean.‖ But to return to Herophilus; Haeser reminds us that, great as were his researches in anatomy, especially as regards the nervous system, yet before him Praxagoras seems to have made no inconsiderable advances in this study. He had distinguished, for instance, between the motor and the sensory nerves, although he presumed that the sensory nerves arose "in the centre of feeling—the heart." But over the earlier schools,¶ as also over Galen and the later, the Alexandrians had the incalculable advantage of dissecting the body of man.** Herophilus advanced to the demonstration of the origin and course of the nerves from the brain and spinal cord,†† and described many of the parts of the brain, including the meninges; and he it was who recognized this noble member—hitherto regarded merely as a refrigerator for the inward heat—as the source of sensation and of volition. On his description of the liver, pancreas, chyle-vessels, and many other members—descriptions, new in part, in part enlargements of previous knowledge—I cannot now dwell; but to his views of the circulation I shall return presently, when we come to discuss the pulse lore of this period and of the Roman pneumatists. Herophilus probably described the anatomy of the eye, as we know from Aetius that he wrote a treatise Περὶ ὀφθαλμῶν. To this great and precise observer Galen was deeply indebted; yet these Alexandrian anatomists never cleared up the confusion under the name νεῦρα. They still regarded nerves and tendons as varieties of one kind; varieties because they perceived that the nerves came from the brain and spine, but the tendons from the bones and muscles.‡‡ As a physician Herophilus, in opposition to Erasistratus, clung to the four humours of Hippocratic tradition, and opposed him furthermore in matters of pharmacy, dietetics, and hygiene; subjects with which he dealt at large in a work Περὶ αἰτιῶν.§§

It would have been well if medical science could have continued patiently on these more positive, although it

* Even of later date the medical finds are scanty. Meyerhof and Pflüger discovered in a library in Cairo some unknown MSS. on eye diseases of Arabian origin, and Meyerhof adverts to such relics in Damascus and Constantinople. These may prove to be translations of older treatises.

† It is said that in the reign of Augustus there were a million Jews in Alexandria; and we know there were Jewish physicians in the first century A.D.

‡ The name of Dogmatists was given to this school, if I remember right, by Galen. In working rather by the letter than in the spirit of their great founder, Hippocrates, they became the Pharisees of Ancient Medicine, as in after time were the Galenists.

§ Besides the historical treatises already cited I am, in what follows, indebted also to Susemihl's *Gesch. d. Griech. Litt. in der Alexandrinerzeit*, Leipzig, 1891. This scholar at any rate perceived that from a history of culture Medicine could not be omitted. The medical sections are in great part from the pen of Wellmann.

‖ Strabo, xii, 580.

¶ That is speaking generally. Galen credits Diocles with some knowledge of anatomy, and there is reason to suppose that both this physician and Praxagoras, and so presumably some others, had dissected the human body. But in Alexandria there was an Anatomical Institute in which human bodies, as Galen says plainly concerning Herophilus, were dissected. (II. 895: "ουκ επι αλόγων ζώων καθάπερ οι πολλοί, άλλ' επ' αυτών των ανθρώπων πεπονήμενος.")

** Much more evidence would be necessary to compel us to believe the malignant insinuation of Tertullian that these anatomists opened the bodies of living men (criminals). Such brutality, not alien to the Roman, was foreign to the Greek.

†† Galen, viii, 212.

‡‡ Cf. Daremberg's edition of Rufus.

§§ A certain Heracleides Erythraeus, lauded by Galen, a contemporary of Strabo about the Christian Era (placed by error in Haeser I see in the third century B.C.; there were three or four physicians of the name), wrote a long treatise on the "sect" (αίρεσις) of Herophilus, but unfortunately nothing of it remains.

must be confessed still somewhat nugatory, methods. It has been the trial of Medicine that while, as compared on the one hand with the no less complex but far more accessible phenomena of politics, and on the other with the far less complex phenomena of the physical sciences, it has stood in respect of the difficulty and inaccessibility of its knowledge, and stands still, at an enormous disadvantage; yet, in no unnatural impatience with these perennial bafflings and obscurities, the moan of suffering men and women and the poignant misery of the child have ever driven us into action, however blind, however premature. Remedies, orthodox, empirical, or quackish, remedies one way or another, and by whatsoever means, have always been imperiously demanded of us. And, as nowadays the modern physician cannot wait for pharmacology, which seems to him, and not untruly, to be the tortoise behind the hare of empirical practice, so after a like manner we may imagine the impatience of Alexandrian physicians and sick with the pursuit of anatomy. Except in respect of surgery, the lost anatomical treatises of Herophilus himself could have contained but little of any immediate application to inner medicine. Such, then, in the middle of the third century B.C. was the ground in which, in spite of its scientific spirit, or perhaps engendered by it, empiricism and medical infidelity would readily spring up, and, gyrating in the void of positive knowledge, would, and did, give rise to weary and endless disputes and logomachies — *Federkriege*, as Susemihl calls them. Professing much reverence for Hippocrates, physicians broke loose not only from anatomy but also from the Hippocratic rational sagacity. In the third century B.C., as we learn from that earliest essay in medical criticism the Preface of Celsus, and from other sources, Philinus of Cos,* the reputed founder in Alexandria of the Empirical school, and Serapion, who harshly straightened it, instituted the schism in which walked with more or less discernment their eminent successors, such as Apollonius of Antioch, Herakleides of Tarentum (whom Soranus calls the most persuasive of them all), Menodotus, and Sextus Empiricus.

Towards the end of the second century B.C., under the evil rule of Ptolemy Physkon, Alexandrian science began to dwindle. Hipparchus, who had flourished about the middle of that century, was the last of the great originating minds. Then the disinterested search after knowledge for its own sake dropped into an industrious and respectable assiduity; as into the technical furtherance of the crafts, especially of agriculture. Accordingly, we find then the beginnings of those summaries and compilations which, admirable as they were in Varro and Celsus—two of the most scientific of the Romans—dogged the retreating footsteps of Urania. Thus the field was left open for astrological phantasies and for marvels of zoology which began to creep in from the East, and, flourishing in Aelian, spread themselves through the bestiaries and herbals of the Middle Ages.

After this introduction concerning the history of the pneumatist idea, it is convenient to illustrate its application to Medicine by some story of the chief medical teachers of the pneumatist school, so far as we know them. However far-reaching, even perennial, as was the pneumatic doctrine, I repeat that pneumatism, as a medical sect, was of brief duration; and for the most part its adherents are now no more than names to us. I propose, therefore, to speak more particularly of two only—of Athenaeus, the formal founder of this school in Rome, and Archigenes, who, if an Eclectic, came forth from the Pneumatist school.

Athenaeus.

Athenaeus was one of the most interesting of the Romano-Greek physicians; Diels, in his essay on the physical system of Straton, emphasizes the doxographical importance of Athenaeus, who nevertheless adopted and formed his opinions with critical judgement. As to his date, Athenaeus of Attalia, who, like most of the Roman physicians, emigrated thither from the colleges of the wealthy Hellenic cities of Asia Minor, was unknown to Celsus, who lived in the days of Tiberius and to whom Methodism was known; but his works were well known to Galen, who cites him frequently and in terms of much respect as an author and *savant*. We may assume, then, if perhaps he was born under Tiberius, that he flourished in the reign of Claudius. Athenaeus seems to have perceived how Methodism, in the sense of the atomic physiology, was even then withering; in practice it had dried up into two or three abstract maxims or common rules (*κοινότητες*); whilst its Epicurean philosophy was giving way in Rome to Stoicism. Thus intelligent men felt something more was wanted, and pneumatism, coming as it did in the tradition of the elder medicine—Sicilian, as we have seen, as well as Coan and Alexandrian—and in alliance with the ascendant stoicism, offered to fill the want. Athenaeus, therefore, had a large school or following in Rome. Indeed, pneumatism, as we have seen, represented a physiological idea of a kind so attractive that, under the phases of many schools, it survived in its essence until the eighteenth century. Athenaeus wrote a large and important work, *Περὶ βοηθημάτων*, which probably dealt with all departments of medicine. Unfortunately, this work has almost wholly perished; for what we know of Athenaeus we are dependent upon some fragments surviving in Oribasius, and upon some allusions by other authors. These relics suffice, however, to indicate that Athenaeus was a clear and accurate observer, apt in reflection and criticism, and wise in philosophy. To these gifts he added a large and various learning spiced with a shrewd irony. Athenaeus, like such later pneumatists, or eclectic pneumatists, as Herodotus, Archigenes, Leonides, Heliodorus, was a good surgeon. Moreover, the school was not clinical only. Besides its considerable therapeutical content, it taught also (as in the *Π. βοηθημάτων*) an elaborate physiology and pathology which, within my present limits, I may be able to illustrate by a few references, especially by its teaching concerning the pulse.†

Athenaeus, who did much to weld together philosophy and practical medicine, apportioned the sphere or faculty of medicine into five divisions. The first was physiology, which for him was the essential foundation; and therein he made a great advance upon the methodists and empirics. Of his next or second division, that of pathology, but little is known directly; yet we incur little error in interpreting the pathology of the master by that of his successor Archigenes. The main feature of his pathology, that upon which I would dwell for a moment, was the study of the causes of disease; for herein the school returned to the sounder tradition of Hippocrates, avoiding on the one hand the facile and jejune etiology of the Methodists and on the other the narrow concentration of the Empirics upon superficial and immediate antecedents. Of the logical classification of causes we read in Galen enough and to spare; and we of to-day in our array of causes are still somewhat given to outworn categories, such as the *predisposing*, the *exciting*, and so on. In Rome, from the time of Asclepiades, the sects which did not ignore the wider causes with moderation divided them into three classes at least, according to their nearness or remoteness in the series of antecedents. Thus Athenaeus did not expatiate in a wilderness of logical but unnatural categories. But the pneumatists conveniently distinguished *αἰτία* from *διάθεσις*, by which they signified all which pertains to the conditions of the disease in the individual. Disease (*νόσος*) was the dyscrasia; *πάθος* was used variably as the lesion or as the functional disarray, fever, for instance, as abstracted from symptoms of fever.‡ *Συμπτώματα* were the consequences of the dyscrasia. The dyscrasia, a perversion of health (eucrasia)—the ancients perceived in these rhetorical antitheses substantial as well as verbal values—was for the genuine pneumatist a failing or taint of the pneuma, and to be counteracted by marshalling against it the contrary quality—as cold against fever, and

* We have to regret our ignorance concerning this considerable person; almost all else we know is that he wrote glosses on his distinguished compatriot before Erotian. The Empirics boasted of an heretical descent from Akron of Agrigentum (fifth century B.C.), an eminent physician contemporary with Empedocles. It is not impossible that the hazy science of the Sicilian school may have instigated such a reaction, but we have no evidence of it.

† In what follows I am indebted especially to Daremberg's Oribasius and Rufus, Wellmann's article on "Philumenos." Hermes, 1908, and on "Ancient Medical History," Hermes, 1900, and continually, of course, to his "Essay on the Pneumatists." Nor must our general debt to Diels be forgotten.

‡ Herophilus pointed out that certain *πάθοι* might be natural (*κατὰ φύσιν*), such as childbirth or the secretion of milk; others unnatural (*παρὰ φύσιν*), such as fever. Still *πάθος* was often used in equivalence with *νόσος*, especially perhaps by the methodists (for example, *ἡ παθητικὴ στέγνωσις*, etc.).

so on; so that, as we shall see, physical means of cure prevailed with this school, such as diet adapted to the several seasons, clothing, exercises, waters, and so on. The fusion of their vitalistic pathology with the humoral, which for clearness' sake we are disregarding in this lecture,* was in its completion the task of Galen. By him the soul, or vital dynamic, in its three kinds—the natural, the animal, and the psychical soul—and the qualities of the elements were harmonized so far as logic could harmonize them; for instance, phlegm was akin to moisture, yellow bile to fire, black bile (spleen) to earth, and so on, the qualities being mixed in the blood. But it would be futile to enter farther into these logical permutations; I have said enough to give a notion of their method. It is, perhaps, more interesting to perceive how in certain ways Athenaeus and the pneumatists went back to Hippocrates. Thus I have touched upon their observation of climates and waters. The third pneumatist division was Dietetics; then came Materia Medica; and fifthly and lastly Therapeutics, a title with a larger content than is usual with us, and almost comprehending clinical practice.

Growth of Polypharmacy.

The vast commerce of the Ptolemies, and in some measure no doubt the lore of the Pharaonic Egypt, had flooded the markets of Alexandria with quantities of new drugs. One writes to a friend to send him good quality of drugs "lest he do otherwise and send him stale stuff which will not pass muster in Alexandria";† and the keen inquiry for them was far more than the legitimate demand of the medical practitioner. For with the treatise of Theophrastus Περὶ τῶν δακετῶν καὶ βλητικῶν, as one may approximately say, began the prodigious and diabolical literature on the art and mystery of poisons and antidotes in which, not always without the aid of medical accomplices, kings and nobles of the empire and its principalities, and after them popes and cardinals of the Church and their vassals, were the experts. And, indeed, the bent of the Herophileans, onward to Galen himself and the Galenists (Andreas, Krateuas, Apollonius Mys, Zopyrus), was to polypharmacy. In the decadence of Alexandrian science and society this gross or baleful propensity increased and multiplied; and under the influence of perfidious potentates, such as Mithridates,‡ Nicomedes, and Attalus, attained to an almost grotesque infamy. Under the foul accumulations of panaceas, mithridatics, and cosmetics, elaborated with a perverse and loathsome ingenuity,§ medicine was oppressed and almost suffocated; and the habit of heaping up ingredients degraded or defiled the legitimate prescriptions. Thus to build up a huge and conglomerate bolus or potion became the ambition of the doctor, and the faith and consolation of the patient. "If your liver is getting impatient," writes Juvenal in the XIIIth Satire, "seek Archigenes as fast as you can, and buy of him the composition of Mithridates, and you will live to eat figs and gather roses another year."‖

* We find the humoral pathology as far back as Herodotus, who tells how (IV, 187) the Lybian shepherds used to burn the veins on the vertex or temples of their children to prevent fluxions of rheum (κατάρρεον φλέγμα).

† Milligan, Sel. Greek Papyri, 1910, p. 58.

‡ The locus classicus of this treacherous lore is the twenty-fifth chapter of Pliny (N.H.). Krateuas probably worked under the patronage of Mithridates (cf. new ed. by Wellmann, 1897).

§ Among many other such books see recently *Das Gift in der ..... antiken Literatur*. By Dr. Erich Harnack, of Halle. Leipzig, 1908.

‖ We note here that Archigenes sold the remedies himself.

The number of medical students in Italy shows a steady decrease from a total of 6,648 in 1899-1900 to 4,441 in 1908-9.

Lord Southwark, as President and Chairman of the South London Institute for the Blind Poor, appeals for funds for the support of that institution. A sum of £2,000, he says, is required immediately. The honorary secretary is the Rev. St. Clare Hill; the offices are at 83, Borough Road, London, S.E.

An interesting instance of a marked family leaning towards medicine as a profession was recently brought to our notice by Dr. H. S. Royds of St. Mary Bourne, Hampshire. The name of the family is Baird, the head of it being a clergyman. No less than five of his children are members of the medical profession, two of them being medical women. Moreover, nearly all of them have taken not only degrees in medicine but also either in science or arts. The family is resident in New Zealand, but all its medical members received their medical education in Great Britain.

A BAD CASE OF STRANGULATED OMENTAL HERNIA, WITH VERY FEW SYMPTOMS.*

BY

ARTHUR ZELL CLAYDON CRESSY, M.R.C.S.Eng.,

HONORARY SURGEON CARSHALTON AND DISTRICT HOSPITAL.

The following case is of interest in showing what a grave state of things can occur without the patient thinking much is the matter: A man of 60 years called to see me on Friday evening, February 25th. He complained of pain all over the lower abdomen like gripes, the pain was general, not tender near the appendix. He had been sick once, his tongue was clean, and his bowels open twice that day.

On Saturday, February 26th, he called to say he would like to go on his club, and went away again. On Sunday night his friends called to ask me to see him the next morning, but refused to let me go to him that night.

On Monday, February 28th, I called, and on looking at the abdomen at once saw a large swelling in the left inguinal region the size of my fist, solid and hard, tender and no impulse. It had been there all the time, and he only thought it was his old rupture down again, and would go back presently.

I told him that if he was not operated on without delay he would die, so he consented, and was removed to the hospital, and at 8 30 p.m. I cut down on the mass. It was indurated, and showed no landmarks. Presently a black mass came in view, and slitting up the cavity in which it lay I laid bare as much as three fingers of gangrenous omentum. Freeing the internal ring, and passing my finger into the abdomen, I felt a large hard mass extending as far as the middle line like a sausage. With difficulty freeing this I got it through the opening, and this was a mass of gangrenous omentum as big as my two fists. Having freed it all round, it was ligatured off close to the bowel; his left testicle and cord were removed. The wound was sewn up in three layers, and a big tube left to drain the abdomen; the operation took seventy-five minutes. He was put back to bed, and passed a good night.

On looking up my authorities I found very little on the subject, but was very surprised to read the following paragraph in Treves's *System of Surgery* for 1898:

> The existence of strangulated omental hernia attended by the usual strangulated symptoms was at one time questioned, but its reality has been placed beyond doubt.

It looks as though a strangulated pure omental hernia was rare.

Take the symptoms of strangulated hernia: irreducibility of the hernia; pain about the neck of the sac; sickness and faintness; pain in the abdomen, especially around the umbilicus, colicky in character; vomiting appears early; depression, cold sweats; temperature below normal; pulse rapid; constipation, and no flatus passed; subject to the usual variations.

Now, look at my case of to-day. A strangulated gangrenous omental hernia, pain in abdomen across the lower part; tenderness over hernia, which was hard, dull, and no impulse; temperature normal; pulse not affected; only sick once; bowels open even more than once a day; patient walking about three days out of the four.

And yet I think you will all agree that the man would not have lived very much longer unrelieved.

In Jacobson's and Stewart's *Operations in Surgery*, 1902, they quote Sir W. H. Bennett as describing a case of strangulated omental hernia with commencing gangrene—

> No interference with the action of the bowels; constipation and vomiting are both absent; but the symptoms which conclusively called for operation was the entire absence of real hernial impulse.

He does not mention the pulse and temperature, which in my case were unaffected.

One point is strongly brought out in my case, and that is, that when an omental hernia does get strangulated, it is certain to be fatal if unrelieved, *as the gangrene does not stop at the stricture, ut passes on into the abdomen.* He went out of hospital under four weeks without a truss. The case healed by primary union, and did well.

* Read before the Croydon Division of the South-Eastern Branch.

A very eminent London pathologist suggested that possibly the gangrene in this case started inside the abdomen high up on the omentum, and I suppose he was thinking of the style of cases described in Felix Lejars's excellent book on *Urgent Surgery*, 1909. Under the heading of "Torsion of Pedicles" he describes torsion of the great omentum with or without an irreducible hernia. In my case there was no twisted pedicle of omentum, and so I still contend that the gangrene started with the hernia becoming strangulated, *and that the gangrene in these cases is capable of passing along the omentum, past the stricture, to the inside of the abdomen, which is not the case as regards strangulated bowel.* I do not find any record of this surgical point in the textbooks.

A CASE OF TETANUS TREATED BY CHLORETONE.

By ROLAND A. HOBBS., M.R.C.S.Eng., L.R.C.P.Lond.,
HOUSE-SURGEON, ROYAL SURREY COUNTY HOSPITAL, GUILDFORD.

With a Note

By ERIC W. SHEAF, M.A., M.B., M.C.Cantab.,
HONORARY ASSISTANT SURGEON, ROYAL SURREY COUNTY HOSPITAL.

The treatment of tetanus is so very unsatisfactory that a case such as the one described below, in which the most dreaded symptoms of the disease were checked, is worthy of notice:

J. A., aged 46, a fishmonger, was admitted to this hospital under Dr. Mitchell, to whom I am indebted for permission to publish these notes. Dr. Sheaf also watched the case in consultation with Dr. Mitchell.

A nail projecting from his boot caused an abrasion on the plantar surface of his big toe on January 16th. Rigidity of his jaw developed on January 22nd—six days after the injury—and he was admitted to this hospital on January 25th with all the typical symptoms of tetanus except convulsions. The trismus was so advanced that the teeth could only be separated about ¼ in.; there was marked abdominal rigidity and dysphagia, stiffness of the neck muscles, and slight retraction.

He was given 100 c.cm. of antitetanic serum, fomentations to both feet, as there were abrasions on each, and an injection per rectum of olive oil ʒij containing chloretone 30 grains. This was followed by a marked decrease in the rigidity of the jaw; he swallowed much more easily and slept well.

For the next four days his condition remained on the whole satisfactory, although his temperature rose and reached 100 6° F.

During this period the following doses of chloretone were given, all per rectum, with olive oil.

January 26th, 40 grains, and repeated at night.
January 27th, 40 grains, and repeated at night.
January 28th, 120 grains, in three doses.
January 29th, 80 grains, in two doses.
January 30th, 30 grains, early in the morning and repeated.
100 c.cm. of antitetanic serum was injected on January 26th.

The chloretone was given when indicated by an increase in the rigidity.

A marked decrease in the trismus was constantly noticed after every dose of chloretone, the effect being observed at first as early as an hour after the administration of the drug, but later it took about two hours to make any marked difference.

On January 30th the throat was getting very full of mucus, which was improved by injections of atropine sulphate $\frac{1}{100}$ grain.

Towards the evening he became drowsy and passed into a very heavy and semicomatose condition, probably due to the effects of the chloretone combined with the severe constitutional disturbance resulting from the disease itself.

There were no special symptoms of poisoning, but his condition of stupor was somewhat alarming. The temperature now reached its maximum of 102 6° F. With the administration of oxygen and strychnine $\frac{1}{30}$ grain alternating every three hours with caffeine 1 grain hypodermically, and continuous saline per rectum, his condition gradually improved.

He was given another 100 c.cm. of antitetanic serum. The rigidity never became marked again, and beyond an antitoxin rash he had no untoward symptoms, and made a rapid recovery, leaving the hospital for the convalescent home fairly strong, having been in just under six weeks.

The total amount of antitetanic serum and chloretone given was: Serum, 390 c.cm.; chloretone, 420 grains.

To summarize, the points to be specially noted are:

1. The early onset of symptoms and consequent grave prognosis.
2. A marked decrease in the rigidity was noted a definite period after the administration of chloretone, the trismus being relieved in a constant and remarkable manner.
3. The complete absence of convulsions from beginning to end of the illness.
4. The relief of trismus enabled the patient to take ample nourishment throughout and thus maintain his strength.
5. The rapid recovery of the case.

I am firmly convinced that this man's life was saved by chloretone, although the part played by the antitetanic serum must not be disregarded.

Note by Dr. Sheaf.

Tetanus kills partly by the direct action of the toxin and partly by the exhausting effects of the convulsions.

By the trismus, and dread that taking food will bring on a convulsion, starvation is added to the horrors of the disease and sleep is prevented by the painful muscular contraction.

In treating the disease there are therefore the following indications:

1. To prevent further absorption of tissue.
2. To neutralize the circulating toxin, for it is at present impossible to affect the toxin which has already combined with the nerve cells.
3. To relax the muscles and prevent the tetanic spasms.

If this last can be accomplished the patient will escape the exhaustion and be able to take food and to sleep. Consequently he will be in the best position to fight the disease.

To this end many drugs have been used with more or less success, and of these magnesium sulphate has recently found most favour.

Dr. C. T. McClintock and Dr. W. H. Hutchings, of Detroit, Michigan, U.S.A., undertook an experimental study of the various drugs used for this purpose, and were convinced that chloretone was the best substance hitherto employed.

Subsequently Dr. Hutchings published 6 cases treated with chloretone, with 4 recoveries.[1]

Of the 2 cases that died, one succumbed on the eleventh day of peritonitis, having been free from tetanus symptoms for several days; the other was a very severe case, symptoms appearing four days after injury.

In the next case treatment with chloretone was begun; the convulsions were only partially controlled at first, later complete relaxation was obtained, but he died of circulatory failure.

Dr. Hutchings points out that in animal experiments chloretone poisoning killed by respiratory failure, and that therefore his last case died of tetanus and not of chloretone poisoning. For the same reason I do not think that the serious symptoms on January 30th in our case were due so much to the chloretone as to the disease itself.

These results and the result in the case reported above are very satisfactory. Chloretone has the advantage over the intraspinous injection of magnesium sulphate in its greater safety, and from these cases its therapeutic action seems to be equally satisfactory.

Reference.
[1] *Surgery, Gynaecology, and Obstetrics*, July, 1909.

An examination of candidates for not fewer than fifteen commissions in the Royal Army Medical Corps will be held on January 25th next and following days. Applications to compete should be made to the Secretary, War Office, London, S.W., not later than January 16th next, on which date the list will be closed. The presence of candidates will be required in London from January 23rd.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about 180 dollars, will be made on July 14th, 1911, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays, which may be upon any subject in medicine, must be typewritten, and must be received by the Secretary of the College on or before May 1st, 1911. The Alvarenga Prize for 1910 has been awarded to Dr. M. Katzenstein, of Berlin, for his essay entitled, The Formation of an Arterial Collateral Circulation in the Kidney.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF PATHOLOGY.

S. G. Shattock, F.R.C.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

After a few initial observations, Mr. Shattock said: Some pathological or clinico-pathological questions are particularly well adapted to the observation of the practitioner. His position is peculiar, amongst other ways, in his intimate and long-extended knowledge of the medical history of the members of particular families. And not the least important of the many functions of the Journal of the Association is the ready means it affords the practitioner of recording observations, which the specialist may afterwards garner for more general purposes. But he might be encouraged to contribute in the future more extensively to these meetings.

Speaking at random, some such subjects on which he might furnish information would be:

1. The ultimate results of double castration or of double oöphorectomy in adults upon the external sexual characters—a matter of considerable biological interest.

2. The proclivity of the bones to fractures in the members of certain families.

It has often seemed to me there may be differences in the hardness of bone due to slight deviations in the relative proportions of its earthy salts—somewhat in the way that minute differences in the proportion of carbon affect the tenacity of steel—chemical malformations, as Garrod would call them.

3. The history, *qua* alcohol, of persons reaching 85 and upwards and a critical investigation of their mental powers is another kind of observation easy to make in general practice. A record of fifty such would be a contribution to the alcohol question.

4. The possibility of uterine or tubal tuberculosis being directly derived from the tuberculous emission of the male is another matter upon which evidence would be valuable.

5. In regard to the important subject of cancer, there is its possible contagiousness and infectiousness, using these terms in the usual clinical sense.

Mr. Butlin, in his address in surgery two years ago, produced a series of striking instances of autoinoculation. But any evidence as to the communication of the disease from one individual to another is still worth searching for and recording. The vitality of the cancer cell, as it is studied in mouse cancer, is one of the surprising things in biology. The carcinomatous tissue may be kept for three weeks in an ice-chest, and still be successfully implanted into further mice; and even after its treatment with liquid air a certain number of mice may be grafted from it. These observations naturally strengthen the theoretical possibility of cancer, in the human subject, being conveyed from one individual to another, and favour the belief suggested by cancer houses, cancer villages, and cancer districts. But there is one common agency which the cancer cell cannot withstand, and that is simple drying. Dr. Dudgeon and I have confirmed, by work we have had the privilege of carrying out in connexion with the Imperial Cancer Research, the fact that the drying of cancer pulp in thin layers at the body temperature so completely kills the cells that no further grafts can be raised by means of the material after it has been remade into a pulp with salt solution.

This fact vastly reduces the possible infectiousness of carcinomatous débris expectorated or otherwise discharged by cancer patients. The case becomes at once altogether different from that of a tuberculous or other bacillary infection, where the drying of the bacilli is by no means immediately lethal. Dr. Dudgeon and I are further testing the possible conveyance of mouse cancer by means of spraying the unkilled cells, suspended in salt solution, into the air inhaled by mice.

Were cancer ever an airborne disease, however, primary carcinoma of the lung should be something not uncommon. But its extreme rarity proves that such a contraction of the disease could at the most be merely a curiosity and devoid of any great practical issues. The proclivity of the larynx to carcinoma can be explained without recourse to an airborne theory.

And, lastly, for the practitioner interested in the Mendelian aspect of evolution, the construction of medical pedigrees is, as Brevet-Colonel Firth has pointed out, a piece of work that would be of real value. The problems which concern the heredity of such diseases as gout, cystinuria, alkaptonuria, tuberculosis, cancer, and insanity can only be elucidated by the study of critically collected histories obtained in individual families.

THE NERVOUS SYSTEM IN CHRONIC ALCOHOLISM.

(With Special Plate.)

By F. W. Mott, M.D., F.R.S., F.R.C.P.,

Physician to Charing Cross Hospital and Pathologist to the London County Asylums.

I.

As physician to a large general hospital situated in the middle of the liquor traffic and as Pathologist to the London County Asylums, I have had unusual opportunities of studying the effects of alcohol upon the sane and well fed and the sane and ill fed, as well as upon the insane and potentially insane well fed and ill fed. It is only by a comparative study of the individual that a true estimate of the effects of alcohol upon the nervous system can be properly gauged, and it is desirable to approach the subject in a scientific spirit and without prejudice.

The effects of alcohol are largely dependent upon not only the quantity and quality of the liquor taken and the period of time over which it has been taken, but upon the personality of the individual, and by the personality of the individual I mean the physical and mental characteristics which differentiate him from every other individual.

I will illustrate this point first by showing the photographs of a number of chronic inebriates who are sent to reformatories. I will call your attention to the striking evidence in the physiognomies of these people indicative of feeble-mindedness, and I will correlate this fact with an extract from the report of Dr. Branthwaite for the year 1905, concerning Certified Inebriate Reformatories established under the Inebriates Act, 1879–1900. At page 10, he remarks:

> Upwards of 62 per cent. of the persons committed to reformatories under the Act are found to be insane or defective in varying degree. I am satisfied that the majority of our insane inebriates have become alcoholic because of congenital defects or tendency to insanity, not insane as a result of alcoholism, and that the drunkenness which preceded alcoholic insanity was merely the herald—the only obvious sign—of incipient mental disorder. In relation to the final insanity, drunkenness in such cases is the intensifier, perhaps, but not the cause of the disease. These chronic alcoholics who eventually come under the care of the State may be divided into two classes: (*a*) Degenerates, imbeciles, and epileptics; (*b*) moral and social defectives.
>
> A marked intolerance to the action of alcohol is present in both the refractory and quiet class of defectives; very small quantities of drink, no more than is taken daily without apparent physiological effect by an ordinary individual, being sufficient to cause disorderly and violent behaviour. Our experience in this direction has led us to accept the view that intolerance of the exciting effects of small quantities of alcohol may be considered a fairly certain sign of impaired mental equilibrium.

I have long been struck by the fact that whereas cirrhosis of the liver with ascites is relatively common in the wards and *post-mortem* room of the hospital, I have only once seen a case of advanced cirrhosis *with ascites* in the asylums, and that was in the case of a notorious police-court character who was convicted of drunkenness nearly 400 times before she was found incapable of taking care of herself and certified as insane. I have come to the conclusion that the effects of alcohol upon the mind depend not only upon the quantity, quality, and period of time alcohol has been taken, but even more upon the personality

of the individual—his temperament, organic constitution, and the circumstances which led to intemperance, especially poverty, insufficient food, and miserable surroundings. It is probable that a person who can drink to a condition of advanced cirrhosis of the liver has inherited an inborn stable mental organization.

In discussing the question of alcohol and insanity we have to consider whether alcohol is the efficient cause of the mental disease, a coefficient with other bodily and mental causes, or merely a coincidence. If we compare the statistics of hospital and asylum *post-mortem* examinations, we are struck with the fact that in the former there are a large number of cases of advanced cirrhosis of the liver, whereas in the latter there are relatively few cases of cirrhosis, and many of those recognizable with difficulty. I will throw on the screen a statistical analysis, prepared for me by my assistant, Dr. J. P. Candler, of the results obtained in 1,099 autopsies on adults at Charing Cross Hospital, compared with the 1,271 *post-mortem* examinations at Claybury Asylum. An analysis of the results obtained by Drs. Rolleston and Fenton on *post-mortem* records extending over ten years at St. George's Hospital is given, and in the main it supports the opinion that the statisics derived from Charitng Cross Hospital agree with those which could be obtained at other London hospitals.

The principal points of interest which this tabular synopsis of a comparative inquiry into the *post-mortem* incidence of cirrhosis of the liver at Charing Cross Hospital and Claybury Asylum afford in relation to the subject of alcohol and insanity may be summarized thus:

At Charing Cross Hospital the notes of the autopsies upon 1,099 adult cases were examined—735 males and 364 females. Out of this number there were 85, or 7.7 per cent., cases of cirrhosis of the liver, which accords closely with the 8 per cent. in which alcohol was the immediate and direct cause of the disease for which the patients were admitted to the hospital. The per centage of males is 9.1 and the females 4.9. In Claybury Asylum the notes of 1,271 autopsies were investigated (627 males and 644 females). Of this number only 23 cases of hepatic cirrhosis were found (14 males and 9 females). The total percentage of cirrhosis of the liver works out at 1.8 per cent. (males 2.2 per cent. and females 1.3 per cent.). There are a number of points of interest to which the synopsis refers, but I will limit my remarks thereon to the following more important facts which have been elucidated—namely, that only 1 case of cirrhosis with ascites occurred at Claybury Asylum, whereas of the Charing Cross Hospital cirrhosis cases 66.6 per cent. had ascites, 22.2 per cent. with a history of paracentesis abdominis. At Claybury, in 1 instance of the 23 cases was cirrhosis of the liver mentioned as the assigned cause of death, whereas at the hospital in 72.2 per cent. of the 85 cases cirrhosis of the liver was the assigned cause of death. It was noteworthy that the cases of well marked cirrhosis met with on the *post-mortem* table at the asylum were large livers, and they occurred in persons who had a well marked history of chronic alcoholism, and who during life presented physical signs and mental symptoms of chronic alcoholic insanity, notably alcoholic dementia and polyneuritic psychosis (Korsakow). There were, in addition, some cases of general paralysis. The relatively greater frequency with which acute and chronic gastritis and other inflammatory lesions of the stomach are met with in cases of alcoholic affections of the liver among the insane is shown.

There is a greater frequency of arterio-sclerotic changes associated with cirrhosis of the liver in the case of the insane, especially among the males. Atheroma of the aorta is common on the *post-mortem* table, even in comparatively young people, in asylums. Probably this may be explained by the fact that a large proportion of the deaths occur in the subjects of general paralysis, and this is in all probability due to the syphilitic origin of the disease.

It may be remarked that in only four of the fatal cases occurring at the hospital neuritic symptoms were associated. In fact, it is noteworthy that alcoholic cirrhosis of the liver with pronounced ascites and a history of prolonged intemperance, even excessive intemperance, frequently occurs in individuals who may exhibit no obvious mental symptoms beyond a weakened will, and loss of moral sense shown by the indulgence of a vicious habit.

Comparative statistics of alcohol as a cause of insanity in patients admitted to the London County Asylums for the last thirteen years show an amount of variability of percentages in the same asylum for different years, and in different asylums for the same year (although the admissions are drawn from the same class of the population), that can be in great part explained by a difference of opinion by medical officers as to what constitutes evidence of alcoholic excess and interest in ascertaining a complete family history. Not only have we, however, to take into consideration the personal equation of the medical officers who obtain the information, but also of the friends who give it, as to what constitutes alcoholic excess and as to how far alcoholism is an efficient cause. The statistics which I place upon the screen derived from the annual reports of the Asylums Committee illustrate these facts. In one year, 1902, from the same class of people, alcohol is the assigned cause of 25.6 per cent. of the admissions to Hanwell, and to Claybury 11.2 per cent.; but in 1905, intemperance is the assigned cause of 28 per cent. of the admissions to Claybury, while at Colney Hatch it is only 14 per cent. At Bexley Asylum, where they have adopted the modern classification and where the statistics appear to be nearly uniform since its opening, intemperance as an assigned cause is very high, the average being 22.8 per cent. for the seven years. An analysis of the cases admitted during 1905 to this asylum in which intemperance was either a coefficient or efficient cause in 25.7 per cent. of the total admissions, shows that there are many cases in which other causes are associated. Of 248 male admissions, alcoholic excess was the assigned principal cause in 46, or 18.5 per cent., and out of the 246 female admissions alcoholic excess was the principal cause

DESCRIPTION OF SPECIAL PLATE.

Fig. 1.—Section of normal cortex from ascending frontal convolution, to show the wealth of fibres (*a*) tangential, (*b*) super-radial, (*c*) inter-radial association systems; the latter intersects at right angles the radial fibres. Magnification 30.

Fig. 3.—The same section of normal cortex more highly magnified, showing (*a*) the tangential, (*b*) super-radial, (*c*) inter-radial association systems. Magnification 80.

Fig. 2.—Section of cortex from ascending frontal convolution of a case of chronic persistent alcoholic dementia. No improvement occurred in her demented state, although no alcohol was obtained for several years. Compared with Fig. 1 it will be observed that there is great diminution in the wealth of fibres, especially of the association systems. Magnification 30.

Fig. 4.—The same section as Fig. 2, more highly magnified. Compared with Fig 3, it will be observed that there is a disappearance of the tangential and super-radial systems. Magnification 80. These sections were stained by Weigert-Pal methods.

Fig. 5.—Section of prefrontal cortex from another case of chronic alcoholic dementia; there was a history of 15 years' inebriety, and evidence of advanced cirrhosis of the liver (without ascites), vide Fig. 7; it will be observed that the cells are fairly normal in the pyramidal layer, but there is atrophy and disappearance of the tangential and super-radial systems of fibres. Magnification 80 diameters.

Fig. 6.—Section of ascending frontal convolution, for comparison with Fig. 5; observe that there are tangential and super radial fibres, although there is some degree of atrophy and evidences of active degeneration by the existence of varicosities on the fibres of the tangential system. Magnification 80. These sections were stained by Weigert-Pal and counterstained with eosin to show the cells.

Fig. 7.—Liver showing advanced cirrhosis; the nodular appearance of the surface of the organ is well seen. Magnification 30.

Fig. 8.—Small Betz psycho-motor cell, from the ascending frontal convolution of a case of chronic alcoholic dementia, showing eccentric nucleus and perinuclear chromatolysis. Magnification 350.

Fig. 9.—Cells of the vagus nucleus in which degeneration of the vagus nerve was found; from a case of polyneuritic psychosis, acute fatty degeneration of the heart and encephalitis haemorrhagica. Magnification 350.

Fig. 10.—Section of cortex of a rapidly fatal case of polyneuritic psychosis with encephalitis haemorrhagica. There is atrophy of the association systems, for the section was stained by the Weigert method to display the fibres. The black irregular patches are haemorrhages in the cortex. These were visible throughout the central cortex, and varied in size from a pin point to a large pin's head. They are caused by the rupture of small vessels which were in a state of chronic inflammation and fatty degeneration. Magnification 80.

TO ILLUSTRATE DR. F. W. MOTT'S PAPER ON THE NERVOUS SYSTEM IN CHRONIC ALCOHOLISM.

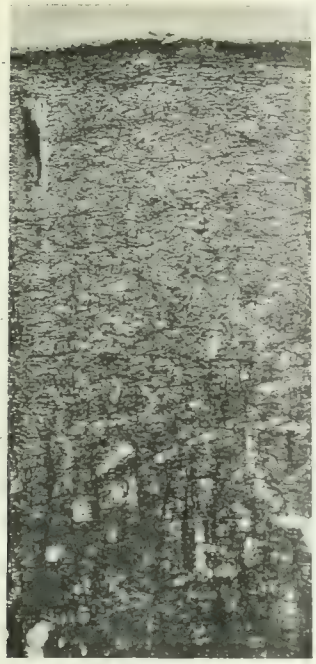


Fig. 3.



Fig. 4.

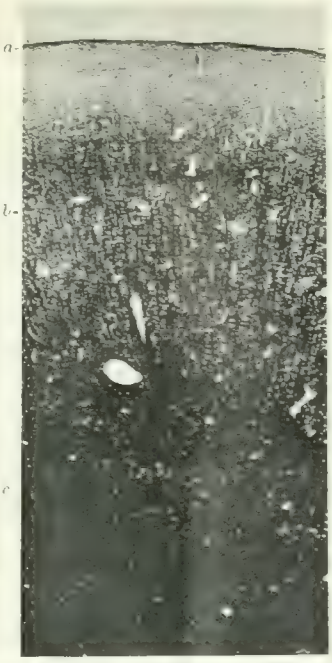


Fig. 1.



Fig. 2.

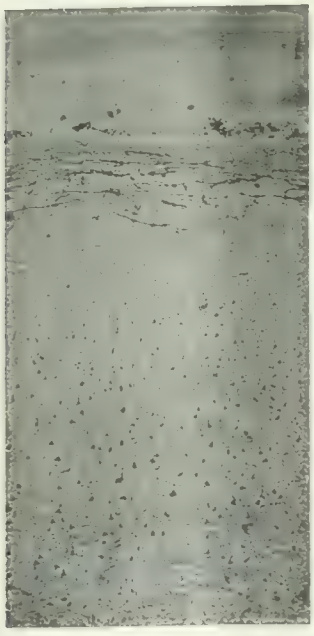


Fig. 6.



Fig. 5.



Fig. 10.



Fig. 8.

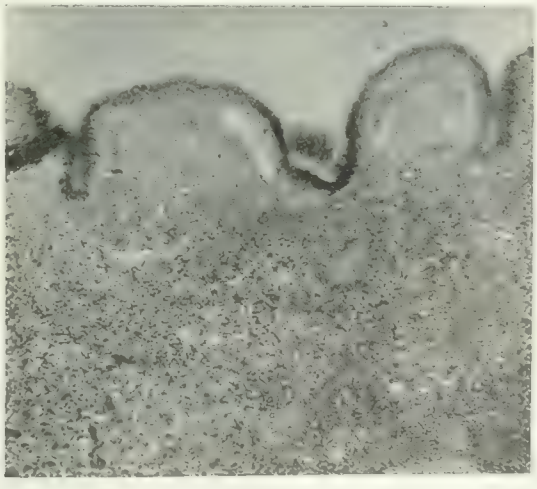


Fig. 7.



Fig. 9.

in 38, or 15.4 per cent., a total percentage on the whole admissions of 17 per cent. But when we inquire into these cases we find that 13 were imbeciles, 13 were epileptics, 5 were cases of chronic delusional insanity, 5 were organic dementia, and no less than 20 were cases of primary dementia. In fact, out of the 84 cases, quite one half were lunatics or potential lunatics and the subjects of an inborn tendency to mental disease. I will put on the screen a statistical table to illustrate this. My experience at Hanwell, Claybury, and other asylums corroborates this statement. Moreover, I have found that the notes show hereditary insanity or epilepsy quite as frequently in these so-called alcoholic cases as in other forms of insanity, and more frequently than in general paralysis. In the family histories of these cases of insanity as a result of intemperance we find frequently neurosis, criminal degeneracy, insanity, and chronic alcoholism in the pedigrees on one or both. In the personal histories, inherent instability is frequently found in the form of neuropathies, imbecility, criminal degeneracy, epilepsy, and intolerance of alcohol, as manifested by previous admissions, when they were termed recurrent mania and recurrent melancholia. Some of these cases are manic depressive insanity. Sometimes there is a head injury, brain disease, and not infrequently incipient general paralysis. Many are admitted on account of threatened or attempted suicide, and a few on account of murderous assaults and sexual crimes.

Coincidence and cause may thus be confused, for a lapse from moderation into intemperance may be the first recognizable sign of the mental breakdown. Especially is this the case with general paralysis, and the involutional psychoses occurring in the climacteric period in women, also men between 50 and 60 who suffer with melancholia, and at the same time are often the subjects of arteriosclerosis. Again, cases of periodic or manic depressive insanity and dementia praecox may take to drink. There can be no doubt that neurasthenics, epileptics, imbeciles, degenerates, and potential lunatics possess a marked intolerance to alcohol, and the failure to discriminate between what is *heredity* and what is the *result of alcoholism* has been the cause of much confusion.

Many cases of chronic alcoholism seen in hospital practice are persons who have drunk a large quantity of alcohol every day for a number of years and finally die, after many operations of paracentesis abdominis, from advanced cirrhosis and ascites. They do not, as a rule, show signs of mental derangement beyond a weakened will power, failing memory, and an unnatural craving for indulgence of a vicious habit. There may, however, be a history of their having suffered from an attack of delirium tremens on one or more occasions, from which they have recovered, and I agree with Sullivan that some affection of the mind is the usual result of chronic alcoholism, but it is commonly moderate in degree or, if more intense, is so transitory in duration that it does not bring the drinker, as a rule, within the walls of an asylum, unless suicide is attempted. We might on this account regard delirium tremens as an exacerbation of a mild chronic alcoholic psychosis. In connexion with the problem of causal relationship of alcoholism to certifiable insanity, it is of interest to note that Drs. Sullivan, Bevan Lewis, and MacDonald have brought forward arguments that alcohol, as an efficient cause of insanity, is not so great as the reports of the Lunacy Commissioners in England would indicate. Drs. Bevan Lewis and Macdonald have shown a regional dissociation between alcohol and insanity. Thus inland and agricultural communities had the least inebriate but highest ratio of pauperism and insanity. Maritime, mining, and manufacturing communities, above all others, were the most intemperate, but revealed the lowest ratios of pauperism and insanity. Dr. Sullivan, by careful analysis and tables, has shown that in the regional distribution of insanity it is difficult to trace any evidence of alcoholic influence such as might be expected if alcoholism really accounted for one-sixth of the total number of cases. Thus Lancashire, Warwick, and Cheshire, which rank very high in the scale of alcoholism, and the mining counties, where drunkenness is rife, are alike in showing very low rates of insanity. He concludes that alcohol as the essential cause of certified insanity falls a good deal short of 16 per cent., at which it is rated in the official statistics, and may be something under 10 per cent. There is, however, a reason that agricultural communities in England should have higher percentages of insane: it is on account of the migration of the mentally and physically capable men and women to the industrial centres, leaving the feeble in mind and body behind to procreate their species; and this at the present time is a matter of national importance. While the drink bill is annually falling, the percentage of insanity in the population is rising.*

If alcohol is not responsible for certified insanity to the extent that is generally believed, there can be no doubt that it is the most fruitful cause of pauperism and crime. Sullivan asserts that 60 per cent. of the crimes of violence are due to drink.

The psychoses which occur in the subjects of chronic alcoholism may be divided into three groups:

1. Mental affections which are the result of the direct or indirect action of alcohol upon usually a previously healthy brain for a considerable period of time—that is, delirium tremens and polyneuritic psychosis (Korsakow's disease).

2. Mental affections resulting from alcoholism occurring in an individual who is either potentially insane or possesses a morbid temperament. At least, this is the explanation I should offer, because the cases in many respects are hardly distinguishable from typical insanity of abstainers.

3. Cases in which groups 1 and 2 are more or less combined.

It is difficult to decide simply by the hallucinations and delusions alone whether alcohol is the cause. Should these, however, persist, especially auditory hallucinations while the mind otherwise is clear, it is probable that alcohol has only acted as a coefficient; consequently it is difficult to differentiate such cases from paranoia or hallucinatory insanity occurring in non-drinkers; moreover, the chronic forms may begin insidiously, or by an acute onset in both drinkers and abstainers.

Certain signs and symptoms point to alcohol being the efficient cause, namely, the existence of physical signs and symptoms pointing to its following on an attack of delirium tremens; the existence of physical signs and symptoms pointing to visceral disease, especially enlarged liver; and the evidence of neuritis associated with any of the characteristic mental symptoms of Korsakow's syndrome. Besides, there are certain mental symptoms which afford strong presumptive evidence that alcohol is an efficient cause, and not merely a coefficient or coincident, namely, morbid jealousy and suspicions relating to the sexual functions and reproductive organs, marital relations and maternal instincts; threatening or terrifying visual and auditory hallucinations accompanied by delusions of being followed by policemen and detectives; also delusions connected with the deranged cutaneous and kinaesthetic sensibility caused by neuritis. Delusions of poisoning are not uncommon, and these may be the result of an insane interpretation of the pains incidental to gastritis. In most of the cases of psychosis occurring in patients the subjects of chronic alcoholism morbid states of depression predominate and persist, causing morbid fears, anxiety, and tendency to suicide; in some cases there is persistent exaltation, and even grandiose delusions, usually associated with some signs and symptoms of polyneuritic psychosis. They give rise to a pseudo-general paralysis. The morbid changes in the brain, however, differ from those of general paralysis. The more the cases exhibit during life signs and symptoms (conforming to the cases met with in hospital practice) of delirium tremens and polyneuritic psychosis, the more likely is there to be a well marked cirrhosis of the liver.

It might be argued that the progressive and continuous poisoning of the body with alcohol leads to permanent changes in the organs, and induces thereby permanent disturbances of metabolism and autotoxaemia which will induce chronic psychoses. At present no reliable evidence is forthcoming that there is a deranged metabolism in these cases of alcoholic hallucinosis and alcoholic paranoia. The gastritis and the advanced cirrhotic condition of the liver which may occur in hospital cases, and in which one would expect, therefore, a deranged

* Although we see placarded by the *Daily News*, "How the Budge has made the people sober," thinking people will attribute the diminished consumption of alcohol to education of the national conscience to temperance; and by temperance I mean moderation, which, starting in the better classes, is pervading all classes. The establishment of healthy recreation, clean dwellings for the poor, and cheap, clean, and wholesome cafés, has done more in the cause of reform than prohibitive legal measures in the cause of temperance.

metabolism, do not support this view, but rather we should explain a chronic delusional insanity occurring after alcohol as the result of the effect of the poison upon a subject potentially insane, and who might have developed it if alcohol had not been taken. Before we can solve this question, however, it is necessary to have an accurate comparison, clinical as well as pathological, of all the acute and chronic cases of hallucinosis and paranoia in drinkers and abstainers. This might enable us to separate the one from the other. We might ascertain, moreover, that many of the cases which are termed "chronic alcoholic psychoses" are not really alcoholic in origin. Another point which, to my mind, requires an investigation, is whether cases of acute hallucinosis occur especially in the subjects of chronic alcoholism, or whether a considerable number develop, as I believe, soon after the individual has commenced drinking. I would also suggest the desirability of a complete inquiry into the family history of the different types in order to ascertain the sum total of inherited degenerative tendencies.

Dipsomania is a form of periodic insanity. There are persons who have periodic cravings for alcohol, who in the intervals lead a sober, respectable life. Suddenly, and often for no accountable reason save an unnatural and insane craving for drink, dipsomaniacs neglect their home and their business, take little food, do not attend to their personal care or comfort, and drinking continuously to satisfy their morbid craving sink into the lowest depths of moral degradation, and for a time lead an unnatural and vagabond life.

In conclusion I would sum up as follows:

The fact that but few cases of advanced cirrhosis of the liver are found in the asylums, and that these occur in cases either of general paralysis, alcoholic dementia, or Korsakow's disease, both of which latter only occur after prolonged intemperance, suggests, *a priori*, that in the great majority of cases of alcoholic insanity alcohol acts as a coefficient to some other factors peculiar to the individual. This hypothesis is supported: (1) By the relatively large number of cases of advanced cirrhosis of the liver dying in the hospitals and presenting no mental symptoms. (2) By the variability of percentages of alcohol as a cause of insanity in the different London asylums as shown by statistics extending over thirteen years. (3) By the regional dissociation of drunkenness and insanity as shown by comparison of maritime and manufacturing communities with rural communities, this being explicable by the mental and psychical deterioration of the agricultural population in England owing to the migration of the better types to the industrial centres.

The polyneuritic psychosis, or Korsakow's disease, was at one time thought to be due to alcohol directly acting on the brain cells. A typical instance of this disease rarely occurs in any other condition than alcoholism; it accompanies the later stages of alcoholism, and is allied to delirium tremens. It is more prone to occur in individuals with inborn sane mental inheritance than in insane.

The pathogenesis is obscure. The disease, however, is not due to the direct action of alcohol on nervous structures. More probably it is due to deranged metabolism, secondary microbial toxaemia, and autotoxaemia from deranged organs which have been injured by the poisonous effects of the alcohol ingested.

Other causes of this disease are influenza, pulmonary tuberculosis, septic infection, diabetes, and chronic poisoning by some of the metallic poisons, such as arsenic, lead, and mercury.

Dupré states that he has known the disease to be caused by mercurial poisoning in the treatment of syphilis.

This disease occurs more frequently in women than in men, and usually in adult life. An excellent study of it has been made by Ascherson,* who states: There are four symptoms which take precedence of all others in importance.

These are:

1. Loss of memory.
2. Paramnesia or pseudo-reminiscence.
3. Mental confusion.
4. Certain peculiarities of the mood.

The loss of memory is for recent events; generally the patients remember the general circumstances of their past, while they forget those which have occurred more recently. The period of time in the immediate past for the circumstances of which the memory is defective varies in individual cases, but usually coincides with that of the patient's illness.

So far the amnesia is anterograde, and concerns a period during which not only the power of recollection may have been at fault, but when, by reason of an impaired power of attention, the material for recollection was probably lacking. In many cases the patients also fail to recollect those circumstances which occurred within a period of time antecedent to the onset of their disease; the amnesia is retrograde, and, in this case, since the attention before the disease set in was presumably normal, must depend upon a defective power of recollection alone. Clinical observation shows also that the defect of memory is active—that is to say, that facts continue to be forgotten in measure as they are acquired.

French writers have given the name "*amnésie continue*" to this kind of defect of memory: it is an important feature of Korsakow's disease, and is often present in cases in which the memory is otherwise unaffected. This continual failure of recollection affects all recent acquisitions; not only do the patients fail to reproduce ordinary test words and combinations of figures, but they entirely forget the faces they have just seen and the actions of everyday life they have just performed.

Paramnesia (pseudo-reminiscence, false memory), or the representation before consciousness of false experience, is an essential feature of Korsakow's disease. I have rarely seen an instance of the disease in which it was absent. This symptom has been carefully studied by Korsakow, and has formed the exclusive subject of one of his monographs. Professors Kraepelin and Wehrung have also attempted to explain it psychologically.

Mental Confusion.—A varying degree of mental confusion is always a symptom at some stage of the malady. In some cases it amounts to positive incoherence, and is then so prominent a feature as to overshadow completely the disturbance of memory. Such cases were recognized by Korsakow, who spoke of the patient's condition as *Apathische Verwirrheit*, and they constitute also the *forme confusionelle* of the French writers. Very often the disturbance of the ideation is limited to a disorientation in time and place, with, perhaps, confusion of identity of persons. These isolated symptoms, and, in fact, mental confusion in general, seem to me to denote a condition of partial stupor.

The Mood of the Patients.—Unless frequent attempts are made to hold their attention the patients are more or less oblivious to surrounding circumstances, and this occasions the condition of apathy to which their dull and listless facial expression bears witness. When roused they are apt to be extremely irritable, and this I attribute in part to the recognition of their confused state of mind, although it is no doubt due to some extent to the instability of the emotions.

In severe cases the patient may develop a stuporose dementia and pass urine and faeces in the bed. Some patients are inclined to be jocular, and I look upon this as a favourable symptom. It is a feature of the mental state of alcoholics in general, and is the more striking because of the misery with which these patients are so often afflicted.

"Bevan Lewis has remarked upon the rude and impulsive conduct of the patients. While such conduct may be in part an instance of moral degradation, it has in my opinion a deeper significance. Rudeness and impulsiveness is very often found in epilepsy and dementia praecox; with imitativeness, attitudinizing, echolalia, the use of neologisms, and the other forms of automatism, it is an instance of katatonia, or the undue expression of low forms of mental activity insufficiently controlled by the higher mental faculties, and is but another instance of an incomplete state of the consciousness. The patients are often emotional, but their emotionalism is never profound, and the same may be said of their moods of depression. In fact, their mood continually alters, and, indeed, must be regarded as part of a dream state rather than as a part of their true nature; in further proof of this is their increased excitability at night, at a time when further removal of consciousness by approaching sleep gives freer sway to delirium."

Visual hallucinations are more common than aural hallucinations in these cases, which is the reverse of what occurs in cases of acute alcoholic insanity, where the latter are more usual. This is important from the point of view of etiology, since visual hallucinations are the kind most often found in the delirium of acute specific fevers and in the toxic insanities. Delusions of jealousy and morbid ideas of persecution are also present in some of these cases, also delusions of a sexual character and delusions of grandeur.

The delusions, whatever their nature may be, are rarely systematized, and, unlike the acute forms of alcoholic mental affections, Korsakow's disease does not often lead to chronic delusional insanity.

* The Mental State in Alcoholism, *Archives of Neurology*, vol. iii.

Physical Symptoms.

The most important physical symptoms are multiple neuritis, and the neuritis is one of the entire nervous system; the nerves of the lower extremities are most often affected, but the upper limbs—especially where occupation leads to their continuous use—are not infrequently affected in some cases. I have seen the face and even the muscles partially paralysed or paretic, and in two fatal cases of heart failure and fatty degeneration, the vagus nerves and their medullary nuclei (vide Fig. 9) were the seat of characteristic changes. As a result of the neuritis there is paralysis, wasting of muscles, absence of deep reflexes and more or less reaction of degeneration. The superficial and deep sensory nerves are usually affected; probably the tenderness on deep pressure is due to the chronic inflammatory affection of the deep sensory nerves to muscle. The affection of the skin sensory nerves is shown clinically by severe pains; in one case the patient believed she was on fire and rushed to the window, and would have jumped out had she not been prevented. The next day bullae appeared on the skin of the legs, and subsequent examination of the nerves to these bullae of the skin showed marked evidences of recent acute degeneration by the Marchi method. Besides hyperaesthesia there may be numbness and formication. There is usually in severe cases a stocking and gauntlet anaesthesia and analgesia which, if marked and persistent, is accompanied by glossy skin.

Various deformities and contractures are liable to occur in the limbs from the effects of the disease, and permanent foot-drop results, the liability to which is increased by the continued effect of the weight of the bedclothes pressing upon the feet.* Tremor is present and sometimes ptosis, and amongst general symptoms may be mentioned debility, emaciation, anaemia, headache, vomiting, and diarrhoea. These symptoms may be serious, and show a general deterioration of the organs and their functions.

II.

The following is a histological account of the structural changes in Korsakow's disease:

The brains are generally of good weight, of good convolutional pattern, and do not, as a rule, show much evidence of thickening of the pia-arachnoid membranes, increase of cerebro-spinal fluid, or other obvious signs of cerebral wasting. The ventricles are not granular, but there may be a few ependymal granulations in the lateral sacs of the fourth ventricle. Microscopical examination shows some wasting of the tangential fibres and subpial glia cell proliferation and felting, but, as a rule, this is not marked. The fibre systems as a general rule are otherwise well preserved. There is no very marked glia cell proliferation in the cortex, and when sections are stained by the Nissl method, the cells of the columns of Meynert are not distorted or poorly stained, their apical processes are not corkscrewed, and there is no marked coarse change of the cortical neurones as in general paralysis. There is no lymphocyte and plasma cell infiltration of the membranes and perivascular sheaths.

Are there any morbid microscopic changes pathognomonic of toxic polyneuritic psychosis? In my opinion this clinical syndrome is not peculiar to alcohol. Lead, arsenic, and other toxic conditions produce similar symptoms and similar pathological changes, and it makes me suspect that they are not caused by the direct effect of the alcohol, but are the result rather of microbial toxins, or by autotoxins caused by deranged metabolism. I have examined microscopically the brains of a large number of alcoholic cases and several lead cases; in all of these where there was a pronounced neuritis there were characteristic changes affecting the large psychomotor cells.

The changes in these cells are similar to the changes in the anterior horn cells of the spinal cord, and are very evident; the nucleus is large and clear, it is dislocated to the side, sometimes extruded altogether, there is a marked cell chromatolysis. The Nissl granules may be almost entirely absent or only found at the periphery (vide Fig. 8).

Sometimes the cytoplasm is vacuolated or shows excess of pigment. I have found in a few cases similar changes of the cells of the nucleus of the motor oculi. It may be asserted that these changes in the cerebral and spinal motor neurones indicate a toxic action upon the whole motor efferent path. The changes in the anterior horn cells and the cells of the posterior spinal ganglia are, however, similar to those produced in animals by section of the nerves—namely, there is swelling of the cells, eccentric position of the nucleus, and a disappearance of the Nissl granules from within outwards (perinuclear chromatolysis); it may be, however, concluded that these changes are not solely due to a *réaction à distance* caused by destruction of the peripheral nerves, for similar changes are found in the Betz cells of the motor area (vide Fig. 8). Examination of the sensory path in severe cases often shows profound changes in the posterior spinal ganglion cells and degeneration in the posterior roots and columns of the spinal cord. In one severe case a spiral ganglion was destroyed and only a cavity left. It was the fifth lumbar ganglion and there was glossy skin of the foot on the same side and a trophic sore on the sole.

Owing to fatty changes in the vessel walls haemorrhagic extravasations may occur (vide Fig. 9), sometimes resulting in pachymeningitis haemorrhagica. According to German writers, changes in the nerve fibres of the cortex are the earliest and most essential lesions of the malady. Gudden has described an atrophy of the tangential fibres in four cases, but the atrophy is less extensive than that encountered in general paralysis; the atrophy chiefly affected the frontal convolutions. This has been my experience, and Figs. 1 to 6 are illustrative of this fact. As a rule, cases of Korsakow's psychosis recover unless carried off by intercurrent disease; consequently the mental symptoms must be attributed mainly to functional deterioration of the cortical neurones caused by the poison circulating in the blood; a few cases, however, remain permanently demented, and die in the asylum months or years after admission. These cases are bedridden and the subjects of contracture of the limbs, but I have not had many opportunities of examining the brains of such cases, for they are comparatively rare. I have found atrophy of the association fibres most marked in the tangential and super-radial systems, but also very evident in the inter-radial. In a female with a history of fifteen years' chronic intoxication and marked cirrhosis of the liver, I found a very definite atrophy of the tangential, super-radial, and inter-radial association systems of the cortex in the frontal lobes (vide Figs. 5 and 6). This atrophy was much more evident, as the photomicrographs show, in the frontal lobes than in the central convolutions. When there is contracture of the limbs persistent for several years, there may be atrophy and disappearance of many of the Betz cells, and a degeneration of the crossed pyramidal tracts in the spinal cord. In severe cases rapidly terminating in a fatal result from heart failure I have found multiple haemorrhages in the cortex (vide Fig. 10). Many chronic cases with marked persistent dementia occasionally die in the asylums; these cases were formerly regarded sometimes as general paralysis, but examination of the brain shows few of the characteristic changes of that disease. There is far less wasting of the convolutions, thickening and adhesion of the pia arachnoid membranes. The ventricles do not show the characteristic granulations of the ependyma. Upon microscopic examination there may be marked wasting of the tangential, super-radial and inter-radial association fibres of the frontal lobes (vide Figs. 1–4); but there is not the same degree of cell wasting and distortion of Meynert's column as in general paralysis. Moreover, the glia proliferation is less marked, and there is no perivascular infiltration with lymphocytes and plasma cells (vide Figs. 5 and 6). It is easy now to differentiate these cases of pseudo-general paralysis from true general paralysis by examination of the cerebro-spinal fluid. The Wassermann reaction is not obtained, and a cytological examination would not show any marked lymphocytosis or proteid excess.

In conclusion, I wish to thank Dr. Pearson for assisting me in reporting my remarks, which were given extempore.

* I always recommend the patient's legs to be protected by woollen stockings, a board placed at the end of the bed to press against, and the weight of the bedclothes taken off by a cradle. Again, I always recommend massage of the limbs and passive movements of the joints as soon as it can be done. The patient, moreover, is told to try and help the operator in performing the movements by "willing" them, thus opening up the path again between the brain and muscles.

DISCUSSION.

Sir Clifford Allbutt said that much of the literature of alcoholism was of a rhetorical rather than scientific order, and the sooner scientific order and method were introduced the better. The whole question was extremely

complicated. He had found that alcoholics who suffered from nervous symptoms very rarely showed affections of the abdominal viscera; on the other hand, patients who were in hospital for visceral diseases usually retained their intelligence unimpaired. It was always difficult to get behind the alcoholic bent of individuals. Alcoholics were divided into two classes, the spasmodic drinker and the regular boozer. In two cases of the former class he had been struck by the specificity of desire which assailed the patients, and by the fact that they never had any remorse for their deeds. They were comparable to epileptic criminals.

Mr. Shattock (President) asked Sir Clifford Allbutt whether the patients he mentioned would have had that desire for alcohol if they had never tasted it before. He thought the desire was relatively independent o experience.

Dr. E. S. Pasmore (Croydon) said that in one of the sections shown by Dr. Mott there was evidence of definite brain mischief. In those cases, it seemed to him, treatment such as keeping the patient under control for six months would be of no avail. All chronic alcoholics, while showing no visceral affections, had their minds affected, although this might not be observable; accordingly, they should not be trusted.

Dr. C. McVicar (Dundee) said that it was interesting to note that the syndrome of mental symptoms in alcohol poisoning was similar to that of senile degeneration, namely, a disorientation as to time and place. The degenerate patients were admitted, not so much because of the alcohol, but because of the mental degeneracy, and readmissions were associated with the taking of very small quantities of alcohol. The recovery of cases of multiple neuritis with paralysis of the limbs, in association with marked mental changes, was remarkable if the patients were kept under observation for one and a half to two years. Cases of alcoholism showing periodicity were usually impulsive and might be very intellectual.

Dr. Mott, in reply, said that Sir Clifford Allbutt's experience accorded very much with his own. It was the poor depressed man who took alcohol instead of food who suffered so badly and became insane. The convivial drunkards, on the other hand, had a high degree of intelligence; they were chronic boozers for years, then they developed ascites and died; they, however, were able to go on with their work. With respect to Dr. Pasmore's statements about the degeneration of the association fibres, he said that it was extremely difficult to collect such cases. These were probably cases of toxic insanity associated with microbial disease. It was a toxic psychosis more than anything else. He therefore agreed with Dr. McVicar in keeping these patients under observation. Just as the limbs recovered, so did the mind. He was also of opinion that massage of limbs and joints should be undertaken early, and that the feet should be protected from the weight of the bedclothes by a cradle. He was very much interested in Dr. McVicar's remarks on the similarity between alcohol poisoning and old age. He agreed with Sullivan, who believed that alcohol was a poison, but that the insanity was due to an inborn tendency to it. He was glad to hear Sir Clifford Allbutt's remarks on the uselessness of rhetoric in such questions, and strongly applauded the suggestion of the collection of medical pedigrees.

THE THERAPEUTIC USE OF ALCOHOL VAPOUR MIXED WITH OXYGEN.

BY

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Introduction.

The value of oxygen alone as a most beneficial remedy in cases of illness where there is respiratory and cardiac embarrassment is generally recognized, and oxygen has been extensively used on account of its good effect in these conditions.

Recently Dr. Leonard Hill has published some very interesting and valuable investigations showing the marked effect which oxygen has in diminishing the fatigue following violent muscular exercise of various kinds. He has also shown the value of oxygen in mountain sickness.[1]

In this paper we wish to call attention to the very remarkable stimulant effect on the heart and circulatory system produced by the inhalation of oxygen containing alcohol vapour. When this combination is used, it can be readily demonstrated in cases of cardiac failure that the addition of alcohol vapour to the oxygen administered produces a stimulant effect on the circulatory system much greater than that produced by the breathing of oxygen alone. These are the good effects of the oxygen *plus* an additional marked stimulant effect on the circulation caused by the contained alcohol vapour.

The combination of oxygen and alcohol vapour was first used in some experiments on animals made by one of us in 1907 (B. J. Collingwood[2]), in which it was found that after an overdose in chloroform anaesthesia the mixture of oxygen and alcohol vapour was a very valuable remedy for the cardiac failure which had supervened as the result of a toxic dose of chloroform. It was found that the effect of oxygen containing alcohol vapour was greater than that of oxygen alone.

As a result of these experiments, oxygen which had been bubbled through absolute alcohol contained in an ordinary wash-bottle was administered by one of us (W. H. Willcox) in several cases of illness in which cardiac failure was a prominent symptom, and it was found that the mixture produced a remarkable stimulant effect on the heart and circulation decidedly greater than that produced by oxygen alone. In some of these cases the administration appeared to have been the cause of the prolongation and saving of life. In cases of pneumonia with cardiac failure the mixture of oxygen and alcohol vapour was found to be a very valuable remedy, and attention was called to this in a discussion on the treatment of pneumonia at the Harveian Society in April, 1908 (W. H. Willcox[3]).

The subject of the paper will be considered under the following headings:

1. Physiological experiments which led to the use of oxygen and alcohol vapour.
2. The apparatus suitable for the clinical administration of the remedy.
3. The chemical investigations which have been made in order to determine the amount of alcohol vapour present in the oxygen under different conditions of administration.
4. The therapeutic effects of oxygen and alcohol vapour.

I.—*Physiological Experiments.*

Investigations were made into the causation of chloroform apnoea when large doses of chloroform had been administered to cats. It was found during these investigations that frequently marked chloroform poisoning occurred, and the animals presented all the outward signs of death. Respiration had ceased, the blood pressure had sunk to zero, the eyes were soft, and on opening the thorax the feeblest flicker of auricular contraction was the only suggestion of possible recovery. In other cases the poisoning was not so profound, apnoea and a fall of arterial blood pressure being alone observable.

It was found that the apnoea in many cases could be relieved by the administration of carbon dioxide mixed with oxygen and breathing restored. This remedy, however, did not restore the cardiac failure which had supervened, nor did the administration of oxygen alone have the desired effect in raising the fallen blood pressure. In these cases, where cardiac failure remained after respiration had recovered, it was found that the administration of oxygen which had been bubbled through absolute alcohol was a very valuable remedy, and in many cases the blood pressure quickly rose to normal, and the heart's action was restored. It was found that good results followed the administration of air containing alcohol vapour, and the cardiac failure which was not restored by oxygen or air alone quickly recovered when air containing alcohol vapour was administered.

In the above experiments the oxygen and air mixed respectively with alcohol vapour were administered by means of a bellows attached to a tube in the trachea of the

animal. It was found if the absolute alcohol through which the gas was passed had been exposed to air for some time it lost to some extent its beneficial effect, owing no doubt to absorption of water, and thus to there being a smaller amount of alcohol vapour present in the gas which was passed through the diluted alcohol.

II.—*The Apparatus Suitable for the Administration of the Remedy.*

The simplest method of administration is to have an ordinary bottle of about 16 fluid ounces capacity, fitted with a rubber cork with two holes bored in it. Through the holes in the cork pass two glass tubes, one acting as the inlet, which reaches nearly to the bottom of the bottle; the other acting as the exit, and passing just through the cork. The glass tubes should be bent at right angles above the cork. The bottle should be about one-sixth full of absolute alcohol. It is convenient to have a metal collar round the neck of the bottle to which is attached a wire hook, so that the wash-bottle may be attached to the bed or other suitable support.

The oxygen cylinder is attached by rubber tubing to the inlet tube of the wash-bottle, and to the exit tube is attached a length of rubber tubing, to the end of which is fixed an ordinary glass funnel for administering the oxygen and alcohol vapour when held over the mouth and nose of the patient. In an emergency the wash-bottle containing absolute alcohol can be dispensed with, and a pad of wool soaked in absolute alcohol placed in the apex of the glass funnel, which is attached to the rubber tubing connected directly with the oxygen cylinder.

A special convenient form of apparatus has been devised by Dr. Collingwood whereby either oxygen alone or oxygen saturated with alcohol vapour may be administered by turning a tap. It is important that the alcohol used should be absolute and when not in use the apparatus or wash-bottle containing the alcohol should have the inlet and outlet tubes closed by rubber tubing into which glass rod plugs are fixed.



Showing the usual method of administering oxygen and alcohol vapour clinically.

Special facepieces for the administration of the oxygen and alcohol vapours have been used on a few occasions, but these were not found suitable for clinical work, since the patients to whom the remedy was given were extremely ill, and they objected to the facepiece, being apparently under the impression that an anaesthetic was about to be given.

No doubt with a special facepiece, such as that used by Dr. Leonard Hill, more oxygen and alcohol vapour would be absorbed and probably smaller percentages of alcohol vapour in the oxygen would suffice to produce the therapeutic effect than if the administration is carried out in the ordinary way as described above. Usually the administration of the mixture with a glass funnel suffices to produce a marked therapeutic effect in from three to five minutes.

III.—*Chemical Investigations.*

Numerous investigations have been made in order to determine:

1. The effect of the inlet tube for the delivery of the oxygen being below or above the surface of the alcohol in the wash-bottle.
2. The influence of the rate of passage of the oxygen when the inlet tube of the wash-bottle is below or above the surface of the alcohol.
3. The effect of changes of temperature on the amount of alcohol vapour in the oxygen.
4. The effect of using other alcoholic liquids than absolute alcohol, such as rectified spirits, brandy, and whisky.

The most convenient method of determining the effect of the position of the inlet tube relative to the surface of the absolute alcohol and the influence of the rate of flow of the oxygen was found to be the estimation of the loss of weight of the wash-bottle under the varying conditions considered, a measured amount of oxygen being passed through in each case. The weighings were, of course, made on a specially delicate balance.

The results are shown in Tables I, II, and III.

From these the following conclusions are deduced: If the inlet tube is above the surface of the absolute alcohol, then with a rapid flow of oxygen the gas is not saturated with alcohol vapour; with an ordinary rapid flow of oxygen the gas will be less than two-thirds saturated with alcohol vapour. If the inlet tube is below the surface of the absolute alcohol then the oxygen will be saturated with alcohol vapour in all cases. With a rapid flow a rather greater amount of alcohol will be present in the oxygen than with a slower current of gas, due, no doubt, to some alcohol spray being carried over in particulate form.

The effect of change of temperature on the amount of alcohol vapour present in the oxygen when the inlet tube dips below the surface of the absolute alcohol is shown in Table IV; which table also shows the amount of alcohol vapour present if rectified spirit, brandy or whisky respectively are placed in the wash-bottle.

The results shown in this table illustrate clearly the marked effect which rise of temperature has on increasing the amount of alcohol vapour in the oxygen. The results also clearly demonstrate the importance of using absolute alcohol, and not a weaker spirit, if appreciable amounts of alcohol vapour are to be contained in the oxygen. Thus at 15°C. with brandy or whisky only about 2.2 per cent. of alcohol vapour is present (0.74 grain per litre); with rectified spirit 3.65 per cent. of alcohol vapour is present (1.16 grains per litre); with absolute alcohol 4.7 per cent. of alcohol vapour is present (1.5 grains of alcohol per litre).

In the above experiments the rectified spirit contained 90 per cent. by volume of absolute alcohol; the brandy contained 47.1 per cent. by volume of absolute alcohol; the whisky contained 52.25 per cent. by volume of absolute alcohol.

For determining with great accuracy the percentages of alcohol vapour present at different temperatures with

TABLE I.—*Inlet Tube Half Inch Above Alcohol.*

Experiment.	Temperature C.	Rate of Flow in Litres per Minute.	Alcohol.	
			Grains per Litre.	Percentage of Vapour.
1	12°	0.87	0.73	2.3
2	12°	0.37	0.78	2.5
3	12°	0.18	0.97	3.1
4	12	0.14	1.0	3.2

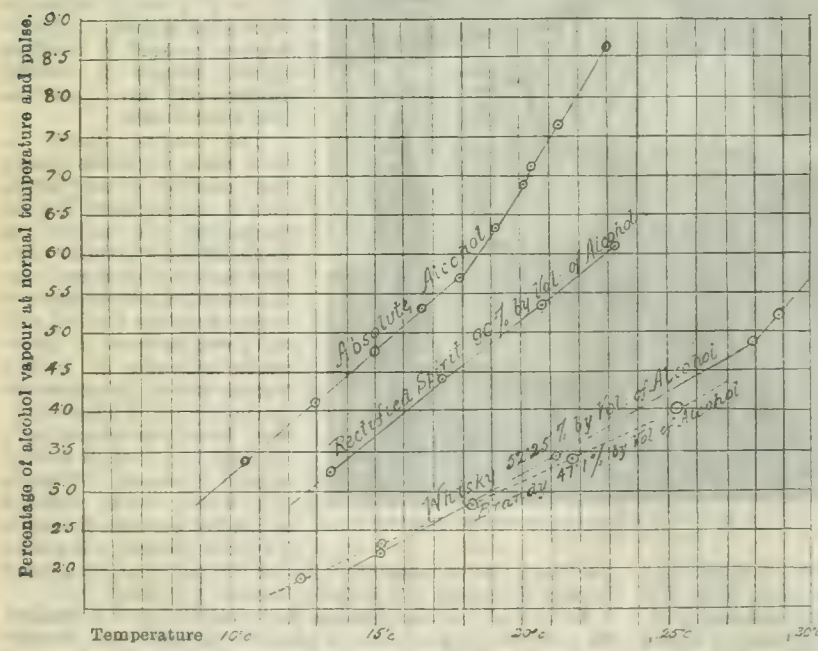
TABLE II.—*Inlet Tube Half Inch Below Alcohol.*

Experiment.	Temperature C.	Rate of Flow in Litres per Minute.	Alcohol.	
			Grains per Litre.	Percentage of Vapour.
1	14°	1·1	1·23	3·9
2	14°	0·95	1·18	3·7
3	14°	0·19	1·08	3·4

TABLE III.—*Comparison. Inlet Tube Above and Below Alcohol.*

Position of Inlet.	Temperature C.	Rate of Flow in Litres per Minute.	Alcohol.	
			Grains per Litre.	Percentage of Vapour.
½ in. below ...	12½°	1·75	1·1	3·5
,, above ...			0·74	2·3
½ in. below ...	12¾°	0·65	1·0	3·1
,, above ...			0·8	2·5
½ in. below ...	13½°	0·13	1·3	4·0
,, above ...			1·14	3·6
½ in. below ...	16°	0·52	1·43	4·5
,, above ...			1·0	3·3
½ in. below ...	16°	0·32	1·4	4·4
,, above ...			1·12	3·6

TABLE IV.



different kinds of spirit a combustion method was used the oxygen and alcohol being passed through a red-hot tube containing copper oxide, when the alcohol was converted into carbon dioxide and water. The carbon dioxide produced was absorbed in a weighed soda lime tube, and from the increase in weight of the tube the amount of alcohol vapour present could be calculated with great accuracy.

IV.—*The Therapeutic Effects of Oxygen and Alcohol Vapour.*

When oxygen which has been passed through absolute alcohol is administered to a patient, there is no doubt as to the remarkable beneficial effect in a suitable case. In many cases of acute illness a period arrives at which life may be said to hang on a thread, and if the patient is able to survive this critical period often complete recovery takes place.

Examples of this are the later stages of pneumonia, the shock following severe operations, especially those on the abdomen, the heart failure which occurs sometimes during chloroform anaesthesia, and many other instances which might be cited. Any remedy which has a powerful stimulating effect on the heart and general system is most potent for good at such a critical period, and oxygen which is saturated with alcohol vapour has appeared to us to be a most valuable remedy. In many cases of desperate illness, in which its effect has been carefully observed, we believe that oxygen passed through absolute alcohol has been the means of tiding the patient through the most critical period of his illness, and so of saving life.

It is very interesting to note the amount of alcohol given when administered in vapour form with oxygen. One litre of oxygen when bubbled through absolute alcohol at ordinary temperatures will only contain from 1 to 2 grains by weight of alcohol, and only a portion of this can be absorbed by the lungs, so that it is seen that very minute amounts of alcohol are absorbed into the system.

Sufficient attention does not appear to have been paid to the method of administration of remedies by inhalation into the lungs. It is well known that many remedies produce a marked physiological action in extremely minute doses if the administration is by deep inhalation. Examples of this are amyl nitrite, where the absorption of a minute amount of the drug in vapour form produces a potent physiological effect.

The action of chloroform vapour and other anaesthetic drugs of this type is such that a relatively minute amount of the drug may cause death when inhaled, whereas much larger quantities could be taken with safety by the mouth. Similarly many other drugs, such as atropine and cocaine, in most minute amounts will, if inhaled into the lungs in the form of a finely-divided spray of their solution, produce a definite physiological effect, which will be as marked as that produced by much larger doses if given by the mouth or hypodermically.

The alcohol which is absorbed when oxygen containing its vapour is inhaled appears to be carried direct from the lungs to the heart, and so produces a very marked physiological effect by the direct action on the heart, even though only minute amounts of the drug are being administered. Probably the small amount of alcohol administered in this way is rapidly decomposed, and so does not produce any harmful effect on the tissues of the bodily organs, such as the liver, kidneys, and nervous system.

The administration of alcohol by inhalation must have few, if any, of the objections which can be urged against the administration of alcohol as a stimulant by the mouth. It is well known that formerly alcohol was regarded as a valuable cardiac stimulant, and that it used to be one of the most largely-used remedies for that purpose. In recent years the pendulum has swung in the opposite direction, and it is the custom now to avoid the administration of alcohol by the mouth in cases of illness as far as possible, and considerable doubt has been cast upon the supposed action of alcohol as a cardiac stimulant.

It is most important that, while realizing the dangers and ill effects of alcohol under certain conditions of administration, the medical profession should not lose sight of the good effects which it can be proved that alcohol may have in certain conditions. The common use of alcohol in the mixture of alcohol, ether, and chloroform, known as A.C.E. mixture,[1] has, no doubt, arisen and continued because of the less risk of cardiac failure occurring with such a mixture than with pure chloroform. In other words, anaesthetists have acknowledged by their practice in using A.C.E. mixture for so many years their belief that alcohol has stimulating effects on the heart when its vapour is inhaled.

A very valuable paper on the action of alcohol on the

circulation, by Dr. W. E. Dixon, was published in the *Journal of Physiology* in March, 1907.[5] After a very careful series of experiments, Dr. Dixon proved that in moderate doses alcohol increased the activity and output of the heart, and that in cases of cardiac failure the rise of blood pressure following the administration of alcohol was due mainly to its direct effect on the heart. Dr. Dixon says that alcohol probably produces its effect by providing the heart with an easily assimilable source of energy, since alcohol perfused through an active isolated heart is used up and oxidized. Alcohol may thus act as a direct food to the heart.

In considering the action of alcohol, it is most important that the question of dosage and mode of administration should be carefully borne in mind. Every one is agreed that in large doses alcohol has a depressing action on the circulation, and is a very harmful drug to the tissues of the bodily organs generally.

In moderate doses alcohol may be beneficial in suitable cases, and this beneficial action is certainly likely to be most manifest and to be gained without ill effect when alcohol vapour is inhaled into the lungs with oxygen, for here the alcohol is conveyed direct to the heart, and all the alcohol absorbed by the blood passes immediately through the heart, so that the full effect of the drug is obtained on the only organ on which it is known to have a beneficial action. If given in the form of vapour with oxygen at ordinary temperatures, the amount of alcohol administered is so small (1 to 2 grains per litre of oxygen) that it is impossible to give an overdose.

It is important to remember that the stimulating effect of alcohol on the heart is shown not on the normal organ, but on the heart which is showing signs of cardiac failure. In moderate doses alcohol has little or no effect on the normal heart, but on the failing heart its effects are marked.

Oxygen containing alcohol vapour has little effect on the normal heart, but a very marked effect in cases of cardiac failure. The presence of alcohol vapour in oxygen makes the administration of the gas pleasant to the patient, the effect being warming and soothing to the air passages. There is no irritating effect whatever.

In cases of cardiac failure with feeble rapid pulse and cyanosed or greyish colour of the patient the inhalation of oxygen containing alcohol vapour causes the colour to improve and the pulse to increase in force and volume. If the pulse is rapid—for example, over 100 beats per minute—the inhalation usually causes the rate to be reduced from ten to twenty beats per minute. In cases of cardiac failure with slow pulse the administration is often followed by some quickening of the pulse, so that the frequency becomes about normal.

Where the blood pressure has fallen as a result of cardiac failure, it has been observed that the blood pressure quickly rises when oxygen and alcohol vapour are administered, a rise of 5 to 30 mm of mercury having been measured in several cases with the Riva-Rocci sphygmomanometer. The patient usually expresses himself as feeling much strengthened and refreshed after inhaling the mixture for a few minutes.

It has been found that after the administration of the mixture has been continued for about two minutes the pulse is stronger and fuller, and begins to become slower if rapid. It has been found that the full beneficial effect is obtained after about five minutes if a rapid stream of oxygen through absolute alcohol is administered, and if the administration is now stopped the beneficial effect remains for some minutes. In cases of cardiac failure it has been found convenient to give the oxygen and alcohol vapour in a rapid stream for five minutes every half-hour.

The remedy has been used in a very large number of cases; among these being cases of pneumonia with cardiac failure, pleurisy, cases of heart failure following chloroform anaesthesia and various surgical operations, angina pectoris, attacks of asthma with heart failure, septicaemia, typhoid fever, myocardial degeneration, dilatation of the heart, valvular lesions of the heart, collapse after epidemic diarrhoea, etc.

In a large number of cases where oxygen charged with alcohol vapour has been administered and the above described beneficial effects have been observed, namely, the pulse improved in force and volume and slowed, if rapid, together with a definite rise of blood pressure where it has become low from enfeebled cardiac action, it has been found that the administration of oxygen alone without the alcohol vapour has *not* caused the same improved effect on the pulse and circulation, though, of course, the colour of the patient has improved under the influence of the oxygen when given alone.

So marked have been the results obtained by the administration of oxygen and alcohol vapour in cases at St. Mary's Hospital, London, that it has become the custom to keep in every ward of the hospital and in the operating theatres wash-bottles containing absolute alcohol ready for cases of emergency, so that oxygen and alcohol vapour may be administered without delay.

Many medical men have reported to us cases where the administration of the remedy has been followed by marked beneficial results.

For assistance in the above work our thanks are due to Mr. John Webster, F.I.C., who gave valuable assistance in the chemical investigations; Dr. E. Holmes, House Physician of St. Mary's Hospital, who made several observations on the effect of the remedy in cases under his care; and to Mr. H. L. Buswell and Mr. R. F. Wilkinson for valued assistance in the physiological experiments.

Conclusions.

1. The administration of oxygen bubbled through absolute alcohol is a marked cardiac stimulant in cases of heart failure.

2. The administration is pleasant and non irritating to the patient; it causes no ill effects to the lungs or bodily system.

3. A rapid feeble pulse is slowed by some 10 or 20 beats per minute, and there is a marked improvement in its force and volume. The blood pressure, if low from cardiac failure, is raised from 10 to 30 mm. of mercury as measured by the Riva-Rocci sphygmomanometer.

4. It is better to use absolute alcohol in the wash-bottle, since with less concentrated forms of alcohol an insufficient amount of alcoholic vapour will be contained in the oxygen.

5. The oxygen should be bubbled through the alcohol in a rapid stream.

6. The full effect of the administration is obtained after five minutes, and lasts for several minutes afterwards. As the effect passes off the administration should be repeated.

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DISCUSSION.

Dr. A. E. Boycott (London) said that the amount of alcohol absorbed by the patient must depend on the rapidity of flow of the gases, and that consequently the figures set down expressed inadequately the amount of alcohol taken.

Dr. Mott (London) asked if Dr. Willcox had noticed any alteration in the depth of respiration after the inhalation of the vapour, and whether he thought that the alcohol was acting on the nerves at all.

Sir Clifford Allbutt (Cambridge) asked if the cyanosis disappeared, and also if there had been any experiments with alcohol vapour alone.

Dr. J. Mackie Whyte (Dundee) said that Binz had shown by repeated experiments that the respiratory system was stimulated by alcohol. The explanation of this phenomenon offered by his critics was that it was an effort on the part of the body to neutralize the bad effects of the alcohol, more especially with respect to the interference with the proper oxygen supply of the blood. Possibly the addition of oxygen prevented this bad effect. Could Dr. Willcox say in what way precisely the stimulant

showed itself? Was it on the heart mainly or on the blood vessels—a peripheral vasomotor paralysis?

Dr. WILLCOX, in reply, agreed with Dr. Boycott that the figures set down were not high enough; he had not paid particular attention to variations in the depth of respiration. The cyanosis cleared up probably because of the presence of the oxygen. In answer to Dr. Mackie Whyte's remarks, he said that some experiments of Dixon seemed to prove that the action on the heart was more marked.

SOME OBSERVATIONS ON FATAL CASES OF PULMONARY THROMBOSIS.

BY

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THE fatal occlusion of the pulmonary artery by an embolus or thrombus is deeply interesting, not only to the physician, the surgeon, and the obstetrician, on account of the tragic suddenness with which death occurs, but also to the pathologist who is called upon to decide at the necropsy whether the foreign bodies plugging the pulmonary artery are the result of embolism, thrombosis, or both. By the majority of writers clots present in the pulmonary artery are almost invariably ascribed to embolism. There is no mention of primary spontaneous thrombosis in the majority of textbooks on medicine, surgery, or midwifery. A few allude to it as a possibility or of rare occurrence. Embolism is held to be commoner than spontaneous thrombosis by Frederick Roberts, Fowler and Godlee, and Welch. On the other hand Playfair, Méry, Newton Pitt, and Box appear to maintain that primary thrombosis is not only common, but commoner than embolism.

It is a curious fact that, though many writers have carefully described the macroscopical appearances of the clots found in the pulmonary artery, no attention whatever has been paid to their *microscopical* structure. This is all the more remarkable since, as is well known, the microscopical structure of a thrombus alters with age. In those cases of supposed pulmonary embolism in which thrombi extend far into the lungs this extension is assumed to be the result of encapsuling and secondary thrombosis. But a careful microscopical examination would almost certainly demonstrate the truth or falseness of this assumption.

The following are the changes produced by age in pulmonary thrombi to which we attach the greatest importance:

1. The erythrocytes in a recent thrombus have very distinct outlines, and when stained with eosin are bright red. Later their outlines disappear, they fuse together, and take a brownish tint with eosin. Later still brownish-yellow haemosiderin pigment appears in increasing amount as fine granular deposit, which is soon found inside the cytoplasm of the leucocytes present in the clot. Finally, the surrounding artery wall itself becomes pigmented; the pigment may even be found in adjacent cartilage.

2. The polymorphonuclear leucocytes, which are present even in aseptic thrombi and tend to increase in numbers through emigration, retain their normal appearance and staining capacity, and are destitute of pigment at first; but soon karyorrhexis and karyolysis of the nuclei take place, the margins of the cytoplasm become indistinct, and the cell eventually disappears. If the leucocyte had contained much pigment its original site is marked by a brown, faintly-granular mass.

3. Organization is proof positive that the thrombus has been *in situ* for some time.

The rapidity with which haemosiderin occurs depends partly upon general conditions, such as the presence of haemolysin in the blood, from streptococci, etc., and probably upon local cellular conditions.

Although we can make no definite statement as to the exact time pigmentation takes to appear, for it must vary with circumstances, it is perfectly clear that the liberation of haemoglobin from the erythrocytes, its deposition as haemosiderin, its entrance into the leucocytes and later into the connective tissue of the surrounding artery, is not a question of minutes, but of hours, sometimes days; and none of our patients lived more than thirty minutes after the onset of the symptoms.

The eight cases about to be described occurred in the *post-mortem* room of the Liverpool Royal Infirmary during the years 1902-1909 inclusive, and we are indebted to the honorary physicians and surgeons for permission to use them. The thrombi were examined microscopically in 7 cases. In the last 5 the heart and lungs were removed together, and the distribution of the thrombi was not finally ascertained till the organs had been fixed and hardened.

CASE I.

J. L., male aged 50, admitted 1902, with anterior hypopyon following injury. He declined to have his eye removed, and was kept in bed. On the nineteenth day after admission, on going to stool at 5 a.m., he was suddenly seized with dyspnoea, thoracic pain, and slight cyanosis, and died in about fifteen minutes.

At the *post-mortem* examination, the right ventricle and pulmonary aorta contained no clots, but situated in the stem of the right and left pulmonary artery and extending into the lungs were two branched stratified thrombi, the main stem of each being 3 in. or 4 in. long. The proximal end of one thrombus appeared to be composed of two separate pieces of clot coiled together. (The diameter of the thrombi varied from ⅝ in. to less than ¼ in.) The pulmonary aorta was *empty*, so the clots in the right and left branches were separated from each other.

Microscopical examination of the coiled extremity of the largest clot demonstrated that it was of recent formation, was not composed of two thrombi twisted together, but of a single laminated piece, the inner white layers being arranged like a figure of 8. Thus the coils were evidently due to secondary eddies in the thrombosing blood. Two pieces of thrombi from the smallest vessels showed extensive pigmentation, and were therefore old. No source for embolism was discovered, the ophthalmic veins contained no clot.

Evidence in Favour of Spontaneous Thrombosis.—(1) Stratified thrombi in both pulmonary arteries, separated from one another. (2) Pigmentation of smaller thrombi. (3) No systemic clotting.

CASE II.

E. M., male, aged 12, operated on for appendix abscess, November 26th, 1904. A sinus formed and occasional pyrexia continued until January 8th, when the appendix was removed. The patient was progressing normally, but at breakfast he became cyanosed, and died in less than twenty-five minutes. At the *post-mortem* examination the abdomen was normal. The heart contained a yellow agony clot, which extended as far as the bifurcation of the pulmonary aorta. Beyond this point it became stratified and extended along the pulmonary arteries, some branches reaching far into the lungs. Microscopical examination demonstrated that the larger thrombi were of recent origin; they contained no pigment, but three out of four separate pieces of smaller thrombi were extensively pigmented, and had therefore been laid down first. No source of embolism was discovered.

Evidence in Favour of Spontaneous Thrombosis.—(1) Stratified thrombi in both pulmonary arteries, also in smaller branches. (2) Pigmentation of smaller thrombi. (3) No systemic clotting.

CASE III.

M. T., female, aged 52, had the right breast and some axillary glands removed for cancer, June, 1905. Progress satisfactory until the sixth day, when the temperature was 101° F., and on the sixteenth day 100° F. At 5 a.m. on the seventeenth day the patient had a cup of tea; at 5.5 a fit with cyanosis; at 5.10 she was dead.

At the necropsy the wound was healthy, the brain normal. The heart weighed 11oz., being somewhat hypertrophied and dilated. There was extensive fatty infiltration of the myocardium. A yellow agony thrombus was present in the right ventricle, and typical laminated thrombi in both branches of the pulmonary artery, extending some distance into the lungs. No thrombi were found in the axillary or iliac vein or inferior vena cava.

No microscopical examination was made of these thrombi, but they were undoubtedly truly *ante mortem*.

CASE IV.

B. D., aged 10, was shot in the hip on July 29th, 1906, at 9 a.m. Suppuration and pyrexia immediately occurred. On August 1st the head of the femur was excised.

At 9.45 next evening the child was fairly well; at 10 p.m. the nurse found her dead.

At the *post-mortem* examination a red thrombus was present in the right auricle. The pulmonary aorta was empty, so was the right pulmonary artery, even to its terminal ramification, but a laminated thrombus (with a maximum diameter of 0.4 cm.) commenced in the left pulmonary artery 2½ cm. from its origin from the aorta, and extended into some of the branches into the upper lobe.

Certain smaller branches also contained clot which was unconnected with the main stem.

The artery to the lower lobe contained no thrombi for its greater part, but two vessels in the base with a maximum diameter of 2½ mm were full of clot separate from the main thrombus by a distance of 4 cm., and spreading into the smallest branches of the artery.

Ten different portions of the thrombi were examined microscopically and demonstrated that the proximal end of the main clot was of recent origin; that its distal end was older, for in the latter pigment had appeared, some being present in the leucocytes, while certain of the smaller thrombi in the lower lobe were older still, because the leucocytes had autolyzed, leaving pigment masses behind them. Occasionally the artery walls were also pigmented. Other of the smaller thrombi were of recent origin. The hip-joint contained pus. No source of embolism was discovered.

Evidence in Favour of Spontaneous Thrombosis.—(1) The presence of pigment in the distal end of the main stratified thrombus. (2) The separation of some peripheral thrombi in both lobes from the main thrombus. (3) The age of some of the peripheral thrombi as indicated by extensive pigmentation, etc. (4) No systemic clotting. (5) The presence of the thrombi in the left lung; embolism is said to be more frequent in the right lung.

CASE V.

W. E., male, aged 64, had his jaw excised for epithelioma on September 10th, 1907. He progressed normally, but on the 15th his temperature rose to 99.2 F. Next day he had a heart attack, and died suddenly in half an hour at 9 a.m. on the seventh day after operation.

Post-mortem Examination.—Situated in the pulmonary aorta was a Y-shaped thrombus the stem of which measured 10½ cm., and reached into the right ventricle, where it formed an irregular mass about 2 cm. transversely. The limbs of the Y spread into both pulmonary arteries, that to the right being separated by an interval from other thrombi which reached into some of the finer ramifications of both lobes, that to the left extended a short way into all the main branches of the upper lobe only, but there were a few isolated thrombi in the smaller branches of the lower lobe. There were some patches of consolidation in the right upper and lower lobes. The systemic veins were not examined.

Ten separate pieces were examined microscopically. The stem of the Y in the right ventricle was composed mainly of old with some recent thrombus. The right limb showed advanced pigmentation and karyorrhexis of the leucocytes. One smaller thrombus in the right upper lobe was much older, the pigment having extended to some adjacent cartilage. The left limb of the Y was of more recent origin. Some of the isolated thrombi in the lower lobe contained much pigment which had slightly infiltrated the vessel wall. The pneumonic patch in the right upper lobe contained Gram-negative bacilli about the size of colon bacilli.

Certain veins in the myocardium had evidently thrombosed some days before death, for they were full of pigment. The red blood corpuscles were normal in those arteries which contained blood, and in the majority of the capillaries.

Evidence in Favour of Spontaneous Thrombosis.—(1) The shape of the thrombus in the pulmonary aorta and its right and left branches, and the absence of an encapsuled embolus in it. (2) The isolated thrombi in both lower lobes. (3) The pigmentation of the thrombi and especially of the artery walls. (4) The spontaneous thrombosis in the myocardial veins.

CASE VI.

S. K., aged 46, a woman with a moderately enlarged thyroid and slight exophthalmic symptoms, had hysterectomy for cancer on May 28th, 1908. The operation was followed by slight daily pyrexia. On June 12th and 13th the patient complained of palpitation and uneasiness, but the house-surgeon found the heart normal. On the 14th, at 10 a.m., she became cyanosed, the pulse extremely rapid, and she died in a quarter of an hour, eighteen days after laparotomy.

At the necropsy the external wound was healthy, but the stump of the left Fallopian tube was septic. Commencing at the bifurcation of the inferior vena cava, and extending onwards down the left common iliac and left femoral vein as far as the knee, was a true *ante-mortem* thrombus, which was firmly adherent to the vein for 1 in. below Poupart's ligament. A smaller thrombus extended down the right common iliac vein for a few inches.

The right ventricle contained red and yellow clot, which extended into the pulmonary aorta. Distinct from this, and lying at its bifurcation, was a cone-shaped piece of true *ante-mortem* thrombus, measuring 2 in. longitudinally, blunt at one end. Three large thrombi arose separately in the right lung, two passing to the upper lobe—one extending into the smaller branches—the third to the lower lobe, almost completely occluded the main vessel and was adherent, its maximum diameter being 1 16 cm.; some of its branches extended into an infarct at the base. A large thrombus started from the left pulmonary artery at its bifurcation to the two lobes, some portions of it extending to the finer branches and others ending bluntly. There were small infarcts at both bases.

Fourteen different parts of these thrombi were examined microscopically. The main thrombi in both upper and lower lobes were laminated and pigmented locally. Many leucocytes were also pigmented, but they still stained normally. Some of the smaller thrombi were older, others quite recent. There was pigmentation of some of the artery walls in both lower and the right upper lobe. Two portions of the adherent thrombus in the right lower lobe showed organization, which was more advanced at the periphery where canalization had begun.

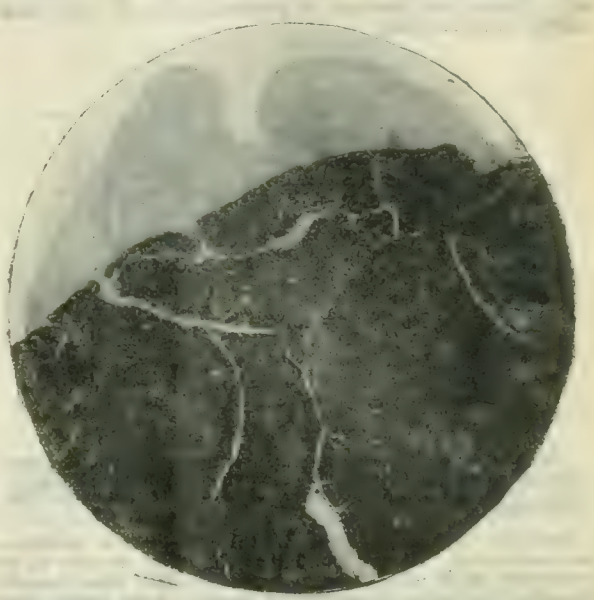


Fig. 1.—Case VI. Showing commencing canalization of thrombus from right lower lobe.

A section of the femoral vein with the adherent thrombus showed the clot to be slightly pigmented and organization beginning. There was no round-celled infiltration in the vessel wall and bacteria were absent. Old pigmented thrombi were present in some of the myocardial veins.

Evidence in Favour of Spontaneous Thrombosis.—(1) The complete separation of the thrombi in the two lungs from one another. (2) The extensive amount of pigmentation in some of the thrombi in every lobe, and specially in some of the vessel walls surrounding them in three lobes, proving that several had been *in situ* for a considerable period. (3) The organization in the clot of the right lower lobe more advanced towards the periphery. (4) Spontaneous thrombosis in the veins of the myocardium.

Comment.

This is the only case of the series with extensive thrombosis of the systemic veins, and it suggests the possibility of embolism, especially as there was a loose thrombus in the pulmonary aorta. But embolism will not explain the peculiar and widespread distribution of the pulmonary clots, their macroscopic appearances such as the absence of signs of fracture, and their microscopical character. It is noteworthy also that organization was not as far advanced nor pigmentation as extensive in the adherent piece of femoral thrombus as in the adherent piece of pulmonary thrombus.

The acceleration of the pulse, which began on the fifth day after the operation—a point which will be alluded to later—also suggests spontaneous thrombosis. The occurrence of clots in both pulmonary arteries separately, in the iliac veins, and in the myocardial veins (other organs not examined microscopically), suggests a general tendency to spontaneous thrombosis throughout the body. The balance of evidence is strongly against embolism.

CASE VII.

E. H., male, aged 57, operated upon for inguinal hernia, November 26th, 1909. The operation was followed by slight pyrexia. On the sixteenth day after the operation, while taking breakfast, he complained of faintness. After finishing it and lying down again he was suddenly seized with intense dyspnœa, became slightly cyanosed, and was dead in half a minute, at 7 a.m.

At the *post-mortem* examination there was slight cellulitis at one end of the inguinal incision. The inferior vena cava, and all the iliac veins were normal, but the right femoral vein contained a small piece of thrombus the size of a threepenny-bit, lying over the orifice of the external pudic vein. There was a similar piece in the left femoral vein, in the mouth of the external

circumflex vein. The veins in the calf were normal. The left ventricle was dilated, there being fibroid myocarditis (verified microscopically). No clots were found in the right auricle and ventricle, but a large thrombus began at the posterior cusp of the aorta, into which it partially fitted, and extended along the left pulmonary artery into both lobes. Some of the thrombi in the smaller branches were distinct from the main stem. The clot in the left artery was quite separate from that in the right, some of those in the lower lobe being continued into the finest branches. The larger thrombi showed a distinct tendency to coil. There were patches of pneumonia in all, and small infarcts in three lobes.

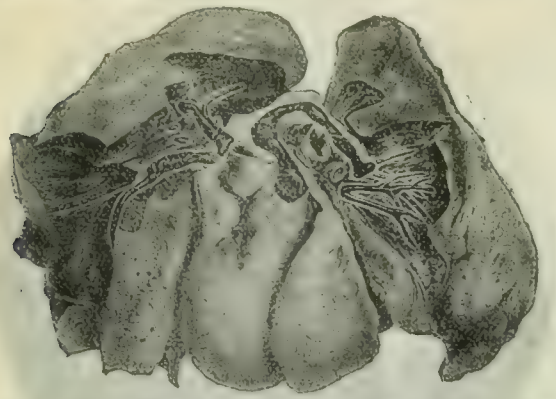


Fig. 2.—Case VII. Showing separation of thrombi in the two lungs from each other, and separation of individual thrombi in the same lung. (Note the coiled appearance of part of thrombus to right lower lobe.)

Fourteen different pieces of thrombus were examined microscopically. It was found that the large thrombi in the pulmonary aorta and its two branches had been recently deposited, but many of the smaller thrombi were much older, the walls themselves being pigmented in two pieces of tissue from the right, and in three from the left lung respectively.

Slender columns of spindle cells, with oval nuclei indicating commencing organization were found in three blocks, one from each lower lobe, and one from the left upper lobe. There were numerous patches of pneumonia, and large colonies of streptococci distributed through both lungs, but none was found in the thrombi, though looked for. The small thrombus from the right femoral vein was pigmented centrally but not organized.

Evidence in Favour of Spontaneous Thrombosis.—**(1) The separation of the thrombi in the two lungs from each other and of individual thrombi in the same lung. (2) Pigmentation of certain thrombi and even of the artery walls surrounding them in both upper and lower lobes. (3) The occurrence of organization in the left upper and both lower lobes.**

CASE VIII.

E. G., female, aged 44, had hysterectomy for fibroids on October 25th, 1909; slight evening pyrexia followed. On the fifteenth day a patch of consolidation developed at he right

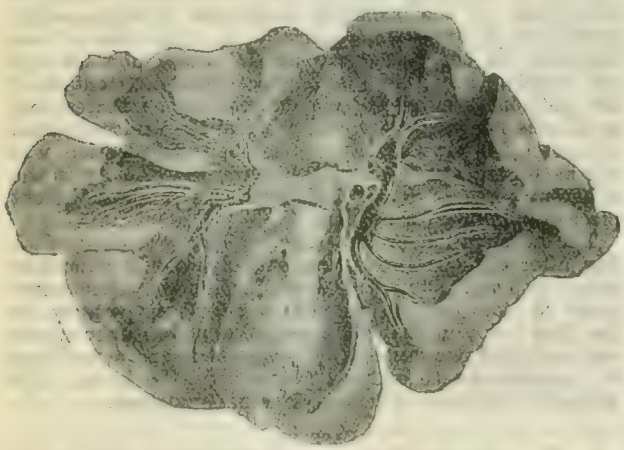


Fig. 3.—Case VIII. Showing separation of thrombi in the two lungs from each other, isolated peripheral thrombi in the right upper lobe, and loose thrombus in ventricle.

base. On the eighteenth day, after a good sleep, patient had a drink, and was immediately seized with an acute precordial pain. She became slightly cyanosed, and died in ten minutes at 4 a.m.

At the *post-mortem* examination the wound was healthy, there was no trace whatever of lymph nor pus. No thrombi were found in any of the systemic veins after a careful search. The right ventricle contained a small quantity of red clot; also a loose oval *ante-mortem* thrombus, 1 in. long, without any signs of fracture in it, and to which was attached a small quantity of recent red thrombus. The pulmonary aorta was empty, but 1 in. beyond the bifurcation thrombi commenced, which extended into both lungs; those to the upper lobes being less numerous and extensive than those to the lower, which often ramified into the smallest vessels; some were also slightly adherent. Three small infarcts were found, two of them in the right lower lobe.

Twelve different portions of the lungs and clot were examined microscopically. The isolated thrombus from the left ventricle consisted of laminated material with softening and advanced pigmentation in the centre. The characteristic features of the other thrombi were a slight amount of pigmentation and the commencement of organization in some from both bases, and in an infarct from the left upper lobe. There was some purulent bronchitis in the right base, with clusters of Gram-positive cocci in the lumen of the bronchus and the adjacent pulmonary tissue. This bronchitis probably accounted for the temperature.

Evidence in Favour of Spontaneous Thrombosis.—**(1) The separation of the thrombi in the two lungs from each other, and the occurrence of isolated thrombi in each lung. (2) The occurrence of organization in both lower lobes. (3) The absence of thrombi in the systemic veins.**

Comment.

The large loose thrombus in the right ventricle had apparently been formed in the pulmonary artery, not the heart, because globular thrombi were absent among the columnae carneae, and the right auricular appendix was empty. Neither was it formed in the peripheral veins, because the central softening indicated that the thrombus was an *old* one, and it is very improbable, if thrombosis had occurred so long before death in the systemic veins, that *no other* thrombi should be found in any of them.

GENERAL SUMMARY.

The following evidence indicates that the thrombi in the pulmonary artery originated spontaneously in the 8 cases.

A.—*Macroscopic.*

1. Laminated thrombi were present in *both* lungs in all except Case IV, and those in the right and left lung were separate from one another in Cases I, II, VI, VII, and VIII. The shape of the main thrombus in Case V and the absence of a central embolus in it has been alluded to.

2. Peripheral thrombi occurred in the small branches of the pulmonary artery separate from main thrombi in the larger branches in Cases IV, V, VI, VII, and VIII.

3. The impossibility of laminated thrombi, often extending into the terminal ramifications of the pulmonary artery, being deposited in from one to thirty minutes—the duration of symptoms following the impaction of the supposed embolus.

B.—*Microscopic.*

1. Lamination of the majority of the thrombi.

2 Pigmentation in certain thrombi, usually the peripheral, in all 7 cases examined microscopically.

3. Pigmentation of the artery wall surrounding the thrombi in all 5 cases in which the lungs were examined microscopically—namely, IV, V, VI, VII and VIII.

4. The occurrence of organization of the thrombi in 3 out of the 5 cases in which the lungs were examined microscopically, involving one, two, and three lobes respectively.

C.—*Absence of Systemic Thrombosis.*

1. No source of emboli was found in the systemic veins in 5 out of 7 cases examined; nor in the heart, including the auricular appendices, in any case, though Cases VI and VIII contained a loose thrombus in the pulmonary aorta and ventricle respectively.

2. The occurrence of pigmented thrombi in the myocardial veins in Cases V and VI, and the small thrombus at the orifice of a vessel opening into each femoral vein in Case VII suggests a general tendency of the blood to thrombose. Even in Case VI, in which extensive systemic thrombosis occurred, the pulmonary clots were probably of spontaneous origin.

ETIOLOGY.

This may best be considered in relation to the causes of thrombosis as given by Welch.

A.—*Contact of the Blood with Abnormal Surfaces.*

There was neither macroscopic nor microscopic evidence of atheroma, arterio-sclerosis nor acute arteritis in the

pulmonary vessels in any of our cases. The valves of the heart were normal, so was the myocardium, except in Cases III and VII, where the ventricles were dilated from extensive fatty infiltration and fibroid myocarditis respectively.

B —*Slowing and other Irregularities of the Circulation.*

1. All our patients were confined to bed and were consequently exposed to the danger of passive congestion of the lungs.

2. The myocardial disease present in two cases might have interfered with the normal circulation.

3. Thrombosis on the whole was more extensive and older in the lower lobes and bases of the lung. It was here also that organization most frequently occurred.

4. With one exception all the patients died in the morning, six before 9 a.m. The physiological slowing of the pulse during sleep probably accelerated the thrombosis.

C.—*Bacterial Infection and* D *Chemical Changes in the Blood.*

These may be taken together. Bacteria were probably partly responsible for thrombosis in all instances, because—

1. Collections of pus were present in Cases I, II, IV, VI, and VII. Case V, with excised jaw, was probably septic.

2. Slight pyrexia usually daily occurred in Cases II, III, IV, VI, VII, and VIII. The temperature chart of Case I is missing.

3. Three out of the five lungs examined microscopically showed some acute inflammation and contained clusters of bacteria.

4. All cases had been anaesthetized and operated upon except No. 1, hence the possibility of bacterial infection through the lungs or wound.

On the other hand, no bacteria were found in the thrombi nor in the walls of the thrombosed vessel, though specially looked for in sections stained with Gram and methylene blue.

It is noteworthy that in half the cases the operation was upon the abdomen; in half also death took place from the fourteenth to sixteenth day after the operation.

The factors described were predisposing, but the determining causes were not apparent.

Assuming that thrombosis was slowly taking place in the pulmonary artery, how is it that no symptoms were apparently produced? The reasons seem to be the following:

1. Gradual obliteration of several branches of the pulmonary artery by thrombosis is far less likely to produce symptoms than the sudden obliteration of a much smaller branch by an embolus.

2. The patients were resting in bed; consequently there was no tax upon their circulatory system.

3. Signs of impending danger may be overlooked in surgical wards. Thus it is not always customary to make a systematic record of the pulse or respiration-rate long after an operation in patients who are apparently progressing favourably; and it was only in the last three cases that we were able to obtain any data.

Here we were pleased to find that the mean of the morning and evening pulse-rate showed a definite and permanent acceleration, beginning from the seventh to the eleventh day after the operation. Thus the average pulse-rate of these patients for the three days immediately following the operation was 86, 86, and 82 respectively, compared with the average pulse-rate for three days immediately preceding death, which was 126, 96, and 106 respectively (see chart).

The charts prove that this acceleration was not due to a rise in temperature. This clinical fact supports the thesis that the patients died from spontaneous thrombosis. Case VIII, the only one in which the respirations were regularly recorded, shows a similar increase in the rate from 25 to 31; of course this may have been due to the patches of streptococcal pneumonia.

It is noteworthy also that Case VI complained of palpitation two days before death, and Case VIII evidently had an infarction three days before death. The occurrence of small infarcts in three cases in itself suggests primary thrombosis, for it is doubtful whether embolism could produce infarction in the few minutes which elapsed after the supposed impaction.

The possibility of rapid and even instant death is admitted by those authors who believe in primary spontaneous thrombosis, still it is rather remarkable that death should occur

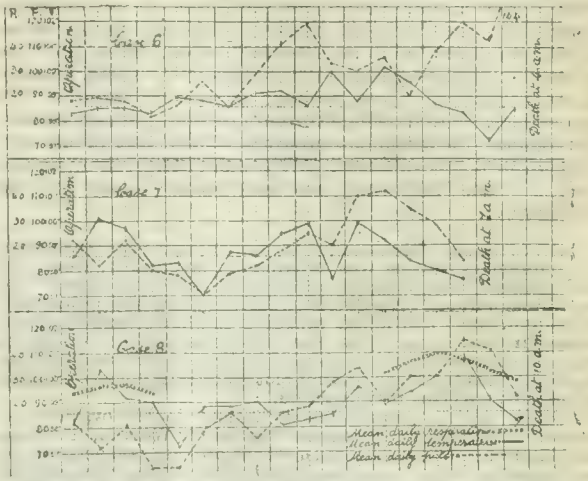


Fig. 4.—Charts from Cases VI, VII, VIII, of average daily pulse-rate ------ and average daily temperature —— proving that the gradual increase in pulse-rate is not the result of an increase in temperature. In Case VIII the respirations x x x x are also shown. (Note the hour of death should be reversed in Cases VI and VIII.)

so suddenly as obtained in our cases. But it must be remembered that thrombosis when once established probably progresses with an ever-accelerating rate, and, as Playfair points out, it is only

when some sudden exertion was made, such as rising from bed or the like, calling for an increased supply of blood, which could not pass through the occluded arteries, that fatal symptoms manifested themselves.

Several of our patients died after exertion. Dr. Box's suggestion, that the acute symptoms may be due to the sudden displacement of the thrombi which have formed spontaneously in the pulmonary artery or right ventricle, is a reasonable one, though in Cases VI and VIII, the only ones in which loose thrombi were discovered, the patients lived about ten and fifteen minutes respectively after the first acute symptoms.

The evidence at our disposal indicates that thrombosis does not begin in the capillaries but in the smaller arteries, probably at their bifurcation (cf. the thrombi in the femoral veins in Case VII), and spreads in both directions but more slowly against the blood stream. The thrombi do not

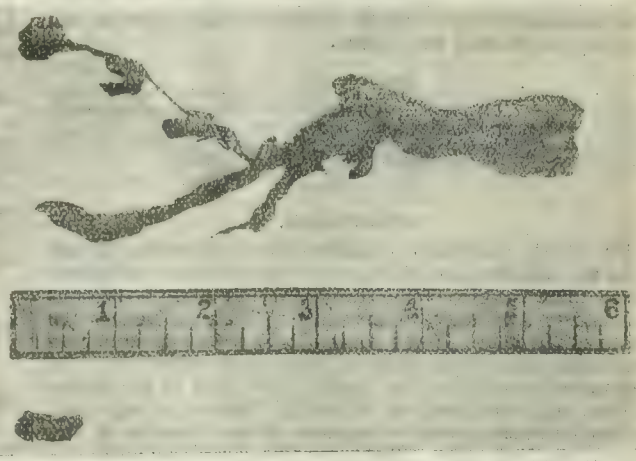


Fig. 5.—Small embolus found in right pulmonary artery (Case A). Large embolus found in tricuspid orifice (Case B.)

completely fill the larger vessels, and apparently only a portion of their circumference is actually in contact with the vessel wall. The coiling and twisting of the

thrombi upon which stress is laid is in itself no proof of embolism unless they can be unravelled, or unless sections prove that separate strands of an embolus have been glued together by encapsuling thrombosis. We believe that eddies in the blood may produce a coiled appearance in spontaneous thrombi as obtained in Cases I and VII.

Critics may suggest that the plugs in the pulmonary vessels are secondary to the impaction of an embolus. Apart from the fact that these hypothetical emboli must have been deposited in both lungs in seven cases, the time allowed for this secondary thrombosis is too short. Surely it is a question of hours, perhaps days—not minutes. No one believes that stratified thrombi in the systemic veins—the femoral, for instance—progress at the rate of an inch or more in a few minutes. Why should they, then, in the lungs? The following are instructive cases of true embolism:

CASE A.—E. T., female, aged 21, with infective endocarditis of the pulmonary valves, was progressing favourably, when she died suddenly with slight convulsions under five minutes. The brain was normal. An embolus derived from the pulmonary valve, ⅜ in. long, was found plugging the main branch of the pulmonary artery supplying the right lower lobe. Now, there was *no thrombosis* in the neighbourhood of, or surrounding, this embolus; thus the blood had not clotted during the few minutes the patient survived its impaction.

CASE B.—C. R., female, aged 40, had double ovariotomy, June 10th, 1909, at the Liverpool Hospital for Women. Thirteen days later she awoke at 1 a.m., used the bedpan, said good-night, and instantly died. A long *ante-mortem* thrombus, bifurcated at its extremity, which had undoubtedly come from the inferior vena cava and its branches, was found coiled up in the right auricle and orifice of the tricuspid valves; but it could easily be unravelled, as there was *no encapsuling* thrombus. The lungs were normal.

CONCLUSIONS.

In our experience spontaneous thrombosis is much commoner than embolism, in the proportion of 8 to 1 in some 1,200 *post-mortem* examinations from a single hospital. We believe an unaccountable acceleration of the pulse or respiration-rate, beginning in the second week after a major operation, especially abdominal, and associated with slight pyrexia, suggests the possibility of spontaneous pulmonary thrombosis and of a sudden fatal termination about the third week.

Cases of spontaneous thrombosis are overlooked from the assumption that only embolism can cause death in a few minutes, from neglect to remove and harden the heart and lungs together, and trace the distribution of the thrombi *in situ* in properly hardened specimens, and especially from neglect to make a thorough *microscopical* examination.

Even the association of pulmonary clots with others in the systemic veins does not necessarily prove that the former are embolic. Both may have arisen spontaneously and separately from similar causes.

This paper is necessarily incomplete, and many of the points raised are controversial; but perhaps it may cause some sceptics who regard primary pulmonary thrombosis as a pathological curiosity to reconsider their position, and possibly to remodel their ideas.

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DISCUSSION.

Dr. E. F. BASHFORD (London) drew attention to the light the intravenous injections of the emulsions of cancer threw upon the size of the thrombi which might be present *ante mortem* without evident signs of their existence. In these experiments it was necessary to inject an emulsion producing immediate signs of pulmonary embolism. In the animals surviving the emboli grew, and in the course of time might be found as "thrombi," blocking a large part of the pulmonary arterial system before invasion of the lung tissue took place. The same thing occurred naturally during the dissemination of cancer both in man and animals. Therefore it seemed to him that the extensive thrombosis described by Dr. Glynn and Dr. Box was not incompatible with its *ante-mortem* occurrence, provided it had developed gradually, whether it arose from embolus or spontaneously in the vessels.

Dr. C. R. BOX (London) said it was gratifying to find that Dr. Glynn had been able to confirm the occurrence of primary pulmonary thrombosis as a cause of sudden death. In a paper read before the Clinical Society of London in 1906 the speaker had attempted to show that the suddenness of death in these cases was due to a process of embolism superadded to the pulmonary thrombosis, that portion of the clot which lay in the main pulmonary stem becoming detached from its anchorage in the heart and impacted further up, nearer the bifurcation of the pulmonary artery. That the coiled appearance of the clot in these cases was not always due to blood eddies was shown by the fact that in one of the speaker's cases the impacted clot bore the impress of the pulmonary semilunar valves.

A METHOD OF DISTINGUISHING DEAD FROM LIVE LEUCOCYTES.

By Professor C. ACHARD,
Paris.

I HAVE undertaken, with two of my pupils, L. Ramond and Ch. Flandin, some researches on the distinction which may be drawn between dead and living leucocytes by using neutral red. Living leucocytes are uncoloured, or contain red-stained and intraprotoplasmic vacuoles or granulations. Dead leucocytes show their nuclei red-brown, and no intraprotoplasmic coloration.

The technique is very simple. Two solutions are used: the one is physiological salt solution with 6 per 1,000 of citrate of sodium; the other is a physiological salt solution with 1 per 1,000 of neutral red. We mix in a tube ten drops of each solution and we add one drop of blood, or one to four drops of the sediment of a centrifugalized exudate containing white cells; the tube is placed in the incubator and kept at the temperature of 37° C. for twenty minutes, then the liquid is examined in a glass cell, and the living and dead leucocytes are separately enumerated.

In the circulating blood there are no dead leucocytes, even in the most grave diseases. If occasionally a few dead leucocytes are seen, fresh preparations must be made again and examined within five minutes, in order to avoid accidental injuries of the white cells; then they generally yield no nuclear staining.

In various exudates dead leucocytes are not scarce, especially in cases of suppuration. In abscesses the number of dead leucocytes suddenly decreases after the incision. In acute meningitis, it appears that the variations in the dead leucocytes are valuable for prognosis; their disappearance is a good sign, their increase an unfavourable indicator. Weill and Policard, of Lyons, who have recently controlled our method, have obtained similar results.

Of course, since the test of dead leucocytes is an anatomical method, it gives an account only of the local process—namely, of the local prognosis. But in acute meningitis the relationship of local to general prognosis is evident.

The red staining of the nucleus is also observed in recently dead and not yet disintegrated cells. Therefore a few stained nuclei are found in old suppurations, for instance, in tuberculous empyema, amongst a great deal of indistinct leucocytic remains.

In conclusion, we believe that this very simple method can be applied to pathological and clinical investigation. The remarks made applied to all leucocytes, more especially the polymorphonuclears.

THE EFFECTS OF ARTIFICIAL RESPIRATION ON THE STILLBORN.

By J. A. BRANTON HICKS, M.D., B.S.Lond., D.P.H.Camb.,
Assistant Pathologist to Westminster Hospital, S.W.

PUTTING aside the legal question, which is nevertheless an important one, as to whether the child was "born alive," and admitting that the fetus has reached a stage of intra-uterine existence at which it might reasonably be supposed to live if born, there is no doubt that the proof of the act of respiration furnishes the best evidence of the child having lived at or about the time it was born.

The proofs that we have at our disposal that respiration has occurred are derived (1) from a careful examination of the lungs, and (2) from an examination of the stomach and intestines. The lungs of a newly born child that has respired are found to present anteriorly on opening the chest, overlapping the heart to a certain extent; they are bright pink and mottled, are crepitant to the touch, float entire, and when cut into small pieces, and attempts to completely empty the lung of air by pressure are useless. In the lung that has not respired the lungs do not present anteriorly when the chest is opened, are dull and of a brownish-purple, and sink in water. The stomach and intestines, or at any rate the stomach, of an infant that has breathed, contain air and float, whereas these organs in the fetus that has not respired sink, unless gases of decomposition cause them to float. This floating of the stomach and intestines is known as the second "life-test." Between these two conditions, which may be taken as typical extremes of inflation and non-inflation, there are any number of intermediate conditions of complete aëration, particularly in the first few days of life; and in addition there are two important exceptions to the statements I have made. The first exception is where the infant has respired but yet the lungs have all the characteristics of the fetal condition (complete atelectasis), and I remember an anencephalic monster that performed respiratory movements for some minutes, but yet the lungs were found in the fetal state *post mortem*. Cases also have been recorded in which this fetal condition of the lungs has been found in infants living from 36 hours to 4 days (Remer). A less marked condition of the fetal state persisting is where a portion or portions of the lungs are inflated, the rest being in the fetal condition (partial atelectasis), and slight degrees of this may be found in infants even of 5 or 6 months of age.

The converse condition is that in which the infant has never breathed, and yet appearances wholly or partly consistent with respiration have been found *post mortem*, produced by artificial respiration. It is to this class of case that I wish to direct your attention, and I first propose to quote some of the cases investigated, and then see how far these findings coincide with the views of others. The first three cases to be now mentioned occurred consecutively:

CASE I.

A stillborn full-term fetus in which Silvester's method of artificial respiration and Schultze swinging were performed for one hour.

CASE II.

A stillborn fetus of a woman with a contracted pelvis, in whom labour had been induced at the thirty-fourth week. Schultze swinging and mouth-to-mouth respiration were performed for about forty-five minutes.

CASE III.

A stillborn fetus of the beginning of the ninth month. Mouth-to-mouth respiration was performed for half an hour.

In all these three cases the lungs were voluminous and presented anteriorly, they were pink and mottled, and the pleurae were glossy. They floated entire and in pieces. The stomach and intestines contained air and floated.

It is interesting to compare these three cases with two others:

CASE IV.

A stillborn fetus, one of twins, from a case of Caesarean section in which artificial respiration could only be carried out for about ten minutes. Schultze swinging and mouth-to-mouth respiration were the methods employed.

CASE V.

The twin fetus to Case IV in which no artificial respiration was performed.

In Case IV the lungs were only partially inflated, but the stomach contained air. In Case V the stomach and lungs contained no air, and sank in water.

I will now show you the actual specimens from some of these cases, but the first remark that must be made is that the colours you now see before you do not represent their appearance in the recent state, for the pink and mottled appearance of the inflated lung has to a great extent disappeared in the process of preserving and mounting the specimen, while the dull brown appearance of the non-inflated lung has become lighter on exposure to air, so that all three specimens of the lungs have somewhat the same colour.

The first specimen is a left lung from one of the first three cases mentioned (the other five lungs were cut up for the purposes of investigation), the second specimen is the partially-inflated lungs of the fourth case, and the third specimen the non-inflated lungs of the fifth case. The differences in volume are well seen, particularly if the upper lobes are compared, the three specimens showing a gradation from the fully-inflated down to the non-inflated condition. Under the microscope may be seen a piece of lung which was taken from the posterior portion of the lobe and floated after being subjected to pressure; the air vesicles will be seen to be distended. The last specimen is a stomach from one of these cases containing air.

Considering now these appearances in their relation to the views of other investigators on this subject, there seems to be no dispute as to the statement that there is no way of distinguishing lungs partially inflated artificially (as in Case IV) from those partially inflated naturally. There, however, does seem some variance of opinion as to whether by artificial respiration the lungs can resemble those of an infant that has fully respired. Thus Casper denies that the lungs become pink and mottled, and as an example of this type of case I mention a case of my grandfather's (Braxton Hicks) in which the lungs answered all the hydrostatic tests, but were pale fawn in colour and not mottled. Taylor, after a series of experiments, came to the conclusion that considerable force must be used in introducing the air. Further it has been maintained that the air in artificially-inflated lungs only reaches the bronchi and bronchioles and not the alveoli, so that pressure will squeeze out the air and the lungs will now sink in water. In my cases the lungs were certainly pink and mottled, the air was not introduced by any greater force than is employed in the orthodox midwifery methods for artificial respiration, and air was not expelled from the vesicles on pressure. Thus these findings agree most closely with those of Runge and Obolonsky, who found that, by the method of Schultze swinging, mottling and inflation of the air vesicles occurred, but while they state the inflation is only partial, I have found that in certain cases it is a total inflation. Further, it would seem that a simple method such as mouth-to-mouth respiration is capable of fully inflating the lungs (Case III), for Schultze swinging has been the one on which many investigators have based their conclusions.

Since, then, I hold the opinion that the appearances of complete respiration may be produced by artificial means, such a statement might be put forward as a defence in a case of infanticide, and I therefore propose to discuss how far such a defence could be considered a good one.

The points to be considered are:

1. Was it possible for the parturient woman alone to have carried out artificial respiration, or was there any one else there with her capable of doing it?
2. The method of artificial respiration employed.
3. The length of time the efforts at resuscitation were carried out.

As regards the time necessary to fully inflate a lung artificially I would submit that, by a comparison of Cases III and IV, twenty minutes is required at least, but for obvious reasons it is not possible to experiment with regard to a time limit in cases of stillbirth. It seems incredible also that a jury could be persuaded that the parturient woman had herself performed artificial respiration on her child at birth, even supposing such a simple method as mouth-to-mouth respiration was the means suggested as being employed, and even supposing she was a woman who had some knowledge of midwifery, namely, a midwife or monthly nurse. There is another type of case that might possibly give rise to difficulty, and the following is an example that I have met with:

A woman in poor circumstances with a large family, and therefore perhaps not likely to welcome an addition to it, was delivered while alone of what she stated was a stillborn fetus. The midwife, who had only been sent for a few minutes before birth took place, arrived in about ten minutes and proceeded, it is stated, to do artificial respiration for an hour. All the appearances in the lungs and stomach of respiration having occurred were present *post mortem*.

Now though there was no particular reason in this case to suspect infanticide or that the midwife was an accomplice, yet since there are now a large number of women trained as midwives and therefore able to state that they are capable of performing artificial respiration, there is,

in my opinion, a possibility of an unscrupulous midwife being able to be a party to infanticide and successfully to assist in defending the appearances found *post mortem* of complete respiration having occurred by a statement that she had performed artificial respiration for some time. The finding of changes in the skin and umbilical cord, or milk in the stomach, would of course negative her statements; but if the time when infanticide was committed was a short time after birth it might be difficult to prove the guilt of these people, and it was the case I have just mentioned that caused me to pursue the investigations I have laid before you. The conclusions I have therefore arrived at are as follows:

1. That lungs artificially inflated can resemble in every particular the lungs of complete respiration.

2. That the same statements hold good for the stomach and intestines.

3. That no excessive force in inflation is required to produce these effects, the ordinary midwifery methods being sufficient.

4. That a simple method, such as mouth-to-mouth inflation, will produce these appearances.

5. That for a lung artificially inflated to resemble a lung inflated by respiratory efforts, attempts at artificial respiration must have been carried out for at least twenty minutes.

6. That though as a defence in infanticide it may be urged that the appearances of normal respiration are due to artificial inflation, it would, however, be necessary to prove that (*a*) the party or parties charged were capable of performing the act of artificial inflation; (*b*) that the time was sufficiently long for inflation to have occurred; and (*c*), lastly, that no other signs of live birth were present.

7. That if all the conditions laid down are fulfilled (an event which I consider unlikely in a case of infanticide), there is no means of saying whether a child has normally respired or whether the appearances are due to artificial inflation.

In conclusion, I must express my indebtedness to Dr. Hebb and Dr. Bernstein for the *post-mortem* notes on some of the cases mentioned in this paper.

THE VARIATION IN THE SIZES OF RED BLOOD CELLS.*

By Cecil Price-Jones, M.B.Lond.,
Pathological Department, Guy's Hospital.

The variations in diameter of the red blood cells are conveniently observed and measured with the help of a camera obscura, the image of the microscopic field being projected on to a table, when the individual cells can be outlined in pencil, and, if the apparatus is adjusted for a magnification of 1,000 diameters, the cells may be measured with a millimetre scale, and expressed in terms of fractions of μ. Observations are made on blood films stained by eosin methylene blue (Jenner's stain). The sizes of cells vary from 4 μ to 12 μ, and are classed in groups progressing from 4 μ by 0.25 μ up to 12 μ. It is found that in a series of successive 100 cells the distribution of these groups is not constant, but if the average diameter is calculated of each successive 100, the figures are very approximate (Table I).

Table I.—*Average Diameters of Successive 100 Red Cells.*

Normal.	Pernicious Anaemia.
μ 7.422	μ 8.150
7.425	8.355
7.330	8.127
7.355	8.175
7.390	8.212

I have employed this method of average measurements in making comparative estimations of blood cell diameters in different specimens of blood. In normal human blood the red cell diameter varies from 6 μ to 8.75 μ, and the average diameter of five successive 100 cells is 7.4 μ. In the blood of pernicious anaemia the diameter varied from 4 μ to 11.75 μ, and the average diameter of five successive 100 cells was 8.0 μ. In normal rabbit blood the red cell diameter varies from 5.0 μ to 8.0 μ, and the average diameter is 6.4 μ.

When a rabbit receives under the skin 10 c.cm. of a 1 per cent. solution of phenylhydrazine, the blood within twenty-four hours becomes brown and turbid, so that it is not possible to estimate correctly the haemoglobin per cent. and colour index. After six or seven days the brownness has disappeared and the blood is clear. It is then found to be very anaemic, 25 to 30 per cent. haemoglobin, and there is a markedly raised colour index. Similarly raised colour index is also observed in rabbit's blood after severe haemorrhage though to a less degree, and after slight haemorrhage it is not observed, or is negligible (Table II).

Table II.

Colour Index.	Phenylhydrazine.			Bleeding.		
Before treatment ...	1.0	1.0	1.0	1.05	0.95	1.0
1 day after		—			1.2	
3 days after		—			1.2	
4 days after		—			1.2	
6 days after		1.6			—	
7 days after		1.5			1.2	
8 days after		1.6			1.3	
10 days after		1.3			1.15	
13 days after		1.4			1.1	
15 days after		1.2			1.1	
30 days after		1.0			1.1	

If measurements are made on successive days of the red blood cells of a rabbit that has been treated with phenylhydrazine, it is found that for the first two or three days the average diameter is diminished, but that on subsequent days it becomes very markedly greater (Table III).

Table III.—*Diameter of Red Cells after Phenylhydrazine.*

Days of the Month:	1	3	4		5	6	7	10	11	12
μ 4	μ —	μ 1	μ 1		μ 19	μ 5	μ 1	μ 1	μ —	μ 2
5	22	8	14		59	52	58	3	—	—
6	63	80	64	Inoculated	20	29	33	10	1	5
7	15	11	21		2	8	5	31	18	21
8	—	—	—		—	6	1	33	46	51
9	—	—	—		—	—	—	18	32	19
10	—	—	—		—	—	—	4	3	2
Average diameter ...	6.3	6.4	6.4		5.5	5.9	5.9	8.0	8.5	8.1

Similar variations in diameter were observed in the blood of rabbits after a moderately severe haemorrhage, but to a much less degree (Table IV).

Table IV.—*Diameter of Red Cells after Bleeding.*

Days of the Month:	1	13	14	15	16	17	18	20	22	29
μ 4	μ —	μ —	μ 1	μ 1	μ 1	μ 2	μ 1	μ —	μ 1	μ 2
5	21	23	12	31	24	18	9	8	11	26
6	70	60	62	56	57	58	39	31	46	38
7	8	17	25	10	13	17	18	40	33	27
8	1	—	—	2	3	3	25	21	7	7
9	—	—	—	—	2	2	8	—	2	—
		A.	B.	C.						
Average diameter...	6.3	6.3	6.2	6.5	6.7	6.4	7.2	7.2	6.7	6.2

A. bled 25 per cent., B. bled 20 per cent., C. bled 9 per cent. of total haemoglobin.

* Towards the expenses of this research a grant was received from the Science Committee of the British Medical Association.

It is also to be noted that this increase in diameter of the red cells is synchronous with the appearance of large numbers of polychromasic newly-formed red cells in the blood films.

Examination of films of bone marrow taken from rabbits killed at various dates after receiving phenylhydrazine, and after being bled, shows that the association of a raised colour index with increased diameter of red cell is connected with the formation of large nucleated red cells in the marrow. These cells, known as "metrocytes" or "mother cells," are not found in the marrow of normal animals; they are large cells 15 μ to 20 μ in diameter, with round or irregular contours, often showing poikilocytic processes suggesting amoeboid movement; the cytoplasm appears homogeneous and stains deeply oxyphile, or more usually is polychromasic and of a purple-grey colour. The nucleus is large and stained deeply basophile, and presents various states of activity and division to form "daughter cells" or "megaloblasts."

Table V shows the percentages of the various kinds of nucleated red cells in the marrow of rabbits at different dates after treatment by phenyl-hydrazin.

TABLE V.—*Analysis of Varieties of Nucleated Red Cells in Rabbit Bone Marrow after receiving 10 c.cm. 1 per cent. Phenylhydrazine Subcutaneously. (Twelve Rabbits.)*

	Number of Nucleated Red Cells per 100 White Cells.	Normoblasts and Primitive Erythroblasts.	Megaloblasts.	Metrocytes.	Free Nuclei.
		Per cent.	Per cent	Per cent	Per cent.
Normal ...	15	41	19	0	39
1 day ...	41	42	28	0	29
1 day ...	44	30	16	0	53
3 days ...	32	29	6	18	47
3 days ...	31	17	6	14	63
5 days ...	44	35	9	10	46
5 days ...	36	29	12	6	53
8 days ...	68	23	12	0.3	65
8 days ...	38	14	6	1 6	78
8 days ...	41	11	7	1.0	81
11 days ...	149	28	14	0 9	56
14 days ...	61	44	11	0	44
14 days ...	126	38	6	0	55

Incidentally it may be noted that these metrocytes are commonly found in the marrow of pernicious anaemia, where colour index and red cell diameter are also raised.

That these metrocytes divide to form megaloblasts, and the fact that many of the free nuclei found in the marrow of these animals seem to be megaloblast nuclei, suggest that the large-sized red cells have arisen from the immediate derivatives of metrocytes.

POLYCHROMASIA, AND THE PATHOLOGY OF HAEMATOMATA.

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IN one of the most recent textbooks on diseases of the blood may be found the following statement:

If blood, the erythrocytes of which are free from polychromasia, be defibrinated and kept in a sterile tube for four or five days and then re-examined, polychromasia will be found in many cells.

I am not concerned to dispute this statement, but to criticize the experiment upon which it is based and the deduction drawn therefrom—namely, that polychromasia is a change degenerative in nature. Defibrination is so gross a tampering with a tissue of such peculiar delicacy that it is impossible to disregard its influence. It is, therefore, basing argument on false analogy to argue the degenerative nature of *intra vitam* polychromasia from a consideration of changes produced by so damaging a process. When we consider that, in addition to this, the blood was kept *in vitro* for some days, the invalidation of the deduction quoted is only too plain. But since there is no such thing as a perfectly isolated, absolutely ineffectual action, we may be sure that there is some deduction to be drawn from this experiment. What, then, does it prove? Only that, if red corpuscles are kept for some days under conditions likely to prove prejudicial to vitality, some of them will show an alteration of chemical constitution which may be demonstrated as "polychromasia." We are, then, forced to observe that this change cannot depend only on the surroundings, for these were the same for all the corpuscles, while only some became polychromatophile. Where, then, lay the deciding factor? Presumably in the corpuscles themselves; no other solution appears to be possible. Thus we are forced to the conclusion that some of these corpuscles were potentially polychromatophile even before being subjected to experiment, or, to put it another way, even in normal blood polychromasia may be demonstrated under suitable conditions. This would appear to be a legitimate deduction from the experiment; but there is nothing here to suggest that the essential bio-chemical difference so demonstrated is in the nature of a degeneration.

With such considerations as a stimulant I examined the blood in haematomata following accidental and surgical injuries. In these the blood had been indeed removed from the circulation, but not from the body. The "living test tube" experiment which one finds dealt with in textbooks of physiology offers a close analogy; and, as in this case, the blood was not found to be clotted. Corpuscles under these conditions would naturally be deprived of opportunity of exercising their normal functions; changes from disuse atrophy might be expected to ensue and finally death. As the conditions were the same for all corpuscles one looked for changes affecting all; wondering, at the same time, whether polychromasia would be amongst them, for only universal polychromasia would afford evidence of its degenerative nature. But again, as in the experiment first alluded to, polychromasia, when present, affected only a few corpuscles. There were, nevertheless, various changes affecting all the corpuscles.

We find, then, that neither under the conditions of the first experiment nor under the more natural ones of the second, does the death of a corpuscle *per se* lead to a polychromatic reaction. Does this reaction, then, depend on the age of the corpuscle? Apparently not, for if it did we ought to find it in fresh drawn normal blood. It might be argued that cells about to become polychromatophile are removed from the blood, but we find that this does not take place even when blood destruction is at its greatest—as in pernicious anaemia.

If, on the other hand, polychromasia were due to the youth of the cell, we ought to find it in normal bone marrow, which is not the case. The fact that this change is found in the young of certain animals is much more easily explained by supposing a congenital variation as its origin. The full development of the adult haemopoietic organs is not reached at the moment of birth; what more natural than that we should find in the young signs of a slightly differing activity?

If, then, we adopt as a hypothesis that there is a certain difference in the composition of the red corpuscles, congenital in origin and capable of being demonstrated under certain conditions as polychromasia, we can explain facts which did not at first appear to harmonize.

I call it a "certain difference" because I do not wish to be understood as representing it to be an abnormality. Polychromasia is potentially present in normal blood, and may be demonstrated if the blood be first treated in a particular way—for example, by defibrination, etc.—in the first experiment and by deprivation of normal surroundings in the second. It is noteworthy that the more unnatural conditions always rendered it demonstrable, the natural only occasionally, usually after ten or twelve days.

In pathological conditions we may suggest that the potentiality is increased as the erythroplastic activity reverts to a more primitive type (for example, in regeneration), or, in other cases, that conditions—for example, of toxaemia—act as did the defibrination by rendering it more easily demonstrable; and polychromasia should be interpreted accordingly.

To sum up, I suggest as a working hypothesis that even in normal blood the corpuscles, as they show differences in size, in haemoglobin content, in isotonicity, show another difference known as polychromasia; that this difference

may be aggravated by conditions inimical to normal haemogenesis; and may be rendered more easily demonstrable when the corpuscles are subjected to unnatural conditions. I further suggest that normal adult haemogenesis produces this difference in a minimal degree, so that the incidence of other factors is necessary to its demonstration; and that it is to be expected in the blood stream in demonstrable degree when the marrow is of primitive type, either by reversion or lack of development.

If this hypothesis be employed, considerations of the significance of polychromasia from a clinical point of view should be much simplified.

As regards the changes noted in all corpuscles in haematomata, they were as follows:

1. The blood was fluid, sometimes viscid, never coagulated.
2. On standing the corpuscles separated out.
3. Rouleaux formation was absent or very defective.
4. The leucocytes showed fragmentation of the nucleus—in some cases they were increased and in some were engulfing red corpuscles.
5. Crenation was absent.
6. Fragmentation was not present, but was very easily produced.
7. Loss of elasticity was most pronounced, and for this reason the examination of spread slides was only possible if the haematomata were opened early.
8. Haemoglobinaemia was absent.
9. The intensity of staining reaction as contrasted with normal blood was impaired.
10. These changes were apt to be accentuated in the older cases.

Such were some of the changes noted. I shall hope at a later date to have the opportunity of examining a larger number of cases and of making a more detailed and comprehensive report on them.

THE ACTION OF OLEIC ACID AND ITS SOAPS ON THE BLOOD.*

By A. E. BOYCOTT.

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BEGINNING with the discovery of an ether-soluble haemolytic substance in *Bothriocephalus* and its identification as a cholesterin ester of oleic acid, some importance has been attached to the presence of such substances, either in the lumen or in the wall of the alimentary canal, as being the effective cause of both helminthic and idiopathic pernicious anaemia.[1] It is, however, a far cry to transfer the results obtained *in vitro* with substances prepared from intestinal contents to the explanation of the production of anaemias *in vivo*. Soaps of oleic acid, for example, are haemolytic enough, but there are reasons for supposing that they are really foreign to the economy and do not occur in the body except as the result of direct experimental introduction.[2] Their haemolytic action *in vitro* is conditioned by a variety of circumstances,[3] which make it difficult to predict what their action in the body would be; in particular, their concentration and the simultaneous dresence of various other substances have to be taken into consideration. It seems likely, indeed, that a good deal of soap might be present in the circulating blood without causing haemolysis. It is certainly not difficult to show that the haemolytic effect of sodium oleate on fresh defibrinated rabbit's blood *in vitro* may be very much greater than that produced by the injection of corresponding amounts into the jugular vein of the anaesthetized animal. As regards the production of anaemia it seems necessary that the occurrence of blood destruction should be established, as well as the presence of haemolytic substances in the neighbourhood. While it is known that idiopathic pernicious anaemia is associated with excessive haemolysis, it is not clear that this obtains in *Bothriocephalus* anaemia, and it is known that abnormal blood destruction does not occur in *Ankylostoma* anaemia.[4]

The question seems, therefore, to be primarily one of direct experiment, and Faust[5] has described how, by feeding two dogs with oleic acid and repeatedly injecting two rabbits with sodium oleate, he produced a marked degree of anaemia, and ultimately death. The immediate object of the present experiments has been to repeat these observations, with the addition that the total amount of haemoglobin has been determined, as well as its concentration in the circulating blood. It is obvious that the fall in the percentage of haemoglobin and in the number of red cells per cubic millimetre observed by Faust might, at any rate in part, have been due to a dilution of the blood.[6]

Seven rabbits were treated by the repeated subcutaneous injection of soap solution.† Daily observations were made of the percentage haemoglobin content of their blood, and stained films were also examined frequently. The animals were finally killed and their total haemoglobin determined by Welcker's method. The results are shown in Tables I and II.

TABLE I.

No. of Rabbit and Sex.	Average Body Weight in Grams.		Average Haemoglobin per Cent. of the Human Scale.		Treatment.
	Before.	At End.	Before Treatment.	During Last Week Before Death.	
3. F.	2075	2140	90	64	5 doses of 10 c.cm. 5 per cent. potassium oleate in 10 days = 2 5 grams.
4. F.	2080	1890	79	46	5 doses of 20 c cm. 5 per cent. potassium oleate in 10 days = 5 grams.
5. F.	2785	2640	75	66.5	14 doses of 1 c.cm. 10 per cent. sodium oleate in 30 days = 1.4 grams.
6. F.	2935	2695	74	62	13 doses of 1 c cm. 10 per cent sodium oleate in 30 days = 1.3 grams.
9. F.	2595	2310	70.5	56	13 doses of 1 c.cm. 10 per cent. sodium oleate in 30 days = 1.3 grams.
11. F.	2545	2555	81.5	64	13 doses of 5 c.cm. 10 per cent. sodium oleate in 30 days = 6.5 grams.
12. F.	2615	2655	78.3	70.5	14 doses of 5 c cm. 10 per cent. sodium oleate in 30 days = 7 grams.

TABLE II.

No. of Rabbit.	Total Haemoglobin in c.cm. Oxygen Capacity.	Blood volume c.cm.	Per 100 Grams Initial Weight.		Per 100 Grams Final Weight.	
			Oxygen Capacity.	Blood Volume.	Oxygen Capacity.	Blood Volume.
3.	14.4	114	0.70	5.5	0.68	5.3
4.	9.55	115	0.46	5.5	0.505	6.1
5.	15.6	133	0.56	4.8	0.59	5.0
6.	14.6	123	0.50	4.2	0.54	4.6
9.	11.0	114	0.42	4.4	0.475	4.9
11.	14.6	117	0.57	4.6	0.57	4.6
12.	16.0	116	0.61	4.5	0.60	4.4
			0.55	4 8	0.57	5.0

For comparison with these results we give also the figures for the total haemoglobin and blood volume obtained by the same method in a series of ten normal rabbits of about the same size (see Table III).

In all seven animals there was a fall in the percentage of haemoglobin, though in two instances (5, 12) this was not very great, and in only one case (4) was the figure reached lower than may be found in normal rabbits. The blood volume was normal, or somewhat increased. The total quantity of haemoglobin in the body was definitely less than normal in at least three animals (4, 6, and 9), and on the whole was deficient by about one-fifth. This result might be due either to increased destruction, deficient formation, or a combination of both factors. The

* The expenses of this work have been defrayed by grants from the British Medical Association and from the Royal Society.

† Made by neutralizing the impure oleic acid known as "Kahlbaum II."

TABLE III.

Sex.	Weight in Grams.	Haemoglobin per Cent.	Total Haemoglobin in c.cm. Oxygen Capacity.	Blood Volume, c.cm.	Per 100 Grams Body Weight.	
					Oxygen Capacity.	Blood Volume.
M.	1970	91	14.6	87	0.74	4.4
M.	2170	94	19.5	113	0.90	5.2
M.	2550	75	15.8	113	0.62	4.45
M.	2350	85	16.1	103	0.685	4.4
F.	2050	71	12.7	90	0.62	4.4
F.	2140	90.5	17.5	105	0.82	4.9
F.	2400	68	14.8	117	0.615	4.9
F.	2220	73	15.1	111	0.68	5.0
F.	2400	83	14.6	96	0.61	4.0
F.	2360	77	13.2	92	0.56	3.9
					0.685	4.6

signs of excessive blood destruction in the urine and organs (liver, spleen, kidneys, lymphatic glands) of rabbits have been described elsewhere.[7] The sum of these observations was to the effect that when a rabbit makes away with a large quantity of rabbits' red cells, the processes involved are an exaggeration of those normally at work. It was also pointed out that blood destruction is naturally so active in the rabbit that a moderate increase is difficult to diagnose from the examination of the urine during life, or of the organs after death. In the present series of animals, nothing could be found which definitely indicated any excess of blood destruction, but, owing to the circumstances which have been mentioned, this cannot be taken as showing that an amount of blood equivalent to the deficiency shown in the Welcker figures had not been destroyed. There is, however, clear evidence that the somewhat anaemic state to which these rabbits were reduced was not entirely due to blood destruction. At no stage in the experiments did their blood show any histological signs of active regeneration of red cells. To any one familiar with the appearances, these signs are easy to detect after removal of quite small amounts of blood by bleeding, and especially if the blood is destroyed inside the body by such agents as saponin, distilled water, aniline, phenylhydrazine, and the like. Regeneration was therefore defective; whether destruction was going on at an abnormally fast rate is uncertain.

The *post mortem* findings at the seat of inoculation were somewhat remarkable. Considerable solid masses of soap still remained unabsorbed, mixed with a clear or somewhat turbid liquid; histologically, there were great quantities of leucocytes, with some necrosis of the subcutaneous tissues. In most cases no definite abscess was present. In two animals, however (4 and 9), the subcutaneous mass was observed to increase in size rapidly for three or four days before death, and on *post-mortem* examination frank suppuration was found. One is inclined, therefore, to think that the soap injected was absorbed only in small part or not at all, and that the effects observed in the blood were due to inhibition of regeneration by the influence on the general health of the animal of the necrotic and inflammatory processes occurring locally rather than to any direct haemolytic effect of the inoculum. It is perhaps

TABLE V.

No.	Duration of Feeding.	Sex.	Weight in Grams.	Total Haemoglobin in c.cm O_2 Capacity.		Blood Volume		Haemoglobin per Cent. of Human Scale.
				C.cm.	Per Cent. of Weight.	C.cm.	Per Cent. of Weight.	
1	30 days	M.	111	1.00	0.90	6.35	5.7	85
2	,,	F.	127	1.27	0.90	6.8	5.4	91
3	,,	F.	81	0.74	0.845	4.9	6.0	81
4	,,	F.	62	0.70	1.04	4.1	6.1	93
5	48 days	F.	79	0.73	0.93	4.5	5.7	88
6	,,	M.	103	1.125	1.095	6.7	6.5	91
7	50 days	F.	119	1.21	1.01	6.9	5.8	94
8	,,	M.	85	1.11	1.31	7.35	8.6	82
9	,,	M.	97	1.07	1.10	5.7	5.9	95
10	,,	M.	85	0.90	1.06	5.8	6.8	84
Average ...			98		1.02		6.25	88

significant that the animals (4 and 9) in which the local condition was most exaggerated were those in which the deficiency of haemoglobin was found to be greatest.

Attempts were made to treat animals by repeated intravenous inoculations, but without success. Soap solutions are so irritating and cause such extensive

TABLE VI.

No.	Sex.	Weight in Grams.	Total Haemoglobin in c.cm. O_2 Capacity.		Blood Volume.		Haemoglobin per Cent. of Human Scale.
			C.cm.	Per Cent. of Weight.	C.cm.	Per Cent. of Weight	
1	F.	116	1.22	1.05	7.1	6.1	93
2	M.	83	0.72	0.87	5.39	6.5	75
3	M.	110	0.92	0.84	6.7	6.1	74
4	F.	83	0.86	1.03	5.4	6.5	86
5	F.	100	0.93	0.93	6.2	6.2	81
6	F.	83	0.87	1.04	5.2	6.3	90
7	F.	90	1.00	1.11	6.3	7.0	86
8	.	102	1.05	1.03	8.0	7.8	71
9	M.	81	0.80	0.99	5.4	6.6	81
10	F.	97	0.90	0.92	5.25	5.4	88
Average ...		94.5		0.98		6.45	82.5

local thrombosis that the injections cannot be repeated very frequently. Large quantities given in one injection kill the animal almost at once.[8] Intravenous injections of emulsions of oleic acid in saline have no apparent effect on the red cells.

Four rabbits were fed, the oleic acid being mixed with their food in quantities as great as they would tolerate. They evidently

TABLE IV.

Sex.	Total Haemoglobin in c.cm. O_2 Capacity.	Blood Volume, c.cm.	Body Weight in Grams.		Haemoglobin per Cent.		Total Haemoglobin per Cent. of Weight in c.cm. Oxygen Capacity.		Blood Volume per Cent. of Weight.	
			Initial.	Final.	Initial.	Final.	Initial.	Final.	Initial.	Final.
A. (M.)	14.95	119	2410	2330	76	75	0.62	0.64	4.95	5.1
B. (M.)	7.7	63	1930	1540	80	76	0.40	0.50	3.2	4.1
C. (M.)	7.4	55	1330	1170	84	69	0.56	0.63	4.2	4.7
D. (M.)	14.3	118	2270	2355	78	65	0.63	0.62	5.2	5.0

did not like it. Animals A. and B. were so fed for sixty-five days, C. and D. for forty-three days, about 2 lb. of oleic acid being given in all. The animals were finally treated by the Welcker method. The total haemoglobin and blood volume are calculated on their body weights before feeding and on their average weight during the last week of the experiment.

Rabbit B. alone shows any material deficiency; this animal lost weight a great deal (20 per cent.), and the whole effect may well have been due to general malnutrition owing to its food being distasteful: nothing abnormal was found *post mortem*. No evidence of excessive blood destruction or active regeneration was found in any of these four animals. (See Table IV.)

A further series of experiments was made by feeding rats with oleic acid; they seemed to like it as little as the rabbits. The results of the Welcker determinations are given in Table V.

Similar determinations were made on a series of similar rats kept as far as possible under identical conditions except that they were not fed with oleic acid. (See Table VI.)

There is no suggestion here that the rats fed with oleic acid have less haemoglobin than the controls. There were no signs of active regeneration in films taken when the animals were killed.

SUMMARY.

1. Rabbits repeatedly inoculated with soaps of oleic acid subcutaneously become anaemic. Blood regeneration is defective; there is no clear evidence that blood destruction is excessive.

2. Rats fed with oleic acid showed no changes in the blood.

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THE PATHOGENESIS OF HEREDITARY HAEMOPHILIA.

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[*Abstract.*]

TWELVE cases were investigated. In all of them the coagulation of the blood was delayed. In those in whom the symptoms were most marked the blood took an hour or more to coagulate; in one case in whom the tendency to prolonged haemorrhage was less marked the coagulation time was thirty six minutes, and in the slight cases it was about a quarter of an hour. This delay in coagulation is the only pathological factor which is constantly present, and it is in itself sufficient to explain all the symptoms. There are good grounds, therefore, for regarding it as the proximate cause.

For the purpose of investigating into the reason of this delayed coagulation, blood was drawn into oxylate solution from the veins of normal and haemophilic persons, and after the subsidence of the corpuscles the plasma was pipetted off. Fibrinogen solutions were prepared by diluting the plasma with water, neutralizing with CO_2, and dissolving the centrifuged deposit in normal saline. Thrombin was made by expressing the fluid from the clot formed when calcium was added to fibrinogen. Thrombokinase was extracted from human tissues. Prothrombin was prepared by adding a minimal amount of thrombin to a fibrinogen solution, and expressing the fluid from the clot.

The first step was to determine whether the delay occurred during the first or the second stage of coagulation—that is, in the formation of the thrombin or in the action of the thrombin on the fibrinogen. It was found that haemophilic thrombin was as active as normal thrombin and that haemophilic fibrinogen was as readily coagulated as normal fibrinogen, but that the rate of formation of thrombin in haemophilic fibrinogen solution was much slower than in normal fibrinogen solution. The delay was therefore in the formation of thrombin. This might have been due to the presence of a substance which had a deterring influence on the process, but no such body was found, and haemophilic plasma did not inhibit the coagulation of normal plasma.

The cause was therefore to be looked for in connexion with the calcium, the thrombokinase, or the prothrombin. Varying quantities of calcium were added to haemophilic plasma, but no amount reduced the coagulation time to normal. Calcium was, therefore, not the cause.

With varying amounts of thrombokinase the same result was obtained, except when very large quantities were added, when coagulation was almost instantaneous in both normal and haemophilic plasmas. But with lesser amounts, even such as were sufficient greatly to accelerate the coagulation of normal plasma, the coagulation of the haemophilic plasma still took much longer than the normal. Further, there was found to be as much thrombokinase in haemophilic serum as in normal serum, and as much could be extracted from haemophilic blood corpuscles as from normal corpuscles. Thrombokinase was, therefore, not the cause.

There was no quantitative deficiency as regards the prothrombin in haemophilic plasma, but a qualitative difference was present, which showed itself in the unduly long time required by the haemophilic prothrombin to change into thrombin in the presence of calcium and thrombokinase. That this fault in the prothrombin was the sole cause of the delay in coagulation was shown by the fact that very small quantities of normal prothrombin when added to haemophilic plasma reduced the coagulation time to the normal.

The cause of haemophilia is, therefore, an inherited peculiarity in the constitution of the prothrombin whereby its activation into thrombin is retarded.

DISCUSSION.

Professor SAHLI (Berne) said that, as all present knew, he had found that the diminution of the coagulation power was a constant characteristic of haemophilia, and this was due to lack of thrombokinase. Traces of normal blood, if added to haemophilia blood, restored the coagulation power forthwith. In a later paper (*Arch. für inn. Mediz.*) he had shown that the difference between normal and haemophilic blood resided in the blood corpuscles. Normal blood corpuscles, even after careful washing, had a strong coagulating effect on haemophilic blood. His final conclusion, therefore, was that haemophilia was a cellular anomaly both of the blood corpuscles and the endothelial cells of the vessels.

ON THE ABSENCE OF ALTMANN'S GRANULES FROM CELLS OF MALIGNANT NEW GROWTHS

(Second Communication.)

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I.—INTRODUCTION.

IN the paper published last year[1] in this JOURNAL, attention was especially directed to the fourth of the following conclusions which had been recently arrived at.[2]

1. Most kinds of normal cells contain Altmann's granules, squamous epithelium and unstriped muscle constituting the chief exceptions.
2. In inflammatory conditions these granules are present in the various cell species concerned.
3. In innocent new growths these granules are present.
4. In malignant new growths these granules tend to disappear, or are absent entirely, from the particular type of cell involved.

A brief account was given of the granules occurring in normal cells, of which a few types were figured; certain inflammatory conditions were mentioned as having been investigated with the result that granules were found to be present in all; and a description as regards granules was given of new growths, based upon an examination of 52 cases, 12 of which were non-malignant. Illustrations were also given of primary and secondary carcinoma showing groups of agranular cancer cells surrounded by granule-containing lymphocytes, plasma cells and other cells.

The number of cases of new growth has now been brought up to 117, and the conclusions already arrived at have been amply verified; these are now extended by the enunciation of a bistological test for malignant disease formulated at the end of the present article.

II.—NORMAL TISSUES.

As indicated above, the chief exceptions to the general rule that normal cells contain Altmann's granules are

squamous epithelium and unstriped muscle. The collecting tubules of the kidney are also almost or entirely free from granules, but the first two are of fundamental importance on account of the large number of new growths into whose composition they enter, since opinions as to malignancy of a given tumour cannot be based upon the non-appearance of granules which are not present in the cells in which the tumour originated. It may be noted [3] that in the early mammalian embryo the cells representing all three cell-species just mentioned show granules, but that these disappear during late embryonic and early extrauterine life. Though fibroblasts contain fairly numerous small granules, their product, white fibrous connective tissue, usually shows none. Granules may be still present, however, although minute and few in number, in the connective-tissue corpuscles even when fibrillation has advanced to a very marked extent. Fig. 1 illustrates a normal tissue—it is chosen especially as showing normal granule-containing columnar epithelium which on becoming cancerous loses its granules (cf. Fig. 2).

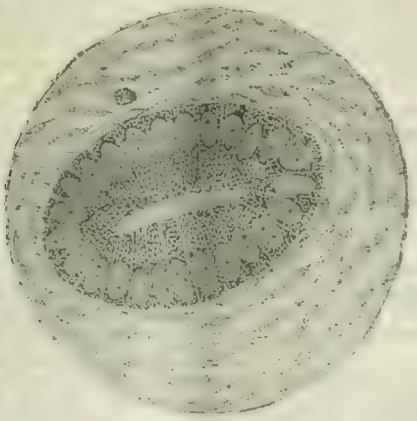


Fig. 1.—Normal endometrium. Granules are present in the columnar epithelium of the tubules, as well as in the cells of the surrounding tissue. Contrast presence of granules in normal endometrial epithelial cells in this figure with absence of granules from cancerous endometrial epithelial cells shown in Fig. 2.

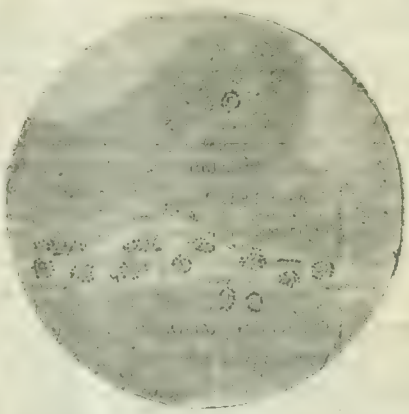


Fig. 2.—Columnar-cell carcinoma of body of uterus. Granules are absent from the cancer cells; the stroma is infiltrated with granule-containing lymphocytes and plasma cells. Three lymphocytes, mapped out by their granules, are seen invading the cancerous epithelium. Contrast with Fig. 1.

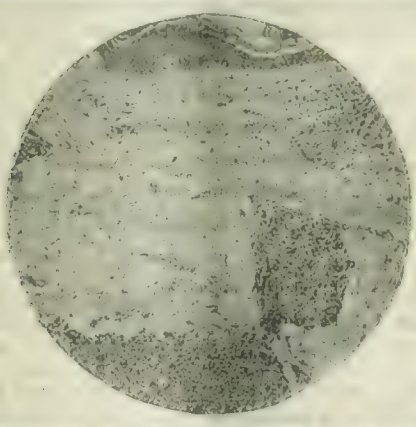


Fig. 3.—Mycosis fungoides (skin). Low power photomicrograph. Section shows small round cells; note similarity to Fig. 5. In this case, however, *granules are present*. (See Fig. 4.)

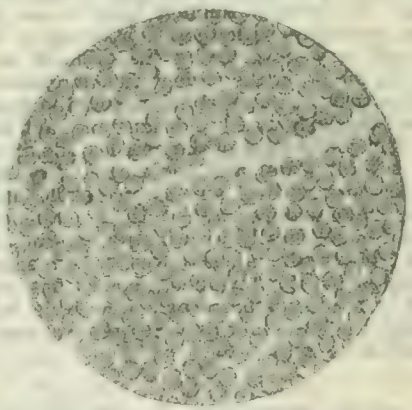


Fig. 4.—Small portion of section illustrated in Fig. 3, highly magnified. Note presence of granules as in lymphocytes. (Zeiss apochromatic objective 2 mm., compensating ocular No. 4.)

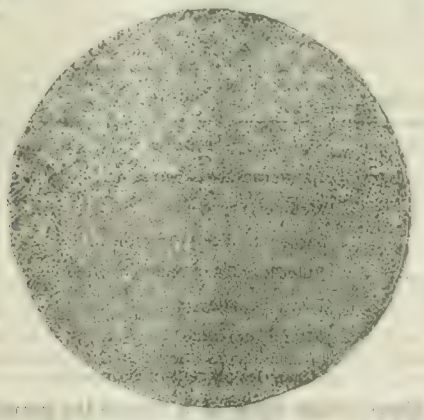


Fig. 5.—Lymphosarcoma (rectum). Low power photomicrograph. Section shows small round cells; note similarity to Fig. 3. In this case, however, *granules are absent*. (See Fig. 6.)

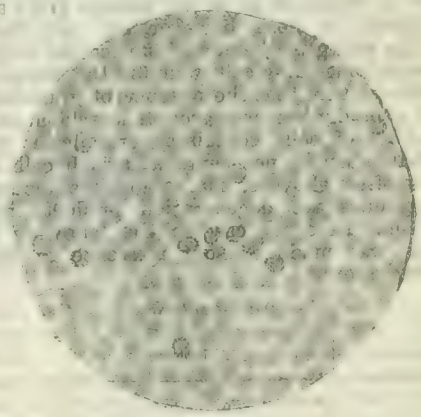


Fig. 6.—Small portion of section illustrated in Fig. 5, highly magnified. Note absence of granules from sarcoma cells, and presence of twelve lymphocytes marked out by their granules. Compare with Fig. 2, and contrast with Fig. 4.

III.—Inflammatory Conditions.

The following cases have been added to those mentioned in last year's paper, and are tabulated for the sake of comparison with the cases of new growth. The proportion of cells containing granules is indicated in the following scheme (p. 1424), and the cells referred to are those characteristic of the conditions named—namely, lymphocytes, plasma cells, and fibroblasts in inflammatory conditions generally, and, in tuberculous conditions, giant cells and endothelioid (or epithelioid) cells, in addition to the foregoing.

The fifth and seventh cases are of special interest. In the former a piece of tissue was removed on a diagnosis

Percentage of Cells containing Granules.	Indicated by
0-10, *i.e.*, about 0	0 0 0 0 0
10-30 ,, ,, 20	+ 0 0 0 0
30-50 ,, ,, 40	+ + 0 0 0
50-70 ,, ,, 60	+ + + 0 0
70-90 ,, ,, 80	+ + + + 0
90-100 ,, ,, 100	+ + + + +

Situation.	Nature.	Granules.
Omentum ...	Tuberculosis (miliary)	+ + + + +
Skin of arm ...	Tuberculosis (lupus)	+ + + + +
Ovary	Tuberculosis (massive)	+ + + + +
Abdomen ...	Fibroma	+ + + + +
Leg	Inflammatory (?gumma)	+ + + + +
Glands of neck ...	Tuberculosis (massive)	+ + + + +
Skin	Mycosis fungoides...	+ + + + +
Glands of neck ...	Tuberculosis (massive)	+ + + + +

of (?) gumma (?) sarcoma, and although the general opinion of many who have examined a section stained with haematoxylin and eosin is that it shows inflammatory changes only, yet others have pronounced in favour of sarcoma. The granule findings, however, as given above, contrast markedly with those obtaining in the cases of spindle-cell sarcoma given in the table of new growths below. In the latter the patient has numerous cutaneous nodules on trunk, head, and limbs, and the case has been diagnosed variously as mycosis fungoides and sarcomatosis cutis. The distribution of the nodules, the duration of the disease (several years), and the amenability to treatment (rapid disappearance of any given nodule under *x* rays) indicate inflammatory rather than malignant disease. Examined histologically by ordinary staining, the tumour presents simply the appearances of an aggregation of lymphocytes or of a lymphosarcoma; but while an undoubted case of lymphosarcoma (see table below) shows absence of granules, in this case granules are present, as indicated above (Figs. 3–6).

IV.—The New Growths

The granule appearances of additional cases of new growth investigated during the past year is given in the following tables. The proportion of cells containing granules is indicated as in the scheme given above; the cells referred to here, however, are only the essential cells of the new growths named, no account being taken of the granule-containing cells found in the stroma. It may be mentioned here that the absence of granules from the cells of a malignant new growth is seldom absolute, but the number of cells containing granules is usually not more than about 1 per cent., and such cells as contain granules often show at the same time indications that these granules are degeneration products of the cell protoplasm. In every case in the following tables the diagnosis was made without reference to the granule appearances found:

1. *Non-malignant New Growths.*

Situation.	Nature.	Granules.
Thyroid	Adenoma	+ + + + +
Breast	,, ...	+ + + + 0
Parotid	Non-malignant endothelioma ...	+ + + + 0
Uterus	Hydatidiform mole	+ + + + +
Rectum	Polypus	+ + + + 0
Thigh	Lipoma	+ + + + +
Epididymis ...	Fibrochondroma	+ + + + +
Thyroid	Adenoma	+ + + + +
Rectum	Polypus	+ + + + +

2. *Spheroidal-cell and Columnar-cell Carcinoma.*

Situation.	Nature.	Granules.
Breast	Spheroidal-cell carcinoma ..	0 0 0 0 0
,, ...	,, ,, ...	0 0 0 0 0
,, ...	,, ,, ...	0 0 0 0 0
,, ...	,, ,, ..	0 0 0 0 0
,, ...	,, ,, ...	0 0 0 0 0
,, ...	,, ,, ...	0 0 0 0 0
,, ...	,, ,, ...	0 0 0 0 0
Skin (?secondary)	,, ,, ...	+ + + 0 0
Breast	,, ,, ...	+ 0 0 0 0
Corpus uteri ...	Columnar-cell carcinoma ...	0 0 0 0 0
Caecum	,, ,, ...	0 0 0 0 0
Rectum	,, ,, ...	+ 0 0 0 0
Corpus uteri ...	,, ,, ...	0 0 0 0 0
Rectum	,, ,, ...	0 0 0 0 0
,, ...	,, ,, ...	0 0 0 0 0
Sigmoid	,, ,, ...	0 0 0 0 0

3. *Endothelioma.*

Situation.	Nature.	Granules.
Breast	Lymphatic perienthelioma ..	0 0 0 0 0
Orbit	,, enthelioma	0 0 0 0 0
Breast	Perienthelioma	0 0 0 0 0
,, ...	Lymphatic perienthelioma ...	0 0 0 0 0
Hand	Endothelioma	+ + + 0 0
Breast	Perienthelioma	0 0 0 0 0
,, ...	Lymphatic perienthelioma ...	+ + 0 0
,, ...	,, perithelioma ...	0 0 0 0 0
,, ...	Perienthelioma	+ + + 0 0
Cervix uteri ...	Lymphatic enthelioma	0 0 0 0 0
Breast	Perienthelioma	0 0 0 0 0
,, ...	,, ...	0 0 0 0 0
Rectum	Endothelioma	0 0 0 0 0
Tongue	Lymphatic enthelioma	0 0 0 0 0
Breast	,, ,, ...	0 0 0 0 0

4. *Sarcoma.*

Situation.	Nature.	Granules.
Leg	Spindle-cell sarcoma	0 0 0 0 0
Breast	Large round-cell sarcoma... ...	0 0 0 0 0
Leg	Melanotic sarcoma	0 0 0 0 0
Rectum	Large round-cell sarcoma	0 0 0 0 0
Groin	Spindle-cell sarcoma	0 0 0 0 0
Rectum	Lympho-sarcoma	0 0 0 0 0
Fibula	Myeloid sarcoma*	0 0 0 0 0

* Granules present in giant cells.

The above tables show at a glance the granule findings in the chief groups of new growths, and shows well the contrast between malignant and non-malignant neoplasms. A detailed table of all the new growths examined during the past year is given in the *Archives of the Middlesex Hospital*, Ninth Cancer Report, 1910; it includes also groups which may here be briefly remarked upon as follows:

5. *Squamous-cell Carcinoma* (11 cases) *and Rodent Cancer* (2 cases).—These are purposely omitted from the above tables, since Altmann's granules are absent from squamous epithelium (except very occasionally and in small numbers in the basal layer), so that one cannot in

the case of new growths originating in this epithelium speak of disappearance of granules, or regard absence of granules as indicating malignancy.

6. *Teratoma* (3 cases).—Granules are present in these as in normal tissues; thus, at a spot at which there is an abrupt transition from ciliated columnar epithelium to stratified squamous epithelium, the change from numerous fine granules to absence of granules obtains as normally.

7. *New Growths of Ovary* (3 cases) *and Thyroid* (1 case) diagnosed on ordinary histological examination as malignant show presence of granules, except in one instance (columnar cell carcinoma of ovary). In last year's paper there is already an indication that new growths of these organs are anomalous, those which are histologically malignant being malignant clinically only in a limited sense. Possibly the absence of granules in the exceptional case just mentioned indicates that it was a secondary and not a primary growth of the ovary.

8. *New Growths of Doubtful Histology* (5 cases).—In some of these presence, in others absence, is the marked feature. In one case the diagnosis actually made was "carcinoma of rectum on macroscopic grounds; no histological evidence"; subsequent examination for granules supported a diagnosis of malignancy.

Among the spheroidal-cell carcinomata tabulated above, the growth in which a majority of the cells contained granules was removed on a diagnosis of "(?) secondary nodule" from the skin of the abdomen of a patient whose breast (of the side opposite to that on which the nodule was situated) had been removed eleven years previously. The presence of granules here may perhaps be correlated with the inordinate length of time elapsing before the appearance of metastases.

In columnar-cell carcinoma of the intestine it has generally been found that the normal looking epithelium in the neighbourhood of the new growth is free from granules. The reason of this—proximity of malignant new growth, pre-cancerous condition, or other cause—is not obvious; in one instance, however, there was an abrupt change in a section from granule-containing epithelium of normal appearance to cancerous epithelium devoid of granules.

The Sarcomata.—In all the different types of sarcoma examined absence of granules is a very marked feature. In the case, however, of myeloid sarcoma of the fibula the giant cells are for the most part crowded with minute granules, and stand out in striking contrast to the surrounding agranular cells. The presence of these granule-containing cells, although comparatively few in number, is suggestive in connexion with the low degree of malignancy of myeloid sarcoma. (It may be remarked here that the almost exact converse of this condition obtains in a case of lymphadenoma. Here the section generally is full of granules, but from most of the somewhat sparsely distributed several-nucleated cells granules are absent.) It is especially important in connexion with the sarcomata to bear in mind, when examining a section for granules, that these are absent from unstriped muscle and from fully organized "white fibrous" connective tissue. Fibroid tumours occurring in various situations, and in particular fibromyomata of the uterus, may be instanced in this connexion.

V.—Conclusion.

On reviewing the results of examination of the various tissues mentioned in the foregoing, it is seen that the conclusions arrived at a year ago are fully confirmed, numerous additional examples of inflammatory tissues and new growths of not only the same but also new varieties falling into line with those already described. These conclusions may now be carried a step further. Setting aside new growths originating in cells not normally containing Altmann's granules, the status of neoplasms from whose cells granules are practically absent is quite clear; these belong to the group of undoubtedly malignant new growths. The position of those neoplasms in which presence of granules is the conspicuous feature is not quite so plain; most of those examined are definitely non-malignant, while growths originating in the ovary and the thyroid body admittedly present anomalous features in respect of malignancy. On the whole it appears that the absence or presence of Altmann's granules may be used as a histological test ("granule test") for malignant disease and other conditions as follows:

1. Excluding new growths originating in cells not normally containing Altmann's granules, absence of granules from all or nearly all the essential cells of a new growth indicates malignancy.

2. Presence of Altmann's granules in all or nearly all the essential cells of a new growth is usually associated with non-malignancy or only with malignancy of a special kind or limited degree (cf. thyroid, ovary).

3. In a tumour the diagnosis of which lies between inflammation and sarcoma, presence of Altmann's granules indicates the former, absence the latter.

References.

[1] British Medical Journal, September 25th, 1909. [2] *Archives of the Middlesex Hospital*, Eighth Cancer Report, 1909, p. 191. [3] Ibid., Ninth Cancer Report, 1910, p. 110.

CHLOROFORM NECROSIS OF THE LIVER.

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The experiments which are the subject of this communication were not originally made for the purpose of investigating the production of necrosis of the liver by chloroform. They were but a means to quite a different end, but they seem of sufficient interest to record, fragmentary though they be, for they approach the subject from a somewhat different standpoint to that of previous observers; and, further, although a good deal of work has been done on the subject, it would not seem to have attracted any very general attention.

It is well known that chloroform, if given to an animal in sufficient dose, may, and under certain conditions invariably does, produce a marked change in the liver. The change, originally described as a fatty degeneration, has been defined by later investigators as a necrosis of the cells at the centre of the lobules. Most of these previous experiments appear to have been concerned with somewhat big doses of chloroform; in the very carefully planned series of experiments of Whipple and Sperry,[1] most of the dogs used were anaesthetized for periods of one and a half to three and a half hours, usually twice and often three times on days in quick succession. Although these observers concluded that necrosis of the liver invariably resulted in dogs after an hour or more narcosis with chloroform, none of the experiments actually recorded deal with a single anaesthesia of less than two and three-quarter hours' duration.

It was my aim to see whether equally constant changes, in less degree perhaps, could be produced by smaller doses, and, if so, what proportion of cases recovered when any marked change has been produced. Whipple and Sperry report that when recovery does take place repair of the liver is complete, even after a most extensive necrosis, in three weeks, and leaves behind no trace of the necrosis.

In my experiments rabbits and rats were used, but the use of rats was discontinued owing to the frequent occurrence of focal necrosis in the liver of rats from apparently independent causes.

The experiments here recorded deal only with rabbits. Chloroform was given by inhalation and by subcutaneous and intraperitoneal injection. The inhalation experiments will be dealt with first.

The 10 animals used were anaesthetized first with ether until they were well under, and chloroform was then substituted. Only a very light degree of anaesthesia was maintained, the corneal reflex being present practically throughout the experiments. The administration was continued from periods varying from thirty minutes to two hours, and two of the animals were anaesthetized twice on successive days. Great differences were noted in the way the animals took the anaesthetic. Nearly all took it badly, and in three cases, in spite of the presence of a brisk corneal reflex, the animal suddenly stopped breathing, and artificial breathing was necessitated. The results are tabulated in Table I.

One animal died during anaesthesia after forty-five minutes' narcosis. No change could be found in the liver attributable to the chloroform. Some fine globules of fat

* The expenses of this research were in part defrayed by a grant from the British Medical Association.

were seen scattered about in sections stained with Sudan III, but not more than is commonly to be seen in an apparently normal animal. In one other animal no change could be found. This rabbit had been anaesthetized for two periods of twenty minutes each on the same afternoon with an interval of an hour between them. It was killed forty-eight hours later, and the liver appeared normal.

In all the remaining eight animals there was a marked change in the central area of the liver lobules, varying from a fatty degeneration to a definite necrosis. The most extensive change was found in Rabbit I, which had been anaesthetized for seventy-five minutes; but the appearances here and in Rabbit 4, which had received two anaesthesias of sixty minutes and forty-two minutes on successive days, were almost identical, and may be described together. The centre of the lobules is composed of cells of hyaline appearance, staining a light pink with eosin; the cell wall is usually intact, but the nucleus stains poorly, and is frequently fragmented. Here and there are collections of débris, obviously the remains of disintegrated cells. External to these necrotic cells is a ring of empty-looking cells, consisting of a cell wall and a central and often irregular nucleus surrounded by a clear space, or a very little granular protoplasm. Around the periphery of the lobule are two or three layers of healthy-looking cells. Droplets of fat are scattered throughout the lobule, but they are much more densely packed in the ring of cells lying immediately internal to the healthy peripheral cells. The capillaries at the centre of the lobule are dilated, but there are few leucocytes.

In Rabbit V. 3, anaesthetized for seventy minutes, the necrosis is limited to a narrow rim of cells surrounding the central vein, but the cells external to this rim, forming more than the inner half of the lobule, are loaded with droplets of fat.

In Rabbit V. 1, anaesthetized for forty minutes, there was no necrosis, but the cells of the inner half of the lobule were densely packed with fat, the remaining cells at the periphery being practically free.

In Rabbit V. 2 the fatty change was much less marked, although strikingly similar in distribution.

In 77 per cent. of these animals which survived the period of narcosis there was therefore a marked change affecting principally the cells at the centre of the lobule. A rough glance at the accompanying table (Table I)

TABLE I.—*Inhalation Experiments.*

No. of Rabbit.	Length of Narcosis.	Time of Death.	Condition of Liver.
1	75 min.	Killed in 48 hours	+
4	60 ,,	Died in 54 hours	+
	42 ,,		
2	60 ,,	Killed in 48 hours	+
V. 3	70 ,,	,, 48 ,,	+
3	2 hours	,, 72 ,,	+
5	12 min.	,, 48 ,,	+
	30 ,,		
V. 1	40 ,,	,, 48 ,,	— Much fatty change
V. 2	35 ,,	,, 48 ,,	— ,, ,,
V. 4	Died during anaesthesia	—	— No fatty change
V. 5	20 min.	Killed in 48 hours	— ,, ,,
	20 ,,		

+ = Definite necrosis at centre of the lobules.
— = No necrosis at centre of the lobules.
The animals are arranged in order according to the degree of change found in the liver.

might suggest that the effect on the liver varies directly with the dose; this is, however, not borne out on closer examination; for example, Rabbit 3, which underwent the longest period of anaesthesia, appears half-way down the list, and moreover in the case of Rabbits 1 and 4, which head the list, the mixture of air and chloroform circulating through the facepiece of the apparatus used contained a much lower percentage of chloroform than was the case of Rabbits 2 or V. 3.

This apparent lack of correspondence between dosage and the effect on the liver confirms the impression formed from observation during the anaesthesia, namely, that the toxic effects of the drug in no way run parallel to the anaesthetic effect, and I quite agree with those observers who say that the degree of anaesthesia is no measure of the degree of poisoning; twitching of the limbs, rotatory movements of the jaw, and very rapid breathing may all occur as signs of a deep degree of poisoning in only a very light stage of anaesthesia.

Injection Experiments (Table II).

Eight animals received 0·5 c.cm. of chloroform subcutaneously; of these six died within three days, and all six showed an extreme condition of necrosis at the centre of the lobules. It may be questionable as to when it is permissible to say, from the histological appearances, that a particular cell is dead and beyond recovery—that is, that necrosis has taken place; but in these animals there can, I think, be no doubt whatever. The centre of the lobules (in many cases as much as three-quarters of the entire lobule, or even more) is represented by a mass of red blood cells, with the remains of isolated liver cells scattered about amongst them. Some of these liver cells are intact, with nucleus and surrounding protoplasm, the latter hyaline and staining light pink with eosin, the former mostly fragmented; others consist merely of free nuclei with perhaps a little granular protoplasm left attached at one side, or again a mere granular mass of débris.

The amount of fat present varies considerably. In the cases where the necrosis is most extensive it is present in greatest quantity in the cells still left intact at the periphery of the lobule; in less advanced cases it is massed in large droplets in the cells lying between the necrotic area and the healthy peripheral cells. There is also a certain amount scattered about in globules in the necrotic areas, but to a very much less degree. Further, the fat is most abundant in those animals which have withstood the poison longest. In the animals dying within twenty-four hours it is relatively small in amount; in those which died on the second day it is present in definitely larger quantities, and it reaches its maximum in an animal which lived till the third day. Previous investigators seem to have concluded that the process was a primary fatty degeneration, passing on sometimes to a complete necrosis; but these observations lend some support to the view that I have formed from a consideration of the whole series that, when the poison is sufficiently intense, the necrosis is the primary change, and that a fatty degeneration is only observed in lesser degrees of poisoning, or where the poison is more dilute.

Of the two remaining animals one was killed on the sixth day, and one on the sixteenth day. The liver of the former showed definite necrosis around the central vein, but it was small in extent, the other seven-eighths of the lobule being composed of quite healthy cells. At the junction of the healthy and necrotic area large numbers of giant cells can be seen in all the sections; these frequently contain bile, and the nuclei are irregular and badly staining; they appear to be a stage in degeneration rather than in repair.

The liver of the animal killed on the sixteenth day is apparently normal; there is no increased amount of fat, and no evidence of a previous necrosis.

Thus, of the animals which received 0·5 c.cm. of chloroform subcutaneously 87·5 per cent. showed definite central necrosis of the liver.

TABLE II.—*Eight Animals Injected Subcutaneously with 0·5 c.cm. of Chloroform.*

Died within 20 hours	2 +	Fat in intermediate zone.
Died within 24–48 hours	2 +	More fat than in preceding.
Died within 2–3 days	2 +	Fat in greatest quantity.
Killed on sixth day	1 +	
Killed on sixteenth day	1 —	

+ = Definite central necrosis.
— = No central necrosis.

Injection of 0·2 c.cm. of Chloroform.—The chloroform was injected either subcutaneously or intraperitoneally; I have not been able to trace any difference in the results

obtained from the two methods, and for convenience sake they are here grouped together (Table III).

The results of this series are much more complicated, and I shall only state them briefly. I cannot attempt to explain them at present. None of the animals of this series showed any anaesthetic effects from this dose. Within a few minutes of the injection they were usually found to be lying stretched out with the head retracted, and breathing shallowly and with great rapidity; this condition lasted not infrequently for several hours; but they responded to stimuli always, and if their position was altered, they would usually take a few jumps round the cage before returning to their original position.

Thirty-four animals received 0·2 c.cm. subcutaneously or intraperitoneally. Of those, 2 died on the fifth day, and both showed a central necrosis of the liver equal in extent to anything found in the previous series; the histological changes in these two were exactly similar to those already described and need not be repeated.

Five were killed within the first five days, and none of them showed any central necrosis, but extensive fatty degeneration was found at the centre of the lobules in 3 cases, less marked change in 1, and 1 was apparently normal.

Two were killed and 10 died within three weeks; in none of these was there any central necrosis or fatty degeneration at all similar to that previously described. I will speak of the condition found here later.

The remaining 15 animals were reinjected with the same dose twenty-six days later; of these, 1 died within twelve hours, 1 within ten days, and 2 within twenty-six days. None of them showed any central necrosis or fatty degeneration. The remaining 11 animals were again reinjected, the survivors receiving a fourth injection, and so on; only 1 animal survived a sixth injection, and this was killed. The results are seen in Table III.

TABLE III.—*Thirty-four Animals Injected Subcutaneously and Intraperitoneally with 0.2 c.cm. of Chloroform.*

No. of Injections given.	No. of Rabbits used.	Died within 12 Hours.	Died or Killed within 10 Days.	Died or Killed within 26 Days.
1	34	0	2 died +	2 killed —
			+	—
			5 killed — *f*	10 died —
			— *f*	—
			— *f*	—
			— *f*	—
			— 0	—
				—
				—
				—
				—
				—
2	15	1—	1 died —	2 died —
				—
3	11	0	4 died —	2 died —
			—	—
			—	
			—	
4	5	1—	0	0
5	4*	0	0	0
6	2	0	1 killed —	0
			1 died —	

+ and — as before.
f = fatty degeneration at centre of lobule.
* Two of these animals were not used further.

In none of these reinjected animals was any change found in the liver at all comparable to that found in those dying or killed after a first injection. These animals do, however, show a definitely increased mortality; other animals not injected and kept under the same conditions lived on happily, while the chloroform rabbits died off. The livers of these animals, although in no way resembling those of the animals of the previous series, do all present a more or less similar picture, and one that must, I think, be called abnormal. First, they are usually very full of blood; the central veins are dilated and packed with red blood cells; radiating from these are greatly distended capillaries also full of red cells, and compressing the adjacent columns of liver cells, so that in many cases the field presents a picture of broad columns of blood cells separated by a mere chain of nuclei of liver cells connected only by an attenuated cord of protoplasm. Secondly, the central vein is often lined by a thick wall of connective tissue frequently of a thickness of three liver cells, whilst in other cases the outline of the central vein has entirely disappeared, the vein being represented by an irregular space without a definite wall, filled with a grey granular material which often contains small colonies of isolated liver cells embedded in it. Here, too, the red blood cells form a very striking picture as they lie between the columns of liver cells, and often in close proximity to the central vein there are definite areas of haemorrhage.

Various observers, especially in France, speak of a second form of change in the liver produced by chloroform which they call "haemorrhagic," and which may, perhaps, resemble the conditions here described. For a satisfactory explanation of this condition I am completely at a loss; but it is possible that there has originally been some destruction of the cells at the centre of the lobule, and that in the process of regeneration of the liver cells the re-formation of the central vein has been incomplete or in some way interfered with.

The method of repair, and the extent to which it occurs, is too lengthy a subject to be discussed here, and must be left for a future occasion.

COMBINED SECTIONS OF PATHOLOGY AND BACTERIOLOGY.

THE Section of Pathology held a joint sitting with the Section of Bacteriology for the purpose of considering complement-fixation in diagnosis. It resulted in the reading of the following papers on different aspects of the subject:

I.—Professor A. WASSERMANN,
Berlin.

THE DIAGNOSTIC USE OF THE COMPLEMENT-FIXATION METHOD.

THE theme before us has become so very voluminous during the past few years through the zealous work of different authors that I cannot hope to treat it exhaustively within the limits of a short discourse. I shall, therefore, only pick out what is most important practically, and present even that as briefly as possible, since I regard my paper merely as an introduction to the discussion to follow.

In the first place, regarding the nature of the so-called fixation of the complement, it is known to you that it depends upon this principle: that when an antigen is mixed with its homologous immune body a union occurs between the two. If now complement—a constituent of every fresh serum—be at the same time added, it becomes anchored through the union of the antigen and antibody. It follows accordingly that if the complement be anchored, the conclusion may be drawn that either the homologous antigen or the homologous immune body is present in such a mixture. The determination whether in such an experiment the complement is bound can be made easily and convincingly.

For this purpose one needs simply to add simultaneously or somewhat later the serum of an animal, which has been previously treated with red blood corpuscles, the so-called amboceptor, together with its homologous erythrocytes. If the complement has already become bound as a result of the union between the anti and immune bodies, then it is no longer available for the haemolytic amboceptor and the red blood corpuscles. Consequently the latter remain undissolved. But if, on the contrary, fixation of the complement has not occurred, the complement goes over to the second group, and causes haemolysis of the blood corpuscles. Thus from the appearance or non-appearance of haemolysis, one can draw the conclusion as to whether the sought-for antigen or immune body is present in the first group. This experimental method has been known for only about ten years, and was first announced by Bordet and Gengou in connexion with theoretical and scientific work. These authors, however, had already recognized the diagnostic value of their method, for they employed as antigen emulsions of various kinds of bacteria with which they mixed human and animal serums, in order to determine whether fixation of the complement occurred—that is,

whether antisubstances corresponding to the different bacteria were present in the serums. Such investigations Widal and Le Soure made with typhoid, Bordet and Gengou with bovine and avian tuberculosis.

Nevertheless, the method as such could not establish itself in practical medicine, and for the reason that, as reported by Bordet, it offered no advantages over the diagnostic methods already in use. As already mentioned, Bordet used bacterial emulsions as antigen. Consequently the method in this form could only be employed in those infectious diseases whose agents could be grown in pure cultures. A modification, however, was made in this respect, for, together with my assistant Bruck, I was able to demonstrate that a bacterial emulsion is not at all necessary as antigen, but, on the contrary, it is even more advantageous to use as antigen the dissolved substances of bacteria which I obtained by the extraction of the bacilli bodies. One is much helped in the understanding of this through the excellent works of your late lamented countryman, Macfadyen, who demonstrated that the products of bacterial solution are often, biologically considered, even more active than the bacteria themselves. What, however, marks the greatest advance is this, that from that time on one might also use this fixation of the complement method in those diseases whose agents are still unknown or unable to be cultivated. To this end, in place of the bacterial cultures, one only needed to make extracts of the pathological organs of the disease in question, and to use them as antigen. After the preliminary investigations which I made on the extracts of meningococci and on tuberculin, namely, the extract of tubercle bacilli, had demonstrated both the possibility and the reliability of the method, I chose to use it as a new diagnostic measure in that most important field—syphilis, as you know.

The method of research was this: As antigen I used, together with Bruck and A. Neisser, the extract of the liver of a fetus with hereditary syphilis; to this we added the serum of normal and syphilis-infected apes and man, and then, by means of the above described method, tested whether the complement had been fixed. We were able to demonstrate through these experiments that fixation of the complement occurred only when the serum of syphilitic individuals was added; but, on the contrary, remained absent if the material was obtained from healthy apes or healthy human beings. Thus it was shown, in principle, that a serum diagnosis of syphilis is possible. Further developments were then made in my laboratory, under my direction, by Porges and G. Meier, who demonstrated that the active principle contained in this extract is soluble, not only in water, but in alcohol as well, so that it must be closely related to the fatty-like substances—the so-called lipoids. Indeed, we were already at that time able to demonstrate that an alcoholic extract of normal non-syphilitic organs might likewise furnish an antigen which, in the majority of cases, would give a reaction with syphilitic serums. From which it follows that substances must be present in the syphilitic serums which have an especial affinity for the above-mentioned alcohol-soluble fatty substances. Since the establishment of this fact, most authors have turned away from the original extract made from syphilitic organs, using instead extracts of normal organs or ready-prepared lipoid with lecithin as antigen, on account of the greater ease with which these latter substances can be obtained. These authors hold that nothing more is present in the extract from syphilitic organs than is present in the extract of normal organs, since in the majority of cases of acquired lues the serums usually give corresponding results with both extracts. This is, however, erroneous. It would lead me too far here to go into the reasons why a syphilitic serum gives a reaction not only with the extract from syphilitic organs, but from normal organs as well.

I refer those of you who are interested in this matter to an article of mine which appeared recently in the *Berliner klinische Wochenschrift*. For to day, it should be enough to state that whoever works with an extract derived from syphilitic organs determines those substances in the blood serums which have been developed against the cause of the disease—namely, the spirochaetes. On the other hand, that whoever works with an extract derived from normal organs lacks those substances which have arisen through cell degeneration following spirochaetic activity. Now it is evident, without further discussion, that similar cell degenerations can likewise occur in other diseases; or, on the contrary, through only slight extension of the syphilitic process—as, for example, a gumma of the brain—a cell degeneration worthy of mention does not take place. It follows, therefore, unconditionally, that the extract of syphilitic organs must be the more specific and reliable antigen. Special evidence in this connexion has been furnished through certain experiments made by your countryman, Dean—who is at present working in the Lister Institute here—experiments concerning the relationship of idiocy to congenital syphilis, which he carried out in my laboratory. Dean was able to show that the serum of such patients practically never gave the reaction with an alcoholic extract from normal organs, while, on the contrary, it reacted typically with the aqueous extract of syphilitic organs. It follows, therefore, that in scientific and responsible researches one should always work with the original antigen obtained from syphilitic organs.

Before I pass to the application of serum diagnosis to syphilis, I should like to say a few more words about the further modifications of the original technique. It is surely an old story to you that in the past few years many proposals have been made to alter the original sero-diagnostic method of syphilis. One author has proposed the use of a different complement from the one I recommended, another author a different haemolytic system—that is to say, a different kind of blood corpuscle than the sheep blood corpuscle, with its homologous rabbit immune body which I employ. All these modifications aim as their end-result to make the method more sensitive. We purposely chose a method that should not be too sensitive—that is to say, there must already be a considerable amount of reaction substances in the serum of the syphilitic, in order to avoid having a non-syphilitic give the reaction, and thus be regarded as a syphilitic. On the other hand, it is freely admitted that among 100 syphilitics certain ones having only a slight amount of antibodies will be passed over by the reaction. We regard this, however, as the lesser evil, since such individuals can be re-examined after a time, and particularly since physicians are not accustomed to exclude the diagnosis because of a negative diagnostic reaction.

Now, most of the authors who proposed this and that modification of the original method, sought to make the system so sensitive that it should show a still higher percentage of positive reactions than the original method. With this aim one author proposed the use of non heated serum, another, as Noguchi for example, the use of human blood corpuscles instead of the sheep blood corpuscles. According to my test of them, none of these modifications are to be recommended for practice. This applies very particularly to Noguchi's procedure, as Sleeswyk, working in my laboratory, has just recently demonstrated through careful tests. It suffers just like the other methods from the fault that it is too delicate, that is, it gives reactions with the serum of patients having other diseases while the original method shows no reaction in these cases. I cannot, therefore, recommend the use of these procedures or modifications for practice. In compliance with numerous requests in the literature and from practising physicians, I have seen to it that the reliable reagents, which according to my point of view are needed, should be dispensed from a central office, namely, the Pharmacological Institute of Ludwig Wilhelm Gans in Frankfurt a-Maine.

Concerning the diagnostic significance of the syphilis reaction, this has been so repeatedly settled in every country that I do not need to speak much about it. In many countries, as in Austria and Denmark, sero-diagnostic institutes have already been established by the Governments. I myself with my co-workers have carried out more than 10,000 examinations, and we have never yet made a false diagnosis. To be sure, to accomplish this one must completely master the technical details of the reaction, must have faultlessly accurate reagent titrations, and must adhere exactly to the rules which I and my co-workers have established. I wish particularly to warn you against the use of active human serum—that is, without having heated it at 55° for half an hour. A non-heated serum gives false results very easily. Furthermore, in establishing the diagnosis of syphilis for the first time it is essential that one should do this only when all the red blood corpuscles, or at least the vast majority, remain undissolved. So-called partial arrests o

haemolysis should not be taken into consideration in establishing the diagnosis. In such cases one should regard the reaction as doubtful, and should have the serum given to him again after some time. On this occasion I should also like to state that 4 to 5 c.cm. of blood should be withdrawn from the patient in order to have about 2 c cm. of serum for use. The serum should be heated at 55° immediately after clotting, and then be used for examination.

Concerning the specificity of the reaction, when carried out under such precautionary measures, it is strongly specific in the sense and within the limitations that apply to all immunity reactions. So it becomes at once clear that the serum of patients infected by an agent very closely related to the infectious agent of syphilis, the spirochaete, will give a like reaction, the so-called group reaction. We see just the same phenomenon in the Widal reaction of typhoid as in other such biological reactions. So it should cause no surprise that the serum of framboesic patients and recurrent fever patients should give a like reaction. Considering the close relationship between spirochaetes and trypanosomes, as well as other protozoa, which was emphasized by Schaudinn, the discoverer of the syphilitic spirochaete, organisms which have all in common the characteristic of liberating lipoid from the body cells, it should likewise cause no surprise that protozoa diseases in certain stages should show a similar reaction. The most important in this respect, and especially for you as the physicians of the greatest colonial empire of the world, is malaria. To study this question, I have sent my co-worker, Dr. Meier, to Italy, to investigate it during the summer, when malaria predominates there. Indeed, Dr. Meier, in association with Dr. Bonfiglio, has already demonstrated that malarial patients give the reaction as long as they have malarial parasites in the blood—therefore during and a short time after the paroxysm. It follows that one should employ the reaction with people who have been in the tropics and contracted malaria there only when one is convinced by their history that they have had no malarial attack during the last quarter of a year. Upon the whole I am of this opinion, and so I advise you accordingly, that whenever you wish to employ the serum reaction, to first determine by the patient's history that he has gone through no acute febrile infectious disease up to at least a month previously. Tuberous leprosy also gives a reaction like syphilis, but can be differentiated by the serological expert. Since, however, tuberous leprosy is very easily differentiated from lues, clinically and bacteriologically, and is not to be confused with it, it plays no practical rôle. If one holds to these preliminary precautions regarding technique and the anamnesis, then in case of a positive reaction, it can be said with certainty that the investigated case is syphilitic. On the other hand, if the reaction be negative, syphilis cannot be excluded absolutely, but only with a probability of about 90 per cent. Practically such a diagnostic measure is of the highest importance, since through it we can determine in the vast majority of cases whether a disease process is of syphilitic nature, and so can take proper measures to bring about its recovery. Of quite special importance, moreover, is the fact that we are now in the position, thanks to serum diagnosis, to determine in the latent state—that is, when manifest symptoms are no longer present—whether the individual in question is really no longer under the influence of syphilis, and therefore needs no further treatment. This investigation appears the more necessary since serum diagnosis has taught us that 100 per cent. of the cases of general paresis and aortic aneurysm, as well as about 90 per cent. of the cases of aortic insufficiency, give a positive lues reaction. We must, therefore, regard it as certain that these severe products of syphilis are recruited from those latent syphilitics who have not lost their reaction. In this connexion it is also important to call attention to the fact that not only the serum of paralytics, but their lumbar fluid as well, gives the syphilis reaction. One may therefore conclude immediately from a lumbar fluid showing the syphilis reaction that a syphilitic degenerative process of the central nervous system is present, either general paralysis or tabes.

Regarding the influence of treatment upon the reaction, exhaustive investigations have been made in Germany, particularly by Citron and in Neisser's clinic in Breslau, also in Copenhagen in the Government serum institute there by Boas and Thomsen. These investigations have shown that in the majority of recent cases we can cause the disappearance of the reaction through quicksilver treatment. If the treatment be then omitted for a while, after a longer or shorter time the reaction reappears, but can be made to disappear again through renewed treatment. But if the treatment be discontinued altogether, then the symptoms of the disease reappear soon after the reappearance of the reaction. The reaction is, therefore, the forerunner of the relapse. If, however, the reaction is already very old—that is, if the infection has already extended over years (and I have found reactions even fifty-four years after the primary infection)—then, according to my experience, it has become so stable that quicksilver treatment can no longer cause its disappearance. In general we can say that under the present-day therapy of syphilis by quicksilver and iodides, of those patients who have been treated only once or twice, about 50 per cent. retain the reaction after the disappearance of all outward symptoms—that is, in the latent stage of the disease. Of those patients who have been very vigorously—that is, again and again—treated, only about 20 per cent., yet still always a fifth remains uncured.

Viewed from this standpoint, Ehrlich's discovery of a new arsenic preparation which kills the spirochaetes far more actively than quicksilver, marks a tremendous advance. As far as we can judge at present, this new remedy appears to cause in a higher percentage the disappearance of the reaction, but whether persistently time is yet too short to tell. However this may be, from now on we must judge the virtues and superiority of each new syphilis measure by means of the reaction. If it succeeds in causing the persistent disappearance of the reaction, even in the latent stage, then we can be sure that the dreaded sequels of syphilis—general paralysis, tabes, and aortic disease—will be averted. You see, therefore, that the scope of serum diagnosis in syphilis, diagnostically, therapeutically, and especially prophylactically, with regard to hereditary transmission, is uncommonly great. We are surely only at the beginning of this matter, but within a few years, doubtlessly, every properly conducted and scientific treatment of syphilis will be carried out under the constant control of the syphilis sero-diagnosis.

It was only to be expected that the serum diagnosis method which I have set forth here somewhat at length could be applied not only to syphilis, but, by analogy, to other diseases as well. Indeed, it was very soon shown, after I had pointed this out, that latent glanders—which the extensive work of Schütz in particular has demonstrated—could likewise be diagnosed by the fixation of the complement method. And it is this method which to-day is used in Germany to a large extent to free the horse stables from horses with latent glanders.

Furthermore, it could be shown—I mention in this connexion the work of Ghedini and Weinberg—that by exact analogy with the serum diagnosis of syphilis, a serum diagnosis of infections with certain parasites—that is, *echinococcus*, *ankylostomum*, *Distoma hepaticum*—could easily be made if, as antigen, a watery or alcoholic extract was made of the parasites or of their capsules. As soon as the organism is freed from the parasites through operation—that is, the echinococci—or through other therapeutic measures, the reaction also disappears.

It was very important to be able to demonstrate, as was done by means of the complement fixation method, the presence of antibodies in the serum of individuals previously treated with tuberculin preparations. It is possible, therefore, at any time during the treatment, to have a picture of the immunization process—a procedure which especially Schlossmann in Düsseldorf, and Robert Koch during the latter years of his life, thoroughly elaborated. On the other hand, the investigations of Marmorek, though they demonstrated, by means of the fixation of the complement method, specific substances in the urine of tuberculous patients, have nevertheless not stood the test for diagnostic purposes, since the presence of these substances in the urine is too infrequent and irregular. Finally, it may be added that the fixation of the complement method, by virtue of its specificity, may naturally also be used to differentiate different kinds of bacteria and albumens. The latter procedure particularly, contributed by Neisser and Sachs, is of practical importance in legal medicine, for through it the smallest traces

of blood can be settled as to their origin, whether human or animal.

Thus we see what a great new field this method of complement fixation has opened up to us, and how animal research and experimental laboratory work have again succeeded in giving important facts for diagnosis and therapy to practical medicine and to the clinic.

II.—H. Wansey Bayly, M.A.Camb., M.R.C.S., L.R.C.P.,
Bacteriological Department, St. George's Hospital.

THE PRACTICAL VALUE OF THE WASSERMANN REACTION.

I venture to lay before you the result of eighteen months' use of the Wassermann reaction in the London Lock hospitals. I have completed over 1,000 determinations, and as the months pass on I am only more and more impressed with the value of the test. I have used an alcoholic extract of rabbit's heart for syphilitic antigen, and have found that I have obtained as good results as with an alcoholic extract of fetal syphilitic liver.

Many observers have tried to simplify the test and obviate the necessity for using rabbits and guinea-pigs by making use of the complement and haemolysin for sheep's corpuscles present in human blood serum. It seems to me, however, that the most essential of all factors in a comparative test such as this is that all factors except the one to be tested should be constant. With Hecht's, Bauer's, Stern's, or Fleming's technique, however, variants are substituted for constants, which in my opinion does not increase the reliability of the test; for the complement content of human serum varies greatly, and some human serums contain no haemolytic antibody to sheep's corpuscles, while others contain some, but in varying quantities. In the technique that I use and advocate I mix fresh guinea-pig serum (for complement) and alcoholic extract of rabbit heart (for the body acting as syphilitic antigen) and normal saline solution *in bulk* and put 2·5 c.cm. of this mixture into each test tube. The only variant that I use is the decomplementized serum to be tested, of which I add 0·3 c.cm. per tube.

In the same way I mix in bulk the prepared rabbit's decomplementized haemolytic serum and the suspension of washed sheep's corpuscles. Any difference in the amount of haemolysis between the tubes must therefore be due to the only variant factor—namely, the serum tested, for syphilitic antigen complement and haemolytic system are all constants. This is not the case, however, with the so-called simplified methods, where the complement and haemolytic antibody are variants, and the cause of any difference in haemolysis must therefore be unknown.

Benefiting by the advice and experience of Captain Harrison (who published a very interesting article on the Serum Diagnosis of Syphilis in the July number of the *Journal of the Royal Army Medical Corps*), I have for the last six months used two strengths of complement, and so obtained a roughly quantitative measurement of the complement deviating power of the serum. Frequently in this way we can obtain an indication that the patient is getting under the influence of treatment, and some haemolysis will occur in the tube containing the larger dose of complement, although the smaller dose of complement is completely deviated.*

By this means I have investigated the therapeutic value of some of the different antisyphilitic remedies, and the comparative value of the different methods of administering mercury, and in conjunction with Mr. Charles Gibbs I published in the *Lancet* of May 7th last a short preliminary note on this subject.

The results that I have so far obtained point to the conclusion that less than six months' pill treatment has little or no effect on the Wassermann reaction, no trace of haemolysis occurring even in the tubes containing the double dose of complement. On the other hand, a large majority of cases treated by inunction and a very considerable percentage of cases treated with intramuscular injection of insoluble mercurial preparations show some definite effect of treatment after one three months' course. Potassium iodide and the arylarsonates seem to have no effect on the Wassermann reaction as far as three months' treatment is concerned.

We therefore conclude that inunction and intramuscular injections are the best methods of administering mercury and in the order named.

I have found that about 85 per cent. of all untreated syphilitics give a positive reaction. In no case of tubercle or cancer and in no healthy individual have I obtained a positive reaction. The highest percentage of positive results has been obtained with untreated congenital syphilitics, practically every case giving the reaction. In primary cases in which the lesion has been present for less than a fortnight the majority of cases give a negative reaction, but after the lesion has been present for a month a positive reaction is recorded in 75 per cent. of cases.

Secondary syphilis with symptoms gives a positive reaction in over 90 per cent. of cases and tertiary syphilis in about 75 per cent. of cases. Of parasyphilitic conditions general paralysis gives a positive result in over 90 per cent., but tabes in only about 50 per cent. of cases.

The history of the Wassermann reaction is too recent for us yet to have acquired sufficient data in regard to its value as a guide to permanent and complete cure. Even in a case where a succession of negative results has been obtained after all treatment has been left off, we cannot be certain until another twenty years have passed that the disease is entirely and absolutely obliterated and that no late manifestation will ever occur. By its means we have indeed learnt that many cases considered cured were not cured, and it is the general opinion that three negative reactions taken at three or six months intervals, during which no mercury is given, can be considered as an absolute cure.

We can only say that an opinion based on this evidence is of far greater value than an opinion based only on clinical or rule of thumb grounds, but we cannot yet be certain that such an opinion would invariably be correct.

In the state of our present knowledge, however, I do not think that it would be justifiable to recommend less than three years' treatment, even if a succession of negative reactions have been obtained, for it has been shown that if treatment is left off a positive reaction may occur. Too much reliance, therefore, should not be placed on a solitary negative reaction for the exclusion of syphilitic infection.

We at the Lock hospitals are entirely satisfied as to the great value of the Wassermann reaction from the diagnostic point of view; such clinically doubtful cases that gave a positive reaction always showing later either by their reaction to mercurial treatment or by the development of clinical symptoms that they were syphilitic. In so far as we have gone at present in regard to treatment also the pathological evidence as estimated by the Wassermann reaction and the clinical evidence seem in the great majority of cases to go hand in hand. I consider that more reliable results are obtained with blood serum than with cerebro-spinal fluid. I have also failed to obtain satisfactory results when urine has been substituted for serum.

As regards the complement deviation test for tuberculous infection as used by Dr. Marmorek, of Paris, my results have been disappointing, and have not agreed with the results published in Paris. But with the Wassermann reaction it will be seen that my results are entirely in accord with those obtained by Professor Wassermann.

* This quantitative measurement of the complement deviating power of the serum can obviously not be determined by the so-called simplified methods.

III.—Robert Muir, M.D.Edin.,
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THE FIXATION OF COMPLEMENT IN GENERAL.

As a contribution to this discussion, I propose to offer some observations with regard to the properties of complement in general, especially in relation to the question of fixation. Complement is notoriously susceptible to physical agencies, heat, light, and even mechanical shaking, and to the action of chemical substances; it is no less strikingly liable to absorption by various substances in solution or in suspension, and it is accordingly desirable to consider some of the chief conditions under which this takes place. It may, however, be well in the first place to point out that in the various tests we rarely inquire into the presence or absence of complement in an active form.

Now, when complement or its activity disappears from a fluid in which it was formerly present, this may be due to one of at least three conditions: (*a*) Destruction of complement by a physical or chemical process; (*b*) inhibition of complement—for example, by a concentrated salt solution, the activity being restored on diluting, and it is important to bear in mind that many proteins in solution have an inhibitory action; and (*c*) the actual binding or fixation of complement, of which the most striking is that by the combination of antigen + antisubstance. It is with regard to the last mentioned—the fixation of complement—that we are chiefly concerned at present, but it is to be noted that it is not possible at present to draw a hard-and-fast line between the three sets of conditions mentioned. The evidence of the occurrence of inhibition, for example, is the restoration of the properties of complement on the removal of the inhibitory substance or condition; but we do not know the real nature of inhibition, and we may accordingly fail to detect inhibition, and appear to have fixation of complement before us, simply because we have not the means of removing the inhibitory substance.

However, taking the facts already known, we may say that fixation of complement occurs under the following conditions:

(*a*) In the presence of an antigen + its antisubstance, and, of course, the antigen may be of various kinds—for example, bacteria, red corpuscles, tissue cells, various proteins, etc.; (*b*) in the syphilitic reaction of Wassermann; (*c*) in the presence of various organic substances in solution or as colloidal suspensions, or in mixtures of these; (*d*) in the presence of comparatively gross particles suspended in a fluid, especially organic particles—for example, bacteria, yeasts, tissue cells, etc., though also inorganic particles have to a certain extent this property. The removal of complement by filtration through a porcelain filter is probably closely allied to this process of surface absorption. This arrangement is merely made for convenience. For example, the Wassermann reaction is not to be considered as really standing by itself, but we place it so because we do not understand its true nature; and further, all intermediate stages between (*c*) and (*d*) might be given. In all the conditions mentioned the combination of complement is a firm one, and although there are facts which suggest that a small amount may be dissociated again, this can hardly be said to be satisfactorily demonstrated. And there is also the common feature that, just as in the case of toxin in its union with antitoxin, when a small amount of complement is left free in any of these conditions, much more than one dose of complement must be added before one free dose is obtained. Further, in all four divisions the physical condition of the fixing agents play an important part. We may now consider in greater detail these conditions of fixation.

(*a*) *Fixation by Antigen + Antisubstance.*—Regarding complement as a substance we know practically nothing; we can, in fact, only recognize it by its action in producing haemolytic, bacteriolytic, or some other effect. The fact that in such actions—for example, haemolysis—the dose of complement necessary to produce the given effect is a definite one, pointed to its being fixed, or at least used up; but it is the deviation method of Bordet and Gengou that has supplied us with the most useful and most widely applicable method of studying the behaviour of complement in various reactions. This is, of course, an indirect or subtraction method. The lysis of corpuscles treated with immune body, or sensitized, is the direct evidence of the presence and activity of complement; the interference with lysis after complement has been allowed to interact with an antigen + its antisubstance is the indirect evidence that complement has been fixed. In the present condition of our knowledge it seems to me advisable to keep cases of this kind by themselves, that is, apart from the examples of non-specific fixation of complement. It is quite evident that the method can be applied both for the detection of antigen (given antisubstance) or of antisubstance (given antigen), and in my opinion the method is a valid one, and is so within as wide limits as the methods used in the detection of other antisubstances, for example, opsonins, agglutinins.

It may be that non-specific or co-lateral immune bodies can be developed in some instances, as seems to be the case with agglutinins (Nebenagglutinins), but this is another matter. It is not only as widely applicable as but of corresponding delicacy to the other methods, provided that it be properly carried in a quantitative manner. In testing, for example, whether a specific antisubstance is present in the serum, the best method, in my opinion, is to use a fixed quantity of antigen and antisubstance along with varying amounts of complement in a series of tubes, the smallest amount being less than a haemolytic dose. By such a method, when suitable controls are used, the absorption or fixation of a very minute quantity of complement can be readily observed. The only provision that has to be made is that we must be certain that in the case of the antisubstance in question zone phenomena do not occur; that is inhibition of the deviation of complement when one of the two substances is present in excess. An example of such an occurrence is seen in the case of a precipitating antiserum produced by the injection of the serum of one animal into another of different species. In this case an excess of antigen leads to a diminution or even disappearance of the deviation of complement, a phenomenon which is closely allied to the inhibition of precipitation and to the solution of precipitate after it is formed. This subject will be referred to below. I have had an extensive experience of the deviation of complement method in the case of all three of the chief types of antiserums—namely, antibacterial, haemolytic, and precipitating serums—and I can testify to its extreme usefulness for the purpose of detecting the substances in question and of studying variations in their amount under altered physical conditions.

By this method I was able to study the actual amount of complement taken up in relation to the amount of immune body, and was able to show that many times the haemolytic dose might actually be fixed. Again, Dr. Browning and I applied the method to the study of the combination of various complements, and showed how, apart from the combining properties, complements of different animals showed great variations in their toxic effects, as seen in haemolytic phenomena. We also showed how complements from different species of animals mutually excluded one another from combination with sensitized corpuscles—that is, possessed similar combining groups—and such observations have since been widely extended. In the case of a precipitating antiserum, Dr. Martin and I confirmed the results of others as to the deviation test being much more delicate, often ten times more so, than the ordinary precipitin test, and Dr. Haswell Wilson applying the method to albuminous urine, found that albumen could be demonstrated by it in from ten to a hundred times greater dilutions than was possible by any chemical method. The method can be applied, with slight alteration, also to the study of the bactericidal properties of the serum. In this case the bacteria sensitive to bactericidal action are substituted for sensitized corpuscles. Accordingly, as a means of analysis of haemolytic and other phenomena, the deviation test is invaluable, and is, in fact, one of the most useful which we possess.

I need not enumerate the various bacterial diseases in which deviation of complement can be observed—that is, in which specific antisubstance can be detected by the deviation method. Their number is now so great as to include practically all known bacterial infections; in fact, we may state it as a general law that in such conditions there are formed antisubstances of the nature of immune bodies which in association with the antigen fix complement. It is to be noted that no rule can be laid down as to the relative proportion of the different kinds of antisubstances—immune bodies, agglutinins, precipitins, opsonins—in the various infections; in fact, they vary much in their proportionate amount in different cases. The question must accordingly be worked out in the case of each disease or condition of infection experimentally produced. On the whole, immune opsonins and agglutinins are present in relatively larger amount, or, rather, their presence can be demonstrated in much greater dilutions of the serum than is the case with immune bodies. For this reason, and also for the reason that the method when satisfactorily performed involves a more complicated technique, and takes longer to carry out than the others, I do not consider that the deviation method will come into extensive use as a means of clinical diagnosis; still there are cases—for example, where it is difficult or impossible to use the agglutination reaction—in which

the deviation method will be found to be very useful. The method is also of service in considering the etiological relationship of an organism; in this case we have the antisubstance in the serum of the patient, and we test whether the suspected organism will functionate as antigen. The most striking example of this application is the well-known work of Bordet and Gengou with regard to the bacillus of whooping-cough.

(*b*) *Fixation in the Wassermann Reaction*.—Although it was by the application of the principle of fixation of complement by antigen + antisubstance that Wassermann, Neisser, and Bruck discovered the serum reaction of syphilis, this phenomenon must now be considered to be of different nature. Extract of liver containing spirochaetes was found to be replaceable by extract of normal liver, and this again by solutions or emulsions of substances of comparatively simple and known constitution. The antigen is not the spirochaete, and it is no less certain that it cannot be any product resulting from the action of the latter, as if this were so, it would follow that only extracts of syphilitic tissues could functionate as antigen. It is a matter of regret, in my opinion, that Professor Wassermann in his introduction to this discussion has not drawn this distinction between deviation of complement in various bacterial infections and that in syphilis. In the former it is only the antigen *sensu stricto* that, along with the corresponding serum, leads to the fixation of complement; in the latter a number of substances, especially lipoids, can act in this way. It is not of great moment that an extract of syphilitic liver is usually more efficient than one of normal liver, and of this another explanation than that the former contains a true syphilitic antigen might be given. What really is of interest and importance is that oleates, glycocholates, lecithin, cholesterin, etc., and especially combinations of these, can be used to bring out the characteristic reaction with syphilitic serum. Of this fact, the importance of which has been overlooked by him, no real explanation can yet be given. It seems to me that we can only say at present that some substance, apparently a modified protein, is peculiar to or present in specially large amount in syphilitic serum, and that this, in combination or in association with lipoids, etc., leads to the fixation of large amounts of complement. With regard to the validity of the method, practically all are now agreed, and I would only wish to add that the discovery is, in my opinion, one of the most important in the history of medical science, and one of which the far-reaching influence cannot be yet fully appreciated.

I would like, however, in the first place to refer especially to the complexity of the reaction and the various influences which modify it. It is to be noted that the test is a quantitative one; it is not a question as to whether or not complement is fixed or not, but one as to how much is fixed. We are dealing in the reaction with three ingredients, and each of these is a mixture of complex organic substances. The result, that is the amount of complement fixed, is found to depend upon variations in each of the three ingredients, and we may accordingly consider some of these. It was shown by Sachs and Rondoni, and confirmed by Browning and McKenzie, that a turbid emulsion of the extract, which acts as antigen, leads, with the syphilitic serum, to the fixation of a larger amount of complement than a comparatively clear one; here manifestly a purely physical condition plays an important part. These latter observers also found that guinea-pig's complement is deviated in larger amount when used fresh than after it has been kept some time, though the haemolytic dose may have remained unaltered in the interval. They also showed that individual variations in the faculty of being fixed were met with amongst different samples of guinea-pig's complement—that is, taking the haemolytic dose as the estimate of the amount of complement, they showed that when several complements were tested different amounts were deviated by the same mixtures and under the same conditions of experiment. Then, lastly, with regard to the serum to be tested, a syphilitic serum in the fresh state usually deviates (along with the extract) more complement than when it is heated to 55° C. But the same appears to apply to non-syphilitic serums, and these latter may when unheated come to react positively according to some standards. Hence it is better to use the serum to be tested after heating at 55° C., as the difference between syphilitic and non-syphilitic is in this way more markedly brought out.

From these facts and others of similar nature there follow two conclusions, the one of theoretical, the other of practical importance. The first is that in the Wassermann reaction we have to do with a phenomenon of very complex nature, and one whose result may be modified by physical agencies in a way which is not yet understood, and the other is that thorough familiarity with the reaction and scrupulous care in carrying it out are essential for obtaining the best results.

I am not going into the question of the different methods of applying the test, as I understand that this will be dealt with by Dr. Dean, but I may say that in my own laboratory the reaction is always tested for by a quantitative method; the haemolytic dose of complement is estimated and increasing multiples of doses are added to tubes in series, so that in any case we see the actual number of doses which are fixed, controls being made with extract alone and with serum alone in each case. The method takes a little longer and requires more serum than the one-tube method, but it has the great advantage of showing exactly the degree of deviation in each case, and thus gives greater confidence to the observer. I consider that in any method where the deviation of a fixed quantity of complement is taken as the indication of a positive or negative result there ought to be at least one other tube containing one half or two-thirds of that quantity. By such means suspicious cases may be detected by incomplete reactions, whereas by the strictly one-tube method this is impossible.

(*c*) We come now to consider the deviation of complement apart from the two first conditions—that is, where we have neither the presence of antigen + antisubstance, nor a syphilitic serum along with one of the various extracts used. We know, for example, that emulsions of extracts used in the Wassermann reaction have what we may call an anticomplement effect, as has also normal serum to a slight extent, and that mixtures of normal serum, especially when unheated, and of extract may have a greater effect than the sum of the effects of the components by themselves. Such an effect is often spoken of as non-specific, and the term is convenient, but we can hardly say definitely whether the syphilitic serum really contains some new substance, or whether there is merely an increase of a substance normally present. Also, with regard to these non specific deviations, we cannot say to what extent inhibition, as contrasted with fixations, plays a part. But it is interesting to note that in these cases also the physical condition of the substances concerned is of importance; for example, there is a marked difference according to the clearness or turbidity of the emulsion.

Another illustration may be quoted from a recently-published paper by Browning, Cruickshank, and McKenzie. Using an extract of ox's liver in cold ethyl acetate, they found that an emulsion of this in salt solution has a very powerful anticomplement effect, which is neutralized to a large extent by lecithin when this is added in solution to the extract and the emulsion is then made; on the other hand, when the emulsions are made separately and then mixed, the anticomplement effect remains practically unaltered.

It has been noted by various observers that when human complement—unheated serum—is kept in a sterile condition, its anticomplement action may gradually increase. Browning and McKenzie have found that after two or three months a quantity of such serum equal to that used in the Wassermann reaction may antagonize from fifteen to twenty doses of guinea pig's complement, or in other words, such a serum without the addition of any extract would give a positive reaction. This is a remarkable result, and it is equally remarkable that when such a serum is heated for an hour at 55° C. this anticomplement effect disappears. These results, which have not yet been published, show that changes taking place spontaneously in a normal serum may result in its acquiring the power of neutralizing complement and that this property is a very labile one. From facts such as these it is seen on how comparatively slight changes in the serum the power of fixing or inhibiting the action of complement may depend.

(*d*) It is not necessary to consider in detail the fixation of complement by comparatively large organic particles,

apparently by surface deposition or adsorption. It may be mentioned, however, that such fixation corresponds in various respects with the cases already discussed—for example, it does not take place, or does so only to a slight degree, at 0° C.; that the saturation phenomena are similar, and that on heating the substances which have fixed complement at 55° C., a temperature sufficient to destroy the complement, the avidity for complement is not restored.

I have thus endeavoured to give a sketch of the conditions in which complement is fixed or disappears in an active form from a solution. We are not yet at a stage at which we may attempt to offer explanations; we are merely concerned with obtaining and arranging facts. We have seen, that gross organic particles fix complement by surface adsorption, that solutions or suspensions of proteins, lipoids, and especially mixtures of these, have a similar property, or at least the property of annulling the activity of complement; and of very great importance, it seems to me, is the fact that changes occurring spontaneously in sterile normal serum may lead to the development of inhibitory or deviating action. We have to note in all these cases the important part played by physical conditions, and, of course, we have nothing to do with special complementophile groups. In view of all the facts, the deviation in the Wassermann reaction cannot, in my opinion, be considered to depend on the presence of an antigen in the strict sense, but is to be regarded as an example of fixation of complement by a mixture of organic compounds. Farther than this we cannot go at present. The question may be asked, Is the fixation of complement by the combination of antigen + antisubstance to be regarded as a phenomenon standing by itself? or does the interaction of the two substances result in some physical change which leads to the absorption of complement? This involves the whole subject of the supposed amboceptor constitution of the immune body and the complementophile group, and cannot be discussed now. But the facts referred to above with regard to the relationship of precipitation and complement deviation, in the case of a precipitating antiserum, appear to me to form a link between this and the other forms of deviation. In any case I do not know of any facts which can be accepted as direct evidence of the direct union of complement and immune body and I consider that the use of the term "amboceptor" is not justified. The constitution and mode of action of immune body are certainly worthy of further study and consideration in view of the more recently established facts with regard to deviation phenomena.

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ON THE STRUCTURE OF COMPLEMENT IN RELATION TO DEVIATION.

The mechanism of complement deviation has already been so clearly explained by Professor Wassermann and Professor Muir in the course of this discussion that I need not again describe the process in any detail. Red blood corpuscles when treated or "sensitized" with the serum of an animal immunized to them acquire the power of attracting complement, a substance found in fresh normal serum. This is a property which the red corpuscles share with other cells similarly treated. Most cells, including bacteria, have the property of attracting complement, when they are combined with the serum of an animal immunized to them. On this fact is based the whole technique of complement deviation as a means of diagnosis.

Now this attraction of the sensitized red cells for complement may be accentuated or diminished according to circumstances which are within our control. It is a familiar fact that at a low temperature the sensitized red cells are usually unable to take up complement out of the the fluid in which they are suspended; they consequently remain unlaked. Similarly, if the complement is offered to the sensitized cells in a fluid which contains a high concentration of sodium chloride—that is, is hypertonic—their capacity of taking up the complement may be considerably reduced. There are other methods known, by which we can inhibit these sensitized cells from obtaining the complement offered to them; but the one to which I wish to direct your attention is that of altering the reaction of the medium in which the haemolytic constituents are mixed.

In a mixture of a definite slight degree of acidity haemolysis does not occur. The red cells are present sensitized, but they cannot avail themselves of the complement which is also present, and they remain unlaked. It was shown by Michaelis and Skwirsky that under such conditions the red cells, although not laked, may still be not unaffected by the complement with which they have been in contact. The corpuscles are suspended in an isotonic solution of acid sodium phosphate of known acidity, and mixed with complement and the appropriate immune serum. After an interval the mixture is centrifugalized, and the supernatant fluid is removed from the unlaked red cells, and both fluid and red cells neutralized. Even after suspension in a neutral fluid the red cells remain unlaked. They are fully sensitized, because the addition of fresh complement causes rapid laking. The failure of haemolysis, then, is evidently due to the fact that the sensitized cells have not taken up the complement when it was offered them.

We should expect, then, to find the complement left in the supernatant fluid, and available in the now neutralized fluid. If, however, we add this neutral fluid to other red cells, sensitized equally, but in the usual way, by the addition of immune serum without complement, no haemolysis occurs. We do not, in fact, find the complement in the supernatant fluid. What, then, has become of it? An explanation, which immediately offers itself, is that the complement has been destroyed by the acidity of the original mixture. This, however, is not the case. For, if one adds the neutralized fluid to the cells from which it was separated by means of the centrifuge while it was acid, haemolysis occurs as readily as if we added fresh untreated complement. The complement has not been destroyed.

We are then in this case. We have a fluid, the neutralized supernatant fluid, which is unable to lake cells sensitized in the ordinary way. This fluid, then, must lack an ingredient essential to haemolysis, namely, the complement or part of it. It can, however, lake the cells from which it was removed. These cells, then, must contain the missing ingredient. But we know that these cells do not contain the complete complement. Hence we may deduce that the cells contain one fraction of the complement, which I shall call C, and the supernatant fluid another fraction, C′. The argument may be summarized in this way:

1. Complement + ordinarily sensitized cells = laking.
   Supernatant fluid + ordinarily sensitized cells = no laking.
   Therefore the supernatant fluid does not contain the complete complement.
2. Treated sensitized cells by themselves = no laking.
   Therefore these cells do not contain the complete complement.
3. Supernatant fluid + treated sensitized cells = laking.
   Therefore this mixture contains the complete complement.

That is—The treated cells contain one fraction of the complement C, and the supernatant fluid another fraction of the complement C′.

A similar division of complement into two parts was effected some years ago by Ferrata by means of dialysis; but his method is very uncertain and gives very irregular results. One portion came down with the globulins which fell out of solution as dialysis progressed, and the other portion remained in solution. Ferrata believed that the globulin part, which corresponds to what we are calling C, is thermostable. But I find that not only is C′ destroyed by half an hour at 55° C., but also C. For, if you heat whole complement, you cannot by adding C′ restore its activity. It is interesting to note that a C derived from human serum by the acid method described acts at least as well with the C′ of guinea pig serum as does guinea-pig C itself. I am not yet certain whether the C′ of human serum acts with the C of the guinea-pig.

Now, in deviation experiments, as ordinarily carried out—that is, with extracts, whether of bacteria or of syphilitic liver, as in the Wassermann reaction—it is not the whole of the complement that is deviated. After completing a strongly positive Wassermann reaction or a deviation with bacterial extract, the corpuscles settle down in the tube unlaked, and the supernatant fluid remains clear and untinted with haemoglobin. Such a supernatant fluid is incapable of laking red cells highly sensitized in the ordinary way, but, if you add it to cells treated in the manner described with acid phosphate, laking occurs quickly. The supernatant fluid therefore

contains C', and only part of the complement has been deviated—namely, C. In deviation experiments, then, what occurs is the removal of C, while C' remains free and intact. I have tried this with various forms of deviation, such as the ordinary bacterial extract, the Wassermann reaction, and the precipitin reaction, and always with the same result: only C is deviated. Even in cases of spontaneous deviation, those non-specific deviations of complement which render rigid controls so necessary a part of a reliable Wassermann technique, it is not a deviation of the whole complement that occurs, but of only a part, and of always the same part—namely, C.

Whether if one used, instead of bacterial extracts according to the modification introduced by Wassermann, the whole bacteria as in the original method of Bordet and Gengou, one would still find only a part of the complement deviated, I cannot yet say. The attraction of red cells sensitized under ordinary conditions is for the whole complement, since they undergo lysis. It is reasonable to expect that in the case of bacterial cells the same will hold good. At least this expectation is reasonable for the bacteria, such as cholera or typhoid, which undergo lysis under the action of complement and immune serum. It will be of considerable interest, theoretical and practical, to determine whether organisms, such as many cocci, which do not undergo lysis, take up the whole complement or remain undissolved, because they are capable of taking up only a part, the portion corresponding to C.

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THE DIAGNOSIS OF SYPHILIS BY THE COMPLEMENTAL DEVIATION METHOD.

I.—*Diagnosis at an Early Stage.*

During the past eighteen months, at the R.N. Hospital, Haslar, I have, for diagnostic purposes, made systematic examinations of the serums of the majority of early venereal cases admitted there, and also of men suffering from other diseases under treatment during this period. In a large hospital situated in a naval port and garrison town the number of venereal cases admitted is naturally large, and I had the advantage of seeing them from both a clinical and laboratory point of view. It was therefore possible to make repeated examinations of any single case, as was frequently done when there was any doubt as to the diagnosis.

For much assistance in this work I have to thank Staff Surgeon Adams, R.N., who was in charge of the cases.

The men are generally sent to the hospital as soon as possible for treatment, so that valuable opportunities were given for determining how early after infection the presence of the immune body could be detected; this I have endeavoured to do. Examinations of serums were made weekly, the blood being taken at a fixed time, the tubes numbered and tested under exactly similar conditions throughout. Three methods have almost always been employed with all the serums: (1) Fleming's modification of Hecht's method; (2) The original method with heated serums, but using an alcoholic extract for the antigen; (3) similar methods, but with unheated "test" serums.

A total of 1,166 bloods have been examined, giving the results shown in Table I.

Table I.

	Cases.	Positive.	Negative.	Percentage.
Syphilis (1)...	183	139	44	75.9, positive
Syphilis (2), mostly early	407	384	23	94.1 ,,
Syphilis, late (2) and (3)	51	48	3	94 ,,
Congenital	1	1	0	100 ,,
Latent	39	18	21	46 ,,
Parasyphilis, tabes, and G.P.I.	20	18	2	90.0 ,,
Chancroids	280	0	280	100.0, negative
Gonorrhoea	39	0	39	100.0 ,,
Other diseases	146	2	144	98.0 ,,

The two positive cases returned not due to syphilis were (1) acute scarlet fever; (2) malignant disease of the liver in a Maltese, with intense jaundice and bile-stained serum. The other diseases included almost every condition admitted into the hospital, malaria and tubercle being especially noted. Among the tertiary syphilitic cases are many with old syphilitic histories, but with present symptoms of arterial degenerations and aneurysms.

A great number of the men were admitted with a diagnosis of chancroid. Many of these gave persistent negative reactions, and turned out to be true local sores; others were undoubtedly cases of mixed infections, positive reactions being obtained and clinical signs developing later; some were definitely syphilis from the first.

It is important to have some definite understanding when a case should be entered as primary and when secondary syphilis; the method here employed was to place the case as one of secondary syphilis if any evidence of general infection, however slight, was manifest, particularly enlargement of the epitrochlear glands, so that in this return cases appear as early secondaries which might by others be entered as primary syphilis. A considerable number of men with primary syphilitic and mixed sores gave negative reactions for several weeks, but all ultimately reacted, either before or during the early secondary stage; in some spirochaetes were demonstrated before the positive reaction was given. Men with extragenital sores generally reacted earlier than those who contracted the disease in the ordinary way.

In many cases the date of infection was impossible to ascertain, many opportunities of infection having occurred, but from others in whom definite data were obtained I have compiled Table II, which shows that the reaction commences to appear about the forty-fifth day *after infection*, is generally present between the fiftieth and sixtieth days, and becomes stronger as secondary symptoms develop.

Table II.—*Date of the Appearance of the Reaction in 12 well-authenticated Cases, where more than One Observation was taken, and Secondary Symptoms developed.*

Case.	Disease.	Negative Reaction.	Positive Reaction.	Treatment.
1	Chancre of face	28th day after infection	42nd day	1 injection.
2	Syphilis 1 ...	30th day	45th ,,	None.
3	Chancroid ...	42nd ,,	49th ,,	,,
4	Chancroid ...	28th, 35th, 42nd days	49th ,,	,,
5	Chancroid ...	13th, 27th days	55th ,,	,,
6	Syphilis 1 ...	49th day	56th ,,	,,
7	Chancroid ...	49th ,,	56th ,,	,,
8	Chancroid ...	36th, 42nd, 50th days	57th ,,	,,
9	Chancroid ...	27th day	57th ,,	,,
10	Syphilis 1 ...	36th ,,	60th ,,	,,
11	Chancroid ...	58th ,,	65th ,,	,,
12	Chancroid ...	65th, 72nd, 77th days	84th ,,	3 injections.

The cases of secondary syphilis that gave a negative reaction had almost all had much treatment, and as a rule showed little clinical evidence; in others, when the disease was "latent," negative reactions were most common and generally there was a history of a year's treatment or of a great number of injections. The intermittency of the reaction was frequently seen in cases which had been treated by intramuscular injections. For instance, in a case giving a well-marked positive reaction, after fourteen injections or so, the positive was replaced by a negative one; this continued for some weeks, then the positive reaction again appeared, to be again rendered negative by a third course of seven injections, this disappearance and reappearance making it important to be careful to give no definite opinion from a single examination. Very often men were tested who stated that they had received months of treatment, with twenty to seventy injections, these still giving positive reactions; there is little doubt that in most of these the injections had consisted of the medium without the active principle, the treatment neither giving rise to ptyalism nor cure of the disease.

From the observations here made I conclude that the diagnostic value of the test in early cases is very consider-

able, allowing us after ten weeks following infection, or less, to come to a correct conclusion. In no case of chancroid or gonorrhoea in which syphilitic symptoms afterwards developed did I fail to get a positive reaction, and in no uncomplicated non-syphilitic lesion was a positive result ever obtained. The usefulness of the test for clearing up the diagnosis in obscure and doubtful late syphilitic lesions has been abundantly proved.

II.—*Variation of the Reaction.*

During the course of this eighteen months' study for diagnosis, employing the three methods above stated, some differences have been noted in the results obtained.

1. Fleming's method. All the serums were tested about six hours after the blood was collected; a spirit extract of syphilitic heart was used as antigen. In many haemolysis of the sheep cells was not complete, but was sufficiently definite to contrast with the "test" tube. Out of 1,100 serums tested, 10 per cent. I found failed to haemolyze the sheep's cells at all; these were not recorded for the specific test. As it is stated that normal blood will at times give a positive reaction by this method, a large number of serums from medical officers and others were examined here; in none of these did I obtain a positive reaction for syphilis. Of the cases for diagnosis, excluding the 10 per cent. which failed to haemolyze at all, the reactions were always correct. In 32 cases (3 per cent.) the positive reaction was obtained earlier than when using the inactivated serum in the ordinary way, as proved by repeated further examinations of the serum, and by the clinical course of the cases. This method, therefore, seems to be an easy and most useful procedure, acting as an excellent check on other methods employed, and is particularly valuable when very little serum is obtainable.

2. The second or original method, using alcoholic extract of congenital liver for antigen, inactivated "test" serum, sheep's blood cells, standardized haemolytic serum and fresh guinea pig serum. This method was employed in every case, all control tests being carried out each week, before commencing the diagnostic series.

3. A modification of the above suggested by McDonagh. The serums were examined twenty-four or more hours after the blood was obtained; using two rows of test tubes containing respectively 0.5 c cm. of saline solution and complement in one, and saline solution complement with antigen in the other, to both of which 0.25 m. of *unheated* "test" serum was added, and after one hour's incubation the necessary haemolytic serum mixed with them, again incubated and finally read off.

This latter procedure with me gave better results than those obtained when using the heated serum, agreeing generally with the readings by Fleming's method, but without the 10 per cent. of failures; when used with efficient controls it appeared to be the most reliable of the three methods.

VI.—Ivy McKenzie, M.B.,

INDIVIDUAL PROPERTIES OF COMPLEMENT AND ORGAN EXTRACT.

A method which is commonly adopted in carrying out the Wassermann reaction depends on the action of a mixture of organ extract and serum on an arbitrarily fixed amount of complement; this amount is, as a rule, 0.1 c.cm. of fresh guinea-pig serum when 1 c.cm. of a 5 per cent. suspension of sensitized ox red blood corpuscles is added after the serum, organ extract, and complement have been in contact for an hour and a half at 37° C. This procedure of observing the effect on a fixed amount of complement would not be open to objection were it not that the complement itself, and also the extract, are variable factors in the reaction. If 0.1 c.cm. of fresh guinea-pig's serum represented a constant number of haemolytic doses for the test corpuscles to be used, and if equal quantities of two different samples of complement behaved similarly in the presence of the same syphilitic serum and organ extract, then the employment of a definite amount of complement in the experiment would be the most simple and satisfactory method of carrying out the test. There is ample evidence, however, to show that considerable variations may manifest themselves in fresh guinea pig's serum as regards (1) the amount of the minimum haemolytic dose; and (2) the deviability of the complement by organ extract alone, and by serum and organ extract, as measured in haemolytic doses.

The minimum haemolytic dose of the complement containing serum is measured as follows: A dilution of one part of the serum is made with three parts of normal saline, and of this 0·01, 0·02, 0·03, 0·04, 0·05, 0.06 c.cm are added to a series of tubes, each containing 1 c cm. of a 5 per cent. suspension of ox red blood corpuscles fully sensitized (five times the minimum haemolytic dose of immune body being the amount of maximum sensibilization for guinea-pig's complement) with the homologous immune serum of a rabbit. The tubes are placed at 37° C., and after shaking every quarter of an hour, the result is read at the end of an hour, and the amount of complement in the first tube in which haemolysis is complete is regarded as the "dose." It has been found that if kept in an ice chest the haemolytic dose of complement in guinea-pig's serum may vary very little in three or even in four days; the dose, however, of complement from different samples of serum may exhibit considerable variation; serums of the same age have with the same test corpuscles varied in dosage from 0·0025 c.cm. to 0.015 c.cm. Thus, if the complement of 0·01 c cm. of guinea-pig's serum must be absorbed before a Wassermann reaction is regarded as positive, this amount of serum may represent in one case forty doses of haemolytic complement and in another case barely seven.

Again, the serum complement may show great variation in deviability, and the variation in this property of the complement manifests itself as regards the inhibiting influence both of organ extract alone, and also of organ extract along with syphilitic serum.

Among the factors which determine such variability, the following must be taken into consideration:

1. The turbidity of the emulsion of organ extract with the saline solution.
2. The age of the complement-containing serum.
3. Individual properties independent of age and of the turbidity of the emulsion of organ extract.

1. *The Turbidity of the Emulsion of Organ Extract.*—When the alcoholic extract of a minced organ is added to normal saline, the turbidity of the resulting mixture depends on the way in which the mixture is made, even when the same proportions of extract and saline are used. The usual proportion of extract to saline solution is 1 to 5. If the extract be added rapidly and the mixture shaken up quickly, the resulting mixture or emulsion is comparatively clear; if, however, the extract be floated on the top of the saline solution, and mixture be produced by gradual rotation of the tube, then the resulting emulsion will be comparatively turbid. It has been found that, as a general rule, a turbid emulsion deviates more complement than a clear emulsion, and in the presence of a syphilitic serum proportionately more complement is deviated by a turbid emulsion with serum than by a clear emulsion with the same serum. Table I is taken from an experiment in which this phenomenon was observed.

Table I.

	Amount of Complement.	Result.
Turbid emulsion of organ extract alone 0·6 c.cm.	0.025 c.cm. (5 doses)	No lysis.
	0·03 c.cm. (6 doses)	Trace of lysis.
Clear emulsion of organ extract 0.6 c.cm.	0·01 c cm. (2 doses)	Almost complete lysis.
	0.015 c.cm. (3 doses)	Complete lysis.
Turbid emulsion of organ extract 0·6 c cm. + 0.1 c.cm. syphilitic serum	0.15 c.cm. (30 doses)	Trace.
	0.2 c.cm. (40 doses)	Complete lysis.
Clear emulsion of organ extract 0·6 c cm. + 0.1 c.cm. syphilitic serum	0.1 c.cm. (20 doses)	Almost complete lysis.
	0.15 c.cm. (30 doses)	Complete lysis.

Here it is seen that the turbid emulsion alone absorbs more than twice as much complement as the clear emulsion; and in the presence of syphilitic serum almost twice as much complement is absorbed by the turbid emulsion as by the clear emulsion. It is also to be noted that if the result were read according to the single tube method a negative result would be recorded with the clear extract (0·1 c.cm. complement, almost complete lysis), whereas with the turbid emulsion the result would be positive.

2. *The Age of the Complement-containing Serum.*—In general, the age of the complement-containing serum is a factor affecting the deviability of the complement; after standing for upwards of twenty-four hours in the ice chest, although there is little or no diminution in the amount of the haemolytic dose, the complement becomes less deviable, both by the emulsion of organ extract alone and by the emulsion along with syphilitic serum. Table II gives an example of the difference between a fresh and an old complement in this respect.

TABLE II.

	Complement I (Four Days old).		Complement II (Fresh).	
Syphilitic serum (half hour at 57° C.) 0.05 c.cm. + turbid emulsion of organ extract 0.6 c.cm.	0.096 c.cm (12 doses)	No lysis	0.09 c.cm. (11¼ doses)	No lysis.
	0.144 c.cm (18 doses)	Trace of lysis	0.15 c.cm. (18¾ doses)	"
	0.192 c.cm. (24 doses)	Marked lysis	0.2 c.cm. (25 doses)	"
	0.24 c.cm. (30 doses)	Lysis just complete	0.25 c.cm. (31¼ doses)	Faint trace of lysis.
	—	—	0.3 c.cm (37½ doses)	Marked lysis.
	—	—	0.35 c.cm. (43¾ doses)	Lysis just complete.

From Table II it is seen that, although the haemolytic dose is identical in the two complements (0.008 c.cm.), the fresh complement (II) is deviated to a greater extent, both by the extract alone and also by the extract along with the syphilitic serum. In combination with the syphilitic serum, 0.192 c.cm. of Complement I (24 doses) gives marked lysis, whereas with Complement II 0.3 c.cm. (37½ doses) is required to cause the same amount of lysis, and the same ratio holds with respect to the amounts necessary to produce just complete lysis. Accordingly the deviating power of the syphilitic serum in presence of the same amount of the same organ extract is half as great again when measured with a fresh complement as it is with an old complement, although the haemolytic power of both complements is identical.

It is difficult to find a satisfactory explanation for such individual variations in complements. The possibility of conversion of complement into complementoid on standing naturally suggests itself, but the fact that there is not a corresponding fall in haemolytic value makes such an explanation improbable. It might also be supposed that when a complement was only slightly absorbed by an organ extract or by a mixture of organ extract and syphilitic serum this was due to the presence in the guinea pig's serum of a natural immune body for ox corpuscles which was specially suited to act in conjunction with the guinea-pig's complement. Browning and the writer have, however, shown that this is not so.

The lytic power of three complement-containing serums was tested as follows:

Complement I (three days old), dose = 0.01 c.cm. With extract alone—2 doses = lysis complete.
Complement II (twenty-four hours old), dose = 0.0075 c.cm. With extract alone—2 doses = lysis complete.
Complement III (fresh), dose = 0.0075 c.cm. With extract alone—2 doses = lysis complete.

Taking 1 c.cm. of a 5 per cent. suspension of washed ox corpuscles, 0.1 c.cm. of Complement I produced only a trace of lysis; 0.1 c.cm. of Complement II produced no lysis; 0.1 c.cm. of Complement III produced almost complete lysis (incubation for one and a quarter hours at 37° C., reading taken next day).

Thus Complement III, though possessing much more natural immune body than I or II, was absorbed to as great an extent as I or II. Further, the natural immune body was removed from Complement III by treatment with washed ox blood at 0° C. (0.26 c.cm. of the treated serum caused no lysis of 1 c.cm. of ox blood suspension), yet the complement of the treated serum was not inhibited to a greater extent than that of the untreated.

In the same way, experiments were done to test whether the amount of complement absorbed by organ extract together with syphilitic serum was influenced by the amount of natural immune body for the test corpuscles in the complement-containing serum. These same three serums were tested both in the untreated condition, and also after being in contact with washed ox blood at 0° C. Table III gives the result of this experiment.

This experiment shows that in spite of the fact that Serum III contained a considerable amount of immune body for ox corpuscles, still exactly the same number of doses of complement was absorbed from the treated as from the untreated serum. The estimation of the haemolytic value of the treated as compared with the untreated serums showed a slight falling off in the former, probably due to dilution. Thus the fresh serum (III) is deviated to a greater extent than the older serums, even although it contained the largest amount of natural immune body from the ox corpuscles. Again, the variation in deviability of different complements does not depend on the procedure by which the complement containing serum is obtained. Certain serums were obtained by immediately defibrinating the blood, and then centrifugalizing off the serum; in other instances the blood was allowed to clot, and the serum allowed eighteen to twenty-four hours to separate; serums obtained in both ways were used fresh, and kept on ice, and compared under these varying conditions, but no definite and constant difference could be attributed to the variation in the procedure.

3. *Properties Independent of Age and Turbidity.*—Specimens of complement-containing serum have occasionally been encountered which were so sensitive to the organ extract emulsion as to render their use in the Wassermann test impossible. In three such instances the extract alone absorbed the complement in 0.06, 0.08, and 0.1 c.cm of the serum. All the serums which were tested in these experiments, including negative controls, gave positive results. In such cases the results must be discarded, and the experiments repeated with complement which is less sensitive. In one of these three specimens this peculiar sensitiveness was absent when forty-eight hours old, although present when twenty-four hours old. Whether this extraordinary sensitiveness is an extreme example of the property of deviability already described in fresh complement-containing serum has not been determined.

Properties of the Emulsion.

The properties which come under consideration are:

1. The turbidity of the emulsion of organ extract.
2. The lytic effect of the extract on the test ox corpuscles.

1. *Turbidity of the Organ Extract Emulsion.*—Reference has already been made to the fact that the turbidity of the emulsion depends on the manner in which the extract and saline solution are mixed. It has also been seen that more complement is deviated by a turbid emulsion with syphilitic serum than by a clear emulsion. As normal serums do not, with a normal complement, produce a deviation of complement when a turbid emulsion is used, it is advisable in every instance to employ a turbid emulsion. Syphilitic

TABLE III.

	No. of Doses of Complement.	Complement I (Three Days old).		Complement II (Twenty-four Hours old).		Complement III (Fresh).	
		Untreated.	Treated.	Untreated.	Treated.	Untreated.	Treated.
Syphilitic serum (half-hour at 57° C.) 0.05 c.cm. + turbid emulsion of organ extract 0.6 c.cm.	7	No lysis	No lysis	No lysis	No lysis	No lysis	No lysis
	10	Faint trace of lysis	"	Trace of lysis	Distinct trace of lysis	"	"
	15	Very marked lysis	Trace of lysis	Lysis just complete	Lysis just complete	Very faint trace of lysis	"
	20	Complete lysis	Complete lysis	Complete lysis	Complete lysis	Trace of lysis	Trace of lysis
	30	"	"	"	"	Complete lysis	Complete lysis

serums which react only weakly with a turbid emulsion do in some cases react negatively with a clear emulsion.

2. *The Lytic Effect.*—The extract by itself should not have a lytic effect on the test corpuscles, otherwise it is impossible to estimate the influence of the extract on the complement. In performing the test an estimation should be made of the amount of complement absorbed by the serum alone, and also by the extract alone. A true deviation results only where the amount absorbed by the serum along with the extract exceeds the sum of the amounts absorbed by serum and extract alone. Now, if the extract has a lytic effect on the corpuscles, its effect on the complement cannot be estimated, and thus a control which is indispensable to a thorough test is left out.

Again, under some circumstances, and especially when the single tube method is employed, a lytic extract may with a normal serum give what is apparently a positive reaction. The possible fallacy from using a lytic extract should be emphasized in view of the fact that its use has recently been recommended, and in view of the fact that some authorities still persist in advocating the advantages of extract of syphilitic liver in the test. A syphilitic liver is, as a rule, either undergoing autolysis or in a state of fatty degeneration when obtained. An alcoholic extract of such livers is often lytic for ox corpuscles in the amounts used for the Wassermann test: and, if not lytic, it contains at least substances which have a lytic effect on ox corpuscles in greater amount than an extract of normal liver. The apparent advantage of using an extract of syphilitic liver is undoubtedly to some extent due to the abnormal amount of fatty substances which it contains. A syphilitic liver containing spirochaetes and without autolytic change or fatty degeneration was extracted with alcohol and the extract used in the Wassermann test. Titration against an alcoholic extract of guinea-pig's liver showed that it did not, with syphilitic serum, deviate more complement than the latter. Now, it has been found that the lytic property of an alcoholic extract of tissue can be inhibited by the addition of blood serum; and it has been suggested that when a lytic extract is employed in the Wassermann test its lytic effect is inhibited by the serum whose syphilitic property is being tested. This would, of course, depend on two things—first, on the strength of the lytic effect of the extract, and, secondly, on the inhibiting power of the serum. Extracts are known to vary considerably in their lytic effect on blood corpuscles, and Cruickshank has found that serums vary in their inhibitory effect on the same extract. If the serum employed has not a complete inhibitory effect on the lytic property of the extract, then part of the guinea-pig's complement containing serum is used in the inhibitory process, and the complement is thus destroyed. In this way, with an extract of a certain lytic strength, a negative serum may appear to give a positive Wassermann reaction.

In view of these variations in the complement and organ extract, attention is drawn to the following precautions:

1. It is advisable to estimate the deviation in terms of the number of haemolytic doses absorbed by serum and organ extract, in addition to the number absorbed by serum and organ extract alone.

2. The complement-containing serum should be allowed to stand twelve to twenty-four hours before use, and should not be more than three days old.

3. The results obtained from the employment of a complement which is specially sensitive to the organ extract emulsion should be discarded.

4. The organ extract emulsion should be turbid, and should not be lytic for the test corpuscles.

5. Negative and positive serums should be used as controls in every experiment.

VII.—H. R. Dean,
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COMPARISON OF THE ORIGINAL WASSERMANN METHOD WITH SOME OF ITS MODIFICATIONS.

Relative Value of Different Methods.

One of the most interesting as well as the most difficult questions in connexion with the Wassermann reaction is that which deals with the relative value of the various methods of preparing the extract. So long as we remain ignorant of the actual nature of the antigen it seems hardly possible to deal with the question from a quantitative standpoint.

Supposing that we compare two extracts—the one made from the liver of a congenital syphilitic, the other from a normal guinea-pig's heart, we are not so much comparing the methods of preparation as the relative richness in antigen of two chance specimens. One guinea-pig's heart will differ considerably from another, and no two specimens of liver will be found to be equally rich in antigen. It seems to me impossible at the present time to make a quantitative comparison between extracts of normal and syphilitic organs. On the other hand, it is possible to draw some sort of conclusion by testing a number of serums against two extracts and noting the results.

I have records of 195 cases in which I have compared an alcoholic extract of normal guinea pig's heart and a saline extract of syphilitic liver. Of these 195 cases a positive result was obtained with the liver extract in 31 cases and with the extract made from normal guinea-pig's heart in 22 cases. In 1 case only was a positive result obtained with the alcoholic, but not with the watery extract. The extracts used in these experiments had been carefully tested and found to be good; that is to say, they had been found to give a positive reaction in very small doses when titrated with test serums from undoubted cases of secondary syphilis.

The majority of the 195 cases which I have quoted formed part of a series of cases of children who were examined with a view to establishing a diagnosis of congenital syphilis, and the large majority of the cases which gave a positive result showed no other evidence of syphilis. On the other hand, I have never been able to demonstrate any difference between extracts made from normal and syphilitic organs in testing serums from cases of obvious secondary and tertiary syphilis. The class of case in which I have found a difference in the result between the extracts made from normal and syphilitic organs has unfortunately been that in which the serum diagnosis could not be confirmed in a satisfactory manner by clinical findings. Although I am inclined to the opinion that the extract made from syphilitic material is a more delicate reagent, it is not possible to exclude the view that it is actually too delicate. On the whole, I am inclined to think that in cases of congenital syphilis, and in those cases in which many years have elapsed since the supposed infection, the watery extract of syphilitic liver is greatly to be preferred. The question is very important from a practical standpoint, because it is only in latent and obscure cases that there is any real necessity for the serum reaction as an aid to diagnosis.

Another very important point with regard to the extract is its titration and standardization. It is absolutely essential to titrate a new extract in falling doses against several authenticated positive and negative serums. Extracts vary very considerably in strength and properties, and it is not safe to use a fixed dose of a fixed dilution without ascertaining if it is appropriate to the particular extract in use. It is necessary to determine the dose in which an extract without addition of serum will absorb complement, the dose in which complement is absorbed in the presence of normal serum, and the dose which, in the presence of positive serum, will bind the complement. A good extract is one which shows a large difference in the dose necessary for the fixation of complement in the presence of syphilitic and normal serum. An extract dose should be selected which can be relied on to give a positive reaction with a syphilitic serum, and which at the same time is less than half the amount which binds complement in the presence of normal serum.

Extracts should be tested before coming into use, and at fairly frequent intervals, to guard against deterioration in the qualities of the extract, which deterioration is in the case of the watery extracts often very unpleasantly sudden. Adequate standardization of the extract can, I think, be only carried out by the use of a haemolytic system which can itself be standardized, that is to say, there must be added to each tube a known definite amount of haemolytic serum and a known amount of complement. A titration which relied on the normal amboceptor and normal complement present in fresh human serum would afford little evidence which would be of service in performing experiments with other serums.

One of the great objections to all modifications which make use of the normal complement is that the worker can form no opinion of the power of the particular dose of extract to absorb complement in the presence of normal serum. In several of the modifications commonly used reliance is placed on the normal amboceptor for sheep's corpuscles which is present in human blood. I examined 50 serums to ascertain their content of normal haemolytic amboceptor for sheep cells.

The tubes were made up to a bulk of 2.5 c.cm., and contained 0.5 c.cm. of a 1 in 20 suspension of sheep's corpuscles, and 0.5 c.cm. of a 1 in 10 dilution of fresh guinea-pig serum. The tubes were incubated for two hours at 37° C. The human serums were inactivated and used in various doses. Of the 50 serums haemolytic amboceptor was absent in 2 cases; in 7 cases haemolysis was incomplete with a dose of 0.1 c.cm.—that is to say, the dose usually employed in the performance of the serum reaction for syphilis. In 4 cases complete haemolysis was produced by 0.1 c.cm. serum; in 9 cases complete haemolysis was produced by 0.05 c.cm. serum; in 9 cases complete haemolysis was produced by 0.025 c.cm. serum; in 17 cases complete haemolysis was produced by 0.0125 c.cm. serum; in 1 case complete haemolysis was produced by 0.005 c.cm. serum.

Thus 0.1 c.cm. serum was found to contain in one case twenty minimal haemolytic doses, in 17 cases eight doses, in 9 cases four doses, in 9 cases two doses, in 4 cases one dose, in 7 cases less than one dose, and in 2 cases no haemolysis occurred.

The amount of normal haemolytic amboceptor is a variable factor, even in the original method; but in the original method the only question which arises relates to possible presence of excess of amboceptor. In the case which I mentioned in which 0.1 c.cm. of serum contained twenty minimal haemolytic doses, a marked positive result was obtained without any particular precautions being observed.

To further test the effect of excess of haemolysin on the reaction, the following procedure was employed:

Several serums, known to give a positive reaction, were absorbed with sheep's corpuscles in the cold. The normal amboceptor for sheep's corpuscles was in this way removed, and its removal was proved by experiment.

The treated serums (from which the haemolytic amboceptor had been removed) were then titrated with falling doses of extract, and a similar series of tubes were put up containing similar amounts of extract and of the untreated serums. It was found that the intensity of the reaction had been but little influenced by the removal of the normal amboceptor—that is to say, the untreated serum gave almost as marked a reaction as the serum from which normal amboceptor had been removed. A sufficient dose of a haemolytic serum (rabbit v. sheep) was, of course, added to each series of tubes.

The result indicates that a positive reaction is in no great danger of being masked by excess of the normal amboceptor.

In Bauer's and Hecht's method reliance is placed on the normally present amboceptor. The danger lies, I think, not in the few cases in which the amboceptor is completely absent, but in those cases where just sufficient is present in the control tube, which contains serum alone, to produce complete haemolysis. In those cases the presence of extract will just upset the balance, and by the absorption of a certain amount of complement a positive result will be simulated. The presence of a known normal and a known syphilitic serum with extract does not afford adequate controls, for the control negative serum may have an unusually powerful haemolytic system.

The normal complement is not so variable; nevertheless, considerable variations do occur. In an examination of 90 serums I found haemolytic complement apparently absent in 2 cases, and in 3 cases the amount present was very small. I examined 87 serums by Wassermann's method, and by the method of M. Stern. Of these, 14 were positive by the original method, and 23 by Stern's method. The 87 serums were also tested for presence and amount of haemolytic complement. Of the 9 cases which were positive by Stern's method and negative by Wassermann's method, 4 could be shown to be unusually deficient in complement.

Another factor in producing a relatively high percentage of positive results is probably the use of unheated serum. Sachs and Boas have shown that the serum of an undoubted syphilitic will give a positive reaction in greater dilution before it is heated. Boas has further shown that during progress of mercurial treatment a positive result can be demonstrated for a longer period by the use of unheated serum. Nevertheless, evidence has accumulated that fresh serum of non-syphilitics is apt to give a positive reaction.

It seems to me that the original method is safer for the reason that it permits of the standardization of the reagents and the putting up of adequate controls. The reaction is a quantitative one, and we consider a serum to give a positive result which gives in the presence of extract a very much more marked fixation of complement than a normal serum. We may arrive at our result either as Dr. McKenzie has suggested by varying the dose of complement or by the previous titration of the extract with a view to the determination of the dose which fixes complement with syphilitic, but not with normal serum. The variations in the complement content of the guinea-pig serum are, I think, quite adequately met by the routine titration of the haemolytic system before the commencement of the actual test, and the use of a dose of haemolysin which, acting in conjunction with a particular complement-containing serum, contains three minimal lytic doses. The variations in the complement are, I think, in practice adequately compensated by varying the dose of the haemolytic amboceptor.

Reliable results can only be obtained by employing a method which allows of a standardization of the reagents employed, and in which controls can be used which disclose all possible sources of error; and although various modifications have been employed with considerable success, the evidence at our disposal is enormously in favour of the original method.

VIII.—L. W. Harrison, Captain, R.A.M.C.

THE GUIDANCE AFFORDED BY COMPLEMENT FIXATION METHODS.

Syphilis is, unfortunately, a very important disease in the army, and the value of the Wassermann test, from the points of view of diagnosis and of regulating treatment, has been recognized by the Army Medical authorities for some time. It has been my privilege to conduct an investigation at the Military Hospital, Rochester Row, into the value of the reaction from these standpoints, and, though the investigation is as yet in its infancy, some points have arisen which may be of interest to you.

As you are probably aware, when a soldier is found to be suffering from syphilis all the particulars relating to his complaint and its treatment are entered on a special case-sheet, which is attached to his other documents and accompanies him wherever he goes. In this way he is kept continually under supervision while he is serving with the colours, and his treatment pursues, as far as possible, a perfectly regular course.

The advantage, from the point of view of the Wassermann test, is that at the same time as a syphilitic soldier's blood is tested for this reaction a perfect record of his clinical progress and his treatment is available, and it is possible to correlate all the particulars with the result of the test.

As it was necessary to ascertain if the two years' treatment, which is customary in the army, was sufficient as judged by the Wassermann reaction, I had to search for the most delicate and yet reliable method of conducting the test. As a result of a number of experiments, I found that by heating the serum at 55° C. for ten minutes only (which is sufficient to destroy its natural complement), as compared with the usual half-hour, a very considerable gain in the percentage of positive reactions in these well-treated cases was obtained, though the difference might not be so apparent in the untreated and early cases. At the same time, the uncertain element introduced by omitting to destroy the natural complement was eliminated, and, while maintaining the reliability of the original technique, the test approached such modifications as Hecht's and Stern's in delicacy.

I have found it an advantage in estimating the effect of treatment to test the serum in a roughly quantitative manner by putting it up with two different amounts of complement (on the lines suggested by McKenzie), one corresponding to 0.1 c.cm. fresh guinea-pig serum, an

which I standardize my reagents, and the other corresponding to 0.2 c.cm.

I have obtained the following results, which illustrate the effect of treatment on the reaction:

	Positive 0.2 % Complement.	Positive 0.1 % Complement.	Total Positive.	Total Negative.	Percentage Positive.
Untreated syphilitics, including primary cases from the fifteenth day ...	66	19	85	6	93.5
Syphilitic cases:					
After 1 course of treatment	17	29	46	9	83.6
After 2 courses ,,	24	14	38	11	77.5
After 3 ,, ,,	8	19	27	15	64.5
After 4 ,, ,,	3	14	17	13	56.5
After 5 ,, ,,	4	13	17	17	50.0
After 6 ,, ,,	3	6	9	17	34.6
After 7 ,, ,,	5	11	16	13	55.0
After 8 or more ,,	0	3	3	11	21.5

You will notice that as treatment progressed there was a marked falling off in the percentage of positive reactions with the double amount of complement (0.2 c.cm.) as well as in the totals which gave the reaction at all.

The table shows an increase in the percentage of positive reactions given by serums of cases which had received seven courses as compared with those which had received six, and I think that this apparent anomaly is to be explained by the fact that the cases under this heading included a number of men who had passed to the Reserve but had voluntarily persevered with treatment on account of persisting symptoms.

Taking a positive reaction as a certain indication to persevere with the treatment, it appears clear that two years is not a sufficiently long period to lay down as a routine measure for the treatment of this disease.

Regarding the modifications which have been introduced on the claims of greater simplicity and of delicacy, such as Hecht's and Stern's, I have practical experience only of Stern's, though I have seen a considerable number of tests conducted by Colonel Birt, using Fleming's modification of Hecht's technique.

I think that, in conjunction with a technique on the original lines, the employment of one of these modifications is a considerable advantage on account of its superior delicacy when estimating the effect of treatment, but for diagnostic purposes all of them suffer from an inevitable objection of which I have practical experience. If a serum be deficient but not entirely devoid of complement, the extract may cause absorption of the modicum of complement in it, even though it be a normal serum, and yet this small amount of complement, unhampered by the extract, may be sufficient to cause perfect haemolysis in the control tube.

I do not believe this test can be carried out by the practitioner in the course of his other duties, and being in any case a laboratory procedure, I do not think that the modifications which have been introduced give a sufficient gain in simplicity to justify their substitution for a technique based on the original lines of keeping the reagents for the test as far as possible constant, and one therefore under more perfect control.

IX.—Carl H. Browning, M.D.,
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LECITHIN AND CHOLESTERIN AS REAGENTS FOR THE DETECTION OF SYPHILITIC SERUMS.

It is now generally agreed that for the detection of syphilitic serums by the complement-deviation method the most suitable form of antigen is an alcoholic tissue extract. The fact that the active substances were soluble in alcohol led to the supposition that they were of lipoid nature. Accordingly a number of such lipoid bodies have been tested in the Wassermann reaction, and also mixtures of these compounds, such as that of Sachs and Rondoni,[1] have been employed; but, so far, the crude extract has proved superior to any of these combinations. As the question of the properties of alcoholic extracts in regard to the syphilis reaction has already been dealt with (McKenzie) I shall consider the action of the two tissue constituents—lecithin and cholesterin—which we have found to act as very delicate reagents for the demonstration of changes in serum due to syphilitic infection (Browning, Cruickshank, and McKenzie[2]). Lecithin by itself has only a moderate capacity for absorbing complement in the presence of syphilitic serum, as many workers have found.

We have used lecithin prepared from the dried residue of a crude alcoholic extract of fresh ox liver.

The residue is extracted with ethyl acetate at 60° C. and the solution filtered. The portion which falls out in the cold is dissolved in ether and precipitated with acetone (the ordinary commercial "pure" reagents serve for this purpose); the process of dissolving in ether and precipitating with acetone is repeated twice again, and finally the precipitate is treated with absolute alcohol in a mortar till the soluble portion has been extracted. In this way a solution of "pure" lecithin is obtained, of which the lytic dose for ox blood corpuscles is three to six hundred times the amount which causes lysis in the presence of cobra venom. For the Wassermann test 1 volume of 0·75 per cent. lecithin in alcohol is diluted with 7 volumes of salt solution so as to make the emulsion as turbid as possible. A series of tubes containing 6 c.cm. of this emulsion mixed with 0.05 c.cm. of the serum, previously heated at 57° C. for thirty minutes, are then used to estimate the power of absorbing the complement of guinea-pig's serum. After the mixture of emulsion, patient's serum, and complement has stood for one and a half hours at 37° C., the test blood suspension—1 c.cm. of 5 per cent. washed ox blood sensitized with five doses of immune body from the rabbit—is added to each tube. After one and a quarter hours' further incubation the tubes are set at room temperature and the result read next day.

We have found that in the presence of powerful syphilitic serums a very considerable amount of complement may be absorbed by the lecithin; on the other hand, with less powerful serums, no more complement is absorbed than in the presence of the serums of normal individuals. When *cholesterin* is added to such an alcoholic solution of lecithin a considerable amount is dissolved.

To the 0.75 per cent. alcoholic lecithin solution cholesterin is added in excess, and the mixture is shaken repeatedly. As saturation occurs only slowly at room temperature, the mixture should be allowed to stand for a week before the clear fluid is used. On dilution with salt solution, as in the case of the lecithin, a uniform emulsion results.

In the presence of syphilitic serum the lecithin-cholesterin emulsion leads to the absorption of more complement than is absorbed by the equivalent amount of lecithin emulsion in the absence of cholesterin. With negatively reacting serums the emulsions of lecithin and of lecithin-cholesterin practically always absorb the same amount of complement. Thus, with 70 negative serums, the lecithin-cholesterin emulsion only once absorbed as much as one dose more than the lecithin emulsion. Further, the inhibitory effects of the emulsions of lecithin and of lecithin-cholesterin by themselves on complement are almost always equal. In 42 experiments the amount of complement absorbed by lecithin-cholesterin emulsion alone only twice amounted to as much as one dose more than the amount absorbed by the lecithin emulsion.

In this respect the lecithin and the lecithin-cholesterin behave much more uniformly with different specimens of complement than crude extract does. The following table

No. of Experiment.	No. of Doses of Complement Absorbed by Emulsion of—		
	Lecithin.	Lecithin-cholesterin.	Crude Extract (Ox Liver).
I	0.3	1	3.5+
II	1	1	2
III	3	3	5
IV	2	2	2
V	2	1	4
VI	1.5	2	6+
VII	1	1	1
VIII	2.5	2.5	5
IX	1.5	2	4
X	1	1	2.5

shows the number of doses of complement absorbed by emulsions of lecithin, lecithin-cholesterin, and crude extract of fresh ox liver respectively when tested simultaneously in a series of experiments.

The practical value of lecithin and cholesterin as reagents for the diagnosis of syphilitic serums has been established by Dr. Gilmour, who has examined in this way upwards of 150 serums, fully half of which were from syphilitic or parasyphilitic cases; at the same time, by way of control, the behaviour of the serums with crude alcoholic extract of ox liver was tested. Five or six serums were examined with the same specimen of complement at one time, and the testing of each serum necessitated the use of upwards of twenty tubes. The method adopted was to estimate accurately the amount of complement absorbed by the patient's serum along with emulsions of lecithin and of lecithin-cholesterin respectively. Where the series containing serum and lecithin-cholesterin shows more complement absorbed than the series with serum and lecithin alone, then the reaction is positive. Even a very small difference in the two series (two to three doses of complement more absorbed with lecithin-cholesterin than with lecithin) is in favour of the serum being syphilitic, and a more marked difference (five doses or more) is practically conclusive under the conditions laid down.

In every instance, of course, the complement-inhibiting power of the serums and the emulsions by themselves were carefully measured. It is also of great importance always to test a known negative serum The following are the details of a characteristic experiment:

Serum.	No. of Doses of Complement Absorbed with—		
	Lecithin.	Leithin-cholesterin.	Crude Extract.
Syphilitic	4	18	20
Normal	3	3	4

Controls: Lecithin alone absorbed 1½ doses; lecithin-cholesterin alone absorbed 1½ doses; crude extract alone absorbed 3 doses; syphilitic serum alone absorbed 1 dose; normal serum alone absorbed ½ dose.

We have found that it is only by the use of these long and precise quantitative methods that the numerous possibilities of error in such tests can be minimized.

The absolute amount of complement fixed by lecithin-cholesterin emulsion along with syphilitic serum is in most cases somewhat inferior to that absorbed with crude extract, but at the same time the crude extract by itself usually absorbs more complement than lecithin-cholesterin. We have found, however, that certain serums repeatedly absorb more complement with lecithin-cholesterin than with crude extract, so that the result is independent of the complement used. This fact serves to emphasize how complicated the nature of the processes involved in the Wassermann reaction must be.

In the ordinary method of carrying out the test with an alcoholic organ extract the criterion of a positive reaction is, of course, the absolute amount of complement absorbed (measured in haemolytic doses) as compared with the amounts absorbed in the controls. Now it has been found that frequently the complement is abnormally susceptible to the inhibitory action of the extract or the heated serum. Along with such deviable complements a normal serum may cause the absorption of much more complement than the sum of the amounts absorbed by serum and emulsion separately, so that the reaction is apparently positive. For this reason McKenzie and I[3] have suggested that where the extract alone absorbs more than four doses of complement the results should be rejected. In a series of forty estimations made by Dr. Gilmour and myself the results were on ten occasions vitiated by the use of complements which were abnormally deviable so far as the crude extract was concerned. On the other hand, with the lecithin cholesterin method, where the difference of the amounts of complement absorbed in the two series is taken into account, we have found that with highly deviable complements two serums absorbed the same amount of complement in the presence of lecithin; but, on the addition of cholesterin, the one absorbed much more complement, thus showing its syphilitic character, whereas the other from a non-syphilitic subject deviated exactly the same amount as without cholesterin. The advantage of the use of lecithin and lecithin-cholesterin is thus apparent. The following is an illustrative experiment:

Serum.	No. of Doses of Complement Absorbed with		
	Lecithin.	Lecithin-cholesterin.	Crude Extract.
Syphilitic	8	2½	2½
Normal	9½	9½	9½

Controls: Lecithin alone absorbed 3 doses; lecithin-cholesterin alone absorbed 2 doses; crude extract alone absorbed 2 doses; syphilitic serum alone absorbed 2 doses; normal serum alone absorbed 3½ doses.

It is notable that the proportional increase in the amount of complement absorbed under the influence of cholesterin is often especially marked in the case of weakly positive serums. Thus, in the following experiment a strong and weak positive serum were tested at the same time:

Serum.	No. of Doses of Complement Absorbed with	
	Lecithin.	Lecithin-cholesterin.
Weak syphilitic	3	15
Powerful syphilitic ...	20	36

Controls: Lecithin alone absorbed 1 dose; lecithin-cholesterin alone absorbed 1 dose; serums alone absorbed 1 dose.

With regard to the mechanism of the specific action of lecithin-cholesterin with syphilitic serums, little can be said as yet. Along with Dr. Cruickshank I have tested the effect of a number of cholesteryl-esters, together with lecithin and syphilitic serum, and we have found that they all possess in some degree the power of increasing the amount of complement absorbed. Thus it would appear that the intact condition of the alcoholic hydroxyl group of cholesterin is not absolutely essential for the reaction.

REFERENCES.

[1] Sachs and Rondoni, *Zeitsch f. Immunitätsforsch.*, 1909, Bd. I, p. 132. [2] Browning, Cruickshank, and McKenzie, *Journ. of Path. and Bact.*, 1910, vol. xiv, p. 484. [3] Browning and McKenzie, *Lancet*, 1909, vol. i, p. 1521.

X.—J. O. WAKELIN BARRATT, M.D., D.Sc.

COMPLEMENT DEVIATION IN RELATION TO CARCINOMA.

IN relation to carcinoma the production of antibodies has been studied by many observers by means of selective absorption and of complement deviation, but progress in this direction has been limited by the lack of specificity which the antibodies obtained exhibited. Although the second of these methods is not as yet available for purposes of diagnosis in carcinoma and it is doubtful if it will be so in the future, nevertheless, it may at this juncture be of interest in connexion with the Wassermann reaction to allude briefly to the occurrence, in the serum of the subjects of carcinoma, of substances which, when employed in conjunction with tumour extract, produce complement deviation.

In connexion with human carcinoma the method of complement deviation has been employed by Ranzi with negative result and, more recently, by Lüdke with positive result.

In relation to mouse carcinoma and also to human carcinoma I have been able to make some observations, which may here be briefly described, full details being reserved for a paper shortly to be published. In these experiments an attempt was made with the aid of the inactivated serum of the subject of carcinoma, in conjunction with an extract of the corresponding tumour, to produce complement deviation. A series of observations made upon mouse carcinoma presents the advantage of being homogeneous in character, representing the result in different animals of the same type of pathological process, the same strain of tumour being employed throughout the series. On the other hand a similar series of observations

on human subjects affected with carcinoma necessarily represents a heterogeneous collection of individual data.

In mouse carcinoma I have been able to obtain complement deviation. A certain number of tumour mice do not, however, respond positively to a complement deviation test. Thus in a batch of nine mice recently inoculated with the same tumour, and examined at various stages of tumour growth, in three cases was complement deviation obtained. Nor are any indications so far available as to the conditions determining such deviation. Unfortunately the amount of serum obtainable from individual mice is too small to allow of an extended investigation of its properties to be made, the greater part of the serum being in fact required for testing for complement deviation. In these experiments it may be added that the same mouse tumour extract has been employed throughout; it has not been found practicable, nor does it appear desirable, as in the experiments next to be described, to prepare for each serum an extract of the corresponding tumour.

In the human subject I have not been able to obtain complement deviation in any of the cases of carcinoma examined. In all cases extract of the patient's tumour, removed by operation, was employed. In some experiments an extract of a tumour of the same type from another case was also used, but again with a negative result.

The specific cellular elements in cancer appear to be either cells proper to the individual affected or cells derived, at any rate in part, from another individual of the same species. In such cases any antisubstances produced in the blood plasma of the host would be of the nature of autocytotoxines or isocytotoxines, and it is in precisely these cases that evidence of the production of antisubstances is wanting or obtainable only as an exceptional event. The circumstance, however, that occasionally such antisubstances make their appearance (for example, autolysin in paroxysmal haemoglobinuria and in experimental blood destruction) lends support to the view, originally rejected, but now receiving some degree of consideration, that the production of autocytotoxines and allied antibodies may be in reality of common occurrence, though not directly demonstrable, under ordinary circumstances, yet incapable of indirect proof. The occurrence in certain cases of complement deviation in carcinoma is in itself of considerable interest, and appears to indicate that the production of autotoxines is in such cases in some way associated with the cancerous process. Beyond this point it is not at present possible to go.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF PEENASH.

PRIVATE G. C., South Lancashire Regiment, was admitted into the Station Hospital, Jubbulpore, C.P., in October, 1906. He complained of severe pains in the nasal cavity, chiefly referred to the posterior nares, a sense of discomfort, and at times severe pain in the frontal region. There was a muco-purulent discharge from the anterior nares, and the temperature was 102.4°. He had been on outpost duty ten days before, during the cold weather manœuvres between Jubbulpore and Saugor, and contracted a "cold" in the tent he was accustomed to sleep in.



He gave a distinct history of the actual morning of the attack. The progress of the case was unsatisfactory in the early stages; the pains increased, the temperature was of a remittent type, varying from 101.2° to 103°; the discharge extended to the posterior nares, and that from the anterior nares became sanious. The larynx was normal throughout. On the morning of the 19th a bulging was observed in the soft palate, which gradually increased, very painful from the beginning. A linear incision in the middle line, previously painted with a 10 per cent. solution of cocaine, was followed by a discharge of pus; the pus was offensive and loaded with maggots, which were afterwards confirmed as the larvae of the screw-worm, that of the fly *Lucilia hominivora* (Parel Laboratory, Bombay).

The progress of the case was slow. Inhalations of chloroform failed to destroy the larvae. Injections of equal parts of chloroform and water, and the oil of turpentine, were also used; the latter, in my opinion, is much more satisfactory, and eventually quite successful. The temperature rapidly fell, and there was no extension of inflammation into any of the neighbouring sinuses.

I am indebted to Lieutenant-Colonel Morris, officer commanding Station Hospital at Jubbulpore, for the photograph from which the illustration here given is reproduced.

J. GERALD BERNE,
Captain, R.A.M.C. (ret.).

Naples.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

BRISTOL GENERAL HOSPITAL.

A CASE OF DISLOCATION OF THE LOWER CERVICAL SPINE.

(Reported by DAVID ROBERTSON, M.B., Ch.B., House-Surgeon.)

THE patient in the following case, a man aged 29, was admitted under the care of Mr. E. W. Hey Groves at 4 p.m. on August 2nd. The history given was that at about 6 p.m. on the previous day he was swinging in a swing-boat. He stood up and tried to catch the rope by which the boat was actuated, and, missing his hold, he fell forward out of the boat, his toes catching in the opposite seat. He landed on his right shoulder and hands, and somersaulted on to his back. On striking the ground he was conscious that "something in his neck cracked," and that he was paralysed from the neck downwards.

State on Admission.—There was paralysis of legs, abdominal and thoracic muscles; partial paralysis of the deltoids, abduction at the shoulder-joint being imperfect, and all the other arm movements were lost. Sensibility to touch, heat and cold, and pain was lost below the level of the second rib in front, and the spine of the scapula behind, and in the arms below the centre of the deltoid. Pupils were equal and narrowly contracted; they did not dilate in the shade. With regard to organic reflexes, he had incontinence of faeces and retention of urine. Respiration was jerky and diaphragmatic. On examination of tendon and muscle reflexes, knee-jerks and ankle-jerks were absent; cremasteric and abdominal reflexes also absent; delayed Babinski sign present on both sides. Triceps, supinator, and biceps jerks were present on both sides. There was no girdle sensation. He could rotate his head slightly without pain. Any marked movement caused pain in lower cervical region behind. Palpation of neck failed to reveal any projection. There was marked tenderness at the sixth cervical spine.

Progress.—By the morning of August 3rd he had total paralysis of the arms, and the arm jerks were absent on both sides. With the possibility of there being extradural or subdural haemorrhage, Mr. Groves operated in the afternoon, under chloroform. On removing the laminae of the fifth and sixth cervical vertebrae the dura mater at once bulged backwards. There was pulsation. On incising the dura mater a softened area of cord was apparent; no fracture of spine detected; fifth cervical vertebra thought to be abnormally mobile.

Result.—In the morning of August 4th he seemed to be in much the same condition as the previous day, but complained of pain in neck and tingling in the hands. Later had intense pain all over, requiring morphine. At 12.15 a.m. on August 5th he complained of shortness of breath; fifteen minutes later respirations ceased; the heart continued beating for eight to ten minutes.

At the autopsy the cord was found in a state of pulp from the fourth to sixth cervical segments. On removing the cord the posterior common ligament was seen to be ruptured between the fifth and sixth cervical bodies. The articular ligaments between these two vertebrae were completely torn There was no fracture even of the articular processes. There had evidently been a dislocation between the fifth and sixth cervical vertebrae which had reduced itself; but meantime it had done sufficient damage to produce a myelitis which in its turn extended upwards to the phrenic centres, and caused death.

I am indebted to Mr. Groves for permission to publish the case, and also for the appended remarks.

Remarks by Mr. Hey Groves.

This case is of especial interest as illustrating the manner in which sudden dislocation of one cervical vertebra from another can occur so forcibly as to tear the posterior common ligament and pulp the cord without any fracture even of the articular processes. What is more remarkable still is the complete spontaneous reduction of the dislocation which had occurred without any manipulation. The lesion was so near to the fourth cervical segment that it is wonderful that death did not occur at once, but the fact that the deltoids were only partially paralysed at first and that the phrenic centres escaped destruction. shows that the cord was not functionally destroyed by the accident above the fifth cervical segment, although ascending myelitis soon brought about the fatal result.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

Medical Section.

Tuesday, October 25th, 1910.

J. Mitchell Bruce, M.D., F.R.C.P., President, in the Chair.

Multiple Cartilaginous Exostoses.

Dr. Gossage and Mr. Rock Carling communicated a paper on the occurrence of multiple cartilaginous exostoses. It was, they said, rare, but was probably more frequent than was usually supposed, since the condition often gave rise to no discomfort. The tumours arose from the intermediate cartilage, and were generally first noticed during the first two years of life, but might be present at birth. They were very variable in size and number and usually required no treatment, but might cause discomfort by pressure on adjacent structures, when they should be removed. They had been supposed to be a consequence of rheumatism, syphilis, or rickets, but there was no real evidence in favour of any of these views. There was evidently some inherent abnormality of the intermediate cartilage which caused it to develop in an unusual manner, and this abnormality was very frequently hereditary. Evidence was adduced to show that the abnormality of the intermediate cartilage resulted not only in the production of bony tumours but also in alterations in the size and length of the bones. The inheritance seemed to obey Mendel's law—an affected person transmitting the abnormality to about half his children by a normal mate, there being no evidence of increased or diminished intensity during successive generations. Males were, however, affected about twice as often as females; but normal women in affected families not infrequently transmitted the abnormality to some of their children, while it was probable that normal males never did so. There were a considerable number of sporadic cases in which no history of any similar complaint amongst the relatives could be obtained; but it was possible that some of these did not arise *de novo*, but were really hereditary, the transmission having taken place through one or more normal females. The records of 51 families were dealt with. Of 30 families that were available for comparison, taking only the later generations of the offspring of affected individuals, 121 were abnormal and 130 normal. Professor Bateson thought it impossible to make a positive statement as to the type of heredity manifested by this disease. It, however, approached that of an ordinary Mendelian dominant. More examples of heredity in man were needed showing a sex limited inheritance like colour blindness. He thought the present disease was not such an example. Examples were further especially needed of sex-limited disease in which there was transmission to the females of the family. Dr. Russell Wells was by no means convinced that Mendelism applied to conditions of disease in the human subject. Mr. Rock Carling, in reply, said that in one of the new cases recorded in the paper death occurred from chondro-sarcoma of the rib.

Section of Diseases of Children.

Friday, October 28th, 1910.

E. Cautley, M.D., President, in the Chair.

Exhibition of Cases.

The following were among the exhibits:—Mr. W. Hampson (for Dr. Eric Pritchard): A case of *Achondroplasia* in a girl aged 5 years; the skiagrams showed defective ossification of the epiphyses of the long bones with overgrowth of the cartilages; the patellae were either absent or rudimentary. Dr. T. R Whipham: A heart presenting *Atresia of the pulmonary artery*, patent foramen ovale, and deficient interventricular septum; the right side was hypertrophied, and the left carotid artery arose from the innominate artery. The patient, aged 1 year and 9 months, was shown on May 27th, and presented marked cyanosis and clubbing of the digits. There was a polycythaemia of 12,740,000 red corpuscles per c.mm. and a haemoglobin value of 200 per cent. The only murmur heard was a faint systolic bruit over the pulmonary area. Dr. F. Langmead: A case of *Scleroderma neonatorum with myositis fibrosa* in an infant aged 8 months. The face, trunk, and limbs were all affected, and the temperature showed a daily rise to from 99° to 100° F. Mr. P. L. Mummery: A girl aged 5½ years, with a tumour in the posterior aspect of the left rectus abdominis muscle, which had almost disappeared under potassium iodide. There were no other signs nor history of congenital syphilis. Dr. J D. Rolleston: Charts and photographs of a case of *Gangrene of the leg* following diphtheria in a boy aged 13 years. No antitoxin had been given, and when seen on the seventeenth day the right leg below the knee was cold and anaesthetic. Dilatation of the heart and a temporary discoloration in both legs ensued. On the thirtieth day there was commencing gangrene of the left leg and obliteration of the pulse in the popliteal artery. Amputation through the knee-joint was subsequently performed, and recovery was uneventful. Dr. J. D. Rolleston also showed charts and photographs of *Concurrent scarlet fever and chicken-pox.* The boy, aged 8 years, had been exposed to chicken-pox three weeks previously, and was admitted with a typical scarlet fever throat and rash. On the following day the varicella eruption appeared Subsequently there was a profuse desquamation, which confirmed the diagnosis of scarlet fever. The child made a good recovery. Dr. G. A. Sutherland: A female child, aged 3½ years, the subject of *Recurrent tetany.* The attacks began seven months previously, after prolonged indigestion and abdominal distension. The tetany was typical, facial irritability being marked at times, and laryngeal stridor occasionally present. There were no signs of active rickets. Dr. J. B. Molony and Dr. H. D. Rolleston: A case of *Idiopathic dilatation of the colon*, with skiagrams. The patient, a male, aged 3 years, was weaned at the sixteenth month, and then had bouts of constipation with progressive abdominal distension. The bowels were very obstinate, and, in spite of a ravenous appetite, the child became emaciated. Bilious vomiting occurred from time to time, and peristalsis along the course of the colon was observed, but was unaccompanied by pain. Skiagrams taken after a bismuth meal showed an enormously distended bowel in the region of the ascending colon and a normal transverse portion, while a tube containing a soft wire passed into the anus indicated a distended rectum extending up to the diaphragm. Mr. C. T. Dent: a child, aged 4 months, with *Congenital elephantiasis* of the right arm, a condition allied to cystic hygroma. There was also a superficial naevus, or condition of cavernous angioma. The bones appeared normal in a skiagraph; but were probably longer than in the corresponding limb.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

Friday, October 21st, 1910.

Dr. W. K. Walls, President, in the Chair.

Meeting at Liverpool.

Drs. Leith Murray, Stenhouse Williams, and A. J. Wallace (Liverpool), read a paper on the incidence, characters, and significance of *Bacillus coli in the urine* of gynaecological patients, before and after operation. They found it present in 44.5 per cent. of normal urines examined before operation, and in 93 per cent. after operation. The type in every instance was the *B. coli verus* of MacConkey, but agglutinative differences were readily made out. There appeared to be no relation between post-operative temperatures and the presence of the bacillus. The suggestion was made that, in inflammatory conditions, the bacillus in question may, more often than is thought, be a secondary infection. Mr. R. Favell (Sheffield) reported a case of Caesarean section for *Concealed accidental haemorrhage*. The patient, a primigravida, aged 24, had been seized with acute abdominal pain and collapse on the day before admission. She was seven months pregnant. On admission she was very pale and collapsed; pulse rate 120; respirations 40; marked oedema of legs and face. The uterus was unduly enlarged, tense, and tender. The os was closed, and the cervix not taken up. There was a little vaginal bleeding. There was only a drachm of urine in the bladder, and that was loaded with albumen. Caesarean section was at once performed. The uterine wall was of a mottled purple colour. More than two pounds of blood clot was found in the uterus. The fetus, well developed for seven months, was dead. There was no *post-partum* haemorrhage. In spite of saline injections and other diuretic measures, anuria and uraemic coma ensued. Death occurred on the fourth day. Dr. T. B. Grimsdale (Liverpool) recounted a case of *Full-term ectopic pregnancy*, and showed the decomposing macerated fetus which he had removed from the abdominal cavity. The patient, aged 24, had borne one child, five years previously. There had been amenorrhoea for two years, and an abdominal swelling for a few months less. Fifteen months previously she had had slight abdominal pain for two days; this was not accompanied by vaginal bleeding. Afterwards the abdominal swelling seemed to get smaller. Eight months later pain again occurred for a short time. For a month before admission to hospital she had had constant abdominal pain, and had been getting thinner and experiencing night sweats. Consideration of the history and the physical condition led to a correct diagnosis. The sac was intraligamentous; it contained a quantity of offensive gas as well as the stinking fetus. The placenta was not seen. The sac was sutured to the abdominal wall, and packed with gauze. Four months elapsed before it was closed and the wound healed.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, October 27th, 1910.

Dr. T. R. Bradshaw, President, in the Chair.

Mr. C. G. Lee showed a case of *Enlargement of the pituitary body* in a man aged 32, married for five years but without children. Four years ago he suffered from diabetes insipidus, his recovery being followed by a general weakness and marked increase of adipose tissue; his weight increased from 11 st. 7 lb. to 13 st. 10 lb. About two and a half years ago the vision began to fail. The patient though adipose showed no signs of acromegaly, and the viscera and blood pressure were normal. There was marked atrophy and the fields of vision were nearly obliterated save for small symmetrical areas on the nasal sides to twenty degrees. There was also loss of sexual power. Skiagraphy showed enlargement of the sella turcica. The exhibitor considered that the symptoms indicated a diminution of the function of the gland. Dr. Thomas Bushby read notes of a case in which *Multiple growths* had developed in the subcutaneous tissues associated with thyroid enlargement. The growths were extremely vascular, two of them having a distinct naevoid appearance on their summits. One of the smaller growths had been removed and the microscopic appearance favoured the view that they were metastases of an adrenal carcinoma. Dr. Ernest Glynn pointed out the resemblance of the tumour to fetal thyroid. The so-called hypernephromata were often derived from the kidney itself, not from the suprarenal rests. Mr. G. C. E. Simpson said that metastases from the thyroid gland might appear before signs of malignancy in the gland itself. Dr. Percy Marsh read a paper on *Pyloric stenosis in infancy* in five cases recently under his observation. He was of opinion that in every case, however severe the symptoms, medical methods should first be tried; if the infant did not show improvement, evidenced by diminution of the vomiting, by the condition of the stools, and by increase in the weight, the surgeon should be called in before the infant was so emaciated as to make any form of treatment almost, if not entirely, hopeless. Mr. Keith Monsarrat discussed the indications for operation as illustrated by one of Dr. Marsh's cases on which he had performed a posterior gastro enterostomy. The only satisfactory explanation of the lesion seemed to him hypertrophy resulting from over-action. The results of diet and lavage should be tested for a period of seven to ten days, and if the child was still losing weight an operation should be performed. Dr. Ernest Glynn thought the stenosis arose from pure muscular hypertrophy of the pylorus. Dr. Hubert Armstrong regarded the hypertrophy as a congenital malformation, and could not conceive how spasm in the feeble pylorus of the fetus or infant could possibly produce it. The malformation was one of excessive development, and therefore need not be expected to be associated with other congenital defects, which with few exceptions were those of arrest or deficiency. Mr. R. C. Dun agreed that medical treatment should first be given a trial. Rapid improvement usually resulted where the spasm was the predominant factor. If under medical treatment there was progressive loss of weight for several days, operation should be performed without delay. Cases which remained stationary under medical treatment should be operated on after three or four weeks.

BATH CLINICAL SOCIETY.

Friday, October 7th, 1910.

Mr. F. Lace, President, in the Chair.

Dr. A. J. B. Leckie showed a specimen of an *Ovarian fibroid* undergoing calcification and cystic degeneration removed from a woman aged 56. The tumour weighed 30 lb., the solid portion weighing 21 lb. He also showed a specimen of *Sarcoma of the left kidney* with the deposits by direct extension in the twelfth dorsal and first lumbar vertebrae, right kidney, and liver, weighing 4 lb. 10 oz., which had been removed from a child aged 4½ years after death, whose weight three weeks before she died was 21 lb. After the President had delivered a short introductory address, Dr. F. G. Thomson read a paper on a case of *Acute toxic polyneuritis* in a boy aged 19. The patient had suffered at the age of 5 years from an apparently similar attack of motor paralysis affecting all four limbs and ending in complete recovery after eighteen months. The last attack commenced five days after the patient had been thrown out of a sculling boat. Paralysis commenced in hands and feet, and within ten days of onset caused complete palsy of all four limbs and of both sides of the face. Muscles of neck, intercostals, and lumbar muscles were also extensively paralysed. Muscles of the eyes, tongue, pharynx, larynx, and the diaphragm were not affected. Sensory symptoms were confined to slight numbness of fingers and soles of feet and pain on pressure over neck and right pectoral region, the latter rapidly subsiding with rest. The sphincters were not affected. Deep reflexes were lost. Considerable wasting occurred in the scapular muscles and muscles of forearms and legs. Extensors of fingers and toes especially suffered. Recovery was slow but complete, all wasting eventually disappearing. Power was not completely restored till two years had elapsed from the onset. Since then there had been no weakness, and patient has been, and was now, able to take violent exercise and undergo prolonged fatigue without ill effects. Treatment consisted in rest, good diet, massage, galvanism, and faradism. Strychnine was given from time to time. Though such cases were usually

considered to be due to a toxic polyneuritis, it was difficult to understand how the toxin picked out the motor elements of a mixed nerve without affecting sensory fibres. It appeared more rational to assume that the anterior cornual cells were the primary site of the lesion. The relationship of these cases to Landry's paralysis was doubtful. Farquhar Buzzard had discussed the question fully in the Lumleian Lectures (1907), and came to the conclusion that the two types of paralysis were distinct, but the points of difference insisted on by Buzzard indicated rather a difference of degree than of kind. Dr. T. Wilson Smith, dealing with *Intermittent albuminuria*, described a class of albuminuria due to effects of exposure to cold. In this class the albuminuria sometimes lasted for some days, after, for instance, injudicious cold bathing, even when there was no evidence of nephritis. In one case under his care a nervous elderly lady, who was given to recurring fears of her house being invaded by men, used to sit in her night-dress at the stairhead for hours in the night. This was followed by an albuminuria at first of merely temporary nature without nephritis, but gradually, as the habit was persisted in, evidences of chronic nephritis appeared.

Reviews.

IMMUNITY.

Under the title of *Studies in Immunity*[1] Dr. Bolduan published in 1906 a translation of various articles which Professor Ehrlich and his followers have written on this subject. Now that a second edition of the volume has been called for, Dr. Bolduan takes the opportunity of adding some of Professor Ehrlich's most recent work. The most interesting of the new articles is the one on the "partial functions" of cells which formed the subject of Professor Ehrlich's Nobel lecture in December, 1908. "The time has come," he says, "for a further study of the minute chemistry of cell life; the concept *cell* must be resolved into a large number of distinct *partial functions*." As the activities of a cell are essentially chemical in nature, the search for these properties must be made by chemical methods. A good exemple of the chemically selective properties of cells is provided by Professor Ehrlich's work on trypanosomes. The three types of chemicals known to be poisonous for trypanosomes are (1) arsenical compounds, (2) fuchsin, and (3) trypan-red. He has found that it is possible, by systematic treatment, to produce strains of trypanosomes possessing immunity against these three poisons. The acquired immunity appears to be remarkably stable. Thus a strain of trypanosomes treated with arsenic, "after having been passed some 380 times through mice in the course of two and one-half years, still possesses the same drug immunity as the original strain." Another essential feature of the immunity to drugs is its strict specificity, which is manifested not merely towards a certain definite elementary combination, but against the entire chemical group of which this combination is a part. For example, the strain made immune against fuchsin is also immune against a large number of chemically related dyes, such as malachite green and ethyl green. It remains, however, susceptible to the other two types of poison, trypan-red and arsenical compounds. Similar specific resistances are exhibited by the trypan-red strain or by the arsenical strain. Researches such as these, it will readily be perceived, are not merely of theoretical interest. By deepening our insight into the nature of the action of drugs, they promise to be a valuable aid in the advancement of rational therapeutics.

The clinical aspects of immunity and serum diagnosis are presented in a novel and interesting manner by Dr. Wolff-Eisner.[2] The present volume has been written from the notes of lectures which he delivered to some practitioners in Berlin. The chief features of the book are a refreshing avoidance of newly coined technical terms, a clear statement of the classical experiments in the study of immunity, and a very clear but extremely dogmatic of his own rather heterodox views on many points. He has succeeded in developing a clear conception of his own point of view by totally ignoring any adverse evidence. This makes the book a very dangerous one for the uninitiated, but the clinician who has learnt the true value to be set upon theories of immunity will find the book both interesting and stimulating. Wolff-Eisner's leading conception is that all foreign albumens, all bacilli which depend on endotoxins for their poisonous properties, must first of all undergo some degree of decomposition before they can produce symptoms. He attaches great importance to von Pirquet's experiment, in which an animal was inoculated with vaccinia on successive days, with the result that all the inoculations matured on the same day. This seems to prove that the incubation period is a function of the host, and not due to multiplication of the parasite, as was formerly believed. He then takes up the thesis that the symptoms are due to lysis, and thus, paradoxical as it seems, to the first attempts at immunity. Thus in typhoid infections symptoms do not occur till bacteriolysins and bacteriotoxins produced by the host have liberated endotoxin from the bacilli. The production of immunity would thus seem to be a vain proceeding, but this is not so, for in the immune animal all the bacilli would perish before they had increased to such an extent that their destruction would liberate a dangerous quantity of toxin. This endotoxin doctrine is applied to the elucidation of many clinical phenomena. Thus the cutaneous and ophthalmic reactions in tuberculosis are said to be due to the presence of lysins in the blood of infected patients. Pregnancy toxaemias are due to the presence in the maternal blood, not merely of fetal albumen, but of a specific lysin which can liberate toxin from the albumen. The phenomena of serum disease are explained by assuming that the first injection leads to the formation of lysins which are necessary for the production of symptoms, hence there is an incubation period after the first injection. A second injection of foreign albumen, however, finds the lysins ready prepared, so that the albumen is immediately broken up and the endotoxin liberated, with the result that symptoms appear with alarming rapidity. Wolff-Eisner thinks that the anaphylactin of the French school is nothing more than the immune body or analogous lysin. In the case of hay fever the patient suffers because he is immune to the pollen albumen, can destroy it in his tissues, and liberate its endotoxin. In many cases of over-sensitiveness the author is compelled to assume the coexistence of individual predisposition to the liberated toxin. He draws attention to the fact that many of the phenomena are of vasomotor origin, and that symptoms are most likely to occur in the case of individuals with an unstable vasomotor system. He gives a clear account of Wright's doctrines in regard to opsonins and vaccine treatment. The endotoxin doctrine is not compatible with the giving of vaccines in acute infections, so he makes the suggestion that reliable evidence for the utility of vaccine treatment in acute infections can only be furnished when good results have been obtained in some uniform disease, such as typhoid fever. Interesting as these speculations are, it must be borne in mind that the evidence on which they are based is very slight, whilst the evidence produced by his opponents is not mentioned. From the strictly scientific point of view, this book should be condemned, but it must be admitted that it is extremely interesting.

ULTRAMICROSCOPY IN RELATION TO MEDICINE.

Gaidukov has produced a very readable book on ultramicroscopy and dark-ground illumination in relation to medicine and biology.[3] The subjects of colloidal chemistry and optics have been excluded, and there is nothing in the

[1] *Studies in Immunity*. By Professor Paul Ehrlich and his collaborators. Collected and translated by Dr. Charles Bolduan. Second edition. London: Chapman and Hall; New York: J. Wiley and Sons. 1910. (Medium 8vo, pp. 723; 6 dols.)

[2] *Klinische Immunitätslehre und Serodiagnostik: ein Lehrbuch für Aerzte*. By Dr. A. Wolff-Eisner. Jena: Gustav Fischer. 1910. (Roy. 8vo, pp. 186, 5 figures in the text.)

[3] *Dunkelfeldbeleuchtung und Ultramicroscopie in der Biologie und in der Medizin*. By N. Gaidukov. Jena: Gustav Fischer. 1910. (Sup. roy. 8vo; 76 pp., 13 figs. in the text and 5 plates, 2 in colours. M. 8.)

book which would be past the understanding of the average medical man. All forms of ultramicroscopical apparatus depend on the principle that no light reaches the eye of the observer except the rays which are reflected from the object under examination. This effect is achieved in a different manner in the different forms of apparatus. The author applies the designation of ultramicroscope to all of them. There is, first of all, the dark-ground condenser with a central stop, which has been replaced by the different forms of reflecting condenser. This is the instrument which has now come into general use for the detection of the *Spirochaeta pallida*. In the Siedentopf ultramicroscope the direct rays which are transmitted through the object are cut off *within the objective*. Against the great disadvantage of bad illumination this objective has one great advantage, in that it may be used for examination of thick preparations—hence for cytological studies. Finally, there is the Siedentopf-Zsigmondy ultramicroscope, which has been used largely for the examination of colloidal solutions. In this instrument light is admitted to the fluid in a direction at right angles to the long axis of the microscope. Following this short chapter on the various forms of apparatus there is a short chapter on Naegeli's theory of colloidal solutions, promulgated in 1861, but since confirmed in many particulars by ultramicroscopical investigations. Then follow some chapters on the results which have been obtained in many different fields. It is a very heterogeneous summary, but very interesting. The following are a few suggestive observations: It has been conclusively shown that the addition of various dyes, mordants, and fixatives to albuminous solutions completely alter their character, thus furnishing an important warning against placing implicit reliance on fine details of histological structure obtained by elaborate technique. Numerous searches have been made for ultramicroscopical parasites, but the results are disappointing, as nothing definite has been obtained. The examination of milk shows, according to Lemanissier, that the supramicrons of casein in human milk are smaller than in cow's milk, and that they are larger in boiled milk than in raw milk, furnishing another explanation to the perennial problem: Why does not modified milk always suit the human child? Perhaps, as a warning against attaching too much importance to these pioneer observations, we may note that from the examination of a commercial solution of chloropbyll Raehlmann has been able to explain the colours of flowering plants, autumnal tints, and many phenomena of chromatic adaptation. No less an authority than von Behring has registered his opinion that for the detection and identification of albumens in the urine the ultramicroscope will soon play a part quite as important as does the polariscope in the case of urinary sugars. In bacteriology there can be little doubt but that the dark-ground condenser has come to stay, if for nothing more than the detection of the *Spirochaeta pallida* or of flagella. The author's own researches have been mostly confined to botany, and are illustrated by some very beautiful plates, many of which are from actual photographs. As he modestly confesses, his conclusions require confirmation by an acknowledged expert. A commercial application of the method to the examination of fibre used in weaving is not the least interesting. The more homogeneous or optically void a fibre is the better are its properties, both from the mechanical and artistic points of view. The book is not an important contribution to our knowledge, but an interesting exposition of the possibilities of a new method.

NEURASTHENIC TOXAEMIA.

Neurasthenia is one of those prevalent present day disorders about which much has been written but about which little is with any degree of certainty known. Being, so far as is yet ascertained, a functional malady, pathology has given little help in the elucidation of the fundamental conditions upon which it depends; but, on the other hand, speculation has been stimulated to suggest all sorts of hypotheses which might be reasonably accepted as working theories upon which to establish a reasonable explanation of the multifarious manifestations by which the neurasthenic condition declares itself and has come to be recognized. Not the least fascinating of these many theories is that which attributes the condition to some form or forms of blood poisoning, which by a process of slow tissue intoxication ultimately reaches the nervous system, or by some unexplained power of selection attacks it primarily.

Dr. Maurice Page of Bellevue is the latest authority in support of this view, and his book, *La toxémie neurasthénique*,[4] recently issued by Messrs. Vigot Frères of Paris, is a comprehensive analysis of a long succession of cases, from which he endeavours to demonstrate, by careful investigations of blood, urine, stools, stomach contents, etc., that in the majority of instances neurasthenic patients are physically as well as psychically ill, and that it is necessary for their cure to treat them on antitoxic principles.

In the short and sketchy summary given of the symptomatology of neurasthenia we are surprised to note that the author makes no mention of the curious contradiction which so often exists between the reflex of the knee and that of the sole of the foot; he further gives a very inadequate description of the type of knee-jerk which is characteristic of the condition. It is not in accordance with generally accepted opinions to be told that the conviction which admits "traumatism as a sufficient cause of neurasthenia" must be abandoned. Further, although the close association frequently found to exist between neurasthenic states and certain arthritic manifestations is familiar, we are not quite prepared to admit unreservedly that "it is the predisposition to neurasthenia which creates an arthritic heredity," or that the time is yet arrived when we are justified in classifying neurasthenia as an "affection para-arthritique."

On the other hand, we fully agree with Dr. Maurice Page that digestive troubles are undoubtedly at the root of many neurasthenic conditions, and so far as it is true that some arthritic conditions are dependent upon gastric disturbance we recognize that in one line of etiological incidence arthritis and neurasthenia are brought into close intimacy. He sums up the results of his investigations by saying:

> Tous les neurasthéniques sont donc des intoxiqués; ils le sont par leur estomac, par leur intestin, leur foie, leur coeur, leur reins; ils le sont très vite parcequ'ils ne neutralisent plus ces poisons, qui bientôt viendront empoisonner leurs cellules cérébrales.

And with this general statement most observers who have an extended experience of neurasthenia will be in accord. The pathology of the condition is still obscure, but there is much to suggest the likelihood of its dependence, in many instances, upon a disturbed metabolism the result of toxaemic absorption.

PREVENTABLE DISEASES.

The first portion of Dr. Woods Hutchinson's interesting volume[5] is given to a consideration of the natural defences of the body against illness, the power of heredity as a preventive factor, and the physiognomy of disease. The chapter devoted to the last-named subject, or "what a doctor can tell from appearances," deserves to be read by every man engaged in the active pursuit of medicine. The author does not attempt to minimize the value of instruments of precision as helps to diagnosis, nor does he undervalue the triumphs of the bacteriologist and the chemist, but he wisely insists that, "priceless and indispensable as are these laboratory methods of investigation, they should not be allowed to make us too scornful and neglectful of the evidence gained by the direct use of our five senses." In this chapter he indicates to what excellent use these special senses may be put by those who know how to avail themselves of Nature's endowments. Among the remarks

[4] *La toxémie neurasthénique: Les neurasthénies sont des intoxications.* Par Dr. Maurice Page, Médecin Directeur de l'Institut Médical de Bellevue. With a preface by Dr. F. Helme. Paris: Vigot Frères. 1910. (Cr. 8vo, pp. 256. Fr. 3 50.)

[5] *Preventable Diseases.* By Woods Hutchinson, A M., M.D., Clinical Professor of Medicine, New York Polyclinic. London: Constable and Co.; Boston and New York: Houghton Mifflin Co. 1909. (Post 8vo, pp. 448. 6s.)

on various preventable diseases discussed in this volume, those on appendicitis are perhaps worthy of specially careful reading. Most of us will agree with the author that appendicitis is a very real, and sometimes a very dangerous, disorder; but the agreement of many will be still more complete when they find him add: "There has come, first of all, a state of mind almost approaching panic in regard to it; and, secondly, a preference for it as a diagnosis, as so much more *distingué* than such plebeian names as 'colic,' 'indigestion,' 'enteritis,' or the plain old Saxon 'belly ache,' which has reached almost the proportions of a fad." It may be comforting to those who are possessed of a terror of this disease to be reminded by Dr. Hutchinson that, under natural conditions, the lumen of the appendix becomes gradually contracted, until by the forty-fifth year of age about 50 per cent., and by the sixty-fifth year nearly 70 per cent., of all appendices are cut off entirely from the cavity of the caecum. In passing it may be noted that in the discussion of malaria there is a curious omission of the name of Sir Patrick Manson, who has done so much towards bringing this tropical scourge within the realm of preventive disease. The book is pleasantly written throughout, and, though no attempt is made to enter into details of treatment, such a good etiological survey is given of each of the ailments brought under review that the general lines of management, where not actually set forth, follow as a natural corollary. The author establishes these preventable diseases in their proper economic and sociological settings, and helps us to recognize in the fullest measure the value of preventive medicine, while also indicating the pathway which we must tread in order to gain complete control of many prevalent present-day disorders. The book has a full and carefully arranged index.

MALIGNANT GROWTHS.

Now that the investigation of malignant disease has entered on the experimental phase, there is some danger lest the histological examination of malignant tissues may fall into disrepute as an old-fashioned study from which there is little to learn. As a corrective against this tendency Professor HANSEMANN'S atlas of malignant tumours[6] will serve a useful purpose. Whatever may be the value of transplantation experiments with mouse cancer, it remains as true to-day as it was before the carcinomata of mice came into notoriety that the best available treatment for malignant disease is early excision, and that the decision as to the necessity for surgical intervention depends to an important extent on the accuracy of histological diagnosis. Professor Hansemann's *Atlas* does not deal with theoretical or controversial questions, but is intended to serve as a practical guide to students and practitioners desirous of learning how to diagnose malignant disease under the microscope. The fifty-three pages of practical instructions in technique and diagnosis are excellent. The author gives sound advice on the significance of abnormal types of nuclear mitosis. There is no pathological form of nuclear division which in itself is characteristic of malignancy; even asymmetric figures may, though perhaps not frequently, be found under other conditions. But the occurrence of numerous mitoses of irregular type is important evidence in favour of malignancy, because experience teaches us that they occur much more frequently in malignant than in innocent tumours. Another important point to which Professor Hansemann calls attention is that the tissue in the neighbourhood of a carcinoma frequently undergoes a non-malignant proliferation of an adenomatous or a polypous type. It is particularly desirable to bear this fact in mind when making a diagnosis of such material as curettings from a uterus, since non-malignant hyperplasia may be present side by side with true cancer, and the latter may be missed unless carefully searched for. In speaking of fixatives, Professor Hansemann expresses a strongly unfavourable opinion of formalin, which, he says, gives a bad definition, does not fix the nuclear substance properly, and causes confusion by the production of artefacts. We are surprised at this view. Formalin possesses the merit of rapid penetration, and when its used is combined with or followed by Müller's fluid, many histologists find that it gives excellent results. The special feature of the volume is the collection of twenty-seven full-page plates representing various types of malignant disease. The illustrations are reproductions of specimens stained with haematoxylin and eosin; they have been specially selected with a view to bringing out diagnostic features and will prove a valuable aid to the work of the clinical laboratory.

[6] *Atlas der bösartigen Geschwülste.* Von Professor Dr. D. v. Hansemann. Berlin: August Hirschwald. 1910. (Cr. 4 to, pp. 51; Tat. 27. M. 9.)

BIOLOGY FOR INDIAN STUDENTS.

To meet the requirements of students in India Dr. R. E. LLOYD, I.M.S., has undertaken the task of writing a new *Introduction to Biology*.[7] This is the first time such an attempt has been made, and it is certainly not without justification. All the English elementary textbooks naturally deal with British types, and the student has descriptions of the animals which he is actually studying and dissecting. In India the fauna is different from that of this country, and the student using an English textbook labours under the disadvantage of having to read descriptions of animals allied to, yet different from, those which he is dissecting. Such a discrepancy, intrinsically of no great moment, is apt to prove somewhat disconcerting to beginner. On this account, if for no other reason, Dr. Lloyd's book is well worth recommendation. It is, at the same time, well written and readable. Strictly speaking, it ought properly to be titled "An Introduction to Zoology," for it deals only with animal types, and indeed is confined to invertebrates. The types chosen appear to be suitable, and the method of treatment satisfactory in the main. The difficulties in most cases are intelligently explained, but in some instances—for example, in karyokinesis—the author does not seem to have gained much by his illustration. Reference to debatable points, with which it is unnecessary to cumber student's minds, is met with more frequently than is desirable. Two of the longest chapters are devoted to Protozoa and Insecta, and as the book is intended chiefly for medical students, we could have wished them even fuller. The plates illustrating the dissections could have been much improved upon, as the drawings are all rather small. The last four chapters deal with evolution, heredity, and kindred subjects. They are by no means the least interesting section of the book, but they seem, in parts at any rate, to be quite beyond the scope of students who have only studied the forms described in the preceding chapters. The geological history of the horse, for instance, reproduced from Huxley, is of undoubted interest, but its significance can hardly fail to be lost to a student who has not acquired some knowledge of vertebrate osteology. The difficulty, however, of deciding whether or not to introduce these subjects is recognized by the author, and if they demand rather more knowledge than that possessed by an elementary student, they may serve to stimulate the desire to obtain that knowledge.

[7] *An Introduction to Biology for Students in India.* By R. E. Lloyd M.B., D.Sc. London: Longmans, Green and Co. 1910.

NOTES ON BOOKS.

THE new volume of *Reports from the Clinical and Research Laboratories of St. George's Hospital*,[8] consists mainly of articles which have already appeared in various medical journals. The excretion of creatinin in diseases involving the muscles forms the subject of two articles by Dr. Spriggs; they are followed by an account of Dr. Longridge's investigation on the excretion of this substance by lying-in women. Mr. Bayly writes on the diagnosis of syphilis by recently discovered laboratory methods, one of which depends on recognition of the specific organism by means of the ultra-microscope. This method is well known to syphilologists in Paris, and, in Mr. Bayly's opinion, deserves wider recognition on this side of the Channel. "Without doubt," he says, "this method is the most practical and certain now available for ascertaining whether a lesion of the skin or mucous membrane

[8] *Reports from the Clinical and Research Laboratories of St. George's Hospital, London.* London: John Bale, Sons, and Danielsson, Limited. 1910. (Medium 8vo, pp. 208. 5s. net.)

is syphilitic or not." We shall be interested to see if Mr. Bayly can convince other authorities in this country that the *Spirochaeta pallida* may be distinguished with certainty from other spirochaetes by means of the ultra-microscope. Dr. Hunt examines the statements, recently put forward by some observers, that the tubercle bacillus is of common occurrence in the circulating blood of tuberculous patients, and that microscopical examination of the blood is a valuable aid to diagnosis. His conclusion is that a diagnosis of tuberculosis in supposed early cases of the disease in man, and in cases where tubercle bacilli are not demonstrable by other methods, cannot usually be established by microscopic search for bacilli in specimens of the blood. The volume as a whole is a good record of useful work in clinical pathology.

These are halcyon days for the lover of good literature who happens to be afflicted with a short purse. It is now possible to obtain a charming miniature copy of that masterpiece of nonsense, *The Hunting of the Snark*,[9] for the modest sum of one shilling. For the benefit of those, if such there be, who do not know the book, we quote the following specimen of its peculiar humour. It is said of the Barrister that—

> He dreamed that he stood in a shadowy Court,
> Where the Snark, with a glass in its eye,
> Dressed in gown, bands, and wig, was defending a pig
> On a charge of deserting its sty.
>
> The Witnesses proved, without error or flaw,
> That the sty was deserted when found:
> And the Judge kept explaining the state of the law
> In a soft under-current of sound.
>
> The indictment had never been clearly expressed,
> And it seemed that the Snark had begun,
> And had spoken three hours, before any one guessed
> What the pig was supposed to have done.
>
> The Jury had each formed a different view
> (Long before the indictment was read),
> And they all spoke at once, so that none of them knew
> One word that the others had said.

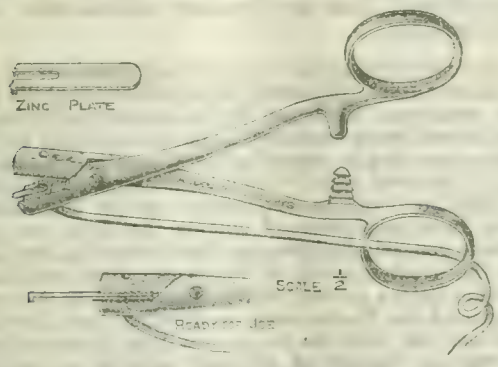
This latest edition of *The Hunting of the Snark* is identically the same as the former large one, is beautifully bound and printed, and best of all, contains all Henry Holiday's illustrations.

[9] *The Hunting of the Snark*: An Agony in Eight Fits. By Lewis Carroll. With nine illustrations by Henry Holiday. Published by Macmillan and Co., Limited, St. Martin's Street, London. 1910. Price 1s. net. Pp. 83.

MEDICAL AND SURGICAL APPLIANCES.

A New Clamp for Use with Plate Electrodes.

In a paper read before the West Somerset Branch of the British Medical Association, Dr. Alfred J. H. Iles (Taunton) gave an account of a new clamp for use with plate electrodes. The following is his description: I have also for your inspection an electrode clamp, which I have found most useful in the treatment of piles by zinc-mercury ions. For this I take a piece of sheet zinc and cut the electrode



to fit the case, but Messrs. Allen and Hanburys, who made the clamp from my pattern, are now cutting electrodes for use with it. In the treatment of piles I use a zinc plate about 2 in. long and $\frac{3}{5}$ in. wide, with a slit about $\frac{1}{2}$ in. long and $\frac{1}{4}$ in. wide, cut out at the distal end, thus forming two prongs, the tips of which are bent at right angles into hooks. The object of these hooks is to hold the electrode in the position in which it is first placed, thus ensuring the full reaction taking place all over the area treated, and that of the slit to allow of a view of a portion of the pile under treatment, thus giving the operator his colour index. This zinc electrode I amalgamate with metallic mercury, while local anaesthesia is being obtained by means of tampons soaked in cocaine solution. To obtain a direct contact, I bare the end of the conductor from the positive pole and pass it through the hole drilled slantways through one blade of the clamp. The zinc mercury electrode is then placed in position and the clamp closed, firmly pressing the copper wire against the zinc. The patient now being ready and the piles having been well strained down, the electrode is applied to the part to be treated and the operation carried out in the usual manner. I have found this method very useful also in treating ulcers which are in positions difficult to reach with saturated tampons.

BRITISH MEDICAL BENEVOLENT FUND.

At the October meeting of the Committee 27 cases were considered, and grants amounting to £209 made to 23 of the applicants, 1 case being passed over, and 3 postponed for further inquiry. Appended is an abstract of the cases relieved:

1. Widow, aged 32, of L.R.C.P., L.R.C.S.Edin. Since husband's death six years ago has supported herself by nursing and letting lodgings, and now asks for assistance towards the education of her two children, aged 12 and 8. Voted £12.

2. Widow, aged 50, of M.R.C.S. Has been incapacitated for some months, owing to an accident, and is dependent on a daughter, whose earnings are small. Voted £5.

3. Daughter, aged 68, of late M.R.C.S., L.S.A. No income. Is given a home in return for services, but receives no salary. Suffers from increasing deafness and general ill-health. Voted £12.

4. Widow, aged 47, of L.K.Q.C.P.I. Since her husband's death has maintained herself by letting lodgings and sewing, but, owing to a recent illness, is obliged to ask for a little help. Voted £5.

5. Widow, aged 34, of M.D Glasg. Is quite destitute through recent death of husband and requires assistance whilst seeking suitable work. Voted £10.

6. L.S.A., aged 65. Broke down in health after the death of his wife at the end of a two years' illness, and has consequently lost most of his practice and been obliged to leave his house owing to arrears of rent. Is given temporary shelter by an old patient, and hopes to make a fresh start. Voted £10.

7. Daughter, aged 39, of late F.R C.S. Has recently undergone an operation for tuberculous disease of a large joint and is practically incapacitated. Relieved four times, £48. Voted £12.

8. Daughter, aged 40, of late L.R.C.P., L.R.C.S.Edin. Endeavours to support herself by nursing, but finds considerable difficulty in obtaining cases. Relieved six times, £50. Voted £6.

9. Daughter, aged 54, of late M.R.C.S., L.S A. No income, and almost incapacitated by ill-health. Relieved eight times, £73. Voted £12.

10. Daughter, aged 61, of late M.R.C.S. Receives a small weekly allowance from two friends, but is unable to earn anything owing to permanent ill health. Relieved six times, £66. Voted £12.

11. Daughter, aged 57, of late M.R.C.S. No income; supports herself by letting rooms and knitting. Health delicate. Relieved six times, £72. Voted £12.

12. Widow, aged 43, of L.R.C.P., L.R.C.S.Irel. Since husband's death has endeavoured to support herself by taking paying guests, but has had her furniture seized for rent, and now contemplates emigration to Canada. Four daughters, but none able to help, and two dependent. Relieved once, £10. Voted £2, and application to be further considered next month.

13. Daughter, aged 47, of late M D.Edin. Is a daily governess, but at present has no post. Relieved twice, £10. Voted £5.

14. M.D.Aber., aged 58. Quite incapacitated by lateral sclerosis, and dependent on pensions from charitable institutions. Two children, aged 12 and 6. Relieved twice, £28. Voted £5.

15. Widow, aged 63, of L.R.C.P., L.R.C.S.Edin. Only income a small pension from a City company, and unable to follow any occupation on account of severe chronic rheumatism. Relieved twice, £16. Voted £10.

16. Widow, aged 43, of L.R.C.P.Edin., M.R.C.S.Eng. Supplements the help given by a stepson only earning a small salary by letting lodgings. Relieved twice, £24. Voted £12.

17. Widow, aged 70, of M.D.St. Andrews. No income, and family only able to give slight help. Voted £12

18. Daughter, aged 55, of late M.R.C.S. Mentally unfit to follow any occupation, and apart from a little help from a brother, is dependent on three half-sisters, who all have to earn their living. Relieved six times, £61. Voted £5.

19 Widow, aged 70, of M.R.C.S. Dependent on an old age pension and a daughter who is a governess. Relieved five times, £62. Voted 12.

20. Widow, aged 43, of M.R.C.S., who for many years held a teaching post at a medical school. Endeavours to support herself by letting lodgings. Three children, all at institutions. Relieved once, £15. Voted £10.

21. Wife, aged 61, of L.F.P.S.Glasg., who has been in bad health for three or four years, but has just obtained a ship's surgeoncy. Applicant lets lodgings, but cannot make sufficient for maintenance. Relieved once, £12. Voted £1 and case to be considered again after further inquiry.

22. Daughter, aged 75, of late M.R.C.S., who was a surgeon in the Scots Guards. Was well provided for, but lost most of her capital through the defalcations of the family solicitor and the rest through unfortunate investments. Now dependent on an old age pension, with occasional help from relations. Relieved once, £18. Voted £15.

23. Widow, aged 56, of L.S.A. No income, and dependent on a son earning a small weekly wage. Relieved nine times, £102. Voted £12.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

A MEETING of the Organizing Committee was held on October 28th, at 5 p.m. in the Royal College of Physicians, the PRESIDENT in the chair.

Letters of regret were received from the following: Dr. T. Dyke Acland, Professor H. G. Barling, Sir James Barr, Dr. Barrs, Mr. George A. Berry, P.R.C.S.Ed., Dr. J. Mitchell Bruce, Sir John Byers, Dr. P. J. Cremen, Sir Halliday Croom, Dr. H. Davy, Professor D. W. Finlay, Dr. J. Magee Finny, Sir Thomas R. Fraser, Dr. Edwin Goodall (Cardiff), Mr. J. W. B. Hodsdon, Professor James Little, Professor H. Littlejohn, Sir Donald MacAlister, Professor Dixon Mann, Professor Howard Marsh, Sir Isambard Owen, Dr. R. W. Philip, Sir G. H. Philipson, Sir Richard Douglas Powell, Mr. J. Scott Riddell, Mr. A. W. Mayo Robson, Dr. F. M. Sandwith, Professor R. Saundby, Professor T. Sinclair, Sir Wm. Smyly, Professor E. H. Starling, Dr. StClair Thomson, Professor W. Thorburn, and Dr. Norman Walker.

The PRESIDENT pointed out that the list of the Organizing Committee was originally drawn up with a view to territorial representation only. At the meeting of the General Committee on October 12th a wish was expressed, and partially carried out, that it should represent also departments of practice. In order to fulfil this wish, the following additional members were nominated for election: Miss Aldrich Blake, Dr. F. W. Andrewes, Dr. J. B. Ball, Dr. Lazarus Barlow, Dr. J. S. Barr, Dr. E. F. Bashford, Dr. A. E. Boycott, Dr. H. G. Brooke, Dr. W. Bulloch, Mr. Arthur Cheatle, Miss Cock, Mr. Treacher Collins, Mr. A. E. Cumberbatch, Sir William Dalby, Professor George Dean, Professor A. F. Dixon, Dr. Dudgeon, Dr. Colcott Fox, Dr. Galloway, Dr. Garrod, Dr. Albert Gray, Dr. Dundas Grant, Professor Greenfield, Dr. de Havilland Hall, Dr. E. Hobhouse, Mr. W. H. H. Jessop, Mr. Robert Jones, Mr. Reginald Jowers, Mr. Lambert Lack, Mr. Richard Lake, Dr. Edward Law, Mr. J. B. Lawford, Lieutenant-Colonel Sir W. B. Leishman, Mr. H. Littlewood, Professor Alexander Macalister, Dr. P. McBride, Sir John McFadyean, Dr. C. J. Martin, Dr. William Milligan, Dr. F. W. Mott, Dr. D. R. Paterson, Dr. F. M. Pope Dr. J. J. Pringle, Dr. Urban Pritchard, Professor Arthur Robinson, Mrs. Scharlieb, Mr. S. G. Shattock, Professor Sherrington, Professor Lorrain Smith, Mr. Priestley Smith, Dr. G. F. Still, Dr. G. A. Sutherland, Mr. H. H. Taylor, Professor Peter Thompson, Professor W. H. Thompson, Dr. StClair Thomson, Miss Thorne, Dr. Herbert Tilley, Miss Jane Walker, Dr. Watson Williams, Professor Sims Woodhead, and Sir Almroth Wright, and these were unanimously elected, with power to add to their number.

Executive Committee.

The PRESIDENT then nominated the following for election as members of the Executive Committee: Sir A. Pearce Gould (Chairman), Sir Clifford Allbutt, Sir William Allchin, Mr. A. A. Bowlby, Sir Francis Champneys, Sir William Church, Dr. Bertrand Dawson, Mr. Clinton Dent, Mr. R. J. Godlee, Dr. Norman Moore, Sir Malcolm Morris, Professor Osler, Dr. Pavy, Sir R. Douglas Powell, Mr. D'Arcy Power, Sir Felix Semon, Mr. Charters Symonds, Dr. Hale White, the Chairman of the Finance Committee, the Chairman of the Reception Committee, the Chairman of the Council of the British Medical Association, a member to be nominated by the Faculty of Medicine of each of the Universities, excluding Oxford and Cambridge (which are already represented), namely: *England*—Universities of Birmingham, Bristol, Durham, Leeds, Liverpool, Manchester, and Sheffield. *Scotland*—Universities of Aberdeen, Edinburgh, Glasgow, and St. Andrews. *Ireland*—University of Belfast, Trinity College, Dublin, and the National University of Ireland. *Wales*—University College, Cardiff.

Sir A. PEARCE GOULD proposed, and Mr. D'ARCY POWER seconded, the addition of Mrs. Scharlieb to this committee. These members were unanimously elected, with power to add to their number.

Finance Committee.

The PRESIDENT then stated that Sir Dyce Duckworth had consented to act as the second Treasurer with Mr. Makins, and he then nominated the following as members of the Finance Committee: Sir Henry Morris (Chairman), Dr. Herbert Spencer, Dr. Frederick Taylor, Sir Edgcombe Venning, and Mr. E. Francis White (Putney). These were unanimously elected, with power to add to their number.

Reception Committee.

The PRESIDENT then nominated the following for election to the Reception Committee: Sir T. Lauder Brunton (Chairman), Mr. A. E. Barker, Sir William H. Bennett, Sir Havelock Charles, Sir Anderson Critchett, Sir Thomas Boor Crosby, Mr. Edmund Owen, Dr. Pasteur, Dr. St Clair Thomson, Dr. Samuel West, and Dr. Theodore Williams, with power to add to their number.

Ex officio Members.

The permanent officers of the Congress are *ex-officio* members of all committees.

Work of Committees.

The PRESIDENT then said a few words on the organization of the various committees.

The Executive Committee was intended:

(*a*) To manage local matters;
(*b*) To act as a board of advisers to the President;
(*c*) To receive and consider reports from the Finance Committee, the Reception Committee, and the various sectional committees when appointed.

It was to be understood that, when the business of a section or sections was to be discussed, the president of such section or sections would be summoned to the meeting of the Executive Committee. It might be necessary, in view of any general regulations being drawn up, that all presidents of sections should be so summoned.

The Organizing Committee was intended to act:

(*a*) When summoned as a whole, as the ultimate committee of reference and of election to appointments of presidents, vice-presidents, secretaries, and councils of sectional committees;
(*b*) To be the source from which special committees could be drawn, if necessary, to advise and report on matters pertaining to the organization of the several sections.

The Organizing Committee then adjourned.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

NORTHERN AND MIDLAND DIVISION.

THE autumn meeting of the Northern and Midland Division of the Medico-Psychological Association was held, at the kind invitation of Dr. C. L. Hopkins, at the City Asylum, Fulford, York, on Thursday, October 20th. Dr. HOPKINS presided.

Hereditary Syphilis and General Paralysis.

Dr. MIDDLEMASS read a paper on hereditary syphilis and general paralysis. He began by apologizing for bringing forward so well-worn a subject. The idea occurred to him some time ago that in cases of general paralysis where no history of personal syphilis could be obtained, an explanation might be found in hereditary syphilis as a cause. Probably most people were of opinion that developmental or juvenile general paralysis was due to inherited syphilis, and in the great majority of the cases he had seen there was a clear history pointing in this direction. In one such case reported the Wassermann reaction had been found to be positive. He went on to suggest that in cases where there was no history of acquired syphilis, a positive Wassermann reaction might point to hereditary syphilis and not to the untruthfulness of the patient.

In the discussion which followed Dr. HOPKINS referred to the use of the Ross Jones test. Dr. TREVELYAN spoke of the relation of tabes to syphilis in families, and mentioned an interesting case. Dr. HITCHCOCK considered that general paralysis depended on the temperament of the individual as well as on acquired or hereditary syphilis.

International Congress on Psychiatry.

Dr. BEDFORD PIERCE gave a most interesting account of his visit to the International Congress on Psychiatry held

in Berlin from October 3rd to 7th, 1910. After giving a brief sketch of the arrangements made for the holding of the Congress and the cordial reception extended to the visitors, he briefly outlined the various items that were brought before the congress, amongst which may be mentioned papers on Asylum Planning, Work as a Therapeutic Agent, The Boarding Out of the Insane—illustrated with lantern views of its working in Hungary—The Significance of the Wassermann Reaction, Mental Diseases in the Army and Navy, Sleeping Sickness. Perhaps the most interesting features of the Congress were an exhibition of models of various asylums in South Germany; cinematograph films showing the movements of the insane, and an excellent cinematograph exhibition of micro-organisms, showing in a most striking way their movements, particularly in relation to the red blood corpuscles. Amongst those exhibited in active movement were *Spirochaeta pallida*, and various spirilla and trypanosomes.

Dr. McDowall thought that some demonstrations similar to those given in Berlin would be very instructive if arranged at one of the general meetings of the association in London.

LITERARY NOTES.

We think the following bulletin, which we reprint from the *Times*, may be of interest. It relates to an illness of George III:

Wednesday, October 31.

"Oct. 29, 1810.

"The King has been indisposed for a few days past; His Majesty has had fever, and his nights have been restless; but he has had several hours' sleep this morning.

"Henry Halford,
"W. Heberden,
"M. Baillie."

"October 30, 1810.
10 o'clock, a.m.

"The King has passed a restless night, and His Majesty is much the same to-day as yesterday.

"Henry Halford.
"M. Baillie,
"W. Heberden."

"An express was sent off from Windsor on Saturday night, at ten o'clock, for Dr. Heberden to attend the King, and he arrived at Windsor at five o'clock on Sunday morning. Everything is kept remarkably quiet in Windsor Castle; not the least noise is suffered."

The next bulletin is as follows:

"The last official account of the melancholy state of his Majesty's health was received in London at about 3 o'clock yesterday, and is as follows:

"Windsor Castle, Oct. 31, 1810.
Nine o'clock, a.m.

"The King has passed a restless night, but his Majesty's fever is not increased.

"Henry Halford.
"W. Heberden.
"M. Baillie."

It may be mentioned that on October 29th the King was found incapable of transacting business, owing to derangement of mind. He was placed under the charge of the Queen, and on her death in 1818 the care of him was transferred to the Duke of York. He died on January 29th, 1820.

National Health, edited by Mr. Ernest Schofield, is the official organ of the Women's Imperial Health Association. The October number contains an article on the disinfection of schools in relation to public health by Mr. J. Arthur Coroley, Clerk to the Northwich Urban District Council, with a number of editorial articles dealing with numerous subjects of practical hygienic interest. *National Health* gives much information on matters concerning health, and, as far as we can judge from the number before us, the faddist has no place in it.

"To see oursels as others see us" in nine cases out of ten would prove an unpleasantly illuminating experience, but occasionally the reverse happens, and it is unexpectedly welcome. Admiration and approval are always pleasant, and it is, therefore, distinctly gratifying to know that a national institution such as the English public school system has found favour in the eyes of other nations besides our own. Old Harrovians, in particular, should take a special pleasure in the perusal of the October number of *L'Hygiène*, since it contains a most sympathetic and appreciative account of "un grand 'public school' anglais; Harrow College." M. Morgan has evidently taken endless pains in the study of his subject. He writes with enthusiasm of the free and healthy life led by the boys, the self-reliance and manliness engendered by the total absence of surveillance, and even has a good word to say for "cette vieille institution du faggisme." It is only fair to add, however, that his admiration of Harrow as a typical English public school does not blind him to the fact that the education, or rather the actual amount of knowledge acquired there, is far below that given by the French colleges and lycées; and he justly observes that, in spite of many brilliant exceptions, the majority of English school boys are more ignorant than their contemporaries across the Channel, precisely because they have so much more freedom and opportunity to shirk the boredom of study. Notwithstanding this it is interesting to find a suggestion from Dr. Maurice de Fleury in his article on "Hygiène et la vie," to the effect that a modification of the present system of education in France is urgently needed, whilst he hints that the excessive care displayed by present day teachers in the development of the judgement and individuality in preference to the memory of their pupils, cannot fail to have a disastrous effect upon the retentive powers of the modern child. Another very interesting article in this month's number of *L'Hygiène* is by Dr. Lucien Jacquet, who has chosen the "Hygiène esthétique de la Femme" as his subject, and gives his women readers much useful advice concerning the preservation of their health and beauty. The illustrations are, as usual, numerous and beautifully reproduced.

The October number of the *Caledonian Medical Journal* has recently appeared with a table of contents which includes much that is of interest not only to the doctors of the Scottish Highlands, for whom it is primarily intended, but also to the general reader. This interesting little magazine, which is the mouthpiece of that band of Celtic physicians, the Caledonian Medical Society, is the only Highland medical periodical in existence, and one of its many aims is "to devote special attention to old Celtic literature in relation to medical science," and to "perpetuate the old Celtic literature and the old Celtic traditions, especially those relating to the medical profession." It is interesting to note that, thanks to the society, Dr. Gillies, of London, has been enabled to devote much time and labour to research work in this direction, the result of which should prove both interesting and useful to the student of Highland history. The presidential address, delivered by Dr. A. Cameron Miller, at the annual meeting of the society, which was held at Fort William on the 23rd of last September, published in this number, consists of a long and able criticism of "The Physician in Fiction," in which the author gives a most interesting account of the medical man as he appears throughout the whole range of English literature, from Chaucer's famous "Doctour of Phisik" to Ian Maclaren's equally famous and far more lovable country practitioner, Weelum Maclure, the "doctor of the old school." A paper from Professor John Gray M'Kendrick on his "Reminiscences of Lochaber in the Sixties" has also appeared in the present number, and gives a vivid picture of practice in a remote district in the Highlands some fifty years ago. Professor M'Kendrick spent four years as a resident medical officer of a small hospital situated at the foot of Ben Nevis, and one of his most interesting souvenirs relates to a Highland sheep farmer, Cameron of Strone, on the Lochiel estate, who enjoyed a large practice as bonesetter. "Cameron was a man of marked individuality, strong and vigorous in frame at 80 years of age, with a proud stern face . . . people came to him from far and near for the cure of sprains and stiff joints. I remember he had enormously powerful hands, and I can quite understand that in some cases he did good service by the breaking down of old adhesions, and by inspiring confidence in his patients." Cameron's healing powers descended to his children, a daughter and two sons, one of whom continued to practice after his father's death. The other son studied medicine, and promptly lost his gift! His brother, young Strone, says Professor M'Kendrick, "was a man of high principle, and I feel sure he honestly believed that he possessed a gift that was in some way supernatural."

British Medical Journal.

SATURDAY, NOVEMBER 5TH, 1910.

COMPLEMENT DEVIATION IN DIAGNOSIS.

IN this issue we publish a full account of the discussion on complement deviation in diagnosis, which was held at the conjoint meeting of the Pathological and Bacteriological Sections at the Annual Meeting.

The method of determining the presence of an antibody formed in response to an infection, from the fact that it combines with complement in the presence of the specific infecting organism, is barely ten years old. Since Bordet and Gengou originated this work much progress has been made, and particularly in connexion with syphilis, with which Professor Wassermann's name has become inseparably associated. Hence the opening paper by him, giving as it does a brief summary of the work since its inception and a summary of its results and its scope, enhances the value of the discussion.

As yet we know little about the substance called "complement," which indeed is only known to us by its activity. We know that it can be fixed or deviated or put out of action by entering into combination with antibodies in the presence of their specific antigen, or with haemolysins in the presence of the corresponding red blood corpuscles. It is this haemolytic action which enables us to say whether or no a complement in a serum has been fixed in a proper admixture, and so confirm a suspected infection.

The technique is complicated, necessitating much practice and experience, for the pitfalls likely to be met with in working with complement are many; as will be seen from Professor Muir's paper, complement can be deviated under many other conditions, and even by admixture with organic particles. But what is difficult to explain is that syphilis does not fall into line with other infections, for it is not even necessary to employ an extract of spirochaetes for the test; they can be replaced with extracts of normal tissues, and even by certain bodies of lipoid nature, with results seemingly of equal diagnostic value. Although this latter irregularity tended to produce the idea in some that the syphilitic reaction was an accidental and not a logical sequence of scientific observation, experience has shown that the value of the test is by no means lessened. But it is evident that the attitude of Wassermann, Dean, and others, who assert that in testing for the presence of antibodies arising from spirochaetal infection it is better to employ extracts of spirochaetes themselves, is the most logical one.

Numerous modifications have been introduced by workers in this field, having as their object the simplification of the technique and an increased accuracy of results, for a small percentage of syphilitics do not respond to the reaction.

As in all cases where scientific results are brought into the field of practical medicine there are two classes of workers—namely, those who are carrying out the test on the lines laid down by the originator and compiling statistics without questioning the truth of their premisses, and the smaller group, who are constantly investigating the scientific truths assumed to be the basis of the test. These latter are recognizing that the question is not so simple as at first appeared; complement in the hands of Henderson-Smith is not even simple complement, but from its action seems to consist of two fractions which can come into action separately. Antigen is being inquired into, and the different chemical substances which can replace it; so too is the nature of the antibodies, and especially those that are formed by allied organisms and give similar reactions, and thus account for the fact that the Wassermann reaction has been obtained in malaria and protozoal infections with syphilitic antigen.

But fascinating though these investigations may be, they do not become of interest to the busy practitioner until the practical outcome is brought within the sphere of his work. Without discussing the various modifications in technique, which are fully treated in the papers published, it will be sufficient to state that the results of all workers show that with careful technique we have at our disposal a most important and valuable addition to practical medicine. It is certain that syphilis can be diagnosed with certainty in at least 90 per cent. in all stages after the first few weeks following infection. In latent syphilis, also, the reaction is of value; Wassermann obtained a positive reaction in 100 per cent. of cases of general paralysis and of aortic aneurysms. Experience has taught that these conditions are sequels of syphilis, and so the confirmation by Wassermann's reaction is of interest.

But where the reaction is of real service is as an index to treatment. Bearing in mind that mercury influences the reaction for certain periods after administration, it is nevertheless evident that we have here a method of determining the results of treatment, the efficacy of different methods of treatment and the onset of relapses. Wassermann finds that in 50 per cent. of incompletely treated cases the reaction is still obtained; whilst even in those vigorously treated 20 per cent. still give it. We have still much to learn concerning the prognosis to be formed in cases which still give the reaction after treatment (in one case this appears to have been present fifty-four years after infection), but all are agreed that in complement deviation applied to syphilis we have a method of great assistance in diagnosis, therapy, and prophylaxis. To be able to diagnose latent syphilis is of great importance, to prevent relapses or sequels by timely medication is to make it a less fatal disease, and to be able to tell a patient whose fears have been aroused that he is free from infection is to alleviate much mental unrest.

As a diagnostic method we agree that it is not called for in every case, but only in doubtful cases. Further, its value is impaired by the fact that a small percentage of cases of infection give a negative reaction, which consequently must be regarded with suspicion. Hence the importance of making laboratory methods subservient to clinical experience; and here we venture to express the opinion that there is a regrettable tendency at the present day to throw more and more responsibility on laboratory aids to diagnosis at the expense of clinical methods. In primary infections the finding of spirochaetes is the most ready method of diagnosis, and recent staining methods have rendered this so simple as to be within the reach of all. Similarly in many other infections the organisms can be found before the antibodies are elaborated to a

sufficient extent to be determined; nevertheless there remains a number of diseases in which this method becomes of great practical value; this is especially the case in those diseases in which as yet no specific organism has been isolated.

In Germany the diagnosis of glanders is carried out by the complement-deviation method in central institutes, and though we in Great Britain are of the opinion that the mallein reaction is far more efficacious in diagnosis, it is obvious, in human cases, that a method necessitating merely the withdrawal of a little blood for examination is better, other things being equal, than one entailing the inoculation of toxins into the system. This is especially true when the present state of our ignorance concerning anaphylaxis or increase of susceptibility following inoculation is remembered.

Latent glanders is rife in our large cities even at the present day, and we are now awake to the danger of human infection, so that any method facilitating diagnosis is worthy of consideration.

It is of interest to note that the method of diagnosis has been applied in diseases due to animal parasites—for example, echinococcus, ankylostomiasis, etc.—with some success, and, as would be expected, it has been tried in cancer by Wakelin Barratt, who, however, had no success in human cancer and little in cancer of mice; but with regard to this it is, perhaps, as yet too early to judge.

We think it well to accentuate the fact that in Austria, Denmark, and other countries there are existing official sero-diagnostic institutions which permit of a general application of this method of diagnosis. Wassermann and his colleagues have performed in their institute over 10,000 examinations on supposed cases of syphilis. In this country the test has to be performed in private laboratories, which are greatly hampered by the restrictions regarding animal inoculations. It is true that some of the modifications have so simplified the technique as regards syphilis that many of these difficulties can be overcome in the smaller laboratories, but with the enlarging scope of the reaction and the inclusion of glanders and other diseases these difficulties again increase, and we would wish to see similar institutions in our large cities where the work could be carried out and from which smaller laboratories could obtain the necessary reagents for their own use.

THE VEGETABLE ALKALOIDS.

Considering their number and the certainty of their action, the vegetable alkaloids might be expected to figure largely in connexion with the criminal courts; but this is hardly the case. The occasions on which metallic poisons have been shown to have been used for criminal purposes are considerably more numerous. The vegetable alkaloids have frequently, of course, been the cause of cases of accidental poisoning, and it is possible that they have been used with criminal intent more frequently than the records reveal. This, however, does not seem, on the whole, very probable.

Of the whole class, only aconitine, strychnine, digitalin, morphine, and atropine would appear ever to have come under the notice of the criminal courts, either in this country or on the Continent, up to the beginning of this year. Hyoscine, as we all know, has now been added to the list, but it has made its criminal bow, so to speak, so very recently that even in the very latest English books on medico-legal toxicology it is not mentioned.

Digitalin seems to have been used once; this was in France in 1864, when a Madame de Pauw was poisoned by a homoeopath named De la Pommerais. Tardieu identified the poison by experiments with frogs, but, after the case was over, there continued to be a hot dispute as to the identity of what had been discovered.

As for aconitine, there appears to be only one record of its use as a homicidal poison. It was the drug used by Lamson to rid himself of his brother-in-law some twenty years ago. It was given in a capsule, and the victim, a schoolboy, died within four hours. The alkaloid was isolated by Dupré and Stevenson from the viscera, and its identity was proved, apart from chemical methods, by physiological tests on animals and on Stevenson himself.

The appearances of atropine in the criminal courts have been notably few, considering the number of accidental poisonings to which it has given rise and its very frequent use in therapeutics and ophthalmic surgery. No case of poisoning, both criminal and fatal, by its use would seem ever to have been proved, though in 1899 the Seine tribunal tried and convicted a certain Madame Bianchini of attempting to poison her husband by this drug. Nearly forty years ago an inquiry was also held into a case in the North of England in which it was alleged that a nurse at a workhouse had maliciously placed atropine in some milk, with the result that the resident medical officer died and several other persons were rendered ill.

Conium, as the essential principle of that historic poison, hemlock, might have been expected to enjoy some favour, but seems only to have been used in two cases. They both took place abroad, and of neither of them have we been able to ascertain particulars.

As for morphine it has doubtless been the cause of innumerable deaths, but mainly as the result of morphinomania, intentional suicide, misadventure, or overdosage; but so far as its homicidal use is concerned we can only find three records. The most recent is the Devereux case, which occurred some five years ago, when a druggist's assistant poisoned his wife and some of his children by this alkaloid.

Among the whole group strychnine has been the most prominent in this connexion. It was especially popular in the middle of last century, being the drug used by the notorious murderer, Palmer. Subsequent to his trial in 1856 it was revealed as the cause of death in several murders in comparatively rapid succession. It has also been proved to have been used homicidally in the last decade, the most recent notable case being that in which Neill Cream murdered four women and attempted the murder of a fifth. Neill Cream, it may be noted, claimed to have an American medical degree, and medical qualifications, indeed, we regret to say, have been possessed by several of those proved guilty of intentionally causing death by the use of vegetable alkaloids. In this connexion it may be said that if conceivably there are any circumstances whatever in which an appeal for mercy can reasonably be made in poisoning cases, it is certainly not when a medical man, or any other person well acquainted with its properties, have been proved to have used strychnine homicidally, for death from strychnine poisoning is one of the cruellest of ends.

One of the many vegetable alkaloids which have hitherto failed to figure in the courts is hyoscyamine, nevertheless, this alkaloid was, curiously enough, among the first of the class ever to be mentioned in

his connexion. Mr. J. E. P. Muddock, better known as "Dick Donovan," the author of a number of excellent sensational novels which still continue to appear from time to time, was, in the middle of the Seventies, on the outlook for a new plot, and decided that poisoning should play a prominent part therein. The difficulty was to find a poison which would suit the needs of his story, and eventually, after consultation with the late Sir Benjamin Ward Richardson, he pitched on hyoscyamine, at that time a drug practically unknown in this country. He secured a small amount of it and ascertained its effects by experiments on a cat. The novel is entitled *A Wingless Angel*, and is still procurable, we believe.

Taking the vegetable alkaloids as a whole, it may be said that much of our knowledge of their properties is due to homicidal instances of their use. These have served materially towards securing profound investigation of their characters and dissemination of acquaintance therewith. How little was known of strychnine, for instance, at the time of its use by Palmer in 1856 is clear from the nature of the evidence given by various medical witnesses in the course of that trial. It has been set forth in full more than once.

Hyoscine, the drug which figured in that case, has been the subject of a good deal of dispute among pharmacologists in respect of its chemical constitution. This, no doubt, is in a large measure due to the fact that it is obtained not only from *Hyoscyamus niger*, or black henbane, but from various members of the Scopola family, and the specimens examined by different chemists have possibly not always been identical in character. As a pure alkaloid it is practically unknown in medicine, since, owing to its syrupy consistence, it is difficult to handle. For this reason it is invariably used in the form of a salt. It obtained, and still retains to some extent, a good deal of favour among alienist practitioners, owing to its effect in calming excitement and producing sleep in cases of acute mania. It has also been used in the relief of chorea and other spasmodic disorders, and in a few other allied conditions.

The chief interest attaching to it, however, lies mainly in its use as an adjunct to or substitute for ordinary anaesthetics in cases in which either light anaesthesia is required or those in which the anaesthesia is likely to be prolonged and it is desired to restrict the use of ordinary anaesthetics as much as possible. We drew attention to its claims in this respect for the first time as far back as ten years ago, and repeated our allusions to the matter in several of the first years of this century. It was not, however, until the Annual Meeting at Sheffield some two years ago that the general body of the profession became alive to its value in this connexion and as a method of relieving the pains of labour.

Professor Krönig, of Freiburg, who had used hyoscine for such purposes for a long time, brought the matter forward on that occasion, and his statements were subsequently confirmed by Buist of Dundee, Macnaughton Jones of London, and others who had had experience of its use. For the purpose in question, it is used in association with morphine, and Krönig, it may be pointed out, referred to the drug as scopolamine, and always speaks and writes of the method he then described as "scopolamine-morphine narcosis." Since then reference to it has been made occasionally under the phrase of "hyoscine-morphine narcosis," but Krönig's term would seem the more desirable to adopt if only to distinguish the drug from its analogue hyoscyamine.

During the course of the late trial the precise method of the administration of hyoscine for therapeutic purposes came under some discussion, though in our account of the case we did not report that fact, as the Lord Chief Justice, who dealt with the topic, subsequently stated that the importance of the point was not what he had understood it to be. At one time hyoscine hydrobromide, the salt most commonly used, seems commonly to have been given by the mouth, and in this there is no difficulty, as its taste is readily concealed in chloroform water, or almost any sweetish flavoured fluid. But, as in the case of all very powerful drugs of which only very minute doses are given, and which are not intended for frequently repeated use, it is probably always better to use it hypodermically. Indeed, Krönig and some others who have used scopolamine largely, lay stress on its use in this way, and in this way only.

KING EDWARD MEMORIAL.

WRITING in the *Times* of November 2nd as to the proposals in regard to a memorial to the late King Edward to be submitted to the general committee at its next meeting, Lord Northcote strongly advocates the scheme for the protection of human life in the tropics, by a great extension of that campaign against tropical disease which has already so largely abated the sum of human suffering. An appeal has been submitted to the Lord Mayor, and gratifying support has been received from representatives of most varied interests. Lord Northcote urges London to take the lead in the movement, and he trusts that, with the sympathy of the powerful committee at the Mansion House and some practical assistance of a substantial grant, the rest of the Empire will be encouraged to carry the movement further and to place once for all on a proper basis a matter which has been too long neglected. He says that Lord Crewe, Secretary of State for the Colonies, cordially approves of the objects of the appeal. Men of all parties have written in support, among them Mr. J. Ramsay Macdonald, Lord Northampton, Lord Rothschild, Lord Elgin, Lord Kitchener, and Mr. Joseph Chamberlain. In his letter Mr. Chamberlain expresses regret that he is not able to take an active part in this work, which he firmly believes has done more than anything else to make tropical life more possible to Europeans. In a letter to the Lord Mayor, Lord Northcote cites the following three examples of the effect on human life of measures taken as the result of such investigations in the domain of tropical diseases. First, with regard to malaria, he says that in Klang and Port Swettenham, two towns within the protected Federated Malay States, remedial measures were commenced in 1901. The deaths from malaria were in 1901, 368, and in 1905, 45. In the surrounding districts, where no measures were taken, the deaths for these years were respectively 266 and 351. In Hong Kong remedial measures were commenced in 1901. In that year the admissions to hospital were 1,294, and the deaths 132. In 1905 the admissions were 419, and the deaths 54. In 1904 the United States took over the administration of the zone of the Panama Canal; the deaths from malaria, which in 1906 were 821, had sunk in 1908 to 282. As to yellow fever, he points to the fact that in the city of Havana 35,952 persons perished of yellow fever between 1853 and 1900. The United States Government commenced remedial

measures in 1900, and in 1907 only one case of yellow fever was reported. Then with regard to sleeping sickness, he points out that during the last three years steps have been taken in Uganda to stamp out sleeping sickness, an epidemic which in one district alone had destroyed some 200,000 people out of a total population of 300,000. In 1907 the deaths in the kingdom of Uganda numbered less than 4,000, and in 1908 they fell to 1,700. These cases, however, cover only a small portion of the field. Notwithstanding the rapid advance of knowledge in tropical diseases, there are many as yet unknown or imperfectly understood. The causation of blackwater fever, of dengue, of beri-beri, and of many other diseases, still calls for investigation. It was submitted to the committee that no more appropriate memorial to our late Sovereign could be proposed than the establishment of a fund to carry on and extend the work of research into tropical disease. It is further urged that it is eminently appropriate that London, the metropolis of the Empire, should take the lead in a movement for giving the full benefit of British administration to these outlying portions of the King's dominion, which have contributed in no small measure to her prosperity in the past, and will, by their development, give still ampler ground for her gratitude in the future. We earnestly hope that this scheme will be adopted, for no better memorial of King Edward could be imagined than one that would lessen the loss of life among colonists in the tropics, and thereby consolidate our Empire and lead to its expansion.

HOSPITAL ENTERPRISE.

Two conferences on matters relating to hospital enterprise have been held during the past week in the Council Chamber of the British Medical Association. Of the first of them a full account will be found in the SUPPLEMENT to this week's issue, and should be carefully perused. The scheme discussed was first put forward in a prospectus privately circulated among those resident within the area of the Westminster Division of the Association some three months ago. It relates to the erection, furnishing, and maintenance of a private hospital or nursing home for forty patients in St. Vincent Square, Westminster, at an estimated initial cost of about £12,000. Such institution would have no honorary medical staff, and the patients admitted would be treated as if in their own homes by their ordinary medical attendants. The cost of erection would be provided by the formation of a private company solely consisting of medical men. The object, of course, is to enable medical men in Westminster to attend to their own patients, surrounded by the advantages of a building specially maintained as a place for the sick, and to be able to do so without sending those patients to nursing homes, where they would have to pay fees which many of them could not possibly afford. On turning to the account mentioned it will be found that Dr. Lauriston Shaw, who presided, set forth in admirably clear terms the factors which would have to be considered if such a home were to be successful. He also indicated his belief that the home should be under the control, not of the shareholders, but of some public body of medical men selected by the shareholders, but independent of them. The other conference took place last Tuesday. It was summoned by the Medical Charities Committee of the Metropolitan Counties Branch, and had as chairman the President of that Branch. The conference, to which delegates were appointed by the staffs of a large number of metropolitan hospitals, as well as by the Central Hospitals Committee of the British Medical Association, and by the Metropolitan Counties Branch, was an outcome of a resolution passed by the latter last February. That resolution read as follows: "As a step towards organizing medical opinion in London on the question of the conduct of out-patient departments of hospitals, and the most desirable system by which they can be made satisfactory to the subscribers, to the beneficiaries, and to the medical profession, it be an instruction to the Medical Charities Committee to call a conference of representatives elected by it from the Branch to meet representatives of the staffs of the hospitals directly concerned in order to consider these points." The meeting consequently summoned lasted over two hours, and was well attended, over fifty delegates being present. It did not, however, arrive at any final conclusion on the general question at issue, but on the motion of Dr. Biggs, seconded by Mr. Hugh Ker, decided to authorize the appointment of a committee of nine persons, consisting of the chairman and four members, to be chosen by the hospital staffs, and four members by the representatives of the Metropolitan Counties Branch, to prepare an agenda for a further meeting.

POLICY OF KING EDWARD'S HOSPITAL FUND.

IT is announced that Prince Alexander of Teck intends to carry on the scheme projected by his brother, the late Prince Francis of Teck, for the benefit of the Middlesex Hospital, and by way of putting himself in a better position to do so has accepted the post of chairman of the hospital. The outline of the scheme in question was communicated to us by Prince Francis himself in a letter written shortly before his fatal and deeply regretted illness it appeared at p. 1000 of our issue for October 1st this year. Thanks to a notable combination of energy, industry, and tact, Prince Francis had then recently succeeded in completing his self-imposed task, that of clearing the Middlesex Hospital of the burden of its outstanding debt, by raising a sum of £20,000. But his general efforts were not to stop at that point. He proposed to commence forthwith a much more formidable task; this was so to increase the funded capital of the institution as to enable its governors always to pay their way and to devote themselves solely to seeing to the economic disposition of the hospital's income and to obtaining the best possible results from the combined efforts of themselves, of ordinary annual subscribers to the support of the institution, and of its professional staff. The additional annual income estimated to be required was £7,000, which means a capital of approximately £200,000. We have no doubt that had Prince Francis lived he would have succeeded in getting together this great sum within a comparatively brief period, and it is likely, though perhaps not quite so rapidly, still to be raised. At all events we hope so, for the sake of a very deserving and scientifically successful institution, whose managers are never lacking in enterprise or energy. The general interest of the scheme, however, lies in the fact that it should ever have been conceived. Had its proposer been an ordinary member of the philanthropic public little importance need have been attached to it, but Prince Francis was, quite apart from his connexion with royalty, by no means an ordinary philanthropist. He had been interested in hospital enterprise for good many years, and can hardly have decided to undertake such a task as that of placing the governors of the Middlesex Hospital in the happy position already mentioned without considering what might be the indirect as well as direct consequences of the achievement of his proposed task. It therefore seems just to assume that he had received an assurance that if he succeeded in his task the authorities

of King Edward's Hospital Fund would not promptly nullify his success by withdrawing the large donation which they have hitherto annually made to the funds of the hospital. Up to the present support from that fund has not been readily forthcoming for institutions whose governors have, by careful management in past days, put them on so sound a financial basis that they have considerable accumulated funds, and do not start each year's work without knowing how half or more of the year's expenditure will be met. Indeed, in the case of one or two institutions which are in this position—and notably so popular and important a place as St. Thomas's Hospital—contributions have been definitely refused year after year, much to the disapproval of many of those who in a general way regard the actions of the King's Fund as open to no criticism. In view, however, of Prince Francis's decision, there seems to be a possibility that this policy is now to be abandoned. This is eminently desirable, for the policy constitutes a practical invitation to previously carefully-administered institutions to reduce themselves to a position of comparative poverty.

THE CASES OF PLAGUE IN SUFFOLK.

THE information which the Local Government Board furnished to the public last week through the lay press concerning the plague cases in Suffolk will have been no news to our readers, for we mentioned these cases a fortnight ago. They had not at that time been officially declared to be plague, and indeed little, if anything, had been heard of them at all. We felt justified, however, in referring to the cases as instances of plague, as the information in our possession left no other conclusion possible. This being so, it seemed desirable to draw the attention of our readers to their occurrence, for though the Local Government Board did not at that time seem disposed to take the same view of the matter, it is only by the co-operation of the medical profession and the general public that the authorities can possibly hope to deal effectively with an outbreak of the kind in question. The sanitary authorities can usually deal with other classes of infectious disease effectively and without attracting any particular attention to them; and the same course is possible with cases of plague when they occur in direct connexion with shipping. But it is otherwise when cases break out in a country district and among persons not employed in docks. In such case there can be no reasonable doubt that the immediate cause of the disease in the human beings affected is more or less extensive prevalence of plague among the vermin in the neighbourhood. As we have already implied, such a focus of disease cannot effectively be circumscribed and extinguished without the active co-operation of the public, and, therefore, with its full knowledge. Nor is knowledge of the circumstances on the part of the public in itself undesirable, for, as we showed in the article in question, the tendency of the public now is to exhibit an admirably philosophic calm in the presence of infectious disorders. This is due partly to well-merited confidence in the sanitary department of the Local Government Board and its local representatives, and partly to the fact that the lay press has of late years thoughtfully refrained from fomenting excitement. This is as it should be, for, as was shown in the same article, the occurrence of cases of plague and cholera is this country from time to time can, for the reasons stated, no longer be regarded as extraordinary incidents. As regards the present outbreak, the right steps are now being taken and everything is going well. It is upwards of five weeks since the date of the death of the fourth patient, and the occurrence of others is not on the whole very probable; at any rate, nothing in the nature of a general outbreak can be regarded as in the least degree likely. Dealing with the disease in vermin will, however, be no light task. The infected vermin and ground game near Freston are likely to spread the disease to their neighbours in other districts, and in order to feel full assurance that it is being stamped out gamekeepers and farm hands in all parts of the country should be warned to keep on the outlook for dead animals, or for any evidence of unusual disease amongst them. Even should the disease continue to prevail amongst ground game and vermin, the probabilities of plague obtaining a lengthened foothold in this country are not great. It is in no wise an infectious disease properly so-called. The only truly infectious cases are those of a pneumonic type, and in these infection can readily be avoided by skilled nursing. In past times there has been a good deal of discussion as to the way in which the disease spreads but it is now fully agreed that it is solely through the operation of vermin. If rats can be excluded from houses and streets while infected with plague no one even in the most plague-stricken country runs much risk. It is not the rats themselves which are a danger, but the fleas which live upon them. These fleas, it is to be noted, are not the same as the fleas which infest human beings, but a special kind. They do not usually bite human beings, but are not more particular than their hosts in respect of their food, should they be deprived of their natural nourishment, which is rat's blood. These statements may possibly seem difficult of acceptance by those who have the Great Plague of London in their minds, but it is to be remembered that it is not absolutely certain that that plague was identical with modern plague, and in any case the domestic habits of our forefathers and the structure of their houses, and their fashion of furnishing them, were admirably designed to lead to the prevalence of any disease due primarily to rats and their parasites.

MEDICAL EXPERT EVIDENCE.

AT this time, when the question of expert medical evidence is being much discussed, it may not be out of place to quote the views of a man who played a notable part in many notable trials. Sir Robert Christison, in his *Autobiography*,[1] speaking of the early part of his professional career, says: "My progress in medico-legal knowledge was greatly promoted and the practical bearing of the lectures much enhanced by constant practice as a reporter in precognitions and as a witness in courts of law, first in criminal trials, and soon in civil actions also. My earliest appearances were on the side of the prisoner in the Justiciary Court, the young counsel coming to me for the discovery of loopholes in the case for the Crown—flaws which it was easy enough to find in the defective medico-legal inquiries of the day. But Solicitor-General Hope, afterwards Lord Justice-Clerk, saw the inconvenience arising from obstructions thus thrown in his way, and by his advice I became unacknowledged standing medical counsel 'for His Majesty's interest.' My previous training as witness on the prisoner's side, and the wise advice of my elder brother, with whom I continued to keep house, led me always to look at both sides of the question. So far as the medical relations of a case were concerned, I thus became umpire between the prosecutor and the prisoner in the precognition. In point of fact, I thus

[1] *The Life of Sir Robert Christison, Bart., M.D., D.C.L.Oxon., LL.D.Edin., Professor of Materia Medica in the University of Edinburgh, Physician to the Queen for Scotland, etc.* Edited by his Sons. In two volumes. Vol. I. Autobiography. Edinburgh and London. William Blackwood and Sons. 1885.

on several occasions put a stop to further procedure, either by eliciting proof of innocence, or by showing the inconclusiveness of evidence, and the futility of proceeding to trial. I followed the same rule in my inquiries and evidence in civil actions, in which it is even more necessary to be on guard against the one-sidedness of the preliminary investigations. Once during an inquiry of this kind, I was roundly charged by the agent with precognoscing for the opposite party rather than on the side for which I was employed. It would have served no good end to have informed this gentleman that, whatever might be his duty in the case, mine was to find out the truth. But I silenced his scruples by letting him see that, if my services as his witness were to be turned to good account, I must know as much as possible of the other side, in order to stand cross-examination; that I could rely on him putting me well up to the facts on his own side, but that for those on the opposite side I had found I must always depend very much upon myself. The consequence of this mode of procedure was that I cannot recall a single instance of my evidence-in-chief having been shaken in cross-examination. In general, indeed, it was rather strengthened by points being brought out which had been overlooked in my primary evidence, and which the cross-examining counsel had better have let alone. Hence the leading members of the Bar ceased to cross-examine me; or, when they did, it was to bring out some point in favour of their client, which they knew beforehand that I possessed, and was quite ready to produce if desired." Christison goes on to say that he thus gained the approbation of both Bar and Bench. He expresses the hope that all his brethren will profit by his experience, and put an end to the disgrace under which scientific equally with all sorts of professional evidence has for some time lain, of being rather the pleading of a counsel than the testimony of a witness. It cannot be denied that in all professions and sciences men may now be got to defend, on their oath as witnesses, any case in which there is a little show of reasonable doubt. After referring to medical evidence in cases of railway accidents, he says he saw enough to determine him never to have anything to do with the trade of medical witness in such trials. He proceeds: "Much mischief, however, had been done previously to the character of medical testimony in the Scottish law courts by a small section of men, belonging to the extra-academical school of medicine, who could scarcely ever meet a university man on a public occasion without setting up their backs and spitting at him. It was quite enough that a professor was a professional witness in a court of law for one of this brotherhood to appear on the other side; nor did they ever seem taken aback by the sorry figure they were made to cut on divers occasions. One of them was rather vain of the frequency with which Henry Cockburn, then at the Bar, had him engaged whenever he was counsel. The witness would not have been so proud of his post had he known why he so often filled it. On one occasion the agent in a case in which Cockburn was counsel, remarking that a medical witness would be wanted, asked whether he should see Dr. —— on the subject. 'No, no!' said Cockburn, 'go to Dr. ——. He will say anything you like.' The following is a specimen I heard of a cross-examination of this friend of Cockburn. In a trial for poisoning with arsenic—the last occasion on which an attempt was made to dispute the validity of the chemical evidence in arsenical poisoning—Dr. —— was employed to make a muddle of the professional testimony; and this was how he set about it. The proof, from symptoms during life and morbid appearances after death—apart from irrefragable chemical proof of the presence of arsenic in the stomach—was unusually strong, perhaps singly conclusive. But Dr. —— had not difficulties. 'He had great experience of disease. Vast experience in pathological dissections. There was nothing in the symptoms of the deceased during her life which he had not seen again and again arising from natural disease; nothing in the appearances in the dead body which he had not seen twenty times as arising from natural causes.' 'But, Dr. ——,' said the Lord Advocate, 'the symptoms you have heard detailed, and which you say may have arisen from natural disease, are also such as arsenic may produce, are they not?' 'They may be all produced by natural disease.' 'So you have already told us. But may they not also be produced by arsenic?' 'They may; but natural disease may equally cause them.' 'You need not repeat that information, doctor. Give me a simple answer to my simple question: May these symptoms be produced by arsenic? Yea or Nay?' 'Yes.' 'Now, Dr. ——, you have also told us that the appearances found after death were such as natural disease may produce. Are they not also such as may be produced by arsenic?' 'Natural causes may account for them all,' etc., through the same round of fencing, until he was compelled to admit that arsenic might produce them. 'Now, Doctor,' continued the Lord Advocate, 'you have heard the evidence of arsenic having been found in the stomach of the woman. Are you satisfied that arsenic was discovered there?' 'My Lord, I am no judge of chemical evidence.' 'Then, Dr. ——, in that case I must tell you that it will be my duty to represent to the jury and judges that arsenic was unequivocally detected; and I ask you this—Suppose arsenic was detected, what in that case do you think was the cause of these symptoms, and of these signs in the dead body?' 'Natural disease might cause them all.' 'Yes! yes! we all know that. But suppose that arsenic was found in the stomach, what then would be your opinion as to their cause?' A pause on the part of the doctor, now run to earth. 'Do you not think, sir, that in that case arsenic was the cause?' Softly and reluctantly came the inevitable answer, 'Yes.' 'One more question, then, and I have done: 'In your opinion, did this person die of poisoning with arsenic?' 'Yes.' 'Have you any doubt of it.' 'No.' 'Then' (sotto voce, yet audibly enough), 'what the devil brought you here?'"

"COMPURGATION."

In another part of this issue appears a letter from Dr. Charles Mercier. His Berserk ardour is less full-blooded than usual, and his humour perhaps not quite up to his ordinary standard. Still, on the whole, the letter is typical, so we trust that readers will join us in enjoying it. It is true that in places its meaning seems to us obscure, but that may be due to our lack of apprehension. The first paragraph, for instance, may be variously interpreted as meaning that conflicts of medical testimony are 2,000 years old, or that our suggestion for their avoidance is of the same date, or that Dr. Mercier first began admiringly to watch our "sleepless vigilance" much about the same period. We have no objection to his applying the term "compurgation" to the method mentioned in our article, but shall be glad if Dr. Mercier will take it from us that we do not accept as accurate his description of the application either of that ancient ceremony or of our own method. We suggest that he should read up the subject again, and meanwhile beg his permission to point out that our own form of "compurgation," at any rate,

includes no idea of the defence or prosecution vying in respect of the number of their medical witnesses and the verdict falling to the side with the top score. We merely suggested the adoption in all cases of a system which, so far as its central principle is concerned, has already been applied by the Legislature to compensation cases. If this were done the medical evidence, and the witnesses giving it, would, as Dr. Mercier justly desires, be weighed, but would be weighed by competent persons, instead of by uninformed jurymen. The object is the avoidance of unedifying medical conflicts or of such Homeric combats as might be expected to ensue if Dr. Mercier himself, for instance, found himself faced, say, by some professional "expert" well known to the public which reads the "Yellow Press" but of lower standing in the eyes of the profession. The scene would be amusing, but might possibly lead to a grave miscarriage of justice. The two combatants would be forced by their respective counsel to give—very unwillingly, no doubt—full descriptions of their qualifications, attainments, and performances, and if those of Dr. Mercier happened to make a slighter impression on the jury than those of the other expert, the side represented by the former would be initially prejudiced. If subsequently the Yellow Press expert gave his evidence in a clear, convincing manner, and Dr. Mercier followed with a deliverance beyond the understanding of the ordinary man, such as that which we now have the pleasure of laying before our readers, his side would run a serious risk of losing the day. This would be a pity, for it is quite probable that of the opposed views expressed by the two witnesses Dr. Mercier's might really be the sounder.

A NIGHTINGALE MEMORIAL.

A WELL-ATTENDED meeting was held on October 28th at Grosvenor House, by permission of the Duke of Westminster, for the purpose of considering the question of raising a fund as a national memorial to Miss Florence Nightingale and the direct object to which such fund would best be devoted. The net outcome was a decision to start such a fund, and the appointment of a committee to deal with the matter. The persons selected were Mr. Haldane, Lords Crewe, Pembroke, Selborne, and Charles Beresford, Mr. Shore Nightingale, Miss McCall, and the Presidents of the Royal College of Physicians and the Royal College of Surgeons, Sir Thomas Barlow and Mr. H. T. Butlin respectively. Subsequently the names of Sir William Treloar and Sir Joseph Dimsdale were added to the committee, and the latter was given power to add to its number some representatives of the nursing profession additional to Miss McCall. In the course of the meeting it was mentioned that eight of Miss Nightingale's original band of workers are still alive; three of them being nuns are supported by the sisterhoods to which they belong, three others are supported partly by their own means and partly by assistance from their friends and relatives, and the remaining two are practically in the position of paupers. It was also suggested that one excellent plan of perpetuating the memory of Miss Florence Nightingale would be to devote the fund to the benefit of nurses who are past work and in want. This did not meet with the approval of Mrs. Bedford Fenwick. Nevertheless, we hope it will be taken into favourable consideration by the executive committee. There is nothing degrading to the profession of nursing in such a proposal, nor could it conceivably have any pauperizing influence on its members. Similar funds exist for the benefit of members of nearly all professions, and to most of them persons not belonging to those professions do occasionally, or have at some time, contributed. Nurses, whether they work in or out of hospitals, are essentially public servants, and there is no class which is better entitled to receive assistance from the public as a body. A certain proportion of them are reasonably, and some well paid, when engaged in private work, but the years for which they can hope to work successfully as private nurses are comparatively few, and no nurses whatever receive sufficient pay to make it reasonable to expect that they should invariably save enough to provide for their old age. A few hospitals do provide retiring funds for their nurses, but most nurses when they grow old have very little, if anything, between themselves and the workhouse. The unfortunate position of nurses in this respect would long since have pressed itself on the public notice but for the fact that for a long time the modern nurse was recruited chiefly from among the comparatively well-to-do classes. It is true that there is a provident association of which nurses can become members, but the utmost annuity which they can expect to receive must seem to many of them microscopic in comparison with the premiums which have to be paid. To obtain an annuity of £30 at the age of 50 means the annual payment throughout her working life of little less than 50 per cent. of the salary of an ordinary nurse.

A SANATORIUM FOR MIDDLESEX.

WE understand that next Tuesday (November 8th) a meeting of Middlesex residents is to be held at Burlington House for the purpose of starting a subscription for a memorial to the late King. We also gather that there will be put forward a suggestion to the effect that this county memorial shall take the form of a sanatorium for those suffering from pulmonary tuberculosis. It is a proposition in favour of which a great deal may be said, and since elsewhere similar plans of commemorating one who said "If preventable, why not prevented?" have been received with much approval, it seems not unlikely to be adopted. The idea of creating a sanatorium for Middlesex is not altogether new; a scheme for one was put forward nearly a year ago, and in our issue for May 7th we gave some account of what had been done up to that time. Committees had been established in several localities in Middlesex, some large donations had been promised, and the rest of the money required it was expected to raise by 5s. subscriptions. Since then we have not received any information as to its progress, but if, as now seems to be in view, it is adopted by the county in the fashion indicated, it may be expected to be put through very promptly. The plan provided for the establishment of a "working class" sanatorium of 100 beds at an estimated outlay of about £100 a bed, in addition to the cost of land. It was anticipated, not without reason, that the institution, once started, would prove self-supporting, in the sense that there would always be plenty of applicants ready and able to pay the estimated cost of their maintenance—namely, 25s.—and that options on bed accommodation would be secured by various boards of guardians. At the rate of £100 a bed, the building and furnishing outlay would be just £10,000, and there should be no difficulty in raising this sum in addition to whatever may prove to be the cost of a suitable site. Indeed, £10,000 might not inconceivably be found sufficient to provide accommodation for a good many more than a hundred patients if the very simple forms of building, which are really all that is necessary, were adopted. In this connexion it would be well, if the plan of a sanatorium meets with the approval of the meeting, for those charged with putting the scheme into execution to examine the arrangements at the Arthur Boyd

Memorial Sanatorium in Essex. An outline of them will be found on page 894 of our issue for September 24th, under the heading of "A New Sanatorium Development."

THE PUBLIC AT SENSATIONAL TRIALS.

Our contemporary, the *Law Journal*, complains of the issue of tickets to members of the public to the Crippen trial. There can be no doubt it is a grave scandal, and productive of much mischief. A certain number of the public should be admitted, but it should be strictly limited, and no encouragement should be given to mere curiosity. Members of the Bar and bona fide students of forensic medicine should have facilities offered to them, as it is of the utmost importance that they should have such opportunities of improving their knowledge. In the recent trial many barristers were altogether excluded, and many more were compelled to stand in the body of the court in a dense crowd of men and women who had no claims to be present beyond the desire to witness a man being tried for his life, and to gloat over the prurient details connected with that trial. Even some press reporters found it impossible to get accommodation. In these respects the arrangements for the trial reflected no credit on those responsible for them.

THE ROYAL SOCIETY OF MEDICINE.

A Mansion House Committee has been formed for the purpose of assisting the Royal Society of Medicine to collect the sum necessary for the erection of its new home. The site for this is at the Cavendish Square end of Wimpole Street, and the total sum estimated to be required is something between £40,000 and £50,000. Of this sum a little under £9,000 has been subscribed by members of the medical profession, while another £17,000 has been provided by the society itself. On behalf of the appeal the Lord Mayor has issued a statement to the effect that the society has been engaged in work of the utmost value, not only to the State but to mankind, for many years, and that its Fellows have not spared time, trouble, or expense in carrying on a really national work. In no circumstances, it is added, can it be said that the public work in question has been of the slightest personal advantage to the individual workers, or even to the society. It has been philanthropic in the fullest sense of the word. The very success of its efforts, the statement continues, has so enlarged the demand for still greater development that the society finds itself compelled to provide new and larger premises. Hence it now quite justly asks that those who are interested in promoting the health of the nation, and in preventing as well as curing disease, should at least supply a portion of the necessary funds. Hitherto the Royal Society of Medicine has been generally regarded as in essence a private body of medical men, associated for the purpose of confidential discussion of various points in medicine and surgery; and we confess we were not ourselves aware that it differentiated itself in this respect from other societies of like kind in the towns, and more especially the capitals of the three countries, or that it considered itself to have an ordinarily so-called public part to play. In common with all its compeers it certainly does do work for the public, and is destined to do still more; for the discussions carried on at the meetings of any such body must in the long run necessarily help to promote the cause of public health and the well-being of individuals. This being the case, if the Society considers that it has a mission which it cannot fulfil without an appeal to the Mansion House for assistance, the medical profession in common with ourselves will hope that its effort will be greeted with entire success.

The sixth International Congress of Obstetrics and Gynaecology will be held at Berlin in 1912.

The King has graciously consented to become Patron of Epsom College, in succession to his late father, King Edward VII.

The next session of the General Medical Council will begin on Tuesday, November 22nd, when Sir Donald MacAlister, the President, will take the chair at 2 p.m.

The dinner of the Glasgow University Club, London, will be held at the Gaiety Restaurant, Strand, W.C., on Friday, November 25th, at 7.15 for 7.30 p.m., the Right Hon. Lord Curzon of Kedleston, Lord Rector of the University, in the chair. Members who intend to be present, or to introduce guests, are requested to give notice as early as possible to the Honorary Secretaries, 4, Bryanston Street, Portman Square, W.

An informal conference will be held at the office of the Charity Organization Society, Denison House, Vauxhall Bridge Road, on Friday, November 4th, at 3 o'clock, to discuss the care and employment of consumptives discharged from sanatoriums. Dr. Jane Walker, of Maltings Farm Sanatorium, will open the conference. A large number of representatives of chest hospitals, sanatoriums, health societies, etc., will be present.

It is announced that the Nobel prize for medicine has this year been awarded to Dr. Albrecht Kossel, Professor of Physiology in the University of Heidelberg. Professor Kossel, who is 57 years of age, has devoted himself mainly to the investigation of the chemical constitution of proteid matters. His principal work, entitled, *Researches on Nucleins and the Products of their Division*, was published at Strassburg in 1881.

A committee, of which Professor Bianchi, Member of the Chamber of Deputies, and former Minister of Public Instruction, is president, was formed some time ago for the purpose of collecting funds for the erection of a monument in memory of Cesare Lombroso. Professor Tamburini, of the University of Rome, is the vice-president, and Professor Enrico Ferri, Member of the Chamber of Deputies, and professor of criminal law in the university of Rome, is the general secretary. The municipal council of Verona, Lombroso's birthplace, has voted £200 towards the cost.

During the Fourth International Congress on the Care of the Insane, held in Berlin, October 3rd to 7th, an International League against Epilepsy was founded under the presidency of Professor Tamburini of Rome. The head quarters of the League are at the offices of the Bureau of International Congresses at The Hague, the secretary of which is Professor H. Burger of Amsterdam. The official organ of the League is the periodical entitled *Epilepsia*, published by Johann Ambrosius Barth, of Leipzig. Next year the League will meet at Zurich, when the results of an international investigation which has been set on foot will be presented.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Medical Inspection of School Children.

The London County Council on November 1st had before it (1) a summary by the Education Committee of the annual report of the medical officer of health (education); (2) the letter from the Board of Education criticizing the Council's arrangements for medical inspection (British Medical Journal, October 22nd, 1910, p. 1272); the draft letter in reply thereto drawn up by the Education Committee (British Medical Journal, October 29th, p. 1364); and (3) the modified arrangements for medical inspection approved by the Education Committee in July last (British Medical Journal, July 30th, 1910, p. 293). On these various subjects a protracted debate took place, in the course of which the Council's scheme for medical inspection and treatment came in for criticism, and the majority on the Council was reproached that London after being the pioneer of medical inspection, which was introduced ten years ago under the old School Board, should now receive a severe rebuke from the Board of Education on account of the inadequacy of its arrangements.

Mr. Hobson criticized in detail the Education Committee's estimate of the number of inspections which could be made in twelve months by 100 quarter-time medical officers. It was proposed to inspect the children at three periods—on admission to the schools and between the ages of 8 and 9 and 12 and 13. He congratulated the committee on being in advance in that respect of the Board of Education, whose proposals were too narrow. The number requiring inspection was estimated at 220,000, and to inspect these a staff of 100 quarter-time doctors was to be provided. Taking 100 quarter-time doctors as equivalent to 30 full-time doctors (the quarter-time doctors did rather more than a quarter of a week's work), and deducting one-fifth, or 6 doctors, whose time would be taken up with other work—urgent cases, re-examinations, and so forth—there remained 24 doctors to do the work—not in a year, but before July 31st next. The Board of Education, in one of the gravest and most considered rebukes an education authority had ever received from a Government department, gave 7,000 cases as the absolute maximum one doctor working full time could examine in a year. This figure, multiplied by 24, the number of the full-time doctors, gave 168,000, leaving a deficit of 54,000. Until January 1st, 1911, only 72 quarter-time doctors would be at work, so that this figure was an under-statement. Mr. Hobson quoted figures relating to the number of medical inspections carried out in Surrey and Bradford, and arrived at the conclusion that the number of 7,000 cases per full-time doctor was not wide of the mark.

Mr. Frank Smith urged that the Council was on the wrong lines, because inspection was not being properly followed up with treatment. The plan of making use of hospitals for carrying out medical treatment was doing a disservice to those institutions, because people were arguing that as hospitals were being subsidized from the rates there was no need to subscribe. Thanks to the intervention of the Council, poor parents were being deprived of the free access to the hospitals they formerly enjoyed. A case had been brought to his notice in which a parent, entirely on his own initiative, sent his child to an ophthalmic hospital. The child was asked what school it attended, and a few days later the father was surprised to receive from the Council's Care Committee a notice calling upon him to pay the cost of treatment on penalty of a fine or a term of imprisonment. To such a pass had the great hospitals been brought!

Mr. Cyril Jackson, Chairman of the Committee, replying to the points raised, said Dr. Kerr was the pioneer of medical inspection in this country, and the Council ought to pay attention to his opinion that with the proposed staff the requirements of the Board of Education could be carried out. If it was found that the work was getting behind, a little of the inspection which the Board did not require might be dropped for a time, or a few extra doctors could be appointed. As to quarter-time as opposed to full-time doctors, the quarter-time system was tried on the medical officer's advice, his view being that it led to the Council getting the services of a large number of very able young doctors who could give part of their time whilst they were building up a practice. On the other hand, there were advantages in appointing full-time officers, and the question might be reconsidered at any time it was thought desirable.

An amendment requiring the Education Committee to submit definitely a supplemental estimate, in order that the number of school doctors might be increased, was rejected by 62 votes to 45.

The Council then approved the scheme for enlarging the scope of medical inspection, and for the rearrangement of the medical staff as follows: The number of half-time and quarter-time assistant medical officers to be reduced by one each, and three additional full-time assistant medical officers to be appointed, two as from January 1st, 1911, and one as from September 1st, 1911, each at a salary of £500 a year. From September 1st, 1911, the present scheme for the appointment of part-time school doctors to be abolished and to be superseded by the following scheme: One hundred school doctors to be employed each at a salary of £120 a year, including travelling expenses; 25 doctors to retire as from August 31st, 1912, and thereafter to 25 yearly, the vacancies thus caused being filled by the appointment of 25 doctors yearly.

The proposed reply to the Board of Education's letter was not reached in time to be dealt with. The report of the medical officer of health was ordered to be placed on sale.

The Central Coronership for London.

The Public Control Committee reported to the London County Council on November 1st, with regard to the appointment of a coroner to the Central District of London, vacant through the death of Dr. George Danford Thomas. In response to the advertisement, forty-one candidates offered themselves, and three names, in accordance with precedent, were submitted by the Committee. These were:

Grant, Charles Graham, V.D., 3, Great Ormond Street, W.C., and 523, Commercial Road, East; aged 46. Qualifications: Barrister-at-law; L.R.C.P. and S.Edin.; police surgeon "H" division; late medical officer at Rotherhithe tunnel works; Lieutenant-Colonel R.A.M.C. (T.); author of Police Surgeon's Emergency Guide, etc.: surgeon to the Poplar Hospital; Post Office medical officer, Eastern district. As police surgeon has acquired knowledge of the law of evidence, his duties necessitating frequent attendance at the Central Criminal Court, London sessions, etc.

Oddie, Samuel Ingleby, 1, Essex Court, Temple, E.C.; aged 40. Qualifications: Barrister-at-law; M.B. and M.S. (Edin.): deputy coroner for West London since January, 1903; surgeon in Royal Navy, 1892 to 1895: general medical practitioner, 1895 to 1898. Has held over 1,100 inquests in West London, and has also held inquests in Central London and North-East London. Has for some years been endeavouring to qualify thoroughly for the position of coroner.

Schröder, Walter, Coroner's Court, Paddington Green, W.; aged 55 Qualifications: Honorary secretary to the Coroners' Society of England and Wales; acting coroner for central district of London. Has had thirty-nine years' uninterrupted experience of coroner's work—in 1871 with Dr. Edwin Lankester, coroner for Middlesex, then with his successor, and since 1881 with Dr. Danford Thomas. In 1894 was appointed deputy coroner for Central Middlesex, in 1895 deputy coroner for South-west London and Surrey, and in 1899 deputy coroner for the central district of London; has held over 9,000 inquests, assisted at 20,000 others, and considered 60,000 deaths reported for preliminary investigation; has co-operated and been consulted upon important laws, reforms, and suggested reforms affecting coroners.

The Public Control Committee recommended Mr. Oddie for the appointment, as he had both a medical and legal qualification, and Mr. T. C. E. Goff moved the adoption of the recommendation.

Mr. W. Haydon, Vice-Chairman of the Committee, moved an amendment substituting the name of Mr. Schröder for that of Mr. Oddie. Mr. Schröder

had the unrivalled asset of his vast experience. He believed Mr. Schröder, if appointed, would waive his claim to a pension if retired under the age limit in ten years' time.

On being put the amendment was carried by 52 votes to 17.

Mr. W. C. Johnson moved a further amendment—that one of the conditions of the appointment be that Mr. Schröder waived any claim to a pension.

Mr. Casson protested against the amendment, and said Mr. Schröder had devoted the best part of his life to the work of a coroner, and it would be unfair to say, when he reached the age limit, that he should not be able to claim a pension which, in any case, would not amount to more than £175 a year.

The amendment was defeated by 34 votes to 27, and Mr. Schröder then received the congratulations of the Chairman and took the oath of office.

The Central Coronership for Middlesex.

The late Dr. Danford Thomas also held the coronership for the Central District of Middlesex, to which the salary of £190 per annum is attached, and the Middlesex County Council on October 27th deliberated as to filling the vacancy. The district includes Finchley, Friern Barnet, Hendon, Hornsey, and part of South Mimms, and the coroner has to provide his own office accommodation and expenses, apart from the actual disbursements at inquests.

The General Purposes Committee reported that seventeen applications had been received, and of these three had been selected for submission to the Council. Dr. George Cohen was a barrister, and held the degrees of M.B., C.M., was still, and had been engaged for seventeen years, in a medical practice—for eleven years in Harringay. He attended St. Bartholomew's Hospital, the Royal Infirmary, Edinburgh, and the Rotunda Hospital, Dublin. He had held appointments as Resident Medical Officer of the Hospital of Diseases of the Heart, London, Assistant Medical Officer to the Stepney Sick Asylum, and temporary Assistant Medical Officer at Claybury Asylum, and for two years was Surgeon in the P. and O. Company. He was 40 years of age.

Dr. Cohen received the appointment, and agreed to give a written assurance not to accept any other appointment of coroner or deputy coroner.

Leadless Glaze.

The London County Council has decided to follow the practice of H.M. Office of Works and stipulate that crockery supplied under the various contracts must be of leadless glaze.

MANCHESTER AND DISTRICT.

Medical Treatment of School Children.

On the authority of the School Medical Officer to the Manchester Education Committee it is stated that the only matters in which the Manchester Education Committee takes up the question of treatment are the following: (1) The provision of meals; (2) the provision of spectacles where prescribed by qualified medical men; (3) treatment of stammering; (4) treatment of such crippled children as are admitted to the residential school; (5) the treatment of such epileptics as are admitted to the residential school; (6) the deaf and dumb, blind, and mentally defective children being in a residential institution are also treated, and treatment is provided for children attending industrial schools. The School Medical Officer says he is not aware of any intention of the Education Committee to make further provision for treatment.

A Case of Lead Poisoning.

At an inquest held at Crewe last week on a young married woman, the medical evidence was to the effect that death was due to poisoning caused by taking certain pills and medicines containing lead, and the medical witness said there was a good deal of that sort of thing in Crewe. The coroner said it was alarming to hear of such a practice in Crewe, though he knew it was prevalent in Yorkshire. He would do his best to put a stop to it, but he thought the Legislature should take steps to stop such a dreadful thing. It was stated that the mother of the deceased had given her the medicine. The mother denied it, but the coroner severely censured her, and said he regretted that the evidence was not strong enough to put her on trial for manslaughter. It was not definitely stated in the press accounts what the object was in taking such medicines in this case, but there are grounds for believing that in the Manchester and Salford district it is by no means rare for common emplastrum plumbi to be bought, bits picked off, and rolled up into pills in the fingers, which are then sold by old "Mother Gamps" at extortionate prices for the purpose of procuring abortion. The writer of this note has attended a married woman who, during the space of about a month, took three dozen such pills, for which she paid an old woman, whose name she refused to divulge, the sum of a guinea a dozen. She almost died of lead poisoning, but no abortion took place.

Salford Royal Hospital.

At the annual meeting of the subscribers to the Salford Royal Hospital, the President, Sir Wm. Mather, suggested that the Government should make grants in aid to all voluntary hospitals in view of the financial difficulties under which most of them laboured. This, he thought, might easily be done in a way that would not lessen but rather encourage voluntary subscriptions. Sir George Agnew, M.P., who has just succeeded to the baronetcy on the death of his father, hoped that the time would never come when hospitals would depend entirely on the municipality or the State. Mr. L. Pilkington submitted the annual report, which stated that during the year 29,069 patients had been treated at the hospital and its branch dispensary at Pendleton. The income for the year was £8,128, and the expenditure £8 315. Referring to the distribution of the Hospital Saturday and Sunday Funds, he said that Salford subscribed over £2,500 to these funds, but the Salford Royal Hospital, which is practically the only hospital in the town, only received £555 from the funds, and he did not think that Salford could be content with that amount. The Mayor of Salford said that a special committee was inquiring into the distribution of the funds, and he believed a scheme would be produced that might satisfy both Manchester and Salford, but it must be remembered that the people of Salford benefited just as much from the numerous hospitals in Manchester as the inhabitants of Manchester. Sir Wm. Mather expressed his gratification that £50,000 had now been raised towards the hospital extension, but he trusted that the need for obtaining the full sum of £70,000 would be kept before the public. It was announced that the King had recently consented to become the patron of the hospital.

The late Mr. J. E. Platt.

At a meeting of the Board of Management of the Manchester Royal Infirmary it was announced that Mrs. J. E. Platt, widow of the late Mr. J. E. Platt, had written stating that, as her husband had been intimately associated with the infirmary as honorary surgeon, she was desirous of doing something in his memory. She proposed to endow a bed in one of the female wards and to set up a tablet stating that it was endowed in memory of her husband, and she therefore enclosed a cheque for £1,000 for the purpose. In accepting the offer, the board passed a most hearty vote of thanks for the handsome donation.

LIVERPOOL.

Presentation to Sir James and Lady Barr.

On Thursday, October 27th, Sir James and Lady Barr were entertained at dinner at the Adelphi Hotel. Sir James Barr lately resigned his appointment as Physician to the Royal Infirmary. The occasion celebrated his long and valuable services to the Royal Infirmary, the Northern Hospital, and the various other institutions which have afforded a field for his kindly and

able activity. As a permanent memorial of the occasion, Sir James and Lady Barr were presented with their portraits by Mr. and Mrs. Hall Neale. Mr. Paul, as Chairman of the Presentation Committee, presided at the dinner; 152 were present, including 65 ladies. In proposing the health of Sir James and Lady Barr, Mr. Paul said that those present would understand the enthusiasm with which this presentation was initiated by the colleagues of Sir James at the Royal Infirmary; they wished to express in the strongest way their esteem and affection. Sir James Barr had left the institution with the good wishes of all his colleagues and the enthusiastic admiration of all his friends. Mr. Paul went on to sketch Sir James's career in Liverpool, which began thirty-six years ago, and before closing alluded gracefully to the popularity of Lady Barr. The toast was to have been seconded by Dr. Caton, but in his absence Sir Rubert Boyce spoke both as a grateful patient and as a colleague on the Senate of the Liverpool University. He said that Sir James Barr was characterized by the qualities of courage, honesty, and earnestness, and that the medical profession recognized in him one who set forth his own convictions as a fair and courageous judge.

Sir James Barr, in replying, spoke of what small matters influenced a man's career. In his case, after a voyage to South America, he applied for two resident appointments, one at the Liverpool Northern Hospital, and the other at Swansea: both of these were offered him, but Liverpool came first. He spoke of a memorable occasion on which he was summoned by telegram to Dublin Castle by Sir Edmund du Cane, who was ignorant of the fact that he was an Irishman. The English Prisons Board on this occasion had sent an inspector of prisons and an engineer—Colonel Stopford and Major Beamish—as well as a doctor, and all three turned out to be Irishmen. Sir James alluded to the odium which at that time attached itself to the office he had to fulfil, and how he went about in Ireland usually with a picture of a coffin in his pocket, but he would say that all ill-feeling had long since disappeared.

Lady Barr also acknowledged the toast and presentation, and said the great honour done to her husband made the day one of the proudest and happiest of all her life.

Eugenics Education Society.

On Friday, October 21st, a meeting was held for the purpose of forming a branch of the Eugenics Education Society. Sir James Barr, who took the chair as a vice-president of the society, in addressing the meeting, alluded to the theories of inheritance and the possibilities of improving any particular species. He went on to speak of the difficulties in the case of the human species of knowing the characters which would lead to the elevation of the race; next he showed it was much less difficult to recognize which characteristics were undesirable to propagate. The speaker recommended Dr. Rentoul's book on race culture and race suicide in connexion with the problem of preventing the increase of the undesirable elements of a population. The curing of consumption by segregation was taken as an example of the wrong method of stamping out a disease instead of destroying the breeding ground of the disease and raising a population incapable of consumption and insanity.

The Honorary Secretary of the London society explained that the practical aims of the society were to teach and apply principles especially to the care of the feeble-minded, and to Poor Law questions, to collect and analyse family histories, to investigate certain questions relating to maternity and infant mortality. It was decided to found a Liverpool branch, with Sir James Barr as the first president.

Special Service for Medical Men.

The special service in St. Luke's Church held on Sunday was a great success. There was a very large attendance of medical men, of nurses from various hospitals, and of detachments of the Territorial Medical Service—men and officers. The Bishop of Liverpool read the lessons, and the sermon was preached by the Right Reverend Francis Paget, Bishop of Oxford, on the words, "God's fellow-workers." The appeal for the Medical Benevolent Fund realized the largest amount that has yet been collected on this annual occasion, namely £42.

BRISTOL.

Conferment of Honorary Degrees.

Considerable interest was aroused by the announcement some time since that the first Congregation of the university, when it was intended to confer a certain number of honorary degrees, would be a public function, and speculations on the ceremonial to be observed and the fashions and colours of the new gowns were numerous. Speaking after the event, it must be said that the spectators—who were, of course, in greater numbers than the members of the university—were fully satisfied not only that the proceedings were dignified, but that the shape and hues of the gowns and hoods were of a colour that was sufficiently conspicuous, while not being too gaudy or crude. In short, the whole conduct of the convocation was essentially dignified, and, except for a minor detail, to be mentioned later, was decidedly a credit to those who organized the proceedings. It is not easy to devise a new procedure for the presentation of degrees. The multiplication of universities throughout the kingdom renders any strikingly new pageant an impossibility, so that, though not following the detail of any other university in every detail, the ceremony was of a very similar nature to that seen elsewhere.

Having at present no hall large enough for a public Congregation, the university took the Victoria Rooms for the evening, advertising the fact by flying the university flag on the mast over the portico during the day. Visitors, of whom a large number had been invited, were requested to be in their seats in ample time, the waiting time being relieved by a performance on the organ. In front of the orchestra the chairs of the council, upholstered in red, were ranged, facing the public, to the right of the Vice-Chancellor being the Lord Mayor, to the left a chair for the Master of the Society of Merchant Venturers. The actual procession might possibly have been better marshalled. It began with the officers of the Merchant Venturers, following them the Lord Mayor, with his special constables, the city officials, and city councillors, and after a short break the Vice-Chancellor and the university members. A striking feature was the splendid silver mace of the university, presented recently by Mr. Stanley Badock, and the two wooden staffs, mounted with silver, given by the Misses Swayne. Then in turn the recipients of degrees were presented by the Deans of the various Faculties to the Vice-Chancellor, concluding with the presentation of Professor C. Lloyd Morgan, who had been for so many years the Principal of the College and the first Vice-Chancellor. At the close the whole body of spectators joined in the National Anthem.

It only remains to mention one or two small matters. First, the colour of the hoods—in them a peculiar red was the predominant tone. Few Bristol citizens till that evening knew that there was a shade of that colour known as Bristol, but such is the case, and this has been adopted as the colour to denote Bristol degrees. It is said to take its origin from the scarlet lychnis, whose flower is of a bright scarlet colour, and described in Gerard's *Herbal* as the flower of Bristowe. How it became associated with this city is not known, but it is suggested that it was introduced to this country through the port of Bristol.

The second matter will, it is hoped, not lead to any confusion, but in conferring a degree on certain past students, the Vice-Chancellor made a verbal slip and created them bachelors of science instead of arts. No doubt the error was duly corrected in the official documents.

Thirdly, it must be said that a good deal of the dignity of the proceedings was marred by the senseless

noise of the students, who no doubt think it the proper thing to imitate the bad behaviour of this kind of other universities. In this case the discordant noises began at least half an hour before the ceremony, and continued practically the whole time, thereby preventing many of those present from hearing a word of the proceedings.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EDINBURGH.

Edinburgh Royal Maternity and Simpson Memorial Hospital.

MR. KEITH B. MCGLASHEN, M.B., Ch.B. (Scott Scholar), has been appointed senior house-surgeon, and Mr. A. A. Morison, M.B., Ch.B., junior house-surgeon, for the quarter beginning November 1st. Dr. J. W. Ballantyne has resigned the post of honorary secretary to the hospital, and the directors have appointed Messrs. Scott and Paterson, C.A., secretaries and treasurers of the institution.

Parish Council Observation Ward.

Dr. Martin, physician to the Parish Council on the certification of lunatics, and on incipient cases of insanity sent to the mental observation ward, reported that for the quarter ended on September 30th, there had been admitted to the ward 18 cases, while there remained under treatment at the end of the previous quarter 2, giving a total under treatment during the third quarter of 20. The "discharged," "recovered," and "improved" numbered 13, representing 65 per cent. of the total under treatment. The cases which, after observation, required to be sent to the asylum, along with those that died, numbered 5, representing 25 per cent. of all under observation and treatment. The chairman of the council, referring to the report, expressed the opinion that it was a splendid one. The results of the cases treated in the infirmary proved that the steps they had taken in this direction were wise, and if only they had more accommodation they could go on and improve this treatment.

Meat Inspection in Scotland.

On October 20th Lord Pentland, President of the Local Government Board for Scotland, and other officers of the Board received a deputation in Edinburgh to the end that throughout Scotland all meat for human food be submitted to a method of inspection and standard of adjudication to be prescribed by the Board, and that a veterinary surgeon, with practical experience in the work, be appointed to the staff of the Local Government Board for Scotland, in order to ensure the uniform observance of the system. The deputation was representative of local authorities in burghs and counties and of agricultural, veterinary, and other interested bodies. Various gentlemen spoke in support of the above idea, and in reply Lord Pentland expressed agreement with the principle, and said the Dairies (Scotland) Bill of 1909, if passed, would meet a good deal of what was wanted.

GLASGOW.

University Council.

The statutory half-yearly meeting of the General Council of Glasgow University was held in the Bute Hall on October 26th. In the report submitted by the Business Committee it was pointed out that the Council's recommendations with regard to the draft ordinance for degrees in medicine were transmitted to the University Court, and that the ordinance as adjusted by the Court was communicated to the other University Courts, and laid before Parliament at the end of July. The position now is that it is open to any University Court, or to any person directly affected by the ordinance, to give notice of dissent to the Glasgow Court within one month after receipt (that is, up till the end of October, the months of August and September being for this purpose *menses non*), and, within a month after notifying the dissent, to make a representation to the Privy Council. It is also open to either House of Parliament within twelve weeks from the date of laying the ordinance before Parliament (the period of prorogation not being counted) to present an address praying His Majesty to withhold his assent from the ordinance or any part thereof.

Royal Faculty of Physicians and Surgeons.

When last year the late King Edward granted the Faculty the privilege of designating itself the Royal Faculty, one of the most prominent Fellows, Dr. Walker Downie, made known his desire of commemorating this signal honour by presenting a mace to the Faculty. The formal presentation took place at a *conversazione* held at the Faculty Hall on October 28th, which was attended by nearly 700 ladies and gentlemen. In welcoming the guests Dr. D. Knox, the President, pointed out that though the Faculty founded by King James VI of Scotland nearly 300 years ago was Royal in its inception, it had never used the title Royal, though whether they were entitled to use this title or not he could not say. At any rate they had now received the right for all time to come to be known as the Royal Faculty of Physicians and Surgeons. To commemorate this new era in their history, Dr. Downie was gifting a mace. He then called upon Dr. Downie, who asked the President to accept the mace on behalf of the Faculty. During the evening the mace was on view, and was greatly admired. It is about 4½ ft. long, and is of chased silver gilt. After the formal proceedings were over the guests were entertained by a musical performance, and there were on view a series of specimens illustrating much of the recent advanced research work which has been carried out in Glasgow.

Hospital Accommodation for Small-pox.

The question of adequate hospital accommodation for small-pox patients in the event of an outbreak in Glasgow has again been brought to the front. It has for long been recognized that the present small-pox hospital at Belvidere is wholly unsuitable for the possible requirements of the city, both as regards adequacy of accommodation and site. Its 240 beds are on the ratio of 30 per 100,000 of the population, taking the population at 800,000, the same ratio as existed in 1877 when the hospital was built. The provision made by the Metropolitan Asylums Board, according to the report for 1903, is 45 beds per 100,000, and on this ratio Glasgow should have 360 beds. The effect of the withdrawal of the compulsory clause as regards vaccination of children has been to reduce the proportion of vaccination during infancy in the city by 15 per cent., fully 9 per cent. of which is contributed by statutory exemption, and 4 per cent. by increasing indifference on the part of those who do not even take the trouble to make the requisite declaration. In the opinion of the medical officer of health, these facts show that Glasgow is preparing a population among which small-pox may spread in a manner of which the present generation has had no experience. The situation of Belvidere is unsatisfactory, and as far back as 1902 reports on this question were submitted by the medical officer. It is too close to the fever hospital, and even to residential parts of the city. When in full use it has been shown that it tends to the propagation of the disease in its neighbourhood. During the outbreak of 1900–1901 the average attack rate for the city was 2 per 1,000 of the population, but in the districts adjoining Belvidere it was from 6 to 10 per 1,000. Of all cases that occurred from April, 1900, to June, 1901, 47 per cent. came from this adjoining area, and the proportions were the same when the recrudescence appeared the following year. Several sites for the projected new hospital for small-pox have been considered by the Corporation, and plans have already been approved by the Local Government Board in connexion with a site at Robroyston, on the Corporation estate there. This Robroyston scheme has since 1906 been in abeyance, but it is expected that

steps will soon be taken to fix the site definitely, and have a more suitable modern hospital in readiness for all emergencies.

MEDICAL AND DENTAL DEFENCE UNION OF SCOTLAND.

The eighth annual general meeting of this union was held at Glasgow on October 13th. Sir Hector C. Cameron was in the chair, and there was a large attendance of members. The Chairman, in submitting the annual report of the council, referred to the prosperous condition in which the finances of the union now stood. Over one-fifth of the invested funds was derived from the excess of income over expenditure during the past year, and the fund now stood at £1,849, which was equivalent to £1 10s. 2d. per member. He also referred to the insurance scheme, under which, for a small premium, members are indemnified against claims for damages in the event of an action being unsuccessfully defended. In view of the fact that claims against members of the medical and dental professions are on the increase, the Chairman emphasized the advice given by the council that every member of the professions in Scotland should not only be a member of the union, but should be protected by an indemnity policy. The report was unanimously agreed to, and thereafter the election of office-bearers took place.

THE LATE DR. SPENCE, BURNTISLAND.

A public memorial to the late Dr. Spence, for many years Medical Officer of Health for the Burgh, has just been erected in Burntisland. The design is in the form of a handsomely carved Celtic cross in unpolished grey granite, and stands 12 ft. high. A panel on the cross bears the following inscription: "Erected by friends in Burntisland and district to the memory of Robert Spence, M.B., C.M., born at Uyeasund, Shetland, August 8th, 1847, died at Burntisland, February 24th, 1910. For 37 years a beloved physician." In addition to the above, mural brasses with suitable inscriptions are being placed in the Town Hall and the Public Library. The memorials are the work of Messrs. Stewart McGlashen and Son, Limited, Sculptors, Edinburgh.

DEATH OF DR. BELL, SANDBANK.

Dr. Bell, Sandbank, died suddenly on the night of October 26th. Dr. Bell went to Sandbank about a year ago. He seemed in his usual health when he went to bed, but was taken ill during the night. Dr. Bell, who was about 56 years of age, leaves a widow and family.

NEW COTTAGE HOSPITAL AT ABERFELDY.

A new cottage hospital for Aberfeldy and district has just been opened. The new building is the outcome of an offer made by the late Sir Donald Currie to the hospital trustees of £1,000, and in addition half of any sum required in excess of £2,000. There are four wards, with accommodation for eight beds, and the interior arrangements are up to date.

OUTBREAK OF ENTERIC FEVER AT SALTCOATS.

An outbreak of enteric fever at Saltcoats has assumed a very serious aspect, over 60 cases are reported. The local authority has taken prompt measures to deal with the outbreak.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

ASYLUM ATTENDANTS' GRIEVANCES.

THERE has been much dissatisfaction of late amongst the attendants employed in Irish asylums on the score of excessive work and deficient pay, and in consequence steps are now being taken to bring their grievances before all the members of Parliament by the issue of a circular letter. The main complaints are that the number of hours' work per day, which amount to 13½, are excessive, and that all attendants are now compelled to contribute 3 per cent. of their wages towards the pension fund. The pay for charge attendants varies from £27 to £37, and for ordinary attendants from £15 to £27 per year. As a reconsideration of the relations which exist between the local taxation fund and the Government asylum capitation grant has been promised, it is probable that any real grievances which exist can very shortly be dealt with.

VITAL STATISTICS OF DUBLIN.

Health.

The report upon the state of public health and the sanitary work performed in Dublin during 1909 has recently been issued, its appearance having been delayed owing to the prolonged illness of its author, Sir Charles Cameron. The report states that the Dublin registration area comprises 7,745 acres of land, and has an estimated population of 398,356. The number of persons residing in the whole area was in the ratio of 29 per acre, and in the city proper 38·8 per acre.

Births and Deaths.

In 1909 the births in the whole registration area numbered 11,407 (5,839 boys and 5,568 girls), which was equivalent to 28.6 per 1,000 estimated population. This rate is 0·1 above the average of the previous ten years. The deaths numbered 8,750 (4,344 males and 4,406 females), but of these 431 were deaths of persons admitted into public institutions from places outside the registration area. The death-rate was 20.5 per 1,000 estimated population, which is the lowest rate on record for the Dublin area. Of the total deaths, 3,679, or 42 per cent., occurred in public institutions, a fact which seems to show that the proportion of poor and destitute people in Dublin is very high, as in the large English towns only 18 per cent. of the deaths take place in such institutions. The death-rate from the principal epidemic diseases shows a notable decrease, being 1.6 per 1,000 as compared with 2·2 for the previous ten years. The death-rate of infants was 141 per 1,000 born, as compared with 146 per 1,000 in 1908. The present rate is, however, high compared with that of the large towns in England and Wales, which was only 118 per 1,000 in 1909. The high Dublin rate is attributed to improper and insufficient food, deficient clothing, and neglect during attacks of epidemic diseases.

Deaths from Epidemic Disease.

Since 1904 no case of small-pox has occurred in Dublin, and, in consequence, this disease does not figure in the list of causes of death. Typhus fever caused 3 deaths in 1909, out of a total of 18 cases; the deaths from diarrhoeal diseases numbered only 137, as compared with 275 in 1908; enteric fever caused 51 deaths, and diphtheria 43. In connexion with tuberculosis, attention is called to the diminished death-rate from that cause following the antituberculosis campaign inaugurated by Lady Aberdeen. During the last three months of the year the Tuberculosis Notification Act was in force, and 322 notifications were received. Notification is required in cases of pulmonary tuberculosis when the sputum is infected, provided that the individual suffering from the disease either (1) habitually sleeps or works in the same room as any other person not so suffering, or (2) is employed or engaged in handling, preparing, or distributing milk, meat, or any other article of human food intended for sale to the public.

Suggestions for Improvement of Health Conditions.

The first suggestion under this heading is to make a considerable extension of the provision of healthy dwellings for the working classes, and to clear out insanitary areas. It is suggested that a large loan should be raised for this purpose repayable in sixty years. It is to be remembered, however, that certain steps in this direction have been taken of late years, and that considerable difference of opinion prevails as to the best method for meeting the present situation—for example, in connexion with the scheme for dealing with what is known as the Cook Street area, opposition has been offered by the Dublin Citizens' Association, on the ground that it is wrong in principle to pull down the houses in part of an insanitary area,

and to rebuild in the midst of other insanitary houses. Any steps taken in providing healthy dwellings should be part of a complete and well thought out scheme.

The report also advocates the regular cleansing of the 900 streets and alleys which are not in charge of the Corporation. Several of these alleys are most insanitary; and, although the Corporation has legal powers to insist on the owners keeping them clean, the law has hitherto not been enforced. Other suggestions are: The institution of medical inspection for school children, the provision for the housing of poor consumptives still at work, the efficient carrying out of the Early Notification of Births Act and of the Tuberculosis Prevention Act, and the formation of better by-laws for the regulation of tenement houses.

Street Trading.

The report regrets the absence of medical inspection of school children; if such existed it might be possible to have the street trading children still at school medically examined to determine whether or not they were physically fit for the rough life of the streets. The establishment of a municipal nightly lodging house for young people trading in the streets is urged, as many of the children traders have no family to reside with, and sleep in ordinary nightly lodging houses.

Local Government Board Report.

(Continued from p. 486.)

Old Age Pensions Act.

The number of appeals received under this Act during the year was 21,059, and the number decided upon was 18,449. This large number is attributed to the absence of satisfactory evidence of age; to the difficulty of valuing the means of small farmers; and also to the fact that claimants who have been struck off on appeal usually come forward on the expiration of four months with fresh claims. Under the existing law, apparently every case refused on the grounds of means can come up for consideration several times a year, and as since the passing of the Act assignments of farms have been very numerous on the part of small farmers over 70 years of age, much difficulty is experienced in many cases in coming to a decision. Reference is made to the difficulties caused by judgements given in the Court of Appeal, stating that in appeal cases the jurisdiction of the Local Government Board is limited to the decision of the question that has been made the basis of the appeal.

Pauperism.

The total number of persons in the workhouses and in receipt of outdoor relief on March 26th, 1910, was 99,607. This represents an average of about 22 per 1,000 of the population, those relieved indoor being about 10, and those outdoor about 12 per 1,000. About 74 per cent. of the total workhouse population is composed of the sick, the aged, the infirm, and lunatics. Eleven additional trained nurses were appointed to the workhouse hospitals during the year, bringing the total number up to 235, as compared with 66 ten years ago. The deaths in workhouses during the year numbered 10,455, of which 1,168 were of children under 5 years of age. The total poor relief expenditure was £1,364,114.

Unemployed Workmen Act, 1905.

A sum of £9,160 was distributed to various distress committees during the year, and the opinion is expressed that by its means good and substantial work was done, and that many families were tided over the severity of the winter season without undue privation. Widening of streets, cleansing of reservoirs, clearing out old rubble drains, and reclamation of sloblands were carried out in various districts.

Vaccinations.

The number of vaccinations performed during the year was 82,046, of which 77,127 were primary vaccinations. No difficulty has been experienced in enforcing the vaccine laws, except in the Enniscorthy Union. The secretary of the vaccine department states that there is a small percentage of infants who will not respond to the most active calf lymph, and that in such cases he uses fresh humanized vaccine lymph when the consent of the parents is obtained. The humanized lymph, in his experience, seldom fails. The report from the Vaccine Institute states that the results of keeping the lymph at a low temperature (1° C.) have proved satisfactory, and that it has been decided not to vaccinate calves in future during the hot weather, but to accumulate in cold storage (−6·6° C.) all the vaccine collected during the cold months of the year. The bacteriological examination of the lymph shows that, as issued, it can be absolutely relied on as pure and free from extraneous disease-producing organisms.

Midwives.

The number of midwives authorized for dispensary districts is 714, an increase of 24 in the year. It is stated that additional appointments are necessary in many other districts, in some of which unsuccessful attempts have been made to induce the guardians to take action. The death-rate of parturient women per 1,000 was 6.03 in Ireland, as compared with 4.81 in England and Wales in 1908, and in order to reduce this death-rate the opinion is expressed that further attention should be paid in this country to the care and skilled nursing of women at the lying-in periods, and consequently that trained midwives should be more universally available.

Public Health Acts.

The figures for the year 1909 show that the death-rate for the twenty-two principal town districts was 19·2 per 1,000, as compared with an urban mortality of 14.7 in England and Wales, and 16·5 in Scotland. This is the first year that the rate in Irish towns has been below 20 per 1,000. The death rate from the principal epidemic diseases was 1.4 per 1,000. Reports dealing with the prevalence of epidemic disease throughout Ireland are furnished by the medical inspectors. Enteric fever was on the whole less prevalent than in the preceding year, though small epidemics occurred in several localities. One of these epidemics was traced to the use of water from a contaminated well, another to a creamery, and a third was definitely traced to a typhoid carrier. The epidemic traced to a carrier occurred at Kilworth Camp, near Fermoy, when 27 cases occurred. In every instance, with one exception, which could not be traced, the milk supply used by those affected was obtained from the same source; and inquiries at the dairy farm showed that the dairy maid had some years previously suffered from enteric fever. Examination of this individual's blood gave a positive serum reaction with the typhoid bacillus, and subsequently typhoid bacilli were isolated in large numbers from the urine. A complete and valuable account of the case is furnished by Professor E. J. McWeeney. No typhoid organisms were found in the faeces, and up to the present drug and vaccine treatment has failed in checking the typhoid bacilluria.

Sanitation of Naas.

Owing to a serious epidemic of scarlatina in Naas during the last few months a special committee of the Urban Council was appointed to inquire into the sanitary condition of the town. This committee has now furnished a report, which proves that the sanitation of the district is unsatisfactory, and recommends several important improvements. The rapid completion of the sewerage scheme, which has been under construction for some years, the cleansing and disinfecting of old sewers, the building of labourers' cottages, and the establishment of a public slaughter-house, are the most important structural changes advocated, but in addition attention is called to the importance of enlisting the sympathy of persons of influence in the sanitary condition of the community, in order to make the houses of the people more comfortable and wholesome. The committee believes that judicious and friendly advice and the fostering of a spirit of emulation are more likely to lead to improvement and to be popular than domiciliary visits by the sanitary authority, however necessary such visits may be.

SANATORIUM FOR RATHDRUM.

At a recent meeting of the Rathdrum Board of Guardians the following resolution was proposed and adopted:

> That the present fever hospital building be converted into a sanatorium for the treatment of poor persons suffering from tuberculosis, and that in future all cases of fever be sent to the local fever hospitals in their respective districts, and which are now partially supported by the County Council, the arrangements necessary for the transference of the tuberculosis cases, now in the infirmary, to be carried out forthwith by the medical officers, and the hospital, when renovated, be called the Ballyganno Sanatorium.

The fever hospital in question has been practically disused for some time past owing to the small number of fever cases in the district, and its conversion into a tuberculosis sanatorium is a step that might advantageously be followed elsewhere in Ireland where similar conditions exist.

ANTRIM DRINKING WATER.

At the meeting of the Antrim Rural Council on October 27th a letter was read from the county analyst to the following effect:

> I presume your Rural District Council are desirous of hearing whether the water is desirable for drinking purposes in its present condition. Those responsible for sending such samples should know better, for one was nothing less than stinking sewage, and the other was nearly as bad. Neither man nor beast would attempt to drink the water from Ballydonaghy.

Dr. Hunter reported that he had taken the water himself after pumping for some time, so that he thought the samples represented the average quality of water in the wells.

HEALTH OF BELFAST.

The death-rate for the last week has been only 14.2 calculated on the English system. This is exceptionally low for this season. There are some cases of diphtheria and scarlatina, but no epidemic. Otherwise the zymotic report would be very satisfactory.

ASYLUM RATES IN IRELAND.

The inability of the Treasury to continue the capitation grant of 4s. for the Belfast Lunatic Asylum will probably throw £4,000 more on to the local rates. The grant was taken from the duty on spirits, and this has fallen so low that no balance remains.

UNIVERSITY COLLEGE, CORK.

At a recent meeting of the governing body of University College, Cork, a number of valuable gifts to the College were reported. In the first place the formal notification of the foundation of the Honan Scholarships was made, and a resolution embodying the best thanks of the governing body was ordered to be sent to Miss Honan for her most generous gift of £10,000 for the foundation of scholarships in the College. In the next place a valuable mace, which has been subscribed for by friends and old students of the college, was presented. This mace, which is a very striking example of the silversmith's art, has been made throughout in Cork in the workshop of Messrs. Egan and Sons. It is of solid silver, and stands 3 ft. 6 in. in height. The shaft and the head, which is supported by three additional wolf dogs, are adorned with Celtic ornamentation, and the latter also carries enamels—made in Cork—giving in their proper colours the arms of (1) the College, (2) Munster, (3) Cork, (4) Limerick, (5) Waterford, (6) Cashel, (7) Trales, these being the chief cities of the counties associated with the College under the charter of 1908. The globular head thus ornamented with enamels and jewels is surmounted by a spiky crown, the traditional crown of Munster. The shaft bears the following inscription: "Me Socii et Alumni Pii Collegii Universitatis apud Corcagiam Almae Matri Suae Dono Dederunt A.D. MCMX. Bertramo Windle Praeside. Egan et Filii Argentarii Corcagienses me Fecerunt."

Special Correspondence.

PARIS.

The Birth-rate.—School Hygiene.

NOT long ago a member of the Senate, Professor Lannelongue, laid before his colleagues the outline of a new law which, he hoped, would successfully grapple with the urgent question of the falling birth-rate in France. His proposal received some attention before the Senate rose, but I do not know if it will be discussed during this session. In any case, no one seems to attach much importance to it, or to expect any permanent benefit to result from it. The law has always been quite helpless in dealing with problems which are outside its own proper sphere, and has ever been unsuccessful in any attempt to regulate the inner private life of the individual. Whatever may be the influence of the ideas and actions of each one of us upon the future of the whole race, there is in them an element of individualism with which it is dangerous to meddle. With regard to such matters, prescriptions are useless and advice impertinent. The history of legislation in former times shows us plainly that neither force, nor the most indirect suggestions, nor the most tempting offers of reward have any result upon a stationary birth-rate. It is true that the law can endeavour to check the evil by such means as the reservation of public appointments for married men with children, the taxation of celibacy and sterility, and the rewarding of parents who have large families, but there should be no illusion as to the value of these methods, and their adoption should not prevent the search for the real causes of these great fluctuations of the birth-rate in different races. One reason, in my opinion, has never been taken sufficiently into consideration, and yet it is the chief root of the trouble. It seems that pregnancy and childbirth are becoming more and more formidable. It is not only a selfish economy which limits the number of children, but physical terror. Delivery by the forceps is growing more and more frequent. Even in rural districts the first confinement is often a long martyrdom, which is remembered with horror. There can be no doubt that peasant women had formerly much easier confinements; many of them got up on the third day, and started work the week after the birth of the child. Nowadays, not only is the actual delivery more difficult, but there is the added danger of consecutive injuries to the genital organs, in spite of all the precautions enjoined by modern obstetrical science. Are we to believe, with Professor Metchnikoff, that the human organism is badly adapted and ill-balanced, and in particular that the development of the encephalon is exaggerated, and the skull of the fetus is disproportionate to the pelvis of the mother? It may be so; and yet only a few years ago the majority of confinements passed off easily enough. It is obvious, therefore, that there must be other reasons for this sudden failure in our national evolution. There have been, in fact, enormous mistakes in hygiene, which necessitate a complete re-education in the art of maternity. Existence nowadays is easier for the peasant woman, and her physical labours are no longer as severe as they used to be. On the other hand, the work of women and girls of the towns in factories and shops are dangerous to their physical health and development, inasmuch as they frequently force them to remain day after day in the same attitude, making identically the same movements. Moreover, in all classes, serious mischief is done by the various freaks of fashion which, in defiance of physiology, ruin and deform such parts of the human body as should be most carefully guarded. Finally, there is no doubt that such women as will not or cannot suckle their children, do grievous harm to their reproductive powers in thus abandoning one of their chief functions. Such is, briefly, the medical side of this question of the relative depopulation of France. It is a problem of social hygiene which has to be solved. On every side people seem to

have been aroused to a sense of the importance of physical exercise; and after a passionate enthusiasm for the intellectual life, they have suddenly realized the dangers of neglecting the development of the body. A proof of this was afforded by the Congress of School Hygiene, which was held in Paris from August 2nd to 7th last, expressly for the purpose of mitigating the overcharged and complicated school curriculum, shortening the long school hours in confined schoolrooms, and insisting upon the importance of gymnastics for growing children. Long ago Pascal, one of our most celebrated mathematicians and philosophers, wrote: "Who plays the angel, plays the fool." The intellectualism which causes an overthrow of the organic equilibrium is the most dangerous of all mistakes. The doctor, or rather the hygienist, is as necessary to a school as the schoolmaster himself; no one can dream of questioning the soundness of such an idea, and it only remains to regulate its general application. If, by means of a wiser education, we succeed in making a healthy nation, with its men and women sound in every bodily function, we shall have probably supplied it with a good and sufficient reason for perpetuating the race.

Correspondence.

NATIONAL MEDICAL SERVICE.

Sir,—For the disabilities of the medical profession which present themselves in quackery, hospital abuse, low fees, and bad debts, the columns of the Journal have during the past few weeks contained a series of interesting prescriptions. The importance of these contributions is, however, not derived from their relation to the fundamental conditions of the problem, which they entirely ignore, but from the indications they give of a tendency on the part of a certain number of the profession to be taken by specious argument deriving its force from the individual instance. Most of the writers are following the principle which treats sleeplessness by something with a *vis dormitiva*, while Dr. Fothergill's plan may be compared to that of the doctor who tried, first from one end, then from the other, the prescriptions suitable for children given in the appendix to the book on diseases of children, and eventually fell back on the same things in a proprietary form with a Government stamp.

It is futile for the medical profession to grumble about its grievances so long as there are at one end of it men so isolated as to despise or fear the methods which would weld it into a whole, and at the other end men so poor that they must take employment on whatever terms it is offered, and at the present juncture the most important question before each of us is, "Am I prepared to stand by the majority of the profession even if its proposals should not be the same as mine?"—Or, in other words, is the British Medical Association to be empowered to deal with the problem in the name of the profession, or are we to work each for our own hand?

In the danger of giving away too much to the opponents of the profession by expounding too clearly to one's friends it is evident that the facts ascertained by the Association in its investigation of contract practice have failed to attain the understanding of many of the members. There could not otherwise have been such entire oblivion of the fact that our trouble takes its root not in medical but in social economic conditions, from the existence of a section of the population "who should be enabled to provide for medical attendance by some system of small periodic payments." This fact, which the Association recognized at that time, has now developed almost into a political axiom, and no evidence has been brought forward which would throw any doubt on the statement that the kernel of the fund from which the medical attendance is to be paid for is a series of contributions per head. Are its extensions likely to be of any other character? Is it conceivable that the suggested employer's contribution will not also be of this kind—a payment per head or per pound of wages?

There remains the Chancellor of the Exchequer. His fundamental duty is to budget, and it is obvious that what we ask him to do must be subject to the conditions of due performance of this function. If any request be made to him for assistance it must take one of two possible forms: (1) An average grant to make adequate the fund for remuneration of the service of the medical profession; or (2) a grant to make up each year the deficiency left after the other funds are exhausted. We shall need a stronger lever than Dr. Grey's jointed platitudes to move any Chancellor who knows his business to grant the second.

The fund for the payment of the medical services being created by *per capita* contributions, it will in any year be a definite sum, and two problems present themselves for consideration: (1) How is the individual doctor to be paid in proportion to the services he has rendered? And (2) how is the variability of sickness incidence from year to year to be provided for? Distributing the fund by bills for attendance rendered to the individual patient is familiar, and is sometimes described as a continuance of the conditions of private practice. It does, indeed, continue the familiar mechanism, but it removes such essential conditions of present private practice as bad debts and inadequate fees. These represent in part the price which the profession now pays for its lack of union, and in part its contribution to the contingency of sickness variations. So far the only conditions on which the nation has taken over the contingencies of any profession are those of the public services. Are we likely to get the State to take over those of the medical profession on any other terms?

If provision directly from the Treasury for the yearly variations of sickness be unattainable—and so far no evidence but pious aspiration has been advanced for its probability—only two other solutions offer themselves. The first is the creation of a central reserve fund which shall accrue in healthy years and be depleted in epidemics. This fund, if created, must be in some control, medical or non-medical, and the holder will be in a position to offer terms to the profession. Those who welcome the prospect of such a fund being held either by a Government department or perhaps by the friendly societies, have forgotten the second great fact established in the Contract Practice Report—that *the evils of contract practice arise not from the contract, but from the lay control of the funds.* If, on the other hand, the margins are to be dealt with by the profession itself, the variability must be borne by a central trust or distributed among the individual practitioners.

The problem should be worked out by each trying to form a detailed picture of the conditions of his life under the two systems. Those who so completely fail to understand the principles of insurance that they find an essential difference between a hundred pounds paid for attendance on a certain group of people who have subscribed for their sickness risk according as it is paid to the doctor per head or per bill will fail to solve it, but the fact that so many who have been in good practice have recently as candidates for school work expressed their willingness to exchange practice for the dullest of medical duties under public service conditions encourages me to believe that the empiric character of the formula "payment for services rendered" will be appreciated by the majority.—I am, etc.,

Dundee, Nov. 1st. R. C. Buist.

Sir,—The Gateshead Division held a meeting on October 27th to again consider the question of the basis on which the medical profession should be paid in the suggested State medical service.

The members were informed as to the feeling which prevailed at the Representative Meeting in favour of paying by capitation fee, but are of opinion that very many of those who voted were not directly experienced in the working of contract practice, and did not therefore realize the disaster which would result to all concerned in such an arrangement.

Nearly every member present at the meeting had much practical experience of the system known as club or contract practice, and all equally condemned the system as being thoroughly bad.

The meeting emphatically endorsed its previous opposition to such a principle, and decided to oppose it to the utmost of their power.

They very much regret that, should this policy be further advocated by the Association as being a basis upon which to work, they will feel compelled to separate from the Association.

The matter is in their opinion so important and so vital to the interests of all concerned, that after so many years of loyal and pleasant co-operation they feel they could not do otherwise than thus dissociate themselves from a policy which in their opinion would be suicidal.—We are, etc.,

Signed on behalf of the Executive. { W. J. DURANT, Chairman. C. R. STEWART, Hon. Secretary.

Gateshead-on-Tyne, Nov. 1st.

P.S.—Though no vote was taken, the opinion was expressed against any principle of State Medical Service.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—Every credit is due to Dr. Major Greenwood for giving in plain words his objections to State insurance. As the Divisions will shortly be asked to give their decision on this subject, and as many medical men may not have had the time nor the opportunity to go fully into it, it may be of some assistance to them if I endeavour to explain why a steadily increasing number of medical men have come to regard State insurance as the best remedy for our present unsatisfactory system of medical attendance; and it would certainly clear the air if Dr. Greenwood would kindly answer the following questions:

1. Is Dr. Greenwood satisfied with the present system of medical attendance? He tells us vaguely that he is not. If not, what remedy does he propose? He tells us that he does not believe in medical attendance being included in State insurance, and apparently he is not much in favour of a public medical service or any of the proposals brought before the Association. If medical men in general are inclined to take up the same position, then by all means let us go on as we are, but let there be no more complaints. By so doing, however, that large class whose welfare the Poor Law Commission have specially considered must unfortunately still continue to suffer.

2. Does Dr. Greenwood regard the amount at present paid to medical men practising in the poorer districts as sufficient to enable them to give adequate attendance and medicine? If not, does he object to what many of us regard as quite reasonable, namely, that a subsidy should be given by the employer and the State? If the Association take strong ground there seems to be no reason why this should not now be obtained. If, on the other hand, we are content to drift, as Dr. Greenwood would have us do, an opportunity will be lost that may never recur. To those practising in the poorer districts an increase of 50 per cent. to their income might, one would think, prove acceptable, provided it could be had under reasonable conditions. If no effort is made in that direction, I again say, let there be an end of complaints.

3. I have studied the working of State insurance for a number of years, but must confess that the objections put forward by Dr. Greenwood are to me quite unintelligible. What does he mean when he says that if State insurance were introduced it would "deprive patients of the choice of a doctor altogether"? It is quite true that under the "club" system in this country the patient is often restricted in his choice. A doctor may be appointed to a club by a bare majority. The minority are bound to accept his services or do without. When a large poportion of the population is absorbed in clubs the field of practice for others becomes limited. It is also true that this system still prevails to some extent in countries where State insurance is enforced. Doctors are sometimes appointed for certain works or districts, but even in that case there is generally a choice. Against this limited form of club practice there is now, however, from medical men in these countries a most emphatic protest. In most towns and districts the patient is absolutely free to choose his own doctor. He simply keeps a note of his visits and consultations, sends in his bill, and is paid. He is not, as an anonymous correspondent would have us believe, "under the added horror and worry of official inspection by the emissaries of a heavily salaried chief." I have read the journals dealing with this subject for a considerable time past, and discussed their grievances with German and Austrian medical men—grievances, I may add, that to many of us would seem trivial—but this is the first time I have heard about official inspection. Who are these State officials? By whom are they appointed? Would your anonymous correspondent kindly answer these questions? It certainly augurs ill for the medical profession in this country if any one is to be influenced by such statements as these. The phrase "State insurance" is misleading. There is no one who knows anything of State insurance on the Continent who is not well aware that under that system the medical man no more becomes the servant of the State than the man who in return for money paid into the Post Office receives an annuity or interest from the State.

4. In what way would State insurance injuriously affect those doing contract practice? Suppose—and it is an improbable supposition—that under this system all clubs would be at once thrown open, one would scarce anticipate that all the patients would rush off to other doctors. Some would be lost and others gained, but granted even that a considerable number were lost, the medical man would be no loser, as through a subsidy received otherwise he would get larger fees. The German Association, though fighting determinedly against the remnants of the club system, has never gone so far as to ignore the interests of those holding appointments, and not only in Germany, but in this country, many of those fighting against the club system are themselves holders of clubs. They would gladly get rid of them provided they could see a way of escape. Would Dr. Greenwood kindly tell us if, after the initiation of State insurance, there were any who said they were losers?

I have of late trespassed so much on your space that I will not proceed further to point out what I regard as glaring inconsistencies in Dr. Greenwood's position. He tells us that he has no objection to the working classes being compelled to provide for maintenance during illness, but that they must not be compelled to provide for medical attendance. A strange position this to be taken by a medical man! Of course, I readily admit that in those parts of the country where the working classes pay half a crown for a visit, and there are few bad debts, there need be no great anxiety on the part of medical men for any change in our present system. Unfortunately in the great centres of population and in many districts, as we well know, the working classes now either pay nothing or an utterly inadequate fee to clubs or cheap doctors. Were all compelled to pay anything approaching a reasonable sum, the gain to the profession would be simply immense. For this reason I think the Association is acting wisely in sending down inquiries to Divisions.

There is only one respect in which I entirely agree with Dr. Greenwood. I do not suppose that State insurance for at least many years to come would relieve the country of the necessity of having Poor Law medical officers. It is admitted on all hands that many Poor Law officers are badly paid and the work sometimes badly done. The attempt to raise salaries has not proved much of a success. Nor do I suppose that under State insurance those salaries would be raised, but of this I am certain, that the work would be vastly diminished.—I am, etc.,

Greenwich, Oct. 31st. J. H. KEAY.

SIR,—May I be permitted a few words in reply to Dr. Major Greenwood's emphatic letter in the JOURNAL of October 29th? He says:

> In the interests of the community, or the medical profession, I think it would be far better that there should be no scheme of medical attendance.

The only arguments given in support of this statement are: (1) "The vested interests of the present practitioners have a right to be considered," and it would "more or less ruin the practices" of many. (2) It would deprive the insured of the choice of doctor. (3) It would be opposed by the friendly societies. (4) The State scheme, after all, might be no better than our present.

I submit that all these are arguments against a *State scheme run on contract practice lines.* If, however, the State is simply going to assist the workers to provide against the contingencies of sickness, accident, and invalidity by enabling them to insure against the cost of adequate medical attendance, there is no valid reason why this medical attendance should not, in most instances at any rate, be carried out by ordinary private practitioners and be paid for, according to work done, at a reasonable fee. In my opinion, any other system of payment is unsatisfactory, and the cost need not be too heavy.

Such a method (1) would not interfere with "vested interests," except that some practitioners who at present hold club appointments would perhaps lose a few discontents, who might, if allowed free choice of medical attendant, go elsewhere; on the other hand, the increased fees they would obtain from their other patients would certainly more than recoup them for any such loss.

(2) The patient would have absolute freedom of choice of doctor, limited only by the equal freedom of the doctor to decline any patient.

(3) I do not see why the friendly societies should oppose such a scheme; some of them have already found out its advantages. Only the most dependent class is content to be treated by "the club doctor" at present, and to my own knowledge many who are now entitled to his services prefer to go to "their *own* doctor" when they have anything really the matter, although ill able to afford the extra fees. Payment according to work done is certainly the only satisfactory method where free choice of medical attendant is allowed, as it most probably will be if any contributory and compulsory scheme is adopted. There seems to me to be no reason why the State, working in conjunction with the friendly societies, should not sanction such a scheme as that of the National Deposit Friendly Society, which has been found to work so satisfactorily in practice, and which, with very little modification, would prove acceptable to most general practitioners.

(4) The contention that such a scheme might be no better than our present seems to me to be somewhat gratuitous. We should have practically all the advantages of the present without a great many of its disadvantages. Scamped and unsatisfactory club work would be abolished; the medical attendant would know he was sure of his proper fee in every case, and would have every inducement to fairly earning it by giving of his best in his work.

It truly astonishes me that any of my fellow practitioners can fail to see what a boon such a scheme would be to us. On the other hand, if medical attendance under a State sickness insurance is to be carried out on contract practice lines, I thoroughly agree with Dr. Major Greenwood that both in the interests of the community and of the profession we are far better without it.—I am, etc.,

Bowdon, Oct. 29th. P. R. Cooper.

Sir,—In the Journal of October 29th, Dr. Cooper's letter states with great force the vital importance of holding fast to two great principles which should be most firmly maintained by the medical profession, namely (1) professional freedom; (2) payment according to work done. It is most unfortunate that the Association does not include the whole of the medical profession, so that we could speak for the whole profession. We have, however, the machinery by which we can get into touch with all. Our Divisions are able to convene special meetings, and could arrange for postal votes on *this* vital issue. At the Leicester Representative Meeting a resolution was carried in favour of "payment for work actually done." In my opinion that will be the "overwhelming verdict" of the medical profession if a postal vote be taken. In the columns of the Journal, and in personal contact with medical men inside and outside the Association, I have not found ten general practitioners who are favourable to "contract medical practice." There are two or three on the Central Council who believe the Government will never agree to the principle of "payment according to work done," and they fear that the Government will pass a "contract medical service" system which we shall be compelled to accept. But are we powerless? Can any Government compel the medical profession to accept a principle of medical practice repugnant to its principles of freedom of action and payment for work done? To ask the question is to answer it.

Our past experiences of Government treatment of the medical profession prove that we have no grounds for expecting generous consideration. At the present time we ought to bestir ourselves, and be ready to let the Government know that we are anxious to assist them in their beneficent scheme for the working classes of this country. Also, in regard to medical treatment, that we will do all that is reasonable in regard to a scale of fees based on work done. That there is a general consensus of opinion, based on many years' experience, that contract or club practice is unsatisfactory to patients and doctors. Also that there is less need for contract practice, based, as it has been, on a charitable basis, because the working classes are in a better financial position. In fact, in many of the large manufacturing towns the working classes are able to have their own family doctor and to pay the ordinary fees.

It has been said that we are "out for fees." If that means that we expect reasonable payment for work done, then we ought to maintain that position. The medical professsion can no more live on "honour" than a "baker." Both render to the State services that are necessary, and of necessity their status and well-being require reasonable remuneration.

In conclusion, I believe the highest interest of the medical profession would be best maintained if our proposed "provident medical service" and the anticipated Government "medical contract service" were thrown over.—I am, etc.,

Bacup, Oct. 31st. Jno. Brown, M.D.

Sir,—It is a wise rule that anonymous letters should be ignored, and I have some hesitation in breaking through it. But I fear that I may be in some way responsible for the unfortunate misapprehensions under which "Forewarned" labours, since I am responsible for the report of the Bristol Division meeting[1] upon which his letter is based. It is possible, however, that hurried reading has been responsible in some measure, and two minor mistakes occurring in the first four lines of his letter are obviously due to that cause. But to deal with the more important errors.

The first resolution at the meeting to which he refers was:

> That any scheme of State Sickness Insurance should be based on the principle of payment for work done, as in private practice.

This was carried by a majority of 61 to 1. "Forewarned" finds it abundantly clear from this majority that the meeting had "no confidence in the tender mercies of the Government in the matter of adequate remuneration for medical services." But the tender mercies of the Government are equally concerned whether we choose a "capitation" or "work done" system, so that his deduction is not at all clear, let alone "abundantly clear."

The second resolution:

> That it is essential that the insurance risks of such a scheme be borne by the State,

was framed with the intention of making it clear that the Division did not consider it just that any Government should lay the burden of the insurance risks of any such scheme upon the profession. Dr. Parker seconded this resolution, introducing the simile of the fly and the steam roller to which "Forewarned" objects. There was no objection raised at the meeting against the simile, used as it was used, and the resolution seconded by Dr. Parker and voted for by him was carried *nemine contradicente*. How came "Forewarned" to make the deduction that Dr. Parker's attitude did not commend itself to the meeting? Either my report or "Forewarned's" reading of it must have been very careless.

At the risk of again being misunderstood I may explain that Dr. Parker was replying to a suggestion that we should plunge into party politics and oppose all schemes of this Government because it is this Government. He pointed out that some form of State-aided medical attendance on the lines of compulsory insurance would be brought forward by a Conservative Government if the present Government did not do so; therefore to oppose on party lines the inclusion of medical attendance in a State insurance scheme was like a fly protesting against the oncoming steam roller; that we should be well advised to take this opportunity of laying before the Government the views of the medical profession as to what were the best lines upon which any such scheme should be run—best in the interests of the beneficiaries and best in the interests of the medical profession.

We could not have a better opportunity of bringing forward the principles given above and carrying the public with us, for it is obvious to every one that in this instance, at any rate, that which is in the best interests

[1] Supplement to the British Medical Journal, October 15th.

of the medical profession is in the best interests of the public health of the country.

And yet I gather from the letter by "Forewarned" that he is in favour of both resolutions. Good! I hope that when a scheme based on those principles is laid before the Divisions he will find himself able to support the scheme as well as the principles. A scheme has been forwarded by the Bristol Division to the conjoined committee for consideration, but has not been published in the JOURNAL lest we should in any way hamper that committee. The scheme is not intended to be presented to the Government as the only possible scheme which can embody the principles passed by the Division, but solely to prove that these principles are not impracticable theories.

If "Forewarned" intended the epithets "Radical politician," "noisy," and "militant" to include the speaker whose simile he has objected to, then the epithets are quite pleasingly inept in every respect.

How is it that some of those who appeal to us for unanimity must drag in the one thing that is most likely to divide us? I am given to understand that a Conservative's distrust of a Liberal Government is only equalled by a Liberal's distrust of a Conservative Government, and since both parties are strongly represented in the medical profession, what is gained by introducing party politics and the discourtesies that seem inseparable therefrom? The game of "I spy a Tariff Reformer!" and "I spy a Radical!" is no doubt a fascinating diversion, but does it help us to secure a united profession or an amiably disposed Government?

I believe the principles and scheme passed by the Bristol Division to be such that if they are fairly laid before the Government and the public the Government will adopt those principles. And I am equally confident of success whichever Government is at the helm. But if, at the worst, we fail to convince a Government, we shall have no cause to reproach ourselves for the advice we have given, for we shall have upheld our great traditions by advising that which we believe to be the best for the public health. The fact that it is at the same time the best for the profession should not make us backward in tendering this advice.

If "Forewarned" will communicate with me I shall be very pleased to explain any further difficulties into which my hasty writing or his hasty reading of the report may have led him. The glare of publicity is at least equally distasteful to me as to "Forewarned," and I shall respect his confidence should he let slip his name.—I am, etc.,

Clifton, Oct. 31st. NEWMAN NEILD.

SIR,—We are rapidly approaching the time when the question of the attitude of the Association to the Government proposals for sickness and invalidity assurance will have to be considered, and to a great extent determined, by the Divisions. It is most earnestly to be desired that the Divisions will do nothing to justify that distrust of them which has so often, and I hope so unjustly, been expressed in certain quarters. Yet many of us know too well the difficulty of arousing the interest of the majority, even in a crisis like the present, when it is hardly an exaggeration to say that the very existence of the general practitioner is threatened. I have observed two forms of this "sleeping sickness" among medical men. In one the patient says, "I don't understand the business. It is too large and too complicated, and I have no time to study the ins-and-outs of it all"; in the other form the complaint is, "We'll have to take what comes anyhow. No Government will ever take any notice of us, so what's the good of bothering?"

Now we know, in the first place, that the Association has already made its influence felt, and will in this matter have a larger opportunity of influencing legislation than it has ever had before. Nor is an intimate knowledge of all the issues at stake necessary. Will any medical man who has been sweated, or is now being sweated, by the lay committee of a "friendly society" or a "club," contend that it is necessary for him to read through the Report of the Poor Law Commission before he can make up his mind as to whether he wishes to continue service under such or similar conditions?

That is the first and the principal question to which the Divisions will have to give a definite answer, and surely the weariness and the wounded self-respect of those who have had experience ought to determine us to demand payment in proportion to the work done, and refuse the so-called "contract" under which men have been forced to offer the whole of their time and their knowledge to each patient in return for an annual 2s. 6d.

If we, as an Association, once accept the principle of giving unlimited service for a definite annual payment, all experience goes to show that any service organized by the Government is not likely to have more consideration for its medical officers, and therefore for the efficiency of the service, than has been shown in the past by the numerous small and comparatively irresponsible bodies which have organized contract practice and found a willing beast of burden in the profession.

By his letter in the JOURNAL of October 22nd Dr. Fothergill has done a real service to the Association. Any member who will give careful consideration to the questions there propounded will have the issues clearly in his mind, and will be in a position to record an intelligent vote at his Divisional meeting.—I am, etc.,

Leigh, Oct. 31st. FRED. E. WYNNE, M.B., D.P.H.

SIR,—On July 23rd last you had an article in the BRITISH MEDICAL JOURNAL entitled "Medical Attendance under State Sickness Insurance."

After reading it I wrote the following letter, and sent it to the Chancellor of the Exchequer:

Dear Sir,

In an article in the BRITISH MEDICAL JOURNAL of the 23rd inst. on medical attendance under State sickness insurance it is stated:

> The omission of a provision for medical attendance from State insurance would doom the whole scheme to failure from the beginning.

Again:

> Assuming, then, that medical attendance will be one of the benefits of State insurance.

Well, now, I have read all that you have said in Parliament and on the public platform on this most important subject, and I have never yet seen you make the statement that medical attendance will be one of the benefits of State insurance.

Can you say now that the assumption of the BRITISH MEDICAL JOURNAL is correct?

With apologies for troubling you from one of your warm admirers,

I am, yours faithfully,

I enclosed stamped addressed envelope for a reply, and I am sorry to say that up to the present moment no reply has yet been received.

You will thus see that I went straight to the fountain head for definite information, and did not get it, and the conclusion I have come to is that the Government don't know themselves yet what the provisions of their bill will be. Then why all this correspondence about nothing?—I am, etc.,

October 31st. M.B.M.A.

CONTRACT PRACTICE AND THE MEDICAL PROFESSION.

SIR,—I hope the suggestions contained in Dr. Redmond's letter in your issue of October 22nd will not be dropped.

It seems so strange to me that in a purely commercial country like England we have not had an "Incorporated Medical Society," on the same lines as the Incorporated Law Society, long ago

I am sure, if this matter is taken up by a few energetic men and that the medical practitioners of the United Kingdom pay a small subscription to meet the initial expense, the very serious condition of things could be altered.—I am, etc.,

Bamber Bridge, Lancs., Nov. 1st. R. J. LEEPER, L.R.C.S.I.

"FOR THE LOVE OF ART"

SIR,—Great interest was taken during the meeting of the Association last July in the small section of the Annual Museum which was devoted to pictures, prints, old books, historical relics, and some other curiosities.

It was a new departure, and much credit was due to Dr. Rice-Oxley, who got up this exhibition and made it

a success. His efforts were all the more praiseworthy because a very short time was allowed him to collect the materials, because too little space was allotted in the building to display them, and I must add, because by his courtesy and tact he so well overcame the many difficulties with which any one coming forward with a new idea is generally confronted.

Such a good start has now been made that I think that something more ought to follow, and I am writing to ask you, Sir, if you could use the influence of the JOURNAL to make such an exhibition an annual affair, and whether steps might not in the meantime be taken to get up a similar one for the meeting to be held at Birmingham next July.

There must be throughout the kingdom numbers of medical men, the possessors of pictures, drawings, and engravings, both ancient and modern, which many of those who go to the meeting would be glad to have an opportunity of seeing. I might also add medical books of historical interest or autographs, as well as curious surgical instruments or other relics of the world of medicine in bygone days.

I feel certain that many of the owners would willingly lend such objects to an exhibition if they were assured that proper arrangements were made for their safety. I can say this with all the more assurance after my pleasant experience on the occasions when I have had something to do with such exhibitions and when I have seen how ready my *confrères* were to help me.

At the big *conversazione* given at St Bartholomew's Hospital for the inauguration of the new out-patient block three years ago, I got together a collection of prints and drawings of the hospital and of other objects connected with its history, and it was most gratifying to see and hear how very much the show was appreciated by the large assembly.

Surely amongst the members living at Birmingham there must be some lovers of art who, if it were suggested, would come forward and help to get up such an exhibition for next year's meeting, especially if plenty of time is allowed for them to set about it.

I write at this early date because I know the importance of having ample time, and also to say that if the suggestion meets with any response, and if any member at Birmingham cares to take up the matter, I hope Dr. Rice-Oxley will join in such an effort, whilst I shall myself be happy, *for the love of art*, to give every help in my power. —I am, etc.,

London, W., Oct. 18th. LEONARD MARK.

DRAUGHTS.

SIR,—I certainly think Dr. Torrance Thompson would have been more within the mark had he said, "In a certain proportion of cases a cold is simply the result of mental impression." One cannot get away from the fact that a cold is often caught in rooms, churches, and railway carriages from direct draughts. A continued current of cold air passing over a particular part of the body, which is imperfectly protected, extracts caloric, contracts the cutaneous vessels, and produces more or less local blood stasis, perspiration is checked and waste material accumulates. As to an ordinary head cold being due to the growth of bacteria, as Dr. Gore suggests, it seems to me to be difficult to reconcile it with the fact that 30 m of sweet spirits of nitre and 30 m of sal volatile in water repeated every four hours almost invariably stops it in from twelve to twenty-four hours.—I am, etc.,

Bexhill-on-Sea, Oct. 29th. F. P. ATKINSON.

SIR,—In the history of any movement there are times when misguided enthusiasts would force the results of progress to a premature high water mark, so that there ensues an apparent ebb, and on this tide the reactionaries launch their barques. Such times have been, and may be again, in the great movement of aërotherapy.

Some of the recent correspondence in your columns indicates how little the principles of aërotherapy are understood, even among the brethren. Thus sanatorium methods have been described as "barbarous," and windows open in all weather as a danger to the poor. The fact is that there appears to be some confusion between fresh air and draughts.

In your article of October 15th you state: "It is not commonly understood that the draught is merely the *primum movens*, the immediate cause of the ill results experienced being in some cases perhaps a micro-organism, in others perhaps a toxin, with which the system would have been able to deal effectively but for the local depression of vitality, brought about by exposure to a 'concentrated dose of fresh air.'" You have here accepted a contributor's definition of a draught as a "concentrated dose of fresh air"; and, while your position is perfectly clear to the understanding mind, I would suggest, if you will permit me to do so, that the definition is a little unfortunate, inasmuch as it implies a relation between fresh air and draughts, the distinction being one of degree.

What is a draught? I find the following statement in Notter and Firth[1]: "At 60° F. air, moving at the rate of two feet per second, is barely perceptible; at three feet it is more so; and above this it becomes a draught. At 70° F. the velocity of the air current can be even greater without being noticed." From this data we may define a draught as *a current of air, differing from the surrounding atmosphere in temperature and velocity to such a degree that a sensation of chill is produced in an individual thus exposed*. It follows that a person sitting between a fire and an open door or window is in a draught. One-half of the body is warmed, the other chilled. Resistance is lowered, and a morbific process engendered, of which the most frequent manifestation is a "cold." Such is common and personal experience. Whether the pathology of nasal catarrh be a loss of the inhibitory power of the normal secretion, as suggested by one of your correspondents, or whether it be related to an inhibition of the high absorptive faculty of the nasal mucosa and of the great lymphoid arch of the naso-pharynx, as experimental work in a wide field would seem to indicate, is an interesting yet minor aspect of the issue. My contention is that the freshness or otherwise of the air has no place in the equation. A difference of temperature is the determining factor. Thus on a mountain one may be exposed to air currents moving at high velocity, but few would designate these "winds, austere and pure," as draughts, nor would such exposure induce any morbid process.

What, then, is fresh air? "The pure atmosphere freely administered, without fear." Thus Bodington. Fresh air is indeed far removed from the very general conception of so-called efficient ventilation, based on the degree of impurity present in the respired air. Fresh air is super-aëration, in which no degree of impurity can exist, as the same air is never twice breathed. Such are the great principles of aërotherapy. For the past year I have carried out this régime at the Westmorland Sanatorium, where the patients have slept in shelters, with pure air blowing over them day and night. The dining hall is open on all sides. There are no fires, and the hot pipes have not once been on during the past year. Therefore there were no draughts. During the past twelve months, in a sanatorium of 65 beds, *there has not been a single case of "cold" or nasal catarrh.* If this be so with tuberculous patients, many of them weakened by a profound systemic intoxication, it is not too much to say that fresh air, properly administered, is devoid of danger to those in health.—I am, etc.,

HALLIDAY G. SUTHERLAND.

Westmorland Sanatorium, Oct. 25th.

FEMINISM.

SIR,—I intend to take the earliest opportunity of reading Dr. Arabella Kenealy's letter in the Woman's Supplement of the *Times*, the letter referred to in the leading article of the BRITISH MEDICAL JOURNAL of October 15th.

I may find reason in that perusal for modifying the views I have reached on the subject of the Woman's Movement; still I suspect I will continue to agree with the leading article in question where it states (p. 1172):

> Possibly they [the effects of feminism] are the outcome of causes which lie much deeper or date much further back than the day on which the standard of feminism was first raised.

I believe that the present degeneration of woman, upon which most biologists are agreed, has its causes in the same principle which is responsible for most of the social

[1] *Hygiene*, 6th edition, p. 31.

and political deterioration of our time—the fatal principle of equality (see my paper in the Section of Medical Sociology, British Medical Journal, August 20th, p. 452).

Should it, in fact, surprise us any more to find the differences between the sexes disappearing to some extent than to see, as we do, the differences between the classes—the moral, physical, and mental differences—so very appreciably suppressed?

Why cannot we learn a lesson from analogy and history? (*A propos*, is it not sadly significant that the old universities should be talking of eliminating compulsory Greek from their programmes?) Why not turn for guidance to Sparta, which produced the noblest race the world has ever seen? The women gave birth to men in Sparta. Lycurgus would have no "man-woman" (see letter from "A Plain Woman," British Medical Journal of October 22nd) in his system. And even Plato, who might have had some difficulty in understanding Dr. Berry Hart (British Medical Journal, p. 1286), knew that Lycurgus in this respect was right.—I am, etc.,

Nice, Oct. 25th. A. W. Gilchrist, M.D.

PSYCHO-THERAPEUTICS.

Sir,—A few months ago you published a number of articles by various writers dealing with different aspects of psycho-therapeutics. I had hoped that some more influential member of our profession than myself would have been moved by their perusal to raise the question of the systematic teaching of psycho-therapeutics in our medical schools.

The field is a large one. It includes a study of suggestion in the hypnotic state, and in the hypnoidal state of Sidis; of suggestion in the normal state as carried out by Dubois; of the practice and theory of psycho-analysis, as originated by Freud, an intricate and far-reaching subject in itself; and of all the various methods by which these different kinds of treatment are made effective.

We have, besides, to consider the responses, satisfactory or otherwise, of the diverse complaints to the variously pitched appeals of suggestion, and to discuss important questions as to which methods are most applicable to different conditions, and which diseases can be treated at all by these means.

These matters cannot be made familiar except by a course of systematic instruction which ought obviously to include some general psychological teaching. If such training be still refused by our medical schools, it seems as if in the future we may have a number of medical men, who, ignorant of psycho-therapeutics, ignorant even of the nature of hypnosis, may yet start practice in this domain—a result which would certainly not only injure this particular province of medicine, but would tend to discredit the whole system of medical teaching in this country.

Is it too much to hope that even during the medical sessions of the current year the subject may receive some recognition in the teaching of our medical schools?—I am, etc.,

London, W., Oct. 26th. Hugh Wingfield.

THE HEARING AFTER "OTECTOMY."

Sir,—If Dr. Ward Cousins is correct as to the good results of intrameatal surgery, as I believe him to be, the opposition I have met with for so many years can hardly be justified. But surely Dr. Ward Cousins does not think that the general treatment of ear disease has been satisfactory during the past thirty years, or that the value of intrameatal treatment has been generally recognized. It is only fifteen years since I heard Professor Macewen say to an otological meeting in London, "Gentlemen, you do not cure otorrhœa." The vogue of the radical mastoid operations is not yet over. Intrameatal operations were denounced by Mr. Ballance as "dangerous and unsatisfactory," and I have yet to learn that any one but myself expressed the opinion that he was mistaken.

Mr. C. Heath wrote in the *Lancet* (August, 1906) to the effect that otologists were agreed that the only cure for suppurative otitis was a radical mastoid operation. Dr. W. Hill said, in October, 1907:

> Theoretically, I admit ossiculectomy and curetting of the tympanic cavity appears an ideal method of procedure. In actual practice, except in cases of isolated caries of the ossicular chain, it has, in my hands at least, proved disappointing.

Why this "theoretically ideal method of procedure" should be denounced as "ruthless" has yet to be explained. I should indeed be a poor creature if, in fear of ruthless criticism, I refrained from advocating a method of treatment which has proved satisfactory in so many cases, and which, if not ideal, is probably the best means of curing a multitude of cases, still too often neglected, of suppurative otitis.—I am, etc.,

London, W., Nov. 1st. Faulder White.

Sir,—May I beg a further use of your valuable space to reply very briefly to Mr. Faulder White? That gentleman, in his letter of October 17th, conveniently evades the question. I will therefore merely ask him to reply to two specific questions:

1. Will he give us the names of those "first men in the profession of surgery" who support and encourage him, together with the name of the "recognized authority in otology" who wrote to him?

2. Will he either definitely accept or definitely decline the challenge offered by Dr. William Hill and myself?—I am, etc.,

London, W., Oct. 29th. Macleod Yearsley, F.R.C.S.

THE ETIOLOGY OF SOLDIER'S HEART.

Sir,—In the very interesting discussion on "soldier's heart" at the United Services Medical Society, referred to in the leading article in the British Medical Journal for October 29th, 1910, the etiological factors affecting the recruit after enlistment were fully and minutely discussed. The factors antecedent to his enlistment do not appear, however, to have received quite the amount of attention they merit. There is some ground for believing, I think, that the latter are even more important than the former. Many of the recruits are young, immature, town-bred lads, probably considerably under their reputed age. Many of them come from the ranks of the unemployed, so that at the time of enlistment they are probably more or less weakened by exposure, by poor food and clothing, by lack of work, etc.

On joining the army there is an abrupt change to warm, tight-fitting clothing, a full meat diet, and active, oftentimes severe, muscular exertion. The abrupt change is bound to throw a severe strain on all the internal organs, and especially on the heart. If the organs are of average "tone" they quickly respond to the strain, and are strengthened and in every way improved by it. In youths who are highly strumous or neurotic, however, the cardiac muscle and plexus give way under the sudden strain and a condition of soldier's heart is established. In this, as in other conditions of life, it is distinctly a case of "survival of the fittest."

The essential point is that the chief danger lies in a *sudden* or too rapid strain. If, to use a military simile, the strumous and neurotic recruits were made to "mark time" until they were better fed and nourished, much of the danger would, I believe, be removed.—I am, etc.,

G. H. Youngé, F.R.C.S.I., etc.,
October 30th. Lieutenant-Colonel R.A.M.C.(ret.).

Sir,—In your leading article on Military Medicine, published on October 29th, you suggest that D.A.H. will be found to exist as commonly amongst the civilians from whom the soldier is drawn, as amongst the soldiers themselves, and you suggest observations by civil medical practitioners. May I point out that the information can be more easily obtained from the records which are kept by recruiting medical officers?

I am at present doing this work at Stratford, and I find that D.A.H. is exceedingly common amongst the recruits who present themselves. My recruiting sergeants have orders that they are invariably to count the pulse of the intending recruit, before they take any further steps to ascertain whether he has a probable chance of "passing the doctor." They know that I will pass a man with a pulse-rate up to 100, but not beyond.

The recruit, when first approached by the sergeant, is not in the least excited. He is very casual about the whole business, and his pulse-rate is most probably at the normal figure, and may be accepted as such. By the time

he has had a bath and enters the presence of the medical officer, excitement may have the effect of raising the pulse-rate, and in the case of an irritable heart may add twenty to forty beats per minute.

I think it is wise to accept men with a pulse of 100; for the rate may be temporarily accelerated owing to hard work and improper feeding.

From the presence of stained fingers, cigarette smoking is common amongst this class.

I believe that under the influence of rest and good food during the first month's service, the heart may settle down to the normal rate. At the same time, I think it very likely that a certain number of these cases may eventually have to be invalided for D.A.H.

For the last year or two the pulse rate on enlistment has invariably been recorded in the medical history sheet.

It would be very interesting in the future to see how many cases of D A.H. had a high pulse-rate on enlistment. From the records of the past four years available at Stratford, I find that 24,199 recruits have presented themselves, of these 6,123 have been rejected, and of these 869 have been for heart disease. Very few of these cases have had valvular disease, and it is fair to assume that the great majority have been for D.A.H.

Up to the last three weeks the recruiters have not eliminated cases of D.A.H., and so the figures I have given may be accepted as approximately correct. During the previous three weeks my rejection for D.A.H. amount to 0.76, 1.05, and 0.71, respectively. Since they have counted the pulse the numbers have fallen to 0.22, 0.38, and 0.52.

The rejections by six recruiters for D.A.H. during the past week of pulse counting amounted to 25. As they now invariably count the pulse first, it must be understood that in the old days it would not have followed that all these cases would have reached the medical officer; many of them would have been rejected by the recruiters for other defects. The number serves, however, to show that the contention is correct—namely, that D.A.H. is an exceedingly common complaint amongst the class from which the soldier is drawn.—I am, etc.,

F. J. W. Porter,
Major, R.A.M.C.; Recruiting Medical Officer.

London, E., Nov. 1st.

THE VALUE OF THE DIPLOMA OF THE WORSHIPFUL COMPANY OF SPECTACLE MAKERS.

Sir,—A prescription of mine for glasses was taken by the patient to a sight-testing "optician and spectacle specialist," who advertises himself as holding the diploma of "The Worshipful Company of Spectacle Makers, London."

I had ordered, according to my custom, that the glasses were to be sent to me for verification, and in course of time they were sent to me by the optician. On examining the glasses, I found that the lenses were wrong; spheres had been given in place of cylinders and cylinders in place of spheres. The centreing of the lenses was grossly wrong, 10 mm. beyond what I had ordered, so that the centreing in one lens was only just on the lens. The shape of the lenses was not what I had ordered, although I had sketched the shape I wanted. The workmanship of the frames was poor, the frames so soft that they bent easily, and the cutting of the lenses was very rough.

Yet, with all these errors, the optician would appear to be so ignorant of his work that he sends the glasses to me for verification, believing them to be right.

Surely it would be better if the Worshipful Company of Spectacle Makers took some care that those holding their diploma could carry out their proper work, namely, to make spectacles correctly, than that they should endeavour to extend their sphere to sight-testing.—I am, etc.,

Rayner D. Batten.

London, W., Oct. 24th.

THE EXPERIMENTAL METHOD IN DIETETICS.

Sir,—As one who has long taken a practical interest in the study of diet by experimental investigation, perhaps you will kindly allow me to comment on the recently published record by Professor Reid Hunt on the effects of various diets upon the resistance of animals, which was the occasion of an editorial article in your columns in the Journal of October 22nd. Professor Hunt is to be congratulated on the new ground which he has broken in his investigation, and on the very important and suggestive results which he has obtained. One of his most striking conclusions has reference to the thyroid gland. His results have led him to conclude that the profound influence on resistance which he found associated with certain diets was due to their powers of stimulating the thyroid gland. This conclusion is to me personally of the greatest interest, as it is identical with one which I have previously drawn from the results of many years' investigations along a different yet closely allied line of inquiry—namely, the influence of diet on the structure of the tissues. The results of the investigations carried out by myself and others in the physiological laboratory of Edinburgh University in the past ten years have, I think, conclusively shown that diet profoundly modifies the structure of the tissues, and very specially the thyroid gland, the importance of the changes described being perhaps none the less, because their significance is as yet imperfectly understood. It was specially interesting to me to read the results described by Professor Hunt in his observations on oatmeal, since, as he himself points out, his conclusion as to the special influence of this food on the thyroid gland is in agreement with that arrived at by me from a different line of investigation, of which an account was published in your columns in 1907.

The whole subject of dietetics is at present in an interesting state. As you rightly observe, there are factors entering into the composition of food which are more complicated than its protein, fat, and carbohydrate or its caloric value, and the data now in our possession give ground for the hope that a continuation of what you have happily termed "the experimental method in dietetics" will yield results of the highest scientific and practical value. To those who have the opportunity of taking part in such investigations, I would like to point out that a vast amount of work is now waiting to be done along the following closely allied lines of research which have been initiated in recent years. These are: (1) The influence of diet on the *structure of the tissues*, as determined by the writer and his collaborators, a full record of these observations being in course of publication. (2) The influence of diet on *the bacterial flora* in the alimentary tract along lines indicated by the work of Herter and Kendall, which was specially referred to in your columns in May, 1910; and (3) the influence of diet on *the resistance to disease* (Reid Hunt).

I am confident that collective investigation of the subject along these lines would soon yield results of the highest importance to practitioners.—I am, etc.,

Chalmers Watson.

Edinburgh, Oct. 22nd.

THE PLAGUE.

Sir,—In connexion with the cases of plague in Suffolk, let me say that the Research Defence Society has lately published an illustrated pamphlet on plague in India, past and present, by Lieutenant-Colonel Bannerman, M.B., D.Sc., Director of the Bombay Bacteriological Laboratory. It gives a full account of the experiments which proved that fleas carry the plague from rats to man; it also gives a full account of Haffkine's preventive treatment, and of the many thousands of lives that have been saved by this treatment. I am sorry that the society cannot afford to give away this pamphlet in large quantities; but I shall be happy to send it to any of your readers who will send me seven stamps. I shall also be happy to send copies, on sale or return, to all booksellers.—I am, etc.,

Stephen Paget,
Honorary Secretary, Research Defence Society.

London, W., Oct. 31st.

HUNTERIAN SOCIETY SILVER MEDAL.

Sir,—The Hunterian Society awards annually a silver medal for the best essay by a general practitioner embodying the results of his own observations. May we remind intending candidates that the last day for sending in essays for the present competition is December 31st, 1910? Any further particulars may be obtained from us.—We are, etc.,

W. Langdon Brown,
A. P. Gibbons,
Honorary Secretaries.

London, W., Oct. 29th.

EXPERT MEDICAL EVIDENCE.

SIR,—*Nova et vetera* are happily united in your proposal that the scientific evidence presented to a court of justice should be that not of an individual but of a majority. I watch with the sleepless vigilance their importance demands your proposals for reform of the law, and I do not remember to have seen this one before in your columns, but the practice has the great and manifest advantage of ancient prescription. It is as old as law itself.

In the primitive courts of our ancestors trials were conducted by the method you propose of compurgation. The plaintiff produced as many witnesses as he could, who swore that his account was true. The defendant then produced his witnesses, who swore to the truth of his tale, and the matter was settled by the simple process of counting heads that you advocate. The verdict went to the side that produced the most witnesses. The simplicity and celerity of the method must commend it to all who desire to supersede the cumbrous and dilatory methods of our law by others of greater ease and dispatch; and the method you propose would have the additional advantage that the authority that selected the witnesses could secure the verdict beforehand by taking care that the majority was taken from those who took the view desired.

In the Crippen case, which suggests your proposal, the verdict would have been unaltered, for there were five expert witnesses for the prosecution, and only three for the defence; but it is evident that the unfortunate prisoner would have secured his acquittal under your method by producing three more witnesses. The blundering method of our present law requires that witnesses should not be counted but weighed, and it is satisfactory to find that the BRITISH MEDICAL JOURNAL takes the democratic view that one man is as good as another—and perhaps better. Why should the evidence of Sir Patrick Manson on a question of tropical disease outweigh that of Tom, Dick, and Harry—men of equal virtue and intelligence? Let us, as you propose, set our time by the ecclesiastical clock and return to the pure practice of the third century.—I am, etc.,

London, W., Oct. 31st. CHAS. MERCIER.

*** A note on this subject appears at p. 1455, under the title "Compurgation."

CORONERSHIP FOR CENTRAL LONDON.

SIR,—May I be permitted through the medium of your columns to tender my sincerest thanks and gratitude to the numerous members of the medical profession who were so kind as to subscribe their signatures to the testimonial on my behalf in connexion with the filling up of the vacant Coronership in the Central London Division, and to assure them of my warm appreciation of their favourable regard. Owing to their great number I regret I am unable to thank them individually.—I am, etc.,

London, S.W., Nov. 1st. LEONARD S. MCMANUS.

The Services.

DISTRIBUTION OF PRIZES AT THE ARMY MEDICAL COLLEGE.

ON October 29th Mr. Haldane distributed the prizes won at the Royal Army Medical College, Millbank. Among those present were: Surgeon-General W. L. Gubbins, Director-General of the Army Medical Service; Surgeon-General W. Babtie, Sir Alfred Keogh, and Colonel D. Wardrop, Commandant of the College. The following is a list of the prize winners: Lieutenant W. W. Treves (R.A.M.C.), first Montefiore Prize—first in military surgery; Parkes Memorial Prize—first in hygiene; Marshall Webb Prize—military medical administration; Herbert Prize for the highest aggregate; Lieutenant H. E. Short (I.M.S.), second Montefiore Prize—second in military surgery; Lieutenant R. C. Clifford (I.M.S.), Fayrer Memorial Prize—pathology; Lieutenant C. H. H. Harold (R.A.M.C.), Tulloch Memorial Prize—pathology; Ranald Martin Prize—tropical medicine; Lieutenant R. F. Bridges (R.A.M.C.), De Chaumont Prize—second in hygiene. Lieutenant Treves, who obtained four of the above prizes, is a nephew of Sir Frederick Treves.

Mr. Haldane said that not even the Admiralty possessed anything which excelled the admirable building and equipment of the college. They owed much to his predecessor, who, as Mr. Brodrick, threw himself whole-heartedly into the work of raising the Army Medical Service to a higher level. If ever Viscount Midleton wanted a memorial for his work he could find no nobler one than that building, with its equipment and the high intellectual level of those who constituted the staff. In every way the efficiency of a fighting force depended upon the work done by the Army Medical section of a military organization.

Remarkable progress had been made in the reduction of disease in the army, particularly in India. Fewer men now fell out sick in the field, and more men returned to the fighting line. There was a time when the Army Medical Service did not contribute to science in any large degree, nor was it famous all over the world as a model of what an Army Medical Service ought to be. But all that was changed, and its modern organization gave scope for every kind of talent. Names like those of Sir William Leishman and Sir David Bruce would always be associated with the bacteriological work of the Army Medical Department. Besides the field of bacteriology there was the whole field of physiology. There were the great questions of food and capacity of movement, on which to a great extent turned the efficiency of the British army, its endurance, its capacity for long marches, and the health of its soldiers. The method of physical training to-day was *toto coelo* different from the physical training of a few years ago, and they were eliminating the evil called "soldier's heart." Within the last twelve months also the War Office were able to arrange two experimental marches on Salisbury Plain which taught them what the ration of the British soldier, even under emergency conditions, ought to be, so as to maintain him in the same condition in which he began his march. That experiment cast a great deal of light upon the problem which the General Staff had to consider—how to maintain the vigour of an army in the field. The soldier's clothes also required the consideration of the physiological specialist. It seemed pedantic to talk of these things as applied to the individual, but when they were dealing with 100,000 men very slight variations produced enormous results. Therefore he commended to them not merely the bacteriological side, but also the not less important physiological side of their studies. What they needed was exact knowledge; and, if that were obtained, the money spent on equipping and maintaining that college would be saved over and over again in wastage. They had made themselves and were recognized as being one of the most important parts of the British army, and he believed still greater progress lay before them.

RED CROSS WORK IN SCOTLAND.

AT the twenty-seventh annual general meeting of the St. Andrew's Ambulance Association, a report was submitted which showed that the scope and work of this institution was steadily and continuously increasing. During the past year some 7,950 calls had been made on the wagons of the association. A remarkable increase had taken place in the number of classes of instruction conducted and examined, which now total 627, an increase of 82 over the previous year, consisting of 572 classes in "first aid," and 55 in "home nursing and hygiene." The number of certificates of proficiency issued during the year amounted to 7,602. The most important proposal at the meeting was the resolution brought forward by Sir G. Beatson dealing with the Red Cross fund held by the association. Sir George Beatson's resolution, which was adopted unanimously by the meeting, was as follows: "That a Provisional Order be applied for by the association to enable it to transfer the Red Cross Fund held by it to the Scottish Branch, British Red Cross Society, with the exception of the sum of £3,500, part of the said fund, which is to be retained by the association to enable it to carry out obligations already undertaken, including those under the sanction of the War Office." Sir George explained that the fund in question, amounting to about £9,000, was the residue left from £48,000 raised for the Scottish Red Cross Hospital at the time of the South African war. This surplus sum was made over to the St. Andrew's Ambulance Association under the obligation that it should be used for the instruction of people in work for the benefit of sick and wounded soldiers in time of war. This the association was prepared and able to undertake, but when the movement was started in 1905 to form a British Red Cross Society, it was felt better for the St. Andrew's Association to withdraw from Red Cross work to avoid overlapping by two bodies carrying on Red Cross work in Scotland. Accordingly the association loyally supported the Red Cross Society, and contributed £500 towards the formation of a Scottish branch. By their withdrawal from Red Cross work the association were left with the care of money which they were unable to use. After careful consideration it was thought best to hand over the greater portion of the fund to the Scottish Branch of the Red Cross Society, to be used for the work in Scotland under the management of the Scottish Branch, and that the Central Committee would have no claim on it. The portion still retained by the association—£3,500—was intended to meet outlays in connexion with the home hospitals reserve and the training of the St. Andrew's Ambulance Association, who could furnish the personnel of stretcher-bearers in time of war, etc.

DR. GEORGE DANFORD PHILLIPS THOMAS, Senior Coroner for the Counties of London and Middlesex, who died on August 5th, left estate valued at £3,117 gross, of which £2,588 is in net personalty.

Obituary.

PROFESSOR MIGUEL BOMBARDA, M.D.,

MEDICO-CHIRURGICAL SCHOOL, LISBON.

On Monday, October 3rd, Miguel Bombarda was shot in the abdomen by a former inmate of his asylum. He was taken with all dispatch to the Hospital de S. José, where Dr. Gentil, assisted by Drs. Feiljao and Manjardino, performed a laparotomy. The intestine had been perforated in five places. After all that was possible had been done he was carried into the ward, and a few hours later oxygen was administered. Symptoms of very acute peritonitis were, however, present, and in spite of all attempts Professor Bombarda died shortly after 6 o'clock. His assassin, Apparicio Rebello dos Santos, had used a Browning revolver suddenly during a brief interview which he had sought, after he had been absent from Lisbon for some time. His discharge from the asylum was succeeded by a journey to Paris and London, where he is said to have consulted eminent alienists. Attempts have been made to attribute a political motive to the crime, but the fact remains that the perpetrator had been within recent years certified insane.



Professor Miguel Bombarda, M.D.

A number of the members of the medical profession in this country will have good cause for sincere regret at the death of Professor Bombarda. He will be remembered by those who attended the Fifteenth International Congress at Lisbon in April, 1906, where as General Secretary he charmed all with whom he came in contact by his courtesy and practical kindness. In the report of the congress which we published, repeated reference was made to his diplomatic manner and his indefatigable efforts to make everybody welcome and comfortable. It was perhaps most noticeable how popular he had become with all the foreign members of the congress when, at the closing meeting the audience recognized with acclamation his splendid services until it could shout no more. It may be recalled that a description of his asylum—the Hospital de Rilhafolles—was given in the account which our special corresondent at the congress supplied to us.

Miguel Bombarda was born of Portuguese parents on March 6th, 1851, at Rio de Janeiro. Seven years later he came to Europe, after his father had got into difficulties with Dom Pedro IV, on account of his views with regard to the independence of Brazil. He was educated in Lisbon, and at the age of 18 was naturalized Portuguese. He entered on the study of medicine and had a distinguished career. On his graduation he gained honours for his thesis on the cerebral hemispheres and their psychical functions. This was in 1877. Three years later he gained great distinction by a publication on the dystrophies of nervous lesions. After a time, he was elected Professor of Physiology at the Medico-Chirurgical School. In this capacity he gained still further distinctions and published a number of important works.

In 1883 he, together with a few other Portuguese professors, founded a medical periodical—*A Medecina Contemporanea*. With an interruption of a few years he acted as editor of that journal during the twenty-seven years of its existence. In 1892 he was appointed Medical Superintendent of the Hospital de Rilhafolles. In this capacity he introduced many marked innovations and reforms, and many of the changes were based on what he had previously learnt in German and English asylums. In the period of his activity as the leading alienist of Lisbon he published several works of note dealing with the subjects of microcephalus, epilepsy, and the doctrine of the neurones. He was elected an honorary member of the *Academia Real das Scientas*, and served as the President of the Society of Medical Science from 1900 to 1903.

Apart from his contributions to medical literature and his valuable work on the physiology and pathology of the brain, Dr. Bombarda during the last twelve to fifteen years of his life entered the field of philosophy and politics. He wrote two books on *Conscience and Free Thought* and *Science and Jesuitism*, which gained for him considerable reputation as a powerful writer and a profound thinker. Although a Catholic his views were anticlerical, which he firmly maintained in spite of considerable opposition. He took a prominent part in the drafting of the Penal Code, and here again came in contact with the existing authorities because he, as a physiologist and respector of free thought, opposed the official who wished to deal with crime and the criminal with a ruthless and heavy hand. His book on *La folie penitentiare* created a sensation, and was powerful in introducing reforms.

In 1901, 1902, 1904, and 1907 he took a very active part in the meetings of the National League against Tuberculosis, while, as has already been mentioned, he proved himself a master of organization and of diplomatic skill in his rôle of general secretary of the Fifteenth International Medical Congress. Among the many acts which signalize his office we may mention the arrangement of the sessions at the new Escola Medica, the publication of the guides, and the organization of the conferences of the Congress as the most skilful pieces of his work.

Politically he made a reputation for himself as a Republican Member of Parliament. He was elected a member for the Eastern Circle of Lisbon in August last. In this capacity, as in his scientific and literary endeavours, he commanded the attention of friends and foes alike. His power of clear thought and his smooth eloquent tongue commanded respect from all, and his admirers were numerous and weighty.

Medicine has lost in Miguel Bombarda a man of rare qualities of intellect and character, and who will not be easily replaced. His friends and relatives have lost a fearless and true friend and a courteous and cheery companion.

JAMESON JOHN MACAN, M.A., M.D.Camb.,

CHEAM.

Less than two years ago there passed away the distinguished obstetrician, Sir Arthur Macan, of Dublin, and, as we regretfully recorded in our issue for October 22nd, his brother, and only other medical man of the name, Jameson John Macan, has now gone over to the majority. The cause of his death was lobar pneumonia, which ran a very rapid course. On October 13th he attended a meeting of the Croydon Division of the British Medical

Association at Sutton, presiding during part of the evening. He was then apparently quite well and in his usual genial spirits. The next day he was already acutely ill, and two days later—October 16th—he died. He was in the 67th year of his age.

Dr. Macan—a son of Judge John Macan, First Commissioner of Bankruptcy in the High Court of Justice in Ireland—was born in Dublin. He received his general education at St. Columba College, near that city, and then proceeded to Jesus College, Cambridge, his career there ending in his attainment of a Junior Optime in the Mathematical Tripos. He studied medicine at St. Bartholomew's Hospital, and became M.R.C.S. in 1870. He was allowed to enter for the final examination a little before his normal period of study was complete. He had suffered as a boy from spasmodic asthma, and, as it was again troubling him, it was considered that he should go abroad quickly.

As soon as he received his diploma he sailed for Australia in charge of emigrants. He returned two years later, but only to sail again for New Zealand; he did not finally take up his residence in England until 1883. Meantime he had spent three years as Resident Medical Officer at Rockhampton Hospital in Queensland, and six years or more in the emigration service. During a visit home in 1878 he became L.R.C.P.I., and on settling down in 1883 he went in for what was then a new qualification, the D.P.H.Camb., with the idea of taking up some appointment or devoting himself to institution work. Nothing, however, which seemed to him of a desirable kind presented itself, so his Australian work eventually proved the last work of an ordinary professional kind to which he devoted himself.

He by no means, however, gave up medicine, but remained a constant, though independent, student. He found plenty of occupation, for apart from his interest in science, he was an excellent musician, and had a fine voice, which made him always in request at social gatherings. In 1894 he took the M.D. of his own university, Cambridge, and meantime had translated Schultze's classical work on *Displacement of the Liver*, the translation being published with his brother, Sir Arthur Macan, as editor.

In 1897 he married the widow of the late Mr. S. C. Wilde, of Cheam House, and then took up his residence in Cheam. He was not a newcomer in the place, for an elder sister had many years previously married the rector of the parish. His married life only lasted two years, but he continued to live at Cheam.

Macan's professional occupation was of a literary kind. It commenced with the translation which has already been mentioned, and from that time onwards he identified himself with obstetrics and gynaecology. He was a good linguist and particularly proficient in German, and busied himself in translating and epitomizing papers in Continental and American journals, and in reviewing books on the two subjects mentioned. For some seven years he was editor of the *British Gynaecological Journal*, and when the British Gynaecological Society became merged in the Royal Society of Medicine he joined the editorial staff of the *Journal of Obstetrics and Gynaecology of the British Empire*.

His knowledge of the literature of obstetrics and gynaecology was very complete, and he balanced it by constant attendance at meetings of societies and clinical observation. He was also an attendant at international congresses dealing with this speciality, usually as a representative of the British Gynaecological Society.

Macan, besides being a man of much energy and industry, was endowed with a strong sense of *esprit de corps*, and more than one body had the benefit of his services. Of the Irish Medical Graduates' Association he was an active member, and at one time chairman of its council. With the British Medical Association his connexion was close and long. For many years the Croydon Division, to which he belonged, continued to return him as its Representative, and last year he was elected President of the South-Eastern Branch. Its confidence in him was again and even more strikingly shown by his election, as the Branch's choice, to the distinguished position of member of the Central Council of the Association. This was last July. In addition, he had of late years played an increasing part in the affairs of Cheam and the district, where the value of his business-like methods and attention to detail was fully recognized. He was also a keen Freemason.

We have still to speak of his connexion with the British Medical Journal. For many years, and indeed up to the hour of his death, he was its reporter for the Obstetric and Gynaecological Section, and no more conscientious occupant of such a post could possibly be found. He took a keen interest in his work, and devoted to its performance an endless amount of care. No man could have been a pleasanter or more reliable colleague. In private life Macan was one of the kindest-hearted of men, always ready to help with advice or personal service those who asked for it, and to many he was a most generous benefactor. If any one contrived to excite his sympathy and interest—and this was the easiest of tasks—he devoted to his or her cause the same endless care as that which he showed in his professional work.

Physically Macan was a very big man, whose equal greatness of heart was not always evident on the surface. His manner, though punctiliously courteous, was occasionally found a little alarming by those who met him for the first time. This, however, was but a momentary impression, and children, who in such matters are the best judges of all, took to him at once. Nor were adults long in discovering that underneath a somewhat heavy manner he concealed much humour and all the geniality of a typical Irishman. Macan, therefore, wherever he went was bound to be not only esteemed, but liked.

Neither Macan nor his wife were young when they married, and they had no children, but he leaves behind him two brothers—one of whom is Master of University College, Oxford—a sister, and a large circle of nephews and nieces who, with more distant relatives and many professional and private persons, now mourn the loss of a very sincere and highly valued friend.

In reference to him, Mr. Charles Wray, Chairman of the Croydon Division of the Association, writes: The South-Eastern Branch of the British Medical Association has sustained a heavy loss by the death of Dr. Macan. In the Croydon Division, in which he was best known, he was held in high esteem, not only for his personal qualities, but for his masterly way of dealing with knotty points in medical politics when submitted to him as our Representative. He was a past master of detail, but an uncompromising enemy of hot-headed iconoclasts. The main object of his latter years was to do all he could to extend and consolidate the influence of the Association. He succeeded John Galton, a strong man, and many were the misgivings of some of us when we saw Dr. Macan step into his place, but in a very short time he proved a worthy successor. His solicitude for the best interests of the profession was at his heart, but never on his lips save when words were as urgent as deeds. One may truthfully say that every man in the Division who knew him personally feels he has lost a sterling friend. Many of us have seen him stern to a degree, but the sternness was because at the moment he dealt not with men but with principles. There are some who think that the tone of the profession is from those who fill important chairs in our schools, but long experience has convinced me that representative men like Galton and Macan make a deeper impression for good on the younger members of the profession than is realized. Such men we can ill afford to lose.

HENRY COLLEN ENSOR, M.R.C.S., L.S.A.

Mr. Ensor, who died recently, was the son of the late Mr. Thomas Henry Ensor, Solicitor, Cardiff, and a brother of the present prosecuting solicitor to the Corporation, and was born at Cardiff on May 2nd, 1859. He received his early education at Milton Abbas School, and, having matriculated at the London University, he entered Guy's Hospital in the summer session of 1879, and passed the Preliminary Scientific and the Inter M.B., taking the M.R.C.S. and L.S.A. qualifications in 1885.

As a student, painstaking and thorough in his work, he was early recognized as a man of marked ability, and if, as a result of independent thought and judgement, he held firm convictions, he was always careful in arriving at his conclusions to give proper consideration and attach due weight to the opinions of others. He held the higher

student's appointments, and amongst them those of Ophthalmic Surgeon's and Aural Surgeon's Assistant. Of a modest demeanour, unobtrusive, and retiring in disposition, he was yet open-hearted, sympathetic, considerate for the welfare of others, and imbued with an integrity of purpose which was inspired by the noble ideals of his profession. He was naturally, therefore, highly esteemed and his friendship valued by a large circle of students. His health, never robust, compelled him, after obtaining his qualification, to relinquish the further course of study for his final M B. Deciding to take up the practice of ophthalmic and aural surgery, he became Resident Surgeon at the Birmingham and Midland Counties Eye Hospital, and ultimately settled, in 1887, in Cardiff, his native city, where he quickly established a large consulting practice, becoming Ophthalmic Surgeon to the Cardiff Infirmary, the Cardiff Provident Dispensary, the Cardiff Deaf and Dumb Institute, and the Cardiff Eye and Ear Hospital. He was Captain on the Special Hospital Reserve of the R.A.M.C. Territorial Regiment.

He was a prominent and enthusiastic Freemason, and held offices of the highest position in the craft and chapter; and he also associated himself actively in charitable objects and philanthropic institutions. His death, which occurred on August 23rd, at a comparatively early age, is a loss keenly felt and deplored by a large circle of friends, many of whom have experienced at his hands acts of kindness which will always make them feel debtors to his memory.

Mr. D. Leighton Davies, M.D Lond., F.R.C.S.Eng., Demonstrator of Anatomy, University College, Cardiff, writes: By the sudden and unlooked-for death of Mr. H. C. Ensor, South Wales has lost one of her most esteemed practitioners, and his death is lamented by a wide circle of friends and patients. Of a quiet and unostentatious nature he yet contrived to get through a large amount of useful work. He was very thorough in all he undertook, even to the minutest details. In his professional work one could not but be struck by the readiness with which he fell in with the newer ideas of pathology as applied to ophthalmology, and he was always ready and interested by new suggestions for treatment. As an operator he was possessed of very considerable skill, and was, withal, rapid in execution, and he therefore met with a great deal of success in this part of his work. He never shirked work, and died in harness, for he was operating at the infirmary on the day of his death. He was a man of large heart and generous nature, ever ready to stretch out the right hand of fellowship to those who desired his friendship. His patients found in him not merely a physician but a real and true friend, and many will be the number of those (of whom the writer is one) who can recall little acts of kindness done in secret. The world is better for his life, and he will live in the memory of his friends. May he rest in peace!

We regret to announce the death of Dr. Lancereaux, formerly Physician to the Paris Hospitals, and President of the Académie de Médecine.

We regret to report the death of William Francis Manners, M.A Camb., M.R.C.S.Eng., L S.A., which took place on August 17th last at Degema, Southern Nigeria, after a brief illness. Mr. Manners, who was the eldest son of the late Colonel Manners, of Newport, I.W., was educated at Cambridge and St. Thomas's Hospital, and was in practice for some time at Claygate, Surrey, and Pewsey, Wiltshire. In 1902 he joined the West African Medical Service, where he was held in the greatest respect by his colleagues and the native population, so much so that certain prominent natives in Bonny are proposing to erect a memorial to his memory. Mr. Manners leaves a widow and three children.

Surgeon-Colonel Francis Henry Welch, F.R.C.S., retired Army Medical Staff, died at Southborough, Kent, aged 70. He entered the service as an Assistant Surgeon, April 1st, 1861, and became Surgeon-Colonel in 1892, retiring in 1895. He took part in the Hazara Expedition in 1888, and was mentioned in dispatches. He was awarded a gold medal in 1860 while a student at the London Hospital, and in 1873, and again in 1882, he gained the Alexandra Gold Medal. He was a Professor of Pathology at the Army Medical School from 1871 to 1876. He was a voluminous writer on subjects incident to his profession, more particularly as connected with the army.

Medico-Legal.

MARKHAM v. WOOD-ABRAHAMS.

Before Mr. Justice Ridley and a special jury, in the King's Bench Division, on October 24th, 25th, and 26th, Miss Margorie Helen Markham, 23, an ex-university student, of "Glion," Moreton Road, Croydon, claimed damages from Mr. R. Thomas, a qualified optician, trading as "Wood-Abrahams, Eye-sight and Spectacle Specialist," Manchester, for injury to her sight through his alleged negligence in supplying spectacles and examining and testing her eyes.

Sir Frederick Low, K.C., and Mr. Greer appeared for the plaintiff; Mr. McCall, K.C., Mr. Albert Profumo, and Mr. Leach for the defendant.

In his opening speech, Mr. Greer said that the plaintiff was practically on the verge of blindness. At the time of consulting the defendant, in September, 1907, she was studying at Aberystwyth College for the final examination for the University of London Science Degree, intending to become a teacher of science. He treated her for astigmatism, and supplied her with two pairs of spectacles, one specially for reading, one for ordinary use, while, as a matter of fact, the trouble was conical cornea. This, the defendant, if reasonably skilful, ought to have noticed at once, and advised her to consult an oculist.

Miss Markham then went into the witness-box and described the tests her eyes were subjected to on her visits to the defendant's shop in 1907, 1908, and 1909. She thought she was receiving skilful and careful treatment.

Cross-examined by Mr. McCall, she said that from 1903, when she matriculated, up till 1907 she studied five or six hours a day on an average.

Re-examined, she said her eyes improved after using the glasses prescribed by Mr. Wray in 1909.

Mr. Charles Wray, F.R.C.S., Senior Surgeon to the Western Ophthalmic Hospital, was called next, and stated that Miss Markham came to him in November, 1909. She had conical cornea. In the early stages it was a slowly progressive disease, but as soon as the conicity was measured by a +8 spherical is rapidly became dangerous, especially if the patient should fall into bad health or be deprived of sleep. He was of opinion that Miss Markham must have had conical cornea for about eight years. It was an easily discoverable disease. Had an ophthalmoscope been used with ordinary care, it would have been impossible not to have detected it. The spectacles supplied by Mr. Thomas were altogether too weak to cope with the disease. She should have been told at once, continued witness, to change her occupation and cease reading. Study increased astigmatism and hastened the end.

Sir Frederick Low: In your opinion what would be the end?

Mr. Wray: There can be but one end, and that is, she will certainly lose the sight of one eye—probably both.

That, he said, was attributable to improper treatment. Had proper treatment been given in the incipient stages, the progress of the disease could have been arrested and the sight of one eye certainly saved for distance.

From November of last year up to the present time the dioptre of astigmatism of the plaintiff's eye had increased about 1½. The glasses prescribed by witness were 7 dioptres, nearly double the strength of those supplied by Mr. Thomas. By doubling the strength of the glasses the strain on the eye was diminished. Mr. Thomas had underestimated the dioptre of astigmatism. So far as glasses were concerned, Miss Markham was now in the last stage of helpability.

Cross-examined by Mr. McCall, Mr. Wray explained that for some years past he had taken a very strong view against opticians prescribing spectacles at all. That was the duty of an oculist.

Mr. Justice Ridley: Does that mean if people want a change in glasses they must go to an oculist?

The Witness: It is prudent, my lord, and, if I may suggest it, this case proves it.

Replying to Mr. McCall, witness said he had frequently expressed that view. He even went the length of saying that every optician should be a qualified oculist. It was impossible to say that conical cornea was a congenital disease. It occurred in 1.5 cases out of every 1,000. It was incurable. All that medical or surgical skill could do was to retard its progress by means of suitable glasses.

Mr. Nathaniel Bishop Harman, F.R.C.S., ophthalmic surgeon practising at 108, Harley Street, followed. He examined the plaintiff on January 24th of this year, after she had been treated by Mr. Wray, whose evidence he corroborated in every essential particular. Miss Markham, whose health was by no means robust, ought not to have been allowed to endanger her health in the unwholesome atmosphere of lecture rooms and laboratories. If the dioptre of astigmatism increased beyond 8 it was impossible to prevent it going further.

The plaintiff's case concluded with the evidence of the Rev. Arthur Markham, her father, who described his visits to the defendant's shop in Manchester.

Mr. McCall, addressing the jury on behalf of the defendant, said that in substance the action was brought against an ordinary tradesman because he did not possess the skill of such eminent oculists as Dr. Wray and Dr. Harman of Harley Street. It was unheard of. The plaintiff's business was to sell glasses which would improve the sight of the chance customer who came in, not to diagnose obscure ophthalmic diseases.

Mr. Luther Ensor, defendant's assistant, said he adopted the subjective method in testing Miss Markham's eyes. He did not use an ophthalmoscope, but may have used a retinoscope.

Mr. Thomas then gave evidence. He also tested the plaintiff's eyes by the subjective method in April, 1909, and found they were very astigmatic. There had been no great change since she first came to his shop.

In cross-examination he said he frequently sent cases to the hospital.

Then came the three expert witnesses for the defence—Mr. Hartridge, Dr. Stephenson, and Dr. Ettles—who all admitted that the plaintiff had conical cornea; but emphatically denied that she was now nearly blind or that she was in danger of blindness. Conical cornea, in their opinion, was exceedingly difficult to detect in its incipient stages, even by a highly skilled oculist, and the disease in the plaintiff's instance could not have been aggravated by the glasses.

Summing up, Mr. Justice Ridley said there was no evidence at all to show that the defendant was required to bring to bear in this case the same degree of skill and knowledge that a doctor or a surgeon was expected to do. In the matter of the eye, as in the matter of the body, there were many complaints which did not require the treatment of a skilled doctor. The chemist who sold a box of pink pills did not warn his customer that they were not the proper things to take. The real question was, Ought Mr. Thomas to have discovered the existence of conical cornea in the plaintiff's eye?

The jury disagreed and were discharged.

PROSECUTION UNDER NOTIFICATION OF BIRTHS ACT.

In the Journal of October 22nd were reported two cases in which mecical practitioners were fined in small sums for breach of the Notification of Births Act. We have now to report additional cases in which, however, the prosecutions failed—the defence in these cases being conducted by the Medical Defence Union.

From the Bradford *Daily Argus* we gather that Drs. J. F. Allan and W. P. Dunsmore were on September 6th summoned for not complying with the Act in question, in that they failed to notify within thirty-six hours, although in attendance upon the mothers of the newly-born within six hours. A post-card had been issued by the Health Department of Bradford to medical practitioners in the district stating that the "duty" of notifying a birth to the Medical Officer of Health devolves in the first instance upon the *father* of the child, if he be living in the house at the time of the occurrence of the birth; and if not, then upon "any person in attendance upon the mother at the time or within six hours after the birth, etc."

After the post-card having being put in as evidence the stipendiary intimated that this was a sufficient exoneration. The solicitor acting for the Medical Defence Union, however, claimed that a ruling on the interpretation of the Act should be given. He urged that unless it was construed very literally the result would be absurd, as several people might be fined for omitting to notify one child, and a daughter or a neighbour giving assistance at the time would come within the scope of the Act.

The stipendiary then stated he would give his decision on October 11th.

The judgement has now been given, and, as it is important to the profession, we make the following quotations from it. After giving a history of the facts, the magistrate stated:

"The local authority, with a laudable motive of making the clear meaning of the statute still more clear, had caused to be printed on the postcards . . . what purported to be either a copy, or an abstract, of the material provision. . . . The substitution of 'or' for 'and' of course completely misrepresents the effect of the Act of Parliament; and at the close of the case for the prosecution I intimated my view that the court was prepared to dismiss the summons on the ground that the issue of the postcards in that form constituted extenuating circumstances within the meaning of the Probation Act.

"Mr. Belden, however, who appeared for the defendants, instructed, as he informed me, by the Medical Defence Union, desired my opinion on another point, and therefore called the defendants as witnesses.

"The point taken that the duty of notification lies primarily upon the father of the child, if residing in the house at the time of birth, and that this circumstance alone is sufficient to bring the medical man in attendance within the terms of the above-mentioned proviso, and to give him reasonable grounds for believing that some other person—namely the father—had given the prescribed notice. I am quite unable to appreciate this argument. The statute contains no warrant for it, and the only thing that can be said for it is that by some mischance it appears temporarily to have imposed on the local authority. The only doubt I have is whether, in view of the evidence of the defendants, that the failure to notify must have been the result of forgetfulness. It is not the duty of the Court to convict, but upon the whole it appears to me that it would be harsh to inflict the penalty upon the defendants for not doing what the local authority had told them they need not do; and accordingly I dismiss the summonses. It must be taken, however, for the future that the effect of these post-cards, which I assume have been withdrawn from circulation, is exhausted."

This decision makes it quite clear that the only possible chance of success in defence in this respect is that a medical practitioner has reasonable grounds for belief, such as will satisfy the magistrates, that some other person has duly notified; and this, we assume, is the common sense, as well as the legal, interpretation of the Act.

The safety against prosecution lies, therefore, in either notifying, or amply assuring oneself that someone else has notified, the birth within the required time. Outside such safeguards danger lies, and it will be for the medical profession to secure immunity by these methods.

THE ANTIVIVISECTION HOSPITAL.

The *Times* of November 2nd contains a report of an inquest held at Battersea on November 1st by Mr. John Troutbeck on the body of a child named Robert James Wright, son of a soldier stationed at Chelsea Barracks. The child, aged nearly 10 months, while at an aunt's in Bullen Street, Battersea, was seen putting a piece of coal to his mouth. He was suddenly taken ill, and as it was feared he had swallowed some coal his uncle, a 'bus conductor, rushed off with him to a doctor, who advised the patient's removal to the Bolingbroke Hospital. The uncle, being almost exhausted, handed the child to a neighbour, a Mrs. Davis, who got into the first tram that came by with the intention of taking the child to St. Thomas's. The child gasped so that she changed her mind and went to the Antivivisection Hospital, which is not far from Bullen Street. The institution is now known as the Battersea General Hospital, but it was explained at the inquest that it retains the name of the Antivivisection Hospital in order to be entitled to certain legacies. The evidence of the relatives differed in some points from the medical evidence. Mr. MacCormac, assistant medical officer of Wandsworth Infirmary, said he first heard of the case by telephone from the Antivivisection Hospital. The sister there gave him a message on behalf of the doctor to the effect that they had a child at the hospital which required tracheotomy. In answer to a question whether it was diphtheria, she said she did not think the doctor quite knew, or something to the effect. There was no mention of coal. The child was admitted practically dead. The witness immediately performed tracheotomy in the kitchen of the receiving ward, and the patient recovered. Afterwards, however, he developed pneumonia, and died on the night of October 29th. On making a *post-mortem* examination the witness found a piece of coal nearly an inch square jammed in the voice box. This, in his opinion, had brought about the pneumonia. A heroic operation would have been necessary for the removal of the coal. From the first the child had very little chance, and it would have made no difference if tracheotomy had been performed two hours earlier. He performed the operation single-handed.

Dr. Gott, resident medical officer at the Antivivisection Hospital, said he could detect no foreign body. To the sister he mentioned the possibility of various diseases but not to the relatives He ordered a hot bath and a mustard poultice, and, in view of the history of the case and having no bed, he thought it best to get the child into a public institution other than his own. The sister suggested the infirmary and he agreed. He did not know the sister said instant tracheotomy, or that tracheotomy was necessary. The child was kept at one temperature, and every care was taken of him. He thought the best treatment was to send him to a public institution where they had more available appliances. If he had telephoned for assistance perhaps it would have come not quickly enough. The coroner said that there was no evidence to suggest that the absence of treatment at this general hospital accelerated the child's death. There should be some explanation as to why the case was removed from a general hospital to the infirmary. It was difficult to understand the story of the child's reception and treatment at and his removal from this general hospital. The jury returned a verdict in accordance with the medical evidence, and came to the conclusion that the coal was swallowed accidentally. The foreman added: "The jury do not appreciate the action of the Antivivisection Hospital authorities."

A MEDICAL HERBALIST.

An inquiry regarding the death of a woman, who died under the care of a herbalist, was held last month at North Mills by the coroner for the High Peak district.

The general evidence was to the effect that the deceased, a woman aged 47, had been sent home to North Mills from her situation at Sale on account of her health. She had a cough and had had haemorrhage from the lungs, which had soon subsided under treatment. On returning home she remained well for a time, but eventually put herself under the care of a medical herbalist, and apparently some two or three days later had a violent fit of coughing, brought up much blood, and died almost immediately. It was also stated that the medical herbalist when called in by the patient's friends at her request said that if the patient grew worse they should send for an ordinary medical man.

The medical herbalist, giving evidence, said that he had supplied the deceased with two bottles of medicine; one contained comfrey, marshmallows, and witch hazel tincture; what the other contained he did not know. It was a mixture for the stomach which he got wholesale. It contained, he thought, wild cherry bark.

The medical man, Dr. Chapman, who was called in after the patient's death, said that he had seen the medicine which was said to be "for the stomach," but as it had not been analysed he could not say what it contained. It might, as far as he knew, contain strychnine. With regard to the other mixture, he could only state that it was wrong to give anything containing a cardiac stimulant to a person suffering from pulmonary haemorrhage.

The coroner, after stating that the final end of the patient was exactly what would be expected in a case of pulmonary phthisis, completed his summing up by the following remarkable statement: The case was somewhat complicated by the fact that while at home deceased had seen fit to consult Mr. Howard. He was not a qualified doctor, and did not profess to be. He was a medical herbalist. He (the coroner) did not want to condemn Howard off-hand—nor must the jury—because he was not a qualified medical man. There were men with a large amount of knowledge who were not qualified medical men, who treated people to the best of their skill, and, unless it was shown they were absolutely wrong, it was not for him or the jury or anybody else to condemn them. One bottle was intended for the cough, and its ingredients were more or less used in all cough cases. One of the constituents Dr. Chapman did not think advisable for a particular reason, but that was a long way from saying that it was the cause of death. The second bottle was intended for the stomach; but that did not seem to him to be quite in the question. It would not necessarily contain anything deleterious. They had Howard's statement as to what the bottle contained, and they had to say whether they accepted that statement. If they thought that Howard gave the bottles in the full belief he was giving something to give relief, and that there was nothing harmful in what he did, then it did not call for attention at the jury's hands. If they thought Howard was wrong in what he did, and acting on insufficient knowledge and advice, gave her something which did her harm, then they would say he was to blame. Nothing but a careful analysis would show what the bottle contained, but there was no reason to suspect that Howard was telling them anything wrong. There was no question as to the facts of his statement so far as that went. Apart from Howard's attendance upon the deceased, it was a straightforward case of pulmonary haemorrhage. They must consider the fact of Howard's attendance upon her, and if they thought that did harm they must say so. If they did not think Howard's attendance was a material fact, it was no matter of theirs, whatever it might be for a medical council or any body of that kind. If the jury wished, he would, of course, have the contents of the second bottle analysed.

In view of this curious deliverance it is scarcely strange that the jury promptly returned a verdict that death was due to pulmonary haemorrhage without any comment on the circumstances disclosed.

WORKMEN'S COMPENSATION.

Alleged Inoculation of Tuberculosis from a Cow.

A CASE in which it was sought to prove that a man had contracted bovine tuberculosis occupied the attention of Judge Tindal Atkinson at the Ilford County Court on October 22nd. The plaintiff, Thomas Stringer, residing at Barkingside, near Ilford, was employed by Messrs. Prentis and Son, greengrocers, etc., of Ilford, to look after some cattle, and it was alleged that whilst attending a heifer, which was suffering from tuberculosis, Stringer became inoculated with the bacillus, which found its way into a wound caused by a "chap" between the thumb and first finger. The claim was made under the Workmen's Compensation Act, and Dr. Murtaugh Houghton sat with His Honour as medical referee.

From the statement made by Mr. Foden Pattinson, who appeared for the plaintiff, it appeared that Stringer, acting under the direction of a veterinary surgeon, who at the time only suspected bronchial pneumonia, gave the heifer bran mashes, which he mixed with his hands, and also administered a "drench" by means of a bottle. He also had to clean out the trough with his hands, and this trough invariably contained a quantity of saliva after the heifer had been in the shed during the night. It was at the end of January last that he commenced to do this, and about the same time he had a "chap" on his hand between the thumb and first finger, and his case was that Stringer was inoculated with the tubercle bacillus whilst attending to the heifer. Up to that time Stringer, who was 65 years of age, had never had a day's illness in his life, but after attending to this animal—which was slaughtered and found to be extensively diseased—he developed consumption, and was now in the last stages of the disease. In March he became so ill that he had to consult Dr. Percy Drought, and eventually had to give up work altogether: hence the claim under the Workmen's Compensation Act.

The plaintiff, who was scarcely able to speak, briefly corroborated the main facts of counsel's statement. A cough had developed, lumps appeared on his arm, he sweated very badly, and when he went to the doctor he was told he was suffering from consumption.

Plaintiff's wife and a local builder who had known Stringer for several years gave evidence showing that the man had enjoyed good health prior to January last, when he attended to the heifer.

The veterinary surgeon, Mr. Walter Grey of Ilford, said he was of opinion at first that the animal was suffering from bronchial pneumonia, and as it did not make any progress he ordered it to be slaughtered. He had no suspicion at first as to the existence of tuberculosis.

Evidence was next given by Frank Palmer, of Brentwood, who slaughtered the animal and found "bunches of grapes" inside the carcass. He recognized this to be tuberculosis, as he had killed many animals suffering from the same disease. Witness did not pretend to possess any scientific knowledge on the point.

Dr. Percy James Drought said the plaintiff came to him on March 28th last. He was suffering from consumption, and witness detected a cavity in one of the lungs. He was told of the work which the plaintiff had been doing, and he thought it quite possible that the man had been inoculated through the wound caused by a "chap."

The Judge: Is it possible that a man can contract consumption from a cow?

Witness: It is.

The Judge: Is that definitely agreed now by all experts?

Witness: I cannot say by all experts, your Honour. It is my opinion.

Answering Mr. Shakespeare, who appeared for the respondents, witness said if the inoculation was sufficiently acute it might attack the whole system, and not remain purely local. The wound where inoculation took place might heal and get perfectly well, but the lungs might be affected. Usually they expected to find a scar of a distinctive character at the point of inoculation. He did not suggest that there was such a scar upon this man's hand.

Mr. Shakespeare: If a man becomes inoculated on February 7th, could the disease possibly progress so rapidly that the lungs would be affected by the 14th, and the man would have a cough, night sweats, spit, and suffer general lassitude?

Witness: The bovine tuberculosis is exceptional, but I do not think all those symptoms would be present within fourteen days. Continuing, witness said, in his opinion, it was quite conceivable if the disease had made that rapid progress in fourteen days, that the man would be alive now. There was a cavity in the man's lung when he saw him in March; he would not have expected this in a month.

Replying to the judge, witness said there was nothing in the surroundings to show that the man had contracted consumption in any other way but through this cow.

Dr. James Edward McCausland gave it as his opinion that it was quite possible for human beings to contract tuberculous disease through inoculation from a cow. He had examined the plaintiff and found the right lung extensively diseased. It was unusual for persons of 65 to contract consumption in the ordinary way.

Witness was asked whether he agreed with this statement which appeared in the BRITISH MEDICAL JOURNAL: "We are not aware of any cases of human phthisis which have been conclusively proved to be due to cutaneous infection with bovine bacilli." He replied that he had never met with a case, but he knew a surgeon who was inoculated with tuberculosis in his hand.

For the defence Dr. J. Charlton Briscoe, of 110, Harley Street, Assistant Physician to King's College Hospital and Physician to the Evelina Hospital for Children, said he examined the plaintiff on September 16th. There was a faint scar at the point where inoculation was said to have taken place. There was also a cavity in the upper part of the right lung and a consolidation of a part of the other lung. He did not consider it possible that the man could have been inoculated as alleged. If it had been so, there would have been an enlarged gland in the armpit, the lungs would have been affected to a smaller degree, there would have been signs of infection in the other organs of the body, and the wound would not have healed up so quickly. Cases of inoculation were extremely rare, and six months or a year usually elapsed before the symptoms declared themselves. In cases of inoculation of this description, there would be a distinctive scar.

The Judge said the two points he wanted to be assured upon were these: Could the cavity in the man's lung which was discovered on March 28th have existed before January? Did the scar show any indication of inoculation at that spot?

Dr. Briscoe said the cavity must have been there before January, and as for the scar, it was not one which he should expect after inoculation.

Dr. McClure gave corroborative evidence, and after a hearing which lasted six hours the Judge said: Although the general circumstances seemed to point to the probability of the man's story, he was convinced that the disease was of much longer standing than was alleged. The question of the cavity in the lungs as early as March, and the absence of any distinctive scar at the alleged point of inoculation, also weighed with him, and then there was the extreme rarity of such cases. Whilst commiserating with the plaintiff, he felt bound, on the evidence, to give judgement for the respondents.

TRAVELLING EXPENSES IN INQUEST CASES.

A CORRESPONDENT asks why medical men are not allowed travelling expenses in inquest cases when all others are.

*** The payments to medical witnesses at inquests are governed by Sect. 22 of the Coroners Act of 1887, which do not include travelling expenses. We are not aware that other witnesses have advantages over medical witnesses in this respect.

FEES FOR SURGICAL OPERATIONS.

A CORRESPONDENT asks whether there is any recognized scale of fees for surgical operations. He was called to the wife of a gentleman holding an official position and residing in a house rented at £50 per annum, after an accident, and had to ligature the ulnar artery, suture the ulnar nerve, and some of the flexor tendons. What fee should he charge?

*** If our correspondent was the medical attendant throughout, it would be reasonable to charge a fee of five guineas for this item. If he were specially called in to do this operation by the medical attendant in charge he might claim a higher fee. We do not know of any special scale of fees for operations. They vary in different parts of the country, and the custom of the particular district should be followed.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

PROFESSIONAL ETIQUETTE.

X. Y. Z.—On the facts as stated to us B. appears to have no ground of complaint.

G. P.—*(a)* We should regard it as intolerable impertinence for a medical man to go to another practitioner's house to "insist" on attending to an accident that had been taken there, and which was already receiving attention. While it would be natural and right for any one who knew that a patient of his had met with an accident to ascertain that he was receiving due attention, there should be no question of "insisting" upon a right to interfere. *(b)* We have repeatedly expressed our disapproval of medical practitioners giving assistance to opticians who advertise to correct refractive errors. Medical practitioners are not allowed to advertise themselves, and they must not cover those who do, or they may thereby render themselves liable to censure.

Public Health.

HANDBOOK ON MEAT INSPECTION.

A CORRESPONDENT asks what is the best small handbook on meat inspection suitable for sanitary inspectors.

*** Any of the following would be suitable for the purpose: Vacher's *Food Inspector's Handbook* (The Sanitary Publishing Co., London. 7s. 6d.); Macewen's *Food Inspection* (Blackie and Son, London. 5s.); Walley's *Meat Inspection*, by Stockman. (Green and Sons, Edinburgh. 10s. 6d.).

CLAIM FOR MEDICAL ATTENDANCE ON ESTATE OF LUNATIC WHO DIED IN WORKHOUSE.

G. G. writes, saying there is a £12 debt due to him for medical attendance on a patient who subsequently became insane and died in a workhouse. He believes there was some property belonging to the deceased, which came to him on his wife's death, which occurred some months before his own death. Our correspondent has applied to the solicitor who acted for the deceased and his wife; he has also applied to the *Masters in Lunacy (sic)*. All say they are unable to help him. G. G. asks our advice.

*** We regret that we see no fair probability of our correspondent being able to get his claim paid, but this appears to us to be a matter for a solicitor to investigate and to advise upon, after having obtained all information possible pertaining to the case.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

Degrees.

THE following degrees have been conferred:

M.D.—A. R. Jordan, W. H. Fisher.
M.B. AND B.C.—F. Clayton, A. J. W. Cunningham, E. M. Moore, T. A. Weston, H. B. Wilson.
B.C.—E. R. Stone.

Appointments.

The following examiners have been appointed:

SECOND M.B.—*Human Anatomy:* Dr. Rogers, Dr. Duckworth. *Physiology:* Professor Halliburton, Dr. Shore.
SECOND M.B. *(Part II.)—Pharmacology:* Professor A. R. Cushny, Dr. F. Ransom. *General Pathology:* Professor Woodhead, Professor R. F. C. Leith.
THIRD M.B. *(Part I, Old Regulations).—General Pathology:* Mr. T. S. P. Strangeways, Dr. Ainley Walker. *Pharmacology:* Professor Marshall, Dr. Dixon. *State Medicine:* Dr. Anningson, Dr. Graham-Smith, Mr. J. Niven, M.A., M.B., Mr. J. E. Purvis, M.A. *Tropical Medicine and Hygiene:* Sir W. B. Leishman, Sir Patrick Manson, Dr. J. W. W. Stevens.

UNIVERSITY OF EDINBURGH.

Lord Rector's Address.

THE Right Hon. George Wyndham, M.P., D.C.L., Lord Rector of the University of Edinburgh, gave his rectorial address to his constituents, the students, in the McEwan Hall on Friday morning, October 28th. The Chancellor, the Right. Hon. A. J. Balfour, presided. The Lord Rector took for his subject "The Springs of Romance in the Literature of Europe." He traced the rise of romance to the mingling of Western and Eastern influences in the eleventh and twelfth centuries, dating it by the appearance of "The Sons of Roland." Afterwards he examined the development of romance, and defined what was meant by the romantic in literature.

Later the Lord Rector inspected the Officers' Training Corps, when there was a parade of about 300, with Captain Clive, Adjutant, in command.

The next function was a house luncheon in the University Union to celebrate the majority of the Union, when Mr. Balfour gave an interesting speech on the importance of social intercourse in university life. He spoke of the value of the Union in the social life of the student, its great importance in bringing all classes of students together to their mutual educative benefit, and the part it played generally in Scottish university life as an equivalent to the social opportunities provided by the English college system.

Mr. James Walker, C.A., Lord Rector's Assessor, treasurer of the Union, and honorary auditor of the Students' Representative Council, was presented with a silver casket "in grateful recognition of his unique services to the students of Edinburgh University, and especially to the members of the Edinburgh University Union." Sir William Turner made the presentation, Mr. J. C. Brash, M.A., B.Sc., M.B., Ch.B., senior president of the Students' Representative Council, spoke on behalf of the body of students whom he represented, and Mr. Walker replied.

The Lord Rector replied to the toast of "Our Guests," and Sir Robert Finlay proposed the toast of the "Chairman."

In the evening an unusually brilliant and successful torchlight procession took place.

University Council.

The statutory half-yearly meeting of the General Council of the University of Edinburgh was held on Friday, October 28th; the Right Hon. A. J. Balfour, M.P., Chancellor of the University, occupied the chair, and there was a large attendance. Mr. George Wyndham, M.P., Lord Rector, and Sir Robert Finlay, M.P., were present.

A motion was adopted expressing profound regret at the lamented death of His Majesty, King Edward VII, an *alumnus* of the university.

Referring to the increase in the annual grants to the Scottish universities which are to be made by the Treasury on the recommendation of Lord Elgin's committee, Mr. Clark said the University of Edinburgh would receive £12,500 out of the total of £40 000 recommended by the committee. They could assure His Majesty's Government that every penny would be well spent.

Miss MacMillan complained that the committee made no reference to the grant that had been refused for the medical education of women in separate classes. Had the Bursaries Committee considered that section of the report in which Lord Elgin's Committee pointed out that in Edinburgh the teaching of medicine and surgery to women appeared to be on a less satisfactory footing than in St. Andrews, Dundee, Aberdeen, and Glasgow?

In reply, Mr. Clark said these questions had not been considered by the Business Committee, but no doubt they would be considered by the University Court in consideration of the grant.

The subcommittee on the draft ordinance for the regulation of degrees in medicine recommended approval of the draft subject to certain modifications. The most important amendment proposed to enable instruction which might have been obtained in the subjects of the first examination in such schools and science colleges as were, or might be, hereafter recognized by the University Court for the purpose of imparting instruction in any of these subjects, to count in place of such instruction within the university, although the courses might have been attended prior to registration. Professor Schafer moved adoption of the recommendation, and said under the present regulations it was impossible for the university to recognize teaching in any branch of science which had not been conducted during the five years of the medical curriculum. That was unjust to a great many students and to the great public schools, which were doing their utmost to encourage the teaching and study of science.

Dr. Norman Walker seconded, and the report was approved.

UNIVERSITY OF ST. ANDREWS.

LORD ROSEBERY has been unanimously elected Lord Rector of the University of St. Andrews. The coming year is the five hundredth anniversary of the University.

NATIONAL UNIVERSITY OF IRELAND.

THE following candidates have been approved at the examination indicated:

M.B., B.Ch., B.A.O.—G. Siendan.
M.D.—T. H. Donovan.

A medical studentship has been awarded to Mr. W. D. O'Kelly, M.B., B.Ch., B.A.O., D.P.H.

QUEEN'S UNIVERSITY OF BELFAST.

THE following candidates have been approved at the examination indicated:

D.P.H.—R. G. M. Clements, C. Dickson, G. W. M'Comb, *J. A. Sinton.

*Passed with distinction, and awarded a special prize.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary quarterly comitia was held at the College on Thursday, October 27th, the President, Sir Thomas Barlow, in the chair.

Dr. Caius.

The President announced that, on the occasion of the celebration of the 400th anniversary of the birth of Dr. Caius, he and other College officers had been welcomed and entertained by the authorities of Caius College. In return, the Masters and Fellows of Caius College had been invited and attended the recent Harveian celebration at the College. On the motion of Sir William Allchin, it was resolved that a copy of the portrait of Francis Glisson, in the possession of the College, be painted and offered for acceptation to the authorities of Caius College.

Membership.

The following gentlemen were admitted Members of the College: John Bright Banister, M.D.Camb.; Alexander Edward Gow, M.B Lond., L.R.C.P.; Frederick Arthur Lucas Hammond, L.R.C.P., Major I.M.S.; Henry Pratt Newsholme, M.B.Oxon.; Ernest Henry Shaw, L.R.C.P.; Cuthbert Allan Sprawson, M.D.Lond., L.R.C.P.

Licences.

The Licence of the College was granted to 68 gentlemen.

Jenks Memorial Scholarship.

It was announced that Mr. Gerard Gibbons had been elected Jenks Memorial Scholar.

Portrait of Sir Samuel Wilks.

A letter was received from Dr. Herbert French, offering on behalf of the staff of Guy's Hospital a portrait of Sir Samuel Wilks for acceptation by the College. The gift was accepted, and a cordial vote of thanks was passed to Dr. French, as the medium through whom the offering was conveyed.

Communications.

The following communications were received:

1. From the Home Office, respecting an International Congress for the Amelioration of the Condition of the Blind, to be held at Cairo in February next.
2. From the Secretary of the Royal College of Surgeons, reporting proceedings of their Council on October 13th last.

Committee of Management.

Dr. Frederick Taylor, who retired by rotation, was re-elected a member of the Committee of Management.

Imperial Cancer Research Fund.

Dr. F. W. Andrewes, who retired by rotation, was re-elected a member of the Executive Committee of the Imperial Cancer Research Fund.

Reports.

The following reports were read:

1. From Dr. Amand Routh, the representative of the College, on the proceedings at the International Congress of Obstetrics and Gynaecology, held at St. Petersburg on September last.

The report was received, and a vote of thanks passed to Dr. Routh for his services.

2. From the Committee of Management, dated October 4th, recommending:

(*a*) That a candidate who has passed the first examination for the degree of B.Sc. of the University of the Cape of Good Hope, with a standard of not less than 50 per cent., be exempted from the first examination of the Conjoint Board in chemistry, physics, and biology.

(*b*) That the course of laboratory instruction in public health given by an officer of the Royal Army Medical Corps in the Laboratory of the Sanitary Commission, Gibraltar, be recognized for the Diploma in Public Health, provided that the officer conducting the course is in possession of a degree or diploma in public health.

(*c*) That the course of laboratory instruction in public health given at the South African College, Capetown, be recognized for the Diploma in Public Health.

(*d*) That attendance on the practice of the City Fever Hospital, Capetown, at which instruction in the methods of administration is given, be recognized for the Diploma in Public Health.

All the recommendations were adopted.

3. The quarterly report of the examiners for the licence on the results of the July examinations was received.

Library.

Books and other publications presented to the Library during the past quarter were received, and thanks returned to the donors.

TWO lectures will be given by Dr. C. Levaditi (of the Pasteur Institute, Paris) on Monday and Tuesday next, November 7th and 8th, at 5 p.m., in the Lecture Room of the Royal Institute of Public Health. One lecture will be devoted to The Mechanism of Phagocytosis and the Importance of the Phagocytes in Immunity; the other to Recent Epidemiological and Experimental Researches on Infantile Paralysis. All interested are invited to attend.

Medical News.

THE annual dinner of the Harveian Society is to be held at the Café Royal next Thursday, November 10th. The chair will be taken by the President of the Society, Dr. Handfield Jones, at 7.30 p.m.

AT a meeting of the Society of Medical Officers of Health, 1, Upper Montague Street, Russell Square, on Friday, November 11th, at 5 p.m., Mr. W. A. Gant, L.D.S., will read a paper upon the Foundation of School Dentistry.

TWO lectures on clinical surgery will be delivered at the London Hospital Medical College, Mile End, by Mr. E. Hurry Fenwick, Professor of Urology, on November 8th and 15th at 1 p.m. The first will deal with the diagnostic aspect of the pain in kidney disease; the second with the removal of the urinary bladder. Members of the medical profession are cordially invited.

WE are requested to state that any member who may wish to have one or more copies of the Guide Book prepared for the use of those who attended the Annual Meeting of the British Medical Association, held in London last July, can procure the volume free of charge (except 3d. for postage on one copy and 1d. for each subsequent copy) on application to Dr. Lauriston Shaw, Honorary Local Secretary, 429, Strand, London, W.C.

THE annual meeting of the Association of Public Vaccinators of England and Wales was held in London at the Hotel Cecil on Friday, October 28th, Dr. Bradshaw, of Liverpool, the retiring president, in the chair. Dr. A. E. Cope, of London, was elected president for the ensuing year. We hope to publish a report of the proceedings in a later issue.

THE annual Richard Middlemore post-graduate lecture will be delivered by Mr. Sydney Stephenson at the Birmingham and Midland Eye Hospital on Thursday, December 1st, at 4 p.m., the subject selected being The Consequences of Eye Strain. Members of the profession are invited to attend.

A MEETING of the Marylebone Division of the Metropolitan Counties Branch is to be held in the rooms of the Medical Society, Chandos Street, Cavendish Square, W., on Tuesday, November 8th, at 5 p.m., when the discussion on the problems of medical treatment of school children in London will be introduced by Sir Victor Horsley, F.R.S. It is hoped that a large number of members will be present at the meeting.

THE seventh International Congress of Dermatology and Syphiligraphy will be held in Rome from September 25th to 29th, 1911. The following questions are proposed for discussion: (1) The influence of recent etiological, diagnostic, and experimental researches on the direction of the therapy of syphilis, and the possibility of immunization and of a radical or abortive treatment of the infection. (2) Results of physio-therapy in the treatment of skin diseases. (3) Blastomycosis, sporotrichosis, and their relations with analogous processes.

A COUNCIL MEETING of the Association of Medical Officers of Health was held at the Holborn Restaurant on October 19th, Dr. Crookshank in the chair. The Treasurer, Dr. Gibbes-Smith, reported a balance in hand. In accordance with the decision of the general meeting held in London, the terms of a letter to be sent to a number of societies and associations which represent the various interests of practitioners who hold public appointments under local and central authorities were discussed, and it was decided to ask for a preliminary meeting in which the interested societies could discuss the methods by which a mutual co-operation could be rendered possible.

IN the course of his presidential address before the Therapeutical and Pharmacological Section of the Royal Society of Medicine, Professor A. R. Cushny described the changes in clinical sentiment which have occurred in the last sixty or seventy years. The optimistic faith in drugs which characterized the earlier part of the nineteenth century was replaced by a sceptical attitude towards drugs of every kind. The influence of pathological anatomy was predominant, medicine became pessimistic, and treatment almost wholly expectant. Hence the new school of pharmacology which arose about the middle of the century perforce abandoned the wards for the laboratory. Now the time had come when the principles learnt in the laboratory should be applied sedulously to the practice of the wards.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

J. P. desires to know if radium has been used in the treatment of rheumatoid arthritis; and if so, in what manner and with what result.

D. P. H. asks where he can obtain Angus Smith's varnish or similar preparation for coating the inside of an iron water cistern to prevent rust.

HEMIPLEGIA will be glad if any member can tell him of any particular kind of body for a covered motor car specially convenient for a hemiplegic gentleman. He can walk a little, but the left arm is useless.

J. R. K. writes: I should be much obliged if any of your readers could tell me of a home to which a monstrosity could go. The child is dreadful to look upon, but apparently the intelligence is fair. Age about 7.

L. I. C. would be much obliged if some reader would recommend a suitable climate (Australia preferred) for a patient who suffers from asthma. The attacks are worse in the summer, and are frequently brought on when he visits the seaside.

THIRTEEN personally suffers from psoriasis of scalp and body, and would be obliged if any reader would suggest a reliable remedy, preferably internal. Is there much danger of neuritis or malignant disease in using arsenious acid, which temporarily relieves the disease?

R. M. W. writes: A parson suffers from stammering, which he has controlled quite well until lately, and two weeks since broke down and lost his nerve. He had previously studied at special stammering schools without much benefit. He has since conducted a service perfectly with the help of ½ grain of morphine; this cannot be repeated indefinitely. (1) How long and in what doses should it be continued? (2) Would he receive any benefit from hypnosis or verbal suggestion; and, if so, who would you advise me to send him to?

E. TREDINNICK (Craven Arms) would be glad of the opinion of any readers on the following case: A young woman, about 30, married, has within six years had four children, all born healthy and delivered normally. Each child has developed jaundice within six hours of birth and each died within three days. The body of the one before the last had a most exhaustive *post-mortem* examination performed on it, and every organ was quite normal. Mother and father quite healthy. Father when a lad suffered from tuberculous glands. No history of syphilis on either side.

W. A. L. writes: I shall be much obliged if some of your readers can throw light upon the following:—A friend of mine who is a scrap metal merchant has conducted his business for many years without special danger to his employees. Some eighteen months ago he commenced receiving consignments of old metal from broken up ships. When the metal reaches the warehouse it has to be stripped and rough cleaned. The stripping process is a mechanical one. No chemical or heat is used. The men employed upon this work develop large boils, chiefly upon exposed parts such as the forearms, though, I understand, other situations are occasionally attacked. Master and men are agreed that it is only the men who work upon the metal taken from old ships who become infected. The questions I am asked are: Why should this particular class of metal set up a furunculosis? and What steps can be taken to prevent infection?

HERTFORD writes: I should be grateful for any suggestion in treatment in the following case: A lady aged 30 for many years has had pain in the right tibia and fibula. She has had five operations in the last three years—two in the head of the tibia and fibula, the rest in the lower epiphyses. Very little disease has been found at any of the operations; the bone has in all of them been deeply opened up, and the patient says she has had no relief. The temperature is subnormal in the morning, and generally about 99·6° in the evening. There is marked hyperaesthesia all down the tibial shaft, just below the knee-joint, and just above the ankle-joint. She has had two courses of tuberculous injections with no benefit. Her opsonic index is not low. Bier's congestive treatment has been frequently tried; leeches and counter-irritants externally, iodides in varying doses internally have been tried; *x*-ray evidence by a specialist is purely negative. Beyond the thickening round the old operation scars, there are no objective signs.

ANSWERS.

DR. REGINALD MAPLES (Kingsclere) writes: In reply to "E. S." in the BRITISH MEDICAL JOURNAL of October 22nd, although I am no motorist I use in my house nothing but petrol gas, and to prevent the water-tank from freezing during the winter months—for the whole apparatus is kept in a cold out-house exposed to the north—we put into the water one in eight of crude glycerine. The natural temperature of petrol is only 0.16° F. or 0.16° of frost.

H. W. B. writes: I believe there is a powder called "Anti-freeze" which is added to a given amount of water, but should there be any part (for example, water pump), made of aluminium, this would be harmful, and a mixture of one-third commercial glycerine, two-thirds water should be substituted, after emptying the water cooling system. It should be done away with, of course, during the summer months.

ABDOMINAL DISEASES.

A MEMBER.—The following works may meet our correspondent's requirements: *Diseases of the Stomach.* By A. W. Mayo Robson and B. G. A. Moynihan. Second Edition. (London: Baillière, Tindall, and Cox. 1904. 15s.) Reviewed in BRITISH MEDICAL JOURNAL, October 22nd, 1904, p. 1091. *Abdominal Operations.* By G. A. Moynihan, M.S., F.R.C.S. Second Edition. (Philadelphia and London: W. B. Saunders Company. 1906. 28s.) Reviewed in BRITISH MEDICAL JOURNAL, July 27th, 1907, p. 207. *Clinical Lectures and Essays on Abdominal and Other Subjects.* By H. D. Rolleston. (London: Sidney Appleton. 1904. 5s.) Reviewed in BRITISH MEDICAL JOURNAL, September 24th, 1904, p. 758. *Abdominal Pain: its Causes and Clinical Significance.* By A. E. Maylard. Second Edition. (London: J. and A. Churchill. 1906. 7s. 6d.) Reviewed in BRITISH MEDICAL JOURNAL, January 19th, 1907, p. 146.

MEDICAL FOLK LORE.

NURSERY RHYME writes: "Folk Lore" will probably get the information he requires by writing to the Honorary Secretary, Folk Lore Society, 22, Albemarle Street, W.

DR. DAN M'KENZIE (London) writes: In reply to "Folk Lore's" request for books or papers dealing with the folk-medicine in the West of England I venture to refer him to an article by Dr. G. F. Sydenham which appeared in the BRITISH MEDICAL JOURNAL, November 10th, 1900, p. 1367. "Folk Lore" should, if he wishes to become acquainted with the medical folk lore of England, consult W. G. Black's *Folk Medicine*, a book published by the Folk Lore Society in 1883. Here he will find many references of interest. It would also be advisable for him to consult the files of *Folk Lore*, the journal of the Folk Lore Society.

LETTERS, NOTES, ETC.

A DISCLAIMER.

DR. JULIA L. PRINGLE (Dundee) writes: There appeared in the issue for October 20th of the *Dundee Courier* an article entitled "Women and the Medical Profession," in which my name, qualifications, etc., figured. The correspondent for the above newspaper had a conversation with me to elicit facts regarding the medical education of women, and in spite of my express warning that I wished nothing personal to appear in print, I regret extremely to find that this grave mistake has been made, and I beg to disclaim all responsibility for such apparently personal advertisement.

HAEMORRHAGE OF THE NEWBORN.

DR. J. G. BLACKMAN, M.D.Brux. (Portsmouth), writes: The memorandum in the JOURNAL of October 22nd brings to my mind an exactly similar case which occurred quite recently in my practice. The child, a male, was born at midnight on October 8th, and severe haemorrhage from the nose, mouth, and rectum occurred on the 10th. It continued at intervals for twenty-four hours, and since then the child has got on quite well. I have seen one or two cases, and they have always puzzled me as to the pathology. In this case I gave hyd. cret., as I suspected a syphilitic taint.

ST. PAUL'S "THORN IN THE FLESH."

DR. GEORGE JONES (London, S.E.) writes: The last words of the second lesson last Sunday, October 23rd, supply the answer to Dr. Welch's question. 2 Thes. iii, 17: "The salutation of me Paul with mine own hand, which is the token (σημεῖον = sign) in every epistle: so I write." (R. V.) On this Bishop Ellicott remarks: "These words apparently form the commencement of the autograph salutation with which the Apostle attests the . . . authenticity of the epistle. . . . The οὕτως (so) . . . points to the visible . . . difference between the handwriting of the transcriber and of the Apostle." In a long note (p. 135, ed. 1866) the Bishop collects all the New Testament learning on this point. The Vulgate has: "*Salutatio, mea manu Pauli: quod est signum in omni epistola. Ita scribo.*"

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *postes Restante* letters addressed either in initials or numbers.

The FitzPatrick Lectures

ON

GREEK MEDICINE IN ROME.

DELIVERED AT THE ROYAL COLLEGE OF PHYSICIANS OF LONDON,

BY

SIR T. CLIFFORD ALLBUTT, K.C.B., M.D., F.R.S.,
REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE.

LECTURE II.

PRESIDENT AND FELLOWS,—My last lecture* ended with an allusion to the poison lore of the ancients, a literature in itself; with an allusion therefore I had to be content, for time presses, and we must turn to other and less sinister subjects. And none in this period is of greater historical interest than the pulse doctrines.

Pulse Doctrine.—Broadbent, in the introductory chapter of his treatise on the pulse, set forth the Galenic doctrines sufficiently for his own purpose; but on this occasion we may fitly endeavour to trace more fully and particularly the researches on the circulation of the blood from more ancient times, from Praxagoras of Cos, in the succession of Diocles, through Athenaeus down to Galen, to whom we are chiefly indebted for what we know of the subject. That to feel the pulse was a common practice we note incidentally in such comparatively early passages:

> Tange, miser, venas,
> . . . nil calet hic.
> (Pers., *Sat.* IV.)

and *Et peragit soliti vena tenoris iter* (Ovid in Letter X. to Flaccus, speaking of cold and languor without fever). Galen wrote many essays on the pulse, and from his fourth, fifth, eighth, ninth, and nineteenth books, in which he gives a summary and a criticism of the various pulse doctrines from Herophilus to Archigenes, especially in the Περὶ τῶν σφυγμῶν and the Περὶ διαφορᾶς τῶν σφυγμῶν (IVth Book); and from some other sources, as in a certain pseudo-Galenic pneumatist treatise, from a pseudo-Soranic tract published by Rose (Anecdota Gr. II), and especially from the treatise on the pulse usually attributed to Rufus of Ephesus, a fairly definite reconstruction of the pulse-lore of the ancients has been attained. Galen's main source was a lost treatise—Περὶ σφυγμῶν—of Archigenes,† some fragments of which he quotes; though the first treatise on the pulse (Περὶ παλμῶν) was written by Aegimius of Elis, of the period of Hippocrates. But I may take Praxagoras as the first physician to give the pulse its due place in diagnosis and therapeutics. Unluckily Praxagoras taught that the arteries were air channels only, a dogma which provoked grievous dissensions, errors, and abuses through later ages. It would seem that Chrysippus also had emphasized the value of the pulse as a criterion of fever.

In the next place, we come to Erasistratus, who described the valves of the heart, the chordae tendineae, and the several regions of the arteries and veins in heart and liver more accurately than Herophilus, whose attention was directed rather to the anatomy of the brain. Erasistratus showed by experiments that the arteries contained blood, and he recognized the function of the heart as the prime mover of the circulation. This great master got very near the truth of the circulation—to a point of view too soon to be perverted by pneumatist and other notions for which he himself was not altogether without responsibility; or indeed to be lost sight of in that empirical indifference to anatomy to which I have referred. This insight of Erasistratus (c. 340–324 B.C.) is of much historical importance; for, as we have seen in respect of Praxagoras, before his time the arteries during life were supposed to contain air only—thin air, breath, vapour, spirit, pneuma. It is well, therefore, to quote the very words attributed by Galen (V, 552) to Erasistratus, which are as follows: ἅμα μὲν ἀρχὴν καὶ ἀρτηριῶν καὶ φλεβῶν εἶναι τὴν καρδιάν, ἅμα δε τοὺς ἔξωθεν ἔσω νεύοντας ὑμένας ἐπὶ τοὺς εἰσάγουσι τὰς ὕλας ἀγγείας ἐπιπεφυκέναι, φάσκοντος. This Galen repudiated, for how, said he, could the veins originate in the heart when the blood for them is made in the liver? The remarkable hypothesis by which Erasistratus endeavoured to reconcile the new and the old notions of the arterial contents was that at certain undefined places in the circulatory tree there were communications—anastomoses—between the veins and the arteries: channels which under ordinary circumstances he seems to have assumed to be closed or but sparingly permeable, but in case of lesion or disease opened, so that the blood streamed into the arteries (παρέμπτωσις) and became one of the causes of fever. To this hypothesis in respect to haemorrhage we shall return, for certain therapeutical means were founded upon it.

Yet strangely enough, both as regards the physiology of the circulation, and in medicine also, the Erasistrateans paid less attention to the pulse than did the Herophileans, perhaps because of their reluctance to bleed. In their clinical appreciations Herophilus and his immediate disciples seem to have been properly content with four excellent indications of the pulse—namely, size, strength, rate, and rhythm; but the later disciples of his school too sedulously and fancifully overargued its signs, splitting them into a multitude of unreal categories. Archigenes, of whose elaborate treatise, under the title of Περὶ σφυγμῶν, Rufus gives some account, and of which some excerpts have survived, in his recognition of eight categories only "as generally known," was economical. However, his modest eight, it would seem, we must make into ten; for on turning to Daremberg's Rufus, we find that "hard and soft," as qualities of "systasis and dialysis," are to be distinguished from "strong and weak," as qualities of tone. These eight, or ten, categories (λόγοι) Galen appears, from his two works on the pulse and a certain pseudo-Galenic chapter, to have adopted (Wellmann). These and other minutiæ, such as pulses hot or cold, dry or moist, etc., if in themselves idle or absurd, are nevertheless serviceable as clews to traditions and authenticities.

When from such records as remain we endeavour to reconstruct the pulse and respiration doctrine of the Pneumatists in the time of Athenaeus—say in the reign of Claudius—they seem to have been after this form. The pneuma, divine energy, or world-soul, permeated the body as πνεῦμα ζωτικόν; but, as Erasistratus taught, it reached the heart by respiration through the lungs as πνεῦμα ζωτικόν and πνεῦμα ψυχικόν; whence the πνεῦμα ζωτικόν "sped like a bird" through the arteries and the body, while the πνεῦμα ψυχικόν was delivered to the brain (Chrysippus). Now as the pneuma reached the heart it met with the blood, both in the arteries, which had their roots in heart, and in the ventricles; but in the ventricles crasser blood was in excess, in the arteries pneuma. "The arterial blood was thinner, purer, and redder." It seems at this time to have been generally held, in spite of Erasistratus, that the veins had their roots in the liver.‡ The movements of the circulation, systole and diastole, were kept up by the innate heat, identified by the pneumatists with the pneuma, as a single entity; and the harmonious rhythm of these motions was a sign of health. Thus the Praxagorean notion, that the arteries contained pneuma only, appears for the time to have been definitely set aside; though in comparing these records we are often perplexed by equivocal terms. Aristotle seems to have been unaware of the distinctions of Praxagoras between arteries and veins, except in respect of the aorta and venae cavae; and he supposed the heart to consist of but three chambers. Especially in this respect we are perplexed in Aristotle, and elsewhere, by the uncertain meaning of the word φλέβς, or *vena*, although Herophilus and Erasistratus clearly distinguished arteries from veins, and the left from the right heart. Celsus, whose testimony in respect of Alexandria is very important, uses *vena* to signify blood vessels (including arteries); yet he uses the word

* Lecture I was published in the BRITISH MEDICAL JOURNAL of November 5th, 1910, p. 1393.

† For these paragraphs I am again indebted to Wellmann in his *Pneumatists* and in Susemihl; to Daremberg's *Rufus;* to Celsus himself; to the relics of Archigenes, etc.; and to various commentators on Aristotle and the later sources.

‡ It is worth notice that the Chinese to this day, I am told, think that the right pulse tells the state of the liver, the left the state of the heart.

"*arteriae*" also, on the whole with a definite meaning, and anatomically in our sense—as, for example, "itemque arteriae quas καρώτιδες vocant" (IV, 2); though we observe that with them he classes that main pneumatic channel the *aspera arteria*, or windpipe. And here I may conveniently anticipate matters so far as to say that Galen must have accepted the truth that the arteries contained a redder and more ethereal blood;* for, as we all know, he assumed the existence of pores in the ventricular septum. He was also aware that the heart was the centre and source of the pulsations, and showed experimentally that if an artery were ligatured—the femoral, for instance—pulsation continued between the ligature and the heart, but ceased beyond it; an observation, however, which, if taken alone, would not have satisfied those pneumatists who attributed pulsation to the throbbing of the pneuma only, an idea which may now occupy our closer attention. With Galen the difficulty was to understand how Nature, "which does nothing in vain," came to make two different kinds of vessel for the carriage of the blood.

It seems to me, then, rather difficult in the obscurity of the traditions to discriminate between the great Alexandrians as concerns their anatomical and physiological views respectively, or, indeed, to compare them with precision, though it is clear that in the clinical observation of the pulse the Herophileans were distinctly in advance; but it is probable that not Herophilus only, but also the contemporary Alexandrian school generally, attributed the energy of the arterial pulsation to the heart as the chief seat of the animal pneuma, or innate heat. Moreover, herein they certainly established the important conception of the heart and blood vessels as an integer, or functional unity, a conception in later times too often forgotten. The pulsation itself they divided into four periods—a contraction, an expansion, and two pauses. Whether both these motions or only one of them used energy seems to have been a point of some disagreement, though as the distinction between cardiac and arterial systole is often obscure, and is not always made quite clear even by Wellmann, it is not quite easy to be sure of the grounds of this dissent. However, to start with, we ascertain from a passage in the 8th volume of Galen (755) that, although in the Herophilean opinion (Susemihl) the systole only used energy, the diastole being mere recoil, according to the later (Roman) school of Athenaeus energy was expended both in systole and in the diastole. The passage being an important one I quote it in the original: "*οἱ δ' ἀπ' Ἀθηνάιου πάντες, ὡς εἴρηται, τὰς κινήσεις ἀμφοτέρας ἐνεργείας ἡγοῦνται, τήν τε ἐν τῷ διαστέλλεσθαι γινομένην καὶ τὴν ἐν τῷ συντέλλεσθαι.*

Now in some sentences it appears to me that, contrary to our customary use, by systole was intended the lift of the artery, whereas in others, as where it is disputed whether the systole of the pulse can be felt or not, clearly the arterial fall was intended. Moreover, it has been pointed out I think already, on a suggestion of the late Professor Magnus, that many of these writers, at any rate, supposed the heart and the arteries to swell and collapse together; this I had myself observed and illustrated by the following passage: "*διογκωσις καὶ συνίζησις αἰσθητὴ καρδιάς καὶ τῶν ὁμοιοπαθούντων αὐτῇ.*" Dicroty, as we gather from Galen, was regarded as a second weaker beat; an explanation which he accepts, comparing it to the second tap of the hammer on the anvil, the anvil being the σκληρότης (inertia) of the arterial wall (*σῶμα*).

The Roman pneumatists, even of the ability of Archigenes, hampered as in part they were by the methodist abstractions of *strictum* and *laxum*, lost sight of some invaluable clinical inferences from qualities of the pulse, which had been perceived by the Alexandrians, and which Galen restored. For instance, these later pneumatists—as we find in Athenaeus, Agathinus, Herodotus, and Archigenes—got entangled in argument between blood content and pneuma content; and between tone (*τόνος*) as pneuma, and tone as a quality of the arterial wall (*κατὰ τὸ σῶμα τῆς ἀρτηρίας*). In such fragments of Archigenes as we possess (Wellmann) we find this confusion between blood content, pneuma content, and arterial wall. And I may note here, a little before due time, that, so far as I know, Galen was the first to point out that the arterial wall is liable to sclerotic degeneration. So, if we try to get behind these confusions, we shall apprehend that the Alexandrians, nurtured in a more scientific school, had, in respect of the circulation, perceived certain most important truths afterwards obscured, and that to these forerunners Galen owed not a little, how much we cannot now tell. I may add further this notable instance, that in respect of plethora the difference was then discerned between a long (or sustained) and a short beat as definitely contrasted with degrees of frequency of beat; and again between the "broad" (*πλατὺς*) pulse—as of a relaxed artery with large output—and an ill-filled pulse. The high pulse (*celer*) of the former case was also described by them; so that they regarded the big pulse (*μέγας*) in three dimensions.

In systole the pneumatists considered that air (pneuma) was drawn in, and in diastole the fuliginous excrement expelled; thus they forwarded the scientific conception of diseases as perversions of the normal. It was especially true of Erasistratus that he fully grasped this idea, only too soon to be vitiated, that disease is a perversion of health, of the normal processes; not a condition contrary or foreign to biological nature. To take a very interesting example: to those of my readers who are conversant with music the name of Aristoxenus of Tarentum, a pupil of Aristotle, is not unfamiliar, as of one who conceived, or on behalf of his musical tutor recorded, a masterly contribution to the theory of music. Now, Aristoxenus flourished in the fourth century just before Herophilus; and it is interesting to find that in his description of the rhythm and arrhythms of the heart Herophilus used the terms of Aristoxenus. For example, in illustration of the idea of morbid as but deviations from normal processes, Herophilus distinguished certain cardiac rhythms as characteristic of periods of life. The rhythm of infancy, he said, was a pyrrhic (⏑ ⏑); of adolescence a trochee (– ⏑); of middle life a spondee (– –); of age an iambus (⏑ –). I am not now concerned to justify these descriptions precisely, but to present them as patterns of method, and of a sound kind of pathology. After him Archigenes likewise described and compared taxic and ataxic pulses—gallop rhythms, palpitations ("spasms") of the pulse and the like—as various degrees of deflexion from the normal into the abnormal. This fruitful conception of the nature of disease unfortunately became distorted by demonology with its magical cures; and also by the kindred if more spectral hunt of the metaphysicians after "morbid entities," a cry which finds an echo in the words of some eminent physicians even of to-day.

After the pulse lore of these schools, I would make some reference to their doctrines on *sexual generation;* for herein also we revere the memory of our immortal Harvey. And when, in comparing his results in this field with those on the physiology of the circulation, we dare to reflect that, as in the times of which we are speaking, even supreme genius cannot penetrate far beyond the limits of contemporary knowledge and means of research, we cast no shadow on that great memory. The problem of generation, as it presented itself to the ancients, is too difficult to put succinctly without a renunciation of much of its detail and of the history of many tides of opinion. Moreover, to make the argument comprehensible, I cannot quite confine myself to the pneumatists; I must make some more general reflections upon its phases from Hippocrates through Aristotle to Galen, that I may indicate the stage where the pneumatists came in. Our sources in this respect are, however, very scanty, and turn chiefly upon what is recorded in Galen's Περὶ σπέρματος (IV. 593).

Concerning the respective virtues of male and female in the generation and development of the embryo, the opinion of Hippocrates is clear—that the ovaries corresponded to the testes, and that male and female both contributed seed. The superb anatomy of Vesalius left this physiological notion of the matter unaltered until the seventeenth century, when it was undermined by the labour of Highmore, Stenson, and de Graaf. After Hippocrates we come to the opinions of Aristotle, which are too well known to need a careful description here. Suffice it to say that this great sage firmly and consistently denied that the female contributed seed; the semen, the finest concoction of the male blood, as a dynamic element (*τὸ ἄρρεν ποιητικὸν*) quickened the

* We know that Galen wrote an essay entitled Εἰ κατὰ φύσιν ἐν ἀρτηρ... αἷμα περιέχεται.

passive but plastic female element (*τὸ θῆλυ παθητικόν*),* enduing it with "form." He saw no difficulty in the resemblance to the mother; for did not plants vary with the soils in which they might be planted? He admitted that in the catamenia the female contributed some kind of generative substance (*γόνη*), but contrasting it with *σπέρμα*, held that it was but of a rudimentary kind. His objection against the seminal contribution of the female—that she could be impregnated without orgasm, and even unconsciously—was less adequate; and how often are we tempted to think how happily we could have jogged the elbow of a great scientific father and supplied him with just the notion he needed. For Aristotle had a good knowledge of the egg, and how well the ovum would have fulfilled his argument,† as Fabricius and Harvey perceived and von Baer finally proved. Straton, so far as we can tell, seems not to have followed Aristotle's footsteps closely; he dwells more, as did some other authors, on prepotency, and assumes that in particular cases the prepotency might have lain with the male or the female. Next we come to Alexandria and to Herophilus, who described the ovaries (*διδυμοι*), and the tubes (*σπερματικοὶ πόροι*); but this more accurate anatomy did not reveal more physiology. So far as it went, indeed, it seemed in favour of seed in both sexes; but the Aristotelians, magnifying the content of the *σπέρμα*, fancied that these female parts were but a "structural harmony," after the kind of the male mamma. It is notable that Falloppius, himself a master in this field of anatomy, and pursuing the same positive methods as Herophilus, scrutinized the ovaries and vesicles minutely in search of a seminal element, and, finding none, also denied seed to the female. And we may suppose that Harvey, in holding the same opinion and denying that the ovaries, to which he attributed a rather fantastic function, were an equivalent of the testes, followed Falloppius. But to come to the pneumatists: Athenaeus, and Archigenes who followed him, seem to have been the last physicians of the period to rely upon Aristotle; they denied seed to the female, and Athenaeus seems to me to be even more dogmatic about it than Aristotle himself. Galen, however, definitely did attribute dynamic seed to both female and male. The old demur that the progeny were as prone to resemble the mother as the father, for Galen held no difficulty; he assumed that each sex afforded a seed endowed with both virtue and substance (*δύναμις* and *ὕλη*); and yet he betrays a curious uneasiness about it, for how is it, he candidly asks himself, that the female never conceives alone? As to the preparation of semen as a perfected product of the blood, in this respect Aristotle seems to have followed Democritus, Hippocrates, and Praxagoras in a speculation which reminds us of Darwin's idea of pangenesis; in the pneumatico-stoic opinion, however, the semen was sublimated from the hegemonic spirit in the heart.

Influence of Pneumatism on Medicine.

Of this kind, then, so far as these limits permit me to unfold it, was the doctrine of the pneuma, a metaphysical idea foreshadowing vital combustion. And pneuma, whether under this name or in refluent waves of aboriginal ideas under such names as the vegetable and animal souls, of the Archaeus, of van Helmont's vital principles of the animal spirits of Descartes, of the motor nervous fluid of Stensen, of the animism which in the early eighteenth century sprang from chemistry, of the vitalism again which sprang from the doctrine of irritability, or of the transcendent vital quality beyond physico-chemical virtues entertained by some leading physiologists to-day—*πολλῶν ὀνομάτων μόρφη μία*—must, in so far as it is an imported entity, make a free pathology and an inductive therapeutics almost impossible. And meanwhile the humoral pathology had to be counted with, even by the pneumatists. If the pneuma might become hot and dry as in fever, cold and moist as in dropsy, too dense or too light with many consequences; or again, too quick or too sluggish: if it might be pent up, as in epilepsy and constipation, or, as in hysteria, imprisoned in the womb, so again the humours also might be crossed, or crossing, in one or more of the many possible permutations of dyscrasia. The Hippocratean doctrine was that health and disease depended upon the crases of qualities. That health consisted in a eucrasia was, it is said, an axiom of that spectral sage Alcmaeon of Croton; and the conception of diseases as modes of the many possible dyscrasias survived down to Galen, and, by him regenerated, flourished as we know in a crude form through the Middle Ages; and in a sublimated form has yet a great part to play in pathology. These humoral doctrines the pneumatists did not abolish, but made their intricacies still more complicated, coiling them into a mesh which at present we have no leisure to unravel; curious as is the study of an intense mental hunger, with but a scanty harvest of knowledge, feeding upon itself. And not only in the first and second century A.D. in medicine, in Neoplatonism, and in the Christian Fathers, but again in the thirteenth century, and in the ingenious literature of the sixteenth and seventeenth century against which Sydenham led so masterly a revolt, we see history thus in principle repeating herself. It was well, therefore, that the empirical reaction initiated in the earlier Alexandria by Philinus the Coan and Serapion, narrow and ungenial as they seemed, and, more fruitfully and scientifically, the admirable surgery of the age curbed the extravagance of the pneumatic and other metaphysical opinions; and this protest it was which made the pneumatist sect strictly so-called, although backed by the Stoics, but a transient phase‡ Indeed, its own greater men, almost from the first, had begun to hedge by a prudent eclecticism. And it is true that their central doctrine of the pneuma was less prejudicial to surgical progress, which they forwarded upon Alexandrian anatomy, than were their unbridled expatiations, a wasted or even a mischievous energy, in the field of inner medicine. That the pneumatist emphasized the dynamic side of physiology is true also; and that, like the methodist, he recalled attention to the solids of the body; yet, by personifying the pneuma as an indwelling and creative entity, he provoked a reduction of the functions of growth, work, and excretion to a passive machinery worked by a demiurgical finger: thus the whole framework of digestion, for example, became for him a mere gizzard, a mill for mechanical contrition of food; and therapeutics became a magical checkmate of the malignant. Now the methodist, or at any rate the Lucretian atomist, before the formalist Themison, while animated no less by the dynamic idea, had regarded energy more truly as one aspect of a quick matter than as the demonic master and manipulator of an engine. And the sceptics of the day, on narrower if surer ground, were teaching, almost with the decision of Locke, that thought can only be built upon the functions of the senses. Even for Diogenes of Apollonia§ phenomena, the pneuma having condensed into them, were but phenomena, not outside realities; and concepts therefore were fashioned wholly of the products of our senses. The defect of these critical schools, at any rate of the empirics who did not realize that we see what we are trained to see, was, as I have explained, an intolerance even of the chaster Hippocratean reasoning on causes, and a repudiation of anatomy which reminds us of Sydenham's aversion from pathology. Difficult as it is, then, to define our distinctions between the later Herophileans and Erasistrateans, or even to contrast the persons and doctrines of the two great leaders, yet it would seem from the course of events, and from Galen's testimony, that on the whole

* It is usually supposed that Aristotle took the *σπέρμα* to imply the body of the fetus; he seems to have given too much content to the *σπέρμα*, but "form" is far from signifying structure. As we gather from the Eumenides, concerning the appeal for the acquittal of Orestes, the idea of deposit of the embryo by the male to be nourished by the female, as in a nest, was far older than Aristotle, and contains far more than "form." But we must remember that in early times the differentiation of notions to which we are accustomed had not been accomplished.

† See the eighteenth chapter of the *De Generatione Animalium*; and also the *De Anima*. After these lines were written I read in the British Medical Journal (August 13th, 1910) a very able and interesting article, signed "J. W. B.," on Dante's knowledge of Aristotle's *De Generatione*, and noted that in Dante's words we might observe a strong infusion of the pneumatic doctrine. I venture, however, with great respect to question if Dante's account of the accretion or supervention of the animal upon the plant soul can be interpreted as a "flash of insight" into our modern idea of the embryo "climbing up its own genealogical tree" - His phrases seem to me to contain no more than we meet with not infrequently in ancient and medieval speculation, and we must beware of importing into them concepts of our own.

‡ I venture to repeat that Gomperz has liberally insisted that, whatsoever the inconsistencies within the faculty itself, this service for a more positive method and influence was one for which ancient philosophers were indebted above all to Medicine.

§ Cf. Krause, loc. cit.

Herophilus had more of the utilitarian bent, while Erasistratus was of a more speculative temper; for Galen accuses him and his followers of scoffing at the clinical school of Hippocrates in a manner which Galen regarded as unmannerly and cavilling. But probably, as I remarked last year, Erasistratus also scoffed not so much at Moses as at the Mosaic dogmatics: while for Herophilus Haeser vindicates some balance of observation and reasoning, some use of theoretical explanations. Celsus, in his invaluable preface, while attributing to Erasistratus also some measure of the empirical temper, says again of this point of view that, although basing its practice upon the more manifest of them—upon the *causas evidentes*—it did not refuse to consider obscure and remote causes: *causis obscuris omnibus, non a cogitatione artificis, sed ab ipsa arte rejectis.* So Jack Wilkes "was never a Wilkite." It would appear notwithstanding that the concentration of Herophilus upon present symptoms—such as the pulse for instance, on immediate or at any rate proximate causes, and, in common with his great contemporary, upon anatomy both normal and morbid, established a pragmatic bent which in the practice of his disciples, if not in his own, led to over-busy interference, to much drugging, and to excess of venesection; while the Erasistrateans, as reflected in their disciple Asclepiades, reasoning upon wider and remoter causes also, and becoming sceptical of therapeutical prowess, pursued a more expectant method. That accordingly Herophilus abode in the four humours, while Erasistratus discarded or neglected them, if in part it explains the antagonism of Galen to the Erasistrateans, still carries with it more history than this. For if the humoral doctrine involved its disciples in a mess of pharmacy from which the Erasistrateans won their freedom, yet on the other hand it would seem it was this inclination from the juices towards a dynamic or pneumatist conception which gave countenance to the opinion of Praxagoras, conveyed by Straton, that the arteries contained air rather than blood—an error of momentous consequence. What Galen did afterwards was to force both empirics and methodists back to study anatomy, to scrutinize causation only too meticulously, and to restore and develop the elemento-humoral tradition; while in his physiology, under the guises of the psychical soul and of a divine teleology, he perpetuated some pneumatism. Thus, while phlegm was interpreted as moist, yellow bile as hot, black bile as earthy, upon these were worked in the three entities of the soul, the animal soul having its primary reception in the pulmonary veins. A great part of our difficulty in distributing these sources and phases of opinions lies in what was Galen's own misfortune likewise—that, rich as by tradition may have been his physiological and clinical inheritance, he, like ourselves, was deprived of historical sources; for even in his day the destruction of manuscripts—as, for one instance, in the siege of Alexandria by Cæsar—had been already disastrous. We know that in the time of Galen, and probably of Celsus also, the works of Erasistratus had perished; and still more unhappily certain histories of medicine under the names of Hermippus of Smyrna (Περὶ ἐνδόξων ἰατρῶν), Andreas of Karystus, and of Histomachus were lost (Haeser). No insubstantial deliverance of medical tradition was notwithstanding handed down to the third century, if in a more impalpable form than of parchment, through Asclepiades, Themison, Archigenes, and many others over whom oblivion has cast her poppy;* and above all things the Hippocratic series of manuscripts had been preserved in other libraries.†

The brilliant progress of Alexandrian anatomy would in itself suggest that in morbid anatomy also advance was not wanting; although, in the early destruction of the records, and under the overgrowth of the later metaphysical cobwebs, much of it fell into oblivion. But that necropsies were then made for the investigation of disease is well known. For instance, a statement of Erasistratus has survived that in some cases of dropsy the liver was condensed, and as hard as a stone. In Alexandria pathological dissections were probably obtained without difficulty; in Rome the current prejudice against them was prohibitive, and so persisted even into the fifteenth century, when the Florentine Antony Benivieni—the friend of Ficino and Poliziano—made it yield to his ardent importunities.

Hygiene.

The hygienic and therapeutical doctrines of the pneumatists, and of the eclectic or "episynthetic" physicians who assimilated the more effective results of methodist, empirical, and other schools of the period, were of considerable interest and importance. The surgery of the school especially was excellent, and it is a matter of grave regret that of its records but little is extant. If in the light of recent researches our standard histories of the surgery of this period need revision on some points, yet on the whole it has been set forth almost as fully as the materials permit, so that I will not now dwell upon it. I will turn rather to the hygiene of the period, as of peculiar interest to us who at this moment are occupied with the medical aspect of education, to note the close attention this branch of the public service had received from the Greek physicians in Rome. Celsus, from the point of view of a Roman gentleman, gave some excellent hints on this subject; and the following interesting fragment of Athenaeus is preserved in Oribasius (III, 164): "*χρήσιμον δὲ ἦ μᾶλλον ἀναγκαῖον πᾶσιν ἀνθρώποις ἀπὸ ταύτης τῆς ἡλικίας ἅμα τοῖς ἄλλοις μαθήμασι συμπαραλαμβάνειν καὶ τὴν ἰατρικήν, καὶ κατακούειν τὸν ταύτης λόγον, ἵνα καλοὶ καὶ ἀγαθοὶ σύμβουλοι γενῶνται πολλάκις ἑαυτοῖς τῶν εἰς σωτηρίαν χρησιμῶν.*" For Athenaeus indeed medicine was even more than this, it was an integral part of a liberal education.

On airs—as of day and night, of hills and valleys, lunar and solar seasons, and of various climates—the pneumatists, as we should anticipate, laid great stress. Accordingly we find such airs described as moist or dry, hot or cold, dense or thin. Night air was cold and thick, and consequently apt to cause rheumatism, fever, and inflammation. I need not stay to interpret the warning that, of seasons, the air of autumn was the most dangerous; and that during these months one should never sleep out of doors. The air of towns was warm and thick, so that natives of towns were fat, and were sluggish in their secretions. The air of enclosed valleys was bad; and likewise the air of river flats and of marshy places. Inland air was said to be more wholesome than that of the seaside, an opinion derived perhaps from the malarious infection of estuaries, and of harbours, such as Ostia. Drinking water was to be filtered through porous stone or earth, but particularly to remove dirt and leeches.

Diels draws attention also to their careful adaptation of hygienic rules to the periods of the individual life. Still depending chiefly upon the reports of Oribasius and Aetius, which as regards Athenaeus, Agathinus, and Herodotus‡ are fortunately copious, we find that the pneumatists regarded its course as of four stages—of infancy, of adolescence, of middle age, and of old age. We shall note with particular interest that they discouraged all serious school work before the age of 6 or 7; then the child was to be taken in hand by a mild and kindly master, who would discipline the child by changes of work and play, carefully avoiding prolonged stress of either but encouraging him by emulation, finding for him a delight in learning, and remembering that severity or satiety engenders an aversion which in after-life may never be overcome. From the age of 12, however, the work was made tougher, and the pupil led to feel his powers, and to put them forth in such studies as grammar. The master was to be well versed not only in intellectual matters but also in dietetics, in the wide range of exercises known as gymnastic, in the use of the bath, and particularly in the apportionment of the hours of sleep. Thus, as the boy grew up, bodily and mental development went hand in hand; and in adolescence, in order that every man should understand the conditions and promotions of a normal life, medicine and philosophy were introduced into the

* The reader will remember that the treatise of Celsus was either little known to the physicians of Rome in later generations, or was disregarded by them as the compilation of a Roman layman.

† As on Aristotle and Plato in philosophy, so in medicine transcripts and commentaries on "Hippocrates" formed the backbone of the tradition. Cicero refers to the writings of Hippocrates as well known. Galen, besides his other reverential services to the father of medicine, wrote, or proposed to write, a critical essay on the genuine and false treatises of the collection. If it was ever completed it is lost; but Mewaldt in an essay in Hermes (1909) studies some relics of it. The greater empirics, such as Xeuxis and Heracleides of Tarentum, were loyally devoted to the great master.

‡ As, for instance, Orib. III, 107, "*ἐκ τοῦ Ἀθηναίου.*" For the ready reference to these passages and comments upon them I am indebted again to Wellmann (loc. cit.).

curriculum. Concupiscence was subdued in youth by gymnastics, and by the general discipline of mind and body. In maturity the generative function was to be approached with due sense of responsibility, and directions were given for the *παρασκευὴ πρὸς τὸ παιδοποιᾶν*. The sage counsel was given not to forget even in youth the prospect of old age, and, as years wore on, to economize the efforts of body and mind, and to cut down the quantities of food; indeed, at all ages the food was to be reduced in warm weather. And with the exquisite Greek sense of balance, even in physiology, and of the unity of bodily and spiritual function, they reminded us—for are not these lessons for all time?—that in a healthy old age we should seek to be wholesome not in body only, but gentle of soul also, high-minded, never tiresome, in sympathy and fellowship lifting up the young with the fullness of sweet lessons from the past. In the education of women, while a wholesome interest in political affairs was not denied to them, they were advised to concentrate themselves upon the arts of the home and family. Such, when divested of their necessarily crude biological hypotheses, was the ripe wisdom and sagacity of these great physicians, so near us and yet so far away.

Therapeutics.

The remedial therapeutics of the Roman physicians between Celsus and Galen have not, in their fuller details, at any rate, the same practical interest for us as their hygienic teaching. We may glance somewhat cursorily at a few of the means. In their eclectic and expectant methods, in the development of physical means of cure, and in some use of wine, we note that influence of Erasistratus and Asclepiades upon the pneumatico-eclectic schools to which I have repeatedly invited your attention; but it is with less satisfaction that we turn to note the influence of the Herophileans in that increasing use of drugs, and of violent means such as emetics, clysters, purgatives, and venesection, which gave a certain grossness to the therapeutics even of Galen himself, and under his influence degraded medicine more and more till the days of Molière. Herophilus and his fellows revered Hippocrates in lip-service, and, indeed, did much to preserve and elucidate his writings; but they never obeyed the spirit of his therapeutics, which were founded upon prognosis and upon respect for the functions of Nature.

Asclepiades had, as we remember, carried physical therapeutics to lengths almost, or quite, absurd; as in his swings, successions, and jolts. Therapeutical gymnastics had been admirably developed from the Hippocratean schools through Diocles and Praxagoras of Cos; but it is to be observed that not only by Asclepiades and Celsus but also before them, indeed from Hippocratean times, and more especially in the Coan than in the Cnidean School, the intemperate pursuit or profession of gymnastics was deprecated, not only as injurious to the health, but also as illiberal (*κακοτεχνία*, Galen). Thus by the more sagacious physicians there was a continual mistrust of the gymnastic schools.*

At present, however, I will speak only of the passive movements, of the massage of the period which seems to have been elaborate and refined. By four or six performers the entire body seems, often at any rate, to have been massaged at once—two performers manipulating the arms, hands, and fingers, two the trunk, two the legs and feet. The first stages were slow and gentle, the later became gradually quicker and severer. We may note with interest that gentle massage was practised in fevers, so long as there was no acute focal lesion; the tolerance of the patient of its degrees and durations being carefully watched. The amelioration which by this means they professed to obtain was attributed in part to refrigeration by the induction of sweat. It seems to me, Sir, that in some measure this practice is not unworthy of the consideration of this College. The fever lore of these ancients was, as we all know, enormous; as Wellmann says, and as W. S. H. Jones has exhaustively proved, it was a literature in itself.

And we are all well aware also that the cult of water springs and the bath literature of early times, before as well as after Epidaurus, was no less prodigious.† The ancient magic of wells, which developed into the Epidaurian combination of theurgic and therapeutic ritual, had in the times of which we are speaking become a separate resource. The Roman physicians seem to have ignored the Tiber Island. But we read of pure water baths, of saline baths ("which warmed the body"), of oil baths for cramps, pains, and retention of urine, of sand baths, and of sun baths. Asclepiades, and after him the pneumatists, argued against the abuse of warm baths, which, however appropriate in their degrees for debilitated persons, were not bracing enough in fevers, or even for use in health. Here we call to mind Musa's reputed cold-water cure of his august patient. Nurses were lectured for "boiling their children"; and bathers were warned against letting water into the ears, "which damages them." Mineral waters, of course, had their many natural virtues. Archigenes gives us the first rational classification of mineral waters which is extant; he divided them into the alkaline (soda), saline, aluminous, sulphurous, ferrous, cuprous, and bituminous; and elaborately explains their effects on the humoral hypothesis.

Wine.—The place of wine as a remedy is a curious story; in my Harveian Oration (1900) I touched upon it, but there especially as regards its outward application, even from the days of the Good Samaritan. Asclepiades wrote an essay *Περὶ οἴνου δόσεως*, an epoch-making work in its way, the contents of which may be gathered from Pliny‡ and Dioscorides,§ amid paragraphs deriving from such recipe compilations as that of Sextius Niger. As I stated in my lectures of last year, Asclepiades, who was nicknamed "*οἰνοδότης*," taught the therapeutical value of wine, and discussed the virtues of its various kinds—the Greek, the Roman, and so on; but the advocacy of Athenaeus seems, from negative evidence, as from the lack of certain details in Pliny and Dioscorides, to have been inspired not directly by or from Asclepiades but to have been influenced by the tradition of Diocles, Praxagoras, and Mnesitheos; authors to whom those compilers do not allude. Athenaeus says that wine when carefully used—used with attention to proper rules of symptoms, of doses, of dilutions, of hours—arouses the pneuma from its torpor, and, as Archigenes repeated afterwards, is especially useful in syncope. Now syncope was then said to consist in a loss of tone (*τόνος*), a vital quality to which the pneumatists attached much importance, and the state of which for the whole body they were wont to infer from the tone of the pulse. From a persistent acceleration of the pulse in fever, for instance, they inferred correctly that the remedy should be withdrawn.

Venesection.—But I need not say that of all the therapeutical means practised and discussed in those days the most ascendant was venesection; and concerning it the controversies of the schools were the most stubborn and acrimonious. In my lectures last year I noted the reserve of Asclepiades in respect of venesection; a means which, for good reasons, he did not withhold, but kept in hand for critical moments. Now the close attention of Athenaeus and the pneumatist school to the pulse gave no little importance to their teaching concerning this remedy. But the protest against the practice of venesection as a potent and a vulgar ally against disease in general carries us back into a much dimmer past. Not to detain you by a long retrospect on the sacredness of the blood—no unfamiliar subject in the Old Testament for instance—I may curtly remind you of this superstition in the semi-Oriental mysticism of Pythagoras; and so onward in medicine it influenced Empedocles and the Sicilian School, Philistion of Locroi, the Cnidians, and Chrysippus. If we may rely upon certain passages in the eleventh book of Galen (150, 197, and 252), Chrysippus stood prominently forth as an

* On this subject the reader is referred to the admirable study by Juthner of Philostratos Ueber Gymnastic, Leipzig, 1909. (Philostratus lived soon after Galen.)

† The Alexandrian Greeks owed but little to the Pharaonic Egyptians, who were, however, as we gather from Herodotus (I, 193, 198, and II, 35-37), at least hygienists. They had a State health service, and practised many ablutions of person and clothing, as did the Babylonians also. The honour of filth in person and clothing was left for medieval times. The Egyptians also vigilantly and ceremoniously protected their water courses.

‡ The reader who desires to know more of this history may be referred to the Second Book of Oribasius, chiefly compiled from the works of the distinguished pneumatist physician Herodotus, pupil of Agathinus.

§ N. H., xxiii, 31.

¶ ., 7

opponent of bleeding, and his deprecation was heeded more especially, so it was said, by one Medius, an uncle of Erasistratus, and by Erasistratus himself and his disciples. This forbearance was a little more remarkable in that the Erasistrateans, and indeed Chrysippus himself, clearly perceived the perils of plethora, but these they combated by diet. The objection to bleeding was formulated as an opening for the escape of the animal spirit (*πνεῦμα ζωτικόν*). Apollonius, a pneumatist of whom we know little, although indisposed to bleeding as a routine, contributed the interesting demur, that in plethora the permeation of the periphery by the *πνεῦμα φυσικὸν* was retarded. As reasonable persons, therefore, they accepted no formula, but, before using the remedy, estimated the general conditions of the malady, the state of the patient as to strength and nutrition and so forth, and especially as to age and sex. Archigenes, however, advised that bleeding in some form was not inappropriate in plethora; and many of the school believed at least that by this means foul humours could be evacuated.* In fevers, however, they had no doubt that to reduce diet, and at the same time to draw blood, was to exhaust the patient; † therefore, to prevent the inflammatory indraught of blood into the arteries in fever the master, after the Alexandrian tradition, bandaged the patient's limbs so as to keep the synastomoses closed, and thus to prevent the conflagration of blood and pneuma in the thorax. For we have seen that Erasistratus, to account for blood in the arteries, assumed certain more or less distal communications between the veins and the arteries, gates normally guarded or closed. On account of this meticulous shunning of venesection, though they limited rather than repudiated it, Galen waxed almost as hot against the pneumatists as against the methodists; but Celsus (52, 3), in his cool and shrewd way, had said long before, in reference to Asclepiades—"*Sanguinem incisa vena mitti novum non est, sed nullum paene morbum esse in quo non mittatur, novum est.*" The pneumatists, or Erasistrateans, reasonably argued that in many cases local ought to be preferred to general bleeding, as by cupping, scarification, or leeches; and that in many cases even dry cupping or a cataplasm would suffice to draw off a congestion.‡

Eminent Pneumatist Physicians.

After this discussion of pneumatic doctrines, modified or masked, generation after generation from Alexandrian times onwards, by empirical, sceptical, stoical, and eclectic tendencies, and even by changes of name, and at length formulated for Medicine by Athenaeus in Rome, I propose to return, so far as the fragments will permit me, to the personal story. Of Agathus, and after him of Agathinus the Spartan, who lived in Rome under the Flavian Caesars, and were important links in the chain between Athenaeus and Archigenes, we know little; but it would appear that both of these physicians played a considerable part in the fusion of doctrines to which I have often referred, a fusion which made the name rather than the essential doctrine of the pneumatist short-lived. Greenhill regarded Agathinus as taking the lead in these eclectic or "episynthetic" § modifications: "*Εκλεξάμενος τὰ ἀρέσαντα ἐξ ἑκάστης τῶν αἱρέσεων.*" Archigenes, who was a pupil of Agathinus, said of his master that he was accurate in all things, and ripe in experience. Still guided by three main clews of pneumatist doctrine—namely, the pulse lore, the fever lore, and the hygienic, paedagogic, and dietetic forms of therapeutics—we perceive at this period more explicitly the fusion of Pneumatism, Methodism, and Empiricism, with a younger and more liberal Hippocratic, or clinical, medicine.‖ This blend of old and new suggests to us progress, an orderly development of medicine; and we shall see presently that a solid, sagacious, clinical school—variegated, indeed, by some sectional dissent—survived, and superseded the arrogant domination and the sterile maxims of the later methodists, such as Thessalus. And yet we must admit that on the dogmatic or clinical side this evidence of sound development was accompanied not merely with a respectful appreciation of older doctrine but with a mechanical tradition of form and letter such as seems to us to be contrary to the spontaneity of life. For although we are wont to suppose that the medicine of summists, of copyists, of large and literal transcripts, belonged to Byzantinism, and signified then the routine, if not of decrepitude at least of an unintelligent conservatism, yet we have seen that the era of scribes and summists must be carried back much farther than we had supposed to a period not only far before Oribasius and Aetius, but before Varro. And plagiarism was not confined to the scribes; even men of natural genius, such as Soranus and Galen, excerpted largely, literally, and anonymously; so did that imposing surgical phantom, Antyllus; and so, says Wellmann, did that no less considerable surgeon, Heliodorus, whom, on the slender relics that remain, I am disposed to regard as of still richer genius. In discussing, then, all these Romano-Hellenist medical writings, we must bear in mind the custom among them of lifting both terms and volumes of the literature one from another, and this without acknowledgement, unless when, happily for us—as often in Galen—controversial animosity goaded to personal attacks. That Celsus named his sources so generously may in the enemy's mouth be one more point of evidence that he was a layman! In the fragmentary and disconnected state of the records of the period, then, we cannot be sure whither and how many of these embedded remains are in their origin and order to be distributed. Any such distribution which, with the aid of far greater scholars than myself, I may now attempt, in order to distinguish individual authors, must therefore partake of much uncertainty, and be in its nature provisional; but in justice to the memory of Archigenes it must be attempted.

Archigenes and Aretaeus.—To appreciate Archigenes, one of the greatest of the physicians of this period, we must first discuss the place of Aretaeus, who, by name at least, is familiar to us all. And probably not a few of us, attracted by the story of the past, have perused, or at any rate dipped into, his treatise, so admirably rendered for English readers by Adams, and have been deeply impressed by his gallery of diseases—portraits select, succinct, deft in their handling, and speaking of character and experience. Galen, more diffused in generalities, never painted such telling pictures of morbid species. From it we have formed, and justly formed, a high opinion of the medicine of the age. This impression I say was just; but that Aretaeus in person justly deserved the honour is another matter. The ancients gave him no such meed. The author, who drops systematic pneumatism in his practice, which is on sound Hippocratic lines and probably moulded in some part upon Asclepiades, and interprets pneuma merely as *φύσις* in the Hippocratean sense of *δύναμις ζωτική*, or generative energy, yet by phrases here and there, such as his emphasis on *τόνος*, betrays his school. He seems to have lived under Domitian or Hadrian, but to have fallen into a long neglect. The first mention we have of him is in the sixth century by Aetius; then by Paul in the seventh; after then he sank once more into oblivion till the middle of the sixteenth, when the Greek MS. of a large part of his work was discovered, and was printed in Paris in 1554. It was now observed that the treatise was written in Ionic Greek; now the Ionic singsong in his day had become a literary fancy, and to use it in medicine was an affectation, even—so competent scholars assure us—an affectation so "grotesque" as to strengthen some suspicions of the writer's originality in other respects. Was the neglect of Aretaeus by the ancients because they knew him to be but a secondhand and archaistic scribe? It does seem probable that in Aretaeus the Cappadocian, who so far as we know never visited Rome, we find a conspicuous example of that prevalence of copying and recopying without acknowledgement which, not unknown among ourselves, then prevailed in the large measures I have indicated.¶ Delicate and complicated as is the task of

* It is interesting to note that in almost all schools of ancient medicine melancholia was attributed to toxic causes.

† In more than one passage of Galen's XIth Book. See also Book X, 376.

‡ Which vein to open in a particular case or malady, n the elbow, in the ankle, in the temple, at the nasal angle, in the tongue, in the little or ring finger, and, not least, on which side of the body, was in the times of which we are speaking, and still more in the Middle Ages, often decided on fantastic reasons. Arteriotomy was practised occasionally by the ancients, but under what conditions is not precisely known.

§ Not of course, the philosophical school so-called.

‖ We may observe in the pneumatist succession the continuous use of methodist technical words—such, for example, as *ἔντασις*, a stoppage of the pores.

¶ We do not, of course, estimate these annexations by modern ethical standards. In ancient times written matter when published became the common property of the reading public, "*δεδημοσιωμένα τοῦ καταβεβληται.*"

tracing such stolen property from one obscure author to another, yet as out of it comes to light the figure of Archigenes of Apamea, of the time of Trajan, who, like Asclepiades, seems to have suffered unmerited eclipse, we must try, if on main lines only and by renouncing some of those impressions of form which we call the higher criticism, to make clear in summary* certain restorations and redistributions suggested by modern students concerning these records.

Of the confessed compilers Oribasius, who lived during the last three-quarters of the fourth century, was the chief; and of his collection about one-third is extant. The chapters on the poison literature are lost. We know, honest man, from his own references, that he swept into his net Dioscorides, Archigenes, Antyllus, Philumenus, Philagrius, Poseidonius, and Galen. About a hundred years later flourished another such scribe, namely Aetius, and in his collection lies our main source of the poison literature, after Pliny. But Aetius, luckily, did not copy from quite the same sources, nor quite the same things, as Oribasius; he borrowed from Asclepiades, and, so far as extant MSS. inform us, he made a larger use than did Oribasius of Philumenus. Now, who was *Philumenus?* Well, he too was an eclectic methodist and pneumatist of the generation of Galen (about 180 A.D.), and likewise a compiler after the spacious manner of Oribasius; but only some portions of his work, those contained in Aetius and Paul of Aegina, were known until Wellmann's discovery, in the Vatican, of 37 short chapters of his work, most fortunately with the names of the authors submitted to his scissors.† Philumenus again gathered his materials from somewhat different sources; so that these three compilers throw cross lights upon each other and upon their various sources, so that by comparing them certain identifications begin to appear. Philumenus has this particular value for us, that Archigenes seems to have been one of his principal sources. This inference first suggested itself to Wellmann while reading a certain chapter containing an antidote to viper venom which he recognized as the antidote of Archigenes. Now Aetius, in all the diseases concerned, while similar to Aretaeus, is fuller, and presents also some peculiar differences; for instance, in respect of pleuropneumonia and empyema Aretaeus does not extend beyond Soranus. And in respect of headaches and of epilepsy the identification can be carried farther; for herein Soranus, and even Galen, and much later Alexander of Tralles, as well as Aretaeus, followed Archigenes. Not to detain you on points of cumulative evidence, I may say that in the divisions of matter, in the way in which certain drugs are selected and used, and so on, there are further coincidences which are very significant. The conclusion seems to be, then, that Aretaeus was a copyist, as was Aetius; that they copied from some source common to both, and that this source was Archigenes, whom indeed Aetius happens to name. Wellmann, comparing them in parallel passages, declares that Aretaeus is just a servile copy of Archigenes, if not directly, then by the intermediacy of Philumenus; and this may be. But I would remind you that there is much verbal identity with other authors in Galen also; and if I may venture to demur to a judgement of this distinguished scholar, it would be that the agreement in many such passages is substantial rather then literal; and in a broader sense I would urge that similarity of terms, and even of phrases—"literary universalities"—does not necessarily convict an author of plagiary. Phrases which become current in one period fall out of another. In the medical journals of to-day we may readily note the professional dialect and shibboleths of our own time, especially in the writings of the less literary of our brethren. And thus, under the Roman Empire, although, for instance, Aetius did not copy Oribasius, yet in many places there is much similarity between them and no little verbal identity. Nevertheless it seems more than probable that, whether through Philumenus or not, Archigenes was the main source of Aretaeus; and that Philumenus, who reproduced Archigenes, was in his turn the main source of Aetius and no inconsiderable source of Oribasius.

However, there is yet one more of these compilers to whom, if you will forgive me, I must refer—namely, one *Alexander*, of whom I, at any rate, know nothing except the remarkable treatise, easy to lay hands upon, which stands first in Ideler's collection. It consists of two sections, one on problems and one on fevers; and with this it is that we are now more particularly concerned. For this fever chapter is in close conformity, often in verbal identity, with Galen's writings on fever, the pathology of which, with some qualifications of his own, he drew from pneumatist sources. Now in both Galen and in Alexander we find fever divided into two categories, thus: (1) as to severity, *πυρετοὶ μέγαλοι καὶ μικροί*; (2) as related to the three kinds of bodily substance respectively—the dense, the moist, and the vaporous‡—that is to say, quotidian, septic, and hectic. But on turning to the same passages in Alexander we find a third category—as to "rhythm"; namely, slow, quick, intermittent, and continuous; though it is added that as the motions of heat are infinite so these rhythms glide the one into the other. And, in respect to those kinds of bodily substance, he goes on to say that the harder its constitutional substance the less is the body swayed by the fever, and the less the sympathetic propagation of its motions through the system: thus a quotidian is brief because it vibrates only in the rarest substance of the body. Now this additional matter Alexander must have got from the large work of Archigenes, mentioned by Galen, *Περὶ τῆς τῶν πυρετῶν σημειώσεως*, from which he had made a somewhat larger excerpt than had the others from the common source to which they all betook themselves. Now fortunately, Galen (VIII, 203) gives the title of an important pathological work of Archigenes; and Oribasius (II, 146) that of his work on therapeutics—namely, *Τῶν ὀξέων καὶ χρονίων παθογνωμικά*; and *Θεραπεία τῶν ὀξέων καὶ χρονίων παθῶν*, respectively; both apparently in four books; and these titles, as we shall remember, correspond to the four books of Aretaeus, On the Symptoms and On Treatment of Acute Diseases, and On the Symptoms and On the Treatment of Chronic Diseases.

Now we have the titles of two others of the more celebrated treatises by Archigenes—namely, the *Περὶ τῶν κατὰ γένος φαρμάκων* and the *Περὶ τόπων πεπονθοτῶν* (in three books), to which Galen gives high praise. The work on the seats of disease would have been an invaluable document for the historian. We are told that in it Archigenes, with a genuine clinical instinct, inquires if from a comparison of the varieties of functional perturbation, or symptom groups, seats of disease could be inferred; if there be, that is, a signal group for each seat? For example, if we observe this series—orthopnoea, rusty or dark and livid or frothy sputum, fever, pain in the side, and a rapid pulse—we infer a peripneumony. Dyspnoea is common to many maladies, it is true, but we interpret it by its associates; as in this case by fever, the kind of sputum, and so on. Galen (*De locis affectis*) scoffs at a narrower argument of his, that the seats of disease might be discerned even by several kinds of pain; apparently it did partake too much of the nature of a logical exercise, for Galen complains of its new-fangled notions and terms; but nevertheless the method was a sound one. Moreover, upon it Archigenes seems to have built another fruitful clinical idea, that of sympathetic parts, and primary and secondary symptoms. Thus he pointed out how disease in a certain part might betray itself by pain or disorder in a distant part, not itself diseased. He instances, and very appropriately, confusion of vieion caused by a disorder seated in the stomach. These views, and the seat or the hegemonic pneuma in the heart, Galen contested; though on the whole treating his great predecessor with respect, and paying him the dubious compliment of copying from him extensively, often without acknowledgement. For example, Galen's description of that notorious disorder the *πνιξ ὑστερική*—the hysterical suffocation—is identical with that of Aetius, as are both with that of Philumenus, the plagiarist or

* In this summary I rely on Wellmann's *Pneumatists*, and on his article in Hermes, 1908; also on Daremberg's edition of Oribasius, and of Rufus.

† This discovery was one of the many fruits of the formation of the preliminary catalogue for the Corpus by the associated academies. Unfortunately, a vast pile of MSS. thus revised and catalogued has brought in little so far; such matter as 150 indifferent MSS. of the Aphorisms; 100 of the Prognostics, and so on, with quantities of Arabian, Syrian, and Hebrew translations. So it may prove that for Galen we shall have little better than the Ed. Pr., or for Paul than the Aldine. And Aetius is complete only in the Latin version of Cornarius. There was a sad loss of MSS. in the fury of early printing. (See VIth vol. of Pauly-Wissowa; art. on Dioscorides.)

‡ *στερεὰ, ὑγρὰ*, and *ἀερώδης οὐσία*.

copyist of Archigenes* This description was that the restless uterus attacked the heart through the arteries, the liver through the veins, and the brain through the nerves; the simulation of death was described; and the cause was attributed to a chill to the pneuma, a pathology opposed to the more rational notion, of Soranus, of an inflammation of the womb, which engendered in the cavity a cold and moist phlegm; in quantity no doubt small, but, as he urges, how minute may be the venom of a snake or of a mad dog. Now, in commenting upon this account in Aetius, Valentine Rose proved, by facts with which I will not trouble you, that Aetius did not copy from Galen, but, as we have seen already, from Archigenes, the common source of both writers.

On other subjects, as concerning the cynanches, for instance,† and certain drugs and their uses, a like correspondence is notable, but I will touch on two more coincidences only—namely, concerning elephantiasis and concerning the hellebores used in the treatment of it.

Elephantiasis was so hideous, so alarming, and so conspicuous a disease that, if prevalent, it could not escape observation. We may recognize this horror in its various names, such as leontiasis and satyriasis. On the evidence of silence, then, we may assume that elephantiasis did not appear in Italy until about the time of Themison and Celsus. The first description of the disease, so far as we know, was written in the third century B.C. by Straton, a description handed down to Themison through his master Asclepiades. Of this disease and of its treatment Aretaeus gives a full report;‡ and Wellmann, comparing it passage by passage with that of Archigenes as preserved in Aetius, points out that in this chapter again Aretaeus was a plagiarist of Archigenes. The treatment of the disease was also identical in both—namely, venesection at the elbow, hiera, hellebore, whey, viper preparations; and—externally for the tubercles, the unguent was similar.

The hellebores were in occasional use by physicians in more ancient times. Herophilus, on whose bent for pharmacy I have already insisted, seems to have pushed this use of the drugs in some opposition to Erasistratus; and under Themison, Archigenes, Rufus, and others they came into the common use which is familiar to all classical scholars. Anticyra, Sicily, and Galatia produced the best kinds. Hellebore was used chiefly perhaps for melancholia (which, as I have said, was generally, or always, regarded by the ancients as a toxic disorder), for other insanities, and for pains in the head. Now Aretaeus further appropriates from Archigenes full directions for the use of the herbs: the white hellebore to act especially upon the upper bowel, the black on the lower; and if a prompter action were required the herbs were to be cut very fine. They were used also as urgent emetics. In spite of the prudence of Asclepiades in therapeutics—a prudence and reserve I dwelt upon last year—and the large development of the physical methods of treatment, yet under methodists and pneumatists alike reckless attacks upon disease by powerful drugs prevailed more and more: and unhappily the influence of Galen did little to discountenance them. Emetics were used by the Hippocrateans more rationally, and in moderation by Asclepiades and Celsus also, who advised them in bilious constitutions, and for certain chronic diseases. Asclepiades indeed gave warning that abuse of emetics led to loss of appetite, atony of the stomach, indigestion, and emaciation. Nevertheless, vomitives obtained their vogue under the Empire, and as an instrument of gluttony, became almost habitual. These agents were many in number, ranging from a feather in the pharynx to a pound or a pound and a half of radishes in a horrible mixture with honey, salt, and vinegar; the oxymel of squills being another mawkish alternative.

While referring to the use of hellebore in insanity I may mention not inappropriately that on the treatment of this class of disorders Archigenes seems to have held opinions of remarkable enlightenment. Seeing the priests of Cybele scampering, and flagellating, and cutting themselves after their manner, he said "they are insane, do not leave them to these bloody gods of the East, send them to me." And his therapeutics was no less enlightened, for he fed up the maniac and soothed him with music. What would Bedlam have thought of this eccentricity!

Archigenes, as reproduced by Aretaeus, had a considerable knowledge of the veins and ducts of the liver, and wrote well on phthisis, and on diabetes which was regarded as a melting down of the flesh into urine—a sort of runaway dropsy. And of the anatomy and diseases of the nervous system his knowledge was considerable; for instance, he seems to have been the first to show that hemiplegia falls upon the side opposite to that of the cerebral lesion; and moreover to attach the aura to epilepsy. In his description of tetanus Haeser thinks a note of cerebro-spinal meningitis is to be detected. He recognized also the glandular nature of the kidneys, of the testicles, and of the mammae. One remark of Archigenes might, after the lapse of all the centuries, come as a fresh light to the modern examiner. "What we need is to be fertile in expedients, not to be always paying attention to the writings of other people."§

The surgery of Archigenes, whose fame, says Dr. Withington, was no less honourable as a surgeon than as a physician, and that of other eclectic physicians of this period, presents a very fair story. The ancient Greeks shrank from mutilation; and amputation, mentioned by the Hippocratean physicians only in gangrene as a subsidiary aid, seems, even in Alexandria, to have made no great progress; for Celsus also regarded it as a last sad resource in gangrene; yet by the time of Trajan, under Archigenes, amputation had become a recognized procedure for ulcers, growths, injuries, and even for deformities. The limb to be removed was bandaged, and a tourniquet was placed above the line of severance; or sometimes the chief blood vessels were first cut down upon and tied, and the smaller tied, or twisted, during the operation ‖—"transfixing them with a sharp hook and twisting them round and round and closing them by this twisting"—a proceeding of which there is no trace in Hippocrates, nor apparently in the earlier Alexandria. These good methods were afterwards obliterated by the bad fashion of the searing iron. But we know that Galen used the ligatures, and where the shop was at which he bought them. Moreover, as we noted under Soranus, the whole field of surgery had come under a more intensive cultivation. Still, if it be true that in Alexandria capital operations had not made much way, yet by the traditions of Apollonius of Kition, of Lysimachus of Cos and other Hippocratean commentators, of Apollonius Mys (a Herophilist from Alexandria), of Dioscorides, and especially of Philoxenus, we learn that nevertheless in that anatomical school surgery was carried actively forward; for instance, in cutting for stone and operating for hernia, operations which, before and after the prey of specialists and adventurers, seem then for a while to have been undertaken by the general surgeon; and by Heliodorus resection of the long bones was performed. How much of the more advanced surgery under the Empire was due to Romano-Greek physicians, as, for example, to Heliodorus and to that tantalizing shade, without local habitation, Antyllus—a personage who probably owed much to Heliodorus but of whom we have little more than a glimpse in Oribasius—and how much of it flowed derivatively from earlier sources we cannot definitely say; but the progress seems to have been substantial and largely original.

Out of such fragmentary and allusive records as I have tried to stitch together recent historians of medicine, and Wellmann especially, have endeavoured to reconstruct the figure of the great eclectic pneumatist, of methodist origin, Archigenes of Apamea; a figure not wholly eclipsed in the transit of Galen, for in the sixth century his memory is still revered by Alexander of Tralles as *θειότατος εἴπερ ἄλλος*. That Juvenal speaks of him as a fashionable practitioner need not derogate from his merits, as we pleaded in the life of his greater predecessor Asclepiades, and as we might have to plead for fashionable physicians of our

* We may conveniently regard Galen's works as consisting in part of his own original observations and thought; in part of fugitive pieces concerned with questions of the day; in part of compilations.

† Vide, e.g., *Die Halskrankheiten bei d. altgriechischen u. römischen Aerzten*, von J. Weigel, Leipzig, 1907.

‡ It is a curious feature in Aretaeus (Ed. Adams, p. 123) that he describes at length the elephant from which the disease took its name. Why? As a transcriber? Oppian gives this same description, one copied, it is said, by both writers from Amyntianus' *Περὶ ἐλεφάντων*; a book I find (in *Smith's Dict.*) is referred to by a scholiast on Pindar.

§ *χρὴ δὲ καὶ αὐτόν τινα συνευπορεῖν, μὴ πάντα αλλοτρίῃ ξυγγραφῇ προσέχοντα τὸν νοον.*

‖ Vide Daremberg and Bussemaker's edition of Oribasius, excerpts from Heliodorus's great *Χειρουργούμενα* in five books; and notably the passage *περιστρεψαντες πολλάκις και ἀποτυφλώσαντες ἀυτα διά τῆς περιστροφῆς.*—Lib. L, c. 4.

own day, who, wise men as they are, do not disdain empirical and persuasive remedies when no arm of precision is at hand. Archigenes seems in character to have been a blend not only of several schools of doctrine, but also of several complementary qualities: of theorizing proclivity, yet rational in methods and technically sound in practice. To his clinical insight the fruitful distinction between primary and secondary disorders, and the indication of localizing symptoms, which I have quoted from Aetius, is strong testimony. If, on the one hand, it appears from Galen's respectful criticism, and from other witness, that, after the fashion of the pneumatists, he was in preciosity of language and in sophistical dialectic something of a pedant, yet, on the other hand, he did much to deliver medicine from the cramping influence of the methodist common forms based upon an abstract principle, like the "homoeopathic" formula which in our own day became for a while so dear to that most theoretical of creatures the "practical" man. Nay, if besides he seems to have fallen in with the use of amulets and such like, probably it was a tolerant and humorous observer of the foibles of mankind, and of the magical influences of faith, rather than as a charlatan or a sorcerer.

I have said that to enter upon the poison literature would in this course be impossible, for in its biological and pharmaceutical aspects it would require a lecture for itself alone. Such a chapter may be added to these lectures hereafter; but in conclusion I would indicate the place of Archigenes in this current of medical history. We have seen that Philumenus, in his Περὶ τῶν ἰοβόλων ζώων καὶ τῶν ἐν αὐτοῖς βοηθημάτων, drew largely upon him, as he did upon less eminent men of the school of Athenaeus and Soranus; and this not least in respect of poisons and their antidotes. Our tradition of the poison literature, more or less mingled in its course with that of cosmetics, begins with one Apollodorus of Alexandria (c. 300 B.C.); and thence in dark volume it flowed through Nicander, Philinus, Andreas, and that remarkable man, a Herophilean turned empiric—Herakleides of Tarentum. Krateuas, who seems to have worked under the patronage of Mithridates Eupator, is a very important link of this chain.* It is with Krateuas that we enter upon the Attalid and Mithridatic period of this art and mystery on which the *locus classicus* is the twenty-fifth chapter of Pliny's *Natural History;* and so to Dioscorides, to Philumenus, to Aetius who borrowed from Philumenus, and to Galen. Thus at second hand Archigenes became a main source of this sinister lore for the Middle Ages, and for the papal and ducal circles of the Renaissance.

In these lectures, Sir, if I have failed—and with but our present resources we may hardly succeed—to bring the physicians of Rome out of chronological tables and to present them in living portraiture; yet, if, in my subordinate degree, I have made some fair endeavour to illustrate the inner movements and to read the genius of those variously gifted races of whom Roman medicine was engendered—the dreamy Sicilian, the positive and sagacious Greek, the subtle and demonic Oriental—which, blended in Alexandria, inspired the motley players who walked the stage of our art and mystery at the feet of the imperious mistress of the world; if in any fair measure I have done this, my labour and your long-suffering—for which I gratefully thank you—may have been not wholly in vain.

FOUR CASES OF PNEUMONIC PLAGUE.

By H. P. SLEIGH, M.B.,

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Cases of plague in this country are comparatively rare, and although the daily press has given somewhat distorted accounts of the four cases recently occurring in Suffolk, readers of the Journal may find an account of them to be not without interest.

The cases occurred at Freston, some five miles from Ipswich, in the households of two farm labourers. C.'s child, aged 9 years, was taken ill on September 13th and died on the 16th; the mother, aged 40 years, was taken ill on the 21st and died on the 23rd; C., aged 57, was taken ill on the 26th and died on the 29th; and a neighbour, Mrs. P., aged 43 years, who nursed C.'s wife on the night of the 22nd and 23rd, was taken ill on September 26th and died on the 29th.

True to description, the disease had picked out two very dirty households; and again, of all the people coming into close contact with the patients, only those who had but little respect for hygiene were infected. Three nurses who were unremitting in their attentions to the sick escaped.

The *incubation* period was definitely five days.

Prodromal symptoms were not well marked. All the patients complained of being "not well" a few hours before the onset of illness; and in one case—that of the child—there was sickness.

The *invasion* was sudden, and in one case at least the illness was ushered in by a rigor. All complained of severe frontal headache. The features were drawn, the expression vacant, and mental ineptitude was well marked. The temperature was high from the commencement, the thermometer registering 105° in two of the cases and 103° in the other two within a few hours of the onset of the illness, and remained high till within twelve hours of death, when in each case the temperature fell a couple of degrees.

Respiratory System.—Respirations in all four cases were quickened from 30 to 40 per minute. In only one case (Mrs. P.) was there definite lobar pneumonia; in two there were evanescent patches, and in the fourth no signs of pneumonia were detected. The case with definite pneumonia had no expectoration at any time of the illness; the other three had thin dark blood-stained expectoration.

Circulatory System.—The pulse in all cases was feeble and fluttering, and ranged from 120 to 140 per minute.

Digestive System.—The tongue in each case was red at tip and edges, but the dorsum was covered with a thick yellowish fur. In two of the cases there was sickness and diarrhoea.

The spleen in one case at least (Mrs. P.) was enlarged, but no other glandular enlargement was detected.

Nervous System.—In the child there was delirium, but in the others consciousness was unimpaired till the end, and in one case (Mrs. P.) the patient gave thoughtful and intelligent instructions within ten minutes of her death.

Diagnosis.—It was at once recognized that this was a highly contagious disease, so that prompt measures to isolate contacts were adopted. Drs. Brown and Heath, of Ipswich, were asked to see the cases in consultation, and from specimens of sputum and blood taken from the last three cases Dr. Heath ultimately discovered the *Bacillus pestis* in all the specimens, but this was not demonstrated till too late to adminster serum treatment.

Investigation as to the cause of the outbreak elicited the fact that a great many rats were dying in the neighbourhood, and on bacteriological investigation many of these, as well as a hare and a cat, were found to have plague. On further investigation it was elicited that five years previously eight persons were similarly attacked near Shotley, and about six miles distant from Freston. Of those eight persons attacked, six died, and I have no doubt, from the reports given me, that they also were plague. These cases occurred about a quarter of a mile from the river Orwell, and at a point exactly opposite to where the larger ships anchor to lighten their cargoes into barges to enable them to proceed up the river to Ipswich. It would be an easy matter for rats to swim ashore from those boats at this point, and it is surely not mere coincidence that rats on the other bank of the river at this point have since been proved bacteriologically to have plague. There certainly has been an undue mortality amongst rats since the occurrence of those eight cases, and it would almost appear as if there has been a chronic condition of plague amongst rats in the district since that time.

There are, however, other possible sources of infection which are under investigation; the results, when complete, will no doubt be made known.

It is now known that other districts in Suffolk have a "rat plague," the cause of which is being investigated alongside with this district.

To prevent the spread of infection stringent measures were adopted. All contacts were quarantined for a period of ten days; in both houses all articles that could not be thoroughly disinfected were burned, the rooms were carefully disinfected, their walls were stripped, and afterward

* Vide Krateuas, von M. Wellmann, Berlin, 1897.

repapered or distempered. The destruction and disposal of rats over a wide area was undertaken by the sanitary authority, willingly assisted by the public, and this is meanwhile being done methodically and with excellent results.

I am indebted to Dr. Carey of Holbrook for notes on the cases in C.'s family; to Dr. Brown of Ipswich for much valuable advice at the consultation; and to Dr. Heath for his bacteriological examinations.

THE RECENT PLAGUE CASES IN SUFFOLK.

BY

HERBERT H. BROWN, M.D., F.R.C.S.,

IPSWICH.

MUCH interest has been aroused by the recent death of four people from pneumonic plague at the village of Freston, four miles from Ipswich, and the subsequent discovery that the disease is fairly widely spread among rats and other rodents in this part of Suffolk.

On September 13th a little girl of 9, living with her mother, stepfather, and two or three other children in a small cottage at Freston, became ill. Vomiting was the first symptom. On the 14th she was seen by Dr. Carey of Holbrook, to whom I am indebted for notes of this and the succeeding case. At his first visit Dr. Carey found a temperature of 105° but no signs of pneumonia. On the following day, September 15th, bronchial breathing was detected at the base of one lung. She had been delirious during the night before, but not in the day, though rather drowsy. During the following night the cough was somewhat troublesome, and there was vomiting and diarrhoea.

She died on the next day, September 16th. The temperature throughout had been about 105°. She was nursed by her mother, Mrs. C., and was buried on September 20th.

On September 21st Mrs. C., the mother, was taken ill. She got up as usual on that morning, but complained of headache and a feeling of sickness.

Next day, September 22nd, Dr. Carey was sent for. He saw her at 3 p.m. He found a temperature of nearly 105°, rather rapid respiration, and crepitant râles at the bases of both lungs.

During the night of the 22nd there was vomiting and diarrhoea.

On the 23rd she was seen by Dr. Carey at 10 a.m. She was almost pulseless, respiration laboured and gasping. He sent to ask me to see her in consultation with him, but she was already dead when I arrived at about 12 noon. I took away some sputum for bacteriological examination. The sputum was brownish in colour, as though tinged with anchovy sauce, and did not at all resemble ordinary pneumonic sputum.

I gave the sputum to Dr. Heath for examination, who reported that it contained pneumococci and Gram-negative diplobacilli in large numbers.

On the 26th G. C., the husband of the last patient, and Mrs. P., who had nursed her during the night of the 22nd, were both taken ill. Dr. Carey informed me of the occurrence on the 27th, but as I was unable to visit them that evening I asked Dr. Heath to go instead. He saw G. C. and obtained some blood from the ear for examination.

On the 28th I visited both patients in consultation with Dr. Carey and Dr. Sleigh, and took a syringeful of blood from the basilic vein of G. C., and fluid from puncturing the pneumonic lung in the case of Mrs. P. This material I gave to Dr. Heath, who made cultures in agar and bouillon and prepared films.

The films, especially those from the pneumonic lung, showed very numerous bacilli, identical with plague bacilli, with the typical bipolar staining, and the cultures in bouillon, the characteristic "stalactite" growth. The cultures and films were at once submitted by Dr. Heath to Professor Sims Woodhead, of Cambridge, who confirmed his diagnosis, and later to Professor Klein and Professor W. G. R. Simpson.

The course of the disease in these two cases was as follows:

G. C., who was a farm labourer, started to work as usual on the morning of September 26th, but complained of backache and "feeling bad." He attended his wife's funeral on that day and then went to bed.

On September 27th he was seen by Dr. Carey. He was flushed; temperature 103°. He had not vomited, and there were no signs of mischief in the lungs. A nurse was sent from Ipswich on this evening.

On September 28th I saw him with Dr. Carey. He was very flushed and rather drowsy and lethargic, but complained of no pain. On examination of the lungs, I found no dullness or bronchial breathing, but moist crepitant râles over both bases. During the night his temperature was 104° or 105°. He slept at intervals, took nourishment well. He complained of thirst, and of feeling drowsy, but had no pain. There was slight cough and some expectoration. Pulse about 120. Respirations from 30 to 40. He perspired freely. There was no diarrhoea or vomiting.

On the 29th his condition was much the same, temperature a little lower. There was no loss of consciousness or marked change until three minutes before death, which took place at 7 p.m.

Mrs. P., the neighbour who had nursed Mrs. C., was taken ill on the morning of the 26th.

In her case pneumonic symptoms were prominent from the first. She had a high temperature from the commencement, and on the 27th there were obvious signs of pneumonia in the left lung.

She was treated by Dr. Sleigh, of Holbrook.

A nurse from Ipswich took charge of her and G. C. on the night of the 27th. She complained of severe pain on the left side of the chest, near the angle of the scapula. The left side of the face was very flushed. She lay generally on her right side. She coughed very little during the night, and there was no expectoration. Temperature from 103° to 104° F. No delirium; no diarrhoea or vomiting.

On the 28th I saw her with Dr. Sleigh at 11.30 a.m. The respiration was about 50, laboured and rattling; pulse 130, very compressible. Face livid. There was dullness to percussion over the left back, as high as spine of scapula, and bronchial breathing. There was also dullness and signs of consolidation at the extreme right base.

During the night of the 28th she complained of severe pain in the left side. Vomiting and diarrhoea came on at very frequent intervals till death, which took place on the morning of the 29th.

There had been no loss of consciousness and no delirium. Some cough, but not much expectoration. Temperature 105.6° F. before death.

In all four cases death occurred after a short illness, in only one as late as the fourth day. In all cases there was definite evidence of lung congestion, although in only one was there extensive pneumonic consolidation; and in all except one there was diarrhoea and vomiting before death. The temperature in all was high, from 103° to 105° F. or over, and they were conscious throughout, almost up to the moment of death.

The characteristic bipolar-staining bacilli were found in the sputum of the second case, in the blood of G. C., and in the fluid from the lung of Mrs. P. In this last they were exceedingly numerous.

When the nature of the disease was determined, all who had been in contact were isolated, and the cottages thoroughly disinfected. There have been no fresh cases since.

As numerous rats and some hares and rabbits had been dying in the neighbourhood, two rats and a hare were sent to the Local Government Board, and submitted to Professor Klein for examination. In each the presence of plague bacilli was proved.

Many rats and other animals have been since examined by Dr. Heath and others, and it is evident that the infection among these animals is fairly widely spread; but owing to the energetic measures which have been and are still being taken, it is hoped that the disease may be stamped out.

No case of infection among rats has been found within the borough of Ipswich.

THE late Dr. William Thomas Law, of Bournemouth, left estate valued at £8,950 gross, with net personalty £8,536.

RADIUM THERAPY IN EYE DISEASE.

BY

ARNOLD LAWSON, M.D., F.R.C.S.,

AND

J. MACKENZIE DAVIDSON, M.B., C.M.Aberd.

The present paper is an outcome of an investigation carried out by Mr. Mackenzie Davidson and myself into the possibilities of radium as a therapeutic measure in eye disease. We have carried on the work with the limited time at our disposal for over a year, and now venture to bring forward the results obtained, in the hope that they may stimulate further inquiry and research.

A good many of the present cases were mentioned in a preliminary note published in vol. xxix of the *Transactions of the Ophthalmological Society*, but no statistical tables such as are appended to this paper were made, and all the cases are now grouped together and their special features detailed for easy inspection.

We can endorse more fully now the opinion which we then ventured to express—namely, that radium is likely to prove of great service, both in the treatment of external diseases of the eye and in those of the eyelids. The results are in many ways most encouraging, and the field of utility for radium in eye disease has widened considerably since the time that it was first shown to be a specific for rodent ulcer.

Method of Application.

The method of applying the radium was crude but satisfactory. The eye was first cocainized and the radium, which was contained in sealed glass tubes permitting only the passage of beta and gamma rays, was applied directly to the affected part. The fingers of the operator were protected by enveloping first that part of the tube not required and then the fingers in a thick, continuous wrapping of lead foil.

The process is tedious, especially as care must be exercised to keep the tube in close contact with the part desired to treat which is often very small, but no more efficient way could be devised.

Length of Exposure and Dose.

There are two points to which we should, in the first place, like to draw attention. First—and this is of vital importance—in no single instance have we observed the slightest ill effects from the use of radium. We have, of course, exercised caution, especially when dealing with the eye itself, and it is probable that when the actions and dangers of radium are more fully understood there will be a much greater freedom in repeating the sittings than we thought advisable.

The second point is that no increase of inflammation or aggravation of symptoms occurred in any case, with the one exception of pain, to which I shall refer again later on, and which, when it occurred, was usually transient and not severe.

It is, of course, of the utmost importance, in dealing with a substance such as radium, that at the earliest possible moment positive rules as to the size of the dose to be employed and length of the sitting, as well as the frequency with which the sittings should be repeated, should be laid down for the guidance of the inexperienced.

At the present time it is unfortunately impossible to give more than a few general indications, and to point out by results obtained the most likely road to a successful issue.

With regard to the eye itself, we had no basis upon which to found our observations, so we thought the best plan would be to fix a time limit which would not endanger the integrity of the eye, however large a dose it might be considered desirable to try. Mr. Mackenzie Davidson's experience with radium here proved the deciding factor, and an exposure of five minutes was fixed as being absolutely safe.*

With regard to the dose itself, it will be obvious to anybody glancing over the appended statistics that very many and varied doses were employed. We were chiefly guided as to dose by the character of the lesion to be treated, considering that one exhibiting a tendency to spread or infiltrate surrounding tissues, or marked by any special virulence in its progress, would probably require a larger dose than a small, superficial, or non-infiltrating lesion. Further, being anxious to try the effects of as many variations as possible, we in many cases used a different dose for the second sitting to what was employed in the first instance.

It soon became evident that lesions of the cornea could be treated successfully with this time limit of five minutes by the same dose which, for affections of the skin and lids, required an exposure three or four times as long, and also that superficial lesions of the cornea frequently do not need any more than quite a small dose, such as 5 to 10 mg., applied once or twice as the case might demand.

Looking back upon our experience, I am inclined to think, and Mr. Mackenzie Davidson agrees with me, that a supply of 20 mg. is sufficient to combat any external affection of the eye in which radium is likely to be of service.

Frequency of Exposures.

With regard to the frequency with which the exposures were repeated, we were guided entirely by the progress or otherwise of each individual case.

When dealing with a virulent and highly dangerous process, such as a hypopyon ulcer, it was obviously necessary to get a result with the least possible delay, and consequently the exposure was repeated as soon as was considered safe, if no improvement had been noted. Whereas, in milder cases, we were content to wait longer for signs of amelioration, being anxious to find, if possible, the minimum number of sittings necessary to effect a cure.

The effects of radium are continuously exhibited for a considerable space of time, extending into a matter of six weeks at least, and so some of our cases had only one sitting, and a perfect cure resulted.

The margin of safety with regard to the minimum interval that should elapse between the sittings must obviously depend upon the dose employed. The larger the dose, the sooner should its effects be produced, and the longer the interval between the sittings. Consequently, if a large dose was considered necessary at the first exposure, we seldom repeated it with less than a week's interval, except it happened to be noted that the disease continued to spread in spite of the treatment, in which case we considered that a second exposure might safely be given at a rather shorter interval.

Results.

Before briefly reviewing the results obtained, it must be clearly understood that as soon as the patient was submitted to radium all other forms of treatment were as far as possible omitted. In some cases, such as corneal ulcers, it was considered advisable to continue the use of atropine and a pad and bandage, and in most cases the patient was also given boracic lotion for the purpose of keeping the eye clean. In the case of corneal ulceration it may be perhaps argued that this would to some extent discount the value of the result obtained, in that the patient might have been cured by this method of treatment alone; but, with few exceptions, the cases submitted to radium were of a kind not usually amenable to this simple treatment, and were selected on this account. Further, many of them had had previous treatment without success before radium was employed; and, lastly, a few superficial cases were undertaken to note whether radium, employed in addition to the simple routine treatment of pad, boracic lotion, and atropine, afforded a likelihood of effecting a more speedy cure.

The immediate effects of applying radium directly to the eye are practically *nil*, beyond an evanescent photophobia and irritability, which are probably simply a reflex disturbance induced by the method of application, and which would probably appear just as markedly if a stick of chocolate, instead of radium, were employed.

A few hours after the sitting a certain proportion of the patients complained of pain, which in a few instances was severe enough to cause a sleepless night. As a rule this symptom had passed away within twenty-four hours, but once or twice the patient has told us that the pain lasted more or less continuously for a couple of days. Th

* With regard to this point, I may say that Mr. Mackenzie Davidson, in dealing with rodent ulcer affecting the lid border, found that a tube of 20 or 30 mg. could be applied to the inner surface of the lid, and so lie in contact with the sclerotic for a period of half an hour without causing any ill effect to the eye.

I think, is the longest period in any instance. As a rule the pain was not at all severe, and it has been differently described by patients, some saying that it was of a throbbing character, whilst others described it as a numbing sensation. A large proportion experienced no pain at all.

In only one instance did a patient complain of any sensation referable to the retina, and that occurred in a case of episcleritis—one of the first cases which we treated—in which the application of a very large amount of radium (59 mg.) had been employed for five minutes to the sclerotic. This patient said that after the application she was much troubled for the space of an hour or so by the appearance of flashes of light proceeding from the side opposite to that treated. After this once passed off there was no return of symptoms, nor has there been any evidence of impaired function since. With reference to the production of this symptom, it is worth noting that if a tube of radium is placed against the closed lids in a darkened room a faint, though quite definite, sensation of light is imparted to the observer.

After the initial discomfort, if any, has worn off, the patient usually experiences a rapid improvement in the subjective symptoms from which he had previously suffered, and this speedy anaesthesia, if it may be so called, is a very striking feature of the treatment.

With regard to affections of the lids and of the eye other than those involving the cornea, a much longer exposure with a large dose (20 mg. or more) was borne without any expression of subsequent discomfort, and, if the part to be treated involved the skin, a dose of 30 mg. applied for fifteen minutes will only produce a subsequent sense of itching and heat over the treated area.

With regard to the more remote effects of applying radium to the eye, it is very gratifying to be able to say that in not a single instance did we obtain any untoward inflammatory exacerbation as the result of treatment.

A certain number of cases did not respond at all to the radium, but in those that did so the effect produced was simply that improvement became manifest, rapid or slow as the case might be, without any characteristic clinical signs.

A noticeable result of treatment by radium is the character of the scars produced, which are best exemplified in cases of spring catarrh. They are perfectly supple and smooth, and do not exhibit the slightest tendency to cause cicatricial dragging; but they are very strikingly bloodless, and the tarsal surface of the lid after the cure of a case of spring catarrh presents a very blanched appearance.

Before closing, I should like to make a few remarks with regard to the statistical tables which are appended as a supplement to this report.

The cases selected for treatment may be divided into four groups.

1. Ulcerations of the cornea.
2. Non-ulcerative acute inflammations of the cornea and sclerotic.
3. Affections of the lids.
4. Corneal scars.

We purposely did not attempt cases of a kind readily amenable to simple forms of treatment, such as phlyctenular keratitis, nor did we try the treatment on trachoma. Perhaps some apology is needed in this respect, but our time was unfortunately very limited, and it had already been shown that trachoma could be cured by exposure to *x* rays. We felt that in this case radium would almost certainly be shortly proved to act as a specific for this disease, the more especially as it is so successful in the treatment of spring catarrh; and I, for one, venture to hope that this paper will result in an extended trial of radium for the treatment of trachoma, employing a similar kind of exposure and dose to that found successful in dealing with spring catarrh.

Corneal Ulcers.

The first 17 cases in the tables deal with various corneal ulcerations. The results obtained were universally good with one exception, and that was Case 16, where, I think, the failure was due to continuous infection of the ulcer by the septic condition of the lids. The latter, in accordance with our rule, were not treated whilst trial of radium was being made. It will be noted that not a few of the cases were treated successfully with a very small dose (5 mg.) applied once or twice. The rapidity with which improvement followed the first exposure to radium was a striking feature in nearly every case, as was also the rapidity of the healing as soon as it had commenced.

In no case, with the exception of that already quoted, did the ulcer continue to progress after radium had been used, although the length of convalescence necessarily varied very considerably.

Non-ulcerative Inflammations of the Cornea and of the Globe.

Seven cases of acute interstitial keratitis are reported. It is very difficult in a disease of this sort to make any dogmatic statement, with so few cases on record, and we therefore leave the cases to speak for themselves. However, one or two rather striking results were obtained.

In case No. 20 one eye was treated with radium and the other eye, which was attacked soon after the first, was not so treated. The eye in which radium was employed made a much better recovery than the other, the cornea showing barely a trace of the old complaint, whereas the other cornea has a well marked central haze.

In case No. 21, the attack of interstitial inflammation, which was caught in its earliest stage, certainly did seem to be cut short by radium, and the symptoms never became acute, whereas in the other eye, which was previously affected and not treated by radium, the inflammation was of a severe description, and the patient was under constant treatment for six months.

Case No. 26 (recurrent episcleritis), which was a typical case of a most troublesome disease, is worth mentioning, because the improvement after radium was used was so extremely marked in every way. The patient expressed herself to me a week after radium had been used as feeling more comfortable than she had done for months.

Case No. 27 (keratitis profunda), which was an excellent example of a comparatively rare condition, is also interesting. This patient came under my observation a month after the loss of sight had commenced. Various remedies had been tried without the slightest effect, and the case was handed over to me on this account, as the patient was getting restless, and threatening to go to Wiesbaden, where tears are wiped away from all eyes.

Case No. 40.—This case of recurrent inflamed pterygium was quite one of the most striking illustrations of the power of radium to reduce inflammatory processes. The patient has, during the whole of the treatment, continued his work in a gunpowder factory, exposed to the fumes which have no doubt been the essential factor in producing and maintaining the condition. The condition was regarded as hopeless when the patient was sent for treatment.

Affections of the Lids and Corneal Scars.

There is one point to which I want to draw special attention, and that is the continued success of the treatment of spring catarrh. There is, I think, no doubt that, for this disease at least, radium acts as a specific cure.

Mr. Mackenzie Davidson has two more cases under his care at the present time, both of which are doing well. Large doses of radium, however, appear to be essential.

Case No. 33 had a good trial with a 5 mg. tube without the slightest benefit, and it is certain that a long exposure with a small dose will not produce the same result as a large dose given for a short space of time.

Our attempts to deal with the removal of fine, downy, ingrowing lashes was not a success, though much patience was exercised in the effort. Nor was the treatment of old corneal nebulae productive of much obvious benefit. It is, however, possible, seeing that two of the four patients were very positive of improvement, that large doses of radium applied continuously at intervals of three weeks or so, over a long period of some months, might effect a radical and permanent increase in the vision, and more extended effort might be made in this class of case.

Finally, the great drawback to the more general use of radium is its present prohibitive price. It is to be sincerely hoped that this will in the near future be considerably lower, so as to come within the means of the ordinary man.

The present system of cornering the supply and amassing it in institutions which can utilize it as a means of obtaining prodigious fees is most prejudicial both to the prestige of the profession and to public interest.

No.	Name.	Age.	Sex.	Nature of disease.	Number of exposures and dose.	Result.	Remarks.
1	G. S.	53	M.	Hypopyon ulcer	2 exposures of 29 mgrm. tube. First exposure for 5 minutes. Second exposure for 2 minutes 1 week later	Cured	Ulcer caused by wound from metal 7 days previously. Large central infiltrating grey ulcer with small hypopyon. Hypopyon much smaller the day following first application; quite gone on third day. Ulcer quite healed with small grey facet 14 days after first exposure.
2	J. B.	22	M.	Hypopyon ulcer	1 exposure of 29 mgrm. tube for 3 minutes	Cured	Ulcer caused by injury from fragment of mortar. Small circular ulcer just below pupil with small hypopyon. Hypopyon had disappeared on the third day, and the ulcer no longer stained to fluorescin.
3	W. C.	23	M.	Corneal ulcer with vascular fasciculus and pannus	2 exposures of 5 mgrm. tube for 5 minutes with an interval of 3 days between the applications	Cured	Patient had had several previous attacks of inflammation. There was a nebula occupying a large area of the cornea with a moderate degree of pannus and a small superficial erosion near the centre. The pannus had quite disappeared and the patient quite well, except for the nebula, 11 days after the first application.
4	T. S.	65	M.	Corneal ulcer with vascular fasciculus and pannus	2 exposures of 5 mgrm. tube at an interval of 3 days	Cured	A case much like No. 3. Recurrent attacks of inflammation extending over many years. The cornea was largely nebulous and moderate pannus was present with much general irritability. Ung. flav. was tried before radium, but it did no good. 10 days after first exposure the eye was white and subjective symptoms had disappeared.
5	M. T.	61	F.	Corneal ulcers	1 exposure of 29 mgrm. tube for 5 minutes	Cured	Patient gave history of painful inflamed eye for 3 months. Much injection of bulbar conjunctiva, with two patches of corneal ulceration of an infiltrating character. One patch was large, oval in shape, and about 3 mm. in length and 1 mm. in diameter. 2 days after exposure the ulcers did not stain to fluorescin. Bandages removed 6 days after exposure. The resulting nebulæ were extremely faint.
6	D. B.	43	M.	Corneal ulcer	2 exposures of 5 mgrm. tube for 5 minutes at interval of 7 days followed by 1 exposure a week later of 39 mgrm. for 5 minutes	Cured	A case of deep ulceration resulting from breaking down of an old scar, the result of injury several years previously. The exposures of the 5 mgrm. tube had no effect, but the ulcer quickly healed after the strong dose of 39 mgrm. In this case there was deep ciliary injection and some iritis.
7	C. S.	—	M.	Corneal ulcer with large hypopyon	1 exposure of 49 mgrm. for 5 minutes. 1 exposure of 59 mgrm. for 5 minutes 10 days later. 1 exposure of 39 mgrm. for 5 minutes 3 weeks later	Cured	An exceedingly bad case. A dirty yellow, spreading ulcer of cornea with large hypopyon and a muco-purulent discharge from lids, which were injected and chemosed. A corneal paracentesis was performed before radium was tried, as the condition was extremely urgent, but the patient did not improve much. 13 days after paracentesis the lower third of cornea was densely infiltrated and sodden, with some bulging present. Improvement was rapid and continuous immediately after the first exposure to radium. Very large doses were used, as the case was so bad, but no pain or reaction followed any of the applications and a sound, excellent scar resulted with the pupil fairly active. V = $\frac{6}{60}$.
8	E. H.	30	F.	Herpetic ulceration of both corneæ	2 exposures of 5 mgrm. for 5 minutes with an interval of 4 days	Cured	Both corneæ were dotted with multiple punctate staining areas, the result of the rupture of vesicles. In the left eye the central two thirds of the cornea after douching stained deeply to fluorescin. In this eye there was also a linear ulcer with some surrounding infiltration. 4 days after the first exposure there were still a few staining points, but the linear ulcer was healed over. 4 days after the second exposure both corneæ were quite healed. 11 days later there was an acute muco-purulent conjunctivitis with some relapse of staining at a few points, but the patient quickly recovered with a weak lotion of zinc sulphate.
9	J. B.	49	M.	Vascular facetted ulcer of cornea	1 exposure of 5 mgrm. for 5 minutes	Cured	A deep central facetted ulcer with a staining area of 2 mm. diameter and a good deal of surrounding infiltration of the cornea. There was severe pannus and much injection of the globe. The patient rapidly improved after exposure and was quite well a fortnight later. The ulcer was the result of a second attack of inflammation, and there was some iritis.
10	E. J.	17	F.	Mooren's ulcer	2 exposures of 29 mgrm., the first exposure for 5 minutes and the second, a week later, for 3 minutes	Cured	There was a history of repeated attacks of inflammation for 18 months. The present attack had lasted a fortnight. There was a grey haze of rather varying density, with numerous new vessels extending over the upper two thirds of the cornea with an advancing irregular line below, which stained to flourescin. 6 days after exposure there was no staining and the eye was quiet. 1 day later there was a little pink injection of the eye, and it was considered advisable to use radium a second time. Patient was last seen a month later, when the eye was quite well.
11	C. W.	20	M.	Recurrent vascular ulcer of cornea	3 exposures of 5 mgrm., the second exposure 2 days after the first, and the third exposure 4 days after the second	Cured	The present was the third attack of inflammation in 6 months, and the eye had never got quite well between the attacks There were 2 punctate superficial erosions with many grey maculæ dotted over the upper portion of the cornea. Pannus was considerable. 2 days after the first exposure there was much less injection and only one minute staining point. 7 days later the patient was quite well except for a little pink injection about the corneal limbus

No.	Name.	Age.	Sex.	Nature of disease.	Number of exposures and dose.	Result.	Remarks.
12	M. S.	26	F.	Recurrent erosions of cornea; herpes of cornea	59 mgrm. applied for 5 minutes. Patient was cured for a time. Relapse 2 months later, when the other eye also became affected. 1 exposure of 49 mgrm. to first eye for 5 minutes, and 2 exposures of 49 mgrm. to the second eye with interval of 13 days	Cured?	This case had been under treatment off and on for 14 months before radium was tried. The patient suffered from repeated attacks of superficial ulceration and pannus affecting both eyes and different portions of the cornea. The attacks consisted of eruptions of small staining areas near the limbs with superficial pannus and much irritation and photophobia. Radium produced immediate relief of symptoms with rapid healing, but in each eye there was a relapse after treatment which necessitated a second exposure. The patient has not come for examination for over a year so presumably has kept quite well.
13	A. S.	40	M.	Traumatic ulcer	2 exposures of 5 mgrm. for 5 minutes with an interval of 3 days	Cured	5 days previous to exposure the cornea was wounded by a chip of concrete. There was a large deeply staining abrasion roughly circular and measuring 5 mm. in diameter. The surrounding cornea was deeply infiltrated at two points. 3 days after the first exposure the staining area measured 1 mm. in diameter and 3 mm. in length. 7 days later the cornea did not stain and the patient was practically well.
14	F. W.	19	F.	Dendritic ulcer of cornea	1 exposure of 29 mgrm. for 5 minutes	Cured	A typical case of dendritic ulcer. There was a history of a similar attack of inflammation of the cornea six years previously which had lasted for 4 months. The cornea presented several irregular wavy lines of grey ulceration which intersected here and there. A week after exposure there was no staining and no subjective symptoms and the eye seemed quite well.
15	A. G.	42	F.	Catarrhal ulcer of cornea	1 exposure of 5 mgrm. for 5 minutes	Cured	This patient had suffered from a relapsing conjunctivitis for 2 months. The ulcer formed a deeply staining, sodden spot near the limbus. As in other cases, all treatment except bandage and boric lotion and atropine was discontinued after radium, but the ulcer quickly healed. The lids, however, suffered a good deal from the bandaging and want of effective treatment, and subsequent astringent applications were necessary.
16	C. Q.	62	F	Deeply infiltrating yellow ulcer of cornea	2 exposures of 29 mgrm. for 5 minutes with an interval of 14 days	Failure	This case was complicated by the condition of the lids, which were in a very septic condition. The exposure in each instance caused a great deal of pain, lasting for some hours. After the first exposure the ulcer showed no tendency to spread, but it did not heal and a second exposure did not seem to benefit. A great deal of trouble was experienced in curing the lid inflammation, and under treatment in this direction the ulcer slowly got well.
17	S. G.	35	M.	Central corneal ulcer of traumatic origin	2 exposures of 29 mgrm. with an interval of 5 days; the first exposure was for 5 minutes and the second for 3 minutes	Cured	There was a history of injury 4 days previously. The cornea stained over an area measuring 2 mm. in length by 1 mm. in breadth, and there was a surrounding area of deep grey infiltration 4 mm. in diameter. The pupil was sluggish with marked ciliary injection. 5 days after the first exposure the ciliary injection was much less and the cornea did not stain. A few days later the patient was practically well.
18	M. R.	18	F.	Marginal keratitis	1 exposure of 29 mgrm. for 5 minutes followed by a second exposure a fortnight later of 29 mgrm. for 1 minute	Cured	There was a large area of the limbus of the cornea red and swollen with much photophobia and lacrymation but no staining. The first exposure caused much pain for 2 days, and then the eye began to improve rapidly and appeared almost well 9 days after exposure. No further radium was give for a further 5 days on account of the pain caused by first application. The second exposure was scarcely necessary, but the patient was then not quite well.
19	E. W.	15	F.	Interstitial keratitis, tuberculous; both eyes affected	Several exposures to doses varying from 49 mgrm. to 15 mgrm.	Doubtful	A most obstinate and difficult case. Patient had been under treatment at the Central London Hospital for 18 months before coming under observation, and had been attending Moorfields Hospital for over a year before radium was tried. At first radium seemed most successful and rapid improvement followed, but relief was not permanent. Successive relapses were treated, but beyond producing a temporary amelioration it is doubtful if radium proved of much service.
20	M. B.	24	M.	Interstitial keratitis; congenital specific disease	1 exposure of 15 mgrm. for 5 minutes	Improved	A typical case of specific interstitial keratitis. Had been treated for 5 weeks by the usual methods of fomentations, etc., but did not improve and subjective symptoms were acute. Rapid improvement set in at once after radium, and without any relapse the eye got well with barely a trace of corneal haze. About 6 weeks after exposure the other eye became affected and was *not* treated with radium. This eye has since made a good recovery, but though the disease did not run a more severe course there is a considerably denser resultant haze over the centre of the cornea.
21	A. R.	17	F.	Interstitial keratitis; congenital specific disease	5 exposures of 29 mgrm. for time varying from 3 to 5 minutes	Improved	The patient was convalescent from an attack of interstitial keratitis in one eye for which she had been treated for 6 months. The other eye then showed signs of a commencing attack, and it was resolved to try to abort the attack with radium. In this some success was certainly made. The symptoms seemed to come to a standstill, and at no period did this eye show any acute inflammation. Within 3 weeks the sclera was quite white, but a certain amount of corneal haze remained and still persists.

No.	Name	Age.	Sex.	Nature of disease.	Number of exposures and dose.	Result.	Remarks.
22	N. W.	24	F.	Interstitial keratitis; congenital specific disease	8 exposures extending over 3 months, with doses varying from 5 mgrm. to 29 mgrm. applied for 5 minutes	Improved	Patient had been treated for 3 weeks on general lines before radium was tried. Symptoms were exceedingly acute, and patient grew continuously worse. It is difficult to say to what extent radium benefited, but certainly the case began to make rapid strides towards recovery after the first exposure, which was a cautious one of 5 mgrm. for 5 minutes. The exposures were then made almost weekly with increasing doses, and the patient thenceforward made steady progress without any relapse. A small dense central nebula persisted.
23	E. G.	15	F.	Interstitial keratitis; congenital specific disease	5 exposures extending over 5 weeks, with doses ranging from 15 mgrm. to 29 mgrm. applied for 5 minutes	Doubtful	A severe typical case of interstitial keratitis with intense photophobia and lacrymation. Improvement seemed at first to follow the exposure to radium, but a severe relapse set in a few weeks after the radium was discontinued, with recurrence of pannus and photophobia.
24	T. C.	7	M.	Interstitial keratitis; congenital specific disease	1 exposure of 59 mgrm.	Improved?	An unusually severe case of interstitial inflammation affecting both eyes. The child had been under treatment for 4 months before radium was used. Both corneæ were extremely opaque and vascular, but the child was steadily mending. The exposure was given to *one eye only* to compare results if any. No reaction followed the large dose employed, and the eye chosen was much the more opaque. The opacity in this eye appeared to clear much more rapidly after the use of radium than was the case with the other eye; but it is impossible to speak more definitely.
25	H. S.	26	F.	Recurrent episcleritis with sclerosing keratitis	1 exposure of 59 mgrm. for 5 minutes to the episcleral swelling	Cured	The present attack was the second in the right eye, and there had been a similar attack in the other eye. The inflammation had already lasted 2 months, and was accompanied by severe subjective disturbance. There was great injection, with deep violet discoloration and swelling. A fortnight's treatment on the usual sedative lines and salicylate of soda was tried without any improvement resulting. The exposure to the large dose of radium caused severe pain, and the sensation for an hour or so of almost continuous flashes of light proceeding from the side of the globe opposite to that treated. After exposure to radium all treatment was omitted. Two days later the patient was already much better. A week after exposure she was nearly well. She then contracted influenza, and there was a slight recrudescence of symptoms, but they soon passed away without any further treatment, and the patient made a steady convalescence. The patient has not been seen for nearly 12 months, and presumably has remained quite well. On account of the severe disturbance following the large dose of radium it was considered inadvisable to employ it a second time. Probably a quicker convalescence would have resulted after a second much weaker exposure.
26	H. M.	23	M.	Interstitial keratitis; congenital specific disease	4 exposures of 29 mgrm. for 5 minutes with intervals of 1 week.	Failure	This was the worst case of its kind I have experienced. In spite of every kind of treatment that could be devised both corneæ sloughed, and one eye had to be removed. The other eye ultimately quieted down, but the whole cornea remained densely opaque. Radium was tried as a last resort in this eye, when the sloughing had ceased, in the hope of producing some clearing of the opacity. No reaction followed the exposures, but the treatment did not produce any noticeable result.
27	M. B.	29	F.	Keratitis profunda	4 exposures of 29 mgrm. for 5 minutes with intervals of 1 week	Much improved	A very interesting case. Five weeks previous to use of radium vision began to rapidly fail without apparent cause. There was a central grey plaque situated in deep corneal layers measuring 8 mm. in diameter. Surrounding cornea healthy. Subjective symptoms slight. Vision much affected. A month's treatment with fomentations, etc., had effected no improvement. A week after first exposure the plaque was smaller and less dense and vision improved. No reaction followed radium, which was continued for a month. Two months after last exposure an exceedingly faint nebula, about one third the size of the original plaque, was still visible.
28	S. C.	10	M.	Inflamed pterygium	6 exposures of doses varying from 39 mgrm. to 59 mgrm. extending over 3 months with about fortnightly intervals. No further treatment for about 4 months; then 3 further similar exposures during the ensuing 6 months	Cured	A most successful case. Patient had had 6 operations of transplantation during 3 years with no permanent benefit. When he first came under observation there was a very large, inflamed pterygium, forming a broad, succulent swelling, with large corneal involvement. The subjective symptoms were marked and the patient was in constant and extreme discomfort. The effect of radium was immediate and marked. No reaction or pain followed the large doses employed, but the inflammation and subjective symptoms rapidly subsided, and the pterygium began to shrink. After 3 months the bulbar conjunctiva had resumed its normal appearance, but over the corneal portion there was still a little juicy-looking swelling and some slight pannus. Nothing further was done for 4 months and no relapse occurred; but as a little pannus and swelling still persisted a few more sittings were given. At the present time no radium has been used for 4 months, and the patient is quite cured except for a slight degree of pannus at the corneal limbus.

No.	Name.	Age.	Sex.	Nature of disease.	Number of exposures and dose.	Result.	Remarks.
29	W. F.	31	M.	Bilateral pterygia partly cured by excision	1 exposure of 49 mgrm. and 1 exposure a fortnight later of 59 mgrm. applied through 13 mm. of lead foil	Cure completed	Patient had had successful operations for removal of large bilateral pterygia a year previously. The bulbar conjunctiva, however, remained red, rather chemosed, with continued irritability of both eyes, photophobia, and constant slight diplopia due to dragging of the conjunctiva on one side. The first exposure caused a good deal of intermittent pain for 2 days, and the second exposure was made through lead foil in the hope of preventing this from occurring again, and this was successful, as no pain was experienced. The first exposure produced rapid improvement in the subjective symptoms, and the eyes were much less red a week later. At the expiration of a fortnight the diplopia had quite disappeared, and the eyes were nearly white. The patient then went to West Africa, and was not seen for a year. On his return he stated that he had remained quite well for 6 months, but then slight redness of the bulbar conjunctiva on the right side appeared, and has continued ever since. The other eye remained permanently white and free from discomfort. Patient was just off again to West Africa, and nothing further was done.
30	J. W.	38	M.	Pterygium (not inflamed)	2 exposures of 29 mgrm. for 5 minutes with an interval of 1 week	Doubtful benefit	The patient was a captain in the Merchant Service, and had to return to sea before the effects of radium could be satisfactorily tested. No reaction or discomfort followed the exposures, and the pterygium seemed to us to be shrinking, but no positive statement can be made.
31	C. S.	48	M.	Inflamed pterygium	2 exposures of 5 mgrm. for 5 minutes with an interval of 1 week	Failure	A case of large pterygium, with extensive corneal attachment and considerable irritability of the conjunctival portion. It was resolved to see if small doses of radium would have any effect. No effect of any kind was noted, and we should have then proceeded to larger doses, but the patient presumably tired of the treatment and did not attend. The case is reported as evidence that probably large doses are needed to produce marked effect in cases of this sort.
32	L. B.	12	M.	Spring catarrh	8 exposures of doses varying from 39 mgrm. to 44 mgrm. and extended over 12 months	Cured	This case has already been fully reported (*vide* 'Trans. Ophthal. Soc.,' vol. xxix, p. 239). The length of time occupied by the treatment was due to caution through lack of experience. The boy has since remained quite well.
33	B. R.	30	M.	Spring catarrh	*Right.*—6 exposures to right lid extending over 4 months: 49 mgrm. for 20 minutes twice; 49 mgrm. for 10 minutes twice; 29 mgms. for 15 minutes twice *Left.*—Similar treatment to right.	*Right* cured *Left* improved	An extremely bad case, which had been under observation and treatment for over 3 years, without any benefit. The upper tarsus of each lid was extensively infiltrated with characteristic flat outgrowths. The right lid was treated first. Under cocaine, scissors were used freely to remove as much of the growths as possible, and to well freshen the surface. Very little could be got away. A week later 49 mgrm. were applied for 20 minutes, and the same dose and exposure was repeated again 3 weeks later. A month after the first exposure the condition was already much better, and then two sittings were given in one week of 49 mgrm. for 10 minutes. No more radium was used for a month, when one sitting of 29 mgrm. for 15 minutes was given. 2 months later a final exposure of 29 mgrm. for 15 minutes was made, the lid being then almost well. 6 weeks later the lid was examined, and no trace of the former trouble was apparent, the tarsus being quite smooth, without any appearance of cicatrix, except that there was a certain bloodless appearance in places. Treatment of the left was not commenced until the right lid was nearly well, and no previous shaving of the outgrowths was made. A similar method of treatment has been adopted in other respects. The lid is now practically well, but is still being kept under observation, and possibly one or two more sittings may be required. It may be mentioned that weak doses of radium (5 mgrm.) were tried 3 or 4 times without success before the patient came under our observation.
34	E. M.	40	F.	Rodent ulcer	3 exposures of 16 mgrm. for 10 minutes, the first 2 exposures with a week's interval, and the third about a month later	Cured?	A small rodent ulcer, situated on the face about 1 inch below the inner canthus. It was freely excised, but there was an obvious return of the disease in the scar a few weeks later. The patient was then sent for treatment by radium. No reaction until a week after the second exposure, when the scar was raised and reddened, and there was some pricking pain. This subsided in about a fortnight, leaving the scar white, supple, and free from infiltration. The patient was last seen 6 months later, and has remained free from recurrence.
35	F. K.	77	M.	Rodent ulcer	2 exposures of 29 mgrm. for 15 minutes, with an interval of 1 week, and a third exposure of 29 mgrm. for 10 minutes about a month later	Cured?	Typical rodent ulcer, involving whole of lower ciliary border, with much loss of surface at inner canthus, where the ulceration is severe. 8 weekly applications of 5 mgrm. for 5 minutes had been given before the case came under our observation. Some benefit to the outer portion of the growth had resulted, but the inner worse part had not improved. The condition was much improved a week after the first exposure to the larger dosage, and the ulcerated area thenceforward rapidly cleared up. 2 months after the first exposure he seemed to be cured, and a supple scar was alone to be seen. Patient has not since reported himself.

No.	Name.	Age.	Sex.	Nature of disease.	Number of exposures and dose.	Result.	Remarks.
36	O. S.	7	F.	Small nævus on cheek just below lid margin	2 exposures of 29 mgrm. for 10 minutes, with a fortnight's interval	Cured	No reaction for about 3 weeks after the first exposure, when the spot became redder and inflamed. Repeated small superficial scabs then formed and re-formed, with final healing delayed for a few weeks. 6 months after treatment the only indication of the trouble is a minute pink speck surrounded by a small area of blanched skin.
37	M. M.	14	F.	Pigmented papilloma of ciliary border	2 exposures of 29 mgrm. for 11 minutes with a week's interval	Cured?	A hard, nodular, pigmented swelling noticed for about 2 years, and though small, causing considerable disfigurement. Reaction to radium first noticed a week after the second exposure, when a scab had formed with a mild surrounding inflammation. No further radium was given as reaction was rather severe. A month later there was still a vestige of the growth left, but shrinkage was going on. The ciliary border on each side of the growth was entirely denuded of lashes.
38	M. A.	19	F.	Granuloma of lower lid	2 exposures of 29 mgrm. for 5 minutes with 1 week's interval	Cured?	For 7 or 8 months an increasing growth had been noticed on the palpebral surface of the lower lid. It formed a round sessile tumour, smooth on surface, which was covered by conjunctiva and apparently growing in connection with the tarsus. It was very hard to the touch and painless in character. A piece removed showed it to be composed purely of granulation tissue. 10 days after the second exposure the tumour had almost disappeared. The effect of radium in this case was simply to produce a rapid shrivelling of the growth. The patient was last seen a month later, when there was still a vestige remaining, consisting of a flat scar, but no obvious growth.
39	E. W.	37	F.	Angioma of ciliary border	3 exposures of 29 mgrm.; 1st exposure for 25 minutes, 2nd exposure a week later for 15 minutes, 3rd exposure 7 weeks later for 15 minutes	Much improved	A blood-cyst measuring 5 mm. in diameter and elevated about 2 mm. above the ciliary border. Noticed for 10 years, and lately increasing in size. It produced great disfigurement. Reaction was first noted 3 weeks after the first exposure, when a crust had formed over the angioma, which had shrunk considerably. A fortnight later the crust came away, leaving an inflamed scar. A month later the lid had quite healed, but as there was still a small but definite remnant of the growth radium was used once more. When last seen there was still a very small red swelling with the lid border denuded of lashes in the neighbourhood. It was not deemed advisable to use radium again.
40	H. R.	44	M.	Trichiasis (old trachoma)	—		These 3 cases were examples of that variety of trichiasis where the lashes as a whole do not brush the cornea, but where there are a few or several very fine downy colourless cilia scattered along the lid margin and setting up much irritation. Electrolysis is extremely difficult, and the lashes are so fine that the patient or friends cannot see to pull them out for themselves. An attempt was made to deal with the difficulty by treating the lid border with radium applied directly to the faulty lashes. The trials given were not a success. To ensure a good result a long and direct exposure is necessary, and after several endeavours it was found practically impossible to directly apply a tube of radium to a fine lash for a period of 15 minutes. Further, the lashes in the immediate neighbourhood are apt to suffer, so that a patchy baldness of the ciliary border may be produced in the attempt to rid the lid of one or two fine hairs.
41	M. B.	76	F.	Ditto	—	Failure	
42	E. H.	46	F.	Ditto	—		
43	A. M.	14	M.	Large and dense central corneal nebula	Several exposures in each case to both large and small doses	Doubtful	These 4 cases represent an attempt to deal successfully with the amblyopia caused by central corneal nebulæ. It is difficult to express an opinion as to the value of the treatment. In each case the patient after a few sittings expressed himself as being able to see more, and in Cases 43 and 46 there was definite objective evidence that the nebula was less dense. Attempts, however, to measure improvement in vision by test-types did not show conclusive proof of amelioration. It is certain that if any success is to follow the treatment of corneal scars by radium the exposures must be continued over a long period of time, and the dosage must be fairly large.
44	W. B.	50	M.	Ditto			
45	M. W.	31	M.	Ditto			
46	W. S.	24	M.	Ditto			

SERUM-ANAPHYLAXIS: A CASE ILLUSTRATING ITS POSSIBLE GRAVITY.

By A. BANKIER SLOAN, M.D.,

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The subject of serum-anaphylaxis is one that deserves the closest investigation. The leading article in the British Medical Journal of May 21st attracted my attention and reminded me of a case I had under my care in 1903, which I have often thought of reporting. I now put the facts of the case on record on account of the importance of the condition it illustrates and in view of the statement made in the said article that certain authorities hold "that serum-anaphylaxis in man gives rise to transient symptoms only, and never to dangerous or permanent consequences."

My case at the time of its occurrence was a complete mystery to me, and, although I did hear at the time that at least one other similar case had occurred in a Metropolitan Asylums Board hospital, no one to whom I referred could throw any light on the causation of the symptoms. It has been, however, for some time quite clear to me that the condition was due to anaphylaxis.

The patient was under my care in the Western Hospital, Fulham, one of the Metropolitan Asylums Board hospitals, and the facts are as follows:

H. C., aged 3½ years, was admitted to the Western Hospital on January 30th, 1903, suffering from faucial and nasal diphtheria. The faucial involvement consisted of swelling of the tonsils and the presence of patchy membrane; there was considerable rhinorrhoea; the glands at the angle of the jaw were not markedly swollen. The child received 12,000 units of diphtheria antitoxin (volume of serum about 30 c.cm.) on admission, and 12,000 units the following day, as, although the membrane on the fauces was not extensive, the child seemed moderately ill.

His recovery during the following week was unduly slow, his temperature keeping up in a way which to me did not seem quite accounted for by the local conditions. He had during this time a little bronchial catarrh.

On February 10th some punctate erythematous rash appeared on the trunk and face; there was a tendency to factitious urticaria; the lymphatic glands generally were rather enlarged. The following day the glands at the angle of the jaw were distinctly swollen and tender, and the evening temperature was 104.6° F. By the 13th a typical measly serum rash had developed and the face was slightly swollen. This rash was intense on the 14th, being distinctly haemorrhagic in character on the right hand and left leg. It was also noticed that although the throat was generally quiet the left tonsil showed a patch of haemorrhage.

Between the 11th and 16th the temperature was never below 101° F., and varied between that and 104.6° F. as a maximum (Chart 1); during this period the child was sharply ill.

His convalescence was slow for the type of diphtheria he suffered from, and this was due, I think, to the severe serum reaction. By March 16th he had only been out of bed for a few days.

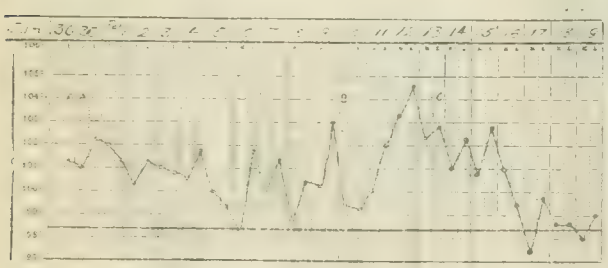


Chart 1.—A, 12,000 units A.T; B, rash; C, rash, haemorrhagic.

On the evening of March 16th his temperature rose to 100.6° F., and examination of the throat showed a patch of distinct membrane on the posterior pharyngeal wall. On account of his previous severe serum reaction no antitoxin was given that night. Next morning, however, as a small patch of membrane was present on each tonsil in addition to that on the pharynx, 12,000 units of antitoxin were administered at 12 noon. At 1.15 p.m. I got an urgent message from the staff nurse to come and see the child, as he was very ill. When I arrived immediately afterwards I found him ghastly pale in colour, anxious-looking, shivering, covered with a cold, clammy sweat, and almost pulseless. His condition was so urgent, and to me so unaccountable, that I at once sent for a colleague to see him with me. Fortunately, after the application of heat and the use of brandy and strychnine, he gradually warmed up and rallied somewhat. Marked urticarial rash appeared by 2 p.m., causing swelling of the face.

During the following night he was very restless and vomited frequently. On the morning of the 18th, although he was better, neither the radial pulse beats nor the cardiac sounds could be counted accurately owing to their great frequency. It was noted that subcutaneous haemorrhage had occurred around the seat of injection.

By the 19th he was considerably better, vomiting had ceased, and the heart rate was 152 per minute. From this time onwards the boy very gradually improved; the temperature, however, did

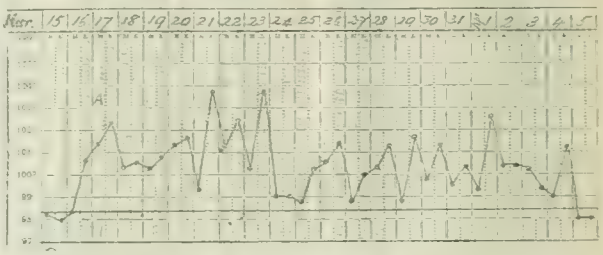


Chart 2.—A, 12,000 units A.T.

not settle to normal level till April 5th (see Chart 2), and three weeks after the start of the relapse. Induration was present at the seat of injection for fully a fortnight. He suffered during his convalescence from mild suppurative adenitis and right suppurative otitis media.

In passing, I would remark that a second attack of diphtheria following so closely, as in this case, upon a first is very rare. In this connexion the question as to the first attack being true diphtheria might be raised. I must admit that a bacteriological examination was not made, but on the admission of the patient in my own mind I had no doubt as to the diagnosis.

It is interesting to note that during the first attack from the outset I had an impression that the serum was distressing the child, and when the real reaction did appear it was, as above noted, very marked.

The chief point of interest, however, in the case was the occurrence of sudden collapse after the injection of serum at the onset of the second attack. As stated above, at the time the cause of this was to me a mystery. In the light of further knowledge, however, and for the following two reasons, I have no doubt that the grave condition was due to serum-anaphylaxis: (1) The collapse occurred within two hours of the injection without other apparent cause and while the child was lying quietly in bed; (2) the collapse was accompanied by the almost simultaneous appearance of a marked serum rash of the urticarial type. Apart from the twenty-four hours' urgent illness following on the injection, I also think that the prolonged febrile period thereafter and the slow convalescence were chiefly due to the serum phenomena.

If my conclusion, that the very grave condition of my patient was due to serum-anaphylaxis, is right, then it must be admitted that serious results may occur from anaphylactic phenomena.

It is, therefore, of the greatest moment from a clinical point of view that we should know more about the exact conditions under which the phenomena are likely to occur. This is specially important in view of the fact that foreign serums are now being put to such diverse uses. Anti-diphtheritic serum in addition to being used as a curative agent in diphtheria is used as a prophylactic agent for the same disease, is recommended as an antituberculous measure (Montgomery Paton), is used by some for asthma, and finally (a special serum) is used by a Paris physician for the treatment of diphtheritic paralysis. The latter proceeding, in view of the possibility of anaphylaxis occurring, would suggest itself to one as being specially open to objection when one remembers the weak condition of many patients suffering from diphtheritic paralysis.

In conclusion, it is my opinion that, until we have more accurate knowledge of the circumstances bringing about anaphylaxis, we should be particularly cautious not to inject foreign serums without good reason, because we may by doing so render our patients so sensitive that a future necessary injection may cause grave consequences.

SEVENTY-EIGHTH ANNUAL MEETING
OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF BACTERIOLOGY.

CHARLES J. MARTIN, M.B., D.Sc., F.R.S.,
President.

DISCUSSION ON RECENTLY ACQUIRED KNOWLEDGE CONCERNING THE BIONOMICS OF PATHOGENIC ORGANISMS AND ITS BEARING ON THE SPREAD OF DISEASE.

OPENING PAPERS.

I.—A. C. HOUSTON, D.Sc., M.B., C.M.Edin.,
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I VENTURE to think that in the past we have been attaching, consciously or unconsciously, far too much attention to dead matter and the passive transmitters of disease—namely, soil, water, air, and foods—and have been bestowing far too little consideration on the living storehouses and factories of pathogenic bacteria. Soil, water, air, and foods may, it is true, be teeming with life, chiefly of an adventitious sort, but, in contradistinction to "living carriers," these agencies (as such) should, I think, be regarded as dead and merely passively concerned in the propagation of disease. It needed the work of men like Manson, Ross, Bruce, Horrocks, Shipley, Nuttall, and Sambon, to mention but a few names, to bring home to us the insufficiently recognized part played by living creatures in the propagation of disease.

Let me cite a few examples of diseases (not all, however, of microbial origin) which have been either stamped out, or at least their incidence greatly diminished, by attacking the living agencies which fostered their spread. Rabies is no longer regarded as a myaterious disease arising out of some climatic combination of circumstances. The Muzzling Order has served to stamp out a disease which, while not very common, was yet so dreadful in its ending as to prove a nightmare to a great many people. The great part played by Mr. Walter Long, then President of the Board of Agriculture, should not be forgotten in this connexion. Malaria, to take another instance, has ceased to be associated with lethal vapours arising from swampy ground. Drainage, petroleum, and the mosquito-net have robbed this disease of most of its terrors. So also Malta fever is no longer a subject for vague epidemiological generalities and hypotheses. The "banning" of the infected goat has revolutionized the whole history of this complaint. To those who regard bacteriologists as faddists, and vivisectors as active demons of cruelty, I commend an unbiassed study of the work of the Malta Fever Commission. The work of Bruce and Horrocks and their colleagues has practically resulted, as I am informed, in a saving to the nation of £40,000 a year, not to speak of the stamping out of a chronic disease entailing much suffering, now known to be preventable; and just recently we are learning that pellagra is not, as was supposed, caused by the consumption of diseased grain, but by a species of sand-fly. The foregoing are only a few illustrations of the extreme importance of seeking out and, if possible, of annulling the baneful influence of these living creatures which act as storehouses or factories of disease.

I propose to deal with the subject-matter of this discussion under two headings: (1) The dead and merely passive transmitters of disease; (2) the living storehouses or factories of disease.

I.—*Dead and Merely Passive Transmitters of Disease.*

(*a*) *Soil.*—Belief in the influence of soil as a propagator of disease dates back to times immemorial, and even within recent times polluted soil has been the sheet anchor of many epidemiologists. Nearly all soil in the neighbourhood of dwellings is necessarily more or less contaminated, yet this factor has been used on the most slender evidence as explaining the cause of epidemics of obscure origin—epidemics which would still have remained obscure if the soil, as such, had been even ten times more polluted than was actually the case. Putting on one side sporing microbes such as anthrax and tetanus, the most trustworthy evidence nowadays tends to show that pathogenic bacteria not only do not multiply in soil, but that they undergo therein a process of gradual extinction. It is, of course, not suggested that polluted soil or dust, gaining access to food or water supply are not dangerous, but it is exceedingly difficult to believe that soil acts as an active breeding ground for pathogenic microbes, or that in the absence of fresh pollutions it can remain indefinitely infective. The danger of a polluted soil and subsoil rests, in my opinion, almost solely on the possibility of water or food becoming accidentally infected therefrom.

(*b*) *Air.*—In diseases of proved microbial origin, apart from the setting free of "droplets" of saliva and the detachment perhaps of particles of scurf, it is difficult to see how a patient can continuously produce an infective atmosphere, even in his immediate environment. Nowadays increasing importance is justly assigned to personal contact and "carriers." No doubt many cases attributed to atmospheric influences were in reality infected in this manner. Whatever views are held on this subject, all of us will agree that microbes are not "chained down to points in space." We shall also probably agree that pathogenic bacteria do not multiply in the air, and that the air, as such, is not the factory responsible for bridging over the gap between one epidemic and the next. With reference to the setting free of "droplets" of saliva inside a certain zone of influence, and the bacteriology of air generally, Mervyn Gordon's most interesting experiments deserve special mention.

(*c*) *Defective Drains, Sewer Air, Foul Smells, etc.*—Assuming that leaking drains do not cause the contamination of drinking water or of food, their influence on the spread of disease seems very problematical. Nervous persons with hypersensitive imaginations can no doubt work themselves into a state of ill-health by worrying over bad smells, otherwise I believe the malignant influence attributed to foul odours has been grossly exaggerated. Haldane, Andrewes, Horrocks and others have carried out most exhaustive researches as regards sewer air. Whilst not denying the possibility of disease organisms being at times conveyed by this means, the extreme improbability of sewer air being a factor of much importance is the view which rests on the foundations of fact and common sense. Sewer air (in the absence, at all events, of much splashing and bursting of bubbles) not only contains very few microbes, but excremental bacteria are almost entirely absent. Sewage contains hundreds of thousands of *B. coli* in every cubic centimetre, and even if it also contains specific bacteria, it is only reasonable to suppose that the latter are present in infinitely smaller numbers than *B. coli*. If sewer air, then, were charged with *B. coli* the occasional accompanying presence of specific bacteria might be conjectured. But knowing that it is not, I can only regard the attributing of *direct* pathological significance to sewer air as a fetish of the past.

(*d*) *Water.*—The dangerous part that may be played by water in transmitting disease is now acknowledged by every one. But it is important to bear in mind that pathogenic bacteria not only do not multiply in water, but tend fairly rapidly to lose their vitality. One reason why the consumption of sewage-polluted river water after filtration is so seldom followed by apparent evil consequences may really be, not because the filtration process is invariably perfect, but that the water *antecedent to filtration* is *comparatively* innocuous. In the absence of convincing evidence to the contrary, I regard sand filters as mechanical devices which bring from 2½ to 5 pints of filtered water to the same plane of bacteriological quality as 1 oz. of unfiltered water. The history of the search for *B. typhosus* in water is an interesting one. In 1905

Willson published a striking paper,* in which he pointed out that he had been able to collect only 6 cases in which the *real B. typhosus* had been isolated from water. All these cases occurred abroad, and the water in 4 out of the 6 cases was from wells. If Willson was writing a similar paper in 1910, it appears to me not unlikely that his story would remain much the same. An eminent Frenchman once warned his students that in scientific research, unless they were very careful indeed, they would find what they were looking for. This, it is to be feared, is precisely what has happened in water bacteriology, and it is a matter for much regret.

Reverting to the question of sewage-polluted waters in general, and the presence of pathogenic microbes therein, it may be of some interest if I give a brief account of my own experiences. During 1907 and 1908 I examined 156 samples of sewage-polluted river water, using tried methods, which allowed of the vast majority of "water microbes" being excluded from consideration. The result was that out of 7,329 *selected* microbes, not one could be identified as *B. typhosus*. It is perfectly easy, however, to isolate from almost any impure water some microbes which will pass muster as the typhoid bacillus, according to the standards for identification adopted by some workers.

At the time of writing this paper twenty-four additional experiments have been carried out. Each sample of water was divided into two equal portions of 500 c.cm. (A and B). The A sample was artificially infected with a definite number of typhoid bacilli and Gaertner's bacilli. Both samples were next separately centrifugalized, the deposit spread over a similar number of plates, and the same number of colonies subcultured in each case. In brief, apart from the infection of the A sample, both samples were examined in a precisely similar manner.

As regards the A (artificially infected) samples, the *average* number of typhoid bacilli and Gaertner's bacilli added per c.cm. of the water was 2.242 and 0.686 respectively. The average number of these pathogenic microbes isolated was 14.54 and 12.417 respectively, a result which shows that the methods adopted were not at fault. By inference it may be concluded that it is possible to isolate the typhoid bacillus and Gaertner's bacillus when present in the proportion of 1 typhoid per 7 c.cm. and 1 Gaertner per 18 c.cm. of water.

As regards the B (non-infected) samples the same number of subcultures (5,451) yielded results as follows: As many as 5,449 of the microbes were neither the typhoid bacillus nor Gaertner's bacillus. Of the remaining two, one could not with certainty be differentiated from Gaertner's bacillus, and the other was almost, if not quite, indistinguishable from *B. typhosus*. Even if we accept these two microbes as of pathological significance, it is obvious that typhoid and paratyphoid bacilli are very rare in sewage polluted river water, and that thousands of subcultures are required to demonstrate even a single one. The following is a description of the chief morphological and biological characters of the two microbes referred to:

The Gaertner-like microbe is a small rod-shaped actively motile bacillus, which is agglutinated with anti-Gaertner serum. It produces gas in mannite and dulcite media, but no gas in a gelatine medium containing glycerine, raffinose, salicin, saccharose, adonite, and lactose. The surface growth on gelatine is less transparent and more slimy-looking than that of the classical Gaertner's bacillus. It forms no indol in peptone cultures. It produces alkali in litmus whey and litmus milk cultures. There is no liquefaction of gelatine. The typhoid-like microbe is a small multiflagellated rod-shaped, actively motile bacillus, which is agglutinated with antityphoid serum in high dilutions. An animal immunized with it yields a serum which agglutinates in high dilutions both itself and the typhoid bacillus about equally well. It produces acid but no gas in Proskauer and Capaldi's No. 2 medium, and in the No. 1 medium no change occurs. In a mixed lactose, saccharose, dulcite, salicin medium no change occurs. No indol is produced in peptone cultures. In litmus milk there is slight acidity produced, but no clotting of the medium. There is no liquefaction of gelatine. In glucose neutral red broth cultures a purplish tint is produced, but no gas or fluorescence. In media containing separately sorbite, mannite, glucose, levulose, galactose, and maltose, acid but no gas is produced. In media containing separately inulin, inosite, saccharose, salicin, adonite, lactose, dulcite, and raffinose no change occurs. It reduces nitrates to nitrites. Voges and Proskauer's test yields negative results. No visible growth occurs on potato.

Excepting these two microbes, I have never been able to isolate from water any microbes which could not readily be differentiated from the typhoid bacillus and Gaertner's bacillus. One great fallacy in connexion with typhoid work is that a large number of "water microbes" are very feeble gas producers, and, when grown in liquid sugar medium, no gas is visible in the inner inverted tube. In many such cases, however, on tapping the tube smartly with a flat piece of wood, a cloud of bubbles rise to the surface.

But really the best way, in my experience, of demonstrating the capacity of such microbes to form traces of gas is to use not liquid but solid gelatine sugar tubes, incubating the cultures for three to five hours at 37° C., and thereafter for one to two days at 20–22° C. I could cite hundreds, and even thousands, of instances in which microbes which failed to show any visible gas formation in Proskauer and Capaldi's No. 2 medium, yet gave abundant gas in solid gelatine sugar media. All those who pay attention to this important technical detail will save themselves a vast amount of unnecessary labour, and will at the outset be able to exclude microbes which otherwise might give rise to a great deal of confusion and trouble.

It must not be supposed from what has been said that I am endeavouring to show that sewage-polluted river waters do not at any time contain pathogenic bacteria. All that I wish to point out is that, according to my experience, they can only be present infrequently, and only in small numbers. The satisfactory health statistics not uncommonly noticed in the case of towns whose drinking waters are of this class may be due more to this circumstance than to the efficiency of mere sand filters. Epidemics occurring in the case of such towns may be really due, not to any temporary inefficiency or breakdown of the filtration plant, but to the unfiltered water becoming suddenly and accidentally grossly polluted with infective material, or to some accidental contamination of the supply after filtration.

Turning our attention next to sewage, the question may be asked whether even the crude sewage of a large town is invariably so dangerous a substance in small amounts as is commonly supposed, or whether it really plays a large part in spreading disease. It is quite possible that it is less constantly harmful than is generally conjectured, because it is difficult to imagine any continuous source of supply of specifically infective material rendering it necessarily and uniformly dangerous even in small amount. The sewage of a town of 100,000 inhabitants amounts to about 3 million gallons daily. If it is reasonable to assume that the urine and faeces of persons who have *never* contracted typhoid fever is specifically non-infective, the whole burden of rendering the 3 million gallons daily specifically infective rests on those persons who are actually suffering from typhoid fever or who have at one time so suffered. I ask these questions to stimulate useful discussion, and it must not be supposed that my own mind is at all clear as to the proper answer.

(*e*) *Solid Foods.*—Solid foods (excluding for the moment shellfish) would not seem to play any very large part in the propagation of epidemic disease. Vegetables, however, eaten in the uncooked condition and grown in sewage-polluted soil or water are potentially dangerous. Solid foods may also be infected by contaminated dust or by flies carrying infectious matter. Whatever be the infection conveyed to solid food it is probably limited to the actual dose of infective material, for the reason that it is unlikely, generally speaking, that multiplication takes place. In regard to shellfish, there is strong evidence as to the danger of eating shellfish grown or laid in sewage-polluted waters. As a rule, the degree of pollution of the water in which shellfish are grown or laid is not excessive, but I have found by numerous comparative experiments that, per unit of volume, an oyster is vastly more impure than the water surrounding it. Shellfish are undoubtedly "concentrators" of pollution. Apart from its brackish character, I would much rather drink a litre of the water in which oysters were growing, than eat a single one of the oysters themselves.

(*f*) *Liquid Foods.*—Liquid foods stand in a separate category from solid foods in relation to the spread of disease. Here actual multiplication *may* take place, and

* The Isolation of *B. typhosus* from Infected Water, with Notes on a New Process.

so greatly increase the danger of widespread infection. Moreover, certain kinds of liquid food (such as milk) are exposed in a special degree to the risk of undesirable pollution. Nevertheless, the milk of a perfectly healthy animal is practically germ free as secreted, and any risks involved in the consumption of milk must be due either to accidental contamination or to the animal secreting the milk being in a diseased condition. At the recent tuberculosis conference at Edinburgh I understand that most speakers admitted the relatively infrequent occurrence of bovine infection and considered that man was especially infected by man, the infection usually being aëro-lymphogenous. In summary at this stage, I have endeavoured to suggest that perhaps too much importance has been attached to those agencies which, in the main, act chiefly as passive transmitters of disease.

Is the belief not permissible that all the agencies I have considered would cease to be operative in carrying on the work of infection if it were only possible to exclude from our environment all the living creatures who are suffering, or have at one time suffered, from infectious disease, or which, although not themselves sufferers, yet store in their bodies the germs which are infective to others?

II.—*The Living Storehouses or Factories of Disease.*

If the agencies previously considered play no more than a passive part in the propagation of disease, where are the active repositories of infections to be found? Unquestionably, I think, as already suggested, in living creatures who are suffering, or who at one time have suffered, from infectious disease, or which, although not themselves sufferers, yet store in their bodies the germs which are infective to others. If the tendency in soil, water, and air is towards the destruction of pathogenic bacteria, it is only reasonable to turn to *living* matter as the probable factory which keeps infectious matter alive, and to regard infected living creatures as the "carriers," which probably serve to bridge over the gap between one epidemic and the next.

Of course, with some diseases, the virus may be specially resistant, and retain its infective qualities for long periods, until, indeed, the chance is afforded of its re-entry into a suitable and susceptible host. Even with some diseases of known microbial causation such things occur. We know, for example, that anthrax and tetanus infected soils are almost permanently dangerous. But I am not suggesting that dead matter plays no part in fostering contagion, or that the living "carrier" is necessary for all diseases. I am merely advancing the opinion that in the past we have attached, generally speaking, too much importance relatively to the former and too little to the latter.

Within recent years we have learnt that flies and insects (using these terms in their broadest sense) play a most important, and, indeed, vital, part in the propagation of certain diseases. Niven, Hamer, Graham Smith, and others have specially studied the question of house flies as carriers of infection, and I have heard it suggested that there is some experimental evidence to show that flies may not only act as passive carriers of filth from one place to another, but actually allow of the *multiplication* of pathogenic bacteria in their interior. If this is confirmed, then these pests of civilization acquire an importance not hitherto assigned to them, and every effort should be made to effect their destruction. Apart from this, I find it not a little difficult to understand from whence flies derive their infectious matter, if we regard the excretions of *healthy* persons as specifically non-infectious.

Within recent years we have come to learn that a considerable proportion of those who have contracted typhoid fever harbour the typhoid bacillus for indefinite periods, and therefore are apparently a permanent menace to the community. Such persons would seem, in the truest sense of the words, to be living manufacturers of enteric fever. As regards the search for these individuals and the feasibility of annulling their dangerous influence, I must leave those to speak who have made this difficult subject their special study. Further, I can only make a passing mention of the important question as to whether the excreted bacilli vary in virulence either seasonally or occasionally.

But I would like to point out that as typhoid is not the only disease liable to be spread by carriers, the time is ripe for reconsidering the question of how far infectious diseases generally are spread in this manner. I trust that some of those who take part in the discussion will deal not only with typhoid fever, but with other diseases known or suspected to be spread by carriers—for example, dysentery and diphtheria. It is possible that we may not be spending too much time and money on the purification of impure substances, on the protection of pure materials from contamination, and on the avoidance of dangerous surroundings; but it is quite certain, in my opinion, that as a nation we are devoting far too little attention to the attempt to discover and render inoperative the living storehouses and factories of disease which alone seemingly are responsible for rendering undesirable but harmless pollutions specifically dangerous.

At all events, it appears to me that work on these "living lines" affords the best hope for progress in preventive medicine. It may be urged that these preventive measures are wellnigh impossible, but it must not be forgotten that the same hopeless attitude used to be adopted in regard to rabies, malaria, and Malta fever. At all events, until we realize and can trace out more fully the part played by living creatures in keeping alive the germs of disease, and study this subject systematically from the point of view I have indicated, we are really not in a position to speak either of impossibilities, or even of improbabilities.

II.—Professor Dr. Otto Lentz,

Chief of the Department of Epidemic Diseases at the Royal Institute of Infectious Diseases in Berlin.

THE ORGANIZATION AND RESULTS OF THE TYPHOID CAMPAIGN IN SOUTH-WEST GERMANY,

With Special Reference to Typhoid Carriers.

After Robert Koch had obtained such brilliant results in his systematic campaign against cholera and malaria, he felt encouraged to take active measures against typhoid fever. With the help of the authorities, a total of eleven bacteriological stations, each fully equipped for the campaign, was organized in the Prussian district of Frier, in the Bavarian Rheinpfalz, in the Oldenburgian principality of Birkenfeld, and in the territory of Alsace-Lorraine.

The scientific direction of the typhoid campaign was entrusted to Professor Frosch, while in order to unify the relationship of the stations to the State and communal authorities, an Imperial Commissioner and a Land Commissioner (for the Bavarian Rheinpfalz)—both higher officials—were appointed. At each station was placed a director, having under him from one to three bacteriological assistants and one or two laboratory attendants.

These stations have four duties:

1. To assist the practitioners in the diagnosis of typhoid.
2. To ascertain the source of infection, to render it innocuous, and seek out infected persons at a distance.
3. To be on the look-out for unhygienic conditions.
4. To determine, by repeated examination of stools and urine, when convalescents cease to eliminate typhoid bacilli, in order to prevent them from transmitting the disease.

The carrying out of all the necessary measures is naturally only made possible by having the stations work hand in hand with the official medical men of each district. To them they communicate the positive results of their examinations as well as their observation of unhygienic conditions. They make their investigations in company with them whenever possible. These official physicians have the power of causing the isolation of the sick or their transference to hospitals, and carry out both disinfection at the bedside and the final disinfection. They see also to the removal of unhygienic conditions, and must take special care that the precautionary measures ordered are not relaxed till it has been definitely settled by bacteriological examination that the convalescents eliminate no more typhoid bacilli.

This latter is regarded as proved if, after the patient has become completely afebrile, two bacteriological examinations, made eight days at least apart, no longer show typhoid bacilli in the stools and urine.

Of special importance is tracing of the sources of infection and unknown infected individuals. It was very soon evident that the typhoid reports of the practitioners were often merely indices which only needed to be followed up to establish a larger number of typhoid cases. Thus it frequently happened that when 1 or 2 typhoid cases were reported, 10, even 20, additional cases might be discovered; in one instance Professor Frosch discovered 73 cases of typhoid in a place in which only 7 were reported. The cause of this discrepancy lies in the fact that on the one hand many patients, especially those in the country, do not consult a physician, while on the other the clinical diagnosis of typhoid fever is often beset with extraordinary difficulties.

In these systematic investigations a perusal of the lists of school absences, sick cases, and deaths proves of great assistance; through them many valuable hints were obtained which led to the discovery of unknown typhoid cases. Whenever it was possible the examination of suspected persons was immediately undertaken, through the examination of a blood specimen and if possible of a stool, in addition; which the patient sent in a case supplied by the station. The data so obtained gave the occasion to set up investigations in the houses of the parents and relations of the suspects, and thus to widen the scope of the inquiry. The stations were also indebted to the communications of the local authorities, teachers, and ecclesiastics for much valuable information.

The typhoid crusade, the organization and method of work which I have briefly sketched here, has brought to light many significant facts. First of all, it was only natural that from it the bacteriological diagnosis of typhoid should receive a great stimulus to which we owe the working out of a large number of now well known methods. I mention here besides the Drigalski-Conradi and the endo-agar methods, which were already known at the beginning of the typhoid campaign, and which by the way have excellently stood the test of time, the widespread use of malachite-green-agar of Lentz and Fietz, the coffein-agar of Gaethgens, the brilliant green acid agar of Conradi, the malachite green-bile-agar of Badlewsky, and the bile method of Conradi—all methods which have extraordinarily advanced the diagnosis of typhoid.

The constant control of the clinical picture by bacteriological methods, and the investigation of cases in which there was only a slight suspicion of typhoid, have caused our knowledge of the pathology and the clinical symptoms of typhoid to undergo manifold changes. Thus, the presence of typhoid bacilli in the roseola, in the urine and bile, and their frequent demonstration in the patient's blood, pointed with ever-increasing force to the fact that typhoid was not at all, as was previously thought, simply an intestinal disease, but a general septic infection. Though admittedly the most frequent, yet the lymphatic apparatus of the intestine is not always the portal of entry; of great significance are the observed cases of tonsillitis, especially in the beginning of the sickness (according to v. Drigalski, in 40 per cent. of the cases), in which myself and others have been able to demonstrate in the tonsillar scraping that the lymphatic apparatus of the upper digestive tract may likewise be the portal of entry.

Multiplication of the typhoid bacilli does not, as was formerly generally held, take place in the intestinal contents; on the contrary the sequence seems to be that the bacilli are carried into the bile by way of the blood stream, and with the bile eliminated in large numbers into the intestine, and then, as v. Drigalski and Fürgens have shown, gradually perish in the lower intestine. This explains why in typhoid cadavers so many typhoid bacilli are present both in the gall bladder (Chiari, Neufeld, Klinger) and upper intestinal segments (v. Drigalski, Fürgens, and others), and why at times their demonstration in the lower intestine is so extraordinarily difficult. That, indeed, the typhoid bacilli found in the blood are carried into the bile, and with it eliminated into the intestine, both Doerr and Hoffmann have demonstrated by animal experiments.

Through the work of the typhoid stations, the classical clinical picture of typhoid underwent a very essential alteration. Already, Griesinger, in Virchow's handbook of the special pathology and therapy, had alluded to the fact that during a typhoid epidemic, side by side with the well developed cases of typhoid a series of lighter cases always ran parallel, which though differing markedly from the picture of true typhoid, nevertheless are to be included with it. These wholly forgotten observations of Griesinger regarding such cases were completely verified through the bacteriological demonstration of typhoid bacilli or a positive Widal reaction. The large number of systematic investigations which we have carried out in the neighbourhood of typhoid cases have taught us that the disease presents most varying pictures—from simple sore throat to pneumonia, from a mild gastric catarrh to perforated peritonitis, from a slight headache to meningitis—may all owe their existence to an infection by typhoid bacilli. Moreover, the so-called cardinal symptoms of typhoid abdominalis may be developed to so slight a degree that only a bacteriological examination will be able to throw light upon the etiology of the disease. Children and elderly people frequently develop such typical symptoms, and among children, at least, typhoid usually runs a mild course. Thus it is explained, as Frosch and Brückner have shown, that children form a large percentage of the typhoid cases, and have a very essential part in the spreading of the disease. For example, Frosch found in the epidemic above mentioned that among the 73 typhoid cases no less than 52 were children. Furthermore, there has been no confirmation of the notion that neither children in the first year of life nor the senile contract typhoid. I have, in fact, frequently confirmed typhoid in children between 4 and 6 months old, as well as in old men between 60 and 80 years. Just as little can I verify the idea formerly held valid that women in childbed do not contract typhoid. Similar observations to those here described have been made in all the stations for typhoid research.

Valuable observations have likewise been made in the typhoid research stations regarding the clinical symptomatology of paratyphoid. Lack of time, however, prevents me going more deeply into this subject. An extremely surprising observation is this, that side by side with typical cases and mildly sick cases are found individuals who for weeks running eliminate typhoid bacilli with their excrements without, however, having at any time a single classical symptom of typhoid, not even a mild discomfort to point to the condition. In such individuals there follows a reaction of the body tissues against the invading typhoid bacilli; we must from a general pathological standpoint, likewise regard these healthy carriers of bacilli as typhoid cases, even though they be typhoid cases without clinical symptoms.

Epidemiologically, however, of greater importance is the further fact that the elimination of typhoid bacilli may not cease with the beginning of convalescence, but may persist during the convalescence for weeks, even for months; in fact that, as I myself have shown, in a certain percentage of cases even after complete recovery, the elimination of bacilli may persist for years, presumably till the end of life. According to one of my estimations, based on the large amount of material of the research stations in Idar and Saarbrücken, of all persons who have had typhoid, about 4 per cent. remain chronic carriers of bacilli. According to Brückner, whose data are based upon observations made in Strassburg, as well as those of Frosch, Schneider, and Park, the proportion may rise even as high as 5.1 per cent. The chief sites for the multiplication of typhoid bacilli in the carriers are, according to many investigations in which Forster and Josef Koch are pre-eminently concerned, the gall bladder and the larger bile passages. Klinger reported that in three cases of carriers of bacilli who came to autopsy, typhoid bacilli were found in large numbers in the bile. According to the investigations of Josef Koch, small colonies of typhoid bacilli are frequently found under the mucous membrane of the bile ducts. These make their way into the bile ducts. This location of the bacilli outside the general circulation and in the widely ramifying bile ducts explains why, up to the present, all attempts to free the bacilli carriers from the organisms—whether through internal medication, through active or passive immunization, or through cholecystectomy, as first recommended and carried out by Dehler—have completely miscarried.

About 75 per cent. of all typhoid carriers are adult women. Children only exceptionally remain typhoid carriers. This circumstance that women, often with large families, remain bacilli carriers, simplifies very materially

the problem of combating the danger of their becoming wide spreaders of the disease. It is sufficient, usually, to point out the possibility of infecting the family in order to make such women pay attention to the necessary cleanliness, especially of their hands, after defaecation, and of the careful handling of their soiled linen; and if this is done a great deal has already been accomplished, so that the employment of more stringent measures, which, on account of the duration of the condition, could not be persistently carried out, can be dispensed with. Naturally, bacilli carriers must, however, under all circumstances, be excluded from matters pertaining to food and the dairy.

That, indeed, the typhoid bacilli eliminated by the chronic carriers are able to produce new infections has been abundantly proved by the comprehensive and unequivocal material of the typhoid research stations as well as by repeated confirmation from other sides.

In fact, it has not rarely been observed in a place that just the first cases of sickness, coming after a longer or shorter interval, were caused by bacilli carriers, and that the infection still more widely spread by these sick persons. That, however, the infections caused by the bacilli carriers are not so frequent as one would at first sight suppose, finds its explanation in the fact that very soon all persons in the immediate neighbourhood of the bacilli carriers become infected, and go through typhoid fever in severer, or, especially as far as children are concerned, milder, form. There arises, therefore, about the carriers a regional immunity which to a certain extent acts as a protective wall for the more distant neighbourhood. Thus it is also explained that in the dwellings of such carriers, the so-called typhoid houses, it is seldom that a member of the family, but with great regularity outsiders—that is, visitors, new domestic servants—who fall sick of typhoid.

The transmission of bacilli from the sick or the bacilli carriers to the healthy results in the vast majority of cases from contact, whether it be from direct contact with unclean hands, or indirect contact, that is, the disease germ falling first upon objects—linen, the ground—and thence being transmitted to the healthy. In this manner long contact chains may arise.

Infected drain water, water courses, and wells, from lack of precaution in the handling of milk or other foods, are sources of infection that may lead to the sudden appearance of typhoid in a large number of people. Such explosive-like epidemics arising from a common cause tend to excite the general attention which only exceptionally is started by the endemic form in the course of long contact chains.

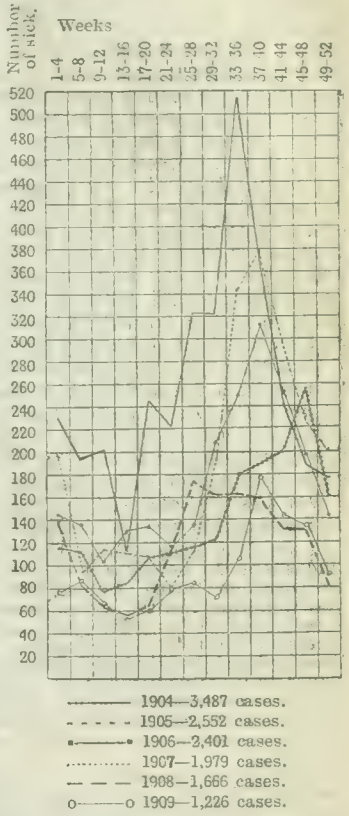
Through the natural fluctuations of the population, through immigration and wandering labourers, typhoid is borne into other uncontaminated districts, a factor which is of importance in typhoid epidemiologically.

I must content myself with these few remarks about the epidemiology of typhoid. Anyone who pays attention to the customs of the people, especially of the country people and the behaviour of the children at play, or who glances at their commonly defective living conditions, arrangements for water supply and the disposal of excrements, will recognize without difficulty the manifold ways in which typhoid bacilli can be transferred from the diseased to the healthy and will discover the unhygienic conditions which favour the outbreak of typhoid infection.

Surely no infectious disease of man is so adapted as typhoid to shed light upon all the hygienic conditions under which we live or to disclose their defects. How much the typhoid campaign improved hygienic conditions is shown in the communication of Schneider, which states that in the Prussian Governmental district of Frier alone between the years 1904 and 1907, 186 new water systems had been installed, 4 localities entirely drained, and 59 localities in part, and that 51,000 refuse places, 58,000 closets, and 345 000 metres of street gutter had been constructed. During the same period in the Bavarian Pfalz, 122 water systems and 18 drainages have been newly built or widened, and in Alsace-Lorraine in 233 parishes more or less extensive improvements of the drinking-water supply have been carried into effect. That this comprehensive betterment of the hygienic conditions has proved itself of great value not only with regard to typhoid but to all infectious diseases, goes without further discussion.

Finally, a few statistical data concerning the typhoid morbidity will show how considerable a reduction of typhoid in the campaign districts is owing to the co-operation of the different factors of the systematic campaign.* First of all I should like to refer to the accompanying chart, in which the positive typhoid cases occurring between 1904 and 1909 in the whole campaign district are arranged together in the form of curves. A single glance at the chart shows that the absolute number of typhoid cases has diminished materially from year to year. Above all, however, the apices of the curves representing the late summer and autumn are lower from year to year. This latter circumstance is due to the fact that in the earlier years there were still many fairly large epidemics arising from common sources which often caused the typhoid frequency to mount very quickly, while in the last two years only two such epidemics in all occurred. The prevention of such epidemics is a significant immediate result of the typhoid campaign.

Typhoid Fever Morbidity in the Whole Region of the Typhoid Campaign Work.



It has been further noted on the table that the typhoid morbitity in 1904 amounted to 3,487 in 1905 to 2,552, in 1906 to 2,401, in 1907 to 1,979, in 1908 to 1,666, and in 1909 only to 1,226 cases. In 1909, therefore, the number was only one-third of that of 1904. Among each 10,000 inhabitants in the entire campaign district, 10 9 in 1904, 8 in 1905, 7.5 in 1906, 6.2 in 1907, 5 2 in 1908, and 3.9 in 1909, contracted typhoid. (In the whole of Prussia during the same period the percentage computed as above diminished only from 4.3 to 3 4 per 10,000) Also the number of places which were attacked by typhoid in the campaign district shows an unmistakable reduction. For example, in 1904 18.4 per cent of all places (villages and towns) were attacked, in 1905 16 per cent., in 1906 15.5 per cent., in 1907 14 5 per cent., in 1908 14 per cent., and in 1909 only 9.8 per cent.

These data speak an eloquent language; they show unequivocally that the systematic campaign planned by Robert Koch in the face of many difficulties—such as the bacilli carriers, who were first recognized during the campaign—has succeeded in reducing typhoid very materially. These evident results bring with them the hope that in no far distant time the civilized world may be freed from this scourge of mankind.

III.—Drs. F. A. Bainbridge and R. A. O'Brien.

THE DISTRIBUTION OF CERTAIN BACILLI OF THE FOOD-POISONING GROUP.

The distribution of *B. suipestifer* and *B. paratyphoid* B and their relation to disease in man have during the last few years attracted much attention and given rise to considerable differences of opinion. We propose first to summarize the current views on the subject and then to refer

* These statistical data for the years 1904-8 I have taken from Fornet, Beiträge zur Physiologie der Typhusverbreitung, *Ztschr. f. Hyg. u. Inf.*, Bd. 64, p. 364, ff. The data for 1909 I owe to the kindness of the Imperial Commissary Ober-Regierungsrat, Dr. Schreiber, at Saarbrücken.

briefly to our own observations as to the occurrence of these organisms.

Current Views.—The two main points at issue at the present time are (*a*) the relation of these two bacilli to each other, and (*b*) their occurrence in diseased and healthy men. *B. paratyphoid* B was originally isolated from patients whose symptoms were those of typhoid fever, and was at first regarded as distinct from the *B. suipestifer* (or *aertryck*), which has been found in many outbreaks of acute food-poisoning in man, and is a secondary invader of the blood and organs in swine fever. This view is still held by many writers, and it has been shown by Boycott and by Bainbridge that these two organisms can readily be distinguished from one another by means of the absorption method, if this method is properly used. Others, however, who have confined themselves to cultural and agglutination tests, regard *B. aertryck* and *B. paratyphoid* (B) as identical, and indiscriminately describe as *B. paratyphoid* B the organisms obtained from cases of paratyphoid fever or food-poisoning or from food. Further, Conradi, Rommeler, Mühlens, Dahin and Fürst, and other writers have brought forward evidence that paratyphoid bacilli are widely distributed not only in food but also in the faeces and urine of typhoid convalescents and carriers and of healthy men.

Unfortunately these workers did not attempt to ascertain whether the bacilli which they obtained were *B. paratyphoid* B or *B. suipestifer*, an omission which robs their work of much of its value. Nor do their results correspond with those obtained by Morgan and by Savage in their examination of human faeces and urine.

Our Observations.—In the hope of throwing further light on these points we have followed out two lines of inquiry.

In the first place we have had the opportunity, through the kindness of Dr. Ledingham, of examining the plates made from the faeces and urine of about 270 typhoid convalescents, who were in normal health. Colonies which did not ferment lactose were picked off the plates, and subjected to the cultural tests necessary for their identification. In all, 290 colonies were examined and though many of them showed a superficial resemblance to *B. paratyphoid* B or *aertryck*, not one corresponded exactly in its cultural reactions to those bacilli. Several of the cultures were tested against a paratyphoid or *aertryck* serum, and their agglutination reactions were completely negative in all cases.

Secondly, we obtained from various sources twenty strains of bacilli which (with one exception) were stated to be paratyphoid bacilli. They had been isolated from food, from cases of food-poisoning, from cases of paratyphoid fever or carriers with the bacilli constantly present, or from healthy men. These strains were tested as to their agglutination and cultural reactions, and also by the absorption method.

Two were excluded—one on cultural grounds, one because it failed to agglutinate with paratyphoid or *suipestifer* serums. The remaining eighteen strains were indistinguishab'e from *B. suipestifer* or *B. paratyphoid* B in their cultural and their agglutination reactions. By means of absorption tests, however, they were separated into two groups—namely, a group which behaved in all respects like a strain of *B. suipestifer* obtained from a healthy pig and like the original *aertryck* strain of v. Ermengen, and a second group which was indistinguishable from the original Schottmüller strain of *B. paratyphoid* B. The first group consisted of four strains—one from a case of food poisoning, and three from food. The second group consisted of fourteen strains—namely, six from cases of paratyphoid fever, four from paratyphoid carriers, and three from healthy men. (We have not been able to ascertain whether the "healthy" men were intermittent carriers or had recently suffered from paratyphoid fever.) The origin of the fourteenth strain is still uncertain. It was recently isolated (during a small epidemic) from patients whose clinical symptoms were those of acute food poisoning. It was impossible, however, to correlate the outbreak with unsound or infected food, and there are reasons for supposing that a paratyphoid carrier may have been responsible for the outbreak.

Conclusions.

We feel that these observations are too limited to justify the expression of dogmatic opinions upon the distribution of these organisms, more especially as much of the material with which we worked was not obtained at first-hand, and the history of some of the strains of the bacilli is not as complete as we could wish But, so far as our evidence goes, we are disposed to take up the following position.

In the first place, we consider that *B. suipestifer* and *B. paratyphoid* B are separate organisms; we regard the distinction which is brought out by the absorption method or by agglutination test as indicating a real difference, which is not merely of academic interest, but of definite epidemiological value.

Secondly, it is significant that these strains, which are identical with *B. suipestifer*, have been found by us to be those derived from food only or from disease directly associated with food. It is not surprising, as many workers have shown, that this bacillus should be widely distributed in meat, especially meat derived from the pig, for the *B. suipestifer* is a frequent inhabitant of the intestine of this animal. It is also to be expected that this bacillus, if present in meat, will from time to time be ingested by man, though its stay in the human alimentary canal appears to be very transitory, since it was not found once in the 270 cases which we examined. And Conradi has shown that when meat containing bacilli indistinguishable from *B. suipestifer* is eaten, the bacilli can be isolated on the following day, but not subsequently.

Thirdly, all our strains of *B. paratyphoid* B were obtained from man, and the fact that four of them were obtained from chronic carriers seems to us to have a very important bearing on the epidemiology of paratyphoid fever, which is still very obscure. Although we have not obtained *B. paratyphoid* B from food, the existence of carrier cases introduces the possibility that they may occasionally infect food (as a typhoid carrier cook might do). But our observations rather suggest that, as a rule, *B. paratyphoid* B has its habitat, not in food, but in the human body.

Finally, our failure to find *B. suipestifer* or *B. paratyphoid* B in a large number of cases of typhoid convalescents agrees with the observations of Morgan and of Savage, and is opposed to the results obtained by Conradi, who found 10 per cent. of paratyphoid carriers in such cases. We can only suppose that, fortunately for us, the distribution of these organisms is much more limited in England than it is abroad.

DISCUSSION.

Professor E. J. McWeeney (Dublin) said that he had listened with much interest to Dr. Houston's and Professor Lentz's remarks, more especially with regard to "carrier" cases of typhoid. He had at present under observation a girl whose urine regularly contained typhoid bacilli in pure cultivation in numbers varying from a few score to several thousand per cubic centimetre. The faeces never contained the bacillus. The girl had had typhoid seven years ago, and since then had given rise to many cases of typhoid in families where she had acted as cook, and amongst persons who consumed the milk from a dairy in which she was employed. He detailed the various means he had employed, including urinary antiseptics, such as hetraline, urotropin, and borovertin, and vaccine treatment with her own "strain" of bacillus, but hitherto without success. By means of the cystoscope and catheterizing the ureters this girl had been shown to have a typhoidal pyelo-nephritis, and that the local condition was influenced by the vaccine injections was shown by the critical discharge of bacilli that took place on the day after each injection. No doubt the semi-necrotic tissue of the renal pelvis exfoliated to some extent, but the fact remained that the patient was not cured. She was still excreting the bacilli in thousands or millions per diem, and was thus rendered incapable, though apparently in good health, of earning her livelihood in the only capacity for which she was fitted. In his opinion the law did not give sanitary authorities adequate powers to deal with such cases. They should be kept under constant supervision, and, if necessary, assisted to live, as they could not be allowed to earn their livelihood. He asked Professor Lentz whether the investigations into the dissemination of typhoid in South-West Germany had been instrumental in bringing about a change in the public health law of that country with regard to typhoid carriers. He would also ask Professor Lentz whether, in his experience, the proportion of females to males amongst urinary typhoid carriers was as great (3 to 1) as amongst those who harbour the bacillus in the gall bladder and intestine. He concluded by referring to the nutrient media used for detecting the typhoid bacillus in excretal matter, and stated that in his experience "China-green-agar," as recommended by Werbitzki, exercised a more decided inhibitory effect upon *coli* than even malachite green. He asked Professor Lentz whether he had tried this medium, and, if so, with what result.

Dr. R. M. Buchanan (Glasgow) stated that his experience of carriers of infection was limited to typhoid fever, diphtheria, and cerebro-spinal fever. At the moment he could vividly recall five typhoid carriers, three of whom were elderly women and two youngish men. The bacillus was found in the faeces only of the women and in the urine only of the men. The first of these carriers to come under observation was a woman with an indefinite febrile illness and great distension of the gall bladder. The blood gave a positive Widal reaction and the clear fluid obtained on puncturing the gall bladder yielded a very profuse growth of *Bacillus typhosus*. It required daily irrigation of the gall bladder with 1 to 40 solution of carbolic acid for about five weeks to rid the bile of the bacillus. The patient had had twenty years previously a feverish illness of three weeks' duration, which was most probably typhoid fever but called at the time "gastric fever." The second woman, a milker, gave rise to a severe epidemic of typhoid fever in the distribution of the milk supply. She had suffered from typhoid fever sixteen years previously. The third woman had just been a few months out of hospital and gave rise to a small epidemic amongst her visitors and immediate neighbours. The two men illustrated the difficulty already alluded to by Professor McWeeney of stopping the discharge of the *Bacillus typhosus* by the urine. In one man with haemorrhagic pyelitis drugs had no apparent effect, and the bacilli disappeared with the abatement of symptoms in four months. Two of the patient's attendants were infected very early in the course of the illness, and both passed through a typical attack of typhoid fever. The other man gave rise to a return case from his own household. Beyond this he has left no trail of cases, although he has continued for over a year to shed bacilli in great number uninfluenced by drug or vaccine treatment. This carrier fully realizes the danger of infecting others, and takes the fullest precautions which a man in his station of life (a labourer) can observe. The continuous isolation of such a man would be a severe hardship unless the State made provision for the maintenance of his family. The examination of a large number of diphtheria contacts had revealed the fact that 8 to 10 per cent. were carriers of the infective agent, and that these people retained the bacillus in their throats on an average just about the same length of time as patients. If hospital isolation of such positive contacts were adopted, it would require in many instances to be just as prolonged as that of patients. In the case of cerebro-spinal fever he had found during the epidemic in Glasgow that amongst the members of the invaded households as many as 26 per cent. were carriers of the infection, the meningococcus being readily demonstrable by culture in the secretion of the naso-pharynx. It was a remarkable fact, however, that the infectivity of these carriers was very low, for no case of infection could definitely be traced to one of them after their discovery.

Dr. G. F. Petrie (London) summarized recent researches into the mode of transmission of the plague bacillus. From the point of view of the discussion introduced by Dr. Houston, the life-history of this bacillus was of considerable interest inasmuch as it was perhaps more chequered than that of any other bacterium associated with an epidemic disease. Plague was apparently the only bacterial disease transmitted to man through the medium of an insect, and it seemed also to be unique in that it was primarily a disease affecting a lower species of animal (the rat); it became a human disease incidentally from the occasional close association of rats with man. The sequence of events in a plague epidemic might be thus stated: First, there was a seasonal increase in the numbers of fleas infesting rats, due most probably to climatic conditions favourable to the breeding of these insects. Next came the rat epizootic, also showing a definite seasonal prevalence. The human cases increased and diminished *pari passu* with the epizootic, the interval between the rat plague and human plague curves representing a mean period of about twelve days. Recent researches in India had shown that every outbreak of bubonic plague when adequately investigated was associated with the disease amongst rats, so that it must be concluded that this correlation was invariable and universal. The available evidence pointed strongly to the disease being spread amongst rats by the rat flea. The rat flea might be said to combine the functions of a culture tube and of an inoculating needle with respect to the spread of the epizootic, the blood imbibed by the flea forming a culture medium for the multiplication of the plague bacilli.

In a plague epidemic there were three conceivable infective agents: (1) The infected rat, (2) the infected rat flea, and (3) the infected human being. The influences which might affect the bacillus in each of these media were both numerous and varied. (1) The question of the relation of immunity to plague in rats and the virulence of the plague bacillus may be raised. As tested in Bombay the virulence of the bacillus derived from rats did not seem to vary much throughout the year. A septicaemia would not probably occur in a partially immune rat, so that the chances of transmission of the bacillus by fleas from such a rat would be small. Hereditary transmission of immunity in rats might conceivably affect the epizootic and perhaps help to bring it to an end, but judging from experimental data on the inheritance of immunity in other infections it was unlikely that this factor influenced materially the continuance of acute plague in a rat population. (2) Plague bacilli in the rat flea were subject to external influences—for example, temperature. The rate of multiplication of the bacilli in the flea was liable to be affected by the temperature of the surrounding air. The Plague Research Commission had found that the duration of infectivity of the rat flea depended largely upon the kind of blood on which the flea fed. If infected fleas were fed on rats immune to plague the infectivity of such fleas was much diminished. The explanation seemed to be that the immune opsonins in the imbibed blood favoured the phagocytosis of the plague bacillus in the flea's stomach. This phagocytic influence was further markedly affected by variations in the temperature of the surrounding air. (3) Plague bacilli were excreted in the urine of septicaemic human cases, but these bacilli did not seem to be effective in spreading the disease. Pneumonic plague was extremely contagious by direct infection of the respiratory tract. Chronic carriers in the sense of typhoid and diphtheria carriers did not probably play any part in the spread or recrudescence of the disease. The phases through which the plague bacillus was liable to pass might be shown schematically as follows:

1. Septicaemic rat —→ infected rat flea —→ septicaemic rat —→ infected flea = epizootic.
2. Septicaemic rat —→ infected rat flea —→ immune rat.
3. Septicaemic rat —→ infected rat flea —→ ? partially immune rat —→ chronic rat plague.
4. Septicaemic rat —→ infected rat flea —→ human case = epidemic bubonic plague.
5. Septicaemic rat —→ infected rat flea —→ human septicaemic case with severe secondary pneumonia —→ pneumonic plague.
6. (Excreta of acute rat and human plague not infective.)

The table might be interpreted as follows:

1. The epizootic is maintained through a series of susceptible rats by the agency of the rat flea.
2. If an infected rat flea conveys the bacilli to a rat immune to plague, these bacilli are disposed of in the tissues of the rat.
3. The pathogenesis of the condition commonly known as chronic rat plague is obscure. It may be that it is ascribable to an infection in a rat with partial immunity to plague. The Plague Commissioners have pronounced against the view that the bacilli in chronic plague lesions are likely to spread the infection amongst rats. It is probable that the bacilli in these lesions sooner or later cease to exist.
4. The available evidence is strongly against the spread of infection from a case of human plague to the contacts.
5. It is conceivable, however, that a human septicaemic case with an extensive secondary pneumonia may originate a case of primary pneumonic plague, and this may infect contacts with the same type of the disease, that is, the pneumonic type.
6. The *Bacillus pestis* has probably no saprophytic phase of importance from an epidemiological standpoint.

To sum up the whole question of the transmission of plague, it might be said that the rat with acute septicaemic plague would seem to be the ultimate reservoir of the plague bacillus.

Dr. Savage (Weston-super-Mare) brought forward certain facts derived from his investigations of the bacteriology of garget in cows, which suggested the possibility of the existence of bovine streptococcus carriers. About 75 per cent. of the cases of mastitis or garget in cows were due to streptococci, and the great majority were due to a special long-chain form which he called the *Streptococcus mastitidis*. The connexion between certain outbreaks of human sore throat and local udder disease of the cow was epidemiologically a strong one. One of the commonest

causes of human sore throat was the streptococcus called by Andrewes and Horder *Streptococcus anginosus*. It was of great interest to compare these two types of streptococci. Morphologically and culturally they were indistinguishable even when the series of sugar-alcohol tests introduced by Gordon were employed. Their only difference was in their pathogenic properties. The *Streptococcus mastitidis* was of low virulence for the small laboratory animals. Occasionally a local abscess was produced, but usually it had no observable action upon mice or guinea-pigs. The *Streptococcus anginosus*, on the other hand, was usually pathogenic for these animals. The *Streptococcus mastitidis* readily set up mastitis in goats; the *Streptococcus anginosus* had no such action. The latter was a cause of human sore throat, while the former, even when inoculated in very massive doses upon the human throat, was quite without effect. The two types showed pronounced differences as regards their powers to cause disease in rodents, goats, and human beings, although otherwise identical.

He had followed up the question further, and studied the persistence of these organisms in a bovine and human habitat. The human streptococci, for the most part, when inoculated upon the interior of goat's teats, failed to establish themselves, and, with one striking exception, rapidly died out. The bovine streptococci lived for much longer periods in the udder of goats, but very rapidly died out when inoculated upon a healthy human throat. Although in his experiments the human throat infection was extremely massive in character, the inoculating bovine streptococci could only be recovered with great difficulty, although the isolation was undertaken only two and three days respectively after the inoculation; also when they were recovered their power to produce mastitis in goats was already somewhat diminished. One striking exception was, however, met with. In the case in which the streptococcus isolated from the spleen of a boy who died of acute lymphadenitis was used to infect a goat's teat, it did not set up mastitis, but survived as a harmless (to the goat) saprophyte for the whole duration of the experiment, extending over seven months. During this period it had not caused any inflammatory changes or alteration in the appearance of the milk, nor had its biological character become altered, except in one particular, and that inconstantly.

Another fact which must be considered was that all streptococci causing mastitis were not of the *Streptococcus mastitidis* type, and that undoubtedly some mastitis conditions could set up human disease.

These facts had a definite practical lesson, and bore directly upon the subject under discussion. It would be of great interest to know if the lymphadenitis streptococcus after its sojourn in a bovine habitat was still pathogenic to man. It had originally caused a secondary infection in a boy with marked elevation of temperature, and no doubt largely contributed to his death. Most likely at the end of the experiment it was non virulent, but probably for some considerable time while it was being excreted into the milk in large numbers, and this without visible alteration of the milk, it would still be pathogenic to man. In the same way the sore-throat streptococci tended rapidly to disappear from the goat's udder, but the disappearance was only relative, and they did persist for as long as twenty-six days in one case without any alteration of the milk. He was rather driven to the provisional conclusion that the streptococci of purely bovine origin were of modified, possibly quite negligible, influence as a cause of human disease, and that more danger was to be feared from streptococci of human origin, which, while not setting up disease in the cow, yet could be transmitted by the cow. In other words, he feared the cow as a passive transmitter of disease. He could imagine, under the prevailing filthy conditions, a milker with sore throat easily infecting the teats of one or more of his cows with the streptococci from his own sore throat, and the streptococci multiplying and appearing in huge numbers in the milk for a little while, and so spreading an extensive epidemic. The cow might serve as a streptococcus carrier, and disease be lit up from time to time by unknown pathological causes. Unlike the human typhoid carrier, he believed the virulence would disappear in time, although the organisms might persist, but he might be wrong in his hypothesis, and virulence might persist all the while. He need only remind the meeting of Todd and Dean's outbreak of diphtheria spread by milk, in which the udders were extensively ulcerated and infected with diphtheria bacilli. The cows were acting as carriers of diphtheria bacilli, probably in a purely passive rôle. He was in agreement with Dr. Houston that the "producers" of disease must be rendered inoperative. Dr. Houston's paper was essentially a comparison between the value of general and individual precautions. Obviously, both were necessary, but he was quite in agreement with him that no general precautions were sufficient to eliminate the necessity of tracing out and dealing with infectious individuals.

Dr. HOUSTON, in reply, said that the consensus of opinion appeared to be strongly in favour of the desirability of attaching increased importance to the living factories of disease and decreased importance to the passive transmitters of disease. One great difficulty presented itself in connexion with the question of carriers, namely, how far the bacilli concerned were really infective. It seemed fairly obvious that all the living carriers of disease germs could not exercise a continuous infective ability, otherwise few people could hope to escape infection for long. Until it was possible to distinguish between dangerous carriers and carriers possessing little or no infective power the hands of the administrator were almost tied. A wholesale legislative programme would present difficulties of a most serious kind. Professor McWeeney had called for compulsory powers of treatment, but, even if these were obtained, what was the outcome? In the absence of known rapid and effective curative measures, was it reasonable to ask the State to bear permanently the cost of supporting an army of ostracized disease carriers, many of which might be relatively harmless in an infectious sense? However this might be, all were agreed that nothing but good could arise from greatly extended work on the subject, and, as their knowledge increased, difficulties which now appeared insuperable might eventually disappear.

Dr. LENTZ, in reply, said: Professor McWeeney has asked me if in Germany any special legislative measures have been taken with a view to the control of typhoid carriers. That is not so. We received in 1905 a new general law for the control and treatment of infectious diseases in Prussia. In this law are included the general regulations and instructions for the conduct of the typhoid campaign, but against the carriers no special orders have been given. The medical officers of health are instructed, however, to see that the carriers pay attention to the cleanliness of their hands and linen. With regard to those who carry typhoid bacilli in the urine, I may say that women give a percentage of 60 per cent., while of the carriers who pass the bacilli in stools 75 per cent. to 80 per cent. are women. Of the China-green-agar of Werbitzki I have no personal experiences; Gacthgens, who instituted a comparative series of experiments with various media, praises the China green-agar method of Lentz-Tietz. With regard to the fourth question of Professor McWeeney, I may say that of eleven carriers ten gave a positive Widal reaction. Among paratyphoid carriers the percentage of those giving no reaction was larger.

DYSENTERY CARRIERS.

By G. H. K. MACALISTER, M.D., D.P.H.,

EPIDEMICS of bacillary dysentery in this country are at the present time limited almost entirely to the precincts of lunatic asylums and such institutions, although sporadic cases, often unrecognized, occur also among the general population. The nature of these endemics is of a type only too well known to the officers in charge. Infection is everywhere, and most of the inmates become attacked sooner or later. There appears, however, to be a species of natural immunity which protects the robust—members of the staff, for example—but this may be overcome by a big dose of infection.

Epidemics may be due to the presence of either the Shiga or the Flexner bacillus. At times, moreover, the two types may occur side by side in one epidemic. Outbreaks due to infection with the Y bacillus occur in Germany, characterized by a relatively high proportion of

chronic cases. The particular epidemic that I have studied, with which I propose to deal presently, owes its origin and maintenance to the Flexner bacillus, but in a small proportion of cases, indistinguishable by clinical means from the majority, other organisms, such as *B. pyocyaneus*, Morgan's bacillus No. 1, *B. proteus vulgaris* have been found alone—instances, perhaps, of secondary infections.

The nature of dysentery outbreaks is such as to suggest that the disease is propagated by contagion, direct or indirect, from person to person. They lack the explosive character of water or milk epidemics. The course of the outbreak bears a strong resemblance to that of other diseases in which carriers have been shown to constitute a prominent etiological factor. Particular incidents in the history of a number of dysentery epidemics supply evidence which indicates that here, too, carriers may be of great importance.

Carriers, in the widest sense, may be distributed into two great classes. The first class consists of healthy persons, who have never suffered from the disease, and show no signs of ill health, but nevertheless harbour and scatter the specific organism. Those, on the other hand, who make up the second class, are persons who have had the disease, and are thereafter unable completely to eliminate infection. Their after-history is chequered by minor disturbances of health, and by intermittent liberations of the specific bacterium.

Cases of the first type, in the instance of dysentery, are rare, and probably unimportant. Conradi recovered the bacillus from five healthy children, all of whom had, however, been living in the midst of infected adults. Two similar cases, also in children, are reported by Collins. Otto Mayer, while investigating an epidemic of pseudo-dysentery, found a relatively larger number of healthy carriers, but of these persons at least one developed the disease after isolation. I have not been able to find a single case of this type. As regards convalescent carriers, I am unwilling to dogmatize prematurely, but my experience appears to go far in confirming the view that, as agents in the spread of dysentery, the importance of this class cannot well be over-estimated.

During the past half year I have had the opportunity of studying an epidemic occurring at a large lunatic asylum in the Midlands, and I am glad to have this opportunity of expressing my thanks to the medical superintendent for placing the material at my disposal. As the disease has been prevalent for a number of years, it has been possible to obtain specimens from patients at all periods—some during or shortly after attack, others after widely varying periods of freedom from disease. A rise in the number of cases took place during April, and in consequence it has been possible to make a particular study of these persons during early convalescence.

From 120 inmates I have received about 200 specimens of faeces to examine bacteriologically. Concurrently, agglutination tests were performed upon a rather smaller number of serums from the same persons. After a short account of the results of this work I propose to attempt a classification of cases and an estimation of the number of potential carriers.

The methods pursued have been of a simple and stereotyped nature. In dealing with faeces, a loopful was plated upon MacConkey's lactose neutral-red bile-salt agar. From these plates, after incubation, suspected colourless colonies were picked off into mannite peptone water. Cultivations that showed an acid reaction in this medium were tested for a further series of sugar-fermentation reactions. Complete identity was established by testing the degree of agglutinability of organisms with a Flexner-rabbit-serum of high potency.

In order to select a suitable portion of a sample for plating it was necessary in some cases to spread the material in a sterile dish. Mucus was taken if possible, as this is the most usual habitat of the bacillus. Second or third platings were performed before a negative result was recorded, but even so, negative results are far less certain than positive. A minute portion only of a small sample of a single stool is examined, and thus much territory must be left unexplored.

Twenty-eight specimens from acute cases gave 13 positive results. Among the remaining 15 negative samples there were 7 from which some other pathogenic form was isolated, which may have masked or replaced the primary infection. *B. pyocyaneus*, for example, was obtained three times. As a rule, the Flexner bacillus was isolated readily from typical acute dysenteric stools containing mucus and blood. With disappearance of blood and diminution of mucus the proportion of positive findings diminished greatly. Almost invariably the bacillus could no longer be recovered from stools after complete return to the normal faecal type. The table below shows the condition of affairs in the April and May cases where it has been possible to make repeated observations during early convalescence.

	First Week.	Second Week.	Third Week.	Fourth Week.	Second Month.	Third Month.
Percentage of samples from which Flexner's bacillus was recovered	67	33	25	16	20	0
Percentage of cases suffering from definite clinical attack	100	23	8	4	1	0

These figures show that clinical convalescence is in advance of that determined by bacteriological examination.

The difficulty of proving a complete negative by these bacteriological methods gives an added importance to agglutination results.

The strain of Flexner bacillus used for this purpose was one isolated from the earliest positive case examined. The dilutions of serum investigated ranged from 1 in 25 to 1 in 400. Microscopic methods were employed throughout. Complete clumping in dilution of 1 in 100 was regarded as positive, but lower dilutions were in general disregarded.

Twenty-five serums from acute cases gave seventeen positive results. Four of the remaining eight negative samples were obtained at the very commencement of the attack—that is to say, before the development of specific agglutinins.

Examination of serums obtained from persons during quiescent seasons showed that, unlike typhoid, there is no definite time limit for the disappearance of specific agglutinins after termination of an attack.

	Positive Agglutinations.	Negative Agglutinations.
During attack	17	8
After 6 months	5	6
6 months to 1 year	7	8
1 to 3 years	12	12
3 to 5 years...	4	5
5 to 8 years	1	4

This table shows that while in many cases agglutination no longer occurs a few months after an attack, there is a very large number in which, even after a lapse of years, the serum retains the power of clumping in high dilutions.

Unsupported by other evidence, persistence of agglutination must not be thought invariably to connote persistence of infection. The problem is more complex than this. On the other hand, in the presence of such residual agglutinations it is difficult to prove that these cases no longer contain an infective focus. Moreover, when the history of such persons is chequered by periodic disturbances of health, amounting often to definite relapses, the presumptive evidence in favour of the existence of such a focus becomes very strong. This gives such an importance to residual cases that it becomes necessary, before proceeding to classification, to consider them in detail.

A review of the clinical features of the whole series shows that persons who recover completely from acute dysentery possess considerable powers of resistance to further infections. In the rare cases where such persons yield to a fresh infection from without, the second attack is acute and pursues a similar course to the primary attack.

In relapsing cases, in which it is supposed that further infections come from within, the history is different. That convalescence from the primary acute illness is incomplete is shown first, by the persistence of a high agglutination figure; and secondly, by the continued presence in the faeces of mucus, albeit in greatly varying degree. Further attacks are subacute, and may possibly last for no longer than a single day, but sometimes they may be intractable and continue for relatively long periods. Attacks may be determined by circumstances which lower the general resistance. Cold, bad weather, and particularly unsound food, are the most obvious exciting factors. The series contains records of twenty-four occasions upon which unsuitable diet provoked a relapse. In rare cases returns of the disease become frequent and protracted, and the

illness assumes a chronic form. But this is rare in the case of Flexner dysentery.

It is not yet possible to dogmatize as to the site of such persistent infective foci, but in analogous cases of infection with the Y bacillus—where, however, the disease is of a more chronic type—rectal ulcers have been seen with the rectoscope. If the focus be in the intestinal wall, it is probable that bacilli are in fact constantly being passed out. During quiescence, when the motions are well formed and the amount of bacteria very small, the danger of infecting others is negligible, even apart from any possibility of diminution in virulence or toxicity—a point not yet worked out. But at times, apart from recognized attacks, there may occur minor disturbances—manifested, it may be, by a single stool rich in mucus—which may escape the notice of both patient and attendant, and consequently become a fertile source of infection. The system of classification depends upon the completeness of convalescence after the primary attack. Recent cases which have not been under observation for a sufficiently long period are not included in the following table:

	Male.	Female.	Total.	Percentages.
1. Complete recovery	20	23	43	53·7
2. Single attack, but agglutination remains high; stools usually contain a trace of mucus	9	7	16	20
3. Relapsing cases	4	15	19	26.2
4. Chronic cases	—	2	2	

The first group contains persons who after the primary attack return to normal health and are for a season immune against fresh invasions. Members of asylum staffs and the more robust inmates come under this heading.

The second group is made up of those cases whose complete recovery is only discounted by the continuance of agglutination, and by the presence of small quantities of mucus in the faeces. They do not relapse. Possibly they harbour infection somewhere, but further evidence is required to secure conviction. Administration of a simple purgative might perhaps determine the elimination of bacteria.

Types of Cases.

Group II.—G. R., male, aged 55. Attack April 11th, 1905, lasting three days. Result of examination January 25th, 1910: Faeces negative; agglutination positive ($\frac{1}{250}$).

Group III.—F. H., female, aged 24. Five attacks between June 29th, 1905, and January 9th, 1910. Result of examination February 3rd, 1910: Faeces positive; agglutination positive.

Group III.—J. A. S., female, aged 37. Four attacks between September 16th, 1903, and April 2nd, 1909; two attacks provoked by food. Result of examination February 1st, 1910: Faeces negative; agglutination positive ($\frac{1}{250}$).

The third group contains relapsing and chronic cases, whose nature has already been described. To define the position of these three groups with regard to the question of potential carriage, the language of Scots law may be borrowed and verdicts of "not guilty," "not proven," and "guilty" be returned. The figures in the table show that, if this view be accepted, 26 per cent. of these cases must be regarded as possible transmitters of contagion. These considerations emphasize above all things the great need for care during and immediately after the primary attack. The first step towards the prevention of an epidemic must be one that obviates the development of a class of incomplete convalescents. To this end no method of treatment, local or general, should be omitted. During early convalescence the same care should be taken as during the attack. The consistence of the stools should be watched, and Widal's tests be performed from time to time. Until the results of these observations be satisfactory, these persons must not be allowed to mingle with their healthy fellows. Persons that have already come under the heading of incomplete convalescence must be strictly isolated, while means should be taken to discover, if possible, and eliminate the focus of infection. Members of the second group should be domiciled in a separate block, if possible, and it is superfluous to add that no laundry or kitchen work should be assigned to any such suspected persons.

The conclusions, put very briefly, are:

1. That healthy carriers are very rare, and of no importance.

2. That the actual carriers are to be found among the incomplete convalescents, which form a high proportion of the cases.

3. That in combating an epidemic it is necessary to reduce as far as possible the number of such cases, and to isolate very strictly those that are already of this type.

DIPHTHERIA CARRIERS.

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Before the specific bacillus was discovered it was recognized clinically that persons who had not themselves suffered from recognizable diphtheria, but who had recently recovered from a sore throat, were liable to give diphtheria to others. The occurrence of the *Bacillus diphtheriae* in the fauces of patients three to fourteen days after the disappearance of the membrane was described by Roux and Yersin in 1888; and Loeffler reported in 1890 a case in which bacilli able to cause the disease, were found in the fauces of a patient three weeks after apparent recovery. Since that time numerous observers have recorded the persistence of the bacillus and its continued virulence for long periods after all local naked-eye symptoms of the disease have passed away. In fact, this phenomenon has become one of the best known facts of bacteriology, which are of practical everyday interest, and at the same time one of the chief bugbears of general practitioners and medical officers of health. Moreover, it is not only during convalescence from diphtheria, and after slight attacks of sore throat, that the bacillus may be present, but also after contact or association with diphtheria patients, both adults and children are liable to harbour the bacillus in their fauces, even when no local or constitutional disorder of any kind has been noticed.

There are thus two classes of healthy carriers of the diphtheria bacillus. First, "convalescents" who have had the disease and have retained the bacillus after apparent return to health; and secondly, "contacts," who have never had the disease at all as far as can be discovered, but who have at some time been in contact with a case of diphtheria or another "contact." To these two groups must be added a third group of carriers, consisting of those persons who are suffering from the disease in a chronic form without constitutional symptoms. These latter are very important as regards the spread of the disease. In some cases the chronic form appears to have existed in a patient for years, though it cannot be stated that no intermission has occurred during that time. For instance, one may cite the case of a nursemaid recorded by E. Neisser, who thought it probable that she had had the disease on and off for fourteen years. Cases of membranous or fibrinous rhinitis due to the diphtheria bacillus are best included in this group; some of these cases last for at least two or three years.

The large majority of healthy carriers of both the convalescent and contact classes soon lose the bacilli. Probably about half the convalescents are free by the time that the local exudation on the fauces has disappeared. Welch, Prip, and Glucksam quote large numbers of cases which support this statement.

Welch examined 752 cases, and of these 427 only retained the bacillus after the disappearance of the membrane. One week after disappearance of membrane 47 per cent. of the 427 were still infected; one month after, 2.5 per cent. were still infected.

Prip examined 654 patients in hospital, of whom 345 retained the bacillus after disappearance of membrane: 38 per cent. for ten days from this date; 16.5 per cent. for thirty days from the same date; 2 per cent. for two months; 0.65 per cent. for three months.

Prip also examined 60 discharged patients. One month after discharge 20, or 33 per cent., retained the bacillus; after two months 11, or 18 per cent.; after three months 3, or 10 per cent.; and after twenty-two months 1 person still retained the bacillus.

Glucksam examined 484 convalescents, of whom 267 still had the bacillus in the fauces. Of these 267, 17, or 8 per cent., still retained the bacillus seven days later, and 4, or 1.5 per cent., four weeks later.

Scheller examined 389 convalescents. Of these, 264, or 77 per cent., still retained the bacillus after eleven days; 62, or 18 per per cent., after thirty-one days; 18, or 5 per cent., after sixty-one days; and 8, or 2 per cent., after ninety days.

Drigalski examined infected schools, and found 218 contacts to be carriers. Of these, 8, or 4 per cent., retained the bacillus for over three weeks; and 1, or 0.5 per cent, for over three months.

Tyaden, in 1,338 cases which he examined from the onset or early in the disease, found the bacillus still present after one month in 16.4 per cent., after two months in 0.26 per cent., and after three months in 0.05 per cent.

Graham-Smith collected records of 9,080 cases examined, and calculates that the bacillus is still present after one month in 19 per cent., after two months in 7.2 per cent., after three months in 2 per cent., and over 200 days in 0.02 per cent.

Most of these figures it will be observed do not represent the proportion of cases of diphtheria which retain the bacillus for the various periods of time, but the percentage of convalescents who continue to carry, and as only rather over half the diphtheria patients still retain the bacillus into convalescence, the percentages for the retention of *B. diphtheriae* for the whole number of patients would be about half those given for convalescents.

Taking the figures as a whole it appears that about one-half of the diphtheria patients are free from diphtheria bacilli within two or three days of the disappearance of the membrane, and of the remainder probably 50 per cent. are free in another week or ten days.

At the end of a month from the disappearance of the exudation only 16 to 19 per cent. retain the bacillus, after two months only 5 to 7 per cent., and after three months at most 1 to 2 per cent. These last, the 1 to 2 per cent. who retain the bacillus after three months from convalescence, constitute what may be called the chronic carriers, though the evidence does not point to their being perpetual carriers as in the case of typhoid carriers, for only a very small percentage of healthy carriers carry for six months, as far as is known. Graham-Smith's figures show that only 0 02 per cent. carried for more than two hundred days.

Prip recorded a case of a virulent *B. diphtheriae* being still found after more than three hundred days, and of a *B. diphtheriae* as recognized by its morphology only after four years.

On the other hand, cases of chronic diphtheria chiefly constitute the group of carriers who retain the bacillus for an indefinite period.

The persistence of the bacillus in contacts is much the same as in carriers. Probably the contacts do not retain the bacillus for so long (Kober and Glucksam).

I found in one infected school (Arkwright, 1908) 118 carriers out of 551 contacts examined, or 21 per cent.

Fourteen days later, of 91 examined, 23, or 19.5 per cent., were carriers.

Twenty-eight days later, of 31 examined, 10, or 8.5 per cent., were carriers.

Six weeks later, of 11 examined, 8, or 6.8 per cent., were carriers.

Eight weeks later, of 9 examined, 7, or 6.0 per cent., were carriers.

In another school examined more recently, two swabbings of the whole school (145) showed 10 carriers. All the strains were virulent.

In one case the bacillus persisted till the patient ceased to send swabs—three weeks. One ceased to carry in three weeks. One ceased to carry in six weeks. One ceased after eighty-five days.

The percentage of healthy carriers among those who have recently come into contact with cases of diphtheria varies very much according to circumstances, such as the closeness of contact and the habits and social position of the population examined (cf. Pennington). It has sometimes happened that as many as 20 per cent. of the children in an infected school have been found to harbour *B. diphtheriae*, and Scheller found in several families in which the members were repeatedly examined, that every member became infected sooner or later. On the other hand, in communities where diphtheria has not occurred for some time the percentage of carriers varies from 2.5 to 1 per cent., or in some series of examinations to zero—for example, Ustvedt in certain isolated schools in Norway (86 children), and Scheller. The percentage of virulent *B. diphtheriae* in non-contact communities is very small, say, 0 04 per cent. (Graham-Smith).

Little is known of the cause of persistence of the bacillus. Some observers have pointed out that enlarged tonsils favour prolonged retention of the *B. diphtheriae*. Meikle, who methodically examined a large number of diphtheria convalescents, states that out of 27 persistent carriers 22 had enlarged tonsils. The *B. diphtheriae* has been found in the antrum, sphenoidal and frontal sinuses, and middle ear (Wolff and Councilman, Mallory and Pearce).

Nose.—The figures given above have referred only to observations made by taking swabs from the fauces. The nose has been less frequently examined. Except in cases where there is nasal discharge, the number of carriers in whom the *B. diphtheriae* is confined to the nose is probably small. But Graham-Smith collected records of 5,826 persons examined, amongst whom 2.33 per cent. were found to have *B. diphtheriae* present in the nose only. Pugh found *B. diphtheriae* in the nose of 23 out of 414 scarlet fever patients; 3 of these strains were tested for virulence, and found to be non-virulent. There is greater liability to confuse diphtheria-like bacilli from the nose with *B. diphtheriae*, as various diphtheroids are of more frequent occurrence in the nasal fossae than in the fauces.

Ear.—Graham-Smith isolated 17 strains of *B. diphtheriae* from cases of otorrhoea, and found 11 non-virulent and 6 virulent. The liability to confusion is greater here than in the case of the nose, and the difficulty of isolation is much greater, on account of the saprophytic organisms found in aural discharge.

Treatment of Carriers.

The means at our disposal of freeing the throat or nose from the bacillus in the case of carriers are not very efficient. Diphtheria antitoxin given subcutaneously is of no value for this purpose, according to all observers. Different kinds of antiseptic gargles have not given encouraging results when tested methodically; and the use of antibacterial serum locally, though recommended by Louis Martin and also prepared by Wassermann for the purpose, have not been successful in other hands. Vaccination with killed diphtheria bacilli in increasing doses, first tried on 5 carrier-cases by Petruschky, has not, so far as I am aware, been tried in a large number of cases and deserves further trial, but the few recorded cases which I have met have been quite inconclusive. Operative treatment on the tonsils, where these appear to be the seat of the bacilli, seems a hopeful and justifiable procedure. Probably the whole of the tonsillar tissue should be removed as far as possible, as recommended by Pegler. A prophylactic dose of antitoxin should be given before the operation. It has been recommended that the tonsils should be painted with some chemical substance, such as iodine, which will cause a local inflammation and lead to destruction of the bacilli by the inflammatory exudate, and also their extrusion from suppurating tonsillar follicles. In any case antiseptic gargles, etc., should be used frequently with the view of lessening the spread of the bacilli to others.

The nature of the immunity from the disease which the carriers enjoy is obscure, but it is not always complete nor as persistent as the bacilli. Carriers may develop diphtheria after tonsillotomy or operation on the turbinated bones, and, without any known localized wound, may suddenly develop the disease after carrying the bacillus for three or four weeks (Scheller). Prophylactic doses of antitoxin may cause similar temporary immunity with presence of bacilli in the fauces, and later an attack of diphtheria may occur—for example, 21 contacts were injected prophylactically by Peters, of whom 7 developed diphtheria after three weeks.

It is at first sight remarkable that so few cases of diphtheria occur in schools in which, perhaps, 7 per cent. of the children have *B. diphtheriae* in their throats.

On the other hand, numerous cases are known of the disease resulting from short contact with a healthy carrier or with cases of chronic diphtheria. However, even those in close contact with diphtheria cases often escape the disease, and very frequently only one or two members of a numerous household are attacked with recognizable diphtheria where isolation is not practised.

Ustvedt only observed 3 secondary cases from 98 persons suffering from diphtheria. Cases of chronic fibrinous rhinitis give rise to singularly few cases of clinical diphtheria, although virulent *B. diphtheriae* can be readily isolated from them. Lack examined 37 cases of fibrinous rhinitis and isolated virulent *B. diphtheriae*, but from none of them—nor, indeed, from 50 cases in all—could he hear on careful inquiry of any case of diphtheria originating. Other observers, however, have recorded instances in which severe cases of diphtheria have resulted from contact with a case of membranous rhinitis. In the case of school carriers, it seems likely that some are far more dangerous than others, for if a school class is swabbed only in part, and therefore probably only a certain number

of the carriers are isolated, this partial removal of carriers is often sufficient to stop an epidemic.

The following question arises practically. Taking an otherwise healthy person who is a carrier of *B. diphtheriae*, as shown by the ordinary methods of swabbing serum tubes and examination of a film, is he necessarily a danger to his surroundings unless isolated?

The relative efficiency of different carriers must be taken into consideration, and, further, the possible value of antiseptic gargles in preventing the distribution of the bacilli. This has, as far as I know, never been sufficiently inquired into and tested, but undoubtedly some carriers have living virulent *B. diphtheriae* in their mouths within an hour or two of active antiseptic treatment.

Does a diagnosis of the *B. diphtheriae* by examination of a film from a young serum culture definitely decide the dangerous nature of this bacillus? With the greatest care and experience bacilli resembling virulent *B. diphtheriae* are sometimes found in the fauces or nose which are non-virulent for guinea-pigs and produce no toxin capable of killing a guinea-pig. (These bacilli are at the time, therefore, probably non-pathogenic for man.) What is the nature of these bacilli, and can those who harbour them pass on diphtheria?

These bacilli which resemble *B. diphtheriae* morphologically are not all of the same kind and should be classified in accordance with the scheme of Park and Beebe, advocated by Graham-Smith, namely:

1. Bacilli which do not ferment glucose.
2. Bacilli which do produce acid from glucose, which are non-virulent for guinea-pigs, but resemble virulent *B. diphtheriae* in every other respect.
3. Bacilli which ferment glucose and are virulent for guinea-pigs.

1. Rarely a bacillus of the Hofmann type resembles a virulent *B. diphtheriae* morphologically. When isolated, such a bacillus is easily distinguishable by the fact that it does not ferment glucose.

2. Certain other bacilli occur which closely resemble *B. diphtheriae* morphologically, but have different characters when grown on solid media. I have come across several such in supposed carriers, which when isolated are easily distinguishable from *B. diphtheriae* by the opacity of the growth on agar and by the fact that they ferment cane sugar as well as glucose.

3. Besides the above, strains are met with which resemble the true *B. diphtheriae* in every respect, but which are quite non-pathogenic for guinea-pigs in ordinary doses and produce none or only very small quantities of specific diphtheria toxin.

Graham-Smith has very carefully discussed the question of the nature of these non-virulent *B. diphtheriae*, and he points out that they occur, when a large number of observations are collected, in from 1 to 2 per cent. of all healthy persons not in contact with diphtheria. Graham-Smith's and Cobbett's figures for the occurrence of these non-virulent *B. diphtheriae* among "contacts" do not exceed this proportion of 1 to 2 per cent. Graham-Smith therefore suggests that the non-virulent *B. diphtheriae* is a distinct bacillus and bears no relation to diphtheria.

The percentage of carriers of non-virulent *B. diphtheriae* among healthy persons who are not "contacts" varies considerably, however, according to different observers, and the proportion of "contacts" who harbour non-virulent *B. diphtheriae* has been found to be much higher in some epidemics than in others. Graham-Smith and Cobbett found no evidence of the occurrence of strains of *B. diphtheriae* of intermediate grades of virulence between full virulence and complete absence of virulence for guinea-pigs. In some epidemics of diphtheria, on the other hand, a considerable number of partially virulent strains have been found. Pennington found in an infected school 9 per cent. of carriers, made up of 3 per cent. of carriers of non-virulent *B. diphtheriae*, 1 per cent. of carriers of fully virulent *B. diphtheriae*, and 5 per cent. of carriers of *B. diphtheriae* of only slight virulence. The standard of virulence was, however, not that used by Graham-Smith and Cobbett; but the difference between the three classes seems so marked that it would probably have come out if the method of testing had been different.

In 1908, in the *Journal of Hygiene*, I recorded the results of the investigation of an epidemic of diphtheria in a school. I found a high proportion of non-virulent and of partially virulent strains among the diphtheria bacilli isolated from the carriers. Of 590 boys, 23 per cent. yielded *B. diphtheriae*. Twenty strains were isolated and tested for virulence, and if these strains were a fair sample of the whole, then,

7 per cent. of the boys harboured non-virulent strains.
6 per cent. of the boys harboured partially virulent strains.
7 per cent. of the boys harboured fully virulent strains.

Although very careful observations made by Park and Williams and others have shown that, as a rule, the strain of *B. diphtheriae* isolated from a patient retains its virulence up to the latest date at which it is possible to find it in that patient's fauces, still, sometimes a strain isolated from a case of diphtheria proves to be non-virulent. Lubowski (1900) found, amongst other diphtheria cases, two diphtheria patients from whom he could only isolate non-virulent strains of *B. diphtheriae*, and he found unusually high antitoxin content in the blood of both these patients. Pennington found on examining 25 diphtheria convalescents that 22 yielded virulent strains of *B. diphtheriae* and 2 non-virulent strains five to seven days after the end of their illness. One convalescent yielded at first a virulent strain and later a non-virulent strain.

In the school epidemic mentioned above, the first case of severe sore throat occurred in a boy who had returned to school before I examined the boys. He had suffered from a thin purulent nasal discharge for the greater part of the time since his illness. It seemed highly probable that he was responsible for a large share in the spread of the disease. On several occasions, however, the only strain of *B. diphtheriae* which could be isolated was completely non-virulent, although in all other respects exactly resembling typical virulent *B. diphtheriae*. Similar strains were isolated from his fauces and his nose. The evidence for the transformation of true non-virulent *B. diphtheriae* into virulent *B. diphtheriae* or the reverse is scanty and unsatisfactory. I have tried very many methods, but have completely failed to change the one type into the other.

Occasionally, however, a strain on being tested has proved non-virulent, whereas on a former occasion the same strain has been virulent. When this has occurred, the change has not been referable to any special treatment or external condition, and has been permanent.

All the non-virulent strains with which I have worked have been completely non pathogenic unless injected in massive doses intraperitoneally, and then antitoxin has not had any neutralizing effect when given beforehand or simultaneously.

Although I have not been able to obtain any direct evidence of toxin or toxoid produced by non-virulent strains, still the injection of filtrate from one non-virulent strain into a horse caused a decided rise in the antitoxin content of the horse's serum—from $\frac{1}{5}$ to 4 units—and the further injection of filtrate from cultures of another non-virulent strain further raised the antitoxic value of the serum to 25 units per c.cm. (Arkwright, 1910).

It does not seem, therefore, to be definitely settled whether *B. diphtheriae*, which are typical in every way except that they are non-virulent, have any close causal relationship to cases of diphtheria or not. Very probably they are less likely to cause diphtheria in man than virulent *B. diphtheriae*, for the circumstances under which they regain their virulence—if they do so—are quite unknown.

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ON THE INTERPRETATION OF THE PRECIPITIN REACTION.

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THE different phenomena of immunization are but different aspects of the response of the animal body to the introduction of alien substances within its tissues, and the precipitin reaction is one form of this response. When the blood serum of an animal that has received repeated

injections of some alien protein is mixed outside the body with a solution of this alien protein, then precipitation may occur. This, apparently one of the simplest of the immunity reactions, is yet one of the hardest to interpret. We do not propose to discuss what corresponding property has been acquired by the blood *in vivo*, nor what is its relation to the general defensive mechanism.[1] It is with the interaction of antiserum and antigen, indicated by a precipitate *in vitro*, that we are now concerned.

From the beginning we have looked upon the reaction as taking place between known weights of the interacting substances. In our later work the weighing of the precipitate marks a further advance in accuracy. The remarkable nature of the precipitate is thus revealed. For, if our interpretation be correct, the precipitate is formed mainly of those constituents of the antiserum that give the antiserum its specific precipitable character. It is probable that the specific antisubstance (precipitin) brings down with it from the antiserum non-specific molecules (for example, complement) which also go to form the precipitate. It is probable also that the antigen enters to a relatively slight extent into the composition of the precipitate But all our work tends to show that the main mass of the precipitate is composed of antisubstance (precipitin) which can be weighed. A ponderable antisubstance has hitherto been unknown, but in the precipitate of a precipitin reaction we have a remarkably near approximation to such a substance.

Phenomena of Precipitation.

(*a*) *Relation of Antiserum to Precipitate.*—The original interpretation of the precipitin reaction was that the antiserum contained "coagulin" or "precipitin," which had the power of throwing the antigen (homologous protein) out of solution. "Très généralement, en effet, le sérum d'un animal d'espèce A, injecté de sérum d'espèce B, précipite ce sérum B."[2] It was admitted that some portion of the precipitate might be derived from the antiserum.[3 4 5 6] It was also said that the precipitin combined in equivalent quantities with the antigen to form the precipitate.[7] Nevertheless, the fundamental assumption was made that the main source of the precipitate was the antigen (homologous protein), which was therefore known as the "precipitable substance." It was suggested that the precipitin reaction was analogous to bacterial agglutination, and that, in some similar manner, precipitins agglutinated and precipitated protein molecules from solutions of the antigen.[8 9]

At an early stage of our work on precipitins we found that this interpretation of the reaction was not borne out by experiment. It has long been known that the precipitin reaction is one of extreme delicacy—that recognizable precipitates may be obtained with minute traces of the antigen (homologous protein) in solution. We have been able to go a step further, and to show that recognizable precipitates can be obtained from a mixture of antiserum and antigen, although the total amount of protein in the antigen solution is too small to be revealed by any chemical precipitant of protein.[11 12] Obviously the visible precipitate cannot have come from the invisible amount of antigen. It must, therefore, have been derived from the antiserum.

At a later stage we obtained corresponding results with quantities of antigen and of precipitate that were large enough to be measured by weight.[13] Thus 1 mg. hen egg-white (antigen) interacting with 52 c.cm. of antiserums for hen egg white yielded a precipitate weighing 25 9 mg., and the superfluid still contained antigen in solution. Obviously again a precipitate weighing more than 25 mg. cannot have been derived from an amount of antigen weighing only 1 mg and still recognizable in the superfluid. The antiserum must therefore be the main source of the "precipitate substance."*

Further study of the reaction by weighing the precipitates[14 15] has shown that the weight of the precipitate is directly proportional to the amount of antiserum, and independent of the quantity of antigen, provided that the antigen is in sufficient quantity to yield the full precipitate from the amount of antiserum employed. With this proviso, if, in a series of tubes, 1 c.cm., 2 c.cm., 3 c.cm., etc., antizerum, interact with 100 mg. antigen in a volume of 50 c.cm. saline solution, the dried precipitates will show the ratio in their weights of 1, 2, 3, etc.; and the superfluids removed from the deposits will yield no further precipitate on the addition of antigen. With the same proviso, the weights of the precipitates will be the same, and will show the same ratio as the amounts of antiserum, although the quantity of antigen be increased to 200, 300, 400, or 500 mg. or be diminished to 50 mg. These gravimetric experiments demonstrate what our earlier work has indicated[12 16]—that each cubic centimetre of antiserum has a definite "precipitable content" which may be thrown from solution by a certain amount (or concentration) of the antigen† We have already explained that "precipitable content" is not necessarily equivalent to "precipitin," since the "precipitin" may carry down with it non-specific molecules from the antiserum.

A few illustrative experiments are recorded in the following Table I. The interactions were conducted in aseptic conditions, and were allowed to proceed for forty-eight or for seventy-two hours, when the deposits were carefully separated, washed, dried, and weighed.‡ The nature of the protein used to immunize the rabbit and to interact with the resultant antiserum is given under the heading "Antigen and Antiserum."

Table I.

No.	Antigen and Antiserum	Volume of Antiserum.	Weight of Dried Protein (Antigen).	Volume of Saline Solution.	Weight of Precipitate.	Weight of Precipitate per c.cm. Antiserum.
		c.cm.	mg.	c.cm.	mg.	mg.
1	Horse serum 57...	2.5	100	50	3.7	1.5
2	Horse serum 57...	2.5	100	50	3.5	1.4
3	Hen egg-white 59	2.0	134	50	8.6	4.3
4	Hen egg-white 59	3.0	134	50	12.5	4.2
5	Hen egg-white 59	4.0	134	50	16.7	4.2
6	Horse serum 53...	2.5	50	50	2.0	0.8
7	Horse serum 53...	3.0	200	50	4.0	0.8
8	Horse serum 56 ..	3.0	100	50	10.4	2.1
9	Horse serum 56...	10.0	100	50	20.0	2.0

Incidentally, these observations show that the precipitable content of different antiserums varies greatly, from 0 8 mg. to 4.2 mg. per c.cm. of antiserum in those under consideration.

The conclusion that the precipitate must be composed mainly of constituents of the antiserum has been endorsed by Adami[17] and by Arrhenius,[18] who states, apropos of the interaction of small quantities of sheep serum and its antiserum, "Der Haupttheil des Präzipitäts stammt danach wahrscheinlich aus dem Präzipitin."

(*b*) *Total and Partial Interactions.*—One reason for the divergent views held by other observers lies in the failure to discriminate between total and partial interactions. It is a common experience that when increasing quantities of antigen interact with a fixed amount of antiserum, increasing amounts of precipitate may be obtained, the usual inference being that each increment of precipitate is derived from each increment of antigen. We find, however, that this observation holds good only up to a certain point, which varies for each antiserum. After a certain quantity (and concentration) have been reached, no further precipitate is obtainable from a given amount of antiserum by any further addiment of antigen. We interpret this to mean that it is possible to discharge practically the whole of the precipitable content of an antiserum by a sufficiency of antigen, and we distinguish this as a total interaction.

Different antiserums, however, vary greatly in respect of the amount (and concentration) of antigen required to yield this maximal precipitate from fixed amounts of the antiserums. This we have expressed by saying that antiserums are characterized by different degrees of

* Moll[82] and Rodet[83] had independently reached a similar conclusion.

† We have not yet sufficient evidence to decide whether the amount (equivalent quantities) or the concentration of the antigen determines the precipitation from the antiserum.

‡ A more detailed account of our procedure is given in reference [14], from which these tables are taken, and also in reference [15].

precipitability. When the antigen is insufficient to give the maximal precipitate from the antiserum, then the interaction is only partial, and further additions of antigen will continue to give further precipitates until the full precipitate has been thrown out. Many precipitin antiserums are characterized by high precipitability, and are, therefore, likely to give such partial interactions.

Our earlier experiments on these lines, based on the volumetric estimation of small precipitates, are supported by our later results of weighing larger precipitates. Two illustrative experiments are given in Tables II and III. In each experiment constant volumes of an antiserum (prepared in a rabbit with hen egg-white) were allowed to interact with increasing weights of antigen (dried hen egg-white), and the precipitates at forty-eight hours were washed, dried, and weighed. A different hen egg antiserum was used in each experiment.

TABLE II.

No.	Volume of Antiserum.	Weight of Antigen.	Volume of Saline Solution.	Weight of Precipitate.	Weight of Precipitate per c.cm. of Antiserum.
	c.cm.	mg.	c.cm.	mg.	mg.
1	3	1.44	50	1.0	0.33
2	3	3.6	50	1.5	0.5
3	3	7.2	50	2.0	0.67
4	3	14.4	50	2.7	0.9
5	3	28.8	50	4.2	1.4
6	3	144.0	50	6.5	2.2

In the first experiment (Table II) the amount of deposit continued to augment with each increase of the antigen, and the whole of the precipitable substance was not thrown out of 3 c.cm. of the antiserum by nearly 29 mg. of the antigen. This antiserum is characterized by a considerable precipitable content (at least 2.2 mg. per c.cm. of antiserum), and high precipitability. It is just the kind of antiserum that lends support to the common view of the precipitin reaction, since in the earlier partial interactions (Nos. 1 to 5) the weight of precipitate is increased with increasing weights of antigen.

TABLE III.

No.	Volume of Antiserum.	Weight of Antigen.	Volume of Saline Solution.	Weight of Precipitate.	Weight of Precipitate per c.cm. of Antiserum.
	c.cm.	mg.	c.cm.	mg.	mg.
1	2	14.4	50	3.2	1.6
2	2	36.0	50	3.5	1.75
3	2	144.0	50	3.4	1.7
4	2	432.0	50	3.4	1.7

In the second experiment (Table III) 14 mg. antigen served completely to precipitate the content from 2 c.cm. antiserum; and further increments of antigen, even to thirtyfold, did not increase nor diminish the weight of precipitate. This antiserum is characterized by a moderate precipitable content (about 1.7 mg. per c.cm. of antiserum) and a relatively low precipitability. In these total interactions the weight of precipitate is independent of the weight of antigen.

These observations show that it is only in partial interactions that the weight of the precipitate alters with the weight of antigen (cf. Table II). In a total interaction the precipitate has reached a maximal weight, and does not vary with further additions of antigen (cf. Table III).

(*c*) *Relation of Antigen to Precipitate.*—When a fixed quantity of the antigen, however minute, is allowed to interact with successive amounts of the antiserum, the antigen is not completely removed from the superfluid. In many of our experiments with quite small amounts of antigen and relatively large amounts of antiserum, we had no evidence that the antigen was sensibly diminished. We found that the superfluids were capable of interacting again and again to yield similar precipitates with fresh additions of antiserum and that, as the concentration of antiserum increased, the precipitate also tended to increase.[11 12]

In the interactions of ponderable quantities of antigen with antiserum we have no direct evidence of the amount of antigen present in the precipitate; but the following facts indicate that it is a quantity small in comparison with that derived from the antiserum. (1) Each cubic centimetre of antiserum has a definite precipitable content, and the weight of precipitate is proportional to the weight of antiserum (vide supra). (2) The maximal weight of precipitate from a given amount of antiserum is the same whether it is discharged by a single quantity or by successive smaller quantities of antigen.[15] (3) In total interactions the weight of precipitate is independent of the weight of antigen (vide supra). (4) In partial interactions the weight of precipitate may be many times greater than the weight of antigen when the quantity of the latter is small—for example, 1 mg. or 5 mg.[13 15] These observations are not inconsistent with the hypothesis that antigen and antiserum combine to form the precipitate, but they indicate that it is erroneous to speak of the precipitin of the antiserum precipitating the antigen; in other words, they indicate that the antigen is not the true precipitable substance.

Arrhenius and Hamburger[20] have brought forward evidence in favour of the interaction taking place between equivalent quantities of antigen and of precipitin. Their experiments do not appear to be opposed to ours. They deal rather with another aspect of the question, studied in different experimental conditions. Arrhenius† [22] states that the precipitate formed with small quantities of antigen must be composed mainly of precipitin, and, from his equation of equilibrium

$$\frac{A-P}{V} \times \frac{B-P}{V} = K$$

it follows that his large precipitates must contain proportions of antigen and antiserum similar to those contained in his small precipitates. Thus a small precipitate of 2 units (P = 2) contains 2 equivalents of A (antigen) and 2 equivalents of B (precipitin); and a large precipitate of 64 units (P = 64) contains 64 equivalents of A and 64 equivalents of B. If, as Arrhenius states, the small precipitate is composed mainly of precipitin, then, on his own hypothesis, the large precipitate is in the same ratio composed of precipitin. Arrhenius[23] also points out that the precipitates deviating complement in the "deviation test of Moreschi" must be derived mainly from precipitin, a fact which we fully recognize.[24]

The experiments of Von Dungern,[25] P. T. Müller,[26 27] Fleischmann and Michaelis,[28] have led them to the view that a diminution of both components of the precipitate (antigen and antibody) occurs in the interaction, and that in favourable circumstances both components may be completely removed from the solution. The precipitate is therefore composed of an insoluble compound of both components, neither of which acts as a ferment on the other. If a considerable mass of precipitin reacts with a small mass of "precipitable substance," the precipitate is formed of much precipitin and little "precipitable substance." If mean masses of both substances interact, the precipitate contains both components in equal proportion.

Von Dungern[25] mixed constant amounts of antiserum with ascending quantities of antigen. He then tested the superfluids above the precipitates for precipitin and for "precipitable substance." To this end he added a drop of antiserum and a drop of antigen to separate drops of each superfluid. With the microscope he sought twenty minutes later for a precipitate, and in each series he found a "middle zone" in which the superfluid gave no precipitate with antiserum nor with antigen. He concluded that in this "middle zone" of the series the precipitate contained the whole of the precipitin and antigen of the original mixtures. He also made certain adsorption experiments to show the variable composition of the precipitate.

We have carried out many thousands of interactions of the type employed by Von Dungern, and we have tested the superfluids with both antiserum and antigen.[13 16] But we have found that in every case the subsequent addition of antiserum has led to the formation of a further precipitate. The subsequent addition of antigen has, or has not, yielded a precipitate, according as the original interaction was partial or total (vide supra). We would draw attention to the larger quantities of superfluid examined by us, and the much greater time—frequently forty-eight hours—allowed for interaction.

P. T. Müller[26] has compared the effect of lactoserum on milk with the coagulation of caseinogen by rennin. He has shown that lactoserum precipitates casein, and in

* An interesting corroboration is supplied by Hunter,[19] who, working with precipitins for snake venom, found that the toxicity of his superfluids was not diminished at the end of a precipitin reaction.

† Arrhenius[24] had previously said: "This seems to indicate that the whole quantity of the albuminous substances in A (anticen) and only a small part of those in B (precipitin) enter into the precipitates."

many other ways resembles rennin—for example, precipitation by lactoserum is dependent on the presence of the salts of lime, or certain other divalent elements. The close similarity between the actions of lactoserum and rennin indicates that antiserums prepared by injection of milk differ fundamentally in their action from antiserums prepared with blood serum and egg-white.

Phenomena of Inhibition.

We have elsewhere discussed our interpretation of this phenomenon and the bearing of our experiments on Ehrlich's hypothesis.[29 30] If inhibition were brought about by inactive precipitin (precipitoid) interacting with molecules of antigen, and thus preventing the precipitating action of any active precipitin that may be added, then it should be possible to overcome the inhibition by an excess of antigen, thus providing disengaged molecules to interact with the active precipitin. But in our experiments, when inhibition was complete, we have never been able to overcome the inhibition by any further addition of antigen. (In these experiments the amount of antigen originally present was sufficient to discharge the greater part of the precipitable content of the antiserum). In similar circumstances we have usually been able to overcome the inhibition by a further addition of antiserum—an observation which by itself is not inconsistent with Ehrlich's hypothesis and the theory of mass action.

When regard is paid to the exact amounts of the interacting substances in an inhibition experiment, further difficulties arise, since unheated antiserum is never able completely to neutralize the antigen, while the same quantity of heated antiserum may completely inhibit precipitation from like quantities. It would, then, be necessary to assume that the combining affinities of precipitoid could be effectively distributed over a much greater number of molecules of antigen than could those of precipitin.

Without going into detail, we may say that our results are consistent with the hypothesis that a heated inhibitory antiserum acts not on the antigen, nor on the antiserum, but on the product of their interaction—the precipitate—and that inhibitory action is of the nature of a solution of precipitate.[29 30] There appears to be a quantitative relation between the amount of heated antiserum and the amount of precipitate that it will inhibit (dissolve). The fact that inhibition cannot be overcome by excess of antigen (the original antigen being sufficient to neutralize the greater part of the antiserum) is explained by our finding that, in these circumstances, no marked increase of precipitate occurs. The further fact that, in similar conditions, an increase of unheated antiserum can overcome the inhibition, is consistent with our finding that there is always sufficient antigen left to produce fresh precipitates with fresh addition of antiserum. We may add that our precipitation[11 31] and inhibition[29 30] experiments with closely-related heterologous proteins support our interpretation of the interaction of antiserums with specific antigens, and so strengthen our general position.

Conclusions.

1. The main mass of the precipitate is formed by constituents of the antiserum.

2. There is a close relationship between the weight of precipitate and the amount of the antiserum (cf. Table I).

3. In total interactions the weight of precipitate is independent of the weight of antigen (cf. Table III).

4. In partial interactions the weight of precipitate is conditioned by the quantity of antigen (cf. Table II).

5. It is therefore erroneous to speak of the precipitin of the antiserum coagulating the antigen, or to regard the antigen as the precipitable substance.

6 Inhibition phenomena are inconsistent with the hypothesis that precipitoid is developed, but are consistent with the finding that heated antiserums act directly on precipitate by specific solvent action.

7. Our interpretation of the precipitin reaction appears to have important practical bearings

(*a*) On the identification of the specific origin of proteins, and on the separation of closely related species ([11 31]);

(*b*) The determination of the value or morphological characters of the orders, genera, and species of plants, as suggested by one of us ([24]);

(*c*) On the improvement of methods for testing the interaction of antigen and antiserum by the deviation of complement.

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STUDIES IN THE ANAËROBIC CULTURE OF THE INTESTINAL MICRO-ORGANISMS.

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In the course of an investigation on the variation of intestinal organisms it was thought advisable to ascertain if any variations could be obtained by anaërobic methods of culture. This appeared the more desirable as it is generally admitted that the intestinal canal must have a very low oxygen pressure.

If the anaërobic state produced any definite variations, it seemed probable also that such would take place within the body. Again, the chemical action of the intestinal organisms in the anaërobic state, as opposed to the aërobic, is but little understood, and many of the published results are contradictory.

Technique Employed.—The Bulloch anaërobic chamber was used for this work. In all experiments it was more or less exhausted, so that by ascertaining the degree of exhaustion at the end of the experiment any leak in the apparatus could be readily detected. This is necessary since the apparatus as obtained directly from the instrument maker is apparently rarely gas-tight.

The estimation of the degree of anaërobiosis (as in one particular experiment) was made as follows: Height of barometer, 760 mm. of Hg; height of the manometer communicating with the anaërobic chamber, 700 mm. of Hg—difference 60 mm. This is diminished by the vapour tension of water at the temperature of the apparatus, for example, 17 mm. at 68° F. This in the case in point gives a remainder of 43 mm., one-fifth of which represents oxygen.

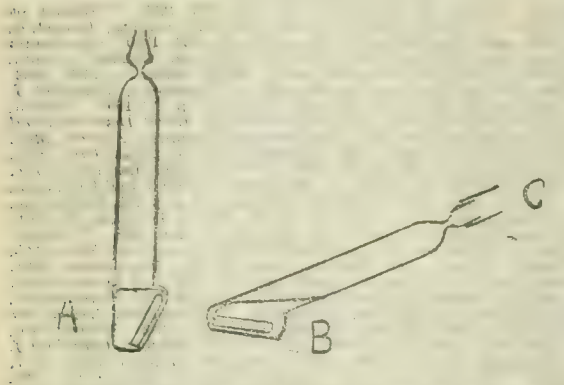
The leakage of air should not amount to more than 10 mm. of mercury, in which case the pressure of oxygen will vary not more than 2 mm. between the beginning and the end of the experiment. In favourable cases I have found the leak to represent not more than 2 mm. of air in four days. The same luting used with the new instruments shows about 100 to 500 mm. leak after 24 hours at 37° C. It is difficult in the latter case to say whether the growth effects are due to the great exhaustion in the beginning of the experiment or the great leak taking place after further incubation. With leaks such as one gets with good apparatus, for example, 5 mm. only (about one-fifth of which is oxygen), the results are fairly accurate.

Drying of the plates is very troublesome in a chamber containing pyrogallic acid in strong potash. This is obviated by placing a dish of water over the pyrogallic solution. If partial anaërobic states are used without pyrogallic, the bottom plate comes out frequently with a large quantity of water floating on it, so that it is advisable to have one or two empty plates on the bottom of the chamber. The plates do not require to be inverted in the chamber. If they are inverted and a hand-pump is used for exhaustion, the agar frequently falls off. A water pump attached to the tap is most satisfactory for exhaustion.

Since the oxygen tension in broths is difficult to ascertain, I confined my work mainly to plate culture. A quarter of an

hour's exhaustion of a broth tube at a particular pressure, with vigorous shaking during the whole time, does not induce a state of equilibrium between the tension of gas in the fluid and the space above it. Sealing the tubes after such an exhaustion is followed by further liberation of gas.

That exhaustion of broth by means of the air-pump occurs very slowly can be readily shown by the use of an anaërobic gas-tube, designed as shown in Fig. A. If the tube be exhausted



in the tilted position (see Fig. B), any dissolved gas in the inner tube escapes. If the exhaustion take place at an air pressure of 30 mm. of mercury and is accompanied by vigorous shaking, it will be found that after fifteen minutes a position of equilibrium has not been obtained. This can be shown by sealing the neck of the tube and putting it into the erect position, when gas will continue to be given off and will collect in the gas-tube. This renders it difficult to determine at what pressure of oxygen the organisms in broth are growing.

Again, plates which are poured after seeding will show growth in anaërobic conditions which will prevent the growth of surface cultures. The surface of the agar conforms more strictly to the anaërobic state of the chamber than the substance of the agar. On this account I used surface inoculations regularly.

Another advantage of plates as opposed to fluid media is that, in the anaërobic state, the former will give sharp and definite changes in reaction in cases where such changes do not show up well in the broth. This is probably due to the fact that the total volume of growth is too small in some cases to produce sharp well-defined alterations in reaction in the whole mass of the culture as in broths, but will do it quite well when concentrated on definite points of a plate.

For anaërobic states superior to those got by simple exhaustion with an ordinary water pump, exhaustion and refilling with hydrogen is satisfactory. This is repeated two or three times as required. The most strict anaërobic states used in these experiments have been got by simple exhaustion, repeated refilling with hydrogen, and the use of pyrogallic acid in 30 per cent. potash solution.

Attention to the above points of technique gives constant and satisfactory results. The use of lactose-bile-salt-agar was first tried in this anaërobic work, when I found that the *B. typhosus* would not grow on it in an exhausted chamber containing pyrogallic acid and 30 per cent. potash. This made it necessary to ascertain first of all the oxygen pressure required by the different intestinal organisms for their growth. Surface inoculation of glucose-agar was used, and the following results obtained:

Surface Inoculation of Glucose Agar Plates.

Degree of Anaërobiosis.	
1. Exhaustion; filling twice with hydrogen and re-exhaustion with addition of pyrogallic acid and caustic potash (30 per cent. solution). (The apparatus must be gas tight.)	Gaertner's bacillus, *B. typhosus*, *B. dysenteriae* (strains Kruse and Flexner) will not grow under these conditions.
2. 1 mm. oxygen	*B. typhosus*, *B. dysenteriae* (strains Kruse and Flexner), *V. cholerae*, *B. coli*, Morgan's No. 1 bacillus all grow at this oxygen pressure. *B. alcaligenes* does not.
3. 7 mm. oxygen	The results got at this pressure were similar to those obtained at 1 mm., that is, all organisms specified grew except *B. alcaligenes*.
4. 16 mm. oxygen	At this pressure all grew, including *B. alcaligenes*.

Result.—Some of the above organisms at least are not facultative anaërobes in the strict sense. *B. alcaligenes* requires a comparatively high oxygen tension for growth.

Lowering the oxygen tension diminishes the size of the colonies of the organisms. This diminution is a little more marked in the case of *V. cholerae* than the other above-mentioned organisms. The thinness of the colonies is a striking feature of anaërobic growth in most of the organisms tested, especially *B. typhosus* and *B. dysenteriae* (Kruse).

From the above results it followed that strict anaërobiosis was not desirable in endeavouring to find variations or other anaërobic phenomena of interest applying to the pathogenic intestinal organisms.

It is now well known that papillae formation on colonies frequently indicates variation, and this was first sought for and obtained in great perfection in the case of the *B. coli* on MacConkey's medium.

B. coli on MacConkey's medium (lactose-bile-salt-agar with neutral red) gives after two days' anaërobic growth at 1 mm. oxygen pressure intensely yellow colonies. After four to five days' growth these colonies are papillated. The papillae are large and numerous. Aërobic controls on the same medium show only red colonies during the whole time with no definite papillae. The yellow colour is also produced by *B. coli* anaërobically in neutral red lactose-bile-salt-peptone water. If the yellow broth be made acid to litmus the colour does not change markedly. If air be drawn through the broth for five minutes it still remains yellow, which would not be the case if ordinary reduction had taken place. In plates which have stood in the cold room for two to three days the yellow colour tends to disappear.

I find that on replating after propagation in anaërobic broth and growing anaërobically this papillae-forming power is lost. We seem to have here an adaptation to the particular oxygen pressure on this medium in which process a few selected cells rapidly outgrow all the rest. These new cells give rise to smooth colonies. The strict analogy between papillae-formation following the addition of chemicals to the media and that accompanying partial anaërobiosis leaves little room for doubt that we have an anaërobic variation. Bile-salt must be present to give this effect.

B. typhosus was next tried on the same medium. *B. typhosus* on bile-salt-lactose with neutral red does not, like *B. coli*, give rise to papillae formation at any of the oxygen pressures I have worked with.

It produces at 1 mm. of oxygen, however, strongly acid colonies (red), a phenomenon which it seemed advisable to investigate. The range of oxygen pressure giving this effect is very narrow. It is easily got at 1 mm., but at 7 mm. of oxygen I have never been able to obtain the effect. It was at first thought to be an anaërobic fermentation of the lactose, but further work showed that it occurred without the presence of the lactose. It really depends on the bile salt (commercial sodium taurocholate). The action was also found to be common to the *B. dysenteriae* (Kruse and Flexner strains) and Gaertner's bacillus. *B. alcaligenes* cannot produce the acidity, as it fails to grow at this pressure.

To elucidate further these effects produced by the growth of *B. typhosus* and *B. coli* on bile-salt it was thought desirable to work with taurin, glycocol, sodium cholalate, and pure sodium taurocholate, any of which might perhaps account for these effects. Taurin and glycocol only have so far received any attention from me, as they are easily obtained in the pure state. A necessary preliminary to such an investigation was to observe carefully the effect of *B. typhosus* and *B. coli* on the medium which formed the basis of the above experiments.

The Action of B. Coli on Peptone.

Plates of the following composition were used: Agar, 2 per cent.; peptone (Witte), 2 per cent.; solution of neutral red (1 in 100), ½ per cent.; sodium chloride, ½ per cent. Made up with tap water and rendered faintly alkaline to litmus.

B. coli grown on above, in ordinary air gives a distinctly alkaline reaction of the colonies and plates. With a tension of oxygen equal to 26 mm. of mercury the alkali production is much less though the growth is luxuriant; at 7 mm. it is very slight, and at 2 mm. it is indistinguishable. *B. typhosus* has a similar effect, but the alkali formation aërobically is not quite so great.

We see, then, that no acid reaction appears with either organism growing on peptone only at any oxygen pressure, nor have I observed papillae-formation.

Glycocoll.—If a medium of the following composition: Agar 2 per cent., peptone (Witte) 2 per cent., lactose 1 per cent., solution of neutral red (1 in 100) ½ per cent., sodium chloride ½ per cent., made up with tap water and rendered faintly alkaline to litmus, has added to it ½ per cent. glycocoll, it will be found that the *B. typhosus* will not grow on it aërobically, while control inoculated plates put into the anaërobic chamber immediately after inoculation will grow luxuriantly.

Medium.	Typhoid Strain.	Aërobic Plates.	Plates at 16 mm. of Oxygen.	Plates at 1 mm. of Oxygen.	Aërobic Plates of Lactose Agar, with no Glycocol.
Lactose agar + ⅛ per cent. glycocoll	"Delépine"	Two colonies	Four brown colonies	Crowded plates with pale brown centres	Crowded plates of colonies with no pigmentation.
,,	"Guy"	No colonies	Three colonies	,,	,,
,,	"Lincoln"	,,	Ten colonies	,,	,,
,,	"McConn"	Four colonies brown in colour	Over 200 colonies all showing brown pigmentation	Crowded plates with deep brown centres	,,

General Conclusion.—Evidently the strain McConn is much less sensitive than the other strains, since it grows well at a pressure of 16 mm. of oxygen.

In the accompanying table are shown the results obtained with four strains of *B. typhosus* on media containing glycocoll.

Strength of Glycocoll Required.

If lactose agar be used as the basis of the medium, ⅛ per cent. glycocol is sufficient to prevent the aërobic growth of *B. typhosus*. In the absence of lactose I have found that ⅛ per cent. does not suffice but that ¼ per cent. is required. With 1 per cent. glycocoll-agar without lactose a similar effect is produced, but the plates must be got quickly into the anaërobic chamber, otherwise they will not grow. The *V. cholerae* is inhibited aërobically by ⅛ per cent. glycocoll-agar without lactose. *B. coli* and Gaertner's bacillus require a higher concentration of glycocoll to stop their aërobic growth.

Nature of the Phenomenon.

If inoculated aërobic plates which had not grown after two days are then placed in the anaërobic chamber no growth occurs. Reinoculation is necessary, in which case they will grow anaërobically. This suggests that the previous incubation in the presence of air has not caused the formation of any direct poison.

Twelve plates of ⅛ per cent. glycocoll-agar were inoculated with *B. typhosus* strain "Guy," and divided into four groups of three each. The first group was put into the anaërobic chamber immediately on inoculation and all grew. The second group was then incubated aërobically for fifteen minutes and transferred to the anaërobic chamber, when no growth resulted. The third set after three hours and the fourth, after twenty-four hours' aërobic incubation, also failed to grow when placed in the anaërobic chamber. All the above plates were put up at the same oxygen pressure anaërobically—namely, 1 mm.

If 5 c.cm. of a ½ per cent glycocoll solution in peptone water be inoculated with 72 mg. of a forty-eight hours' broth culture of *B. typhosus*, subculture in broth can be readily made during the first one to two hours, but not after eighteen hours. If the same quantity of organisms be put on a ½ per cent. glycocoll plate and subcultures are made therefrom into broth, they will be found to die out much more quickly than in the peptone water. This may be due to the comparatively small amount of oxygen in contact with the organisms in peptone water.

With *B. typhosus* the results with glycocoll are constant, but with other organisms it occasionally happens that both aërobic and anaërobic plates do not grow. By working rapidly, however, and employing a suitable concentration of glycocoll I have got the effect also with *B. dysenteriae* (Kruse), *B dysenteriae* (Flexner), B. No. 1 Morgan, *B. paratyphosus* A, *B. paratyphosus* B, *B. aertryck*, *V. cholerae*, Gaertner's bacillus, and *B. coli*. With the latter two the effect is somewhat inconstant.

All the above give a deep brown colour reaction on glycocoll media under conditions admitting growth. It takes two to four days to appear usually.

It was thought that this antiseptic effect might be due to the production of formaldehyde from the glycocoll, in which case glycollic acid—hydroxyacetic acid—would probably be an intermediate product. This idea was based on the possibility that the organism might act similarly to yeast on leucin. Glycollic acid agar (½ per cent.) gave, however, no such difference with *B. typhosus*, *B. dysenteriae* (Flexner), or *V. cholerae*, so that this experiment does not support the view that the organism has formed formaldehyde.

It was observed that peptone agar with ½ per cent. glycocoll shows after standing on the bench a bleaching of the upper inch of the agar; below this there is a dark zone of about ½ in. in depth, while underneath the glycocoll medium retains its normal greyish-yellow colour. If the medium be kept at freezing point this change does not occur. If kept at 37° C. it occurs much more quickly than at room temperature. This it was thought, might have something to do with the difference, and accordingly agar which had undergone this change was used for anaërobic culture of *B. typhosus* and other organisms, when they were found to grow almost as well as on the new material.

The nature of the aërobic antiseptic influence of glycocoll seems at present obscure.

B. typhosus on taurin agar was not found to give any acidity at different oxygen pressures, so that the acid reaction of *B. typhosus* on bile salt media anaërobically is probably not due to taurin in any way. Other separate bile constituents have not yet been tried in order to account for this anaërobic fermentation of bile salt by *B. typhosus*, but I am continuing the research on this subject.

Conclusions.

1. *B. coli* and *B. typhosus* produce alkali from peptone aërobically. By lowering the oxygen tension the amount of alkali formed may be progressively diminished until at 1 mm. of oxygen the colonies are quite neutral in reaction.

2. *B. coli* forms papillae on bile-salt-lactose-agar anaërobically. These appear very prominently at a pressure of 1 mm. of oxygen. By continued anaërobic growth this papillae-forming power may be lost. The analogy between this phenomenon and papillae-formation aërobically on carbohydrates suggests that we have here to do with an anaërobic variation.

3. *B. typhosus* ferments bile salt at low oxygen pressures, but does not do so at a pressure equal to 7 mm. of mercury. This effect is not due to taurin or glycocoll.

4. Glycocoll acts as an antiseptic on many intestinal organisms, notably *B. typhosus*. By pursuing the technique described in the paper, this antiseptic effect may be shown to occur only under aërobic conditions. Under anaërobic conditions, the addition of glycocoll does not inhibit growth.

In the above experiments with glycocoll Kahlbaum's product was employed exclusively. Recently further experiments have been made with the same product after recrystallization, and it would appear that the antiseptic influence of the recrystallized substance is considerably less than that of the commercial glycocoll, and the pigment formation is also less marked. The experiments on this question are being continued.

AN OUTBREAK OF GASTRO-ENTERITIS DUE TO B. PARATYPHOID (B).

By F. A. Bainbridge, M.D., D.P.H., F.R.C.P.,
Lister Institute.

During the period of June 10th to 14th, 1910, fourteen people living in four households had symptoms of acute gastro-enteritis, namely, vomiting, diarrhoea, abdominal pain and collapse. The onset was sudden, the diarrhoea was profuse, and the stools were of a characteristic *green* colour; fever was present in all the patients, and lasted from three to seven days, the temperature ranging from 101° to 103°F. No spots, enlargement of the spleen, or other symptoms suggestive of typhoid fever were observed. Two of the patients were very ill indeed and in all

convalescence was slow, and was retarded by attacks of circulatory failure in at least three patients.

Three specimens of faeces were obtained. One was practically sterile, but the other two yielded a bacillus which, in cultural characters, its agglutination and absorption reactions, was identical with *B paratyphoid* B

Blood was obtained from six of the patients, and was found to agglutinate both the bacillus isolated from the faeces and standard strains of *B. paratyphoid* B in dilutions ranging from 1–200 to 1–400.

It seems highly probable, therefore, that the outbreak was caused by the paratyphoid bacillus.

It was at first supposed that infected food was responsible for the outbreak, but no article of food had been eaten by all the patients, and the dates of onset and distribution of the illness were at variance with this view. The fact that the cases occurred in several households, and that the only link between the different households was that visits had passed between them at the time of the outbreak, suggested the possibility of a paratyphoid carrier infection.

The outbreak is of interest since attacks of acute gastro-enteritis caused by *B paratyphoid* B have not been previously recorded in this country.

RECOGNITION OF B. TYPHOSUS BY COMPLEMENT FIXATION.

By H. R. Dean, M.B., B.Ch.,
Lister Institute.

The object of these experiments has been to ascertain if it is practicable to recognize by the complement fixation method the presence of small quantities of typhoid bacilli in the mixed growth obtained on plates inoculated with an emulsion of faeces.

The cases examined have been taken from among the series of typhoid carriers, or suspected carriers, examined by the usual bacteriological methods at the Lister Institute. The results obtained by me have been controlled by the results obtained by the isolation and identification of the bacteria on the customary sugar media, and I have great pleasure in recording my thanks to Dr. Ledingham for controlling my results by the isolation of typhoid in pure culture, as well as for the great interest he has taken in these experiments. The independent control thus afforded to my observations has been of the utmost service to me. The method was as follows:

Three Petri capsules of MacConkey's medium (neutral red bile salt, lactose agar) were inoculated with an emulsion of the faeces. These were the actual plates used in the bacteriological examination of the faeces, and were not subjected to any special treatment. After twenty-four hours' growth the first plate, which was in the majority of cases thickly covered with a mixed growth, was treated as follows: The entire growth on the plate was rapidly emulsified in 3 c.cm. of distilled water. The emulsion was removed with a Pasteur pipette to a test tube, which was placed in the incubator at 37° C. After a period varying from three to twenty-four hours the emulsion was removed from the incubator and frozen hard in an ice and salt freezing mixture. When thoroughly frozen it was returned to the incubator at 37° C. for a further period of time, varying from one to twenty-four hours. The emulsion was then centrifugalized until clear or nearly clear. The clear supernatant fluid was pipetted off and tested for the presence of typhoid antigen with a typhoid immune serum obtained from a horse.

The details of the method are as follows: Each tube contained two and a half cubic centimetres, or five quantities each of half a cubic centimetre.

- 0.5 c.cm. containing extract diluted with physiological saline solution.
- 0.5 c.cm. containing serum diluted with physiological saline solution.
- 0.5 c.cm. of a 1 in 10 dilution of fresh guinea-pig serum.
- 0.5 c.cm. of a 1 in 20 suspension of washed sheep's corpuscles.
- 0.5 c.cm. of a dilution of haemolytic serum (rabbit v. sheep corpuscles).

The haemolytic system was prepared and standardized in the usual way, and from two to three times the minimal haemolytic dose was used. The extract was used in three amounts of 0.3, 0.15, and 0.075 of a cubic centimetre diluted in each case to 0.5 c.cm. The typhoid serum was used in a dose of 0.1 c.cm. diluted to 0.5 c.cm., and the same dose of normal horse serum diluted in a similar fashion was used as a control, with each dose of extract. Further details are best seen from the following example.

Table I.

	With Typhoid Serum 0.1.	With Normal Serum 0.1.
	Haemolysis.	Haemolysis.
Extract A:		
0.3	None	Almost complete.
0.15	,,	Complete.
0.075	,,	,,
Extract B:		
0.3	Almost complete	Almost complete.
0.15	Complete	Complete.
0.075	,,	,,

Controls typhoid serum 0.2 and normal serum 0.2, without bacterial extract. The haemolysis was in both cases complete.

The extract dilutions were first made, the bulk being in each case made up to 0.5 c.cm. with normal saline solution. The extract dilutions were made in duplicate, and to one series was added 0.1 of typhoid serum diluted to ½ c.cm. To the other series was added 0.1 of normal horse serum diluted to ½ c.cm. Control tubes containing double the dose of serum (0.2) diluted to 1 c.cm. were also put up. To every tube was added 0.5 of a 1 in 10 dilution of fresh guinea-pig serum. The tubes were then incubated for one hour at 37° C. At the expiration of one hour there was added to each tube 0.5 of a 1 in 20 suspension of sheep's corpuscles and 0.5 c.cm. of a 1 in 500 dilution of haemolysin. The tubes were then incubated for one hour, and the results read and recorded.

Eighty-five plates were examined by this method, and in 81 cases the result was in agreement with the bacteriological findings. In 66 cases the complement fixation method gave a negative result, and no typhoid colonies could be isolated from the plates. In 15 cases a positive result was obtained, and typhoid bacilli were isolated in culture from the plates. In 4 cases out of 85 the result did not agree with the results obtained by the usual method. In all cases the reaction was very sharp and clearly marked, and no difficulty was experienced in reading the results.

It does not seem necessary to go into any detail as to the method, for no departure was made from the accepted technique of complement fixation except in the matter of the preparation of the bacterial extracts. These extracts, which will be again mentioned, were found to be very uniform, to have a powerful specific action, and to have little tendency to independent absorption of complement; they were, moreover, very easy to make. The optimum time for the making of an extract by this method has not been determined, but the extracts were found to be quite good which had occupied four hours in the making, and extracts which had been allowed a longer time were not appreciably more powerful. In any case, it is quite possible to make a good extract in four hours and to form an opinion as to the presence of typhoid bacilli on the same day as that on which the plates are removed from the incubator.

The results obtained seem to show that the method is accurate, and it is certainly delicate. I have no evidence as yet that it may succeed in cases where typhoid bacilli are too few for detection by ordinary methods, but in several cases from which typhoid bacilli were isolated by cultural methods with considerable difficulty a marked reaction was obtained by the complement-fixation method. The result was, in fact, quite as definite as in cases in which the typhoid colonies on the plate were numerous and obvious. I hope shortly to get more evidence on this point.

As a test of the delicacy of the reaction three agar plates were generously inoculated with *B. coli.* They were then incubated for forty-eight hours, at the end of which time one normal loop of typhoid bacilli was mixed with the growth of one plate, to another was added half a loop, and the third was untouched. Extracts were prepared by emulsifying the growth of each plate with 3 c.cm. of distilled water. The result of the complement-fixation experiment is shown in the following table:

TABLE II.

	Typhoid Serum 0.1.	Normal Serum 0.1.
	Haemolysis.	Haemolysis.
Extract A:		
0.2	None	Complete.
0.1	,,	,,
Extract B:		
0.2	,,	,,
0.1	Slight	,,
Extract C:		
0.2	Almost complete	,,
0.1	Complete	,,

Controls of serum alone:
Typhoid serum 0.2 diluted to 1 c.cm. ... Complete haemolysis.
Normal serum 0.2 diluted to 1 c.cm. ... Complete haemolysis.

Each tube contained the dose of extract diluted with saline to 0.5 c.cm. *plus* the dose of serum diluted with saline to 0.5 c cm., and to each tube was added 0.5 c.cm. of a 1 in 10 dilution of fresh guinea pig serum. The tubes were incubated for one hour, and then received 0.5 c.cm. of a suspension of sheep's corpuscles, 1 in 20, and 0.5 c.cm. of haemolysin, 1 in 600. The plates A and B, which had received one and half a loop of typhoid bacilli respectively, were very plainly differentiated from C, to which typhoid had not been added.

The result shows that a small quantity of typhoid bacilli can be detected even when mixed with an enormous quantity of *B. coli*. It will be seen from the table that 0.1 c.cm. of extract B, which contained approximately one-sixtieth of a loop of typhoid bacilli, gave a perfectly definite reaction. The recognition of typhoid bacilli in mixed culture by this method is easy and rapid, for a result can be obtained within eight hours of the removal of the incubated plate from the incubator. Moreover, it can be easily combined with the usual cultural methods.

For making the extract I have used the first of the three plates inoculated with the emulsion of faeces. The first plate was, as a rule, overgrown with confluent colonies, and quite useless for bacteriological purposes. In cases in which the colonies were discrete on the first plate, some of the suspicious colonies were picked off before the extract was made.

In 2 cases out of 85 a complement fixation reaction was obtained, but typhoid bacilli were not isolated in pure culture. In these two cases it was not possible to determine whether the serum reaction or the cultural methods had been at fault. Of the other cases no difficulty was at any time experienced in deciding between a positive and a negative reaction. No cases were met with in which a positive reaction was simulated by any organism resembling typhoid. At the same time it is recognized that the number of cases investigated is far two small to exclude this possibility. It is more probable that no organisms of the typhoid group occurred in this comparatively small series of experiments. To settle this point I prepared extracts from plates made with pure cultures of paratyphoid A and B, and from a culture of aertryck. These gave a reaction which was in no way distinguishable from that obtained with a typhoid extract. It seemed to me, however, probable that this was a group reaction, comparable to that seen in agglutination experiments, and that the source of error might be eliminated by accurate dosage of the serum. To test this view it seemed advisable to experiment with extracts prepared from pure cultures of various members of the group.

It is not intended in this paper, which is of the nature of a preliminary communication, to go at all fully into the literature of the subject. It may, however, be mentioned that the specificity of the complement fixation reaction in the case of the typhoid group is at the present time generally acknowledged as the result of the work of numerous authors. The question of specificity as regards the typhoid and the paratyphoid bacilli was settled by the papers of Leuchs and the very interesting results to be obtained by the absorption of the group ambocepter were first recorded by Simnitzky.

The strains of bacilli used in these experiments were tested by the usual sugar tests.

The method of preparing the extract was as follows: A Roux bottle, with an agar surface of about 20 × 10 cm., was freely inoculated and incubated for twenty four hours. At the end of this time the growth was emulsified in 20 c.cm. of distilled water. The emulsion was put into an incubator at 37° C. for twenty-four hours, at the end of which time it was frozen hard with a mixture of ice and salt. It was allowed to thaw after two hours, and then returned to the incubator for another twenty-four hours, when it was again frozen and thawed. The emulsion was then centrifugalized and a clear or almost clear fluid obtained. The clear fluid was poured off and kept in the cold room, and was found to remain fit for use for at least one month. In those cases in which the extract was not quite clear after centrifugalization it was found that a deposit settled to the bottom of the flask after a few days, leaving the supernatant fluid quite clear.

The extracts made in this way gave good results with the complement fixation method, and were very free from any tendency to absorb complement spontaneously. It will be noticed that the extract was not heated above 37° C. at any period during its manufacture; nevertheless, cultures made from the clear fluid immediately after centrifugalization were either sterile or showed only one or two colonies. The extracts were almost invariably found to be sterile after they had been a few days in the cold room.

TABLE III.

		Typhoid Serum, 0.1 c.cm.	Typhoid Serum, 0.025 c.cm.	Normal Serum, 0.1 c.cm.
		Haemolysis.	Haemolysis.	Haemolysis.
	Typhoid Extract "M" c.cm.			
1	0.1	None	None	Complete
2	0.05	,,	,,	,,
3	0.025	,,	,,	,,
4	0.0125	,,	,,	,,
5	0.00625	,,	Trace	,,
6	0.003125	Trace	Almost complete	,,
7	0.0015625	Marked	Complete	,,
8	0.00078125	Almost complete	,,	,,
9	0.000390625	Complete	,,	,,
	Paratyphoid A Extract			
1	0.1	None	Trace	Complete
2	0.05	,,	Almost complete	,,
3	0.025	,,	Complete	,,
4	0.0125	,,	,,	,,
5	0.00625	,,	,,	,,
6	0.003125	Trace	,,	,,
7	0.0015625	Almost complete	,,	,,
8	0.00078125	Complete	,,	,,
9	0.000390625	,,	,,	,,
	Paratyphoid B Extract "Sch."			
1	0.1	None	None	Complete
2	0.05	,,	Almost complete	,,
3	0.025	,,	Complete	,,
4	0.0125	,,	,,	,,
5	0.00625	Trace	,,	,,
6	0.003125	Slight	,,	,,
7	0.0015625	Almost complete	,,	,,
8	0.00078125	Complete	,,	,,
9	0.000390625	,,	,,	,,

Controls:
Typhoid serum (without extract) 0.2 ... Complete haemolysis.
Normal serum (without extract) 0.2 ... Complete haemolysis.

To each tube was added 0.5 of a 1 in 10 dilution of fresh guinea-pig serum, and, after incubation for one hour, 0.5 c.cm. of a 1 in 20 suspension of washed sheep's corpuscles and 0.5 c.cm. of a 1 in 600 dilution of haemolysin. The extracts used in these experiments were prepared at the same time and by the same method from approximately equal amounts of fresh cultures.

In this experiment it will be noted that with a dosage of 0.1 c.cm. typhoid serum it is impossible to differentiate between typhoid extract and extracts prepared from paratyphoid A and B. When, however, the dose of serum is reduced to 0.025, the positive reaction with the paratyphoid extracts almost disappears, while the reaction with typhoid extract is reduced only to a very small extent. A very similar result is shown in the following experiment:

TABLE IV.

		Typhoid Serum, 0.1 c.cm.	Typhoid Serum, 0.25 c.cm.	Normal Serum, 0.1 c.cm.
		Haemolysis.	Haemolysis.	Haemolysis.
	Typhoid Extract "T."			
1	c.cm. 0.1	None	None	Almost complete
2	0.05	"	"	Complete
3	0.025	"	"	"
4	0.0125	"	"	"
5	0.00625	"	Slight	"
6	0.003125	Trace	Almost complete	"
7	0.0015625	Slight	Complete	"
8	0.00078125	Complete	"	"
9	0.000390625	"	"	"
	Paratyphoid B Extract "Mac."			
1	0.1	None	Marked	Almost complete
2	0.05	"	Complete	Complete
3	0.025	"	"	"
4	0.0125	"	"	"
5	0.00625	"	"	"
6	0.003125	"	"	"
7	0.0015625	Slight	"	"
8	0.00078125	Almost complete	"	"
9	0.000390625	Complete	"	"
	Aertryck Extract.			
1	0.1	None	Slight	Almost complete
2	0.05	"	Marked	Complete
3	0.025	Trace	Complete	"
4	0.0125	Slight	"	"
5	0.00625	Marked	"	"
6	0.003125	Almost complete	"	"
7	0.0015625	Complete	"	"
8	0.00078125	"	"	"
9	0.000390625	"	"	"

The controls of typhoid serum 0.2 c.cm., and normal serum 0.2 c.cm., without extract, in either case showed complete haemolysis.

To each tube was added 0.5 c.cm. of a 1 in 10 dilution of fresh guinea-pig serum, and after one hour's incubation, 0.5 c.cm. of a 1 in 20 suspension of sheep's corpuscles and 0.5 c.cm. of haemolysin 1 in 300.

These experiments show that in complement fixation, as in agglutination, there is a group reaction which, when the antiserum is used in large amount, tends to mask the specific reaction between typhoid antibody and typhoid antigen. The complement fixation by a typhoid extract and typhoid antiserum is an extremely delicate and specific reaction, to demonstrate which it is, however, necessary to adjust carefully the proportions of the ingredients. In this case a dose of 0.025 c.cm. gives, under the conditions mentioned, a reaction with typhoid extract which is little short of the maximum, while the reaction with the other members of the group almost disappears.

In the following experiment an attempt was made still further to demonstrate the specific nature of the reaction.

Two Roux bottles, which had been inoculated with a culture of typhoid, and two which had been inoculated with a culture of paratyphoid B, were incubated for twenty-four hours. The growth was then washed off from each pair of bottles with about 200 c.cm. of saline solution. The emulsions were then centrifugalized, and deposits of washed bacilli were obtained. To each deposit was added 20 c.cm. of a 1 in 5 dilution of typhoid serum, and the thoroughly emulsified mixtures—serum and bacilli—were left for one hour in the cold room. The mixtures were then rapidly centrifugalized, and the almost clear serum mixtures were at once decanted. There were thus obtained an antityphoid serum which had been acted on by typhoid bacilli for one hour in the cold, and an antityphoid serum which had been similarly treated with paratyphoid B bacilli. These serums were then compared with a specimen of the same antityphoid serum, similarly diluted but otherwise untreated.

TABLE V.

		Typhoid Serum Untreated 0.1 c.cm.	Typhoid Serum Previously Absorbed with Paratyphoid B 0.1 c.cm.	Typhoid Serum Previously Absorbed with Typhoid 0.1 c.cm.	Normal Serum.
		Haemolysis.	Haemolysis.	Haemolysis.	Haemolysis.
	Typhoid Extract M.				
1	c.cm. 0.1	None	None	Almost complete	Complete
2	0.05	"	"	Complete	"
3	0.025	"	"	"	"
4	0.0125	"	Trace	"	"
5	0.00625	Trace	Almost complete	"	"
6	0.003125	Almost complete	Complete	"	"
7	0.0015625	Complete	"	"	"
8	0.00078125	"	"	"	"
9	0.000390625	"	"	"	"
	Paratyphoid A Extract.				
1	0.1	None	Almost complete	Almost complete	Complete
2	0.05	"	Complete	Complete	"
3	0.025	"	"	"	"
4	0.0125	Trace	"	"	"
5	0.00625	Almost complete	"	"	"
6	0.003125	Complete	"	"	"
7	0.0015625	"	"	"	"
8	0.00078125	"	"	"	"
9	0.000390625	"	"	"	"
	Paratyphoid B Extract.				
1	0.1	None	Almost complete	Almost complete	Complete
2	0.05	"	Complete	Complete	"
3	0.025	"	"	"	"
4	0.0125	Trace	"	"	"
5	0.00625	Almost complete	"	"	"
6	0.003125	Complete	"	"	"
7	0.0015625	"	"	"	"
8	0.00078125	"	"	"	"
9	0.000390625	"	"	"	"
	Serum alone.				
	0.2	Complete	Almost complete	Almost complete	Complete
	0.1	"	Complete	Complete	"

To each tube was added 0.5 c.cm. of a 1 in 10 dilution of fresh guinea-pig serum. The experiment was incubated for an hour, and there were subsequently added 0.5 c.cm. of a 1 in 20 suspension of sheep's corpuscles and 0.5 c.cm. of a 1 in 400 dilution of haemolysin.

From this experiment it appears that absorption with paratyphoid B removes the group antibody from an antityphoid serum, and that a serum treated in this way gives no complement fixation with extracts of either paratyphoid A or B, while the reaction with typhoid extract is only slightly reduced. It will be noticed that previous treatment of antityphoid serum with paratyphoid B extract

removes not only the antibodies for paratyphoid B, but also the antibodies for paratyphoid A.

On the other hand, previous treatment with typhoid bacilli removes the amboceptor for typhoid as well as for paratyphoid A and B. I hope to be able to continue these experiments, and more especially in the direction of the recognition of typhoid bacilli in mixed culture.

THE SERUM TREATMENT OF DYSENTERY:

WITH NOTES ON THE BACTERIOLOGICAL DIAGNOSIS OF DYSENTERY.

By Drs. M. A. Ruffer and J. Graham Willmore.

(From the Laboratories of the Conseil Sanitaire Maritime et Quarantenaire d'Egypte.)

In this paper we propose to give a short account of:

1. The preparation of polyvalent antidysenteric serum and the monovalent serum against the *B. dysenteriae* El Tor No. 1 described by us at the Belfast meeting last year.[1]
2. The biochemical properties of these serums.
3. The differential diagnosis of "dysentery" by laboratory methods.
4. A summary of the results of the treatment of 138 cases of dysentery during the present year, and a comparison of the mortality-rate of cases before and after the introduction of the serum treatment.

Preparation of Antidysenteric Serum.

(*a*) Horses No. I and II were inoculated with a mixture of cultures composed of:

5	strains of	B. Shiga-Kruse No. 1.
8	,,	B. El Tor No. 1.
5	,,	Pseudo D. (Kruse).
4	,,	Flexner, including B. Pseudo A. (Kruse).
2	,,	as yet unidentified dysentery bacilli.

The cultures were prepared by growing the bacilli on stock agar slopes for forty-eight hours at 37° C., emulsifying in 0.9 per cent. saline solution, mixing, and heating to 56° C. for one hour.

(*b*) Horses III and IV were inoculated with ten strains of *B. dysenteriae* El Tor No. 1, isolated from patients at El Tor and Alexandria.

(*c*) Horse No. V was inoculated with a culture of *B. pseudo-dysentericus* D (Kruse), kindly sent to us by Professor Dr. Kruse.

The growth from one large agar tube was emulsified in 1 c.cm. of physiological saline, and the doses, expressed in cubic centimetres, therefore represent the number of tubes of mixed vaccine. The initial dose given in June, 1909, was 0.5 c.cm. of the dead vaccine; the inoculations were made every ten to fifteen days, and the amount increased until by the middle of August a dose of 20 c.cm. was injected. At the end of August each horse then received 1 c.cm. of living organisms, the inoculations being repeated in increasing doses until by the middle of November 80 c.cm. of the living virulent cultures were given as a dose. The horses were then allowed to rest for one month before bleeding.

With Horse No. VI an entirely different method was adopted. A strain of El Tor No. 1, isolated in Alexandria, which produced a violent reaction when the killed culture was injected subcutaneously into a horse in a dose of half an agar tube, was grown for forty-eight hours on 15 agar tubes. (This strain killed a rabbit in twenty-four hours when inoculated intravenously in doses of a quarter of an agar tube.) The growth was emulsified and killed by heat, and then digested with pepsine and 0.2 per cent. HCl for twenty-four hours. The mixture was then rendered slightly alkaline with NaOH solution, and the entire amount given as an initial injection intramuscularly on October 30th. On November 11th 30 tubes similarly treated were given. On November 22nd a small amount of blood was withdrawn, and on the 23rd 80 tubes, digested, were injected.

The serum was found to agglutinate the bacillus completely in dilutions up to 1 in 1,000, and incompletely up to 1 in 2,000.

When mixed with the living culture in the proportion of 2 c.cm. of serum to one agar tube of living bacteria and inoculated into rabbits intravenously, the rabbit invariably survived. When mixed in the proportion of 1 c.cm. and ½ c.cm. of serum to one agar tube of living bacteria, the result was inconstant, some animals surviving and others succumbing.

Normal horse serum in the proportion of 1 to 2 c.cm. to one agar tube of bacilli was found to have no protective action, the animals which received the above mixtures all dying within twelve hours. A starting point in connexion with the injections of digested vaccine was the absence of the usual phenomena of reaction which followed the injection of untreated vaccine. This in spite of the large amounts injected and the rapidity with which the doses were increased; the rise of temperature was insignificant, there was hardly any swelling or tenderness at the points of inoculation, and the horse did not go off his feed or appear to be in any way affected.

On December 4th, 1909, eighty agar tubes of the living virulent bacilli were injected intramuscularly. Hardly any reaction followed; the temperature rose from 37.8° to 39.8°, and fell the next day to 39°. By the seventh day the temperature was normal. On the morning of the 6th there was very little swelling and no oedema, and the horse was eating well. Serum from blood withdrawn on December 2nd protected a rabbit, in doses of 1 c.cm., against six minimal lethal doses of living bacilli inoculated intravenously.

After our return from El Tor the inoculations were continued; commencing with a dose of 40 c.cm. in April, 1910, the amount was increased to 160 c.cm. for horses Nos. I and II, and to 240 c.cm. for horses III and IV in June, 1910, without any ill effect being produced. The immunity conferred by the first set of inoculations was therefore of satisfactory duration.

Subcutaneous and intramuscular injections only were employed, as during some experimental work in 1908 two of our horses died suddenly with symptoms resembling those of anaphylaxia, after receiving intravenous injections.[2] The virulence of the cultures was maintained when necessary by passage through rabbits and guinea-pigs, though this procedure was avoided as far as possible in view of the statement by Shiga that subcultures from the first generation are "more effective in the preparation of serum than the bacillus obtained after passage through animals."[3]

In the preparation of the mixed vaccine the proportions of each strain were chosen on the basis of the ratios of their virulence when inoculated into rabbits. The quantity of each culture injected into the horse was therefore in inverse ratio to the virulence of that culture, and it was hoped that by these means the horse's organism would respond by the production of equal quantities of antibodies for each group.

As will be seen when we discuss the protective properties of the serums, this hope was not realized, far larger amounts of antibodies being formed for the Shiga-Kruse No. 1 group than for any of the others. The agglutinins, on the other hand, were constant. In all the horses, with the exception of the horse No. VI (El Magnûn), the injections were followed by violent reactions.

The phenomena observed were:

1. A rise of temperature, usually amounting to 2° or 3° C., and lasting about forty-eight hours.
2. Diffuse swelling and inflammatory oedema, which usually spreads a considerable distance from the point of inoculation. When this subsides, a fluctuating swelling, lasting about seven days, is left at the area of inoculation. (If this be aspirated, a thin creamy pus containing degenerated dysentery bacilli and leucocytes is withdrawn. If this pus be then heated for one hour to 56° C., centrifugalized, and the clear liquor puris decanted off, the latter is found to be very strongly antimicrobic and antitoxic.)
3. Anorexia and general malaise. The areas round the points of inoculation are acutely sensitive.
4. Occasionally a little diarrhoea and, on one occasion at least, haematuria were observed. These symptoms pass off in twenty-four to forty-eight hours.

Biochemical Properties of the Serums.

Table No. I shows the agglutination reactions of the various strains of dysentery bacilli—some isolated in 1909 and some in 1910—with polyvalent serum. For the agglutination reaction of the above with El Tor serum see our paper read at the Belfast meeting.[4]

In testing the protective power of serum, 1 c.cm. was mixed with the living virulent bacillary emulsion in varying proportions and left in the incubator for two hours at 37° C.

The mixtures were then agitated and inoculated into rabbits and guinea-pigs, intravenously and intraperitoneally.

The minimal lethal dose of each emulsion was determined on each occasion by inoculating control animals under the same conditions as the animals inoculated with the serum and emulsion mixtures. Table II shows the prophylactic powers of the serums.

Controls were also made by inoculating animals with mixtures of bacillary emulsions and normal horse serum; the latter was found to possess no protective properties.

Living bacillary emulsion was used, as it has been shown by numerous observers[5] that serum prepared by inoculating horses with bacillary emulsion and that prepared with filtered toxins possess identical antitoxic and antimicrobic properties; further, of the various cultures used by us only those of the Shiga-Kruse No. 1 group furnished a soluble toxin.

The same results were obtained with killed bacillary emulsion.

TABLE I.

The types of bacilli in this and the following tables are classified according to their agglutination reactions with saturated serums.

Type of Bacillus and Name in Register.	Serum 1 in 50.	Serum 1 in 100.	Serum 1 in 200.	Serum 1 in 500	Serum 1 in 1,000.	Serum 1 in 2,000.
Bacillus Shiga-Kruse No. 1:						
K.S.	+ 3	+ 3	+ 3	+ 3	+ 1	–
49 (1909)	+ 3	+ 2	+ 1	±	–	–
Negri	+ 3	+ 3	+ 2	+ 1	±	–
Shiga-Kruse	+ 3	+ 3	+ 3	+ 2	+ 1	–
Y.g.p.p.2 (1909)	+ 3	+ 3	+ 3	+ 2	+ 1	–
B. dysentericus El Tor No. 1:						
157 IV (1908)	+ 3	+ 3	+ 3	+ 3	±	–
39 (1909)	+ 3	+ 3	+ 2	+ 1	±	–
Aut. 167 (1909)	+ 3	+ 3	+ 3	+ 3	±	–
14 R.E.T. (1909)	+ 3	+ 3	+ 3	+ 3	+ 2	±
44 (1909)	+ 3	+ 3	+ 3	+ 2	±	–
22 R.H.B. (1909)	+ 3	+ 2	+ 2	+ 1	±	–
96 g.p.p. (1910)	+ 3	+ 3	+ 3	+ 2	+ 1	–
B. pseudo-dysentericus D. (Kruse):						
——	+ 3	+ 3	+ 2	+ 1	–	–
2 up. (1909)...	+ 3	+ 2	+ 2	+ 1	±	–
68 R.H.B. (1909)	+ 3	+ 3	+ 3	+ 1	±	–
37 (1909)	+ 3	+ 3	+ 3	+ 3	+ 2	+ 1
Mahmûd (1910)	+ 3	+ 3	+ 3	+ 2	±	–
B. dysentericus (Flexner):						
——	+ 3	+ 3	+ 3	+ 2	–	–
B. pseudo-dys. A. (Kruse) ...	+ 3	+ 3	+ 2	+ 1	–	–
12 up. (1910)	+ 3	+ 3	+ 3	+ 2	+ 1	±
163 (1910)	+ 3	+ 3	+ 2	+ 1	±	–
172 (1910)	+ 3	+ 3	+ 3	+ 3	+ 1	±
Unidentified:						
162 up. (1909)	+ 2	+ 2	+ 2	+ 1	±	–
136 (1910	+ 2	+ 3	+ 2	+ 1	±	

– = Reaction negative.
+ 3 = Complete agglutination and precipitation of bacteria. Liquid remains clear on shaking.
+ 2 = Agglutination and precipitation of bacteria. At rest, liquid clear, but slightly turbid on shaking.
+ 1 = Agglutination of bacteria, without clarification of liquid.
± = Slight agglutination of bacteria only.

As will be seen from a consideration of Table II, the polyvalent serum gave by far the best results against the B. Shiga-Kruse, No. 1. The failure of the Polyvalent, El Tor, and Pseudo-D. serums to show a higher protective standard against the El Tor and Pseudo D. organisms is disappointing, particularly as the first two of these serums gave most encouraging results as therapeutic agents against these infections in human patients. It may be mentioned, however, that different animals of the same weight and species varied so much in their susceptibility to infection by these bacilli that it was difficult to arrive at any true idea of the value of the different serums by laboratory methods.

With regard to the curative properties of these serums, it was found that if an animal be inoculated with a certain number of minimal lethal doses, and the serum be injected after the onset of symptoms—diarrhœa and paralysis—death is in all cases delayed, but never averted; many animals, however, showed a surprising temporary improvement.

Tables III and IV show the general reduction in the mortality under serum treatment, and the classification of the cases by laboratory methods of diagnosis.

Clinically the purely bacillary cases are divided into:

1. Gangrenous cases (nearly all gangrenous cases are complicated with nephritis, myocarditis, and bronchopneumonia often with malignant tertian malaria as well).
2. Chronic cases, subdivided into (*a*) simple chronic, (*b*) complicated chronic.
3. Subacute, simple and complicated.
4. Acute—mild, severe, simple, and complicated.

The serum-treated cases are divided as follows:

A. Cases of double bacillary infection, by B. Shiga and B. Tor: Gangrenous, 8; chronic, 4 (of which 3 were complicated); subacute, 5; acute, 3. Total, 20.

B. Cases of double bacillary infection, by B. Flexner and B. Tor: Gangrenous, 0; chronic, 1 (complicated); subacute, 0; acute, 1. Total, 2.

C. Cases of single bacillary infection, by B. Shiga: Gangrenous, 6; chronic, 3 (of which 1 was complicated); subacute, 2; acute, 4. Total, 15.

D. Cases of single bacillary infection, by B. Tor: Gangrenous, 16; chronic, 9; subacute, 3; acute, 7. Total, 35.

A case was considered to be gangrenous when the following conditions were present:

1. The passage of extremely offensive green, greenish-brown, or black stools containing altered brown blood, and green or black sloughs of varying dimensions and characters. These sloughs may be large—in some instances dark-green tubular sloughs more than a foot long were passed—or intimately mixed up with muco-pus and altered blood, giving the stool the appearance of mashed spinach, a purée of green peas, or a cup of chocolate.

TABLE II.

Serum.	Dose.	Bacillus.	Test Animal.	By Intravenous Inoculation.	By Intraperitoneal Inoculation.	Maximum Number of Minimal Lethal Doses Protected against Constantly.	Remarks.
Polyvalent	1 c.cm.	Shiga-Kruse No. 1	Rabbit	+	+	60	Constant—both as to protection and as to minimal lethal dose in controls.
Polyvalent ...	1 c.cm.	B. Tor No. 1 (1910)	"	+	+	4	In some instances 1 c.cm. protected against 10 minimal lethal doses.
	2 c.cm.	"	"	+	+	10	
Polyvalent	1 c.cm	"	Guinea-pig		+	(?) 20	Reaction inconstant. Great variation in lethal dose in controls.
Polyvalent	1 c.cm.	B. Flexner (172, 1910)	Rabbit	+	+	8	
Polyvalent	1 c.cm	B. pseudo-D. (Mahmûd)	"	+	+	6	Larger doses often withstood.
El Tor	1 c.cm.	Shiga-Kruse No. 1	"	+	+	0	
El Tor	1 c.cm	B. Tor No. 1 (1910)	"	+	+	10	
El Tor	1 c.cm	"	Guinea-pig		+	24	In several instances, but not invariably, 1 c.cm. protected against 40 minimal lethal doses. Vide supra.
El Tor	1 c.cm.	B. pseudo-D. (Mahmûd)	Rabbit	+	+	4	Larger doses occasionally supported.
	2 c.cm.	"	"	+	+	10	
Pseudo-D. (Horse V) ..	1 c.cm	Shiga-Kruse No. 1	"	+	+		
Pseudo-D. (Horse V)...	1 c.cm.	B. Tor No. 1 (1910)	"	+	+	6	
Pseudo-D. (Horse V)..	1 c.cm.	B. pseudo-D. (Mahmûd)	"	+	+	4	In many cases animals survived 8 minimal lethal doses.

2. Constitutional symptoms of profound toxinaemia, evidenced by dyspnoea, a very rapid (120 to 160), thready, almost imperceptible pulse, dry brown or glazed red tongue, facies Hippocratica, subnormal temperature, subcutaneous ecchymoses, algid extremities, husky voice, and utter collapse.

These cases always emit a very unpleasant, musty, death-like odour which is very characteristic. The urine was either suppressed, or scanty and albuminous.

A chronic case was so classified when the probable onset of infection dated from three weeks to a month or more previous to admission.

The stools consisted of a certain amount of brown or yellowish muco-faeces, mixed with sloughs, muco-pus, and blood. The patient was usually emaciated, with sometimes a varying degree of oedema of the ankles and feet, and presented signs of a varying degree of toxinaemia. The urine was usually scanty, high-coloured, and contained varying amounts of albumen.

TABLE III.

Date:	1907.	1908.	1909.	1910.
Total number of pilgrims ...	43,271	29,446	20,333	16,736
Total number of deaths ...	423	336	254	113
Percentage total deaths to total number of pilgrims ...	1 (−)	1.14	1.25 (−)	0.67
Total dysentery admissions...	—	155	212	138
Total dysentery deaths ...	—	82	134	45
Percentage dysentery deaths to dysentery admissions ...	—	53	63	32.6
Cases in which Amoebae were Present.				
Total number	—	—	4	55
Deaths	—	—	2	32
Case mortality per cent. ...	—	—	50	58.1
Purely Bacillary Cases.				
Total number	—	—	208	74
Total deaths	—	—	134	8
Case mortality per cent. ...	—	—	64.4	10.8
Total serum-treated	—	—	12*	72
Deaths in serum-treated ...	—	—	0	7
Case mortality per cent. ...	—	—	0	9.7
Purely Amoebic Cases.				
Total number	—	—	—	32 (23.2 per cent.)
Total deaths	—	—	—	19
Case mortality per cent. ...	—	—	—	60 (−)
Total serum-treated	—	—	—	12
Deaths in serum-treated ...	—	—	—	11
Case mortality per cent. ...	—	—	—	91.6
Mixed Amoebic and Bacillary Infection.				
Total number	—	—	—	23 (16.6 per cent.)
Total deaths	—	—	—	13
Case mortality per cent. ...	—	—	—	60 (−)
Total serum-treated	—	—	—	11
Deaths in serum-treated ...	—	—	—	8
Case mortality per cent. ...	—	—	—	42.1
Undiagnosed Cases.				
Total number	—	—	—	9 (6.5 per cent.)
Total deaths	—	—	—	5
Case mortality per cent. ...	—	—	—	5.5
Total serum-treated	—	—	—	6
Deaths in serum-treated ...	—	—	—	2
Case mortality per cent. ...	—	—	—	33.3

*Picked Cases.

NOTE.—Among the total number of serum-treated bacillary cases five patients died either from causes other than dysentery, or else death occurred in less than twelve hours after the first injection of serum. Excluding these cases, we therefore get the following figures: Bacillary cases serum-treated, 67; deaths, 2; case mortality, 3 (−) per cent.

TABLE IV.—*Table Showing Classification of Cases by Laboratory Diagnosis.*

Infection	Total Number of Cases.	Percentage.	Total Deaths.	Case Mortality.	Serum-Treated. Number.	Deaths.	Case Mortality.
Triple infection: Amoebae, B. Shiga, B. Tor	10	7.2	6	60%	10	6	60%
Double infection by Amoebae + B Shiga	4	3.8	1	25%	3	0	0%
Double infection: Amoebae + B. Tor	8	5.7	5	62.5%	5	1	20%
Double infection: Amoebae + B. Flexner	1	0.7	1	100%	1	1	100%
Double infection: B. Shiga + B Tor	20	14.4	3	15%	20	3	15%
Double infection: B. Tor + B. Flexner	2	1.4	0	0%	2	0	0%
Single infection: B. Shiga	15	10.8	2	13.3%	15	2	13.3%
Single infection: B. Tor†	36	26.8	3	8%	35	2	5.7%
Single infection: B. Pseudo D. (Kruse) ‡	1	0.7	0	0%	0	0	0%

* This case died of angina pectoris. He was also suffering from malignant tertian malaria.
† This case, to which serum was not administered, was moribund on admission.
‡ Very mild case.

A subacute case was so classified when the probable onset of infection dated from ten to twenty days previous to admission.

The stools usually consisted of very little muco-faeculent material, muco-pus, sloughs, and blood; often the stools consist entirely of muco-pus, giving the appearance—according as to whether they are blood-stained or not—of raspberry fool or crème d'orge. The constitutional symptoms vary with the virulence of the infection and the resisting power of the patient.

An acute case was considered to be one in which the probable date of onset was within ten days of admission.

The stools in these cases usually consisted of blood, mucus, and small sloughs, preceded by a preliminary serous diarrhoea, and followed by liquid serous blood-stained stools resembling water in which raw meat had been washed (*raclure de boyeau*). These cases usually presented signs of severe toxinaemia, as evidenced by a rapid small pulse, high temperature (39° to 40° C.), albuminuria—though the quantity of urine was not as a rule much diminished—and prostration. Pain of a colicky cramping nature, referred particularly to the region over the transverse colon, was always a prominent symptom, while tenesmus was often absent and always insignificant—a condition in sharp contrast to that seen at the onset of acute amoebic dysentery.

All recovered under massive injections of serum.

In other milder cases the symptoms of toxinaemia, while always present, were not so severe, the temperature as a rule was not so high and the prostration not extreme. On the other hand, the stools were scantier, more numerous, and accompanied by tenesmus and sharp shooting pain in the left iliac fossa, which was sensitive to pressure. There was usually no albuminuria. It was this type of case which, if untreated, would pass on to the subacute and chronic varieties, while the one previously described became gangrenous.

The routine treatment of each case was as follows:

As soon as possible after admission a specimen of the stools unmixed with urine was sent to the laboratory, where it was examined for amoebae. Plates of Conradi-Drigalski's medium, and later of "special" medium, were then sown and examined for colonies of dysentery bacilli at the end of twenty-four to forty-eight hours' incubation at 37° C.* About 3 c.cm. of blood were withdrawn aseptically from the median basilic vein of the left arm, and set aside to clot.

Immediately after the blood was withdrawn the patient was given half an ounce each of castor and sweet almond oils by the mouth, and, if his condition was urgent—as it usually was—a subcutaneous injection of polyvalent serum was administered without waiting for the results of the examination. As soon as the blood had clotted the serum was drawn off and examined macroscopically for its agglutination reactions against B. Shiga and B. Tor.

* At first the blood of each case was examined for micro organisms; as it was invariably found to be sterile, this practice was discontinued.

According to the data furnished by the agglutination reactions and the isolation of dysentery colonies from the stools, the case was treated with polyvalent, Tor, or Shiga antitoxins.

It is to be noted that, while the agglutination test is most valuable as a means towards diagnosis, it is not absolute. It proves the existence, past or present, of infection by the determining germ, when positive; when negative, however, it does not exclude the possibility of present infection. Such negative reactions are seen in two types of cases:

1. The early acute, when there has not elapsed a period since the onset of infection sufficient to admit of agglutinins being formed.
2. Very severe cases, usually in old men, in which the organism is too exhausted to respond to the infection by the production of agglutinins.

This point is mentioned in order to emphasize the necessity of treating all cases with either a polyvalent serum or multiple injections of different monovalent serums. A man may have an attack of dysentery, for instance, due to infection by Bacillus A. At any time during the course of the attack, or during convalescence, an infection by Bacillus B. may be superimposed. If seen a day or two after the onset of the second infection, the blood would give a positive agglutination reaction for Bacillus A. and negative for Bacillus B. The examination of the stools would show Bacillus B. to be present, while in all possibility Bacillus A. would be absent, or, if present, would be missed. In all cases, therefore, an examination of the stools must go hand in hand with the serum reactions in order to arrive at a true diagnosis. *A fortiori* the mere presence of amœbae in the stools, while, in our experience, absolutely diagnostic of the presence of amœbic ulceration, does not exclude the possibility of a coexistent bacillary infection.

Only in those cases, therefore, in which the examinations of the blood and stools were negative, in which the presence of amœbae was determined, and the clinical picture was one of amœbic dysentery, was the serum intentionally withheld.

As regards the quantity of serum to be injected, no hard-and-fast rule can be laid down, as in diphtheria; each case must be judged upon its merits, and the serum pushed until its therapeutic effect is apparent and maintained. In this connexion it may be noted that antidysenteric serum differs from antidiphtheritic serum, in that the former is efficacious in cases of one, two, three, or even more months after the onset of the disease, if given in sufficient quantities.

The patient's general condition, gauged *ab inspectu*, is the best criterion as to the amount of serum to be given; the condition of the stools is not so important.

Our general practice was to give an initial dose of 40 to 60 c.cm. in mild cases, 80 c.cm. in severe cases, and 100 to 120 c.cm. in desperate cases. These doses were repeated as required, as much as 320 c.cm. being given in twenty-four hours.

In one gangrenous case (B. Tor infection), complicated with a severe toxic nephritis and accompanied by general anasarca and subcutaneous ecchymoses, no less than 520 c.cm. of the serum were administered in all. The patient, an elderly Turk, was discharged convalescent after nineteen days' treatment. In other cases a single injection of 80 c.cm. of polyvalent serum was sufficient to effect a cure.

As a general rule 80 c.cm. of polyvalent serum, followed as soon as a diagnosis was made—in cases of single infection—by 80 c.cm. of the specific serum, were administered. The beneficial effect of the serum was manifested, as a rule, in from four to twelve hours after its injection; in all cases the most striking phenomenon was the improvement in the patient's general condition—the pulse became fuller and slower, the heart sounds of better quality, the temperature rose or fell to within normal limits, and abdominal pain disappeared. The effect on the patient's mental condition was no less remarkable, a condition of utter prostration, or groaning hopeless despondency, being replaced by one of cheerful comfort, accompanied by insistent demands for food and tobacco.

With this striking change in the general condition there was usually no corresponding improvement in the character of the stools, which were often more abundant and fetid, and contained more sloughs than before, though the number passed was usually diminished. This curious combination of general euphoria with gangrenous stools sometimes persisted for three or four days, occasionally even longer, and would then be replaced by complete constipation of twenty-four hours' duration. A small dose of castor and almond oils would then bring away an abundant normal pultaceous stool.

In the early acute cases, on the other hand, the effect would often be immediate, a short period of repose being followed by the passage of abundant faeculent, pultaceous stools.

Untoward Effects of the Serum.

In spite of the large quantities of serum used these were of rare occurrence and of trifling importance. In only one case was anything approaching a serum rash observed. This was the case of an old man who died of gangrenous amœbic, not bacillary, dysentery, and who exhibited a few ephemeral urticarial rings around the site of the injection some few hours after the first dose of serum was given. Fairly frequently a rise of temperature was observed, usually about six hours after the first injection; it was usually insignificant, but in two acute cases the thermometer registered nearly 41° C., and there was a good deal of headache, restlessness, and general pain, particularly affecting the back and joints, and recalling that seen in dengue. These rises of temperature never lasted more than twelve hours, and were not observed after subsequent injections of serum in the same individual. They required no special treatment, and antipyretics were never given.

No late or remote effects were observed. No cases of sepsis were ever seen, nor did the sites of injection, even after 60 c.cm. had been given through one needle, remain painful or tender for more than a few minutes. The serum was always given injected deeply into the subcutaneous tissues of the flank and abdomen, and was so quickly absorbed that it was never considered necessary to give it intravenously.

Amœbic Cases.

These were treated upon the orthodox lines recommended in all textbooks, with the addition that the "enema Kartulis"* was given night and morning as a routine in most cases. It was of undoubted benefit in the "early" acute cases, but no value at all in the old chronic or gangrenous cases. With the idea that it might be of value during its absorption, pararosaniline acetate in 0.5 per cent. solution was tried as an enema; the effect was disappointing, and in no case was it absorbed sufficiently to tinge the urine.

The evidence that the serum is specific for bacillary cases is furnished by the mortality rate of 91.6 per cent. in the 13 purely amœbic cases in which it was tried. The high mortality rate of the amœbic cases, and of the bacillary cases before the introduction of the serum treatment, calls for a word of explanation. It may be stated at once that this is to be sought in factors affecting the patient and the disease, rather than in the treatment previously adopted. Practically all the orthodox methods of treatment by drugs, enemata and diet, had been tried by many different physicians of different schools and nationalities: ipecacuanha, calomel, the sulphates, castor oil, El Kosam, simaruba; astringents, such as opium, bismuth, tannic acid and tannoform, tannalbin, tannagen; antiseptics, such as salol, beta and benzo-naphthol, etc., all were found wanting in that they failed to counteract the toxinaemia and microbic activity, to which the patient succumbed. Further, the patients whom we were called upon to treat were nearly all very old men, exhausted by famine, fatigue, and the hardships attendant upon desert travel in Arabia. As a result, by the time a case was admitted to hospital, the infection, aggravated by the lack of rest or any other treatment, and acting upon frames often already weakened by previous cardiac and renal disease, had reduced the patient to a state of utter *misère physiologique*, so that his condition could only be described as desperate.

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*So called because the formula—that of a Dutch army surgeon in the East India Islands—was kindly communicated to us by Dr. Kartulis. It consists essentially of an emulsion of iodoform and tannic acid.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF SIAMESE TWINS.

Dr. Carmichael and Surgeon R. M. Riggall, R.N., have recently recorded in the Journal cases of Siamese twins, but they have both been produced abroad, whereas this case may be of interest in that it is one of home production, being born last March at Lowestoft, in the county of Suffolk; the mother being a young English woman, aged 21.

The birth of the specimen was not extremely difficult. The head of the smaller child presented in the left occipital anterior position, but did not come down at first, although forceps easily delivered it. On traction being made one was able to diagnose the condition by tearing



the two children apart. Once the breach of the first child was delivered the second child followed quite easily. The two children were seen to be alive during the labour, but expired before birth was complete.

The weight of the specimen is 6¾ lb. The mother states she had been pregnant almost nine months.

The specimen consists of two small children, which were joined together from their nipples downwards. One child showed a condition of hydrops cranii, otherwise they appeared to be perfectly formed above the diaphragm,



each having perfectly formed upper extremities. There was a single placenta, with a single cord attached to the monster. Each child has one fully formed leg, but beside these there is one fin-shaped appendage, which appears to be two legs fused into one, making three lower extremities in all. There is one cloacal aperture, consisting of an upper portion which is apparently connected with a single bipartite uterus inside, with fully formed Fallopian tubes and ovaries, whilst the lower portion is apparently connected with a single rectum. There is also what appears to be an attempt at the formation of two more ovaries and tubes further behind on the back wall.

Each child has a fully formed stomach and duodenum, lying below two separate livers, which were fused in the middle line and are torn apart. Above the liver is a separate diaphragm in each case. Each child has separate large and small intestines, with a caecum, and one well formed appendix; they join into a common rectum, which leads to a common anus, which is imperforate, the bowel being distended above. The four kidneys are separate, with four separate ureters, which all lead down to the space in front of the uterus and end blindly. There is no formed bladder, but at the upper end of the cloaca there is a small fungating mass, which looks somewhat like an extroversion of the bladder. Each child has a well formed spleen, but in the case of the child with the deformed head it is on the right side of the body. The organs within the thorax seem normal, except that the child with the deformed head has an enlarged heart, with no ventricular septum. The thymus gland in both children is large.

Lowestoft. Dudley W. Boswell, M.D., M.B., Ch.B.

TETANY FOLLOWING AN ACCIDENTAL OVERDOSE OF THYROID EXTRACT.

Tetany has developed within two to five days after parathyroidectomy. In some cases tetany has been noticed some months after operations in the vicinity of the parathyroid glands. These observations have led some to attribute tetany to some functional defect in the parathyroids, either congenital or acquired.

Forsyth[1] believes that the thyroids and parathyroids are functionally the same, that the former produce active secretion of colloid indistinguishable from thyroid colloid. Further, the suggestion has been made of trying thyroid extract in cases of tetany, on the supposition that hypothyrea may exist.

The following case, therefore, cannot fail to be of unusual interest:

A little girl, 3½ years of age, was discovered in December, 1909, in a house where I was in attendance upon the mother during her confinement. She presented very definite if not very marked stigmata of cretinism. She was a fat, plump child, with reddish, somewhat cyanotic cheeks, abundant coarse hair covered her head. The anterior fontanelle was not closed. Her hands and feet were cold and blue. She had prominent supraorbital ridges; her eyebrows were scanty. Her abdomen was protuberant, but there was no umbilical hernia. She had well marked lordosis, and her tibiae were curved. She was short in stature, and unable to say more than two or three words. Mentally, as well as physically, she was certainly deficient and backward. The rectal temperature was 95° F. I prescribed thyroid extract, 1 grain t.i.d. (Burroughs Wellcome and Co.), and gradually increased the dose to 2½ grains t.i.d. All went well for a month during which time she became more active and very mischievous. One morning she climbed on to a chair, secured the box containing only five tablets of each 5 grains of the extract from the mantlepiece, and swallowed the whole. She "cried and screamed" a great deal that day. Six hours after she became "stiff and convulsed." A dose of castor oil was given, and later some bromide. There was no diarrhoea. I saw her the next day; she was stiff, and presented very pronounced signs of tetany. Her eyes and limbs "twitched" a good deal. Her face was very red. The characteristic accoucheur's hand and arched feet were quite typical. The fingers and wrists were swollen, and moving the joints made the child cry. The whole of each limb and the back were stiff and painful. The deep reflexes were increased. The pulse was very quick, and the child was feverish.

She was unable to stand or sit without support. The treatment was suspended for a fortnight, and the symptoms gradually disappeared. At the end of that time ¼ grain of thyroid extract was given t.i.d., increased to ⅓ grain. During the week after resuming the "accoucheur hand" was again noticed. The dose was again reduced but later increased. One month later a slight recurrence of the "accoucheur hand" compelled me to reduce the thyroid, and since then, though on continuous treatment, no recurrence of the tetany has been observed.

The first attack might well be ascribed to gastro-enteric irritation following the ingestion of the tabloids, but the slight occurrence on the two subsequent occasions incline me to the view that the tetany in this case at least was

[1] British Medical Journal, 1907, vol. ii, p. 1508.

due to hyperthyroidea. In animals the calcium output is increased in the urine after thyroid feeding, and the blood contains only half the normal amount. I think it is now well established that the thyroid has a material influence upon the calcium metabolism of the body, the influence being largely an excretory influence. If this be so, have we not here an explanation of the tetany in the above case?

London, N.W. G. W. R. SKENE, M.B., Ch.B.Edin.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

MANCHESTER EAR HOSPITAL.

CASE OF CHRONIC SUPPURATIVE OTITIS MEDIA WITH LABYRINTHINE FISTULA AND SPONTANEOUS NYSTAGMUS.

(By LINDLEY SEWELL, M.B., B.S., M.R.C.S., etc., Assistant Surgeon.)

A WOMAN, aged 24 years, was admitted to hospital on August 4th, 1910, complaining of severe headache and dizziness of about four months' duration. She stated that the right ear had discharged since infancy. On examination a perforation, through which protruded a small polypus, was seen in the postero-superior quadrant of the right tympanic membrane. The pus in the meatus was very foul and mixed with desquamated epithelium. The patient had an unsteady gait, stumbling to the right side, also on standing erect with feet together and eyes closed she showed a tendency to fall to the right; she was unable to stand on one foot with eyes closed. She had slight, although well-marked, spontaneous nystagmus directed to the left, most marked on deviation of the eyes to the left and disappearing on their deviating to the right side. On syringing out the right ear with cold water the nystagmus to the left was much increased in intensity. By compression of the air in the meatus by means of a small Politzer's bag fitted to it, a strong nystagmus directed to the right side was produced; by rarefaction the nystagmus to the left was increased.

The acoumeter was heard on the right side at a distance of 8 in., and using tuning-fork C 256, bone conduction was increased by 5 seconds, and Rinne's test negative; and by air conduction C 64 was not heard, C 256 was diminished by 24 seconds and C 2048 by 14 seconds. Galton's whistle was unfortunately not used. There was no optic neuritis and no squint. A diagnosis of labyrinthine fistula secondary to suppurative otitis media was made, and a radical mastoid exenteration performed. Extensive destruction of bone was found accompanied by a foul-smelling cholesteatoma, and in the region of the external horizontal canal was a small erosion through which a probe could be passed. The fistula was not curetted or enlarged. The patient made an uninterrupted recovery, the unsteadiness and headache quite disappeared, and at the end of a month's time there was no nystagmus present.

REMARKS.—The case is of interest in that it illustrates the value of Bárány's vestibular tests as an aid to diagnosis in certain cases. The well-marked response to syringing with cold water indicated that the vestibular apparatus was still active, and that therefore no gross lesion of the labyrinth was present. The nystagmus induced by condensation and rarefaction of the air in the auditory meatus pointed to some breach in the labyrinth; this reaction may indeed be regarded as almost certain evidence of a labyrinthine fistula, although rare exceptions have been reported. The correct treatment of such a condition consists in performing a wide radical mastoid operation, keeping the case under careful observation, and only interfering with the labyrinth should rapid recovery not ensue.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Friday, October 14th, 1910.

Sir A. PEARCE GOULD, President, in the Chair.

Adiposis Dolorosa.

THE following were among the exhibits:—Mr. ALBERT CARLESS: A case of possible adiposis dolorosa in a woman always anaemic and of poor circulation. From time to time she had noticed that the tissues beneath her chin became somewhat swollen. In March last she had a small fatty growth in the back of the neck in the sub-occipital region, but it caused her no pain. Between the months of April and June a marked fatty development occurred, affecting mainly the shoulders, the back of the neck, the root of the neck, the back, and the front of the abdomen. Those diffuse fatty masses had been decidedly painful and tender, and there had been some degree of neuralgic pain in the arms. The thyroid body appeared to be atrophied. She had taken thyroid tabloids and pituitary extract. The former seemed to do her good and control the increase in size, but worried her eyes somewhat; the latter had no effect. Dr. H. D. ROLLESTON: A man, aged 45, who showed almost symmetrical fatty masses over the neck, shoulders, arms, the lower abdomen, sacral region, and the upper and inner aspects of the thighs. The veins over the chest and the lipomata in the neighbourhood of the clavicles were dilated. Except in one or two spots there was no tenderness; the tumours were not spontaneously painful, and there had not been any local pain before the appearance of the tumours. The condition, therefore, was not adiposis dolorosa nor Dercum's syndrome. It approached but did not accurately correspond with Lyon's group of "Diffuse symmetrical lipomatosis, with predilection for the neck." Dr. ALFRED M. GOSSAGE: A case of possible adiposis dolorosa in a woman, aged 54, who had always suffered from pains in the legs. From the age of 44 she had become very stout, and the legs had become much more painful. There were numerous fatty swellings on the legs and thigh, which were painful and tender.

OTOLOGICAL SECTION.

Friday, October 21st, 1910.

Mr. ARTHUR CHEATLE, F.R.C.S., President, in the Chair.

THE PRESIDENT opened a discussion on *Syphilis in relation to otology*. Speaking of the congenital cases, he said he had generally found the usual antisyphilitic remedies useless. Blisters applied to the mastoid were, on the other hand, of much benefit. In dealing with cases of middle ear deafness in acquired syphilis, the naso-pharynx should be searched for gummata. Exact localization of the seat of a lesion when the perceptive portion of the ear was involved was difficult owing to the absence of *post-mortem* knowledge of such cases. Dr. URBAN PRITCHARD agreed that in congenital syphilis the age of the onset of ear troubles was not always a fixed one. He had seen cases which came on quite late in life. In acquired syphilis he had been struck with the infrequency of Eustachian deafness in syphilitic pharyngitis. Mr. WEST asked if there was any definite proof in the late cases of labyrinthine trouble of the patient being syphilitic, or even if in cases in which the patient had been syphilitic as a child was it certain that the deafness was due to syphilis? In regard to condylomata he had been struck with the intense pain the patients suffered. Mr. A. L. WHITEHEAD did not think that ulceration of the nose and naso-pharynx was infrequent in congenital conditions Condylomata in the acquired syphilis, although intractable, healed as a rule without causing contraction. Mr. MACLEOD YEARSLEY was not of opinion that syphilis was never the cause of deaf-mutism. Bardeau, in his researches upon stillborn children who were syphilitic, found the middle and internal ear involved. Dr. DAN M'KENZIE agreed with Mr. Yearsley on this point, and quoted in support a paper which had appeared in the archives of a German society. Mr. MCDONAGH said that he had treated only one case of ear trouble with "606." That was an acquired case in

which the patient had a lesion of the ninth nerve on one side. Hearing was certainly improved after the injection. Mr. Waggett said it was important to examine the post-nasal space in patients who had otalgia with syphilis. The President replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, November 2nd, 1910.

Dr. Byrom Bramwell, President, in the Chair.

Epithelioma of the Tongue.

Professor Caird reviewed 60 hospital cases of epithelioma of the tongue. In 38 of them there was a history of antecedent irritation, the cause of it in 27 cases being the state of the teeth. No case had been preceded by leucoplakia. Only in 4 cases had a negative microscopical examination been falsified by the result. He preferred a two stage operation, removal of the tongue under local anaesthesia, followed a few days later by a Butlin operation on the lymphatic structures in the neck. Unless the jaw were diseased he did not interfere with it. It was not possible, he thought, to base prognosis on the histology of the glands removed. Of the 60 cases only 16 now survived, not including 8 which could not be traced. But in some of the earlier cases the tongue only had been attacked. Though the results were disappointing the operation was perfectly justified, as it relieved the patient from the terrible pain and discomfort of fungating cancer in the mouth; recurrence of the disease in the tongue was happily rare.

Recurrent Enlargement of the Salivary Glands.

Mr. Greig gave an account of five cases of recurrent enlargement of the salivary glands. Of these, three were submaxillary and two parotid. Common features were the tendency to recurrence, and the sudden enlargement of the gland during eating. In the parotid form there was usually some constitutional disturbance, but this was absent in the submaxillary. Again, in the parotid, while at first single, it tended later to affect both glands. In his cases it remained single in the submaxillary. The condition must be diagnosed from mumps, where the occurrence of that disease in the district and the fact of contagion must be obtained; from Mikulicz's disease, where there was parotid enlargement, but no recurrence; and from sialodochitis fibrinosa, where there was no constitutional disturbance and there was rapid subsidence with a free salivary flow.

Fungus Infections of the Finger-nails.

Dr. Cranston Low gave an account of 19 cases of this condition. Of these, 16 were cases of ringworm, all the patients but 2 being females. A history of infection from ringworm elsewhere on the body was rare. The duration of disease was from three weeks to seven years, and the number of nails affected 1 to 7. The toenails were never affected. The disease caused splintering of the end of the nail, with zones of yellow and brown above this. The nail might be irregular and heaped up, showing an affection of the nail bed. The diagnosis was by microscopic examination of fragments after prolonged immersion in caustic potash. In all his cases the large-spored fungus was present. In a number he had cultivated the fungus in Sabouraud's proof medium, and had obtained growth of two different forms—the *Trichophyton crateriforme flavum* and the *Trichophyton rosaceum*. The best treatment was that devised by Dr. Norman Walker—the softening and removal of the nail by prolonged application of Fehling's copper solution, followed by the use of a dressing soaked in copper sulphate solution, 10 grains per ounce.

Exhibits.

The cases demonstrated included the following:—Mr. Cotterill and Dr. Bruce: A patient in whom, following an attack of post-basic meningitis in 1908, there had developed *Hydrocephalus* associated with marked stupor, complete blindness, extreme weakness of both legs, and recurrent loss of control of bladder and rectum. By operation the foramen of Majendie, which was closed by fibrous tissue, was reopened, the result being practially complete recovery of intelligence, sight, motor power, and control of reflexes. Mr. Miles: A patient who had suffered from right *Trigeminal neuralgia* for five years, and in whom the removal of the Gasserian ganglion with the second and third divisions of the fifth nerve had resulted in immediate and, so far, permanent relief of the pain. Dr. Boyd: A patient with *Cerebro-spinal meningitis*, and with purulent spinal fluid, which was sterile on cultivation. A positive von Pirquet reaction suggested that the condition was possibly tuberculous, but repeated lumbar puncture with intraspinal injections of 1 per cent. collargol resulted in complete recovery.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Thursday, October 27th, 1910.

Mr. A. Cuff, President, in the Chair.

Squint.

Mr. G. H. Pooley, in a paper on squint, pointed out that when the fusion sense was weak, errors of refraction such as hypermetropia produced over-accommodation for near objects, and, owing to the close relation between the centres in the brain for accommodation and convergence, over-convergency was produced. The fusion sense not being strong enough, diplopia did not cause much trouble, and the brain learnt to disregard the impression from one eye. The causes of loss of fusion sense were not known, but were supposed to be associated, in some cases at any rate, with defects of the auditory apparatus or the labyrinth, and allied to nystagmus; or to be simply due to developmental error in those association bundles which are late in receiving their myeline sheaths, or in the centres which they join up. It was necessary to undo the mischief step by step—first, to correct the error of refraction, then to occlude or atropinize the fixing eye until the power of fixation returned to the squinting eye. In cases he had investigated 75 per cent. of the squinting eyes were amblyopic; and in cases it was advisable to occlude or atropinize the fixing eye for twelve to eighteen months, or until good sight had returned to the amblyopic eye. If these had not already become straight, then operative measures might be successfully employed.

Exhibits.

The following were among the exhibits:—Dr. A. G. Yates: Miner, aged 41, with *Chorea*. In July, 1910, he began to suffer from a sharp stinging pain in the right shoulder. Shortly afterwards he noticed irregular movements in the hands which later spread upwards and involved the arms and head. He has now slight lateral nystagmus and constant pain above the right clavicle in the region of the brachial plexus. The knee-jerks are slightly exaggerated. In other respects he appears to be healthy. His sister has suffered in the same way for the last twenty years. Mr. W. S Kerr: A specimen from a case of innominate aneurysm causing *Asphyxia from tracheal pressure*. The patient, a man aged 34, who had had syphilis, was admitted to the Royal Infirmary for urgent dyspnoea. A laryngotomy and passage of a small catheter gave temporary relief. The trachea was flattened by the tumour. Mr. R. Favell: A specimen from a case of Caesarean section for *Accidental haemorrhage*. Mr. A. E. Barnes: A *Tumour of the pons*, the nature of which has not yet been determined.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Friday, October 28th, 1910.

Dr. Christy Wilson, President, in the Chair.

Béraneck's Tuberculin.

The President, in the course of an opening address on tuberculosis, stated that of the various tests for tubercle, he found von Pirquet's more accurate and safer than Calmette's, but regarded the subcutaneous method as being the most accurate. In making his tests he preferred Béraneck's T B K 1 tuberculin. The same product was also much preferable to Koch's new tuberculin, and if it were more widely employed, tuberculin treatment would gain in popularity. He quoted illustrative cases of improvement that had followed its use. It was not necessary, he thought, to control injections by the estimation of the opsonic index.

Exhibits.

The following were included among the exhibits:—Mr. H. COLLINSON: A specimen of *Traumatic rupture of the spleen* successfully treated by splenectomy. The patient, a labourer, was kicked by a horse over the left costal margin; this was followed by haematuria and signs of intra-abdominal haemorrhage. At the operation, a large retroperitoneal haemorrhage was present over the left kidney. Dr. R BEATTIE: A mass of hair removed from the stomach of a girl, and which formed an exact cast of the organ; it weighed 2½ lb. Before the operation a hard gastric tumour was made out. Mr. MICHAEL TEALE: A child who sustained slight concussion of the brain. This was followed by swelling of the nasal half of each optic disc and marked rotatory nystagmus of a temporary nature. Mr. H. LITTLEWOOD: A small spirit level and a pencil case successfully removed from adult male bladders. Mr. C. H. GREENWOOD: A liver from a case of portal cirrhosis in a child who had been treated by *Fibrolysin*. Microscopic appearances showed that softening of the fibrous tissue was taking place.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

Wednesday, October 19th, 1910.

Mr. W. MORLEY WILLIS, President, in the Chair.

PROFESSOR ALEXIS THOMSON of Edinburgh, in an address before the society, recorded and illustrated the ideas of Poncet of Lyons. The latter regarded all lesions to which some other definite pathological cause was not assignable as being due to tuberculous intoxication, even if by no clinical or pathological process could the presence of tuberculous disease be demonstrated. Eburnation of the articular surfaces had hitherto been regarded as typical of osteo-arthritis, but the speaker showed a bone with ivory eburnation surrounded by caries typical of tuberculous disease. Bony ankylosis had usually been regarded as due to suppuration, yet he showed a specimen clearly of a tuberculous nature. Two specimens of bony ankylosis of the vertebral column were hard to explain except on a tuberculous hypothesis. Cases which would be labelled multiple osteo-arthritis or rheumatic arthritis commonly ended in phthisis and the association of undoubted tuberculous disease of one joint with polyarthritis of the finger was also common. As for clinical manifestations, since cases of "growing pains" invariably recovered, it was commonly assumed that they could not be tuberculous; but Poncet maintained that they were cases of an attenuated tuberculous toxin. He carried his theory beyond joints. From analogy with the synovial membrane he considered adherent pericardium, dry pleurisy, hydrocele, and meningitis to be generally tuberculous. To the same origin he assigned the cause of aortitis, phlebitis, and endocarditis. Even neuralgia, ocular lesions, thickening of the pylorus, and colitis, Poncet assigned to this cause, and declared these cases did better on an anti-tuberculous treatment than on the usual spa treatment. Although it was difficult to agree with all Poncet's theories, the speaker thought they afforded ground for recasting some views of these lesions in practice.

HARVEIAN SOCIETY OF LONDON.

Thursday, October 27th, 1910.

Dr. HANDFIELD JONES, President, in the Chair.

Cystic Disease of the Breast.

MR. D'ARCY POWER, in opening a discussion on the diagnosis and treatment of cystic disease of the breast, stated that classification of cystic disease in this region was at present chaotic, and offered a scheme of his own for consideration. In the course of his remarks he stated that single and simple cysts were sometimes placed so deeply or had such thick walls as to be mistaken for solid tumours, and every pathological museum contained specimens from cases in which the entire breast had been removed under misapprehension of the existence of cancer. It should, therefore, be a cardinal rule to incise every breast before performance of amputation. Incision was always preferable to puncture, because, apart from other considerations, mere puncture might lead to intracystic growths being overlooked. Mr. E. H. SHAW, who also suggested a classification, did not believe that there was such a condition as lymphatic cyst of the mammary gland. For the tumours known as "duct" papillomata he preferred the term "intracystic papilloma." Mr. W. G. SPENCER remarked that only in few cases did the contents of "serous" cysts correspond to blood serum. He recalled that Kanthack had regarded papillomata as connective tissue tumours. This view had been regarded by many as heretical, but was supported by the fact that many intracystic growths were chiefly composed of connective tissue stroma. Cases of recurrent mastitis should be excised if they did not yield to treatment after a few months. Circumscribed cysts should not be shelled out, but be removed together with a zone of healthy breast tissue. If the surrounding zone were not apparently healthy he would excise the breast, leaving the nipple. Mr. T. CRISP ENGLISH regarded mammary cysts as almost always secondary to mastitis or other local disease. Recognition of the primary condition being of essential importance, an exploratory incision should always be made. The ordinary form of cystic mastitis did not, he considered, involve any special predisposition to malignant disease. Mr. GASK thought that intracystic growths were always due to protrusion of stroma or interstitial tissue into the cavity of the cyst, and were not epithelial. This stroma might be fibrous tissue alone, or fibrous tissue showing myxomatous or sarcomatous degeneration. Hence the confusion as to the meaning of Brodie's disease. As for mastitis with cyst formation, the whole breast should be removed if surgical treatment were needed. Partial excisions did not free the patient from neuralgic pain, and in certain cases carcinoma followed. Mr. CLAYTON GREENE agreed as to the propriety of removing a zone of healthy tissue at the same time as the cysts.

Reviews.

MEDICAL INSPECTION OF SCHOOLS.

THE literature of the medical inspection of schools is already of considerable dimensions and still grows, although many of the publications do not differ much in their contents. Dr. KELYNACK has, however, given us an exceedingly useful collection of articles,[1] most of them by writers having practical experience in their subject, and the series covering almost the entire field as at present opened up. It is, of course, impossible that any existing staff of school medical officers could undertake anything like the amount of work suggested by the writers of the various articles, some of whom are apt to forget that there are other branches of medicine in addition to their own special choice. The system of covering the ground by means of a number of writers has, however, certain advantages, and in his choice of authorities Dr. Kelynack has made good these merits. The sections on organization and administration will be specially interesting to the school medical officer. Secondary schools are also dealt with, although in these as yet inspection is not legally compulsory. The sections on eyes and eyesight, the ears, nose, throat, and dental conditions, are all well written and contain much valuable information; that on mentally defective children is excellent and all too short. Section 14 gives a good description of the Bradford school clinic, and Section 15 is a very useful article on the feeding of school children. Open-air schools and the school nurse are other subjects ably dealt with, and containing much information and many hints for those whose authorities are progressive enough to provide them. The descriptions of the medical examination of schools and scholars in Scotland, in America, and on the Continent are good reading, as showing the differences in develop-

[1] *The Medical Examination of Schools and Scholars.* Edited by T. N. Kelynack, M.D. London: King and Son. (Demy 8vo, pp. 460. 10s 6d.)

ment and the comforting fact that even in Germany things are far from perfect. The article on Ireland paints a sad picture, while that on Wales, with its bibliography, is a curious production. The bibliography is exceedingly good, and is arranged so as to follow each section. There is remarkably little overlapping of sections, and the book forms an excellent guide and provides an ideal model for those responsible for the carrying out of medical inspection of schools.

MALFORMATIONS AND VARIATIONS.

IN a pamphlet of thirty-three pages Professor ERNST SCHWALBE of Rostock discusses the relationship between malformations and variations,[2] with a view to finding, if possible, what connexion there may be between malformation and the formation of species, and what investigators into these two subjects can teach one another so as to throw new light upon both. This inquiry divides itself into two parts—a discussion of variations or varieties as an expression of variability, and the question of whether varieties and malformations can be referred to the same cause or principle of development. To measure and define the range of variations of any given organ within the normal is difficult in the simplest cases, and the difficulty increases when we pass from a morphological to a physiological point of view. Moreover, although form and function are not unconnected, physiological variations may occur without morphological variations, and vice versa. The author uses the term "variety" for the alteration (*Abänderung*) of the whole individual within the species, and "variation" for the varying of a single organic part of the individual. "Malformation is a change of form (or of position, size, or number) of one or more organs or organic systems of the whole body occurring during fetal development, and so congenital, which goes beyond the range of variation of the species." From this quotation it will be seen that to distinguish between variations and malformations it will be necessary to define the range of variation. Dr. Schwalbe goes on to show that it is not generally possible to do so. For, although in many cases no one would hesitate to decide whether the abnormality in question is a malformation or only a variation, in many others it is impossible to draw the distinction. Dr. Schwalbe's previous work on the subject of malformations and monstrosities would lead us to expect that the essay would contain, as it does, much matter for reflection, and we can recommend it as containing many suggestive examples and disquisitions upon them. This pamphlet is the ninth of a series of monographs on anatomical and physiological subjects published under the editorship of Dr. E. Gaupp and Dr. W. Nagel.

SPECIAL SURGERY.

THE *Grundriss und Atlas der Speziellen Chirurgie*[3] of Professor SULTAN is a very portable publication, and the diagrams and drawings of the stages of operations, though small, are clear. The last volume includes the general technique of laparotomy, the surgery of the abdominal parietes, omentum, mesentery, stomach, intestines, liver, pancreas, spleen, kidneys and ureters, bladder, male organs, pelvis, hernia, and, lastly, the upper and lower extremities. The author introduces good illustrations, instructing the reader about matters concerning surgical anatomy not included in elementary textbooks, such as the bursae associated with muscles and tendons in the region of the shoulder and popliteal space. The coloured drawings demonstrating the morbid anatomy of the abdominal viscera, cholelithiasis, renal calculus, and the diseased bladder, as seen through the cystoscope, are likewise satisfactory, but the strong point of the publication as an atlas is the clinical department. The photogravures of deformities, etc., are good, as is usually the case in works published at the present time, when the authors can enjoy the useful resources of modern art, but the coloured engravings taken from life are of unusually high quality, even for the best contemporary medical works. They recall the fine drawings in atlases by authorities like Sir Jonathan Hutchinson. We may give an honourable mention to the plates representing cases of lymphangioma, ectopia vesicae in both sexes, haemorrhoids, and prolapsus ani. They are really instructive and not merely elegant representations of ugly diseases. The young surgeon and the experienced but elderly operator who alike seek instruction in new methods will, we suspect, make use of the volume mainly for its directions and diagrams under the heading "Technique of operations on the stomach and intestines." Dr. Sultan admits that Murphy's button is of value on account of the simplicity of its application, but warns his readers that it may in itself be the cause of bad complications.

MEDICAL AND SURGICAL HANDICRAFT.

DR. JULIUS SCHWALBE'S handbook of therapeutic technique,[4] of which the first half volume was reviewed in our pages two years ago (BRITISH MEDICAL JOURNAL, 1908, vol. i, p. 999, April 27th), has already reached a second edition. The almost infinite variety of means of treatment at the disposal of the modern practitioner is such that even in this book of nearly one thousand closely printed pages some things must be omitted and some almost too briefly touched upon. On the other hand, too much importance is perhaps given to some details. For instance, two illustrations are devoted to the removal of an artificial eye. Certain sections of the work are rewritten in this second edition. Owing to the deaths of Professors Hoffa and Vierordt, the sections on hydrotherapeutics and thermotherapeutics, massage, gymnastics, and mechanical orthopaedics are now presented by Professors Rieder and Riedinger, and, instead of Professor Englisch, Professor O. Zuckerkandl has written the section on kidneys and the male reproductive organs. There are entirely new sections on the therapeutics of nutrition and diet by Professors F. Kraus and Privat Docent Brugsch, and on the technique of the treatment of venereal and skin diseases by Professor Bettmann. There are 153 more pages and 72 more illustrations in this than there were in the first edition; the print and paper are good, and—what is most important in a work of this kind—there is a good index. It should prove a useful book of reference.

HOME NURSING.

MISS ISABEL MACDONALD'S position in the nursing world is sufficient guarantee for the accuracy and reliability of any work from her pen on her own subject, and in the preface to *Home Nursing*[5] she suggests that she is about to do something which would be of inestimable value. That is to provide a sort of handy guide to mothers of families or to women in the position of mothers, which should tell them what to do when there was illness in the house. Such a book should be quite different from the ordinary manual of nursing, which is addressed to those who are learning the art of nursing as a profession. Unfortunately Miss MacDonald seems to have lost sight of this distinction, and her little book differs hardly at all from the dozens of excellent nursing handbooks already on the market. What mother faced with a child screaming from a tumble is going to read through directions as to first aid in case of various fractures which she is utterly incompetent to diagnose? She will send for the doctor without consulting a book to tell her to do so, and the child will not be much the worse for the lack of the extemporized splints. But as long as Miss MacDonald

[2] *Sammlung anatomischer und physiologischer Vorträge und Aufsätze.* Herausgegeben von Prof. Dr. E. Gaupp and Prof. Dr. W. Nagel. Heft 9. *Missbildung und Variationslehre.* Von Ernst Schwalbe in Rostock. Jena: Gustav Fischer. 1910. (Roy. 8vo, pp. 33, 7 text figs. Pf 80.)

[3] *Grundriss und Atlas der Speziellen Chirurgie.* Von Professor Georg Sultan. II Teil. Vol. xxxvii of Lehmann's *Medizin Handatlanten.* Munich: J. F. Lehmann. 1910. (Cr. 8vo, pp. 630; 40 Tafeln, und 261 zum Teil zwei-bis dreifarbigen Abbildungen nach Originalen von Maler: Schmitson, Berlin. M. 16.)

[4] *Therapeutische Technik für die ärztliche Praxis.* Ein Handbuch für Ärzte und Studierende. By Twenty Authors. Edited by Dr. Julius Schwalbe. Second, improved and enlarged edition. Leipzig: Georg Thieme. 1910. (Sup. roy. 8vo, pp. 995; 557 illustrations. M. 22.)

[5] *Home Nursing; with Notes on the Preservation of Health.* By Isabel MacDonald. London: Macmillan and Co. 1909. (Cr. 8vo, pp. 341. 2s. 6d.

confines herself to the things for which the untrained mother, sister, cousin, or aunt ought properly to be responsible she is admirable. The only fault of the book is that it contains far too much. Again, it is said to be designed mainly as a book of reference, yet it is not provided with an index. There is a very wise and useful chapter on the care of infants, and the chapter on cooking for invalids is particularly useful, and contains many simple, practical recipes which we do not remember to have seen elsewhere.

FOOD.

ON the appearance of the first edition (see BRITISH MEDICAL JOURNAL, October 16th, 1909, p. 1160) we drew attention to the extremely useful Food Tables published by Drs. SCHALL and HEISLER, and we are not surprised that the success of the book has been sufficiently great to enable the authors to publish an enlarged edition.[6] As they say in their introduction, this information can be found in various books, and the only merit they claim is of collecting and putting it together in a convenient form, so that it can be found without trouble. They do not profess to have made original analyses for these tables, and this is for the most part of no moment, but in the present edition they have included a number of meat extracts and invalid and diabetic foods, trade articles which are much advertised, and where the analyses published by vendors are at least open to the suspicion that they may not correctly represent the composition of the articles as they are to be found in the market. It is of importance to know the source from which these figures were taken, and the only independent analyses appear to be those published by Dr. A. Magnus-Levy in the *Berliner klinische Wochenschrift*, No. 6, 1910, on the diabetic breads and biscuits of commerce. The authors refer to the important question of waste; it is obvious that in the case of many foods, particularly poultry, fish, and shellfish, a considerable portion is not eaten, and they suggest that where perfect accuracy is required the contents of the plate should be weighed before and after the meal, the difference only being reckoned as the food consumed.

When we reviewed the first edition of Dr. TIBBLES'S *Food and Hygiene* we spoke favourably of it, although its teaching was in some points antiquated and it contained many small mistakes. A second edition[7] has afforded Dr. Tibbles an opportunity to revise his book and to correct these mistakes, but he has not done so. So far as we can see, this is a reprint of the old book, with nothing altered, amended, or added, except in the appendix, where there is an account of the sour milk treatment. Moltke is still a *Russian* (!) general, Cornaro continues to figure in the plural as "Cornari," Van Ermenghen is hardly recognizable as "Ermenglin"; beri-beri is attributed to diseased rice, and pellagra to diseased maize, without a hint that these doctrines have been called seriously into question during the last few years, and so on. On page 81 he gives what he says is the daily ration of French soldiers; we have compared this with the dietary of the French army given in Marcelle Labbé's *Régimes Alimentaires* (1910), and in scarcely a single instance do the items correspond, doubtless because Dr. Tibbles has not taken the trouble to find out what the French soldier gets at present, but has reprinted something which was true some time ago. We spoke of his book in our former notice as being well arranged and well written, but there is no excuse for his failure to bring its matter up to date and to correct his mistakes.

LEUCOPATHY.

DR. FEUILLÉ aspires to revolutionize pathology in his book on *Leucopathies*.[8] He asks that his critics before condemning him should "inject under the skin of a dog in a dozen different doses, 50 to 100 grams of sterilized egg albumen and kill the animal on the following day." His conception is that many diseases which we regard as inflammatory are due to diseases of the leucocytes. Infiltration by leucocytes thus is often merely the aggregation of a number of dead or dying leucocytes seeking to escape from the body through one of the eliminating channels, or poisoned by some local toxin. He calls such an accumulation *leucosis*: if the infiltration occurs in an eliminating channel he terms it *leucexosis*. He thinks this aggregation of leucocytes may be due either to their flying to escape a poison by diapedesis, or in the pursuit of a poison to an eliminating organ, or, being charged with poison, trying to relieve the organism by escaping from it. Leucosis causes infiltration of an organ and leucexosis catarrh of its canal. Leucosis is rapidly succeeded by fibrosis, as in the kidney, for example, where it is not dependent upon inflammation but upon this eliminatory leucosis. Leucopathies are caused by toxins derived from intoxication, autointoxication or acute infections. The result of such infiltration is to cause in the kidney albuminuria, in the cellular tissue oedema, in the liver jaundice, in the lung catarrh, and so on. He thinks this explains the phenomenon of metastasis and affords a better elucidation of the working of derivatives than current theories. The conclusions for which he asks the consideration of pathologists are that the lymphatic cells deserve as much attention in pathology as is accorded them in physiology, and that they possess an activity which enables them to react on their own account in many ways, possessing as they do the faculty of mobility. The various diseases which may affect them may produce modifications in their secretion and their power of phagocytosis, and in the manner described infiltrations, catarrhs, and fibroses of various organs occur without any primitive lesion of the organ itself. The treatment of many diseases now regarded as local ought, he thinks, to be directed to the primary leucopathy, and the principal means at our disposal are bleeding, the production of a fixation abscess, the actual cautery, setons, poisons (mercury), and all the drugs called tonic or alterative. He suggests that the serum of an animal in the course of rapid and intense renovation may perhaps contain and transmit by injection a part of the renovating stimulation and the immunity of that animal.

[6] *Nahrungsmitteltabelle zur Aufstellung und Berechnung von Diätverordnungen.* Von Dr. Hermann Schall und Dr. August Heisler. Second edition. Würzburg: C. Kabitzsch. 1910. (Sup. roy., 8vo, pp. 56. M. 2.50.)

[7] *Food and Hygiene: A Treatise upon Dietetics and Hygienic Treatment.* By William Tibbles, LL.D., M.D. Second edition. London: Bohman, Ltd. 1910. (Post 8vo, pp. 684. 5s.)

[8] *Leucopathies, métastases albuminuries et lésions leucopathiques.* Par Dr. Emile Feuillié. Paris: G. Steinheil. 1909. (Roy. 8vo, pp. 192; 4 illustrations. Fr. 6.)

NOTES ON BOOKS.

THE literature bearing on medical inspection and of a character really useful for the school teacher is as yet very limited in amount. In a recently published booklet[9] Mr. R. C. ELMSLIE has given us an excellent little guide. This pamphlet covers the field of crippled children, and deals with some of the more important of the invalid class, and, while not treating the subjects exactly in a popular way, strikes a happy medium, and gives much valuable information in a manner calculated to interest and educate the school nurse, teacher, or manager. It is well worth perusal by the school doctor, and it is a publication which might with great advantage be followed by others dealing in a similar manner with other children requiring special attention. Provision for the care or treatment of children of the classes referred to in the pamphlet is as yet optional, and only a few authorities have assumed the responsibility, but such a provision is urgently wanted and must ultimately become compulsory, as must the adequate provision for epileptics and mental defectives.

[9] *The Care of Invalid and Crippled Children in School.* The School Hygiene Publishing Company, Limited, 2, Charlotte Square, W. (Pp. 50, paper covers. 1s.)

THE "Berkefeld" Filter has been awarded three Grand Prix and one diploma of honour at the Brussels Exhibition, 1910.

UNDER the will of the late Mr. Frederick Henry Harrison, of White Hall, Lincoln, Boston Hospital receives a bequest of £1,000, other sums of £250 and £100 going to Lincoln County Hospital and Lincoln General Dispensary respectively.

MEDICAL AND SURGICAL APPLIANCES.

A New Sterilizer for Instruments and Dressings.

Dr. G. G. Macdonald (London) writes: In the practice of surgery the first essential is the aseptic condition of every article and substance which approaches the site of an operative wound. In hospital practice there can be no possible excuse for defects in any of the details of the art of aseptic surgery. Economy has seldom to be considered. The surgeon has at his disposal a perfect operating theatre, trained assistants, and appliances, before, during, and after an operation, and the surgical technique of a well-managed operating hospital is in most cases so perfect that one is apt to lose sight of the vast attention to detail and to the refinements in practice. As in hospital, strict asepsis is the goose that lays the golden egg in the private performances of the surgeon. The ranks of the general practitioner are being more and more filled up by men who have had a splendid training in the practice of aseptic surgery, and it is in their hands that much of the minor surgery, at least, is placed. For the successful carrying out of any operative procedure it is essential to have sterile instruments, sterile sutures and ligatures, and sterile coats to screen off the dust from microbial impurities from the surgeon's, nurses', and patient's clothes, and also sterile swabs, dressings, and bandages. Besides these, efficient preparation of the hands and operation site are also essential. The sterilization of instruments, ligatures, and sutures, and the preparation of the hands and patient's skin can be effected at an extremely low cost, but it is otherwise with the preparation of the aseptic dressings.

The cost of dressings already sterilized and sent out in hermetically sealed tins is prohibitive for the "surgery" doctor, and means a considerable reduction from the fee of any surgeon. For repeated use, if any part of the contents is on one occasion contaminated, the whole tin must be condemned by the conscientious aseptician. For economical reasons every non-essential may have to be shorn from the practice of the general practitioner, but the essentials must be zealously maintained.

To obtain dressings sterile and ready for use it has been frequently shown that an expensive high pressure sterilizer is not an essential. Bacteriologists tell us that saturated aqueous vapour at 100° C. is quite sufficient to kill all organisms and spores. Koch's and Schimmelbusch's sterilizers and their many modifications aim at sterilizing dressings by placing them in current steam, and the kettles used with those sterilizers with open ends or perforated sides are constructed for the passage of steam through the dressings, but it has been shown that current steam is not necessary so long as the vapour is saturated aqueous vapour at 100° C. We can, therefore, rob our sterilization apparatus of all the arrangements for producing high pressure and for producing current steam.

In the preparation of dressings, swabs, etc., it is essential that they be rendered in as dry a condition as possible. Dry dressings, besides being much more comfortable, act as filters and not as carriers of microbes. In the high-pressure sterilizer this quality of dryness is obtained by the creation of a vacuum at the beginning and the rapid escape of superheated steam at the end of the sterilization. In the Koch and Schimmelbusch sterilizers dryness is not obtained with any uniformity, water of condensation being constantly deposited on the dressings.

To attain the essential objects in the sterilization of dressings, apsesis and dryness, I have constructed a sterilizer which is cheap, extremely simple, and absolutely efficient in the production of dry and sterile dressings. The sterilizer is as simple as the pneumatic tyre, being constructed, as will be seen from the accompanying diagram, of an inner and an outer chamber with a space between, and fitted with a lid of a particular form. For use a quantity of water is placed into the space between the cylinders, the dressings, loose or in canisters, are placed in the inner chamber, the lid fixed, the steam exit on the lid opened, and the whole instrument placed on the fire or gas-ring. In a few minutes steam issues vigorously from the escape tap, the temperature of the inner chamber rises to the temperature of the boiling water jacket, the cold air of the inner chamber is expelled, being displaced by saturated aqueous vapour at 100° C. The sterilization is continued for at least half an hour after the steam has begun to issue vigorously from the escape opening. The opening is then closed and the apparatus set aside to cool. The physical principle of aqueous vapour condensing first at the coolest part exposed is made use of to dry the dressings, and a glance at the diagrams will show that all condensation takes place in the outer chamber, the inside of the lid being prevented from cooling by means of a vacuum exhausted between the upper and lower layers of the lid. There is no heat or cold conduction through a vacuum, and therefore the lower layer of the lid remains hot for a considerable time during the cooling, thus effectually preventing any condensation on the lower layer of the lid, which would drip on the surface of the contents of the inner chamber. In consequence, after the instrument has been cooled, the dressings, etc., may be removed, and will be found to be perfectly dry and in the most suitable condition for use, and this without any high pressure apparatus whatever.

The efficiency of the sterilizer has been repeatedly tested bacteriologically. Anthrax spore threads inside a roll of flannel bandage 10 yards by 6½ in. were destroyed in ten to fifteen minutes. Very resistant saprophytic spores—those of *Bacillus subtilis* and *Bacillus mesentericus*—which resisted boiling for twenty minutes—were destroyed in twenty to thirty minutes, and streptococci, staphylococci, and typhoid bacilli were killed in three to five minutes.

It might be conceived that with the cooling of the apparatus there must be a contraction of the volume of the vapour within, and an aspiration of germ laden air through the crevices of the lid to restore equilibrium. However, if one follows the track of the in-going air one will see how it is deprived of its germ-laden character. It has to pass through three consecutive "traps" before



Fig. 1.



Fig. 2.

it can gain access to the inner chamber, and as Hoffmann, Pasteur, and others have long ago shown, one of these "traps" is sufficient to prevent contamination of the inner chamber from the entering air.

The instruments may be sterilized along with the dressings, as also may be the rubber gloves, coats, towels, etc. The largest sizes are sufficient to sterilize the coats and dressings for one or two major operations; the smallest sizes are designed to sterilize dressings and instruments for post-operative and other wounds, all that is necessary for repeated use being to drop the remains of the dressings and instruments back into the sterilizer and repeat the process. Thus the requirements of the most exacting aseptician can be fulfilled at a very trifling cost.

The sterilizer has been manufactured for me by the Medical Supply Association, 228, Gray's Inn-road, in the following actual sizes:

No. 1.—Canister, 6½ by 6 in., which can contain ½ lb. cotton-wool bandage gauze, two towels, rubber gloves, and two nailbrushes.

No. 2.—9 by 9 in., which can hold one operating coat, towels, bandages, cotton-wool, etc.

No. 3.—Holds two drums of size No. 2.

By the use of several drums the practitioner can always have an abundant supply of sterilized dressings ready for any emergency.

Nova et Vetera.

SOME ROYAL DEATH-BEDS.

(Continued from p. 462.)

Queen Anne.

On Saturday, July 31st, 1714, the last Stuart sovereign who reigned over England lay dying in her palace at Kensington. Some months previously the state of Anne's health had given cause for anxiety, but latterly she had appeared better and stronger; and only six or seven weeks before her death Arbuthnot wrote to Swift that the Queen was in good health (June 12th, 1714).

Nevertheless, no one expected her to live very long, and the whole Court was in a ferment over the question of the succession. The universal excitement could not fail to have a disastrous effect upon the ailing Queen, who upon her death-bed told Arbuthnot that the disputes and quarrels of her Ministers had killed her, but she insisted upon presiding over all the meetings of her Cabinet and taking part in the discussions. On the night of July 27th, however, a long and stormy Council, which had agitated her greatly, was abruptly terminated at 2 o'clock in the morning by the Queen's sudden collapse into a dead faint. She was hastily put to bed, where she passed the night in tears, and next morning it was announced that Her Majesty was too ill to attend the Council fixed for that day. It was therefore postponed for a couple of days, but to those about her there can have been little doubt that Anne would never sit at the head of the Council again. Besides occasional fainting fits, the Queen suffered considerable pain, apparently caused by gout, and was by turns feverishly hot and shivering with cold. Moreover, her discomfort was increased by an abscess, attributed to erysipelas, on one of her legs, and from time to time her mind wandered, and she became utterly unconscious of her surroundings. On Wednesday, July 28th, Dr. Shadwell, who was in attendance upon the Royal patient, was made anxious by the state of her pulse, and spoke of it to the Duke of Shrewsbury, who sent Arbuthnot to see the Queen. Arbuthnot, however, apparently found nothing alarming in her condition, for we learn from the *Wentworth Papers* (p. 408) that he "brought the Duke word her pulse was well, and the same thing he made Dr Slown (Hans Sloane) say, for they had always had a mind to keep the Queen's illness a secreet."

In spite of this favourable report, the Queen was too ill to attend the Cabinet Council on the following day, July 29th. Her attendants, for political reasons, hesitated to call a general consultation of the royal physicians, but Arbuthnot took counsel with four of the physicians-in-ordinary, and it was decided that she should be cupped; after this she felt relief and was able to get some refreshing sleep. The following morning, July 30th, the Queen felt so much stronger that she desired to rise and receive the members of her Council, and actually managed to get out of bed. Her attendants, however, alarmed by her extreme weakness and pallor, sent in haste for Arbuthnot, who gave orders for her head to be shaved. In the middle of this operation the Queen fell back in a swoon, which was declared by the doctors to be an apoplectic fit. Her other physicians had been called in, and she was at once bled. She remained unconscious for nearly two hours, whilst her doctors wrangled over her case, politics playing almost as great a part as physic in their disputations. Arbuthnot held out hopes of recovery; on the other hand, a gloomy prognosis was given by Sir Richard Blackmore, who nevertheless thought the patient might linger for a day or two, whilst one of his colleagues, Richard Mead, declared that it was merely a question of minutes. Mead's opinion seems to have been shared by most of those present, for it was only with the greatest difficulty that the Queen was brought round. An emetic was administered without any effect, and it was not until a trial was made of a medicine recommended by Mead that the patient recovered consciousness. At one o'clock Anne was well enough to receive some of her Privy Councillors, but later in the afternoon she had a relapse, and it became clear that she was in serious danger.

A contemporary pamphlet, entitled *The State of the Nation: Containing an Account of the Indisposition and Death of Her late Majesty Queen Anne*, etc., says that "Friday, the 30th of July, was the first time that any Symptoms of Danger appear'd, her Majesty being then seiz'd with a sudden illness, which was follow'd by repeated Convulsion Fits."

Her doctors ordered the application of blisters; and Peter Wentworth wrote to Lord Strafford the same evening that:

> I got to Kingsenton about six o'clock, and whilst I was there her Majesty had the benefit of vomitting thrice by the help of Cardis. Dr Alburtenhead (Arbuthnot) came out and told the company of it and said 'Twas the best symptom they had today, and that she felt pain in her feet, their being garlick laid to't wch likewise was well, and was then gone to sleep. 'Tis now nine o'clock—but they tell me there's no judging how the decease will turn till twelve a c'ock. I overheard Dr. A—— in a whisper say 'twas ten thousand to one if she recover'd. (*Wentworth Papers*, p. 407.)

Meanwhile a report had got about that the Queen was already dead. On July 31st, Charles Ford, who by Swift's interest had been appointed Gazetteer, wrote to the Dean as follows:

> London, July 31st, 1714. Three in the afternoon.
>
> I don't doubt but you have heard the queen is dead, and perhaps we may be so unfortunate before this comes to you; but at present she is alive, and much better than could have been expected. I am just come from *Kensington*, where I have almost spent these two whole days. I am in great haste; but, till dinner comes up, I will write to you, and give you as full an account as I can of her illness.
>
> Her disorder began between eight and nine yesterday morning. The doctors ordered her head to be shaved, and while it was doing, she fell into a fit of the convulsions, or, as they thought, an apoplexy. This lasted near two hours, and she was speechless, and showed little sign of life during that time; but came to herself upon being blooded.
>
> As soon as she recovered, my lord *Bolingbroke* went to her, and told her the privy council was of opinion it would be for the public service to have the duke of *Shrewsbury* made lord treasurer. She immediately consented, and gave the staff into the duke's hands. The great seal was put to the patent by four o'clock. She continued ill the whole day. In the evening I spoke to Dr. *Arbuthnott*, and he told me he did not think her distemper was desperate. *Radcliffe* was sent for to *Carshalton* about noon, by order of council; but said he had taken physic and could not come. In all probability he had saved her life, for I am told the late lord *Gower* had often been in the same condition with the gout in his head; and *Radcliffe* kept him alive many years after. This morning, when I went there before nine, they told me she was just expiring. That account continued above three hours, and a report was carried to town that she was actually dead. She was not prayed for, even at her own chapel at *St. James's*: and, what is more infamous, stocks arose three *per cent.* upon it in the city. Before I came away, she had recovered a warmth in her breast and one of her arms, and all the doctors agreed, she would in all probability hold out till to-morrow, except *Mead*, who pronounced, several hours before, she could not live two minutes, and seems uneasy it did not happen so. I did not care to talk much to *Arbuthnott*, because I heard him cautious in his answers to other people; but, by his manner, I fancy he does not yet absolutely despair. The council sat yesterday all day and night, taking it in turns to go out and refresh themselves. They have now adjourned upon what the doctors said, till five. Last night the speaker and my lord chief justice *Parker* were sent for, and the troops from *Flanders*. This morning the *Hanoverian* envoy was ordered to attend with the black box,[1] and the heralds to be in readiness to proclaim the new king. Some of the whigs were at the council yesterday, but not one failed to-day: and the most of the members of that party, in each house, are already come to town. If any change happens before the post goes out, I will send you word in a postscript; and you may conclude her alive, if you hear no more from me, and have no better authority than post-letters to inform you of the contrary. . . .

In the same letter Ford says:

> Eleven at night.
>
> The queen is something better, and the council adjourned till eight in the morning.

On the same date Erasmus Lewis, Secretary to the Lord Treasurer, the Earl of Oxford, and M.P. for Lostwithiel, in Cornwall, wrote to Swift from Kensington:

> At the time I am writing the breath is said to be in the queen's nostrils; but that is all. No hope left of her recovery. . . . We expect the demise to-night.

[1] Containing the instrument nominating the persons, in number thirteen, to be added as lords justices to the seven great officers of the realm.

It has been said by some writers that Anne's last hours were embittered by the thought of her wronged and exiled brother. There is, however, no proof of the truth of this story; and, indeed, the last day of the Queen's life—Saturday, July 31st—was passed in a deep lethargy. Lady Masham, her bosom friend, described her condition that evening in the following terms:

Her pain deprives her of all sense, and in the interval she dozes and speaks to no-body.

Later in the evening the dying woman became delirious, and she died at 7 o'clock the following morning (Sunday, August 1st, 1714) without recovering sufficient consciousness to sign her will or to receive the sacrament. She was in her fifty-first year of age at the time of her death, and had been Queen of England for thirteen years. In a letter to Swift, dated August 12th, Arbuthnot wrote:

. . . My dear mistress's days were numbered even in my imagination, and could not exceed such certain limits, but of that small number a great deal was cut off by the last troublesome scene of this contention among her servants. I believe sleep was never more welcome to a weary traveller than death was to her; only it surprised her too suddenly before she had signed her will; which no doubt her being involved in so much business hindered her from finishing. It is unfortunate that she had been persuaded, as is supposed by *Lowndes*, that it was necessary to have it under the great seal. I have figured to myself all this melancholy scene; and even, if it be possible, worse than it has happened twenty times; so that I was prepared for it.

The causes of Anne's death have been attributed to suppressed gout, ending in erysipelas, which produced an abscess and fever,[1] and her end was probably accelerated by political intrigues and dissensions with which she was surrounded.

The record of the *post-mortem* examination does not throw much light on the cause of death. It is dated August 2nd, and is referred to by Geo. A. Aitken as being among the Sloane MSS 3984, f. 248. An official copy of the document with the docket is in the possession of Dr. William Cock, who exhibited it at the *conversazione* of the Physical Society held at Guy's Hospital on October 7th. It belonged to Dr. Thomas Lawrence, her senior physician. It is published in the *Guy's Hospital Gazette* of October 15th, from which we quote it:

At the Council Chamber, St. James's, the 3d August, 1714. Present:

Their Excellencys the Lords Justices in Council.

The Physicians called in and Dr. Laurence delivered the following paper, containing an Acct. of what was observed at the opening of her late Majᵛˢ. Body.

Kensington Palace,
2 August, 1714.

Upon opening the Body of her late Majesty of Blessed Memory, We found a small Umbilical hernia Omentalis without any excoriation, a large Omentum well Coloured. No water in the Cavity of the Abdomen. The Stomach thin, and its inward coat too smooth. The Liver not Schircous, but very tender and Flaccid, as were all the rest of the Viscera of the lower belly. The Gall. Bladder, Kidneys, and Urinary bladder without any stone. There was a very small Scorbutic Ulcer on the left leg. We can give no further account, being forbid making any other inspection than what was absolutely necessary for Embalming the Body.

The following is the docket:

The Physicians' Report to their Excellency's deliver'd by Dr. Lawrence as Principal Physician.

(Signed)	Jo. Shadwell,
Thos. Laurence,	Hans Sloane,
Davd. Hamilton,	Amb. Dickins,
Jno. Arburthnott,	Rd. Blundell.

A true Copy.

(Signed) Edward Southwell.

According to the *Gentleman's Magazine* for March, 1787, vol. lvii, part i, p. 191, the Dr. Thomas Lawrence here mentioned was first physician to Queen Anne and Physician General to the army; he lived to a great old age, and held employment under four successive sovereigns, beginning with Charles II, by whom he was appointed physician to the garrison at Tangier. Dr. Thomas Lawrence, Johnson's friend, was his grandson. The absence of John Radcliffe from the dying Queen's bedside, which is referred to in one of Ford's letters, caused a storm of unpopularity to break on the head of the famous physician. Years before Radcliffe had deeply offended the Queen by his sneer about her "vapours," but so great was his reputation that about noon on July 30th, when it was recognized that Anne was in imminent danger, Radcliffe was summoned by an Order of Council. Radcliffe was unable to obey the summons, being laid up with an attack of gout in the head and stomach at his country house in Surrey. He wrote that he "had taken physic and could not come," and the result of his refusal was that the Queen's death was laid at his door. The public appear to have believed that the mere presence of the great Jacobite doctor would scare away death, and feeling ran so high that when the Queen had breathed her last the mob actually threatened him with assassination. In a note to Charles Ford's letter to Swift, which has been quoted, it is said that

On the fifth of *August*, four days after the queen's death, a member of the house of commons, a friend of the doctor's, who was also a member, and one who always voted on the same side, moved, that he might be summoned to attend in his place, in order to be censured for not attending on her majesty.[2]

Upon this occasion Radcliffe is said to have written the following letter to another of his friends:

Carshalton, August 7, 1714.

Dear Sir,

I Could not have thought, that so old an acquaintance, and so good a friend, as Sir *J—n* always professed himself, would have made such a motion against me. God knows my will to do her majesty any service has ever got the start of my ability; and I have nothing, that gives me greater anxiety and trouble, than the death of that great and glorious princess. I must do that justice to the physicians, that attended her in her illness, from a sight of the method, that was taken for her preservation by Dr. *Mead*, as to declare nothing was omitted for her preservation; but the people about her, the plagues of *Egypt* fall on them, put it out of the power of physic to be of any benefit to her. I know the nature of attending crowned heads, in their last moments, too well to be fond of waiting upon them, *without being sent for by a proper authority*. You have heard of pardons being signed for physicians, before a sovereign's demise; however, ill as I was, I would have went to the queen in a horse litter, had either *her majesty*, or *those in commission next to her*, commanded me so to do. You may tell Sir *J—n* as much, and assure him, from me, that his zeal for her majesty will not excuse his ill usage of a friend, who has drank many a hundred bottles with him; and cannot, even after this breach of a good understanding, that was ever preserved between us, but have a very good esteem for him. I must also desire you to thank *Tom Chapman* for his speech in my behalf, since I hear it is the first he ever made, which is taken more kindly; and to acquaint him, that I should be glad to see him at *Carshalton*, since I fear (for so the gout tells me) that we shall never more sit in the house of commons together.—I am, etc.,

John Radcliffe.

How real was Radcliffe's fear of being made the victim of popular violence is shown by the following letter, directed to "Dr. *Mead*, at *Child's* coffee-house, in *St. Paul's Churchyard*."

Carshalton, August 3, 1714.

Dear Sir,

I Give you, and your brother many thanks for the favour you intend me tomorrow; and if there is any other friend, that will be agreeable to you, he shall meet with a hearty welcome from me. Dinner shall be on the table by two, when you may be sure to find me ready to wait upon you. Nor shall I be at any other time from home, because I have received several letters, which threaten me with being pulled to pieces, if ever I come to *London*. After such menaces as these, 'tis easy to imagine, that the conversation of two such very good friends is not only extremely desireable, but the enjoyment of it will be a great happiness and satisfaction to him, who is, etc.,

John Radcliffe.

Radcliffe died on November 1st the same year, having survived the Queen only three months; and it is said that the dread of assassination and the want

[1] *Dictionary of National Biography.*

[2] Letters written by the late Jonathan Swift, D D., Dean of St. Patrick's, Dublin; and several of his friends; from the year 1703 to 1740. Published from the originals; with notes, explanatory and historical, by John Hawkesworth, LL.D. London: Printed for R. Davis in Picadilly; T. Davies, in Russel-street, Covent Garden; L. Davis and C. Reymers, in Holborn; and J. Dodsley, in Pall-Mall. MDCCLXVI. Vol. i, p. 500 et seq.

of company in the country village which he was afraid to leave shortened his life. He was, in the words of an old biography, "a victim to the ingratitude of a thankless world and the fury of the gout." John Radcliffe had been appointed physician to Anne in 1686, but soon fell into disfavour owing to the roughness of his manners. When Anne came to the throne, she could not be persuaded to reinstate Radcliffe. When urged by those about her to do so, she replied that he would send her word, as he had done before, that her ailments were nothing but the vapours.

Of her physicians, John Arbuthnot was unquestionably her favourite. In 1705 he was appointed Physician Extraordinary to the Queen "by her Majesty's special command, in consideration of his good and successfull services perform'd as Physitian to his Royal Highnesse" Prince George of Denmark. As early as in 1703 he had attended the Queen and her children. In 1709 he was appointed Physician in Ordinary to the Queen. Of the confidence reposed by Queen Anne in him, numerous proofs are to be found in Swift's *Journal to Stella*. Thus, under date August 10th, 1711, we find mention of "Dr. Arbuthnot, the Queen's physician and favourite." On September 8th, reference is again made to "Dr. Arbuthnot, the Queen's favourite physician, a Scotchman"; and in 1712 a rumour that the Queen was inclined to a dropsy is denied on the authority of "her physician Arbuthnot, who always attends her."

Scandal lovers may perhaps find in this denial some confirmation of a belief which has survived even to the present day, that Anne was given to drink. Whether this be true or not, she seems to have been much given to physic. We are informed by Dr. Cock that when Wandsworth Manor House was altered some twenty years ago, a cupboard was found full of phials and gallipots, and other vessels for the administration of medicine of the kind used at the time when the Manor House was the country residence of the Queen and Prince George. The physic may, of course, have been intended for her children, only one of whom survived to the age of 10.

Immediately after the Queen's death, Arbuthnot left his rooms in St. James's Palace and moved to Chelsea

THE TREATMENT OF CANCER BY X RAYS.

By Charles G. Barkla, M.A., D.Sc,
Professor of Physics, King's College, London.

The address delivered by Sir J. J. Thomson before the British Medical Association in July turned the attention of the writer to the work that is being done in the diagnosis and treatment of disease by x rays. A study of the methods employed and of the results obtained leads to many practical suggestions. One of these appears of sufficient importance to justify the present communication from a physicist.

It has apparently been fully demonstrated that certain diseases of the skin, in particular cancerous diseases in and near the skin, have been relieved and cured by the action of x rays, while similar diseases affecting deeply seated organs have been influenced but little, if at all, by the rays. I suggest that the difference in the results is due to the difference in the treatment which the diseased tissues have actually received.

The most fundamental change which has been observed in matter traversed by a beam of x rays is that which appears in the gaseous state as ionization. [There is no doubt that a similar process takes place in the solid and liquid states, though in these the final conditions of the ions are different.] This process of ionization involves the absorption of energy from the beam of x rays transmitted. Where there are little absorption and little ionization we may certainly expect—indeed it may safely be asserted—there is little physiological effect.

Now, the disadvantages of the methods at present used are the following: (1) The treatment is not confined to the diseased tissue—in fact, the healthy portions of the body are subject to a more intense radiation than the portions which it is desired to transform into healthy tissue; (2) the radiation which reaches the diseased tissue is necessarily of a penetrating type, and, as a consequence, passes through that tissue with little absorption of energy and little ionization of the atoms constituting that tissue. This is obviously the case to a certain extent, but it is much more so than is suspected, for these penetrating radiations, while passing through the light atoms which constitute the flesh, lose by far the greater portion of their energy by simple scattering, and not by true absorption. Thus the density of a shadow cast by an organ upon a fluorescent screen or photographic plate is no true measure of the energy absorbed by that organ, even if the beam be homogeneous, but is more correctly a measure of the energy lost by the direct beam by scattering, and received by the surrounding organs. Owing, then, to the facts that the more efficient ionizing radiations are absorbed by the superficial layers of flesh; that the penetrating radiation is so penetrating as to pass through the affected portion with little absorption; that what little is apparently absorbed is in reality largely redirected, it is undeniable that little energy is truly absorbed and little ionization takes place in the diseased tissue. The absence of appreciable physiological action follows as a consequence.

Now the treatment may be both enormously intensified and localized in a particular portion of the body, as will be seen from what follows.

Elements of high atomic weight scatter only a small fraction of the radiation trasmitted through them, but they transform this radiation into much more absorbable and more intensely ionizing secondary radiations of two types, soft x-radiation characteristic of the particular element emitting it, and corpuscular radiation in character like the β-radiation from radio-active substances. The total energy of these two radiations is certainly a large fraction of that of the primary beam lost during transmission. Also the proportional absorption of these radiations by light atoms to that by heavy atoms is very much greater than in the case of the original penetrating radiations. If, therefore, a mixture of heavy and light elements be subject to a penetrating x-radiation, the heavy elements absorb much of this radiation, and re-emit a large fraction of the energy in the form of these absorbable radiations, which, proceeding in all directions, produce greatly increased ionization in the light atoms in the immediate neighbourhood. Thus, if we inject a substance containing a heavy element into the diseased portion of the body, an intense penetrating radiation will pass through the surrounding tissue with little effect, and will in the diseased tissue be transformed into highly efficient ionizing radiations, which are practically completely absorbed within that diseased tissue.

The state of chemical combination of the element does not affect the process, as in a substance such as bismuth carbonate the constituent bismuth acts as the transformer. Also the more widely distributed the injections through the portions it is desired to treat, the more effectively is the transformed radiation distributed, for large masses of radiating substance absorb their own radiations to a large extent.

To give an idea of the magnitude of the increase in ionization we will suppose half a gram of bismuth carbonate distributed through a cubic centimetre of flesh. The ionization produced in the flesh itself by a transmitted radiation would through the agency of the bismuth probably be of the order of thirty, forty, or fifty times that produced by direct action of the rays. The most suitable concentration of the injected substance, and the exact increase in efficiency due to an injection, would, however, depend on the penetrating power of the radiation used, and upon the thickness of the diseased tissue, as screening of deeper layers would occur and necessitate diminished concentration. In the treatment of thin layers of flesh—say a few millimetres thick—the efficiency would be of the order above stated, but even in the most unfavourable cases in which the affected portion is not less than several centimetres deep in any direction, the efficiency need not sink to less than ten, or perhaps twenty, times that of the direct radiation. It would at this stage be an unnecessary refinement to discuss the relative efficiencies of various elements.

The advantages of such a treatment, where practicable, are sufficiently obvious to need no further comment.

In conclusion, a word of warning ought to be given against the practice of taking bismuth carbonate into the system for observational purposes with the use of x rays,

for a membrane covered with only a very thin layer of bismuth carbonate is during the transmission of x rays exposed to a very violent treatment by soft x rays and corpuscular rays. If these membranes are sensitive to such radiations—it is difficult to conceive of them being otherwise—the results must be serious. If the bismuth carbonate be strongly diluted with a large quantity of food, the food itself absorbs the greater part of the radiation, but the relative amount by weight of food to bismuth carbonate would need to be great to sufficiently protect the membranes during prolonged exposure.

ASSOCIATION OF CERTIFYING FACTORY SURGEONS.

Annual Meeting.

The annual meeting and dinner of the Association of Certifying Factory Surgeons took place at the Queen's Hotel, Manchester, on Friday, November 4th. The meeting was also the first statutory meeting of the association on incorporation. Dr. W. F. Dearden, of Manchester, who has acted as honorary secretary for the past eleven years, was elected president, Dr. T. W. Heywood, of Darwen, succeeding to the secretarial duties. With these two exceptions the whole of the previous year's officers and council were re-elected. It was reported that most of the old members had transferred their membership.

Dinner.

Dr. Dearden presided over one of the best attended gatherings in the history of the association, the explanation being that his assumption of office was to be made the occasion of a handsome presentation from the members. This took the form of a tray, tea-set, and entrée dishes, in silver, with a souvenir bracelet for Mrs. Dearden. After the toast of "The King" had been duly honoured, Dr. T. Fort, in making the presentation, said that the gift might be regarded as an indication of appreciation and good feeling from practically all the members. He spoke highly of the work of Dr. Dearden during his eleven years of secretaryship, mentioning, among other matters, the trebling of the membership during the first four years of his office, and his great efforts towards standardizing the methods of examinations and reasons for rejections by certifying surgeons He pointed out that since powers were obtained, in 1901, Dr. Dearden had never ceased from impressing upon members the importance to industry and to young people of taking the fullest advantage of the privilege of affixing conditions to certificates. He was quite satisfied that the people who were getting the benefit from these labours were the juvenile workers themselves. He drew attention to the valuable scientific and organizing work which the president had taken in hand in connexion with the particular province of industrial hygiene, and to the fact that his successful endeavours in getting together a powerful national committee, and so excellent a series of papers, for the recent International Congress on Industrial Disease had already been rewarded by his appointment as a member of the Permanent International Committee for the Study of Diseases of Occupation.

Dr. Dearden, on rising to return thanks for the presentation, met with an enthusiastic reception, including the usual musical honours. He said that the kindness of his colleagues was overwhelming, and that he had thought a sufficient honour had been conferred in selecting him, that afternoon, to be the first president of the newly incorporated association. He cordially thanked the members for the very handsome pieces of silver, and the pretty token to his wife, and was particularly impressed with Dr. Fort's statement that nearly every member of the association had contributed Apart from the value of the present, this latter fact was to him a pleasing proof that his eleven years' labours as their honorary secretary had met with universal approbation. Dr. Fort was somewhat too flattering in attributing to his efforts the more or less successful undertakings mentioned, and he thought it would be only fair and correct to point out that their very hardworking and businesslike council should share any credit which might be due. Their greatest triumph had, of course, been achieved when they succeeded in securing the retention of the old statutory obligation requiring the investigation into the causation of so called preventable factory accidents by the certifying surgeon, and this was principally owing to the way in which every individual member used his efforts to convert to his way of thinking any member of Parliament with whom he happened to be acquainted. The British Medical Association were also entitled to a large share of credit for the ready manner in which they threw their powerful influence into the scale at a critical moment, and he should always hold that certifying surgeons owed a debt of gratitude to Sir Victor Horsley for the convincing manner in which he advocated the views of that great organization before the then Parliamentary Under Secretary of State. He was, however, quite prepared to admit that he had devoted a considerable amount of spare time to the service of the certifying surgeon. The modern and only successful method by which a body of men engaged in the same calling can hope to improve their common condition was by association, and he had striven hard to convince certifying surgeons of this principle, which stood for uniformity of views and uniformity of action. He was proud of having in his possession a letter from the late A. J. Mundella informing him of the defeat of a clause which had been inserted in the Factory Bill of 1891 with the object of abolishing the certificate of fitness, and in which he wound up by saying, "You will hear no more of the clause, but the surgeons in future must do their duty." Securing uniformity of method in carrying out the duties of the office was the way to obtain the fulfilment of Mr. Mundella's undoubtedly strong view, and that the association was doing it could be shown by results. The departmental returns for 1900, at the beginning of which year he took office, showed that 1,882 certificates had been refused for physical incapacity; each year these figures had gradually improved, until during 1909 they had gone up to 7,738. The association had convinced the authorities of the tremendous advantage to juvenile labour of legalizing the regulating of the nature of employment to the physical capacity of the applicant by authorizing the certifying surgeon to affix conditions to his certificate; and it was members of the association who were responsible for the 5,775 conditional certificates granted last year. He was proud of the way in which members had of late years shown this intimate knowledge of industrial conditions in many valuable contributions to books, journals, and congresses, and was convinced that the certifying surgeon only required to be better known to be properly appreciated. The work of this official was certainly well thought of by Continental experts, and there did not appear to be much doubt that Belgium, at any rate, intended creating a similar service. He spoke of the directions in which the utility of the certifying surgeon could be extended, and strongly advocated the attachment to each superintending inspector's district of one or more medical inspectors who, among their other duties, would supervise and direct the work of the certifying surgeon.

Dr. J. Brassey Brierley proposed the toast of "The Houses of Parliament," which was responded to by Mr. A. A. Haworth, M.P., who said that progressive legislation was necessarily slow, as Parliament could not legislate one inch in front of public opinion; and that experience of the past had fully supported this view. In their undoubtedly praiseworthy efforts they must aim to carry the people with them, and if they did this they need not despair of improvement. Although meeting many rebuffs, factory legislation now proposed would undoubtedly pass into law, and, along with older Factory Acts, would be looked upon in times to come as one of the factors in the march of civilization and progress.

Sir William Bailey, in proposing "The Factory Department of the Home Office," made a comparison between the excellent laws of Spain, with their practical nullity through maladministration, and the exceptionally good results accruing from what he termed a wise elasticity of administration exercised by the department under the control of gentlemen present that evening.

Professor G. R. Murray, in replying to "Our Guests," expressed the view that any philanthropic employer of labour who wished to devote a sum of money to a really good object could not do better than found a research scholarship for the study of industrial disease.

THE AFTER-CARE OF CONSUMPTIVES.

A large number of representatives of sanatoriums and health associations took part in a gathering convened by the Charity Organization Society on the afternoon of November 4th, for the purpose of discussing the problem of caring for consumptive patients after they have passed out of sanatoriums. Colonel Montefiore presided, and the conference was opened with a short paper by Miss Jane Walker, M.D., of Mallings Farm Sanatorium, who put forward the axiom that if sanatorium treatment were to be effective, especially in the case of the poor and the working classes, it must not end with the patient's departure from the institution. Sanatoriums were educational as well as curative establishments, and the education should have regard to the patient's future as well as to his present, and to his circumstances in life as well as to his hygiene. A loafing habit must not be fostered, and the work given in the sanatorium must, if possible, be the kind of work that the patient would have to take up on going out into the world. The best work for the discharged patient was, with few exceptions, the work he had been doing before admission; for the simple reason that at this form of employment it was probable that he could earn most money, and therefore anxiety, which was a most potent factor in retarding the complete cure, was reduced to a minimum. Even an unsuitable occupation which relieved the ex-patient from financial worry was better than an ideal occupation which produced little money. Unfortunately, many employers refused to take back an employee who had had consumption, and the worst offenders in this respect were some departments of the public service, notably the navy. (In some remarks made subsequently, however, Dr. Walker said that this stricture did not apply to the police department, where the ex-consumptive received consideration.) As an ideal employment she recommended French gardening, for which there seemed to be an increasing scope. She thought that in many cases it was a mistake to advise consumptive patients in the town to give up their work and find employment in the country. The important point was that their leisure should be spent healthily. Two years was the minimum period for which a discharged patient required careful watching, and to carry out this supervision she advocated the utilization of existing agencies for helping the poor—the labour exchanges, the charity organizations, and the tuberculosis dispensaries. Any scheme, she insisted, must be national in its character.

Dr. Burton-Fanning, of Kelling Sanatorium, Norfolk, supported the contentions of Dr. Walker, and gave an interesting analysis of the fortunes of 306 first-class or mild cases discharged from the sanatorium. It was found that 60 per cent. had returned to their original occupations, and that only 8 per cent. had failed to obtain employment. The statistics of those who had taken up outdoor and indoor work respectively were surprisingly even:

	Well.	Fairly Well.	Worse.
	Per Cent.	Per Cent.	Per Cent.
Outdoor	76	12	10
Indoor	73	11	15

The speaker bore testimony to the consideration with which many employers treated their men on their return from a sanatorium. It was important that the work given to such employees should be carefully allotted and supervised, and should be not too laborious.

From the same institution came Dr. McConnel, who said that at Kelling everything that was possible was done to fit the patient to earn his living, although, of course, in the case of women, who had good homes to return to, the necessity for labour training was not so great.

Mrs. Esther Carling, M.D., of Maitland Cottage Sanatorium, desired to switch the question of the after-care of ex-patients on to the campaign against consumption, and suggested that a magazine devoted to the matter would be of great assistance. She warmly commended the successful efforts of Dr. Davies, the Medical Officer of Health for Woolwich, to get the Woolwich Arsenal authorities to treat ex-patients from sanatoriums more sympathetically, the result being that advice was sought at an earlier stage, as the men were not now in fear of discharge if found to be victims of the disease.

Mr. E. S. Kemp, the secretary of the Medical Committee of the Charity Organization Society, also dwelt upon the necessity of educating the employer as well as the ex-patient. He read a letter from Dr. Davies, of Woolwich, pointing out that his (Mr. Kemp's) society could do a good work by establishing local after-care subcommittees.

The folly of giving the advice as a matter of course that a sudden change of occupation was necessary when tuberculosis was discovered in a patient was emphasized by Dr. Paterson of Frimley. He agreed with Dr. Walker in saying that an unsuitable and ill-paid employment was no remedy. Dr. Glover Lyon, of Victoria Park Hospital, urged that it was now the duty of the State to interfere, and to ensure that all sanatorium ex-patients were under the care of some public body. Later, the same speaker joined issue strongly with Dr. Robert Maguire, of Brompton Hospital, who expressed the opinion that the public had been over-educated in the infectiousness of consumption, and that there was no danger of infection unless the phthisis were in active stage or proper care were not taken. Dr. Glover Lyon insisted upon the recognition of the infectious character of the disease.

The remainder of the meeting was in the hands of lady speakers, who brought some practical contributions to the discussion.

Miss Curtis, of Hammersmith, pointed out the peculiarly hard case of the domestic servant seeking a return to her former occupation, and also that of the married woman going back to the home of a poor, out-of-work husband.

Miss McGall hoped that one day there would be a working-farm colony in London, such as had been tried in the North.

Mrs. Norman Moore suggested the compilation of a list of employers willing to give work to persons who had been in sanatoriums, and Miss Dalton a magazine propaganda on the subject.

Mrs. Pearse gave the history of a number of discharged patients who had come within her experience, and Dr. Jane Walker, in replying upon the whole discussion, would not agree that the public had been over-educated on the subject, although probably in some respects there had been miseducation.

ASSOCIATION OF PUBLIC VACCINATORS OF ENGLAND AND WALES.

The annual meeting of this association was held at the Hotel Cecil, London, on October 28th, under the presidency of Dr. J. C. Bradshaw (Liverpool). The meeting was chiefly occupied by a discussion on the internal affairs and a consideration of suggestions for increasing the usefulness of the association. Dr. A. E. Cope (London) received a very hearty call to the presidential chair for the ensuing year.

In the evening the annual dinner was held at the Hotel Cecil, the newly-elected President being in the chair. Letters of regret at inability to be present were mentioned from Sir James Crichton-Browne, Dr. Dawson Williams (British Medical Journal), Dr. J. Smith Whitaker (British Medical Association), Dr. Francis T. Bond (Gloucester), and others. Among the guests present were: Dr. A. P. Hillier, M.P., Dr. Farrar (Medical Inspector, Local Government Board), Dr. Parsons (*Lancet*), G. S. Elliston, Esq. (the *Medical Officer*).

The President proposed "The Association of Public Vaccinators of England and Wales," and drew attention to his connexion with that association from its very beginning. Dr. J. C. Bradshaw responded. Dr. J. Foster Palmer, in an entertaining speech, proposed "The Guests."

Dr. A. P. Hillier, M.P., in replying, spoke of the great pleasure he felt in meeting so many of his professional brothers who were engaged in that too little recognized but profoundly valuable branch of medical practice which dealt with the application of preventive medicine. When a future historian came to deal with the present age he would record of to-day that there was nothing more markedly distinguished that period than the wonderful

works which began with Jenner and which had been continued by Pasteur, Lister, and Koch to such an extent as to have conferred upon mankind at large probably a greater benefit than any other body of men the world had ever seen. They still had sceptics among them, but they might console themselves that there were still people who believed the world was flat and that mankind had benefited nothing from experiments performed on the lower animals. These people could all be placed in the same category as those who thought vaccination to be useless. Dr. Hillier recounted his experiences during an epidemic of small-pox in South Africa in an unvaccinated community. There he found conscientious objectors whose objection he could understand because among the Mohammedans it was an article of their faith that to withstand disease was an insult to the Deity. Their objections, he said, might be excusable, though many of them in the end accepted vaccination, but for the life of him he could not understand how the conscience of the objector in this country came into the question. Having drawn attention to the rapid increase in the number of exemptions from vaccination in this country, Dr. Hillier said he did not believe that small-pox could be successfully combated by simply vaccinating contacts. He concluded a vigorous and impressive speech by suggesting that if the bulk of the profession held the opinion just expressed the time had come when the leading men of the profession should meet to make a public protest on that question. Nothing would carry more weight with the House of Commons than an opinion judiciously expressed by the leaders of the profession.

Dr. Drury (Halifax) proposed the toast, "The Public Health and Poor Law Service." This toast was coupled with the name of Sir Henry Newton (Newcastle-on-Tyne), to whom Dr. Drury offered congratulations on the great honour he had received from His late Majesty King Edward. Sir Henry was a vice-president of the association, and the association was delighted to recognize the honour.

Sir Henry Newton responded, and spoke of the continual state of annoyance caused in the Newcastle Union by the repeated attempts of the guardians to reduce the fees to the absolute minimum. He contended that something should be done without delay to amend the position in which public vaccinators found themselves owing to the irritating results of the power of the guardians to give twenty-eight days' notice.

On the proposition of the President, the health of both the Organizing Secretary (Mr. Charles Greenwood) and the Editorial Secretary (Dr. Drury) was enthusiastically drunk. The replies of each of these concluded a very enjoyable evening.

DR. HADWEN AND THE "CRIMSON CROSS REMEDIES."

In the Journal of May 7th one of the series of articles on Secret Remedies appeared dealing with "The Crimson Cross Remedies." In a separate paragraph of the same issue attention was drawn to some of the remarkable claims made on behalf of these remedies. Reference was also made to the fact that an advertisement had frequently appeared on the cover of the *Vaccination Inquirer* announcing the Crimson Cross Remedies as "a simple solution of the vaccination question," and that they "render the patient non-infectious." In the advertisement the name of Dr. Hadwen appears, and a statement that he had investigated, compiled, and contributed to the medical press certain remarkable figures showing the superiority of treatment with the Crimson Cross Remedies over all other treatment during the Gloucester epidemic of small-pox. Miss Beatrice Kidd (Secretary, British Union for the Abolition of Vivisection), in a letter referred to in the Journal on May 21st, appears to have keenly resented what she described as our taking advantage of the opportunity afforded by the advertisement of associating the name of Dr. Hadwen with a quack remedy. As will be seen from the correspondence below, Dr. Drury of Halifax sent Dr. Hadwen copies of the articles in the Journal. In the postscript to his letter Dr. Hadwen not only gives permission but desires the publication of his letter. Dr. Drury wishes us to state that he has delayed submitting this correspondence in the hope that Dr. Hadwen might reply to his second letter repeating the request for particulars of the investigations advertized as having been undertaken by Dr. Hadwen. No reply, however, has been received to Dr. Drury's letter of July 10th.

[Copy.]

Halifax,
June 5th, 1910.

Dr. W. R. Hadwen,
Gloucester.

Dear Sir,

If you have any details concerning the marvellous efficacy of the Crimson Cross Remedies in small-pox said to have been "investigated" by you, I should be glad to publish the same if you will kindly allow me to do so.

Yours truly,
Arthur Drury.

Brunswick House,
Brunswick Square,
Gloucester.
June 13th, 1910.

Arthur Drury, Esq.

Dear Sir,

I duly received your letter of the 5th inst. enclosing a reprint from the British Medical Journal of May 7th and a cutting from the same of May 21st, together with a reprint of correspondence between yourself and Mr. Arnold Lupton.

I beg to apologize for not acknowledging the receipt of your communication earlier, but my prolonged absence abroad and the accumulation of work awaiting me on my return to Gloucester on the 9th must plead my excuse for the delay.

1st. With regard to the advertisement of Captain Feilden in the *Vaccination Inquirer* to which reference is made, I have looked in this month's issue and have now seen it for the first time, but although some figures of mine are quoted, my name does not appear to be mentioned. I know nothing of the matter except from the editorial articles you send me.

2nd. I am well acquainted with the Ointment which Captain Feilden supplies, although I have never personally used it, nor have I ever recommended it except in a tentative way as I will presently explain. It is not a quack remedy, as I understand the meaning of that term, inasmuch as it is not a secret or bogus remedy advertised by a charlatan for his own personal gain. I have respect both for the preparation and for the gentleman who makes it, although I have never met him personally. He seems to me to be a very sincere and honest man.

3rd. There was no need for the British Medical Journal to take the trouble to analyse it, as its composition was long ago published in the medical press, and Captain Feilden has been most assiduous in offering it to Hospitals, to Medical Institutions, and to medical men, and I understand he invariably informs them of its composition.

4th. During the Gloucester Epidemic of Small-pox of 1895-6 the ointment was largely manufactured locally from Captain Feilden's recipe. He did not himself derive profit from it, and he has always appeared to me to be very unselfish in the matter. Its composition is simply Beeswax, Linseed oil, Resin, and Acetate of copper. The latter is largely used by Agriculturists for fungoid growths of all kinds both among animal and vegetable life, and it may be useful in acute eruptive diseases in the human. I am not prepared to say. I have no scientific proof of its specific value. The *post hoc ergo propter hoc* argument which is used not only by Captain Feilden but by orthodox medical men for their own pet remedies—including vaccination—does not appeal to me.

5th. The claims which Captain Feilden in his enthusiasm makes on behalf of his ointment (according to the extract you send me from the British Medical Journal) as a cure-all for almost everything I know nothing about, nor do I gather that I am held responsible for them or for the glowing statements embodied in those claims.

6th. If, however, as I gather from the British Medical Journal articles, Captain Feilden has quoted me as stating, as the result of my investigations, that "cases where his ointment was used during the Gloucester epidemic of 1896 show a lower percentage than those otherwise treated," he is quite within his right in doing so, and I am prepared to justify both him and myself respecting this assertion.

7th. I have some large manuscript books containing the names and addresses and methods of treatment, etc., collected independently, of practically all the cases of small-pox during that epidemic, and those books are open to the inspection of any one who likes to call upon me at my private residence, Brunswick House, Brunswick Square, Gloucester. I have repeatedly made the same offer. The summary is as follows:

(*a*) Two hundred cases treated by hydropathy, taking them straight on as they came, had a fatality of 10 per cent.

(*b*) Captain Feilden claims some 500 or 600 cases, I believe, with a fatality-rate of about 1 per cent. But the figures I have collected represent 260 cases, certified by medical men as small-pox, with 4 deaths. That is, about 2 per cent. fatality treated with the "Crimson Cross Ointment."

(*c*) The total number of completed cases under treatment in the Gloucester Small-pox Hospital for the twelve months prior to the advent of Dr. Brooke from the Metropolitan

Asylums Board—a period of the most scandalous maladministration ever conducted, I believe, by a municipal body, when there was really no treatment whatever—was 277, with a mortality of 151—that is, 54.51 per cent.

(*d*) The total number of completed cases during Dr. Brooke's administration (including 281 of the poor creatures he took over on April 24th, 1905) was 426, with 38 deaths—that is, a fatality of 8.92.

(*e*) The average death-rate for the whole epidemic was 27.2 per cent.

8th. Now, I have said I have only tentatively recommended Captain Feilden's ointment, and in view of my published figures this attitude may appear paradoxical. My explanation is simple. Whilst in no way presuming to declare that the acetate of copper (verdigris) contained in the ointment, upon which Captain Feilden chiefly relies, is useless, I am bound to say that I am not yet convinced that it possesses the curative virtues attributed to it by him. Whatever virtue the ointment may possess lies, in my opinion, in the oil. My reason for thinking so I will explain.

9th. I have frequently been struck in the course of my practice by the soothing and apparently beneficial effect which oil possesses in various eruptive diseases, such as scarlet fever, measles, and inflammatory conditions. Its use in the East has been almost universal from time immemorial. And my own impression is that the apparent beneficial effect of Captain Feilden's ointment in small-pox cases is due to the oil contained in it rather than to the acetate of copper. My opinion has been confirmed by the following facts: Since the Gloucester small-pox epidemic of 1896 we have had about a dozen cases of small-pox, chiefly imported, all of which were removed to the Isolation Hospital. I was then on the Sanitary Committee of the City Council and official visitor to the Isolation Hospitals, and by the courtesy of the Medical Officer of Health I was permitted to adopt my method of treatment in every case. I visited them daily. (I may say incidentally that, so far as I know, I have never been vaccinated.) The charge nurse entered enthusiastically into the work. The patients had warm baths at least twice in the day, and when too ill to go to the bath-room they were repeatedly sponged. A bowl of oil was kept always by the bed-side, so that they could anoint themselves over all irritable parts. The face especially was continually dabbed. Some of these cases were of a very bad confluent type, but all recovered, and recovered without pitting, which I attribute to the treatment. In the early part of the small-pox epidemic of 1896, when the death-rate was so heavy, no water whatever was used in the hospital, even though the patients had been inmates for weeks. Only the strongest survived. When Dr. Brooke arrived he found all the baths filled with soiled and foul linen. He instituted a new régime, adopted the free use of warm baths, and in some instances oil applications, with the result, as I have shown, a rapid decline in the death-rate.

10. From a very careful study of small-pox disease and its prevention and treatment, I have found that outbreaks may invariably be traced to insanitary and unhygienic conditions. I believe overcrowding and ill ventilation play a very serious part in its spread. This was markedly so in Gloucester and Middlesbrough. In the Gloucester Small-pox Hospital during the early part of the epidemic the patients had only 500 cubic feet of air space each. The type of disease appears to be settled at the time of attack, and to depend pretty much upon the character of the vital resisting powers of the patient; recovery seems to depend practically upon three things—the type of disease, environment, and treatment. I have not found that vaccination exercises any influence whatever upon small-pox, unless, perhaps, it might lower the vital resisting powers by setting up a morbid process in the system. I have repeatedly seen small-pox and cow-pox eruptions maturating side by side, which to my mind is proof positive that there is no antagonism between them. This was Woodville's puzzle in the Old London Small-pox Hospital, which led him to the rather illogical conclusion (since adopted by the profession generally) that some time must elapse before the cow-pox inoculation could be protective. But if it could not protect when in its acutest form, it is difficult to see how it could protect when the vesicle had become a scar!

The *discrete* cases of small-pox almost invariably recover whether vaccinated or not. This is the record of all time. The *malignant* cases almost invariably die whether vaccinated or not. This also is proverbial. They usually occur when the personal and surrounding conditions are very bad. We had 29 malignant cases in Gloucester, all vaccinated, and all died. The real battle of life and death lies with the *confluent* cases, and here the question of environment and treatment comes in—that is, of course, supposing the constitution itself is capable of battling with the disease. And I believe that no treatment can equal warm water bathing and applications of oil.

11. Allow me two words in conclusion relative to the criticism of the BRITISH MEDICAL JOURNAL which you enclose.

(1) The Editor's criticism of Miss Beatrice Kidd is not justified. The kind and loyal defence on my behalf offered by this very clever lady during my absence abroad was absolutely logical. Captain Feilden has only quoted me, I understand, in connexion with my published figures relating to the different methods of treatment adopted in the epidemic of fourteen years ago. He is quite justified in selecting these from my writings, and it does not in any way commit me to any extravagant views he may hold about his remedy for small-pox or any other diseases. Miss Kidd has made no attempt "to extricate Dr. Hadwen from the position in which he is placed by the association of his name with a quack medicine." Her sole attempt was to repudiate the Editor's ungenerous effort to fix upon me a stigma which does not exist. In this she succeeded.

(2) I believe Captain Feilden to be a genuine and honest man. His faith in his ointment, judging by letters I have received from him, is unbounded. And there are grounds for his faith, inasmuch as an oleaginous compound is likely to prove beneficial in many eruptive conditions. That the preparation is empirical is, of course, a fact, but so are many of the most reliable drugs and preparations of orthodox medicine. Captain Feilden, at least, does no harm, and I think it scarcely dignified to make an absolutely honest man who advocates what is, to say the least of it, a harmless remedy, the composition of which he makes no secret of, and which he advertises, not for profit, but out of sheer enthusiasm and love of doing good—the butt for unnecessary medical editorial sarcasm.

Believe me,

Yours very truly,

WALTER R. HADWEN.

P.S.—You are at liberty to publish this letter; in fact, considering the criticism in the BRITISH MEDICAL JOURNAL, and presuming that some notice of it has appeared in your publication, I shall be pleased by your doing so. I enclose a couple of my pamphlets, which may interest you if you have not already seen them.

[Copy.]

Landon House,
Halifax.
July 10th, 1910.

Walter R. Hadwen, Esq.,
Gloucester.

Dear Sir,

Absence from home has prevented me from replying to your letter earlier.

Taking your points in numerical order:

1st. I am astonished to hear that so active an antivaccinator as yourself missed seeing the prominent advertisement in which your own name appeared for six or seven consecutive months last year in the official organ. Your name disappeared from the advertisement in the very next issue of the *Inquirer* after a reference to the "humorous advertisement" in the *Jennerian*. Why? This was last September.

2nd. You say it is not a quack remedy. Miss Kidd calls it a quack remedy, and I gather from your letter she is a "very clever lady." Any person whose mind was not warped with prejudice would call it a quack remedy after perusing the literature supplied to puff the remedy.

3rd. You say the composition was long ago published in the medical press. Where?

4th. I am glad to note that the argument "*post hoc ergo*," etc., used by Captain Feilden does not appeal to you. That being so why do you accept it when used by him as an indication that he is a very sincere and honest man; but, when the same argument is used by what you call "orthodox medical men" you abuse them by virulent attacks on their honour and integrity, as seen in your numerous writings and occasionally in your speeches, especially when there are no orthodox medical men present to defend themselves.

5th. You say you know nothing about the claims Captain Feilden makes on behalf of his ointment. Precisely. That is, I suppose, the reason why you can say it is not a quack remedy.

6th. No comment.

7th. Your large manuscript books are stated to contain information collected "independently." Are you prepared to state the actual source of this information? By whom and for whom was this independent information collected? From your own statement there is a serious discrepancy between your large manuscript books and Captain Feilden's claims. He claims 500 or 600 cases, you say, but your figures represent 260 cases for him.

8th. Whatever virtue the ointment may possess lies, in your opinion, in the oil! You do not criticize Captain Feilden for making his preposterous claims, some of which were known to you before writing to me, however innocent you may have been up to the moment of reading the BRITISH MEDICAL JOURNAL article. It was never suggested that you should be held responsible for those claims. You evidently think it right that you should deliberately close your eyes to those claims, and though your name has been associated by advertisement with the ointment described by Miss Kidd as a quack remedy, I am not aware that you have hitherto pointed out that Captain Feilden claims to have treated over 300 cases more than your independent information "of practically all the cases of small-pox" shows.

9th. You surely do not wish to suggest that oil in some form was not used in any way during the epidemic except as an ingredient of Captain Feilden's remedy? Does your large manuscript book contain any evidence on this point? According to your view of the virtue in this remedy, the only useful tabulation in this respect would be to divide all the cases into those treated with oil in some form and those not so treated. This, I presume, would place many of your cases not included among Captain Feilden's into the same category as those treated with his remedy, and the alleged fatality-rate would be quite different.

10th. I note you have not found that vaccination exercises any influence whatever upon small-pox. I don't suppose you ever will. He who sees only what he pleases cannot see what is plain.

11th. I am surprised that you do not address your criticism of the conduct of the BRITISH MEDICAL JOURNAL to the Editor. N notice of the criticism of the BRITISH MEDICAL JOURNAL has appeared in the *Jennerian*, and I decline altogether to allow you to make your indirect attack on that journal in the manner you suggest. You know where you can get that kind of thing published. In my view the JOURNAL did not fix upon you a "stigma." The JOURNAL merely noted a stigma that you have put upon yourself, and Miss Kidd's generous effort did nothing, in my opinion, to remove that stigma.

In conclusion, may I point out that my object in writing was to ascertain if you had any particulars of your investigations into the alleged wonderful cures of small-pox by the Crimson Cross Remedies such as I could publish for the benefit of medical officers of health. I think you will agree with me that your letter does not provide me with any such particulars. You surely do not claim that your observations on the "soothing and apparently beneficial effect of oil" are in any way original or such as call for publication. It is very kind of you to have written me at such length, but I should have been more interested if you had been able and willing to write more particularly in regard to the advertised investigations.

I am,
Yours very truly,
ARTHUR DRURY.

HEALTH OF WESTERN AUSTRALIA.

ANNUAL REPORT FOR 1909.

THE annual report for this colony on the public health, etc., for 1909 has recently been issued. The principal medical officer, Dr. James Hope, is also president of the Central Board of Health and chief quarantine officer. The report is a lengthy one, covering 64 pages, and contains a mass of useful information.

Expenditure.

Dealing first with expenditure, the amount spent in the department was £106,540, the medical part of the establishment spending £36,951 and health £14,864.

Medical.

Hospitals are divided into six classes:

1. Hospitals under "The Hospitals Act, 1904"—that is, Perth and Fremantle.

2. Hospitals, Government departmental. They number twenty eight.

3. Hospitals controlled by local committees and in receipt of a fixed annual grant towards maintenance, in addition to a subsidy in aid of the salary of medical officers. These number eighteen.

4. Hospitals at timber mills. There are three of these. In addition to helping with the salary of district medical officers, the Government contributes a small grant towards the maintenance of indigent patients.

5. One consumptive sanatorium at Coolgardie.

6. A children's hospital which receives a subsidy of £1,250 per annum.

Cost of Treatment.

Taking the whole of the Government hospitals, the cost per patient treated during the year 1909 was £8 17s. 6d., which works out at 7s. 7d. per patient per diem. This sum will compare very favourably with the cost of patients treated in the voluntary hospitals in this country. The number of beds available in the 52 Government hospitals is 1,263.

Vital Statistics.

The mean population of the State in 1909 was 274,755, and in 1908, 268,347, showing an increase of 6,408.

The number of births registered was 7,601, being at the rate of 27.66 per 1,000 population. Illegitimate births showed a percentage of 4.55 on total births.

The deaths numbered 2,706, being at the rate per 1,000 population of 9 84.

The infantile mortality was 78 per 1,000 births.

There were 83 deaths from typhoid, 81 from diphtheria, 188 from phthisis.

A declining birth-rate has to be recorded in this colony; ten years ago the rate was 30 70, last year it was 28 63. The death-rate ten years ago was 13 79; the year under review has been the lowest yet recorded in the history of the colony. The infantile mortality rate is slightly under that of previous years, it being due to the fact that the care of infants is better understood and their environment improved. Disturbances of the alimentary system, as usual, cause the chief loss.

Enteric Fever.

There were 641 cases notified during 1909, with 83 deaths. The environments of cases indicate that carelessness existed in carrying out reasonable precautions. In some cases the origin is difficult to locate, and whether due to "carriers" or not is uncertain. The whole of the State at present, it may be said, is subject to the "pan" system in closets, and as regards the danger from flies the "pan" is more dangerous than the old dark and deep cesspits. This may account for a number of enteric cases.

Diphtheria.

The number of cases reported was 1,221 with 81 deaths. When no resident medical man was available, antitoxin was administered by the district nurse to each detected case. In many isolated places and where population is scattered, assistance has been rendered by the central health department. One of the medical officers and a qualified nurse from the department has gone and acted with the local medical man, where there is one, or alone in other parts, and carried out complete measures for the control of the outbreak. The measures include examination by swabbing of a large number of the inhabitants. Whenever a clinical case or a carrier was detected the whole household was immediately isolated and kept so until every one was found to show two consecutive negative results. During isolation, treatment by spraying the throat of each affected person was carried out daily by the nurse. All swabs from suspected cases were examined at the health laboratory free.

Phthisis.

The number of deaths reported from this disease was 188. Phthisis is a notifiable disease to the local and central boards of health. Some 1,500 cases were notified as in some stage of the disease. A very important circular was issued by the Central Board of Health to medical practitioners, local authorities, and others on "Suggestions for the Control of Tuberculous Diseases." The Government of Western Australia have recognized the necessity of taking this matter seriously in hand, and are prepared to assist the poor, both as regards necessary comforts as well as places where they can be received. The Government are anxious to do all that is possible to this end, and look to co-operation of all persons and administrative bodies dealing with health matters on the basis of any system that may hold out any reasonable hopes of success. They look to medical men to comply with the Health Act, and notify every case immediately it is discovered. By early notification local health authorities are able to follow up the case.

The sanatorium at Coolgardie contains 63 beds, but it has not been utilized to its full advantage. A great many cases were well advanced, and could receive no possible good from sanatorium treatment, but they were obliged to be received, and thus occupied room which could be more profitably made use of for earlier cases. For the reception of chronic cases the Government are building wards near Perth, where all these cases will be received. Any plans for the treatment of consumptives must necessarily combine the means by which work of a suitable nature can be undertaken under the direction of the medical officer, as this is essential for treatment, and may be made reproductive. In this direction a reserve of about 2,000 acres in the hills is under consideration for future use. It will thus be seen that the Government of Western Australia are sparing no efforts in their desire to combat this disease.

Scarlet Fever.

Three hundred and forty cases were notified; the type was of a mild character, there being no deaths recorded.

Plague.

There has been no outbreak of plague in the Colony since 1906. Precautions, however, continue to be taken by the local authorities in the destruction of rats. In Perth 36,379 baits were put down for the year, 13,202 taken, and 2,232 rats caught. Close investigations of the dead rats are constantly made, and during the year no plague-infected rat has been discovered.

Beri-beri.

One hundred and twenty-nine cases were reported, all from Broome. This town is the head quarters of the pearling industry in the North West, where a large number of boats are annually congregated in this work. This disease is the chief cause of sickness amongst the coloured crews, who are chiefly Japanese, Malays and Manila men. No deaths were reported.

Vaccination.

An attempt was made during the last session of Parliament to remove from the laws compulsory vaccination; it met with the necessary support in the Lower House, but was rejected by the Upper House.

As it is, only about 10 per cent. of those born in the colony in recent years have been vaccinated.

Alcohol.

The report goes into the question of the consumption of alcohol, and, as Dr. Hope says, "continues to show an enormous waste of money by putting into the mouth that which takes away the senses of the brain."

During last year the amount expended on alcohol per head was £8 3s. 6½d. In comparison with other States and England as regards consumption per year per head, Western Australia comes out badly, as the following table shows:

	Gallons.
Western Australia:	
Spirits	1.49
Wines	1.08
Beer	24.74
New Zealand:	
Spirits	0.785
Wines	0.144
Beer	9.309
Victoria:	
Spirits	0.70
Wines	0.85
Beer	12.04
United Kingdom:	
Spirits	1.17
Wines	0.66
Beer	24.74

Milk Supply.

In 1908 the Central Board inaugurated the veterinary examination of dairy cows, and this was carried out by the Board with satisfactory results.

The inspection of dairy premises, as well as the milk supplied to customers, is undertaken by the inspecting staff of the Central Board.

Sanitation.

There is no system of sewerage anywhere, but one is in course of construction in Perth and Fremantle, which will take a considerable time yet before it is completed. As already mentioned, the "pan" system is at present in vogue. The system for disposal is by trenches, and this is where default is often made, both in the trenches being too large and too deep and in care not being exercised in covering up deposits as soon as laid in. A few private houses and some institutions are providing themselves with septic tanks, with satisfactory results.

Sanitary Supervision.

A staff of men who hold certificates of the Sanitary Institute are employed, who itinerate the whole of the chiefly settled parts of the State, including the goldfields. They inspect all buildings, schools, dairies, slaughterhouses, etc., and report defects found. The Central Board issues notices to remedy any defects, and, if not complied with, prosecution follows.

Laboratory.

A well-equipped laboratory is attached to the Central Board of Health, where all bacteriological investigations are made, both on behalf of the Board and private practitioners for diagnostic purposes. For diphtheria 8,841 swabs were examined, and for different forms of tuberculosis 230 specimens were examined.

School Hygiene.

The examination of school children has received attention for some years in this State. The system that has been followed has been that whenever it has been found possible a visit has been made to a school by the medical officer, or whenever for other reasons schools have been visited, the teacher has been asked to bring up all children who appear to him to be suffering from any physical defect or bodily ailments. Whenever defects are observed a notice is sent to the parents calling their attention to the necessity of obtaining treatment for defects. Lectures are given in school hygiene to the teachers.

General Remarks.

The medical officer concludes this very excellent report by a few general remarks. He states that the general conditions of people's lives in the colony are of the best—good climate, plenty of sunlight, food, and satisfactory employment—so as to prevent anything likely to be a cause of deterioration of the race. In many parts of the State there exists a combination amongst men, apart from benefit societies, which provides for medical treatment and assistance during sickness. The fuller development in the way of preventing invalidity, providing insurance against accidents and old age, is one which should be undertaken by employers and employees, supplemented by State aid. It will thus be seen that those responsible for the well-being of the people are working on much the same lines as we are on this side for providing State medical aid.

One seldom peruses a report in which there is so much evidence of good work done in all branches of public health. The medical officer is anxious to see the different Health Acts consolidated in one bill, which would include a registration board for midwives and nurses, examination of school children, etc. This bill, it is to be hoped, will be taken up at an early date by the Legislative Assembly.

THE AUTOMOBILE EXHIBITION.

The exhibition annually organized by the Society of Motor Manufacturers and Traders has been in full progress at Olympia during the past week. The doors opened on Friday, November 4th, and will not be closed until 10 p.m. on Saturday, November 12th. This year the usual annual dinner was not held, anything in the form of an opening ceremony having been abandoned as a mark of respect to the President of the Royal Automobile Club, the late Prince Francis of Teck.

The exhibition includes over 300 separate stands, of which just one short of 150 are given up to naked chassis and to cars ready for the road. The sets of cars on each stand average between five and six, and occupy the whole of the ground floor of Olympia and its annexes, which now, to all intents and purposes, form one single hall. The gallery, as usual, is given up to components and accessories, many of the stands being shared by several firms. Hence the total number of manufacturers represented is very large indeed.

The aggregate value of the exhibits has been estimated at little short of a million pounds; a more accurate figure would probably be half that sum; but in any case the exhibition must be written down as the largest automobile show ever held either at Olympia or in Paris. The increased size would appear to be due to skill in making full use of the available space which exhibitors and the administration have alike acquired from the experience of the past few years.

A further outcome of such experience is that it has been made more possible than in some previous years to obtain accurate information at the stands as to the cars shown, more especially in respect of technical detail. In addition, a good many exhibitors have secured in different parts of the building small offices, and have thus put themselves in

a position both to transact business and to supply information free from the turmoil of the stands. For these and other reasons the exhibition this year is less bewildering and more informing to such visitors as without expert assistance come with a view to choosing a car, or, at least, deciding on the type of car which they will eventually select.

General Impressions.

No attempt can be made to give a description of the exhibition as a whole, but attention can be drawn to such of the cars and appliances shown as seem best calculated to repay examination by medical men and an account given of the general impressions created.

As regards the latter, it is of a kind agreeable to those who, like most of our readers, purchase and use cars mainly for business purposes. The tendency of the day among motor manufacturers, as illustrated by the cars now on view, is decidedly favourable to this class. There are cars, of course, of all prices, but the characteristic of the exhibition is the predominance of the car of moderate price and moderate power. Certain firms which hitherto have catered solely for those who like what may be called State coaches and racing machines, and are prepared to pay for them, are now making vehicles of quite moderate price and of horse-power as low as 15–20.

Whether the prices of automobiles as a whole are lower is another question. There is some evidence of shrinkage, but, on the whole, the price of a good car may be regarded as much what it was about a year ago. On the other hand, the car of 1911—that is to say, the car shown at this exhibition—seems certainly to represent better value for money. Each separate manufacturer seems to be picking out the points of proved desirability in his rival's productions and to be adopting them in the manufacture of his own cars. The result is that cars purchased now are, price for price, likely to prove more comfortable, reliable, and satisfactory purchases than the average car of an earlier date; a further result is a tendency towards a common type. This in itself is an advantage, as it makes the task of choosing a satisfactory car less worrying and difficult.

This, of course, does not mean that anything like a standard car is yet available. There are still far too many points of essential principle of car construction to be determined. Meanwhile the battle of the valves continues; the sliding sleeve, the Knight patent, the merits of which we described last year, is making progress, and is to be found on a good many cars besides those of the Daimler firm.

But this by no means represents the sole attempt at increased silence of movement. Most cars nowadays are practically noiseless as compared with their predecessors, thanks to enclosure of working parts and other improvements, and several firms are now endeavouring with success to eliminate the noise due to poppet valves by increasing their area, and thus diminish the distance through which they must rise and fall.

As regards transmission of power to the driving wheels, chains and bands are becoming more and more rare, their use being practically confined to quite small runabouts and very heavy vehicles. For the rest, the use of live axle transmission is almost universal; but here, too, there is a fight going on.

As at the time when the live axle was first introduced, the majority of makers still use a crown wheel on the bevel principle, but an increasing number are adopting a worm drive—that is, one in which the propeller shaft ends in a worm which transmits the power to the rear axle through a master wheel around it. The majority, perhaps, of these use it on the lighter and lower-powered cars, but a good many are using it for cars of all weights.

Should the worm drive gain the day, there will still remain a final question for settlement; this is whether the worm should lie above or below the master wheel. The importance of this difference lies in the fact that when the latter plan is adopted, engines and all transmitting gears must be set on the slope.

In respect of cylinders, it should be mentioned that many firms are giving the piston a longer stroke, and thus securing greater power without increasing the nominal rating of the engine. Hitherto short stroke engines have been preferred, as producing less vibration, and rendering it easier to secure a large number of revolutions per minute, which, of course, means added flexibility. The new taxation, however, seems to have caused the possibilities of long stroke pistons to be further investigated with the results that seemingly the long stroke engine as now produced is free from the defect of causing vibration, and can be run at high speed. The rate at which an ordinarily good engine will run as compared with those of earlier date is certainly remarkable. Only four or five years ago a thousand or more turns of the crank shaft was considered good. From a good engine practically double that number can now commonly be extracted. This fact to some extent discounts the advantages of multiple cylinders, which are now supplied by many firms as part of quite low-priced under parts. It is, indeed, by no means certain that the day of the single cylinder is entirely over.

Further points noticed were an increase in the number of gear boxes entirely covered in, but made easy of inspection by substituting for a metal top a sheet of thick glass; and that the Liversedge front-wheel brake, which we described some two years ago, is more than holding its own; it is to be seen on many cars. A description of its advantages will be found in vol. ii, 1908, p 1564. Self-starting appliances are also increasing in number, and some of them seem of a practical character. To the man who drives his own car a really efficient self-starter, or even a device which materially lessens the amount of force required to turn the crank, is of immense advantage. There is also a change in the number of gears which are supplied. A fourth gear, inserted between the present second and third, is now to be found on many cars. Whether it will prove a popular notion remains to be seen. Too large a choice is sometimes embarrassing, and with a flexible engine most drivers already appear able to vary their speed within the limits of the power of their car quite as much as it is necessary for threading traffic and dealing with variations of elevation in the road.

In regard to coach-builder's work, this is certainly improving all round. The plan of fitting doors so that they open forwards instead of backwards is spreading, and represents a decided improvement, for it eliminates the danger of a person getting into a car being knocked down by the door if the vehicle makes a sudden and unexpected move. Another improvement which we noted for the first time last year is now to be found on practically all cars; this is the plan of enclosing by a door the driver's as well as the back seats, even on cars of touring pattern. It increases the comfort of those on the front seats, and also improves the appearance of the carriage as a whole. A further point to which attention has been successfully paid is accessibility of the driving seat from either side.

The use of wire instead of wooden wheels also appears to be growing in favour. As for tyres, there are a good many new claimants for notice, and the well known firms have plenty of minor modifications in construction to show. Only one thoroughly novel idea, however, was noted; this is a tyre with its cover built in removable sections. It constitutes a new departure, not only on this account, but because nearly all attempts to remove the disadvantages of pneumatics have lain either in thickening or otherwise strengthening the outer tube, or in so far interfering with the inner tube as practically to deprive it of its character of an air tube altogether.

Of this new sectional device, which leaves the inner tube untouched, we hope to give some account at a later date and at the same time to illustrate all the other points mentioned in the course of this article by description of specific cars into which these various improvements have been introduced.

SCIENCE NOTES.

A quartz balance, of which the sensitiveness exceeds the half-millionth of a milligram (the thirty-millionth of a grain) was used by Sir William Ramsay and R. W. Gray to estimate the density of the radium emanation. The volume of the emanation which they employed had been previously calculated from the value found for the volume in equilibrium with 1 gram of radium. This was introduced into a small capillary tube, which was then sealed and placed on the balance. Its weight being determined, the tip of the capillary tube was broken and

the weight again read. From this the weight of the emanation was found to be about a two-thousandth of a milligram, and the density calculated from this gave molecular weights of from 216 to 228, the mean of five estimations being 220. This shows, therefore, that the true atomic weight is 222·5, this being deduced from the disintegration theory, the atomic weight of radium itself being 226.5, and that of helium, expelled as α-particles, being 4. The name *niton* is proposed for the radium emanation as being one of the inactive gases, taking its place in the series after *xenon*. An account of this interesting investigation is published in a recent number of the *Comptes rendus*.

A hospital for fishes seems a striking enough novelty in its way, and the ingenious idea, needless to say, comes from America. Such an establishment has been set up at the New York Aquarium, and already a considerable number of finny patients have been attended to with an encouraging measure of success. The scope of treatment is naturally somewhat limited, and many of the diseases dealt with necessitate treatment of a very empirical kind, yet it would be too much to expect the piscine healing art to attain perfection from the very start. So far as we know, the diseases to which fish, especially fresh-water fish, are most liable are of a parasitic, protozoal, or fungal nature. These attack the skin and frequently give rise to extensive epizootics. Treatment of these cases is being attempted by the application of formalin and other antiseptics, as well as by the gradual change from fresh to salt water for a few days, which not infrequently kills off the parasite without doing much injury to the fish. Deformities and injuries are common enough, and these cases do surprisingly well under the skilful surgeon's hands. Tumours, benign and malignant, are of frequent occurrence amongst fishes, but they have not lent themselves as yet to operation. We have even seen a case, *post mortem*, of chronic pericarditis with cardiac hypertrophy in a fish, but there was unfortunately no previous record of the clinical signs and symptoms. It is not too much to believe, indeed, that fish are subject to the same ills as human flesh is heir to, and in spite of their undemonstrative nature, there is no reason why we should not be able, if need be, to render them medical assistance in the same way as we do horses, dogs, and other animals which have come, voluntarily or otherwise, under man's fostering care.

LITERARY NOTES.

A REPRINT has just been published, in pamphlet form, of Sir John Byers's most interesting account of *Ulster Ambassadors to China*,[1] which first appeared in the *Northern Whig* for September 28th, 1910, on the occasion of the freedom of the city of Belfast being conferred upon Sir John Jordan, K.C.B. Sir John Jordan is the third British Ambassador to China who has hailed from the North of Ireland, and this little pamphlet contains a brief sketch of the career of each of the three great Ulstermen —Macartney of Dervock, Sir Henry Pottinger, and Sir John Newell Jordan—who in the course of the last 120 years have represented Great Britain at the Court of Peking. Of these, Macartney, who was entrusted with the embassy in 1792, was the first man ever sent as Ambassador from England to China. It is interesting to learn that this able diplomat probably owed some of his many gifts to heredity, his great grandfather, "Black George Macartney," having been a most remarkable and enlightened man, whom Sir John Byers does not hesitate to characterize as "the first great public health reformer in Belfast," and one who as early as the year 1678 "foresaw what a vehicle a defiled water supply would become in the propagation of disease." "Black George Macartney" was of Scottish descent, but left his native land to settle in Belfast somewhere about the middle of the seventeenth century. He seems to have been a prosperous person, for besides possessing a large business as a merchant, he was a miller, sugar refiner, collector of customs, shipowner, and possibly a worker in woollens, and he rose to be chief magistrate, or sovereign, as it was then called, of Belfast, a post which he occupied for many years. It was during his tenure of this office that he endeavoured to improve the water supply of the city, which was in sore need of attention and improvement, if the following description, taken from a proclamation issued by Macartney on July 29th, 1678, is accurate: "The River which runneth through the Town is very much defiled and abused by all manner of sinks falling into it and other nuisances corrupting the same, whereby the water is made altogether unfit for the use of man in meat and drink." Thanks to his efforts, "Belfast got its earliest supply of 'good and wholesome water' carried in wooden pipes (there is one now in the Belfast Museum) underground from the Upper or Tuck Mill Dam through Lettice Hill to the Great Bridge of the town." Small wonder that Benn, in his *History of Belfast*, describes this enterprising Scot as a man of whom "it may be said, without exaggeration, that at no period has the town contained a citizen of more ability," and that "there was no project for the public advantage of which he was not the originator or promoter." The life of any man who has spent his life in the service of his native land must always be of interest to his fellow-countrymen, and the lives of these "Ulster Ambassadors" are no exception to the general rule. Moreover, they possess an additional advantage from the clear and forcible style in which they are here related, and Sir John Byers is to be congratulated upon a very interesting and well-written memoir.

Dr. John Arbuthnot was not only the most learned, but, in the opinion of many, the wittiest of the "Wits of Queen Anne." To him we owe almost the whole of the *Memoirs of the Extraordinary Life, Works, and Discoveries of Martinus Scriblerus*, which was intended to be a joint production of the members of the Scriblerus Club, of which Pope, Swift, Gay, and others, as well as Arbuthnot, were members. Only the first book is extant, and that was not published till 1741, six years after Arbuthnot's death. Scriblerus, it may be remembered, studied anatomy and medicine, and he may, perhaps, be accounted a pioneer of the open-air treatment. At any rate, it is said of him in Chapter XIV that

> His was also the device to relieve consumptive or asthmatic persons by bringing fresh air out of the country to town, by pipes of the nature of the recipients of air pumps.

But he went further than this, as his pipes were designed

> To introduce the native air of a man's country into any other in which he should travel with a seasonable intromission of such steams as were most familiar to him, to the inexpressible comfort of many Scotsmen, Laplanders, and white bears.

That Arbuthnot intended to make Martin a target for his ridicule of medical pedantry is shown by a letter of his to Swift dated June 26th, 1714, and published in Swift's *Letters* (with notes explanatory and historical by John Hawkesworth, London, MDCCLXVI). He writes:

> . . . Pray remember *Martin*, who is an innocent fellow, and will not disturb your solitude. The ridicule of medicine is so copious a subject, that I must only here and there touch it. I have made him study physic from the apothecary's bill, where there is a good plentiful field for a satyr upon the present practice.
>
> One of his projects was, by a stamp upon blistering plaisters and meliot by the yard, to raise money for the government, and to give it to *Ratcliffe* and others to farm.
>
> But there was like to be a petition from the inhabitants of *London and Westminster*, who had no mind to be flead. There was a problem about the doses of purging medicines published four years ago, showing, that they ought to be in proportion to the bulk of the patient. From thence *Martin* endeavours to determine the question about the weight of the ancient men, by the doses of physic that were given them. One of his best inventions was a map of the three cavities of the body, and one for the external parts; just like the four quarters of the world. Then the great diseases are like capital cities, with their symptoms all like streets and suburbs, with the roads that lead to other diseases. It is thicker set with towns than any *Flanders* map you ever saw. *Ratcliffe* is painted at the corner of the map, contending for the universal empire of this world, and the rest of the physicians opposing his ambitious designs, with a project of a treaty of partition to settle peace.
>
> There is an excellent subject of ridicule from some of the *German* physicians, who set up a sensitive soul as a sort of a first minister to the rational. *Helmont* calls him *Archoeus*. *Dolaeus* calls him *Microcosmetor*. He has under him several other genii, that reside in the particular parts of the body, particularly prince *Cardimelech* in the heart; *Gasteronax* in the stomach; and the *Plastick* prince in the organs of generation. I believe I could make you laugh at the explication of distempers from the wars and alliances of those princes; and how the first minister gets the better of his mistress *Anima Rationalis*.

[1] *Ulster Ambassadors to China: Macartney, Pottinger, Jordan.* By Sir John Byers. Reprinted from the *Northern Whig* of September 28th, 1910.

British Medical Journal.

SATURDAY, NOVEMBER 12TH, 1910.

HUMAN FACTORIES OF DISEASE.

Sarcasms to the effect that medical men and modistes have a mistress in common are frequently launched at the medical profession, and are received with indifference. We know that Queen Fashion, who is thought to rule our treatment, is in our case an optical delusion, so to speak—a simulacrum created by the circumstance that when some new method seems to have proved of value in particular instances, there is a laudable readiness on the part of medical men to see if it cannot be applied to the advantage of their own patients; and this, of course, commonly leads to a good deal about the treatment being suddenly heard by the public.

If this verbal javelin is somewhat blunt when hurled at therapeutists, it is absolutely pointless when aimed, as it sometimes is, at pathology. In this branch of medicine certain views have at times tended to attain undue prominence; but this almost always has been when new discoveries in the mother science, Physiology, have seemed for the moment to disturb the foundations of all existing pathological beliefs. On the whole, pathology might almost be said to have pursued an unswerving course from the beginning of the history of medicine, the continuity being mainly obscured by the introduction of new methods and improvements in technique.

As the term is now understood, pathology is commonly, and to some extent rightly, regarded as an entirely modern development of medical science, but there have been clinical pathologists from the very beginning, and the accuracy of many of their conclusions, though not of their reasoning, is from time to time curiously confirmed by modern research.

Much the same considerations apply to epidemiology, which, in essence, is merely a branch of pathology, and was in effect treated as such by the Section of Bacteriology, of part of whose proceedings at the recent Annual Meeting an account appears in the earlier pages of this issue. The rest of its proceedings were conducted in conjunction with the Section of Pathology, and appeared in the issue of November 5th, when the more practical lessons to be derived were brought out in a leading article concerning complement deviation in diagnosis. The subject to which we now wish to draw attention is recently acquired knowledge of the bionomics of pathogenic organisms and its bearing on epidemiology. A hasty reading of Dr. Houston's admirable summary of this question might conceivably leave an impression that sanitation had hitherto been following wrong lines, and that the time had come to transfer many existing beliefs to the lumber chamber of scientific ideas, and to send to the scrap heap much of the present machinery of sanitation.

This, of course, is not really the case. The general principles of disease prevention remain unchanged, and Dr. Houston's account of matters merely indicates ways in which the net around disease-bearing organisms could be drawn more tightly and the efforts to prevent them playing their wonted part be concentrated. To sum up his article, he shows that so far as are concerned dead, or rather lifeless, transmitters of disease, vigilance may in some degree be relaxed, while it must be increased in respect of living storehouses or factories of disease, including in that term both insect and animal life. Pathogenic organisms, with one or two exceptions, are almost entirely dependent on the living for continued life, and attention to the living transmitters of disease—the need for which, except so far as are concerned actual sufferers from zymotic disorders, only began to be recognized within recent times—must now be increased.

Hitherto it has been necessary to attack the causes of disease with a blunderbuss or scatter gun, and this has doubtless led, as Dr. Houston would seem to suggest, to the spending of more time and money than need be on the purification of impure substances, on the protection of pure materials from contamination, and on the avoidance of dangerous surroundings. Now that so much more is known as to the precise way in which a very large proportion of all disease is introduced into the human body, it is not difficult to give a practically affirmative reply to Dr. Houston's question. This is whether all lifeless disease agencies, such as impure soil, air, water, and food, would not cease to be operative, if it were possible to exclude from our environment all the living creatures who, from one cause or another, keep stored in their bodies germs which are infective to others.

At the same time this is a somewhat academic admission, for though it might, and in many cases does, prove possible to deal with insect and other like living transmitters of disease, we now have some idea of the large part that human beings themselves play in distributing disease from person to person; as Dr. Houston himself suggests, it at present seems practically impossible to negative entirely the part which these, unintentionally, unwillingly, and usually unconsciously, at present play.

But how well worth while is pursuance of this subject is clearly evidenced, not merely by Dr. Houston's paper, but by those which were subsequently read. Particularly informing in this respect is the account given by Professor Lentz of Berlin with regard to the typhoid campaign carried on in Germany during the last few years; while other papers on diphtheria, dysentery, and other disease carriers all afford corresponding lessons.

Independently of the increased light it throws on the part played by carrier cases of typhoid, the paper of Dr. Lentz has the added value that it reminds us of certain points in the pathology of typhoid which are of much interest and some clinical importance. One is that the intestinal lymphatics, though the commonest portal of entry for the bacilli, are not the only one; the tonsils seem sometimes responsible. Hence cases of sore throat in epidemic times should receive attention. Then again, the actual seat of multiplication of typhoid bacilli is not the intestine; their predominance in this quarter is due to the fact that they are poured into it with the bile. The cavity of the intestine, indeed, is their death bed rather than their home.

When, too, one remembers the disinclination of

physicians of fifty years ago to recognize typhoid fever as a disease absolutely distinct from all other febrile disorders, or to accept the clinical picture drawn of it, it is specially interesting to observe that the investigations carried on during this campaign prove conclusively that textbook pictures of an attack of typhoid fever only apply to pronounced cases. It has always been recognized, of course, that attacks of typhoid fever vary greatly in their severity, and as an explanation of the frequency with which visitors to some foreign countries contract typhoid fever as compared with the natives it has been suggested that the latter go through typhoid so commonly in early life that the adult population is practically immune.

The probable truth of this is indicated by the frequent identification during the campaign—by the Widal reaction and other means—of cases of typhoid fever in persons of all ages, including young children, many of whom were only slightly unwell, while others, though actually excreting typhoid bacilli, exhibited no symptom calculated to attract attention. There seems reason, indeed, to believe that such larval cases may be sufficiently common to account for the fact that when recognized cases of infection by typhoid carriers occur the victims are commonly newcomers, not ordinary members of the household. Another conclusion to be drawn from the prolonged investigations recorded is that the great majority of all typhoid carriers are women.

Apparently the time for which a person may remain a typhoid carrier is quite unlimited, but this, according to the researches of Drs. J. A. Arkwright and G. H. K. Macalister respectively, is fortunately not true of another very important class of unconscious disease-spreaders, namely, diphtheria carriers, nor yet of dysentery. Nevertheless, the vista of work opened up for sanitarians is formidable, for the number of diseases now known to give rise to carrier cases is considerable, including, as it does, typhoid fever, diphtheria, dysentery, cerebro-spinal fever, and cholera, apart from diseases such as tubercle, which, for many reasons, clinical and pathological, should be included in the class; and before long others may have to be added.

We can point, however, to one circumstance which at the present moment is decidedly consoling—this is that plague carriers are not only unknown to exist among human beings, but there is strong reason for accepting Dr. Petrie's suggestion that they do not exist. Another fact which we mentioned last week, but which may well be emphasized, is that plague is not infectious; in other words, there is no very special risk in being in contact with a case of human plague of the ordinary bubonic variety. This is not equally true of cases of pneumonic plague, or plague septicaemia, such as those at Preston (of which two interesting accounts in detail appear in the earlier pages of this issue), for the bacilli-laden expectoration renders infection from person to person easy unless due precautions are taken. But pneumonic cases are exceptional, and are merely an accidental clinical variety, not a separate form of the disease.

The vast majority of cases of human plague are due to each separate victim having been bitten by a rat-flea, and if rats can be excluded from houses and public places the battle is practically won. This is the point of primary importance, for attempts to exterminate rats are never more than partially and temporarily successful. Not only are rats exceedingly fecund, but they show a more than human degree of common sense in attending to their own interests. Proverbially they leave a sinking ship, and when they find themselves subject to epizootic disease, or to determined attacks by human or other foes, they promptly scatter in all directions and look for more comfortable quarters.

For this reason alone the suggestion recently put forward in the *Times* by Mr. A. E. Shipley, to the effect that a cordon should be drawn round the infected zone in Suffolk, and even a wire fence erected, is distinctly unpromising. Such zone must already be something like thirty miles in circumference, and long before the precise amount of wire fencing required to surround the area could be secured and erected, the plague among rats, if it had not already died out of its own accord, would have spread far and wide. In short, any campaign against rats carried on mainly with a view to lessening the probability of plague establishing itself among human beings in these islands must, as we indicated last week, be carried on throughout the whole country, and not in Suffolk alone.

When all is said and done, the chances of anything like a severe outbreak of plague are very small. Even Turkey some ten years ago, when the disease was much less well understood than it now is, managed to free itself of plague in the course of a few months, and without any material loss of life; and what Turkey can do, Great Britain may surely expect to be able to do likewise.

SCIENCE AND ART.

It is customary, we believe, in artistic circles to exalt Art at the expense of her younger sister, Science, claiming for the former the supreme place among the ideal functions and vocations of mankind. Men of science are as a rule content to do their work in silence, without troubling themselves in the least about the relative worth of their own and other men's tasks, or the esteem in which they are held by the world. The question may indeed be considered academic by some, but it has its importance, nevertheless, even from the practical point of view. It resolves itself into the question whether Beauty and Truth are essentially or only seemingly distinct ends, and, if the former, to which the higher devotion is due. To us it appears probable that Art and Science have much more in common than is generally supposed, that the very same faculties which at an early stage of development find inevitable expression in aesthetic pursuits will in their fuller maturity be drawn into the service of Science. This process of transition has often been exemplified in the lives of great men. Spinoza and Newton were devoted to drawing and painting in their youth. Goethe, on the other hand, as he grew towards middle age, developed an unmistakable interest in scientific investigations, and made some discoveries of real importance. Of his now discredited theory of colour he professed himself prouder than of all his poems and plays. The typical instance of transition from art to science is, however, that of Leonardo da Vinci. Of his aesthetic endowment there can be no manner of doubt; he is universally acclaimed as among the very few supreme artists of the world. Yet the older he grew the more definitely his devotion to art became transformed into devotion to science. His notebooks reveal an incredible catholicity of interest

and an amazing prescience with regard to the destined results of inductive research. He was an anatomist of the first rank, and is held by some to have anticipated the revolutionary discoveries of Vesalius. He was perhaps the first to grasp firmly the principle of success in aviation in so far as he insisted that it must be based on study of the flight of birds. He is known to have constructed a flying machine of some sort, but whether or not it flew we are unable to say. Returning to the question of the general relation of art and science, we will quote some significant remarks of Gustave Flaubert as bearing out our own view of the matter. "The time of the beautiful is passed. Humanity, free to return to it, has nothing for the present quarter of an hour to do with it. The further it goes the more scientific will art become, and in the same way science will be more artistic: the two, after having been separated at the base, will meet at the summit." The fact that Flaubert's father was a distinguished surgeon and his mother the daughter of a country doctor, may partly account for his appreciation of science and the strongly-marked realism of his novels. But there can be no doubt that in the opinion just quoted he was typical of the best modern representatives of the art he himself practised with supreme skill. The best modern fiction is that which is most obviously based on actual observation, and in which plot and invention play an altogether subsidiary part. Psychological interest is so universally predominant that it is hardly an exaggeration to say that the aim is as much scientific as aesthetic.

Sociologically, it is of course the fact that aesthetic development precedes and is gradually superseded by regard to those utilitarian requirements over which science presides. The ships of our Scandinavian ancestors, with their gaily-striped sails and the carved dragons' heads at their prows, must have been picturesque objects, but there is reason to suppose that from the points of view of comfort and health they left everything to be desired. And as much could certainly be said of the beautiful houses which in our own ancient boroughs and in cities like Munich and Heidelberg survive as monuments of mediaeval architecture. The modern idea, whether consciously formulated or not, would seem to be that in construction function shall determine form, and it is a quite arguable position that the successful achievement of this aim results in beauty of a higher kind than the primitive preoccupation with form to the neglect of utility can attain. A modern locomotive, yacht, or battleship, each by the perfection of its adaptation to the end in view, makes a distinct aesthetic appeal. But perhaps the best example of that merging of the scientific and aesthetic methods referred to by Flaubert is furnished by the spectacle of a precarious and skilful surgical operation. The sense of restrained power, of exact knowledge, of the perfect co-operation of various minds in one function of purposeful activity, the smooth silent precision of all parties concerned, above all, the ever-present sense of deep and poignant significance and gravely-realized responsibility, are calculated to evoke in the mind of an appreciative onlooker an emotional thrill or exaltation analogous to that awakened by the contemplation of a great work of art.

It is no doubt the case that, as Weininger pointed out, artists have always enjoyed a certain advantage over men of science in respect of the full expression of temperament and personality. The triumph of the scientific discoverer culminates in the formulation of a law which at once takes its place in that great system of objective truths which constitutes science. The greater the discovery the more inevitable it will appear—that is, the more impersonal, the freer from any traces of the idiosyncrasy of the discoverer. Such has, at any rate, been the case with the great discoveries of the past; but it does not follow that it will always be so. The dominant science of to-morrow will be psychology (using that word in its most inclusive sense as the science of human nature), and it may well prove that the greatest achievements in this field will fall to the lot of those who bring to the work, not merely the detached intellect of the man of science, but also the keen intuition and the sympathetic temperament of the artist. "Individuality is founded in feeling," wrote the late Professor James; "and the recesses of feeling . . . are the only places in the world in which we catch real fact in the making." And, this being so, he conceives that "the rigorously impersonal view of science might one day appear as having been a temporarily useful eccentricity rather than the definitively triumphant position which the sectarian scientist at present so confidently announces it to be."[1] Such a reversion of science (mediated by psychology) to the more personal style and method, which, after all, prevailed up to the time of the Renaissance, may ultimately reveal the underlying unity or continuity of the aesthetic and scientific aspirations.

In reviewing the history of the Renaissance one cannot but notice the fact that it begins as an aesthetic and gradually merges into an intellectual revival. The great names of the latter part of the fifteenth century, when Lorenzo de' Medici reigned at Florence, and of the first half of the sixteenth—Perugino, Da Vinci, Dürer, Michael Angelo, Titian, Raphael, Holbein—are the names of artists. Copernicus was born in 1473 and died in 1543; and then, after a pause, we are met by a galaxy of names famous in the spheres of philosophy and science—Bacon, Tycho Brahe, Kepler, Galileo, Harvey, Hobbes, Descartes, Spinoza, Locke, Leibnitz, Newton—dominating the whole of the seventeenth and the opening of the eighteenth centuries. This may not suffice to prove, but certainly suggests, the truth of our contention that in relation to science the aesthetic enterprise plays a provisional, or at any rate, a preparatory, rôle.

Coleridge defined genius—no doubt that of the aesthetic type was foremost in his mind—as the carrying on of the freshness and feeling of childhood into the powers of manhood. Without the least desire to be offensive, we believe that all impartial observers will admit that a certain immaturity denotes the personality of the typical artist in comparison with that of the typical man of science. Yet if Keats was justified in his assertion that "Beauty is truth, truth beauty," both are engaged in the same quest, and their characteristics as well as their functions must converge. And if Professor James's prediction of the transiency of the "impersonal view" of science should prove correct, it is more than likely that the medical profession, whose duties have always been a safeguard against emotional atrophy, may contribute largely to the result. Many of our great physicians and surgeons have been remarkable not merely for intellectual or practical ability, but for something closely resembling temperamental genius.

[1] *The Varieties of Religious Experience*, p. 501.

TUBERCULOSIS STATISTICS.

PROFESSOR B. FRÄNKEL gives some abstracts from the recent statistical return of the German Reichsversicherungsamt.[1] These have been published in the second volume of the *Medizinalstatistischen Nachrichten* in observance to an order of the Minister of Education of the Royal Prussian Statistical Board. The figures showed a marked improvement as compared with the figures published for the preceding year (1908). The mortality from tuberculosis per 10,000 living was 15.59 for 1909, and 16 46 for 1908. It was 32.51 in 1878. The results of institutional treatment of tuberculosis are discussed. In 1909, 102,762 persons were treated in institutions, as against 95,130 in 1908, and 11.672 in 1877; 12 915 of the 102,762 died. The increase of cases treated in institutes is due to the generalization of sanatoriums. Fränkel regards the death-rate in the institutions as satisfactory when compared with previous returns. He then turns to the effect of treatment. Here the figures permit of comparison by taking the results five years after the beginning of the treatment. In 1897 only 27 per cent. of the patients showed "permanent results," by which it appears that he means "considerably improved or practically cured." In 1893 this figure rose to 31 per cent., in 1901 to 34 per cent., in 1904 to 42 per cent., and in 1905 to 46 per cent. "These excellent results are chiefly due to the sanatoriums," he states. He appends a table of the condition of the patients who were still able to work five years after the treatment was begun. The numbers are set up in the columns representing the stages of disease: 0 = practically no physical signs, I = Turban-Gerhardt's first stage, II, III = Turban-Gerhardt's second and third stage respectively. From this table it appears that of 29,029 male and female patients (they are given separately in the table) 897 lost all physical signs at the end of the five years—that is, 3 09 per cent. of those patients who had recovered sufficiently to work again were apparently cured! Furthermore it is seen that only 13.44 per cent. of those included in the table were so far improved as to be promoted to a higher stage or column. We hear a great deal of the reputed 50 per cent. of cures in tuberculosis, and even if full allowance be made for the fact that the cases included in these statistics are largely made up of the working class patients who can be kept in the sanatorium only for a short time, it must be clear that the actual number of consumptives who are cured is still deplorably small. Professor Fränkel speaks of a hope being justified that the younger members of the profession will live to experience a time when tuberculosis will have lost its importance as a scourge. If this is to be consummated, then the rate of progress must be materially accelerated, for a broad abyss divides a time when less—far less—than 3 per cent. of those treated regain their complete health from one when tuberculosis will be so mild a complaint as no longer to form a national scourge.

AN ACTUARIAL STUDY OF PULMONARY TUBERCULOSIS.

TWO professional actuaries—Messrs. W. P. Elderton and S. J. Perry—have recently published[2] an analysis of data relating to the influence of sanatoriums on the expectation of life of phthisical subjects. The material used was collected by Dr. Noel Bardswell in this country, and by Drs. Lawrason Brown and Pope in America; the figures are analysed, and the expectation of life for persons of the given ages calculated from the Registrar-General's English Life Table, compared with the actual experience. As the authors remark, the results need confirmation in the light of fuller statistics, but, so far as they go, it would appear that even in the cases in which treatment has been most successful those who have suffered from tuberculous disease are subject in after life to a heavier rate of mortality than the general population. A most instructive comparison is instituted between the results of sanatorium treatment and the earlier records of Pollock and Williams; the difficulties in the way of effecting such a comparison are carefully noted, but the result of the analysis fails to reveal any superiority in the sanatorium results. There does not appear to be sufficient justification for the opinion so often expressed that sanatorium treatment has materially increased the expectation of life of phthisical persons. While we are strongly of opinion that the time has not come for final judgement on this important matter, Messrs. Elderton and Perry's memoir appears to us to be a careful piece of work, executed in a spirit of true scientific modesty and caution. Whatever may be the final conclusion of the matter, we cannot but feel that many readers of this paper and of a recent correspondence in our columns will regret that a somewhat higher standard of statistical reasoning has not been adopted in certain contributions to the literature of tuberculosis.

[1] *Berl. klin. Woch.*, October 24th, 1910.

[2] *A Third Study of the Statistics of Pulmonary Tuberculosis; The Mortality of the Tuberculous and Sanatorium Treatment.* By W. Palin Elderton, F.I.A., and S. J. Perry, A.I.A. London: Dulau and Co. 1910 (Pp. 35. 3s.)

THE CONTROL OF BOVINE TUBERCULOSIS.

AT its meeting in Chicago in September, 1909, the American Veterinary Medical Association appointed a committee of American and Canadian gentlemen to consider and advise upon methods for controlling bovine tuberculosis. This committee, which styles itself "The International Commission on the Control of Bovine Tuberculosis," held four meetings during 1909 and 1910, and has now issued its report. The Commission strongly urges the wide application of the tuberculin test, declaring that this "is the fundamental factor in any policy having for its object the control of bovine tuberculosis." Tuberculin, when properly used, is an accurate and reliable diagnostic agent for the detection of active tuberculosis. As regards different methods of applying the test, they find that subcutaneous inoculation is the only one which can be recommended for use on cattle at the present time. The Commission advises the passage of legislation providing for the compulsory notification by owners and by veterinarians of the existence of tuberculosis in a herd, whether the disease be revealed by the detection of clinical cases or by the tuberculin test. As a general policy in the eradication of the disease they recommend the separation of healthy and diseased animals, after application of the tuberculin test, with a view to the construction of a healthy herd. With the object of preventing the spread of infection, persons buying cattle for breeding purposes or milk production should, except when such purchases are made from disease-free herds which have been tested by a properly-qualified person, purchase only subject to the tuberculin test. In order to assist in the proper carrying out of this suggestion the Commission recommends that official authorities should adopt such regulations as will prevent the entry into their respective territories of cattle for breeding purposes or milk production unless accompanied by satisfactory charted records of the tuberculin test. The distribution or use of tuberculin by unauthorized persons should be prohibited. There is much need for a better education of the farmer as to the nature of bovine tuberculosis and the way to eliminate it: to further this end it is recommended that a pamphlet on bovine tuberculosis

should be written, couched in simple language which would be understood by every person of average intelligence. It is also pointed out that the press might do much to enlighten the general public, and that if people were made to realize how much the welfare of the community depends on the health of its food-producing animals, public opinion would provide a valuable stimulus towards the eradication of the disease in cattle.

ALCOHOLISM AND DEGENERATION.

Professor Karl Pearson has recently published a supplement[1] to the memoir on alcoholism and its effects on the next generation, which has given rise to so much debate in our correspondence columns and elsewhere. In this supplement Professor Pearson considers the objections raised by Professor Marshall and Mr. J. M. Keynes, to the effect that the original memoir compared alcoholic families with degenerate or unhealthy non-alcoholic stock. In our judgement, Professor Pearson is successful in demonstrating that the onus of proof lies on those who assert that the groups compared are really differentiated in respect of characters other than the alcoholic habit. With regard to another point raised by Mr. Keynes,[2] to the effect that no evidence is adduced as to the habits of the parents at the time of the birth of the children, Professor Pearson writes: "The reply to this is that there are as many children of 5 and 6 as of 11 and 12, and if some children were born before parental alcoholism had started, some were certainly born after, and therefore this mixed category should be worse than the category containing children whose parents have not been alcoholic at all Further, a pretty wide experience of the relative healthiness of children, earlier and later born, has shown us that the preponderance of criminality, idiocy, phthisis, and other signs of degeneracy usually attributed to parental alcoholism occurs among the *elder* born." Both criticism and rejoinder abound in those amenities which, in accordance with some mysterious psychological law, appear to be inseparably associated with writings on alcoholism. Thus, Mr. Keynes remarks: "As a contribution to the solution of the general problem the memoir is almost valueless, and, from its failure to direct the reader's attention to essential facts, actually misleading." Professor Pearson, not to be outdone in candour, writes: "And it is not the members of the Eugenics Laboratory, but the Cambridge economists in their cloistered studies, who exhibit ignorance, when they try to demonstrate that the Edinburgh sample belongs to an exceptionally 'low grade' population in which 'physical and moral squalor are rampant.'" Let us warn the reader that this is not a newspaper controversy about "Tariff Reform" and "Free Trade," but a serious discussion between eminent men of science. As we stated in noticing the original memoir, we are not prepared to express a final opinion respecting the important social problems with which it deals. It is, however, our duty to say that, so far as the present controversy is concerned, it appears to us the assailants of Professor Pearson have been somewhat over-hasty, and have been too eager to occupy ground which may prove untenable. We must add the expression of our earnest hope that some small measure of courtesy may be introduced into a discussion which bids fair to be prolonged and vehement.

[1] *Questions of the Day and of the Fray.* No. 1 Supplement to the memoir entitled, "The Influence of Parental Alcoholism on the Physique and Ability of the Offspring. A Reply to the Cambridge Economists." By Karl Pearson, F.R.S. Pp. 26. London: Dulau and Co. 1910. (1s.)

[2] *Journ. Roy. Statistical Soc.*, lxxiii, 759.

MALTA FEVER IN FRANCE.

Aubert, Cantaloupe, and Thibault (*Ann. de l'Inst. Pasteur*, May, 1910) state that an important nidus of Malta fever exists in the department of Gard, in the Cevennes, a region where goats are very abundant. They have investigated an epidemic of this disease which broke out in 1909 at Saint-Martial, a hamlet situated in this district. Clinically, bacteriologically, and epidemiologically the epidemic was without doubt attributable to infection with the *Micrococcus melitensis;* and it was preceded by an epizootic amongst goats which was also directly associated with infection by this micrococcus. The inhabitants of the infected area consumed a large quantity of goat's milk, and the authors have no doubt that this was the medium in which the infection was conveyed. They have not been able to discover how the epizootic originated, but they ascertained that it spread from a particular farm where a large number of goats had been brought together. Investigation of the domestic animals in the affected area by means of the serum agglutination test yielded the following results: Out of 213 goats 67 (31·9 per cent.) were found infected, and out of 74 sheep and 96 rabbits infection was found respectively in 7 (1.9 per cent.), and in 20 (20·8 per cent.). With regard to the sheep, they state that ewe's milk is hardly ever consumed now as human food, but when not used for feeding the young lambs, is turned into cheese. Whether the *Micrococcus melitensis* may be present and retain its vitality in such cheese, is a point which they have not yet determined. The authors think that the frequency of infection amongst the rabbits investigated is a matter of some significance; if these animals excrete the micrococcus in their urine, they may prove to be a dangerous means of spreading the disease. They appear to have no doubt as to the reliability of the serum test (dilution 1 in 20) on rabbits, since they investigated a large number of control rabbits at Marseilles and found that none of them gave a positive result, even with a dilution of 1 in 10.

CENTENARY OF THE BERLIN MEDICAL FACULTY.

The celebrations recently held in Berlin on the occasion of the centenary of the university were attended by many eminent persons belonging to different countries. Professor Sudhoff, the well-known medical historian, publishes in the *Berliner klinische Wochenschrift* of October 11th, a somewhat ornate account of the Medical Faculty in Berlin from its inception to the present day. He traces the career of the men who made the Medical Faculty of the Berlin University famous, from Wilhelm Hufeland to Johannes Müller, Rudolf Virchow, and Robert Koch. He speaks in enthusiastic terms of the pathological, clinical and bacteriological advances achieved in Berlin, of the high level of the Faculty as a teaching body, and of its immense importance a a seat of learning. We congratulate the university, and especially the Medical Faculty, on the brilliant success with which their work has been conducted and the high reputation their leaders have won throughout the learned world.

OLD GLASGOW HOSPITALS.

The deplorable condition of the public hospitals up to comparatively recent years is a matter of common knowledge, and the dirt and discomfort of the old Town's Hospital of Glasgow, so graphically described by Dr. Hugh A. M'Lean in an interesting article which appeared in the September number of the *Glasgow Medical Journal*, were by no means peculiar to Scotland, but may be taken as a fair example of a state of things universal throughout Europe during

the early days of the nineteenth century. In fact, despite the lack of sanitation and almost total disregard of cleanliness, the Glagow Hospital at that time compares favourably with the majority of similar contemporary institutions, inasmuch as its patients do not appear to have been actually ill-treated or neglected, as was so frequently the case in other hospitals at the same period. A proof of this is furnished by the fact that, besides their food, patiants were supplied with tobacco and snuff at the expense of the hospital. The Town's Hospital, or Town's House, was founded in 1733, and built with funds supplied by the Kirk Session, the Council, and other public bodies. Dr. M'Lean, quoting from the Glasgow historian, M'Ure, who wrote three years after its foundation, says that the new hospital "is of modern fashion, and exceeds any of that kind in Europe, and admired by strangers." The same authority also informs us that the patients were attended daily by three members of "the Faculty of Physicians, Surgeons, and Apothecaries . . . and to their deserved praise they furnish the sick with daily attendance, drugs, and medicine gratis, and when any of them dies they are decently buried at the Town's charges, and their place furthwick filled up." Nearly a century later the hospital contained over four hundred patients, though it was only built to hold about three hundred and twenty beds. The majority of the patients were old and bedridden, but some sixty or seventy were "fatuous or insane." The lot of these latter unfortunates was pitiable. They were confined in small cells (from 7 to 11 ft. square and 6 ft. high), on the ground floor, with stone floors and ceilings, and no fireplaces; and these little dens contained two or three beds, sometimes with a couple of patients in each. The only means of warming the cells was by "a flue for communicating heat," which ran through the gallery into which they all opened; and the only method of ventilation was through small gratings in the cells and in the gallery. To add to the misery of the wretched occupants the stone floors of the cells were very damp, and, in the words of an eyewitness, "this is much increased, from the necessity of having them frequently washed in consequence of the filthy and unclean habits of many of the inmates." The other patients were better off than the unhappy lunatics, for, though they were often put two in a bed, the wards were large, and both sufficiently ventilated and properly heated. Their enjoyment of these comforts, however, was a somewhat precarious one, since the whole hospital was usually flooded—sometimes to the depth of several feet—once or twice a year, owing to its "being situated so very near the river and surrounded . . . by several common sewers." Another drawback must have been the dunghill, which was thoughtfully placed "at the west end of the front building," and supposed to be cleared away every fortnight by a neighbouring farmer. The eyewitness quoted above, Dr. Auchenloss, writing in May, 1832, about the outbreak of cholera which had ravaged the hospital a few months previously, states that before the epidemic this accumulation of filth had not been removed for some time, and as "the straw from the cells of the lunatics, saturated with filth and moisture, is regularly mixed with the dung, and, the surface being exposed and open, the effluvia and noxious vapours have been considered by some sufficient to account for the breaking out of the pestilence."

THE CIGARETTE BEETLE

In his latest report, the Medical Officer of the City of London records a case in which some rooms, used as a dwelling-house and situated over a warehouse, had to be vacated in temporary favour of a swarm of flying beetles, with whose enjoyment of their captured quarters sulphur dioxide did not appear materially to interfere. The invading force was traced to some bags of turmeric stored in the basement close to some open windows; the bags were honeycombed with maggots. Eventually the beetles were identified as belonging to the species *Lasioderma serricorne*. It is one which, in common with its first cousin *Lasioderma testaceum*, has a particular interest for smokers, since though, as the incident shows, these beetles are not very particular as to their surroundings, their favourite home is tobacco in the form of cigars and cigarettes. Mr. Theobald, of the British Museum, drew attention to their existence some seven years ago, pointing out that they had been found most frequently in Burma cigars and in Manila cheroots, but were almost cosmopolitan and ready to attack most dry vegetables. The egg stage lasts from eight to sixteen days, while the grub stage, which normally occupies six weeks, may last for a year or more. The pupal stage is short, only about eight days. The development of the larvae is hastened or retarded by heat and cold, and the developed beetles normally live about two months. Damage is done alike by larvae and beetles, and since a single tunnel into a cigar or cigarette is sufficient to stop its drawing, quite a small number of beetles and their larvae may suffice to destroy a whole box or boxes of cigars or cigarettes. Mr. Theobald on the occasion mentioned stated that when a box or case of cigars was found infested with the larvae of this beetle, further development of the mischief could be checked by bisulphide fumigation. We are thankful to say that hitherto we have had no occasion to put this observation to the test; when we do we shall not be surprised to find that a better way still is to throw the box away and secure a new one. We have no doubt that the fumigation would be effective, but a mixed flavour of tobacco and carbon bisulphide does not sound attractive.

THE PREVENTION OF MALARIA IN INDIA.

At the Malarial Conference, opened at Simla by His Excellency the Viceroy and Governor-General of India on October 12th, 1909, it was decided amongst other things that the Government of India should appoint a Central Scientific Committee, and an indication, under different headings, of the work that should be done by this body was also laid down. This central committee, consisting of Lieutenant-Colonel J. T. W. Leslie, C.I.E., I.M.S., President, Lieutenant-Colonel D. Semple, Captain S. R. Christophers, I.M.S., and Major S. P. James, I.M.S., Secretary, held a meeting on May 12th, 1910, to consider how some of the subjects enumerated in the Government of India's letter could best be dealt with. The following questions were submitted for the committee's consideration: A. Work of the central committee: (1) The formation of a type collection of *Anopheles*; (2) the collection of biological facts about *Anopheles*; (3) the formation of a type collection of malaria and other blood parasites; (4) the collection of malarial literature, maps, gazetteers, etc; (5) the issue of a bulletin; (6) field work. B. Work of the provincial officers. It was agreed that questions 1 to 4 could best be dealt with by the establishment in the first instance of a Central Malaria Bureau, and it was decided to create such an establishment at Kasauli, where the necessary books and other materials could be collected. As regards question 5, a decision was arrived that a journal or bulletin should be issued every three or four months, and that its title should be, "Paludism: Being the Transactions of the Committee for the Study of Malaria in India." As regards field work, the most urgent

lines of investigation in the opinion of the committee were: (1) A continuation of the inquiry concerning epidemic malaria; (2) an inquiry into the conditions associated with endemic malaria, the most suitable area in which to begin this inquiry being the Jeypore agency in the Madras Presidency; (3) an inquiry on the bionomics of *Anopheles;* (4) an inquiry on quinine. Captain Christophers, it was thought, could carry out (1); for (2) and (3) additional workers would be necessary, while as regards (4) medical superintendents of gaols might help. In connexion with subject B—the work that will be done by provincial malariologists—it was decided to ask the Government of India to address the several local Governments and Administrations, and for this purpose a series of questions upon which information was desired by the Central Committee was drawn up, one of the most pertinent of these being, "Which of the different species are concerned in the spread of malaria in Nature in India?" In addition to this, Captain Christophers now holds a class of instruction at Amritsar in the Punjab, where medical officers and subordinates are suitably trained. The whole scheme seems a very sensible one, and its progress will be watched with keen interest in England and other places which are specially concerned in the prevention of malaria.

PROGRESS IN ELECTRO-THERAPEUTICS.

Dr. H. Lewis Jones, the President for 1910–11 of the Electro-Therapeutic Section of the Royal Society of Medicine, only availed himself of the presidential privilege of giving an address at the first meeting of the session to the extent of making a few remarks upon the progress of electro-therapeutics in general. In the course of those remarks, however, he expressed appreciation of what he described as the cordial and sympathetic leading article upon the same subject which appeared in the British Medical Journal of August 27th, accompanying the report of the proceedings of the Section of Medical Electricity and Radiology which formed part of the annual meeting. The article, he said, gave encouragement to the workers in this branch of medicine—encouragement which he thought they deserved for their industry and for their efforts to approximate electro-therapeutics to the standard of an exact medical science. Proceeding, Dr. Lewis Jones said that the emphasis of the moment was certainly upon the use of large currents. This subject was brought greatly into prominence by Bergonié and others at the Congress of Physiotherapy in Paris, a few months ago. They might in future have to think in ampères instead of in milliampères. Indeed, in what was coming to be known as diathermy—the sending of heat internally into the tissues by means of a special kind of high-frequency apparatus—patients had been treated by currents of one, two, or even more ampères. He looked forward to the early abandonment of their little electrodes of a few square inches in extent and the adoption of large ones measuring something like a square foot. At St. Bartholomew's lately they had been using large currents, getting up to 75, 80, or even 100 milliampères for ionic medication. Another feature of the electro-therapeutic work at St Bartholomew's was the use of rhythmic currents. He believed that to refrain from using rhythmic currents would soon mean that the individual worker or the electrical department of the hospital was behind the times.

DIATHERMY.

London has lately had a visit from one of the leading Continental exponents of the new method of diathermy, Dr. Franz Nagelschmidt of Berlin, who gave a demonstration at St. Bartholomew's Hospital, and afterwards before the members of the Electro-Therapeutic Section of the Royal Society of Medicine at their meeting on October 21st. Diathermy, or thermo-penetration, describes the heating of diseased tissue by electrical currents of high frequency. This is done by means of an apparatus which has already been described in these columns, the high frequency system employed having a smaller voltage and a higher milliampèrage than the type of high frequency with which we have hitherto been familiar. It is well known that the various local applications of heat only elevate the temperature of the tissues to a slight depth, but the currents of von Lepell's high frequency system in their passage elevate the temperature of the deep tissues to any required extent. Dr. Nagelschmidt in his address divided the application of diathermy into surgical and medical categories. The surgical application is based upon the fact that very great heat secures the coagulation of tumours and neoplasms, and thus leads to their destruction. In the medical application the treatment is so regulated that the smaller intensity of the current and the different size of the electrodes produce less rise in temperature than that which is necessary for surgical purposes, but the results are manifested in the relief of pain and other symptoms, in neuritis, for example, upon which Dr. Nagelschmidt reported one or two cures. We have not space to indicate the many clinical applications to which he alluded. Suffice it to say that his technique in coagulating a large tumour is to proceed gradually from layer to layer, removing each thin, charred layer with the curette after the burning action has been applied. One of the great advantages of the method is the absence of haemorrhage, and he laid stress upon the fact that during diathermic operations the blood vessels and lymph channels are securely sealed at the moment of separation by the coagulating property of the heat.

"SOCIETY OF INFANT CONSULTATIONS."

A meeting was held on October 19th at the St. Marylebone General Infirmary to inaugurate the formation of the "Society of Infant Consultations." Among the vice-presidents are Sir Lauder Brunton, F.R.S., Dr. Hope (Liverpool), Dr. Niven (Manchester), Dr. Florence Willey, Dr. Sykes (St. Pancras), Dr. McCleary (Hampstead), and Lord Avebury. Dr. Eric Pritchard (chairman of the executive committee) pointed out the great value of infant consultations, and showed that not only did it appear to be the most satisfactory means of combating infantile mortality, but it was also the cheapest. Dr. Sykes stated that he hoped to form a society in St. Pancras which would deal chiefly with the social aspect of the prevention of infantile mortality, but that, when formed, he did not think it would overlap the work of the Society of Infant Consultations. Resolutions were then put by the Chairman, and after some discussion and amendment were passed unanimously in the following form: "(1) That a 'Society of Infant Consultations' be formed, and be called by this name. (2) That the aim and object of such society be: (*a*) To bring into closer relationship and assist all those engaged and interested in the work of such institutions; (*b*) to promote the establishment of similar institutions, and advise as to their organization; (*c*) from time to time to hold meetings for the reading of papers and discussion on subjects germane to the work of infant consultations; (*d*) for the recording of experience gained by individuals engaged in the work; (*e*) for the collection of literature, statistics, and reports bearing on the subject. (3) That the society consist of a president, vice-presidents, treasurer, librarian, and ordinary members. (4) That the expenses of the

society be defrayed by a subscription of 2s. 6d. from each member." A hearty vote of thanks to the chairman was then given. All communications or requests for information may be addressed to either of the honorary secretaries, Dr. Ronald Carter, 11, Leonard Place, Kensington, W., and Dr. Janet Lane-Claypon, 69, Prince of Wales's Mansions, Battersea Park, S.W.

ADVANCES IN TROPICAL MEDICINE.

PROFESSOR J. L. TODD, of McGill University, Montreal, recently read a paper[1] before the Johns Hopkins Medical Society, the subject chosen being "A Review of the Recent Advances in our Knowledge of Tropical Diseases." The work done during the past year is chiefly reviewed, the author stating that "although no very extraordinary addition has been made to our knowledge, a great mass of work has been done during the past year on subjects connected with tropical medicine, and much has been done to consolidate and co ordinate what is known concerning them." He also mentions the part the different Governments have taken in forwarding such researches. Work on sleeping sickness, spirochaetes, kala-azar, and Oriental sore are the chief items of last year's programme. The same author, in the *Montreal Medical Journal* (vol. xxxix, August, 1910), contributes a note on human trypanosomiasis, the histories of five cases of trypanosomiasis in Europeans being given. Three of the cases reported were treated by thorough dosing with liquor arsenicalis, and the patients were well two, two, and three years respectively after the commencement of their disease. The author is sanguine as to the ultimate result, but several years will have to elapse before the cases can definitely be said to be cured. The prognosis of sleeping sickness at the present time cannot be said to be a hopeful one.

HEALTH OF PANAMA.

COLONEL W. C. GORGAS brings out a monthly report of the Department of Sanitation of the Isthmian Canal Commission, and the one for August, 1910, reveals a very satisfactory state of affairs. The total number of deaths from all causes among employees was 55, 31 from disease and 24 from external causes, giving an annual average per thousand for all causes of 13.04; for diseases 7.35, and external causes 5.69. Among the employees during the month there died from malarial fever 4; from lobar pneumonia, 7; from tuberculosis of the lungs, 2; other forms of tuberculosis, 2; tetanus, 1; and from other diseases, 15. No cases of yellow fever, small-pox, or plague have been brought to or originated on the isthmus during the month. A death-rate of only 13.04 per thousand might well be envied by many towns situated in temperate regions. It is certainly a striking testimony to the thoroughness with which Colonel Gorgas and his staff carry out their great work.

THE WANDSWORTH SCHOOL CLINIC.

As already announced, the Wandsworth School Clinic will be opened in Garratt Lane, Wandsworth, on January 1st, 1911. It has received the approval of the London County Council and the Board of Education, and will be under the control of the Wandsworth Division of the British Medical Association. At this clinic will be treated those children found on medical inspection to be defective in ears, nose, throat, or eyes, whose parents cannot afford the fees of the local doctors. It will be used only by the children attending the London County Council schools within the London County Council Wandsworth electoral area (excluding Streatham). A nurse, appointed by the London County Council, will be in daily attendance. There will be a staff of seven local registered medical practitioners, who will hold office for only one year, and will be succeeded by others in rotation; they will attend during the afternoons. Cases of ringworm will be treated at the surgeries of local medical practitioners. The London County Council will elect the staff. A meeting will be held at the Town Hall, Wandsworth, on Friday, December 2nd, at 8 p.m., to discuss points affecting the treatment of the children in order that by the co-operation of all interested the clinic may prove successful.

[1] From the *Johns Hopkins Hospital Bulletin*, vol. xxi, No. 232, July, 1910.

ACCIDENTS TO SCHOOL CHILDREN.

WE have received an official letter from Mr. G. L. Gomme, Clerk of the London County Council, in which he informs us that the Council has recently had under consideration the question of the fees to be paid for the first medical attendance on children who meet with accidents in public elementary schools, and has adopted the following scale, which will come into operation as from December 1st, 1910: (*a*) In the case of a child who meets with an accident in the school, and who is taken to a doctor's surgery, 3s. 6d.; (*b*) in the case where a doctor is summoned to the school to attend a child, 5s. Claims in excess of these amounts will, if there are exceptional circumstances, receive special consideration. These fees will be paid by the Council for the first attendance only.

AMONG the Fellows recommended for election to the council of the Royal Society are Dr. W. H. Gaskell and Dr. C. J. Martin. Dr. J. Rose Bradford is recommended as one of the two secretaries.

THE annual meeting of Fellows and Members of the Royal College of Surgeons of England will be held in the College, Lincoln's Inn Fields, W.C., on Thursday, November 17th, at 3 p.m.

PROFESSOR J. G. MCKENDRICK, F.R.S., formerly Professor of Physiology in the University of Glasgow, has been elected Provost of Stonehaven. This, it is stated, is the first occasion on which Professor McKendrick has taken part in municipal politics. His return at the top of the poll at the recent town council election is a proof of his great personal popularity in Stonehaven, with which he has been connected for forty years.

WE are asked to state that in the report of the Organizing Committee of the Seventeenth International Congress of Medicine which appeared in the JOURNAL of November 5th, p. 1443, the name of Colonel Sir David Bruce was accidentally omitted from the list of those elected to the Committee.

RUMOURS as to the prevalence of an "epidemic" of cholera in Rome have prevented many persons from visiting the Holy City. We are able to state on the highest authority that as a matter of fact the few cases which made their way into the city were promptly isolated, together with all "contacts." In no single case has there been any extension of the disease.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

LONDON.

London County Council.

Coroners' Law Amendment.

The General Purposes Committee, in a report to the London County Council on November 8th, set forth the points of divergence between the recommendations of the Departmental Committee on Coroners and the views of the Council as expressed in a series of resolutions passed on October 30th, 1906. The Committee regarded the introduction of Sir William Collins's Coroners' Law and Death Certification (Amendment) Bill as affording an opportunity of giving effect to the principal recommendations of the Departmental Committee, and recommended the Council to urge the Government to give facilities in the autumn session for passing the bill. The Council agreed to this course, first reaffirming, at the suggestion of the General Purposes Committee, those opinions which the Departmental Committee did not endorse. These were: (1) Coroners should be paid by salary, and should be required to devote their whole time to the duties of the office; (2) the number of jurymen should be not less than six nor more than eleven, and the jurymen should be summoned strictly by rota; (3) the office of deputy should be abolished as unnecessary in London; (4) the view of the body by the jury should be dispensed with, except in cases in which the coroner and a majority of the jury thought it necessary: and (5) no fees for giving evidence or making *post-mortem* examinations should be paid to medical officers employed in rate-aided institutions.

Compulsory Notification of Ophthalmia Neonatorum.

The Council decided to order, under Section 56 of the Public Health (London) Act, 1891, that compulsory notification of infectious disease should apply in the administrative county to ophthalmia neonatorum. The Midwives Act Committee asked that the Council should take action with a view to the more effectual prevention of blindness or impairment of vision caused by the want of prompt and efficient medical treatment among newly-born infants. The compulsory notification of ophthalmia neonatorum might prove advantageous. So far as the practice of certified midwives was concerned, there was already in existence a method of notification, as one of the rules of the Central Midwives Board, made under the provisions of Section 3 of the Midwives Act, 1902, and confirmed by the Privy Council, required every certified midwife to advise that medical assistance should be obtained in every case of inflammation of the eyes, however slight. This advice must be given in writing in a prescribed form and a copy must be sent to the local authority within twenty-four hours. The information obtained under a compulsory notification order would enable the medical officers of health of the various sanitary districts (the metropolitan boroughs) to make known to those concerned the opportunities available for treatment in necessitous cases. It would be found of value in cases in which the infant was taken to a medical practitioner, perhaps at a hospital, who did not have the opportunity of keeping it under treatment, and incidentally it would serve a useful purpose in bringing to light cases attended by midwives concerning which they had omitted to advise that medical aid was necessary. Notification would render more complete the arrangements for securing continuous and efficient treatment of the child.

The Order will be advertised, and a copy sent to every qualified practitioner residing or practising in the County of London.

A Southwark Slum Clearance Scheme.

The Housing of the Working Classes Committee reported that the medical officers of health for Southwark and Bermondsey had made representations that the houses in Tabard Street and Grotto Place areas, Southwark, and the Crosby Row area, Bermondsey, were unfit for human habitation; that the narrowness, closeness, and bad arrangement of the streets and houses; the want of light, air, and ventilation, were dangerous to health, and that an improvement scheme was urgently required. The Committee, in recommending the Council to spend £387,700 in buying the three areas, forming an open space, and rehousing half the population in block dwellings, gave some particulars of these wretched slums; most of the houses are low-ceilinged, the ground floors lower than the street level, and the streets themselves extremely narrow. The death-rate from all causes during 1904–08 in the Tabard Street area was 36·8, in Southwark 18.2, and in London 14·9; the phthisis death-rate was 3·88, 2·09, and 1.44 respectively; and the death-rate from the principal endemic diseases was 6·07 in the Tabard Street area, 2·29 in Southwark, and 1.71 in London.

The Council sanctioned the improvement scheme.

Board of Education and Medical Inspection.

On the report of the Education Committee submitting a draft reply to the letter of the Board of Education with regard to medical inspection, Mr. George Lansbury had given notice of an amendment to substitute the words:

> That the Board be informed the Council regrets its failure to carry out to the satisfaction of the Board the duties laid upon it with regard to medical inspection, and has instructed its Education Committee to report as to the action to be taken in order that the Council may discharge in a generous manner its obligations in respect of medical inspection.

The amendment, however, was not moved, and the draft letter was approved.

MANCHESTER AND DISTRICT.

The Glasgow University Club in Manchester.

On November 1st Sir James Barr presided at the fifth annual dinner of the Glasgow University Club in Manchester. In proposing the toast of "Alma Mater," he said that Glasgow had been trying to extend its medical school, and he did not agree with that. He thought there were too many medical schools already in the country, and if some of them were shut up it would be all the better both for the profession and the public. What was wanted was more post-graduate work. Young men thought that when they had spent five years in a medical course they ought to begin at once to earn some money, but really they were then only just beginning to learn their profession, and he thought that a post-graduate school would be an enormous advantage to Scottish education. In responding to the toast, Professor Cameron said that out of 3,408 students at the Glasgow University, 709 were in the medical department. He then went on to speak of the attitude that the Government ought to take with regard to the enormous number of quacks who now sold their remedies without limit. He thought it was high time that the Government should protect the public against the evils of quackery, especially referring to the alleged cancer cures. Any ignoramus, who might be a butcher, or a shipwright, or a carpenter, or others, who set themselves up as better able to cure cancer than the surgeon, ought to come under the lash of the law.

NEWCASTLE-UPON-TYNE.

Professor Osler and the Northumberland and Durham Medical Society.

One of the most interesting and most important events of last week here was the visit of Professor Osler and his address to the Northumberland and Durham Medical Society. At the afternoon meeting, in the Connaught Hall, the President of the Society, Dr. A. C. Burnell, in the chair, Professor Osler, who was supported on the platform by Sir George Hare

Philipson, Sir Thomas Oliver, Dr. James Drummond, Dr. Modlin, and others, addressed a large meeting of members and friends. Professor Osler spoke of the hospital unit in university work. While it was the function of a university to teach and to advance learning, he felt that, in order to extend its work in the medical schools, all branches of the curriculum should be included and encouragement given so that all learning might become profitable. The university claimed that hospital work came within her province and that she should have some voice in the control of hospital affairs, especially those which concerned the teaching of the student by men who ought to be paid for their services. While the hospital primarily stood for the cure of the sick and the relief of suffering, it was also an institution for the study of the problems of disease and for the training of men to serve the public. These last two functions came within the sphere of university influence. Hospital trustees had not always the money with which to acknowledge the services rendered by physicians and surgeons, and, besides, laboratories were required wherein students might become better qualified for the treatment of disease.

In the evening the society held its annual banquet, at which Professor Osler was the guest of the evening. Upwards of 140 sat down to an excellent dinner by Messrs. Tilley in the King's Hall of the Armstrong College. After the loyal toast had been disposed of Dr. Burnell proposed the health of Professor Osler. In a felicitous speech Professor Osler acknowledged the compliment, and subsequently paid a high tribute to the general medical practitioner. He begged him to regard a large infirmary as his best friend, one whose acquaintance he should never lose. The harmony of the evening was much advanced by songs rendered by Mr. Ernest Potts and Mr. T. Dunn of the College of Medicine and by music supplied by Amer's orchestra.

ROYAL VICTORIA INFIRMARY CHAPEL.

The infirmary chapel, consecrated by the Bishop and used as a place of worship for many months after the opening of the infirmary, was closed two years ago by order of the governors because Nonconformists were not allowed to worship in it. The chapel still remains closed. It has now been arranged that religious services shall be conducted in the library by Anglican and Nonconformist clergymen alternately.

BIRMINGHAM.

HOSPITAL SATURDAY FUND.

THE total amount of the present year's collection up to the present date is £20,167 17s. 11d., as compared with last year's total of £19,689 7s. 4d., showing an increase of £478 10s. 7d. There are still further items to come in before the fund finally closes, so that the total will probably be between £500 and £600 more than in the previous year. This increase is very necessary, as well as satisfactory, on account of the continually increasing work of the fund. Apart from the normal growth of work the fund will be required to support very soon a sanatorium of its own for consumptive patients on Romsley Hill, about eight miles from Birmingham. The plans are now being considered for the sanatorium, which is designed to contain beds for fifty patients. £10,000 of the fund are annually divided among the hospitals and nursing societies of the city.

ST. THOMAS'S MEN IN THE MIDLANDS.

The third annual dinner of old St. Thomas's Hospital men living in the Midlands was held at the Midland Hotel, Birmingham, on Thursday, October 27th. The invitations were sent to all the old St. Thomas's Hospital men residing within a radius of fifty miles of Birmingham. Mr. W. F. Haslam was in the chair, and the guest of the evening was Mr. G. H. Makins, Senior Surgeon to St. Thomas's Hospital. Dr. A. E. Russell, Physician to Out-patients at St. Thomas's Hospital, and Dr. Seymour Taylor, Senior Physician to the West London Hospital, were also present as guests. After the loyal toasts, the toast of "St. Thomas's Hospital" was proposed by Mr. W. F. Haslam, and responded to by Mr. G. H. Makins. Dr. A. E. Russell and Dr. Seymour Taylor were also called upon to respond. Dr. A. V. Bernays proposed a vote of thanks to Dr. Sawyer for acting as secretary for the dinner. Mr. H. H. Heffernan proposed a vote of thanks to the Chairman, and Mr. Haslam responded. The meeting was thoroughly appreciated by all the old St. Thomas's Hospital men present.

WORK AND FINANCIAL POSITION OF HOSPITALS.

The total number of patients treated in the various institutions in Birmingham during the year 1909 exceed a quarter of a million, and although many of these patients wander from one institution to another, and probably some of them are counted twice or more times in the same hospital, yet the number of patients receiving free medical aid can scarcely be less than 200,000 yearly. The totals given are the number of patients treated, not the number of attendances.

The ordinary income of the Birmingham hospitals and medical institutions for the relief of patients was during 1909, £93,853, and the ordinary expenditure was £113,019, exceeding the income by £19,166. There is an excess of expenditure over income in all these medical institutions of Birmingham.

STAFFORDSHIRE.

PREVENTION OF BLINDNESS.

A CONFERENCE for the purpose of considering preventable blindness was held in Wolverhampton on Friday, November 4th, and was attended by most of the medical officers of health in the county and by delegates from all municipal and urban sanitary authorities and other public bodies in Staffordshire. The delegates having been welcomed by Dr. John Grout, the Earl of Lichfield took the chair and delivered a short address. In the course of it he said that one duty of local authorities was to see how they could save money for the ratepayers. One way of doing so would be to prevent blindness. Each blind child costs the education authorities about £500, while an ordinary child only cost about £30. The proportion of the former to the latter would be greatly reduced if compulsory notification of infantile ophthalmia were introduced. The plan had been put into operation in the northern part of the county with great success. If cases were dealt with at their early stage, the cost of treatment need not exceed £1 1s. a case, and the total cost of notification and treatment would only equal an expenditure of 17s. 5d. per 1,000 of population. Mr. E. V. Greatbatch, Chairman of the North Staffordshire Blind and Deaf Institution, was then introduced to the audience by the chairman as the originator of the movement. He said that in the northern part of the county, where the disease had been made compulsorily notifiable, after nine months' experience only 2 per cent. on 75 cases occurring in the six districts included in the order were not saved. Dr. H. H Folker also spoke in favour of the adoption of a scheme for the prevention of blindness from untreated and inadequately treated ophthalmia neonatorum, and finally Dr. H. Malet, medical officer of health for Wolverhampton, proposed the following resolution:

> This meeting is of the opinion that the disease known as ophthalmia neonatorum should be added to the list of notifiable diseases under the Infectious Disease (Notification) Act, 1889, and that provision should be made by the public health authorities for ensuring that every case receives proper medical help and nursing, under Section 133 of the Public Health Act, 1875. Also, that it is desirable that the Notification of Births Act, 1907, should be adopted.

The resolution, having been seconded, was duly carried. Readers will remember that a discussion on the administrative control of ophthalmia neonatorum, with Staffordshire as an object lesson, was introduced by Dr. George Reid in the Section of State Medicine at the Annual Meeting this year. Among other things,

Dr. Reid mentioned[1] that the scheme so successfully adopted in North Staffordshire had originated in a conversation between Mr. Greatbatch and Dr. Folker.

WALES.

Welsh National Memorial.

A "special appeal to Wales," on behalf of the Welsh National Memorial to King Edward VII, has just been issued by the promoters from the Newtown offices of the movement. The appeal, which is signed by the Lord Mayor of Cardiff (Chairman of the General Committee), Mr. David Davies, M.P. (Honorary Treasurer and Chairman of the Executive Committee), and Professor Thomas Jones, M.A. (the Secretary), describes how the decision to commemorate King Edward VII by a national effort to stamp out consumption has united all classes and creeds in support of the project. The movement, it is declared, promises to remove the stigma under which the country now rests. Having recited the terms of the gracious message to Wales in support of the movement, sent by King George in response to a telegram sent him, some startling facts are given as to the ravages of consumption in the Principality. Of the fifteen counties in the United Kingdom having the highest death rate from phthisis, no fewer than seven are Welsh. In Carnarvon the death-rate from phthisis is 40 per cent. higher than in England and Wales as a whole, while Cardiganshire has a death-rate from phthisis which is nearly double the average of England and Wales. The objects of the crusade will be to convince the public that it is preventable, and to wage a persistent warfare against the prevailing ignorance and fatalism. The campaign will be divided into three main divisions: (1) An educational propaganda; (2) the provision of model dispensaries; (3) the erection of sanatoriums. It is also proposed to organize: (1) Travelling tuberculosis exhibitions; (2) popular lectures with lantern slides; (3) an information bureau for the press and public; and (4) the distribution of literature. Qualified medical men and women are to be appointed to deliver lectures on the subject in English and Welsh throughout Wales and Monmouthshire. They will explain in simple language what medical science has discovered about the causes and cure of tuberculosis. The "appeal" contains the names of donors of £100 and upwards, and shows that of the £300,000 required, the actual amount promised or subscribed up to date approximates £160,000, leaving £140,000 more to be raised. When the Campaign Fund is closed, the whole list of the subscribers will be published. All are invited to help. Definite steps are now being taken by the Executive Committee in the important work of organizing the collection of funds throughout the whole of Wales and Monmouthshire. Public meetings, convened by the Lords Lieutenant, will be held in all the counties to bring home to the public the necessity for an active campaign, and to secure the appointment of a strong and representative county committee with an honorary secretary. The primary duty of each committee will be to secure a systematic and thorough canvass of each county by the appointment of local collectors in every town, village, or district. The General Committee consists of the Lords Lieutenant, the High Sheriffs, the members of Parliament, and the county and county borough medical officers of health of Wales and Monmouthshire. The first county meeting in South Wales in support of the Memorial was held at the Victoria Hall, Llandrindod Wells, on November 4th; Sir Powlett Milbank, Bart., Lord Lieutenant, presided. Mr. David Davies, M.P., sketched the proposed methods of operation, and urged that they should not now squabble about details, but unite in the determination that there should be a great campaign against this terrible disease. A county committee has been formed, with Dr. J. Murray, Llandrindod, as secretary. The announcement of the gift of £5,000 by Miss Thomas, Llwynmadoc, was received with cheers.

[1] British Medical Journal, September 3rd, page 604.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Scottish Poor Law System.

The Stirling and Clackmannan Association of Inspectors of Poor recently celebrated its fiftieth anniversary at Stirling. Mr. John Paterson, Inspector of Poor, Stirling, and President of the Association, was in the chair. At a luncheon held after the conference Lord Balfour of Burleigh, K.T., proposed the toast of the "Stirling and Clackmannan Society of Inspectors of Poor." He said that in a short time he would have completed his forty-first year of continuous service as chairman of a parochial board. In addition to that he had served ten years as chairman of the combination poorhouse, had been for eight years responsible for the Presidency of the Local Government Board, and during these forty years he had had a personal acquaintance with every one of their outdoor inspectors. He might claim, therefore, to know something of the inspectors of poor. In his opinion the efficient inspector was the very corner stone of efficient administration of the Poor Law. It was a difficult and complex system; it did not always give satisfaction. Taking Scotland all over, there was no body of men who commanded respect more thoroughly and deserved it more than the inspectors of poor, taking them as a whole. Their administration was not perfect. But he would say that the success of their administration of the Poor Law was largely due to the efficiency of the inspector of poor. There had been commissions of inquiry on the reform of the Poor Law, and it was one of the things which Government after Government had promised and were still promising. But it was not a very easy task. Lord Balfour of Burleigh next referred to the unit and area of administration. In England they had large areas: in Scotland, in the main, very small areas. He preferred the smaller area, because the real groundwork and essential thing for a successful administration of the Poor Law was knowledge. He was largely in favour, wherever it was possible, of whole-time inspectors. It was not always possible, but under such auspices as they were met that day it was possible for the less experienced inspectors to meet and confer with their more experienced brothers. He cordially supported the scheme lately promulgated for the granting of diplomas to inspectors of poor who deserved them, whether for their knowledge or general capacity for managing the business entrusted to them. This had his warmest support, and he hoped it would be put to greater efficiency. He wanted to see more co-operation between the public and private effort. He put forth an appeal for the children. These children were sent out at a very early age to struggle for themselves. The adult might be responsible, he might be in fault, but no reproach could rest upon the child. The child was never responsible for its misfortunes. At the age of 14 these children were expected to shift for themselves, and in this connexion he brought into prominence the Scottish Girls' Society, which did most useful work in caring for these children when they were launched upon the world.

Registration of Fever Nurses.

At a special meeting of the Association of County Councils in Scotland, held on November 1st, a letter was read from Dr. Wilson, Medical Officer of Health for Lanarkshire, as Secretary of the Medical Officers of Health Association, pointing out the serious manner in which the staffing of fever hospitals would be affected by the Nurses' Registration Bill, which was to be considered on the reassembling of Parliament. The association was asked to oppose the bill until a clause was inserted providing for the registration of fever nurses, and that training in a fever hospital should count as part of the training of a nurse for admission to the general register. It was suggested that the matter should be remitted, with powers, to the Executive Committee, and this was agreed to.

Edinburgh.

Royal Society of Edinburgh.

The first ordinary meeting of the Royal Society of Edinburgh was held on Monday, November 7th, when the following ballot took place:

As British Honorary Fellows: James George Fraser, Professor of Social Anthropology in the University of Liverpool; Sir Joseph Larmor, Lucasian Professor of Mathematics in the University of Cambridge, Secretary of the Royal Society; and Alfred Russel Wallace, O.M. As Foreign Honorary Fellows: Hugo de Vries, Professor of Anatomy and Physiology of Plants in the University of Amsterdam; F. A. Forel, naturalist and limnographer, Morges, Switzerland; Karl F. von Goebel, Professor of Botany in the University of Munich; Jacobus Cornelius Kapteyn, Professor of Astronomy in the University of Groningen; Elie Metchnikoff, Vice-Director of the Pasteur Institute, Paris: Albert Abraham Michelson, Professor and Head of the Department of Physics in the University of Chicago; Wilhelm Ostwald, Emeritus Professor of Physical Chemistry in the University of Leipzig; Frederick Ward Putnam, Professor of American Archaeology and Ethnology in Harvard University; and August F. L. Weismann, Professor of Zoology in the University of Freiburg (Baden).

The Treatment of Consumption.

Some time ago, as reported in the Journal, a proposal was made and carried in the Town Council of Edinburgh that in consideration of a grant of money, the Corporation should have a right to a certain number of beds in the Royal Victoria Hospital for the Treatment of Consumption, and, in addition, that the medical officers of health should have access to all the data accumulated there. One of the principal inducements leading the Corporation to give the grant was that in so doing they might be able to learn much which would enable them to cope with the disease in its beginning stages, and in spreading sound ideas on infection. There was a good deal of preliminary work before the agreement between Dr. Philip as representing the Victoria Hospital and the Town Council could be completed; but this has now been done, and ten beds are now at the disposal of Dr. Williamson, the medical officer of health. The cases intended to be dealt with are those in which the disease has just begun. The hope of the public health authorities is that as the result of the treatment in the hospital and the instructions as to future procedure, much may be done to mitigate the effects of the scourge.

Glasgow.

University News.

The period of matriculation ceased on October 31st. The number of students matriculated in the Medical Faculty at Gilmorehill is 555, and at Queen Margaret College for Women 64, a total for the university of 619.

Royal Infirmary.

Several important alterations in the constitution of the board of managers will be proposed for the consideration of the qualified contributors at the coming annual general meeting. It is suggested that the number of working men representatives be increased from two to four; that the professors of medicine and anatomy be no longer *ex officio* managers, and that instead of them and the manager at present nominated "by the Faculty of the College of Glasgow," in future two managers shall be nominated by the Senate and two by the Court of the University. Among other changes, it is proposed to remove the right of the members of Parliament of the city to be *ex officio* managers and that of the Established Church ministers of Glasgow annually to appoint one manager. On the other hand, it is proposed to allow the Muirhead trustees to nominate one manager, the Faculty of Procurators to nominate two managers, and the Town Council to nominate three managers instead of one manager as at present. Among other changes foreshadowed is that of transferring to the managers the right at present possessed by the general contributors to make by-laws and regulations at the general meetings.

Clinical Laboratory for the Victoria Infirmary.

It is only a short time since the Edinburgh Royal Infirmary opened the new clinical laboratory so generously provided by an anonymous donor. It is now the turn of the Victoria Infirmary to acknowledge the generous gift of £5,000 for a similar purpose by a donor who, curiously enough, also desires to remain anonymous. With a suitable clinical laboratory the Victoria Infirmary will be in a much better position than it has hitherto been to undertake clinical research. As the Western Infirmary has nearly completed the building for its clinical laboratory, the Glasgow medical institutions will soon be well supplied with facilities for clinical research.

The Cinematograph in Medicine.

Within the course of the past twenty years the teaching of medicine has been revolutionized. Dry systematic lectures have been brightened and rendered more interesting by the use of the projection lantern and the epidiascope, which can show an image of the actual specimen. Those members of the Glasgow Medico-Chirurgical Society who were fortunate enough to hear Dr. Levaditi, of the Pasteur Institute, Paris, lecture on phagocytosis were introduced to the very latest phase of projection demonstration. Every one had heard of the cinematographic record of abdominal operations, but that the cinematograph could also be used to demonstrate the movements of spirochaetes and trypanosomes and reveal the actual process of phagocytosis by white blood cells came as a revelation to most of the members present. By a series of wonderfully clear records Dr. Levaditi was able to show these and other processes absolutely true to life, which brought home to those present the extraordinary influence of immunized serum upon the infecting micro-organisms, and how thereupon the white cells were able to ingest and digest the affected organisms.

Lunacy Report.

The annual report by Dr. John Carswell, Certifying Physician in Lunacy to the Glasgow Parish Council, has been issued for the year ending 15th May, and is very encouraging. The cases reported during the year numbered 1,018, of whom 533 were certified insane. This is 25 less than the previous year, and the lowest recorded for five years. Of these 533 cases only 392 were certified for the first time, the others having been previously under certificate. On an estimated population of 660,713 this figure represents a production rate of 56.3 per 100,000, the lowest for the last ten years. As regards age incidence 47 males and 38 females became insane between the ages of 15 to 30: 66 males and 48 females between 30 and 45: and 44 males and 38 females between 45 and 60. Thirty-seven males and 52 females became insane after reaching 60 years of age. The report states that the figures for the last ten years reveal a gratifying decrease in the occurrence of insanity during the young and active periods of life, and while they also reveal a marked increase during the older period of life the increase is limited in extent. There are, moreover, grounds for believing that this merely indicates a certain readiness to use asylums for the care of patients whose mental infirmity was not formerly treated in such institutions. In this connexion it may be stated that 25 patients of advanced years came from Barnhill Poorhouse. Districts of the city with high death-rates have high lunacy-rates, while those with low death-rates have low lunacy-rates, which goes to show that the causes of bodily and mental diseases are similar in their origin and operation. This view may be considered prosaic when contrasted with the popular idea that insanity is the price we pay for civilization, but it is rational and hopeful and based on facts.

Medical Inspection of School Children.

An interesting point in connexion with the medical inspection of school children came up recently in Largs. The assistant medical officer had excluded

four children from one of the schools on the suspicion that they were affected with scarlet fever, and ordered that they were not to be readmitted till furnished with a medical certificate. The parents of three of the children refused to be at this expense of getting the medical certificate, with the result that the children were still excluded from school. The members of the school board unanimously agreed that the parents should not bear the expense of the certificates, seeing that there was no actual disease, but only the suspicion of it, and the children were excluded in the interests of the other scholars; and it was decided to communicate with the chief county medical school inspector to determine how to obtain the necessary certificate.

Sanitary Condition of Pittenweem, Fifeshire.

Dr. Dewar, of the Local Government Board, has reported unfavourably on the sanitary condition of Pittenweem, and specially in regard to pig keeping in the town, the local authority having neglected to enforce its by-laws. The Local Government Board has allowed the burgh authorities two months to effect the required improvements, after which it desires to be furnished with a report on what has been done. The Local Government Board points to the responsibility that would rest on the burgh authorities should there be any outbreak of disease attributable to prevailing insanitary conditions.

Dunfermline College of Hygiene.

Dr. Alister Mackenzie, M.A., D.P.H., F.R.S.E., who was on the staff of the Edinburgh City Fever Hospital, has been appointed lecturer on anatomy and physiology.

Colliery Medical Appointments in Fife.

After over a year's negotiations it is reported that the question of the appointment of a medical officer to the West of Fife collieries is now nearly settled. A scheme has been drawn up by the Collieries Doctors' Association and the representatives of the miners, and recommended to the men. The scheme has been adopted in most of the villages where meetings were held. At some of the meetings exception was made to a clause relating to friendly societies, and it is probable this clause will be taken out, it being stated that the friendly societies are quite capable of taking care of themselves. The principle embodied in the scheme for which the men have been holding out, is freedom of choice of medical attendant. At present, it is stated, many of the workman, while deduction is made at the office for the colliery doctor, prefer to pay in addition for their own doctor. The decision of the men will now be placed before the Miners' Board, and then placed before the coalowners of Fife. It is expected that there will be no opposition offered to the completed scheme.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Presentation to the Master of the Rotunda.

On November 2nd Dr. Hastings Tweedy was made the recipient of a handsome presentation by many past and present nurses of the Rotunda Hospital, on the occasion of his retirement from the post of Master of the hospital on the conclusion of his seven years' term of office. The presentation consisted of a handsome silver tray of Celtic design and of an album containing the names of the subscribers. In addition Mrs. Tweedy was presented with a handsome watch. Dr. Little, Consulting Physician to the hospital, made the presentation on behalf of the nurses, and referred in his remarks to the large increase in the number of available beds in the hospital during Dr. Tweedy's tenure of office, and also to the increase in the accommodation for nurses and students. In expressing his thanks, Dr. Tweedy spoke of the unfair position in which Irish midwives had been placed by the Midwives Act, and expressed the hope that before long legislation would be introduced which would remedy the present injustice.

Later in the week a meeting of the board of governors of the hospital was held, and a vote of thanks was passed to Dr. Tweedy for his devoted attention to the patients and to the interests of the charity during his term of office. Dr. Henry Jellett, King's Professor of Midwifery and Gynaecologist to Sir Patrick Dun's Hospital, was then elected Master of the Rotunda in succession to Dr. Tweedy.

National University of Ireland.

At the first meeting of the Senate of the National University of Ireland for the purpose of conferring degrees a rowdy scene, which reminded one of similar meetings of the defunct Royal University, prevailed. Crowds of students collected at the end of the hall, and kept up an incessant clamour, accompanied by the discharge of various missiles, so that the interesting and eloquent address of the Vice-Chancellor of the University, Sir Christopher Nixon, M.D., was quite inaudible. An impression was thus produced in the minds of some members of the public—who were not aware that occasions of the sort are often utilized by students for the relief of pent-up exhilaration—that strained relations existed between the students and their teachers. To obviate this impression a representative meeting of the senior students of University College was subsequently convened in Cecilia Street Medical School, and a letter has been issued to the press stating that many of the offenders were not members of the university at all, and deprecating any suggestion that any but cordial relations existed between the university officials and the students of the university.

Superannuation Bill.

At a recent meeting of the Council of the Irish Medical Association the Superannuation Bill which it is proposed to submit to Parliament in the coming session was discussed and unanimously approved. Some of the members of council expressed the opinion that pressing forward this bill at the present moment was unwise in view of the promised scheme of Poor Law reform, which would necessarily include clauses dealing with superannuation, but after discussion all opposition was withdrawn, and it was decided to send a copy of the bill to each of the Irish Members of Parliament. The terms of the bill are as follows:

1. This Act may be cited for all purposes as the Local Government (Ireland) Amendment (Ireland) Act, 1910.

2. (1) Every officer who is at the date of the passing of this Act an officer of any district council or any board of guardians of any union in Ireland shall be qualified for a superannuation allowance, and shall, without prejudice to any existing right when he resigns or ceases to hold his office for some cause other than misconduct, be entitled to receive a superannuation allowance on the scale and according to the acts and rules relating to His Majesty's Civil Service.

(2) For the purpose of this Act the expression "qualified for superannuation allowance" shall mean qualified as regards age and length of service, and the devotion of his whole time to the service, except as respects a medical officer to whom the Medical Officers' Superannuation Act (Ireland), 1869, applies.

3. All superannuation allowances which shall be paid under the provisions of this Act shall be paid from the same funds and in the same proportions as the salaries and emoluments of the officer being superannuated are now payable by law.

4. The term "officer" shall include:

(1) A duly qualified medical practitioner in the service of a board of guardians holding an office under the provisions of the Act for the more effectual relief of destitute poor in Ireland, or the Medical Charities Act, 1851, and the Acts amending the same respectively.

(2) A medical officer of health of a sanitary district under the Public Health (Ireland) Act, 1878, or any Act or Acts amending the said Act.

(3) A registrar of births, deaths, and marriages holding such office contingent on his position as dispensary medical officer.

National Medical Service for Ireland.

The replies to the circular issued by the Conjoint Committee of the British Medical and Irish Medical Associations to the members of the profession in Ireland with reference to the establishment of a national medical service have on the whole been coming in well. Out of a total of about 2,400 medical men, nearly 1,750 have replied, and of these replies not more than 35 have been unfavourable to the projected scheme. The amount of active opposition

may therefore be judged to be small. As, however, the committee will be in a much better position to urge their scheme if more unanimous support for it can be shown to exist than the present figures warrant, it is hoped that the six hundred odd medical men who have not yet expressed their opinion will do so without delay. In some of the counties more than 95 per cent. of the issued post-cards have been returned signed, but elsewhere, more especially in Leinster and Munster, the returns have not been so good.

Health of Belfast.

At the meeting of the City Council held on November 1st the Medical Officer of Health reported that the mortality was 14·8, or 13.1 as a comparative rate. Only 9 cases of typhoid, but 68 of scarlatina and 26 of diphtheria, had been notified. The City Fever Hospital at Purdysburn was congested in its scarlatina wards; it is, happily, of a mild type. Plans for doubling the accommodation at this hospital at a cost of about £18,390 were ordered to be prepared; this will bring the number of beds up to 268. On the same day a deputation of the Public Health Committee waited on the Poor Law guardians to ask their aid in case the scarlatina epidemic should increase.

Asylum Capitation Grant.

Reference has previously been made in these columns to the diminution in the Government grant to the county asylums in Ireland, owing to the exhaustion of the fund from which the grant was payable. A deputation was recently received by Mr. Birrell for the purpose of discussing the situation, and as a result of this certain questions which Mr. Birrell asked the deputation to consider have been referred to the various county councils who had sent representatives on the deputation. These questions were as follows: (1) If it was considered best that the Treasury should contribute a sum in respect of each lunatic confined in Irish asylums. (2) Whether it was considered that the cost of the upkeep of lunatics should be an imperial or local charge. (3) Assuming the charge to be an Irish charge, whether it should be levied on the whole of Ireland or be paid by districts according to need and ability. The Co. Dublin County Council recently met to discuss the above questions, and unanimously passed the following resolution:

> That in the opinion of this Council the grant from the Local Taxation Account should be as it was originally—one-half of the original cost per head for each pauper lunatic in the asylums; and, further, that the area of taxation should be the same as at present.

It was further thought advisable by many of the members that the Government grants should be placed on the Consolidated Fund, and not on a fund which was liable to fluctuate.

Jamaica.

[*FROM OUR SPECIAL CORRESPONDENT.*]

Annual Health Report.

The annual report of the Superintending Medical Officer for Jamaica for the year ending March 31st, 1909, was issued some time ago. With it are included reports on the public hospital, the lying-in hospital, lunatic asylum, and lepers' home. Jamaica has a well-organized public medical service, hospitals and district medical officers being scattered all over the colony. Excluding the Kingston Public Hospital, there are no less than nineteen provincial hospitals. The amount expended on the medical service during 1909 was over £39,000; to this must be added a further sum of £3,143 for drugs supplied to the various institutions.

Vaccination.

Twenty-one thousand six hundred and sixty-two vaccinations were performed during the year; the cost was £1,451. It is stated that no arm-to-arm vaccination takes place now in the public service. Lymph is obtained from the Lister Institute, and is received fortnightly by the Royal Mail Steamship Company. Although the younger generation are efficiently protected against small-pox, the same cannot be said for the adult population.

Yaws.

The number of cases of yaws treated, 5,332, is much in excess of previous years. It is stated that the treatment of yaws will always be unsatisfactory until some system of segregation or compulsory treatment can be introduced and kept in force, the former being by far the best. The people look upon the disease as one that every child must go through, and so pay little attention to it. Possibly the increased number coming under review is due to the fact that it is now a notifiable disease.

Malaria.

Malaria still claims a large number of victims; the total number of admissions in the public general hospitals during 1909 was 7,939. The disease would not be so prevalent if more attention was paid by householders and others in getting rid of the various breeding places of the *Anopheles* variety of mosquitos in their backyards and on their premises. Parochial boards could also help in this matter by insisting that all those living within their towns and villages shall keep their premises in a sanitary condition, and by themselves keeping the towns and villages sanitary.

Public Hospitals.

Over 18,000 cases were admitted to the public general hospitals in 1909, with 380 deaths. Malarial fever, as already mentioned, forms by far the largest number of admissions, rheumatism also bulks largely in the admission list. Diseases of the respiratory systems supply a large number of admissions.

Sanitation.

Dr. Ker mentions that during his last vacation he went through the Jamaica and English public health laws, and drew up a rough code, so as to make the Jamaica laws run on the same lines as the English ones. Owing to unforeseen circumstances it could not be got ready for the last session of council. At present all the sanitary laws are distributed throughout various years instead of being consolidated.

Bacteriologist.

Seeing that the medical service is now placed on a satisfactory basis, it seems a little behind the times that no bacteriologist is attached to the department. Attention to this want is mentioned in the report, and the senior medical officer urges the Government to make suitable provision for one in the next estimates.

Kingston.

The medical officer for Kingston reports that the death-rate, 34.22 per 1,000, was considerably lower than in the previous year. Enteric fever was very prevalent during the year, 245 cases being reported. The causes of this outbreak seem to have been filthy latrines, and the clouds of dust which float about during dry and windy weather.

The number of patients treated in the public hospital during the year amounted to 3,729; there were 362 deaths.

The most prevalent diseases treated in the public hospital were malarial fever, tuberculous diseases, enteric fever, and venereal diseases; 69 cases of phthisis were treated, 22 of which proved fatal. A considerable amount of operative surgery goes on in the hospital.

Lying-in Hospital.

The number of patients admitted during the year was 596, with 10 deaths. We note that forceps was only used in 16 cases.

Lunatic Asylum.

The number of inmates at the beginning of the year was 1,032; the admissions during the year amounted to 237. There were 120 deaths.

Lepers' Home.

There were 24 admissions during the year, with 15 deaths, and remaining in the home at the end of the year under review 113.

In his report Dr. Neish, the medical attendant, states that for two years he has been treating leprosy with nastin. The results are practically negative. The disease is no more retarded or arrested than would be demonstrated by any form of tonic treatment, and, in Dr. Neish's opinion, is not as effective as the treatment by mercurial injections or chaulmoogra oil.

The report on the medical department of Jamaica shows that much good and useful work has been done by the district medical officers; reference was made in a previous article (see p 112, July 2nd, 1910) to the amended rules in connexion with the district medical service, and it is to be hoped that the Government will help this deserving body of medical men to collect the fees to which they are entitled under the amended tariff.

One criticism which might be made in connexion with this report is that the covering letter forwarding the district medical officers' separate reports to the Colonial Secretary by the Superintending Medical Officer might contain a more extended summary of the work done in the various districts and hospitals.

Special Correspondence.

PARIS.

Physiology and Therapeutics—Some Statistics on Tuberculosis.

The fireworks of the autumn congresses came to an end with two brilliant set pieces—the congress of surgery and the Congress of Medicine. Neither presented any point of novelty. There was, of course, the inevitable discussion over "606," but no definite conclusions were arrived at. In this the disputants showed their wisdom, since, amongst doctors, hasty conclusions are invariably promptly abandoned or revised. At the Medical Congress the most brilliant of our surgeons expounded his medical and serum-therapeutic treatment of tuberculosis, which remains the most easily cured and yet the most deadly of all diseases. Perhaps one may be allowed to express regret that microbiology should have done so much harm to physiology. The more one studies modern therapeutics the more one is reminded of a man whose watch is out of order, and whose only idea of setting it right is to shake it and tap it with his finger (revulsion), then to pour oil into it (pharmacotherapy). The science that raised Claude Bernard to so high a pinnacle of fame should be restored to its proper place—at the head of all others—for it has been rather neglected in the search after microbes. The majority of scientific researchers seem to regard the organism of the human body as a crucible in which take place chemical reactions of a somewhat complicated nature, or as an arena where phagocytes and micro-organisms strive against each other for mastery, disease being caused by these disturbances, in the production of which, perhaps, they take an equal part. Was Claude Bernard wrong when he wrote the following passage, now completely forgotten: "There will never be a science of medicine so long as the explanation of the phenomena of pathological life is divorced from the explanation of the phenomena of normal life. These two states are regulated by the same forces, and differ from one another only by the particular conditions under which the vital law is manifested"? The physiology of nutrition is particularly difficult, since, being obliged to study it *in vivo*, one runs a serious risk of disturbing the very phenomena one desires to observe, but happily science provides us almost daily with fresh means of investigation, and the human body will soon become as transparent as a glass in a laboratory. It is physiology, and physiology alone, that can give us the key to certain problems which have till now defied solution, in spite of the various and contradictory opinions of theorists and scientists whose observations have been confined to externals. Amongst such problems may be placed the relations between the different constitutional affections, the affiliation of certain diseases, the knowledge of temperament, and the inheritance of tuberculosis, which has been so much questioned. With regard to the latter, a very full and interesting statistical report was published quite recently by Dr. Pégurier. This report gives the result of his clinical observations of 700 families under his care, taken from the working classes of Nice, and comprising 1,400 direct ancestors and 3,280 children. The following extract, published in the *Revue internationelle de la tuberculose*, contains the most important points: "Tuberculosis appeared in equal proportions in the father and mother of consumptives; 36.7 per cent. had tuberculous parents; 37 per cent. non-tuberculous but alcoholic parents; but, assuming that the former class includes tuberculous alcoholics, the child of a tuberculous parent seems to run less risk of becoming phthisical than the child of an alcoholic. Hereditary alcoholic antecedents accelerate the evolution of the lesions. The mortality amongst the children of alcoholics, one-half of which do not reach the age of 2 years, is considerably greater than the mortality amongst the children of consumptives, the characteristic stigmata of the two inheritances being comparable in every particular. The tuberculous and still more the alcoholic taint seems to increase the fertility of the parents to a considerable extent. This is a curious but well-known fact, and seems to suggest that there is a resistance of the instinct of preservation, which multiplies the individuals in proportion to their debility, and saves the race by means of numbers. It is also noticeable that Nature is not so successful in her struggle against artificial and deliberate poisoning as in resisting passive infection. If in addition to this the rate of mortality before birth is taken into account, we are led to a conclusion which, thus summarized, might have pleased Schopenhauer: 'Nature tends to compensate for pathological misfortune, and consecrates race suicide.' It is true that, to be exact, one ought to write 'the suicide of vice,' which would open up unexpected moral horizons in medicine and pathology, and perhaps justify the philosophers who believe that the precepts of all human ethics resolve themselves into the necessity of conservation and collective progress of humanity, and are simply the unconscious laws of a superior instinct. But having reached this point, it is time to stop and apologize for touching upon metaphysics, which seem as though they were to become once more fashionable amongst French doctors, who, having pursued the infinitely little for so long, feel the need of relaxation in lofty speculations." It may be recalled that Professor Landouzy, Dean of the Faculty of Paris, opened the Congress of Medicine with a very fine discourse on modern vitalism.

An appeal for fresh support is made to the public on behalf of the Garden Cities and Town Planning Association. It is said to be the only society which advocates and organizes the control of a separate town or city, with a fixed relation to surrounding agricultural land. Letchworth is now a rapidly increasing town, where industries of many kinds are being carried on, with their attendant population. The Hampstead Garden Suburb and the present development of a smaller garden suburb estate known as Valentines, at Ilford, bear witness in outer London to the force of an idea which is also manifested at Harborne, Woodlands, Bristol, and elsewhere in the United Kingdom. It is pointed out that, owing to the increased work and responsibility thrown upon it, the association feels the necessity of largely increasing both its membership and its resources. "The welfare of our race in the future depends upon a satisfactory solution of the difficulty of securing healthy and happy conditions of life for the industrial worker and his family, and it is sincerely hoped that those who feel the importance of the subject in its physical and moral aspects will now lend their aid by becoming members of the association and subscribing to its funds."

Correspondence.

DIASTOLIC BLOOD PRESSURE—A CORRECTION.

SIR,—A correspondent has kindly drawn my attention to what might seem contradictory statements in my address in the BRITISH MEDICAL JOURNAL of November 5th. At page 1390, second column, line 38, I say, "Its relation to systolic tension . . . is nearly 1 to 4." The "its" here refers to the difference between systolic and diastolic pressure, or pulse pressure, mentioned at the end of the preceding paragraph. But it might be supposed to refer to "diastolic pressure" mentioned at the beginning of the preceding paragraph, and in this case is apparently in contradiction to the statement in line 45 that the relationship of the diastolic to the systolic pressure is as 3 to 4. If the readers of my address will correct it by substituting "The relation of pulse pressure to systolic tension" instead of "Its relation to systolic tension" that ambiguity will disappear.—With many apologies, I am, etc.,

London, W., Nov. 7th. LAUDER BRUNTON.

NATIONAL MEDICAL SERVICE.

SIR,—Dr. Buist's contribution to the JOURNAL of November 5th will meet with the ready approval of those of the profession who desire the abolition of contract practice, in so far as he admits that the problem of our troubles is a social economic one. This is the point I have tried to drive home in my letters since last April—that the origin of clubs was in the bad economic conditions prevailing at the time and in the consequent necessity of the profession's making the best of these conditions.

If no one else would do it, for our own sakes we had to take care of the underpaid worker on the terms he could afford: hence the capitation grant and club practice, accepted as a lesser evil than bad debts and haggling over fees with those patients. But now the conditions are entirely changed. Someone else *will* do it, namely, the State. We did not ask the State to do it; social progress is responsible for that. Government says it recognizes that the wage-earner cannot provide for the contingencies of sickness as they arise, and proposes by means of the usual and inevitable "contribution per head or per pound of wages," that is, the ordinary methods of insurance, to insure the wage-earner against these contingencies. I submit that we medical men are now out of the running, and should be glad of the opportunity of freeing ourselves from a burden which was, and is, quite foreign to the business of medical practice. We now resume our place as medical practitioners pure and simple, ready as sellers to give our service to the buyer, who is now not the poverty-stricken wage-earner, but the solvent State Insurance Company. The *raison d'être* of clubs and contract is gone. Dr. Buist tries to reimpose the doctor's former disability by suggesting that as the wage-earner *could not* meet his liability in full, so the State *will not* do so, and adduces as an argument that the State must "budget" for a definite sum, and that therefore it will throw the risk of "the yearly variation of sickness" on the profession. Dr. Buist says that "no evidence but pious aspiration has been advanced" to show that the State could bear this risk itself. It strikes me that we have nothing to do with this, and that the Government might be left to deal with a difficulty which is essentially of its own making; but, if we must meddle with business not our own, I would suggest that the difficulty be met by "budgetting" for a fixed sum and applying it to cover the sickness liability of a smaller number of beneficiaries than can, even in a bad year, outrun this amount. The Government scheme is progressive; Mr. Lloyd George has told us that he intends to begin with a small number and enlarge the scheme in successive years; let him therefore begin with a number which cannot by any possibility exhaust the amount he is ready to expend, and carry over at the end of each year the balance unexpended, having always sufficient in hand to meet any epidemic, or, if he likes, rely on a supplementary grant, *as is done with other national expenses*. Consider for a moment what the alternative means—that the profession should be willing to meet the risk of an epidemic out of its own pocket, health, and strength. I object altogether to the assumption that we should relieve the State of the risk of the "variation of sickness." Dr. Buist's reference to the probable "appreciation by the majority of the empiric character of the formula 'payment for services rendered'" may be read in diametrically opposite ways, as approbation or sarcasm: Dr. Buist may wish us to understand that these men in "good practices" fled from private practice with "payment for services rendered" to a fixed salary with fixed duties; or he may mean, as I hope he does, that they found private practice, largely weighted with bad debts and clubs, with "payment per head" and unlimited attendance, inferior to a fixed amount of work at a small salary. He surely does not mean the former, for I know personally some of the men who have exchanged "good practices" for "the dullest of medical duties" with a fixed small salary; these "good practices" have in many cases been found unsaleable, and, if Dr. Buist would care, I could give him some information about one such derelict North of the Tweed, and why its incumbent was glad to accept a fixed salary of £250 a year for *fixed* work.

This, however, is surely evident enough, that Government intervention—the logical outcome of social progress—between the wage-earner and the vicissitudes of life, renders unnecessary any longer the anomaly of *our* intervention, which made us responsible for the charity which public opinion holds as obligatory.

We as medical men deal now with a solvent State instead of with an insolvent patient, and our terms to the former should be free from all taint of the charity which was essential to the latter. These sentiments also Dr. Buist may characterize as "platitudes" (I thank him that he called them "jointed" and not "disjointed"), but it is no bad policy to reiterate forgotten platitudes: a policy built up without them is likely to be a tottering one.

I presume the statement "that the evils of contract practice arise not from the contract, but from the lay control of the funds" is not a quotation as I cannot find it in the Contract Practice Report. If a deduction, as it appears to be, would it not be more exact to say "*some* of the evils of contract practice arise from lay control," or "*some* of the evils of contract practice might be remedied by professional control"? Surely we are agreed that there are inherent evils in contract practice which are insuperable by any control. On the other point I am entirely in agreement with Dr. Buist; we must all be prepared to stand by the majority of the profession, even if its proposals should not be the same as ours; what we in Bristol are asking is that the profession should have the matter put plainly before them, with the pros and cons of *every* method of dealing with this *new* matter that has arisen, and not be asked to say "yea" or "nay" to a one-sided question.

I very much regret to see in the JOURNAL of November 5th a letter from the Gateshead Division which goes far to destroy the effect of the admirable and temperate one it sent on May 7th. I am certain that of the sixty-one members of the Bristol Division who voted last month (against a minority of one) in favour of "payment per service," not one will hesitate to bury his own opinion if the Association concludes with open eyes in favour of "payment per head."—I am, etc.,

Bristol, Nov. 5th. HARRY GREY.

SIR,—I have to thank Dr. Harry Grey for the courtesy of his reply to my letter, and for giving me the opportunity to continue without delay a discussion which is of such importance and so urgent. The point of difference between us is not the need for adequacy in the future remuneration of the medical profession, but simply as to the mechanism by which this is to be secured. The Association will, I hope, succeed in securing that an adequate sum be provided, but it seems to me that even with a Chancellor of the Exchequer we are bound to regard the conditions under which he manages his income, just as we consider the circumstances of our private patients in giving them credit or accepting round-sum payments. We must surely consider whether we are likely to get better terms if we say that we will only have cash down, or if we say that we are willing to average things over a series of years. If we are to have a cash-down system, we are not the only parties to the fixing of the scale in the first instance, and, further, the Association has already found the tendency of a minimum scale to become the maximum, and it is much

more difficult in practice to raise an inadequate scale of fees than it is to raise a too low capitation payment.

There is, I hope, no intention on the part of any one in the Association to admit an element of charity in the terms of the new service, but it is evident that members fail to realize that we are not now discussing a continuance of the old contract system. The new system, which alone we are considering, is one with adequate funds and medical control, and free from the conditions of which, if Dr. Grey objects to my gloss, the Association found "that the cause of the above evils is the advantage which non-medical organizations are able to take of the competition between individual medical practitioners."

There is one further point of advance towards agreement in this discussion in that Dr. Grey admits the possibility of a central fund in the hands of the State, and suggests a means by which it can be accumulated at the Treasury.

I would again emphasize—and on this Dr. Grey and I stand side by side—the necessity for unity when we have fought out our differences. Had the profession united in the past, we could ere now have had clear lines as to the limits of charity and business; without union, we shall now fail to secure adequate terms on either system, and Divisions who are in the frame of mind indicated by the letter from Gateshead would do well to think two or three times before they decide to adopt Little Jack Horner as their prototype.—I am, etc.,

Dundee, Nov. 7th. R. C. Buist.

Sir,—The letter of Dr. Buist, when stripped of its non-essentials (which include sneers at men who are doing sound work for the general practitioners—I nearly put for the British Medical Association, but they are not synonymous—yet) is practically summed up in his question in the second paragraph—namely:

> Am I prepared to stand by the majority of the profession even if its proposals should not be the same as mine?

This is a question pregnant with a very deep and far-reaching meaning, and I put it to Dr. Buist: Is he prepared to stand by the majority of the profession even if its proposals should not be the same as his? If so, will he advocate steps being taken to obtain the view of the majority of that part of the profession—namely, general practitioners—who alone are affected (adversely) by this invalidity insurance scheme? And having obtained that view, will he help the general practitioner all he can in its attainment?

Dr. Buist explains this question, and says it means in other words: Is the British Medical Association to be empowered to deal with the problem in the name of the profession or are we to work each for his own hand?

If this means that the general practitioners of this country are to submit themselves blindly to the leadership of the present Representatives of the British Medical Association, who are—many, if not most of them—misrepresentatives of the members of the Association, I say No! most emphatically No!

In this suggested invalidity insurance it is general practitioners alone who are affected; a study of how they are represented will be instructive.

In my own Division we have three Representatives, who were elected *en bloc*, and at a Branch meeting of seven persons we were told the "Division" had nominated them, and it was passed with little remonstrance, but nobody objecting, as one of them was present. Of these three Representatives two certainly are not in favour of advocating a scheme of "payment for work done." My own particular Division is almost solid in its preference for that scheme, and under the circumstances it is obvious that we shall be "given away" if we leave our interests to our Representatives.

I will go further and ask, How can general practitioners be properly represented when from the very nature of their vocation they are prevented from going on to representative bodies? (I of course mean bona-fide practitioners who are dependent upon their practices for their livelihood.)

As it is, bona fide general practitioners are not on the representation (so-called), and their interests are left to men who are consultants, whole-time officials, retired men, service men, men with private means, professors, etc., in fact, to a class of men who know little of the requirements of general practitioners, and who are not in touch or sympathy with them.

As a remedy I would suggest that the British Medical Association formulate a scheme of "payment for work done," and let every general practitioner have a copy to compare with the "club scheme" already issued, then let it be discussed in the Journal and at the Division and Branch meetings for five or six weeks, during which time no editorial or official pronouncement be made, and *then* let the general practitioners vote for what they mean to have, and I think they will get it.

I must apologize for trespassing on your space so much, and will conclude by expressing my hearty appreciation of the straightforward and definite pronouncement of the Gateshead Division—I am, etc.,

Northwich, Nov. 6th. Henry Edward Gough.

Sir,—The letter appearing in your issue of November 5th, signed by the Chairman and the Secretary of the Gateshead Division on behalf of their Executive Committee, must have been read with feelings of pain by any members who look upon the Association as the best agency we have for redressing the grave evils of contract practice throughout the country. The threat of secession if the Association dares to disregard their views is hardly what one would have expected of any body of medical men. It reminds me of an incident that occurred on our local horticultural committee. One of the members, a gardener, having failed to carry a small point with regard to one out of the 120 classes, retorted by saying, "Then I shall not show at all, and I shall have nothing to do with the society in future." Such childish petulance may be forgiven in a gardener after a heated argument, but we surely look for something better as the result of the deliberations of a body of able and educated medical men forming one of our Divisions.

On the other hand, we have men who say they will have nothing to do with any scheme that suggests a freedom of choice of doctor. These men wish to stick to their clubs, bad as they are.

Others, again, demand that they shall be allowed to hold on to their part-time Poor Law appointments, although the conditions of service and remuneration are admittedly degrading.

With such divergency of views amongst members, how can we expect any betterment, unless we agree to some form of compromise which will bring about the greatest good to the greatest number of the profession?

Dr. Buist is clearly right when he suggests that at the present time the most important question for each of us individually is:

> Am I prepared to stand by the majority of the profession even if its proposals should not be the same as mine?

Gateshead apparently would answer this question in the negative. If others follow their lead, what chance have we of any betterment in the conditions of the poorer class practice—a class of practice on which the majority of the members of the profession depend for their livelihood? The old saying about "the house divided against itself" is as true as ever. The old fable of "The Bundle of Sticks" is still pertinent. If we cannot agree to act together *loyally* and to sink our own minor preferences when they have been overruled by the majority, after consideration in the constitutional manner agreed upon by ourselves, then the Association may as well close its doors. Its powers as an agency for the betterment of the conditions of practice are at an end. I know no other body that can help us. The scandalous conditions of contract practice not only will not improve but will certainly become even worse.

For the present state of affairs we have only got ourselves to thank. The wage-earning classes have combined, and by acting loyally to each other have obtained all possible advantages for themselves—at our expense. We on the other hand have been apathetic, we have shown little combination, we have not stood loyally by one another, either in public or private, in the face of the common danger. We have not looked after our own rights, and certainly we could not expect others to look after them for us. The result is that we have had to submit to the dictation of friendly societies, and have had to accept a degrading scale of remuneration. State departments are apt to look upon terms of payment which have

been accepted by medical men under the stress of disunion, competition, or poverty as a satisfactory rate of professional remuneration. Now, rightly or wrongly, we are led to believe that the State is about to take steps to enormously increase the scope of provident or contract practice. It behoves us to bestir ourselves, lest, under worse conditions in the future, many of our professional brethren may be absolutely ruined by this intervention of the State.

We seem to be agreed that the present state of so-called contract practice is a disgrace, and that its present condition is due to the factors I have already enumerated—namely, that by our own apathy we have allowed the dictation of terms to pass entirely into the hands of lay bodies. The Representative Meeting has therefore instructed the Council to prepare some scheme which would meet any requirements likely to be made by the State, and which would at the same time be satisfactory to the medical profession. Such a scheme is, I believe, shortly to be sent down to the Divisions for discussion. With this scheme there will, I believe, be alternative methods of arranging for payment of the medical men; and it is on this point that there is likely to be the greatest divergence of opinion. Now in general practice there are three methods in which our work is remunerated:

1. *Payment for Time.*—This is seen in most whole-time medical appointments. It is also met with in such part-time appointments as require a definite attendance for so many hours a week or a month for a fixed salary. It also enters slightly into such recognized scales of medical charges as that published in *Whitaker's Almanack.*

2. *Payment for Piecework.*—This means a definite fee for each visit, and is the general rule in most private practice other than appointments. It is also the method adopted in such provident institutions as the National Deposit Friendly Society. It is the system so largely advocated in your columns as "payment for work done." But as all these three systems are methods of payment for work done I fail to see why this term should be applied to one system to the detriment of the other two.

3. *Payment by Contract for the Job as a Whole.*—This is the system in force in most of the friendly societies and medical clubs, and also in many of the part-time Poor Law and other State services. Now, any of these three systems may be satisfactory to the medical man, provided always that the rate of remuneration is adequate for the work required; and also that the work is not hedged in with such conditions as would make it irksome or intolerable for the medical man.

But these two provisos will almost certainly be absent if we allow the conditions of work to be arranged for us by lay bodies, whose object would be to get the work done somehow at the least possible cost. It is just because this has been done in the past that the ordinary run of "club" work now being done in the country has come to stink in the nostrils of the profession.

As to the relative merits of the three systems as methods of payment in a scheme to meet the foreshadowed State proposal, it is easy to discard the first. "Payment for time" might suit the State, but it would certainly be ruin to many practitioners in the country.

Between the other two the choice is not so simple as some of your correspondents seem to think. I myself would consider "payment for piecework," on the lines of the National Deposit Friendly Society, as greatly preferable to the present ordinary methods of contract practice, *if adequate security that the funds would never run short* could be obtained. But so far I have not seen any satisfactory suggestion as to a working method by which such a security could be assured. On the other hand, I know of no suggestion by any committee of the Association that the present system of club work, with its inadequate capitation fees and its intolerable control by lay bodies, should be supported by the Association. An improved system of "contract for the job" practice, with adequate fees and medical control, would have many supporters on the ground of the steady and reliable income produced. Such questions as to which system would give greater freedom of choice of doctor or which would more easily prevent abuse by the patient or by the doctor are, to my mind, minor considerations, and certainly are not worth the imperilling the unity of the Association.

Another system, which has been sometimes described as payment for work done, is merely a method of dividing the capitation fees amongst the doctors in proportion to the visits made by each. I have worked for a provident dispensary in which this was tried but given up in favour of the simpler system of giving to each doctor the capitation fees of all his own patients The result of the change made practically no difference in the receipts of the individual doctors, and was certainly a great saving of trouble. This system must not be in any way confounded with the "payment for piecework" where a definite fee is to be paid for each visit, consultation, etc.

When the report of the committee of the Council on a National Medical Service is sent round to the Divisions, I would urge every member to consider the various proposals carefully and dispassionately; not to be carried away by meaningless party phrases applied to one or other suggestion; not to be influenced by threats of secession; to carefully think out what would be the conditions, under one or other system, in his own practice and in that of his medical brethren; also carefully to think out whether the system he favours would be likely to be accepted by the Government: and then to vote in his Division for the system that he honestly thinks would be for the benefit of the profession in general.

Lastly, I would most pressingly urge the members of the Gateshead Division, or any other members of the Association, even if their own views are not adopted by the majority, loyally to stand by the vote of the majority as if it were their own, so that we may present a firm and united front to the State or any other bodies with whom we may have to deal.

In this way, even if the suggested State proposals do not come to anything, we may have some chance of improving the position of medical men practising amongst the wage-earning classes.—I am, etc.,

Harrow, Nov. 5th. ALFRED H. WILLIAMS.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—I cannot help feeling that there is quite an unnecessary tendency at present for the Association to divide into two hostile camps on the question of the payment of fees under State sickness insurance, and threats like those of the Gateshead Division cannot but have a most damaging influence. Threats never convince, though they have often the unfortunate effect of embittering a controversy, which I am quite sure the Gateshead Division would regret. I want, then, with your permission, to make a suggestion with a view to getting something like union in the Association in its attitude towards the Government on this question of medical fees.

I start with the assumption that medical attendance will be provided by State insurance for the working classes, but it makes very little difference to the action of the Association whether it is or is not. The State is bound before long to take up the question of medical attendance for the poorer classes, as it can hardly resist the unanimous opinion of the Poor Law Commission that the matter is urgent, and if it is not dealt with under the insurance scheme, it may be on the lines of the Minority Report for a unified medical service under the health authorities. I sincerely hope with Dr Keay that medical attendance will be provided by the insurance, on the ground that it tends more to foster that spirit of self-providence which is so beneficial. But in either case the British Medical Association must be ready, and it makes absolutely no difference to our schemes which method the Government proposes.

The present position of general practitioners is simply intolerable. In the poorer districts bad debts are often over 50 per cent., in spite of low fees, and in those districts there cannot be the least surprise that so many practitioners are ready to take clubs at almost any price rather than work for nothing. At the same time, every one condemns the clubs from the point of view both of the profession and the welfare of the public. It is in this universal detestation of the present club system that I see some hope of unanimity in the Association. I am quite sure that Dr Buist will agree in this, and his letter in the JOURNAL of November 5th demands most careful attention, as it shows what, strange to say, so many have failed to see—the difference between friendly society club practice and any provident medical service under the control of the British Medical Association. It may, then, fairly be assumed that the Association will oppose to the utmost

any attempt of the State to hand over medical attendance under sickness insurance to the friendly societies. Even though a State subsidy might enable the societies to increase their medical fees, the fundamental point to which Dr. Buist refers—lay control by bodies interested in exploiting the profession—ought to, and I believe will, unite the whole profession against any State-aided extension of friendly society medical clubs. No one has greater admiration than I have for the splendid work done by the friendly societies in fostering self-providence, nor should I in the least object to a State subsidy to the societies, provided that, like the "Hearts of Oak," they give up their medical club departments. It would be better for the societies themselves in several ways.

A third assumption is that the insured themselves will demand a free choice of doctor. They have done so in Germany, and, in spite of the opposition of employers, are gradually getting it, supported by the whole medical profession, and there seems to me no reason for doubt that the general practitioners in England will in the same way be united in favour of free choice of doctor. If that is so, it necessarily involves determined opposition to selected whole-time or part-time medical officers at fixed salaries for attending indefinite numbers of the insured—a system that would destroy the practice of most general practitioners.

It appears to be quite necessary to remind certain Divisions of the present position, to prevent them forming premature opinions, as I believe the Gateshead Division has done. First of all, it is certainly the fact that many of the supporters of a provident medical service on contract lines under the control of the British Medical Association are not so bigoted in their views nor so wedded to contract practice as in some quarters they are supposed to be. The report of the Special Poor Law Committee was definitely called only an "interim report." It was quite understood to be incomplete. It only dealt with those aspects of the question on which the Annual Representative Meeting was in a position to give some guidance. But in addition to what came before the Representative Meeting, there are several other important points which the Divisions have still to consider, notably the question whether the Association shall approach the Government with a request for payment per attendance. I have no doubt whatever that the question will be placed before the Divisions in a perfectly unbiassed form, and personally I strongly resent the suspicions that have been expressed that there is an attempt to foist on the Association a capitation scheme. At any rate, I have seen no signs of such an attempt. As a contract scheme, the draft scheme of the Special Poor Law Committee seems to me to be the best that can be framed. It gets rid of what is infinitely the worst feature of club practice—lay control of medical officers elected as slaves of the persons that elect them—and it is a most unfair verbal quibble to prejudice the scheme by calling it "club practice." The difference is fundamental, and the one fact that it removes lay control puts the scheme in a totally different category from club practice.

Nevertheless, with that protest, I am bound to say that I see some great advantages in payment per attendance. I only doubt whether it is possible to overcome the practical business administrative objections that are sure to be raised by a hard-headed Chancellor of the Exchequer. But why should we not try? As far as I can read the minds of members, very few of the supporters of the scheme considered by the Representative Meeting would oppose on principle payment by fee per attendance. They simply doubt whether the State can be expected to have such confidence in medical men as to trust them not to make unnecessary attendances, and while they rather dislike the "confidence trick," they recognize that the State Insurance Department will be a public trust which will be legally bound to take reasonable precautions against abuse through over-attendance. It seems to me to be quite unbusinesslike even to suggest the "private deposit" system of the National Deposit Friendly Society. The very cost of keeping two separate accounts for every one of the 15,000,000 persons to be insured would run away with much of the money that might go for medical attendance, to say nothing of the difficulties that would arise when a private deposit was exhausted. But there are several other safeguards against over-attendance that might be suggested, and after all it might not be impossible to persuade the Government that there would be some advantages to the public as well as to the profession if doctors were paid per attendance, with some reasonable supervision by independent whole-time medical inspectors, and I see no reason why we should not make the attempt. We should, of course, need to have a reasonable scheme, and I do not think I am breaking confidence when I say that the Special Poor Law Committee is considering such a scheme. We should need, too, to have unanimity in the profession. Here we must face hard facts. Suppose for a moment that the Association decided even by an overwhelming majority to ask for payment per attendance, and the Government refused and decided to appoint special whole-time salaried medical officers, what would happen? Can any one say that he does not believe that there would be numerous applicants for every post, in spite of any previous decisions in favour of free choice of doctor by the insured? I have as much confidence as most men in my fellow practitioners, but I believe we should then be almost helpless, unless we had another scheme which we could put into operation ourselves like the Provident Medical Service under the auspices of the British Medical Association. That could always be kept in reserve, and we could work it in spite of what are generally called "blacklegs." Moreover, any Government would pause before it decided on the appointment of special salaried medical officers, if it knew that we had a reserve scheme which did not depend on absolute unanimity in the profession, but which would include the best part of the profession.

What I suggest, then, amounts to this, that the Association should express its decided preference for payment per attendance and should urge this on the Government as most likely to give the most efficient medical service, satisfactory both to the public and the profession. If this were granted, well and good; but if this cannot be obtained, rather than accept a system of special appointments at fixed salaries or drift into the hands of the friendly societies, we should accept payment *per head* from the insurance department under the Provident Medical Service scheme drafted by the Special Poor Law Committee. Under that scheme it must be specially remembered that though the Government might pay *per head*, the local medical committees have complete local option as to whether the final distribution of the funds shall be *per head* or *per attendance*. If that were done, the experience thus gained as to the working of the system of payment per attendance would be extremely helpful if in the future we decided again to approach the insurance department for payment per attendance by the department. If this were granted at any time, certain clauses of the scheme laid before the Representative Meeting could easily be altered, leaving the Association with a medical service of its own, fully organized, which would place the profession in the strongest position to meet any contingencies.—I am, etc.,

Salford, Nov. 5th. J. H. Taylor.

Sir,—Dr. Keay compliments me for stating in "*plain words*" my objections to State insurance. This is, I fear, flattery—or is it veiled sarcasm?—for he evidently misunderstands, and asks various questions, to which my last letter should have afforded a sufficient answer, where, in my opinion, they are not irrelevant. In the first place, my objections were not to a State insurance, but to any *special* medical scheme being linked on to it. The object of the State in proposing an invalidity insurance is to insure the beneficiaries against *all* the demands entailed on them by "invalidity," of which medical attendance, though an important item, is by no means the only one. His first question is whether I personally am satisfied with the present system of medical practice in the country. I must leave it to your readers to say whether this is relevant to the matter at issue, but I have no objection to answering—not vaguely—in the negative. I do not see that this helps him very much in his arguments. I am fairly well acquainted with the past history of our profession for many generations, and am quite satisfied that there never was a time when every medical practitioner, or even the majority, were satisfied with the medical attendance then in vogue. I will even go further, and express an opinion that it is most unlikely there ever

will come a time when the satisfaction Dr. Keay seems to contemplate will have any existence, except in the minds of certain medical reformers who publish impossible resolutions, and are surprised that their brethren are not ready to swallow them immediately.

Dr. Keay asks what I mean by saying that "State insurance would deprive patients of the choice of a doctor." I did not say "State insurance," but, as I previously pointed out, any *special* scheme of medical attendance drafted into it would. State insurance of a legitimate kind would have the reverse effect. For if the beneficiaries could look for a larger income during "invalidity," they would have more wherewith to pay their own doctors' charges. It seems to me obvious that if poor people had to contribute for a special medical scheme they might be forced to give up their own private doctor or club, and make use of the doctor whom the scheme provided. In all probability they would have no choice at all in regard to that doctor, and even under the present debased club system it is admitted that a majority of the club do, as a matter of fact, choose their own doctor.

If I am blamed for introducing "probabilities" into argument, I may reply that my view as to what the Government will do is at least as reasonable as that which suggests the formation by the Government of a fund on the National Deposit Society's system to meet the bills of medical practitioners, set out according to Dr. Fothergill's formula of "payment for work done."

I am surprised that Dr. Keay does not see the—shall I say possibility?—of all works' doctors being seriously jeopardized by any scheme of the kind I have objected to. If deductions are to be made from the workmen's wages for a Government medical scheme, they will reasonably object to pay contributions for the works' doctor. Of course, the Government may employ the works' doctor in the same capacity, and pay him better; but it may not. If it did, it is difficult to see how the minority who object to the works' doctor will get any choice of doctors by the change.

With regard to analogies from German medical practice I express no opinion. I only have before me the information that has been provided by the Association and that contained in the *Encyclopaedia Britannica*, and these, to my mind, do not help very much. Even if reliable as to the conditions of medical practice in Germany, they might be altogether misleading when taking into consideration those existing in this country.

Dr. Keay speaks of the "glaring inconsistency of my position." Well, I can only leave that to your readers. His example is interesting. He says I have no objection to the working classes being compelled to provide for maintenance, but they must not be compelled to provide for medical attendance. If my words gave him that impression they must have been far from "plain." If the beneficiaries under an invalidity insurance scheme receive a weekly payment, why is it to be assumed that this money is only for maintenance? Why should not some of it be meant for medical attendance? My objection is to "earmarking" any portion of it for this purpose only. It should be left to the beneficiaries, who in this way will retain perfect freedom of choice of doctor.

I am aware that it has been urged that the working classes do not understand the importance of proper medical attendance, and might waste, or spend too small a portion of their insurance money on an inferior article. This may be a good argument for some purposes, but not for proving that in any other way they will get a *freer* choice of doctors. If they are to choose freely, they must be allowed to select good, bad, or indifferent doctors, and not be forced to have only the good ones.

Dr. Keay *entirely* agrees with my views as to the relations of the Poor Law Medical Service in this connexion. I hope this is without reservations, and that he does not misunderstand them.

Dr. Cooper seems to have grasped my meaning better. All my arguments are against a "State scheme run on contract practice lines," or *by means of salaried medical officers*. But as I do not believe in the practicability of any other scheme, I think it consistently explains my opposition to any scheme of State medical attendance.

I must apologize for the length of this letter, but it may save space in your columns if it prevents me from being called upon to explain the consistency of my position.—I am, etc.,

London, N.E. Nov. MAJOR GREENWOOD.

SIR,—Some days ago, in the daily press, an interview was reported between Mr. Lloyd George and representatives of the Manchester Unity. From this interview it would appear that the Chancellor has already a scheme of sickness insurance prepared, and that it has been submitted to the representatives of certain friendly societies and of the medical profession. Is the scheme that was printed and issued by the BRITISH MEDICAL JOURNAL a scheme modelled on Mr. Lloyd George's? If so, it were time prompt action were taken. A postal referendum to all members of the medical profession, having a set of questions similar to those proposed by Dr. Fothergill, would give a true idea of the opinions of medical men in this country. Such postal referendum should be carried out, and a chance given to general practitioners to express an opinion on this vital question—for to attend meetings is an impossibility with many. None of us wish to form a new association to protect ourselves, but weak action now on the part of the British Medical Association would compel us to do so in self-defence.

Let us, then, have prompt and vigorous action taken, and the entire profession—members and non-members—roused to the importance of the crisis; for many do not know, and we may yet save ourselves before it is too late.—I am, etc,

Long Eaton, Nov. 7th. ERNEST MILLIGAN.

THE CORONERSHIP FOR CENTRAL LONDON.

SIR,—The report on page 1458 of your last issue, after naming the three candidates who survived to go before the Council for final selection, proceeds to state that "the Public Control Committee recommended Mr. Oddie for the appointment *as he had both a medical and legal qualification*."

This clearly suggests that the committee might have failed to appreciate that I was also qualified in both professions.

I take it that, as a matter of fact, my friend Mr. Oddie was preferred to me for other reasons, no doubt excellent, but obviously not for that which your report advances—not that it matters, because Mr. Schröder was eventually preferred to either of us.

It would seem to be small encouragement to medical men to qualify for the Bar when a candidate who has not taken the trouble to qualify at all is the successful applicant. It must, however, be remembered that Mr. Schröder is a man of exceptional experience wedded to great ability, and I take this opportunity of congratulating him on his success, and the public on retaining the services of a servant so competent.—I am, etc.,

London, W.C., Nov. 7th. C. GRAHAM GRANT.

*** The following are the words used by the committee: "We have formed the opinion that Mr. S. Ingleby Oddie is the candidate best qualified for the appointment. Mr. Oddie has had considerable experience both as a barrister and as a medical practitioner."

CORONERS' LAW AND DEATH CERTIFICATION BILL.

SIR,—A few days ago I wrote to the M.P. for my district drawing his attention to the injustice which the passage of the Coroners' Law and Death Certification Bill would place upon the medical profession by forcing them under penalty to visit the corpse of every patient who died, within twenty-four hours, and sign the death certificate without fee or reward, not even carriage hire being provided. I pointed out that it might involve a journey of ten or twelve miles or more, to the exclusion of all other work, however pressing, perhaps in bad weather and over bad roads.

I also pointed out that there is only one class of the community (besides doctors) that is compelled to work for the State under penalty, without remuneration, namely, convicts, and I hoped that he objected to the medical profession being placed in this classification and would vote against the bill unless a just and reasonable remuneration was provided for professional work done for the good of the State.

I received a courteous and thoroughly sympathetic reply; perhaps if even a few medical men in each constituency would do likewise it might have a good effect.

For obvious reasons at present I withhold the name of the M.P., and therefore my own.—I am, etc,

November 11th. "UNUS."

"COMPURGATION."

Sir,—Any advice from you always receives from me the most serious consideration. You advise me to read up again the subject of compurgation, and I have done so, with the result that my account of it scarcely needs modification. It is difficult to know exactly what took place in courts of justice such a long time ago, when shorthand writers were not; but it seems that, as far as is known, my account is accurate. There are, indeed, those who think that the compurgators did not directly testify to the accuracy of the statements made by their principal, but merely swore that he was a worthy person, whose statements were entitled to credit, and that if he said a thing was so, it probably was so. I trust I shall not be accused of "Berserk ardour" if I say that it was the kind of evidence that I should willingly have given in favour of you, Sir, before the publication of your leaderette on compurgation.

The obscurity that you find in the first sentence of my previous letter would scarcely be discovered without a combination of ingenuity and industry such as must be rare outside of your office.

I now gather that the reason you advocate the return to a modified system of compurgation, is in order to save me from an hypothetical discomfiture, in an hypothetical Homeric combat, with an hypothetical adversary, identified only as known to an hypothetical public, that reads the "Yellow Press," a publication with which I am not familiar, but which I am inclined to regard as also hypothetical.

There was an inhabitant of the ancient village of Gotham in Nottinghamshire, who burnt down his granaries for fear they might be struck by lightning. His example has not been generally followed, but there is much to be said in favour of taking ample precaution against contingent calamities; and as the alteration that you advocate in the law, seems to be for my special protection, it would be churlish indeed in me to oppose it. Nor have I offered any opposition to it. In the letter that you criticize with such acuteness and severity, I gave the proposal my unqualified blessing.—I am, etc.,

London, W., Nov. 8th. Charles Mercier.

INSURANCE ON THE CHEAP.

Sir,—I have been requested to forward you the following resolution, which it is hoped you will insert in your Journal. It was unanimously passed at the last meeting of the members:

> That the members of the Leicester Medical Union strongly disapprove of the new scale of fees proposed by the Pearl Life Assurance.

—I am, etc.,

Douglas Bryan,
Honorary Secretary, Leicester Medical Union.

Leicester, Nov. 7th.

*** The question of the fees offered by the Pearl Insurance Company was dealt with in the issues of the British Medical Journal of September 17th, p. 801, and October 1st, p. 992.

DRAUGHTS.

Sir,—Strenuous efforts are now being made to induce people to improve the ventilation of their dwellings by opening doors and windows, which must often produce draughts, but so far as I am aware no reference is made to permanent ventilating openings in living rooms, so placed as to avoid draughts and inconvenience. Many years ago the health of the British soldier was so unsatisfactory that in 1863 the Barrack Improvement Commission was instituted to report on the soldiers' sanitary surroundings. Among other improvements as a result of the report, a scheme of permanent ventilating openings was framed by the War Office for barrack rooms, and the openings were so placed and arranged as to obviate draughts and other inconveniences and to render the ventilation of the rooms independent of windows and doors. The dimensions of the openings depended on the cubic contents of the rooms and the number of occupants in each, and they were, so far as possible, introduced into all old barracks, and, as a matter of course, into all new buildings. It is the opinion of those in a position to judge that this important system of ventilation has had much to do in the greatly improved health of the army.

With very few exceptions permanent ventilating openings do not find a place in the living rooms of the general population; and this applies to the mansion of the peer as well as to the cottage of the farm labourer, although permanent ventilating openings are in operation in all modern hospitals at least.

My proposal, therefore, is that the present energetic and able President of the Local Government Board should consider this question—decide on a suitable and inexpensive system of permanent ventilation for dwellings—submit the question to local authorities who must approve plans for all houses intended for human habitation; and I believe that in time the spirit of the system would operate extensively throughout the country.

There is another small matter about which a hint might be taken from army sanitation. All modern buildings to house soldiers have the surface of the ground under the boarded floors of the basement rooms covered with a thin layer of concrete and rubble. This does not, as a rule, form part of civil building regulations; yet many sanitarians think that as it tends to keep down dampness, it has an important bearing in preventing the predisposition to tubercle. It is not expensive.—I am, etc.,

November 1st. Surgeon-General.

THE CAUSES AND TREATMENT OF DYSMENORRHOEA.

Sir,—Having read the paper of Dr. Herman on the above subject in the Journal of October 22nd, I trust you will find space for a few comments. I think the profession are fairly well agreed that the *cause* of dysmenorrhoea has not been determined; indeed, Dr. Herman says himself:

> I know nothing about the cause or causes of dysmenorrhoea.

And what we have to determine now (not knowing the exact cause) is what means of relief we can afford the patient. Dr. Herman says:

> The cure of dysmenorrhoea is by dilatation of the cervix;

and quotes the experience of Dr. Mackintosh, who cured (?) 24 patients out of 27. *If dilatation is the best cure, why not keep up the effect of the dilatation long enough to permanently cure the patient?* This can be effected by the use of my wire spiral stems, open from end to end, flexible, and self-retaining, and which not only keep the cervical canal patulous, but also, by acting as a drainage tube, allows any membrane to escape. I have known several who have shown me such after a period was over, but while wearing the spiral wire stem had *no pain and no membrane!* showing the value of dilatation and drainage. Dr. Herman describes a case:

> Married at 25; when 26 cervical canal dilated; after this she menstruated three times without pain! when the pain returned.

Why? I venture to say, from my small experience, had a spiral wire stem been introduced directly after dilatation in this instance, the pain should not have returned three months after, *nor for so long as stem was worn.* Is a patient such as the one described to go on taking guaiacum till the menopause? Dr. Herman thinks a stem a "very dangerous way of dilating the cervix," but his objection is not at all convincing. I know several gynaecologists who will bear me out in saying they have met with no fatal cases from the wearing of the stem, and some of my own patients have ridden on bicycles without any consciousness of its presence. Dr. Heywood Smith described an interesting case in the *Medical Press and Circular*, October 28th, 1908, in which he has removed the left ovary for severe dysmenorrhoea. He says:

> The patient has now worn Duke's spiral wire stem with the greatest relief for five and a half years at intervals.

What about the "impossibility of keeping the stem aseptic while its lower end remains in the vagina?" (The lower end of the cervix is in the vagina.) The late Dr. More Madden of Dublin constantly used my spiral wire stems after dilatation (and has borne testimony to their freedom from risk, and value, both in the *Lancet* and the *Medical Press*) *more than ten years ago.* My treatment for dysmenorrhoea is *dilate and keep canal patulous*, the drainage being a most important factor, giving freer exit to membrane. "When it appears in large pieces, or becomes rolled into a ball," as described by Mrs. Scharlieb, ordinary cleanliness by douche or syringe, during the periods while the stem is worn will keep it from becoming plugged, and as the

patient wearing it can go about her ordinary vocation, and not be confined to bed, the mental effect will also contribute to the cure, which in neurotic females is a consideration. To compare a "flexible spiral wire self-retaining stem" with a rigid implement which the patient could not go about with is not fair, nor should stems be condemned *in toto*. It was in the Seventies I had seen and myself divided a good many cervices for dysmenorrhœa, but finding the os quite as contracted a month afterwards, led me to design my flexible wire stem, and as Dr. Herman says, "Dilatation did cure her" (case quoted), which applies to several, I am sure, treated in this way. Dr. Herman's statement, "that stem pessaries were by others happily little used," should have been at least qualified by stating *which form of uterine stem he alludes to*.—I am, etc.,

London, W., Oct. 21st. ALEXANDER DUKE.

STRANGULATED OMENTAL HERNIA WITH FEW SYMPTOMS.

SIR,—Other surgeons will agree with me in complimenting Mr. Cressy on his prompt action and deserved success in his operation on the case of omental hernia described by him in the JOURNAL of November 5th, 1910. The hernial tumour and the local discomfort were everything and evoked his practical appreciation, which steered him straight.

The absence of symptoms at all suggestive of strangulated or obstructed intestine is very noteworthy, and recalls a prolonged discussion, which I will not here repeat, but in which I took part years ago. I now give only the references, in case Mr. Cressy or others care to look them up, all dealing with the question of omental strangulation, in the *Lancet*, as follows:

1876, August 12th, p. 219, paper by me.
1883, July 21st, p. 107, review of a pamphlet of mine.
1883, July 28th, p. 164, my comment on the review.
1883, August 4th, p. 211, letter by Mr. Timothy Holmes.
1884, May 17th, p. 881, my reply to Mr. Holmes.
1885, April 11th, p. 630, letters from Mr. Holmes and myself.
1885, April 25th, p. 772, letter from Mr. F. Treves.
1885, May 16th, p. 902, my final reply.

The conclusion I maintained and still adhere to is that "there can be no such thing as symptoms of intestinal obstruction brought about solely by constriction of omentum."

The symptoms of strangulated hernia are, of course, those of intestinal obstruction; and, while it is well known that strangulated omental hernia may more or less resemble strangulated intestine, it does not seem to be sufficiently seen that when symptoms exist at all they are due to incidental intestinal derangement, and not to the mere omental constriction.

All this is fully considered in the discussion alluded to, and to which I must refer any one who wishes to pursue it further. But I may take this opportunity of quoting a private letter from Sir James Paget, whose opinion on the whole question I asked at the time:

March 12th, 1886.

Dear Mr. Parker,—

I am obliged to you for again sending me some of your papers. I think you make it clear enough that the symptoms which have been ascribed to "strangulated omental hernia" are not due to the mere constriction of a piece of omentum or to any reflection from nerve centres thus impressed. But before deciding to which of many probable conditions the symptoms may in each case be ascribed, I think it will be necessary to collect many cases observed and recorded without the supposition that the constriction was enough to explain all that happened.

Very truly yours,

JAMES PAGET.

What strikes me as very remarkable in Mr. Cressy's description is the "black" colour he found in the altered omentum. Was it actually black and necrosed, or a dark series of composite tints? In the *Lancet* for November 26th, 1898, I reported a case of umbilical hernia with putrid abscess and gangrene of omentum, apparently starting from a slough of the skin, infecting the sac and contents. But the gangrenous omentum was grey, not black, and the symptoms were those of acute putrid abscess and associated fever, without reference to intestine, which was not present or concerned. In Mr. Cressy's case I do not understand the existence of black gangrene of omentum inside the peritoneum at all, unless by some chance a gangrenous microbe had reached it from the intestine. The single vomit might by some be conceivably attributed to that; but how slight an effect from a condition one would expect to set up a serious toxæmia! The short attack of "gripes" might have resulted from a drag on the colon, causing this temporary discomfort. But even these two symptoms did not alter the pulse, temperature, or intestinal functions.

I have seen in constricted omentum an assortment of colours, purple, crimson, yellow, green, with induration evidently due to simple inflammation; the colours being similar to those of bruises in the skin, but more brilliant. Is it possible that something of the kind of an intensely congestive nature was there? I hesitate to question Mr. Cressy's anatomical description, given on the spot, but I known how fallacious some of these changes are apt to appear; and they are very seldom seen by any one.

In any case he need not be surprised at strangulated omentum existing without symptoms of strangulated bowel.—I am, etc.,

Liverpool, Nov. 6th. RUSHTON PARKER.

ALCOHOL AND OXYGEN.

SIR,—In reference to the very interesting communication of Professor Collingwood and Dr. Willcox, may I state that I am contriving a little apparatus by means of which the alcohol can be given in varying dosage? A metal cylinder contains an incandescent lamp; over this is placed a jet containing water and a percentage of alcohol, which can be varied. The oxygen is led through this box, is warmed, and takes up water vapour and alcohol. A small metre indicates the required current of oxygen, and my little oxygen mask is used to give the oxygen and alcohol. Messrs. Down are making this apparatus.—I am, etc.,

London, E., Nov. 7th. LEONARD HILL.

THE HEARING AFTER "OTECTOMY."

SIR,—Though indisposed to join in the discussion going on in your columns on this subject, the incorrect quotation by Mr. Faulder White of remarks of mine in the *Lancet* in 1906 seems to call for some correction.

In the JOURNAL for November 5th he says:

Mr. C. Heath wrote in the *Lancet* (August, 1906) to the effect that otologists were agreed that the only cure for suppurative otitis was a radical mastoid operation.

I will just quote one sentence from the article he refers to:

Far be it from me to suggest that the radical operation will no longer be needed; it will still be of use for those whose hearing has been entirely destroyed, or whose disease has not been found amenable to the treatment herein described, which by avoiding the removal of any part essential to hearing permits such prospects of retention of the hearing power as the radical operation, associated as it is with its removal of drum and ossicles, cannot possibly afford.

This sentence surely goes to show that the radical operation damages the hearing by removing the drum and ossicles, and as the proceeding which Mr. Faulder White is advocating also removes them, it is open to a similar objection—that it inevitably leaves a deaf person.

The object of my article was chiefly to point out that if another and less destructive method of treatment were carried out at the proper time, there would be no need for such operations as always leave deafness.

It appears to me that discussions such as these are more effectively carried on in the Section of the Royal Society of Medicine which is devoted to this work, and it would be well if Mr. Faulder White acceded to the suggestion of Mr. Macleod Yearsley and Dr. William Hill to that effect, in order that this perennial dispute may there be settled as far as our present knowledge will permit.—I am, etc.,

London, W., Nov. 8th. CHARLES J. HEATH.

COMPLEMENT DEVIATION IN DIAGNOSIS.

SIR,—In your leading article on this subject in the JOURNAL of November 5th you point out advisedly that "there is a regrettable tendency at the present day to throw more and more responsibility on laboratory aids to diagnosis, at the expense of clinical methods." A case

which I have recently had under observation bears out this fact, and, if it does not throw doubt upon the value of the Wassermann reaction as an aid to diagnosis, at any rate shows the danger of attaching too much importance to laboratory reports. The case in question was originally diagnosed as malignant disease of the throat. There was no history nor sign of syphilis, but, according to the laboratory report, the blood gave a positive Wassermann reaction. This report, combined with improvement under treatment by iodides and mercurial inunction, led to the supposition that the case might possibly be syphilitic. However, the improvement was only of short duration, and the patient died a few months later from sloughing carcinoma. In this case, therefore, the laboratory report simply had the effect of putting one on a false scent, and causing one to doubt the clinical evidence—a most unfortunate effect, when we consider the difference in prognosis between syphilis and cancer.—I am, etc.,

London, N.W., Nov. 5th. C. F. Marshall.

SHIP SURGEONS.

Sir,—From Dr. Rentoul's medico-political experience I expected a more sympathetic criticism in the Journal of October 15th of Dr. J. F. Elliott's endeavour to raise the status of ship surgeons.

While belittling Dr. Elliott's efforts, he incidentally slights his own profession by repudiating its dignity, and classifying the calling of medicine with the occupations of "rat catcher" and "sewer cleaner." Intemperate utterances of this description bring their own condemnation, and of course Dr. Rentoul merely speaks for himself.

As the Journal is frequently read by the laity, I should like, through its columns, to maintain that, as a class, the medical profession has as much right to dignity, corporate and personal, if not more so, than any of the other learned professions. The dignity of medicine is not a mere shibboleth—it is a tangible asset, valuable the more practitioners live up to it. In short, the more dignified the doctor is in bearing and conduct, the greater his influence to benefit the community in which he is placed.

It is an interesting coincidence that in the same copy of the British Medical Journal in which Dr. Rentoul's letter appears two references are made to "the dignity of the profession"—one on page 1174 and the other at page 1190. Both of these references bear me out that the profession as a whole is conscious of its right to be regarded as a dignified calling.

To return, however, to the subject of Dr. Elliott's attention. Those of us who have personal knowledge of his ability as a practical reformer know he can be trusted to hit the target if within the range of possibility. The British Medical Journal already bears record of many contributions of value from his pen.

It cannot, however, be gainsaid that Dr. Elliott has taken up a difficult task when he grapples with the problem that the late Surgeon-Major C. H. Leet, of Liverpool, after years of endeavour, failed to solve. Nor is the reason of it far to seek. Practice afloat is regarded as a holiday trip, an inexpensive way of deriving experience of travel with benefits to health. Ship surgeons seldom or never look upon their berths as permanent. Both employer and employed—particularly the employer—regard the professional services rendered as nominal, and the remuneration is fixed at a scale commensurate with easy responsibilities.

It is true occasions do arise when exigencies demand services of a high order. Such exigencies are, however, very rare. The young medical man is out for a pleasant voyage, and after the first few days at sea usually has it. Were it otherwise the companies would have difficulty in filling the medical vacancies as they arise. Experience shows there are plenty of junior men to supply the demand.

In conclusion, I would suggest that if Dr. Elliott and his committee were able to formulate and get the companies concerned to establish a regular Mercantile Marine Medical Service on lines similar to the Medical Department of the navy, serious professional men might be attracted to the career of a ship surgeon by the prospects of continuity of employment and gratuity or pension on retirement. So long, however, as vacancies can be filled by any inexperienced novice who can produce a registration certificate so long must the status of ship surgeons remain as at present.—I am, etc.,

S. Wesley Wilson,
Dublin, Oct. 21st. Ex-Surgeon Dominion Line.

ARMY AND NAVY MALE NURSES' CO-OPERATION.

Sir,—During the last few years an institution known as the Army and Navy Male Nurses' Co-operation has been in existence, located at 47b, Welbeck Street. It was founded by Miss Ethel McCaul, R.R.C., assisted by a representative and influential committee. The present Naval Medical Director-General has all along given us his material support and generous consideration.

The object of this co-operation is to afford to the public thoroughly trained male nurses and sick attendants of assured good character, and to provide employment for members of the sick berth staff of the Royal Navy and retired non-commissioned officers and men of the Nursing Section of the Royal Army Medical Corps.

The merits of the object of this co-operation quickly secured the patronage of Her Majesty Queen Alexandra.

The vice-patrons and patronesses of the co-operation comprise the heads of the navy, the army, and the medical profession, and include the Directors-General of the Medical Department of the Navy and the Army.

The officers of the co-operation are: *President*, Sir Frederick Treves, Bart., G.C.V.O., C.B.; *Chairman*, Sir William H. Allchin, M.D.; *Vice-Chairman*, Dr. Howard Tooth, C.M.G.; *Honorary Treasurer*, Dr. Horton-Smith Hartley, M.V.O.; *Honorary Secretaries*, Miss Ethel McCaul, R.R.C., and Fleet Surgeon A. E. Weightman, R.N.

The Executive Committee is composed of the following ladies and gentlemen: Rowland Bailey, M.V.O., I.S.O., Miss Becher, R.R.C. (Matron-in-Chief), Anthony Bowlby, C.M.G., F.R.C.S., Hon. Florence Colborne, Deputy Inspector-General T. J. Crowley, M.D., R.N., Major Ferguson, D.S.O., R.A.M.C., Dr. Horton-Smith Hartley, M.V.O., Mr. R. Martin Holland, Miss Ethel McCaul, R.R.C., The Countess Roberts, C.I., R.R.C., Dr. J. S. Risien Russell, Charles Stonham, C.M.G., F.R.C.S., Colonel Sir Edward Ward, K.C.B., K.C.V.O., Fleet Surgeon A. E. Weightman, R.N., Lieutenant-Colonel E. M. Wilson, C.B., C.M.G., D.S.O., R.A.M.C., Miss Evangelina E. Harte, R.R.C., of Queen Alexandra's Royal Naval Nursing Service.

A considerable amount of success has been secured by those interested in the co-operation, which has now become nearly, if not quite, self-supporting. The nurses of the co-operation have secured most eulogistic testimonials from those who have obtained their services. Their services have been so highly appreciated that many have left the co-operation, having obtained permanent employment through its means—to us a highly desirable result if they continue to act as nurses. It would be a great pity if the services of such men as nurses should be lost to the country.

London is at present the only centre of this co-operation, which we recognize is still in its infancy. It is capable of far wider extension. The success we have so far attained warrants us in the belief that we have only to make ourselves known sufficiently well to the public in general and to the medical profession in particular to be able to supply all the needs of the country for male nurses who, by having served their country in its time of need, have earned the right of full recognition of their great merit, and it is only to be realized by the public that through the navy and army alone they can obtain fully trained male nurses.

As supplementary to the above remarks, I, as a retired naval medical officer, should like to add some others from intimate knowledge. I served on the active list for a little over twenty years and during that time met a larger number of the naval sick berth staff than is usual by men of my standing. I never had to report a sick bay man during the whole time of my service. Peccadilloes there were, but of so little importance that I can hardly remember the most important of them; that they were awarded a severe lingual castigation I have not the slightest doubt, but fortunately oblivion comes to my aid. That the sick bay man is a good, honest, hardworking, and efficiently-trained man I and all others who know him will maintain at all costs; he is indeed an example of what the world

knows as the handy man. The ruthless and relentless process of weeding out insures that a sick bay man who has earned his pension at the end of twenty-one years is thoroughly well worth the salt he has earned to savour his porridge. To enable such a man to continue to practise his particular work is of supreme importance: he may be wanted, and when wanted he will be a saviour in his country's need, and he will be wanted very badly. I ask for employment for the retired men of the sick berth staff, such employment as will keep them fit for service as sick bay men should the "horrid cause" arise. All who wish the country well in these troubled times will assist and wish us well.—I am, etc.,

A. E. Weightman,
Fleet Surgeon, R.N.

ctober 24th.

PUERPERAL FEVER.

Sir,—In discussions on puerperal fever, such as that printed in the Journal of October 22nd, it is always assumed that it is by vaginal examinations that the infection is introduced. Two cases of severe puerperal fever, one of them fatal, have come under my notice, in neither of which was any vaginal examination made; and these have led me to believe that there is another source of infection to which too little attention is paid—namely, the dressing applied to the vulva after parturition. In the fatal case above mentioned these were the ordinary napkins, which in this instance were proved to have been handled by persons with suppurating fingers; the fact that the first rigor did not occur till the sixth day supports the hypothesis of a *post-partum* infection. In the other case the patient herself had been attending to a child's suppurating scalp, and had probably contaminated her own skin or her napkins. Here fever began on the third day, but with her also no vaginal examination had been made.

The prevention of such cases lies in a proper cleaning of the patient's skin before parturition, and in applying dressings afterwards in a manner at least approaching that used after operations; cotton-wool soaked in an antiseptic, such as 1 in 2,000 biniodide of mercury, is a convenient and suitable dressing. I think it is quite possibly the neglect of these two precautions which is responsible for the continued mortality outside lying-in hospitals of something like 1 in every 450 parturient women.—I am, etc,

F. C. Bottomley, M.D.

Bournemouth, Oct. 24th.

ETIOLOGY OF IRITIS.

Sir,—To generalize upon the question of the etiology of iritis does not seem to me to be possible. The cases vary, as with other diseases of the eye, according to the environment, the habits, the diathesis of the patients from whom the ophthalmic surgeon derives his statistics. In hospital practice this is markedly so. Thus the statistics from time to time published in respect to the frequency of the various causes of iritis cannot be accepted as indicating a common or a universal rule; the most that can be said of them is that they represent merely individual experience. The confirmation of this has already been shown in the correspondence which you have published upon this subject, and especially so as far as the alleged frequency of syphilis as a cause of iritis is concerned. Twenty-five years and more ago, according to my observation, it was not only common to see syphilitic iritis of one eye among hospital patients, but it was not uncommon to find the disease present in both eyes. Nowadays, however, again according to my observation, it is comparatively rare to meet with monocular syphilitic iritis, while double syphilitic iritis is practically a pathological curiosity. The cause of this I believe to be due to a modified virulence of the syphilitic virus, to improved methods of treatment of the primary infection, to a diminished frequency in the incidence of the disease. When, therefore, we read that an American surgeon records as much as 75 per cent. of his cases of iritis as due to syphilis, one can only suppose that something must be at fault with the environment of the patients from whom his cases are derived. But while the facts are such as I have stated, according to my observation, in respect to syphilitic iritis, the cases of so-called rheumatic iritis—those in which a history of a previous gonorrhoea can be obtained in men, and in which syphilis as a cause can be absolutely excluded—are undoubtedly common, so common as to form by far the largest series of cases of iritis. It goes, of course, without saying, that since syphilitic iritis is a manifestation of the so-called secondary period of syphilitic infection, it is essential to the diagnosis of the ocular disease that evidence of active syphilis should be present elsewhere upon the body. In these cases the iritis is merely an incident expressive of the activity of the virus, the chief manifestation of which appears upon the skin.—I am, etc.,

Percy Dunn.

London, W., Oct. 21st.

MECHANO-THERAPEUTICS AND DISEASE.

Sir,—We have read with great interest the paper of Dr. Bryce entitled, "Mechano-Therapy in Disease," and the excellent leading article on the Undeveloped Land of Medicine which appeared in the British Medical Journal of September 3rd.

It is greatly to be regretted that the medical profession in this country has largely neglected mechano-therapeutics—a fact well illustrated by the absence of any section in the Royal Society of Medicine and the meetings of the British Medical Association, dealing specially with the subject. Members of the lay public who have heard of Swedish treatment, mechano-therapeutics, massage, or allied forms of treatment, have in consequence come to regard such methods of healing as being outside the domain of the regular medical profession, and have gone to unqualified practitioners to obtain them. Medical men are compelled, as a rule, to send their patients to an unqualified exponent of mechano-therapeutics if they desire to have the latter form of treatment carried out. The inevitable result of this state of affairs is seen in the present large army of unqualified practitioners of mechano-therapeutics. A small proportion of the latter are doubtless well qualified to carry out such treatment, but on the other hand the vast majority are not, and their presence in reality but exemplifies the old adage that imitation is the sincerest form of flattery.

There is only one remedy. The profession must take mechano-therapeutics into its own hands. The subject should be taught at the universities and medical schools as part of the regular curriculum, instead of being practically neglected as it is now. The treatment of difficult cases should be carried out by the medical attendant personally, or under his immediate personal supervision. Simpler cases might be confided to unqualified practitioners with occasional visits, as the case demanded, from the medical man. But in order to allow the latter alternative to work smoothly, safely, and without abuses, a teaching institute should be provided in which would-be unqualified practitioners of mechano therapeutics could be thoroughly instructed, both theoretically and practically, in this branch of medicine. The General Medical Council should exercise control over all the diplomates of the institute, and issue a register of their names and addresses on the lines of the *Medical Register*. The diploma of the institute might be granted after examination alone to unqualified practitioners of known repute and standing of some definite number of years.

The need for proper teaching and training in mechano-therapeutics has been recognized abroad, but nowhere more than in Sweden, where the Royal Central Gymnastic Institute, founded in 1813, provides a three years' course (two years in the case of lady students) of Swedish gymnastics; this includes, of course, both medical gymnastics and massage. The institute and its diplomates are under the jurisdiction of the Swedish General Medical Council.

The need of proper legislation and control in the unqualified practice of mechano-therapeutics was never so strong as it is to-day.—We are, etc.,

Edgar F. Cyriax, M.D.Edin.
Richard J. Cyriax, M.R.C.S., L.R.C.P.

London, W., Oct. 17th.

Mr. Abraham Hoskins, M.R.C.S., L.S.A., of Sutton Coldfield, Warwick, who recently died at the age of 87, left estate valued at £47,330 gross, with net personalty £45,943.

Medico-Legal.

ABRAHAMS *v.* SNOWMAN.

Action Against a Medical Man.

In the High Court of Justice, King's Bench Division, the trial of the action of Abrahams and Another *v.* Dr. Jacob Snowman was concluded before Mr. Justice Ridley and a special jury on Monday, November 7th, 1910.

Sir Frederick Low, K.C., and Mr. Eric Dunbar, instructed by Mr. G. A. Wigham, appeared for the plaintiffs.

Mr. Hume Williams, K.C., M.P., and Mr. Hugh Fraser, instructed by Messrs. Hempsons, solicitors to the Medical Defence Union, appeared for the defendant.

Sir Frederick Low, in opening the case for the plaintiffs, said it was one somewhat unusual in its circumstances. The parties to the action were all members of the Jewish religion, which, by a most ancient institution, decrees that the male children at a very early stage of their career, should undergo the rite of circumcision, and it was as to the manner in which that operation was performed on one of the plaintiff's children by, or under the direction of, the defendant that this action arose. There was a charitable society known as the Initiation Society, established for the purpose of carrying out this rite among the Jewish people, and the defendant was a member of that society. Upon receiving notice he called and pronounced the child of the plaintiffs to be healthy and fit to undergo the operation and on May 15th it was performed by a gentleman named Snadon, who was qualifying for the position of a Mohel, under the supervision of the defendant who expressed himself as satisfied with what had taken place. The child was then taken to the mother. Later in the day the society's nurse, in making the necessary change, found there was a good deal of haemorrhage. The defendant was sent for, but was not at home, and another medical man was called in to stop it. It was alleged that this haemorrhage took place by reason of the negligent performance of the operation. The child, who at its birth was a healthy child weighing some 13 lb., gradually wasted until when it was taken to the hospital in July last it weighed only some 6 or 7 lb., a condition of things which plaintiff alleged was brought about wholly by the excessive haemorrhage from which the child had suffered. If, as he hoped to satisfy the jury, the child had been rendered practically an invalid for a very long period, then, of course, he contended the plaintiffs would be entitled to substantial damages to compensate them for the disability that had been brought to the child by the negligence of the persons who had performed the operation. Further, the plaintiff claimed for loss of his wife's services in having to remain at home and nurse the child, and for special nourishment some £84 as special damages which they claimed in addition to the reasonable and proper compensation if they established the negligence of the defendant or the person acting under his control.

The plaintiff and a number of other witnesses were then called substantiating the statements outlined by the learned counsel in his opening.

Dr. W. L. Brown said the child was very weak, both physically and mentally, and was suffering from marasmus, which in his opinion was brought about by excessive haemorrhage, resulting from the operation. In his opinion the haemorrhage had been brought about by the severance of the fraenum and the severing of an artery in doing it.

Cross-examined by Mr. Hume Williams, he said the severance of an artery during an operation would be immediately perceptible.

Dr. Thomas William Humphries, of 143, Victoria Dock Road, corroborated the evidence of Dr. Lawson Brown.

Dr. Frederick Thompson, Medical Officer to the Hospital for Children, Great Ormond Street, said the child was brought to that institution. He was informed by the parents that there had been haemorrhage when it was circumcised. The child was wasted and had been injudiciously fed, and had slight bowel irregularity. Its weight was below the normal, but under treatment and proper advice as to feeding had steadily improved, and when finally discharged from the hospital was some 3 lb. heavier than when it first came. Even assuming that there had been severe haemorrhage he did not think it would have a permanent effect.

Mr. Hume Williams applied for and obtained permission for the defendant and his medical witnesses to examine the child. Mr. Hume Williams said that the accusation against the defendant was a perfectly groundless one. The operation of circumcision in the Jewish faith was to the Jews a deeper meaning religious rite which up to recent years was always performed by the clergy of the faith as part of the religious ceremony without, he feared, due observance of the rules of sanitation which had grown up with the twentieth century. In order that the operation should be performed with due regard to those laws, and brought within the reach of the poor, the Initiation Society was formed. It was a society which originally dated from 1745, but it fell into disuse and had recently been resuscitated. It was under distinguished patronage, and was formed for the express purpose of providing that those who were called upon to perform the ceremony of circumcision should have the proper qualifications, and this was the first action of this nature which had ever been brought against a medical officer of the society. The rules of the society provided that the rite was to be performed under certain conditions, namely, in the presence and under the direct supervision of a competent medical officer or by a person called a Mohel, who had passed an examination by the medical board and obtained a certificate to comply with all modern surgical conditions. Mr. Snadon attended the plaintiff's child in company with Dr. Snowman, and performed the ceremony under his supervision and to his satisfaction. Some days afterwards he was informed that he had been sent for, and it was desired that he should go and see the child, which he did. He examined it and found there had been some retraction and loosening of the bandages in consequence, which he rectified and left, calling subsequently to see that everything was perfectly satisfactory. He left the child on May 16th, and never heard anything more about it until August this year. He suggested it was absolutely impossible to credit the case as presented by the plaintiff and that the claim had been wickedly and grossly exaggerated by somebody, and that the child had only been suffering from marasmus, which 80 per cent. of the children of the poor suffered from, and which had been brought about by malnutrition. The defendant and his medical advisers had had an opportunity of examining the child, and they would say that the case which was made on behalf of the plaintiff by Dr. Brown in the witness-box for the first time, namely, that there had been severance of the fraenum and some skin left behind which ought not to be there, was not true. There was a little skin left there, as not so much had been taken off as in some cases. There had been no division of the fraenum, and he would ask the jury to say that this was a case which had been trumped up and ought never to have been brought. The case was an important one to the doctor, as it was to the society. If the defendant had been negligent, the society would have to bear the consequences.

Dr. Jacob Snowman gave evidence bearing out counsel's statement. He said that Mr. Snadon had had both practical and theoretical instruction for some two months in the operation of circumcision in various cases. He described the operation on the plaintiff's child, which was done to his entire satisfaction. There was no bleeding of an abnormal character at the time. When he subsequently examined the child he found there had been retraction which was the cause of the bleeding; this he attended to, and it immediately ceased. He saw the child subsequently in September, when it was suffering from malnutrition, and he took the opportunity of examining the local condition and found it was satisfactory. He had seen the child that day; it was an underfed and badly nourished child, and he was able to discover one objectionable symptom, namely, that the child had an enlarged gland of the groin, probably of a tuberculous nature. He examined the fraenum, of which there was absolutely no severance whatever.

Cross examined by Sir Frederick Low: The rules of the society provided that the operation was to be performed only by a registered Mohel. He believed he was the only registered Mohel present at the operation under his (Dr. Snowman's) supervision. There was not much haemorrhage when he saw the child, but it was serious, as if it had not been arrested the child might have died. In his opinion, in cases of severe haemorrhage in children, once the bleeding was arrested it made very little difference to their future development.

Dr. Richard N. Bateman, Dr. Gustave Michael, and Dr. Maurice Clifford corroborated the defendant's evidence, and Mr. Abraham Snadon having been called, learned counsel addressed the jury on behalf of their respective clients.

His Lordship, in summing up, described the case as a grossly exaggerated one, to say the least. It was essentially a case for the jury to decide. If in their opinion the child's condition was brought about by reason of the negligent manner by which the defendant performed or assisted at the operation, then their verdict would be for the plaintiff and they would have to assess the damages.

The jury immediately returned a verdict for the defendant.

WORKMEN'S COMPENSATION ACT.

Injury to the Toes Causing Incapacity.

In a case at Wigan (September 6th) it appeared that on December 31st, 1908, plaintiff had five toes crushed through a barrel falling on him. Gangrene set in and he had to have his toes amputated. There was some suppuration for a considerabe time, and in March plaintiff expressed a desire to resume work, but when put through some muscular exercises the foot broke down again, and he was unable to work until the beginning of August, when he applied for light employment. He contended that having lost the support of the arch of the foot he was unable to follow his previous employment, which necessitated the lifting of heavy barrels, and the unloading and loading of barrels down steep cellar steps, said to have small treads, which, it was contended, would make plaintiff become flatfooted so that he would have to walk on his heel. Applicant said he thought farm labouring would be suitable employment for him. He could earn 18s. a week at that.

Dr. Fletcher said the arch of the injured foot was weakened, and plaintiff was not suitable for carrying heavy weights. Witness had endless trouble to heal up the wound. Lifting heavy weights would affect the arch of the foot, and the plaintiff might become flatfooted.

Dr. Blakemore, who was called by the respondents, said the applicant in his opinion was able to do the work that he did before the accident. He did not see that the injury had interfered with the arch of the foot at all. If the man wore a pad in his boot it would obviate any possible effect on the arch.

Dr. Fletcher was asked by His Honour whether he thought applicant could do the work if he wore a pad. He replied: "I do not think you ought to ask him to. He could not do it with safety and efficiency."

Dr. Blackmore added that it was not necessary to have toes to bear a weight.

His Honour said what he had to guide him was the medical evidence; but while one doctor affirmed with great confidence that the man's foot was so injured that he could not carry heavy weights, the other doctor with equal confidence said the man could do his old work as well as ever. As the skilled witnesses upon whom he was asked to rely contradicted each other, he was left practically with no evidence at all. That was the general experience. When he got expert evidence it was contradictory, and he was no wiser for it. Therefore, disregarding the evidence of the two gentlemen, he was left simply with the fact that the man was injured. The man had certainly received some injury which must be detrimental to him, at least at present, and he (His Honour) would hold that his earning capacity was not more than 18s. a week. The difference between 18s. and 25s. was 7s., and there would therefore be judgement for the respondents to pay half that amount—3s. 6d. per week—until further order, from August 6th. The respondents must also pay costs.

CLAIM AGAINST A HOSPITAL.

IN the Court of Sessions at Edinburgh on November 4th a claim for damages against the Greenock Infirmary was dismissed with costs. The claimant alleged that, owing to lack of skill and reasonable care, she had been treated only for a sprain of the knee, whereas really, she alleged, she had a fracture of the thigh as well. The Court dismissed the claim on the same general grounds as those which have proved fatal to all similar claimants during the last few years; this is, that the governors of institutions, providing they exercise reasonable care in the selection of a medical staff, are not responsible for the actions of the latter, these not being their servants. In this particular case an unsuccessful endeavour was made to get round the difficulty by asserting that the fact that the patient had been admitted on a payment of two guineas a week established a special contract—namely, one which implied not only that the treatment should be given by competent medical men, but that it should itself be careful and skilled.

"BOOKING FEES."

C. P. B. asks whether it is usual to charge "booking fees" where a practitioner has entered a midwifery engagement in his book on the condition that he is to be paid a certain fee if called upon by the midwife in charge of the case. He has often entered such engagements in the case of members of the working classes, but has never charged a fee.

*** We have never heard of such fees being charged, though, in the circumstances, such a charge does not appear unreasonable. The arrangement precludes him from accepting another engagement, and may have no other result.

MEDICAL INSPECTORS AND FAMILY DOCTORS.

M. X. writes that the parents of a child 6 years of age have been ordered to submit their child for examination at the local school, and that, failing to, the medical inspector will visit the home of the child to examine him.

*** We know of no authority that gives power to a school medical inspector to visit the home of a child under the care of a duly registered medical practitioner, who is able to give any certificates required under the Education Acts.

BANKRUPTCY AND MEDICAL OFFICERSHIP OF HEALTH.

OMEGA asks whether a bankrupt can hold a part-time appointment as medical officer of health to a district.

*** A bankrupt cannot during his bankruptcy, or until five years after his discharge, act as a member of the legislature, or as justice of peace, mayor, alderman, councillor, guardian, or overseer of the poor, member of a sanitary authority, school, highway, or burial board, or select vestry in any part of the United Kingdom, but is not prevented from holding other offices.

FEES TO MEDICAL WITNESSES.

W. M. M. complains that he was absent at the Carnarvon Assizes under a subpœna for seven days to give evidence touching an accident, which he had witnessed. His residence is in Durham, and he was compelled to engage a locumtenent during his absence, and he has only been allowed £15 19s. for expenses. He does not think this sufficient, and is applying to the taxing master for a more liberal allowance. He wishes to know the customary items of expense usually allowed in cases of this kind.

*** Two guineas a day and travelling expenses is, we believe, the customary allowance for a professional witness at the assize courts when residing at a distance therefrom.

DOCTORS AND NURSING CLUBS.

L. N. H.—A correspondent writes that he is often called in to maternity cases by a nurse who is employed by a "nursing club." He is frequently unable to get any fees for his services, and has applied to the said club for a guarantee that his fees shall be paid in such cases. This has been refused. What is his position?

*** Unless willing to take his chance of getting paid, our correspondent's only remedy is to refuse to attend to such cases without a previous guarantee of payment. Unless a fee is guaranteed by a local authority, where the patient is not in a position to pay a doctor, recourse should be had to the relieving officer, who can call upon the district medical officer to attend. The latter will be entitled to a fee of £2 in most cases where there is any special difficulty.

BOND IN RESTRICTION OF PRACTICE.

A CORRESPONDENT writes that he has been a nominal partner of his principal for one year, and that he has signed a bond not to practise independently within ten miles of the city where his principal resides. In the practice is a large club, which the members desire to put in the hands of a doctor who is to do no other work, and he has been more than once asked to take this appointment; but the principal objects, and insists on the observance of the bond. As the latter only prohibits practice "in opposition" to the principal, our correspondent asks if the holding of a club which forbade private practice would violate this clause. Secondly, he wishes to know whether the following would be contrary to the ethics of medical practice: He has discovered a special disinfectant, which has become very popular. Can he make an arrangement with a chemist to prepare this article and sell it, and account to him for the profits?

*** (1) It is to be feared that under his bond our correspondent would be prevented from accepting this post without the leave of his principal. As the club might attract many of his old principal's patients, especially if he were the doctor, it could hardly be contended that he was not practising in opposition to him. (2) Such a procedure would be altogether unprofessional.

NOTIFICATION OF STILLBIRTHS.

A CORRESPONDENT writes that he has recently had two stillbirths in his practice, and "when going to supply the usual certificate, found he was out of forms." He sent to the registrar for a book of forms, but after failing to get one, he wrote out the certificates upon ordinary note paper. These were refused at the cemetery, and the burial was not permitted till the certificates were furnished on a proper form.

*** Our correspondent's statement is somewhat puzzling. A death certificate for a stillbirth is not required by law, as it is not necessary to register such, although, under the Notification of Births Act, a notification of all stillbirths, if after the twenty-eighth week of pregnancy, must be sent to the medical officer of health of the district. It is usual for the practitioner to give some kind of certificate to the undertaker in cases of stillbirth, but not to fill the ordinary official death certificate form. In the case of burials, the cemetery officials require a certificate that the death has been duly registered according to law, but not a death certificate in the medical sense. This cannot apply where there has been no live birth.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

INDIRECT ADVERTISING.

SPECIALIST writes: There is a form of indirect advertising which is gradually finding its way into professional life, and of which, so far as I have seen, no notice has been taken. One or two enterprising opticians have secured the services of gentlemen whom they consider as qualified ophthalmic surgeons, and these practitioners attend at certain hours in the opticians' shops to interview patients. Like their neighbours, these opticians advertise enormously; indeed, a large part of their work, no doubt, comes to them through numerous advertisements scattered widely over the country. When a practitioner consults in the shop of an optician who thus advertises largely, does he in any way make himself amenable to the penal code of the General Medical Council? If not, why not? One ingenious individual extensively advertised that when he failed to suit a patient himself he was in the habit of "recommending an experienced and skilful oculist." A medical practitioner as an experiment sent a number of his patients to that shop to find out about the said "oculist."

They were all recommended to a young gentleman who had just commenced ophthalmic practice in that neighbourhood, and who, no doubt, had his rooms filled in consequence.

*** We referred to this in the second part of our answer to "G. P." in the JOURNAL of November 5th. We have no doubt that medical practitioners should not be allowed to avail themselves of this form of indirect advertising, and that the General Medical Council would listen to any complaint properly supported by evidence.

MEDICAL PARTNERSHIPS.

WE have frequently pointed out the great advantages conferred by partnership upon medical practitioners, and have deplored the fact that they are not more common, or, when they exist, work badly, owing to the unwillingness of one of the partners to fulfil loyally the obligations of his position. A correspondent writes us a letter which illustrates the difficulties which may arise, and we summarize his complaint, premising that we have had no opportunity of testing the accuracy of his statements. He says he is a junior man who has purchased a share of a practice from a gentleman who wished to live out of town. He apparently lives at the former residence of his senior partner, and is in communication with him by telephone. He complains that during the six months he has been in partnership he has not been introduced to any patients, and that his senior partner does not speak of him as his partner, but as "some one who is working with him." No notice has been sent to any of the patients that he has taken a partner, nor did his name appear upon the billheads when the midsummer accounts were sent out. The maid who attends to the door and the telephone, and who has been eleven years in the service of the doctor, sends patients away if the senior partner is not at home, and does not mention our correspondent's name. When he asks to see or do anything, the senior partner tells him that things are all right and the practice is keeping up to the average, and that in time our correspondent will be able to make a practice of his own. If he does see a patient, his senior invariably alters the treatment without speaking to him, and if he visits any one outside, his senior calls to see the patient without letting him know that he has done so. He complains that no proper books are kept, and that he has no access to the visiting list, and no means of finding out what is being done; also that his partner is late in his attendance in his consulting hours, and that patients to see him are kept waiting or sent away! Finally, that the maid goes to bed at 10 p.m., and that it is his duty to answer the telephone and night bell until 8 a.m., when she gets up! He says he likes the neighbourhood and does not want to quarrel over the matter, but would be very glad for our advice.

We think our correspondent has been too long suffering, and he ought, without delay, to have a friendly explanation, in which he should set out exactly what changes he wishes, and what he desires to have done. We assume he has a copy of the partnership agreement; if he does not understand it he had better consult a solicitor, and know exactly what his rights are before he enters upon any discussion, for he will be able to state his case with much more resolution if he knows beforehand exactly what he has a plain right to ask. We may add that the longer he tolerates the existence of the conditions of which he complains, the more difficult he will find it to approach his partner with a view to getting them altered.

MEDICAL APPOINTMENTS BY POPULAR ELECTION.

A CORRESPONDENT sends us a cutting from the *Glasgow Evening Citizen* of October 27th which gives an account of the lively election then going on for the post of Medical Officer for the Seafield, Deans, and Livingstone district, the appointment being apparently in the gift of the workmen employed by the Pumpherston Oil Company. Four candidates were in the field, and we are informed that "a political election is as nothing to the keenness of the contest." Each doctor has his supporters, and a door-to-door canvass has taken place: meetings have also been addressed by the doctors. At one of the meetings three of the candidates met and there was some "plain speaking as to their respective ability to fill the post." The first vote had been taken but had not resulted in any candidate receiving a decisive majority, so that a final vote had to be taken on that day. The paragraph ends: "One of the candidates will address three public meetings to-day in favour of his candidature; the workmen are greatly enjoying the election"!

It is highly undesirable that medical appointments should be made in this fashion. The whole proceeding is unwise, as it is by no means likely to secure the appointment of the best man. No doubt exercise of the privilege of voting is popular, and the present would be an undesirable time to attempt any reform; but when the excitement of the election is over an attempt should be made by the medical profession in the district to come to some arrangement with the leaders of the men, so that the choice should in future be left to an election committee appointed by them. The best body to initiate such a reform would be the local Division of the Association, to whose attention we commend the matter.

MEDICAL ADVERTISING.

RICHMOND.—We do not think our correspondent's proposal is one which he would be well advised to carry out, as it comes into the same category as the putting up of name-plates on houses where there is no bona fide tenancy—a procedure of which we have frequently expressed our disapproval.

Obituary.

EDWARD ELDRIDGE BLOMFIELD, M.D.Lond.,

LECTURER ON MATERIA MEDICA, UNIVERSITY OF OTAGO.

DR. EDWARD BLOMFIELD, of Dunedin, died on October 15th in New Zealand. He had been absent from England for a good many years, but not so long as to be forgotten by his many friends in Yorkshire and old fellow-students at the London Hospital. Dr. Blomfield, who was in his 48th year, was born at Hastings, his father being the Rev. H. Blomfield. His general education he received at the University School, Hastings, and as one of its pupils he passed the matriculation of the London University at the age of 16, and in the first division.

He was not at this time intended for the profession of medicine, and on leaving school was entered at the London and County Bank as a clerk. In view, however, of his intellectual ability and aptitude for scientific work, it was natural that he should not find a bank clerk's occupation much to his taste, and after a year or two gave it up on obtaining an appointment in the Government Laboratory at Somerset House. While there he began a definite study of science, and was so successful that before long he competed for the Entrance Scholarship in Science at the London Hospital, and carried it off.

His career as a medical student, thus happily begun, proved one of much distinction. Apart from minor prizes he carried off in consecutive years the scholarships in Anatomy and Physiology, and in Anatomy, Physiology, and Chemistry; and before leaving the school in 1891 was awarded the scholarship in Obstetrics. At university examinations he was equally successful, taking first class honours in Chemistry at the Intermediate M.B. in 1889, and honours in Medicine and Forensic Medicine at the Final M.B., B.S. examination in 1891. The joint diplomas of the two Royal Colleges in London he received in the same year, and proceeded four years later to the M.D. degree of his university.

On leaving the London Hospital he joined his brother, Dr. G. W. Blomfield, in practice at Pontefract, remaining with him until 1894, when he moved to Knottingley, not far off, as the successor of Dr. Johnson of that town. His stay in Knottingley was not long. He had always had a desire to settle abroad, and in 1899 an opportunity for doing so presented itself. The University of Otago was in search of a lecturer on materia medica, and on applying for the appointment he received it and went out forthwith. His life in New Zealand was a happy one; he was successful both as a trainer of students and as a private practitioner, and just as had been the case in England his genial disposition, pleasant manners, and real kindness of heart secured for him a wide circle of friends. At the time of his death he had been married six years, his wife being a New Zealand lady, and he has left behind him a widow and two children.

ALEXANDER MILNE, M.B., C.M.Aberd.,

ILKLEY.

WE regret to record the death on October 26th of Dr. Alexander Milne, of The Grove, Ilkley, Yorkshire. It took place at Huntley, N.B., where Dr. Milne had been staying for some time past, and was due to malignant disease.

Dr. Milne, who commenced his medical education at the University of Aberdeen, completed it at Guy's Hospital and in Dublin, and in 1885 graduated M.B., C.M.Aberdeen, with highest honours. Before settling down in practice he served two terms of office as a resident in institutions, his first post being that of Resident Medical Officer at the Hospital of Consumption in Manchester, and his next that of House-Surgeon at the District General Infirmary, Dewsbury. He then acquired knowledge of practice by work as an assistant, and eventually set up in practice on his own account in Sheffield. The life of a medical man

in a large town did not, however, prove congenial to his tastes, and consequently he accepted an invitation made to him to join as a partner one of the medical men whom he had previously assisted. It proved a happy arrangement for all parties, for he soon acquired an excellent position professionally, made many friends, and was regarded throughout the district with both affection and respect. At the time of his death he was Honorary Medical Officer of the Coronation Hospital, and Surgeon of the North Eastern and Midland railways, and so long as he was fit for duty had shared with his partner the labours of several other appointments.

In private life he was an abstemious man and an advocate of the strenuous life, who combined love of outdoor occupations with an instinct for books; he was thus ever a well occupied man. He was also, though of retiring disposition, an excellent companion, for he was a good shot and proficient at tennis, cycling, golfing and billiards. His death was not unexpected, but is nevertheless the cause of deep regret and a real loss to the Wharfedale district of Yorkshire.

CHARLES EDWARD ADAMS, M.B, B.Sc LOND., M.R.C.S.Eng.

DR. C. E. ADAMS, whose death occurred at Buckhurst Hill after a long and painful illness, was only 49 years of age. He settled in Buckhurst Hill in 1885, the same year in which he qualified. He was a man of deep sympathies, and never spared himself in the discharge of his duty to his numerous patients. Of a retiring nature, he never busied himself with public affairs. He won for himself a reputation as an able diagnostician and a sound clinician amongst his brethren in the district where he practised. In recent years he had taken a leading part in the movement to provide a new and efficient hospital for the neighbourhood. Unhappily he has not lived to see the completion of this scheme. He was an accomplished musician, and, what is unusual in an amateur, his talent lay in composition. For many years he was the conductor of the musical society and the president of the choral society. During his twenty-five years of active life at Buckhurst Hill he endeared himself to all classes and denominations by his sweet gentleness and never-failing courtesy. He was an ideal practitioner, combining the courtliness of the older generation with the keener scientific desire for accuracy of the later school.

DR. DE FOREST WILLARD, Professor of Orthopaedic Surgery in the University of Philadelphia, died on October 14th, in the 65th year of his age.

THE death at Nottingham is announced of Surgeon-Colonel CHAMNEY GRAVES IRWIN, M.D., late of the Army Medical Staff, in the 80th year of his age. He was educated at Dublin, qualified as a Member of the Royal College of Surgeons of England in 1853, and joined the Army Medical Department as an Assistant Surgeon in 1854, retiring from the service in 1891 with the rank of Deputy Surgeon-General. He served in the Crimea, and was present at the battle of the Alma and at the siege and fall of Sebastopol, for which he received a medal with two clasps and the Turkish medal.

The Services.

VOLUNTARY AID DETACHMENTS.

THE Right Hon. R. B. Haldane, Secretary of State for War, delivered an address on Red Cross work to the Scottish Branch of the British Red Cross Society on October 26th. He outlined the work of the Voluntary Aid Detachments and showed the improvement in organization between the medical service of the Territorial Force and that of its predecessor the Volunteer Force. In speaking to a resolution to support the Scottish Branch, Sir George Beatson said that the Lowland Division was thoroughly organized with its regimental medical officers and regimental bearers, its three field ambulances and three general hospitals. As regarded the general hospital in Edinburgh, he expressed the opinion that if the service had a suitable building, and was called upon, it would be ready within from twenty-four to thirty-six hours to take in 530 wounded. They had not got quite so far in the two Glasgow hospitals. They had the staff, nurses, and trained nucleus. They had not settled upon the buildings, but were busy at it, and would soon bring that matter to a conclusion.

TECHNICAL TRAINING IN THE SCOTTISH COMMAND.

THE syllabus of technical training for Royal Army Medical Corps, Regulars, and Territorials, issued from Scottish Command Head Quarters on November 1st, includes two series of special lectures. These will be delivered on December 2nd, December 16th, January 20th, and February 17th: the first series, for officers of all arms, at 11.30 a.m. in the Carlton Hotel, Edinburgh; and the second series, for medical officers, at 3 p.m. on the same dates, in the Military Hospital, Edinburgh Castle. A special R.A.M.C. staff tour will take place in spring.

Particulars are also issued regarding the instruction to be given in sanitation throughout the Scottish Command.

GLASGOW UNITS, TERRITORIAL FORCE.

AT a general meeting of officers of the five Glasgow units of the R.A.M.C.(T.F.), Lieutenant-Colonel W. F. Somerville presiding, it was decided that the annual gathering of the combined units should take the form of a dance in St. Andrew's Halls during the month of January, and a committee of officers and non-commissioned officers was appointed to make the necessary arrangements. The prize distribution will take place during the evening. The competitions in connexion with the Mounted Brigade Field Ambulance and 1st Lowland Field Ambulance took place at camp. The 2nd Lowland Field Ambulance conduct their competitions during the present month.

LOWLAND MOUNTED BRIGADE FIELD AMBULANCE.

THERE was a large attendance of officers and non-commissioned officers at the special lecture under the auspices of this unit on November 1st, when Mr. Alex. Trotter, M.R.C.V.S., Veterinary Surgeon to Glasgow Corporation, gave a lecture and demonstration on the inspection of meat. Lieutenant-Colonel R. T. Halliday presided. On the invitation of Mr. Trotter, it was arranged that a special demonstration, more comprehensive in scope, would take place at the abattoirs in Moore Street on November 19th, at 2 p.m., when a large number of specimens of the various types of meat would be shown. Regimental medical officers will be cordially welcomed at this demonstration.

Universities and Colleges.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on October 19th.

Appointment of Medical Officer.

Dr. Edmund Ivens Spriggs, F.R.C.P., has been appointed medical officer to the University for five years from October 19th, 1910.

Reappointment.

Miss Beatrice Edgell, M.A., Ph.D., has been reappointed Demonstrator in Experimental Psychology and Curator of the Apparatus for Examinations in Experimental Psychology in the Physiological Laboratory for the session 1910–11.

UNIVERSITY OF BRISTOL.

THE following degrees in the Medical Faculty were conferred at the meeting of Congregation, of which an account has already been published. The various recipients were introduced by the Dean of the Faculty, Professor Fawcett.

M.D.— H. Devine, M.D.Lond., *A. H. Joseph, M.D.Lond., *W. B. Roue, M.D.Durh.
M.D., B.S.—*W. C. Swayne.
M.S.—C. A. Moore, M.S.Lond.
M.B., B.S.—C. W. J. Brasher, A. L. Flemming, W. W. King, L. A. Moore, L. N. Morris, F. C. Nichols, J. W. Taylor, *W. M. Bergin, M.B., B.S.Lond., *Thomasina G. Prosser, M.B., B.S.Dunelm.; *W. S. V. Stock, M.B., B.S.Lond., *A. J. M. Wright, M.B., B.S. Lond., P. G. Stock.

* Associates of University College admitted *ad eundem*.

UNIVERSITY OF SHEFFIELD.

Appointment.

MR. ARCHIBALD CUFF, F.R.C.S., has been appointed Lecturer on Practical Surgery.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE annual meeting of Fellows and Members is to be held on Thursday next week, at 3 p.m., and in anticipation thereof the report of the council is now being circulated. The agenda for the meeting will be obtainable on and after next Monday.

The Last Meeting.

The report begins with a reference to the last annual meeting, at which resolutions were passed: (1) Reaffirming the desirability of Members being granted direct representation on the

council; (2) urging the council to impress upon the Government the necessity of such amendment of the Midwives Act as would secure just remuneration for professional services rendered by medical men under the Act; and (3) asking the council to make an arrangement with the Royal College of Physicians, whereby the two colleges would be incorporated under a new charter, so as to form Royal Colleges or parts of the University of London. After consideration the council decided to take no steps with regard to the representation of Members.

The Midwives Act.

Copies of letters exchanged between the council of the College and the Lord President of the Privy Council on the subject of an amended Act and of the report of the representative of the council on the Central Midwives Board are given. The representative of the council mentions that 26,000 copies of the leaflet relating to the early symptoms and recognition of uterine cancer have been distributed among midwives.

Combination with the University of London.

A report on this subject was drawn up by representatives of the College and of the Royal College of Physicians for submission to the Royal Commission on University Education in London, but after adoption by the council it was referred by the College of Physicians to a committee for further consideration.

Dentistry and Anaesthetics.

The occurrence of the Jubilee of the charter enabling the College to grant a licence in dental surgery, and the dinner by which it was celebrated is recorded. Note is also made of the fact that the bill put forward by the Society of Apothecaries, and which among other things would have enabled it to grant diplomas in dental surgery, was withdrawn. In the same connexion may be mentioned the action of the council in regard to the bill relating to the administration of anaesthetics by holders of the diploma in dental surgery. The council opposed the recommendation of the General Medical Council that dentists should be allowed to administer anaesthetics only for dental operations. The council of the College thought that they also should be allowed to administer such anaesthetics as were open to them, for the purpose of assisting medical practitioners in the performance of ordinary operations.

Blindness.

The council advised the Registrar-General that blindness for census purposes should be subdivided into "blind" and "partially blind"; the former term including persons stone-blind or so blind as to be unable to count fingers in daylight at more than 3 ft. distance, and the latter persons who cannot be educated or earn their living by means of their sight. It also suggested that if only a single heading could be used the meaning of the term "blind" should be defined.

Removal of Members.

During the year the names of four Members of the College were removed from the Register after their erasure from the *Medical Register* by the General Medical Council.

Prizes.

The triennial prize (the John Hunter medal and £50) for 1907-10 was not awarded. The subject for 1910-12 is, "The Anatomy and Physiology of the Pituitary Body, and the Relationship with Disease of its Abnormal and Morbid Conditions." Dissertations must be handed in by December 31st, 1912.

The Jacksonian Prize for the year was awarded to Mr. William Girling Ball. The subject for next year is "The Diseases of the Pancreas, with special reference to their Surgical Treatment."

Note is also made of the award of the honorary gold medal of the College to Dr. Robert Fletcher, M.R.C.S., of Washington, in recognition of his labours in connexion with the *Index Medicus* and the *Index Catalogue* of the Library of the Surgeon-General's Office, Washington.

The King.

Copies of the addresses presented to His Majesty the King and to Queen Alexandra on the occasion of the death of King Edward VII are supplied, and the decision of His Majesty to remain an Honorary Fellow of the College is gratefully recorded.

Finances.

The gross income of the College for the year amounted to £25,551. This represents an increase of £150, despite the fact that there has been a decrease of £480 in the gross receipts from the Conjoint Examination Board in respect of the Membership. The latter has been practically counterbalanced, however, by the increase in the fees received for the Fellowship, the L.D.S., and the D.P.H. In reference to expenditure, it is stated that that on books continues to grow materially; while a sum of £503 has been spent on the installation of the odontological collection entrusted to the College by the Royal Society of Medicine. The net outcome of the year's work is a balance of income over expenditure of £1,827. The cost of leases and freeholds of the four houses in Queen Square on the site of which the new Examination Hall is to be erected has now been paid; the share of the College amounts to £11,600. During the next two or three years the College will have to find almost the same sum for the building of the hall.

Diplomas.

During the year the Diplomas of Membership issued numbered 344, of Fellowship 56, in Dental Surgery 84, and in Public Health 86.

The Council.

On the completion of the last election in July the constitution of the council became as follows: *President:* Mr. Henry T. Butlin. *Vice-Presidents:* Mr. R. Clement Lucas, Mr. C. Mansell Moullin. *Members:* Sir Henry Morris, Bart., Mr. Edmund Owen, Mr. Rickman J. Godlee, Sir W. Watson Cheyne, Bart., C.B., Mr. F. Richardson Cross, Sir A. Pearce Gould, Mr. Clinton T. Dent, Mr. G. H. Makins, C.B., Mr. Frederic Eve, Mr. A. A. Bowlby, C.M.G., Mr. Gilbert Barling, Mr. C. H. Golding-Bird, Mr. W. Bruce Clarke, Mr. C. J. Symonds, Mr. William F. Haslam, Mr. C. B. Lockwood, Mr. W. Arbuthnot Lane, Mr. W. Harrison Cripps, Mr. Bilton Pollard, Mr. C. A. Ballance, M.V.O., Mr. John Bland Sutton.

The Museum.

The body of the report concludes with a lengthy statement relating to the affairs of the museum during the year. It has been one of much activity and has seen many valuable additions to the contents of the museum, and the renumbering and redescription of many of them. During the year the number of visitors was 13,648, more than half this number coming on Friday and Saturday, the two days on which the museum is open to nurses and lady visitors. The number of attendances at the very interesting lectures which have been given during the year by Professor Arthur Keith, conservator of the museum, and Professor S. G. Shattock, pathological curator, is also recorded. For the most part, they seem to have averaged between 40 and 50 at each lecture and demonstration.

The Library.

The section relating to the library includes a long list of recent and ancient works and MSS. which have been presented during the year. On the 274 days that the library was open the number of readers was 10,413.

The report is signed by Mr. Butlin, and concludes with an appendix, giving the results of each of the professional examinations held, statements of accounts, and the names of honorary Fellows, ordinary Fellows, Members, and Licentiates in Dental Surgery who have died during the year.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

We are requested to state that Fellows and Licentiates of the Royal Faculty of Physicians and Surgeons of Glasgow may, on application to the Registrar of the General Medical Council, have the prefix "royal" added to the title of the Faculty in the entry of their names in the *Medical Register*.

CONJOINT BOARD IN SCOTLAND.

The following candidates have been approved at the examinations indicated:

First College.—K. A. Deodhar, A. N. da Silva, R. J. Patchett, R. McC. Paterson, J. M. Beyers, J. L. Hamilton, A. Sinha, J. K. Venables.

Second College.—D. S. Graham, C. J. B. Inglis, J. Williamson, N. N. Chatterjee, J. B. Donaldson, J. J. O'Connell, J. J. Reynolds, S. A. Faulkner, O. R. Jones.

Third College.—D. Aldridge-Macpherson, W. Ashworth, P. W. Laidler, J. McFarlane, T. Sheehan, E. E. Doyle, S. Jesudason, H. W. McH. Wallace, A. S. Mackenzie, S. Brennan, W. Lessey, S. D. Bridge, A. N. da Silva, E. A. Klein.

Final.—J. F. Morse, J. Nedd, D. J. O'Connell, Emma M. Johnstone, M. Greene, Dulcie E. Williams, T. McEwen, W. B. Gourlay, W. St. J. Cogan, R. E. Harris, F. M. Stewart, B. C. Sen, B. G. Shiroadkar, K. F. P. R Gover, S. E. A. Acheson, J. W. N. Roberts, J. N. M. Sykes, J. Paxton, B. Flack, U. J. Bourke.

CONJOINT BOARD IN IRELAND.

The following candidates have been approved at the examinations indicated:

Final.—G. F. Allison, A. E. Bedell, O. G. Connell, N. M. Herbert, P. McCartan, L. A. Moran, W. H. Murray, H. R. Tighe.

Third College.—A. J. Best, F. Cassidy, E. P. Dewar, R. F. J. Griffith, J. Kelly, B. Kelly, J. S. Levis, M. Meehan, F. P. McDermott, D. Murphy, A. J. Nelian, H. E. O'Brien, P. J. O'Connell, J. C. O'Farrell, G. Wilson.

In his presidential address before the Bradford Medico-Chirurgical Society, Dr. Mitchell dealt with diagnosis by means of the *x* rays. Fluoroscopy, he pointed out, had the advantage of affording direct view of an object, even if it moved under examination, but it was difficult to observe detail, and the process might be dangerous, owing to the difficulty of cutting off undesirable rays. Skiagraphy, on the other hand, was, with modern instruments, almost instantaneous, and supplied great detail. The disadvantage of having a picture in one plane could be got rid of by stereo-radiography, as also by the projection method, and by taking photographs at different planes at right angles. Difficulties, however, still faced those who could not afford to provide themselves with a series of tubes of different degrees of hardness, and they existed also in all cases in which stout patients had to be examined.

Public Health
AND
POOR LAW MEDICAL SERVICES.

LOCAL GOVERNMENT BOARD REPORTS.

Brackley Borough and Rural District (by Dr. W. W. E. Fletcher. New Series, No. 26).—No reason is given for the inspection of these districts, which are situated in the county of Buckingham. The population of the borough of Brackley is about 2,500. The proportion of good-class houses is large, and although the working-class dwellings are generally well-built and in good repair there are some in an unhealthy and dilapidated condition. The medical officer of health, Dr. J. S. Fenton, has repeatedly urged the Town Council to take steps to secure their improvement, but thus far very little attention has been paid to his representations. In other respects the council has not been inactive. A good water supply has been provided, though the quantity is still somewhat deficient; watercarriage has been adopted and the collection of house refuse has been undertaken. The principal needs of the town from a sanitary point of view would appear to be the provision of an efficient disinfecting apparatus and hospital accommodation for persons suffering from infectious disease. Nuisances arising from the keeping of pigs and fowls have not been very actively dealt with. Upon the houses in the Brackley Rural District the absence of eaves-spouting is noted even for tiled and slated roofs, with the result that damp houses are common. Some cottages are so constructed that the contents of pail closets or privy middens have to be removed through living rooms. The nuisances inseparable from the conservancy system in which earth is not freely used would seem to be particularly marked in the district. Dr. S. N. Stathers has been medical officer of health for fifteen years and receives a salary of £40 per annum, a sum which can hardly be considered adequate for a district 42,000 acres in extent and with a population of over 7,000 persons. Although Dr. Fletcher expresses the opinion that Dr. Stathers does not devote as much time to his duties as they require, there would seem to be justification for the contention of the latter that he does ample work in return for the remuneration he receives.

Conway Rural and Urban and Llandudno Urban District (by Dr. R. W. Johnstone. New Series, No. 28).—The grounds for this inquiry were outbreaks of typhoid fever in the Conway rural district at the end of 1908 and the beginning of 1909, and in the Conway and Llandudno urban districts in 1909. In September, 1908, an unrecognized case of typhoid fever occurred at a milk farm in the Conway rural district and a well-defined milk outbreak resulted, 28 persons being either directly or indirectly infected. Owing to the prompt measures which were taken, including the removal of the milk trade to another farm, the outbreak came to an end. One of the patients was nursed by her mother who was housekeeper in a milk farm in the Conway urban district. She was removed to the Llandudno isolation hospital, and in spite of the remonstrances of her medical attendant returned to her home in a very weak condition, and before her evening temperature had become normal. Within a fortnight of her return a case of typhoid fever occurred in Llandudno in a house supplied with milk from the farm. Other houses on the same milk round were invaded with the disease, and early in May the farmer himself was taken ill and died from the disease. Between April 1st and June 30th 24 persons were attacked with typhoid fever and 19 of them lived in houses supplied with milk from this farm. Two of the houses were large establishments. One was a boys' school where nearly all those persons who had special opportunities of contracting infection by way of milk were attacked by the fever. At the other establishment, where the household including visitors and staff numbered some 155 persons, 3 out of the 5 members of the staff who had free access to milk were attacked, while the other 2 who escaped did not drink milk except in tea or coffee. There were altogether in the double outbreak 55 cases in 25 houses, and 10 of the patients died.

A HARD WATER SUPPLY.

Dr. James Peacock.—In his work on *Water and Water Supplies* (Rebman), Dr. Thresh writes:

"For washing purposes the superiority of soft water is undoubted. Apart from the use of soap, the detergent qualities of a water containing very little calcareous matter in solution are more marked than in waters containing a large proportion of these substances, but when soap is used all the latter have to be removed before the soap dissolves in the water, and so a certain amount is wasted. The first action of the soap is to soften the water, and that this is a very expensive method can easily be demonstrated. Each degree of hardness removed in the washing process means the waste of 12 lb. of best hard soap per 10,000 gallons of water.

"With a water of 20 degrees of hardness, therefore, 1 lb. of soap is wasted for every 40 gallons used, or, in other words, it costs the user 6d. to 7d. to soften each 100 gallons of such hard water when used for washing purposes. As a matter of fact, the expense is probably much greater, since the insoluble curd adheres to the articles being washed, and requires additional time and labour and soap to remove it."

Medical News.

At the meeting of the Royal Microscopical Society to be held at 20, Hanover Square, W., on November 16th, at 8 p.m., Mr. A. E. Hilton will exhibit specimens of British mycetozoa.

At a general meeting of the Balneological and Climatological Section of the Royal Society of Medicine on October 28th, the new President, Dr. Frederick Gardner, of Bournemouth, delivered an address entitled Air and Water: Is There Anything New Under the Sun? The annual dinner took place the same evening at the Imperial Restaurant, Sir Thomas Barlow and Dr. Bertrand Dawson being the guests of the evening.

The annual dinner of the Royal Free Hospital and School of Medicine for Women will be held at the Trocadero Restaurant, Piccadilly Circus, W., on Wednesday, December 14th, at 6.45 for 7.15 p.m., when Mr. E. W. Roughton, F.R.C.S., will preside. The price of the tickets is 7s. 6d., and applications for them should be sent to the Honorary Secretaries, Dr. A. G. Phear, 47, Weymouth Street, W., and Mr. T. P. Legg, M.S., 139, Harley Street, W., by December 1st.

The next general meeting of the Medico-Psychological Association of Great Britain and Ireland will be held at 11, Chandos Street, W., on November 15th, at 3 p.m. under the presidency of Dr. John Macpherson. Dr. G. H. Savage will read a paper on Insanity and Marriage, and the discussion on the paper by Dr. C. T. Ewart on Eugenics and Degeneracy, which was adjourned from the annual meeting, will take place. The members will dine together at 7 p.m. on the same day at the Café Monico, Piccadilly, W.

At a meeting of the Metropolitan Asylums Board held on November 5th, the Hospitals Committee reported that the metropolitan borough councils had recently been empowered, under an order of the Local Government Board, to provide a supply of antitoxic serum for the poorer inhabitants of their districts, and recommended that application be made to the Local Government Board for powers to enable the managers to supply the councils with antitoxic serum. The recommendation was adopted.

The Le Touquet Golfing Tournament for the professions of the Church, navy, army, law, medicine, and others will be held at Le Touquet, France, during the week-end December 9th to 11th. Play will be as follow: Eighteen holes match play *v.* Bogey under handicap. Class I handicaps 12 and under. Class II handicaps over 12. Players can take out as many cards as they wish. Prizes will be given by the Le Touquet Golf Club. Intending competitors should send names and addresses as soon as possible to L. Eliot Creasy, M.R.C.S., L.R.C.P., 36, Weymouth Street, London, when information concerning vouchers for cheap week-end tickets will be forwarded. By the term "profession" is meant an occupation that properly involves a liberal education or its equivalent, and mental rather than manual labour, especially one of the three so-called learned professions; hence any calling or occupation involving special mental and other attainments or special discipline, as, for instance, editing, acting, engineering, authorship, etc.

The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held on October 21st, Dr. de Havilland-Hall in the chair. The sickness experience of the society for 1910 has so far been well under the expectation, and there is every reason to anticipate a considerable increase in the funds at the end of this year. The most marked feature of the sickness claim list is the steady growth in the number of what are called chronic cases. To assist medical men who were totally and permanently incapacitated from the practice of their profession was one of the main objects kept in view by the founders of the society when they started in 1884, and no part of the operations of the business have received more serious attention from the committee of management. There are now between forty and fifty members of the Medical Sickness Society who have no hope of ever again doing professional work, and they will draw the sick pay—usually £2 2s. per week—for the rest of their lives. Over £1,000 a year is being paid to these chronic cases, and at each valuation of the business of the society a special reserve is made in respect of them. The ordinary sickness claims are under the expectation both in number and amount, and, when combined with the chronic cases, do not amount to more than was anticipated and provided for when the society was founded. Prospectuses and all further particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

Letters, Notes, and Answers.

Communications respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the Journal, etc., should be addressed to the Office, 429, Strand, London, W.C.

Telegraphic Address.—The telegraphic address of the EDITOR of the British Medical Journal is *Aitiology, London*. The telegraphic address of the British Medical Journal is *Articulate, London*.

Telephone (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* British Medical Journal *alone unless the contrary be stated.*

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any Circumstances be Returned.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

H. S. G. would be glad to know the technique used by Dr. Beckton for demonstrating Altmann's granules in tumours.

D. G. D. writes: Can any of your readers tell me where I can find anything on colloids in medicine, and especially on mercury colloid.

Steam would like to know experience of newer steam cars, and how they compare for convenience, etc., with petrol cars for medical men. Inquirer has some knowledge of petrol car, but objects to changes of gear, etc., when starting, and noise of all small single cylinder cars.

Licence Duty on Motor Cars.

F. L. N. inquires whether the use of a medical man's motor car in support of a candidate at a parliamentary election would necessitate payment of the full licence duty.

*** No pronouncement has been made by the licensing authorities in regard to any restriction in the use of cars on which only one half the licence duty has been paid. The requirement of the Act is that the practitioner shall prove to the satisfaction of the commissioner or council by whom the licence is granted that the motor car is kept by him for the purpose of his profession. If the car is in fact kept for the purpose of the profession, this requirement would seem to be met, notwithstanding its occasional and incidental use for the purposes to which a private car may be put.

Licences for Male Servants.

Horseman asks for full information as to licences for male servants and livery. He inquires whether duty is payable on any male servant employed for whole time, whether residing in the house or not; also, what constitutes livery for tax purposes.

*** The licence duty for male servants is chargeable whether livery is worn or not. The definition of "male servant" includes a person employed either wholly or partially in such capacities as butler, footman, page, coachman, chauffeur, groom, stable boy, or help in the stables, gardener, under gardener, gamekeeper, etc, but does not include a servant who, being bona fide employed in some capacity other than these, is occasionally or partially employed in any of these capacities. The term "male servant," moreover, does not include a person who has been bona fide engaged to serve his employer for a portion only of each day, and who does not reside in his employer's house. The duty is, however, payable in respect of a male servant employed for the whole of his time, although not resident in the house. There are certain exemptions in favour of officers of the navy and army, hotel keepers, livery stable keepers, and others.

Date of Expected Confinement.

Exsul Scoticus writes: The following doggerel, which is, I blush to say, entirely my own, has proved during some years a useful mnemonic in reckoning the probable date of expected confinements. It will be found to be absolutely accurate with the exception of leap years, when it is easy to allow for the extra day in any nine months' period that includes February. By its help one can instantly say what date will be 280 days, or 40 weeks, from the beginning of the last menstruation, and according to one's predilection can add to that as many days as one prefers. Personally, I found the pregnancy to end, as a rule, later than the 280th day. Take, then, the first day of last menstruation as the fixed point, and—

> Add *four* to the date for conception in May,
> But for March and for April add *five* to the day,
> (These two are the only five-lettered, remember);
> Put *six* for July, and the same for December,
> The seven months left will require the addition
> Of *seven* to the date to forecast parturition.

For example, say menstruation began on August 10th, go back three months to May, add seven to ten, May 17th will be 280 days. But say menstruation began May 20th, February 24th would be 280 days.

ANSWERS.

M.O.H. and Legion have omitted to enclose their cards.

Dr. H. L. Thorp (Ipswich) writes: In reply to "Thirteen" I have obtained excellent results with salicin gr. xv three times a day.

Plague Outbreaks.

Weston.—There has been no case in which an outbreak of plague has originated in a bacteriological laboratory, or in which any other disease of a contagious order has so originated. Possibly the foundation of the story is that some eleven years ago Dr. Müller, of Vienna, inoculated both himself and his laboratory attendant with plague. They were aware of what had happened, and never left the laboratory. They isolated themselves in one of its rooms, and eventually both died. No other cases followed, either in Vienna or in the laboratory itself. Both might possibly have been saved if it had been recognized at that time that bubonic plague is not contagious.

The Effects of Acids on the Urine.

A. H. G.—Most modern books do not go into the subject in detail, but content themselves with expressing the rule that vegetable and mineral acids increase the acidity of the urine. The subject is treated at length in *The Composition of the Urine*, by Edmund A. Parkes, M.D. (London: J. and A. Churchill. 1860), p. 145.

Foreign Practitioners in Italy.

Dr. G. H.—We published an abstract of the new law relating to practice by foreign medical men in Italy last July, and summarized its contents, so far as they relate to those possessed of British qualifications, in the article on Medical Practitioners Abroad in the Educational Number (September 10th, 1910). The law makes practice in Italy absolutely free to foreign medical men, provided their diplomas or degrees have been obtained in countries between which and Italy reciprocity in the matter of medical qualifications exists. All other foreign medical men are forbidden to practise unless (1) they naturalize as Italian citizens and obtain degrees from Italian universities, or (2) unless they have at the date of the Act been resident in Italy and paid income tax for upwards of two years. In the latter case they are permitted to treat foreigners, but not Italian subjects. As Italian qualifications entitle their holder to admission to the *Register* in Great Britain and Ireland, the requirements of reciprocity are ful filled, and therefore all medical men possessed of qualifications entitling them to admission to the *Register* in this country stand equally entitled to practise in Italy.

LETTERS, NOTES, ETC.

Fatal Pulmonary Thrombosis: A Correction.

Dr. Ernest Glynn (Liverpool) writes: In the title of the above paper published in the Journal of November 5th, Dr. R. E. Knowles should read Dr. R. O. Knowles. The error was mine.

A Disclaimer.

Mr. Henry Curtis (London, W.) writes: To-day a Harley Street physician informed me that my name had been given to him as a reference, as appearing in the list of medical men consenting to have their portraits painted and displayed in an exhibition about to be opened by *Vanity Fair*. I at once warned my friend that on each of the two occasions on which

I had been approached on the matter in question I had absolutely declined to allow any such portrait to be made or exhibited, regarding the whole thing as being merely a form of self-advertisement and therefore contrary to what is in accordance with the best traditions of our profession. As other friends may have been falsely given my name as a reference, I beg you will insert this disclaimer.

HAEMORRHAGE OF THE NEW-BORN.

DR. CHARLES T. QUILLER (London) writes: With reference to the notes on these cases by Dr. T. F. Forster (October 22nd) and Dr. T. G. Blackman (November 5th) I see that they were both male children. I would suggest as a possible theory that haemophilia might be the cause. This condition is often overlooked from its rarity, but to me it is ever present, as my first child died in forty-eight hours, and now my only child—a boy of 10 years—is a constant sufferer. The diagnosis in my first case was entirely obscure, until years after symptoms appeared in the second, and directed my attention to haemophilia.

SAHLI'S OPIUM PREPARATION "OMNOPON."

IN the JOURNAL of October 15th there was published a short account of Ewald's and Gräfenberg's experiences with an opium preparation called in Germany "Pantopon" and in this country "Omnopon." In this article it was reported that Ewald compared the price of a sterilized solution of this preparation with one of morphine, and found that the former costs from two and a half to three times the price of the latter. In the *Berl. klin. Woch.* of October 17th Ewald published a note in which he admits that his remark as to the price of the preparation was erroneous. According to this note pantopon (omnopon) costs 33 pf. per ampoule if bought in a packet of twelve, or 40 pf. if bought in packets of six, while ampoulae of morphine cost 30 pf. each, according to the Royal Prussian Medicine scale of prices. The price charged in this country for a dozen ampoules of omnopon, each containing 1 c.cm. of a 2 per cent. solution, is 3s.

ABBA, FATHER!

DR. AINSLIE HOLLIS (Hove) writes: The word "Abba," father, which Christ used in His passion, may be regarded as Aramaic, "a language akin to Hebrew," as some correspondents suggest. It is certainly an example of a very old and widespread type of child-name for that parent. These words consist of two syllables, "a-xa," where "a" is an open vowel sound, and "x" is a lingual labial or nasal consonant. The Accadian or Sumerian babe some centuries before scrip was invented (that is, 8,000 B.C. or thereabouts!) probably called his father "adda." Afterwards the ancient Assyrians named that parent "abu" or "aba." The first syllable of such words was originally spoken in all probability during a respiratory intake, and the whole word occupied a complete respiratory cycle. This method of utterance, both difficult and dangerous, especially to interprandial orators, was gradually superseded by out-breathed language. Even now the word "aba," father, is in use among the Arabs; and we find "ama" and "hama," father, in the primitive dialects of New Guinea.[1] Otherwise this form of word has been largely replaced by duplicated syllables of the "ba-ba" type in the child-language of the present day.

ST. PAUL'S "THORN IN THE FLESH."

BUXTONIENSIS writes: Before your correspondence on this curious subject closes I cannot but express what is probably only part of a general regret that so little profitable interest has been taken in it, and so little accomplished in deciding whether the "thorn" was a defect of physical or nervous character. The subject is much more likely to receive help in its elucidation from the medical fraternity than from the whole army of theologians, and its elucidation would do much to determine the mental attitude of St. Paul as to whether he had not passed beyond the confines of hystero-epilepsy into emotional insanity. One or two thoughtful letters like that of Dr. Jones in the JOURNAL of October 15th are what one would naturally look for and appreciate. But half the criticisms have been either irrelevant or simply slaying the slain.

That Aramaic was the language in which the uneducated disciples of Christ must have conversed with each other is probably familiar to every Sunday school scholar, and as Renan, and almost the whole school of German theologians say, Christ did not, and for many cogent reasons could not, have known Greek, has more weight with me personally than the *ipse dixits* of any number of local preachers holding other views.

The same remark applies to the so-called Greek woman, which one of your correspondents relies on as a proof that Christ understood Greek. Does he need to be reminded that at that time the Jews called all civilized nations except themselves Greeks (as Acts, xix, 10; xx, 21; Rom. I, 16; II, 9, 10; x, 12), just as the Greeks called all except themselves Barbarians. Though Mark vii, 26, calls her a Greek, Matthew calls the same woman a Canaanite (xv, 22). The Revised Version more cautiously calls her a *Gentile*, but the text adds she was a Syro-Phoenician, where again the schoolboy will tell us her language was consequently Aramaic.

But another more *bizarre* criticism it is better to leave in the very words of your correspondent: "The most violent higher critic and the most *rabid of the orthodox* (!) agree that Luke's gospel and the Acts were written in Greek." For whatever this stupendous discovery may be worth, it is quite true! They even go further, and the higher criticism which he invokes has now finally decided that Luke and the Acts are by the same hand, but that hand was *not* St. Luke's.

In the Augustan age of Roman literature, when the Roman dominion extended almost over the whole of the ancient world, and it was at the zenith of its power and influence, the same droll correspondent makes the astonishing statement that Greek was the *lingua franca* of the whole world! And he tries to prove that this debased Greek of the New Testament, this Greek of the back kitchen and the street—kitchen-Greek—was the vernacular language of the foremost city of another nation altogether. And this is the humorous proof of it.

"The Roman lady," says he, "liked to be styled Zoe Kai Psyche by her lover. . . . Rome itself was full of Greeks."

Well, London has far more Germans and French and Jews in it than ever ancient Rome had Greeks, but their influence on the vernacular is microscopic. Of course every attractive Roman lady would like to have been called "My life, my soul," or, as it is much more prettily expressed in Byron's "Maid of Athens," "Zoe mou sas agapo!" if she had the good luck to know the meaning of it, which in the great majority of cases she certainly would not, any more than the average London girl would like her lover to drivel over her with a flood of similar endearments, "all equally Greek" to her—"Ma belle aimée, chérie," etc.—and she would probably like it so much as to answer him in the words of Albert Chevalier—"Garn!"

So far from Greek having been in general use at Rome, Juvenal thunders against the higher classes for their aping foreign customs and for indulging in a society craze for Greek, just as every other English dramatist of the seventeenth and eighteenth centuries declaimed against the introduction of French modes of speech and of the flippant and affected immoralities of French milliners and dancing masters.

They were only the modern representatives of these passing fads in society. And so Juvenal—

Omnia Graecè—concumbunt Graecè! and the Rev. Mr. Madan's reflection, "The Roman ladies were guilty of copiously interlarding their vernacular tongue with Greek words, a piece of affectation similar to that with which the British fair have been charged of introducing French phrases upon all occasions."

Professor Ramsay, who, I believe, still has a large following, holds that Paul caught malarial fever while doing missionary work, and subsequently betook himself to the highlands about Antioch, feeling that the more bracing air of the uplands of Asia Minor would enable him to recover more quickly.

At least one objection to this, from a medical point of view, is whether a long and perilous journey like that from Perga to Antioch could be practicable in such an enfeebled state.

An objection none the less difficult is the reconciling this view with the cryptic words in which Paul refers to his bodily imperfection or defect.

"I preached the Gospel," says he, "unto you the former time, and that which was a *temptation* to you in my flesh ye despised not, nor *spat out*" (Gal. iv, 14).

Should this *temptation* in my flesh be read *vexation*, as seems to be justified by the Latin translations of the Scriptures, or does he refer to some ancient usage in which expectoration was indulged?

Krenkel has elaborately discussed the question in his *Beiträge* (pp. 47-125), in which he shows how epilepsy was regarded by the ancients with peculiar horror as a supernatural visitation, often associated with madness (Matt. iv, 24; xvii, 15, with which, also, Paul was taxed (2 Cor. v, 13; xii, 11). Spectators witnessing epileptic attacks used to *spit out* in superstitious dread, and by way of averting the evil (*morbus qui sputatur* of Plautus, Captivi iii, 4-18, and the *despui suetus* of Pliny, Nat. Hist. x, 23).

*** We think this correspondence may now cease.

[1] See *The Languages of New Guinea in the Different Dialects.* By Sydney H. Ray.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *postes Restante* letters addressed either in initials or numbers.

An Address

ON

SOME POINTS CONCERNING TUBERCLE, SYPHILIS AND MALIGNANT DISEASE.*

BY

RUTHERFORD MORISON, M.B., F.R.C.S.,

PROFESSOR OF SURGERY, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

GENTLEMEN,—I highly appreciate the honour of being asked to address you, and have selected for my subject three of the most common and most interesting of surgical diseases—tubercle, syphilis, and malignant disease. It has been helpful to me, and I trust it may be to you, to consider them together.

For two of them—syphilis and tubercle—the responsible organism has been discovered. It is still being searched for in respect to cancer and sarcoma.

All of these diseases commence locally, and spread mainly by the lymphatics. The primary lesion in each may either take the form of an ulcer or that of a tumour. Thus, in cancer of the tongue, ulcer is common while tumour is rare; in the breast, ulcer is rare (Paget's disease), while tumour is common.

In tubercle, the primary lesion is frequently so trifling as to pass unobserved.

In syphilis, it may be so insignificant as to attract no attention.

In malignant disease, it is usually a most important feature.

In each, many of the conditions described as characteristic of the disease are the result of septic infection of the primary focus. This may be a serious complication in all of them.

The skin and genito-urinary organs are the favourite sites in all. Syphilis remains localized for so short a time that the generalized manifestations of it have rarely, if ever, been prevented by the earliest excision of the primary lesion. In malignant disease early excision of the primary lesion alone offers a chance. In tubercle it does not often fail.

The importance of the primary focus in all these diseases is not yet sufficiently recognized. If the primary focus in cancer is removed, secondary growths will, in a certain percentage of cases, disappear. This has occurred in chorion-epithelioma, when, after hysterectomy, a secondary growth in the lung gave no further trouble. It is also proved by the results of old-fashioned operations for cancer, in which only the primary growth was excised, for it is now accepted knowledge that, in the great majority of these cases, the nearest lymphatic glands are early infected.

GLANDS.

All of them infect and cause enlargement of the lymphatic glands. These seem to offer little or no resistance to the diffusion of syphilis, considerable resistance to the dissemination of tubercle, and for a long time they stop the advance of malignant disease.

Therefore, syphilis is always disseminated, tubercle frequently, malignant disease rarely.

Syphilis confers complete immunity, tubercle partial immunity, malignant disease probably no immunity at all.

The glandular enlargement in syphilis is general, in tubercle limited, and in malignant disease localized. Following syphilitic infection, all the local glands swell and feel like almonds. Shortly after all the glands in the body participate. Syphilitic glands never suppurate. Following tuberculous infection the local lymphatic glands swell one at a time, feel like a string of small potatoes, tend to form large tumours, and frequently suppurate. Following cancerous infection, the local glands enlarge (those nearest the point of infection first), they grow into hard fixed tumours, and seldom suppurate except in the neck.

Dissemination always occurs before three months in syphilis, and on the skin it appears usually as a roseolous eruption. The dissemination of tubercle is rare, and occurs chiefly in the viscera of the head, chest, and abdomen. General dissemination of cancer is rarer still. When it occurs in the skin all over the body the eruption, on superficial examination, may be mistaken for that of syphilis. On the other hand, dissemination of sarcoma is to be expected, and when it attacks the lungs and pleura the symptoms and signs of tuberculous disease are closely simulated.

ULCERS.

It is generally possible to offer a correct diagnosis as to whether an ulcer is due to tubercle, or to cancer, or to syphilis. The age, appearance, and sex of the patient, the history of how the condition commenced, and its site are of an importance next to the physical signs.

Tubercle is most common in the young, syphilis in the middle-aged, and cancer in the old.

Tuberculous subjects look thin and anaemic or fat and pasty (delicate); the syphilitic look "dry," with a muddy anaemia, and the cancerous florid and robust.

Tubercle and cancer affect both sexes equally, syphilis mainly the male.

A tuberculous ulcer usually commences as a small sore, which has gradually destroyed its site (destruction in excess of growth); the cancerous ulcer, as an irritable crack around which a tumour has developed (growth in excess of destruction); the syphilitic ulcer, as a tumour which has broken down (an ulcerating tumour).

Tubercle and cancer choose sites furnished with the best vascular supply, syphilis with the worst.

Mistakes will become less frequent with improved diagnosis, but are sometimes, as yet, unavoidable.

I have excised an ulcer of the lower lip, and along with it the enlarged submaxillary and submental glands, of an elderly man, for "epithelioma." Microscopical examination of the growth and of the glands proved tubercle.

I excised the tongue of a stout, florid man, between 50 and 60, for an "epithelioma," which proved to be tubercle. He was quite well ten years later.

I excised the uterus of a patient for "carcinoma of the cervix." This was also a case of tuberculous disease.

To the infirmary clinics, chancres of the lip or tongue are usually sent as "epitheliomata." I treated one girl of 26 and a man of 28 with mercury and iodide, for a "chancre of the lip." They both died of cancer of the lip and neck respectively within one year.

I have observed cases of "cancer of the cervix uteri" cured by a course of iodide and mercury. They were syphilitic sores, and either had, or developed later, signs typical of syphilis.

A large number of "cancers" of the face have been cured by mercury and iodide: and as large a number of cancers of the tongue and of the penis have had their chance of cure lost through delay in operating whilst the same means were being "fairly tried."

TUMOURS.

The chronic inflammatory swellings produced by tubercle and syphilis have not infrequently been mistaken for malignant disease, and vice versa.

Many bowel "tumours," due to tubercle, especially at the caecum, have been excised under the belief that they were malignant.

I operated on a case of "cancer of the pylorus," and found the disease too far advanced for anything but the palliative operation of gastro-enterostomy. To confirm the diagnosis I removed a gland. It only contained tubercle. The microscopical diagnosis was confirmed by the permanent recovery of the patient and the disappearance of the tumour.

A middle-aged woman had "cancer of the liver and ascites, with hard lumps in the omentum, and jaundice." Examination revealed typical tertiary syphilitic ulceration over the left shoulder. Mercury and iodide cured her.

A man, aged 38, had three attacks of acute intestinal obstruction in eighteen months. After the last of these I opened his abdomen, and found a "fixed inoperable malignant growth" in his sigmoid flexure. His doctor, who was present at the operation, mentioned that he had treated him for syphilis seven years before. Since a mercurial course he has had no further attack, and fifteen

* Delivered before the Blyth Division of the British Medical Association on September 25th, 1910.

years after is well. Fortunately I refrained from making a permanent colostomy opening, because I thought it would be soon enough for that when the obstruction recurred.

A middle-aged man had an "aneurysm of the thoracic aorta eroding his sternum." The "aneurysm" disappeared after six weeks of mercury and iodide.

I excised a large thyroid for "malignant growth" from a woman of middle age. The microscope revealed tubercle.

In another case I made a diagnosis of a malignant thyroid and offered a hopeless prognosis. Six months afterwards an abscess opened and the pus was tuberculous. The patient was alive three years later.

A stout, healthy-looking lady was operated upon by one of my colleagues at my request for a "typical scirrhus of the breast." A macroscopic section confirmed the diagnosis. The pathologist and ourselves required more than one series of microscopic sections to satisfy us that we were all wrong. The "tumour" was tubercle.

A "tumour" of a bone may be due to either.

I once saw a leg amputated at the hip-joint for "sarcoma" at the lower end of the femur. This was a syphilitic gumma.

A patient had his leg amputated at the upper part of the thigh for a "sarcoma" of the lower end. Sixteen months later a "secondary growth" appeared in the upper end of the humerus of the opposite side. This was cured with iodide and mercury, and the patient is alive and well fifteen years later.

A patient was advised amputation at the hip for a "sarcoma" of the upper end of the femur. The advice was not accepted. Twelve months later a tuberculous abscess was opened, and recovery followed.

A patient was operated on for "tubercle" of the upper end of the humerus. Profuse haemorrhage followed the incision, and a fungating malignant growth appeared through it a few days later.

Even a skilled pathologist with his microscope may make mistakes.

A man of 35 had his right testicle removed for a "round-celled sarcoma." Nine months later he "developed a secondary growth in his brain." This serious brain lesion disappeared after a course of mercury and iodide.

Nearly twenty years later he is well.

I was once asked to look down a microscope and offer a diagnosis. I felt no doubt that the section of skin revealed bore a typical epithelioma. It was a nodule of leprosy, and a favourite "catch."

A young married man had his left testicle excised for "tubercle." The diagnosis was confirmed by the microscope (no tubercle bacilli were found). One year later his right testicle swelled as the other had done, and he resented the proposal that it also should be removed. Mercury and iodide quickly cured him.

Hodgkin's Disease (Lymphadenoma).

This condition, as yet ill understood, sometimes resembles tubercle, sometimes sarcoma, in its clinical course. The enlarged glands, which are characteristic of it, may remain for long unchanged, then slowly soften, redden on the surface, break down, discharge a curdy matter, and finally heal. The patient with this form of the disease may live for several years. In the second type the glands become glued together and fixed; internal growths develop quickly, and the patient dies, with dissemination throughout the viscera.

Fibrosis.

Natural cure occurs in all of these diseases. It is the rule in syphilis, the exception in tubercle, and very rare in cancer. In all of them the cure of the local lesions is the result of fibrosis.

The tendency to break down is characteristic of the acute type of tubercle, syphilis, and malignant disease; and to fibrose is characteristic of the chronic variety.

The natural tendency of fibrous tissue to contraction accounts for the fact that stricture of the tubular viscera may be the result of tubercle, of syphilis, or of cancer.

In all, the newly developed fibrous tissue may grow so luxuriantly as to form a tumour, chiefly fibromatous. Keloid of the skin, and many internal growths, are of this nature, and in each of them the chief clinical characteristics are slow development and long duration, with periods of quiescence (fibrosis or sclerosis in excess) and exacerbation (infection in excess).

In the prognosis of cases of cancer everything depends upon the amount of existing fibrosis. The ill-defined diffuse growths, so active as to simulate inflammatory swellings, offer the worst prognosis. The firmer, more defined growths, resembling simple tumours in their physical characteristics, are the most favourable in prognosis.

A growth rich in cells and without much fibrous tissue will rapidly disseminate and kill.

I have known a patient die of breast cancer within three months of its appearance. On the other hand, one patient under my care lived for twenty-five years after two operations for breast cancer, both of which failed to remove the growth and were followed by an inoperable recurrence. Death resulted from extension of the cancer to the pleura and lung. From time to time I had the opportunity of watching the great fight between cancer and fibrosis, and though complete healing never occurred the supremacy of the external fibrous tissue was maintained till the end. This was at the expense of much discomfort to the patient, for the right side of her chest was tightly bound and contracted by thick, large patches of scar tissue.

Many cases of atrophic scirrhus cancer of the breast have lived for years without much discomfort, and have frequently in the end died through bone infection. They owe their benign course to fibrous tissue formation. Some of them assume a more malignant course after operation, and in view of what has been said the explanation is obvious.

Cancer of the colon may be one of the most malignant or one of the most benign of malignant growths.

If it takes the form of a tumourating ulcer without stricture its course is malignant; if, on the other hand, stricture (that is, fibrosis) is the predominating feature a better prognosis can be offered.

Tuberculous glandular tumours of long standing are chiefly composed of fibrous tissue.

A patient of mine carried about a testicle the size of a cocoanut for twenty years, before it troubled him sufficiently to require removal. It was syphilitic, but consisted chiefly of fibrous tissue.

Bones.

For bone sarcomata the rule corresponds exactly with that discussed above. Their malignancy may be gauged by the amount of osseous tissue in relation to them.

The least malignant (myelomata) have an even, rounded shape, and may not destroy life for many years. They are enveloped in a well defined bony capsule, which may expand indefinitely with their growth. If they burst through this capsule they infiltrate the surrounding tissues, grow rapidly, and declare their malignancy.

The most malignant of malignant tumours are the so-called periosteal sarcomata of growing bones. They spring from the bone, and their favourite site is in the neighbourhood of the most active epiphyses (upper end of humerus, lower end of radius, lower end of femur, upper end of tibia). Their growth is so rapid that they assume an irregular lobulated form, and any resistant structure met with, such as tendon, blood vessel, or nerve, leaves its mark on their surface, because, in their hurry to get big, they follow the path of least resistance. Their victims die within the year, usually from growths in the lung, and whether the most radical operation is or is not done.

In the intermediate group of bone sarcomata—those of neither very slow nor very rapid growth—the degree of malignancy may be estimated by the amount and density (shown by x rays) of the osseous tissue connected with them. Some of them, after years of slow growth, suddenly develop their malignant tendency, owing to the fact that the tumour cells have overpowered their osseous inhibitor.

Like the pyogenic infections, those of tubercle, cancer, and syphilis can be imprisoned by fibrous tissue and bony deposits for long periods of time.

Septic Infection.

The evil influence of septic infection on tubercle, malignant disease and syphilis is insufficiently recognized. Each may have a relatively benign course till sepsis is superadded. An uncomplicated tuberculous abscess never

causes constitutional disturbance or death, but when septic infection has gained an entrance to it both frequently follow.

The uncomplicated primary "sore" of syphilis is not a sore at all, but a hard, dry, raised, painless lump.

Most of the pain, the odour, and the discharge of cancer are due to superadded sepsis. One of the conditions in which they are all pronounced is cancer of the uterine cervix. I have had opportunities for observing elderly spinsters with this disease. In all, the only early symptom was haemorrhage. Before the growth had caused serious disturbance it had in each instance invaded the bladder, was infiltrating the surrounding structures, and had become inoperable.

Chronic Lymphatic Oedema.

Amongst other causes of chronic lymphatic oedema of the extremities tubercle, syphilis, and cancer have to be remembered.

Combinations.

That of syphilis and tubercle is a deadly combination. I have seen cases in which tubercle attacked the lungs of a victim of secondary syphilis. In each instance the tubercle rapidly advanced to a fatal issue.

The most disastrous form of "scrofula" is a combination of congenital syphilis and tubercle.

Cancer and syphilis are very firm allies, and syphilis often provides a suitable site for the lodgement of cancer. If a person over 60 years of age contracts syphilis his death from cancer may be anticipated.

Tubercle and cancer favour the same sort of soil. Persons who have recovered from tubercle in their youth are exceptionally liable to cancer in their later years. It is more than a coincidence that both occur in families with a history of some members having attained to an extraordinarily long life.

THE ROENTGEN RAY APPEARANCES OF THORACIC ANEURYSM.*

By A. C. JORDAN, B.A., M.D.Cantab.,
Medical Radiographer, Guy's Hospital, and Royal Hospital for Diseases of the Chest.

Thoracic aneurysm is a condition in which a Roentgen-ray examination is of the greatest value, for there are few cases in which such an examination does not clear up the diagnosis beyond possibility of doubt. In the normal thorax, viewed from the front or back, the normal aortic arch is usually entirely concealed by the shadow of the vertebral column. In a fair proportion of normal cases, however, it forms a slight bulge to the left of the vertebral column below the clavicle. Thus, we must not fall into the error of taking a mere bulge to the left of the spine above the cardiac shadow as evidence of the presence of an aneurysm. It is necessary to supplement the view obtained in this plane by a view in the plane of the aortic arch itself. For this purpose the patient is placed vertically on a revolving seat in such a manner that he can be revolved upon his vertical axis between the *x* ray tube and the fluorescent screen.

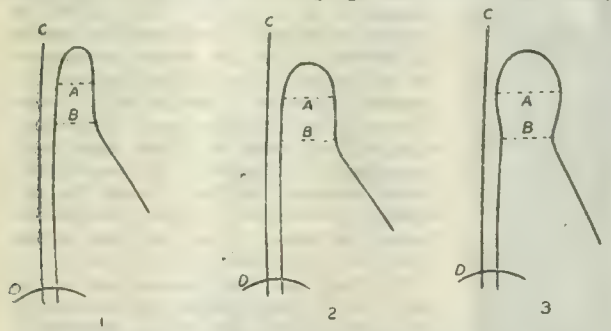


Fig. 1.—Diagrams of the aortic arch in the right anterior oblique view. 1, Normal arch. 2, Generally dilated arch. 3. Fusiform arch. C, Front of vertebral column. D, Diaphragm. Immediately in front of C is the posterior mediastinal clear space.

* A paper read in the Section of Medicine at the annual meeting of the British Medical Association, 1910.

It will be remembered that the direction of the course of the aortic arch from its origin is backwards and to the left. Hence we are able to obtain a view in the actual plane of the aortic arch by revolving the patient so as to bring the right shoulder forward. The exact angle to which he should be revolved in individual cases is determined by the appearance on the fluorescent screen. In this, the right anterior oblique view, the appearance of the normal aortic arch and of the aneurysmal arch is illustrated by the diagram (Fig. 1), which shows the appearance of the aortic arch in relation to the posterior mediastinum and to the vertebral column.

In both the normal and the generally dilated arch the sides of the aortic shadow are parallel, a line A drawn horizontally across the upper part of the shadow being equal in length to a horizontal line B across the base, where the aortic shadow and the shadow of the auricle meet. In the generally dilated arch, however, both A and B are greater in length than in the normal arch, and it is not uncommon to find them double the length of the normal arch. In the fusiform arch the upper line A is longer than the line B at the base of the arch. A saccular aneurysm is merely an exaggeration of the fusiform arch.

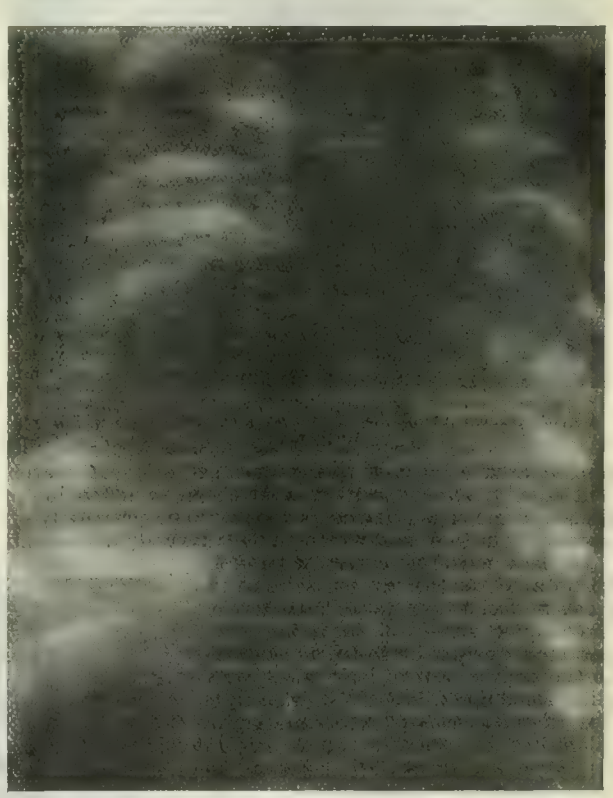


Fig. 2.—Large saccular aneurysm of the ascending portion of the aortic arch. The transverse portion of the arch is displaced to the left.

The only form of aneurysm which is not revealed with certainty by either the anterior or the oblique examination is a small aneurysm confined to the concavity of the arch. I have no personal experience of this form except in association with general dilatation of the arch. If the symptoms, for example, those of pressure upon the recurrent laryngeal nerve, are too great in any particular case to be explained by moderate general dilatation of the arch, the fact should be borne in mind that there may be a localized saccular aneurysm in the concavity of the arch. In the case of a large saccular aneurysm of the aortic arch there can rarely be any doubt from the anterior view alone as to the diagnosis. When the saccular aneurysm affects the ascending portion of the arch, the transverse arch is usually displaced to the left by the pressure of the aneurysm, and is seen to the left of the vertebral column (Fig. 2).

In an aneurysm which involves the whole of the arch it is usual to find the long axis of the [illegible] oblique than usual. In explanation of this remembered that a generally dilated arch is als

Since the descending thoracic aorta is fixed in position against the vertebral column, it is the aortic arch, lying free in the thorax, whose position will alter. Consequently, as the arch elongates, the commencement of the arch will take up a lower position in the chest, so much lower that in some cases the heart appears to be actually lying upon its right side with its long axis practically horizontal.

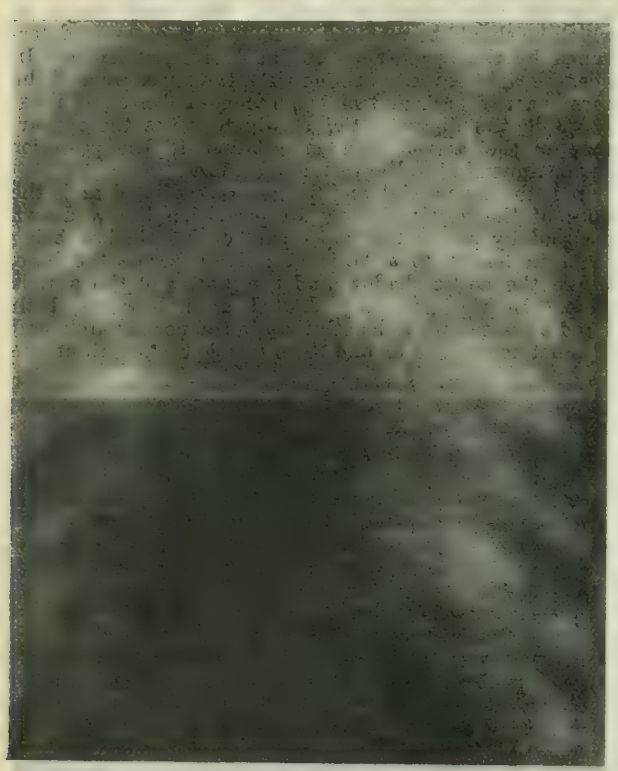


Fig. 3.—Aneurysm of the innominate artery above a dilated aortic arch.

In less extreme cases, where the aortic arch shadow as seen from the front is decidedly greater than normal, the oblique view will show the exact nature and degree of the dilatation, and aortic arches which look very much alike from the front will be seen to be due in some cases to moderate general dilatation, in others to great general dilatation, and in others, again, to fusiform dilatation of the arch.

Aneurysm of the innominate artery usually forms a very striking and characteristic picture. In most cases the arch itself is dilated, sometimes considerably so. From the upper part of the shadow of the arch, just to the right of the spine, a considerable shadow ascends and is lost in the dense tissues of the neck (Fig. 3).

An unusual case is that of an aneurysm of the descending thoracic aorta, displacing the heart and aortic arch forward (Fig. 4). In the right anterior oblique view the outline of the heart and aortic arch are shown to be normal, but their distance from the vertebral column is increased. The posterior mediastinal clear space is occupied in its middle part by an opaque shadow, which was thought during life to be due to a mass of enlarged glands, but was shown at the *post-mortem* examination to be due to an aneurysm of the descending thoracic aorta. This aneurysm pressed upon the oesophagus and gave rise to difficulty in swallowing. A bismuth emulsion was found, when swallowed, to be obstructed at the level of the upper limit of the aneurysm, the emulsion collected above it, while a thin stream found its way through the oesophagus around the aneurysm.



Fig. 4.—Right anterior oblique view. A, Saccular aneurysm of descending thoracic aorta. B, Bismuth emulsion in the oesophagus above the aneurysm; a thin stream of the emulsion is seen passing thence down to the diaphragm, whence it enters the stomach. C, Aortic arch, normal in size, displaced forward by the pressure of the aneurysm. D, Diaphragm.

In complicated cases the diagnosis may be far less easy.



Fig. 5.—Aneurysmal dilatation of the descending thoracic aorta in its entire length.

Thus, in the presence of a large pleuritic effusion, where the lung above the effusion is compressed and the other lung is considerably congested, the outlines of the cardiac and aortic shadow are so far concealed that a diagnosis may be almost impossible, although, after the removal or the absorption of the pleuritic fluid, the diagnosis becomes obvious.

It is somewhat surprising to find how frequently an error in diagnosis may occur in cases in which the Roentgen-ray examination reveals the diagnosis at a glance. Thus phthisis is not infrequently diagnosed as aortic aneurysm, while an aortic aneurysm is still more often mistaken for pulmonary phthisis. New growth in the chest may give rise to areas of percussion dullness and to other signs and symptoms suggestive of aneurysm, while various swellings may, by receiving transmitted pulsation from the heart or aorta, simulate an aortic aneurysm very closely.

In other cases an examination of the aortic arch throws light on the nature of a case where the actual complaint is not connected with the thoracic aorta. Thus in a case of pulsating abdominal tumour examined recently, in which the diagnosis of aneurysm of the abdominal aorta had been made, although there was some possibility that the tumour was connected with the liver, it was shown that the aortic arch was dilated, while the descending thoracic aorta was uniformly dilated in its entire length. (Fig. 5.) Thus it may be said that the diagnosis of abdominal aneurysm was placed beyond a doubt, while, further, the utility of surgical treatment for it, in view of the condition of the thoracic aorta, was made clear.

Dilatation of the aortic arch usually follows atheromatous disease of the endothelium, and the question arises whether it be possible, by a Roentgen-ray examination, to determine the presence of atheroma while there is as yet no dilatation of the aortic arch. One is bound to admit that atheromatous patches as such are not recognizable either on the fluorescent screen or on a photographic plate, although calcareous patches have occasionally been shown when they happen to have been caught edgeways, but even this is of extremely rare occurrence.

There is one fact, however, which has considerable bearing on this question of atheroma, and that concerns the form of the cardiac and aortic shadows. We have shown that a generally dilated arch is elongated, and throws the heart into a more oblique position than is seen normally. When aortic regurgitation is present the form of the heart is characteristic, the apex being displaced to

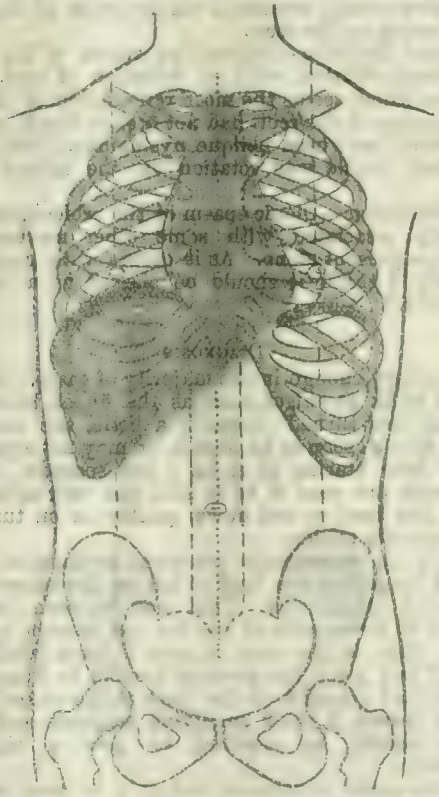


Fig. 6.—Author's diagram showing the normal cardiac area (shaded) and the form of cardiac and aortic shadow commonly associated with aortic regurgitation due to atheroma of the aorta (curved black outline).

the left, while the left ventricle and the left auricle are both comparatively empty. In this way an excavated appearance of the left cardiac border obtains when viewed from the front, and this is accentuated by the prominence of the aortic arch to the left of the spine. Even before the aortic arch has begun to dilate this particular form of cardiac shadow is found, so that in any case in which the presence of an atheromatous aorta is suspected the discovery of this particular form of cardiac shadow affords valuable circumstantial evidence confirming the suspicion of atheroma (Fig. 6).

THE late Dr. Jameson John Macan, brother of the Master of University College, Oxford, left estate of the gross value of £7,628, with net personalty of £7,541.

ACCORDING to the *New York State Journal of Medicine*, the average annual income of the medical profession in the United States is 1,250 dollars (£250).

IT has been arranged that a special congress on the standard of purity in cocoa and chocolate will take place in Paris in January, 1911, when there will be present delegates from Germany, England, Austria Hungary, Belgium, Brazil, Spain, the United States, France, Holland, Italy, Mexico, and Switzerland. The congress is being arranged under the auspices of the White Cross Society of Geneva, whose delegate in the United Kingdom is Mr. Loudon M. Douglas, F.R.S.E., of 3, Lauder Road, Edinburgh.

MINER'S NYSTAGMUS.*

By H. S. ELWORTHY, F.R.C.S.,

INSPECTOR OF INJURED WORKMEN TO THE EBBW VALE COMPANY.

IN compliance with the request of one of your secretaries, who has done me the honour of asking me to read a paper before you, I propose to bring to your notice some observations on miner's nystagmus.

While engaged in examining injured workmen for the Ebbw Vale Company during the past three years a certain number of cases have been examined; but I must ask your indulgence if the observations are not very elaborate, owing to the limited time in which they have to be made, and also if the conclusions I have drawn from them may seem presumptuous or premature, considering the small number of cases and the short period of time in which I have been engaged in the work.

To begin with, miner's nystagmus is a disease peculiar to coal miners. I have made inquiries as to its occurrence in the Cornish tin mines, but have not heard of any cases. Nystagmus is not mentioned in the Blue Book on the Health of Cornish Miners, 1904. Inquiries as to its prevalence in the lead mines of the Isle of Man were also negative. For this information I am indebted to Drs. T. A. Woods of Douglas, and H. Gell of Peel.

ETIOLOGY.

On considering the question, "Why is it that nystagmus only occurs in coal mines?"—I come to the conclusion that it is the absence of colour that makes all the difference.

I take it that the cause is fatigue of the eye, resulting from working by artificial light with a black background and nearly black surroundings. There is the blackish "rubbish" or "slack" above and below the coal, and the jet black coal with some sparkling facets which reflect the light. The monotony is not relieved by other colours. The miner may come to work with clean face and clothes, but in a few hours all is more or less black from the dust. Then he has to fix with his eye the point at which to strike with his mandril, or to lift out lumps of coal against a black background. When he turns his eyes away from the coal there is no colour relief. To make matters worse, the majority of miners prefer to work in the day. The consequence is that for the greater part of the year it is dark when they get up and go to work; they work in the dark, and in winter it is dark soon after they come out. They therefore get the minimum of daylight, and the opportunity of seeing a variety of colours by daylight, which means physiological relief to the eye.

Another cause of fatigue to the eye is when miners have to walk a mile or more underground to reach the "face" where they work. They proceed more or less in single file, each carrying a lamp which gives out light in every direction. The result is that the miner walking behind another gets the glare of that lamp in his eyes all the time. Consider what that means in a two or four mile walk.

Then, after working his eight hours and his eyes being more or less exhausted, he has to make a similar journey back. On inquiry I have generally found that men feel the effects of nystagmus most when they come from work with the abominable glare of the lamp just in front of them. Many have to sit down and wait until it has gone out of the way.

As to the theory that nystagmus is produced by working while lying down I can give no opinion, as the great majority of the Ebbw Vale colliers, I am told, work in the upright position; and I have not yet seen a case of oblique nystagmus. And, besides, other underground workers get nystagmus, such as hauliers, timbermen, and repairers in coal mines. The only class of workers in coal mines that seem immune is the ostlers, and that is because the stables are whitewashed. That it is not due to imperfect fusion is shown by its occurrence in one-eyed men.

The one essential factor seems to be exhaustion of the eyes from working in the general blackness without any colour relief.

* Read before the Monmouthshire Division of the British Medical Association.

PATHOLOGY.

I know nothing about the minute changes in the retina or nerve centres of the orbital muscles. What seems to me to occur is, when a certain stage of exhaustion is arrived at, co-ordination is lost and spasm sets in; very much the same as in writer's cramp or other trade neuroses. Lastly, accommodation fails. The spasms are clonic, and may be regular or irregular, and confined to two opposing muscles or affecting more. In some cases the whole head is in a state of tremor. In the early or "latent" stage, although there are movements of the eyes, there is sufficient power of accommodation to prevent confusion of vision, but sooner or later this accommodation fails.

SYMPTOMS AND COURSE OF THE DISEASE.

Nystagmus seldom manifests itself until the miner has been working for some years. In the case of boys getting it there may be some refractive error or hereditary element. One boy I examined, aged 15, who got nystagmus after working three years, was the son of a collier who admitted having had trouble with his eyes, but had not been on compensation for it.

The first stage of the disease may be called latent nystagmus. The patient may be perfectly unconscious that he has anything wrong with the eyes, although nystagmic movements may be quite obvious and definite.

One case I examined for an injured back, and who then had nystagmus, worked ten months before being certified for it; another who also injured his back over two years ago has not yet been certified; so that as long as the disease remains in the latent stage, unperceived by the patient, it does not seem to interfere with his work. I do not know how long this may continue, or whether the movements are continual or only periodic.

There is in many cases a general and increasing nervous irritability, and then a blow or sudden fright is sufficient to break down the co-ordination of the ocular muscles, and the power of accommodation to see with moving eyes is lost. The man then discovers that he has nystagmus.

When the disease comes on naturally the first symptoms may be various. In some it is the lamps that seem to move or become blurred, or he becomes dazzled by them; in others headache or pain in the eyes, or else everything becomes misty and he is lost in a fog.

When movements are well developed everything seems moving about, and he becomes giddy and staggers.

Bending down, or sudden movements increase the trouble; so does fright. A man may be able to walk about the street well enough, but, if a dog barks or if some one shouts at him, he is immediately lost in a fog and staggers about, quite unable to see what is coming or where he is going. Hence the danger of such men working in mines.

The most constant symptoms are headache, giddiness, and movements.

My records are far from complete, and I find only 43 per cent. with these three symptoms noted; but my impression is that fully 60 to 70 per cent. have them all. Giddiness and movements, but without headache, also occur, and I find 7 cases with the definite record of *no* headache, and 6 in which headache is not mentioned. Of these 13 cases, 8 were rotatory, 4 lateral, and 1 mixed.

Intolerance of light and continual headache are frequent, and in severe cases the man can only sit about with his eyes shaded and his back to the light. In such cases there may be an error of refraction as well.

One variety often passes into another, a rotatory to a lateral, or vertical to a rotatory with nictitation. Nictitation often comes on late, and may be the last objective symptom visible, but in some cases it is present early, with very indefinite movements of the eye.

The two eyes may be unequally affected, or have different movements, one lateral the other vertical or rotatory, but I have never seen two eyes rotating in opposite directions.

The greatest discomfort and pain in the head is caused by the very fine and quick movements, and the least by the slower rotatory. An error of refraction may cause persistent headache, and delay recovery unless corrected by proper glasses, which, however, cannot be worn in the pit.

VARIETIES.

I have divided them as follows:

1. *Lateral.*—An alternating clonic spasm of the interna and external recti.

2. *Vertical.*—An alternating clonic spasm of the superior and inferior recti.

3. *Rotatory.*—An alternating lateral and vertical nystagmus in regular sequence producing rotation. In one case with a large and flaccid eye it was quite easy to see the tug of the several rectus muscles at their insertions into the globe.

4. *Mixed.*—An alternating lateral and vertical nystagmus in irregular sequence, producing rotation but irregular movements.

5. *Oblique.*—Presumably a synchronous contraction of a superior with one of the lateral recti alternating with the inferior and the opposite rectus. It could also be produced by the two oblique muscles if the deviation of the axis is not corrected by the recti.

6. *Axial Rotation.*—Alternating spasm of the superior and inferior obliques, with no deviation of axis. I have one case, which seems the most remarkable of the series. Co-ordination of the recti had not broken down, otherwise there would have been oblique nystagmus. But the only movement visible was rotation on the antero-posterior axis.

7. *Nictitation.*—Clonic spasm of the orbicularis muscle. Generally associated with some other movement, but sometimes present alone. As it occurs with considerable frequency, I think it should be classed as a variety of nystagmus.

DIAGNOSIS.

This is easy enough in the majority of cases. On asking the man to fix an object, such as the finger, held so that the eyes are turned upwards a little, the movements may be seen as soon as he fixes it, or may not appear until he has been staring at it for a few seconds. Often no movements are seen if he is still, and only appear after making him bend up and down quickly, or on turning his head from side to side.

Still, if no movements are seen, nystagmus may be revealed by getting the light to fall on the sclerotic, so as to make a bright spot. This may be seen to quiver, although no movements of the iris can be seen, even with a lens. This is the sort of case I have labelled "indefinite," and gives the greatest trouble to diagnose. It requires good eyesight on the part of the examiner, and for this reason I think certifying surgeons and medical referees should be required to pass a sight test periodically.

In some cases movements can only be seen when the man is bending down.

In cold weather, washing the face with cold water and rubbing vigorously with a towel will demonstrate nystagmus, or putting the man in a dark room and suddenly lighting a match.

If all tests fail, one should suspect some other cause, such as an error of refraction, particularly astigmatism. When headache and blurred lights are complained of, glaucoma is to be excluded; and, lastly, there are other causes of nystagmus than coal-mining, and the diseases of the nervous system must be considered and excluded before certifying the case as miner's nystagmus.

I had one case of the indefinite class, who received compensation for a considerable time, and who was admitted to a hospital for some intracranial disease from which he eventually died. No nystagmus was observed while he was in hospital, but he had optic neuritis. This man was certified on subjective symptoms only. It is all very well to certify cases on subjective symptoms just because a man happens to be a collier, but it is very difficult to disprove a claim for compensation if there are these indefinite symptoms, which may, after all, have nothing to do with miner's nystagmus.

ANALYSIS OF 100 CASES.

These are taken just as I noticed they had nystagmus, and without regard to whether they had been certified or not.

Seven were relapses, and counted as fresh cases.
One man had one eye, and one had one good and one useless eye, while two had bad squints.
There were 18 latent cases. Of these—
8 first noticed nystagmus after a blow on the head.
1 had it after a blow on the head, but was not aware of it. It is 16 months ago, and he has not been certified yet.
5 after blows on the eye or eyebrow.
2 after blows on the back; neither was aware of it.
1 after a blow on the leg. He developed nystagmus 6 weeks afterwards, while he was still above ground.
1 after a sprain of his side.

The average age at the commencement of the disease was 35½ years.

The average number of years men had been working underground was 21¼ years.

The average period between first noticing eyes and leaving work was 8 months, but this includes 3 cases who noticed them from 2 to 8 years before. If these are excluded, the average period is 6½ months.

The average period of disability for all cases is 5 months. but, as I have included latent and uncertified cases, this is, if anything, an under-estimate. A number resumed work on the surface before complete recovery.

The longest period was 28 months, and he has not yet recovered. The shortest was three weeks. Four cases of over 12 months' duration have not recovered yet.

Varieties Met With.

As there is seldom a hard-and-fast line to be drawn between them, these are classified according to the most pronounced movement.

Of 14 cases in which nictitation was a prominent symptom, those with some other movement, such as vertical or lateral, are included in those classes, and those with no definite movement except nictitation in the indefinite. There were: Rotatory, 27 cases; lateral, 25; indefinite, 18; vertical, 12; mixed, 12; not recorded, 5; axial rotation, 1; oblique, 0; total, 100.

Prognosis.

As far as my limited experience goes, those men who remain t work struggling for months against the disease until obliged to give up take the longest to recover, especially if old.

Given a youngish man who has been underground for, say, ten to fifteen years, and who comes out early, say in two or three weeks after first noticing his eyes, he will probably get well in two to four months in summer and somewhat longer in winter. The sooner the man with nystagmus leaves off work the better will be the prognosis; but in the early stages the diagnosis is more difficult, as there may be no definite objective symptoms visible.

I have not been examining long enough to say whether the disease is in some cases incurable.

Some inference as to the duration may be drawn from the variety of nystagmus. The average duration for the 100 cases was five months.

1 case of axial rotation recovered in	6	weeks
18 indefinite cases recovered in an average of	3	months
27 rotatory cases recovered in	4½	,,
14 cases associated with nictitation recovered in	5	,,
25 lateral cases recovered in	5½	,,
11 vertical cases ,,	6	,,
12 mixed cases ,,	8	,,

So it appears that the mixed cases—that is, the cases with the greatest inco-ordination—take the longest to recover.

The rotatory and indefinite take the least.

Of the 4 cases not recovered after twelve months, two were mixed, one vertical, and one lateral. Fewer recover in winter than in summer.

I find that in my cases last year twice as many recovered in the six months April to September as did in the months October to March, and this year the difference is still more striking; for where one man recovered in the first three months, six recovered in the second. In summer they get more daylight and there is more colour about the country.

Relapses.

One would expect that as coal mining produces the disease, so resuming work underground would produce relapses. How many of these cases will relapse, or how long it will take, I do not know. I have not had time to see yet. For the seven cases of relapse included in the 100 the average time from resuming work to the relapse was twelve months. Two more have been observed with recurrence, but have not ceased work. One of these is now two years after resuming.

The variety of nystagmus in a relapse is not always the same as in the first attack.

Treatment.—Preventive Measures.

In the old days of thirty or forty years ago, it seems the custom was for boys to begin work underground at about the age of 7 or 8. With such immature eyes one would think they would be more likely to get nystagmus than the modern boy who begins at about 13 or 14.

But, with the increasing modern education and higher development of the nervous system generally, there may also be a greater tendency for the nervous mechanism to break down under stress. Time will show, but I expect the more developed boy will run less risk of getting it.

The importance of daylight seems to have been overlooked both by the miner and the employer. I take the view that, as far as nystagmus is concerned, working underground in daytime is a mistake, as the miner in doing so loses his opportunity of refreshing the eye by looking at colours in daylight, and so, in a measure, compensating himself for working by artificial light without colour relief.

To get this relief, the hours of work might be altered somewhat as follows:

Start work at the pit head ...	4 a.m.
Come out	12, mid-day.
Allow an hour to get home at	1 p.m.
Recreation and see the world till	6.30.
Bed	6.30 to 2.30 a.m.
Breakfast and get to pit head by	4 a.m.

He would thus get some four or five hours of daylight all the year round, which is of far more value to the eye than artificial lights.

To prevent unnecessary fatigue to the eyes removable shades should be provided for the lamps, so that they give out light in front only. These should be used in going in and out. When at the "face," they could be taken off, so the light would not be interfered with. With the shade on the man simply wants to see the ground in front of him and the roof to prevent him knocking his head.

The last and somewhat revolutionary preventive remedy I have to suggest is to introduce some sort of a colour scheme into coal mines, no matter how, and thus, if possible, to bring them into a condition at least as good as lead mines. I have not been down a lead mine, but have seen the ore coming out of one, something about the same colour as coke; but the difference is sufficient to eliminate nystagmus, and that is the important point.

As the essential cause of nystagmus is absence of colour, I take it that the one rational preventive measure is the substitution by artifice of sufficient colour to make good the deficiency.

To do this, I suggest that the roof, the leeward sides of the posts and collars, the cogs and sides of the alleyways be coloured with some light but inexpensive wash —whitewash, or, preferably, green or other varied colours.

The dust in mines travels in the direction of the air current, and so it would probably be useless to wash the windward sides of the timbers, but the other side, being protected from it, would last, at any rate, some hours.

The colouring would have to be done daily, and would cost money; but nystagmus costs money.

Suppose a colliery has on an average 100 men on compensation for nystagmus, it loses £100 a week in cash and more in other expenses, and the loss from the men being idle; and, as a collier generally earns more than £2 a week, the colliers are also losing more than £100; thus there is considerably more than £200 a week being lost

between the two parties. To prevent such a loss both parties might well co-operate.

If a quarter of the sum lost through nystagmus were spent in continually colouring the mine, and was enough to bring its colour relief up to the level of a lead mine, I do not see why nystagmus should not be abolished, and the other three quarters of the loss wiped out.

We must remember that it takes about twenty years to produce the disease, and that in a lead mine there is not a great deal of colour. Quite possibly it may not be necessary to get as much colour as that.

The net result of such a procedure can only be found out by experiment, and one persisted in for a considerable time.

MEDICAL TREATMENT.

The first thing to do is to remove the cause; that is, stop work underground. Let the patient rest, and in subdued light if he has photophobia.

We have to deal with a state of exhaustion and increased nervous irritability. Therefore at first medical treatment should be sedative; such as the bromides or hyoscyamus.

Later, these should be replaced by stimulant tonics and brighter light as he can tolerate it. To commence with stimulants seems to me like whipping up a tired horse instead of resting it.

Mechanical.—Eye shades, blue or smoked goggles give a good deal of relief in some cases, especially in sunlight and snow, but fail in others. I should like to see other coloured goggles tried, particularly green. One man recently told me that when his eyes are very painful he only gets relief on going into a green wood or field.

Proper glasses should be prescribed to correct errors of refraction.

Electrical.—I have not seen any cases that I am aware of being treated by electricity. In chronic intractable cases there seems a fair field for experiment with various forms of electrical treatment.

Special Departments in Hospitals.—Whether it would be profitable to provide green or other coloured rooms, and take in cases as in-patients and apply other special forms of treatment is uncertain. Very likely some way of cutting the disease short could be discovered; but, personally, I think better value for the money would be gained by the preventive measures I have indicated.

[An apparatus designed to show the visual effects of lateral nystagmus was exhibited.]

ON THE CAUSE OF NEUROPATHIC STATES.

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AT the meeting of the Societies of Neurology and Psychiatry in Paris on December 9th, 1909,[1] a remarkable difference of opinion upon the part played by the emotions in the genesis of neuropathic states was found to prevail among the eminent members who took part in the discussion. In initiating the séance M. Déjerine maintained that emotion was the sole cause of neurasthenia; pointed out that prolonged emotion—not necessarily violent—was more often the cause than emotional shock; and insisted that in the development of neuropathic states in the infected, the intoxicated, and the overworked the most active etiological factor was the underlying mental perturbation—the tendency to worry. He thus implied that neurasthenics were endowed with a special nervous organization or temperament, which under deleterious influences was suitable for the development of neuropathic states. This temperament determined the individual's power of self-control in periods of emotional stress; it varied in degree in different individuals, and in the same individual even at different age epochs where the temperament was but feebly present. Neurasthenia, he thought, appeared only after many battles, but self-control survived each encounter with increasing difficulty until the neurasthenic state was fully developed. Such patients are in large measure accidental neurasthenics. An infinite variety of types unites this acquired form to the true constitutional neurasthenic. The clinical picture of any case of neurasthenia depends entirely upon his temperament, character, reactions, former affectivity, etc.; hence cases vary, but are all identical in the main features of the disease—the lack of self-control in times of emotion.

M. Sollier agreed that the emotions played a fundamental part in the development of neurasthenia, but thought that in neurasthenia there was a special reaction of the nervous system to emotions, which might be constitutional or hereditary, and that the part played by the emotions was only that of the exciting cause.

Directly opposing those views was M. Babinski, who asserting that such conditions are never the result of shock, added weight to his contention by reporting a series of observations which he made among classes of the community who daily witnessed people exposed to emotional stress. He had interrogated among others the *post-mortem* attendants of the large Paris hospitals. Some of those attendants had witnessed as many as 200,000 people identifying in the mortuaries their deceased relatives or friends. These people, he contended, had undoubtedly been exposed to great emotional strain. He elicited from the attendants that never had they witnessed amongst all those visitors any who had exhibited an indubitable hysterical attack. He further instances the immunity of the members of the Aero Club de France from neurasthenic states, and referred to the striking absence of hysteria found by M. Neri after the earthquake at Messina. From these data he concluded that an exaggerated importance had been conferred upon the rôle of the emotions in the production of neurasthenic states. M. Déjerine, in reply, stated that those who were chosen from the sorrowing household to undergo the ordeal of viewing the body were only the strongest and most composed members of the family; the more emotional members remained at home, where they may have had their attack; and further, it was quite possible that even those members who came to view the remains had passed through an attack before leaving their home on their painful mission. They did not, however, come unprepared; they had been tuned up to their ordeal; and as a parallel he instanced the absence of neuropathic states in soldiers during battle, and its presence in prolonged sieges, involving hardships and privations of all kinds. Not only were those mortuary visitors in a measure prepared for their ordeal, but the amount of shock experienced by them would almost certainly vary with the cause of the death, whether it had been sudden and under tragic circumstances, or a not unexpected result of bad health or old age. M. Babinski's statement seemed to M. Déjerine to show that sudden emotional shocks were not so important as long-continued anxiety. So also the inquiries of M. Neri into the effects produced on the inhabitants at Messina after the earthquake, cited by M. Babinski, strengthened M. Déjerine's contention, for as the inhabitants were in a measure forewarned, and as they suffered collectively, not in isolation, there was thus established a resistance which prevented the shock from acting so acutely as it otherwise might have done.

M. Crocq stated that neurasthenia did not essentially demand for its development either an hereditary or a constitutional predisposition, the essential factors in its production being overwork, especially mental, intoxication, and prolonged intense or frequently repeated emotions even of average intensity. To support this statement he cited three cases, one of which, bearing upon the effects of sudden shock, was as follows: An advocate, 55 years of age, whose parents had died of old age, and whose brother and sister were well, was working in his office preparing an interesting "pleading." As he casually and inadvertently looked through the window he saw passing through space his son, who had fallen from the window above. The shock of the accident was such that on the following day the unfortunate parent presented the classical symptoms characteristic of neurasthenia. Neurasthenia, M. Crocq went on to say, frequently aggravates the immediate results of disasters, especially railway accidents.

M. Pierre Janet trenchantly criticized the investigations. He asserted that if the same inquiry had been conducted by another than M. Babinski the results might have been quite different; he also pointed out that hysterical attacks were not of instantaneous development; that the visitors may have had their attack outside the mortuary, or even at home before or after the viewing of the body; and that those who did come to view the body would certainly be the least emotional members of the family. He clearly recognized such a condition as constitutional neurasthenia. That such a condition existed was admitted by M. Vogt, but he was inclined to believe that in the constitutional neurasthenia there was probably as the basis of the malady some defect in cerebral nutrition.

Following him M. Henri Claude, in a few apt words, clearly showed that not only did he agree with M. Déjerine, but also that he supported M. Sollier in the importance which he attached to the predisposition. This predisposition he pointed out might come from inherited mental degeneracy, but that owing to a series of emotional storms conduced by injudicious education, intellectual overwork—in fact, by long exposure to emotional influences—it could also be acquired. So the discussion proceeded. "Wherever and on whatever questions good men are found ranged on opposite sides, one of three alternatives is always true: Either the points of disagreement are purely speculative and of no moral importance—or there is a misunderstanding of language, and the same thing is meant under a difference of words—or else the real truth is different from what is held by any of the disputants, and each is representing some important element which the others ignore or forget."[2]

We may now try to discover the truths common to the opposing parties, M. Déjerine and M. Babinski, in this discussion. Let us consider a normal sensory stimulus with a motor expression. The stimulus impinges on a sensory end organ, the changes initiated there are transferred along an afferent nerve to a central nerve cell, where they excite an activity which is conducted by means of an efferent nerve to a motor organ, and thus the external response of the organism to the sensory stimulus follows. To the same stimulus the same motor response will invariably be given so long as the sensory motor arc is intact. Response to each stimulus is accompanied by electrical and chemical changes, and too frequently repeated, too violent, or too prolonged stimulation may induce fatigue and impair the delicacy and the integrity of the primitive reflex arc. If now we interpose one synapse in the afferent and another in the efferent track, so that an alternative course is provided both for the ingoing stimulus and the outflowing response, then, if the arc be functioning normally, the sensory stimulus flows in a definite direction—as does the motor response also—for the resistances normally offered at each synapse determine the natural direction of the nerve flow; the current flowing in the natural direction is proceeding along the path of least resistance—that is to say, the resistance in the natural path is normally lower than the resistance in the alternative path.

According to McDougall's theory,[3] fatigue exerts its protective influence by elevating the resistance at the synapse, so as to block the normal course of the nerve current, and thus in the afferent path inhibit it reaching the cognate central perceptive centre; or under circumstances, such as excessive fatigue, a point may even be reached where the current may thus be diverted to an alternative path, led to an unnatural central perceptive centre, and so induce an unusual response. If in the efferent track any morbid process effects the same heightening of resistance at the synapse as does fatigue, then, although a sensory stimulus may be correctly perceived and interpreted, no response, an abortive response, or an unexpected response results—such as may be seen in the negativism of dementia praecox. What is true for a simple reflex arc also applies to the medley of stimuli which constitute everyday sensations, so, under conditions such as morbid degrees of fatigue, unusual perceptive centres may be linked up with sensory impulses to which they are unaccustomed, and only remotely allied, and thus unnatural external responses result.

Lesions in the sensory end organs are of little concern to us. Undoubtedly pathological states in the Schneiderian membrane, in the retinal layers, or in the auditory apparatus, may cause peripheral perversion of sensations, and may be the starting point of false conceptions of smell, sight, and hearing, and, similarly, morbid changes may arise in the muscular, glandular, or other peripheral mechanism of emotional expression, but the lesions commonly encountered in psychiatry are situated centrally, either in the perceptive centre or in the afferent or efferent track.

A disease such as hysteria is obviously a lesion of the highest perceptive centres; the stocking, glove, band, or section of limb areas of anaesthesia, or the well-known complete sensory loss on one side of the body, do not correspond to any known area of distribution of peripheral nerves, nor are they limited to the sphere of influence of any nerve roots. The stimulus in such cases is correctly conveyed by the sense end organ, by the peripheral nerves, through the spinal cord, medulla, pons, mid-brain, optic thalamus; but somewhere above this point the stimulus is completely blocked—in fact, the area which is insensitive seems to be cut off from its representation in the cortical psychic centres. This isolation may affect not only cutaneous stimuli but also the stimuli of the special senses, particularly vision.

A hysterical subject who when tested with the perimeter exhibits only a microscopic field of vision can thread his way through a crowded room; his visual perception must be functioning subconsciously to enable him to avoid the obstacles, and is probably intact. The lesion in hysteria therefore cannot be a lesion of the primary perceptive centre; the interruption must be situated between the primary perceptive centre and the higher psychic centres.

Such areas of anaesthesia are typically inconstant in size; the mere advance or recession of the anaesthetic boundary denotes only that the continuity of the sensory stimuli is preserved to a lower or higher level, but does not indicate that the sense impression then attains to the highest psychic centre which would be its destination if the brain was functioning normally. This highest centre, the seat of intellectual control or judgement, is necessarily the recipient of myriads of stimuli reflected from all parts of the brain, which have been roused to activity by the sense impression; in other words, the primary stimulus reaches the highest psychic centre enormously reinforced, multiplied, and embellished, and in a corresponding fashion intermediate psychic centres between the highest level and the primary perceptive centre are affected, but in direct ratio to their level—the higher the level the greater is the number of stimuli referred to them, the lower the level the less—until the primary perceptive centre, the lowest of all, is subjected merely to the activity of the initial stimulus. As the cells in the highest psychic levels are subjected to more stimuli than those at lower levels, the resistance at the synapses of the cells of the highest psychic level will earliest reach a point which stimuli find difficulty in overcoming—that is, fatigue first appears there, and, if the excitation be continued, the stimuli may be entirely blocked; later the process passes down to the lower levels. The blocking of a stimulus at a synapse may not be complete, but what passes the synapse is ineffective in transmitting the original stimulus. Further, the blocking of the stimulus only implies an interruption for that particular degree of stimulation. But, if the stimulus be slightly increased, the current will again pass, and will continue to flow until fatigue reappears, and the heightened resistance at the synapse gradually blocks the current once more; if the stimulus be further increased, the flow will recommence.

The nature of this resistance may be primarily due to physical changes in the protoplasm of the synapse, but sooner or later chemical changes must also occur in the nature of a breaking down of the protoplasm; probably every change of resistance at the synapse is a physical accompaniment of a chemical change in the neuron. Also, *pari passu* with changes at the synapse, metabolic processes must occur in the nerve cells, the resistance of various synapses are merely the expression of the normal available energy of the cell; thus, in fatigue is attained a mechanism by which the neuron is protected from all stimuli of ordinary intensity, and thereby an overdraft on the vitality of the neuron is prevented; the most vital neurons must be those which are most frequently in use.

Within the limits of the nutritive capacity of a neuron frequent use with adequate intervals of rest will tend to increase the reserve store of energy in the cell. By some such mechanism as this, by the acquisition of a lower resistance in some than in other neurons, stimuli are diverted constantly into the same channels—the channels which offer least resistance to their passage. Thus habits arise and a temperament is built up.

The energy of a neuron is definite in amount; apparently each cell contains a certain amount of protoplasm which is capable of being readily broken up to liberate energy. After its expenditure, further excitation exhausts first the reserve stores of energy in the cell, a process accompanied by a definite structural alteration such as diminution in the number and size of the Nissl's granules, and, if continued, causes the disintegration and diffusion of the nucleus and other phenomena significant of death of the cell. The energy of any neuron may thus be accumulated into several divisions, according to the readiness with which it can be liberated. The ease with which the neuron yields energy from its protoplasm depends upon the degree to which that protoplasm has entered the structural organization of the neuron, hence a resistance at the synapse rises as the demands upon the energy of the cell encroach upon the cell's vitality. So when stimuli of certain intensity have exhausted the energy available for that intensity the synapse blocks the continuance of such stimuli and thus permits anabolic processes to rebuild the reserve of the cell.

In normal life as the day advances the available store of energy is gradually expended, and the resistance at the synapse is slowly raised until towards night normal stimuli are all but blocked, and the condition known as fatigue is thus developed. Rest follows, the energy re-accumulates in the cell, and the resistance gradually falls. There is thus daily a certain degree of exhaustion, and this process is physiological. It is commonly experienced that the reserve supply of energy of the cell may be considerably encroached upon without pathological results, but then, to ensure a return to the normal nutritive state of the neuron with the special resistance which characterizes it, a more prolonged period of rest is necessary. If now in the absence of adequate rest such a fatigued neuron be again excited, the reserve store of energy of the cell will be still further depleted; and if this exhausting process of frequently repeated, excessive, or prolonged stimulation is continued without intervals sufficient to permit the neurons to return to their normal state the reserve store of energy in the cell will become exhausted, and the resistance at the synapse will be maintained at a level which effectually blocks all ordinary stimuli; or the process may even go further, and the organic integrity of the neuron be impaired. The same result may obviously be attained by grossly excessive stimulation for a short period. In everyday life the gradual dissipation of this neuron energy is seen in cases of chronic strain and its sudden exhaustion in shock. Thus the vitality of the neuron is threatened, and neuropathic states are produced.

Brains differ in their reaction, and this difference we recognize as temperament. The difference in nervous organization is well demonstrated by the action of toxic substances. Quite apart from the difference in cerebral reaction so often observed in acute toxaemias, such as in typhus, this distinction is well exemplified in the diversity of the reactions produced in different individuals to chronic alcohol poisoning. In chronic alcoholic toxaemia the results show themselves in many ways: in some delirium tremens appears, in others progressive cerebral deterioration often accompanied by a tendency to epileptiform seizures, and in others again, apart from slight weakening of control and memory, the stress of action falls on other organs.

The same uncertainty of action is seen from the toxaemia of syphilis; one case develops general paralysis of the insane, another cerebral syphilis, another locomotor ataxia, while a fourth may show no nerve lesions at all. The nervous system in different people must vary in its resistive power, and different brains exposed to the same influences are liable to differ in their reaction.

Having now considered the mechanism of cerebral action and of cerebral fatigue, and having shown how prolonged fatigue may merge into a morbid process which requires more than normal physiological rest, or even how under special circumstances the nerve exhaustion may approach to being irreparable, and having further demonstrated that the readiness with which different brains become fatigued is variable, let us now examine M. Déjerine's and M. Babinski's contentions.

Emotion implies expenditure of nerve energy; prolonged or intense emotions must therefore involve exhaustion. The more frequently they are repeated, the less the interval the neuron is allowed to rebuild its store, the sooner will complete exhaustion be attained. Overwork is merely one form of dissipation of energy, so also is worry, and M. Déjerine's contention that the worry is the more essential factor merely expresses that the overwork must be an intermittent, whereas the worry may be a source of continuous degradation of nerve energy. His further assertion that such chronic causes are more important than sudden causes such as shock, is merely an expression of the relative incidence of chronic strain and shock in any community. The worrying temperament, the constitutional tendency to neurasthenia to which he gave prominence, indicate a quality of ready "fatigability" inherent to such cases. This inherited quality implies on the part of the synapse a lack of power so to arrange the resistance as to shut off stimuli from a fatigued cell. In such patients resistance at the synapse does not rise *pari passu* with the work done. The cell is thus exposed to a continual series of small or great demands irrespective of the state of its reserve store of energy; hence the neuron may continue to work till it is quite exhausted. The fault probably lies in the failure of the neuron to incorporate an adequate amount of the protoplasm into its own structure. Thus the protoplasm of the neuron is left in an insufficiently elaborated state, a state of greater chemical instability than is normal, a state therefore which permits of a constant liberation of energy practically as long as any protoplasm remains in the cell.

As regards M. Babinski's contention that such conditions as neurasthenia and hysteria were never the result of shock, he dealt with people who from surroundings, occupation, and mission were specially selected on account of their mental stability. He proved that mentally stable people attuned to a shock usually experience it without detriment. This was not under discussion, and was not denied. If stimuli could be devised for M. Babinski's mentally stable individuals of the same relative intensity to them as the exciting stimuli were to the patients of M. Déjerine and his followers similar results of shock would be observed.

The whole discussion merely emphasizes what I have already maintained,[4] that there is an inherited or acquired structural predisposition—an emotional diathesis. A more important point clinically is the determination of the actual extent of the lesion, whether it is reparable or not. About this our knowledge is very scanty, and its further investigation is urgently needed.

Taking the mechanism which I have suggested as the mode of origin of neuropathic states, definite indications for treatment necessarily follow. To ensure as complete rest as possible—that is, to ensure the absence of any fresh external stimuli—isolation is necessary. It is not only a means of husbanding the patient's resources, but it has also a certain psycho-therapeutic value. To treat accompanying dyspepsias, constipation, sleeplessness, or other symptoms, complete rest in bed in the open air—combined with suitable diet—massage, with baths and electricity, are necessary to eliminate from the disease any accompanying autointoxication and malnutrition. The most favourable conditions for the nutrition of the nervous system of the neurasthenic are bodily health and mental rest. If after these conditions have been maintained for three months no considerable improvement has been made, the lesion is probably irreparable, and the only hope of amelioration would appear to lie in education, either by suggestion or other psycho-therapeutic measures.

My best thanks are due to Dr. W. J. Maloney for his kind help and suggestions.

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SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF PHARMACOLOGY AND THERAPEUTICS.

Professor Arthur Robertson Cushny, M.D., F.R.S., President.

DISCUSSION ON LACTIC ACID THERAPY.

OPENING PAPER.

I.—Otto Grünbaum, M.D., F.R.C.P.,
Assistant Physician to the London Hospital.

A description of the history of the introduction of the treatment with lactic acid-forming bacilli would be of great interest, but the time at our disposal, I think, will be better spent in discussing the theory and practice rather than historic anecdote. I propose to direct the discussion into the following channels: (1) The theory of the action of the lactic acid-forming bacilli; (2) the method of administration; (3) the diseases which benefit by the administration.

Theory of the Action.

Some seem to hold the view that lactic acid-forming bacilli of the same group as *Bacillus bulgaricus* are able to destroy putrefactive bacilli in the same way as phagocytes can deal with bacteria. This is not the case. Their action comes from their power of manufacturing lactic acid; the presence of this acid is inimical to the multiplication of putrefactive micro-organisms. Evidence in support of this statement is to be found in the work of Metchnikoff, of Hayem, Singer, and others. Many will ask: How, then, does the administration of the lactic acid bacillus compare with the exhibition of antiseptics, or lactic acid by the mouth? To my mind the great advantage of the lactic acid bacillus is that it forms lactic acid where it is of value; if an antiseptic is given by the mouth it is absorbed in the stomach or small intestine, and does not reach the large intestine, the main site of the multiplication of putrefactive micro-organisms.

The Method of Administration.

Some five years ago I began prescribing lactic acid-forming bacilli, and obtained good results in certain cases. But many of these relapsed, and this led me to investigate the tablets which were alleged to contain myriads of active bacilli. Upon bacteriological examination I found that it was an even chance whether the tablet contained any living bacilli, and then I had no guarantee that the bacillus which multiplied was not almost upon the point of dissolution at the time that it was introduced into the milk medium, and would therefore not have been able to withstand the somewhat perilous and trying journey through the stomach. Therefore, for the last four years I have always ordered milk in which there are millions of bacilli per c.cm. It is not my intention to advertise any special brand, nor to waste my time in law courts defending actions for libel, by telling you what I think of other brands. All that I need say is that there are quite a number of preparations upon the market which contain a very large number of *Bacillus bulgaricus*, and comparatively few cocci; preparations of this kind have a distinctly sharp although pleasant taste.

If we agree that the beneficial action is due to the antiseptic properties of the lactic acid formed in the intestine, it is obvious that it does not matter whether the acid is formed by the *Bacillus bulgaricus* or by a streptococcus. There are, however, two advantages in choosing milk containing the *Bacillus bulgaricus:*

(*a*) Microscopic examination permits us to judge whether there is much contamination. If there are many streptococci present, it is difficult to say whether these have been introduced on purpose or whether they are an accidental contamination.

(*b*) The *Bacillus bulgaricus* is a more active lactic acid producer than most of the lactic acid-forming streptococci. It is, however, asserted that the preparations with the pure *Bacillus bulgaricus* are less palatable than those containing other bacilli.

Having selected a suitable brand, we have to decide in what quantities and how often it should be administered, and, in addition to this, what steps should be taken to prepare a suitable nidus for the bacillus in the intestinal tract. It is my custom to order patients who are to take the lactic acid bacillus a special diet during the first four days of the treatment. This diet consists of much carbohydrate and a fair quantity of malt extract; proteid food and fats are limited. Since carbon dioxide is evolved in converting the carbohydrate into lactic acid, it is wise to warn the patient that it is not unlikely that flatulence will be increased temporarily. After the bacillus is established a physiological diet may be prescribed with advantage. The importance of beginning the treatment with the suitable diet is, in my opinion, so great as to render valueless these observations which are based upon cases in which it has been omitted, with the exception of those in which bacteriological evidence has proved the presence of the lactic acid-forming bacillus in the faeces.

The next question which arises is the quantity and frequency with which the micro-organism should be administered. It is a mistake to think that the more acid the milk the greater number the bacilli. Lactic acid-forming bacilli, like many others, tend to be killed by their metabolites. The preparation of milk should be curdled, for without this it is necessary to prove the presence of bacilli; but it should be only just curdled, for in this stage it contains many young and vigorous bacilli, and does not possess an acidity which is objectionable to the average palate. The course of treatment should be begun with a third of a pint of curdled milk taken thrice daily, but after the third or fifth days this may be reduced to a quarter of a pint twice a day. When this plan is adopted it is rare for the patient to develop an insuperable dislike to its taste, but if there be a tendency towards this it is wise to let the preparation be taken upon alternate days. Occasionally patients develop a liking for the preparation, and continue taking it indefinitely. I have not met a single case in which this preparation has done harm, in spite of the rumour that rheumatic pains occasionally become worse from its administration.

We now come to the discussion of the kind of cases which are likely to benefit by the treatment, and I think these may be divided into three classes:

(*a*) Conditions in which the micro-organism which causes irritation of the intestinal mucosa does not flourish in a lactic acid medium.

(*b*) Cases in which the toxins produced by the putrefactive micro-organisms in the intestine are too readily absorbed or eliminated with too much difficulty.

(*c*) Certain cases of *maladie imaginaire.*

(*a*) Amongst the first series must be included mucous colitis. One occasionally comes across the assertion that all cases of mucous colitis are simply manifestations of neurasthenia. A dogmatic statement of this type is as incorrect when applied to mucous colitis as when applied to any other disease. A certain percentage of cases are, I believe, of neurasthenic origin, but not all. With very few exceptions, cases of pure mucous colitis have been benefited or cured by the lactic-acid-forming bacillus treatment. Now, if this were purely the effect of suggestion, it would be difficult to understand how the patients who have been through many treatments, including visits to Plombières, should express a certain amount of displeasure or annoyance at not having been put upon the treatment before; they had had many chances of being treated by suggestion, yet none had acted. This is too frequent an occurrence in mucous colitis to permit of the conclusion that it is pure chance. In several cases the type of patient has been far removed from that which one associates with neurasthenia.

Some cases of gastric disturbance improve whilst under treatment, and find such benefit that they continue it indefinitely. These, I imagine, are due to some abnormal micro-organism in the stomach, which is causing a gastritis, but this I do not put forward with any confidence because I have not investigated them. As a rule gastric cases are not improved by a course of this treatment.

(*b*) Cases which suffer from autointoxication are not so common as one would be led to suppose from the French literature of medicine. It is of interest to note that frequently a high ratio of ethereal to mineral sulphates in the urine is associated with languor, headache, pallor, and that by giving lactic acid-forming bacilli the ratio of ethereal sulphates diminishes, and the patient improves; and this without any other treatment. I believe that a course of intestinal antiseptics such as calomel would probably produce a similar result, and I do not claim that the lactic acid treatment is the best for cases of this type. The condition in which there is great difficulty in eliminating toxins usually arises from disease of the kidneys, and it is in this complaint that I have observed very great improvement follow the treatment.

Possibly the outline of a case which to my mind gave very definite evidence of a beneficial effect of the treatment, may be of interest. A man of about 44, who had suffered from renal disease for fourteen years, had reached the stage in which nausea and vomiting were extremely distressing; headache and giddiness were corroborative symptoms of uraemia. The diet had for several years been that which is usually ordered in renal disease. He was placed upon the lactic acid bacillus, and gradually improved. In July he moved to Scotland, where the cook was entrusted with the preparation of the milk. The man's condition slowly became worse, and he returned to London. On being seen by his practitioner here, he was recommended to cease taking the lactic acid bacillus. No improvement occurred, and I was asked to see him again. Upon inquiry, I found that the cook in Scotland had noticed that if the milk was left it became too sour for the patient to take, and that she could prevent this by boiling it, which she had done regularly during the time the patient was in Scotland; this, of course, killed all the lactic acid-forming bacilli, and the patient had been fed upon dilute lactic acid and milk. He improved markedly from the time upon which he was placed once more on the lactic acid bacillus treatment.

I could cite several cases of uraemia which have improved temporarily under the treatment, and to an extent greater than I have seen in other cases upon a milk diet or any other treatment.

I am under the impression that some cases of diabetes mellitus benefited by the treatment. Lactic acid is excreted as a carbonate, and thereby it tends to increase the alkalinity of the blood, and to defer acidosis. In addition to this, the lactic acid bacilli will change the carbohydrates in the food into lactic acid, and tend to diminish glycaemia. Diabetics vary so markedly in their reaction to treatment that it would be foolish to make a dogmatic statement upon this matter, and one can only record one's impressions based upon some number of cases. When, however, a treatment seems advisable from the theoretical point of view, and appears to give relief in practice, considerable evidence must be brought forward before throwing discredit upon it.

(*c*) As regards the third class of individuals benefited by treatment—namely, those on whom it acts by suggestion—one must own they will not be harmed by taking milk in this form. It is true that, as the treatment becomes more and more known and more aged, this effect will become less marked, for it was to this class of patient that the physician referred when he advised his colleague to use the new remedy whilst it still cured.

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THE BACTERIOLOGY OF SOURED MILK.

SOUR milk is an article of diet extensively used in many parts of the world—for example, Sardinia and the near East, Egypt and South Africa, Asia Minor and India. From all these "natural" sour milks bacilli have been isolated having as common characters: (1) Relatively large size, considerable amount of pleomorphism, absence of motility, absence of spore formation, and reacting positively to Gram's stain; (2) growing best at a comparatively high temperature (40° to 42° C.); (3) growing only in milk or in culture media prepared with milk or whey, or in certain special media, and not on ordinary culture media; (4) producing a relatively high percentage of lactic acid in milk. These bacilli seem to be always associated in the natural sour milks with lactic acid-producing streptococci.

The bacilli[1] isolated from the natural sour milks have received a variety of names, the best known being:

1. The *Bacillus bulgaricus* and bacillus of Massol isolated from Bulgarian yoghurt and maya.
2. The *Streptobacillus lebenis*, from the leben of Egypt (Rist and Khoury).
3. The *Bacillus* or *Bacterium mazun*, from Armenian mazun.
4. The "Granule" bacillus, from Bulgarian yoghurt.
5. The *Bacterium sardous*, from Sardinian gioddu (grixoni).
6. *Bacterium lactis acidi* (Leichmann).

The question arises whether all these are distinct species, varieties of two or three species, or varieties of only one species. The matter has recently been critically reviewed by Makrinoff,[2] who arrives at the conclusion that all the organisms named belong to one species and are identical with the *Bacillus bulgaricus*. It is true variations occur in the organisms derived from different sources, and doubtless different varieties or races exist. But the organisms exhibit considerable pleomorphism and the morphological and cultural characters supposed to distinguish one from another are by no means constant. Thus an organism exhibiting uniform staining for a time may later develop granulation and become a granule bacillus, and one at first typically a bacillus may afterwards become streptococcoid or grow out into threads. I think, therefore, that Makrinoff is probably right in regarding the various characters as inconstant and insufficient to base differentiation into distinct species. Two more or less distinct *races* seem to exist, namely, those that produce viscosity and those that do not. Makrinoff suggests the name *Bacillus leichmannis* to include all these organisms (distinguishing the two races as *viscosus* and *non-viscosus*), but to avoid confusion, for the purpose of this paper I shall continue to term the organism the *Bacillus bulgaricus*.

The origin of these specialized lactic acid-producing organisms is one of some interest. Kuntze regards them as being primarily of intestinal origin and allied to the *Bacillus acidophilus* and *Bacillus bifidus* of the intestinal tract.

The biological properties of the *Bacillus bulgaricus* are of some importance with regard to the preparation and use of soured milk. While the sugars dextrose, laevulose, lactose, galactose, fructose, and mannose are attacked, saccharose and maltose are not attacked.[3] The addition of cane sugar to the diet or to the milk, when soured milk is being taken, with a view to increased production of lactic acid would therefore seem useless to attain this end.

Probably all races of *B. bulgaricus* are equally good as regards production of lactid acid, but some undoubtedly produce products of more acceptable flavour than others, hence the selection of particular races for the preparation of soured milk. Some races also produce the maximum quantity of lactic acid more quickly than others; an admixture of difference races, however, produces approximately the same final amount of lactic acid as any single race. Bertrand and Duchacek state that both dextro- and levo-rotary lactic acids are formed in practically equal quantity in artificial media, but in milk the dextro-acid is in slight excess. Mr. Revis, however, informs me that he believes the dextro-acid to be in large excess. Traces of acetic, formic, and succinic acids are also formed. Lactase is alone formed, not sucrase or maltase.

The *B. bulgaricus* does not seem to attack fats and produce rancidity, although statements to the contrary have been made.

A viscous product is probably not palatable to most persons, and the races which produce it should, therefore, be avoided for the preparation of soured milk. Some of the "non-viscosus" races, however, produce some viscosity at a particular stage of the incubation, the viscosity disappearing an hour or two later. This viscosity may be due to the formation of intermediate (?) gummy products analogous to "dextrans" formed by the *B. radicicola* from

cane sugar.[4] Similar substances, "galactans," have been described in ropy milk.

The lactic acid producing streptococci form less lactic acid than the *B. bulgaricus*, and therefore cannot take the place of the latter organism. These streptococci are, however, always present in the natural sour milks, and their employment in the production of soured milk is very general. Are they of any real value? Probably they aid the growth of the *B. bulgaricus* by producing an acid environment—a condition of some importance, as pointed out by Crithari[5]—though they do not add to the total quantity of lactic acid formed when grown in symbiosis with the *B. bulgaricus*. One useful purpose served by growing the *B. bulgaricus* with a lactic streptococcus is that while the *B. bulgaricus* itself will produce a perfect curd, the curd tends to contract and squeeze out the whey. When the lactic streptococcus is added to the culture this does not occur, and a better mixed and more uniform product is the result. The ordinary *Streptococcus lacticus*, common in all milk, is unsuitable, as its optimum growth temperature is about 27° C. (80° F.) and it grows indifferently at blood heat. The *Streptococcus lebenis* or some similar race should be employed, so that it may flourish with the *B. bulgaricus* at 40° C.

A point of importance in the preparation of soured milk is that if the inoculation from soured milk to fresh milk be carried on from day to day, there is some tendency for the streptococcus to become more and more numerous and to outgrow the bacillus, though probably the latter never completely disappears.

The varying resistance to desiccation exhibited by the lactic streptococci and the *B. bulgaricus* is also important. The lactic streptococci are resistant to drying, and will retain their vitality for months if desiccated, but the *B. bulgaricus* dies out within about three weeks if kept in a dry state.[6] Similarly, if kept in the moist state, for example, in cheese, the streptococcus will persist and multiply, while the *B. bulgaricus* will not multiply and will gradually die out. Hence, if material in tablet form is used for starting the milk cultures, the tablets must be fairly recently prepared for living *B. bulgaricus* to be present, and if the tablets be old the production of a curd and acidity in the milk treated is no criterion of the presence of the *B. bulgaricus*, the result may be entirely due to the streptococcus. Lactic cheeses similarly must be consumed as soon as possible after preparation in order that the maximum number of *B. bulgaricus* may be ingested.

The *B. bulgaricus* maintains its capacity for producing lactic acid indefinitely if kept in milk culture, but if the cultures are kept going on other culture media, loss of lactic acid-producing power ensues, an "attenuation" results. This is another reason why fluid cultures in milk are preferable to the use of tablets for the preparation of soured milk. If it be found that with the use of fluid milk cultures the soured milk obtained is not quite normal, it is far more likely that the temperature of incubation rather than the culture is at fault. There is no doubt that the proper temperature of incubation should be 40° C. to 42° C., and not blood heat; the blood heat temperature (37° C.) may make all the difference with some strains of the *B. bulgaricus*, and an inferior product result.

In the preparation of soured milk, the milk should be sterilized by actual boiling for at least half an hour before inoculation, preferably for three-quarters of an hour or one hour, and not simply simmered or heated in boiling water for a few minutes as is sometimes recommended.[7] Whey is an excellent medium for the growth of the *B. bulgaricus*, and soured whey can often be taken when soured milk is not tolerated. Soured milk also often tends to constipate; soured whey does not constipate, it tends to be aperient. Unfortunately, in London whey is an expensive article, but in cheese-making districts whey might be employed for the preparation of an excellent and palatable lactic product, suitable if soured milk disagreed or if its fattening properties were not desired. Of course, one of the recommendations for the use of soured milk in many cases is its nutritive and fattening virtues, and for such soured whey cannot be substituted for soured milk.

Exception has been taken by some to the preparation of soured milk on the large scale by dairies and other companies. It has been alleged that there is considerable risk of contamination in such circumstances with putrefactive or other undesirable micro-organisms. With care, such objection should be baseless. Provided that proper cleanliness is observed, that the milk is properly sterilized before inoculation, that inoculation is done with relatively massive doses of fresh, actively-growing, pure cultures in milk, and that a proper incubation temperature is maintained—all conditions which there should be no difficulty in observing in practice—the rapid production of lactic acid will maintain the milk as practically a pure culture, and any chance or stray microbe will be prevented from multiplying, will soon be crowded out and will succumb. When we consider the rough and ready way in which the natural sour milks are prepared in their native habitats and their invariable harmlessness, it seems hypercritical to object to the commercial production of soured milk because of the possibility of contamination, always provided, of course, that proper plant, methods, and cultures are employed.

These points emphasize the possible risk attendant on the use of tablets and other dry seeding agents for the preparation of soured milk. It is difficult to prepare them in an uncontaminated form; unless fresh, the *B. bulgaricus* is dying out and present in an inactive form, and nothing like the dose of culture is seeded compared with a fluid milk culture.

Yeasts in small number are frequently present in commercial soured milks, and it seems a very difficult matter to exclude them altogether. I doubt if they do any harm: they are always present in many of the Eastern milks—for example, Koumiss—and their apparent abundance in some samples may be due to the fact that on a plate cultivation they have a great capacity for spreading widely, so that what is actually but a slight contamination or infection may, on a plate, appear to be a very large one.

I have already referred to disadvantages attending the use of tablets as "starters" for preparing sour milk. Quant[8] examined certain tablet preparations, and compared them with a milk culture as regards flavour and production of lactic acid. The milk culture produced 2.34 per cent. lactic acid *B.P.*, the tablets yielded only 0.07–0.42 per cent. lactic acid *B.P.* Moreover the curd and flavour were unsatisfactory. Quant also directed attention to the importance of a proper incubation temperature. He found that, using the milk culture, the yield of lactic acid at a temperature of 105° F. was more than one and a half times that at 85° F., and more than one and one third times that at blood heat.

Samples of fermenlactyl, lactobacilline, sauerin, and trilactine tablets, and a fluid milk culture were also examined for the British Medical Journal,[9] with the following results, using well-boiled (1 hour) milk:

Percentage of Lactic Acid Produced.

Sample.	After 10 Hours' Incubation.
1. Fluid culture (Oppenheimer) ...	0.96
2. Fermenlactyl tablets	0.00
3. Lactobacilline tablets	0.02
4. Sauerin tablets	0.07
5. Trilactine tablets	0.27

Again, it is shown that tablets produce little or no acid, the fluid culture, on the other hand, producing a considerable amount.

This question of the use of tablet preparations is of importance not only with regard to the preparation of soured milk, but also with regard to treatment, as the tablets are being prescribed in place of soured milk. I have examined a few of the preparations on the market with a view to ascertaining (1) their content of *B. bulgaricus*; (2) their capacity for producing a proper soured milk; (3) the presence of other organisms. The preparations were (with one exception) obtained last week (July 18th to 21st) and were as follows:

1. Sauerin tablets (Allen and Hanbury), inscribed "cannot be guaranteed after November 13th, 1910."
2. Sauerin, liquid culture (Allen and Hanbury), inscribed "cannot be guaranteed after August 3rd, 1910."
3. Trilactine tablets (W. Martindale), *new*.
4. Trilactine tablets (W. Martindale), *old* (January, 1910).
5. Fermenlactyl (Pasteur Vaccine Co.).
6. Bulgarian soured milk chocolates (Rowntree and Co.).

The method of examination was to place a tablet (or 1 c.cm. of liquid sauerin) in 100 c.cm. of sterile water and emulsify thoroughly; with this to prepare various dilutions and to introduce measured volumes of these dilutions into tubes of sterile milk, incubate at 40° C., and examine microscopically films stained by Gram's method. Six cultures were made with each preparation, the amount of the preparation added corresponding to from 0.01 to 0.0000001 (descending by tenths) of a tablet, or of a cubic centimetre of the fluid preparation. The following summary gives the results as regards the presence of the *B. bulgaricus*.

Sauerin Tablet.—The culture with 0.01 gave acid and curd, with *B. bulgaricus* present; that with 0.001 gave acid only, no curd, with a few *B. bulgaricus* present; the four cultures with 0.0001 downwards were all negative.

Sauerin, Liquid.—All the six cultures gave acid and curd, with *B. bulgaricus* present.

Trilactine Tablet (new).—The culture with 0.01 gave acid, no curd, with *B. bulgaricus* present; the remaining cultures were negative.

Trilactine Tablet (old).—All the six cultures were negative.

Fermenlactyl Tablet.—The four cultures with 0.01–0.00001 gave acid and curd, with *B. bulgaricus* present; the two remaining cultures were negative.

Rowntree Chocolate.—Five of the cultures gave acid and curd, with *B. bulgaricus* present; the sixth culture (0.000001) was negative.

It will be seen that the *B. bulgaricus* is present in:

(1) One thousandth but not in one ten-thousandth of a sauerin tablet.
(2) At least one ten-millionth cubic centimetre of liquid sauerin.
(3) One hundredth but not in one thousandth of a trilactine tablet (new).
(4) Not present in trilactine tablet (old).
(5) Not present in fermenlactyl tablet (an occasional rod seen; practically entirely streptococci).
(6) Probably one millionth of a Rowntree chocolate.

These results are of interest as regards the administration of tablets. The number of *B. bulgaricus* taken in tablets will be extremely small compared with that taken in a properly soured milk, for I have found that the soured milk shows the presence of the organism in at least one thousand-millionth of a cubic centimetre. The number of *B. bulgaricus* which get into the intestine from tablets must be very small. I imagine, also, that with soured milk some of the curd passes from the stomach into the intestine, entangling with it vast numbers of the *B. bulgaricus*, and there is no doubt in my mind that soured milk or whey is incomparably the best form in which to administer the organism. The production of soured milk with these preparations was also examined. The tablet, etc., was added to the proper quantity of well sterilized milk—as recommended in the directions with each—and the culture was incubated at 40° C. for twenty-four hours, then examined. The results are as follows:

1. Sauerin tablet = no curdling; no change in flavour. (No *B. bulgaricus*; fine bacillus present.)
2. Fluid sauerin = good characteristic curd and odour; good flavour, very acid (*B. bulgaricus* abundant).
3. Trilactine tablet (new) = mostly whey, with little curd floating in it; not an acid but a buttery flavour (*B. bulgaricus* present, also a large number of a Gram-negative bacillus).
4. Trilactine tablet (old) = whey, with layer of floating curd; slight cheesy odour; not acid, buttery flavour (a few *B. bulgaricus* and streptococci; few Gram-negative bacilli).
5. Fermenlactyl tablet = thick creamy liquid: acid flavour (large numbers of streptococci; a very few *B. bulgaricus*).
6. Rowntree chocolates (2) = whey, with some curd; cheesy odour (*B. bulgaricus* and streptococci, a few other Gram-negative and positive bacilli).

The only preparation of those examined giving anything like a satisfactory soured milk is the liquid sauerin.

Gelatine plates made from the emulsions used for determining the amount of *B. bulgaricus* present showed all the preparations to be comparatively free from extraneous organisms, though in the soured milks prepared with some of them extraneous organisms were numerous.

Balloch[10] similarly found dry preparations very unsatisfactory.

I have also attempted to ascertain whether the ingestion of soured milk produces any diminution of lactose fermenters and of *B. welchii* in the faeces. The determinations were made on myself and on my laboratory assistant, Mr. Welch. One pint of soured milk was taken daily for a month. The method of examination was to take 1 gram of faeces, emulsify in water, and subculture various fractions into lactose bile-salt peptone water for lactose fermenters and into milk (anaërobic cultures after heating to 80° C.) for *B. welchii*. The results are given in the following summary:

CONTROLS BEFORE TREATMENT.

Bile-Salt Cultures for Lactose Fermenters.

Subject H. (June 15).—Amounts of from 0.01 mg. to 0.00001 mg. (descending by tenths and in duplicate) all gave acid and gas.

Subject W. (June 18 and 20).—Similar amounts to the foregoing on both occasions gave acid and gas in all the tubes.

In both subjects, therefore, at least 100,000,000 lactose fermenters were present per gram of faeces.

Milk Cultures for B. Welchii.

Subject H. (June 15).—*B. welchii* present in 0.01 gram, doubtfully present in 0.001 gram, not present in 0.0001 gram and 0.00001 gram of faeces.

Subject W. (June 18 and 20).—*B. welchii* present on both occasions in 0.01 gram of faeces but not in less amount.

In both subjects, therefore, *B. welchii* was present in 0.01 gram of faeces, but not in less.

DURING THE TREATMENT.

Bile-Salt Cultures for Lactose Fermenters.

Subject H.—On June 29th, amounts of 0.01 mg. and 0.001 mg. of faeces gave acid and gas, but not less amounts. On July 7th and July 21st, amounts of 0.01 mg. to 0.00001 mg. of faeces gave acid and gas.

Subject W.—On June 29th, amounts of 0.01 mg. to 0.00001 mg. of faeces gave acid and gas. On July 7th and 21st, amounts of faeces of 0.01 mg., 0.001 mg., and 0.0001 mg. gave acid and gas, but not less amounts.

Milk Cultures for B. Welchii.

Subject H.—On June 29th, *B. welchii* present in 0.1, 0.01, and 0.001 gram of faeces. On July 7th and 21st, *B. welchii* was present in 0.1 gram of faeces, but not in less.

Subject W.—On June 29th, *B. welchii* was present in 0.1 and 0.01 gram of faeces, but not in less. On July 7th, *B. welchii* was present in 0.1 gram of faeces, but not in less. On July 21st, *B. welchii* was present in 0.1, 0.01, and 0.001 gram of faeces.

From these examinations it would seem that the ingestion of soured milk for a month produces no decided change in the numbers of lactose fermenters and of *B. welchii* in the faeces.

The *B. bulgaricus* undoubtedly passes into the intestine, for after administration it can be demonstrated in the faeces in so short a time as five days after commencement of treatment (Leva[11]) and may be present in enormous numbers (Eyre[12]). According to Eyre it will cause the disappearance from the intestinal tract of abnormal organisms, such as the pathogenic streptococci and pneumococci.

As regards the diminution of the products of putrefaction in the intestine caused by the sour milk treatment, Leva (loc. cit.) found that the ethereal sulphates, volatile fatty acids, aromatic oxy-acids and hippuric acid in the urine were all diminished, but no alteration in the amount of indican excreted could be detected.

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THE LIMITATIONS OF CURDLED MILK THERAPY.

PROBABLY the milk treatment has not been under observation sufficiently long to enable us to have defined its indications and relegate it to its true position as a therapeutic agent; but our experience of it is quite extensive enough to have determined some of its limitations. In consequence of the egregious claims made for it—for the most part by irresponsible people—curdled milk is at present in great favour with the medical profession and among the

public as a very valuable article of diet; and from this point of view, where it suits the individual, nothing but good is likely to result. Being a complete food, and as a rule easy to digest—because, as has been pointed out by Metchnikoff, 38 per cent. of its casein and 68 per cent. of its phosphate of calcium have been rendered soluble by the fermentation process—being also a powerful diuretic, occasionally a convenient laxative, and it is claimed a nervine tonic, it cannot fail to produce a potent influence for good on the human body.

It is even averred that its contained lactic acid increases the coefficient of the assimilation of food in the intestine, because Biernacki[1] has shown that lacto-bacilline causes a diminution of the weight of the faeces amounting to from 15 to 20 per cent. of dry matter, with in addition a reduction of their content of nitrogen and fat. This same observer remarks that nascent lactic acid stimulates intestinal digestion, and that lactic acid bacilli exert very energetic action on the digestive organs, and so improve digestion. This effect he suspects is due to the stimulation of the secretions, which would explain the notable intolerance of the subjects of hyperacidity for soured milk. He also asserts that soured milk is astringent in certain diseased conditions of the intestine, although lacto-bacilline produces the opposite effect in constipation.

Amidst an almost universal chorus of approval, this is one of the few dissentient voices which have raised a note of warning in the use of curdled milk, and it is to be observed that the evidence is somewhat contradictory. Curdled milk disagrees with the hyperchlorhydric patient because it stimulates the secretions. One would, therefore, have expected that on account of an analogous action on the intestinal secretions it would have relieved constipation, whereas an astringent effect was noted. Personally, I can cordially corroborate both statements, because I have repeatedly observed that curdled milk always disagrees with hyperchlorhydrics and almost always produces constipation, and I have only known of a very few cases in which it acted as a laxative. The two objections to its use, indeed, which the healthy member of the community who has been infected by the craze advances are, that it induces obesity and constipation—both well-known effects of the consumption of ordinary milk. I am informed by the superintendent of a large sanitarium in this country, who is enthusiastic in the use of curdled milk, that he has never known it to act as a laxative, although on the other hand he does not consider it is any more constipating than ordinary fresh milk. It is a fact worth noting that not only does the average hyperchlorhydric patient tolerate fresh milk, but he finds it distinctly advantageous if used in sufficient quantity because of its power to combine with the excess of acid present. As the majority of dyspeptics belong to this order, it will be found that curdled milk is likely to aggravate their malady, whereas in most instances they can not only tolerate but benefit by the use of fresh milk. Even where a patient is not decidedly hyperchlorhydric he may be just on the border line, and any little increase of acidity, such as would be due to the curdled milk, would produce acid dyspepsia. This, therefore, is the first contraindication of curdled milk.

In the second place, it will be found that in by far the greater proportion of cases in which it is administered it will induce constipation just in the same degree as fresh milk. It must never be forgotten that milk contains more lime than lime water which is deliberately used for its astringent effect, and although it is claimed that in curdled milk the phosphate of calcium has been rendered more soluble, this fact has apparently no influence in reducing the constipating tendency. In my opinion this is a most important and weighty objection to its use, as in many cases it would induce the very contingency it is supposed to counteract — namely, auto-intoxication, which in ordinary circumstances need hardly be feared where a daily alvine evacuation can be secured.

Perhaps the most serious indictment in connexion with its use is the undoubted fact that it induces or initiates rheumatism; and I should like to draw attention to this fact on account of the many cases in which I have seen it produce this effect. In the days of my youth I had frequent opportunities of testing the value of buttermilk, both as a refreshing drink and a dietetic agency with oatmeal porridge, but its use was invariably accompanied by severe indigestion. In more recent years I have suffered both from colic and indigestion from the use of curdled milk, and therefore did not persevere in its use. On my return from Battle Creek Sanitarium in 1909 I determined to make a persistent attempt to habituate myself to, and if possible benefit by, its use, and although by employing yoghurt tablets or capsules I was able to obviate the indigestion, I repeatedly noticed after a few days—generally the third or fourth day—an exacerbation of a rheumatic pain in my right knee, so severe as to prevent me playing golf. That the pain was not imaginary or produced by suggestion was obvious from the fact that two or three times when I began to take the tablets in an effort to use them up whilst still active, and entirely forgetful of my previous experience, on the third or fourth day I was again pulled up by the rheumatism. This induced me to watch other cases, and I have been able to note lumbago, sciatica, attacks of muscular rheumatism in various parts of the body, and an occasional effusion into a joint. One gentleman well up in years became so seriously ill from fibrositis—a new experience in his career—that he was compelled to spend the winter at Bath, and is only now recovering from the effects of his unlucky adventure with curdled milk. Another gentleman who had always had a tendency to constipation adhered to the treatment in the belief that it would cure his constipation, but abandoned it when he became convinced that it had aggravated the condition and left him with a severe attack of lumbago.

Most physicians are in the habit of counselling their rheumatic patients to keep free from even the slightest suspicion of constipation, knowing from experience how quickly this induces sciatica, lumbago, and fibrositis, and doubtless the constipating tendency of milk has something to do with these untoward results. But there is another factor in the case which is probably of more importance. For many years excess of acidity has been considered as being in some way associated with the production of rheumatism, and lactic acid itself has been mentioned as the specific agent involved.

In the ordinary way it is discovered in the body as one result of indigestion, and also from the metabolic changes in muscles. We also know that ammonium is a product of protein metabolism, and these two substances being carried by the blood to the liver combine to form lactate of ammonium, $NH_3 + C_3H_6O_3 = NH_3C_3H_5O_3$, and this in ordinary circumstances is converted into urea. Now in birds the liver forms uric acid, and when it is cut out of the circulation lactate of ammonium is excreted instead of uric acid. It would therefore appear that, at any rate in birds, the liver transforms lactate of ammonium into uric acid.

The close association of uric acid, urea, and lactic acid is surely more than a mere coincidence. The molecule of uric acid contains two molecules of urea combined with an acid containing three atoms of carbon—namely, acrylic acid, which is simply dehydrated ethylidene lactic acid. Uric acid, indeed, has been synthesized by Horbaczewski from trichlorlactic acid and urea.

I make no claim for the recognition of lactic acid as a direct factor in the production of rheumatism—this was sufficiently disproved by Latham in the Croonian lectures of 1886—but I do think that in common with many other acids it is an indirect factor.

Now when excessive quantities of lactic acid are formed by fermentation in the alimentary canal, or by feeding with lactic acid bacilli, there is no doubt that these can be absorbed, and it is conceivable that they may interfere in some way with the normal hepatic metabolism. In any case the constant necessity for neutralizing the ever-increasing acid contents of the bowel tends to withdraw alkalis from the system, and lessens the alkaline reaction of the blood, a condition analogous to that which occurs when too much acid fruit is consumed. I have repeatedly seen arthritis produced by indulgence in a dish like stewed rhubarb or stewed plums, and whatever the explanation may be, it is closely bound up with the ingestion of more acid than the system can tolerate. The function of the kidneys is to eliminate excess of acid from the alkaline blood, and if they fail in this duty then autointoxication must arise, because the blood is not alkaline enough to absorb carbon dioxide from the tissues.

It should be carefully noted that curdled milk was introduced by Metchnikoff and his associates less as an addition to our therapeutical armamentarium than as an

item of our daily diet, and from this point of view it may be considered as a most powerful argument in favour of a low protein diet. If harmful putrefactive organisms only infect the colon when there is a food supply for them in the shape of surplus protein not required by the tissues, then the simplest way to exterminate them is to desist from taking the extra protein. It is surely a work of supererogation, and certainly a waste of energy, to consume the useless extra protein calculated to form dangerous toxins, and at the same time swallow a by no means delectable antidote in the shape of a culture of lactic acid bacilli. But it has yet to be proved that the toxins, which are undoubtedly formed, are, except when in excess, or where the natural protective organs are unable satisfactorily to fulfil their function, any more dangerous than the irritating acids formed by the antitoxin, and it should be noted that butyric acid bacteria are anaerobic.

It should be borne in mind that lactic acid therapy is only indicated when the putrefactive anaërobic microorganisms are in excess in the colon, and there is no guarantee that without such a guide this form of medication may not aggravate rather than alleviate the intestinal condition. It is not at all unusual for severe colic and occasionally diarrhœa to arise during a course of curdled milk treatment, and although such untoward symptoms may be anticipated just at the beginning in many cases, they do not always subside. It would be futile for me to deny the benefit frequently accruing during the treatment, but in many cases of colitis I have seen just as valuable results from fresh cow's milk, when it agreed with the patient, as from the curdled milk.

We are very apt to forget that there are other factors in the curdled milk treatment besides the lactic acid bacillus. Milk *per se* is a most valuable nutrient, and the new system is an excellent artifice for enabling recalcitrant patients who object to ordinary milk to obtain the unquestionable advantages of the continued use of milk. Nor is it to be forgotten that it replaces the objectionable tea and coffee, which in most cases of intestinal ailments are decided irritants and always nerve poisons in the neuro-arthritic type of patient. At the same time it diminishes the desire for flesh foods because it possesses quite a respectable amount of protein.

The longevity of the Bulgarian peasantry is not necessarily due to the use of soured milk. There are many other powerful factors in operation. The most important of these is an open-air life with considerable muscular exercise, extreme moderation and simplicity of diet, absence of the nerve exhausting occupations of civilized life, and the influence of heredity—an element whose potency must not be overlooked.

But is it quite certain that curdled milk is used with such frequency or in such proportions in Bulgaria as is being so constantly reported? My friend, Mr. Frank Marsh, F.R.C.S., of Birmingham, who resided for eight months in a Bulgarian peasant's cottage, never once saw nor heard of curdled milk whilst there, although he recollects that much fresh cow's milk was used, and naively adds that he saw more tuberculosis amongst the people than he has ever seen since that time.

It has been asserted[2] that intestinal putrefaction paves the way for intestinal infection, because putrefactive bacteria prepare the soil for the growth of pathogenic bacteria, and this has been used as an argument in favour of a pure vegetarian diet, eggs, cheese, and cow's milk being rejected because capable of encouraging the growth of dangerous microbes. Vegetable albumen is said to be less putrefiable than flesh proteins, and possesses the further advantages that it is always accompanied by at least three times its weight of carbohydrates. As, however, much of this is in the form of cellulose, which succeeds in preventing quite two-fifths of the protein from being assimilated, the advantage is a very questionable one. A remarkable commentary on this statement which is bolstered up by concrete facts exists in the practice of vegetarians taking large quantities of curdled milk. This, at any rate, is the custom at Battle Creek Sanitarium, and one cannot help feeling surprised that with a low protein diet prepared in such a way that it is stated there is no surplus of non-putrefiable vegetable albumen, there can be any necessity for the use of any means to neutralize the toxins of putrefactive organisms which have no obvious cause for existence.

The observations of Professor Walker Hall[3] and Dr. W. A. Smith are not without significance in this connexion. After a careful investigation they came to the conclusion that many of the tablets used in preparing curdled milk were of no real value, and that the amount of the curd produced was by no means an index of the capacity of the active organisms to pass through the alimentary canal. There is no doubt that in many cases much of the benefit ascribed to the curdled milk must have been owing entirely to the use of milk as such, and incidentally the reduction or exclusion of more harmful liquids. Considerable dubiety must therefore exist as to the beneficial therapeutical influence of lactic acid bacilli, and it has been well summed up by Mendel[4] in these words: "The usefulness of lactic acid, sour milk, and lactic acid ferments as curative agents is nothing less than problematical at the present moment."

But whatever difference of opinion may be expressed on this point, it is absolutely certain that there is no indication for the indiscriminate and widespread use of curdled milk as a therapeutic agency. If the practice of moderation in eating be the keynote of the whole life, if a daily alvine evacuation be the rule—and this is by no means the prerogative of vegetarians—then we can afford to despise the much advertised ravages of the putrefactive organisms in the colon.

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THE INFLUENCE OF SOUR MILK ON METABOLISM.

The treatment of intestinal and other complaints by giving sour milk is supposed by some to cause various degrees of benefit to the patient beyond those which are obtained by psychological effects. The only influence which sour milk could have from a physiological point of view would be that the sour milk might cause a better absorption of the food or that the lactic acid bacilli flourishing in the intestine at the expense of the bacteria ordinarily there, would lead to the production of either less putrid products, or harmless products, and so benefit the individual. Increase of the bacteria normally present in the bowel under ordinary circumstances can lead to two pathological conditions—either increased intestinal fermentation where the breaking down of the carbohydrates causes an increased production of gas and various organic acids, or the bacteria may cause increased intestinal putrefaction by acting on the proteids contained in the intestine.

The addition of lactic acid bacteria to the bowel contents already indicating increased intestinal fermentation would hardly produce any great advantage; but on the other hand, in cases where increased intestinal putrefaction is going on, the addition of lactic acid bacilli might, by their multiplication, stop the increased intestinal putrefaction. In this paper I am only going to deal with the addition of small quantities of sour milk to an ordinary diet, such as in most cases would be given in practice.

Increased intestinal putrefaction can be partly recognized by the fact that in marked cases one gets an increase in the aromatic sulphates in the urine, together with, as a rule, a great increase in the quantity of indican. Some go so far as to say that when one obtains an increased reaction of indican, one may consider that the person is suffering from increased intestinal putrefaction. In the case of a great many individuals, especially the meat-eating ones, it is found that an excess of indican is present in their urine, even when one can hardly consider the condition worthy of designating as pathological increased intestinal putrefaction. The aromatic sulphates may be only slightly increased, as in the cases taken for the present paper, and yet marked intestinal putrefaction be present.

The examination of the fæces, then, seems to be a better indication of increased intestinal putrefaction. In

these cases, instead of the neutral faeces ordinarily passed, one finds a distinctly alkaline stool, which on keeping becomes more alkaline. This is due to the fact that in the splitting up of the proteids ammonia is formed, which neutralizes any acids which may be produced in the stool, and so causes the faeces to react alkaline. The increased putrefaction as against fermentation in the bowel is also demonstrated when one employ's Schmidt's fermentation test; with this method one obtains little or no gas formation, while in increased intestinal fermentation one finds a very marked formation of gas in the tubes kept in the incubator for twenty-four hours.

The difficulty in carrying out metabolism experiments where one is comparing daily analyses—as all those who have tried it are aware—is almost insurmountable, unless the patient is kept daily under exactly similar conditions. Three cases which I am going to describe were, however, kept entirely in bed undergoing a so-called rest cure; the amount of exercise they took daily was kept practically equal, each of them having massage for two hours daily; for the entire period they lived a life of routine, the hours being almost the same for reading and working, so that they were as little interfered with by the ordinary worries of life as possible.

The difficulties of collecting faeces and urine are great, but in these three people it was accomplished without failure. It is marvellous how many people supposed to be under strict observation, with everything explained to them, will nevertheless, in spite of all this, either mix their urine with their faeces or do some other stupid thing. One has also the difficulty of carrying out the multitudes of analyses which are necessary in doing these experiments.

The patients were first put on Schmidt's diet[1] for a period of some two to three days, and then on ordinary mixed diet for two to five days; this was followed by the same mixed diet, but some of the milk was replaced by 1 pint of sour milk given three times daily. The sour milk employed was bacteriologically examined for me by Dr. Kenneth Goadby, who found that it contained the Bulgarian bacillus and no other organisms except those concerned in milk clotting.

The different periods were separated from one another by charcoal being given at eight o'clock in the morning at the commencement of a period, and again at the termination. By this means the total quantity of faeces passed between the two administrations of charcoal could be distinctly isolated for the purpose of analysis. Schmidt's diet was given first so as to find out the condition of the bowels, and whether intestinal putrefaction was really present, as I have found by experience that it is extremely difficult to obtain satisfactory results with the fermentation tubes on an ordinary mixed diet, while with Schmidt's diet the results are much more conclusive. It is not advisable, however, to continue Schmidt's diet for a long period, because the patients are generally averse to taking it, and it would not be comparing an ordinary condition of affairs by adding sour milk to this diet.

The first case (Table I) was that of a lady who suffered from a certain amount of intestinal discomfort, but no organic disease. For two days she was put on Schmidt's diet, the first Schmidt's faeces appearing two hours after commencing the diet; and since, as a rule, the patient only passed one stool daily, one must consider that the increased motor power of the alimentary tract was due to psychological causes.

The ordinary examination of the urine showed an increased quantity of indican, with a fairly copious sediment which consisted of a few large yellow-stained uric acid crystals and numerous urates, but nothing else abnormal.

TABLE I.

Schmidt's Diet contained 16·99 Grams of Nitrogen, 94·81 Grams of Fat, 165.13 Grams of Carbohydrates, 1,540 c.cm. of Fluid; [illegible] Calories per Kilo.

Urine.								Faeces.						
Date.	Weight in Kilos.	Quantity.	Sp. Gr.	Nitrogen in Grams.	Sulphates. Alkaline A.	Aromatic B.	Ratio A : B	Date.	Quantity in Grams.	Water per Cent.	Nitrogen. Grams.	Nitrogen. Absorption per Cent.	Fat. Grams	Fat. Absorption per Cent.
1910.								1910.						
Feb. 2 ...	78.20	1,460	1018	16 88	2 65	0 19	14 : 1	Feb. 2 ...	101	69.4	1 11	93	6.33	93
Feb. 3 ...	78 20	1,300	1020	18 13	2.75	0.18	14 : 1	Feb. 3-4...	145	76.4	1 23	93	7.01	93
Average ...	78 20	1,380	1019	17.36	2.70	0.19	14 : 1	Average...	123	72.9	1.17	93	6.67	93
Mixed Diet contained 22.55 Grams of Nitrogen, 117.89 Grams of Fat, 159.41 Grams of Carbohydrates, 2,240 c.cm. of Fluid; [illegible] 30 Calories per Kilo.														
Feb. 5 ...	78.20	1,230	1023	15.69	5.33	0.12	21 : 1	Feb. 5-6...	221	80.4	1.69	93	5.86	95
Feb. 6 ...	78.30	1,260	1025	16.60	3.18	0.20	16 : 1	Feb. 7 ...	157	82.0	1.10	95	4.98	96
Feb. 7 ...	78.40	1,760	1020	18.57	3 47	0.21	16 : 1	Feb. 8 ...	143	78.6	1.19	95	5.33	95
Average ...	78.30	1,417	1023	16 95	3.99	0 19	18 : 1	Average...	174	80.3	1.33	94	5.41	95
Mixed Diet and Sour Milk contained 22.55 Grams of Nitrogen, 117.89 Grams of Fat, 164.81 Grams of Carbohydrates, 2,240 c.cm. of Fluid; 29 Calories per Kilo.														
Feb. 8 ...	78 80	1,400	1022	17.21	3.19	0.16	19 : 1	Feb. 9 ...	128	75.0	1.44	94	6 74	94
Feb. 9 ...	78.60	1,790	1020	19.45	3.73	0 20	18 : 1	Feb. 10 ...	135	76.0	1.46	94	6.83	94
Feb. 10 ...	78.90	1,570	1021	18.08	3.47	0.17	20 : 1	Feb. 11 ...	138	75.0	1.55	93	7.27	94
Average ...	78.77	1,613	1021	18.25	3.46	0.18	19 : 1	Average ..	134	75 0	1.48	94	6 95	94
Mixed Diet and Sour Milk contained 22.55 Grams of Nitrogen, 117.89 Grams of Fat, 164.81 Grams of Carbohydrates, 2,240 c.cm. of Fluid; 29 Calories per Kilo.														
Feb. 21 ...	80 00	1,460	1021	15 36	3.25	0.15	21 : 1	Feb. 22 ...	288	72 0	2.87	87	9 36	92
Feb. 22 ...	80 20	1,850	1022	20 05	3.98	0.23	17 : 1	Feb. 23 ...	125	74.6	1.47	94	4.80	96
Feb. 23 ...	80.20	1,460	1022	16.35	3.25	0 13	25 : 1	Feb. 24 ...	157	78.6	1.51	93	4.99	96
Feb. 24 ...	79.90	1,900	1020	21.28	3.93	0.21	18 : 1	Feb. 25 ...	156	77.0	1.62	93	5 26	96
Average ...	80 08	1,668	1021	18.26	3 60	0 18	20 : 2	Average...	167	75.5	1 87	92	6.10	95

The qualitative analysis of the stools showed a fairly formed motion, with a few hard scybalae and some excess of mucus: the stools were slightly offensive and distinctly alkaline in reaction. No blood or pus was present, although there was a trace of albumen and a marked excess of urobilin. There were three stools passed while on the diet, and each of these from being alkaline became neutral, and on one occasion faintly acid, in Schmidt's fermentation tubes. On the occasion when a faintly acid stool was obtained one-tenth volume of gas was yielded; on the other occasion no gas bubbles at all were formed.

The microscopic examination of the stools showed a few undigested muscle fibres, together with some Nothnagel's yellow bodies, starch granules, fat globules, together with vegetable cells. A few leucocytes were present, with some epithelial cells, but not enough to make one consider this to be a case of catarrhal colitis. Ammonio-magnesium-phosphate crystals were also present.

During the two days the diet contained 16.99 grams of nitrogen, and there were passed in the urine no less than 17.36 grams of nitrogen on an average for the two days. The quantity of alkaline sulphates in the urine was practically normal, being 2 70 grams per diem, while the aromatic sulphates were 0 19 gram, which is slightly high for a patient on Schmidt's diet.

A quantitative analysis of the faeces showed the stool to be very dry, since it contained only an average of 72.9 per cent. of water; the stool was fairly bulky, the average for the two days being no less than 123 grams. In Table IV the averages found in a series of cases by Dr. Goodbody and myself are given for comparison. The nitrogen in the stools was 1 17 grams, which is more than one would expect, giving an absorption of only 93 per cent. proteid. The fat in the stools was 6.67 grams, yielding also an absorption of 93 per cent., so that the fat in this case was markedly increased in the faeces.

The patient was now put during a period of three days on an ordinary mixed diet. The qualitative analysis of the urine showed the same results as on Schmidt's diet, and as far as the faeces were concerned, the stools were always alkaline on being collected, while on being kept they became either neutral or faintly acid, and on one day gave one-fifth volume of gas, on another day one-sixth, while on the third day there was no formation of gas.

This diet contained much more proteid—22.55 grams of nitrogen, and the nitrogen excreted per diem in the urine during the three days averaged 16.95 grams. There were slight variations on the different days, there really being progressive increase in the quantity of nitrogen as seen in the table, in spite of the patient's gaining slightly in weight, owing to the increased quantity of food taken. The alkaline sulphates averaged 3 99 grams, corresponding to the increase of proteids taken; the aromatic sulphates remained the same as on Schmidt's diet, 0.19 gram per diem.

The patient passed the first stool again only two hours after taking the charcoal; when the second charcoal was given at the commencement of the fourth day, this was followed by a motion two hours afterwards. It may here be remarked that the patient imagined that the charcoal would act as a purgative, and this increased peristalsis, as already stated, may be put down to this psychological cause.

The quantity of faeces passed on this mixed diet averaged 174 grams, which is above the average, and contained 80 3 per cent. of water. The nitrogen in the stools varied very slightly, the average being 1 33 grams, giving an absorption of 94 per cent. The fat in the stools averaged 5.41 grams during the three days, giving an absorption of 95 per cent.

During the next period of three days one pint of sour milk was added to the diet, 8 oz. being taken at 8 a.m., 4 oz. at 11 a.m., and 8 oz. at 10 p.m. There was no special change in the qualitative analysis of the urine; the ordinary examination of the faeces with Schmidt's fermentation test showed on the first day an alkaline reaction, which remained alkaline, with no evolution of gas, when kept in the incubator; on the second day the faeces were alkaline, becoming faintly acid, and on the third day from being alkaline they became neutral, and on neither occasion was there any gas evolved.

The diet contained the same quantity of nitrogen, as ordinary milk had been taken out to be replaced by the sour milk, and during this time the patient passed daily in the urine 18 25 grams of nitrogen. The total quantity of alkaline sulphates, which in the previous period averaged 3.99 grams, now fell to an average of 3.46 grams, the aromatic sulphates only falling from an average of 0 19 gram to 0 18 gram per diem.

During this period with the addition of sour milk, the daily quantity of faeces passed averaged 134 grams, and only contained 75 per cent. of water. The nitrogen in the stools averaged 1.48 grams, showing a slight increase on what was found during the period of three days' diet without the addition of sour milk, the absorption being now 94 per cent. The quantity of fat also increased slightly, being now on an average 6.95 grams, with an absorption of 94 per cent.

The patient was kept on this diet with the addition of sour milk, and at the end of another fortnight another period of four days was analysed. The urine still contained excess of uric acid, and otherwise remained the same as on the previous examination. The stools, however, appeared to be less offensive, although still of a distinct alkaline reaction. With Schmidt's fermentation test, on one occasion one-seventh volume of gas was evolved, and on the other three days practically none, and the reaction of the stools at the end of Schmidt's test was neutral or faintly acid.

The first and second charcoal at this time appeared in 26 and 25½ hours respectively, and this may be due to the fact that the patient was altogether less nervous, having benefited by the rest cure, and probably did not expect the charcoal to act as a purgative.

The quantity of nitrogen in the urine now averaged 18.26 grams per diem, although the daily quantity showed considerable fluctuations. The alkaline sulphates were 3.60 grams, while the aromatic sulphates were 0.18 gram, so that the quantitative analysis of these four days almost exactly corresponds with that of the three days on the same diet two weeks earlier

The faeces were slightly increased in quantity, being now 167 grams and only containing 75.5 per cent. of water; the small quantity of water may explain the fact of the quantity of faeces not being so much as the first period on a mixed diet. The nitrogen in the stools averaged 1.87 grams, showing an absorption of only 92 per cent. The fat averaged 6.10 grams, giving an absorption of 95 per cent.

During the period of four weeks in which the patient was under observation, the weight had gradually increased nearly two kilos, while the patient was taking in the diet about twenty-nine calories per kilo.

The next case was that of a gentleman (Table II) who was suffering from general intestinal discomfort; he was, however, an extremely nervous individual who had for some years overworked himself in business, and occasionally suffered from nervous panics, depression generally coming on at night accompanied by trembling and a fear of impending calamity. The attack was accompanied by shortness of breath and slight palpitation, although there was no increased stomach distension to account for the cardiac disturbance; on making a special effort to pull himself together the attack would end. Each attack was accompanied by polyuria; but unfortunately, in spite of having the patient under observation for six weeks, we were unable to get an analysis of the urine during an attack.

He was first put on Schmidt's diet for a period of three days. The urine showed an excess of indican, but nothing else abnormal. The stools were firm-formed motions, with occasionally some small scybalae, and an offensive odour; they contained traces of albumen and mucus, but no blood or pus, and there was a marked excess of urobilin.

On microscopically examining the faeces, a few small muscle-fibres were seen, showing cross-striation, an excess of fat with some partially digested starch granules, together with some epithelium, débris, and leucocytes. The first Schmidt's stool appeared twenty-four hours after commencing the diet, so that on this occasion the motor power of the alimentary tract was apparently normal.

The diet contained 16.59 grams of nitrogen, and during the three days on the Schmidt's diet 12.40 grams of nitrogen were excreted in the urine. The alkaline sulphates averaged 2.51 grams, while the aromatic sulphates were 0 20 gram.

The average quantity of faeces per diem was only 63 grams, which is less than one would expect, and contained 73.4 per cent. of water. The nitrogen in the stools was 0.62 gram, giving an absorption of 96 per cent., while the fat was 3.81 grams, giving an absorption of 96 per cent., so that the quantity of nitrogen and fat were decreased.

The patient was now put on an ordinary mixed diet containing 16.66 grams of nitrogen; the urine, however, only contained 12.37 grams per diem. The alkaline sulphates were 2.29 grams, the aromatic sulphates having fallen to 0.18 gram.

The quantity of stools passed per diem was now 81 grams, containing 75.1 per cent. of water. The nitrogen in the stools was 0.63 gram per diem, giving an absorption of 96 per cent., while the fat was 3.78 grams, giving an absorption of 94 per cent.

The patient was now given with this diet one pint of sour milk—6 oz. at 8 a.m., 6 oz. at 11 a.m., and 8 oz. at 10 p.m. During the next four days the nitrogen in the diet was 18.33 grams, while in the urine it was 14.25 grams. The alkaline sulphates were 2 60 grams, while the aromatic sulphates had risen so that they were now 0.21 gram. This abnormal rise when the sour milk was first given is difficult to explain; it was most marked the second day.

The average quantity of stools was 80 grams, containing 73.1 per cent. of water. The nitrogen in the stools increased to 0.80 gram, giving an absorption of 96 per cent., while the fat in the stools was 3.70 grams, giving an absorption of 95 per cent.

Two weeks later, the patient having been kept continuously on sour milk—only the food slightly altered, fourteen biscuits instead of 8 being now taken—another period of three days' analysis was gone through. During this time the patient took 18.79 grams of nitrogen in his diet, passing 14.24 grams in his urine. The quantity of alkaline sulphates was 2.35 grams, while the aromatic sulphates fell slightly, being now only 0.18 gram.

The quantity of faeces during this period increased considerably to 128 grams, containing 81.6 per cent. of water, while the nitrogen in the faeces was 0 92 gram, giving an absorption of 94 per cent. The fat in the stools was 3.12 grams, giving an absorption of 97 per cent. During the periods on mixed diet the charcoal took forty-seven to forty-eight and a half hours to appear in the faeces, there being no indication of increased peristalsis with the sour milk.

During the time that the patient was taking the sour milk, he went up very slightly in weight—barely 1 kilo—although he was taking from 23 to 29 calories per kilo. He thought, however, that his bowels acted with greater freedom, and that he had less discomfort from flatulence while on the sour milk.

Table II.

Schmidt's Diet contained 16.59 Grams of Nitrogen; 94.45 Grams of Fat: 141.13 Grams of Carbohydrates: 1,750 c.cm. of Fluid: 29 Calories per Kilo.

Urine.							Faeces.					
Date.	Weight in Kilos.	Quantity.	Sp. Gr.	Nitrogen in Grams.	Sulphates. Alkaline A.	Sulphates. Aromatic B.	Sulphates. Ratio A : B.	Date.	Quantity in Grams.	Water per Cent.	Nitrogen. Grams.	Nitrogen. Absorption per Cent.	Fat. Grams.	Fat. Absorption per Cent.
1909.								1910.						
Oct. 28 ...	65.70	1,680	1010	10.08	2.00	0.20	10 : 1	Oct. 29 ...	36	73.3	0 37	98	1.96	98
Oct. 29 ...	65.50	1,620	1016	13.28	2 58	0 21	12 : 1	Oct. 30 ...	31	73.9	0 31	98	1.64	93
Oct. 30 ...	65.50	1,510	1014	12.84	2.94	0.20	14 : 1	Oct. 31 ...	123	72.9	1.17	93	7 84	92
Average ...	65.57	1,603	1013	12.40	2.51	0 20	12 : 1	Average...	63	73.4	0.62	96	3.81	96
Mixed Diet contained 16.66 Grams of Nitrogen: 58.58 Grams of Fat: 102.07 Grams of Carbohydrates: 1,710 c.cm. of Fluid; 23 Calories per Kilo.														
Oct. 31 ...	65.30	1,280	1016	11.52	2.18	0 18	12 : 1	Oct. 31 Nov. 1 ...	96	79.9	0 60	96	3.79	94
Nov. 1 ...	65.30	1,340	1017	13 53	2.49	0.16	15 : 1	Nov. 2-3...	84	75.3	0.64	96	4 02	93
Nov. 2 ...	65.60	1,290	1014	10.71	1 88	0 15	12 : 1	Nov. 4 ...	43	69.7	0.40	98	2.52	96
Nov. 3 ...	65.30	1,460	1017	13.72	2.60	0.23	11 : 1	Nov. 5 ...	101	75.4	0 87	95	4 80	92
Average ...	65.38	1,343	1016	12.37	2,29	0.18	12 : 1	Average...	81	75.1	0.63	96	3.78	94
Mixed Diet with Sour Milk contained 18.83 Grams of Nitrogen: 70.62 Grams of Fat; 112.08 Grams of Carbohydrates; 1,790 c.cm. of Fluid: 24 Calories per Kilo.														
Nov. 4 ...	65.60	1,790	1016	14.99	2.65	0.18	14 : 1	Nov. 6 ...	133	70.0	1 48	92	6.71	91
Nov. 5 ...	65.50	1,400	1020	16.24	3 07	0.28	11 : 1	Nov. 7 ...	73	72.3	0 74	96	3.67	95
Nov. 6 ...	65 50	1,400	1017	13.17	2.40	0.20	12 : 1	Nov. 8 ...	65	77 5	0.49	97	2.18	97
Nov. 7 ...	65.40	1,340	1017	12.61	2.27	0.20	11 : 1	Nov. 9 ...	49	72 2	0 50	97	2 22	97
Average ...	65.50	1,483	1018	14.25	2.60	0.21	12 : 1	Average...	80	73.1	0.80	96	3.70	95
Mixed Diet with Sour Milk contained 18.79 Grams of Nitrogen: 93.43 Grams of Fat; 146.40 Grams of Carbohydrates; 1,988 c.cm. of Fluid; 28 Calories per Kilo.														
Nov. 22 ...	66.60	1,680	1019	16 02	2.11	0 17	12 : 1	Nov. 24 ...	159	82 0	1.15	93	3.89	96
Nov. 23 ...	66.50	1,310	1020	12.86	2.25	0.16	14 : 1	Nov. 25 ...	64	79.8	0.52	97	1.75	98
Nov. 24 ...	66.60	1,340	1019	13.83	2.70	0.22	11 : 1	Nov. 26 ...	162	83.1	1.10	94	3.73	96
Average ...	66.56	1,443	1019	14.24	2 35	0.18	13 : 1	Average...	128	81.6	0.92	94	3 12	97

The third case was that of a lady (Table III), who had suffered from chronic constipation for years, and was extremely thin. In this case, in order to get the bowels to act, it was necessary to give her pil. col. et. hyos., gr. 4, every night. During the period of three days that she was on Schmidt's diet the urine contained an excess of indican with a faint trace of albumen, but otherwise nothing abnormal. The stools were formed principally of scybalae massed together in rolls with a good deal of mucus attached to them; the odour was offensive, a small quantity of blood being often present; there was a marked excess of mucus, albumen, and urobilin. Even while taking the pill the food took fifty-one and a half hours to pass along the alimentary tract.

The Schmidt's fermentation test gave a distinct alkaline reaction of the faeces, which gradually became neutral, and there were a few bubbles only of gas.

The diet contained 15.59 grams of nitrogen, and the urine only 8.41 grams of nitrogen. The alkaline sulphates were 1.60 grams, with 0.19 grams of aromatic sulphates. The quantity of stools per diem averaged 103 grams, and, in spite of taking the pills, there was only 64.9 per cent. of water. The nitrogen in the stools averaged 1.25 grams, giving an absorption of only 92 per cent. The fat in the faeces was very large, being no less than 9.42 grams, the absorption being as low as 90 per cent.

During the next period of six days the patient was put on a mixed diet; the period had to be extended to six days, as the first charcoal took seventy-four and three-quarter hours to appear, in spite of the patient passing a motion each day. The stools were not so firm this time, although they contained some scybalae and a good deal of mucus, sometimes tinged with blood.

The Schmidt's fermentation test on this mixed diet yielded an alkaline stool, which remained alkaline, and no gas was given off on any occasion.

The diet only contained 12.37 grams of nitrogen, the patient being a very small feeder, and it was with the greatest difficulty that one got her to take the quantity she did. The urine now contained 11.29 grams of nitrogen. The alkaline sulphates were 2.13 grams per diem, the aromatic sulphates having fallen to 0.14 gram.

The total quantity of stools averaged 63 grams, containing 79.4 per cent. of water. The nitrogen in the stools was 0.67 gram, giving an absorption of 95 per cent. The fat in the stools was 2.68 grams, giving an absorption of 93 per cent.

During the next period of four days the patient took with the food 1 pint of sour milk, 8 oz. at 8 a.m., 4 oz. at 11 a.m., and 8 oz. at 10 p.m. The diet now contained 14.87 grams of nitrogen, and there was found in the urine 11.90 grams of nitrogen. The alkaline sulphates averaged 2.32 grams, while the aromatic sulphates fell to 0.12 gram.

During this period the quantity of faeces increased to 118 grams per diem, containing 81.4 per cent. of water. Charcoal now appeared with the faeces after fifty-five and a half hours, and the stools were inclined to be unformed paste, no longer containing any scybalae.

The daily quantity of nitrogen in the stools was 1.09 grams, giving an absorption of 93 per cent. The fat was 3.80 grams per diem, giving an absorption of 94 per cent.

Unfortunately this patient could not be analysed at a later period, as the difficulties of getting her to take her meals fully could not be overcome with sufficient accuracy to make results reliable.

The conclusions to be drawn from these analyses of metabolism when a small quantity of sour milk is still in addition to the ordinary mixed diet can be put under two heads:

TABLE III.

Schmidt's Diet contained 15.59 Grams of Nitrogen; 92.68 Grams of Fat; 188.01 Grams of Carbohydrates; 1,540 c.cm. of Fluid 42 Calories per Kilo.

Date.	Weight in Kilos	Quantity.	Sp. Gr.	Nitrogen in Grams.	Sulphates. Alkaline A.	Aromatic B.	Ratio A : B	Date.	Quantity in Grams.	Water per Cent.	Nitrogen. Grams.	Absorption per Cent.	Fat. Grams.	Absorption per Cent.
1910. Feb. 16 ...	48.40	1,930	1014	8.32	1.42	0.22	6 : 1	1910. Feb. 18 ...	159	63.0	1.77	83	13.44	86
Feb. 17 ...	48.60	1,960	1011	9.87	2.02	0.20	10 : 1	Feb. 22 ...	16	61.7	0.23	99	1.72	98
Feb. 18 ...	48.10	1,370	1012	7.04	1.35	0.15	9 : 1	Feb. 23 ...	134	63.9	1.74	89	13.09	86
Average ...	48.37	1,753	1012	8.41	1.60	0.19	8 : 1	Average...	103	64.9	1.25	92	9.42	90

Mixed Diet contained 12.37 Grams of Nitrogen; 39.85 Grams of Fat; 73.09 Grams of Carbohydrates; 1,288 c.cm. of Fluid; 21 Calories per Kilo.

Feb. 20 ...	47.10	1,000	1018	10.46	2.04	0.16	12 : 1	Feb. 23	—	72.0	0.46	96	1.81	95
Feb. 21 ...	47.10	1,460	1016	15.58	2.76	0.19	14 : 1		99	72.0	0.46	96	1.81	95
Feb. 22 ...	47.10	840	1019	9.74	2.35	0.10	23 : 1	Feb. 24 ...	138	68.6	2.21	82	8.82	78
Feb. 23 ...	47.90	1,120	1011	6.48	1.11	0.11	10 : 1	Feb. 25	—	86.0	0.33	97	1.33	97
Feb. 24 ...	47.00	1,350	1014	15.15	2.49	0.16	15 : 1		92	86.0	0.33	97	1.33	97
Feb. 25 ...	46.90	1,200	1014	10.32	2.04	0.13	15 : 1	Feb. 26 ...	59	92.0	0.24	98	0.96	98
Average ...	47.18	1,028	1015	11.29	2.13	0.14	15 : 1	Average ...	63	79.4	0.67	95	2.68	93

Mixed Diet and Sour Milk contained 14.87 Grams of Nitrogen; 59.95 Grams of Fat; 91.74 Grams of Carbohydrates; 1,400 c.cm. of Fluid; 28 Calories per Kilo.

Feb. 26 ...	47.00	1,300	1015	10.17	3.32	0.11	30 : 1	Feb. 28	—	81.0	1.60	89	5.65	91
Feb. 27 ...	47.30	960	1025	13.45	1.34	0.13	10 : 1		343	81.0	1.60	89	5.65	91
Feb. 28 ...	46.80	1,290	1015	12.50	2.29	0.12	19 : 1	March 1...	69	86.7	0.45	97	1.59	97
March 1 ...	47.00	800	1025	11.50	2.32	0.12	19 : 1	March 2...	61	77.0	0.69	95	2.43	96
Average ...	47.05	1,088	1020	11.90	2.32	0.12	19 : 1	Average...	118	81.4	1.03	93	3.80	94

First, *the influence on increased intestinal putrefaction.* The quantity of the aromatic sulphates is seen to be decreased, although this is not in any considerable quantity, but in none of the cases were the aromatic sulphates very large to commence with. The increased indican in the urine also appeared to be somewhat decreased in quantity.

In all the cases the stools became much less offensive in odour when a small quantity of sour milk had been added to the diet. The results of Schmidt's fermentation test further indicated a decrease in the intestinal putrefaction, and the marked alkaline condition of the stools tended to become either neutral or even acid.

The chemical analyses gave indications that there was a decrease in the intestinal putrefaction.

Secondly, *the influence on the absorption of food.* In Table IV the results of a series of analyses on individuals on Schmidt's diet and on ordinary mixed diet are given. These can be taken as a standard of comparison.[2]

TABLE IV.

Average Analysis of Faeces on Schmidt's Diet.

Quantity in Grams.	Water per Cent.	Nitrogen. Grams.	Nitrogen. Absorption.	Fat. Grams.	Fat. Absorption.
90	76	0.88	Per Cent. 95	4.26	Per Cent. 96

Average Analysis of Faeces on Mixed Diet and 1½ Pints of Milk.

Quantity in Grams.	Water per Cent.	Nitrogen. Grams.	Nitrogen. Absorption.	Fat. Grams.	Fat. Absorption.
117	75	1.11	Per Cent. 94	3.75	Per Cent. 96

The quantity of nitrogen in the stools is certainly increased by the addition of sour milk to the diet, and this increase in the quantity of nitrogen present causes the apparent decrease in the absorption of nitrogen by the bowel. It must here be remembered that the nitrogen contained in the stools is not really the nitrogen in the food, which remains undigested; but is the nitrogen contained in the various secretions that are eliminated into the bowel, together with mucus, epithelial cells, and the remains of numerous bacteria in the intestine; so that, although the nitrogen absorption may apparently be decreased, there is in all probability no real decrease in the absorption of nitrogen.

The fat, however, in the stools, appears to be slightly increased in quantity in two of the cases, while in Table II there was an apparent decrease in the quantity of fat.

The analytical results of the absorption of food after the addition of small quantities of sour milk to an ordinary diet do not apparently point to any better absorption of food.

I have to thank Mr. Lawrence for having so carefully carried out the analyses, and Dr. Goodbody for having gone through all the numerous figures necessary for making these tables.

REFERENCES.

[1] Schmidt's Diet, p. 95. Harley and Goodbody, *The Chemical Investigation of Gastric and Intestinal Diseases.* [2] Ibid., pp. 101, 102; 123, 124; 134, 136; 148, 146.

DISCUSSION.

Professor SAHLI (Berne) said the claims made for sour milk as compared with ordinary milk tended to be exaggerated. It must, however, be admitted that sour milk had advantages in certain directions. The sour milk had proved of particular advantage in the medical clinic at Berne in cases of gastric anacidity, including that which was associated with pernicious anaemia, as this disease perhaps depended upon deficient absorption of the iron of the food as a result of gastric hypo-acidity; consequently, the absorption of the iron of the food, and also iron given as medicine, could be increased by the administration of sour milk or lactic acid. In addition, sour milk had been used in the Berne clinic for enteritis and typhoid fever. It was also useful in diabetes mellitus, as in the process of souring the sugar of milk was reduced to about half. As the action of sour milk in digestive disorders depended upon its preformed lactic acid, the administration of the

ferment alone could take its place. Faecal examinations showed that there could be no question of an extensive growth of lactic acid organisms in the intestine. With regard to the bacteriology of sour milk, as it had been described that day, the speaker was very sceptical. He was of the opinion that the bacteriology of the milk was the same all over the world, and that the *B. bulgaricus* had not been separated as a definite species from other organisms. The description of the organism in this connexion was insufficiently clear.

Dr. F. D. Bond (Gloucester) desired to put in a plea on behalf of whey as a better medium for the administration of the lactic acid treatment than milk, because the complicating influence of the casein was eliminated, and the therapeutic problem was thereby much simplified. Apart altogether from the lactic acid, which could be generated as easily in whey as in milk, whey had special recommendations in the fact that its administration could be pushed to a much greater extent without fear of creating digestive troubles than milk could be. Dr. Bond stated that he could speak from personal experience of the beneficial effect of sour whey in promoting an increased capacity for work. He believed this to be due to a distinct tonic influence which sour whey exercised on the heart. He urged those who were interested in working out carefully the real therapeutic value of lactic acid to do so by testing on their own persons the effects of whey in different degrees of sourness.

Dr. R. Hutchison (London) expressed himself as profoundly sceptical of the scientific basis of a treatment which had been exalted into a sort of craze. The benefits claimed for it by different speakers could be obtained by simpler and better controlled means. For example, to produce intestinal antisepsis he would prefer calomel, and in absence of gastric acidity he would rather prescribe weak hydrochloric acid.

Professor Bradbury (Cambridge) related two cases of mucous colitis which had improved upon the treatment, and a case of intestinal indigestion, complicated with severe bradycardia, which completely lost all symptoms.

Dr. A. F. Hertz (London) said that many of his patients with constipation claimed to have experienced relief from soured milk. There were cases where the treatment had been followed by very severe and intractable diarrhoea. He desired to see bacteriological examination of the faeces carried out as a routine control. Dr. Eyre, in cases of infective colitis under his care, had been able to show the disappearance of the offending organism.

NEW FACTS CONCERNING CHRYSAROBIN.

By Professor P. G. Unna, M.D.,
Hamburg.

Chrysarobin has become, notwithstanding several disagreeable accompanying effects, a world-wide remedy, as up to the present time no satisfactory substitute has been found for it. The medical man who now sees daily its action upon the skin can scarcely imagine the impression which this remedy made upon the European physicians when it was introduced thirty-five years ago. It seemed to be something absolutely new, not to be compared to any former skin remedy.

After Tarish (1878) introduced pyrogallic acid as a rival to chrysarobin and we became acquainted with a whole group of similar substances, like resorcin and ichthyol, chrysarobin lost some of its former nimbus. But in one respect it upholds its peculiar position up to the present day, as it is not only a remedy of first rank in practice, but an incomparable diagnostic test for certain qualities of the skin. For as we all know, chrysarobin is oxidized on some regions of the skin strongly, on others weakly, on some not at all. But the reason of this you will not find in any textbook of physiology or pharmacology. Could we explain this, many obscure points of dermatological work would become clear to us.

As you are aware, the nature of chrysarobin was in the beginning very much disputed. Attfield, who first examined the Goa powder more exactly, found in it 80 to 84 per cent. chrysophanic acid. But Liebermann and Seidler showed that the chrysophanic acid obtained by Attfield was developed from the Goa powder by the alcoholic solution of caustic potash used by them, and that originally Goa powder contained only a reduced chrysophanic acid, which they named "chrysarobin." They gave it the formula, $C_{30}H_{26}O_7$, and fixed the equation:

$$\underset{\text{Chrysarobin.}}{C_{30}H_{26}O_7} + 2O_2 = 3H_2O + 2\underset{\text{Chrysophanic acid.}}{(C_{15}H_{10}O_4)}.$$

From this Seidler explained the therapeutic effect of chrysarobin thus—that it kept away the oxygen of the air as a reducing agent, not only from the skin, but in parasitic skin diseases also from the parasites. Therefore he proposed to make parallel tests with chrysarobin and chrysophanic acid on one hand, and on the other to find out if other reducing agents had the same effect as chrysarobin.

The first problem I solved by comparing the chrysophanic acid gained from rhubarb with the chrysarobin from Goa powder. I found that the first was good in cases of superficial parasitic skin diseases and eczema, but proved to be devoid of the effect of chrysarobin upon psoriasis and sycosis. By this I confirmed the assertion of Liebermann and Seidler that chrysophanic acid and chrysarobin were totally different substances, and I therefore claimed a separation of them for the German *Pharmacopoeia*, as did fourteen years later Walter G. Smith for the English *Pharmacopoeia*. But as the comparison of rhubarb chrysophanic acid with chrysarobin was in some respects open to objection, I repeated later on the same experiments with a chrysophanic acid gained from Goa powder by the peroxide of soda. But this chrysophanic acid also *failed to have the powerful effect of chrysarobin*.

The second problem of finding a remedy of similar constitution and action was solved by Liebermann. Seeing the essential quality of chrysarobin in its oxidation upon the human skin, he advised the reduced leuco-products of the alizarine under the name of "anthrarobines" as remedies for skin diseases. As you know, the expectations formed for anthrarobin were not fulfilled. Now, as before, the product gained from the exotic Goa powder holds its undisputed position. For this reason alone we have ground to be sceptical in regard to the first theory of chrysarobin, according to which the true action of this remedy was regarded as due to its oxidation to chrysophanic acid.

Considering without prejudice the problem of Liebermann, we must distinguish at least three possibilities. First, chrysarobin may act *as such* upon the skin, by combining with the horny layer in some way. If this were the case all subsequent alterations of chrysarobin would be of no importance for the healing property. This supposition can, as it seems, be excluded in regard to chrysarobin; were it correct, it ought to act as well where it is changed as where no change takes place. Thus it should act upon the knees, elbows, and legs, as well as upon the face and neck. But in observing the different regions of the skin we note that it acts upon psoriasis the quickest where it changes most.

The second possibility is that the *process of oxidation*, which Liebermann made the base of his theory, is the essential point in the therapeutic effect. Without doubt *reducing qualities* of our remedies are of great importance, and these induced me many years ago (1883) to separate as a special group the *reducing remedies*.[1] But, of course, the reducing effects can only be such as are common to all reducing agents and not such as characterize some of them only. For instance, if only chrysarobin and pyrogallic acid are able to remove psoriasis and not the other reducing agents, the curative effect cannot, or cannot alone, depend on the oxidation of these substances upon the skin; besides, it is easy to convince oneself that oxidation alone does not cure any psoriasis. Take only the leuco-product of the methylene blue, the methylene white, and let it be oxidized on the psoriatic skin: it will turn blue but the psoriasis does not change.

There remains the third possibility—namely, that not the original substance and not the process of oxidation, but the *final product of the latter* forms the principle of the therapeutic effect. Thus I have shown that one product of oxidation of pyrogallic acid, the "pyraloxin," still possesses some definite effects (in callous eczemas, lupus

erythematosus, leprosy, and so on). But the chrysophanic acid, which till now has been considered to be the final product of the oxidation of chrysarobin on the skin, does not possess the desired effect of curing psoriasis.

From these considerations we are compelled to acknowledge that, in spite of the valuable work of Liebermann, we do not know the true nature of the chrysarobin effect; we know only that it must consist in a change of chrysarobin yet unknown.

In the next twenty-two years after Liebermann's work there appeared numerous articles on its effect on skin diseases. The once dreaded remedy entered all the pharmacopoeias of the world. But the explanation of its effect, so much surpassing all other reducing remedies, made no progress.

Whenever such a standstill occurs in any scientific question, something has always proved wrong in the suppositions. We are able to-day to see where these faults lay. There are principally two.

The first consisted in the groundless supposition that the changes of chrysarobin on the skin could only be the oxidation to chrysophanic acid, because Attfield and Liebermann found this substance in their experiments.

The second error was the hypothesis generally made after Wurster's work in 1886, that in the oxidations occurring on the skin the influence of hydrogen peroxide only came in question. Wurster has the merit of having been the first to show us that in certain secretions, such as sweat and saliva, processes of oxidation occurred. He attributed these to the presence of hydrogen peroxide on the skin. Since then, so far as I can see, no other hypothesis explaining oxidation on the skin has been brought forward. If we exclude H_2O_2 we are helpless in explaining the oxidation on the skin, because of itself chrysarobin does not change; it is not "autoxidable."

Regarding the first hypothesis, I already in 1897 showed that the oxidation of chrysarobin to chrysophanic acid, which takes place so easily under co-operation with caustic alkalis, cannot occur in ordinary practice, because then the alkalis are usually wanting. On the other hand, I showed that the oxidation of chrysarobin upon the skin resembled more that occurring in the presence of *oleic acid* or *oleate of lead* (ointment of Hebra) in the ointment box.

Regarding the second point, I came to quite a similar conclusion, namely, I was able to show, together with Dr. Golodetz, with the help of a new test for free oxygen, which we called *Rongalitweiss*, that the oxidation on the skin was due to the presence of *oleic acid* on the skin surface, and that this substance originates from the sweat glands on the palmar and plantar surfaces, on all other regions from the sweat and sebum glands.

After discovering this new source of free oxygen on the skin surface, I had to prove that oleic acid was sufficient to oxidize chrysarobin. This investigation was much facilitated by the discovery that chrysarobin dissolved in benzol has a characteristic spectrum, which during oxidation also changes. It is characterized by two bands in the green lying closely together (535 and 510). If, however, the chrysarobin is oxidized in absence of alkalis, the spectrum shows only a broad indistinct band in the green, and an obscuration in the yellow. I propose to call this new body *oxychrysarobin* at present until its exact constitution is known. If we oxidize chrysarobin by means of oleic acid which has been in contact with air for some time, or by heated linseed oil (siccatif), by peroxide of benzoyl, by oleate of lead, or by persulphate of ammonia, in increasing degree oxychrysarobin results.

A totally different product is gained by the oxidation of chrysarobin in the presence of alkalis. If we, after Liebermann, conduct a stream of air through an alkaline solution of chrysarobin, we get chrysophanates; but if we continue this process for a very long time the change goes further, and finally, after adding acids, we get another product, easily soluble in benzol, which has also a characteristic spectrum—namely, an indistinct band in the green and chiefly a dark, sharply defined band in the red (625). I propose to call this product "chrysaloxin."

On the other hand, chrysophanic acid dissolved in benzol gives no spectrum; but, as Liebermann and Kostaniecki have shown, if dissolved in concentrated sulphuric acid, chrysophanic acid has a definite spectrum. In contrast to this, chrysarobin as well as oxychrysarobin and chrysaloxin have no spectrum at all if dissolved in concentrated sulphuric acid.

Making use of these spectra, there is no difficulty in defining the way which the oxidation of a given chrysarobin ointment takes on the skin. After the ointments have rested three to five days on the skin of a patient, the residue is washed off by means of pads of cotton-wool soaked in benzol. The concentrated benzol extract of these pads is then analysed by the spectroscope. Twelve patients suffering from psoriasis and treated in this manner gave always the same result—that simple chrysarobin-vaseline or chrysarobin in siccatif, changed into oxychrysarobin. In contrast to this, the ointment from one patient who, besides chrysarobin, used soft alkaline soap, and that from another, who used Drew's ointment, containing chrysarobin and soft soap, showed a distinct chrysaloxin spectrum.

If this new theory based upon oleic acid is right, we must in future conduct our treatment thus, that the change of chrysarobin into oxychrysarobin is hastened, facilitated, and increased. I therefore propose a generous use of chrysarobin siccatifs and of ointments containing, besides chrysarobin, oleates of lead. After a year's experience, I am able to recommend this form of treatment of psoriasis as an especially quick and thorough one.

REFERENCE.

[1] Unna, Uberhäutung und Uberhornung (Dermatoplasie und Keratoplasie), *Berl. klin. Woch.*, No. 35, 1883.

THE ACTION OF LIME SALTS.

By Professor HANS MEYER,
Vienna.

I SHOULD like to report some observations on the action of calcium which have recently been made in my laboratory. The physiological significance of any normal protoplasmic constituent can, in part at least, be judged from the effect of its absence, if by any means it can be rendered inactive.

Poisoning with oxalic acid seems a suitable method of thus getting rid of calcium. Various investigators (Zöw, Friedenthal) have already suggested that the action of oxalic acid is due to its withdrawing or combining with calcium, but have failed to produce the proof that this was the case; for, quite apart from its combining with calcium, oxalic acid might have some specific action upon the protoplasm.

The necessary proof has, however, been recently adduced by Dr. Januschke, who has shown that not only the cardiac depression, but the general toxic symptoms of oxalate poisoning can be relieved by the administration of calcium or of its physiological equivalent, strontium; while such other substances, as barium, which combine with oxalic acid, are not effective. The essential element in relieving the poisoning consists, therefore, in the replacing of the calcium withdrawn by the oxalic acid from the protoplasm, and not in combining with and rendering inactive the acid itself.

Some of the symptoms of oxalate poisoning are of particular interest—namely, the marked flow of saliva, the alternate maximal contraction and dilatation of the pupil, and the alternate rise and fall of blood pressure. The fall in pressure is accompanied by a slowing of the heart-beat, and the enormous sudden rise by an increase in rate. These symptoms seem to point to an increased irritability of the autonomous and sympathetic nervous systems due to the withdrawal of calcium; and Chiari and Fröhlich have been able to show that moderate (not lethal) poisoning with oxalic acid leads to such an enormous increase in the irritability of organs having a sympathetic innervation—for example, dilator pupillae, submaxillary gland, arteries, the inhibitory mechanism of the bladder—that they respond to small fractions of the usual effective dose of adrenalin. The autonomous system is similarly affected, and the cardiac vagus, the chorda tympani, the motoric innervation of the bladder, respond to small fractions of the usual dose of pilocarpine. The administration of calcium does away with this hyperirritability.

In poisoning with acids (hydrochloric acid) a part of the general picture is formed by the symptoms due to the withdrawal of calcium; this may be concluded from the findings of Allers and Bondi, who found that in every acid

intoxication the calcium content of the blood increases considerably, apparently at the cost of the tissues, which become relatively calcium poor. In how far this takes place also in other protoplasmic poisonings—for example, by mercury, phosphorus, and arsenic—is now under investigation. Drs. Fröhlich and Chiari have already stated in these poisonings an exaggeration of the adrenalin sensibility.

Another aspect of the action of calcium which has been studied by Chiari and Januschke seems not less interesting. Animals to whom calcium has been administered do not give inflammatory exudates as normal animals do. If one applies oil of mustard to the eye of a normal narcotized rabbit within twenty minutes a marked oedematous swelling of the conjunctiva takes place, so that the eye can scarcely be opened. If one poisons a guinea-pig with diphtheria toxin, or a dog with iodine or with thiosinamin, one finds very marked pleural and pericardial exudates *post mortem*.

If, however, the same experiments are carried out on animals to whom calcium has previously been administered the oedematous exudates and transudates are not formed. It seems as if the vessel walls, owing to the increase in their calcium content, had become less permeable. Experiments carried out by Dr. Luithlen show that the same is true of the skin. Exudative exanthemata can easily be produced in calcium poor animals, but with difficulty or not at all in calcium-rich ones. Wright had already noted that serum exanthemata can be prevented or weakened by the administration of calcium. He attributed its efficacy to a greater coagulability of the blood; it appears, however, to be more a case of a change in the vessel walls.

Probably the decrease in the secretion of the glands of the intestine, which we recognize as a consequence of the drinking of calcium-rich waters, is to be similarly explained. Salts whose anions form with calcium insoluble compounds, and therefore deprive the tissue cells of calcium, all act as purgatives. To this fact Cushny and Wallace have already drawn attention. And here also, in part at least, the increased permeability of vessels and consequent more ready glandular secretion plays a part in their purgative action. That these salts, and also those of mercury, do withdraw considerable quantities of calcium from the intestinal wall has been demonstrated quantitatively by Dr. Chiari.

We believe that we have hereby demonstrated, first, that calcium has a sedative effect on the vegetative nervous system, and, secondly, that it diminishes the permeability of the walls of the blood vessels.

THE TREATMENT OF MORPHINOMANIA BY THE "COMBINED" METHOD.

By H. Crichton Miller, M.A., M.D Edin. and Pavia,

San Remo.

The method of treating morphinomania to which I desire to draw your attention to-day is one which combines both medicinal and moral treatment, and is directed both to the physical and psychical sides of the disease. At the outset let me make one or two prefatory remarks. First, I wish it to be understood that this paper is of the nature of a preliminary paper. In a disease like morphinomania no results are worth tabulating that have not stood the test of at least three years, and of such I have none to record. Secondly, let me point out that, though I shall speak only of morphinomania, the method, with necessary adaptations, is applicable also to any drug mania, including dipsomania, to alcoholism, to severe obsessions, and also to self-abuse. Finally, I would have you bear in mind that when I refer to the morphinomaniac I mean *the average morphinomaniac*, being well aware that where a disease may exist in any degree of severity or mildness it is impossible to generalize except for the average case.

There are three primary requisites in any system of cure for morphinomania. First, it must be painless, or as nearly so as possible. Secondly, it must be calculated to obliterate the craving completely and absolutely for a time, however brief. Thirdly, it must be specially designed to re-educate the will. Besides these three cardinal requisites I would add two further points—namely, that the treatment should be carried out in a nursing home or similar institution, for reasons too obvious to dwell on, and that the withdrawal of morphine should not be immediate.

Let us now pass on to an analysis—necessarily superficial—of the disease. A morphinomaniac is an individual whose mind is dominated or obsessed by the desire to take morphine, either to satisfy a present organismal craving or to reproduce a pleasing subjective condition, which he has previously attained by the use of the drug. Under the first heading comes the neutralizing of sensory hyperaesthesia, of excessive medullary stimulation, and of gastric hyperacidity. Under the second heading come the fascinating exhilaration and the intensification of imagination, and so on.

To state the case in other words, the morphinomaniac indulges either because of an organismal habit or through psychical association, or both. To put it more briefly still, there is the physical temptation, the psychical temptation, or the union of the two. In mild cases it is chiefly the psychical factor that is at work; in bad cases it is both, and in the worst cases the psychical factor is so paramount that we are apt to forget the other. Our object must therefore be to break the habit of the organism—that is, to remove the actual physical craving, and *during that time* (please note these words) to render the mind proof against the dominance of the craving in the future. Looked at from this point of view, it is manifest that both physical and psychical treatment are essential. Without drug treatment—and that on heroic lines—it is impossible to allay the craving of the organism for sedatives, for peace, for sleep (I would again remind you that I speak of the average case). As evidence of this, let me quote the words of Dr. Milne Bramwell, in reference to the treatment of alcoholism by hypnotic suggestion: "In the majority of the cases that failed it was impossible to get the patients to cease drinking during treatment." In other words, psychical treatment was rendered vain by the persistence of the organismal craving.

But there is another score on which drug treatment is most desirable—to wit, the fulfilment of my first requisite, painlessness. Most morphinomaniacs want to be well; few of them want to be cured. They are too much afraid of the weeks and months of suffering entailed in the process of cure; they know too well the agony they endured at each fruitless effort to abstain. Therefore, to get them to submit to treatment we must make it as nearly as we can painless. Douglas says: "I am convinced that morphine can never be eliminated from an addict without suffering. . . . I therefore lay down the general principle that sleep solves the problem of painless surgery." Any form of treatment that is purely moral or psychical, and free from drugs, must, in the nature of things, make a great demand on the patient to renounce the drug while the craving is actively and physically present. I submit, then, that complete and immediate obliteration of the organic craving is essential, and can only be produced by drugs.

On the other hand, I maintain that hypnotic suggestion is no less essential a part of the cure. When the physical craving has been provisionally eliminated, there remains a pure obsession—a concept that dominates the psychical activities. I think the profession has come to regard hypnotic suggestion as the most satisfactory—perhaps the only satisfactory—treatment for obsessions. I shall, therefore, make no further apology for recommending hypnotic suggestion, although I am perfectly aware of the scorn and scepticism with which this particular form of treatment is regarded by many physicians.

The details of the treatment which I recommend are as follows:

1. A course of nine weeks in a nursing home or similar institution. I consider this period as long as desirable, and yet short enough to bring the cure within the reach of most patients.

2. Examine the patient and make sure that there is nothing to contraindicate the treatment.

3. Explain to the patient very fully the nature of the cure. Let him see that you do not mean to treat him as a criminal, but that you want to help him. Explain that you will allow him practically as much morphine as he asks for during the first three days, and that by the end

Average Dosage for a Patient taking 0.30 Gram (gr. v) of Morphine per Diem.

Periods of 12 Hours.	No. of Doses.	Each Dose of		Total in 12 Hours.		Approximate Equivalents in Imperial Measure.			
						Each Dose.		Total in 12 Hours.	
		Bromide.	Morphine.	Bromide.	Morphine.	Bromide.	Morphine.	Bromide.	Morphine.
		Grams.	Milligrams.	Grams.	Milligrams.	Grains.			
First day	5	5.0	30	25	150	80	½ gr.	3vij	2½ gr.
First night	4	5.0	20	20	80	80	⅓ gr.	3v	1⅓ gr.
Second day	4	5.0	15	20	60	80	¼ gr.	3v	1 gr.
Second night	3	5.0	10	15	30	80	⅙ gr.	3iv	½ gr.
Third day	3	5.0	7	15	21	80	⅛ gr.	3iv	⅜ gr.
Third night	1	5.0	5	5	5	80	1/12 gr.	3iss	⅓ gr.
Total in three days ...				100	346			3iijss	5¾ gr.

of that time he will be sound asleep, and free of the craving.

4. During the first three days of treatment, the patient should get a diminishing number of injections of diminishing strength (actual figures are given in the accompanying table), and on the third day the injections should be per rectum.

5. Before each injection he has to take a draught containing 5 grams of sodium bromide. The total for the three days should work out at about 100 grams. By the end of the third day both bromide and morphine are stopped, and the patient will be in a comatose or semicomatose condition which will last from three to six days more.

6. During all this time the patient is roused to take milk at regular intervals, and to be placed on the commode to empty bowel and bladder.

7. When the effects of the bromide begin to pass off there will be in all probability a certain amount of mental confusion, including hallucinations, delusions of persecution and so on. These will pass off soon.

8. As soon as the patient appears to be sufficiently sensible, efforts should be made to hypnotize him, and the lethargic state he is in will materially assist. Suitable suggestions must be made without waste of time, lest the craving should reassert itself before the mind is sufficiently influenced. This is the critical point of the whole cure.

9. As soon as possible the patients should be brought into one room and hypnotized collectively. This I consider of very great importance, as would any one who has seen the method practised abroad. All the most successful exponents of treatment by suggestion on the Continent lay great stress on the value of this method—Bertillon, Van Renterghem, the late Dr. Wetterstrand, and many others. It serves two purposes: (*a*) to facilitate the hypnotization of obstinate cases; (*b*) to enhance the effect on all that respond.

10. During this period—that is from the second to the end of the seventh week—the patients should be strictly supervised, and no access to drugs allowed. Everything is done to make life interesting, and to promote the general health of the patients.

11. During the eighth and ninth weeks the patients should be allowed to keep their morphine and syringes. The hypnotic sittings should be reduced in number, and should have special reference towards teaching the patient to put himself to sleep—that is, autohypnosis. I would lay great stress on this point. Autohypnosis is, I believe, a mental knack or trick that can be acquired through hypnotic suggestion by all but a certain percentage of mental invertebrates. Once acquired, this power will serve to give the patient in the future a ready refuge from worry or pain, or anything else that might otherwise lead to thoughts of morphine.

I have tried to sketch out the plan of treatment I recommend, but within the limits of a paper such as this it is quite impossible to enter into minutiae. I can only mention a few points. During the period of drug treatment other drugs will of course be necessary, such as sparteine, which, with Jennings, I believe to be the most suitable cardiac tonic; ichthyol, which I recommend instead of arsenic, as suggested by Macleod, to prevent symptoms of bromism; alkalis to mitigate the hyperchlorhydria that is usually present, and possibly a stimulant expectorant to minimize the risk of pulmonary oedema.

Nor have I time to refer to the complex causes so frequently met with, such as alcoholism and morphinomania (in which the former should be treated first); morphinomania and cocaine habit (perhaps the most obstinate of all the cases), or alcoholism and masturbation, which form another very bad pair.

I pass now to a brief survey of some of the modern methods of treating drug habits, with a few observations.

1. Oscar Jennings has described very fully his method, which is briefly this: (*a*) A gradual reduction of the morphine; (*b*) administration of the morphine per rectum; (*c*) sparteine and other heart tonics; (*d*) Vichy water for hyperacidity; (*e*) Turkish baths.

I think Jennings is correct with regard to the rectal administration when the morphine has been reduced to a certain point. I also agree with him in recommending sparteine, but, in my opinion, his method leaves far too much to the patient's unaided will power. It may succeed in some cases, but I submit that it is not likely to prove successful with a morphinomaniac of any degree of severity. Furthermore, I am convinced that it is morally too painful to be attractive. The patient, before consenting to treatment, will see before him the prospect of a long and hideous struggle, during which his craving may be mitigated but will not be entirely removed.

2. Neil Macleod of Shanghai was the first to describe the prolonged bromide sleep and to point out its value and its safety. For the first part of the treatment I consider his method the best, but I differ from him absolutely in considering such treatment complete unless it is followed by definite and vigorous psychical treatment. I also agree with Macleod's three days for the reduction of the morphine.

3. Douglas recommends apomorphine in doses of $\frac{1}{10}$ grain as a hypnotic. I cannot bring myself to believe that this drug is as safe or as satisfactory as sodium bromide, but I very heartily agree with his general dictum already quoted. Any cure that is devised without regard to this dictum can never, in my opinion, be of general or successful application.

4. Crothers has compared very carefully the results of different methods of withdrawal, and has shown that even immediate withdrawal is hardly ever fatal. He approves of sodium bromide as a substitute, but his doses are much smaller than Macleod's, and on that account I do not think his results can be as satisfactory, while I do not believe his method is a whit safer. Crothers prefers gradual reduction by concealed methods, waking suggestion, and a cure period of six to ten months. Of course, this is too long for practical purposes. For one morphinomaniac who will submit to a nine months' cure, at least ten will submit to a nine weeks' cure.

5. For a thoroughly scientific analysis of morphinomania no better account could be wished for than that given by Professor Dixon in the *Practitioner* three years ago. I have no time to refer to it in detail, but a perusal

of it will, I think, convince any one that the lines of treatment I have recommended are, as far as drugs are concerned, rational and indicated. Professor Dixon also recommends the plan used by Jennings, which I have adopted, of administering the morphine per rectum.

I trust that what I have said will lead others to try this plan of treatment, and that they will be able to modify and improve it with experience, and in any case I hope that I may have persuaded some of you that there is a place in our scheme of therapeutics even for hypnotic suggestion, and others of you that even the pharmacopœia can sometimes afford help to psychic treatment.

COMPARATIVE THERAPEUTIC VALUE OF THE ORGANIC AND INORGANIC COMPOUNDS OF CERTAIN ELEMENTARY BODIES.

By J. M. Fortescue-Brickdale, M.A., M.D.Oxon.,
Lecturer on Pharmacology in the University of Oxford.

During recent years manufacturers have placed on the market a vast number of synthetic compounds intended to replace the simpler inorganic salts which have hitherto been so largely used in medical practice. Speaking generally, the aim of the manufacturer has been (1) to provide the physician with a means of giving certain elementary substances without producing harmful symptoms or unpleasant after-effects; and (2) to ensure more complete assimilation from the alimentary tract than is stated to occur with older preparations. These aims are not usually coincident, and, indeed, it is only under special and somewhat exceptional circumstances that diminished toxicity can be secured, together with increased absorbability. In considering each group of organic bodies we shall therefore have to distinguish clearly between these two objects, and within the limits of this paper it will only be possible to deal with the following important groups of drugs: (1) The halogen elements, iodine and bromine; (2) arsenic; (3) phosphorus; (4) iron.

1. *The Halogens.*

The avowed objects of the introducers of the organic halogen compounds have been to avoid, first, the gastric disturbances resulting from the administration of bromides and iodides; and, secondly, the toxic symptoms, such as the exanthemata which occasionally occur during their use. To deal with these separately, it should be noted that in the first place gastric disturbances after ordinary doses of bromides and iodides are not very common. At any rate, they do not constitute that formidable objection to their employment which certain manufacturers suggest. Such disturbances are due to vigorous osmotic action set up by the contact of hypertonic solutions with the cells of the gastric mucosa, and can be actually avoided in almost all cases by adequate dilution. This is a far simpler method of overcoming the difficulty than that of using a synthetic compound containing the halogen in a complex and stable molecule which may not be decomposed till it reaches the intestine.

A far more real difficulty is the possibility of secondary toxic effects, and before this can be discussed we must consider the mode of action of halogen compounds, and remember that their therapeutic activity is due to their electrolytic dissociation, whereby iodine and bromine ions* are set free to act on the cells—for example, $KI \rightleftarrows \overset{+}{K} + \overset{-}{I}$. These ions, especially the iodidions, are active protoplasmic poisons, having certain selective affinities, and it is most probable that the toxic effects are also due to them, although some ingenious theorists attribute toxicity to free bromine and iodine. Generally speaking, the probability of toxic effects increases with the dosage, although in certain cases unpleasant symptoms appear even after very small amounts have been taken.

In the following tables the amount of the halogen element given in the daily dose of the more important new organic compounds is calculated and compared with that of the potassium salts:

Iodine Compounds.

Compound.	Percentage I.	Daily Dose.	Amount of I in Daily Dose.
			Grains.
1. *Iodalbin*—stable protein compound insoluble in water	21·5	30 grains	6·45
2. *Iodonlidine*—stable vegetable protein compound insoluble in water	10	3 tablets	1·5
3. *Sajodin*—a calcium iodine soap insoluble in water	26	75 grains	19·5
4. *Iodipin*—addition product derived from iodine and sesame oil	10	3 drachms	18
5. *Olivenol iodate*—a similar product from olive oil	7·6	10 c.cm.	11·4
6. *Tiodine*—thiosinamine ethyl iodide $CS\langle^{NH\,C_3H_5}_{NH_2}$ C_2H_5I —a soluble body yielding iodine on oxidation	50	4·5 grains	2·25
7. *Iodival*—iodine isovalerylurea $CO\langle^{NH\,CO\,CHI\,CH\,(CH_3)_2}_{NH_2}$	47	15 grains	7·05
8. *Potassium iodide*	76·5	30 grains	22·9

Bromine Compounds.

Compound.	Percentage Br.	Daily Dose.	Amount of Br in Daily Dose.
			Grains.
1. *Bromalbacid*—a protein compound soluble in water	6	30 grains	1·8
2. *Bromocoll*—a gelatine tannate compound insoluble in water	20	70 grains	15
3. *Bromipin*—similar to iodipin ...	10	3 drachms	18
4. *Bromolein*—a compound with oil of almonds	20	(?)	(?)
5. *Bromural*—similar to iodival ...	41.3	15 grains	6.2
6. *Bromalin*—brom-ethyl-formin—$(CH_2)_6N_4C_2H_5Br$ —clinically has toxic side effects	30.9	175 grains	54
7. *Bromamide*—hydrobromide of tribrom-aniline—$C_6H_2Br_3NH_2HBr$*	(77·8) = 19.4	45 grains	7·38
8. *Bromctone*—tribrom-butyl-alcohol—$CBr_3\,C\,OH$ (CH_3 ... CH_3)	77.1	15 grains	11·6
9. *Potassium bromide*	67.3	90 grains	60

* Chemically stable. The Br is not split off the benzene ring in the animal body, so that only one-fourth the Br is available.

Note.—Neuronal (diethyl-brom-acetamide) has not been included, as it is a somewhat powerful hypnotic, and was not introduced as a substitute for the alkaline bromides.

It is at once evident that the amount of halogen given in almost all cases is very far short of that prescribed in the ordinary dose of an alkaline iodide or bromide. The exceptions are bromalin, which itself gives rise to toxic effects, and the two sesame oil preparations, which are generally considered clinically to be the most efficacious of these bodies. The manufacturers state that the small amounts of the organically combined halogens are more effective owing to their slower excretion. But it is quite clear that it is not until the halogen is split off and ionized that its therapeutic activity and also its liability to rapid elimination begins. Moreover, although 65 to 80 per cent. of iodine may reappear in the urine in twenty-four hours, when KI is given by the mouth, this leaves a considerable residue—say 7 grains, with a daily dosage of 30 grains—or more than the total contained in most of the organic compounds. It must be remembered, too, that bromine is less rapidly excreted than iodine.

We are, then, forced to the conclusion that the organic halogen compounds are only non-toxic owing to the small amount of the element which they contain or yield to the

* Or, as some chemists term them, iodidions and bromidions, etc.

organism, and that their therapeutic value is limited to those cases in which such very small amounts can be shown to be efficacious.

As has been noted, the sesame oil compounds contain a comparatively large amount of the halogen, but it seems doubtful whether the hypodermic introduction of these bodies is really a scientific proceeding, involving as it does a complete loss of control over the dosage, when once the injection has been given. The fact that the bromine compounds generally have not obtained any wide application in cases of epilepsy where the results can easily be gauged, suggests that the iodine analogues are equally inactive, but that the cases in which they are employed do not give such definite indications of the efficacy (or otherwise) of the therapeutic agent adopted.

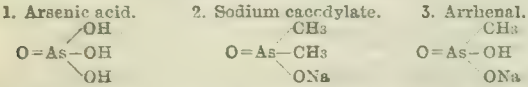
2. *Arsenic.*

In Dr. W. Harrison Martindale's communication to the International Congress of Applied Chemistry last year there are notes on no less than thirty-nine organic compounds containing arsenic. It is therefore obvious that in the time at my disposal I can only deal in very general terms with this large series of bodies. We may consider the arsenic-containing drugs in three groups, one inorganic, and two organic, namely, those belonging to the aliphatic series and aromatic respectively.

1. The inorganic arsenic compounds, arsenic acid, and arsenious acid owe their pharmacological value and produce their toxic effects by means of dissociated arsenate and arsenious ions. Although there is usually no very marked difference in the action of these two when given internally, Leduc states that when introduced by cataphoresis the arsenate ion is much less caustic than the other. The excretion is mainly by the urine and is slow.

2. The aliphatic arsenic compounds which have been introduced as being equally efficacious and much less toxic than the older drugs are known as sodium cacodylate and arrhenal. They are obtained by the substitution of methyl groups for one and two of the hydroxyls respectively, and the conversion of the resulting acid into a sodium salt.

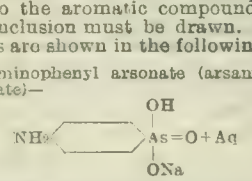
1. Arsenic acid. 2. Sodium cacodylate. 3. Arrhenal.



Both of these substances are excreted unchanged in the urine and although they are probably broken down in the body, giving rise to ordinary arsenic ions, this takes place to so minute an extent that large doses may be given without producing any therapeutic, much less toxic, effect. These aliphatic compounds are, therefore, of no practical use, and others which have been prepared have not been tested pharmacologically.

3. With regard to the aromatic compounds of arsenic, however, a different conclusion must be drawn. The more important of these bodies are shown in the following table:

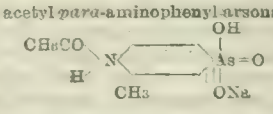
1. Sodium *para*-aminophenyl arsonate (arsamin, atoxyl, soamin sodium arsanilate)—



2. Sodium acetyl *para*-aminophenyl arsonate (arsacetin, acetyl-atoxyl)—



3. Sodium methyl acetyl *para*-aminophenyl arsonate (orsudan)—



With regard to atoxyl, which is the best known of these three bodies, its therapeutic effects are not simply those of an arsenic anhydride ion. The fate of atoxyl in the body has been variously described, but it is quite clear that its characteristic action (that on trypanosomes) is due to the action of a complex organic ion. In man, the excretion of atoxyl usually amounts to 50 to 90 per cent. within nine hours, partly as atoxyl and partly in another form, the latter being found in the urine for several days (Ingersheimer and Röthmann). The atoxyl retained in the body is to some extent decomposed, so that after a sufficiently long time enough inorganic arsenic is formed to produce the ordinary toxic symptoms.

Two main theories exist as to the nature of the changes which take place in the retained organic arsenic compound. Ehrlich thinks that a reduction product (such as *p* amidophenol arsenic oxide, $NH_2.C_6H_3As=O$), in which As is trivalent, is the trypanocidal agent; Levaditi, that the reduction product can only act on the trypanosomes by the intervention of the products of cellular activity as amboceptors. On the other hand, Breinl and Nierenstein can find no evidence in support of the view that a reduction product is actually formed (except in the intestinal canal), and believe rather that an oxidation process is the most important factor in the production of a trypanocidal body, by which means atoxyl can be eliminated combined with glycuronic or sulphuric acids (*Entgiftung*). They believe further that a small amount combines, through the amido group, with the proteins of the blood plasma, from which the arsenic is set free by an oxidation process, and thus in a nascent condition kills the trypanosomes.

It will be seen that in the action of atoxyl and some of its allies on trypanosomes a new pharmacodynamic process is involved. Thus, in this case the organically combined element has a value which differs materially from that of the simple inorganic anhydride. When, however, atoxyl is applied to the treatment of syphilis, chorea, or any of the grave forms of anaemia, there is no evidence that any further action takes place than can be ascribed to the gradual splitting off of inorganic arsenic, and thus no advantage is gained in giving a rapidly eliminated form in large doses, rather than one which, being slowly excreted, can be given in small ones.

3. *Phosphorus.*

The inorganic forms of phosphorus are the salts of the alkalis and alkaline earths; the organic forms are the glycerophosphates, the nucleins and phosphoproteides (paranucleins), and some vegetable phosphorus-containing proteins (for example, phytin). Phosphorus having been largely given as a "brain food" and "nerve tonic," it may be well to point out that there is at present no evidence that the central nervous system is ever in a condition of phosphorus starvation. W. Koch found that, as compared with normal brains, there was no diminution in the lecithin content of brains of persons suffering from dementia praecox, and hardly any in those of general paralytics; and that, even if there was considerable phosphorus loss, it could be made good from stores in other parts of the body, were any regenerative power present in the central nervous system of such patients.

The actual amount of phosphorus necessary per diem has been estimated by Ehrström at 0.06 gram per kilogram body weight. This appears to be an outside figure. It is quite covered by the amount contained in an ordinary mixed diet. The questions remain whether the addition of further phosphorus compounds has any physiological effect, and whether, if so, any difference can be observed between the organically combined phosphorus and the ordinary inorganic salts.

It has been thought that increased nitrogen as well as increased phosphorus retention followed the administration of extra quantities of phosphorus by the mouth. The experimental evidence on this and other points connected with the rôle of phosphorus in the body is not altogether harmonious, but the following results are worth consideration: Many observers have shown that during periods of active growth the phosphorus and nitrogen balances rise together, but under other circumstances this is not always the case.

Clerc and Cook showed that though, when animals were given food rich in phosphorus, the addition of inorganic and organic phosphorus did not cause any retention of the element, yet when the food was poor in phosphorus organic but not inorganic phosphorus caused an increased retention of both nitrogen and phosphorus.

As regards the absorption of phosphorus from the intestine, much depends on the character of the diet as a whole. Milk fats, for example, by combining with the calcium in the intestine to form insoluble soaps, set free P_2O_5, which can combine with alkaline bases to form soluble and absorbable phosphates. Free fatty acids may cause a breaking down of lecithins, to form neutral fats with the liberation of P_2O_5 (Ferrata and Moruzzi). The presence of calcium hinders phosphorus absorption, owing to the insolubility of calcium phosphate, and the presence of potassium as compared with sodium bases in the diet causes a considerable rise in phosphorus excretion, owing to the fact that calcium phosphate is insoluble in

organic solutions containing potassium carbonate, but soluble in those containing the corresponding sodium salt. Hence, under the latter circumstances, phosphate does not appear in the faeces.

Keller, by using sodium phosphate, was able to demonstrate phosphorus retention in an infant, whereas Tunnicliffe, using calcium phosphate, showed that no increase but rather a slight fall in phosphorus retention occurred in a healthy child. At the same time he showed that the glycerophosphates caused an increased nitrogen and phosphorus retention, whereas Marfori found that glycerophosphate of soda injected hypodermically caused increased phosphorus and nitrogen excretion (that is, stimulated katabolism) though the phosphorus content of the faeces was not increased. He found similar effects produced by lecithin when given by the mouth.

4. *Iron.*

The terms "organic" and "inorganic," as applied to preparations of iron are not used in the usual chemical sense. The inorganic are those from which metallic ions are readily split off when in solution, and which consequently give certain chemical reactions, the most delicate of which is Macallum's test (0.5 per cent. watery solution of haematoxylin). Between these two comes a third or intermediate class, in which the chemical tests are given imperfectly and slowly. Examples of organic iron are haemoglobin and preparations from fresh or dried blood haemol, haemogallol); intermediate substances are represented by Schmiedeberg's ferratin and carniferrin; inorganic compounds not only by the ordinary ferrous and ferric salts, including the tartrate, acetate, and other compounds with organic acids, but also the so-called albuminate and peptonate.

For our present purpose we need only consider these three groups from the standpoint of their absorbability, retention in the body, and local action on the gastro-intestinal tract.

1. The absorption of iron probably always takes place in an ionized or partially ionized condition. Schirokauer, who made observations on dogs with gastric fistulae, and also on the human subject, was able to show that all iron compounds in the stomach were converted into loosely combined albuminous compounds, the protein portion of which became a diffusible peptone which was directly absorbed (in the duodenum) with the iron as an alkaline peptonate.

Abderhalden has shown that organic iron compounds are broken down and absorbed in the ionized state in which they stain with ammonium sulphide. Thus, as far as absorption is concerned, there is very little to choose between the organic and inorganic preparations.

2 As regards retention in the body, experiments by Loëtta show that ferratin was stored in the liver to a greater extent than iron tartrate, though the blood in both cases yielded the same amount. There may, then, be some advantage to the organism in obtaining iron in an organic form.

3. It is really, however, only in the matter of their irritant action on the gastro-intestinal mucosa that the organic salts of iron present any real disadvantage as compared with organic combinations; and even here the astringency varies among the different salts so that it is usually possible to select one which is easily tolerated by the patient. The action on the teeth may to a certain extent be taken as an index, and Morgenstern, who has investigated this point, finds that the albuminate, the uncharated solution of the manganate and reduced iron have no more injurious effect than ferratin, while the citrate has hardly any action. It may, then, be concluded that though the astringent action is a disadvantage, this may be avoided by selecting a preparation either from the organic or inorganic groups.

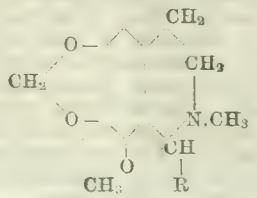
THE ACTION OF HYDRASTININE AND COTARNINE.

By P. P. Laidlaw, B.C.,

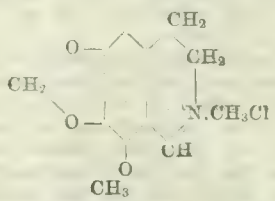
London.

A number of closely related isoquinoline alkaloids are known which produce convulsant effects on animals. This convulsant action appears to bear quite definite relationship to chemical constitution. These alkaloids fall into three groups: (1) Narcotine series; (2) hydrastine series; (3) laudanosine series.

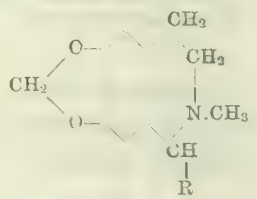
1. In the narcotine series the general formula—



represents a number of convulsant poisons. R may be an opianyl, benzyl, phenyl, propyl ethyl group, or merely hydrogen. They are all tetrahydro *iso*quinoline derivatives. Substances which are not tetrahydro derivatives are devoid of convulsant action, for example, cotarnine:



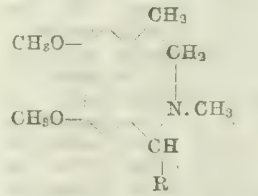
2. In the hydrastine series a similar relationship obtains:



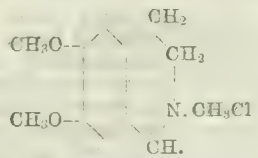
Substances of this type are again convulsant poisons, whereas hydrastinine (cf. cotarnine) is devoid of this effect:



3. In the laudanosine series similarly substances of the type



are convulsant poisons, while 6:7 dimethoxy 2 methyl 3:4 dihydro isoquinolinium chloride is not:



These facts may be summarized in a law: N-methyl isoquinoline derivatives substituted in the 6.7.8 positions with methoxy or methylene dioxy groups are or are not convulsant poisons according as they are tetrahydro isoquinoline derivatives or not.

Isoquinoline derivatives which have no methyl group in relation to the nitrogen react differently—for example, papaverine. The convulsant action of many of these alkaloids renders them of no value in therapeutics; cotarnine and hydrastinine, however, are devoid of this effect. In fact, they have a mild depressant action on the central nervous system, and cause death by depression of the respiratory centre.

When injected intravenously hydrastinine causes a rise of blood pressure which is partly due to increased cardiac output, and partly due to vaso-constriction.

The vaso-constriction is usually attributed to an effect on the vasomotor centre. This is not the case; a diminished outflow from the vein is observable in perfusion experiments when hydrastinine is administered. The rise of blood pressure is no greater in an anaesthetized animal than in a spinal one. After sufficient ergotoxine has been given to reverse the adrenine response, the rise of blood pressure is unimpaired. The vaso-constriction is slight, and cannot be considered to be sufficient to account for the haemostatic reputation of hydrastinine.

Cotarnine causes a fall of blood pressure, which is for the most part of cardiac origin. The calibre of the arterioles is, as a rule, unchanged; occasionally a slight dilatation is observed in perfusion experiments. Here, again, there is no action which could produce a haemostatic effect; neither of the two alkaloids has any effect on the coagulation time of blood.

Their rational application appears to be limited to cases of uterine haemorrhage, for they have a distinct although not very powerful effect in producing contraction of the uterus. This is the result of two factors: (1) A direct stimulating effect on the plain muscle; and (2) a stimulating effect on the peripheral neurone supplying this muscle. In the virgin cat the net result of these two actions is inhibition. In the pregnant cat or in the rabbit the effect is a well marked contraction. In the case of the isolated organ the effect is always motor.

DISCUSSION ON THE EFFECTS OF DIGITALIS ON THE HUMAN HEART.

I.—Dr. K. F. WENCKEBACH,

Professor of Medicine, University of Groningen.

[Before Dr. Wenckebach delivered his address, Professor CUSHNY (the President) said that the Section was about to discuss the action of one of the most reliable and important members of the *Pharmacopoeia*. It had been shown experimentally that digitalis had a double action—on the inhibitory cardiac function and on the heart muscle. The laboratory investigators now asked the clinicians whether these two factors were properly balanced in digitalis, or whether the therapeutic action would be improved by augmenting one or other factor. If the clinicians would answer this question the experimental investigator could go further, and would be prepared to supply the needs of the clinician. But the clinical opinion must be backed by actual measurements, which would be comparable to those obtained in the laboratory. He hoped that the discussion that morning would supply an answer to this question.]

Among drugs used for many years there is none perhaps more relied upon, more rightly trusted to, than digitalis. No practitioner ever failed to see its marvellous effects in appropriate cases. Moreover its pharmacology offers a number of most tempting problems. Thus the scientific mind as well as the whole profession, is equally attracted to the study of digitalis, anxious to get a complete insight into the mode of its action, and to see a parallelism established between experimental results and clinical observation. I understand that our President of to-day, who is himself a well-known authority on the experimental side of digitalis, wants me to try to make such a parallelism before you, and to see how far experimental data may be recognized in clinical symptoms, and what might be concluded from it.

What everybody knows about digitalis is, that in cases of heart failure with small and weak pulse, quick and irregular rhythm, with dilatation of its chambers, overfilling of the veins, dysuria and dropsy, it works wonderfully, slows and steadies the heart, raises blood pressure, aids diuresis, and drains the dropsical limbs. We know that in some cases, not well defined yet, it loses its beneficial effect, or even may do harm; that in large doses, or if given for too long a time it accumulates in the body and causes symptoms of poisoning. So we give it, as Withering did 125 years ago, until a desirable effect is reached, and certainly stop it as soon as any inconvenience of its use might appear.

Precise directions for prescription cannot yet be given. Every physician who has to treat a great number of heart patients is obliged to acquire a personal skill in administering this drug, and as a matter of fact every one has his own way. But this is far from what we all hope to attain. We want more and better and precise guides as to how and when to give it and where to avoid it, and we feel that our knowledge is still far from satisfactory.

We may proceed in two ways, first by careful experimental work as much comparable with clinical conditions as possible, secondly by deeper analysis of the heart action and the conditions of the circulation in disease as well before as after giving digitalis. The first way is opened by such men as Traube, Böhm, Lauder Brunton, Schmiedeberg and his pupils, Cushny, Wybauw, Gottlieb and Magnus, and many others.

But we know how questionable it is to apply experimental results to clinical conditions and how the action of a drug on a normal heart may widely differ from its effect on a diseased heart.

The second way, if not discovered, has been at least widened and made accessible to the profession by modern methods of analysing the heart action and gauging the blood pressure in man, a field in which English physicians such as James Mackenzie, Schäfer, Oliver, and many others, have done work of everlasting value.

We will now see how far both ways may lead us, and, in very concise form, compare clinical and experimental results.

I.—*The Change in Rate of the Heart.*

In man there is not only the well known slowing of the heart after digitalis, but there is one effect more—*the rhythm becomes always irregular.* These facts are easily demonstrated.

I will show you diagrams of the effect of digitalis in different cases. These diagrams are so arranged that the distance between the pulse waves (pulse periods) has been put on ordinates giving one-thirtieth of seconds.

(*a*) *Regular* rhythm before digitalis. (See Figs. 1 to 8.

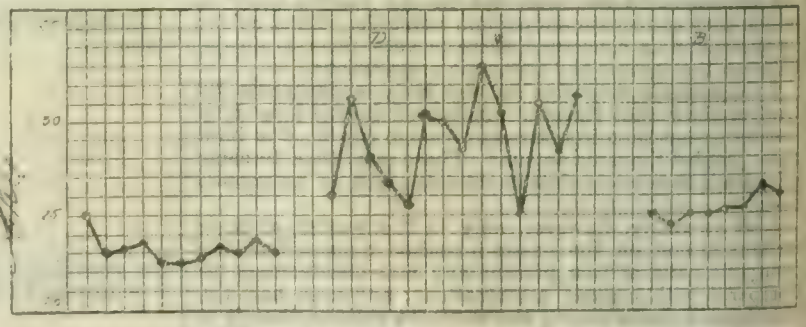


Fig. 1.—Very bad condition of valvular disease. D, Digitalis; B, bromo-camphor.

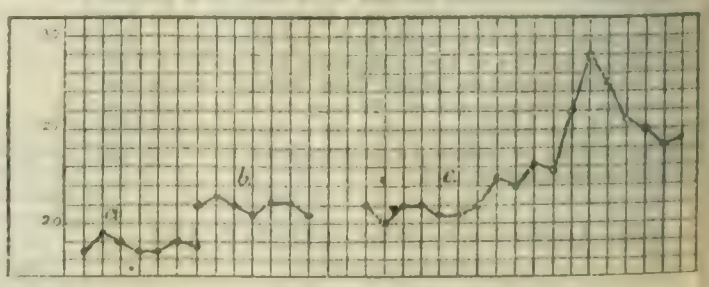


Fig. 2.—Aortic incompetence. *a*, First tracing taken; *b*, after resting five days; *c*, after digitalis, 1·50 grams powder in ten days.

We see that a regular rhythm becomes slower after digitalis, *and invariably becomes irregular.*

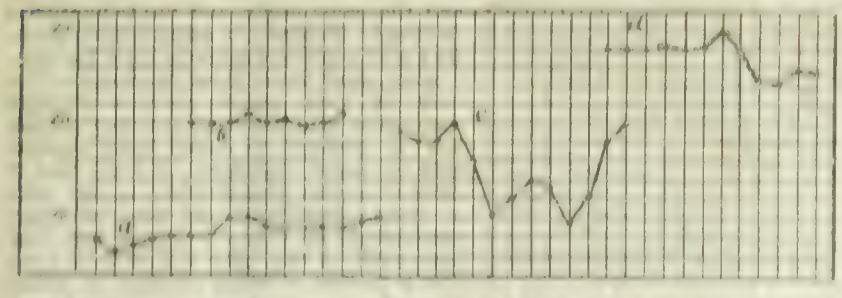


Fig. 3.—Angina pectoris; fatal case; small effect. *a*, After exercise (pulsus alternans) (see Fig. 10); *b*, after a rest; *c*, after 1·0 gramme of digitalis; *d*, same tracing as *c*.

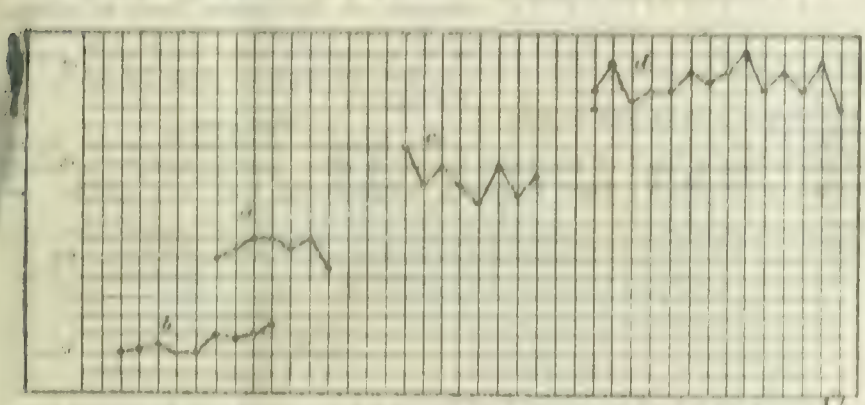


Fig. 4.—*a*, After resting; *b*, after dinner (extra systoles) (see Fig. 22); *c*, *d*, after small doses (0·6 gramme powdered digitalis leaves in five weeks).

(*b*) *True irregular rhythm* (of the whole heart). Here the existing irregularity is largely increased by digitalis, at the same time the rhythm is slowed considerably. (See Figs. 9 and 10.)

Another instance, from a case which has been published two years ago, shows that a periodical heart action undergoes the same changes, the pauses between the periods *becoming so long* that digitalis had to be stopped immediately. (*Archiv. f. Physiol.*, 1908, p. 55.)

I emphasize the fact that the irregularity in these cases was caused by an irregular rhythm of the whole heart, not by extra-systoles or other abnormal mechanisms.

(*c*) *Continuous Irregularity.* In such cases of what Mackenzie called "nodal rhythm," and what we now know as to be probably cases of fibrillation of the auricles, digitalis has a strong effect, as shown by Mackenzie and others, *in slowing* the heart and *increasing* the long pause between the beats. The enormous effect on these hearts is clearly written in these diagrams. (See Figs. 11 to 14.)

Seeing this effect of digitalis, we ask ourselves: Is this slowing of the heart in man caused by vagus action of the drug or is it a change in heart muscle?

After Ackermann, Cushny showed that it is vagus inhibition, and that section of the vagi or atropine paralysing the vagus deprives digitalis of its slowing property. Gottlieb and Magnus afforded new proof by showing that in the excised mammalian heart all slowing fails to appear. Why should it be otherwise in man? We can afford, however, better proof than analogy alone. It is well known that the vagus nerve acts mainly on those parts of the heart where normally the contractions and the rhythm start—namely, at the veins and the right auricle. As soon as the functional connexion between auricles and ventricles is suspended by cutting the auriculo-ventricular bundle the vagus acts on the auricles only, and loses its control over the ventricles, as Mr. Lange quite recently clearly demonstrated. Therefore we have in cases of heart-block a beautiful object for studying whether a given drug acts on the heart directly or by means of the vagus. Now I found in cases tested purposely on this matter that in heart block digitalis slows the auricles only and does not affect the ventricles. For instance, in the case published by Van den Heuvel the period of the auricular beat is lengthened from 15·50 to 18·50 sec., the period of the ventricles remaining 44·5–50 to 44·50 sec. If the slowing effect of digitalis were due to muscular action the ventricular rate should have been altered as well as the auricular. Moreover, the form of the irregularity caused by digitalis at the same time as the slowing consists, as we have seen, in retardations of the pulse rate, and for long has been known as the "vagus pulse." Now slowing and irregularity belong to the same influence, come from the same origin. We always see both of them; as soon as there is no slowing there is no irregularity. (See Fig. 15.)

Another question is raised by these cases of fibrillation of the auricles. May the extreme slowing after digitalis here, too, be ascribed to vagus inhibition? The answer is affirmative. In experiments it has been shown that the vagus has not lost its power on such hearts, and I can prove the same thing in man. The next tracings are taken in such cases, and show the effect of simple pressure of the finger tips on the right vagus nerve at the neck. (See Figs. 16 and 17.)

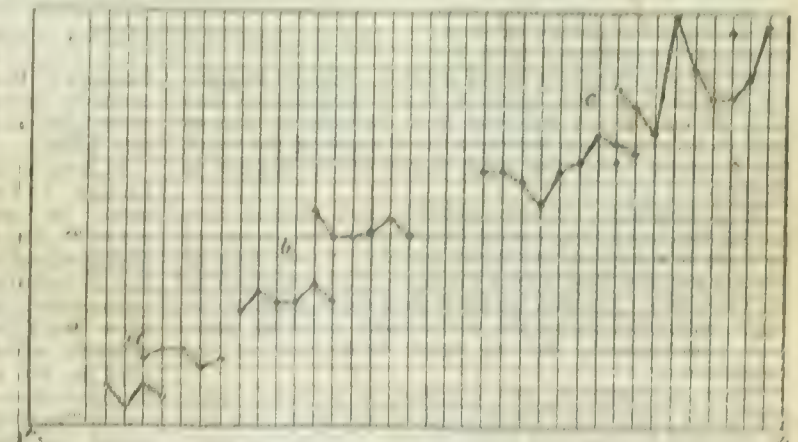


Fig. 5.—Mervous tachycardia (alternating pulse). (See Fig. 26.) *a*, First tracings taken; *b*, later tracings; *c*, after digitalis, 0·25 gr. infusion every day during ten days.

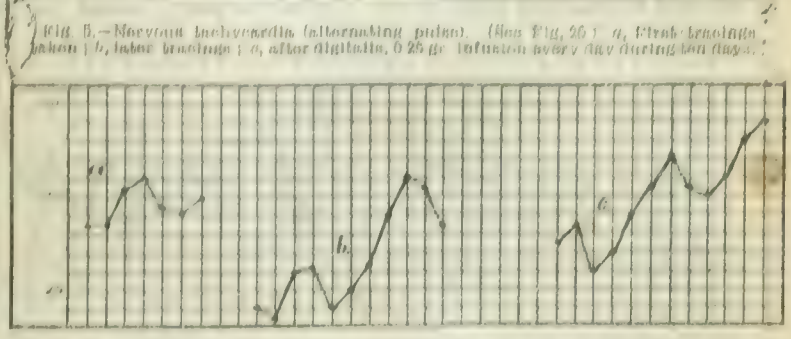


Fig. 6.—Weakened heart; extra-systole, not disappearing; small dose (one day); small effect. *a*, Absolute rest; *b*, after exercise; *c*, 0·120 digitalis.

A case, not proving anything but remarkable enough, is

the following, in which there was no valvular disease, but fibrillation only. (See Fig. 18.) Here digitalis had no effect whatever. The man died suddenly, and now looking up his tracings I find that vagus pressure also had had no effect whatever on his pulse-rate. As I said, the case alone does not prove anything, but offers quite a bundle of questions which time does not permit me to insist upon.

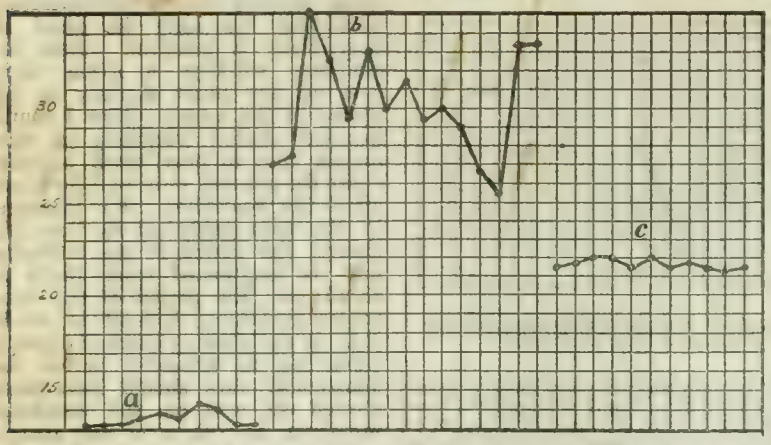


Fig. 7.—Tachycardia (not paroxysmal). *a*, First tracings taken; *b*, after 0.5 gram digitalis; *c*, a fortnight later.

Conclusion.—In man digitalis, even in very small doses, slows the heart, makes a regular heart irregular, an irregular heart still more irregular, without disturbing its mechanism. This double effect is due to vagus-inhibition.

II.—*Strength, Contractility.*

The strength of the heart cannot be measured in man, but being the origin of the energy of circulation may be estimated from the conditions of circulation in any patient. Without neglecting the many factors, vascular and others, coming into play, we may safely conclude that digitalis in man as well as in experiment increases the strength of the heart, this property being the chief factor of its success in therapy.

Experimentally, Cushny, Gottlieb, and Magnus have proved that this strengthening of the heart beat is caused by digitalis acting on the heart muscle. So we may by analogy presume that in man the same effect is reached by the same way. Besides, we know that stimulation of the vagus rather diminishes the contractility (auricles, staircase phenomenon). So we seem to be safe in our conclusion.

There is, however, one question to be dealt with. Mackenzie argued as follows: Pulsus alternans is a sign of impaired contractility of the heart. Digitalis in many cases (angina pectoris, for instance) causes a pulsus alternans, or if existing makes it more obvious. So digitalis seems to diminish contractility. (See Fig. 19.) This clever observation, which I can corroborate, cannot be allowed to be used for general conclusions. The pulsus alternans is certainly not always of one and the same origin, and has to be studied in detail. Moreover, in other cases digitalis may cure a pulsus alternans (See Fig. 20.)

More such cases have shown me that only in some cases *perhaps* digitalis diminishes contractility. We may further ask if perhaps in those cases digitalis acts by vagus inhibition. I *know* that in cases of angina pectoris there is very often a great sensibility of the inhibitory mechanism, as Clifford Allbutt last year presumed! I can only say that I never saw any effect of vagus pressure on pulsus alternans.

Conclusion. — Digitalis increases the strength of the human heart by acting on the heart muscle. Perhaps large doses, or in appropriate cases even small doses, may have an opposite effect (by acting on the vagus?).

III.—*Tone.*

The influence of digitalis on the tonus of the heart muscle is often misrepresented. In small doses it causes, independently from any slowing, an increase of the systole to both sides, a deeper diastole, a complete systole. The researches of Cushny and those of Gottlieb and Magnus do not permit any doubt upon this point.

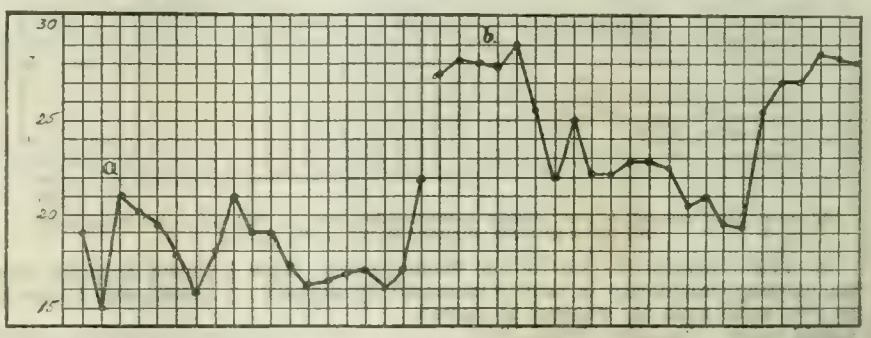


Fig. 9.—*a*, Irregular before digitalis; *b*, more irregular after digitalis (3 grams in four days).

In large toxic doses only, such as are never used therapeutically, the diastolic relaxation of the heart decreases, which goes so far as to cause the so-called systolic arrest of the heart. Whether this is a maximal increase of tone—a property of muscle very poorly known—or some other process of shrinking quite apart from tonus, we do not

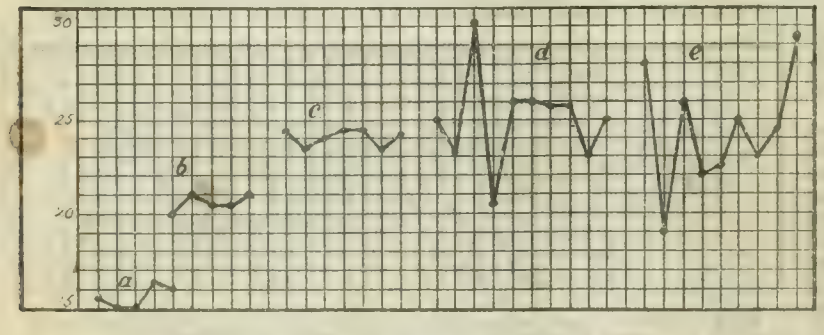


Fig. 8.—Morbus Addisoni. *a*, After slight exercise; *b*, sitting; *c*, lying; *d*, *e*, after 0.5 digitalis (powder) in three days.

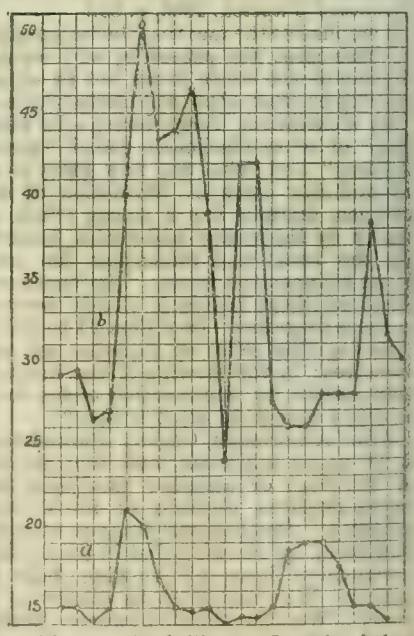


Fig. 10.—Nephritis. *a*, Irregular before digitalis; *b*, after digitalis (3 grams in infusion in eight days).

know. So we are not allowed to say that digitalis, in doses used at the bedside, acts chiefly on tone, and should be given only or chiefly in cases of "loss of tone." The great effect of digitalis in dilated hearts may have other causes, as we will see presently.

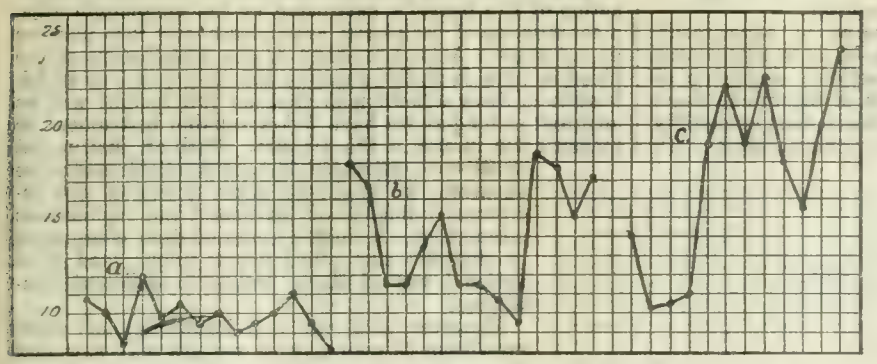


Fig. 11.—Arrhythmia perpetua (quick form). *a*, Before digitalis; *b*, after 1 gram of digitalis (great improvement); *c*, after 2 grams in four days.

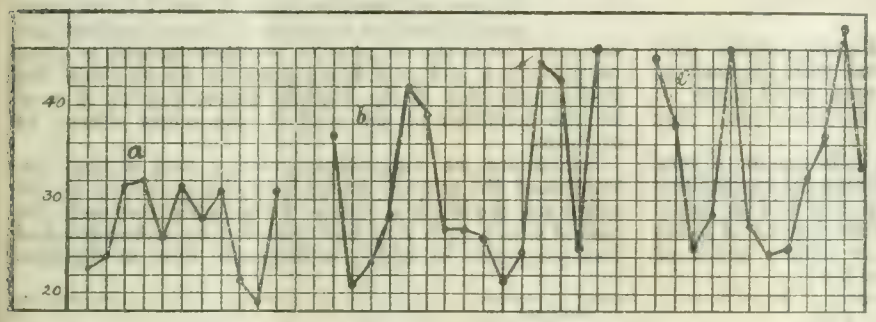


Fig. 12.—Arrhythmia perpetua (slow form). *a*, Before digitalis; *b*, after two days' digitalis (pulv., 0.3 pro die); *c*, after eight days' digitalis.

Conclusion.—At present we have no right to ascribe to digitalis a special effect on tone—a property of heart muscle of which as a matter of fact very little is known.

IV.—*Conductivity.*

The facts concerning the important quality of heart muscle to conduct the stimulus from one part of the heart to any other are:

1. Stimulation of the vagus often diminishes conductivity.
2. Digitalis has the same effect. V. Tabora demonstrated that with vagi intact this effect was obtained by small doses; much larger doses were required after cutting the vagi.
3. In many heart patients digitalis lengthens the interval between auricular and ventricular beat, and may cause partial heart-block.

From experiments we may conclude that our therapeutic doses act mainly by their influence on the vagus. In such cases where conductivity is already impaired, digitalis may do harm, as I predicted as long ago as 1898, and was proved afterwards by many observations.

The effects of digitalis on heart and circulation being very numerous, we have to reckon with the possibility of a bettered circulation causing a better nutrition of the heart muscle and secondarily improving conductivity and other qualities of the heart. In this way, perhaps, cases in which we saw partial heart-block cured by digitalis may be explained.

Conclusion. — Digitalis often causes a decrease of conductivity in the human heart, mostly in large doses, or in hearts where conductivity is already impaired, giving rise to a longer A—V interval, dropping of ventricular beats, and partial heart block. This effect has to be ascribed mainly to vagus inhibition, partly to acting on the heart muscle.

V.—*Excitability.*

Strictu sensu excitability is the quality of being susceptible to stimulation. Experimentally it is measured by the weakest stimulus still effective. Too often in older experiments excitability was measured by the mode or strength of reaction. Only few experiments have been made in our dominion keeping in mind this stricter sense of excitability. Engelmann, Sherrington, and others gave the example. Brandenburg, Straub, di Cristina followed, and showed that by digitalis the excitability of the heart decreases, the heart muscle becoming insensible to weak stimuli that caused extra-systoles before digitalis. So digitalis may regulate a heart by preventing the occurrence of extra-systoles. At the other side large doses increase the excitability of the heart, cause a quick rhythm and the occurrence of extra-systoles and other arrhythmias by heterotopic stimulation. As to the origin of these effects

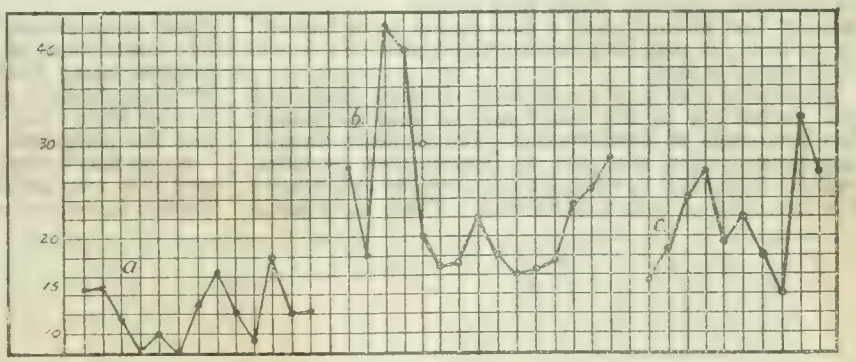


Fig. 13.—Arrhythmia perpetua (quick form). *a*, Before digitalis; *b*, *c*, after digitalis.

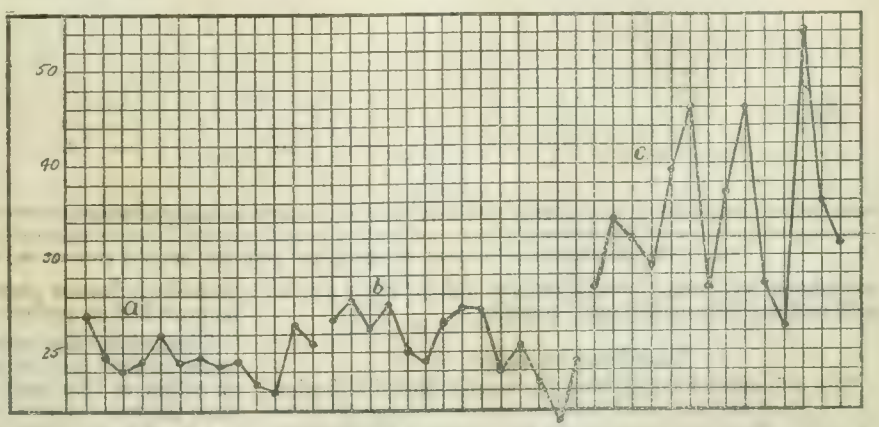


Fig. 14.—*a*, Before digitalis; *b*, after one day's administration of digitalis (0.4 infusion); *c*, after four days of digitalis (1.6 infusion).

we know only that vagus stimulation may diminish excitability (Engelmann) and that the large doses act on the heart muscle (Gottlieb and Magnus). But a more minute study of these phenomena is most desirable.

In man we find the same effects as in experiment. Large doses may, as is well known, in some cases cause irregularities by extra-systoles, sometimes occurring at regular intervals, thus causing a sort of bigeminal heart action (Fauconnet). But in small doses it may splendidly regulate the heart-beat by preventing extra-systoles. In

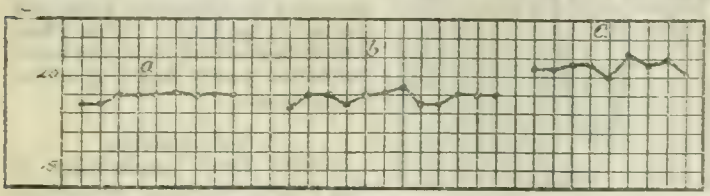


Fig. 15.—*a*, No effect of five days of digitalis; *b*, no slowing, no irregularity; *c*, very little effect after seven days.

these last years I have cured a good many patients with very troublesome extra-systoles, as well with diseased as with perfectly healthy hearts, by very small doses of digitalis only. Some of such cases I will show you. (See Figs. 21 and 22.)

Such cases show the marvellous influence of a very small quantity of digitalis in diminishing the excitability of the heart muscle, and open quite a new field to treatment of these often misunderstood disturbances of heart action. Whether this is by vagus or muscle action of digitalis I cannot say—I only mention the inefficacy of vagus pressure in these cases, so that an action on the muscle is the more probable.

It would be pleasant to dwell upon the inefficacy of digitalis in some cases of extra-systoles, and to discuss its effect on other forms of irregularity, such as tachycardias, but this would take all the time of this morning, and a good deal of work has still to be done in analysing these arrhythmias. So I will limit myself to this

Conclusion.—In very small doses digitalis diminishes the excitability of the heart muscle, thus preventing the occurrence of extra-systoles. Larger doses may, in appropriate cases, give rise to irregularities by extra-systoles (bigeminy) by raising the excitability or favouring the formation of heterotopic stimuli. These facts are in accordance with experimental results, and probably due to action of digitalis on the heart muscle.

VI.—*Vascular Effect.*

The influence of digitalis on the vessels, the distribution of the blood and arterial blood pressure is a large problem in itself. Well-established facts are: Most of the digitalis bodies have a vaso constrictory effect on the splanchnic system, giving rise to greater filling and higher pressure in the arterial system. Digitoxin narrows the peripheral arteries also.

In man blood pressure is raised by digitalis. But the unravelling of the different factors of this rise of pressure is at present simply impossible. How far the stronger action of the heart, a narrowing of the splanchnic area, a constriction of peripheral arterioles comes into play we do not know. A further study of the distribution of the blood in man is badly wanted; the only point to which I want to draw attention is that no full insight will be acquired as long as we have not a reliable instrument to measure the lumen of the arteries. With an instrument as Oliver constructed, but more reliable and more accurate, we might get some notion of the reciprocal influence of peripheral and splanchnic circulation. A further study of each component of digitalis and allied drugs might lead to a rational use of these bodies in different conditions.

However poor our real knowledge of these conditions in man may be, we yet may say that there exists a vascular action of digitalis in man. Not only the analogy with experiments in mammals may be called in, but I think every practitioner has experienced the curious fact that one may *feel* at the radial pulse whether digitalis is given or not. It is not only blood pressure which gives this curious sensation of the digitalis pulse; I think it must be the condition of the wall of the artery altered by digitalis.

Sometimes we may observe even a very strong contraction of the arteries as far from the periphery as the radial and the brachial pulse. I remember very well the case of a lady, in a very bad condition by exhausted and diseased heart, in which a desperate dose of digitalis,

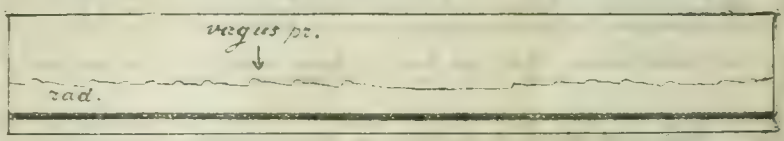


Fig. 16.—Arrhythmia perpetua; effect of pressure on right vagus nerve.

given as an enema, caused the radial pulse to disappear by constriction of the arterial wall, the throbbing carotids being filled to a maximum, and the heart working strongly against a very high blood pressure in the aorta, yet not succeeding in pushing a pulse into the peripheral vessels.

So we may safely conclude: Digitalis in experiment as well as in man has a narrowing influence on the arteries. Further investigation will have to decide which part this vascular influence plays, and how far its occurrence may be provoked or avoided in different cases.

Overlooking the many and manifold effects of digitalis, as far as they may be traced in man, we find a wide field of action of this unique drug. Acting on the vagus, it pulls the reins of the heart; acting on the heart muscle, it is a most useful whip, at the same time providing it with food by bettering the circulation. Slowing the heart, it makes it irregular also. This slowing gives the heart an opportunity of resting, so secondarily improving contractility, conductivity, excitability. By primary action

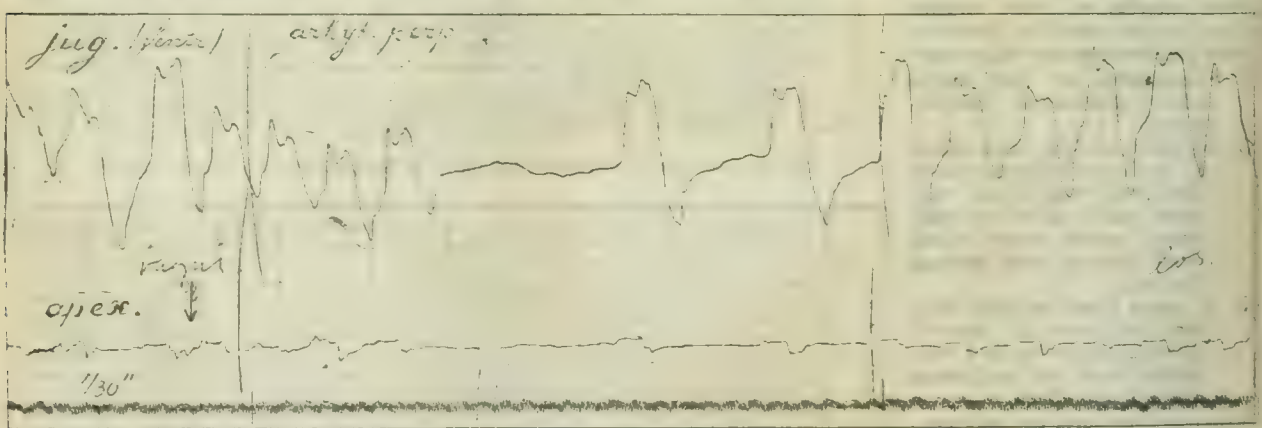


Fig. 17.—Positive venous pulse in case of arrhythmia perpetua; effect of pressure on right vagus nerve at the neck.

it increases its strength, regulates its rhythm by depressing excitability and conductivity. In large doses it may increase excitability, causing extra-systoles, perhaps diminish contractility, by causing long pauses do harm to the circulation. All these influences work in a different intensity according to the dose, the form in which given, and the conditions of the heart. How will it ever be possible to unravel these interfering factors and to build up a rational and trustworthy scheme for using digitalis at the bedside?

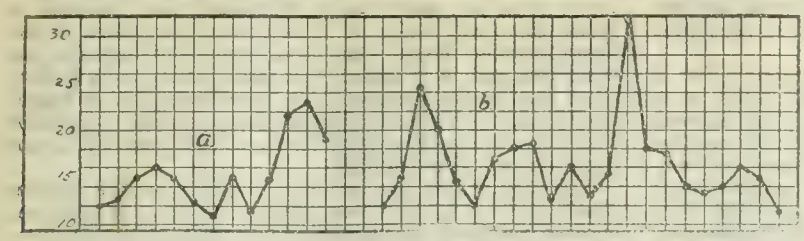
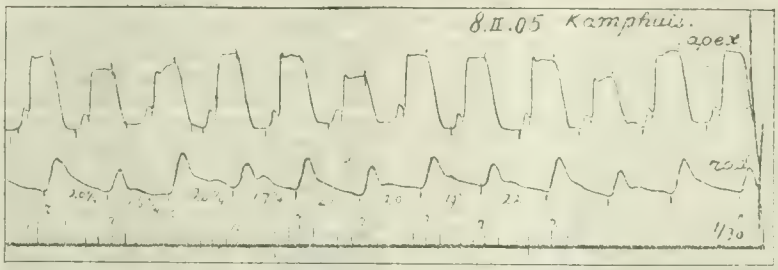


Fig. 18.—Arrhythmia perpetua. *a*, Before digitalis; *b*, after 0·8 digitalis (powdered leaves).

No new ideal is within reach at the present moment. We have to make up our mind, and to come to a preliminary understanding as to where and how to prescribe digitalis.



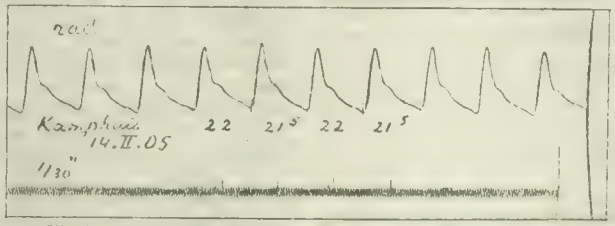


Fig. 19.—Aortic disease, pulsus alternans after digitalis, which phenomenon disappears after stopping it.

The manifold effects of this drug seem to indicate that it may be tried with success in every case where the condition of the heart is cause of a bad circulation or troublesome symptoms. Some among us have discussed whether to limit its use to such cases, where the tone of the heart muscle is amiss, as in the largely-dilated hearts of decompensation in valvular disease. That in such cases digitalis acts so wonderfully we have no right to ascribe to its specific influence on the tone of heart muscle. It is because the conditions for a full display of all its beneficial properties are most favourable here. The rate is too frequent and is slowed, the rhythm is made irregular by abnormal contractions or even by fibrillation of the auricles and it is regulated, the heart is too excitable and made more insensible, it is too weak in its contractions and yields to overfilling and it is strengthened, so that it may empty its chambers. The distribution of the blood is disturbed by low arterial pressure, by splanchnic strain, the lungs are over-filled and respiration made a heavy task, the liver is swollen and hampers the diaphragm, the renal functions are impaired, oedema is impending or present already. The blood supply to the heart itself is insufficient. Here digitalis restores the filling of the arteries, restores the flow of the urine, frees the respiration, nourishes the heart. That digitalis does such splendid work in these cases is because it gets the chance of unfolding *all* its properties here. Whether there is a specific action on the tone of the heart is not known nor proved, nor is there any need for invoking such an effect, whether probable or not. So we have no right to say that it will not be useful in other cases. Of course, in a slow heart the slowing action of digitalis is of no value, may even do harm; where there is no oedema the diuretic action loses its significance, and in high blood pressure still higher pressure is in most cases not desirable.

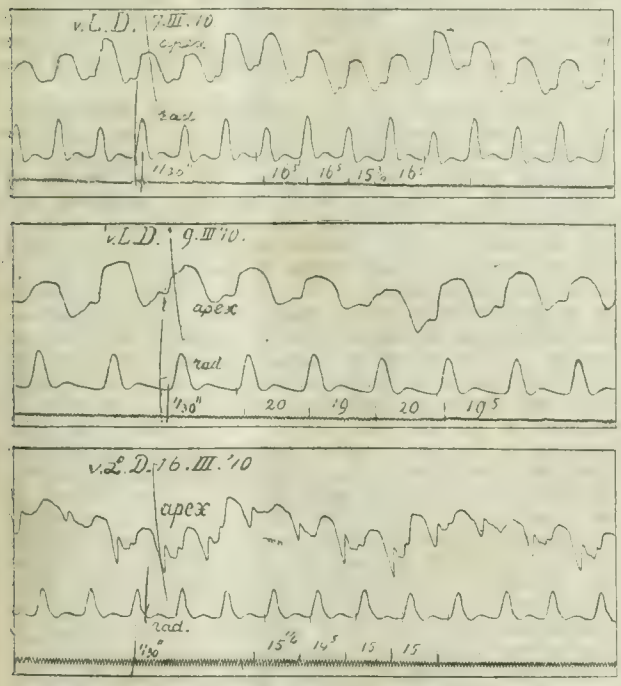


Fig. 20.—Exhausted heart with tachycardia. Quick rate and pulsus alternans before digitalis, slowing and disappearance of alternans after digitalis; after exercise and quick rhythm again no alternans.

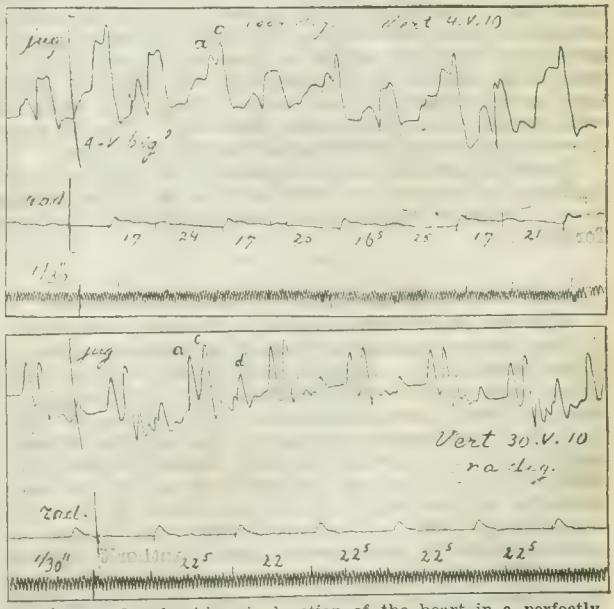


Fig. 21.—Regular bigeminal action of the heart in a perfectly healthy man aged 36 (*a–v* extra-systoles at regular intervals); cured after very small doses of digitalis, returning after three days' stopping of digitalis.

But so many effects has digitalis that in all such cases it may do good. So we come to the conclusion that the many varied properties of digitalis oblige us to try it prudently in all cases where the heart is affected, and not to restrict its use to cases with loss of tone or to cases with quick and irregular pulse.

There is one restriction in my conclusion: Give it prudently. Just as Withering abandoned large toxic doses and prescribed smaller ones to get the diuretin effect only, experience led me to use much smaller doses. Do not push digitalis until impairment of conductivity, or a pulsus alternans, or bigeminal heart action, or long pauses occur. In doubtful cases give very small doses, which may be given for weeks and for months, and reserve your large doses for the cases just mentioned, where there is *periculum in mora*, such as are well known to every physician.

Of course we have to look for better and preciser instructions. A deeper analysis of the action of digitalis

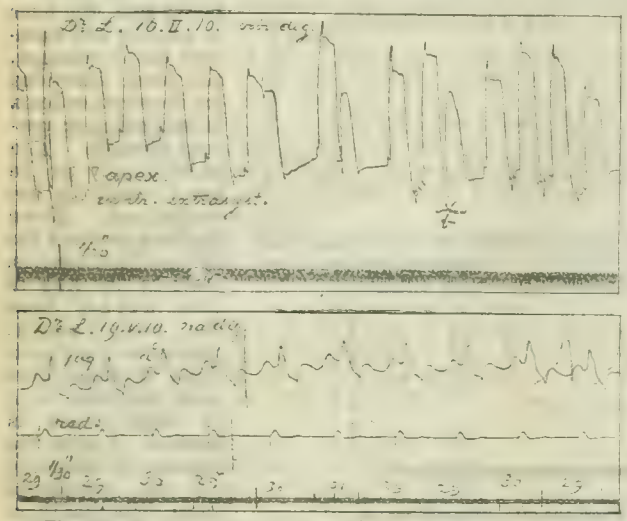


Fig. 22.—Hypertrophied, overstrained heart; irregular ventricular extrasystole of years' standing; refractive to any other treatment, cured by small doses of digitalis.

and its single constituents is needed, and not less is a minute analysis of our heart cases, of the disturbances of heart action and of the conditions of the circulation. In every case we want to know whether the heart, and which of its functions is wrong, whether there is splanchnic strain, overfilling of the lungs, loss of control from the vasomotor centres, so as to know whether digitalis is indicated or not: or perhaps digitoxin had to be given, which contracts the peripheral vessels, or strophanthus, or digitalin, which acts on the splanchnic area only. Along such lines we will have to proceed to further knowledge. But so much I would say—Give digitalis a fair trial in every case.

If ever I should acquire a reputation for treating heart patients with success, it will be from my giving in this way digitalis in cases where authorities and textbooks forbid it!

II.—JAMES MACKENZIE, M.D Edin., LL.D.Aberd.,
Physician, Mount Vernon Hospital for Diseases of the Chest.

A GOOD many years ago, while inquiring into the nature of heart irregularities, I found that digitalis in medicinal doses could produce different forms of irregular action of the heart, and it occurred to me it might be worth while to make a more systematic study of the effect of digitalis in this respect. In order to qualify myself for this line of observation, I looked up the literature on the action of digitalis on the human heart, and found it far from satisfactory. One authority advocates small doses, and gets his results in a few hours, another authority gets his results from small doses in a few days, while a third finds small doses useless. Nearly all remark on the uncertainty of the drug, due either to the inertness of the preparation or to the capricious action of the drug itself. A great number of different preparations have their special advocates, and new digitalis preparations are being added to the number, each on its advent being heralded with the announcement that at last the real effective preparation, robbed of all disagreeable contents present in the crude drug, has been obtained.

When definite results are obtained, whether beneficial or the reverse, it is rarely that a sufficiently clear account is given which will enable us to recognize the nature of the heart trouble. Even when the dangers of digitalis are described, and it is stated that fatal results may follow, there is an entire absence of any precise indication which would lead the reader to recognize the case or the symptoms that might herald a fatal issue, or the quantity of the drug that would prove fatal.

The inquiry into the action of digitalis on the human heart, pursued when I was engaged in general practice, showed me that it was possible to ascertain with considerable accuracy the manner in which digitalis acted on the human heart, and from the evidence thus obtained certain conclusions could be drawn which explained many of the obscure actions which have given rise to the confusing and contradictory statements in regard to the action of this drug.

When I was appointed physician to the Mount Vernon Hospital for Diseases of the Chest, and given charge of the wards devoted to diseases of the heart, I embraced the opportunity of pursuing the study of the action of cardiac drugs under circumstances far more favourable than when engaged in general practice. I was fortunate in being able to have associated with me Professor Cushny, who has placed his knowledge of drugs at our service, who has guided us in their administration, and who has experimentally tested in his laboratory the efficiency of the remedies we used. To ensure accuracy in diagnosis, Dr. Lewis has kindly examined many of our patients by means of the electro-cardiograph. The minute and careful study of individual cases, and the employment of graphic methods for recording the movements of the heart and vessels, is extremely laborious and time-robbing, and could not have been accomplished without the assistance of Dr. Hulme Turnbull and a number of colleagues who were trained to assist us.

In seeking for a definite standard to guide us in our observations there are two matters which are of the first consideration—namely, to have a clear idea of what is meant by heart failure, and to recognize the true significance of abnormal signs or symptoms. These two matters are often so confused that an abnormal sign, such as a murmur or irregularity, with or without heart failure, is regarded as evidence of "heart disease," and as a defect needing treatment. While carefully noting the presence of abnormal symptoms, we sought for other evidence whereby to estimate the functional efficiency of the heart.

In order to obtain a clear understanding of heart failure, not only for diagnostic purposes but to serve as a guide to treatment, we must have some method for estimating the condition of this functional efficiency. This we do by observing the manner in which the heart maintains the circulation, with the body at rest, and in response to effort. By the first of these observations we estimate what I propose to call the rest power of the heart, and by the second the work power of the heart. When the patient is in perfect comfort while lying in bed, with the circulation maintained efficiently, then we consider that the rest power of the heart is intact. If, however, there be manifest signs of inefficient circulation, when the patient is at rest, as dropsy, dyspnœa, orthopnœa, then there is exhaustion of the rest power. Work power is that function of the heart which enables it to increase its force when an effort is made, accommodating its activity to the varying demands made upon it. The amount of work power varies with each individual. It is necessary to have a standard by which we may test this work power, and this we obtain by observing the amount of exertion the individual can undertake with comfort. Each individual knows within certain limits how much he can do, and exhaustion of his work power is made manifest to him by the occurrence of some disagreeable sensation.

The first evidence of heart failure is, therefore, the premature exhaustion of the work power. This exhaustion is recognized by discomfort arising in the performance of an effort he was wont to undertake with ease. The sensations vary in different individuals and include breathlessness, consciousness of the heart's action (palpitation, irregular action, fluttering sensations), gripping of

the throat or chest, a sense of exhaustion, a feeling of suffocation, or actual pain.

I am rather insistent upon the careful recognition of the patient's sensations, as the meaning of these sensations, especially their relation to heart failure, has not received that attention from the medical profession which is their due, nor has the importance of these sensations been sufficiently realized By the time objective signs of heart failure are manifest the exhaustion of the work power has made considerable progress; the objective signs to which I refer are dyspnœa, dropsy, cyanosis, etc. Such signs as murmurs, irregularities, or changes in the size of the heart are not necessarily signs of heart failure, for these may be consistent with such an amount of work force as to call for no form of treatment. In order to test the work force quantitatively some simple standard of exertion is employed, as, for example, the ascent of a given number of steps, and a note is made of the patient's sensations, and records of the circulatory and respiratory movements before and after the exertion are obtained. Improvement can then be found to be associated with a number of collateral signs, and may be noted on the chart to which I shall shortly refer.

The method of taking the work power as standards, not only in carrying on such an investigation as I am describing, but in everyday practice, will be found of great value, especially when some abnormal phenomenon is present, the nature of which is not understood. The more usual method of judging the heart by studying each case from the point of view of compensation and decompensation, or failure of compensation, is unsatisfactory, for the idea conveyed by these terms is of insufficient definiteness to be of value, while the sense in which they are commonly used is actually misleading.

In order to facilitate the taking and preservation of accurate records, we have prepared a special chart, in which spaces for the more salient features are filled in the routine of daily examination. A glance at the chart reveals its object, and I need only dwell on a few points. It omits a reference to the changes in rhythm, for the graphic records are kept on a separate sheet. These records are peculiarly valuable, as they form a permanent register of the manner in which the drug affects the heart, as in the instances of slowing of rate or of the production of some characteristic irregularity. Taking a tracing continuously for ten or fifteen minutes has been of special service in two ways. The first effect of digitalis often consists of an *occasional* alteration of the rhythm of the heart, and in observations limited to a few minutes the alteration may escape detection. The occurrence at rare intervals of an extra-systole or a dropped beat, as the result of partial heart-block (a not uncommon occurrence with drugs of the digitalis group) may be instanced. In long records taken immediately after exertion we obtain the most valuable indications. We have found that the peculiar action of such a drug as digitalis is first detected as the heart slows from the rapid rate following upon exertion. These reactions vary in different patients, and in some patients they are of a varied character; but they are frequently fugitive.

The column for recording the patient's sensations is of particular value in view of what I have said in regard to the estimate of the condition of the work force, and so far it has been instructive to observe the improvement coincident with the changes recorded in the remaining columns.

The blood-pressure measurements are taken by means of a Martin's modification of the Riva-Rocci apparatus, and as far as possible one observer is responsible for the observation in each case. The reason for this is that there is a distinct difference in the ability of different individuals to appreciate the earliest reappearance of the pulse after it has been obliterated, and for purposes of comparison it is better to avoid the possibility of variation due to this cause. While we only note what is called the systolic pressure in each case, we recognize that the pressure at which the first pulse beat is observed does not represent the actual systolic pressure within the artery; but as a definite point of observation it is of value, and the most reliable which our present methods afford. We are careful to exclude the records of the blood pressure when the pulse is continuously irregular, inasmuch as the pulse beats are always varying in strength, and no satisfactory conclusion can be arrived at from the strongest or weakest beat. While no doubt a record could be obtained which might possess some value, yet, in view of the fact that such record would give a seeming reliability which in reality it does not possess we reject such observations lest they should tend to mislead.

In noting changes in the size of the heart we use only percussion, as being on the whole the most convenient and the most reliable. I had used the *x* rays for some years, but they did not render the help I had hoped for. A further inquiry into the use of the orthodiagraph and photographic methods gave me the impression that the results were not sufficiently precise for my purpose, and I was therefore forced to content myself with percussion in preference to methods which are troublesome and laborious, and which do not yield sufficiently accurate results.

Another feature which calls for a short reference is the space left for noting changes in the sensibility of the external body wall. I had long observed that in some forms of heart failure the tissues in certain regions become tender on pressure, and I found a distinct relation between the degree of heart failure and the extent or severity of the hyperalgesia of the skin muscles, mammary gland, and other tissues in the external body wall. In fact, the first sign of improvement in the patient's condition is nearly always the diminution of the tenderness of these areas. The most frequent sites of manifestation are beneath the left breast, the breast itself, the pectoralis major muscle where it forms the anterior wall of the axilla, the sterno-mastoid and trapezius muscles on the left side, and the skin covering these. While such areas can be correlated with definite changes in the heart, equally striking symptoms are presented when the liver is enlarged, and the marked diminution of the hyperalgesia of the tissues of the external body wall covering the liver always accompanies a decrease in the size of that organ.

The form of drug and method of administration we employ are those which are most commonly used by the practitioner in his everyday work. We felt that the employment of hypodermic injections or intravenous injections—methods of great value, and which we may later and under special circumstances employ—would not result in that usefulness to the general practitioner which administration by the mouth ensures. The preparation of digitalis used is one easily procured and most commonly employed in practice—namely, the *B. P.* tincture. I have found it very reliable. The extractives which go under such names as "digitalin" and "digitoxin" we have not used, because Professor Cushny pointed out that none of these glucosides are sufficiently definite to be recognized, that a preparation like the tincture contains the different glucosides, and that there is no reason to suppose that the special preparations have any distinctive advantage.

In the use of the drug we are careful to eliminate as far as possible adventitious circumstances, such as rest and diet, in our consideration of its effect. For this purpose the patient is allowed to remain at rest for a period before the drug is administered. In this way we also study the effect of rest in treatment; and, as is well known, it is a very powerful remedy in a great variety of cases.

We attempt the comparison of effects of different doses of the same drug, and of different drugs on the same individual. In suitable cases, where we get a definite and well-recognized reaction from digitalis, we note the amount of the drug taken to produce the first physiological effect, and the quantity that maintains the heart in the condition best fitted to carry on the circulation efficiently. It may be found that a given quantity of the drug has slowed the pulse down from 100 to 60 beats per minute, and, coincident with this slowing, there has been an improvement in the patient's condition. If the drug be pushed further, the pulse may become still slower in its rate, but the patient may not feel so well, being conscious, it may be, of the thumping of the heart, or of breathlessness. Under such circumstances we gradually diminish the dose till we find the quantity which keeps the rate such that the patient feels most comfortable. It is very remarkable how reliable a patient's sensations are in this matter—so much so that we are often guided only by him as to the quantity of drug which he continues to take. When digitalis produces nausea, or for other reasons we let the patient escape from the influence of the drug, and then substitute some other drug, as

strophanthus, squills, helleborein, and carefully push the drug until the first physiological effect is produced, or the patient experiences an improvement in his condition. By this means we obtain a knowledge of the reaction of the patient to the different drugs, and find out which, for him, is the most beneficial. We are thus enabled to form an opinion of the properties of the different drugs, the most appropriate doses, and their relative efficiency in treatment. The drugs are then tested and physiologically assayed.

There are other features in heart failure which call for further inquiry, such as cyanosis and the nature of different forms of breathlessness. We have attempted in several ways to deal with those questions, but at present we find our methods insufficient to cope with the subject, and we hope that we shall be able to evolve methods which will assist in these inquiries.

III.—H. H. TURNBULL, M.D.

THE THERAPEUTIC USE OF DIGITALIS.

THE following observations are based on work done in Dr. Mackenzie's clinic at Mount Vernon Hospital. In order to obtain the full effect from the use of digitalis and its allies it has been found necessary to push the drug until definite symptoms are produced, and in this inquiry the amounts which were necessary to produce effects, and the symptoms thus produced, were noted, attention being paid to the varying reaction of different types of cardiac lesion to the drug. The usual dose employed was ♏ xv of the tincture four times a day, and it was found that the average quantity taken before symptoms were produced was about 6 drachms, though the cases varied within rather wide limits, the minimum being 3¾ drachms and the maximum 11¾ drachms. If a rapid effect was desired, larger doses were employed, but if too small doses are given many cases fail to show any effect whatever, and frequently cases which had been treated on doses of ♏ v–x three times a day without benefit, were rapidly influenced by full doses.

Subjective Symptoms.—These varied slightly, but were broadly constant, and no relation could be traced between them and the nature of the cardiac lesion. The most constant symptom was nausea, some degree of which was produced in every instance but one, and was accompanied by loss of appetite and frequent vomiting. Headache was very common, being in fact frequently the first, and in one case the only, cause of complaint, and with it some patients complained of giddiness and a general malaise similar to that of sea sickness. Diarrhoea was only produced in one instance. The amount of urine was not definitely increased in cases which were not dropsical, and indeed in most cases at the time of the appearance of subjective symptoms it was usually diminished, probably owing to the small amount of fluid taken while the nausea was in evidence.

Time Required.—The time required for the production of the full effect varied in different patients, but if very rapid action was desired larger doses, up to 2 drachms a day, of tincture of digitalis were employed, and with such a dose sickness and beneficial cardiac effects can be produced in thirty-six to forty-eight hours. If only 1 drachm a day be given, four to eight days are usually required for a satisfactory result.

Cardio-vascular Effects.—Some cases showed no definite effect at all, the pulse not being slowed, although the drug was pushed to the point of vomiting. These were all cases of senile cardio-sclerosis; all the rheumatic hearts showed a reaction. Usually the pulse was slowed, and, as a rule, the respiration was also slowed a little; the pulse slowing, and, indeed, all the reactions being especially marked during the period about three minutes after exercise, when normally the pulse slows down after the initial quickening caused by the exertion. This seems to be the period of maximum vagus activity, and most of the effects produced by digitalis have been explained as due to an increased control from vagal stimulation. This pulse slowing occurred in three separate ways:

1. General slowing of the whole heart.
2. Sinus arrhythmia, in which the pulse is irregular owing to a more or less rhythmical variation in the rate of the whole heart, the variation being due almost entirely to alterations in the length of the diastolic period.
3. Varying degrees of heart-block.

The first two types usually occurred in rheumatic hearts; non-rheumatic showed, as a rule, little slowing, and in none was any marked degree of sinus arrhythmia produced. Sinus arrhythmia showed best about three minutes after exercise, and in cases in which it was present before the administration of digitalis this drug caused it to become much more marked. In these cases it did not accurately follow the respiratory cycles, as is usually the case in the arrhythmia of young people, but each pulse phase might continue during more than one respiratory cycle, and the pulse did not become regular when the breath was held.

3. *Heart-block.*—In cases in which, owing to damage of *a–c* bundle, the period required for passage of an impulse from auricle to ventricle over the bundle is longer than the normal 0.2 second (*a–c* interval prolonged), digitalis very frequently further increases this difficulty until some of the impulses fail to pass and a condition of heart-block is produced, at first partial, and finally, if the drug be pushed, perhaps complete with blocking of all auricular impulses. This is probably due to a depression of conductivity in the bundle tissue by excessive vagus stimulation, and, like all other vagus effects, is most marked shortly after exercise. In some cases in which the *a–c* interval is not noticeably prolonged, there may be sufficient damage to the bundle to allow of the production of heart-block by digitalis, so that this becomes one of the most important conditions to be observed during the administration of this drug and its allies, and the length of the *a–c* interval must be carefully watched when these are being pushed. This action on conductivity seems to be the chief reason for the slowing which is got in cases of auricular fibrillation, in which, as has been pointed out by Dr. Mackenzie, digitalis finds its chief use. In these cases the pulse can often be kept at any desired rate by giving or withholding the drug, and in some full doses produce a practically regular pulse of about 40, the occasional premature beat being followed by a pause equal in length to that between any two preceding regular beats, which suggests that the condition is one of complete heart-block. These cases frequently have to continue taking the drug for considerable periods, one man being now under observation who is able comfortably to do light work while taking 45 minims of tinct. digitalis daily, which keeps his pulse-rate down to about 46 to 48 per minute. He has been experimenting himself to find the proper dose, and finds that he is most comfortable while taking this amount.

Extra-systoles.—In cases in which extra-systoles are already present, the administration of digitalis is usually without effect on their frequency, though occasionally they appear to diminish under it. However, in some cases where extra-systoles are very frequent and there is some cardiac disability, simple rest will cause a great diminution in their number, and here it seems likely that the diminution is merely due to a better and therefore a quieter action of the heart. Digitalis may act in the same way in these cases, but in no case have we found extra-systoles entirely to disappear under its administration. In three of our cases, however, in whom no extra-systoles were present the administration of digitalis produced them—one case showing extra-systoles while at rest in bed, but the others only in the slow period two or three minutes after exercise. In two cases extra systoles were interpolated, and in the other ordinary ventricular extra-systoles, occurring after every other normal beat and followed by a compensatory pause. They gave rise to no disability, though one of the patients was unpleasantly conscious of the thump produced by the larger beat following the extra-systole. They disappeared rapidly after the drug was discontinued, in one case even disappearing in spite of the continued exhibition of the drug. All these cases showed marked sinus arrhythmia and the extra-systoles appeared during the slow period.

Action on Dilatation.—In two cases, both of *auricular* fibrillation, a very marked diminution in the size of the heart, as determined by percussion, was produced, and in one or two slight diminution, but in most cases no very definite change was found. However, nearly all the cases were chronic ones, in whom there had been no sudden breakdown, and no doubt the enlargement of the area of cardiac dullness was chiefly due to hypertrophy, and only in a minor degree to dilatation which could be recovered from. In the two cases which showed marked diminution the heart failure had been rapid, and there was considerable dilatation which disappeared under digitalis. It was

found that the dullness often varied a little from day to day, quite apart from any treatment, so that only very definite and persistent variations were taken into account, but what little change there was after treatment with digitalis was always in the direction of diminution.

The Febrile Heart.—In two cases in which there was marked heart failure combined with a febrile condition, digitalis produced no effect, though pushed to the production of vomiting. In no case was any rise of blood pressure found to result from the pushing of digitalis; in fact, there was frequently a fall of 10 to 12 mm. of mercury. However, it was noted that in two cases, in which the heart began to fail while under observation, and taking no drugs, the blood pressure rose about 12 mm., and the fall which may occur under digitalis is probably due merely to the increased efficiency of the circulation which results from its use.

Strophanthus—The effects produced by tincture of strophanthus were similar in every respect to those obtained by the use of digitalis, except that vomiting seemed to be less common than diarrhoea, which in many cases was the first sign of the full dose. This diarrhoea was severe in several of the cases, and did not cease when the drug was omitted, though it readily yielded to treatment with castor oil, or castor oil and opium. Although the tincture of strophanthus employed was twenty times as powerful as the digitalis when tested on the frog's heart the dose necessary to produce effects was usually larger. In some cases the physiological effects were seen after only 4 to 6 drachms, but in several of the others considerable tolerance was shown for the drug, and as much as 2 drachms a day was given without causing any symptoms other than the maintenance of a slow pulse-rate. In one case half a drachm of tincture of strophanthus was given every four hours to a case of auricular fibrillation with great dyspnoea, marked cardiac dilatation, and oedema of the lungs and lower limbs, the pulse-rate being 138, and after thirty-six hours all oedema had disappeared, the patient was quite comfortable, and the pulse-rate 52. On the whole, it seems advisable to use doses of not less than 1½ to 2 drachms of tincture of strophanthus per day if a rapid good result is desired.

Tincture of Squills—This is one and one-third times as strong as the digitalis, and was used in doses of mxv four times a day. Though results similar to those of digitalis were obtained on the heart, no general symptoms, except slight malaise, were met with. In one case squills produced, first, sinus arrhythmia, and later a marked degree of heart-block during the slow period following exercise.

The special points which we regard as important in the administration of digitalis are:

1. Full doses are necessary to produce the effects of the drug, and unless it is pushed no result may be obtained in cases which would at once react to large doses.

2. There is no danger in pushing the drug if the type of case is taken into consideration and the results watched. In most of our cases the patient stopped the drug himself owing to the increasing nausea, and the only cases likely to show bad effects are those with damaged auriculo-ventricular bundle in whom heart-block may result. Several cases have been treated in the out-patient department with doses of mxv three times a day with excellent results.

3 Raised blood pressure is no contraindication to the use of digitalis, and is often due to some secondary effect of the heart failure.

IV.—J. D. Windle, M D.Vict.

DEMONSTRATION.

Dr. J. D. Windle completed the opening of the discussion by a demonstration of tracings showing the action of digitalis in cases of nodal rhythm and auricular fibrillation.

DISCUSSION.

Sir Lauder Brunton (London) said it was just forty-five years ago that he began to collect digitalis leaves for an investigation into its action. Six months later he saw a case of digitalis poisoning which showed quick beats with interpolated slow ones, slow beats with an interpolated quick one, and then slow beats. Like Professor Wenckebach, he attributed this condition chiefly to vagus stimulation, but he also took into consideration another possible factor—namely, accelerating nerves. He thought that clinically an estimation of the relation between power of the heart and arterial tension was very important. The best method of doing this at present was to compare the arterial tension as ascertained by the sphygmomanometer with the form of sphygmographic tracing. He thought it very important to watch the action of digitalis on the blood pressure in cases of gouty kidney with high pressure, as otherwise danger might occur from too great a rise. He said that the heart was a double organ—right and left—and symptoms of discomfort and dyspnoea might arise from weakness of the right ventricle whilst the left ventricle was perfectly healthy. He thought that what clinicians wanted from pharmacologists was a knowledge of the comparative proportion of cardiac stimulants like digitalin, and of vascular dilators like digitonin, in each preparation, and also what drugs had a selective action on the right ventricle and which upon the left.

Dr. W. T. Ritchie (Edinburgh), who discussed the coupled rhythms (continual bigeminy) of the heart which might appear after the administration of digitalis, said that under the influence of digitalis a coupled rhythm of the ventricles might become superadded to a perpetual arrhythmia of the ventricles associated with auricular fibrillation. Cases without perpetual arrhythmia, however, might also develop a coupled rhythm after this drug had been administered. These facts were well known, but the mode of production of the coupled rhythms was less clearly understood. The speaker and Dr. Cowan had been considering this problem, and had come to the conclusion that all coupled rhythms (except some of those in auriculo-ventricular heart-block) might be induced by one mechanism. Digitalis lessened the frequency of the heart's rate, and the consequent prolongation of diastole led to increased intracardiac pressure; and it was suggested that whenever an enfeebled heart was unduly irritable in an abnormal site any excessive rise of intracardiac pressure might produce a regularly recurring premature systole originating in the irritable area.

The clinical evidence in favour of this theory was supported by that obtained in experimental research. Knoll and Hering had demonstrated that extra-systoles might be produced by constriction of the aorta or pulmonary artery, or by reflex stimulation of the vasomotor system. In Pletnew's experiments, stimulation of the vasomotor centre induced extra-systoles, singly, or in groups, or a continual bigeminy; and Pletnew also recorded continual bigeminy as a result of constriction of the aorta. Rothberger and Winterberg concluded that extra-systoles might originate in either the right or the left heart according as the pulmonary artery or the aorta be narrowed. There was therefore experimental evidence to demonstrate that single extra-systoles or a continual coupled rhythm might be induced whenever there was a discrepancy between the functional capacity of the heart and the work which it was called upon to perform. In the human heart excessive intracardiac pressure might be produced in many ways, but it would necessarily accompany synchronous contraction of auricle and ventricle or any undue prolongation of diastole. Dr. Cowan and the speaker found that both synchronous contraction of auricle and ventricle, and likewise undue prolongation of diastole, might be followed either by a single extra-systole or by a coupled rhythm. In auriculo-ventricular heart-block with mitral disease and an enfeebled heart, they found that synchronous contraction of auricle and ventricle might be followed by an extra-systole of the ventricles. When auricle and ventricle contracted synchronously the usual mitral reflux was lessened, and the auricle could not empty itself of its contents. The residual blood in the left ventricle was excessive, and the diastolic influx from the over-full left auricle quickly raised the intraventricular pressure to such a degree that a ventricular extra-systole ensued. In the case of heart-block recorded by Vinnis, the continual bigeminy of the ventricles might be explained by the fact that an auricular systole seemed to coincide with the first ventricular beat of each couple. In other instances synchronous contraction of auricle and ventricle—as on the occurrence of a ventricular extra-systole—might be followed by a single extra-systole originating in the auricle or by a continual coupled rhythm in which both auricle and ventricle participated.

Undue prolongation of diastole might cause a single extra-systole or a regularly recurring extra-systole. The latter event was shown in Fig. 93 of Mackenzie's work, *The Study of the Pulse*. Prolongation of diastole entailed excessive intracardiac pressure, and, if the heart were enfeebled, neither the auricles nor the ventricles might be able fully to expel their contents, and the subsequent diastolic influx from the overfull auricle would rapidly raise the intraventricular pressure so high that the enfeebled and irritable ventricle initiated a premature extra-systole. After the premature beat the ventricle would not again become overdistended, nor would it again contract, until the second sinus stimulus reached it in the usual manner. But with the lengthened diastole the ventricle would again become overdistended, and the coupled rhythm would continue.

The coupled rhythm which became superadded to a perpetual arrhythmia under the influence of digitalis was not due to cessation of the auricular fibrillation—for the latter still persisted—but probably might be explained by a mechanism similar to that of a coupled rhythm occurring in a heart with a fundamental and regular sinus rhythm. The slowing of the ventricular rate under digitalis might be due in part to depression of conductivity in a damaged auriculo-ventricular bundle under the influence of the drug, or to increase of the arterial blood pressure, as well as to other factors. But the lessened frequency of the ventricular rate, however produced, entailed prolongation of diastole, and therefore increase of intracardiac pressure; and, as already stated, the first beat after a prolonged diastole might be succeeded by a single extra-systole, or the prolonged diastole might be followed by a coupled rhythm. In the coupled rhythm superadded to perpetual arrhythmia under the influence of digitalis it was not yet known whether the second beat of each couple yielded invariably an electro-cardiogram which was, according to Einthoven's nomenclature, "atypical." If that were so, the coupled rhythm of the ventricles in perpetual arrhythmia was due to essentially the same mechanical factors as those of a coupled rhythm in which a ventricular extra-systole recurred regularly in a heart with a fundamental and dominant sinus rhythm.

Sir CLIFFORD ALLBUTT (Cambridge) said that had he not received a kind request from the Chair he should not have ventured to speak, as some time must pass before such materials as the previous speakers had laid before them could be properly digested. For his own part, he felt unable to say anything to the point until he had had the published records under his eye, and been able to consider them with line and rule. But he was glad to have the opportunity offered to him of expressing in the strongest terms, he felt sure he might say on behalf of the audience, their sense of the admirable methods in which the records and studies had been laid before them. There could be no better illustration of the development of that quantitative appreciation of clinical phenomena by which only their knowledge could be placed on a firm basis. He might, perhaps, venture to remark on what had passed that his own opinion was in favour of the alleged differences of larger and smaller doses of digitalis in their effects upon the myocardium and the vagus respectively. Concerning the large doses of digitalis which had been mentioned, as if it were easy, if the dose were ill borne, to retrace one's steps, he would urge that it was not always so easy. In some cases of vomiting after digitalis this distressing and perilous symptom did not subside on suspension of the drug; so that any trifling in a serious case with doses which might for the individual prove excessive was to be deprecated. The best way to avoid nausea was to give the drug after a meal, and to ice the draught. Administration per rectum did not avoid this disorder. On one more factor in many heart cases he would dwell for a moment, as in his experience it was too frequently neglected, namely, the factor of emphysema. As some speakers had said, for the present they had to estimate cardiac values by symptoms; they had no quantitative tests. Now in persons past middle life, emphysema commonly entered into the conditions, probably, in the speaker's opinion, because of atheroma of the bronchial arteries. However this might be, the coincidence was frequent, and in every case should receive particular attention, as it added considerably to the embarrassment of the patient, weighed down the prognosis, and baffled the treatment. He would not, of course, presume to detain them by any advice as to the methods of estimating this emphysematous constituent; it was sufficient for him to emphasize the frequency and importance of a factor too commonly overlooked or slighted. It happened to him not infrequently to see cases of alleged cardiac disease in which the cardiac factor was, beside the emphysematous, almost negligible.

Professor WENCKEBACH, in reply, said that he thought that the difference between his clinic and that of Dr. Mackenzie was not so great as might appear at first sight. While in some cases he recognized the need and utility of large doses of digitalis, in other cases he had had success with small doses. On the Continent there was a great and exaggerated fear of digitalis. He himself thought that large doses should be confined to hospital work, and safeguarded by careful observation, such as Dr. Mackenzie gave.

Dr. MACKENZIE, in reply, reiterated that he thought the dangers exaggerated. He gave out-patients large doses, telling them to stop if sickness or other unpleasant symptoms developed, and he had never seen ill results.

THE ACTIVE PRINCIPLES OF ERGOT.

By H. H. DALE, M.D.,
London.

IN the middle Seventies of the nineteenth century two conceptions of the activity of ergot had been put forward. Buchheim stated that it belonged to the class of "putrid and septic substances." Tauret isolated an alkaloid in crystalline form; an amorphous alkaloid occurring with it he regarded as a physical modification. To these conceptions we have had to return, and regard the activity of ergot and its extracts as due (1) to a specific alkaloid; (2) to certain bases which also arise in the putrefaction of proteins.

1. The specific alkaloid—ergotoxine—corresponds nearly to Tauret's "amorphous ergotinine." It was isolated by Barger and Carr as crystalline salts, and was proved to be the hydrate of the inactive crystalline ergotinine, as was suggested by Kraft, who prepared it independently. It causes the characteristic gangrene and other toxic symptoms of ergot; it also causes contraction of the arteries, uterus, and some other plain-muscular organs, and, in larger doses, selective paralysis of motor effects of the true sympathetic system.

2. Of the amines, which also arise during putrefaction, two have been shown to be concerned in the activity of ergot and its preparations.

(*a*) *p* hydroxyphenylethylamine, produced by splitting off CO_2 from tyrosine. This base has an action similar to, though weaker than, that of adrenine. It therefore causes rise of blood-pressure, being the chief agent in producing the pressor action of many ergot extracts. It produces contraction of the cat's uterus in the pregnant, inhibition in the non-pregnant, condition.

(*b*) β iminazolethylamine, produced by splitting off CO_2 from histidine. This base has an intense action on plain muscle, the uterus in particular being stimulated to intense contraction by minute doses. It causes a fall of blood pressure, apparently due chiefly to dilatation in the splanchnic area. Kutscher also obtained from ergot a base identical with or closely related to this.

The pharmacology being thus fairly clear from the experimental point of view, the subject needs for its complete elucidation careful clinical experiment which will decide whether the therapeutic effects desired of ergot are due to the specific alkaloid ergotoxine, or to the amines from amino-acids, and, in the latter case, which is the important one. It may be that all are needed. If ergotoxine plays a necessary part in the desired effect, only ergot can give us what we want. If, on the other hand, the amines without ergotoxine do what is necessary, then ergot has no proper place in the pharmacopoeia, since these bases can more easily be obtained from other sources.

TREATMENT OF LOBAR PNEUMONIA.

By A. J. Mathison, M.R.C.S., L.R.C.P.,
Wood Green.

[*Abridged.*]

The central fact in this brief paper is the employment of a certain drug combination in 20 cases of lobar pneumonia, with no mortality, but with abortion of 4 of the cases.

The treatment advocated is the administration from the time of diagnosis of a combination of two drugs, each of which has been put forward separately as an efficient remedy in pneumonia—creosote and potassium iodide. There is no novelty in employing either of these separately. The combination alone is introduced as new, just as I introduced it briefly in the Journal in 1906.

No particular local treatment goes with this scheme. I do not myself trouble now about applications to the chest in pneumonia.

I formerly recommended giving my combination in gradually increasing strength, but pneumonia marches so rapidly that I find it better to give from the time of diagnosis the following prescription, and to minors one of strength proportionate to their age. The four-hourly dose introduces a fraction, so I will give the medicine for two days: Potassium iodide, 1 drachm; creosote, ½ drachm; rectified spirit, 2 drachms; liquid extract of liquorice, 3 drachms, or 4 drachms of the older *Pharmacopoeia* preparation (which makes a better mixture, I think). Water to 6 oz. A tablespoonful to be taken every four hours. Will children take their proportionate dose? Yes. Their taste is so blunted during the height of the disease, that by the time the patient begins to rebel it is time, or almost time, to substitute the more palatable tonic.

In this combination the antiseptic action of creosote limits the extension of the pneumonic process. It directly opposes the invaders, probably by making the circulation an unsuitable haunt for them, and perhaps also by digesting enzymes. The iodide, stimulating cell action, loosens the exudate. The fluxion is diminished by the quieting effect both drugs have upon the heart, by their combined diuretic action, and by the reduction of blood pressure by the iodide. All these actions, too, control the alveolar diapedesis.

It may be objected that people die from heart failure and poisoned vasomotor centres, and therefore we do not wish to quiet the heart or lower the pressure. But our business in general is not with dying people, but with people stricken with pneumonia. To quiet the heart and reduce its work from the first will, I contend, prevent right-sided engorgement, and the combination will prevent poisoned vasomotor centres.

It is the part of creosote to diminish the output of the toxins and also to neutralize those in circulation; but this latter result must be brought about to some extent by the valuable action of the iodide in stimulating leucocytosis.

Delafield and Prudden say:

> In general, according to our present knowledge, the leucocytosis of infectious diseases may be regarded as the effort of the blood-producing organs to protect the blood and tissues by means of leucocytes against invasion of micro-organisms and against the action of the toxins present in the circulation.

The iodide thus calls upon the body to bring out its reserves.

Just this brief consideration must suffice now, though it should be added that the dual work of these drugs should be considered the sum of the actions of each, *plus* something more, to be put to the credit of the partnership.

I want next to say why this drug treatment is superior to vaccine treatment.

A splendid account of skilful work along this line of attack was given by Willcox and Parry Morgan at the last annual meeting of this Association, and their results were extremely good. Out of 24 cases treated, only 2 ended in death, and of these one came in with marked dilatation of the heart and another died from nephritis with suppression after the pneumonic symptoms had subsided. Still, these two deaths must be noted against absence of mortality on this side, and the possibility of much greater number being treated without mortality, which obviously follows the fact of no fatalities so far as I have gone.

There are many disadvantages connected with the vaccine treatment. The delay in preparing a vaccine from material supplied by the patient himself—quite a long delay in so acute a disease. Although it is advised that a dose of stock pneumococcus vaccine should be administered immediately, it is quite obvious that this may do no good at all, and the disease runs on for about two days before the better remedy is administered. Another disadvantage is the pain caused by the puncture of the chest wall and the risk attaching to this method. And yet another: the necessity of knowing the particular organism which has invaded the lung. Another difficulty to be dealt with is the necessity of developing in cases of infection a threefold immunization. It is, of course, possible that these disadvantages are not so serious as they appeared last year; but the advantage of avoiding them is on the side of the drugs—the despised drugs.

In commencing a brief analysis of my 20 cases, in which all recovered, and so far as I know are well to-day, I divide them into: 4 in which the disease aborted, 2 instances of pneumonia in a phthisical woman at periods divided by a few months, 1 severe case of typhoid pneumonia following influenza, and 13 other cases grouped together.

In 2 of the cases of aborted pneumonia the excellence of the treatment was proved up to the hilt, by all treatment failing to relieve distressing nervous trouble till diagnosis of pneumonia and administration of the usual mixture, when all the symptoms vanished—symptoms which would not vanish in the ordinary way before such medicine, and only departed now because the cause—pneumonia—had met its antidote. Meningitis was suspected in the one child, and the iodide had already been given for this reason before pneumonia was diagnosed, and creosote added.

In the other case I was sent for in the night because of convulsive disturbance; and here again the local signs were slow in coming, but the disease quick in departing on application of the treatment.

In the patient who shortly after influenza had so severe a pneumonia, the asthenia became so extreme that he took alcohol for twenty-four hours without a protest, though a strong teetotaler. When he demurred rather strongly to taking more, I considered my point had been gained. Strychnine injections were given to this patient; and in general he gave opportunity for applying the art as well as the science of medicine. I mention these details because I do not wish it inferred that it is never necessary to give alcohol or strychnine in conjunction with my treatment. The mere fact of patients desperately ill being saved may mean protracted recovery. Omitting the phthisical person, of the 18 other cases I cite 7 were ill for a long time.

To return to the abstainer mentioned, he has been to me since his illness with slight phthisis, and I cannot help thinking that in the case I have related, I had to do with a very mixed infection. It is possible that the case was protracted through my timidity in omitting the iodide, though I restored it to the medicine afterwards.

It is a remarkable fact that most of the worst cases in this series either had the prescription I have quoted altered and the changes rung on it or had the graduated prescription I used early in the series. I had 2 cases in which the patients took pneumonia and the medicine was prescribed; but I found that the medicine had not been given regularly. Both these patients were ill for a long time. They both had hypodermic injections of strychnine, and one had quite a long series of these. They both were very delirious.

One boy had a relapse. He ceased taking the mixture on June 1st, 1906, and had pneumonia again on July 16th. The disease quickly died down again after the medicine had been resumed. I have counted these as two cases to make my 20, because I have had to omit a case in which ammonium carbonate was added to the mixture, thus vitiating the case so far as our present purpose is concerned.

The sequelae included empyema, for which a boy went to hospital to be treated, and a large abscess pointing in gluteal region, for which a man was treated at home.

Of the 20 cases, 12 patients were children and the remainder were equally divided between the sexes. They were spread out over a long period, so that success can

hardly be said to have been dependent on the occurrence of a mild epidemic. Many of the cases, too, occurred under by no means favourable circumstances. There was but little help from the trained nurse in the whole series, and some of the patients were by no means promising subjects.

In concluding, let me lay emphasis on the importance of early diagnosis, the detection of slight dullness, slight resistance on percussion, conjoined with the systemic disturbance already engaging attention. The medicine should be given in full strength from the time of diagnosis, and may perhaps be sometimes used slightly stronger —never weaker. The aborted cases which I specially mentioned occurred late in the series, when I was bolder in applying treatment.

SECTION OF LARYNGOLOGY.

HERBERT TILLEY, B.S., F.R.C.S., President.

Surgeon, Ear and Throat Department, University College Hospital, London.

PRESIDENT'S INTRODUCTORY REMARKS.

AFTER some complimentary allusions to the achievements of foreign laryngologists present, and to past Presidents of the Section, Mr. Tilley said: How different is the teaching of laryngology to-day compared with fifteen years ago! At that time, with one or two notable exceptions, the general hospitals of London entrusted instruction in the subject to the assistant surgeons or physicians of the staff, who had had no particular training in that branch of work, and they could neither afford the time nor was it to their interest to spend much time in becoming experts in the technique and manipulations which the rapidly growing speciality demanded. As a result many students were forced to attend special hospitals, or even to find their way to Continental schools, where greater facilities were afforded and men of world-wide reputation ministered to their needs.

To-day there is scarcely a general hospital in London or the large provincial cities which has not a throat department fully equipped and presided over by men who give their whole time and attention to the subject and who have earned the respect and friendship of their colleagues engaged in the more general realms of medicine and surgery. Who would have credited that in so short a space of time the membership of the Laryngological Society would have increased from 100 to 200 with an average attendance of 48 at its monthly meetings?

We cannot stop to analyse the meaning of this extraordinary progress or to recall how our leaders gradually wore down the opposition which raised its hydra-like head against this, as it does against most other young and pioneer movements, be they political, social, or scientific. I am quite sure, however, that two of the greatest factors in raising laryngology and rhinology to their present position have been the powerful influence exerted by the good work of the Laryngological Society of London and the personnel of those who compose its membership.

A brief glance over the history of our speciality during the last fifteen years will reveal that an enormous amount of excellent work has been done, and perhaps most of it in relation to the diseases of the nose and its accessory sinuses.

At the beginning of this period the maxillary antrum alone claimed the attention of the surgeon, and how very unsatisfactory was the treatment of chronic suppuration of that cavity must be well known to many of us. Then came Ziems's paper detailing his personal experience of the affection, and advocating alveolar drainage. The subject was infused with a new interest, but the failure of many cases to cure by alveolar drainage led to the initiation of those radical measures associated with the names of Caldwell, Luc, and Spicer. This method enormously shortened a form of treatment which had hitherto proved wearisome to both patient and surgeon.

In rapid succession the other nasal accessory sinuses were made to reveal their hidden recesses and the relation of these to surrounding structures. The surgeon was not slow to take advantage of the resources of the electrician and the physicist, so that, by means of transillumination and the x rays, it might truly have been said that "there is nothing hid which shall not be revealed."

It was soon obvious that the deeply situated sinuses were amenable to surgical intervention, and that chronic suppuration, hitherto more or less intractable, could now be successfully treated in the frontal, ethmoid or sphenoidal sinuses. There was no lack of enthusiasm in operating, and ingeniously contrived instruments for attacking these regions multiplied with amazing rapidity. Then, as is usual, one began to hear of fatal cases, and sometimes these were reported in the medical journals. Those busily engaged in this branch of work toiled ceaselessly to overcome the dangers incident and peculiar to this class of disease, but even to-day we cannot claim that our methods are perfect, nor that our major operations are altogether free from anxiety.

And here I think I notice a distinct tendency to greater conservatism in the treatment of the more intricate sinuses. The pendulum has swung backwards very considerably, and where a few years ago a suppurating sinus would have been an indication for immediate operation, and this in spite of the patient's general good health and the absence of pain, to-day experience has taught many of us to look more leniently on such a case when it gives rise to little more than inconvenience to the patient.

With regard to the frontal or fronto ethmoidal sinuses, how many patients have we known to die from unrelieved suppuration during the past fifteen years? Very few. On the other hand, "How many cases can we recall that have died as a result of operations even when carried out by skilled and experienced surgeons?" More than we care to remember. And when we think calmly on this subject, must we not allow that, even if some pus be swallowed, it may be destroyed by the acid gastric juice of the stomach, and, if not, that the human organism can manufacture antitoxins as cleverly, perhaps, as the pathologist in his laboratory?

In contrast with the practice of the past few years, may we not occasionally defer for a while external and possibly disfiguring operations, and see what improvement may result from the establishment of free intranasal drainage and subsequent irrigation, possibly combined with the use of an appropriate vaccine?

I wonder if such thoughts as these are a sign that one's pia mater is losing its elasticity? On the contrary, I hope they represent lessons learnt in that most exacting of schools which we call Experience.

One of the greatest improvements in nasal surgery has been the treatment of nasal obstruction due to septal deformities by the operation of submucous resection—an advance which we owe to the genius of Killian (Freiburg) and Freer (Chicago). Before the introduction of this method such obstructions were the bugbear of the nasal surgeon; to-day there is probably no operation in surgery which gives so quick and complete relief to the patient.

The subcutaneous injection of paraffin introduced by Gersuny (Vienna) for the obliteration of the deformity of a sunken nose or as a means of levelling up depressions following external operations on the frontal sinuses has not been so successful as we were led to hope in spite of the kindly aid of the photographer's art. Serious accidents were reported, and who of us has not seen oedema of the eyelids and a "wandering" of the paraffin many weeks after a "successful" injection?

I have a vivid recollection of spending two hours of a glorious summer afternoon in a mansion on the Sussex Downs dissecting out paraffin from a lady's nose and eyebrows. So hideous was the deformity that for eight months the patient had not been outside the grounds of her home; she refused to see any of her friends, and only with considerable shyness and diffidence would she allow me to examine the condition of her face before operating. Whether the injection of solid is free from the risks of melted paraffin I do not know; at any rate, I think the method is very little used in London at the present time.

The intimate relationship between inflammation of the ethmoid bone and nasal polypus has been reinvestigated, but we are still in the dark as to whether the primary inflammation is in the bone, periosteum, or mucous membrane. Lack has, however, demonstrated that recurrence of these growths may be very effectually checked by thorough removal of the diseased ethmoidal cells, and

most of us will agree that in selected cases the operation is an excellent one. And here let me add that we must not condemn the method because fatalities have occurred in the hands of the clumsy or inexperienced.

And so we might proceed from one region to the other, but we have other work before us. I should like to have dwelt on the improvements which have been instituted for attacking and successfully dealing with large growths in the naso-pharynx which formerly were looked upon as formidable operations on account of excessive haemorrhage at the time or of the risks of a later septic pneumonia—evils which have been overcome or much diminished by previously cleaning the mouth and teeth, a preliminary laryngotomy and more efficient laying bare of the tumour by a modified Rouge's operation. A more scientific and thorough method of removing submerged tonsils has recently become a more regular practice, and I am delighted that this matter is to form one of the subjects for discussion at the meeting.

In the larynx and lower air passages one recognizes three great advances:

1. The more general recognition by the profession of the significance of chronic hoarseness—whereby many lives have been saved from cancer and consumption and many voices restored by the removal of simple non-malignant growths or ulceration.
2. The recognition of the early stages of tuberculous laryngitis and its treatment by rest of the voice and possibly galvano-puncture. In this matter we must not forget the excellent pathological work done by our friend Jobson Horne.
3. The direct method of examining and treating intra-laryngeal, tracheal, bronchial, and oesophageal affections. Truly an extraordinary development in our resources, and particularly so when dealing with foreign bodies lodged in the lower air passages. How much we owe to Killian and his assistants for the perfection to which this method has been brought!

If I dared to trespass on your patience for a few moments longer it would be to forecast the future of our speciality, but that entrancing subject must scarcely be touched upon.

I can imagine that our young workers must regard the field for future efforts as a restricted and somewhat barren one when they remember that there are no more nasal sinuses awaiting discovery, and that to-day the human eye can with direct vision see all that lies between the lips and the larger bronchial tubes, or even to the pylorus of the stomach. My old teacher, Mr. Christopher Heath, used to be very fond of saying that the province of the throat specialist included all diseases between the lips and the levator ani, and I am inclined to think he would have had more just grounds for his gibe if he could see us to-day when we are able to inspect the deeper air-ways, the oesophagus, and even the very walls of the stomach.

But, gentlemen—and I speak more directly to the juniors—there are vast fields for research. Who and where are the young workers who shall solve for us some of the riddles of infection and immunity? To whom so readily as for them are the portals of infection so open and so accessible? Where better than in the nasal mucous membrane, the pharynx or the larynx are the phenomena of tuberculosis so easy of study and observation or the results of treatment so obvious, be they positive or negative? Who shall ascertain what are the innate conditions of the mucous membranes which assist in rendering the pneumococcus or streptococcus of to-day inert while to-morrow they may be capable of the direst evil in their host? Who will forge the key which shall unlock the mysteries of hay fever, asthma, paroxysmal sneezing, and a host of other maladies which render life so miserable to those afflicted by them? Will the instruments we are using to-day be of historical interest in the museum of fifteen years hence, and shall we not then be discussing the relative values of this or that vaccine or antitoxin?

Such are a few of the thoughts which jostle to the fore-front to-day as we review the progress of the past decade and wistfully regard the future. Perhaps in the strength of our manhood and experience we are inclined to feel somewhat superior to those who have gone before us, to smile at the methods of their work or at their ignorance of those things which seem so simple to us in the year of grace 1910. But it was ever thus, and I will conclude with the expression of two thoughts.

In the hour of our self-satisfaction let us remember the pregnant words of that distinguished American citizen, who in his recent Romanes lecture warned us that the knowledge of to-day may prove to be the foolishness of to-morrow. When, on the other hand, we are inclined to fancy that little more remains to be done, and that we have exhausted the resources of our special calling, it may bring us solace to remember those inspiring words of Robert Louis Stevenson, "To travel hopefully is better than to arrive, and the true success is to labour."

DISCUSSION ON DIRECT METHODS OF EXAMINING THE AIR AND FOOD PASSAGES.

OPENING PAPERS.

I.—Carl von Eicken, M.D.,
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Taking for granted your general acquaintance with the methods of direct examination of the air passages and the instruments necessary thereto, I will confine myself to some special questions of the technique and then more fully discuss the difficulties and dangers which occur in practice and the means to overcome them.

The best fashion of illuminating the endoscopic tubes is a very much disputed question. I think the majority, however, have decided in favour of outer lamps, and with good reason, for all inner lamps encroach on the lumen, which is a very real disadvantage in working with tubes of small calibre. Moreover we cannot completely protect an inner lamp from becoming soiled and dimmed by the secretions, and when this has occurred then the lamp must be withdrawn and either cleaned or replaced by a new one. During all this time our field of operation is in utter darkness. There is also great danger of an inner lamp breaking off and falling into the bronchus. From all these faults outer lamps are free. Shall the lamp be fixed by a head band before the eye of the examiner or to the tube itself? Does the advantage lie with the Kirstein lamp, which moves independently of the tube, or with the hand-lamp of Brünings, which is attached to the tube?

A fixed lamp is without doubt to be preferred when we wish to demonstrate a certain finding to a large number of onlookers. Besides, such a lamp for a beginner does away with all the difficulties of illumination. But except for demonstration purpose, the Kirstein lamp renders us equally good service. For cases complicated with profuse purulent bronchial secretion I even consider the Kirstein lamp more suited, in that one can merely by slight movements of the head better protect the lamp from becoming soiled and obscured without entirely cutting off the illumination of the tube. I also prefer the Kirstein lamp for the fine manipulations required in the larynges of children. I am convinced that the reason the Kirstein lamp has not met with general favour is due to its former faulty construction, and to the indifference of the instrument makers to the shape of the head of the examiner. The connecting piece between the lamp and the head band must be of different lengths to correspond to the incline of the forehead, so that the examiner can conveniently look through the reflector and in the axis of the reflected rays without bringing the lamp too near his cheek.

The greatest difficulty for the majority of men in the endoscopy of the air passages is the finding of and passing through the larynx; especially is this true of the small larynges of children. Many authors recommend the introduction into the trachea of a tube fitted with a mandarin after the O'Dwyer intubation method; but as one by this procedure occasionally passes into the oesophagus I prefer the introduction under the control of the eye. In the epiglottis we have the most important landmark, which we readily find if we introduce the tube at first only a very little way into the mouth and exert a certain pressure on the middle of the tongue. When the oral surface of the epiglottis comes into view it is quite easy to pass over its free border with the beak of our tube spatula; here the mistake is frequently made, in an effort to reach the vocal cords, of pushing the tube too far downwards, a movement by which the oesophagus is invariably entered. We must bring ourselves, therefore, to press the tube at first further forwards until we have seen from above and in rotation

the aryepiglottic folds, the arytenoids, the posterior part of the vocal cords, and finally the whole glottis. The passage of the glottis may be attained in one of two ways: either introduce the beak of the tube into the posterior commissure of the widely opened larynx and by forcibly raising it separate the vocal cords so widely apart that the trachea now lies free before us; or by keeping the beak of the tube in the sagittal plane introduce it into the closed glottis at the same time sinking and rotating the tube in an angle of 90°. This latter manœuvre commends itself most especially for small children, who, even under deep narcosis, have the unusual power of absolutely closing the entrance to the larynx with sphincter-like tension.

When the larynx is passed, usually the further introduction of the tube offers no special difficulties. The only other thing that is here necessary is to keep the lumen of the trachea or bronchi always visible at the end of our tube.

If the head of the patient is properly held the whole trachea as a rule can be examined when the tube has passed the glottis. In the bronchi we must exert a moderate pressure, with the tube on the lateral circumference of the bronchi, in order that the axes of the bronchus and tube coincide. One must, above all, avoid scraping the end of the tube along the median bronchial wall.

The significance of the endoscopic picture which we meet with on the way from the larynx to the ramifications of the bronchi always presupposes an exact knowledge of the anatomy of these parts. We have to look upon the several bifurcations as the most important landmarks. It is well known that the bifurcation of the trachea does not lie absolutely in the middle line of the body. Frequently it deviates to the left, so that in looking from above it is hidden from view. The direction and calibre of the right main bronchus do not essentially differ from those of the trachea. Hence it is that many examiners, after having sought and failed to find the entrance to the left bronchus, pass directly into the depths of the right main bronchus. To guard against this mistake we have only to observe closely the left tracheal wall, which in its lowest part shows the strong transmitted pulsations of the aorta. If we now cautiously press the tube against this wall and follow the outlines of the tracheal rings, we will soon come to a point where these rings apparently cease. Now we are at the entrance to the left bronchus and the bifurcation presents itself to view.

Much easier to miss are the openings of the bronchi to both upper lobes. Here also it is the rule to give a lateral direction to our tube to find these structures. We need only introduce our tube 1 cm. to 1½ cm. at most, when almost on the same level as the bifurcation of the trachea we come upon the somewhat rounded rectangular bifurcation of the entrance to the right upper lobe. On the left side the main bronchus divides first at a much greater depth into its two principal branches, which latter soon again break up into their roots. To see the entrance to the bronchus of the upper lobe on this side we must direct the tube forwards and outwards, after first noting the bifurcation to the lower lobe, into which the tube naturally first enters.

In what position shall we place our patient? For an examination of short duration I generally prefer the sitting position, if salivation is not too profuse. For all other cases the lateral or dorsal position is more comfortable for patient and examiner. With the exception of very small children, who can be held vertically by a nurse or assistant, only one of these positions comes into question in general narcosis. It easily happens, especially with children, in the dorsal position with the overhanging extended head, that the cervical part of the spine is too much flexed—a condition which must be avoided. The patient who is not anaesthetized considers it very repugnant that the secretions gather in the naso-pharynx, and later run out through the nostrils over the eyes. At the termination of the examination a basin must be at hand into which the now erect sitting patient can expectorate and blow out the collected secretions, often quite a considerable quantity. After the examination it is well to put anaesthetized patients in the lateral position. The carrying out of the whole examination in the lateral position—quite possible also on anaesthetized patients—has the great advantage that the secretions which collect in the buccal cavity can always run out over the lower angle of the mouth.

To successfully combat the enormous secretion, which, in those cases with extensive bronchiectatic cavities, can render the examination quite unusually difficult, two means are at our disposal. First, for half an hour to one hour before the direct examination we have the patient assume the lateral position on an incline in such a way that the hips are highest, and the healthy lung lies below the affected one. In this way a spontaneous outpouring from the cavities occurs, and one is at times astonished at the great quantity of sputum which is coughed up in a short time. Secondly, when the bronchiectatic system has been as far as possible emptied, then we examine the patient in the sitting position because in this the flowing out of secretion from the cavernous cavities is either completely stopped, or at least rendered very difficult.

I now pass to the second and more important part of my paper—namely, the difficulties and dangers that arise in practice. We divide these into those due to (1) anatomical, (2) psychical, and (3) pathological conditions. Under anatomical conditions we have first to consider the influence of the age of the patient. The smaller the individual the smaller must the tubes be. While, on the one hand, this entails a smaller field of view and more difficult orientation, still, on the other hand, the root of the tongue, with its epiglottis, owing to their soft nature, can be easily pressed forwards without the use of practically any force.

When we have learnt to explore the small larynges of children, the location of the anterior commissure, the passage of the glottis, as well as the inspection of the lower air passages, offer no special difficulties. To protect the small patient from injury we must be careful not to use too large a tube, as, when the small glottis has been subjected to too great pressure, or has been injured by the introduction or withdrawal of the tube, there very readily develops, after the tube's removal, an acute laryngeal stenosis, which may necessitate a tracheotomy. The view advanced by some authors that a child's larynx will tolerate a certain dilatation seems to me, therefore, very questionable.

With adults a very well developed and complete set of teeth in the superior maxilla, as well as a short neck and a high grade of muscular rigidity, offer special obstacles to the direct examination. In such cases we must press the tube well over into the angle of the mouth, and even then it is still often necessary to exert a quite strong pressure on the epiglottis and root of the tongue, in order to see the larynx. The location of the anterior commissure can sometimes be so difficult that Brünings has invented a special instrument, which he calls "counter pressure autoscope," for the inspection of this part of the larynx. When the tip of the tube spatula has approached the anterior part of the vocal cords, as is possible without too much pressure on the root of the tongue and epiglottis, then the larynx, which is drawn somewhat away from the vertebral column, is subjected to a counter pressure from in front through a plate connected by a steel ratchet-toothed arm to Brünings's hand lamp. Through the combination of pressure from within and without the exposure of the most anterior part of the glottis is successfully obtained. Killian has quite recently perfected an exceptionally simple instrument, which possesses the same advantage. It is the so-called angle-spatula, which, as you can understand, must exert much lighter pressure on the soft parts of the tongue than either the Kirstein or tube spatula. Should the anterior commissure not be located with this instrument alone, then a slight pressure with the finger on the anterior surface of the larynx suffices to effect the desired result. The soft pressure of the finger is more agreeable to the patient than the pressure of a rigid steel plate.

More important still than the question of the exposure of the anterior commissure is the question of the possibility of direct tracheo-bronchoscopy under such difficult conditions as just mentioned.

If we wish to inspect the right bronchus, we introduce the tube from the left angle of the mouth, and if the left bronchus from the right angle of the mouth. In rare cases, where besides large teeth there are also present a short neck and muscular rigidity, it is impossible to move the

tube, when once it is in the trachea, across the upper incisor teeth from one angle of the mouth to the other.

For the success of the examination, the psychical condition of the patient is of great importance. The majority of adults have sufficient intelligence and will power to put up with the unpleasantness of the cocainization and direct examination. Bright and well-trained children behave equally well, when once we have won their confidence and shown them that the examination will not cause any great trouble or pain. The examination of a patient by force I consider absolutely wrong. It is well to have some prearranged signal with the patient, such as raising the right hand, by means of which he can notify us to remove the tube, which we must implicitly follow. Anxious patients are inclined to give this signal before they have felt any pain whatsoever, but by words of encouragement we can generally win their confidence, so that in one or two trials they succeed in following the wishes of the doctor. The co-operation of the patient, such as the restraining of a fit of coughing at a very critical moment, is of incalculable aid for successful work, particularly in very difficult cases. If we cannot count on such qualities in our patient, and if we have not the necessary time at our disposal to prepare him by repeated exercise, then in the case of adults a hypodermic injection of morphine, or in extreme cases general narcosis for either adults or children, will remove all psychical difficulties.

Authors differ from one another in the anaesthetic used. Personally I always prefer chloroform to ether. Before the narcosis we can with adults employ without greater danger remedies to lessen reflex irritability or profuse secretion, such as bromide preparations, codeine, morphine, or atropine.

Even with general narcosis one must not omit local anaesthesia with cocaine 10 to 20 per cent. solution, to which some preparation of suprarenal may with advantage be added. If, for example, we have to deal with the extraction of a foreign body from a bronchus, we must cocainize the glottis, the bifurcation of the trachea, and also the immediate neighbourhood of the foreign body—a region which usually shows a high degree of reflex irritability. The cocainization of this last-mentioned area is best carried out by means of Brünings's bronchial spray apparatus. Here let me strongly warn you against the danger of the cumulative action of various poisons in children, particularly young children. Morphine and atropine are to be entirely avoided, cocaine to be used as sparingly as possible, or, better, to be replaced by such new local anaesthetics as alypin, novocain, etc. According to general experience, an oft-repeated deep chloroform narcosis for a short time is not nearly so dangerous in children as the too free use of cocaine or the simultaneous employment of several toxic drugs.

Before the use of the direct method it is above all of the greatest importance to have as thorough a knowledge as possible of the general state of the patient and the local pathological conditions. An exact anamnesis, which often gives us very essential points, is to be followed by an examination of the inner organs by all the modern means at our disposal, especially the Roentgen rays, particular attention being paid to the condition of the heart, vessels, kidneys, lungs, and their secretion.

Advanced cachexia, marked arterio-sclerosis—especially in combination with sclerosis of the coronary arteries—definite signs of an aortic aneurysm, severe valvular or myocardial disease, contraindicate the use of the direct method of examination, except for some very special reason. Where, for example, we have definite signs of an aneurysm of the arch of the aorta I consider it absolutely unallowable to use the direct method in order to obtain an exact knowledge of the local situation of the prominent part of the aneurysm in its relation to the tracheal or bronchial wall. The examination of the larynx, trachea, as well as the beginning of the bronchi with the laryngeal mirror should be much more regularly practised than is often the case to-day. The more frequently and more carefully we perform this method, the more often we will be able to dispense with the direct method, more especially when mere diagnosis is our object. Local therapeutic measures—as the removal of tumours and foreign bodies—can in the deeper parts only be carried out by the direct method. The direct is likewise the only possible method for the inspection of the lower air passages, as also for diagnostic purposes in children.

Pieniazek and Körner have called attention to the fact that the examination of children with tubes can, under certain conditions, have fatal consequences. Pieniazek lost a child whilst doing direct upper tracheoscopy, and a case of Körner's died of asphyxia before the direct examination had even begun, the head of the anaesthetized child only having been stretched on the table. Pieniazek found by the *post-mortem* examination that the cause of this regrettable occurrence was an extensive cold abscess of the three lower cervical and the first thoracic vertebrae over which the trachea and beginning of the bronchi were actually stretched, and at the same time compressed from behind. Similar pressure conditions may also have been present in Körner's case, on which, however a *post-mortem* examination was not performed. The trachea is generally able to move from one side to the other when pressure is exerted on one side alone, but should a large tumour or abscess press directly from behind on the trachea, especially at the level of the thoracic entrance, then the trachea will be crowded up against the manubrium sterni and unable to move towards either side. Is there any way possible of guarding against such occurrences? I think there is. For, first, the *x* ray picture can reveal with certainty such large abscesses, and, secondly, by simply bending the patient's head backwards we can exactly observe whether or not the dyspnoea increases.

Under what conditions is tracheotomy to precede the direct examination? According to my mind, severe and dangerous dyspnoea, more especially when it has already existed for some time and the patient is exhausted, is an absolute indication for tracheotomy. And it is quite indifferent whether this dyspnoea be due to a narrowing of the lumen by pressure from without or by the pressure of a foreign body or tumour in the larynx, trachea, or bronchi. Artificial respiration, the use of pure oxygen gas, and in cases of threatening heart failure hypodermic injections of camphor or caffeine, may exceptionally help us to tide over a critical moment. If the stenosis disappears after the tracheotomy, the obstruction to respiration is, as a rule, situated above the wound, in which case the direct, or even the retrograde, laryngo-tracheoscopy is indicated. Where, on the other hand, no improvement occurs, then we must direct the tube into the lower air passages.

Certain other indications are to be added to those general ones when we especially consider foreign bodies. Unusually large ones with sharp prominences or hooks—for example, a dental plate—will be best removed from the bronchus through a tracheotomy wound, because otherwise there is the danger that such a foreign body may become stuck in the subglottic space or larynx, or, at all events, cause severe injuries of these parts, demanding either an emergency or perhaps secondary tracheotomy. Before every extraction of a foreign body we must ask ourselves if its presence has not resulted in the temporary or permanent loss of function of the lung of one side, and if there is not the danger of complete cessation of respiration during its passage through the trachea and larynx, or of it slipping from the extracting instrument and being sucked into the bronchus of the only functioning side. In a further category of foreign bodies—namely, soft beans—I would especially advise tracheotomy. It is well known that beans, the aspiration of which is confined almost exclusively to children, become not only softened, but also swollen after a few hours in the air passages. There is the danger, therefore, that in the attempt at extraction with upper bronchoscopy the foreign body either crumbles—in which case we have not only one but a whole series of foreign bodies to remove—sticks in the subglottic space, or finally is either whole or in parts sucked into the bronchus of the up to now free lung. Though in a few cases it has been possible to remove the bean through the natural ways, still even here the majority required a secondary tracheotomy, owing to glottic oedema.

Finally, all foreign bodies which we have failed to remove by upper bronchoscopy are to be treated through a tracheotomy wound. Owing to the great improvement of our instrumentarium and our increased practice, the number of such cases has become relatively smaller. I

would only like to point out that the removal of a piece of bone embedded in easily bleeding granulation tissue, which formerly formed a difficult technical problem in bronchoscopy and therefore often necessitated tracheotomy, may to-day, thanks to the delicate tooth-forceps of Brünings, be easily and successfully accomplished in the first attempt with upper bronchoscopy. We need only seize it by a point or edge protruding from the granulation tissue, and its extraction is certain; the bleeding from the granulations, which in former days caused such unspeakable difficulties, occurs now only after the foreign body has been removed, and consequently does not interfere with the actual operative procedure. For the finding and extraction of needles we use special instruments, with some of which it is possible to break *in situ* a needle that is sticking crosswise in the lumen of a bronchus. Collar studs, which usually lie in the bronchus with their head downwards and base upwards, can be much better removed to-day through the natural way by the Morton and Brünings forceps constructed specially for these foreign bodies. For hollow bodies there are a whole series of valuable instruments at our disposal, which, by expanding, grip the hollow body from within.

In spite of all these new aids in technique there will always still remain a number of foreign bodies which can be successfully dealt with only by lower bronchoscopy.

Just a few words about the treatment of foreign bodies impacted in and behind a stricture. The dilating instrument may be introduced right up to, or alongside of, the foreign body, or having pushed the foreign body further down may act directly in the stricture itself. The two first methods are only seldom attended with success; the third, on the contrary, usually succeeds because the bronchus is as a rule dilated behind the foreign body. But after the displacement of the foreign body and the greatest possible stretching of the stricture, the extraction may still be impossible because immediately after the withdrawal of the bougie the cicatrized bronchial wall contracts again. The removal must therefore be effected immediately after the use of the bougie, or better still simultaneously with it. Brünings has made this possible by the construction of his handless seizing instrument and concentric hollow metal bougie. The well-known case of Killian and Brünings, in which bronchoscopic technique achieved one of its greatest triumphs, was treated by these means. Here they had to deal with a tack having a large, flat head, with a sharp border that was firmly lodged in a stenosed right bronchus. After repeated dilatations its removal was accomplished without any injury to the surrounding parts by a specially-constructed tube, the end of which could spread open and then completely covered the head of the tack. This case is of further interest for the reason that after the extraction a systematic dilatation of the bronchial stricture was successfully carried out.

II.—D. R. Paterson, M.D., M.R.C.P.,
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It is not without interest to recall that the examination of the food passage was almost a worn and threadbare subject before the feasibility of the exploration of the respiratory tract was even thought of, but without the extraordinary advance in the science of bronchoscopy which we owe to the Freiburg school the technique of oesophageal work would not be the safe and simple procedure it is to-day. At first sight, on finding that practically the same instruments take part in the technique of both examinations, it might be supposed that the procedure was also identical, and, indeed, to an onlooker, the difference may not be very obvious. But a little reflection will show that the problem must necessarily vary to an important degree in the two passages. On the one hand, in the trachea and bronchi, we have a semirigid tract; in the gullet a soft muscular canal. In the latter we have to overcome the sphincter-like action of its mouth, a procedure which is often disconcerting. In the larynx the rigid vestibule acts as a guide into the trachea; the hypopharynx, on the other hand, is lax and unhappily permits the point of a tube to wander. After passing through the cricoid orifice the cervical part of the gullet is still a closed passage in its upper section, only expanding in its lower to a wide cavity in the thoracic region, and finally there is a second, though less troublesome, constriction to be negotiated at the lower end. It goes without saying that this contrast in physical structure in the two passages counts for something in their operative technique.

It may be laid down as a good rule that a careful examination should be made of the bodily organs generally before proceeding with a direct examination of the oesophagus. I am afraid this has not been carried out as regularly as it ought to be, since control by inspection has happily rendered the passing of the tube such a safe procedure; but it is nevertheless desirable, especially where there is any suspicion of aneurysm. In this case also, and where there is a question of a foreign body, an *x* ray plate should be obtained. The indirect examination of the hypopharynx with the aid of the laryngeal lever, which we owe to Professor von Eicken, is especially valuable, affording, as it does, a survey of a region which is so frequently the seat of the disease.

In the matter of better lighting there has been a very definite advance, and the improvement in the electric lamp has coincided with real progress in this department of endoscopy. Here, however, I would put in a plea against abandoning means of illumination which are often available and are still, in many ways, quite satisfactory for our purpose. It ought not to be forgotten that the ordinary incandescent burner will give a good view through an 11 or 13 mm. tube—quite sufficient, for instance, to enable the relations of a foreign body to be made out. This is useful to bear in mind when we place ourselves at the mercy of electric light vagaries.

Of the forms of electric illumination I have very little experience of the distal lamp, in which the light is carried at the extremity of the tube. It has, of course, obvious disadvantages, and the contention that the proximal lamp is just as liable to get smudged by secretions is more true of the air passages than the gullet. But the advantage of a steady light close to the field of observation is very great, and many workers who can show brilliant results have done so by the use of it. I need not go into the merits of internal and external lamps, but I hope the discussion may serve to define the conditions in which distal illumination is serviceable.

Most of us in this country employ the outer lamp fixed on the forehead, as in the Kirstein, or attached to the tube, as in the Brünings electroscope. Each system has its peculiar merits, and speaking generally the two forms may be said to supplement each other. I make use of both to a considerable extent, and would not willingly be without either. For examination of the hypopharynx and the mouth of the gullet the lamp attached to the tube is admirably adapted. It is convenient, can be readily applied, thus saving time, and gives an excellent fixed light which illuminates brilliantly the longer tubes. Its disadvantage—and this is a real one, it seems to me—shows itself during operative manipulation. Here it is distinctly in the way, and the introduction and withdrawal of instruments can only take place with the light switched aside, a procedure which deprives us at the time of ocular control. Certain modifications have been suggested, but none that I have seen overcomes satisfactorily the drawback. For this reason I still largely use the Kirstein lamp. It takes perhaps a little more time to get into the way of managing it, and requires more practice to get the best result from it, but it allows more freedom in operating, a matter of no small moment when working in a restricted field. From personal experience I would recommend the observer to make himself conversant with the use of both forms of illumination, and he will find it easier to circumvent difficulties which may be very disconcerting.

In the inspection of the food passage we have a choice of two methods of introducing the tube—either by sense of touch guided by a pilot or under the control of the eye. Much valuable work had already been done by von Mikulicz and von Hacker before the ocular method became practicable. Indeed, I believe it was the fortune of Kirstein in his early attempts at inspection of the hypopharynx and oesophagus to accidentally pass a tube for the first time through the larynx, though we owe it to the genius of Killian that we are to-day discussing the technique of bronchoscopy. Killian's short tube spatula revolutionized the clinical examination of the gullet. Its beaked end made its passage through the introitus more easy, and we acquired a more exact method, controlled by the eye instead of by the sense of touch. It is unnecessary

to enlarge upon this important advance, for although the mandarin or pilot has still its place, experience has shown that its use must be restricted within definite limits.

I take it that it may be laid down as an axiom that at least all preliminary examination of the œsophagus should be carried out under the control of sight. Only in this way can the observer avoid the pitfalls which beset him. It is applicable to all cases and is the only one permissible where the lesion is high up, at or immediately below the mouth of the gullet. In the latter case the passage of the tube by means of a pilot is not unattended with considerable risk, and it is on record that even in the hands of an experienced observer like von Mikulicz, it led on two occasions to perforation.

It was the custom of many of the older observers to endeavour to locate the seat of lesion by the preliminary passage of a bougie. Fortunately the introduction of the ocular method has rendered this superfluous, and it would hardly deserve mention here did not Guisez and Philip at the recent French Congress insist that œsophagoscopy should always be preceded by the passage of a flexible sound. Undoubtedly at times this yields useful information, but it entails subjecting the patient twice to a procedure which, to say the least, is not an agreeable one. This is an aspect which has to be borne in mind if we are to extend the practice of œsophagoscopy, and it ought to be the aim of all workers in this field to obtain from a single passage of the tube all the data possible. It should not be lost sight of that the examination of the gullet always involves some degree of forcible dilatation, which is not without discomfort to the patient.

The use of some form of anæsthesia is, of course, absolutely necessary. Cocaine, applied locally, usually answers the purpose, and I find a solution of 10 per cent. quite sufficient as a rule. The application is best done by means of a cotton-wool carrier, and should be made to all the parts of the pharynx with which the tube is likely to come into contact, special attention being paid to the epiglottis and mouth of the gullet. Spraying I have found unsatisfactory, and submucous injection I have no experience of. For children and nervous apprehensive people, and where the procedure is likely to be painful, a general anæsthetic cannot be done without. Sometimes morphine is very helpful, but, in general, chloroform is necessary. Many of the patients who suffer from gullet trouble are already feeble from long-standing disease, and where a general anæsthetic is called for, I have had ether administered by the open method, and have found it satisfactory. The increased secretion of mucus which it sets up and which is so disturbing in the air passages, causes little inconvenience here. It is a good plan to combine local with general anæsthesia, as the latter need not be pushed so deeply.

For an ordinary examination all will agree that it is most convenient to have the patient in a sitting position. But this can be used only for a short séance, say of five to ten minutes, since the mucus excited by the presence of the tube collects and obscures the field or overflows into the larynx and produces cough. This may be overcome by resorting to the back or side position, and it is largely a matter of individual experience which is chosen. In general anæsthesia, I take it the back will always be adopted. With a local anæsthetic patients prefer, on the whole, the left side as being more comfortable. To some extent the selection will depend on the condition of the teeth of the upper jaw. If these are good, the back position with the shoulders close to the end of the table is preferable, as the head can be moved backward freely. Whatever position the patient assumes, the operator should see that he himself takes up an easy attitude. This can be arranged by the patient's stool being conveniently low, and the table of such a height as to permit of a comfortable seat for the operator.

The help of a trained assistant counts for much. He is able by appropriate manipulation of the patient's head to facilitate the introduction of the tube and to assist its passage downwards. The patient should be instructed to leave the head perfectly free, so that all movements may be made by the assistant. The patient can assist materially by breathing regularly and not holding himself stiffly, and this should be explained beforehand so as to enlist his co-operation.

By whichever method the tube is introduced, the problem is the same—to pass it through the crescentic orifice, and to convert the curved food passage into a straight one. A cardinal rule is to keep strictly to the middle line. With the ocular method, by making use of the forefinger of the left hand to hook forward the tongue and taking the interarytenoid region as a guide, the tube is slipped over it. If it be now tilted forward, the hypopharynx is opened up, and a view of the contracted gullet mouth is obtained. A little firm pressure with the point of the tube usually suffices to overcome the reflex contraction and to allow the tube to pass. Where the lip of the introitus projects and the point impinges on it, moving the head often manipulates it through. It may be necessary to hold it in position for a short times or to rotate it, before the mouth relaxes. Sometimes getting the patient to make a swallowing movement induces the desired relaxation.

Where the lesion is known to be some distance below the cricoid orifice, introducing the tube by pilot is a safe and convenient method, especially for long tubes and those of large size. Practically the same rules guide us as in the ocular method. The bougie glides along the posterior pharyngeal wall, keeping the middle line, into the hypopharynx and œsophagus. When the tube has passed the gullet mouth the pilot is withdrawn, and the further examination takes place under the eye.

Once past the cricoid cartilage the tube travels easily through the closed upper cervical part, meeting with no resistance, and reaches the open lower cervical part, when we are able to see a considerable way down the gullet. The aortic narrowing with its prominent pulsation may be made out, and immediately below it the bronchial constriction formed by the pressure of the left bronchus on the anterior wall. These are not of much interest, and do not compare in practical importance with the diaphragmatic constriction, which, like the cricoid orifice, is guarded by muscular mechanism. The oblique course of the gullet downwards and to the left should be borne in mind, so that the proper inclination be given to the tube as it reaches the deeper part. This is most readily done by carrying the upper end of the tube in the angle of the mouth on the right side—a manœuvre which gives to the point an oblique direction to the left. For the examination of the lower part the inner telescopic tube saves the discomfort of having to introduce a longer one. Care has to be exercised in pushing it down. If it appears to stick, this is often due to faulty direction, which can be circumvented by suitably varying the body position. It is not infrequently a matter of no small difficulty to pass it through the hiatus, and several attempts may have to be made before success is attained.

The withdrawal of the tube often furnishes useful information. This should be done slowly, the mucous membrane as it is left exposed by the receding instrument being carefully scanned and its condition again noted. This serves to control the inspection made during introduction, and the parts about the mouth of the œsophagus may be seen more leisurely. In leaving the problem of the introduction of the tube, it may be well again to emphasize the exercise of due circumspection and care. Where ulceration exists about the entrance of the gullet—a condition commonly calling for examination—undue force may be attended with disastrous results, and a recent case warns us that even with the ocular method perforation may take place.

With regard to our choice of a tube, the question of size comes into consideration. The usual sizes—9, 11, and 13 mm.—are sufficient for ordinary inspection purposes, but there are circumstances in which larger tubes are desirable, and, indeed, indispensable. The cricoid narrowing is usually taken as the measure of dimension, and a tube which passes it will travel down easily. According to Starck, this orifice is 23 mm. in the transverse direction and 17 in the antero-posterior. This gives a margin in which the size of the tubes may be increased, and I have passed them up to 18 and 20 mm. Of course, the larger tube means greater dilatation, and can be used only under a general anæsthetic. It can be readily introduced by the mandarin or pilot. In dealing with an impacted foreign body the advantage of a large tube is obvious. From Burger's statistics we know that 90 per cent. of foreign bodies stick in the upper half of the gullet and 60 per cent. above the sternal notch. The majority are found

just below the entrance, as if they had just managed to squeeze through, but not infrequently they are impacted a little lower down between that and the sternal notch. If a preliminary examination has been made by a smaller tube and extraction presents difficulty, a larger tube with the patient under an anaesthetic will give more room for inspection and operative measures.

It has been the custom of recent years in this country to work very largely with the oblique-ended or beaked tube. It is more easily introduced, but for work in the gullet it has to my mind some drawbacks which are worthy of consideration. In the larger sizes the beak is quite 1 in. long, and in its passage down the point travels in advance of our field of view. I do not agree that pathological changes are always seen before the point of the tube reaches them. On the other hand, the old straight-ended tube exposes the interior simultaneously, and is in no part in advance of what it is designed to show, and gives all the advantages of ocular inspection. It may be a little more difficult to introduce, but the relations of the foreign body are better made out, and I am sure in attempting extraction it offers a decided advantage. The oblique-ended tube may, of course, be made straight ended by pushing down the inner tube, but this contracts the field of view and of work, and is a sensible disadvantage.

The telescopic tube is admirably constructed for work in the air passages which taper towards the deeper part; but in the gullet, once past its entrance, we have a canal of practically equal width throughout in which large foreign bodies become impacted, and where as much room as possible is required for extraction. For operative work, therefore, I prefer a large size, straight-ended tube, and any one who compares the view seen through it and through the beaked tube as they are pushed down will appreciate the difference. I am inclined to think that some of the difficulties in extraction of which we hear about would not occur with a straight ended tube. The principle of the telescopic instrument is so eminently practical, that if it were adapted to have the inner tube beaked and the outer straight we would have the ideal for the oesophagus. It would combine the advantage of the narrow pilot with the accuracy and safety of ocular control. I show you an instrument which carries out this principle.

For the removal of excessive secretion Killian's saliva pump answers the purpose admirably. Its action is greatly assisted by the horizontal position of the patient. Passing the metal nozzle should be done carefully by sight where an ulcerated surface is suspected, as bleeding, which blurs the field, should be avoided.

Of the accessory instruments, a good forceps is the most important. In the gullet, a soft muscular distensible tub in contrast to the more or less rigid respiratory tract, we, require an instrument to combine lightness with strengthe and to be easily handled. It seems to me, most of the, forceps in use, admirably conceived as they are for the trachea and bronchi, do not possess sufficient power, and are not always well adapted for the removal of a foreign body like an impacted denture. An ideal instrument ought to give more control over such a body without losing any of the delicacy in the manipula'ion. For years I have worked with the crocodile pattern forceps, which I have had made in various lengths. It is light, of sufficient strength, and having a familiar form of handle it is well under the operator's control. Moreover, it can be quickly introduced and withdrawn. Though not available for deep-seated work, fortunately 90 per cent. of all foreign bodies are within its grasp. It is a convenient cotton-wool carrier, and does good service in mopping the field of operation.

I need hardly say much about special difficulties of technique. In some individuals passage of the tube over the cricoid induces disturbance of respiration. Using a smaller size may forestall this If it fails, it is advisable to defer the examination to another occasion, when success may crown the effort. Rigidity of the cervical spine is a troublesome obstacle in old people; but by approaching from the angle of the mouth the passage is rendered easier.

To sum up, the best guides in the technique are the trained eye and the practised hand of the observer. These can be acquired only by experience, and when we make the direct examination of the food passage part of our regular routine, it will take its proper place as a safe and valuable procedure.

III.—William Hill, B.Sc., M.D.Lond.,

Surgeon for Diseases of the Ear, Nose, and Throat, St. Mary's Hospital, London.

Since Kussmaul first made a direct examination of the gullet, elongated tubes or cylinders of the same calibre throughout their entire length have been almost universally employed for endoscopy of the oesophagus, trachea, and bronchi; and when extension tubes have in addition been used, they also have been constructed on the cylindrical principle.

I have found, however, that, as far as the larynx and gullet is concerned, elongated funnels possess marked advantages over tubes of uniform calibre. At the present day endoscopes attached to Brünings's hand lamp are usually employed, but, owing to the fact that the hand lamp is attached centrically to the shank of the endoscope, there is no room for the passage of swabs and instruments by the side of the lamp down the endoscopic tube without displacing the hood and thus shutting off the light; moreover, the proximal end of the tubular endoscope being of the same narrow calibre as the distal end, the handle of the forceps or other instrument lies in the centre of the line of vision, and much obstructs the view in the narrow tube. This equally applies to Brünings's new pattern hand lamp, in which there is a slot in the mirror to facilitate the passage of instruments, but in which the view is still considerably interfered with.

With a funnel-like endoscope the lumen of the proximal end of the instrument has a sectional area more than double that of the distal end, and by an eccentric attachment of the hand lamp there is ample space for the passage of the instruments, sponge-holders, etc., *by the side* of the hood of the hand lamp without cutting off the light. It is also obvious that as forceps, etc., can be passed down close to one side of the funnel the inserted instruments, except at their distal ends, are not in the centre of vision, and a clearer view is therefore obtainable of the working of the distal ends of the instruments. Although the distal extremities of endoscopes are necessarily limited in size according to the dimensions of the area examined, be it gullet, trachea, or bronchus, there is no anatomical bar to the proximal end of endoscopes being considerably larger, sufficiently large in fact to permit of the hand lamp being attached eccentrically, and of instruments being passed by the side of the hood without disturbing the illuminating apparatus. The immense gain in simplifying technique can only be fully appreciated after actually employing a funnel-like endoscope.

I first made use of this principle of the endoscopic funnel when I designed a new pattern operating laryngoscope, which I showed before this Section at the Belfast Meeting last year. That instrument was not a complete funnel, but had a lateral slot to give additional facility in the manipulation of large forceps, etc. Following on this I later designed elongated funnels on the same principle for employment in the gullet. These were at first complete funnels; but in order to facilitate the removal of the oesophagoscope after placing a radium apparatus (with an elongated stem) within malignant strictures, I resorted to the principle of the lateral slot, as in my laryngoscope. This pattern endoscope also greatly facilitates many other endo oesophageal procedures, such as the dilating of strictures by graduated bougieing, the removal of portions of new growths, and most especially the extraction of foreign bodies. For example, instead of needing a special apparatus for the closing of an open safety pin in the gullet before attempting extraction, with one of my slot oesophagoscopes it is quite easy to draw the pin point of the safety pin within the lumen of the endoscope with forceps, where it cannot catch the mucosa; the jaws of the forceps are then transferred to the other limb of the safety pin, traction on which tends to partially shut it, and it can then be drawn up through the endoscope with ease and safety. The advantage of being able to draw the sharp point or jagged edge of a foreign body within the protecting groove of the slotted endoscope will be obvious to all.

The distal end of my endoscope is bevelled; the great advantage of being able to pass the instrument throughout its whole course under vision, as in Brünings's

tube spatulae, will be generally admitted, more especially by those who had previously used tubes of Killian's type, where a mandarin or guide was usually necessary in traversing the deep pharynx and cervical oesophagus. These are the dangerous areas where perforations are occasionally made, but with a bevelled-ended instrument passed under vision this calamity should not happen, more especially if the patient be directed to swallow when passing the post-cricoidal narrowing and directed to cough in order to open the lumen when the mouth of the oesophagus is reached, and whilst traversing its collapsed cervical portion. If difficulty is experienced in passing the instrument on account of stricture, from whatever cause, in the post cricoidal pharynx and upper oesophagus the instrument should not be passed onward until the lumen has been dilated up by graduated bougieing.

The passage of the oesophagoscope has been described as an easy procedure, but it must never be forgotten that it is equally easy to perforate the gullet, and in some instances it is probable that neglect of cautious instrumentation in the region of the mouth of the oesophagus has led to those regrettable incidents which have a tendency to bring oesophagoscopy into disrepute. I have heard of six cases of oesophagoscopic perforation of the gullet in this country alone in recent years, with three deaths, so that a word of caution is not out of place.

It will be seen that the cross-section of my oesophagoscope is distinctly elliptical at the proximal end and nearly circular at the distal end, and the reason for this and for the long diameter being transverse is sufficiently obvious.

I consider extension tubes a needless complication in oesophagoscopic technique; moreover, they are liable to break at the spring and to clog in the groove after frequent hospital use and sterilization. Brünings's two smallest bronchial spatulae with extension apparatus are certainly useful in dealing with the lower air passages of infants and small children, but for older patients I prefer the slot funnels.

Most endoscopes are made of brass, copper, or German silver, and are liable to dent if dropped; I have therefore had my endoscopes made up in steel. The following table gives the approximate dimensions of the complete endoscopic funnels, which, it will be seen, are made in three lengths:

Length.	40 cm.	35 cm.	30 cm.
Proximal diameters... ...	24 × 16 mm.	20 × 16 mm.	20 × 16 mm.
Distal diameters	13 × 11 mm.	11 × 10 mm	9·5 × 8·5 mm.

The slot funnels correspond in size with the complete funnels of 35 and 30 cm. in length. It is advisable to have two of each with a right-handed and left-handed slot respectively, that is, four in all. These new pattern oesophagoscopes have now been in almost daily use at St. Mary's Hospital for nearly a year, and those of my colleagues who have employed them are unanimous in testifying that they greatly simplify endoscopic surgical procedures in the gullet.

There are other points of oesophagoscopic technique I should have liked to have alluded to, but I hesitate to take up your time any longer.

DISCUSSION.

Dr. StClair Thomson (London) said the opening address of Professor von Eicken was noteworthy from the fact that he was philosophic enough to discuss the occasions when the direct method could be dispensed with. It was rare for the propagandist to know of any time or occasion when his method was not universally applicable. He would like to know whether Professor von Eicken used in his clinic for such procedures as removal of a neoplasm from a vocal cord, or the application to the larynx of the galvano-cautery, the old, indirect method. The speaker had lately maintained in the Royal Society of Medicine that the indirect method should first be used in all cases, and that it was the simplest, speediest, and most pleasant for the patients in the hands of all who had acquired the average dexterity. The direct method was only to be called in as a secondary help. Even the direct method in cases which might have been thought the most pressing, was not always successful. He referred particularly to lesions in the anterior commissure. One case in which the beak of the Killian tube prevented access to a minute growth in this region was easily and successfully operated on by the indirect method with the help of Horsfall's epiglottis lifter. He wished to get further information in regard to electric globes, the use of accumulators compared with a street current, and the most suitable spatula for operating on the papillomata of children. Personally, he still adhered to the fish-tail method inserted in front of the epiglottis. Lermoyez had lately divided the stages of evolution of laryngoscopy into three: the first dated from the invention of Garcia up to the discovery of cocaine. The second period dated from the introduction of cocaine up to the perfecting of the direct methods. The third period was only just beginning, and laryngologists of the present day might congratulate themselves that they were starting on what promised to be a most brilliant third period.

Mr. Waggett (London) urged those who had no extensive experience in the direct method with cocaine anaesthesia to engage the confidence of their patients by undertaking to withdraw the instruments at a prearranged signal made by the patient with his hand. One tap with the hand upon the thigh signified pain in the lips or teeth; two taps indicated the exhaustion of the patient's tolerance. By such means the period of observation was much longer than was the case where the will of the patient and of the operator came into conflict.

Mr. Stuart-Low (London) had learnt much from the excellent scientific addresses they had just listened to. He had found that by warming the cocaine solution he had required to use less of the drug, and thus diminished any danger of poisoning.

Dr. R. Scanes Spicer (London) considered endoscopy largely a question of local anaesthesia. He had used it combined with general anaesthesia for fifteen years in prolonged and difficult examinations and operations in children and adults. He used 20 per cent. cocaine with mops and sprays, but always removed all excess at once with mounted sponges, thereby diminishing the quantity swallowed, which was of no use for the local anaesthesia. He had used combined anaesthesia for over an hour by this method, the principle of application being strong solutions of cocaine on a mop not too fully charged, with free sponging to remove excess.

Dr. Permewan (Liverpool) expressed his admiration for Dr Eicken's paper. He had learnt some of the dangers of the procedure. He considered that Dr. Hill had made a considerable advance in his modification of his instruments. He would regret any loss of dexterity in the indirect method of examination, and was glad to hear Dr. Eicken's views on this point.

Dr N. C. Haring (Manchester) said that the usual lamps used with direct inspection instruments were of 12 volt strength. The ordinary town current might be easily used to light these lamps, by the interposition of a couple of lamps (of the voltage of the town supply) together with a sliding resistance. This apparatus could be made up into a portable box, and lamps of different voltages used with different voltage town supply. He had found hypodermic injection of $\frac{1}{150}$ grain of atropine of considerable use in minimizing the troublesome flow of mucus, especially when the patient was examined under chloroform. Cocaine solution should be used strong—20 per cent. in spirit for preference—and care taken to mop up the redundant quantity. Patients varied enormously in their tolerance of the direct method. He had had cases which had permitted the passage of Brünings's tube into the bronchi without any anaesthetic agent, local or otherwise, having been used. As for work in and about the larynx, the direct method was not, generally speaking, of much use compared with the indirect method. The special advantage of the direct method was in cases where the trachea, bronchi, and oesophagus were concerned, and in such cases diagnosis and treatment could be effected with a certainty that no other methods gave.

Dr. Irwin Moore (London) said that he had used Dr. Hill's instrument for the last six months, and had been pleased with the ease by which it could be introduced and withdrawn.

Dr. Brown Kelly (Glasgow) said that in operating on intralaryngeal conditions in children it was of advantage to have the patient lying on the side with the chin approximated to the chest; manipulations were thus facilitated. He desired to call attention to the rare affection termed "cardiospasm." This for long had been recognized only *post mortem*. The patients suffered and ultimately died from dysphagia. Malignant disease was assumed to be present, but at the necropsy the only change found was dilatation of the oesophagus. Dr. Brown Kelly had a case of difficulty in swallowing, in which on passing the oesophagoscope no neoplasm was found, but the lower end of the gullet was seen to be firmly closed by the smooth mucous membrane. Attempts were made on three occasions at intervals of a fortnight to dilate the stricture. After the last the patient became ill and died in two days. The *post-mortem* examination showed extensive malignant disease of the lesser curvature of the stomach, and that the healthy mucous membrane had in consequence been pushed upwards into the gullet so as to produce the appearance observed; it also proved that the oesophagoscope had not penetrated the wall of the gullet, but that a small perforation at the junction of the healthy and diseased tissue had been produced probably by the pressure exercised. He asked how one might distinguish cardiospasm from closure of the lower end of the gullet due to cancer in the stomach.

Dr. Andrew Wylie (London) had found spasm and secretion a difficulty in his examination of the oesophagus and lower air passages, and he had found that 10 to 15 grains of potassium bromide with 3 minims of tincture of belladonna given four times daily for three days prior to examination greatly obviated this difficulty. The former was useful also when a general anaesthetic was employed.

Dr. J. H. Bryan (New York) said he had been greatly interested in the improvement made in the instruments for the removal of foreign bodies from the upper air passages. If he had had the triangular spatula he probably would have succeeded in passing the instrument into the larynx in the case the President referred to. The following was a brief history of the case. A child, 6 years of age, had sucked a grain of corn into the bronchial tubes, and after an interval of a week came under his observation in a very critical state. In attempting to pass the old style spatula he found it was impossible owing to the intense traumatic swelling of the whole laryngeal cavity due to the foreign body sticking in the subglottic region. During the manipulation of the instruments the child stopped breathing, and he did a rapid tracheotomy and resorted to artificial respiration which revived the child. During the forced respiration the foreign body made several excursions past the tracheal opening, and during one of these he seized it with the forceps, thus relieving himself of the necessity of introducing the bronchoscope through the tracheal opening.

Dr. Speirs Kirkland (Sydney, N.S.W.) pointed out that bronchoscopy was not only of use in the diagnosis and extraction of foreign bodies, but also as a means of observing and elucidating conditions which were still *sub judice*, such as asthma. He had observed the bronchi contract during inspiration in cases of asthma, and in this case there was no apparent oedema of the mucous membrane. Another condition which called for remark was the great tolerance of the patient to cocaine where it was introduced into the respiratory passages only. Large quantities of a 20 per cent. solution could be injected and sprayed into the bronchi without producing any sign of intoxication.

Dr. Walker Downie (Glasgow) said that in the successful use of direct laryngoscopy there were three points of great importance; first, they must have the patient's full confidence: secondly, the examination must be made with the greatest gentleness; and thirdly, the anaesthesia should be as nearly complete as possible. The relief of pain and prevention of spasm might in most cases be successfully accomplished by the administration of bromide of potassium for two or three days prior to their examination, and the local application of a 15 per cent. or 20 per cent. solution of cocaine at the time of the examination. The source of light might be taken from the street current passed through a transformer.

Mr. Thomas Guthrie (Liverpool) asked Professor von Eicken whether he had found the metallic filament lamps of any value for this method, or whether the carbon filament lamps were still indispensable. He wished to say also that, although his experience was small, he would corroborate what Professor von Eicken had said with regard to the superiority of the Kirstein lamp attached to the forehead, over the Brünings lamp fixed to the tube, in removing papillomata from the larynx in children.

Dr. Donelan (London) pointed out that the suggestion to use bromides for subduing undue irritability in some cases was by no means new, having been used as a routine preliminary to laryngeal examination in pre cocaine days. He hoped the safe and well-tried indirect method would not be lightly set aside by any one. Reference had been made to the great skill of Morell Mackenzie in the indirect method. As one intimately associated with Mackenzie's private work, he had known him to regularly practise with a phantom larynx, or even at the removal of small objects from the bottom of a dice-box by the indirect method. If the new generation had similar perseverance, they would find there was little they could not accomplish in the examination of the air passages and operations therein.

The President said that in infants the larynx was so soft and small that a tube in the oesophagus might easily stop respiration. He advocated turning the child on its side and pushing up its larynx, thereby diminishing the distance to the larynx and obviating the lengthening of the neck which occurs with the child lying on its back. He had found the preliminary use of bromides useful, also the sucking of ice for from five to six minutes prior to the passing of the tube.

Dr. von Eicken, in reply, said that he was glad so many had taken part in the discussion, and he himself had received many valuable hints. He thought that Dr. Hill's oesophageal tubes might be useful under certain circumstances, but he himself would not recommend them in all cases, perhaps because he was accustomed to using the Kirstein forehead lamp, which rendered unessential such large-mouthed oesophageal tubes. In reply to Dr. StClair Thomson, he said that the direct method was only indicated when the indirect method failed to give satisfactory information or therapeutic ends could not be attained by it. With regard to the source of light, the connecting apparatus with rheostat for the utilization of the continuous current was now so well made that short-circuiting need not be feared. Nevertheless, it was well to have at one's disposal two sources of light: (1) The continuous current with rheostat, and (2) an accumulator. He recommended as being quite trustworthy Brünings's lamps, in which three thick carbon filaments were compactly arranged in a stellate form, and produced a brilliant spot of light. A warning against the liberal use of cocaine in young people was given, and he welcomed Mr. Stuart-Low's suggestion that warming the cocaine rendered it more easily absorbable and therefore a smaller amount was necessary. The speaker agreed with Dr. Brown Kelly that it was not always easy to differentiate between an infiltrating carcinoma of the small curvature of the stomach and spasm of the cardiac end of the oesophagus. Patients with spasm had often suffered for several years before they came for examination of the oesophagus, and even then did not exhibit marked cachexia. Oesophagoscopy also revealed marked dilatation of the gullet which was not present in such degree in gastric or cardio-oesophageal carcinoma. When in doubt an attempt should be made with the oesophagoscope (possibly under general anaesthesia) to pass the cardiac end, and, as a rule, if carcinoma were present prominent portions of the growth would be seen, and portions could be removed for microscopic

examination. In conclusion, he congratulated the President of the Section for having removed a foreign body from the gullet of a child only 4 days old—the youngest patient on record in connexion with oesophagoscopy.

Dr. Paterson in his reply referred to the usefulness of an expanding lower end to the tube to add to the lumen locally. He thought Hill's funnel-shaped tube of great convenience, and he hoped he could extend the expanding principle to it and thereby add to its usefulness. He considered rapid operation essential, and that twenty minutes should be the limit of any one sitting.

Dr. William Hill, in reply, expressed his gratification at finding that his suggestions for the simplification of technique had been so well received that he had no adverse criticisms to reply to. He was glad that Dr. Brown Kelly had raised the question of cardiospasm. Dr. Kelly had found it difficult to differentiate between carcinoma of the lower end of the gullet and cardiospasm, and asked how this could be done. The question presented no difficulty to him (the speaker) as for the oesophagoscopist cardiospasm had no objective existence. It ought to be obvious that any form of spasm, including cardiospasm, if such a condition really occurred, must disappear when the patient had been placed under a general anaesthetic, and such spasm must also have been abolished in oesophagoscopy under cocaine anaesthesia as a necessary essential for the easy passage of the tube. Out of 47 cases of growth he had examined for cardiospasm he had not once seen it, and he did not believe it existed. He had noticed a tumefaction at the lower end of the oesophagus, which was due to bilious vomiting after the anaesthetic and which might have been mistaken for the oedema of malignant disease.

DISCUSSION ON THE REMOVAL OF THE TONSILS.

OPENING PAPERS.

I.—G. Seccombe Hett, M.B., F.R.C.S.,
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THE ANATOMY OF THE CAPSULE AND ITS CLINICAL SIGNIFICANCE.

The capsule closely invests the tonsil and sends septa into that body. The supratonsillar fossa is included within it, and the blind end of the latter is only separated from the capsule by a very thin layer of lymphoid tissue. Towards the side of the tongue the capsule blends with the connective tissue which surrounds the lymphoid follicles in that situation. This lingual prolongation, usually known as the lingual tonsil, consists of two bilateral portions which in many instances form a direct prolongation of the palatine tonsil on either side, in so much as they can be removed in one continuous strip with the tonsil, when the latter is enucleated, owing to this connexion of the capsule.

The upper portion of the capsule is surrounded by a loose areolar tissue space—the peritonsillar space. There is only a potential space round the lower portion of the capsule, for the muscular fibres of the palato-glossus and the palato-pharyngeus form a close investment to it. These fibres are interlaced with one another and with those of the superior constrictor, and some of the latter are directly inserted into the capsule itself.

Blood Supply.—The vessels supplying the tonsil are the ascending palatine and tonsillar branches from the facial, the ascending pharyngeal from the external carotid, branches of the dorsalis linguae from the lingual, the descending palatine from the internal maxillary. The branches from the facial are the largest, and enter the capsule after piercing the superior constrictor. These reach the capsule in its lower part, and, running upwards, ramify on its outer surface. They then divide into branches, which pass into the tonsil along the connective tissue septa, with the exception of some which pierce the capsule at once to supply the lower portion of the tonsil. The branch from the descending palatine pierces the upper part of the capsule, and supplies the imbedded pars palatina and the posterior pillar. One or two branches of the dorsalis linguae reach the lingual surface of the tonsil, and supply the anterior pillar, the plica triangularis, and the lingual prolongation.

Relations of the Lymphatics.—The lymphatics of the tonsil run in the connective tissue septa accompanied by the vessels to the capsule, which they pierce. After ramifying on its outer surface, they form three to five trunks, which pass downwards and backwards to the point at which the muscles closely invest the capsule, and pierce the superior constrictor with the arterial branches from the facial. They then pass to the superior gland of the median deep cervical chain (jugulo-digastric), which lies on the internal jugular vein under cover of the posterior belly of the digastric. Some of the trunks pass behind, some in front of the internal jugular vein. The lymphatics of the base of the tongue communicate in the sinus tonsillaris with the above set. These supply the lingual prolongation and pass as efferents with the branches of the dorsalis linguae, then with the lingual artery to the deep cervical glands (superiores mediales). The lymphatics of the lingual prolongation and base of the tongue also communicate across the mid-line with the set of the other side, although it is not always possible to inject this anastomosis.

Comparative Anatomy.—The capsule completely surrounds the tonsil in mammalian tonsils, and the supratonsillar fossa is included within it. The simplest form is that found in the tiger and leopard, where the capsule is a test-tube-shaped sac lined with lymphoid tissue, and containing a central channel opening on the lateral wall of the foregut. The tonsil of the giraffe has a capsule very similar to that of the imbedded tonsil of childhood. It would take too long here to enumerate the various mammalian types, but a few of the more recent sections and specimens prepared by Mr. Butterfield and myself are shown here; and should the subject of the comparative anatomy interest any members of the Section, I may mention that the remainder of our series is to be seen in the museum of the Royal College of Surgeons.

Clinical Significance in Relation to Secretion.—During the act of deglutition the palate is raised and pressure is brought to bear on the tonsil from outside, and this acts especially on the movable portion of the tonsil in the peritonsillar space. The lower portion of the tonsil is fixed by the attachment to it of the muscles, and the margins of the opening of the sinus tonsillaris are kept apart by the palato-glossus and palato-pharyngeus. The upper part of the tonsil surrounded by the peritonsillar space alone is movable, and this is pressed downwards and inwards between the pillars by the action of the extrinsic muscles. The openings of the supratonsillar fossa and the crypts, as a consequence, tend to be inverted and the secretion discharged.

In relation to inflammation in chronic enlargement of the tonsil, the capsule does not become increased in thickness or undergo a corresponding hypertrophy. In tonsils which have undergone acute inflammatory changes the capsule is unaffected, but at its junction with the tonsil the pillars may become adherent. A type of tonsil common in adult life is that in which the plica triangularis undergoes a lymphoid proliferation, and then the plica with its lymphoid tissue often forms the main mass of the tonsil. In this case the relation of the capsule is apparently disturbed, although this is not really the case; it is that the plica itself may be mistaken for the tonsil proper. In peritonsillar abscess the supratonsillar fossa is obstructed, consequently the crypts opening into it from the pars palatina cannot drain. Infection spreads to the lymphatics of the capsule, and an abscess forms in the peritonsillar space. The abscess cavity corresponds to the peritonsillar space, and is limited below by the adherence of the constrictor to the capsule. This intimate relationship of the muscle with the lower part of the capsule explains why the tonsillar abscess commonly points in the palate instead of tracking downwards. In a paper in the *Journal of Anatomy and Physiology*, by Mr. H. G. Butterfield and myself, stress was laid on these points, and also on the fact that the supratonsillar fossa is really always intratonsillar, that is to say, it is always surrounded by the capsule of the tonsil. After a quinsy has been developed some days, and the palate is bulging, a probe passed up the supratonsillar fossa may be forced through the capsule, and the pus evacuated by this route. This does not allow of very efficient drainage, and is not to be recommended as

adequate treatment, but it demonstrates that the abscess has not burst through the capsule, either from the supra-tonsillar fossa to the peritonsillar space, or vice versa. After quinsies adhesions form between the capsule and walls of the space, so that the latter becomes more or less obliterated, and if the tonsil is then dissected out an artificial division has to be made instead of the tonsil shelling out. I have found that the adhesions are most marked in the neighbourhood of the anterior pillar (probably at the point where the abscess burst or was opened), and that when this point is passed the natural cleavage plane can usually be entered.

In relation to removal of the tonsils, the treatment of tonsils which are septic or subject to recurrent inflammation resolves itself into one word—removal. But round the method of removal there has raged and still rages a controversy. Let us see whether any points in the surgical anatomy of the tonsil and its capsule bear upon the much-discussed topic: (1) As to whether it is necessary to remove the tonsils with its capsule complete in the treatment of unhealthy tonsils; (2) whether, if the complete removal is necessary, how the anatomic relations of the capsule bear upon the steps necessary to effect this. Tonsils which require removal can be roughly divided into:

(*a*) Those in which the tonsil is deeply imbedded, so that it does not project much between the pillars. In these cases the pars palatina is the most developed and there is a dome-shaped mass surrounded by the capsule projecting into the peritonsillar space. This is the normal shape of tonsil in the first years of life.

(*b*) The tonsil which has proliferated mainly between the pillars and in which the capsule is flattened and the pars palatina is not dome-shaped but has retrograded. This is seen in later life, but may be combined with the previously mentioned condition.

(*c*) The small septic tonsil with little lymphoid tissue, seen often in adult life as a result of the normal atrophy of that period, *plus* cicatricial tissue—a result of old inflammation.

Forms (*a*) and (*c*) do not project and are not easily removed by the guillotine, and are the types in which a dissecting operation or form of enucleation is now generally recommended. As for form (*a*), the embedded tonsil of early childhood is usually removed because of cervical adenitis, and not because of symptoms of sore throat. Now, if removed for this reason—that is, because the tonsils are acting as a source of infection—a complete removal is indicated, for if a portion of the tonsil is left it may still continue to act as a source of infection. As for form (*c*), this is small and tough and often has adherent pillars, and sepsis, not size, is here, as generally, the determining factor, and symptoms of recurrent sore throats render removal necessary, so that here also a complete operation is indicated.

Granted, then, that in these cases at any rate a removal of the whole tonsil is required, it is obvious that the capsule must be removed in its entirety, for it forms the boundary limit of the tonsil and is closely connected with it. Now if we examine a series of tonsils, removed by the guillotine without previous separation of the pillars, we shall find that the capsule has been cut through and consequently some tonsil has been left in a large proportion, and this, whatever the means employed, whether by volsellum traction and guillotine, or by forcing the tonsil through the guillotine ring by pressure from without. The examination of tonsils removed by the guillotine will demonstrate this. It has been urged that the failure to remove the tonsil is due to the lack of practice of the operator, but I have collected a large series removed by experts on the staff of our leading special hospitals, and the result has been that very few tonsils thus removed have the capsule complete. Further, in some cases where it has been effected without previous separation of the pillars, I have seen severe haemorrhage, whereas by a properly performed enucleation this is conspicuous by its absence. In certain cases after the use of the guillotine, sore throats take place just as before the operation and in others reproliferation occurs. In a certain department where I worked for two years a black list was kept of hospitals where tonsils had been removed and which came for treatment owing to recurrent symptoms. In these cases the tonsils had been removed on one or more occasions. The list was impartial, nearly every throat department in London being equally represented.

In private practice the same thing obtains. I recently performed enucleation on a boy of 9 years whose tonsils had been removed twice by a most distinguished operator. On cutting sections through the removed tonsil, which was both large and crowded with organisms, we were much struck by the very active cell divisions in the deeper layers of the tonsil in the neighbourhood of the capsule. A similar condition was observed in another case in which I performed enucleation for continuance of sore throats, after use of guillotine, punch forceps, and cautery. Mr. H. G. Butterfield and myself have noted the same thing on several occasions, showing the necessity of the removal of the capsule, from the point of view of its neighbourhood being a possible centre for new cell division.

Lastly, the removal of the tonsil with the guillotine does not prevent the subsequent formation of quinsies; but with enucleation, and consequent removal of the capsule, there is no longer any peritonsillar space and consequently no peritonsillar abscess can form. As regards the method of operation to ensure complete removal, the essential is the primary separation of the pillars, for the capsule can then be defined and is readily separated and removed entire with the contained tonsil by any of the various methods in vogue.

In relation to tuberculosis, we know that tubercle bacilli can be demonstrated in certain cases of enlarged tonsils, and that these tonsils themselves may show no clinical sign of the disease, although liable to be the cause of tuberculous adenitis. In these cases there is nothing to be said in regard to the capsule, beyond what has been already mentioned. In cases where there is a gross tuberculous lesion of the tonsil the resistance of the capsule to infection is seen. The tuberculous process seems to expend itself along the path of least resistance, that is, towards the pharynx. The infiltration and ulceration spreads and involves the pillars, and the lymphoid tissue is eaten away down to the capsule, without the latter giving way.

I have a specimen here from a man of 26, in whom the disease appeared as a terminal infection with advanced chest signs. I have also a patient of 26 whose tonsils I have seen at intervals for six months at the out-patient department of Mount Vernon Hospital. He has deep, excavating ulcers, but the capsule is still apparently intact, although the pillars are becoming infiltrated. A portion removed showed typical tuberculous structure and tubercle bacilli. These two cases represent the acute and chronic types respectively, and in both types the same resistance of the capsule is seen. What is true about the infective processes is also true of tumours, and has an important bearing on the treatment of the latter.

In relation to tumours, in studying malignant tumours of the tonsil such as the sarcomata, I have been much struck by the manner in which these tumours grow in lymphoid tissue and remain intratonsillar until very late in the disease, even when there are quite inoperable secondary masses in the neck, and it is this fact of the integrity of the capsule which offers suggestions as to the practicability of their removal. There are two places where these tumours tend to transgress the limits of the capsule, and these, as might be expected, are at the points where the latter becomes indefinite. They are at the pillars of the fauces and in the neighbourhood of the lingual prolongation. In removing these tumours it is necessary to leave the anterior and posterior pillars of the fauces attached to the tumour when it is removed, and also to take away the lingual prolongation in one piece with the tumour.

The choice of operation in malignant tumours of the tonsils is sometimes a question of difficulty, but if the relations of the capsule are understood, many cases can be operated on successfully by the intrabuccal method. There are several advantages in the intrabuccal operation. A large tumour can be delivered through the mouth and the integrity of the pharyngeal wall maintained. This is an advantage where an extensive dissection of the glands has to be done. Whereas by the other means a large opening into the pharynx would be necessary to remove a mass of glands in the neck before obtaining access to the tonsil from outside, and hence the risk of a pharyngeal wound communicating with the opened-up fascial planes of the neck. It is a disadvantage to have to sever the jaw, and even by von Vobsen's method there is not much room for the dissection. The advantage of the external operation is that a better view of the lower lingual portion is obtainable, and it is easier to tell what margin of healthy tissue must be taken from the side of the tongue. An advantage claimed for it is that it is possible to remove the tonsil and its infected gland in one piece as though the lymphatic channels running between

the two could be included. We know, however, from recent injections, that while some of the vessels run in front of the internal jugular to reach the jugulo-digastric gland, others run behind the vein, and still others in front of the belly of the digastric, so that a removal in continuity of all infected channels is obviously impossible. Lastly, if the relations of the tonsils are known, and we realize that in such cases these are not disturbed owing to the integrity of the capsule, a type of extended enucleation can be effected which has been in my experience very satisfactory. In addition it has the already mentioned advantage that a few days after removal of the primary growth a dissection of the glands can be effected without any risk of sepsis from the pharynx or interference of relations of structure, as after a previous opening from outside.

I have here two specimens of sarcomata of the tonsil removed by the intrabuccal method. The first is the left tonsil of a man aged 46 on whom the operation was performed two years ago. He is well and free from recurrence. The second is from a man aged 26 years, recently removed at the Throat Hospital, Golden Square, by Dr. Bond, whom I assisted. In both cases the capsule limits the disease which has been proved by microscopic section not to have involved the capsule. Recently I have seen three carcinomata of the tonsil, but in these cases the disease rapidly spread beyond the confines of the tonsil.

In the first case the disease spread rapidly on to the palate and the side of the lower jaw. In the second case there was a large mass proliferating over the anterior pillar to the side of the tongue. In the third case the lingual prolongation was the seat of the disease, and this had spread to the epiglottis and side of the tongue, causing limitation of movement of the latter. In these cases, therefore, an external operation was obviously indicated.

II.—Dan McKenzie, M.D., F.R.C.S.E.,
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ENUCLEATION OF THE TONSIL.

Complete and entire removal of the hypertrophied tonsil by dissecting it out of its bed in the pharynx has come to be the operation *de rigueur* in America. And there is much to be said in favour of tonsillectomy as compared with the incomplete operation of tonsillotomy, which is still the favourite mode of operating in England and on the Continent of Europe. Those who advocate enucleation as the routine operation summon logic to their aid. If, they say, it is improper in the surgical sense not to remove the whole of a lymph node or nodes when they are diseased, in the neck or elsewhere, then surely it is equally improper to treat an enlarged tonsil—which is, after all, a lymph node—by partial excision, seeing that in doing so we leave behind undisturbed a certain amount of diseased gland tissue. At first sight this argument looks unassailable, but it rests upon an assumption which, if not altogether unsupported, is nevertheless not entirely proved—namely, that an enlarged tonsil is invariably a diseased tonsil. The comparison of the enlarged tonsil with the enlarged lymphatic gland of chronic tuberculosis is not quite accurate. For, as is well known, no pathologist has so far succeeded in proving to the satisfaction of all and sundry that ordinary hypertrophy of the tonsils is generally, or frequently, or ever at all, due to tuberculous infection such as that which so often induces chronic cervical adenitis.

In opposition to the opinion which would lead us to take up enucleation as the routine operation for hypertrophy of the tonsils we can point to the fact that the ordinary tonsillotomy, efficiently performed, is seldom followed by a recurrence of the hypertrophy. Every one, I think, will agree that, in the majority of cases, when partial excision has been performed in childhood, the stump of tonsillar tissue which is left behind undergoes the normal involution at puberty, and nothing more is heard of it. Moreover, a critical consideration of the *pros* and *cons* of routine enucleation must always raise the question of the functions of the adenoid masses which go to form the tonsil. It may be perfectly true that their complete removal is not followed by any evidence of physiological disturbance, and we may therefore presume that, whatever their function is, it can be taken over by adenoid masses elsewhere in the body. At the same time, no one can deny that the more conservative measure of tonsillotomy as the routine practice has this to be said in its favour: It leads us nearer to the ideal *redintegratio ad integrum* than does the more complete and, if you like the word, more logical procedure of enucleation or tonsillectomy.

Without, however, labouring the physiological point too much, we may surely say that, as regards its routine employment for the relief of the mechanical obstruction which hypertrophied tonsils offer to respiration, enucleation offers no such considerable advantages as would compensate us for the general adoption of a measure which demands more from the patient and from the surgeon than does tonsillotomy. For there is no doubt whatever that enucleation is the more severe operation; it takes longer to perform, it inflicts a deeper and more extensive wound, and it demands a degree of manipulative skill and dexterity such as are not to be found save among experts. On the other hand, skill being granted, enucleation, even as a routine procedure, is not perhaps strongly contraindicated save in extraordinary cases; and for the expert to harbour an aversion to enucleation save when the tonsils are the seat of such serious diseases as tubercle and cancer, is unreasonable.

Leaving, for the moment, the routine adoption of enucleation on the one side, we now ask, Is there a class of case in which enucleation is to be preferred to tonsillotomy, as the typical operation? I think there is such a class. *Enucleation should always be performed when the tonsil is diseased and not merely hypertrophied.* To institute a distinction between disease and hypertrophy of the tonsils may seem to be rather a nice diagnostic feat. And perhaps it is. But practically speaking, the distinction is easily made. When, for example, the patient is the subject of recurrent attacks of tonsillitis or quinsy, then the tonsil may be looked upon as diseased, because events have proved that in place of acting as a rampart it has become a breach in the defences. In consequence either of the direction and disposition of its crypts, or of an actual lowering of the defensive powers of its cells, it is a source of danger to the organism of such a kind that nothing less than the complete removal of the gland and the subsequent sealing up of its site by the process of healing and cicatrization, can be relied upon to put an end to the constantly recurring invasion of septic organisms through this ever open door.

Secondly, the tonsils should be enucleated in patients who are suffering from tuberculous disease of the cervical lymphatic glands. In most of these cases we may take it for proven that the portal of entry of the tubercle bacilli is either the tonsils or the teeth. Consequently, not only should the condition of the teeth be rendered healthy, but the tonsils should be entirely removed, even if they are not enlarged. That is to say, that no operation for the removal of tuberculous cervical glands is complete if the tonsils are suffered to remain. In taking up this position we can cite in our support the work of Mr. Scott Carmichael, who, in examining the tonsils in 50 cases of tuberculous cervical glands, found tubercle in no fewer than 7 cases. And it is to be noted that, as regards their size, the tonsils which were found to be tuberculous were actually smaller than the normal.[1]

There is another variety of the enlarged tonsil which should be dealt with by complete removal. I refer to what is known as the "buried" tonsil. In this type the gland is so completely sunk in the pit between the pillars of the fauces that without dissection we cannot remove it, even partially, with the guillotine. This particular variety is by no means uncommon even in its most marked form, while we may say that cases in which a great part of the tonsil is so concealed are fairly frequent. For these last the ordinary operation is insufficient, inasmuch as it leaves behind a large part of the hypertrophied gland, which may become a source of trouble later on.

Finally, when hypertrophy recurs after tonsillotomy has been performed, the tonsils should be enucleated.

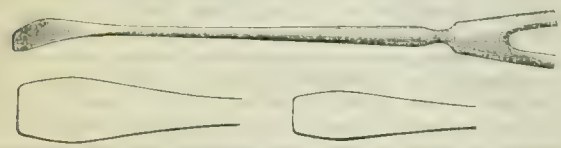
In cases which fall into such classes as these the removal of the pathological condition cannot be effected otherwise than by a formal dissection of the gland out of its fossa, since no other measure can give us the comfortable assurance that the diseased tissue is wholly and entirely removed. Simple tonsillotomy obviously does not meet the requirements of such cases. There is, however, one alternative to the operation known as enucleation, and that is morcellement. But enucleation is incomparably superior to morcellement. Complete excision of the tonsil by repeated crushing bites of the morcelleur is more difficult of accomplishment than is enucleation, and the wounds

inflicted by that instrument are more bruised and ragged than is the wound left after enucleation. Besides, injury to the pillars of the fauces is certainly as liable to occur when the tonsil is punched out, as when it is dissected out.

I shall now briefly describe the operation, and in so doing I shall mention one or two points of practical value in operating, and I shall also venture to recommend to your notice one or two instruments, the few survivors of a large number experimented with, which I have found to shorten the duration of the operation and to render it more simple and easy.

There is no need for us to recapitulate in detail the anatomy of the tonsil. It will suffice to mention the features which interest the operator:

Embedded in a shallow pit between the anterior and posterior pillars of the fauces, the tonsil rests upon a fascial layer which separates it from the superior constrictor muscle of the pharynx, and it is by cleaving this layer that we excise the tonsil. Round its edges the tonsil is attached by a fibrous band to the mucous membrane, an attachment which is particularly firm above, and also in the neighbourhood of the anterior pillar. Moreover, from this pillar a band or process of fibrous tissue passes backwards and downwards, to merge into the lower surface of the gland in such a way as to sling it or support it like a hammock. The separation of this tough and elastic fibrous process from the anterior, and to some extent from the inferior, surface of the tonsil is the first step in the operation. Many operators effect the severance or separation by means of a snip with scissors, but I am in the habit of using a dissector made by Messrs. Mayer and Meltzer, which



I have found to answer very well. It possesses the great merit of simplicity, and, as it can be used for freeing the rest of the tonsil, its employment saves time in that it does away with the necessity of changing instruments during the operation. The tongue being well depressed, and under the guidance of a good light, the dissector is slipped between the anterior pillar and the tonsil, and made to sweep down as far as its lower surface. Then the tonsil is seized with a pair of forceps and gently pulled out so as to define its upper attachment. I have tried many forceps for this purpose, beginning with an old-fashioned uterine vulsellum, but there are none so satisfactory as Mr. Tilley's, which I can most confidently recommend. The next step is to cut through the fibrous membrane binding the upper pole of the tonsil to the mucous membrane so as to reach the fascial layer mentioned above. Once in the fascial layer, further separation can be easily accomplished either with my dissector, or with Mayer's serrated dissector, or even with the finger, and presently the gland is detached all round save at its lower pole. This final attachment should not be cut through until we are sure that we have got all the rest of the tonsil freed from its connexions. I ought to mention that once the forceps are fixed in the tonsil they should not be loosened until the tonsil is in the basin. The attachment at the lower pole is, of course, partly adenoid tissue and partly fibrous membrane, and it can be cut with scissors, knife, or, what is better and safer, a snare or tonsillotome slipped over Tilley's forceps, which are so devised as to permit of this being done.

Having thus excised one tonsil, we turn to the other, and deal with it in exactly the same way. The enucleated tonsil presents on its outer aspect a fascial covering, and its edge is fringed with the remains of its membranous attachment or ligament. That is to say, the tonsil is removed entire, the tonsillar tissue not being cut into at all.

An inspection of the tonsillar fossa after enucleation reveals a smooth bleeding area sunk between the faucial pillars, and so hidden by the anterior pillar that the patient's head must be turned well to one side before we can discern it. On the anterior surface of the posterior pillar, near its base, the spouting tonsillar artery—a branch of the ascending pharyngeal—can be seen, of which more anon.

Difficulties.—As I have already hinted, enucleation of the tonsil is not an operation which the inexperienced can hope to perform with ease and celerity.

The first and most important point to be attended to is that of reaching the extratonsillar fascial plane. If this is done, enucleation takes place of itself; if not, the operation is spent in shallows and in miseries. Secondly, we must be careful not to carry our dissection deeper than the fascial layer, otherwise the superior constrictor muscle of the pharynx will be seriously injured—an accident which may perhaps be followed by a weakening of the voice-producing mechanism.

To reach the proper plane the tonsil must be pulled out a little with the forceps, so that its upper pole is clearly defined, and for this purpose a bright illumination is called for. I prefer to have the patient in the sitting posture, for in this attitude our view is less impeded by the pharynx filling with blood. A good anaesthesia is a *sine quâ non*. I generally operate under gas and ether, but the operation can also be performed under local anaesthesia in suitable subjects. If chloroform is used, the patient must, of course, be placed in the recumbent position.

Dangers.—Risk of wounding the internal carotid or jugular is non-existent, unless the operator loses control over his sharp instruments. So it may be dismissed without any more being said.

The other dangers are (1) injury to the pillars of the fauces; (2) haemorrhage; (3) sepsis.

The faucial pillars are liable to be cut if the operation is performed with an ordinary bistoury or with a knife the curve of which is too gentle. But the accident may occur with the most perfect instruments in the world if the operation is performed blindly or hurriedly. On the other hand, deliberation, precision, and good illumination rob the operation of its terrors so far as the pillars are concerned. At the same time, division of a faucial pillar is not a serious accident, although it spoils the artistic effect of the operation, and some people affirm that it impairs the singing voice. This may be a superstition; all the same it is better not to have the question raised at all.

The fear of excessive haemorrhage seems to be the bugbear of the operation in England. Yet the Americans declare that there is actually less bleeding after tonsillectomy than after tonsillotomy. So far as my own experience goes, I should say there is very little difference between them, but there is no doubt that the sight of the spouting tonsillar artery is somewhat disquieting. This vessel soon stops, however, especially if hydrogen peroxide is applied to it, and in any case it is not difficult to catch it up with long artery forceps, if the need arises.

Thirdly, septic infection of the tonsillectomy wound may occur, and it is a more serious complication than septic infection of a tonsillotomy wound. In both operations, however, it can be prevented by attention to cardinal rules, especially as regards the mouth and teeth. Septic conditions about the mouth (carious teeth, pyorrhoea alveolaris, etc) should be got rid of before the operation is undertaken.

Results.

If a tonsil is properly enucleated recurrence of the hypertrophy is impossible, tonsillitis is a thing of the past, and the fear of cervical glands becoming infected from this source is for ever banished.

By way of criticism of the operation, some observers in America report that the singing voice may be impaired by the filling up of the tonsillar fossa with cicatricial tissue, whereby the action of the pharyngeal muscles is impeded. The reply to this criticism is that the same reproach is also frequently levelled, generally without reason, against the ordinary operation of tonsillotomy. At the same time, one would be very cautious of recommending enucleation to a professional singer for obvious reasons.

Before ending these remarks on enucleation it is fitting to say that, as nearly all operators know, the freeing of the anterior pillar from the anterior surface of the tonsil before applying the tonsillotome in the ordinary operation enables us to remove a large portion of tonsillar tissue which otherwise remains behind, protected as it is from the cutting blade of the instrument by the faucial pillar. In conclusion, I think we may express the opinion that enucleation of the tonsil is a clean, complete, and radical procedure, imperative in some types of tonsillar enlargement, advisable in others, and not contraindicated in any variety save and except for reasons which would also exclude the simple operation of tonsillotomy.

Reference.

[1] E. Scott Carmichael, Tuberculosis of the Tonsil associated with Tuberculous Glands of Neck, *Proc. Roy. Soc. Med.* (Section of Study of Diseases of Children), November, 1909, p 27.

III.—StClair Thomson, M.D., F.R.C.P., F.R.C.S.,
Professor of Laryngology and Physician for Diseases of the Throat, King's College Hospital.

Dr. StClair Thomson reminded the meeting that enucleation of the tonsils with the finger was described by Celsus in A.D. 10. He himself had recommended the method and described his way of doing it in the *Transactions of the Medical Society of London* some ten years ago. Needless to say, therefore, he had no prejudice against the proceeding; but it was not the only method, nor did he think it was even the method most generally required. Mr. Hett's statistics of unsatisfactory results from the guillotine operation were of little value. They were drawn from out-patient practice, and every one knew that in most clinics the department was so overworked, and the skilled assistance so insufficient, that few seniors were satisfied with the way their tonsil and adenoid cases were completed. The speaker objected to the word "enucleation" being limited to removal of the tonsil by a process of dissection. The correct way to describe it was "tonsillectomy by dissection," for he could produce positive evidence that the tonsil could be as completely and entirely "enucleated," intact in its capsule, by the ordinary guillotine. The speaker then gave a demonstration of his method of "enucleating" the tonsil, after pulling it through the ring of the guillotine. The method was illustrated by drawings, and the specimens handed round showed the gland intact in its capsule, including even the supratonsillar fossa.

The objections to "dissection" had not been insisted on by Mr. Hett, but had been acknowledged by Dr. Dan McKenzie. The chief ones were:

(*a*) The necessity for special skill,
(*b*) The need of a particularly expert anaesthetist,
(*c*) The profound anaesthesia recommended by many supporters, and
(*d*) The possibility of injuring the faucial pillars.

With the guillotine, the bleeding was sharp at the time, but he had only had some three or four cases of secondary haemorrhage causing any anxiety; they were all in adults, and he had had no accidents whatever. In the profound anaesthesia generally recommended for enucleation by dissection he had seen the patient deeply congested, with his head extended and his pharyngeal reflex entirely abolished. In such a condition any undue traction on the tonsil led to laryngeal spasm, and he could not help thinking that all such patients were much closer to the verge of danger than those in whom the swallowing and coughing reflex were carefully preserved. The specimens handed round entirely refuted the statement that tonsils could not be completely enucleated with the guillotine.

His conclusions were that, in practised hands, the guillotine was still the most suitable instrument for the average condition of enlarged tonsils and certainly for all pedunculated tonsils in children. The method by dissection might be required for cases with marked adenitis, and for such tonsils as could not easily be drawn into the guillotine ring.

DISCUSSION.

Dr. J. S. Bryan (New York) said that the use of hydrogen dioxide was very useful in controlling haemorrhage following tonsillotomy, but it had its dangers. A fatal case occurred in Pittsburg, which of course was not reported. The haemorrhage was profuse; hydrogen dioxide was freely applied; the resulting foam filled the fauces and larynx, and the patient was asphyxiated.

Mr. E. B. Waggett (London) said that, in discussing a subject such as that just introduced, it was important to eliminate points not essential to the argument. It had been suggested that the operative removal of the tonsil, with its capsule complete, introduced the elements of complexity and of danger, but in the speaker's experience enucleation entailed no danger which the classical use of the guillotine with general anaesthesia did not also entail. The technique was so simple that any student might be trusted to learn it, always provided that no sharp instruments were used. Any flat or "hidden" tonsil could be removed with perfect ease and with its capsule complete by means of a pair of forceps, a strong écraseur snare, and a blunt curved raspatory. As a raspatory he preferred a pair of closed scissors curved upon the flat; Luc's fenestrated nasal polyp forceps was a very suitable grasping instrument, and he had no objection to the use of a small-sized but blunt guillotine in place of the snare. The blunt forceps previously threaded through the snare loop, took a deep grip of the head of the tonsil and traction was then made towards the middle line. The tip of the closed scissors or raspatory was inserted into the supratonsillar fossa and the capsule perforated. As soon as air was, by this means, admitted between the muscular wall of the pharynx and the capsule, the latter turned inside out if traction were maintained. The upper part of the tonsil emerged from between the pillars and projected as a cauliflower-like body into the mouth. If a few strokes were now made with the closed scissors in front and behind, the lower part of the tonsil followed suit, and the whole tonsil in its evaginated condition presented as a definitely pedunculated body. Constriction of the pedicle, with the snare loop, completed the operation—the whole proceeding having occupied not more than sixty seconds. It was certainly easier to perform than to describe. Some operation of this kind had, in the speaker's experience, been in vogue for a great many years where flat or hidden tonsils were concerned, and he did not think that it was possible to devise a simpler or more certain method of removing the entire capsule. For one new point he was indebted to Vacher, of Orleans, at whose suggestion he employed two snares instead of one. The snare used upon the first tonsil was not screwed fully home, but was supported by the nurse, until the second tonsil was attacked. In this way both tonsils were dealt with upon a bloodless field. Some little care must be taken to ensure the severance of the plica from the anterior pillar, but the whole operation was simplicity itself, and occupied two minutes. By the avoidance of sharp instruments and the haemorrhage their use entailed, the question of complexity was eliminated from the problem. As to danger, he had, among many hundred cases, seen but one instance, and that a trivial one, of post-operative bleeding. This favourable experience was what one might expect of an operation in which the blood vessels were crushed through by blunt instruments. Concerning anaesthesia, it must be admitted that this method of operation entailed a general anaesthetic. Complete removal of hidden tonsils with their capsules was under local anaesthesia either distressing or tedious. A few fatalities had occurred under general anaesthesia, and a few also under local anaesthesia. In either case the element of danger was not wholly negligible, but in general anaesthesia it was extremely slight if the administrator were experienced. This he should always be where throat operations were concerned, seeing that he must of necessity play the double rôle of anaesthetist and assistant, for his channel of administration was also the field of operation. Among perhaps twenty thousand operations under general anaesthesia, a large proportion of them in the sitting posture—that best suited for the operation under discussion—he had seen no fatality and very few anxious interruptions. Where the anaesthetist realized the importance of his function and, in addition, habitually made use of a tongue clip, the anaesthetic danger was reduced to such small dimensions that that question might also fairly be eliminated from the argument.

Dr. William Hill (London) remarked that he had entered the room with a very open mind, and he had rather expected that there would be a large consensus of opinion against the use of the guillotine alone, and in favour of a combination of dissection *plus* the guillotine. Hitherto, in his own practice, he had adopted an eclectic position; in hospital practice he relied on the guillotine alone in the large majority of cases, reserving a preliminary dissection for those cases where there were septic deposits in the crypts, and in the case of buried tonsils. In private practice, on the other hand, he relied on the guillotine alone in only a small proportion of cases, and the number of these operations were being reduced almost to vanishing point in view of the possibility of imperfect removal and the remains of the tonsil growing as large as ever again. In fact, it had become a question with him whether he was doing his utmost for his private patients if he neglected to combine dissection with the use of the guillotine or snare. Only the day before

he had been painfully reminded of failure in a private patient through reliance on the guillotine alone If dissection were resorted to, it necessitated a longer anaesthesia and a more expert operator than was always available in hospital practice, where clinical assistants dealt with the majority of cases, and in cases treated by general practitioners. In the combined operation of partial dissection followed by the guillotine or snare, he was not content with merely separating by dissection the tonsil from the anterior and posterior pillars, for he found that a complete extracapsular removal was much more consistently effected by separating with a dissector the superior pole of the tonsil as well. Mr. Hett deserved great praise for the thoroughness of his studies on the anatomy of the tonsils, both human and comparative. He was a little surprised, however, to find that he still retained the misleading term "*supra*tonsillar fossa." Mr. Hett's dissections and microscopical sections clearly showed that this fossa was within the capsule, and was therefore *intra*tonsillar. Dr. Dan McKenzie, in his very able communication, was careful to use the more correct term, "tonsillar fossa," a term which had the support of embryology. Mr. MacNeill Hardy had contributed a paper to the Section in 1908, and again in 1909, in which he pointed out current misconceptions in the anatomy of the tonsil and its capsule, insisting on the intratonsillar position of the "crypta magna" or palatal recess, and objecting to the term "*supra*tonsillar fossa." Dr. Watson Williams and Dr. R D. Paterson had endeavoured to controvert Mr. Hardy's statement in the correspondence columns of the JOURNAL, and apparently no one had been willing to give Mr. Hardy the slightest support, yet it would now appear that Mr. Hardy's contentions were absolutely correct. Dr. Thomson contended that a complete enucleation could be effected with the guillotine, and Mr. Waggett had very truly asserted that this could often be accomplished with the snare alone. He had carefully scrutinized the specimens just shown by these operators in order to see whether the capsule was generally intact, especially in the region of the palatal recess—that is, tonsillar fossa—and he found that all the specimens stood the test, and were complete enucleations. On the other hand, a small number of Mr. Hett's specimens were not absolutely complete excisions, the tonsillar fossa not being completely removed; the amount of tonsillar tissue left behind was, however, not worth mentioning. When he assisted Lennox Browne, more than twenty years ago, he was taught to use the snare. That surgeon used an écraseur with a thick silver wire, somewhat resembling the uterine instrument. Lennox Browne also taught that if one decided on using a guillotine, one should always select an instrument that appeared to be two sizes too small. In conclusion, the speaker entertained no doubt that an operation which included dissection could show a far higher percentage of practically complete removals than could be obtained by the most expert use of the guillotine or the snare alone.

Dr. DUNDAS GRANT (London) said that, although it could not be denied that very excellent results constantly followed the removal of tonsils by means of the guillotine, he had had searchings of heart with regard to the use of its routine practice, and he had himself exercised a certain amount of eclecticism in the choice of operation. He considered that the leaving of a portion of tonsil tissue as such was not a serious matter, and indeed possibly a beneficial one so long as the crypts were cleared away. Moreover, the protective character of the capsule had already been pointed out, and its complete removal was open to question. He advised complete enucleation when there were recurring attacks of tonsillitis or quinsy, or infection of the cervical glands, or unexplainable feverish or rheumatic attacks. When he wished to enucleate he used a blunt-pointed cutting hook for detaching the upper pole of the tonsil and the pillars of the fauces, especially the triangular plica. He agreed with Dr. Thomson as to the methodical turning of the guillotine so as to include the lower pole of pendulous tonsil, as described with great minuteness in a former issue of the *Clinical Journal* by Mr. Mark Hovell. Dr. Grant used Ruault's morcellement instrument for the removal of tonsils in young adults, as it was in them that post-operative or secondary haemorrhage was apt to occur when the guillotine was used. Very large and somewhat pedunculated tonsils could be removed and indeed most beautifully enucleated by means of the écraseur.

Dr. LUC (Paris) said that since many of his English colleagues appeared to be, like himself, supporters of the cold snare for the removal of tonsils, he felt bound to call their attention to a modification of a short instrument that was proposed by Vacher of Orleans at the last meeting of their French Society. It was called the rigid cold snare, and consisted of two metallic rings with blunt edges which slid one against the other by means of a screw. This instrument was always ready to work, and saved the operator loss of time required by the preparation of the wire in the ordinary snare. The question of anaesthesia was a delicate and important one as regards the operation considered. The limited time secured by such general anaesthetics as ethyl chloride or somnoform (since they generally abstained from using chloroform in such cases) was undoubtedly a source of difficulty, and required skilfulness and quickness in operating. For that reason, when operating on adults, he preferred having recourse to local anaesthesia under the form of a solution of novocain (1 in 100), which was previously injected into the gland, the pillars, and the neighbouring region of the base of the tongue. He disposed thus of an unlimited duration of anaesthesia which enabled him to operate without the least hurry.

Dr. DONELAN (London) said that in the last twenty-two years he had removed many thousands of tonsils. He had chiefly used the Mackenzie guillotine as modified by himself. He had had the advantage, owing to the situation of his hospital, of knowing the after history of a great many of these patients, and he believed that in the great majority of cases, especially of young children, the guillotine operation, combined with previous freeing the tonsil when necessary, was all that was required. He had performed enucleation in a great many cases, but only in those of so called removal of imperfectly removed tonsils. In these, after trying various instruments, including scissors and forceps, he had found a modification of Löwenberg's adenoid forceps extremely useful, and it was possible with the guidance of the finger to remove every particle of tonsil. He strongly supported the view of Dr. StClair Thomson that general anaesthetics should always be given by an expert in throat cases. The anaesthetic should never abolish the cough reflex.

Dr. WATSON WILLIAMS (Bristol) asked if it was certain that it was always desirable completely to remove the tonsil instead of employing a method which yielded a partial removal. To his mind this must remain an open question until they had more definite knowledge of the functions of the tonsils and other naso-pharyngeal aggregations of lymph tissue. He might say that many years ago he endeavoured to trace the influence of the tonsils as a source of rheumatic infection, and concluded that patients whose tonsils were enlarged were less prone to rheumatic fever than those whose tonsils were atrophied—at any rate, he thought it quite possible (he purposely went no further) that patients who suffered from acute rheumatic tonsillitis were often protected by the local infective attack from its becoming a general systemic infection. They might prevent absolutely any further trouble in a tooth by its extraction, but it did not follow that a dentist should therefore invariably extract a diseased tooth. Enucleation, however, had many advantages, and he did not think it was an operation which necessitated great skill or long practice. He used a forceps which firmly grasped the tonsil and enabled one to thread a snare or guillotine over it. He thought ether, followed by chloroform, was the safest anaesthetic, and if $\frac{1}{200}$ grain to $\frac{1}{150}$ grain of atropine sulphate were injected from one-half to one hour beforehand the operator was assisted by the marked lessening of secretion and saliva. If haemorrhage was troublesome he put on a compressing clamp, which had never failed to completely control bleeding, but he thought there was less haemorrhage, if anything, after enucleation than after tonsillotomy.

Mr. H. LAMBERT LACK (London) had heard nothing to convince him that enucleation should be the routine

operation for removal of enlarged tonsils. The ordinary guillotine operation, performed skilfully, gave results in every way admirable. Enucleation should be reserved for cases of disease, such as quinsy, recurrent tonsillitis in deep lying flat tonsils, and so on. Statistics of recurrence, drawn at random from hospital practice such as Dr. Hett's, were absolutely valueless, as there was no proof the tonsils were properly removed in the first instance. The advocates of enucleation who desired removal of the last vestige of every crypt were not logical, as they took no note of the other lymphoid crypts in the pharynx; they should advocate removal of the entire ring of the pharyngeal lymphoid tissue.

Dr. W. S. Syme (Glasgow) had made use of enucleation, snaring, and tonsillotomy as operations for tonsillar disease, and was not convinced that the first of these methods should be the routine one. It was difficult to decide in any given case which should be employed. Yet it was important, because there was no doubt that, though the performance of enucleation was simple enough, the fact that in children, at any rate, deep anaesthesia was required, added an increased risk; moreover, the period of convalescence was longer. On the general question he thought there were cases for which tonsillotomy was sufficient; there were others where enucleation should be performed, and it should be their endeavour to decide more definitely upon the indications.

Mr. Stuart Low (London) said that he was strongly in favour of the method of enucleation for the removal of enlarged tonsils in adults in certain forms of hypertrophy. He did not think that enucleation would ever become the routine method in children, as in them the tonsillotome was still much the best instrument, because the tonsil had, in the great majority of children, a pedunculated attachment. Where this was the case it was not desirable to employ enucleation, for a number of reasons, one being the prolongation of the anaesthesia and the greater risks that this incurred. In the case of adults, however, enucleation was often the best way of getting rid of a troublesome and enlarged tonsil. Whether to enucleate or not was to be decided by the way in which the tonsil was attached. If by a long attachment, extending sometimes from apex to base, there was no better way than to enucleate. The speaker then showed specimens of tonsils which had been taken away by being enucleated, and laid stress on the importance of paying attention to the shape of the tonsil and how it was fixed in the tonsillar fossa. He used two instruments only, a special form of securely grasping vulsellum forceps, and a pair of curved scissors. With these instruments the operation was simple, swift, and safe, and he had no hesitation in saying that given proper patients and practised performers enucleation was the perfect operation.

Dr. Pegler (London) was glad Dr. Dundas Grant had alluded to morcellement as they performed it in England, and which, he believed, was quite different from the morcellement of Ruault. He felt some surprise that so little reference had been made to this valuable method in the discussion. He had continued to practise it in suitable cases since its first adoption, and still advocated the handy little Hartmann conchotome for the purpose, as set forth in the short paper which he read at the Cheltenham meeting. As in many another class of operation, surgeons preferred to adopt the plan with which they met with the best success.

Mr. Seccombe Hett, in reply, said Dr. William Hill had very rightly pointed out the absurdity of the name "supra-tonsillar fossa," and he had only retained it because it was so time-honoured that he did not venture to rechristen the recess. He thought, however, that "tonsillar fossa" would be a better term. In some of the cases in which he had managed to remove an imbedded tonsil entire without previous separation of the pillars he had had severe haemorrhage. By a dissecting operation a complete removal of the capsule and its contained tonsil could be absolutely ensured. In a properly performed enucleation haemorrhage was slight, at any rate in children, and he preferred to dissect out the tonsil, thus tearing rather than cutting the vessels, which then retracted and did not bleed. Dr. StClair Thomson and others had objected to the depth of anaesthesia required and the consequent increased risk of operation and necessity for a skilled anaesthetist. But surely a deep anaesthesia in itself was not dangerous, and in it lay safety, for the absence of gagging and swallowing prevented haemorrhage obstructing one's view, or the patient's respiration, and allowed of a certain, quick and neat operation. Mr. Waggett had discussed enucleation by the snare and had said that the operation could be done in two minutes and also bloodlessly, but by dissecting off the pillars and enucleating, the average time taken over a series of cases was one minute over each tonsil and one minute to change sides. Moreover, he had seen the snare cut through the lower part of the capsule and it sometimes left a bruised stump at the attachment of the constrictor, which was said to cause considerable pain in some cases. Mr. Waggett had emphasized the point about the sitting-up position for the anaesthesia. If, however, the tongue were pulled out by a suture passed through it, and the tonsil and anterior pillar were drawn forward, the operation was then very much facilitated, while the recumbent position had the obvious advantage of allowing the throat to be more easily mopped out if necessary. Dr. Stuart-Low objected to enucleation in children because of the anaesthesia, but surely children, owing to their young and healthy tissues, were the best subjects for anaesthetics. Again, as he had already pointed out, the operation was especially called for in young children, owing to the tonsil of childhood being deeply imbedded, and also that operation was more often indicated because of cervical adenitis than for sore throats, and it was particularly necessary in them to remove the whole tonsil. Mr. Stuart-Low said that there was muscle on the capsules of the tonsils, and that consequently there must be a wound of the pharynx. The reply to this was that in a microscopic section of a capsule which had been removed muscular fibres could be demonstrated, for the constrictor obtained a direct insertion into the capsule. The specimen which Mr. Stuart-Low showed was that of a large projecting tonsil with little imbedded portion, and was the type that could be removed almost, if not quite, complete with the guillotine. Even so, the specimen could not be regarded as one of complete removal, for, as pointed out by Mr. Herbert Tilley, a portion of the capsule was missing and exposed crypts, which had been cut through, were seen.

Dr. Dan McKenzie, in reply, said that, while the discussion had revealed many differences of opinion with regard to the best methods of operating, it was also shown that there was a fairly general agreement in regard to one of the principles formulated in his paper—namely, that in recurrent hypertrophy and in disease the tonsil should be so completely excised that no trace of tonsillar tissue remained behind. This expression of opinion was one of great importance.

Dr. StClair Thomson, in his reply, said that he was agreed that any tonsil which called for removal should be removed entire with its capsule. At the same time they must keep their minds open in view of what they had heard that morning in regard to the defence which this capsule offered against the spread of malignant disease or invasion by the tubercle bacillus. With regard to the objection that haemorrhage was more frequent with his method, he still felt that he would sooner have the short, sharp bleeding of the guillotine than run the risk of the profound anaesthesia required for the dissection method. He therefore adhered to his conclusions—that the guillotine had not been dethroned, and that the method by dissection had its limitations.

An International Exposition of Social Hygiene will be held in Rome in 1911, under the presidency of Professor Baccelli.

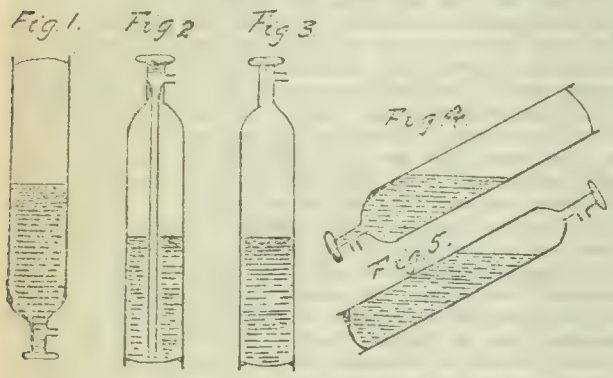
The Chemical Industries Committee of the British Royal Commission is taking steps to make the British chemical court at the Turin Exhibition next year thoroughly representative of the chemical industry of Great Britain. The Committee contains representatives of all branches of the industry. Further particulars can be obtained from the Director of the Exhibitions Branch, Board of Trade, Queen Anne's Chambers, Westminster, S.W.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CARBON DIOXIDE SNOW.

THE use of solid carbon dioxide snow as a therapeutic agent has been very fully described in various journals during the past few months, and at the recent annual meeting of the British Medical Association several interesting demonstrations were given. Many good methods for collecting the snow have been suggested, some simple and others elaborate, and excellent apparatus has been invented and prepared by different makers to prevent waste, and to obtain easily a hard pencil or stick of the solid snow. One simple but highly essential and practical point requires emphasis, and, unless understood, some may procure cylinders and collecting apparatus, and yet meet with disappointment in not being able to obtain any snow. When the valve of the cylinder is opened, the liquid carbon dioxide must be forced out, and not simply a jet of high-pressure gas. It is a portion of the liquid gas which solidifies in the form of white snow-like flakes, and this is caused by the great absorption of heat produced by the very rapid evaporation of another portion. Consequently the cylinder must be placed on a stand upside



down, with the valve at the bottom, as in Fig. 1, or in an inclined position, as in Fig. 4, so that the liquid gas is gravitated down to the nozzle end, and must of necessity be forced out when the valve is opened. The cylinder, if fitted with a central siphon tube (Fig. 2), may be kept in an upright position, and in a stand similar to that supplied with oxygen cylinders. As this siphon tube is attached to the nozzle, the pressure must first press out the liquid CO_2 from the bottom of the cylinder. If the cylinders are placed as in Figs. 3 and 5, the gas will simply rush out with great noise and be wasted. The cylinders used by aërated and mineral water manufacturers are usually about 5 ft. in length, and contain some 27 lb. of gas. This large size cannot well be inverted, and, if used, must be placed on a suitable stand, as in Fig. 4 position. Smaller cylinders of 7 lb. capacity, however, are being supplied by most of the carbonic acid gas companies, and are, therefore, more convenient. The pressure or tension contained in the cylinders is from 850 to 1,000 lb., but varies, of course, with the temperature. The cooler the atmosphere the lower the pressure. On an average it is probably about 950 lb. to the square inch, or 65 atmospheres. Liquid CO_2 has a coefficient of expansion larger than that of any known body, and its boiling point is $-72.2°$ under a pressure of 760 mm. The temperature of the snow is 79° below zero (Centigrade).

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THE next International Congress of Psychiatry will be held at Moscow in 1912.

A RADIUM institute is to be opened in Vienna on November 28th. It is somewhat remarkable that no provision appears to be made for medical research in the institute.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

METROPOLITAN COUNTIES BRANCH: HAMPSTEAD DIVISION.

Dr. FORD ANDERSON in the Chair.

Mental Therapeutics.

AT a meeting of the Hampstead Division held at the Central Library, Arkwright Road, on November 11th, Dr. H. CAMPBELL THOMSON read a paper on mental therapeutics, with special reference to Freud's and other methods of treatment. He started by saying that he proposed to deal only with the milder mental disorders, such as those included in hysteria, neurasthenia, and psychasthenia, and would not speak of insanity. Psychic methods should be systematized on a proper foundation, in order that they could be taught like other methods in medicine. Mental processes were governed by definite laws, and every thought and act was a logical sequence of a past experience in the normal mind. The newborn child had no ideas, and the child brought up out of reach of human intercourse could acquire no higher thoughts than those necessary for preservation of existence. Dr. Campbell Thomson illustrated the education of the nervous system by the process of association of ideas. A new idea linked itself up with ideas of a similar nature. In this way it found its proper place and proportion in the system of ideas. Turning to the subject of the subconscious mind, he explained this by stating that every one performed many actions without the full cognizance of the mind. Walking, for instance, was performed automatically, and during the act the mind was free to acquire fresh ideas. Illustrations were given both by instances and by diagrams of the subconscious working of the mind. He emphasized the fact that an interference of the conscious mind with the working of the subconscious mind might result in the hampering of the action. The most important processes of the normal mind were association of ideas and the relegation of familiar actions to the subconscious mind. These processes might become deranged by the associations becoming weak or faulty, so that the ideas were not kept in their proper proportion to general experience, by what Janet called "dissociation," and by the failure to associate painful events. Dissociation was supposed by some to account for the greater number of symptoms in hysteria. Freud found that painful sensations were worked off normally by suitable reactions, such as the use of strong language in response to an insult, tears in response to grief, etc. If no relief was obtained, a painful experience might fail to be duly associated with other experiences. The impressions were, then, kept outside the personality of the individual, and might be regarded like a foreign body. Since they were painful to the individual, they gradually become pushed out of the conscious mind and relegated to the subconscious mind. Freud's method involved the attempt to link up the submerged experience with the consciousness of the person. This was accomplished by the method of psycho-analysis. Freud at first attempted this with the assistance of hypnosis, but later gave it up for his more simple method of "free association." Free association consisted in persuading the patient to give out his thoughts indiscriminately without self-criticism. The difficulty met with was due to the fact that the patient was unconsciously repressing the offending source. Another means employed by Freud was a system of analysis of dreams. The speaker disposed of this subject briefly, since he stated that it was too long and too intricate to be adequately dealt with in this lecture. Next he passed on to the method devised by Jung of word association. He illustrated this method by an example. The physician chose a set of words which were termed *stimulus words*. The patient had to say the first word which the stimulus word suggested. This was termed the *reaction word*, and the physician timed the interval. The process appeared to deal rather with the emotions than with the intellect. By observing the type of words which produced delayed reactions and employing further words connected with similar subjects it was possible to interpret the hidden com-

plexes which influenced the patient's actions. The example given revealed a suicidal tendency with special impulses to drowning. In this case, while the majority of the ordinary words, such as "head," "green," stick," etc., were followed by rational reaction words within 1.4 to 1.6 seconds, "water," "ship," "swim," and the like called forth a special type of reaction words after an interval of 3, 4 to 5 seconds. The speaker then touched lightly on the hypothesis enunciated by Freud, that buried complexes in hysteria were connected with sexual ideas. He agreed with Bernard Hart, who did not consider the sex theories as the most important part of Freud's work. Freud had certainly helped to clear up difficulties with regard to the relation between the conscious and the subconscious areas of the mind. Psychoanalysis took too long and was too difficult to become a general form of treatment for the cure of hysteria, but Dr. Campbell Thomson believed that the principle might be found useful in some cases of psychasthenia and neurasthenia. Lastly he dealt with suggestion and with persuasion as described by Dubois. Suggestion apart from definite hypnosis was the power of some persons to impress their personality on others. It was very useful when properly applied, but its field of action was limited by its superficiality. Persuasion appeared to stand half-way between suggestion and psycho-analysis; it was deeper than the former, and less deep than the latter. He advised the physician in dealing with a disturbance of the mental function first to determine whether he could help at all; next he should endeavour to construct in his own mind the morbid psychology of the case; and, lastly, consider how the morbid condition could best be changed into a normal condition. It was necessary to exercise the greatest care in estimating the mechanism of another person's mind, for in no department of medicine was the physician more likely to err by finding what he expected rather than what really existed.

Dr. H. E. Wingfield spoke of his experience of hypnotism in the treatment of hysteria, neurasthenia, and similar conditions. He admitted that he had seldom used psycho analysis in this class of patient. He thought that Dr. Campbell Thomson had taken too narrow a view of the subconscious mind. He had studied the subconscious mind during hypnosis. During the waking state the subconscious mind was capable of carrying out very many intellectual actions. He gave examples of hypnosis with post-hypnotic suggestions which he had induced in undergraduates at Cambridge and others. In one case a man had written stanzas on the May races at his command, without any knowledge of the hypnotic suggestion, although the actual composition of the verses appeared, in part at all events, to have been carried out in the waking state. His experience went to prove that the subconscious mind performed many other functions besides those which could be regarded as automatic. In turning to therapeutics, he found that drink cases were especially well adapted to hypnotic treatment. If the patient had the good will to get better, he could always be either enormously improved or entirely cured. He illustrated the power of curing laziness by means of hypnotic suggestions. In discussing the systems of psycho-analysis, he found that they were all almost impracticable for ordinary practice. This was well exemplified in the dream analysis method. He illustrated this form of analysis by reciting the salient points of a case of physical pain caused by disappointment in love. The patient found her mental agony intolerable and therefore unconsciously transformed her symptoms into bodily pain which she could easily bear. The analysis was laboriously performed without the assistance of hypnosis. He doubted whether this method could be used in ordinary practice for gain. The patient would have to be seen daily or several times a week for many months or even years, and if each visit were charged for it would cost the patient hundreds of pounds before the physician had discovered the buried complex. There was another method of obtaining the same results, which had not been mentioned. This was by passing an electric current through the body and through a galvanometer. Certain nervous stimuli gave rise to decreased resistance, and thus to the recording of an increased current. Word association analysis was, however, simpler. Freud believed that in hysteria the painful ideas formed a split in consciousness. In hypnosis the same thing took place. In many hysterical cases suggestion played an important part at the time of the psychical trauma. He gave instances of this. A girl, at the onset of the hysterical disturbance, had her arm numbed by hanging over the back of the chair. The prominent symptom in this case was a paralysis of the arm. He was of opinion that for hysteria psychoanalysis was a more powerful therapeutic agent than suggestion or hypnotism could possibly be. He doubted, however, whether these cases could be treated with complete success by psychic methods alone without the assistance of rest, forced feeding, etc., which was the ordinary mode of dealing with neurasthenia.

Dr. Maurice Craig regarded Freud's method as extremely exhausting. In some cases the analysis had occupied two, three, or even four years. Something that was easier and more practicable was required. The difficulty lay in the fact that we did not understand the mind as we understood the body. In dealing with psychasthenia and neurasthenia he came to the conclusion that when the patient was intelligent and well educated the troubles were not so difficult to analyse. Here the field of the association of ideas was open, and it was consequently easier to discover the complexes which were submerged. It was necessary to bring into consciousness one idea, and all the others might be awakened. Turning to the effect of mental troubles on the normal functions of the body, he said that evidence of this could be adduced with ease. One of the difficulties which presented itself was the disinclination of persons to speak about their mental processes. They did not mind talking about defective bodily processes, but were ashamed of a mental symptom. In giving evidence in a recent case he had been asked whether a person could have a feeling of being drawn towards a train which was approaching, and whether the feeling of falling off a height could occur, or of cutting one's throat during the process of shaving without any real disturbance of the mind. He had answered the two first questions in the affirmative when they were put as personal questions to himself, while he succeeded in getting out of the last difficulty by stating that he always used a safety razor. Criticizing the "word-association" table which Dr. Campbell Thomson had exhibited, he came to the conclusion that it would be possible to determine the suicidal tendencies without going through the trouble of this form of analysis. He next dealt with the significance of memory pains of former illnesses. In all these cases the association could be determined, but the necessary factor was to understand the symptom, and if the patient was told how it had arisen it would often disappear. It was highly important to deal with disturbances of mental association, and to study each case with minute care. A large proportion of cases of insanity were the results of neglected disturbances of this kind. In treating them, auto-suggestion came into play in almost all the methods. Here the most important factor was the absolute belief in the physician. One of the reasons why the cancer curer did so well at first was that, having secured this absolute belief, he was able to remove all the associated nervous symptoms. Dr. Craig said that we were only just beginning to recognize the importance of teaching psychology and of studying it in properly-equipped psychological laboratories. In conclusion, he stated that if the physician could get the patient to understand himself he would never see him again.

Dr. Edridge-Green asked Dr. Wingfield for the details of his method of hypnotizing. He then referred to the question of the subconscious mind. He had examined a number of phenomena supposed to be subconsciously performed, but had been able to show that in every case there was always some link with conscious cerebration. There was, in his opinion, always a reflex below the mind which brought about the action. In giving some examples of what he meant, he referred to the recalling of a forgotten name. In one case the name was suddenly remembered, apparently without any outside stimulus, but on minuter consideration it was found that a picture of the individual in a complex group photograph had been the stimulus which assisted in the remembrance. He would like to know what the real difference was between suggestion and hypnosis—where the line of demarcation lay.

Dr. Ford Anderson also wished to know where suggestion ceased and hypnotism began. He called attention to the peculiar influence which a lecturer at times held over his audience. It had been reported that a powerful speaker had so carried his listeners with him when speaking on "the idle rich," that ladies had plucked out the feathers from their hats and cast off their fur coats under the influence of the lecture. In this case there were all the conditions said to be favourable for hypnotism—a dull religious light, quiet, absorbed attention on every word uttered by the lecturer, and so on. Was that suggestion or hypnotism? He also inquired whether Freud's method was suggestion or hypnotism. Freud had himself described how he held the patient's head, or laid his hand on one or other part of the body. He knew that Freud objected to the idea that he employed hypnotism; in any case he feared his methods were too ponderous for general use. Dr. Ford Anderson then spoke of a condition or symptom-complex which was common in ladies belonging to the upper middle class. This was due to what he termed "the servant trouble." He had become familiar with the symptoms, and could often tax his patients with having this trouble without receiving a confession from them. Unfortunately the tracing of the cause did not carry with it a removal of the trouble.

Dr. MacIntosh asked whether Dr. Campbell Thomson could explain the nature of Christian Science.

In reply, Dr. Campbell Thomson stated to Dr. Wingfield that when he spoke of the subconscious mind he had no intention of imposing a limitation of it to the examples quoted. He merely gave simple instances of subconscious action, and was of the opinion that its limits could not at present be stated. In reply to Dr. Maurice Craig, his table of word-association analysis was merely a simple instance. It was no doubt easy to determine suicidal tendencies by other means, but his intention had been merely to illustrate Jung's method. He had no knowledge of Christian Science.

Dr. Wingfield sought to reply to the inquiries as to the line of demarcation between hypnotism and suggestion. He regarded hypnosis as an artificially increased suggestibility. He insisted on the fact that suggestion could be carried out only when the subject's mind had been placed in a peculiar condition.

A cordial vote of thanks was passed by acclamation to Drs. Campbell Thomson, Wingfield, and Maurice Craig.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

Section of Surgery.

Tuesday, November 8th, 1910.

Mr. Warrington Haward, President, in the Chair.

Fractures near Joints.

Mr. Robert Jones opened a discussion on this subject, in the course of which he said that modern advances in general surgery had so engrossed the attention of the most able surgeons that there had been a tendency to leave the treatment of fractures too much in the background. Whether they entirely agreed with him or not they owed much to Mr. Arbuthnot Lane for rousing fresh interest in this subject, and must all feel that his strenuous work had been productive of much good. Every practitioner was expected to treat fractures, but there was a tendency in medical schools to teach students to rely too much on *x*-ray appearances, the correct interpretation of which required a long and careful education. *X* rays should be a court of appeal, after an attempt at diagnosis had been made, and should not be allowed to deprive the student of his powers of clinical observation. "There should not be two schools—one relying on operative and the other on mechanical methods of treatment. Each surgeon should decide for himself whether in a particular case an operation should be performed or not, and the way in which a successful result would be achieved would depend largely upon his special ability." From the patient's point of view, impairment of function was a much more serious deformity than any mere outward change of shape. He was still learning certain fundamental rules for clinical guidance from his mistakes and sometimes from those of others. For instance, Wolff's law must not be forgotten—that the internal structure of bone and its outward appearance were adapted to the strain to which it was subjected and the function it performed and varied to meet changes in strain and function. Hence, in dealing with fractures about joints, the mechanical function of the joint, and the directions of the normal lines of strain across the joint must be clearly appreciated. Again, common deformities and disabilities which were associated with so-called neglected fractures should be carefully studied, so that they might be anticipated and avoided. In fractures about the shoulder they were deficient abduction and rotation, in the hip limitation in the range of internal rotation, abduction, and extension. The elbow-joint was liable to become fixed at an angle of about 130 degrees. At the knee genu valgum and sometimes flexion were the common features of an imperfect result. Thirdly, in case some unavoidable impairment of function was to be feared, they should know which particular movement or which position of the joint it was most important to preserve, and direct the treatment accordingly. As an illustration of this point they might consider fracture of the scaphoid in the wrist, which could be diagnosed from a sprain by the presence of tenderness on slight pressure in the anatomist's snuff-box. The result of injudicious passive movement or of permitting free movement of the wrist was a displacement of the fragments, which prevented dorsiflexion of the wrist. It was a familiar fact that the grasp of the hand was greatly weakened unless the wrist be dorsiflexed. The injury should therefore be treated in the dorsiflexed position. If a fragment of bone prevented the hand from being put in this position it should at once be excised. Mere aesthetic considerations of appearance should be subordinate to questions of restoration of function. Thus, an endeavour should be made to secure a right of way clear of obstructions by bone and callus so that the movements of the joint were not impeded; and the alignment of bones should be preserved so that the lines of stress should fall in a normal direction across the joint. In the lower limb this was of great importance, for deviation of the body weight would produce a cross strain at the seat of fracture, and changes would take place in the bone to meet the altered strains; and these changes were identical with those of traumatic osteo-arthritis. Inflexible fixation by wire or plate, fixation by splints, or no fixation might be simply good or bad, according as the surgeon had or lacked the necessary knowledge and skill to employ them to advantage. In fracture of the neck of the humerus with dislocation of the head the manœuvre he had found most successful was to have the arm extended vertically upwards while the surgeon tried to manipulate the head into position. If reduction by manipulation failed, an operation should be performed in a recent case. It was interesting to note the free range of movement, with good rotation inwards and fair abduction, which often occurred in neglected cases in spite of great deformity. In referring to fractures in the neighbourhood of the elbow joint, he advised treatment of such injuries with the elbow fully flexed, with the single exception of fracture of the olecranon, which was treated with the elbow extended, and should be wired or screwed if the fracture was transverse and the fragments separated. The treatment of a case of supracondylar fracture of the humerus might be taken to illustrate the harmful effects of early passive movements. Patients were constantly being sent to him with practically the same history that passive movements were commenced a week after the accident, and had been carried out assiduously several times a day ever since, and yet a stiff elbow was the result. The practitioner was surprised when he was told that all the joint required was rest in the fully flexed position, and the stiffness would disappear. No passive movement should be commenced until repair was so far advanced that no disturbance of the union would be produced. Each movement (in the case of the elbow, supination, pronation, flexion, and partial extension) should be performed once, and once only; the wrist was then slung up, keeping the elbow flexed for one, two, or three days to allow any damage done to the elbow to heal, and then each movement was again made only once. Repeated

early passive movements disturbed the union, promoted exudation, and the formation of excessive fibrous adhesions and excess of callus. Massage was beneficial at all stages, and must be clearly distinguished from passive movement. On the other hand, active movements free from pain were beneficial. Thus, in the case of the elbow, after three weeks' treatment with the wrist slung close under the chin, the sling was loosened, allowing the wrist to drop three inches. The patient was then encouraged to practise moving the hand from this position back to the mouth. If at the end of three days the elbow was getting stiff in the new position, it must again be fully flexed and rested for a further period. If, however, movement of the hand back to the mouth was free, the wrist might be further dropped, and the further range of active movement practised. Since this systematic line of treatment had been adopted injuries of the elbow had ceased to give trouble. In connexion with the hip, an interesting injury was strain and fracture of the epiphysis and neck of the femur in adolescents, which were precursors of traumatic coxa vara. Three stages might be recognized. First, a boy playing football strained his hip and left the field. The surgeon found no shortening; extension, flexion, and adduction were free, but rotation was painful, and abduction beyond a short range was not tolerated. After some days' idleness the boy went back to the playing field, and soon the same thing occurred again, and games were stopped for the rest of the term. One day something gave way in the hip, and he was helped to bed, and now on measurement there was a shortening of the affected limb by about three-quarters of an inch, and this was due to separation of the epiphysis. In a second case the injury was more severe, the disability was more pronounced, from the beginning there was shortening of half an inch or more, and they knew that they had to deal with a separation of the epiphysis or a fracture of the neck. In a third type there was a strain of the hip, and the boy was incommoded, scarcely disabled, for a day or two. As the weeks passed he complained of lameness and increasing stiffness of the hip. His symptoms seemed to indicate early hip disease. There was limitation of all movements, and the trochanter was above Nélaton's line. The *x*-ray photograph showed coxa vara of the epiphysial type. He had torn the periosteum and strained his epiphysis. All these injuries led to traumatic coxa vara, the characteristic features of which in neglected cases were an adducted stiff hip with some flexion. The treatment should be adopted at once, and consisted of fixation in the abducted position, with strong extension to bring the displaced head or fractured neck into its true relation to the shaft. This might be carried out in plaster-of-Paris, or, as was done in Liverpool, in a modified Thomas's frame. In impacted fracture of the neck in old people his practice was to disimpact the fracture in all cases where there was any outward rotation or shortening, and then treat the case in the same abduction frame. After a few weeks the patient was put in a Thomas's knee-splint with extension. A fortnight later the patient would get up, and walk in a Thomas's caliper splint. If there was any fear of hypostatic pneumonia the patient was treated from the beginning in a Thomas's knee-splint with extension, and was allowed to sit up if necessary. In all these splints the pelvis, lower limb, and splint formed one rigid system, and there was very little movement at the seat of fracture when the patient was moved, and there were no starting pains when the patient fell asleep, such as occurred in cases treated by weight and pulley. Fractures of the condyles of the femur were treated in a Thomas's knee-splint with extension with the knee straight. *X*-ray photographs showed that the lower fragment was often in front of the upper, and not always behind, as one would infer from the classical description. The use of the double inclined plane to neutralize the action of the gastrocnemii was based on a theory which was not found to be true in practice. The procedure in femoral osteotomy was suggestive in this connexion. In the many thousands of these operations performed, how few surgeons had ever resorted to the use of the double inclined plane! Energetic traction to overcome the contraction of the quadriceps and hamstrings was the secret of success. "The spasm of muscle in any part of the body is very transient, and readily yields to pressure and extension." Two conditions were essential to success: (1) Freedom should be secured for movements of the knee, and (2) there must be correct alignment of the hip, knee, and ankle joints. The same laws held good in fractures about the ankle joint. The great point was to get the line along which the weight of the body was transmitted to the ground correct, and to see that there was nothing blocking the normal movements of the joints. Thus, in Pott's fracture the principal deformities were the well-known dislocation of the astragalus outwards, and the less recognized dislocation backwards. A successful result depended first on complete reduction of these two deformities, but did not end there. No weight should be carried on the ankle before the fifth week, and then the heel of the boot should be raised on the inner side to deviate the body weight to the outer side for about six weeks. If this were not done a considerable number of cases would return to the out-patient department with a valgoid deformity. A fracture, not described in the textbooks, which was frequently the result of a fall from a height on to the foot was a split fracture of the anterior external corner of the lower end of the tibia. The portion split off was always displaced forwards, and if unreduced, blocked the way to full flexion of the ankle and caused pain across the front of the ankle, especially at the end of the stride, when the patient was stepping off the affected foot on to the other. If the ankle could be completely dorsiflexed the deformity was reduced; if this could not be done, the offending fragment should be pinned or wired into position. In old-standing cases it should be removed. In conclusion, Mr. Jones said: "I pay more attention to function than to appearance, consider correct alignment of more importance than meticulous care in reposition of fragments, believe that pain is an indication for physiological rest, and therefore deprecate early forced passive movements. If I prefer methods of manipulation and fixation in some cases where others of my colleagues would prefer an open operation, it is perhaps because for many years an increasing proportion of my work has been the treatment of deformities, whether of traumatic origin or not, and have thereby gained confidence in using powerful but carefully graduated force in cases when another would hesitate to do so. My object has been not so much to discuss various methods of treatment as to expose my own for discussion, and hope that those who follow may do the same for our mutual profit." Mr. Rushton Parker added a further warning against passive movements, and demonstrated the advantages of the flexible metal splints introduced by his friend and teacher, H. O. Thomas. Mr. Warren referred to the importance of correcting the alignment of the bearing surface of an articular end to within $\frac{1}{16}$ in. of the normal. He related some cases of separation of the lower epiphysis of the tibia which had led to deformity and required operative correction. Mr. Whitelocke touched on the question of fractured patella, advocating routine operation and mentioning the increased importance of perfect union in view of the Workmen's Compensation Act.

EDINBURGH OBSTETRICAL SOCIETY.

Wednesday, November 9th, 1910.

Dr. F. W. N. Haultain, President, in the Chair.

The Development of Gynaecology.

Dr. Haultain, in a presidential address, traced from the minutes of the society's meetings the transformation of gynaecology from a medical to a surgical science. In this metamorphosis, Edinburgh had played the most prominent part. Simpson's anaesthesia and Lister's antiseptics had made it possible for Thomas Keith to make ovariotomy safe, and to establish the fundamental principles of hysterectomy. Lawson Tait proved the ready accessibility of the peritoneum to surgical interference, and showed that contamination with pus was not necessarily fatal. In 1840 the first gynaecological specimens—uterine polypi—were shown before the society, and shortly afterwards was exhibited an extrauterine gestation sac removed by Sir J. Y. Simpson. Up to 1878, however, the communications were mainly concerned with obstetrics, and gynaecology was a thing of plugs and douches. During the seventy-one years of the society's existence midwifery had shown comparatively little change. In

spite of the great advances made by the introduction of antiseptics, the addition of the axis-traction rod to the forceps, and the use of hot water in *post-partum* haemorrhage, the statistics of the Registrar-General showed that the death-rate was as high last year as fifty years ago. In spite of the certainty that antiseptics had been highly beneficial in labour, the results had fallen far below expectations. The teaching of gynaecology now constituted a special subject of the final examination for the medical degree. He doubted if it was a step in advance to divorce obstetrics and gynaecology as far as the teachers were concerned. It tended to merge gynaecology in general surgery, and that was a retrograde movement. The President also drew attention to the prevalence of puerperal eclampsia in Scotland. Whereas in Dublin the percentage of these cases was 0 5, with a death-rate of 14, in Edinburgh at the Maternity Hospital the percentage was 3, with a death-rate of 35. The increase in Scotland must be due to the change from a diet mainly farinaceous to one rich in nitrogenous compounds. The onset of eclampsia was best counteracted by educating the women to submit the urine for examination during the later months of pregnancy.

MANCHESTER MEDICAL SOCIETY.

Wednesday, November 2nd, 1910.

Mr. STANMORE BISHOP, President, in the Chair.

Identification of the Spirochaeta pallida.

DR. G. E. LOVEDAY, in a paper on the Indian ink method of demonstrating the spirochaete, said the chancre, which should have had no treatment for two or three days previously, should be washed and dried, and its edge abraded with a sterile instrument. Serum was then squeezed out and a drop mixed with water and Indian ink in equal proportions. After the film had been dried, the *Spirochaeta pallida* appeared white on a brown ground. Any cells present showed up, and served to indicate the size of the spirochaete. The simplicity and reliability of the Indian ink method recommended it. Secretion from a primary sore hardly ever failed to show the spirochaete.

Frontal Sinus Suppuration.

Dr. J. ARNOLD JONES, in a paper on the diagnosis and treatment of acute suppuration in the frontal and maxillary sinuses, pointed out that in these cases periodic attacks of neuralgia (mainly affecting supra- and infra-orbital nerves), as accurate and regular in their periodicity as in malaria, might occur. The main lines of treatment in antrum cases were: (1) Washing out the sinus and puncturing the nasal wall in the inferior meatus with a straight hollow needle; (2) endeavouring to establish drainage through natural ostia by applications of cocaine and adrenalin followed up by menthol inhalations. In frontal sinus cases the same measures should be taken for the establishment of drainage, which, if ineffectual in twelve or twenty-four hours, should be followed by amputation of the anterior end of the middle turbinal. Extranasal operation was rarely necessary in acute cases.

Psycho-Therapeutics.

Dr. J. WALTERS, in a paper on the practice of psycho-therapeutics, described a method he had employed in about 200 cases. A state of distraction or very light hypnosis was the best. The chief factor of this state was undoubtedly "preadjustment"—in other words, the patient was placed in the most suitable condition to receive and maintain the suggestions given. This was aided by reinforcement (or inhibition), repetition, and the restfulness of the state itself. Cases were cited proving the efficacy of the method in somnambulism, alcoholism, neurasthenia the obsessions, and insomnia.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, November 8th, 1910.

Dr. T. R. BRADSHAW in the Chair.

THIS was a pathological meeting, the following being among the exhibits:—Dr. HARCOURT: A culture of *Aspergillus niger* growing upon a lemon. It had been isolated from an ear which had been affected for two years; recently the external auditory meatus had been partly filled with pseudo-cholesteatomatous layers interspersed with black material. Dr. GROSSMANN: An *Intraocular melano-sarcoma* of the ciliary region of about six weeks' duration. The eye had received a severe electric shock shortly before illness began. Perhaps this had stimulated the growth of a small dormant tumour. Mr. THELWALL THOMAS: A *Retroperitoneal spindle-celled sarcoma*, weighing 22 lb, removed from a patient who was still living four months after the operation. Drs. LLOYD ROBERTS and MOORE ALEXANDER: A *Carcinoma of the pancreas and liver* from a man aged 23. Drs. BLAIR BELL and ERNEST GLYNN: Microscopic specimens from *Concretions in the ovary* of a patient aged 49. They were of two kinds—some calcareous and others due to coagulated proteins mixed with acid haematin. Both varieties probably arose in connexion with the Graafian follicles. Dr. ERNEST GLYNN: Lantern slides of *Spirochaetes* demonstrated by the "Burri" Indian ink method. He drew attention to the enormous number of *Spirochaeta refringens* sometimes encountered in balanitis. Dr. O. T. WILLIAMS, in a note on the *Estimation of chlorides in urine*, advocated a more routine use of the method in cases of nephritis, so as to save the administration of salt-free diet in cases showing no chloride retention. Drs. STENHOUSE WILLIAMS and NAUSS read a note on the value of *Rabbit leucocytic extracts* in the protection of guinea-pigs from anthrax infection. The leucocytes were prepared according to Pettersson's method, and were inoculated in some cases simultaneously with the infecting organisms, in others at intervals of twenty-four, forty-eight, and seventy-two hours after the inoculation with anthrax. In all cases the extract was found to exert a marked protective influence, many of the guinea-pigs living for prolonged periods, though all the controls were dead within six days. Dr. MOORE ALEXANDER stated that leucocytic extract had been used in the treatment of acute infections in man. The diseases treated included pneumonia with or without empyema, epidemic meningitis, streptococcal endocarditis, etc. In the majority of cases so treated the results had been immediately and strikingly beneficial.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Thursday, November 10th, 1910.

Mr. GUSTAVUS HARTRIDGE, Vice-President, in the Chair.

Clinical Meeting.

THE following were among the exhibits:—Mr. GEORGE COATS: A case and series of slides illustrating *Atypical coloboma* of the iris and lens with persistent mesoblastic strand. The case, he contended, favoured the theory of Hess, that coloboma of the lens was due to fibrous strands of that sort. There were also changes in the vitreous, retina, and choroid. In the upper part of the eye there were certain areas of choroidal atrophy, although there was no persistent mesoblast. If found alone, they would be taken for patches of old choroiditis, thus illustrating the difficulty which often arose in differentiating between a congenital abnormality and a patch of inflammation. That difficulty had given rise to the idea that true coloboma did not occur in the macula; whereas Mr. Coats thought it did. The changes in the fundus exactly followed the retinal vessels. Another interesting point was in connexion with the development of zonula; he favoured the mesoblastic origin. The cases upon which he based his remarks were mostly cases of aniridia. Mr. W. H. JESSOP: A case of recurrent *Melanotic sarcoma* of the conjunctiva, which was shown before the society seven years ago. At that date the tumour, but not the eye, was removed, and proved to be melanotic sarcoma. There had been recurrences in 1904, 1907, and this year; there had been no pain. Vision was $\frac{6}{9}$, and there was a small swelling under the upper lid. It was removed, with the surrounding conjunctiva, and found again to be melanotic sarcoma. Nothing more was now to be seen except two little patches. Mr. TREACHER COLLINS mentioned three cases of epibulbar sarcoma which he had removed without taking away the eye. There had been no recurrence; one of them dated back twenty years. This

was not a melanotic growth, but a definite sarcoma. Mr. Brewerton believed that in Mr. Jessop's case the outlook was now less hopeful, and that a general metastasis was setting in which would kill the patient. Something more should now be done to the conjunctiva, and the brown pigment patches should be excised. Mr. J. H. Tomlinson: A simple projecting *Polariscope* for use in testing colour perception, and illustrated it with a patient whose illumination perception was normal, but colour vision abnormal.

WEST LONDON MEDICO-CHIURGICAL SOCIETY.

Friday, November 4th, 1910.

Dr. P. S. Abraham, President, in the Chair.

Clinical Evening.

The following were among the cases shown: Dr. F. S. Palmer: (1) A case of *Progressive muscular dystrophy* of pseudo-hypertrophic type in a boy aged 6 No history could be obtained of nervous or mental disease in the family or its collateral branches. The boy had whooping-cough when aged 4, and since then had developed the typical features of his disease. (2) A case of *Myasthenia gravis* in a man aged 41, with marked wasting of the facial muscles. Dr. Arthur Saunders: A case of *Diabetes* in a boy aged 5. No family history of glycosuria was obtainable. He had passed over 2,000 grains of sugar in a day, but under dietetic treatment all sugar had now disappeared from the urine. Dr. Reginald Morton: Skiagrams of a case of *Congenital syphilitic disease* of elbow joint. In one taken before treatment no bony outline could be detected at the site of the joint; in the second skiagram, taken after four months' treatment, the bony outlines of the joint were clearly defined. Mr. N. Bishop Harman: A case of early *Conical cornea* in a woman aged 28. The evidence in this case showed that the condition had remained stationary for several years under treatment. Dr. T. Grainger Stewart: A case of *Exophthalmic goitre and syringomyelia* in a typist, aged 20. The chief point of interest was the involvement of the seventh cervical segment on the left side and its escape on the right.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

Tuesday, November 1st, 1910.

Mrs. Dickinson Berry in the chair.

Medical Women in India.

Miss Benson, in a paper on the position of medical women in India, said that in Bombay they were trained at the Grant Medical College and took at the Bombay University the qualification of L.M. and S., which was registrable in the United Kingdom. Their training was administered by officers of the Indian Medical Service, the clinical work being done at a hospital containing 500 beds. Women and men students were on an equal footing, and the class from which the students were drawn was good. English textbooks were used throughout, and many students were ambitious to study in the United Kingdom. The resident appointments were permanent, their occupants being hospital assistants, a class of man not fully qualified. On this account it was difficult for the fully-trained doctors to obtain experience before starting practice independently. There was a regular Government service for men, but not for women, and their position was ill-defined and insecure, and needed radical change. In many of the hospitals nurses were trained, and the people had no means of distinguishing between fraudulent and properly-qualified "lady doctors." In this way there was much abuse of the position, especially in the country districts. There were also great difficulties for the native qualified women, as the country was not ripe for young native women to live an independent life. The Government should form a service, of superior and inferior grades, for women, selected by a body on which women had a voice. Such service should be subjected to inspection and supervision by medical women.

Reviews.

DIETETICS.

The Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India constitute a series of important papers, mostly the outcome of original research, by officers of the Indian Medical Service. The thirty-seventh of the series, recently published, concerns *Investigations on Bengal Jail Dietaries*,[1] carried out at the instance of the Sanitary Commissioner with the Government of India in the physiological laboratory of the Calcutta Medical College, by the Professor of Physiology, Captain D. McCay, M.B., B.Ch., I.M.S., and his demonstrators. The subject is handled in a very scientific and exhaustive manner, and the detailed inquiries and the conclusions deduced from them are not only serviceable for the purpose of indicating the best gaol dietaries for different classes of prisoners in the Province of Bengal, but are also of value as contributions to the solution of important physiological problems. A short sketch is given of previous work by Lyon, Lewis and others. Stress is laid on the futility of determining dietaries on a purely chemical basis, or in accordance with European standards, without taking into account racial habits and peculiarities, questions of geography, climate and work, the nutritive value of various articles of diet in different parts and among different races in India, the questions of bulk as regards food, and weight as regards person, and the proportion of essential constituents actually assimilated and used for vital purposes under various conditions dietetic and personal. These and other questions were made the subject of rigid investigation and carefully-conducted trial. Foods and excreta were scrupulously analysed, and selected groups of prisoners of different races in several gaols situated in different parts of the Province were segregated and observed with a view to the determination of the most economical and useful dietary under ordinary and extraordinary gaol conditions. The general conclusions arrived at point to a reduction of bulk, and improvement of quality, digestibility, and assimilability of food, an important recommendation being the larger use of animal food, especially fish. Apart from the special object for which these researches were made, this treatise in conjunction with a previous publication by the same author on the *Standards of the Constituents of the Urine and Blood and the Bearing of the Metabolism of Bengalis on the Problems of Nutrition* (No. 34 of the same series), is an excellent piece of scientific work on dietetics, digestion, assimilation, and metabolism.

TUBERCULOSIS.

The recently published volume of *Studies from the Saranac Laboratory for the Study of Tuberculosis*[2] commences with a long article by Dr. Baldwin on hypersusceptibility or anaphylaxis. He finds from his experiments that a true anaphylactic sensitization can be produced in guinea-pigs by the pure protein substance of the tubercle bacillus extracted by water at 50° C. A single injection of tubercle-protein equal to 0.0008 gram of dry weight is sufficient to sensitize a normal guinea-pig. In another interesting article Dr. Baldwin discusses the fate of human tubercle bacilli when inoculated into bovines. He states that virulent cultures grown directly from human sputum may cause active infection in bovines when inoculated intravenously, and that the disease, though generally localized and retrogressive, is a sufficient danger to preclude such methods of immunization for cattle. It is also possible for the disease thus produced, after remaining latent for a time, to be awakened into activity owing to parturition, lactation, or trauma. Human tubercle bacilli do not appear to change their characteristics readily when introduced into the bodies of cattle, as Dr. Baldwin

[1] *Investigations on Bengal Jail Dietaries.* With some observations of the influence of dietary on the physical development of the people of Bengal. By Captain D. McCay, M.B., B.Ch., B.A.O., I.M.S., Professor of Physiology, Medical College, Calcutta. Calcutta: Superintendent of Government Printing, India. Pp. 226, quarto, with plates. (Price, Rs. 2 6, or 4s. 3d.) Agents in England, Messrs. W. Thacker and Co., 2, Creed Lane, London, E.C., etc.

[2] *Studies from the Saranac Laboratory for the Study of Tuberculosis.* E. L. Trudeau, Director. 1904–10. Publication Office of the *Journal of Medical Research*, Boston, Mass., U.S.A.

finds that after nineteen months' residence in bovine tissues a culture of human type has retained its original distinctive properties without modification. Reporting on the use of antiformin, Dr. Paterson finds that this substance is useful for cultivating tubercle bacilli direct from sputum, and also for the examination of faeces, urinary sediment, pus, or blood, when such material is suspected of containing tubercle bacilli.

THE STORY OF OUR LIVES FROM YEAR TO YEAR.

IT is no new idea to describe the span of human existence as a clock, every movement of whose pendulum subtracts a fractional portion from the life of each one of us. Sir WILLIAM ROBERTSON NICOLL, therefore, has chosen a very appropriate title for his book, *The Round of the Clock*,[3] in which he describes

> the story of our lives from year to year as indicated on the clock. I begin at six o'clock in the morning and take every hour marked by the hour hand as five years. Each year would thus correspond with a minute marked by the minute-hand. In this way life is divided into lustrums or periods of five years. I propose to indicate the character of each lustrum, and to give from biography and other sources characteristics of each year.

These elaborate calculations have resulted in a very interesting and instructive volume, where each lustrum in the life of the average man is dealt with in a separate chapter which contains a full description of the mental and physical characteristics peculiar to each period. These characteristics are illustrated by examples drawn from the lives of famous men and women belonging to every nation, and to every phase of the world's history. The interest of the book undoubtedly lies in these extracts from the lives of those who have gone before us, but it is considerably enhanced by the theories advanced by its author. For instance, Sir William Nicoll regards

> The zenith of success—the time of most consideration and public honour—as somewhere in the Sixties, say from Sixty-five to Seventy. At that time a man may be in full vigour, and yet be able to look back on a laborious and successful career. He is safe, or comparatively safe, in the position he has climbed to. Criticism dies down, people accept him as an institution. Honours are conferred on him partly because he deserves them, and partly because it is felt that there should be no more postponement. All this is, I think, particularly true of the three great professions.

This is consoling to those among us whose way of life is fallen into the sere, the yellow leaf; but the author's disbelief in the alleged increase in the length of human life at the present day brings less comfort. After careful study and frequent consultation he has been forced, he says, to the conclusion that the average life of the modern man, if indeed it has been lengthened at all, has been prolonged only a very little, in spite of the progress in hygiene and sanitation, and this small increase is due rather to "a diminution of the fatalities of the weak than an addition to the vitality of the strong." This, in Sir William's opinion, is most probably caused by the strain of modern existence, a strain which did not exist a generation or two ago, and which nullifies the good effects produced by the advance of science and the improved conditions under which we now live. Though many of his readers may question the truth of Sir William Robertson Nicoll's theories, there can be no doubt that *The Round of the Clock* well repays a careful study of its contents. Its author, in the introduction, tells us that "such as it is, it has cost me much labour," and it is easy to see that infinite pains have been bestowed upon the compilation of this imposing array of facts and figures. *The Round of the Clock* is well printed and bound, and prettily illustrated by George Morrow.

FICTION: NEW AND OLD.

THOUGH the scene of Mr. EDEN PHILLPOTTS'S new book is laid on Dartmoor, *The Flint Heart* [4] in every other respect is quite unlike the usual run of his books, being nothing more or less than a very amusing fairy tale. The plot turns upon the mischief wrought by a flint charm in the form of a heart made by a "mystery man" in the Stone Age, and endowed with the power of making the heart of its possessor as hard and pitiless as its own flinty substance. After having enabled a prehistoric man to establish himself as chief of his tribe by means of bloodshed and cruelty, the charm lies hidden for thousands of years in Phutt's grave, until acidentally dug up by Billy Jago, a Devonshire farmer, and the rest of the book consists of the trouble caused by this unlucky find, not only in the farmer's own family, but throughout the animal kingdom on Dartmoor, and even in Fairyland itself, until the spell is broken by the innocent courage of Jago's little son and daughter. The story is told with all Mr. Phillpotts's accustomed humour, and though there is but little scope here for the peculiar gifts of its talented author, the book is full of touches well worthy of the creator of *The Human Boy*. The literary fairy, De Quincy, grieving over the decline of English prose, is extremely funny; so is the delightful Marsh Galloper, a mischievous little goblin who speaks broad Devonshire, and whose mission in life is "to get you humans into a mess in these here bogs." He alone should do much to ensure the success of the book, but in any case *The Flint Heart* is certain to be popular with children, even with those who consider themselves too old to enjoy fairy tales. The volume is well printed, and prettily illustrated by Charles J. Folkard.

"Certain books hold their own by individual right and might," says Mrs. RITCHIE in her delightful introduction to the latest edition of Miss MITFORD'S *Our Village*,[5] recently issued by Macmillan and Co., and "they are part of everybody's life as a matter of course. They are not always read, but they tacitly take their place among us." Such a book is *Our Village*, which contains some of the sweetest descriptions of English rural life and scenery in the language, and which is full of an old-world charm and fragrance bestowed upon it by its author's passionate love of Nature and humanity. It is remarkable that the charming "Village Sketches" which captivated London some ninety years ago, and which appear to be brimming over with the joy of life and the love of all created things, should have been written by the daughter of a spendthrift doctor, whose pen was the sole means of repairing the havoc made in the family fortunes by her brilliant, but erratic, father. This new edition of a most popular classic is well worthy of the genius of the gentle woman who loved the quiet English countryside so well. The chief feature of it is, of course, the illustrations, and no greater compliments can be paid them than to say that they are worthy of the text. Besides Mr. Alfred Rawlings's beautiful water colours (which seem almost too daintily pretty to be shut up within the covers of a book) nearly every second page has one of Hugh Thomson's delightful sketches, which form a pictorial comment on Miss Mitford's graceful prose. It only remains to add that the value of this handsome volume is considerably enhanced by the interesting preface written by Thackeray's accomplished daughter.

"My friend who wrote the story of the water baby was a very kind man and very clever," Huxley once wrote to his little grandson; and all who know and love Kingsley's fascinating fairy tale will cordially agree with the famous scientist. A new and very handsome edition of *The Water Babies*[6] has just been published by Macmillan and Co., and one cannot help thinking that this beautiful volume and its still more beautiful pictures would have given pleasure not only to the appreciative Huxley and his inquiring grandchild, but to the author himself. The book is well bound and printed, and Mr. Warwick Goble's exquisite coloured illustrations are beyond all praise.

The many admirers of Dan and Una, in *Puck of Pook's Hill*, will welcome their reappearance in Mr. Kipling's

[3] *The Round of the Clock*. "The Story of our Lives from Year to Year." By W. Robertson Nicoll. Illustrated by George Morrow. Published by Hodder and Stoughton, London. 1910. (Pp. 324.)

[4] *The Flint Heart*. A fairy story by Eden Phillpotts. With sixteen illustrations by Charles J. Folkard. London: Smith, Elder and Co. 1910. (P. 310.).

[5] *Our Village*. By Mary Russell Mitford. With an introduction by Anne Thackeray Ritchie; 100 illustrations by Hugh Thomson, and 16 coloured plates from drawings by Alfred Rawlings. Published by Macmillan and Co., Ltd., St. Martin's Street, London. 1910. (Pp. 256.)

[6] *The Water Babies*. A Fairy Tale for a Land Baby. By Charles Kingsley. With illustrations in colour by Warwick Goble. London: Macmillan and Co., Limited. 1910. (Pp. 274.)

latest book, *Rewards and Fairies*,[1] which is intended as a sequel to the former, and every child who reads the fascinating tales contained in this volume must envy the brother and sister whom Puck has honoured by his friendship, and to whom he gives such wonderful glimpses into the past. Mr. Kipling is, perhaps, almost at his best when writing either of children or of the pleasant county he loves so well, and he has drawn a delightful picture of two entirely delightful children in their home in the heart of the Sussex Weald. *Rewards and Fairies* consists, like its predecessor, of a collection of historical sketches of different periods; but in the second part its author goes farther afield, and does not confine his attention solely to the history of his own country. Both in "Brother Square-Toes" and its continuation, "A Priest in Spite of Himself," the scene is laid in France and America during the years immediately following the Revolution, and Washington, Talleyrand, and even the great Bonaparte himself, play a part in the development of the story, which, by the way, is somewhat unnecessarily involved and obscure. The majority of the stories, however, concern Sussex, and of these, perhaps, the best is "Marklake Witches," a pathetic little tale of the Napoleonic wars, which has for its heroine the consumptive daughter of a Sussex squire, whom two enlightened men, a French prisoner of war and an old sailor and whilom smuggler, endeavour to cure by modern methods, with the result that they are nearly murdered as witches for their pains. The story, told by the dying girl herself, all unconscious of the doom hanging over her, is skilfully handled and written with infinite tenderness and restraint; the ending, in particular, is quite perfect. Incidentally, "Marklake Witches" contains a clever thumb-nail sketch of Wellington, long before the days of his dukedom, describing the battle of Assaye "as though it had been a whist-party—I suppose because a lady was present." Another story whose plot turns upon modern scientific discoveries is "A Doctor of Medicine," in which a physician checks an outbreak of plague in a country village during the Civil War by exterminating the rats with which the whole place is swarming. Culpeper is an amusing example of a seventeenth-century physician—self-satisfied and long-winded—who stumbles by accident upon the discovery which enables him to save the stricken people, and who attributes the epidemic to the constant warfare waged between the moon and her enemy, the planet Mars. Space forbids further enumeration of the many good things with which the book abounds, but two of its stories deserve special attention. One is "The Tree of Justice," in which an old acquaintance, the Norman Knight, Sir Richard Dalyngridge, gives the true version of Saxon Harold's end—his escape from the shambles of Senlac and his return years later as an old half-witted pilgrim to die at the feet of the King who was reigning over England in his stead; and the other, the charming "Conversion of St. Wilfred." The latter contains a beautiful little sketch of the saintly Archbishop of York and his friend Meon, a fine old heathen who will not curry favour with the new God by deserting the gods of his fathers, and who refuses to become a Christian unless his pet seal, Padda, is baptized with him. Padda (the name is a stroke of genius) is delightful, and so is Eddi, the Archbishop's chaplain and devoted companion, who is incapable of seeing a joke, and who firmly believes that poor Padda is in league with the powers of darkness. Mr. Kipling is to be congratulated upon *Rewards and Fairies*, which has succeeded, where so many sequels fail, in fully coming up to the standard of the volume which preceded it. As in *Puck of Pook's Hill*, the author has managed to create something of the proper atmosphere for his tales, whether they deal with Saxon England, the Syone Age, or the "spacious times of great Elizabeth." Moreover, he has told them, for the most part, simply and clearly, with little of the obscurity and straining after effect which has spoilt so much of his later work; and the lessons they teach of the beauty and necessity of an unselfish patriotism and duty to the mother country are none the less effective for being carefully concealed behind a mask of fiction. The book is well bound and printed, and contains some pretty illustrations by Frank Craig.

[1] *Rewards and Fairies*. By Rudyard Kipling. With illustrations by Frank Craig. Published by Macmillan and Co., St. Martin's Street, London. 1910. Pp. 338.

Mrs. MOLESWORTH is so universally and so deservedly popular that anything from her clever pen can always be counted upon to receive a warm welcome from her youthful admirers. Her latest book, *The Story of a Year*,[8] though perhaps it may not quite come up to the high standard of its predecessors, is by no means unworthy of the author of those charming stories, *Carrots*, and *Us*. The story of the trials endured by little Fulvia Derwent and her young mother at the hands of a miserly old relative under whose care they had been placed, is told very simply and prettily by the child herself; and there is a really charming picture of two maiden ladies who keep a tiny shop in an old-world suburb, and under whose roof the mother and child are driven to take refuge. The book, of course, ends happily, with the return of the husband and father from a long journey to the West Indies; but not until his wife and daughter have gone through some curious experiences, both pleasant and unpleasant. There is never anything of a violently exciting or unusual nature in Mrs. Molesworth's books, but they possess a certain quiet charm that is peculiarly their own. This is probably due to the fact that whilst their author never appears to be writing down to her little readers (a thing which children are quick to discover and resent) she never forgets for whom she is writing, and becomes, as it were, almost as if she herself were a child again, with all a child's quaint fancies, and the narrow outlook on life and love of detail which is so marked a characteristic of childhood. But besides this, Mrs. Molesworth possesses a decided gift for character drawing, and is particularly happy in the portrayal of a certain type of old-fashioned child, dreamy and imaginative. Fulvia Derwent is but one more addition to that large family of delightful little girls whose joys and sorrows have entertained more than one generation of childish readers, and she is fully as charming as any of her older sisters. Altogether, *The Story of a Year*, which is prettily bound, and illustrated by Miss Gertrude Demain Hammond, can be safely recommended as an ideal Christmas or New Year's present to any little girl.

NOTES ON BOOKS.

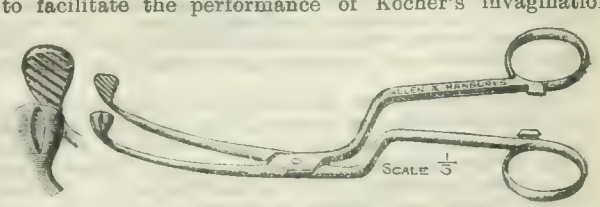
WE have received a copy of Professor KARL PEARSON'S presidential address delivered at the annual meeting of the Social and Political Education League.[9] The address is an admirably clear and forcible exposition of Professor Pearson's well-known views and contains in addition some interesting reminiscences of his early work as a popular lecturer and the knowledge he obtained therefrom. The pamphlet will repay perusal by Professor Pearson's many friends and not less numerous opponents.

[8] *The Story of a Year*. By Mrs. Molesworth. With illustrations by Gertrude Demain Hammond. London: Macmillan and Co., Limited. 1910. (Pp. 232.)

[9] *Nature and Nurture: The Problem of the Future*. By Karl Pearson, F.R.S., Eugenics Laboratory Series VI, pp. 31; 2 plates. Price 1s. (London: Dulau and Co. 1910.)

MEDICAL AND SURGICAL APPLIANCES.

MR. HARRY CRICHTON (Assistant Surgeon, South Shields Infirmary) writes: The accompanying illustration shows a forceps made to my design by Messrs. Allen and Hanburys to facilitate the performance of Kocher's invagination



operation for the radical cure of inguinal hernia. As will be noted, the shaft of the forceps has a gentle curve bringing the head to the level of the handles, and terminating in a "bullet-shaped" head bearing a slot on either side. The head of the forceps, carrying the invaginated "sac," protrudes the parietal peritoneum into the opening made

by separating the fibres of the internal oblique and transversalis muscles, and here it is secured. Through the buttonhole now made in the peritoneum the sac is very readily picked up by inserting the teeth of a tenaculum forceps into the slots in the head of the hernia forceps. The forceps have proved very satisfactory, and render the performance of this excellent operation very simple, and if working single-handed or on a muscular subject, they are invaluable.

EXTERMINATION OF RATS.

OFFICIAL CIRCULAR.

THE Local Government Board has issued the following circular to port sanitary authorities, town clerks, and clerks to urban and rural district councils:

Local Government Board,
Whitehall, S.W.,
November 12th, 1910.

Sir,

I am directed by the Local Government Board to advert to their Circular Letter of the 10th instant, and to forward to the Sanitary Authority the enclosed copies of a Memorandum which has been prepared by the Board's Medical Officer on the subject of Plague, together with Directions for obtaining and forwarding for bacteriological examination material from suspected Plague cases.

A copy of the Memorandum and of the Directions should be given to the medical officer of health, and a copy of the Memorandum to the inspector of nuisances.

I am to request that the Sanitary Authority will instruct their officers to use their best endeavours to secure the carrying into effect of the suggestions which the Memorandum contains.

The Memorandum will be placed on sale, so that copies may shortly be obtained either directly or through any bookseller from Messrs. Wyman and Sons, Limited, Fetter Lane, E.C.

I am, Sir,
Your obedient Servant,
H. C. MONRO,
Secretary.

MEMORANDUM ON PLAGUE.

I. GENERAL CHARACTERISTICS OF THE DISEASE.

After frequent recurrences during several centuries, ending with the great outbreak of plague in 1664–1679, the disease disappeared from Great Britain for more than 200 years. In 1894 it became prevalent at Hong Kong, and since that time it has spread from Asia into various parts of Europe, America, Africa, and Australia. In 1900 and in two subsequent years small outbreaks have occurred at Glasgow, and one or more cases have also occurred at Liverpool, Cardiff, and Leith during the last ten years.

During the present year (1910) cases suspected to be pneumonic plague were associated in Suffolk with definite occurrence of plague in rats and other rodents.

In view of these facts sanitary authorities and their officers should be on the alert, and especially should they take steps for ascertaining the cause of any recognized excessive sickness in rats, or of human illness of a doubtful nature associated with sickness or mortality in the same district.

The following facts with regard to plague should be borne in mind:

1. *Symptoms of Plague.*

An attack of plague usually begins some three to five days after exposure to infection. The attack may develop gradually, but, commonly, there is sudden onset with much fever, as indicated by a high temperature, rapid pulse, headache, hot skin, and thirst. The eyes are injected; the expression, at first anxious, becomes subsequently vacant and dull; the utterance is thick, and the gait unsteady as in one under the influence of drink. There is at times a distinct tendency to faint. The tongue is at first covered with a moist white fur except at the edges, which are red, but later on it becomes dry and of a mahogany colour.

The most distinctive sign of plague is the presence of glandular swellings, or "buboes" as they are called, in the groin, armpit, or neck. These "buboes," which led to the disease being called "bubonic plague," appear, as a rule about the second or third day of the disease. They are usually painful and tender on pressure, and in size they vary from that of an almond to that of an orange. Later on they may "gather" and burst like an ordinary abscess. In a few cases "carbuncles" occur.

Cases of plague occur in which buboes are greatly delayed or even absent, as, for instance, in "pneumonic," "gastric," and "septicaemic" plague.

In addition to the above-mentioned forms, plague sometimes takes on the so-called "ambulant" form. In plague of this description the affected person is hardly ill at all, presenting no definite symptoms, perhaps, beyond indolent, though painful, swellings in groin or armpit. Such plague cases may nevertheless be instrumental in spreading the disease, and any persons, therefore, who, having been possibly exposed to plague, exhibit these symptoms, should be isolated and watched medically until the nature of their malady has been definitely ascertained.

2. *Diagnosis of Plague.*

The three most important forms of plague—bubonic, septicaemic, and pneumonic—are very liable to be confused with venereal diseases, enteric or typhus fever, and ordinary pneumonia respectively; and the differentiation will be greatly facilitated (*a*) if the medical practitioner bears the possibility of plague in mind; (*b*) if he inquires carefully into the antecedents of the patient and into the occurrence of rat sickness or mortality; and (*c*) if he avails himself of the bacteriological aid to diagnosis mentioned below. The occurrence at or about the same time or in succession of more than one case of pneumonia in a house, or the unusual prevalence of disease of a dubious character in a neighbourhood, should at once lead to suspicion and to the action needed to clear up the diagnosis.

3. *Method of Spread of Plague.*

The pneumonic form of plague is directly infectious from patient to patient, the expectoration, and possibly also the droplets ejected when the patient coughs, containing plague bacilli. The means for avoiding personal infection are set out below.

In bubonic plague there is a consensus of experience that personal infection rarely, if ever, occurs; and that, given elementary cleanliness, including absence of fleas and bugs, little risk is run by doctors or nurses or other attendants. Bubonic plague is the rule, pneumonic plague is rare. That infection from patient to patient seldom occurs is further shown by the comparative infrequency of multiple cases of plague in invaded houses. Experimental observations[1] have shown that the plague bacillus has only a short extra corporeal vitality; and that infected soil and dust need not be considered as serious or continuing sources of infection.

It has also been shown that experimental feeding of animals with virulent plague material produces the disease only when the infective material is given in enormous doses. Apart from the protection afforded by cooking, such massive infection of human food is highly improbable. It is, however, desirable that the access of rats and mice to human food should be prevented.

In the majority of cases of human plague the virus enters through the skin by means of a flea-bite, occasionally by inoculation in other ways. Under experimental conditions the chance of infection varies with the number of infected fleas which are allowed to bite the subject of the observation. The risk of infection, therefore, may be regarded as likely to be proportional to the extent to which the house or workplace is infested by plague-infected fleas.

4. *Rats the Source of Plague.*

Plague for administrative purposes may be regarded as a disease of rats which incidentally and occasionally attacks man. Fleas form the intermediaries between the diseased rat and man. If the fleas of infected rats (or the fleas of such other animals as occasionally suffer from plague) are excluded from access to human beings, plague will seldom, if ever, spread from animals to man.

The species of rat and the species of fleas infesting the rat have an important bearing on the likelihood of infection spreading to man.

During the great epidemic of plague in England in the seventeenth century, the black rat (*Mus rattus*) was chiefly prevalent. The brown or Norwegian rat (*Mus decumanus*) began to invade England early in the eighteenth century, and soon almost entirely replaced its smaller and weaker rival in this country. The change bears on the possibility of the occurrence of human plague in this country. The brown rat in towns is found chiefly in sewers, docks, slaughter-houses, granaries, etc. In the country it lives in burrows in the hedgerows and ditches and in ricks. It is a shy animal and avoids man, seldom taking up its abode in human habitations. In India the black rat lives and breeds in the houses and huts of the natives, in close proximity to man. Both the flea *Ceratophyllus fasciatus*, which commonly infests rats in this country, and *Pulex cheopis*, which is the usual rat flea

[1] See Reports on Plague Investigations in India, in *Journal of Hygiene*, particularly vol. viii, No. 2 (1908).

in India and other tropical countries, readily feed upon man when hungry and when their natural host is not available; *Pulex cheopis* is usually considered to bite man more readily than the former.

II. Measures against Plague.

The chief measures requiring to be taken to prevent the spread of plague follow from the knowledge of its natural history which has been acquired in recent years, especially as the result of the work of the Indian Plague Commission.

Measures concerned with the prevention of importation of infection from abroad are regulated by the International Sanitary Convention of 1903, and need not be considered in this Memorandum.

The experience of Glasgow shows that in this country the disease in man can easily be controlled under conditions of efficient sanitary administration.

The measures to be taken in respect of plague occurring in this country concern (*a*) human source of infection, (*b*) infection from inanimate objects, and (*c*) infection from lower animals, especially the rat.

(*a*) *Precautions against Human Infection.*

The first step in the control of spread of infection from patient to patient is the discovery of suspected cases of illness, and their prompt notification to the medical officer of health.

Notification.—The Board's Order of September, 1900, requires under penalty immediate notification to the medical officer of health of the district, and by him to the Board, of every recognized case of plague. To aid in this recognition the sketch of the clinical features of the malady given above has been inserted in this memorandum. Further, in order to aid in identifying plague newly developing in a district, the Board have arranged for

Bacteriological diagnosis, without cost to the local authority, of material sent to the Board's medical officer by the medical officer of health from the earliest suspected cases.

Isolation and Observation of "Contacts."—Although it is only in the pneumonic form of disease that personal infection is likely to occur, the isolation of all patients suffering from plague is desirable, among other reasons, because disinfection and the disinfestation of premises from vermin can be more efficiently secured after the patient's removal. It is important to keep under observation those who have been in contact with the patient or exposed to the same conditions.

The Production of Personal Immunity.—Those persons who are liable to be exposed to direct infection will do well also to protect themselves beforehand by means of the plague prophylactic, which has been found to be successful in India in protecting attendants and others exposed to infection under very dangerous conditions. Plague prophylactic should be obtained by the medical officers of health of districts actually invaded by plague, for the protection of doctors and nurses who may have to attend cases of plague, or others who may be exposed to infection. Any person attending a patient with recognised or suspected pneumonic plague should use strict precautions to avoid infection. Among such precautions may be mentioned personal cleanliness, especially of the hands, and the use of a respirator containing a film of cotton, made to cover the nose and mouth.

The part played by man in spreading bubonic plague is small. Hence measures taken against him have a correspondingly limited influence in preventing the propagation of plague. In the case of pneumonic plague direct personal infection occurs. Such outbreaks are successfully dealt with by isolation of the patients and observation of contacts.

(*b*) *Precautions in Regard to Inanimate Objects.*

These are concerned with the destruction of infective material derived from man or from animals, and with removing the harbourage for rats.

As already stated, the plague bacillus does not live long outside the animal body, even in excreta or in discharges from the lungs and abscesses. It is, however, important thoroughly to disinfect and cleanse infected dwellings. The disinfection and cleansing which will be most efficient will be such as will secure the disinfestation of the rooms and of all articles of bedding and clothing from fleas. Clothing, which may harbour infected fleas, is dangerous. Fleas are to be found in dust and rubbish in dirty, untidy houses; hence the importance of domestic cleanliness in the prevention of plague.

The removal of all heaps of refuse, especially of garbage affording food for rats, the removal of empty boxes or any rubbish allowing rats to hide near houses, the stopping up of rat runs with broken glass and tar, the repairing or relaying of drains in houses where there are rat-runs, are among the most important methods for preventing the spread of plague by the rat. It is also important securely to stop up entrance to spaces under floors of dwellings and outbuildings where rats may harbour.[2] These and other like measures, which will occur to all, are directed towards *preventing the access of rats to or their entrance into houses.* If rats are kept out of dwellings, danger is relatively small. There is difference of opinion as to the keeping of cats. Cats which have worried plague infected vermin may bring rat-fleas into the house; but the presence of a cat in a house is one of the best safeguards against domestic invasion by rats or mice. The balance of evidence appears to be strongly in favour of the protective influence of cats. But a cat which shows signs of illness should be destroyed and buried.

Domestic uncleanliness favours plague. The human flea (*Pulex irritans*) which flourishes under such conditions, will bite both the rat and man; but it is seldom found on rats and soon dies out on them. Uncleanliness also may lead to increase of rats in and about the house.

(*c*) *Precautions against Rats.*

The *continuous* suppression or limitation of rats in a district into which rat plague has been introduced will prevent the occurrence of human plague of local origin. Efforts should, therefore, be concentrated in such districts towards this end. Complete extermination of rats is, perhaps, impossible; but decrease of rats, short of extermination, diminishes greatly the chances of infection. Such measures must be persistent, as the rat soon breeds up to its old level of numbers, conditioned only by the amount of food supply and the activity of its enemies. Rats are intelligent, and will migrate to other districts unless the efforts at destruction are combined and systematic. In view of likely migration, medical officers of health and inspectors of nuisances, as well as private persons, in districts bordering on a neighbourhood where rat-plague exists, should make inquiries at intervals, and submit suspected rats found dead or ill for bacteriological examination.

There are several methods of dealing with rats, but it is unwise to trust to any one of them alone, and, when practicable, all methods should be employed together. Of traps, a spring trap has been found to be the most useful kind. Poisons containing phosphorus or arsenic are effective, but they should not be laid where poultry or other domestic animals may be poisoned. The different forms of bacterial virus are useful, where chemical poisons cannot safely be employed. They are said sometimes to be uncertain in result, and it is important that animals poisoned by them should not obtain access to human food. Hunting with dogs and ferrets is a very effective method, especially in the hands of expert rat catchers. If dogs or ferrets are employed, they should be kept under observation and not allowed in domestic dwellings. The Board of Agriculture and Fisheries are about to issue a leaflet on the subject of rat destruction, which will contain general information on the matter.

Even in districts not affected with rat plague, nor bordering on districts so affected, the sanitary authority should be on the watch for the occurrence of unusual mortality among rats. If excessive mortality is observed, bacteriological examination of rats found dead should be made, and if they prove to have died of plague, steps should be taken to ensure the *systematic and continuous destruction of rats.* Precautionary measures of this kind are especially called for in and about docks and wharves, and also in places where rats abound, such as granaries, meat markets, slaughter-houses, piggeries, and dumping grounds for refuse. The private slaughter-houses still found in the immediate neighbourhood of dwelling-houses are a special source of danger, being commonly over-run with rats.

Fleas leave the dead rat when it becomes cold. Dead rats should, however, not be handled without precautions. Cremation is the best method of disposal of dead rats, if it can be carried out without involving delay or unguarded handling. Failing this they should be so buried that they cannot be disinterred by other animals.

Rat catchers, as well as those engaged in disinfection of clothing, etc., can, apart from the administration of plague prophylactic, partially protect themselves by the external application of powders, etc., disliked by fleas, and by wearing puttees or gaiters and gloves.

On a previous page the importance of removing all harbourage for rats in or near houses has been emphasized.

[2] The provision of a layer of concrete under the floor, as required in the Board's Model By-laws for new buildings in urban districts, is of importance in this connexion.

So far as possible every house should be rat-proof. It is equally important not to encourage the domestic invasion of rats by allowing morsels of food to lie on or under the floor or in ashpits.

The most important recommendations may be summarized as follows:

1. Persistently and systematically destroy all rats.
2. Remove and obliterate their nests, burrows, and habitual haunts, and
3. Make each dwelling as far as practicable rat-proof, and remove all known harbourage for rats in or near dwellings.
4. At the same time do not allow waste food (whether for human beings, chickens, or other animals) to accumulate in or about the house.

Rat plague is not necessarily accompanied or followed by human plague. Freedom from risk of plague can be secured, with almost complete certainty, by any household which acts in accordance with the directions given above.

ARTHUR NEWSHOLME,
Medical Officer.

Local Government Board,
November, 1910.

BACTERIOLOGICAL EXAMINATION IN SUSPECTED CASES.

Dr. Newsholme has issued the following directions for obtaining and forwarding for bacteriological examination material from suspected plague cases.

[The Local Government Board, with a view to assisting in the identification of plague newly developing in a district, have arranged for bacteriological testing, without cost to the local authority, of material from the earliest suspected case or cases, or from the earliest suspected rodents, in the district. *This material can be received only from the Medical Officer of Health.*]

A.—*From the Living Person.*

1. Clean with soap and water and then with alcohol the skin over the bubo. When dry, or after mopping with a clean cloth, pierce the bubo with the needle of a hypodermic syringe (previously cleaned with boiling water); empty the syringe into a small phial, previously cleaned with boiling water. Collect additional exuding fluid in capillary tubes.
2. When there is a discharging bubo, collect fluid therefrom in capillary tubes, as in the above case. When this discharge is not of a sufficiently fluid character for collection in this way, place some of it in a small glass-stoppered phial, previously well washed out with boiling water or with alcohol, care being taken that no alcohol remains in the phial.
3. If expectoration be obtainable, collect some in a phial in the manner prescribed in the previous sentence.
4. If the patient shows symptoms of lung disease, it should be considered whether fluid may not be obtained by aspiration under strict aseptic precautions from the lung over the affected part, and collected as above.

B.—*From the Dead Body.*

1. Cut out any inflamed lymph gland, together with some of its surrounding tissue, wrap the whole in fresh gutta-percha paper, and place it in a wide-mouthed glass-stoppered bottle, previously well washed out with alcohol, care being taken that no alcohol remains in the bottle. The bottle should have the stopper well secured and sealed.
2. Obtain also a piece of the spleen, dealing with it in the same manner.

C.—*From Rats and other Rodents.*

The suspected dead animal should be immersed in a solution of a strong disinfectant before being placed in the package. By this means fleas, if any, can be destroyed.

The animal should then be packed in a tin box or a jar with a close-fitting cover, and this placed in a larger wooden box filled in with sawdust.

D.—*Directions for Forwarding Material.*

1. All suspected plague material should be very carefully packed so as to avoid risk of breakage and danger of infection during transmission.
2. The material may be sent by letter post, not parcel post, if the Post Office Regulations[3] are complied with. The postage need not be prepaid.
3. The package should be addressed "The Medical Officer, Local Government Board, Whitehall, London."
4. A statement giving details as to the source of the material, and a preliminary account of the clinical character of the case, and other information respecting the patient should always be sent, under separate cover to the Medical Officer, Local Government Board, at the same time as the material is sent.
5. Where possible the Medical Officer, "Localise" London, should be advised by telegram that material has been dispatched, specifying the route and also, if possible, the time when the material may be expected to arrive.

[3] Postal Regulations for sending deleterious liquids or substances by ordinary letter post for medical examination: "Any such liquid or substance must be enclosed in a receptacle hermetically sealed, which receptacle must itself be placed in a strong wooden, leather, or metal case, in such a way that it cannot shift about, and with a sufficient quantity of some absorbent material (such as sawdust or cotton-wool) so packed about the receptacle as absolutely to prevent any possible leakage from the package in the event of damage to the receptacle. The packet so made up must be conspicuously marked 'fragile, with care,' and bear the words 'pathological specimen,' and also the signature and address of the medical practitioner or veterinary surgeon who sends it. The packet must on no account be sent by Parcel Post. Any packet found in the post not packed and marked as directed, will be at once stopped and destroyed with all its wrappings and enclosures."

THE AUTOMOBILE EXHIBITION.

In our last issue we gave a general account of the constructional tendencies manifested in the 1911 models of motor cars shown at Olympia. In the interval that has elapsed a detailed examination of many of the exhibits has been possible. Before describing them, however, we accentuate for the benefit of our readers abroad what has been said before as to the increasing favour with which detachable wire wheels are being regarded by mentioning that those prejudiced against detachable wheels nevertheless need not deprive themselves of the advantage of wheels made of material which will not alter materially at different temperatures. Some ordinary but all-steel wheels made by Sankey are now procurable, and appear to have given satisfaction both in India and Australia.

A Novel Drive for the Magneto.

A good notion of the increasing extent to which accessibility and simplicity are being studied may be gained from the 8-h.p. single cylinder De Dion car. In this the natural circulation of the water is relied on for cooling purposes, and a positive and direct drive is afforded to the magneto machine, as it is driven direct from the forward end of the crank shaft, being centrally situated, yet readily dismountable. There has also been a modification in the design of the De Dion clutches for all types. The plate member is faced with a series of leather segments. Allowance is made for any creeping to which the leather may be subject in the course of wear by spacing these segments to a sufficient degree. In the popular single-cylinder model, wherein the cylinder diameter has been reduced though the motor is to the full as powerful as any previous ones, there is no exterior fly-wheel, this detail being enclosed in the base chamber. This obviates any necessity to carry additional weight in the clutch, which is accordingly an extraordinarily light member that does not run in oil, though it is enclosed around the spring. The details of these new clutches would certainly repay inspection. The springs are now made longer than formerly, and a special form of triangular radius rod is employed in connexion with the live axle. Natural circulation is also relied on for cooling the 9-h.p. two-cylinder type and the new 12-h.p. four-cylinder model. The latter is a development from the 10-h.p. model of last year, but has a piston displacement 20 millimetres longer; it is, indeed, a very long-stroke engine, since the cylinder bore is only 66 millimetres and the piston travel is 120 millimetres.

Darracq Novelties.

The Darracq firm has made a considerable change in its programme this year, the smallest model being a 10-h.p. machine with a pressed steel frame, and the lower portion of the seats in two single pieces or sheets of metal joined centrally; Messrs. Darracq, of course, was the first firm to standardize the use of the now universal pressed steel side parts to car frames. The firm also brings forward a medium-powered six-cylinder model, but the chief feature of interest is to be found in its four-cylinder 15-h.p. type, which succeeds the 14-h.p. model of last season, but departs from it in several details, apart altogether from having a motor of larger dimensions. For one thing, the cylinders are not cast at one operation but in pairs, and for another the crank shaft is now equipped with ball bearings. Many firms are taking up this practice, for instance, Messrs. Delahaye on a small machine and—in another style of motor—the Daimler firm with a 12 h.-p. monobloc sleeve-valve engine. The 15-h.p. Darracq motor has overhead valves and tappets, while another novelty is that the entering portion of the clutch is pressed out of one piece of steel.

New Style Adler Valves.

There is quite an interesting novelty in the Adler programme concerning the largest of its new cars, which is a nominal 20 h.p. four-cylinder machine, having the inlet valves set above the exhaust series. These valves are of large area and are so designed that the lift of them is made comparatively slight, the better to ensure silence and precision. All the valves are on the left side of the motor, the inlet series being set immediately above the exhaust ones. The tappets are worked by rods that move in long guides between the valve chambers. Each inlet valve is set in a sleeve dropped into the pocket proper and is worked by a rocking tappet carried in a stanchion forming part of the valve sleeves. Then, again, the number of distributing gear wheels has been reduced to two, thus making still more for efficiency and quietude. The magneto machine and the pump for circulating the cooling water are driven by a common transverse shaft in front of the engine.

A Recruit for the Worm Drive.

The chief item in the Argyll programme is the introduction of a 12-h.p. four-cylinder model that embodies several departures from the previous practice of the firm. These include the employment of front wheel brakes and the use of a worm drive in combination with a very ingenious shaping of the transverse frame member to provide against all risk of displacement of propeller shaft and the car jumping that shaft, pole fashion. The Argyll system is the very simple one of slightly sinking the second rearmost transverse frame member so that it sweeps a few inches below the truly horizontal propeller shaft terminating in the worm placed over the master wheel in the rear live axle. In this connexion it may be noted that, as a general practice, makers are using overhead worm drives in the case of cars of 12-h.p. or less and an under-drive in others, consequently setting the motor, clutch, gear box, and the transmission gear on the slope to achieve a straight drive with absence of work for the universal joints. The Lanchester, Daimler, Wolseley, Sunbeam, Napier, Thornycroft, and a number of other firms employ this latter mode, by far the majority of them having the engine on the slope. The Argyll chassis in general is a very much stronger as well as a more efficient model than anything the firm has produced previously. Among the bodies built for it is one specially well suited for some classes of medical work—a smart two seated body with scuttle dash, high sides, collapsible occasional seat at the rear, and a very low, racy type of cape cart hood that fits close on to the low wind screen.

The New Armstrong-Whitworth Machine.

The Armstrong-Whitworth programme this year is enlarged by the addition of a 17.9-h.p. four-cylinder model which, like the Argyll, has all four cylinders cast in one operation. It is a rapidly growing practice for low and medium powered engines, initiated by Mr. Edmund Lewis, who also pioneered the movement of enclosing the valves in readily detachable cover plates—a plan which achieves a much cleaner engine, as well as makes for an additional degree of silence. In the Armstrong-Whitworth machine a honeycomb cooler and a fly-wheel fan are furnished in combination with reliance on natural circulation of water, while the carburettor itself is set unusually high, so as to enhance accessibility. With the carburettor thus placed, a stream of appreciable depth could be forded without fear of water getting into the cylinders. It may also be noted that the pressure feed for the petrol is derived from a small air pump worked off the lay shaft in the gear box, which furnished four speeds forward, the through drive representing the top speed. The plate clutch is coupled up rigidly to the gear box, and the steering column, as well as the steering pivots, are equipped with ball-thrust bearings, the column itself being adjustable to about 30 degrees.

Long-stroke High-speed Engines.

It is some time since there has been embodied any outwardly obvious change in the constructional details of the Clément-Talbot machines. This year, however, the first thing one notices is that the valves are set all on one side, Indian file fashion, so that they are worked by a single cam shaft, thus reducing the amount of half-time gear employed, and making for additional silence; moreover, the piston travels have been made longer in relation to the cylinder diameters. In the early days long-stroke engines suffered from comparative coarseness and slow speed, but the compression now employed, and that increased knowledge of metals which has enabled reciprocating parts to be greatly lightened, have resulted in getting very high speed motors that are not coarse in use, and which naturally develop extraordinary power in relation to their size and the number of their revolutions. The new style 15-h.p. chassis really gives the key to the fresh Talbot practice in all the models, which include a very attractive 20 h.p. six-cylinder model. The lower ends of the connecting rods delve into troughs for their splash lubrication, while oil is forced by a pump to the main engine bearings. The cooler is mounted on felt pads with springs to the holding bolts, and there is a flexible connexion between the leather clutch of the four-speed gear box, while all the road wheels run on combination load and thrust ball bearings. The latter are also fitted to the top and bottom of the steering column, and the steering heads are provided with phosphor bronze bearing rings. There is a hand adjustment for taking up the foot brakes, and the manner in which the radius rods are made long so that their points of anchorage may coincide with the universal joint on the front end of the propeller shaft is worthy of note.

Humbers.

The Humber firm makes a fresh start in the motor industry by bringing forward three quite new models which, while retaining those features that have rendered Humber cars distinctive in appearance, are in actual constructional practice as well as in material quite an advance on everything that has yet come from the firm. The new feature of all the engines is the employment of silent chains to work the cam shafts, just as they are used by the Daimler and Minerva Companies in connexion with the valve shaft of the sleeve valve engines. It is a practice which seems to be growing, since it is employed this year by Germain to work overhead tappet valves. In the 28 h.p., which is the largest of the Humber trio, the magneto machine as well as the valves are worked by these silent chains. Other details worth study are the ample brake surfaces furnished, the strength of the steering connexions, and, in the case of two smaller models, the tubular member that encloses the propeller shaft, and also, in the largest type, the pressed steel "V" style torque member.

Worm-driven Sunbeams.

The Sunbeam Company comes forward at the conclusion of the most prosperous season in its history with a series of three models, all of them employing the worm form of live axle drive from below the master wheel. The largest model is a six-cylinder nominal 18 to 22-h.p. machine; it is similar in design to the 12 to 16-h.p. four-cylinder type, the casting being done in pairs of cylinders with the inlet and exhaust valves on opposite sides. The front ends of the three-quarter elliptic springs used at the rear are anchored so that there is no call to use radius rods, nor is a torque member employed. The six-cylinder model has engine dimensions of the same size as the smaller four-cylinder model; but the grouping is done in threes, after the manner approved by Rolls Royce, Vauxhall, Delaunay-Belleville, and the rest. The way in which the steering-gear of the Sunbeam machine is fixed is out of the ordinary, while details of minor refinement that call for note in connexion with these cars are that a laminated spring-drive is employed in connexion with the magneto machine, while not only is the carburettor hot water-jacketed, but there are also three cross tubes that pass right through the induction pipe, and through which the warm liquid circulates.

New Gear-box Oiling.

The Wolseley Company's programme for 1911 is very varied, the largest model being the 50-h.p. six-cylinder type supplied to Queen Alexandra, and the smallest the nominal 12-h.p. model. In connexion with the former there is a mechanical novelty in the construction of the gear box which is significant, and which may be expected to be widely imitated. Instead of the gears churning in a bath of oil the lubrication system is practically the same as that adopted for some engines—that is to say, a well is

cast in the lower part of the gear box. From this a pump draws the filtered oil and forces it along a pipe set parallel with and above the gear shaft, and having holes corresponding with the positions of the various spur wheels, on to which the lubricant accordingly falls. This is a very much neater and more refined method of working, the oil being supplied precisely where it is needed. It will be noted, too, that the Wolseley Company is increasing its use of the worm drive, and employing higher compressions and higher engine speeds; that is to say, the motors take their load at a much greater number of revolutions, so that, size for size, the 1911 Wolseley types are more powerful and flexible than the corresponding ones of the current year.

Sleeve-valve Rovers.

The Rover Company makes a notable departure in supplementing its series of poppet-valve models by two popular types fitted with the new Daimler-Knight silent sleeve-valve engines. They are the first to be put on the market by any firm with one and with two cylinder units, so that, from the engineering point of view alone, it is an interesting development. The single-cylinder vehicle is rated at 8-h.p. The 12-h.p. two-cylinder model is the same in engine dimensions as the nominal 22-h.p. four-cylinder Daimler engine. In both the sleeve-valve models an overhead form of worm-drive is employed, and the larger one has the supplementary coil rear springs used on the Daimler cars, as well as a very original form of anchorage to the forward end of the enclosed propeller shaft. The chassis are strong throughout, yet they are not weighty.

"V"-set Two-cylinder Vehicles.

The two-seated nominal 10-h.p. Riley cars may be regarded as a development rather from cycle practice than from big-car practice. They are light vehicles, and there is a larger model rated at 12 to 18 horse power. Detachable wire wheels of larger diameter are now employed, but the "V" engine with the two cylinders set at right angles the one to the other is retained, and the firm's special form of gearing—one which renders it possible to change without the gears clashing—remains a standard feature. A single-blade distributor is employed, while another feature in connexion with the carburation is that the rich mixture is taken from the jet chamber through a diluting chamber.

The Napier Programme.

The chief feature of the Napier programme is the 15-h.p. four-cylinder car; but the firm's 1911 practice does not seem to embody anything mechanically fresh, for, though a point is made of the new gate change and gear box, this latter resembles one employed by Bell Brothers for their cars for some years. The notion is admirable, for while it leaves the lay shaft idle when the through drive is in service, it ensures that when any intermediate speed is required, the spur wheel to be brought into mesh shall be already turning at the correct ratio of speed for engagement. As to the control, it is impossible for the reverse speed to be put in while the sprag is in service. The firm still fits the worm drive at option to these models. They may be taken as examples of the many medium-powered, reasonable priced, four-cylinder refined cars that the best makers now place on the market.

A Piston Valve Machine.

There is simplicity as well as originality in the construction of the engines employed on the Crowdy cars. When introduced last year they evoked considerable interest, and again attracted attention this year. The engine differs both from sliding sleeve-valve and poppet-valve engines, in having the admission and exit of the combustion mixture regulated by miniature cylinders driven at half the speed of the power cylinders. This creates a great difference between these engines and spring-controlled valve motors, for no matter what the motor speed may be, the working of the valves must precisely synchronize with the speed of the crank-shaft; for these miniature pistons move up and down, closing or uncovering ports in a positive fashion, instead of the return action depending on the strength of a spring. In the chassis of the Crowdy car the power is conveyed to a master wheel on the live axle by a worm drive from below, and a special point kept in view has been to make all parts accessible and removable rapidly without general disturbance of the machinery.

The Metallurgique.

The makers of Metallurgique cars, exhibited by Messrs. Warwick and Wright, have seen little need to alter them in mechanical detail; certain of their features are already distinctive; for instance, the spring drive on the front of the propeller shaft. Nevertheless in its 1911 models the firm is employing larger valves with correspondingly increased engine power. The net result is that the 14, 20 and 26 h.p. four-cylinder models are deemed sufficiently powerful for all purposes. Consequently the larger types will be supplied in future to special order only. Otherwise, the chief feature of the exhibits on this stand was the luxurious character of the body work by Van den Plas and the ingenuity of the fittings. An equal degree of luxury is sought probably by few medical men, but these bodies are nevertheless worth examination as illustrating what a great deal can be achieved by attention to fine details.

Coachwork and Accessories.

We have already drawn attention to some characteristics of the coachwork this year, and mentioned some bodies of a kind suitable for medical use, but must draw attention to the double-purpose cabriolet body which Messrs. De Dion are now building. It is excellently designed throughout, and presents that ease of access to the driving-seat from either side, which is now being secured in all the bodies built by this firm. Another form of body not unlikely to prove popular among men is that which Messrs. Cann of Camden Town have registered under the name of "Medicann"; while Messrs. Alford and Adler of Newington Butts showed a further novelty in the form of a kind of limousine, which, in general arrangement, conforms to what are known as Sedan-chair vehicles, but has in addition a sliding roof. Now that bodies are being built flush and with doors both to front and rear seats, there is a point to which purchasers should pay special attention. They should see that all doors not only lock into parts of the body, but also that they are hinged to one or other of its integral parts. If, for instance, a door is fixed to a dashboard, rattling is bound to set up sooner or later. Moreover, the fact that when closed carriages are made convertible into open vehicles by dropping windows into the doors and the use of collapsible pillows, weight is necessarily increased, is a point of some importance if the car is usually to be used open and not shut. As for the great tyre makers, such as Messrs. Dunlop, who now hold a warrant as tyre makers to the King, and the Continental Tyre Company, they seem less disposed to bring out new designs than to perfect those which are already of proved value. Nevertheless, the Continental Tyre Company supplemented its range this year by chrome leather, steel-studded, non-slipping treads, with small circular discs under the rivets to prevent their being pressed through the treads. It may be mentioned, too, that the Challenge Reinforced Inner Tube manufacturers have figured excellently in some official tests carried out by the Royal Automobile Club. As for carburettors, which count for so much in automobile work, the number of makers who are now using the carburettors of White and Poppe, and the motors of the same firm, seems now very large. Some minor improvements have been introduced into the carburettor, and we understand that at a recent trial a motor fitted with this carburettor developed 24-h.p. on the brake with a consumption of only 0.65 petrol per horse power per hour. Before concluding, examples may well be given of recent additions to the list of high class firms which are now catering for professional users of cars. Cases in point are Messrs. Austin, with a four-cylinder 10-h.p. car; Messrs. Deasy, with a 12-h.p. worm driven car; Messrs. Daimler, with a 12-h.p. sleeve-valve car; and the Mercedes manufacturers with a 10 to 15 four-cylinder poppet valve car.

A SPECIAL effort is being made by the Surgeon-General of the United States Navy to provide for the protection of gun-pointers and other enlisted men whose duties require keen eyesight. The illumination of fire rooms, dynamo rooms, and living spaces generally will be the subjects of special study, and recommendations will be made for the improvement of conditions. The eye conditions of men detailed to adjust carbons on searchlights will be safeguarded in the future by special goggles or screens to cut off the actinic rays.

MEDICAL WOMEN AND THE SUFFRAGE.

A memorial in support of the Conciliation Committee's bill for woman suffrage was sent to the Prime Minister on November 14th. The memorial is a follows:—

"*November 14th*, 1910.

"To the Right Hon. H. H. Asquith, P.C., M.P.

"Sir,—We the undersigned Medical Practitioners desire to urge the Government to grant immediate facilities for the further stages of the Conciliation Committee's Bill for Woman Suffrage.

"In a Memorial which 531 medical women had the honour to present to you in November, 1908, their unanimity on the question of Woman Suffrage was clearly shown.

"As members of the medical profession women conform to all regulations imposed upon candidates for medical degrees and they undertake responsible public and private work which is fully recognized by the State. It is manifestly inexpedient that, on the ground of sex alone, they should be unable to influence legislation on questions about which their special knowlege particularly fits them to hold an opinion.

"Moreover, as taxpayers, women practitioners feel strongly that their exclusion from all voice in the election of Parliamentary representation is inconsistent with the first principles of democracy—namely, that Government rests on the consent of the governed, and that those who pay the taxes should have a voice as to how the taxes are spent.

"The justice of the claim made by women for the Parliamentary vote has been admitted by large majorities in the House of Commons on many occasions.

"We urge that the dignity of the House of Commons will be diminished if it fails to put its principles into practice. We ask that time may be given to allow the present House of Commons to carry through the final stages of the Conciliation Bill, which has already passed its Second Reading by a majority of 110 votes, and which proposes to extend the Parliamentary Franchise to those women who are already on the municipal register.

"We remain, yours faithfully."

It is signed by Mrs. Scharlieb, Mrs. Garrett Anderson, Miss Aldrich Blake, and 404 other medical women.

LITERARY NOTES.

The second number of *The Child* has just appeared, and amply fulfils the expectations aroused by its predecessor. There can be no doubt that this most attractive magazine has a future before it; and in the meantime it is doing an extremely useful work which cannot fail to have a salutary effect upon the moral and physical development of the children both of the present and of coming generations. The contents of the November number are so many and so varied that it is somewhat difficult to pick and choose amongst them; but mention should be made of a very interesting description of "Oxycephaly," by Dr. W. A. Potts, and another, equally interesting, of "Mongolianism," by Dr. Murray Bligh; whilst a long article on "Fear and the Evolution of the Child," by Dr. H. Macnaughton-Jones, is worthy of special attention from all those who are called upon to look after nervous or backward children. Other items of interest in this month's number are Miss M. H. Mason's "Inspection of Boarded-out Children," a most instructive article on "Respiration in School Children," by J. F. Halls Dally, and a charming account, written by the founder himself in collaboration with H. J. Gauvain, of the life and treatment of crippled children at the Lord Mayor Treloar Cripples' Hospital and College at Alton, in Hampshire. *The Child* is rendered doubly attractive by the addition of some interesting photographs, which are reproduced in its pages.

A very interesting series of articles by Dr. M. A. Van Audel of Gorinchen have appeared in the July, September, and October number of *Janus* on Dutch superstitions and folklore. From these we learn that a great many of the popular beliefs current in Holland to-day are of very ancient date, and moreover are very similar to those found in other countries. For instance, the old saying that children could not be born till the coming in of the tide is in full force amongst the inhabitants along the Dutch coast, and the virtues of a child's caul are still an article of faith, whilst the numerous ways of foretelling the sex of the unborn child which are common amongst Dutch mothers have been in use for many centuries amongst the women of other nations. The idea that if the face of the expectant mother is free from spots she will give birth to a son comes down from the Greeks and Romans, and the belief that the time of the preceding child's birth determined the sex of the coming one is still common in Ireland and the Ardennes, where it is yet believed that a son will be born if his elder brother or sister came to this great stage of fools when the moon was on the increase, and a daughter if it arrived when the moon was on the wane. Another ancient method, still in use amongst the Malays of Sumatra, of settling the sex question, is for the mother, at the commencement of milk secretion, to drop some milk into a little water. If the milk dissolves immediately, she may expect a girl-baby, but if it remains as it is for a little while, she will be delivered of a son. If the child dies before it is weaned, the flow of milk is stopped by laying its little shirt on the mother's breast, a practice still found in Hungary. There are all sorts of ways to cure sore and inflamed nipples. Some take the form of plasters and ointments, such as leaves of a white lily soaked in brandy, lily bulbs which have been standing in oil, or an embrocation made of foenum graecum, a medicine which was well known to the ancients, and is mentioned by Dioscorides and other old writers. There are other and ruder methods, however, which are regarded as equally efficacious, such as the application of hemp drenched in tar, of a newly-worn woollen nightcap of the husband's, a wet dish cloth, or even a young dog which had been cut open whilst still alive and laid upon the woman's breasts. All sorts of charms and superstitions still prevail in Holland with regard to the cure or prevention of different diseases and disorders. Headache, for example, is cured by the application of a slice of lemon peel, or raw potato, a piece of red cabbage or even of tin-foil to the temples; whilst he who never cuts his nails except upon a Friday hides them in a hole in a hollow tree, carries a cow's tooth in his pocket, a bag of indigo or hempseed in his hat, or a fresh sheep's spleen in his nightcap is considered immune from this distressing complaint. Mistletoe which has grown upon an oak tree, and has been infused in red wine, is a sovereign remedy for apoplexy, convulsions, worms, lameness and epilepsy. The last-named disease is still treated as it was in the Middle Ages, with human blood, elk's claw, crab's eyes, peony root, linden-blossom, rue, and the placenta of a first birth, all of which are likewise used for any kind of fits. Another remedy is for the patient to eat the heart of a mole, a roasted mouse, or to drink the blood of a white duck, whilst eggs, which have been laid on Maundy Thursday and are beaten up with the shell, are efficacious not only in cases of falling sickness but also of cancer. The ancient faith in the Three Kings as protectors against epilepsy is still very strong. Another means of preventing epileptic attacks is never to eat flesh from the head of any animal, whilst in Limburg and Brabant it is quite common to find people wearing the prayer of Charles V as a charm against this disease. This prayer, the original of which was found on the Holy Sepulchre at Jerusalem, is said to have been sent to the Emperor by the Pope as a safeguard in war. The magpie is considered most efficacious not only in cases of epilepsy but also for gout in the joints, madness, melancholia, and diseases of the eye. The latter are likewise cured by the application of saliva (some forty years ago dogs were used to lick diseased eyes, a practice happily gone out), urine, and woman's milk, as well as by different kinds of water, such as March snow-water, dew gathered on Christmas night, and the water from Lourdes and other holy wells. Water from the well of St. Willebrord near Heiloo in North Brabant is especially efficacious when drawn before seven o'clock in the morning, and its healing properties are at their best on Maundy Thursday. Infusions of celandine, chickweed, and speedwell are also largely used for eye troubles. Boiled mouse is regarded as a cure for enuresis; it is mentioned by Pliny, who says, "Urina infantium cohibetur muribus elixis in cibo datis." Another cure for the same complaint is the taking of *Porcellio scaber*, which the ruder Dutchmen vulgularly call "piss-a-bed," in porridge.

British Medical Journal.

SATURDAY, NOVEMBER 19TH, 1910.

PREVENTABLE BLINDNESS.

THE movement in favour of the inclusion of infantile ophthalmia in the schedule of notifiable diseases, and of the making of arrangements by local authorities for its treatment at their expense when need be, may be expected to receive additional impetus from the attention which the Medico-Political Committee has recently suggested that the Divisions should pay to the matter.

Already, however, the movement may be regarded as a success, for the Local Government Board, when acknowledging the receipt of a copy of the Association's report on the subject sent to it by the Council, was able to state that fifty sanitary districts had then adopted notification, including the boroughs of Chester, Chorley, Macclesfield, Manchester, Neath, Norwich, Rotherham, Stoke-on-Trent, St. Helens (Lancashire), and Wimbledon, and that the Board was ready to authorize other local authorities to take the same course whenever they applied.

This was in August last, and since then note has been made in the JOURNAL of sundry additional districts in which the Infectious Disease (Notification) Act of 1889 has been extended to cover ophthalmia neonatorum. A conspicuous as well as a recent case in point is the action of the London County Council in accepting, at its meeting on November 8th, the recommendation that it should make use of the powers granted by the Public Health (London) Act of 1891, and thus make ophthalmia neonatorum a compulsorily notifiable disease within the administrative county of London.

For the initiation of this movement, the value of which comes home to local authorities when they realize the cost of educating blind and seeing children respectively, the British Medical Association may rightly claim most, if not the whole, of the credit. As its precise starting point may perhaps be regarded the decision of the Council in 1906 to select ophthalmia neonatorum as the subject of the next Middlemore prize competition. This set to work a good many active minds among the younger ophthalmologists, and resulted not only in the penning of the essay by which Mr. Sydney Stephenson won the award, but in several other excellent compilations. Specially notable in the present connexion was that which Mr. Bisbop Harman subsequently published under the title of *Preventable Blindness*, for it brought out with admirable clearness, not only how high a proportion of all children are blinded at birth, owing to infantile ophthalmia, but the comparative ease with which the operation of that cause could be prevented if suitable administrative measures, such as those generally indicated in the essay, were adopted.

The formal announcement of the award was made at the meeting of the British Medical Association at Exeter in 1907, and on the same occasion a discussion on the subject was initiated in the Section of Ophthalmology by Mr. Simeon Snell, who was at that time President-elect of the Association, and whose death we have since had to deplore. Mr. Snell, on the basis of some elaborate statistics resulting from the investigation by him of the precise cause of the blindness of each of the children in a large school for the blind in his neighbourhood, was able to offer reasons for believing that infantile ophthalmia was as common as at the date, many years ago, when its identity was first realized, and the discussion ended in the Section of Ophthalmology passing, on the suggestion of Mr. Sydney Stephenson, a resolution definitely calling on the Association to take still more active steps in the matter.

The immediate result was the appointment by the Council of a committee representative of the Association, of the Ophthalmological Society, the Incorporated Society of Medical Officers of Health, and of the sections of the Royal Society of Medicine which deal respectively with diseases of children and obstetrics and gynaecology. The co-operation of the Central Midwives Board was also invited. The final outcome was a report which on publication attracted general attention. Undoubtedly a material factor in this result was the interestingly written memorandum by which the report was accompanied, and it no longer need be a secret that this was drawn up by the chairman of the committee, Mr. Sydney Stephenson, who, of course, also took an important part in shaping the definite recommendations with which the report concluded.

Since that time the subject has been constantly brought to the notice of the public in one way and another, so that there is already a considerable degree of general comprehension of its bearings and importance. On this account the suggestion now made to Divisions that they should press the question on the attention of local authorities all over the country is well timed, and as a working scheme has been put forward simultaneously by the committee, action may be expected to be taken in many fresh quarters. This scheme, we understand, is largely based on the experience gained in North Staffordshire by Dr. Reid, the Medical Officer of Health for the County; by Dr. Folker, the medical initiator of the notification movement in the Potteries, the first of all districts to seek additional notification powers; and by the local Divisions of the Association, and by members or representatives of other Staffordshire bodies.

We gave some account of the net outcome of the working of the parent scheme at page 1550 of the JOURNAL of November 12th, in recording the occurrences at a conference of delegates from local authorities, held at Wolverhampton, with a view to deciding whether the North Staffordshire scheme should be adopted by all authorities in the county. The main facts, however, are worth repeating, more especially as they resulted in an affirmative answer being given forthwith to the question indicated.

Some of the principal statements on the subject were made by the chairman of the meeting, the Earl of Lichfield, who carefully dealt with the question before the meeting as if it were purely a business proposition. He showed that the half-dozen districts which had established notification, and had arranged for such notification to be followed up by effective treatment, found that the average cost of each case which came under treatment at any early stage was only about a guinea, and that in relation to population the total expense both of notification and of treat-

ment need not be expected to equal an expenditure of more than 17s. 5d. per 1,000 of population.

The figures given by Mr. E. V. Greatbatch, Chairman of the North Staffordshire Blind and Deaf Institution, who shares with Dr. Folker the honour of securing the first practical trial of the effect of notification of this disease, related to clinical results, and with many people would prove an even more effective lever than financial considerations. He showed that during the time that the disease had been notifiable—relatively quite a short one—as many as 75 cases of infantile ophthalmia had been notified, and that in all but 2 per cent. of these the sight of the children had been saved.

We need not dwell on the saving of relative unhappiness and human suffering implied by these clinical results, but merely point out two lessons which may rightly be drawn from them. They mean that over seventy children who came into the world possessed of the untold blessing of sight were saved from the calamity which threatened them by the working of a very simple and inexpensive administrative machinery, and that it is not only these children and their parents who will benefit. The ratepayers of North Staffordshire will also benefit, for whether a child is stone blind or possesses perfect vision the ratepayers are equally responsible for the cost of its education. On a conservative basis the cost of educating a blind child, and training it in such fashion that when it has reached a certain age it may be capable of gaining its own livelihood, in part or in whole, was placed by Lord Lichfield at £500; while the education of an ordinary child costs only about £30. The difference between the two sums multiplied by the proportion of children saved in North Staffordshire during the course of its experimental adoption of notification and treatment indicates with sufficient accuracy the financial gain which ratepayers as a whole may reasonably expect if notification is introduced and arrangements made for suitable treatment throughout the whole of the country.

THE DRESDEN HYGIENE EXHIBITION.

As has already been announced in the JOURNAL, an International Exhibition of Hygiene is to be held at Dresden in 1911. The exhibition is under the patronage of His Majesty the King of Saxony, and among its honorary presidents are His Excellency the Imperial Chancellor von Bethman-Hollweg and Prince von Bülow. In the list of the various committees are many of the heads of administrative departments and most of the leading hygienists in Germany. The organizers of the exhibition have taken the whole of human life in its hygienic aspects for their province. The scheme extends over all the agencies that may influence health for good or for evil. There are sections devoted to air, light, soil, and water; to town-planning, including dwellings, lighting, ventilation and heating, water supply, cleansing the streets and public places, disposal of the dead; to nutrition and foodstuffs, including the physiology of nourishment, meat supply, milk supply, vegetables and stimulants, and the examination of food; to the clothing and care of the body, including bathing and gymnastics; to diseases of occupation, including the physiology and hygiene of work, industrial poisoning, special industrial hygiene, and care of the working classes; to infective diseases, including microbiology and parasitology, immunity and vaccination, infectious diseases in man and animals, warfare against epidemics, and disinfection; to the care of the sick and the saving of life; to the care of children and adolescents, including school hygiene; to traffic, including streets and railways, ships, and accommodation for travellers; to naval and military hygiene; to tropical hygiene; and to statistics. Special sections have been assigned to tuberculosis, alcoholism, venereal diseases, cancer, and diseases of the teeth. The work of all these sections is mapped out in minutest detail so as to cover the whole field of scientific hygiene and to show its development. The history of hygiene has a department to itself, which is intended to show what enlightened care was bestowed on the problems of public sanitation and on personal health among various peoples even in remote antiquity.

The objects of the exhibition are purely educational; it is intended to make hygienists of all nations acquainted with what is being done in other countries, and to bring home to the public what has been achieved by scientific research for the physical welfare of man, and to impress upon people the truth that health is a necessary condition of the efficiency and the happiness both of the individual and the community. It will be an object-lesson on a vast scale in hygiene, comprising within that term everything that has any bearing, direct or indirect, on the advancement of our knowledge of the means of waging successful warfare against the innumerable dangers to health amidst which we live and move and have our being.

The exhibition will be international in the fullest and widest sense. To ensure this the German Government issued invitations to all the principal nations of the world to take an active part in the realization of a scheme essentially philanthropic in character. Most of them have accepted and voted considerable sums of money for the proper display of what they have done and what they are doing in the field of hygiene. One great country only stands aloof. This, to the shame of our Government be it spoken, is Great Britain, the birthplace and cradle of modern hygiene.

The history of the negotiations is interesting and instructive. First, the Foreign Office sent an official refusal in response to the invitation of the German Government. Efforts were made to induce it to reconsider this decision, and the position of this country as the pioneer in hygienic progress was freely recognized by the organizers of the exhibition, who offered this country the best site at their disposal. The only result of these efforts, however, was that the matter was referred to the Board of Trade. That body pleaded through its chairman, Lord Lytton, that it already had three industrial exhibitions—Brussels, Turin, and Rome—on its hands, and seemed to think that a sufficient reply to the application. In vain it was explained to the Board of Trade that the Dresden Exhibition has in it no element of commercialism, but is purely educational in character; in vain was it pointed out that an International Hygiene Exhibition, in which this country took no part, would be like *Hamlet* with the Prince of Denmark left out; in vain, too, was it urged that the abstention of Great Britain from an exhibition in which it might have been expected to take a leading part would certainly be misconstrued in Germany. The Board of Trade was deaf to all appeals.

That the action of our Government was, as a matter of fact, imputed in Germany to political ill will is

too clear, and the feeling has found expression in more than one German periodical. Only one proof need be given. In a powerful letter which appeared in the *Times* of November 3rd, Lord Ilkeston quoted the following passage from the *National Zeitung*: "A remarkable sidelight has been thrown on the 'friendly feelings' which England entertains for Germany by the recently announced fact that the English Foreign Office has declined to participate officially for England at the International Hygiene Exhibition in Dresden." At a time when it is of such vital importance that friendly relations between the two nations should be carefully fostered, it is deplorable that the British Government should apparently go out of its way to give offence to Germany. We do not believe that its decision has any political character. Its attitude is simply due to lack of insight on the part of the Board of Trade in a matter outside its mental horizon, and especially to the want of appreciation of the value of scientific research which is a distinctive feature of all our Governments, whatever be their political hue. With the possible exception of Spain, there is no civilized country in which science is held in such light esteem, whether by politicians or by the people, as it is in this country. This is often attributed to want of ideas, which was said by Matthew Arnold to be a national characteristic. This is surely a strange charge to be brought against a nation which has furnished the world not only with the seeds of philosophic thought and an incomparable imaginative literature, but with some of the most far-reaching discoveries and inventions in the field of medicine and hygiene, and in science generally. But though we are not destitute of ideas, we fear that the unfortunate action of the Government in regard to the International Hygiene Exhibition will give point to the old gibe that we are a nation of shopkeepers. Can anything more incongruous be imagined than that a question which has nothing to do with commerce, but is wholly scientific and educational in nature, should be referred to the Board of Trade? It might have been thought that the most hide-bound bureaucrat would see that, with cholera knocking at our doors and plague already within our gates, hygiene is as practical a question as trade. We appeal to the Government, even at this eleventh hour, to break the bonds of official routine and allow this country to take the place in the Dresden Exhibition which rightfully belongs to it and which has been so gracefully conceded. In default of this, we earnestly hope that some of our wealthy philanthropists will redeem our country from the reproach which it must otherwise suffer.

WATER FOR WASHING THE MOTOR.

A QUESTION which we thought had been set at rest by a decision in the King's Bench in 1907 has recently been revived by the Metropolitan Water Board. It is, Can the Board make an additional charge upon a medical practitioner in respect of the water which he uses for washing his motor car? It appears that the Board has threatened to demand additional payments from certain members of the profession in London because they make this use of water, but we wholly fail to see what right it has to do so, having regard to the decision above referred to. In that case it appeared that the Harrogate Corporation sought to make a special charge against Dr. Ian Donald Mackay in respect of water used in washing his motor car. Speaking generally, a water authority must supply water for domestic purposes at ordinary rates. The Waterworks Clauses Act, 1868, does not define domestic purposes, but says what is not included in that term. Thus, "A supply of water for domestic purposes shall not include a supply of water for cattle or for horses, or for washing carriages where such horses or carriages are kept for sale or hire by a common carrier, or a supply for any trade, manufacture, or business, or for watering gardens, or for fountains, or for any ornamental purpose." It was argued that, inasmuch as the doctor used his motor for seeing his patients, he used it in his business. It was the washing of something which was part and parcel of the respondent's stock-in-trade. But this view did not prevail. The Lord Chief Justice said: "If it had been intended to hit such a case as the one now before the court it would have been done by putting in some such words as 'or where a carriage is used by a professional man who rides in it.'" Mr. Justice Darling said: "If it had been intended to include in this section a doctor's carriage the Act would have said so plainly." Thus Dr. Mackay established his case, and was excused from liability to pay an extra 10s. a year for this water rate. We should mention, perhaps, that it was decided some years ago that the washing of an ordinary carriage was a domestic purpose within the meaning of the Act. The meaning of "domestic purposes" was also considered in a recent case in relation to the powers of the Metropolitan Water Board itself. A gas company had sanitary conveniences, and the water supplied was solely used by the servants of the company while engaged in their trade or business. It was argued that this was not used for domestic purposes, but the court held that it was. To judge from this case, the true principle appears to be to consider the actual user of the water and not the object for which it is used.

TYPHOID CARRIERS.

IN a report issued by the Local Government Board[1] Dr. J. C. G. Ledingham presents a review of current knowledge about the transmission of typhoid fever by the "carrier." Dealing with the infectivity of carriers he shows that infection has been traced with more or less certainty to such sources in a large number of cases, both in domestic life and in military and other public institutions. In many instances the incriminating evidence is quite conclusive. Milk and other foods are common vehicles of transmission from the carrier, and sometimes the personal relationship between the carrier and the person attacked is sufficiently close to suggest direct personal infection. Several observers have endeavoured to ascertain what share of enteric fever is due to the carrier. Their results differ widely, ranging between 2.3 and 32 per cent. of the total amount of the fever. Some of those who have arrived at a high percentage maintain that such results are due to greater care and more prolonged investigation, and that therefore they are more accurate. Sufficient statistics are not yet available for making a reliable estimate of the number of carriers in any given community: such incomplete data as are forthcoming indicate, as a provisional estimate, that the proportion of carriers in an ordinary population is about 3 or 4 per 1,000. Carriers, it appears, are much more frequent in adult life than in youth, and, as we pointed out last week, they are more commonly females than males. Associated with this latter fact is the greater frequency of gall-stone disease in women. Is it possible to cure the chronic carrier? Dr. Ledingham discusses

[1] *Reports to the Local Government Board on Public Health and Medical Subjects.* (New Series, No. 43.)

this important question in detail, and records many instances in which curative treatment has been attempted by drugs, vaccines, surgical operation, or in other ways. So far the results, on the whole, have been very disappointing. There may, perhaps, be a little more hope of eliminating the bacilli from the urine than of banishing them from the intestinal excreta. With the latter type of carrier, in Dr. Ledingham's opinion, the prospect of success is extremely remote, except, perhaps, when treatment can be adopted in the early stage of the condition. Dr. Ledingham concludes his report with a discussion of the measures which have been tried or proposed with a view to lessening the danger of disseminating typhoid fever by carriers. We must take steps to detect the carrier, and, when we have discovered him, we must endeavour to make him take the precautions which his dangerous condition demands. "There is no doubt that much good has already been accomplished by instructing typhoid carriers in proper methods of disinfection, and it is on the disinfection of the hands that chief stress must be laid." With a view to determining the most efficient and at the same time the least irksome method of cleansing the hands of typhoid carriers Gaehtgens has recently performed an interesting series of experiments. He smeared the hands and fingers with faeces containing typhoid bacilli, and determined the relative disinfectant values of washing, with and without disinfectants, followed or not followed by thorough drying. Washing with soap and water alone, without subsequent drying of the hands, caused a marked fall in the number of *B. coli* and *B. typhosus*, especially of the former. If the hands were dried thoroughly after removal of the soap in running water, subsequent cultivation frequently showed a complete disappearance of both these micro-organisms. For those carriers who are not specially employed in handling food, Dr. Ledingham thinks that the cleansing of the hands with soap and water, followed by drying, affords "a tolerably complete protection." But for carriers engaged in the preparation of food he advises the use of a disinfectant after the ordinary washing and drying process. Gaehtgens, he tells us, found that the most satisfactory germicide for this purpose was alcohol, in the form either of eau de Cologne or of spirits of wine.

ROENTGEN CINEMATOGRAPHY.

THE dramatic effect produced by the reports in the daily press of a demonstration of microscopical cinematography is likely to be short-lived. The movements of science have been considerably accelerated since the end of last century, and nowadays ideas as well as men fly. Years ago a certain Parisian surgeon attracted much attention by exhibiting cinematograph representations of himself operating at lightning speed at congresses and annual meetings. These pictures savoured of advertisement, and were never popular, save as a side show among the less scientifically inclined members of the profession. Cinematograph pictures were, however, utilized by several teachers for the purpose of demonstrating symptoms and other phenomena to a large class. For a long time no further advance was made in this direction. At the Annual Meeting of the Association this year a form of cinematograph was shown in the Medical Museum, by means of which nystagmus could be watched, and a second machine was intended to teach deaf-mutes the movements of the lips in speaking. These machines, however, could only be utilized by a few persons at the same time. Now comes the introduction of moving microscopical pictures, in which protozoa and bacteria are seen gaily indulging in their morning or afternoon walks. This is outdone by the introduction of Roentgen cinematography. We learn that an engineer named Alfred Wertheimer[1] had the opportunity of demonstrating to the Göttingen Medical Society the first films taken by a machine called the Polyphos. The movements of respiration, the peristalsis of the stomach, and so on, were the subjects chosen. It appears that Dr. Kästle, Professor Rieder, and Dr. (Phil) Rosenthal[2] have already described the process of this new departure, which apparently owes its existence to the last-named. The achievement does not admit of any immediate criticism. It matters little what the first films are like, or what they actually reveal. If the fact is once established, and the technique is improved gradually, as is always the case, then we may look to the cinematograph to unveil some highly interesting secrets, which Nature has hitherto kept well concealed.

OLEIC ACID IN THE DIAGNOSIS OF GASTRIC CARCINOMA.

CLINICAL methods employed for the differential diagnosis of gastric diseases are fairly numerous, and while several of them taken in combination with others may lead to a correct differentiation between cancer and benign affections, this is not always possible, especially when the test is most needed—namely, in the very earliest stages. It has been known for a few years that some relation existed between malignant tumours and haemolysis, and an attempt was made in 1908 to utilize this knowledge for the diagnosis of cancer of the stomach. Dr. E. Graefe and Dr. Röhmer worked with an ether extract of the gastric contents after a trial breakfast and tested the extract for its haemolytic power, comparing the extract from cases of cancer with that from healthy persons. Since that time, they have found that the haemolytic power was never present in healthy persons, was present in 1 case out of 112 of non-malignant stomach affections, in 10 out of 61 ulcer of the stomach cases, in 26 out of 36 suspicious cases, in 42 out of 42 cases of undoubted cancer of the stomach, and in 52 out of 56 cases of cancer diagnosed at the operation or *post mortem*.[3] The authors claim that these results have been confirmed by others, but that Fabian, working in Garré's clinic, failed to obtain haemolysis in cancer cases in which there was marked gastrectasis. They explain this negative result on the assumption that it is impossible to wash the stomach out completely in these cases and that the haemolysin is therefore diluted in proportion to the amount of fluid or food left in the organ. Fränkel, on the other hand, is said to have met with positive haemolysis in 44 per cent. of his non-malignant cases. The authors suggest that the presence of bile and of trypsin would explain these results. They think it essential to exclude all traces of bile or intestinal content. Following up their own work on this subject, they came to the conclusion that the haemolysis might be due to oleic acid. On employing Hübl's method of detecting this acid, they succeeded in isolating it in each case in which the haemolysis was present and they failed to find it in the negative cases. It is unnecessary in this place to follow the authors through their chemical analyses or to give all the details of the tests as employed. It is sufficient to state that out of 77 non-malignant cases, it was only present twice, and in 22 undoubted cases of cancer, oleic acid was found in all cases but one in which there was marked gastrectasis. (It would perhaps be more correct to speak

[1] *Deut. med. Woch.*, No. 29, 1910.
[2] *Zeitschr. f. Röntgenheilk*, vol. xii, 1910.
[3] *Muench. med. Woch.*, Sept. 20th, 1910.

of the iodine binding power lying outside the normal limits than of the positive find of oleic acid, since the test depends on a quantitative result.) The authors cite a few cases to illustrate the clinical significance of the reaction. In a case of a man who had suffered from gastric symptoms for nine years (pain and vomiting), no other symptoms pointed to a malignant growth. A trace of blood in the gastric contents raised suspicion, but the free hydrochloric acid and the increase in weight was rather against the diagnosis. The test proved positive. An operation revealed a commencing carcinoma in an old ulcer scar. The regional glands were slightly affected, and the growth and glands were removed with ease. In two other cases the clinical symptoms pointed strongly to cancer, but the test was negative. The *post-mortem* examination in the one case, and the operation in the other, proved that neither were cases of cancer. These results require confirmation on a large scale. They have the prima facie appearance of being of great importance, since there is no doubt that the only chance of recovery at present in malignant disease of the stomach lies in a very early diagnosis and early operation. The test is not difficult to carry out, but requires some care and skill. If its significance be confirmed, there need be no reason why it should not be freely used clinically and in private practice.

LOCAL ANAESTHESIA FOR OPERATIONS ON THE FACE.

SINCE Oberst and Schleich first published their articles on local anaesthesia, the various methods have been freely used in the Groningen clinics. The work has been materially favoured by the researches of Braun. At present more than one-third of all operations are performed under local anaesthesia. Some difficulty has been experienced in introducing a satisfactory anaesthesia for operations on the face and oral cavity, but in the course of his investigations on deep injections of alcohol into the trigeminal nerve, H. K. Offerhaus was able to plan a new way of inducing local anaesthesia.[1] He employs cocaine (0.5 to 0.75 per cent.) and injects from 2 to 2.5 c.cm. The advantages of operating under local anaesthesia when removing the superior maxilla or other structures in proximity of the mouth are obvious. It is a common experience that general anaesthesia for face operations is unsatisfactory and extremely difficult to keep steady; the blood flowing into the mouth forms a danger to the patient and may necessitate a preliminary tracheotomy with tamponage of the trachea or other safeguard against aspiration of blood into the air passages. On the other hand nervous patients wish to be unconscious during an operation. The author only applies local anaesthesia to patients who are not markedly nervous, and usually induces a partial sense of indifference by injecting morphine and scopolamine before the operation. The injections of cocaine can be made withou any preliminary experiments on the cadaver or animal. He gives the points of puncture and depth as follows: For anaesthetizing the third branch of the trigeminal, the distance between the two malar bones immediately in front of the maxillary joint (that is, the distance between the articular tubercles) is measured by means of callipers. This he calls a. Next the distance between the superior alveolar processes, measured behind and externally to the last molar teeth within the mouth is determined with small callipers. This is the distance between the two foramina ovalia, and is called b; $\frac{a-b}{2}$ = the depth to which the needle must penetrate in the direction of the intertubercular line to hit off the third branch. As soon as the needle touches the nerve the patient feels a sharp pain right along the course of the nerve. For the second branch, the distance between the middle of the malar bones is called a' (*D. interzygomatica*); b' is the distance between the superior alveolar processes measured behind and internal to the last molar teeth, and corresponds to the distance between the two foramina rotunda; $\frac{a'-b'}{2}$ = the distance of the second branch from the surface along the interzygomatic line. In this case the needle is inserted immediately below the malar bone, and is directed very slightly upwards. Offerhaus gives details of cases in which this method has been employed with success. He recognizes that Schlösser's, Levy's, and Baudouin's methods also yield good results, but they necessitate previous experimentation on the cadaver. In two of his cases no anaesthesia resulted. He was able after the operation had been completed under general anaesthesia to demonstrate that the nerve had been displaced considerably by a carcinoma in the one and by a sarcoma of the maxilla in the other. In all the other cases the nerve was reached with accuracy and prolonged anaesthesia resulted. With 0.5 per cent. solutions it lasted for one and a half hours, while after 0.75 per cent. solutions it lasted for about five hours. He also mentions that he has treated 12 cases of severe trigeminal neuralgia with injections of 80 per cent. alcohol applied in the same way. In 10 of these the cure was complete, in the eleventh considerable improvement took place, while in the last, a case of central disease, the injection was not followed by any amelioration.

[1] *Deut. med. Woch.*, August 18th, 1910.

THE DETECTION OF TUBERCLE BACILLI.

SINCE Koch discovered the tubercle bacillus the diagnosis of doubtful cases of illness has been materially assisted by the search for the bacilli. Physicians of old based the diagnosis exclusively on physical signs, and pathologists were satisfied with the macroscopic and microscopic appearances in forming an opinion whether the case was one of tuberculosis or not. Nowadays more direct evidence is demanded. Where there are but few bacilli present it may be extremely difficult to detect them, and the bacteriologist has learnt that a negative result in the examination of a microscopical preparation by no means excludes the existence of the disease. For clinical purposes the employment of animal experiment in these obscure cases has disadvantages. Five weeks is a long time for the practitioner to be kept in doubt as to the true nature of the affection, and this time is required for the most susceptible animal, the guinea-pig, to develop the disease. Some shortening of this period has been brought about by certain modifications of the inoculation, such as the bruising of the inguinal glands and the like, but even then the time is too long for practical requirements. Again, if the bacilli are associated with other organisms the animals may die of the associated infection before the tuberculosis has manifested itself. It was, therefore, of importance to find a means of removing other germs from a fluid which may contain a few tubercle bacilli. A short time ago such a method was described by Uhlenhuth. This consisted in treating the fluid with antiformin, a mixture of hypochlorite of sodium and sodium hydrate, by means of which the other organisms are dissolved, and the tubercle bacillus is not damaged. After centrifugalization the bacilli may be sought for directly in specimens prepared from the sediment, or if they are still too few in number

this may be injected into guinea-pigs without fear of other infection. Hoffmann[1] finds that this means may be of considerable use in determining the nature of a mild or early lesion. He takes a piece of suspicious tissue of the size of a lentil or slightly larger, crushes it with forceps, and rubs it on to a microscopical slide. After it has nearly dried he pours a 15 to 20 per cent. solution of antiformin to cover the whole slide, and places it in the incubator until the following day. The tissue is then dissolved, and the fluid has evaporated to form crystals. These latter are removed by carefully applying some water, and the water is removed in such a way that as little as possible of the remaining substance is washed away. The specimen is then stained with carbol fuchsin and counterstained with methylene blue after decolorization with acid. Preparations treated with antiformin in this way were compared with specimens prepared without it from the same tissue. He was struck by the number of tubercle bacilli which became visible in the antiformin preparations, and the sparcity of them in the control slides. It would thus appear that it is unnecessary to wait after inoculation of a guinea pig until the disease has fully developed if this method is confirmed by other investigators. That it is likely to be so confirmed is shown by the fact that antiformin has been used with excellent results in this country, and has gained a definite place among the reagents on the bacteriologist's shelf.

THE PREVENTION OF PLAGUE IN INDIA.

The report of the Punjab Plague Committee for the year 1910 contains twenty-six definite recommendations and conclusions. Some of the more important of these are as follows: (1) An active antiplague policy on the part of the Government is necessary and should be continued. (2) The destruction of rats by means of poisoning and trapping on the present lines does not yield results commensurate with the expenditure incurred and should be discontinued; the greatest prospect of success in preventing the spread of plague by means of rat destruction consists in attacking the comparatively few localities where plague persists during the quiescent period. (3) Antiplague inoculation is essentially a personal prophylactic measure, and in recommending its adoption everything savouring of compulsion or pressure should be carefully avoided. (4) For dealing with plague epidemics in villages evacuation is a most important antiplague measure. (5) The disinfection of infected houses during the course of an epidemic, or after its cessation, is not ordinarily necessary, but disinfection, as applied to the clothing and baggage of persons coming from infected areas, is a valuable means of preventing the spread of plague into uninfected areas and should be carried out wherever possible. (6) The only measures of a compulsory nature which are permissible are those demanded by public opinion and capable of being put into operation by the people themselves. Other recommendations deal with measures facilitating quarantine and isolation, and the extension of legal powers to the inhabitants of towns, as well as villages, to prevent the access of persons coming from infected areas, is advocated.

THE ANALOGIES BETWEEN SYPHILIS AND TRYPANOSOMIASIS.

In the address delivered by him as President of the Section of Pathology of the Royal Society of Medicine last week, Dr. Mott had some interesting remarks to make regarding analogies and differences between the *Spirochaeta pallida* and the *Trypanosoma gambiense* in relation to man. Among resemblances, he pointed to the early phenomena of infection, the irritation or sore occurring at the point of inoculation, to the period of incubation, to the local gland enlargement, followed by a general infection of the lymph stream, and to the erythematous rashes due to migration of the parasites and accompanied by constitutional disturbances. It was also suggested that possibly the fashion in which the two organisms originally used to invade man was also the same; while the *T. gambiense* is still conveyed to man by a specific fly, the *Glossina palpalis*, it is recognized that the *T. equiperdum* owes its power of transmitting dourine disease, or *mal de coit*, from horse to horse, to the fact that it has acquired the habit of perpetuating its species by multiplying in the mucus fluid found at mucous orifices. Possibly the *Spirochaeta pallida* has also likewise acquired new habits, and though now transmitted direct from man to man was at one time dependent on the assistance of a biting insect, just as still is the spirochaete of tick fever. Other resemblances to which allusion was made are the occurrence in both of polyadenitis and lymphocytosis. The same drugs, too, which avert affections of the nervous system in syphilis seem capable, if only rarely, of averting the onset of the symptoms which have led to human trypanosomiasis being termed "sleeping sickness." There are also certain points of resemblance in the histological changes produced in the nervous system by the two organisms and in the clinical symptoms resulting therefrom. But here we arrive at points of difference likewise. For instance, in practically every case *T. gambiense* sets up chronic inflammatory affection of the lymphatics of the central nervous system, while in spirochaete infection invasion of the nervous system is evidenced only in from 5 to 10 per cent. of even untreated cases. In human trypanosomiasis the subarachnoid space is always invaded, but even when the *Spirochaeta pallida* invades this space it remains in all probability confined within the lymphatics, and does not become free in the cerebro-spinal fluid. This circumstance becomes readily explicable when the two organisms are examined under the ultramicroscope, for this shows that while the *Spirochaeta pallida* moves only very slowly and in screw-like fashion around its long axis, the movements of the *gambiense* are extremely active, and may easily enable it to penetrate the delicate walls of capillaries, and thus find its way into the cerebro-spinal fluid. In addition, while *T. gambiense* can usually be found in the blood with ease, the *Spirochaeta pallida* can not, and seems able to multiply only in lymph spaces and channels. Dr. Mott also expressed the opinion that possibly the deadly results of infection by *T. gambiense* as compared with other trypanosomes is due to *T. gambiense* having acquired the habit of migration into the subarachnoid space. He had also some suggestive remarks to make on the higher pharmacology of drugs, such as organic forms of arsenic; possibly their trypanocidal and spirillocidal action was due to their stimulating phagocytosis; possibly to their having an affinity for the phosphorus-containing lipoids of the periplasium membranes of the organisms in question. On the other hand, the toxic effects of organic arsenic might be due to its union with the lecithins of the nervous system. Patients, therefore, seem to stand between the devil and the deep sea.

EXTIRPATION OF UTERUS AND VAGINA FOR TUBERCULOSIS.

Wertheim's operation, by which the cancerous uterus is removed together with the surrounding tissues, is now frequently performed. It involves free dissection, yet some British operators, such as Dr. F. J. McCann, maintain that as cancer tends to extend

[1] Hoffmann, *Deut. med. Woch.*, July 14th, 1910.

towards the vagina the walls of that canal also should be freely removed, the dissection being carried down much lower than is usually practised when Wertheim's method is adopted. A report of much interest to the surgeon and to the specialist has appeared in a foreign medical magazine.[1] The disease which brought the patient to the operating table was not cancer but tubercle. From a purely surgical point of view the extirpation of a tuberculous focus may prove harder, more impracticable indeed, than the total removal of an area of cancer. Stoeckel of Marburg undertook the treatment of a case of tuberculosis of the vagina. It appeared to be primary, but proved to be secondary. The patient was 23, married, and sterile; the husband was free from tubercle in any form. There was a flat round deposit on the vesico-vaginal septum as big as a crown piece immediately below the anterior fornix; it discharged into the vagina through three fistulous tracts, yet the vaginal wall was not fixed, nor was there evidence of infection of the uterus, appendages, or bladder. Inoculation gave positive results. Free scraping was followed by temporary benefit, but soon afterwards the parametrium was found to be infected on both sides and the uterus fixed in deposit as hard as stone. Great mental disturbance set in, amounting to melancholia. Stoeckel operated after the method now in vogue for the extirpation of the cancerous uterus. The operation proved extremely difficult, especially at the stage when the ureters had to be dissected up so as to be placed out of harm's way. The abdominal wound was closed and the whole vagina and the surrounding tissues were dissected away from below. The patient bore the operation well, indeed, the neurotic symptoms at once disappeared. Unfortunately during the second week the anterior wall of the rectum sloughed and a fistula formed which Stoeckel intended to cure by operation should it not close spontaneously. The opening of the peritoneal cavity proved that the vagina was not the primary seat of disease. The serous membrane was covered with miliary nodules, and there were strong adhesions between the uterine appendages and the intestines. The Fallopian tubes seemed to be the original seat of tuberculous affection. Stoeckel promises that the after-history of his case will be reported in full. The experiences of the Wertheim school seem to show that uterine cancer may be extirpated if taken in time, though the doctrine is not universally accepted. Without doubt a tuberculous Fallopian tube may be removed with good results, although the uterus must be sacrificed as well, since the stump of an infected tube is a great source of danger. Unfortunately it often turns out that the disease is less limited than was at first suspected.

[1] Stoeckel, Report of a Meeting of the Mittelrheinische Gesellsch. f. Geb. u. Gyn., *Monatsschr. f. Geb. u. Gyn.*, September, 1910, p. 371.

PSEUDO-HOURGLASS STOMACH.

THE detection of hourglass stomach is often quoted as one of the greatest triumphs of radiography; the more important it becomes, therefore, to understand why in certain cases a subsequent operation has belied a definite *x*-ray diagnosis and has shown no hourglass condition to be present. Herz[2] mentions three conditions in which hourglass stomach may be simulated. The first may occur through the patient being given a suspension of bismuth in milk instead of a bismuth meal, and being examined in the horizontal instead of in the vertical position. Most observers now examine in the vertical position, however, so that this cause of error may be dismissed. Herz goes on to point out that there is such a thing as functional hourglass stomach, which may be mistaken for the organic condition. It occurs in cases when severe atony coexists with gastroptosis. The walls of a dropped stomach of deficient tone fail to contract upon the gastric contents, so that the food drops at once to the most dependent part of the organ, which sags more deeply as the quantity of food present increases. The horizontal upper limit of the gastric contents is therefore abnormally low, and only rises slowly as more food enters the stomach. The fundus being fixed, the food and gastric secretion exercise a considerable tension upon the body of the stomach, which is greatly stretched. The passage between the fundus and the dependent part of the stomach becomes increasingly narrower, until finally its lumen is completely obliterated, the stomach now being divided into an upper air-containing portion and a lower and much larger portion containing the food and a small quantity of gas. If more food is swallowed, it remains in the upper part of the stomach, and small quantities can be seen periodically shooting through the neck to join the main portion of the gastric contents. Therefore it is necessary in all doubtful cases to examine the patient at short intervals while the bismuth meal is being taken. Yet another cause of confusion in diagnosing hourglass stomach is the presence of an ulcer situated in the lesser curvature and adherent to the left lobe of the liver. When the patient stands the stomach tends to assume a vertical position. The ulcer being fixed to the liver, a line of tension is produced diagonally across the stomach. The greater curvature is held up at the point where the line of tension meets it, and the part of the stomach immediately above tends to sag down. The apparent constriction disappears when the patient lies down, as does the functional hourglass condition. Herz, therefore, recommends examination in the horizontal as well as in the vertical position before a diagnosis of hourglass stomach is made.

[2] *Archives of the Roentgen Ray*, September, 1910.

PREGNANCY AFTER REMOVAL OF FALLOPIAN TUBES.

Certain obstetricians consider that when Caesarean section is performed the subject, should the pelvic deformity be extreme, ought to be sterilized by excision of the Fallopian tubes. Three cases recently reported by Dr. J. O. Polak, of Brooklyn,[3] show, as has been already shown, that removal of the tubes may be followed by pregnancy. A woman, aged 21, underwent a series of operations in March, 1906; the perineum was repaired, the curette applied to the uterus, the vermiform appendix amputated, and the left tube and ovary removed. She afterwards bore two children, yet in June, 1909, she underwent amputation of the cervix, repair of the pelvic floor, and removal of the right Fallopian tube. Two months later the patient became pregnant and was delivered apparently at term, labour being uncomplicated. In the second case the patient was 28, and subject to axial rotation of a dermoid of the right ovary, which was removed with the right Fallopian tube. The uterine end of the tube was excised "well into the right cornu." This operation was performed in May, 1908. The periods did not appear in July and August, and in September the patient underwent another abdominal operation on account of an attack of acute internal haemorrhage. It was found to be due to rupture of an interstitial gestation sac in the right cornu of the uterus. Dr. Polak asks how the fecundated ovum managed to migrate into the interstitial portion of the right tube, and develop there

[3] Report of Three Cases of Pregnancy following Salpingectomy, *Amer. Journ. Obstet.*, October, 1910, p. 676.

when that tube had been previously excised, and the peritoneum and uterine muscle sewn over the wound in the cornu. In this instance, however, the left appendages remained. The third patient was a sterile young married woman, infected with gonorrhoea shortly after marriage. Both Fallopian tubes were amputated in the usual manner, but not excised at the cornua. Several years afterwards the periods were missed once, and a month later a severe attack of abdominal pain set in, followed by uterine haemorrhage. Douglas's pouch was opened, and blood escaped; abdominal section was performed, and an interstitial pregnancy discovered in the stump of the right tube, which was attached to the corresponding ovary by adhesions. The sac was successfully excised. It was noted that the remains of the left tube, 1.5 cm., or about three-fifths of an inch long, projected from the left cornu of the uterus. Thus, as Dr. Polak observes, this case illustrates the possibility of tubal stumps becoming patent after ligature and amputation of the free and isthmic portions of the Fallopian tube. The late Professor J. W. Taylor performed Caesarean section twice on a rachitic dwarf, applying ligatures to both tubes on each occasion.[2] Christopher Martin did a third Caesarean section on the same subject and excised the tubes and adjacent tissues of the uterine cornua. More than once pregnancy has followed when the ovaries and tubes have been removed for chronic inflammatory disease. More correctly, we should say that the ligatured stumps of the tubes and probably a piece of ovarian tissue were left behind, and that the tubal canals managed to become pervious through relaxation of the ligatures. Hansbury Sutton, Gordon of Portland, U.S., and J. Anderson Robertson have related cases of the kind.[3] These experiences show that, should sterilization be necessary, it is hard to effect it by operations on the Fallopian tubes, even excision of part of the uterine cornu being sometimes ineffectual, as is shown by Polak's second experience. Many cases have been reported, none more clear and instructive than Polak's. The fact remains that a metro-peritoneal fistula often develops when the cornu is excised, and may prove quite sufficient for the transmission of ova and spermatozoa.

Lord Ilkeston will distribute the prizes at the Westminster Hospital Medical School at 4 p.m. on Thursday, December 15th.

The Japanese Government has increased its donation to the funds of the Hygiene Exhibition to be held at Dresden in 1911 from £25,000 to £35 000.

Medical Notes in Parliament.

Parliament assembled again, after the adjournment, on Tuesday last. The House of Commons met at the usual hour of 2 45. All the benches and galleries were crowded by members who had come up to learn what course the Government had decided to pursue in consequence of the failure of the Conference on the Constitutional difficulty. After prayers, a little formal business was transacted, and the roll signed by two members who had not previously observed that formality. After a series of questions from the Labour benches respecting the use of the military forces in South Wales in connexion with the colliery disputes had been disposed of the Chancellor of the Exchequer, in the absence of the Prime Minister, moved the adjournment of the House till Mr. Asquith could attend and make his statement of the intentions of the Government. It was proposed at first that the statement should be made on Thursday, but as this was objected to by Mr. Balfour as inconvenient on account of his public engagements it was finally agreed that the adjournment should be till Friday. This arrangement flattened out the excitement in the Chamber, and men dispersed to the Lobbies to talk over the nature of the announcement to be made on Friday, and calculate dates for the General Election. It was generally felt that the constituencies would be appealed to without delay, and that a new House of Commons would be elected before Christmas. Other rumours were also circulated to the effect that the Ministry would resign instead of appealing to the electors. The members' lobby was consequently filled most of the evening by knots of excited members discussing the situation. In the meantime the debate on the adjournment went on in the Chamber, Mr. Keir Hardie and the Labour members criticizing the conduct of the police at Tonypandy, and condemning the drafting of troops into the district. They asked for an inquiry. The Home Secretary replied, defending the action of the police and justifying the movement of the military, and then said he could not grant an inquiry. A warm discussion next arose on the methods of valuation under the Finance Act, in which Mr. Pretyman and the Chancellor of the Exchequer took the chief parts. The motion for the adjournment was then put and a division was challenged by the Labour members, which resulted in the adjournment being carried by 168 to 41.

The House of Lords met at half-past four, and Lord Crewe referred in feeling terms to the loss the country had sustained in the death of Lord Spencer. Lord Lansdowne followed with a warm tribute to the high character and the great public services of the late Earl. It was then explained by Lord Crewe that he was unable to make a statement on the course of public business, as the Prime Minister had been unable to do so in the Commons. On this Lord Lansdowne rose and declared that he was unprepared for such complete inability to state the course of business, and gave notice that he would move on the next day that the Government be invited to submit without delay the provisions of the Parliament Bill to the House. He took the opportunity of denying certain statements that had been made in the press with reference to the causes of the breaking up of the Conference. Lord Crewe replied briefly, and after some questions had been answered the House adjourned at ten minutes after five. On Wednesday the House of Lords assembled in great numbers to hear Lord Lansdowne make his motion for the introduction of the Parliament Bill. He made a speech in which he reviewed the whole situation, and Lord Crewe replied that the Government had no objection to introduce the bill, and that he would move the first reading at once. The discussion was continued by Lords Rosebery and Balfour of Burleigh, and at its conclusion the bill was introduced. Lord Rosebery gave notice to proceed with his resolutions on Thursday.

The Legislative Programme sketched out for the remainder of the session has been abruptly upset by the political crisis. The order paper for Tuesday contained no less than twelve Government bills and thirty-nine other bills for consideration. The Shops Bill (No. 2), which it was intended to push through Parliament, was the first measure in the list, and it was anticipated that with the promised modifications it would make a popular Act. Its chances are for the present destroyed. The Public Health (Health Visitors) Bill was a second measure which a week ago had fair prospects and is now lost. Only the absolutely necessary Acts are likely to be passed before the appeal is made to the country, and a new Parliament will have to take up the arrears of work. If no General Election is decided upon at once—and absolute certainty does not exist at the moment of writing—there will be other changes, which will necessarily upset the programme of work originally laid down for the autumn session.

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[2] Fallopian Tubes Ligatured Twice at Previous Operations, and Removed in the Case of a Third Caesarean Section, *Medical Press and Circular*, December 21st, 1904.

[3] Renewal of Menstruation and Subsequent Pregnancy after Removal

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Hygienic Results of the Provision of School Meals.

The Board of Education has asked the London County Council to report as to the extent to which the provision of meals for necessitous children has increased the ability of the children to take full advantage of the education provided for them, and to what extent their manners and conduct have improved under the discipline employed. The Board states that it attaches great importance to the close association of the work done under the Provision of Meals Act, 1906, with the work of the school medical service, and desires to be fully informed of the arrangements made for securing co-operation between the school medical officer and his staff on the one hand and the canteen committee and its officers on the other, in respect of the recommendation or selection of children, the regulation of the dietary, and the observation of the physical or hygienic results attributable to the meals.

The Education Committee recommended at the meeting of the Council on November 15th that the Board of Education be informed that the general appearance of the average necessitous child had been improved by the supply of meals. "To arrive at any estimate as to the comparative ability of children was most difficult, however, as under the Council's scheme children were not allowed to remain unprovided with food except during holidays." With a view to training the children to be well mannered, a list of rules had been approved for the guidance of the supervisors in the management of dining centres. In cases where it had been impossible to obtain adequate voluntary supervision it was proposed to employ paid supervisors, and some had been appointed already. Reports on the nutrition of the children had been submitted to the Board in the report of the Medical Officer of Health (Education), 1908 (pp. 16–20). On this question the committee pointed out that no absolute standard existed as to what was and what was not healthy nutrition. Necessitous children were not necessarily ill-nourished at the time of application for aid, and in such cases there was not always immediate need for medical inspection. Home conditions such as overcrowding, lack of sunlight, and insufficient sleep, contributed to produce the typical appearance of a necessitous child. Consequently, the care committees relied to a great extent on the circumstances of a family as revealed by interviews with the parents and by home visits, no hard and fast rule as to "necessity" being adopted. So varying were the circumstances that practically every case had to be considered on its individual merits. In some cases sufficient food seemed to be available and yet the child remained ill-nourished. This might be due to insufficient building up of the tissues, either from unsuitable food, from lack of power to digest food—as in the cases of bad teeth or indigestion—or from lack of power to assimilate the food when digested. Again, another cause might be the excessive breaking down of the tissues, occurring in conditions of nervous irritability such as accompanied insufficient sleep, attacks of vermin, chronic fatigue and overwork, and constant, though perhaps slight, febrile illnesses. Such cases fell within the purview of the school doctor. There was always co-operation between the public health department and education service through the school teacher. The records of the school medical inspections were always at the disposal of head teachers and care committees, and were consulted when children were being selected for the provision of meals. The head teacher indicated to the school doctor the children who appeared to be in need of special treatment, and the school doctors often recommended that inquiries should be made by the care committees into the home circumstances of individual children. In special cases of delicate or anaemic children milk or cod-liver oil was recommended by the school doctor, and if the case was approved by the Care Committee this was supplied to the children at the cost of the Council. The menus for the school meals had been drawn up in consultation with the school medical officer.

[The report had not been reached when the Council adjourned at midnight on Tuesday, November 15th.]

Board of Education and Accommodation for Defective Children.

In communicating its decision to recognize for a definite period only a temporary school for mentally defective children, the Board of Education intimated that it strongly deprecated makeshift arrangements for providing education for these children, and urged the Council to proceed to complete with all possible dispatch the survey of accommodation for defective children. This survey should be extended to schools for physically defective children, as during the year ended March, 1909, eleven schools for mentally defective and eleven for physically defective children were seriously overcrowded, deductions having to be made from the grant in respect of two schools in each category. Similarly during the year ended March, 1910, so far as the review of claims for grant had yet gone, seven schools for mentally defective and eleven for physically defective children had been found to be overcrowded, and the grant had been reduced in some cases. The Board hoped the Council would put matters on a satisfactory footing without delay.

The Education Committee stated that a survey of the accommodation for mentally defective children had now been made, and proposals for providing 705 additional places to meet immediate needs had been submitted to the Finance Committee. That committee had suggested that the first question to decide was the principle involved in the provision of additional permanent accommodation for mentally defective children pending the result of deliberations on the report of the Royal Commission on the Care and Control of the Feeble-minded—still under the consideration of the General Purposes Committee. In the circumstances the Finance Committee had adjourned the consideration of the proposals for providing additional places.

Private and Pauper Asylum Patients.

The Hampstead Board of Guardians, in a letter to the London County Council, recently raised an interesting question with regard to the admission of paying patients into London county asylums. The guardians pointed out that their officers took considerable care to inquire into the ability of relatives to support inmates of the asylums, and the collector was paid a commission on the amount he obtained from relatives of patients. When the London County Council took over cases in which relatives paid the full cost, would it be possible, the guardians asked, for the Council to pay their collector the commissions that he lost?

The Asylums Committee, in a report to the Council, pointed out that the whole question of keeping a patient unnecessarily and unjustly under the stigma of pauperism was involved in the board of guardians' request. So long as the payment for a patient's maintenance was made to the Council by a board of guardians the patient remained a pauper, even though the guardians might recover the whole cost of maintenance from his friends or his estate. But if the expenses of maintenance were paid directly to the asylum, the patient ceased to be "chargeable to a union," and became a private patient. It had been decided, in the case of Regina *v.* Jones *re* Stennett, that it was the duty of the Asylums Committee to ascertain the means of patients, and to classify them as private patients when they were entitled so to be regarded. When a patient was placed on the private list, a parish collector no longer recovered the cost of maintenance, and the Council could not pay commission to a collector in respect of work he was not doing.

Recovery of the Cost of Dental Treatment.

A scheme—which, however, was withdrawn by the subcommittee concerned—appeared in the agenda of the Education Committee of the Council last week for fixing the scale of charges to parents in respect of dental treatment of school children. The subcommittee stated that in fixing a charge it had to be borne in mind that unless there was actual suffering parents generally did not recognize at present the need for dental treatment. The obligation placed on the Council by the Act to make a charge might militate against dental treatment being obtained, and it seemed desirable, until the importance of dental treatment was more widely realized, that inducements for obtaining treatment should be as great as possible. The subcommittee suggested the following charges: 2s. 6d. for the complete treatment of the mouth where stoppings were included; 1s. 6d. where the treatment consisted of extractions under gas; and 6d. for simple extractions. Where more than one child in a family required dental treatment half the amount charged for the first child should be charged for each additional child, provided the net family income was 25s. or under. Legal proceedings to enforce payment would not be taken where the net income fell below 17s. 6d. a week, and in the case of incomes below 30s. remissions would be made according to circumstances.

Payment of Medical Men called in to assist Midwives.

The Woolwich Borough Council has sent a circular letter to the other metropolitan borough councils with reference to the provisions of Section 17 of the Midwives Bill, relating to the payment by boards of guardians of fees to medical practitioners summoned upon the advice of a certified midwife in cases of emergency, more particularly in cases of infants suffering from inflammation of the eyes, stating that the Woolwich Borough Council are strongly of opinion that the London County Council should be the authority to pay the fees of medical practitioners instead of the board of guardians, and that the Lord President of the Council has been asked to amend the bill in the direction indicated. The other metropolitan borough councils are requested to take similar action.

MANCHESTER.

Medical Students' Hostel.

For some time time past it has been felt that the senior medical students attending the Manchester Royal Infirmary laboured under a great disadvantage in not being able to find suitable lodging accommodation near the infirmary. Since the infirmary was removed to its present position near the university, there has been a considerable saving of time formerly spent in travelling backwards and forwards to Piccadilly, but there are still many students who are compelled to reside a considerable distance from the university and the infirmary. It is therefore proposed to provide a hostel for the senior medical students, and several houses in Nelson Street, which adjoins the infirmary, will be taken for the purpose. In a circular that has been issued, asking for donations to the capital fund and a contingency fund, it is stated that "the object of the scheme is to enable students to gain experience in the management of accident and urgency cases, and in the observation of acute disease, so that they may be better fitted for the emergencies with which they will have to deal, both as residents in the hospitals and in private practice. Experience of this sort can be acquired only by students residing close to the hospital, and permission for these facilities has already been granted by the board of management." It is said that the hostel will not interfere with existing residential halls, as it is intended only for medical students during the final part of their term of study. It is proposed to start the hostel on a modest scale, providing for about ten students, at a weekly charge of 25s. each inclusive, and to give it a trial for three years. The hostel will, of course, be under the care of a responsible warden. It is estimated that there will be an initial capital expenditure of about £600, and it is desired to have £200 a year guaranteed for three years for working expenses and contingencies, though it is fully hoped that after the first year there will be no call on the contingency fund, and that the hostel will soon become self-supporting. A considerable number of contributions have already been received, and the scheme has the support of the Dean of Manchester, Sir A. Hopkinson (Vice-Chancellor of the university), the board of management of the infirmary, and practically all the members of the medical and surgical staff. Contributions may be sent to Mr. Joseph Bell, 2, Portland Street, Manchester, or the honorary secretary, Dr. Tylecote, the Royal Infirmary, Manchester.

Housing of the Working Classes.

A new experiment in provision of housing accommodation for the working classes is now under consideration in Manchester. In various parts of the city the Corporation has already built blocks of dwelling houses largely to take the place of insanitary property that has been demolished. The model dwellings erected are let either entire or in apartments, but it is found that many working people cannot take advantage of the provision, as they have not the money to buy furniture and they resort to furnished apartments elsewhere. Some members of the Sanitary Committee have accordingly thought that the Corporation might try the experiment itself of providing furnished houses, or at any rate furnished apartments. It is possible that new houses will be erected and furnished throughout to meet the want, but for the present the experiment will probably be confined to the vacant rooms in the existing model dwellings.

WEST YORKSHIRE.

Boric Acid as a Food Preservative.

A case of considerable interest in connexion with the use of boric acid as a food preservative was heard at the Bradford city police court recently. A dealer in shrimps at Morecambe was summoned for selling in Bradford pickled prawns containing 0.916 per cent. of boric acid. This was nearly 63 grains of boric acid to the pound of shrimps. The Bradford Corporation maintained that no boric acid was allowed at all by law, although exception was not taken up to 35 grains to the pound. The medical officer of health contended that over 0.5 per cent. of boric acid was injurious. Medical evidence for the defence contended that shrimps were readily prone to decomposition, and it was much safer if they were preserved by a considerable quantity of boric acid rather than that they should be eaten in an unwholesome condition. The quantity, too, of shrimps eaten at any one meal was small, and they were only taken sporadically, not, like milk or butter, daily.

The stipendiary gave judgement after a fortnight's consideration. He came to the conclusion that a dose of over 20 grains of boric acid might possibly be injurious. He considered that a ½ lb. of preserved prawns would be more than could reasonably be expected to be consumed at one time by an ordinary person. With the percentage alleged to be in the sample taken from the defendant this amount would contain about 15 grains. This amount he thought would not be injurious. He accordingly dismissed the summons.

LIVERPOOL.

Liverpool Medical Students' Dinner.

The annual dinner of the Liverpool medical students will be held at the Exchange Station Hotel on Saturday, December 17th, at 7.30 p.m. All past students will be welcomed. Tickets can be obtained from the honorary secretaries of the dinner, Messrs. J. P. Rafter and T. H. Martin, Liverpool Medical School, Liverpool.

WALES.

Cardiff Nursing.

On November 4th the members of the Cardiff Nursing Division of the St. John Ambulance Brigade (No. 7 District) were presented with the certificates, medallions, and labels obtained by them as the result of their successes in examinations. There was a large attendance, presided over by Dr. T. Wallace, who was supported by Sir John and Lady Duncan, Drs. W. G. Williams (honorary surgeon of the division), De Vere Hunt, D. R. Thomas, Barnardo, F. Davies, and W. C. Anderson, Superintendent J. Davies, and Inspector J. Bell. The Chairman, in his address, said that in his opinion there was no work more interesting or calculated to be more useful and helpful than ambulance work. He was greatly pleased to find that that nursing division had been so successful in its first year, and hoped that its work would spread throughout the city. Miss J. McCallum, the honorary secretary of the division, read the report for the first official year ended September 30th last. This stated that the division was formed with 35 ladies, of whom 8 had since resigned, but 9 others had joined, and the present strength was 33 nurses, 3 officers, a doctor, and a drill sergeant—a total of 38. Twenty-seven members had passed their re-examination for efficiency—2 for first-aid certificates, 8 for nurses' certificates, 10 for medallions, and 19 for labels. There had not been a single failure during the year. Thirty-one first-aid cases had been attended privately by members. There was a complete voluntary aid detachment of the British Red Cross Society in connexion with the division, which is registered by the War Office as Detachment No. 2 of the Glamorganshire Branch of the British Red Cross Society. Thanks were accorded to Dr. W. G. Williams, the honorary surgeon, and others who had assisted in the work. Lady Duncan, in presenting the certificates, etc., referred to the report presented by Miss McCallum as being highly satisfactory. Presentations of a framed photograph group were made to Dr. W. G. Williams, the honorary surgeon of the division, and Sergeant Francis.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Administration of Anaesthetics.

A special meeting of the Royal Academy of Medicine in Ireland was held in Dublin on November 10th for the purpose of discussing proposed legislation regarding the administration of anaesthetics. At the invitation of the Council of the Academy several members of the dental profession attended the meeting and took part in the discussion. The following resolutions were ultimately passed unanimously:

1. That it is desirable in the public interest that the administration of general anaesthetics to render persons unconscious during any medical, surgical, obstetrical, or dental operation or procedure, should be restricted by law to registered medical practitioners, with the exception of nitrous oxide gas, and such other anaesthetics as may from time to time be scheduled by the Privy Council, which may be administered by registered dentists.
2. That provision should be made for the instruction of medical and of dental students in the administration of anaesthetics.
3. That the specification of the anaesthetic substances or drugs which may be employed by registered dental practitioners during dental operations or procedures should be made in a schedule to the proposed Act of Parliament, power being reserved to the Privy Council, on the recommendation of the General Medical Council, as the authority charged with the publication of the *British Pharmacopœia*, to add to or vary the specified list from time to time as occasion arises.
4. That the administration of local anaesthetics for producing insensibility to pain during any surgical or dental operation or procedure by the introduction beneath the skin or mucous membrane of any fluid or other substance by means of a hypodermic needle or in any other way, should be restricted by law to registered medical practitioners, to registered dentists, or to persons acting under the immediate supervision of a registered medical practitioner or a registered dentist.

Resignation of Dispensary Medical Officers.

Notice of resignation has been handed to their respective boards of guardians by two dispensary medical officers of over forty years' standing. Dr. James Rowan, Medical Officer of the Ballyward Dispensary District, has been in his present post for forty-one years, and is now compelled to resign on account of ill health. A similar reason has caused Dr. Arthur Mussin to resign his appointment to the Glenavy Dispensary District after a service of forty-five and a half years. In both cases the resignation has been received with regret, and the question of superannuation allowance is to be considered.

Asylum Capitation Grant.

Further opinions are to hand on the questions propounded by Mr. Birrell concerning the administration of lunatic asylums. These questions were published in our issue for last week (p. 1554.) The Dublin Corporation had decided in favour of a Treasury contribution of 6s. 6d. per head; the Cork Corporation prefers that the cost of the upkeep of lunatics should be an imperial charge; the Mayo County Council also favours the defrayment of all asylum expenses from imperial sources.

County Scholarships for University College, Cork.

The Kerry County Council has unanimously decided to grant two scholarships of £50 each and two scholarships of £30, tenable at University College, Cork. Of the £50 scholarship, £30 is to be paid to a hostel recognized by the university in Cork, £10 to be paid for fees, and the balance to go to the student. The scholarships are to be given to students from County Kerry who have been resident and educated in Kerry for at least three years. The holders must be matriculated students who have passed such tests as may be prescribed by the University College, Cork.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Rest and Movement in Tuberculosis.

Dr. R. W. Philip gave the introductory address to the Edinburgh Sanitary Society on November 10th, on "Rest and Movement in Tuberculosis." Councillor Macpherson presided over a large audience.

Aërotherapy, Dr. Philip said, was serviceable, not merely in consumption, but in the treatment of most diseases. His conviction was that were the vitalizing properties of open air truly understood and realized, the larger part of disease would cease to be. The practice of continued rest in consumption proceeded from a faulty, because insufficient, conception of the disease. There was a wider conception of tuberculosis than that which concerned the local mischief in the lung. Tuberculosis implied a progressive intoxication. The toxins produced by the tubercle bacillus seemed to exert their vicious influence particularly on the neuro-muscular apparatus. The toxin was especially a muscle poison. Nothing repaired muscular tissue so certainly as natural movement. This was the guide in the institution of regular activity. As acuter manifestations disappeared under the influence of rest, and the risk of local and constitutional disturbance was reduced, the need for complete rest was lessened or removed. As recovery proceeded further, the aim came to be the restoration of physiological function. By the institution of natural movements, the process of cure or recreation was assisted, and there followed a gradual return towards the normal condition of health of every organ. The scheme of physical treatment at the Victoria Hospital and the part played by the farm colony were described.

Royal Society of Edinburgh.

Dr. Hugo de Vries, Professor of Anatomy and Physiology of Plants in the University of Amsterdam; M. Elie Metchnikoff, Vice-Director of the Pasteur Institute, Paris; and Dr. A. F. L. Weismann, Professor of Zoology in the University of Freiburg (Baden), are among those recently elected to the Honorary Fellowship of the Royal Society of Edinburgh.

Edinburgh Royal Infirmary.

Colonel William Pleace Warburton, M.D., C.S.I., has resigned his position as superintendent of the Edinburgh Royal Infirmary. Born in 1843, he entered the Indian Medical Service in 1866, and retired in 1899. During his Indian career he was medical officer to the Maharajah of Kapurthala, Principal Medical Officer and Sanitary Commissioner in Assam, Inspector General of Civil Hospitals in the North-West Provinces and Oudh, and Honorary Surgeon to the Viceroy.

There are many deeply interested in the well-being of the Edinburgh Royal Infirmary who hope that the tradition of appointing as superintendent a man who has retired at the age limit, or on approaching that limit, from the Indian Medical or Army Medical Service will now be broken. While holding strongly that the office should be held by a medical man, they think that the superintendent of a vast hospital like the Royal Infirmary should be a younger man, thoroughly equipped in all the details of modern medicine and surgery, and of wide mental outlook. The new appointment will be scrutinized more closely than ever before.

Glasgow Royal Infirmary.

The general meeting of the qualified contributors to the Royal Infirmary of Glasgow, referred to in this column last week, was held on November 9th, when there was submitted to the meeting the following resolution:

> That it is in the interests of the infirmary that the several amendments on and additions to the charters in favour of the infirmary of 1791, 1875, and 1901 embodied in the draft supplementary charter submitted to this meeting should be made, and that the managers be requested and authorized to take such steps as may be necessary to attain that object.

The principal amendments and additions have already been indicated (page 1552). The Lord Provost, in moving the resolution, explained that since the original charter was granted, not only the infirmary but the entire city had undergone important changes, and the necessity had now arisen for a new charter. There was little doubt that the proposed changes would link with the infirmary the various public bodies more or less closely identified with it, and the result would conduce to efficiency. A protest against leaving out the clergy in the management was made by the Rev. Dr. McAdam Muir, but no amendment was moved and the resolution was adopted unanimously.

Dumfries Combination Infectious Diseases Hospital.

The new combination hospital for infectious diseases which has been erected at Parkhead, Dumfries, for cases from Dumfries and Maxweltown was opened on November 10th by Dr. Leslie Mackenzie, of the Local Government Board. The new institution has cost fully £7,000. Dr. Mackenzie, in declaring the hospital open, referred to the duty of the community in providing such hospitals for infectious disease, and also emphasized the necessity for dealing in a strenuous manner with another infectious disease—pulmonary phthisis. It was most satisfactory to find that already local authorities representing over 50 per cent. of the population of Scotland had complied with the recommendation of the Local Government Board to adopt compulsory notification of phthisis.

Enteric Fever Outbreak in Ayrshire.

Reference was made at the Ayrshire Northern District meeting on November 10th to the enteric fever outbreak in Saltcoats and Stevenson, and to the report of the Local Government Board official who was asked to investigate the matter. It appeared that a farmer had been removed to hospital suffering from enteric fever, and that his premises had been disinfected. As nothing of a suspicious nature was found to exist after this disinfection, the sale of milk was permitted. The water supply was pure and the drainage satisfactory. Of the 80 cases subsequently reported, with one or two exceptions the victims had their milk supply either directly or indirectly from this farm. The farmer voluntarily stopped the milk supply at once. The outbreak is now checked, but it is impossible meantime to determine the exact cause of the fever. The Local Government Board approved generally the steps taken to deal with the outbreak.

A New Hospital for Skye.

A scheme has been formulated to build and equip a new hospital at Broadford, Isle of Skye, in memory of Dr. Mackinnon of Strath; a site has been secured, and plans approved for a building costing £1,000; already £1,600 has been subscribed, but building operations are being delayed pending the result of a special appeal to provide a fund sufficient for endowment.

Correspondence.

NATIONAL MEDICAL SERVICE.

Sir,—Dr. Gough misreads my letter as much as he seems to do the present situation, when he finds it sneer at men who are doing sound work for the general practitioner. Curiously enough my two illustrations were both taken from the history of the consulting branches of the profession, and they were used because they describe only too accurately methods which some are applying to medical politics, and which I am sure the general practitioner would not dream of using in his practice. Those who contend that we can settle this question purely as a professional one exhibit the same neglect of essential conditions as did the undergraduate who, when he had a problem dealing with a mass *W.*, said to the examiner: "I could give such a pretty solution if you would allow me to neglect *W.*"

The insufficient remuneration of the medical profession for the work it does is a matter as important as it is perennial, but it is only incidental to the problem set us by the announcement of a scheme of sickness and invalidity insurance. If we are to intervene effectively, we must try to understand the problem from the Chancellor's point of view as well as from our own. From his side it is not a question of paying the doctor better rates for the work he is now doing, but of getting more medical work in the form of attendance that is not at present being given. For this, as well as the rest, he proposes to pay by creating a fund from provident payments of the beneficiaries, extended by grant from the Treasury, and we may take it for granted that he is pretty well informed as to the existence of several ways in which he can secure the service required. As he is entitled to assume that a registered practitioner is both adequately trained and honest enough to carry out this work, any scheme that will give him a supply of registered practitioners is sufficient for his purpose, and we must be provided with fairly cogent reasons and show due regard to the conditions under which he makes his grant if we are persuade him that the system which commends itself to the medical profession is preferable to that of a medical civil service which is being strongly advocated from certain quarters, or to an extended medical service through the friendly societies.

Let each of us try to imagine himself conducting an interview with the Chancellor on behalf of the profession, presenting such arguments as we can, for the Treasury taking each year the margin, large or small, left after the contributions of workman and employer are exhausted, and meeting his arguments as to the impropriety from a national point of view of dealing in such an incalculable way with the Budget. If we do there will be few of us who do not realize that the Treasury grant will be made per head as well as the contributions of the beneficiaries themselves and that of the employers. The problems before us are, therefore, the adequacy of the fund over a series of years, and the way it is to be distributed in relation to the work of each doctor. Adequacy of the fund—or, in other words, the full market price of medica,

work—can only be secured by common action, and I have no hesitation in assuring Dr. Gough that I answer my own question in the affirmative, and that if the decision of the Association or the profession should, in my opinion, be unwise, I should use my endeavours to get it revised within the Association itself.—I am, etc.,

Dundee, Nov. 12th. R. C. BUIST.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—I am entirely at one with Dr. J. H. Taylor in his letter in the BRITISH MEDICAL JOURNAL, November 12th, 1910, in regretting any tendency towards "dividing the Association into two hostile camps on the question of payment of fees under State sickness insurance." It would, of course, be infinitely preferable for us all to be united, at least on fundamental points, before we officially approach, or are approached by, the Government, and I would most strongly urge that every effort should be made to arrive at agreement by a calm and candid discussion of all aspects of the subject.

It cannot be expected, however, that the general practitioners of this country can regard with absolute indifference the prospect of their probable extinction in the near future, as may happen if some of the schemes which have been proposed should be adopted by the Government.

Personally, I am sorry the Gateshead Division has made a somewhat hasty decision, but I am not at all surprised, and I feel only too sure other Divisions, as well as many individual members, will quickly follow suit unless the Association takes immediate steps to ascertain the views of its members, and to frame its policy and action upon those views. I have very little doubt that when the issue of "payment per attendance versus payment per head" is put to the general practitioners of this country, there will be an overwhelming majority in favour of "payment per attendance"—that is, for work actually done—and against "payment per head"—that is, contracting for an unlimited amount of attendance for a fixed and limited fee per annum.

In my opinion the issue is a vital one, because it means that if we accept the latter method of "payment per head," we are taking upon our own shoulders the whole risks of the insurance. It would be we individually who would have to bear the brunt of all exceptional claims.

Now the whole basis of insurance is the principle of distributing the risks over so large a field that the exceptional elements can be practically disregarded, but to ask each individual practitioner to undertake the risks of insurance for his relatively small *clientèle* is to offer him a veritable gamble; he may, of course, have a number of clients who would not require his services, but if he is a successful practitioner it is more than likely that the demand upon his time and services would be above the average—and yet his pay would not necessarily be proportionate.

If the Government intend to introduce a system of State insurance for sickness and invalidity, to include medical attendance, they have no right to expect or to ask the medical profession to undertake the risks as well as to do the work, and we shall be very foolish if we allow ourselves to be trapped into doing so.

To take a concrete case—an extreme one no doubt, but by no means an impossible one—suppose a workman's insurance contributions have been paid regularly to Dr. A. for ten years but the doctor's services have never been required. Two days before the end of the year, when a fresh choice of doctor is allowed, the workman is attacked by pneumonia. Dr. A. is sent for but does not, for some reason, give satisfaction to the patient or his family. The day when a change can be made arrives, and Dr. B. is promptly sent for. The case proves a very severe and protracted one; Dr. B. attends perhaps half a dozen times a day for a week or two, and does his best to pull the patient round, but the man dies. How is Dr. B. to be remunerated under the capitation system? Or, again, the patient, instead of dying at once, develops phthisis, and Dr. B. is let in for almost daily attendance for the next twelve months. Can Dr. B. feel that his work is being fairly remunerated when he learns that Dr. A. has been receiving this man's contributions for ten years or more, and has done nothing in return; whilst he (Dr. B.) has to be content for all his arduous service with a nominal payment per annum? It will take a good many non-sick payers on his list to make up to him for this.

It has been said that there can be no objection to payment per head provided the payment be adequate—that is, so as to allow of a reasonable fee per visit—and that it is a simple matter of actuarial calculation to say what the fair capitation fee should be. This is, I fear, begging the whole question. It would only be possible to fix a fair capitation fee when the incidence of sickness is fully known. There are no data at present for ascertaining this, and it is practically certain that the capitation fee offered by any Government would *not* be adequate. Again, as I have pointed out, even if a fair average fee could conceivably be arrived at for the whole country, it is pure chance, under the capitation system, whether any individual practitioner gets his fair share of actual earnings; indeed, it is practically certain that the busy and conscientious practitioner would be penalized and underpaid, whilst the shirker, who went about it in a diplomatic way, would draw more than his just share of fees.

The possible abuses of the contract system are, indeed, only too many and too well known to need reiteration, and the general experience of the profession both here and abroad is strongly opposed to its continuance.

Dr. Taylor says, let us try first for "payment per attendance, as most likely to give the most efficient medical service, satisfactory both to the public and the profession." Failing this, he suggests "we should accept payment per head from the insurance department under the Provident Medical Service scheme drafted by the Special Poor Law Committee." Now this seems to me tantamount to saying, when we have a case of diphtheria to treat, "we know antitoxin is by far the most efficient treatment, and most satisfactory both to the patient and ourselves," but if it be objected by the parents or guardians that antitoxin is "too ideal," or "too expensive," we will meekly "consent to treat our patients on the old lines," that is, without antitoxin. If we are not allowed to treat our patients in the way we think best we should decline to attend, and similarly if the Government does not allow us to treat our patients under State sickness insurance in the most efficient manner we must decline to attend them, in the patient's interests quite as much as in our own.

The Provident Medical Service scheme drafted by the Special Poor Law Committee was originally intended to deal with cheap club practice—that is, to remove some of its more obnoxious features; but even with these amendments the scheme is still essentially club practice, its object being to obtain medical men's services at the cheapest possible rate, by contracting for a limited and fixed fee for a practically unlimited liability for sick attendance. It is this unlimited and quite incalculable amount of attendance to which we should be committing ourselves that makes the bargain so unfair to the individual practitioners. If our work is to be adequately remunerated, there is no need for such a provident scheme. If, however, the Government seek to exploit us by offering us less than a just and proper reward for our services, and also to thrust on our shoulders all the insurance risks, then I say *they* are not giving the workers of this country State sickness insurance, but they are wringing it from the already overwrought and overburdened medical practitioners, upon whose shoulders the chief cost would inevitably fall.

To allow for one moment that we shall be willing to accept contract practice, *on any terms*, is to give our whole case away. To say "that the Government will never agree to payment for work done," and therefore we shall have to accept contract work, is to deny our right to have any voice in the disposal of our services. Surely if we are to do the work we should be consulted as to the terms upon which we will act; and we have a right to ask that our remuneration should bear a very definite relation to our exertions. We should therefore use all efforts to secure payment for work done at a just and reasonable fee per attendance (as is now charged in private practice), and resist by every means in our power the imposition of an unfair and inequitable contract system, if necessary declining to act under such a system.—I am, etc.,

Bowdon, Nov. 12th. P. R. COOPER.

SIR,—So much misconception appears to prevail as to the aims of those of us who object to clubs, provident societies, and all "schemes" for attendance on the State

beneficiaries, that I crave space to introduce to your readers the simile of fire insurance, to which medical attendance insurance is closely analogous.

The present method of fire insurance companies is regarded as fairly satisfactory both by the insured and by tradesmen in general, and we objectors to contract think that medical attendance insurance should be run on the same lines. These lines are that the insurance company bears the risk of loss by fire, and the tradesmen make good the loss at market price. Fire insurance, if run on the lines of a provident medical service, would turn out thus: The fire company receives a premium and guarantees against loss by fire; it then hands this premium over to a builder, and says: "Now if this house is burnt down you must replace it."

This is exactly what is done to-day by the friendly societies in regard to medical attendance risk, and what is proposed to be done by the British Medical Association to-morrow. Only, the Association says: The friendly societies had no interest in exacting from the insurers an adequate premium (capitation grant), as they could force the doctors to take an inadequate one, but we, the Association, will take an interest in getting an adequate premium for the sake of our members, and this is "the great and fundamental difference that places the two systems in totally different categories." *En passant*, one may observe that the Association does not explain how it is going to get a bigger (adequate) premium while the friendly societies are accepting a lower (inadequate) one. But *does* it place these systems in different categories? We abolitionists say No. Let us follow the lines of fire insurance, which guarantees replacement of goods destroyed by fire, holds itself responsible for the damage, and repairs that damage *when it occurs* by either paying in cash direct to the insured, or paying the bill of the tradesman who replaces the goods. Why with medical attendance should any other course be followed? Why should the State, for example, ask us medical men to underwrite the insurance risk it proposes to accept for the premiums of its beneficiaries? This is the point on which we differ from Dr. Buist and the majority of our representatives at the annual meeting. I had thought that we differed from Dr. Greenwood also, but in the JOURNAL of November 12th he makes it evident that he had misconceived the position of these "medical reformers who publish impossible schemes." We have no "special scheme of medical attendance" in the sense he means. Our "scheme" is a proposal that when the State buys a thing it should pay for it in the ordinary way in current coin. The State is the insurance company guaranteeing medical attendance to its beneficiaries; it may either pay the insured sufficient during sickness to enable him to pay the doctor he calls in (this Dr. Greenwood says he would approve of) or give the insured the services he requires, paying these services itself (like many insurance companies, which will give their insured a new carpet in place of one destroyed, but not the *price* of the carpet). This action of insurance companies is a quite usual and, I think, reasonable one, and I cannot see why Dr. Greenwood should object to the State's imitating it in the more important matter of medical attendance. The fire company has no patriotic or humanitarian interest in seeing that the man whose house is burned down spends his insurance money in building another; the State has a direct interest in seeing that the sick man does spend his insurance money on the object for which it is furnished, in order to get well as quickly as possible.

How Dr. Greenwood can say that our proposals "would force the poor people to give up their own private doctor or club and make use of the doctor whom the scheme provided," when the scheme provides no doctor and is directed absolutely against the nomination of special doctors, I do not understand. I feel that he is fighting an imagined idea very different from the one we stand for. I cannot too plainly and emphatically say that if our proposals are received by the Association and by the Government, no patient will give up his present medical attendant unless he urgently desires a change; and no medical man will fail to gain in pocket, leisure, and self-respect unless he owes a present competence, not to his merits, capacity, or popularity, but to unfair constraint of his *clientèle*. Personally I believe there are no such men; but it has been reiterated that if the workers were given freedom to choose what doctor each liked, the "works doctor" would have no patients left to him—a scathing commentary on the quality of club practice!

I said, "if these proposals for the restitution of private practice are received by the Association and by the Government." Will the Association be too timid or too lethargic to make a stand? That is really the vital question, for if the Association wants freedom it is the master of the situation. What would not the cotton-spinners or boilermakers give for our unique and impregnable position? They have to contend with starvation whilst out on strike, and with blacklegs at home and abroad; our pay goes on while we are fighting, and we have no blacklegs outside our own profession. Government cannot send to Belgium for a few weeks' medical services while it is fighting our demands.

Let every Division in the country discuss this question at length—every night for a week, if necessary, for it is the most important matter the profession has had to deal with for a century, or will have for another—know its own mind, consolidate with the medical men outside the Association, or, better still, with this bait persuade them to join, and stand firm by the result of the Divisions' voting on the Special Poor Law Reform Committee's report, which will soon come to the Divisions for consideration. In spite of Dr. Gough's suspicions, I believe that our leaders are anxious to fight for whatever the Association is united enough to demand. We demand that our private patients be not interfered with in their relations to us. Let Government confer benefits on them if it likes, but not at the expense of our incomes and personal freedom. By all means give the wage-earner medical attendance, but pay for it in the ordinary way at ordinary fees. This, besides being best for us, is best for the people and best for the science we serve; it will preserve our freedom of practice, keep active that competition our nation so admires, satisfy the State beneficiaries, relieve the congestion of hospital out-patient departments, solve the question of the treatment of school children, and make possible the exaltation of medicine into a profession instead of, as it is fast becoming, a trade.

Further, if we believe that in the interest of medicine and of the nation the continued existence of the general practitioner is preferable to his transformation into an "institution doctor," it is our *duty* to the profession and to the State to urge this course on the Government, even if we think it will not hearken. If Government is determined to make a mess of this business, let it do so without our co-operation or acquiescence.

I do not quite understand Dr. Williams's provisional approval of a system of piecework "if adequate security that the funds would never run short, could be obtained"; how can the funds run short unless the insurance company (the State) "contracts out" of its liability by imposing a capitation scheme on the medical profession? Then, indeed, the funds might run short and the deficit have to be supplied by us unfortunates.

This is one of our arguments for "piecework" as against contract: that the liability is the State's, and contract transfers that liability to us. There is a tendency to gloss over the other arguments against contract, and nullify this one by suggesting that we could, by insisting on a large enough capitation grant, reduce the insurance risk to a vanishing point. Even if this could be done (and I believe it will be found more difficult than to abolish contract altogether), all the intrinsic demerits of club practice remain—the suspicious attitude of patient to doctor, and vice versa, the grievances of overtime and unreasonable hours and additional duties, of being tied for a period, and so on. And why should we worry to tinker at a faulty machine when a really efficient one is waiting to be put in use, if we have the courage to insist on the old one's being scrapped?—I am, etc.,

Bristol, Nov. 12th. HARRY GREY.

THE REFERENDUM.

SIR,—I do not desire to intervene in the correspondence on sickness and invalidity assurance, but I am reading it with much interest. My object in writing just now is to draw attention to the suggestion made by Dr. Ernest Milligan in the JOURNAL of November 12th. He says:

A postal referendum to all members of the medical profession, having a set of questions similar to those proposed by Dr. Fothergill, would give a true idea of the opinions of medical

men in this country. Such postal referendum should be carried out, and a chance given to general practitioners to express an opinion on this vital question—*for to attend meetings is an impossibility with many.*

The italics are mine.

There could hardly be a better object-lesson in favour of the views so recently expressed and still held by a number of Branches and by many members of the Association.

Let us hope that the powers that be will recognize the truth of Dr. Milligan's statement, and that we may yet find the "postal referendum" adopted in our new constitution. Why should practitioners in the Association be disfranchised any more than practitioners outside the Association?—I am, etc.,

Edinburgh, Nov. 15th. R. MCKENZIE JOHNSTON.

ALCOHOLISM AND DEGENERATION.

SIR,—All readers of the editorial in your last issue in relation to the above subject will be glad that you are not prepared to express a final opinion on the subject of parental alcoholism and degeneration with which Professor Pearson and Miss Elderton's memoir ostensibly dealt, and, above all, will be relieved to learn that our JOURNAL is not yet committed in support of Professor Pearson's and Miss Elderton's verdict, because that verdict has no scientific relation to the problem, What physical injury is done to the children of the nation by parental alcoholism? It certainly is not yet the time for the medical profession to endorse or deny the validity of any investigations on this question by Professor Pearson or Miss Elderton. That time will arrive when these workers have addressed themselves to the question which was the object of their investigation, namely, "The influence of parental alcoholism on the physique and ability of the offspring."

Up to the present, however, they have not done this.

They do not yet know whether the individuals about whose habits (alcoholic or not) they wrote were, *qua* parents, alcoholic or not.

As Mr. Keynes, Dr. Sullivan, Dr. Saleeby, and others have pointed out, Professor Pearson and Miss Elderton omitted to ascertain in their research the answer to the essential question: Which came first in each case, the alcoholism or the child?

Professor Pearson's only reply to this criticism is that, "*if some* children were born before parental alcoholism had started *some* were certainly born after."

On this "*if*" and on these two "*somes*" Professor Pearson and Miss Elderton have based a mass of figures and mathematical curves which they presented to the world as a model of scientific caution and accuracy, the alleged absence of which in other inquiries they assert in the words of admonition with which they introduce their memoir to the public.

On what ground you refrained in your editorial from drawing attention to the fact that Professor Pearson's admission wholly destroyed the scientific value of his and Miss Elderton's mathematical results we do not know, nor do we understand your reason for satirically animadverting on Mr. Keynes's plain statement of fact that "as a contribution to the solution of the general problem the memoir is almost valueless, and from its failure to direct the readers' attention to essential facts, absolutely misleading."

We feel, however, obliged to call special attention to this matter on account of its great scientific and public importance, and in doing so to enter a remonstrance against your unsubstantiated comment, namely, that not the authors of the memoir but "their critics appear to have been somewhat over-hasty."

Our JOURNAL is designed by the Association to be a scientific periodical. We submit that to treat such a question as alcoholism and degeneration editorially, and to give support to those who have offered to the public as scientific conclusions which are admittedly based on mere conjecture, shows that you yourself have been "over-hasty" rather than the scientific critics you condemn.—We are, etc.,

London, W., Nov. 15th. MARY D. STURGE.
VICTOR HORSLEY.

CORONERS' LAW AND DEATH CERTIFICATION BILL.

SIR,—In your issue of October 1st there appeared an excellent letter by "Another Country G. P.," under the above heading. He suggested that the profession should combine in each constituency and memorialize its member of Parliament.

It may be of interest to inform you that here in the Enfield Division of Middlesex this has been done. With the very able assistance of my friend and colleague, Dr. Haldane Cook, a memorial has been submitted for signature to practically every medical man in the constituency, and in no single instance has it been met with a refusal. The last sentence of the memorial is as follows:

> We therefore venture to hope that when the bill comes up for consideration in the House of Commons, you will use your influence to see that an adequate fee is guaranteed by the State for each certificate.

Just to show what a little perseverance will do, over eighty medical men have signed the memorial in less than three weeks, and it has been forwarded to, and been favourably acknowledged by, our M.P.

My only object in telling you this is that if you care to publish it, it may be the means of causing many other members of Parliament to be memorialized to the same effect, and thus may help to procure for our profession what is, after all, simple justice.—I am, etc.,

Enfield, Nov. 14th. HOWARD DISTIN, M.B.

THE AFTER-CARE OF CONSUMPTIVES.

SIR,—I trust you will allow me to supplement your short account of what I said at the Charity Organization Society meeting on November 4th,[1] since in its present form it may be misleading. It states: "There was no danger of infection unless the phthisis were in active stage, or proper care were not taken." I intended and stated that this applied only to patients who were sent back to their former work after treatment in a sanatorium or hospital. Necessarily such patients are not in an active stage of the disease, for otherwise they would not be advised to undertake any work at all. In many cases, when discharged, they have no expectoration. But most important of all is that in every well-ordered institution the patients are thoroughly trained by lectures and otherwise in the methods for prevention of infection.

No sensible physician would assert that untrained patients were, in any stage, safe companions.—I am etc.,

London, W., Nov. 14th. ROBERT MAGUIRE.

PROFESSIONAL WOMEN AND MATERNITY.

SIR,—In his evidence before the Divorce Commission Sir James Crichton-Browne made the following statement:

> The rebellion against maternity was most marked in these classes of women, who asserted their independence and equality with men. For the ladies of the law, and for medical and journalistic ladies, maternity was a nuisance.

Now, I am writing to ask if Sir James Crichton-Browne will kindly give us his authority for this statement. Will he tell us how many ladies of the law have expressed this sentiment, and also give us some evidence which goes to show that the same opinion is held by medical and journalistic ladies?

Personally, I have never met a legal lady (has Sir James?), but, either as patients or friends, I am acquainted with a large number of women belonging to other professions, many of whom are married and mothers of families, and neither from married nor single have I ever heard the statement that they considered either marriage or maternity a nuisance.

At the same time, Sir James pleads for the idealizing of marriage. What is more destructive to this than the marriage of convenience, which in so many cases is unavoidable unless the woman is independent? As the majority of parents are unable to provide a competence for their daughters, this independence can alone be secured by educating them for some definite vocation.

This position of affairs does not affect the woman only. Is not a very grave injustice done to the man who is accepted in marriage because he is able to provide a wife with the material necessities or luxuries of life, not because he has inspired in her that feeling towards him which alone can sanctify their union? Then, again, the fact that in Great Britain there are so many more women than men renders the following of some profession or occupation not

[1] BRITISH MEDICAL JOURNAL, November 12th, page 1534.

a matter of choice, but an imperative necessity forced upon them by the need of the means of existence.

These are the causes which are at work in forcing women into other spheres than the matrimonial, not their desire for equality for men. The more these conditions are attained—which, although lessening the actual number of marriages, will increase the number of those founded on mutual affection—the less we will hear of the Divorce Court and its sordid details.

If Sir James wishes his evidence to carry any weight or conviction with it, he will, no doubt, be ready to show that his conclusions have been formed from well-authenticated facts. If he does not do this, the public will be forced to the belief that this is another instance in which he has again merely been "hazarding a conjecture." I am, etc.,

November 8th. A Woman M.D.

THE NUMBER OF CHILDREN PER FAMILY.

Sir,—When I proposed that bachelors between certain ages should be taxed, and that the amount so raised should be given to those whose income is under about £250 per annum and who have the largest number of healthy children, I was no little surprised that it is impossible to obtain from the Census, or Registrar-General, or Local Government Board any statistics whatever showing the number of children per family. This is not as it should be. That fine man, the late Dr. Matthews Duncan, in his Government report on "Fertility, Fecundity, and Sterility," did supply some such statistics. The Registrar General kindly tells me that the Census of New South Wales contains similar statistics.

May I suggest that a committee of the British Medical Association be appointed to offer suggestions to the Census Commissioners, and especially that relating to relative fertility? It would be well if such Census statistics gave also the ages of fathers and mothers and the age of each child last birthday. The Irish Census gives some very instructive figures relative to the deaf-mutes in Ireland: their number and their place-birth in the family—that is, first, second, third, etc., child.—I am, etc.,

Liverpool, Nov. 15th. Robert R. Rentoul.

DR. HADWEN AND THE "CRIMSON CROSS REMEDIES."

Sir,—I beg to thank you for your courtesy in publishing my correspondence with Dr. Drury upon the above subject in your issue of November 12th, although I was very much surprised to see it in your columns five months after it had taken place.

I gather from your own preliminary remarks that "Dr. Drury has delayed submitting this correspondence in the hope that Dr. Hadwen might reply to his second letter repeating the request for particulars of the investigation advertised as having been undertaken by Dr. Hadwen."

This is a very extraordinary statement. Dr. Drury asked me on June 5th for "any details" I could furnish concerning the "Crimson Cross remedies," which he said "I should be glad to publish if you would allow me to do so." He enclosed me a cutting and also a reprint from the British Medical Journal, neither of which, owing to my absence abroad, had I previously seen; nor had I seen, nor have I seen up to the present time, the advertisement to which allusion is made, wherein, I gather, my name was quoted as an authority for certain statistics.

In my letter of June 15th I gave Dr. Drury all the information which lay in my power, including a summary of the particulars contained in my casebooks, and I invited him or any one else to give me a call and inspect the books for himself.

Dr. Drury distinctly declared in his letter of July 10th that he should not publish my reply. He said it "did not provide him with particulars for the benefit of medical officers of health," and construed my letter into "an indirect attack upon the British Medical Journal"; and why he has now offered the correspondence to you for publication, after this long interval, passes my comprehension. He makes, as your readers will perceive, a running commentary on the various points in my letter without bringing forward a single issue which I have not already answered. I could not see then, neither can I see now, anything in Dr. Drury's letter of July 10th which calls for a reply.

I have been perfectly open and straightforward in this matter. In the letter you have courteously published I have given the fullest answer possible to the question addressed to me, and I repeat that if Dr. Drury will care to call upon me or appoint any one else to do so my books are open to inspection, and I shall be happy to give all the explanation which lies in my power; any extracts whatever may be made from them, and any details which may be deemed suitable for publication or criticism may be used for that purpose. Most of the details have been checked by myself, and I hold myself responsible for them all. More than this, every unprejudiced reader will agree, it is impossible for me to do.—I am, etc.,

Gloucester, Nov. 14th. Walter R. Hadwen.

MASSAGE OF HEART IN CHLOROFORM COLLAPSE.

Sir,—What is practically a sense of duty makes it incumbent on me to publish the following notes at the earliest possible date, since the description of that which was the means of saving one life may suggest to your readers the possibility of similar success under like circumstances. The case is as follows:

A. C., aged 30, marine engineer, had at least one fairly sharp attack of appendicitis, and, seeing that he consulted me in the quiescent stage of his malady; that he had the necessary time to spare; that he was liable to further attacks in future, when he might be placed at the advent of an attack twenty or thirty days from land, I advised, and he agreed, that his appendix should be removed.

Physical examination, which was minute, revealed nothing whatever wrong with his heart or kidneys or other organ. He was a stoutly-built, pleasant, jovial fellow, with most splendid muscular development, but and this, I take it, is a very important feature—he had the most ineradicable dislike to, and fear of, "chloroform," by which he meant anæsthesia in general, though he had had no previous experience. It amounted to an obsession with him, and he continually dwelt on this matter.

He entered Richmondhill Nursing Home on the evening of September 23rd, apparently the soundest man possible, and went straight to bed, where he remained till the day of his operation—the 26th, at 3.30 p.m. He entered the theatre and mounted the table with alacrity, but still with the same dread, and began to receive chloroform from a skilled anæsthetist. All went well for about four minutes, and he was just "under." I was about to commence and had my scalpel in hand, but before I touched him he suddenly collapsed, breathing stopped completely, and so did his pulse; which was first to do so I do not know. He was at once inverted and artificial respiration, rhythmic tongue-traction, hypodermic injection of strychnine and of other tried—all to no purpose whatsoever. I massaged the heart outside over the præcordium and in the left hypochondrium, and failed to get any response. His pupils were dilated, so that there seemed to be no iris left; no pulse at wrist, temple, or groin. He was dusky and clammy, and every individual present concluded that all was over, and some said as much.

I then ceased the massaging from the outside, and was divided for a second as to whether I should try heart puncture or direct massage. There was no suitable trocar for the first procedure, but plenty of knives, etc., for the second. I therefore cut into the abdomen to the left of the xyphoid cartilage, making an incision about 4 in. long down to the peritoneum, and wormed my right thumb through the wound and up through the diaphragm margin till I had it well behind the heart and the other fingers over the heart outside. I now began to squeeze, as one does the bulb of an enema syringe; and never shall I forget the kick and wobble, or rather thrill, that the heart gave in response to the very first compression. It reminded me of the feel a trout has when one grabs it below a bank or boulder. I kept pumping away, and all the symptoms disappeared, the first indication of revival being pupil contraction. The wound was disinfected and stitched up.

Now came the question of proceeding to remove the appendix or not. He looked so well, and was taking chloroform and ether mixed, that I decided to proceed,

knowing that after this "scare" I would never have another opportunity. The appendicectomy passed off without any incident, and was a most necessary operation. Subsequent recovery was excellent, and he left the nursing home this evening, twenty-one days from entry and eighteen from operation, and wonders what the upper wound was for.

Comment here is needless. All that can be said is that in the unanimous opinion of three medical men and of the nurses present he was dead. When is a man dead?—I am, etc.,

J. WALLACE MILNE, M.B., C M., M.R C.S.Eng.,
L.R.C.P.Lond.,
Senior Assistant Surgeon, Aberdeen Royal Infirmary.

VOLUNTARY AID DETACHMENTS.

SIR,—At the present time very many desirous of joining are deterred by the length of time required to pass in first aid and nursing or hygiene as separate courses.

A simple way out of the difficulty is a course of ten lectures and ten instructions in first aid and nursing; at the end of the course those passing a suitable examination to be efficient members and allowed to commence training.

As these detachments are associated with the evolution of our system of national defence, being the technical reserve of the R A.M.C.T., and entirely local, why not detail officers of the R A.M.C.T. to examine, and the county association to grant certificates to the successful, and so effect co-ordination?—I am, etc.,

Bletchley, Nov. 11th. P. BROOME GILES.

PLAGUE AMONG EUROPEANS.

SIR,—There seems to be a general impression that plague could not possibly become epidemic among Europeans. As this is likely to lead to viewing the spread of plague-infected rats over different parts of the country with comparative complacency I send you the figures which I submitted to the Colonial Office in May, 1901, regarding the plague outbreak in Capetown two months before the last case:

Cases of Plague.

Europeans.	Coloured.	Natives.
164	342	133

Capetown with its suburbs was a comparatively small town. Rats had died a very considerable time before the outbreak, and when the epidemic began there were very few rats to be seen. The close connexion between rat plague and human plague was only accepted in a half-hearted manner until there was a succession of cases in which dead rats were found in the houses, and in one particularly which was badly infected, where 105 dead rats were found under the floor and behind the wainscot and panelling.

There is also another impression that plague behaves always in the same way and that because there was a small percentage of pneumonic cases in India and Capetown, whilst in Sydney there were until recently no pneumonic cases at all, that, therefore, a small percentage of pneumonic cases is a law of the disease. In 1908 on the Gold Coast there were both bubonic and pneumonic cases of plague, and instead of the 4 to 8 per cent. of pneumonic cases there was over 50 per cent.

Until England can deal effectively with her influenza epidemics she cannot afford to sit down and not deal vigorously with the plague-infected lower animals in Suffolk in the hopes that nothing may happen. She may be right; on the other hand she may be wrong, and the wisest course is to treat the rat plague as *the plague*, and bring every available force to bear to get it out of the land.—I am, etc.,

London, N.W., Nov. 15th. W. J. SIMPSON, M.D.

THE HEARING AFTER "OTECTOMY."

SIR,—In the LANCET of August 11th, 1906, may be seen (p. 354) the following paragraph:

> The paramount position which the radical operations hold in the estimation of otologists is a tacit acquiescence in the opinion that chronic suppuration of the middle ear is generally considered to be incurable by any other means.

This is from an article by Mr. C. Heath. In the same article he refers to his paper on "The Restoration of the Hearing after Removal of the Drum and Ossicles by a Modification of the Radical Mastoid Operation." It is strange, then, to find Mr. Heath arguing that removal of the membrane and malleus inevitably leaves a deaf person.

I should be pleased to show Mr. C. Heath a case in which the hearing is very good indeed after such a removal. Furthermore, Sir, I am prepared to furnish you with the names and addresses of all the patients I have treated for suppurative otitis by otectomy during the past two years and a half. A study of these cases will show that this method of treatment is conservative of the hearing and satisfactory in its results.—I am, etc.,

London, W., Nov. 14th. F. FAULDER WHITE.

ALCOHOL AND OXYGEN.

SIR,—I should like, with your leave, to offer a few remarks on the apparatus to be employed in the administration of alcohol vapour. The apparatus which I have designed is capable of delivering either oxygen alone or oxygen with alcohol of such concentration as is desired. Since there is only one tap, the apparatus is extremely easy to manipulate.

If alcohol administration is required in an operating theatre or elsewhere, it is usually an emergency that calls for it. This is the foundation idea of the apparatus. It is intended to be permanently attached to the oxygen cylinder, so that when alcohol is required it can instantly be given without the delay involved in the adjustment of rubber tubing which the use of a wash-bottle necessitates. The importance of immediate treatment in cardiac failure can scarcely be overestimated.

Messrs. Burgoyne and Burbidges, of Coleman Street, E.C., are supplying the apparatus.—I am, etc.,

B. J. COLLINGWOOD,
Professor of Physiology, University College, Dublin.
November 13th.

PROVISION FOR THE INSANE POOR.

SIR,—A paragraph appeared in the April number of the *Journal of Medical Science* commenting on the lack of provision in county asylums for patients who are just above the ordinary pauper class. I would wish to point out that at this new asylum we have made provision for the class who cannot afford to pay the fees of a private asylum; it is chiefly confined to cases belonging to the two counties of Leicester and Rutland, but I am empowered to take in cases belonging to other counties to the number of five males and five females at the rate of 30s. a week. Perhaps the insertion of this in the JOURNAL might be of use to medical men who find a difficulty in finding accommodation.—I am, etc.,

ROTHSAY C. STEWART,
Medical Superintendent, Leicester and Rutland Asylum.
Narborough, Oct. 21st.

STRANGULATED OMENTAL HERNIA WITH FEW SYMPTOMS.

SIR,—In answer to Mr. Rushton Parker's kind comments on my case reported on November 5th, I should like to state that the omentum was black, or so dark as to be called black. If by necrosed Mr. Parker means broken down and offensive, it was not so, and there was no gradation of tints; it was uniformly black, only a very narrow portion next the transverse colon was a proper colour, enabling me to ligature the omentum off. I have the entire specimen very nicely mounted, and to-day its colour is dark red with a bluish tint, only a small portion at the point where I ligatured is a normal colour.

Whether it was actually a state of gangrene or obliterated circulation leading to gangrene is only a question of degree. The condition had lasted four days, and I still maintain my point—which Mr. Parker has not commented on—that the gangrene started with the hernia becoming strangulated, and that the gangrene in these cases is capable of passing along the omentum past the stricture to the inside of the abdomen, which is not the case as regards strangulated bowel, and I do not find any record of this surgical point in the textbooks.—I am, etc.,

Wallington, Nov. 14th. A. Z C. CRESSY.

DRAUGHTS.

Sir,—My lot being cast in a land of hotels, I pursue my calling in a medium permeated by draughts and rumours of draughts.

The *hotelese* for draught is "courant d'air," an expression originally derived from the French. Unlike bridge, golf, and theatricals, which engage the attention of sections of the community, the "courant d'air" is a subject of universal interest. It is also a perennial of hardy growth, but like members of the bar it takes a long summer holiday, and returns to serious work only when the hotel-keeper starts the central heating, and issues general orders to close all the port-holes and batten down the hatches, for "what is the use of heating the hotel if you are going to let all the heat out?"

Then the "courant d'air" assumes its garb of war, and the rest of creation ranges itself in battle array "for" or "against."

Like the warrior at the siege of Troy, the cold air without is ready to take advantage of every chance breach in the line of defence, and rush in, supported by an ardent band of followers, whose war cry is

> Air, fresh air!
> For draughts, one jot, we do not care!

The besiegers are met by a garrison of argus-eyed veterans, who rally to the cry of "courant d'air" as a terrier springs to attention at the cry of "Rats." To them the "courant d'air" is a thing in itself loathsome and hateful, like Polyphemus:

> Monstrum horrendum, informe, ingens cui lumen ademptum.

The battle wages hot and furious, but whichever side claims the victory, the issue is the same, for it does not depend on a just assessment of the rival claims, but on the high price of coals about which all are agreed.

It is needless to say that the voice of the "courant d'air" party prevails over that of the advocates of fresh air, and all alike are sentenced to breathe impure air, for the maintenance of a high temperature without draughts in an inhabited room is inseparable from an impure state of the air in such room.

Dr. Sutherland's definition of draught is a decided improvement on the "concentrated dose of fresh air" of an earlier contributor; but I do not think it allows sufficient latitude for the variability of the human factor in the equation. It is extraordinary to what a degree of sensitiveness to the slightest air current the man, trained from infancy to beware of draughts, can attain.

But there is a constitutional as well as an acquired sensitiveness to draughts, and under this head I must express a divergence of opinion from the postulate set forth in the concluding lines of Dr. Sutherland's letter—namely, that because a tuberculous patient weakened by profound systemic intoxication derives benefit from prolonged exposure in the open air, therefore similar conditions are devoid of danger to those in health. My experience leads me to regard the tuberculous patient as highly tolerant of cold and exposure, more so than the average healthy individual, and far more so than he of rheumatic diathesis.

Failure to recognize this general rule probably explains much of the divergence of opinion on the subject of "fresh air." All are not equally susceptible to cold, and the least susceptible is the tuberculous, whereas it is assumed *a priori* that he is the most so.

May I, as one who has observed for many years the regularly recurring contests between the advocates of fresh and of foul air respectively, point out a merit on the foul air side which even its advocates have apparently failed to recognize.

Suggestive of paradox, it nevertheless contains a vigorous germ of truth that the individual who can live and thrive in a foul atmosphere must, *ipso facto*, be of greater resisting power than he who is dependent on fresh air for his well being. It must make a greater demand both on his breathing capacity and on his powers of resistance to infection. It is both a developing and an immunizing process, hence it makes him better able to resist both cold and infection. So far as my observation goes, this is actually the case. The *habitué* of the overheated and foul atmosphere of the public smoking-room or salon is no less able than his fresh air-loving neighbour to withstand extreme cold or to undergo great physical exertion and no more prone than he to infection.

It is essentially the weaklings who are dependent on fresh air for their well-being, and of the weaklings the most dependent on it are the tuberculous.—I am, etc.,

Montreux, Nov. 8th. Stuary Tidey, M.D.

Sir,—I am glad that my small contribution on the subject of draughts has been productive of so many letters on the subject, and I should like, with your permission, to make a few additional remarks. Draughts of air may vary very much in velocity.

Dr. Sutherland, quoting Notter and Firth, gives their definition, namely, that any movement of air at a greater rate than 3 ft. per second is a draught. This cannot, then, be the draught to which Dr. H. Torrence Thomson refers as acting quietly and imperceptibly so that the person may be hardly conscious of it at the time.

It is evident, then, that a draught must be, as I have before stated, "a more or less concentrated dose of fresh air." In the majority of cases it is fresh air as it is caused by a window being opened to allow fresh air to enter into a room which contains heated and vitiated air.

Draughts may be prevented to a very great extent, as your correspondent, Dr. Sutherland, points out, by efficient ventilation, and where unavoidable their unpleasant effects can be prevented by simple means within the reach of the poorest. Sheets or blankets can be made with layers of newspapers, perhaps the best use to put them to. The effects of any draughts along the floor can be prevented by merely putting the feet on a piece of wood, etc.

As a correspondent points out, one may be exposed on a mountain to air currents moving at a high velocity, which few would consider to be draughts, yet in its character of producing strong currents of air cannot be distinguished from them. It is well known that those whose occupations keep them in these atmospheres are amongst the healthiest of the population.

If architects, the constructors of tramcars, etc., would pay more attention to efficient ventilation there would be no necessity for draughts; but, so long as they do not do so, it is better we should suffer the inconveniences of draughts of fresh air than be stifled in a poisonous atmosphere, stiff with the germs of all imaginable diseases. I agree with Dr. Thomson that the supposed ill-effects of a draught are due to the imagination—in the same manner that cures at Lourdes are.

A little while ago I went into a large public newsroom on a warm day. An old gentleman was sitting reading there. The door was closed, one window open a very little. I left the door open. He immediately said, "You have made me cough; there is such a draught." He was sitting at least 50 ft. from the door. What could that be but imagination?

I think it is pretty clear that the less one notices the presence of so-called draughts the less susceptible we shall be to any effects from them, whether real or imaginary.—I am, etc.,

Plymouth, Nov. 7th. Geo. Jackson.

A CASE OF PEMPHIGUS VEGETANS.

Sir,—May I mention for Dr. Pernet's information that while the case described in the Journal of September 24th was under Mr. E. Lane's care at the London Lock Hospital he was treated with an autogenous mixed vaccine of *Staphylococcus albus* and *aureus*? The effect of the vaccine treatment at first was so beneficial as to promise a complete cure. Relapse, however, took place, and though fresh vaccines in various dosages were tried, the patient retrogressed. On his admission, there were several large warty masses in the right armpit and on the left flank; these were soon got rid of by means of sulphur baths. The warty growths were crowded with spirochaetes for the most part intermediate in tenuity and closeness of spirals between the *Sp. refringens* and the *Sp. pallida*.—I am, etc.,

Cape Town, Nov. 7th. W. E. de Korté.

*** We have referred this letter to Dr. Pernet, who desires to thank Dr. de Korté for the interesting facts contained in his letter. He regrets he was not aware that vaccines had been employed at the Lock Hospital, or he would have mentioned the fact in his paper. He made use of the notes just as they were handed to him.

CAUSE OF APPENDICITIS.

SIR,—Dr. Coates suggests that appendicitis is caused by eating animal food in a state of decomposition. If such be the case, is appendicitis more common in the autumn months amongst that section of the community which consumes a considerable quantity of game? Has he *proved* that it is more frequent amongst those of the public who consume tinned meat? Has Dr. Coates or anybody else ever heard of a person becoming suddenly affected with appendicitis after a present, say, of a pheasant or a grouse has been duly eaten and enjoyed? such person of course not being in the habit of eating game of any kind as a regular article of diet. Again, is the decomposition of vegetable food—which, including fruit, is more likely to be eaten uncooked—to be entirely ignored?

No doubt Dr. Coates's list could be added to indefinitely, but there is another and far greater factor in the cause of appendicitis. That is, the imperfect or incomplete evacuation of the bowels allowing undigested food to remain in the alimentary canal longer than it should. Is constipation more common than it was? Has the increase in the number of cases of appendicitis anything to do with that? Take Dr. Coates's list, add to it all the indigestible, faked, and foolish things that are eaten to-day—I will not call them foods—and put in conjunction with them an incomplete evacuation of the bowel, and you will have the chief factor in appendicitis.

The strenuous life of the business and professional man of to-day, the hurried meals, and in some cases the daily sprint for the train, all help to prevent proper attention to digestion, and that which is far more important, the proper and complete evacuation of the bowels.

Equally injurious is the strenuous life of the present-day seeker after pleasure, women as well as men. Hurry and bustle and rush. The schoolgirl or schoolboy who comes down late for breakfast, and after a hurried meal rushes off on a bicycle, without attending to the bowels, is a frequent sufferer from appendicitis. The cramped position on the machine, undigested food above the appendix, and decomposition of many days' collection below—how can the appendix stand that?

Let Dr. Coates and others go on collecting so-called "causes" by all means, but let it be done in a systematic way; let every man who finds a cause support that cause by statistics, and we may get nearer the truth. "A great change in the food of the people during the last thirty years," says Dr. Coates, "and a great deal more appendicitis."

I do not remember ever having heard that one's ancestors refrained from hanging meat, or that they dined upon the pheasant they had shot the same morning. On the contrary, their saddles of mutton, their venison, and their game were, if anything, kept considerably longer. True, they did not eat tinned meat, and their flour was pure; but I believe they were exceedingly fond of a really ripe Stilton at Christmas.

As far as the food goes, the argument will not do. If appendicitis is more common than it was thirty years ago, or fifty years ago, or a hundred years ago, it is either because the condition was overlooked, or it is caused to day by the effects of incomplete evacuation of the bowel and the rush and worry of modern life.—I am, etc.,

Symonds Yat, Oct. 29th. JAMES TURLE.

ETIOLOGY OF IRITIS.

SIR,—I have read with much interest Mr. Percy Dunn's letter which appeared in the JOURNAL of November 12th, and more especially that portion of it which refers to rheumatic iritis, so-called.

In spa practice practically all cases of iritis sent for treatment are labelled rheumatic, but, according to my own observation, they are due, with few exceptions, to oral sepsis or gonorrhoea, the former outnumbering the latter by about 4 to 1, and the rapidity of recovery after the mouth and urethra have been treated is truly remarkable.

I am convinced that the connexion between recurrent iritis and suppurating teeth is exceedingly common, and has not received the attention it deserves.—I am, etc.,

Bath, Nov. 14th. T. PARRY LOWE.

Medico-Legal.

X-RAY BURNS.

A NEW ZEALAND paper, named the *Timaru Post*, which has reached us, contains a long account of an action for damages against a lay electrician. In the course of an attempt to take a radiograph of the kidney he produced a burn which after upwards of a year still remained unhealed. The electrician was a man who seems to be employed to do radiograph work at the Timaru Hospital, but when taking this photograph he was acting in a private capacity.

The allegation against him was that he had shown negligence and lack of skill by using too soft a tube, placing it too near the body, keeping in place for too long a time, and employing a coil with a spark too short for the purpose. The distance of the tube from the skin was said to have been only between one and two inches, and the length of the exposure twenty minutes; the coil apparently was ten inches long or less. The medical evidence for the plaintiff, mainly given by Mr. Clennell Fenwick of Christchurch Hospital, was to the effect that the defendant should have known that to use such a coil for the purpose and in such a way was necessarily dangerous, and he should also have discovered that his tube was too soft by testing it.

For the defence it was contended that the defendant had been using the same appliance for taking skiagrams for many years, and could not be expected to know that the tube had suddenly grown soft, because the general tendency of tubes was to grow hard. Various medical witnesses also stated on his behalf their experiences when studying at home, and indicated that until comparatively recent times long exposures were in use.

The case ended in a disagreement of the jury.

WORKMEN'S COMPENSATION ACT.

Cataract or Accident?

A CASE which shows the importance of the functions which a medical referee may have to discharge in relation to the Compensation Act was heard at the Liverpool County Court on October 12th. An engine driver claimed £1 a week from the London and North-Western Railway Company for total incapacity, due, he alleged, to an accident in August, 1909. The case was adjourned for a report from Mr. C. H. B. Shears, the Ophthalmic Referee in Liverpool under the Act.

The applicant, who is over 60 years of age, was driving a train, when he was struck in the right eye by a hot cinder or spark from a passing engine. It was alleged that in the result the vision of both eyes had been seriously impaired, and consequent total incapacity from following his employment as an engine driver.

The company paid him £1 a week from the date of the accident to May last, when they stopped the allowance on the ground that the effects of the injury had ceased.

Cataract was observed in both eyes in May, and the eye specialists, on behalf of the company, attributed this to the applicant's age and natural causes, and not, as suggested by the specialists on behalf of the applicant, to the accident.

It appeared that the man had been in the service of the company for forty-four years, and had such a good record that he had been one of their most trusted drivers of express passenger trains—so much so that he had been selected on one occasion to drive an express conveying the present King and Queen of England when they were Prince and Princess of Wales.

Mr. C. H. B. Shears, in his report, stated that he found slight but definite signs of cataract in the left eye and marked signs of cataract in the right eye. In each case he was of opinion that the cataract was the result of advancing years and not in any way due to the accident. He was of opinion that the applicant's present sight would not be sufficient to enable him to pass the vision tests required by the railway company for their engine drivers; but he still had very fair sight in the right eye and good sight in the left, and would be capable of doing work in other departments of the railway if that were available to him. His general condition seemed unusually good for a man in his years, and the cataract would probably develop very slowly indeed.

His Honour Judge Thomas, in giving judgement for the company, said he would like to say, having regard to the applicant's length of service with the company, and to the fact that he could still be of some service to them, that he hoped the company might be able to find suitable employment for the claimant.

The solicitor for the company said he would convey His Honour's remarks to the proper quarter, and he had no doubt effect would be given to them in such a way that the man's present vision would not be a source of danger to himself or any one else.

Refusal to go to a Convalescent Home.

In a case at Manchester it appeared that the applicant had been engaged at one time as a dirt picker by the Stafford Coal and Iron Company and had been in receipt of compensation at the rate of 6s. 1d. per week. The employers now applied that the compensation should cease on the ground that plaintiff's inability to work was due to his own misconduct in refusing to go to a convalescent home; and further, that he was able to do the work of screen picking, which was offered to him at a wage of 1s. 6d. per day for five days a week. It appeared that the

accident occurred on August 23rd, 1909, the youth's left foot being caught in a moving belt and the toe having to be amputated. The case came before Judge Ruegg a short time ago, when it was explained that his home was poor, and His Honour requested that he should go into a convalescent home with a view to getting strong again before returning to work. The company paid the expenses of the youth and his mother to the convalescent home and of a bed there for a fortnight, but the lad refused to go in "because he did not like it."

His Honour, commenting on the case, said it was obvious that the youth would not do anything towards regaining his strength. It would be very unfair if he compelled the employers to continue paying compensation under the circumstances. He would not go to a home to get well, nor return to light work. He would receive compensation up to date, but nothing more, and must return to screen picking or get nothing.

Sarcoma from a Fall?

An interesting appeal case was decided in the Court of Session on October 21st. A widow sued under the Workmen's Compensation Act for the death of her husband, and the Sheriff-Substitute found that he suffered injuries to his chest through falling, and that in consequence of these injuries he died. The employers appealed, and the court has recalled the judgement and found that the respondent was not entitled to compensation. In giving the decision the Lord President said that the Sheriff-Substitute's (Sheriff-Substitute Campbell Smith, Dundee) finding could not be supported on the evidence. He did not think it was proved that the deceased had a fall. But there was evidence to that effect, and accordingly he thought that if the only question had been, was there a a fall (that is, an accident)? a finding to that effect could not have been disturbed. He assumed also that the accident was in the course of and arising out of the employment. But then came the question, Was the injury (that was, the death) caused by the accident? Here the affirmer of that proposition must prove it, and here His Lordship found no evidence to support it. The evidence for the defence, including the very cogent evidence of the *post-mortem* examination, was absolutely destructive of the idea. Apart from that, the doctors who spoke for the respondent affirmed no such proposition. All they said at the utmost was that a fall might be the original cause of sarcoma, and that sarcoma might grow to the size here observed within a period no longer than that which elapsed between this fall and this death. They never said that in their opinion the fall caused the sarcoma which caused the death. No wonder they did not do so, for their own diagnoses ignored sarcoma altogether, and their certificates of death were absolutely inconsistent with death being the result of the accident. There was, therefore, nothing in His Lordship's view on which the finding of the Sheriff-Substitute could be supported. His Lordship had not, so far as his judgement went, considered the note which the Sheriff-Substitute appended to his judgement, as in his view it was improper to do so. If he were at liberty to consider it, it bore on the face of it that, according to the Sheriff-Substitute's view, any disease which was developed during the ordinary conditions of a man's employment and culminating in death was, in the view of the statute, personal injury by accident arising out of and in the course of employment and causing death—a view so palpably unsound as to explain the possibility of such a finding as he had here pronounced on such evidence.

Lords Kinnear and Johnston concurred.

Loss of an Eye.

VERAX writes: A workman lost an eye six months ago, and has been receiving 8s. a week ever since. Now the company are anxious to offer him a "lump sum" in settlement of all claims. What would be a reasonable sum?

*** It would be impossible to answer this on the present data. The following are absolutely necessary for any solution of the question: (1) The workman's age; (2) the nature of his employment; (3) is the 8s. half his ordinary wages, paid to him under the Workmen's Compensation Act? (4) how much longer could he claim this payment if no arrangement is made? In some occupations the loss of an eye would be far more serious than in others. If it were possible to calculate the probable loss per week permanently entailed by reason of the accident, the "lump sum" should be equal to the amount necessary to buy an annuity commensurate with that loss, calculated on the workman's present age.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

"BOVRIL."

H. E. L.—Although we confess that the whole proceeding has a strange look we do not think that Trinity College, Dublin, can be blamed for the advertisement of which our correspondent complains. It certainly is to our mind a matter for regret that the Local Government Board for Ireland and the School of Physiology of Trinity College, Dublin, should have allowed themselves to undertake a report upon a trade product, and we are amazed that the authorities of the British Association should have considered the subject-matter suitable for a communication to one of its sections. The objection, of course, is that no manufactured article of this kind is necessarily of uniform composition, and that the statement which might be true of a given sample would not necessarily hold good of all.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following dates are fixed by statute on which examinations will begin during the academical year 1910–1911:

First B.M.—Thursday, December 8th, and Thursday, June 22nd.

Second B.M.—Wednesday, December 7th, and Wednesday, June 21st.

D.P.H.—Tuesday, November 22nd, and Tuesday, June 6th.

Diploma in Ophthalmology.—Monday, July 17th.

Appointments.

The following have been appointed to hold office as examiners from the first day of Hilary Term, 1911, to the first day of Hilary Term, 1913: *In Organic Chemistry*, Mr. John H Gardner. *In Materia Medica*, Professor Arthur Cushny. *In Human Anatomy*, Mr. A. P. Lodds-Parker. *In Physiology*, Professor Francis Gotch. *In Pathology*, Sir W. B. Leishman. *In Forensic Medicine and Hygiene*, Dr. F. J. Smith. *In Medicine*, Dr. Percy Kidd. *In Obstetrics*, Dr. G. H. A. Comyns-Berkeley.

The Vice-Chancellor and Proctors have nominated Mr. David Hepburn as Examiner in Human Anatomy in the First B.M. Examination, in place of Professor Arthur Robinson, who has been granted leave of absence.

Radcliffe Prize.

The next award of the Radcliffe Prize will be made in March next year, and candidates must band in their memoirs to the University Registry on or before December 1st.

This prize, value £50, is awarded by the Master and Fellows of University College, every second year for research in either Human Anatomy, Physiology, Pharmacology, Pathology, Medicine, Surgery, Obstetrics, Gynaecology, Forensic Medicine, or Hygiene.

The prize is open to all graduates of the university proceeding to a degree in its Medical Faculty, provided that not more than twelve years have elapsed since they passed for the B.A., and that they are not Radcliffe fellows.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.B., B.C.—A. E. Cullen, H. Parsons, G. W. Twigg.

M.B.—C. L. Forde, H. S. C. Starkey.

UNIVERSITY OF BIRMINGHAM.

The Walter Myers Travelling Scholarship.

THE Council of the University of Birmingham at its last meeting elected Mr. Cranston Walker, M.B., Ch.B., B.Sc. (Birmingham) to the Walter Myers Travelling Studentship, and Mr. Walker has proceeded to the University of Freiburg, in Baden, to carry out a research under the direction of Professor L. Aschoff.

This scholarship, which is becoming one of the most important in the medical school, is of the value of £150 per annum, and was founded by Mr. George Myers, of Edgbaston, for the promotion of original research, and in memory of his only son, Walter Myers, M.A., M.B., B.C.Cantab., B.Sc.Lond., a former student of Mason University College, who died of yellow fever contracted in Brazil while investigating the cause of the disease on behalf of the Liverpool School of Tropical Medicine.

The Council of the University also approved the election of Mr. John Dale, M.B., Ch.B., B.Sc. (Public Health, Birmingham) for a further year, he having held the studentship for the year 1909–10, and having proved himself a student of exceptional merit. Mr. Dale is returning to Hamburg to continue his research work in public health under the direction of Professor Dunbar.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on November 10th, 1910, Mr. H. T. Butlin, President, in the chair.

Examination Results.

Diplomas of Membership were issued to sixty-six candidates found qualified at the recent examination.

Diplomas of the Licence in Dental Surgery were issued to five candidates found qualified to receive them.

Examination Hall Buildings.

The tender of Messrs. Holland and Hannen for the sum of £27,644 for the building of the examination hall was accepted.

Bradshaw Lecture.

This lecture will be delivered by Sir Alfred Pearce Gould, K.C.V.O., on Wednesday, December 7th, at 5 o'clock, on the subject of "Cancer."

Vacant Examinership.

The President reported that Mr. Bruce Clarke's period of office on the Court of Examiners would expire in December next, and that the vacancy would be filled up at the ordinary meeting of the council on December 8th.

Annual Meeting of Fellows and Members.

This will be held November 17th, at 3 o'clock. The report of the council for 1909-10 will be placed before the meeting. Mr. Joseph Smith, J.P., will move:

That this twenty-sixth annual meeting of Fellows and Members again approves the desirability of admitting Members to direct representation on the Council which (as now constituted) does not represent the whole Corporation; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.

Vote of Thanks.

A vote of thanks was accorded to Mr. C. B. Lockwood for a gift of books to the library.

CONJOINT BOARD IN ENGLAND.

AT a meeting of the Comitia of the Royal College of Physicians on October 27th, and of the Council of the Royal College of Surgeons on November 10th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon the following gentlemen:

W. A. Anderson, R. W. Annison, S. V. Appleyard, H. G. Baynes, B. Bernstein, G. C. Birt, A. W. Bourne, E. Boyd, E. G. S. Cane, W. E. Carter, A. E. D Clark, G. B. Cockrem, L. K. Cooper, J. Cowan, O. T. Dimnick, A. W. Donaldson, S. Falkner, W. E. Fox, A. J. Gibson, A. K. Glen, W. M. Glenister, E. St. G. S. Goodwin, F. C. Greig, A. K. Hamilton, H. A. Harris, A. S Heale, A. J. Hickey, A. H. C. Hill, J. P. Hill, J. C. John, W. H. T. Jones, J. B. Jordan, T. H. Just, C. D. Killpack, C. Y. Laing, W. B. Laurence, M. W. Littlewood, A. V. McMaster, G. K. Maurice, R. D. Mody, C. E. Molino, G. J. P. Monod, R. Montgomery, A. E. Moore, G. Moore, H. C. W. Nuttall, C. E. H. Paley, G. N. Palmer, H. B. Parker, A. B. Pestonji, H. F. Renton, W. Reynolds, Q. H. Richardson, B. P. Sabawala, H. H. Sampson, A. R. P. Scott, W. F. V. Simpson, C. J. Stocker, M. P. Thomas, G. Y. Thomson, R. T. Timberg, H. S. Tumber, A. B. G. Underwood, W. R. Wade, P. B. Wallis, H. Wetherbee, E. V. Whitby, S. Williams.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

A MEETING of the members of the Faculty was held in their hall, St. Vincent Street, Glasgow, on November 7th, when the following office-bearers were appointed for the ensuing year: *President*, Mr. D. N. Knox; *Visitor*, Dr. James A. Adams; *Councillors*, the President (*ex officio*), the Visitor (*ex officio*), the Treasurer (*ex officio*), Mr. D. N. Knox (as Representative to the General Medical Council), Dr. John Barlow, Dr. J. Wallace Anderson, Dr. John Glaister, Dr. Alexander Napier, Dr. David Newman, Dr. A. Maitland Ramsay, Dr. George Halket; *Treasurer*, Dr. W. G. Dun; *Honorary Librarian*, Dr. Alexander Napier.

The Services.

PRIZES AT THE JUNIOR COURSE EXAMINATION.

IT is announced by the War Office that the prize winners and prizes gained at the second junior course examination for lieutenants of the Royal Army Medical Corps are as follow: Lieutenant W. W. Treves, M.B., 1st Montefiore, Parkes Memorial, Marshall Webb, and Herbert prizes; Lieutenant C. H. H. Harold, M.B., the Tulloch Memorial and Ronald Martin prizes; Lieutenant R. F. Bridges, M.B., the De Chaumont prize.

LABORATORY TRAINING FOR R.A.M.C. OFFICERS.

THE War Office has issued a circular letter regarding a proposal made by the Council of the Royal Institute of Public Health. The Council had written to the War Office to the effect that it might possibly aid the medical service of the army by placing the opportunities which it possesses in the laboratories of the Institute at the disposal of the War Office, and is willing to admit gratuitously two medical officers yearly to work in the laboratories for a period of six months each. In the bacteriological and chemical laboratories practical teaching is given to medical practitioners desirous of qualifying as medical officers of health, and that investigations are also undertaken into the purity of water supplies, quality of food samples, epidemics, and infectious disease, etc. The laboratories are also equipped for serological work. It is understood that this offer was intended to apply to medical officers of the regular army; but it is thought possible that the Council of the Institute, if asked to do so, might offer these facilities instead to Territorial medical officers. Inquiry is therefore made in the circular as to whether, in the event of such an offer being made, Territorial medical officers would avail themselves of it.

SCOTTISH TERRITORIAL RED CROSS BRIGADE.

PROGRESS is being made throughout Scotland with the formation of the voluntary aid detachments which are to be grouped under the organization known as the Scottish Territorial Red Cross Brigade, and meetings of the various county committees of the Red Cross Society have been held to push forward the work. Colonel J. G. A. Baird, of Coulstoun, formerly M.P. for the Central Division of Glasgow, presided at a meeting in Haddington on November 9th, to organize the work of the East Lothian detachments. The Marchioness of Bute and the Marchioness of Graham were present as President and Vice-President of the Bute County Committee at a public meeting in Rothesay in connexion with the Buteshire organization. The Duchess of Montrose presided on November 10th at a public meeting in Stirling, when Sir George Beatson, M.D., K.C.B., urged the claims of the Red Cross Society. On November 11th the Countess of Eglinton presided at a meeting of the Ayrshire Division in Ayr, when Major Fleming, M.B., D.S.O., explained the organization, and the Marquis of Ailsa and the Earl of Eglinton also addressed the meeting. Meetings were also held on November 11th at Ballinlig, Perthshire, and at Dumbarton for the purpose of forming detachments in these districts.

Obituary.

THOMAS FRANCIS SPITTAL CAVERHILL,

M.B., C.M., F.R.C.P.E.,

EDINBURGH.

WE regret to announce the death of Dr. T. F. S. Caverhill, of 6, Manor Place, Edinburgh, which took place at his brother's house at Jedburgh on November 4th. He had been in failing health and unfit for the duties of practice since December, 1909, and it had been known to his friends that he could never return to active work, though it was not anticipated that his end was so near.

He was born at Crickshaw some fifty-five years ago, and was educated at the Parish School of Cranshaws, Berwickshire, and later at the Parish School of Duns. From the latter school he proceeded to the University of Edinburgh, where he graduated M.B., C.M. in 1878. Subsequently he studied at Vienna. In 1882 he was admitted a Member of the Royal College of Physicians of Edinburgh, becoming a Fellow in the following year. He was a resident physician and a resident surgeon in the Royal Infirmary of Edinburgh, as also in the Royal Maternity and Simpson Memorial Hospital, Edinburgh. He was senior Secretary and President of the Royal Medical Society. Later he was one of the physicians to the New Town Dispensary, and ophthalmic surgeon to the Eye Dispensary of Edinburgh. For many years he was Medical Officer for the County of Haddington. All his life he was greatly interested in the volunteer movement, and he was in the end Surgeon-Colonel of the Lothians and Berwickshire Imperial Yeomanry, and one of its most popular officers. He retired when the new Territorial scheme came into force. He was profoundly interested in the subject of tuberculosis, and was consulting physician to the Manor Valley Sanatorium, in the county of Peebles.

In 1898 he published in the JOURNAL an article on "The Open-air Treatment of Consumption," and in 1900 an article on "Removal and Transport of Cavalry Wounded." He was also the author of a pamphlet on "The Crusade against Consumption."

He was an extremely interesting and attractive man, and had a wide mental outlook. Few men since the death of Professor Veitch, of Glasgow University, knew so much of the history, legends, songs, and ballads of the Scottish borders. The writer will not soon forget a day he spent with him in visiting the Manor Valley Sanatorium, the Black Dwarf's Cottage, and other points of interest in Peebleshire. He talked incessantly and in the most interesting way.

Till his health began to fail he had a large and important practice among the better and upper classes in Edinburgh and its neighbourhood, who held him in high esteem. He was never married. The cause of his death was highly marked arterio-sclerosis.

In Dr. Caverhill Edinburgh loses a conspicuous figure.

The funeral took place on Tuesday, November 8th, at Innerwick Churchyard. There was a large gathering of friends from Edinburgh, East Lothian, and Berwickshire.

The service was conducted in the parish church of Innerwick by the minister of the parish (the Rev. Mr. Sutherland), and the Rev. Dr. Wallace Williamson, St. Giles's Cathedral, Edinburgh. The latter also officiated at the grave.

Medical women of England will hear with profound regret of the death of Violet Ackroyd-Turkhud, M.D., B.S.Lond., of enteric fever, in Bombay, at the age of 29. She was born in India and educated entirely in England. She was a student of Bedford College, London, and of the Royal Free Hospital School of Medicine for Women, where her cheeriness of disposition made her universally popular. She was a keen student and an enthusiastic worker in her profession. She qualified in 1906, taking the degree of M.B., B.S.Lond. After some post-graduate work in England she went out to India, where for some months she was on the staff of the Dufferin Hospital for Women, Delhi. She was next in charge of the Women's Hospital, Alwar. In 1909 she returned to England and took her degree of M.D.Lond. with honours in pathology. She also, after working for some months at the School of Tropical Medicine, Liverpool, obtained the diploma of Public Health. In February, 1910, she came back to India and started practice in Bombay. She was engaged in research work in pathology at the Canea Hospital, Bombay, for some months before her death, which occurred on October 18th. Her untimely death, at the beginning of what promised to be a most useful and distinguished career, is mourned by a wide circle of friends both in India and in England.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Joseph Förster, Professor of Hygiene and Director of the Institute of Hygiene and Bacteriology in the University of Strassburg, aged 66; Dr. Frederick Holme Wiggin, Consulting Surgeon to the City Hospital, and Visiting Gynaecologist to St. Elizabeth's Hospital, New York, aged 57; Dr. Obdulio Hernandez, Professor of Surgical Pathology in the Medical Faculty of Buenos Aires; Dr. J. Chapplain, some time Professor of Surgery in the Medical School of Marseilles; and Dr. Trousseau, a distinguished Ophthalmologist of Paris, and Surgeon to the Quinze-Vingts Hospital, who was killed in a motor accident.

Public Health AND POOR LAW MEDICAL SERVICES.

LOCAL GOVERNMENT BOARD REPORTS.

Holywell Registration District (by Dr. E. P. Manby. New series, No. 29.).—The grounds of the inquiry were the slowness of progress in the constituent sanitary districts of the Holywell registration district in sanitary matters generally, and of continuance of complaints to the Local Government Board regarding the persistence of conditions prejudicial to the comfort and health of the inhabitants. The population of the registration district is approaching 50,000, and it includes the urban districts of Buckley, Connah's Quay, Mold, and Holywell, the borough of Flint, and the Holywell rural district. Detailed recommendations are made with regard to all these districts, but the most important and far-reaching is with respect to the appointment of a joint medical officer of health for the entire area, or in combination with the adjoining urban districts of Rhyl and Prestatyn, and the rural districts of Hawarden, Holywell, and St. Asaph. Dr. Manby states that the Local Government Board has had many years' experience of the working of combined whole-time medical officer of health appointments, and its experience shows that the advantages of such arrangements far outweigh the supposed disadvantages. In Dr. Manby's opinion the present is an age of specialization, and there is an obvious advantage to sanitary administration in employing a specially qualified trained medical officer of health giving his whole time to his duties, rather than a general practitioner untrained in sanitation and subject to conflicting interests. With the best intentions, the part-time medical officer of health, who receives as a rule only a small salary, tends to fall into one of two classes: he either does his official duty thoroughly, and thereby offends and perhaps loses valuable patients, and possibly in the end loses his appointment also; or he does little active public health work, or perhaps confines his activity to tendering good advice in his reports to his council. This advice the council may disregard, and naturally enough the medical officer of health does not then feel disposed to urge persistently and personally at the council measures known to be unpalatable to some of his best patients. The whole-time medical officer of health is independent of patients; he is, moreover, in virtue of his special training, of great assistance to the various inspectors of nuisances in his district, who recognize him as an authority, whereas they are apt to act independently of a part-time untrained medical officer.

APPOINTMENT OF ASSISTANT M.O.H.

Zeta.—The approval of the Local Government Board is not required for the appointment of an assistant medical officer of health who would act as deputy to the medical officer of health. There does not appear to be any statutory obligation that such an assistant should have a Diploma in Public Health, but it is quite open to any local council to require that the person appointed should be so qualified.

Medical News.

The late Sir Constantine Holman left estate valued at £19,293 gross, of which £18,423 is net personalty.

Dr. William Millar, Public Vaccinator of the Fourth (Welton) District of the Sculcoates Union, has received, for the fourth time in succession, the Government grant for efficient vaccination.

The Hon. Sir John A. Cockburn, M.D., K.C.M.G., Sir Malcolm Morris, K.C.V.O., Dr. J. W. Hope, P.M.O., Central Board of Health, Western Australia, and Dr. Charles, M.O.H., St. Marylebone, have been elected Fellows of the Royal Sanitary Institute.

At the meeting of the Royal Society on Thursday, November 24th, Sir W. Abney will read the second part of his paper on colour blindness in the trichromatic theory; in this he will deal with incomplete red or green blindness.

In 1904 there were in the United States 133 sanatoriums and hospitals for tuberculosis, 32 special dispensaries for its treatment, and 39 antituberculosis organizations. There are now over 400 such sanatoriums and hospitals, over 300 tuberculosis dispensaries, and 450 antituberculosis associations.

A public meeting in aid of the North Kensington Dispensary for the Prevention of Consumption will be held at the Kensington Town Hall on Wednesday, November 23rd, at 5.30 p.m. The chair will be taken by the Duke of Argyll, and among the speakers will be the Lord Chief Justice of England, Dr. Alfred Hillier, M.P., and Dr. Sutherland.

A new method of evading the United States law relative to the sale of opium is reported by the *Boston Medical and Surgical Journal* from Chicago, where the proprietor of a Chinese restaurant has recently been discovered purveying sandwiches containing the drug to *habitués* who had difficulty in obtaining it in the more usual form.

A large number of medical men are expected to be present at the Bristol Medical School annual dinner, to be held on November 29th at the Royal Hotel, College Green, to welcome Sir Alfred Keogh, K.C.B., the late Director-General, Army Medical Staff, who is to be the guest. Those requiring tickets (price 5s.) should apply to the Secretaries of the Dinner Committee at the Royal Infirmary.

The adjourned debate on fractures in the neighbourhood of the joints, opened on November 8th by Mr. Robert Jones before the Surgical Section of the Royal Society of Medicine, will be resumed at 15, Cavendish Square, on Tuesday, November 29th, at 5 p.m. Intending speakers, who are limited to ten minutes, are requested to send their names to Mr. Jonathan Hutchinson, 1, Park Crescent, W.

Letters, Notes, and Answers.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

ARTHRITIS writes: I am anxious to have some help in the treatment of a troublesome case of rheumatoid arthritis. A slight temperature is running, the right knee and right elbow being affected. The other joints have become practically normal under "sauerin treatment" combined with guaiacol carbonate. I have tried the hot-air baths with no benefit. I should be pleased if some reader would suggest any other line of treatment.

PLAGUE OF FLIES.

THERE seems to have been this year in many parts of England an unusual number of autumn flies which still survive in the warm rooms of the house, such as the dining room and kitchen. A correspondent in the North of England, who has tried burning sulphur, formalin, carbolic acid and similar remedies without good results, asks for advice how to get rid of the flies.

BOTTLE FEEDING AND FLAT CHESTS.

DR. W. J. HENSON (Wedmore) writes: During the last few years, while devoting my spare time to the subject of infant feeding, I have been much struck, when examining candidates for life insurance, etc., with the fact that in *every instance* that I have been able to elicit the truth the deformed or flat-chested candidate has been bottle-fed as an infant. It seems to me the counteracting suction action on the immature chest wall, when the child is made to *suck* its food out of a bottle, is bound to draw in the ribs or sternum. When the child is breast-fed it obtains its food by compression and pulling as a cow is milked, with no suction action whatever, so that the infant is able to inflate its lungs whilst feeding, and thus suction muscles are not unduly developed. This undoubtedly accounts for the fact that babies fed in this proper manner have invariably more regular and beautiful features than when the more artificial method is encouraged. This applies to every type of feeding-bottle I know, more or less, except the "Amater," which Messrs. Lowe and Co., of 8, Stafford Street, Old Bond Street, W., had made at my suggestion, and which you noticed in your columns some months ago. I would like to ask those members who have a larger experience in examining for life insurance, etc., to kindly look out for and inquire into the question. I feel sure they would be much struck by the result of such inquiry.

ANSWERS.

DR. H. J. THORP (Ipswich) writes, in reply to "Hertford," to recommend the following ointment spread on lint: ℞ Ung. hyd. fort. ʒss, ex. bellad. ℈j, ung. sulph. ʒiij. M.

F. B.—The scientific name of the trypanosome in the blood of the freshwater eel (*Anguilla*) is *Trypanosoma granulosum*, Laveran and Mesnil, 1902. Two varieties, *magna* and *parva*, were distinguished by Lebailly in 1905. The most recent descriptions are by Lebailly (*Arch. de Parasitologie*, x, 1905), and Minchin (*Proc. Zool. Soc. Lond.*, 1908).

BOOKS FOR THE L.R.C.S.EDIN.

H. J. G. asks what books are required for the L.R.C.S.Edin. (single licence), especially in regard to the anatomy part of the examination.

*** The following works would probably meet our correspondent's requirements: *A Textbook of Anatomy*, By D. J. Cunningham, F.R.S. Third Edition. (London: H. Frowde and Hodder and Stoughton. 1909. 31s. 6d.) *Anatomy, Descriptive and Applied*. By H. Gray, F.R.S. Seventeenth Edition, edited by R. Howden, M.A., M.B., C.M. (London: Longmans, Green, and Co. 1909. 32s.) *A Manual of Surgery for Students and Practitioners*. By W. Rose, M.B., B.S Lond., F.R.C.S., and A. Carless, M.S.Lond., F.R.C.S. Seventh Edition, *University Series*. (London: Baillière, Tindall, and Cox. 1908. 21s.) *The Practice of Surgery*. By W. G. Spencer, M.S., M.B.Lond., F.R.C.S.Eng., and G. E. Gask, F.R.C.S. (London: J. and A. Churchill. 1910. 22s.) *Manual of Surgery*. By A. Thomson, F.R.C.S.Edin., and A. Miles, F.R.C.S.Ed. *Oxford Medical Publications*. In two volumes. Volume I, General Surgery; Volume II, Regional Surgery. Second Edition. (Edinburgh, Glasgow, and London: H. Frowde and Hodder and Stoughton. 1909. 10s. 6d. each volume.)

COLLOIDS.

DR. H. OPPENHEIMER (London) writes: "D.G.D." will find an account, by Dr. Max Joseph, of colloids, including colloidal calomel, in *Dermatologisches Zentralblatt*, vol. x.

AUSTRALIA FOR ASTHMATIC PATIENTS.

F. A. writes: In reply to "L. I. C." (BRITISH MEDICAL JOURNAL, November 5th, p. 1480), I resided in Melbourne, Australia, for some years, and remember the case of an old gentleman, a sufferer from asthma, which may be of use. He was compelled to leave Melbourne and live in Ballarat, an elevated country town. While there he was quite free from his complaint, but staying only a single night in Melbourne invariably brought on a recurrence. Melbourne is only a few miles from the sea.

LETTERS, NOTES, ETC.

ERRATA.—In the article by Drs. D. A. Welsh and H. G. Chapman "On the Interpretation of the Precipitin Reaction," in the JOURNAL of November 12th, p. 1511, col. 1, line 11 from foot, for "precipitate substance" read "precipitable substance"; col. 2, Table I, under "Volume of Antiserum," No. 7, for "3.0" read "5.0," No. 8, for "3.0" read "5 0."

PRINCE ALEXANDER OF TECK has graciously consented to accept the proceeds from the sale of *Lusus*, a book of verse and prose, by Mr. Christopher Stone, on behalf of the Prince Francis of Teck Memorial Fund for the endowment of the Middlesex Hospital. Copies, price 5s. each (postage 4d. extra), may be obtained from Mrs. Christopher Stone, 177, St. James's Court, Buckingham Gate; from Mr. B. H. Blackwell, the publisher, 51, Broad Street, Oxford; or from Messrs. J. and E. Bumpus, Messrs. Truslove and Hanson, and Messrs. Hatchards, who have kindly undertaken to sell copies for the fund.

THE AUTOFUME.

WE have recently had an opportunity of examining a new appliance named the "autofume." The object of its construction has been to provide a machine which will burn definite amounts of medicated paper at definite intervals, such amounts and intervals to be variable at will, the consumption being automatic and entirely freed from risk of fire. The final object, of course, is to furnish a method of prolonged fume production for the benefit of persons suffering from asthma, hay fever, and other conditions in which an atmosphere containing special constituents is deemed of value. The mechanism of the appliance is simple, but not easy to describe. We must therefore content ourselves with saying that at given intervals a strip of medicated paper is extruded into the flame of a night-light. Two wheels are supplied with the machine, and each can be geared to work at two speeds. Thus wheel A secures the consumption of 12 inches of medicated paper either every 20 minutes or every 40 minutes as desired. Wheel B effects the consumption of 8 inches of paper every 30 minutes or every 60 minutes. The machine goes on doing its work automatically as long as the night-light lasts. Both from a mechanical and therapeutic point of view the appliance seems to us excellent. It is made by Messrs. Arnold, of West Smithfield, E.C.

EVENING OPENING OF MEDICAL LIBRARIES.

DR. E. G. L. GOFFE (Tottenham) writes: It seems a pity that there should be, in London, practically no facilities for reading or for research work in a medical library after 7 p.m. The reading room of the British Museum is open up to 10 p.m. at night, and many other public libraries offer the same facilities to the general reader. Why should not the College of Surgeons keep the library open until 10 p.m.? This would be a great convenience to many who have only the evenings free to look up references or to read up a subject.

EARLY SYMPTOM OF PLAGUE.

DR. JOHN C. THOROWGOOD (Bognor) writes: I observe that Dr. H. P. Sleigh reports how all his patients smitten with plague complained of severe frontal headache as an early symptom. This fact reminds me of the late Sir George Buchanan telling me how, when as resident medical officer at the London Fever Hospital, he was attacked by typhus fever, his most striking symptom was intense frontal headache. Not perhaps a very rare initiatory symptom in the advent of fever, but still it shows the affinity that may exist between genuine typhus and plague.

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NOTE.—It is against the rules of the Post Office to receive *postes Restante* letters addressed either in initials or numbers.

A Clinical Lecture

ON THE

USE OF ELASTIC TRACTION AND ELASTIC PRESSURE IN SURGERY.

Delivered at the Manchester Royal Infirmary.

By G. A. WRIGHT, F.R.C.S.,

Surgeon, Manchester Royal Infirmary.

Although it is probable that elastic traction had been applied to surgical purposes before the time of Barwell (1861), I am not aware of any systematic attempt to employ it till that date. Barwell's first paper was published in the *Medico-Chirurgical Transactions* for 1861, and a second in 1863.* Lewis Sayre in 1869 writes (*Treatment of Clubfoot*) with approval of Barwell's method of treating clubfoot, and again does so in the later edition of 1874. In 1876, Sayre, in his *Orthopaedic Surgery*, describes the use of elastic traction in cases of facial paralysis. Traction was applied by a wire hooked into the mouth and over the ear with elastic between. The elastic traction was used as an accessory to galvanism.

For torticollis Sayre used plaster strips round the head and a collar round the axilla with elastic fixed on the sound side. He also made use of the jury mast for this purpose. In 1882–3 Golding Bird, in the *Guy's Hospital Reports*, published a paper on the treatment of flat-foot and talipes, and described his method of attaching the elastic or "artificial muscle" to a steel with an encircling band below the knee. The exact details of the method of applying the traction suggested and employed by Barwell and Golding Bird need not be described now.

The use of elastic traction instead of steel springs has of course been employed in various ways, such as in artificial limbs, to produce recoil, and so straightening or flexion as might be desired, but it is of its more direct application to surgical uses that I propose to speak now. Many of these applications of the elastic recoil of rubber are, of course, in constant and familiar use, as, for example, Martin's rubber bandages for varicose veins, the principle here being much the same as that of Brodie's bandage, only employed with more efficient material.

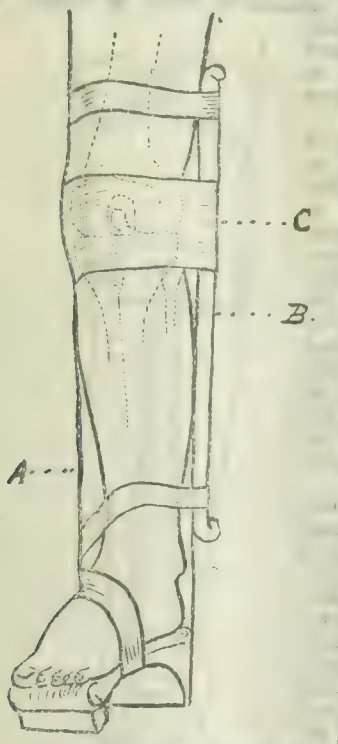


Fig. 1.—The writer's splint for genu valgum. The footpiece is rotated inwards on an axis parallel with the back splint A. The outside splint B forms the chord to the arc of the curved limb; C, the broad elastic band drawing the knee against B, and straightening the limb.

So, too, the use of bandages of flannel or other more or less elastic fabrics to reduce oedema and other forms of swelling need only be mentioned. Elastic pressure as directly applied to more local conditions—such as to naevi, and no doubt to many other tumours — would obviously commend itself, probably from very early times; and I well remember my late friend and colleague, James Hardie, advocating and using for some years "sponge pressure" to enlarged glands in the neck (lymphomatous and other) that he did not consider suitable for operation.

Esmarch's bandages and tourniquet for making limbs exsanguine and controlling bleeding before and during operations on the limbs were, if I remember rightly, introduced in the Seventies; and, though simple elevation of the limbs has largely replaced the use of the elastic bandage, it is still frequently employed for such purposes as operations for necrosis, autotransfusion, etc.

With the universal confidence given by modern surgical methods the treatment of aneurysms by elastic as well as by other forms of tourniquet has almost died out, and the method of ligature of the main vessels as a preliminary step in certain amputations has still further restricted the use of tourniquets and allied apparatus of all kinds.

The use of elastic pressure to promote absorption of fluid and other effusions into joints does not differ in principle from its employment in cases of more general oedema. The so-called Biers treatment† may also be mentioned.

Many years ago Lord Lister employed elastic pressure, after a preliminary tapping, as a means of treating hydrocephalus. I well remember trying the method, but experience did not encourage its further use, and it has been superseded by other modes of treatment.

Few, I suppose, of the present generation have seen the elastic ligature used for the removal of piles or for the cure of fistula, and fewer still can have had any experience of its employment for removal of the tongue or of tumours. Elastic ligatures are, however, occasionally still employed for the purpose of temporarily controlling the circulation in blood vessels and temporarily occluding the gut during operations.

Rubber trusses and belts have been in common use for many years.

With this hurried mention of some of the many uses to which elastic pressure has been adopted, I propose to pass on to a somewhat more detailed consideration of the use of rubber as an orthopaedic agent. In cases of flexion of joints, where no actual ankylosis is present, but immediate straightening by force is undesirable, no more valuable means of rectification exists than elastic tension. At this point it may be well to notice the advantages which rubber possesses over other means of employing tension. First, rubber has the advantage over steel springs in that its tension can be employed through a much wider range, and the strength of the tension is capable of more ready adjustment. It is much easier to apply slighter degrees of traction or pressure, much easier to arrange for the exact line of traction required, and, in addition, any apparatus needed may be readily and cheaply improvised. The appliances are indeed exceedingly cheap, easily managed, and easily replaced. A little ingenuity and some rubber cord is the stock-in-trade, though patience and care are, of course, also necessary, as living tissues cannot, as some surgeons seem to suppose, be dealt with quite as if it was a question of cabinet making or upholstering. Pressure sores are a possible result of mismanagement or neglect, and are easier to make than to repair.

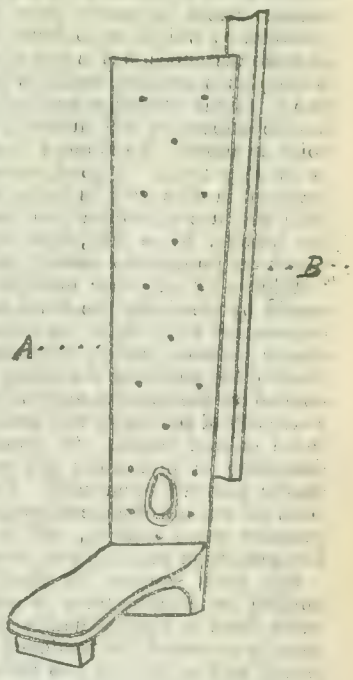


Fig. 2.—Showing the details of the splint and the rotated footpiece. A, Back splint; B, outside splint fixed to A.

For flexed joints that require straightening, all that is necessary in many cases is the application of a straight splint across the angle of flexion secured to the limb above and below the joint, but not so tightly as to prevent the

*In Malgaigne's *Orthopaedias*, 1862, there is no mention of elastic traction.

†A large part of this method is of course simply a revival of the old cupping glasses and cucurbitae.

lower segment from slipping through the bandages as the limb straightens. These bandages may be of any material, but perhaps it is better to use flannel or some slightly elastic material for the distal segment of the limb. The joint is left bare at this stage. Next an elastic bandage is carried over the joint and round the splint so as to exert the desired pressure in the required direction. The exact form of elastic material, its strength, the arrangement of suitable pads to take off or equalize pressure, and other little practical details must be adapted to each individual case.

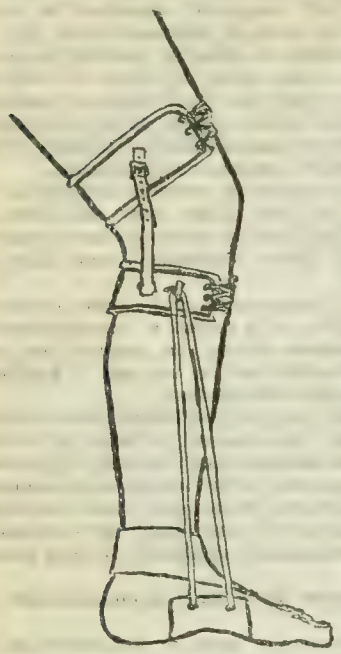


Fig. 3.—"Artificial muscle" applied for flat-foot.

The angle of flexion should be measured before and at short intervals during the treatment, to see what progress is being made, and a daily removal of the elastic is necessary at first to make sure that there is no excessive pressure.

Exactly similar appliances may be used to prevent or correct cicatricial contractions in suitable cases It is a good plan to substitute elastic traction applied to the lower segment of the limb, either as a temporary substitute or an alternative to the elastic pressure, if for any reason direct pressure over the joint is inadvisable. Traction by weight is no doubt efficient and easy to apply in some instances, but is not always so simple and trustworthy as it appears, and it is by no means uncommon to find a weight extension applied to a leg in such a way that a little inspection will make it clear that friction at one point or another is reducing the traction power to nothing or to very little. A good example of the use of elastic traction in this way is seen in Bryant's double splint, with the use of which you are familiar. In fracture of the patella, those who, like myself, do not as a routine resort to immediate wiring, use elastic traction by the "Middlesex" or other method to approximate the fragments by steadying the lower one and drawing the upper downwards towards it. In rickety deformities the use of elastic pressure finds a very wide application. For curvatures of the shafts of the bones of the leg a straight splint applied on the concave side with elastic pressure over the convexity of the curve will straighten a large proportion of these curved limbs. Of course, the more rapidly the deformity is increasing the more likely is the use of elastic pressure to succeed. For the anterior curve of the tibia the tension of the calf muscles makes the use of elastic pressure more tedious, and in some instances nothing but cuneiform osteotomy or a splice section will succeed.

For genu valgum in slight cases an outside splint applied on similar lines is quite efficient, but in severe cases there is great difficulty in maintaining steady pressure by reason of the tendency of the limb to rotate outwards, and so take off the tension. This problem will be familiar to all who have attended at the Children's Hospital; and it was only after various trials many years ago that I found I could get over the difficulty by the use of the splint shown to you in Figs. 1 and 2. It is almost impossible to get a drawing to show the features of this splint, but Mr. Jefferson has made a sketch which is as near as we can get.

You will see that the footpiece is set inwards—that is, rotated on a vertical axis, so that the limb is fixed on the back splint in such a way that it cannot rotate outwards. The outside splint is thus maintained in its proper position, and the elastic tension rendered efficient. You will find this a useful splint if you take the trouble to have it made correctly.

Next we come to the treatment of flat-foot by elastic traction. The modification of the Golding Bird's apparatus, which I show you here, is simple in the extreme, and in my experience much more efficient and comfortable than any of the "insteps" or "socks" or "arches" that are sold. The continuous traction combined with "play" of the muscles by the varying tension not only gradually replaces the collapsed arch, but tends to strengthen the muscles. The mode of application is indicated in Fig. 3. I use this largely and in combination with, not to the exclusion of, tiptoe exercises and thickening of the sole of the boot on the inner side, etc. These means are sufficient for many of the slighter cases, but in the severe ones the "artificial muscle" is much more efficient. Adhesions must, of course, be broken down, and moulding employed by hand under an anaesthetic in some severe cases before the muscle is put on.

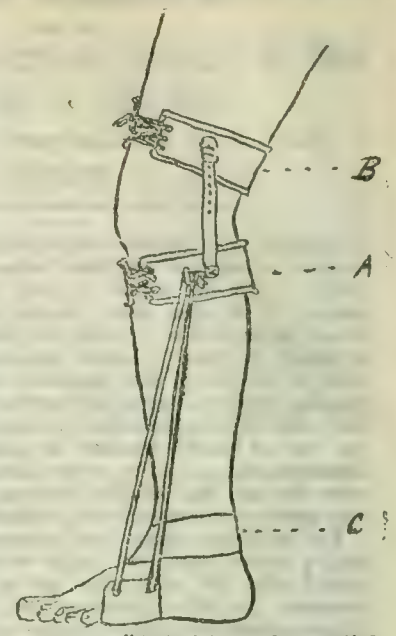


Fig. 4.—"Artificial muscle" applied for talipes equino-varus. A, Leather leg strap with hook; B, leather thigh strap which keeps A from slipping down; C, felt band encircling ankle and foot, to which is attached the elastic.

In the great group of deformities classed as talipes, both congenital and acquired, there is ample scope for the use of elastic traction, and considerable trouble is needed and some ingenuity on the part of the surgeon both to devise the exact method of application, and still more to prevent the instrument maker and the "friends" from foiling his efforts by "improvements" of their own (Fig. 5).

The mode of application is best demonstrated on a patient, but Fig. 4 will show the ordinary mode of application in talipes equino-varus. I had this arrangement for using the elastic made many years ago at the Children's Hospital, and have found it answer all purposes in one form or another. A good deal of skill is, however, called for in getting the most out of the apparatus. The exact line of traction and the point of fixation of the elastic may be varied so as to exert a rotating pull, as well as a direct drag, where such rotation is desirable. In some instances, especially of pes cavus, it is necessary to mould steel sole-plates and exert traction on these to get over difficulties due to slipping of



Fig. 5.—A faulty appliance for equinus. It is better to have the elastic cords attached one on each side of the steel sole-plate A, as indicated by the dotted lines.

the felt foot-sling. Other adaptations have been devised, one of which is to put a bandage over the foot first so as to increase friction and allow the sling to be fixed to this. This modification was suggested by the late Mr. Collier at Pendlebury many years ago.

The method of application shown in the sketch (Fig. 5) of an "artificial muscle" applied for talipes equinus is an example of an instrument maker's "improvement" which I do not recommend. It is much better to bring up a cord on each side, as shown in the dotted lines. Varying tension on either side can thus be arranged and much more accurate correction got. The use of "artificial muscles" does not, of course, do away with the need for tenotomy, tenoplasty, tarsectomy, and the various other operations needed in certain cases, but it is a valuable supplement to some of these, and in many cases it prevents the deformity from becoming "inveterate."

For paralytic conditions the elastic traction is a most useful adjunct to, or, in some circumstances, substitute for, tendon grafting. I will only mention the use of

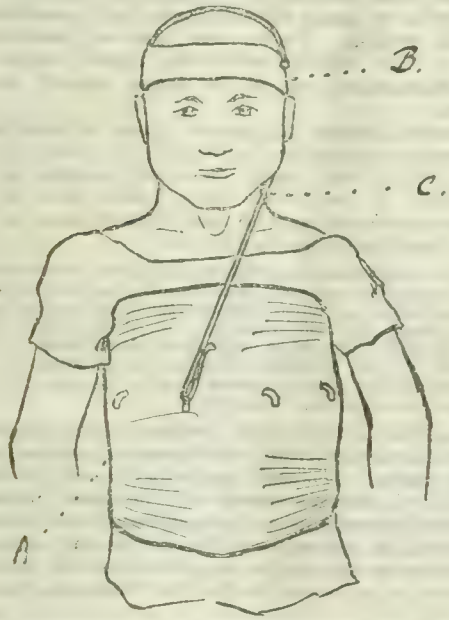


Fig. 6.—Elastic traction applied for torticollis after division of the sterno-mastoid of the opposite side. A, Plaster-of-Paris jacket with hooks; B, head band or felt cap, also with hooks; C, the "artificial muscle." Another elastic is usually necessary at the back to prevent flexion of the head.

the artificial muscle in wryneck. It is usually employed, after tenotomy, with a jacket and some sort of cap (Fig. 6). Traction is made parallel with the unaffected muscle.

There is room for the useful employment of elastic traction and pressure in many more ways in surgery than those I have mentioned, and I strongly recommend you to think out and adapt the plan to any suitable case you may have in charge. These "artificial muscles" have been ignored or decried in some of the orthopaedic and surgical text-books, but they are none the less most efficient and valuable implements, and may with advantage be used in very many cases in preference to the costly, heavy, and complicated apparatus usually recommended. As compared with the use of plaster-of-Paris, the elastic has the advantage of being more readily adjustable and safer, as well as that of giving a varying and active power.

[I am indebted to my present senior house-surgeon, G. Jefferson, M.B., and to my former house surgeon, Hamilton Irving, F.R.C.S., for the sketches for this lecture and for some of the corresponding ones in the chapter on this subject in *Diseases of Children* (Ashby and Wright).]

The next Congress of Diseases of Occupation will take place at Vienna in 1914. The following are the questions proposed for discussion: (1) Fatigue, its physiology and pathology; influence of professional occupation on the nervous system; night work. (2) Work in hot air and in moist air. (3) Anthrax. (4) Pneumoconioses (diseases caused by the inhalation of dust). (5) Accidents caused by electricity. (6) Industrial poisoning, by aniline, mercury, lead, etc. The general secretary of the Congress is Privatdocent Dr. Teleky, IX Türkenstrasse, 23, Vienna.

An Address
ON
HIGH BLOOD PRESSURE IN ARTERIO-SCLEROSIS.

Delivered at the Academy of Medicine, Toronto,

BY

R. D. RUDOLF, M.D., F.R.C.P.,

PROFESSOR OF THERAPEUTICS, UNIVERSITY OF TORONTO.

The occurrence of high blood pressure in arterio-sclerosis has been a much-discussed subject in recent years, since the clinical estimation of this pressure was made possible by von Basch in 1876.

At first high blood pressure was described as a constant symptom in arterial thickening, and even as a measure of the degree of this thickening,[1] so that, although it was admitted that a high pressure might exist without arterio-sclerosis, it was greatly doubted if any considerable degree of arterial disease could be present if the pressure were not raised.

But soon observers began to record cases of even well-marked arterial sclerosis in which the pressure was not raised, and even read below the normal, throughout the illness. Thus Groedel of Nauheim recorded a series of 500 cases of arterio-sclerosis, in 35 per cent. of which there was no rise in pressure, and in 18 per cent. only a slight one.[1] Several years ago Drs. Arthur Ellis and Bruce Robertson investigated the matter with me in St. Michael's and the General Hospitals, and found that in only about 50 per cent. of well marked cases of arterial thickening was the blood pressure above normal, and since then I have seen several fatal cases of the disease in which the pressure was not raised.

The next view that became prevalent was that arterio-sclerosis only produced a high blood pressure when the splanchnic system of arteries was involved. A high blood pressure means a hypertrophied left heart, and Hasenfeld and Hirsch showed by very accurate weighments[2] that an enlargement of the left ventricle only occurred in arterial sclerosis when the disease involved the splanchnic vessels or the aorta above the diaphragm. But rise in blood pressure may occur from many other causes than arterial thickening, and because an individual happens to be arterio-sclerotic he is not exempt from such other causes. Probably one may say without much fear of contradiction that when in a case of arterial thickening a raised blood pressure is detected, such a rise may be due to one or more of the following causes:

1. Toxaemia; such toxaemia being at the same time the direct cause of the arterial disease by directly poisoning the vessel walls. A good example of such a poison is nicotine, which directly raises the blood pressure, and according to many authorities also acts directly upon the vessel wall as a poison. Probably there are very many such toxins manufactured in the alimentary tract or in the tissues of the body.

2. Some toxin which has nothing to do with the associated arterio-sclerosis, but is directly raising the pressure. One might theorize that in an arterio-sclerotic patient the adrenal tissues might be from time to time overactive, and might thus produce periodic rises in pressure, as might occur in individuals not arterio-sclerotic.

3. Compensatory. It is well known that if some vital tissues, such as those in the medulla, be rendered anaemic—say, by the pressure of a new growth—the blood pressure rises enormously, seemingly with the object of forcing blood at all hazards into the part. If such a part of the brain be supplied by a vessel the lumen of which is much narrowed by disease, it is likely that the blood pressure will rise from the same cause.

4. Simple nervousness. It is very common to find the pressure high from nervousness, and if an arterio sclerotic happens to be also a neurasthenic, his pressure may be high from this cause alone.

5. Lastly, the raised pressure may be due to the arterial disease alone, and in this case probably the splanchnic vessels, or the aorta leading to them, are extensively diseased.

While the rôle of arterio-sclerosis in producing hyperpiesis is thus open to much limitation, the rôle of hyperpiesis as a producer of arterial disease seems to be an important one. Given a constantly or occasionally increased blood pressure within the arterial tree for any length of time and the arteries will tend to be dilated, and in order to prevent this dilatation the arterial walls will tend to hypertrophy and thicken, as will also the wall of the left ventricle. As to the exact way in which increased intra-arterial pressure brings about disease of the walls, nothing may be said here, but the fact is undoubted that, given sufficient arterial pressure, we will sooner or later get disease of the walls. This will occur very much sooner in some individuals than in others. Experimentally this has been shown by the effect of clamping the aorta even for a short time, as also by the administration of adrenalin, which greatly raises the blood pressure. In both cases the vessels soon show sclerotic changes. Clinically we see the disease in people who have undergone great exertion, physical or mental, with consequent raising of the pressure, and *post mortem* the change is seen in the pulmonary circulation in cases of mitral stenosis. Dr. T. D. Savill[4] showed some years ago by *post-mortem* returns how the media of the arteries of the lower extremities were nearly always more hypertrophied than those of the upper; and lately Dr. O. K. Williamson[5] demonstrated the same thing in another way. He measured the pressure of numerous arterio-sclerotic people, both in the upper and the lower extremities, and found that, with the limbs always at the heart level, the *apparent* pressure—due to the thickened walls—was always higher in the lower than the upper extremities. In normal individuals the pressure was the same in both, and he hence concludes that the higher readings from the lower limbs is due to the extra thickening of the walls here. The matter was hotly discussed at the Royal Society of Medicine, and Dr. Williamson quite held his own. We have been repeating his work in the Toronto General Hospital, and so far our results would tend to confirm his. Dr. Harry Campbell[6] endeavours to prove that, at least in small and medium-sized arteries, which are in a condition of hypertonus, the muscular coat bears all the strain, and it is only when the muscular coat gives way that the strain can come upon the other tissues.

There have been many classifications of arterio-sclerosis, and perhaps the one that best fits in with what we see clinically is the etiological one of Sir T. Clifford Allbutt. He divides all cases into three classes: (1) Those due to hyperpiesis; (2) those of a toxic or infective nature; (3) involutionary cases. In the first class the raised blood pressure precedes and produces the sclerosis. In the second the pressure may not be raised, or may be so at a late stage, and is the result of the disease. In the third—the senile type—it is usually absent, or, if present, is an intercurrent event, and very open to dietetic and medicinal influence.

One must keep in mind also the terminal cases of arterio-sclerosis, where, with a big heart and thickened vessels, we find a low pressure. I have found a number of such cases in the records of the General Hospital, and can recall a number in my own experience. There *had* been high pressure in such cases for years, as shown by the great heart, but this pump was now giving out.

The question arises as to our ability to detect and measure an increased blood pressure. Many instruments have been invented within the last few years with this object, and there are several that have been proved by animal experiment to be very correct, the pressure being taken by one of them in one limb, while at the same time it was being measured in another by a manometer directly connected with the interior of a vessel. But whether we can always measure the pressure within a vessel, by seeing what external pressure is necessary to stop the pulse passing along it, is open to question.

If we were dealing with an inanimate elastic tubing it would be an easy matter, but the artery is a living structure and varies greatly in tone and hence in resistance to compression. It is a common thing to feel a vessel firmly contracted—for example, in peritonitis—and it must surely take a great deal of external pressure to eliminate the lumen of such an artery, entirely apart from the pressure within the vessel. Dr. William Russell has insisted much upon this point,[8] and there seems to be much in what he says. In cases of intermittent claudication the vessels of the limb may so contract that no pulse may be felt in the distal branches.[11] If the contraction of the artery were not *quite* sufficient to stop the pulse one would probably get an altogether too high reading of the general blood pressure if measured in such a limb, as the spastic vessel would resist the external pressure.

As to whether the sclerosis of the artery actually being used in the measurement of the pressure modifies the reading to any extent, it may be recalled that Dr. C. J. Martin about ten years ago seemed to prove by many experiments made upon sclerosed arteries removed from the body that even an extreme degree of hardening did not give rise to a resistance to compression of more than 10 mm. Hg. But more recently Drs. Herringham and Womack found that the resistance of a thickened artery might amount to from 4 to 34 mm. Hg, and Dr. O. K. Williamson found the same thing.[5] Hence, when the vessel of the limb used for the blood pressure measurement be felt to be much thickened we must considerably discount the reading. In no case are we justified in accepting a high reading when the heart shows no signs of enlargement, nor is the aortic second sound accentuated.

When arterio-sclerosis has caused a rise in the arterial blood pressure, this rise is chiefly in the systolic pressure. This is only what we would expect, as the rigid condition of the vessel walls makes most of the force of the ventricular systole pass right on, as in a rigid tube, say a lead pipe, it would quite do.

> At a high arterial pressure the distensibility of the arteries is distinctly diminished, and any increase in the systolic pulse volume must raise the blood pressure far more than a corresponding increase at lower pressure. . . . Thus, in all cases of arterio-sclerosis, where there is a rise in blood pressure, this rise is chiefly in the systolic pressure, on account of the lessened distensibility of the arterial walls, due either to the high tension or the disease. (Janeway.[7])

In the condition of high blood pressure from pure vaso-motor spasm, as in peritonitis, the diastolic pressure is the one chiefly raised. It would probably be safe to argue that in a case of arterio-sclerosis with increased pressure the relative difference between the systolic and the diastolic pressures would be a measure of the degree to which the increased pressure was due to the sclerosis of the arterial tract between the heart and the point at which the pulse is being felt.

TREATMENT.

We are only here concerned with the treatment of high blood pressure in arterial disease, and it might well be said that if the pressure were due actually to the sclerosis and to that alone, then its lowering could only be brought about, and that only very temporarily, by bleeding. But, as has been shown, the hyperpiesis is nearly always not directly due to such fibrous thickening, but rather to associated spasm of the arterioles, and, one might probably add, capillaries. Such spasm is in the great majority of cases of toxic origin, and it is to the lessening of this toxaemia that our attention must be directed. The nature of this toxaemia has been the object of much research, and it is generally recognized now that it is due to nitrogenous bodies. As Dr. William Russell says, the whole problem of hypertonus centres round the three factors of hereditary character, pabulum, and excretion. Some individuals inherit vessels that no toxin of dietetic origin scarcely will affect, while others suffer on the least indiscretion. As regards the pabulum, the fault may be in mere quantity of proteid taken, or in the way in which this is dealt with in the alimentary tract. In this tract certain bodies, technically known as the aromatic series, are produced by the decomposition of proteid materials; and these being absorbed may, either by direct action on the vessels or in some less direct way, produce vaso-constriction. These poisons must first pass through the liver, and, if this organ be active, may be destroyed there and do no harm. Eck's experiment well illustrates this. He found that if in animals he tied the portal vein and then connected the lower end of this vein with the inferior vena cava and fed the animals on milk, they would live for some time; but if, on the other hand, they were given even a small quantity of meat diet, they rapidly succumbed, with dyspnoea and other toxic symptoms.

Milk contains proteid, of course, but it seems to be specially the proteid of meat and eggs that produces most toxins. If the toxins once reach the blood they are chiefly got rid of by the kidneys. Hence it is that Huchard puts as the second most important factor in the production of the presclerotic stage of arterio-sclerosis insufficiency of hepatic and renal functions.[12]

Sir T. Clifford Allbutt lays down the good rule that every individual of 40 and over should at intervals of five years or so have his blood pressure measured in order that he may know in time if he be tending towards arterio-sclerosis. One may emphasize here that the so-called pre-sclerotic stage continues long after the further stages of actual sclerosis and even heart involvement have become evident, and that in order to prevent the condition getting worse we must continue to treat the toxic condition.

One might emphasize this point by the following classification of the disease:

First Stage.—(1) Toxaemia.
Second Stage.—(1) Toxaemia; (2) organic change in walls of vessels and left heart, and probably in kidney.
Third Stage.—(1) Toxaemia; (2) organic change in walls of vessels and left heart, and probably in kidney; (3) breaking down of the diseased circulatory apparatus.

Take a man of, say, 45 in whom we find a systolic pressure of some 160 mm. Hg. He seems well, but probably has a slight increase in the amount of urine, which will be too watery and may show a trace of albumen occasionally and probably now and then a few hyaline casts.

If this patient show a family tendency to arterial disease so much the worse. If in such an individual we cut down his animal proteids, putting him chiefly on a lacto-vegetarian diet, cut out excessive smoking and the use of alcohol, and give him some saline every morning, with an occasional mercurial purge, he will probably improve very much and his pressure will come down to normal or nearly so, and, as long as he keeps to such simple rules, may remain so. If such a régime be not sufficient regular small doses of potassium iodide may help very much. Pharmacologically Stockman showed years ago that this drug had no effect in lowering blood pressure except in enormous doses, but clinically nothing seems to be more evident than its effect in hyperpiesis due to toxaemia. Probably it helps in elimination. Every clinician has seen its good effect in relieving the pain in aneurysm. Diuretics may be useful, especially theobromine.

The treatment so far mentioned is applicable to all cases of arterio-sclerosis where the pressure is high, whether the case be early or more advanced. But if, in spite of it all, the pressure remain too high, and perhaps symptoms of cerebral trouble—such as transient affection of speech or even paralysis—are showing, then severe purgatives or even bleeding may be required. But the question always arises here whether we should interfere actively with a high pressure merely because it be high—whether this pressure may not be compensatory, and the best thing under the circumstances for the crippled patient. May not his symptoms be due to an anaemia of a vital part of the brain, owing to a sclerosed and narrowed vessel of supply? Here the high pressure may be keeping him alive. Again, thrombosis may be occurring in such a vessel, and the most likely thing to increase such clotting will be to reduce the flow of blood through the artery, and to increase the coagulability of the blood, as may be done in both instances by the operation of bleeding.

It is probable that no one rule can be laid down about the care of high blood pressure in cases of advanced arterio-sclerosis beyond those of diet and other simple means applicable to the presclerotic stage.

Moreover, it is wonderful how well many people are with blood pressures that may at first surprise us, and not only well, *but may remain so for years*. Especially in stout individuals, we may find pressures reading even over 200 mm. Hg, in whom there may be practically no symptoms.

Occasionally, however, the pressure is producing some trouble that makes it urgent that we reduce it, and here blood-letting or the use of vaso-dilators may be of much value.

As regards blood-letting, most of us have seen good results from an epistaxis in an arterio-sclerotic, and such results are wonderfully lasting. If a normal animal be bled, especially from a vein, we can reduce the arterial pressure easily, but a bleeding, even amounting to half of the total blood in the body, only reduces the pressure for a very short time. It is different in cases of toxaemia, and the chief cause of the very lasting results that are obtained is probably that by bleeding we are removing the toxins that are the chief cause of the raised pressure.

One sees the good effect of bleeding also in uraemia, where it is evidently by removal of toxins that it acts. Osler states the case well when he says:

> In cases that come under observation for the first time with dyspnoea, slight lividity and signs of cardiac insufficiency, venesection is indicated. In some instances, with very high tension, striking relief is afforded by the abstraction of 20 oz. of blood.[8]

With regard to the use of the vaso-dilators, it is found that they usually act even in profound cases of arterio-sclerosis, and recently Drs. Wallace and Ringer[9] have shown that their action is more prolonged here than in normal vessels. One might put them in the following order as regards their speed of action and associated evanescence of effect: Amyl nitrite, nitroglycerine, spiritus aetheris nitrosi, sodium nitrite, erythrol nitrate, and, lastly and most lasting, the nitrate of mannitol.

Dr. Edwin Matthew[10] last year published some work on the action of the different nitrites in high blood pressure, which may be summarized as follows:

1. The effect of nitroglycerine in $\frac{1}{100}$-grain doses lasts about one hour, but a tolerance is rapidly established.
2. The effects of sodium nitrite in 2-grain doses last about two hours, and no tolerance occurs.
3. Erythrol tetranitrate in $\frac{1}{2}$-grain doses lasts about six hours, and no tolerance occurs.
4. Mannitol nitrate in 1-grain doses acts as the erythrol, but effect even more prolonged, and hence to be preferred.

With these drugs he found it possible to keep the abnormal pressure down about 30 mm. Hg, and such often kept the patient comfortable and free from pressing symptoms. It is interesting to note that he could get no results with tabloids of nitroglycerine or erythrol nitrate, but got them at once with solutions of the former and chocolate tablets of the latter.

As regards the sweet spirits of nitre, it is well to note that it is often very weak, or even inert. In a recent investigation made in the laboratory of the Inland Revenue Department of Canada it was found that 63 per cent. of samples examined were adulterated and that some contained no ethyl nitrite at all. There is no standard for strength in the British or Canadian pharmacopoeias, but in the American it must contain 4 per cent. of the ethyl nitrite when freshly prepared. When made according to the *B.P.* directions, it should contain from 2.75 to 1.75 per cent. Sodium nitrite also rapidly oxidizes and thus loses its action, so should be freshly prepared. Physicians probably often fail to get the action looked for with these drugs on account of these depreciations.

Various other and milder methods of reducing blood pressure in arterio-sclerosis are often used, such as baths, massage and gymnastic exercises, and static electricity; but no attempt has been here made to discuss them all, and probably most of the best known and most commonly used ones have been mentioned.

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The Chelsea Hospital for Women has received a grant of £105 from the Court of Common Council of the City of London.

The annual general meeting of the British Medical Benevolent Fund Guild will be held at the New Hospital for Women, 144, Euston Road, N.W., on Tuesday, November 29th. Lady Frederick Brudenell Bruce will take the chair at 3.30 p.m.

THE REACTION OF THE HEART TO DIGITALIS WHEN THE AURICLE IS FIBRILLATING.*

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In a communication published in *Heart* in March of this year[1] it was shown that the completely irregular pulse,† which is so frequently encountered in clinical work, and which is peculiarly associated with advanced mitral stenosis and arterio-sclerosis, is the result of a condition well known to experimentalists—namely, fibrillation of the auricle.

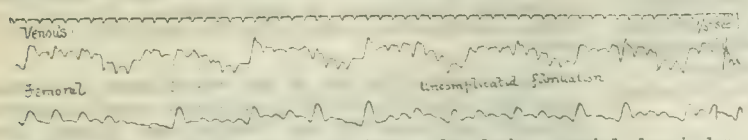


Fig. 1.—Venous and femoral curves from a dog during a period of auricular fibrillation. The venous curve is ventricular in form. The pulse is completely irregular.

I do not propose to reiterate at the present time the detailed evidence upon which this conclusion rests, but content myself by stating that the conclusion is in absolute accord with all the known characters of the experimental and clinical conditions. It may be stated that a similar irregularity of the heart occurs in horses, and since the publication of my full paper I have had a further opportunity of examining the heart of such an animal beating *in situ*. The auricle was fibrillating.

When the heart is inspected in an animal in which the auricle (speaking of right and left auricles as a whole) is fibrillating, this chamber is found to be in a state of continued diastole. No co-ordinate contraction of its walls interrupts its condition of distension, but careful examination discovers a flickering or tremulous state of the musculature. The muscle seems to be alive with the movement, yet no given point shows any appreciable excursion. The interpretation of the phenomena witnessed is a simple one. In a normally beating heart the auricle responds to rhythmic impulses generated in the neighbourhood of its junction with the superior vena cava,[2] and it contracts as a whole, expelling its contents into the ventricle. The movement of the auricle is a rapid one, and there is shortening of the muscle in every direction. It is supposed that in the fibrillatory state this normal impulse formation is in abeyance, and that in its stead numerous and small areas of the hyper-irritable musculature are building up independent and pathological impulses; it is further supposed that the resulting waves of contraction, propagated from each and all of the new impulse centres, meet each other in the walls of the auricle without travelling far, and that as a consequence the whole of the contractile substance of this chamber is thrown into delirium. There is no co-ordinate contraction, meaning by co-ordinate contraction universal contraction of the fibres in a definite order and eventually together. There is a condition of asystole.

Now, while the auricle is in this state the *individual* ventricular systoles are co-ordinate; but the chamber beats in a rapid and highly irregular fashion. Thus, while each contraction of the ventricle is of a similar nature to a normal systole, the sequence of contraction presents no rhythm, but has a completely disordered character. In explanation of this gross irregularity in the ventricle it is supposed that occasional impulses escape in a haphazard fashion from the turmoil in the auricle, and that, like normal impulses, they are transmitted across the junctional tissues, the auriculo-ventricular bundle and its arborizations, to the ventricle.

It is upon a heart whose mechanism is disturbed in this way that digitalis exerts its most conspicuous action. Given in full doses it frequently produces a marked retardation of the ventricular rate. In inquiring into the cause of the retardation it is essential, first, that the condition of the auricle should be remembered; and, secondly, that we examine the known ways in which ventricular slowing may be brought about when the auricle is fibrillating. In the experimental heart, when fibrillation of the auricle is present, retardation of the ventricular rate follows certain definite procedures. It results from stimulation of the vagus nerve (Fig. 3), and it has been suggested by Professor Cushny[3] that such slowing is the outcome of an increased obstruction to the passage of impulses across the auriculo-ventricular junction; for it is known that the conductive functions of the junctional tissues are markedly depressed by inhibitory impulses, and that heart-block in an otherwise normal heart is a ready consequence of vagus excitation (Fig. 2).

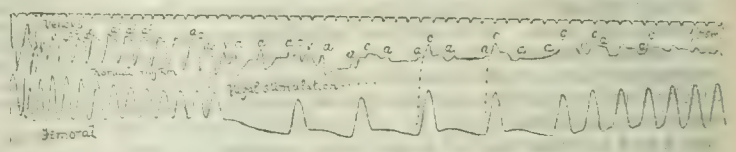


Fig. 2.—Venous and femoral curves showing the effect of vagus stimulation. With the stimulation 2:1 heart-block appears.

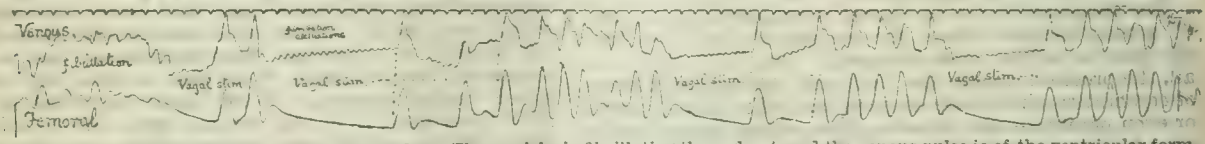


Fig. 3.—Venous and femoral curves from a dog. The auricle is fibrillating throughout, and the venous pulse is of the ventricular form. When the vagus is stimulated the ventricle ceases to beat, but the auricle continues to fibrillate, and leaves its impress on the venous curve in the form of small and rapid oscillations.

The curve now demonstrated (Fig. 4) strongly supports this view. It shows simultaneous venous and arterial curves from a dog in which the auricle is fibrillating. Accompanying stimulation of the vagus the ventricular rate is diminished, while the fibrillation, identified by the small and rapid oscillations in the venous curve, proceeds. A few seconds later the fibrillation terminates, and the normal and co-ordinate auricular contractions are re-established. When these rhythmic contractions of the auricle appear, it is seen that only one in two transmits an impulse to the ventricle and excites a response. The slowing of the ventricle at this stage is the result of heart-block; the presumption is that the slowing previously manifested was of similar origin.

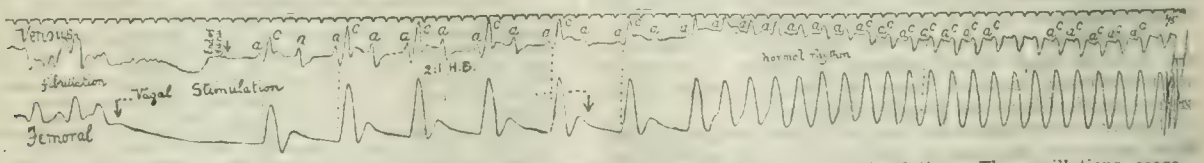


Fig. 4.—The end of a period of auricular fibrillation. Its termination results from vagus stimulation. The oscillations cease where the fibrillation ends, and from this point co-ordinate auricular contractions are represented. A condition of 2:1 heart-block is present. To show that the ventricular slowing while the auricle is fibrillating is the outcome of heart-block.

It has been shown by Fredericq[4] that the ventricle beats slowly and regularly when the auriculo-ventricular

* A paper read in the Section of Pharmacology at the annual meeting of the British Medical Association, July, 1910.

† Or "pulsus irregularis perpetuus." The rhythm of the heart has passed under the terms "arrhythmia perpetua," "nodal rhythm," and chronic arrhythmia."

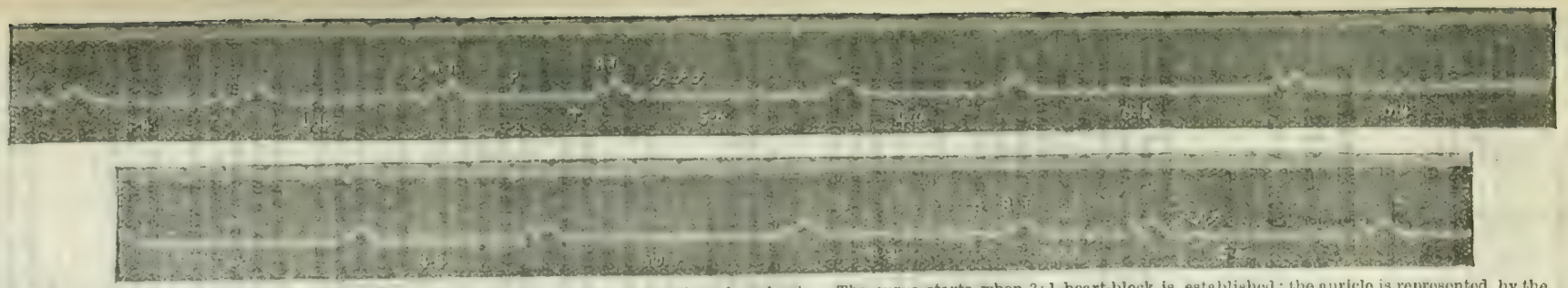


Fig. 5.—A continuous electro-cardiographic curve taken from a cat during a period of asphyxia. The curve starts when 2:1 heart-block is established; the auricle is represented by the variations P; the ventricle is represented by the variations R and T. At the point marked by the arrow in the upper curve the auricle was faradized, and fibrillation ensued. The type of curve immediately changes. The normal auricular waves are replaced by the fibrillation waves (*fff*). At the same time, though the ventricle shows no marked change of rate, its rhythm becomes irregular. The curve is continued, and shows the breakback from fibrillation + heart-block to a rhythm in which 2:1 heart-block is present. At the end of the lower curve the auricle is once more faradized and fibrillation ensues. The curves show the effect of heart-block in hindering the transmission of impulses from a fibrillating auricle.

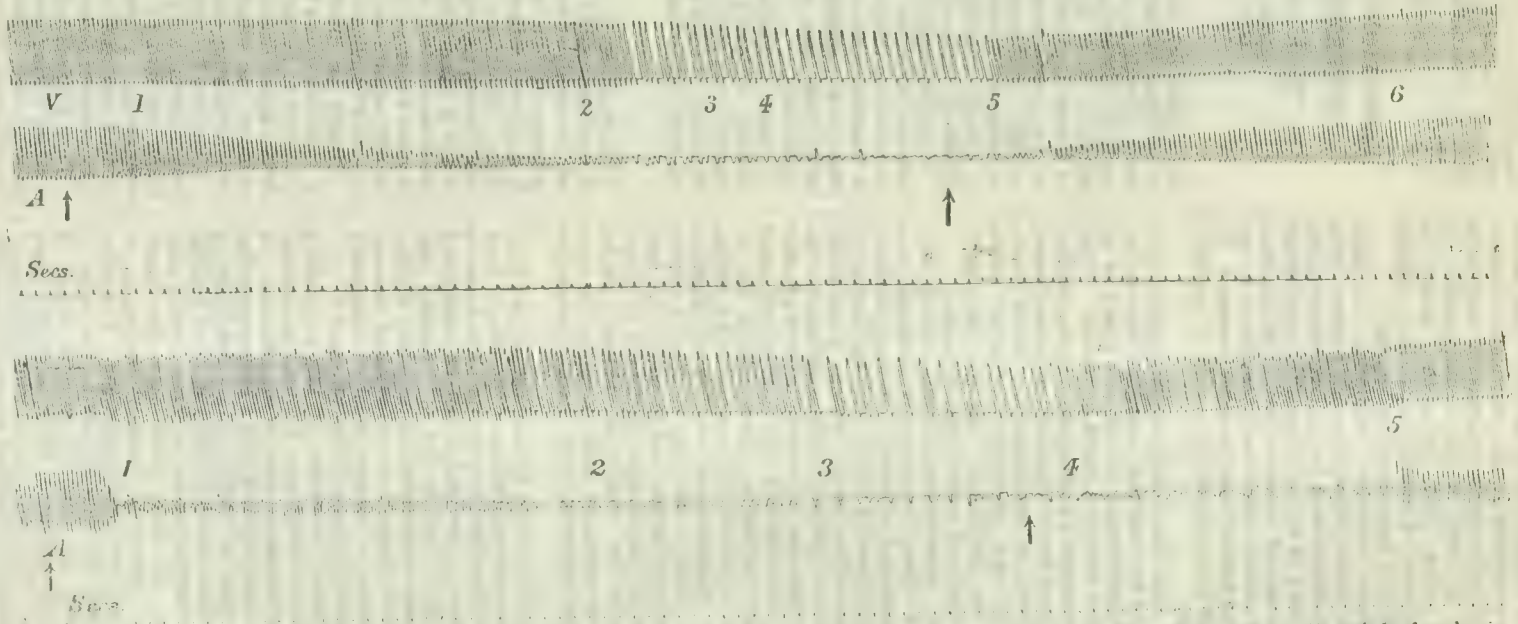


Fig. 6.—Two curves taken from a cat during successive periods of asphyxia. V = Myocardiogram of ventricle; A = myocardiogram of auricle. The periods of asphyxia begin and end where the arrows are placed. The first curve is of uncomplicated asphyxia. The second curve is of a similar asphyxial period, during the whole of which (from the points 1 to 5) the auricle was faradized and sent into fibrillation. At a point lying between 2 and 3 in the upper curve heart-block occurs as the result of the asphyxia. Up to this point the excursion of the auricle has greatly decreased, and from this point onwards the movements of the curve represent tug from the ventricle alone. At 5 the auricular contractions are again seen, and once more increase in excursion. The heart-block starts with an occasional dropped beat. At 4, 2:1 heart-block is seen. At the point marked 5, shortly after the onset of respiration, the heart-block disappears. In the second curve, and at the point marked 1, fibrillation of the auricle begins. It is accompanied by an increase of ventricular rate and by irregularity of the ventricle, seen in the outlines of the ventricular curve. From the point marked 2 the rate of the ventricle *gradually* decreases up to a point lying between 3 and 4. Just before point 4 respiration starts once more, and the rate of the ventricle increases. Again, at the point marked 5 fibrillation ceases, and the normal sequence of heart contraction is resumed. The two curves show the effect of heart-block upon the transmission of impulses from auricle to ventricle during co-ordinate action and fibrillation of the auricle. The obstruction to the passage of impulses shows earlier when the auricle is fibrillating; in the one case the curve shows an abrupt slowing of the ventricle; in the other case retardation is more gradual

bundle is transected, and while the auricle is fibrillating—a fact which demonstrates that all auricular impulses to it are impeded by such a procedure. As a consequence the ventricle assumes its own spontaneous slow and regular rhythm. Partial heart-block is readily induced by asphyxia, and, in conjunction with Dr. Mathison, I have utilized this fact to show that when a condition of heart-block is present, the production of auricular fibrillation, while disturbing the regularity of the ventricular contractions, fails to bring about the marked increase of rate which usually accompanies its onset in the normal animal. It may be similarly shown that when the auricle is fibrillating the production of partial heart-block reduces the rate of the ventricular responses (Figs. 5 and 6).

The clinical condition, auricular fibrillation, has been seen in association with heart-block of several grades: with partial heart-block in the curves of Dr. G. A. Gibson,[5] by Dr. Mackenzie,[6] and myself; in all these cases the ventricular rate was slow: and a case of auricular fibrillation has been recently reported in which complete heart-block in an epileptic and syphilitic subject was probably present.[7] In this case the ventricle beat regularly at a rate of approximately 30 per minute.

We see, therefore, that the known ways in which the ventricular action may be retarded, whether the fibrillation is clinical or experimental, are of one type; in all instances heart-block is either probable or proved. What more natural than to suspect that digitalis acts in a similar manner when it produces ventricular slowing in the clinical condition? For digitalis has been found to induce heart-block experimentally,[8] and clinically a similar action has been described by Mackenzie,[9] and has been fully substantiated by a number of more recent workers.

The case for which I plead—that digitalis slowing is a result of heart-block when the auricle is fibrillating—is very materially strengthened when the following facts are considered: The type of case in which, with the normal or co-ordinate contraction of the auricle present, heart-block is readily provoked by digitalis administration, is the advanced rheumatic heart, and *a fortiori* the heart affected by mitral stenosis. It is a striking fact that of all cases of clinical auricular fibrillation, those which are of rheumatic origin, and *a fortiori* those affected by mitral stenosis, show the characteristic slowing of digitalis to most advantage. This is the type of case in which digitalis acts in so magic a fashion, and in which the rate of the ventricle is set by the dosage employed; it is the type of case in which the ventricular rhythm may be sometimes reduced to regularity, and in which the rate may be reduced to that consistent with a true ventricular rhythm.

On the other hand, there is the type of patient in whom no reaction ensues upon the exhibition of the drug. Now Mackenzie has shown that digitalis produces heart-block in those patients in whom a previous defect of conduction exists. The proposition I put to you is a parallel one, namely, that the ventricle is retarded in auricular fibrillation by digitalis when there is a pre-existing damage of the junctional tissues, a damage which is frequently demonstrable in cases of rheumatic heart affection.*

The complete evidence in support of this proposition will require time for its collection. We require observations upon patients in the early stages of the affection. It is requisite that it be demonstrated that a large proportion of the cases which react to digitalis had a deficiency of auriculo-ventricular conduction *before* the onset of fibrillation. I can offer the facts in regard to three cases[10] only at the present time. In these three cases the heart-rhythm was observed before the onset of fibrillation, or during the intervals of rest between attacks. The cases were thoroughly tested with digitalis during the stage of fibrillation. Two cases, in which no previous defect of conduction could be demonstrated, failed to show a trace of reaction to the drug. The third case in which deficiency of conduction was clearly established reacted repeatedly and in the most typical manner.

The view suggested, therefore, is that the ventricular rate is retarded in clinical auricular fibrillation by the action of digitalis upon the junctional tissues, the functions of which are already in a depressed state; and this view is put forward, together with an indication of the direction from which the evidence will come, which, if favourable, should convert what may be now regarded as a proposition into a well-established conclusion.

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*The view that digitalis acts by the production of heart-block was originally put forward in the BRITISH MEDICAL JOURNAL of November 2 th, 1909, and was more fully considered in *Heart*, 1909-10, 1, 349.

VARIATIONS OF THE FERMENTATION PROPERTIES OF THE B. TYPHOSUS.*

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(From the Lister Institute, London.)

Lactose.

DR. TWORT has shown that the *B. typhosus* can be made to ferment lactose-peptone water. He found that two years' growth on lactose-peptone water was necessary to produce this strain. I have examined this new variety and find: (1) It is a genuine *B. typhosus*. (2) On plating on lactose it always gives rise to mixed plates of fermenting and non-fermenting colonies. Subculture of fermenting colonies on lactose plates gives again a mixture of fermenting and non-fermenting colonies, so that the character is always tending to disappear and requires constant growth on lactose for its retention.

If the atavistic non-fermenting colonies are retrained on lactose-agar slopes, after a variable number of subcultures they take on the fermenting power again. In this process of training, when the efficient fermenting strain is arising they show papillae-formation on the lactose, the papillae being very large and acid in reaction as indicated by neutral red.

I have attempted the complete training of a large number of strains myself, and have only got one to the stage of very slightly fermenting lactose-peptone water in two days. I have not yet got red colonies out of it. This has required sixteen monthly subcultures.

Dulcite.

I have shown † that *B. typhosus* requires about ten days to produce acidity in dulcite-peptone water. The period can be readily shortened to one day by one to three subcultures on dulcite media at monthly intervals. Normal *B. typhosus* produces neutral or alkaline colonies on dulcite agar. About the fifth day, in one-third of the strains papilliform projections arise on the colonies, which become acid in a day or two. Subcultures from these papillae give rise to fermenting colonies. Other strains of *B. typhosus* give papillae about eight to ten days after inoculation. These do not acquire an acid reaction. Occasionally strains do not show papillae on this medium.

Plating on dulcite agar daily from dulcite broths of *B. typhosus* shows the history of the variation. It usually takes two to ten days to produce fermenting elements on dulcite agar. Then, some time later, all the non-fermenting elements are killed off suddenly, and the broth contains only fermenting elements.

This new fermenting character tends to recede after its first selection, but if continuous growth on dulcite is undertaken for two to three months, the character remains permanent. A strain so trained and selected about nine months ago gave on plating out within the last few days pure plates of fermenting colonies.

Thus apparently two years' growth on lactose selects out a strain acting similarly to a dulcite strain selected in about a week. How long will a pure permanent lactose strain require for its selection?

Arabinose.

B. typhosus does not ferment arabinose on neutral red arabinose agar plates and ferments arabinose peptone water very slowly and irregularly. After three months'

*A paper read in the Section of Bacteriology at the annual meeting of the British Medical Association, London, July 29th, 1910.
† Penfold (1910), *Journ. of Path. and Bact.* vol. xiv., p. 406.

training on arabinose peptone water, I have succeeded in getting this fermentation in arabinose broths to occur overnight. On plating out at this stage, the plates may consist entirely of pure fermenters. I have not yet tested this character for permanency. All the three above-mentioned varieties agglutinate with a typhoid serum readily.

Glycerine.

Glycerine provides an illustration of another type of variation. Normal *B. typhosus* ferments glycerine. All the recently isolated strains examined, I have found on plating on glycerine agar to be pure fermenters. Three old laboratory strains I examined have shown, however, mixed plates of fermenters and non-fermenters. Sub-culture of each of these types has given rise to pure races of the respective varieties. After five subcultures on peptone water, these still retained their pure character. Probably this negative variation is due to the laboratory culture, and the loss occurs so slowly as not to show itself in the same red strain after so few as five subcultures.

It is rather remarkable that pure fermenting strains inoculated on glycerine peptone water take about three to four days to produce full acidity and eight months' training does not quicken this period. After one day the litmus is completely decolorized by the fermenting strains, but on agitation it regains its colour and only the faintest trace of acidity is seen.

I have not yet tested whether the non-fermenting strains can be readily retrained, but in glycerine litmus peptone water they do not show any signs of acidity after two or three weeks. Both strains give all the other fermentation and agglutination tests of *B. typhosus*. The agglutinability of the non-fermenting strain, is, however, somewhat impaired.

Isodulcite.

R. Müller has drawn attention to papillae-formation by *B. typhosus* on isodulcite. This I have observed in all the strains I have examined. Subculture from these, gives rise to colonies no longer able to form these papillae, but growing much more luxuriantly on isodulcite-agar. I found that subculture of these new colonies on peptone water thirteen times, failed to restore the papillae-forming power in any of the four strains so tested, This is apparently a mutation. Growth of *B. typhosus* on isodulcite broth frequently does not produce acidity though it may do so as early as one week. By 1 to 3 subcultures at monthly intervals, all strains I have tested give acidity in forty-eight hours.

The above five variants of *B. typhosus* agreed with the normal type in all their other fermentation and general properties, that is, the fermentation variations seemed to arise without any concomitant qualitative variations in respect of other fermentation and general characters.

Unsuccessful Variations.

I have grown *B. typhosus* (12 strains) in peptone water, containing formates, for about eight months, in order to get a gas-forming strain, but so far without results. Adonite, erythrite, saccharose, amygdalin, and salicin have all failed to select out special strains, though they were used for about nine months in each case.

Do the above-described variations undermine the value of sugar tests? I think not. They show, however, their limitations—namely, that laboratory culture can vary them. Short laboratory culture on particular carbohydrates will change the type, and evidently, in the case of glycerine, subculture on ordinary nutrient agar will do it after a long period. Cultures fresh from the blood or excretions of typhoid patients, however, show an almost absolute conformity to type in respect of fermentation characters, whereas the agglutination tests, when applied to freshly-isolated strains, not infrequently break down. It seems to me, therefore, that, in the recognition of these organisms, fresh from the body, the fermentation characters take a pre-eminent position.

In conclusion, I should like to put in a plea for the value of the fermentation tests in elucidating the laws of bacterial variation. They are easily applied, and if once understood would probably explain many of the most difficult problems in connexion with virulence and other properties of micro-organisms.

A CASE OF DIAPHRAGMATIC HERNIA IN AN ADULT.

BY

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Many cases of congenital deficiency in the diaphragm, chiefly left-sided, in infants have been collected both in this country and abroad, but the instances of the subjects having lived to adult life are extremely rare, and therefore I feel that no apology is required for recording this case.

M. L., aged 26 years, married three years, no children. She was a seven months child, had acute rheumatism thirteen years ago, was always highly neurotic, was a school teacher before marriage, and had been passed as sound by the medical examiner. She never suffered from digestive troubles. She was always very thin and was in the habit of lacing rather tightly.

In August, 1909, she was examined for uterine and bladder trouble and found to have marked anteflexion; nothing abnormal was found on palpation of the abdomen.

The patient became pregnant in November.

In March, 1910, she said she had not felt so well for years as she had during her early months of pregnancy.

On May 31st, 1910, she complained of feeling sick, and had "dragging" pains in her abdomen and back; at 3 p.m. she vomited.

On June 1st she was seen by me: her face was very flushed, the respirations 44; pulse 144, regular, low tension; temperature 100.4°. The heart's apex beat was in the fifth space, a little internal to the nipple line; the first and second sounds were normal. The percussion note over the front of the left side of the thorax was dull up to the second rib; above that it was hyper-resonant. The breath sounds were weak except at the third space, where they were bronchial. On the left side at the back there was dullness on percussion, weak breath sounds and diminished vocal fremitus up to the angle of the scapula; above that the percussion note was clear and the breath sounds bronchial; no adventitious sounds were audible anywhere over the left side of the thorax. There was considerable pain at the left costal margin. The patient was constantly eructating about half an ounce of clear yellowish fluid; the bowels acted well. The abdomen was occupied by the pregnant uterus of about seven months.

June 2nd. The patient had a restless night; the pain went away, but the eructations continued, the left back was quite dull on percussion, the breath sounds absent, and the heart's apex beat was in the epigastrium towards the right; aspiration was decided upon, but about 6 p.m. the child was born without any labour pains or warning; the placenta came away normally, and there was very little haemorrhage. During the kneading of the uterus a large mass was felt in the left iliac and lumbar region; this was thought to be an ovarian cyst, but on examination per vaginam nothing could be made out, and the uterus was quite normal. The patient felt much more comfortable, so it was decided under the circumstances not to aspirate the thorax that night.

On June 3rd my colleague, Dr. Hine, saw the patient with me; the pulse was 144, the respirations 44, temperature 100°; the heart's apex beat was then found to be again in the fifth space, just to the left of the sternum; slight jaundice was noticed. The mass in the left side of the abdomen was freely movable and easily examined, and diagnosed as the spleen. The bowels acted well, the stool being like putty.

June 4th. The patient was markedly jaundiced, the liver edge was felt two fingerbreadths below the costal margin, the eructations continued, the fluid now being quite black; the left thorax remained the same, but the heart's apex beat was again to the right edge of the sternum. The thorax was aspirated in the fifth space at the posterior axillary border and 6 oz. of black fluid came away. The patient became cyanosed and the pulse very small and weak; it was decided not to proceed with the aspiration. The patient continued to vomit small quantities of black fluid throughout the night; she had intense pain on the left side by the costal margin for an hour before death, which took place the next day.

Post-mortem Examination.—The autopsy was made twenty hours after death, at which Dr. Hine assisted me. The uterus was healthy and no larger than is natural after labour; the appendages were normal. The spleen was found five fingerbreadths below the costal margin and approaching the middle line; it was slightly enlarged. The stomach was enormously distended and partially filled with black fluid, about 3 quarts in all; the fundus was situated in the thorax, as far up as the second rib; the pylorus was in its usual position, there being an hourglass constriction where the portion of the stomach passed through the diaphragm, owing to a partial strangulation. In addition the whole stomach was rotated on its long axis; the great curvature was uppermost, the posterior surface being anterior and

covered near the pylorus by the pancreas, which thus became extremely taut. The contents of the fundus could be pressed slowly into the pyloric portion, and the least pressure caused a quantity of the fluid to pour out of the mouth. The stomach walls of the abdominal portion were intensely congested, both internally and externally, and there had been considerable haemorrhage into the lumen. The large omentum had passed partially through the hernia into the thorax. About one-quarter of the small intestines was in the thorax, and together with the fundus of the stomach and omentum had compressed the left lung against the vertebral bodies. The transverse colon was empty, but still passed horizontally across the abdomen a little below the level of the umbilicus.

The hernia was situated on the left side of the diaphragm, and admitted the whole hand; its edges were formed of distinct muscular bands, the free edge being smooth and rounded; the upper edge formed a well defined falciform border reaching from the middle arcuate

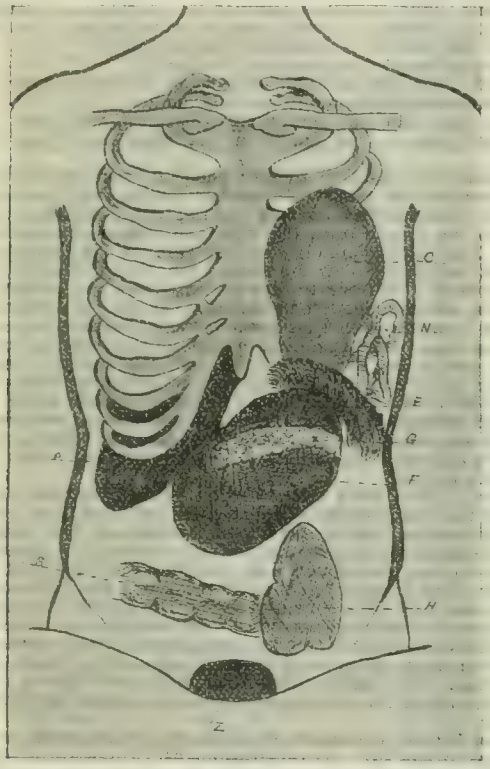


Diagram of the position of the abdominal viscera as found *post mortem*. A, Liver; B, transverse colon; C, distended fundus of the stomach; E, flabby muscular edge of opening in the diaphragm; F, distended posterior surface of portion of the stomach of a bluish-black colour; G, pancreas; H, spleen; N, portion of small intestines and omentum; Z, uterus.

fibres to the attachment of the diaphragm to the twelfth rib.

There was no evidence of any tear or laceration, in fact the condition strongly suggested a long duration, if not a congenital deficiency of the substance of the diaphragm between the middle arcuate fibres and the external arcuate band. There was no sac.

It was of interest to note that after reducing the hernia, that is, pulling back the fundus and intestines into the abdomen, the condition at once recurred, being highly suggestive that this migration into the thorax had been of some considerable standing

Usually in these cases the hernia apparently takes place accidentally (these must be distinguished from traumatic diaphragmatic hernia), but the cause in this case can only be accounted for by the gradual distension and pressure produced by the pregnant uterus; there was no strain nor violence; the hernia had obviously occurred two days before the child was born prematurely, and the absence of labour pains negatives labour as the cause.

THE President of the United States is appointing special committees in the principal cities of the United States to assist in raising an endowment fund of £400,000 for the American Red Cross Society.

SEVENTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, and 29th.

PROCEEDINGS OF SECTIONS.

SECTION OF OTOLOGY.

EDWARD LAW, M.D., President.

PRESIDENT'S INTRODUCTORY REMARKS.

IN the course of his remarks Dr. Edward Law said: Without the least desire to unduly magnify the importance of our Section, we may unquestionably congratulate ourselves on forming once again a separate Section of Otology. The wisdom of our isolation from any other recognized Section is self-evident when we consider the marvellous growth of specialism, but I must own that I should like to see our programme varied with, and more liberal hospitality shown to, subjects taken from those closely connected but still unrecognized Sections—Rhinology and Pharyngology. It is impossible, in season or out of season, to too strongly or too frequently reiterate and emphasize the great importance, either from the scientific and clinical aspects or on sordid business grounds, of a more pronounced otological sphere of influence in the nose and throat. Rhinology, thanks to the energy, skill, and foresight of enthusiastic laryngological investigators, has made such rapid and wonderful strides that she is now almost ready and eager to stand alone, and the advisability of a distinct Section is occasionally mooted. Such a desirable or undesirable possibility is encouraged by the apathy of aurists in not introducing naso-pharyngeal subjects more frequently into their discussions, and so permitting another Section to exercise more or less complete control over a domain in which we should be coequal. Unless otologists show more interest and enthusiasm in the naso-pharynx, and so get down to the portal of entrance and bedrock of many aural affections, it is probable that rhinology will assume the rôle of the "predominant partner" in the study and treatment of diseases of the throat, nose, and ear. This prognostication may not be verified, but it should incite otological sections to devote more time and attention to prophylaxis, and to the source of origin of a large majority of cases of deafness and middle-ear suppurations. It is advisable for us, as well as for the State and municipalities, to remember the good old adage, "Prevention is better than cure"; and I should like to draw the attention of the members of this Association, and particularly of this Section, to the very interesting and instructive report of Dr. James Kerr, the eminent and zealous Medical Officer (Education) of the London County Council. It is recorded therein that provision for the medical treatment of defects is for the first time accessible to every child; it shows the dire necessity of the compulsory medical examination of school children; it emphasizes the fact that childhood is often the only time for the preventive treatment of deafness and many other troubles in later life. It records an experiment in the treatment of aural cases, particularly suppurating ears, at their own homes; it points out that the congenitally word-deaf child is no longer to be classed as imbecile and neglected in education. The weighty facts revealed throughout this report demonstrate that our representatives in this hugh metropolis are undertaking social work which a few years ago would have been looked upon as impracticable or Utopian, and which, *inter alia*, must have a most salutary and far-reaching influence on the prevention, early recognition, and treatment of aural affections.

This morning is, perhaps, not an opportune moment to touch upon some controversial topics which at the present time are exercising the minds of many of our members—I allude to whether the examination and treatment just referred to should be carried out at the child's home, or

undertaken at the hospitals, or in school clinics, and by whom such measures, whether operative or otherwise, should be carried out—but I do hope that every member present to-day will agree with me that these special duties should only be undertaken or supervised by specially trained members of our profession (not necessarily specialists) who are quite suitably remunerated for their valuable services to the community, regardless of the economic cost, which is after all, in the long run, a sound investment for the long-suffering ratepayer. This report also states that the interesting experiment of a tuberculosis school is to be tried, and gives a careful analysis of 500 cases of deafness by a highly esteemed member of this Section, Mr. Macleod Yearsley; but neither in the report, nor in Mr. Yearsley's analysis, is any mention made of "aural tuberculosis in children." This easily explainable omission justifies, if exoneration were necessary, the action of your officers in choosing Aural Tuberculosis in Children as a fit and proper subject for one of our discussions. Having got over the difficulty of selecting the subject there was not the slightest difficulty in selecting the man to open it. Dr. Milligan opens this discussion alone, at the unanimous wish of your officers, and no words of mine can convey a greater or more well-deserved compliment. The title of the discussion on the Diagnosis and Treatment of Infective Labyrinthitis was only determined after much deliberation. It embraces some of the amazing and very ingenious work of that great labyrinthine authority, Dr. Bárány, and the well-known labours of Mr. West, who have kindly consented to introduce this intricate subject from separate standpoints.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF INFECTIVE LABYRINTHITIS.

I.—Privat-Dozent Dr. Robert Bárány, Vienna.

I.—Diagnosis.

Suppurative middle-ear disease may cause total deafness without an infection of the labyrinth, but total destruction of the vestibular apparatus as a result of middle-ear suppuration can be produced only by a suppurative process in the labyrinth itself. Therefore diagnosis of infective labyrinthitis depends mostly upon the findings in regard to the vestibular apparatus.

The diagnosis of vestibular conditions depends primarily upon the vestibular nystagmus. Nystagmus is the exact measurement of the degree of response to any irritation of the vestibular apparatus. The vestibular nystagmus consists of two movements, a slow and a quick one. Experimentally, it can be produced in all forms and directions. The spontaneous nystagmus with which we have to deal in labyrinth diseases is a combination of horizontal and rotatory nystagmus. The vestibular nystagmus is accompanied by a number of partially subjective, partially objective symptoms: (1) Seeming movements of the surrounding objects; (2) seeming movement of the own body; (3) real movements of the body; (4) nausea and vomiting; (5) sensation of blackness before the eyes, etc. To go into detail regarding the variation of these symptoms in different patients would go beyond the scope of this paper.

The different conditions of the labyrinth which we can detect by investigation, mainly of the vestibular apparatus, are:

I. Normal vestibular apparatus (no labyrinth suppuration).
II. Acute destruction of the labyrinth.
III. Subacute destruction of the labyrinth.
IV. Latent labyrinth destruction.
V. Labyrinth fistula with intact membranous labyrinth.
VI. Labyrinth fistula with slight impairment of function.
VII. Labyrinth fistula with marked impairment of function.
VIII. Serous labyrinthitis.
IX. Vestibular movements of the eyes by compression and aspiration without fistula.
X. Labyrinth empyema and cerebellar abscess (Type A).
XI. Labyrinth empyema and cerebellar abscess (Type B).
XII. Labyrinth normal, cerebellar abscess.

In our investigation we have to consider the following points:

1. Spontaneous nystagmus.
2. Spontaneous nystagmus behind the opaque spectacles (Bárány).
3. Attacks of nystagmus, produced by rapid head movements (Bárány).
4. Caloric reaction (Bárány).
5. Turning reaction with use of opaque spectacles (Bárány).
6. Galvanic reaction.
7. Fistula symptom.
8. Disturbances of equilibrium—
   (*a*) Spontaneous.
   (*b*) Experimentally produced (Bárány).
9. Hearing.
10. Dizziness.
11. Nausea and vomiting.
12. Position in bed.
13. Ringing in the ears.

The following paragraphs contain the results of the investigation in the above-mentioned conditions.

I.—*Normal Vestibular Apparatus (no Labyrinth Suppuration).*

1. Spontaneous nystagmus is absent, or there is a small rotatory and horizontal (+ R) nystagmus to the right on maximal turning of the eyes to the right, together with the same to the left in looking to the extreme left (L. +).

2. Behind opaque spectacles there is an absence of spontaneous nystagmus in looking straight to the front.

3. Absence of nystagmus during quick motions of the head. (In smokers there are sometimes observed slight attacks.)

4. Caloric reaction: Right ear, head in erect position, water 25° C. produces L. +; right ear, head erect, water 48° C. produces + R.; during slight narcosis cold water syringed into the right ear produces a deviation of the eyes to the right, and hot water a deviation to the left. In deep narcosis there is no movement of the eyes produced by hot or cold water syringed into the ear.

5. Turning nystagmus behind opaque spectacles: Ten turns to the right, head erect, produce L. ⟵ 42″; ten turns to the left ⟶ R. 42″ (approximately) (minimum 5″, maximum 2′).

6. Galvanic nystagmus: Cathode in right ear, anode in right hand ⟶ R.; anode in right ear, cathode in right hand, L. ⟵ 5 to 15 milliampères.

7. Fistula symptom is absent.

8. Disturbances of equilibrium—

   (*a*) Spontaneous are absent. In neurasthenics there may be a slight disturbance of equilibrium of non-vestibular character.
   (*b*) During experimentally produced nystagmus (after rotation to the right) the patient falls to the left if the head is erect. With the head turned to the right, he falls to the front. With head turned to the left, he falls backward.

9. Hearing normal, hard hearing or deaf.

10. Dizziness absent. (Exception see 3.)

11. Sickness and vomiting absent; during experimentally-produced nystagmus it is often present, especially in neurasthenics and in cases of traumatic neurosis.

12. Position in bed without significance.

13. Ringing in the ears may be present or absent.

II.—*Acute Destruction of Right Labyrinth (of Two Days' Duration).*

1. Spontaneous nystagmus: + L. pronounced when the patient looks in any direction.

2. Spontaneous nystagmus behind opaque glasses on looking forward ⟶ L.

3. Attacks of nystagmus during quick motions of the head. The spontaneous nystagmus is increased.

4. Caloric reaction ("Blickfixator") R. negative (cold and hot)—that is, the syringing does not change the spontaneous nystagmus). Left ear, syringed with cold water, produces a lessening of the spontaneous nystagmus L, or produces a nystagmus R.

5, 6, 7. Negative.

8. Disturbances of equilibrium. With head erect, the patient falls spontaneously to the right. On turning the head to the right, the patient falls backward. On turning the head to the left, the patient falls forward.

9. Hearing: Totally deaf on right side (with my noise apparatus).

10. Dizziness: The surroundings seem to turn to the left. The patient has the sensation as though his own body was turning to the left.

11. Sickness, vomiting present.

12. Position in bed: Lies on the sound side.
13. Ringing in the ears may or may not be present.

III.—*Subacute Destruction of Right Labyrinth (of Eight Days' Duration).*

1. Spontaneous nystagmus to the left lessened (to the right often moderately strong, purely horizontal). After a labyrinth operation the disappearance of the nystagmus is quicker than without the operation.
2. Spontaneous nystagmus behind opaque glasses; a more moderate nystagmus to the left, even when without glasses there is no nystagmus to be seen in looking to the front.
3. Negative.
4. Caloric reaction: Right, negative. Left, a weakened caloric nystagmus (that is, —> R., but smaller than in II).
5. Turning reaction behind opaque glasses: 10 R. head erect, —> L. 28"; 10 L. head erect, —> R. 14".
6. Galvanic nystagmus is not reliable; there is often a reaction from the diseased ear, and often none. The reaction from the sound side is plain.
7. Negative.
8. Disturbance of equilibrium weak or absent.
9. Same as II.
10. Dizziness slight; the surroundings no longer appear to the patient to move, nor does his own body seem to turn. This is often not the case with neurasthenics.
11. Negative.
12. Position in bed normal.
13. Ringing in the ear, same as in II.

IV.—*Latent Labyrinth Destruction, Right (after many months).*

1. Spontaneous nystagmus — nystagmus R. and L. slight or none at all.
2. Spontaneous nystagmus behind the opaque glasses generally absent, sometimes present of minimal grade.
3. Negative.
4. Caloric reaction: R. negative; L. markedly weakened, in a few cases absent.
5. Turning reaction: Ten times turning to the right with head erect, 20". Ten times turning to the left, 16". When the nystagmus to the diseased side lasts longer than 25" there is certainly no disturbance present.
6. Galvanic nystagmus from the diseased side may be either positive or negative.
7, 8, 9, 10, 11. Negative.
12. Normal.
13. Same as in II.

V.—*Labyrinth Fistula on Right Side, with Intact Membranous Labyrinth.*

1. Spontaneous nystagmus changes may be absent.
2. Spontaneous nystagmus behind opaque glasses changes.
3. Attacks of nystagmus by quick movements of the head. By throwing the head backward and to the diseased side generally a rotary nystagmus is produced to the diseased side, by throwing the head to the sound side and forward there is often a rotatory nystagmus to the sound side.
4. Caloric reaction: Both sides normal.
5. Turning reaction: Normal.
6 Galvanic reaction: Both sides normal.
7. Fistula symptom: By compression —> R. strong, by aspiration, L. + weaker. (Semicircular canal fistula.) Sometimes by aspirating nystagmus + R. strong, and by compression a weaker nystagmus L +. (Fistula not in semicircular canal or particulars not yet known exactly.)
8. Disturbances of equilibrium according to the nystagmus.
9. Hearing may be nearly normal or may be destroyed.
10. Dizziness: (*a*) With movements of the head as in V. 3. (*b*) Severe attacks without apparent causes mostly accompanied by nystagmus to the diseased side, lasting as long as twenty-four hours.
11. Sickness and vomiting often accompany the dizziness.
12. Position in bed: Patient generally lies on the sound side because a bending forward or a turning to the diseased side bring attacks of dizziness.
13. Ringing in the ears present or absent.

VI.—*Labyrinth Fistula (Right) with Slight Impairment of Function.*

(Coagulation of the endolymph or haemorrhage into the perilymphatic space?)

1. Spontaneous nystagmus as in V.
2. Nystagmus behind the opaque glasses as in V.
3. As in V.
4. Caloric reaction: Right much weakened or absent; left normal.
5. Turning reaction: Normal.
6. Galvanic nystagmus: Normal.
7. Fistula symptom as in V. It may, however, also occur in the opposite direction in cases of semicircular canal fistula as when the labyrinth was intact.
8. As in V.
9. Hearing bad with the character of a lesion of the internal ear together with a disturbance in the conducting apparatus, or there may be deafness.
10. Dizziness as in V.
11, 12, 13. As in V.

VII.—*Labyrinth Fistula (Right) with Marked Impairment of Function.*

1. Spontaneous nystagmus, generally to the sound side; seldom changes to other side, seldom is absent.
2. Nystagmus behind the opaque glasses generally to the sound side.
3. Nystagmus by head movements as in V.
4. Caloric nystagmus: Right absent.
5. Turning reaction as in destruction of the labyrinth (III).
6. Galvanic nystagmus as in V.
7. Fistula symptom: By compression larger slow movement to the left; by aspiration smaller slow movement to the right, or the whole may be reversed.
8. As in V.
9. As in V.; generally deaf.
10, 11, 12, 13. As in V.

VIII.—*Serous Labyrinthitis Right (No Destruction of Function, no Fistula).*

1. Spontaneous nystagmus to the right or left, changing.
2. Spontaneous nystagmus behind glasses, changing.
3. As in V.
4. Caloric reaction: Right, weak.
5. Turning test gives a reacting labyrinth, right.
6. Galvanic nystagmus, normal.
7. Fistula symptom: Absent.
8. Disturbances of equilibrium according to the nystagmus.
9. Testing the hearing with noise apparatus does not give a total deafness.
10. Dizziness present in both marked and slight attacks.
11. Sickness and vomiting present.
12. Position in bed, generally on the sound side, because turning to the diseased side causes dizziness.
13. As in V.

IX.—*Vestibular Movements of the Eyes by Compression and Aspiration without Fistula.*

1. Fistula symptoms weak—that is, by compression and aspiration—then follows only slow eye movements in the opposite direction.
2. Caloric reaction: Normal. It may be weaker or even absent.
3. Turning reaction: Normal.

For the remaining symptoms such cases may have all the evidences of a circumscribed labyrinth disease, as dizziness following quick movements of the head, heavy attacks of dizziness without apparent cause, a changing spontaneous nystagmus, and so forth. The diagnosis in this case would be either an abnormal mobility of the window membranes (chronic suppurative otitis media, luetic periostitis) or an abnormal irritability of the vestibular apparatus (disease of the inner ear, especially in traumatic cases).

There are cases, though seldom, of luetic labyrinthitis or without known cause, in which the caloric irritability in lessened or is absent; in these, compression and aspiration produce traces of nystagmus, or only small, slow eye movements.

X.—*Labyrinth Empyema and Cerebellar Abscess—Right (Type A).*

1. Spontaneous nystagmus R. + strong.
2. Spontaneous nystagmus behind glasses R ←.
3. Movements of the head often increase the spontaneous nystagmus.
4. Caloric reaction: Right negative.
5. Turning nystagmus (?).
6. Galvanic nystagmus (?).
7. Fistula symptom negative.
8. Disturbance of equilibrium; either (*a*), (*b*), or (*c*) possible.
   (*a*) Vestibular (head erect, falls to the left; head turned to the right, falls forward; head turned to the left, falling backwards).
   (*b*) Cerebellar (the falling is not dependent upon the direction of the nystagmus and is not influenced by the changes in position of the head).
   (*c*) The experimentally produced vestibular nystagmus from the left ear yields often a change in the disturbances of equilibrium in that the patient does not show the typical dependence of the direction of falling on the direction of the nystagmus, nor is the direction of falling typically changed by the changes in position of the head.
9. Hearing: Right deaf.
10. Dizziness present, in the later stages slight.
11. Sickness: Vomiting at first severe, later ceases; in fact there may be a lessened sensibility to vestibular disturbances so that a strong nystagmus coming from the left ear may not cause any dizziness or sickness.
12. Position in bed: On the diseased side.
13. Tinnitus present or absent.

In case these findings are present in a case of chronic suppurative middle ear disease, a diagnosis of empyema of the labyrinth (total destruction of the labyrinth) with cerebellar abscess may at once be made, as a spontaneous nystagmus to the diseased side can only be produced intracranially when the absence of caloric nystagmus has shown the presence of destruction of the labyrinth. Meningitis and cerebellar tumour may easily be ruled out of the diagnosis through the other symptoms.

XI.—*Empyema of the Labyrinth and Cerebellar Abscess—Right (Type B).*

1. Spontaneous nystagmus, —→ L.
2. Spontaneous nystagmus behind glasses, —→ L.
3, 4, 5, 6, 7. As in X. (Type A).
8. Disturbance of equilibrium: (*a*) Vestibular; (*b*) and (*c*) as in X (Type A).
9, 10, 11. As in X (Type A).
12. Position in bed: On the sound side.
13. As in X (Type A).

The diagnosis at first is acute diffuse labyrinth destruction. In case the nystagmus does not decrease in a few days (especially after a labyrinth operation), or in case it increases then, the diagnosis of an intracranial origin is sure. The further differential diagnosis is the same as in Type A.

XII.—*Right Labyrinth Normal; Right-sided Cerebellar Abscess.*

1. Spontaneous nystagmus, R. or L., or a strong nystagmus in both directions; often of abnormal form (intracranial) as, for instance, vertical or diagonal nystagmus, or rotatory in one direction, and horizontal in the other at the same time.
2. Spontaneous nystagmus behind glasses varied.
3. Movements of the head often produces attacks of nystagmus.
4. Caloric reaction: Right strong. The double-sided simultaneous syringing of the ears (Ruttin) often shows an overexcitability of the diseased side.
5. Turning test gives a normal reaction.
6. Galvanic nystagmus. A double-sided simultaneous application of the cathode shows a nystagmus to the diseased side, indicating an overexcitability of that side (Ruttin). The anode produces an opposite effect.
7. Fistula symptom negative.
8. Disturbances of equilibrium as in XI (Type A).
9. Hearing present; generally the findings are those of a lesio auris internae.
10. Dizziness as in XI (Type A).
11. Position in bed according to the nystagmus.
12. Sickness: Vomiting as in XI (Type A).
13. Tinnitus present or absent.

One would differentiate between these diseases and a circumscribed disease of the labyrinth. If one observed the nystagmus for more than twenty-four hours without its changing, it is surely of intracranial origin. It is also intracranial when abnormal forms of nystagmus are observed which are not possible in peripheric diseases. In the remaining cases the diagnosis can be only made from the other symptoms.

The following remarks may be of use in investigating the different conditions of the labyrinth:

A.—*Remarks concerning Points 1 to 13 of the Conditions dealt with.*

1. If you examine for spontaneous nystagmus, have the patient look at your finger, held about one metre from his eyes.

2. A simple method of making opaque glasses is to cover a pair of glasses with ordinary white paper. One examines the nystagmus behind the glasses by raising somewhat the upper lid of the eye and observing it under a bright head mirror light for a minute or two at least.

3. To examine the nystagmus caused by rapid head movements the observer places himself directly in front of the patient and observes one of the eyes, while the patient is directed to look alternately to the right and left. Then, without interrupting the observation of the eye, the head of the patient is brought in the desired position with a sudden quick jerk. The nystagmus by bending forward is examined by means of a mirror placed on the lap of the patient.

4. For the caloric test a slow irrigation is sufficient (you can use an irrigator, or a Politzer bag, with an attic cannula, or several syringes of water). In a case of dry perforation it is necessary to use a constant stream of air instead of water. In case of spontaneous nystagmus the "Blickfixator"—that is, ocular fixation apparatus*—which I have constructed is to be used. Make the patient look in a definite direction, and notice the strength of the spontaneous nystagmus; then judge whether by syringing this spontaneous nystagmus is altered or not.

The examination of the caloric reaction in light narcosis has to be done in all operative cases with doubtful caloric reaction after the radical operation. Even in cases of labyrinth fistula I have never seen the slightest injury caused by this examination.

5. For the examination of the turning nystagmus we make use of a turning chair with back, arm, and feet rests. A perpendicular iron rod is fastened to the back, extending well above the patient's head. It is important not to use a chair which is raised or lowered by rotation. It must have a simple rotary movement around the vertical axis. The turning should always be done with uniform velocity. The ten revolutions should take about twenty seconds. It is necessary to stop the movement suddenly—best by putting the observer's knee in the path of the knee of the patient. Measure the time by a stop-watch.

6. The galvanic test in the presence of spontaneous nystagmus generally gives a doubtful result, as the pain caused by galvanization renders it difficult for the patient to fix his eyes continuously on the same spot.

7. To examine the fistula symptom, let the patient look straight forward on your front, and use a head mirror to observe his eye with good light. It is necessary to have an olive, which, when placed in the ear, closes same air-tight. For different ears several sizes are necessary. If air escapes through the Eustachian tube, use the Valsalva during the test (Ruttin). The compression and aspiration is brought about by means of a Politzer bag connected to the olive by a rubber tube. One should not use too strong pressure or aspiration, nor make the test too frequently. One should never examine the eye movements caused by pressure upon the fistula during the operation unless one intends to perform the labyrinth operation at once. It is possible that an injury might be brought about by frequent examination, though I have never met with such a case. An examination, if carefully conducted, will not cause any injury, even if repeated three or four times over.

8. To examine the disturbance of equilibrium the patient has to be placed in the same position as for the Romberg test—that is, with closed eyes and feet together. The experimental falling is tested mostly by producing rotary

* To be procured from H. Reine, IX Van Swietengasse 10. (Price 12 crowns.)

nystagmus through syringing with hot or cold water, or by turning with the head bent forward 90 degrees, and erecting the head after arrest of turning.

9. I have nothing to say about the usual methods of diagnosing a lesion of the cochlear apparatus. For the diagnosis of unilateral deafness the noise apparatus* which I have constructed is used with good results. The principle of this apparatus is to produce such a noise in the sound ear that this ear is quite excluded from hearing and that the diseased ear might be tested alone. If the diseased ear has comparatively good hearing this is lessened by the noise in the other ear. The worse the diseased ear hears the less it is influenced by the noise in the other ear.

10 and 11. Dizziness is the subjective side of vestibular irritation. It is important to keep in mind the enormous individual differences. One patient notices scarcely a trace of dizziness with the strongest nystagmus, another has strong dizziness where the vestibular eye movements can hardly be detected even with the utmost care.

12. The position in bed, due to dizziness, is caused by the presence of spontaneous nystagmus or by the nystagmus produced by rapid head movements. For example, if a patient has a spontaneous left rotary and horizontal nystagmus he lies on his left side, thus making his field of vision to the right, which reduces the nystagmus and dizziness to the minimum, whereas if he lies upon his back or right side the field of vision to the left induces the patient to look to the left, thereby increasing the nystagmus and sensation of dizziness. If we have to do with a case of nystagmus attacks due to head movements the patient will either lie upon his back or on the healthy side, since turning in the direction of the diseased side usually makes the attack more marked. Sometimes a patient will go about holding the head in a definite position, this being due—other causes excluded—to the fact that in any other position of the head attacks of nystagmus are elicited.

13. Roaring or ringing in the ear rarely accompanies the caloric and turning nystagmus, or the short nystagmus attacks produced by rapid head movements, but it is often present in the heavy spontaneous attacks of dizziness. In rare cases the tinnitus ceases during the attack.

B.—*Remarks concerning the Twelve Conditions dealt with.*

I.—The most important tests for determining a normal labyrinth are: (1) Absence of spontaneous nystagmus, except in extreme positions of the eyes; (2) absence of attacks of nystagmus produced by rapid head movements; (3) presence of the caloric reaction; (4) absence of fistula symptom. With these results any severe disease of the vestibular apparatus, and therefore any suppurative infection of the labyrinth, is excluded. A slight lesion, perhaps of serous character, might be present as spontaneous nystagmus, and also attacks of nystagmus due to head movements show remissions, and it is possible that the examination is made during this time. Also the presence of the caloric reaction does not exclude a slight lesion, since the physiological variations are not yet sufficiently known to determine when a caloric reaction is pathologically exaggerated or diminished. Quantitative methods of measuring the caloric reaction have been undertaken (Kiproff, Beck, Ruttin, Buys, Wojatschek, Brünings), but have not as yet given satisfactory results. The exact measuring of the turning nystagmus which I have performed gives such enormous physiological variations that the border between physiological and pathological behaviour, regarding the circumscript diseases, cannot be drawn.

II, III, IV.—The strong nystagmus to the sound side in acute labyrinth destruction is not to be considered due to irritation, but to the loss of function of the involved side. We must imagine that, when the vestibular end-organ is completely at rest continual innervations pass from the vestibular ganglion, the Deiter's nucleus, and from here to the eye muscle nuclei and maintain a vestibular tonus of the eye muscles. If the vestibular ganglion by destruction of the labyrinth is damaged in its function, then the innervations from the sound side to Deiter's nucleus outweigh those from the diseased side, thus producing a nystagmus to the sound side. This spontaneous nystagmus together with the absence of the caloric reaction are the most important signs of the acute labyrinth destruction. The spontaneous nystagmus and the accompanying symptoms decrease from the moment of the destruction of the labyrinth by adaptation of the centres (subacute labyrinth destruction). This decrease is much more rapid after labyrinth operation. From this we assume that besides the loss of the normal stimuli there are pathological irritations, released from the diseased labyrinth, which hinder the quick adaptation of the centres. The fact that some time after labyrinth destruction the caloric reaction of the sound side is often diminished, and in rare cases even abolished, proves also the change of irritability in the centres. The latent state of the labyrinth destruction is characterized by the absence of the spontaneous nystagmus and of the caloric reaction.

V, VI, VII.—As the bony labyrinth wall is generally eroded slowly, we can understand that in the moment when the perforation produced from the cholesteatoma of the antrum or the chronic osteitis of the outer labyrinth wall is complete the membranous labyrinth is already protected against the infection by a leucocyte wall. We therefore observe fistula cases with intact function of the membranous labyrinth (V). If the suppuration continues the membranous labyrinth will be damaged. The slightest degree of this damage is in my opinion an inflammatory thickening of the endolymph, which leads to partial coagulation of the latter. When this coagulation has progressed to a certain extent the caloric reaction is lost (VI). The caloric reaction can only be normal if the endolymph is freely movable, as the physical force producing this reaction is minimal. When the endolymph is only thickened the caloric reaction will be impaired, as we see in animals with normally thick endolymph (Kubo). A slight impediment for the movement of the endolymph can abolish the caloric reaction. The turning reaction, however, and much more so the "fistula symptom," depend upon a stronger physical force, and therefore will be present where the caloric reaction is already gone (VI). If the inflammatory process continues, the end organ becomes involved, and with it the turning reaction and the "fistula symptom" will be impaired. The impairment of the fistula symptom is shown by the decrease in the nystagmus on aspiration and compression, and finally by the complete loss of the quick component of the nystagmus (VII).

VIII.—The diagnosis of the serous labyrinthitis presents the most difficulties. As yet we have no proof that a non-infective serous labyrinthitis really exists, or that a mild infection of the labyrinth can remain serous. In cases of labyrinth disease in which the function of the labyrinth is never quite abolished, or where after a temporary abolishment a portion of the function returns, we assume a serous labyrinthitis. But it is possible also that a circumscript purulent disease of the labyrinth can heal with a remnant of function, as is proved by cases of traumatic injury of the semicircular canal during mastoid operation. In cases in which acute labyrinth symptoms occur with absence of fistula the diagnosis of serous labyrinthitis seems probable. But it is not yet proven that a fistula is necessary for a purulent infection of the labyrinth. From the above remarks it can be seen that the diagnosis of serous labyrinthitis is more a matter of opinion than of real knowledge.

X, XI, XII.—It is a clinical fact that generally a cerebellar abscess is combined with labyrinth suppuration. A discussion of the reasons for this fact is not in the scope of the present paper. The diagnosis of a cerebellar abscess is in part made from the presence of intracranial nystagmus. Every spontaneous nystagmus of a typical form has to be considered as of intracranial origin. Any strong vestibular nystagmus which persists without change for more than twenty-four hours, or increases within this time, does not belong to the peripheric labyrinth, but is central; an attack of nystagmus—as in a circumscript disease of the labyrinth—will not last this length of time without change, and in cases of acute destruction of the labyrinth a decrease of nystagmus is appreciable within this time. If a patient presents spontaneous nystagmus towards the diseased side, and absence of caloric reaction and "fistula symptom," the diagnosis of central nystagmus can be made at once, as it is impossible that a destroyed labyrinth can produce nystagmus to its side (Neumann and Bárány).

* To be procured from H. Reiner, Vienna, IX Van Swieteng asse 10. Price 50 crowns.)

Two other symptoms, dependent upon the vestibule, are important in the diagnosis of cerebellar abscess: (*a*) The disorders of equilibrium; (*b*) disorders of the pointing movements of the extremities.

(*a*) If a normal man has rotatory vestibular nystagmus to the right side, he falls, with closed eyes and feet together, to the left. If the head is turned 90 degrees to the right, he falls forward; if 90 degrees to the left, backward (Bárány). This falling is due to a slow tonic contraction of the muscles of the side to which the patient falls. In cases of cerebellar lesion we see in Romberg's test a falling which reminds us accurately of this vestibular falling. But there is a very important difference. The falling in these cases is not in connexion with a certain form of nystagmus, and is not influenced by the position of the head (Bárány). If in such a case we produce an experimental nystagmus, the falling which accompanies the nystagmus does not follow the rules above given for the normal.

(*b*) If we let a normal individual with closed eyes touch with his forefinger or big toe the outstretched finger of the examiner held before him, and then withdraw his finger or toe and point to the examiner's finger again, he will, after a few trials, point correctly. In cases of fresh cerebellar lesion (abscess, trauma) I have seen the patient point constantly to the same side of the examiner's finger with the hand and leg of the diseased side, while the sound side pointed correctly.

If a normal individual is turned quickly ten times to the right with the head erect, on stopping he will point with all four extremities to the right of the finger of the examiner. In cases of healed cerebellar abscess I have seen that, after turning, the extremities of the diseased side did not point to the side of the turning, but pointed absolutely correctly, while the extremities of the sound side made the usual error. The explanations of these phenomena are discussed in my paper read before the Neurological Section of the British Medical Association.

Indications for the Labyrinth Operation in Middle-ear Suppurations and in Complications from the Side of the Labyrinth.

Condition.	When there are Labyrinth Symptoms only.	Presence of a Complication of the Middle-ear Suppuration apart from the Labyrinth Suppuration.	A Simple Anthrotomy is Indicated.	Radical Operation is Indicated.	The Total Labyrinth Operation (Jansen-Neumann) is Indicated.	The Small Labyrinth Operation (Hinsberg) is Indicated.	The Total Labyrinth Operation and the Radical are Indicated to be made at the Same Sitting.	The Smaller Labyrinth Operation and Radical are Indicated at the Same Time.
II	One may wait eight days	Operate at once	—	—	—	—	+ In acute and chronic suppurations	—
III	If there is no particular reason for waiting, one may operate at once	Operate at once	—	—	—	—	+ In acute and chronic suppurations	—
IV	Ditto	Operate at once	—	—	—	—	In acute and chronic suppurations	—
V	Cautery of the cavum tympanum. Extraction of polyps. Hammer and incus extraction. Only in exceptional cases no operation	Operate at once	+ In acute middle ear suppuration	+ With exception of those cases of deafness on the other side, here, if possible, a conservative treatment. In chronic suppuration with good hearing and intact drum a radical operation with retained drum and small bones is indicated	+ When after a radical operation a diffuse labyrinthitis is set up, especially in cases of fistula in the membrane of the oval window	+ When after a radical operation there is deafness and severe dizziness and the patient wishes to get rid of the dizziness	+ With symptoms of cerebellar abscess or meningitis	+ If deafness and severe dizziness are present and the patient wishes to get rid of the dizziness.
VI	Ditto	Operate at once	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto
VII	Ditto	Operate at once	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto
VIII	No labyrinth operation except when in the course of the observation of the case there is a complete destruction of function (danger of meningitis small)	Operate at once	Ditto	Ditto	—	Ditto	Ditto	Ditto
Traumatic fistula of the semicircular canals	No labyrinth operation except on destruction of function (serous labyrinthitis). (Danger of meningitis small)	—	—	—	+ Immediate operation on appearance of symptoms of meningitis or cerebellar abscess	—	+ When symptoms of meningitis or cerebellar abscess appear after anthrotomy	—
Traumatic fistula of the oval window	In case of severe labyrinth symptoms operate on labyrinth at once. (Danger of meningitis great)	—	—	—	+ With severe labyrinth symptoms even before entire destruction of function	—	—	—

II.—INDICATIONS FOR OPERATION.

The amount of pus which the labyrinth may contain is very small. Still the labyrinth suppuration is very dangerous, because the pus cannot escape, and any rise of pressure in the labyrinth makes it possible for the pus to pass to the meninges. The great dangers incident to this disease justify our operative procedures. If we wish to give exact indications for this operation, we must first know the mortality. Of more than a hundred labyrinth operations performed in the last few years in our clinic two deaths might be attributed to the operation itself. This makes a mortality of not quite 2 per cent. But even at that we are not sure that really the operation was the cause of the death. It is possible that the fatal meningitis would have come also without operation. In the remaining cases in which death occurred definite signs of meningitis were present before the operation. With these statistics we are bound to operate on the labyrinth in every case where the diagnosis of labyrinth destruction can be made. Concerning the labyrinth destruction, you can only discuss the time of operation. If we have to deal with an acute labyrinthitis without any complication (that is, no fever, no headache, no great amount of suppuration, no tenderness on the mastoid, and so on), we can wait eight to ten days to allow the pus to become encapsulated. In the latent labyrinthitis we have no reason to wait. In the fistula cases our procedure is difficult to define; we have to differentiate various conditions.

A. Fistula in the semicircular canal.

Hearing preserved.		Deaf.	
No dizziness.	Much dizziness.	No dizziness.	Much dizziness.
No labyrinth operation.	Eventually labyrinth operation.	No labyrinth operation.	Labyrinth operation.

B. Fistula in the oval window.

Hearing preserved.		Deaf.	
No dizziness.	Much dizziness.	No dizziness.	Much dizziness.
No labyrinth operation.	Eventually labyrinth operation.	No labyrinth operation.	Labyrinth operation.

First we must consider how cases with preserved hearing and much dizziness behave after the simple radical operation. There are some possibilities. It may be that after the operation no labyrinth symptoms occur, that the fistula heals, the dizziness disappears, the hearing is preserved. This is, no doubt, the most fortunate result. But it is not the usual result. Very often after radical operation acute labyrinth symptoms occur, and the hearing is lost for a short time or permanently. Dizziness can also permanently disappear after a few days of exacerbation, but may also remain even when the hearing is lost. We have also cases where, notwithstanding a long treatment, the fistula does not heal. It is necessary to state that the fistula in the semicircular canal is not nearly as dangerous as in the oval window. Therefore, if a case of fistula in the oval window develops labyrinth symptoms we should immediately operate, whereas we can wait with a case of fistula in the semicircular canal. Concerning dizziness, we know that some cases suffer greatly with the slightest degree of vertigo, and are incapable of working. In such cases we will naturally favour operating sooner than in a case which does not suffer from vertigo.

II.—SYDNEY SCOTT, M.S.Lond., F.R.C.S.,
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DEMONSTRATION.

DURING the course of Dr. Bárány's paper Mr. Sydney Scott gave a cinematic demonstration of nystagmus. The cinematographs were taken with a photographic apparatus provided by Kinora Limited, fitted for high-speed exposures and driven by an electromotor. Mercury vapour lamps had been found necessary to give sufficient illumination by actinic rays. A specially arranged mask and frame had been used to support the head, and a cross thread had been fastened to the mask in front of the eyeball to serve as a means of obtaining accurate measurements of the movements observed. Photographs had been taken in this way of (1) spontaneous nystagmus, (2) nystagmus produced in a normal subject by rotation about a vertical axis with the head erect, (3) nystagmus provoked by meatal compression in a case of fistula of the external semicircular canal. It was hoped that further details would some time be given by Mr. Abrahams, who had undertaken to study the angular velocity of nystagmus by means of these photographs. As it seemed possible that chief interest would be taken in the cinematographs of the movements in the case of fistula of the external semicircular canal, a detailed account of it was recorded, and is here reproduced.

History.—Annie B., aged 17, was first seen October 29th, 1909. She had bilateral otitis media chronica, dating from infancy. The tympanic membranes were perforated posteriorly close to the tympanic ring, and foul muco-pus was seen in the meatus. On the right side there were polypoid granulations which were removed, but without material diminution of the discharge from the ear. The discharge from the left ear greatly lessened under routine syringing, etc.

When at her best, the patient could hear Politzer's acoumeter at about 10 cm. from either ear. Rinne's test (e^1 Bezold fork) was negative and Schwabach was positive. There was no paracusis Willisii. The highestt one audible on Edelmann-Galton whistle was 22,000 on the right side and 44,000 on left. The lowest tone at maximum amplitude audible was 36 on the left and 45 on the right side (Bezold-Edelmann forks). Owing to the persistent formation of granulations in the right tympanum in spite of continuous attention, the patient had to be admitted to the hospital and was operated upon February 10th, 1910. The radical mastoid operation was performed on the right ear. The membrane and remains of malleus were removed. The stapes was found to be in its place. There was no fistula of the external canal, although the eminence was flatter than usual. A skin graft was applied to the surface of the bone.

On April 1st, after the patient had left the hospital, she was seen in the out-patient department, and it was found that the whole of the cavity was well healed except over an area in the attic and aditus above the facial nerve, where there was a small mass of granulations. When the ear was syringed with water at body temperature, the patient forcibly turned the head to the left, and nystagmic movements were produced. When the eyes were attentively fixed towards the right, the force of syringing produced an intial movement horizontally to the left, followed immediately by jerking movements which were sometimes faster to the left than to the right and sometimes faster to the right than to the left, and sometimes the eyeballs moved to right and left to and fro at equal rate. When the patient looked attentively straight ahead, the eye-movements produced were the same as when the patient looked to the right. When the patient directed her eyes voluntarily to the left, forcible syringing caused rotatory nystagmus with the rapid jerk to the right. (A distinct horizontal movement could not be detected apart from the rotatory motion when the eyes were directed to the extreme left.) *The same phenomena could be elicited by touching a small area above the facial nerve with the end of a fine probe,* but no movements or sensations were set up by touching any other part of the cavity. Strong intrameatal compression (with a Politzer's bag connected with the ear by a rubber tube, which was fitted tightly into the meatus) produced strong horizontal nystagmus, when the patient was looking straight ahead. It was not possible to say that the rate of the alternating movements was faster in one direction than in the other. Once a weak compression produced the sensation as if the stool on which the patient was seated was suddenly pushed directly forwards. It was not possible to reproduce this sensation, in spite of several attempts to do so. The sensations invariably produced on other occasions were that the room was rotating towards the patient's right with a slight undulation up and down, and secondly that the patient herself was also turning towards the right as in waltzing. The forced movements of the head and body, however, were always in the opposite direction, that is, the patient turned her head towards the left around a vertical axis, when the region of the external semicircular canal was touched; in other words, there was contra-deviation of the head and eyes, to each stimulus applied to the area of the canal. These observations were repeated again and again to make certain that the observations which were taken down at the time were in accordance with fact. On one occasion when the probe came in contact with the area on the inner wall of the cavity, the patient made such a sudden forced and involuntary movement that the probe unintentionally entered more deep than usual into the granulations. The nystagmus which accompanied this stimulus lasted thirty seconds after the probe was withdrawn, and it was feared that some haemorrhage must be going on into the labyrinth. The sensation of giddiness out-lasted the persistence of the nystagmus on this occasion. The area was swabbed with a 5 per cent. mixture of izal, which produced a burning sensation for a few minutes but did not cause the return of giddiness. The cavity was packed with gauze. During the process of packing, nystagmus was again produced at each act of pressure.

In about ten days the granulations had disappeared, and a little later no pressure reactions could be obtained, and there was no spontaneous giddiness or nystagmus.

A few weeks afterwards the patient was examined on the rotation chair, and by the caloric tests, and showed signs of normal reactions for the superior and external semicircular canals.

Subsequently Mr. Scott said that he could attest the accuracy of Dr. Bárány's descriptions from his own researches in labyrinthology. He laid stress upon the necessity of thorough investigations, and regarded the idiosyncrasy shown by patients in their reactions during excitations of the labyrinth as an important practical feature in examining patients for the first time. Nystagmus was not the only sign to rely upon. Forced movements were sometimes more easily evoked, and were often unaccompanied by unpleasant sensations. He agreed with Dr. Bárány's observations on galvanic stimulation, and he had also met with examples of positive (normal) reactions as regards elicited nystagmus, even when there was necrosis of the semicircular canals. The value of the test was restricted to cases giving unilateral negative reactions; galvanism was then a valuable corroborative test. He had practically discarded the use of currents of such strength as are found necessary to provoke nystagmus (8 to 18 ma), and paid more attention to artificial Rombergism, which it was possible to produce by weak and painless currents of (usually) from 2 to 5 ma. He had mentioned this in the Arris and Gale Lecture (Royal College of Surgeons, March, 1910). He suggested that the anomalies of galvanic stimulation might be due to anatomical variations in the distribution of the vestibular ganglia cells, which were not necessarily destroyed by infections in the labyrinth, but would be cut off by auditory nerve tumours or gross lesions in the internal meatus. He had met with 12 examples of "fistula (compression) sign" in cases of fistula of the external semicircular canal or fenestra ovalis. As regards so-called serous labyrinthitis, the diagnosis of which was often difficult, he suggested that possibly in some the symptoms were really due to oedema or inflammation of the ampullary nerves to the superior and external canals. In particular he had met with the symptoms and signs described by Dr. Bárány in some patients in whom vertigo was associated with facial paralysis, and in whom the facial nerve had been found exposed by middle-ear disease. In some of the cases he had obtained negative caloric and rotation reactions on the affected side before and after the operation on the antrum and tympanum, the defect in hearing being of the *middle-ear* type. It was important to have a reliable means of distinguishing this variety, for an operation on the labyrinth when this complex prevailed was to be condemned, whereas in cases of virulent infection of the internal ear delay in opening the vestibule might mean certain death from consecutive leptomeningitis.

III.—C. Ernest West, F.R.C.S.,

Aural Surgeon, St. Bartholomew's Hospital.

The diagnosis of infective conditions of the labyrinth has already been treated in the paper by Dr. Bárány which we have just had the privilege of hearing. In introducing the discussion of the treatment of these conditions, I shall therefore assume throughout that questions of diagnosis have been settled.

Infections of the labyrinth fall into two main classes, the pyogenic and the non-pyogenic. We have much fuller knowledge of the former as regards its pathology, and it is especially with the treatment of this class that I have felt called upon to deal; for the sake of completeness, however, I hope, if the limits of time will allow, to briefly mention some few points with regard to the more obscure and in some cases debatable non-pyogenic conditions.

Infective labyrinthitis due to pyogenic organisms may be either diffuse, involving the whole of the membranous labyrinth in functional destruction, or strictly localized, affecting a limited portion of the interior of the labyrinth —for example, a short section of the external semicircular canal—or being restricted entirely to the bony wall of the canal. Diffuse infective labyrinthitis may be either acute or chronic. Chronic cases may have passed through the acute stage, diffuse from the first, or may be the final result of a slow infective process starting from a local focus—a condition especially characteristic of tuberculous labyrinthitis, but not limited to this form of infection. Necrosis of the labyrinthine capsule may take place both in acute and in chronic infective labyrinthitis; it brings its own special difficulties in treatment.

In *acute diffuse labyrinthitis* of pyogenic origin the indications for treatment may be summarized as threefold: the relief of the patient's violent illness—he is in great pain, distress, and headache; the cutting short of the great danger of meningitis and cerebellar abscess to which he is exposed (more rarely of acute blood infection); and the avoidance of a residual chronic infective labyrinthitis, which is an almost inevitable sequela if he survive without treatment. I have intentionally emphasized the occurrence of cerebellar abscess, and have omitted any mention of temporo sphenoidal abscess. In cases of extension of infection from the labyrinth to the brain the route seems to be in almost every case through the posterior semicircular canal or internal auditory meatus to the posterior surface of the petrous, and so to the cerebellum. Probably 50 per cent. at least of all cerebellar abscesses are consequent on infective labyrinthitis. On the other hand, I have not found it possible to trace any connexion between infective labyrinthitis and temporo-sphenoidal abscess. Caries extending to the middle cranial fossa seems to take the path through the tegmen, and so to the temporo sphenoidal lobe; only in tuberculous labyrinthitis, and in necrosis of the labyrinthine capsule, do I remember seeing the route through the labyrinth to the middle cranial fossa followed. Meningitis due to labyrinthitis includes at least the great majority of all cases of otitic meningitis; infection spreads along the nerves, either through the channels of the modiolus of the cochlea or through the foveae on the antero internal wall of the vestibule to the prolongation of the subarachnoid space which passes out along the seventh and eighth nerves in the internal auditory meatus. The problem of treatment resolves itself into the effective and safe opening and drainage of the infected labyrinth. I may be allowed to remind you that in these cases the labyrinth is already destroyed as a functional organ, both in its auditory and in its equilibrating sections, and that no further loss of function results from operative procedures under these conditions. Clinical experience has shown that the criterion of effective drainage is satisfied by the free opening of the vestibule, and that there is no necessity for any wide interference with the cochlea, nor with the length of the semicircular canals. The criterion of safety is concerned with two structures—the subarachnoid space of the internal auditory meatus, infection of which threatens life, and the facial nerve. The detailed treatment of the operative procedures under various circumstances will be returned to at a later stage.

By operation in acute diffuse labyrinthitis very striking relief is immediately obtained from pain, headache, and fever, provided the infection is still limited to the interior of the labyrinth, and has not reached the meninges or brain; the risks of further spread of infection are greatly minimized or entirely arrested; and the ear may be rendered dry and free from further dangers at the one primary operation.

In considering the treatment of *chronic diffuse labyrinthitis* of pyogenic origin, the following facts are of cardinal importance:

The affected labyrinth has ceased to be a functional organ in either of its capacities.

In addition to the special dangers of meningitis and cerebellar abscess, an infected labyrinth is an inevitable cause of continued suppuration and its usual attendant risks.

An ordinary radical mastoid operation is inadequate to bring about the cessation of infective processes within the labyrinth, and, if carried out without extension to the labyrinth in such cases, will leave the ear as a continued focus of infective dangers.

Evidence accumulates that many, probably the great majority of all cases of post-operative meningitis, are instances of operation on cases of unnoticed and consequently untreated chronic diffuse infection of the labyrinth. There is no question that the risks of meningitis are far greater in such cases if the labyrinth is not opened up than if a properly planned operation on the labyrinth is carried out.

Such an operation must have for its objects the adequate opening and drainage, and the ultimate sound healing, of the infected labyrinth. The special dangers are as before. The exact procedure will be considered later.

Chronic local labyrinthitis means, for the purposes of this paper, erosion of either the external or superior semi-

circular canal. It may be a mere absorption or caries of a part of the thickness of its wall, or may expose the periosteal lining membrane of the canal without affecting its interior, or may bring about the local infection and blocking of the interior of the canal. It may be debatable whether any but the last condition is strictly included within the title of this paper, but the conditions so shade into each other and their treatment is so simple that I have ventured to include them collectively. Owing to the short length of the superior canal which is exposed in the cavity of the attic, strictly localized lesions of this canal are very rare; the ampullary part is practically all that is exposed, and fistulae into the ampullae almost inevitably lead to infection also of the vestibule, and so become diffuse. Nearly all cases of local labyrinthitis are thus concerned with the external canal only.

In local labyrinthitis we have to deal with a labyrinth functionally intact, as in cases of simple erosion or of fistula of a canal without infection of the interior of its lumen, or at the most with a labyrinth in which the function of one canal has been interfered with or destroyed, while the labyrinth as a whole remains functional and capable of preservation. It is thus of the greatest importance to avoid if possible all destructive operations on the interior of the labyrinth; treatment should be as conservative as is consistent with safety and with the effective relief of the patient. As in these cases we have to deal with a strictly localized infection which does not involve complicated and narrow cavities, the mere local removal of infected tissues by curetting is all that is necessary. The diagnosis of labyrinthine fistula is, however, a sufficient indication for early radical operation on the ear; for, apart from the manifest inconvenience and danger caused by liability to attacks of paroxysmal vertigo, we must consider the possibility of the penetration of the general cavity of the labyrinth at any time by pyogenic organisms of high virulence, and the resultant disaster of an acute labyrinthitis.

The treatment of diffuse infective labyrinthitis, whether acute or chronic, is necessarily operative. Its technique, while varying in some minor features in the two conditions, is in the main determined by the site of perforation of the outer wall of the labyrinth. The opening, disinfection, and drainage of the vestibule is enough to ensure complete healing, except in cases of tuberculosis, in which caries sometimes extends along the semicircular canals and calls for their opening in their whole length. Drainage of the vestibule may be carried out by opening it either below the facial nerve through the inner wall of the tympanum, or above this structure through the ampullary region of the attic, or behind its descending part through the posterior wall of the vestibule. In practice, I have found that opening below the nerve is a satisfactory operation, that the superior opening is by itself inadequate to ensure free drainage and must be combined with the inferior opening, and that the posterior route through the hinder wall of the vestibule is troublesome and difficult to carry out and more awkward in after-treatment. The operations I shall describe will, therefore, be those of the inferior opening, which will be called "inferior vestibulotomy," and of the combined superior and inferior openings, which will be called "double vestibulotomy." Inferior vestibulotomy is applicable to all cases in which the entrance of infection has been through the tympanic part of the labyrinthine wall. Double vestibulotomy should be carried out in those cases in which entrance has been through the canals or the roof of the vestibule. The performance of the radical mastoid operation is a necessary preliminary to all operations on the labyrinth, and will be assumed to have taken place. The cavity must be well open, and as dry as possible. Good illumination is absolutely necessary, and is best secured by a head-lamp furnished with a small metallic filament lamp. The necessary removal of the labyrinth wall may be done by means either of hammer and small gouge, with a cutting edge ⅛ in. broad, or by means of power-driven burs. Personally, after some considerable experience with both, I greatly prefer to use the gouge, as being emphatically the more exact and delicate instrument.

All débris, granulations, or thickened mucosa must be removed, and the anatomical features of the operation cavity must be clearly identified.

The mastoid cavity will vary widely in size and form in different cases. It should be as spacious as the arrangement of the dura mater in the individual case will allow in order that access may be easy. A very thorough removal of the posterior meatal wall and of the facial spur must be made, so that the whole of the inner wall of the tympanum is rendered visible. The great part of this is formed by the promontory; on the posterior border of the promontory will be seen, above, the pelvis ovalis; the floor of this deep narrow fossa cannot be distinctly seen, but the presence or absence of an intact footplate of the stapes may be determined by the gentle use of a fine probe. At the lower part of the posterior border of the promontory is the notch which marks the free border of the outer wall of the fossula rotunda; the latter leads upwards under cover of the overhanging promontory to the round window. Immediately above the pelvis ovalis the tympanic part of the facial nerve passes backwards and downwards. When its bony canal is intact it can usually be readily identified. The nerve is, however, frequently bare in this part in cases of chronic suppurative otitis media, and great care must be taken in the use of curettes in this neighbourhood to avoid injury to it. Passing again upwards and backwards from the position of the facial nerve, the smooth eminence of the external semicircular canal is conspicuous in the inner wall of the open aditus. It may be normal, or flattened by erosion, or may be perforated. The commonest form of labyrinthine fistula is a narrow slit about 2 mm. in length, looking almost like a dark hair, lying along the course of the external semicircular canal in the aditus. The ampulla of the external semicircular canal lies at the anterior end of its outer limb, and is situated in the attic immediately above the anterior end of the pelvis ovalis. The ampulla of the superior semicircular canal lies immediately in front of that of the external canal, and at a slightly higher level. Immediately in front of this is the geniculate ganglion of the facial nerve. The exact locality of the point of penetration must, when possible, be established by vision, or, if necessary, by the careful use of a delicate probe.

Inferior Vestibulotomy.—In this operation the part to be removed is included within a small oval with long axis vertical, the upper pole lying along the upper margin of the pelvis ovalis, the posterior curve being against the posterior wall of the tympanum, and the lower pole being cut by the notch in the posterior margin of the promontory which overhangs the fossula rotunda. The tympanic part of the facial nerve lies immediately above and behind the upper pole, and is often bare in cases of chronic infective labyrinthitis. Care must, of course, be taken to avoid bruising or section of the nerve. The small piece of bone within these limits includes nearly the whole of the outer wall of the vestibule, and may be removed by two cuts with the gouge, along its posterior and anterior limits respectively. It should be lifted out with a small curette or forceps. The contents of the vestibule—disorganized membranous structures, or, in chronic cases, granulations—are then removed by the gentle use of a curette, and the interior of the vestibule is disinfected by being swabbed out with pure izal, formalin, or strong solution of biniodide of mercury—1 in 500. Rough curettage must be carefully avoided; it is very apt to result in a flow of cerebro spinal fluid, and though in the majority of cases no serious consequence follows, it is evidence of the opening of the fundus of the internal auditory meatus with its attendant risks of meningitis. It is not necessary to curette the ampullae, as I have in the past advised.

Double Vestibulotomy.—In this operation the inferior opening is carried out precisely on the lines already laid down for inferior vestibulotomy. The superior opening is commenced along the line of the external arcuate eminence, the lumen of the canal is opened, if not already open, and this opening is carried forwards until the ampulla of the external canal is opened. By extending the removal of bone slightly upwards and forwards the ampulla of the superior canal is reached and opened. The two ampullae are thrown into one cavity, and the spur of bone which projects outwards in the roof of the vestibule between their openings is cut away, thus completing the removal of the roof of the vestibule, and, in conjunction with the inferior opening, the operation on the vestibule. The facial nerve is left enclosed in a bridge of bone which separates the upper from the lower opening.

The final stages of both inferior and double vestibulotomies are carried out exactly on the lines of an ordinary radical mastoid operation. The post-aural wound is completely closed or is left open at its lower end and drained according to its extent and the position of its lowest parts. The whole cavity is lightly packed with gauze wrung out of parolene. The meatal flap may be of any form preferred, provided that it gives free access and exposure to all parts of the inner wall of the cavity. Under no conditions should immediate grafting be carried out over the region of the open vestibule, as it is safer to let these cavities heal by cicatrization, or, if secondary grafts are applied, to restrict their use to the parts of the cavity which lie entirely behind the area of the operation on the labyrinth.

After-treatment of Vestibulotomies.—As a rule the patient exhibits no special features which would distinguish the case from one of a simple radical mastoid operation. The temperature should be closely watched, any significant rise calling for the immediate dressing of the cavity and the careful consideration of the possibility of commencing meningitis. The first dressing is usually carried out after forty-eight hours. The parolened gauze is comparatively easily withdrawn; the cavity should be well irrigated with izal 1 in 400, or mercury biniodide lotion 1 in 2,000, inspected, and again lightly packed. Subsequently daily dressings are carried out. As a rule there is a good deal of filling up of the operation cavity, particularly in its tympanic part; the opening in the vestibule early becomes filled up by granulation tissue, and can no longer be identified.

There appears to me to be little or no opportunity for the use of vaccine treatment in cases of labyrinthitis unless they are already complicated by intracranial infection. The nature of the labyrinthine infection can only be established with any certainty by cultures made from the interior. The *Streptococcus pyogenes* has been recovered in pure culture from some of my cases, but, except in the rare event of acute labyrinthitis occurring in the course of a recent acute otitis media of known bacterial nature, no conclusion would be justified as to the infective agent within the labyrinth except by direct culture from its interior. Further, the labyrinth is already destroyed functionally when it is the seat of a general infection, while the patient's condition is urgent, and can be satisfactorily relieved by operation without further damage to function. After opening and draining of the vestibule the interior of the labyrinth seems to heal readily and soundly. There is thus neither time for the preparation of a vaccine, even if the nature of the organism could be fixed, before operation, nor is there need for its use once the vestibule has been opened. The cases of simple fistula of the wall of the canal and those with only local infection of the interior, on the other hand, occur exclusively in chronic suppurations, the bacteriology of which is most complicated and difficult. A radical mastoid operation is called for in these cases on general principles, and is entirely adequate for their treatment. When there is any question of meningitis, however, I am always in the habit of making early exploratory lumbar puncture, and of making every use possible both of vaccines and of serums, combined with the most efficient drainage of the meninges which I can secure.

Tuberculous labyrinthitis may in its early stages be so far restricted to the vestibule, or to the vestibule and cochlea, that it can be treated by an ordinary vestibulotomy, or by such an operation with forward extension into the cochlea by the removal of further portions of the promontory. In its later stages, however, it tends to extend along the lines of the semicircular canals, from which caries may spread into the deeper parts of the petrous, causing deep-seated tuberculous abscesses within the bone, and sometimes extending to the dura mater of the middle or posterior fossae. In all cases of tuberculous labyrinthitis the proximal parts at least of the superior and external canals should be opened, and if disease is found to extend along their lumina, they must be followed until healthy canal is reached. To do this may be an operation of extreme difficulty, and under these circumstances it must be confessed that burs are almost a necessity in excavating along the more remote parts of the canals. Any diseased part of the dura mater must be freely exposed and appropriately treated.

Necrosis of the Labyrinthine Capsule.—Necrosis may result either from an acute infective labyrinthitis or from the destruction of the blood supply of the bony labyrinth by surrounding disease, as in some cases of tuberculous disease of the petrous. It may be restricted to the posterior part of the labyrinth (posterior wall of the vestibule and the semicircular canals) or to the cochlea, or may include both parts in continuity. It is frequently associated with extradural suppuration in the middle fossa in connexion with the superior canal, or in the posterior fossa in connexion with the posterior canal. Cochlear sequestra lie superficially on their tympanic aspect, and may even be spontaneously discharged through the external auditory meatus. They crumble readily, and can easily be removed by the use of a curette after a preliminary radical operation. Sequestra of the posterior part of the labyrinth, on the other hand, may be deeply buried, coming to the surface of the operation cavity through a small fistula only. They may thus easily be missed. Their removal may require a large exposure of the dura mater, which may be suppurating and softened, and the operative difficulties are much enhanced by the course of the facial nerve, which may lie across the outer face of the sequestrum. The cavities so created must be well drained. Like many other exceptionally large cavities in aural operations, they heal conspicuously well.

No special medical treatment is either necessary or apposite in cases of infective labyrinthitis of pyogenic origin, either before or after operation. In operation cases the usual medical after-treatment of an operation case will be all that is called for. The vertigo resulting from the sudden destruction of one labyrinth in acute infective labyrinthitis as a rule subsides almost immediately and completely after operation and with rest in bed. Should it be troublesome 30 m doses of dilute hydrobromic acid, with 10 grains of ammonium bromide, every four hours will give relief. It is possible that cases of pyogenic infection of the labyrinth may occur in some forms of meningitis. I am not concerned with their diagnosis, and they call for no special treatment. The introduction of the question of translabyrinthine drainage of the meninges is outside the scope of this paper, but very germane to the treatment of such cases, not as cases of labyrinthitis but of meningitis.

The prophylaxis of labyrinthine infection is limited and simple. No patient with continued suppurative otitis media, which resists treatment, and in which there is presumptive evidence of the presence of cholesteatoma, ought to be allowed to remain in a position of danger. The majority of these cases will require the radical mastoid operation; in others, if carefully selected, a more limited operation on the attic and mastoid is sufficient, without disturbance of the tympanum. Finally every case of diagnosed labyrinthine fistula ought to be regarded as suburgent and should undergo a radical mastoid operation without delay. It should never be lost sight of that quite nine-tenths of all infections of the labyrinth take place through pathological openings caused by the eroding power of cholesteatoma.

Of *non-pyogenic infections of the labyrinth*, the most important and best known is syphilis. Syphilitic labyrinthitis may occur in acquired and in inherited syphilis. In the acquired disease it develops typically during the later part of the secondary period; in congenital cases, between the ages of ten and fourteen years in the majority of instances, often quickly following the onset of interstitial keratitis. Treatment of these cases is purely antisyphilitic, and the more vigorous and effective it can be made the better is the very poor chance of survival of any useful hearing. Subcutaneous injection of pilocarpine to the point of heavy sweating and salivation has been much praised in these cases. There seems to be no good evidence that its effects on the labyrinth can be identified, and whether used or not, it should certainly never be allowed to interfere with the more orthodox antisyphilitic treatment.

The deafness of mumps is of labyrinthine type, but, as far as I am aware, nothing certain is known of its pathology. I have no knowledge of any form of treatment of the slightest value, either prophylactic or curative, in this most distressing disease of hearing.

Rarely one sees in the course of an otitis media the development of vertigo and deafness of labyrinthine type,

but of milder character than is associated with the ordinary infections. The patient's general condition, too, does not show the considerable general disturbance which accompanies a typical acute infective labyrinthitis. Whether these cases are due to actual infection of the labyrinth of mild type, or to other alterations in the labyrinth, perhaps of perilymphatic tension, I do not know. They seem to tend largely to recover their normal labyrinthine functions. Whether drugs have any effect in the course of the condition may be open to doubt. There is, however, plenty of justification in precedent for the employment of counter-irritation over the mastoid, the subcutaneous injection of pilocarpine, and the administration of iodides in full doses. Personally I attach considerable value to the free use of sulphate of magnesia internally in the treatment of deep-seated inflammations. But individual experience of the condition is hardly large enough to afford any real guide to the best methods of treatment of such rare cases.

DISCUSSION.

The President said the labyrinth was a maze in which he was still entangled and in a somewhat muddled condition. Fortunately the brilliant investigations of Dr. Bárány would probably get him out at no distant date. The acoustics of the maze were not good—for though a number of his friends were likewise entrapped, he could not hear them. He envied those friends who already knew the inlet and outlet of the maze and saw the clear daylight above them; but, in the strictest confidence, he would like to say that these speering investigators occasionally got mixed up a little and off the right path. Nevertheless, one thing was certain—the two introducers of the discussion possessed the "requirement complex" or *ensemble* of requirements necessary for dealing in a most illuminative and scholarly manner with a most difficult and intricate subject. The methods of examination of Dr. Bárány, which he modestly stated in his abstract "as partly originated and partly worked out by the author," could not be too well known before the operative procedures so ably and forcibly advocated by Mr. West were carried out. These labyrinthine investigations and operations were a most valuable addition to otology, and on behalf of the meeting he begged to offer to Dr. Bárány and Mr. West their sincerest thanks and heartiest congratulations.

Dr. Dundas Grant (London) associated himself with the President in finding the subject of nystagmus in relation to disease of the labyrinth a complicated one, but he thought it could be simplified, and Dr. Bárány had cleared up some obscure points. The speaker used the rotation "after-nystagmus" first for the diagnosis of defective development of the internal ear in cases of supposed congenital deaf-mutism, in place of the rotation vertigo he had used previous to Dr. Bárány's publications. In his clinic, where he had the advantage of Dr. McKenzie's assistance and co-operation, normal rotation nystagmus was found in hysterical nerve-deafness. With respect to the frequency of meningitis of labyrinthine origin subsequent to chronic suppurative disease of the middle ear and temporal bone for which the radical mastoid operation had been performed, the experience of different observers seemed to vary very considerably. Messrs. West and Scott seemed to him to have had an exceptionally high percentage, especially when one considered the extreme rarity of the occurrence at the Central London Throat and Ear Hospital, where for many years large numbers of radical mastoid operations had been performed. No doubt there had been involvement of the labyrinth in numerous instances, but it seemed to have subsided after the mastoid operation, and not to have led to meningitis. It was also possible that cases of labyrinthine suppuration might find their way to general hospitals more frequently than to special ones, but he believed that Mr. Hunter Tod had found them very rare at the London Hospital. The speaker thought Mr. West had left one point still uncertain—namely, how to tell when the labyrinthitis was of the serous form, and therefore likely to subside after the radical mastoid operation. Mr. West had stated that such forms could only be diagnosed by the fact of their subsiding. An operation on the labyrinth would destroy the hearing beyond all chance of its recovery. No doubt there were symptoms, or shades of symptoms, which Mr. West would recognize and be guided by. In any case, Messrs. West and Scott's experience had been of the utmost value, and British aurists, especially the older ones, were much indebted to them for having so enthusiastically worked up the methods of investigation devised and formulated by Dr. Bárány.

Dr. Dan McKenzie (London) associated himself with the compliments which had been paid to Dr. Bárány for his valuable discoveries—discoveries which would probably obtain an even wider recognition in general medicine and in neurology than in otology. With regard to diagnosis the speaker warned the members against relying upon spontaneous nystagmus as being in itself a localizing symptom of any weight. The chief value of spontaneous nystagmus lay in the fact that, like vertigo, it was a danger signal, an indication that the vestibular tests should be resorted to in order to ascertain what the cause of the spontaneous nystagmus might be. Stimulated by Dr. Bárány's scientific method of measuring rotation nystagmus the speaker had devised a method of estimating the activity of the vestibular system by means of the caloric test, using water of a standard temperature (22° C. to 24° C.) and measuring the induction period of nystagmus. The results obtained had been reported, and had shown that this modification was not without value and interest. He had found, for example, that a shortening of the induction period indicated a hypersensitive state of the vestibular system, such as was found in neurasthenic conditions. He did not place much reliance upon the duration of the caloric nystagmus because the lowering of the meatal temperature after douching would last for a longer or shorter time according to the atmospheric temperature, saturation with moisture, and other uncontrollable factors. He thought, however, that too much refinement and elaboration in the diagnostic measures were unnecessary. The simple rotation and caloric tests, even if not measured, were sufficient in most cases of infective labyrinthitis to establish the diagnosis beyond all doubt. A source of difficulty in the diagnosis of infective labyrinthitis by the vestibular tests was alluded to. In chronic deafness due to non-purulent middle-ear or labyrinth disease of long standing, the vestibular reactions were generally impaired or absent. If, in such a case, suppuration set in, the absence of a vestibular reaction might be erroneously attributed to purulent labyrinthitis. If only one ear was the seat of suppuration in these circumstances the fact that the reactions were negative in both ears would, however, prevent such an error being made. With regard to treatment he hoped that he would have heard more definite information concerning the indications for operation, an aspect of the question which had recently been exhaustively analysed by Alexander of Vienna. Attention was drawn to the contrast between the conservative labyrinth operation of Mr. West and other English surgeons and the extensive exposure of the dura recommended by Alexander.

Mr. Hunter Tod (London) said that although he also fully appreciated the value of the splendid work Dr. Bárány had done, and its importance in diagnosing labyrinthine disease, yet he had missed, not only in his paper but also in Mr. West's, what he particularly wanted to know—namely, the indications for operation on the labyrinth. He still wondered if the cases of suppurative labyrinthitis were so numerous as recent publications led one to believe, as he could not help feeling, from his own personal experience, that in many of these cases suppuration did not exist, although this diagnosis might have been suggested by the tests applied. From the London Hospital Reports he found that in the years 1907, 1908, and 1909, he had operated on 302 cases of mastoid disease, including in this category acute and chronic conditions, as well as intracranial complications. Of those cases who died, and on whom an autopsy had been made, only one case was found in which suppuration of the internal ear actually existed, and in this particular case it was noted at the time of operation that there was actually necrosis of the labyrinth itself. He thought the reasonable deduction from this was that even supposing he had failed to recognize suppuration of the internal ear in some of these cases, yet they recovered, on the mastoid operation being performed, or, on the other hand, suppuration of the internal ear had never existed at all. In any case, the mortality from internal ear suppuration seemed

to be very small indeed. With regard to operative procedure, he agreed that the complete mastoid operation should be done in every case showing "fistula" symptoms. If, at the time of operation, a small erosion of the semicircular canal were discovered, it should be left alone, as the symptoms would subside as a result of the mastoid operation. If, on the other hand, granulations or purulent secretion were found to be coming through the promontory or semicircular canals, then of course the labyrinth should be opened up. These cases, however, he had hardly ever met with, although he had made a point of looking for them. If it were determined to open the labyrinth, he considered that the best way of obtaining a clear view of the inner wall of the tympanic cavity was to remove completely the tip of the mastoid process and the floor of the external auditory canal. If this were done, it would be found that it was now an easy matter to open up the cochlea or vestibule by means of a small gouge or mallet. Mr. Tod explained that he only quoted what he had been told with regard to the autopsies. He had chosen the years 1907 to 1909 because during this period a careful examination of the internal ear was made in every case by the pathologist. He admitted, however, that the condition of the labyrinth was only judged by its naked-eye appearances, and that no microscopic nor histological examinations were made in any of the cases, so that it was quite possible that in some of the cases who died of meningitis, the infection had come through the internal ear.

Dr. Jobson Horne (London) asked Mr. West what had been in his clinic the ratio of cases of labyrinthine operations to the total number of mastoid operations.

Mr. Ernest West, in reply, said that he was unable to give any information with regard to the results of destruction of the tympanic plexus; he was in the habit of curetting the whole of the tympanic mucosa and grafting immediately in his radical operations, but had never met any symptoms which he could refer to this cause. He doubted whether the tympanic plexus was not already destroyed by chronic suppurations long before operation. He did not consider that the wide exposure of the dura mater of the posterior cranial fossa was in any sense necessary in view of the possibilities of post-operative meningitis; he believed this complication to be rare, and had only seen it twice after adequate operations on the vestibule, one of the cases recovering. If drainage of the basal meninges was indicated, he preferred to do this by breaking through the inner wall of the vestibule into the internal auditory meatus, a method which followed the track of infection and gave excellent drainage of the subarachnoid space. He considered that the danger of spread of infection to the cerebellum and meninges in labyrinthine infections was a real one; the connexion between cerebellar abscess and the labyrinth had been specially emphasized by the work of Mr. Whitehead, while the beautiful work of Mr. Scott had made the genesis of translabyrinthine meningitis a matter beyond question. He considered the ordinary routine *post mortem* examination of the labyrinth as of no value whatever; the only method was that of histological examination. The indications for operation on the labyrinth he considered to be quite clear; he would express them as, first, the presence of acute infective labyrinthitis, the diagnosis of which Dr. Bárány's paper had put clearly before the meeting; secondly, the diagnosis of a defunct labyrinth, confirmed by the discovery at operation of a fistula through the ampullae or through the inner tympanic wall, or, in the absence of previous diagnosis, by default of proper testing, such discovery of undoubted aperture into the vestible; thirdly, the continuance of disabling vertigo in fistula of the external semicircular canal after a radical mastoid operation and local curettage had failed to give relief. Such cases were rare, but he thought one occasionally met with cases of slowly progressive infection travelling along the canal. Simple fistulae of the external canal he had never submitted to operation on the labyrinth in the first instance. The amount of bone to be removed in order to get a sufficient exposure of the inner tympanic wall he considered to be purely optional; he had always found the removal he described fully adequate. He regretted that he had no recent statistics ready as to the ratio of labyrinth operations to the total radical mastoid operations in his clinic; when he had read the paper on the subject with Mr. Scott some two and a half years ago, they had found that about one in ten of their radical mastoid cases required labyrinth operation; but the cases which were operated on at St. Bartholomew's were nearly always of very long-standing suppuration, the majority with cholesteatoma. He thought the proportion had remained about the same, and his recollection was that Dr. Milligan had given figures which corresponded fairly closely with this from his Manchester clinic.

SOME REMARKS ON THE CONNEXION BETWEEN IRRITATION OF THE MUCOUS MEMBRANES THROUGHOUT THE BODY AND MIDDLE-EAR CATARRH.

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Although all aurists know full well that the mucous membrane which lines the tympanum and Eustachian tube is continuous with that which lines the nose and its accessory cavities, and, through the naso-pharynx, pharynx, and oesophagus, is in direct communication with that which lines the stomach and intestines, yet the vast area with which the tympanum is thus connected is sometimes forgotten, and it is not realized that an irritation in one part of the mucous membrane is communicated in a greater or lesser degree over the whole of its surface, and must therefore affect the special organ which has to be treated.

The first stage of middle ear disease is associated with deficiency in the ventilation of the tympanum due to the supply of air being interfered with by a swollen condition of the tissues lining the Eustachian tube, which, when not produced by a transient catarrh, is frequently due to a catarrhal state of the nasal mucous membrane which may be termed a septic rhinitis; by that I mean a nasal catarrh which probably is often the result of septic material which has found its way into the nostrils, its presence being shown by effervescence when a solution of peroxide of hydrogen is introduced.

Next in frequency to this is the chronic congestion of the naso-pharynx, with an accompanying excessive secretion of mucus, resulting from nasal obstruction, which may arise from hypertrophy of the lining membrane of the nose, due to the irritation produced by the condition just referred to or other causes, or to the irritation from polypi, necrosed bone, and the septic condition of the cavity which results. The importance, therefore, of carefully examining the nostrils and treating any affection which may be present cannot be too strongly emphasized.

Some years ago an elderly gentleman consulted me who previously, for about six weeks, had undergone treatment of injections of air into the tympanum through a catheter without permanent benefit. I noticed as he entered the room that he was breathing through his mouth and that he spoke with a nasal intonation, and on examining his nostrils found them both plugged with polypi, the ear having been treated in the manner mentioned without the nose being examined.

Much useful information may be obtained by examining the naso-pharynx with a mirror after the soft palate has been anaesthetized and drawn forward, but unfortunately a common sight at the present day is a large amount of adenoid growth left behind at a hurried operation, due either to the patient not having been sufficiently anaesthetized or to no anaesthetic having been administered.

In my book on diseases of the ear, the first edition of which was published in 1894, the desirability is pointed out of passing a finger into each fossa of Rosenmüller before concluding the operation to make sure that all growth had been removed from this region; but often now the track of a curette may be seen along the centre of the naso-pharynx, and adenoid growth left on each side of it, in the position in which, from an aurist's point of view, it is most important that it should be removed—namely, the area around the pharyngeal extremity of the Eustachian tube—and, consequently, one of the principal objects for which the operation was undertaken is not attained.

Associated with impairment of hearing and tinnitus in young adults after an operation for adenoids, cicatricial bands may often be seen across the fossae of Rosenmüller resulting apparently from abrasion of the contiguous surfaces at the time of the operation. In many cases an improvement results from these bands being broken down.

Whilst speaking of the operation for adenoid growths, I will again urge the desirability of passing a snare through the nostrils, and snaring off the posterior extremity of the inferior turbinated body when it is enlarged, which is frequently the case. No harm can be done by this procedure, and if the end is not enlarged of course there is nothing to take away; but when hypertrophied, unless it is removed, nasal respiration is often not restored, and naso-pharyngeal congestion remains, and, as a consequence, imperfect patency of the Eustachian tubes.

I was taught that if adenoid growths were removed the hypertrophic condition of the mucous membrane of the nose must subside, but some years ago I learnt that this view is erroneous by a patient being brought back to me with pronounced mouth breathing on whom I had operated and carefully removed all the adenoid growth. To ascertain the cause of the failure the soft palate was anaesthetized, and on examining the naso-pharynx with a mirror, it was seen that both choanae were almost closed by the swollen posterior extremities of the inferior turbinated bodies. Since then I have made a practice of passing a snare through the nostrils before concluding the operation and removing the posterior extremities when enlarged, and I attribute the almost entire immunity from recurrence of growth in my patients to this occurrence.

I have had many patients brought to me after being operated upon by throat specialists for adenoid growths, with the complaint that no benefit had resulted from the operation which had been performed, and in each case the failure has been found to be due to the posterior extremities being enlarged and not having been removed, a cure being established after this had been done.

Another frequent cause of closure of the Eustachian tubes is granular pharyngitis, especially when there is a ridge of granulations situated behind the posterior pillar of the fauces. I believe that I was the first to point out that granulations in this position are the cause of that itching sensation, deep in, on the floor of the ear which patients try to remove by scratching through the meatus, but granular pharyngitis and the naso-pharyngeal catarrh with which it is so often associated, will not be relieved generally until its etiology is better understood.

The erroneous teaching of thirty years ago still prevails —namely, that it is due to improper voice production, and is therefore found amongst barristers, clergymen, hawkers, and costermongers; and it is still treated as if it were a local condition, the usual remedy primarily suggested being cauterization of the granules, whereas, in my opinion, the source of irritation which produces the disease should first be removed, and the cautery reserved for those granulations which do not subside when the mucous surfaces have been restored to a healthy condition.

As regards the term "clergyman's sore throat," I think it should be deleted from medical nomenclature, as its incorrect etiology does not tend to induce sound treatment.

As I pointed out about eighteen years ago, granular pharyngitis is usually the result of irritation of the gastro-intestinal and utero-vaginal mucous membrane, and consequently is as common amongst females who do not use their voice as amongst the class of males who were supposed to specially suffer from it. It is true that when granular pharyngitis is present reading aloud or excessive use of the voice aggravates the abnormal condition, but it is not usually its primary cause. Although irritation of the mucous membrane can generally be proved to be the cause of the malady by the affection subsiding when the evident source is removed, yet it must not be forgotten that a reflex irritation may exist in a degree which is not sufficient to produce marked symptoms. There are a few cases in which residence in a damp climate appears to be the chief cause, and it is well known that the condition is generally aggravated by wet weather, and sometimes by east winds.

As it is most important for the successful treatment of middle-ear catarrh that granular pharyngitis and the naso-pharyngeal catarrh which so frequently accompanies it should be removed, it is evident that its etiology should be fully recognized by aurists with a view to treatment.

We all know that irritation of one part of the gastro-intestinal tract makes itself apparent in another region, as shown by a foul tongue when there is gastric disturbance, colitis, or constipation, and it does not require a great flight of imagination to realize that the utero-vaginal mucous membrane is in sympathy with its kindred tissue. As an instance I may mention: About two years ago an unmarried girl of 22 consulted me with regard to her throat, as she wished to take up singing professionally. She told me that she had seen six throat specialists, but that her throat was no better for the treatment. I found that she had a considerable amount of congestion of the pharynx and pronounced granular pharyngitis, and as there were not sufficient abnormal conditions in her nose and gastro-intestinal tract to account for this, I thought that there might be some pelvic derangement, and therefore sent her to a gynaecologist, who reported that she had retroversion and retroflexion of the uterus, chronic cervicitis, and an erosion about the size of a shilling. He replaced the uterus into its normal position, curetted the cervix, and kept her in bed for about ten days. When I again saw her, soon after leaving the nursing home, the congestion of the pharynx had almost disappeared, and the granular pharyngitis had greatly subsided, although nothing had been done locally. I conclude that the throat specialists whom she had previously seen treated the granular pharyngitis as a local affection.

Recently I was consulted for deafness by a young married lady who had one child, and her pharynx was found to be intensely congested and granular. There was no history of recent dyspepsia or of constipation, and I therefore thought that her pelvic organs might be at fault, so advised her to consult a gynaecologist. This she did, the gentleman she selected not being the same as mentioned in connexion with the previous case. He reported that the uterus was acutely retroverted and flexed.

It is not only displacements of the uterus, however, which are associated with granular pharyngitis, but many uterine diseases such as fibroid tumour and other affections which give rise to menorrhagia, and with this condition a persistent granular pharyngitis is often found.

In my book on the ear, when speaking of the causes of granular pharyngitis, profuse leucorrhoea is mentioned as a cause, but from extended experience I consider that the word "profuse" should be deleted. A vaginal discharge and a naso-pharyngeal catarrh are not infrequently associated and the addition of a vaginal douche to the throat and nose remedies already employed will often in a short time markedly diminish the naso-pharyngeal catarrh.

My friend, Dr. Wainwright of Folkestone, is well aware that vaginal discharges are the cause of many neuroses. A patient of his some time ago was suffering from naso-pharyngeal catarrh, violent cough, and arthritic knee pains which had been diagnosed as gouty. The cough was distressing and the throat foul, congested and swollen, and markedly granular.

Inquiries elicited the existence of a vaginal discharge, and further investigation resulted in the discovery of a forgotten pessary. After the removal of the pessary the cough and arthritic pains disappeared and the throat resumed its normal condition.

As another instance of vaginal irritation producing congestion of the pharynx and naso-pharynx, I may mention that some years ago an actress whom I had been attending for granular pharyngitis came to see me after the interval of some months. Her pharynx was intensely congested, and as there was no evidence of sufficient disturbance in the gastro-intestinal tract to account for this I inquired whether she still had leucorrhoea, from which she had previously told me that she had suffered. On hearing that it was very bad indeed, and there was a considerable amount of local irritation, I advised her to consult a gynaecologist, who reported that she was suffering from gonorrhoea.

A profuse leucorrhoea is generally caused by endo-cervicitis, and an erosion of the cervix is by no means

uncommon even in girls who are unmarried, and no one with gynaecological knowledge can pretend that the erosion will be cured by the use only of a vaginal douche, or that its presence can be diagnosed except by highly educated touch without a speculum being introduced; nor can the endocervicitis be removed without local applications to the cervical canal, or in severe cases by curettage.

A small-sized Roper's speculum has been shown to me specially designed for unmarried girls, the larger blade being only seven-eighths of an inch in diameter, which it is said can be passed usually without the slightest difficulty or causing abrasion.

I have had under my care a number of cases of naso-pharyngeal catarrh and granular pharyngitis associated with a vaginal discharge sufficient in quantity to cause discomfort, occurring in both married and unmarried women, which have not got well until the patient has been placed in the hands of a gynaecologist for treatment of the cervical catarrh, and in many cases I have been informed that a large erosion existed.

I have dwelt specially upon the relation between granular pharyngitis and naso-pharyngeal catarrh in connexion with uterine displacement and irritation of the utero-vaginal mucous membrane, because it is not as yet universally recognized, and the treatment of middle-ear affections, catarrh in the naso-pharyngeal region, etc., is chiefly confined to local measures, which I hope I have shown will not be curative in many instances until the reflex sources of irritation are removed.

DISCUSSION.

The President was sure Mr. Hovell would permit him to say that on the surface his paper appeared to be rather commonplace and somewhat different to the usual scientific dissertations. Nevertheless, such contributions were of paramount importance and of incalculable value to practitioners and patients. He congratulated Mr. Hovell in bringing forward some of the commoner phenomena of life and disease, which were often either neglected or forgotten. He agreed with Mr. Hovell that the gynaecologist was often of the greatest assistance in the treatment of certain forms of vertigo, tinnitus, vasomotor rhinitis, and catarrhal troubles of the naso-pharynx. He was pleased that Mr. Hovell had emphasized the great pathogenic importance of bands, adhesions, pits, and an unhealthy condition of Rosenmüller's fossae. He had pointed this out at a meeting of the old Otological Society in 1906. This condition frequently accounted for recurrences of earache and deafness after imperfect adenoid operation. It was a subject which had received more attention in America than in this country.

Dr. Frederick Spicer (London) agreed with Mr. Hovell, especially as to the desirability of the removal of the posterior ends of the inferior turbinate bones when enlarged, and remarked on the frequency with which the adenoids in Rosenmüller's fossae were left behind by even experienced operators. He was constantly seeing cases where the operation had failed to cure, either on account of imperfect removal of adenoids or enlarged turbinals.

Dr. Jobson Horne (London) fully concurred with Mr. Hovell upon the importance of paying attention to the size of the posterior ends of the inferior turbinated bodies when operating for the removal of post-nasal obstruction and the attendant catarrh and deafness caused by an enlargement of the adenoid tissue in the post-nasal space. For some time past he had realized that not only in adult life, but also in child life, the posterior ends of the inferior turbinated bodies were quite as material a factor as the shrivelling adenoids in the nasal symptoms. The evil that adenoids caused by the congestion and subsequent hypertrophy of the posterior ends of the turbinated bodies lived after the atrophy of the adenoids, and unless the posterior ends of those bodies when enlarged were reduced at the time of the operation, then the object of the operation, namely, the relief of nasal obstruction and its accompanying symptoms, would not be achieved. The speaker also cited cases in which vagino-uterine reflexes had a bearing upon the singing voice.

EXPERIMENTS BEARING UPON THE PRACTICABILITY OF TREATING MENINGITIS (SEPTIC AND SPECIFIC) BY MEANS OF LAVAGE OF THE CEREBRO-SPINAL SUBARACHNOID SPACES.

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(*Preliminary Communication.*)

In this brief communication I wish (1) to outline some experiments conducted by me upon the cadaver with a view to testing the practicability of employing lavage as a means of removing or acting upon the pathological elements (pus, exudate, and pathogenic organisms) which are found in the cerebro-spinal subarachnoid spaces as the result of a leptomeningitis; and (2) to draw attention to a case of fatal purulent leptomeningitis in which I employed lavage of the subarachnoid spaces when the patient was *in extremis*.

1. The experiments were carried out entirely under my own initiative during the summer of 1909. The first was made upon the body of a child who had died of epidemic cerebro-spinal meningitis, and was conducted in the following manner:*

The body being placed on its right side upon a table and the head supported by means of a wooden block, lumbar puncture was performed, and the hollow needle left *in situ*. A small quantity of turbid fluid escaped but soon ceased to flow. Through a trephine opening in the skull, made above and behind the left ear, a cannula trocar was introduced into the lateral ventricle, and, on removing the trocar, a small quantity of turbid fluid escaped through the cannula. By means of a rubber tube attachment and a glass funnel held 2 in. above the head, water tinted with carbol fuchsin was allowed to flow into the ventricle. Almost immediately turbid fluid began again to drop from the needle in the lumbar region, and in less than a minute the escaping fluid was found to have a reddish tinge; it continued to flow as long as the fluid entered the lateral ventricle. The higher the elevation of the glass filler the faster became the flow of stained fluid from the needle, and the flow was allowed to continue for over a quarter of an hour. The brain was then removed and carefully examined, when the course of the fluid introduced into the ventricle could be easily traced by the red coloration into the fourth ventricle via the foramen of Monro, third ventricle and iter. From the fourth ventricle the fluid found exit into the subarachnoid space (cerebello-medullary cistern) through the foramen of Majendie, and possibly also through the two lateral apertures. It stained the entire cerebello-medullary cistern, passed forward into the interpeduncular cistern; upwards along the Sylvian fissures over the anterior ends of the temporo-sphenoidal lobes, and even along the vaginal sheaths of the optic nerves. The course of the coloured fluid could also be traced downwards along the spinal subarachnoid space.

The same experiment was repeated on several other fresh subjects with similar results. This at least established the fact that fluid may pass uninterruptedly from the ventricular system into the basal and spinal subarachnoid spaces.

2. Whilst making the preliminary preparations for experimenting upon living animals, I found, after various trials, that for my purpose dogs were unsuitable, and I was arranging for experimenting upon monkeys when a case (a boy of 13 years of age) of advanced purulent leptomeningitis, secondary to a chronic purulent ear affection (left), came under my care in the hospital on October 16th, 1909. The symptoms were typical of the worst form of the disease, and lumbar puncture verified the diagnosis, the fluid withdrawn being turbid, containing streptococci in chains, as well as pus cells. The radical mastoid operation, including the opening of the dura mater and the employment of such therapeutic measures as urotropine, 10 grains four times daily, repeated lumbar puncture, and several subcutaneous injections of antistreptococcic serum, led to no improvement in the condition, and, two and a half days after admission to the hospital, the patient was obviously moribund. He was in a state of coma, the temperature was over 103° F., pulse 130 per minute and feeble, and the breathing markedly Cheyne-Stokes in type. After consultation with our consulting physician,

*I am indebted to Dr. Morton, of Lightburn Fever Hospital, for facilities in conducting two of my experiments and for his valuable help in carrying them out.

Dr. John Love, it was considered justifiable to operate in the same way as I had done in the cadaver.

Operation.—Under chloroform anaesthesia lumbar puncture was first carried out, a fine cannula being employed, and over an ounce of turbid fluid was removed. The lumbar cannula being left *in situ*, a half-inch trephine opening was made in the cranium above and behind the left ear, and a wide cannula-trocar was passed into the left lateral ventricle, when the trocar was removed. There was immediately a gush of semiturbid fluid, large in amount and under great pressure. The pulse at once steadied, slowing from 130 to slightly under 100 per minute, and the respirations became regular and ceased to exhibit the Cheyne-Stokes type. After the flow had ceased from the lateral ventricle a rubber tube was passed through the cannula into the ventricle, and the cannula was removed. By means of a glass funnel attachment, sterilized saline solution, at a temperature of 100° F., was allowed to flow into the lateral ventricle, the glass funnel being at first held about 2 in. above the level of the head. In a few seconds turbid fluid began to drop from the lumbar cannula. The glass funnel was then raised higher, so that ultimately it was held fully a foot above the head, when a constant stream of turbid fluid, mixed with flakes of exudate, escaped from the cannula in the lumbar region. This was carried on for quite an hour, and at the end of that time more than half a pint of turbid flaky fluid had been collected in a measure glass. As a final step 10 c.cm. of anti-streptococcic serum were introduced into the lateral ventricle through the rubber tube. The cannula in the lumbar region was then removed, but the rubber tube, fixed by means of sutures, was left in the lateral ventricle.

The patient bore this prolonged operation well, and at no time during its course was there any sign of syncope or arrest of breathing which might have indicated dangerous pressure upon important centres round the fourth ventricle. It was noted, however, that the respirations increased in rapidity when the glass funnel was raised over a foot. Immediately after the operation the temperature was 101° F., and for an hour or two there was, if anything, a slight general improvement, but no return to consciousness; this slight improvement soon passed off, and death ensued fourteen hours after the completion of the operation.

A *post-mortem* examination confirmed the diagnosis of widely diffused basal leptomeningitis, characterized by the large amount of exudate filling the basal subarachnoid cisterns. There was no other intracranial lesion.

I hope to pursue these experiments further, but thought it desirable at this stage to place the facts I have just narrated before this section. I have at least proved that lavage of the subarachnoid spaces can be carried out on a living person with apparently no unusual danger to life. Time and experience alone will prove if there is any therapeutic value in this method. There is no doubt that the great amount of exudate present in my case prevented the fluid spreading out as far as it would have done in a healthy individual. Perhaps, however, if treatment had been commenced earlier, before the exudate had become so dense and before the patient had been overwhelmed with toxins, the result might have been different.

I should like to hear the opinion of my colleagues as to whether one would be justified in employing this method at an earlier stage of the disease, repeating the lavage daily, or even twice daily; also any suggestions as to a suitable fluid other than saline solution such as a mild antiseptic or digestive fluid, calculated to soften the exudate and deal with the toxins. I would be disposed to combine vaccine-therapy with this method.

REFERENCES.
Quain's Anatomy, and Key and Retzius.

DISCUSSION.

The PRESIDENT congratulated Mr. Barr on his original work, and expressed the hope that he would communicate his further investigations of a subject about which so little was as yet known.

THE VALUE OF OSSICULECTOMY IN CHRONIC MIDDLE-EAR SUPPURATION.

By MACLEOD YEARSLEY, F.R.C.S.,
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IN a paper published by Suckstorff, in the *Archives of Otology*, xxxii, 426, on the pathology and treatment of purulent otitis, the indications for the removal of the malleus and incus, and the relative frequency and localization of disease of the ossicles are considered. The former are given as (1) caries of the ossicles; (2) caries of the attic; (3) suppuration from the attic which has not given way to careful and consistent treatment with the tympanic cannula. Suckstorff gives his results in twenty operations, followed up for over one year, as 16 (80 per cent.) cured, 2 (10 per cent.) improved, and 2 (10 per cent.) unimproved. In the second part of his paper he gives the results of examination of the ossicles in 106 radical operations. These results are, briefly, that the malleus was diseased or absent in 89 cases (83 per cent.), being diseased in 36 per cent. and absent in 48 per cent., whilst the incus was diseased or absent in 98 cases (92.4 per cent.), being diseased in 24 per cent., absent in 69 per cent., thus giving preponderance to the incus as regards liability to caries.

I have always considered the extraction of the two major ossicles, provided that the outer attic wall is removed at the same time, to be a useful operation. But the cases in which it is likely to be of value require to be carefully selected. Until now, however, I have never made an analysis of actual cases, whereby I could support this opinion.

The series of cases of ossiculectomy upon which the present paper is based ranges in time from 1897 to February, 1910, and comprises 70 operations upon 65 patients, 5 undergoing the double operation. Of these patients, 23 were males and 42 were females, their ages varying from 6 to 62. The ages in relation to sex are shown in Table A.

All these cases were operated upon for chronic or recurrent discharge, with a view to preventing, if possible, the performance of the radical mastoid operation. The duration of disease varied from three months to many years, the exact numbers being shown in Table B.

The conditions found in the ear at the time of operation

TABLE A.

Age	6	7	8	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	29	30	31	32	33	34	35	36	37	39	40	42	44	46	60	62	Total.
Males	—	—	1	1	2	—	—	1	—	1	2	1	3	—	1	—	1	2	1	1	—	—	—	—	—	—	1	—	1	—	—	1	1	1	23
Female	1	1	—	—	5	1	2	1	1	2	2	1	1	1	—	4	3	2	1	—	2	1	1	1	1	1	—	1	1	1	1	2	—	—	42
Totals	1	1	1	1	7	1	2	2	1	3	4	2	4	1	1	4	4	4	2	1	2	1	1		1	1	1	1	2	1	1	3	1	1	65

TABLE B.

Months.					Years.													Unknown, but Extending over Years.	Total.
3	5	8	12	18	2	3	4	6	7	9	10	14	15	17	19	20	23		
1	1	1	4	1	4	1	6	3	1	1	2	1	2	1	1	2	1	36	70

were as follows, considered under perforation, ossicles, and granulations:

Perforations.

Of membrana flaccida:		
Confined to Shrapnell's membrane	...	5
Involving Shrapnell's membrane and the superior posterior quadrant	... ...	3
Involving Shrapnell's membrane, with destruction of the membrana tensa	...	4
		—12
Of membrana tensa:		
Superior posterior quadrant	... ...	16
Whole posterior segment	... ...	12
Inferior segment	... ...	5
Anterior inferior quadrant	... ...	1
Anterior segment	... ...	1
Whole membrana tensa destroyed	.. ...	23
		—58
		70

Ossicles.

Both ossicles were intact in	... ...	7
The handle of the malleus was fixed to the inner tympanic wall in	... ...	2
The *malleus alone* was carious in	... ...	9
Having completely disappeared in 1.		
The *incus alone* was carious in	... ...	16
Having completely disappeared in 4.		
Both ossicles were carious in	... ...	39
In 6 of these the incus and in 2 the malleus had disappeared.		

In one case the carious malleus and incus were ankylosed, so that they came away together.

In one case the two ossicles showed caries with hyperostosis, both bones being distorted by masses of new osseous tissue.

The *outer attic wall* was carious in 5 cases, or 7.1 per cent.

These results compare with those of Suckstorff, quoted above. The malleus was diseased in 62.8 per cent., having disappeared in 6.2 per cent., whilst the incus was carious in 78.5 per cent., being totally destroyed in 18.1 per cent., the preponderance of caries in the incus being marked. When both bones are diseased one is almost certain to find that the condition is more advanced in the incus. The reason of this greater liability of the anvil to disease lies in the conditions of its blood supply.

Granulation Tissue.

In 20 cases there was granulation tissue. This grew from the region of the membrana flaccida in 6 instances, in 2 of which the remains of the ossicles were embedded in the granulations. In 7 cases it filled the superior posterior quadrant (occupying the site of the incus in one instance), in 6 it was situated inferiorly, and in 1 case the locality from which it grew is not stated in the notes.

In 3 cases there was cholesteatomatous material in the attic.

The operation was performed in every case under general anaesthesia.

As regards instruments, the Delstanche extractor is useful when there is great destruction of the membrana tensa, but when much of the membrane is present a Sexton's knife should be used to detach it. Sexton's pincette is sometimes useful for removing the malleus. The incus, when not much destroyed, is best extracted with a Ludwig's incus hook, but when it is much reduced in size Lake's incus extractor is the better instrument. The outer attic wall was always taken away piecemeal by means of the small sliding chisel of Hartmann, and this removal should be especially thorough in the region of the aditus for purposes of drainage.

The greatest trouble in the operation is haemorrhage. To control this I used to employ peroxide of hydrogen, but have come to depend upon packing with fine ribbon gauze as a better method. In a few instances I have found preliminary instillation with adrenalin useful, but it cannot always be relied upon. When there are remains of the membrane it is important to curette the annulus tympanicus, or a false membrane may form in the process of healing. When possible the tendon of the stapedius muscle should be divided as a final stage of the operation.

As regards the *results* of these ossiculectomies, an attempt has been made to obtain recent information by letter from those of the 65 who were unable to be seen personally, and, although a number of letters remain unanswered and some were returned, I have so far succeeded that only 24 cases remain unaccounted for. Of these the discharge was known to have recurred in 4, whilst of the remainder the ears are known to have been dry from twelve to eighteen months after operation.

The results may be tabulated under hearing, tinnitus, and discharge.

Hearing.

Improved	... ...	19
Unaltered	... ...	8
Worse	... ...	3
Not stated	... ...	40
		70

This, at first sight, does not show much, but the operation being done primarily for suppuration, it was comparatively late in the series that special attention was paid to the results as regards hearing. In a few of the 40 under the head "not stated" are remarks in the notes that the "patient thought hearing was improved," but I make it a rule never to base any conclusions upon such statements, and the remaining 30 were all tested by the voice (spoken and whispered), acoumeter, and tuning-forks, before and after operation. In none was the improvement great, the best case being that of a woman, aged 36, with a posterior superior perforation and caries of the body of the incus, in whom hearing for speech was improved to the extent of 18 in. In the other cases improvement was not more than from 4 to 6 in.

In 2 cases I find it definitely stated in the notes that *tinnitus* was improved.

Discharge.

Cured	... ...	41
Improved	... ...	3
Recurred, but easily cleared up by treatment		4
Recurred and lost sight of	... ...	4
Failed	... ...	13
Still under treatment	.. ..	5
		70

Of the 41 cured (58.5 per cent.), 20 have been lost sight of, but these, it is known, had no recurrence from six to eighteen months after the operation. In the remaining 21 (30 per cent. of the whole 70) it has been ascertained that there has been no recurrence. We may therefore consider that a cure was certainly effected in at least 30 per cent. of cases.

Three cases were definitely improved. These were all tuberculous—one man aged 27, one woman aged 19, and one boy aged 14. The first two died of phthisis six months and three months later respectively. The third underwent a radical mastoid on the right side and ossiculectomy on the left, but I have been unable to ascertain his ultimate course. These 3 cases were improved by the operation, and to them may be added the 20 patients just mentioned as having been lost sight of, but in none of whom had discharge recurred for from six to eighteen months. The number improved may therefore be stated as 23, or 42.8 per cent.

Discharge recurred in 8 cases (11.4 per cent), 4 of which have been lost sight of. In the remaining 4 the discharge rapidly cleared up under simple treatment and has not since returned. They might reasonably be included under those cured or improved.

In 13 cases (18.5 per cent.) the operation failed to improve the condition, and of these 11 subsequently underwent the radical mastoid operation. Of these, one case, a lady aged 26, is interesting as illustrative of a possible result of ossiculectomy likely to militate against its ultimate success. The patient had suffered from right discharge, the result of scarlet fever, for fifteen years. Ossiculectomy was performed on January 23rd, 1906, and the ear was dry on February 16th. In September a fresh infection occurred during a severe cold, and did not succumb to treatment. A radical mastoid operation in December revealed the fact that the tympanic opening of the aditus had become partially closed by a fibrous cicatrix which prevented the outlet of pus from the antrum.

The other cases needing the radical operation showed cholesteatoma or granulations in the antrum, and one case developed a temporo-sphenoidal abscess one month after the removal of the ossicles.

Of the remaining cases, 5 are, at the time of writing, still under treatment, but 3 of these will probably be ultimately successful.

From the study of these 70 operations the following conclusions may be reasonably drawn:

1. That, in the treatment of middle-ear suppuration, ossiculectomy offers in selected cases at least 30 per cent. of cures and 42.8 per cent. of improvements.

2. That, to give reasonable expectation of success, the operation should not stop at the extraction of the major ossicles, but should include the careful removal of the outer attic wall, especially in its posterior part. The chief objects of ossiculectomy are to provide drainage and to remove ossicles which, by reason of their carious condition, are acting as foreign bodies.

3. That the annulus tympanicus should be subjected to curettement in order to prevent the possibility of a false membrane forming.

4. That, in cases in which the symptoms indicate that the disease is limited chiefly to the tympanum and attic, ossiculectomy should be entertained as an alternative measure before proceeding to the radical mastoid operation, especially as it in no way militates against the success of that operation should the simpler method fail.

DISCUSSION.

Mr. HUNTER TOD (London) said that he was much interested in the paper which had just been read, as he himself had performed this operation frequently in the last few years, and entirely agreed with Mr. Yearsley as to the good results which might be obtained. He submitted that the operation should be done more frequently, not only in the accepted type of case of chronic attic suppuration, but even where the ears were filled with granulations or polypi, and there were also symptoms of caries in the tympanic wall; and he would only perform the complete mastoid operation in those cases in which there was obvious sign of mastoid process, such as a fistula into the external auditory canal, or through the cortex of the mastoid itself, or in which there was cholesteatoma, or in which there was obvious active inflammation shown by pain or tenderness over the mastoid process, pyrexia, or for constitutional symptoms. He admitted that in some cases the operation was a failure. He himself had been successful in about 50 per cent.; in about 30 per cent. there was still a certain amount of discharge, chiefly through the Eustachian tube region—that is, in at least 80 per cent. the mastoid operation had been avoided; in only 3 cases out of over 100 had it become necessary to perform subsequently the mastoid operation, and in one case alone did death occur, and that from lateral sinus thrombosis a year later. With regard to the hearing power, in over 20 per cent. the voice could be heard over 12 ft. off. In favour of ossiculectomy was the simpleness of the operation and the shortness of the after-treatment, and, in addition, the minimizing of the expense to the patient.

Dr. FREDERICK SPICER (London) congratulated Dr. M. Yearsley upon his paper, but differed from his conclusions—indeed, his results and those of others he had witnessed had been so unsatisfactory that he had given the operation up altogether, and he considered that, at the present day, it was almost unjustifiable.

Mr. C. E. WEST (London) said that his experience of the operation was limited to some thirty cases. He considered that the limits of usefulness of the operation were very narrow. It was useless in cholesteatoma and in all cases of infection of bone outside the ossicles and a limited area of the outer attic wall. In his opinion the sole advantage of the operation, when successful, lay in the shortened period of convalescence and the possibility of dealing with the cases as out-patients. The disadvantages were that the percentage of cures, even in selected cases, was enormously less than that following the radical operation in unselected cases; that the damage to hearing was at least as great as after the radical mastoid operation; and that in chronic local attic suppuration the removal of the ossicles was an unnecessarily destructive procedure, the opening up of the attic and antrum being sufficient, and giving excellent hearing results. It had to be borne in mind that hearing before operation was above the average in most cases at all suitable for ossiculectomy. He had been much struck by the amount of pain following these small intrameatal operations, which was far greater than after the larger open operations. There were, he was convinced, special dangers attending the operation of ossiculectomy; he was sure that the risks of facial paralysis were greater than in the radical operation, and that the possibilities of dislocation of the stapes were real. He had seen, though not in his personal experience, two fatal cases of this latter accident. He could say that Dr. Bárány had, in the course of conversation, strongly agreed with him on both the latter points.

Mr. MARK HOVELL (London) said that in his experience chronic suppuration in the tympanum was usually associated with a collection of pus or cholesteatomatous matter in the mastoid antrum, and he failed to understand how removal of the ossicula in these cases could put an end to the discharge.

Mr. MARRIAGE (London) stated that in his opinion ossiculectomy was not a satisfactory operation; he had always found that in cases of chronic otorrhœa, where an operation was necessary, extensive disease of the antrum also existed which did not clear up by an intratympanic operation. Mr. Yearsley's statistics only showed healing in 30 per cent. of the cases, and he asked for information as to the duration of the treatment before operation had been carried out; he also asked as to whether the successful cases had occurred in patients who had suffered from otorrhœa for a few months or in those with a history of many years. He further asked on how many occasions Mr. Yearsley had divided the tendon of the stapedius muscle at the time of the ossiculectomy. In reference to the case mentioned by Mr. Hunter Todd, the speaker remarked that otorrhœa had recurred on several occasions and that at the present time a false membrane had formed with a very small aperture which was constantly getting blocked with collections of epithelium and cerumen, producing very marked deafness.

The PRESIDENT considered the great disadvantage of ossiculectomy was the difficulty in selecting suitable cases. He quite agreed with Mr. Hunter Tod that ossiculectomy was a desirable operation "if you could only hit off the right cases," but so far this difficulty was unsolved. Years ago there was more reason for this operation than to-day, when the dangers to life, facial paralysis, continuance of suppuration, and other misfortunes, have been almost completely removed by the perfected mastoid operation; 30 per cent., or even 40 per cent. of cures was not a particularly satisfactory result, especially if one remembered that some of these cases would doubtless have been cured if non-operative treatment had been carried out by a skilled nurse under the reader of the paper's expert supervision.

Mr. MACLEOD YEARSLEY, in reply, said he was sorry to find so many dissentients, but it was always interesting to read a contentious paper, in order to see from what other points of view the subject could be regarded. He would like to point out that the cases upon which the paper had been based extended over a period of thirteen years, and that many of the earlier ones failed from faulty technique, whilst the later ones gave better results. He had never done the classical operation, which he quite agreed was unjustifiable, having always combined it with removal of the outer attic wall. It would be interesting to obtain statistics of a large number of ossiculectomies by various operators, and to compare them with similar statistics of the radical mastoid operation. In reply to Mr. Marriage, he wished to state that all the cases were carefully treated by other methods first, and he would see by the table in the paper that only a very few had been affected for less than one year. He had tried Neumann's method in his last two cases with good result as regarded haemorrhage. The accidents mentioned by Mr. West had never occurred to him, and he had found that with improved technique pain had been much less in his later cases. He divided the stapedius tendon usually after several days, and he quite agreed that, although it could sometimes be done, it was usually difficult at the time of the operation. He believed that tenotomy of this tendon was a very useful procedure to improve hearing when the opposing action of the long process of the incus was lost.

DEAFNESS AND DISEASES OF THE EAR IN RELATION TO THE PUBLIC SERVICES AND INSURANCE:

THEIR BEARING ON FORENSIC CASES AND THE CHOICE OF A MEANS OF EARNING A LIVELIHOOD.

By Jobson Horne, M.D.,
Surgeon to the Metropolitan Ear, Nose, and Throat Hospital; formerly Ernest Hart Scientific Research Scholar, British Medical Association.

The length of the title of this paper is out of all proportion to the length of time officially allotted for the reading of it. I do not for one moment suggest that the title should be curtailed, and it is still further from my intentions to trespass upon the time available for the discussion of the subject. The subject covers a considerable amount of ground, and is one about which there is undoubtedly room for more than one opinion—in short, it lends itself to discussion. I shall, therefore, abstain from elaborating my views, and I shall confine myself to submitting for your consideration points that at times occasion considerable anxiety to those who have to adjudicate upon them.

It is not possible to lay down hard and fast rules, or even general principles of general application, for accepting or rejecting candidates, the subjects of deafness and ear disease, coming within the scope of the title of this paper. What would be applicable to one would not be applicable to another. For example sake, a candidate not acceptable for life insurance might be accepted for accident insurance, and vice versa; whilst a third candidate might be acceptable for both classes of insurance and rejected for any public service, using the term in a comprehensive sense to include the telephone company and the indifferent waitress at the tea-shop. In the title of the paper the term "insurance" has been used so as to cover both life insurance and accident insurance. Now, first of all, as regards deafness and ear disease in relation to life insurance. Let me at once remind you that there is an increasing competition amongst life offices for business, and whilst they are always most anxious to exclude lives the acceptance of which would be an injustice to others insured, at the same time they are not desirous of turning away business. At times there has been a tendency to regard middle-ear disease a little too seriously in the matter of life insurance. In a word, the life office has to temper medical science with business purposes.

The last time that this subject was discussed by the British Medical Association was in 1898, in Edinburgh, at a conjoint meeting of the Sections of Laryngology and Otology and that of Medicine in relation to Life Insurance. The difficulty that confronted that meeting twelve years ago and prevented it from arriving at useful conclusions confronts this meeting to-day—twelve years afterwards. The difficulty was this—an absolute want of reliable statistics upon which to base sound opinions. The meeting twelve years ago naturally dealt with suppurative diseases of the ear, to the exclusion, I may say, of all other forms of disease of the ear and of causes of deafness. They limited their subject to life insurance; to-day we are dealing with the subject in a much broader manner, and before I touch upon the suppurative diseases of the ear I would wish incidentally to refer to the non-suppurative varieties in connexion with life insurance. For instance, can anybody present tell me from reliable statistics what is the average length of life of a person the subject of oto-sclerosis? Further, can any one tell me the causes of death of such subjects, and whether the causes of death have any bearing upon the ear trouble and upon the point of view of the life office? Unfortunately the ear, hitherto, has been regarded too much as an appendage distinct from the body, with the result that our knowledge of the causes of some forms of ear disease has not advanced. In the present state of your knowledge, can you with confidence state that insurance without delay should be recommended in oto-sclerosis?

The suppurative diseases of the ear naturally form the bulk of the aural problems in life offices, and I wish to submit for your consideration and discussion the following points:

Speaking generally, persons suffering from acute inflammations of the external and the middle ear would not offer themselves for life insurance until the acute stage had passed by. However, exceptions arise, life insurance is at times a matter of urgency, would you advise such cases being accepted in the acute stage? Further, is it advisable to put off insurance in cases of chronic inflammation of the external ear?

Passing to the middle ear, I think it will be generally agreed—but even about this matter I know there are two opinions—that chronic suppurative cases should not be accepted if there is inflammation in the attic or the mastoid, if there is cholesteatoma or tuberculosis, or any form of bone disease or facial paralysis, or if there is associated with the middle-ear disease giddiness, headache confined to one side, or any kind of narrowing of the meatus which would prevent a free escape of secretion. Apart from such cases, would you recommend the acceptance of other cases of chronic suppuration of the ear?

Does a permanent perforation of the drum without obvious discharge call for, in your opinion, rejection of the candidate or some increase of premium?

And, lastly, as regards the suppurative forms of disease, should those chronic cases of suppuration regarded as curable by a radical mastoid operation be rejected or even weighted?

With regard to insurance against accidents, I think it will be agreed generally that marked deafness in both ears with vertigo should call for increased terms for acceptance, if not for rejection.

The suppurative forms of disease in the matter of insurance against accidents alone, at first sight should not stand in the way of the acceptance of the candidate. However, there appears to be room for litigation over the meaning to be attached to the term "accident," as shown by the recent case of a widow seeking to recover compensation for the loss of her husband who was deliberately shot in a railway train. In the event of a subject of suppurative disease undergoing an operation for the cure or relief of ear disease succumbing to the operation, should that be regarded as an accident? If so, such cases ought to be weighted for accident insurance.

I will not take up your time in talking platitudes to you about the lack of attention paid to ear disease by insurance companies, but in illustration of my point let me cite a recent experience. About a fortnight ago a lady, the subject of middle ear suppuration, involving the attic and the antrum, of some thirty-five years' standing, was advised to undergo a radical mastoid operation. Before acting upon the advice she consulted me. Whilst I fully agreed with her that she had been able to go through thirty-five years of life without the operation, and that possibly she might be able to go through another thirty-five years without it, at the same time, in the circumstances, I thought she had had sound advice given to her, and I advised her to submit to the operation. There was some hesitation, and in order to make my point clear to her I mentioned that her position amounted to this, that no life office would put twopence upon her life until the operation had been done. The reply was, "Oh, you are quite wrong, doctor; I have already paid two premiums." "And in what office?" I inquired. The office was one of the best in the kingdom. I further inquired whether she had disclosed the fact that she had been the subject of ear disease for the greater part of her life, and the reply was: "Oh, yes; I mentioned that in my paper." "Did they examine the ear?" "Oh, no!" Well, accepting those statements, personally I should be very sorry to be insured in the same office.

The environments and the social position of the candidate have to be taken into account as of some importance in life insurance when suppurative disease of the ear may be a factor in accepting or rejecting a life. Speaking generally, and excluding the more serious forms of suppurative disease to which I have drawn attention, the well-to-do can be more readily accepted than those who through the harshness of circumstances cannot give up the time for the treatment of the disease; but at times, even amongst the well-to-do, whilst one hour in the day would be given up gladly to the arrangement of a coiffure, the cession of five minutes of life to the purification of a fetid ear would be grudged. Such are the difficulties one has to contend against in advising and protecting a life insurance office.

The examination of candidates for the public services, and more particularly for the Civil Service, calls for even

greater attention to deafness and diseases of the ear than in the case of insurance against accidents and life. Whereas some forms of deafness and disease of the ear would not preclude a candidate from being accepted for insurance, the same should, as I have already indicated, be grounds for rejection of the candidate for employment in any public service. Further, attention should be paid not only to existing deafness or ear disease, but also to any factors potential to the causation of such defects. In this matter, the remarks by our President, Dr. Edward Law, in his opening address, drawing attention to the importance of paying attention to the nose and the naso-pharynx, and thereby getting down to the portal of entrance and bed-rock of many aural affections, are most applicable. Altogether, apart from actual deafness and the potentialities for its development, nasal obstruction is a serious detriment to a public servant in carrying out work which calls for well-sustained and concentrated attention. The advice given to a drowning man to shut his mouth and save his life has been most aptly paraphrased into "shut your mouth and save your brain" as a sound piece of advice for all in all stations of life. When the British Medical Association met at Exeter I was included in a small party for which special permission had been given to visit Dartmoor Convict Prison. I was impressed by the remarkable absence of mouth breathers amongst the inmates, and the doctor informed me that there was little or no ear disease in the institution. Free nasal respiration was no doubt responsible for their alertness of thought and for their fate. The impression left in my mind was that one had to be a brainy person to become an inmate of that institution.

As regards the bearing of deafness and ear disease on forensic cases, this part of our discussion is obviously concerned mainly with cases of malingering. For example's sake, take the case of an individual seeking to recover compensation for alleged deafness resulting from an accident. Here the ingenuity of the aurist may be taxed to the utmost to detect the low cunning of the individual. Doubtless other points in relation to forensic cases have occurred to some of you, and I should be glad if you would mention them in the course of the discussion.

Finally, coming to the choice of the means of earning a livelihood. This part of the subject can be considered usefully, I think, under two headings: Those cases in which there is a family tendency to deafness, and those cases in which the patient is already deaf. As regards the former, there are certain occupations involving great strain upon—one almost might say concussion of—the organ of hearing, such as the firing of large guns, boiler making, and similar occupations, which should be avoided. Then there is a sociological aspect of the matter, such as matrimony, which, when followed by pregnancy, is liable to bring out a latent form of deafness or to intensify a pre-existing deafness. In such a matter one can only advise—one must not dictate—but in advising it is as well to bear in mind that matrimony is not always followed by pregnancy. In cases in which the patient is already deaf the choice of a means of earning a livelihood will, naturally, in a great measure be decided by the degree of deafness, and so I need not weary you by elaborating that point. It follows that a person with suppurative ear disease would be well advised not to seek a dirty or dusty occupation. I would only mention that the most marked deafness need not be the means of preventing the earning of a livelihood; on the other hand, it may be of considerable assistance in doing so. There is money to be made in not hearing too much. I am not going to tell you tales about intentional deafness, but I can call to mind an old fellow with marked deafness who used to help me in days gone by with my research work. He excelled in photographing microscopic specimens. I placed the specimen under the microscope at the exact spot to be photographed. Not a word was spoken, he looked through the microscope, the specimen was removed, and was returned to me with the photograph as required. After his death I employed another photographer, also advanced in years, but not in deafness. He did a great deal of talking about what he was capable of doing, but he never did it. Another old fellow, also deaf, assisted me in literary research. He was so deaf that other people realized that it was useless to interrupt him at his work, with the result that my work was rapidly carried out and carried out well.

Nine-tenths of what is said in this world might be left unsaid without the world being left any the poorer. The demands made upon the organ of hearing are far too exacting. A little deafness is at times helpful. Reverting again to my visit to Dartmoor Convict Prison—and here incidentally let me mention, as bearing upon forsenic cases, that there is no opening there for an ear, nose, and throat doctor—I was much impressed by the amount of difficult technical work that could be done, and done well and rapidly, under the silence system. In the wheelwrights' shop I witnessed two of the inmates making a cart. The work necessitated co-operative movement in clamping and fixing the parts. Not a word was spoken by mouth, but much was said by the eye, and the work proceeded with a rapidity that outside those grey walls would have aroused the indignation of any trade union.

Without stopping to discuss genius and insanity, or sanity and ingeniousness, I left Dartmoor with the impression that the difference between a lunatic asylum and a convict prison, broadly speaking, was the excessive talking in the former and the remarkable silence in the latter, and that the remarkable silence was far more conducive to good and useful work, even in the presence of insanity, than excessive talking. I was so impressed by the advantages of the silence system that I contemplate introducing it into my hospital clinic, where silence would be so helpful in testing hearing. Any one desirous of making a remark would be required to hold up the right arm above the head until the sign to speak were given. That would be wearisome, and the would-be speaker would start thinking before commencing to speak.

Lastly, as regards the lessons taught by this study of the economies of deafness. Deafness and its attendant hindrances would not be so prevalent to-day but for the support which it has received from the medical profession and the public in the past. The levity with which ear disease and impairment of hearing have been treated in childhood must be held in large measure responsible for the sad awakenings and disappointments in after-life. Further, the subject teaches us that reliable statistics are sadly needed to enable us to speak with confidence on the several matters which we have under discussion. Altogether apart from the questions before us, it would be most instructive to learn the fate of the cases of old suppurative disease of the ear, and also of the non-suppurative cases. We seldom see in hospital suppurative disease of the ear in advancing life, or, to put the matter more correctly, such cases that come under our notice are for the most part under 35 years of age. I gather that that is about the age at which life insurance is more largely effected. We may therefore assume that the cases of middle-ear suppurative disease by the time they are submitted for life insurance have given a good deal of indication of how they intend to progress. It would be a most useful piece of work were the special hospitals and the special departments for diseases of the ear in general hospitals in London and the provinces to co-operate in compiling collective statistics to help us to speak with authority to life insurance offices and to similar bodies.

DISCUSSION.

The PRESIDENT thought that applicants with otorrhœa should be rejected until the discharge had ceased and all symptoms disappeared for at least six months. The dangers of bathing and the recurrence of suppuration must be borne in mind when an obsolete perforation was discovered in a proponent. Exostoses and other permanent contractions of the external auditory canals were a risk, especially in patients who travelled abroad and lived away from expert surgical assistance. Persistent deafness and vertigo were, in some cases, sufficient to call for an increased premium. What was their bearing on the Employers' Liability Act? Vertigo was frequent after head injuries, and he was sorry that Dr. Bárány was not present as he might possibly have given them a vestibular test for vertiginous malingering, which was probably more difficult to diagnose than assimulated deafness. The choice of the means of earning a livelihood was a most important and difficult question. Speaking generally, he always advised parents to select for a deaf child an occupation or profession in which the sufferer was likely to be eventually the master and not the servant. Surely, if deaf, it were

better to be the superior officer rather than the subaltern or private, or to be the judge rather than the prisoner, and the same referred to the more humble walks in life. Deafness was less irksome if the sufferer, to use a colloquial slang, was in a position to boss the situation.

Mr. Macleod Yearsley (London) said that as regards otosclerosis, the question of insurance was one to be considered from a general point of view, since these subjects were so frequently sufferers from some general autotoxaemia, usually of intestinal origin. The question of insurance against accident in extreme deafness was one of which often too much was made. It must be remembered that these persons were more careful than hearing persons in the avoidance of street accidents. In the case of life insurance in old suppuration, it had always been his (the speaker's) system to consider the life a good one when there had been no fresh suppuration for at least seven years.

Dr. Jobson Horne, in his reply, said that Dr. Albert A. Gray had endorsed his views that a dry perforation of the ear should not be regarded as a ground for rejection for insurance. The speaker in the matter of insurance against accidents emphasized the importance of ascertaining whether giddiness accompanied the deafness. For life insurance an absence of discharge from an ear for seven years would be a fairly good test, but unfortunately it was most difficult to obtain a reliable history on that point. With reference to exostoses of the meatus affording an additional risk, the speaker had included that condition under the general heading of any obstruction preventing a free escape of the discharge. Suppurative disease of the ear, with vertigo and residence away from skilled assistance, called for an increased premium. In the matter of forensic cases, the tests for vertigo in cases of malingering would be of considerable value. Their President, Dr. Edward Law, had gone to the crux of the question of the selection of an occupation for a person who was deaf, when he said, that one so afflicted should follow an occupation in which he was likely to be eventually the master.

DEMONSTRATION.

Mr. Butlin, President of the Association, exhibited a hearing apparatus which he had been using with great advantage for several months past. It consisted of a concave receiver with a hole in the centre, in which a parabola was fixed. From the hole two tubes conveyed the sound to the ears, where the ends were adapted and fixed like the ends of a binaural stethoscope. The receiver and parabola were the invention of Mr. Sydney Scott (Assistant Aural Surgeon to St. Bartholomew's Hospital) and of Dr. Womack (Lecturer on Physics to the same School). But the binaural arrangement and the placing of the receiver at the back of the listener instead of in front had been carried out on the suggestion of Mr. Butlin. The instrument was made by Messrs. John Griffin and Sons, Kingsway, W.C., who were still experimenting and modifying some parts of the apparatus, particularly those relating to the use of it in public and private places.

DISCUSSION ON AURAL TUBERCULOSIS IN CHILDREN.

OPENING PAPER.

By William Milligan, M.D.,

Aurist and Laryngologist to the Royal Infirmary; Surgeon to the Hospital for Diseases of the Ear; Lecturer upon Diseases of the Ear, the Victoria University, Manchester.

[*Abridged.*]

The exact frequency of tuberculous otitis media is difficult to estimate, for the reason that so far we know very little about the incubation period of tuberculosis, and whether it arises from an infection which may enter the body at any time of life, and by one or other channel, or whether it is the ultimate development of an infection which has obtained access during the milk drinking period of life. Certain it is that, so far as infection of the middle-ear cleft is concerned, the vast proportion of cases of primary tuberculous otitis media occur in infancy and childhood.

By many authorities the primary origin of the disease is considered to be rare. To this view I am unable to subscribe, the result of my observations tending to show that in infants and young children it is distinctly common.

While not denying for one moment its comparative frequency as a complication of pulmonary phthisis, especially with cavitation, it must be borne in mind that pulmonary phthisis in young children is rare and cavitation exceptional. From this it might be deduced that the disease was rare in infants and young children. The very reverse is, however, the case, tuberculosis of the middle-ear cleft occurring in my experience at least more frequently in infancy than at any other period of life and showing a tendency to diminish after the fourth year.

When due to blood infection it may start in the cancellous tissue of the petro-mastoid, when to inhalation or ingestion of tuberculous material in the mucosa of the middle-ear cleft, the latter pathway being in my opinion in children the more frequent of the two. Detailed histological observations of the early stages of primary tuberculous otitis media are not, however, very numerous. This is due in part to the subtilty of the disease and in part also to its being so frequently complicated with suppuration which masks its real nature. It should be borne in mind that the tubercle bacillus is not a pyogenic organism *per se*, and that, therefore, when discharge from the middle ear is definitely purulent organisms other than the tubercle bacillus must be held responsible. The essential feature of any tuberculous lesion, whether of mucous membrane or of bone, is multiplication of epithelioid cells (endothelial and perithelial) which in course of time completely replace the normal elements of the structure. The foci or tubercles thus formed, owing to absence of blood vessels, caseate and die.

Mingled with these epithelioid clusters are giant cells formed either by fusion or by nuclear multiplication without cytoplasmic division. Bacilli are for the most part to be found in the peripheral zone where epithelioid elements and lymphocytes intermingle. They are, however, comparatively seldom found in "giant cells." In any pure tuberculous infection active destruction of tissue is never frequent.

When, however, the process is complicated by the presence of pyogenic bacteria, as is generally the case, leucocytes are numerous, both in the inflammatory focus and in the discharge. An uninfected tuberculous discharge from the ear has certain definite characteristics. It is of a thin watery and for the most part of an odourless character, containing white or grey granules or flakes. Lymphocytes are invariably abundant while leucocytes are relatively few and granular and possess pale and fragmented nuclei. Giant cells may as a rule be found if searched for in the tuberculous area. Some difficulty may arise in definitely identifying the tubercle bacillus from the fact that other acid-fast bacilli are also present at times in discharge from the ear, such as certain streptothricial forms, the *B. subtilis*, *B. butyricus*, etc. These organisms differ, however, from the bacillus of tubercle not only morphologically but also by their staining properties.

The changes induced as the result of the deposition of the tubercle bacillus within the mucosa of the middle-ear cleft vary according to whether the morbid process runs an acute or a chronic course. In acute cases tubercles are numerous and break down at an early stage, with a resulting loss of tissue. If deposited upon the membrana tympani perforation is prone to take place at an early period of the disease, followed by the extrusion of pale, oedematous, and succulent granulation tissue. From the fact that two or more tubercles are often deposited upon the membrane multiple perforations are not uncommon, while a coalescence of several perforations leads to extensive loss of tissue. When tubercles are seen upon or through the membrane, they appear as sharply-defined pearly-grey spots surrounded by an uninflamed mucosa.

Although acute tuberculous infection of the tympanic mucosa undoubtedly occurs, the chronic type of disease is much more common and more important from a clinical and practical standpoint. The deposition of tubercle bacilli in the muco-periosteum of the antro-tympanic cavity frequently leads at quite an early stage to infection of the underlying bone and to subsequent cario-necrotic changes, often extensive and as a rule quite painless.

Accompanying this cario-necrosis there is at times an exuberant production of pale granulation tissue which, if microscopically examined, may show areas of caseation, giant cell formation, etc. Progressive cario-necrosis leads in time to exposure of the dura mater, the facial nerve, or the contents of the internal ear. In fact one of the very early and one might almost say pathognomonic symptoms of tuberculosis of the middle ear is the appearance of facial paresis or paralysis.

The extensive destruction of the tympanic mucous membrane which accompanies all tuberculous middle-ear lesions leads to infection of the ossicular chain with subsequent exfoliation of one or more ossicles. In fact in no other type of middle-ear disease are the ossicles so frequently infected and destroyed. So much is this the case that Haike [1] considers caries of the foot plate of the stapes to be a pathognomonic symptom of tuberculosis.

Tuberculous disease shows also a marked predilection to attack young and growing bone. So far as the petro-mastoid is concerned the possibility of injury—for example, the use of forceps during delivery—acting as an exciting cause should not be forgotten. The amount of painless destruction of the temporal bone often with no external evidences of its presence is at times remarkable. In several cases coming under my observation *post-mortem* examination has revealed almost complete destruction of the cancellous tissue of the petro-mastoid upon both sides, a mere shell of compact bone remaining upon which the middle fossa is poised.

In infants and young children destruction of bone is generally greater than in adults. Sequestra may involve such important structures as the Fallopian aqueduct, the cochlea, the semicircular canals, etc.

Erosion of the outer table of the pars mastoidea is, in my experience, not of such frequent occurrence in tuberculous as in non-tuberculous cases, the tuberculous disintegration showing a peculiar affinity to attack the cancellous rather than the compact portions of the temporal bone. On the other hand, however, I have met with many cases where, after making the post-aural incision, the cortex was seen to be perforated and a large fistula found filled with a creamy white material of the appearance and consistency of putty. From the complete absence of external signs and symptoms it would appear as if the periosteum offered greater resistance to the spread of disease than the bone itself. Perforation of the inner wall of the mastoid process and the formation of an abscess under the deep cervical fascia, Bezold's mastoiditis, I have found to be comparatively rare.

Early enlargement of the periauricular glands is peculiarly characteristic of primary tuberculous otitis media, and is in many cases the first definite objective indication of disease.

Those first attacked are the mastoid glands, then the deep glands of the posterior triangle, and finally the parotid and retropharyngeal. Sections of these enlarged glands reveal the presence of such changes as the formation of tubercles, giant cells, and areas of caseation.

In course of time the infective process spreads to surrounding glands, until large masses are formed, often matted together by intercurrent attacks of periadenitis, and exhibiting on section the various stages of degeneration, caseation, suppuration, and even calcification. So long as degeneration and breaking down has not taken place, they act as a first line of defence, preventing the dissemination of bacilli, and hence, for a time at least, serve a useful purpose.

Infection of the meninges, the result either of direct extension of disease or as part of a general miliary tuberculosis, is not uncommon. In my experience the route of extension is most frequently by way of the internal ear to the pia arachnoid meshes of the posterior cranial fossa, although it may also result from organisms passing through the lymphatic channels of the unossified petro-squamosal suture.

The occurrence of a tuberculous brain abscess is very rare. When an intracranial abscess is found complicating tuberculous otitis media it is almost invariably of pyogenic origin.

Channels or Avenues of Infection.

The avenues along which tubercle bacilli travel to effect an entrance into the middle-ear cleft are:

1. Aërial—air passing up the Eustachian tube and depositing bacilli upon its lining membrane—respiratory tuberculosis.
2. Lymphatic—along various lymph channels leading from adjacent tuberculous foci.
3. Vascular—along blood vessels, following the entrance of bacilli from the respiratory or digestive canals.
4. Through the lymphoid and along the subepithelial collections of lymphoid tissue which exist in such abundance in the pharynx and naso-pharynx, and also around the lumen of the Eustachian tube, bacilli being carried inwards by means of leucocytes and often without any demonstrable lesion of the epithelium—aëro-lymphogenous.
5. From the entrance of bacilli through a perforated membrana tympani.
6. Through erosions of the dermic lining of the external auditory meatus.

The most common route of invasion—in adults, at any rate—is by way of the respiratory system. I am inclined to think, however, that the importance of ingestion tuberculosis is, in this country at least, somewhat underrated, and that the lymphoid tissue constituting Waldeyer's ring is a most important portal of entry.

The fact also must not be overlooked that many cases of primary tuberculous mastoiditis in infancy are the direct result of a blood infection.

In infants and young children, among whom cases of primary tuberculosis of the middle-ear cleft are most frequent, I believe, as the outcome of observation extending over fifteen years, and including the records of a large number of clinical cases and *post-mortem* records, that one of the most frequent avenues of infection is from the entrance of the bacillus through the pharyngeal and naso-pharyngeal mucosa, and thence along the subepithelial lymphatics and conglomerations of adenoid tissue to the middle ear. Assuming this to be true, how is the entrance effected? My theory is that the bacillus is swallowed with the milk upon which the child is fed, that the regurgitation of food, which is so common in young children, forces portions of the now semi-digested milk into the tonsillar crypts, the naso-pharyngeal cavity, and the neighbourhood of the Eustachian tubes.

As is now well known, the bacillus has the power of penetrating the mucosa, leaving it intact, and so of gaining an entrance into the submucous lymphatic plexuses. This theory is, to my mind, substantiated from the fact that I have found on section tuberculous adenoid tissue around the Eustachian tube from its naso-pharyngeal to its tympanic orifice. It is also possible that the regurgitation and suction movements of the child, by causing a negative pressure in the post-nasal space, initiate aërial currents which carry bacilli towards the tympanum.

In a few of my cases of tuberculous otitis media occurring in infants reared upon the bottle, and where no family history of tuberculosis was obtainable in either parent, I have carefully investigated the source of the milk supply, and in three instances have found that the little patients were being reared upon milk from cows possessing tuberculous disease of the udder.

While attaching very great importance to this particular mechanism of infection I also believe that a large number of patients are aërially infected. If one considers for a moment the surroundings of the great majority of cases of tuberculous otitis media, the vast proportion being hospital patients often from the poorest districts of our large cities, one cannot help being struck by the extraordinary ignorance of parents in the matter of the clothing and the feeding of their offspring, and in the provision of fresh air in the often overcrowded sleeping rooms where other tuberculous contacts may be sleeping. The mixing also of large numbers of children, often with running ears, or with ears to which semi-desiccated crusts of discharge are adherent, or ears stuffed with highly septic and decomposing pledgets of cotton-wool, in school-rooms not always particularly well ventilated is, in the light of our present-day knowledge, almost certain to be the means of disseminating disease, and of infecting other children whose powers of resistance are incapable of withstanding bacillary invasion.

Symptoms.

I know of no one particular symptom, subjective or objective, which is pathognomonic of tuberculous otitis media. Certain signs and symptoms, however, taken collectively, make up a picture which the aural surgeon has little hesitation in pronouncing as typical of tuberculous infection of the middle-ear cleft. These symptoms are the painless onset of the disease, the absence of inflammatory reaction, the frequent presence of two or more perforations,

the early appearance of enlarged periauricular glands and facial paralysis.

The painless onset of the disease is in marked contrast to the acute and painful course of a pathogenic infection of the middle-ear cleft. In no other middle-ear lesion, sarcomatous disease of the tympanic mucosa excepted, is the complete absence of pain so marked a feature. In a series of cases examined with special reference to the presence or absence of pain, the onset of the disease was apparently quite painless in 85 per cent. This anomaly is by no means easy of explanation, but is usually said to be due to the very slow and insidious destruction of tissue and terminal filaments of the sensory nerves of the part.

Should a coincidental pathogenic infection exist at the same time, giving rise to acute swellings, pain of a more or less severe character may be present. In many cases two, and sometimes three or four, perforations are visible, while at times they coalesce, forming one large perforation occupying the greater portion of the membrana tympani. Prior to the stage of perforation, the tubercles, to whose breaking down the perforation owes its origin, may be seen upon the membrane or upon the mucosa covering the pars promontoria in those cases where the membrane is peculiarly translucent. In the ordinary type of case, which runs a chronic and asthenic course, the membrane appears pale and oedematous, and the edges of the perforation grey, inactive, and flabby. Where the greater portion of the membrane has been perforated the exposed inner wall of the tympanum is frequently found covered by oedematous granulomatous tissue, which upon microscopic examination shows evidences of active tuberculous changes. To this particular objective appearance I attach considerable importance, the more especially when the underlying bone is found to be carious.

The presence of a perforation in the postero-superior segment of the membrane, of painless origin and unaccompanied by sthenic symptoms, is regarded by many observers as pathognomonic of tuberculous otitis media. In my opinion there is in all cases of tuberculous infection of the middle ear with perforation an absence of that distinct inflammatory reaction so invariably seen in cases of phlogogenic origin.

Reference has already been made in considering the pathology of the disease to the fact that early and extensive enlargement of the periauricular glands is almost constant, and I would here state that in several cases I have found glandular enlargement to be the first objective indication of the disease, before even perforation has taken place and prior to the occurrence of facial paralysis.

Facial paralysis is not only extremely frequent but is also met with at a very early stage of the disease. In a series of tuberculous cases which I have collected it was found in 65 per cent., whereas in an equal number of non-tuberculous cases it was found in only 2 per cent. In another series of tuberculous cases collected by Paul Matthews it was found in 33 per cent., while in 658 consecutive cases of non-tuberculous otitis media collected by our *confrère*, Richard Lake, it was found but four times. Whatever the exact percentage may be—whether 30, 40, or 60 per cent.—the above figures are very striking, and tend to substantiate Grimmer's contention that its presence may be regarded as almost pathognomonic of tuberculosis in cases of chronic otorrhoea

In infants and young children it is somewhat difficult to detect minor degrees of facial paresis owing to the absence of lines and folds upon the face and owing to their inability to whistle.

The almost invariable presence of caries or cario-necrosis in tuberculous otitis media serves to explain the frequency with which facial paresis or paralysis is met with. The position of the Fallopian aqueduct and its frequently incomplete ossification renders it liable to attack, with consequent erosion and exposure of the facial nerve. The resulting neuritis may come on quite suddenly, and may involve the whole thickness or only a portion of the nerve trunk.

Extension of disease to the pars petrosa by way of the fenestrae, or erosion of the promontory, leads frequently to early implication of the static or acoustic segments of the internal ear. The insidiousness of the process, however, prevents as a rule the occurrence of symptoms of the Ménière type. Severe, if not complete, nerve deafness is, however, very common.

The Discharge.

The discharge from the middle ear is, as a rule, copious, thin, and sanious. It is frequently extremely fetid, owing partly to its origin being from broken down and carious bone, and partly from secondary infection with putrefactive organisms—for example, the *Bacillus butyricus*, *Spirochaeta foetida*, etc—which gain access through the perforated membrane. When a pyogenic infection is superadded, as frequently occurs at an early stage, it is thick, muco-purulent, and curdy. The presence of blood in the discharge is due to the existence of exuberant granulations associated with osseous lesions. If a droplet be rubbed between the fingers it imparts at times a gritty sensation from the presence of spicules of bone.

Diagnosis.

A diagnosis of aural tuberculosis is by no means always easily made. The various clinical signs and symptoms already detailed are highly suggestive of the tuberculous nature of the disease. To verify the diagnosis it is, however, necessary to discover the bacillus in the discharge from the infected middle-ear cleft, or in tufts of granulation tissue or portions of diseased bone removed by operation or exfoliated by disease, or to produce experimental tuberculosis in animals inoculated with products from the diseased ear.

The finding of bacilli in the discharge from the ear is admittedly hard, partly on account of the small number which may be present, but more particularly on account of the frequent presence of other acid-fast bacilli and the difficulty of distinguishing them from the bacillus of tubercle.

A more certain method of diagnosis is the examination of portions of tufts of exuberant granulation tissue removed from the depths of the tympanum. Such tufts show at times evidence of active changes—for example, giant cells, areas of caseation, bacilli, etc. The most exact and reliable method of diagnosis, however, with which I am acquainted is the inoculation of guinea-pigs with portions of bone or granulation tissue removed from the advancing edge of disease. Either the subcutaneous or the intraperitoneal method of inoculation may be adopted. My own observations have been mainly confined to subcutaneous inoculations.

Prognosis.

In all cases a guarded prognosis should be given. In the primary form it is more favourable than in the secondary. The death rate is certainly high—in my experience being nearly 50 per cent.—and even if a fatal issue does not result, the difficulties encountered in effecting a complete arrest of the disease are great. Age incidence is of the utmost importance. The younger the patient is when infected the greater the risk and the more rapid the spread of the disease. In hospital patients the prognosis is distinctly worse than in private patients, while the possession of a tuberculous family history adds greatly to the gravity of the outlook.

The greater the area of glandular involvement, but not necessarily of glandular enlargement—I mean in the gross and palpable form—and the earlier the onset of facial paralysis, the worse the prognosis. Early implication of the labyrinth is also an unfavourable omen.

The virulence of the bacilli present in the discharge or in tufts of exuberant granulation tissue, as determined by the results of the experimental inoculation of animals provides us with a fair means of estimating the severity of infection. The almost constant presence of cario-necrotic bone lesions and their well known rôle in the production of miliary tuberculosis in children accounts to some extent for the high mortality. The prognosis in secondary infections—especially in phthisical patients, where there is frequently a rapid destruction of tissue, largely the result of a superadded streptococcal infection—is most unfavourable.

The unsatisfactory results of treatment must also be considered in our estimate, for it is undeniable that many patients exhibit practically no reparative power, and succumb either from a generalized blood infection or septic complication.

Treatment.

Unfortunately the treatment of the majority of cases is begun too late, and this I believe is due to the insidiousness

of the process, and to the complete absence of pain. Moreover the tuberculous nature of the disease is often not suspected until dissemination has taken place, or until it is so advanced as to render all attempts at its removal futile. In acute cases no time should be lost in establishing and in maintaining free drainage from the posterior end of the middle-ear cleft. The provision and maintenance of efficient drainage is of immense value, and if supplemented by the judicious injection of tuberculin may bring about an arrest of the disease. As a rule, however, cases are well established before resort to advice is sought. Under such circumstances our great aim should be to remove infected bone and to provide efficient drainage. How this is accomplished does not seem to me of so much importance as its accomplishment. I am in favour of free removal of bone; and, seeing that the facial nerve at this stage is so frequently paralysed, and that there is practically no hope of preserving the ear as an organ of special sense, it appears to me the more widely we operate, the better are the chances of arresting the disease. In other words, in order to save life, we are justified in ablating the sense organ. I am in the habit now of exposing as much of the dura as possible, of removing the labyrinth, and of rather welcoming a view of the internal carotid artery than otherwise, believing that the greater the amount of temporal bone removed the better the chances of recovery.

As the great majority of the children suffering from aural tuberculosis are in a more or less debilitated condition and possess a low opsonic index, such extensive surgery is only to be accomplished by operating in stages. Enlarged glands I purposely leave for a time at least, believing that so long as they are not broken down they act as a first line of defence in preventing dissemination, and hence fulfil a useful purpose. On the other hand, when the infection is a spreading one or when the enlarged glands commence to caseate or suppurate, efforts should be made to assist immunization.

Speaking generally, local treatment—by which I mean irrigation with antiseptics and the employment of antiseptic lotions—is practically valueless, and has never in my experience, even in early and acute cases, effected a cure. Removal of adenoid vegetations, in such cases themselves frequently tuberculous, and of enlarged tonsils should be effected as a preliminary to any other form of treatment.

Seeing that every individual who has contracted tuberculosis is capable of conveying it to others, the question arises how far it is justifiable to allow such children to mix with others, especially in school where large numbers are collected together, often in small and not too well-ventilated class-rooms.

To summarize my belief, it is:

1. That aural tuberculosis is of far more frequent occurrence than is usually supposed.

2. That an early and accurate diagnosis of the underlying factor in the production of suppurative otitis media is essential from a therapeutic, prognostic, and sociological point of view.

3. That children suffering from tuberculous otitis media should be segregated and every endeavour made to raise their powers of resistance.

4. That local authorities should be appraised of the great danger to life from an impure milk supply, and that means should be adopted to secure efficient supervision of dairy farms and creameries.

5 That notification of tuberculosis, in whatever form it occurs, should be made compulsory.

DISCUSSION.

The President (Dr. Edward Law), after expressing the Section's appreciation of the paper, said that aural tuberculosis in childhood appeared to be of more frequent and of greater moment than was usually surmised. The prophylactic war-cry should evidently be "pure milk and a satisfactory hygienic environment."

Mr. Westmacott (Manchester) said he had examined cases at the Children's Hospital, Manchester, for the past two years more carefully owing to request for information on this subject by school medical officers. Out of 1,500 cases in the past year he found 31 cases of undoubted tubercle of the ear—that is, 2 per cent. Of the 31 cases the discharge showed tubercle bacilli in only 2 instances, in the other cases a mixed infection was present of streptococcus and staphylococcus, and in others of either of these organisms alone, and in two cases of streptococcus and pneumococcus. More attention should be paid to the cases where the mother stated that the baby in arms put the hand to the ear and cried, more especially at night. Frequently no visible aural disease could be found, but he advocated watching the cases for months, as there might be early tubercle present in the bone. In cases of mastoid tubercle, other tuberculous bone lesions in shaft or joint were present much more frequently than alimentary or respiratory tuberculosis. Meningeal complications were due to saprophytic organisms or to that secondary tuberculous meningitis which so frequently ended the life of children suffering from joint or bone tubercle. Sequestration following tuberculous disease of the temporal bone he had seen lately in one case, a boy of 9 years; the whole squamous portion of the temporal bone had been exfoliated. In another case the whole vestibular, cochlear, and semicircular canals had been removed en masse from an old operation cavity in the mastoid; while in a third case there had been a passing of the epitympanic ring in the meatal discharge. The discharge was usually extremely irritating to the skin round the meatus, and set up impetiginous eruptions and cellulitis. The perforation in the upper and posterior segment he could not accept as being pathognomonic of tubercle, as from physical reasons any bacterial or other matter blown forcibly up the Eustachian tube towards the iter would in most instances impinge on the tympanum in this position. Tuberculous glandular enlargement he had found oftener on the left side; and this was due to the situation of the thoracic duct on that side. In many cases of tuberculous glands in the retropharyngeal region and of the neck around the under part of the ear, no ear disease at all occurred. He always opened up the mastoid process and curetted wherever the disease seemed to track, and repeatedly operated if necessary, rather than doing a formal and extensive removal of bone.

Mr. Sydney Scott (London) said that his personal experience of aural tuberculosis in children was based upon some 10 cases which he had met with at the Evelina Hospital for Sick Children or at St. Bartholomew's Hospital. In all these cases the diagnosis was established by direct histological examination or by inoculation. (Possibly other cases were tuberculous, but their true nature remained undiagnosed.) All were children under 4 years of age except one, a boy of 5 years, who already had a mastoid fistula when first seen. Several of the cases gave indications for operative treatment when less than 12 months old. In two cases the middle-ear cavity was filled with ordinary looking pale granulation tissue and there was no obvious bone destruction. As regards the invasion of the internal ear, the speaker could only recall one case of proven tuberculous labyrinthitis. This was in a girl whom he saw with his colleague, Mr. West. The disease had invaded the vestibule and destroyed the cochlea. The President had alluded to one of Mr. Scott's specimens of aural tuberculosis which was exhibited in the museum of the Association. In this case, as also in another which he examined *post mortem*, there were large caseating granulomata in the antrum on each side. The masses protruded into the cranium, forming tumours which compressed the temporo-sphenoidal lobes, but had not become adherent to the leptomeninges. Death was due to general miliary tuberculosis, with miliary tuberculous leptomeningitis, which was probably haemogenous in origin. The speaker took a favourable view with respect to the result of local treatment effected by the complete radical tympano-mastoid operation through the ordinary post-aural route, and he would not consent to treat these cases intrameatally. In no case had a second operation been necessary, and he had been interested to find that in those patients who had succumbed during periods up to three years after the operation—from accidental causes in one case or from tuberculosis elsewhere in others—the temporal bone, which had been operated upon, had remained free from any trace of the disease. As an example of the favourable result of treatment by operation, he cited that of an infant whom he had operated upon at the age of 7 months. The child was then wasted and puny, and had

purulent discharge from the left ear, a post-aural fistula leading into the antrum, an ulcerated preauricular gland and a tuberculous abscess in the neck. After the operation on the ear and lymphatic glands the child had become strong and robust, and now, at the age of nearly 4 years, he showed no sign of disease. In this case there was no family history of tuberculosis; the child was hand-fed almost from birth. The speaker attributed this success largely to the mother's undivided care in carrying out "fresh-air" principles of treatment combined with the eradication of the tuberculous foci.

Dr. Bárány (Vienna) said that his experience in the matter was the result of clinical observation only. Cholesteatoma seemed to be not rarely combined with tuberculosis in children. Double perforations of the tympanic membrane were only characteristic if they were in the anterior inferior or posterior inferior quadrant, whereas a combination of one perforation in the attic, one in the anterior inferior quadrant, or two perforations leading to attic and antrum were not characteristic. As to complications from the side of the labyrinth, it seemed to him that necrosis of the promontory, which was met with frequently in adults, was rare in children. He had seen several cases with sequestration of the labyrinth, but only one case with labyrinth fistula, in a child of 9 months. In was the youngest person in whom he had found the labyrinth fistula symptom. As to the operation, they were in Vienna as radical as possible, and they did not even hesitate to operate a second time if the first operation had not produced the desired effect. Sometimes after the healing of the wound a deadly meningitis appeared.

Dr. Dundas Grant (London) was of the opinion that tuberculosis of the ear would be more often diagnosed at an early stage if the possibility of its occurrence was kept more prominently before the mind. Many cases of apparently acute mastoiditis in very young children had a basis of tuberculosis with pyogenic infection superadded. In his experience the most common appearance of the membrane before perforation in tuberculosis was a general bulging of a yellowish-grey tint as if the tympanic cavity was obliterated by a stuffing of some sort (cheesy material or granulation tissue) without the intense redness of an acute otitis. He attached great importance to the hygienic —open-air, etc.—treatment. He did not approve of limited curettings, but advised thorough exposure and wide removal of the diseased bone. The removal of fragments of tissue for preliminary microscopic examination could be safely effected by means of Hartmann's minute punch forceps. The antiformin method of disintegrating small fragments for double-staining might be found useful. He had seen good effects from the application of methyl violet (pyoktanin) either in the tympanum or in the osseous wound.

Dr. Jobson Horne (London) fully agreed with Dr. Milligan that in infant life the disease was primary in origin, or, if not primary in origin, it was, when it did occur, and an early diagnosis had been made, primary in importance. He further agreed that the ravages of tuberculosis of the ear amongst infants were far more extensive than was commonly realized, and would go further than that, and state that primary tuberculosis of the ear in children was far more frequent relatively, and far more disastrous absolutely, than tuberculosis of that organ where secondary to hopeless cases of pulmonary phthisis associated with cavitation of the lungs in adults. Reliable statistics could be based only upon cases in which the diagnosis had been conclusively established, either by detecting the tubercle bacillus in the tissue or in the discharge, or by reproducing the disease by animal experiment. For practical clinical purposes the disease presented a set of symptoms which, taken together, would justify one in arriving at a diagnosis of tuberculosis and acting accordingly, although, from the standpoint of the scientist, such cases should not be placed in the same category for statistical purposes as those in which the diagnosis of the disease had been conclusively established by finding the bacillus. Every case of aural tuberculosis sooner or later became purulent; but purulent ear disease, even in a person the subject of tuberculosis in some other part of the body, was not necessarily tuberculous in origin. In discussing the causation of the disease, he would not detain them by repeating what he had written some years ago about the part played by the adenoid tissue in the naso-pharynx, which he had spoken of as a "half-way house," and about the rôle of the lymphatic glands, which he had described as potential lines of defence and also as potential paths of general invasion. He would, however, remind them that in 1903 he had summed up the conclusions which he had arrived at from clinical and *post-mortem* observations to the effect that, in his opinion, it was a question whether tuberculosis of the ear in child-life should be regarded strictly as a form of middle-ear disease in precisely the same sense as other forms of suppurative otitis, or whether it should not more properly be grouped under the tuberculous diseases of bone. All the clinical evidence—and more than a quarter of a century ago it was pointed out that facial paralysis in a child might be the first clue to tuberculous disease of the ear—supported the view that the disease had a deep-seated origin in the bone, and the extensive ravages found already to have been made by the disease when a case was first brought under observation confirmed that opinion. At the time of operating he had found the temporal bone completely gutted, the contents a pultaceous mass, the party walls alone left standing, and the long-suffering dura mater on the point of falling in. The mortality from this disease in infant life was appalling. He therefore submitted that any reference to unspeakable symptoms in the ear by an infant should not be passed over lightly, even when upon examination no objective sign could be detected. Development of radiography might possibly come to their assistance in detecting a deep-seated deposition of tubercle in the bone at a time when surgical intervention would yield more happy results.

Mr. Mark Hovell (London) agreed with Dr. Milligan as to the importance of the supervision of milk supply, and referred to a case of a child suffering with tuberculous disease of the eye with healthy parents, living amid healthy surroundings, who was fed by milk supplied from a farm where a large herd of cows was kept for milk supply. He fully agreed that the disease should be notified, so that the impure milk supply might be traced to its source.

Mr. Hunter Tod (London) said that he agreed with Dr. Milligan on practically every point. With regard to the origin of the disease, he could not help feeling that in some cases it must be through the blood stream—for instance, in infants who had a double-sided affection, and in which at the time of operation the temporal bone was found to be extensively diseased, as if the tuberculous lesion had started primarily in the mastoid process. One of the earliest symptoms was a slight sanious discharge from the ear, of distinctive odour and of such an irritating character as frequently to cause eczema of the meatus and auricle. If with this granulations were found in the place of the tympanic membrane, tuberculous disease should be suspected. If, in addition, there was caries of the promontory, the diagnosis was practically certain. Next in order with regard to clinical symptoms came enlargement of the cervical glands, but more especially the preauricular glands; the latter he had never found enlarged in simple middle-ear suppuration. Facial paralysis was an important symptom and very frequently met with. With regard to treatment, if the case could be seen in its earlier stages, before involvement of the glands, facial nerve, or the mastoid process itself, he would suggest a trial of tuberculin, from which he had seen several good results. If, however, operation was decided on, he agreed that it should be thorough and extensive. In such cases one was often surprised that, in spite of there being no external signs of disease of the mastoid process, yet on operating the temporal bone was found to be carious and necrotic, frequently with involvement of the internal ear, which structure in tuberculous cases seemed to permit of considerable operative interference without any appreciable risk to the patient. With regard to prognosis, if the diseased area of bone could be eradicated by operation, the result was favourable. Death, in his experience, seldom occurred from the meningitis, but

if so, it was from septic infection and not from the spread of the tuberculous lesion.

Mr. WEST (London) held that the number of tuberculous infections of the ear had been greatly overstated if it applied to the class of case seen at St. Bartholomew's. Tubercle was a progressive disease, and whether diagnosed early or late was bound to declare itself. He was in the habit of submitting every case which could be held suspicious to animal experiment, and he believed that 1 or 2 per cent. would be about the figure. As to the diagnosis, he believed animal inoculation was the only conclusive method. There were, he thought, two types of tubercle of the ear—the one, of infection of the bone, the disease chiefly in the posterior parts of the petrous and mastoid; the other of the mucous membranes, apparently coming up the Eustachian tube, with the older lesions situated anteriorly. He questioned the possibility of free tubercle bacilli in the atmosphere of the naso-pharynx, so conveyed, as Dr. Milligan seemed to imply, along the Eustachian tube to the tympanum; such a supposition seemed highly improbable. Meningeal infection had been in his experience unfortunately common, not at the same time or as the result of operation, but as a much later development after the complete healing of the disease in the ear in several instances. He believed this tuberculous meningitis was due to a blood infection from tubercle in other parts of the body. But cases of direct spread through the labyrinth to the internal auditory meatus and the leptomeninges probably also took place.

Dr. MILLIGAN, in reply, said that he was quite aware his view of the prevalence of the disease might not be accepted at once. He had, however, worked at the subject for a considerable time past, and had found the cases to be more numerous than was usually supposed. He thought that Dr. Dundas Grant had hit the nail on the head when he had said that in many cases there was an original tuberculous focus which was frequently not suspected. He considered the most accurate method of establishing a diagnosis was by means of animal experiments, and until those speakers who disagreed with his statistics adopted the same methods he could not accept their conclusions. He thought one outcome of the discussion was that there was a practically unanimous expression of opinion that if operation was to be performed it should be a free and radical one. He entirely agreed with Dr. Bárány about the occurrence of cholesteatoma in tuberculous cases. He also agreed with Mr. Hunter Tod that in many cases a fatal issue was brought about as the result of a septic and not necessarily a tuberculous meningitis.

SECTION OF LARYNGOLOGY.

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CONGENITAL ATRESIA OF THE CHOANAE.

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CONGENITAL atresia of the choanae was first described by Otto[1] in 1830; the condition is a somewhat rare one, and I have only been able to find records of 115 cases, many of which were insufficiently described. The atresia may be unilateral or bilateral, partial or complete, bony or membranous.

Schwendt[2] divided cases of choanal atresia into typical and atypical; in the former group he placed cases in which the occluding structure (usually a bony plate) is in a plane in front of the choanal margins, so that the boundaries of this space can be clearly recognized; in the second group he included cases in which the closure was in the plane of the choana itself or behind it. Many of these cases are membranous.

If we combine the cases collected by Haag,[3] Cohn,[4] and Kahler,[5] and add to them those recorded by Hamilton,[6] Brunk,[7] Schönstadt,[8] Paterson,[9] Ash,[10] Ard,[11] and the present case, we get a total of 108 cases; of these, 31 were males, 44 were females, and in the rest of the cases the sex is not stated; 40 of these 108 cases were bilateral, while the right side was affected in 36 and the left in only 22 cases (no statement in 10 cases). In regard to the nature of the occluding structure, this was bony in 89 cases, wholly or partly membranous in 10, while in 9 the nature of the membrane was not stated.

The symptoms, which are of course most marked in bilateral cases, are as follows: Inability to breathe through one or both sides of the nose, loss of smell, collection of mucus in the nasal cavity, and dermatitis of the upper lip, due to the constant moisture of the part. There may, in addition, be certain abnormalities, such as asymmetry of the face and body, abnormally high palate, inequality of the palatal arch (in unilateral cases), hypertrophic nasal catarrh (mulberry hypertrophy of the inferior turbinals and polypoid oedema of the middle turbinals), catarrhal or suppurative otitis media and mental defects.

Although I have only one case to add to those already recorded, I think that I am justified in bringing the condition under the notice of the Section, as I was able to obtain the specimen at *post-mortem* examination. As far as I can find, there are only three specimens of this condition in existence—Professor Heymann's, which is not one of the typical variety, Dr. Hamilton's, and my own. The history of the case is as follows:

C. A., female, aged 20, a native of Shetland, was admitted to the Ear and Throat Department of the Royal Infirmary, Edinburgh, in the absence of Dr. Logan Turner. The patient was the seventh child of a family of nine; her father died of pulmonary tuberculosis, and three of her brothers also died of tuberculosis. Dr. R. F. Russell, who attended the patient, tells me that he was acquainted with nearly all her relations, and that he neither knew nor heard of any other abnormality among them. On admission, the patient gave a history of deafness in and discharge from the left ear of many years' duration, and of occasional attacks of pain in this ear; antiseptic treatment had not been persevered with. On being questioned, the girl informed us that she had never been able to breathe through the right nostril, and that she had never menstruated. Dr. A. H. F. Barbour, who kindly examined the patient in the Gynaecological Department, tells me that the amenorrhoea was due to imperfect development of the uterus.

The patient was a well-developed but rather pale-faced girl; there was no noticeable facial asymmetry; her mental development was probably slightly below the average. The patient was *not a mouth-breather*, and her speech did not show the characteristics of rhinolalia clausa.

On examination the right tympanic membrane was found to be normal (the choanal atresia was on the right side); the left tympanic membrane showed a large kidney-shaped perforation through which the region of the promontory and niche of the round window could be seen; there was no mastoid tenderness.

The nasal septum was deviated to the right, and the right side of the nose contained a large quantity of mucous discharge; the anterior ends of the inferior and middle turbinals on the right side were slightly oedematous, and there was also slight redness (dermatitis) of the right anterior naris. The left side of the nose was roomy. After the application of adrenalin and cocaine solution it was possible to see the bony occlusion of the right choana from in front, below the septal deviation; viewed in this way the plate appeared to have a pale yellow colour, and on touching it with a probe was found to be of bony hardness. On posterior rhinoscopy the free border of the vomer was clearly seen, apparently in the middle line; the left choana was normal, while the right one was closed by a greyish-yellow plate which presented a small depression in its upper part; the choana on the left side appeared to be larger than that on the right; there were no adenoids.

On transillumination the frontal sinuses and the maxillary antra illuminated well and equally. Unfortunately no anthropometric measurements were taken during life.

The opinion formed was that the condition of the left ear did not warrant immediate operation; the patient was, however, admitted to the ward, and instructions were given that the left ear should be syringed with the intratympanic cannula. Five days later, during the use of this instrument, the patient became giddy, and, though still seated, fell slightly forwards and to the left; at the same moment the nozzle of the syringe was felt to grate on bone. The patient did not fall off her chair, but immediately became pale and giddy, and vomited; there was no bleeding from the ear.

The further history of the case is interesting, but rather from an otological than a laryngological point of view; it is sufficient to say that the patient developed symptoms of an acute infection of the labyrinth, and died from purulent meningitis, in spite of a radical mastoid operation, combined with double vestibulotomy and drainage of the subarachnoid space.

At the *post-mortem* examination the skull cap was found to be firmly attached to the dura by old fibrous adhesions; the lepto-

meningitis was most marked over the upper surface of the cerebellum. The head only was examined at the autopsy.

Examination and Measurements of the Nose.

	Mm.
Vertical measurement of choana on left side ...	19
Vertical measurement of choana on right side ...	16
Breadth of left choana at middle of posterior border of vomer	13
Breadth of right choana at same point	10
Depth from posterior border of vomer to bottom of small pit in occluding bony plate	10
Breadth of floor of left nasal cavity (measured from middle of bony septum at its base)	17
Similar measurement on right side	9.5
Vertical measurement of left antrum at level of first molar tooth...	34
Similar measurement on right side	35

The floor of the left antrum is slightly lower than that of the right, and on both sides the level of the antral floor is a little lower than that of the corresponding nasal cavity.

The septum is deviated markedly to the right. This is mainly due to the maldevelopment of the V-shaped groove in the upper border of the vomer, which should receive the lower edge of the quadrilateral cartilage; the right side of the notch is very small, and the cartilage has slipped out of it, and projects into the right nasal cavity under the mucous membrane.

The posterior end of the right inferior turbinal is absent, or, at most, represented by a slight projection on the outer wall of the nose; the right middle turbinal is badly developed as compared with the left one. Schwendt, Haag, and Kahler state that this atrophy is due to the pressure of the masses of mucus. At the level of the first molar the breadth of the hard palate—as measured from the inner margin of the gum on one side to the corresponding point on the other side (see diagram)—(C–D), 39.5 mm. The raphe is not in the middle line, and if we drop a perpendicular from it to the line mentioned above we get a measurement on the left side (B–D) of 21 5 mm., on the right side (C–B) of 18 mm. The vertical distance from the raphe to the base line (A–B) is 15 mm. The vertical distance from a point 5 mm. on the left of the raphe to the base line (G–H) is also 15 mm. A similar measurement on the right side (E–F) is 16 5 mm.

Palato-maxillary index (Flower):

$$\frac{\text{Breadth, 59 mm.} \times 100}{\text{Length, 42 mm.}} = 140\,5 \text{ (brachy-uranic).}$$



Diagram showing asymmetry of hard palate.

The conditions present in the nasal cavities, in the choanae, and in the hard palate can be best appreciated by reference to the diagrams; it is sufficient to say that the right choana is closed by a bony plate which has almost the same attachments as those described by Hamilton. About the middle of this plate, in the vertical direction, but considerably nearer to the septum than to the outer wall, there is a small pit or canal, which admits the end of a blunt probe. This small canal runs forwards, apparently, into the septum, which at this point is markedly deviated to the right. The septum behind the small depression is thin and translucent, and the bony occluding plate external to the depression is also thin and translucent, but at the point where the depression is situated the bone is thicker, as this is the spot where the occluding plate blends with the bony septum. The sphenoidal sinus on the right side is considerably smaller than that on the left.

On microscopic examination the nasal mucosa of the left olfactory region showed normal appearances, whereas that of the right olfactory region showed almost complete desquamation of the surface epithelium, and fibrous thickening of the submucous tissue. There was also on the right side considerable small cell infiltration, especially of the deeper layers of the submucosa. The mucous membrane of both maxillary antra was normal.

The fact that the two antra were of equal size is against the theory of Frers that the development of the nasal accessory sinuses is due to the pressure of the air currents in the nose (report of the German Laryngological Society, 1909).

Kahler notes that in his cases of bilateral atresia the naso-pharynx was remarkably wide, and that, partly for this reason and partly on account of the hypo-sensibility of the soft palate, posterior rhinoscopy was extremely easy.

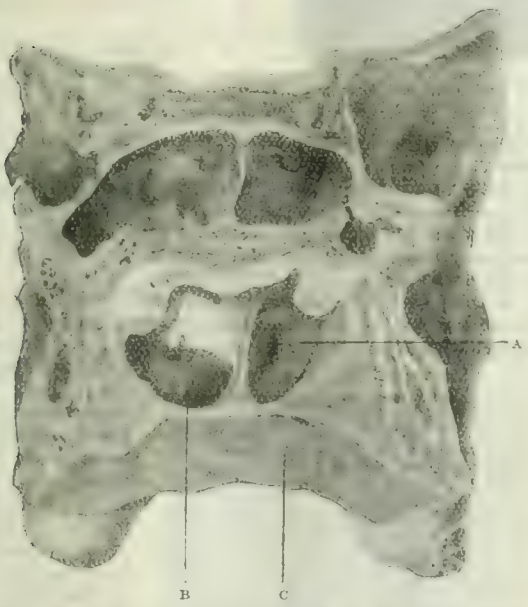


Fig. 1.—Choanae and sphenoidal sinuses seen from behind. The left sphenoidal sinus is larger than the right; the left choana is broader and deeper than the right. A, Bony plate closing right choana; B, posterior end of left inferior turbinal; C, soft palate.



Fig. 2.—Vertical transverse section through the nasal cavities: the specimen is looked at from the front; notice deviation of septum nasi to the right (obstructed) side of the nose. A, right maxillary antrum; B, left maxillary antrum; C, atresia of right choana seen from the front; D, choana of left (unobstructed) side, seen from the front.

Many cases of choanal atresia show changes in the middle-ear cleft—simple tubo-tympanic or suppurative catarrh. In the present case the ear on the side of the choanal atresia was normal, whereas the other one was the seat of chronic purulent otitis media.

There are two further questions of interest in cases of congenital choanal atresia, namely: (1) The effect of mouth-breathing on the shape of the hard palate, and (2) the developmental etiology of the condition.

1. In regard to the first of these questions we have two theories: (*a*) Siebenmann,[12] Fränkel,[13] Grossheintz,[14] Haag and Buser[15] take the view that a high palate is only part of a congenitally high and narrow formation of the facial skeleton, that is, of leptoprosopia. (*b*) Bloch,[16] Körner,[17] Waldow,[18] Alkan,[19] and Bentzen[20] are of opinion that mouth-breathing produces an abnormally high palate on account of the pressure of the stretched cheeks on the lateral part of the alveolar arch, and also because of the want of counter pressure of the tongue on the roof of the mouth. These two factors are of course due to the open mouth, and, in addition, there may be a certain amount of pressure due to the impact of the air current on the roof of the mouth. There is one other factor which may aid in the production of high palate, and that is a degree of atrophy of the nose from disuse.

Cases of congenital atresia of the choanae have been put forward in favour of both of these theories, Siebenmann and his pupils pointing to cases of bilateral atresia with a normal palate, while the Körner-Waldow school call attention to the frequency of high palate in cases of choanal atresia. Porter[21] mentions the fact that the palate was high in 87.5 per cent. of cases in which the patients suffered from congenital atresia, and mouth-breathing was present.

Brunk comes to the following conclusions on this question: (1) In cases of bilateral, complete, and long-existing choanal closure there is almost always a high palate. Since such closures are the most complete examples of continuous mouth-breathing, the occurrence of high palate due to mouth-breathing is proved. (2) Against the theory of Siebenmann that high palates are merely a part of leptoprosopia there are several weighty reasons. The frequent occurrence of leptoprosopia along with high palate is not to be wondered at, since a high palate must make a face longer.

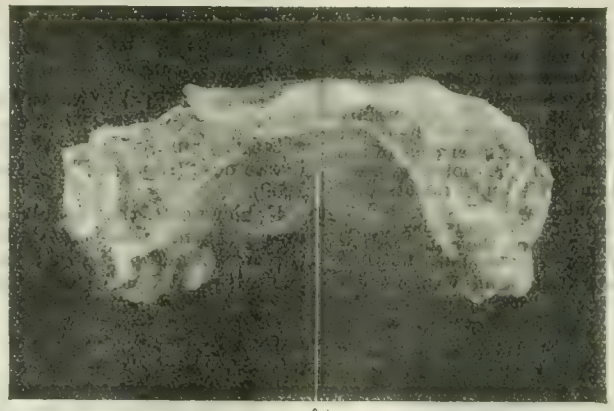


Fig. 3.—Hard palate seen from behind; notice asymmetry; the palate is higher and narrower on the right (obstructed) side. A, Raphe.

Bloch has examined mouth-breathers and nose-breathers of both types, and finds that the highest palatal index is present in cases of leptoprosopic mouth-breathers; but—and this is the interesting fact—he finds that the palatal index of chamaeprosopic mouth-breathers is higher than that of leptoprosopic nose-breathers. This fact strongly supports what is known as the Körner-Waldow theory.

Although in the present case no measurements were taken, the patient's face was undoubtedly of the chamaeprosopic type, and it must be stated emphatically that the patient was not a mouth-breather; the asymmetry of the palate is, however, very marked, and the arch is higher and narrower on the side of the choanal occlusion. This condition could not, of course, be due to the pressure of the stretched cheeks, or to want of counter pressure of the tongue, or to pressure of the air current on the roof of the mouth. The condition present in my case was by no means unusual, and in recent papers Kahler and Paterson have both called attention to the fact that the palate is higher on the side of the atresia, although the difference between the two sides may be slight. Obviously, then, we must look for another factor to account for this difference; "atrophy of the nose" from disuse has been suggested, but this is hardly an accurate expression.

We have seen that the nasal cavity in the present case is much narrower on the side of the atresia, and that the septum is deviated markedly to the right. By the failure in the formation of the right choanal opening the lateral wall of the nose on that side remained attached to the septum posteriorly, and could not fall away as it would have done had the choana become pervious: further, the dilating effect of the air current through the right (obstructed) side of the nose was lost, while it was present on the left side, and may have had an important influence in causing the deviation of the nasal septum.

If a patient with unilateral atresia of the choana is a nose-breather, and has a palate which is markedly higher on the side of the atresia, there must be some cause for the asymmetry; this cause cannot be mouth-breathing. In a bilateral case, even though the patient is perforce a mouth-breather, there is no reason why the same cause which gives rise to the higher arch on the side of the unilateral occlusion should not be at work on both sides in the formation (or malformation) of the hard palate; I therefore do not think that cases of choanal atresia (unilateral or bilateral) can be used with much success to support either the Siebenmann or the Körner-Waldow theories.

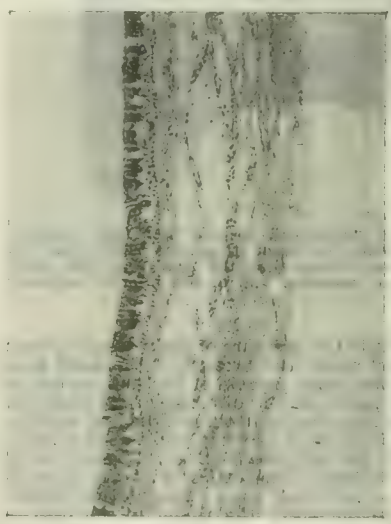
2. The last question of interest is that of the developmental etiology of the condition. There are two theories as to the formation of the nasal cavities and choanae:

(*a*) Ecker and His[22] hold that the nasal and bucco-pharyngeal cavities communicate at first and that the nasal cavities are later on partially shut off from the bucco-pharyngeal cavity by the growth inwards of the hard and soft palate.

(*b*) Hochstetter,[23] Tiemann,[24] and Keibel,[25] on the other hand, state that the primitive nasal cavities are from the first separated from the mouth and pharynx, and form a blind cul-de-sac. The floor of these primitive nasal cavities is formed by the union of the lateral with the mesial nasal process, and is made more solid by the proliferation of mesoderm between the two epithelial layers. The posterior part however, continues as an epithelial layer, and, as the nasal cavities elongate, ultimately reaches the naso-buccal membrane, which finally gives way. In this way the primitive choana is formed. In cases of choanal atresia it is possible that the naso-buccal membrane becomes permeated by mesoderm, and therefore fails to break down. Keibel has shown that in badly preserved specimens the epithelial layer which separates the primitive nasal and buccal cavities may fall off, and so give an entirely wrong idea of the development of this region. He suggests that Ecker and His must have used such a specimen, of which he gives an illustration.



Mucous membrane from olfactory cleft of right (obstructed) side of nose. × 50. Notice almost complete loss of superficial epithelium, and marked thickening of submucous tissue.



Mucous membrane from olfactory cleft of left (unobstructed) side. × 50.

Fig. 4.

In *Quain's Anatomy*, vol. i, page 152, there is a reproduction of a microscopic preparation by Bryce, showing a vertical section through the olfactory vesicles of a human embryo of 15.5 mm.; on the right side the

olfactory vesicle is still almost completely separated from the bucco-pharyngeal cavity by the naso-buccal membrane, while on the left side the membrane has disappeared and the section passes through the primitive choana.

The theory of development of the nose first stated by Hochstetter is in line with what we know as to the development of the vagina, anus, and external auditory meatus; in almost all cases of congenital atresia of the choanae the occluding membrane is well in front of the choana, and this lends support to the view that congenital atresia is due to the failure of the naso-buccal membrane to break down.

There can be no doubt that the statements of Hochstetter, Tiemann, and Keibel supply a better explanation of congenital choanal atresia than those of Ecker and His. Haag and Kahler are of opinion that the anomaly is due to persistence of the naso-buccal membrane.

Hopmann[26] regards choanal atresia as the most extreme degree of choanal narrowing. Lushka[27] and Schwendt think the condition is due to proliferation of the horizontal plate of the palate bone; while Schrotter[28] and Kahler regard it as due to overgrowth of the vertical plate, and in support of this view bring forward the fact that the lateral part of the occluding membrane is thicker than the mesial part.

Porter[29] calls attention to a fold sometimes to be found in front of the posterior nasal opening; he regards this as a vestigial structure—that is, as the remains of what was once the naso-buccal membrane, and states that a persistence of the whole of the naso-buccal membrane, results in congenital atresia of the choana.

Kahler and Brunk state that the question of the etiology of choanal atresia cannot be definitely settled till we possess a *post-mortem* specimen of the condition; Kahler does not accept Heymann's specimen as one of the typical form. There are, however, two specimens of this variety at present in existence—Hamilton's and my own. Hamilton has macerated his specimen, and describes it as follows: Septum straight; bony choanal plates are diaphanous in the centre; the bony plates are attached in front and below at the junction of the superior maxillary and palate bones; at both sides to the internal pterygoid plates; mesially to the posterior margin of the vomer; behind and above to the basilar process of the occipital bone; the septum at its base projects behind the plane of the bony plates.

While I have no objection to sacrificing my specimen if I can by this means clear up the question of the etiology of the condition, I do not at present clearly see how the matter can be settled even by serial horizontal microscopic sections of the region.

I wish to acknowledge a grant from the Carnegie Trust for the reproduction of photographs.

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DISCUSSION.

Dr. Brown Kelly (Glasgow) had had two cases of congenital choanal closure. Both were unilateral. One was that of a girl, aged 3 years, in whom the obstruction was detected by the mother. Palpation of the choanae revealed nothing abnormal owing to the congenital membrane being in front of the choanal plane and out of reach of the examining finger. The other patient was a woman who complained chiefly that in winter there was abundant discharge from the blocked side which she was unable to expel. In both cases there was marked asymmetry of the face. In the child an opening was made in the membrane and a tube passed through, but difficulty was experienced in preventing closure from again taking place. A permanent opening was obtained in the adult by means of chisel and forceps. In any case he might have to treat in future he would be inclined to remove the posterior part of the vomer by submucous resection, especially if the septum were deviated to the blocked side, and thus gain better access to the obstructing structures.

Dr. Dan McKenzie (London) related a case in which the posterior choanal partition was associated with deviated septum. After operation on the septum the osseo-membranous web was broken down with chisel and burr with perfect result.

HEADACHES IN ASSOCIATION WITH OBSTRUCTION IN THE NASAL PASSAGES.

By L. Hemington Pegler, M.D.,

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Although headaches in association with nasal obstruction have been discussed already at a meeting of this Association (Medical Section, Portsmouth, 1899), I hope that the additional evidence of my own experiences will serve both to reinforce the truth of what was then maintained, and as an excuse for briefly reopening the subject in this paper.

Headaches are such a disturbing form of slight ailment and are so common, especially amongst town dwellers, that it behoves us to study them not only for their own sakes, but because of their value as indicators of lesions lying more or less obscured from view, which will reproduce the annoyance continually until they are discovered and removed. My object is to recall the existence of regions within the nose and adjoining spaces which have been ascertained, albeit empirically, to be the seat of such lesions, and accordingly to be the foci from which the symptom of headache may emanate.

I also hope to elicit from members in discussion how far they agree with the location of such foci and the mode of production of this class of headache hereinafter suggested, but I shall be brief upon speculative questions of this nature, for they can only be answered hypothetically at best.

I employ the term "empirical," because it is only by watching the effect of certain operative measures that we have learnt the relationship between the suspected lesion and the concurrent symptom; and even now we can only speculate as to why apparently the same lesion will be so differently construed in effect by different individuals. We dare not affirm positively from objective appearances whether a gross abnormality, such as a cystic middle turbinal, is producing the headache in a given patient or not, though in such a case we should probably be correct. We are still more unsafe in predicting in the presence of a given abnormality that a recognized line of treatment will relieve an attendant headache. The fact is that we do not know why headache is the sole symptom in one patient, the subject of a nasal lesion, whereas in another the site of excitation of the headache is betrayed by a definite symptom, such as one or other of the reflex nasal neuroses; nor why in a third patient we have the familiar neuroses—sneezing or watery discharge but no headache. Again, in two patients apparently similarly blocked in both fossae by nasal polypi, one may complain of severe headache, the other of none at all. The explanation seems to be that certain independent disturbing factors must combine in an individual in order to produce the pain. Dr. Harry Campbell[1] has shown that:

> in the production of headache there are many causes at work, but it may often be cured by removing any one of them. Thus a man may have an innate tendency to migraine, be markedly astigmatic, and suffer from some nasal affection, at the same time he may be taking a highly nitrogenous diet. In such a case we may possibly cure the headache by removing any one of these factors.

He also points out the interdependence of causes in the etiology of headache; thus the obtrusive cause may be menstruation, fatigue, or nasal disease, but the more immediate factor may be the state of the eyes induced by one of these. A case in my notebook illustrates this. A school teacher, aged 29, came to me four years ago for aching sensations in the throat and constantly recurring head colds. I removed a mass of adenoids and cauterized both her inferior turbinals with benefit to the colds. Two years later she began to have pains in the back of the head, scarcely a day passing without a headache. About the same time she suffered from ocular fatigue due to asthenopia, for which a slight error of refraction was corrected and tinted glasses prescribed. In spite of this

however, the eye-strain increased and was but very little benefited by four months' rest. Some of the obstruction now recurred in the right nasal fossa, as often is the case after cauterization, so that the breathing was less efficient and sore throat was complained of again. Towards the end of last year I removed the anterior end of the right inferior turbinal and permanently cured the obstruction. The result of this has been immediate relief to the eye-strain, and many worrying ocular symptoms that before were of great annoyance have vanished. The headaches became rarer and have now entirely disappeared, only being felt after excessive strain with eye work.

In order to reduce headaches associated with nasal obstructions to some sort of classification I would suggest the following division:

I. *Referred headaches*, called by some American writers *reflex*, and apparently due simply to pressure; these include varieties of supraorbital neuralgia, rhinalgia, and hemicrania.

II. Headaches of double origin—a mixed class, showing (1) objective signs of pressure and contacts inducing referred pain, and (2) of deficient drainage and ventilation of the nasal passages, setting up headache from toxic absorption.

III. Headaches due solely to toxic absorption or toxaemia, these being attributable to deficient oxygenation of the blood, or, according to some authorities, to lymph stasis.

IV. Headaches associated with intranasal inflammatory conditions, including cases of acute sinusitis in which the pain may be attributed to exhaustion of air in obstructed accessory sinuses.

This is not a perfect classification, but one made for convenience on clinical grounds. Perhaps more than one mixed class may exist, but when a plurality of factors is in operation it is important that the predominating one should be discovered and treated.

The headache of toxaemia is attributed to the circulation of waste products in the cerebral vessels, but we need not think of the meninges in association with genuine nasal headaches.

Distribution and Character of the Pain.

There is nothing absolutely distinctive either in the distribution or location of pain arising from intranasal contacts, or from toxaemic absorption in the upper respiratory tract, by which it can be diagnosed from headache produced by toxic effects in other parts of the body.

The following hypersensitive areas, with the corresponding "referred" sites more or less remote, are modified from Roe[3]; it is not maintained that they bear a constant relationship.

Hyper-sensitive Focal Areas.	*Sites to which Pain is Referred*
Inferior turbinal and lower part of septum.	Lower portions of temporal, parietal, and occipital regions; lateral incisor teeth.
Middle turbinal, and corresponding region of the septum.	Temple; bridge of nose to parietal eminence and over the vertex towards the occiput.
Superior turbinal region.	Frontal and supraorbital region, and in and around the eye.

Thus it may be stated generally that pain from pressure or from mixed etiological factors within the upper respiratory passages is distributed somewhere above the brow-line either laterally or vertically in common with those from general causes long ago described, and that pain below the brow, on the bridge of the nose, or in the angle of the orbit is, as a rule, associated with local pressures beneath. A pure rhinalgia without discoverable cause is probably a rare occurrence.

The occipital region, so remote from the middle turbinal area, is reached by the ultimate ramification of the supraorbital division of the frontal branch of the ophthalmic.

The *character* of the pain is equally variable; a headache which is lancinating and neuralgic, or dull and pressing, constant or periodic, or throbbing and accompanied by great heat on the surface, and subsequent tenderness of the scalp, is quite compatible with nasal origin. We are also familiar with pain referred to the teeth during operations upon the anterior ends of the inferior turbinals and septum adjoining, but the fulminating and spasmodic form of toothache known as tic douloureux never has an origin within the nose. Unilateral headache is commonly called hemicrania, a term which, although now attached by some writers to one-sided neuralgias of nasal origin, must originally have been synonymous with migraine as its etymology proves. But unilateral nasal headache is distinct from migraine, and I think confusion would be saved by adhering to the former expression, and by excluding the term "hemicrania" from this connexion altogether.

From these preliminary remarks I pass to a more detailed inquiry into nasal headaches as above classified.

I.—REFERRED HEADACHES.

These are members of a group of symptoms many of which are genuine pathological reflex phenomena such as paroxysmal sneezing and rhinorrhoea, asthma, hay fever, etc., a fact emphasized by the inseparable character of the vasomotor reflex phenomena of surface congestion with heat and throbbing, that accompany the headache in some persons.

For the production of such reflexes, certain causative factors are presumed to be in operation. Tilley[12] enumerates these as follows:

1. A peculiar idiosyncrasy.
2. A special exciting cause, within or without the individual.
3. A special irritability of the afferent sensory nerve terminal.
4. An unstable condition of the central nervous system and general health.

Upon the peculiar nervous organization of the subject depends what form of nerve disturbance the focal excitation arouses—for example, whether paroxysmal rhinorrhoea or asthma, or neither of these, but headache. Here, again, the interdependence of factors comes into play—for example, the condition of the digestive organs. Roe believes that gastric irritation may set up headache secondarily, by causing engorgement of the turbinal vessels; and we know that the sufferer from nasal difficulties, in order to save himself a morning catarrh or headache, has to be careful how he indulges in the food and drink that the average diner may take with impunity. Thus nasal symptoms may serve to guide the practitioner as to where his attentions should be directed for the cure of an apparently dyspeptic headache. A knowledge of the mechanism engaged in the production of referred headache is very important; and the following hypothesis is given with the approval of Dr. Purves Stewart. (See Figs. 1 and 2 for further details.)

An excitation is produced at the peripheral extremity of an afferent—that is, sentient—nerve; say, for example, pressure upon a terminal twig of the nasal nerve, a branch of the ophthalmic or first division of the fifth, distributed on the septum. The stimulus is conveyed to the nearest ganglion or nerve centre—the Gasserian—and thence upwards through the pons to the cortex, where it is construed by the sensorium into a sensation of pain, but the sensorium refers the impression to the area of distribution of another branch of the ophthalmic—namely, the supraorbital branch of the frontal nerve, and thus the pain is felt over the brow, forehead, vertex, or occipital region. Other referred effects can be easily traced out by recollecting the branches and communications of the fifth or trigeminal nerve. Thus middle or inferior turbinal irritation often sets up a simultaneous aching in the incisor teeth of the same side, owing to a transference of the impression along the anterior dental branch of the superior maxillary division.[2]

The intranasal regions that have been specially cited by different observers as foci of reflex irritation may be enumerated as below:

Anterior ends of the inferior turbinals.
Posterior extremities of the inferior turbinals.
Anterior ends of the middle turbinals.
Middle meatal region of the septum.

But experience teaches that the sources of origin of nasal headaches cannot be limited to the definite hypersensitive foci of vasomotor reflex phenomena. In dealing with headaches we have need for a double classification—first, of the sensitive regions of origin; and, secondly, of the abnormal or pathological conditions which render them liable to set up pain.

The sensitive regions for headaches may be classed as follows:

A. The inferior turbinals.
B. The middle turbinals.
C. The septum.

A. *The Inferior Turbinals.*

The more common morbid conditions capable of exciting referred headache in association with the inferior turbinals may be classified as follows:

1. Erectile tumefaction.
2. Oedematous degeneration of mucous membrane.
3. Simple bony hypertrophy with pressure against the septum, especially by its superior free margin.

1. *Simple erectile tumefaction* is a very important source of headache on account of its frequency in our climate, and of its being so often overlooked, also on account of the readiness with which these bodies respond reflexly by turgescence to stimuli conveyed from distant organs such as the abdominal, pelvic, or sexual. They are also influenced very much by gravitation during the recumbent posture, as at night. The hollow depression in the opposing septal mucous surface, which this body creates when the engorgement is at its height, is a sign that should always be looked for, as by it latent tumefaction is unfailingly betrayed, and true though it be that the current of air on inspiration and expiration is blocked by middle

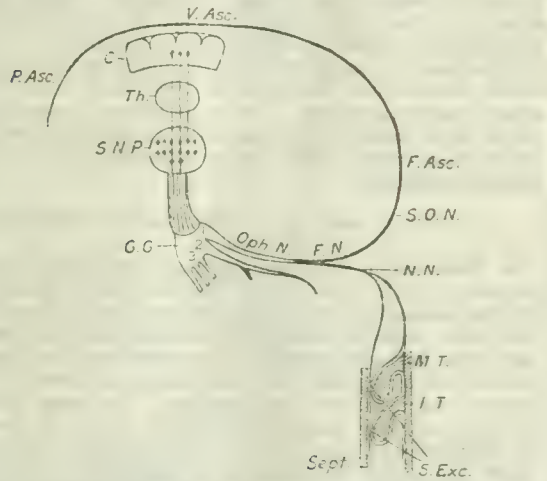


Fig. 1.—Scheme to illustrate the mechanism of "referred" pain due to pressure exerted in a turbinal region. M.T., I.T., middle and inferior turbinals, capable of pressing upon the septal wall (Sept), and irritating one or more terminal branches of the nasal nerve N.N. at the "sites of excitation," S.Exc. V., F., and P.Asc., vertical, frontal, and posterior "sites of ascription—that is, points corresponding to cutaneous terminations of the supra-orbital nerve S.O.N., to which pain is "referable." F.N., frontal nerve. G.G., Gasserian ganglion. S.N.P., sensory nucleus of the pons. Th., thalamus, C, cortex. The stimulus due to pressure is transmitted afferently from S.Exc., through G.G., S.N.P., and Th. to C; it becomes manifest as pain at Th., the opposite thalamus. As these efferent impulses from S.Exc., when excessive, may overflow at S.N.P. to the cells around which the fibres of S.O.N. terminate, the pain may be referred to V., F. or P.Asc., which lie in the distribution of S.O.N. and are familiar surface areas corresponding to peripheral terminations of sensory branches of the fifth nerve, whose centres have been affected by the overflow.

turbinal enlargements, it is obvious that tumefactions of the anterior ends of the inferior turbinals at the very portal of the nasal chambers must also greatly impede it.

There would seem to be two or more possible sources of headache from inferior turbinal tumefaction, namely, *referred*, in obedience to this condition responding to vasomotor impulses occurring during the day, and *systemic or toxic*, due to the atonic or postural tumefaction at night, that has induced mouth-breathing, and consequent maloxygenation of the blood.

2 *Hypertrophic Rhinitis affecting the Inferior Turbinals.*—By this is implied an oedematous degeneration of the turbinal mucous membrane, filling up the inferior meatus with a fringe-like appendage of polypoid growth, and terminating with a moriform hypertrophy. This condition, with attendant blockage of drainage and ventilation, furnishes a source of headache in a manner similar to erectile tumefaction, but there is a great deal more catarrh, both ante-nasal and post-nasal, in hypertrophic rhinitis.

3. *Bony Hypertrophy of the Inferior Turbinal, with Pressure of the Upper Border upon the Septum.*—If the septum is deflected slightly outwards, this condition may create a source of headaches and allied symptoms. The pressure may be presumed to act in effect like middle turbinal contact with the septum, and I believe does so, but both inferior and middle turbinals of one side may press, and conduce to the same result.

I have long been in the habit of pointing out to pupils at my clinic that there is a spot in the inferior meatus at which the lumen is narrower than at any other, and for this reason I have designated it, for want of a better term, the "isthmus" of the inferior meatus. Its situation is usually about one inch from the anterior extremity of the inferior turbinal; beyond this, as is well known, the meatus widens out, and the turbinal recedes slightly from the septum. The existence of this isthmus or strait has a practical bearing in the event, so extremely common, of a corresponding slight convexity of the septum. It is here that contact is most marked between the opposing surfaces, and treatment directed against pressure symptoms so caused must not fail to reach or exceed it.

B. *The Middle Turbinals.*

I would classify the exciting lesions of these bodies as under:

1. Any alteration in configuration—bony, cystic, or mucous—causing undue pressure against the septum, or outer wall, or both.
2. Polypoid degeneration of the middle turbinal mucous membrane.

The effect of simple hypertrophy and bulbous or cystic enlargement may be considered as one, but the corresponding septal area is probably the more important

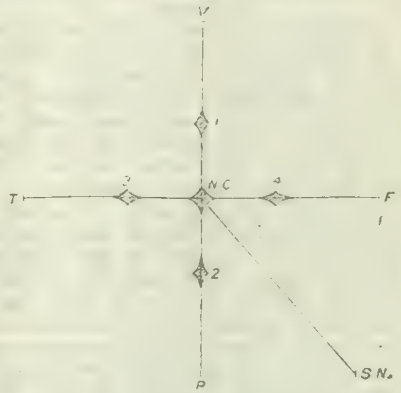


Fig. 2.—Diagram to illustrate the spread or overflow of nervous excitability from a nerve centre to neighbouring centres in the explanation of "referred" pain. The nerve centre N.C. is irritated from a peripheral surface—as, for example, the middle turbinal region S.N. An overflow of nervous energy extends from N.C. to neighbouring sensory centres, 1, 2, 3, 4. Undue activity in these centres is associated by experience with painful impressions in peripheral areas, as at the points V.P.T.F., which they represent. Hence irritation applied at S.N. produces impressions which will be referred to V.P.T.F.

sensitive surface involved in contact with either. The pain is usually intermittent, because the pressure is varied by rise and fall in the tumefaction of the mucous surfaces, septal or turbinal, owing to vasomotor influences from the medulla; in the latter case a tidal impression may be looked for upon the corresponding septal surface as in the case of the inferior turbinal, after spraying the part with cocaine solution. The location of the pain varies, but it usually follows the distribution of the supraorbital nerve, as already stated.

One case in my practice was especially interesting, because with bony hypertrophy of all four turbinals, no particular benefit followed the reduction of the inferior turbinals, but a portion of the headache was relieved by reducing the swollen right middle turbinal. On applying the same treatment to the left middle turbinal a year later all trace of headache disappeared. The pain was throbbing in character; it started from the root of the nose and extended over the forehead to the top of the head, at times reaching the temples, and affecting both sides alike.

Polypoid degeneration of the mucous membrane, like mucous polypi, sets up headache in a large proportion of cases, depending apparently upon the presence of more than one determining factor. Contact of surfaces and auto-infection from bad drainage and absorption of secretions may each be suspected of taking part.

C. *The Septum.*

Exciting lesions (distinct from abnormally-sensitive areas upon its surface):

1. Deflections and crumplings, affecting both cartilaginous and bony segments.

2. Ascending crests, spurs, and synechiae or adhesions.
3. Mucous hypertrophy of the "cushion" of the septum (*pulvinus*).

Many of the cases of pressure induced headache in the nose, for which the middle turbinal is blamed, are caused or aggravated by high deflections of the septum. They constitute a large proportion of cases, and their importance is generally recognized.

Headaches from deflections of the triangular cartilage of the septum are also extremely common. Amongst my notes is one of a young male patient who, besides distressing headaches, complained of complete obstruction of this kind on the left side. The deflection was complicated by a spur, ascending crest, and adhesions to the inferior turbinal. Complete relief was effected by removing the crest and adhesions, followed up by septal fissure and displacement of the cartilage on Moure's principle.

Hypertrophy of the *pulvinus*, forming sometimes a more or less diffuse mucous protrusion, is looked upon by many authorities as a special site of excitation for headaches as well as for asthma and other reflexes, especially if it impinges upon the middle turbinal.*

II.—MIXED CLASS: HEADACHE, BOTH REFERRED AND TOXAEMIC.

To this division I would assign the large class of cases in which the headache is present with accessory sinus suppuration, for with this disease we usually have blockage from granulations in the ethmoid region and at the lower opening of the fronto-nasal canal. Here, and in cases of polypoid degeneration in the bullar region without frontal sinus suppuration, we have evidence of general toxic absorption, besides a great deal of abnormal contact capable of producing pain. I do not concur in the belief that the pain in frontal sinus suppuration is all practically due to pressure by the inflamed middle turbinal, for the latter body may be reduced without curing the pain. Whilst it is true that the sinus has several times been opened through a diagnosis founded largely on frontal or supraorbital pain when no pus has been discovered in it, and when therefore middle turbinal pressure was presumably at fault, yet we often have a periodicity in the pain accompanying genuine frontal sinus suppuration, and this may be assumed to depend upon the filling or emptying of the cavity. In antrum suppuration pain will recur in the malar region after evacuation with a fresh accumulation of pus, seemingly the direct result of pressure.

III.—HEADACHES DUE TO AUTO-INFECTION FROM VARIOUS SOURCES OF TOXIC ABSORPTION TRACEABLE TO LESIONS OF THE UPPER RESPIRATORY TRACT.

I would include in this class a proportion of headaches in association with sinus suppuration, those in which local drainage is not seriously blocked, and much back-pressure pain thus eliminated. The headache may result, then, from secondary toxaemia due to absorption of pus from the mucous surfaces or from making its way down into the digestive tract. The pain of sphenoidal sinus disease is said to be usually local and felt at the back of the eyeballs and over the occiput, but if the discharge is freely poured into the naso-pharynx, headache from secondary toxic anaemia may fairly be expected to ensue.

Under the category of toxic headaches I include the pain in atrophic rhinitis. Headache is an almost constant as well as a very distressing symptom in sufferers from this disease. The patients, as we all know, in spite of the wasted condition of the turbinals and nasal mucous membrane, complain to us of actual obstruction, owing to the heaping up of massive crusts in the nasal chambers. Whether pressure contributes much to the pain I rather doubt, as the heavy crusts occurring in syphilitic cases are less apt to occasion it. On the other hand thorough cleansing always gives relief in atrophic rhinitis.

Under naso-pharyngeal obstructions, including adenoids the headaches of children and young adults suffering from these conditions must be classed.

Adenoid headaches are matutinal, and wear off in the course of the day, a feature of all such pains evolved from nasal obstruction and nocturnal mouth breathing. They have been attributed by Guye of Amsterdam to a hindrance in the flow of lymph from the intracranial lymphatics, which are obstructed in their passage through the cribriform plate in company with the branches of the olfactory nerve, these lymphatics being in direct communication with those of the nasal passages, accessory sinuses, and naso-pharynx.

This theory of stasis was formerly much in vogue in accounting for the headaches of nasal obstruction. According to Sargent Snow, writing in 1897, it was then held by Hajek and Schreck, and he himself attributed to this cause those cases of nasal headache in which he could detect no evidence of pressure. At the present time it is more customary to consider the headaches of adenoid and other mouth-breathing patients to deficient oxygenation of the blood in the lungs from obstructed nasal respiration. We have no proof that either view is entirely right or wrong. Some additional factor must, as usual, be necessary to bring on the resulting headaches when they occur, since many adenoid children do not suffer from them.

IV.—HEADACHES FROM INFLAMMATORY INTRANASAL SOURCES.

A class under this heading has already been made by Harrison Allen, who, in his classical paper dated 1886, divided headaches into reflex, neurotic, and inflammatory. We meet with a head pain accompanied by heat and throbbing, not infrequently, after curettings for disease in the ethmoidal regions, all which symptoms subside in due course under ice-cold applications. In acute sinusitis, swelling of the mucous membrane shuts off the exits for drainage and ventilation of the accessory cavities, and when the hiatus semilunaris is thus involved, the frontal and periorbital regions representing the frontal sinus is the seat of the pain. It is thought that exhaustion and absorption of the contained air of the sinus induces hyperaemia of the mucous membrane virtually by a species of dry cupping, thus giving rise to the suffering. In this way may, perhaps, be explained the facial discomfort of iodism in those who are thus affected by this drug. Most people feel a modified degree of the same dull ache during the first stage of a common cold.

Diagnosis of Nasal from Systemic Headaches.

As previously indicated, the pain in the head is not pathognomonic in character or localization, so that we are thrown largely upon the test of treatment in distinguishing a referred nasal from a systemic headache, and if our attention is not especially directed to the nose by catarrhal symptoms we should look carefully into the organ for surface contacts. In accessory sinus suppuration we have the presence of pus in the nasal chambers and the help of transillumination; moreover, much of the pain is located immediately over the affected sinus, though it may radiate from thence, but the diagnosis, if doubtful, can be cleared up by exploration.

We eliminate *cerebral disease* by absence of pain referable to cranial complications.

In *asthenopia* pain is relieved by curing the error of refraction.

Sick headache is traceable to gastric disturbance or some error in diet.

Migraine is preceded by prodromas, is periodic, often hereditary, there are visual abnormalities, such as fortification or zigzag scotoma, and injection of the conjunctivae.

Headaches from goutiness, renal disease, quinine, etc., are also to be diagnosed by special symptoms from those of nasal origin.

In all cases of nasal obstruction and catarrh the headache disappears *pari passu* with the elimination of those conditions.

By far the larger proportion of cases revealing a tight middle turbinal on examination of the middle meatus is

* It is now ten years since I urged, in a paper read at the Ipswich meeting, and published in this JOURNAL, the advisability of discontinuing the term "tubercle of the septum" (tuberculum septi) for the soft mucous eminence which is more or less pronounced as an anatomical feature in the middle meatal aspect of the septum nasi. Apart from the fact that we have a disease known as tubercle of the septum with which the anatomic "tubercle" is apt to be confounded in discussion, the term "tubercle" is not happily chosen to represent a body which when hypertrophied assumes the character of a cushion or puffy swelling. In osteology a "tubercle" is represented by a small rounded projection, and there seems to be no good reason why this conception should not be consistently followed. I therefore take the liberty to reintroduce a substitute word as formerly proposed, and which I hope other authors will either adopt or replace by something more suitable.

relieved partially, if not entirely, by resection of the obtruding part of that body. The use of the probe in diagnosis is advocated, and will start the familiar pain if applied to the nasal source, but in areas so sensitive to touch at all times I use it sparingly, and then chiefly for estimating the space between surfaces in close approximation. The cocaine spray has a test value if applied during a time when headache is complained of. Whilst, perhaps, the majority of the subjects are females, a number of men suffer in the same way; nor do I think the members of either sex belong necessarily to the so-called neurotic class, though the latter includes a fair percentage of them. Some supraorbital neuralgias and rhinalgias will perhaps remain in whom no objective nasal cause can be discovered, and it is a question whether we should remove a middle turbinal experimentally which, even if enlarged, is exciting no perceptible pressure anywhere. But cases do occur in whom the excision of an abnormal-looking turbinal has cured headache where the cause was not obvious, possibly by some effect akin to counter-irritation. In any case, no harm has been done in skilful hands. Other patients, I am informed, do very well in the care of experts who inject remedies into the nerve or its sheath, whilst for more severe cases the special nerve resection operations which have been devised are available as a last resource.

Time will not allow of my entering further into the question of treatment, but I hope that sundry observations under the respective headings of this paper will serve to indicate the lines on which surgical measures must proceed for the cure of nasal headaches.

[Want of space unfortunately prevents the publication of the series of illustrative cases, and also of the full bibliography that form the proper termination of this paper.—L. H. P.]

References.

[1] *Headaches and other Morbid Cephalic Sensations*, 1894. [2] J. O. Roe, *Medical Record*, 1888. [3] H. Tilley, *Diseases of the Nose and Throat*, third edition. [4] See Dr. Head's original paper in *Brain*, vols. xvi and xvii.

DISCUSSION.

Dr. Syme (Glasgow) thought that it was advisable to examine carefully for evidences of chronic ethmoidal and sphenoidal disease before deciding that headache had not a nasal origin. Degenerative changes in their cavities were more common than was thought, and the second branch of the fifth nerve was near to them, and it was common experience that toothache caused reflex pain in other branches of the fifth nerve.

TUBERCULIN IN LARYNGEAL TUBERCULOSIS

By W. Camac Wilkinson, M.D.Lond., F.R.C.P.,

London.

Laryngeal tuberculosis offers the best opportunities for studying the value of tuberculin in the treatment of tuberculosis—at least, in Australia, where, so far as my experience goes, lupus is extremely rare. Two advantages are self-evident: The effects of treatment can be closely and directly watched, and the prognosis of well-marked laryngeal tuberculosis being so utterly bad, any real successes must be attributed to the method. In the successes I have had with tuberculin I have not had recourse to sanatorium methods, and even when the disease of the lungs has reached the third stage I have witnessed ulceration of the larynx completely heal in several cases under tuberculin without any local treatment. In these cases also the lungs have healed in a clinical sense. Cough and expectoration have ceased, and healthy nutrition and bodily vigour have been restored.

Laryngeal tuberculosis is generally a late incident in pulmonary tuberculosis, and secondary to the disease in the lungs. Has any one ever seen a case of laryngeal tuberculosis secondary to a tuberculous lesion elsewhere than in the lungs? Still, laryngeal tuberculosis may be so obviously in advance of the lung trouble that it certainly appears to be primary. I have seen at most three such cases in Sydney, and another recently through the courtesy of our President.

Case I.

In the first case there was a circular, raised ulcerating mass involving the whole of the upper surface of the cord in its middle third. Symptoms of pulmonary trouble were absent. No cough, no expectoration, and physical signs were very doubtful.

Case II.

The second case was even more remarkable. The epiglottis was severely and extensively ulcerated, and the ulcer extended down to the base of the epiglottis in its centre so as to form a V-shaped depression. The larynx also was seriously involved. Both cords were hidden from view by a swollen red oedematous mass on each side, especially on the left side, where there was also ulceration of the mucous membrane. The swollen mass so encroached upon the lumen of the larynx that there was stridulous breathing, aphonia, and dyspnoea. The patient, aged 16, the daughter of healthy parents, was first taken to Mr. Brady, who told the parents that there was advanced and hopeless laryngeal tuberculosis, and refused to adopt any local treatment. Six months before this the child had been sent up the country, because "she was run down." The child, after Mr. Brady's verdict, was brought to me, and I also at first declined to undertake any treatment. There were no evident signs in the lungs; no cough or phlegm or pain. When I saw the child there was progressive hoarseness, ending in aphonia, and the child looked and felt ill. Temperature normal. Subsequently I consented very reluctantly to take the girl into the hospital, and began treatment with tuberculin at once. I instructed my house-physician to do tracheotomy if there should be urgent dyspnoea. I gave progressively increased doses of P.T.O. and Spengler's I.K. preparation. At first there were reactions to 100° several times, but subsequently large doses were well borne. In two or three months' time the improvement was extraordinary. Both cords came into view and were thickened and reddened, but not fixed. The voice returned. The V-shaped fissure filled up with organizing tissue; the edge of the epiglottis healed. Meanwhile the girl gained 10 lb. In another few months the gain in weight was 18½ lb. There was no attempt at open-air treatment, though the child was well fed. The last note (March, 1910) is: "Epiglottis completely healed and edge smooth; larynx apparently normal." Patient feels and looks perfectly well. Nine months after treatment patient was tested and did not react to 0.045 c.cm. old tuberculin. Mr. Brady was interested in the case, and I arranged that he should see her again.

Case III.

The third case showed also definite physical signs of pulmonary tuberculosis in an early stage, and for six months there had been a cough ending in retching. There was some phlegm, but I could find no tubercle bacilli. Appetite poor. Weight, 8 st. 12 lb. Pulse 108. Patient looked very pale and ill. The larynx was seriously affected. There was loss of voice amounting to aphonia. On examination the left cord was more affected than the right, markedly infiltrated and fixed at posterior end, so that it could not be approximated to touch the right cord. There was also superficial ulceration at junction of cord and arytenoid, spreading also into interarytenoid area. The right cord was red and velvety. I treated this case also with P.T.O., and in less than two months her condition was thus described: "The distressing cough entirely ceased. The voice was fully restored, the night sweats disappeared, and above all the weight increased substantially. At the present moment, after a few months of tuberculin treatment, the patient is a different being, to all outward appearance vastly improved in health, with energy renewed in a material degree, and, so far as one may judge from what one sees, on the high road to absolute recovery. This result has been achieved without any resort to the open air." She gained 10½ lb. I was able to watch the cords become clean and white, and the ulceration healed.

Case IV.

The fourth case I saw through the courtesy of our President, who sent me the case for tuberculin treatment. The trouble began in the larynx, epiglottis, and left tonsil. At no time have any obvious pulmonary signs or symptoms presented themselves. The lesion on the epiglottis was accurately excised, and the lesions on the aryepiglottidean fold and left tonsil were treated by galvano-puncture. The lesion in the tonsil was brought to a complete standstill, and subsequently did not react to tuberculin. The result in the larynx was not so complete, as small doses of tuberculin caused marked hoarseness for two or three days.

May 13th. Even now each dose of tuberculin brings on hoarseness. After a time tuberculin failed to produce this local reaction. Sad to say, before the patient came to me for treatment a new focus had appeared on the upper surface of the soft palate just above and to the left of the uvula, looking into the post-nasal space—curiously on the opposite side of the mesial line to the earlier lesions. This focus ulcerated and formed a well-marked excavation with swollen, rounded infiltrated edges and considerable redness and swelling of the surrounding tissues, including the uvula.

At this stage I saw the patient and at once began treatment with tuberculin. No local treatment was adopted, nor any sanatorium measures. After three months' use of tuberculin, which caused decided reactions with every dose, the patient being extremely sensitive to tuberculin, the ulcer slowly healed and the redness and swelling disappeared. I do not presume at this stage to say what the final result may be, because even now the patient is so sensitive that one has not yet been able to give large doses. For a month the patient was treated in London, but since then the patient, having been instructed, is

giving herself the injections. The over-sensitiveness persists. I have rarely seen such prolonged over-sensitiveness, and I admit that I have given the doses more cautiously and at longer intervals than is my custom. I am now asking myself whether the over-sensitiveness has been perpetuated, because I have increased the doses less rapidly than usual and have repeated them, not every three or four days, but every seven or eight days. In order to see whether this is so, I am now giving a dose which I hope will cause little reaction, and I shall repeat this dose every two days. The patient writes that, in spite of the reactions, her throat feels quite well and she feels well in herself. Still, after the doses there is temporary hoarseness. I shall not be satisfied till I have given large doses without any reaction, and then after an interval of nine months have tested her. Whether I shall succeed with tuberculin where the most skilful surgical measures have failed remains to be seen. While she was under Mr. Tilley the patient had open-air treatment at St. Moritz. It will be extremely interesting to watch in this case the effect of tuberculin alone. The patient cannot afford to remain under constant observation.*

So much for the tuberculin treatment of tuberculous lesion occurring early in the larynx. Laryngeal tuberculosis, secondary in incidence and appearance to pulmonary tuberculosis, is a capricious manifestation occurring in any stage of lung disease, and with increasing frequency and intensity in the later stages.

In 150 cases of pulmonary tuberculosis in the first stage I have seen but a few cases in which the lesion could be definitely described as tuberculous. Laryngeal catarrh is a common incident in early pulmonary tuberculosis, but unless either the appearances in the larynx are distinctive or the laryngeal lesion reacts to tuberculin I do not describe them as tuberculous. There is a pre-tuberculous laryngitis of a simple kind. After treatment with tuberculin I have never seen a tuberculous development in the larynx in these early cases. Case II, above reported, belongs to this category.

In another instance an accomplished singer consulted me for "cracked" voice. I found absolute and hopeless paralysis of the right vocal cord, due to injury of the recurrent laryngeal nerve by a tuberculous lesion of the pleura and apex of the right lung. This symptom led me to examine the apex of the lung, where I found signs of early tuberculosis. The first test dose of 0.001 c.cm. Old Tuberculin raised the temperature to 102.6° and settled the diagnosis. Treatment with tuberculin healed the lung but the cord was permanently paralysed.

The third patient was also a fine singer who completely lost her voice with the onset of the disease. The changes were not very distinctive but she reacted energetically to 0.001 c cm. Old Tuberculin, and was then treated with T.E. up to 4 c.cm. There were obvious signs at the right apex. She lost all her symptoms, gained a stone, and regained her voice. Some years after I heard her sing at the Sydney Town Hall. She married later and was quite well in 1909, six years after I treated her.

Case IV long suffered from hoarseness. Reacted to tuberculin. Treated with P.T. up to 0.775 c.cm., working all the time. Completely recovered health and voice. A year after treatment did not react to 0.045 c.cm. Old Tuberculin. Well one year later.

Accordingly the typical lesions of laryngeal tuberculosis are rare in the early stages of pulmonary tuberculosis, and in my experience invariably yield to tuberculin treatment alone.

In the second and third stages of pulmonary tuberculosis, when tubercle bacilli are being constantly discharged by the air passages, typical lesions become more and more frequent. Statistics show that the larynx is affected in nearly 50 per cent. of the late stages of pulmonary tuberculosis. Sanatorium statistics must be ignored, because laryngeal tuberculosis disqualifies for sanatoriums. In German Sanatoriums (Hamel) out of a total of 7,258, and 2,413 women, there were 5 cases of laryngeal tuberculosis among the men, and none at all in the women. Sanatoriums have to live and keep up their reputation by records, and are forced to protect themselves from utter failure by rejecting unfavourable cases. The excuse given for rejecting laryngeal cases is that high altitudes are bad for these cases. It would be nearer the truth to say that laryngeal cases are bad for sanatorium statistics.

In 90 cases of pulmonary tuberculosis in the second stage I have had 15 with very definite laryngeal tuberculosis, six manifesting severe and persistent hoarseness with redness, swelling, and thickening of the cords, while nine others had both infiltration and ulceration. Of course when severe laryngeal tuberculosis complicates the second stage of lung disease, the case should be classed with those of a later stage.

Yet in all the six cases of the milder form there has been complete and permanent recovery of the voice, with return of the cords to a healthy state. In the cases with ulceration I have watched the ulcer slowly heal.

In one severe case with a circular ulcer nearly as large as a threepenny-piece developed between the arytenoids I watched the ulcer slowly heal till not a trace of it was left. This occurred early in my experience when I was still using lactic acid (80 per cent.). The lactic acid seemed to do positive harm—so I gave it up, and have not used it since. The lung also, though in a late second stage, improved. Cough and expectoration ceased and tubercle bacilli disappeared from the sputum.

For four years the larynx remained well, but the patient was very poor and tried to make a living by teaching deaf-mutes lip-reading. Her health broke down again, and she died of pulmonary tuberculosis eight years after she had shown a severe lesion of the larynx in the second stage or worse of pulmonary tuberculosis.

In all the other cases the improvement was extraordinary. One of them had been treated by Mr. Percy Kidd in 1905. I saw him in March, 1906.

Then the lungs were R. II, L. II-III. Sputum oz. i, Tb. G. 4. There was much infiltration of cords, especially left. I gave him several courses of tuberculin. The improvement in the lungs, in general health and in larynx was very great. Unfortunately a band of fibrous tissue formed across the anterior angle of the larynx, which seriously injured the voice. The patient was a salesman and had to do much talking to get a living. Otherwise he was reported as well at the end of 1909. In another case an ulcer formed on false cords with much swelling which healed, but there was also ulceration of cord and aryepiglottidean fold, which healed and left a firm band of organized tissue which fixed the right cord and seriously affected the voice.

In this case the result was not satisfactory as the disease in the lungs progressed and in two years the patient died.

Case IV illustrates well the common history of cases treated at sanatorium.

July, 1905, sent to sanatorium with note: "No physical signs and no tubercle bacilli." "Had previously lost 3 st. in a few weeks." At sanatorium gained 28 lb.; "one of their best cases." Discharged and went to sea. In five weeks lost 22 lb. Came to me. State of lungs, II. Tubercle bacilli, G. 5. Patient looking ill and very weak. Treated with tuberculin while living in poor part of Sydney. No sanatorium treatment; improved immensely. Lost cough, recovered appetite and strength. No relapse while under my observation (more than a year). Came to see me every few months. Larynx gradually returned to normal condition. The cords had been red and interarytenoid area rough and velvety.

CASE V.

Case No. 49, p. 209, in records published in book. Lungs stage, R. II; L. II. Temperature 100° to 101°. Hoarseness, diarrhoea, and griping pains for nearly three months. Later double ischio-rectal abscess. Treated with tuberculin P.T.O. to 1 c.cm., then P.T. to 0.15 c.cm., and later up to 0.7 c.cm., gained 21 lb., and recovered voice. Very well a year later.

CASE VI.

Lungs, R. II; L. II. Appetite poor, looks very ill. November, 1907, very hoarse. Lungs, R. II; L. II. Tb. G. 3 in large clumps. Treated with P.T.O. and P.T. Many reactions, 100°, 100.6°, 101.4°, 101.6°, 102°, yet great improvement. Gained more than 9 lb. (6 st. 5 lb. to 7 st. 1 lb.). Voice restored; cords healthy. March, 1910, very well.

CASE VII.

State of lungs, R. II; L. I-II. Sputum, 3 oz. Tb. G. 6. Night sweats. Temperature 100.6°-103.6°. Country air two years. Disease began while in country. Came to Sydney. Sent to mountains, got worse, and pleurisy supervened. Marked tuberculous laryngitis, with redness and infiltration. Treated with tuberculin. March, 1910. Very well.

CASE VIII.

Whole or upper surface of epiglottis converted into a thick, granular, ulcerating mass; there was marked infiltration of cords and a small interarytenoid ulcer causing complete aphonia. Lungs, R. II; L. I-II. Sputum, 2 oz. Tb. G. 5. Tuberculin P.T.O. to 1 c.cm. Then P.T. to 0.8 c.cm. Epiglottis healed completely and cords recovered. Voice returned. No cough or phlegm. Gained 21 lb. Tested nine months after, no reaction to 0.05 c.cm. Old Tuberculin.

This man lived 500 miles from Sydney, and gave himself most of the doses.

CASE IX.

State of lungs, Stage II, Tb. G. 4. Hoarseness due to tuberculous laryngitis, chiefly infiltration of cords and interarytenoid

* June 30th: I have now another case under treatment, in which both cords are reddened and juicy; voice affected for some months. November 20th: Patient has taken 1 c.cm. of P.T., weight 10 st. 1 lb., voice normal, reactions to tuberculin have entirely ceased.

area. Treated with P.T.O. and P.T. Many reactions, 102°, 102°, 104°. Yet six months after "feels very well, physical signs almost disappeared, nothing else abnormal."

This case has not been long enough under observation to justify any opinion as to the ultimate result.

But gratifying as these results have been, they are not to be compared with the extraordinary results I have seen in pulmonary tuberculosis later than Stage II, in Stage II–III, and Stage III, obtained by using large doses of tuberculin with no sanatorium methods at all, without any local treatment, and with a total disregard of the opsonic index and the curious negative phase.

CASE I.

Aged 32, weight, 9st. 6lb. Came to me in December, 1902. Lungs, R. III (cavity); L. I–II–II. Treated by thirteen doctors. Abundant sputum, many ounces. Tb. G. 6. Very hoarse. Obvious infiltration of cords, especially left, involving interarytenoid space. Later definite ulceration of cord occurred which spread to interarytenoid space. Gave several courses of Old Tuberculin, T.E., P.T.O., T.O.A., P.T., and old T. Ulcer completely healed—all signs of active disease in lungs disappeared. Patient gained over 40 lb., and has been working in a newspaper office for several years. I saw him in 1909, seven years after treatment, in robust health, and with a perfectly normal voice. His sister, affected after him, had sanatorium treatment for ten months—much improved, but dead in less than two years from onset of illness. She had no tuberculin treatment.

CASE II.

1904. Boy, aged 17, weight, 7st. 10lb. Had been under Dr. S. S., in Sydney, for two years. "Took pounds of Dr. S.'s medicine, cod-liver oil, and maltine." Always lived in open air. For six months travelled forty miles, then forty miles back once every week to the doctor. "Rest cure" with a vengeance, then sent inland. "Got much worse." Then his father brought him to me. State of lungs, R. III; L. II. Numerous Tb. and mixed infection (streptococci). Pulse 110 to 120. Temperature, 100° to 103°. Abundant sputum. Very obvious laryngeal tuberculosis, causing great hoarseness, cords reddened, ridged and ragged. At urgent request of father and boy treated with tuberculin, P.T.O., and then T.E. up to 3½ grams. Many reactions, 100°, 100·6, 101°, yet gained weight, 10lb. The boy said, "Not two coughs a day since last dose, not a bit of phlegm. Oh, it was grand." He gained another 11 lb., and pulse was 80.

In 1906 I tested him up to 0.05 c.cm. Old Tuberculin, and he did not react. The larynx was healthy and voice recovered. Two years later he was well.

CASE III.

1904. Patient had had open-air treatment at Orange for one year and a quarter under several doctors. Came to me an absolute wreck early in 1904. He could not speak, great breathlessness, and cyanosed. Temperature 100·5°, 101°, 102°. State of lungs, R. III; L. II. Abundant thick yellow sputum. Tb. G. 6. His doctor left for England and visited patient's mother to inform her that her son could not live more than a month or two. He also diagnosed "ulceration of the vocal cords"—quite rightly. Dr. S. S. ordered cod-liver oil and a squirt. At first I refused to treat him, but he implored me to try, and I yielded.

Treated with P.T.O., and then three courses of P.T. up to 0.75 c.cm. He gained 32 lb. He was about eighteen months under treatment.

1908. Saw him in excellent health and spirits. No cough, no sputum, and a good robust voice.

1910. Managing a rubber plantation in the Malay States. "Never was better in his life."

I have only to point out also that tuberculin had this marvellous effect in spite of regular fever, as in the previous case, in order to show the profession that even in hopeless cases wonders can be performed. If one can do this in hopeless cases, is it any wonder that one always succeeds in easy and mild cases?

CASE IV.

Had been treated for two years without benefit. Came to me. State of lungs, R. II–III; L. I–II. Sputum, 4 oz. daily; Tb. G. 6; pulse 96. Infiltration of one vocal cord; later ulceration. Complete loss of voice.

Treated with T.R. In spite of great sensitiveness and severe reactions (103°, 102.6°, 103°, 103°, 103°), result was "no cough or expectoration, very good appetite, and complete recovery of lost energy." This result obtained without local treatment to larynx, and without any open air methods. He lived near Sydney, and, like all the other cases, was treated as an ambulatory case. Four years later he looked and felt well, but as he reacted I gave him P.T. up to 0·85 c.cm.

CASE V.

Young man, aged 22. State of lungs, R. II–III; L. II; sputum 4 oz.; Tb. G. 8 in numerous clumps; mixed infection streptococci; larynx—advanced tuberculosis, both cords red and ragged, with swelling over arytenoids. Three months before he came to me Dr. S. S. of Sydney said it was an early stage, and "there was nothing to worry about," and sent him up the country. Certainly he gained 10 lb., but meanwhile the disease advanced almost to the third stage, and for the last two months he had completely lost his voice.

I treated him with T.R. and T.E. He recovered his voice, the larynx healed, and the sputum was a dessertspoonful instead of half a cupful. Unfortunately he gave way to drink, and two or three years later I heard he had had a relapse. He was alive for several years after I treated him.

CASE VI.

Young girl, aged 17, came to see me in 1902. State of lungs, R. III; L. I to II. Pulse 110 to 120. Temperature 100°. Abundant expectoration, Tb. G. 5. Tuberculous laryngitis of mild form. Treated with T.E., P.T.O., P.T.

1904. Patient looks very well, has recovered all old energy, can sing well, and has no cough or expectoration. Pulse normal.

1910. Eight years after she was told she was dying, she has had a slight relapse, but is responding well again to tuberculin treatment.

For many years I have given up all other methods of treating laryngeal tuberculosis except by means of tuberculin. No drugs—though Sir Felix Semon seems to approve of creosote. No open air treatment, no local applications except palliatives for pain, no surgical measures such as lactic acid, excision (Heryng), galvanopuncture—and my results have been in some cases quite extraordinary. In cases in the first stage, although some date back for twelve years, I have not seen laryngitis supervene in a single case. Certainly in two cases in the second stage there was a relapse after six years' complete freedom from symptoms, and in both these cases laryngitis soon developed and death followed. In both these cases, in spite of my advice that they should be tested from time to time, they put off coming for six years, and then I could do nothing for them. In most of the cases in which tuberculous laryngitis existed, whether in II, II–III, or III stage, great improvement followed, and for several years there has been no return, while in the third stage I have seen even ulceration on the larynx heal. The series of cases in which I have carefully watched for many years the immediate and after-effects of tuberculin treatment according to clinical and not laboratory methods, leaves no doubt in my mind that in tuberculin we have a remedy not only better than all other known methods combined, but far the best that is likely to be suggested for use at this or any future time in all cases of laryngeal tuberculosis, even in the most hopeless of cases. Nothing has done so much to strengthen my firm conviction of the value of large doses of tuberculin in pulmonary tuberculosis as the extraordinary effects I have closely watched week after week, and year after year, in laryngeal tuberculosis.

DISCUSSION.

Dr. WATSON WILLIAMS (Bristol) said that they must all be prepared to welcome any method of treating laryngeal or other forms of tuberculosis that give better results than they hitherto had obtained. But he did feel very strongly that Dr. Camac Wilkinson's remarks about sanatoriums and the exclusion of laryngeal cases therefrom, in order to improve their statistics, were inaccurate and unjustifiable. The speaker had known many laryngeal tuberculous cases become cured at sanatoriums and by sanatorium treatment alone, and others by local measures combined with sanatorium treatment. He also believed in the value of minute doses of tuberculin, but considered that it was essential to begin with very small dosage and only gradually increase it, so as to avoid those fulminating local reactions which, in his opinion, did so much harm when tuberculin was first introduced; and he felt compelled to add that the only case of P.T.O. he had seen was a case of his own, which was referred to the speaker by her doctor as a pure laryngeal case. Her larynx was much diseased and very painful and swollen, but her lungs were also involved. After being practically cured at a sanatorium, and with tuberculin injections, she was sent to Dr. Wilkinson. The only result he had observed from the P.T.O. injections this patient had from Dr. Wilkinson was that the repeated doses greatly irritated and inflamed the larynx, and in fact seemed to have made it much worse than before. Still, he should be very glad if, in spite of this, the case went on to a complete and permanent recovery.

Dr. DONELAN (London) said that he had given up the use of tuberculin for some years, and preferred to treat laryngeal ulceration by silence, local applications, and galvano-cautery in suitable cases. He would be glad if Dr. Wilkinson would give details of his methods. He was glad to notice that many of the patients referred to were alive and able to work six and eight years after the healing of the ulcers. He would like to know how often that obtained, as in so many cases the healing of the laryngeal ulcer was the precursor of more rapid deterioration in the lungs.

Mr. WAGGETT (London) had found tuberculin treatment of value in laryngeal tuberculosis in those cases which had the essential characteristic of chronicity—namely, where a balance had been established in the conflict between the bacillus and the patient. By means of tuberculin one could in such cases turn the scale in favour of the patient.

Dr. PERMEWAN (Liverpool) would have liked to hear something of the cases that had showed no improvement.

Dr. BIRKETT (Montreal) said that tuberculin was very generally used by him, not only as a means of diagnosis, but also of treatment. He had yet to see a case in which it had been used for either purpose followed by oedema of the larynx, as stated by some authors. There was no doubt that it served to differentiate conditions which clinically resembled each other. The value of its use to this end was very beautifully illustrated in a patient whom he saw a short while before leaving Montreal. It concerned a young man, 37 years of age, who had been hoarse for about nine months, no other symptoms complained of. Upon examination, an infiltration, involving the anterior third of the left vocal cord, was noted, the surface quite unbroken, and a few fine vessels to be seen coursing upon it. There was no interference with the normal movements of the cord. Physical examination revealed absolutely no pulmonary tuberculosis. There was no history of lues, and clinically the infiltration did not look like malignancy. The pulse and temperature were quite normal. The administration of potassium iodide had no effect upon the local condition. Half a milligram of tuberculin was administered hypodermically. He might say that the patient had been placed in bed for two days before its administration, and the temperature carefully observed and recorded every two hours and found to be normal. This first injection gave a slight reaction, and upon repeating the injection, making it 1 milligram in quantity, there followed a very typical reaction of latent tuberculosis, the temperature gradually rising from normal to 102°, and gradually subsiding to normal within eighteen hours, and remaining at that afterwards. This case illustrated very forcibly, in his mind, the value of tuberculin for diagnostic purposes, especially where there might be in one's mind a doubt as to what the local condition truly represented.

Dr. WILKINSON, in his reply, said the lungs in the cases mentioned had improved, and that he considered that the prognosis depended upon the lung condition. The larynx might get well, but if the lung did not also improve the patient would die.

DISCUSSION ON VASOMOTOR RHINITIS.

OPENING PAPERS.

I.—H. S. BIRKETT, M.D.,

Montreal.

Etiological Considerations.

IN considering the etiological conditions of vasomotor rhinitis I fully agree with Herzog, who expressed his opinion in a most able paper published by him in 1831, "That we must not be ashamed to confess our complete lack of knowledge of the etiological conditions of this disease in so many cases."

Amongst the predisposing factors, a neuropathic disposition, whether inherited or acquired, must, as first pointed out by Beard, be put in the foreground; changes of the weather and colds must also be considered. The condition is met with at all ages and in every condition of life. While it is doubtless true that the physical and moral forces of civilization encourage its development in the higher walks of life, they probably do so only so far as they predispose to abnormal excitability of the nervous system in general. It is more common amongst women than is generally supposed. Its phenomena are not due to race peculiarities. I have observed it in several members of the same family, and it is possible that a peculiar excitability or deranged condition of the vasomotor system may descend from father to son, and determine the appearance of the affection in the latter; but it is difficult to say how far the influence of inheritance, as originally suggested by Wyman, enters as a factor into its causation. Over-exertion, either mental or muscular, undoubtedly predisposes, through lowering the nerve tone; a rheumatic or gouty diathesis certainly does.

Exciting Causes.

Opinions at present are divided as to whether the exciting causes arise external to, or within the body itself.

The entrance of some foreign material of whatever nature, and especially, as first noted by Blackley, the pollen of certain flowers and grasses, acts as an exciting agent. The actinic rays of the sun prove an excitant in certain individuals. Pathological conditions of the nasal structures, as first described by Daly and Roe, act in no small way.

Ballinger, following in the footsteps of Gradle, has very recently expressed the opinion that some cases of hyperaesthetic rhinitis may have, as possible etiological factors, a catarrhal sinusitis, especially of the ethmoidal and frontal. It is reasonable to suppose, according to this writer, that an inflammatory disease of the nose, attended with an irritating secretion which is characteristic of catarrhal sinusitis, might affect the filaments of the terminal sensitive nerve and render it extremely hypersensitive. This hypothesis, Ballinger states, is based upon clinical observations; but as yet they are too meagre to warrant final conclusions.

Braden Kyle expresses the opinion that in many cases the cause of the local irritation in the nasal mucous membrane is brought about by some chemical changes in the constituents of the mucous secreting glands.

Grayson, in a very recently published paper, expresses his strong conviction that this condition is to be attributed to a chronic autotoxaemia due to dietetic indiscretions, and without this systemic condition the neurotic nose would be unknown.

As an unusual cause, Chappell reports 4 cases of vasomotor rhinitis from malarial poison.

To state the subject briefly, there must exist:

1. A neurotic temperament implying susceptibility.
2. A local morbid condition of the nasal mucous membrane, which may or may not be associated with gross pathological changes of structure.
3. An irritant, acting either from without or within the body itself.

Pathology.

The earliest attempt to explain the symptoms upon the visible changes in the nose was made by Hack in a memorable monograph published in 1884, which gave rise to considerable comment. Hack assigned the nasal symptoms to a sudden and turgescent condition of the anterior extremity of the inferior turbinated bodies, resulting in great tension of the mucosa, which was interpreted as the stimulating factor of the nerve-end apparatus. In this opinion he was supported by Sommerbrodt, Schech, Koehler, and Goetze. Arrayed in opposition to this view were B. Fränkel, M. Schäffer, and Schnitzler, who maintained that the nasal symptoms were due to nerve enervation.

Arrayed in further opposition to the fullest acceptance of Hack's far-reaching theory we find Semon and McBride.

Later, Baratoux, Hering, John Mackenzie, and Hack himself proved that pathological hyperaesthetic areas existed also in the posterior part of the inferior turbinated bodies, in the middle turbinated bodies, and the septum.

Rethi does not attribute special significance to the repletion of the erectile bodies, and does not regard it as an active reflex link between the peripheral stimulation of

a sensory nerve and an elicited reflex, but interprets it as a phenomenon co-ordinate with other reflexes.

Lewy endeavours to explain the hyperaesthesia on the ground of having found in two cases who were the subject of vasomotor rhinitis a very large number of thickened nerve fibres to the free edge of the mucous membrane of the inferior turbinated bodies.

Widakowich undertook a similar investigation, but was unable to confirm Lewy's findings. Bresgen, in a very able paper, published last year, upon the relation of the sympathetic to diseases of the nose, points out that the very careful investigations of Bidder and Volkmann have shown that the sensory nerves distributed to the mucous membranes contain, as a rule, a very large number of fine sympathetic fibres, not uncommonly five to twenty times more than cerebro-spinal fibres. The preponderance of the fine fibres is most striking in the branches of the trigeminus distributed to the nose.

Bresgen further refers to the work of Max Buch, which, although particularly concerning the abdominal cavity, is, nevertheless, of extreme importance to the rhinologist. According to his findings, the sympathetic nerve is non-sensitive in the healthy condition only, as shown by animal experimentation; when it is stimulated for some time and rendered hyperaemic, the sympathetic nerve becomes extremely sensitive to pain. Numerous reflexes of a sensory, motor, and vasomotor character could be produced by way of the hypersensitive sympathetic. From the results Bresgen regards the reflex nasal symptoms as arising from inflammatory conditions of the sympathetic fibres. What the true pathological changes are, either in the afferent nerve terminals or the ganglionic centre, in vasomotor rhinitis is still unknown, because we have as yet no technique which will satisfactorily stain pathologically-changed axis cylinders, of which these nerves are composed. This is a statement given to me by J. Gordon Wilson of Chicago, whose work on the vasomotor nerves has been published in the *Proceedings of the Royal Society*. All we do know is that the peripheral terminals are abnormally sensitive, and the central nervous ganglion unstable.

Prognosis.

The prognosis of vasomotor rhinitis may generally be considered favourable, although one must be cautious. Even with operative interference, the prognosis is by no means certain, because the disease may at the same time have still other causes, and, even when the trouble has originally started reflexly from the nose, permanent changes of the nerve may develop in the course of time, which possibly and probably fail to disappear even after the original pathological focus has been removed.

Symptoms.

In reference to the symptoms of vasomotor rhinitis, the patients, in my experience, may be grouped into three classes, each class varying a little in detail from the other, both in the objective as well as the subjective manifestations. The first group I find chiefly amongst females who are of slight physique and of nervous temperament. The subjective symptoms are those of frequent attacks of sneezing, often violent in character, followed by a profuse discharge of clear mucus from the nose, but not associated with any nasal obstruction.

The paroxysm is not accompanied with any feeling of irritation of the mucous membrane of either the eyes or the throat. Following the attack is a feeling of general exhaustion and headache, but in the course of an hour or two the patient is quite well again. At the time of menstruation the symptoms are usually more severe than at other times.

In the second group the individuals are, as a rule, men who are of a florid countenance, and show evidence of good living. The subjective symptoms being those just enumerated, plus marked nasal obstruction, lacrymation, and irritation of the mucous membrane of the throat and conjunctivae. Objective examination shows the mucous membrane of the inferior turbinated bodies principally to be markedly swollen and very hyperaemic.

In the third group the only difference from the second group is in the objective symptoms. The mucous membrane of the inferior turbinated bodies, as well as that of the septum, is swollen but very pale, and has a slightly stippled appearance, a condition to which attention was first drawn by Glasgow.

The one disease which vasomotor rhinitis might possibly be mistaken for is the escape of cerebro-spinal fluid, but the differential diagnosis as laid down by StClair Thomson is readily understood by the lucid remarks made in reference to this matter in his work on the cerebro spiral fluid—namely, that in vasomotor rhinitis "the flow takes place almost invariably from both nostrils, although sometimes more from one than the other. It is not noticeably influenced by the position of the head. It ceases during sleep. It is, as a rule, preceded or accompanied by other signs of photophobia. The flow is very variable, and seldom has any regularity, either in the dripping or in the intermission; but the flow is seldom continuous for more than a few hours or a few days at a time.

Treatment.

"As the symptoms of vasomotor rhinitis are dependent upon a nervous diathesis or nervous weakness, therapeutics have a double task to fulfil, a local one to remove or rather shorten the circulatory irregularities, which, properly speaking, are only incidents of the neurasthenic condition, and a general or constitutional treatment to combat the fundamental trouble, the neurasthenia, for only after the improvement or cure of the latter can we consider our task as solved, because the possibility of a relapse is then more distantly removed" (Herzog).

The individual case should be carefully studied from all aspects and, according to Richardson and Grayson, the gastro-intestinal tract should be carefully considered. "The character of the food ingested should be investigated, and the diet thoroughly regulated. The habits of the life of the individual should receive attention, as to the use of stimulants, tobacco, coffee, tea and amusements, and if these are noted in injurious excess, they should be restricted or prohibited. The character and amount of work done, as well as the hours devoted to work, should be considered. The amount of work, rest, and physical exercise should be prescribed, according to the exigencies of the case. Such remedies as are found useful in toning up the general vitiated nervous function are to be administered" (Richardson).

In reviewing the local treatment of the subject, we find many writers advocating a method of treatment which has given satisfactory results in their hands. Since attention was first drawn to the local treatment of vasomotor rhinitis, we find the application of the galvano-cautery to the hyperaesthetic areas, "furrowing" of the inferior turbinals, as suggested by Hack, claims first place. Killian has carried out a similar method of treatment, but used trichloracetic acid, then the correction by operative measures of other and more marked pathological conditions.

Recently Grayson has practised free scarification of the swollen tissues.

Yonge has had satisfactory results from resection of the nasal nerve.

Muck, in a paper published last year, advocates as a prophylactic therapeutic suggestion for vasomotor rhinitis the application of cold water by means of a spray to the back of the neck. The satisfactory result obtained is due to the fact that the dominating vasomotor centre being in the medulla oblongata is stimulated to thermic reflex activity through the stimulation of the skin at the nape of the neck. Relief to complete nasal obstruction is obtained in about five seconds by this method of treatment. Watson Williams has found that spraying the nasal passages with a solution of mercury biniodide (strength 1–10 and 1–20) has proved highly successful in curing many cases. The pain following the application is often severe, and sometimes requires morphine to obtain relief. In suitable cases, if this be efficiently done at the onset of the symptoms of hay fever, the patient will remain free throughout the season.

The application of the positive pole of the galvanic current within the nose and the negative pole to the back of the neck in doses of 3 to 5 milliampères is advocated by some, but has not proved of any value in my experience with it.

O. J. Stein recommends that the nasal branches of the fifth nerve be rendered insensitive by the injection of alcohol into the nasal chambers. Of the anterior group the nasal nerve is first attacked, and later, if necessary,

the posterior group—branches of the spheno-palatine ganglion—are next to be treated. The treatment is carried out by means of a suitably devised syringe fitted with: (1) A straight, sharp-pointed needle to reach the nasal nerve (anterior group) and inserted into the tissues just posterior to the nasal bone—that is, the anterior extremity of the cribriform plate. The posterior group is reached by a (2) longer needle with a curved tip, which is inserted at the posterior extremity and lower border of the middle turbinated body. Five drops of alcohol are used with each injection. In a recent note to me, Stein maintains that he still is obtaining satisfactory results. I have personally given this method of treatment a trial, and the results, so far limited to six cases of vasomotor rhinitis, have been successful.

Constitutional treatment by gradually increasing doses of arsenic, as recommended by Sir Felix Semon, has in my experience proved of great value.

I have tried to lay before you in as impartial a manner as possible, though I fear but imperfectly, a summary of the work done in this subject and representing contributors in this country, on the Continent, and in the United States of America. In conclusion, the work suggests to me the following questions:

1. How far is the so-called neuropathic disposition responsible for the symptoms of vasomotor rhinitis?

2. Are the symptoms referable to an unstable condition of the nervous centres brought about by imperfect metabolic changes within the body.

I wish to express my indebtedness to Dr. Robbins of the Library of the New York Academy of Medicine and to Dr. Allemann of the Surgeon-General's Library, Washington, for research work so carefully carried out.

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II.—E. B. Waggett, M.A., M.B., M.R.C.S.Eng.,

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PAROXYSMAL RHINORRHOEA AND ITS ALLIES.

You will, I am sure, agree, after listening to Dr. Birkett's admirable and complete opening paper, that it would be out of place for me to take up the time of the meeting in discussing the various remedies and methods of treatment now in vogue. Dr. Birkett's paper brings our knowledge up to date; my wish is to make a suggestion concerning the line of further advance. One might be expected to record personal experiences with the various remedies, but I do not think this would serve any valuable purpose. Here in London, so far as hay fever is concerned, the majority of patients go straight to the chemist's shop and purchase a "remedy," and it is only the really rebellious cases, those that have been the round of the patent medicines, which come into contact at all with the medical profession.

If we had at our command all the members of a numerous community we could no doubt estimate the relative value of the various methods of treatment now practised; as things are we have no means of finding out, at all events here in London, what is the minimum of interference in the typical case, that is to become established as part of our routine treatment. I emphasize the word "minimum," as I conceive it to be quite possible that certain extensive forms of interference may prove invariably successful, and I for one am eagerly awaiting the report which Dr. Yonge will give of the ultimate results of his nasal nerve resections.

My own experience with all the many remedies which I have tried has been both good and bad. There has always been an element of uncertainty, which suggests that the treatment has not been directed to the fundamental source of the trouble. It is our business to dispel that uncertainty, and to discover what it is that determines that certain individuals should be thrown into a state of paroxysmal coryza while their neighbours escape.

It must, I think, be conceded, that there is an essential underlying element common to all cases of paroxysmal coryza, whether it be seasonal or diurnal. In both conditions there is sudden development of nasal oedema with persistent irritation of the nerves. It is quite evident that in the subjects of typical paroxysmal coryza of the non-seasonal type these nasal phenomena are not the outcome of any external irritation. On rising from bed or on commencing their ablutions the matutinal attack commences. The air they are breathing is that to which their noses have become accustomed during the night. Their experience is exactly the same as that of a normal person suffering with a cold in the head, and every one of us must have noticed the fact that when an ordinary cold is upon us, we wake to find our noses clear and free from irritation, but that as soon as one leg leaves the bedclothes we commence to sneeze and realize that yesterday's nasal blocking is re-established. The chill to the leg has immediately induced rapid oedema of the nose, and coincident with this oedema arrives an excessive stimulation of the nasal nerves. The mere presence in the nasal fossae of bacteria and their toxins was unable of itself to produce these phenomena, and I may mention here by parenthesis that even marked rhinorrhoeics sometimes will be entirely free from their old enemy during the existence of an acute catarrhal antritis, though it is giving rise to toxins which are sufficiently irritating to excoriate the skin of the vestibule.

It has been suggested that the nasal nerves in rhinorrhoeic and hay fever patients are excessively sensitive. It is true that all these patients belong to a class in which cultivation and habit have induced somewhat excessive sensibility. But whereas we all examine a great many highly sensitive noses in which the gentlest probing produces the sneezing reflex, these reflexes are not paroxysmal and there is no oedema; a few sternutations occur and the reflex is over and forgotten. Moreover, although we find the nasal nerve-endings more than usually sensitive in the subjects of spasmodic coryza, and though undoubtedly we are able to discover highly sensitive spots distributed in many different areas of the nose, still we never see true paroxysmal sneezing and rhinorrhoea follow directly upon the application of a probe. Some of these patients complain of having passed a miserable day as the consequence of the surgeon's attentions, but their misery does not commence until some hours have passed, and it evidently is not produced at the time of and wholly on account of the mechanical irritation of the mucous membrane. Indeed, the immediate after-results of cauterization and so forth, even when it is to prove ultimately useless, are often enough very satisfactory and lead to false hopes, and in my experience in rhinorrhoeic and in hay fever patients one of the regular after-results of extensive operations in the nose is a complete immunity from all paroxysmal phenomena for a period of three or four weeks. Finally, now that the dusty pastime of motoring is in vogue among the sensitive classes of the community, we know that dust as such does not produce the rhinorrhoeic spasm during the period of exposure. Before leaving this question of the result of direct external stimulation upon the nerve endings I may refer to the effect of bright light which is stated to be capable of precipitating a paroxysm of hay fever. Upon this point I am more than sceptical. Bright light is comfortably tolerated by hay fever patients outside of the hay season, moreover I have never seen the bright light thrown from the forehead mirror on to the eye precipitate a paroxysm of sneezing or nasal oedema in any patient at any time of the year.

I believe I am correct in saying that the ischaemia produced by adrenalin applied locally, is in all persons followed by a reactionary hyperaemia and temporary blocking of the nose. In a certain number of individuals, I believe in all paroxysmal sneezers, and many persons of plethoric or gouty habit, this secondary reaction is accompanied by oedema, rhinorrhoea, and prolonged paroxysmal sneezing. The reaction is quite unlike that observed in normal persons in whom a few sneezes occur without rhinorrhoea during the early stage of the reactionary turgescence, and the essential difference lies in the formation of oedema, in other words, of the abnormal passage of fluid from the blood vessels into the tissues. One is compelled to assume that in paroxysmal sneezers the prolonged titillation of the nerve endings, or more probably of the nerve fibres, which is experienced, is dependent upon that oedema. Is the stimulus the result of mechanical stretching of the nerve structures or of chemical action upon them, or of both combined?

At first sight it would seem that nothing would be easier than to settle this question by experiment, but I have learnt from past experience that experiments of this kind are not only useless but often detrimental, as leading to conclusions which have subsequently to be reversed, unless they are undertaken by men fully equipped with all the knowledge available concerning the whole field of circumstance, and I do not believe that a clinician is very often capable of reading correctly the results of his experiments. Accessory results due to causes which are foreign to the essential purpose of the experiment often overshadow the result which it is our object to discover. The outcome of such an experiment as the one now in question would be very inconclusive unless it were conducted by a man fully alive to all the phenomena connected with the central and peripheral nervous systems, as well as to the reaction of foreign fluids upon all the tissues concerned and upon the normal fluids bathing them. Such a man would confer a great boon to medicine if he would undertake, both upon normal and paroxysmal human subjects, the latter class both during and between their paroxysmal periods, to investigate the effects of the submucous injection of neutral isotonic fluid, normal serum, the serum of hay fever and paroxysmal sneezers both in and out of their period, and also the nasal secretions of these subjects taken at the various phases. Such a set of experiments will at the minimum occupy the investigator for a full year, for the reason that he must spend some time in the elimination of inessential results, and because he must determine the chemical characteristics of a large number of seasonal sneezers before, during, and after their period of intoxication.

It is useless to commence a task of this kind unless some reasonable prospect of a positive result is in sight. It is my purpose in a few minutes to show that a positive result is almost certainly within the grasp of a man fully equipped for chemical and haematological research, and that it is probably within his power to demonstrate one or more abnormal elements or conditions in the body fluids of sufferers. There is a reasonable hope that he may also provide medical science with definite means of detecting the nature of such conditions in any particular patient, and possibly of indicating a fundamentally rational line of treatment.

Is it worth while to set such a research on foot, or are we to be satisfied with our present methods? It must be admitted that the unpleasant phenomena may be excluded in a good many cases by the desensitization of the nerve endings, for weeks or even months, by means of the cautery, blasts of hot air, and by powerful applications such as those of quinine, carbolic acid, biniodide of mercury, and so forth; or in a more temporary fashion by local anaesthetics. The oedema may be kept at bay by adrenalin and other constricting agents acting upon the blood vessels, either applied locally or by prolonged internal medication; or, again, by the submucous injection of paraffin or by scarification. The toxin of hay fever may be neutralized by the admixture of antitoxin with the pollen toxin before it penetrates the epithelium; but if this is to be effectual the application must be made as often as the toxin is inhaled—that is to say, perpetually during periods of exposure. Antitoxin, again, may be supplied through the blood system by subcutaneous injection, but here we are met with the difficulty that repeated injection of horse serum induces hypersensitiveness to that fluid and unpleasant phenomena. Auto-immunization also may be attempted by the prolonged use of the various vegetable or animal—that is, in horse rhinorrhoea—toxins, but it has not, I gather, proved successful.

The underlying problem, however, remains unsolved: Why do certain persons react to poisons which are to others innocuous, by developing nasal oedema with its distressing consequences?

These persons differ in some unknown but remarkable manner from their fellows, and it is our business to detect the underlying basis of their peculiarity and, if possible, to redress it. In all the realm of medicine there is no disease in which the problem of personal idiosyncrasy is

more strikingly presented. Two men in robust health enter a hay field. Both equally inhale the pollen, both equally have been exposed to it throughout life. One is prostrated, the other remains untouched. We must not rest content merely to call the former a sensitive, still less to label him a neuropath. It is my purpose to suggest that he is no more worthy of that title than is a haemophiliac, and it will, I predict, ultimately be proved that the susceptibility to paroxysmal sneezing has a chemical basis in which the body fluids in general are concerned. The disease at bottom is in no real sense a nasal or a nervous one.

Dunbar has shown that if pollen-toxin is injected into the arm of a hay fever patient, all the symptoms of that malady are produced. In ten minutes severe sneezing and copious rhinorrhoea commence, with swelling of the nostrils. Injection of the conjunctiva and chemosis develop, and within an hour intense asthma supervenes. After two hours large urticarial wheals appear over the whole skin, associated with violent itching. Next morning the nasal and ocular symptoms have disappeared, there is no rise of temperature, nothing but a passing toxaemia with peculiar manifestations, all associated with oedema. The same injection into a normal person produces no specific evidences of irritation. Wherein lies the difference? It will not do merely to say that the elements of the neuro-vascular and of the sensory systems of the one are hypersensitive, nor can we invoke a hypothetical nervous sensibility specific to the toxin. There is something more than this, for Dunbar has proved by numerous experiments upon many persons, that the blood corpuscles of hay fever patients are laked by pollen-toxin, whereas those of normal subjects are not. The blood constituents must therefore be included in the problem.

Again, with regard to ordinary diurnal paroxysmal coryza, the attacks generally bear a distinct relationship in time to periods of sleep. It is the rule for them to commence on rising or shortly after, and even in typical matutinal sneezers a second attack in some patients occurs invariably after a midday nap. It is known that the body fluids of the sleeping and waking states differ, and the early morning urine is stated to contain convulsive substances and that of the evening to contain narcotic elements. It appears that in certain persons these chemical fluctuations are attended with distressing nasal symptoms; in other persons by none whatever.

It is well known that general itching of the skin, and even the development of wheals, are observed in hay fever patients as the culminating symptoms of an unusually heavy dose of pollen. Urticaria is also frequently found associated with spasmodic rhinorrhea. Many rhinorrhoeics suffer with it, and the majority give a previous history of urticaria in their earlier years, and it figures prominently in the family history given by these patients. Urticaria is produced by the subcutaneous introduction of pollen-toxin into the system, and indeed by the mere application of the toxin to the skin in hay fever patients. Urticaria also occurs in certain persons upon eating even small quantities of certain fruits and shellfish. Now it has been shown by Wright that urticaria is associated with a deficiency of lime salts in the blood, and that the supply of an excess of calcium in the ingesta will in many cases prevent the skin eruption. It is certain, therefore, that in urticaria an essential element is a condition of abnormal chemistry, resulting in the abnormal transference of fluid through the walls of the capillaries. Paroxysmal nasal phenomena not only bear a striking resemblance to urticaria, but are, as I have said, in many cases associated with it. Is it not probable that paroxysmal nasal oedema is a true urticaria, and may it not be investigated upon the lines that have proved valuable in the skin malady?

For some three or four years since hearing of Wright's work on urticaria I have treated a large number of paroxysmal sneezers with calcium lactate administered internally, and in the majority of cases with success, and almost always with modification of the symptoms. I purposely avoid giving figures, for the reason already mentioned, that I believe them to be unreliable and misleading. Certainly all my cases have not been successful, but one may add that it is known that calcium is absorbed with difficulty by some individuals. Some cases have reacted favourably only to repeated large doses, others only when magnesium as well as calcium was administered. These salts, and particularly calcium, influence, as is well known, the coagulability of the blood; but the coagulability rate does not represent the whole story in skin and nasal urticaria, for haemophiliacs with a deficient calcium index are not specially prone to these disorders. I do not, therefore, myself believe that in calcium we have a specific for all cases of paroxysmal nasal oedema.

What influence it exerts upon hay fever I do not know. It has been my custom for some years to order this drug, but at the same time to apply the galvano-cautery to spots in the nose specially sensitive to irritation by the probe, and probably, therefore, to the mechanical or chemical effects of oedema. So far as I know, the results of such treatment have been excellent where the classical precaution has been taken of applying the cautery at least three weeks before the flowering of the hay. This year, however, this treatment has been disappointing. The fact that the grass blossomed a fortnight before its usual season may have some bearing upon this experience, but I am inclined to think that the excessive output of pollen in a short space of time had more to do with it. This year the daily pollen dosage, at all events in the South of England, was above the normal, and certainly doses of 20 grains of calcium lactate a day produced no notable check upon the symptoms in certain of my patients with whom I have been in close touch.

However that may be, it is pretty clear that it is not yet proved that the mere ingestion of moderate doses of calcium is in itself sufficient to control all cases of nasal urticaria under all conditions, and we still have a gap in our knowledge which must be bridged; the important point to bear in mind is the definite fact that a large proportion of spasmodic rhinorrhoeics can control their symptoms so long, and just so long, as they take this drug. This is sufficient to prove that the phenomena are associated with blood chemistry, just as the local oedema of skin urticaria is dependent upon the saline contents of the blood.

I suggested just now that an investigation should be made into the manner in which nasal oedema produces irritation of the nasal nerves. I put it that a much more valuable investigation will be an exhaustive one into the blood chemistry of the subjects of paroxysmal coryza, whether it be diurnal or seasonal.

What I have already said concerning calcium suggests the probability that such a research will result in the discovery that the vulnerability of certain persons to mild intoxication by substances which are to the normal man innocuous, is associated with—dare I say dependent on?—the relative poverty of the blood in some simple mineral constituents. In the light of what we know of the need of salts throughout the animal kingdom—the reindeer who must have his drink of brine, and so forth—such a discovery would not be surprising. The investigation may, it is true, prove that it is not a question of deficiency but of excess, and that the substances involved are neither mineral nor simple, and certainly the investigation must be followed by a further one, first into the means of rectifying the abnormal chemistry, and secondly, into the manner of detecting and perhaps of correcting the cause of it.

I can hear it said, "You are proposing nothing short of an attempt at discovering the basis of susceptibility and of personal idiosyncrasy. It is a matter for the philosophical pathologist, aided by the chemist. Why bring the matter forward at a rhinological discussion?" For this reason. We have in hay fever a widespread disease which we do not understand though it is entrusted to our care and for which we are responsible. It is, moreover, a disease extremely well suited for experimental investigation, seeing that the symptoms are remarkably distinct and of short duration. The areas involved are easy of access and even of microscopic examination. The symptoms can be produced at will at all seasons of the year within the walls of a laboratory without danger or serious suffering. The clinical material is abundant, and the subjects belong to a class which has proved itself ready for self-immolation upon the altar of truth.

Rhinology has been accorded a generous welcome by the older branches of the profession, and we owe a debt to general medicine. It is, I contend, within our power to furnish repayment through the medium of a hay fever

investigation. If the investigation bears no fruit, well and good: no one will have been killed by it. If it is successful, we shall not only have done our duty by our patients, but we shall, maybe, furnish science with a clue to the problem of pathological idiosyncrasy, and perhaps revolutionize a considerable section of medicine.

The first step is the attempt to convert the man susceptible to pollen into a normal person. It is only a step further to detect beforehand susceptibility to more serious diseases, and one step more to correct the susceptibility before danger threatens. This last has been the dream of every thoughtful doctor from the time he walked the hospital, and it partakes of platitude to mention it; but the purpose of my paper is to suggest that it is within your power, Mr. President, to set the first step in motion, and upon a very promising path, by encouraging us this morning to place our knowledge, our clinical material, and some money at the disposal of a biological laboratory.

We shall have justified our choice of this subject for discussion if at this meeting we institute a competent research into the basis of paroxysmal rhinorrhoea, and do not rest content merely with the multiplication of palliative measures.

III.—Alexander Francis, B.A., M.B., B.C.Camb., M.R.C.S.Eng.

THE EFFECT OF NASAL CAUTERIZATION IN VASOMOTOR NEUROSES.

The treatment of asthma by nasal cauterization has now been so generally adopted that it is hard to realize how great was the incredulity with which my original paper, read before the Clinical Society in 1902, was received. Reports of the ensuing discussion are given in the British Medical Journal and the *Lancet* of October 18th, 1902. Mr. Tilley said that the statistics and statements in my paper were astounding. He pointed out that at the discussion on asthma in relation to the upper air passages at the Laryngological Society of London on May 5th, 1899, the meeting was attended by physicians and surgeons of London, Edinburgh, and other cities, and yet only nine cases of asthma were recorded at that meeting as cures, or as obtaining very great relief from intranasal treatment. The general opinion seemed to be that if asthma was associated with gross nasal lesions, such as polypus, marked deviation of the septum, or spurs or crests growing therefrom, or hypertrophic rhinitis, or if the paroxysm was preceded or accompanied by nasal symptoms, then it might reasonably be hoped that the removal of the lesion would remove the lung trouble. He further stated that my paper compelled them to put their ideas again in the crucible because I told them the best results were obtainable when the nasal cavities appeared healthy. Dr. Dundas Grant said that he echoed the astonishment expressed by Mr. Tilley. Dr. Greville MacDonald admitted that he was quite at a loss to explain the remarkable results I had recorded, and stated that no one in this country had hit upon the simple method of treatment advocated by me, but after my paper he would approach these cases with new hope for the patient.

In spite of the hope expressed by Dr. Watson Williams in a letter to the British Medical Journal (November 8th, 1902), that my contribution would not lead to the general adoption of intranasal cautery as the panacea for paroxysmal asthma, because there are so many "cures" for asthma, I believe there are few countries where the treatment is not now practised. I am in receipt of reports from America, Australia, New Zealand, India, Africa, besides European countries, of the success obtained by my method of treatment, and there are undoubtedly thousands of persons who have been relieved of asthma by this means.

In my original paper I gave the notes of 402 cases treated in Australia. Of these, 194 were known to have obtained complete relief, while 30 more were well when last seen, and great improvement was obtained in 123 cases, showing that the results were more or less satisfactory in 86.3 per cent.

I now have notes of 1,066 cases treated in this country, and I can claim that the results are quite as good as those of the former series as far as the general average of improvement is concerned, although a somewhat smaller proportion has obtained absolutely complete relief.*

The great difficulty has been to find a reasonable explanation of the effect so constantly observed. Many of the results are so sensational, and the effect on the asthmatic condition is so altogether out of proportion to the apparently trivial operation performed, that at first one cannot help feeling that much must be due to suggestion.

For instance, a man was sent to me on August 5th, 1909. On account of his difficulty in breathing he had been able to do no work for ten years, during the whole of which time he stated that he had spent the nights in a chair with his arms and head resting on a table. He said he could not walk 100 yards in a day. His hair was perfectly white, which he explained was due, not to old age, for he was only 36, but to suffering. He experienced instant relief on my cauterizing his septum nasi, and from that time he has had no return of asthma, and, although he was previously subject to colds and bronchitis on the slightest provocation, he now in the course of his work is exposed to all kinds of weather, and often gets wet through without suffering any ill effects. In a letter dated June 2nd, 1910, he states:

"I have felt no more of the asthma since I saw you than if I had never had it. I have to work very hard at my trade as a butcher, slaughtering single-handed, and am often at work seventeen hours a day."

The first case I ever had was as striking, and in this there has been no slightest return of the asthma for over thirteen years. There is, however, strong evidence against suggestion playing any part in the treatment. Thus:

1. Many of the best results are obtained in the most incredulous patients.
2. Good results are obtained in children who are too young to know the object of the treatment.
3. In some cases good results are obtained after prolonged treatment when the patient has given up all hope.
4. Frequently relief is obtained by the lightest touch, although the patient had been previously cauterized severely without any benefit.
5. Some operators who are unsuccessful at first become proficient when they have mastered the details of the technique.

I very soon realized the fact that the prognosis was better the more normal the nose appeared, the more free it was of hypersensitive spots, and particularly when there was no sign of polypus or polypoidal degeneration. Consequently I was obliged to exclude the theory that relief was obtained as the result of the removal of irritation in the nose, which by reflex action was responsible for the asthma.

That relief is obtained, as is so generally supposed, by a counter-irritant effect is not supported by the fact that the more lightly one cauterizes, and the less after-irritation and reaction are produced, the better is the result.

In my book, *Asthma in Relation to the Nose*, written in 1903, I tried to show that there must be some connexion between the nasal mucous membrane and the respiratory centre, whereby the stability of the centre could be increased by the nasal treatment. But at that time I was persuaded that asthma was due to spasm of the bronchial muscles. Dr. Francis Hare has proved so incontrovertibly, I consider, that asthma and the other paroxysmal neuroses are dependent upon varying vasomotor conditions, that I am compelled to seek other explanation.

Some years ago Hare suggested that if my method of treatment could relieve an asthmatic condition, it ought to be of use in the other paroxysmal neuroses. Consequently, my friend Dr. W. N. Robertson, of Brisbane, and I employed the treatment in a number of cases of angina pectoris with surprising results. Dr. Robertson, in a paper in the *Australian Medical Gazette* of January 20th, 1906, refers to 13 cases treated by him in this way. There was marked improvement in all, and in some the seizures entirely ceased.

In 1907 I saw a lady who was suffering from distressing angina. Her father had died suddenly of a heart attack. In 1904 she had a severe breakdown which was attributed chiefly to heart weakness. In the following year she suffered a great shock from a family bereavement, and from that time the heart trouble became greatly aggravated. In April of 1905, to quote her own words—

* Results:
Total number of cases, 1,066—
Complete relief ... ... 550, or 51.59% } 86.4%
Great improvement ... ... 372, or 34.89% }
No relief or lost sight of 144

"On opening the front door a cold blast of air seemed to strike my chest, as if I had received a heavy blow. I was seized with an agonizing squeezing cramp in my chest, which forced all breath out, and yet I dared not try to take any in. I remember hardly anything but the struggle, which insisted on being met to get action in the heart regions, until at last I found myself wet through with exhaustion, cold, and fright." When she had had four more of these attacks her doctor told her she was suffering from angina pectoris, and warned her that unless she took more care another seizure might not be overcome. From this time she suffered pain in her heart, neck, and left arm whenever she moved hurriedly, and the paroxysmal attacks gradually became more frequent and occurred without any unusual exertion or strain. One seizure which I witnessed in 1907 was the most severe attack I have ever seen. Her suffering was distressing to watch. She was speechless, her face was drawn and pinched, her lips and eyelids were almost black, and in spite of the free use of amyl nitrite her pulse was barely perceptible, but was felt as a hard thread. After some time there was relaxation, she came out in a profuse sweat, the pain subsided, and she lay in a state of complete exhaustion. I cauterized her nose as if for asthma, and the relief has been immense. In a letter written May 31st, 1910, describing the effects of the treatment, she says, "I began to sleep comfortably in a recumbent position, and the attacks got far less frequent and severe. I have done a lot of work, and can take exercise with enjoyment. It may interest you to know that my circulation is now quite good, my hands are never the blue colour they used to be, and my lips only get blue when I am tired. I take my meals without being left cold and damp, and I am really a different woman." She had an attack last September and another in April after exposure to cold winds, but these quickly yielded to amyl nitrite which previously gave but tardy relief. She has gained a stone in weight during the last two years, and can now walk fast and go upstairs without fatigue or discomfort.

I have given this case in greater detail than was perhaps necessary, but one is apt to regard any case of angina pectoris which shows marked improvement with suspicion, and to think that probably the original diagnosis was wrong and that one had to deal only with a form of pseudo angina or hysteria.

With regard to migraine. In 1900 I published a paper on the relief of headache by removing pressure of the middle turbinated bodies on the septum, and gave a number of instances. Dr. Hare has suggested that it was not necessarily the removal of pressure that gave relief, but that the operation produced a vasomotor effect similar to that obtained in the treatment of asthma. He maintains[1] that the pain of migraine is due to vascular distension at the seat of pain, which vascular distension is compensatory of a widespread vaso-constriction, particularly of the cutaneous area. That is to say, the mechanism of the pain in migraine is identical in principle with the mechanism of the dyspnoea of asthma. Consequently I attacked cases where there was no turbinated pressure, and the results seemed to confirm Hare's views.

Thus, on August 11th, 1909, I saw a lady who had been subject to attacks of migraine all her life. Her distress became so great that in 1905 she was given a mixture of 30 grains of potassium bromide and 20 grains of sodium salicylate to be taken every night. In 1907 she ceased to take it for three months, but was obliged to resort to it again on account of the severity of the pain, and from that time until I saw her in August, 1909, she had taken it daily without intermission. In spite of this drugging she was never quite free from head pain, frequently had paroxysmal attacks of great severity, and always felt heavy and dull. She had no middle turbinated pressure and I cauterized her septum as if for asthma. She tells me now (June 18th, 1910) that she remained absolutely free from headaches until April 11th, which was a longer interval than she had ever had before. Since then she has had two other attacks.

Then, again, Raynaud's disease. On August 22nd, 1906, I saw a lady, aged 18, who had suffered from cold feet from infancy. For some years her feet at times during the cold weather, to use her mother's expression, "died and went like alabaster." This condition was always accompanied by a violent headache, which, however, ceased as soon as her feet again became warm. During the winter before I saw her her hands and feet had died off on five or six occasions. I cauterized her as if for asthma, and since that time not only has there been no recurrence of the trouble, but she has not even suffered from cold extremities, and has had no headache.

On September 25th, 1907, I treated a patient for asthma who also complained that she had suffered during the last few years from mucous diarrhoea, often passing three or four mucous stools a day. I advised her to consult a physician, as she was evidently suffering from mucous colitis. On her next visit she told me that she had not done so, as her trouble had entirely disappeared. Although it took a considerable time before her asthma was relieved, she only once subsequently, about six weeks later, had any return of the colitis, and that lasted for three days only.

These cases not only confirm Hare's contention that the pathology of the paroxysmal neuroses is identical in principle, and that asthma, like the others, results from a disturbance of the vasomotor equilibrium, but they also tend to supply an explanation of the mode of action of nasal cauterization.

For some time past I have been in the habit of systematically taking blood pressures before and after cauterizing the nose, and the results are striking. The practical point is that I find it is possible to raise or lower a patient's blood pressure by cauterizing different spots in the nose. In cases of abnormally high pressure it is easy to get an initial fall of 20 mm. of mercury, and although the pressure tends to rise again, it does not usually reach the original level, and by persevering with the treatment an ultimate reduction of from 20 to 40 mm. can usually be obtained. On the other hand, I find it is possible to raise the blood pressure, but this is a less certain result than the reduction. I believe that this reduction of an abnormally high blood pressure is responsible in great measure for the extraordinary improvement often experienced in a patient's feeling of well-being after septal cauterization, which is greater than could be expected to result from the slight mechanical freeing of the nasal passage and the consequent improved air supply.

It is impossible to say at present how this effect upon the blood pressure is produced, but there is evidence that it is due to vasomotor action, through the sympathetic on the cutaneous vessels. At all events I have little doubt that it will be found to supply the solution of the mystery of the connexion between nasal cauterization and the paroxysmal neuroses.

Dr. Pierre Bonnier has published a series of papers in French journals and a recapitulation in *La Revue*, under the title of "The Direct Action on Nerve Centres." He gives some extraordinary results of nasal cauterization in a wide range of troubles, and suggests that the nasal mucous membrane is to be looked upon as a telephonic exchange board, and we have to learn where to insert the pin in order to get connexion with the various centres. Thus he states the more the centre aimed at occurs low in the bulb, the more anterior in the nose is the spot to be touched, and so on. In a general manner he deals with all the chief centres, giving the approximate spots in the nose which communicate with them.

I think that all this can be explained by the action of nasal cauterization on the vasomotor system; for, after all, vasomotor disturbance is at the bottom of most ailments.

Dr. Bonnier rightly emphasizes the point upon which I have laid the greatest stress for the last thirteen years—namely, that one cannot cauterize too lightly. The merest touch which causes no local irritation or reaction is the one which produces the best result. I feel that I ought to sound a note of warning against indiscriminate nasal cauterization. When one sees what profound and diverse effects a touch with the cautery can produce upon the vasomotor system, it is necessary to proceed with caution and with some knowledge of what the effect is likely to be.

REFERENCE.
[1] *Food Factor in Disease*, 1905, vol. i, p. 277 et seq.

DISCUSSION.

Dr. STUART LOW (London) said that he did not consider the title, "Vasomotor Rhinitis," for the subject under discussion at all a good one, and was surprised that those responsible for the selection of a topic for discussion should have adhered to such a nondescript and unsatisfactory nomenclature. In all forms of rhinitis there was more or less vasomotor disturbance. The name "vasomotor" conveyed nothing distinctive or conclusive regarding the nature or pathology of this distressing and intractable form of rhinitis. Many cases that he had seen and treated presented two troublesome symptoms, namely, frequent and paroxysmal sneezing and profuse watery discharge from the nose. Doubtless, both of these symptoms resulted from reflex actions commencing in stimulation of the intranasal nerve terminals, starting centripetal impulses, which, in return, were received by unstable and overexcitable nerve centres. Such nerve centre instability was often indicated by want of self-control of the patient, inability to keep the head steady, hyperaesthesia, and fractiousness during examination. This was the type of individual most liable to suffer from

vasomotor rhinitis and paroxysmal sneezing. Such being the state of the centres, in what condition was the periphery of the reflex nervous arc? It was in a state of irritability, hyperaesthesia, and, probably, congestion, and from his observations he considered that such changes in the peripheral nerves resulted from over-stimulation brought about by insufficient protection of the peripheral nerves from deficiency in the normal amount of protective covering. The mucous membrane lining the nose and throat being thin, did not sufficiently shield the nerves, and very easily became congested. This either occurred generally or in localized portions, and wherever it took place one result invariably followed, namely, a vast outpouring of serous fluid, and so the rhinorrhoea was largely accounted for; but accompanying the interepithelial serous transudation was a profuse secretion from Bowman's tubular glands in the upper regions of the nasal cavity. The mucous secretion was not only not increased, but invariably diminished, because in all conditions of thinning of the mucous membrane there was a semiatrophy of the mucous secreting glands. This was what he called hypomyxia. The deficiency of mucus in the noses of susceptible individuals also meant lessened protection of this sensitive lining from dust and variations of temperature, and helped very greatly to bring about the peculiar attacks to which they were so liable. Most of these people not only showed the indications of thinning of the mucous lining in the throat, pointed uvula, thin faucial pillars, and large vessels on the pharyngeal walls, but from a similar mucus deficiency and desiccation in the stomach were martyrs to dyspepsia and gastritis, and this undoubtedly helped reflexly to disturb the nasal secreting functions. Anything diminishing the protective mechanism of the lower regions of the nasal cavity, and especially the efficiency, continuity, and consistency of the inferior turbinals, by exposing the upper parts of the mucous membrane to dry, irritating, and dust-laden air, was indirectly an infallible factor in bringing about rhinorrhoea and paroxysmal sneezing. Now, two procedures, still very much in vogue with many rhinologists as panaceas for all the ills that the nose was heir to, namely, the application of the galvano-cautery, and anterior turbinectomy, were indubitably deteriorative to turbinal functional efficiency. Many of the patients that he had encountered suffering from rhinorrhoea and paroxysmal sneezing had had either the galvano-cautery severely applied to the anterior ends of the inferior turbinals, or had anterior turbinectomy only too completely performed. He was sure that such treatment was reprehensible and to be sternly reprobated.

Dr. Scanes-Spicer (London) said that the term "vasomotor rhinitis" was a bad one for those hay fever and pseudo hay fever cases, since very often inflammation did not enter into the matter at all. He would prefer some non-committal term, such as "vasomotor coryza." Mr. Waggett's suggestion that some mineral constituent of the blood was diminished in vasomotor coryza was well worthy of consideration. Salts of calcium chloride and lactate were being used four years ago in certain cases of rhinorrhoea by Sir Almroth Wright at St. Mary's Hospital; but, in spite of large doses, the results were negative. In some of these states the speaker had found very small doses of potassium iodide and of mercury of occasional use. Morphine and atropine were, as was well known, almost specific in giving relief in these reflex neuroses. Probably, however, the blood change was rather one of excess, deficiency, or perversion of one or more of the internal secretions. At other times it was probably a retention of waste, as in "gouty coryza." In spite of the possibility of some important blood change the symptom complex of vasomotor coryza, asthma, and nasal neuroses generally, and the results of treatment showed that these states were essentially derangements arising in the peripheral end-organs and smaller nerve filaments in the nose, and were to be explained on the well-known physiological principles of persistence of irritation, summation of stimulus, and irradiation or overflow of centripetal impulses reflexly on to neighbouring efferent tracts. All rhinologists welcomed Dr Francis as a co-worker in the field of reflex nasal neuroses, but if every rhinologist used the terms "asthma" and "cure" in the same haphazard way each could claim scores of cases with similar favourable results, more especially if he limited his reports to noses in which there was so little lesion that the nose could be spoken of as "normal." There was no necessary connexion between severity of nasal disease and severity of paroxysm, for in certain noses usually more or less deformed internally the slightest swelling from a cold, or portal congestion, would cause the most aggravated and long-standing attack. Further, many asthmatics were relieved permanently to an extent that they called cure, after failure of the galvano-cautery, by thorough rectification of intranasal disease. The rhinologist, however, should refrain from stating that he can "*cure asthma*," for he could not *guarantee* to *find* and *remove* every source of irritation in the nose, nor could he guarantee the permanence of the immense improvement he produced in every suitable case, and which he could repeat if necessary. Dr. Francis said that the less the abnormality in the nose the lighter the touch of the cautery, and the less the reaction the greater the relief. Every rhinologist knew well that with lesions so trifling as easily to be corrected by the cautery miraculous instantaneous relief was sometimes procured, but it was quite a different matter when there were complicated nasal disease and continuing sources of irritation; then the most serious demands were made on the perseverance of both practitioner and patient. The rhinologist also knew that it was impossible to fix on any spot absolutely on the septum or elsewhere, but that the right spot had to be found by trial and the cautery often repeated. The experienced rhinologist frequently had a good guide in increased sensitiveness to touch, in localized swelling, in abnormal contacts, in undue approximation of parts, or from considering the track of the main nasal nerves or their terminal distribution areas, and these were then attacked with success. Dr. Francis's paper afforded no further clue for the recognition or localization of any definite spots from the cauterization of which cure of asthma could be infallibly produced. He acknowledged there must be an empirical "groping" for these spots. What was this but searching as all did for the special "hyperaesthetic areas" in that particular case?

Mr. N. C. Haring (Manchester) said that it was quite evident that the disease under discussion belonged to the class of paroxysmal neuroses, and that any element of catarrh which might be present was merely an addition to, but not an essential portion of, the symptoms. Migraine, nervous skin lesions, and epilepsy were the diseases which, with paroxysmal rhinorrhoea and asthma, seemed to form a fairly well defined group of nervous diseases which were related to each other, both as occurring in different members of the same family and also often replacing each other in one individual. (Thus a patient might at various times suffer from one or other of these paroxysmal neuroses, and close examination of the family history showed an unusually large crop of neurotic lesions in closely-allied relatives.) Of the three factors in paroxysmal rhinorrhoea—(1) Central nervous instability; (2) excessive irritability of the nasal mucosa; (3) peripheral irritant—the factor which appeared to him to be the dominant one was the peculiar readiness of the central nervous system to be excited, and to respond tumultuously. Of the second factor one might say that many patients at least appeared to have an unduly sensitive nasal mucosa and yet did not suffer from the lesion under consideration. Of the third factor—a peripheral irritant—the well known action of irritant particles, such as pollen, rather tended to mislead one in estimating this as a causative factor, for it was quite evident that (as Mr. Waggett had pointed out) at any rate the matutinal attack, which occurred on getting out of bed, had no relation to any such irritation of the nasal mucosa, and was probably due to a vasomotor disturbance set up by change of position and sudden change of temperature of portions of the body surface. For purposes of treatment the cases fell into two well-defined classes—those with nasal lesions and those without. Nasal lesions, such as polypi, hypertrophies, deflections of the septum, and ulcers, were evidently to be treated, and one might expect a fair amount of amelioration if not cure. The treatment of the cases without any obvious nasal lesion was a more difficult matter altogether. The application of the cautery to a normal nasal mucosa was as likely to give relief as any manipulation which impressed

the patient and acted as a powerful "suggestion." One case of his had shown cessation of attacks of asthma, which were occurring twice or three times a week, for a period of about twelve to fourteen months after passage of the bronchoscope; the patient came back about every twelve months and asked to have the instrument passed, as she then felt secure from attacks for some time to come. The woman was neurotic but not hysterical, and one could hardly see why such a result should be obtained unless a powerful suggestive influence enabled the irritable central nervous system to maintain, at any rate for some time, a more regular vasomotor control.

Dr. STCLAIR THOMSON (London) shared in the objection to the title given to the condition under discussion. Doubtless vasomotor action was a part of the phenomena, but it had not established itself as the *causa causans*. Unfortunately, an appeal to vasomotor action was rather a refuge for the pathologically destitute, and was apt to be invoked as an explanation of the still unexplainable. He thought it better for them to confess their ignorance than to lull themselves with false theories. He shared in the gratified astonishment at the results obtained by Dr. Francis. Others could only have failed through some fault of technique; yet the manipulation of such a simple proceeding as cauterizing the septum should not afford insurmountable difficulties. Perhaps Dr. Francis would, by a diagram or demonstration, show exactly what his procedure was. It was not a sufficient objection that his method was empiric. This objection might be raised against many other methods. It was certainly a harmless, and not unpleasant, form of remedy. In conclusion, he was inclined to support Mr. Waggett's prognostication that progress was to be looked for from a study of the condition of the blood and the internal secretions. The alternations of paroxysmal sneezing with asthma or other so-called neuroses supported this idea. Local conditions were contributory, but evidently of secondary moment.

Dr. WATSON WILLIAMS (Bristol) said he believed that a proportion of the cases of the neuroses under discussion were due to bio-chemical changes in the blood affecting the bulbar centres and that such blood changes might be toxic in character or might be due to exaggerated physiological variations in the blood conditions. But in the greater number of cases he was quite convinced there existed some organic affection which was at least sufficient to act as a peripheral source of irritation. He ventured to doubt the accuracy of Dr. Haring's interpretation of the favourable result in a case of asthma from the passage of a bronchoscopy tube, and he (Dr. Watson Williams) did not think the beneficial effect due to suggestion. They probably attached too little importance to the physiological action of nasal stimuli on normal respiration, but they should not be forgotten, and in the same way, as was fully recognized by physiologists, the direct action of the air on the alveoli and bronchioles had a reflex action on the respiratory centres. And just as direct stimulation of the nose influenced the bulbar centres—for example, by the galvano-cautery—so might stimulation of the bronchi, as in Dr. Haring's case, and there were many cases where repeated attacks of bronchitis led to more or less persistently recurring asthma by indirectly influencing the respiratory mechanism. With regard to galvano-cauterization of the nose Dr. Watson Williams had many years ago noted the beneficial effect that followed in asthma from galvano-cauterization, and for a time he regularly cauterized the septum above the tubercle and the middle turbinate of all his cases. But he soon realized that the effect was generally but temporary, and in 1896, in an article on asthma,[1] he stated his conviction that nearly every case of asthma, whether there was a nasal lesion or not, would markedly improve from such galvano-cauterization. But he did not advocate the routine galvano-cauterization because he thought in many cases slight organic lesions did exist, and if they did not he was more strongly convinced that the effect was but transient and that it was of infinitely greater importance to depend for permanent results on general treatment and hygienic measures, etc.

Dr. LUC (Paris) said that he must confess that he had abstained systematically hitherto from any local treatment in cases of asthma or hay fever that did not present obvious nasal lesions; but it was the result of his experience that some patients who seemed to have no such lesions were in reality subjects of a latent form of myxomatous degeneration of the mucous membrane of the nose, that latency being due to the small size and deep seat of the myxomas; they were hidden under the middle turbinal, where they could only be detected after a prolonged (ten minutes') application of cocaine and adrenaline in that region. He had found such lesions in patients complaining of hay fever or asthma or simply with a deficient nasal respiration and frequent acute catarrhs, and he had found that removal of the middle turbinal and its underlying myxomatous tissue gave the best results, some cases being completely relieved by this means.

Dr. PEGLER (London) read brief notes of a case (typical of many others), suffering from paroxysmal rhinorrhoea, which he had treated with local application of glacial acetic acid.

The patient had been in the habit of using about twelve handkerchiefs per day, and at night it had been necessary to fasten layers of handkerchiefs round the head and face in order to mop up the copious watery discharge. There were attendant emaciation, languor, migraine, and much constitutional disturbance. After preliminary cauterization of the inferior turbinals, which were chronically inflamed and tumefied, and refused to contract under cocaine, paintings of glacial acetic acid were applied to the surface of the septum (after 20 per cent. solution of cocaine) and the free border of the middle turbinal, piece-meal, first on the right, and afterwards on the left side. As usual, the mucous membrane affected by the acid peeled off a few days after the applications, and the under surface healed very kindly. With the advent of this result, the rhinorrhoea gradually abated and the general constitutional disturbance disappeared. The treatment was carried on eleven years ago, and an excellent result was still maintained, as proved by a report sent in a few days ago by the husband of the patient, himself a medical practitioner.

Other cases either quite as successful or nearly as much so had been treated in a similar manner during the interval. The result was due in some way to counter-irritation, on the lines of a class of treatment much less adopted at the present moment than formerly and which had not been satisfactorily explained. He supported Dr. Luc when he remarked on the great service rendered by cocaine or adrenalin in enabling one to detect latent lesions in the nose, and to distinguish between simple erectile tumefaction of the turbinals and swelling due to a chronic inflammatory condition.

Dr. ANDREW WYLIE (London) said they had listened to excellent papers discussing the causes and treatment of this ailment, but had attained no definite result. One cause none of the speakers had mentioned was astigmatism. Many patients, who could not be relieved on being sent to an oculist and having their refraction corrected, were cured. Occupation had a great deal to do with this rhinitis. Clerks hanging their heads over desks, furriers, those working in mills, etc., were severely afflicted, and the treatment, therefore, was to change their occupation. This form of rhinitis was found very commonly in young men due to sexual excitability, and in these cases the galvanic cautery should not be employed. A great many cases of rhinitis would be cured if all the sufferers had to earn their food and bed.

Dr. PERMEWAN (Liverpool) said he thought there was a danger of their giving up local treatment in these cases. He personally had no doubt that cauterizing, but preferably by a chemical caustic, did much good. As regards Dr. Francis's method, he hoped that Dr. Francis would give them a demonstration of the exact method he employed, as others generally failed to obtain such good results. In this connexion he had had a successful case, which was much relieved by submucous resection of the septum. This possibly acted by removing the hard, resisting septum between the two middle turbinates, and might be justifiable in some cases. The use of large doses of the salts of lime, preferably the lactate, often gave relief in these cases, and deserved a further trial.

Dr. IRWIN MOORE (London) wished to confirm Mr. Stuart-Low's experience of the advantageous use of adrenalin, injected in 2 to 3 minim doses under the skin, in cases of

[1] On Asthma, Watson Williams, *The Hospital*, June, 1896.

asthma. The relief of the spasm was almost immediate. He referred also to a paper written some years ago on the use of the nitrites by Sir Thomas Fraser, of Edinburgh, and he wished to mention the great success which he had obtained for a number of years by spraying a solution of sodium nitrite into the bronchial tubes in cases of asthma.

Mr. Charles A. Parker (London) wished to support Dr. Francis's particular method of applying the cautery. It was quite true, as Dr. Scanes-Spicer had said, that there was nothing new in the idea of using the cautery for the treatment of asthma, but the method was new, and Mr. Parker was confident that it gave far better results than the older methods. There was no reason in refusing to adopt it because its action could not be explained. It generally relieved and often arrested the attacks of asthma, and, after all, that was what our patients wanted. He would lay stress on the importance of making a very superficial and limited burn in the region of the tubercle of the septum.

Dr. Tilley, the President, said he took the responsibility for the title, which was adopted to prevent the discussion from falling into that of asthma. He quite agreed with Mr. Stuart-Low that the use of adrenalin was not free from danger. He considered that Dr. Francis had focussed attention upon the subject of his nasal treatment, and though the speaker had used it his results were not so good as Dr. Francis had obtained. He would like to hear more of the technique of the discovery and as to the correct areas to cauterize.

Dr. Birkett, in reply, said he had appreciated the manner in which the subject had been received and discussed, and he was in agreement with Mr. Waggett's suggestion with reference to further investigation.

Mr. Waggett also thanked the meeting.

Dr. Francis, in reply to Mr. Stuart-Low, said he thought there was considerable risk in the indiscriminate use of adrenalin by hypodermic injection in asthma. It was undoubtedly a most valuable remedy, but even in small doses it must be used with caution. With regard to Dr. Scanes-Spicer's remarks that all which he had said and done had been perfectly well known to him for twenty years, he could understand how difficult it must be for anyone to suggest anything which Dr. Scanes-Spicer did not already know. Members laughed when Dr. Haring spoke of relieving asthma by dilating the rectum or passing a bronchoscope. He considered such treatment just as likely to relieve asthma as nasal cautery, if one could produce the necessary effect upon the vasomotor system. He had tried in vain for years to make it understood that the effects of his nasal cauterization were not limited to the nose, that they were not to remove nasal irritations only, but that their action on the vasomotor system or the respiratory centre was the effect sought after.

CANCER OF THE THROAT.

By Robert H. Scanes-Spicer, B.Sc., M.D.Lond.,
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[*Abstract.*]

Dr. Scanes-Spicer read a paper entitled, *Cancers of the Throat: Further Observations of the Throat on the Sites of Predilection of Malignant Degeneration in the Oesophagus, Larynx, and Pharynx, in Relation to* (1) *Rigid Resistances (Actual or Potential Levers, Wedges, Pulleys, and Fulcra) belonging to the Bony, Cartilaginous Framework of the Endoskeleton:* (2) *Chronic Augmentation of Stress, Strains, and Friction Incident at those Sites from Habitual Faulty Postures and Working of the Living Body with Relative Displacements of its Constituent Parts.* In the course of it he expressed the opinion that cancer was no more an entity than was fever, and stated that, as the result of the examination of numerous specimens of laryngeal cancer and cancer of the nose, mouth, and oesophagus, he had come to the conclusion that cancer was more common in certain sites than in others. The sites in question were those in which soft structures overlay hard processes, angles, bosses, ridges, and other situations in which movement and friction took place during breathing, swallowing, and like actions.

He held the view that, if such forces were persistently and not too extensively increased in any part of the body, new growths might arise, and that such causes might play the same part in their causation as does the pipe, sharp teeth, etc., in other cases of cancer, not that irritation *per se* caused cancer, but that it acted in conjunction with other factors, as age, faulty nutrition, constitutional states. He mentioned the chief sites of growth, and urged that such were the parts most subject to pressure. He instanced, amongst numerous others, the parts just in front of the cartilaginous lips of the vocal processes, the lateral choroid area, and the anterior commissure, and he believed that if ossification of the thyroid cartilage of the arytenoids were present, or if the small joints in this neighbourhood were ankylosed the constant play of the hand upon the soft tissues might easily result in excessive irritation; in fact, clinical experience lent great support to this view. Every case of cancer he had seen during the last few years had been in a bad type of belly breather, which breathing posture caused such friction. (The whole question of unphysiological or belly breathing and of physiological or back breathing he had fully discussed upon a previous occasion.) He had never seen cancer in a habitual back breather; but as belly breathers were a numerous class, too much weight should not be attached to this factor.

He then referred to the question of throat cancer in animals, and quoted Professor Hobday as stating that it only occurred in the sites of impaction of foreign bodies. In the further elaboration of his argument he referred to the contrivances of Nature in obviating and minimizing strains, stresses, and friction, as by joints, muscular pads, and lubrication by secretion. He summed up his experiences and conclusions by stating that calcification of the cartilages of the larynx usually preceded malignant degeneration; that such calcification was a more efficient irritant when there was concomitant cachexia of portal system production, which latter was produced by bad orthograde posture and belly breathing; that such pathological change appeared first in the deeper structures adjacent to such surfaces exposed to friction, and that it was at a later date it appeared upon the surface of the mucosa. That laryngo-fissure was successful in the early stages because it removed not only the neoplasm but also the rigid resistance of the calcified cartilage. That men were more subject than women to cancer because more muscular and vigorous, and therefore the causes above referred to were more vigorous and persistent.

That women were more liable to extrinsic cancer because they more often practised superior costal breathing, which caused greater friction of the cricoid on the spine; because their lives were more sedentary; because of conditions of pregnancy, etc.

That in orthograde man epithelial cancer was thirty-six times more frequent than in pronograde animals.

That sarcoma is only four times more frequent in the former than in the latter, and that cancer and sarcoma were equally frequent in animals, whereas in man cancer was nine times more frequent than was sarcoma.

That cancer had never been found in invertebrates where one found a nervous system, where there was also a muscular, a digestive, a circulatory, a respiratory, and excretory and sensory, and a reproductive system; but when there was no endoskeleton, no portal system, and no lymphatic system.

For a further advance in knowledge accurate records should be kept of appearances of affected larynges; radiograms of the same, and of all museum specimens, to ascertain calcified conditions of cartilages; more knowledge as to physiological and premature ossification of cartilages; history of previous laryngeal trouble leading to adhesion and perichondritis, etc., and as to abnormal size of cartilages in relation to cancer; also observations as to posture and breathing of affected cases.

The nineteenth annual convention of the Association of Military Surgeons of the United States was opened at Richmond, Virginia, on November 1st. Among the delegates were representatives from the Governments of Great Britain, Canada, France, Germany, Mexico, China, and Guatemala. Surgeon General George H. Torney, of the United States army, was elected president for the ensuing year.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF HENOCH'S PURPURA, OR PURPURA ABDOMINALIS.

My reason for reporting this case is that so very few cases are reported, and that one does not find many references to it in textbooks. As far as I can gather, about 60 cases have been reported since Henoch first described the disease in 1874, and of these about 18 patients died. Osler says that he has reported 18 cases, and that the prognosis is, as a rule, good. Henoch's purpura is considered by some to be a variety of erythema exudativum muliforme; others place it among the angioneurotic oedemas; while, on the other hand, on account of the oedematous swelling which is usually present, it is suggested that there is a combination of purpura and angioneurotic oedema, as in the cases reported by Bowen in the *Journal of Cutaneous Diseases*, 1892, page 434, "The Association of Purpura and Acute Circumscribed Oedema."

Stelwagon, in his book on *Diseases of the Skin*, says of this disease:

> Apparently the dermatologist rarely gets sight of these peculiar cases, which, according to this writer, are more common than generally thought.

In May, 1909, I was urgently summoned to a girl aged 16, who had "violent cramp in her bowels and was vomiting." The story was that the girl was a domestic servant in another part of the county, and had caught a chill. She ached all over, and her knees and ankle-joints were swollen and tender. A doctor was called in, and he said she had rheumatism, and was to rest in bed for a few days. She improved slightly, and was sent to her own home in my district. I did not see her until the third day after her return home, when I was summoned on account of the abdominal paroxysms and vomiting. When I arrived the girl was rolling about in bed and screaming aloud. The spasm soon passed off, and she settled down quietly. She said that these spasms had been coming on gradually for the last two days, and in the girl's own words, "Each one is worse than the last." Also, she mentioned that spots were coming out on her legs.

On examination the abdomen was very tender, and the pain was referred to the umbilical region. I could not detect any swelling in the abdomen, nor was there any enlargement of the liver or spleen. Her legs were greatly swollen, but there was not as much "pitting" on pressure, as one would have expected. Her legs were covered with purpuric spots, which were more located on the shins, inner sides of the thighs, and on the buttocks. There were a few isolated spots on the back, particularly in the scapular regions, but none on the abdomen.

The knee and ankle joints were very tender, but there were no external signs of inflammation. The vomited matter was very green, but no blood was noted in it on this first examination. Tongue very furred, breath offensive, constipation for three or four days, temperature 100° F., pulse 80. I ordered her to be kept in bed, barley water by mouth, have hot bran bags applied over abdomen, and gave her an effervescing bismuth mixture, with liq. morph., 5 m doses. Two days later her paroxysms had not abated, diarrhoea had set in, and she had frequent attacks of copious epistaxis. Menstruation, which had been absent for about six months, had started again. At the end of a week her condition had not altered, and I, being suspicious of some acute abdominal mischief going on, suggested calling in a consulting surgeon. Her people could not afford this. Almost immediately after this suggestion the paroxysms abated, the vomiting stopped, but the diarrhoea and menstruation still continued. The abdomen was now easy to palpate, but nothing abnormal could be detected. She went on very satisfactorily until the end of the third week, when her symptoms all returned again, the paroxysms being so acute that the girl used to knock her head against the wall and throw herself about the bed. Fresh spots came out, keeping to the same areas as the former ones, which were now fading away, giving the skin a dirty yellowish, mottled appearance.

There was blood in the vomit, and the faeces were dark in colour. On account of the severity of the paroxysms I kept her under the influence of morphine (giving hypodermic injection of tab. morph. gr. ⅛ once and sometimes twice daily) for four days. These symptoms again passed off gradually, and at the end of the seventh week she was sitting up in bed. I had been giving her liq. ferri perchlor. ʒss, liq. strych. mv., aq. $CHCl_3$, ad ʒss. T.D.S. Also cod-liver oil and malt and plenty of nutritious food. A month after her last relapse I allowed her to walk into the garden—a matter of a few yards. About a fortnight thereafter (that is, two and a half months from my first seeing her) I was sent for again, and found that she had a recurrence of the attack—paroxysms, vomiting, purpura, etc. During this attack I gave her 10 m of oil of turpentine four-hourly for the first two days, but as it seemed to increase the vomiting I desisted, and put her on to tabloid calcii lactatis gr. v, two thrice daily. She gradually improved, and by the end of a week her symptoms had disappeared, excepting the purpuric eruption, which was fading.

I kept her in bed for a month, giving her the calcium lactate for three or four days alternately with the iron and strychnine mixture. Thereafter her improvement continued, and she has never had any return of symptoms.

The points of interest in this case are that at the onset there should be such definite symptoms of a rheumatic attack, or rather one should say, of an arthritic purpura.

Secondly, the severity of abdominal symptoms which almost brought the patient to the operating table for laparotomy.

Thirdly, the rapid recurrences of attacks.

Fourthly, one must add the fact that there were no recurrences after the administration of calcium lactate. In this respect it is interesting to note that Dr. Robert Hutchison, in his book on *Lectures on Diseases of Children*, says:

> Salts of calcium I have found no benefit from, although perhaps you ought always to try the lactate.

It was this "although perhaps you ought" that induced me to try it.

Coventry. A. STEWART MACMILLAN, M.B., Ch.B.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

PATHOLOGICAL AND CLINICAL SECTION.

Friday, October 28th.

Dr. MELSON, President, in the Chair.

Cretinism.

Dr. W. A. POTTS showed a cretin, male, aged 21 years, height 3 ft. 3 in., the youngest of a family of twelve, ten of whom were alive and normal, while one died of convulsions in infancy. Mother alive; father, who suffered from phthisis, died, at 48 years, of apoplexy. The family life and circumstances were not altered before the birth of the child; the boy was an imbecile, not entirely devoid of intelligence; could not talk, but made sounds which his mother understood; could go out by himself. Shown as an almost typical cretin, except that the tongue was not large and protuberant. Had a large, flat-topped skull, with coarse, scanty hair, ashy complexion, wrinkled forehead, flattened bridge of nose, everted thick lower lip, small fat pads above the clavicles, protuberant abdomen; broad, thick, stumpy hands with wrinkled skin; fingers square at tips; feet not so characteristic as the hands; no pubic hair, external genitals normal and in proportion to his size; no thyroid to be felt; extreme scoliosis. Just above and internal to the left scapula there was a large firm tumour, apparently due to displaced and hypertrophied muscular tissue overlaying a deformity of the ribs, secondary to the scoliosis. The case was discussed by Mr. GAMGEE, Mr. FRANK BARNES, and Dr. PARSONS, and Dr. POTTS, in reply, said the

mental state of the patient was really better than the physical condition suggested. He could remember and understand simple statements, and he could make requests by sounds which the mother was able to comprehend. He cited cases (of Dr. Shuttleworth's and Dr. Underhill's) which improved physically and mentally (though not to a normal standard) even when they were of mature age. Dr. Underhill's patient was a woman 50 years of age. Somewhat large doses (gr. 5 t.i.d.) were desirable, and if there was no improvement with the dried extract, fresh thyroids, or even thyroid grafting, should be tried.

Surgical Treatment of Graves's Disease.

Mr. Leedham-Green showed a man in whom he had a year ago removed the right lobe of the thyroid gland, tied the right superior and inferior thyroid and the left superior thyroid arteries for Graves's disease. The patient was emaciated (he weighed 5 stone), and had diarrhoea, vomiting, delirium, rapid irregular pulse, high-pitched voice, and moderate enlargement of the thyroid gland and exophthalmos. Ten days after operation the pulse was reduced to half the former rate, and gradually the other symptoms abated, and he was able to return to work six months ago, and now works as a clerk from 9 a.m. to 5 p.m., and his weight is 8 stone. The case was discussed by the President, Mr. Gamgee, Dr. Potts, Dr. Glegg, Mr. Billington, Dr. Willoughby Gardner, Mr. Jameson Evans, and Dr. Elgood; and Mr. Leedham-Green, in reply, said that operative treatment had improved the prognosis of Graves's disease. Relapses were less frequent after operative than medical treatment. He did not agree that there was a tendency to spontaneous recovery, as constant relapses were the rule. He was of opinion that operation should be performed at an earlier stage than was now the custom. He insisted on the economic advantages of operative treatment, as only in a few instances could the patient afford to be a chronic invalid. Kocher's mortality was 5 per cent., whilst he (Mr. Leedham-Green) had lost 2 out of 20 cases—1 from acute pneumonia and the other from acute phthisis one month after operation. He considered ligature of the arteries alone ineffectual, and favoured excision of one lobe. He considered that the prognosis was less favourable in men than in women.

Acute Pancreatitis.

Mr. Gamgee read a note on a case of acute pancreatitis. The patient, a gentleman aged 45 years, was operated upon for that condition in January, 1910. During the twelve years before that time he had had many attacks of severe pain in the upper abdomen, and these had been put down (rightly as it proved) to the presence of gall stones. During the night of January 2nd, 1910, the patient had a sudden onset of severe epigastric pain accompanied by vomiting. He was seen by his doctor the next morning, when he was found to be in acute pain, and there were marked rigidity and tenderness in the epigastrium. The patient himself described the attack as being the worst he could remember. On January 4th he was better in every respect. During the daytime of January 5th the patient became much worse; the pulse rate rose to 110, vomiting became frequent, and the abdomen became generally distended, painful, and tender. He was seen by Mr. Gamgee at midnight on January 5th; he then looked very ill and complained of general abdominal pain, and was frequently vomiting dark brown fluid. The bowels had not been open for three days, despite enemata; the abdomen was distended, and the wall was rigid and tender, the tenderness being most marked in the epigastrium, the right hypochondrium and the hypogastrium, and there was distinct fullness observable in the last position. It was stated that the pain in the hypogastrium was worse after micturition. A provisional diagnosis of acute phlegmonous cholecystitis was made, and an incision was made in the right hypochondrium. On the abdomen being opened patches of fat necrosis were seen in the omentum and scattered over the visceral and parietal subperitoneal tissue. In the position of the pancreas was a considerable soft swelling, and, on the hand being passed in that direction, a quantity of dark, blood-stained fluid escaped. The gall bladder was moderately distended, and gall stones could be felt in it. The gall bladder was opened, and several hundreds of stones, varying in size from a hazel nut to a millet seed, were removed. One stone was impacted in the cystic duct, but no stones could be felt in the common duct. The gall bladder was drained, and large tubes and gauze tampons were passed into the right kidney pouch and down towards the pancreas. A median incision below the umbilicus was then made. Through this more patches of fat necrosis were seen, and several ounces of thin purulent fluid were let out from the pelvis. After the operation the patient improved steadily, but it was many weeks before the biliary fistula closed. At no time was there any sugar in the urine. At the present time the patient was in good health, but since the operation had had one or two febrile attacks, accompanied by slight jaundice. Mr. Frank Barnes related a case of acute pancreatitis in which he had operated within twenty-four hours of the onset of acute abdominal pain with rigidity, cyanosis, and rapid feeble pulse. Fat necrosis and turbid peritoneal fluid were observed when the abdomen was opened. The gall bladder was inflamed, and contained one large stone and numerous small ones, and puriform fluid. The gall bladder and the pelvis were drained, and the patient made a good recovery. Three other cases seen by him all died within a few days after operation. Mr. Gamgee, in reply, said he considered drainage of the gall bladder a very important part of the treatment, as the infection of the pancreas generally arose from the biliary ducts.

Lymphadenoma.

Mr. Frank Barnes showed a mass of glands removed from the neck of a boy aged 14. The mass was removed in one piece, and occupied the whole of the right side of the neck. Microscopic section showed them to be the hard or fibrous form of lymphadenoma consisting of masses of young fibrous tissue in general distribution throughout the gland, leaving very little lymph structure. The boy was pale and anaemic looking, with a red count of 4,500,000 and a leucocyte count of 8,000. There was a two years' history, the condition starting as a small gland in the middle of the neck, and gradually spreading. There were no other enlarged glands to be made out in the body. The spleen was not palpably enlarged.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

Pathological Section.

Tuesday, November 15th, 1910.

Dr. Lazarus-Barlow, President, in the Chair.

Gastric Ulcer.

Dr. C. Bolton recorded an investigation into the effects of diet upon acute ulcer of the stomach produced by the local injection of gastrotoxic serum. A hyperacid secretion increased the effect of the toxin; if the epithelium was damaged the gastric juice would start the ulceration. Retention of food delayed healing. In cats the ulcer healed more rapidly under a milk diet than under one of meat. The greatest care was needed in the early stages, until the ulcer was reinvested with epithelium. Ulceration was more readily produced in a digesting stomach than in one at rest; this was the reason why healing was retarded by a meat diet. In ordinary cases, in the human subject, three weeks was a sufficient time for the healing, provided the food taken was not long retained in the stomach. Hyperacidity should be controlled by alkalis.

Atypical Chloroma.

Dr. Firth and Dr. Ledingham recorded a case of atypical chloroma in a child whose blood presented the character of acute leukaemia. There were ulcers in the palate. Tumour like swellings occupied the orbital region, the scalp, and meninges, and certain of the long bones; the cells were allied to large lymphocytes. The coloration was limited to the scalp. The relations of the disease to leukaemia were uncertain. No micro-organism was discovered.

Experimental Production of the Carrier State.

Dr. Petrie and Dr. O'Brien recorded the results of experiments made by feeding guinea-pigs with a bacillus of the food-poisoning group. The carrier state was not

intermittent; an agglutination was produced in the blood by the presence of the micro-organism in the intestine.

Fatal Infection Associated with the B. Aertryck.

Drs. FIRTH, BAINBRIDGE, and LEDINGHAM recorded a case in which cultivation from the spleen of a child which died of enteritis showed *B. aertryck*.

Experiments with Air-dried Mouse Cancer.

Mr. S. G. SHATTOCK and Mr. L. S. DUDGEON described experiments (carried out at the Imperial Cancer Research Laboratories) which confirmed Jensen's statement that simple drying of cancer pulp in air at body temperature was lethal to the cells. This was one factor in preventing the transference of carcinoma from one person to a second by means of carcinomatous débris. There was very little evidence that carcinoma was ever an airborne disease. The authors had sprayed cancer cells suspended in salt solution into the mouths of mice, the process being repeated more than once, but so far with a negative result. Osler's statement that primary carcinoma of the lung was particularly common amongst the Schneeberg cobalt miners was worth bearing in mind; here the pneumonokoniosis doubtless prepared the way for the other disease. The remarkable vitality of the cancer cell in the undried condition, however, showed that the possible infectiousness and contagiousness of cancer could not be safely ignored. Extending their observations, the authors had found that the subcutaneous insertion of air-dried carcinoma produced no prophylactic immunization to the growth of a subsequent graft. This accorded with the results invariably observed at the Imperial Cancer Research, which showed that dead cancer tissue, whether killed by radium or other means, was powerless as a prophylactic. Neither did the insertion of air-dried carcinoma produce any curative immunization towards the growth of a graft previously made. The use of a centrifugalized extract (the material being ground first) was similarly inert. By the method of rapid centrifugalization the whole of the débris was got rid of from an extract in a very rapid manner, and as effectively as by means of the filter and press. If this extract was used prophylactically the growth of the subsequent grafts, instead of being retarded, was, in fact, accelerated. The same result had been obtained by Dr. Haaland from the use of pressed extract.

SECTION OF OBSTETRICS.

Thursday, November 3rd, 1910.

Dr. MACNAUGHTON-JONES, President, in the Chair.

Endometritis.

DR. ARCHIBALD DONALD and Dr. FLETCHER SHAW read a paper on the symptoms and treatment of chronic endometritis, with special reference to the results of curetting. The name was used to denote a class of cases of which the commoner symptoms were menorrhagia, metrorrhagia, leucorrhoea, dysmenorrhoea, and pain in the lower abdomen associated with a moderately enlarged uterus which is tender on palpation. Two groups of cases were included under the name; in one an inflammatory change seemed possible; in the other any inflammation of a septic or specific origin seemed out of the question. The clinical material consisted of 267 cases (hospital and private) of uncomplicated chronic endometritis. Notes had been taken before treatment in all of these cases, and the later condition of the patient was ascertained by written replies to printed questions. In all cases at least twelve months had elapsed since the operation. Notes were made as to the position of the uterus in 188 cases, and it was found that anteflexion was twice as common as retroflexion in virgins. The general result was that, of the 267 patients, 230 (or 86.1 per cent.) were relieved, and 37 (or 13.9 per cent.) were not relieved. The large majority did not obtain the full benefit until some months after the operation. Dr. AMAND ROUTH considered that the authors were really speaking of cases of chronic metritis. He did not believe that chronic endometritis ever occurred, apart from changes in the vessels and muscle of the uterine body; nor did he believe that such cases as these had true inflammation of the endometrium, but rather that there was overgrowth of the endometrium associated with previous pathogenic or saprophytic infection, or with subinvolution. In these cases, as the authors themselves admitted, the body of the uterus was enlarged and often retroverted and prolapsed. Curettage cured many of these cases, because it removed the overgrowth of adenoid tissue, and led to absorption of the congestive and inflammatory products in the muscular and vascular tissues of the uterus. Thus lightened in weight, the prolapse or retroversion was often spontaneously rectified during the subsequent rest in bed, though no doubt in suitable cases these results could be hastened by appropriate temporary help from pessaries. He considered ventrifixation very rarely required, and agreed with the authors that a congenital retroversion or retroflexion *per se* was often asymptomatic. It was not either necessary or desirable to curette all cases of dysmenorrhoea requiring treatment. There were many causes of dysmenorrhoea, both constitutional and local, and, if these causes were absent, an empirical dilatation would cure them quite as well as curettage.

SECTION OF ANAESTHETICS.

Friday, November 4th, 1910.

Mr. RICHARD GILL, Vice-President, in the Chair.

Prolonged Anaesthesia.

MR. A. L. FLEMMING described a method he had employed where prolonged anaesthesia was required. After inducing by ethyl chloride and ether, anaesthesia was maintained by ether, open or closed, for the first fifteen or twenty minutes, until, in fact, the operation was well under way. At this point nitrous oxide and oxygen, with frequent breaths of fresh air, was substituted, and continued for a short interval, varying in length from three to five minutes, and a change to ether then made, and so on throughout. Nitrous oxide anaesthesia being as it were superimposed upon ether intoxication, it was generally found that as the operation progressed it became possible to shorten the ether sessions, and to prolong those of nitrous oxide and oxygen. From his experience in 86 cases the author had come to the conclusion that it was sometimes to the patient's advantage that nitrous oxide had been thus employed so as to lessen the amount of ether toxaemia, and he was satisfied that a perfectly smooth anaesthesia could be maintained by the alternating system, although he felt that with improved apparatus it should be possible to obtain the same result with less changing and chopping. Among the patients who had proved favourable subjects were many for whom nitrous oxide and oxygen alone would not have been suitable, such as alcoholic men, very stout patients, bronchitics, and senile subjects. Mr. GILL, who had given ether alternately with gas and oxygen for short operations, was glad to hear that Mr. Flemming laid stress on the limitation of the dose, and also on maintaining the degree of anaesthesia as light as possible. Dr. SILK considered that a very rapid recovery from anaesthesia, as in the case of gas and oxygen, was not wholly an advantage, as the period of analgesia that accompanied recovery from an anaesthetic masked post-operative pain. Severe after-effects usually depended on a uniform level of anaesthesia not having been maintained. The method advocated by Mr. Flemming would require great skill, and the use of a very large quantity of nitrous oxide. Mr. BOYLE considered that a level anaesthesia would be very difficult to maintain with the alternative of the anaesthetics, and that after-sickness would probably be frequent. Mr. COLLUM had occasionally used ethyl chloride to deepen ether anaesthesia, as when, for instance, a student allowed a patient to come partially round. These cases had a good deal of after-sickness. Mr. HARVEY HILLIARD had kept records of after-sickness, and found it was less frequent when a regulating inhaler was used. Mrs. DICKINSON BERRY considered that light anaesthesia rather than a necessarily level anaesthesia was one secret of absence of after-effects. She found goitre cases were scarcely ever sick whether they had chloroform or ether. In these cases a very light anaesthesia was maintained, but it was not level throughout, as at a certain stage they were always allowed to come partially round and strain in order to make sure that the vessels were satisfactorily secured. Mr. FLEMMING, in reply, said that he was surprised himself when he tried the method he advocated, both by the case with which a level anaesthesia was maintained and at the satisfactory after-results.

UNITED SERVICES MEDICAL SOCIETY.

Wednesday, November 9th, 1910.

Colonel Sir David Bruce, F.R.S., in the Chair.

Malingering.

Major C. E. Pollock, in a paper on malingering, said that as many as 80 per cent. of those invalided for insanity from India recovered on the voyage home. There should be established in India a central institution for the careful observation of cases of mental disability. Men should not be allowed to evade their obligations by shamming madness; but at the same time it was very necessary to be extremely cautious about coming to the conclusion that a mental case was one of malingering. If a patient discharged as a malingerer went and did something really foolish, such as discharging a rifle in a barrack room, the medical officer was put in an awkward position, for it would be very difficult to decide whether the foolish act was that of a madman or only the supreme effort of a malingerer to obtain his end. Speaking of the numerous methods of mutilation attempted in countries where conscription was in vogue, he said that the retired Russian *feldsher* was a past-master in the arts necessary to a "conscript's friend," for he included in his practice the production of artificial hernia, spurious tumours by the system of paraffin, hammer toe by fixing the toes in a plaster bandage for some months, and numerous other devices of that kind to deceive the examining medical officer and to secure exemption from military duty. Brigade-Surgeon Beattie said that when he was serving he saw no malingering; when malingering did occur to any extent it was evidence that the men were not being properly managed. Surgeon-General Gubbins said the proposal to establish one place for observation of mental cases in India was not practical on account of the distances to be travelled—there should be four or five. Major W. S. Harrison said that spurious palpitation had been produced by chewing cordite, which caused similar symptoms to those caused by the injection of nitrites. In one case an R.A.M.C. recruit complained of attacks of pain radiating from the loin to the testicle followed by blood in the urine. On admission no blood could be found, but the day following what appeared to be pus was noted. It turned out to consist of starch granules, and was evidently dusting powder added to the urine.

Guinea-worm.

Major S. L. Cummins, R.A.M.C., in a paper on guinea-worm, gave instances in which the worm had caused great loss of efficiency to garrisons of native troops serving in endemic areas, and pointed out that, if it were ever necessary for British troops to serve in tropical Africa, the conditions of water supply in many places would make this disease a serious menace to health. The strategical importance of the disease, however, was diminished by the fact that it took nearly a year to develop, so that it could not complicate military operations lasting less than twelve months. Prophylaxis, though simple in theory, and consisting in clarifying infected water before use on the one hand, and protecting water from infection by cases on the other, was shown to be difficult in practice owing to the conditions prevailing in endemic areas. Lieutenant-Colonel Sir W. B. Leishman inquired as to the habits of Egyptian soldiers in the matter of wading in water. He was very sceptical about the intelligence of filariae leading them to go to parts where transmission to other hosts was facilitated. Major Cummins replied that at home in Egypt the men lived a great deal in the water, but in the Sudan they wore boots and were not so constantly in the water; but the Sudanese, who were the main source of infection, were constantly paddling in water up to their knees.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Friday, November 11th, 1910.

Dr. A. Christy Wilson, President, in the Chair.

Mr. J. Stewart, in a paper on *Some cerebral surgery cases* on which he had operated, described a case in which there was dislocation of the parietal bone with fracture of the anterior fossa at the base of the skull. The symptoms closely simulated a quite different surgical lesion of the brain. Trephining was performed, with reduction of the dislocation; recovery ensued. In another case of slight and obscure injury to the brain, late hemiplegia supervened; recovery followed decompressing trephining. In a third case a chronic abscess of the temporo-sphenoidal lobe presented symptoms suggestive of tumour. In a fourth case there was an hour-glass subdural and temporo-sphenoidal abscess. The following were among the exhibits: Dr. C. Oldfield: A specimen of *Tuberculous pyosalpinx* (one-sided) found attached to the omentum in an umbilical hernia. The patient, who was lactating, had had regular and profuse menstruation since her confinement, nine months previously; the uterus was bulky, 4½ in., but not otherwise abnormal. Dr. E. F. Trevelyan: A girl, aged 3 years, with partial *Paralysis of the right shoulder muscles*, including the serratus magnus, of some four months' duration. A similar paralysis—but not so marked—had recently developed on the other side. Between the onsets of the paralysis in the two arms a slight but definite prominence had been noticed in the lower cervical and upper dorsal regions of the spine. Mr. A. L. Whitehead: (1) A boy, aged 15, with *Bilateral interstitial opacity* of both corneae, without iritis, of two months' duration. For six weeks the knee-joints had been swollen without causing pain or interfering with locomotion. No other evidence of congenital syphilis was present. (2) A girl, aged 10, with *Right interstitial opacity* of the cornea, without iritis, of three weeks' duration. On examination both knee-joints were found to contain fluid. The duration of this was uncertain, since it had caused no discomfort and was unknown to the patient. With the exception of a slight scar at one angle of the mouth there was no other sign of congenital syphilis.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

Wednesday, November 2nd, 1910.

W. Morley Willis, F.R.C.S., President, in the Chair.

Abdominal Rigidity.

Mr. W. Morley Willis, in a presidential address on the significance of the rigid abdomen, stated that the condition was always an early phenomenon in inflammatory lesions within the peritoneal cavity, and occasionally remained the sole objective symptom until the condition had so far advanced that operative interference was likely to prove unsuccessful. Abdominal rigidity, therefore, in itself justified an exploratory operation. As an instance in point he quoted a case in which a boy, aged 16, had been seized with acute abdominal pain four hours previous to his being seen by Mr. Willis, but the only objective symptom was abdominal rigidity. Nevertheless, section was at once performed, and a perforation of the duodenum discovered. In another case in which operation was performed on the strength of abdominal rigidity, the cause proved to be a perforated gastric ulcer. Abdominal rigidity might occasionally occur in some pleural conditions, but in these cases temperature was unusually high, and respiration rapid and generally catchy. As a surgical axiom it might be laid down that the necessity for operation was urgent in exact proportion to the intensity of the abdominal rigidity. In the discussion which followed, cases were quoted in which abdominal rigidity had been absent, although the conditions were urgent, and others in which abdominal rigidity had been present, but recovery had occurred without surgical interference.

ULSTER MEDICAL SOCIETY.

Thursday, November 10th, 1910.

Dr. J. J. Austin in the Chair.

The new President of the society, Sir Peter O'Connell, inaugurated his term of office by introducing a discussion on *Poor Law reform* in Ireland. The dispensary doctors, he said, had been agitating for betterment of their position ever since the Medical Charities Act. They now claimed promotion by merit, a definite rate of increase of salary, and a retiring allowance. Their salaries, especially that part paid them as medical officers of health, were simply a retaining fee, and utterly inadequate as a recompense for their duty. Dr. Gardner Robb, who had organized an

agitation in Ulster, stated that 95 per cent. of Ulster medical men had signed the petition, and in Connaught the percentage, he understood, was equally high. The profession, therefore, was practically unanimous. Dr. DARLING (Lurgan) said that the present state of affairs was fair neither to the people nor to the doctor. Appointments were obtained under the most humiliating conditions. Sir JOHN BYERS said three things were required: (1) Fair play to those in the profession; (2) raising the whole tone of the profession; (3) raising the whole health of the country. The service in Ireland had drifted apart from that in England. The sick consumptive was allowed to remain at home in Ireland, when a home allowance was made. In the West of Ireland there was little private practice; in future the profession there must be subsidized. If a new service was inaugurated, it must be distinctly and clearly understood that a broad consultative and controlling body must be elected from all parts of Ireland to take charge of the enterprise. It must not be left in the hands of any one town or of any one of the present departments.

CLINICAL SOCIETY OF MANCHESTER.

Tuesday, November 15th, 1910.

Mr. J. HOWSON RAY, President, in the Chair.

DR. P. R. COOPER, in introducing a discussion on *Bronchitis as it affects adults*, said that probably in nearly every case bronchitis was due to micro-organisms, while impure overheated air, fogs, and noxious fumes probably acted by lowering the local or general resistance, and favouring the growth of these organisms. In chronic bronchitis, especially if attended by bronchiectasis, the chest was a breeding ground of micro-organisms, and on the slightest provocation conflagrations—that is, acute bronchitis or peribronchitis, etc.—resulted. In diagnosis it was of importance to ascertain the causal organism as well as its location in the bronchi, and here the services of the bacteriologist were required. In treatment it was probable that in the future, especially in chronic cases, vaccine-therapy would prove of great assistance. The experiences of Drs. Latham and Des Voeux, as related at the discussion on vaccine-therapy at the Royal Society of Medicine, were quoted in support of this view. Dr. CHRISTOPHER HEYWOOD, who dealt with the disease as it affects children, laid special stress on want of fresh air as a predisposing cause, and on sudden changes of temperature—for example, from a stuffy nursery to a cold bedroom. He also urged that there should be no delay in removing adenoids, if present, even during the bronchitic attack if necessary, and stated that he had seen striking relief afforded by this procedure. Discussing treatment by drugs he urged the avoidance, as far as possible, of the usual expectorant mixtures, and the substitution of emulsion of ol. morrhuae according to age and circumstances. In the discussion which followed, the PRESIDENT referred to a case of Dr. Heywood's in which he had removed adenoids during the bronchitic attack, with most excellent results.

MANCHESTER PATHOLOGICAL SOCIETY.

Wednesday, November 9th, 1910.

Mr. ALEXANDER WILSON, President, in the Chair.

DR. W. MAIR, in a paper on *Enlarged thymus and sudden death*, described 7 cases of lymphatism in which he had made *post-mortem* examinations. Only two of these deaths were unexplained. In one of these he was able to demonstrate definite degenerative changes (waxy degeneration of Zenker) in the heart muscle. He was of opinion that death in these cases was due to the action on the heart of some as yet unknown toxin, and that neither the mechanical theory nor the theory of a thymogenic autointoxication could be accepted as a satisfactory explanation. Dr. A. SELLERS described a case of *Acute fatal poisoning by aniline*, and mentioned some experiments showing that atmospheric air impregnated with small quantities of aniline vapour was capable of causing toxic symptoms in small animals.

Reviews.

PROBLEMS OF THE EAR.

IN an age in which every would-be specialist feels it incumbent upon himself to quote from "My Book," what would be the task of the reviewer without hope? His task is to review the same old apologetic preface, the stereotyped table of contents, the familiar illustrations gathered from many sources, the well-known and well-tried formulae, the same old clinical inexactitudes of the author's wide and varied experience. The hope is that the masters will not remain silent for ever. Patience has been rewarded, hope has been realized, by the appearance of an English translation of the fifth edition of Professor Dr. ADAM POLITZER'S *Textbook of the Diseases of the Ear*.[1] No one can accuse the students of not having studied even if they have not imitated. Professor Politzer's book bears the same relation to works on otology as Burton's *Anatomy of Melancholy* formerly did to general literature—a source from which many have drawn but which few have acknowledged. We are again indebted to Dr. MILTON J. BALLIN and Dr. CLARENCE L. HELLER for a translation into excellent English of a work which is sure to meet with as favourable reception as its predecessor. The fifth edition, from which the translation has been made, has been completely rewritten, and every chapter has been revised. This has necessitated the elimination of some material of less importance in order to make room for matter of more recent date which Professor Politzer has deemed indispensable to the student and practitioner. The more perfected technique in operative procedures in labyrinthine suppurations, in intracranial complications, and in affections of the jugular bulb, has received special attention. The book, as the translators quite correctly state, abounds with literature throughout the text, and is replete with references, gathered from the most reliable and most recent authorities. In a sentence, the work is undoubtedly of the highest standing both as a textbook and as a work of reference. The only fault, if it is a fault, we have to find is that it is too full for the purposes of the general practitioner. This raises the question, What would be the best way to go to work to write a textbook to meet the requirements and the pressure of work of a general practitioner? One way obviously suggests itself—to supply him, if possible, with a "Pocket Politzer." It is, however, sincerely to be hoped that the appearance of this new edition will not be followed by a large influx of "Potted Politzer"! In that event the reviewer, like Pauline, in order to endure will require a fire in the studio.

MR. MACLEOD YEARSLEY'S *Textbook of Diseases of the Ear*[2] was announced as "a more complete textbook upon diseases of the ear than has yet been published in England, the larger ones at present in that language being either translations from the German or imported from the United States." Whilst that statement might be criticized, we will not pay the author the poor compliment of doing so in the small amount of space at our disposal. We need only say that the announcement reminds one of the Englishman's reply to the American who, in describing the great fire of Chicago, referred to it as one vastly superior to the Great Fire of London. The reply was, "that the citizens of London at that time were more than satisfied with the size of their fire." Although otology is comparatively a modern branch of medical science, there has been no dearth of textbooks or varieties of sizes for the student to select from. The announcement further claimed for the book that "it is as complete as is compatible with conciseness." The author has undoubtedly succeeded in this respect; even the *Mus musculus* has not been forgotten. The average reader of a textbook takes

[1] *A Textbook of the Diseases of the Ear*. By Professor Dr. A. Politzer. Translated and edited by M. J. Ballin, Ph.B., M.D., and C. L. Heller, M.D. Fifth edition. London: Baillière, Tindall and Cox. 1909. (Roy. 8vo, pp. 906. 25s.)

[2] *A Textbook of Diseases of the Ear*. By M. Yearsley, F.R.C.S. London: Kegan Paul, Trench, Trübner, and Co., Ltd. 1908. (Demy 8vo, pp. 464. 18s.)

MEDICINAL AND DIETETIC PREPARATIONS.

Regulin.

In spite of the large number of preparations in use for the treatment of chronic constipation, no one will deny the possibility that yet other means of dealing with it may possess advantages over any hitherto in vogue. The preparation known as "Regulin," supplied by the Regulin Syndicate, Limited (13, Cullum Street, London, E.C.), consists of agar-agar in the form of small flakes, containing a small proportion of an aqueous non-bitter extract of cascara sagrada. Agar-agar has been recommended for use as a laxative, its action being mechanical; after being swallowed, it absorbs large quantities of water in the stomach and retains it as it passes on into the intestine, and so causes the formation of soft faeces instead of the hard masses so usual in constipation: it is claimed that in the preparation under notice the extract of cascara slowly separates from the agar agar in the lower intestine and stimulates evacuation by its purely local action on the mucous membrane. Our examination of the specimens of Regulin submitted show that it is a tasteless material which could be taken without difficulty or repugnance, and although the dose is somewhat large this disadvantage may be overcome by mixing it with food; it is also supplied in tablets made up with chocolate, which are quite attractive to taste.

FINANCIAL RELATIONS OF HOSPITALS AND MEDICAL SCHOOLS.

The Honorary Secretaries of the King Edward's Hospital Fund for London have sent us the following correspondence for publication:

To His Gracious Majesty King George V.

May it please your Majesty,

The Metropolitan Radical Federation, for whom I am empowered to write, have observed with deep concern that some of those who manage the great hospitals of London are persons who have not attended with becoming respect to the recommendations clearly and emphatically pronounced by Sir Edward Fry, His Grace the Archbishop of York, and Lord Welby, in the report made by them in 1905 to the Council of King Edward's Hospital Fund after they had fully investigated the financial relations existing between the great hospitals and the schools contiguous to them.

Those three investigators, whose probity and wisdom none can gainsay, declared that the benefits reciprocally conferred by the hospitals and schools the one upon the other should be regarded as equivalent, and that, therefore, where money was taken from the coffers of the hospital and conveyed to those of the school, the school remained a debtor to the hospital to the amount of such diversion.

To this declaration the Metropolitan Radical Federation appended its cordial adhesion when it was published. The schools are private enterprises which do not reveal their accounts to the public, and their profits, if any, are retained by private persons, and do not find their way into the treasury of the hospital.

This salutary direction that money subscribed or bequeathed to the hospitals, by persons whose sole interest is centred in the tending of the sick poor, should not be conveyed away to schools where the public are not informed what becomes of it, has been openly flouted in one hospital and silently evaded in some others.

It has been openly flouted at St. George's, where Dr. Charles Slater in a speech to the school contemptuously spoke of the "ill-advised action of a commission of the King's Hospital Fund."[1] And this insubordinate utterance is fully endorsed in the last published accounts of St. George's Hospital, where we discover[2] that £1,026 was paid directly from the funds of the hospital in salaries to the laboratory staff of the school, and £550[3] similarly diverted to the "medical school for work done for the hospital," although the report of Sir Edward Fry and his distinguished coadjutors pronounced any "work done for a hospital" by a school as being paid for fully by the reciprocal benefit conferred upon the school by admission of its pupils to the wards of the hospital, and any cash payments, such as these of £550 and £1,026, to be debts of the school to the hospital.

In these very clear circumstances the Metropolitan Radical Federation are disturbed, astonished, and grieved to observe that the Distribution Committee of King Edward's Hospital Fund have condoned this open flouting of the directions of their own distinguished committee of inquiry by making a grant to St. George's Hospital of £1,500, which appears in the same published accounts as the above insubordinate diversions.

In many other London hospitals vast sums in the past have been taken from the funds of the hospitals and conveyed into the private accounts of the schools; these amounts remain debts owing by the schools to the hospitals, but no effort appears as yet to have been made to repay them.

The Metropolitan Radical Federation make no apology for coming into the presence of Your Majesty, who is President of King Edward's Hospital Fund, with the respectful request that Your Majesty will at least direct that no further grant from King Edward's Hospital Fund be made to St. George's Hospital until the £1,576 diverted to the school, according to the last accounts, are refunded.

The Metropolitan Radical Federation further respectfully suggest that it would certainly give the working classes of London greater confidence in King Edward's Hospital Fund, and in its influence for strict finance at the hospitals, if its Council were elected, like the councils of other great philanthropic bodies, by the subscribers at an annual meeting, and not, as at present, without any reference to the subscribers.

The Metropolitan Radical Federation, for whom I am empowered to write this letter, represents over 40,000 working men of London; they therefore claim to speak more representatively for those for whom the hospitals were founded, exist, and are supported, than the Council of King Edward's Hospital Fund, who represent no one but themselves, and they confidently hope that Your Majesty will not refer this letter to that Council, but will take it into your own gracious consideration, and direct that what we humbly ask for shall be done.

I am, Your Gracious Majesty,
Your obedient and humble servant,
(Signed) Edw. Garrity,
Honorary Secretary.

37, Hall Street, City Road, London, E.C.

King Edward's Hospital Fund for London,
7, Walbrook, E.C.,
18th November, 1910.

Councillor E. Garrity, M.I.I.,
Honorary Secretary,
Metropolitan Radical Federation.

Dear Sir,

The communication addressed by you to His Majesty the King on the subject of the relations between hospitals and medical schools has been forwarded to the Fund by direction of the King, as His Majesty is now Patron and no longer President of the Fund, and it has been considered by the Executive Committee.

The Committee feel sure that a knowledge of the facts will convince you that there is no ground whatever for the allegations against the Fund contained in your memorandum.

Your communication suggests that two departures from the findings of Sir Edward Fry's Commission of Inquiry have been committed by hospitals and condoned by this Fund. In the case of St. George's Hospital it is alleged that, contrary to the recommendations of the Commission, moneys were diverted in the year 1909 from the hospital to the school, and that the Fund by making a grant in that year condoned such diversions. It is also stated that in many other London hospitals vast sums have been conveyed in the past into the private accounts of the schools, and that no effort appears as yet to have been made to repay them.

In view of the reflections contained in your communication upon the alleged action of the King's Fund, we are directed to say, in the first place, that there is no ground for the suggestion that by making a grant to St. George's Hospital in 1909 the Fund has condoned any "flouting" of the directions of the Committee of Inquiry. A mere consideration of the date at which the grant was made will show that even if there has been any breach of the direc-

[1] British Medical Journal, October 3rd, 1908.
[2] Page 29 of Report for 1909.
[3] Page 27.

tions, the Fund has not condoned it. The annual distribution takes place in December and is necessarily based on the accounts of the preceding year, while in the case of hospitals with medical schools these accounts are supplemented by a certificate from the hospital that the accounts of the current year, when completed, will show that the rule as to medical schools has been observed. The accounts of St. George's Hospital, in which it is alleged that a breach of the directions is disclosed, were published some months after the last grant was made. The judgement of the Fund upon these accounts, whatever it may prove to be, will be expressed in the usual course by means of this year's distribution, and the time at which this judgement is formed and published has not yet arrived.

While it would be premature, therefore, for any one connected with the Fund to express an opinion on the questions raised in reference to the accounts of St. George's Hospital, it may be added that the Fund was in correspondence with this hospital during the course of the year 1909 on the subject of the principles involved, and that the question whether or not these principles have been observed has necessarily come before the Fund, in the course of the ordinary examination of the accounts of the hospital with a view to the forthcoming distribution.

On the question of sums paid to medical schools prior to the date of the report of Sir Edward Fry's Commission of Inquiry, the action of the Fund is equally clear. The phrase in the report on which your charge is based—namely, "the schools still remain debtors to the hospitals in respect of these pecuniary contributions made to them," is qualified by a reference to a previous paragraph; and as a result of this qualification the Commission arrived at the conclusion that "the great uncertainty which, in many or all cases, attends any attempt to ascertain the intentions of the original founders of the hospitals and medical schools, the impossibility of knowing what were, from time to time, the exact motives in the minds of the subsequent donors and subscribers, and the complexity of the relations which have existed between hospitals and schools, seem to render any attempt to open up the transactions in the past between the hospitals and schools very undesirable, even if it were possible." The attitude of the Fund towards these past payments is based upon the actual terms of the Report of the Commission.

The Fund is administered under the provisions of the Act of Parliament specially passed in 1907, and the governing body, appointed in accordance with that Act, may be relied upon to take whatever precautions may be necessary to ensure that the conditions which are binding on all hospitals applying for grants, including the condition that no part of the general funds subscribed for the relief of the sick poor is diverted to the purposes of medical education, are duly observed by every hospital which receives assistance from the Fund.

Yours faithfully,
(Signed) SAVILE CROSSLEY,
FREDERICK M. FRY,
Honorary Secretaries.

PLAGUE INVESTIGATION IN INDIA.

THE Advisory Committee for Plague Investigation in India has made a further report,[1] as follows:

XXXIII.—THE EXPERIMENTAL PRODUCTION OF PLAGUE EPIDEMICS AMONG ANIMALS.

In two previous series of experiments the Commission showed that healthy guinea-pigs did not contract plague when kept in close confinement with plague-infected guinea-pigs so long as fleas were absent, and that in the presence of fleas the disease readily spread from the infected to the healthy animals. It was objected by Gottschlich that the results did not necessarily apply to rats and could not be used as an argument bearing on the question of the mode of propagation of plague among rats in nature. The present paper details experiments showing that exactly the same results are obtained when guinea-pigs are replaced by rats. Healthy wild Bombay rats were confined in small huts with other rats which had been inoculated with, and subsequently died of, plague; in one hut in each experiment abundant fleas were present, in the other there were no fleas. Considerable difficulty was experienced in securing the complete freedom of the control rats and huts from fleas, but the following results were obtained in eight experiments in which this condition was obtained:

	Huts Containing Fleas: About 24 Fleas per Rat.	Huts Containing no Fleas.
Inoculated rats put in	70	84
Inoculated rats died of plague ...	63 = 90.0%	73 = 86.9%
Uninoculated rats put in	125	125
Uninoculated rats died of plague ...	57 = 45.6%	0

In seven other experiments the control huts were not altogether free from fleas, one or two fleas being found in each. In these 105 healthy rats were exposed to possible infection from 78 rats dying from inoculated plague, and only 1 died of plague. In the corresponding huts in which fleas were more abundant, 64 inoculated rats died while living with 105 healthy rats, and of these latter as many as 38 (36 per cent.) took plague and died. These experiments, therefore, support the view that the rat flea is of paramount importance in the dissemination of plague among rats. A few rats dead of plague were eaten in both groups of huts, but the figures show that this was of no account in spreading the infection.

XXXIV.—RESOLVING (CHRONIC) PLAGUE IN RATS.

The abscesses in the viscera, especially in the spleen, and in the peripheral lymphatic glands, some of which contain living plague bacilli, which have previously been described as "chronic plague," are shown to be plague lesions in the process of healing; the name "resolving plague" is more appropriate. These appearances have been found frequently in rats in Belgaum and Poona, and a re-examination of Bombay rats shows that they also occur there; they had previously been found only in Punjab villages. It is also shown now that they are found most frequently towards the close of, and immediately after, the acute plague epizootic. The lesions in the spleen and mesenteric glands often ultimately find their expression in peritoneal adhesions. No evidence has been obtained that these abscesses are ever actually of importance as a source of acute rat plague.

XXXV.—ON THE SPREAD OF EPIDEMIC PLAGUE THROUGH DISTRICTS WITH SCATTERED VILLAGES.

In large towns, such as Bombay, the infection of plague is carried over from one epidemic to the next by the persistence of acute plague among the rats, accompanied by a few human cases. But in small communities each annually recurring epidemic is separated from that preceding by an interval more or less prolonged, in which plague cannot be found in either rats or men. It is obviously an important practical question in such places whether each successive epidemic has its origin from remnants left over *in situ* from the previous epidemic, or whether on each occasion infection is due to plague bacilli being brought in afresh from outside. Towards the solution of this question of "recrudescence" or "importation" a great mass of data has been collected and discussed by Major Lamb relating to the plague history over a period of four or five years of more than 2,500 villages in the Punjab and United Provinces. Dr. Greenwood, Statistician to the Lister Institute, contributes the first part of an analysis of these data by statistical methods. The chief conclusions are (1) that the occurrence of epidemics among the villages is not a chance distribution; (2) that the size of the village is an important factor, the larger villages being more liable to attack; in two out of the three districts investigated the distribution of epidemics among villages of equal size has not been shown to be other than random; (3) that the fact of a village having been infected in any one epidemic does not render it more liable to be infected in the next following epidemic; (4) that a study of the distribution on maps of infected villages month by month suggests a spreading out of

[1] *Journal of Hygiene*, vol. x, No. 3 (Fifth Special Plague Number), pp. 313-568. November, 1910.

infection from various centres. On the whole, therefore, the authors conclude that importation is a more important factor than recrudescence in the annually recurring epidemics in these villages.

XXXVI.—Observations on Plague in Belgaum, 1908–9.
XXXVII.—Observations on Plague in Poona, 1908–9.

These two papers contain the result of a close inquiry, lasting in each case for a full year, into the occurrence of plague in rats and men in Belgaum and Poona, together with studies of rats and fleas. The facts collected under the former heads do not lend themselves to summary treatment. With regard, however, to the fleas, it was ascertained that there was a definite seasonal variation in the prevalence of fleas which is closely correlated with the seasonal prevalence of plague. Thus:

	Belgaum.		Poona.	
	Plague Deaths Average per Week.	Average Number of Fleas per Rat.	Plague Deaths Average per Week.	Average Number of Fleas per Rat.
January		5.9	22	5.0
February ...	6	7.7	5	4.8
March	1	5.9	1	4.4
April	0	5.6	1	2.5
May	0	3.9	1	2.4
June	1	7.4	0	2.2
July	2	14.5	0	4.5
August	9	16.3	2	8.8
September ...	26	16.9	28	9.1
October	23	15.2	132	7.6
November ...	25	13.6	89	7.2
December ...	19	8.3	46	6.7

These results, therefore, fully confirm the data already obtained in Bombay, Kasel, and Dhand. The climatic conditions in Belgaum and Poona are quite different to those which prevail in Bombay. This strengthens the conclusion that the prevalence of plague depends upon the prevalence of fleas rather than that both phenomena are independently conditioned by circumstances of temperature, etc. The present data suggest a connexion between the atmospheric humidity and flea prevalence. In Belgaum an interesting census was made of the various animals living in the native houses; there was no evidence that cats afforded any protection. For the valuable discussions of the causes of the rise and fall of epidemic plague in these towns the original memoirs should be consulted.

XXXVIII.—First Report on Investigations into Plague-Vaccines.

Dr. Rowland, of the Lister Institute, working at Elstree under the direction of the Advisory Committee, has attempted to isolate from plague bacilli the substance which, when inoculated into animals, arouses an immunizing response. In a series of experiments conducted by exact methods he shows that after killing the bacilli with chloroform and drying with anhydrous sodium sulphate a nucleo-proteid may be extracted from the bodies of the bacilli which possesses immunizing properties of a high order. A single dose of 0.001 to 0.01 mg. reduces the mortality on subsequent inoculation with virulent plague from about 70 per cent. to about 13 per cent. The whole bacilli killed with chloroform given in the optimum dose are much less efficacious. The inquiry is still in progress.

XXXIX.—Interim Report by the Advisory Committee.

The following statement embodies the chief conclusions which have been provisionally reached by the Advisory Committee as the result of the investigation made under their direction from 1905 to 1909 into the mode of spread of plague in India.

1. Considerable epidemics of human plague consist almost entirely of cases of bubonic plague, and are directly dependent on the occurrence of epidemic plague in rats. The development of the rat epidemic precedes the human epidemic by an interval of about a fortnight. There is no evidence that any animals except rats play an important part in plague epidemics.

2. *Epidemic Plague in Rats.*

(*a*) Fleas which have sucked the blood of a plague-infected rat can transmit the disease to healthy rats to which they are transferred. The plague bacilli multiply in the stomach of the flea, and the flea may be still capable of conveying infection three weeks after having imbibed plague-infected blood.

(*b*) If plague-infected rats are kept in close confinement along with healthy rats, no epidemic of the disease occurs in the absence of fleas. In the presence of rat fleas the disease spreads from the infected to the healthy animals, and the rapidity and severity of the epidemic so produced is in proportion to the abundance of fleas.

(*c*) Rats may be infected by feeding them upon the bodies of other rats dead of plague. The distribution of the lesions in the bodies of naturally infected rats corresponds with that in rats experimentally infected by means of fleas, and not with that in rats infected by feeding. The Committee therefore conclude that *in Nature plague is spread among rats by the agency of rat fleas.*

3. *Epidemic Plague in Man.*

(*a*) Bubonic plague is not directly infectious from man to man, as is shown by the experience of plague hospitals, where there is no tendency for the disease to spread from the sick to the attendants.

(*b*) Material epidemics of plague in man are always associated with epidemic plague in rats. Epidemic plague among rats provides a large number of infected rat fleas, and, owing to the mortality among the rats, brings these fleas on to human beings.

(*c*) Rat fleas (*Pulex cheopis*) bite human beings, especially in the absence of their natural host.

(*d*) Rat fleas containing plague bacilli and found capable of transmitting plague to animals may be caught in plague-infected houses.

(*e*) Animals susceptible to plague (guinea-pigs, monkeys) placed in plague-infected houses if unprotected from fleas may contract the disease; whereas such animals under the same circumstances remain free from plague if protected from fleas.

(*f*) The Commission has also performed numerous experiments with a view of testing other possible modes of infection, and have found that—

(i) In the absence of fleas no epidemic resulted when animals susceptible to plague (guinea-pigs) were kept in close contact with infected animals, although the animals took their food off floors grossly contaminated by the excreta of their infected companions.

(ii) Susceptible animals (guinea-pigs) caused to live upon and feed off floors artificially saturated with plague cultures failed to contract the disease.

(iii) The excreta of plague-infected patients may contain plague bacilli, but the bedding, etc., of plague patients soiled with excreta containing plague bacilli was not found to be infective to highly susceptible animals caused to live in and upon the bedding.

The Committee, therefore, consider that *in the great majority of cases during an epidemic of plague man contracts the disease from plague-infected rats through the agency of plague-infected rat fleas.*

4. *The Seasonal Recurrence and Spread of Plague.*

(*a*) The Committee has obtained no evidence that under ordinary conditions the plague bacillus survives for more than a few days outside the bodies of men, animals, or fleas.

(*b*) In large towns plague may persist throughout the year, since a few cases of acute plague in men and rats occur during the non-epidemic plague season.

(*c*) In villages there is no satisfactory evidence that such persistence is of other than exceptional occurrence, and it seems probable that the recurring annual epidemics in such places are due in most cases to fresh importation of the infection.

(*d*) There is no evidence that plague infection is carried for more than short distances by the spontaneous move-

ment of rats. Plague appears to be commonly imported into a fresh locality on the persons of human beings, though the transference of infected rats in merchandise must be considered.

(*e*) In districts which suffer annual epidemics of plague, the rat epidemic, on which the human epidemic depends, occurs during some part of that season when the prevalence of fleas is greatest.

LITERARY NOTES.

In the *Scottish Historical Review* for October there is an interesting note by that well known antiquary, George Neilson, LL.D., of Glasgow, on the Pills of Pope Alexander, of which some notice will probably be acceptable to readers of the Journal. He calls attention to the fact that in the Cartulary of Glasgow in its oldest shape, the *Registrum Votus*, there were certain entries which Professor Cosmo Innes, in editing the *Registrum Glasguense* in 1843, relegated to an appendix. Amongst them was one very interesting reminiscence of early medicine; and yet more interesting was a charm against colic. The latter was the subject of an essay by Dr. Alexander Tille, who, in *Scots Lore*, pp. 61–78, discussed at some length the significance of "Thebal Guth Guthain," the words of power which were prescribed as the posy of a ring to be used *contra dolorem ylii*. The two formulae are printed on p. 110 of the *Registrum*, and in the preface Professor Innes said of them: "The medical prescriptions against colic, savouring shrewdly of art magical, and the recipe for the famous pills which the Pope Alexander himself had deigned to use, are at least characteristic and amusing. They are both in a hand as old as 1200." From the prescription which is given it appears that the pills were composed of a variety of ingredients, including calamus root, cubeb, nutmeg, gum, spikenard, gillyflower, colocynth, myrobalan, agaric, senna, and aloes, and the claim made for them was that they would clear the eyesight, strengthen the hearing, comfort the soul, repair the memory, guard the health, and, above all, regulate the human body. This is surely concise and comprehensive enough, and will favourably compare with the advertisements of any modern quack nostrum vendors. Dr. Neilson in the same article calls attention to a volume in his possession, written probably at a considerably later date than the Glasgow *Registrum*, and which he thinks probably dates from the fifteenth century. On the fly-leaf of this volume there are three prescriptions. One is for a most comprehensive antidote powder; the next is a powder against flatulence and gross and phlegmatic tumours, to warm the stomach and aid digestion, and the third is a prescription for the pills of the Most Glorious King of Sicily. The same virtues are claimed for these pills as for those of Pope Alexander, and their composition is very much alike. But, while it is a moot point whether the patient when taking the pills of Pope Alexander should change his diet, in the case of the King of Sicily's pills the advice is definite that he should do so. The article concludes with some remarks on the problem of the date and of the identity of the "Most Glorious King of Sicily" and the Pope, "those high historic personages so strangely associated in the prescription for the confection of this momentous pill," and the author concludes that the King can hardly have been other than William (son of Roger), King of Sicily from 1154 to 1166, renowned in chronicle (despite his traditional name of William the Bad) for many victories over the Saracens, and especially associated with the great Pope Alexander III as his ally from 1161 until 1166, during the struggle for the Papacy against the Emperor Frederick.

An interesting article by Dr. Félix Regnault on the collections of Roman ex-votos in the Archaeological Museum of Madrid appeared in the *Progrès médical* for September 17th, in which the author shows very clearly how strong a claim these antique representations of human suffering have upon the interest and attention of the student of pathology. For the ex-voto of antiquity differs from its modern equivalent, inasmuch as it is frequently an exact reproduction of the deformity or disease from which its donor suffered, instead of the perfectly normal arm or leg which may be seen by the score in foreign churches to day; and, rude as some of them undoubtedly are in many cases, these thank-offerings are wonderfully lifelike and correct. The Madrid collection of terra-cotta ex-votos, all of which were found between forty and fifty years ago by the Marquis de Salamanca at Calvi, near Rome, and presented by him to the archaeological museum, is a very large one, and includes numerous specimens of a somewhat rare kind. For instance, it contains a great many models of deformed hands, which are very seldom found in any collection of Greek or Roman ex-votos. Several of these hands are atrophied, with bent fingers and deeply hollowed palms; others have abnormal lines on the palm; and in more than one case the patient had obviously suffered from tremor. Again, deformed feet and legs are somewhat unusual, but the Madrid collection includes several specimens of flat-foot, malformed ankles, and swollen or oedematous legs. An interesting fact to be noted with regard to the numerous examples of foot deformity is that in a great many cases the malformation is undoubtedly due to ill-fitting foot-gear. We learn from Dr. Regnault that such deformities were by no means uncommon amongst the Romans, who wore shoes very like our own, and this explains the fact that many of these models have the toes bent and shrivelled, as if their owner had crippled himself by habitually wearing tight shoes. Even those who shod themselves with sandals, however, nowadays vaunted as the ideal foot-gear, were not exempt from certain ills. The strap of the sandal, which passed along the root of the toes, and was twisted round the little toe, often pushed the latter out of its natural position by pressing it against the fourth, a deformity, according to Dr. Regnault, which is frequently to be observed in antique statues, even in such as have bare feet. In several specimens of the Calvi collection the little toe is stunted and atrophied, whilst in others the last joint of the same toe is thin and tapering; in one case the fifth toe is a hammer-toe, and in another it is pressed right under the fourth. Deformed heads occur very rarely amongst the antique ex-votos, but the Madrid museum is fortunate enough to possess several. One specimen represents the head of a woman, whose face is asymmetrical, and swollen in the submaxillary region; another is clearly a case of convergent strabismus, whilst a third has the right eye more widely open than the left. Yet another specimen appears to be a copy of the head of a dead child. Models of the uterus after delivery, women's breasts, and the male external genital organs, abound in every collection, and of these Madrid possesses an enormous variety. Many of the former, which differ widely from each other, present difficulties in the way of diagnosis; whilst the last resemble every known similar specimen inasmuch as each is represented with a long prepuce which entirely covers the glans. Every specimen in this collection has a phimosis, though of varying forms and, with one exception, are all in the erect state, the testicles raised and projecting; the penis is stretched, but being prevented from rising by the phimosis, it points downwards in an oblique position. The breasts are of every variety in shape and form, and every deformity of the nipple which prevents suckling is represented.

It is announced that Mr. Murray will publish on December 8th a work by Professor Ronald Ross, of Liverpool University, entitled *Induced Cell-Reproduction and Cancer*, which, it is said, promises to throw fresh light on the eternal problem of the treatment of cancer. The book is not written for specialists alone.

Watering places are the scene of many flirtations, and are therefore hunting grounds for mammas who have daughters to get off their hands. This, of course, is by no means new. In the early part of the eighteenth century we find one of his fashionable friends writing to John Gay, author of the *Beggar's Opera*, who, after losing his money by the bursting of the South Sea Bubble, was trying to recover from the shock at Tunbridge Wells. The correspondent was Lady Suffolk, who wrote to the poet as follows:

> The place you are in has strangely filled your head with cures and physicians; but (take my word for it) many a fine lady has gone there to drink the waters without being sick, and many a man has complained of the loss of his heart who had it in his own possession. I desire you will keep yours, for I shall not be very fond of a friend without one, and I have a great mind you should be in the number of mine.

UNQUALIFIED PRACTICE.

Report by the Privy Council.

The report as to the practice of medicine and surgery by unqualified persons in the United Kingdom, issued as a Blue Book on November 24th, is the outcome of the action taken by the General Medical Council on the advice of the Unqualified Practice Prevention Committee, moved for by Dr. Langley Browne, one of the direct representatives of England. This committee, of which Dr. Langley Browne is chairman, was appointed in November, 1907. It first of all ascertained, with the assistance of the Lord President of the Council, the Secretary of State for Foreign Affairs, the Secretary of State for the Colonies, and the Secretary of State for India, the legal provision existing in the Colonies and dependencies and foreign countries for the prevention of medical practice by other than legally-qualified persons. After considering the evidence thus obtained, the General Medical Council expressed the opinion that the Medical Acts did not sufficiently enable "persons requiring medical aid" to "distinguish qualified from unqualified practitioners," and that it is contrary to the interests of the public that medical and surgical practice should be carried on with impunity by persons holding no recognized qualification. The Council therefore requested the Government to take steps for the appointment of a Royal Commission to inquire into the evil effects produced by the unrestricted practice of medicine and surgery by unqualified persons. The Lord President of the Council thought it expedient in the first place to cause letters to be addressed to the Local Government Board, the Scottish Office, and the Irish Government, asking that a circular should be issued to medical officers of health in each country inviting their opinion as to whether the practice of medicine and surgery by unqualified persons is assuming larger proportions, and as to the effect produced by such practice on the public health. The opinions thus collected are summarized in the Blue Book, of which we can in this issue give only a preliminary notice.

England and Wales.

Replies were received from over 1,600 medical officers in England and Wales, some giving their whole time to their duties, others engaged also in general practice. It is stated that in many cases these officers were at considerable pains to obtain as full information as possible, and wrote to all general practitioners in the district, or called in the aid of the local Division of the British Medical Association or of the Local Medical Society. The Local Government Board considers therefore that the replies may be taken to represent the opinion not only of medical officers of health but also of a large number of medical practitioners. In an appendix the statements as regards those towns in England and Wales having a population of 20,000 at the census of 1901, showing the extent to which the practice of medicine and surgery by unqualified persons and the effect of such practice are summarized. Taking the 217 towns in this appendix it appears that in 82 unqualified practice in one form or another is either increasing or already exists in large amount; in 75 such practice is stated to exist to some extent; in 27 there is reported to be very little, while only in 30 is it stated that unqualified practice is entirely non-existent. As to the three remaining towns no information is forthcoming.

It is stated that in London the amount of unqualified practice does not appear to be so great as in provincial towns. In two metropolitan boroughs only is it said to be increasing, in five there is a large amount; in eleven the practice exists to some extent, while in seven it is non-existent or very small. As regards four metropolitan boroughs the extent of the practice is not stated. It is added that there is some evidence pointing to the conclusion that unqualified practice increases in large centres of population, attracting dwellers in the smaller urban and rural districts. This tendency is sustained by the ready means of access to towns, by the extensive advertising in the newspapers and magazines, which brings quackery of all kinds under the direct notice of all classes, and by the facilities extensively used of obtaining advice and medicine through the post.

On the question of whether unqualified persons represent themselves to be registered or assume titles which would lead the public to believe that they are regular medical men, the evidence is stated to show that the educated classes as a rule are not deceived in this respect, but that it is probable that a large number of people among the more ignorant section of the community are deceived into the belief that the person they consult is in some way or other qualified to give medical or surgical advice. The fact that many societies accept the certificates of unqualified persons is held to assist this belief, which, it is stated, is further strengthened by the practice of some registrars of deaths in accepting certificates of death granted by unqualified persons without further inquiry and entering them as uncertified deaths. The practice is adversely commented on by several medical officers of health in their response to the inquiries.

Scotland.

The Local Government Board in Scotland states that it is well known that the unrestricted practice of medicine and surgery by unqualified persons is widespread in Scotland as elsewhere, but that it is difficult to obtain precise information as to the facts. The report consists of a summary and a tabular appendix.

In the summary it is stated that while there is no evidence that bonesetters are increasing in number there is sufficient evidence that they are certainly not decreasing; almost everywhere, but particularly in small towns the bonesetter is to be found. With regard to midwives, it is stated that "the qualified midwife" or trained nurse is steadily gaining ground, but that there still remain many untrained midwives, though the reports received do not specify in any great degree the results of this kind of practice. In several small towns "eye and ear specialists" advertise in local papers and in some others. Such persons are common, but taking the whole country it does not appear that the medical officers of health believe that they seriously encroach on the realm of medical or surgical practice proper. Attention is drawn to the failure to comment on the well-known fact that many opticians habitually test the eyesight of all classes of persons and provide spectacles, and it is added that the whole area of prescribing opticians is on the borderland of unqualified practice.

The general conclusion is that, although the information obtained from the reports is not large, it is confirmatory of information obtained from other sources, and indicates that there is a fair ground for a more detailed inquiry.

Ireland.

A summary of the replies received from the medical officers in Ireland shows that chemists are consulted extensively, and prescribe for patients; that they likewise perform minor surgical operations and engage in dentistry; and that injurious results of their practice are often observed. Proprietary medicines are vended to various extents in a considerable number of towns and villages, and generally to the detriment of the patients. Bone-setters are employed in many districts, and necessarily with bad results; there are also cancer curers, whose plasters are stated to inflict very great pain and to injure seriously some of the patients. Charmers of erysipelas, ringworm, and sprains are mentioned, as well as herbalists, Christian Scientists, unqualified dentists, dental mechanics, and "handy women" midwives.

The Local Government Board has issued an order under Section 41 of the Housing Act, 1909, prescribing the forms of advertisement and notices to be used in connexion with powers and duties of a local authority under Part I of the Act of 1890. The use of the prescribed forms is obligatory, and they are intended to replace those issued under the Act of 1890.

At a recent meeting of the students of Middlesex Hospital Medical School, it was resolved to raise amongst past and present students a sum of 1,000 guineas for the endowment of a memorial bed in grateful appreciation of the great work done for the hospital and its school by His late Serene Highness Prince Francis of Teck. The general memorial fund appears to be making excellent progress, a sum of over £10,000 having been raised in little over a fortnight.

British Medical Journal.

SATURDAY, NOVEMBER 26TH, 1910.

A PLEA FOR THE NASO-PHARYNX.

A FEW years ago the University of London made it possible for Bachelors in the Faculty of Medicine to proceed to higher degrees therein through the special branch of medicine to which each is devoting his career or has paid more particular attention. The same general idea had previously been adopted by the University of Durham when drawing up its regulations for the examination of candidates for the degree in medicine granted by that university to practitioners of fifteen years' standing, and may be said also to have underlain the arrangements made by all universities which impose any kind of test on those who, being already bachelors of medicine and surgery, desire to proceed to the doctorate or mastership; the centre-point of such test has always been some subject of the candidate's own selection.

But no other university has elaborated this principle in a fashion corresponding to that of the University of London. That body has established eight separate divisions of medicine through which bachelors can proceed to the M.D. and M.S., and may therefore be regarded as the first to put a university seal on the characteristic feature of the organization of latter-day medicine and surgery, namely, the development of specialism. The list, though long, is probably not yet complete, for the followers of other specialities are likely to put in claims for corresponding recognition. Indeed, there is reason to believe that a movement is already on foot in favour of the class of practitioners to whose work a large part of the earlier pages of this issue is devoted.

For the moment we have nothing to say either for or against the proposition in question, but merely wish to express a hope that if it ever comes within the area of practical politics, the Senate of the University of London will take into very serious consideration the extent to which diseases of the nose, ear, and throat respectively may rightly be deemed separate studies.

The reason for putting forward this aspiration on the present occasion is that Dr. Edward Law, in the very interesting remarks by which he initiated the proceedings of the Section of Otology, indicated a possibility of a further development in the department of medicine in which he is an honoured leader.

Time was, and not so very long ago, when otology, rhinology, and laryngology were regarded as an inseparable trinity. More recently the professors of these conjoint sciences have fallen into two camps, with the larynx as the centre-point of the one, the ear as that of the other. As for rhinology, or the care of the naso-pharynx, this at present resembles Mahomet's coffin in floating 'twixt a laryngeal earth and an otic heaven, not definitely belonging either to one or to the other. One outcome of this state of affairs appears to be that the trinity, having been resolved into a duality, is not unlikely further to be divided into three distinct unities; in other words, development of a new speciality appears to be imminent.

We by no means pretend that the number of specialities which may rightly be founded on the lesions of any given part of the human frame is necessarily limited by the size of that part, but we do very seriously maintain that there is no room for three specialities in the section of the body limited below by the bifurcation of the bronchi, and above by the roof of the pharynx.

Hardly five years have passed since we said farewell to Garcia, and that great man Politzer is still fortunately with us; but despite the comparatively short time which has elapsed since the one began to write and the other established the use of the laryngeal mirror, immense progress has been made both in laryngology and otology. Those who have no expert knowledge of the latter science will grasp at once how complicated a subject it has become if they look at the paper by Dr. Bárány which appears in this issue.

Nor is it knowledge alone that has increased. The technique employed in the respective sciences is now of so delicate a character as to make long devotion to the one or the other essential to the acquirement of a full degree of manual dexterity. Then, again, whatever may have been thought at one time, it is now clearly recognized that between diseases of the larynx on the one hand and diseases of the ear on the other, there is little more essential connexion than exists between diseases of these localities in general and those of far distant organs. The cleavage which has taken place between laryngology and otology has therefore been almost inevitable and the segregation of otologists from laryngologists is perfectly natural.

But what is the right position of rhinology? On this point little more need be said than that since there is no necessary or even habitual connexion between diseases of the larynx and diseases of the upper air passages—the mouth, the nose, and the pharynx—rhinology can scarcely be regarded as an intrinsic part of the science of laryngology.

It might, of course, be argued that rhinology can stand by itself, but that contention would hardly be accepted by independent medical men, and more especially by those who realize how vast a proportion of all aural diseases originates in the naso-pharynx, and how commonly disease of the ear is associated with diseases in the upper pharynx or nose. Indeed, Dr. Edward Law would have been fully justified in going even further than he did on this occasion, and in urging that a definite separation between the study of the diseases of the naso pharynx and those of the ear would be a retrograde movement in what has hitherto been an advancing science, and spell calamity for all concerned.

The part played by the naso-pharynx in setting up disease of the ear is of course known to all otologists, but we venture to doubt if in the course of his daily work every otological practitioner keeps the relations between the naso-pharynx and the ear as constantly in mind as he should.

For evidence in support of this suggestion we need go no further than the contents of this issue. If all otologists attached sufficient importance to the condition of the naso pharynx, it would hardly be possible for Mr. Mark Hovell, Consulting Aurist to the London Hospital, to refer to the case of a patient who had had his tympanum inflated by an aurist, but presented himself for further treatment with his nose stuffed with polypi which had received no attention whatever

Then, again, it is to be remembered that bygone adenoids very commonly lie at the root of those innumerable cases which, developing little by little, are eventually written down as either middle-ear catarrh or middle-ear sclerosis. If adequate weight were given to this consideration, would the vast majority of all adenoid cases be left to be treated by laryngologists, who, as such, are concerned neither with the prevention nor cure of aural disease? In this connexion appeal may again be made to Mr. Mark Hovell, who mentioned as a common experience on his part the discovery of adenoid growths on which operation had been performed, but which were left untouched in the very situation where they are best calculated to do harm to the hearing.

We therefore regard Dr. Edward Law's suggestion that naso-pharyngeal topics should be more frequently discussed at meetings of otological societies as one which should receive the very fullest attention, not merely by way of preventing the development of rhinology as an independent speciality, but in the interests of otology itself, and of the patients with whom otologists deal.

Otology has no doubt made very great progress, particularly in the way of obviating the more dangerous outcomes of aural disease and the elaboration of operations on suppurating mastoids. This is satisfactory and creditable to otologists so far as it goes, but, after all, it is progress of quite limited scope, and is not of the kind which the public would best appreciate, or the medical profession as a whole would most like to see. For years past a large number of clever brains, and equally clever fingers, have been engaged in the service of otology, but despite that fact the power of aurists to relieve deafness or to restore hearing remains much what it was twenty years ago, and no material progress has been made in the prevention of deafness. The net outcome is that aural disease still remains the happiest hunting ground of quacks, and that the proportion of deafness amongst the general population has not been materially diminished. It is quite possible that the cure of established deafness will always present more or less insuperable difficulties; but it is equally possible that in respect of the prevention of deafness rapid progress would be made if otologists as a whole took Dr. Edward Law's counsel to heart and put his suggestion into practice.

To other communications made to this Section and to that of laryngology we have no space to refer, but we must at least draw attention to the paper by Dr. Milligan on aural tuberculosis, as it is one of general interest. His suggestion that a common cause of aural tuberculosis in infants is direct infection of the Eustachian canal by the regurgitation of infected milk is both ingenious and attractive. It is one, moreover, which, in view of the attention which this distinguished investigator has paid to the general subject, we are disposed to accept whole-heartedly, despite the absence of much in the way of direct proof.

EPSOM COLLEGE.

Epsom College is a foundation of which the medical profession has every reason to be proud. In its evolution it has passed through several phases of difficulty and even crisis, but from these it has triumphantly emerged, till at the present time it stands, in point of educational efficiency, in the front rank of the public schools of this country. In proof of this we need only point to the success achieved every year by Epsomians at the universities and medical schools, and to the number of men distinguished in various spheres of activity who have received their early training at the college. The growing popularity of the school is shown by the steady increase in the number of the boys for many years past.

This increase has made large additions to the buildings necessary, and the provision both for work and for play is fully adequate to modern requirements. Moreover the arrangements for the comfort of the boys are such as must astonish those who remember the roughness of school life even thirty or forty years ago. The dormitories are airy and have plenty of cubic space. The sanitary arrangements are of the most modern type and no expense has been spared in making them as good as possible. They are examined by an expert at frequent intervals. The Propert Library and the Holman Reading Room are well supplied with books, and the best English literature—taking that term in its widest connotation—is available for the boys. The school museum contains valuable collections of plants, shells, minerals, and insects. The playing fields are large and well adapted for their purpose, and there is abundant provision for games, gymnastic exercises, swimming, and all the manifold arrangements for the development of a sound body as the necessary instrument of a sound mind, which is the modern ideal of education.

Epsom underwent the severe ordeal of an inspection by the Oxford and Cambridge Schools-Examination Board in June last, and the report was such as must gratify all who take an interest in the school. In classics the teaching was pronounced to be very satisfactory, in mathematics the staff was found quite adequate for the needs of the school and the teaching was said to be efficient and the general work satisfactory. For the teaching of science, both elementary and of a more advanced kind, the school was stated to be unusually well equipped; the staff was considered adequate and the teaching efficient. Favourable mention was made of the laboratories and equipment. The chemical laboratory affords adequate accommodation for even the largest forms. The large physics laboratory is 45 ft. by 24 ft., and is fitted with four large central tables, a master's table, a wall table down one side, and three smaller wall tables. Galvanometer stands are fixed to the wall, and ample cupboard room is provided. There is also a smaller laboratory, 20 ft. by 24 ft., properly fitted with five tables, sinks, etc., for special work, and a battery room adjoining. There is also a good lecture theatre, a preparation room, and a dark room. The laboratories are provided with a plentiful supply of suitable apparatus, the electrical apparatus in particular being described as very good for a school laboratory. The new biological laboratory consists of two large rooms, which can be thrown into one and separated by means of a sliding partition. The rooms are very well lighted, and there is a working bench running the whole length of the window side of the two rooms; it affords accommodation for twenty-five students. One of the rooms can be readily darkened for lantern work, and can be used as a class-room. We lay stress on the part of the report that relates to the teaching of science, as some fifty per cent. of the boys are intended for the profession of medicine. Nothing better shows how thoroughly Epsom is up to date than the ample laboratory accommodation,

which compares favourably with that of many medical schools as these were thirty years ago. We note with great pleasure that in appearance the boys made a very favourable impression on the inspectors, who describe their manner as friendly and natural. The inspectors were much struck, not only by the orderliness, but by the earnest tone of the various classes visited. It is added that under the present headmaster and his staff the school is admirably fulfilling the main object for which it was founded, by performing a great service to the medical profession, and it is also providing an excellent education for those of its members whose future lies in other directions.

The board considered the report of the inspectors satisfactory, and recommended the school for continued recognition by the Army Council as a school preparing candidates for "leaving" certificates for army purposes. The result of the inspection was that the headmaster received a communication from the Army Council to the effect that, consequent on the satisfactory report of the inspection of the recommendation by the Oxford and Cambridge Schools Examination Board, the approval which in 1905 was given to the school, in respect to the grant of leaving certificates for army purposes to pupils, would hold good for a further normal period. We most heartily congratulate all those to whose self-sacrificing labours it is due that Epsom has reached so high a position in the scholastic world on the emphatic witness to the success of their efforts borne by the body most competent to judge.

We commend the school to the favourable notice of all members of the profession who wish to give their boys that best outfit for the battle of life, a first-class education. At Epsom this can be got at a comparatively small cost without any inferiority of standard as compared with the best public schools.

CORONERS AND DEATH CERTIFICATION.

In the Journal of July 9th, 1910 (p. 98), the bill to amend the law relating to coroners and regulating the certification and registration of deaths, introduced in the House of Commons by Sir William Collins, was discussed and the manner, at once impolitic and ungenerous, in which its provisions affected the medical profession was pointed out. It is with much satisfaction that we call the special attention of our readers to a paragraph referring to the bill in the report of the Proceedings of Council at its meeting on October 26th, published in the Supplement to the Journal of November 19th. That paragraph makes it clear that the Council of the Association is by no means overlooking the exception rightly taken by the profession to Sir William Collins's bill. It states that the Council has expressed its strong disapproval of the bill, and that the Parliamentary Subcommittee of the Medico-Political Committee has been instructed to take all necessary action to oppose the proposed measure. It is worth while drawing attention to the point, for a correspondent recently suggested that in each constituency the profession should combine to memorialize its local member of Parliament, and Dr. Distin of Enfield subsequently showed that in his own Division such action had already been taken. We were glad to publish these letters, because they afforded evidence that the medical profession is more alive to its interests than it used to be. But of course isolated action is of comparative little value, and it seems certain that should occasion arise the Council would organize general action, in addition to securing the opposition to the bill in the House by the means habitually at its disposition. The probability of any action being necessary is now, however, somewhat remote, for the bill never got further than being read the first time, and in view of the decision of the Government to appeal once more to the country is now practically dead. There is, of course, a possibility that it may be revived in a future Parliament, but that largely depends on whether its author, Sir William Collins, or one of its sponsors, Dr. Hillier, are re-elected. At the last election Sir William Collins's majority was reduced to about ten votes, much to the dismay of his many friends, who, in the case of so distinguished a member of the medical profession, sink all political prejudices and hope for his further appearance in the House. The number of such well wishers, however, will have been materially reduced, it is to be feared, by his parentage of the bill in question, for no document of like purpose could well have been drawn up in a fashion more needlessly detrimental to the profession of which Sir William Collins is a member. The death certification part of the bill imposes on medical men the duty of certifying not only causes of death but the occurrence of death, the identity of the body with that of the person who has been under the medical man's treatment, and obliges him to pay a visit to the deceased person's house for these purposes; and all this without payment of any kind. In the coroner part of the bill there is equally little evidence of any endeavour to combine public with professional interests. Among other outcomes of its passage would be that all inquest fees would before long be diverted from the pockets of the medical profession as a whole into those of a new class of persons termed "medical investigators," and that while any sprouting barrister or solicitor of five years' standing would be a good candidate for a coronership, every medical candidate would have to be qualified both in medicine and in law. Medical knowledge in a coroner is at least as desirable as legal knowledge, and knowledge of medicine is made all the more necessary by this bill, because it extends the powers of coroners to dispense with inquests and to declare that deaths have been due to natural causes on their own authority. In the course of time most coroners, however trained, acquire ability to deal with reasonable success with the medical considerations of a case, but some of them pick up very quaint notions indeed. Recently, for instance, a London coroner gravely laid down the axiom that when death has occurred after haemorrhage from the mouth the cause of that haemorrhoge is self-evident. He made a statement to this effect not long ago, when taking advantage of his position to bully a medical witness who quite rightly hesitated to state the cause of death without a *post-mortem* examination in the case of a person whom, before death, he had never seen at all.

RAT PLAGUE IN EAST SUFFOLK.

The Local Government Board thinks it desirable that an official statement should be issued as to the steps which are being taken in regard to the occurrence of rat plague which has been observed in certain districts in East Suffolk. For several weeks past Dr. Bulstrode, one of the Board's medical inspectors, has been making local inquiries with a view to ascertaining the extent of the disease and to securing concerted action on the part of the various authorities. With him are associated Dr. Fletcher and Dr. Reece, also medical inspectors of the Board, and the three

inspectors are making investigations over a wide area, including West Suffolk and Essex. An expert staff, under the direct supervision of Dr. Martin, F.R.S., Director of the Lister Institute, has also been engaged for some time in investigating on a large scale the local prevalence of disease among rodents, the kind of rats predominating in the districts, and the flea parasites of these rodents. Other inspectors of the Board have also been instructed to make inquiries in various parts of England. Up to the present plague infected rats have only been found in five districts. The Board's inspectors report that the various sanitary authorities are actively co-operating in taking the necessary measures. As regards the authorities in the county of East Suffolk, valuable help has been rendered by Dr. Heath, who has been specially appointed by the County Council to deal with the matter. It may be added, the statement continues, that although cases of plague in man are unlikely to arise, arrangements are being made by the various sanitary authorities for the early recognition and isolation of such cases should they occur. On November 17th Mr. Burns received a deputation from the East Suffolk County Council, and various questions of procedure were discussed at length. The President emphasized the need for continuous and persistent efforts on the part of local authorities as well as of individuals, who it was hoped would all co-operate in the taking of measures for the destruction of rats, and the prevention of their entry into houses.

THE NATIONAL DENTAL HOSPITAL.

A DINNER of past and present students of the National Dental Hospital, Great Portland Street, took place on November 18th, the prizes for the year being distributed during the course of the evening. It is, of course, an annual event, but this year was of unusual interest, for the President of the Royal College of Surgeons, Mr. Butlin, occupied the chair. This is a fact which may well be placed in the foreground, for it is high testimony to the position which the school has attained and a striking illustration of a fact on which Mr. Butlin had something to say in the course of the evening. Looking back to the first years of the institution, he asked whether any one at that date would have ventured to prophesy that members of the staff of the newly constituted hopital would now be acting as examiners at the Royal College of Surgeons, and one a Hunterian Professor. That fact, he indicated, crystallized the change that had taken place in the short period of fifty years, and exemplified the advantage which men derived from education and qualification. Evidence of the conditions formerly prevailing was supplied by recalling the kind of advertisements which used to appear, and the strange company which dentistry used to keep before the passage of the Act of 1878, and even for some time after the commencement of the new era. There was an individual who held himself out as a "dentist and sexton," and another who claimed chiropody and dentistry as his joint domain, while in the newspapers might be found the advertisement of a quack named Cosmos, who stated that he set teeth with diamond pivots and stopped them with emeralds, and had a new mode of extraction by steam, the most efficacious of any system practised. In short, in the middle of last century, no professional or any education was deemed essential to the practice of dentistry, which was regarded as work which a blacksmith could do as well as anybody else, and was mixed up with all kinds of vocations. But those times had happily long gone by, and to obtain a notion of the high development of dentistry at the present date it was only necessary to take a glance at current dental literature. It dealt with such highly scientific subjects as bacteriology and the vaccine treatment of pyorrhoea alveolaris, and with matters of national importance such as the relation between dental caries and national efficiency. The change was equally obvious to those who entered dental hospitals and medical schools, and he had to congratulate those present on the completeness of the equipment of the institution to which they belonged. Mr. Sidney Spokes, the dean of the hospital, in responding to the toast proposed by Mr. Butlin, said that the good work carried on at the hospital was increasing in amount, while as regards the efficiency of the school, out of fifteen students who had recently been sent up for their final examination thirteen had emerged successful. He then asked the chairman to present the prizes for the year. Mr. B. Mendleson proved to have carried off as many as six first or second awards, Mr. A. Barritt five, while Mr. A. A. Hume was the winner of the blue ribbon of the year, the prize for operative dental surgery, Mr. B. H. Jones coming second. A toast to the "Past and Present Students" having been proposed by Dr. Campbell Thomson, Dean of Middlesex Hospital Medical School, and acknowledged by Messrs. C. L. Donne and A. Barritt, Mr. F. R. Smith proposed the toast of "The Visitors." It was acknowledged by Sir Henry Morris, who mentioned that the General Medical Council had done a good deal lately towards obtaining information as to what was being done in other countries with reference to qualified and unqualified practice, and in general was looking after the interests of the dental profession. Mr. Kenneth Goadby, the vice-dean of the school, then proposed the toast of "The Chairman," and Mr. Butlin's brief reply thereto brought the proceedings to a close.

THE BIRTHPLACE OF MODERN SURGERY.

IN the October number of the *Glasgow Medical Journal* Dr. Hugh A. McLean gives an interesting account of the Royal Glasgow Infirmary, which may justly be regarded as the birthplace of modern surgery. The originator of the scheme which led to the foundation of this famous hospital was Jardine, Professor of Logic at Glasgow University somewhere about the year 1787; but it was not until four years later that a Royal Charter was obtained, the foundation stone being laid in the following year, 1792. The hospital buildings, which were opened to the public in 1794, were at first the reverse of spacious. The patients, who lived on the ground floor, appear to have been herded into one "ward with three small rooms accommodating in all nineteen patients." Twenty years later, however, an addition was made to the original building in the form of a block capable of holding another eighty beds. But if space was lacking in the wards, no such fault could be found with the operating theatre at the top of the house. This room, which had "an area of 42 ft. in circumference," contained "five tiers of high-backed seats, accommodating 200 students, the whole crowned with a stately dome"; whilst on the floor below was "a large and elegant surgery, where were arranged all the instruments, bandages, and fracture apparatus." During the first few years the staff of the Royal Infirmary received no salary, even in the case of the resident, who was likewise the hospital apothecary. (He did not rejoice long in these two offices, which were separated in 1799, when the hospital chaplain was appointed apothecary in his stead). It was not until 1807 that the physicians and surgeons who attended the Royal Infirmary received any monetary acknowledgement of their services; bu

in that year it was decided that the former should be given a yearly salary of £30 and the latter a third of that sum, though only after each should have attended the hospital gratis for a couple of years. In 1810, when the hospital finances were in a more flourishing condition ("chiefly from students' fees," as we learn from Dr. McLean), the pay was raised to £50 a year for the physicians and £20 for the surgeons. In 1829 a decree was passed to the effect that "each student feeing the infirmary should also fee the lectures of one of the physicians or surgeons," and to this decree Glasgow owes the existence of the St. Mungo Medical School, which was actually founded in this fashion. In the very year that Professor Jardine first suggested the need for an infirmary in Glasgow that city received a visit from a well-known quack, "Dr." Graham, "president of the council of health, and sole proprietor and principal director of the Temple of Health in Pall Mall, London." This Graham was the prototype of the modern "simple life" fanatic. Not only was he a rigid teetotaler and vegetarian, but he lived with his windows wide open, slept without blankets, never wore woollen clothes, and bathed in cold water morning and evening. "His treatment consisted of his celebrated *Earth Bath*. The patient, stripped naked, was placed on a glass stool, which was 'electrified' by means of his (Dr. Graham's) machine. Then he was rubbed down by a silken towel, and then buried up to the chin in the earth bath, the earth of which had been previously medicated by the doctor. This, however, was only a preliminary to the more marvellous course of treatment in the doctor's temple of health and electric bed. This bed, mounted on four crystal pillars, and so isolated that no part of the bed or bedding touched walls, roof, or floor, was covered with silk hangings, and finished off with silk damask curtains. It was of course, under the roof of the temple of health. . . . To this bed a continuous current of electricity was led from an 'electrifying machine' in another room; and one night in this bed had powers of rejuvenating and restoring the bodies used up, worn out, and fit for the scrap heap." Curiously enough, Graham was not at all successful in Glasgow, in spite of his announcement that he could cure all bodily ills, and "by his never-failing medicines, and by his scientific treatment of his patients, not only to prevent them from dying, but also through his wonderful discoveries he had absolutely brought a new generation of beings into life, who would never have made their appearance in this busy world unless through his marvellous skill and all-potent agency." After his failure in Glasgow Graham took refuge in Edinburgh, where he became immensely popular, until he published a pamphlet which brought about his undoing. His mind gave way towards the end of his life, which was terminated by an attack of haemorrhage. It is strange to pass from this obscene impostor to the illustrious master of *color che sanno* in surgery. It is half a century ago since Lister was appointed to the Chair of Surgery in Glasgow. The *Glasgow Herald* of January 31st, 1860, in a passage which has already been quoted in the JOURNAL, announces the appointment of "Mr. Lister of Edinburgh to the office of professor of surgery in the University of Glasgow, vacant by the death of Dr. Lawrie." While admitting, "[as far as we have heard," that "Mr. Lister is a gentleman qualified in every respect for the important office to which he has been nominated," the *Herald* evidently thinks that a Glasgow surgeon should have been chosen. Apparently it was all the fault of an over-zealous advocate: "The claims of our local men have been ignored, we suspect, from the preposterous plan which Mr. Dalglish followed in his well-meant attempt to bring their merits before the Home Secretary. We cannot regret that our impulsive representative has been snubbed, although we may regret that the office has gone past the door of some able Glasgow practitioner We never doubted that Mr. Dalglish honestly and disinterestedly desired to find the best man; but the plan he took was a singularly injudicious one, and he must now be satisfied that the Government patronage, especially when it concerns with university appointments, is not to be regulated according to the principles of universal suffrage." Poor Mr. Dalglish. He meant well, but he was snubbed, and the Glasgow paper was evidently not sorry that such a misadventure should have befallen him. Assuredly we entirely agree that "universal suffrage," whatever advantage it may have politically, is not a satisfactory means of choosing a professor, or estimating scientific merit. The writer goes on to say: "What Mr. Lister may achieve as a lecturer we have yet to learn." Well, we have no doubt that the *Glasgow Herald* has learnt by this time; certainly the world has learnt the name of Lister as marking not only the beginning of scientific surgery, but an era in the history of mankind. And Glasgow can never forget that it was in the wards of its Royal Infirmary that his work was begun.

LOCAL ANAESTHETICS IN DENTAL SURGERY.

IN the course of a recent action in the Bolton County Court a point of interest in dental surgery arose, and on a connected subject the judge delivered a dictum of a distinctly remarkable kind on the sterilization of dental instruments. The point of interest was, What precautions should be, and are, usually adopted by careful and well-trained dentists when about to extract teeth under local anaesthesia? One set of witnesses claimed that the gum should be carefully prepared, and all instruments employed properly sterilized. The other set maintained that neither the preparation of the gum nor sterilization of the instruments was either necessary or usual. The second of these two statements represents a condition of affairs so totally different from that which prevails in general surgery that its accuracy seemed initially improbable. Nevertheless, in view of the very confident manner in which it was put forward, it seemed worth while to investigate the point and ascertain what, as a matter of fact, are the views and actual practice of leading representatives of the profession of dentistry. We find that the established practice among them is to endeavour to secure by rubbing and swabbing with 1 in 40 carbolic acid solution, or some equivalent antiseptic, freedom of the whole area from germs, and in addition to ensure absolute sterility at the point at which the needle is to enter by placing thereon a minute drop of pure carbolic acid. They also carefully cleanse their hands and take care that the solution to be injected is sterile, and that the needle to be employed is sterile likewise. Some even go so far as never to use an injecting needle twice. They hold that these practices are not only desirable, but absolutely necessary, if the patient is to be secured from the risk of a suppurating gum. Hence, as we expected, the witnesses for the defence in this case were entirely wrong, and the witnesses for the plaintiff right. As for the judicial dictum which has been mentioned, a reference to it is only worth making because, in view of the position of its utterer, that dictum is not unlikely to be taken in the locality as worthy of credence and representative of the real facts. His Honour stated that, as the defendant

had placed his instruments in hot water the night before the operation, and to that water had added five drops of carbolic acid, his instruments could be regarded as sterilized, despite the fact that they were subsequently placed and remained throughout the night in an unsterilized container. We can only state that His Honour's views on the subject of sterilization are entirely erroneous, and that he did not betray on this occasion the acumen which doubtless habitually characterizes his utterances. Instruments might be submitted to treatment of this sort until the end of time without becoming sterilized, and, even if they were sterilized in some more effective fashion, they would become non-sterile so soon as placed in any non-sterile container. Moreover, if such container were one habitually used for the reception of equally uncleanly instruments, these instruments which His Honour regarded as sterilized would not only be non-sterile, but probably positively dangerous. So far as our acquaintance with dental surgeons and dental hospitals goes, we believe that without exception these dental surgeons would refuse to use such instruments, and cannot understand how any properly-trained dentist can so disregard his own interests and those of his patients as to treat sterilization in the light-hearted fashion indicated.

DR. EDWARD CHARLTON IN SHETLAND.

The third part of vol. iii of the *Old-Lore Miscellany of Orkney, Shetland, Caithness, and Sutherland*, published in July last, contains the opening chapter of a very interesting account of "A Visit to Shetland in 1832," which is made up of extracts taken from a journal kept by the late Dr. Edward Charlton, D.C.L., of Newcastle-on-Tyne, during his first visit to the North. In those days a voyage to the Shetlands was not so quickly or easily accomplished as it is now, and Charlton evidently regarded his journey as a somewhat unusual experience, for he speaks several times of the "feelings of enterprise" and "of awe" which overpowered him as he drew near his destination. Though but a medical student, at the end of his first year's study, Charlton was apparently the nearest approach to a doctor on board, since we find him attending a forecastle passenger who had fallen ill during the voyage. How passengers in that part of the boat fared in the case of illness it is impossible to conjecture, if they were as overcrowded as were the occupants of the main cabin of the *Magnus Troil*, which, measuring "about 12 ft. by 8 ft., had to contain as constant residents not less than nine gentlemen, and at dinner, ladies and all, we mustered twenty-one." It was on July 11th, 1832, after a voyage of four days, that Dr. Charlton got his first view of the inhabitants of those wild regions he had come so far to see. The boat was in Sumburgh Roust, when, as he tells us, "on a sudden, as I was leaning over the bow, two yawls full of strange-looking mortals broke through the mist. . . . They were Shetland fishermen, the first I had ever seen, and I shall never forget the impression their strange garb made upon me. Dressed in their skin coats and breeches, with their nether limbs encased in high boots, they rather resembled the pictures we have seen of some of the Esquimaux tribes, though, having since had an opportunity of comparing these strange garments, I must confess those of Shetland to be decidedly inferior in point of manufacture. However, the long fair hair of the Shetlanders, escaping in coils down upon their shoulders from beneath their large pendent caps of variegated worsted, certainly gave them a more picturesque appearance than the inhabitants of a still more northern clime. . . . The rapid glance I caught of the whole, as they burst suddenly through the fog and were as quickly reinvested in its heavy canopy, imparted an air of romance exceedingly in accordance with my feelings of enterprise." But the writer's natural desire to explore these "far northerly" regions was not immediately satisfied, for the inhabitants, "being in the utmost terror of the cholera," put the *Magnus Troil* and all her passengers into quarantine, where for the present we must be content to leave them. The author of this interesting diary lived to visit many other countries, "but with none," he tells us, "excepting, perhaps, Norway, have I entered with that feeling of awe, if I may so term it, which impressed me when entering the harbour of Bressey Sound on July 11th, 1832." Interesting as the contents of the journal are in themselves, they are still more so when one remembers that they are the youthful impressions of one who later on became widely known and respected as Dr. Edward Charlton. It may not be out of place to recall here some particulars of his life. Born in 1814, the second son of Mr. Charlton, of Hesleyside, in Northumberland, and the worthy descendant of an ancient Catholic family, Edward Charlton was educated at St. Cuthbert's College, Ushaw, Durham, in the university of which city he was afterwards Professor of Medicine. His life was passed in the part of England from which his family had sprung. He became senior physician to the Newcastle Infirmary, and took a leading part in the foundation of the Newcastle College of Medicine, where he was both President and Lecturer on Medicine from the date of its opening in 1851 till his death twenty-three years later. But Charlton enjoyed a more than local reputation. A keen antiquarian, his researches in Scandinavian lore earned for him the honour of election as member of the Royal Swedish Academy of Medicine in Stockholm, the Medical Society of Christiania, and other learned societies of Europe; and many of the papers he wrote on the subject of his favourite hobby received considerable attention both at home and abroad. But it is his long and close connexion with the British Medical Association that forms Dr. Charlton's chief claim upon the attention of our readers. For many years he was an ardent supporter of the Association, at the thirteenth annual meeting of which, held at Sheffield in 1845, he delivered the retrospective address on Medicine. When elected President in 1870, four years before his death, he discharged his duties so admirably that he was formally complimented at the close of the meetings. Dr. Charlton died suddenly at Newcastle on May 14th, 1874, from "suppressed gout." The universal esteem and affection gained by this "noble representative of an English gentleman" may be gauged by the fact that his funeral was attended by the medical and surgical staff of the Newcastle Infirmary, several officials of Durham University, and Lecturers of the Newcastle College of Medicine, the past and present students of the college, and the dead man's professional colleagues, who, attired in their academic robes, formed a procession which walked from the infirmary to the Catholic Cathedral, where the Requiem was sung.

GRANULAR PHARYNGITIS IN WOMEN.

In the report of the Section of Otology, which appears elsewhere, there is a paper by Mr. Mark Hovell which, though primarily addressed to otologists is of much general interest. The central topic of Mr. Hovell's discourse is the connexion between middle-ear catarrh and irritation of mucous membrane

anywhere in the body; but the point on which he lays most stress is the frequent but commonly unrecognized relation between granular pharyngitis in women and abnormal conditions of the vagina or uterus. This is by no means the first time Mr. Hovell has had something to say on the subject; and if so far otologists have been indisposed to treat his observations with the consideration they deserve, that fact is hardly likely to dissuade the medical profession as a whole from paying them due attention. General practitioners have occasion every day of their lives to realize that irritation of one part of the gastro-intestinal canal tends to make itself apparent in distant regions, and possibly they will have less difficulty than otologists in conceiving that sometimes an unhealthy condition of the utero-vaginal mucous membrane may affect allied structures elsewhere. Since Mr. Hovell first directed attention to the subject, more striking evidence in support of his view has accumulated than he at first brought forward. On the present occasion he was able to quote several cases of pharyngeal troubles which, though they had proved resistant to prolonged treatment by throat specialists, yet vanished with the gynaecological troubles underlying them. For details of these cases we refer readers to the paper itself; here we merely point out that, when discussing the paper, the President of the Section (Dr. Edward Law) referred to cases of ear disorder in which he had found the gynaecologist of the greatest assistance. Here, then, among the otologists themselves is a notable adherent to Mr. Hovell's views. Mr. Hovell, we believe, holds that gynaecological troubles of a minor order are a much commoner source of ill-health in young unmarried women than is generally realized, and finds ground for his belief in the number of instances in which advice to consult a gynaecologist has been followed by the happiest results, and the reception by him of letters from the patients or their parents, gratefully acknowledging the counsel given them. This is testimony to the value of gynaecology, which, coming from a medical man in no wise connected with that branch of medicine, is distinctly striking. The final verdict on both points, however, must come from the general body of the profession, and more especially from family doctors, for they alone are, in most cases, the real judges of the final outcome of specialist treatment.

REPRESENTATION OF THE UNIVERSITY OF LONDON IN PARLIAMENT.

We understand that Sir Victor Horsley has consented to stand in the forthcoming election as a candidate for the representation of the University of London. At a recent meeting of the Executive of the Liberal Association, Sir Victor Horsley was selected for nomination to a meeting of the Association, to be held on Monday next, and is being supported by a large number of graduates.

We regret to state that some of the buildings of the University of Toulouse have been burnt down. Especially deplorable is the destruction of the library, among the contents of which were richly illuminated mediaeval manuscripts, some unique anatomical plates, and a number of medical works which it will be impossible to replace. The library contained 60,000 volumes, besides collections of theses, prints, etc. Fortunately some of the archives and the registers of students have been saved. The library was insured for £20,000. The buildings had cost £36,000.

On October 29th a bust of the famous clinician Hermann Nothnagel was unveiled with due rites and ceremonies in the great hall of the University of Vienna. An address was delivered on the occasion by his oldest pupil, Professor von Jacksch, of Prague.

We regret to announce the death of Mr. Mitchell Henry, F.R.C.S., formerly surgeon to Middlesex Hospital. He was born in 1826, educated at University College, London, admitted a Member of the Royal College of Surgeons in 1847, and a Fellow in 1854. He gave up the practice of his profession in 1862, and in 1871 he was elected member of Parliament for County Galway. From 1885 to 1886 he sat as Liberal member for the Blackfriars Division of Glasgow. On the split of the party over Mr. Gladstone's Home Rule Bill, Mr. Mitchell Henry became a Liberal Unionist and failed to secure re-election.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

The House of Lords was active last week, while the Commons were not sitting, in making suggestions for its own reform. On Thursday Lord Rosebery brought forward his proposals for the best means of reforming the existing organization of the House of Lords so as to constitute a strong and efficient second Chamber. The first resolution affirming that in future the House shall consist of Lords of Parliament (*a*) chosen by the whole body of hereditary peers from among themselves, and by nomination by the Crown; (*b*) sitting by virtue of office and qualifications held by them; and (*c*) chosen from outside was agreed to after a long discussion in which Lords Curzon of Kedleston, Selborne, Newton, Lansdowne, Crewe, and others took part. Lord Crewe declared that if a division was taken he should walk out, and so the resolution was accepted without any voting, and the second resolution, dealing with the tenure of Lords of Parliament, was withdrawn by Lord Rosebery as containing too much detail. After this the House adjourned.

The Dissolution.—On Friday in last week both Houses met to hear the statements of the Government as regards the continuance of the session. The Prime Minister announced to a crowded House of Commons that he intended to proceed with the essential parts of the Budget, namely, the tea duties and the income tax, together with the provisions for the Sinking Fund. The proceedings would be regulated by a procedure resolution, and in addition it would be necessary to pass a supplementary estimate for half a million to meet the cost of the removal of the pauper disqualification from old age pensioners. The Expiring Laws Continuance Bill would have to be passed, but all other contentious business would be dropped. Mr. Asquith then stated that the Government had advised the King to bring Parliament to an end, after the foregoing business had been transacted. The Veto policy of the Government had no chance of being accepted by the Lords, and the time had come when "this controversy, which obstructs the whole path of progressive legislation, shall be sent for final arbitrament to the national tribunal." The date of the Dissolution would be the 28th inst. Mr. Balfour, as Leader of the Opposition, followed in a strongly critical speech, and then the members left the Chamber in large numbers and the remainder of the debate was conducted in a relatively small house. Before the motion for adjournment was carried Lord Castlereagh moved an amendment in favour of giving

further facilities to the Parliamentary Franchise (Women) Bill. Mr. Asquith, in answer, said he would state next week what were the views of the Government as to granting facilities in the next Parliament. The amendment was then rejected by 199 votes to 52, and the House adjourned shortly afterwards. In the House of Lords the announcement of the dissolution was made by Lord Crewe to a great assembly of Peers. The statement was received in silence, and Lord Lansdowne was greeted with cheers when he declared that he had never heard of a Parliamentary manœuvre carried out with greater cynicism than that which they had just listened to. Lord Balfour of Burleigh called attention to the position of the Parliament Bill, and Lord Crewe said the advice to the Crown had been given on the assumption that their lordships could not accept the Parliament Bill as it stood. If this was not so, the whole subject would be open for reconsideration. The House rose shortly afterwards.

The Parliament Bill.—The House of Lords presented an animated appearance on Monday. All the benches on both sides were filled by Peers, and the galleries were crowded with spectators, while a large number of members of the Commons House crowded at the Bar. Lord Crewe, in moving the second reading of the Parliament Bill, recalled the rejections and mutilations of bills which had occurred since 1906, and said this bill proposed to get rid of this state of things by limiting the powers of the Upper House, while allowing sufficient delay and time for revision, so as to prevent hurried and ill considered legislation. Lord Lansdowne followed, and was not satisfied with the two years' power of delay and revision, and moved the adjournment of the debate till Wednesday, in order that he might bring before the House counter-proposals, that they would not be allowed to add as amendments to the bill, since they had to take it practically without amendment. A spirited discussion followed, in which Lord Rosebery took a prominent part, and finally the motion was agreed to, and Lord Lansdowne read his proposed resolutions—namely, that it was desirable that provision should be made for settling differences which might arise between the House of Commons and the House of Lords reconstituted and reduced in numbers; that as to bills other than money bills, such provisions should be on the following lines: If a difference arose between the two Houses with regard to bills in two successive sessions and within an interval of not less than one year, and such difference could not be adjusted, it should be settled by a joint sitting, provided that if the difference related to a matter of great gravity it should not be referred to a joint sitting, but submitted for decision to the electors by referendum; that as to money bills the Lords were prepared to forego their constitutional right to reject or amend bills which were purely financial in character, provided that effectual provision was made against tacking, and provided that if any question arose the matter should be referred to a joint committee of both Houses presided over by the Speaker, who should have a casting vote only; and if the committee held that the bill was not purely financial it should be dealt with in a joint sitting of the two Houses.

The House then adjourned at 6.45. On Wednesday the Lord Lansdowne moved that the House go into Committee on his resolutions, and this motion gave rise to a full-dress debate which lasted till half-past ten and was then adjourned to Thursday. Lord Crewe, Lord St. Aldwyn, the two Archbishops, Lord Carrington, Lord Ridley, Lord Macdonnell and others took part in a very interesting and animated discussion.

Progress of Legislation.—The Expiring Laws Continuance Bill was read a third time and passed in the Commons on Tuesday, and was read a first time in the Lords on the same day. The Consolidated Fund (Appropriation) (No. 2) Bill was also passed and read a first time in the Lords. The new Finance Bill was read a second time in the Commons without any discussion, as the Opposition declined to take any part in the proceedings at this stage. On Wednesday the Commons held a comparatively short sitting, but discussed the Finance Bill and had one division on the tea duty. The Finance Bill passed through Committee after two clauses (7 and 9) had been struck out at the instance of the Government. The bill was afterwards read a third time. It was read a first time in the Lords on the same night. The Education (Choice of Employment) Bill was also read a third time and passed, while a second reading was given to the Consolidated Fund (No. 2) Bill and to the Expiring Laws Continuance Bill in the Upper Chamber.

The Rat Plague in East Anglia.—In the Lords on Tuesday, after the Education (Choice of Employment) Bill had been discussed and passed, Lord Lamington asked whether, for the more effective destruction of rats in the plague-infected districts of East Anglia, the Local Government Board as the chief authority, would not itself take steps for their extermination or else induce the local authorities concerned to adopt concerted measures under expert scientific guidance. He said that there seemed to be some lack of co-ordination on the part of the various authorities, although the recent regulations issued by the Board of Trade to some degree removed his objections. He asked what methods the local authorities and the Local Government Board were taking to get rid of the rats. Lord Allendale said that he need not go into all the details of the procedure adopted by the Local Government Board. The noble lord seemed to suggest that the Board might turn rat-catchers, or, at any rate, should superintend the extermination or destruction of the rats. While the Board was of opinion that the campaign should be of a local character, it was fully alive to its responsibilities in the matter of public health, and had not been slow to press on the local authorities concerned the necessity for adopting common measures. It had from the outset provided the local authorities with guidance and advice. The matter was first brought to the notice of the Board on October 3rd, when 4 cases of suspected plague were reported. The medical inspector of the Board was instructed on the same day to visit the locality. On the eve of October 8th a dead rat was sent to the Board for examination, and was pronounced on October 12th to have had the plague. The inspector proceeded at once to make a scientific local investigation as to the extent of the disease and to give advice to the sanitary inspectors of the districts concerned as to the action to be taken. On October 10th the Board issued an order as to the destruction of rats, imposing the duty on the sanitary authorities and providing for the necessary expenditure of money. They had taken other steps also, and arrangements had been made for a special staff from the Lister Institute to go to Suffolk to make examination on a large scale, and to ascertain the kind of rats affected and their parasites. This work had been undertaken under the direction of Dr. Martin, a director of the Lister Institute, whose investigations into the plague were well known. Up to yesterday only six districts were known to have rat plague in East Suffolk, one in West Suffolk, and one in Essex. The Board considered that the campaign against rats was a local responsibility, and he saw no reason why this particular work should be undertaken by the State. The noble lord would not contend that the State was better equipped for such experiments, but, at the same time, any advice that the Board could give was at the disposal of the local authorities. The Local Government Board and the Board of Agriculture were working in co-operation, and were in touch with the local authorities and would continue to give such advice as was necessary.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

EARLY TREATMENT OF INCIPIENT INSANITY.

LITTLE more than a year ago the London County Council considered a proposal by its Asylums Committee that parliamentary powers be sought for the establishment of four receiving houses for alleged lunatics. On behalf of the Finance Committee an amendment was moved limiting the scheme to the establishment of one receiving house only, as an experiment, and this amendment was carried despite the protests of those who argued that one receiving house for the whole of London would be wholly inadequate.[1]

This week—on November 22nd, 1910—the Parliamentary Committee stated that it had experienced considerable difficulty in giving effect to the Council's instruction owing to doubts which had arisen in regard to the exact nature and extent of the scheme for which it was desired to obtain powers. Prolonged negotiations had taken place with the Asylums and Finance Committees as to the form the bill should take, and although agreement had been arrived at on the larger issues involved, the Asylums Committee had not yet considered the bill in its final form. However, it would be too late to make any progress with a private bill this session, and in the circumstances it did not appear to the Parliamentary Committee to be of any use proceeding further. The Chairman of the Asylums Committee concurred in this view. The Council's instruction only related to the session of 1910; if the Asylums Committee desired to proceed further in the session of 1911, it remained with that committee to submit the necessary recommendation.

This report was submitted without any recommendation attached, and consequently could not be discussed. Mr. W. C. Johnson, who wished to speak on it, opposed the whole report in order to secure an opportunity for debate next week.

ADMINISTRATION OF L.C.C. ASYLUMS.

The Finance Committee reported, as required by law, on the financial aspects of the Asylums Committee's annual report.

Mr. Jephson remarked that the report of the Asylums Committee reflected the greatest credit on the administration of that department of the Council's service. It was a striking tribute to it that amongst such a large number of unfortunate people they had never yet heard of any scandal or cases of ill-treatment.

Mr. Hayes Fisher, Chairman of the Finance Committee, agreed that the Council was much indebted to the Asylums Committee and former committees for attending so diligently to the disagreeable tasks which fell to the lot of the members. One or two members of the Council had made it practically their life-work. There had been no complaint whatever on the part of those concerned, and the whole record of asylums management was a great credit to the London County Council and to those who served year by year on the committee.

The report was received.

ADJUSTMENT OF CORONERS' DISTRICTS.

The Public Control Committee reported that one effect of the adjustment of the coroners' districts in the County of London, agreed to by the Council on October 11th,[2] would be to necessitate extensive alterations in the areas of the southern and south-western districts, the Council having decided to make the boundaries of the coroners' districts coincide with the boundaries of metropolitan boroughs. Since its previous report the committee had been advised that serious difficulties in regard to compensation, etc., might be encountered in taking steps to carry out such alterations in the two districts mentioned. The committee recommended, therefore, that the proposed alteration of boundaries should be confined at present to those cases in which the boundaries did not coincide, owing to alterations of parish areas made under the Local Government Act, 1899.

The resolution of October 11th was accordingly rescinded, and the Council agreed to limit the alterations to those proposed by the committee.

EXPECTORATION ON TRAMCARS.

In reply to a question as to the extent to which the Council's by-laws against spitting on tramcars were enforced, Mr. White, the Chairman of the Highways Committee, said that a few convictions had been obtained and 100 or so of cautionary letters had been sent. It was extremely difficult for the conductors to deal with this matter, and he wished something could be done to persuade passengers to help; then, no doubt, it would be possible to do a great deal to check this objectionable habit.

EDUCATION COMMITTEE.

Administration of the Provision of Meals Act.

The Education Committee of the London County Council on November 23rd had under consideration a long report by the Children's Care Subcommittee reviewing the system by which necessitous children were served with meals. The conclusions the subcommittee came to were that more suitable dining centres were required, and that the use of school halls—the Board of Education's objection notwithstanding—was preferable to present methods, which consisted of attendance by the children (*a*) at buildings hired or lent free of charge; (*b*) at coffee-houses, and (*c*) at privately controlled dining centres. By way of meeting various objections which had been urged by teachers and others to the use of school halls, the subcommittee stated that all the children could leave by one o'clock, thus allowing ample time for ventilation; the spilling of food was a trivial matter. All that was necessary was that the helpers should gather up all greasy substances immediately after the meal, and that floors should be washed fortnightly instead of every three weeks. The principal difficulty would be the provision of accommodation for washing up, and to meet this the subcommittee recommended that annexes should be built. The ultimate cost would be £20,000. The subcommittee found itself obliged to admit that the four years' contract entered into with the Alexandra Trust for the supply of meals was ill-advised from the Council's point of view, and stated that the ideal method would be to establish a kitchen and dining-hall at each school, or to group two or three schools with a dining-hall at the most convenient centre. For the present, however, no change could be made.

At the request of several members the debate on the report was adjourned.

Cleansing of Verminous Children.

The subcommittee also reported as to the cleansing of children infested with vermin, recommending that, as the number of such children would probably diminish in the next few years, arrangements should be made to use borough council cleansing stations rather than establish new stations. Thirteen borough councils were willing to undertake the work, and agreements for one year should be entered into. For the remaining districts the County Council would have to make its own arrangements. Any scheme for cleansing the bodies and clothing of children would be ineffective unless the homes were attended to at the same time, and the subcommittee was informed that the borough medical officers of health were willing to assist in this matter. It was estimated that about 20,000 children required treatment, and the agreement with the borough councils would provide for 12,000 of them. Three visits to the cleansing station would be necessary in each case, and the borough councils would undertake the work for a payment of 2s. a head. Where existing buildings could not be adapted, only temporary structures would be erected to serve as the Council's own cleansing

[1] BRITISH MEDICAL JOURNAL, July 24th, 1909, p. 234, and October 16th, 1909, p. 1184.
[2] Ibid., October 15th, p. 1180.

stations. The boroughs agreeing to undertake cleansing were Battersea, Bermondsey, Camberwell, Greenwich, Hackney, Hampstead, Poplar, Marylebone, St. Pancras, Southwark, Stoke Newington, Woolwich, and Westminster. The City Corporation offered to do the work without charge.

The proposals of the subcommittee were approved.

Recovery of Cost of Dental Treatment.

The report with reference to the recovery from parents of the cost of dental treatment, withdrawn last week by the subcommittee, as reported in the last issue of the British Medical Journal, page 1651, was brought forward again, the subcommittee recommending that, instead of fixed charges, each case should be considered on its merits, provided that some charge was made in all cases, and that in no instance should the amount paid by the parent exceed 1s. As in the case of medical treatment, legal proceedings would not be taken where the local care committee was of opinion that the parents could not pay.

The report was approved.

Appointments to the Medical Service.

In connexion with the reorganization of the medical inspection staff agreed upon by the Council on November 1st,[1] the committee approved the appointment of Mr. A. H. Brinckner, B.A., M.B., D.P.H., and Miss A. C. Gowdey, M.B., two part-time officers whose engagements had just lapsed, as full time assistant medical officers (education) at commencing salaries of £500 a year.

Numerical Return of Medical Inspections.

In accordance with a promise made at a recent meeting of the committee, the first of a series of weekly returns as to the number of children undergoing medical inspection was presented. It was as follows: Number of school doctors engaged 71, schools inspected 73, children inspected 5,521, number found to require treatment (all ailments) 2,309, number of those for whom treatment is available under the Council's scheme 1,558.

MANCHESTER AND DISTRICT.

Manchester University.

A meeting of the Court of the Manchester University was held on November 16th, at which the Pro-Vice-Chancellor, Professor H. B. Dixon, presided, in the absence of the Vice-Chancellor. Sir F. Forbes Adam, Chairman of the Council, moved a resolution expressing the deep sorrow of the Court at the death of Lord Spencer, at one time Chancellor of the University, and recording its sense of the high value of the services which he had rendered to the university for many years. This was seconded by Mr. A. Haworth, as Representative of Convocation, and passed. A similar resolution was passed referring to the late Sir William Agnew, who had been a warm friend of Owens College, and had continued to be a generous supporter of the university. Only recently Sir William Agnew had come forward at a critical time, and enabled the Council to establish the Chair of Architecture. Sir F. Forbes Adam went on to speak of the progress of the university, and said that the number of students had increased during the year from 1 583 to 1,657, and he was glad to say that the number of those who had not passed the matriculation was much smaller. Allusion was next made to the founding of the Chair of Economic History, which was the first chair in this subject instituted at an English university. The Faculty of Commerce had now been successfully carried on for six years, and had largely depended on subscriptions promised for a period of years. That fund now needed replenishment, and the Chamber of Commerce had agreed to ask its treasurer to receive any subscriptions that might be sent in. It was hoped that the Faculty would soon be placed on a permanent basis. Early in the present year the council decided to proceed with the erection of new botanical laboratories in which accommodation could be provided for the new Chair of Cryptogamic Botany. The cost of the extension was estimated at £11,456, and towards this a generous donation of £1,000 had been received. Part of the cost would be met out of the Barker Fund from which the Chair of Cryptogamic Botany was provided, but there would be something like £7,600 still to be provided for the new building; this would enable several rooms to be set at liberty for the use of the Department of Geology. Additional buildings would also be needed for the Department of Electrical Engineering, owing to the large number of advanced students who come from all parts of the world to do research work under Professor Rutherford in the physical laboratories.

Dr. A. W. Ward, Master of Peterhouse, Cambridge, moved the adoption of the report presented, and both he and the Bishop of Salford expressed gratification that in a great commercial centre like Manchester the arts departments of the university fairly balanced those devoted to science.

Hope Hospital.

At a meeting of the Finance Committee of the Salford Board of Guardians, it was announced that forty-seven applications had been received for the post of medical superintendent of Hope Hospital. A previous appointment to this post had failed to receive the sanction of the Local Government Board, and after several ineffectual attempts to persuade the Board, the guardians had been compelled again to advertise. Among the conditions attached, it was stipulated that the candidates must be married men, and must have had previous administrative experience in a Poor Law or other hospital. On the previous occasion the guardians had not refused to consider applications from unmarried men who promised to get married soon, and several of the present candidates intimated in their letters of application that they were prepared to get married in time to undertake the appointment if their applications were successful. When the matter came before the guardians several members expressed the opinion that such a promise ought to be taken as sufficient, but others of the guardians thought they ought to keep strictly to the terms of the advertisement, and not to lay themselves open to having their appointment again refused by the Local Government Board. It was stated that at least one medical man, well qualified in other ways, had refrained from applying because he was at present unmarried, though he intended to get married shortly. The Clerk said he understood that what the Local Government Board required was that the medical superintendent should be married when he took up the appointment; and it was then resolved to take the applications as they appeared on the list, the names of three unmarried candidates who gave no indications of their intentions being at once struck off. Six of the 47 candidates, all married men, were chosen to appear before the board, and on November 18th the guardians met to make the appointment. After the first vote it was found that three of the candidates had received an equal number of votes, and one of the guardians, who had refrained from voting as a protest against the refusal of the Local Government Board to sanction the former appointment, suggested that the board should be allowed to make the appointment. In the end, however, one of the three names was struck off, and by a majority the guardians appointed Dr. Austin of Leicester. In his letter of application Dr. Austin stated that he was married and, as required by the advertisement, had had administrative experience at Kensington Infirmary, where he had been for two years, during which time he had charge when the medical superintendent was absent. He had also been resident obstetric officer at St. Mary's Hospital, Paddington, and house-physician at Leicester Infirmary and Fever House. He was now district medical officer to the Lutterworth Union and a public vaccinator. Apparently all the terms of the advertisement have now been carried out, and it is understood that if the Local Government Board ratifies the appointment Dr. Austin will take up his duties at the beginning of the new year.

[1] British Medical Journal, November 5th, page 1458.

BRISTOL.

THE NEW CHEMICAL AND PHYSIOLOGICAL LABORATORIES.

THE ceremony of the official opening of the new Physiological and Chemical Laboratories took place on November 14th, in the presence of a large number of Professors, City Councillors, and invited guests. The proceedings began with prayers offered by the Bishop of Bristol, and the singing of two hymns, in which all present were requested to join. Afterwards the Pro-Chancellor, Lord Winterstoke, addressed a few words on the advantages that would result from the uses of the new laboratories, and was followed by Dr. Herbert Warren, President of Magdalen College, Oxford. The company then divided into two parties, the Pro-Chancellor and certain invited guests passing down the new wing to the inside of the entrance under the tower, while the Chairman of the Council, Mr. Lewis Fry, with the Lord Mayor, City officials, and other guests went to the outside. Posted outside the gate was a guard of honour of the Univerity Officers' Training Corps, which presented arms on the approach of the procession. Mr. Fry, with an ivory mallet, gave three knocks at the door to announce the presence of those seeking admission; this was answered by Lord Winterstoke, who opened the door and announced the new wing open and ready for inspection. Unfortunately, the weather was most unpropitious, and few remained to make the tour of the buildings, but as there was to be a reception in the evening the opportunity of seeing the splendid laboratories was, no doubt, deferred by many till then. The architect of the building was Mr. G. Oatley, of Bristol, and the builders Messrs. Cowlin and Sons. The original estimate for the whole block was £30,000, but this has probably been exceeded.

The reception in the evening of the same day was the most successful entertainment of the kind that has ever been held in the university buildings, not only for the better convenience for getting about, but also for the interesting exhibits that were shown in all the departments. It would take too long to describe all these in detail, and only those that were connected with the two newly opened ones will be mentioned. First, as regards the rooms.

Physiological Department.

Twenty-one rooms are devoted to teaching, but this includes the necessary store-rooms and preparation rooms. In the basement are situated the galvanometer room, a cold store room, an incubator room, and a constant temperature room. In the first of these will be fitted an electro-cardiogram, by which heart records for the medical institutions can be taken. This apparatus will be the first to be erected in the kingdom, and will be mounted on concrete pillars embedded on the rock. On the ground floor is situated the lecture theatre, to hold 120 to 160. The lecturer's table is constructed in three parts, each being capable of being removed to the back part of the room if not required, all the connexions for gas, water, electricity, and drainage being flexible and removable, and brought to the lecture table in channels under the floor. On the table are fitted lights on the principle of footlights in a theatre, so that the specimens are brilliantly illuminated, and the eyes of the audience not dazzled. The lantern is fixed on the lecturer's table, so as to be under his control, and the screen is placed at the back of the theatre, and can be tilted to any required angle. For the demonstration of diagrams an original design has been introduced—a set of angles or gallows is fixed in a corner, each supporting a sheet of strong canvas. On the canvas the diagrams are fixed, and when no longer required can be rotated, thereby exposing the one behind. For the efficient illumination of these an arc lamp is provided. The galvanometer is placed on a stone shelf at the back of the room, the screen being placed in front of it. All the electrical fittings are under the control of the lecturer. On this floor are situated the private room of the professor, the museum, and a store-room.

On the first floor are situated the optical room, the laboratory of chemical physiology with its preparation room and store-room. The optical room will be devoted to the study of special senses, gas analysis, photography, and photomicrography, and as a balance room for the laboratory of chemical physiology. On the second floor is the histology laboratory, the experimental physiology laboratory with the preparation room, assistants' room and demonstration rooms, the students' galvanometer room, and the professor's laboratory. The histology laboratory will give accommodation for sixty students at present, but more room can be had by using the gallery. A north light is obtained by a "weavershed" glass roof, though the general lighting is by electricity, inverted gas mantles being used for the microscopes. In the professor's laboratory the experimental mains provide alternating currents at 105 and 210 volts pressure, a direct current at 72 volts, and three circuits supplying current at any special voltage that may be required. It will be seen from the above rather brief account that the physiological department has been fitted up with the most modern requirements; indeed, it is doubtful whether a more fully equipped laboratory exists in the kingdom. Professor Stanley Kent has had the opportunity of inspecting a large number of similar buildings, and from his experience has evolved as complete a set of rooms for the teaching of physiology as can be found anywhere.

Chemical Department.

This department, which lies to the left of the new entrance of the university in Woodland Road, consists of thirty rooms, with accommodation for 200 students. In the basement is a large store-room for the stock of apparatus and chemicals, connected by a lift with the rest of the department, a gas analysis room, an analytical laboratory, a metallurgical laboratory fitted with draught hoods, a battery room, and heating chambers and plant for the supply of hot water. The special point about the battery room is the fact that the whole of the supply of experimental current is here concentrated in one place. At present eighty-six cells have been installed, each of about 300 ampère hours capacity. From the distribution board in the Physico-Chemical Laboratory overhead the current is distributed to the departments of science and medical faculties, and for the lantern in the large hall. On the ground floor is the senior lecture theatre with its preparation room, a balance room, and the organic laboratory. A peculiar feature of this room is a shower bath for use in the event of a student's clothes catching fire. Between this room and the Physico-Chemical Laboratory is the professor's private room. This latter laboratory is specially fitted with an experimental current and arrangements for continuous experiments without the fear of fire. In the preparation room are the switches for the ventilating fans, run on a continuous current to minimize noise. There is also a museum on this floor. On the first floor are a small lecture room and the Bio-chemical Laboratory, with balance room and stores. Here is also the main laboratory, well lighted from three sides, and capable of accommodating eighty students, a number which has already been exceeded. Each bench contains its own draught flue, gas and water, and round the room are the fume chambers, dispensaries, and steam-drying ovens for the supply of distilled water. The chemical department can afford room for over two hundred students, and the building compares favourably with others of its kind in England and on the Continent. In the small leaflet that was distributed at the reception a full description of the electrical fittings is given, and from it it will be gathered that Dr. Francis and his assistants have taken the trouble to obtain details from many laboratories both in the country and abroad, in order to get as complete a department as is possible.

Only a brief account can be given of the various exhibits that were on show at the reception. Each

department seemed to have done its best to put before the visitors whatever was new and of interest, and the large numbers of workers are to be congratulated on the success of their labours. The pathological and bacteriological department had many interesting exhibits, such as a demonstration of the latest facts on typhoid-carriers, infected food, flies as carriers of infection, etc. It would require too much space to detail them all, but special notice must be made of the projectoscope, Leitz-Edinger's apparatus showing normal and cancerous skin.

When one remembers the former small room and crowded benches of the old building and compares them with the well-lighted and spacious rooms of the new, the heartiest congratulations must be given to the professors and their assistants for the immense amount of labour that they must have taken to evolve such a fine building, which, as they proudly boast, is second to none in the world.

WEST YORKSHIRE.

Poor Law Administration in the West Riding.

Many interesting points are dealt with in the annual report of the Local Government Board Inspector (Mr. Philip H. Bagenal) on Poor Law administration in the West Riding. The inspector states that the publication of the reports of the Poor Law Commission has not only aroused fresh public interest in the whole problem, but has had the effect of quickening the action of guardians in a more detailed examination of their administration. It appears that nearly all the workhouses have separate classification blocks for the accommodation of the sick. In the thirty-five unions in the West Riding there are only three workhouses where the sick are treated in the main block, these being Pateley Bridge (24 inmates), Sedbergh (12 inmates), and Saddleworth (58 inmates). The first two are so small as to be classed more as almshouses than workhouses. During the last ten years twelve new workhouse hospitals have been erected in the West Riding, a convincing testimony to the progress made in this particular branch of workhouse administration. Some of the workhouse hospitals, such as Sheffield, Bradford, Leeds, Halifax, Dewsbury, Wakefield, Doncaster, and Huddersfield, are as well equipped and staffed as general hospitals. The "staffing" mentioned by Mr. Bagenal is, perhaps, from a medical point of view not quite complete. The medical staff usually consists of a superintendent with one or more resident medical officers. The superintendent has to undertake the general supervision of the sick, and to be the operative surgeon and the consulting physician, and it is impossible to consider that any one individual can in all respects be as perfect as the different members of the medical and surgical staff of a general hospital. There is little doubt that the medical aspects of Poor Law hospital work could be improved by the judicious use of the special qualifications of experts in the various branches of the profession.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Regulations with respect to Plague.

The Local Government Board for Scotland has issued an Order to the local authorities containing regulations issued by the Board in pursuance of their powers under Part IV of the Public Health (Scotland) Act, 1897.

The Order is not so elaborate as the Memorandum issued to the sanitary authorities in England (published at pp. 1636–38, British Medical Journal, November 19th). Referring only to previous Orders issued in 1902, the Board explains that it is advisable to issue a more stringent Order.

The Regulations as issued are:

Article I.—The local authority shall take measures to ascertain whether there is or has been recently any disease or unusual mortality among rats within their district, and if such be found to exist the local authority shall at once report the facts to the Board, and take steps to ascertain whether any of such animals are suffering from plague.

Article II.—If plague is found or suspected to exist among rats within the district, or in any neighbouring district, or in any ship lying in any harbour, river, or other water within or *ex adverso* of the district, the local authority shall at once take the necessary steps to include plague among the diseases to which the Infectious Diseases (Notification) Act, 1889, applies, and shall adopt all necessary precautions to prevent the dissemination of the disease, and for that purpose shall take measures:

(*a*) To disinfect all places and to disinfect or destroy all articles that may have been exposed to infection;
(*b*) To destroy all rats in the locality;
(*c*) To prevent their entrance into houses, ships, and other premises;
(*d*) To remove all deposits or accumulations of rubbish, refuse, manure, or other materials likely to attract such animals; and
(*e*) Generally to do everything calculated to stamp out the disease.

Article III.—If plague is not found or suspected to exist among rats as aforesaid, the local authority may take measures:

(*a*) To destroy all rats in the locality.
(*b*) To prevent their entrance into ships, houses, and other premises; and
(*c*) To remove all deposits or accumulations of rubbish, refuse, manure, or other materials likely to attract such animals.

Arrangements have been made for bacteriological examination of material from suspected cases of plague, whether (1) from the living person or the dead body; or (2) from rats suspected to be suffering from, or have died of, plague.

An Effective Rat Poison.

In view of the recent circulars issued by the Local Government Boards of England and Scotland relating to extermination of rats, it may be noted that a circular has just been issued by the United States Agricultural Department, recommending barium carbonate as the cheapest and most effective poison for destroying rats. In the small quantities used in poisoning rats this compound is harmless to larger animals. It has the further merit that the animals before dying usually leave the premises in search of water. The bait is prepared by mixing one part of the barium carbonate with about five parts of oatmeal and adding enough water to form a stiff paste. The chemical can also be used by spreading it on bread-and-butter. The recommendation of the United States Agricultural Department might be well worth a trial.

The Feeding of School Children in Edinburgh.

The Edinburgh School Board has issued a memorandum on the feeding of school children in Edinburgh under the Education Act, 1908. The matter is considered under five heads:

1. *The Board's Duty under the Act.*

(*a*) To initiate prosecutions in cases of neglect where the child's education is suffering.

(*b*) To supply food and clothing in cases of genuine destitution, where voluntary agencies are unable to deal with the matter.

As soon as it appears that there are in attendance at the schools children who are unable through lack of food or of clothing to take full advantage of the education provided, the board must consider these cases in relation to the circumstances of the parents or guardians. It is clear that it is highly desirable for the board to be in touch with all the voluntary agencies in the city, and to be assured that they are acting in unity and efficiently. The board may give temporary feeding and clothing, pending the completion of the investigation into the circumstances of the case. The board will aim at deterring the idle, the dishonest, and the unscrupulous, at organizing effectively voluntary effort so far as to relieve genuine necessity and honest poverty; only in the last result will it lay upon the rates the cost of feeding and clothing destitute children.

2. *The Conditions of the Problem in Edinburgh.*

The total number of children on the rolls of the board's schools is approximately 41,000, and in the voluntary schools 5 500; total, 46,500. The board is responsible for dealing with the problem of necessity in both cases. From the experience of the winter of 1909–10 it was found that the number of children regarded as necessitous was about 2,400. In addition there were throughout the year approximately 370 children of parents receiving outdoor relief fed at the expense of the parish council.

3. *The Proposed Organization.*

The board proposes to constitute care committees consisting of voluntary workers. For the city, as a whole, there will be a central care committee; for each school or group of schools there will be a local care committee consisting of about ten members. The latter will in poverty-stricken districts be attached to one school; in other districts to a group of schools. The primary function of the local committee is to investigate thoroughly all cases of destitution in the schools under their charge, to keep in touch with these cases continuously so as to be aware of any change of circumstances, and to make recommendations to the central care committee. The central care committee is to be composed of the members of the board, of representatives of such societies and voluntary agencies as are willing to co-operate with the board in this work, and of other influential and representative elements of the community.

4. *The Feeding Centre.*

The board has the power to provide accommodation, apparatus, equipment, and service for the preparation and supply of meals to pupils attending schools within the district. Briefly, the advantages of a well organized cooking centre may be stated as follows:

1. The children receive some training in decorum or good manners.
2. Scientific knowledge of food values can be made use of in drawing up the bills of fare.
3. The meals are properly cooked, and the materials used are of good quality.

5. *District Social Work.*

The local care committees which carry out the work of feeding properly will find themselves in a very strong position for social work in their districts. The knowledge of the home circumstances of destitute families, and the personal and sympathetic contact with parents and children, may in the hands of the tactful and zealous worker lead to many results in social amelioration, of which efficient feeding and clothing of school children is but a small part.

VERMINOUS CHILDREN.

At a recent meeting of the Edinburgh School Board, several parents were specially summoned under Clause VI of the Education (Scotland) Act, 1908, dealing with verminous children, and empowering the Board, after due warning, to report to the Procurator-Fiscal, with a view to prosecution before the Sheriff. As this was the first instance of the kind coming before them under this Act, the board decided to give the parents another chance, but warned them that any further complaints against them would be summarily dealt with before the Sheriff.

HOUSING CONDITIONS OF LANARKSHIRE MINERS.

Mr. John T. Wilson, Medical Officer of Health for Lanarkshire, has issued an exhaustive report of 242 pages on the housing conditions of the Lanarkshire miners, for the Local Government Board, county council, and district committees. There are reckoned to be about 55 500 persons employed in mining operations in the county, of which 500 are females. The total number of houses occupied by miners is given as 20,930, which, compared with the total occupied houses of all classes, gives a percentage proportion of 36 25 In the middle ward of Lanarkshire the proportion of houses occupied by miners is one half of the total; in the upper ward one fourth; and in the lower ward one-sixth. These figures show the important place the mining industry occupies in the county. While many companies have built houses for their workmen, and many houses have been built and are owned by miners themselves, the majority are accommodated in houses rented from speculative builders, the number of rented houses being 12,099.

Dr. Wilson discusses the interesting problem of the single-apartment house. Ten per cent. of the houses erected in the county under the building by-laws are of this class, which in the second report of the Royal Commission on Mines is condemned. For men and families living in such circumstances the Commission considers that facilities for cleanliness are non-existent, and it is scarcely possible for miners to wash themselves completely without a breach of the common decencies of life. Dr. Wilson considers this conclusion might well be questioned, and asks consideration of the whole social conditions of the miner's life. Assuming that single-apartment houses are used only by young married couples, or by elderly couples without families, Dr. Wilson cannot see that any objections can be urged so long as the houses have suitable domestic and sanitary conveniences. On the whole, it is concluded that the miners are fairly comfortable, and matters continue to improve. An interesting comparison is drawn with the Ruhr mining district in Germany, where 300,000 miners are employed. In this district Dr. Wilson was impressed with the ground building plan, the air space round the buildings, the provision of public park, gardens, bandstand, and fountain, yet the rentals were comparatively small. He could not but admire the method under which such schemes were carefully thought out and carried through.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

FUNDS OF THE ROYAL COLLEGE OF SURGEONS.

IN the Chancery Court recently judgement was given by the Master of the Rolls in the case of the Royal College of Surgeons *v.* Stoker and others. The question at issue depended on the construction of the deed of amalgamation between the Carmichael and Ledwich Medical Schools and the School of the College of Surgeons, and concerned the disposal of a sum of about £1,900 which had accumulated in the general fund. The Master of the Rolls held that under the agreement the proprietors of the Ledwich school were not entitled to further payment, but the decision was to be without prejudice to any steps that might be taken for rectifying the agreement. Professor White was held to have a definite claim on the fund, and Professor Scott and the widow of the late Professor Frazer were held to have claims under certain specified conditions.

DUBLIN UNIVERSITY BIOLOGICAL ASSOCIATION.

The opening meeting of this association was held in the debating hall of the Graduates' Memorial Buildings, Trinity College, Dublin, on Saturday evening, November 19th, when the President elect, Mr. W. I. Wheeler delivered his inaugural address on the treatment of fractures by ancient and modern methods. Mr. Wheeler laid stress on the comparatively little progress that had been made in the treatment of fracture from the time of the ancient Egyptians until a few years ago, and later dealt in detail with the modern methods associated with the names of Lucas-Championnière and Arbuthnot Lane. The address was illustrated by lantern slides. The succeeding speakers included Mr. Arbuthnot Lane, Mr. Fullerton (Belfast), Professor James Little, and Mr. W. S. Houghton. After the meeting, the members of the association were entertained at a most enjoyable smoking concert by Mr. William Taylor.

Dublin Guardians and Pasteurized Milk.

In the issue of the Journal for October 22nd, p. 1282, reference was made to a motion which had been handed in by one of the guardians of the South Dublin Union with reference to the abolition of the use of pasteurized milk and the substitution therefor of fresh milk. Since then the guardians have met, and have determined upon the discontinuance of the pasteurized milk without waiting for the report on the deaths of children in the union which they had asked Dr. Dunne to furnish. This precipitate action is the more to be regretted as it appears from a letter addressed to the guardians by Dr. Dunne at their last meeting that previous recommendations of his, which would have ensured the provision of a pure milk supply, have been ignored. Dr. Dunne rightly insists on the responsibility which the members of the board incur in interfering with the medical treatment of the infants admitted to the union. The precedent is undoubtedly a dangerous one; and even admitting that opinions on the value of pasteurized milk are widely variant, we think that the guardians should have taken the trouble to investigate the matter thoroughly and to obtain expert opinion, instead of rushing to an unconsidered conclusion.

Belfast Medical Students' Association.

The inaugural meeting of the session was held on November 15th in the McMordie Hall of the Students' Union. The President, Dr. W. W. D. Thompson, B.C., occupied the chair, and gave an interesting address on The Country Doctor. He dealt with many of those unconscious heroes whose memory has come down to us, and serves as a spur to our higher nature. Dealing with the question of remuneration, he strongly urged newly qualified men to think of the services or colonies in preference to a country appointment in Ireland, where the salary of a dispensary doctor was that of a mechanic, and where private practice was limited and difficult.

Professor Lindsay followed with a paper on the Present day Prospects for the Medical Student. After a clear and humorous description of many of the early troubles of the newly qualified medical man, he referred to the overcrowding that had been experienced in France, Germany, Italy, and America, and said that it did not exist in Belfast, where there were 1,000 citizens to every practitioner. This statement has not been accepted with anything like a chorus of approval, as there is an immense class of people in Belfast on the border line of poverty, such as labourers, mill-girls, and out-of-work mechanics, whose days of fee-paying capacity have been brought to an early termination by former alcoholism and extravagance. It is the unanimous experience of the general practitioner that money is harder to make and bills more slowly paid than was the case five years ago. The hospitals treat many cases quite able to pay a fair fee, and bring back day after day many minor accidents that should be sent after the first visit to their ordinary medical attendant. Overcrowding to a very serious extent is alleged to exist; and undoubtedly the number of practitioners has increased far beyond the proportion of the increase of population. At the debates of the last couple of years at the Ulster Medical Society general practitioners brought forward several resolutions designed to limit hospital abuse and to regulate the attendance of consultants and specialists. Of the graduates twice yearly sent out from the Belfast University, a very large majority luckily recognize the excess of supply over demand in Belfast, and seek the services, the colonies, or assistantships in England.

Ulster Medical Society.

The annual dinner of the Ulster Medical Society was held in the Medical Institute, Belfast, on the evening of November 17th. The Senior Vice-President, Dr. J. S. Morrow, occupied the chair, owing to the unavoidable absence of the President, Sir Peter O'Connell, from illness. About sixty Fellows and guests sat down. After dinner the Chairman gave the toast of "The King," which was loyally honoured. He next gave the "Lord Lieutenant and Prosperity to Ireland," which was responded to by the Lord Mayor of Belfast (Mr. R. J. McMordie, M.A.) in a clear and felicitous speech, telling of many of the efforts of both Lord and Lady Aberdeen, which had endeared them to all hearts in Ireland. Sir John Byers then gave "Our Guests," saying he had wished all the guests would reply, as they were delighted to welcome them individually and would be delighted to hear them. Many were associated with the profession in close and friendly ties. The toast was responded to by the Recorder of Belfast (His Honour Judge McIlroy), the Vice-Chancellor of the Queen's University, (Rev. Dr. Hamilton), and the President of the Ulster Branch of the British Medical Association (Dr. W. Calwell). Professor Sinclair proposed "Our Chairman," which was received with applause, and acknowledged by Dr. Morrow, who said that they must not part before acknowledging the many services of their Honorary Secretary, Mr. Howard Stevenson, to whose labours the success of the dinner was due. Much regret was expressed by many speakers as to the absence of Sir Peter O'Connell, and all hoped for his speedy recovery.

Some excellent singing greatly contributed to the enjoyment of the evening.

Correspondence.

NATIONAL MEDICAL SERVICE.

Sir,—I hope that you can afford me space to develop further the issues involved in the questions of sickness and invalidity insurance. Is it too much to presume that most of us now recognize that the Chancellor of the Exchequer is likely to provide for his share of the sickness cost by paying each year what is actuarially deemed an adequate premium? If not, we must consider the issues to the profession from the various possible ways in which the fund so created can be managed.

It has been suggested that a central reserve fund could be created at the Treasury. If the profession can look forward with equanimity to a large fund for the payment of medical services being held over its head by the Treasury, I fail to see what we are all so anxious about now. If the Treasury, with accumulated resources of this kind, can be relied upon to receive favourably the views of the medical profession as to their distribution, we can surely with like equanimity rely on the abstract justice of our interests being recognized now, and all the work of our central organization is so much futile log-rolling.

The second possibility is that the funds might be taken in premium by some great insurance organization. As yet the philanthropy of the insurance societies has not led them to accept premiums on any scale that does not afford both sufficient cover for the risk and working expenses, and also a margin of profit. Thus assuming that the working expenses would be equal under all schemes, this one is marked by requiring a special deduction from the fund in the name of profit. In addition, the experience of the profession with regard to the remuneration of professional services rendered to insurance societies does not seem of a kind to encourage extravagant hopes for medical remuneration at rates fixed by bargaining with insurance organizations.

The third possibility is that the premiums might be handed to the friendly societies, who would accept the responsibility of providing the medical service, the Treasury grant and employers' contribution being relied upon to attract into the societies the ten millions of the future scheme who are not already there. Surely there is no need to elaborate argument under this head, or to show that even if the societies decided to grant choice of doctor and payment for work done, as they might do, the contract would in future take place in fixing the scale of payment per visit, and might have results compared with which the club practice of the past might appear a traditional golden age.

The last possibility is that the responsibility should be assumed by a professional organization, and only those who believe that a professional organization would be less likely to secure an adequate premium, and less ready than

a business organization to demand increase should the initial rates prove too low, are likely to consider this as unpractical.—I am, etc.,

Dundee, Nov. 20th. R. C. BUIST.

SIR,—Dr. Buist says that I misread his letter and the present situation. I fear that I read the present situation much better than Dr. Buist, and unless I misread his letter in the JOURNAL for November 19th, it is a most deplorable attitude, from the general practitioner's point of view, for one of our "Representatives" to take.

His letter advocates the Chancellor's side of the case in a deal with the profession, and asks that we should imagine ourselves conducting an interview with that official.

If a representative of the profession (as he ought to be) met a Chancellor of the Exchequer (as Dr. Buist represents him) I imagine the interview would be something of this kind:

Representative of Profession. I have submitted your wishes for medical attendance upon some 15,000,000 people to the profession, and the matter has had most careful consideration, and we are prepared to undertake the work at the following fees (producing the tariff which the profession will fix).

Chancellor of Exchequer. Oh! but never mind the fees. What s the sum total? I must fix a definite amount, as it is easier nd simpler to budget for.

Representative of Profession. If you will tell me exactly the amount of medical attendance you require I will soon give you the sum total necessary to pay for it.

Chancellor of Exchequer. But that is just what I can't do; nobody can possibly tell.

Representative of Profession. Then if you can't tell the amount of work required nobody can possibly tell the cost, and I cannot pledge my "profession" to provide unlimited work for limited pay. [*Exit.*

I might liken such a transaction to a similar one in land. Suppose a man offered his estate for sale, the first question asked would be, How many acres is it? If he replied that he did not know, but somewhere between 1,500 and 2,000 acres, the only business-like proposition would be to bargain at so much per acre. Any other method would be a mere gamble, in which either one or the other would certainly be a heavy loser.

The profession need not fear any Chancellor getting the work done by whole-timers or through the friendly societies, because it cannot be done; there are not enough men to staff such a service, and the 15,000,000 people will not be satisfied with young and inexperienced men, nor with old and unsuccessful men, but will insist upon having a reliable class of practitioner, and there is only one source of supply available.

Also a Chancellor is usually a sufficiently business-like person to see that no service which is obnoxious on account of its injustice to both the servitors and the beneficiaries is likely to be anything but a failure, however cheap it may be.

Dr. Taylor's suggestion in the JOURNAL of November 12th was also a deplorable one from the view of a general practitioner, especially coming from a "Representative." Does Dr. Taylor imagine for one instant i we want a certain scheme, and go with an alternative one, which is apparently easier and cheaper, to offer in case the first one is refused, that anything but a blank refusal will be forthcoming?

May I again liken it to a purchase? If Dr. Taylor wanted a certain house and sent his "representative" to buy at £1,500, with power to go up to £2,000, what would he think if his solicitor said, "I have come to buy such-and-such a house, and I offer £1,500; but if you won't take that, I can go up to £2,000." The cases are not quite parallel, because the "profession" does not want the "house," and if the vendors will not take what the representative is commissioned to give, he should not be able to grant any other terms.

It is a very serious matter that most of the letters in the JOURNAL which advocate "giving ourselves to the Government at their own price" come from "Representatives"—that is to say, they were elected to represent us before any such scheme was even thought of—and that to-day nearly all the general practitioners are against the payment "per capita" and in favour of "payment for work done," while the "Representatives" seem entirely wedded to payment "per capita" and against "payment for work done," their chief argument being "because we shan't get the latter."

If the British Medical Association will take the trouble to learn how the profession really feels on this matter and then really represent them (or should it be "it"?) we shall have no more resolutions *à la* Gateshead; but if they go on as they are, I cannot conceive how such an end is avoidable.

I will answer the question which I put to Dr. Buist and which he does not answer. Once the true voice of the profession has spoken its verdict for any course of action, I will support the Association in carrying it out, with one proviso—that such action shall not deprive any section of the profession who protest against it of their livelihood, even though it be for the benefit of other sections.—I am, etc.,

Northwich, Nov. 21st. HENRY EDWARD GOUGH.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—For so many months now have the champions of "payment for services rendered, as in private practice," been prancing up and down the lists on their high-mettled steeds, looking vainly around for some one to come forth to take up one or other of the gauntlets that strew the green, that the spectators had almost despaired of seeing any fun. However, at last a champion has entered the lists from the Far North and announced his battle cry to be "Semper eadem." So quickly, however, have the Knights of Liberty fallen on to him, forgetful of all rules of precedence, that he would seem to need to repeat, like the escaped parrot to the inquisitive pecking sparrows: "One at a time, please, gentlemen!"

In your issue of September 17th appeared a memorandum asking this question:

On what terms and on what conditions does the medical profession suggest that its necessary services should be placed at the disposal of the State in any scheme the Government may bring forward to cover invalidity and sick insurance?

In your issue of October 22nd following appeared a letter in which were elaborated certain questions that required consideration before a full reply to this question could be given.

The first important question, namely:

1. *Is it desirable that a State invalidity and sick insurance scheme should include medical attendance*

has been answered already by the Chancellor of the Exchequer on November 18th in the affirmative; and so there is no need for the medical profession to discuss it further.

Out of the long list of questions in that letter only two need prompt attention by the medical profession. On these two the champions have now joined battle. They are:

2. *In whose hands should the central promotion, organization, and control of the medical attendance portion of such a scheme be?*
3. *Should the contract made with the medical profession be (a) in the form of an annual capitation grant, or (b) on a tariff of fees for work done as in private practice?*

The question of control, like the first question, may be settled without the medical profession being consulted. If the Association would come into line, and urge the profession to demand State control, either by an *ad hoc* board of represented interests or by special commissioners, it might be possible to avoid permanent friendly and other insurance societies being appointed.

But if the northern champion, quoting old stock aphorisms which in no way apply to the new situation that has been created by the Government entering the field, urges the acceptance of British Medical Association control, then most certainly friendly society control will come about. He must know that the Association cannot accept the work under its memorandum of association; it could only do it as an agent; there would be no funds to offer as security in competition with permanent friendly societies in making an offer to undertake the work; half the profession is outside the Association, and a quarter of that number would not have the Association at any price.

and would probably appeal to the Government against any such proposal.

Result: Discord, disunion, defeat, professional death.

Then the question of payment. There are two systems; for against whole-time appointments all seem united.

The northern champion's third cry is "honorarium"—for an annual capitation payment is nothing more or less. He produces no actuarial opinion stating that his proposal is insurance and not an honorarium; he mentions no sum, although 10s. a head has been hinted at; he does not define the services for which this honorarium is to be the reward; he advances no scheme by which to prevent the amount of benefits which can be obtained in return for this honorarium exceeding a maximum limit: and so he goes galloping wildly down the course, lance in rest, shouting "Semper eadem"; "B. M. A. for ever"; "honorarium"; driven by his keen desire to help the Chancellor of the Exchequer to save the bawbees.

Many standing around the palisades who openly favour this doughty champion acknowledge in private that their sympathies are with his opponents; but they seem to be too timid to take their courage in both hands and to say so.

Dr. Taylor of Salford, in his communication, says, "Demand payment for services rendered as in private practice"; but he adds, *sotto voce*, "if we cannot get it, then accept an honorarium." Alas! what faintheartedness!

Is it not time that the medical profession realized that it is primarily a scientific body, and not a lot of hirelings whose mercenary instincts urge them to undertake commercial work they are not trained for on terms that only competition and discussion make possible?

If the reply is "Yes," then let us unite during the coming campaign under the battle cry of "Liberty and Justice," and have done with what seems like attempts to lull us into sleep and to fog the issues—the quoting of prehistoric aphorisms and pleading poverty.—I am, etc.,

Southfields, S.W., Nov. 21. E. Rowland Fothergill.

Sir,—I should have thought that the views I have put forward on this subject were sufficiently clear, and I have little doubt that they are understood by most of your readers. It would appear, however, that some seem to have a natural liking for obscurity, and will even find it where it is non-existent. Dr. Grey writes that it is evident from my letter of November 12th that I had "misconceived" the position of those reformers who publish impossible schemes. To the best of my belief I am labouring under no misconception. I never referred to Dr. Grey's scheme specially, but his conscience would seem to rush to the conclusion that I must have been thinking of his views. I quite agree that the State should pay sufficient to the insured to enable them to defray their own medical attendance, but I certainly do not approve that the State should provide the service he requires. This I have consistently opposed at all times. Dr. Grey is surprised that I should object to the State imitating a fire insurance company, that supplies burnt articles in kind rather than in cash. The analogy is an exceedingly unfortunate one, in my opinion, and does not help his argument a bit. The complexity of such an arrangement must be obvious to all. Dr. Grey further says that he cannot see why his proposals would force poor people to give up their own private doctors. I never said his proposals would. I have all along *consistently* maintained that the only methods the State could, in my opinion, adopt for providing medical attendance—namely, the capitation method, or that by means of salaried officials—would have this effect. The argument that the State is greatly interested in seeing that a beneficiary's insurance is properly spent on the right kind of medical attendance may be very true, but it does not tend towards choice of doctors by poor people. His remarks about the "works" doctors may or may not be true, but in either case they are not complimentary to a considerable class of our professional brethren, and do not help to unite us in a common union. In conclusion, I would add that my personal opinions may be of very little value, and possibly shared by only few of my brethren, but I must contend that they are neither inconsistent nor obscure, and do not call for certain criticisms that have been made by some of your correspondents.—I am, etc.,

London, N.E., Nov. 19th. Major Greenwood.

MEDICAL PRACTICE BY FOREIGNERS IN ITALY.

Sir,—Will you allow me to point out some inaccuracies which occur in your reply to your correspondent, "Dr. G. H.," in the Journal of November 12th, p. 1571, in regard to the new law "Per gli ordini dei Sanitari" in Italy? You state that all foreign medical men other than those belonging to the two categories you have specified "are forbidden to practise unless they naturalize as Italian citizens, and obtain degrees from Italian universities." This is an error; the law merely requires that such medical men shall be "nel godimento dei diritti civili" (in the enjoyment of civil rights); in other words, that they must have the ordinary rights pertaining to persons of full age, of sound mind, in possession of their personal liberty, etc., in which case, and having obtained an Italian degree, they are eligible for registration as medical practitioners. Naturalization is, therefore, not required for that purpose.

Again, in the case of those belonging to the second category, namely, foreign practitioners possessing diplomas of countries which do not grant reciprocity of medical practice to Italy, but who were practising in this country at the date (July 19th, 1910) of the promulgation of the Act, the liberty of continuing the exercise of their profession is only accorded to those of their number who had already at that time been enrolled on the list of contributories to the income tax for a period of more than three (not two) years. This provision in reality makes the law retrospective in their case for fully *four* years, since the newcomer's name does not appear on that list in the first year of his residence.

Although these restrictions do not affect those holding diplomas granted in the United Kingdom, they are of sufficient general interest to make an accurate statement of them desirable.—I am, etc.,

G. Sandison Brock, M.D.,
Physician to the British Embassy at Rome.

Rome, Nov. 18th.

THE MEDICAL DEFENCE UNION.

Sir,—The attention of the Council of the Medical Defence Union has been called to the issue by the Car and General Insurance Corporation, Limited, of a circular *re* benefits under an "eclectic policy," and in which the name of the Medical Defence Union is used without our authority or consent, and without any previous knowledge on our part that it was intended so to be used. I am directed to state for the benefit of members of the medical profession that the Medical Defence Union has no connexion in any way with the above company, and that it has not entered into any agreement with it whatever in respect of any such "indemnity policy," and that the only company authorized to use the name of the Union in respect of any "indemnity policy" is the Yorkshire Insurance Company, Limited, Bank Buildings, Princes Street, E.C.—I am, etc.,

A. G. Bateman,
General Secretary.

London, W.C., Nov. 18th.

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

Sir,—It has been brought to the notice of the Council of the London and Counties Medical Protection Society, Limited, that indemnity insurance policies are being issued to members of the society (in respect of damages and costs of the other side in actions undertaken by this society) by the Car and General Insurance Corporation, Limited, and I am directed to inform members of the London and Counties Medical Protection Society that the Car and General Insurance Corporation has received no authority from this society, and that this society accepts no responsibility in the matter.—I am, etc.,

London, W.C., Nov. 22nd. Hugh Woods.

ALCOHOLISM AND DEGENERATION.

Sir,—I shall esteem it a favour if you will spare me the space for a few lines of reply to Sir Victor Horsley's letter in your last issue. Sir Victor Horsley states that my only reply to the criticisms of Dr. Saleeby and himself is that "*if some* children were born before the parental alcoholism had started *some* were certainly born after." Sir Victor Horsley does not state:

1. That the italics are his and not mine.
2. That he has taken a *qualifying* sentence which begins and ends with a comma out of its context, and not even cited its *locus*.

The actual sentence occurs in my *Questions of the Day and the Fray*, No. I (Dulau and Co.), p. 15, and it runs:

> The reply to this is that there are as many children of 5 and 6 as of 11 and 12 [that is, offspring of alcoholists in our data], and if some children were born before parental alcoholism had started, some were certainly born after, and therefore this mixed category should be worse than the category containing children whose parents have not been alcoholic at all.

Sir Victor Horsley states that my "only reply" has been the clause he extracts. He means probably the "only reply" he has himself seen. The whole matter will be further discussed in a forthcoming *Second Study on Parental Alcoholism*. Meanwhile, instead of referring Sir Victor to other places where I have dealt with this point, I will ask your permission to cite a few lines of that memoir:

> The actual answer to the difficulty raised by Sir Victor Horsley and Dr. Saleeby could have been found by them at once had they studied the data in our memoir. Of the alcoholic parents, a slightly *larger* percentage of the offspring *lies* between 5 and 7 years of age than in the case of sober parents, 30 per cent. as against 27 per cent. and the ratio of the number of children between 5 and 7 to those between 12 and 14 is for *both* drinking and sober parents 1.6. But if the parents only became alcoholic to any large extent after the birth of their children, it will be clear that the ratio of young to old offspring in the case of the alcoholic must be very different from what it is in the case of sober parents. Actually the alcoholic have as many *young* children as the sober, and there is no place for a large number of the alcoholic to have become such after the birth of their children. The only artifice by which Sir Victor Horsley and Dr. Saleeby could get out of this difficulty would be to assert that alcoholism never develops until the youngest children of a family are of school age. Granted this, however, we see that the assertion that alcoholism in the parent produces mental defect in the children must be idle, for all the children would be borne before alcoholism begins!

This second memoir by Miss Elderton and myself will consider the whole of the statistical evidence cited by Sir Victor Horsley and Dr. Sturge in their work on *Alcohol and the Human Body*, and analyse its scientific value. Meanwhile, I should like to put one very simple question to Sir Victor. On pp. 324–6 (edition 1907), Dr. Sturge and he tells us that the effect of alcohol as a factor in the causation of mental deficiency has been "strikingly shown" by Dr. MacNicholl's examination of 55,000 school children. My question is, whether Sir Victor Horsley agrees in considering Dr. MacNicholl's memoir "valueless" and "absolutely misleading" because he merely inquired whether the parents of the children took beer, wine, or spirits, and did not ascertain whether that habit antedated or postdated the conception of the offspring?

I am not at all sure that when Sir Victor Horsley sees in ten days' time our forthcoming memoir he will not regret using such a very double-edged knife as that by which he proposes to root up the basis of our first study.—I am, etc,

Karl Pearson.

Eugenics Laboratory,
University College, W.C., Nov. 19th.

Sir,—I take it to be a sound rule that a critic should not engage in controversy with those who think themselves aggrieved by his decisions. If, however, the statements contained in the letter of Miss Sturge and Sir Victor Horsley had been based on fact, I should have been guilty of a violation of the trust reposed in me as a reviewer, so that a word of explanation seems due to you, Sir, and your readers. The work of Professor Pearson and Miss Elderton was asserted to be valueless because (1) the samples classified as alcoholic and non-alcoholic were differentiated in other respects; (2) there was no evidence as to the habits of the parents before the birth of their children. I carefully studied the evidence adduced by Mr. Keynes, among others, in support of the former contention, and was, and still am, unable to discover its relevance, since nothing was attempted in the way of an appeal to other statistical experience. With respect to the second contention, it will be found on examination of Professor Pearson and Miss Elderton's data that their alcoholic sample has proportionally as many quite young children as their non-alcoholic subjects. This fact is utterly irreconcilable with the truth of the objection. As stated in the editorial, the time has not yet come for a final pronouncement on the important questions raised by the memoir under notice. I do not, however, believe that purely *ex cathedrâ* statements, even when they proceed from such eminent scientific authorities as Dr. C. W. Saleeby and Sir Thomas Whitaker, deserve any other treatment than they received in my notice. *De non apparentibus et non existentibus eadem est ratio* is a valid principle even when its user has the misfortune to differ from so courteous a writer as Sir Victor Horsley.—I am, etc,

Your Contributor.

"BOVRIL."

Sir,—The remarks made under the above title in the Medico-Ethical column of the Journal of November 19th are, I feel sure, based on an incorrect appreciation of the facts, and as I am principally concerned, I should like to state them, if you will be good enough to give me the opportunity.

In the course of an investigation undertaken at the personal and unofficial request of the Medical Commissioner of the Local Government Board of Ireland, without the knowledge of the Bovril Company, to ascertain for him, whether the beef extract in question had any nutritive properties or not, the following facts came out: (1) The weight of the animals used in the feeding experiments increased during the period when the extract was given out of all proportion to the amount added to their food. Knowing something of the effects of different foods in this respect the result was to me surprising. (2) The extract greatly increased the assimilation of the other food constituents of the animals' diet. This was shown in a reduction (often to less than 50 per cent.) of the waste escaping as faeces, not alone in regard to total quantity, but also in the proportion of nitrogen contained in the excreta. (3) Nitrogen was retained by the animals and presumably stored in the body during the period of feeding with the extract in the majority of the experiments.

Now I venture to ask, What is to be done with facts of the above nature? Are they to be suppressed, or are they to be pushed, as far as possible, to their scientific conclusions and published? One of them, be it noted, is seemingly of far-reaching significance, in view of the increasing scarcity of animal food in the world, and of the greater necessity for mankind to draw upon cereals, etc., for the nitrogen necessary to subsistence.

I have no interests to serve in the matter other than those of science, and I have decided to pursue the latter course. Is it too much to ask, not merely to be allowed unhindered to do so, but to be assisted in following up these and kindred questions which may arise out of the inquiry, as far as my abilities and opportunities permit?

During the investigation an initial attempt was made to standardize the nutrient effects of the beef extract against those of some well-known protein, egg-white being chosen. The results in themselves were remarkable, but the main point is that I was forcibly impressed with the fact, upon which I had often previously reflected—namely, that we know nothing of the relative nutrient properties of the everday proteins we consume in our dietaries. How is reliable knowledge on such matters to be obtained? In no other way, to begin with, than by laboratory investigations. But we have no laboratories in Great Britain where such questions can be solved on an adequate scale. Some exist in America, and a few on the Continent of Europe. There is room, however, for many more in the world, and I confess it is my ambition to see one founded in Dublin.

I hold, also, that it would be a praiseworthy and benevolent act of any great manufacturing or producing company, catering for the wants of the people in the matter of food supplies, to assist in the founding of such a

nutrition laboratory. We often grumble that science does not receive more support from manufacture and commerce. But is it matter for surprise when, as not infrequently happens, some one or some thing intervenes to hamper or prevent industry from reaping the advantage of scientific discovery?

A few words more and I have done. The British Association for the Advancement of Science has nothing to answer for in the matter. The results were communicated to one of its sections in Sheffield under the title, "The Nutritive Effects of Beef Extract." It was there stated that a commercial extract was used in the investigation, but the name was not made public. Lastly, as regards the Local Government Board of Ireland, I have heard the comment made in England that it was an enlightened thing of the Medical Commissioner to have done before deciding for or against the admission of the preparation to the Board's list of articles suitable for workhouse infirmaries, and perhaps I might add that I agree. Moreover, the report is not yet furnished to the Local Government Board, the investigations not being complete.—I am, etc.,

School of Physiology, Trinity College, Dublin, Nov. 20th. W. H. Thompson.

Sir,—In your issue of November 19th, under Medico-Ethical (p. 1661), is a reference to "Bovril," which contains the remark, "We are amazed that the authorities of the British Association should have considered the subject matter suitable for a communication to one of its sections."

As Recorder of the Section of Physiology, I beg to point out that neither in any paper nor in any discussion on any paper was there any reference to "Bovril."—I am, etc.,

H. E. Roaf.

School of Physiology, Thompson Yates Laboratories, Liverpool, Nov. 22nd.

DR. HADWEN AND THE "CRIMSON CROSS REMEDIES."

Sir,—The gist of Dr. Hadwen's letter, published in the Journal of the 19th inst., is that he is obliged to you for publishing the correspondence on the Crimson Cross Remedies, but that it passes his comprehension why it should be published, and this merely because the letters were written a few months ago.

Surely the opinions he expressed and the remarkable statements he made in June are just as suitable for publication in November as in June, unless he now wishes to repudiate them.

The correspondence arose out of an advertisement in the *Vaccination Inquirer*. Dr. Hadwen has taken the trouble to write about this and still pleads he has not seen the advertisement, which appeared regularly for six or seven months last year, conspicuously displayed on the cover of that organ. It may be natural modesty that prevents Dr. Hadwen from seeing so many consecutive numbers of the official organ of the League in which he takes so much interest, for no other journal so completely appreciates Dr. Hadwen's special attributes or so frequently announces his special qualifications.

If Dr. Hadwen is really pleased to see his letter in print, why should he carp at the fact of its publication?

I did not distinctly declare my intention not to publish Dr. Hadwen's letter, as he erroneously states. I merely stated that I declined to allow him to make an indirect attack on the British Medical Journal in the columns of the *Jennerian*, as suggested by Dr. Hadwen. This did not in any way interfere with my right to publish the letter elsewhere, in accordance with the permission contained in the postscript to his letter.

Dr. Hadwen is inaccurate in other particulars. He says I did not bring forward a single issue in my reply to his letter which he had not already answered. This statement is not correct. If he will take the trouble to read my letter again he will find eight or nine specific questions on points relative to the discussion which up to this moment remain unanswered by him. For these reasons the boast that he has "been perfectly open and straightforward" is empty and vain.

Will Dr. Hadwen kindly drop quibble and evasion and answer the plain and simple questions which were addressed to him in my second letter? So far he has not had the courtesy to acknowledge its receipt.

My object in submitting the correspondence to the Journal was to expose Dr. Hadwen's ridiculous defence of the Crimson Cross Remedies, and to draw attention to the offensive attitude he adopts towards the profession of which he is a member. Dr. Hadwen's strange bias in favour of the pseudo-practitioner as against what he calls "orthodox" practitioners is well illustrated by his solicitude on behalf of the proprietor of the Crimson Cross Remedies, advertised to cure practically all diseases to which mankind is liable. He says he knows nothing about the advertised claims, many of which were published, under the head of Secret Remedies, in the Journal of May 7th, 1910 Notwithstanding this want of knowledge, Dr. Hadwen pleads that these things (which he says he knows nothing about) should not be made "the butt for unnecessary medical editorial sarcasm."

He seems to forget that he has already "damned with faint praise" the nostrum under consideration by limiting its virtues, in his opinion, to the oleaginous base (linseed oil). This is surely more cutting than editorial sarcasm.

When contrasted with his repeated attacks on his fellow-members of the medical profession, his apologia for the Crimson Cross Remedies, of which he writes, "I have respect both for the preparation and for the gentleman who makes it," is, to say the least, remarkable.

Dr. Hadwen's respect for the members of his own profession has been expressed in a speech he made at the annual meeting of the National Antivaccination League in London, March 11th, 1908. He is reported to have said (vide *Vaccination Inquirer*, April 1st, 1908, p. 20):

> . . . They must be on their guard against new professional methods, and he particularly urged that the proposed medical inspection of school children should be carefully and earnestly watched, for there was no more dangerous set of people than medical men when they had the power against the bodies and the consciences of the people.

It may pass Dr. Hadwen's comprehension why I should republish this exceedingly offensive pronouncement. Lapse of time cannot expiate such an offence, and so far as I am aware the accuracy of the report has never been questioned. When Dr. Hadwen has answered the questions in my second letter and completed his defence of the Crimson Cross Remedies and the advertisement in which his name appeared, I invite him to enter on his own defence of the contrast narrated above.—I am, etc.,

Halifax, Nov. 21st. Arthur Drury.

THE DISCUSSION ON THE DIAGNOSTIC VALUES OF OPHTHALMOPLEGIA, PARTIAL AND TOTAL.

Sir,—I am sorry to trouble you in the matter, but would you very kindly call attention to a correction that is necessary in my opening remarks in the Ophthalmological Section of the British Medical Association Meeting, 1910?

It is an error that occurs on page 1316 of the Journal of October 29th, in speaking of the diagnosis of intracerebellar and extracerebellar tumours:

> Not only in the diagnosis, but also in the localization, of intracranial tumours, however, do we look for assistance from ocular paralysis, as is as well illustrated by what obtains in connexion with the cerebellum as by any other example that I can suggest. The indications of intracranial tumour may be clear, and those pointing to the region of the cerebellum equally so, but to cranial nerve paralysis, among other signs, we look for assistance in our attempts to determine whether the tumour be *intracerebellar or extracerebellar*; and no such paralysis is more common than that of eye muscles—a condition of things which obtains in *the former variety* but not in *the latter*.

"The latter" should appear where "the former" has been used, as paralysis of the cranial nerves is more common and more pronounced in extracerebellar tumours than in the intracerebellar varieties.—I am, etc.,

London, W., Nov. 16th. J. S. Risien Russell.

UNQUALIFIED PRACTICE AND CRIME.

Sir,—A sensational murder trial is over, and the prisoner has, after a fair trial, been convicted and executed.

I think it is now time that the attention of the public, and also of the medical profession, should be drawn to the slur which, though unjustly, has fallen on our calling.

Crippen came to this country, and practised illegally. He was allowed to freely advertise all sorts of quack nostrums, to associate his name with some commercial ventures of questionable character, though they had a medical aspect. He was both before the murder and also during his trial freely spoken of in the lay press as "Doctor" Crippen, and by many ignorant people he was probably regarded as a duly registered practitioner whom it was quite safe to consult. There are scores of such interlopers in this country. The daily papers reap a rich harvest from the vulgar advertisements of these parasites. Their illustrations often depict a man in professional attire, drawing attention by studied attitudes, or by theatrical pose of hand or finger to the terrifying effects of every malady, and to the boons which sufferers from every ailment may obtain by purchasing rubbish, although bearing a totally inadequate Government stamp. It is doubtful if these men would be allowed to carry on this nefarious trade in their own countries. But in Britain freedom is permitted to degenerate into disgraceful licence, and the medical profession is being lowered in the estimation of the public.

But this is not the most serious aspect of this terrible murder case. Crippen was undoubtedly enabled to obtain a large quantity of deadly poison owing to the fact that he styled himself, and was known to druggists, as "Dr." Crippen. It was stated in evidence that he was not always required to sign the "poison book" when purchasing, thus showing how he was looked upon as being a duly registered practitioner. I very much doubt if druggists would extend the same want of precaution to me.

Here, then, is a chief danger to the public. Crippens and Neill Creams may flood our metropolis; they may successfully compete with our duly qualified members of an overworked and underpaid profession; they may, without question or suspicion, obtain large amounts of poisons; they may commit murders, and their detection may be entirely due to some accidental circumstance.

It is now time that the British Medical Association, or the Medical Council, or both, should urge and compel the Legislature to take such steps as shall at once protect the public and also the profession from the shameful and shameless harpies who prey on the credulity of suffering humanity.—I am, etc.,

London, W., Nov. 23rd. SEYMOUR TAYLOR.

THE CONTROL OF MEASLES INFECTION.

SIR,—Taking into consideration the high death-rate among children due to complications occurring during measles, and the serious nature of many of the sequelae, is it not imperative that some steps should be taken without delay to endeavour as far as possible to reduce the spread of infection, in at all events one direction? I refer especially to the County Council day schools.

The present rule, which is apparently carried out relentlessly, is, that where one child or more in a family is suffering from measles, all the brothers and sisters (when there are any) are compelled to attend school, although in many instances the entire family live in one room; there being, as far as I can ascertain, no distinction made or allowed on account of restricted domicile.

I know of at least one school where the instructions to the parents of patients are that all the children in the family who had previously suffered from measles must attend school, but not those who had not suffered from the complaint. This is of course absurd, as it is well known that one attack of measles does not confer immunity from further attacks. The chances are very much in favour of the children from infected families, especially in congested areas, where there are no possibilities of isolation, having contracted the disease, which of course lies latent for a certain period—generally accepted as about fourteen days, although on this point authorities appear to be still divided.

The infectiveness of measles is known to be more highly virulent before the disease becomes apparent than after definite symptoms appear, at which period the children are either detained at home or sent home from school by the responsible teacher. By this time the number of victims has been enormously increased by the infected children mixing daily with their healthy school companions. Not only is this a serious matter for the children in many instances, but a great hardship is imposed on the parents, and, in the case of paupers, the rates are very materially added to. The fallacy that measles is a harmless disease, and that all children must necessarily suffer from the complaint at some time of their life, dies hard with the laity.

I maintain that in order to reduce epidemics of measles' children from an infected family should be compelled to remain away from school until declared free from infection by their usual medical attendant or the district medical officer of health.

Another way of checking the complaint is by adding measles to the schedule of notifiable diseases, which surely might be done, if only for a probationary period.—I am, etc.,

HUBERT C. PHILLIPS, M.R.C.S.Eng., L.S.A.Lond.

London, W., Nov. 4th.

Medico-Legal.

NOTIFICATION OF STILLBIRTHS.

J. L. L. writes, with reference to an answer published under this heading in the JOURNAL of November 12th, p. 1566, to point out that there are special forms of certificate for the use of registered medical practitioners only, which must be filled in and delivered to the superintendent of the cemetery or other official when a stillborn child is taken there for burial. This is correct; but the said certificate is really no more than what is usually given by the practitioner on an ordinary piece of notepaper, which is quite as valid at law as the official form. Many practitioners are unaware of the existence of this special certificate form for stillbirths, and some have had special books printed for their own use. One registrar in a busy metropolitan district stated that he had never had this certificate book in his possession, as it had never been applied for by any practitioner. There is no objection to making use of this official certificate form, and it may be well to draw attention to the fact that such may be procured from any registrar free of charge by any registered practitioner.

Medical News.

THE Lord Mayor of London will open a Conference of Health-promoting Institutions, to be held at the Guildhall on December 8th and 9th, which is being organized by the National League for Physical Education and Improvement. The subjects and speakers at the three sessions are as follows: (1) How to work a "School for Mothers" (Lady Meyer, Vice-President of the St. Pancras "School"); (2) infant welfare schemes abroad (Miss H. M. Blagg); (3) day nurseries (Muriel Viscountess Helmsley, Chairman of the National Association of Day Nurseries); (4) what may be accomplished by Children's Care Committees (Miss M. Frere, member of the Education Committee of the London County Council); (5) health societies: their aims and opportunities (Mr. Douglas Eyre); (6) the co-ordination of health-promoting agencies (Mr. F. E. Fremantle, County Medical Officer of Health for Herts). The chair will be taken at the various sessions by Alderman Broadbent of Huddersfield, the Duchess of Marlborough, Mr. Whitaker Thompson (Chairman of the London County Council), and Sir Shirley Murphy (Medical Officer of Health to the London County Council). Tickets of admission may be obtained gratis on application to the Secretary of the League at 4, Tavistock Square, W.C.

THE replies received by the Christian Union to a circular addressed to all the Protestant mission stations in China asking whether the cultivation of opium in various districts of China had been increased or diminished appears to show that there has been in many parts of China a very considerable diminution, and this appears to be generally confirmed by recent consular reports. This has been attended by an increase in the price of imported opium and a small increase in the actual number of chests of Indian opium entered in 1909 as compared with 1908. The policy adopted with the sanction of Lord Morley was gradually to reduce the total export of chests of opium from India by one-tenth each year. In this way the total export was reduced from 61,900 chests in 1908 to 51,700 in 1910. There appears, however, to have been a decrease in other directions greater than the decrease in trade with China. During 1909 the number of chests imported from India had fallen from 47,040 to 41,805 in 1908, but rose to 42,183 in 1909. It would appear, therefore, that the assumption, upon which the India Office has acted, that the restriction of the aggregate export of opium from India would in itself bring about the restriction of the import into China, has not been realized.

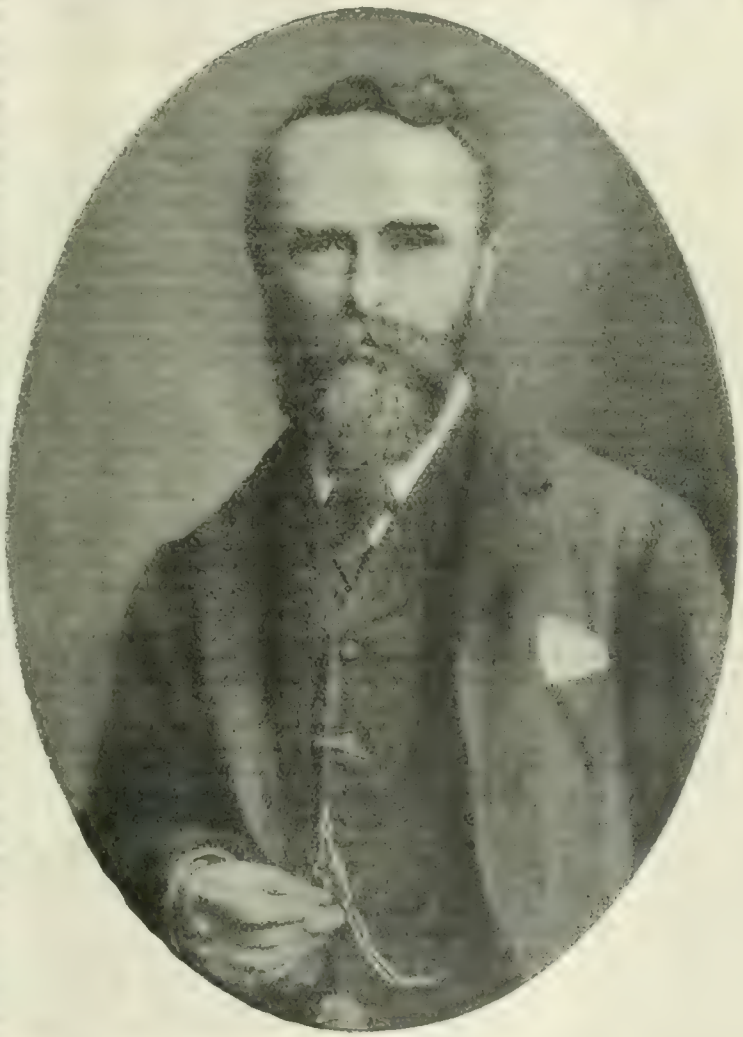
Obituary.

JOSEPH FRANK PAYNE, M.D., F.R.C.P.,

CONSULTING PHYSICIAN, ST. THOMAS'S HOSPITAL.

It is with deep regret that we announce the death of Dr. J. F. Payne, which occurred on November 16th, at his residence, Lyonsdown House, New Barnet, Herts, in the 71st year of his age.

Joseph Frank Payne was born in Camberwell on January 10th, 1840. His father, Mr. Joseph Payne, was a most successful teacher, the first Professor of Education at the College of Preceptors and the author of many educational works, which were popular in their day both here and in America, one of them reaching its eighteenth edition. Frank Payne possessed in a remarkable degree those four qualities which, Hippocrates said, are indispensable to the making of a good physician—learning, modesty, humanity, and probity. Some slight idea of the extent of his learning may be obtained from the brief outline of his work given below; to give a complete account of what he has done for the cause of medicine alone would take many pages. His modesty was such that few even of his friends realize how much he has done in the course of his busy life. Of his humanity and probity there is proof enough in the fact that he was revered and loved by all those with whom he came in contact.



Dr. Joseph Frank Payne.

At an early age Frank Payne was sent to University College, where he obtained a demyship to Magdalen College, Oxford. There he gained a reputation among his fellows as a zealous student, which was fully justified by his obtaining his B.A. degree with first class honours in 1862, the Burdett-Coutts Scholarship in Geology in 1863, the Radcliffe Travelling Fellowship in Medicine in 1865, and by his taking, in 1866, the B.Sc. degree at the London University.

He studied medicine for a time at St. George's Hospital, and then (in 1867) took his M.B. degree at Oxford; in the year following he became a Member of the Royal College of Physicians. Soon after, in compliance with the regulations of the Radcliffe Scholarship, Frank Payne went abroad. He spent a short time in Paris, three months in Berlin, where he attended, among others, the clinical lectures of Professors Frerichs and Traube, and then proceeded to Vienna. At the last-named town he came under the influence of the great pathological anatomist, Carl Rokitansky; of Professor Johann Skoda and of Johann Oppolzer; and there, also, he studied diseases of the skin under Hebra and Neumann. In 1871 he contributed to the British Medical Journal three articles, entitled, Recollections of the Medical School of Vienna, in which he gives a graphic description of his teachers and of their methods of teaching.

On his return to England, Payne was appointed Examiner in Natural Science at Oxford University; Assistant Physician to the Hospital for Sick Children, Great Ormond Street; and Demonstrator of Morbid Anatomy and Curator of the Museum at St. Mary's Hospital, where, according to a notice issued by the hospital, "*post-mortem* examinations are made by Dr. Frank Payne at 2 o'clock as opportunities occur."

Leaving St. Mary's, in 1871 he began his long connexion with St. Thomas's by accepting the Assistant Physicianship; he was elected Physician in 1887, and became Consulting Physician in 1900. During his long and valuable service to the hospital, lasting nearly thirty years, he contributed thirteen papers to the Hospital Reports, of which he was editor. One paper was on Plagues, Ancient and Modern. In 1875 he delivered the introductory address to the students, and in his speech he pointed out, among other things, that "medical studies, properly understood, contained many of the elements of a true liberal education," and that the "value of medical training as a liberal education depended chiefly upon its connexion with the physical sciences." Even in his early days at St. Thomas's, Dr. Payne's reputation as a pathologist was such that he was appointed to make a *post-mortem* examination in the Bravo case. While still at St. Thomas's, he was made Surgeon to the Hospital for Skin Diseases in Stamford Street, Blackfriars.

In 1873 he was elected a Fellow of the Royal College of Physicians, and was, as one of the four junior Fellows, at once appointed to deliver the Goulstonian Lectures; for these he chose as his subject, "The Origin and Relation of New Growths." Later on he delivered the Lumleian and the FitzPatrick Lectures, and in 1896 he was appointed by Sir Russell Reynolds to deliver the Harveian Oration. In 1892 he was asked to act as Secretary to the Committee appointed to revise the "Nomenclature of Diseases," and to edit and to bring out a new edition of the same.

In order to investigate and report on the plague, then prevalent in Russia, commissioners were sent out to that country in 1879 by most European Governments. The British Commissioners selected for the purpose were Surgeon-Major Colvill and Dr. Payne. They arrived in Russia too late to view the actual epidemic, which, though fatal in its effects, was not widespread. No doubt it was his experience on this expedition which led Dr. Payne to take such a keen interest in the plague. He not only wrote a

paper about it in the St. Thomas's Hospital Reports, but lectured on it in the Parkes Museum, and also contributed an article on the subject to the *Encyclopaedia Britannica*. In this article he expressed his conviction that "personal contagion is inadequate to explain the transmission of the disease in certain circumstances, and its continued existence in certain places between the epidemics of human disease," and suggested "that infection or miasma of plague must reside in the soil like that of malaria, as well as in the bodies of infected persons." He added:

"If we take the expression 'soil' in a wide sense, meaning external nature, outside the human body, this belief has been confirmed since the discovery of the bacillus, for it is certain that it has a mode of existence quite independent of man in animals living underground, especially in rats."

Some years later he contributed an article on the plague to the *Quarterly Review*, October, 1901, which contained information invaluable to all subsequent investigators of the subject.

In 1899 Dr. Payne succeeded Dr. Munk as Harveian Librarian to the College of Physicians. Soon after his appointment he began to prepare a new catalogue of the valuable library, adding many volumes to it from his own collection of rare books. One gift he made was that of one of the earliest books printed at Cambridge—bearing the date of 1523, and was a volume much treasured by him.

Dr. Payne was a representative of the University of Oxford in the General Medical Council for the five years ending June 1904. He was also a member of the Executive, the Examination, and the Pharmacopoeia Committees of that body. As a member of this last committee he rendered valuable service in the arrangement of the Council's excellent library.

Dr. Payne was a member of the Royal Commission on Tuberculosis, and also an active member of the Pathological, the Epidemiological, the Dermatological, the Royal Medical and Chirurgical (now the Royal Medical), and many other societies, and a regular attendant at their meetings; he was President of the first three societies named and Vice-President of the last. He was also Examiner to most of the English Universities, to the University of Edinburgh, and Examiner in Medicine for the Murchison Scholarship and for the Parkes Weber Prize to the Royal College of Physicians.

Dr. Payne's literary productions are numerous—too numerous by far to be given here in full. Some idea of their character may be gained by the following inadequate enumeration:

Whilst Curator at St. Mary's Hospital he brought out a revised and enlarged edition of Jones and Sieveking's *Manual of Pathological Anatomy*. His own *Manual of General Pathology*, designed as introduction to the practice of medicine, was published in 1888; the preface to this is a model of clear and cogent reasoning, and shows how well he was acquainted with the works of Locke.

In 1889 he published *Observations on Some Rare Diseases of the Skin*.

His *Life of Sydenham* in the Masters of Medicine Series appeared in 1900. In this work he has given the world an entertaining and instructive picture of Sydenham himself, and also of the period in which he lived. The book is written with great clearness, and impresses one with the author's sound knowledge of his subject, and with his evident admiration of Sydenham.

A *Life of Linacre* had appeared nine years earlier (in 1891), written after the preface to *Galeni Pergamensis de Temperamensis Thoma Linacro interprete*.

The FitzPatrick Lectures (delivered in 1903) on English medicine in Anglo-Saxon times were published by the Clarendon Press. The second series of the same lectures (delivered in 1904), on "Gilbertus Anglicus" and "Ricardus Anglicus," and the Teaching of Anatomy in the Middle Ages, he was preparing for publication at the time of his death.

He wrote in Sir T. Clifford Allbutt's *System of Medicine* the history of medicine in modern Europe.

Besides all this, Dr. Payne contributed articles on the "History of Medicine" to the *Encyclopaedia Britannica* and a large number of lives to the *Dictionary of National Biography*, fifteen being in the letter "A" alone. Dr. Payne's addresses before different societies (and they were also numerous) were always interesting, full of suggestions and of information. Among some of the most noteworthy is that given before the Pathological Society on the "Morbid Anatomy and Pathology of Chronic Alcoholism." In this he gave a history of the subject from the first recorded case (one of cirrhosis of the liver, in 1626) down to recent times, and mentioned that Harvey began the study of its morbid anatomy, but unfortunately all his papers on the subject were lost. Another interesting address was that on the "Herbarius" and "Hortus Sanitatis," read before the Bibliographical Society in 1901. He also gave one on "Tuberculosis as an Endemic Disease" and another on "The History of Epidemiology" before the Epidemiological Society.

This sketch of Dr. Payne's life, which has been drawn from many sources, gives only a very inadequate conception of the man and his work. Johnson says the business of a scholar is to "talk in private, to think in solitude, to inquire, and to answer inquiries" Dr. Payne was certainly a scholar. As Congreve says of Dryden, it might also be said of him, "As his reading had been very extensive, so was he very happy in a memory tenacious of everything

that he read. He was not more possessed of knowledge than he was communicative of it: but then his communication was by no means pedantic or imposed upon the conversation, but just such and went so far as by the natural turn of the conversation in which he was engaged, it was necessarily promoted or required."

It is also true that he was "of a nature exceedingly humane and compassionate." "His friendship, when he professed it, went beyond his professions."

Notwithstanding his devotion to the care of the library for which he worked and over which he so long presided, he was ever ready to assist from his vast store of knowledge those who sought his advice, and the Library of the British Medical Association is indebted to him personally for fine folio copies of Hippocrates, *Opera Omnia* (Charterius), thirteen volumes in nine, 1679, and Morison, *Plantarum Historiae*, 1680–1699, and other volumes.

There is in the reading room of the College of Physicians a portrait, by Sargent, of Dr. Payne, taken just before his retirement from the office of Librarian to the College.

Sir R Douglas Powell writes: Dr. Payne was a man of singularly gentle and lovable nature, and the respect in which he was held by the Royal College of Physicians for his learning and fine literary qualities was associated with great personal esteem and affection. He was possessed of that love for the archaic in literature and that zest for hunting up ancient works and first editions which rendered him a worthy analogue of Davy Wilson, that archtype of book lovers so amusingly described by Mr. Oldbuck in *The Antiquary*. Although he conspicuously lacked the dusty habits and greed of gain characteristic of the original "Snuffy Davy," he had his "scent of a slow-hound and the snap of a bulldog" for anything of value in literature, and there was no one who more enjoyed a good find and subtle bargain in the form of an old book for the College library. He was, moreover, generous in many personal gifts to the library. Dr. Payne, during my presidency, instituted the plan of arranging a selection of the literary treasures of the College for inspection after the quarterly College Club dinners; these are greatly appreciated, and have increased the popularity and social interest of the dinners. The Fellows of the College and his many other personal and literary friends will greatly miss Payne's charming personality, but all their recollections of him will be sweet and pleasant memories.

Professor Osler writes: The dominant feeling in the minds of many of us is not so much regret at the death of our dear friend Dr. Payne—for had he not reached the Psalmist's limit?—but a deep sense of the tragedy of the extinction in the grave of so much sound learning. For Payne belonged to that small group of men in the profession of this country who not only possess an interest in the history of medicine, but the scholarship necessary for fruitful work at the records. In our generation he was the worthy successor of Adams, Greenhill, and Ogle—the last named happily still with us. Practical men who, like myself, dabble in these subjects as a pastime, owe an immense debt to these experts who maintain in the profession the fine traditions of the scholarship of Linacre, Caius, and Freind.

Dr. Payne's ambition was to see the story of the evolution of British medicine worthily presented. In his first Fitz-Patrick Lectures, 1903, he dealt, as no one else could have done, with the Saxon period, and in the second series, 1904, with the Anglo-Norman period. It is to be hoped that he has left the MS of the last series in a state fit for publication, as a companion volume to the first, as he had spent an extraordinary amount of labour in working out the history of Ricardus Anglicus and Gilbertus Anglicus. Dr. Cholmeley has in hand John of Gaddesden and his times. D'Arcy Power has recently given us the results of his valuable studies on John Arderne. Dr. Norman Moore has dealt with several aspects of medical education in the Middle Ages, and in numerous monographs and lectures, many by Dr. Payne himself, we have had presented the story of British medicine in Tudor and Stuart periods. Dr. Payne had made a special study of Sydenham, and his volume in the *Masters of Medicine* series is a model of careful biographical study. One of the great pleasures of his last illness was the Grangerizing of a copy of this work, extended into two large quarto volumes; and a pleasant memory of my last visit, after the Caius dinner at Cambridge, was the delight with which he showed me these beautiful volumes. A keen collector, his splendid private library bears testimony to a judgement ripened by long experience, while his generous gifts to the college showed that his mind kept pace with his riches. My first acquaintance with Dr. Payne takes me back to 1873, when he was interested in the Medical Microscopical Society, to a meeting of which, after a pleasant dinner, he took me one evening, and where I read (with many vasomotor accompaniments) my first scientific paper on the action of atropine on the white blood corpuscles. From that time, by correspondence at first, and then during my frequent visits to London, I came to know him intimately as a friend, and to appreciate his great work as a man and as a ripe and acurate scholar.

Mr. Horace Malkinson Barlow, Assistant Librarian, Royal College of Physicians, writes: In the lamented death of Dr. Payne medical science, history, and bibliography are deprived of a warm and loyal friend. With the various phases of his professional career, which was one of remarkable activity and success, the writer is incompetent to deal, but with Dr. Payne as historian and scholar, bibliographer and librarian, the following imperfect appreciation is concerned. It is indeed difficult to give any brief description of a man of such varied interests and attainments, and the writer is painfully conscious of his limitations in dealing with the life of one whose wide literary culture and inborn love of learning have been a source of inspiration and pleasure. To Dr. Payne, as Harveian Librarian of the Royal College of Physicians, it has been the writer's privilege and honour to serve as assistant for the all too brief period of three years, but from one who has profited by his wide knowledge of books and erudite scholarship these few impressions, it is hoped, will be received with indulgence.

Dr. Payne's services to the history of medicine can hardly be overrated. The reputation for scholarship and historical research which he made at an early period in his professional career has more than been confirmed by his medico-historical works. His life of Linacre, a most scholarly contribution to Renaissance biography, prefixed to the translation of Galen, *De Temperamentis*, is one of many proofs that he, like Linacre himself, was "possessed from his youth till his death by the enthusiasm of learning." With a profound knowledge of the great masterpieces of literature, scientific as well as classical, he illumined and enriched the minds of all who had the good fortune to seek his help and advice. He was fully conscious of the great principle that in every literary and scientific line of work he who makes use of the experience of his predecessors both saves most time and makes most progress. "No kind of knowledge has ever sprung into being without an antecedent, but is inseparably connected with what was known before." For the classic lines of Goethe no writer had a greater veneration:

> In dem Vergangnen lebt das Tüchtige
> Verewigt sich in schöner That.

To him these words were a doctrine, and many were the ways in which he sought to bring this doctrine a greater recognition. It is to be seen in his watchful and incessant care over the interests of the beloved library of his college. No work of a permanent historical interest would be cast aside without receiving the utmost consideration, and none would be added to the treasured collection until it had gone through a process of critical examination. Dr. Payne was of the true type of historian. His medico-historical studies reveal his love of the past, which, he says, is worthy of our study, and ever more so the further we advance. By these studies Dr. Payne has rendered a signal service to medicine, and for this service he has been and will continue to be held in grateful remembrance. These can only be referred to briefly. His History of Medicine in the *Encyclopaedia Britannica*, and his many medical lives in the *Dictionary of National Biography*, are pieces of elegant writing and sterling worth. In 1881 appeared his facsimile edition, already mentioned, of Galen, *De temperamentis et de inaequali intemperie libri tres, T. Linacro interpr.*, with his masterly life prefixed. In 1894 he edited William Boghurst's *Loimographia: An Account of the*

Great Plague in London in the Year 1665, with an introduction giving an account of the author, a description of the manuscript, which had hitherto remained unpublished, a critical estimate of the treatise and of the plague literature of the period, and a short general history of plague in England. His *Life of Sydenham*, 1900, a biography constructed from original sources, is one of the most readable, and certainly one of the most scholarly, volumes which have appeared in the Masters of Medicine Series, and for the task of writing this no one was more eminently fitted than the author. In October, 1896, he was entrusted with the honourable duty of delivering the Harveian Oration. For this he selected as his subject *The Relation of Harvey to His Predecessors, and Especially to Galen.* This important contribution to the history of medicine was published the following year. The article on the History of Plague in the *Quarterly Review*, 1901, was also from his pen.

In 1903 Dr. Payne was appointed first FitzPatrick Lecturer to the Royal College of Physicians. With his accustomed modesty, he expressed the wish that his eminent friend Dr. Norman Moore, to whom the conception of the lectureship and the plan under which it is to be carried out are due, had been appointed in his stead. The outcome of these lectures was a volume entitled *English Medicine in the Anglo-Saxon Times*, 1904, a learned work, like his life of Sydenham, full of original research. For some idea of the thoroughness with which he prosecuted these investigations, and of the difficulties attendant on the production of a treatise of this type, we turn to the introduction: "When we inquire into the state of medicine among ancient peoples in any bygone age, there are several sources of information which we have to examine. We have to inquire what general history and literature tell us about the medical profession, since we assume that there have always been doctors of one kind or another. We ask whether any laws are still extant showing the relations of the profession to society. Besides written documents, we search for monuments or inscriptions, often more trustworthy than books, bearing on the subject. We examine contemporary works of art for representations of medical scenes or personages. We look over the material antiquities preserved in museums, such as weapons, instruments, household gear, to discover surgical instruments as evidences of the state of medical and surgical art in those periods. Finally, more important and more copious in the supply of information than all these put together, we examine the literature of medicine itself, for where this is wanting, we can form but a very inadequate notion of the state of medicine at any particular time." These, mainly, were his authorities, and when we remember that the Anglo-Saxon depositories of learning—the churches and monasteries throughout the land—were at one time or another pillaged or burnt by the heathen invaders, there can be very few MSS. preserved to us for direct investigation. Indeed, the number of MSS. of the period in existence do not exceed a score. The most important of these is the "Leech Book of Bald." This, along with the Anglo-Saxon translation of the *Herbarium* of Apuleius Platonicus, and the Greek treatise *Peri Didaxeon*, the only existing MS. of which belongs to the twelfth century, are dealt with exhaustively. In 1904 Dr. Payne again delivered the FitzPatrick Lectures. These appeared in abstract form in the British Medical Journal, and treated of (1) "Gilbertus Anglicus," and (2) "Ricardus Anglicus and the Teaching of Anatomy in the Middle Ages." At the time of his death he was engaged in completing and extending them. It is fervently to be hoped that he had proceeded far enough to allow the work to be published.

Well known as a scholar and historian, Dr. Payne was no less famous as a bibliographer. His knowledge of early English medical works and of the various schools of botanical illustration, both English and foreign, was extensive and profound. Indeed, among bibliographers of his own class he stood *facile princeps*. With the writings of Dioscorides, Fuchs, Matthioli, Cesalpino, Gesner, Dillenius, Lobel, and Dodoens, and of all the great botanists of our own country he had an intimate first-hand acquaintance. One of the most distinguished members of the Bibliographical Society, and an occasional contributor to its *Transactions*, he delighted his fellow members with two of the most learned disquisitions on the early history of herbals that have ever been penned—and, indeed, in recent years the only two works of any importance on the subject. One of these, *On the Herbarius* and *Hortus Sanitatis*, which appeared as a separate work in 1901, was a successful attempt "to describe the earliest printed books in European literature devoted to the illustration of natural history; to fix the date and order of the several works known by the names of *Herbarius* and *Hortus Sanitatis*; and to show their connexion one with another, and with some other works of the same class." The patient, laborious, and exhaustive research which the composition of this essay involved must have been enormous, as the materials were mainly derived from actual inspection of the works themselves. And, as some of the editions were not accessible in this country, the treatise shows Dr. Payne's intimate acquaintance also with standard bibliographical works, such as Hain, Panzer, Pritzel, Proctor, Choulant, and others. To the second paper, which has not yet been published, the writer had the pleasure of listening, and also of inspecting the unique collection of early Herbals which were brought from Dr. Payne's own library at New Barnet to illustrate the subject. This paper was received with enthusiasm and astonishment. The foremost bibliographers of the day who were present at the meeting, and who are in the habit of following up each discourse with learned and abstruse discussions, were unable to make any material additions to the subject. All were loud in their praises of Dr. Payne's mastery of the subject. For these two pioneer works the medical bibliographer of the future must ever feel grateful.

It is the business of the true bibliographer to deal with editions, peculiarities, title pages, colophons, printers, dates, types, places, sizes, illustrations, and collations, and with all these, with the possible exception of types, Dr. Payne was concerned. As an example of the thoroughness with which he prosecuted his inquiries, of his sound critical judgement in determining the relations of one copy to another, the *Herbarius* of 1484, the first work printed in Germany with woodcuts of plants, may be taken. For a long time the Venice editions gave rise to the error of attributing this work to Arnold de Villa Nova, a physician of the thirteenth century, who never wrote any such book. Here is Dr. Payne's explanation of the error. "In the original preface names of Arnold de Villa Nova and Avicenna are quoted, which induced the printer of the Vicenza edition of 1491 to place on his first leaf a large cut of these two philosophers with their names underneath. In the edition of Venice, 1499, these figures are wanting, the printer apparently not possessing the block, but the names were allowed to remain, and thus appeared to be those of the authors; or, the name Avicenna being regarded as a sort of title, it appeared in the misleading form given by Hain—'Arnoldus de Villa Nova de virtutibus herbarum seu Avicenna.' The error of attributing the work to Arnold is peculiar to the Latin editions printed in Italy, and appears to this day in the catalogues of Italian booksellers."

For many years it was Dr. Payne's delight, at the college dinners to arrange small exhibitions of rare and interesting books taken from the shelves of the College Library, and on these occasions one could never enter the Great Hall without finding a little band of book enthusiasts surrounding a table case, listening with interest, profit, and pleasure to the masterly expositions of obscure points in the authorship, printing, and publication of the various works exhibited. His catalogue of the numerous MSS. in the Library of the College is a model of neatness and accuracy, of patient and painstaking industry. In all his bibliographical pursuits it may indeed be said of him: "Nihil tetigit quod non ornavit." Every line bears the stamp of scientific inquiry.

The loss which the Royal College of Physicians has suffered by his death is difficult to estimate. In 1899 he succeeded Dr. Munk as Harveian Librarian, and for more than ten years he held the office with unceasing faithfulness and devotion. Having retired from active practice, he found the work thoroughly congenial to him. Dr. Payne was the ideal type of scholar-librarian. As the later years of his life were occupied in literary work and historical research, one wonders how so much of his valuable time could have been given to the various details in the active administration of the library. But nothing

was ever too great or too trivial for his attention. Day after day found him at work probing into the obscurities of some dead and forgotten manuscript, or collating some old and rare edition with all the care and accurateness of the scientific bibliographer. His zeal for the acquisition of old historical works and the manner in which his profound knowledge of the College and its associations led him to detect almost by intuition as it were the various items of importance in the numerous catalogues of second-hand booksellers were remarkable. His attention, even to the smallest detail in the equipment and organization of the library system, was never divided, and his intimate acquaintance with almost every work of interest in the vast collection of old and rare medical works in the College Library testify to that thorough and whole-hearted manner in which he fulfilled his duties in every phase of his busy life. Volume after volume, in which one finds such phrases as "editio princeps" and "liber rarissimus" lightly and carefully pencilled on a fly-leaf or inside cover, have come with remarkable frequency before the writer's notice, thus showing that at some period or other during his term of office probably every book had passed through his hands.

Dr. Payne had the interests of the library dearly at heart. Elected to the office in January, 1899, he set to work almost immediately to increase its utility by introducing a number of reforms. He found that the increase of the collection fell far short of what it should have been, whether by presentations or purchases, and his suggestion to the Library Committee that Fellows of the College be requested to present copies of their works was embodied in a resolution passed at a subsequent comitia. He studied the convenience of readers with a sympathy as earnest as it was practical. Numerous alterations in the arrangement of the books were effected. All reference works were collected together, as they should have been, and placed within the reach of readers in the reading room. The general state of the library was reported on, and various periodicals of a non-professional character were discontinued, and others more in keeping with the nature of the library were acquired. At his instigation the separate catalogues of the various bequests were incorporated into one general alphabet, thereby increasing the facilities for reference work. In addition to these improvements he caused a subject index to be prepared of all books published since 1880, and a matter of far greater moment was his drafting of rules to safeguard the priceless literary treasures the library contained. On his recommendation certain classes of books were not allowed to be taken away. These included all books before 1500, if printed abroad, and all before 1600 if printed in England, books valuable for their associations such as first editions of the works of Caius, Harvey, Sydenham, and others, or those with important inscriptions and autographs, and manuscripts of every age. These decrees revealed the spirit of the true librarian and bibliographer, whose duty it is to preserve these "monuments of antiquity" from the hands of careless readers. The college library was enriched to a considerable extent, not only by his constant and assiduous attention to the catalogues of second-hand booksellers, both English and foreign, but also by his own numerous gifts. Many choice examples of the typographic art were taken from his own private library to fill up gaps in the shelves of the College. Among these may be mentioned exceedingly rare and valuable works, such as Galen, *De Temperamentis. T. Linacro interpr.*, 1521, from the press of John Siberch, the first Cambridge printer; Galen, *De Naturalibus Facultatibus*, 1523; *De Pulsuum Usu, T. Linacro interpr.* [1522]; and *De Motu Musculorum, N. Leoniceno interpr.* [1522]—all from the famous press of Richard Pynson, one of the earliest London printers. When it may be safely asserted that works such as these rarely, if ever, find their way nowadays into the sale rooms, it must be apparent with what degree of self-denial he stripped his own unique collection of these priceless treasures to enrich the library of the College. Other gifts were first editions of Servetus and Sydenham, the 1532 edition of Linacre's Latin grammar, and the second printed Greek text of Hippocrates, Basle, 1538.

Even the smallest details were the object of Dr. Payne's patient attention. In the library he worked, the scholar librarian and bibliographer, imparting to all who sought it, in the spirit of the true philanthropist, without noise or display, the knowledge he accumulated during long years of intellectual activity and persistent study. His severe accuracy and desire for absolute perfection—although none was ever more willing to own a mistake—his forbearance with the faults and failing of others, made him a model worker, despising no suggestion, evading no difficulty. This inestimable quality is to be found in the opening lines of his Harveian Oration. All progress was to him the final resultant only of all the endeavours of men in past times to penetrate the secrets of Nature. "When," he writes, "we look back upon those strivings, they often seem perverse and contradictory; men at certain periods seem to have gone backward rather than forward; we are struck less by the few grains of truth than by the great mass of what we call errors. But let us speak gently of those errors, and call them rather imperfect truths, for, in science at least, the truth of to-day is error to-morrow." This is the spirit in which he laboured, in which he criticized and corrected the work of his pupils and subordinates. A few months before his death ill-health caused him to resign his office, and for his distinguished services he was honoured with the title of Emeritus Harveian Librarian. He is succeeded by his learned friend and Fellow of the College, Dr. Norman Moore.

As a collector of books, not in extent, but in the choiceness and rarity of his copies, Dr. Payne follows in the steps of Mead, Radcliffe, Askew, and other great bibliophiles. His collection of Incunabula and rare first editions of the works of early English medical writers in the old historic founts of the early English printers must be the envy and delight of every antiquarian of moderate means. The shelves in his library at New Barnet are packed in double rows with unique specimens of early typographic art. And his collection of Miltoniana, including also first editions of the rarer works of the great poet, would be the boast of any institution. And how great was the delight with which he produced his coveted tomes for the inspection and admiration of his visitors and friends! The few occasions on which the writer has been privileged to spend amidst such a brilliant assembly of choice and valuable works have indeed been "crowded hours of glorious life."

In his home life Dr. Payne was probably seen at his best. With a mind well balanced, full of a knowledge of the best men and things of the world, always ready to yield to the opinions of those whom he considered better informed than himself, ever eager to listen to the conversation of those beneath him; genial, kindly, and sympathetic, a profound scholar, without any signs of pedantry, utterly devoid of self-interest and self-seeking, no one more genuinely humble, he endeared himself to all with whom he came in contact. His death we deeply mourn.

Is it not written, "By their deeds ye shall know them"?

Dr. H. Selfe Bennett writes: I am grateful for the opportunity afforded to join my voice in the chorus of eulogy that must follow the news of the death of J. F. Payne. We are bidden to "speak no evil of the dead," but in this case it would be impossible so to do, for he had no enemies who could disobey this charitable injunction. It is not mine to sing of his professional attainments; these will be dealt with by abler pens than mine. It is concerning his personal qualities I am permitted to speak of that which I know; for, although, whilst all members of the profession who were privileged acquaintances will mourn his loss, those of us—and they are many—who were proud to count themselves amongst his friends will sadly miss his advice and companionship.

It falls to the lot of but few men to arrive at that Corinth of affectionate admiration and esteem reached by him over whom the grave closed on Saturday last. That this goal was attained by Frank Payne, as his familiars called him, was evidenced by the distinguished company that assembled to render homage on that last occasion on which the Royal College of Physicians, his university and hospital colleagues, the Local Government Board (all fully represented at the funeral) could show the respect in which he was held. How came it that he whom his brethren delighted thus to honour obtained such tribute? The answer is undoubtedly by honest merit and high character. It is true that Payne was an eminent and exceptionally learned man, but if he had used his mental

attainments for purposes of self-advertisement and aggrandisement his learning alone would certainly not have produced this effect upon his fellows.

It was the natural modesty of true greatness which prevented any glitter or parade of his learning. There is an illustrative story told of him many years ago, that one wet Sunday, in Switzerland, a young lady came into the salon of the hotel, and found a semicircle round Payne, who was distributing his golden store of information to any who cared to listen. Her comment at the close was: "To think that I sat next to him at *table d'hôte* for *three* nights, and all he said was 'Please pass the salt?'" The story is probably true; at any rate it demonstrates what has been already said—namely, that there was an entire absence of any attempt to shine in conversation, or of self assertion. Yet you had only to ask and it was given to you; you had, as it were, simply to scratch the soil, and the treasure was apparent. If you went to Payne for information on *any* subject, whether it might be pathology, Chinese ware (not music), furniture, binding, medical and other history (ancient or modern), to mention only a few matters on which he was an authority, you would be rewarded abundantly with full measure, running over. If you were in his library, he would get down from his shelves the book from which his knowledge had been acquired, not for the purpose of refreshing his memory—which was extensive and peculiar—but to confirm what he had already told you. Whilst you sat in an old Chippendale armchair he would discourse at large on any matter of interest, interspersing his remarks with an occasional "What?" after the royal manner attributed to George III. He seemed to be of Dr. Johnson's opinion, "All knowledge is of itself of some value. There is nothing so inconsiderable, that I would not rather know, than not." Yet Payne was no mere bookworm, no dry-as dust, no dictatorial pedant, nor was the so-called "Oxford manner" at any time in evidence. As to his "bedside manner," it is possible that it was not impressive, but if so, the reason, partly at any rate, was because he knew so much that his knowledge included that of his own ignorance and mental limitations; partly also, no doubt, because his bodily presence was not imposing; there was, in fact, nothing at all "imposing" about him—his learning, indeed, was colossal, though his physical structure was not. This, however, did not preclude his being what the ladies call "a dear," for he was both a lovable and a clubable man. He had, moreover, the saving grace of humour which seldom accompanies profound learning. He enjoyed a joke or a good story as much as any one; in other words, he was not in any way dehumanized by mental excess.

Some years ago Payne expressed his pleasure with a present he had received from a friend—namely, a copy of *The Gold-headed Cane*, a little book published in 1854, written by Dr. MacMichael, containing the history of the celebrated physicians who had owned the cane which is now in the library of the Royal College of Physicians; this copy was "Grangerised," or extra-illustrated, with a number of portraits and views of persons and places mentioned in the text. He was still further pleased, in his capacity as Harveian Librarian, when a similar copy of the same book was presented to the library of the College. These gifts probably engendered in him the desire which he subsequently developed to illustrate in the same way his life of Thomas Sydenham, which he had written and which had been published by Fisher Unwin in 1900 as one of the series of Masters of Medicine. To this end he had this crown octavo work enlarged by "inlaying" to large quarto size and then divided into two volumes, with specially printed titles. In these volumes were inserted and subsequently bound up 120 fine portraits and views. About Whitsuntide of this year he wrote to the man who had so successfully inoculated him with the virus of his hobby. "I am making an index to the additional plates of the Sydenham. . . . The total number is nearly or quite equal to the number of leaves in the book," and shortly before he took to his bed in his final illness he had the satisfaction of being able to show to his friend, Professor Osler of Oxford, the completed work handsomely bound in morocco. This pursuit had doubtless been a source of much pleasure to him since his impaired health necessitated retirement from active work. Yet he still continued until within a few weeks from the end of his labours to take an active interest in all matters that related to science, medicine, and literature. Although he attained the three score and ten years of the Psalmist he never appeared to be an old man; many younger gray-haired men looked his seniors, but his strength was abated, and, realizing that his life's work was finished, he faced the common fate with courage and philosophy: he became a good patient as he had been a good doctor; happy in his domestic relationships, he left a widow, son, and daughters to mourn his loss; his friends and the whole profession are the poorer for his death. Our friendship dates back close upon forty years, but it was not till his retirement to "the northern heights" that he constituted my P.S.A. society, where I "sometimes counsel took and sometimes tea," and thus became more intimate with him. Medicine has ever been recognized as a learned profession, and Payne was emphatically a learned physician; there are doubtless others of whom we are proud, but the type which he so well represented in these days of depreciation of classical training, is unfortunately getting rapidly "small by degrees and (?) beautifully less." Nevertheless, there be some still amongst us who do not recognize the new style as necessarily an improvement upon the old, who do not always and altogether believe in the adage, "Uno avulso non deficit alter." The race may replace him, but those who loved him cannot.

In a letter to Dr. Sharkey which has kindly been placed at our disposal, Dr. Payne's son, Mr. BURNELL PAYNE writes:

As to father's domestic and holiday life, you probably know enough of his character to guess what they were like in some respects. He was all his life a great reader, not only in the subjects with which he was immediately concerned, but in general literature, of which he had not only great knowledge but the artistic appreciation. He had also very strongly the antiquarian's interest in books—in rare editions, printing, bindings, etc—and was a great devourer of booksellers' catalogue, being always on the look out for rare medical works. In his younger days he collected china, and he had a great appreciation of all forms of art. He did not go in for games or any kind of sport, but he loved the country and the sea, and for a holiday liked to go away to some quiet country place where he could rest and enjoy Nature. In his younger days he walked a good deal, and from his boyhood he had a great love of natural history; he was always collecting flowers or fossils when in the country. He had enjoyed his garden very much in the last few years, and took a great interest in it.

I hope I have said enough to give you some idea of his domestic life. He had, as you probably know, a wide circle of friends and liked few things better than talking. I should say that with congenial people he was a decidedly sociable man. With us he was always tolerant, genial, and humorous, and so self-effacing and modest that I feel now that when he was alive I never appreciated him enough.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

ABOUT sixty Fellows and Members attended the annual meeting of the Royal College of Surgeons of England, which took place on November 17th. The President, Mr. Henry T. Butlin, was in the chair.

The President made a commentary upon the annual report of the council, an abstract of which was published in the JOURNAL of November 12th, p. 1568, dealing especially with the paragraphs relating to the amendment of the Midwives Act, the regulations with regard to the administration of anaesthetics, and the acquirement of the Odontological Collection of the Royal Society of Medicine. The college had now, he said, the finest odontological museum in the world. It was true that it was upon loan, but if the Royal Society of Medicine desired at any time to regain its possession they would have to reimburse the college for the sum spent upon installing it. The contingency was, he thought, unlikely to arise.

A number of questions were put by Members, chiefly relating to the procedure adopted in removing names from

the college roll, four such having been expunged during the year covered by the report. One or two of the questioners desired to know if it followed in natural sequence that when a name was removed from the *Medical Register* it was erased from their own list? Did the college hold an independent investigation? The President replied that when an accused person held the college diploma his case was most carefully considered. It happened sometimes—although, naturally, such instances were rare—that the College Council did not agree with the finding of the General Medical Council. On the other hand, they had on occasion availed themselves of the information contained in the shorthand notes of the General Medical Council's inquiry. Personally, he felt it a tremendous responsibility to deprive a man of his diploma, and he assured the questioners that the utmost care and patience were exercised in the matter.

Mr. Joseph Smith, J.P., then moved:

> That this twenty-sixth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council, which (as now constituted) does not represent the whole Corporation; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.

He said that, although the petition of the members for representation on the Council had been presented year after year, it had been met persistently by a refusal unsupported by argument. To him it was astonishing that the councillors, "many of whom he knew to be right-minded men," should become so demoralized by their office as to maintain the present anomaly. He appealed to the President to allow his term of service to be marked by the bestowal of this tardy justice.

Dr. S. C. Lawrence, in seconding the resolution, condoled with the Council upon the poor results that had followed from opening to women the examination for diplomas. He had previously elicited that there was but one woman Member of the College at the present moment. He also pointed out that the proportion of Members to Fellows, which was fifteen to one in 1888, was about eleven to one in August, 1910. The Council were apparently working towards a millennium in which their constituents would be simply the Fellows and one Member, and that a lady. He criticized certain expenditure—the donation of 100 guineas to a neighbouring church, an item of £240 for a dinner to celebrate the jubilee of Licence in Dental Surgery—and said that the Council which thus spent the money of the body corporate, while denying to the members a voice in the management, "ought to be covered with shame as with a garment, and one hobble-skirt amongst them was totally inadequate." He read a letter, which he said was typical of others received by the Society of Members of the College, of which he was honorary secretary, in which a practitioner wrote that it had become his custom to describe himself as "an 'L.R.C.P.,' leaving out the 'M.R.C.S.' whenever possible."

Mr. F. W. Collingwood said that the constitution of the college was mediaeval, and the attitude of its Council contrary to all principles of equity and good sense. He prophesied for the college the speedy fate of those institutions which failed to assimilate themselves to a new environment.

Dr. W. G. Dickinson caused some amusement by quoting a few sentences from Mr. Butlin's presidential address before the British Medical Association describing the struggle to secure the direct representation of the profession on the General Medical Council: "I would have it (the story of that struggle) printed in large type and set up in every building which is devoted to the service of the Association, that all men may find in it an object-lesson of what can be done by patience and perseverance, by determination and tenacity of purpose." Would Mr. Butlin, he asked, have the story of the reform party of the college engraved on the walls of their own institution?

Sir Victor Horsley asked whether it were not possible, even at that late hour, to give the Members some idea as to the report of the committee which had inquired into the subject? Members were entitled to know the grounds of their exclusion.

The President said that the whole of the report on the subject of council representation was embodied in the report of the Council for 1907.

Sir Victor Horsley said that he was referring to the present report, Section ii, in which it was stated that a special committee advised the Council on the subject in March of the present year.

The President replied that the report of this committee consisted only of the statement made in Section ii of the Council's report. ("Oh!")

Sir Henry Morris said that he would explain. A lengthy statement, embodying a variety of reasons and objections, was published in the report of a few years ago. When the matter arose at the last annual meeting and was referred to a committee, that committee took the whole of the former report into consideration, and inquired as to any new facts or arguments which might justify modification or reversal of the previous decision. They came to the conclusion that nothing fresh had been brought forward, and therefore their report was a reaffirmation of the antecedent finding.

Mr. Collingwood: Will the President tell us whether any voting was taken in the secret conclave upon this subject?

The President (smiling): I think I remember some voting.

A Member said that he would give notice of motion that a deputation be formed to wait upon the Council.

Mr. Smith's resolution, on being put to the meeting, was carried *nemine contradicente*, and the proceedings concluded with a vote of thanks to the President, the sponsors of which were the proposer and seconder of the hostile motion.

Public Health
AND
POOR LAW MEDICAL SERVICES.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Shropshire.—Based upon an estimated population of 243,238, the birth-rate in the administrative county of Shropshire in 1909 was 23.8 per 1,000, the corrected death-rate 13.4 per 1,000, and the infantile mortality-rate 91 per 1,000 births. The reports from the rural districts show that old, dilapidated, and very small houses are common, but that their closure is impracticable, owing to the absence of better accommodation; and similar conditions are to be found in many of the urban districts. Dr. Wheatley points out that where housing accommodation is unsatisfactory, and private enterprise is not sufficient to provide an adequate supply of new houses, the sanitary authority should either itself build dwellings under the provisions of Part III of the Housing of the Working Classes Act, 1890, or the existing houses should be maintained in the highest possible state of efficiency. He urges that this can only be done by a frequent and thorough house-to-house inspection, followed up by action wherever necessary. He further very properly points out that the enormous importance of this inspection as a conservative agency has not been sufficiently realized. An instruction has been issued by the County Education Committee that children who have suffered from diphtheria must not be allowed to return to school until their throats have been declared free from diphtheria bacilli. Two further precautions, in Dr Wheatley's opinion, should be adopted as soon as the machinery at the disposal of the sanitary authorities or the education authority is adequate for carrying them out. These are that all persons living in a house in which there is diphtheria should have their throats swabbed before the house is disinfected, and children from an infected house should not be admitted to school until certified that they are free from diphtheria; and that during the prevalence of diphtheria in a school all sore throats should be notified to the medical officer of health of the district, and the affected children should not be readmitted until he is satisfied, by bacteriological examination or otherwise, that they may do so with safety.

POWERS OF GUARDIANS WHEN APPOINTING MEDICAL OFFICERS.

BUCKRA asks several questions in reference to the powers of guardians when appointing workhouse and district medical officers, and to these questions our collective answer is as follows:

*** We know of no regulation which limits the choice of guardians on appointing a workhouse medical officer to candidates residing in the same district as that in which the workhouse is situated. Guardians are not *compelled* to appoint as district medical officer a resident in the district, but in the event of a vacancy any or all such candidates would be regarded as having a prior claim to that of non-residents. The medical district and not the parish is the area to be considered for all such appointments. All Poor Law medical appointments are subject to the confirmation of the Local Government Board.

PRINCE ALEXANDER OF TECK presided at the Court of Directors of the Royal Sea-Bathing Hospital on November 21st, when the committee reported that the new ward and day rooms were completed, and that there were now a few vacancies for the male patients, but there were 20 female applicants on the waiting list.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

L. R. C. asks whether there is any better astringent local application for chronic internal haemorrhoids than the old ung. gallae c opio.

S. D. C. would be grateful for information of Dr. Thomas Goodman, whose appointment as Physician-in-Ordinary to King George II appears in the *London Gazette*, October 7th, 1727. Dr. Goodman's name does not appear in Munk's *Roll of the Royal College of Physicians* nor in the *Dictionary of National Biography*.

TREATMENT OF FLAT-FOOT.

BODMIN asks for advice in the treatment of flat-foot. He has tried the effect of the Swedish exercise termed "heels raised" which means walking round for a few minutes on the toes with the heels well raised from the ground. He suspects that in some cases it makes the condition worse. He wishes to know whether an arch instep would be of use as a curative agent.

COFFEE.

M.D., D.P.H. writes: I should like to know whether it is generally recognized that Java is less deleterious to the nervous system than "Mocha" coffee. That has been the experience in my own circle, and I have recently heard such an assertion made by my cook, a German, as if it were a well-known thing. The Java has another advantage—it is much cheaper.

INCOME TAX.

ONE IN DIFFICULTY writes: A., B., and C. are partners. The profits of the practice are divided as follows: A. receives one-half and B. and C. each one-quarter. C. leaves the partnership on September 30th, 1909, and his part of the practice is sold to D., while A. and B. continue in partnership and make a new agreement whereby A. receives two-thirds of the profits and B. one-third. In assessing his income for income tax, B. in April, 1910, sends in Form No. 11, calculating his profits on the average of the three years ending March 31st, 1910—that is, on a quarter share of profits received from April 1st, 1907, to March 31st, 1908; from April 1st, 1908, to March 31st, 1909; from April 1st, 1909, to September 30th, 1909; and one-third share of profits received from October, 1909, to March 31st, 1910. In October, 1910, the surveyor of taxes informs B. that "in estimating the averages it is not a question of averaging the income of A. and B., but of averaging the profits of the practice, and, in arriving at the average, the actual profits of the practice, including C.'s profits, must be taken for the three years 1907, 1908, and 1909, and that average will be a figure for the assessment for 1910–11, and this assessment will be divisible as between A. and B., in accordance with the profits of each under the arrangement." The surveyor sees that this method would be disadvantageous to A. and B., and therefore wishes their income to be assessed on the actual profits received by each partner during the first year of the new agreement—that is, from October 1st, 1909, to September 30th, 1910. This last method, though fairer than the previous one, yields a larger figure than the method adopted by B. What should B. do?

*** The method proposed by B. is not in accordance with the system of the Income Tax Acts, and B. cannot insist on its adoption. He will be well advised to accept the solution proposed by the surveyor.

DERMATITIS EXFOLIATIVA.

R. F. O. writes: I have a somewhat serious case of dermatitis exfoliativa, of a relapsing character. It has supervened on a sharp attack of influenza, five weeks since. In that five weeks he has had three attacks of the desquamation, each attack preceded by rigors, prickling heat of the body, headache (left side), dimness of sight, temperature rising to about 102° and malaise, with very febrile urine. He got over the influenza as well as most cases do, and got up. He was treated with sodium salicylate, and after getting up with an acid mixture with quinine, and as there was some irritation of the skin, arsenic with it. He did well for a few days, and then developed the first attack, which did not seem to be so very severe, but each one has been more and more severe. The body was and has been before each attack red all over. I cannot see any other diagnosis but that of dermatitis exfoliativa. I am treating the attacks as they recur with a diuretic mixture, rest in bed, and careful diet, and no stimulants.

ANSWERS.

R. H. S.—We have made inquiries of a number of bacteriological experts and others, but have failed to trace any description of a serum treatment of diabetes mellitus. This disease has, we believe, been treated by means of a vaccine on one or two occasions, but no published accounts of the form of case or of the results can be found.

F. D.—Our correspondent will find details of the treatment as to which he asks for information in Professor P. W. Latham's *Pathology and Treatment of Rheumatoid Arthritis* (Deighton, Bell and Company, Cambridge, or George Bell and Sons London, price 1s. 6d.).

IMMUNITY.

SOCIOLOGIST.—A simple treatment of a highly complex and controversial subject like the modern doctrines of immunity does not exist, but some of the works are less technical than others. Among the simplest and fairest general surveys with which we are acquainted, we should place Dr. d'Este Emery's book, *Immunity and Specific Therapy* (Lewis, 1909), and the chapter on immunity in Clifford Allbutt and Rolleston's *System of Medicine*, written by Professor Ritchie, among the first and best.

RHEUMATOID ARTHRITIS.

DR. JAS. P. BOLTON (Nottingham) writes: "Arthritis" would find the remedy he needs for rheumatoid arthritis in high-frequency current massage.

DR. F. P. ATKINSON (Bexhill-on-Sea) writes: In reply to "Arthritis," allow me to suggest the application each day of Chili paste, and over this a wet compress (changed night and morning). This is a favourite method with hydropaths, and I think he might also try with advantage Naline's "Histogenol," which is a combination of nucleopsarine and disodic methylarseniate. It may be obtained of Messrs. Roberts and Co., New Bond Street.

Dr. H. J. THORP (Ipswich) writes: I recommend the following treatment:

℞ Am. chlor.	...	...	...	gr. xv
Pot. iodi	...	...	...	gr. iij
Ac. carbol.	...	...	...	gr. 1½
Sp. menth. pip.	...	...	...	gr. v
Aq. chlorof.	...	...	...	℥j
Glycerin.	...	...	...	℥ss

M. T. d. s. in water. Sulphur as an aperient.

℞ Guaiacol	...	...	...	℥j
Tr. iodi	...	...	...	℥vij

M. Ft. lin. To be painted on the affected joints night and morning.

LETTERS, NOTES, ETC.

ANEURYSM OF THE AORTA.

IN a paper by Dr. Jordan on the Roentgen-ray appearances of intrathoracic aneurysm, which appeared in our issue for November 19th, a mistake occurred at the bottom of the second column of p. 1576. By the dropping out of a letter the word intended to be used, namely, "futility," was converted into "utility." The paragraph describes a case in which a pulsating abdominal tumour (which prima facie might have been connected with the liver) had been diagnosed as an aneurysm of the abdominal aorta. An *x*-ray examination showed that this diagnosis was correct, but that the thoracic aorta was uniformly dilated throughout its entire length. The futility of surgical treatment of the abdominal condition was therefore placed beyond doubt.

ERRATA.

IN a leading article on the Dresden Hygiene Exhibition which appeared in the BRITISH MEDICAL JOURNAL of November 19th, reference was made to Lord Lytton as "Chairman" of the Board of Trade. Though this inadvertence is so obvious as scarcely to require correction, we desire to apologize to Lord Lytton for the mistake. He should, of course, have been described as Chairman of the Royal Commission for the International Exhibitions of Brussels, Turin, and Rome.

In the article on "Miner's Nystagmus" by Mr. H. S. Elworthy, F.R.C.S., in the JOURNAL of November 19th, p. 1378, col. 2, line 13, the word "not" was inadvertently omitted. The sentence should read: "4. *Mixed.*—An alternating lateral and vertical nystagmus in irregular sequence, producing not rotation but irregular movements." This is intended to describe those cases in which the movements of the eyes are in every direction, without any orderly sequence.

We regret that, in the leaderette on "Pseudo-Hourglass Stomach," in the same issue of the JOURNAL, p. 1648, Dr. Arthur F. Hertz should have been referred to throughout as "Dr. Herz."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

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Presidential Address

ON

PROPHYLAXIS IN OBSTETRICS.

DELIVERED AT THE OPENING OF THE SESSION OF THE GLASGOW OBSTETRICAL AND GYNAECOLOGICAL SOCIETY, OCTOBER 26TH, 1910.

BY

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SINCE my election, but especially within the last few weeks, the idea has gradually taken form in my mind that I might do the society some service, as I certainly have greatly profited myself, by grouping together and illustrating some outstanding and important ideas under the central heading of Prophylaxis in Obstetrics. At the outset, when I began to look through the index of subjects in the various medical journals and works on obstetrics for help in the development of my subject, I was somewhat dismayed to find an almost complete absence of reference in any of them to the word "prophylaxis," or even to its more common equivalent "prevention." I have been obliged, therefore, in the comparatively short time at my disposal since it was decided that I should give an address at the first meeting of this present session, to depend almost entirely on my own mind and my own experience for the considerations that I have now to bring before you.

DEFINITION.

Prophylaxis is defined in the ordinary English dictionary as "the mode of defending the body against disease."

In relation to obstetrics we may define it as the prevention of complication in relation to childbirth, meaning the prevention of complications in the course of pregnancy, during the process of parturition, and throughout the puerperium until complete convalescence has been again established. Difficult as it has been to find references to the word in our obstetrical literature, it is the central principle of the art of obstetrics, the ideal towards which the true obstetrician must constantly strive, the persistent effort he must always make to maintain the physiological character of childbirth. It would be impossible in one comparatively short address to traverse the whole field of our subject, but I can give some indication of its scope.

HEREDITARY INFLUENCES.

I think it is Oliver Wendell Holmes who somewhere says that, if we want to cure some diseases of the present generation, we must go at least two generations back. I do not propose, however, to take much account of hereditary influences, though we must not entirely forget them even in such an inquiry as the present. Antenatal pathology is a fascinating field of study, and a whole address might with profit be devoted to the interesting facts of such study, or a night given to their discussion. As yet prophylaxis, as applied to this particular period, is probably limited to the prevention of the pregnant woman from exposing herself to any of the infectious diseases, as her immunity, acquired by previous attack, does not extend to the unborn infant. In an epidemic of small-pox it might be advisable to vaccinate her to increase the immunity of the infant. If she is the subject of syphilis, she should be treated both for her own and for her child's sake, and, even if the father alone is affected, she should be treated for the child's sake. It is important also to remember that in certain cases where the infant's vitality is reduced in the last month of pregnancy, the induction of premature labour at an earlier date may save a subsequent child. I pay little regard to what has been written about maternal impressions, but it has been established with almost scientific precision that alcoholic indulgence on the part of the mother is seriously prejudicial to the growth and life of the child. I believe, also, that the expectant mother should be encouraged to a cheerful life and the avoidance of mental irritation and excitement and low desires. If we cannot remove such influences, we can at least endeavour to secure that they will not be perpetuated in future generations

THE FUTURE MOTHER.

Motherhood being the most important, though not necessarily the only function of womanhood, I speak of woman from her earliest stage of growth as the future mother.

SAVE THE INFANT FROM RICKETS.

For the proper development of the future mother infancy itself needs to be watched, for it is then that the seeds are sown that provide for us in after-years some at least of the forms of distorted spine and contracted pelvis. Rickets, with its delay in the development of the bony structures and the train of symptoms which so seriously handicap the future mother, cannot be cured in an obstetrical sense. Here, if anywhere, it is prophylaxis or prevention that is necessary, and the nutrition and general hygienic management of the infant have, therefore, a very necessary and important place in the work of such a society as ours. It is one of the signs of the times that the laity is wakening up to the seriousness of our persistent infantile mortality, and the efforts of our municipalities and of unofficial private organizations are already taking effect in a lessened infantile death-rate. In this connexion we look forward with interest to the original communication on "Intestinal Toxaemia in the Infant" promised to us by Dr. Ralph Vincent of London, for our November meeting.

The medical man, and especially the obstetrician, must go further in his efforts, for it is not only the treatment of the weakly and already rickety that must concern him. The weakling infant is too often the forerunner of the unfit mother. The practitioner must concern himself far more with the prevention of the onset of a disease that always cripples and deforms, and it is now a commonplace fact in our knowledge that errors in the nutrition and hygiene of the infant are the main causes of rickety disorders.

GIRLHOOD AND THE APPROACH OF PUBERTY.

It is of great importance to watch critically the future mother's growth into girlhood. I need only enumerate the various points: Feeding—now, as always, important; hygiene, including physical exercises, such as gymnastics and swimming, and sports such as cycling, golf, and hockey; education, involving not only due regulation of the amount of mental work, but also consideration of the proper position and attitude in school life and home study in relation to light, the desk, etc; mode of dress, so as to leave room for play of limbs and body, and save from cramping or displacing organs.

As the future mother approaches puberty she comes to one of the critical periods of her life, and stress deserves to be laid on the special need for care at this time. Lessons should be slackened off. Short intervals of rest should be encouraged.

The girl should be taught the meaning and nature of the change which is about to take place. By this time the simpler facts of reproduction ought to be part of her education. There is room for exercise of prophylaxis in relation to the menstrual function, and in these months and years of its establishment much may be done to secure its subsequent regularity and freedom from pain.

THE YOUNG WOMAN.

The period of adolescence that succeeds the onset of puberty has its own perils. If the young woman belongs to a poor family she has to go to work in a factory or shop, or enter domestic service, and she runs the risk of digestive disturbance from errors in feeding, and of anaemia as a result of this and the confinement and often defective sanitary conditions in which she may be working. These play their part, though it may be a minor one, in handicapping the future mother. The obstetrician welcomes, therefore, and takes his share in the advancement of knowledge of hygiene as to dress, food, etc., the inspection of factories, laundries, and workshops, and the regulation of work and hours.

It is of even greater importance now, if such knowledge has not already been sufficiently communicated, that the necessary amount of information with regard to the points of physiology already referred to should be given.

MARRIAGE.

When marriage is contemplated, or has already taken place, the obstetrician gets nearer the period of life when

he is likely to be consulted, but a healthier public opinion ought to be created, so that for the better exercise of prophylaxis in relation to motherhood his advice may be sought more regularly in these earlier stages of the young woman's life. The importance of this as a routine practice on the part of parents cannot be exaggerated.

From the point of view of prophylaxis some interesting points arise with reference to marriage. I can only allow myself time to mention several that occur to me. The need for correct and reliable information as to the sexual functions, and the proper relation of the sexes, becomes of urgent importance, if not already provided Now, if it has not already been done, the medical examination should be made, so that such abnormalities as bony deformities may be discovered and noted, and occasional abnormalities in the fleshy parts remedied. At the same time the general health can be investigated. This is the time to correct disorders of the reproductive organs that might influence unfavourably the progress of a subsequent pregnancy. The existence of tuberculosis, heart disease, kidney disorders, or syphilis should be ascertained. Endometritis, whether due to ordinary inflammation or of gonorrhoeal origin, should be treated. It is almost a criminal thing that gonorrhoeal infection of a wife by her husband, with its disastrous consequences to her much more than to him, should be of so frequent occurrence.

It should be possible for the woman in poor circumstances to get the same privileges as her more fortunate sister of the middle and upper classes, and the future mother of the race, even if she is poor, should be saved from all forms of labour that are likely to interfere with the production of healthy children when her time comes.

Motherhood.

I have now reached what many will think the most serious part of my subject, that part which is directly concerned with motherhood itself, and therefore with the exercise of prophylaxis throughout this important period of a woman's life.

If prophylaxis has not been complete in these earlier stages of her life which I have tried to trace, we may already discover constitutional conditions or physical deformities that are certain to form complications in pregnancy. There is, therefore, all the more need for constant vigilance from the beginning of her pregnancy onwards to enable the mother to maintain the best of health, and, without undue strain or injury, give birth to normally healthy children that are properly fitted to survive the risks of their infancy.

Let me deal with what remains of the subject under the three natural subdivisions of pregnancy, parturition, and the puerperium. Prophylaxis in relation to obstetrics I have already defined as the prevention of complication from the time of conception onwards through childbirth and the period of childbed and convalescence.

Prophylaxis in Pregnancy.

The objects to be promoted during the course of pregnancy are the maintenance of the mother's health and the proper implantation of the ovum and its subsequent healthy development.

1. As to the latter point, it should be the obstetrician's aim to see that the uterus that is liable to become pregnant is free from disease. Where care has been taken in a previous confinement or after abortion—which is just as serious an experience—to secure freedom from sepsis and complete involution, and where all lacerations have received surgical attention, there is much less likelihood of the occurrence of those chronic inflammations, displacements, subinvolutions, abortions, extrauterine pregnancies, etc, that make the big part of the work in a gynaecological department, and there would probably be fewer cases of accidental and unavoidable haemorrhages than there are.

2. Disordered health in the mother must be corrected. For perfect prophylaxis the mother must be saved from the effects of syphilis and gonorrhoea, the former taking effect in interruption of the course of pregnancy, but always capable of cure, the latter leaving its effects rather on the pelvic organs and ultimately preventing pregnancy, though liable to cause salpingitis as a complication of pregnancy, and, when present at the end of the pregnant condition, liable to injure the eyes of the infant. Tuberculosis also is a serious complication which, while active, ought to debar the possibility of pregnancy, and, if pregnancy has already taken place, should suggest the desirability of its being at once terminated in the interest of the mother. Heart disease complicating pregnancy provides one of the most anxious problems for the practitioner, and yet the obstetrician gets surprising results by the exercise of a judicious prophylaxis displayed in rest, dieting, and suitable medical treatment during the pregnancy and the skilful conduct of labour in relation to strain of the heart. Here also it may sometimes be imperative to terminate the pregnancy early.

3 The acknowledgement of a certain slight amount of digestive disturbance in the form of morning sickness, as an almost constant concomitant of pregnancy in the earlier months, has diverted attention from the fact that even this is due to disturbed digestion and faulty metabolism, and it is highly probable that sufficiently early attention to this would greatly lessen if not entirely stop the occurrence of the more serious forms of pernicious vomiting or hyperemesis gravidarum, the neurotic element being usually, in my opinion, a later development in cases that should have been treated earlier. A really bad case of hyperemesis is one of the most serious and trying things with which a physician has to grapple, and no time should be lost in deciding the course to pursue after a complete clinical investigation, if the patient's life is to be saved. The toxaemia of pregnancy is still largely a *terra incognita*, and much work remains to be done before our treatment of this disorder can be put on a satisfactory footing.

4. This remark applies even more forcibly when we come to consider the more frequent and still terribly fatal disorder of pregnancy, eclampsia. Nowhere better than in Glasgow can this dire disorder be studied. Hardly a week passes that we do not get one or more cases in our maternity hospital, and in one week lately there were four consecutive fatal cases. Some one has said, in writing on this subject, that in all his experience he had never met with a case of eclampsia in which the urine had been previously examined—and thereby hangs a moral that still requires to be impressed. The urine of every pregnant woman should be repeatedly examined throughout her pregnancy. At this point I cannot help emphasizing the need for a thorough clinical investigation of these often terrible cases of toxaemia both during pregnancy, as seen in pernicious vomiting and eclampsia, and during the puerperium, as seen in septic infection. Advantage should be taken of all the modern means of chemical and biological research, and a complete equipment for this should be provided in our special hospitals and be available for the community. Till this has been done we need hardly expect any material lessening of the death roll due to these complications.

5. The haemorrhages of pregnancy carry their own lessons as to the exercise of prophylaxis. The promotion of the mother's health in the intervals of pregnancy, the precautions she ought to take as to sexual intercourse during pregnancy, the kind of work that it is safe for her to do, the proper regulation of the digestive functions as to constipation, the correction of displacements of the pregnant uterus, the proper treatment of such a disease as syphilis, all help to reduce the risk of haemorrhage during the pregnant state. And when haemorrhages do threaten, prompt and skilful medical treatment may still be an agent of prophylaxis against the worse fate.

6. Another important class still requires to be considered from the point of view of prophylaxis—the numerous cases of contracted pelvis. Nowhere is there more need for exercise of judgement and skill and care in the previous examination.

That due importance is not attached by medical practitioners to this aspect of prophylaxis is proved alike in private and in hospital cases. This is the proper moment to discuss the matter, as it is long before the end of pregnancy, and not when the patient is well into labour, that her treatment should be decided upon, so far as contracted pelvis is concerned. Till this fact is generally recognized we shall still have the almost unjustifiable operation of craniotomy or embryotomy to perform, and in less severe cases the mother, the infant, or both alike, will be maimed, perhaps permanently maimed, as a consequence of difficult instrumental delivery. Prophylaxis here concerns itself

with the accurate estimation of the size of the pelvis, and account is taken of the relative sizes of the head of the child and the birth canal through which it must pass. After a long experience of hospital work as well as private consultations I cannot help remarking my surprise that, with all the natural anxiety of practitioners as to their midwifery cases, there should be so frequent a disregard of the clear indications regarding the proper methods of treatment of contracted pelvis that can be obtained from the simple measurements of the pelvis and a comparison of the size of the child's head with the size of the pelvis. As a consequence difficult cases which, if properly diagnosed, would be sent into a maternity hospital or placed under the charge of an obstetrician at once without being touched, are in this twentieth century still subjected to bruising, laceration, and infection from frequent handling and futile application of the forceps or by injudicious attempts at version, when really one of the special operations is required for the safety of the mother and child. The principle of prophylaxis is not completely observed unless the expectant mother is carefully examined at the latest by the time that the child becomes viable. The practitioner has then a wonderful choice of methods by which he can secure the healthy recovery of the mother as well as the life of the child. I need only mention induction of premature labour and the various methods of widening the pelvis—symphysiotomy or pubiotomy—or Cæsarean section in all its varieties. One of the most important communications on this subject ever given to any society was the address of our last Honorary President, Professor Schauta, on "Spontaneous Labour in Contracted Pelvis," a translation of which appears in the last volume of the *Transactions* of our society. I must not omit to mention the possibility of modifying the severity of labour in cases of slightly contracted pelvis by dieting the expectant mother during the last half of pregnancy. This need not affect the vitality of the child, though it has a good chance of reducing its weight. This is an especially important point where the tendency is to have big children. Another point is the induction of labour at full term when the previous children have been above average weight and development, and pregnancy has gone beyond the calculated time.

7. One other complication of pregnancy, though fortunately a rare one, may be mentioned. When there is a history of previous insanity and pregnancy has again occurred, the true prophylaxis in this case is the immediate termination of the pregnancy. It is worth recalling here the danger of a second pregnancy in those rare cases of puerperal aphasia.

8. A final point occurs to me as regards pregnancy. The breasts seldom receive the attention that they deserve, and as a result now and then a case occurs where the nipples are not suitable for suckling, and difficulties arise as to the nursing of the infant, or septic absorption may take place, ending in mastitis which might have been prevented by timely attention before labour.

Prophylaxis in Labour.

The aim here is to promote normal labour, and do nothing at any stage of it that will be prejudicial to the mother or the child. Prophylaxis is exercised in regulating the conduct of the patient as to her movements or her rest or her position in bed, according to the stage of the labour, and in protecting her from chill, from exhaustion, and from mental excitement. The rules as to asepsis must be observed from the very beginning of labour. The patient must be handled or examined internally as little as possible, and attention must be given instead to external abdominal palpation as a means of diagnosis, and when such handling or examination is necessary it is desirable that rubber gloves be used. Premature rupture of the membranes must be avoided, but it is just as important to rupture them at the right time.

The greatest care must be taken at this stage to diagnose the exact position of the child, for often in lingering labour the delay and difficulty arise from the least error in the position of the presenting part, and any abnormality of this character can best be corrected before rupture of the membranes.

This may be illustrated in some of the varieties of cephalic presentations. Excessive flexion of the head—Roederer's obliquity—causing the occiput and the small fontanelle to present, with very little of the sagittal suture to be felt, is usually an indication of some abnormal condition, such as rigid cervix or vagina, contracted pelvis, unusually large head, or macerated fetus. To prevent undue delay in such cases an attempt is made to get the head to engage. When the bregma or anterior fontanelle presents, on the other hand, insufficient flexion is indicated, and unless this is corrected a prolonged labour, with greater risk to mother and child, is the result, while it may develop into the more troublesome brow and face presentations, in which cases there is still more need for the skill and judgement that are prophylactic in their effects by obviating the well known difficulties and complications that are apt to arise. Anterior parietal presentations (Naegele's obliquity) and posterior parietal presentation (Litzmann's obliquity) should equally suggest the desirability of specially careful examination. The occipito posterior position in vertex presentations is perhaps the best illustration of the benefit of the prophylaxis of the skilled obstetrician, and it is at the same time the condition to which too little significance is attached in the routine of practice. I quote from the article on Vertex Presentations in the first volume of Norris and Dickenson's textbook, by Dr. Edward Reynolds: "It may safely be said that there is no variety of labour in which easily avoided ill results are so commonly incurred as in posterior positions of the vertex; and there is certainly no subject in obstetrics that better deserves attention than the means of detecting extension and of preserving or re-establishing flexion in these cases." When asked in a former session to introduce a discussion on occipito posterior positions in vertex presentations, I had the opportunity of dealing with this question in detail, and the paper is included in vol. v of the *Transactions* of the society.

Were there time for it, the need for judgement and skill might be similarly illustrated throughout all the varieties of labour—for example the familiar precautions so necessary in the conduct of breech cases, the desirability of early rectification of transverse or oblique presentations before rupture of the membranes, the avoidance of the effects of precipitate and protracted labour, the proper conduct of the third stage of labour so as to facilitate complete expulsion of placenta and membranes and avoid haemorrhage. Especially should everything be done throughout the labour to prevent septic infection.

For the preservation of the perineum many directions have been given, but probably none of them are universally applicable. Any involving the insertion of a finger into the rectum deserve unqualified condemnation. The least we can do is to maintain flexion and to keep the presenting part, especially if it is the head, from emerging hurriedly at the crisis of a pain. A laceration often begins high up in the vagina, owing to the lack of sufficient flexion or some other abnormality in the position of the presenting part. A torn perineum is not the worst thing that can happen, but it should, of course, be at once and carefully repaired. It is better to postpone the repair for a few hours than to do it ineffectively at the time, for it has been found that such a repair is a poor support to the pelvic structures and often necessitates secondary repair.

Prophylaxis in the Puerperium.

Even if the precautions hitherto described have been properly observed, there is still need in the puerperium for a vigilant prophylaxis, as a mere enumeration of the possible complications sufficiently shows. The patient must be saved from the effects of constipation, haemorrhoids, retention of urine, blood disorders, nervous disturbances (such as eclampsia, insanity, neuritis, aphasia), anomalies of the breasts and the milk secretion, too severe "after pains," tardy involution of the uterus, undue haemorrhage, and septic infection. Alike in the worst and in the least serious complications that threaten the puerpera, attention to the earliest symptoms will often save her from troublesome after-results, and sometimes even from a fatal issue. The first and most alarming complication, on account of its suddenness, is *post partum* haemorrhage. If prophylaxis has been exercised in the final stage of labour by controlling the uterus from the moment that the presenting part emerges from the vaginal orifice until the placenta is born, there is little likelihood of alarming haemorrhage. Where there is

reason to suspect the possibility of haemorrhage ergot may be readily used, and should always be at hand. Ergot in these days suffers by neglect, and I think we would do well to use it not only on an occasion like this, but regularly during the puerperium, to promote uterine contraction and favour involution.

Eclampsia may come on with equal suddenness at any moment, but by this time the practitioner should have been able to examine the urine and note signs of kidney disease or disturbance of metabolism, and so foresee the possibility of such an attack

Of the minor complications none is more upsetting than mammary abscess, and it hardly needs to be remarked that this can almost invariably be traced to some previous inattention to precautions in the care of the breasts and the regular feeding of the infant. I have not included the nutrition of the infant in my consideration of prophylaxis in obstetrics, but I may be allowed to remark here that sufficient attention has not been given in the past to this, though there are now signs that the work of investigators and clinical observers during the last ten years in this department is being recognized.

Perhaps the most serious of all the complications of the pregnant state is sepsis, and it is not creditable to us that the occurrence of sepsis shows little sign of abatement in private practice during the last twenty or twenty-five years, in spite of all the advances of knowledge on the subject.

In 1908 241 deaths from puerperal fever were notified to the Registrar-General for Scotland, and of these 119 occurred in Glasgow. The registered deaths in Scotland during the ten years 1899–1908 numbered 2 612. and yet it is a preventable disease. What a toll to pay to defective method! And this is not all, for it is impossible to estimate the much greater number of women who have more or less "morbidity" from milder sepsis and are more or less handicapped afterwards in their lives. The reasons are some of them not far to seek, and until every practitioner, midwife, and obstetrical nurse not only practises surgical cleanliness as to the hands, instruments, and swabs that are used, but also, and as carefully, cleanses the parts of the patient that are to be handled, one need not expect in private practice to abolish puerperal septicaemia as one of the most frequent and least justifiable causes of death of women in childbed and of chronic ailment during their subsequent lives when they survive the acute attack.

Conclusion.

In concluding this address I must, at the risk of repetition, give additional emphasis to several of the most important points by way of a final summary.

1. Contracted pelvis is mostly a legacy of the rickety infant. Much can therefore be done by way of prevention if enlightened attention is paid to the feeding and hygiene of the baby from birth.

2 The education and physical culture of the growing girl must be supervised. This is specially important at the onset of puberty and during adolescence.

3 The young woman should understand her functions, and in her work should be protected from debilitating influences.

4. The young wife, and especially the expectant mother, should receive the further information that is necessary for her guidance in relation to the sexual functions and the preparation for motherhood.

5 As to the complications of pregnancy it does not seem to be generally realized by the busy practitioner out of how trifling ailments overlooked the most serious troubles arise, and how much special obstetrical studies have in recent years contributed to their more scientific treatment. I refer you to what I have already said about pernicious vomiting of pregnancy, which so often develops out of the ordinary digestive disturbances, and eclampsia which results from renal or hepatic disorders which have not been looked for or have been left untreated. In the antepartum haemorrhages, too, it has been clearly shown by statistics that if the condition is properly diagnosed under aseptic precautions and the patient put under the care of a skilled obstetrician at an early stage before she has been carelessly handled, the chances of the mother and child are infinitely better. The same remark applies to the early diagnosis of really difficult cases of contracted pelvis or marked disproportion between the sizes of the child and the pelvis.

6 With regard to the process of labour I desire to give fresh emphasis to several points.

(*a*) Abortion or miscarriage is really a miniature labour and should receive at least the same prophylactic care as ordinary labour. The mother needs to be taught this otherwise and earlier than by the unhappy lesson of a weakening haemorrhage or a septic infection.

(*b*) The induction of premature labour has still a place among obstetric operations, but it must be done after careful, and even repeated, examination under an anaesthetic, so that the pregnancy may be allowed to run as near the full term as is consistent with spontaneous delivery. When this is done the results are most satisfactory, as I can testify from a recent series of cases conducted on these lines in the Glasgow Maternity Hospital. It has been a great advantage to Glasgow to have its new maternity hospital with abundance of room, so that apart from simply providing for labour when it comes on, patients may receive prematernity treatment, and may be admitted, as now frequently happens, for the proper investigation and treatment of complications arising during pregnancy. This has proved itself a great boon, alike to the practitioner and to the patient. and not the least important of the cases that need such consideration are the patients who can thus be saved from operative procedure later on by the induction of premature labour under favourable conditions.

(*c*) When we come to consider prophylaxis in relation to full-time labour it is difficult to select points for emphasis, and I shall confine my attention to difficult labour in relation to the use of the forceps and to the scope of modern operations.

The forceps should be considered a surgical instrument, and its use a surgical operation. As a consequence the sterilization of instruments and the disinfection of all parts of operator, nurse, and patient, that are liable to be touched, should be thorough, and this asepsis should be maintained. In this way there is some hope of avoiding the septic infection that so frequently results from handling. The forceps should never be used without distinct indications on the part of the mother or child of the need for it, and delay in the labour is very rarely a reason in itself. The use of the forceps should always be preceded by a careful measurement of the pelvic cavity, so far, at least, as to gauge the relation of the child's head to the pelvic brim. One of the painful experiences of an obstetrician in consulting and hospital practice is to get cases submitted to him after prolonged use of forceps or repeated attempts at their application that would never have been tried in this way if an intelligent examination had been made, and to him is left without choice the melancholy duty of breaking up the child when one of the newer operations might have saved it and been even less dangerous to the mother.

No address on prophylaxis would be complete without reference to these newer operations—vaginal section, Caesarean section, and the widening of the pelvis by symphysiotomy or pubiotomy.

Vaginal section has not been found to be useful in complications at full time, although it may be sometimes advisable to incise a rigid cervix to save irregular laceration. Its place is rather in the earlier months of pregnancy, where late abortion or miscarriage has to be completed or pregnancy terminated for some other reason.

The range of pubiotomy or symphysiotomy is so limited, and the risk of injury to important structures is so great, that I have grown very critical of any suggestion to adopt the operation. Though I have performed both operations, I cannot express any distinct preference between them.

Caesarean section has for a long time been a tremendous boon in cases of extreme contraction of the pelvis. In these modern days its scope has been greatly extended, and it is now available as an operation of choice for eclampsia, for placenta praevia, and for transverse presentations in contracted pelvis where decapitation or embryotomy of a living child would be the only alternative.

The new modifications of the operation by the extraperitoneal method are at present on their trial, but this variation seems to me to be likely to take its own place among the operations.

I am tempted here to add to the address as published what was not sufficiently emphasized in it when delivered. The importance of the study of clinical obstetrics has been almost ignored till recently in the arrangement of the medical curriculum for the student, and it is little short of a scandal that he has been in the past, and is still sometimes, allowed to go out to practise without having taken a training in practical midwifery beyond an often perfunctory attendance on a few cases.

Since the whole art of obstetrics is concerned with, and dependent on, the exercise of the principles of prophylaxis, I have of necessity omitted many points that I might have discussed, but I hope that I have gathered together such as are sufficient to impress the mind with the need for vigilance, with the fact that much has yet to be accomplished, and with the greatness of the ideal to be reached by the true practitioner of our art.

An Address

ON

THE TREATMENT OF HYPERTENSION BASED UPON THE CONSIDERATION OF THE CAUSE.*

By H. BATTY SHAW, M.D., F.R.C.P.,

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Introduction.

Hypertension, by which is meant an increase of the blood pressure within the arterial system, is no new topic. It was studied most assiduously by Bright and his followers at Guy's Hospital. Interest in its study has been kept up in this country mainly through the efforts of Sir Clifford Allbutt, Dr. Oliver, and Dr. Leonard Hill. Progress was slow because, before a searching study could be made of the subject clinically, it was necessary to devise some means by which its detection could be accurately effected at the bedside. Despite the fact that many clinicians believed they could accurately gauge its existence by means of the finger, suspicion was aroused when it was found that a constant accompaniment of hypertension, namely, cardiac hypertrophy, was found to exist although hypertension was overlooked. The centre of activity in the development of instruments of precision moved from our country to Italy, and we owe to the genius of Riva Rocci the introduction of his sphygmomanometer, by means of which the detection of hypertension was rendered certain. Modifications of his original instrument have been effected, and it is possible for any practitioner now to estimate the presence and degree of hypertension with an exactitude which approaches that given by the thermometer of the temperature of the body. The picture of Dr. C. J. Martin's model of a sphygmomanometer is familiar to us in the advertisement pages of our medical journals, so that it is reasonable to assume that the usefulness of such observation is being appreciated by our profession. No doubt it is a bulky instrument, but it is equally true that there is no pocket substitute which can be trusted to read the degree of arterial tension with as great a degree of accuracy.

The Mode of Use of the Instrument.

Single observations must not be trusted, for to establish the existence of permanent hypertension at least three or four observations should be made, if possible daily; if this is not practicable, then on as many occasions as possible at longer intervals. If night and morning observations can be made, so much the better, and the plotting out of the readings on a chart will give a graphic representation of the condition (see Charts A and C, representing normal pressure and hypertension). The pressure may be taken in any position of the body, but, for the sake of comparison with other observations, it is well to take the reading when the patient is recumbent. The patient should, if nervous, be assured of the harmlessness of the proceeding, for excitement causes a rise of tension for a moment or two. Most readings are taken by compression of the brachial artery, and the return of the pulse at the wrist provides the moment at which the pressure (systolic) should be read off. If there is dropsy of the arm, observations are valueless; fortunately the very conditions in which the instrument is of most use are just those in which dropsy of the upper extremities is exceptional. The limits of normal pressure have been fairly well established; but, owing to the fact that it has been conclusively shown that stiffness of vessels (arterio-sclerosis), which so often accompanies hypertension, causes an error in the readings, it is accepted by most workers that a pressure of 150 mm. of mercury or more, maintained for at least a fortnight, satisfies the observer that pathological arterial hypertension is present; the figures for children are much lower, but it may be said that more use will be found for the sphygmomanometer in adult life than in children; out of observations on about 400 children admitted to University College Hospital during the last four years, not more than one or two showed pathological hypertension; whereas amongst the adults scarcely a week goes by but a case is admitted which gives a pressure chart indicative of this condition.

The Clinical Associations of Hypertension.

Hypertension of a maintained course is met with in the cases of what is known as essential cardiac hypertrophy—that is, hypertrophy which exists independently of valvular lesions—and may be found to be associated clinically with no other pathological sign but tortuosity of the accessible arteries such as the brachial, hence the diagnosis of hypertension dependent upon arterio sclerosis. In other cases, with or without clinical signs of cardiac hypertrophy and tortuous arteries, there may be albuminuria, and casts may be found in the urine. There is little hesitation then in diagnosing "renal" hypertension, and it is generally admitted that the form of renal disease most commonly associated with the hypertension is sclerosis of the kidney, either the granular or regularly contracted kidney, or the irregularly contracted or scarred kidney, which by some is known as the arterio-sclerotic or infarcted or scarred kidney. It is a familiar experience that the only clinical accompaniment may be retinitis, and it has been the practice to affix the term "albuminurica" if albuminuria exist; if it does not exist, it is reasonably anticipated that sooner or later albumen will appear in the urine. Not a few cases of hypertension are found associated only with "asthmatic signs," and if the heart shows signs of hypertrophy such asthma is said to be "cardiac," if albumen is present "renal," and if these signs and others which connote pathological conditions which are capable of producing asthma are non existent, the diagnosis of primary or bronchial asthma is made. If the hypertension is accompanied by the existence of tophi, or pains in the big toe, or if the patient is a painter or addicted to alcohol, then gouty, plumbic, or alcoholic hypertension may be the diagnosis. In a certain proportion of the cases of exophthalmic goitre high tension is observed not for a few, but, as in the above cases, for many days. Not a few cases present evidence of hypertension and of dropsy, or of monoplegia or hemiplegia, or of coma or of convulsions, and even of cirrhosis of the liver, and finally nothing but hypertension may be found. It is alleged that hypertension is an accompaniment of age, and is a purely degenerative phenomenon. Quite apart from the difficulty of understanding how involutionary changes could cause hypertension, the statement is not true, for octogenarians, and even centenarians, may have no hypertension and yet it may be present in quite young people.

This list of the clinical associations is long and varied enough, but it is possible to add to the number. Enough, however, has been said to show an extremely perplexing problem when the question is asked, How can a solution be found which shall clear up the connexion, if any, between raised arterial tension and such extremely varied associations?

Theories of the Causation of Hypertension.

It has been said that their name is "legion," but of this large number a certain list of alleged causes must be

* Delivered at a meeting of the St. Pancras and Islington Division of the British Medical Association, October 27th, 1910.

mentioned which from their popularity and currency, if for no other reason, deserve recognition and consideration on this occasion. They fall into one of two categories, mechanical or chemical.

1. *Mechanical.*

It has been argued that hypertension is due to an occlusive disease, such as endarteritis, which blocks partially or completely all the arteries of the body, or a great number of them. The heart meeting with this resistance hypertrophies and the blood pressure rises. As proof of this position the frequency with which arterio-sclerosis is manifested in such cases is quoted. Several objections may be raised at once, and more especially as the pressure charts now shown will give an opportunity of clinically checking the behaviour of the heart in changes of the degree of the hypertension. It will be seen that in certain of the cases, after prolonged rest in bed, the pressure falls, *but rises again* (see Chart C); that even some cases have been admitted with a normal or slightly elevated pressure and during rest in bed the pressure has risen (see Chart B); during these variations the heart has not resumed its normal condition. If endarteritis were the primary cause of hypertension, the blood-pressure chart should show a persistent elevation, it should never fall to normal, and certainly should not rise. But a more fatal objection is that endarteritis may be absent entirely when histological observations are made of these cases. A variant of this theory is that it is not endarteritis which is the cause of hypertension, but arterio-sclerosis; the heart, owing to the loss of dilatability and contractibility of the vessels, has more work to do to meet the requirements of the tissues. This argument would be a good one were we seeking for an explanation of the maintenance of *normal* pressure in the presence of arterio-sclerosis, but it is difficult to see why the heart by hypertrophying should not only meet extra demands to supply blood at *normal* pressure, *but should actually produce greatly elevated pressure.* Last of all, a great objection to the theory of occlusive disease of the peripheral vessels being the cause of hypertension is that fibrosis should under this condition be a common feature of the organs of the body, but, as the careful observation of 29 fatal cases of hypertension has shown, fibrosis, though met with in the kidneys in each of these cases, has not occurred in the liver in a single case. In one case, used as a control, in which there was no hypertension and no cardiac hypertrophy, the kidney was normal, but the liver intensely cirrhosed. Still one final objection may be raised—namely, that it is well established that hypertension may exist before the blood vessels become sclerosed and before the heart hypertrophies. This is only a clinical observation, and must be taken for what it is worth. When an appeal is made to the pathological histology of cases of hypertension, the theory that occlusive disease of the blood vessels, or arterio-sclerosis, is the cause of hypertension falls to the ground completely.

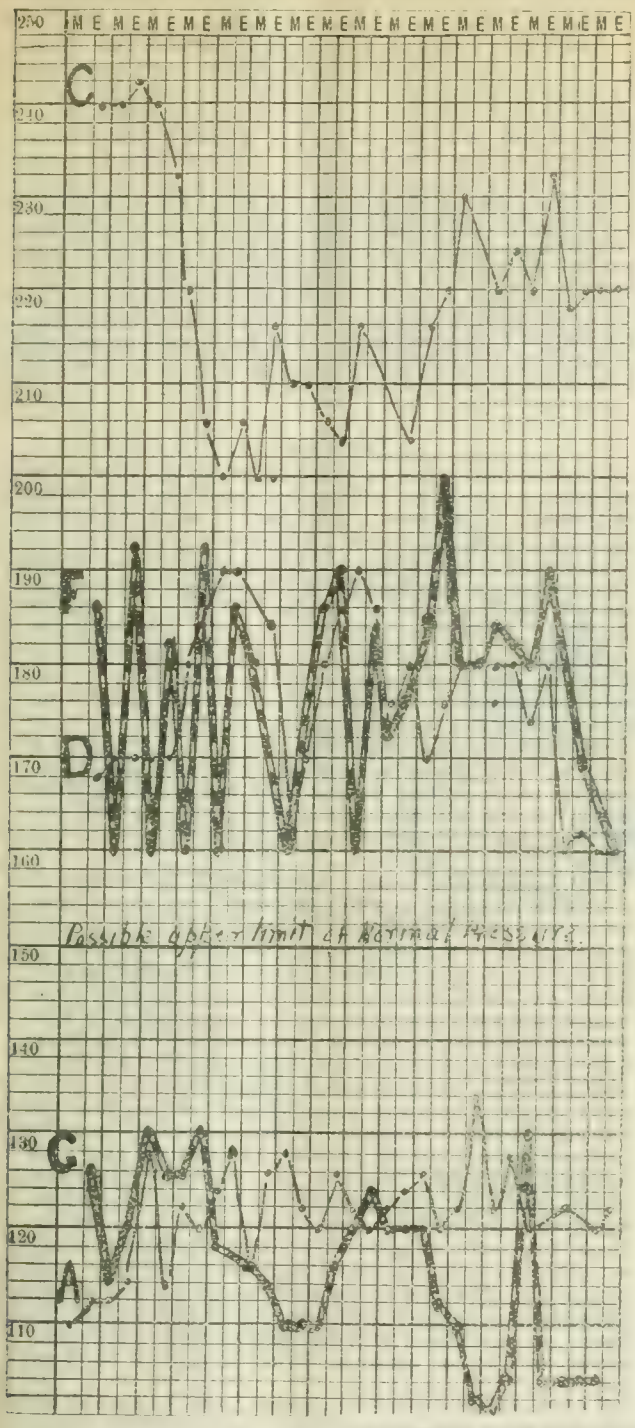
Still other views centre around the idea that occlusion of blood vessels is responsible for the hypertension. Capital is made of the accepted fact that it may be found that the renal arteries are occluded in cases of hypertension. But hypertension is found to exist when occlusion disease of the kidney vessels is absent, and, moreover, ligature of one renal artery or both, excision of one kidney or both, is not followed by hypertension, nor is amputation of a lower extremity followed by hypertension. The same objections hold for the theory that the vessels of the splanchnic area, by being occluded, cause hypertension; the vasomotor system is too beautifully balanced to allow of hypertension when a part of the arterial bed is obliterated. It has also been argued that stiffness of the vessel walls, as in arterio sclerosis or atheroma of the *large* vessels above the diaphragm, like the aorta, is responsible for hypertension; accepting, for argument's sake, that such an association is a constant one, it does not appear to be an adequate explanation for the reason already given—namely, that though it would be reasonable to expect in such a case that the heart assisted with greater effort to maintain a normal pressure, it would be unreasonable to expect the heart to assist still more to produce a much higher pressure than normal. And, lastly, the variability of the high tension, as shown by the charts now exhibited, requires a variability in the arterio-sclerosis, or atheroma, or endarteritis of the vessels suggested—a view which is alien to the permanency of such changes when once established.

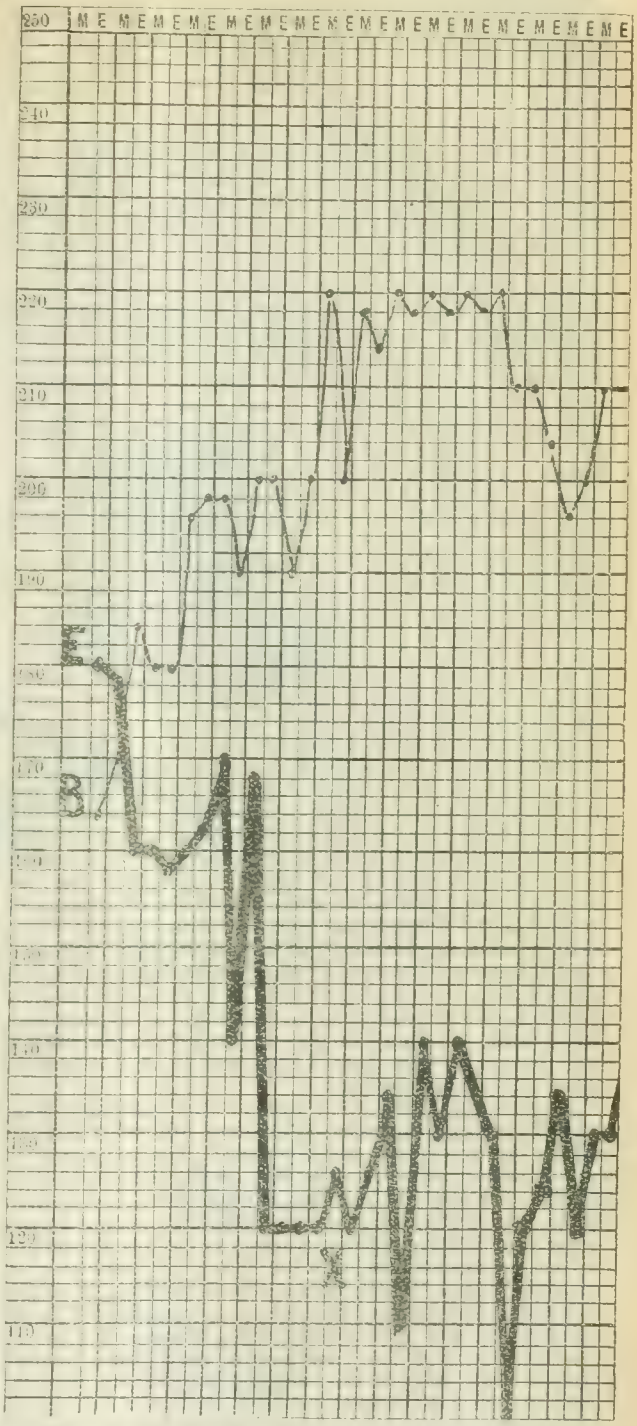
Another explanation which has been popular, and still is, is that part of the kidney substance is rendered inoperative by occlusion or arterio-sclerosis of branches of the renal artery, and cardiac hypertrophy and hypertension come into play in order to pass through the surviving kidney substance all the blood of the body for depuration purposes. This view is untenable for the same reason that occlusion of any district of arteries is incapable of causing hypertension (vide supra). An amplification of this doctrine hypothecates the influence of chemical agents, and will be discussed later. In the same way the view that hypertension is due to a reflex action, dependent upon afferent impulses from the cellular tissues, efferent stimuli to the blood vessels and central control by the vasomotor centre, must be considered later under the heading of chemical causes, for there are no facts pointing in hypertension cases to the existence of vasomotor storms of contraction entirely spontaneous in origin and capable of lasting, as tension cases last, for many years. Still another view is that the heart undergoes an essential, that is a spontaneous, hypertrophy in these cases—a view which has only to be mentioned to be dismissed, for it has so frequently been observed that hypertension precedes and does not begin to develop at the time of the inception of cardiac hypertrophy. It is stated that great muscular exertion causes the so-called essential cardiac hypertrophy, but this idea is negatived by recent experimental evidence, which shows that muscular effort in animals does not cause cardiac hypertrophy; and clinically we know that people who have led sedentary lives develop this form of cardiac hypertrophy.

2. *Chemical.*

This term must be used in a broad sense. By chemical agencies we mean soluble bodies which can permeate the whole vascular system, operating either on the ends of afferent nerves, on the vasomotor centre, or on the termination of motor nerves distributed to the muscular coats of blood vessels or to the muscular elements of the heart. In quite early times the view was advanced that such chemical elements were to be found in retained metabolites, such as urea, uric acid, xanthin, etc., which could no longer, owing to the inefficiency of damaged kidneys, be extruded from the body, or they were to be found in such elements which, owing to the disorganized state of the kidneys, were formed, and, not being excreted, accumulated in the body to its undoing, producing as some of their harmful effects hypertension, cardiac hypertrophy, etc. The one answer which must negative this ingenious theory is that not a single metabolite of either order has been discovered which, operating on the elements of the vasomotor reflex, could cause hypertension—that is, not one of these bodies is "pressor"; indeed, those that can be separated are "depressors." A further unsatisfactory point is that such view does not trouble itself with the explanation of why the kidneys have reached such an unsatisfactory condition as to be imperfect eliminators of the toxic substances. Indeed, the whole theory is negatived by observations which show that, despite the defect in the kidneys, various metabolites, such as urea, may be excreted quite effectively in these cases. Decent sepulture should therefore be accorded to the views that the heart hypertrophies and hypertension is established in the effort of the heart and vessels to drive through surviving renal tissue all the blood of the body for depuration purposes. Such a happy result could only be effected through the reflex vasomotor control, and the stimulant to such action must be *de facto* a pressor body; metabolic changes in the body have not, so far as actual demonstration is concerned, produced such pressor substances.

Then a more modern conception has arisen which looks to the suprarenal bodies and the pressor part of the pituitary body as a source of a pressor substance which, operating on the vessels at the neuro-muscular junction, provokes contraction, hypertension and cardiac hypertrophy. Despite the energy of our French *confrères* it is difficult to be convinced that any constant change has been found in the suprarenal bodies (or of the pituitary bodies) which could explain cases of hypertension. The same may be said of the efforts of those who look to





Blood pressure charts (taken during sixteen days, night and morning).

A.—William P., aged 35, clerk. Admitted for debility associated with old anterior poliomyelitis. This chart serves as a type of normal pressure chart, showing the variations possible during rest in bed.

B.—Charlotte E., aged 48, housewife. When the patient was admitted she suffered from albuminuria and dropsy. The heart was hypertrophied and the vessels tortuous. She developed anaemic symptoms, but these with the dropsy yielded to treatment, and she was allowed to return home; a few days later she died suddenly and unexpectedly. It will be noted that in eight days the pressure rose through 56 mm.

C.—Isabella B., aged 20, unmarried. The patient was admitted for severe headaches, puffiness of the eyes, and vomiting; eyesight defective owing to "albuminuric retinitis." Heart hypertrophied and vessels tortuous. Haematemesis and melaena. Latterly dropsy developed. Pericarditis developed seventeen days after last record here charted, and the pressure had fallen then to 170 mm. Death occurred twenty-seven days after the detection of pericarditis, the last pressure registered being 124 mm. At the necropsy the heart, free from valvular lesion, showed pericarditis, and weighed 13 oz.; each kidney was small and tough and weighed 3 oz. It will be seen that the pressure fell 40 mm. and rose 30 mm. in the sixteen days.

D.—Eliza W., aged 37, housewife. Admitted to the Brompton Hospital for Diseases of the Chest with signs of cardiac hypertrophy, dropsy, and albuminuria. Death occurred within a week of the last record in this chart, the last pressure reading being 130 mm. At the autopsy the heart was greatly enlarged; the kidneys were less than normal size, and showed well-marked old infarct scars, which were numerous in each organ. This is an example of hypertension being associated not with general but with localized sclerosis of the kidneys.

E.—William C., aged 56, painter. Admitted for dropsy, shortness of breath, and albuminuria; heart enlarged; vessels tortuous. The chart (thick line) shows the degree of high pressure towards the end of illness. At the date marked by X, dry pleural and pericardial friction sounds were heard. Death occurred eleven days later. At the autopsy both kidneys were found to be granular; the right weighed 5½ oz., the left 6 oz., and the heart 24 oz. The chart shows the "depressor" effect upon the circulation of a terminal infection (pericarditis) occurring in a hypertension case.

F.—Horace R., aged 42, carman. Admitted December 30th, 1909, for dyspnoea and cough and oedema of the lower extremities. Albumen was found on admission, but was absent during the rest of his stay in hospital till January 22nd, 1909, when he was discharged, greatly improved. The curve, indicated by doubled lines including dots, was taken immediately before his discharge.

G.—The same patient, Horace R., was readmitted on March 3rd, 1910, suffering from exacerbations of tophaceous gout, dropsy, and dyspnoea. Albuminuria was constant. He died on June 26th, 1910, and this chart shows the pressure during sixteen days immediately before death. Curve again indicated by doubled lines including dots. At the autopsy an empyema of 5 pints (thought during life to be a serous effusion) was discovered. The heart weighed 23 oz., and each kidney 4½ oz.; both were sclerosed. Charts F and G again show how the signs of hypertension may be altered when a terminal infection occurs (empyema).

an internal secretion of the kidneys as a means of explaining hypertension. No one has advanced any suggestive evidences of such a condition; the blood issuing from the renal veins of a healthy animal has no pressor effects.

Interesting discoveries have recently been made that proteid substances undergoing putrefactive changes may develop pressor bodies. Knowing, as we do, that substances elaborated in the intestines are eliminated in the kidneys—for example, the ethereal sulphates—it is an inviting theory to regard the intestines as a factory for the development of such pressor bodies from the proteid of the food, to believe that such bodies are absorbed through the intestinal mucosa, and, owing to the faulty condition of the kidneys met with in hypertension cases, accumulate in the system and lead to hypertension. The beneficent effects of purgation, diuretics, and diaphoretics lend ample support to this doctrine, but an ugly hiatus is still present—namely, the absence of an explanation why the kidneys show such constant changes in hypertension cases; so far as I am aware, it has not been shown that in the cases of sclerosis of the kidneys with hypertension such products of proteid putrefaction have *caused* the kidney change.

It is not to be wondered at that workers, from the time of Bright himself, have been found who sought to prove a close relationship between the development of hypertension and changes in the kidney. Many years ago two Swedish workers advanced the view that we must look to the kidneys for the possession of a pressor substance, and they demonstrated that kidney substance was pressor. With the knowledge we possess (1) that in hypertension cases the kidney shows so frequently a loss of substance as shown by the development of fibrous tissue leading to the familiar picture of a granular kidney; (2) that in the remaining cases the fibrous tissue is still there, indicating loss of kidney parenchyma at some time or another, although the kidney bulk may be equal to or greater than a normal individual's, owing, as may be reasonably supposed to be the case, to the compensatory development of new parenchyma, it is reasonable to argue that at last a step forward has been made and hypertension has been explained. When once hypertension is established by the pressor effects of the loosened kidney substance entering the circulation, cardiac hypertrophy occurs, and the familiar picture of arterio-sclerosis is developed, neither as *cause* of hypertension, but as *result*, or better as accompaniment.

It is no use blinking one's eyes to the fact that even accepting such an hypothesis we are still at a loss to explain why the kidney parenchyma is loosened from its bed. That problem must be left for the future, which, thanks to the study of cytology, is promising. Substances which can dissolve cells, even of the kidney—nephrolysins—have been demonstrated as a result of the introduction of the kidney of one animal into the tissues of another of a different species. But so far facts are wanting to show, on parallel lines, how nephrolysins can be developed in an animal which can lead to the undoing of its own kidneys. It is possible that the future will show that bacterial invasion of the body is also capable of yielding nephrolysins, and that the task of clearing up the pathology of kidney disease will have advanced nearer to the stage of causal treatment.

The above views have been stated by me four years ago in the Goulstonian Lectures, and I should not have presumed to repeat them on the present occasion were I not able to give you more facts supporting them. During the last four years, owing to the generosity of my colleagues in the hospital, I have had access to all the cases which have revealed hypertension. Of this number, which was very large, 29 cases have proved fatal. In every case the heart was shown *post mortem* to be hypertrophied; in every case there was general arterio sclerosis; *in every case there was fibrosis of the kidneys*, some were smaller than normal, some were of normal size, some were larger than normal. Sections of every kidney have been mounted, and under the same cover-clip a section of normal kidney taken from a surgical case dying from chloroform poisoning has been placed; the kidneys of every case are on view, and I invite your criticism of the deductions I have drawn from these 29 complete inquiries.

It will interest you to note one instance in particular of a case which died at the Brompton Hospital last week. You will see that there is a typical hypertension as shown by Chart D; the heart was hypertrophied, and the vessels clinically were tortuous. The kidneys present the appearance of old multiple infarction, probably from local thrombosis of blood vessels; the evidence is that they are scarred deeply in many places, showing a loss of kidney substance; the right lung showed three recent infarcts, but the valves of the heart were free from signs o recent or old endocarditis. Presumably the infarction of the kidneys and possibly of the lung is due to local occlusions. We do not know the origin of this local occlusion, possibly it was bacterial, but the sign complex must not escape you (1) loss of kidney substance, (2) hypertension, and (3) arterio-sclerosis and cardiac hypertrophy. I believe this to be the sequence of the events.

Treatment.

It seems hardly fair to give this paper the title it has received; no doubt you anticipated something new in the treatment of this curious condition. I must dispel this delusion and confess to you that the only treatment I can advise is that in which you are probably more expert than I—namely, symptomatic treatment, and first amongst them I would venture to suggest that all such patients should be made to rest recumbent during a much longer period than is usual with them, the diet should be easily digestible, and purgatives should be freely used. I say unhesitatingly that when the patient arrives—as he or she most surely will, provided other maladies such as pericarditis do not cause the closing scenes—at the stage of what we still persist in speaking of as uraemia, do not hesitate to bleed your patients and use sedatives when the symptoms are convulsive in character, a condition in which lumbar puncture appears in some cases to give relief.

If this address is taken in the right spirit, I venture to think that, after all, you will have gained, for your diagnosis will in the future be more correct and consequently your treatment more natural and less hapazard; it is to be hoped you will not endeavour to treat the hypertension by drugs, any more than you treat temperature by such means; you will rather preserve both as a means at least of estimating the condition of your patient. For instance, if the pressure has been known to be raised for weeks and with conditions indicative that your patient is growing worse, even though there be no rise of temperature, you will suspect with a steady fall of the pressure the onset of some infection such as pleurisy, pericarditis, and even peritonitis, a disorder which we all have learnt to our cost develops so easily without our knowledge (see Chart E). Moreover, with the deepening toxaemia, you will with an elevated pressure be more chary in your use of digitalis and other powerful cardiac tonics, drugs which in such cases are so often used on the pretext that there is cardiac degeneration, dilatation, etc., when forsooth the heart and vessels are so efficient that between them they are maintaining maybe a pressure twice as great as your own.

It is necessary to warn you that, even by use of the sphygmomanometer, you will not be able to find hypertension in every case of kidney sclerosis; as the charts will show, one observer might be called in to see the patient when the tension is high and make a correct diagnosis, another called at a later period, when infection has occurred, will find it low, and so miss the true diagnosis (see Charts F and G).

Lastly, the question may be raised of causal treatment. Has investigation revealed any agent akin to the diphtheria antitoxin which is capable of neutralizing the poisonous substances circulating in the blood of patients suffering from this dire complaint? Unfortunately the answer is a negative one. No one has so far been able to show the presence in the serum of these patients of a substance which is pressor in action, much less of a substance of the complex constitution of toxin or amboceptor, whether bacterial or cellular in origin. That such bodies exist is a piece of pure speculation based upon our knowledge of cytological studies in which toxins have been developed when an organ of one animal has been injected into another animal of different species.

THE ESTIMATION OF BLOOD PRESSURE BY MEANS OF THE SPHYGMO-OSCILLOMETER.

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So much has been done of late on blood pressure, and so many advances have been made in methods for the estimation thereof, that it may be useful to describe an instrument which presents several interesting features.

The sphygmo-oscillometer is an instrument which recently has been devised by Dr. V. Pachon, Chef du Laboratoire de Physiologie in the Faculty of Medicine of Paris for the clinical estimation of blood pressure, and the study of the variations which occur in the cardiac cycle as manifested by the pulse wave.

The instrument is shown in Fig 1, and its mechanism is explained in Fig. 2.

It consists of a rigid and air-tight metallic box E, which contains an aneroid chamber *c*. At the beginning of an experiment the box E, the aneroid chamber *c*, and the armlet B are in direct communication with one another by means of the three-way passage *f*, *b*, *a*.

The pump P is used for establishing a given pressure throughout the combined system; the reading of the pressure at a given moment being indicated by the manometer M, the graduations of which correspond to centimetres of Hg; an escape valve *v* allows the pressure to be reduced at will; S is a separator or key which on being depressed closes the india-rubber tube between the box E and the aneroid system, thus allowing pulsations set up in the armlet B to be transmitted direct to the registering needle *l*. In order to determine the blood pressure of an individual the armlet is applied most conveniently to the forearm just above the wrist, and the atmospheric pressure in the entire system is raised to a point likely to be above the maximal or systolic blood pressure. The separator is then pressed down and the needle *l* watched. If no deflection occurs, the atmospheric pressure is too high, and it is lowered about 1 cm. at a time by opening the screw-valve *v*. On no account must the separator be touched whilst the valve is open.

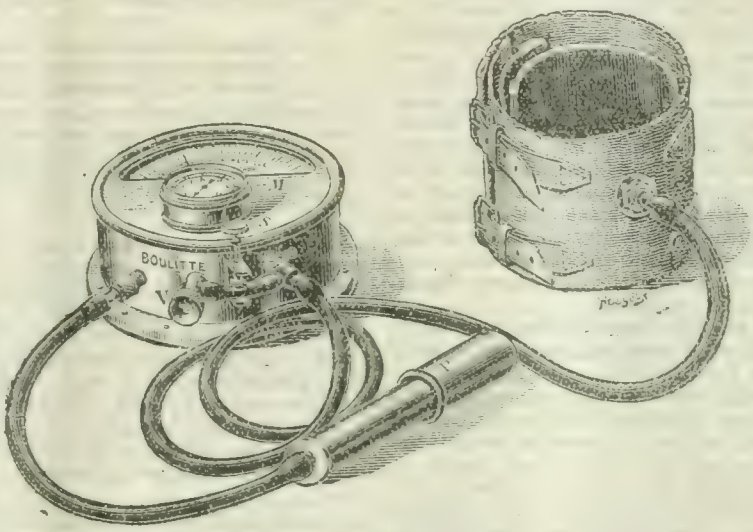


Fig. 1.

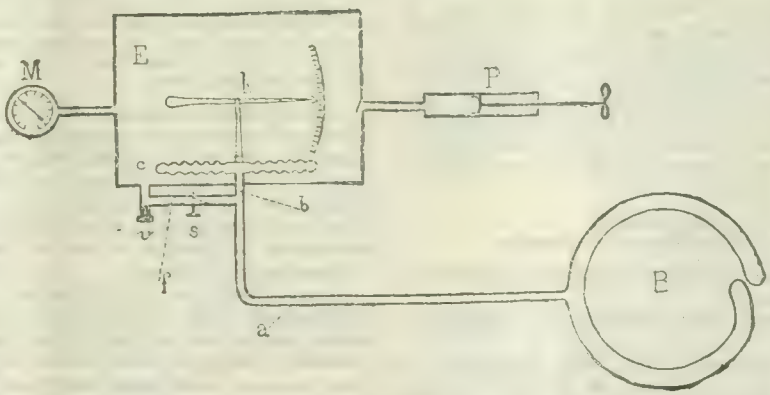


Fig. 2.

The maximal or systolic pressure is indicated by the pressure at which the needle first shows definitely increasing oscillations.

Having read off this number, which is registered in centimetres of Hg on the manometer scale, we next proceed gradually to lower the pressure.

The oscillations will be seen to increase in vigour until a point is reached at which they are of maximal intensity. The number of divisions of the scale over which the needle *l* swings gives the amplitude of the pulse.

It is at this moment that the separator should be kept pressed down for a short time, and the character of the pulse as shown by the behaviour of the needle studied.

Irregularity, dicrotism, missed beats, and the effects of respiration, etc., may be demonstrated with great facility.

Finally, the pressure is gradually lowered until a sudden diminution in the size of the oscillations is observed; this is the diastolic pressure.

What advantage has such an instrument over those already in use? One great advantage is the absence of the personal equation. Those who have worked with instruments of the Riva-Rocci type must have been struck with the difficulty that is sometimes experienced in determining the exact moment at which the registering finger can no longer distinguish the pulse. This difficulty may be made still more marked if two observers perform the experiment, one of whom is engaged in watching the sphygmomanometer whilst the other is occupied solely with feeling the pulse.

With the oscillometer there is no such difficulty, as the disappearance or reappearance of the pulse is indicated by the needle. The following experiment would seem to suggest that the finger is not to be entirely relied upon to indicate the pulse.

The oscillometer should be used exactly as a Riva-Rocci instrument—that is to say, the armlet should be applied over the brachial artery and the finger on the radial pulse.

The separator and registering needle are to be ignored. The pressure is raised gradually until the pulse is no longer felt. If the separator be now depressed, the registering needle will be seen to oscillate freely, and an increase of pressure equal to a varying number of centimetres of Hg will be required to abolish the oscillations.

It may be noted that, whereas with the Riva-Rocci instrument the pressure is applied over the brachial artery and the pulse felt at the wrist, with the oscillometer the pressure and the indication of the pulse wave take place at the same point.

In this preliminary communication I do not propose to enter into further details, but I hope to publish a longer paper as soon as I have been able to work out more fully the clinical results to be obtained by the use of this instrument.

I desire to express my thanks to Dr. Pachon for his courtesy in personally explaining to me various points in connexion with this work, and to Mr. Boulitte, the constructor, for the loan of the blocks illustrating the oscillometer.

AN International Congress of Pathology is to be held in Turin in 1911. The date will probably be the last week in September.

THE CONTROL OF VENEREAL DISEASES AT THEIR SOURCE IN CIVIL COMMUNITIES.

BY

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IT may be pointed out that there are two essentially different modes of State intervention which may be adopted with a view to checking the spread of these maladies. The system at present in force in the principal countries of Europe regards persons of a particular class and sex as the chief agents in the diffusion of disease, and seeks to prevent it by keeping these persons under *constant sanitary supervision*, the supervision consisting of periodical medical inspections, in order to ascertain whether the disease is present or not, and by compulsory detention and treatment in hospital in case it is found to exist. In order to ensure the regular attendance of the women, they are required to enter their names and addresses on a register kept by the police, and those who fail to attend the inspection are liable to be arrested and imprisoned. This is the system commonly known as "regulation." The difficulty of enforcing registration and attendance is, however, very great; and in many countries the police encourage, as far possible, the aggregation of the women in houses of ill-fame, which are *tolerated* or *licensed* by the State on the understanding that the mistress of the house insists on the observance of the regulations by her inmates.

These *maisons tolérées* are regarded by many regulationists as the very core of the system.

The other mode of possible State intervention is to require doctors and others to notify all cases of actually existing disease of this kind, in persons of whatever class or sex, to the health authority, who is to inquire into the means of segregation and treatment (as in the case of other infectious diseases), and is empowered to remove the patient to hospital if necessary. It has been urged in favour of the latter method that it is not open to the objections brought against the former, as being unequal between men and women, or as encouraging immorality by superintending, in its interests, the health of those who minister to it.

A letter on the Majority Report on the Poor Law, in reference to venereal diseases in the United Kingdom, appeared on page 52 of the BRITISH MEDICAL JOURNAL of January 1st, 1910. The writer, Dr. H. T. Gillett, thought that some of the recommendations, if followed, must inevitably do harm. He also takes exception to the fact that the Poor Law Commissioners, in vol. i, p. 354, suggest that certain types of sick cases should be compulsorily *detained*: amongst these are:

1. Persons suffering from phthisis;
2. Persons suffering from venereal diseases.

For phthisis the Commissioners recommend "a diffusion of knowledge of its dangers."

For venereal diseases they recommend *compulsory detention*.

I would suggest, however, that both remedies be applied in the most thorough manner possible for the adequate control of venereal diseases. An international conference on the prophylaxis of venereal diseases which met at Brussels in 1899 recommended:

> That since a thorough knowledge (*connaissance approfondie*) of venereology is one of the most important means of effectually combating the spread of disease, complete and compulsory courses of instruction in the subjects for all medical students should be instituted in every university so as to ensure the training of really competent practitioners.

They also recommended that the Governments should use their utmost powers to suppress the prostitution of girls under age, and that the utmost rigour of the law should be enforced against *souteneurs*—that is, men who live upon the earnings of prostitutes. Also,

> That the statistics of venereal diseases should be drawn up in all countries on a common basis.

These, amongst other resolutions, were carried unanimously. Four of them aim at the prevention of vice as the root of the whole evil. The remainder seek to increase the efficacy and accessibility of medical aid, to apply a stimulus to research, and to bring all results into a common treasury. There is no reason to fear the light, if only there is light enough.

Inquiries extending over twenty years in Brussels, and having for their object the discovery of the cause which led women to adopt a life of prostitution, elicited the fact that in 1,523 out of 3,505 cases it was poverty.

The foregoing facts, therefore, would appear to show the very real value of the suggested action on the part of the Poor Law Commissioners to control venereal diseases, since poverty cannot be controlled by them. Dr. Gillett also takes exception to the fact that the Commissioners urge "infringement of the liberty of the subject" by detaining such cases until cured, and he further expresses the opinion that:

> Such would lead to concealment of disease and detention for very long periods.

What, however, is meant by the liberty of the subject? According to Mr. Conway Scott, in the *Sanitary Record*, 1894,

> Liberty to be as drunken as you like,
> Liberty to be as immoral as you like,
> Liberty to propagate as much disease as you like.

As long as the public opinion of Christian Britain endorses such ideas no great improvement can be looked for in our national health, but the moment public opinion determines that the highest liberty is to live according to the laws of God . . . then, and not until then, can we have a marked improvement in the national health.

It is, however, quite an error on Dr. Gillett's part to suppose that it is necessary to detain persons for long periods in hospital; four to eight weeks amply suffice in probably 90 per cent. of cases in order to cure the more contagious earlier periods when disease is spread broadcast. I speak from seventeen years' special experience of this particular class of work, in many parts of the world, both amongst men and women.

The State of Massachusetts, U.S.A., in 1891, passed a law for the detention of certain persons affected with syphilis. In this law it enacted:

> That persons suffering from syphilis and being inmates of any correctional or administrative institution, such as a house of correction, a penitentiary, or a workhouse, shall be placed under medical treatment and be isolated until the medical attendant shall consider further isolation unnecessary. And if, at the date of discharge of a person, syphilitic symptoms are still present and likely to prove a public danger, compulsory detention may be put in force to detain the infected person until such time as dangerous symptoms have been pronounced to be no longer present.

Concealment of disease to some extent tends to correct itself, as the person is commonly unable to walk, owing to gonorrhoeal orchitis, or to buboes supervening, and consequently is obliged to seek medical aid. In the army such aid is given in hospital. In civil life, however, such cases are often treated as out-patients, which is wrong but inevitable, as there is no law to control them and no beds to accommodate them.

Concealment can also be largely obviated by fine, or by notification from medical men, as is the case with any other contagious or infectious disorders which are dangerous to the public health. Such a system of notification now exists in India, and is of great value.

The communication of venereal disease to other persons is an offence punishable by fine or imprisonment in some countries—and very properly so.

It is the duty, I consider, not only of Poor Law Commissioners, but of the State, to interfere with the individual liberty of diseased persons, in the public interest, on financial apart from purely medical grounds.

The late Dr. Parkes said:

> In the case of venereal diseases the State must as much protect its citizens as from the danger of foul water, or the chances of gunpowder explosives, or the risks of any other perilous and unhealthy trade.

I do not, therefore, endorse Dr. Gillett's view:

> That it would seem more reasonable to endeavour to diminish venereal disease by lectures dealing with normal sexual physiological processes, or by parents speaking of these things to their children when they reach the age of puberty.

I think Dr. Gillett overlooks the fact of the innocence of the majority of children at puberty, and the utter impossibility of their being able to grasp the facts. The majority

of medical men and fathers would probably consider that, rather than speak to a young child of 14 or 15 years of age on this very delicate subject, it must run the risk of contracting disease, and, if necessary, that its liberty should be curtailed whilst it was being detained and adequately treated in order to prevent disease being transmitted.

By directing public opinion to this subject, which possibly constitutes the most important social problem of the day, and by obtaining the requisite legislation, fathers and medical men, if they do not succeed in benefiting their own children, may confer an everlasting benefit on the progeny of the next generation.

I would recommend the establishment of voluntary hospitals for those women who have not sunk too deeply in the mire, where they can seek medical advice and be reclaimed.

This particularly applies to clandestine rather than to irreclaimable prostitutes, who require more thorough supervision both in and out of hospital.

I would also recommend the compulsory notification of venereal disease, occurring both amongst men and women, by means of a confidential certificate, as now exists in the case of the medical examination of school children, and punishment by fine or imprisonment when it is reasonable to suppose that venereal disease has been spread by a person with a probable knowledge of the facts.

I would not accept ignorance as an excuse, if that person previous to transmitting the disease, had applied for aid to a private medical practitioner or to a public institution, such as a hospital or dispensary.

Solicitation by women, or by men who may finance the situation and live on the earnings of women, and all open scandal in the streets should be rigorously suppressed under the Town Clauses Act, 1847; and prostitution by alien women in London be much more adequately controlled by the police.

England, in regard to the control of prostitution, is fifty years behind the Continent of Europe. In Brussels the worst forms of syphilis are known as *English syphilis*.

Diseased women find their way from the Continent to England. They enjoy uninterrupted personal liberty and freely exercise it at the expense of the country of their adoption.

If we look back into ancient history we find that this problem has been faced before.

Moses, in many respects, anticipated modern sanitary science by about thirty centuries.

Prostitution, and all its attendant diseases, which destroy humanity, was abolished *in toto*; no daughter of Israel to follow such a business under the penalty of death.

Stranger still, nearly all the diseased, the syphilitic, the scrofulous, the epileptic, and other sufferers from the diseases of civilization, were isolated beyond the camp. Under such regulations, rigorously enforced, the national health was found to rise year after year, and at the end of forty a new race appeared, as strong and hardy and self-reliant as their predecessors were diseased, degraded, and cowardly.

In the camp of Moses the scrofulous could not produce again all his diseases in his wretched children, the syphilitic could not destroy and poison the very line of humanity by propagation of his fearful diseases, and the epileptic could not transmit his disease to his innocent offspring.[1]

All Jewish children are circumcised in infancy. This extensively protects against syphilis but not against gonorrhoea. This is supported not only by Mohammedan practice, in India, in which class syphilis is much less than in Hindus, according to statistics from the police force in Bombay, but, as pointed out by Dr. G. Elliot Smith, it is also supported by Egyptian experience, before Rameses II, B.C. 1310–1243.[2] Tarnowsky quotes the case of three families with twenty-two children with syphilitic taint, from whom only *one* healthy adult survived. This was in the *intelligent class* of society.

Professor Fournier (Paris) records the case of a man who gave his mother syphilis by kissing her.

Mr. Buckley (New York) has tabulated 110 epidemics of innocently contracted syphilis, culled from literature, with a total of 3,000 victims. The common causes of conveyance, apart from heredity, are nursing, hand raising of infants, breast drawing, accouchements, vaccination, tattooing, household utensils, dental, barbers', and other instruments, kissing, pipes, etc.

He further states:

We approach the matter from the higher ground of "innocent" communication. The time has now come to place syphilis under the control of the proper health officers and to make it quite as criminal to transmit syphilis wittingly as it is to transmit small-pox, scarlatina, or diphtheria.

An attempt was made in England in 1870 to repeal the Contagious Disease Acts of 1864–66–69.

A Royal Commission reported in 1870:

That the worst forms of disease had been much reduced amongst the lower class of prostitutes, and that the women had benefited in an indirect manner. We are satisfied from the evidence that the frequent examination of women is the most efficacious means of controlling the disease.

On April 20th, 1883, however, by a chance vote of the House of Commons, the Acts were not repealed, but a resolution was carried:

That this House disapproves of the compulsory examinatio of women under the Contagious Disease Act.

The Judge-Advocate-General declared:

That though his vote might jeopardize his seat at another election, he must protest against any attempt to impair the efficacy of a system which had done much to check the progress and alleviate the severity of one of the most terrible scourges of humanity, and had also done something to mitigate one of the most prevalent vices of modern society.

There was an entire divergence of opinion between different members of the Government on the question of the Acts. This, in my opinion, arises from conflicting evidence and a lack of cohesion on the part of the medical faculty.

A voluntary system of control existed in England in 1884–5, and the Acts were totally suspended in 1886.

Mr. Parker Wilson, surgeon to Brixton Prison, London, states that:

Amongst 700 prisoners in 1882 the percentage suffering from venereal disease was only 2.9; in 1883, 4.5; and in 1884, 23.9 per 100.

There are no reliable statistics at present kept of the relative incidence of venereal diseases in civil communities in England, and we are obliged, therefore, to fall back on British army statistics, which are now thoroughly collected.

In England the Contagious Disease Acts were suspended in 1886.

In India the Lock Hospital system was temporarily suspended in 1886, and finally abolished in 1888.

Taking the average annual ratios for the years 1886–90, the admission ratios to hospital per 1,000 of strength for all forms of venereal diseases were, in the various foreign armies:

27 in the German,
51 in the French,
65 in the Austrian,
94 in the Italian,
202 in the British.

As far as my experience is concerned, where British troops are stationed and where no control exists over prostitute or diseased women, the average annual incidence of freshly contracted syphilis amongst soldiers is about 2 per cent.; gonorrhoea is three times as frequent. The relative incidence is probably less than this in civil life, allowing for the beneficial influence of marriage and other factors.

In London, therefore, with a population of 5,000,000 people, about 75,000 to 100 000 persons contract syphilis each year. In New York City, 50,000 persons are infected in each year, but the population is much less than London. Three times the above number probably contract gonorrhoea in these cities. Under one hundred beds exist in the civil hospitals in London for the treatment of these diseases, one of which—syphilis—may be perpetuated even to the fourth generation, in various forms, such as lunacy, epilepsy, etc.

In Paris 2,000 beds exist for treating syphilitic disease; and, as London is five times the size of Paris, the provision of 10,000 beds would be inadequate.

In France and Germany control is exercised over prostitute women of all classes and over venereal cases. In France, according to *Le Noir*, "amongst the adult males of Paris the proportion of known syphilitics was not less than 13 per cent."

Fournier, working on the statistics of general hospitals, gives 13 to 18 per cent. Working on analogy, London must be higher, since no control exists.

Dr. Holland, in 1854, estimated that in the United Kingdom at least a million and half persons were *infected* with syphilis every year.

In New York 300,000 cases of skin disease gave a percentage of 11·5 due to syphilis.

At the Moscow Hospital, Russia, from 1850 to 1870, there were 2,002 births from syphilized parents, and of these 1,425 (71 per cent.) died.

Fournier, in Paris, found:

That fully 25 per cent. of all females whom he had seen in private practice had contracted the disease innocently and undeservedly. Of the married females, in 75 per cent. of cases the disease was unmistakably traced to the husband.

In India we have results which, in my opinion, as a demonstration of the possibility of control, will never be surpassed in any country. The native population of India is 300,000,000, and there has been in the past fifty years a garrison of about 70 000 British soldiers.

In 1888, the Lock Hospital control over women was finally abolished, and venereal diseases rose year by year until, in 1895, the admissions to hospital for all forms of these diseases reached the enormous total of 537 per 1,000 of strength.

Further, in 1897, 661 invalids for venereal diseases were sent to England in one year. Control, by means of the Cantonment Code, October, 1897, again commenced in 1898. In 1908, ten years later, the admissions to hospital for all forms of venereal disease were reduced to 70 per 1,000 of strength, and 59 invalids sent to England. How did this occur?

The following will briefly explain. Under the Cantonment Code, 1897, and other measures:

(*a*) Notification exists.
(*b*) Diseased men and women are isolated and controlled in hospital, or otherwise, for four to eight weeks, as is the case with any other contagious disorders.
(*c*) Prophylaxis by in-patient and later out-patient treatment is rigorously and systematically enforced.

The financial saving in regard to India has thus been enormous. In 1895 there were over 3,000 soldiers constantly sick in hospital with venereal disease, and in 1908 about 500. In 1897 there were 661 invalids sent to England for venereal disease, and in 1908 only 59.

A trained soldier landed in India costs the State £100, so if 661 invalids from venereal disease leave India in one year the loss represents many thousands of pounds—this quite apart from the fact that a soldier's food costs the State 1s. to 1s. 3d. per diem in hospital. The food of a diseased native woman in hospital costs 4d. I leave the details to actuaries, but the actual saving to the State would possibly pay the interest at 5 per cent. on capital sufficient to build several Dreadnoughts.

Taking the civil aspects in England, a corresponding reduction in the maintenance of lunatics, epileptics, and persons with paralysis or locomotor ataxia due to syphilis, as well as a reduction in the number of blind infants and sterile men and women who have had gonorrhoea, quite apart from lessened poor rates, etc., would probably repay in a few years the capital outlay that these Dreadnoughts cost.

"The Royal Commission on the Blind, the Deaf, and the Dumb, which reported to both Houses of Parliament in the year 1889, estimated that about 7,000 persons in the United Kingdom had lost their sight from ophthalmia neonatorum, and assess the cost to the State of each of them at £50 a year, on the basis of £25 for keep and £25 for loss of useful work. That is, the cost to the State for these cases of preventable blindness is £350,000 a year."[3]

This disease within the last year, however, is notifiable in England.

It is to be hoped, therefore, from a financial, apart from a public health point of view that preventable diseases like syphilis and gonorrhoea will also be notifiable before the millennium.

This problem goes far beyond the purely medical aspects, and is well worthy of the consideration of those statesmen who have their country's welfare at heart, as in many instances venereal diseases are so largely dependent on poverty and spread by the poor in a dying effort to exist.

In conclusion, we may add with Professor Fournier of Paris, in imitation of another proverb, that "the fear of syphilis is the beginning of wisdom."

We are also with him in quoting Pasteur's fine thought that "Where good is to be done duty only ceases when there is no longer power to do more, or to do better."

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A NOTE ON THE COMBINED USE OF SPINAL AND GENERAL ANAESTHESIA.

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In spite of the advocacy of enthusiasts for spinal anaesthesia it must be realized that this method of rendering the lower part of the body anaesthetic is not yet free from danger, and it is extremely doubtful whether it will ever replace general anaesthesia for routine work. In selected cases, however, spinal anaesthesia presents such great advantages over general anaesthesia that it is certainly the method of choice. With patients who have a dread of being rendered unconscious, in cases of emergency where the operator is single-handed, in some acute abdominal conditions, and in cases of disease of the heart and lungs, spinal anaesthesia is certainly to be preferred to a general anaesthetic. Also, as I have pointed out in an article on amputation for diabetic gangrene,[1] in conditions associated with fatty changes in the liver and other organs—as, for example, diabetes, rickets, alcoholism, starvation, malnutrition, and the cyclical vomiting of children—a deep degree of general anaesthesia is to be avoided from fear of bringing on acid intoxication, which may lead in diabetes to coma and in the other conditions to "delayed anaesthetic poisoning."

But by far the most important and interesting question in considering the advantages of spinal anaesthesia, is its action in the prevention of shock. It is now generally admitted that if all impulses from the area of operation or injury be prevented from reaching the central nervous system by the employment of this method, shock from this source is either absolutely prevented or at any rate minimized. It must, however, be remembered that psychic influences may bear no small part in the production of shock, and impulses from the highest centres may affect the vital centres just as seriously as the effects of trauma at the periphery.

Crile[2,3] has always insisted on this element in the production of shock, and has lately published[4] the results of experiments, which show that definite changes occur in the cells of the brain as the result of fear. He has clearly proved that trauma, anaemia, infection, and fear, not only produce very definite symptoms, but that singly or in combination they damage the brain cells, and so influence the immediate results of surgical operations. In Graves's disease, when the patients are especially susceptible to fear, he has seen death occur from fear alone. Working on these lines Crile has often advocated the combination of general anaesthesia with local and regional anaesthesia, and his plan has been followed by many in cases of emergency. I have reported[5] a successful case of amputation for diabetic gangrene in which nitrous oxide anaesthesia was used in conjunction with nerve blocking, and Crile[6] states that since following this plan he has amputated twelve times for gangrene of the leg without a fatality. "Indeed, there is usually no noticeable operative effect."

In reporting my own case and also elsewhere[7] I expressed the opinion that many advantages might be gained by the use of a combination of spinal anaesthesia with a light degree of general anaesthesia. By the spinal injection the vital centres will be protected from injurious impulses from below, while by general anaesthesia the effects of fear will be prevented. There are three ways in which spinal anaesthesia may be used in conjunction with a general anaesthetic. The solution of stovaine or

other anaesthetic may be injected before, during, or after the inhalation anaesthesia. If the spinal injection be administered first, the surgeon can assure himself of the success of the injection and the completeness and extent of the anaesthesia before the patient is rendered unconscious, and it may be possible to cut down the dose of the general anaesthetic very considerably. With a dosimetric method of administration it should be easy to show how small a dose of chloroform, for example, might be given to produce unconsciousness when the area of operation or injury is rendered anaesthetic. If the patient be very frightened, the general anaesthetic may be given first and the spinal injection undertaken before the operation is begun. Then, again, if symptoms of shock threaten to develop during an operation, a spinal injection may be given, while even after an operation or injury, if shock be feared, or even be present, a spinal injection of stovaine should do much to prevent it or minimize its symptoms.

With the idea of absolutely preventing the development of shock in a case of amputation of the only remaining lower limb of a very feeble old patient, I adopted a combination of these two methods of anaesthetization with strikingly successful results. The history of the case is as follows:

F. P., a warehouseman, aged 60 years, was first admitted to the Middlesex Hospital on December 13th, 1909, under the care of Mr. Sampson Handley, who transferred the case to my care, and to whom I am indebted for permission to report it. The patient was then suffering from senile gangrene of the left foot, and on January 1st, 1910, the left lower limb was amputated at the junction of the lower and middle thirds of the thigh. He left the hospital for the convalescent home, and in March, about a month after his return from there, noticed that his right foot often got very cold and painful. In spite of every care, gangrene set in, and he was readmitted to the hospital on June 4th, 1910. He was then very feeble, and looked at least 70 years of age. He suffered considerably from pain, and there was some septic absorption, the temperature rising to 100° F. each evening.

It was not until ten days after his admission, when he was still more feeble, and in an extremely nervous state, that he consented to have his right lower limb amputated, and it was then very questionable whether he was in a fit condition to have the operation performed. It was thought, however, that, if every precaution were taken to prevent damage to his medullary and other centres by cutting off impulses both from above and below, the operation should not have any bad effect.

Accordingly, on June 15th, a dose of 4 cg. of stovaine in Barker's solution was injected into the spinal theca, the puncture being made in the interval between the twelfth dorsal and first lumbar vertebrae. After about ten minutes the lower part of the body was absolutely anaesthetic, and Dr. F. E. Meadows rendered the patient unconscious and maintained a light degree of general anaesthesia. The limb was then amputated at the junction of the lower and middle thirds of the thigh. The result was that the patient did not suffer in the slightest degree from shock. From the time of the operation until the date of his discharge from the hospital he continually improved, and the satisfaction of having brought him successfully through a critical surgical operation was increased by his undoubted gratitude and unfailing cheerfulness in spite of the pitiable state to which he was reduced.

The case was one eminently suitable for such a test as this, and it was gratifying to find that shock could be prevented by isolating the lower parts of the brain from other parts of the nervous system, through which they might receive impulses likely to exhaust the vital centres.

As I have mentioned, the idea of isolating the medulla originated with Crile, who advocated the combination of local or regional anaesthesia with a general anaesthetic.

Regional anaesthesia by nerve blocking, in the case of amputation of the lower limb, entails some delay and inconvenience, and the combination of spinal and general anaesthesia is much more convenient and satisfactory.

It may be said by those who regularly practise spinal anaesthesia as a routine method in general surgical work that the light general anaesthesia is superfluous; but it will, I think, be held by the majority of surgeons that consciousness on the part of the patient is practically never desirable during a major surgical operation, not only for the sake of the patient but also for the comfort of the surgeon. The reports as to psychic influences affecting patients during spinal anaesthesia are rather conflicting, but these effects have obviously been quite noticeable from the fact that so many surgeons have adopted the use of some narcotic such as morphine or scopolamine and morphine as a preliminary to a spinal injection. I cannot but think that with the spinal anaesthetic the induction of unconsciousness by the inhalation of a small amount of some general anaesthetic is superior to this combination.

No doubt in young children the general anaesthetic is superfluous, and probably in the later stages of acute abdominal conditions, when vomiting is taking place, spinal anaesthesia is better used alone. Fortunately these patients are as a rule markedly apathetic, and little likely to suffer much from the effects of psychic disturbances.

In the discussion on the present position and limitations of spinal anaesthesia in the Section of Anaesthetics at the recent annual meeting of the British Medical Association it is gratifying to find that Dr. Blumfeld[3] expressed his belief that a combination of spinal with a light general anaesthesia should render surgical anaesthesia as safe as the administration of chloroform in midwifery practice, and that Gray's[9] work on the localization of the action of stovaine was likely to do much to help this.

With regard to the choice of a general anaesthetic, ether might be given in small doses by the open method or a mixture of chloroform and ether might be used, though probably the most convenient drug would be chloroform. When, however, these drugs are contraindicated, as in diabetic patients, the best anaesthetic is nitrous oxide given with oxygen, for Crile[10] has shown that this combination is less injurious to the tissues than any other general anaesthetic.

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THYROID EXTRACT IN RHEUMATOID ARTHRITIS.

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INDEPENDENT results and observations in therapeutic research are, perhaps, the strongest corroborative evidence of the efficacy or otherwise of various lines of treatment; and the writer, who has read with interest the excellent lecture by Dr. Macalister on rheumatoid arthritis, would put on record some experiences of results attained by the use of thyroid extract, without claiming any priority in treatment or originality of thought, though the use of thyroid extract by others for this complaint was unknown to him before reading Dr. Macalister's paper.

It first suggested itself to him in 1907, when called to attend an advanced case in which the patient was bedridden, all joints being more or less involved, with extreme wasting, anorexia, sleeplessness, and constant pain. The patient—a man of 54—had no illness until the onset of this condition, which had been coming on gradually since he was 40. He could not stand, had lost all power of locomotion, could not feed himself, nor raise his arms to do his hair!

The writer was struck with his rough, dry harsh skin, crisp hair, husky voice, and deep suprasternal notch; the prominence of the trachea and apparent absence of thyroid gland, analogy to other conditions suggesting deficiency of thyroid secretion.

Accordingly, the extract of thyroid was administered in doses of 5 grains three times daily, together with adjuvant treatment to be mentioned presently. In a month the results were remarkable. The patient could struggle on crutches from one room to another, his appetite returned, and pain was almost gone. In three months he could walk with two sticks, and in eighteen months he was able to walk three miles with the aid of one stick. His elbows and shoulders have regained their mobility almost entirely, and he has been for a year able to do without his thyroid extract without a relapse. At the present date he is able to get about well, with slight flexion of one knee and some metacarpo-phalangeal deformity, but is fat and well and enjoys life.

Another case was also that of an elderly man whose metacarpo-phalangeal joints were three months ago greatly enlarged with a pulpy synovial membrane and partial palmar dislocation of the joints, and whose knees and elbows were in much the same condition. He was put on the same treatment. There appeared to be little, if any, eburnation of the bones, but much periarticular thickening and weakening of the ligaments.

In this case the thyroid gland could not be detected. After three months' treatment on the above lines he has more pliability in his joints, a good grasp, and can walk without his stick; he has more confidence in locomotion and more muscular control over his joints. On the whole he is much improved and still making steady progress.

In the writer's opinion the group of cases likely to receive benefit are those in which changes are chiefly confined to the synovial membranes, without erosion of cartilage or eburnation of bone. such cases in fact as Schüller describes as "chronic villous arthritis."

In these cases, to which class both of the above belong, the local improvement is evinced by gradual softening of the pulpy synovial tissue under the influence of thyroid extract, the gelatinous feel under one's finger being replaced by a sensation of fluctuation. Subsequently absorption appears to take place, leaving a firmer, more useful joint, and at that stage adjuvant treatment by means of passive movement, massage of the neighbouring muscles (*not* the joint), and liniments are of great efficiency.

The liniment which the writer has found of great use has the following formula:

℞ Unguent. hydrargyri ... ... ʒij
Olei nucis ... ... ʒiv
Methyl. salicylatis ... ... ʒj.
Fiat linimentum. Misce bene. Nocte utatur.

The theory of the improvement is open to much discussion, but the writer is of the opinion that the cause of the pathological synovial change is metabolic, and that the chemical pathologist rather than the bacteriologist can find the key to the problem. Myxoedema is "characterized by an increase of connective tissue in and under the true skin," with "more than the usual amount of that substance (mucin) in the subcutaneous tissue."[1] There seems a distinct resemblance in the synovial deposits to the above condition in myxoedema, which may account for the influence of the thyroid extract on the pathological metabolism.

Further observation on the action of thyroid extract in suitable cases of rheumatoid arthritis would be of great interest and possibly also of great benefit to mankind.

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A CASE OF INTESTINAL REFLEX.

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RONDEBOSCH, NEAR CAPETOWN.

IN an interesting paper published some time ago in the BRITISH MEDICAL JOURNAL Mr. Moynihan points out some various symptoms which are caused by a diseased appendix—symptoms so varied in their nature and locality that it becomes difficult, and at times impossible, to localize the disease. The appendix, on account of its variable position and length, may be the cause of pains which are located in various parts of the abdomen. For instance, a long appendix may through adhesions become fixed in the pelvis, and in the female simulate affections of the organs of generation.

It may also become attached to some part on the left side of the abdomen, or when adherent to the ascending colon produce symptoms akin to those due to renal or hepatic disease. This condition of things cannot be otherwise; the abdominal sac is packed with organs mostly tubular, overriding each other, constantly altering in shape and position, according to their being full or empty, to the position of the body, to the movements of respiration, to the length of their mesenteries, and above all to their common innervation. In the early period of embryogenic life the alimentary canal is a simple tube; its innervation is derived from the sympathetic system. At a later period the fore-gut is subdivided into higher structures—namely, the stomach, liver, part of the duodenum and the pancreas—and although much more complex in their structure and functions, they still retained their same nerve supply—namely, the sympathetic, and in addition a few fibres from the cerebro-spinal ganglia. The afferent branches which serve to control those parts pass into the hepatic, gastric, vagus, and solar plexuses.

These four organs occupy that space which is found in the right upper abdominal quadrant, and it is in that region that the greatest difficulty in forming a diagnosis lies. It is easy to understand that if any organ in that locality is acutely affected, that short of premonitory symptoms to assist the diagnosis is fraught with difficulties.

With such lines of communication the complexity of symptoms becomes extreme; the nerve storm spreads rapidly among all those parts. In a sudden rupture due to gastric or duodenal ulcer, in a first attack of gall or renal colic, without premonitory signals to help one, or rather without the knowledge of such, it is usually a matter of impossibility to decide on the locality primarily affected.

Lower down in the bowel contractions are of common occurrence, normally from peristalsis, and abnormally from an exaggerated form due to local trouble such as undigested food, fermentation, and pathological contraction, but also from nerve irritation from afar.

Case.—A lady, aged 30, 3-para, youngest child 17 months old. A very thin, haggard woman. Previous to the birth of her last child she had suffered from tapeworm, for which she had been treated heroically, ultimately getting rid of it. Since that she had suffered from abdominal pain with periods of obstinate constipation, looseness, straining, together with the passage of blood and mucus. She looked very ill and emaciated, she had not had any relief for ten days, felt sick but had not vomited. Her abdomen was easily palpated owing to the extreme thinness of its walls. Coils of bowels were felt and seen contracting from left to right. There were several hard masses in the bowel; the transverse colon had descended in the pelvis, forming there an acute angle. In the caecal region an invagination of the ileum into the caecum was clearly felt, the region over the lower margin of the liver was tender on compression, the gall bladder could not be felt. There was no history of gall stone colic or jaundice. Under the impression that the trouble was due to intestinal ulceration, an exploratory operation was advised. For several days previous to operating she was kept in bed and fed on digested food, and enemata of sweet oil were forced as high as possible; in less than a week after the bowel had been freely opened all the hard masses had disappeared and the invagination had lessened perceptibly. On the day of the operation, previously to being chloroformed, the invagination had completely disappeared.

The abdominal cavity was opened through the right rectus, the bowel looked quite normal, the appendix healthy, the appendages free from trouble; the right edge of the liver was seen to be protruding from under the ribs for about half an inch. On tilting up the lower edge of the liver, the gall bladder was found to be enlarged, of a grey blotting-paper colour, its shape quite unusual. The common duct was very broad and of the same shape and breadth as the bladder. There seemed to be no division between the gall bladder and the common duct, no cystic constriction; it was impossible to see where the bladder ended and the cystic duct began. Three calculi were found in the duct, the higher one about where the hepatic duct enters the common duct, the lower stone in the second part where the duct dips under the second part of the duodenum, and middle stone, which was the largest, between the two. The largest stone, the size of a small marble, was first cut out, and as the others could not be milked into the middle incision, they were cut out; a rubber drain was fixed into the central opening; the other cuts were sewn and drained. The gall bladder, when incised, was found full of small stones, the size of millet seeds. For the gall bladder condition alone cholecystectomy would have been best, but whether in such circumstances it should have been done in the presence of the other conditions, I did not think so.

I was anxious that thorough drainage should be done, and in view of some further necessity for treatment the advantage of having the gall bladder to assist the manipulation was important. The patient recovered rapidly, and up to the present, seven months since the operation, has had no return of her trouble. She is in perfect health, has never had any return of pain, has put on flesh, and does not suffer from constipation.

PROOF OF THE ENDEMIC ORIGIN OF YELLOW FEVER IN WEST AFRICA.

BY

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A LARGE amount of misconception exists upon the question of race susceptibility. It is sometimes supposed that the Latin races are the most susceptible to yellow fever, others think that the black races are immune. As a matter of fact, the most recent observations prove the accuracy of the old writers of authority upon yellow fever.

Writers of the eighteenth and nineteenth centuries concluded that no race was exempt, and that the apparent exemption in the black races, or in the Creoles, would readily disappear if these people went to Europe for a long stay. Modern observations prove that all races are susceptible, provided they come from climates where yellow fever does not exist. *That, in fact, it is entirely a question of immunity.*

Those living in a country where disease is endemic at a very early period in their life get an attack of the disease, which naturally confers a certain degree of immunity; later they may get subsequent attacks, but each successive attack is less serious; when manhood is reached the subject is in all probability completely immune.

It is this fact which explains why yellow fever has always been regarded as a *disease of newcomers;* it does not matter in the very least whether the newcomers are Scandinavians, British, Latins, Syrians, Mohammedans, Tartars, Chinese, blacks, or whites, the question alone is, Are they newcomers or not? Have they resided for a long term of years in a country where there is no yellow fever? It is an old observation that those blacks who resided in yellow-fever-free districts in the United States suffered from yellow fever when they reached a town where it was prevalent.

During the great yellow fever epidemic in Philadelphia, blacks and whites were equally affected, and there are numerous other examples to the same effect. The creoles who leave the West Indies to be educated in Europe return as non-immunes, and are as liable to yellow fever as any European. It is an old and oft-repeated observation that the blacks of West Africa rarely, in comparison with the whites, get yellow fever; this has been amply borne out by the outbreaks of yellow fever in West Africa this year, and in all previous years. On the other hand, last year, 1909, during the yellow fever epidemic in Barbados, those who were most severely affected were the native blacks; yet these same blacks were the descendants of the African immunes. They had, therefore, in the meantime become non-immunes and susceptible, owing to the fact that yellow fever had ceased to be endemic in Barbados.

The fact that the poor native black inhabitants of Barbados were those most susceptible proved that yellow fever was not endemic. Similarly, the fact that the black races in West Africa do not exhibit, as a rule, the severe yellow fever symptoms, nor die from the disease like the whites, is proof positive that they suffer from a mild form of the disease which confers subsequent partial immunity. We know positively that neither their colour nor race confers immunity to yellow fever, and that they are as liable as the white European to become infected provided they have lived out of Africa for a long period. Vice versa, it is a well-known and an often proved observation that those whites who, being born in yellow fever countries, survive childhood grow up to be resistant to yellow fever. The old physicians said that they became acclimatized, whilst Creoles who left for a long stay in Europe became deacclimatized. We now know, thanks to the experimental observations of the American, Cuban, and Brazilian observers, that "acclimatization" means becoming infected by the *Stegomyia*, with a mild attack of yellow fever, which confers partial immunity. The word "acclimatization" of the eighteenth and nineteenth centuries means "immunization" to-day.

Applying, then, this reasoning to West Africa, we know that outbreaks of yellow fever have been far more frequent than is usually supposed during the last hundred years; we know that in this year, 1910, yellow fever broke out independently at four separate points in British colonies —namely, Freetown, Seccondee, Axim, and Sawmills—and that inquiry on the spot failed to prove importation. We are forced, therefore to conclude that the disease was, to use the phraseology of the older observers on the coast, a product of the place itself—in other words, that the disease was endemic. If, then, the disease is endemic—a view which is held by some British, German, and French authorities, who have investigated the disease upon the spot—it remains to ask, By whom is the virus of yellow fever maintained? From whom do the *Stegomyia* derive their infection? The answer to this can only be the black races; we know that the whites are not immunized in sufficient numbers. On the other hand, we know that the black races are very considerably immunized, or how otherwise would they escape yellow fever? Then it is to the black races that we must look for the source of supply of the yellow fever virus; it is they who, in childhood and adolescence, have the disease in a mild form, but, mild though it be, quite able to infect the *Stegomyia*, as the inoculation experiments of the American Commission proved. In other words, the black natives have the so-called mild or ambulatory form of yellow fever. These mild forms pass unrecognized amongst the natives, just as the sister disease, malaria, does, but, nevertheless, like malaria, it is there.

From analysis of all the facts, I can come to no other conclusion than that a very large proportion of the "remittent" and "bilious remittent" fevers of West Africa to-day are the well-known mild forms of yellow fever. The African native is as saturated with yellow fever as he is with malaria, and his escape from severe yellow fever and its very frequent occurrence amongst the whites is proof of this contention.

But it may be argued by some that, if yellow fever has been endemic in Africa so long, how comes it that all the whites have not perished? As a matter of fact the death-roll from *diagnosed* yellow fever has been exceedingly high; in the second place, there is no doubt whatever that a vast amount of yellow fever has passed *unrecognized* amongst the whites; in the third place, European whites have during the last decades taken measures which, without their being aware of it, protected them—they have lived to a certain extent segregated in larger and better houses, and the use of the mosquito net is now very general. Both these measures afforded a very great degree of protection; the remarkable comparative immunity which even partial segregation gives is well known to students of yellow fever. Were this not a well-recognized rule in connexion with all infectious diseases mankind would have long since disappeared.

The final proof that remittent and bilious remittent fevers are in a large number of instances the mild forms of yellow fever will be given when, by the destruction of the *Stegomyia* in West Africa, these fevers will, if my reasoning be correct, disappear in great part with yellow fever, precisely as they have done from Barbados, and from ships from the Southern States of America and from Spain.

AT a meeting of the Manchester and Salford Hospital for Diseases of the Skin on November 12th it was decided to form a Dermatological Society for Manchester. Such society was forthwith constituted, Dr. H. G. Brooke being elected president, and Dr. William Dyson, honorary secretary.

AN examination for not fewer than fourteen commissions in His Majesty's Indian Medical Service will be held in London on Monday, January 23rd, 1911, and the five following days. Particulars regarding pay, promotion, etc., in the service, and the necessary forms forms for application, can be obtained from the Military Secretary, India Office, London, S.W.

ON November 24th, Lieutenant P. T. Etherton, F.R.G.S., of the 30th Gahrwalis (Indian Army), repeated—in aid of the building fund of the nurses' block at the Royal Portsmouth Hospital, which forms the local memorial to King Edward VII—the brilliant lecture which he gave at the Sheffield meeting of the British Association on his great journey across Cashmir and Mongola over "the Roof of the World" to Siberia, a story of sport and exploration attended with gigantic difficulties splendidly overcome, along routes untraversed by white men. The Commander-in-Chief, Admiral Sir Assheton Curzon Howe, K.C.B., presided, and, as the Town Hall was crowded, the fund will benefit very substantially.

CASE OF FATAL TRICHOCEPHALIASIS IN A CHILD.

BY

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LONDON. MOREBATTLE, N.B.

The case now to be recorded was that of a girl aged 5. There was nothing of interest in the family history, and the child's previous history was free from illnesses of any importance. The patient's home and surroundings were in every way conducive to good health.

The mother stated that a year before the onset of her illness the girl was noticed on several occasions to eat earth from the roadside, but for several months at least before her illness began she was not observed to do so. In August, 1908, her mother noticed that she was not looking well; she vomited sometimes after breakfast, she was easily tired, felt sleepy, and was developing a rash on her legs, and looked bloodless.

When the child was brought to us on August 31st, 1908, she was a well-developed girl, with pale skin and mucous membranes, the face being almost lemon-tinted, and the sclerotics pearly. Many spots of purpura were found on the legs, body, and neck, and one or two in the mouth. There were several patches of greenish discoloration indicative of old ecchymoses. A soft systolic murmur was heard all over the cardiac area; the spleen, liver, and lymphic glands were not enlarged. There was no history of bleeding from mucous membranes, or haematuria, but there was a small quantity of albumen in the urine. There was no diarrhoea during the illness, or during the previous year; there was no history of the passage of worms, and the only symptoms pointing to intestinal irritation were occasional grinding of the teeth and complaints of abdominal discomfort. These symptoms were not urgent, and were recalled by the parents only after the illness. There were no fits.

On the chance that intestinal parasites might be the causal agent of what was obviously a grave anaemia, calomel and thymol were given, and the faeces were carefully examined. No worms were found, but multitudes of the characteristic eggs of *Trichocephalus dispar* were present. No blood was present. Three days after the first visit the blood count was: Reds 1,160,000, whites 30,000, haemoglobin 20 per cent.; colour index below 1. The film showed poikilocytosis, microcytes, megalocytes, normoblasts, megaloblasts, and polychromatic staining. The leucocytosis consisted in an increase of the lymphocytes, and, to a lesser extent, of the large mononuclear leucocytes. Myelocytes were present, including some "intermediate" myelocytes.

The child was obviously becoming weaker, and no extreme measures could be taken with a view to expulsion of the parasites, but another dose of thymol was given and the stools carefully examined. The result was, as before, no worms found, but many eggs of *Trichocephalus dispar*. A second blood count, three days after the first, showed reds 990,000, whites 19,000, and haemoglobin 15 per cent. Her weakness gradually increased; the temperature, which had been rising to 100°, now began to reach 102.5°; she complained of pains in her legs, and suffered from occasional rigors. On the day before death, the liver, formerly of normal size, was found to be enlarged, extending 2½ in. below the costal margin. The spleen was not enlarged. On the day of her death she vomited a mass of coagulated blood; she died in a comatose condition. No necropsy was permitted.

Trichocephalus dispar is usually described as a parasite "without medical interest" and innocuous, but cases similar to the above have been recorded in which it has been associated at least with severe anaemia. These cases stand in the same category as certain "pernicious anaemias" due to the presence of *Bothriocephalus latus*, which are in reality not primary but secondary anaemias. *T. dispar*, if present in large numbers, may be a most destructive agent, causing profound, and even fatal, anaemia. Unfortunately, in this case we were not permitted to examine the bowel *post mortem*, but the ova of the parasite were found in the faeces in very large numbers indeed, so that we are justified in concluding that this child's condition was due to the parasite.

The blood had the characters of a secondary rather than a primary anaemia, as witness the colour index and the decided leucocytosis. The presence of megaloblasts does not go against this statement, as these cells are found in severe secondary anaemias, especially in those resulting from intestinal parasites (Askanazy).

A case similar to the above was reported in the British Medical Journal, 1907, vol. ii, Epitome. In contradistinction to that case, our patient had a history of previous good health with no diarrhoea, nor was there any diarrhoea during her illness. The rapidity of the illness now recorded is noteworthy; the child was apparently in good health in July, and died in September after two months' illness.

A case of this kind points to the necessity for examination of the stools in children suffering from anaemia of unknown cause.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ULCERATIVE ENDOCARDITIS IN A BABY WITH PYAEMIC ABSCESSES: CURED BY DRAINAGE AND VACCINES.

The patient, aged 4 months, was admitted with a fluctuating swelling over the inner aspect of the upper third of the left tibia and a temperature of 103.6°. This was said to have been caused by a blow from a cricket ball.

The swelling was explored, and proved to be a subcutaneous suppurating haematoma. The underlying periosteum was examined, and found healthy, so the wound was partly closed and a drainage tube inserted. A week later the baby was observed to be rather blue, and breathing rapidly. On examining the heart the left ventricle showed signs of dilatation, and on auscultation a murmur was heard over the mitral area. This had a distinctly musical character, and was conducted outwards.

A tentative diagnosis of ulcerative endocarditis was made. Three days later a puffy swelling appeared over the right sacro-iliac joint. This was explored, and pus was found in the joint, which was accordingly drained. The next day the right knee exhibited signs of distension. This was opened and drained; it contained a slightly turbid fluid. Some of this, and also a specimen of pus from the suppurating sacro-iliac joint, was removed for examination.

The *Staphylococcus pyogenes albus* was found in each of the preparations, and a vaccine was prepared from them. An initial dose of 2½ million was injected into the subcutaneous tissue of the abdomen. This was repeated once a week. On the day after the first injection albumen was found in the urine. A fortnight after the vaccine treatment was started the knee-joint had ceased to discharge, and the sacro-iliac joint was still discharging slightly. Three months after admission the baby was able to return home. The abscesses in the knee-joint had completely healed, the movement in the affected knee-joint was excellent, the heart appeared to be normal, and the albumen had for some time disappeared from the urine. During the last month the dose of vaccine was gradually decreased from 2½ million to ½ million.

This case is of considerable interest—partly from the extreme rarity of ulcerative endocarditis in an infant (hardly any other such cases having been reported), and also on account of the vaccine treatment curing a case in which the prognosis looked extremely bad.

I am much indebted to the staff of the Royal Surrey County Hospital, Guildford, for giving me a free hand in treatment of this case, and also for granting me leave to publish it.

Echlin S. Molyneux, M.R.C.S., L.R.C.P.

Leamington.

SCARLATINA MALIGNA.

Dr. Arnold Gregory's paper in the Journal of July 23rd, giving an account of some cases of scarlatina maligna, recalls to my mind a very similar case which occurred in my practice many years ago, in which treatment by cold affusion saved the patient from imminent death. A young girl, after eating her dinner, was suddenly seized with sickness of stomach, green vomiting, and green stools. Headache and delirium rapidly followed, and she was going about the house "as if she was mad." Simultaneously with the sickness the nurse who was attending her brother during an attack of enteric fever stated that a

red rash "like measles" came out all over the body of the patient, and remained out for some hours.

On the following morning, when I first saw her, her temperature was 105.6°, pulse 160, respirations 60. She was passing a thin dirty fluid from the bowels, with greenish shreds floating in it. Restorative remedies were employed with little or no effect. At 6 p.m. the temperature was 105°, the pulse could not be felt, except as a mere flicker; the first sound of the heart was inaudible, the only thing heard being a series of clicks in rapid succession, which I took to be the second sound. She was unconscious, but on speaking very loudly to her she opened her eyes, but could not be got to put out her tongue or speak. Since the morning visit the nurse stated that she had got "quite black" (cyanosis); that her pulse went, and that she only kept her alive by sprinkling her with cold water, and by applying mustard and turpentine to different parts of the body. As a rapidly fatal issue seemed the only thing to be expected—the girl, in fact, was moribund—it was decided to give her the chance of a cold affusion. Her hair was quickly removed, her head and shoulders brought well clear of the bed, and two or three jugfuls of cold water were thrown over her. This was followed by an immediately favourable result. She became conscious, answered when she was spoken to, put out her tongue readily, then seemed inclined to fall off into a somnolent state.

At 11 p.m. she had somewhat improved. The pulse could be counted, 160, but was only the merest thread. The temperature was 105.8°, respirations 36. As she seemed inclined to relapse into a state of lethargy, I repeated the cold affusion on her head, which this time she violently resisted.

On the following morning her temperature had fallen to 101.2°, the pulse to 136, and on the next day, the third of her illness, the temperature was 100.8°, the throat was sore, and a bright scarlet rash was over her limbs. From this on she made an uninterrupted recovery, and within five days from the onset of the attack was practically convalescent.

I mention this case because I believe that in similar cases cold affusion is *the* treatment *par excellence*, and where other remedies are inapplicable is likely to prove efficacious. The great nerve centres are overpowered by a morbid poison, and in cases such as this, where these centres are rather surprised than (necessarily) completely overwhelmed, and when they have been, up to the onset of the attack, in a condition of unimpaired integrity, it is just under such circumstances that a powerful stimulant is imperative if the patient is to be roused from a torpor which may have rapidly fatal effects.

Enniscorthy. THOS. DRAPES, M.B.

MENINGOCELE OF SKULL CAUSING DIFFICULTY IN DELIVERY.

MRS. N., a multipara, suffered for the last few weeks before delivery from marked oedema of legs and pain in the back greater than during previous confinements.

I was called to her on the night of September 18th, and found her in the second stage of labour, the membranes having ruptured a short time before my arrival. The amount of amniotic fluid seemed to be in excess. The pains were not severe, and were described as nearly continuous.

On examination per vaginam a fluctuating swelling was found about the size of a large orange occupying the vagina. Above this the head of the child could just be felt. An abnormality clearly being present, c loroform was administered and the hand cautiously passe into the vagina alongside the presenting tumour.

The condition was then clear. The fluctuating swelling could be felt to arise from the occipital portion of the child's skull and to have its pedicle surrounded by the cervix—the tumour being entirely in the vagina and the skull within the uterus. The tumour was felt to be covered by skin. Gentle traction was made on the pedicle and tumour in the hope of delivering first the tumour and then the head. The head was small and the cervix easily dilatable. Unfortunately, though little force was used, the tumour burst, and delivery of the head was completed manually in a few minutes. The third stage of labour was normal. The child, which was a male, and otherwise healthy, only lived about two hours. On examining the lax tumour it was found to have been a meningocele, brain substance only being detected in the gap between the bones.

REMARKS.—The books on midwifery to which I have access do not describe a meningocele at any length; indeed, one says it is "of no obstetric importance." I would like to know whether it would have been possible to have delivered the tumour intact or whether it should have been tapped *in situ*.

H. J. ROBINSON, M.B., B.C.Cantab.
M.R.C.S., L.R.C.P.

Kirkoswald R.S.O., Cumberland.

INTUBATION OF THE APPARENTLY STILLBORN.

POSSIBLY this method is well known, but as I have not seen it in any textbook, and have never met a practitioner who was acquainted with it, you may think it of sufficient interest to justify publication.

When the usual methods of inducing respiration fail, I insert a gum-elastic catheter, from which the blunt end, including the eyelet, has been cut off (a No. 8 is a convenient size), by the mouth, and using the forefinger of the other hand as a guide, pass it through the glottis into the larynx, and blow through it gently, but with sufficient force to fully inflate the lungs. Usually the respiratory muscles immediately respond and expel the air, and breathing commences. Occasionally several inflations are necessary before respiration is fully established. In one case, where not the slightest indication of heart action could be detected, it was necessary to compress the chest walls in order to expel the air, and the inflation and forcible expulsion had to be kept up for quite two minutes, but in the end the child breathed without help and lived. I have used this method for the last thirty-five years and never known it fail. As an example of the value of subordinating one's surroundings to one's need, I may say that the first time it occurred to me to try this (in or about 1875) the only thing in the house of the nature of a tube was a "churchwarden" clay pipe. Using about half of its stem, I was able, by exercising great care, to get the thin mouthpiece end through the glottis without injury to the soft parts, and got a perfectly satisfactory result. Since that I have always carried the catheter tube in my bag.

Bishop Auckland. MARK WARDLE.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

MONSALL FEVER HOSPITAL, MANCHESTER.

SEVERE CASE OF SCARLET FEVER, FOLLOWED BY MULTIPLE ABSCESSES.

(By RAYMOND J. CHAPMAN, M.B., Ch.B.Edin., D.P.H.Vict., Assistant Medical Officer.)

THE following case seems worthy of record:

The patient, a boy aged 3 years, who prior to this illness, with the exception of a few slight attacks of nasal catarrh, had been perfectly healthy, was admitted to the Monsall Fever Hospital on February 17th, 1910. On admission the child was well nourished. The trunk and limbs were covered with a typical scarlatinal rash. The mucous membrane of the throat was very swollen and intensely inflamed.

The tonsils were enlarged and almost covered with a thick white, glairy secretion.

The tongue was furred and the papillae enlarged. The deep cervical glands were enlarged and tender on both sides.

The heart sounds were regular and rapid, and there were no audible bruits. The breathing was rapid, vesicular in type, and there were no abnormal physical signs. The urine was acid and contained no blood, albumen, or sugar.

The pulse-rate was 140 and the temperature 101.2° F. In

short, the case was a typical one of septic scarlet fever or scarlatina anginosa.

Following admission, the nose and throat were douched frequently with warm sterile water and the throat swabbed with a solution of peroxide of hydrogen. The throat condition, however, did not respond to treatment, and on February 23rd several large ulcers appeared on the soft palate and on the mucous membrane covering the hard palate.

On the 25th it was observed that a large portion of the soft palate and of the mucous membrane covering the hard palate was sloughing. On the following day a large piece of necrosed tissue came away, leaving a deep wound on the left side of the soft palate, extending on to the hard palate and downwards on to the anterior pillar of the fauces.

On the 28th several small boils or pustules appeared on the scalp and face. These, however, rapidly yielded to treatment and disappeared in a few days. The throat at this stage continued to cause anxiety, and on March 3rd it was observed that, in spite of swabbing with pure izal, the sloughing process had spread on to the left tonsil. On March 16th the temperature, which for the last few days had never risen above normal, again shot up to 103°.

On examination this proved to be due to a large abscess on the back of the right wrist. On the following day this was opened and drained, and the temperature came down to normal. A day later the temperature again began to oscillate from 100° in the morning to 103° in the evening. The pulse was now rapid and feeble, and there was still a large amount of discharge from the throat.

On the 29th the upper half of the right thigh was slightly swollen and painful on palpation. The swelling continued to increase in size, and on April 6th fluctuation could be distinctly made out. A puncture was then made with an exploring needle and pus found.

On April 7th a general anaesthetic was administered and the abscess opened up freely by incisions on the inner and outer surfaces of the thigh.

About 10 oz. of pus were evacuated. The pus was found to be lying deeply beneath the muscles of the thigh at about the junction of the middle and upper thirds of the femur. The bone was not thickened and did not appear to be implicated.

Cultures made from the pus showed the presence of streptococci in almost pure growth. After the operation the temperature slowly fell to normal, but on April 17th there was again a slight rise caused by a septic finger, which was incised.

On April 18th a swelling, which proved to be another abscess, appeared in the lumbar region of the back, slightly to the right of the middle line.

On the 20th the temperature again rose to 100°, and the abscess was opened and about 3 oz. of pus evacuated. The throat was now improving steadily, but there was still a very large amount of induration around the femur, and fears were entertained that the bone was affected.

As the wound in the thigh continued to discharge large quantities of pus and the patient was losing flesh, it was decided to try the effect of an autogenous vaccine. Cultures were made from the discharge, and again showed the presence of streptococci in almost pure growth.

The opsonic index to throat streptococci was now taken according to the method described by Dr. A. Clarke Begg,[1] and found to be 0.64, a vaccine was prepared, and on May 4th 25 million organisms were injected. The temperature rose to 99.6° in the evening, and the next day fell to normal.

Following the injection the discharge was rather less in amount, but not markedly so. The child, however, appeared brighter, and the pulse-rate fell from 150 to 134.

On May 11th the opsonic index was 0.95, and on the 13th 75 million organisms were injected. The temperature rose to 99° in the evening, and as before fell to normal on the following day.

On the 15th the discharge was very much less in amount, and two days later the leg was no longer tender on palpation.

On May 30th the wound was quite dry, and from that date the patient made an uninterrupted recovery.

REMARKS.

The interest in the case lies, first, in its rarity; and, secondly, in the very marked beneficial effect produced by the injection of the vaccine. Until I had looked up the literature I was under the impression that the case was unique. I find, however, that in Goodall and Washbourn's *Manual of Infectious Diseases*[2] pyaemia is mentioned as an uncommon complication. Also in Nothnagel's *Encyclopaedia of Practical Medicine*[3] it is stated that multiple abscesses sometimes occur, the explanation given by the writer being that "temporarily the conditions become more favourable to the entrance and growth of any of the parasites." With these two exceptions I am unable to find any reference to the condition.

In regard to the causation of the condition, an interesting observation, which unfortunately was not made in the case, would have been the determination of the strain of the streptococci in each of the abscesses, and also in the throat lesions.

I am indebted to Dr. Fletcher, Medical Superintendent of the Monsall Fever Hospital, for kindly allowing me to publish the foregoing notes on the case.

REFERENCES.

[1] A. Clarke Begg, Observations on the Vaccine Treatment of a Series of Staphylococcic Infections, BRITISH MEDICAL JOURNAL, January 22nd, 1910, p 189. [2] Goodall and Washbourn, *A Manual of Infectious Diseases*, p. 77. [3] Jürgenson: Diphtheria, Scarlet Fever, and Measles, Nothnagel's *Encyclopaedia of Practical Medicine*, English Edition, p. 497.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, November 28th, 1910.

CHARTERS J. SYMONDS, M.S., F.R.C.S., President, in the Chair.

Dilatation of the Heart and Heart Strain.

DR. J. F. GOODHART, in opening a discussion on dilatation of the heart and heart strain, said that the limitations to be attached to these terms were not easy to settle, because dilatation was sometimes present without giving positive signs of being so. Strained hearts were constantly in evidence. The symptoms appeared to be unnatural sensations of illness: perhaps nausea, perhaps fainting; the breath sighing; irregular action of the heart; collapse; sensation of impending death, perhaps, in some few cases. Then there were pains of various degrees and kinds over the region of the heart, and other sensations, such as extreme lassitude on the smallest exertion. Diagnosis was often based upon the increase of the precordial dullness, and a displacement of the impact of the apex upon the surface wall of the chest. There seemed to be an idea abroad that the impulse in relation to the chest wall was a constant one, and no doubt in general terms it was a fairly constant anatomical landmark. But there were several circumstances that tended to lessen its value as evidence of dilatation. Another fact which militated against too prodigal use of the term "dilatation," was that the symptoms for which men and women applied for treatment were not such as were found in cases where the dilatation was beyond dispute. An intermission of the heart beat, if unassociated with any obvious disease, was one of the most unimportant of cardiac aberrations, and a weak pulse had but seldom any sinister meaning in respect of the heart. These so-called dilatations of the heart were no dilatation at all. In short, both the strained heart and spurious dilatation were mostly due to aberrant innervation. If he correctly assumed that in cases of so-called dilatation and heart strain the heart muscle was sound there was no necessity for prolonged rest. A case of the kind would often show better results if the patient were allowed to take moderate exercise, and live a life in conformity with his or her time of life. His conclusion was that in disease in which the heart shared in the vicious process, there might be too much tendency to consider it from the local standpoint when they would do better to think less of the heart and more of the driving power. Sir R. DOUGLAS POWELL said that cases were sometimes referred from the public services on account of disease of the heart with murmur and dilatation, and yet on examination by other medical men no sign of organic disease of the heart could be discovered. In young children, especially between the ages of 7 and 12, it was possible to observe enlarged hearts, the apex beat being outside the normal position, and yet those patients had not diseased hearts. In making a diagnosis, it must be remembered that the heart was part of a large extensive cardio-vascular system. Sir LAUDER BRUNTON said that in elderly people the disturbance of the heart might not be due to change in the muscular structure but to nervous changes. In diagnosing cardiac strain in young people he depended chiefly on a combination of symptoms with an estimation of the size of the heart as ascertained by very gentle percussion. The question of murmurs was interesting, because there were some murmurs which persisted and yet apparently were of no clinical importance. It was quite certain that a healthy heart had great power of withstanding strain, but that it was gradually weakened by acute disease, especially slight attacks of influenza. Dr. HENRY DAVY, of Exeter, said that the action of toxins on the heart muscle was well known, and most people

had seen hearts dilated under the influence of typhoid, diphtheria, and influenza toxin, but he did not think it had as yet been quite clearly recognized that the micro-organisms connected with diseased teeth might produce toxins which acted on the heart muscle in the same fashion. Dr. W. COLLIER, of Oxford, said that he did not consider any one justified in expressing an opinion as to the fitness of a man for hard athletic exercise unless he had tested his heart during violent action. Further discussion was adjourned till Monday, December 5th.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Tuesday, November 22nd, 1910.

J. MITCHELL BRUCE, M.D., F.R.C.P., President, in the Chair.

Use of Belladonna in Dyspepsia.

DR. F. CRAVEN MOORE and Dr. L. KILROE communicated this paper. Clinical experience having established that the administration of belladonna led to a definite amelioration of the subjective manifestations of certain types of dyspepsia, it was decided to conduct a systematic investigation into the action of this drug on the functional activity of the stomach in a series of consecutive cases, both with and without manifestations of gastric disorder. The results of this investigation confirmed and amplified the earlier observations of Riegel, in showing that belladonna exerted a definite inhibitory effect on the secretory activity of the stomach. The administration of the drug along with, or some short time previous to, a test meal was associated with a well-marked diminution of the acid and peptic values of the stomach contents; this effect was generally greater in such pathological conditions as were associated with hypersecretion, but still obtained in conditions of hyposecretion. The effect of the administration of belladonna on the volume of the stomach contents was but slight, and variable; but whilst by this method it would appear that the drug influenced but little the emptying of the stomach, more recent radiographic observations caused them to believe that it exerted an influence in inhibiting and relieving spasmodic contractions. In the discussion which followed the reading of the paper Dr. A. F. HERTZ said he had found belladonna useful in the treatment of gastric and duodenal ulcer. There was a remarkable difference between the action of atropine on the salivary secretion and the gastric secretion—in the one a diminution in quantity with no change of quality, and in the other a change in quality with no change in quantity. Dr. H. FRENCH alluded to the bullous dermatoses and their causation by autointoxication, and to the use of belladonna for such, suggesting that its activity might be due to some modification of the contents of the alimentary canal. Sir JOHN BROADBENT asked as to evidence of spasm in the cases recorded, referring to the dilatation of the stomach in duodenal ulcer, which he thought might be due to pyloric spasm. The PRESIDENT asked if the treatment by belladonna needed to be continued, and as to the usefulness of the various preparations of the drug. Dr. CRAVEN MOORE, in reply, said his impression was that the drug was one of distinct value, though the absence of lasting effect was clear.

SECTION OF OTOLOGY.

Friday, November 18th, 1910.

Mr. ARTHUR CHEATLE, President, in the Chair.

THE following were among the exhibits: Mr. ARTHUR CHEATLE: (1) A case of *Congenital malformation of the auricle and meatus.* An *x*-ray photograph showed the presence of mastoid cells, but on exploration no meatus was found, nor any evidence of the tympanic plate. (2) A case of *Healed fracture of the right temporal bone*, in which the line of fracture in the meatus could be seen. The fracture dated back twenty years. Dr. H. J. DAVIS: A case of *Extradural abscess* tracking through the jugular foramen into the neck, with sloughing of the middle third of the internal jugular vein. The patient, a girl aged 19, had been treated as a doubtful case of enteric fever for five weeks before the operation. (Widal's reaction negative.) Mr. SYDNEY SCOTT: A case of latent mastoid disease in which an extradural parasinous abscess had formed, and was followed by *Retrocerebellar intradural abscess.* The path of infection along the great horizontal fissure of the cerebellum could be traced. Dr. DAN MCKENZIE: A woman, aged 32, showing *Infiltration of both auricles.* A vaccine had been prepared from the moisture in the depths of the meatus, and injected subcutaneously, with the peculiar result that certain fleeting attacks of local cutaneous inflammations had ceased to appear. Lymphangioplasty had had no very decided effect. Mr. C. E. WEST: A case of chronic *Infective labyrinthitis* in a woman aged 23, who had had right facial paralysis for about a week, and total right deafness and loss of thermal excitability before the radical mastoid operation. The facial nerve was found to be absolutely isolated by granulations which sprouted from the labyrinth. Mr. H. J. MARRIAGE showed a large *Tuberculous polyp* removed from the middle ear of an infant aged 7 months. Microscopical examination had been made. Twelve days after a radical mastoid operation an injection of tuberculin was given. Three months later tuberculous dactylitis developed. Six months later tuberculous glands were removed from the neck. The child had grown into a fine sturdy boy.

ROYAL ACADEMY OF MEDICINE IN IRELAND

SECTION OF MEDICINE.

Friday, November 11th, 1910.

Sir JOHN MOORE in the Chair.

Presidential Address.

BY way of a presidential address, Sir JOHN MOORE related a number of cases throwing more or less light on obscure features in diagnosis and pathology or illustrating practical points in treatment. Among other matters dealt with was pneumonia in childhood. Nothing, he said, was more remarkable in the history of Dublin during the last twenty-five years than the steady decline in prevalence of enteric fever, the almost total disappearance of typhus, and the ominous increase of acute pneumonia—a disease which had taken the place of the old classical continued fevers in the nosology of the Irish capital. According to old teaching, it might have been expected that the pneumonia occurring among children would be lobular rather than lobar; but the reverse was the case. The President also described two cases of ataxic typhoid fever, followed by recovery, and laid much stress on the great therapeutic value of camphor as a stimulant, antiseptic, and sedative. The communication concluded with the report of a case of amyotrophic lateral sclerosis, and one of a case of staphylococcic infection, which caused six months' fever, and was finally controlled by the use of antistaphylococcic vaccine.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, November 24th, 1910.

Dr. T. R. BRADSHAW, President, in the Chair.

Mr. K. W. MONSARRAT showed a man aged 40, suffering from *Osteitis deformans*, together with a photograph showing that at the age of 21 he was quite free from evidence of the disease. Mr. R. E. KELLY, describing Mayo's operation for *Hallux valgus*, showed that the condition was essentially one of a long great toe, and necessitated the removal of a large portion of the head of the metatarsal bone so as to reduce it in length. He also described the ingenious use of the bunion or adventitious bursa in forming a new joint. Mr. ARMOUR pointed out the great danger of sepsis in the bursa and said that he had had many successes with the older methods of operation. Mr. NEWBOLT spoke to a similar effect and laid stress upon the importance in some cases of dividing the tendon of the extensor hallucis.

Glaucoma.

Dr. A. A. BRADBURNE, in a paper on incipient glaucoma, described a modification of the ordinary iridectomy which he was in the habit of performing; it consisted in drawing a small part of the iris forwards and inwards before detaching it, in this way the root of the iris was taken

away; this, he thought, was essential to success. Mr. A. NIMMO WALKER considered that Priestley Smith's modification of Bjerrum's test for incipient glaucoma to be of value and he now used it in his routine examination of patients. He was experimenting with Schioetz's tonometer, which he thought had come to stay as it was more scientific and trustworthy than digital palpation. In regard to operative measures he did not do iridectomy, which in his opinion was unnecessary and often useless; in acute cases he did cyclotomy, and in chronic cases sclero-corneal trephining; his experience of this operation was comparatively small, but the results, as far as they went, were encouraging. Dr. GROSSMANN said that the symptoms could not be considered as pathognomonic when they occurred alone. He instanced a case where, with an apparently marked glaucomatous cup, the vision was normal as regards colour, form and field. He maintained that the cause of glaucoma was not yet found. Of operative methods the iridectomy proposed by Graefe sixty years ago still was the best, though no one could explain why it was beneficial. He advocated this operation with a wide basal incision. Dr. T. H. BICKERTON also alluded to the great difficulty there might be in deciding upon the proper treatment in a given case.

SOCIETY OF MEDICAL OFFICERS OF HEALTH

Friday, November 11th, 1910.

Dr. W. G. WILLOUGHBY, President, in the Chair.

School Dentistry.

MR. W. A. GANT, L.D.S., in opening a discussion on the foundations of school dentistry, urged the necessity of a complete examination of children's teeth. A school medical officer could hardly determine which children were most suitable for conservative treatment. It was vitally necessary that the earliest traces of caries in the permanent teeth should be discovered; the ages for medical examination and re-examination would not synchronize with the times at which dental examination should be made. When no treatment was to be offered but advice sent to parents in extreme cases, the most suitable plan would be to make a primary division between the temporary and the permanent teeth. The temporary teeth could then be divided into three classes, signifying fair, bad, and very bad dentures, and the subdivisions for the permanent teeth could apply to the same conditions. Or the children with permanent teeth could be divided into those whose teeth were fairly efficient, those whose grinding capacity was impaired on one side only, and those whose grinding capacity was impaired on both sides. Such classification would serve to divide the children into groups having fair or bad teeth; the third group would relate chiefly to those children whose dentures would almost certainly be ruined before adult life was reached. The present system of noting the number of carious teeth at the best could only make a very imperfect division of the children, and gave little guide as to how the function of mastication was being performed.

HARVEIAN SOCIETY OF LONDON.

Thursday, November 24th, 1910.

Dr. HANDFIELD-JONES, President, in the Chair.

DR. SIDNEY PHILLIPS, in a paper on *Fevers from the standpoint of the clinician*, drew attention to the declining mortality from infectious fevers, as evidenced by the Registrar General's returns, and pointed out that this was partly due to a decreased incidence of these diseases and partly to a decreased case mortality. Speaking of rötheln, he considered there were many cases in which the rash did not appear before the third day, and gave details of cases in his practice in which feverish symptoms of an influenzal type had been present for a few days before the rash. In the differential diagnosis between this complaint and measles Koplik's spots were of value. He had known cases of measles being mistaken for small-pox owing to the shotty feeling of the rash when it first appeared on the forehead. He had also seen pityriasis rubra accompanied by fever simulating the rash of measles; amongst the sequelae of the affection he drew special attention to tuberculous peritonitis. In speaking of mumps he read notes of some very severe cases in which maniacal symptoms obscured the diagnosis; the testicle was generally affected in these cases. He advised mercury in the treatment of mumps, owing to its well-known influence on the salivary glands. Typhoid was one of the fevers in which there had been a decline in the mortality, but in this case mainly owing to diminished incidence; the case-mortality remained about the same. He recommended whey and citrated milk; the latter, however, did not prevent thrombosis as a sequela. He gave small doses of calomel as an intestinal disinfectant; it was not contra-indicated by diarrhoea or melaena. Cold bathing was impracticable in private practice. He had seen several cases of typhoid complicated by pregnancy; in the early months they generally aborted, in the later they went to full time. Speaking generally, he considered that hyperpyrexia as a complication of fevers was always due to some local cause, such as pneumonia, rheumatic fever, and in typhoid, perforation. A search should always be made for such causes. The combination of two exanthems in the same patient was no uncommon occurrence in the fever hospitals, however rare it might be in private. In the discussion which followed, Dr. C. O. FOWLER suggested that apparent cases of rötheln, in which rash appeared on the third day, might be cases of influenza accompanied by rash. When cold bathing was adopted in typhoid, thoroughly skilful lifting of the patient into and out of the bath was very important. Sir J. BROADBENT mentioned cases illustrating the non-infectivity of the pre-eruptive stage of scarlet fever, and also advocated the calomel treatment of typhoid.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

Friday, November 18th, 1910.

Dr. W. K. WALLS, President, in the Chair.

Rupture of the Uterus.

MR. R. FAVELL (Sheffield) reported a case of hysterectomy for complete rupture of the uterus in a secundipara, aged 24, whose first labour was natural. On the present occasion, after she had been in labour sixteen hours, and when the os was nearly fully dilated, her doctor applied forceps, and with considerable difficulty extracted a living child. As the placenta could not be expressed, he introduced his hand, and found the placenta amongst the intestines. There was no marked shock nor haemorrhage at the time, but on admission to hospital an hour and a half later she was found to be very collapsed (pulse 140, temperature 98°), but did not complain of any pain. The abdomen was distended and soft, but not tender. The fundus uteri was in the middle line. There was only slight vaginal bleeding. On opening the abdomen a large quantity of free blood was found in Douglas's pouch, and the rupture was seen to involve the posterior two-thirds of the supravaginal cervix. Hysterectomy was performed, and the patient made a good recovery.

A Hairpin in the Uterine Wall.

Dr. J. B. HELLIER (Leeds) reported a case in which a hairpin embedded in the uterine wall was revealed by skiagraphy. The patient stated that she had sat down on a chair into the seat of which a child had fixed a hairpin with the point upwards. She found that the hairpin had passed into the vagina and that it held her fast, so that she could not rise until she had broken part of it off. A little bleeding followed but no pain. On digital examination the pin could not be found, but a skiagram showed one limb of it, bent at an acute angle, lying above the pubes in a more or less vertical direction. The lowest point of the shadow was $\frac{3}{4}$ in., and the highest 2 in. above the pubes. The patient, who was very thin, was then thoroughly examined under anaesthesia. The uterus was found to be retroverted. Recto-abdominal and vagino-abdominal bimanual examination, passing the uterine sound, and examining the bladder by sound and cystoscope failed to discover the pin. Finally the anterior fornix was opened and the bladder separated from the cervix. The end of the wire was then found, projecting from the anterior wall of the uterus just above the anterior lip of the cervix. To draw it out required considerable force. It must have been entirely embedded in the uterine wall. It measured $2\frac{4}{10}$ in.

Transverse Suprasymphysiary Section.

Dr. A. W. W. LEA (Manchester) read a paper on the transverse suprasymphysiary incision, which, during the past two and a half years, he had used in 65 cases of abdominal section. Only one case ended fatally, and that could in no way be attributed to the mode of incision. The wound healed by first intention except in two cases. In these infection occurred along the suture tracks, but speedily cleared up. Many of the cases had been seen at varying intervals since. The scar was usually marked only by a thin white line. No case of hernia had occurred, nor had there been complaint of tenderness of the scar. The following conclusions were presented:

(1) The incision may be adopted with advantage in all cases of operation for displacement of the uterus; for inflammatory diseases of the appendages in the absence of evidence of suppuration; for the smaller ovarian tumours and myomata; for conservative procedures on the appendages, and for tubal gestation. (2) If the patient is placed in the elevated pelvic position, excellent access is afforded to the pelvic organs, with little disturbance of the intestines. (3) The operation is not suitable if drainage by the abdomen is likely to be needed; but as vaginal drainage is usually employed, this is not a valid objection to the operation. (4) The author has no experience of the incision in cases of cancer of the uterus or in large tumours; but there is no doubt that, by a wide incision, sufficient space may be afforded for the necessary operations to be carried out in a satisfactory manner. Experience has exclusively shown that a wide division of the fascia is not attended by any dangers of necrosis.

BATH CLINICAL SOCIETY.

Friday, November 4th, 1910.

Mr. F. LACE, President, in the Chair.

DR. RUPERT WATERHOUSE read a paper on *Anterior crural neuritis*, and described 5 cases in which symptoms occurred in the area of distribution of the lumbar plexus without evidence of pressure thereon. The patients were all males between the ages of 52 and 76; the etiological factors appeared to be gout, glycosuria, and exposure to cold and wet. Pain, the only sensory symptom subjective or objective, was chiefly felt over the dorsum ilii, the front of the thigh, at a point a little above the middle of the shin, and on the inner side of the dorsum of the foot. There was weakness of the muscles, flexing and adducting the hip and extending the knee, with resultant difficulty in mounting stairs, in rising from the sitting position, and in crossing one leg over the other; also, on walking, a sense of insecurity about the knee-joint, which was apt to flex unexpectedly. The objective symptoms consisted of coldness of the surface of the affected thigh, wasting of the muscles of the front and inner side, loss of the knee-jerk, and, in some instances, of the cremasteric reflex on the affected side. In two patients who continued to walk about symptoms referable to the knee-joint arose which were ascribed to internal traumatism resulting from the weakened quadriceps failing to keep the capsule of the joint taut during movement, so that the synovial membrane was apt to be pinched between the femur and tibia. The outlook in this form of neuritis was regarded as good even in diabetic cases.

AT the meeting of the Eugenics Education Society on Tuesday next, at 5.15 p.m., at the Caxton Hall, Westminster, Dr. Edgar Schuster, M.A., will speak on Methods and Results of the Galton Research Laboratory.

THE twenty-eighth German Congress of Internal Medicine will be held in Wiesbaden in 1911 from April 19th to 22nd. An exposition of preparations, apparatus, and instruments will be held in connexion with the congress. All communications relating to the congress should be addressed to the Secretary, Geheimrat Dr. Emil Pfeiffer, 13, Parkstrasse, Wiesbaden.

THE St. Marylebone General Dispensary, 77, Welbeck Street, W., celebrated its 125th anniversary on November 24th by a dinner at the Langham Hotel. Lord Howard de Walden occupied the chair and some 80 friends of the institution were present. Advantage was taken of the occasion to endeavour to extinguish the debt which was necessarily incurred in rebuilding some fifteen years ago; about £800 was required. The chairman announced in the course of the evening that £1,274 had been collected, so that the directors will have a considerable sum at their disposal to extend the beneficent work of the charity.

Rebiews.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

WE all know "the College," and those of us who are best acquainted with it are in a position to understand that the stranger and the student have never until now enjoyed the advantages of a good manual explaining the arrangements of the treasures preserved in the great collection at Lincoln's Inn Fields. *The Illustrated Guide to the Museum of the Royal College of Surgeons, England*,[1] therefore reflects great credit on the eminent scientist, Dr. ARTHUR KEITH, who has compiled it. One of true glories of the College, perhaps the greatest, is its really noble line of conservators. Owen, now almost a hero of ancient scientific history, won his spurs in the museum. Quekett, like Lionel Beale, showed the profession how the microscope should be employed, in days when that instrument was to the doctor little better than a toy, but he was handicapped by ill health, and, unlike Beale, did not live to the era of staining and sections. Flower, who had the rare advantage of being a biologist and a naturalist at the same time, was an ideal conservator, and Dr. Keith, most generous to his predecessors, does not fail to indicate to the visitor how he can witness Flower's work as a scientist in the collection of skeletons of whales, and how he can understand Flower's merits as a curator by inspecting the fine series of specimens illustrating the evolution of each bone in the vertebrate skeleton. Stewart has left behind him, as Dr. Keith indicates, many samples of his personal skill in dissection, especially the preparations in the ear series showing the modifications of the canalicular balancing system of fishes. The museum possesses other preparations of the semicircular canals made by Hunter himself. Stewart's additions to the physiological series illustrating protective mimicry showed the pains which he took in demonstrating the latest discoveries in his time. The labours of past conservators, as above noted, are carefully explained in this *Guide*, which is superior to any publication of its kind ever issued at Lincoln's Inn Fields. The author acknowledges the assistance of his collaborators, Mr. Shattock and Mr. R. H. Burne, at present his colleagues in the museum, and concludes the manual with another form of acknowlegement of the labours of others—namely, a brief history of the development of the museum, including a short and clear account of the life and museum work of John Hunter, highly to be recommended, as somehow most previous accounts were lengthy and obscure. A good plan of the museum is added to the text, and by its aid, combined with that of the letterpress, the visitor is guided from room to room. If he be an amateur in science and physic, he will find that the author can enlighten him about the real beauties, not the imaginary horrors, of anatomy, and can show him through the medium of the pathological collection what pains our profession takes to investigate the true nature of disease, and, thanks to Dr. Keith, he will leave the museum, not a sadder, but a wiser man. The student, the doctor, and the scientist can take care of themselves, but the *Guide* will save them time and will direct them to what they might overlook. Besides Hunter's collection, including that famous relic the preparation of the femoral artery ligatured for popliteal aneurysm, there are specimens chiefly of marsupials obtained by Captain Cook's first voyage. The *Guide* also turns attention to the Darwin relics, the priceless trophies brought home in the *Beagle*—giant edentates, the singular *Toxodon*, and the tooth of *Equus curvidens*, by which Darwin was the first to show that the horse, extinct in South America when discovered by the Spaniards, had existed in that continent in the days of the Megatherium. The extinct edentates at the same time bear witness to the

[1] *Illustrated Guide to the Museum of the Royal College of Surgeons, England*. By Arthur Keith, M.D., F.R.C.S., Conservator of the Museum. Issued by order of the Council of the College. London: Printed for the College and sold by Taylor and Francis. 1910. (8vo, pp. 132; 14 illustrations. 6d.)

labours of Owen. The author does not fail to remind the visitor that an articulated though imperfect skeleton of the dodo is preserved in the collection. The visitor, turning to what Pope held to be the proper study of mankind, is directed to the Barnard Davis collection, known to anthropologists all over the world, and to the whole series of human crania and skeletons, including the bones of the extinct Tasmanians. Nor does Dr. Keith let him miss John Evelyn's preparations made in Padua in the days when Charles I and Cromwell were fighting in his native land, and the brain of Babbage the mathematician, and the cast of the brain cavity of Jonathan Swift. The visitor will be surprised to learn that the cranial capacity of the great Dean of St. Patrick's was but moderate, and the same was the case with Eugene Aram, whose skull is on view in the museum. On the other hand, the skeleton of another Jonathan—whose family name was Wilde—shows neither in the skull nor elsewhere any of those marked signs of degeneracy on which psychologists of the Lombroso school love to dwell, yet Wilde was one of the vilest of mankind. Thief-taking, the pursuit of blood-money, however, and the selling back of stolen goods to their rightful owners implied intellectual development, however misguided. Dr. Keith also points out to the visitor the splendid series of dissections from the human subject at the preparation of which Mr. W. Pearson, the Prosector, has worked for nearly half a century, and the Conservator indicates where the visitor may find other special series prepared by scientists and surgeons in the College workrooms, under the auspices of Flower, Stewart, and himself. It is fair to add that the *Guide* possesses an index, which greatly adds to its utility, especially for the most bona fide type of visitor. Yet let us add in conclusion that the other type, the *dilettante*, must be considered. He wants to see curiosities, and therefore Dr. Keith rightly enlightens and directs him. He can inspect the Historical Cabinet, which includes a segment of Napoleon's intestine—now believed to be perfectly genuine—a chastity belt, the mummy of the first Mrs. Van Butchell, and pieces of the skin of England's foes once nailed to the doors of parish churches. He can look at one of the oldest mummies in any collection—about 4,000 B.C.—and the Elliot Smith and Wood Jones specimens will show him that the ancient Egyptians suffered as we do from the thousand natural shocks that flesh is heir to. He can also comment on the skeleton of Byrne, the "man of inches," as Carlyle would call him; and on that of Crachami, the dwarf; on the noble Chunee, the elephant of Exeter Change; on Orlando, winner of the Derby in 1844; and on the skull of Thurtell, with those of the other illustrious criminals already mentioned; the rib of King Robert the Bruce, and the clothes of a peasant struck by lightning. We trust, however, that the *dilettante* will be induced to become a student of Nature in earnest, and, if he should fail to become one, we feel sure that it will be his own fault and certainly not the author's.

DISEASES OF INFANTS AND CHILDREN.

IN spite of many excellent works already existent on the subject of Dr. CAUTLEY'S book on *The Diseases of Infants and Children*,[2] he has amply justified his claim to add to their number. His work contains more information on the subject than any other of the same size that we are acquainted with. The very merits of the book are its main drawbacks. The amount of information is so great, and so tersely expressed, that the closest attention is demanded, and the book is thus rendered somewhat difficult reading. His terse mode of expression, too, make many of his sentences sound dogmatic, but the slightest consideration will show that this arises solely from the author's respect for considerations of space. On careful perusal we can find no subject of importance omitted, and the most recent works on the subject are laid under contribution. In addition to knowledge gained from his own experience, he has drawn largely from the writings of others, both British and foreign. Many of these writers are mentioned by name, but we agree with him as to the omission of innumerable references to their special works, as their inclusion would have added considerably to the bulk of the work, already a large one.

An unusual feature is the considerable amount of space devoted to the surgical diseases of children, but this is commendable, since many surgical affections in their early stages come under the notice of physicians, who should possess a sufficient knowledge of them to "appreciate the best lines of treatment, and to recognize the conditions for which the aid of a surgeon should be invoked."

Infant feeding occupies only forty-five pages, but every detail of any importance is briefly but adequately dealt with. The different analyses given as to the compositions of human and cow's milk clearly show how irreconcilable are the views of accepted authorities as regards the percentages of the chief ingredients, such as the caseinogen, whey, proteids, and fat. Dr. Cautley condemns the so-called percentage method of infant feeding, and his statement that it "has had a very thorough trial, and has proved unsatisfactory, except for temporary purposes," will be accepted by many, at least, of those who have had practical experience of it. That there are many opinions and statements in the work open to criticism goes without saying, but, considering its size, they are wondrous few. In the section on pneumonia it seems unnecessary to introduce as separate clinical varieties such forms as cerebral pneumonia, pleuro-pneumonia, gastro-intestinal pneumonia, nephritic pneumonia, pneumonic or pneumococcal fever, and abortive pneumonia, merely on account of the predominance of particular symptoms. They are confessedly all one and the same disease. Such particular symptoms may mislead at first, but seldom predominate for long over those of the responsible pulmonary disorder. Bronchitis and bronchopneumonia are grouped together, and there are obvious advantages in this. Many authorities, however, believe in the occurrence of a capillary bronchitis apart from that of bronchopneumonia, although the last is an almost invariable sequela, in the unusual event of death being delayed. Dr. Cautley gives belladonna the first place in the drug treatment of bronchopneumonia, but there might be reasons for its being continued for more than twenty-four hours, even if no definite result had been obtained by that time. With his preference for simple incision in empyema, especially in children under 2 years of age, we are in thorough accord, and agree with all that he puts forward to the disadvantage of rib resection.

The section on syphilis is, perhaps, the least satisfactory in the book. Some of the writing here is far from clear, and in places, indeed, apparently contradictory. We fail to grasp what connexion his remarks on conceptional syphilis have with that part of the subject. Sperm transmission, too, may be, as he says, "highly improbable," yet, as its reality is still held by many, if not most, capable observers, he must bring further proof of his contention than the mere size of the *Treponema pallidum* before they become convinced of their error.

Dr. Cautley has been so conscientious to omit no detail that we fear the uninitiated may have occasional difficulty in distinguishing between the rarer and the more usual phases of many of the complaints. For a thorough appreciation of his work it is, perhaps, necessary that the reader should have some previous special knowledge of the diseases of children. We would congratulate the author, however, on the result of his labours, and trust that his book will have the success that its numerous merits thoroughly deserve.

[2] *The Diseases of Infants and Children.* By Edmund Cautley, M.D Cantab., F.R.C.P., Senior Physician to the Belgrave Hospital for Children; Physician to the Metropolitan Hospital, etc. London: Shaw and Sons. 1910. (8vo, pp. 1042. Price 27s. net).

THE CARE OF THE CHILD.

DR. MILDRED BURGESS has written a very practical little book[3] designed to act as a simple guide to mothers in the rearing of their children. It follows the syllabus of the London County Council lectures on infant care, and may prove a useful handbook for students. The difficulties

[3] *The Care of Infants and Young Children in Health.* By Mildred M. Burgess, M.D. Publishers: H. K. Lewis, 136, Gower Street, W.C. (Pp. 72. Price 1s.)

associated with infant feeding and the errors that mothers fall into are discussed in very easy language. The management of the breast-fed child and the care of the mother's health are fully dealt with, while the chapter on substitute feeding contains practical hints, and tables giving the proportions in which milk is diluted for different ages, which cannot fail to be very helpful. The way in which a feed should be prepared and given is explained with much care and detail, and easy recipes for making such things as whey and barley water are included. There is some advice about the feeding of older children, and several specimen dietaries. From the age of 9 months to 2½ years onwards it is suggested that they should be fed five or six times daily. This would seem to be rather often in the second and third years, when the habit of "nothing between meals" may be established with advantage. The amount of fruit-juice advised for babies of 9 to 12 months, one teaspoonful daily, is much less than a child can take, and there is no mention of this essential article of diet in connexion with hand-feeding in the earlier months. The author includes "uncooked fruit" among the things not to be given to children of "2½ years onwards." Highly valuable are the simple directions on the daily care and hygiene of the young, and the instructions as to the best ways of giving baths, preparing mustard or sulphur baths, or keeping the hair clean, are excellent. The advice upon emergencies and their treatment is needed in many households. The book is written for the untrained and inexperienced parent. Its simplicity and directness make it suitable for use in schools for mothers, and by health visitors, as well as in the ordinary home.

THE INHERITANCE OF THE CHILD.

IN *The Child's Inheritance*[4] Dr. GREVILLE MACDONALD presents the results of an inquiry into the science of the imagination. Holding that the fundamental law of our inheritance is the means of creation and reformation, he discusses the rival claim of the biologist and poet as authority on the subject of inheritance, and more particularly the faith of Wordsworth, as against the teachings of Weismann. These two thinkers, representing as they do opposite schools of thought, are not necessarily antagonistic, for biology in no way contradicts, but rather strengthens, ancient views concerning the spiritual origin of life. In tracing the upward evolution of the organism, Mr. Macdonald shows that the greatest gift of inheritance is the enlargement of possibilities, or the power of development, which is the first essential of life. He dwells upon the importance of environment as an automatic educational influence. Environmental food is necessary for the growth of the mind, and it is desirable to preserve that part of our inheritance which is termed joy in life because of the power to transmit it to future generations. The suggestion of environment cannot be ignored; it is Nature's own system of education; there is continual response to it; but though it awakens possibilities, it does not create character. We err in seeking adaptation to the conflict of environment rather than conquest of it. Out of the chaos of evolution and environment man emerges, with his inheritance, the gift of love, the power of work, the desire for freer life. In a similar manner we are shown that children survive an education which strives to suppress individual enterprise as a stumbling-block to learning. The relations between imagination and the soul are fully discussed, and the influence of the former upon truth and its illuminative effect upon the soul are made clear. The author regards intellectual education as a means of enlarging the mind beyond the limits of specialization and the confines of doctrine. He deals with the education of the hand and five senses in its general and economic bearings, and introduces us to a higher sense that embraces all these five in a wide comprehension. This original sense of being is served and enhanced by the other five, which it in turn controls. This sense is one of aspiration; its work makes the kingdom of Heaven possible, its purpose in the human soul is the winning of life's joy. The high office of play and work in a child's education is insisted upon; they bring the sleeping inheritance into germination. The inheritance of sorrow and suffering is regarded as the inevitable consequence of individual freedom. In dealing with the relation of responsibility and penalty, the tyranny of inheritance and submission to environment are not held to be greater than man's individual power to shape his character and life. Faith in will and in spirit as the inspiration of life is fundamental. The writer questions the lines upon which present-day education is conducted, and the power of such an education to develop fully the great possibilities of the child's natural inheritance.

[4] *The Child's Inheritance.* By Greville Macdonald, M.D. Published by Smith, Elder, and Co., London. November, 1910. With 19 illustrations, pp. 310, and appendix. (Demy 8vo. 12s. 6d. net.)

PARENT AND CHILD.

Parent and Child,[5] by Sir OLIVER LODGE, is a treatise dealing with the moral and religious education of the child. Sir Oliver Lodge has no sympathy with the doctrine of original sin; he has been much impressed by the innate goodness of children, and asks for a better recognition of their individuality, so that the training given to them may be developmental and preparative for life. He emphasizes the value of parental influence, including the indirect influence of the active life of the busy parent, and considers that training in such minor virtues as consideration for others and accuracy in delivering messages is a potent educational factor. The acquisition of a faculty for truthful and accurate statement is essential, as also are self-control and self-discipline, since they enable the individual to acquire and worthily utilize real freedom. The teacher of technical subjects is advised to distinguish between the essential features and subsidiary details, and to see that the main features are grasped before the mind is overloaded with details. Interest and curiosity, which are valuable aids in education, are easily checked by premature systematic instruction. It is wise to utilize the moods and the imagination of the child, to cultivate in him an interest in literature and a sense and appreciation of literary work, and so to lead him to see the value of service to the human race, and to attain to definite religious ideals. Those who are seeking for inspiration and thoughtful suggestion will find it in this little book.

METEOROLOGY.

AMONG those who are engaged in meteorological observations there are a large number of medical practitioners, several of whom have made valuable contributions to the literature on the subject. Among these the excellent work of Sir JOHN MOORE, *Meteorology, Practical and Applied*,[6] has long been recognized as one of the standard textbooks, and the revised edition which has been issued will be welcomed by all those who are interested in the science. Moreover, it should be the means of adding to the ranks of meteorologists, for the author states that the chief object of the work is to convey a clear idea of the science of meteorology to any one of ordinary mental capacity and fair education who had been previously quite unacquainted with so attractive a study. This object should be achieved if only on account of the admirable arrangement of the work and the clear and lucid descriptions which it contains. But even to those medical practitioners for whom meteorology has no attractions the work may be commended, and to that branch of the profession who are engaged in public health work it should prove invaluable, for the final chapters deal with the influence of season and weather on disease. We are told that one fact established in relation to the winter death-rate in Dublin is that the deaths from all causes, and particularly from diseases of the respiratory organs, such as bronchitis and pneumonia, vary in number inversely with the temperature. If the thermometer is high in winter, the death-rate is moderate

[5] *Parent and Child.* By Sir Oliver Lodge, D.Sc., F.R.S. Published by Funk and Wagnalls Company. London and New York. 1910. (Pp. 72. 2s.)

[6] *Meteorology, Practical and Applied.* By Sir John Moore, M.A., M.D., D.P.H. Second edition, revised and enlarged. London: Rebman Limited. (Royal 8vo, pp. 492; 101 illustrations. 10s. 6d. net.)

or low; if the thermometer is low, the death-rate is high. As regards influenza, the author is of opinion that the disease is absolutely independent of season and weather. He lays down the proposition that in summer and autumn the tendency to sickness and death is chiefly connected with the digestive organs, diarrhœa and dysentery being especially prevalent and fatal during these seasons, a rise of mean temperature above the average increasing the number of cases of, and mortality from, those diseases, while a cool, rainy summer and autumn controls their prevalence and fatality. He agrees with the well-known observations of Ballard associating diarrhœa with a subsoil temperature at 4 ft. of 56° F., but he considers that this relation is more of a coincidence than an etiological factor. The relation of the seasons to small-pox, typhoid and typhus fevers, scarlet fever, measles, and to pneumonia are discussed in a convincing manner. There is, however, one noticeable omission. No mention is made of the seasonal influence on diphtheria. It would have been of interest to have had the author's views as to the relative influence of personal infection in this disease and climatic conditions.

HOUSING AND TOWN PLANNING.

ONE of the most flagrant instances of legislation by reference is to be found in the Housing, Town Planning, etc., Bill which was before the House of Commons in the session of 1908. The outcry which was made against this objectionable form of enactment resulted in a considerable amount of improvement when the bill was reintroduced in 1909. But even in the form in which it has finally found a place on the Statute Book there is need for a considerable amount of explanation. Mr. W. ADDINGTON WILLIS has thus rendered good service to those who will have to administer the Act in bringing together in one volume—*Housing and Town Planning in Great Britain*[7]—the several Acts of Parliament relating to the housing of the working classes in Great Britain and arranging their provisions in some sort of order. He points out that the aim of the Legislature in the new Act has been simplification in administration and procedure and an extension of the powers of authorities. Whether this very laudable purpose has been successfully achieved can only be decided by the process of time, and as opportunities arise for carrying out the provisions of the Act. Already certain difficulties are arising. For example, the Local Government Board has stated, in reply to an inquiry from the clerk to a rural district council, that a dwelling-house closed under the provisions of the Act and not having been rendered fit for habitation must be demolished, and cannot be used for purposes other than human habitation. The task which the author set himself of presenting the housing legislation of this country in consecutive array—was not an easy one, but he has performed it with great skill, and the difficulties which public health administrators meet with he has smoothed over to a remarkable extent. Not the least useful portion of the work is the very full reference which is made to the sections of those Acts to which allusion is made in the text of the Act of 1909.

In the second edition of his work on *Practical Housing*,[8] Mr. J. S. NETTLEFOLD has taken the opportunity of including a short chapter in which he discusses the Housing Act of 1909, and the full text of the Act is given in an appendix. The views of the author are evidently quite in harmony with the principles of the town planning portion of the Act. We cannot, he says, suddenly undo the mistakes of the past, but, at least, we can try to prevent mistakes in the future by planning out in a comprehensive manner urban and suburban districts before the work of development is begun. He condemns the legislative policy of the past fifty years, which has encouraged and assisted semiphilanthropic trusts or companies and local authorities to build houses, and considers that the housing problem will be on the way to solution if business energy and business methods can be combined with just compassion. How those business methods can most effectually be brought into action is clearly and intelligibly told by Mr. Nettlefold. Of exceptional value to all those who are working out housing schemes will be the full text of a few model leases which are placed in an appendix, including those of the Corporation of Birmingham to the trustees of the Ideal Benefit Building Society, the Bournville Village Trust, the Hampstead Garden Suburb Trust, and the Hereford Garden City.

There is nothing which militates so much against the successful enforcement of beneficent Acts of Parliament as the indifference of those for whom the benefits are intended. It must have been with a view to combating this indifference that Alderman W. THOMPSON decided to arrange his *Handbook to the Housing and Town Planning Act, 1909*,[9] in the admirable manner in which it has been produced. His comments upon the Housing Act are interspersed with such striking headings as: "How to make a local authority carry out its housing duties," "How to make neglectful landlords keep their houses clean and in good repair," and "How to get more workmen's dwellings." The author deplores the deletion from the Housing Bill by the Government of the clause which provided for a housing survey and register, but he anticipates that an extremely valuable work can be accomplished by a thorough application of the section of the Act (17) which enables the Local Government Board to make regulations requiring a local authority to keep such records as may be prescribed by the Board. He considers that the records, so far as they relate to the structural condition of dwellings and the names of the owners, should be open to public inspection. A very complete index to the Housing, Town Planning, etc., Act precedes the text of the Act, and should be of the greatest service to those who are concerned with its administration.

NOTES ON BOOKS.

E. LEITZ has issued a small pamphlet[10] which may be of interest and use to those whose work necessitates the cutting of serial sections by the paraffin method. It is intended more particularly for users of the Leitz sliding microtome, but the directions are suitable for any form of apparatus. An illustrative example is chosen of the technique to be employed in the case of a human embryo, and the various stages of fixing, hardening, dehydrating, clearing, and embedding are described in detail. Various practical suggestions are made with regard to the difficulties which may arise. The process of preparing the paraffin block and melting the sections is then dealt with, and this is undoubtedly the most useful part of the booklet. The exasperating troubles met with in this connexion are known to every one who has had experience of the method, and one is often at a loss to account for them. Mention is made of the cause of and remedy for curling, wrinkling, and tearing of the sections. The hints ought to be especially welcome to those whose experience is limited, and who do not have access to the larger works on microtomy.

The issue of a second edition of Major R. BRYSON'S *Indian Lunacy Manual*[11] within eighteen months of its original publication attests the usefulness of the compilation. The present edition has been rendered more complete by the addition of a chapter relating to the laws and regulations affecting native sepoys and British soldiers, and the wives and children of the latter. Medical officers in both military and civil employ have been provided with an accurate and complete handbook which ought to guide them in fulfilling their duties regarding the disposal of the insane, and minimize the trouble which often arises from ignorance and error in adopting the proper procedure and

[7] *Housing and Town Planning in Great Britain.* By W. Addington Willis, LL.B Lond., Barrister-at-Law. London: Butterworth and Co.; and Shaw and Sons. 1910. (Demy 8vo, 244 pp.)

[8] *Practical Housing.* By J. S. Nettlefold, with a preface by the Right Hon. Alfred Lyttelton, K.C., M.P. Popular edition. London: T. Fisher Unwin; and Letchworth: Garden City Press. 1910. (Demy 8vo, pp. 114; 38 illustrations. 1s., cloth 2s.)

[9] *Handbook to the Housing and Town Planning Act, 1909.* By W. Thompson. London: National Housing Reform Council; and P. S. King and Sons. 1910. (Demy 8vo, pp. 98. Paper cover 1s., cloth cover 2s.)

[10] *Some Hints on the Use of the Sliding Microtome.* By "A Worker." London: E. Leitz, Oxford Street. (20 pp.)

[11] *The Indian Lunacy Manual for Medical Officers and the General Public.* Second edition. By Major R. Bryson, F.R.C.S.E., Indian Medical Service. Calcutta: Thacker, Spink and Co. 1910. (Roy. 8vo, pp. 59. Rs. 1.8.)

preparing the documents necessary for securing the admission of lunatics into asylums. Magistrates and friends of patients will also find this manual exceedingly helpful. The laws and regulations affecting lunatics being substantially the same in all the provinces of the Indian Empire, the information contained in this book will be of universal value.

Flame and Flannelette[12] is the title of a pamphlet issued by the Society for the Prevention of Cruelty to Children, and drawing attention to the many preventable cases of children's deaths from burning. The title is not fully descriptive of the contents, as more than half the matter is concerned with cases of burning through absence of fireguards, leaving matches within reach of young children, and other causes in which flannelette played no part. The danger of ordinary flannelette is insisted on, and the safety of the chemically treated variety known as "non-flam." A tabulated list is given of prosecutions under Section 15 of the Children Act, 1908, by which persons in charge of children who suffer death or injury due to unprotected fires may be fined, showing that as a rule very small fines have been imposed; and the need for further legislation is urged. The pamphlet is written for the general public, and although the photograph of a burn on the body of a boy and many of the expressions used have rather an air of sensationalism, it will doubtless be of service in its effect on public opinion.

DIARIES AND VISITING LISTS.

Messrs. Wright and Sons of Bristol have brought out a new edition of their *Physicians'*, *Surgeons'*, *and Consultants' Visiting List*, compiled for them by Mr. ROBERT SIMPSON, L.R.C.P., L.R.C.S., of Plymouth. The fact that this is the eighteenth edition is sufficient evidence of its utility. The special point about it is that by the insertion of a half-leaf on each page the trouble of entering a patient's name more than once a month is avoided. Moreover, by way of preventing the entry of visits on wrong days, dates appear at the bottom as well as at the top of each column. The page openings of the volume (Form A) before us are specifically dated for the year 1911, but the firm issues the same book (Form B) without fixed dates, so that its use can be commenced at any time until the book is filled. The number of monthly patients for whom space is provided is 40, but some forms of the same book can be procured arranged for practices so large that as many as 240 patients have to be kept on the visiting list at one time. Against each name is a space for a reference to the folio of the journal on which each patient's account is kept. The flap contains an ever-pointed pencil.

There is nothing very novel about the diaries which Messrs. Cassell and Co. have brought out this year for the Letts's Diary Company, but as these—the original Letts's—diaries have long been deservedly popular, it is legitimate to draw attention to their continued publication. They are all excellently designed, and the numerous forms in which they appear vary in size from foolscap office-table diaries, giving half a page to a day, to neat leather-covered booklets suitable for carrying either in the pocket or in a vanity-bag. The prices range from one shilling upwards. Two of them have a special purpose in view—namely, to provide for the requirements of medical men and nurses respectively. The former, of the usual oblong shape, contain on one side of the opening a space for patients' names and on the other an ordinary diary. Provision is made for the entry of vaccination and midwifery engagements, and for recording cash expenditure and nurses' names. Information is also given as to legal obligations imposed on medical men and as to the fees allowed by various official bodies. The diary for nurses includes space for the keeping of records of special instructions given regarding patients and other notes about them, and such matters of importance as the telephone numbers of the doctors in charge of them. All the diaries contain an accident insurance coupon.

A copy of the sixty-fifth issue of Smith's Physicians' and Surgeons' Visiting List and Pocket-Book is before us, and we have pleasure in commending it. These visiting lists are convenient in size, and contain in a readily accessible form a great deal of useful information. The almanack is handy, and there are pages for obstetric and vaccination engagements, memoranda, etc. The publishers—Hazell, Watson and Viney, Limited, 52, Long Acre, W.C.—issue it in four styles of binding and in six different sizes, prices from 2s. 6d. to 6s. 6d.

A CORRECTION.—In the footnote to the review of *Principles and Practice of Modern Otology*, by Dr. J. F. Barnhill and E. de W. Wales, published last week, p. 1725, the price was incorrectly printed as 6s.; it should have been 21s.

[12] *Flame and Flannelette. Being Facts Concerning the Modern Slaughter of the Innocents.* By Robert J. Parr. Director of the National Society for the Prevention of Cruelty to Children. London: National Society for the Prevention of Cruelty to Children. 1910. (Demy 8vo, pp. 33; 5 photographs. 3d.)

THE MEDICO PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE quarterly meeting of the association was held at the rooms of the Medical Society of London, Chandos Street, W., on Tuesday, November 15th, Dr. JOHN MACPHERSON, President, in the chair. A resolution of congratulation to the President on his restoration to health after a severe illness was cordially approved. A very interesting discussion eventuated out of two noteworthy contributions: by Dr. G. H. Savage in a paper on Insanity and Marriage, and by Dr. C. T. Ewart on Eugenics and Degeneracy.

Dr. SAVAGE said the subject of marriage and insanity was at present beyond practical legislation in this country, but it was of immense importance for the social stability and for individual welfare. Though physicians could not legislate, they had to advise, and that advice was sometimes taken. A dogmatic statement that the insane should never be allowed to marry was unscientific and unpractical, for it assumed that all insanity was alike, and was to be treated as of equal value. Certain persons might suffer from a degree of mental disorder which justified the application of the term 'insanity," and yet recover and marry with no increase of risk to their children. Such were adolescent cases with melancholic symptoms, many with marked hypochondriacal ideas; adolescent cases with maniacal excitement who had recovered completely. He had also encountered cases of women who had had attacks of insanity before the menopause, who had married when that period had passed, and remained well; but few would recommend such unions. Unions after acute delusional insanity, of probable toxic origin, had also turned out well, but he would hesitate to advise such. The question of family neurosis would influence the advice given. Lack of dread of recurrence of insanity was an important factor, as dread might act as an autosuggestion. With regard to the cases in which marriage should be hindered or prevented these should include those with a history of recurrences and youths with alternating periods of depression and buoyancy, and the suppression of such material facts should be a ground of nullity. It was impossible to prevent the marriage of all who were related to the insane, and it would not be good, as he had seen successful families reared by neurotics. He would never allow marriage where there were fully organized delusions or hallucinations, nor in epilepsy accompanied by mental symptoms. Moral perversions should also be a bar, and marriage with the idea of reformation should be discouraged, as it so seldom happened. In cases where there was buoyancy and amorousness, before one was sure general paralysis of the insane was present, marriage turned out badly. He had seen miserable marital results in cases of tabes. Marriage was no relief for neurasthenia or hypochondriasis, and after sexual disorder it was dangerous. Dr. Savage concluded his paper by propounding the following questions: Should any one who has been certified as of unsound mind be allowed to marry? If so, which cases or which forms of insanity may be considered as not barring healthy unions and healthy offspring? Should not the recurrence of any form of insanity be a bar? Should evidence of syphilitic affection of the central nervous system bar marriage? Should marriage ever be recommended in cases of mental disorder? Should insanity be a plea for divorce?

Dr. EWART said the object of his paper was to consider whether it was advisable to discourage parenthood of the unfit and to encourage large families by the fit with a view to national efficiency. Nations which became luxurious and idle degenerated and decayed. In the elementary schools 35 000 children were mentally defective; 2 521 defective women mentally added 1 000 illegitimate children to the population. He advocated a higher estimate of the value of woman, whose strength should be husbanded for the future welfare of the race. The giving birth to a new citizen involved a duty to the community in respect of his health, mental and physical, and a claim

by the parents on the State that the State should make the conditions of life favourable to that child's efficient growth. The divine intent of all wealth, according to Professor Karl Pearson, was the production of a sturdy race. There was plenty of good stock in this kingdom, and its reproduction should be encouraged while checking the continuance of the evil strains. Public opinion looked to the medical profession for guidance towards the welfare of the race.

MR. CRACKANTHORPE, K.C., opened with a note of dissatisfaction at the meagre and often misleading summaries of evidence tendered to the Divorce Commission published in some papers, instancing Dr. Savage's evidence and Sir James Crichton-Browne's. He missed from Dr. Savage's paper any definite reference to the effects of insanity on the children. What students of eugenics were in search of was information as to the extent to which insanity was heritable. Recurrent insanity was much more dangerous to society than permanent mental breakdown, because subjects of the former were let out from control and thus were able to reproduce, and it seemed a truism that the degenerates were more prolific than the sound. He thought the time had come when marriage should not be permitted in the absence of inquiry as to the history of the members of the families of the contracting parties. He hoped there would be given to the world a pronouncement as to what was and what was not transmissible disease. The aim of those interested in the matter was the elimination of the unfit and the propagation of the fit, with the consequent raising of the level of humanity.

DR. HYSLOP said the general public was becoming alive to the fact that there were conditions which brought about degeneracy, and that those must be dealt with, first, by education, and, if that did not suffice, by legislation. He believed the present Divorce Commission would result in a reform of the conditions under which marriages were entered into. Two classes of people came to the physician for advice as to marriage; the first were afraid the advice would be averse to their wishes to get married, and so took no notice of it. Others came as a sort of forlorn hope that the physician would forbid the banns, raking up all sorts of eccentricities to support their wish. He believed that in the future medical fitness would be inquired for before the celebration of a marriage.

DR. DONKIN believed the time was not yet when any one could say certain qualities were and certain qualities were not inherited, though gross bodily defect could be more definitely pronounced upon. Only in regard to the feeble-minded, in mental matters, could one be dogmatic.

DR. MERCIER contended that the profession did not yet know sufficient to be able to say what qualities were hereditable and what were not. Certainly the time had not arrived when the Legislature could be advised what would tend to the most successful marriages. Those who spoke of restriction of procreation did not realize that such restriction had always prevailed even among savage races. On this question it was not the most experienced who spoke most dogmatically. Dr. Savage had spoken tentatively, and that was the correct attitude at present.

MISS DANDY spoke of the difficulty of getting reliable family histories in the case of the applicants for admission to her Home. Much had been said about the danger of weak-minded girls being in the streets, but too little attention had been paid to the question of the same class of boys. In her institution the inmates were treated as children, and they were quite happy in their surroundings; they had no ideas except such as were put into their heads, and it was necessary to see that those ideas were good ones. The time had come for taking serious action in the matter.

DR. FLETCHER BEACH reminded the members that progress could only take place by increasing the fit and decreasing the unfit, and the latter should be permanently kept in institutions. He had long contended that cases of moral imbecility should be kept in institutions where they could be profitably employed, and cease to be defects at large. Feeble-minded girls continually became mothers, and steps should be taken to prevent that. They were travelling towards a fall, and the only way to arrest that fall was for the State to interfere.

DR. HAYES NEWINGTON agreed with Dr. Mercier that enough was not yet known by the profession on the subject to give any legislative lead. Moreover, he did not think the Divorce Commission had the impression from alienists which the collective membership of the association would give. In such a matter humanity was subject to tremendous laws, far above human laws, and to interfere without adequate knowledge would be wrong.

DR. CARSWELL (Glasgow) said there was a mental defect which showed itself only in very limited degree in infancy and childhood, and was equal to passing the ordinary examinations at school up to the third or fourth standard. But later the child could not adjust himself or herself to the simplest environment. Such people become aggressive, and not only asocial, but antisocial. There was a form of feeble-mindedness which became manifest after puberty, and was not to be confounded with dementia praecox. The remedies suggested in the present discussion did not appeal to him, and he endorsed the remarks made by Dr. Mercier. Nothing had been said as to the influence of alcohol in producing unfitness, and that was significant. He could not say very much positively about inheritance. Evidence was not clear enough to enable one to be dogmatic on the question.

DR. BRISCOE objected to the use of the term "divorce" when speaking of insanity or other disability as a cause of annulment of marriage. He advocated that a committee of the association should set itself to make a collective investigation of facts bearing upon the subject, which would enable the profession to give a lead for the solution of the problem.

DR. BEVERIDGE SPENCE expressed his agreement with the remarks of Dr. Mercier and Dr. Newington as to the insufficiency of the data available to enable the profession to give a guide on the matter. He thought a beginning should be made to isolate defective children to prevent them propagating their species.

DR. EDEN PAUL said he thought it was the duty of the medical profession to use the influence it had in the direction of a sane extension of eugenic conceptions. It would not be right for physicians to fold their hands and say they had no knowledge. On the question of epilepsy and feeble-minded, knowledge was sufficiently definite to be most useful for the general good.

DR. GREENLEES deprecated the assumption of ignorance on the part of the association on such an important matter, and reminded members that it was to the association the Legislature would look if it wanted information to guide it. He thought the matter could be referred to a parliamentary committee of the association for collective investigation.

THE PRESIDENT agreed as to the paucity of real definite knowledge on the transmissibility of qualities, and declared that no really fundamental advance in biology had been made since the days of Darwin, if one excepted the branch of embryology. The time had not yet come for giving the definite pronouncement which Dr. Ewart desired.

DR. EWART, in summarizing the debate, restated his position. Dr. Savage had been unable to remain.

VACCINATION DEBATE AT LEWISHAM.

A DEBATE on vaccination took place on October 26th at the Whitburn Hall, Lewisham, under the auspices of the Lewisham Liberal Club, between Mr. J. H. Bonner, of Leicester, Lecturer and Organizing Secretary of the National Antivaccination League, and Dr. Drury, of Halifax. A large audience assembled, and much interest was taken in the proceedings. The chair was taken by Principal W. G. BOTHERAS, of Stafford College, Forest Hill, who explained the conditions of the debate—Mr. Bonner would speak first for forty minutes, followed by Dr. Drury for forty minutes; then each in turn, in the same order, would speak for twenty minutes.

MR. BONNER'S SPEECH.

MR. BONNER commenced by saying all people were anti-small-poxites. Provaccinators were not more anxious than were the antivaccinators to see that disease eradicated from the land, but they thought it possible to cheat Nature by adding filth to filth, whereas his own policy was to try to stamp disease out instead of stamping disease in. The late Sir Benjamin Ward Richardson, on one memorable occasion at Brighton, told the delegates assembled for the annual congress of the Sanitary Institute that if some morning people could wake

up "clean," in the sense in which he used the word, all disease would be banished. And yet antivaccinators saw their opponents strive to retain that desirable state of affairs, namely, by adding to human ailments one from the animal kingdom. The fact that the operation of vaccination meant the wilful and deliberate communication of the disease of vaccinia could not be too strongly impressed; that some at least of the members of the medical profession were beginning to realize the folly of the practice was borne out by the comment of Dr. Killick Millard, Leicester's medical officer, who, at the Public Health Congress at Exeter in July, 1902, said: "It must never be forgotten that vaccination is, after all, a disease; and those of us whose profession it is to prevent disease should be ready to abandon it at the earliest possible moment consistent with the public safety. The control of one disease by the substitution of another, whilst it may be expedient, can never be regarded as an ideal method." Although a Dorsetshire farmer named Benjamin Jesty had practised vaccination since 1774 we are principally concerned with Edward Jenner, whose first recorded connexion with vaccination dates from 1796, and whose inquiry was published in 1798. In 1840 the old system of inoculation was suppressed by law, and it was not until 1853 that vaccination was made compulsory. He thought there would not have been the slightest necessity for Acts of Parliament to enforce something which had been before the country more than fifty years if it possessed any personal merit. But still, vaccination did not seem to prosper, and in 1867 a much more stringent Act was placed on the Statute Book, containing, as it did, penal clauses which provided heavy penalties for the parents of unvaccinated children. That very few then escaped the operation goes without saying; in fact, at no period of our history were the people better vaccinated. With what result? In 1872–3 the greatest epidemic on record visited this country, and, whilst there were hundreds of thousands of proofs that vaccination did not protect against small-pox, there were also in the churchyards and graveyards 45,000 victims, whose deaths furnished evidence that it did not even mitigate the virulence of the fever.

Mr. Bonner then referred to the Public Health Act of 1875, from which time, he said, dated not only the diminution of small-pox but of the general death-rate. He thought the eminent gentlemen who constituted the Royal Commission on Vaccination temporarily took leave of their senses when they reported in favour of vaccination. He was tempted to ask, What is vaccination? and Is there any test for the success or otherwise of the operation beyond the point whether in the years that follow the person performed upon contracts small-pox or does not? There was no definition in any Act of Parliament as to what constituted vaccination, there had never been any unanimity amongst the members of the medical profession themselves on the subject; the best answer they seemed able to give was: "What we say is vaccination is vaccination"—in fact, it was simply a case of you pay your money and take your choice. Upon this aspect the comments of the Dissentient Commissioners—Dr. (now Sir) William Collins and the late Mr. J. Allanson Picton—were very enlightening: "We regret that in the course of our inquiry we have not obtained from the experts who have favoured us with their views any satisfactory definition of 'vaccination.' No definition of the term appears in any of the Vaccination Acts. Our late and much regretted colleague, Mr. Bradlaugh, we know attached great importance to this view." The speaker did not dispute the horrible character of small-pox. It was his opinion that small-pox had declined in this country in spite of vaccination and not in consequence of it. Recent epidemics had started with vaccinated or revaccinated persons. Figures were quoted from the Glasgow epidemic of small-pox (1900). Details of the London epidemic 1901–2 followed. He could safely predict that the example of Germany would be put forward as something which ought to be followed. But the crux of the application of the Germanized standard rested entirely upon an understanding being arrived at—if that were possible—as to the date when the enforcement of vaccination commenced there. Anti-vaccinators claimed that it was in 1834, but in order to miss those dark years of 1871–2, when 124,943 persons died from small-pox in Prussia, the pro-vaccinators averred that it was only under the law of 1874 that vaccination was made compulsory. But was the Germany of to-day like the Germany of, say, thirty years ago, and had not the vast amount of money spent upon sanitation been usefully employed? Let no one forget, however, that within the last three years for which official figures are available—namely, 1906–7–8, there were only 43 deaths from small-pox in England, in spite of exemption having been procurable since 1898, whilst the deaths in much-vaccinated Prussia totalled 134 for the corresponding three years, or thrice as many. He attributed the condition of affairs in Germany regarding small-pox to isolation and sanitary measures. All children in Japan (continued Mr. Bonner) must be vaccinated before the age of 10 months, with re-vaccination at 6 and again at 12 years. In the twenty years 1889–1908, there were in Japan 171,611 small-pox cases, with 47,919 deaths. In 1908 alone there were 18,067 cases with 5,837 deaths. In that revaccinated paradise it would be seen that during the last twenty years over 27 per cent. of the small-pox cases had died. Practically a similar condition of affairs prevailed in the Indian Empire. England had brought sanitary science to a pitch of perfection unattained by any other part of the world, and they did not want to again drag her down to the level of Eastern countries, but advised them to raise themselves, so far as possible, to our standard. Different regulations as to the age at which vaccination was made compulsory in various countries bewildered the speaker when he was trying to fathom which of the advocates, if any at all, were right.

DR. DRURY'S SPEECH.

Dr. DRURY opened by mentioning that an American boy when asked how the criminals were put to death in America replied, "By elocution." Public vaccinators, and indeed all vaccinators, were often described by anti-vaccinators as "filth-mongers," "murderers," "fee hunters," and other similar phrases. After Mr. Bonner's attempt that evening to put him (Dr. Drury) to death by his elocution he felt that the attempt had been a complete failure, for it had revived him and stimulated him to such an extent that if he could afford it he would follow him to his next dozen engagements, by which time Mr. Bonner would probably have had enough public debating. Having no indication from Mr. Bonner what lines he proposed to take that evening, his only course was to guess what might have to be faced. It was against the rules on that occasion to ask for a "show of hands." Judging by the evident expressions of approval by a large section of the remarks by the previous speaker, it was clear that many in that room were under the same misconception as was Mr. Bonner. It would, however, be interesting, if a "show of arms" could be made in order to see how far they contradicted the hands, that would be held up, if permitted, against vaccination. The facts of pre-vaccination days were admitted, but they were of such a character that they should not be forgotten as was too often the case.

Dr. Drury read extracts from Dr. Buchan's *Domestic Medicine*, published in 1769, describing the devastation and disorganization of affairs caused by the ravages of small-pox in pre-vaccination days. Mr. Bonner had asked for a definition of vaccination. He (Dr. Drury) did not attach much importance to definitions, but retorted by asking Mr. Bonner for a definition of cleanliness that would do all he had claimed for it that evening. Regarding isolation, to which Mr. Bonner attached so much significance in Germany, he would remind him that in Germany isolation was far less rigorous than in England, and small-pox cases were treated there in general hospitals. Antivaccinators themselves were at complete variance about the value of isolation. The guest of the National Antivaccination League, a Dr. Leverson, of New York, had solemnly declared at a recent annual meeting of the league that isolation was useless, and ought not to be insisted upon. Of the Royal Commission on Vaccination it was usual for antivaccinators to say it was a packed Commission. That was an insulting suggestion to make regarding the eminent men who were members of that Commission. The Commissioners were unanimous upon one point: they all agreed that the State should continue to provide vaccination, and that the existing machinery should be continued.

Briefly, their conclusions were:

1. That efficient vaccination practically protects the population under 10 years of age from attack.

2. That vaccination has the power to mitigate the attack after its power to protect from attack diminishes, as it admittedly does later in life.

3. That vaccination has altered the age-incidences of small-pox in a remarkable manner.

Dr. Drury exhibited various diagrams on the wall. Throughout Mr. Bonner's forty minutes three diagrams had remained suspended, showing the process of vaccinating calves for the supply of vaccine lymph. As Dr. Drury attached his diagrams to the wall he alluded to Mr. Bonner's pictures, remarking that evidently Mr. Bonner had no use for them, not having referred to them in any way. He asked permission to cover them with his own diagrams (the space being limited). They would, he remarked, be of use to the audience, for they were not there merely for the purpose of creating some mere sensational impression. He did not himself object to the pictures of the calves, but if any strange feelings had come over the audience as they looked upon them, he reminded them that not many of them would enjoy a veal cutlet if they visited the shambles and saw the whole process that went on there.

Referring to Mr. Bonner's figures from Japan, they were useless for their purposes that evening, as they contained no mention of vaccination except that it was compulsory. What would Mr. Bonner think if he (Dr. Drury) argued that all the children in Leicester were vaccinated because vaccination was compulsory during many years in England?

Antivaccinators greatly exaggerated the dangers of vaccination, and he had exposed many of the fables and stories of alleged danger and injury published by antivaccinators, and had shown them to be base fabrications or gross exaggerations.

The infantile mortality of Leicester and Halifax was compared in a diagram showing that Leicester without vaccination had a much higher mortality during five years than Halifax during the same years when vaccination was more in evidence than at any time for over twenty years.

In conclusion, Dr. Drury stated that he was of the opinion that the Vaccination Acts should not be repealed—

1. Because the consensus of opinion, both medical and political, is that it is the duty of the State to provide vaccination.

2. Because all impartial investigations in all countries testify to the protective and modifying influences of vaccination.

3. Because the scientific base on which the claims of the pro-vaccinists rests is now recognized by the leading bacteriologists throughout the world.

Mr. A. W. C. WHEELER, J.P., proposed a hearty vote of thanks to the two protagonists, and mentioned as a proof of the spread of antivaccination views that a large and increasing number of conscientious objectors came to his house to make the declaration necessary to gain a certificate of exemption.

Mr. MARSHALL STEELE (Chairman of the Council of the Lewisham Liberal Club), in seconding, said there was nothing remarkable in the foregathering of conscientious objectors at Mr. Wheeler's house, and it did but show how pernicious was the force of an evil example. There was nothing the conscientious objectors wanted more than sympathy—except vaccination—and of course the poor dears flocked to where they could get their heart's desire. (Laughter.) Mr. Wheeler attached great importance to the views of these conscientious objectors. He (the speaker) would point to the opinion of the whole civilized world—to France, Italy, Germany, and away to far Japan, in each of which countries not only was vaccination, but revaccination also, compulsory; and the reflective mind was more likely to be influenced by this consensus of civilization and culture than by the prejudices of ignorance or the loud alarums of roaring faddists. (Cheers and interruption.) That conviction did not deter him from expressing to Mr. Bonner his sincere admiration for the fine courage and ingenuity with which that gentleman had presented his case, while it compelled from him a tribute of thanks to Dr. Drury, who by speech and diagram had made plain to all the large beneficences of a system which throughout the world had done much to mitigate the ravages and to check the approach of a dreadful and fell disease. (Loud cheers and dissent.)

UNQUALIFIED PRACTICE IN SCOTLAND.

REFERENCE was made last week (JOURNAL, p. 1729) to the Report by the Privy Council on unqualified practice in Scotland. To obtain a thorough knowledge as to the extent to which this unrestricted practice of medicine and surgery by unqualified persons exists in Scotland, we are strongly of opinion that the Privy Council should, instead of asking the Local Government Board through the medical officers of health, have obtained the assistance of the organization of the British Medical Association to collect facts as to the existence of such practice throughout the country. Medical officers of health are, as a rule, whole-time officers, and, while possibly there were several consulted secretaries of Branches and Divisions of the Association, it is within our knowledge that this was not done in many large districts of Scotland. The information collected by the medical officers of health is even, in the words of the report, "largely in the nature of hearsay." It is the general medical practitioner who, in his daily round of work, comes across examples of unqualified practice, whether it be that done by bonesetters, prescribing chemists, or eye and ear specialists. The conclusion arrived at by the Local Government Board bears this out, for it says: "Although the information obtained from these reports is not large, it is confirmatory of information obtained from other sources, and indicates that there is a fair ground for a more detailed inquiry." The information collected is decidedly meagre, owing largely, as already stated, to the machinery employed in gathering the facts. While welcoming any attempt to gain information which would be of practical use in formulating some scheme whereby unqualified practice could be dealt with, the Memorandum just issued can only be accepted as a preliminary to a more thorough inquiry. The questions submitted to the medical officers of health did not allow of very extended information being given; they were:

1. Whether the practice of medicine and surgery by unqualified persons is assuming larger proportions?

2. As to the effects produced by such practice on the public health.

According to the report, 33 counties stated that there was no increase of unqualified practice, and no ill effects to the public health in the counties or in 129 burghs; but in regard to other burghs (76 in number) and 2 districts, an increase of practice by unqualified dentists, bonesetters, eye and ear and cancer specialists, etc., and in counter-prescribing by chemists, is reported to have occurred with, in some cases, mischievous results.

The leading features in connexion with the various forms of unqualified practice are detailed as under:

1. *Bonesetters.*

In Scotland, as elsewhere, there exists a long tradition of "bonesetting." In almost every populous locality there is always some person with a reputation for "bonesetting." Indeed, there are many hamlets and farms where the bonesetter is habitually consulted by many classes of people. In fact, the bonesetter is rather a survival of tradition than a deliberate creation of modern social demands. In many thinly populated and remote areas he may be the only relatively "skilled" person in the locality.

In reports by medical officers of health the bonesetter figures largely, but the details furnished are somewhat inadequate. There seems to be no evidence that the bonesetters are increasing in number; but there is sufficient evidence that they are certainly not decreasing.

2. *Counter-Prescribing by Chemists.*

This is a region of practice where the medical practitioner is frequently able to obtain direct evidence. No doubt the practice is widespread; but it is not all of one grade. When a client asks for a particular drug and further asks for directions for its use, no druggist would hesitate to give such directions as might be necessary. In many cases—for example, the case of mineral waters—the doses are indicated on the bottles, and all the

druggist has to do is to draw attention to the fact if requested. A client may purchase a seidlitz powder; he may request to be informed as to the best time to take it; he may ask for detailed directions as to the method of preparing it. From such relatively indifferent cases up to the detailed diagnosis of disease and special issuing of drugs there is every variety of grade.

In the reports by the medical officers of health there is no indication whatever as to what is involved by "counter-prescribing by chemists." Neither is there any indication as to specific evil results. Further, there is no indication as to how far practitioners themselves either act in association with druggists or themselves conduct a druggist's shop. These are obviously matters for further inquiry.

Counter-prescribing by chemists cannot be put on precisely the same footing as bonesetting, because in certain specific respects the druggists are "qualified persons," and the limits of legitimate dispensing are extremely difficult to fix. These facts probably account for the absence of any definite opinions that evil results follow counter-prescribing.

3. *Midwives.*

As was to be expected, the midwife is described as an unqualified person; but here, even more than in the case of the bonesetter, we have a long tradition of practice—a tradition so long and so powerful that it has, in most civilized countries, been rather accepted and regularized than suppressed. It is quite certain that "the qualified midwife," or trained nurse, is steadily gaining ground; but still there remain many untrained midwives. These reports do not specify in any great degree the results of this kind of practice.

4. *Unqualified Dentists.*

There are some indications that unqualified dentists are on the increase. Both in the country districts and in the small towns the unqualified dentists seem to have considerable vogue. Although in the larger sense the unqualified dentist is to be regarded as an unqualified person engaged in "unrestricted practice of medicine and surgery," the range of his activity is strictly limited to such medical and surgical proceedings as are incidental to dentistry. "The qualification" does not mean precisely the same in "medicine" as in dentistry. Accordingly, the prevalence of unqualified dentists does not have the same significance as the prevalence of other unqualified persons.

5. *Eye and Ear Specialists.*

In several small towns "eye and ear specialists advertise in local papers." In some other small towns it is said that "eye and ear specialists are common." But, with the exception of the few towns referred to, eye and ear specialists are not anywhere commented on. It appears, therefore, that the eye and ear specialists do not seriously encroach on the realm of medical or surgical practice proper. It is somewhat surprising that those classes of unqualified practice have not been more commented on in the reports, since it is a well-known fact that many opticians habitually test the eyesight of all classes of persons and provide spectacles. Probably, however, the failure to comment on this practice largely arises from the fact that very few general practitioners, particularly in the country, trouble themselves to test acuity of vision or to prescribe for any refraction defect discovered. The vast majority of cases are absorbed by the eye dispensaries and the general hospitals. The normal onset of presbyopia is not regarded by the ordinary person as a disease, and provision of spectacles for it is not usually regarded by the general practitioner as "medical or surgical practice." Secondly, this whole area of prescribing opticians is on the "borderland" of unqualified practice.

6. *Cancer Cure Specialists.*

There are a few instances of "cancer cure specialists," but the number of such specialists reported on is small.

7. *Rheumatic Specialists, Herbalists, and other Specialists.*

A few instances are referred to of persons professing a special rheumatic cure; practising as herbalists and the like; but, compared with the number of bonesetters, unqualified dentists, or midwives, the numbers referred to are very trifling.

8. *Proprietary Medicine Vendors.*

Apart from the sale of proprietary medicines by druggists, some references are made to special vendors of proprietary medicines. Here, also, the numbers reported on are small. This is no doubt accounted for by the fact that proprietary medicines are to be obtained from qualified druggists. Probably, also, the free advertising of all forms of proprietary medicine reduces the attractions of proprietary medicine vending as a business.

The foregoing extracts from the reports confirm the remarks already made as to the meagre information collected. The reference to counter-prescribing by chemists surely calls for further comment. That it is prevalent to an excessive degree is a thoroughly established fact, and that much harm is done by the chemist who professes not only to prescribe for but diagnose any disease his customer may consult him about, every medical practitioner in Scotland well knows. Then, again, what about the harm done by unqualified dentists? It is not a fair comment on qualified dentists to say that the "qualification" does not mean precisely the same in "medicine" as in dentistry. The qualified dentist has every right to be protected from the unqualified dentist. No mention is made of the harmful results produced by the ignorance displayed by unqualified dentists. The Memorandum expresses surprise that the practice of eye specialists was not more commented on; it cannot be due to ignorance on the part of the reporters, for there is hardly a town of any size in Scotland which does not contain one or two of these "unqualified specialists." Here, again, private medical practitioners could have furnished particulars as to many of their patients who, after consulting "eye-sight specialists," suffered in no small degree from the mistaken ideas regarding the use of spectacles given by opticians.

THE BRITISH MEDICAL BENEVOLENT FUND GUILD.

ANNUAL GENERAL MEETING.

THE guild of ladies which was inaugurated a year ago to assist generally the British Medical Benevolent Fund, and to help its beneficiaries by personal service and in other practical ways, held its first annual meeting at the New Hospital for Women, Euston Road, on November 29th. Lady FREDERICK BRUDENELL BRUCE presided, and was supported by Sir John and Lady Tweedy, Lady Broadbent, Sir William Church, and Dr. Samuel West, among others.

In presenting the annual report, Lady TWEEDY said that the organization had been so carefully planned that the council of the guild felt that the work could now go forward smoothly and to some extent automatically; in a word, the anxious initial period had been passed. Special emphasis was laid in the report upon the recent appointment of a paid visiting secretary, Mrs. Fuller, to undertake the duties hitherto fulfilled in an honorary capacity by Miss West, a lady whose resignation was greatly deplored.

A number of ladies then gave brief accounts of the special work which had been allotted to subcommittees. Mrs. HUTCHISON dealt with the important matter of clothes distribution. She stated that the garments which had passed through the hands of the committee numbered over 2,000, and that a special room had to be rented for their accommodation and dispatch. An appeal was made for warm winter clothing, which was not greatly in evidence among the articles sent. Smart dresses, such as evening gowns, could also occasionally be utilized, as some of the people visited were trying to obtain a living as professional singers and in similar ways.

Mrs. H. D. ROLLESTON gave a report of the "Father Xmas Branch," the outcome of an interesting idea for sending out surprise parcels at Christmas, including toys for children and useful articles for grown-ups. Miss Evelyn Tweedy, of 100, Harley Street, supervises the work of this branch, and gifts for the coming season's distribution should be sent to her without delay.

In dealing with the report of the visiting work, Lady TWEEDY, speaking for Mrs. Liveing, gave particulars of some pathetic cases from a lengthy list, and, in order to show the miscellaneous character of the requirements,

mentioned that ear-trumpets and spectacles had been provided, country holidays arranged, garments taken out of pawn, even wedding rings replaced, the local dentist commissioned, and investigations made into suitable occupations for the gently-nurtured fatherless daughters of medical men. Some of the cases illustrated the pluck, grit, endurance, and self-sacrifice with which the members of families from whom the breadwinner had been removed were facing a sudden change in their circumstances.

The financial statement, rendered by Dr. May Thorne, showed that during the year £363 had been received in donations, subscriptions, and contributions from branches. The total outlay, including the expenditure incurred in launching the Guild and the various subcommittees, was £202 Out of the balance of £160 a grant was to be made to the Fund. The salary of the secretary was to be raised by a special appeal, and not to be chargeable upon the main treasury.

Lady Bruce congratulated the Guild upon the essentially womanly work it was doing, and expressed her special pleasure at the fact that it had been carried on along Charity Organization Society lines, which, she thought, were the best safeguard against imposition.

Sir William Church in seconding the adoption of the report, said that one of the saddest and most disagreeable duties which fell to his lot, as treasurer of the Society for the Relief of Widows and Orphans of Medical Men, was to listen to cases of distress occurring in the families of members of his own profession. It was made yet more sad by the realization that it was impossible for him and those who sat with him personally to investigate such cases. They could do little more than dispense such bounty as was at their disposal, and therefore he welcomed the work of a body of ladies who made it their object to render the personal service for which they were so well fitted. He pointed out that the work of the Guild, as also that of the Fund, was almost entirely on behalf, not of medical men, but of their dependents. Only 17 out of 124 annuitants of the Fund were men, and men accounted for only 25 of the 197 special cases relieved by grants. The majority of the beneficiaries were the widows and daughters of practitioners, and therefore the creation of the Guild was all the more a happy one.

The report having been agreed to, and the revised rules as approved by the Council of the Fund having been accepted, the election of officers was moved from the Chair. The Dowager Lady Broadbent remained President, and the list of Vice-Presidents had some notable additions in the persons of the Countess of Aberdeen, Lady Bruce, and Lady Truscott. The Council was also reinforced by Lady Barr, Lady Gould, Lady Manson, and Miss Turner. Mrs. Scharlieb, M.D, became the new Honorary Treasurer.

The remainder of the meeting was occupied with complimentary votes of thanks. Special recognition was made of the kindness of the Association of Registered Medical Women in London, in allowing the Guild the use of a room, and of the Medical Insurance Committee in making a grant of 15 guineas. Cordial thanks were also given to the retiring officers, special mention being made of Dr. May Thorne, the treasurer, and Miss West, the honorary secretary. In moving a vote of thanks to the press, Dr. Samuel West said that for many years the British Medical Benevolent Fund had been greatly indebted to the various journals for their assistance, particularly for the insertion of abstracts of the monthly list of cases relieved by the Fund, which was probably the best form of appeal that could be presented to the public. Whenever the Guild or the Fund had found it necessary to make a request for publicity, the editors of the medical papers had most generously accorded space. Speaking of the Guild in particular, Dr. West said that it was his desire that something should be done for the children of unfortunate practitioners, particularly for the girls, in the way of training. With regard to paid secretarial assistance, he thought that the fund of which he was treasurer ought to assist in this matter, for in his opinion efficient secretarial work, although it had to be paid for, was, except in certain special cases, a better investment than amateur work, because the administration of the charity was more economically conducted and to better purpose.

WATER FOR WASHING MOTORS AND CARRIAGES.

In an annotation published in the Journal of November 19th we drew attention to the fact that the Metropolitan Water Board were making a special charge for water used for washing motors, on the ground that the water so used is not used for a "domestic purpose." While it is clear that outside the metropolis no water company can make this charge, it appears that the Board in London has power to do so. S. 25 of the Metropolitan Water Board (Charges) Act, 1907, provides that "In and for the purposes of this Act the expression '*domestic purposes*' shall be deemed to include water-closets and baths constructed or fitted so as not to be capable of containing when filled or filled up to the overflow of waste pipe (if any) more than eighty gallons, *but shall not* include a supply of water for any of the following purposes (namely): . . . Consumption by or washing of horses or cattle; washing carriages or other vehicles. . . ." It is manifest that this section was inserted in the Act with the express object of getting rid of the judicial decision referred to in our previous issue. The doctor must pay extra for the washing of his motor, and this whether he uses it in his profession or not.

The charges which may be made are (according to a memorandum published by the Board) as follows:

Horses, Carriages, and Automobiles.

1. When the supply is not taken by meter, the following annual charges are made:

Horses, private	... 8s. each.
,, trade	... 6s. each.
Carriages, private, 2 wheels ...	... 5s. each.
,, private, 4 wheels ...	... 10s. each.
,, trade, 2 wheels ...	... 2s. 6d. each.
,, trade, 4 wheels ...	... 5s. each.
Motors, private	... 20s. each.
,, trade	dependent upon h.p., etc.

2. Where more than five horses are kept, or the aggregate charges under the above scale will exceed £1 2s. 11d. per quarter, the supply must be taken by meter under Section 16 of the Metropolitan Water Board (Charges) Act, 1907.

We wonder if there are many owners of motors, whether doctors or not, who realized in 1907 that the Metropolitan Water Board was seeking parliamentary powers to impose this serious burden? The old water companies of London had no such powers; and it is difficult to see why the Board which was brought into existence in order to effect economy should impose this new duty.

BOARD OF EDUCATION.

Second Annual Report.

The second annual report of the medical officer to the Board of Education has been issued this week. It contains an introductory chapter, eight sections, and eight appendices, and is about double the length of the first year's report. It differs also from that issue in devoting much more space to records of investigations of actual defects and ailments of school children, and possible means of securing their treatment or alleviation, than to questions of organization. The medical department of the Board of Education and the School Medical Service of the country is, in short, getting nearer to the children.

The Chief Problems.

Nevertheless, though the final object at which every one is aiming is the prevention and alleviation of disease, the chief problems still remain those of administration and organization. The immediate problems, the introductory chapter points out, are to ascertain in each area what children are suffering from various defects and ailments; what is their character and degree; in how many cases the local education authority can reasonably expect to secure amelioration without further assistance than that of existing voluntary agencies, and, as regards the residue, in what fashion such agencies can best be supplemented or otherwise rendered more effective.

To prevent solution of these problems entailing expenditure such as might provoke resentment on the part of those who ultimately control it, the closest attention to the mechanical details of organization and administration is required. At the present time a school medical officer can render no greater service than by devising a simple

and effective organization which, without overlapping, waste of effort, or leakage will conduct ailing or defective children, through the process of medical inspection, into the hands of those qualified to treat them, and without unduly harassing the parent or weakening his responsibility.

Administration by Local Authorities.

Emphasis is laid on the fact that now, as from the beginning, the Board holds that the science and art of school hygiene cannot be regarded as an independent study, but must be treated as an integral part of the science of public health.

The Board requires medical inspection of all school children on two occasions—soon after their admission and at the age when they are considered likely soon to be leaving. The age periods of these two groups vary in different districts. The entrants range between 3 and 6; some local authorities regard as leavers children between 12 and 14, others those between 13 and 14. Later on a third group will have to be added—one intermediate between the entrants and the leavers. Indeed, about a hundred local authorities already include three groups in their work. With the introduction of this intermediate examination, the examination of leavers still remains of much importance. It serves as an index for the final results of the practice or neglect of hygiene during school life, and brings medical inspection into direct relation with questions of employment and the after-career of children.

In regard to the numbers comprised in the first two groups, the estimates of various local authorities for the year ending July 31st, 1910, aggregate 1,397,000 children. To these have to be added those on the "special examination" roll—namely, upwards of 250,000.

A certain number of local authorities have been dilatory in making the necessary arrangements for inspection, but the only conspicuous example, says the report, is the London County Council. It is admitted that this body has been doing very useful work of a medical kind in connexion with school children, but it is neglecting its obligatory work—namely, the inspection of entrants and leavers. In as many as 800 schools in the metropolitan area no statutory medical inspection was taking place during the year under review. In this connexion statements that the number of school doctors employed in London is large are regarded as irrelevant, because the instructions given to these doctors preclude them from performing their proper quotum of work in respect of inspection, and the arrangements under which they work are defective both in respect of organization and control. No scheme of treatment can soundly be laid except upon the foundation of a comprehensive and effective system of medical inspection. The London County Council has intimated its intention of complying with the regulations in respect of the year ending July 31st, 1911, but nevertheless Dr. Newman thinks it his duty to draw attention to the foregoing considerations.

Organization.

The schedule describing the minimum of medical inspection issued by the Board in 1903 has been generally adopted by local authorities, though a certain proportion of them pay attention to points of anthropometrical, medical, and statistical interest which the Board intentionally excluded from its schedule. The latter is regarded as having been proved, when properly used, to allow few cases of serious physical weakness or defect to escape attention, while nothing which might be thought inquisitorial or in the nature of unnecessary clinical investigation has taken place.

The method of organizing a School Medical Service which the Board appears to regard as the best is that of appointing as school medical officer the medical officer of health of the area, and giving him such whole-time assistants as are deemed necessary. When the school medical officer is the county medical officer, his natural assistants are the local medical officers of health. This arrangement secures for the school medical officer a larger or smaller number of part-time medical officers, each working as a school doctor and medical officer of health in his own sanitary area. With the exception of a few localities, the extent of the co-ordination between the Public Health and the School Medical Service is regarded now as reasonably satisfactory.

County Medical Officers.

Under the Town Planning Act, all county councils have now to appoint medical officers. The Local Government Board does not object to their holding the office of school medical officer, but thinks it generally undesirable that they should hold any other offices. When a county medical officer is appointed school medical officer, he should receive, in addition to his salary, his actual travelling expenses, and be provided with adequate clerical assistance.

The School Medical Officer.

The allegation that the routine work of a school medical officer is monotonous and uninspiring is held to be untrue. On the contrary, it opens up opportunities for scientific and practical ability found in few other regions of professional service. By Paragraph 7 (*a*) of Circular 596, the Board has given a wide connotation to the duties of a school doctor, and the valuable use to which many of these put their opportunities is evidenced by reference to the work of some twenty-one medical men.

School medical officers have now been recognized in 314 out of the 327 local education areas. In 230 of these areas the person selected is also medical officer of health. In 74 of the remaining 84 areas the school medical officer has been appointed to do his work under the supervision of the medical officer of health or in co-operation with him. Experience has proved the necessity of such co-operation. In 153 of the 314 areas a single school medical officer suffices; the remaining 161 areas employ 533 assistant medical officers, of whom 172 are whole-time officers and 361 part-time officers. The total number of officers constituting the School Medical Service is 986. It is a smaller number than last year, because the prophecy of the Board that the service would become a whole-time service is being fulfilled. Only 72 of the 936 medical men engaged in the School Medical Service are public vaccinators. In this connexion it is pointed out that as a rule it is undesirable that the medical inspection of school children should in any area fall wholly into the hands of public medical officers or Poor Law vaccinators. The list of officers includes 73 women doctors, 6 of whom are school medical officers, the others being assistants.

School Nurses.

In 152 areas whose arrangements have been approved school nurses are employed, the total number of nurses regularly in the service of the education authorities in question being 289.

School Closure.

The existing code has modified the procedure relating to school closure. Schools can still be closed by the sanitary authority on the advice of the medical officer of health, but there is no longer a right of appeal to the Education Authority. Voluntary closure must be either on the advice of the school medical officer himself, or on his approval of other advice to the same effect. The general outcome seems to be that total closure of schools is becoming less common, and the system of partial closure and exclusion of individual scholars to be spreading from urban to country areas. In Liverpool, however, the health authority last year found it necessary to close all infant departments for four weeks.

Exclusion of Individual Scholars.

Individual children can be excluded from school both by the sanitary officer and the school medical officer. Some school medical officers have instituted school diseases registers, recording the name and school of the child, the cause of exclusion, its duration, the date of readmission, and the medical officer on whose authority or advice the exclusion was enforced. These registers, whose institution is approved, can also be used for recording what children have had measles. If this is done, it is often easy to determine forthwith whether an outbreak of measles can be dealt with merely by exclusion of certain scholars, or whether total closure is necessary.

Grounds for Exclusion.

Children can be excluded either to prevent the spread of infectious disease, or on account of uncleanliness or incapacity to benefit by the instruction given. Children who have suffered from infectious diseases should not be readmitted until certified by the school medical officer himself as free from infection. The medical officer, of course, when issuing a certificate, may accept such evidence, including certificates given by ordinary medical practitioners, as he deems satisfactory. Children excluded as suffering from contagious skin disease form a most important class for consideration in framing any scheme for following up cases, or for providing medical attendance. Medical officers, when they encounter children who, on account either of defective eyesight, hearing, or physical or mental defect, are incapable of deriving benefit from continued attendance at an ordinary public elementary school, should bring to the notice of the school authority the necessity of providing for such children in some other way. In Birmingham, London, and Nottingham, classes have been provided for partially deaf and partially blind children.

Excuses for Non-attendance.

When medical certificates from private practitioners are handed in by parents as an excuse for non-attendance, they should be referred to the school medical officer. Sometimes such certificates indicate conditions requiring exclusion and the need of further action; but in other cases the school medical officer may not agree that the conditions stated justify withdrawal of the child from the school.

Removal of Names.

The names of children should never permanently be removed from the school register on the ground that no kind of school provision would be of benefit, except with the authority of the Board.

Attendance Rewards.

Exclusion of children is objected to sometimes both by teachers and by parents, especially when these children are competing for an attendance prize or medal. If it is thought desirable to continue these rewards it should be made clear that absence from school under the school medical officer's certificate of exclusion is no bar to competition for them.

Physical Condition of School Children.

It is regarded for various reasons as being much too early to attempt to furnish anything in the nature of a national return or statistics in regard to the physical condition of the children in public elementary schools, but certain general statements are possible. Thus, of the 6,000,000 children in the public elementary schools in England and Wales about 10 per cent. suffer from serious defect in vision, from 3 to 5 per cent. from defective hearing, from 1 to 3 per cent. from suppurating ears, and 8 per cent. from adenoids or enlarged tonsils obstructing the nose or throat, and requiring surgical treatment. Another 20 to 40 per cent. suffer from extensive and injurious decay of the teeth 40 per cent. from unclean heads; 1 per cent. are affected with ringworm, and another 1 per cent. with tuberculosis in a readily recognizable form. Heart disease affects from ½ to 2 per cent. of all the children.

Uncleanliness.

Much attention is being paid to this subject by educational authorities all over the country, and an appreciable improvement has been brought about. The number of cases of gross uncleanliness is fewer than formerly. The conscience of the parent has been touched. In respect of unclean heads the number of nits discovered is not less than formerly, but live pediculi are much less in evidence.

Only about 60 per cent. of the girls in county areas and 50 per cent. of those in boroughs have heads that can be considered clean. When boys and girls are taken together the percentage is much lower. Attacks on uncleanliness must be carefully planned and a consistent line of action followed, more particularly in regard to the exclusion and readmission of children. A few words spoken to the mother at the time of the routine examination are much more effective than sending a notice to her house. When possible, the heads of all the girls in the school, and not merely those of a certain age, should be examined. In dealing with uncleanliness, the employment of a school nurse is of great value, but she should deal with a few schools thoroughly rather than with a large number imperfectly.

A quotation is supplied from the report of one of the school medical officers, which seems to throw a light on the value of the teaching of hygiene as at present conducted. The children examined were girls in Standard VII —those presumably who had had the benefit of most hygiene lessons, and who were old enough to look after their own personal cleanliness. Of these, 15.7 were verminous; 52 1 per cent. did not clean their teeth; and 90 per cent. came to school with dirty hands.

The prime agent in cleansing schemes must be the parent, but sometimes a cleansing station proves of much educational value. This has been the case both at Exeter and York, as also in Liverpool and London. Sometimes compulsory use of these cleansing stations is necessary.

Washing Accommodation.

Of all forms of extended provision to ensure greater cleanliness, a shower or spray bath, as described in the report of the School Medical Officer for Coventry, is the most economical in point both of first cost and use, and the Board is ready to consider any proposal from local education authorities for the installation of such baths.

(To be continued.)

SCIENCE NOTES.

We have already referred more than once in these columns to the growing importance of agricultural bacteriology, and to the notable advances which have of late been made, especially in America. The maintenance of the nitrogen supply of the soil is probably the greatest problem with which the modern agriculturist has to contend. The importance of this fact was early recognized, and endeavours to attain an adequate solution of the difficulty have resulted in the discovery of various biological factors which lend material aid in maintaining the nitrogen supply. Chief amongst these is the presence of nitrogen-fixing bacteria in the soil. These are of two types, the one being anaërobic, the other, and more recently discovered, being aërobic. The difference of opinion with regard to the food requirements of the latter, the *Azotobacter*, as it is called, and the futile results of attempts to employ it for the artificial inoculation of soils in order to improve their fertility, has induced Hoffmann and Hammer[1] to make a special study of this type of bacterium. Experimenting both with impure and pure cultures, they endeavoured to determine the amount of nitrogen fixed by different types of soils, the effect of the concentration of carbohydrate on the fixation, the availability of various sugars as food for *Azotobacter*, the influence of different forms of calcium phosphate and of varying amounts of calcium carbonate, as well as the nitrogen content of the bacteria themselves. As a result of their work they find that different soils vary widely in their power to fix atmospheric nitrogen, some being as much as 100 times more powerful than others. Mannite appears to be the best food for the bacteria, yielding the maximum fixation in both impure and pure cultures; the presence of carbohydrate in the culture solution aids the activity of the bacteria, but this should be present only in small quantity, an important fact to be borne in mind when considering the advisability of artificial soil inoculation. The period of incubation of such artificial cultures should also be taken into account, and should not exceed a month, otherwise losses in the amount of nitrogen fixed will result. These experiments must serve a useful purpose in indicating the way for a more scientific employment of the *Azotobacter*, which, it is hoped, will prove a valuable aid to the farmer when used in a proper manner.

[1] *Centralbl. f. Bakt.*, II Abt., xxviii, p. 127-139.

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THE PRELIMINARY SCIENCES AND SECONDARY SCHOOLS.

THE reports of the Education Committee of the General Medical Council are always of interest and value as affording detailed information, carefully compiled from official sources, upon points in the curriculum and in the career of students which are the present problems of medical education. It may therefore seem ungracious and even ungrateful to criticize the results of the conscientious labours of the Committee and of its indefatigable chairman, Dr. Yule Mackay; but the conclusions drawn in the report[1] presented to the Council last week do not appear to be so fully justified by the premisses as those of the earlier reports.

The reference to the Committee contained two principal points. The first was "the place in the student's career which the preliminary sciences should occupy," and the second was a request that the Committee should frame a pattern scheme showing how the subjects required could be adequately studied, and the examination passed within the prescribed period. The Committee apparently took a different view of the instruction from that intended by Sir Henry Morris who had moved it. To the second part of the reference the Committee replied that it could not undertake to say which of the many slightly varying curriculums of different bodies was the best; but, as Sir Henry Morris pointed out, what was sought was an indication of how the subject matters could be so arranged as to render it possible for the average student to complete them in five years. He made no secret of the fact that he himself thought it impossible, the matter being too large for the containing space.

In discussing the "proper place" for the preliminary science studies, the Committee appears to have assumed that it must necessarily come within the five years, whereas Sir Henry Morris, whose important speech on the subject will be found in our report of the debate, would appear to prefer that they should be extracurricular, leaving the five full years for the intermediate and final subjects. The Committee's decided opinion that these subjects must be studied at a medical school or at a science institute, and not at secondary schools, does not seem to be established by the data it produced, and its position was further weakened when Sir Henry Morris showed that these data were in some respects misleading. In the statistics given in the Committee's report the total number of candidates stated to have done this work at secondary schools is small, and represents only those who, without entering for any part of these subjects at a medical school, have offered themselves for examinations at the First Professional Examination of the Conjoint Board in London. But many of them pass the Preliminary Science Examination of the University of London, and these were not included.

Again, it is difficult—at any rate, from the data given—to follow the reasoning which has led the Committee to the conclusion that an extension of the latitude allowed by the Conjoint Board and the University of London, in permitting the subjects of Chemistry, Physics, and Biology to be taken at secondary schools, would "undoubtedly" lead to the lowering of the standard of the examination. The percentage of rejections among such candidates is, it appears, actually smaller than amongst those taking these courses at medical schools. On the other hand, it might equally well be argued from the same data that the numbers are as yet too small to warrant any conclusions, but that, so far as they go, they point to the teaching at secondary schools having been adequate. The contention that as the standard of general education is by no means too high the efforts of the secondary schools should be directed to this seems answered by a letter from the Head Master of St. Paul's School, who complains that the tendency of the present regulations of the Council is to make boys hurry away from school in order to put in the extra year at a medical school.

Sir Henry Morris attacked the regulations printed in connexion with students' registration (which are now to be referred to the Education Committee) as being incorrect. As an example, he cited an Epsom College boy, who passed the Preliminary Scientific Examination at the University of London from school. Then, after four years, he felt himself able to go up for his final examination. He offered himself at the Apothecaries' Hall of England, and at the Conjoint Board, and was refused as being short of his five years. He then passed the final examination at the University of London, presented his degree for registration, and was registered, and could not have been refused registration. Now, under the regulations alluded to, he could not have done what in fact he did, and part of the new reference to the Committee embodies the harmonizing of these regulations with the facts, so that the questions will come up again at the next session. So far the report of the Committee makes no recommendations, but holds that the time has not yet come for a consideration of the place and time for the study of the preliminary subjects. This is a disappointing conclusion.

Then we come to a positive recommendation, namely, that, allowing a period of grace till the end of 1913, some of the junior examinations should no longer be accepted as adequate for the entrance examination. Though 26 per. cent. of students do now enter by the portal of these junior examinations it was hoped that by the end of 1913 things would have improved so much that these admittedly low standard examinations would no longer be needed. This recommendation was adopted, and the discussion disclosed the unusual spectacle of the representatives of the various Irish bodies being in complete agreement, and advising that pressure be put upon the Intermediate Education Board of Ireland to induce it to provide an examination suitable for medical students.

[1] See SUPPLEMENT, p. 423.

AN "INDEPENDENT MEDICAL PROFESSION" IN INDIA.

The Allahabad *Pioneer Mail* of September 30th contains an interesting leading article on this subject, which is reproduced at p. 1813.

In Lord Morley's scheme, sent to the Government of India in 1908, for the "formation" of an independent medical profession in India, what struck us with surprise was that the late Secretary of State for India entirely ignored the fact that there already existed in India a large, well-educated, and generally prosperous "independent medical profession." For the last sixty years or more the Indian Medical Service has been using its utmost efforts to educate in Western medicine and surgery thousands of natives of India. Selected and well-qualified officers have formed the professional staffs of the various medical colleges, and trained the students in their four or five years' curriculum, and throughout the country the I.M.S. civil surgeons have continued the training in practical work at the numerous district hospitals and dispensaries. Formerly the supply of students who passed out and took their degrees in medicine or their diplomas of L.M. and S. was only sufficient to fill the numerous Government posts open to them, but for many years past a large surplus of qualified medical men have left the medical colleges and established themselves in private practice in the Presidency cities and other large towns. Many of these gentlemen are most successful, become skilful practitioners, and make large incomes; but, as in every other country in the world, a certain number are failures, either because there is no room for them in the large cities or because of personal shortcomings. We have reason to believe that one of the reasons why the younger men find it difficult to establish themselves in successful practice is the absence in Indian native practice of any system of partnership between the younger and older practitioners or of temporary assistantship. The young man, just qualified, has to compete with the old-established practitioner, and this leads to a very low standard of medical ethics.

That the present supply of this class of independent native practitioner is equal to the present demand from that part of the population who wish to benefit by Western medicine and surgery is fully known to all who have given any attention to the subject during long residence in India. It must also be remembered, as the *Pioneer* points out, that the percentage of natives of India who wish for Western treatment is still far from large. Most of them retain their belief in their own ancient systems; and another very potent fact is that the fees of the Kobiraj and the Hakim are very much smaller than those of the graduates in Western medicine, and the cost of indigenous drugs is ludicrously small compared with that of European medicines.

Lord Morley might be assumed to have ignored all these facts from the tenor of the dispatches regarding the "formation" of an "independent profession." India is a very poor country, or perhaps we should put it that 99 per cent. of its inhabitants are poor labouring people, and there is but a small middle class. Till the Government of India and the Secretary of State, with the recognition of this fact, turn their attention to the better education and fostering of a class of medical practitioner content to live among and work among the poorer classes in the smaller towns and large villages, except for those patients within reac of charitable hospitals and dispensaries, Western medicine and surgery will be a luxury for the comparatively well-to-do native of India.

We will assume, then, that the late Secretary of State, Lord Morley, when proposing a scheme for the "formation" of an independent medical profession in India, really meant encouraging the growth of one already existing in the large cities and towns only. To this end he suggested to the Government of India to take away from the Indian Medical Service as many civil medical appointments as possible, appointments which would be attractive to members of the independent medical profession who had spare time to devote to them, such persons being, of course, natives of India. It really goes without saying that no sane politician could for one moment have contemplated introducing into India a subclass of "independent Government officer," European, to substitute for the competent and available Indian Medical Staff officers. The objections to and disadvantages of any such scheme are too patent from every point of view to waste time over.

There remain, therefore, the existing independent medical practitioners, the busy successful members and the unoccupied, unsuccessful and complaining members. Are the busy successful men likely to take up any Government work but that which just suits their convenience? One of the reasons of the success of the many independent medical practitioners, European and native, in the large Presidency towns is the very fact that they are not tied by Government work. We once heard of a European resident in one of the Presidency towns who said, "What I object to is the d——d independence of these Government doctors. I send for one and get a reply that he will call *after* he has been to his hospital or given his lecture. I want a doctor who will come when I send for him."

In Presidency towns it would be possible for independent medical practitioners to be appointed physicians and surgeons to the hospitals or professors at the colleges, but they would not or could not, without extra pay, take up the attached duties which fall to the Indian Medical Service officers holding these posts. There is much Government work, for which no special extra pay is given, which falls to the Indian Medical Service officers holding a hospital or college appointment at one of the Presidency towns. The Indian Medical Service officer could not possibly live on his bare pay in a Presidency town and perform all the duties which fall to a Presidency surgeon unless he had a considerable private practice or a large staff salary.

Since the necessity would arise of combining in an up-country station the duties of civil surgeon with the position of an independent or non-Government medical practitioner the hopelessness of the suggestion becomes at once apparent. There would be no local medical man of position, European or native, available. An outsider would have to be imported. His official duties would practically absorb his whole time. In what possible respect would he be "independent," if not merely being independent of control? The position is an impossible one.

It would be more straightforward if Lord Morley had said: "I wish to deprive the Indian Medical Service of most of its desirable and lucrative civil appointments. I wish to appoint in their place natives of India, locally selected, not native members of the Indian Medical Service or of the Indian Sub-

ordinate Medical Service. I wish them to be called independent medical practitioners, because then they can be paid smaller salaries, will not require regular leave rules, will not qualify for pensions, as they will not be Government servants, being 'independent'; also they can be dismissed at short notice. It does not matter whether, being independent, their work is supervised or not, or whether they are able to dislocate the whole work of a district by asserting their independence in numerous ways. What I wish is at all costs to replace European by native agency, and *sic volo, sic jubeo*."

We think that the Indian Medical Service need not take alarm at such a scheme as that proposed two years ago by Lord Morley, but the pity of the whole thing and the impolicy of it is that it raises impossible hopes in the minds of those who think they might benefit by the change, and disappointed hopes often lead to unnecessary trouble. Possibly also with the late change of Secretary of State and of Viceroy, and with the prospective political changes, saner and more practical counsels will prevail at the India Office and Simla.

PUBLIC DEBATES ON VACCINATION.

A TIME-HONOURED tradition exists in the medical profession that it is neither desirable nor necessary to debate medical subjects in public. The progress of time and the rapid development of the public health service and that branch of medical science known as preventive medicine have, however, aroused great public interest in medical matters, and the tradition has become modified. The diffusion of knowledge on certain medical matters is now almost a duty of the State, and the demand for such knowledge is constantly increasing. It is of the utmost importance that only sound views should be disseminated, and that pernicious and fallacious teaching should be counteracted and corrected. Opposition to demonstrated truths has always existed. It is not a little singular that organized bodies of apparently intelligent men have been formed for the express purpose of hindering and hampering the progress of medical science and of hoodwinking over-credulous people.

The National Antivaccination League has long been an offender of this kind. Its members have quaint and antiquated notions about medical practice and medical measures. They have dangerous ideas concerning public policy and the so-called liberty of the subject. Paid lecturers of this league are at the present time perambulating the towns and villages of the country, attacking in a virulent manner the honour and integrity of the medical profession, and vilifying all who practise vaccination. It can no longer be argued that such organized attacks can safely be left unanswered. One of the planks in the agitator's platform has been the continual boast that medical men dare not meet the "anti" champions and cross swords with them in public.

From the report of a public debate recently held at Lewisham, which will be found at page 1782 of this issue, it will be seen that Dr. Drury has once more come forward to give the lie to the boast that medical men dare not stand up for the faith that is in them. The debate was organized by the Liberal Club, in which Mr. Bonner, an official of the antivaccination body to which reference has just been made, and Dr. Drury took part. Mr. Bonner's chief qualification for the rôle he assumed appears to be that he has endured the penalty of the law rather than submit his children to vaccination. He has also conducted a few one-sided inquiries on behalf of the league into cases of alleged injury. In these circumstances it is not necessary to point out that the disputants were unequally matched, and that Mr. Bonner's feeble attack was antagonized by trenchant and irresistible arguments. We venture to predict that Mr. Bonner's thirst for public debate would soon be quenched if a suggestion made by Dr. Drury could be carried out. After Mr. Bonner's forty minutes' attack, his opponent began by announcing that if he could afford the time and expense he would willingly follow Mr. Bonner to his next dozen engagements. It is not unlikely that if an organized attempt could be made to provide such men as Mr. Bonner with an antagonist who knows how he fights, the battle against this kind of foe would soon be won. By such means their methods would be exposed, the public would learn the real truth, and the spreading of misleading and erroneous views would receive a much needed check.

The temporary absence of small-pox and the absurdly great facilities granted by the Legislature for obtaining exemption from vaccination are sources of danger calculated specially to influence the indifferent among the people. It is the indifferent class also who are most likely to take for granted that what they are asked to believe by the zealous propagandist is unanswerable if unanswered. For these reasons it is in the public interest that some of the challenges to public debate thrown out by the "anti" bodies should be accepted. Stringent rules are absolutely necessary on such occasions, or the audience would soon get out of control. One aspect of these public assemblies is always observable—the audience is usually chiefly composed of antivaccinators, on the "birds of a feather" principle. The tendency of such an audience is to be neither polite nor fair to the provaccinist speaker.

At the Lewisham debate Dr. Drury appears to have turned the tables so effectually on his interrupters in the early stages of his remarks as to silence them almost completely. After the debate, during the speech of the seconder of the vote of thanks to the speakers, a section of the audience created a scene of considerable disorder. Needless to say, as will be seen from the report, the speech was a vigorous and effective defence of vaccination. It is a characteristic feature of the opposition to vaccination that it is usually conducted with unrestrained bitterness and animus. This is one of the many signs of the weakness of the case against vaccination.

In an article on antivaccination controversy which appeared in the JOURNAL of April 21st, 1908, mention was made of the fact that Dr. Drury had entered the field of newspaper correspondence against the stock method of propagandism of the Antivaccination League. We expressed a hope that he would continue in the course he had begun. That hope has been fully realized. In every part of the country and almost wherever a letter from the official ring of antivaccination writers has been inserted in newspapers crushing blows have been promptly dealt by Dr. Drury. This has undoubtedly had the effect of contracting the ranks of the ring, and at the same time exposing the follies and fallacies of these over-zealous writers. None of the champions seem to have been spared. These include Mr. Arnold Lupton, whose electioneering pamphlet was thoroughly

dissected and exposed in a long correspondence in the *Yorkshire Post;* Mr. G. Bernard Shaw, in a correspondence in the *Daily News*, where that *poseur* was tackled in quite delightful fashion, and was reduced to saying "the public does not want to see us scoring off each other"; Mr. Swan (the editor of the *Vaccination Inquirer*); the Hon. Ernest Pomeroy, Dr. Charles Creighton, Dr. Hadwen (the latter in a correspondence recently published in the JOURNAL), and many others. This is a remarkable record and keeps alive the defensive work formerly so energetically carried on by Dr. Bond of Gloucester and Dr. McVail of Glasgow.

CANDIDATURE OF SIR VICTOR HORSLEY.

AT a meeting of the Liberal Association of the University of London, held on November 28th, at 5 o'clock, Sir Thomas Barlow in the chair, Sir Victor Horsley, F.R.S., was unanimously adopted as the Liberal candidate. The nomination will take place at the university on Saturday, December 3rd, at 12 noon, and the polling begins on Monday, December 5th, at 8 a.m., and continues till Friday, December 9th, at 4 p.m. Graduates who do not vote in person at the Imperial Institute can vote by a voting paper, which must be witnessed by a Justice of the Peace for the borough or county in which the voter is for the time staying or residing. We understand that both candidates are issuing information on this point, which should be in the hands of the graduates before the present issue of the JOURNAL reaches them. At the election in January the contest lay between Sir Philip Magnus (C) and Sir West Ridgeway (L), the poll being 2,625 for the former and 1,928 for the latter. Sir Philip Magnus is again a candidate. Sir Victor Horsley's address, which according to precedent takes the form of a letter addressed to Sir Thomas Barlow, chairman of his committee, will be found in our advertising columns, page 9. The address, it will be seen, is accompanied by an appeal from a number of medical electors of the University of London, setting out the considerations which, independently of party politics, make it appear to them of great importance that the medical candidate should be returned at the present election. The memorial calls attention especially to the insurance of workpeople against sickness, the reform of medical arrangements under the Poor Law, the Coroners' Law and Death Registration Acts Amendment Bill, and the report on Unqualified Medical Practice recently issued by the Privy Council and the Local Government Boards of England, Scotland, and Ireland, as matters likely to arise at an early date during the next Parliament.

PROCEEDINGS OF ANNUAL MEETING.

WE think that both our readers and ourselves are to be congratulated on the completion last week of the proceedings of the Annual Meeting. The work is all the more satisfactory since throughout its duration there was no alteration in the normal contents of the JOURNAL. As we pointed out last year, there is no other great conference of whose proceedings a complete report is published with such rapidity as are those of the Annual Meeting of the British Medical Association. On this occasion the difficulties of the task were even greater than usual, partly owing to the large number of Sections which met, and partly to the nature of some of the communications that had to be dealt with. The net outcome is that the total number of pages so far published already exceeds the total number of the pages in any previous complete year. In addition the SUPPLEMENT has made its appearance regularly.

CORONERS AND DEATH CERTIFICATION.

WE have received a letter from Sir William Collins, in which he takes strong objection to our allusion last week, in a note headed "Coroners and Death Certification," to the fact that the Coroners and Death Certification Bill introduced in the House of Commons by him last session imposes on medical men fulfilment of a new and onerous duty without payment of any fee. He states that it was his intention to obtain the insertion of a clause relating to fees when the Bill reached the Committee stage, and that he made a statement to this effect at the Annual Meeting of the Association last July. Sir William Collins is on the eve of a contested election, and were we, too, politicians, we might be tempted to describe his statement as in the nature of a death-bed repentance. As things are, we fully accept it and only regret that we should have hitherto remained entirely unaware of his good intentions. This ignorance must be shared by hundreds of our readers, for after we had described and pointed out the defects of this bill in a leading article last July correspondents for many weeks in succession continued in published letters to criticize its provisions. Among other letters on the subject was one of an apparently inspired character, which stated that Sir William Collins had intentionally omitted any clause relating to payment lest an idea that the profession was "out for fees" should lead to the rejection of his valuable bill. This made what we now know to have been an illusion on the part of ourselves and general correspondents all the more excusable. It is scarcely conceivable that Sir William Collins was not aware of the prevailing delusion, which any time since July 2nd he might easily have dispelled by a letter. He has not, however, till now seen fit to do so, and it is his imitation of the papal fashion of keeping his good intention *in petto* that we must regard as chiefly responsible for any injustice which we may have done him. The same circumstance must be taken as the cause of the ignorance even of the Council of the Association, which as recently as October instructed the Parliamentary Subcommittee to take all necessary action to oppose the bill, mainly on the ground that it imposed on medical practitioners statutory duties in their professional capacity without remuneration. The moral is that any medical member of the House of Commons who desires to introduce a bill dealing with medical matters of a kind which he hopes will prove acceptable to his professional brethren, should take the trouble to get into touch with the Council of the Association or with its Medico-Political Committee. As we have had occasion to return to this subject, we take the opportunity of pointing out that though, as we said last week, further progress of this bill depends in a considerable measure on whether Sir William Collins, its parent, or Dr. Hillier, one of its sponsors, is returned to the House, it is possible that Sir William Collins may already have succeeded in enlisting the Home Office in its favour. Should that be the case, the bill may again be brought forward in its present or some similar form, either as a Government measure or as a favoured private bill. In view of this circumstance, it might be well for all Divisions to follow the same course as that which is already being taken in Newcastle. There a deputation is being organized by Dr. Sinclair Fraser to interview the candidates and obtain from them a pledge to vote in favour of insertion in any bill imposing on medical men new duties in connexion with death certification a clause authorizing adequate payment. Prompt action is, of course, necessary, and, providing the

deputation could claim to represent a fair number of its fellows, its action in such a politically unimportant matter would probably be immediately effective. The point on which stress should be laid is the unfairness of ordering medical men to undertake without fee a duty which will entail a special visit to the house of a patient, and not seldom, in the case of a country practitioner, a long journey for that purpose.

ROYAL SOCIETY OF MEDICINE.

WITH pleasing appropriateness the newest and greatest of medical societies—to wit, the Royal Society of Medicine—chose the newest and largest of London dining halls—to wit, the Connaught Rooms—for its dinner last Wednesday. There was likewise attractive harmony between the splendours of this gastronomic temple and the general character of the assembly, which had Sir Henry Morris as chairman. All the higher estates of the realm may be taken to have been admirably represented. The Church, it is true, was not present, nor yet any representative of the Lower House of Legislature. For the moment, of course, there is no legal bearer of the magic initials M.P., and in any case the dominant note of the last House of Commons was hardly in keeping with the supercultured character of the gathering. The Upper House, on the other hand, was represented by Lord Ilkeston, whose name was greeted with applause when mentioned by Sir Douglas Powell in proposing a toast to "The Guests"; also present was Lord Blythe, who is entitled to the gratitude of the medical profession as having facilitated the work of the Tuberculosis Commission by lending his farms. The Court found representation in Sir Almeric FitzRoy, Clerk of the Privy Council, and in Sir James Reid, in addition to other members of the medical department of the Royal household. The representatives of law were headed by Lord Justice Fletcher Moulton, and those of the services by Director-General Ellis and Surgeon-General Branfoot, President of the Indian Medical Board; while the City graced the board in the persons of the present and two past Lord Mayors and ex-Sheriff Sir Thomas Crosby, M.D. The lay faculties of universities may be regarded as having been represented by Vice-Chancellor Hill, and "Other Medical Societies" by Mr. Charters Symonds, President of the Medical Society of London; the Presidents of the two Royal Colleges also attended. Medicine and surgery in general were represented by great scientific names too numerous to mention, beyond observing that they included those of the President of the Medical Department of the Local Government Board, Dr. Newsholme, and that of one of his principal assistants, Dr. Bulstrode, and that Sir Shirley Murphy was also among the diners. Other persons to whose presence Sir Douglas Powell made appropriate reference were Dr. Squire Sprigge of the *Lancet*, and a representative of the BRITISH MEDICAL JOURNAL. A certain number of ladies were likewise among the guests, a distinguished group of medical women having a table to themselves. Allusion to their presence was made by Sir Henry Morris when thanking Sir Joseph Dimsdale for proposing the toast to the society, a task performed in terms so laudatory of science that we refrain from quoting them lest they should create among its acolytes a form of pseudo leontiasis. Since last February, Sir Henry Morris explained, women—formerly only admissible to membership of sections—had been made eligible for Fellowship of the Society, and twenty-three of them had taken advantage of the privilege. That number was just two less than the number of women doctors who in 1881 signed a protest against their exclusion from the International Congress. In the interval over 1,000 women students had passed through the lecture rooms of the London School of Medicine for Women alone, and he had recently ascertained that there were now over 800 women doctors on the *Register*. He modestly claimed that the right occupant of the chair that evening would have been not himself, but one of those Fellows to whom credit for the great success of the society was more truly due, notably the late president, Sir William Selby Church. The idea of the society changing quarters was not a new feature, since a migratory instinct had been evident throughout the 100 years of its existence. Commencing life in Queen Street, next door to the rooms in which the company was then assembled, it had had various homes. That to which it hoped soon to be able to move was likely to prove a final resting-place, since it would be adequate to its needs for several generations to come. Sir Henry Morris also made allusion to the present lack of a Section of Tropical Medicine, and demonstrated the causes which prevent civilization being spread in the tropics and subtropics otherwise than by the inhabitants of countries in which Nature shows no excess. Finally, he wound up a speech replete with literary references by relating the story of the Seven Sleepers of Ephesus. If, like those sleepers, the great men who long ago played a part in the affairs of the parent society could now be awakened, they would find at least as much cause for admiration and surprise at what had taken place during their sleep. With the changes that had taken place the future of the society would be thoroughly in keeping; for a characteristic of its members was true devotion to science and absence of self-seeking or personal advertisement, and the part which the society was destined to play in the development of medicine was great. The toast to "The Guests" was acknowledged in turn by Sir Vezey Strong, Lord Justice Fletcher Moulton, and Sir Thomas Barlow. The proceedings then terminated.

THE SOCIETY OF APOTHECARIES.

THE Worshipful Society of Apothecaries held its annual Lord Mayor's dinner on November 22nd, the guests being received by the Master of the Society, Mr. Arthur Treherne Norton, Consulting Surgeon to St. Mary's Hospital, and by the senior and junior wardens. The former is Dr. Arthur Long of Kearsney, Kent, and the latter Dr. W. Bramley Taylor, who, when in practice, lived at Denmark Hill and now resides at Weybridge. In proposing the toast to "The Lord Mayor, the Sheriffs, and the Corporation of the City of London," the Master spoke of the problem now occupying the energies of the society's chief guest—namely, the selection of a memorial to His late Majesty King Edward VII. For his own part he would have liked, he said, to see all local schemes combined into one great whole; it might then have been possible to achieve what was one of his cherished ideals—the establishment of a State university. The University of London had endeavoured to fill the place of such a university, and he by no means desired to belittle its work; but in its Faculty of Medicine it had placed the standards so high that a majority of medical students were shut off from its degrees. In some universities, on the other hand, standards were dangerously low. These wrongs a State university might right. He also spoke of the movement now on foot to re-establish in all trades and technical occupations the system of apprenticeship. In medicine this was no longer possible, but in other arts and crafts he hoped to see the system once more on a

firm footing. In his reply the Lord Mayor, Sir Vezey Strong, said that Mr. Norton had opened a wide field for discussion by his reference to existing university systems and to apprenticeship. In regard to the first, he regarded with pride the high standard which the University of London had laid down for itself, and speaking as a layman, he would be sorry to know that for those who were to be medical men any standard was demanded except the highest. The question of apprenticeship was now before the Corporation, and the work being done in connexion with it had both its sympathy and its monetary support. Technical education alone would not suffice. The apprentice must convert theoretical information into real knowledge in the workshops of practical journeymen. The toast drunk to "The Royal Colleges of Physicians and Surgeons" was acknowledged by Sir Thomas Barlow and Sir Henry Morris respectively, while of the two responses to the toast to "The Visitors," one came from Dr. Norman Moore.

POOR LAW INFIRMARIES.

WHEN opening a new Poor Law Infirmary for Wandsworth last Saturday, Mr. Burns made some strong remarks which are of distinct interest if they can be taken as indicative of the probable attitude of the Local Government Board next year, when the Poor Law report comes under discussion in the House of Commons. His remarks also have a bearing on the difficulties which surround, and are created by, existing systems of voluntary hospital enterprise. The new infirmary, Mr. Burns said, symbolized in the character of its equipment and construction what was going on all over the country. The Local Government Board was determined to bring the Poor Law Medical Service up to date, and to render it equal in respect of appliances, skill, and capacity to the best general or special voluntary hospitals. Seventy years ago, when the extent of general pauperism was much greater than at the present time, Poor Law authorities employed only 200 nurses for all the sick on their hands, and these nurses were none of them trained. The number of trained nurses now employed was 7,000. This alteration was a symptom of the complete change which had taken place in the character of the benevolent desires of the community. Over 50 per cent. of the indoor poor were now maintained in special institutions, such as infirmaries, wards for the aged, homes, hostels and asylums, in which the evils from which they suffered could be better treated than was ever the case in the old mixed general workhouse. The general poor rate had dropped in the last sixty years from 1s. 8d. to 1s. 6d. in the pound, but the actual expenditure on each pauper maintained had increased, owing to the better treatment which the aged, the sick, and the children now received. About 30 per cent. of the total pauperism of the country was due to sickness alone, and it was more economical to spend £50 in ridding young persons of sickness altogether than in waiting until they were 40 and then palliating it by an expenditure of £300. The problem to be dealt with was a great one, as was shown by the fact that in the metropolitan area alone there were 20,000 beds in Poor Law infirmaries, or a larger number than in all the voluntary hospitals in England and Wales put together. The increasing use of Poor Law infirmaries was due, not to increasing destitution, but to increasing recognition by the poor that the infirmary was now as good as the general hospital. Whilst Utopians had been debating what should be done, the Wandsworth Guardians had been doing it. They had changed the character of Poor Law relief in their district to an extent which made it scarcely recognizable by those who knew it thirty years ago. It ought to be realized that pauperism could not be abolished on vaccination principles, by inoculating everybody with its virus. If a watch were not kept, a number of people with fine ideals and magnificent enthusiasm, but lacking in sense of proportion, would probably try to impose remedies infinitely worse than the disease. There was no specific against pauperism; its causes were multifarious, and the remedies must be multiform.

HINTS UPON THE PURCHASE OF A MEDICAL PRACTICE.

WE have from time to time had occasion to indicate to our readers certain principles of law which should serve to guide them in the purchase of a medical practice. But, apart from purely legal questions, there is certain counsel which may be given to those who are about to enter the market to look for a practice. A false step at this stage of a man's career may mean the ruin of his prospects. The following notes may seem homely and simple enough to those who have gained experience, but they may be of some value to those about to embark on the treacherous sea of medical practice. In the negotiations which lead up to a purchase it is well to bear in mind that, though an action may be brought to set a contract aside on the ground of fraud or misrepresentation, there are many things to which the maxim *caveat emptor* applies. A willing and anxious seller is not likely to underrate the advantages of the district, the ease with which fees are earned, and other favourable features. There are, moreover, several matters to which the purchaser will find it prudent to direct his special attention. The first question to be answered is —Why is the practice being sold? It may be in the market for one of many reasons. The vendor may be retiring from practice, and it may be a genuine retirement on account of old age or ill health. In the alternative the practice may be retiring from him. It is when there is no very obvious reason for the sale that the purchaser must be on the look-out for surprises. There is much to be learned from a glance at the houses which are within the area of the practice. Are there many to let? Do they present an appearance of prosperity, or do they look as if the character of the neighbourhood was changing for the worse? If the town or district has recently become the resort of cheap trippers, this may be the reason why the vendor is seeking a more profitable *clientèle*. An examination of the books by a skilled accountant will reveal much, but it will reveal much more if it is accompanied by a few shrewd questions. Thus it may appear that during the last few years some chronic patients have swelled the total receipts to a surprising degree. But what of these chronic patients? Have they succumbed, or have they left the district? The fact that an "old chronic" paid the outgoing practitioner £100 a year for five years may serve the vendor in good stead by enhancing the value of the practice, but the purchaser should take care that there is a reasonable chance of this valuable asset being transferred to him. The question of bad debts is one which must be carefully considered. Like Bob Sawyer, the vendor may have "a very extensive practice," but ready money may be conspicuous by its absence. For this reason the accountant should be instructed to pay special attention to the age of the debts which are entered in the books. Upon the nature and extent of the opposition in the district it will be difficult to get any very reliable information. It ought not to be impossible, however, to ascertain whether there is much 'poaching" by practitioners from neighbouring dis-

tricts. The motor car has extended the bounds of the country practice in a very marked degree in recent years, and this element of foreign practitioners may afford some explanation why the practice is being sold.

MECHANICAL BREAKDOWNS AND INSURED VALUE.

A good deal of discussion has been raised lately in the motor press on the subjects of "mechanical breakdowns" and "insured value" in regard to the accidental damage covered by motor car policies, many instances being cited of apparent unfairness in the settlement of claims. The Medical Insurance Committee has advised medical men not wishing themselves to bear the risks associated with motor cars to consider the advantages offered by the Red Cross Indemnity Association. This association issues several policies, but there is one—the Doctor's "A 1" policy—which appears to be specially suited to the needs of medical men, who will no doubt desire to know what view is taken by the Red Cross Indemnity Association on the above points. A correspondent recently asked, with reference to the section covering accidental damage, from which "mechanical breakdowns" are excluded, whether "supposing that the brakes fail to act when descending a hill and there is a collision in consequence with a wall or a vehicle, this is covered by the doctor's 'A 1' policy; or supposing that a tyre bursts, and in consequence the car collides, is the damage in consequence of the collision covered by the same policy? In fact, is mechanical breakdown taken to mean simply the injury or damage to the car itself due to a failure in some part of the machinery, or is it taken to mean the consequences of any mechanical failure?" A clear answer to this is contained in the actual clause in the policy referring to accidental damage, which we quote in full: "Section I.—The underwriters will pay for or replace or make good all damage to any automobile hereby insured up to the amount specified in the schedule hereto as the value of such automobile, if such damage is the direct result of an accidental collision or impact of the automobile with any object. Provided always that this section shall not cover cost of repairing or reinstating damage from wear and tear, or from mechanical breakdown not caused by accidental collision." We may add that there is nothing in the policy modifying the cover given under the clause quoted above, excepting a condition which excludes damage occasioned wilfully. For example, take the case of a car which has run some thousands of miles and in which perhaps, quite unknown to the owner, some internal parts are badly worn. In endeavouring to avoid a collision, unwonted stress is thrown upon these parts, and a mechanical breakdown results. The driver loses control of the car, and a collision occurs. Under the "A 1" policy, which is the subject of our correspondent's letter, the underwriters would pay for repairing all damage caused by the collision, but the assured would bear the cost of replacing the worn broken parts which were the cause of the collision. Under the "C.C." policy these mechanical breakdowns and damage from any cause, except wear and tear, in addition to several other risks, are covered. The other point raised by the correspondence relates to the amount paid in the event of total loss. Some motorists have unfortunately had the experience of making a claim for the total value of their car only to learn that though they have paid the company the premium on the full value, the amount offered to compensate them for their loss is the second-hand market value—a very different thing in the case of a car, say, nine months old. Whilst of necessity a car depreciates in value annually until the owner finds a new car necessary, its value to him is not reduced to any great extent in nine months. In the event of its total destruction its second-hand value does not compensate him fairly for his loss. In the "Red Cross" policies the amount declared as the present value of the car is the amount on which the premium is based, and this value is agreed as the replacement value in the event of total loss. We understand that the experience of the Medical Insurance Committee is that the underwriters have settled all claims in the spirit of the wording of the policy; this has been found to be a straightforward acceptance of certain liabilities which are discharged as promptly as possible. The Medical Insurance Committee is able to afford special advantages to medical men insuring with the Red Cross Indemnity Association through the Committee. Full particulars with regard to insurance of motor cars under the Red Cross Indemnity Association, and for fire, life, burglary, and workmen's compensation insurance under the Guardian Assurance Company, can be obtained on application to the Secretary of the Medical Insurance Committee, Mr. Guy Elliston, 429, Strand, London, W.C.

CLUB PATIENTS.

A decision of considerable importance to medical officers of friendly societies has lately been arrived at by the Grand Master and Board of Directors of the Society of Oddfellows. The circumstances were these: The medical officer of a local district lodge declined to accept as a club patient a former member who had previously been on his list but who had left the district, taking himself off the list and paying into another club for some time. On coming back to the district he had himself put upon his former club and claimed medical attendance without fresh examination. It appeared that the patient was suffering from malignant disease of grave character, and the medical officer naturally objected to admitting him as a "continuous patient." The member appealed against this decision to his district committee, and after going into the matter the committee ordered the medical officer to attend the man as a club patient, considering that the case was one falling within the rules. An appeal from the decision was lodged with the Grand Master and duly considered by him and the director, and judgement given that the resolution of the local district committee be rescinded, thus supporting the medical officer's contention that he was not called upon to attend the member as a club patient in the circumstances. This decision is a common-sense one and perfectly fair and just. If members of clubs can move themselves to another district, join other clubs, and at their own will, when suffering from chronic ailments of severe type, return to their original lodge and claim sick pay and attendance without the consent or approval of the medical officer, the disabilities already existing in club practice, so far as the medical staff is concerned, will be greatly increased, and in addition the finances of the club will be seriously endangered. It is satisfactory to find that the Grand Master and the board accepted the position taken up by the medical officer as the only right and proper one.

THE GERMAN FREIBANK.

The *Freibank* has been known in Germany for a very long period. In certain parts of southern Germany, as long ago as the thirteenth century, it was enacted that "any butcher who shall slaughter a measly

animal shall sell it to no one without his knowing its condition," and at the end of the fourteenth century it was required in Hamburg that measly meat should be sold in a special booth upon a white cloth. An interesting account of these institutions is contributed to the December number of the *Contemporary Review* by Miss C. Smith Rossie, who has obtained her information on the subject at first hand. She enters into no details of the elaborate system of meat inspection in force in the German towns, but describes the practical outcome of the inspections. The meat examined is divided into four different classes. The highest class contains such meat as may be adjudged first class, in the next class is meat of a lower value, in the third class that which is described as conditionally fit and which would be unfit for human food unless scientifically sterilized. The lowest class contains such meat as would be entirely unfit for human food. Miss Rossie appears to consider that the German standard for high quality meat is not a particularly high one. The meat placed in the second and third classes is sold in the *Freibank*. That which is only conditionally fit is placed in a closed chamber and subjected to 212° F. for two hours. At the end of this period the flesh is quite free from living germs, but it is described as very unpleasant to behold, and the blackish liquor that has been drawn off by the hot air is still less inviting, yet it is sold to the poor people, who can purchase it either for soup making or as a restorative for infants and sick people. The regulations governing the sale of *Freibank* meat prohibit its purchase for use in any hotel, restaurant, or eating house, and a further indication of the estimation in which it is held by the public authorities is to be found in the fact that it is not used in the State prisons. Miss Rossie declares that the poorer classes whose poverty alone compels them to resort to *Freibank* meat, spoke of it with such scorn as to convince her that the system would not stand the force of public opinion as soon as the workers of Germany get power enough in the Legislature to make their will felt.

"606."

ON September 20th, at the meeting of German Scientists and Physicians in Königsberg, a full-dress discussion on Ehrlich's new remedy took place. Thirty-two speakers took part in the discussion. Neisser expressed the opinion that atoxyl and the nearly-allied substances, arsacetin, soamin, and hectin, might be disregarded as antisyphilitics. Instead of the pentavalent arsenic compound, Ehrlich had introduced the trivalent compounds arseno-phenyl-glycin and later dioxy-diamido arseno-benzol. The action of the latter was partly direct on the parasites and partly indirect through an antitoxic antibody. The maximum therapeutic dose had not yet been determined. One gram for an individual weighing 60 to 70 kilograms (= about 9 st. 6 lb. to 11 st. 3 lb.) had been given without ill effects. The total quantity given within a period of three weeks was 2.4 grams; 0.5 gram in 200 c.cm. of fluid might be given intravenously. He advocated an intravenous injection of 0.4 gram followed by a subcutaneous one of 0.5 gram. He put forward a tentative list of indications for the use of "606," and also pleaded for a combined treatment with this drug and mercury or iodide of potassium. Lastly, he said that "606" would render the problem of diminishing the spread of syphilis easier than before. Ehrlich said that when spirochaetes did not disappear in from twenty-four to forty-eight hours after an injection of "606," either the dose was too small or the drug was not satisfactorily absorbed. Marinesco, Plaut, Scholtz, and L. Michaelis had proved that the serum of persons treated with this drug exercised a curative action on syphilitic processes, especially in newborn infants. He quoted cases of gummas of the tonsil, which prevented the act of swallowing, being so far improved within five hours of the injection that the patients had eaten solid food without pain; of an iris exudation clearing up in three hours so far that, while fingers could only be counted at a distance of one yard before the injection, the patient was able to see his own image clearly in the looking-glass at a distance of five yards, and after twenty hours was able to read small print. With regard to the toxicity of the preparation, he reported that only one death had resulted from the injection. The patient was a weakly person with tertiary syphilitic affection of the larynx. The fluid injected was acid, and death was due to shock. Other deaths had followed the application of "606," but in this group the patients were affected with severe organic affections of the central nervous system. He regarded disease of the central nervous system and of the heart and circulatory apparatus as contraindications to its use. Lastly, he expressed the belief that the future use of "606" would be with a combined intravenous and subcutaneous injection. Alt, Schreiber, Iversen, Wechselmann, and many others followed with favourable accounts of the action of the drug. Margarete Margulies gave an interesting account of experiments she had carried out on various parasites with "606." Trypanosomes became refractory to the action of the drug very soon if the doses given were too small. It was necessary, therefore, in these cases to inject large quantities. Spirilla did not become refractory to the preparation, and she found it possible to repeat the injections of small doses in order to carry out what was known as *therapia sterilisans fractionata*. Stern expressed the opinion that the results obtained were no better than those obtained by the older methods. He attributed the failures to cure to an arsenic-fast character of the spirochaetes. None of the other speakers agreed with Stern in his assertion that the drug frequently failed. The general opinion appeared to be that "606" had a wonderful effect in tertiary and primary syphilis, and acted well in secondary syphilis; that it was especially active in malignant and advanced cases, in which mercury and iodides did no good; that it did not affect the eye, and did not cause any serious toxic effect on the organism; that when given in large doses in the early stages it appeared to cure in one dose, but that the permanency of the cure had yet to be proved; lastly, that it was necessary to avoid exaggeration, since, although the drug acted with extraordinary efficacy in very many cases, it could not replace scar tissue, nor could it act equally well in all persons and in all syphilitic conditions. It may be added that the majority of the clinicians prefer Wechselmann's neutral suspension to Alt solution. Citron suggested using calcium carbonate instead of sodium hydrate, since this substance was indifferent toward the tissues.

ONCHOCERCIASIS.

HORRID enough though this name may appear, it is not any more dreadful than the scare raised anent it by certain ill-informed, though doubtless well-meaning, individuals. Scaremongering is an occupation which possesses a peculiar and irresistible fascination for a section of the community, and an admirable maladroitness is displayed in the choice of time and opportunity. The appeal is invariably to ignorance, be it scientific or otherwise; no respite is afforded for a careful consideration of the facts by those

most qualified to judge. The present case is a repetition of the old story. Bred of ignorance, and fostered by not unwilling credulity, the report has gone abroad that certain meat imported from Australia is highly dangerous for human consumption. From the very outset, however, the scare is unfounded, for it is now well known that the authorities, taking no risks and pending investigation, have condemned all such meat. The actual facts of the case may be gathered from a communication which Dr. Leiper made to the Zoological Society last Tuesday. In a few well chosen remarks he made the matter very clear. A considerable proportion of the carcasses—roughly, 75 per cent.—display the condition which may be termed "onchocerciasis." It consists in the presence of a number of nodular swellings or cysts under the skin, particularly in the regions of the flanks, the knees, and the shoulders, to which regions they are almost entirely confined. It may be noted—although the fact is of little importance—that the nodules are in the subcutaneous tissue, not in the muscles themselves. Each nodule is somewhat globular and about ¾ in. in diameter. It consists of a tough fibrous wall, inside which a worm, or worms, is inextricably coiled up; so much so that it is practically impossible to dissect it out entire. The worm belongs to the family *Filariidae*, and its scientific name is *Onchocerca gibsoni*. The female worm is distinguished by its pronounced wavy transverse striations, which disappear towards the anterior end, and by the position of the genital aperture anterior to the end of the oesophagus. The male is not marked. The female contains an enormous number of minute embryos in various stages of development. These, however, have not been found in the lymphatic system or the blood stream. Such are some of the morphological characters of the worm; what of its history and affinities? With regard to the latter, an analogous condition is known in horses, due to a similar parasite, but a species distinct from that mentioned above. It has also a congener in man, the twenty-years old *Onchocerca* (*Filaria*) *volvulus*, from tropical Africa. This species, again, is distinct from *Onchocerca gibsoni* of the ox, and there is absolutely no possibility of the two being commutated. It is distinguished at first sight by the transverse markings on the female being plain, and not wavy. Finally, with regard to the life-history of the parasite. At this time of day it surely does not require the renewed assertion of a helminthologist to assure us of the fact that the *Filaria* worms are not directly transmissible, and that for their spread they require the agency of some intermediary—a biting insect or some other such animal. The painstaking researches of Manson, Low, and their numerous fellow-workers were otherwise of no avail. To repeat the fact, however, let it be insisted upon that *Onchocerca gibsoni* or any other of its tribe cannot be disseminated by being eaten by human beings or any other mammals. The ox does not become infected by eating its companions. The statement is ridiculous, but not any more so than that of those who suggest that man may be infected by eating infected oxen. Add to this the fact that the meat is *frozen*, that the parasites are dead beyond resuscitation, and no further comment is necessary. From a scientific point of view, however, the life-history of the worm is worthy of further study, and in this connexion the question put by Mr. Austen is very suggestive. He asked if it were not possible that infection might be conveyed by *Stomoxys calcitrans* or some allied biting fly. Nothing is definitely known on the matter, but were *Stomoxys calcitrans* the intermediate host there would be the remote possibility of the condition being introduced amongst the cattle of this country, for *Stomoxys* is one of our common flies. That it would even then infect man is more than doubtful, for no case has ever been recorded from the various countries in which the ox parasite is known to exist. The matter, however, is a mere supposition, and need not be enlarged upon. To sum up, we repeat that the meat in question is little, if at all, deteriorated in quality, that it is perfectly safe for human consumption, and that its unsightly condition may be remedied by the removal of the nodules. As a corollary we might add that in matters biological a little zoological knowledge is always desirable, and that in the present case not more than half a dozen men in the country were in a position to pronounce authoritatively on the subject, and assuredly none more so than Dr. Leiper.

COMPULSORY NOTIFICATION OF PHTHISIS IN WEST AUSTRALIA.

PULMONARY phthisis is a notifiable disease in West Australia. The following is the mode of procedure: Upon receipt of notification at the Central Board of Health a special certificate form is sent to the local board of health in whose district the case occurs, and the health inspector is required to get the form filled in and returned to the Central Board. This certificate form would appear to be needlessly complex, and we agree with the *Australasian Medical Gazette* in wondering how often the queries are accurately answerd. For example, in addition to such questions as name, age, occupation, details of the cause of death, or of the state of health of parents, brothers, and sisters, information is required as to the patient's place of abode for the last ten years, the sources of the milk supply for the same period, the present circumstances of the patient from the public health point of view; whether the patient has been instructed how to prevent the infection spreading to others. Is the patient able to spend his time out of doors? Has he been provided with the means and instructions to have his sputum disinfected and destroyed with safety? Is he able to maintain himself and provide for himself all necessary nourishment and treatment, and can he afford to make provision (canvas, etc.) for sleeping out of doors? Have arrangements been made for periodical disinfection by the local board of the room occupied by the patient? All these queries are to be answered by the Health Inspector. This official is further required to ascertain from the medical attendant as nearly as possible the duration of the illness, fixing as accurately as may be the appearance of the first symptoms, and whether the lesion is "open" or "closed"—that is, capable of spreading infection by means of sputum or not. It is obvious from this method of procedure that not much secrecy can be depended upon in the process of notification; nevertheless, our contemporary says there is no record of friction having arisen between the patients and their medical attendants.

SIR ROBERT FINLAY'S address to the Parliamentary electors of Edinburgh and St. Andrews will be found in our advertising columns, page 8.

WE are requested to state that the book entitled *Induced Cell-reproduction and Cancer*, published by John Murray, of London, is not by Professor Ronald Ross, as stated in the JOURNAL of November 26th (p. 1728), but by his brother, Mr. Hugh Campbell Ross, Director of the Special Cancer Research, Southern Hospital, Liverpool.

General Medical Council.

NOTES.

Tropical Medicine.—A memorial signed by a large number of influential persons and supported by the Colonial Office asked the Council to accord recognition to certificates of proficiency in this subject, and allow them to be registered as additional qualifications, as in the case of diplomas in public health; the memorial pointed out that the addition of a few words to Section 21 of the Medical Act of 1886 which deals, *inter alia*, with public health, would effect the purpose. It was intimated that the Government would take the matter up. Some exception was taken to this course on behalf of the English Royal Colleges on the ground that the powers of the Council with regard to public health were greater than with regard to other qualifications, and that to extend these powers to another subject would be to encroach upon the powers and privileges of licensing bodies. The Council signified its willingness to undertake the work, and resolved to forward copies of the memorial to the licensing bodies in order that they might have the opportunity of offering any suggestions upon it.

Reciprocity with Italy.—Legislation in the direction of rendering difficult the position of English medical men in Italy was much talked of some few years ago, and caused no little anxiety to those most concerned. Their status was already not too satisfactory, as they could only, short of obtaining an Italian degree, get permission to practise among the alien population of the places where they resided. But a few years ago recognition was granted by Great Britain to such of the Italian degrees as the General Medical Council might deem sufficient, and the *Medical Register* for 1910 contains in the foreign list the names of thirty-one graduates of Italian universities. A new Italian Act has now been passed which grants complete recognition to all British registered qualifications. Hence, the restriction of practice to foreigners is removed, and as no other nation has a similar relation with Italy, the British practitioner stands in a better position than any other foreigner in that country.

Midwives Act.—The evidence in a recent penal case had brought into prominence the fact that unqualified men sometimes acted as midwives, and that they were outside the terms of the Act. The Midwives Board had made a representation to the Privy Council asking for an amendment to remedy this state of things, but, so far, the Government has not given any promise. There is a feeling amongst lawyers that Acts should only be amended within the lines originally covered by them, and it is possible that the Midwives Act being wholly devoted to women, nothing relating to men would find a proper place there. This is only a conjecture, but, if it be correct, it seems a pity that a desirable reform should be blocked by a technicality.

Voting in the Council.—Dr. Langley Browne moved that members of the Council not desiring to vote upon a given question should leave the room whilst a vote was being taken. This practice is already somewhat generally followed, and the motion was agreed to. The reason for bringing the matter up was that the Act declares that nothing can be carried except by the votes of the majority of those present; it might happen that 32 members being present, 16 voted for a measure and 10 against it, the remaining 6 not recording their votes. If challenged the motion would be lost, as a majority of those present had not voted for it, but such victories snatched by the losing side are hardly to the taste of a body like the Council.

Students' Registration.—Under guise of a motion to amend the form of accounts, the representative of the Apothecaries' Hall of Dublin, in effect, challenged the right of the Council to allocate any money whatever to the purposes of a students' register. The discussion of this matter upon a motion which implied something quite different, was ruled out of order, and so the matter dropped, but it would, of course, be possible to raise the issue directly.

Medical Ethics.—A short but interesting debate took place on the motion of Dr. Latimer, who desired that instruction in medical ethics should be added to the later part of the curriculum. Several speakers took exception to the idea that medical ethics differed in principle from any other sort of ethics, and urged that principles only could be taught, whereas it was only in various applications of the principles to diverse and unexpected circumstances that real difficulties arose, and these could not be met by teaching. As it was evident that, whilst sympathy was felt with the object, the motion would be lost owing to members being unwilling to make an addition to the curriculum, the mover withdrew it, satisfied with the expressions of opinion it had elicited.

"Professional Relationship."—A case in which the ship's doctor on a P. and O. liner had become co-respondent, and a decree of divorce had been pronounced, came before the Council. The Council is, of course, not concerned with general questions of morality, unless the immorality arises out of or in relation to the position of the co-respondent as medical man. It was recognized by the counsel who appeared before the General Medical Council for the defence, that the view might be taken that the passengers upon a liner were in the position of patients to the ship's doctor even though they had no occasion for his professional services. In other words, that in order to bring such a case within the purview of the Council, the mere fact that the lady was a passenger might be sufficient to establish a professional relationship. Against this view counsel argued that while the strictness of the rule that there should be no abuse of the intimate relationship brought about by the position of doctor and patient was very proper, and that such abuse was rightly held to be infamous and disgraceful professional conduct, there was great danger in extending the idea of professional relationship beyond actual proved medical attendance. It is obvious that this contention was in a general sense true, and that the danger which he pointed out was a real one, whatever view might be taken in a particular set of circumstances. On the other side, it might be contended that a ship's doctor was placed in close relation with the passengers by virtue of his being a medical man employed by the owners to give attendance if required, and that such a position was in some sense fiduciary. The Council decided to remove the name from the *Medical Register*, and this decision implied that the Council found that the truth of the words of the charge, "with whom you stood in professional relationship," had in this case been proved. But a perusal of the evidence—as well as the admission of the defendant's Counsel that it was largely a matter which side the Council believed—will indicate that the Council may have thought that there was in this case sufficient evidence of the actual relation of doctor and patient. Apparently, therefore, the point whether the position of ship's doctor constitutes in itself professional relation with all of the passengers is not settled by the Council's verdict. But it may, nevertheless, serve as a caution to those who hold official medical positions that their line of conduct should be absolutely above question, and the recognition of the fact that an official position might be held to constitute professional relationship can only work in the direction of keeping their footsteps straight. In saying this we would not be misunderstood. The attitude of medical men holding official positions may be pointed to with pride and satisfaction, for it is very rarely that any occasion for censure arises. But it would be better if no such cases occurred, though human nature being what it is, such a desire may be Utopian.

The Eye and Ear Clinique.—Some three or four years ago an institution, called at various times the National Eye Hospital, the National Eye, Ear, Nose, and Throat Hospital, and more recently the Eye and Ear Clinique, was established at 123, Oxford Street, and at the May meeting of the Council Mr. James Forrest, M.B., B.S. Edin., was charged with having associated himself, as a member of its committee and also as one of its surgeons, with this institution, which advertised by pamphlets and in the public press for paying patients. The complainants were the British Medical Association, and the fact that patients applying to the Clinique were charged half a guinea for the first attendance and five shillings for each successive attendance, and that the institution had been advertised by means of pamphlets and advertisements in the Sunday papers did not appear to have been denied. The Medical Secretary of the British Medical Association, Mr. Smith Whitaker, submitted that the question the Council had to consider was whether medical practitioners should be allowed, by surrounding themselves with the apparatus of a committee and of a hospital, to advertise indirectly in a way in which they would not be permitted to advertise directly in their personal capacity. Mr. Forrest stated that the institution was established to meet what was considered a public need, that is to say, for people who could not afford to pay high consulting fees. He and others interested in the institution were influenced to advertise by the fact that certain other hospitals advertised in all the Sunday papers. He also stated that Mr. Yates, described as a consulting engineer and founder of the Clinique, had guaranteed £5,000, and that nearly £2,000 had already been expended. He himself, he said, was working without remuneration. The hearing of the case on May 26th was adjourned to the following day to enable the respondent to produce further evidence, and his legal representative informed the Council that he proposed to produce the books and accounts of the Clinique, and also, if possible, to call members of the committee. When the case was called on May 27th the solicitor of the Council read a letter from the respondent stating that he did not propose to produce further evidence, and asking that his name should be removed from the *Medical Register*. The Council adjourned the case from the May session until the November session in order to give the respondent more time to produce further evidence in answer to the charge. When the case came on again on November 24th Mr. Forrest did not appear and was unrepresented, but the solicitor of the Council read a letter from him dated November 15th, transmitting a statutory declaration made by Mr. Yates stating that he had provided funds for the foundation of the institute, and had guaranteed it against loss for a period of five years; that the administration of the Clinique and the management of the finances were under the control of an honorary committee, of which Mr. James Forrest was the only medical member; that any excess of income over expenditure should be devoted in the first place to the provision of an in-patient department, and afterwards to the repayment of the donor; and that no salary should be given to the surgeons until the donor was reimbursed, and that such salary should not exceed £100 per annum, as it was intended that this honorarium should be given with the view of excluding purely honorary services, and not as adequate remuneration. The Council, without desiring to hear further evidence, resolved to direct that Mr. James Forrest's name should be removed from the *Medical Register*. Mr. Forrest's contention that the advertisements of the Eye and Ear Clinique should be condoned because several hospitals advertised in the Sunday papers was, of course, no answer to the charge made against him, and Mr. Smith Whitaker, in opening the case, pointed out that though other institutions advertised they treated persons who were believed to be fitting recipients of charity, there was at least some degree of inquiry to ascertain whether applicants ought to be treated at reduced fees, so that such institutions were not carried on solely for paying patients, as was the case with the Eye and Ear Clinique. But the point having been raised, it would seem that the Association may find it desirable to investigate the nature of the advertisements issued by various special hospitals, and would, we have no doubt, not hesitate to call the attention of the medical staff of such institutions to anything that may be deemed objectionable in the manner or form of such advertisements.

Certificates in Lunacy Cases.—A medical man had given certificates stating that he had seen two lunatics on a particular day, whereas, in fact, he had not seen them. The circumstances were inquired into before a jugde of assize and, as a result, the respondent was bound over to come up for judgement when called upon. This may be taken to indicate that the judge did not regard the offence as a very serious one in the eyes of the law. The circumstances were somewhat peculiar: The patients were in the house of a layman and it was the duty of the medical man to see them every six weeks, and report upon their condition in their medical journals. This he did on one or two occasions without having seen them, and the offence, which was fully admitted, had not as a matter of fact led to any bad result. It is obvious, however, that any laxity in the making of such returns might deprive the lunatics of the protection to which they are entitled, and the Council marked its sense of the importance of strict observance of accuracy in giving medical certificates by suspending its judgement till the next session.

Dental Disciplinary Cases.—Two dental cases were heard, in each of which it was decided to erase the name from the *Dentists Register*. The first was a case adjourned from the last session in order to enable the practitioner to produce evidence of his complete severance from an advertising practice conducted by an unqualified man. None was offered beyond his own statements, which appear to have been regarded as inadequate. In the other case, that of one Alexander Peel Patterson, four unqualified persons were employed to go round and extract teeth at patients' houses, the patients apparently being procured by canvassers. Though the operators had received no training, they were in the habit of administering injections of eucaine; they were ignorant of the doses, but the two syringefuls, which were not to be exceeded, apparently contained 1 grain. Death ensued in one case shortly afterwards, though the *post-mortem* examination indicating that it was due to haemorrhage in the cerebral ventricles and not directly to the eucaine or the operation.

GENERAL ELECTION.

List of Medical Candidates.

The following are among the list of candidates possessing medical qualifications at the forthcoming General Election whose names have been announced up to the time of going to press:

England.

*Dr. Christopher Addison (L.), Hoxton.
*Sir William J. Collins (L.), St. Pancras West.
Dr. J. Court (U.), North-East Derbyshire.
*Mr. C. H. Dixon (U.), Boston.
*Dr. Alfred Hillier (U.), Hertfordshire North or Hitchin.
Sir Victor Horsley (L.), University of London.
Dr. J. E. Molson (U.), Bethnal Green North-East.
Dr. R. O. Moon (L.), Marylebone East.
Dr. W. Permewan (L.), Walton District, Liverpool.
*Sir G. H. Pollard (L.), Eccles.
*Sir R. J. Price (L.), East Norfolk.
*Sir G. Scott Robertson, K.C.S.I. (L.), Central Bradford.

Scotland.

*Dr. W. A. Chapple (L.), Stirlingshire.
*Sir Robert Finlay, K.C. (U.), Edinburgh and St. Andrews.
*Dr. A. R. Rainy (L.), Kilmarnock.

Ireland.

*Mr. J. Dillon (N.), Mayo East.
*Mr. A. Lynch (N.), West Clare.
*Dr. C. O'Neill (N.), S. Armagh.

* Sitting member.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

The House of Lords resumed on Thursday in last week the great debate on Lord Lansdowne's Resolutions for reforming the Upper Chamber. The attendance of peers was scarcely so large as on Wednesday, as it had become known that the discussion was really academic, and that no division would be taken. The Lord Chancellor opened the debate for the day in a very business-like and closely-reasoned speech, which was listened to with great attention. He set out the list of bills of the Government which had been rejected in the last four years by the Upper House, and he invited the Opposition to give an instance where in the last hundred years there had been thrown out a single bill introduced by a Conservative Government. The Government had been driven to a dissolution by the infringement of their constitutional rights, and they felt they could not advance legislation or remain in office if the differences between the two Houses were not settled. Lord Curzon, after paying a compliment to the Lord Chancellor, criticized warmly the speeches of some of his colleagues, and defended the Resolutions as embodying a good alternative policy. Lords Dunmore, Courtney of Penwith, Brassey, Colchester, and Nunburnholme followed. Lord Balfour argued that the Government did not seek reform of the House of Lords, but to increase undesirably the powers of the Commons. The Bishop of Birmingham made a strong speech on the difficulties and dangers of the Referendum, and then Lord Morley, after expressing concurrence with the Bishop, argued against the Resolutions, which, he contended, would lead to something which would stand between the people and the House of Commons, and the Government had no option but to oppose them, as they were intended to checkmate the Lower House. Lord Rosebery and Lord Salisbury replied briefly, and the House resolved itself into a Committee at 11.30, and the Resolutions were agreed to without a division, after a few words of protest by Lord Crewe. The Resolutions were then reported and ordered to be communicated to the House of Commons. The House then adjourned till Monday.

The House of Commons was a remarkable contrast on Thursday to the other House, as the attendance barely exceeded a quorum. After a few questions had been answered, the Prime Minister moved the adjournment till Monday, whereupon Mr. Keir Hardie made a long speech on the conduct of the police in the strike districts of South Wales, and repeated his demand for a public inquiry. Mr. Churchill replied, and spoke in very plain and strong terms of the unreasonable behaviour of both masters and workmen in this dispute. When the strike had been settled the matters raised might be gone into, but he could not now hamper the police in the discharge of their dangerous duties by any promise of an inquiry. Other members followed, and the subject dropped, to be replaced by a complaint by Mr. Brady about a Dublin police order. When Mr. Illingworth was replying a most remarkable thing occurred, for on a demand by an hon. member for a count it was found that only thirty-eight members were present. The House, instead of adjourning, was counted out, and had to assemble again on Friday, when a meeting of ten minutes' duration sufficed to carry the adjournment to Monday. When the cry of "Who goes home?"—which always announces the departure of members—rang through the lobbies, the Clerk of Parliament from the House of Lords appeared at the Bar with the Lords' reform resolutions. The Speaker had, however, left the chair, and so the resolutions could only be received without any ceremony by the Clerks at the Table in the Commons House.

The Budget came on for second reading on Thursday in the Lords, and after Lord Crewe had explained that it only dealt with the Tea Duty, the Income Tax, the Sinking Fund, and some other smaller matters of finance, it was read a second and third time and passed. Lord Midleton made a protest on behalf of the Opposition. The Consolidated Fund (Appropriation) (No. 3) Bill and the Expiring Laws Continuance Bill were also passed.

The Parliament of 1910, the twenty-ninth Parliament of the United Kingdom, came to an end on Monday, when it was formally prorogued to December 15th, according to the old custom, in order to be dissolved altogether by the Royal proclamation a few hours' later. The House of Lords, in which the King's Speech was delivered to the Lords and Commons by the Lord Chancellor supported by the Lords Commissioners in their robes, was only attended by some half-dozen Peers, while at the Bar the Speaker, a dozen or two officials, and members of the House of Commons listened to the King's first speech. After a feeling allusion to the death of King Edward, King George referred in appropriate language to the award of the Hague Tribunal over the Newfoundland Fisheries, and also to the opening of the first Parliament in the Union of South Africa. He thanked the House of Commons for the liberal provision for the Navy and Old Age Pensions, and referred with regret to the failure of the Constitutional Conference. The Royal Assent was given to the Consolidated Fund (Appropriation) (No. 2) Act, the Finance (No. 2) Act, the Education (Choice of Employment) Act, the Expiring Laws Continuance Act, and about a dozen local and private Acts. In the Commons about a score of members were present afterwards to hear the Speaker read the speech, and then the members filed past the Speaker to shake hands, and the Parliament of 1910 closed its short life.

Sleeping Sickness in Nyasaland.—Sir J. D. Rees asked the Secretary of State for the Colonies whether he had received information to the effect that two cases of sleeping sickness had occurred in Nyasaland in an area in which *Glossina palpalis* was believed not to exist; and whether any inquiries had been made into the matter and steps been taken to prevent the spread of the disease. The Secretary of State for the Colonies regretted to say that the hon. member had understated the case. He had recently received information of 9 cases of sleeping sickness in Nyasaland, and there seemed to be strong evidence that *Glossina palpalis* did not exist in the area in which they occurred, although he should hesitate to commit himself to a definite statement on the subject until the area had been further searched for the fly in question. The Acting-Governor had already taken steps for dealing with the situation, of which he recognized the gravity, although he did not consider that there was at present cause for undue alarm.

Local Authorities (Supply of Antitoxin).—Mr. Chancellor asked the President of the Local Government Board what was the authority by which his department was empowered to issue the recent order to local authorities suggesting the supply of antitoxin to private medical practitioners out of the public rates and the employment of special medical aid for its administration without reference to Parliament; whether he was aware that the Registrar-General's returns report that during the last fifteen years, since antitoxin had been introduced, the death-rate from diphtheria to the living population of this country had increased by 25 per cent. above that of the fifteen years prior to its introduction; and that in the tables supplied by the Metropolitan Asylums Board's reports for the past fifteen years the cases of diphtheria treated without antitoxin had declined double as much as those cases which were treated with it? Mr. Burns replied that, as to the first part of the question, he might explain that separate orders were issued to sanitary authorities in London and to local authorities outside London. The order addressed to

sanitary authorities in London was made under the powers of Section 77 of the Public Health (London) Act, 1891, and the order to local authorities outside London was made under the powers of Section 133 of the Public Health Act, 1875. With reference to the last part of the question, he was aware that in some of the last fifteen years there was an abnormal amount of diphtheria, and thus that the deaths from this cause were higher than in some of the previous years. This, however, did not justify any inference that antitoxin treatment was of little value. On the contrary, he was advised that the treatment of diphtheria by antitoxin had saved a large number of lives. The reference in the question to cases treated by the Metropolitan Asylums Board was somewhat obscure. He assumed that it referred to tables published by the Asylums Board, from which it appeared that the mortality per cent. of all cases treated by them in the years 1890–93, before the use of antitoxin, was 30.4, and that that percentage had fallen since antitoxin was used to 9 7 in 1909. It was true that the figures showed a larger decline in the case-mortality of patients not treated with antitoxin than of that of patients so treated, but as he explained in the answer given to Mr. Lupton on November 2nd, 1909, no comparison could properly be drawn between the case-mortality of these two classes of patients. The former class consisted largely of persons suffering from a mild form of diphtheria, and, indeed, the few deaths that occurred in this class were almost entirely those of patients who were too ill or who came into hospital at too late a stage in their illness to derive any benefit from the injection of antitoxin.

Treasury Grants to Universities.—In answer to Mr. Mount, the Financial Secretary to the Treasury stated last week that the Treasury grant which would be paid on the recommendation of the Advisory Committee to universities and university colleges in England in 1910–11 would not exceed £101,250. In addition there would be paid to universities, but not on the recommendation of the Advisory Committee, £22,000. The sum which would be paid to the University of Wales and its constituent colleges in 1910–11 was £31,000, of which £5,500 was paid to the University of Wales. Figures of the total income of the universities and colleges for the current financial year were not yet available, and he was therefore unable to give percentages; but he might refer to Appendix A and pp. xi and xv of the Parliamentary Paper Cd. 5,246, issued by the Board of Education, containing reports from the universities and university colleges in Great Britain.

Protection against Dust in Woolcombing.—Mr. Churchill stated last week, in reply to Mr. Jowett, that inquiries had been made by the factory inspectors in the districts concerned at all the works which were under the woolcombing regulations as to the conditions under which the process of raising a stack or blending was carried on, and the means for protecting workers against dust. The reports which had been received pointed to the need of steps being taken to safeguard the workers, and show that in some works satisfactory measures had already been adopted, such as the use of a steam jet for keeping down the dust and exclusion of workers until the dust was settled, or the provision of exhaust ventilation. Before taking action the Chief Inspector had thought it desirable to consult the Bradford Anthrax Investigation Board, and it was hoped their reply would be received very shortly.

Civil Servants (Medical Examination).—Mr. Aneurin Williams asked the Secretary to the Treasury whether he was aware that a telegraphist at Plymouth, who applied to be accepted under the Superannuation Act, 1909, was, in consequence of the views expressed by the local post office medical officer, debarred by the Treasury from participating in the benefits of the Act; whether he was subsequently examined and passed by the Medical Referee to the Treasury; and whether, in view of the fact that the whole of the expenses, amounting to over £7, were borne by the officer appealing, he would consider how far the charge for examination by the Treasury medical referee was justified in cases where an appeal was successful. Mr. Hobhouse replied that he regretted that he was not able to relieve civil servants of the expenses involved in cases where the medical certificate submitted in support of the original application was qualified in such a way as to make it impossible to admit the officer to the benefits of the Act without further inquiry.

Accidental Poisoning of a Prisoner.—Sir Francis Channing asked the Home Secretary whether he had considered the evidence taken at an inquest at the Oxford prison on the death of Eliza Brown, on November 3rd and 8th; and whether, having regard to the fact that it was proved that the death was caused by a wardress having applied to the prisoner undiluted carbolic acid, and that the wardress stated that she was ignorant that carbolic acid was harmful and corrosive, he would either direct a formal prosecution for manslaughter or take such steps as would protect prisoners from such treatment and insure that the prison authorities should not allow wholly unfit and ignorant persons to be in positions of trust on the prison staff. Mr. Churchill replied that he had already been fully informed by the Prison Commissioners of the circumstances of this painful accident, and the coroner had sent him a copy of the evidence. The accident was due not to the ignorance of the wardress, but to an unfortunate misunderstanding of a message, which led to her being supplied with pure carbolic acid in mistake for carbolic lotion. The matter was clearly an accident, as the coroner's jury found, and there could be no prosecution for manslaughter. The Prison Commissioners were giving instructions which would make the recurrence of such a lamentable event impossible.

Public Medical Relief.—Mr. Henry Walker asked the President of the Local Government Board whether persons suffering from certain diseases, notably phthisis, measles, and whooping-cough, were being maintained and medically treated, free of charge, in some districts in institutions under the Poor Law and in others in institutions under the local sanitary authorities; whether he could give a list of the diseases that were being thus dealt with simultaneously, at the expense of the rates, by two different authorities, whether the patients suffering from such diseases, and maintained at the public expense, were all entered and classed as paupers, or were none of them so entered and classed, or whether their status varied according to the geographical district in which they happened to be treated; and whether the Government proposed to take any steps to prevent the overlapping and duplication of authorities in these cases, or to relieve any of the patients who might be entered and classed as paupers from being so designated or regarded. Mr. Burns replied that the guardians were under an obligation to relieve destitution whenever application was made to them, and they were therefore primarily responsible for dealing with cases of the diseases mentioned, if the patients applied for relief and were in need of treatment which they were unable themselves to supply. The sanitary authority, as the public health authority, might provide hospitals, but, although the cases dealt with by sanitary authorities were more usually those of other infectious diseases (mainly among children), cases of the diseases mentioned were sometimes received by them. The arrangement which the Local Government Board had systematically encouraged was that guardians should enter into agreements with the sanitary authorities for the reception of cases of infectious disease into their hospitals. All cases chargeable to boards of guardians were entered in the return of paupers; but, as his hon. friend was no doubt aware, medical relief did not involve all the disabilities attaching to ordinary poor relief. He could not at present undertake to promise legislation to the effect suggested in the last part of the question.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

HOSPITALS AND THE MEDICAL TREATMENT OF SCHOOL CHILDREN.

MR. CYRIL JACKSON has been succeeded as Chairman of the Education Committee of the London County Council by Mr. E. A. H. Jay, who has been an active member of the Day Schools and Children's Care Subcommittees, and took a prominent part in the negotiations for the provision of medical treatment of London school children through the agency of the various hospitals.

Replying to a question at the meeting of the Council on November 29th, Mr. Jay said that the statement made during several recent discussions of the medical treatment question, to the effect that certain hospitals had sent away children who attended for treatment but were unable to produce the cards issued to those included in the Council's scheme, had been the subject of inquiry, although the members who made the statement had not responded to the invitation to give specific instances. He had received letters from three hospitals which had been mentioned in the debate. The Secretary of St. George's Hospital wrote: "I have to inform you that every patient who applies to the hospital for medical relief is treated. No distinction is made between patients coming with or without letters, or between those attending school and voluntary patients." The authorities of the Poplar Hospital wrote: "There is no truth in the statement that any children have been refused treatment at this hospital, whether they have had cards or not. No one is refused treatment, and no letter or card of any kind is required." The East London Hospital authorities wrote: "Every school child brought to this hospital by a parent or some responsible person is seen and attended to by a medical man. It does not matter one jot whether they come with or without a certificate."

REORGANIZATION OF THE PROVISION OF SCHOOL MEALS.

The Education Committee of the London County Council, on November 30th, after a protracted debate on points of detail, approved the proposals of the Children's Care Subcommittee for the reorganization of the administration of the Provision of Meals Act in London, reported in the last issue of the BRITISH MEDICAL JOURNAL, p. 1738.

MANCHESTER AND DISTRICT.

THE ALTRINCHAM DIVISION AND STATE SICKNESS INSURANCE.

AT a general meeting of the Altrincham Division on October 6th, the official report of which appears this week, the question of medical attendance under State sickness insurance was considered, and the meeting unanimously expressed the opinion that any scheme should embrace two main principles: First, free choice of medical attendant by the insured in all cases when the premiums are contributory; and, secondly, payment for medical attendance according to work done, and not by a fixed capitation fee. Under the first it is presumably implied that paupers and other persons who pay no portion of their own premiums are not to have free choice of doctor.

It is well known that the Altrincham Division has been considering this question for a considerable time, and has not come to any decision in a hasty way. The Division is one of the most active and vigorous in the Lancashire and Cheshire Branch, and has been able to introduce an *esprit de corps* among its members which will certainly stand it in good stead when the inevitable struggle about club practice is taken in hand. It may be taken for granted that the resolution is to be interpreted in its literal sense, and, at any rate, the stalwarts of the Division look with some suspicion on the modified interpretations sometimes given to some of the phrases used. Moreover, it is quite certain that several others of the Lancashire and Cheshire Divisions will support the Altrincham Division. Speaking generally of Lancashire and Cheshire, there is, your correspondent believes, the strongest feeling against all sorts of club practice, especially among the active workers in the Divisions. Not only so, but the feeling has been carried out in practice in several Divisions which have been able to prevent the establishment of any new clubs for a considerable time, and, indeed, in two or three towns no medical clubs can obtain any footing at all.

Allusion has been made to the modified interpretations which have sometimes been placed on certain phrases. The phrase "payment according to work done" may imply one of three systems. Presumably it means to the Altrincham Division payment by the State of a fee for each attendance, not, as the phrase has been used sometimes, especially in France, the system of payment per case, where the payment is a lump sum roughly proportionate to the character of the case and the amount of attendance supposed to be required. The third system, which involves a "pooling" arrangement, meets with a very doubtful reception in Lancashire, some Divisions being ready to accept it while others would certainly refuse it. Under this system, though the State might be paying a fixed capitation fee for each person insured, the local medical practitioners would "pool" the total in the hands of a local medical committee, and that committee would then pay out to the individual practitioners sums proportionate to the work done by each. The amount per attendance would then vary. For instance, if the State paid 10s. per head for 100 persons, the total of £50 would be received by the local medical committee as available for distribution. Neglecting committee expenses, which would, however, have to be deducted, if the total number of attendances in a year were 500, the £50 would allow of 2s. for each attendance. But if the attendances numbered 1,000, as might happen in an epidemic, the £50 would only provide 1s. for each attendance, and yet it might still be said that payment received was according to work done. This system has been advocated by some because they feared that the State would absolutely refuse to pay for each separate attendance, and rather than do so, if it were insisted on, would appoint special whole-time medical officers at fixed salaries, these they think there would be no difficulty in obtaining, though it might mean ruin to many general practitioners. The pooling system would, however, not meet the views of those Lancashire Divisions that object to the contract principle in every form. They prefer that an attempt should be made to induce the State department itself in the first instance to pay a fixed sum for each attendance according to an agreed scale, altogether independently of any domestic arrangements which practitioners might make among themselves. In other words, these Divisions would abolish the capitation principle altogether, and would not tolerate any semblance of club practice, even though it be shorn of most of its other objectionable characters.

Again, the phrase "free choice of doctor" is often used in a limited sense to denote the liberty which exists in certain provident dispensaries which have several medical officers, and where the members are free to place their names on the list of any of the doctors whom they wish to attend them during the ensuing year. The members can, in fact, exercise their free choice once a year, and, having made their choice, are limited for the rest of the year. Strictly speaking, however, the phrase "free choice of doctor" means exactly the same liberty to choose any doctor at any time which private patients can exercise, changing their doctor, if they think fit, for every illness. This, at any rate, is what is understood by most of the Lancashire Divisions that advocate free choice of doctor. The wide import of the movement has not been overlooked, and the numerous club doctors of the Manchester area have not been slow to see what this involves to them personally. A very large number of Manchester medical men have

extensive club practices on which they largely depend for their living. They receive a fixed yearly fee for every member of their clubs, and though in certain cases some club members at times in serious illness choose another doctor and pay him privately, as many of them are well able to do, still the club doctors are sure of their capitation fees, and they are expressing fears that if the principle of free choice of doctor becomes universal they may lose many of the capitation fees which they now get. They are, in fact, uncertain of their hold on their club patients. When the question has arisen in Manchester, as it has done in one notable instance, it has been found very difficult to argue about the general good of the profession with men whose living is thus threatened, or who think that it is threatened, and the club doctors are demanding that some special arrangement should be made to protect what they regard as their vested interests before they will agree to the principle of free choice of doctor. It is said that the situation in Manchester—and, indeed, in England generally—is widely different from what it was in Germany when State insurance first began. In Germany the friendly societies had never gained such a strong footing as they have done in England, and there were only comparatively few medical men with vested interests in sick clubs, so that the introduction of free choice of doctor in Germany could hardly interfere with any great number of medical men. Your correspondent has little doubt that the great bulk of the profession in Manchester would on theoretical grounds strongly advocate the free choice of doctor, but many members of the profession cannot help feeling some sympathy with the numerous club doctors. They feel that bare justice demands some scheme to prevent injury to men who are far too numerous to be disregarded, and who have been engaged in a form of practice which up to the present has been in no way contrary to the recognized customs of the profession. If some such scheme could be offered, which ought not to be impossible, there is little doubt that the principle of free choice of doctor in its widest sense would be carried in Manchester by a large majority.

Infant Mortality at Swinton.

Special attention is now being given to the high infant mortality that occurred in the Swinton and Pendlebury district during the last quarter. It appears that of the industrial centres of the North—with the exception of Ince, which had an infant mortality of 261 per 1,000 births—Swinton and Pendlebury is the worst, with a rate of 238. Both are colliery districts, and the principal causes of death have been lung troubles, diarrhoea, and diseases of the digestive tract. In July the Swinton rate was 135, in August 196, and in September 312, the last month accounting for the high result for the quarter. In spite of this bad record for the last quarter, the infant mortality for Swinton has not been worse than that for Manchester and Salford, taking the average of the last ten years. The population of Swinton is just over 30,000, and the infant death-rate for the year 1909 was 131, and the average for the last ten years 171. In Manchester the infant death-rate for the last year was 136, and the average of the ten years 175; while Salford last year had a rate of 141, and an average for the ten years of 174. Thus, taking the longer periods, which is, of course, a much fairer method of comparison, Swinton is slightly better than either Manchester or Salford. The general death-rate last year for Swinton was 14·6. Here, again, Swinton is better than Manchester, which had a rate of 17·7, or Salford, with a rate of 18 per 1,000. In his last annual report Dr. Hosegood, the M.O.H. for Swinton and Pendlebury, points out that three-fifths of the total infant deaths were attributed to prematurity, pneumonia, and tuberculous diseases, the last-named being often associated with poverty, overcrowded and unclean dwellings, and early neglect. The lady health visitors find that one of the commonest causes of illness among the infants is improper food, given at too frequent intervals and in too great quantities.

Dublin University Graduates' Association.

The Association of Graduates of Dublin University residing in the North of England held its eighteenth annual dinner at the Midland Hotel, Manchester, on November 7th, the Archbishop of Dublin (Dr. Peacocke) presiding. Among the guests were the Lord Mayor of Manchester, Bishop Welldon, Dr. Donald, and others. Bishop Welldon, who proposed the toast of "Dublin University," said that each of the older universities had a distinct characteristic of its own. The distinguishing note of Cambridge was its science, especially the science of mathematics. The Cambridge man was always haunted with the fear of making a mistake, while the Oxford man had no such fear. The characteristic of the Oxford man was not science, but *omniscience*. There was no subject on which he could not write a paper on short notice, and it was a curious thing that there was hardly a Cambridge man on the press of the country, while it literally swarmed with Oxford men. Dublin University combined the science of one with the omniscience of the other, and during the three centuries of its existence it had stood as a lighthouse firm among troubled waters, diffusing its radiance all over the island. The Archbishop of Dublin, in responding to the toast, said it was possible that he was the oldest graduate of Trinity present, as he had first attended the university in 1859. He was thankful that the university question had been settled in Ireland to the satisfaction of all parties. As graduates of Dublin they wished every success to the new universities and hoped they would fulfil their objects. Mr. E. J. Gwynn proposed the toast of the "Sister Universities," specially referring to Manchester University, which Dublin men greatly admired for its research work. Canon Richardson and Dr. Donald responded, and afterwards the Lord Mayor proposed the toast of "The Guests."

Ancoats Hospital.

Owing to the removal of the Manchester Royal Infirmary from the centre of the city to Oxford Road, the Ancoats Hospital has beyond doubt been called on to take many cases which formerly would have been taken to the infirmary. This is shown in a very striking manner in the recently issued annual report of the hospital, which states that the number of new patients treated during the year had been 36,835, an increase of 5,810 over the previous year. The accident cases alone numbered 23,279, being 5,194 more than the previous year. The accident cases were greater in number than at any other local hospital, and the total number of patients exceeded that of any other hospital, except the Royal Infirmary. Unfortunately the income has not increased in anything like the same proportion as the work done, and the board has to announce a deficit on the year of £966, which increases the debt due to the bank to £7,560. In response to a special appeal for £20,000, and £1,200 in new annual subscriptions, only £7,072 had been received, together with £621 in new annual subscriptions. The workpeople's committee had raised £880 during the year by concerts, dramatic performances, and other means. The medical report draws special attention to the necessity for the erection of the two new wards provided for in the new building scheme. As was pointed out by several speakers at the annual meeting, the Ancoats Hospital has been overshadowed by other institutions, and it was most unfortunate that just at the time when financial support was somewhat failing, the hospital was suffering from the extra strain put on it by the removal of the Royal Infirmary.

Enteric Fever at Eccles.

A considerable number of cases of enteric fever have recently occurred at Eccles and Patricroft, and suspicion was aroused owing to the fact that nearly all of the patients were children. Careful investigations have been made by Dr. S. M. Copeman, of the medical department of the Local Government Board, and Dr. Hamilton, medical officer of health for Eccles, and it is now stated that the outbreak has been definitely traced to ice-cream bought from an itinerant vendor.

Stockport Isolation Hospital.

The Stockport Corporation recently applied for permission to borrow the sum of £16,000 to cover the cost of extending their isolation hospital, and recently the Local Government Board held an inquiry into the matter. At this inquiry the architect to the Local Government Board stated that he considered that several things in the plans of the proposed extension were quite unnecessary, and he added:

> We are endeavouring at the Local Government Board to reduce the cost of infectious hospitals, which has of late years become absolutely appalling. Public opinion is very pronounced on this question, and it is these little refinements which make the cost of the hospitals so enormous.

On behalf of the Corporation, it was stated that they had done all they could to keep down the cost, and the Corporation considered that their scheme combined efficiency with economy. The result of the inquiry is not yet announced.

LANCASHIRE.

The Surgical Aid Society.

The Manchester Surgical Aid Society is one of those modest and unobtrusive agencies whose value cannot be estimated by the size of its income or expenditure. Its object is to assist working-class patients in providing any kind of surgical appliance needed, such as artificial limbs, trusses, belts, bandages, elastic stockings, surgical boots, leg irons, spinal supports, water beds, air cushions, and so on. Its total expenditure for these purposes during the past year was £408, and patients or their friends who were able to pay part of the cost of appliances supplied contributed £93. The financial statement showed a deficiency of about £35 on the year's working, and the report showed that 204 women, 138 men, and 99 children had been aided during the year. The Lord Mayor of Manchester at the annual meeting confidently recommended the society to the support of the citizens, and Professor Thorburn laid emphasis on the surgical need there was for such a society. He said that though Manchester did its duty in regard to hospitals and nursing for the poor, it hardly did it in this matter of furnishing surgical appliances, and, as the report pointed out, the society had often enabled a wage earner to follow his or her occupation who, without the needed appliances, would have remained dependent on charitable assistance.

Compensation for Lessened Vaccination.

Several requests from vaccination officers for compensation for lessened income caused by the large number of exemptions from vaccination now granted in Salford came before the Salford Board of Guardians last week, and the ready way in which the compensation was allowed was very different from the reception that would probably be given by many boards of guardians if such requests had come from public vaccinators. The clerk to the guardians explained that since the Act was passed which enabled parents to get certificates of exemption many parents had been able to avoid having their children vaccinated, and owing to the increasing number of exemptions the fees of the vaccination officers, through no fault of their own, had been a diminishing quantity. The officers are now paid 3d. for each notification and 9d. for each successful vaccination. The Finance Committee had carefully considered the circumstances, and recommended that, subject to the consent of the Local Government Board, a gratuity equal to the payment of 9d. on each exemption case should be given to each of the vaccination officers, and a fee of 10d. instead of 9d. for each successful vaccination. Several of the guardians spoke very strongly against vaccination, one of them, who was chairman of the Hope Hospital Committee, going the length of saying that it was advocated by the medical fraternity simply to bring in shekels, but in spite of this the recommendation was carried unanimously.

Tuberculosis Exhibition at Bolton.

The crusade against consumption has nowhere been taken up with greater vigour than in Bolton, and the opening of the tuberculosis exhibition last week by the Earl of Derby is only another sign of the determination to do all that can be done to lessen the disease. Bolton was the second town in the country to obtain powers for the compulsory notification of phthisis and the disinfection of the homes from which cases come, and the Corporation recently appointed a veterinary inspector to give his whole time to his work and to pay special attention to the purity of the milk supply. In addition to a number of beds for consumptive cases at Grange, the Council is now applying for sanction to a loan of £6,000 for building a consumption pavilion. The guardians also give special attention to consumptive cases, and, where practicable, insist on their removal to the infirmary, while the Local Government Board recently gave its sanction to plans for two new buildings for phthisis cases, each to accommodate 64 patients. The greater part of the objects shown at the exhibition have been got together by the National Association for the Prevention of Consumption, though some special exhibits have been sent by the Corporation, the guardians, and the Public Health Laboratory of the Manchester University. There is also an instructive exhibit from the Women's National Health Association of Ireland. In opening the exhibition, Lord Derby laid stress on the necessity of cases of phthisis being taken in hand as soon as the first symptoms appeared, though the unfortunate thing was that very often persons neglected the disease until it was incurable. In many cases this was because they could not afford to give up their work, and he commended the example of the Post Office employees, 40,000 of whom had formed an association, through which, by the payment of ½d. a week, they were assured of sanatorium treatment, and while under treatment received full wages for the maintenance of their dependents. They could not expect the Corporation to pay full wages for cases entering their sanatorium, though it must be remembered that it was of little use offering sanatorium treatment unless they were prepared to do something towards keeping the home going while patients were away. He said that one-fifth of the money paid by the Order of Foresters in sick-pay benefits was on account of consumption, and, taking all the friendly societies together, the annual bill was £1,120,000; Poor Law institutions spent £1,400,000, and charitable institutions another £500 000, giving a total of £3,000,000 spent on consumption directly, without taking note of money spent in general hospitals and private nursing institutions. Alderman Aspinall, Chairman of the Sanitary Committee, said that within the last ten years the death-rate from consumption in Bolton had been reduced from 1.75 to 1.1. In reply to a vote of thanks, Lord Derby appealed for assistance for the National Association, and said that by a weekly payment of ¾d., starting at the age of 15, insurance could be provided for sanatorium treatment and provision for dependents during such treatment.

BIRMINGHAM.

Memorial to the late Dr. Arthur Foxwell.

The Foxwell Memorial tablet, which has been erected in the new medical buildings of the Queen's Hospital, was unveiled on November 22nd by Professor Jordan Lloyd, the Senior Surgeon to the hospital and Professor of Surgery in the university. Professor J. T. J. Morrison (Chairman of the Medical Committee) presided over the large company who attended the ceremony. The tablet, which is of brass, is in the form of a memorial bust. It is inscribed: "Arthur Foxwell, Physician to this Hospital, 1889–1909. Erected by his colleagues and friends." Professor Morrison, in the course of an eloquent speech, said that the Medical Committee had felt strongly that the hospital should contain some conspicuous evidence of the regard and affection in which they

held their late friend and colleague. It was, therefore, decided that the memorial should take the twofold form of a mural tablet and a medical prize. The tablet was most appropriately designed by Mr. Courtenay Pollock, a stepson of Dr. Foxwell and an artist of considerable talent. The endowment fund of the memorial would provide a prize in clinical medicine, to be competed for by qualified residents in the Queen's Hospital and in the General and Children's Hospitals. The function of unveiling a memorial tablet was unique in the annals of the Queen's Hospital, and, in order to justify this action there must, of necessity, be some underlying motive of uncommon weight and moment. No doubt they were moved, in part, by the tragedy which deprived them so suddenly of a colleague at a time when he was in the fullness of his powers, to whom that charity and the general community were deeply indebted, and who could very ill be spared. They were partly inspired by the undoubted claims of Dr. Foxwell on their appreciation as a physician of the first rank, as a scientist with highly trained faculties, and as a scholar of great attainments. But the real motive that induced them to take an exceptional measure in order to cherish his memory, was the recognition that the nature and character of Arthur Foxwell belonged to a personality, to a rare type of English gentleman. Professor Jordan Lloyd unveiled the memorial tablet, and in a graceful speech said he had known Dr. Foxwell from the time when he first came to Birmingham. He had learnt to regard him as a man, to esteem him as a scholar, and to revere him as a devotee of the profession he had chosen. The senior physician, Dr. Kauffmann paid an eloquent tribute to the eminent physician to whose position on the medical staff of the Queen's Hospital he had succeeded.

THE HUXLEY LECTURE AT THE UNIVERSITY.

Professor Percy Gardner, of Oxford, delivered the Huxley Lecture at the University of Birmingham on November 23rd, and took for his subject Rationalism and Science in Relation to Social Movements. There was a large attendance, over which Sir Oliver Lodge presided, and supporting him were Sir George Kenrick, and many members of the professorial staff. Professor Gardner pointed out Huxley's many-sidedness, saying that this was a reason why the Huxley Lecture should not always be on biology. Huxley was not only a man of science, but also a man of letters, a philosopher, and almost a theologian. In the course of his lecture Professor Gardner said that by rationalism was meant the adoption of certain fixed principles from which a course of action might be deduced. By science was meant the regular and methodic knowledge of man; the investigation not of ethical principles but of results of action. Human progress resulted from the embodiment in society of impulses and tendencies coming from the region of the unconscious, and making their way into all forms of activity. Three classes of workers were required to make ideas triumph: (1) The prophets, who came from the unknown; (2) the philosophers and rationalists; (3) the men of science and results. Since Darwin the third class had been gaining at the expense of the second. The moral was that all human studies ought to be organized.

NEWCASTLE-UPON-TYNE.

PROFESSOR HOWDEN.

IN recognition of Professor Howden's twenty-one years' service as Professor of Anatomy in the University of Durham College of Medicine, he has been made the recipient of a memento both by his colleagues and by the past and present students. The earlier proceedings took place in the Council Chamber, where, in the presence of his colleagues, Sir George Hare Philipson as President presented a beautifully-illuminated address to Professor Howden, signed by the members of the College and by many of the professors of the Armstrong College as well. To Mrs. Howden was presented a gold necklace in terms equally appropriate, and with a gracefulness well befitting the occasion.

After the ceremony, the company adjourned to the large hall which was specially decorated for the occasion, and where a warm welcome was extended to the guest of the evening and Mrs. Howden. On the platform supporting the Chairman (Mr. H. B. Angus) were, in addition to Professor and Mrs. Howden, Sir George Hare Philipson and Sir Thomas Oliver, and among those present in the hall were Dr. H. E. Armstrong, Professors McDowell, Stuart Macdonald, Beattie, Bedson, Meek, Drs. Beatley, W. E. Hume, Messrs. Gowans, Wardale, Howson, etc. The room was fitted up for a smoking concert. Groups of students past and present occupied the various tables. Mr. Angus, in a eulogistic speech, in alluding to the twenty-one years spent by Professor Howden in the College of Medicine, spoke of his powers or organization and of his contributions to the literature of anatomy, of which Gray's textbook was an example. In the field of sport, Professor Howden had been equally successful. Mr. Angus, on behalf of the past and present students, presented a handsomely bound album containing coloured views of the College of Medicine, and the signatures of those who had contributed to the cheque which accompanied the gift. Professor Howden, in thanking all who had signed the album, touched upon the many changes which had taken place in the College of Medicine during his connexion with it, spoke feelingly and most appreciatively of the late Professor George Yeoman Heath and the late Dr. Nesham, and gave an outline of how the teaching in the college might be still further improved if only money could be got to do it with.

Then followed an excellent concert, to the success of which several of the present students contributed.

WEST YORKSHIRE.

THE BRADFORD DIVISION.

A VERY successful supper, followed by a smoking concert, promoted by the Bradford Division of the British Medical Association, took place at the Great Northern Victoria Hotel, Bradford, on November 23rd, at 8.30 p.m. Sixty-nine gentlemen were present. Dr. Manknell (Vice-Chairman), in the unavoidable absence, through sickness, of the chairman, at first acted as chairman, but he, too, had later on to vacate the chair, which was then taken by Dr. Metcalfe. After supper the smoking concert at once commenced. Bradford medical men can well afford to be proud of the diversity of entertaining talent they possess. Dr. Eurich acted as accompanyist, and songs, readings, conjuring tricks, thought reading, and recitations were given by Drs. and Messrs. Martin, Carroll, Lockerbie, Bruce, Shackleton, Symons, Scott, Bateson, and Metcalfe. The proceedings lasted until midnight. Great credit is due to the Secretaries (Drs. Willson and Dunlop) and to the manager of the musical portion of the programme (Dr. Oliver) for the admirable way in which everything was arranged. Social evenings of this character assist largely in cementing friendship and evolving unanimity of opinion between local medical men. They are a great aid in helping on some of the important questions that the British Medical Association has at heart.

WEST RIDING COUNTY COUNCIL CONSUMPTION SANATORIUM.

It was mentioned in the JOURNAL for October 22nd that another conference of the local authorities was to be held to consider this question. The meeting took place in the Philosophical Hall, Leeds, on November 25th, Sir J. C. Horsfall presiding. There was a large attendance. The chairman gave a history of the movement since the year 1902, and Mr. T. B. P. Ford then moved the following resolution:

> That the representatives of local authorities here assembled express their approval of the idea of establishing a sanatorium on the lines suggested, and undertake to lay the matter before the councils they represent, and to ask them to report whether they are in favour of joining the scheme at as early a date as possible.

Some opposition was manifested, but eventually it was agreed to submit the scheme to the various authorities concerned, but without any special expression of approval.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

COLLIERY MEDICAL APPOINTMENTS IN FIFE.

WE learn that the paragraph under this head published in the JOURNAL of November 12th, page 1553, gave too sanguine a picture of the position of things with regard to colliery appointments in Fife. The scheme has not been so generally adopted as we were led to believe, and it is probable that considerable opposition will develop.

PULMONARY TUBERCULOSIS IN SCOTLAND.

At a meeting of the Royal Society of Edinburgh (Professor Cossar Ewart presiding) on Monday, November 21st, Professor C. Hunter Stewart, the Professor of Public Health in the University of Edinburgh, read a paper on the sex and age incidence of mortality from pulmonary tuberculosis in Scotland since 1861.

He showed that the mortality from tuberculosis of the lungs per 10,000 living at all ages of males and females in Scotland was:

	Death-rate.	
	Males.	Females.
1861—1865	25 0	26.0
1881—1885	19.88	21 84
1891-1895	17 53	17.48
1905-1907	13 87	13 30

The corresponding figures for England and Wales for 1906–7 were males 13.48 and females 9.55, and for Ireland males 20.31 and females 20 21.

Summarizing the results of his statistical inquiry he noted:

1. That in the quinquennium 1851–5 the mortality from tuberculosis of the lungs at all ages was practically the same in Scotland and in England and Wales in both sexes, the mortality among females being greater than among males.
2. That between 1861–70 and 1905–7 there has been a smaller reduction of the mortality in Scotland than in England and Wales, and this is almost entirely due to the much smaller reduction in female mortality, the reduction in male mortality being practically the same in both countries.
3. That while in England and Wales the female rate fell below the male rate in 1866–70 and has continued so to an increasing degree, this did not occur in Scotland till the quinquennium 1891–5.
4. That while in England and Wales the reduction has been greater among females than among males from 15 to 20 years onwards, in Scotland this has been the case only from 35 to 45 years onwards.
5. That in the rural area of Scotland the percentage reduction of mortality at age periods under 50 years has been less in both sexes than in the urban area, and that up to 25 years of age there was a smaller reduction in female relatively to male mortality in the rural than in the urban area.
6. That contrasting the urban and rural areas of Scotland with the somewhat similar areas in England and Wales since 1891–1900, the female rate in the urban area is much higher than that in England and Wales, while the male rate is now lower. The rural female rate is also higher, and, as in England and Wales, it is lower than the male rate.

In both urban and rural areas in Scotland the male and female rates at age periods up to 45 years are greater than those in the corresponding areas of England and Wales.

7. That in certain towns and groups of towns in Scotland the female rate at all ages exceeds, and in others is the same or less than, the male rate.

The cause or causes of the greater mortality from tuberculosis of the lungs among females in Scotland as compared with England and Wales must have operated during more than forty years both in urban and in rural areas, the effect being most marked in the age periods up to 35–45 years. The reduction in Scotland at all ages has been practically the same among males and females, but between age periods 5–10 and 25–35 it was less among females until 1901–5, since when it has been the same in both sexes. In England and Wales, while the reduction in female mortality at all ages had been much greater than in male mortality, the reduction among females had been the same as or greater than among males from age period 15–20 years onwards. Between the ages 5 and 20 years the phthisis mortality both in England and in Scotland, alike in urban and rural districts, had always been greater than among males. Some influence had been at work in Scotland which had retarded the reduction of female mortality at age period 15–20 to 30–35 as compared with that among females in England and Wales, and among males in both countries. In the etiology of tuberculosis of the lungs two factors were generally recognized, the bacillus and the condition of the body into which it entered, the relative importance of these being differently estimated by different authorities. The cause of the greater mortality among females in Scotland than in England and Wales might be either a greater exposure to infection or diminished resisting power among the female population of Scotland, especially at the early age periods, or to both of these. Any light on this point was most important in connexion with the success of preventive measures. Fortunately many measures, such as improved housing, improved conditions in factories and workshops, school hygiene, etc., tended both to lessen the risk of infection, and to increase the individual power of resistance. If the chief cause were greater exposure to infection, measures must be directed specially against the tubercle bacillus; if diminished resistance were also a major factor, then success would lie to a large extent in measures for securing general conditions of healthy living.

Lowered resistance, produced by exhausting work and insufficient nutrition, was recognized as a very important factor in lung tuberculosis. Setting on one side the dangers to health in special industries, the exhaustion produced in young females by hard physical exertion would tend to accentuate that predisposition to lung tuberculosis observed in them between 5 and 20 years of age, as compared with males. There was, and had been for the last forty years, a much smaller relative number of the female population in Scotland engaged in indoor domestic service than in England and Wales. On an average during the forty years, in England and Wales more than 35 per cent., and in Scotland 27 per cent. of the occupied females above 10 years of age were engaged in indoor domestic service. As regarded the female domestic servants themselves—at least to the majority of them—it certainly ensured better feeding and housing than they would have had in their own homes. About 46 per cent. more females between 10 and 20 years of age were engaged in domestic service in England and Wales than in Scotland, and hence had to this extent less severe labour and better conditions as regards food and housing, at the time of greater predisposition to pulmonary tuberculosis, as compared with males.

Since 1871, on an average 6 2 per cent. of the occupied females above 10 years of age were engaged as agricultural labourers in Scotland, as against 0 9 per cent. in England and Wales. There were 87 per cent. more females thus employed at age period 10 to 20 than in England and Wales. Though this meant outdoor work, it was often hard, and—in the past at all events—the sleeping accommodation was insufficient, both as regards space and ventilation. In the rural districts of Scotland, therefore, the female population above 10 years of age had been much more engaged in the hard work of agricultural labour. The chief textile industry in Scotland was jute manufacture; in England and Wales it was cotton manufacture. There was a great difference between the two countries in the relative number of females employed in these industries. In Scotland, since 1871, on an average nearly 26 per cent. of the occupied females above 10 years of age were engaged in

textile manufacture, while in England and Wales less than 17 per cent. were so employed; 33 per cent. fewer females from 10 to 20 years of age were engaged in it in England and Wales than in Scotland. In dressmaking, tailoring, stay-making, millinery, etc.—lighter work than either agriculture or textile labour—in Scotland 13 per cent., and in England and Wales above 18 per cent., of the occupied females above 10 years of age were so employed. Nearly 40 per cent. more females from 10 to 20 years of age were employed in this industry in England and Wales than in Scotland. Thus there was and had been in Scotland, since 1871, a markedly smaller number of the female population between 10 and 20 years engaged in the relatively light occupations of indoor domestic service and dress manufacture, and a markedly larger number in the harder work of agricultural and textile industries, than in England. Any diminution in the bodily resistance produced by these conditions would probably be chiefly operative on the mortality-rates between 15 and 35 years, and it was between these age periods that the reduction in female mortality was so markedly smaller in Scotland. There seemed sufficient accordance to indicate that the occupation was exerting an influence on the female mortality in Scotland as compared with England, and in the Scottish towns of greater as compared with those of lesser industrial occupation among females. In a comparison between the mortality from lung tuberculosis and that from all other causes save this, Professor Hunter Stewart said the comparison showed that the rate of reduction among females from tuberculosis of the lungs followed a somewhat similar course to that from all causes save this disease, and the question naturally arose as to whether in both cases the same cause was operative, and whether this consisted in a lowered bodily resistance to disease in general among females in Scotland as compared with England and Wales, brought about by different conditions.

Dr. John T. Wilson, Medical Officer of Health for Lanarkshire; Mr. A. Hewat, of the Edinburgh Life Assurance Company; Sir David Paulin, and Dr. James took part in the discussion. They were followed by Dr. Leslie Mackenzie, of the Local Government Board, who emphasized the fact that the rate of diminution in mortality from tuberculosis was greatest in the principal towns and least in the mainland rural districts. To imagine that merely because the area was a rural area the people in it were more healthy, or better housed or fed, or that the houses were less damp, or had nothing of the kind of thing that led to phthisis, was a pure delusion. With its old high houses, ill-ventilated closes and slums, Edinburgh, was ever so much better off than rural districts with their bothies and cot-houses.

Dr. Matheson Cullen said Edinburgh had a very much larger number of domestic servants than any town in Scotland, and the fact that the female death-rate for phthisis was so much smaller than that of the males might be attributed in Edinburgh to the fact that from the age of 20 upwards there was a very large access to the population of young females who, coming from country districts, went into domestic service, and, one would expect, with constitutions stronger than those of town dwellers.

Dr. James Crawford Dunlop, Superintendent of Statistics in the Registrar-General's Department, said one was apt to get the idea that we were greatly worse in Scotland than in England. But one must not forget that England led other countries in this matter, and that therefore they were putting Scotland against the best nation in that respect.

Professor Hunter Stewart replied, and was accorded a vote of thanks for his very interesting paper.

The Royal Commission on Ancient Monuments.

Reference was made some time ago in these columns to the ancient monuments in the Lothians. At a meeting of the Royal Commission on Ancient and Historical Monuments of Scotland, held in Edinburgh on November 23rd, a verbal report was made by the secretary on the examination of the ancient remains in Caithness. These proved to be more numerous and of greater importance than was anticipated. The remains of brochs numbered nearly 150, or almost double the number previously known. A large number of the cairns of the neolithic period not recorded were examined and reported on. A new class of megalithic structure, probably a dwelling with galleries supported on piers, and covered with slabs so as to lessen the area required to be spanned by roofing, was discovered in the parish of Latheron, and is of a type of which no remains are now known elsewhere in Scotland, though presenting analogy to ruined structures recorded as existing in Lewis. The place name "Was," given to the sites where several of these occur, suggests that they are the structures referred to by Pennant as "hunting houses," and called by the natives "Uags." There were also discovered in the county a number of additional settings of rows of small standing stones, a class of monument so far only known to exist in Scotland in this county and in Sutherland.

Edinburgh Water Supply.

The independent tests which are being made at the instance of the Edinburgh Corporation in connexion with the water supply of the city continue to give reassuring results. A large number of samples have been taken by the Public Health Department from various quarters of the city. In a number of cases the slight discoloration which has given rise to complaint has been noted; but in no case has the presence of such contamination been discovered by analysis as would cause any danger to health. A peculiar feature has been that where second samples have been taken at the points at which discoloration has been noted, the later samples have been found quite clear. This suggests that the cause of any contamination that may exist is local and temporary, and not due to any impurity at the source. Special investigations were made in a district where it was supposed that some cases of slight illness might be attributed to the water supply. There, however, it was found that the supply was obtained from the well-tried sources of the Pentlands, and included no part of the Talla supply. A comprehensive scheme of investigation is to be carried on by the Public Health Department, under the supervision of Dr. Williamson, as it is felt that in an important matter of this kind the expense of an independent inquiry is justified. The Water Trust is affording every facility for this purpose. Samples are being taken, not only at the point of delivery, but at various points in the course of transit and at the source, the object being to locate and determine any causes of contamination that may exist.

Provision of Antitoxin.

Under date November 29th, 1910, the Local Government Board for Scotland has issued a circular in which it is stated that it appears eminently desirable that arrangements should be made by local authorities with the object of facilitating the prompt use of diphtheria antitoxin in the case of persons suffering from, or exposed to the infection of, diphtheria. The cost of supplying the antitoxin in special circumstances to individual cases is, in the opinion of the Board, a competent expenditure for the purposes of the Public Health (Scotland) Act, 1897, and the consent of the Board is not required. Where, however, a local authority frame a scheme for the general distribution of the antitoxin the consent of the Board will be necessary. Any arrangements made should be brought to the notice of all medical practitioners practising in the district. In the circular or notice issued to such practitioners, it is desirable to lay emphasis on the importance of prompt treatment by antitoxin, and of the saving of life that may be thereby effected. The prompt administration of the antitoxin before the patient is removed to hospital may, especially if delay in removal is inevitable, go far towards preventing a fatal result. The Board, however, desires to remind local authorities that the free provision of this antitoxin must not be regarded as a substitute for removal to hospital.

EDINBURGH SMALL-POX HOSPITAL ARRANGEMENTS.

The Local Government Board suggested that Edinburgh might combine with Leith and other local authorities in Midlothian for a general hospital. Reports by the medical officer of health and the superintendent of the Fever Hospital submitted to a recent meeting of the Public Health Committee were to the effect that the existing accommodation provided at Colinton Mains is sufficient for reasonable possibilities within the next few years; that the condition of the buildings is generally satisfactory, but that certain improvements and alterations should be carried out; that the ground available for the erection of additional pavilions is of such an extent as to provide for 100 additional patients; and that the difficulties in connexion with the administration of a combination hospital for small-pox make it inadvisable that such an arrangement should be carried out, the city's present arrangements having been found perfectly efficient. The committee adopted a resolution on the lines of these reports.

GLASGOW.

Parish Council: Increased Expenditure.

In a summary published of the work and expenditure of the Glasgow Parish Council, calculated for the past ten years, some very startling figures are given. The expenditure on indoor poor has increased over 200 per cent.—from £37,729 to £135,771. In 1900 there were only two institutions, apart from asylums, belonging to the parish of Glasgow—namely, Barnhill and the City poorhouses, both of which were practically free of building debt. The latter was condemned and sold, and extensions were made to the former, while three new institutions have been raised. More and better hospital accommodation was urgently required. Stobhill Hospital, with accommodation now for 1,942 people, cost £405,000; the Eastern District Hospital, accommodating 313 persons, cost £100,000; Western District Hospital, accommodating 228 persons, cost £90,000; and the Barnhill extension, with increased accommodation for 1,081, cost £112,000. This enormous expenditure raised the debt of the parish from £13,360 at the beginning of 1900 to £559,000 in 1910. Improved and much more costly hospital accommodation accounts for the bulk of it. The insane poor in asylums, etc., have increased 53 per cent. during the decade, and the expenditure from £36,312 to £51,652, or 42 per cent.; while the insane boarded out have also increased 50 per cent, with expenditure £10,721 in place of £7,176.

Population of the City.

In his latest annual estimate of the population of Glasgow the medical officer has to record a continuance of the decline which has manifested itself persistently since 1903. He calculates that in the past seven years the number of inhabited houses has declined by 6,767 inside the parliamentary boundary. For some years the depopulation inside this central or parliamentary area was more or less compensated by the growth of the population in the extra-parliamentary portion of the city, but this year, for the first time, there is a decrease in the number of inhabited houses in the area of the city outside the parliamentary boundary. This is an indication that the outward movement of the population is extending further and further from the centre of the city. It is probable that this outward movement is in large measure due to the policy of the tramway authorities in extending their lines into the surrounding country districts, which are thereby supplied with cheap travelling facilities.

Glasgow Antismoke Campaign.

The campaign against smoke in the atmosphere is being vigorously carried on by the Glasgow and West of Scotland Branch of the Smoke Abatement League of Great Britain. A series of popular lectures by recognized authorities, dealing with various aspects of the smoke question, will be given during the ensuing winter, under the auspices of the branch. On November 4th the opening lecture of the series was delivered by Professor Glaister, Glasgow University, who dealt with "The City Atmosphere and the City Health." On December 14th Councillor Smith, the convener of the subcommittee on air purification in Glasgow, will lecture on "The Necessity for Pure Air"; and on February 3rd Mr. Peter Fyfe, the Chief Sanitary Inspector, will deal with "The Pollution of the Air: its Causes, Effects, and Cure." Several lectures of the series are more technical, and will appeal more to those immediately concerned in the production of smoke. Among these are: "The Chemistry of Combustion," by Mr. F. W. Harris, Corporation Chemist; "How to Fire Steam Boilers Smokelessly," by Mr. George Ness, Chief Engineer, Scottish Boiler Insurance Company; and "The Production of Soot," with experiments, by Dr. T. S. Paterson, Lecturer on Organic Chemistry in Glasgow University, on February 17th. On January 20th Dr. Hugh A. McLean will give a lecture, illustrated by limelight views, on "A Smokeless City: A Retrospect and Prospect," in which he will deal with the whole question in its medical and sociological bearings. The lectures will be given in the Technical College, except Councillor Smith's, which is arranged for the Fine Art Institute.

Tuberculosis and Milk Records.

Dr. William Watson delivered the first of a series of lectures, under the auspices of the Glasgow and West of Scotland Agricultural Discussion Society, in Glasgow on November 16th, taking for his subject Tuberculosis. Sir H. Shaw Stewart, Bart., presided. Referring to debility as one of the contributing causes of tuberculosis in cattle, he discussed the keeping of milk records of cows. This is a subject which has a very practical bearing on public health. The lecturer did not disparage the keeping of milk records by dairymen, because any sensible man could thus take precautions to eliminate unprofitable animals from his herd. But tuberculosis was most common in aged milk cows, and when forced to give milk to the uttermost, fed up for this purpose beyond what her digestive organs could undertake, while Nature made another demand on her in the way of reproduction, she could easily become a prey to the tubercle bacillus, and her offspring would be debilitated. The system, therefore, of keeping the milk records of cows in order to increase their selling value was a departure from Nature's plan, and one fraught accordingly with danger in the end. A cow must ever be a dual-purpose animal, to provide milk and flesh, and it should not be the practice to have one at the expense of the other.

Western Infirmary.

The thirty-sixth annual meeting of the contributors to the Western Infirmary was held on November 24th, Sir Matthew Arthur, Bart., the chairman, presiding. The report for the past year up till October 31st showed that 9,230 cases received indoor treatment, of whom 5,494 were dismissed well, 1,742 were dismissed improved, and 597 died in hospital. The average daily number of patients in hospital was 524, and the greatest number on one day 585. The average period of residence of each patient was 20.75 days. In addition, 733 patients were sent for fourteen days' further treatment to the Convalescent Home at Lanark. The outdoor patients treated at the infirmary during the year were 39,948. During the year there had been an average of 400 waiting admission. Two beds were endowed during the past year, making a total of 36 beds endowed in perpetuity.

The new wing, with nearly 100 additional beds, would soon be ready for occupancy, and the extension of the nurses' home was now completed. The clinical laboratory provided by an anonymous donor was also nearing completion, and would be in working order by the beginning of the year. A central block to connect the main building with the western additions was required, this block to contain operating theatres, and admission and casualty department, lecture rooms, etc. An anonymous donor had intimated a contribution of £3,500 to provide and equip an operating theatre for this projected central block. A sum of at least £35,000 was required for the full scheme.

For the Lady Hozier Convalescent Home, Lanark, the late Lord Newlands, donor of the Home, had given £10,000 in aid of its maintenance, but at least £30,000 was required to make it self-supporting. The chairmain appealed to the citizens of Glasgow to give support to these various schemes in connexion with the infirmary.

District Nursing.

At the annual meeting of the Higginbotham Sick Poor and Nursing Association held on November 25th, the report showed that the twenty-nine district nurses had attended to 3,095 cases during the year. The actual expenditure did not amount to 20s. a head of the cases treated by the nurses, who deal with all kinds of medical and surgical cases under the instructions of medical practitioners throughout the city.

West of Scotland Sanitary Association.

The twenty-ninth annual general meeting of this association was held in Glasgow on November 25th, and the annual report submitted showed that the operations during the year had been carried on at a loss. Fortunately, the surpluses of other years could be utilized to meet this deficiency. A change had been made in the engineering staff, and the engineer had been instructed to direct attention in his inspections to what was required for safety, and only to make suggestions for improvement when requested to do so by members. The association, it may be stated, exists for mutual benefit in advancing the interests of the community regarding healthy houses.

DUNDEE AND INFANT MORTALITY.

A further development of the crusade against infant mortality in Dundee is found in the organization of a system of voluntary visitors, to supplement the official work of the municipal health visitors and others, and in the opening of a course of lectures by local practitioners. The subjects dealt with are: The Problem of Infant Mortality, Methods of Work, Advice to be given to the Expectant Mother, the Breast and what can be done with it, Management of the Infant, Hygiene of Children, Hygiene of the Home.

POLLUTION OF THE RIVER CLYDE.

A memorandum has been prepared by Mr. A. B. McDonald, Glasgow City Engineer, for the information of Glasgow Corporation, on the sources of pollution of the river Clyde, through the tributary streams which enter it above and below the city of Glasgow. It is pointed out that the present condition of these streams demands very serious consideration, as most of the populous communities in the vicinity regard the foul condition of the streams within their jurisdiction with indifference, or at least provide methods of purification which are inefficient to achieve the purpose. All this tends to nullify the benefit which should be derived from the very expensive purifying plant set up by Glasgow to deal with sewage and the purification of the river. The Mersey and Irwell Joint Committee Act, 1892, contains drastic provisions prohibiting the contamination of rivers by solid matter, liquid sewage, or liquid from manufactories, and similar provisions were embodied in the West Riding of Yorkshire Act of 1894, and in a general measure for the prevention of river and stream pollution passed in 1904, but not applicable to Scotland. The memorandum details the areas dealt with by the Glasgow sewage works at Dalmarnoch, Dalmuir, and Shieldhall, which intercept the sewage from 15 square miles on the north side of the river with 14 miles of river frontage, and 15 square miles on the south side with 8 miles of river frontage. Beyond this area the water of the river Cart presents a condition of increasing pollution, and this is greatly aggravated where it enters the town of Paisley and receives the domestic and industrial sewage of a population of over 90,000. This river discharges into the river Clyde below Glasgow. Above the city the North Calder water with the untreated sewage of Airdrie, Coatbridge, and Baillieston, is in a very unsatisfactory condition, and pours its water into the Clyde. Other streams in a similar state are Jock's Burn, containing the sewage of Carluke; Newton Burn, which receives a very dirty and malodorous discharge from a sewage work; Park Burn, discharging part of the sewage of Hamilton; the river Avon; and the river Nethan, which receives the untreated sewage of Lesmahagow and other places. Reference is also made to the pollution of the river Kelvin, a tributary of the Clyde which flows through Glasgow and joins the Clyde on the border of the city. Within the watershed of the Clyde no less than seventy collieries have installations of coal washing plant. Measures for the compulsory purification of much of this inflow into the Clyde must be taken if Glasgow is to reap the benefit of the millions expended on the purification of the river in the interest of public health.

EXTENSION OF LANFINE CONSUMPTION HOME.

Lanfine Home for Incurable Consumptives was opened six years ago for the purpose of minimizing the evil among the poorer classes of contamination arising from patients in an advanced stage of phthisis. It owed its origin to a bequest of £5,000 for the erection and £15,000 for the endowment of a cottage home for such patients; it is situated near the Glasgow Home for Incurables at Broomhill, and worked in conjuction with that institution. Provision was originally made for two wards of eight beds each, with administrative block. Through the generosity of two anonymous donors the capacity of the Home has now been doubled, and the new buildings are ready. A third donor has defrayed the cost of furnishing the extended portion, so that it will be opened free of debt. The main extension consists of two new wards, and a dining room which will also be utilized as a day room. The new block is 83 ft. long and joined to the original building by a corridor. The windows of the wards open out on a verandah running the full length of the southern frontage, and this verandah can accommodate eight additional beds. A smaller block abuts on this main building, the lower floor of which is equipped as workroom and stores, while the upper story has two single apartments for the isolation of patients, with dressing room, bath room, and other accommodation. The total number of available beds is now forty-four. A new nurses' home for the staff at Broomhill and Lanfine has also been erected, with thirteen bedrooms, a large sitting room and other necessary accommodation. The new buildings are of steel framework with walls of frazzi blocks—a terra-cotta material—cemented in rough cast fashion externally. They are ideally situated at the base of the Campsie Hills, Kirkintolloch, where light and fresh air are in abundance.

PURIFICATION OF THE RIVER ESK.

Langholm Town Council is at loggerheads with the County Council of Dumfries over the question of purification of the river Esk. The Town Council had received a summons for alleged pollution of the river by the discharge into it of crude sewage, but they wished the Public Health Committee of the County Council to show that some damage to health resulted before action was taken. A purification scheme would cost from £12,000 to £20,000, and the rates would be increased by at least 1s. 3d. in the £. The Town Council had a public meeting on November 14th, at which the Provost stated that they had never denied that they were technically infringing the law, but that other burghs had found their sewage purification works unsatisfactory, and they should wait for the report of the Royal Commission before taking further steps. The public meeting resolved unanimously to support the Town Council in defending the action raised.

SELKIRK LOCH AS REFUSE DÉPÔT.

Selkirk Town Council further discussed on November 22nd the proposal to fill the Pot Loch, near Selkirk Hills, with refuse from the town, under certain conditions laid down by the owner of the loch. Considerable local agitation has been aroused by the proposal.

Meantime the Town Council wishes the owner to take all responsibility and liability in consequence of the deposition of the refuse, and of any pollution of water therefrom, while the owner insists that the Town Council should bear any such liability. A committee has been appointed to consider this point.

HAIRMYRES INEBRIATE REFORMATORY.

A committee of Lanarkshire County Council had an interview with Lord Pentland, Secretary for Scotland, regarding the future of this reformatory. It was explained that inebriates were not dealt with in any considerable numbers under the existing procedure of the Inebriates Act, and therefore the continuance of the inebriate reformatory as such was not justified, the inmates being likely to be so few. Suggestions for utilizing the buildings included their conversion into a consumptives' sanatorium, or its use under the Children's Act. The Secretary for Scotland expressed his willingness to assist the County Council in every way in his power, either as regards continuance or conversion of the reformatory.

TEACHERS AND MEDICAL INSPECTION.

The Stornoway School Board has received from the teachers under the Board the following communication relative to their duties in connexion with the medical inspection of scholars, and after consideration have approved of the attitude adopted by the teachers:

That it was the consensus of opinion of the teachers that the medical examination of school children would lead ultimately to a higher physical development of the child, which would facilitate the work of education, and consequently the teachers sympathetically welcomed the inauguration of the system. In the actual working of the scheme the teachers were willing to inscribe on the card of medical queries particulars from the various school registers—namely, the name and date of birth—and, as this would have to be done after school hours, they thought that it would be a fair contribution towards the lightening of the official duties of the school medical officer. The teachers were also willing to give their aid in respect of the weighing and measuring of children, but in such a case they would expect to receive reasonable remuneration. In regard to the entries to be made about cleanliness, etc., where the children would require to be divested of their clothes, and where very grave questions of privilege might be raised, the teachers were strongly of opinion that only a duly qualified medical practitioner or certificated nurse should be asked to write any remarks. The teachers also thought it advisable that all communications respecting the working of this scheme should be sent through the various school boards of the island, and they could not see their way to respect any forms, etc., which might reach them through any other source.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on November 18th, Dr. de Havilland-Hall in the chair. The accounts presented showed that the sickness experience of the society continues to be favourable. As the year closes and the severe weather sets in, the number of claims for sickness benefit are usually increased, and the total disbursement in respect of these claims is expected to show a substantial increase. The experience of this year has so far been normal; the number of claims received has been about the average, but the amount of sickness pay disbursed has so far been well under the expectation; and unless a marked change takes place in the last month of the year the accounts for 1910 will show a handsome addition to the sickness reserve of the society. The number of members dying grows with the age of the society, and the death-roll of 1910 is not greater than was anticipated. For many years the society has transacted no new annuity on life assurance benefit, and accordingly the number of members entitled to these benefits is rapidly falling. A very satisfactory feature of the business is the large number of members who have taken advantage of the facilities offered by recent alterations in the rules, and have increased their sickness benefits to £6 6s. or £8 8s. a week. During the year the incoming of new members has been somewhat less than usual, but the large increase in the number of additional benefits goes far to counterbalance this. Prospectuses and all further particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

NEW LOCAL GOVERNMENT BOARD INSPECTOR.

IN consequence of the resignation of Dr. Clibborn, the Local Government Board in Ireland has appointed Dr. Brian O'Brien as Medical Inspector. Dr. O'Brien was at first intended to take charge of the South-Western District, but it is now stated he is to succeed Dr. Clibborn in the North-Eastern and continue to live in Belfast. Dr. O'Brien's appointment will be very popular, and he will receive congratulations from hosts of friends. For the two posts he vacates, the Assistant Surgeonship of the Queen Street Hospital for Sick Children, and the Divisional Surgeonship of the Constabulary, there are already many applicants.

CHIEF INSPECTOR OF REFORMATORIES.

At the last meeting of the Public Health Committee of Dublin Corporation the following resolution was unanimously adopted:

That this Committee congratulates Surgeon-Colonel Flinn, who has been associated with the Public Health Committee in their work, and who always took the sincerest interest in the conservation of the public health of the city, on his promotion to the position of Chief Inspector of Reformatories and Industrial Schools, and member of the General Prisons Board.

ALLEGED BRIBERY AT DISPENSARY ELECTION.

Some weeks ago a sworn inquiry was held by Sir Acheson McCullagh, Local Government Board Inspector, into certain alleged irregularities in connexion with the election of a dispensary medical officer in Scarriff Union, co. Clare. Specific charges of corruption and bribery were preferred against Dr. John Holmes, the newly-elected medical officer, and against certain members of the board of guardians. The decision of the Local Government Board has now been announced. The Board refuses to sanction Dr. Holmes's appointment, and being of opinion that bribery was practised at the election, has directed a new election to be held. It is also directed that Dr. Holmes shall not be eligible for an appointment under the Poor Law system until a period of five years has elapsed.

SUICIDE AT RICHMOND ASYLUM.

Following upon the suicide of a patient named Lloyd in the Richmond District Asylum on November 3rd, certain recommendations were made by the Lunacy Inspectors regarding the general training of asylum officials, and these recommendations have been reported on by Dr. Donelan, Resident Medical Superintendent. Dr. Donelan's report was considered at the last meeting of the Asylum Committee. It points out that two of the recommendations are already complied with, namely, those advising that attendants should be instructed regarding the regular counting of patients, and the inspecting of wards before locking the doors. A recommendation was also made concerning the issue of "caution cards" in cases of suicidal patients. These cards were in use in the Richmond Asylum up to about fourteen years ago, but had since been discontinued, and Dr. Donelan thinks that the discontinuance has been justified by results, patients being enabled to enjoy greater freedom and employment, and, not being constantly reminded of their suicidal tendencies by excessive supervision, tend to drop their delusions earlier. Dr. Donelan is also opposed to the creation of suicidal wards on the ground that the accumulating together of acute melancholics, while possibly ensuring greater safety, would strongly militate against recovery. The report has been referred for full consideration to a special committee.

SCHOOL HOURS AND TUBERCULOSIS.

At the opening of the session of the Agricultural School, Trinity College, Professor Barnes devoted a considerable portion of his remarks to the subject of tuberculosis, and dealt especially with what he

believed to be an important contributing cause to the prevalence of the disease, namely, the principles on which the national school system is at present conducted. That the schools are to a great extent non-sanitary, and that a remedy for this state of affairs is needed, is universally admitted, but in Professor Barnes's opinion it is equally important that the age limit for admission to the schools should be altered. According to the rules of the London School Board the earliest age at which a child can be sent to school is five years; while in Ireland three years has been adopted as the minimum age. In the opinion of many even five years is too early an age for regular school work, and in consequence nothing can be said in support of the Irish system, which results in children being brought to school at the age of 3, when they are quite unable to derive benefit from the teaching, and are only taught to remain quiet—a condition most abnormal to the young healthy child. The deprivation of fresh air and sunshine thereby inflicted on these young children is, in Professor Barnes's opinion, a potent cause of the lowered vitality which favours the development of tuberculosis in later life.

Suicide in a Private Hospital.

A coroner's inquiry was held last week to investigate the circumstances attending the suicide of a patient in a Dublin private hospital. The jury's verdict is of importance as showing the opinion that the public is likely to take regarding the responsibility of medical men towards melancholic and depressed but non-certifiable patients. The patient in question, a commercial gentleman, was in a depressed state of mind, and was sent to hospital for rest and feeding. He was not insane, in the opinion of the doctors who saw him, but it was feared that he might become so. No suicidal tendencies had been noticed, but one morning, during the temporary absence of the nurse in charge, he succeeded in cutting his throat with a small pocket-knife, and shortly afterwards died from the effects of the self-inflicted wound. The coroner expressed himself strongly on the fact that no male attendant had been employed for the case, and was of opinion that insufficient instructions regarding the management of the case had been given by the doctor. The jury brought in a verdict of suicide during temporary insanity, and added that they were of opinion that the doctor, when placing the deceased in hospital, did not give sufficient instructions, and that there should have been a male attendant. It is to be hoped that the general public will remember this expression of opinion, as frequently the question of expense is one that deters a medical man from urging the employment of extra nurses when such help is not apparently an absolute necessity.

Prevention of Cruelty to Children.

The annual report presented to the Dublin Branch of the Society for the prevention of Cruelty to Children stated that in the opinion of the committee the Children Act of 1908 had worked well. A good deal of work, involving the welfare of 4,060 children, was got through during the year, and that the work was necessary was shown by the fact that out of 1,435 complaints investigated, 1,387 convictions were obtained. It is disappointing to find that the committee regret that they cannot see any hopeful signs of a reduction of the sum total of misery under which children suffer in the Dublin area.

Department of Agriculture and Dairy Farms.

Some months ago an action was taken by the North Dublin Rural District Council against the manager of the Model Farm, Glasnevin, which is under the control of the Department of Agriculture, under the Dairies, Cowsheds, and Milkshops (Ireland) Order, 1908, for allowing a pit for the reception of manure and other noxious matter to be situated sufficiently close to the dairy as to cause the air in and about the dairy to be rendered offensive and unhealthy. The case was adjourned at the time, and a conference between those concerned was held, at which it was agreed that the pit complained of would be removed to a suitable site. When, however, the adjourned case came up for hearing on November 11th it was found that the Department of Agriculture were not prepared to act on the advice of their own officials, and were determined to contest the allegation that the pit, as at present situated, was offensive or unhealthy. The department regards the question at issue as a most important one, and maintains that the pit is placed where it naturally should be in a dairy farm. It is added that any attempt to alter its position would be aiming at establishing an impossible standard in the country, and that as an educational body the department is bound to oppose any attempt at impractical idealizing of dairy farming. The case has been further adjourned for a fortnight.

Belfast Medical Students' Association.

In the JOURNAL of last week (November 26th, p. 1743) under the above heading, Professor Lindsay is quoted as stating that there was one medical man to 1,000 of population in Belfast; the figure should have been 1,600. As regards the question of overcrowding in Ireland and Belfast the following sentences show Dr. Lindsay's position:

> It can hardly be denied that during the last three or four decades there has been in most civilized countries an undue rush to medicine, that the supply has exceeded the demand. This has been even more marked in France, Germany, Italy, and America, than amongst ourselves.
>
> But I do not think that overcrowding of the medical profession is an urgent question in Ireland. Belfast with a population of about 380,000 has 247 medical men on its register, of whom about 230 are in practice, which works out at about one medical man to 1,650 people, and this is a proportion which is supposed to afford to reasonable prospect of a livelihood to the medical practitioner. Cork with a population of 76,000 has 93 medical men on its register; Limerick with a population of 38,000 has 35 medical men; and Londonderry with a population of a little over 40,000 has 34 medical men. If we allow for those recently qualified, and not yet in practice, for those engaged in special branches, such as lunacy or public health, and for retired veterans, these figures, though ample, are not excessive. The case of Dublin, with two universities and two qualifying bodies, is exceptional. In England the ratio varies greatly as might be expected. For example, Sheffield has a ratio almost the same as that of Belfast, while Brighton has no less than one medical man to 600 people—a very high rate, but accounted for by more or less obvious reasons.

This quotation will give Dr. Lindsay's meaning with the lucidity that characterizes every line he writes. His facts are undeniable, but in the opinion of your correspondent he does not attach sufficient importance to the great difference in wealth of the two countries, England and Ireland. It was said lately in conversation that more wealth comes before the assize court of Liverpool than before the assize courts of all Ireland; whether this be true or not, it is pretty certain that a proportion which would give affluence to a practitioner in nearly any part of England, would yield but a half to two-thirds of the return in Ireland. On the other hand, assistantships are extremely rare in Ireland; they are common in England; so that the total return per caput for qualified men in practice might come out closer than if independent practitioners alone were considered. Most assistants in England receive more than dispensary doctors in Ireland; the latter are allowed private practice, but have to provide means of locomotion for their compulsory work.

New Sanitary Laws in Belfast.

It has now been definitely decided by the authorities in Belfast to proceed with an omnibus bill, which contains some very important sanitary regulations. The public health and sanitary provisions relate to the control and regulation of midwives, the regulation of premises used for the sale of food, for the carrying of milk or butter-milk, for the restriction of the collection of shellfish on the shores of the lough, to confer further powers for the inspection of meat, and for the regulation of slaughterhouses and seizure of meat, to require the registrars of births and deaths in the city to make returns to the Corporation, to confer powers upon the Corporation as regards provision against fire in all hostels, taverns, etc., and to exempt public hospitals from taxes, to relieve the Corporation from the obligation of a former Act as regards the purification and disposal of sewage, etc. In the original bill were included clauses dealing with the

disgraceful double tenancies, which have been condemned by the health officers, the revising barristers, and public opinion generally; but unfortunately political feeling was introduced, and it was understood that the retention of these clauses would wreck the whole bill.

Streamhill Sanatorium.

The sanatorium for the treatment of consumptives from the city and county of Cork has been for some months in operation, and it is gratifying to learn that already several patients have been discharged cured, two within the past month. There are now fifty-two patients in the institution, the great majority of whom are making satisfactory progress. There are still, however, twenty-five unoccupied beds, while sufferers from this disease are clamouring for admission. This strange state of affairs arises from the fact that there are no funds available or that can be legally applied towards defraying the travelling expenses of patients, and providing them with suitable clothing. This difficulty in present circumstances can only be surmounted by prospective patients becoming inmates of the workhouse, and so justifying the Poor Law boards in bearing these charges out of the public funds. The sufferers, naturally anxious as they are to be cured of this insidious disease, shrink from the pauper taint. Meanwhile a number of applications have been received from persons who are willing to pay for the occupation of the empty beds, but the sanatorium authorities have stoutly refused these applications, preferring rather that the beds should remain unoccupied than that the hospital should be filled with patients for whom it was never intended.

Sydney.

[FROM OUR SPECIAL CORRESPONDENT.]

Bureau of Micro-Biology.

The Government Bureau of Micro-Biology was established rather less than two years ago, but practical work was not begun until the beginning of 1909, and the first annual report of the work accomplished during that year has just been issued by the Director, Dr. Frank Tidswell. From this report we learn that 6,597 specimens of various kinds and 26,744 rats, making a total of 33,341 specimens, were examined and reported upon during the year. This large amount of work was done at the request of various Government departments, professional men, and farmers. The specimens examined were obtained from diseased persons, animals, and plants, dairy products, soils and waters, foods, and several materials examined for hygienic purposes, as well as medico-legal exhibits examined on behalf of the police. The second part of the report deals with the investigational work, and deals with diseases of animals and plants, pathological examinations, parasites, etc. The section on diseases of animals deals with the relation of micro-organisms to disease; the sources, modes of transmission, and consequences of infection, including the subject of immunity, vaccines, and antitoxins. There are a series of articles based on observations made in the bureau upon septic infections, tuberculosis, typhoid fever, and plague in man, diarrhoea in calves, and pseudo-tuberculosis in sheep. There is a discussion of the current views concerning the tuberculin test for tuberculosis in animals, an account of the present method of treatment of disease by vaccines, and some details concerning the part played by rat fleas in the dissemination of plague. There is also a report on the rôle of flies in the propagation of disease, which conveys some interesting information concerning the ordinary house-fly, bush fly, and the stable-fly of Australia, together with a list of insects which have been proved or suspected of carrying disease. Under the heading "Parasites" there is an account of the intestinal worms of human beings and stock, including an important list of the parasites recorded as occurring in Australia. There is also an account of some half a dozen worms met with in native animals which are new to science. The section on hygienic matters deals with the alleged dissemination of disease by telephone mouthpieces, and also with filters, foods, and disinfectants. The chapter on the bacteriology of milk deals with the bacterial condition of milk as it issues from the udder, as it exists in the dairy, as it is delivered to customers, and as it exists in the house. The effect of bacteria upon the constituents of milk and the changes which the latter undergo in the processes of separating, sterilizing, and pasteurizing are also discussed. Another chapter deals with the lactic acid bacteria and their use as butter starters, and for the production of sour milk for use in the lactic acid treatment of disease. The report concludes with a list of some forty communications to scientific societies contributed by officers of the bureau during the year. A museum is in course of formation for the purpose of showing specimens obtained from various diseases which affect animals and plants in this State. The collection and filing of reports and periodicals makes the bureau a repository of information from all parts of the world.

The Crusade against Tuberculosis.

A large public meeting was recently held in the Sydney Town Hall to inaugurate an active crusade against pulmonary consumption. Sir Philip Sydney Jones, in the course of his address, urged the following measures as being necessary for the prevention and cure of the disease:—(1) Compulsory notification throughout the State; (2) the establishment of tuberculosis dispensaries; (3) education of the people as to the causes of the disease and the means of prevention; (4) regulations against spitting in public conveyances, buildings, side-walks, etc.; (5) free bacteriological examination of sputum; (6) the regulation of factories and workshops; (7) sanatoriums for the treatment of early cases; (8) hospitals for the reception of advanced and incurable cases; (9) farm colonies for patients leaving the sanatoriums and no longer in need of active treatment and advice; (10) association for the care and assistance of the families of breadwinners while in the sanatoriums; (11) improved dwellings for the working classes; (12) open-air schools; (13) playgrounds for school children; (14) a pure milk and food supply. Speaking on the question of compulsory notification, he said that unless it was made universal throughout the State as it was already in Sydney it would be impossible to discover all the cases. There was nothing in the objection raised that compulsory notification would result in hardship to persons suffering from the disease, since experience of compulsory notification as enforced in Edinburgh, Sheffield, Birmingham, France, America, and elsewhere had shown that no such hardship had arisen. On the contrary the vast majority of those concerned had expressed their pleasure and satisfaction at having their sick ones looked after by qualified nurses. As regards the proposal to establish dispensaries, they would have places for the reception and examination of patients, for keeping a record of the cases, and for the examination of sputum. At the dispensaries patients would be instructed how to treat themselves and prevent their disease spreading to others. Through the agency of these institutions patients would be visited in their own homes by doctors if necessary, in any case by specially trained nurses for treatment, and the inspection of the dwelling to ascertain the conditions of life prevailing, and the risks of infection. At the dispensary also a selection of cases would be made, early cases would go to sanatoriums, and advanced and incurable cases to special hospitals provided for them.

Several other speakers addressed the meeting, and the net result was the establishment of the National Association for the Prevention and Cure of Consumption, with Sir Philip Sydney Jones as President, and Dr Zlotkowski as Vice President. It was also resolved that a national fund should be opened, that deputations should wait upon the Prime Minister of the

Commonwealth and the State Premier, and communication should be opened up with the mayors of the other capital cities throughout Australia, with a view to the formation of similar associations throughout the Commonwealth.

As a result of the initiation of this active crusade, the State Government introduced a bill into the Legislative Council to provide for the compulsory notification of tuberculosis throughout the State. Strong opposition was offered to this measure by some medical members of the Council, on the ground that the bill was too vague in not specifying distinctly the notification of pulmonary tuberculosis; that compulsory notification would inflict unnecessary hardship upon many unfortunate sufferers from the disease, as well as on their wives and families, and that notification should be made to the Board of Health, and not to local health authorities. On division, however, the second reading of the measure was carried by 11 votes to 7.

India.

[*FROM OUR SPECIAL CORRESPONDENT.*]

AN INDEPENDENT MEDICAL PROFESSION.

THE *Pioneer Mail* of September 30th contains the following article on the official scheme for an "independent medical service in India":

It has been announced that the Government of India are at present considering the replies of local governments on the subject of Lord Morley's scheme for the formation of an independent medical profession. It has not been announced, but it is none the less certain that those replies are by no means as favourable to the scheme as the Government of India in 1908 apparently expected they would be. With all the sympathy in the world for the legitimate aspirations of Young India, the local governments, of course, cannot blind themselves to the disadvantages of proposals whose effect is merely to substitute one kind of agency for another—Indian for European, the unqualified for the qualified, the temporary and independent for the whole-time, regular medical officer. The local governments have been in no hurry to send in their answers. They have, as is their wont in matters of importance such as this, given the question their full consideration; if they have any prejudices to voice, those prejudices are at least founded on something more substantial than philosophic theories as to how the world should be governed. The local governments are in closer touch with the people than Whitehall can ever hope to be; they know what their subjects emphatically do not want; and they are able to speak with authority as to their own needs and requirements. If they are unanimous in condemning a proposal—as we are quite willing to wager they are in this particular case—their views should suffice to convince most reasonable men that there is very little to be said for that proposal. We do not, of course, forget that this specious scheme for creating an independent medical profession is supposed to be a very old one; that "since 1899 successive Secretaries of State" are claimed by Lord Morley to have put forward suggestions similar to his own. But if age sometimes adds to the value of wine, the mere lapse of time does not necessarily turn the thing that has been oft repeated into mellow wisdom. Nor is it, as a matter of fact, the case that the proposals of "successive Secretaries of State" have been in any way identical. Lord George Hamilton, if we remember right, was impressed with the necessity of not allowing the I.M.S. to expand beyond the administrative needs of the country. There had already been recruiting difficulties, and supply might not, he thought, prove equal to a greatly increased demand, except at ruinous cost to the exchequer. And if Lord George Hamilton also looked forward to the growth of an independent medical profession in this country, he saw no other means of bringing it into existence than the encouragement of English practitioners to settle in India. Lord Morley has approached the question from a different standpoint His desire is that a "strong effort" should now be made to reduce the civil side of the I.M.S. "by gradually extending the employment of civil medical practitioners recruited in India." His medical scheme, in fact, is but part of the larger scheme of "breaching the bureaucracy" wherever and whenever possible. He cares less for financial considerations than for finding employment for Indian energies in every direction—a very laudable ideal, provided efficiency is not unduly sacrificed in the pursuit of well-meaning reform.

The most unfortunate part of the whole business is that the Government of India should have been so ready in August, 1908, to fall into line with Lord Morley's views; they had not referred the question to local governments, but they were none the less willing to express "their entire sympathy" with his lordship's desires. True, they advocated a cautious advance; true, too, they deprecated doing anything that should lessen the efficiency of the medical schools or diminish the attractiveness of the Indian Medical Service. But for all that their attitude was their usual attitude at that time to the Secretary of State in all matters—*Jo Hukm*. They found from inquiries they had made that "about one-third of the officers holding their civil posts could not be spared for military duty, even in the event of an emergency so grave as to require a general mobilization of the army in India," and "to the extent of that one-third" they straightway set out to consider what could be done to meet Lord Morley's wishes. The "less important civil surgeoncies" were "just the appointments in which the war reserve officers of the Indian Medical Service can most suitably be employed, and the transfer of these surgeoncies from that service might therefore cause some embarrassment and lead to increased expenditure." There remained the more important appointments of civil surgeon, the bacteriological and other special posts, and the professorial chairs; for these very few qualified independents could, indeed, be found at the moment, but a beginning might be made with the qualified candidates that presented themselves. There were difficulties, doubtless, to be overcome, but "these difficulties are not, we believe, insuperable, and they will tend to diminish with the increase in the number of practitioners who are qualified to hold such appointments (for example, of civil surgeon) and anxious to obtain them." The Government of India, as at present constituted, is not likely to be quite so sanguine on the subject as the Government of India of a year ago; it is more alive to its responsibilities and less inclined to subscribe blindly to any policy that the Secretary of State may see fit to dictate; it is bound also to give due weight to the opinions of local governments. The result may not prove to be altogether pleasing to Lord Morley, but it is to be hoped that the public which has had its interest excited over this question by the publication of official correspondence a year ago may have the opportunity of studying the whole case in the light of the fresh evidence brought to bear upon it.

The first thing that strikes one as incongruous about Lord Morley's scheme is the belief that lies at the root of it that it is possible to create an "independent" medical profession by converting a few private practitioners into Government servants. As well might one endeavour to foster the growth of a civil engineering profession by giving a few gentlemen commissions in the Royal Engineers. It is surely merely a question of the ordinary laws of supply and demand. The growth of the legal profession in this country is not to be ascribed to the opportunities offered to lawyers of judicial preferment, but to the continuously increasing demand for the lawyer's services. In all the correspondence that has hitherto passed between India and London on the subject of Lord Morley's proposals, there has, it is curious to remark, been no reference at all to the existence in this country already of a very large body of private practitioners—practising Eastern medicine. And yet it is obvious that until the people as a whole begin to lose faith in the *Ojha*, the *Kabiraj*, the *Vaid*, or the *Hakim*, there will be comparatively little call for the services of the private practitioner trained according to Western methods. Where there is a demand for Western medicine, there we need have no fear that its exponents will want for employment. But it is idle to ignore the important fact that it is only in the larger towns, such as Bombay and Calcutta, that this demand at present exists. Remove popular prejudices in favour of Swadeshi remedies and you will have removed the principal obstacle in the way of the growth of an independent profession practising Western medicine. Government can, of course, do something—as, indeed, it is doing now—towards effecting the desired object, by demonstrating the advantages of Western methods of treatment both in hospitals and dispensaries, by discouraging the "quack," and by keeping high the standard of medical education. But do what one will to bring about a change in the people's attitude, it will rest with them whether they continue to resort to indigenous therapeutics or become convinced of the greater efficacy of the treatment prescribed by the representatives of Western medicine. You can take a horse to water, but you cannot always make him drink. If he is thirsty, you will have no need of urging him to the water.

And who are to benefit under this scheme of the Secretary of State? Not the people of India as a whole; not the private medical practitioner, who has already a large practice and has no need of a Government post; not local governments, who want whole-time medical officers with administrative experience; not the Anglo-Indian official, who very naturally expects to receive medical attendance from men of his own race; but the unemployed practitioner who has failed to get into the I.M.S., has not the qualifications of the Civil Assistant Surgeon, but is to be presented with a handsome salary from the State to make up for his lack of patients. We believe we are right in saying that three-quarters of the applications the Government of India have so far received for medical appointments come from men with the lowest possible qualifications, and we greatly doubt whether as many as thirty applications have been received during the whole time the Government of India's medical register has been kept open. But even were it the case, which it emphatically is not, that the applicants are sufficiently numerous and sufficiently qualified for their claims to deserve serious attention, it would still be impossible to ignore the many objections that there are to a scheme such as Lord Morley desires to fasten upon India. What, for example, becomes of the superior attractiveness of the I.M.S. when most of the more lucrative posts are surrendered to the independent practi-

tioner? Is it not a fact that the medical papers have already taken alarm? Is it not also notorious that the general standard of candidates in the last two I.M.S. examinations is far below the average of previous years? And is it not a fair presumption to assume that the standard will fall lower still if Lord Morley's scheme is carried into effect? Further, the majority of appointments at present held by I.M.S. officers are Civil Surgeoncies whose incumbents are required to perform a great number of miscellaneous and responsible duties. Will the independent medical practitioners be willing to perform or be capable of performing these duties in the same thorough manner in which they are now performed? What control will a local government be able to exert over them if they are really "independent" and if they are inclined to shirk what may be to them very irksome work? Yet when we feel it necessary to consider the grievances of a few unemployed gentlemen, we should not forget the many interests that are likely to suffer by giving such persons employment. What is to happen to the hospitals, the gaols, and the dispensaries under a scheme of this kind; what is to happen to English officials and their families; where is a local government to get its medical officers for cholera and famine camps; where is it to turn to for trustworthy advice in its medico-legal cases? These are some of the difficulties involved in giving over important posts such as Civil Surgeoncies to "independent" practitioners. Perhaps, as the writer of the Government of India resolution of August, 1908, says, they are "not insuperable." No, it is always possible to sacrifice efficiency to policy; it is always possible to leave disease to stamp itself out; it is always possible to let it be understood that our statesmen are quite indifferent to the comforts of European officers in India, but the question is whether it is wise.

Hong Kong.

[*FROM OUR SPECIAL CORRESPONDENT.*]

JOINT REPORT OF THE PRINCIPAL CIVIL MEDICAL OFFICER AND THE MEDICAL OFFICER OF HEALTH, 1909.

Area.

THE Sanitary Board's jurisdiction extends to the island of Hong Kong, which has an area of 29 square miles, and to that portion of territory on the mainland between the shore and the first range of the Kowloon Hills, extending from the village of Tseung Kwan O in Junk Bay, on the east, to the village Kau Pa Hang on the west, with a sea frontage of about 13 miles and an area of about 16 square miles. Old Kowloon, with an area of 2¾ square miles, has been in British occupation since 1861, but New Kowloon was leased to this Government in 1898, as part of what is known as the New Territories. The remainder of the New Territories is not under the jurisdiction of the Sanitary Board.

General Sanitary Condition.

In connexion with antiplague measures to render as far as possible houses rat-proof, 391 ground surfaces in houses have been repaired, and 1,048 buildings have had rat runs filled up with cement.

The training of nullahs has been carried out to the extent of 792 feet.

A considerable improvement is always taking place in the matter of scavenging lanes; the total area of lanes obtained for scavenging purposes during the year has been 11,450 square feet, the length being 1,756 feet, while a further area of 7,906 square feet was resumed for the construction of a new roadway.

Meteorological Return.

The accompanying table records the meteorological conditions which have prevailed during the year.

The average annual rainfall during the ten years ending 1899 was 83.16 in. and ranged from 117.12 in. in 1891 to 45 83 in. in 1895; the average for the decade ending 1909 has been 81.09 in. The rainfall for last year is therefore somewhat below the average of recent years.

Population.

The estimated population to the middle of 1909 is as follows:

Non-Chinese: Civil community		14,000
Chinese:		
City of Victoria (including Peak and Stonecutter's Island)	180,750	
Villages of Hong Kong	18,800	
Kowloon	74,600	
Floating population	46,240	
Mercantile Marine	2,770	
Total Chinese civil population...		323,160
Army (average strength)		4,500
Navy (average strength)		2,217
Total population of the Colony in 1909, exclusive of New Territories (except Kowloon)		343,877

The civil population consists chiefly of male adults.

Births.

The births registered during the year were as follows:

	Males.	Females.	Total.
Chinese	874	328	1,202
Non-Chinese	170	145	315
Total, 1909	1,044	473	1,517
Total, 1908	937	475	1,412

The number of Chinese births registered does not give an accurate record of the number of births which have occurred. Owing to the custom of the Chinese of not registering births unless the child has survived for a month, and often in the case of female children not at all, it is probable that the majority, if not all, of the infants which are sickly at birth or die before they have lived one month have not had their births registered.

Month.	Barometer at M. S. L.	Temperature.			Humidity.		Cloudiness.	Sunshine.	Rain.	Wind.	
		Max.	Mean.	Min.	Rel.	Abs.				Direction.	Velocity.
	In.				p.c.	In.	p.c.	Hours.	In.	Points.	Miles p. h.
January	30.10	61.1	60.6	57.6	80	0.43	83	85 0	1.460	E by N	14.1
February	30.11	64.3	60.4	57.0	81	0.43	80	85 6	1 660	E by N	14.2
March	30.05	67.6	64 1	60.8	81	0.50	92	64 2	2.345	E	16.5
April	29.95	75.8	71.1	67 4	79	0.61	78	155.4	2.455	E by N	14.1
May	29 88	78 6	74 8	71 5	83	0.72	85	113.9	6 700	E	13.4
June	29.79	86.3	81 8	78 6	81	0.88	78	230.3	7 385	S by E	12 5
July	29.77	86.5	81 9	78.2	82	0.89	70	252 0	12 825	E by S	14.1
August	29 78	87 5	82.8	78 8	81	0.91	64	215 3	8.340	SW by S	7.8
September ...	29.78	87 0	82.2	78 5	80	0 88	63	202 6	8 505	E	9.0
October	29.89	81.5	77.8	74.0	77	0 74	80	137.5	23 985	E N E	16.8
November ...	30.07	75 5	70 4	65.4	62	0 47	57	187.1	0.065	NE by N	12.5
December	29 95	68 9	63 6	59.9	59	0 36	30	249 7	0 000	E N E	11.4
Mean or total ...	29.94	76.7	72 6	68 9	77	0.65	72	1978.6	75.725	■	13 0

Deaths.

The deaths registered during the year numbered 7,267 (9,271 in 1908). The death-rate was therefore 21.15 per 1,000, as against 27.55 in 1908. The deaths included 108 from plague (936 in 1908).

The total number of deaths amongst the Chinese community was 7,012, which gives a death-rate of 21.68 per 1,000, as against 28 35 in 1908 and 22.52 in 1907.

The deaths registered amongst the non-Chinese community numbered 255, of which 226 were from the civil population, 26 from the army, and 3 from the navy. This gives a death rate for the non-Chinese community of 12.45 per 1,000, as compared with 14.78 in 1908 and 15.46 in 1907.

DISEASES.

Respiratory Diseases.

The total number of deaths was 2,564, of which 50 were among the non-Chinese community, leaving 2,514 among the Chinese population; 823 out of this total occurred in infants under 1 year of age. The deaths from phthisis amongst the Chinese were 10.7 per cent. of the total deaths amongst that community, as compared with 9.8 in 1906—a sure indication that deaths from tuberculous disease are proportionately on the increase, although the total mortality is less.

Nervous Diseases.

The number of deaths for 1909 was 494, and of these 376 were of Chinese children under 5 years of age, 273 being infants less than 1 year old. The chief diseases were tetanus, trismus, convulsions, meningitis, and hydrocephalus (one case).

Malarial Fever.

The total number of deaths from malarial fever during the year was 422 (as compared with 499 in 1908 and 579 in 1907), of which 5 only were non Chinese, 3 being from the civil population and 2 from the troops.

Antimalarial measures were first inaugurated in this Colony in 1899, and during the past year considerable attention has been paid to this work. Special visits have been made by the inspectors in search of breeding places for mosquitos, dense tangles of brushwood in the neighbourhood of houses have been cut down, the trained nullahs have been regularly swept to prevent the formation of waterweed and algae, and standing water has in places been treated with kerosene at regular weekly intervals, while such cases of malaria as have come to the knowledge of the Sanitary Department have been investigated, and steps taken to prevent the breeding of mosquitos in the neighbourhood of such cases. Certain basements and coolie quarters were also fumigated with sulphur during the late autumn to kill off any mosquitos that might be hibernating in the dark corners of these retreats.

Beri-beri.

There were 545 deaths (736 in 1908, and 562 in 1907) from this disease, of which 3 only were among the non-Chinese community.

Infectious Diseases.

The total number of cases of infectious disease notified during the year was 292 (1,568 in 1908), of which 135 were of plague.

Plague.

There was a small outbreak of plague during the year, the total number of cases registered being 135, as compared with 1,073 in 1908, 240 in 1907, and 893 in 1906. Of these 135 cases, 91 occurred in Kowloon, and 10 were imported. The non-Chinese cases comprised 3 Indians, 1 Asiatic Portuguese, and 1 Japanese, all resident in Kowloon, and 2 Japanese cases imported from Japan. The mortality was: among non-Chinese 57 per cent., and among Chinese 81 per cent. Active antiplague measures have been employed, especially in the direction of destroying the rats A large number of small bins have been fixed to telephone and lamp standards throughout the city and Kowloon. These bins are filled two-thirds full of a 5 per cent. solution of carbonated creosote, which is changed once a week. The native population is encouraged to put all rats which they may catch or find dead on their premises into these bins. These bins are visited once daily in the cool weather and twice daily in the hot weather by rat collectors, and the rats duly ticketed and delivered at the mortuary for bacteriological examination.

When a plague-infected rat is found in one of these bins, men are specially detailed to fill up all rat runs in the houses adjoining such bin, rat poison is offered to all the neighbouring householders, and special attention is paid to the integrity of all gratings for the exclusion of rats from the houses.

During the year 60,113 were caught or found dead in the city of Victoria and 16,022 in Kowloon; on bacteriological examination, 399 of those found in the city and 108 of those from Kowloon were found to be infected with plague.

Typhoid Fever.

There were 75 cases, but of these 23 were imported. The cases of European or American nationality numbered 27, while the Chinese cases numbered 35, and 13 cases occurred amongst the other Asiatic races in the colony. Seven of the European cases, 3 of the Asiatic cases, and 23 of the Chinese cases died. The case-mortality of the European cases was therefore 26 per cent.

Small-pox.

During the year 38 cases of small-pox were certified, of which 2 were Europeans, 28 were Chinese, and 8 were of other races; 10 of the cases were imported. One Japanese and 24 of the Chinese cases died.

The number of vaccinations for the year was 6,721, as compared with 7,655 in 1908.

Diphtheria.

Twenty-two cases of diphtheria were notified during the year, one being imported; 14 were Chinese, 4 Europeans, and 4 "other non-Chinese." Eleven of the Chinese cases died, and also one Portuguese child.

Puerperal Fever.

Nineteen cases were certified throughout the year; 18 of these were Chinese, and the remaining patient was an Indian. All of these cases died.

The Government employs eight Chinese midwives, trained in Western methods, to attend the poor in their confinements, and during the year 1,381 cases were attended, as compared with 1,043 in 1908. Two of the mothers died of puerperal fever, while there were 40 cases of abortion and 46 stillbirths.

Special Correspondence.

VIENNA.

Opening Address of Professor Tandler.—Celebration of the Jubilee of Two Professors.—Free Beds in Hospitals.—Ehrlich's New Remedy and Medical Ethics.

AT the commencement of the winter session, which lasts from October to April, Professor Tandler took over the Chair of Anatomy left vacant by the death of his teacher and predecessor, Emile Zuckerkandl. The new professor is very popular amongst the students, with whom he worked indefatigably when assistant at the anatomical institute. He is an excellent teacher, whose object is to render the student as learned as possible in topographic knowledge. He referred to this desire in his opening address, when he proved how closely clinical teaching and anatomical knowledge are interlinked one with the other. Tandler's views on the question of admitting women to the universities, particularly those who wish to study medicine, have won him many friends among the "weaker" sex, and the powerful aid of this energetic champion has done much towards a solution of this problem. The first official lecture delivered by the new professor was attended by large numbers of students of both sexes, besides nearly the entire senate of the university, with whom Tandler is also much liked and esteemed.

A few days ago Professor Urbantschitsch, the well-known otologist and head of the only ear clinic in Vienna, and Professor von Reuss, the ophthalmic surgeon, celebrated their twenty-fifth anniversary as professors in the University of Vienna. Both men, who, by the way, are intimate friends, occupy an excellent position both in social and scientific circles. The jubilee of these renowned surgeons was celebrated by their numerous friends, pupils, and patients.

A bureau has recently been established in the Vienna General Hospital for the purpose of providing information with regard to free beds in the hospitals of that city. Every charitable institution in Vienna is bound to telephone morning and evening to this bureau in order to state the number of vacant beds they possess or will possess within the next twelve hours. If any of the beds reported vacant should chance to be reoccupied the fact is at once telephoned to the bureau. In this way the police "first aid corps" and similar bodies are enabled at any given moment to know immediately where to take a patient in need of hospital treatment. The chief reason for the institution of this bureau was the occurrence of several deplorable incidents last summer, when injured people were carried from place to place and died before a bed could be secured for them in a public hospital. The present epidemic of cholera in Russia and Italy has contributed in no small degree towards the perfecting of this method, which, in the case of an outbreak occurring in Vienna, would prevent dangerous patients remaining for a long time in private houses, since doctors are likewise enabled to secure a bed for urgent cases by means of the bureau.

The discovery of the excellent results of Ehrlich's new remedy for syphilitic lesions has naturally caused as much excitement and raised as many false hopes in Vienna as elsewhere. The way in which the lay press has taken up the question is much to be regretted, and it is still more deplorable that several medical men have shown themselves only too willing to have their names brought before the public by popular articles on the subject. The Medical Council of Vienna has been obliged to issue a warning to all members of the profession in Vienna to the effect that such proceedings are inconsistent with the ethics of their profession. The public have also been warned, by means of notices inserted in some of the daily papers, that no doctor, save those who have devoted much time and attention to long and minute study of the subject, is qualified either to discuss or to foretell the value of this remedy. It should be added, however, that in the clinics and other medical institutes of Vienna, some really marvellous cures have been obtained by the rapid effects of the "injectio magna sterilisans," as it has been christened by its inventor.

Correspondence.

NATIONAL MEDICAL SERVICE.

SIR,—Dr. Fothergill's quips are more amusing than accurate, and his list of "D's" might all be comprehended in the disintegration to which the methods he has recently followed seem to tend. His formulation in Questions 2 and 3 of the issues at stake may be accepted if he will omit the phrase "as in private practice," which begs the questions on many points. The profession is, however, neither so impractical as to come to a decision without regard to the political considerations, nor so unscientific as to believe that the sickness risk is incalculable *if a sufficient time be taken*. Within our own profession the thing has been done, and any one who has given attention to the annual reports of the Medical Sickness Society knows that the actuary has foretold the risks with astonishing accuracy, and that, starting with a membership less than the *clientèle* of a single doctor, the society has established a strong position on an experience of years which include several epidemics of influenza.

As Dr. Taylor and I do not agree with Dr. Gough, it is evidently impossible that we can ever be "representative," but after his futile if dramatic exit the profession may regard knowledge of affairs a matter of some importance. There are other scenes to follow his, and Dr. Gough's position would seem to imply that they are to be transacted in the absence of the profession until the question is, to put it individually, "Will you do the work on these terms?" In this there are possibilities which Dr. Gough evidently does not realize, but which the past experience of the Association in dealing with charity and with conditions of professional employment has forced upon its attention, and which might perhaps justify the prolongation of the interview with the Chancellor into a conference where both parties might achieve a fairer definition of the mutual position than Dr. Gough succeeds in giving it.

Many of the arguments that have been advanced in this discussion show that the writers regard insurance more as a gamble than as a scientific process. Thus it has been stated that the profession should not be asked to bear the risk; but in ordinary life the risk is borne by the accumulated premiums, and not only the risk, but a very handsome profit as well, and Dr. Gough may take it for granted that if the profession should ultimately agree on a *per capita* system of payment, it will not be to save bawbees to the Chancellor of the Exchequer, but because better remuneration for the profession can be secured under it.

After all, the best method of securing remuneration and satisfactory relations to the individual patient is the essential question, and on Dr. Fothergill's figure of 10s. per head the income of a doctor who was responsible for the domiciliary treatment of an average parcel of 1,500 members of the population would be £750, and if he were popular enough to draw his patients from a parcel of 2,000, he would have exactly £1,000 a year and would know that it was secure as long as his personal relations to his patients were satisfactory. Possibly some members of the profession would be willing to give their whole time at this rate.

At the close of his letter Dr. Gough makes a proviso which it would never have occurred to me that any responsible member of the Association would neglect, but which points out a danger the general practitioner will be exposed to if in arriving at its decisions the Association should show the same oblivion of the conditions of the problem as has been done by the irresponsible but undefined group with which Dr. Fothergill wishes the Association "to come into line."—I am, etc.,

Dundee, Nov. 26th. R. C. BUIST.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—I may be somewhat obtuse, but I find it difficult to follow Dr. Buist's arguments in the opening paragraph of his letter in the BRITISH MEDICAL JOURNAL of November 26th. He says: "Is it too much to presume that most of us now recognize that the Chancellor of the Exchequer is likely to provide for his share of the sickness cost by paying each year what is actuarially deemed an adequate premium? If not, we must consider the issues to the profession from the various possible ways in which the fund so created can be managed."

The "If not" seems to me decidedly ambiguous (1) If it means that it *is* too much for us to presume that the Chancellor will do so-and-so, the rest of the paragraph is a *non sequitur*; (2) if it means that the Chancellor will *not* create a fund in advance, then the rest of the paragraph is a contradiction. Perhaps Dr. Buist would make his meaning a little clearer.

But why is Dr. Buist so anxious to do the thinking for the Chancellor of the Exchequer? I should have thought that the right hon. gentleman was quite capable of thinking for himself. However, the Chancellor has frequently expressed his wish to hear *the views of the profession*, presumably as to the conditions upon which they will undertake medical attendance under a State sickness and invalidity scheme. All that we, as medical men who are to be asked to do certain work for the State, are concerned with is that the conditions should be in accordance with the principles of professional freedom and honour, allow of free scope for the best scientific work in the prevention and treatment of disease, and afford adequate remuneration for services actually rendered. Given these conditions, the methods of obtaining and disbursing the money are details which can be safely left to the Treasury Department of the State and its illustrious head for the time being.

There are, to my mind, only two alternatives in securing these conditions: (*a*) Properly salaried whole-time medical officers; (*b*) ordinary qualified private practitioners chosen by the patients and paid for services rendered according to an adequate scale or tariff of fees.

Scheme (*a*) is, in my belief, not practicable at present, although it may ultimately be resorted to.

Scheme (*b*) is capable of immediate application and is, in my opinion, the *best for all concerned*. I need not here reiterate my reasons for this opinion.

The scheme of a public medical service on contract practice lines which is favoured by the Special Poor Law Committee of the Association (not because they think it best for the profession or the public, but because they think it is what we shall get, and, therefore, we should fold our arms meekly and accept the inevitable with the best grace we can), gives no guarantee whatsoever of adequate remuneration to the medical men concerned for services actually rendered, whilst it undermines completely the principles of professional freedom, and limits seriously the scope for the best scientific work. It is a truism, which the Chancellor himself will probably be one of the first to recognize, that "no overworked and underpaid worker can give of his best in his work," and this applies more, perhaps, to medicine than to most things, for the medical man's work, in general practice at any rate, "is never done," and so much is bound to be left to individual effort and initiative.

Be a medical man ever so altruistic, when he knows that, however much or little attention he devotes to his cases his pay will always be the same, he is bound in the long run to diminish his zest for work, and ultimately to impair his sense of responsibility. It will be but a poor offset against this to urge that by pleasing his patients he may be able to extend his *clientèle*. The paths of pleasing one's patients and of doing one's duty to them by no means always coincide. In short, the method of contract practice tends to the glorification of the slipshod, the hypocrite, and the timeserver, whilst the honest, hard-working, and scientific practitioner will be discountenanced and discouraged by intolerable conditions of practice.—I am, etc.,

Bowdon, Nov. 26th. P. R. COOPER.

SIR,—Week by week many a one beside myself doubtless sighs with relief when on opening his BRITISH MEDICAL JOURNAL he sees a most illuminating letter from a Dr. Harry Grey or a Dr. P. R. Cooper—to mention two splendid examples only.

They do seem to have grasped the urgency of the passing hours. It would be difficult, I think, to overestimate the effect of their letters; I verily believe they, and such as they, are welding us together at last.

If they would permit the medical profession to be still further beholden to them, will they not lay their heads together and summarize briefly and tersely the practical essence of the question over their joint signatures? They would thus be giving the very lead so urgently needed.

I would further suggest that the Divisions could not do better than severally adopt such memorandum—a memorandum signed by Dr. Grey and Dr. Cooper would carry immense weight. Moreover, if the various Divisions had under discussion the same memorandum, and if they could give it their uniform support, then we could say that we were really getting "forrarder."—I am, etc.,

November 28th. HANTS.

LOCAL HEAT AS A DIRECT CAUSE OF MOLLUSCUM CONTAGIOSUM.

SIR,—As the outcome of recent discussion, in which many distinguished dermatologists have engaged, we may claim that the connexion between molluscum contagiosum and the Turkish bath, to which I called attention many years ago, is now pretty generally recognized. Contagion by contaminated towels seems to be generally suspected. Will you allow me to remark that from the first I have never advanced the opinion that this is the only possibility for our consideration. As facts have accumulated I have felt more and more inclined to believe that it may, perhaps, not be a question of contagion at all, but simply the result of exposure to heat. The following are some of my reasons for this creed: In the cases, now so numerous, in which the eruption has followed the bath, I am not aware that in any single one has the source of contagion been traced. Amongst cats and dogs, in which I have seen a few cases, it is to those animals which love to bask in front of the fire and upon those parts which are exposed that the spots occur. My most definite fact is, however, the following: That in one case under my own observation, as a sequel to a slight scald on one forearm, a crop of molluscum followed. Spots of molluscum sometimes occur on the back of the foot in men who are in the habit of toasting those parts on the fender.

If it be asked as to the supposed connexion between heat and molluscum, I may reply that, although the old belief that sebaceous glands become molluscum spots is now discredited, there is yet something to be said in support of its modified acceptance. It may be that incompletely suppressed gland-structures are their sites. Such structures must for certain exist in the skin in varying stages, and may be liable to be stimulated into unusual local active and somewhat erratic growth.

In 1888, the date of publication of Crocker's first edition, that able author, after full discussion of the modern opinions, wrote as follows: "The resemblance to gland structures is very complete, and the old view that the tumour is merely an enlarged and changed sebaceous gland is still supported by Vidal, Kaposi, Hutchinson, Tilbury Fox, Walter Smith, etc." Of those here named two only, I believe, survive. For myself I may record that I still hold to my opinions if we may express them in more accurate terms. The molluscous tumours are morbid developments from embryo glands rather than completed glands which have been "enlarged and changed." The distinction is important, for it explains amongst other points the well-known fact that the contents of a molluscous tumour, although looking like sebum, is not identical with it in all respects.

We know that the seeds of certain conifers rarely germinate excepting after a forest fire, and that certain weeds and fungi are apt to spring up where patches of heather have been burnt.

That in the development of molluscum the portions of tissue plasm which undergo these peculiar developments are in some way associated with suppressed sebaceous glands I am, as I have said, old-fashioned enough to still suspect, offering at the same time all due apologies to more advanced microscopic observers.

It may be said that my suggestions are mainly conjectural, but I think that they have a solid basis of probability on facts. We have admitted the doctrine of contagion in molluscum, and if we now, having thus explained the mode of transference, accept heat exposure as a cause of *de novo* origin, this singular disease will, I am sanguine, have been fairly well explained.—I am, etc.,

The Polyclinic, Nov. 27th. JONATHAN HUTCHINSON.

ALCOHOLISM AND DEGENERATION.

SIR,—Professor Karl Pearson now admits that Miss Elderton and he never ascertained, in beginning their investigation, the essential datum whether the alcoholism in the parents came before or after the child, although their memoir purported to be an inquiry into the effect on offspring of the taking of the drug alcohol by parents.

In other words, Professor Pearson and Miss Elderton admit our charge that their "first study" has no scientific "basis."

Professor Pearson says that another memoir by Miss Elderton and himself is coming out, and quotes a long paragraph from it which, unfortunately, adds nothing to the subject at issue, and does not even contain a plain confession of, nor apology for, the point established against their research, that it is not founded on the only basis possible—namely, facts about the habits of the parents before the birth of the children.

Professor Pearson's allusion to Dr. MacNicholl's work interests us because it shows that Miss Elderton and he are at last beginning to admit the existence of a literature of this subject and to study the work of investigators who have preceded them, which literature and work they dismissed in their memoir with contemptuous scorn (see pp. 1 and 32).

Finally, we are not "proposing to root up the basis" of his and Miss Elderton's memoir, because, as we have shown, it has no basis.

We observe you publish a letter from some one signing himself "Your Contributor." In any case we must decline

to notice anonymous attacks, but we must again point out that the editorial column of our JOURNAL is being used in an undesirable manner. In our first letter we showed that you, Sir (no anonymous or irresponsible person), in treating this subject editorially, had offered to the public, in the name of the JOURNAL, certain conclusions as scientific which were admittedly based on mere conjecture.

We regret that we must conclude this letter by entering a protest, as members of the Association, against this method of dealing with a national question and against any transference of the official responsibilities of editorship to a nameless individual who has been allowed to interpose in this discussion.—We are, etc.,

MARY D. STURGE.
London, W., Nov. 29th. VICTOR HORSLEY.

THE REACTION OF THE HEART TO DIGITALIS.

SIR,—Dr. Thomas Lewis's paper on the reaction of the heart to digitalis when the auricle is fibrillating, published in the JOURNAL of November 26th, is characterized by the carefully built-up ratiocination which is the feature of all his work, which it is a pleasure to read, even though one fail to arrive at the same conclusion as he suggests or reaches. He is one of the few investigators in this country who is in a position to discuss authoritatively the phenomena revealed by the string galvanometer—an instrument with which the clinical physician is scarcely likely to become expert for some time to come. Our diagnostic armamentarium has already become sufficiently bulky to prevent our regarding with enthusiasm the installation of a physiological laboratory as a necessary adjunct to our professional paraphernalia. Should the practical utility of this, however, be demonstrated we shall, no doubt, resignedly build outhouses for the accommodation of such further aids to diagnosis as the inconsiderate ingenuity of physiologists may thrust upon us! Dr. Lewis's galvanograms I shall not presume to discuss in the following remarks.

With the caution characteristic of his logical mind, Dr. Lewis merely suggests, at present, the possible correctness of Professor Cushny's view, that the ventricular slowing resulting from vagal stimulation "is the outcome of an increased obstruction to the passage of impulses across the auriculo-ventricular junction," and in support of such a possible interpretation he gives some arterial and venous tracings, in which, with a fibrillating auricle, stimulation of the vagus caused the usual retardation of ventricular action.

As regards the nature of the venous wavelets whose summits are minutely divided by an *a c* nomenclature in a tachycardial pulse such as is shown at the commencement of Fig. 2, I do not wish to say more than very respectfully to suggest that they are probably more carotid than auricular. When the heart is retarded the distinction is, of course, clearer.

But the point to which I wish to call attention is that the effect of vagal stimulation, although differing in degree, appears to be the same in kind on auricle and ventricle in the tracings given. The action of both is modified.

The "fibrillation oscillations," for example, of Fig. 3 coincide with the prolonged diastolic pause of the ventricle in the lower tracing and the 2-1 rhythm of the previously tachycardial auricle in Fig 2 corresponds with the brady-cardial retardation of the ventricle in the same figure. If depression of the auriculo-ventricular conduction account for the ventricular state, how are we to account for the comparative retardation of the auricle? Is there a depression also in the activity of the sino-auricular node? Or is it due to a direct neural inhibition of the contractility of the muscle-cell itself? In this connexion the results recently obtained by Dr. Flack, if accepted, have a certain interest. He found that after clamping the sino-auricular node stimulation of the vagus failed to inhibit or retard ventricular action.

That injury to the auriculo-ventricular bundle, or clamping the auriculo-ventricular junction—whatever the structures involved—alter the sequence of auriculo-ventricular action may be admitted, and it is in no spirit of carping criticism of the very interesting work which has lately been done in this sphere that I write, but I would suggest that our eyes have been too much focussed of late on the muscular origin and conduction of cardiac activity, somewhat to the detriment of the cultivation of the still obscurely known anatomy and physiology of the cardiac nervous system. Like Dr. Lewis, I merely deal at present in suggestions, but consider it quite as probable that further work will indicate that the effects of vagal stimulation and the action of digitalis in retarding ventricular action will be found to be due, at least in large measure, to the direct action of the nervous system upon the transpontine ventricular muscle as to an abasement by them of the conductivity of the bridge itself. In this connexion it would have been interesting had Dr. Lewis included in his experiments the atropination of hearts in which he had induced fibrillatical diastole of the auricle before stimulating the vagus. Atropin, I suppose, it will be suggested raises the conductivity of the auriculo-ventricular bundle, just as digitalis depresses it.—I am, etc.,

London, Nov. 28th. ALEXANDER MORISON.

ADIPOSIS DOLOROSA.

SIR,—I was much interested to read of the supposed cases of adiposis dolorosa which were shown at the clinical meeting of the Royal Society of Medicine on October 14th. The disease is not common in England, but in Sweden one always comes across two or three cases which are being treated when visiting the different gymnastic and massage clinics in Stockholm.

The preponderance of this disease in Sweden in comparison with the very few cases met with in England struck me very forcibly. It is more common in women than with men. In casting about for a cause one's thoughts naturally turn to the kind of alcohol consumed in the country; in this instance it was not Swedish *punsch* that was the transgressor, as some of the patients were children, and no history of alcoholism could be elicited from the patient.

Adiposis dolorosa, or panniculitis as it is termed in Sweden, is regarded as a neurosis, and the sympathetic nervous system is looked upon as the anatomical lesion. Most of the women under treatment were of neurotic type. In some cases I have observed that the abdominal muscles were tender and inflamed. A common place to find panniculitis is between the umbilicus and the pubes, and at the costal margins. It is sometimes distributed all over the body in small patches, one patient had a patch on the tip of her nose, on her forehead, and on the skin covering each mastoid process. Arvedson, in his *Anteckningar i Sjukdomslära för Sjukgymnaster*, gives the following causes of adiposis dolorosa: General feebleness, deficiency in the quantity of blood, the tight lacing of hard corsets, the wearing of heavy and coarse clothing, and obesity.

Whatever may be the cause in individual cases, the disease rapidly responds to massage and gymnastics properly applied.—I am, etc.

London, W., Nov. 23rd FREDK. F. MIDDLEWEEK.

TREATMENT OF ENLARGED PROSTATE WITHOUT OPERATION.

SIR,—In the EPITOME, BRITISH MEDICAL JOURNAL, June 11th, Siter is quoted as advocating dilatation of the enlarged prostate in cases unsuitable for operation. I have achieved success with a simpler method even than that, in a patient of 85 with dilated heart, and quite unsuitable for operation. Retention occurred as the result of enlarged prostate, requiring constant use of the catheter. I tied in a soft one for a few days with the result that he recovered the power of micturition, which he retained until his death, some months after. I was so impressed with the result that I have tried the same method since successfully.—I am, etc.,

Oamaru, New Zealand. ALBERT I. GARLAND.

CORONERS' LAW AND DEATH CERTIFICATION (AMENDMENT) BILL.

SIR,—As the writer of the letter so kindly referred to by Dr. Distin in your issue of November 19th, I am pleased to hear that the doctors of Enfield have combined to oppose this bill. Nevertheless, for the reasons given by you on November 26th, I am withholding a memorial which I had myself printed for circulation. At the same time I see no excuse for apathy on our part. Granted that the Council with its Parliamentary Subcommittee will do

its best, what hope have we that it will succeed better than heretofore? What guarantee is there that "the opposition to the bill in the House by the means habitually at its disposition" will be more potent than the futile efforts to which we are so well accustomed? Surely it is plain that from lack of adequate representation we are always powerless in the House of Commons, and that action, to be effectual, must be taken outside of it. *I would urge that we act for ourselves.* Let the subject be discussed by every Branch of our Association throughout the country, and let all practitioners be invited to attend the meetings or contribute opinions. The changes put forward in my memorial as essential to the present bill are:

1. As regards clause 17, if it be retained, provision should be made for payment of a fee of 2s. 6d. for every death certificate, with an additional fee for mileage on some such scale as is at present allowed to certifying surgeons under the Factory Act.
2. As regards clause 19, if it be retained, that the period allowed be extended to forty-eight hours, or, where the distance to be traversed exceeds ten miles each way, even more.

I regard the payment for mileage as most important, as it is the journey, and not the inspection nor the certificate, which costs us time and money. These are merely suggestions which seem to me reasonable, but I submit that the matter is not complex as are the schemes for State medical insurance now under discussion, but simple, and that therefore a common agreement could and should be arrived at concerning it, *and the sooner the better.* Agreement once attained we should pledge ourselves to accept no less, so that when any further attempt is made to impose upon us in the House, *at once, without any delay*, every member of Parliament may receive a memorial signed by practically every practitioner in his division expressing their objections clearly. Such strong and concerted action would render ignorant and offensive legislation on this matter impossible; it would also—and this is far more important—teach our legislators a much-needed lesson, which, as I said before, would be of incalculable benefit to the profession when, at a date probably later, Poor Law reform and similar measures come to be considered. I imagine that upon this matter we are practically unanimous. Do not let us allow so rare an opportunity for united and timely action to pass neglected, for such may not recur, or may recur too late.—I am, etc.,

November 26th. Another Country G. P.

EPSOM COLLEGE.

Sir,—As one who has a son at Epsom College, I can in general fully endorse your commendation of the school—its buildings, laboratories, and teaching, and the supervision exercised over the boys (vide British Medical Journal, November 26th, p. 1731). At the same time, I think that in some respects it might be improved. The school is governed by a council almost wholly composed of medical men, and it should, therefore, be as perfect as possible from the medical and hygienic standpoints.

I make the following criticisms:

1. The dress prescribed for the smaller boys is the Eton suit. However "nice" an Eton coat may be for "dress" occasions, for routine wear it is quite unsuitable for the schoolboy. It is generally made of thin material, has an open front, and leaves the loins exposed to chill. A more unhygienic garb can hardly be conceived, and the sooner such an absurd regulation is rescinded the better.

2. There is no regular medical inspection of the boys. For a public school governed by a medical committee such an omission is inexcusable. Every boy should at the commencement of each term be looked at by the medical officer, his heart sounded, and his weight, height, chest measurement, and general condition at least recorded.

3. I doubt if enough sleep is allowed the smaller boys in the Lower School. All authorities are agreed as to the importance of adequate sleep for young growing boys.

4. In the Lower School tea or cocoa and bread-and-butter only are provided for six o'clock tea—the last meal after an arduous day. Something more ought to be provided, and it is a bad and obsolete system to *expect* a regular meal to be supplemented by additional provisions provided by the parents.

5. In some of the class-rooms the windows are of corrugated or similar glass. Provided the class is not too large and the teaching sufficiently good to fix the attention of the pupils (as it ought to be), such an arrangement to prevent wandering thoughts is unnecessary and bad.—I am, etc.,

November 26th. Parent, M.D., D.P.H.

MEDICAL LAW REFORM.

Sir,—The letter of Dr. Seymour Taylor does not suggest that he is very fully acquainted with the fundamental facts of the subject on which he addresses you. Like the bulk of the profession, he no doubt is so far preoccupied by scientific work or by practice as to have little time to devote to such questions. Otherwise he might know that it is almost entirely owing to the inaction of the profession that medical law reform is not now much further within the range of practical politics. The case for reform is unanswerable, overwhelming, and if the Association or any organized and sufficiently large body of medical men will force the question to the front, will work for it by every legitimate means, and subscribe the necessary funds, there need be no doubt that a Medical Act putting an end to most of the existing evils and abuses can within a reasonable time be placed upon the Statute Book.

It needed very slight exertion on the part of the Council of the Association to stimulate the activity of the General Medical Council. This has led to an inquiry by the Local Government Board at the instance of the Privy Council, and to the publication of the Blue Book of which you gave a brief epitome (p. 1729). This episode is suggestive of what further effort may lead to. It can be demonstrated that medical law reform, whilst it would be of advantage to the profession, would confer vastly greater benefits upon the people, and especially the poor and ignorant, who have most claim upon the guardianship of the State. It can be shown that quackery, by its injury to the public health, makes work for medical men, and that from the sordid point of view its suppression would not be altogether a source of gain to them.

As it has been found possible to prevent by law the existence of an unqualified solicitor under any false pretence, so it may be found possible to prevent an ignorant and fraudulent quack from palming himself off as a legally qualified practitioner. Very little amendment of existing statutes is needed to put a stop to a great part of the traffic in worthless nostrums and bogus apparatus. Many proprietors of these articles could at once be put in the dock on the charge of obtaining money under false pretences if a public prosecutor were appointed with the duty of enforcing the law. Every hospital throughout the country can furnish evidence constantly that quackery practice by ignorant pretenders—and the traffic in sham remedies which forms a cloak for much illicit practice—is not only fraudulent, but cruel and murderous. In every hospital are to be discovered numbers of patients with simple maladies rendered chronic, and serious diseases brought beyond the reach of science, in consequence of delay whilst the poor dupes have been relying upon the false promises of quackery.

I still hold that a Royal Commission offers the best means to unfold the tale before the intelligent public and the Legislature, especially in view of the fact that the great bulk of newspapers are to all intents and purposes suborned by quackery, and are mostly silent if not opposed to reform. It is impossible that a satisfactory Medical Act can be carried by a private member. It is certain that no Government will take the matter up unless its attention is forcibly directed to it. The Association, if it cares to exert itself, has, I believe, the power to carry the whole thing through with or without the aid of a Royal Commission. It could prepare a case such as a Commission would produce, and the book *Secret Remedies* suggests the lines on which this would run. I would urge the appointment of a special Law Reform Committee, with power to raise a fund for their purpose. If this idea can be adopted I will gladly guarantee £50. My position for years has been one of complete detachment from ordinary professional life, and I have never acted as a medical practitioner. My motives in devoting much time for many years to this subject have been two. First, I sympathize deeply with the profession in the humiliating and shameful position in which it is left by the State, that exacts so much from its members and owes so much to medical science. Secondly, I sympathize

with suffering humanity. There exists already a great deal too much preventable human misery, and it is intolerable that increase of this should be possible to so enormous an extent through lack of the simple laws needed to put a stop to the practices of the most cynical and cruel section of the great army of criminals of every class now parasitic upon society.—I am, etc.,

Redhill, Nov. 26th. HENRY SEWILL.

SIR,—Dr. Seymour Taylor has rightly pointed out that the general public have difficulty in distinguishing between registered medical practitioners and those who are not registered. There must be thousands of people in this country who err through ignorance every week.

It should be the duty of a Government to ensure that, at the least, folk could destroy themselves with their eyes open. In some of the colonies it is the custom to display at the post office a list of properly qualified persons residing in the district; this cannot be a very expensive proceeding.

Failing the Government, we might very well crucify ourselves. The Secretary of the Stock Exchange finds it advisable to advertise periodically in the press that members are not allowed to advertise themselves. Stockbrokers are business men and know what pays them; but a similar statement on the part of the medical profession would be the sheerest altruism, for unqualified practice, though deadly to the public, is without doubt of ultimate financial benefit to us. The cost of such advertisement might in part be met by mulcting of their attendance fees members of the General Medical Council, who would probably suffer gladly in such a righteous cause. —I am, etc.,

Brierley Hill, Nov. 27th. S. K. VINES.

A PROFESSOR OF MEDICAL ETHICS AT MEDICAL SCHOOLS.

SIR,—The growing responsibility to the State, to their own profession, and to humanity at large, which is being forced on the medical profession, renders it highly desirable that a professor of medical ethics should form part of the establishment of every medical school. There are many points on which medical men need teaching outside the purely technical details of their work, and some specialized and responsible person should undertake this duty, in my opinion —I am etc.,

GEORGE J. H. EVATT, M.D.,

London, W., Nov. 19th. Surgeon-General, late A.M. Staff.

BRITISH MEDICAL BENEVOLENT FUND.

Grant Account Overdrawn—Support Urgently Needed.

SIR,—At the last meeting of the committee I had to report that the grant account on the bank was overdrawn to the extent of £250. In spite of this the committee had to deal with so many and distressing applications that the sum of £300 more was voted, with the result that the deficit now amounts to about £550. Fortunately we have been able so far to meet these demands out of the reserves accumulated at the time of our special appeal two years ago. There is but little more left, and unless further supplies are quickly forthcoming it will be necessary to refuse help to many deserving cases, and that at the time of year when help is most needed and applications most numerous. We spend all we have, but we cannot spend what we have not got.

I appeal therefore to members of the profession to come to the support of the Fund, and save it from the pain and reproach of having to refuse relief for want of means. Subscriptions and donations may be sent to me. *Bis dat qui cito dat.*—I am, etc.,

SAMUEL WEST,
Honorary Treasurer, British Medical Benevolent Fund.
15, Wimpole Street, W., Nov. 29th.

SHIP SURGEONS.

SIR,—Since giving up my London practice I have had experience of several ships, both as surgeon in large passenger ships and in military transports as civil surgeon, in all parts of the Pacific Ocean, and have often talked with managers and owners of shipping lines upon the subject of the small pay they give us, and the difficulty of obtaining fees in these days from first and second class passengers. The passengers are not aware that the shipping laws do not permit of them obtaining the services of their surgeon without charge. Surgeons appointed to passenger ships are only supposed to attend upon the ship's crew and the third class passengers without charging them fees. What we are really "up against" is this. All shipping managers keep lists of the names of young graduates from the various colleges and universities within easy reach of them who are desirous of taking a sea voyage to recuperate after their long hospital curriculum. These gentlemen are willing to take over a ship for little or nothing in the shape of pay, and the managers are quite aware of this, and make use of them accordingly. The Toronto and Montreal Colleges supply most of the young surgeons, who, as a rule, are very capable and intelligent men. This is a difficulty which, I fear, will prove formidable in surmounting.—I am, etc.,

HARVEY J. PHILPOT,
L.R.C.P.Lond., M.R.C.S.Eng., Crimean Medallist.
Vancouver, B.C., Oct. 20th.

DR. HADWEN AND THE "CRIMSON CROSS REMEDIES."

SIR,—I do not propose to bandy words with Dr. Drury. He asks me to "kindly drop quibble and evasion and answer the plain and simple questions he addressed to me in his second letter." I have "taken the trouble to read again" that somewhat extraordinary epistle published in your columns of November 12th, and he really must blame my thick-headedness and not my lack of desire when I repeat that I fail absolutely to find anything to reply to. Surely he does not expect me to waste your space in publishing rejoinders to all his sarcastic comments upon my letter of June 13th! Life is too short for that sort of thing.

Dr. Drury's letter to me of June 5th, 1910, was as follows:

> If you have any details concerning the marvellous efficacy of the Crimson Cross Remedies in Small-pox said to have been "investigated" by you, I should be glad to publish the same if you will kindly allow me to do so.

I gave him all the fullest details that lay in my power, in a letter, the nature of which was apparently as unexpected as it was unwelcome to your correspondent. I offered in addition (an offer I have since repeated) to show him or any one else he may choose to appoint my case-books, and give any further explanation personally that I was able to supply. He does not appear to be very ready to avail himself of my candid offer, but, apparently, prefers to cast veiled doubts upon my rectitude and to pose as the champion of the BRITISH MEDICAL JOURNAL, which, in my opinion, is quite capable of taking care of itself.

As an apparent make-weight to what your correspondent evidently feels to be a very weak position, he introduces a quotation from a speech I delivered in London some two and a half years ago, which he terms an "exceedingly offensive pronouncement." As it has nothing whatever to do with the subject in hand, I am afraid I must conclude that he felt "a bit spiteful" in firing this Parthian shot! He concludes by asking me:

1. To "answer" his enigmatical queries.
2. To "complete my defence of the Crimson Cross Remedies."
3. To "enter on my own defence" of the paragraph he quotes.

In reply permit me to say:

I leave him master of the field on the first point.
I have nothing to add upon the second.
I beg to be excused as to the third.

—I am, etc,

Gloucester, Nov. 28th. WALTER R. HADWEN.

LIFE IN THE OPEN.

SIR,—If rooms open on all sides, without fire and heating apparatus, are good for the sickly, then the sooner houses are built upon this principle for the healthy the better. But before inducing architects to plan any such dwellings, it would be as well to ask Dr. Halliday Sutherland whether he can point to a single race dwelling in cold, damp, uncertain climates without any protection save the roof, and whose average duration of life is above that

of the more civilized races who shelter themselves from rain and cold. Damp, according to my belief, is what we have especially to guard against. For the treatment of phthisis the warm, damp climates, such as Torquay, Hastings, Mentone, etc., have almost entirely passed out of favour, and I do not think any one would recommend for this disease a cold, damp one. The places now considered most favourably are the cold and dry, such as Davos, Wiesen, etc. Warm, damp climates tend to increase rather than lessen germ life. It is wonderful how in the treatment of whooping-cough protection from cold, north-east winter winds and damp saves children from bronchitis and pneumonia. By changing them from room to room, having the windows open as soon as they leave, then closed, and the room thoroughly warmed before they return, there is no difficulty about the matter of fresh air. In my opinion the present routine method of suggesting fresh air under all conditions will be very materially modified in the near future. It is now admitted that the open-air treatment will not do everything in cases of phthisis.—I am, etc.,

Bexhill-on-Sea, Nov. 7th. F. P. ATKINSON.

"PUERPERAL FEVER."

SIR,—Under the above misnomer, which should have been "puerperal septicaemia," Dr. Bottomley, in the JOURNAL of November 12th, states: "The prevention of such cases lies in a proper cleansing of the patient's skin before parturition, and in applying dressings (?) afterwards in a manner at least approaching that used after operations." I regret I cannot agree that his recommendation would, even if strictly observed, fail altogether in preventing many cases of puerperal septicaemia

One source which I have myself found on several occasions (and which Dr. Bottomley's suggestions could not possibly prevent) is a lacerated surface in the vaginal wall or cervix uteri sustained during the course of labour, and, as the perineum escaped injury, this cause was, of course, unlooked for by the attendant. I well remember such cases being a puzzle as to cause—which could not be traced to either tactile examination, soiled diapers, sewage, etc. It is quite obvious, should an extensive lacerated surface exist in the vaginal wall or cervix uteri, and should the patient's discharges become abnormal (and by the supine position generally observed for several days after childbirth assist in the absorption of such discharge into the torn surface), puerperal septicaemia will certainly follow, so that "the neglect of the two precautions" which Dr. Bottomley mentions is *not altogether responsible* for the continued mortality outside lying-in hospitals, which he states is "1 in every 450 parturient women." How many of the fatal cases were due to self-inoculation?—I am, etc.,

London, W., Nov. 14th. ALEXANDER DUKE.

THE BIRTHPLACE OF MODERN SURGERY.

SIR,—In the interesting article under this heading in the JOURNAL of November 26th, you say that the Glasgow Royal Infirmary . . . "may justly be regarded as the birthplace of modern surgery." That fact should be common knowledge.

The article ends with these words: . . . "certainly the world has learnt the name of Lister as marking not only the beginning of scientific surgery, but an era in the history of mankind. And Glasgow can never forget that it was in the wards of its Royal Infirmary that his great work was begun." I wish, Sir, that after "begun" you had written "*and completed.*" All that is essential to his great work Lister taught in full while he was Professor of Surgery in the University of Glasgow and Surgeon to the Royal Infirmary of that city. We, Sir, who in those days were his pupils, are, I venture to think, not to be blamed when we seek to emphasize the fact that, in what is essential to it, the work which ranks Lister high among those who have done most good to mankind was both begun and completed in the Glasgow Royal Infirmary.—I am, etc.,

November 29th. G. A. HERON.

"ANTITUMAN" IN CANCER.

SIR,—Without wishing to express any dogmatic opinion on the possible merits of "antituman," as commented on in the BRITISH MEDICAL JOURNAL of October 15th, I would like to point out that the idea of evolving some curative or immunizing agent from these structures—cartilage and fibrous tissue, say—which seem to show almost i not complete immunity from all forms of malignant invasion, is by no means confined to the brain of Professor Oestreich. Every pathologist must know that the arteries are never invaded even if surrounded by malignant growths. The same is practically, but to a minor extent, true of cartilage. Now why is this? That is just the crux.

Within the past twelve months I have discussed, or, rather, brought under the notice of the curator of the cancer research laboratory at our university here, this interesting fact, with a view to some experimental work on animals affected with malignant growths, suggesting that possibly curative results might be procured from an active extract, if such could be procured from, say, the aorta of an ox. My idea was, and still is, that these structures which show complete immunity from invasion must contain within themselves some antibody or secretion which is inimical to the growth or cell proliferation of malignant growths. Some ten years since I noticed, on making a *post-mortem* examination of a man who died from carcinoma of the neck, and on whom I had tried formalin injections into the tumour, the common and external carotid arteries embedded in a homogeneous cancerous mass involving all the soft structures, superficial and deep down to the bone, but the arteries were quite free from the least sign of invasion, and seemed to "tunnel" the tumour. Since then the idea has had a firm place in my imagination that the cause of this, if ever explained, will probably also be the precursor of the cure.

Up to a certain point my theories are at one with Professor Oestreich, but when it comes to be a question of procuring or extracting from these "immunized," if I may use the expression, structures any salt of soda or salt of anything else, and expect that single chemical product to produce curative effects, then we part company. Assuming there is such a chemical substance, found only in cartilages and the walls of arteries, it does not necessarily follow that this single substance should contain curative or immunizing properties; and, *per contra*, if it does not contain such properties, it does not follow but some other substances might be extracted which might contain them. In my humble opinion, the substance to be sought for must be a vital and active constituent of the cells of these tissues—a secretion, if you will; or, to take a more comprehensive view, a substance containing all the active substances—for example, extracts of these tissues. When such a substance is produced I hope for good results.—I am, etc.,

Liverpool, Oct. 18th. J. D. MCFEELY, F.R.C.S.I., etc.

CANCER OF THE THROAT.

SIR,—In the space available for the consideration of an etiological problem the immediate practical utility of which may not at first sight be apparent, your abstractor of my inordinately lengthy communication has given remarkably well quite a number of my arguments.[1]

Two important new conclusions in that paper, however, arising out of the zoological distribution of cancer, are not presented lucidly or in accordance with my text.

The first should read thus: Cancer has never been found in invertebrates, but only in vertebrates. Common to both of these classes are nervous, muscular, digestive, circulatory, respiratory, excretory, secretory, and reproductive systems. Vertebrates in addition have (1) endoskeleton, (2) portal system, (3) lymphatic system. This association of those three systems last mentioned with cancer in vertebrates, and in them alone, is in favour of my working hypothesis as to the production of cancer by the concurrent irritation and cachexia arising out of the deranged functioning of (1) and (2) in the manner explained in my present and previous papers submitted to the profession, while (3) comes in handy for the dissemination of the cancer cells after they have been made such.

The second should read: Malignant tumours are twenty times more frequent in man than in animals, and epithelioma thirty-six times more frequent in the former than

[1] BRITISH MEDICAL JOURNAL, November 26th, 1910, p. 1717.

the latter. Sarcoma is only four times more frequent in man than in animals. Epithelioma, therefore, is nine times as frequent as sarcoma in erect man. Epithelioma and sarcoma are equally frequent in pronograde animals. *Man's erect posture* is thus associated with a *greatly increased* occurrence of sarcoma and an *immensely greater* occurrence of epithelioma. My hypothesis offers a reason for these disproportions, since faulty erect postures and correlated breathing defects increase intrinsic stress, strains, and frictions. The same explanation applies to the disproportionate increase of epithelioma in man, mainly due to increased incidence in the food tract. It is the digestive tube especially that gets rubbed, pressed, and stretched if erect posture and breathing are faulty.

The correct and clear enunciation of these two conclusions is important. I believe they cannot be ignored in any future consideration of the causation of cancer.—I am, etc.,

ROBT. HY. SCANES SPICER, B.Sc., M.D.Lond.

London, W., Nov. 26th.

MASSAGE OF HEART IN CHLOROFORM COLLAPSE.

SIR,—In Mr. J. Wallace Milne's phenomenal and unique case of massage of heart in chloroform collapse, published in the JOURNAL of November 19th, anaesthetists, physiologists, and physicists will find material evidence for sober and rational contemplation. Here we find a strong man in the prime of life, absolutely free from organic disease, but with a mental dread of chloroform which killed him while under its influence, brought to life by a procedure which, for ingenuity of conception and boldness of execution, has never been surpassed in the annals of medicine. "By a squeeze of the heart the dead man was made to live." It must be remembered that every known means had been unsuccessfully tried to restore animation. Doubtless there will be much unprofitable discussion brought to bear upon this case, of a similar nature to that which has engaged the medical profession for so many years relative to respiratory and cardiac failure during the administration of anaesthetics, and which has so far led to little practical value. The number of deaths during anaesthesia has for some years been steadily on the increase in spite of skilled manipulators of unquestioned ability. On this account I venture to place before your readers the following method of electrical treatment in chloroform collapse, which may lead to more beneficial results than those measures usually adopted in such a condition. I should not do so if I were not impressed with its possibilities. A combined electric current should be used of *plus* faradic strength. Of the two electrodes the positive should be of small size (stabile) and applied to the throat, the other (labile) should be made of a large sponge attached in the ordinary way to a wooden holder. The current being turned on, the negative sponge electrode should be quickly applied with considerable pressure into the hypogastric, left hypochondriac, and iliac regions. Possibly some of your readers may say electricity has been tried and found wanting, but my strong point is the precise method of application.—I am, etc.,

T. STRETCH DOWSE.

Exmouth, Nov. 21st.

SIR,—I must congratulate your correspondent, Mr. J. Wallace Milne, on his lucky escape from a chloroform fatality. The case, from Mr. Milne's description, was obviously one of chloroform overdosage, and it would be interesting to know the method of administration employed, the amount of chloroform used, and the exact period of time which elapsed between the commencement of induction and the appearance of the critical symptoms. The recent investigations into the action of chloroform show—and my own clinical experience bears out this—that the man who attempts to induce chloroform anaesthesia in a strong healthy male in the prime of life, in the space of four minutes, runs serious risks of overdosing his patients, with more or less unfortunate results.

As regards treatment by heart massage, I think the type of case recorded by Mr. Milne is one in which it is likely to be successful. On two occasions on which I have seen the treatment adopted both patients died in spite of it. Both, however, were individuals of feeble musculature, in whom reaction to stimuli of any kind would probably be considerably impaired.—I am, etc.,

Birmingham, Nov. 19th. L. KIRKBY THOMAS.

SIR,—I have read with interest and profit the letter in the JOURNAL of November 19th on massage of heart in chloroform collapse, and desire to call attention to one paragraph: "All went well for about four minutes, and he was just under," "I was about to commence," etc.

I beg to suggest that so short an interval of time as four minutes is quite insufficient for the production of such a degree of anaesthesia as indicated without the administration of a too highly charged vapour of the anaesthetic.—I am, etc.,

November 23rd. IGNOTUS.

TREATMENT OF SCHOOL CHILDREN.

SIR,—As one present at the meeting of the British Medical Association, held the other evening under the able chairmanship of Dr. Ryle, to discuss the question of school children found upon inspection to be defective, may I be allowed to further point out one or two items which the meeting seemed to have lost sight of?

It was suggested that the children should be taken to the houses or surgeries of the doctors willing to act for the educational authorities—this in lieu of a special centre or clinic.

May I point out in treating that bugbear of all medical men—namely, ringworm—I take it that the most effectual and up-to-date treatment is by the *x* ray. How many medical men are there who possess in their houses or surgeries the elaborate paraphernalia appertaining to such treatment?

Medical and surgical treatment has now got to such a pitch that, in order to treat the children as they should be treated, and as I shrewdly suspect the Educational Council wish them to be treated, every individual medical man will have to fit up his house as a small hospital in order to cope with the renewed exigencies of the times. An impossible state of affairs for medical men to compete with.

There is still another fact I should like to draw attention to, and one that seems to have escaped notice so far. All over the country there is a very powerful and Ancient Order of Foresters, who have what is called a juvenile branch, into which branch are admitted members from the age of *one year*.

Now these children, I believe, are taken on at the rate of one halfpenny per week. If, therefore, the parents are served with a paper to take to a doctor, they naturally go to the doctor which is provided by their Order, who, if he does not possess the *x* ray, or is unable to cope with adenoids or skin trouble, will promptly hand them over to the hospitals, as is now done. What with good class tradesmen joining clubs, midwives attending accouchements, school children treated at hospitals, it is time, I think, the General Medical Council woke up, before the good ship "General Medical Practice" quite sinks under the waves of "Everything for nothing."—I am, etc.,

Hove, Nov. 23rd. LOUIS DODS.

DRAUGHTS.

SIR,—One has heard of people—physicians even—imagining they had perforated gastric ulcer, typhoid fever, aneurysm, etc., when in reality they were quite well. But this does not make the diseases in question any less real—no one doubts their existence. Similarly, because some people are supposed to *imagine* that certain ailments of which they complain are caused by draughts, it is surely unwise to come to the conclusion that draughts are never injurious. We are all agreed that plenty of fresh air and a healthy mouth are necessary for perfect health, but that there is danger in having air (fresh or otherwise) administered to us in the form of draughts there can be no question. A draught is difficult to define, but I venture to submit the following:

Air which differs from the surrounding air in velocity, or in temperature, or both, to such an extent that certain well-recognized physiological and pathological effects are in consequence produced in a normal individual suitably

clothed and fed, and exposed thereto for a reasonable period, constitutes a draught.

Draughts may be local or general. Suppose one is chatting to a friend in the street and feeling quite comfortable; suppose, now, we go a few yards further and stand at a corner where there is a draught; if we stay long enough we get, either at the time or later, a feeling of chill, and certain well-known signs appear—in short, we "catch cold." While we were talking in the street our heat-regulating mechanism (of which the vasomotor and sweat-secreting nerves are the main factors) was "set" to accord with the external climatic conditions, but when we suddenly moved to the corner in a "draught," our heat-regulating mechanism did not at once adapt itself to the altered circumstances, and so by convection an unusual amount of bodily heat was lost through the skin. Soon the superficial arterioles vigorously contract, causing a certain amount of stasis in the cutaneous and subcutaneous tissues, with retention of waste products normally given off in the form of sweat. Thus the action of the vasomotor nerves produces a reflex shiver, and the retained waste products the "cold." If the draught happens to be largely composed of sewer gas or carries a lot of dust, the "cold" will be more severe, as the vitality of the body is temporarily lowered through losing an excess of body heat. A local draught—that is, one playing on a limited area of the body, has similar local effects (producing stiff neck, neuralgia, etc.), which may, however, become general if one's sojourn in a draught is a prolonged one, causing, as before, excessive loss of body heat and accumulation of toxins. It would appear from this that it is better (for most of the people in a railway carriage) to open the windows wide at each stopping place—in cold weather in this country at any rate—than to travel with them open.

People differ very much in their reaction to draughts. A small, stout man, having little body surface, radiates a comparatively small amount of heat as compared to the tall, thin man. Moreover, the fat of the stout man tends to prevent heat loss by conduction and convection. Then there are good and bad circulatory systems. In one man the metabolic processes may be perfect, ensuring a high standard of body heat, in another they may be feeble, so that he must conserve carefully (by clothes, good food, avoiding cold, draughts, etc., as much as possible) what little body heat he can produce. We should not think of advocating open-air treatment for myxoedema or Addison's disease, for example. In the case of pulmonary tuberculosis where there is hectic, or continued rise of temperature, fresh cold air undoubtedly does good, because the fresh air inhibits the exciting cause of the disease, and the cold acts somewhat like a continuous cold bath in carrying off the extra heat due to excessive metabolic activity—the skin being kept active by bathing and rough towelling to help in the due disposal of the waste products and the bacterial toxins. But in the case of very feeble tuberculous subjects whose temperature is subnormal, and who, therefore, are not producing a sufficiency of body heat, there is no doubt whatever that, although they should be supplied with an abundance of fresh air, *it should be warmed and free from draughts.* Otherwise they are losing more body heat than they can afford, and so are still further lowering their vitality. Similar effects to those produced by a draught can, of course, occur if a person stand outside on a cold day without adequate protection in the shape of coats, etc., after being in a hot room or after violent exercise, and for the same reasons.

Finally, while all agree that fresh air is a desirble and, indeed, necessary for health, it is, I hold, essential for each one—according to his special requirements—to conserve his body heat (so that he has a feeling of comfortable warmth) by woollen clothes, good boots, suitable food, artificial heat if the weather or other circumstances demand it, and avoidance of "draughts."—I am, etc.,

Liverpool, Nov. 21st. ANDREW S. MCNEIL.

A CAUSE OF DEATH AFTER OPERATION FOR APPENDICITIS.

SIR,—I was much interested in Mr. H. H. Brown's article on "A Cause of Death after Operation for Appendicitis," as I recently had a case somewhat similar, but fortunately without a fatal result. The patient, a boy 8 years old, was operated on by me for an appendix abscess a week after the onset of his illness. I contented myself with draining the abscess and putting a tube down to the foot of the pelvis as recommended by Dr. Murphy, of Chicago. The after-treatment consisted in Fowler's position with a continuous rectal saline. A few hours after operation the temperature rose to 104°, and the pulse to 150, and the boy was seriously ill. He was stimulated with strychnine and brandy, and within twenty-four hours was in a satisfactory condition. At the time, I considered that my patient was suffering from acute toxaemia without infection, and that the prognosis was fairly good, because soon the absorption would cease and, as elimination is good with rectal saline, it was merely a question of stimulation for a short period to see the patient past his danger. The day after operation the whole surface of the wound was in a grey sloughy condition as if it had been burnt with an acid, showing the extreme toxicity of the escaping pus, though previous to operation, after the shaking-up due to a fifty mile journey from the back country, his temperature was not above 102°. I quite believe that if I had done more than drain the abscess I should have had a different result, for by opening up a larger area for absorption the boy would have had a fatal dose of toxins. After ninety-six hours or so the adhesions have become vascularized, and when broken down allow of great absorption from the raw surface.

I think that Mr. Brown's conclusion as to the time for operation is unfortunate, for there is no doubt in my mind that the sooner pus is evacuated the better for the patient, for, besides the risk of general peritonitis, there are the greater dangers of pylephlebitis and subphrenic abscess. My own opinion is that the time for operation is when the diagnosis of appendicitis is made, and, acting on that principle in 30 cases, I am happy to say that I have lost none. On the other hand, I have been greatly relieved when I opened the abdomen of a patient with very mild symptoms to find that my faith was justified on coming across a gangrenous or perforated appendix.

The high death-rate from this disease is due entirely, I believe, to late operation—not always the fault of the surgeon—and to operations performed on wrong principles, chiefly the desire to do more than is necessary to save the patient's life—namely, mere drainage in abscess cases.

Another important point is that drainage in these cases can be effected through an incision merely large enough to admit two fingers, thus minimizing the risk of weakening the abdominal wall.—I am, etc.,

Gisborne, New Zealand, Oct. 13th. W. CARLYLE WILSON.

THE CAUSE OF APPENDICITIS.

SIR,—The fact that so many diverse opinions are expressed regarding the etiology of appendicitis shows that we are far away from a knowledge of its specific cause or causes. Some lay the blame on tinned foods, some ascribe it to constipation, some to the seeds of fruits having been inadvertently swallowed, and Mr. Turle in his letter in the JOURNAL of November 19th states: "As far as the food goes the argument will not do." I think we may discount the theory regarding the seeds of fruits: first, because I have known several patients who had an attack of appendicitis who declared they had not eaten fruit of any kind for years previous to the attack. Schoolboys are the ones that mostly swallow the seeds of fruit, and I do not think there is evidence to show that they are attacked much more frequently than adults. The constipation theory does not explain the facts. It is a tempting theory, and while in some individuals it may be a predisposing cause, it, in itself, is not operative. In my experience of the disease, people who are habitually constipated are not the class who have appendicitis at all. This seems rather paradoxical. They do not have that type of constitution that renders the individual liable to the disease. The type is rather those with regular bowels, and only occasionally constipated.

My object in writing this letter is to draw attention to the close connexion there seems to me to be between tuberculous disease, enlarged tonsils, and appendicitis. I do not wish to assert that the tubercle bacillus is the cause of enlarged tonsils or appendicitis. That, so far as I know, is neither proved nor disproved. But what I wish to assert is that these three diseases occur chiefly, if not entirely,

in the tuberculous stock. This is an induction drawn from a considerable number of cases observed over a period of years. Others may be able to support or negative the view as a result of their experience. The tonsil in the throat and the so-called tonsil of the bowel (the appendix) have much in common anatomically and pathologically. They both are largely composed of lymphoid tissue, the tissue that the tubercle bacillus—and I may also add, the *Bacillus typhosus*—strikes by predilection. They are both very liable to acute inflammation, ending in abscess or perforation. The medicinal treatment of both that I have practised during the last ten years has been very satisfactory—that is, to give aconite with opium, pushed until pain is entirely subdued, with a very restricted liquid diet.

A medical friend informs me that for years past he has treated cases of appendicitis with sodium salicylate, a drug that has been praised recently by Dr. Eustace Smith.

If, as many believe, tonsillitis is a rheumatic affection, it may be a fruitful study to inquire how far the appendix is influenced by the rheumatic state. To those who are interested in tracing constitutional tendencies to disease, I humbly suggest the following inquiry to be made in cases of appendicitis:

1. Is the patient the subject of habitual constipation or not?
2. Has the patient been troubled with his tonsils?
3. Is there any undue tendency in the family to tuberculous diseases or enteric fever?—I am, etc.,

Glasgow, Nov. 21st. JOHN T. MACLACHLAN.

SIR,—Is appendicitis relatively as common in India as in those countries that have the "latest sanitary conveniences"?

I mention India (*a*) because the great bulk of its population defaecates in a natural position; and (*b*) because, being under the eyes of so many well-trained doctors, we seldom read reports of operations for appendicitis.

The appendix contains a large number of solitary glands, and it is not unreasonable to believe that, in the primitive mode of defaecation, the secretion from these glands is squeezed out into the bowel, as Nature intended it to be.

Perhaps some members of the profession practising in districts in India where there is an absence of the usual watercloset will be good enough to inform us whether appendicitis is relatively as common as in England.—I am, etc,

Skegby, Notts, Nov. 21st. W. C. RAINSBURY.

SIR,—Appendicitis was rare twenty years ago, but as soon as influenza appeared in this country the number of cases increased enormously. We all know the bacillus of influenza is always with us, and that it retains its vitality for months outside the human body, only awaiting a suitable soil to start breeding; we also know that this bacillus is responsible for inflammatory attacks of the lungs, kidneys, bowels, etc.; why not the appendix?

Before the outbreak of influenza twenty years ago, I did not see more than one case yearly that might have been an inflammation of the appendix, neither do the death returns in this town about that period show any record of cases of death from peritonitis or perityphlitis. Since then I have at least twenty cases yearly, very few of which would have recovered without operation. Multitudinous causes are given for what is now a veritable scourge, but personally I am quite convinced that the influenza bacillus is the cause in 90 per cent. of the cases of appendicitis.—I am, etc.,

Dovercourt, Nov. 21st. H. GURNEY.

MECHANO-THERAPY AND DISEASE.

SIR,—I read with pleasure Drs. Cyriax's letter in the JOURNAL of November 12th, approving of and commenting on Dr. Bryce's article on mechano-therapy. I am glad to see that the profession is at last turning its attention to the much neglected subject of manipulation surgery. It has not received this attention in the past. Some of its methods are mentioned in textbooks and to a slight extent described. To an equal extent they are practised in actual surgery classes. But it must in all honesty be admitted that no great degree of care has been taken to describe minutely or practise carefully these methods. It has never been thought of sufficient importance to give a brief but minute description of all the ligaments, tendons, cartilages, articular surfaces, etc., concerned in their regional anatomical relations in the particular pathological condition under consideration. It is true they are taught in the anatomy and pathology classes, but it would be well that a brief but minute description should be given in the surgery class-rooms when describing the method concerned. More stress might be laid upon observation of the parts at which pressure, rotation, etc., would be applied in order to produce a certain result in employing manipulative treatment. How many dislocations of the larger articulations are for any length of time tried to be reduced by manipulation pure and simple without the use of an anaesthetic? Very few. I grant that anaesthesia in many cases of dislocation is a boon, but what of these in which a patient's condition does not permit of an anaesthetic? In these cases skilled manipulation is required so as not only to accomplish the reduction by the joint, but to do this in the easiest and most scientific manner, so as to save the weakly patient from shock. It must be granted that in such cases—and they are not few—manipulative surgery is exceedingly valuable, and should therefore have a special degree of importance in the curriculum.

This is one reason. But there are others. Take a case of what is popularly known as "lawn-tennis knee." In this affection we know how difficult it is to return the cartilage to its proper place, and yet how advantageous it is to have a cure effected without having recourse to an operation which lays open to the air, with its millions of germs dangerous even in the presence of the most careful and rigid application of strictly aseptic measures, and of a temperature which cannot always be so regulated as to correspond exactly with temperature of the delicate structures which enter into the composition of a joint—an operation, moreover, which naturally leaves a scar, which, as we know by experience, is much more susceptible to any malignant influences to which the patient may be predisposed than with an unaltered skin. In this particular affection manipulative measures have, in the hands of a skilful operator, given absolutely successful results.

Further, in most spinal cases, where straightening would be advisable, cutting would be absolutely iniquitous, especially as the bends generally depend on the hardening of *many* vertebral articulations. Therefore, the correcting of the curvature would be effected by the treating of each articulation. In such cases manipulation by skilful hands gives most brilliant results, especially in children.

A case recently treated by myself—that of a lady patient who had suffered from severe rectal discomfort for many years through the coccyx pressing into the bowel. This, I believe, had been caused by a fall on the buttocks dislocating the coccyx at the sacro-coccygeal articulation. In course of time, this being unreduced, partial ankylosis took place, with the result that the sacro coccygeal articular surface of the coccyx projected backwards, and the point pressed into the rectum. The patient was put under chloroform, and with one finger in the rectum and my thumb as a lever pressing on the partly ankylosed articulation, I steadily pulled on the point of the coccyx with the forefinger which was in the rectum, and by doing this several times strongly, steadily, and yet without any jerking, the coccyx was brought to a perfectly favourable position. As a result, the rectal trouble has disappeared. That this is not by any means new I know, but I am firmly of the belief that even in the severest cases, in 999 out of 1 000, intelligently applied manipulation will accomplish all that more drastic surgical operation can do, and with none of the dangers of the latter.

Manipulative surgery can only be learnt by practice. It does not mean merely pulling, breaking down adhesions, etc., but consists of carefully regulated movements, and in such cases as the last mentioned there must be a very fine appreciation of the amount of pressure, straining, etc. (as it would seem in the operator's fingers), so as to be able to "feel" just how far he may strain to come just near to the amount which would cause a fracture or a rupture, *and yet not actually cause either.* Practice alone gives the operator this "force-gauge" feeling in his fingers.

Drs. Cyriax recommended that those who are well

known experts in these methods and have practised for years, and whose knowledge and experience would be of great value, should be placed on a register, and so remove any barrier to free exchange of ideas and experience between them and others. I have had opportunity of meeting and seeing the work of one at least of the most famous experts of this art and have seen more of its great possibilities than I had dreamt of, and I would be glad to learn more. I therefore very earnestly support the suggestion by Drs. Cyriax and devoutly hope the Medical Council will speedily take action in this important matter.—I am, etc.,

London, W., Nov. 23rd. A. A. PHILIP, M.B., C.M.

PROVISION FOR THE INSANE POOR.

SIR,—With reference to a letter from Dr. R. C. Stewart, in the JOURNAL of November 19th, p. 1658, headed "Provision for the Insane Poor," may I point out that of the asylums for purely private patients, practically all the registered hospitals and most of the licensed houses will take patients for 30s a week? Many of the larger will do so for less. There is no lack of accommodation in private asylums for cases on such terms.—I am, etc.,

Rotherham, Nov. 21st. GILBERT E. MOULD.

KANGRI-BURN EPITHELIOMA.

SIR,—In the JOURNAL of September 24th Dr. H. D. McCulloch raises some interesting questions. I do not, however, think that the Kashmir epithelioma supports a "riverine or alluvial" theory of the origin of cancer. In Kashmir itself the disease is also found in mountainous districts. The freedom of the mountainous districts of Ladakh, Skardo, Poonch, and Kishtiwar, with all of which I am familiar, is due to the fact that the kangri is not used there by the general population. The people, too, wear a distinct dress, so the conditions are quite different.

Our observations on the condition of the lymph glands are based, not on mere palpation, but upon examination after removal of many hundreds. Infected glands soften early. When they break down they cause diffuse infiltration. In their early stages on section they show grey spots or patches, and later on soft granular pultaceous areas, which are found to consist of large epithelial cells of the same type as those of the primary tumour. These are arranged concentrically, the more central cells being laminated and horny.

There is no doubt whatever that this material is highly infective locally. In my opinion, however, the infectivity is an attribute of the altered and highly proliferating epithelial tissue cells. The primary growth is evidently due to intermittent heat irritation. As a result of this, the cutaneous epithelium appears to escape the trophic nerve control which maintains the balance of growth, and the epithelial cells get, as it were, out of hand. The result is a double process. Large masses perish from want of nutrition. Gangrene, ulceration, and septic infection follow. Other cells, actively proliferating, enter the lymphatic circulation.

That epithelioma may be produced by such widely differing agents as the administration of arsenic, the use of *x* rays, the application of caustics—themselves powerful antiseptics—the irritation of heat applied to various parts of the body, the action of chemical irritants—soot, lime, betel chewing, etc.—is most suggestive of a causation of epithelioma which is not parasitic. The special tendency of the reproductive system to epithelial cancer, especially in women, and the influence of the internal secretion of the ovary on mammary cancer, also point in the same direction.—I am, etc.,

Kashmir, Oct. 11th. ERNEST F. NEVE.

A POSSIBLE FALLACY IN FEHLING'S TEST FOR SUGAR.

SIR,—With reference to the correspondence in the issues of the JOURNAL for October 15th and 22nd *re* reduction of Fehling's solution by urine containing formalin, this reaction is, of course, characteristic of aldehydes as a class. Indeed, it seems likely that the reducing sugars owe their power of reducing Fehling's solution to their possessing the $C\overset{O}{\diagdown H}$ radicle common to aldehydes, and they may, in a sense, be regarded as aldehydes, behaving in many ways as such.

There are so many other possible fallacies in connexion with Fehling's test, especially when the suspected urine contains only a small quantity of sugar, that it seems desirable at least to confirm the reaction.

I have for some years used an excellent and delicate test, first shown me about ten years ago by Dr. Lloyd Jones of Cambridge, but as it appears to be little known I will describe it.

Sodium nitrophenyl-propiolate, which is obtainable in soloids containing ½ grain, is dissolved with the aid of a little heat in water, preferably distilled, the proportion being one soloid to about 10 c.cm. of water. To this solution a few drops of the suspected urine are added, and it is boiled for a short time. The presence of sugar is indicated by the formation of "indigo blue," the solution becoming decidedly green.

This reaction is brought about only by glucose and lactose, no other reducing substance commonly found in urine, such as glycuronic acid or the products of drug elimination, causing it. As lactose is rarely found, even in the urine of pregnant or nursing women, the fact that it gives a positive reaction with the indigo test places the latter at no disadvantage, seeing that lactose will reduce Fehling's solution, even in the cold.

Curiously enough, the presence of formalin *prevents* the occurrence of the indigo reaction, but, as Dr. O'Kelly points out, making the urine alkaline with ammonia and then boiling decomposes the formalin (hexamethylene-amine, a condensation product, being formed), and if glucose or lactose be present, the indigo reaction now comes off as usual.—I am, etc.,

Great Malvern, Oct. 25th. J. N. F. FERGUSSON, M.B.

BAD PROGNOSTIC SIGNS IN ECLAMPSIA.

SIR,—I was much interested in Dr. Shaw's article,[1] on some bad prognostic signs in eclampsia. As a prognosis is always demanded of the doctor in this alarming condition, anything that assists us in forming an opinion should have due weight. It will be of interest, therefore, if others can state their experience as to the signs mentioned—namely, small amount of albumen, a high temperature, and commencement of fits after labour. I have some notes of half a dozen cases of those that I have attended during the last twenty years, in which I find that my experience, though much more limited than Dr. Shaw's, agrees remarkably closely with his as to the first two signs. As regards the last, I have not yet had a case in which the fits have begun after completion of the labour. The age varied in the cases of which I have notes, from 16½ to 43 years. The onset was before or during labour.

Albumen was present in all, in large quantity in the 3 that recovered, in small amount in the 3 fatal cases. The temperature was normal, or below 100°, in the 3 non-fatal cases, above 100° in the fatal ones. In the young girl there was total suppression from the time I saw her, and the temperature reached 104°.

The drugs used were morphine and chloral and bromide injections, with jalap in some cases. No drugs could be administered to the youngest patient. I have found Bozzi's dilator of the greatest assistance in two of the later cases, delivery being effected in each case in less than forty-five minutes, dilatation to 4 in. diameter occupying half an hour. In the other cases dilatation was effected with the fingers and forceps applied. The eldest patient, a primipara of 43, gave me a most anxious time, but here prompt delivery by means of the dilator, followed by bleeding, hot packs, and intravenous infusion, saved the mother's life. Two of the children recovered.—I am, etc.,

Coventry, Oct. 31st. R. CARMICHAEL WORSLEY.

EXPRESSION OF THE LENS IN ITS CAPSULE.

SIR,—With reference to Lieutenant-Colonel Henry Smith's, I.M.S., remarks on "extraction of the lens in its capsule," it seems hardly fair to say that the conclusions arrived at in the article referred to in the JOURNAL

[1] BRITISH MEDICAL JOURNAL, October 29th, p. 1306.

f August 27th are based on Major Kilkelly's paper. Several ophthalmic surgeons besides Major Kilkelly have given their opinions, and their names have appeared in ophthalmic journals as well as in the article referred to by Lieutenant-Colonel Smith.

Lieutenant-Colonel Smith's arguments in favour of the operation he favours by his technique are very much weakened by not meeting their arguments in the proper spirit through your journal instead of referring them to a coming early issue of the *Ophthalmic Record of Chicago*, which is deferring the question.

One is reminded when referring to Smith's, or "Jullundur Smith's," operation, of a question I once heard which was put by a certain gentleman, who was the son of a bookseller, to a professor, in the presence of divines, "Whether the professor (naming him) was the author of that famous little book on *Mental and Moral Science?*" "No, sir," said the professor, "the author of *Mental and Moral Science* was my author."

I feel sure that many of us who are interested greatly in the various methods of operating for cataract would be prepared to meet Lieutenant-Colonel Smith as fairly as possible. I for one would, and be glad to suggest that in the presence of a just and fair tribunal of ophthalmic surgeons, either in this country or in India—India, perhaps, by preference, as Lieutenant Colonel Smith would say—100 suitable cataract cases for operation be given each operator who desires to claim attention to his particular method. Let each operate in accordance with his own particular technique, and, finally, let the percentage of successes, failures, and accidents be made known to the world by the tribunal. Lieutenant Colonel Smith, I understand, claims priority by a particular technique *of his own*, and prefers no iridectomy. The accidents, etc., already mentioned by Major Kilkelly and others are avoided in his hands, and therefore the results are superior.

I venture to predict that, given 100 suitable cases in India or anywhere, the opinion expressed in page 565 of your JOURNAL would be justified not only in Europe, but all over the world.

If it be proved to be so in India, then it would only be fair for Lieutenant-Colonel Smith to pay our expenses; but if it is not so, each should pay his own.

The time occupied in the voyage to and fro, and spent in India to see the cases through, would probably occupy about three months altogether in the cold season, which is the best for such operations. Would some of the gentlemen who are interested in cataract operations take up this suggestion and be willing to champion their cause by sending in their names?—I am, etc.,

October 15th. G. H. FINK, Major, I.M.S. (ret.).

DIAGNOSIS AND TREATMENT OF SYPHILIS.

SIR,—We always read with interest anything which Major French may write upon the treatment of syphilis, and we have carefully perused his letter in the JOURNAL of October 15th. Like him, we are not disposed to place too implicit reliance upon the presence or absence of Wassermann's reaction in coming to a diagnosis, for our experience is that perfectly definite cases of syphilis, with actual lesions at the time of examination, may repeatedly give negative reactions, while Major French can also quote cases to show that the test is unreliable.

It is, therefore, somewhat illogical on his part, after having shaken one's belief in the reliability of Wassermann's test, to proceed to argue that treatment by inunction of mercury is superior to that by injection, because, *inter alia*, Mr. McDonagh has "found that it was almost a rule to obtain a 'negative' reaction after a patient had had a course of inunctions, or *less frequently injections*." The Major has committed a serious error in tactics by admitting that he does not believe in the reliability of the Wassermann test, and then making use of the above quotation. We have not yet seen any cause to abandon treatment by intramuscular injections, which, *if properly carried out*, is perfectly safe.

Of the 26 fatal cases to which Major French refers, we have access at the moment to the details of two only, which occurred in the troops of the Egyptian Command in 1901. In both, we consider that the injections were pushed beyond the limit of safety, and no proper investigations were made by *x*-ray examination and analysis of the urine, to ascertain whether absorption from the muscles and elimination by the kidneys were proceeding satisfactorily during the administration of the injections.

For private practice, in this country, we consider injections immeasurably superior to inunction, and any of our patients who have had experience of both methods are of the same opinion.

We have long ago given up the use of the arylarsonates, which were never entitled to half the virtues attributed to them by a handful of incautious enthusiasts. Like Major French, we have a high regard for Donovan's solution, and we think it is much to be regretted that old and tried remedies, which have stood the test of time, should be abandoned for more unsafe and less efficacious products of the chemist's laboratory.—We are, etc.,

G. STOPFORD TAYLOR,
Liverpool, Oct. 18th. R. W. MACKENNA.

MEASUREMENT OF CAPILLARY VELOCITY.

SIR,—In the discussion on the circulation, at the recent meeting of the British Medical Association, Sir James Barr described his method of measuring capillary velocity, namely, by pressing the blood out of a definite area, say on the back of the hand, and then observing the time it takes to return. Whatever value this plan may have as an index in some cases, it cannot be relied upon in all. In the first place, return does not always come from the periphery alone, but some blood comes up from deep vessels. But, more important, if a bandage is tied so as to obstruct the veins from the part, without interfering with the arteries, the time of return is shortened, and to a greater extent the more completely the flow through the veins is stopped. So that this method is a measure, not so much of the actual velocity in the capillaries, as of the pressure.

It is not by artificial or mechanical means alone that this venous obstruction to the capillaries can be brought about. For instance, a few days ago I was called to see a child asphyxiated at birth. When I arrived about an hour after the birth, most of the body had regained its normal colour, or want of colour; but the hands and feet were still very blue, and I was surprised to find how quickly a pressure spot on these parts became obliterated. Now the condition of the circulation here could hardy depend on general blood conditions, which elsewhere seemed normal. It seemed to depend on obstruction to the escape of blood from the parts, possibly by constriction of the venules; while the force of arterial blood pressure was being received all right.

Again, see what takes place on walking out, with uncovered hands, on a cold day. The parts at first bloodless become blue, and finally, when heated up, red. In all likelihood these changes depend at first on contraction of the vessels, especially the arteries; then the arteries begin to relax, while the veins are still contracted; finally both relax, the changes in the arteries still keeping ahead of those in the veins. If while the veins are still contracted the arteries become very much dilated, it may lead to the early stages of inflammation, but to bring this about, it probably takes more than mere vascular changes.

Perhaps it may not be out of place to add a few words as to how cold affects the vessels. The sensation of cold is so associated with anaesthesia that it may be looked upon as the first stage of it; on the other hand, that of heat very quickly passes into that of pain.

When a part becomes exposed to such a degree of cold as to cause a sensation, the arteries contract, and circulation is reduced till the part becomes anaesthetic; at least to the degree of cold present. When released from the restraining sensation the arteries relax, and the hot blood, coming in contact with the cooled nerves, gives the sensation of heat, and, if the difference in temperature be much, of actual pain; so that one's own blood may feel painfully hot. These sensations encourage the opening up of the vessels, and oppose any constricting effect of the cold, should it continue to act. As soon as the nerve endings become of the same temperature as their stimulant the blood, the sensation ceases.

This mechanism probably also plays a part in neuralgia, migraine, and like conditions.—I am, etc.,

Castlewellan, co. Down, Nov. 8th. HUGH J. MCNABB.

HAEMORRHAGE OF THE NEWBORN.

SIR,—I am much interested to read Dr. T. F. Forster's note on Haemorrhage of the Newborn, as I have quite recently had such a case myself.

On paying one of the usual *post-partum* visits to a mother on the second day after her confinement, I was astonished at being told that the newborn child had passed a quantity of blood both by the mouth and by the anus during the night.

The diapers and soiled gown were shown me, and I estimated that nearly half a pint of blood had been passed. I gave a rather grave prognosis and prescribed a bismuth mixture (which was never needed) after examining the child, who was sleeping peacefully and was apparently none the worse.

No further haemorrhage occurred, and the child has gone on satisfactorily.—I am, etc..

Thornton-le-Dale, Oct. 27th. HOWARD G. PESEL, M.D.

SIR,—The case quoted by Dr. Forster in the JOURNAL of October 22nd recalls a case I had a year ago. The child in this case was one of twins, but delivered quite easily. Two days after birth it suddenly passed large quantities of bright red blood per rectum, and rapidly became very blanched. Bleeding continued for two days almost continuously. I gave the child tinct. ferri perchlor. mij every two hours and injected saline solution every four hours; the bleeding stopped suddenly, leaving the child anaemic for at least nine months, in spite of iron being given. I could find no cause for the haemorrhage or any account of similar cases in the textbooks. I thought this case might be of interest.—I am, etc.,

H. W. OGLE-SKAN, M.R.C.S., L.R.C.P.

London, N.W., Oct. 25th.

SIR,—With regard to the report of a case of haemorrhage in the newborn in the JOURNAL of October 22nd by Dr. Forster, I was not aware that it was such a rare occurrence, if such be the case. I would like to add two cases which have occurred in my practice as far as I can remember. In the first case, some years ago, the symptoms were exactly as described by Dr. Forster, but the infant died. In the second case the symptoms were similar; on the second day the baby vomited blood, about half a cupful at a time, till it lay absolutely blanched and apparently dead. Moreover, it passed blood by the bowels, similar to that which it vomited. This condition lasted for a week or ten days, and I was continually being called in as the child was believed to be dead. In this case the child did not take the breast, so for the first week it was fed on milk and water by teaspoonfuls and given doses of bismuth; subsequently it could take the bottle, and gradually recovered, and now is 6 years old, a strong, healthy young girl. For three years the child would take nothing but milk from her bottle, and for that time took nothing else, so in this case the child did not have the breast, and could not have taken any blood from that source. I was quite surprised that the child could survive after so much haemorrhage.—I am, etc.,

Hanslope, Oct. 26th. W. A. EASTE.

LEUCODERMA AMONG PARSIS.

SIR,—In Bombay many cases of leucoderma occur amongst the Parsis in increasing number at present. No one here can account for this increase of cases of leucoderma, especially amongst the Parsis. Of course cases do occur in other castes too, but compared with the population of the Parsis, the percentage of cases amongst them is very high lately.

Some explanation has been given of late of leucoderma in some articles in the BRITISH MEDICAL JOURNAL, but nothing is known of its causation. It is a pity that no one has as yet discovered the cause or the treatment of this skin disease, and no one has, it seems, cared to make researches about it in India, where it is so prevalent. Unfortunately here it has been considered by some of the lay public as a variety of leprosy, which it is not.

It has been claimed by some native Vaids and Hakims to be curable, but really there seems to be no cure for it with them.

Many qualified medical men have been trying an Indian drug named "bbawchee" as an external application in the form of oleature or extract, and internally as powder or tincture, but the results of the treatment have been disappointing.

It has been claimed by some here to get rid of this disfiguring affection of the skin by *x*-rays treatment. How far it is successful we do not know, as we have no cases of cure to form an opinion of its value.

If any specialist in skin diseases or any scientific researcher in tropical medicine were to find out the cause and treatment of this disfiguring skin affection, which is really nothing more than a loss of pigment of the skin, but which has been looked upon in India as a contagious skin disease and by some as a variety of leprosy, he will do a great blessing to many who are shunned by their fellow brothers for this trifling complaint, and whose helpless lot is therefore pitiable.

Can any one suggest any line of treatment that will restore the normal pigment of the skin, or explain whether *x* rays or any of the new lines of treatment can have any permanent beneficial effect?

I hope therefore you will publish this letter in the JOURNAL to open a discussion on the etiology and treatment of leucoderma and to see some cure of the same discovered in the near future.—I am, etc.,

September 30th. D.M., L.M and S.

A CASE OF PEMPHIGUS VEGETANS.

SIR,—Mr. de Korté's letter on Dr. Pernet's case reported under the above heading induces me to add the further information that the patient in question was for some months under my care as an in-patient at the Kensington and Fulham General Hospital, and was transferred thence, at my suggestion, to the London Lock Hospital. I may say he was sent up to me from Devonshire as a case of pemphigus vegetans. He was seen by many medical men, some of them versed in dermatology. After a time I came to the conclusion that his was probably a case of generalized condylomata, but treatment was mainly local, combined with general tonic and alterative measures. His condition showed little improvement, and a very grave prognosis was formed. The next I heard of him was from Dr. Phineas Abraham, to whose care at the West London Hospital he had been transferred from the Lock Hospital, and who told me he was doubtful as to its being specific. At the Dermatological Section of the British Medical Association Dr. Pernet reported the same patient as a case of pemphigus vegetans which had apparently come under his care a few days before death.

Now, Sir, it seems to me that medical science is not much advanced by attaching vital importance to the matter of names. As a matter of fact there appears to be no definite etiology either of pemphigus vegetans or of condyloma. Pemphigus vegetans begins as a papule, which spreads into sheets of warty growth of a peculiarly offensive nature, and the affection usually ends in death. Why should not a syphilitic condyloma generalize? At any rate, my view of the case as one of generalized specific condylomata is considerably strengthened by the discovery at the Lock Hospital of crowds of spirochaetes apparently resembling the *Spirochaeta pallida*[1] Why should not the malady hitherto known as pemphigus vegetans be in reality a form of syphilitic infection? The resemblance between the two conditions is always pointed out in the textbooks.

There are so many obscure points in dermatology that one is apt to be led astray at times by the authority of a nomenclature that is itself founded on nothing better than sand; and something of the kind may possibly have happened in this case.—I am, etc.,

London, W., Nov. 24th. DAVID WALSH.

[1] Some French observers describe generalized gonorrhoeal papillomata sometimes recurring with each attack of gonorrhoea, and covering the whole of the soles. This they call toxic gonorrhoeal papilloma. If that observation be correct, why should not the toxins of syphilis act in a similar way?

WE learn from the *Australasian Medical Gazette* that the Hon. Dr. Findlay has proposed, with a view to checking the spread of syphilis, that certain amendments should be made in the Public Health Act of New Zealand. The most important of these is that the notification of syphilis should be made compulsory.

Universities and Colleges.

GRANTS TO UNIVERSITY COLLEGES.

In pursuance of a suggestion made by a deputation from the English universities and colleges which participate in the annual university and colleges grant last March, a committee consisting of the Right Hon. A. H. D. Acland, Sir Alfred Hopkinson, Sir Oliver Lodge, Sir Isambard Owen, and the Rev. A. C. Headlam, D.D., was appointed, and had a conference with the Chancellor and the President of the Board of Education on November 16th. The committee recommend that the Treasury Committee, on the advice of which the grants should be distributed, should take into consideration the following three points:

1. *Output.*—Extent and character of the work being done, including number of students, nature of instruction given, research and other work undertaken.

2. *Needs.*—Needs in order to carry on the work efficiently:

(*a*) Staff, and the remuneration of its members.
(*b*) Accommodation and equipment.

3. *Development.*—Development of work which the several universities and colleges desire, and would be in a position to undertake effectively with further financial assistance, and having regard to provision already made from private benefactions, or other local support, or which may be obtained for such objects.

The committee added that while welcoming the fullest expert inspection, the universities and colleges felt that they must have complete freedom as to the mode of expenditure of grants to secure the greatest returns from them and to meet the constantly varying conditions. The committee also attached importance to the grants being made certain, and not liable to diminution so long as the extent and character of the work was maintained. If these two conditions of freedom and certainty were fulfilled, the universities and colleges would be able to work to the full extent of their capacities and use the means at their disposal with the best effect.

The Chancellor of the Exchequer expressed himself willing to grant an additional sum to the colleges to be allocated on these lines, but subject to the condition that sufficient additional local support should be forthcoming in each case, not only to maintain the existing activities of the college in conjunction with its existing Treasury grant and to place it on a secure footing in regard to its capital, liabilities, and requirements, but to meet a suitable proportion of the cost of maintenance of the new developments adopted. He was prepared to increase the total grant by £50,000, and promised (subject, of course, to compliance with the minimum conditions as to character, efficiency, etc., which any college is already required to fulfil in order to participate in the grant at all) not to reduce the existing grants to the several colleges.

UNIVERSITY OF LONDON.

Result of Examinations.

The following candidates have been approved at the examinations indicated:

Third M.B., B.S.—A. R. S. Alexander, E. W. Archer, B.Sc., J. A. Atkinson, K. J. Aveling, W. A. Berry, S. G. Billington, F. L. Brewer, A. Burrows, A. N. Cox, R. L. Crabb, *‡W. A. Daley, B.Sc., F. A. Dick, G. Dunderdale, G. F. E. Dyke, B. F. Eminson, T. C. C. Evans, W. C. Fowler, T. W. George, A. H. Gool, A. A. R. Green, H. A. Grierson, H. P. Hacker, B.Sc., J. S. Hopwood, A. R. Jones, W. S. Kidd, A. E. Lees, Blanche P. Lindup, D. Loughlin, K. D. Marriner, *†B. C. Maybury, R. Montgomery, G. T. Mullally, E. M. Parsons-Smith, *‡Cicely M. Peake, J. V. Rees, A. Renshaw, H. F. Renton, D. G. Rice-Oxley, A. L. Robinson, *†‡C. E. Shattock (University Medal), H. G. Smith, R. Stout, L. S. B. Tasker, L. H. Taylor, G. O. Teichmann, G. Y. Thomson, A. B. G. Underwood, A. D. Vazquez, M. D. T. Vlasto, Lilian E. Watney, E. White.

Honours. †Distinguished in Medicine. ‡ Distinguished in Surgery.

Third M.B., B.S. (*Group I only*).—N. Booth, A. C. S. Courts, Hazel H. Cuthbert, W. E. Fox, J. T. McDougall, Emily C. Macirone, R. N. O. Moynan, Mabel Muncey, T. A. F. Tyrrell. (*Group II.*)—T. Beaton, C. A. Birts, A. E. D. Clark, M. M. Cowasjee, J. A. Edmond, Florence M. Edmonds, Ethel R. Griffiths, E. C. Lindsay, J. B. McVail, R. K. Mallam, A. A. E. Newth, E. A. Penny, A. A. W. Petrie, D. Scurlock, J. C. Woods.

UNIVERSITY COLLEGE.

New Chemical Laboratories.

An appeal for £70,000 to provide new chemical laboratories for University College of London was made last spring, but, owing to the death of the late King, a meeting at the Mansion House which had been arranged was postponed. Sir Henry Roscoe, the chairman of the new chemical laboratories fund, now makes a fresh appeal, stating that the first object is to raise £25,000 for the purchase of the proposed site adjoining the college, and the second to raise £45,000 to erect the laboratories. The sum required for the site must be obtained before Christmas if the Senate of the University is to be in a position to exercise the option to purchase the site. Towards the sum required £9,000 has been collected, leaving a balance of £16,000 to be raised forthwith. An appeal is made to those Londoners who desire to see university teaching in London developed in accordance with the needs of the nation. Donations may be sent to Sir Henry Roscoe at the University College.

UNIVERSITY OF WALES.

Medical Degrees.

In its report to the Court of the Welsh University, which met at Aberystwyth on Friday, November 25th, the Medical Board stated it had reason to believe that the Privy Council would favourably regard such extensions of the powers of the university as to allow the degrees of M.B. and B.Ch. to be registrable qualifications under the Medical Acts, and recommended the Court to take steps to promote a bill empowering the university to hold qualifying examinations in medicine, surgery, and midwifery for the purpose of granting diplomas.

The board also recommended that the laboratory of the Queen's University, Belfast, be recognized as a place of study for the Diploma in Public Health.

The recommendations were adopted, and the following were appointed to examine for the Diploma in Public Health in 1911: —Part I: Professor Sheridan Delépine, M.B., C.M., M.Sc. Manchester, and Colonel J. Lane Notter, M.A., M.D., D.P.H. Part II: Dr. John Tatham, M.A., M.D., F.R.C.P., and Dr. Wm. Williams, M.A., M.D., D.P.H., Medical Officer for the County of Glamorganshire.

UNIVERSITY OF GLASGOW.

Graduation Ceremony.

The winter graduation ceremony took place on November 17th, in the Bute Hall of University, Principal Sir Donald Macalister presiding. The medical graduates were 18 in number, those being presented by Professor Stockman and receiving the degree of M.D., one with honours, two with high commendation, and five with commendation. Two graduates received the degree of B.Sc. in Public Health, being presented by Professor Gregory. No honorary degrees were conferred at the ceremony.

The following were among the degrees conferred:

M.D.—*W. B. M. Martin, †T. Adam, M.A., †M. R. Taylor, ‡J. M. Anderson, ‡W. H. Manson, M.A., ‡W. S. Moore, ‡J. S. Nicolson, ‡C. J. Ross, B.A., Martha M. Buchan (Mrs Wilson), H. H. Christie, J. F. Macdonald, C. Marshall, J. H. Martin, J. Mesterton, H. Matthews, M. M. Rodger, A. Stevenson, T. Strain.

* Honours for thesis. † High commendation for thesis.
‡ Commendation for thesis.

Joint Conference Committee Addresses.

A series of addresses on practical questions has been arranged under the auspices of the Joint Conference Committee to take place at Glasgow University, and these will include some lectures on medical and social work. The first address was given by Dr. A. K. Chalmers, Medical Officer of Health for Glasgow, on November 25th, on The Public Health Authority and its Work. On December 2nd, Dr. R. D. Clarkson, Edinburgh, dealt with the Present Treatment of the Feeble-Minded. Other addresses on medical, social, and civic topics have been arranged for.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The following candidates have been approved at the examination indicated:

First Fellowship.—C. G. Aickin, F. G. Bell, E. C. Bowden, G. W. Carte, A. Chance, J. H. Connolly, C. H. Crawshaw, M. J. Cronin, F. E. Daunt, H. W. Davies, R. D. Davy, G. R. Dobrashian, V. W. Draper, J. Everidge, P. Ferguson, W. B. Foley, P. J. Franklin, H. G. Frean, R. C. Harkness, C. C. Holman, R. L. Horton, C. M. Jones, C. M. Kennedy, F. McG. Loughnane, R. J. McConnell, K. Mackenzie, H. P. Malcolm, H. H. Mathias, J. N. Mehta, A. C. Palmer, M. J. Petty, E. Rayner, J. M. Redding, P. Roux, J. Thompson, J. R. Waddy, G. B. Warburton, D. Waterston, S. B. White.

CONJOINT BOARD IN IRELAND.

The following candidates have been approved at the examinations indicated:

First College.—C. F. Coyne, F. Freeman, C. E. H. Gater, F. G. Kelly, D. F. Lucey, F. M. Taylor.

Second College.—E. Connell, W. Dowse, J. McDonagh, L. L. McKeever, S. J. Mullin, C. L. Sproule, S. T. Sullivan, P. F. Ward.

Third College.—A. J. Best, F. Cassidy, E. P. Dewar, R. F. J. Griffith, J. Kelly, B. Kelly, A. P. Kennedy, J. S. Levis, M. Meehan, F. P. McDermott, D. Murphy, A. J. Neilan, H. E. O'Brien, P. J. O'Connell, J. C. O'Farrell, G. Wilson.

Final.—G. F. Allison, A. E. Bedell, C. G. Connell, N. M. Herbert, P. McCartan, L. A. Moran, W. H. Murray, H. R. Tighe.

D.P.H.—*M. Carthew, J. P. Cassidy, V. G. Gokhale, A. J. Hamilton, J. L. Pinto, J. R. Prytherch, R. W. Rees, S. Rozdon.

* Honours.

SOCIETY OF APOTHECARIES OF LONDON.

The following candidates have been approved in the subjects indicated:

Surgery.—*†H. E. Battle, *†C. B. Davies, †E. B. Keen, *†J. M. Moll, *†W. H. Parkinson, *†C. J. Thompson.

Medicine.—*E. G. Brisco-Owen, †A. Cordon, *†C. B. Davies.

Forensic Medicine.—C. B. Davies, C. W. Jenner, J. M. Moll, A. J. V. Mathews.

Midwifery.—C. B. Davies, W. H. Parkinson.

* Section I. † Section II.

The diploma of the Society has been granted to Messrs. H. E. Battle, A. Cordon, C. B. Davies, J. M. Moll, and C. J. Thompson.

Obituary.

TREGENNA BIDDULPH GOSS, M.R.C.S., L.S.A.,

BATH.

A void is left in the ranks of the practitioners in Bath by the death of Mr. T. B. Goss, at the age of 73 on November 20th. He was emphatically of those whose memory remains sweet and blossoms in the dust. Mr. Goss was a just man in the widest sense of the word, and he was universally esteemed by all, especially by the members of the profession of which he was by seniority and by popularity the head.

After his curriculum at Middlesex and Westminster Hospitals, Mr. Goss became M.R.C.S. in 1863, and L.S.A. in 1864, and then made a voyage to New Zealand. On his return home he joined the late Mr. Harries in partnership at Bath. Gradually he worked his way up until he had a leading obstetric and an extensive general practice. His kindness of heart and the gentleness of his character endeared him to a large circle of patients, as well as to the whole profession of medicine in Bath. No one was ever known to have an evil thought of Mr. Goss, and he was never known to say an unkind word. Although of a very retiring disposition, modest almost to a fault, and highly sensitive, he attained a position which is not often reached by men with those qualities. Mr. Goss was a member of the Obstetrical Section of the Royal Society of Medicine, and a member of the British Medical Association, having been elected to that body on March 5th, 1868. In 1892 he was elected President of the Bath and Bristol Branch of the British Medical Association, an honour his colleagues had offered him several years previously; but the sequestered vale was more to his liking than the mountain top, and the office was accepted only in deference to the unanimous wish and reiterated insistence of his fellow-members.

In addition to his private practice, Mr. Goss held the appointment of medical officer to the Post Office for thirty-eight years, and his unvaried kindness and consideration were highly appreciated by all grades of the service, and recognized by a gift of plate at the end of his long period of office. He was also medical officer to the Eastern Dispensary for some years, and to the Royal School for the Daughters of Officers. It is said that he never applied for any office, but that all his appointments were accepted only after having been voluntarily offered to him.

Mr. Goss was twice married, and had a family of seven children. His eldest son died at Middlesex Hospital just as he was finishing a successful career in its medical school. Another son has recently qualified, and two of his daughters are married to members of the medical profession—one to Mr. Leonard Fuller, Assistant Surgeon to the Royal United Hospital, Bath, and the other to Dr. Lord of Faringdon.

By Mr. Goss's wish, his body was cremated at Woking; the funeral service took place at Bath on November 25th, and was attended by a very large number of members of his profession, and by many old friends and patients.

His fellow-practitioners in Bath, and his colleagues on the council of the Bath and Bristol Branch of the British Medical Association, will long remember the quiet, unobtrusive, kindly, and sympathetic friend who was trusted alike by rich and poor, and who did what his hand found to do with all his might and without ostentation.

THOMAS LAPRAIK, M.D.Glas.,

GLASGOW.

We regret to announce the death of Dr. Lapraik, which took place on November 13th. For some time Dr. Lapraik had retired from active practice, but for many years he was one of the best known practitioners in Glasgow. He was born in 1835, and received his early education at Hutcheson School and Anderson's College. His medical training was obtained at Glasgow University, where he graduated in November, 1859, so that at his death he was one of the oldest medical men in Glasgow. Fourteen years after graduating he joined the Faculty of Physicians and took a prominent part in the work of this institution, and served for many years as a member of its Council. In addition to the exacting work necessitated by an extensive general practice, Dr. Lapraik devoted himself wholeheartedly to the advancement of medical education. For many years he represented the Faculty of Physicians on the Board of the Western Infirmary, Anderson's College Medical School, and the Lock Hospital. He also acted as one of the managers of Gartnavel Asylum, and filled the same position on the Board of the Maternity Hospital. He also took a prominent position in the affairs of the City Parochial Board, acting for some years as convener of the medical committee, and as such was instrumental in carrying through many beneficial reforms in the nursing arrangements for patients in the medical wards of the poorhouses. Dr. Lapraik took a keen interest in the affairs of the Royal Asylum for the Blind, and acted as medical officer to that institution for over forty years.

In addition to serving on these medical boards, Dr. Lapraik played an important part in directing the policy of the Glasgow Athenæum. He joined the institution in 1867, and remained a governor till 1902; he acted for the last five years as chairman, and during that period carried through an important reconstruction scheme. On finally retiring from the board his long and valuable services were recognized by the presentation of his portrait.

JAMES SINCLAIR, M.D.,

SURGEON-MAJOR-GENERAL, A.M.S.

Surgeon General Sinclair died on November 21st at his residence in Belfast, which had been his home since the close of his long and distinguished career in the medical department of the army. Dr. Sinclair was born in Berwick-on-Tweed in 1832, and at the age of 17 entered on a medical career as a student of Edinburgh University. He received the diploma of the Royal College of Surgeons of Edinburgh and the M.D. of the University in 1853, and in the same year obtained admission to the Army Medical Department. His first tour of five years' foreign service took him to Ceylon, and was followed after a few months in England by a second tour in the Mediterranean. He was then promoted full surgeon, and after a year or two at Walmer went to Poona. His stay in India was not, however, long, for he was one of the medical officers selected to take part in the first Abyssinian campaign. This led to his being present at the capture of Magdala and to his promotion for distinguished services to the rank of Surgeon-Major. This first war service was followed by a few years in England, and by further promotion to the rank of Deputy Surgeon-General in 1876. He was then sent abroad again, this time as Principal Medical Officer in Bermuda, and remained there until his first acquaintance with Ireland as Principal Medical Officer of the Belfast District. His second experience of active service in the field came with the first Transvaal war in 1881, when he was in charge of the hospitals on the lines of communication between Durban and Prospect. Shortly after the end of this war he was promoted to the rank of Surgeon-Major-General, and served as P.M.O., Ireland. His last period of foreign service commenced in 1883, and was passed as P.M.O. of Malta. After five years in this island he was again appointed P.M.O., Ireland, and held that office until his retirement on pension after close on forty years' service. A few years after his retirement he was selected for appointment as an Honorary Physician to Her Majesty Queen Victoria, and was reappointed to the same office on the accession of His Majesty King Edward VII.

Surgeon-General Sinclair was a member of the British Medical Association, in which he maintained an interest up to the last. During his tour of service in Malta the Malta and Mediterranean Branch of the Association came into existence, and he was appointed its first President.

On his retirement Dr. Sinclair took up his residence altogether in Ireland, making Belfast his head quarters. His winters he spent in Rostrevor, in the west of the island, and, being a man of retiring disposition, he was better known there, perhaps, than in Belfast. He was, too, a man of very generous disposition, but his benefactions to his poorer neighbours were so unostentatiously performed that they were hardly known except by those who received them. Surgeon-General Sinclair was a widower, but during his last illness was devotedly nursed

by his daughter, the widow of Colonel Ring, R.A.M.C. His remains were interred at Belfast on November 23rd with full military honours.

THE LATE DR. PAYNE.

It should have been stated that the portrait which appeared in the obituary of the late Dr. J. Frank Payne, in the issue of the BRITISH MEDICAL JOURNAL of November 26th, was reprinted from the *St. Thomas's Hospital Gazette* by the kind permission of the editor of that periodical.

We regret to announce the death of Dr. ANGELO MOSSO' Professor of Physiology in the University of Turin. Professor Mosso, who was a Senator of the Kingdom of Italy, was well known throughout the scientific world by his researches on fatigue, and many other subjects.

DR. J. FALCONER MURISON, of Glasgow, who died on November 14th, was a graduate of Aberdeen University in 1875. In his early years he acted as surgeon on board the Polar exploration vessel, *Victory*, and first practised in Shetland. He practised for ten years at Cumbernauld, from which he migrated to Glasgow. He was for some years a Surgeon-Captain in the Dumbartonshire Rifle Volunteers. He was over 60 years of age. His eldest brother is Dr. F. Murison, Professor of Roman Law in the University of London.

We regret to announce the death of AMY MARY MACDONALD, M.D., eldest daughter of Mr. James Galloway Weir, M.P. for Ross and Cromarty. Dr. Weir Macdonald was educated at the Girls' Public Day School, South Hampstead, and subsequently studied at University College and the London School of Medicine for Women. She was a student at the Royal Free Hospital, Gray's Inn Road, where she served as Clinical Assistant and Assistant Anaesthetist. She attended the Rotunda, Dublin, for special work. She also attended Paris University and the Paris hospitals. She obtained the Licence of the Society of Apothecaries in 1898, and the M.D. of Brussels in the same year. Subsequently she spent some time at Vienna, Brussels, and other cities of Europe for the purpose of gaining experience. Upwards of twenty years ago, when her father became a parliamentary candidate, she accompanied him and rendered valuable assistance during political campaigns. Indeed, it was largely the sufferings which she met with amongst the poor of the Island of Lewis that induced her to shape her life for a medical career. After her marriage with the late Dr. Macdonald of Stornoway, she continued to take the keenest interest in her profession, and took an active part in medical work in Stornoway and the country districts of Lewis. Her useful career in the North was, however, unfortunately cut short some five years ago, when she was laid low with a malignant disease. To prevent her name being confused with that of her husband, she adopted the professional designation Dr. Weir Macdonald. She was a member of the British Medical Association. Mrs. Macdonald died at her residence, "Lyndale," Harlesden, on November 14th, and the cremation took place at the Crematorium, Golders Green, on Friday, November 18th, at noon.

Medico-Legal.

WORKMEN'S COMPENSATION ACT.

Cerebral Haemorrhage.

ON November 9th an appeal was heard before the House of Lords arising out of a judgement under the Workmen's Compensation Act. The widow and dependents of a miner claimed compensation from a colliery company for an accident which occurred to her husband. The deceased was employed building what is called a "pack"—a wall of stones and rubbish about 6ft. high—in the colliery. The work involved his lifting stones of various sizes on to the wall. Apoplexy occurred and the workman died. The colliery owners denied liability, on the ground that the death of the deceased was due to natural causes. The county court judge found in favour of the contention of the appellant, and awarded her and her children £274. The case was carried to the Court of Appeal, where the finding of the county court judge was set aside, there being no evidence, in its opinion, to support the theory that the deceased died from an accident arising out of his employment. Without calling upon counsel for the colliery company, their lordships dismissed the appeal on the ground that there was no evidence to show that the rupture of the blood vessel was the result of a strain arising out of the employment. The rupture might have taken place in sleep or under any ordinary circumstances. This finding of the House of Lords is directly opposite to that given in the case of Hughes *v.* Glover, Clayton and Co., reported in the BRITISH MEDICAL JOURNAL of March 26th, 1910, p 787. In this case the judges decided in favour of the dependents of the workmen. Hughes, when screwing up a bolt, fell down dead. The *post-mortem* examination revealed an aneurysm of the aorta, which was ruptured. The aneurysm was in such a condition that it might have burst when the deceased was asleep; still, the House of Lords decided that the rupture arose out of the employment. The two cases are somewhat analogous; still, the decisions given are directly opposite. The former case is fully reported in the JOURNAL, pp 787-88, when the definition of an "accident" within the meaning of the Workmen's Compensation Act was given and is worth perusal, in view of the decisions by the Lords in the two cases of appeal.

ASSISTANTS AND WORKMEN'S COMPENSATION ACT.

ETHJACK asks: Is any assistant receiving more than £250 per annum entitled to claim any compensation from his principal for injury, etc., met with in the course of his employment? If he is so entitled, can you give me any information as to the amount of compensation he is able to claim for an accident which temporarily incapacitates him from following his professional work?

*** A glance at Section 13 of the Workmen's Compensation Act, 1906, shows that the term "workman" does not include any person employed otherwise than by way of manual labour whose remuneration exceeds two hundred and fifty pounds a year. This appears to be a clear answer to our correspondent's query.

FEE FOR EMERGENCY CALL.

CURIOUS desires to know what would be considered an adequate fee for attendance on a case of cut throat. The emergency call was during surgery hours, and the time in attendance was about one hour, during which time "calls" were lost owing to the doctor's absence from his surgery.

*** One guinea would, we think, be a reasonable fee. If our correspondent were called in by the police it is to be feared he could only claim the ordinary fee laid down for medical services, which would vary according to the time of day he was called, and would never amount to more than 7s. 6d. or half a guinea; but if the circumstances of the patient warranted it a higher fee should certainly be charged.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

A DRESSER'S GRAMMAR.

WITCH OF AGNESI.—We do not consider it a breach of professional etiquette for a house-surgeon, or a registrar, to correct grammatical errors in a dresser's notes.

RIGHT TO A PATIENT.

CANTAB.—If, as our correspondent states, he was "asked to see a patient for a neighbouring practitioner who was out," he must accept the position of acting as his substitute, and resign the case to him, although he is entitled to be paid for his services.

MEDICAL PRACTITIONERS AS POPULAR LECTURERS.

C. W. B.—We do not conceive that the General Medical Council or any other medical authority would object to a medical practitioner lecturing on behalf of the system of education conducted by the International Correspondence School, provided that the system advocated is sound, and is carried on fairly towards those who pay for instruction.

HOSPITALS AND THE WORKMEN'S COMPENSATION ACT.

C. C.—We imagine that the house-surgeon supposed inquiries were being made with a view to some action being taken under the Workmen's Compensation Act, and therefore considered himself entitled to a fee. It would appear that the letter of inquiry asked not only for details of the case, but for an expression of opinion as to the patient's immediate and future capacity for work, which was perhaps more than the house-surgeon could be fairly expected to give.

BRANCH SURGERIES.

A. W. H. asks whether there is any objection to a country practitioner having "a lock-up dispensary" in a town three miles distant, where he attends several hours daily.

*** By a "lock-up dispensary" we presume is meant a place at which no one is in attendance in the absence of the practitioner, so that patients seen by him there who might become worse, and require his presence, would have to send three miles. This might be an objection to the arrangement, and some means of communication—as by telephone—would appear to be desirable.

Public Health AND POOR LAW MEDICAL SERVICES.

PUBLIC VACCINATION IN BERMONDSEY.

ACCORDING to a report in the *Morning Leader* of November 18th, at a meeting of the board of guardians, an attack was made on the system of public vaccination in Bermondsey by the rector of that parish, the Rev. Herbert Williams. The public vaccinator was specially criticized for the method employed of obtaining a sufficient number of cases for the purpose of instructing students in the principles and practice of vaccination. It would appear that he is authorized to attract women to bring their babies to his station by the payment of 1s., and is allowed by the Local Government Board to charge the local authority for all such vaccinations at the same rate as if he vaccinated them at their own homes.

It was contended that the pecuniary reward induced mothers to bring their children from other parishes, so that an improper burden was thrown on the Bermondsey rates; it was also alleged that among the very poor the money payment tempted them to throw away the vaccination shields immediately after the operation, so as to be able to bring them a second time for vaccination, and thus to obtain another 1s.; that the cost of instructing students in vaccination ought to be borne by the State, or by the hospital authorities. The report states that Dr. Davies, a member of the borough council, in commenting on this state of affairs, accused the public vaccinator of "going into his neighbourhood, and cadging his patients by giving them 1s., and making a clear 4s." "How does he know," he said, "that people vaccinated at his place do not come two, or three, times?"

Mr. Ecroyd said the rector's allegations were "infamous," and suggested that Dr. Davies was animated by professional jealousy. It was finally agreed unanimously to refer the report back to a committee of the whole board.

It will, perhaps, be better to defer any criticism till after the proposed investigation has been made. In the meanwhile, we must express our incredulity as to the likelihood, or even the possibility, of necessitous mothers taking their infants to the station a second time in order to gain the 1s.

SUSPECTED BOVINE TUBERCULOSIS.

AN appeal of considerable importance in the administration of public health laws in regard to the sale of milk from cows affected by tuberculosis was heard at Sunderland on November 26th by Mr. T. R. Colquhoun Dill, barrister, of London, appointed by the Board of Agriculture and Fisheries to conduct the proceedings. The appeal—the first of its kind in the country—was lodged by Mr. George Greenshields, dairy farmer, Over the-Hill Farm, near Houghton-le-Spring, Durham, against an order of the Sunderland Corporation, under the Corporation Act of 1907, restraining him from selling milk from certain cows in the borough. The ground of the appeal was that the conditions precedent to the order required by the statute had not been complied with. It was contended on behalf of the appellant that the corporation were seeking, without having first established a *prima facie* case of tuberculosis, to put upon the farmer the burden of proving that his cow was free from that disease. Four cows were involved in the order and on the farmer subjecting one against which some suspicion was raised to the tuberculin test and obtaining a certificate that the cow showed no symptoms of tuberculosis, the corporation withdrew the order in respect of that particular cow, but maintained it in regard to the remaining three cows, which had not been submitted to the tuberculin test. Counsel on behalf of the appellant urged that it was incumbent on the authority to establish a *prima facie* case of tuberculosis before they could make a prohibitory order, and he submitted that in this case the corporation had not fulfilled the necessary precedent condition.

The Town Clerk, in reply, said the whole matter rested upon the opinion of the medical officer. If the medical officer on inspection thought there was reasonable ground for suspecting tuberculosis, it was competent for him to call upon the farmer to show cause why the prohibitory order should not be made against him. This had been done in this case, and the farmer having ignored the medical officer's notice, the authority had no other resort than to make the order.

After hearing evidence on both sides, the presiding Barrister intimated that he would report to the Board of Agriculture and Fisheries, who would communicate their decision to the parties in due course.

Medical News.

THE discussion on dilatation of the heart and heart strain, opened at the Medical Society of London by Dr. Goodhart, will be resumed on Monday at 8.30 p.m., Dr. William Collier of Oxford being the first speaker.

THE Bradshaw Lecture before the Royal College of Surgeons of England will be delivered in the theatre of the College on Wednesday next, at 5 p.m., by Sir Alfred Pearce Gould, K.C.V.O., the subject selected being Cancer.

AT a meeting of the Illuminating Engineering Society, to be held at the house of the Royal Society of Arts, John Street, W.C., on Friday, December 9th, at 8 p.m., a paper on Recent Progress in Electric Lighting will be read by Professor E. W. Marchant, D.Sc.

THE conference on matters relating to hospital enterprise, organized by the Medical Charities Committee of the Metropolitan Counties Branch, held a further meeting, under the chairmanship of Dr. Lauriston Shaw, on November 29th. It was attended by fifty delegates representative of the staffs of a large number of the metropolitan hospitals, of the Central Hospitals Committee of the British Medical Association, and of its Metropolitan Counties Branch.

THE council of the Irish Medical Schools' and Graduates Association has addressed a letter to the members of the Board of the West Ham and East London Hospital protesting against the rule requiring that physicians about to be appointed must be Fellows or Members of the Royal College of Physicians, and the surgeons Fellows of the Royal College of Surgeons of England. A similar letter has been addressed to the board of the West London Hospital, where the rule requires the physicians to be Fellows of the English college, while the surgical posts are open to diplomates of other colleges.

THE past and present students of the Royal Dental Hospital of London held their annual dinner last Saturday. They met under the chairmanship of Mr. H. Lloyd Williams, who in the course of the evening announced that the King and Queen had graciously consented to become Patron and Patroness of the institution. He also paid just testimony to the appropriateness of the school building to its special purpose, and said that, though the school had no motto, it lived and worked in the spirit of Wordsworth's rule: "Be in mind to follow with no timid step when knowledge leads." Speaking on behalf of the dental department of Guy's Hospital, Mr. W. Maggs said there was no feeling of jealousy between the dental schools; they all had the same aims in view. He hoped that the day was not far distant when dental research and dental teaching would be endowed: teachers should be considered as well as students. Mr. L. A. Bidwell, who responded to the toast of "The Visitors," said that it appeared to him that the dental profession lacked sufficient members to fulfil all the needs of the public, and there was a need for more institutions for the dental treatment of the poor. Of late years dentistry as a science had made such rapid progress that he had no doubt that the institution of post-graduate courses would be welcomed by many practitioners.

AT a meeting of the Council of the Association for Promoting the Training and Supply of Midwives, on November 24th, Mrs. Wallace Bruce, chairman of the Executive Committee, said that the committee considered that Clause 12 (1) (*b*) of the Midwives (No. 2) Bill, which would permit a midwife qualified under regulations of the Local Government Board for Ireland to be certified under the principal Act and to practise in England and Wales, should be omitted. In the first place, it did not deal with the regulations of midwives practising in Ireland, for which a separate bill would be necessary; and in the second it would allow a second standard of qualification for midwives practising in England—a suggestion deprecated by the association on a former occasion, and by a large majority of those who gave evidence on the point before the Departmental Committee in 1909. With regard to Clause 17, relating to the payment of fees to medical men called in at the request of midwives, the committee, while accepting the clause as a temporary measure, expressed no opinion as to the authority ultimately to be responsible for the payment. Further, it reported that the bill should authorize town councils to make use of Section 133 of the Public Health Act, 1875, as already done in certain towns. The recommendations of the Executive Committee were confirmed by the meeting *nemine contradicente*.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

D. P. H. asks for particulars of what would be required or any small manual on the subject of hygiene in camp, etc., as applied to the Territorial Service. He has been asked to give a few lectures on the subject to the recruits.

*** *Notes on Military Sanitation*, by Lieutenant-Colonel Elkington, R.A.M.C., published by the St. John Ambulance Association, St. John's Gate, Clerkenwell, London, E.C., price 1s., would probably answer our correspondent's purpose.

J. H asks whether there are any institutions which would receive a case of neurasthenia in a woman of the poorer classes.

*** The Lewes Road Hospital, Brighton, has for its object "to provide early treatment for cases of serious nervous breakdown among poor women and girls," and would probably be serviceable. Application should be made to the Matron, 101, Round Hill Crescent, Brighton.

VACCINE TREATMENT IN RHEUMATOID ARTHRITIS.

MORION asks for information as to the success of vaccine treatment in rheumatoid arthritis, some reference to the mode of using it, and if likely to be successful in cases of some length of standing, where almost all the joints are affected.

TRYPSOGEN TREATMENT OF DIABETES.

LLOYD asks for information about the trypsogen treatment of diabetes mellitus.

*** It is advertised by Camick and Co., of New York, in tablets with gold bromide and arsenic. We do not know this particular proprietary medicine, but its name suggests that it is an adaptation of the use of "Secretin" as the physiological stimulant of the pancreas for the treatment of diabetes. This method was suggested and carried out in Liverpool and elsewhere a year or two ago, without, we believe, satisfactory results.

INVOLUNTARY MICTURITION.

F. F. writes: I have a patient, a man aged 50, married, healthy, and active, with a good family and personal history. His urinary and generative organs are normal. He micturates three times during the time from getting up in the morning and going to bed. Six times this year he has had a dream like this: That he is urinating, and thinking he is quite awake, but feels some discomfort in the act and along the inner sides of the thighs. While wondering why he has this discomfort he wakes up to find that he has really passed urine. During the following day he has a dull, aching pain over the upper border of the sacrum. He is much distressed at these occurrences, and I shall be very grateful for suggestions as to the etiology, prognosis, and especially treatment.

ANSWERS.

CHRONIC INTERNAL HAEMORRHOIDS.

DR. F. P. ATKINSON (Bexhill-on-Sea) writes, in answer to "L. R. C.": If the piles are protruding and painful, bathing them with a lotion of liq. plumbi ℥ij, lactis recent ℥ij, aquae ℥j, will give great relief. A tablespoonful of glycerine twice a day in milk given internally is very useful.

DR. M. W. BROWDY (Glasgow) writes: I beg to state that I have found the following local application very efficacious for chronic haemorrhoids, but, of course supplemented with general treatment—℞ Pulv. alum. gr. x, zinci sulph. gr. iij, ung. conii ad ℥j; to be applied night and morning, the parts having been first washed with carbolic soap and water.

DR. R STUART TWIST (Hull) writes: Ung. adrenalin, made up of adrenalin chloride (P. D. and Co.), mlv, ad ℥j lanolin or other basis, is far better than the old ung. gallae c opio. I have used it in several cases with marked benefit, where the ung. gallae c opio has been used for months with no signs of any improvement whatever.

LETTERS, NOTES, ETC.

A DISCLAIMER.

DR. J. M. ELROY (Belfast) writes: In the *Northern Whig* of November 14th appears an article containing extracts from the *Lancet* from a paper written by me on the treatment of pulmonary tuberculosis, and as some of the remarks in the article referred to might be construed to mean that the writer had definite information from me, I wish to express regret that such an impression should be conveyed to my medical brethren, and to point out that I had absolutely no knowledge of the article till my attention was called to it.

PULMONARY TUBERCULOSIS.

DR. ALLAN WILSON (Ardrishaig, Argyll) writes: Professor Hunter Stewart's address on pulmonary tuberculosis, delivered at a meeting of the Edinburgh Royal Society on November 21st (see p. 1805), should be of considerable interest to the medical profession.

Taking it for granted that his figures and statistics are correctly printed, it strikes one as very remarkable that "in the rural area of Scotland the percentage reduction of mortality (from tuberculosis) at age-periods 0 to 45-50 is less in both sexes than in the urban area."

I do not for a moment call in question the accuracy of Professor Stewart's conclusions, based as they are on statistics, but I fail to find in his paper convincing reasons to account for the average increase of mortality from consumption in the rural area of Scotland. No one would now venture to say that tuberculosis is not contagious or communicable. Dr. Koch, who discovered the bacillus, was of opinion that human and bovine tuberculosis were not the same, and that human beings were immune to the bovine species, but it has since been proved that in this respect he was mistaken.

It would appear that Professor H. Stewart attributes the greater average reduction of mortality in urban areas to the sanitary laws and regulations being more strictly enforced than they are in rural areas, and no doubt there is a great of truth in what he says, for the systematic inspection of dairies, the testing of milk, the subjection of dairy cows to the tuberculin tests, etc., are more truly and regularly carried out than they are in rural districts, where they are now almost entirely neglected; nevertheless, we must look elsewhere for some other contributory cause. In my opinion, the manure from towns and villages that is generally sold to farmers to put on their pasture lands may be found to be one of the principal causes of the prevalence and spread of phthisis, and more especially in rural areas.

When we consider the millions of bacilli thrown off by a single consumptive patient daily, and that they, as a rule, are put upon the manure heap, and from there carted on to the grass land where the dairy cows feed and rest, it cannot be wondered that the cattle become infected. And in this way the circle is completed, by the germs being conveyed to their human hosts in the milk-cans, probably modified in their virulence, giving those people of strong resistance a better chance to survive and conquer them. The matter deserves the attention of county and parish councils. Town manure should be thoroughly disinfected or converted into ashes before being put on to the fields.

ELECTRIC HEATING STOVE.

COLONEL R. H. FORMAN (P.M.O., Bombay) writes: I presume, from the description, that the correspondent to whom Dr. Edward Phillips (Coventry) refers in your issue of October 22nd, p. 1295, is myself, as some months ago I wrote, in answer to a query, advising the use of the Bastian Electric Heating Syndicate (91 to 93, Palmerston House, E.C.) appliances for heating and other purposes. I am pleased to know Dr. Phillips took my advice, and that he has found it sound. Recently I saw some further developments with the electric heating of quartz—for example, an iron coffee percolator and hot plate. Moreover, I am now informed by the local agents of the syndicate that they are prepared to give a four years' guarantee with the new nichrome spirals. Any one who knows anything about electric heating, either for warmth or cooking, will recognize the phenomenal character of this offer. I am myself so impressed with the value of this patent that I shall certainly never take a house at home where electricity is not laid on. In the sick-room also it will prove invaluable—clean, quick, reliable, and cheap.

ERRATA.—In the paper by Dr. Robert H. Scanes-Spicer on "Cancer of the Throat," in the JOURNAL of November 26th, p. 1717, the following corrections should be made: Column 2, line 13, for "lips" read "tips"; line 14, for "choroid" read "cricoid"; line 15, after "thyroid" insert "cricoid or" and delete "cartilage of the"; line 18, for "hand" read "hard"; line 28, for "factor" read "experience"; line 48, insert "intrinsic" before "cancer."

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An Address

ON

SURGICAL VERSUS THE EXPECTANT TREATMENT OF INTRACRANIAL TUMOUR.

DELIVERED AT THE FOURTH ANNUAL MEETING OF THE GERMAN SOCIETY OF NEUROLOGISTS, HELD IN BERLIN, OCTOBER 6TH TO 8TH, 1910.

BY

SIR VICTOR HORSLEY, F.R.S.,

SURGEON TO THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC; CONSULTING SURGEON, UNIVERSITY COLLEGE HOSPITAL.

A SURVEY of the last twenty years' experience of the practical treatment of intracranial tumours shows that the time has arrived for a complete reconsideration of the whole subject.

Probably as a consequence of difficulty in diagnosing (1) the accurate position of the lesion and (2) its precise nature, the whole subject of the treatment of intracranial tumour is unfortunately in much the same false position as that of appendicitis was fifteen years ago.

A few years ago all, and even now most, cases of intracranial tumour died without really receiving any treatment at all, for, since no drug is known to have any influence on neoplastic tissues, the classical administration of potassium iodide, etc., is merely a ritual, and is not treatment of the disease at all.

I am not aware either of any case in which it was proved by *post-mortem* examination afterwards that a cerebral tumour (not one of the specific granulomata) had been cured by drugs during the patient's lifetime. By a singular cynicism, the origin of which I cannot trace further, the unfortunate sufferer from intracranial tumour is commonly said to receive "expectant" treatment.

Considering that in the absence of any active surgical treatment the only thing to be expected is death, the term "expectant treatment" has always to my mind carried with it its own condemnation for inhumanity.

No doubt the expression has arisen from the fact that in so many cases the physician is unable to make a diagnosis on the spot, and while he waits hoping that something will turn up to assist him, he tries to alleviate some of the symptoms of the condition which *de facto* he makes no attempt to treat.

Exactly as in the analogous case of appendicitis, where suppression of symptoms by opiates, etc., formerly caused many a fatality, so in intracranial tumour the temporary betterment which has often followed the empirical administration of potassium iodide and other drugs has constantly led to a fatal postponement of the only real treatment at the present day of a neoplasm—namely, operation. Indeed, this is so constantly done that in the large majority of cases for which operative treatment is sought a careful clinical investigation reveals a clear and unequivocal history of intracranial disease of long duration, from one to even ten years, in one case even more than thirteen years.

The first step, therefore, in reform must be the frank recognition that the so-called treatment of intracranial tumour by drugs is wrong because useless.

The second step must be the enunciation of the earliest pathological conditions which are indicative of intracranial tumour.

At the present time it is usual practice, even when intracranial tumour is suspected, actually to wait until the final stage of the disease is entered upon and the signs of hypertension appear—namely, optic neuritis, headache, and vomiting, and particularly the first of these. My view is that this very common procedure is as unjustifiable as would be the waiting for signs of lymphatic infection in a case of cutaneous epithelioma.

I am of course aware of instances in which the occurrence of optic neuritis was stated to have been the first symptom calling for notice, but I have not myself seen such chronology in a case of intracranial tumour, and would rather suggest that the neurological symptoms had not been observed, an oversight particularly possible in patients of uncomplaining natures.

It is therefore necessary that neurologists should come to some sort of understanding as to the pathological conditions which should be at once treated surgically on the ground that they are indicative of intracranial tumour. These "signal" conditions, to use Seguin's suggestive expression, may best be discussed according to Dr. Hughlings Jackson's classification of neurological phenomena—namely, (*a*) those of over action and (*b*) those of want of action, that is, in respect of the functional activity of the central nervous system.

(*a*) *Over-action*, that is, irritative effects of lesion.

On the first of these, then, I propose that the following procedure should be adopted, namely, "that every case of focalized epilepsy not definitely proved to be idiopathic in origin must be treated by exploratory operation."

By focalized epilepsy I mean all varieties of epilepsy in which the focus or starting point of the seizure can be localized to one lobe of the cerebrum.

I have elsewhere[1] shown that a diagnosis of the seat of neoplasms can be made by following Dr. Hughlings Jackson's methods and analysing the mode of epilepsy generated in any one particular region of the cortex cerebri. In order not to take up the time of the meeting and so prejudice the discussion of the main question, the subject of this communication, I must for the present refer my readers to the publication above mentioned.

The character of the epilepsy alone is sufficient as the basis of an exploratory operation, but of course in the large majority of cases the diagnostic conclusion is confirmed by the associated symptoms.

A simple exploratory operation should involve no risks to a patient, and, inasmuch as the successful treatment of a malignant growth depends upon its earliest possible removal, no opposition on a rational basis can be raised against my proposition except this, that in the present state of our knowledge such general resort to operation may lead to negative findings in some instances.

But in such a case no harm would be done to the patient nor would surgical intervention be prejudiced, since the surgeon would have done the best thing in his power for the patient.

In all my cases of such exploratory operations I can only remember one in which the skull and cortex cerebri appeared to be normal when exposed. If the suggested procedure is carried out as a routine practice, it will result not only in the discovery of neoplasms in a very early stage of growth, but will also greatly improve our knowledge of the affections of the brain cortex, which at the present time is chiefly derived from *post-mortem* anatomical examinations, in which only end conditions are found and bearing very little resemblance to the conditions existing during life and of which treatment is attempted.

(*b*) *Want of action*, that is, destructive effects of lesion.

The second proposition I wish to invite acceptance of is that immediately a destructive lesion of the intracranial nervous system is recognized to have a progressive character it must be treated surgically, and since a rough division of the brain into mainly sensory and mainly motor districts is possible, the following terms express my meaning:

"That every case of *progressive* motor or sensory paralysis of intracranial origin must be treated by exploratory operation."

The fact that the principal feature of a new growth is its gradual extension and consequently gradual destroying effect on the nerve tissues, does not seem to have received full attention from clinicians. Many, in fact most, cases of intracranial tumour, when referred for surgical treatment, exhibit severe symptoms of destruction, such as hemiplegia, hemianaesthesia, hemianopsia, etc.; and in some cases, especially where the growth slowly increases and varies in its pressure, as all tumours do, the process of destruction has been allowed to go on for years—three to four years not uncommonly—before the removal of the cause is sought.

This procedure of watching and delay is equally as unjustifiable as would be the watching of the gradual destruction of a limb by sarcoma, if such were the

common practice; but fortunately, since in the latter case the tumour is exceedingly obvious, the sufferer enjoys a better chance by being treated in good time. The matter becomes even more serious if the correlative question of cerebral compensation is considered. Personally, I do not think that we are justified in speaking of cerebral compensation of function. The more closely cases of cerebral lesion are studied the more clearly does it appear that the destruction of any given part means a corresponding loss of function, and that it is only the widespread degree of representation which provides that with restricted lesions there shall not be a total or complete loss of function.

Nothing, therefore, is of graver concern to the sufferer from intracranial disease than that it should be attacked before it has had time to destroy any portion of the cerebrum.

Clearly the problem before us is to find what are the earliest symptoms of destruction in the various lobes of the cerebrum. The answer to this is obviously the answer to the question, What is the principal function represented in each lobe?

What, however, is also needed is a more frequent and systematic clinical inspection of cases. Thus, in the early destructive effects on the mental powers which is so characteristic of tumours of the frontal lobes, beyond a recognition of the well-known *Witzelsucht*, there exist no organized methods of mental and intelligence examination and record.

So, too, in lesions of the sensori-motor Rolandic region, whether pre-central or post-central, so much attention is bestowed on coarse motor loss that the far earlier loss of Munk's "memories of movements" has been overlooked. I have found that atopognosis may be present for months before the destructive lesion producing it has caused any detectable loss of motor power; whereas stereognosis, on which much reliance is often placed, naturally does not develop until the essential factor in its production—namely, motor paralysis—is well marked.

Thus, as might have been anticipated, the earliest graded progressive signs of destruction to be looked for are losses of sensory function. This is true not only of the central region of the cortex, but *a fortiori* of the so-called higher sensory centres. Thus, early recognition of commencing restriction of the fields of vision, of alteration in tone appreciation, and of slight disorders of equilibration, will secure early treatment of tumours of the occipital and temporal regions.

Though for the early and successful treatment of cerebral tumours operation should be at once resorted to on detection of progressive sensory loss, unfortunately the last phenomenon to appear—namely, loss of motor power—is the one usually looked for, and, one must add, waited for, before the proper surgical steps are undertaken.

It follows from what has been said above that no tumour of the brain should be "treated" by internal drug administration. We come, therefore, to the following conclusion: "Every case of intracranial tumour definitely diagnosed must be treated, according to its situation, either by (1) removal of the neoplastic tissue, or (2) release of the intracranial hypertension."

It might be imagined that the decision as to which of these two procedures should be undertaken is simple, but in the present condition of our diagnostic powers the decision not infrequently has to be left to the moment of operation. Under these circumstances it will be found that the two-stage method of operating I suggested in 1893 gives the necessary freedom of action to the operator and protects the patient from unnecessary risk, though with many of my colleagues I quite agree there is but little risk of shock in removing at one sitting small growths from, for example, the upper parietal region.

The removal of an intracranial neoplasm is, of course, the only means of carrying out the primal duty of the medical adviser of endeavouring to save life, but owing to the special functions possessed by the central nervous system the question to a patient whether he would choose to survive the loss of these is always open.

Indeed, it was owing to a patient deciding before an operation that no procedure involving an increase of his hemiparesis should be carried out, that I made the first observation that a simple decompression operation could cause arrest and complete degeneration of a glioma. Though the same result has been observed since in other cases, they are so few that it is impossible to draw any conclusions as to the factors which combine to render such a fortunate result possible.

The logical conclusion, therefore, must be that except in the case where the field of removal involves direct destruction of the representation of such a single faculty as speech, free extirpation of neoplastic tissue should be the rule and mere decompression the exception.

Stress may justly be laid upon this point in the present state of this subject, since, in view of the ease with which blindness, etc., can be averted by a simple decompression operation, there is some risk that only palliative operations may be undertaken when curative measures should be attempted.

The question of diminishing the increased tension which the presence of a growing tumour gives rise to within the skull is important, not only because of its immediate results in arresting papilloedema, headache, and vomiting, but also because, as Oppenheim has pointed out, like all therapeutical means, there are in its employment disadvantages to be avoided as well as advantages to be secured, and that both must be considered in discussing means of palliation during the so-called "expectant" treatment.

If the general plan of operative treatment thus indicated is followed, then the first consideration which should be given prominence—namely, the desirability of making the opening in the skull as near as possible to the lesion—is fulfilled. If subsequently it be decided to attempt the removal of the neoplasm, no difficulty will arise in dealing with the surrounding cerebral tissue. The opposite practice not only creates this difficulty but also causes confusion in subsequent attempts to perfect the localization diagnosis.

As regards the practical question of the accidental production of aphasia by reason of brain oedema, that by no means depends upon the situation of the opening, but upon that of the tumour and of its pressure directly interfering with the function of the speech cortex. I am aware, indeed, of an illustrative case in which although a tumour was suspected to lie in the left frontal lobe a decompression was performed on the right side, with the result that aphasia was not only not avoided but followed the operation, no doubt from the direct effect of the growth.

The final point for discussion is the question, Under what circumstances should simple decompression operations be performed?

The importance of deciding this question lies in the fact that such, as already indicated, merely palliative measures may be undertaken, when, on the contrary, curative operations should be entered upon.

Practically the answer can be readily supplied, since there are but two conditions under which a palliative operation is all that should be employed. These are: (1) Cases in which the neoplasm is known to be situated in a position from which it cannot be safely dislodged; (2) cases in which no localization is possible. In both of these classes of cases the execution of a subtemporal decompression is naturally the best procedure.

Concluding Note on the Usual Procedure in Neurological Practice in Regard to the Treatment of Intracranial Tumour and Syphilis.

The whole subject of the "expectant" treatment of intracranial tumour is inseparably connected with that of the treatment of syphilis of the central nervous system, for there can be no doubt that to the empirical treatment of these cases with potassium iodide and mercury is primarily due the desire, in the absence of a correct diagnosis, to try experimentally a course of antisyphilitic treatment. Moreover (from one point of view regrettably), since this treatment is occasionally followed by a modicum of success where diagnosis has failed and the case is really one of syphilitic cerebritis or pachymeningitis, the unfortunate custom has grown up in practice of devoting a long period of months or even years of incalculably valuable time to antisyphilitic treatment.

There are really two points of great importance involved in this question: first the unjustifiability of treatment of non-syphilitic cases with antisyphilitic treatment; and secondly,

the justifiability of treating syphilis of the brain by the conventional methods, namely, antisyphilitic drugs given by the mouth, intramuscular injection, or inunction. I wish to take these two points separately, as, though these themes may be thought to be very old ones, there is certainly on the first no definite procedure yet adopted except by a few, and on the second I desire to urge a modification of the present practice in the treatment of syphilitic lesions of the central nervous system.

1. Should any (routine) antisyphilitic treatment be given in cases of intracranial neoplasm, and, if so, for how long?

Unfortunately at the present time, owing to our deficient powers of diagnosing the nature of a lesion, a case presenting the symptoms of an intracranial neoplasm, and yet giving a negative Wassermann reaction, cannot be pronounced definitely and at once to be non-syphilitic in origin.

Consequently, although the case be one of glioma or glio-sarcoma, and therefore in itself uninfluenced (though surrounding oedema may be diminished), probably most practitioners would follow the routine practice of giving iodide and mercury in the hope of producing some effect.

In 1893 I drew attention to this matter, and urged, even in those pre-Wassermann days, that six weeks of such probationary treatment was the utmost that should be allowed; that unless within that period not merely temporary alleviation, but very substantial improvement, had been attained, the case should at once be treated surgically. (I shall discuss directly the value of "improvement" in cases of syphilitic lesion.)

Although the same point was subsequently taken up and argued with great force by Dr. Allen Starr, it does not appear to me that during the seventeen years which have elapsed a rational procedure has been arrived at even now, for intracranial tumours of all kinds, from fibromata to carcinomata, are still treated not merely for weeks, but even months and year, with iodides and mercury.

The present position is, in fact, one of the gravest reproach to medicine, and reform and progress can only be attained when the writers of textbooks make, in their chapters on cerebral tumour, treatment bear a definite relation to diagnosis.

I hope that this discussion will accelerate this, and that a consummation so much to be desired in the interests of the sufferers from intracranial tumour will be arrived at before 1913, or not less than twenty years will have passed since the question was first raised.

2. Is the present mode of treatment of intracranial syphilitic disease adequate?

This second question was originally raised by my teacher, Sir William Gowers, who pointed out the fact that cases of syphilitic lesions of the encephalon are not really cured, though often rapidly and very strikingly relieved, by antisyphilitic treatment, and he showed, further, that after a period of respite the symptoms tend to recur. The relative incurability of cerebral syphilis of itself suggests that the time has come to take more active steps in the matter, and especially at this moment, when Ehrlich has demonstrated that though the acute symptoms can be rapidly checked by an arsenical preparation, this apparently is not applicable to the disease when it attacks the central nervous system.

The lesions I wish specially to refer to are gummata, pachymeningitis (including haemorrhagic pachymeningitis), acute and chronic, and so-called syphilitic optic neuritis.

Though in many cases relief is obtained by drug treatment, in not a few there is no improvement or a relapse occurs. In spite of these facts the position was advanced many years ago by v. Bergmann that syphilitic lesions (he specified gummata) ought not to be subjected to surgical treatment. Partly in consequence of this authoritative statement, but partly, doubtless, because at least improvement was so commonly obtained by non-operative procedures, the question of what principles should underlie our treatment has been rather left out of sight.

I wish, therefore, to advance the view that our present lines of treatment should be remodelled in view of the analogy between the subdural and the intraperitoneal spaces. Upon this basis, and the concurrent requirement of getting as large a dose of mercury as possible in contact with the virus, I have obtained in cerebro-spinal syphilis, just as in tuberculous peritonitis, the most rapid improvement by opening the subdural space and irrigating with sublimate solution (1 in 1 000), even in cases where the ordinary routine drug treatment has failed in spite of a full and fair trial. Further, that since a gumma consists of a wholly necrotic focus of infective material, I suggest it is as important that it should be thoroughly eradicated as a similar tuberculous focus is treated.

Here, again, I would ask also for proof that a gummatous mass in the central nervous system has ever been cured by mercurial treatment, whether oral, inunction, or intramuscular. In the absence of such evidence, it clearly is only logical that a gumma cerebri should be extirpated and the subdural space irrigated freely with sublimate lotion. By this means we also secure the most direct treatment of the pachymeningitis which always surrounds a gumma cerebri, and also obtain a more immediate effect on the meningeal (pial) vessels, always in a greater or less degree affected with endarteritis.

I have carried out this procedure in all conditions of syphilitic disease of the encephalon—namely, acute meningitis, chronic pachymeningitis, chronic cerebritis, and gumma—with, in all cases but two, striking benefit. The two fatal cases were both haemorrhagic. In one a large cavity in the membranes, found at the operation to be filled with clot and emptied, was never obliterated—that is, the brain failed to recover from prolonged compression (the patient had been hemiplegic for some weeks); and in the other the haemorrhage had already invaded the ventricles.

Thus the procedure involves no risk in itself. Hence this line of treatment, though it may appear at first sight to be more "heroic" than the ordinary methods, as a matter of fact is not so.

Syphilitic Optic Neuritis.—The occurrence of optic neuritis in a syphilitic subject is frequently regarded as a local manifestation of the infection and treated as such. I wish to suggest for discussion whether such optic neuritis is not always a concomitant of subacute meningitis. A near parallel to such a condition is the optic neuritis observed in children suffering from otitis media.

With this view of the pathological causation of syphilitic neuritis, it is easy to understand that opening of the subdural space and irrigation with 1 in 1,000 sublimate lotion offers the best opportunity of a rapid cure of the condition.

This is the case, and a simple subtemporal irrigation on one side will secure immediate, and as far as I have seen permanent, subsidence of the papillitis. Though "syphilitic optic neuritis" often clears up satisfactorily, it has the characteristic tendency of the disease to relapse, and also, owing to its chronic duration under ordinary treatment, leads to a certain degree of atrophic injury of the nerve fibres. The irrigation method of treatment meets both these contingencies in the most efficient manner.

I have previously directed attention to the beneficial results of treating spinal pachymeningitis cases by the irrigation method, and would now conclude by pointing out that in all syphilitic conditions of the nervous system the problem of rapid treatment is the same, namely, the local application of mercury, and that this can be safely accomplished by subdural irrigation.

REFERENCE.

[1] *University Hospital Medical School Magazine*, No. 1, 1910.

THE State Charities Aid Association of New York has, we learn from the *New York Medical Journal*, appointed a special Committee on Mental Hygiene, which announces the beginning of an "aggressive campaign" for the prevention of insanity throughout the State. The committee states that its campaign will be conducted on lines similar to the crusade against tuberculosis which is being carried on by the State Charities Aid Association. It will endeavour to instruct the public regarding those causes of insanity which are tangible and therefore preventable. Among the features of the campaign will be an exhibit similar to the tuberculosis exhibits, which have played such a large part in educating the public regarding the causes and prevention of tuberculosis. Among the members of the committee are: Dr. M. Allen Starr, professor of neurology in Columbia University; Charles L. Dana, professor of neurology in Cornell University; Dr. Frederick Petersen, professor of psychiatry in Columbia University, and Dr. Bernard Sachs, neurologist to Bellevue and Mount Sinai Hospitals.

The Bradshaw Lecture

ON

CANCER.

DELIVERED AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND ON WEDNESDAY, DECEMBER 7TH, 1910,

BY

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In 1884 the late Sir William Savory chose as the subject of the Third Bradshaw Lecture, the Pathology of Cancer. He pronounced the cancer cell to be an "embryonic" or "rudimentary" form of cell, possessing great powers of multiplication and of endurance, but differing from true embryonic cells in its lack of power of differentiation. And then he used these remarkable words:

> And while tumours of the most innocent type touch, and indeed pass into, natural structures, the most malignant touch, if they do not actually pass into, the class of parasites. . . . The interval between the worst kind of cancer and a parasite must be a very narrow one.

He suggested that the experiments on cancer grafting had probably failed owing to the "crude conditions under which they have been performed." He concluded thus:

> Before we shall ever be able to answer the question, why or how do tumours form? it seems to me we must be able to solve the problem of normal growth and development, and to answer the question why or how it is that these continue up to a certain point and then suddenly cease.

For the succeeding nineteen years the Bradshaw lecturers dealt with other subjects, but in 1903 Sir Henry Morris gave a learned review of the many theories that had been advanced to explain the origin and nature of cancer, and specially discussed two theories: The microbic or parasitic theory, which he held to be "non proven," and Cohnheim's theory of "cancer matrices," ante-natal and post-natal. This theory he strongly supported as explaining all the facts of the disease then known, and he confidently foretold for it a speedy acceptance by all pathologists.

Two years later, in 1905, you, Mr. President, announced, as the title of your Bradshaw Lecture, "Carcinoma is a Parasitic Disease," and stated:

> That the carcinoma cell is an independent organism, like many a protozoon; that it lives a life which is wholly independent and proper to itself; and that it lives as a parasite in the body of the animal which is affected with carcinoma, deriving its nourishment from the host, and having nothing to pay the host for the sustenance of which it robs him.

You shrank from accepting Hauser's suggestion that the protozoal cells of cancer are derived or descended from the living cells of the host, and asserted rather that "the parasite is introduced into the body from without."

It is needless to say that each of these divergent theories has been discussed from the standpoint of a very wide and accurate knowledge of the subject, and that each in turn has been supported with extraordinary ability and with the enthusiasm of a strong personal belief. For me to attempt another review of the same facts and arguments would be to act the disastrous part of Phaeton, and yet I propose, sir, to raise once again the great problem of the nature of cancer, not because I can read aright the riddle solved so differently, and with such mutual destructiveness, by my predecessors, but because within the last few years the workers in our cancer laboratories have added so much to our store of knowledge that it seems wise to see how far the new facts support or refute former conclusions. We are like children putting together a dissected picture, we slowly look over and often vainly try to fit together the irregular pieces of the puzzle, but gradually order comes here and there out of chaos, and as piece after piece finds its proper setting, the picture grows until the fitting in of the final fragment reveals the whole design.

DEVELOPMENT OF CANCER RESEARCH

In addition to the influence of the general progress of biological knowledge, two discoveries have caused a great development in cancer research: the proof that cancer can be transferred from animal to animal, and the demonstration of the influence of radio-active bodies upon cell growth. Scientific workers have devoted themselves to the solution of the problem of cancer with new courage and more confident hope since they saw that it could be submitted to that experimental method which has so often dissipated the darkness of ignorance. All over the civilized world cancer research laboratories, more or less exclusively devoted to this quest, have been founded, and never before have the efforts of scientific men been so largely centred in the study of any one disease. Highly gifted investigators are devoting themselves with praiseworthy devotion to the study of the internal structure and arrangement of cancer cells, to a search for the forms and evidences of the presence of an invading organism, to a close scrutiny of all that takes place in the artificial transmission of the disease from animal to animal, and to the investigation of the various abstruse problems in bio-chemistry and physics that it is hoped may aid in the discovery of the nature and cause of cancer. This college, in conjunction with our sister in Pall Mall, by the initiation, control, and housing of the Imperial Cancer Fund, has taken a very prominent part in this movement, and it is a matter of great satisfaction that the researches carried out in our laboratory are universally recognized as having been of fundamental importance.

It is not my purpose to give a detailed account of the latest results of cancer research, but rather to briefly enumerate some of them, and to see whether and how far they enable us to unravel what has hitherto been a tangled skein.

INCIDENCE OF CANCER IN MEN AND ANIMALS.

It is now known that *cancer occurs in all races of men.* Wherever adequate investigations have been made cancer has been found, and the fuller our knowledge of any people the ampler is the evidence of the presence of cancer among them. We are unable, therefore, to attribute the disease directly to the influence of race, of climate, of diet, of occupation, of soil, of the subtler accidents of civilization, or to any of the associated and complex conditions that may be summarized as "environment." Not that these factors are without influence. Certain occupations are assuredly attended with peculiar liability to cancer; I need only mention chimney sweepers, and workers in *x* rays, tar, and paraffin; and the beneficent effect of circumcision in greatly diminishing the incidence of epithelioma of the penis, and the pernicious influence of the use of the kangri, show us how the disease may be affected by social customs. It is clear, however, that we may not regard any of these conditions as the essential cause of cancer, for the disease occurs in their absence, and we must carefully guard against confusing subsidiary, accelerating, predisposing factors with the inevitable, constant cause of the disease.

Human statistics cannot be relied upon to substantiate or define the influence of race. Dr. Bashford has been at great pains to point out the imperfect character of all statistics of cancer incidence, and he has clearly shown that the proportion of cancer reported among different nationalities is at present only a measure of the value of the material submitted to examination, and must not be taken as a true picture of the actual frequency of cancer. Only as care in diagnosis, in pathological examination, and in records improves, and becomes uniform in all races of men, shall we be able to state with precision what influence race, among many other factors, has upon the incidence of cancer.

The experimental study of cancer has, however, shown that we must not assume that all races of men are equally liable to cancer. Very early in the investigations into the inoculability of mouse cancer it was realized that there were serious discrepancies in the results obtained by different expert workers. Some of these discrepancies were caused by differences of technique, others by inattention to the age of the mice used for the experiments, and others again were due to the particular tumour experimented with. Chiefly owing to the work of Dr. Bashford, these causes of variation in the results obtained have been recognized and eliminated, and the influence of race has thereby been demonstrated. Such facts as these have come to light. Haaland found that a certain tumour grew on inoculation in nearly 100 per cent of Berlin mice, in 24 per cent only

of Hamburg mice, and failed altogether to grow in Christiania mice. Loeb has a sarcoma which was readily propagated in white rats, and could not be inoculated into coloured rats. Tyzzer has a carcinoma found in a Japanese waltzing mouse, which he can transplant successfully in practically 100 per cent. of this particular family of mice, but which altogether fails to grow when inoculated into common mice. On the other hand, Jensen's tumour, which grows readily in common mice, cannot be inoculated with success into the Japanese waltzing mice. In hybrids resulting from the crossing of common white mice and Japanese waltzing mice, the Japanese tumour grows as uniformly and even more rapidly than in the pure Japanese mice, but in the second and third generations of the offspring of these hybrids the Japanese tumour cannot be inoculated at all. In his earliest inoculations of Jensen's tumour, Bashford found it impossible to succeed with blue mice, while he obtained 25 per cent. of success with other tame mice. He also relates that a tumour sent to him by Dr. Michaelis of Berlin was transplanted into 19 Berlin mice, with the result that nine tumours grew, but only one small tumour developed in 182 tame London mice similarly inoculated.

It is, of course, most important to keep clearly before one's mind the difference between the liability to occurrence of sporadic cancer in an individual or animal and the susceptibility of such an individual or animal to the successful inoculation with cancer transferred from another. Such facts as I have just mentioned, however, make it imperative upon us, while recognizing the presence of cancer throughout the human race, to keep a mind open to receive a demonstration, should it come, of the influence of race upon the incidence of cancer, apart from all accidental and accessory conditions.

Passing now from this first fact—that cancer is a disease of man wherever and however he lives—I would next remind you that we have recently learnt that *cancer is a disease that occurs in all vertebrate animals.* It is not limited to man, nor even to man and primates, nor even to the great family of the mammalia; it has been proved to occur in birds, reptiles, and fishes. The disease, as met with in the lower vertebrates, is not a similar disease, but veritable cancer, with the same histological characteristics and with those special biological features that we find in man—the uninterrupted growth, the power of infiltration, and the formation of metastases. The importance of this demonstration is enormous. It dissipates at once all those theories which would find the cause of cancer in any condition peculiar to man; we have to seek it in some influence which man shares with all other vertebrates.

When we reflect that there is no known instance of an external infective agent or organism which spontaneously attacks and produces its characteristic pathological effects in all vertebrata, or in all the varying physical conditions of environment in which cancer is found, the parasitic theory of cancer fails even to be a satisfactory "working hypothesis." We can only adopt it if the fact is demonstrated and Koch's conditions of proof are fulfilled; and such a demonstration is certainly not forthcoming.

That cancer can be transferred from host to host is now attested by thousands of successful experiments upon mice, rats, and dogs. Four facts have come to light during these inoculation experiments which are important to bear in mind. In the first place, the successful grafting of cancer from animal to animal is far more difficult to accomplish than is the inoculation of microbic disease. In the second place, it has been found that it is always difficult to succeed in the primary grafting experiments of a sporadic mouse tumour into another mouse, or in the first graftings of a tumour upon a fresh family of mice. In the third place, as I have already mentioned, it has been found that when allowance has been made for these variations, the success of grafting experiments may vary considerably in different races or families of mice. And then towering above these lesser facts is the greater, all-important one, that *cancer cannot be transferred to an animal of another species.*

Cancer of a mouse is readily transferred to other mice, but it cannot be grafted upon a rat, or upon any other animal of another species. The same holds true of cancer of the rat and dog, and in this specificity of cancer we see the cause of failure of all experiments to graft the human disease upon lower animals. These failures were not due, as Savory suggested, to the "crude methods" employed, but to the working of a biological law.

The fact that an inoculable disease is specific in the sense that it cannot be transferred from species to species surely must be one of great importance in any consideration of its nature, for the grouping of animals into species is not artificial. The differences that we recognize between species have a greater element of permanence than those between varieties; the offspring of crossed varieties are fertile, while the hybrids of crossed species are almost invariably infertile; the number of chromosomes in somatic cells differs widely, but it is constant for every species. Difficult, therefore, as it may be to express the distinguishing limitations of a species in terms which will satisfy the exacting criticisms of modern schools of biologists, all agree that the word connotes a reality, that it indicates an important step in the path of evolution, and that the limits between species are true landmarks.

The enormously wide range of the incidence of cancer, the uniformity of its biological characters, and its specific inoculability are a triad of facts unique in pathology and of tremendous significance. Apart from many minor considerations, I venture to submit that they are inconsistent with what we know of infective or parasitic diseases. They, too, are no doubt "specific," but the specificity is attached to the disease, and neither to the animal nor to the tissue in which it occurs. The tubercle bacillus leads to the same disease in the guinea-pig as in the man from whom the virus may have been taken. The minute anatomy of tubercle is the same in whatever part or tissue of the body it arises; it does not vary with its primary site, as is constantly the case in cancer. Cancer is distinguished from all infective and parasitic diseases by the fact that the cellular parentage of a malignant growth is always definitely marked, and that whether it originates in squamous, columnar, or spheroidal epithelium, in endothelium or in any of the forms of connective tissue cells, it retains throughout its whole life, and wherever found, characteristic features of its parent cell. Parasitic diseases are anatomically and etiologically specific—specific in their structure and cause; cancer is specific not in structure, perhaps not in cause, but in the physiological character of its cells.

The Cancer Cell.

The essential part of every cancerous growth is the living cancer cell! The cell, whether of carcinoma or sarcoma, is the one essential part, that which contains within itself all the potentialities of the whole of cancer. While it lives as a cell, the cancer is living, when it dies as a cell, it is impossible to find or develop or excite any of the parts or agencies, or faculties of a cancer. By no one has the demonstration of this fact been carried so far, or made so indubitable, as by Bashford and his fellow-workers in our laboratories. Their investigations into what takes place in the "early stages" of successful transference of a cancer from mouse to mouse have revealed that in the tiniest practicable graft all the introduced stroma and many of the centrally placed cancer cells die, but that the cells, or some of them, in the periphery of the graft live, do not undergo degenerative changes, and after a few days—usually about four—excite the formation from the fibroblasts of the host of a new supporting and vascular stroma, and themselves show the changes indicative of cell division. The parenchyma of the tumour, which ultimately may grow to a huge size, all develops directly from those cancer cells of the graft which were able to withstand the hurtful influences of the process of grafting. While it is possible to transfer cancer from mouse to mouse so long as care is taken to introduce living cancer cells in the graft, it is impossible to do this when the cancer cells are destroyed by pounding in a mortar, or their vitality has been injured as by the influence of heat. Indeed, Schwann's great doctrine of "*omnis cellulae cellula*" is peculiarly true of cancer.

On the other hand, it has been equally clearly shown of inoculated infective granulomata that they grow not from the graft, but from the connective tissue of the host. This difference between cancer and infective granulomata is of fundamental importance, a veritable *differentia.* The metastases of cancer and of granulomata may be alike in

some of their coarser anatomical features, such as their site, but in their nature, in their true biological characters, they are absolutely distinct, with a distinction which is vital and fundamental.

If the living cancer cell is the essential part of cancer, it is important to know what are its anatomical and physiological characteristics. A study of them demonstrates that the cancer cell is only a variation of a normal cell—it possesses neither in structure nor in powers anything not found in the healthy cell. Let me rapidly mention the established facts about living cancer cells.

First, *they possess a great power of continuous multiplication.* So far as the experiments with Jensen's tumour have gone it seems that the grafting can be carried out with it as successfully now, after seven years, as at first, and that from the small sporadic tumour in the mamma of a mouse a mass of cancer has been grown through an unknown number of mice, amounting to far more than a thousand times the bulk of the original tumour, or even of the original mouse. Bashford has particularly laid stress upon this striking fact, and has spoken of it as a "new" biological fact, but in that I think he has probably exceeded. Certainly in the protozoa such apparently endless multiplication and growth of living cells can be recognized. And when we cast our minds back to the development of the human ovum—a single cell—and remember that from it directly descends the entire mass of cells which form and maintain through his threescore years and ten the full stature of a man, we see a power of cell growth which we need not shrink from comparing with that of a Jensen's cancer cell. But it is particularly noteworthy that in cancer this power of continuous multiplication is spontaneously manifested most often in the cells of an organism that has passed the period of youth and maturity, and has already entered upon the declining phase of life.

The second characteristic feature of the cancer cell is that *it retains the inherited limitations to type* of the cells among which it first appears. The descendants of an epiblastic cancer cell retain, in the main, the features of their early parent—a hypoblastic cancer cell bears its own family likeness, and the sarcoma cell is always a distinctively mesoblastic cell. Even in those remarkable experiences that have been so carefully studied and admirably recorded by Bashford and Haaland, when they observed, in a series of transplantations of an undoubted epiblastic cancer of a mouse, its gradual conversion, first into a cancer with a richly cellular stroma, then into a "mixed" tumour, and finally into a sarcoma, it is clear that the mesoblastic cancer (sarcoma) thus formed sprang from the connective tissue cells of the hosts, and that its cells are in no sense or degree the lineal descendants of the original cells of the epiblastic cancerous parenchyma.

Thirdly, *cancer cells develop and differentiate but little and irregularly.* Thus, in a squamous epithelioma there is great variation in the extent to which keratinization of the cells occurs, and in some cancers we see such departures from type as a change from squamous to columnar cells and from spheroidal to columnar cells, or vice versa; the differentiation of a mammary cancer may be into acinous or glandular carcinoma or into a combination of the two. This variation in growth has been best observed in the experimental work in laboratories, where the opportunities of studying the same strain of tumour in many succeeding stages of its growth and through many hosts affords scope for observation such as can never be found in human pathology.

The development of the cancer cell is neither purposeful nor effective. In glandular carcinoma no regular grouping of acini around primary ductlets is found, nor does the cell metabolism issue in useful secretion. In a squamous carcinoma no impermeable protective covering is formed, and in a sarcoma no useful fibrous bands or aponeuroses, no attached and functional muscles, no perfectly constructed and useful bone is formed. In cancer there is cell multiplication in exaggerated degree, but a lack of adaptation to the many and varied needs of the organism. The cancer cell shows no new faculty or endowment, no power of "rising on its dead self"; it is a less highly endowed cell than its physiological parent.

Then, again, *cancer cells exhibit periodicity in their growth.* Bashford has found that a mouse tumour has its period of active growth succeeded by one of less activity, and that the success of artificial transference of the disease to other mice rises and falls with this wavelike activity of the tumour, and he has found that this periodic activity is transmitted to the tumours which arise from the grafts—that it is an inherent or inherited property. Similar variations in the rate of growth and activity of cancer are also seen in the human subject, and we see periodic activity in metastases—periodic activity in their occurrence as well as in their growth. We must not look upon such variations as due of necessity to a change in the resisting forces of the patient: they are probably due to the inherent periodic growth of cancer. Physiological periodicity of cell growth is, of course, well recognized; I need only mention such examples as the sexual periodicity in animals and especially in the human female, the periodic growth of young animals, the periodic growth of hair, and the periodicity in the life-history of salmon and the periodic variation in the colour of the fur and feathers of many mammals and birds.

The study of *the form of cancer cells* and the attempt to find in it some index of their nature has yielded but little that is positive. The many determined efforts to see within them foreign living forms, whether of bacteria, of protozoa, or of yeasts, have failed. Bacteria may, of course, intrude within a cancer cell, but it was a cancer cell before the intrusion, and we may assert with some confidence to-day that there is no visible evidence of parasitism in the cancer cell. Nor has the hopeful and brilliant study of the mitoses of cancer by Walker, Moore, and Farmer and their followers lifted the veil. It seemed that the theory that cancer was a gametoid tissue would explain much, or at any rate establish on a firm footing the nature of the disease. But we must regretfully consent to see that hope unfulfilled, and admit that mitosis is no key to the riddle.

Quite recently it has been shown by Beckton that the tissue cells of man, except the keratin cells of squamous epithelium, the cells lining the collecting tubes of the kidney, the cells of unstriped muscle, and the unimpregnated ovum, contain certain granules, which are known as Altmann's granules. While unrecognizable in the protoplasm of the ovum, these granules are seen in the unincubated blastoderm of the egg, and are readily recognized after six hours' incubation. Beckton has found them in mouse embryos of 8 mm. and 12 mm. in length, and in the rat embryo of 30 mm. They appear, therefore, very early indeed in the descendants of the original ungranulated cell of the ovum. Beckton states that these particular granules are seen in the cells of the stroma of carcinoma, but *not in the cells of the parenchyma*, and while abundant in the protoplasm of inflammatory and granulomatous tissue they are invariably *absent from the cells of sarcoma.* Beckton examined twenty-one mouse tumours, sent him by Dr. Bashford, and in fourteen of them there were no granules, but in five instances they were present; they are, therefore, commoner in mouse tumours than in human malignant growths. Should further observations confirm Dr. Beckton, we shall not only have a very useful method of diagnosis, but he will have established a morphological difference between cancer cells and most normal cells. He will also have afforded an anatomical proof that cancer cells are not embryonic cells. Beckton's valuable research has been carried out under Dr. Lazarus-Barlow in the Cancer Research Laboratory of the Middlesex Hospital.

Of the *intracellular metabolism of the cancer cell* we know but little; it seems to beget no toxin, to generate no new substance, and to depart but little from the chemistry of health. And yet we cannot doubt that its special biological characters are inseparably linked with some intracellular chemical peculiarities. We have evidence of this furnished by some very careful spectroscopical observations made by Mr. Mottram in Dr. Lazarus-Barlow's laboratory, by which he has shown that the potassium content of the red corpuscles of cancerous patients is considerably higher than in health, the difference being represented by the figures 1.5 and 3. The sodium content, on the other hand, shows no change. The importance of this observation is enhanced by the further fact that while the sodium content of all carcinomatous tumours is about the same, the potassium content of primary cancerous growths is higher than that of secondary, and the potassium content of squamous-

celled tumours is higher than that of spheroidal celled. Mottram has, therefore, shown that the cancer cell has a chemical coefficient, but it is a modification in degree, and not in kind, of that of the healthy cell.

These are the facts at present known about cancer cells as independent entities. We must now look at them as members of a community, and study their relations to neighbouring cells.

First we must notice *the disproportionate growth of the cancer cell.* It bears no relation to the growth, the needs, or the condition of the neighbouring cells and tissues, and, as it often tends to outgrow its stroma, and, by the pressure of its cells, to compress the capillaries, we have in this fact an explanation of the frequent degeneration, fatty and otherwise, of the cancer cells. The haemorrhage which so frequently occurs in some cancerous growths may also be in part due to the fact.

The disproportionate growth of the cancer cell has been mistaken for evidence of its being an independent organism, but we shall see abundant reason for rejecting this view and for being certain that a cancer cell is an altered body cell.

The pressure caused by the incessant and disproportionate *multiplication of the cancer cells causes not only complicated infoldings of the cancer itself, but flattening and distension of the adjacent soft tissues.* In his second Scientific Report, Dr. Bashford has published



Fig. 1.—Squamous-celled carcinoma of lower lip: man. Growth a folded and crumpled sheet, intercalated between outer and inner surfaces of lip. Shows folding of skin (a) and mucous membrane (b) over margins of growth, with great lateral displacement of the normal tissues adjoining either margin.

drawings of an epithelioma of the lip to show the enormous folding up of the cancerous parenchyma, and that what at first sight appears to be a solid infiltrating growth is really an immensely extended superficial growth, folded up into a ball, filling at first the narrow space it acquired for itself by pressing aside the yielding tissues of the lip and then projecting on the surface.

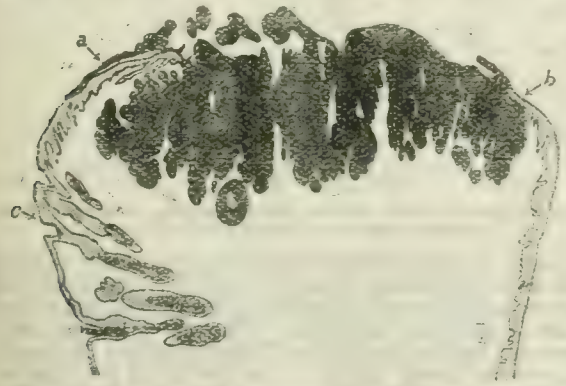


Fig. 2.—Squamous-celled carcinoma of lower lip; man. Shows sharp demarcation of growth from adjacent skin (a) and mucous membrane (b). At (a) the elongated epithelial papillae of the skin are displaced by the pressure of the growth; they are also being undermined and will be pushed off. At (c) the hair follicles already show displacement from pressure.

Bormann has shown that the papillae immediately next the growing edge of an epithelioma of skin or tongue are not exaggerated in size or cell activity, but are compressed and stunted. These observations run right athwart the commonly received notion that as soon as epithelial or other cells have acquired "malignant" properties they burrow deep into the surrounding tissues, and that the similar adjacent cells also show active growth and a readiness to participate in the disorder, as if "infected" by the malignant tendency. Unless Bashford's and Ribbert's statements are erroneous, they afford a demonstration that cancer cells in their growth give a qualified obedience to the law which regulates and controls the growth of the normal cells from which they are derived.

But if the first effect of cancer cells upon their neighbours is to compress them, their second and far more important power is to *invade the adjacent tissues.* This power of infiltration, as it is called, or permeation, is so well recognized that I need only mention it. The growth may penetrate even to bone and marrow, and in doing so cells, or groups of living cells, pass into lymphatic or vascular channels, and are carried along by the slowly or swiftly moving stream therein, and may lodge in distant parts and develop into metastases. But they may not do so. Handley's studies of the process of lymphatic permeation have shown us that the passage of a cancer cell along a lymphatic is attended with great peril to it, the lymphatic endothelium has great power of cancer destruction, and for every cancer embolus that resists it successfully and thrives and multiplies—bursts through the lymphatic wall and develops as a metastasis—many a one falls a prey and dies. The same holds true of the haemovascular embolisms. These have been studied by Borrel, Haaland, Bashford, Murray, Tyzzer, and others, and the resisting or destructive influence of the vascular endothelium on the cancer cells has been clearly demonstrated. The cancer cell, when it wanders from its proper plane or sphere, has to fight for its life; normally and in favourable conditions the "odds" are against it, and our *post mortem* records bear abundant testimony to the ability of the forces of resistance to these cell intrusions to limit the disease, in many cases to the area originally attacked, even up to the death of the patient from the disease. While therefore we must not for a moment under-estimate the grave importance of the permeation of cancer and its tendency to develop metastases by the transference of the living cancer cells to distant parts of the organism, we must be careful to regard this in its due proportion and to remember that all infiltration and every metastasis is only accomplished at a period later than the earliest onset of the disease and after the overthrow of very real natural resistance.

In this connexion I would mention that cancer-bearing mice are not a favourable soil for the grafting of other cancerous tumours until the period at which they spontaneously develop metastases. In the earlier stages the resisting forces of the organism can hold at bay the cancer cells, whether spontaneously or artificially introduced into the tissues; in later stages either form of inoculation becomes potent. The occurrence of metastases is the resultant of two forces—the vigour of the invading cancer cell and the resistance of the tissues to its development within them. This resistance may be inherited or racial, naturally acquired by age, artificially acquired—as shown by Bashford's experiments with the inoculation of various tissue-extracts—and it may be lessened by the persistent presence of a primary cancerous growth.

A very interesting fact about the influence of the cancer cell upon its neighbouring cells is its *compelling them to form a supporting and vascular stroma for it,* of a type governed by the cancer cell and not by the stroma-yielding mesoblastic cells. Along with this, however, there is clear evidence that the surrounding cells exert an influence upon the cancer cell; this is shown by its greater vitality and power of multiplication in the young than in the old, by its more active growth in certain races or families of animals, and by its inoculability being limited to animals of the same species. Two other facts are also full of significance: In the experiments in the propagation of mouse cancer it has been shown that when a graft is implanted in a fresh family or race of mice it grows with great difficulty, and that with each generation of grafts the success increases until it often reaches 100 per cent. This must not be confused with the increased virulence of an infective organism that may

be produced by passing it through a series of animals' for the virulence of the cancer cell is only raised for the one particular variety of mouse and not for others. It is a subtle influence of the host upon the introduced cancer cell which makes it more congenial to the tissues of the particular variety of mouse. And then we have the remarkable fact that Bashford discovered, that in certain cases the repeated inoculation of an epithelial cancer stimulates the mesoblastic tissues of the host so intensely that the stroma becomes proportionately more and more abundant, and more and more richly cellular, while the epithelial growth lessens, until the carcinoma is replaced by a sarcoma. No more surprising, wonderful fact has yet been forthcoming from cancer laboratories than the demonstration of this "transformation" of an epiblastic malignant growth into a mesoblastic cancer, the carcinoma exciting the development of a sarcoma, and thereby being itself destroyed.

What is the meaning of all this? Remember that the escape of epithelial cells into the tissues beneath them is a physiological process. Years ago Dr. Creighton demonstrated it in the case of the breast; he also showed that these permeating epithelial cells were destroyed in the lymphatics. Permeation is not a new power of cancer cells, although it exists in them in an unusual degree. I think we can recognize in the facts I have just mentioned evidence that the cancer cell is not an alien cell; it influences, and is itself influenced by, its neighbours as a normal cell is. The mutual adaptation and mutual influence of the cancer cell and its stroma surely speak of common descent—of blood relationship, if I may use that term.

If, now, we attempt to piece together these various facts, what disease picture do they make? When we consider the intimate connexion shown between cancer cells and the cells of the individual, and, perhaps, above all, the artificial conversion of a carcinoma into a sarcoma, we cannot recognize in cancer an independent parasitic growth, protozoal or other. Not only are the necessary evidences of the presence of specific pathogenic microbes absent, but both in broad outline and in particular detail the life-history of cancer is fundamentally different from that of the great host of known bacterial and other invasions. Nor is it possible any longer to see in cancer a reversion to the embryonic type of growth; that, before all else, is orderly, regular, with a long vista of development, differentiation, and functional activity. Cancer is cell life that is disorderly, irregular, with a minimum of development, differentiation, and function. Still less can we find a satisfactory explanation of this great disease in a circumstance so accidental, so trivial, as the sudden awakening into activity of entirely supposititious "embryonic rests."

What is Cancer?

What, then, is cancer? Before answering the question, think of the fertilized human ovum, a single nucleated cell. Picture it dividing into 2, 4, 8, 16, and 32 cells, all similar in size, form, and structure. Trace on these cells as they multiply by division, and see them silently range themselves in the three primary embryonic layers—epiblast, mesoblast, and hypoblast—and by that step effect a separation of cells which to our senses appear identical, but whose destiny marks them out as absolutely distinct. Follow on the wonderful drama of development, try to realize the orderliness of it all, the varying differentiation of epithelia, endothelia, and connective tissues. Observe the intimate association of these embryonic layers in the evolution of parts and organs, their perfect co-operation, their mutual dependence. See the rising up here of mesoblast into papillae, ever clothed with epiblast, and there the down-growth of epiblast or hypoblast into glands ever supported and nourished by mesoblast. Know that all this goes on with unerring precision, but with almost endless variation in proportion, with countless differences in form and function of cell, with an ordered cycle of chemical changes so wide in its range, so varied in its detail, that we seem to be only at the threshold of a knowledge of it. Remember that this development proceeds with measured step to a certain definite extent only, that then in spite of all kinds of variation in supply and demand, and of adverse and favourable conditions, a certain level of cell life and growth is maintained for a more or less determined period, and that then first here, then there, the processes seem to abate and fail, the flame of life seems to flicker until the unknown and wonderful changes of age draw on. I have failed to bring up before you a tithe of the marvels of the full development of a man from a single fertilized cell, or of the equally marvellous maintenance of his full manhood through the years of maturity and of the gradual decline into old age. But even in my faulty picture of it we see the outworking of a wondrous law, obedience to which brings perfection of development, of life, and of health.

Now summarize our facts about cancer. Consider the disproportionate multiplication of certain cells, their imperfect, irregular, and useless differentiation; their failure to form Altmann's granules, their excessive affinity for and need for potassium, their insistent intrusion into surrounding tissues, their imperfect co-operation with the other cells, and, finally, their selfish greed which enables them to live when other cells are failing and perishing for lack of nourishment—what is it all but a failure of, or a revolt against, that great cytological law or impulse which first manifests itself in the primary division of the ovum, and lasts on till the death of the organism? Cancer is not a disease attacking the body from without, it is the result of a breach or failure of fundamental cell law—a law of which we know only the results; a law so majestic that obedience to it results in perfect development, perfect health, the full measure of days, and disobedience to it may slowly spell out all the inscrutable woes of cancer.

Let us look now at certain conditions which are known to exert an influence on the causation of cancer, and see what confirmation they afford to this view of the nature of cancer.

1. *Age.*

And first it is fully established that cancer is greatly influenced by age. In man its incidence rises with each decade after the third. Of animals this is as true as of man. Thus the average life of mice in laboratories is three years, and sporadic cancer occurs almost invariably only after they have reached the age of two. It is from India, where the cow is a sacred animal, and is allowed to live to old age, that we have most evidence of the occurrence of cancer in that animal. What we have so long known in the case of man, therefore, must not be regarded as in any sense an "accident" or peculiarity in him—it is one of the fundamental facts of cancer.

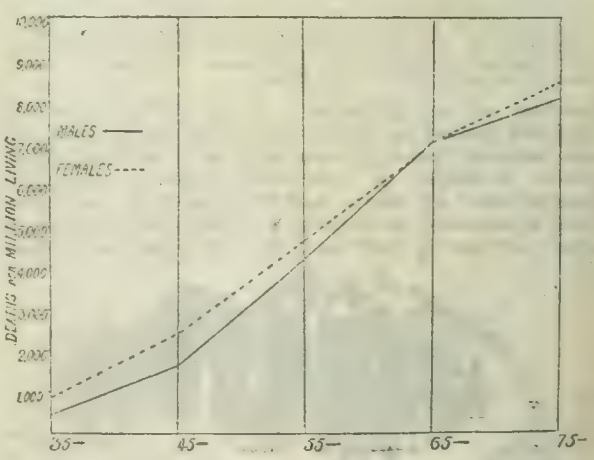


Fig. 3.—Mortality from cancer per million living at each of five groups of ages from 35 years upwards (1906).

Cancer is undoubtedly a disease that generally arises in cells that are growing, or have grown, old. But senility of tissue is not a necessary condition of its growth, and indeed is not a favouring condition. Who of us has not been impressed by the terribly rapid advance of the disease as it occurs in young adults? Who has failed to notice the equally slow and difficult progress it makes in some old people? Of all conditions which influence the rate of progress of cancer in any particular site, I know of none more potent for mischief than the youth of the individual. From the cancer laboratories we get most definite statements that it is in young mice that cancer grafts grow with most certainty and with most rapidity. So important is this that Bashford has had to

point out that, before a just comparison can be made between the results of inoculations under varying circumstances, it is absolutely essential that the experiments should be carried out in animals of known age and of the same age. Now this fact—supported alike by clinical human experience and by experimental animal experience—is of great significance; it teaches us that the condition precedent to cancer is not in the nutrition of the tissues outside the cancer cell, but within the cancer cell itself; the external conditions for the growth of the cancer cell are more favourable in the young than in the old, and a cancer cell having once started on its errant course can profit to the full from the greater nutritive vigour of the young. Incidentally this fact is a strong indication that cancer is not an infective disease allied to bacterial invasions. So far as is known of them, old age is not a favouring factor in their incidence, and it is the veriest negation of all our knowledge of these diseases that a condition favourable to their origin is unfavourable to their spread.

2. *Sex.*

It is well known that cancer is more frequent in women than in men, and that its incidence increases earlier, and attains its maximum sooner in them than in men; after the age of 70 the incidence is practically the same in the two sexes. The greater frequency in women is due to the special liability to the disease of the generative organs of that sex. I have prepared a chart founded on the statistics of the Middlesex Hospital (see Third Report from the Cancer Research Laboratory). The continuous black line

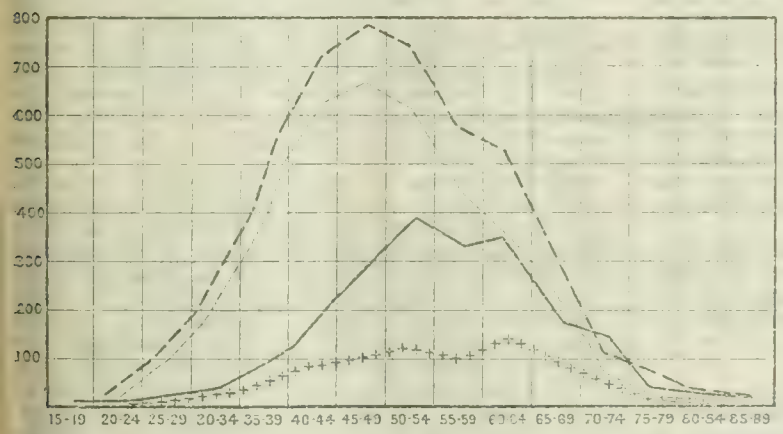


Fig. 4. — — — females, - - - females; cancer of uterus, vagina, vulva and breast only. —— males; + + + females; excluding cancer of uterus, vagina, vulva, and breast.

marks the age incidence of cancer among men; the heavy broken line indicates it in women; the line + + + shows it in women, excluding cancer of their generative organs, and the fine dotted line gives it in the female generative organs. The table shows the close parallelism of the cancer curve in women and in their generative organs only, and the near approach of the curve for women, when we exclude disease of their generative organs, to that for men. In other words, the different incidence of cancer in the two sexes is not a sex difference affecting all the body tissues, but is the result of the special liability to the disease of organs possessed by one sex only. Now these organs—chiefly the breast and the uterus—have a definite functional life which does not correspond at all with the life of the individual, but, starting at about 14, usually begins to terminate about 50, and during those years these organs are the seat of frequently repeated periods of great cellular activity followed by periods of decline and atrophy. It is, I believe, because of this fact that these organs are specially prone to cancer as they get old—before the rest of the woman ages—and so we see the explanation of the facts that cancer is more frequent in women than men, and that its age incidence differs in the two sexes.

3. *Chronic Irritation.*

O! the reality and importance of chronic irritation as a condition precedent of cancer I cannot stay to speak, nor need I—the facts are too well known. Attempts have been made to find the underlying cause of cancer when it follows chronic irritation in some change in the subepithelial tissues, and the Hunterian lectures of my colleague, Dr. Victor Bonney, on this subject are no doubt fresh in your memory. He showed that interference with the continuity and perfection of the subepithelial elastic tissue layer always preceded a carcinomatous growth, and, conversely, that cancer never originates in perfect normal tissue. It has been objected that his beautiful preparations fell short of a demonstration that the changes shown were antecedent to the earliest development of cancer, and that they were as compatible with consequence as with precedence. It is, however, surely a striking fact that these changes are only met with at the seat of the primary growth and in the nearest lymphatic glands, and not in the true secondary growths. But while accepting Dr. Bonney's demonstration, I think we cannot for a moment regard any change in the subepithelial tissue of a part as the sole or most significant change in what have been well called "precancerous conditions." The essential features of such chronically irritated and precancerous tissues are increased cell formation associated with defective differentiation or cell development, and the changes in the subepithelial tissues may be either a result of this or another expression of similar nutritive changes.

The cytological effects of what we call chronic irritation are essentially two—increased cell multiplication and defective intracellular metabolism. Now the life of a cell is not to be expressed in periods of time but in terms of its multiplication or proliferation. An epithelium does not become old because its individual cells have existed for a particular length of time, but when the multiplication of the cells necessary for its maintenance has been repeated a certain great number of times. Therefore chronic irritation, by adding to the frequency of cell division, is producing the special condition of cellular old age; it is, indeed, equivalent to the ageing of a tissue. Its other effect is equally significant. The imperfect cell development and metabolism carried on for generation after generation of cells is clearly akin to senile defects in cell growth and metabolism, as shown, for instance, in diminished secretion and in the impairment of all nervous functions. The word "irritation" is rather apt to suggest a stimulating process; it is important to remember that chronic irritation is the most effective mode of hastening on changes closely akin to, though not identical with, those of old age—the conditions in which we have seen cancer to occur most often.

4. *X Rays.*

Prolonged exposure to *x* rays may undoubtedly cause cancer. The influence of *x* rays upon cell life is known to be most important. Lazarus-Barlow and Somerville Hastings have shown that in the ova of Ascarides exposed to *x* rays the division of the cells is more rapid than in "controls," while fewer of the ova come to maturity. If we look at the hands of an *x* ray worker we see the same—increased production of epidermic cells, with imperfect development of the too numerous cells. Think of this progress carried on and on, will it not cause a premature ageing of the formative epithelial cells, associated with an imperfect elaboration of the cells?

5. *Alcohol.*

The last etiological factor to which I can refer is alcohol.

The influence of alcohol on the incidence of cancer is really important. Dr. Tatham's statistics of the mortality of various occupations from certain diseases revealed the fact that cancer is twice as frequent among brewers and London publicans as among clergymen, and that the cancer incidence in any trade varies with the attendant habits as regards alcohol. Dr. Newsholme has dealt with this subject in the light of figures obtained from the United Kingdom Temperance and General Provident Institution, and has shown that the mortality from cancer among the insured in that institution, if represented by the figure 100 among the non-abstaining males, would be represented by 72 among the abstainers. He laid

United Kingdom Temperance and General Provident Institution.

Ages of Insured Persons and of Persons Dying in Each Group.	Aggregate Population or Years of Life at Risk during Years 1891, 1896, 1901, and 1906.		Deaths during the Years 1891, 1896, 1901, 1906.						Ages.
			From All Causes.		From Malignant Diseases.		From Malignant Diseases. Males only.		
	Abstainers' Section.	Non-Abstainers' Section.	Abstainers' Section.	Non-Abstainers' Section.	Abstainers' Section.	Non-Abstainers' Section.	Abstainers' Section.	Non-Abstainers' Section.	
Under 24	2,314	445	6	2	—	—	—	—	—24
25–34	8,559	4,140	23	23	—	—	—	—	25–34
35–44	13,406	9,005	58	58	1	4	1	4	35–44
45–54	15 645	13 571	143	177	20	14	22	14	45–54
55–64	12,475	14,000	239	365	20	38	20	33	55–64
65–74	6,858	8,853	301	516	22	64	20	50	65–74
75—	2,121	2,736	274	408	13	20	12	17	75—
	61 378	52,730	1,034	1,549	76	140	73	123	

emphasis upon the fact that this statement was based upon scanty evidence; I have, therefore, endeavoured to increase the evidence, and Sir Thomas Whittaker has very kindly brought the figures supplied to Dr. Newsholme up to date; and the accompanying table, which is prepared in identically the same manner as that given by Dr. Newsholme, shows that from the larger number of lives the same conclusion is to be drawn.

It comes to this, then, that all these so-called causes of cancer—age, chronic irritation, *x* rays, and alcohol—agree in being conditions that wear out the cells of a part, they add to the number of cell generations, they deteriorate the evolution of the individual cell, they appear to lessen the hold over the cell of the great primal cell law, and so they cause cancer.

To some extent this causes cancer by directly or indirectly inducing chronic irritation; but let us note that it is a protoplasmic poison—that is, a substance which directly interferes with, and mars, cell metabolism and cell life.

Primary Cancer not always Single.

One objection that may well be raised to this view lies in the occurrence of primary cancer as a single lesion. It is easy at the first blush to find in this a complete refutation of what I have been trying to establish. But the more I have thought of this objection the less convinced I am of its worth. A physiological essay *de senectute* would be very valuable. Wherein lies the true essence of senility? Is it simultaneous in all our tissues? Are we animated illustrations of Oliver Wendell Holmes's "wonderful one-hoss shay"? And if not, if one organ or tissue may grow old before its fellows, are we quite wise in holding that all the individual cells of a given organ must grow old together?

But we must not lose sight of the fact that cancer is not always single in its primary seat. My colleague, Dr. Young, among others, has published a number of instances of multiple primary cancer in the Fourth Report of the Middlesex Hospital Cancer Research Laboratory. In my limited experience I have seen such cases as these. In one case a woman presented three cancerous growths in her left breast, all of them noticed at about the same time, no one of them much larger or notably different from its fellows. I removed the breast, and have one half of it on the table before me. Three times I have been consulted by women with a tumour in each breast, small, far distant from each other, and, except for enlarged glands in the axilla, without evidence anywhere of metastasis, so that I could only regard them as simultaneous primary cancers. One of these patients submitted to amputation of both mammae in 1899, and has remained without evidence of metastasis until now, so that it is reasonably certain that in her case one breast was not infected from the other. Many times I have seen cancer occur in the breast at an interval after removal of the opposite breast when there was no evidence of metastasis elsewhere, and the subsequent progress of the case was so exactly similar to the disease occurring in one breast only, that I was forced to see in it a new attack of the disease, and not the development of a metastasis from the earlier tumour.

Twice over it has happened to me to be called to do colotomy for chronic intestinal obstruction that had become complete, and in which examination of the rectum revealed a stenosing growth within easy reach of the finger, but further examination showed a second independent, annular carcinomatous growth, in one case in the descending colon, and in the other in the transverse colon.

Last year I was consulted by a patient whose left breast had been removed for cancer in 1902 and who had had three subsequent operations for local recurrences. She came to me complaining of an extremely severe pain along the distribution of the ulnar nerve, and I found a very dense, and firmly fixed lump of growth close to the coracoid process. I advised her to try what radium would do to relieve her pain; immediately after exposure to radium for forty-eight hours, carried out by Dr. Finzi, she lost all pain in the arm and hand, and it never returned. The radium was applied on a few subsequent occasions in the hope that it would lead to the disappearance of the growth—of this happy result I saw no proof; but meanwhile an epithelioma developed in the left labium majus, ran a rapid course, and was the cause of her death in December, 1909.

In the lip I have on several occasions seen two or more quite independent primary growths, and in June last I saw a very early epithelioma of the tongue which proved, when subsequently removed by Mr. Spencer, and examined by Dr. Bashford, to be starting from four separate centres.

Of multiple rodent ulcers I have had very numerous instances.

Multiple epithelioma in lupus and in *x* ray dermatitis is also well known, and from Kashmir we are told of multiple kangri cancer.

Were I, on the other hand, to try to give you any adequate conception of the irregular incidence of old age I should need a separate lecture and a much wider knowledge than I can even pretend to possess. But let us take one example—and that the best known of all, the hair—what numerous varieties in the senile changes in the hair we see! It may fail to grow without change of colour; it may lose its colour and persist in growth; again these variations may affect the hair in one part of the body only, or in small areas only, or even be limited to the product of a single hair follicle. If age can thus influence the growth of certain hair-forming epithelium, why may not the age-effect that leads to cancer start in a single epithelial cell?

Immunity.

The only other aspect of the cancer problem to which I would refer is expressed in the word "immunity." This word is specially associated with the processes by which we are enabled to withstand success-

fully the attacks of pathogenic organisms. It is clear, however, that if cancer is not due to any similar cause, but arises from a failure to continue the cellular development of a part exactly in accordance with the pattern of normal growth, we must not look for immunity from this disease along the lines in which we find it for infections. Careful search by many observers has failed to find evidence in cases of cancer of the activity of those protective forces which play so great a part in the life-history of infective diseases. In the last Croonian Lecture at the Royal College of Physicians Dr. Andrewes gave a very full account of the part played by leucocytes in protecting against infection. There is no like tale to be told of their activity and power against cancer. Blood changes there are in the *late stages* of the disease, when other factors than the presence of a malignant growth are active, but none of a protecting character have been demonstrated in the early stages of cancer, when that disease alone is present to disturb the harmony of nutrition. We have in this another fact which strengthens the contention that cancer is not an infection-disease. If the disease differs wholly in nature from those infections in which immunity has been chiefly studied, the problem of cancer immunity will also be different.

Accepting the view of cancer that I have tried to submit to you, cancer immunity might be evidenced in one or more of the following ways:

1. The power of living cells to conform to the law of normal development and to avoid that increased multiplication, defective differentiation, and tendency to intrude themselves into, and grow in, neighbouring cell territories, which together connote cancer.

2. Opposition to the intrusion of cancer cells into, and their development in, heterologous tissue.

3. Inhibition of the growth of cancer or destruction of living cancer cells.

What can we say under each of these heads? Do clinical experience and experimental pathology throw any ray of hope across the dark sea of malignant disease? They do. The deep impress of the primal laws of development holds the cells of our tissues in true and loyal obedience to the very end, in the almost infinite majority of cases, and in the large majority of individuals. The incidence of disease, and immunity from its initial attack, are of course complementary, and the same fact can be expressed either in terms of disease or in terms of immunity. Thus the public have been distressed by the oft repeated statement that one out of every eight women who reach the age of 35 dies subsequently of cancer; and of the men who attain 35 years, one of thirteen dies of cancer! This no doubt is true, but we can express the same fact in terms of immunity, and say that seven out of the eight women, and twelve out of thirteen men, of 35 years of age, will not die of cancer! This is the great initial fact of cancer immunity—that in spite of added years, and of all the unfavourable conditions which tend to wear down the obedience of cell life to its fundamental laws, 90 per cent. of men and women who pass down the hill of life hold this dread enemy at bay. The two ways of quoting our cancer statistics always remind me of a scene in that incomparable allegory which we all had read to us in our childhood, and therefore too often put aside in our maturity. You remember, sir, that when the Pilgrim is taken into the Interpreter's house to have some of the mysteries of human experience explained to her she is shown, to use Bunyan's inimitable words, "a room where was a man that could look no way but downwards, with a muck-rake in his hand. There stood also one over his head with a celestial crown in his hand, and proffered him that crown for his muck-rake; but the man did neither look up nor regard, but raked to himself the stones, the small sticks, and the dust of the floor." The one in ten of failure that our pathologists tell us of is "muck-rake lore"; the nine in ten of success in the great drama of cell-life is like the angel's crown—it is immunity.

Of the second kind of immunity—the opposition to the intrusion of cancer cells into the heterologous tissue—we have plenty of evidence. There is first of all the difficulty in cancer grafting, and then the fate of many of the cancer cells and minute cancer emboli that get into lymphatics and blood capillaries; the majority of them are overwhelmed by the opposing influence of the endothelial cells, and only one here and there is ever able to survive. Or let us recall our clinical experience of the very slow progress of many cancers, of their long-enduring limitation to their primary site, in some cases, and of the extraordinarily long period—amounting to ten or even more years—that may elapse between the removal of an active cancer and the development of a metastasis. Do not all these well-established facts tell us that the organism is not left powerless, defenceless, before the intruding cancer cells, and that the opposing foes are not so unevenly matched as students of the failures of these saving powers—the "muck-rake" students—would persuade us? There is a force of immunity which can protect, and does protect, against the chief mischievous power of malignancy; and when a surgeon asserts that every case of cancer can be cured by a sufficient and sufficiently early operation, I can assent when I remember the reality and the efficiency of this force of immunity, which is his great ally.

The third form of immunity is what is popularly known as the "cure of cancer"—*the disappearance of cancerous growth.* Those who are studying the disease in mice report to us that in these animals it is quite a frequent occurrence for a grafted cancerous growth, after attaining some size, to slowly shrink and disappear, and in some series of experiments a large proportion of the grafts that have "taken" have, after a period of growth, spontaneously vanished. Among the 500 sporadic cases of mouse cancer observed by Bashford this event has been witnessed only two or three times. In human pathology, I fear, it is a still less frequent fact, *but it undoubtedly is observed.* It is most frequently seen in the gradual absorption and disappearance of small secondary nodules in the skin and subcutaneous tissue. It is occasionally witnessed on a grander scale. Many years ago I showed a patient at meetings of the Clinical Society who recovered spontaneously and completely when she seemed to be at death's door from cancerous deposits in the lung and the neck of the femur, secondary to cancer of the breast. She remained well for several years; unfortunately I have been unable to trace her for the last four years. More recently I have had an equally satisfactory and striking case.

Mrs. E. W., aged 52, was admitted to my cancer ward of the Middlesex Hospital on February 28th, 1906, suffering from advanced cancer of the uterus; that organ was fixed in the pelvis, the cervix was ulcerated, and masses of growth were felt invading the anterior wall of the rectum; she suffered from constant discharge and irregular haemorrhages. In February, 1907, I find this note: "The vaginal cervix is the seat of a nodular growth, which is hard, but apparently not ulcerated; it extends all round the cervix and infiltrates the posterior wall of the vagina and anterior wall of the rectum. There is also some extension down the left vaginal fornix. The uterus is fixed." She became slowly but steadily worse, and for many months was unable to leave her bed, owing to frequent haemorrhages and the consequent weakness and the pain, which movement increased. In the early summer of 1908 she gradually lost the use of her lower limbs, and the paralysis extended to both upper limbs until she was literally unable to move hand or foot. My colleague, Dr. Campbell Thomson, kindly examined her on several occasions and satisfied himself that the paralysis was due to exaggerated peripheral neuritis. During the late summer she improved, and when I returned from my holiday at the end of September, 1908, I found that she could just move her hands a little; she was also stronger, with less pain and less discharge, and a local examination showed that the uterus was less firmly fixed than before. Not to weary you with details, Mrs. E. W. got quite well, all the local evidences of disease vanished, and I made this note in July, 1909: "Uterus is small, senile; vagina narrowed at its upper end, vaginal cervix very small, no ulceration or growth to be felt in cervix or vagina. Uterus is mobile. The original disease has entirely disappeared.

After keeping her for several months to make sure of her recovery, we had to discharge her from our Cancer Charity as she no longer fulfilled the necessary condition of suffering from cancer, and she now earns her living by needlework.

Here is another case:

*(a) Miss J. C. F., a trained nurse, discovered a lump in her left breast in 1896, when she was 46 years of age. In June, 1897, Dr. Anderson of Faversham removed the breast, and in September, 1898, he removed a lump from the axilla. In January, 1899, she came under the care of Mr. Farnell of Eastbourne,

*The cases marked (*a*) were treated by double oöphorectomy; those marked (*b*) were treated by *x* rays, by my colleague, Mr. Cecil Lyster.

who removed a recurrence in the axilla and two or three nodules in the skin. In May of the same year he thoroughly cleared out the axilla, as there was evidence of more extensive disease there. In November, 1899, and in March, 1900, he excised small recurrences in the axilla. In May, 1900, he again operated upon the axilla, and found it impossible to remove the growth under the arm. I saw this patient in September, 1900; the wound in the axilla was unhealed, and there was a firmly fixed mass of growth just below the clavicle; the upper limb was greatly enlarged from oedema. Mr. Farnell and I advised the patient to submit to a certain treatment, which was forthwith carried out. The wound quickly healed; the oedema of the arm and all evidence of the presence of a growth disappeared.

I saw Miss F. last month, after an interval of ten years, and found her enjoying excellent health; the scars of her numerous operations are the only sign that she has ever been the subject of cancer.

Here is another case:

(*a*) A. E. W., a single woman of 41, was admitted under my care in January, 1900, with cancer in both breasts. The disease had been noticed on the right side for two and a half years, and there had been ulceration for a year and ten months; on the left side it had been known to exist for six weeks, and the lump had doubled in size in that time. The disease infiltrated the entire right mamma and the skin covering it, and fixed the part to the ribs beneath; there were enlarged glands in the right axilla and beneath the lower end of the right sterno-mastoid muscle. Several nodules of secondary growth were scattered around the primary growth, and above the nipple was an ulcerated surface measuring 2¾ in. by 3½ in. There were also two areas of marked venous congestion of the skin, one below this breast and one over the pectoral muscle towards the point of the shoulder. In the outer part of the left mamma was a firm infiltrating mass the size of a large walnut, and in the left axilla were enlarged and tender glands. On January 31st an operation within the abdominal cavity was carried out. Within three weeks the congested areas I have mentioned had become pale, the ulcer was healing, and the secondary nodules were smaller. By March 9th there was no nodule to be felt in the left breast, and I could only detect in that axilla one tiny gland the size of a buckshot; on the right side the lower half of the breast was free from all evidence of growth, and the ulcer was healed. By March 27th all that was left of the originally extensive disease were two or three very small nodules of the skin of the chest. On April 18th symptoms of intestinal obstruction developed, an operation was performed, and I regret to say that this patient died quite suddenly while some adhesions were being separated. At the autopsy a few small nodules of growth were found in the subcutaneous tissue over the right breast. No other traces of the cancer could be detected. A nodule removed in March presented characteristic appearances of spheroidal carcinoma with a relatively large amount of connective tissue.

Here is another good case:

(*b*) A. B., aged 57, was first seen by me in July, 1903. Her left breast had been removed for carcinoma in April, 1900; four operations for recurrence had been performed since. There was a very considerable local recurrence, enlargement of the third costal cartilage, deposit in the lower flap and under the arm. Under treatment all the growths have disappeared, the patient is in good general health, and continues at her work. I have seen her from time to time during the last seven years, the last time in October of this year; she was then quite well, except for a little superficial ulceration, which seemed to be due to the treatment that had been employed.

Here is a somewhat similar case:

(*a*) S. R., aged 44, was first seen by me at Middlesex Hospital in September, 1909. Her right breast had been removed for carcinoma. There was an extensive secondary deposit in the chest wall with a wide and deep ulcer. Under treatment this ulceration rapidly cleaned and healed, and the growth had disappeared, leaving a very little thickening to be felt where before there was a mass of deposit. Her health is quite good and she does all her work.

(*b*) J. N., aged 43, was first seen by me in May, 1909. Her left breast had been removed for carcinoma. There was a considerable secondary mass of growth in the lower flap and under the axilla. The deposit has steadily decreased in size, and in November of this year there was only a slight thickening to be felt. Her health is good and she is doing full work.

(*b*) E. C., aged 44, was sent to me from another hospital as an incurable case in December, 1903. A columnar carcinoma of the rectum had been removed by Kraske's method. There was local recurrence of the disease, and a mass of growth the size of an orange protruded from the sacrum. Thirteen months later—January, 1905, the following note was made: "Good general health, doing all his work (as a postman), no sign of disease." In August this year, 1910, he was seen again, and gives this history: At the end of 1905 there was noticed a warty condition of the old scar; this ulcerated. It was removed, and proved to be a squamous epithelioma. The wound healed well, and he has had no further trouble. He continues his work as a postman, and enjoys good health. He was seen in October of this year, nearly seven years after his first visit.

Several years ago I excised the left superior maxilla of a woman for cancer. Some months later her attendant in the country sent her back to me at the hospital with extensive recurrence; the cavity left by the removal of the bone was filled with a mass of growth. A year later the doctor asked me to see his patient again, and to my delight I found her in excellent health, and without a trace of the local disease.

Another case that I can never forget was that of a woman who had had her left breast removed for cancer and subsequently came to the Middlesex Hospital Cancer Charity with local recurrence, growth in the glands of the neck, and a large brawny arm. She got quite well, and was able to earn her living again at the wash-tub. I had another similar case where the "brawny arm" got quite well, and all the recurrence of the disease disappeared.

THE HOPE OF CURE.

This is not an exhaustive list of such cases that I have myself seen, and I am sure that my experience is not singular. In some of them the disease was not "cured" in the sense of being wholly and permanently removed, but in several there is strong reason for thinking that this word "cure" may be justly used. In many of the cases treatment directed to this end has been carried out, in some there has been no special treatment. In my brief records of these cases to-day I have not mentioned the treatments employed, because my present purpose is not to vaunt a remedy but to state a fact—that cancer, even when advanced in degree and of long duration, may get better, and does sometimes get well. *There is cure of cancer*, apart from operative removal.

All therapeutic cures are obtainable only by the working of physiological forces, and the first hope of therapeutic success comes with the observation of the efficiency of unaided Nature to accomplish cure. You may say to me there is little comfort in all this; that I enunciate a philosophical concept, and tantalize you by a record of very rare exceptions in the grey, grim drama of cancer. Not so. These cases, rare though they be, are the sun of our hope. In the darkness of night it is everything to know that there is a sun towards which the earth is revolving, and that if we fix our eyes on the east, we shall soon see the grey promise of the dawn and then the many-coloured heralds of the golden sun itself. And as the victims of cancer call to us in the dark night of despair "Watchmen, what of the night?" oh! it is much to know that for cancer-stricken man there is also a sun of healing. We envy the astronomers who know so well the laws regulating the movements of the spheres that they foretell the happenings of the universe with a precision that is the despair of workers in all the other branches of natural science. But with all their knowledge of these laws, they cannot hasten on the day, or affect in one small circumstance the movement of a planet, or alter the destiny of a single grain of meteoric dust. But when the biologist shall know the laws that govern cell-growth, with a knowledge akin in its sweep and accuracy to that of the astronomer, he will have the power to prevent, to control, and to cure, cancer.

THE American Society of Medical Sociology is the name of a new society, the purposes of which, we learn from the *Medical Record*, are set forth in the following announcement: "Recognizing the intimate relationship between disease and the social-economic system under which we live, recognizing that many diseases are caused directly by our social and economic conditions, recognizing that the efficiency or inefficiency of our treatment often depend upon the economic condition of the patient, recognizing that there are many problems deeply and vitally affecting the welfare of mankind, which are left practically untouched by any existing medical society, the American Society of Medical Sociology has been organized for the purpose of studying radically all questions of the socio-medical nature, and invites your co-operation." The President of the society is Dr. William J. Robinson; the Secretary, Dr. A. C. Jacobson, 12, Mt. Morris Park West, New York.

The Bradshaw Lecture

ON

THE RESULTS OF BRONCHIAL OBSTRUCTION.

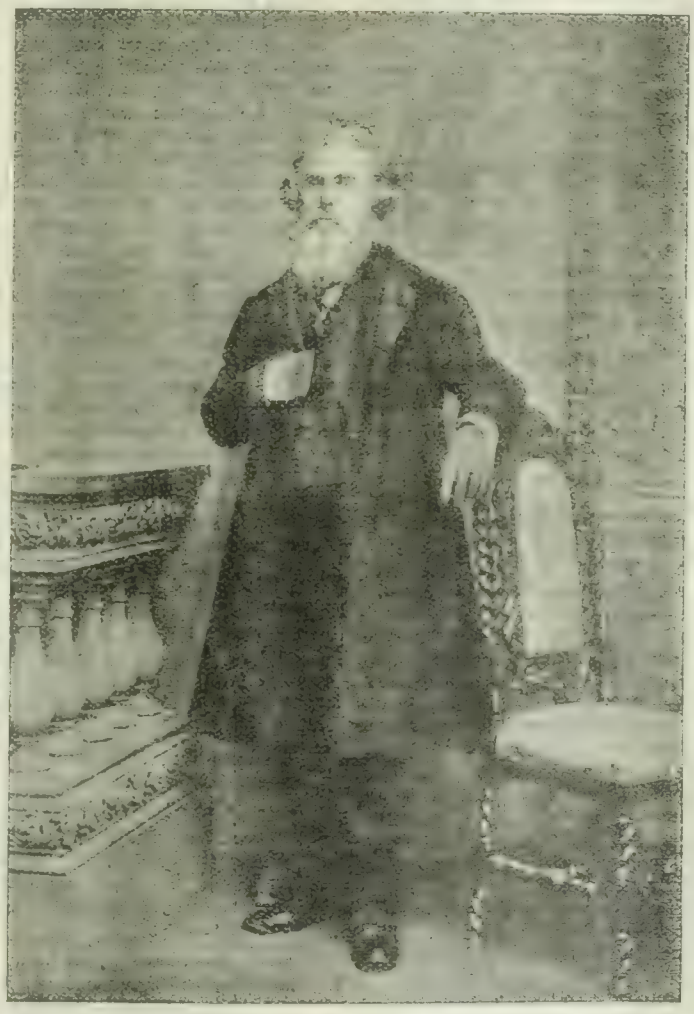
DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON ON NOVEMBER 1ST, 1910.

BY G. NEWTON PITT, M.D.CANTAB., F.R.C.P.LOND,
PHYSICIAN TO GUY'S HOSPITAL AND LECTURER ON MEDICINE.

[*With Special Plates.*]

MR PRESIDENT AND GENTLEMEN,—My first duty is to thank your predecessor in the chair for the honour he has done me in nominating me for this lectureship to-day, and to express the diffidence I feel in choosing a subject on which it may seem there is not much that is new to be said.

We are met to-day to do honour to the memory of Dr. William Wood Bradshaw, who, it would appear, was a man of wide interests—he contributed papers on such subjects as the use of cod-liver oil in chronic rheumatism, on narcotics, on abdominal abscess, and other non-professional articles to the *Miscellany* and elsewhere. Born in 1801 at Bristol, according both to Foster's *Alumni Oxoniensis* and to the inscription on his grave, he was educated at the Westminster and Middlesex Hospitals, taking his M.R.C.S. in 1833. In the early part of the same year he became M.D.Erlangen. He became an Extra Licentiate of this College in 1841, after examination by the President and the "Elects," which entitled him to practise beyond seven miles from London. In 1854 he was elected a Fellow of the Royal College of Surgeons of England. In 1859 Dr. Coplans Hawkins and Dr. R. P. Smith nominated him as a Member of this College, which nomination was approved. At the mature age of 43 he matriculated at Newton Hall, Oxford, and was granted a degree in 1847 without any examination. He married the widow of a wealthy jeweller at Andover, and, according to Mr. Rickman Godlee, to whom I am indebted for his portrait and for much of this information, her money was to be left away in case she remarried; but they bought the reversion, married, and settled down at Reading. He seems to have been a cultivated, refined, somewhat eccentric man with a rather theatrical manner, and never did much practice. He died in 1866; his widow founded a lectureship at each of the Colleges in order to perpetuate his memory.



DR. WILLIAM WOOD BRADSHAW.

THE RESULTS OF COMPRESSION OF A BRONCHUS.

The results of compression of a bronchus may be the following:

1 The lung may be slightly reduced in size. There may be definite diminution in the entry of air, but the resonance may be unaltered, and even *post mortem* beyond an increase in the amount of mucoid contents, and a diminution in the amount of air in the lung, this may be all that can be observed, even when there has been definite pressure on the tube.

2 The chest may be hyper-resonant, the lung over-distended, and the diaphragm displaced down abnormally. This occurs only with partial obstruction of the tube when respiration is vigorous, and will be discussed under the results produced by aneurysm.

3. The lung may be reduced in size, airless and solid from collapse. The chest will be dull on percussion. This results when the obstruction to the tube is complete, or when respiration is feeble. It may occur within a few hours, and was studied by Lichtheim by observing the effects of introducing foreign bodies into the bronchi so as to completely block them, but practically complete obstruction is generally due to other causes, and rarely to the presence of a foreign body. In the early stage the bronchi beyond the obstruction are empty. The lungs in the first and second conditions also tend gradually to become more or less airless.

4 The bronchi become filled with retained secretions, at first chiefly mucus, but catarrhal changes soon ensue and cells accumulate, with purulent and inflammatory products as well.

5. Secondary inflammatory changes take place, due partly to the entry of secretions into the alveoli, so that what has been called a retention pneumonia ensues; the alveoli fill with catarrhal cells and giant cells appear, although they are unconnected with tubercle, as has been shown by inoculating animals with the products. When alveolar walls remain long in contact, organization with obliteration takes place and new connective tissue is formed. The bronchi normally often contain a few staphylococci and streptococci, which when retained in suitable media begin to develop, with the result that pyrexia and a more or less acute pneumonic change develops.

The changes that have taken place so far may all pass away and leave but little damage; but two further changes soon take place—a general fibrosis of the lung beyond the obstruction and a bronchiectasis. These ultimately develop, whatever be the initial process, if the obstruction persist.

6. Dilatation of the tubes. This does not take place equally in all the tubes obstructed, and its distribution is largely determined by local causes. When only one branch of a bronchus has been pressed upon, the dilatation is limited to the tubes in its area. Generally the tubes at the posterior and lower part of the lung are the most affected, probably because the secretion tends to stagnate there, and set up local destruc-

tive changes, as the patient is in the semirecumbent position.

Normally there is a constant secretion of mucus in the bronchi, which passes imperceptibly out into the larger tubes and thence to the trachea, but we are quite ignorant what is the amount normally secreted in twenty-four hours. When a bronchus is occluded the mucus at once begins to accumulate, and is capable of being secreted under pressure, so that as with an obstructed gall bladder the tubes become over-distended. Now bronchial contents cannot pass through the bronchial wall on account of the basement membrane; they can only pass out by the bronchus, or be sucked back by inspiration into the alveoli which remain patent, and so on into the lymphatics and the glands. Normally the contents pass almost entirely by the bronchus, because the initial act of expiration consists in the contraction of the lung by its own elasticity, which as the alveoli empty drives the secretion out of the smaller bronchioles into the larger tubes, to be then carried on by the forcible muscular expiration. With a collapsed lung this initial mechanism fails. As the alveoli become blocked, there is a greater suction on those that remain, and this leads to further occlusion of the alveoli, but the movement of the chest on the affected side is always more or less feeble. The result is that, whether the lung is distended or collapsed, the bronchi become distended with mucoid or muco-purulent contents under high pressure, and hence the walls yield. Owing to the interference with the circulation, which is largely dependent on the suction of the alveoli as they open up with inspiration, the arteries being on the proximal and the veins on the distal side, the tissues are insufficiently nourished, and this, added to the local irritation, causes the bronchial walls to deteriorate, so that the elastic and muscle fibres tend to disappear and local dilatations occur.

It is an old controversy as to whether inspiratory or expiratory efforts are the more efficient in the production of bronchiectases, and I am sorry to say that at the present day the latter theory seems to have the more advocates. In the cases under consideration it is difficult to see how violent expiration, compressing the lung forcibly, as with a cough, can throw any greater strain on the inside of the bronchi than it does on the outside. If the same pressure is applied all round the wall of a bronchus it cannot tend to dilate it. The increased pressure of the contained air is the result of the pressure applied to the outer surface of the bronchus. On the other hand, if it is borne in mind that aspiration is applied to the surface of the lung by inspiration, which tends to open it up, and if the alveoli fail to respond, strain is thrown on the deeper parts, such as the bronchi; if there is no obstruction, they open up and fill with air from the trachea, but when the bronchus is obstructed they must be subjected to strain which tends to dilate them. The feebleness of the respiratory movements spares them greatly, but the contracted condition of the lung tends to set up an inspiratory dyspnoea, and paroxysms occur from time to time, especially with exertion, which must aspirate the tubes and gradually make them dilate.

Consequently we do not find marked dilatation except when there is also in these cases definite fibrosis. The slighter degrees of dilatation are associated with but slight consolidation of the lung. The presence of pleuritic effusion usually inhibits, or entirely prevents, the dilatation of the bronchi, because the lung, not being in contact with the pleura, is no longer held up by capillary attraction between the two surfaces, and therefore is not subjected to so much aspiration. There is no evidence that connective tissue in contracting is capable of producing traction on the tubes at all comparable with that exercised by the powerful suction action of inspiration. It was noted many years ago by Dr. Charlton Bastian that in one-fifth of all cases of cirrhosis of the lung the tubes are not at all dilated. This is what might naturally be expected, as respiration would probably be feeble in many, but if the fibroid change were the essential cause of bronchiectasis it would be inexplicable.

It has been suggested that the accumulated weight of the contained secretions will suffice to distend the terminal tubes when a bronchus is compressed by an aneurysm. The terminal tubules are not the ones that are especially dilated, and the tubules lie in a closed box, the chest, and are supported outside by the same pressure as that inside them. The pressure inside the chest may be slightly increased, but there is no difference between the pressures inside and outside the bronchi, which is the important factor. The essential factors which lead to dilatation of the tubes would therefore appear to be local changes in the walls, the accumulation of secretion under tension, and the effects of inspiration on a lung which is not capable of expanding satisfactorily.

7. Fibroid thickening of the lung. There are several factors which conduce to this result: inflammatory and organizing connective tissue changes result (*a*) from the retention of the secretions, (*b*) from the prolonged collapse of the alveoli, (*c*) from the bronchopneumonia, (*d*) from the peribronchial changes which follow on the destruction of the bronchial epithelium, which generally takes places, and finally (*e*) from the interference with the pulmonary and lymphatic circulations which normally depend on the opening up and the contraction of the alveoli. Moreover, when we bear in mind that in health the alveolar surface of each lung amounts to 100 square metres, each air cell being bathed in a film of blood 10 μ in thickness, we can realize what a difference it must make to the nutrition of the tissues when the alveoli fail to open and the amount of the circulating blood is enormously reduced; hence retrograde fibroid changes must gradually develop. The fibroid change is therefore also a natural sequence of obstruction, but the causes are not quite the same as those which produce the bronchiectasis.

8. Secondary infections producing a septic pneumonia breaking down into abscesses are not infrequent, and vary with the cause; in some they are essential and early, in others a late and accidental development.

9. Gangrene. This especially occurs with malignant disease and when the pulmonary artery is occluded. The communication between the bronchial and pulmonary arteries is a free one, but varies in different cases, and hence gangrene does not always occur even when the pulmonary artery is compressed. The condition may also result from a very virulent infection.

10. Putrefactive changes. Although the bronchi are often dilated, the contents are not always foul. The change is always a serious one, as it accelerates the destructive changes in the lung and introduces a severe toxic poison into the system; the organisms are usually anaërobic, and hence are but rarely cultivated.

11. As a secondary result of the bronchiectasis, especially if foul, there may be a pleurisy or an empyema.

Although stridor is a symptom that at once attracts attention, it is to be noted that it was present in but a very small proportion of the cases examined; it is marked when the trachea is involved, but otherwise was noticeable in only two or three of the cases of growth and aneurysm, yet severe dyspnoea was common.

Causes of Bronchial Obstruction.

Bronchial obstruction may arise from causes without or within the bronchus. Usually only one bronchus is affected, but in some cases the trachea is involved, as well as one or both bronchi. The external causes producing compression are:

1. Aneurysm of the aorta (35).
2. Malignant disease (56) of:
   - (*a*) Oesophagus, epithelioma (16);
   - (*b*) Bronchial glands—(1) primary, usually sarcoma (26); (2) secondary to growth at a distance (6).
3. Enlarged caseous or suppurating glands (12).
4. Gummata (2).
5. Abscess (3).
6. Dilated left auricle (1).

The internal causes are:

1. Bronchiolitis.
2. Syphilitic ulceration with scarring (5).
3. Primary malignant disease of a bronchus (usually columnar-celled carcinoma) (8).
4. Foreign bodies in the bronchus (8).

The material I propose to discuss is collected from our records at Guy's Hospital, and I desire to thank my colleagues for their kind permission to refer to cases under their care. I shall only discuss the general results and give a few illustrative cases.

ANEURYSM OF THE AORTA.

During the period taken, out of 11,000 *post-mortem* examinations there have been 140 aneurysms of the thoracic aorta. Thirty compressed the left bronchus, and 16 of these eroded into it; 5 compressed the right bronchus and none eroded it. To contrast the results of compression produced by the various causes it may be noted that in this series, in 16 cases—that is, one-half—there was bronchiectasis beyond the obstruction, but in only 8 was it associated with a marked fibroid thickening of the connective tissue and increased pigmentation of the lung with a thickened pleura. In several (6) there was also an acute terminal pneumonia, and in 4 an acute septic pneumonia; in 3 there was an acute gangrene, and sometimes there was an acute pleurisy, but only once was there a pleuritic effusion. When there was no definite dilatation of the tubes the lungs generally showed bronchi full of muco-purulent secretion, often with collapse and a more or less airless lung.

The dilatation of the tubes takes place only in the part of the lung beyond the obstruction, and is irregularly distributed, being generally least marked in the anterior part. The amount varies greatly; in some cases the distension of the tubes is but slight, when the lung may be also collapsed or pneumonic. Marked increase in the fibrous tissue, as it occurs less frequently, appears to be to some extent a secondary change, and to be partly set up by the absorption of the irritating contents. In advanced cases the fibrous trabeculae stand out, the lung is very tough, and may be riddled with intercommunicating cavities. In only one in twelve was an acute gangrenous condition noted, although in many the contents were very foul. The bronchiectasis requires at least two or three months in which to develop, but occasionally it took a year or more, and it is very remarkable how very latent the constitutional symptoms may be so long as the changes are limited to the fibroid lung beyond the obstruction. When much foul secretion is expectorated, the healthy part of the lung is apt to become infected, and if an acute septic pneumonia develop, the disturbance to health is intense.

The *ascending arch* is not in very close relationship with the right bronchus, and only occasionally will an aneurysm of this part (usually a saccular one) compress the bronchus, and then on its anterior surface; not infrequently it will also involve the trachea; in none of the cases did it rupture into the bronchus. Occasionally the azygos vein, which is in close relation to the right bronchus, may also be compressed, and this may be the explanation of the only case with pleuritic effusion. In none of the right-sided cases did the breath sounds entirely disappear, nor did a local bronchiectasis develop.

A sac connected with the latter part of the *transverse arch* may compress more or less completely the left bronchus on its outer and anterior surface, and often the trachea as well, and very rarely the left pulmonary artery which lies above the bronchus (Fig. 1). This arterial stenosis probably accelerates retrograde changes in the lung and the development of the fibroid thickening, but it did not in any case lead to gangrene. In no case did an infarct form, and in only one did an aneurysm rupture into the pulmonary artery. When the aneurysm comes off lower down it will compress the bronchus from behind and on its outer side (Fig. 2).

Sometimes, however, before the bronchus is completely occluded, the lung will become over-distended, there will be a hyper-resonant note, and the distended lung may displace the heart and push down the diaphragm. That this condition may result has been almost entirely overlooked by authors, and no reference is made to it in the textbooks. Yet over-distension, we know, not infrequently results if the respiration is vigorous, when there is laryngeal obstruction in diphtheria, in tracheal obstruction from an enlarged thyroid, thymus, or aneurysm, in asthma with spasm and therefore, with stenosis of the smaller bronchi, and in acute bronchitis and bronchiolitis.

It is also what we might expect. With inspiration the chest expands and the surface of the lung closely attached to it by capillary action follows and the air is sucked past the obstruction as the lung attempts to open. With expiration there is a contraction of the lung, due to its elasticity, which is feeble, but sufficient for ordinary purposes. This drives the air from the smaller to the larger bronchi, because the pressure in the former is the greater. When forcible expiration is applied, the bronchi as well as the lung tissue are compressed with an equal pressure; if there is no obstruction the air passes on, and the pressure therefore falls in the larger bronchi. When an obstruction exists, however, this mechanism fails, the air has greater difficulty in escaping than it had in entering, and the lung becomes over-distended. The pressure may be so much raised that the diaphragm may be displaced two inches and the heart pushed out of position.

This condition gradually develops and persists for a certain time, but by degrees the bronchi fill with secretion, thus increasing the difficulties of the ingress of air, and as the contained air is not replaced, and is subjected to high pressure, it becomes absorbed by the pulmonary blood, while the lung becomes solid, airless, and dull on percussion. Lichtheim has shown experimentally that when the bronchus is completely occluded this airless condition develops almost at once.

In six of the cases the symptoms were so suggestive of pneumothorax that this diagnosis was more than once suggested.

This possibility of over-distension as a result of bronchial obstruction has been so far overlooked by all authors that the only definite recognition of the condition I have noted, is by the late Dr. Pearson Irvine, who, in the *Pathological Transactions* for 1878, recorded a case of aneurysm pressing on a bronchus in which the lung was larger than normal, although fibroid and bronchiectasic; he came to the conclusion that the result of the pressure had been first to over-distend the lung, that then the secretion had accumulated in the bronchi, and the air had been absorbed, while fibrosis and bronchiectasis from the greatly increased tension had compressed the blood vessels and impaired the nutrition of the tissues. C. Jacobsohn has also more than once noted that the position of the dullness set up by a growth at the root of the lung may vary with respiration owing to the over-distension of the affected lung, which is best shown by the *x* rays.

CASE I.—*Saccular Thoracic Aneurysm Compressing the Left Bronchus and Producing an Over-distended Lung.*

By some it was thought that the case was one of pneumothorax. The patient was a man, aged 29 years, admitted in November, 1905. He had been in the army and had had syphilis. Cough had been present for a year, and had been worse for the last three months, with dyspnoea and pain in the left chest. He had no great distress while in bed; the left chest moved badly; there was no tactile vocal fremitus, and no voice nor breath sounds on the left side. On percussion the note was hyper-resonant. There was no cardiac dullness on the left, and on the right there was dullness, which varied with respiration, extending from the fourth rib out to beyond the right nipple and down to the liver. There was marked epigastric pulsation, the heart sounds were faint, and no bruit was audible. There was compensatory breathing over the right chest. There was considerable uncertainty with regard to the diagnosis, but it was thought that most probably the condition was due to an aneurysm pressing on the left bronchus. The patient was examined with the *x* rays. The whole of the left side of the chest was remarkably transparent compared with the right; no foreign body was visible; the heart was displaced nearly 2 in. to the right of the sternum with deep inspiration, and back again behind the sternum with expiration. The diaphragm was depressed on the left side, but no trace of any aneurysm could be seen (Fig. 3). The temperature was normal and the pulse 72. There were no stridor, no evidence of any syphilitic ulceration of the trachea and bronchi, and no expectoration. It was elicited that three months previously a crust of bread had gone "the wrong way," but had this passed into the bronchus there would have been evidence before now of septic pneumonia. The extreme translucency and distension of the left chest, with the absence of any change in the aorta, threw a doubt on the diagnosis of aneurysm, and it was thought that a possible explanation of such marked translucency might be a pneumothorax, although no bruit-d'airain could be elicited, and there was no evidence on the screen of a lung compressed by air. The left axilla was explored with a Southey's tube, but no air escaped. The result of this exploration was to produce an acute attack of pleurisy, and he felt very ill for some time. His temperature two days afterwards was 99° F., and on the next day 101.6°, with a pulse of 112 and intense pain. The temperature did not reach the normal again for nine days.

In December the patient was tested with tuberculin with a negative result. Later his opsonic index to tubercle was 0.38. As the condition still remained obscure, the chest was again explored in December, with a negative result, except that there was again a sharp attack of pleurisy with pyrexia which lasted for ten days, when the condition again quieted down. At

the end of 1906 there was an impairment of resonance developing at the left base; there were still an absence of air-entry, diminished tactile vocal fremitus and voice sounds. He now developed pain with sweating at night, cough, and expectoration, and at the apex behind there were distant breath sounds. A somewhat tympanitic note was noticed near the cardiac area. No tubercle bacilli could be found. During the next month or two he had a large amount of mucc-purulent expectoration which was not foul. In February he began to develop slight clubbing of the fingers, and a rub was audible over the left chest. On February 27th he had a rigor with a temperature of 105° and a leucocytosis of 33,700. He had a sharp attack of pleurisy lasting for ten days. In March the impulse of the heart had returned to the left side of the sternum. There were consonating râles at the back of the left lung and not much difference between the note on the two sides.

It was at first difficult to explain the attacks of severe pleurisy which followed both attempts at exploration. It was clear afterwards that infective fluid from the distended bronchi had inoculated the pleura, as, doubtless owing to the great pressure under which it was retained, some leaked into the pleura from the puncture. Had the lung not been under tension it would probably not have set up any infection. The obstruction to the bronchus was not complete, as there was expectoration, although the movement was so feeble that we could not hear air being sucked up to the surface of the lung. It is noticeable that so long as the lung remained quiet, and before it became fibroid, so that the contents did not pass into the lymphatics but remained in the lung, or were expectorated, the patient remained free from fever, yet the faintest trace in the pleura set up a violent reaction.

His symptoms gradually quieted down, and he continued fairly well. I did not see him from April, 1906, to the end of February, 1907, when he was seized with general pains, pyrexia, and troublesome cough. Soon the expectoration became abundant and extremely foul, so that he vomited frequently. On readmission he was very ill and feeble. The left chest was contracted; the movement was deficient, there was an impaired note at the apex and below, and it was also dull in the axilla. Over the upper spaces the entry was deficient and broncho-vesicular; below it was lost. Numerous râles were audible, with compensatory breathing on the right side. The pulse was irregular, 108; the impulse was dragged ⅔ in. outside the nipple by contraction of the lung. A diagnosis of gangrene of the lung was made. The condition proved fatal on the 26th, three days after admission.

Post mortem a saccular aneurysm opening just at the commencement of the descending aorta had compressed the left bronchus and produced a condition of fibrosis of the whole of the left lung with recent septic bronchopneumonia (Fig. 4). There was bronchiectasis of the tubes beyond the compression, with cavitation due to recent putrefactive infection, which was most marked in the posterior part of the lower lobe (Fig. 5).

Until I saw this case I was quite unaware that a partial compression of a bronchus was capable of producing an over-distended lung, which might be confused with pneumothorax.

CASE II.—The over-distension of a lung when there is pressure on the trachea, together with urgent dyspnoea, is well shown in Fig. 6. The patient was a man who was admitted with bronchitis and intense dyspnoea which soon proved fatal. The trachea was found to be compressed by an aneurysm of the transverse aorta.

The lung was enormously over-distended and had ruptured, producing interlobular emphysema, as shown by the lines of the interlobular septa, which, when fresh, were distended with air, but now are collapsed and empty.

I am indebted to Dr. E. W. Martin for the two following skiagrams, which excellently illustrate my contention. Fig. 7 represents a chest taken from the back. The left side is uniformly transparent; the intercostal spaces are wider than on the right. The diaphragm is flattened and displaced downwards and the heart to the right. The aneurysmal dilatation of the arch, with the marked excursion of pulsation, is well shown. There were well-marked signs of an aneurysm compressing the left bronchus. The condition was diagnosed on account of the skiagram as pneumothorax with aneurysm, but the appearance is really due to an over-distended lung. This will be at once apparent if we contrast it with an equally good skiagram of a pneumothorax (Fig. 8), also taken so long ago as 1902 by him. Here the air space is more transparent than was the over-distended lung, but the lung, shrunk up near its root, is obvious; this was wanting in the other picture. The heart and diaphragm are more displaced, and the latter has a much sharper outline.

[Since the lecture Dr. Martin has been able to find me the following notes of this case, which was in Victoria Park Hospital in 1902:

There was pulsation over the upper part of the sternum with a dull note. The note over the left chest was resonant, no cardiac dullness, the apex beat was 1 in. to the left of the sternum in the fifth space, the heart sounds were very feeble, but best heard on the right of the sternum; extremely feeble breath sounds all over the left chest—it hardly moves at all—and the whole chest, both back and front, is larger than the right. An exploring syringe was introduced in the seventh space posteriorly on the left side, and connected with a tube under water, when about thirty bubbles of air escaped.

The condition at that time was considered to be one of pneumothorax with aneurysm. The escape of the bubbles of air naturally suggested this; the skiagram, however, is definitely that of an over-distended lung, and I am supported in this view by Dr. Hugh Walsham. The air must, therefore, have escaped from the interior of the lung itself, and the explanation is that it must have been retained under great pressure, which is also indicated by the condition of the lungs.]

CASE III.—*Aneurysm Compressing the Left Bronchus: Signs at one time suggesting Pneumothorax.*

The patient was a man, aged 39 years. In October, 1906, there was pain behind the sternum. The physical signs on admission left it doubtful whether he had pneumothorax or an obstruction of the left bronchus. There were cough and stridor, there was deficient movement of the left side, but it looked enlarged. Some hyper-resonance was present. There were no tactile vocal fremitus, and no breath sounds, and voice sounds were diminished; on the right side there was compensatory breathing. The heart sounds were not well heard on the left side, but were better than normal on the right side. On December 15th a skiagram showed slightly increased opacity in the region of the aorta. On January 7th there was no dullness; no breath sounds were audible over the left chest. In February breathing was audible behind in the upper part, but the cardiac impulse was not palpable. In March there was a better entry of air into the left lung, with a few râles. The impulse was in the sixth space one inch outside the nipple. On March 14th the left base was becoming dull; when the patient went out in May the left chest had an impaired note with deficient breath sounds. Fatal haemoptysis occurred a few weeks later.

CASE IV.—*Saccular Aneurysm Compressing and Eroding the Left Bronchus: High-pitched Note over the Left Chest: Signs suggestive of Pneumothorax: Fibrosis with Bronchiectasis.*

The patient, a man aged 38 years, had had cough and pain in the chest for six months. The left chest was *less flattened* than the right, there was defective movement, and a *high-pitched note* all over on the left side. There was no cardiac dullness and no dullness in the axilla. Voice sounds were deficient and breath sounds absent. Behind, the *left chest*

DESCRIPTION OF SPECIAL PLATES.

Fig 1.—Trachea and bronchi opened from behind to show that an aneurysm of the transverse aorta presses on the anterior and outer side of the left bronchus. In this case the aneurysm is just beyond the transverse part, and has ruptured into the bronchus at A.

Fig. 2.—A similar specimen with an aneurysm of the descending aorta laid open; this is seen to lie on the posterior surface of the left bronchus, which it compresses.

Fig 3.—Skiagram of a chest taken from the front, showing the greatly over-distended left lung, due to pressure on the bronchus from an aneurysm. The left lung is over-transparent, the diaphragm is pushed down, and the heart is pushed over to the right.

Fig 4.—The bronchi of the same case laid open from behind. A small saccular aneurysm can be seen opening from the descending aorta, compressing, and almost occluding, the left bronchus, through which a glass rod (A) has been passed.

Fig 5.—A section of the corresponding lung, showing the resulting reduced size from fibrosis, with a general bronchiectasis. The fibrous trabeculae stand out, and there is, in addition, an acute destructive cavitation, chiefly in the posterior part of the lower lobe.

Fig 6.—A piece of lung showing interstitial emphysema. The lines of the interlobular septa were, when fresh, distended with air, due to rupture from over-distension of the lung, produced by compression of the trachea by an aneurysm, and accompanied by intense dyspnoea.

Fig. 7.—Skiagram taken from the back, showing an over-distended left lung, due to compression of the bronchus by an aneurysm. The left chest is abnormally transparent, the aneurysm with its movement above is obvious, the heart is displaced to the right, and the diaphragm is 2 in. lower than the other side.



Fig. 3.—To show overdistension of left lung.



Fig. 8.—Pneumothorax for comparison.

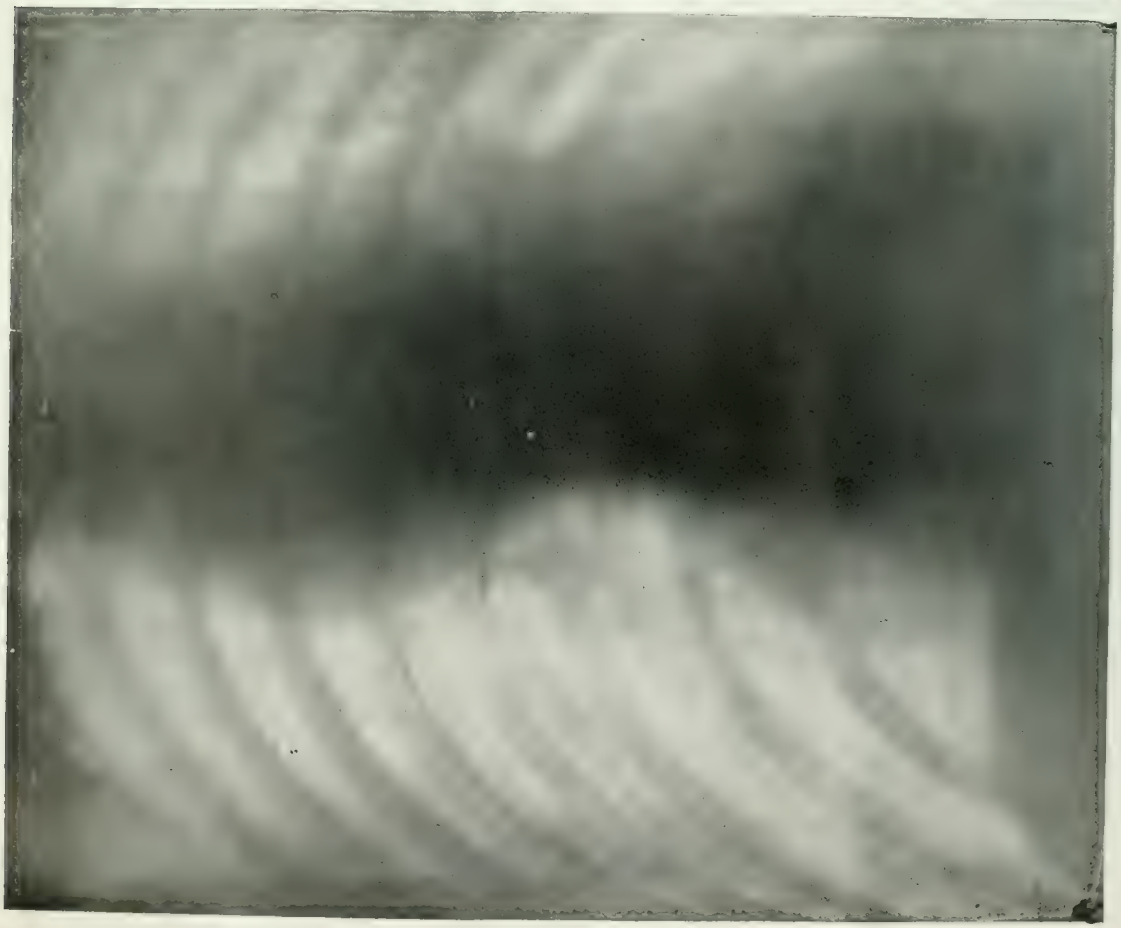


Fig. 7.—Overdistended left lung.



Fig. 1.

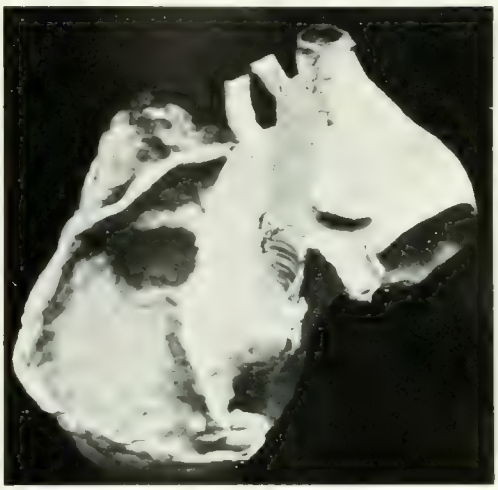


Fig. 2.



Fig. 4.



Fig. 5.



Fig. 6.

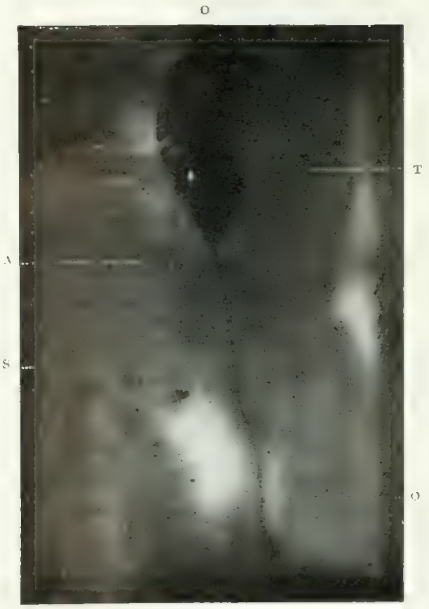


Fig. 9.

For description of figures see pp. 1848 and 1849.

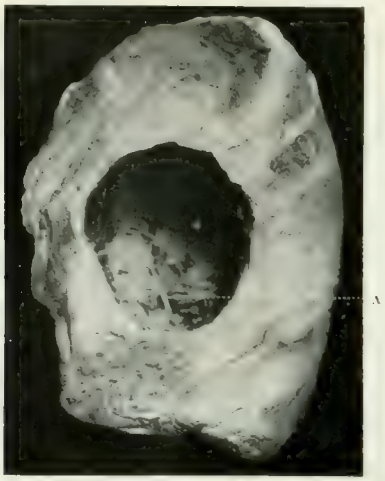


Fig. 10.



Fig. 12.



Fig. 11.



Fig. 13.

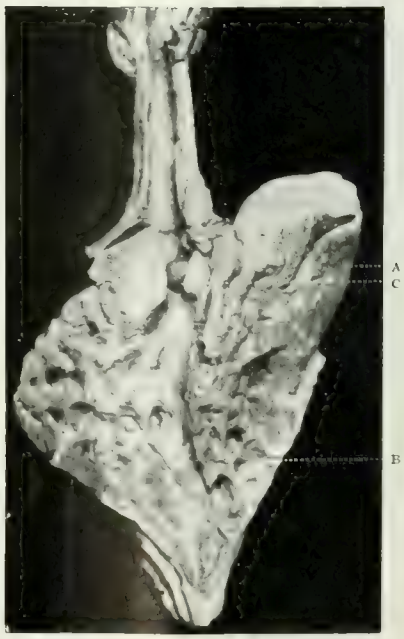


Fig. 14.

For description of figures see pp. 1848 and 1849.

bulged more than on the right; there were diminished tactile vocal fremitus and voice sounds. The chest circumference was 36 in. and the expansion ⅜ in. The heart sounds were indistinct, but were best heard behind the sternum and to the right. Diagnosis: Growth or pneumothorax. The temperature oscillated between 102° F. and normal while the patient was in the hospital. On April 26th, 1902. the chest was *smaller*, being only 34 in., and there was a slightly impaired note over the precordium. Fatal haemoptysis occurred.

Post mortem a saccular aneurysm was found opening into and compressing the left bronchus. There was a septic pneumonia of the left lower lobe, with fibrosis and bronchiectasis.

CASE V.—*Aneurysm of the Descending Aorta Opening into the Left Bronchus. ? Pneumothorax or Aneurysm.*

The patient, a man aged 38 years, had dyspnoea and pain with impaired movement and absence of breath sounds on the left side; there was a hyper-resonant note and the heart was displaced to the right. On September 20th, 1897, there was some dullness at the left base. Fatal haemoptysis occurred while the physician was preparing to explore. ? Pneumothorax or aneurysm.

Post mortem there was an aneurysm at the commencement of the descending aorta, which had opened into the left bronchus near the point of bifurcation. The lungs were mottled with blood that had been sucked in; the edges were emphysematous. The lower lobe was solid, mottled grey-green, with a quantity of odourless pus in the tubes.

CASE VI.—*Aneurysm Compressing the Left Bronchus: Left Lung Over-distended, the Signs suggesting Pneumothorax.*

The patient in this case had a well-formed but emphysematous chest, the left side being *more bulky and larger* than the right and not moving so well; in fact, scarcely at all. No apex beat could be felt; there was a slight pulsation in the third right space 1½ in. from the edge of the sternum. There was a *hyper-resonant note* in the left chest obliterating the cardiac and the splenic dullness. Breath sounds were absent on the left side and very faint at the apex; there were no tactile vocal fremitus, no voice sounds, and no bruit d'airain. The circumference of the left chest was 18 in.; at the level of the right nipple, 17⅛ in.; at the level of the left, 17¾ in. There was no movement on the left. Diagnosis: Pneumothorax due probably to the rupture of a phthisical cavity. The temperature was remittent. Later, the note at the left base was slightly impaired.

DESCRIPTION OF SPECIAL PLATES.

Fig. 8.—A skiagram taken from the back of a case of pneumothorax, due to rupture of an early phthisical cavity, for comparison. The lung, contracted up at its root, is visible above the very clear area occupied by air; the outline of the diaphragm is more distinct than in Fig 7; the heart is more displaced. The low flat condition of the left diaphragm, which is displaced down, is obvious.

Fig. 9.—A skiagram of an oblique view, showing an oesophagus, o, with its upper part distended with bismuth and milk. The spine, s, lies to the left, and the shadow of a saccular aneurysm, A, extending up to it, can be seen compressing the oesophagus; below this point a linear trickle of bismuth alone passes; the shadow extends higher than the point of compression; T is the dilated thoracic aorta.

Fig. 10.—The left lung, containing a cavity 4 in. across. In removal the anterior wall was torn and the walls when fresh were flocculent, but have been made smooth, unfortunately, in preparing the specimen. A probe, A, can be seen projecting through the remains of the bronchus; the pulmonary artery was also involved. An epitheliomatous growth invaded the root and slowly produced this gangrenous cavity, which, owing to the absence of breath sounds, gave no signs during life.

Fig. 11.—A section of a right lung which is fibroid, with bronchiectasis and gangrene, due to infiltration of the root by a sarcoma which compressed and almost obliterated the pulmonary artery and the bronchus; a probe, A, indicates the lumen of the bronchus. The lower lobe is greatly reduced in size and excavated by a gangrenous cavity.

Fig. 12.—A trachea and bronchi laid open from behind, showing the opening, A, through which a suppurating gland, B, had discharged into the right bronchus.

Fig. 13.—A trachea, with part of the right lung. The trachea and bronchi are scarred with syphilitic ulceration, the right bronchus is markedly narrowed, the lung is dense and fibroid, but there is no bronchiectasis.

Fig. 14.—A trachea and right lung, showing a pea, C, tightly wedged in the lower branch of the right bronchus. The upper lobe, A, is healthy, but the lower, B, is riddled with smooth-walled intercommunicating cavities. There is marked bronchiectasis, with fibroid replacement of the lung tissue in the lower lobe.

The following is a remarkable instance in which the patient survived twenty months after the first severe haemorrhage from the erosion of the aneurysm into the bronchus, the opening being probably a valvular one, which he was able to close by retracting his head and thus diminishing the antero-posterior diameter of his chest.

CASE VII.—*Aneurysm of the Aorta, one compressing the Left Bronchus, and another the Trachea: Recurrent Haemoptysis for Twenty Months before Death.*

The patient, a man aged 50, under the care of Dr. Parry Jones of Derby, had four years ago dyspnoea on exertion, when an aneurysm was suspected; twenty months before death haemoptysis (1 pint) occurred; the blood came more rapidly when he leaned forwards, and was checked when he drew back his head. He also noticed that turning his head to the right reduced the volume of his right pulse. Gradually a slight pulsation with a diastolic jog developed beneath the left clavicle. There were diminution of breath and voice sounds on the left side, but no dullness. There were four further attacks of haemoptysis amounting to several ounces during the next year, but by reducing his fluid to 13 oz. and keeping quiet he kept them in abeyance.

Three dilatations were found in the ascending, transverse, and descending portions of the arch. The opening into the air tube was closed up. There was no great amount of bronchiectasis. It is remarkable he should have survived the first rupture for twenty months.

CASE VIII.—*Saccular Aneurysm of the Descending Aorta which Compressed the Left Bronchus and the Oesophagus.*

The patient, a man aged 49, under the care of Dr. Morgan of Seaford, had had pain for a year in the left chest and cough for three months. Recently there had been expectoration in the morning streaked with blood. He had dysphagia, liquid food frequently coming back again into his mouth after some little time if he swallowed. Dyspnoea ensued on exertion; there was defective movement on the left side, with distension of the veins on that side of the chest. There was resonance with deficient breath sounds over the left side, and a very marked delay (almost one second) in the onset of inspiration, which was quite noticeable when a double stethoscope was used. There were deficient voice sounds and the tactile vocal fremitus note was very slightly impaired, if at all. In the skiagram (Fig. 9) a large saccular aneurysm can be seen near the origin of the descending aorta, pressing on the left bronchus and delaying the passage of some milk and bismuth he had just taken. The oesophagus can be seen distended above and the bismuth trickling past the obstruction. When he contracted the oesophagus some of the contents were returned into his mouth.

The features especially associated with the pressure of an aneurysm on a bronchus may be summed up as follows: 1. The left bronchus is involved six times as often as the right. 2 The right is very rarely eroded. 3. Resonance with silence. There are deficient or absent breath sounds over the left lung with a resonant or hyper-resonant lung. This does not necessarily indicate more than a partial occlusion of the bronchus, and occasionally in an early stage the left lung may be over-distended and be too transparent to *x* rays. The condition has, then, to be diagnosed from pneumothorax. 4. With *x* rays dilatation of the aortic arch can generally be detected, as the disease of the wall is generally multiple and diffuse. The local aneurysm often is best shown in a view in the half turned position with the patient sitting up. The deficient and delayed movement of the lung, the alteration in its density, and the abnormal position and movement of the diaphragm are usually obvious. Occasionally no local aneurysm nor yielding of the aorta can be detected. 5. Later, the development of an impaired note rather than complete dullness. with gradual development of bronchiectasis. It is remarkable how the amount of change which develops is always under-estimated owing to the breath sounds being absent or feeble. 6. Absence of pleuritic effusion. 7. Retardation of the onset of inspiration on the affected side. 8. In nearly half the cases more or less haemoptysis. Pain with dyspnoea on exertion are very constant symptoms.

As soon as the mucous membrane ulcerates the liability of the contents of the bronchi to become freshly infected is greatly increased, as the spot is very apt to become a nidus for organisms itself. Hence necrotic changes in the lung occur more often when the tube is ulcerated than when it is only compressed, just as primary growths in the bronchus are especially associated with gangrene.

MALIGNANT DISEASE (55 CASES).

The growth may originate (1) in the bronchus, (2) in the glands at the root of the lung, (3) it may be a secondary

deposit in the glands at the root of the lung and grow into it along the bronchus, and (4) as an epithelioma of the œsophagus ultimately invading the bronchus.

1. Primary growth in a bronchus is rare (8); in 4 cases it started in the right and in an equal number in the left. The growth is generally a columnar-celled carcinoma—at least four-fifths of cases of primary cancer of the lung start in the bronchial mucous membrane. Most of the cases came under observation for pleuritic effusion, which not infrequently required tapping more than once. In half the cases gangrene of the lung developed. In some a fragment of growth was expectorated, and thereby its malignant nature determined. There are generally pain and pressure signs.

2. Growth in the glands (26 cases) half affecting each bronchus. Two were described as lymphadenoma, but as they eroded the bronchus it is more probable that they also were sarcomatous.

3. Secondary deposits in the glands at the root of the lung (6 cases): the growth compressed the bronchus and invaded the lung.

4. Epithelioma of the œsophagus (16 cases). The two bronchi are invaded with equal frequency. In four they were only compressed; in the others the growth had fungated in. With epithelioma the pulmonary condition rapidly proves fatal, with a septic pneumonia, abscess formation, or gangrene. Bronchiectasis and fibrosis have not time to develop. The rapidly fatal changes are due to the infection with food from the communication with the œsophagus. The food is doubtless often squeezed in by the contraction of the œsophagus owing to the obstruction of its tube beyond by growth. In one case a deposit in a gland led to compression of the lower branch of the left bronchus with the development of bronchiectasis beyond. A troublesome paroxysmal cough, pyrexia, and pain are the indications of the onset of trouble in the lung, to which foul expectoration is soon added.

The special features of malignant disease are the frequency with which pleuritic effusion and also gangrene develop (more than half). The effusion is an early sign, and both this and the collapse of the lung, as well as the growth itself, all give dullness which is often quite marked. It has been pointed out by writers that the physical signs given by the changes in the lung and the pleura are obvious at an early stage and tend to obscure the evidence of the growth itself. In many the pulmonary artery is also compressed and may be occluded, and this is much more frequently so than by an aneurysm; hence the rapid development of extensive patches of gangrene which may lead to the development of large cavities, often without fibroid thickening of the wall. In a small proportion fibroid changes in the lung are well marked; in others there has not been time for them to take place. Bronchiectasis is by no means always present, but only in one third.

The massive infiltration of the root of the lung occludes not infrequently the lymphatics and blood vessels as well as the bronchi; hence oedema of the pulmonary tissue tends to develop and the bronchi to become more rapidly overfull of secretion. Stridor is not infrequently present, especially on exertion, but is most marked when the growth has also compressed the trachea.

CASE IX.—*Squamous Epithelioma of the Root of the Lung with Destructive Disease of the Lung beyond.* (Fig. 10.)

The patient was a man, aged 65 years, who for twenty months expectorated material of the colour of strawberries and cream, at one time amounting to a pint a day. The only physical signs were deficient breath sounds over the left base.

Post mortem the left lower lobe of the lung was excavated out into a cavity 4½ in. across, with flocculent necrotic walls, there were numerous dilated bronchi in the rest of the lobe with fibrosis. The bronchus and pulmonary artery were compressed, being embedded in the mass of growth. The primary seat was not determined as the *post-mortem* examination was limited to the thorax.

This specimen is of interest as showing the early formation of a single large cavity from destructive changes from necrosis, and in this instance without any foul secondary putrefactive changes. It illustrates the fact that the physical signs of a large cavity over 4 in. across may be almost *nil* when there is stenosis of the bronchus, owing to the absence of any breath sounds Contrast it with the extensive fibrosis and the usual absence of large cavities which result when the pressure is due to an aneurysm.

As another example showing how a mass of sarcoma growing into the root of the lung associated with occlusion of the pulmonary artery tends to form large cavities, in addition to a general fibrosis of the lung with moderate dilatation of the tubes, the following may be quoted:

CASE X.

The patient, a woman aged 38 years, died a few hours after admission. At the inspection the left lung was healthy. A section has been made of the right lung, with the mass of growth at its root. A rod has been passed through the much-constricted bronchus. The pulmonary artery except for a small branch was occluded. Almost the whole of the lower lobe was excavated out into a cavity. There were smaller cavities in the lower part of the upper and middle lobes with general dilatation of the tubes in a dense fibroid tissue. (Fig. 11.)

CASE XI.—*Primary Cancer of Bronchus: Expectoration of a Nodule of Growth: Duration of Symptoms three and a half Years: Fibrosis with Bronchiectasis.*

The patient, a man aged 40 years, first noticed some wheeziness in September, 1901, and during the year 1902 he became short of breath on exertion; he lost half a stone in weight; there was an ounce of muco-purulent secretion daily, and on exertion or deep breathing there was some stridor. The wheeze or musical whistle with expiration was loudest when he lay on his left side. He had no pain. In October there were deficient breath sounds with a slight squeak, and deficient voice and tactile vocal fremitus over the left side, with dullness in front at the apex. There was similar deficiency in breath sounds at the apex; the base was fairly normal; the right side was quite normal. With a skiagram there was a slight opacity at the left apex, but less than is often met with in growth, although the evidence pointed in that direction. There was no evidence of aneurysm. He was subject to attacks of pyrexia with an increase in the expectoration. He continued to lose weight, and towards the end of the year there was a pleuritic rub. He had a few slight rigors. In December the dyspnoea had increased considerably, and he was very frequently sick unless very careful with his diet. A rough, blowing systolic bruit developed to the left and above the heart; the resonance became more impaired above, and the breathing indeterminate, with an increase in the voice sounds. The impulse of the heart was pulled upwards and outwards. There was pulsation over the affected area at the left apex which apparently was transmitted from the heart and was not due to an aneurysm. The diaphragm was as high as the fifth rib in the axilla. During the year 1903 he was able to get about if he moved slowly. Expectoration was limited to half an ounce; it was slightly blood-stained, but never offensive. The amount of blood varied somewhat.

The patient continued fairly well until May, 1904, when he had an attack of pericarditis, which lasted for six weeks. In December, 1904, he coughed up a piece of tissue an inch long and three-eighths of an inch in diameter, which came away quite easily with only a little haemorrhage. On microscopical examination this was found to be a portion of glandular carcinoma composed of tortuous columns of columnar cells; there were also cells in alveoli which communicated with these columns. Another nodule was expectorated in the following March. On April 18th, 1905, I again saw him with Dr. Cockburn of Ealing. The patient had got worse during the last six months, frequently expectorating as much as an ounce or two of blood. The dyspnoea had increased. He was practically confined to his bed. For a long time he was unable to lie on his left side, and latterly only on his right side. There was pulsation as high as the third space above the nipple, to the left of the heart; there were a noisy, wheezy stridor and noisy expectoration. We came to the conclusion that a nodule of the growth had fungated through, probably into the trachea, and it was a question whether there was not originally a foreign body in the left bronchus, which was the starting point of his trouble. He died the next day.

On *post-mortem* examination the right lung was found over-distended, but otherwise normal; there was an adherent pericardium. There was a mass of growth at the root of the left lung, in which the bronchus and vessels were imbedded. No foreign body was found, the left lung was extremely contracted. The upper lobe was reduced to a mass about 2 in. across and 7 in. long, riddled with small bronchiectasic cavities, while the lower lobe was converted into a very dense fibroid mass no bigger than the lung of a child of 6, and was also riddled with cavities.

COMPRESSION BY INFLAMED GLANDS (12 CASES).

The cases were: Enlarged glands 7, suppurating and opening into bronchus 5. These cases occur mainly in infants in whom the glands are active, and the antero-posterior diameter of the thorax is so small that a mass of glands at the bifurcation of the trachea may lead to serious symptoms, but especially when they press on the trachea They less often compress the bronchi seriously, and this generally only occurs when there are enlarged glands on each side of the bronchus, which accounts for the comparatively few cases in which enlarged caseous glands give rise to pressure symptoms. The cases of pressure on the trachea are apt to be looked upo

due to laryngeal diphtheria, but the absence of movement of the larynx is of diagnostic importance. Their enlargement may be made out by dullness internal to one scapula, by the opacity shown by *x* rays, by the absence of breath sounds on one side, and by a venous hum over the sternum on retracting the head, although I have only been able to elicit this sign three or four times.

When a suppurating gland breaks into a bronchus the child has severe dyspnœa with violent paroxysms of cough, and may bring up some purulent secretion, while there is soon an active development in the lung beyond of fresh physical signs. When in a child there are evidences that a bronchus is compressed, it is far more likely to be due to an enlarged caseous gland than to a foreign body, unless there is a definite history of sudden onset of symptoms after swallowing something. Most of the cases due to caseous glands are complicated with phthisis; less than half of them are diagnosed, but *x* rays make it much easier to do so now than formerly.

In 3 cases abscesses opened into a bronchus: (1) empyema, right side; (2) suppurating bronchial glands secondary to suppurative pylephlebitis; and (3) abscess communicating with the œsophagus and gangrenous cavity in the lung.

CASE XII.—*Compression of Trachea and Right Bronchus by Enlarged Caseous Gland.*

A child, aged 2 years, was admitted to hospital in 1910 with dyspnœa and stridor, which was supposed to be due to laryngeal diphtheria. On examination it was found that there were deficient breath sounds over the right side, with impaired resonance. The larynx did not move with respiration, and compression of the root of the right lung by caseous glands was diagnosed. The child died a few hours later. A large caseous gland compressed the trachea in front, just above the bifurcation. Another large gland between the bronchi was softening; the right lung was collapsed and airless; the left lung was normal. (Fig. 12)

DILATED LEFT AURICLE.

A cause of pressure sufficient sometimes to cause physical signs during life, but rarely to present much evidence *post mortem*, is a dilated left auricle due to mitral stenosis, to which attention was directed many years ago by Dr. Wilkinson King.

CASE XIII.—*Pressure on Left Bronchus by Dilated Left Auricle.*

In 1888 a woman, aged 50 years, was seen suffering from mitral stenosis with a greatly dilated left auricle. At the inspection there was also a softening *ante-mortem* clot in the appendix. The left base was airless and sank in water; it could be inflated less than the right one, which was also œdematous and engorged. Both were deficient in air. The dilated left auricle markedly compressed the left bronchus.

FIBROUS BRONCHIOLITIS DUE TO IRRITANT GASES.

Inhalation of irritant gases is a well known cause of intense dyspnœa and bronchitis, not infrequently fatal, with a greatly over-distended lung, of which we have had examples from time to time. Fraenkel has shown that this condition may be due to an acute fibrous obliterating bronchiolitis, which may develop within a fortnight. He has recorded cases after inhalation of the fumes of chlorine, of cow hair and lime dust, and after calcium chloride dust. A man after inhaling chlorine had intense dyspnœa, which passed off but returned next day, when he was cyanosed, with an extremely distended lung and fine crepitations. The condition again cleared up, to return again after a week, when he died. Widespread fibrous peribronchial inflammation was found round the smaller bronchioles, with necrosis of the lining epithelium, producing constriction of the tubes with dilatation beyond. Schmorles has described a similar condition in the bronchopneumonia of measles, with obliteration of the bronchioles. The ingravescent cyanosis with dyspnœa and a rapid and great increase in the size of the lung are the essential points, especially when there has been exposure to irritant gases.

STENOSIS OF THE BRONCHI FROM SYPHILIS.

Out of 7 cases, 2 were due to gummata pressing on a bronchus. The way in which the tubes dilate under violent inspiratory efforts with bronchial obstruction is well shown in a case (No. XIV) of a man, aged 64 years, where a gumma pressed on the upper division of the right bronchus. The upper and middle lobes were over-distended; the lower lobe was airless from compression with five pints of fluid. The illness was rapidly fatal. The second (No. XV) was a chronic case with a gumma compressing the superior cava and the right bronchus; the bronchi beyond were dilated up to their extremity, and their walls were thickened; the lung was solid. There was extensive pleuritic effusion into the left side secondary to the pressure on the cava.

There were 5 cases of cicatricial stenosis of the bronchus secondary to syphilitic ulceration, and the patients were all under the age of 40. In 2 the larynx was also involved, in 4 the trachea, and in 4 there was bronchiectasis. Stridor is generally present, but often is independent of the bronchial lesion. There are generally other signs of syphilis present, so that an accurate diagnosis can be made in the majority of cases.

CASE XVI.

The patient was a man, aged 38 years; he was admitted with extreme laryngeal stridor and fixed cords due to laryngeal paralysis requiring tracheotomy. *Post mortem* the left lower lobe was collapsed. There was syphilitic stenosis of the right bronchus, with scars on the trachea, fibroid right lung, with dense gummatous fibrous mass involving the root of the lung and the vagus. In spite of the vagus being involved, there was no destructive disease of the lung. Sir W. Gull at one time suggested that the destructive lung disease associated with aneurysm was due to implication of the vagus. (Fig. 13.)

FOREIGN BODIES.

The result of the introduction of a foreign body into a bronchus depends upon whether the bronchus is partially or completely occluded, on the vigour of respiration, and on whether the body is an organic one which will readily putrefy.

Our knowledge of the changes which result largely depend on the experiments of Lichtheim in 1878, who introduced laminaria tents into the bronchi of rabbits, and also in others removed portions of the third and fourth left ribs, ligatured the bronchus, and studied the results. He showed that when the plug completely occluded the bronchus the lung quickly collapsed and became airless. There was at once an intense dyspnœa which gradually quieted down. In many cases the animals died within twenty four hours with pneumothorax of the opposite side from rupture of an enormously over-distended lung; in others the over-distension of the sound lung had stretched the capillaries and made them useless, equally producing a fatal result. Pneumothorax from this cause does not occur in human beings. The affected lung beyond the obstruction was of a dull brown red colour, with the consistency of muscle. With early death the bronchi were empty, but became filled with a thick white mucoid secretion whenever the animal did not die too soon. When he ligatured the bronchus alone the same result was produced.

He found that when the animal was made to breathe oxygen absorption was much quicker, in some cases being under an hour; CO_2 absorption was less rapid, but much more so than when it breathed air. When the pulmonary artery was also ligatured absorption was much delayed, showing that the gases were absorbed by the blood circulating in the lung.

When the chest was merely opened and the lung exposed to the air atelectasis took place quickly, but did not if the pulmonary artery was ligatured. This opening of the chest vitiates many of his results, as it prevented any vigorous respiratory movements from taking place. This was well shown by the fact that when the bronchus was ligatured the opposite lung did not become over-distended to the extent it did when the bronchus was blocked by a foreign body. When the hilum of the lung, including the pulmonary artery, was ligatured there was generally no infarct, because there had been no suction of the blood owing to the absence of the opening up of the alveoli with inspiration. This affords the explanation of the absence of infarcts in cases of growth at the root of the lung and of aneurysm in which the pulmonary artery had been occluded by pressure. When the animal survived some weeks the lung was fibroid and converted into a sac of dilated tubes, presenting an appearance similar to that of a calculous pyelonephritic kidney.

Partial obstruction of the bronchi has not been thoroughly studied experimentally, and we have still much to learn;

the presence of expectoration in amount shows that this is the more usual condition which results from the presence of a foreign body in a bronchus, and I have little doubt that in some cases the lung at first becomes over-distended, and is not always airless and collapsed.

Schuller has shown that it is possible to introduce clean food into the bronchi of rabbits, and if it can disintegrate it will disappear with no change in the lung beyond that of catarrh; when it cannot, fibroid changes with bronchiectasis result. When dirt, however, was mixed with the food gangrene or septic pneumonia resulted.

There have been the following cases: (1) Head of barley grass in left bronchus 129 days; (2) pork in right bronchus possibly for six months; (3) wooden top of toy in left bronchus; (4) pea in left bronchus; (5) feather after tracheotomy in right bronchus, but not cause of death; (6) pipe stem in bronchus after fatal fall down ladder (not cause of death); (7) newspaper in trachea, introduced intentionally; and (8) sponges in trachea, introduced intentionally.

The following case presents many very remarkable features. The boy swallowed a head of barley grass during a paroxysm of coughing, and this passed into his left bronchus, where it remained 129 days. He developed within two days after the entrance of the body an acute pneumonia which became gangrenous, and he had an extremely prolonged dangerous illness. Acid-fast bacilli were found on one occasion in the sputum, and were assumed to be tubercle bacilli, but he made an excellent recovery as soon as he expectorated the piece of grass. He never reacted specifically to tuberculin. He has maintained perfect health for the five years since, and is now strong and well.

It is very rare for any one to make such an excellent recovery after such extensive mischief in the lung, and it is suggested that the acid-fast bacilli came from the grass, as these grasses are said to contain them.

Case xvii.—*Ear of Barley Grass in the Left Bronchus for 129 Days: Gangrene of the Lung: Complete Recovery.*

A boy aged 12 years, while recovering from an attack of whooping-cough, was playing with a head of grass in his mouth, when he was seized with an attack of coughing and the piece of grass disappeared. He tried in vain to make himself sick. On the next day the temperature was 102.8°, and on July 25th—the following day—Dr. J. E. G. Calverley of Folkestone, under whose care he was, found that the temperature was 105.2°, with a pulse of 100. There was pain in the epigastrium. The entry of air at the left apex in front was deficient. On the 28th there was diminished entry over the same area, with diminished movement but a *hyper-resonant* note. There was tracheal wheezing, conducted over the whole chest as rhonchi. The temperature, respiration, and pulse remained high, and on the 30th the boy had consolidation at the left apex down to the third rib, with bronchial breathing and pectoriloquy. The larynx was found to be normal. On August 1st there was profuse epistaxis, with a tympanitic note at the left apex in front, and down to the level of the fourth rib in the axilla. The entry of air remained deficient at the left apex. He became anaemic from recurrent epistaxis. He then passed under the care of Dr. R. B. Wrightson at Aldeburgh. The temperature gradually dropped to 99°, and the boy was able to get about. The sputum at first was frothy, but later became abundant and mucopurulent, and was said to contain tubercle bacilli. In the middle of September his temperature ran up to 104° and he developed signs of consolidation at the left base. In the upper lobe there was dullness at the apex with signs of a cavity in front in the second and third spaces. There was a marked oscillation of the temperature with very foul breath indicative of gangrene. He was extremely ill for a long time with a very feeble pulse. He took creosote regularly and was well nursed in the open air, so that gradually he recovered his health. No tubercle bacilli could be again detected, and at the end of October he had gained a stone in weight. The sputum was reduced to ½ oz. in amount daily, and was no longer foul. On November 30th, 129 days after swallowing the grass, he had a fit of coughing, and brought up a head of barley grass 1¼ in. long from the left bronchus. The long awns had broken off from decomposition, and so it was able to pass out again backwards, which had been quite impossible so long as they were intact. There was a gradual retrocession of the signs, but there remained at the apex a deficient resonance, with indeterminate breathing and increased voice sounds; a few moist sounds persisted at the lower part of the lung for some time. In December the opsonic index for tubercle was found to be 0.6 and 0.65 on two occasions. An attempt was made to see whether any acid-fast bacilli could be cultivated from the piece of grass, but none could be found, although many other organisms were present.

Fig. 14 (Case xviii) shows a pea wedged in the lower bronchus on the right side. The upper part of the lung is healthy, but the rest of the lung is densely fibroid and riddled with intercommunicating cavities. The patient was a boy, aged 3 years, with cough and vomiting. He died with empyema and cerebral abscesses a month later.

Case xix.—*Piece of Pork in Right Bronchus: Bronchiectasis: Septic Pneumonia.*

In 1888 a man, aged 60 years, was admitted. For six months there had been wasting, and for two weeks foul breath. For two days there had been deficient movement of the lung on the right side, pleural rub in the axilla and base, deficient air entry, râles, with amphoric breathing over the middle lobe.

At the inspection the right lung was fibroid with general bronchiectasis of the main bronchi. Low down was found a piece of pork ¾ × ¾ in. There were cavities in the lower lobe. There was acute pneumonia at the lower part of the upper lobe with oedema of the left lung. Had the pork been there for six months?

Case xx.—*Piece of Wood in Left Bronchus: Bronchiectasis of Both Lungs.*

In 1905 a female child, aged 16 months, was seen. She was well until five weeks before admittance, when she had a cough and dyspnoea. The right lung was resonant on the anterior part in front, but impaired behind. There were crackling râles, bronchial breathing, and pectoriloquy behind.

At the inspection there was advanced fibrosis with bronchiectasis of the right lower, the right middle, and the left lower portions, with a mass of dilated tubes in the midst of the parts of the lung which were fibroid. The *two left upper lobes* were distended; there was recent bronchopneumonia. In the left bronchus, just beyond the point of bifurcation, there was a smooth piece of wood broken off a toy. It was doubted at the necropsy whether the piece of wood had caused the bronchiectasis, because it was found in the left bronchus and the bronchiectasis was also on the right side, but probably at an earlier stage it was in the right bronchus, and had produced changes on that side and been displaced to the left later.

Although many cases of foreign bodies in the bronchi have been recorded, in but very few has an accurate note been made of the physical signs in the lung in an early stage of the illness. The body generally passes into the right bronchus because it is more vertical and is also slightly larger. The changes are unilateral, serious, and progressive.

The following are the most important evidences suggestive of a foreign body in a bronchus, and in any such case a bronchoscope should be passed in order that the condition of the tubes may be determined, and a positive opinion formed: (1) A most important factor in diagnosis, and one which until we had *x* rays was absolutely essential, is the history of swallowing something immediately before the onset of an acute attack of severe dyspnoea and cough. (2) Not infrequently a whistling or wheezing sound which the patient can localize to one side, varying in quality if the object is not fixed in the bronchus. (3) Great distress, with not infrequently a constricting pain behind the sternum, made worse by movement. (4) Dyspnoea, with varying exacerbations, often intense and made worse by cough, but it may be elicited only by exertion. After a time there may be no distress. (5) Absent or, rarely, very noisy breath sounds, with some slight diminution of voice and tactile vocal fremitus limited to one side of the chest. (6) At first resonance on the affected side, soon consolidation with dullness, and, after a time, the signs of cavities, and the simulation of phthisis; query occasionally hyper-resonance. The physical signs sometimes vary from time to time. (7) With *x* rays, the defective movement of the diaphragm and of the thorax, the alteration in the density of the lung, and not infrequently the outline of the foreign body itself, may be clearly made out. (8) Delay in the commencement of inspiration as compared with that on the other side. (9) Defective movement with consequent diminution in the size of the affected side. (10) Violent paroxysmal persistent cough, which is apparently most marked when the object is at the bifurcation, as the sensibility of the mucous membrane is greatest here, as can be noticed when passing a bronchoscope. (11) Early pyrexia, which later becomes hectic, associated with chills. (12) After a short time an expectoration more or less profuse, purulent, often bloody, and later often fetid. (13) In some there are nausea and vomiting, which may be very troublesome. (14) Pneumonia often develops in forty-eight hours; this may be septic and may be followed by gangrene.

[We are indebted to Messrs. Bale, Sons and Danielsson for the loan of the block of the portrait of Dr. Bradshaw which appears on p. 1845.]

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RENOVATION OF TERMINAL PHALANX OF THUMB.

IN April, 1908, I saw a boy, aged 10, who had suffered for some weeks from a whitlow of the left thumb. The nail was loosened from its bed, and a sinus led down to necrosed bone; pus was discharging from the sinus.

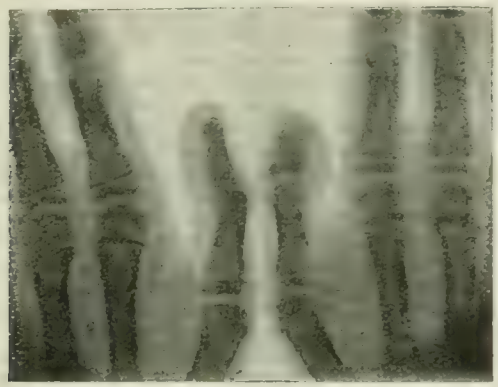


Fig. 1.—Skiagram taken by Mr. J. Taylor. The growth of the new bone from the epiphysis is well shown.

On April 3rd, 1908, the patient was given an anaesthetic, and I cut off the diseased skin, etc., removing the entire nail and the terminal phalanx, which was quite loose and completely necrosed. In fact I performed an amputation at the interphalangeal joint; and I told the parents there was no chance of any "end" ever growing to his thumb. The little operation wound healed quite well, and I did not see the boy again until January, 1909, when, to my great astonishment he had quite a well-shaped nail and a perceptible phalanx with good movement at the joint! I had a skiagram taken (Fig. 1) which shows very clearly the growth of the new bone. Obviously this new phalanx has developed from the epiphysis which was left behind.



Fig. 2.—The necrosed phalanx as removed.



Fig. 3.—Photograph of hands two and a half years after operation.

Fig. 2 is a photograph of the necrosed phalanx removed in 1908. Fig. 3 is a photograph I took of my young friend's hands last September.

I referred to this case in my inaugural address to the Bath and Bristol Branch in 1909 as one of the best examples I ever came across of the *vis medicatrix Naturae* and I think this pictorial record may interest the readers of the JOURNAL.

Clifton. G. MUNRO SMITH.

HYDATIDIFORM MOLE DURING THE FIFTY-FIRST YEAR.

THE following case is of more than usual interest, owing to the fact that conception took place towards the end of the fifty-first year.

Mrs. A., aged 50 years and 9 months, consulted me in September on account of persistent sickness and sanguineous discharge. Menstruation had been quite regular till the early part of this year, when it became irregular with long intervals, suggesting the onset of the menopause. The last menstrual period occurred at the beginning of August, but the uterus was easily felt above the pubes by external examination.

The symptoms of sickness and discharge gradually ceased with complete rest in bed, but the uterus enlarged rapidly, and finally emptied itself, with considerable "pains," on November 14th. The mole, which filled a 3-lb. jam-pot, was typically hydatidiform, the cystic chorionic villi, with myxomatous degeneration of their stroma and proliferation of the trophoblast layers, being clearly shown. All discharges ceased in a week, and the patient is so far making an uneventful recovery.

There seems to be no reason to doubt but that this mole was the result of a recent conception, and the case seems to support the theory that such moles occur as a result of pregnancy in advanced life.

Newton Ferrers, Plymouth. A. E. GLADSTONE.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

HAMIRPUR DISTRICT HOSPITAL.

CASE OF PENETRATING WOUND OF THE ABDOMINAL WALL WITH PROTRUSION OF THE SMALL INTESTINE.

(By S. K. CHANDHURI, M.B., B.A., Assistant Surgeon.)

T., an orphan male child, aged 8 years, was admitted to the District Hospital, Hamirpur, U.P., with the report that the boy had been gored by an enraged bull; he had been carried in a bullock cart from a distant village. The accident was said to have occurred about four hours previously. A dirty cloth was wrapped round his abdomen, on uncovering which a coil of the small intestine a little above a foot in length was seen protruding through a more or less transverse wound across the middle line of the abdomen about an inch above the navel. On inspection two superficial puncture marks were discovered in the visceral peritoneum of the protruded gut, the rest of the intestinal wall being intact. The whole of the protruded organ had a deeply injected appearance. His temperature on admission was 99°.

Under chloroform, when the toilet of the protruded organ with sterilized salt solution was nearly finished, his pulse became feeble and the rest of the operation was hurried through. The gut was pushed back by enlarging the abdominal wound. The severed aponeurotic fibres were drawn together by buried sutures, and last of all superficial stitches uniting the skin were applied.

The patient was kept under the influence of opium, and a little milk was given for the first time since the operation on the third day; next day flatus and faeces were passed. He made an uninterrupted recovery, the temperature never rising beyond 101.4°—recorded on the second day—and no peritoneal complication supervened.

On the eighth day, on removing the first dressing, suppuration was noticed to have occurred superficially; it is strange pus did not travel beyond the muscular wall and did not affect the site of the buried stitches. No drainage for the wound had been provided and yet nothing untoward happened. Another departure from the common practice was that the peritoneal rent had not been united by stitches. Five months have elapsed since the accident took place, and the boy has no complaint whatever.

THE first Congress of French Medical Journalists will be held in Paris on Thursday, March 23rd, 1911. Among the questions to be discussed are the right of reproduction of medical papers; the relations of the medical press with congresses and other manifestations concerning the art and practice of medicine; the organization of a fund for the immediate relief of necessitous cases; the usurpation of the title of doctor.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, December 5th, 1910.

CHARTERS J. SYMONDS, M.S., F.R.C.S., President, in the Chair.

Dilatation of the Heart and Heart Strain.

DR. W. COLLIER of Oxford, in continuing the discussion on this subject, said that in the treatment of the heart strain of athletes it was most important to reassure the patient, and make him realize that he was not in the slang phrase a "heart crock," but had only to avoid severe athletic competitions such as rowing in races, and take care to live a "physiological life," going to bed in reasonable time, and not smoking cigarettes continually.

Dr. SAMUEL WEST said that a muscle not exercised wasted, and therefore it must be exercised, but how much the muscle could do was a matter of observation, therefore in the case of heart muscle supervised exercises were better than rest.

Dr. WALTER BROADBENT said that a method of examining a case of supposed heart strain was by taking a tracing of the jugular pulsation in the neck with Mackenzie's polygraph. In merely functional cases the jugular tracing was normal, but in genuine cases there might be either a very large auricular wave, or a ventricular wave higher than the auricular. When the auricular wave had been large, presumably showing hypertrophy of the auricle, relief of symptoms had quickly followed the giving up of violent exercise for a week or two and the taking of a tonic. When the ventricular wave had been higher than the auricular, though rest, graduated exercise, and treatment had changed the character of the jugular curve and made the ventricular wave much smaller than the auricular, there had been great liability to relapse on any unusual exertion.

Dr. ALEXANDER MORISON thought there was some danger in being too optimistic. Hearts did dilate or become inefficient without gross organic disease, and it was quite possible to minimize unduly the importance of such conditions.

Sir JOHN BROADBENT said that the importance of percussion of the area of cardiac dullness as a means of estimating strain or dilatation of the right ventricle was greatly overrated. An athletic individual would naturally have a larger heart than an ill-developed bookworm, the increase in size being the physiological response to the increased demand. It was not the size of the heart as estimated by percussion that mattered, but its functional capacity that was all-important.

Dr. LEONARD GUTHRIE agreed with Dr. Goodhart that the physical signs supposed to indicate heart strain and dilatation were unreliable as evidence of cardiac dilatation. He thought, however, that they might be regarded as evidence of past strain and dilatation, and of potential dilatation, should the patient indulge in over-exercise.

Dr. CHARLES W. CHAPMAN said that when the patient was young and vigorous a short period of rest would in most cases be all that was necessary. In patients past middle life, although they might up to the time of the strain hold a clean bill of health, the length of rest necessary would depend on the state of the vessels and the more important viscera.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Friday, November 18th, 1910.

Mr. H. R. WOODS, P.R.C.S.I., in the Chair.

Diagnosis of Urinary Calculi.

MR. MAURICE HAYES, in a paper on *x* rays in the diagnosis of renal calculus, laid special stress on the necessity for thorough evacuation of the intestines in order to obtain a satisfactory radiogram. Taken in conjunction with the ordinary methods of diagnosis, *x* rays furnished more valuable information than could be obtained in any other way. Mr. HAUGHTON said he had never known a Roentgen picture to make a mistake with regard to a stone in the kidney. With regard to controlling the respiratory movement of the kidney, the strap mentioned by Mr. Hayes was an admirable addition to the work, but the best appliance was the diaphragm compressor of Albers-Schönberg. Sir JOHN LENTAIGNE said that Mr. Hayes, unlike many demonstrators, had hardly done himself justice in explaining an error in diagnosis. An abscess cavity, shut off, and containing semifluid, gritty matter, could not be called anything else but a stone in the course of formation, and should give a shadow if any stony material gave one. That was the condition in the case in which he had operated, and there was no mistake. Mr. HAYES, in reply, said he was prompted to write the paper by the difficulty created by radiographers being sent hurriedly to examine cases. Surgeons ought to realize that thorough examination was necessary. Mr. GUNN, having read a paper on the same general subject, Dr. HARVEY said shadows in the kidney region not caused by stone could generally be differentiated without much trouble. In the great majority of cases a negative diagnosis was justified by the absence of a shadow in a sufficiently good negative. Such a negative should show (1) the last ribs, (2) the tips of the transverse processes, (3) the line of the ilio psoas muscle, and (4) the outline of the lower pole of the kidney. Mr. HAUGHTON said that in cases of doubt a stereoscopic picture should be taken. It was astonishing how two rather indifferent negatives would yield an excellent stereoscopic result. The question of including the opposite kidney was most important. He had come across patients in which the pain was referred to one side, and there were two large stones in the opposite kidney.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, November 30th, 1910.

Dr. BYROM BRAMWELL, President, in the Chair.

Blood Pressure.

DR. G. A. GIBSON, in opening a discussion on blood pressure, said that, of the two chief factors in maintaining arterial pressure—energy of the heart and the resistance in the arterioles—the latter was much the more important. Increase or decrease in the quantity of blood had little effect. Great importance had been attached to the compression resistance of large arteries, but tests immediately after death showed a maximum resistance of 35 mm. mercury. Local resistance, therefore, must be less important than peripheral. In a healthy youth an average systolic reading was 120 to 124, an average diastolic reading 80 to 100. These were lower in women and children, and higher in the aged. Very high readings were obtained in interstitial nephritis, and extremely low ones in Addison's disease. In lead poisoning the pressure was high until recovery, and then became low. In gout it was high immediately before and during the paroxysms, and low after them. Of valvular heart diseases, aortic incompetence alone disturbed the pressure much, and an interesting point here was the discrepancy between the leg and arm readings, which was probably to be explained as a compensatory effort to maintain an efficient cerebral circulation. In pneumonia a persistently low blood pressure was of bad prognosis. He had tested the value of this omen by ten years' observations in this disease. In cerebral haemorrhage the pressure was high, but the brilliant experimental work of Cushing had shown this to be a deliberate compensation to maintain the brain in its vital supply of blood and contraindicated attempts to lower the blood pressure in this condition. The low reading in renal waxy disease was a valuable diagnostic from interstitial nephritis with its high pressure. Dr. W. RUSSELL drew attention to the condition of the vessel wall in increasing the compression resistance. This factor had been denied, and it had even been said by Janeway that a calcified artery had no effect upon compressibility. But such an opinion could not be entertained. For nine years he had extended his clinical examination from the radial to the brachial artery, and thickening and hardening of the latter vessel was very often an easily palpable clinical fact. At necropsies he had obtained many specimens where thickening and muscular hypertrophy were clearly demonstrable. Increases of pressure with symptoms of cardiac embarrassment were associated clinically with palpable hardening of the brachial artery.

Dr. HARRY RAINY said that where subcutaneous oedema was present over the vessel to be tested a quasi-rigidity was given and produced a serious fallacy. The vessel wall was bound to offer compression resistance, but experiment upon living vessels showed that this never exceeded 15 per cent. of the total pressure. Dr. DICKSON (Lochgelly) said that he had taken the blood pressure of 500 apparently healthy miners. In 469 this was within normal limits, and yet 456 revealed palpable thickening of the radial and brachial arteries up into the axilla. Dr. O. NICHOLSON said that there was no increase of blood pressure during normal pregnancy. There was a rise during the first and second stages of labour, and again a rise on the third day of the puerperium. A continued pressure of over 130 during the puerperium was a danger signal of eclampsia. Dr. T. SHENNAN said he had observed that where there was general calcareous degeneration in arteries the vascular lengths over the flexures of joints almost entirely escaped. This might have some effect upon the readings of clinical instruments applied just above the elbow. Dr. E. MATTHEW said he had found the iodides very useful in some cases of early arterio-sclerosis in middle aged men. Potassium iodide gr. x thrice daily was a sufficient dose, and, if it were going to be effective, it would be so in a few days. In advanced cases the iodides were of no value. Dr. CHURCH advocated the regular use of the sphygmomanometer in the consulting room. Its range of usefulness was wide. The PRESIDENT said that it was only reasonable that a rigid tube should be less compressible than a relaxed one. At the same time, he did not attribute the importance to brachial spasm that Dr. Russell did. With reference to Dr. Dickson's results, one possible explanation of his low readings obtained from thickened vessels had been lost sight of. Where a broad zone of compression was applied, it was only the compressibility of the weakest part of this arterial length that was indicated, and the rigidity of various parts of the tube might vary considerably. Dr. GIBSON replied.

ROYAL SOCIETY OF MEDICINE.

SECTION OF THERAPEUTICS AND PHARMACOLOGY.

Tuesday, November 15th, 1910.

Professor A. R. CUSHNY, F.R.S., President, in the Chair.

The Action of Sulphur.

PROFESSOR R. B. WILD (Manchester), in a paper on the action of sulphur and certain of its compounds as intestinal antiseptics, pointed out that in addition to its action as a mild purgative, sulphur had a definite antiseptic action in the intestine owing to its formation of H_2S in the presence of bacterial decomposition. To this action might probably be attributed the traditional efficacy of sulphur and sulphurous waters in chronic gout and rheumatism, and in certain skin eruptions. The superiority of sulphates as purgatives was in part due to their reduction to sulphides in the bowel. The preponderance of plants containing sulphurous volatile oils among those used dietetically was remarkable. Long-continued administration of sulphur caused depression Sulphur was tasteless, insoluble in the stomach, without action on digestive enzymes, formed in the intestine antiseptic substances which penetrated to all parts of the bowel, had little tonicity, but possessed valuable laxative properties, and was cheap.

The Digitalis Group.

Dr. H. HUME TURNBULL gave a further account of the experimental administration of drugs of the digitalis group under Dr. James Mackenzie and Professor Cushny, which the latter had dealt with in his presidential address. Strophanthus was only about one half as active on man as digitalis, *B.P.* tinctures being used in both cases. Cases of rheumatic disease were most distinctly benefited, and especially those with auricular fibrillation. For the latter class of case the pushing of digitalis was the essential treatment. The drug was given in full doses until "physiological" effect (nausea, vomiting, headache, giddiness, etc.) appeared. It was then stopped, and recommenced in smaller doses, till the minimum amount which would control the heart was found. An intelligent patient could then be left to dose himself by his own sensations. In cases with partial heart-block great care was necessary.

SECTION OF SURGERY.

Tuesday, November 29th, 1910.

Mr. RICKMAN J. GODLEE, President, in the Chair.

Treatment of Fractures.

THE debate on the treatment of fractures in the neighbourhood of joints was resumed. Mr. H. J. PATERSON, Mr. DOUGLAS DREW, Mr. C. H. FAGGE, Mr. CLAYTON GREENE, Mr. SYMONDS, Mr. WALTON, and Mr. JOHNSON having spoken, Mr. GODLEE, after thanking Mr. Robert Jones for his admirable opening paper, said that the point upon which greatest stress seemed to be laid throughout the discussion was the danger attending early and vigorous passive motion. He remembered the days before such an idea as early movement of a fractured limb was promulgated. Now the pendulum had swung back, and once again the virtues of rest were sung. He believed that passive movement did harm in many cases, but he was in agreement with Mr. Jones that the substitution of active movements was desirable as soon as consistent with safety. He reminded the meeting that the case of fracture of the spine of the tibia mentioned early in the debate was not unique, for Erichsen had described a case from the University College Hospital many years ago. He wished to know what Mr. Jones thought of the cases of coxa vara resulting from trivial injury. Were they really fractures or not? He would like to ask him, too, what was the pathogeny of the lesion of the tubercle of the tibia so common about the years from 13 to 16. Mr. ROBERT JONES said he was glad to find so large a measure of agreement between all surgeons who had taken part in the debate. The cases of coxa vara to which the President had referred were shown by *x* rays to be due to a gliding upwards of the diaphysis on the epiphysis, but the neck of the bone certainly had the upward and forward bend alluded to in many cases. He had not found it necessary to screw fractures of the neck of the femur in young adults since extreme abduction and extension gave good results. The lesion at the tubercle of the tibia was certainly due to partial separation of the epiphysis in some instances. He alluded to recent cases of Volkmann's contracture to prove that they had not ceased to occur as a result of the introduction of early passive movements. In his experience the condition was just as often produced by pressure from within as from without. He was not in agreement with the speaker who expressed the opinion that Bennett's fracture was an easy one to treat by manipulation. With the statement that Colles's fracture was one pre-eminently for operation he totally disagreed, believing that none gave better results if properly disimpacted and splinted.

SHEFFIELD MEDICO-CHIRURGICAL SOCETY.

Thursday, November 24th, 1910.

Dr. SAMSON MATHEWS, Vice-President, in the Chair.

DR. A. E M. NAISH, in a paper on *The first month of infancy*, pointed out that it was common knowledge that infants were weaned unnecessarily, but, owing to a lack of an intimate knowledge of the causes which led to it, the custom was still prevalent. Depressed and fissured nipples or chronic mastitis were not necessarily a contraindication to breast feeding. In the infant crying, vomiting, and wasting were the usual reasons given for weaning. Any of these symptoms might be fallacious, and it was especially important in a wasting child to ascertain whether this wasting was due to a defect of the milk or not. In the latter case the wasting was usually aggravated. The influence of the nurse was often against the continuance of breast feeding, and many of the arguments she used were fallacious. In referring to cases of so-called congenital atelectasis, he brought forward examples where the infants were at first strong and healthy, and in whom the onset of the symptoms dated from the fifth or sixth week. Such cases seemed to have a familial incidence. The collapsed lung was probably not present from birth, and possibly the disease might be a disorder of the normal respiratory reflex. Mr. GRAHAM SIMPSON showed specimens and read notes of three cases of *Nephrectomy*, including one on a man aged 22, who complained of great frequency in micturition and pain in

the right loin. There was intermittent pyuria, but no tubercle bacilli were found in the urine. Skiagraphy showed a shadow just below an enlarged right kidney. Chromo-cystoscopy was difficult, as the bladder bled easily, but the right ureter was watched for two minutes, and no urine was seen to come out. The kidney was excised, as it felt like a bag of pus. It contained numerous tuberculous abscesses, but also a fair amount of kidney substance. The output of urea was very small for the first few days, then increased till about the eighth day; after that it rapidly fell, and the patient died of uraemia a fortnight after the operation. Dr. STANLEY RISELEY showed, among other cases, one of *Subacute glaucoma*, in which operation was rendered dangerous by a chronic conjunctival discharge.

SCOTTISH OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

Friday, November 11th, 1910.

Dr. LOGAN TURNER in the Chair.

THE proceedings included the following exhibits and communications:—Dr. W. G. PORTER showed: (1) A patient two and a half years after *Operation on the right labyrinth*. Granulations had been removed from the region of the horizontal canal, but the remaining canals and the cochlea were not interfered with. The vertigo had disappeared, and the patient could follow his employment, but still complained of severe tinnitus. (2) He also reported the case of a patient with *Nystagmus of the right vocal cord* and soft palate. The movement of the cord consisted of a rapid adduction and a slower abduction, and the rate was about 150 a minute. It was thought that the phenomenon was due to bilateral cerebral disease, probably associated with arterio-sclerosis. The patient died suddenly, but no *post-mortem* examination was obtained. Dr. J. D. LITHGOW read notes of a case of double *Frontal sinus disease* with cerebral involvement. There was a deficiency of the cerebral wall of the right sinus, and through this a fungating mass of necrotic cerebral tissue presented. Operation resulted in recovery. Dr. J. S. FRASER reported a somewhat similar case which, however, ended fatally. In this patient the frontal sinus suppuration was complicated by extradural and intradural abscesses in the frontal region. Dr. SYME, in the discussion, remarked on the increasing frequency with which reports of intracranial complications of frontal sinus disease were being published, and pointed out that in reference to the question of operation on the sinus, this danger must be taken into account. Dr. TURNER stated that, besides these two cases, one other, making three within the year, had occurred in the Edinburgh Royal Infirmary; Gerber had collected 150 cases of intracranial disease following suppuration in one or other of the nasal accessory cavities. Dr. MALCOLM FARQUHARSON showed: (1) A patient presenting symptoms of cerebro-spinal rhinorrhoea. The condition followed a severe fall on the back of the head. There was a clear watery discharge from the right nostril presenting the characteristics and conforming to the tests of cerebro-spinal fluid. The patient suffered from severe headaches before the nasal discharge commenced. There was now complete double optic atrophy, and on the right side there was deafness of nerve type. The nasal passages were narrow, but otherwise appeared healthy. (2) A man with a large epitheliomatous growth of the pharynx, in whom treatment by x rays and radium had resulted in retardation and diminution of the growth, with relief of pain, succeeded by rapid extension. Dr. LOGAN TURNER showed: A case of *Laryngeal tuberculosis* in which an 85 per cent. solution of alcohol had been injected into the right superior laryngeal nerve for the relief of dysphagia. The patient had had two injections at an interval of three weeks, with relief of the pain, especially since the latter injection. Unfortunately the disease had extended to the left side, so that the relief was only partial.

MESSRS. DOWN BROS, LTD. (London) have been awarded the Grand Prix (highest award) for surgical instruments and aseptic hospital furniture at the Buenos Aires Exhibition, 1910, as well as the Grand Prix (highest award) at the Brussels Exhibition, 1910.

Reviews.

CHRISTMAS BOOKS.

FICTION.

WHEN, after many years, Hans Andersen is read once more, it is, perhaps, easier than when the stories themselves absorbed us to realize how great an artist he was. Messrs. Macmillan have published in a thin quarto *Three Tales of Hans Andersen*,[1] those selected being the Tin Soldier, Thumbelisa, and the Little Mermaid. They are good examples of his rich invention and delicate fancy, and the twenty-two graceful black and white illustrations by the late Mr. Linley Sambourne make the volume an ideal gift-book for a child who can appreciate the humour and pathos which both author and artist could command.

E. NESBIT is not only a very clever writer; she is also one of the most popular of the large crowd of modern authors who cater especially for the young, and the children who rejoiced over *The Treasure Seekers* and *The Would-be-Goods* will not be disappointed in her latest book. *The Magic City*[2] was built on the tables in a twentieth-century drawing-room by a lonely little boy, who chose this fantastic method of whiling away the hours when left alone in his brother-in-law's house whilst the latter was away on his honeymoon. The story is made up of Philip's wonderful experiences with the queer people who dwelt within the buildings he had erected out of books and bricks and pieces of bric-à-brac. Philip and his little companion Lucy go through all sorts of strange adventures during their sojourn in the city of Polistopolis, where they meet, not only their own toys, but also the characters out of different books and various interesting animals, including a most fascinating parrot, who more than once reminds one of our old friend the Phoenix. Altogether, *The Magic City* is a delightful book, written with all its author's accustomed insight and humour; and, being beautifully bound and printed, and profusely illustrated by H. R. Millar, it is sure to receive a warm welcome from any child who is fortunate enough to be presented with a copy this coming Christmas time.

In the preface to his new book, Mr. DE VERE STACPOOLE informs us that it was written "in a moment of youthful expansion." The result of that moment of expansion should be eminently satisfactory both to the author and to his readers, who are here presented with a really excellent sea story for boys. *The Cruise of the Kingfisher*[3] (which, by the way, is an English cable ship) is a tale of adventure upon the high seas, in which mysterious murders, fights with a giant decapod, and mutiny follow one another in quick succession. The derelict *Kingfisher* is finally salved through the exertions of two plucky boys, who manage to bring her safely home all the way from the Canary Islands, after they have been hunted for their lives by the mutineers, and narrowly escaped shipwreck in a big storm into the bargain. It will be gathered that the story is exciting. It goes with a swing from start to finish, whilst the variety of incident is so great as to be almost bewildering. There is not a dull moment throughout the book, however, and Teddy O'Brien is a very human hero, and quite boyish enough to be interesting, in spite of his almost supernatural cleverness. Mr. de Vere Stacpoole has scored a decided success, for *The Cruise of the Kingfisher* proves that he has not forgotten the tastes of the average boy, who, it may be safely predicted, will certainly greet this addition to his library with hearty approval. The numerous full-page illustrations by William Rainey, R.I. also deserve high praise.

[1] *Three Tales of Hans Andersen.* With 22 illustrations by Linley Sambourne. London: Macmillan and Co., Ltd. 1910. (Cr. 4to, pp. 87. 3s. 6d.)

[2] *The Magic City.* By E. Nesbit. With illustrations by H. R. Millar. Published by Macmillan and Co., Ltd., St. Martin's Street, London. 1910. (Pp. 333. 6s.)

[3] *The Cruise of the Kingfisher*: a Tale of Deep Sea Adventure. By H. de Vere Stacpoole. Illustrated by William Rainey, R.I. Published by Wells Gardner, Darton and Co., Ltd., 3 and 4, Paternoster Buildings, E.C., and 44, Victoria Street, S.W. 1910. (Pp. 308. 2s. 6d.)

Miss MABEL QUILLER-COUCH'S pretty story, *The Mean-Wells*,[4] is an ideal book for children. It is only a very simple little tale of the everyday doings of a country doctor's family in a remote part of Cornwall, but it is told so charmingly, and Geoffrey, Priscilla, and Loveday are such delightfully natural children, that the book is certain to be a favourite with boys and girls alike. *The Mean-Wells* is a title bestowed by Miss Quiller-Couch upon her youthful hero and his sisters, whose mischief s usually inspired by an honest desire to do some one a good turn, though they frequently fail in their meritorious object. The greater part of the book concerns the adventures of the two little girls, Priscilla and Loveday, whose friendship with a childless old man goes far towards reconciling him to his loneliness, but there is plenty of interest and incident apart from the main episode, and the book abounds in slight but clever character studies. The value of *The Mean-Wells* will doubtless be greatly enhanced in the eyes of its little readers by the coloured illustrations, which have been prettily executed by G. E. ROBERTSON.

The Lion's Whelp,[5] the story of a young Irish doctor's career, is a novel with a purpose. That purpose, we learn from the excellent introduction by Dr. John Campbell, which serves as a preface to the book, is

> to inculcate on the medical profession the necessity which exists for the education of the public in all that pertains to the maintenance of health and to the avoidance of disease, and he (the author) wishes to impress upon the public all that is summed up in the time-worn adage, "Prevention is better than cure." . . . Dr. Irvine impresses upon us the need for our profession to play the part of instructors in the laws of health, and of missionaries in the cause of moral improvement throughout every grade of society. This book is a challenge to the members of a noble profession to individually play a noble part, and to act up to the highest ideals of their high calling.

The fruitless struggle of an earnest young reformer to realize these "highest ideals," and so purify the medical profession from every taint of greed or self-seeking, forms the plot of *The Lion's Whelp*, whose hero, Dan Nevin, is, we need hardly say, an ardent apostle of Dr. Irvine's creed. The book opens with an account of Dan's student days in Belfast, but the scene is soon transferred to England, where the author gives some extremely unattractive pictures of the seamy side of medical practice in the provinces. After various unpleasant experiences (including a couple of unsolicited love affairs) Dan leaves England in disgust, and returns to Ireland in order to work up a practice of his own, where he can endeavour to

> loose from the limbs of the profession the fetters which bound it, rendering it largely useless in the fulfilment of its great function—the education of the community, the leading of it forth from the slough of ignorance with regard to the most elementary laws of health. There lay the true dignity of the profession, there its true function, that of "teacher." Every medical practitioner was "doctus" to some extent, but of what use was his learning if he remained learned simply for the purpose of treating the individual case of disease as it occurred? Of what use if he did not become a centre for the dissemination of the life-giving, disease and death preventing knowledge with which he had been entrusted in the interest of his fellows?

What, indeed? Nevertheless, as might have been expected, Dan's lofty aspirations entirely fail to attract a sufficient number of patients, and in despair he decides to go to America, where we finally take leave of him, happy at last in the embraces of a long-lost father and the wife of his dreams. The story, of which this is the merest outline, is long and involved, and to a great extent spoilt both by the author's stilted, and occasionally didactic, style, and the almost total lack of character drawing in the numerous persons to whom we are introduced, all of whom, however, have one salient feature—an inveterate habit of holding forth to each other at immense length in unnaturally high-flown language. These defects are all the more to be deplored inasmuch as Dr. Irvine is obviously capable of better things. There are many happy touches throughout the book which prove a sense of humour worthy of cultivation, such as the remark of Dan's friend when an offended colleague leaves the house in a huff: "I thought I heard some one go out in italics"; or, better still, the following description of the influence which a name may exercise over the character of its unconscious owner:

> Give a child the name "Jane," and serious results follow almost of necessity. That child will be a girl, the oldest girl of a large family, perhaps the first-born; she will grow up tall and thin; her hair will be parted down the middle, and tightly brushed over her temples; she will be demure, austere, and altogether a terror to evildoers.

In spite of all defects in literary style, however, *The Lion's Whelp* is a novel to be read, not only on account of its useful and much needed moral, but also because it contains an excellent description of the trials and temptations which beset the career of a medical man.

Once more Spain has supplied Mr. PAUL GWYNNE with a *mise-en-scène* for a story, though the greater part of the action of his latest novel, *Nightshade*,[6] takes place in Paris. This time the author of *Marta* and *The Pagan at the Shrine* has contented himself with adding another volume to that already large class of books dealing with the supernatural which is so popular at the present moment. The principal character of Mr. Gwynne's new book is a certain Dr. Meisterlimmer, a mysterious old man, who, it is more than hinted, is the Prince of Darkness himself in human form, and who is the proud possessor of a magic lamp, which gives its name to the present volume. Meisterlimmer plays the part of evil genius to the blind hero Pablo, a Spanish violinist, and to the two women who love him, and he and his uncanny lamp go far towards wrecking the lives of all three. After the tragic death in Paris of the elder girl, Carmen, her younger sister, returns home to Spain and enters a convent; and it is through her intervention that Pablo is finally released from the clutches of Meisterlimmer, though not before the latter has reduced the city of Seville to a veritable pandemonium of hysterical rage and excitement. The last scene of the book, which takes place in Seville Cathedral as it is being besieged by the rioters, is really thrilling, for Carmen, in her nun's dress, suddenly appears in the midst of the howling mob as Meisterlimmer is urging it on to work of destruction, wrests the fatal lamp from out of the hands of its owner and smashes it into atoms before his eyes. And here the story ends, for the curtain is rung down as the defeated demon vanishes into space, his deluded followers suddenly recover their sanity, and Pablo and Carmen fall into each other's arms, where, let us hope, they find at last "Sleep after toyle, port after stormie seas." There seems no reason why they should not, for we are told that Carmen is after all only a novice, and therefore of course she is bound by no irrevocable vows. So far Mr. Gwynne is entirely in the right, but it is only fair to his readers to add that his knowledge of nuns is of the most untrustworthy kind, and that his descriptions of convent life are, to put it mildly, decidedly inaccurate. On the other hand, Mr. Gwynne is entirely at home with places and people that he knows at first hand, and *Nightshade* is worth reading if only on account of the charming pictures of French and Spanish life and scenery with which it abounds. The readers who will most cordially appreciate this clever book, however, will doubtless be those who resemble Riri, the Paris gamin, in their tastes, and "like things that are horrible."

Cornered,[7] by PERCY J. BARROW, is the usual kind of healthy, straightforward school story for boys in which virtue is rewarded and evil is overtaken by a just retribution. This time the scene is laid in the big public school of Exted, the chief characters being a pair of brothers who share the honours of hero, and a somewhat unconvincing villain in the form of a wicked prefect, who overreaches

[4] *The Mean-Wells*. By Mabel Quiller-Couch. Illustrated by G. E. Robertson. Published by Wells Gardner, Darton and Co., Limited, 3 and 4, Paternoster Buildings, E.C., and 44, Victoria Street, London, S.W. 1910. (Pp. 164. 3s. 6d.)

[5] *The Lion's Whelp*. By G. M. Irvine, B.A., M.B., with Introduction by John Campbell, M.A., M.D., F.R.C.S.Eng., LL.D. (Hon. Causa). London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. 1910. Pp. 405. (6s.)

[6] *Nightshade*. By Paul Gwynne. London: Constable and Co., Ltd. 1910. (Pp. 431. 6s.)

[7] *Cornered*, by Percy J. Barrow. Illustrated by A. Talbot Smith. Published by Wells Gardner, Darton and Co., Limited, 3 and 4, Paternoster Buildings, E.C., and 44, Victoria Street, London, S.W. 1910. (Pp. 221. 1s. 6d.)

himself in his efforts to lead one of his companions astray. Monty, the good boy, "one of those characters that success does not spoil," is too virtuous to be interesting, but his elder brother Lionel goes through all sorts of adventures, which finally culminate in his running away from school and going to sea. The rough discipline of a sea-going life does much towards his moral regeneration, and all ends happily with his return to Exted and the departure of the boy whose evil influence had so nearly ruined him. The story, which is well and brightly told, is suitably illustrated by A. Talbot Smith, and will doubtless prove exceedingly acceptable as a Christmas present for schoolboys of a certain age.

A. M. IRVINE is the author of several good novels, but none of her writings have hitherto come up to the high standard attained by her latest book, *The Probationer*,[8] As the title indicates, this simple but clever little story is an account of the trials and difficulties of a home-bred girl who, in a fit of enthusiasm, takes up nursing and finds it very different from what she had anticipated. Nurse Atherton's numerous mistakes and misadventures are told with delightful humour and sympathy, and the descriptions of life in a children's hospital are realistic without being unpleasant. There is no over-emphasis of the tragic side of a nurse's career, but, in spite of its many amusing scenes, *The Probationer* might serve as a useful warning to many who contemplate taking up nursing as a profession without any idea of the hard work and need for physical endurance it entails. The love story which runs through the book is, it is needless to say, that of the probationer herself with the inevitable house-surgeon; and this episode is perhaps the only false note in an extremely amusing and original piece of work, which, both in matter and form, is distinctly above the average of the usual novel. *The Probationer* is well printed in large type, and prettily illustrated by P. B. Hickling.

"In this book," says Miss CHRISTINA FRASER, in the preface to her charming *Glints o' Glengonnar*,[9] "the reader will find a small part of Scotland carefully and truthfully displayed. It is not an artistic distortion of Scottish life for the diversion of a cockney public; neither is it a selection of *nesty bodies* to show the seamy side of our national character; nor a fancy picture of butter-scotch piety; but it tells . . . in the homely motherly tongue the story of everyday folk, no worse, if no better, than those of the present generation." These words describe the purport and contents of Miss Fraser's most interesting book far better than could any reviewer, and it may be said at once that the authoress has been entirely successful in her efforts to portray the simple, strenuous people she so thoroughly knows and understands. She writes with a sympathy and humour that are wonderfully pleasant, and some of her sketches of life in a lonely glen of Clydesdale deserve the highest praise. "Merlin's Cairn," the first in the book, is perhaps the best of the whole collection. It is a pathetic little story of the death of a shepherd and his faithful dog in the snow, and it contains a really fine description of a high wind raging round a remote and isolated farmhouse. Another most graphic account of a wild snowy night is in "The Doctor's Visit," where the narrator confesses that "doctors ha'e a terrible life. I dinna ken hoo they leeve; but I maun alloo that oor yin is made o' guid stuff, an' disna care hoo he trauchles himsel' as lang as he's helpin' ithers." But Miss Fraser's stories are not entirely made up of pictures which paint the more gloomy side of the Scottish peasant's existence. Some of these tales afford delightful glimpses into the amusements and superstitions of a bygone age, and others are extremely amusing. Of these latter, "Easie's Ludger," and "A Leap Year Wooing" may be especially mentioned; whilst "Henny and Houpie" is a short but clever sketch of an old couple who console themselves for their advancing age and impending infirmities by discussing the manifold iniquities of the rising generation. Mr. Arthur Ferrier's beautiful pen-and-ink illustrations confer an additional charm upon these attractive *Glints o' Glengonnar*.

[8] *The Probationer*, by A. M. Irvine. With six illustrations by P. B. Hickling. Published by S. W. Partridge and Company, Limited, 8 and 9, Paternoster Row, London. 1910. (Pp. 300. 2s. 6d.)

[9] *Glints o' Glengonnar*. A series of stories from Upper Clydesdale told in the vernacular. By Christina Fraser. With six pen-and-ink illustrations by Arthur Ferrier. Glasgow and Dalbeattie: Fraser, Asher and Company, Limited. 1910. (Pp. 171. 2s. 6d.)

TRAVEL.

IN *Uganda for a Holiday*[10] Sir FREDERICK TREVES adds another volume to the series he has already published giving his impressions of the various countries he has visited off the beaten track of the ordinary tourist. The present book is a record of a pleasure trip to British East Africa and Uganda, written from the point of view of the "unspecialized traveller, of the man who merely seeks somewhere to go," and the distinguished author, who uses the pen as deftly as he wielded the knife, has produced a most interesting account, written in a racy, unaffected style. From Mombasa, Sir Frederick travelled up country by the Uganda railway—a wonderful feat not only of engineering but of civilization, for the country through which it passes is, even now, still of the Stone Age—halting en route at Nairobi, the capital of the British East African Protectorate. Thence he proceeded to Naivasha, where the party went "on Safari" through the Riff Valley till bad weather compelled a return to the railway, whereby the journey to Lake Victoria Nyanza was completed. At Port Florence the party embarked on the Uganda Railway Company's well-appointed steamer for a voyage round the lake. At Entebbe a visit was paid to Kampala, the native capital of Uganda; a visit to Jinja for the Ripon Falls and the source of the Nile concluded the sight-seeing, the party then returning down country and embarking for home. Sir Frederick gives excellent pen pictures of the scenery through which he passed, and it is surprising to the stay-at-home ignoramus to learn that the uplands of Central Africa are strikingly English in general scenic effect; one's dreams of those regions have always been of hideous swamps with thick impenetrable undergrowth or of the standard palm tree. Sir Frederick's comments on the natives of the various tribes are most interesting, and when he describes their ideas of fashionable attire, most entertaining. The most interesting parts of the book to professional readers are naturally those dealing with the climate and the conditions under which the white men have to live. In British East Africa the climate of the low-lying coast line is very bad for the European settler, but the uplands, the country around Nairobi, which is 5,450 ft. above sea level, "is undoubtedly a white man's country." Here "there are no mosquitos and no malaria. There is no prevailing disease." "The climate is delightful, not merely for a few months in the year, but all the year round . . . like that of a perfect English summer."

Of Uganda he says: "The average elevation of Uganda is about 4,000 ft. The climate is mild and agreeable . . . never unpleasantly hot nor unpleasantly cold, for the average maximum is 78.4° F. . . . Uganda at a height of 5,000 ft. may be regarded as healthy, but below that level the claim cannot be maintained. Indeed, Uganda is not a white man's country—that is to say, is not a country where a European with his way to make can settle for life and hope to bring up a family. . . . The diseases which are most troublesome in the country are malaria, blackwater fever, and tick fever."

Sir Frederick gives a clear and short account of the sleeping sickness and its exciting causes, and brings home very forcibly the ravages of the scourge among the native population when he describes the voyage along the western shore of the Victoria Nyanza: the country is almost ideally pleasant to look upon, but is now absolutely deserted by man, "inviting as seemed the shore, one looked in vain for huts, for canoes, for fishermen." Such natives as escaped the tsetse fly have all been sent away inland and their huts and their canoes destroyed, so that they cannot return. Sir Frederick speaks highly of the prophylactic measures initiated and carried out by

[10] *Uganda for a Holiday*. By Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D. London: Smith, Elder, and Co. 1910. (Pages 233, with 72 illustrations from photographs by the author, and a map. 9s.)

Dr. Aubrey Hodges, Principal Medical Officer in Uganda, "whereby the deaths from sleeping sickness in the kingdom of Uganda have been reduced from 8,003 in 1905 to 975 in 1909."

Perhaps the most remarkable feature of the book is that such a journey as that described should be possible. Fifty years ago no white man had ever penetrated to the Great Lake. Twenty-five years ago the country visited was still darkest Africa in every sense of the word. Yet here we have a distinguished man journeying all over the country by rail and steamboat—even by motor car—on a holiday trip involving no more risk to life and limb apparently than a week-end visit to a country house. No more eloquent testimony could bear witness to the march of progress.

We can readily recommend this latest book by Sir Frederick Treves to all who take an interest in the British Empire beyond the seas. Written clearly and humorously, entirely free from the technicalities of the big game hunter and the explorer, it should appeal to the Briton who has never travelled beyond the fringe of the English Channel. Finally, a word of praise must be given for the many excellent photographs by which the book is illustrated: they reflect the greatest credit alike on the author who took them and on the reproducer.

Messrs. Smith, Elder and Co. have just published a popular edition of *The Cradle of the Deep*,[11] by Sir FREDERICK TREVES. This book is an account of a voyage to the West Indies taken two years ago, written in Sir Frederick Treves's breezy style. Descriptions of the islands as they are to-day are interwoven with historical accounts of the famous Spanish Main. We are not surprised at the publishers wishing to bring this book within the reach of a wider circle of the public, for the West Indies, with a history so intimately bound up with the history of the navy, should fascinate all Englishmen. Clearly printed, the book is profusely illustrated from photographs, which have suffered little in clearness from being of necessity reproduced on rather inferior paper.

The Scilly Isles, which a past generation of schoolboys were taught to believe to be the Cassiterides whence the Phoenicians, and after them the Romans, got tin, are now known to the British matron as the source of early flowers and potatoes, and to a few enterprising tourists as a spring paradise. More would find their way there but for the thirty miles or so of stormy, choppy sea which separates them from the nearest Cornish port. The volume entitled *The Isles of Scilly*[12] will probably increase the number of those who valiantly resolve to dare the peril of the Atlantic in a small steamer to gain a spring holiday in an archipelago where, even in February, there is a reasonable prospect, if not always at least often, of finding warmth and sunshine. The scope of the book is well enough stated in the preface, where it is described as containing "impressions of an artist, recorded in colour, together with so much of the history of the islands and of general description as is necessary to comply with the unwritten law of colour books." We are not well acquainted with this law, but it would seem to imply enough to explain the selection of the pictures. These number twenty-four, and are for the most part well reproduced in colours. Some of them, especially those containing figures, seem a little garish. The artist may retort that our fog-dimmed skies have distorted our sense of colour. It may be so, and some of the pictures—such as the two of Cromwell's castle, Tresco, the garrison gateway, St. Mary's, and the view of Round Island from St. Helens—are charming. The book is indeed worthy of high praise, and if it sends to those islands some of those who, seeking sunshine and quiet in the early spring, fear to find neither on the Riviera, the devotees of Scilly must comfort themselves with the reflection that under the existing circumstances of transit and accommodation the fashionable folk and the "smart set" are not likely to be among the intruders. The islands, of course, have a typical maritime climate; and though the winter is mild and spring usually early and bright, fogs are not uncommon, the rainfall is not small, and storms are frequent and often severe; but bad weather seldom lasts long, and the good is very good.

[11] *The Cradle of the Deep.* By Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D. Popular edition. London: Smith, Elder and Co. (With 54 illustrations and 4 maps. 6s.)

[12] *The Isles of Scilly. Their Story, their Folk, and their Flowers.* By Jessie Mothersole. London: The Religious Tract Society. (Med. 8vo, pp. 256. 10s. 6d.)

ANNUALS.

LAVISHLY illustrated in colours and in black and white, strongly bound, and full of the most varied literary matter, the *Boy's Own Annual*[13] and the *Girl's Own Annual*,[13] the yearly volumes of the *Boy's Own Paper* and the *Girl's Own Paper and Woman's Magazine*, make admirable gift books; for while the older children will enjoy the serial and shorter stories, the younger will be able to appreciate the illustrations. At this dark season of the year quantity as well as quality is a recommendation, and in both respects these volumes will be found to fulfil expectations.

POETRY.

THE publication of a new edition of Mrs. HORACE DOBELL'S poetical works[14] should be of especial interest to our readers. The handsome volume in which these charming verses are now presented to the public contains a large collection of poems written at every period of life, from early girlhood down to extreme old age, by the gifted wife of a well-known physician, whose studies on tuberculosis she shared and to some extent assisted. Mrs. Dobell is a very graceful and versatile writer, and much of her work is of a high order of artistic beauty. Perhaps the daintiest of all her verses are those written for her own children and grandchildren, which are very simple and tender, and have the directness that appeals most of all to the youthful mind. A short poem of Mrs. Dobell's, composed in 1880, and entitled *The Good Physician*, which describes the daily life and labours of her husband and his professional brethren, has already appeared in the pages of the BRITISH MEDICAL JOURNAL. A biographical sketch of the poetess forms an introduction to the poems, and the volume is illustrated by some interesting photographs, both of herself and of her various homes.

A CITY OF DREADFUL NIGHT.

MR. L. COPE CORNFORD has already earned a certain reputation as a writer on present-day social problems by virtue of that clever book, *The Canker at the Heart*, in which he described so graphically the conditions under which thousands of his poorer fellow countrymen live and die, and therefore any other work on the same subject is sure to be welcomed from his facile pen. His latest book will not disappoint his many admirers. *London Pride and London Shame*[15] consists for the most part of short sketches of life in the underworld of this great city, many of which have already appeared in various newspapers and periodicals. The majority of these articles give the reader a curious but quite unmistakable impression of having been written in a white heat of indignation during the last General Election, which may possibly account for the profound pessimism with which the whole book is tinged. It is hardly too much to say that London, in Mr. Cornford's eyes, is simply a vast sink of vice and hopeless poverty, where injustice and cruel wrong work their will unhindered upon the helpless victims of a luxurious civilization. The saddest part of all is that Mr. Cornford sees no remedy and has no advice to offer as to the best means of combating an evil which he foresees may quite conceivably prove the ruin of England. He tells his readers frankly that no human power can grapple with the unspeakable misery and degradation left as a legacy to the present generation through the vices and follies of our forefathers, that "there is only one thing to be done, and its name is Duty. . . . If each individual in each class of

[13] London: Religious Tract Society. 1910. 8s. each.

[14] *The Poetical Works* of Mrs. Horace Dobell. With a Biographical Sketch. Illustrated. London: Smith, Elder, and Co., 15, Waterloo Place. 1910. (Pp. 812. 10s 6d.)

[15] *London Pride and London Shame.* By L. Cope Cornford. Published by P. S. King and Son, Orchard House, Westminster. 1910. (Pp. 174. 6s.

society had done his duty there would be no 'social problem' to-day. Duty cannot be done in battalions. It must be done by the one. Therefore (it seems) the less shouting there is the better; the fewer societies there are the better; the less theory-making there is the better." The latter half of this very sound piece of advice, by the way, might be taken as a useful hint by many in these days of professional philanthropy. Though the terrible scenes of slum life are undoubtedly the best things in the book (one in particular, which describes the visits of a medical student to his maternity cases, is almost cruel in its hideous realism), Mr. Cornford has not confined his attention solely to the tragedy of East End existence, but has written some charming descriptions of the brighter side of the picture, as, for instance, his account of Bank Holiday at Wanstead Fair, or the article on a trip to Margate, or "Orators," an exquisitely funny sketch of the multifarious speakers who throng the parks on Sunday afternoons. He has, moreover, described some of the great landmarks and public institutions of London and everyday scenes from London streets with an overflowing sympathy and humour only possible in one who has a complete understanding of his most complex subject. Mr. Cornford writes delightfully, with a loving pity for his less fortunate fellow-citizens which forms the chief charm of his book; but, no matter of what he speaks, through all there sounds a note of solemn warning against the decay of public feeling and patriotism in England, the growing love of ease and luxury, and the steady deterioration of the race. This is no idle "'ware wolf" cry, but an earnest protest from a man who obviously means every word he says. There can be no doubt that the author of *London Pride and London Shame* has studied his subject at first hand, and it behoves us to see that his words of warning are not lightly disregarded.

NOTES ON BOOKS.

Pye's Elementary Bandaging and Surgical Dressing has been revised and partly rewritten by W. H. CLAYTON-GREENE, B.A., F.R.C.S., and V. ZACHARY COPE, M.D., F.R.C.S., and is now issued as the twelfth edition of the work.[1] There are numerous alterations in this edition, and these have been adapted for the most part from the recent new edition of the old standard book, Pye's *Surgical Handicraft*. The book is divided into three main sections descriptive of (1) apparatus for restraint and support; (2) the simpler ways of dressing wounds, burns, and scalds; and (3) the treatment in the first instance of accidents and emergencies. Each section deals in a most satisfactory manner with its portion of the subject, and forms an excellent and quite up to date guide in elementary surgery. We do not look for a highly-finished literary style in surgical literature, but we feel bound to remark that this little book reads so smoothly and pleasantly, and yet is so concise, that the junior student and probationer nurse into whose hands it is put will be in spite of themselves carried along in its perusal. We have but little adverse criticism to offer of such a very good little book, but we think that the "capeline" and "twisted bandage" for the head should no longer be taught in these days when soft broad gauze bandages are in general use, and also that digital compression of the aorta is not so satisfactory a method nor so generally applicable as the method of pressure by the closed fist—the public speaker attitude—taught by Macewen. The illustrations are numerous and appropriate, and there is a complete index. The book is the size of a postcard, and therefore small enough to be carried in the pocket.

VISITING LISTS AND DIARIES.

One of the most attractive visiting lists with which we are acquainted is that issued by Messrs. Walker under the name of the *Loose-leaf Medical Pocket Book*. It contains exactly as much or as little as the user wishes. He can vary his list in accordance with the special needs of his practice at any particular time, and as soon as any page is full he can remove it without disturbing the rest of the contents, either destroying it or putting it into a "transfer book" as a permanent record. As commonly put together to meet the needs of general practitioners it contains a visiting list, records of visits paid, and vaccination and obstetric engagements, temperature charts, duplicate prescription sheets, some treatment and clinical diagram sheets and sheets for cash accounts, some ledger sheets, and records of accounts rendered. These are the more important sheets, and there are others which, with the foregoing, provide for a complete account of the work of any practitioner day by day, both in its scientific and financial aspect. An additional point to be noted is that the book is quite easy to use, and, despite the multiplicity of functions it fulfils, is by no means bulky. The same firm also issues ordinary pocket books and diaries constructed on the same loose-leaf principle, and numbers of diaries and almanacs bound in ordinary form. They vary in size from neat little vest pocket almanacs to large business diaries. The page matter is well arranged, and, though useful notes are included in nearly all forms, they are free from the superfluous matter with which many diaries are loaded up. A notable point about all of them is the excellence, and even daintiness, of the binding. Some well-devised desk calendars and pull-off tablets for hasty notes, as well as block calendars, are also issued by Messrs. Walker.

[1] *Pye's Elementary Bandaging and Surgical Dressing.* Revised by W. H. Clayton-Greene, B.A., M.B., B.C.Cantab., F.R.C.S.Eng., assisted by V. Zachary Cope, B.A., M.D., M.S.Lond., F.R.C.S.Eng. Twelfth edition. Bristol: John Wright and Sons, Limited. (Pp. 235; 89 illustrations; 1910.)

SANITARY APPLIANCES.

Disinfectants and Soaps.

MESSRS. EDWARD COOK AND CO., Ltd. (Bow, London, E.), have submitted samples of a number of their products, including disinfectants and soaps. The principal disinfectant made by this firm is known as "Cofectant"; this is a dark alkaline fluid, which forms a milky emulsion when mixed with water. Analysis showed it to contain a large proportion of cresols and other coal-tar derivatives, and the emulsion formed when it is diluted for use is very stable; it has been shown that the efficiency of a germicide is materially increased when it is presented in the form of a very good emulsion, and there can be no doubt that "Cofectant" is a very satisfactory preparation and a powerful disinfectant. It does not appear desirable, however, that it should be described on the label as non-poisonous, even when allowance is made for the increased safety of such a preparation over plain carbolic and cresylic acids. A special form of "Cofectant" is prepared for surgical use. "Cofectant" powder is a dry siliceous powder, which was found on analysis to contain about 25 per cent. of cresols and other coal-tar derivatives; such a product is, of course, totally different from the old forms of so-called "carbolic powder," and "Cofectant" powder must be regarded as a very active and useful preparation. Messrs. Cook and Co. inform us that if sprinkled on the sills of windows it is very useful in destroying and banishing flies, and that it prevents the development of larvae if sprinkled on putrefying matter containing them. "Unguentum Cofectant" is an ointment having a wool-fat basis, and containing zinc oxide and cocaine, but analysis did not show more than a trace of phenolic constituents. The specimens of soaps submitted included "Throne" and "Riviera" varieties as representatives of toilet soaps made by the firm; both of these were found to be perfectly free from uncombined alkali and alkali carbonate, and exceedingly pleasant to use. Medicated soaps included "Asepso," a soap containing biniodide of mercury, 3.2 per cent. of which was found to be present on analysis; carbolic toilet soap, our examination of which showed 4 per cent. of phenol to be present; coal-tar soap, "Cofectant" tar soap, "Cofectant" bath tablet, and "Cofectant" disinfectant soap, which were found to contain phenolic constituents in varying proportions.

THE trustees of the Dudley Hospital have received from the executors of the late Mr. Hugh Lewis a sum of £40,000, and a second and final payment of probably £30,000 is expected shortly, making a bequest of £70,000. The report of the hospital for 1909 shows an adverse balance of £2,725 on the year's working, while during the previous three years the adverse balances were: 1906, £285; 1907, £902: and 1908, £1,832. The number of in-patients under treatment during last year was 1,091, and the admissions in the out-patients' department were 2,457. The committee has in contemplation a scheme for providing increased accommodation for out-patients.



New University, Birmingham.

SEVENTY-NINTH ANNUAL MEETING
OF THE
British Medical Association
BIRMINGHAM, JULY, 1911.

AS members know, the British Medical Association has accepted the invitation of the Birmingham Branch to hold its Annual Meeting for the fifth time in that city next July, under the Presidency of Professor Robert Saundby, M.D., M.Sc., LL.D., F.R.C.P., Professor of Medicine in the University of Birmingham and Senior Physician to the General Hospital. We understand that the preliminary arrangements are proceeding most satisfactorily, the Birmingham Branch being supported and assisted in its efforts by the cordial co-operation of the Staffordshire, and Worcestershire and Herefordshire Branches.

BIRMINGHAM AND THE ASSOCIATION.

There is no town in the kingdom where there is more loyalty towards the Association than Birmingham. This is mainly to be explained by the fact that for forty years the Association had its headquarters in Birmingham and Birmingham men formed a large proportion of those who fostered it during its days of struggle, so that the relation is to some extent parental. It has given to the Association in the past four Presidents, three Presidents of Council, and a Treasurer; for many years the Secretary was a Birmingham practitioner, while his successor, Mr. Fowke, gave up the house governorship of the Birmingham General Hospital to become the first lay Secretary of the Association. The Birmingham Branch, although not the first to be formed, was always one of the most active, as soon after its foundation it became the principal local medical society, holding two and at one time three meetings in the month, including the meetings of its sections. The Branch meetings were at one time attended by practitioners from a radius of fifty miles round, and although the increased activity of numerous local centres has deprived Birmingham of the unique attractions it at one time possessed, the fortnightly gatherings still hold their own as meetings for the exhibition of patients and specimens, and the reading and discussion of papers concerned with the science and practice of medicine. The Branch has always been able to enlist the services of the most energetic and capable members of the local profession, and they have exerted considerable influence in the counsels of the Association. We need only recall the names of Sir Walter Foster, now Lord Ilkeston, President of the Council 1884–7, Sir Willoughby Wade, Treasurer, and subsequently President, in 1890, and Professor Saundby, President of the Council 1896–9, now President-Elect. The local popularity of the Association has not lessened in recent years, if we may judge either by the number of the members of the Branch or by the reports we hear of the way in which the invitation to the Association to meet in Birmingham next year has been received by the profession in that city and district.

NEW BIRMINGHAM.

Twenty years ago, when the annual meeting was held in Birmingham under the Presidency of the late Sir Willoughby Wade, there was a most successful gathering, distinguished by the presence of many eminent foreign guests and memorable for the value of the papers and discussions. In the twenty years that have elapsed a generation has passed away, so that few, if any, of those who took a leading part then are likely to figure prominently among our hosts next year; and the city has undergone many important changes, so that those who knew it then will find much that is new to interest them. The General Hospital has been rebuilt on a new site, the Queen's Hospital has been much enlarged, the Women's Hospital has been removed and rebuilt, a university has been established, and large university buildings erected outside the town. Moreover, Birmingham has become the seat of a bishopric, presided over by one of the most distinguished of Anglican prelates, Dr. Charles Gore; and St. Philip's Church, now used as the cathedral, has been altered and improved for that purpose. Members of the Roman Catholic Communion will wish to visit the Newman Memorial Church—a beautiful Byzantine edifice built to replace the old church at the Edgbaston Oratory of St. Philip Neri, founded by the late Cardinal Newman.

THE GROWTH OF BIRMINGHAM.

The history of Birmingham is astonishingly modern, for although it was without doubt a market town before the Norman Conquest and was a seat of iron manufacture so ancient that Hutton, the historian of Birmingham, believed it possible that it provided the arms for the warriors of

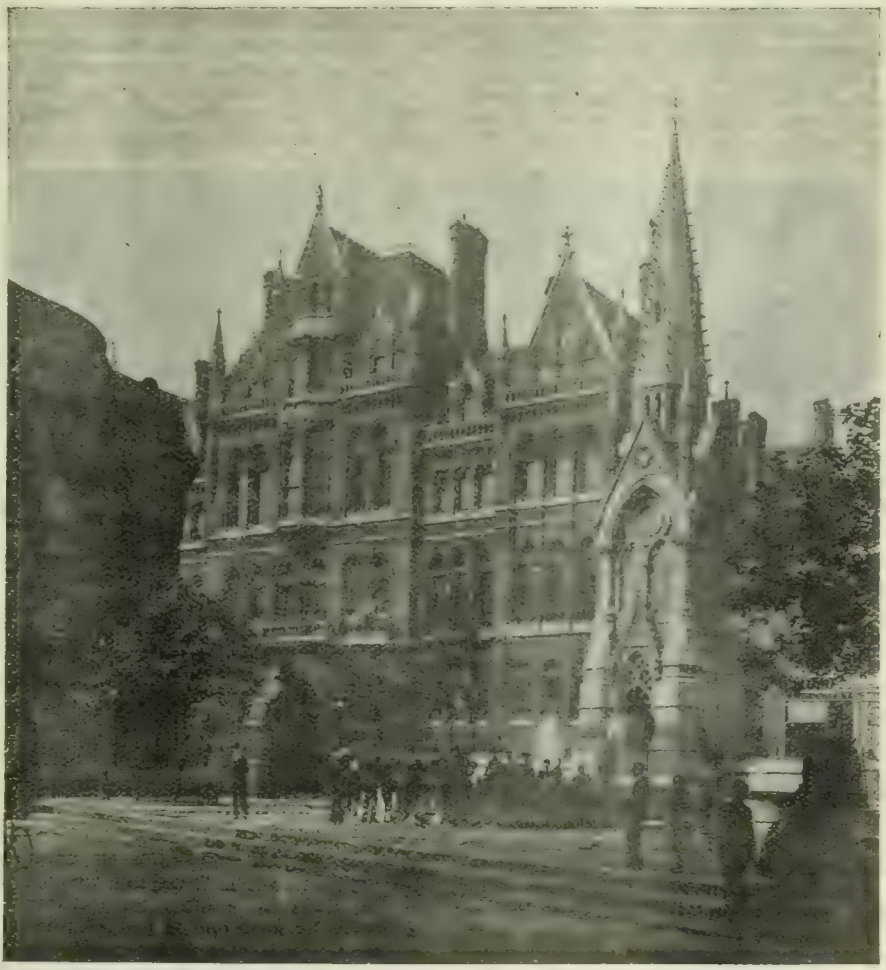


Queen's Hospital, Birmingham.



Town Hall, Birmingham.

Boadicea, yet it was not until after the restoration of Charles II that there was any material change in its size, the number of its inhabitants, or the extent of its industries. It was nearly depopulated by the plague in 1666, but in 1700 it had 15 000 inhabitants, and by 1780 these had increased to 50,000. During that period the iron manufacture had dwindled away and Birmingham had become the seat of an extensive and varied industry, devoted mainly to brass, but in addition it had become the principal centre of the English gun trade. According to Hutton, the impetus to the manufacture of guns in Birmingham was given by a chance remark of William III, who complained that England could not supply muskets for the army as did Holland; he was overheard by a Warwickshire member of Parliament, who undertook to see whether something could not be done, and, having obtained a sample, got a gun made in Birmingham which satisfied the King and led to a large order. The manufacture of military muskets during the eighteenth century was an important source of wealth to Birmingham, and was the foundation of the fortunes, among others, of the distinguished family of Galton. Opportunities will undoubtedly be provided for seeing some of the modern hives of industry in the city. During the last century Birmingham, favoured by its position on the borders of the coal and iron districts, aided by early communication by railroad and canal, blessed with a bracing climate, and hampered by no restrictive local laws, made such astonishing progress that it has overflowed its borders on all sides, and now not illegitimately seeks to include within itself the large population which surrounds it and owes its existence to the parent city.



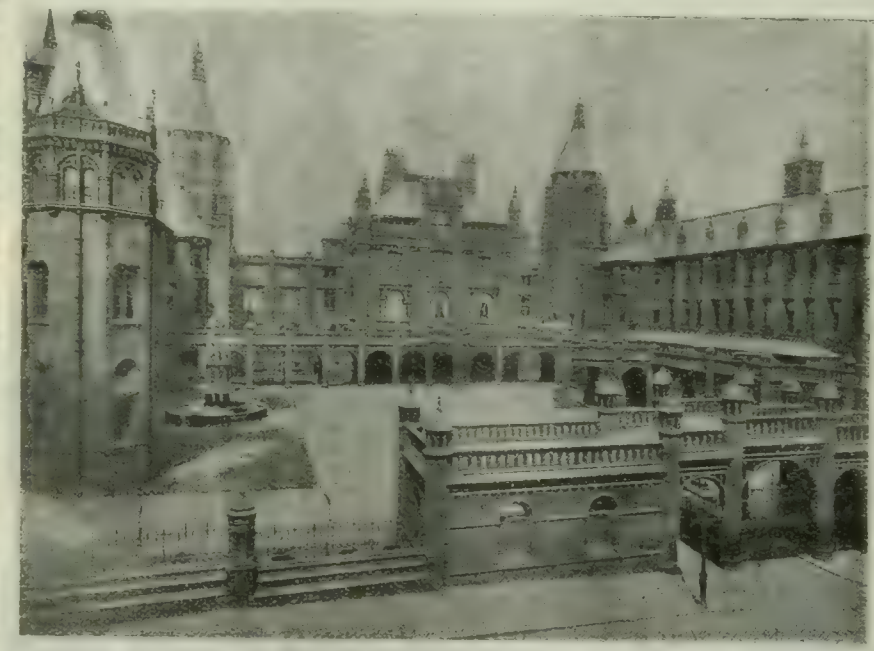
Old University and Chamberlain Memorial.

THE CHARACTERISTICS OF BIRMINGHAM.

Hutton, the historian of Birmingham, to whom we have previously referred, ascribed a large share in the prosperity of the town to the energy of its inhabitants, and this, again, might be fairly attributed to its bracing climate. Few people realize that Birmingham is one of the highest towns in England, and certainly the highest city of such magnitude. The cathedral stands on an eminence which has been said to be as high as the cross of St. Paul's, and the lowest part of the present city is 320 ft. at Saltley, the level rising to over 700 ft. at the west end of Edgbaston. Old Birmingham occupied this ridge, the land falling away on either side, to rise again in similar folds, so that Birmingham is not only itself on high ground, but is surrounded by suburbs at an equal elevation, although in the valleys separating these ridges there is, of course, lower land. The soil is a dry, red sand, which goes down for hundreds of feet. When the new General Hospital was being built it was found impossible to get a foundation of rock for the two great towers which form imposing features of that structure, and they consequently had to be based upon concrete. But this deep layer of sand ensures thorough drainage; even the valleys contain nothing that can be called a river, the small brooks, named the Tame and the Rea, having only formed alluvial land to a very limited extent. Hutton, in his day, thought the atmosphere of the place so stimulating that "it was easy to give instances of people whose distinguishing character had been idleness, when, in the bracing air of Birmingham, diligence became the predominant feature of their characters." He says, again, that when he came to Birmingham he was "surprised at the place, but more so at the people; they were a species I had never seen; they possessed a vivacity I had never beheld; I had been among dreamers, but now I saw men awake"; we are glad to see that he adds "I was treated with an easy freedom by all and with marks of favour by some; hospitality seemed to claim this happy people for her own"; and he pays a grateful tribute to the town—"I was hungry and she fed me, thirsty and she gave me drink, a stranger and she took me in. I approached her with reluctance because I did not know her; I shall leave her with reluctance because I do." With such a character to maintain, the citizens of Birmingham will doubtless make every member of the British Medical Association who attends the meeting next year ready to echo Hutton's words. With reference to the salubrity of Birmingham, it is interesting to know that in 1780, according to Hutton, the town possessed "the most complete baths in the whole island." "These," he says, "are seven in number, erected at an expense of £2 000, accommodation being always ready for hot and cold bathing, for immersion or amusement, with conveniency for swimming." The swimming bath was 18 yards broad by 36 yards long, and was situated in the centre of a garden in which were twenty-four private dressing rooms, the whole being surrounded by a wall 10 feet high. He speaks of the bath with praise, not so much as a means of cleanliness, but as a restorer of health, for he talks about "the gloomy horrors of a bath which sometimes deter us from its use" Yet in spite of this early advance Birmingham is not known to balneologists; the bath situated in the garden has long ago made room for brass-houses and factories, and Birmingham's chance of becoming a health resort has vanished under her clouds of smoke and the noise of her anvils.

The Medical School.

The Medical School of Birmingham, which now forms the Queen's Faculty of Medicine in the University of Birmingham, was founded in 1828, by Mr. Sands Cox, and acquired subsequently, by permission of King William IV, the title of "the Birmingham Royal School of Medicine and Surgery." In 1843 it obtained a Royal Charter of incorporation, and was from that time known as Queen's College, Birmingham. In 1868 the college was amalgamated with Sydenham College, which had existed for some years as an independent medical school connected with the General Hospital, Queen's College being connected with Queen's Hospital, which had in fact been established for the purpose of giving clinical instruction to the students of the college. In 1882, after the opening of Mason Science College, an arrangement was made by which the professors of chemistry, physiology, and botany in that college were appointed professors of these subjects in Queen's College, so that students of the latter institution could attend classes of those teachers in Mason College. About ten years later the important step was taken of separating the School of Medicine from Queen's College, with which it had been connected for nearly fifty years, and transferring it under the name of the Queen's Faculty of Medicine to Mason College. The Faculty was able to secure the transfer of such small endowments as it possessed, consisting of certain scholarships, but as a going concern which then paid its expenses it was welcomed to the new Science College, and now forms an important part of the university, which was incorporated by Royal Charter in 1901. Like all medical schools, it is now on a very different footing from what it was thirty or even twenty years ago; the growth of special departments called for by the remarkable progress of the sciences upon which medicine is based has required well-equipped laboratories and a staff of departmental lecturers and demonstrators, to provide which would have sorely taxed the resources of the Medical School had it attempted to stand alone. Clinical instruction is still given by the hospitals under the control of a clinical board, independently of the university, but it is probable that before long this department of teaching will become part of the work of the university, under the control of the Faculty of Medicine and the authority of the Council and Senate. A large and flourishing Dental School has been in existence for many years, and the university confers not only a licence in Dental Surgery, but the degrees of Bachelor and Master of Dentistry. A new Dental Hospital has recently been built in the centre of the town, where admirable arrangements exist for clinical instruction and practice. An Odontological Section will form part of the work of the Annual Meeting, and it is hoped that this will be not its least successful feature. The Dental Museum at the university has, under the fostering care of Mr. Humphreys, the Dean of the Dental Faculty, become of considerable interest and value, and a dental section of the annual pathological museum will, it is hoped, prove attractive.



The General Hospital, Birmingham.

Accommodation for Sectional and Other Meetings.

It is hoped that the general reception and the President's address will be held in the Great Hall of the University at Bournbrook on the evening of Tuesday, July 25th. So far as present arrangements have been made it is intended to use the Town Hall as a reception room, as was done in 1890; this affords ample accommodation, including writing tables and reading room, without any inconvenient crowding. The other addresses will be given in the large theatre of the Midland Institute, which stands by the side of the Town Hall, and most, if not all, of the Sections, will be accommodated in Mason College, which lies just behind the Town Hall.

Places of Interest in the Neighbourhood.

Although Birmingham extends over such a wide area that its immediate surroundings are built upon, with resulting damage to the appearance of what was at one time beautiful country, it is the centre of a district which presents almost unrivalled features of interest and attraction. Within a short distance are the two renowned medical spas of Leamington and Droitwich, where every modern appliance exists for the treatment of patients suffering from those diseases for which these waters are suitable. It is expected that excursions will be planned to both these places, and that all who wish will have an opportunity of seeing them. Warwick Castle is a unique specimen of Norman feudal architecture; Dudley Castle, now a ruin, marks the site of a stronghold of Aethelfrida, Queen of Mercia, and was the seat of Fitzansculf, one of William the Conqueror's Norman barons, under whom the Saxon thane of Birmingham held his manor. There are also at Dudley remarkable limestone caverns, which it is hoped permission may be obtained to visit.

Stratford-on-Avon, although in itself differing little from many other Warwickshire towns, exercises from its Shakespearean associations an attraction so universal that few visit Birmingham without paying their homage at the shrine of the Bard of Avon. An excursion to Stratford will undoubtedly form one of the features of the Birmingham meeting. It is also to be hoped that opportunities may occur for visiting Charlecote, the home of the Lucy family, and Compton Wynyates, perhaps the most beautiful house in England, the property of the Marquess of Northampton. Lichfield, with its cathedral, its memories of Johnson and Garrick, was the city of Sir John Floyer, the physician who in the time of Charles II first took the step that seems to us so obvious, of determining the pulse-rate by the number of beats in a minute, and who invented a special watch for the purpose. Among other curiosities, the city still possesses a specimen of the scold's bridle.

Worcester, while its chief glory is its cathedral, has many other attractions, and a visit here may be made to include a trip down the river to Tewkesbury, whose abbey presents features of great interest, while there are no finer examples in England of half-timbered houses with carved fronts; or Malvern may be seen on the same occasion, but the beauty of the place and its surroundings is too well known to call for comment. From the point of view of its archaeological interest Coventry stands in the first rank of old English towns. Its magnificent Perpendicular church of St. Michael and All Angels, and the mediaeval St. Mary's Hall, with its remains of fourteenth century glass windows, are sur-

passed nowhere, while the ancient documents possessed by the city are only exceeded in value by those of the city of London. But Coventry has now become a chief centre of the motor car industry, and may have much of modern interest to show to those who are already acquainted with its old-world treasures. Other places to which visits may be easily made are Boscobel House, about ten miles from Wolverhampton, where Charles II was hidden after the battle of Worcester, little changed from the time when the King found it a safe hiding place. The battlefield of Edge Hill is readily reached from Leamington; it is of medical interest to remember that William Harvey was present at the battle in the capacity of tutor to the young princes. The beautiful village of Broadway in Worcestershire, Berkeley Castle, Shrewsbury and the Severn, and Burton with its famous breweries may easily be visited from Birmingham as a centre. To some of these excursions will doubtless be arranged, but all or any of them are accessible by means of the excellent railway facilities that exist.

IN DEFENCE OF THE NOSTRUM MAKER.

UNDER the somewhat misleading title, *A Sequel to Secret Remedies*,[1] a little book has been published by a Mr. Frederick Phillips, who is described on the title page as "Lecturer in Mathematics at the University College, Southampton." The book, or pamphlet (there are only about fifty small pages of matter), is dedicated "to all those who labour *honestly* in the field of medicine"; and in the introduction the author says:

This book is not an attempt to quarrel with doctors, or to champion patent medicines; it has not been "inspired," "subsidized," or "suggested" by any interested party, but is an individual effort to probe a little way beneath the surface; for just as there are honest and unscrupulous doctors (many being struck off the rolls periodically), so there may be good and worthless secret remedies, and one has to discriminate in the employment of either.

On a careful perusal of its pages, there does not appear to be any reason to question the good faith of the author; but it is impossible to restrain a smile at the innocence with which he has applied to the makers of nostrums dealt with in *Secret Remedies*, and has accepted such replies as he has received as being worthy of publication; while in more than one place the usual ill results of the proverbial "little knowledge" are very apparent.

It would appear that the method Mr. Phillips adopted was to write to the makers of all the articles in question asking what they had to say in regard to the analysis published in *Secret Remedies*. The results seem to have been decidedly meagre. The author states that:

According to the postal authorities some few companies have "gone away," but whether as a result of the publication is much to be doubted. . . . In some cases the invitation was completely ignored; in others an intimation was received to the effect that no information could be accorded, the proprietors preferring to depend upon the judgment of those using their medicines; and, again, others expressed their willingness to have the searchlight of criticism, free from prejudice, applied to their methods of conducting business, as well as to their claims for their remedies.

Since replies are published from only 21 firms, referring to 27 of the 134 English and 26 German preparations given in *Secret Remedies*, it seems that the large majority of makers preferred to imitate the tactics of the French prisoner who, as the police agent complained, *Se renferma dans un système de mutisme complet*. The author remarks quite justly:

The silence, following the statements of the British Medical Association, is worth some consideration; it may be that the analyst has summed up the exact situation, and silence—that is, so far as some companies' medicines are concerned—is the only policy. On the other hand, one can understand the reluctance of companies to attack the publication of analyses which they consider inaccurate and misleading, seeing that the whole burden of proof would rest with them as plaintiffs; in other words, they would have to disclose the whole of their formulae and business methods.

Mr. Phillips did not omit to make inquiries into some of the testimonials which are usually published in such abundance by nostrum makers. He says:

Addresses were selected at random, and personal calls made, with curious results. In some cases the "first blush of enthusiasm," had worn off, and praise was superseded by something akin to abuse. A typical case is appended:

Extract from an Original Testimonial.

"I am very pleased to tell you that —— has done a lot of good. I have recommended it to several people."

Extract from Letter to Author.

"I believe I did write a testimonial in praise of it, but that was after I had only had two boxes, and I have come to the conclusion that it only —— and did not cure the person."

In a few cases the testimonial was denied in spite of the "original" being produced, which looks as if someone were sailing pretty close to the wind. A large number of the writers, however, were still found ready to stand firm to their previous convictions.

A short chapter is devoted to American medical qualifications, presumably because so many nostrums sold in Great Britain come from America, and some of these are professedly put forward by medical men. Mr. Phillips has drawn his information on this matter from "a gentleman of high standing in diplomatic service, and with a unique experience of both English and American schools of medicine," and "a member of the American Medical Association." The admissions in the following extracts will suffice for most people:

The idea of purchasing American medical degrees has been greatly exaggerated; it is true that a few "mushroom schools" at one time tried the experience of selling degrees, but the venture was quickly damped.

At the present time there are few men, with American medical degrees, who can be justly termed quacks.

During the past six or eight years dozens of mail order medical concerns have been prohibited the use of the mails, and the crusade has continued up to the present time, one of the largest advertisers having as late as July, 1910, been prohibited.

No wonder they come, or send their wares, to Great Britain, where they are not interfered with!

Mr. Phillips's inability to appreciate some criticisms, owing to insufficient general knowledge of the subject, is shown in many ways. He appears to think it unfair that, as he says,

The writer of *Secret Remedies* has devoted a chapter to cure-alls, and alludes to a preparation which claims to cure "such different disorders as constipation, rheumatism, St. Vitus's dance, heart disease, rickets, sleeplessness, kidney complaints," etc., but again omits to state that it is quite possible for a single preparation to cure a multitude of diverse ailments.

As an example of the latter fact he gives references to medical papers on the use of Poehl's Spermin and of calcium chloride in a variety of diseases, and apparently regards this as parallel to the claims made for the nostrum in question!

The replies of the makers in regard to the analyses naturally do not provide much matter for surprise; a few quotations will give an idea of them:

The analysis is incorrect as far as it goes, and omits a remedy of the greatest importance.

The analysis is incorrect.

The analysis is far from being true.

The analyst has not made a correct analysis, but as most of the dozen or more remedies are vegetable, he cannot reasonably be blamed.

The analysis is mere guesswork, and the remarks concerning the remedy vindictive and misleading.

The formulae are incorrect.

The published analysis is grossly incorrect; indeed, it is so altogether incorrect that one cannot believe any analysis has been made; or if an analysis has been made the work was entrusted to some person who was without any qualification as an analyst.

No competent analyst could ever have made the mistake of thinking he found these ingredients. Without imputing dishonesty, one is compelled to suspect "guessing" on a large scale.

Such "replies" really need no comment; the last one raises a curious question as to what this nostrum maker would regard as dishonesty if guessing at the composition of a preparation and giving the results of the guessing as being obtained by analysis, is not dishonesty.

The replies from the makers are accompanied by notes by Mr. Phillips on the properties of the drugs mentioned, and his evident unfamiliarity with his subject has led him into some amusing errors. For example, in *Secret Remedies* one of the constituents of a certain kidney pill is thus described: "Examination of the resin showed it to be derived from a coniferous source, and on comparison with various coniferous resins it agreed in characters with that of *Abies canadensis* (*Pinus canadensis*), known as hemlock pitch"; and hemlock pitch is accordingly given as an ingredient in the formula which is stated to give "a similar pill" to the one in question. Mr. Phillips's note on this is:

Conine, the active principle of Hemlock, has been given in

[1] *A Sequel to Secret Remedies (In Search of Truth).* By Frederick Phillips, F.C.P., B.Sc.(Lond.), F.C.S. Southampton: F. Phillips. 1910. (Crown 8vo, pp. 59. 6d.)

many diseases such as epilepsy, chorea, etc., in some cases with success.

Probably if any doubt arose as to the connexion between hemlock pitch and hemlock (which have nothing in common), they were laid to rest by the evident connexion between conine and coniferous!

Again, red mercuric oxide is given in *Secret Remedies* as the principal constituent of an eye ointment; Mr. Phillips adds:

Note.—Mercurial ointments are extensively used by doctors. When applied to, or gently rubbed into any part chronically inflamed, such ointments often aid the absorption of the products of inflammation, if they are not too deep-seated. The composition of Blue Ointment, used somewhat frequently by the medical profession, is—

Mercury
Lard
Suet.

It is a pity Mr. Phillips omits to mention that mercury is also "extensively used by doctors" in the form of clinical thermometers.

On another page we read:

Podophyllin.—The chief constituents are the alkaloid berberine and resin (which is the purgative principle).

Enough has been said to show that, whatever the honest intentions the author of this pamphlet has brought to his self-imposed task, his qualifications for it in other respects are not as strong as they might be. But, even if a bias in favour of the injured innocent nostrum makers may have led him to undertake the presentation of their case, it is evident that a study of the matter has forced him to conclude that all is not as it should be. Under the heading "Conclusion" he says:

Every man has the right to select his own method of medication, and there would, probably, be a certain amount of resentment on the part of the public to any great interference with this right; protection, however, is necessary, as shown by the exposures of enterprising journals. . . . Clearly, if matters are to be readjusted, it must mean complete annihilation of Patent Medicines or systematic regulation. . . . The suggestion, contained in the British Medical Association's publication, of requiring the composition and ingredients to be stated on the label, would probably be effective in keeping *some* fraudulent preparations from appearing, but there seems too large a loophole here for the employment of unintelligible terms.

The author's own suggestion for dealing with the admitted evil shows the same combination of good intentions and innocent unpracticalness as other parts of the pamphlet:

As to the future of Patent Medicines, it has been suggested that the honest vendor would have no hesitation in submitting, in strict confidence, the composition of his remedy, together with his claims, to groups of medical men acting in the capacity of advertising experts—men who have realized the meaning of professional honesty, and who could pronounce judgement on the worth of the remedy, or suggest lines for improvement. The outcome is obvious; few, if any, worthless preparations would find their way into the market, and in such cases the Medical Council would deal with members countenancing dishonest preparations. Moreover, the Press would be freed from all responsibilities, as to the acceptance of advertisements, when the vendors produced the approval of such men.

The theory is not free from objections, but at all events it would be a vast improvement on the present condition of affairs.

Perhaps Mr. Phillips will now try his hand at persuading, say, half a dozen of the owners of largely advertised curative syrups, coloured pills, and so forth, to come into such an arrangement. It will then be time enough to look round for groups of medical men ready to act in the capacity of advertising experts for such wares.

BRITISH MEDICAL BENEVOLENT FUND.

AT the November meeting of the committee twenty-eight most distressing cases were considered and grants amounting to £300 made to twenty-seven of the applicants. So few contributions have been received during the last few months that to do this it was necessary to draw upon, and, indeed, nearly exhaust, a small fund which has been carefully reserved for such an emergency. The committee, therefore, earnestly appeals for help to enable it to deal with the numerous applications which are certain to be received at the next few meetings.

Appended are particulars of the cases relieved:

1. M.D.Lond., aged 43. After holding responsible resident posts in this country, went abroad and worked up an excellent practice, but two years ago had an attack of hemiplegia, and is now quite incapacitated. Two children, aged 10 and 9, at present being looked after by a relation. Has a small income, but it is insufficient for present unavoidable expenses. Voted £6.

2. Wife, aged 61, of L.F.P.S.Glas., who is at present acting as ship's surgeon. Applicant lets lodgings, but in her husband's absence has unavoidably got a little behind with the rent. Voted £2.

3. Widow, aged 46, of M.R.C.S.Eng. Quite unprovided for at death of husband nearly twenty years ago, and finds great difficulty in supporting herself as a maternity nurse. Relieved four times, £46. Voted £12 conditionally.

4. Widow, aged 53, of L.R.C.P., L.R.C.S.Edin. Quite unprovided for at recent death of husband and the small sum obtained for the death vacancy was swallowed up by debts. Endeavours to support herself by taking boarders, but at present has only one paying a small weekly sum. Voted £10.

5. Widow, aged 40, of M.D.Durham. Has been acting as a companion but is temporarily in a state of health which necessitates a complete rest. Voted £12.

6. Widow, aged 62, of M.R.C.S. Dependent on an annuity of £10 and 5s. a week from an old age pension. Children unable to help. Voted £6.

7. L.R.C.P.Edin., aged 52. Used to have a fair practice in London, but for the last five or six years has been in very bad health and is now quite destitute. Hopes to shortly obtain a ship's surgeoncy. Voted £5.

8. Widow, aged 74, of M.D.Lond. Entirely dependent on two small annuities and requires help to obtain the small comforts necessitated by her age. Relieved five times, £31. Voted £5.

9. Daughter, aged 60, of late L.S.A. No income; tries to support herself by letting lodgings, but has been incapacitated for a few months as the result of an accident. Relieved twice, £24. Voted £12.

10. Wife, aged 65, of L.R.C.P. Was deserted seven years ago through no fault of her own, and is entirely dependent on this Fund and the Distressed Gentlefolks' Aid Association. Suffers from chronic bronchitis, and is therefore unable to support herself. Relieved three times, £36. Voted £12.

11. L.R.C.P.Edin., aged 54. Has been quite incapacitated for several years by spastic paralysis, and is dependent on an aged mother who can ill afford to help. Relieved six times, £72. Voted £12.

12. Widow, aged 53, of M.R.C.S., L.S.A. No income, and health too feeble to permit of any regular work. No children. Relieved six times, £68. Voted £12.

13. Widow, aged 50, of L.S.A. No income, and dependent on this Fund and a son earning only 17s. a week. Is blind in one eye and nearly so in the other. Health very feeble. Relieved six times, £70. Voted £18.

14. Daughters, aged 58 and 53, of late M.R.C.S. Endeavour to support themselves by needlework, but are in feeble health. Relieved six times, £74. Voted £20.

15. Daughters, aged 60 and 51, of late M.R.C.S. Live in a small house which they own and take boarders, but have had a very bad season. Relieved once, £10. Voted £18.

16. Daughter, aged 59, of late M.D.Lond. No income; lets lodgings. Relieved 27 times, £202. Voted £6.

17. L.R.C.P., L.R.C.S.Irel., aged 64. Was obliged to give up a practice in the North of London on account of ill health, and is now quite incapacitated and without means; slight help from a sister-in-law. Relieved once, £18. Voted £18.

18. Widow, aged 62, of late M.R.C.S. Income £12 a year; children only able to give very slight help. Relieved once, £12. Voted £12.

19. Widow, aged 65, of M.R.C.S., L.R.C.P. Supported herself for some years as companion, etc., but is now only able to earn a few shillings a week by needlework. Relieved once, £12. Voted £12.

20. Widow, aged 65, of M.R.C.S., L.S.A. Supported herself for twenty-four years, but is now unable to obtain a suitable post. Relieved twice, £24. Voted £12.

21. Daughter, aged 58, of late L.R.C.P. No income; very deaf, and otherwise unfit for any employment; dependent on a sister who has to earn her living. Relieved five times, £56. Voted £12.

22. Daughter, aged 63, of late M.R.C.S. Is not physically strong, and gives her services as housekeeper in return for a home, but receives no salary. Relieved twice, £24. Voted £12.

23. Daughters, aged 46 and 38, of L.S.A. Both physically incapable of earning a living; the elder has recently obtained a pension of £21 per annum; the younger is entirely dependent on her mother, whose income is very small. Relieved six times, £72. Voted £6.

24. Widow, aged 69, of L.R.C.P.Edin. No income; children do not help; eyesight failing. Relieved three times, £36. Voted £12.

25. Widow, aged 61, of late M.R.C.S. Health very indifferent, and only income 7s. a week contributed by her sons. Relieved twelve times, £135. Voted £12.

26. Daughter, aged 56, of late L.S.A. Eyesight defective and chronic ill health, which makes any continuous employment impossible; slight help from friends. Relieved nine times, £92. Voted £12.

27. Daughter, aged 52, of late L.R.C.P. Nursed both mother and father during illnesses which lasted many years, and is now without means and unfitted to earn a livelihood. Relieved twice, £24. Voted £12.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, W.

BOARD OF EDUCATION.

SECOND ANNUAL REPORT.

(Continued from p. 1788.)

PHYSICAL CONDITIONS.

Ringworm.—Examination of the statistics received from all parts of the country indicates that, independently of variation in the fungus, there is less uniformity than is generally supposed in regard to the degree of contagion, incidence, and development of ringworm. As for prevalence, routine examination shows a proportion of 1 ringworm child in 130 children in county areas, and in boroughs 1 in 165. It is impossible at present to lay down any uniform plan of action in regard to control, but any authority intending to take serious steps in the matter must (1) see that all children suffering from disease are detected; (2) promptly exclude such children; (3) refuse to admit any child excluded until it is cured, or at least free from contagion; (4) strictly supervise all new admissions and examine all children readmitted after prolonged absence. The possibility of establishing special classes for children suffering from ringworm should not be overlooked. In respect of treatment, *x* rays are steadily superseding all other forms of treatment.

Adenoids.—There is increasing evidence that the serious harm brought about by neglected nasal obstruction is widespread, though it is not everywhere equally prevalent. It is urgently necessary that in all educational areas steps should be taken to secure both the treatment of the children affected and the prevention of the development of the disease. The latter object necessitates the application of educational methods both in the home and in the school. Suitable and regular treatment, the avoidance of all coddling, fresh air by day and night, adequate sleep, and healthful exercise—particularly breathing exercises—will go far to prevent the conditions which lead to enlargement of the tonsils and the development of adenoid growths. Continual oversight of affected children by the medical officer is necessary. Slight cases should be scheduled as abnormal, and should be re-examined at intervals and special attention paid to them by the class teachers when breathing exercises are being practised. It should always be recognized that the surgical removal of adenoids is only the beginning of treatment.

Defective Hearing.—Slight as well as marked defects in hearing should receive attention; left untreated they may become permanent and increase. Children with otorrhœa, the result of recent scarlet fever or diphtheria, should be excluded. A good many medical officers appear to be paying much attention to the subject of deafness, using the "forced whisper" as a test. The opinion seems to be held that this should be heard by normal children at a distance of from 15 to 20 ft.

Defective Vision.—Full and carefully compiled returns are coming in from school medical officers in many districts, but it is evident that in some areas the need of testing vision with care and precision is insufficiently appreciated. When the preliminary testing is undertaken by a teacher or school nurse, the medical officer must satisfy himself that the conditions in which the work is being done are satisfactory.

Heart Disease.—Heart disorders of rheumatic origin appear to be revealed in a great many cases when search is made, but careful inquiry is necessary, since in children the familiar symptoms of rheumatic fever are absent in the majority of cases. A number of medical inspectors consider that "dilated heart" due to physical overstrain is much commoner than is generally supposed, and the work out of school hours is sometimes a factor.

Tuberculosis.—Classification of cases of tuberculosis has been more uniform on the whole than it was last year, so that the results are perhaps more comparable. The returns to hand relate to 683,715 children, and analysis of them shows that 0·75 per 100 present evidence of tubercle in one form or another. As for phthisis, much work is being done in detecting cases of this disease and in dealing with its causes in the children examined; but great difference of opinion on the subject exists, and will doubtless continue to do so until more reliable methods and standards of diagnosis are introduced. If phthisical children are excluded from school, the cases must be followed up.

GENERAL SANITATION.

The percentage of schools unprovided with satisfactory heating arrangements is regrettably high; so, too, is the proportion of cases in which old-fashioned desks are used. Medical officers will no doubt continue to urge on their authorities the advantage of properly warming school rooms and of securing proper desks and forms. Defects in the cloak rooms vary greatly, but a common one is such a lack of ventilation that the atmosphere is offensive. In the newer schools there is commonly an insufficiency of pegs, and a bad arrangement of them. There should be a minimum of 12 in. between any two pegs, and rows thereof should not be placed directly one above the other. All cloak rooms should have some means of drying clothes. The state of many playgrounds is deplorable. When the whole surface cannot be made impervious, a pathway should be made across it from the road to the school entrance, and a portion of the playground suitably prepared for use during physical exercises.

FOLLOWING UP.

Since the primary object of medical inspection is not the compilation of statistics and the cataloguing of defects, but the amelioration of the latter, systematic "following up" is essential to wise and economic administration. The steps necessary are (1) to inform the parent of any defect; (2) to make inquiries as to whether a remedy has been obtained; (3) when action has not been taken, to ascertain the reason; (4) to take steps to remove obstacles in the way of treatment, whether due to poverty, neglect, or absence of necessary facilities; (5) to re-examine all defective children at a reasonable interval to ascertain whether any change has occurred.

The presence of parents tends to prolong examinations, and is therefore inconvenient, but in all essential connexions is of the greatest value. It is natural and fitting that parents should be present on such an occasion as the medical examination of their children, and they should be encouraged to attend in all possible ways. Within not more than three months steps should be taken to ascertain what improvements have resulted from bringing any defect to the knowledge of the parent. In obtaining results, the influence of the teacher is very important. The school nurse also plays a useful part; whether it is better to employ a district nurse or a whole-time school nurse is a matter of dispute. The services of the school attendance officer can also be enlisted in "following up." When children are absent they are generally absent on medical grounds, and for this reason alone intimate association between the medical and attendance departments is desirable.

The work of the foregoing individuals will usually need to be supplemented by the services of voluntary helpers associated together as children's care committees. Such committees are of indisputable value (1) in following up medical inspection, (2) in the right and wise administration of arrangements for the provision of meals, (3) with reference to the employment of children when they leave school, (4) the after-care of the feeble-minded, and (5) work in relation to recreation and play centres, vacation schools, and country holidays.

Finally, all the work indicated must be tested by re-examination, the children re-examined being all those who at the routine examination have been found in any way defective, and not merely those deemed to require supervision as distinct from treatment commonly so called. The reports from the country, as a whole, show that much is being done in the matter of "following up."

MEDICAL TREATMENT.

Much space is devoted to a consideration of the principles underlying systems of supplying medical treatment, a problem which, it is stated, has begun to be considered by local education authorities. The only duty imposed by the Education Act of 1907 is that of inspection, while provision of treatment is merely optional, and in all cases must be sanctioned by the Board itself. Before treatment can properly be undertaken the organization of the work of medical inspection must be consolidated and mature conclusions reached as to the precise degree and character of the requirements of the area, both immediate and ultimate. A broad conception should be applied to the term "treatment." Extraction of a decayed tooth is treatment; but so, too, is

suitable adjustment of each child's education to its physical capacity. Also to be regarded as treatment, and as even of more importance than the medical treatment of individuals, are general measures applied to whole schools, such as securing good lighting and ventilation, and the prevention of overcrowding, and educational overpressure. Physical exercises come into the same category.

Local authorities must, as far as possible, utilize existing machinery, even though not ideal in character, before endeavouring to create new agencies of amelioration. They must aim at that economy which is obtained when local authorities co-operate with voluntary agencies and endeavour to utilize the responsibility of the parent. With few exceptions, the local authorities are falling in with these ideas and following the Board's advice that they should refer all cases in the first place to private medical practitioners, the school medical officer reporting to the authority his findings in respect of individual children, the authority communicating these findings to the parents, and the duty of obtaining adequate treatment being primarily left to the parent.

Adequate Treatment.

For certain conditions adequate treatment can rarely, the Board considers, be expected from an ordinary general practitioner—for instance, *x*-ray treatment of ringworm, conservative dentistry, surgical operations on the throat, and treatment of suppurating ears—but what medical men cannot always supply as units they can frequently supply on a co-operative basis, and it is in this direction that much future work must lie.

Neglected and Necessitous Children.

For neglected children persistent following up is the right course to adopt; when this fails, prosecution under local by-laws regarding school attendance and under the Children's Act is still available. Necessitous children can, if necessary, be dealt with under the Poor Law, the Local Government Board being prepared to make special arrangements for children found to require specialized treatment. During the past seventy years the Board has frequently approved of guardians contributing to voluntary hospitals in order that the poor may obtain adequate treatment without payment. A subsidy from a local education authority to a hospital is therefore, it is claimed, not a new departure.

HOSPITAL SCHEMES.

In some twenty towns the Board has now given permission to local authorities to make contributions to hospitals out of the rates by way of securing the treatment desired. This course, though it has exposed the Board to some criticism, is claimed to be receiving increased support from public opinion. These hospitals, it is urged, were established, and are maintained, for the medical relief of the poor, and the fact that the State has called upon local authorities to organize machinery for detecting ailments among children does not alter the claim of those children upon the institutions in question. On the other hand, the Board recognizes that the extent to which that claim is exercised is now sometimes so increased that hospitals cannot be expected to undertake the work without increasing their professional staff. For this reason the Board, whenever it has been requested by local authorities to do so, has always sanctioned the making of appropriate remuneration to the members of a hospital staff actually employed in carrying out treatment arising out of the establishment of medical inspection. The Board, however, is not in a position to insist that payment shall be made, or that it shall be adequate.

Difficulties in Hospital Schemes.

In discussing the scheme of medical treatment adopted by the London County Council certain difficulties inherent in hospital schemes are described. Among these are the facts that hospital treatment is unnecessary for many of the ailments of school life, and for others is inappropriate or incomplete. Many ailments demand a continuity of attention and supervision which cannot well be undertaken in an out-patient department and are alien to its spirit. To secure the best effects the actual process and manner of treatment should in itself be educational, both to the child and its parent. Hospitals could no doubt adapt themselves to the necessities of school practice, but it would require considerable effort on the part of institutions which, as a rule, have other purposes to fulfil. In any hospital scheme, moreover, there must be a certain amount of leakage, the children told off to attend hospitals either not doing so, or primary treatment being received, but "following up" not occurring. It cannot be too clearly understood that medical inspection, the work of care committees, and medical treatment are parts of one and the same enterprise. More especially must there be intimate relations between those who treat and those who inspect. The whole undertaking must be worked as one piece of machinery.

So far as London is concerned, the distance between children's homes and hospitals in some areas creates further difficulties. The hospital scheme has not yet had a complete trial, and possibly in the end some composite scheme will be found best fitted to the needs of London. The arrangements at Norwood, Hampstead, and Wandsworth, by which groups of local medical men undertake all treatment, are mentioned as interesting, but are not otherwise discussed.

SCHOOL CLINICS.

The establishment of school clinics has been authorized in eleven towns. Generally speaking, the Board has withheld its sanction unless the local authority was able to show, among other things, that the circumstances or necessities of the area called for the establishment of special machinery. One advantage of a school clinic is that it makes more possible the linking up together of an administrative medical and educational machinery.

DENTAL TREATMENT.

Dental disease among school children is so prevalent that no authority can possibly attempt to grapple with it forthwith and as a whole. Its first effort should be to deal with children at the six-year molar period, or aged from 6 to 8 years. To establish a dental clinic a special building is not necessary; it would suffice to adapt two rooms for the purpose. The equipment of these rooms need not cost more than £30, nor materials and upkeep more than £50 per annum; and one dentist working five days a week, or several private part-time dentists sharing the work, may be expected to deal with a school population of 3,000 to 4,000. In any dental scheme the factor of the willingness or the unwillingness of the parent is of primary importance.

SPECIAL SCHOOLS.

The number of special schools for the blind, deaf, and mentally and physically defective children increased last year by ten. They provide altogether for 19,161 children and include seven open-air schools, of which one, that at Bradford, remains open throughout the year.

PHYSICAL TRAINING.

The Board attaches much importance to physical training, not only as organized exercise but as a form of treatment, and devotes a long chapter to its consideration. It introduced a definite syllabus last year, because ordinary teachers are not sufficiently expert to select exercises for themselves. The exercises are physiological and designed to cover the whole period of school life. Exercises of a military kind are intentionally excluded as unfit for children. The two-fold contribution from the school of a State to its army should be strict discipline coupled with healthy physique. It cannot well be more than that, and it should not be less than that; hitherto it has been much less.

CONCLUSION.

In concluding his report, Dr. Newman points out that, notwithstanding all difficulties that have had to be met, a national system of medical inspection and supervision of school children may be regarded as now having been established throughout England and Wales. The work has only begun, but thousands of children are now receiving the consideration, the treatment, and the training which school children have previously lacked, and for a lack of which they failed, with irretrievable loss both to themselves and to the State.

The appendices supply a list of school medical officers, stating the number of children in their charge, and information as to prosecutions by local authorities, the findings of the London Education Committee, and other doings of this body, and give schedules for the examination of school children for mental defect, and other like matters.

LITERARY NOTES.

PROFESSOR GILBERT, author of a treatise on medicine, a series of books for the degree of Doctor of Medicine, and a library of therapeutics which have achieved success, has started a new weekly journal, entitled *Paris Médical*. In this enterprise he has secured the help of the most active of his collaborators in the works that have been mentioned. The *Paris Médical*, which will comprise 2 064 pages and 500 illustrations annually, is published by J. B. Baillière and Son, 19, rue Hautefeuille, Paris. The subscription for foreign countries is 15 francs a year. The first number, which appeared on December 3rd, contains an interesting historical account of clinical teaching in the Hôtel Dieu, with numerous illustrations.

Paludism is the title of a new publication which is to be the organ of the Central Committee for the Study of Malaria in India. The members of this committee consist of Lieutenant-Colonel J. W. T. Leslie, I.M.S., Lieutenant-Colonel D. Semple, R.A.M.C (ret.), Major S. P. James, I.M.S., and Captain P. R. Christophers, I.M.S. The first issue, which is dated July, 1910, consists of fifty-three pages, including an editorial note, giving details of the work of the Malaria Committee.

We have received the first number of a new periodical, entitled *Zeitschrift für Kinderheilkunde*. As its name imports, it is devoted to diseases of children. The editors are: Drs. H. Finkelstein and L. Langstein, of Berlin; M. Pfaundler, of Munich; C. von Pirquet, of Breslau; and B. Salge, of Freiburg in Baden. The publisher is Julius Springer, of Berlin. The new periodical, which is well printed on excellent paper, contains, among other communications, an article by Dr. Rudolf Neurath, of Vienna, on the significance of calcium salts in the organism of the child in physiological and pathological conditions; one by Dr. Fritz Rolt, of Berlin, on the physiological decrease of weight in newborn children; one by Drs. M. Karasawa and B. Schick on the period of absorption of antidiphtheria serum administered hypodermically.

The *Journal of Genetics*, the first number of which has just appeared, is described as a periodical for the publication of records of original research in heredity, variation, and allied subjects. It will also, from time to time, contain articles summarizing the existing state of knowledge in the various branches of genetics. Adequate illustration will be provided, and, where the subject-matter demands it, free use will be made of coloured plates. The journal will be issued in parts as material accumulates, and a volume, appearing, as far as possible, annually, will consist of four such parts. Papers for publication may be sent to one or other of the editors—Mr. W. Bateson, Manor House, Merton Park, Surrey, or to Professor Punnett, Gonville and Caius College, Cambridge. Other communications should be addressed to the University Press, Cambridge. The first number contains, among other papers, one by Mr. L. Doncaster and Mr. F. H. A. Marshall, on the effects of one-sided ovariotomy on the sex of the offspring. The subscription price for a volume is 30s. net (post free), payable in advance; separate parts, 10s. net each. Subscriptions may be sent to any bookseller, or to Mr. C. F. Clay, Manager, Cambridge University Press, Fetter Lane, London, E.C.

What to do with back numbers is a problem that presents itself with ever-increasing insistency to the attention of every subscriber to a journal, whether scientific or literary. Unbound they are litter of the kind most distressing to a tidy housewife; even when bound they accumulate slowly but surely, invading all available shelf room. Yet those who take a living interest in medical science, especially if they live at a distance from libraries, hesitate before they have recourse to the drastic methods of Omar in dealing with the Alexandrian library. They are, therefore, generally offered to medical libraries, and as these grow more numerous the disposal of back numbers becomes easier. In these collections we hope they will find a comfortable refuge. We sympathize with the feelings of Dr. C. D. Spivak, of Denver, Colorado, who was formerly editor of *Medical Libraries*, a bimonthly periodical especially intended for medical libraries, which came to the end of a spasmodic and irregular career in 1902. We learn from the *Boston Medical and Surgical Journal* that Dr. Spivak offers to send to all medical librarians and all who may be interested in medical journalism, complete sets of vols. ii, iii, and iv, and incomplete sets of vols. i and v, of the defunct periodical for the asking. He adds to this offer the following touching appeal:

> All the sad editor desires in return is that these his dear departed ones be reverently laid out, decently shrouded, adequately coffined, properly epitaphed, securely inhumed, and unostentatiously gathered unto their fathers.

The *Gazette Hebdomadaire des Sciences Médicales* of Bordeaux, of October 2nd, published an interesting note on the first ages of medicine in that ancient city, a communication presented not long ago by Dr. Durodié to the local Society of Medicine and Surgery. According to the lecturer, the first physicians who ever practised in that part of France were the priests and chieftains of the various Gaulish tribes. These for centuries were the sole depositaries of the medical knowledge of the clan, which was, however, anything but extensive. The pharmacopœia of these early practitioners seems to have consisted of a few drugs made from herbs and simples, and their only idea of treatment appears to have been the dosing of their unhappy patients with these rude medicines, accompanied by incantations and religious rites in honour of their gods. The conquest of Gaul, however, changed this simple and primitive system, and under the Roman rule a flourishing school of medicine sprang up at Bordeaux, whose scholars went forth to spread its fame throughout the ancient world. The University of Bordeaux, or Burdigala, to give it its ancient name, was for a long time the most famous seat of learning in Gaul, and its reputation as a medical school was such as to attract students from every part of the Roman Empire. Amongst the "Bordelais" who studied medicine at the university, many went abroad, to Rome and other cities, to practise, but a considerable number remained at home; and though in the majority of cases all trace of them has been lost, the names of a few have come down to us on their tombstones. The most ancient of these monuments was erected to a doctor, whose name cannot be deciphered, who died at the age of 51, in the days of the Roman Empire. The inscription, which runs as follows, was found in the year 1756:

D.M.
MSNV
MEDICI
DE. ANLI
SE PVL
II ET

It seems a pity that the most important part—the name of the man who lay beneath the stone—should be precisely that which is too much damaged to read. The rest has been filled out. "D(iis) M(anibus) . . . MSNU . . . MEDICI DE(functi) AN(norum) LI (hic) SEPUL(tus) E(s)T." Another monument, found over a hundred years later, dates from the same period, but is much more illuminating. It was erected over the grave of the first known physician of ancient Bordeaux, Flavius Pollianus Eburius, who died at the age of 36, and who, from his name of "Eburius," must have been a native of Gaul. His epitaph is as follows:

////M.
FL.POLLIANO.EBVRIO.M.
//ICODEFVNCTOANN.//
M.XXXVI. VALERIACON.//
ONENDVMCVRAVIT.

Which being interpreted means:

(D(iis)) M(anibus) FL(avio) POLLIANO EBURIO, M(ed)ICO, DEFUNCTO ANN(oru)M XXXVI. VALERIA CON(jux) (p)ONENDUM CURAVIT.

The names of many of the later physicians of Bordeaux are well known, and some of these men became famous, not only in their own profession, but in politics or literature as well. Such were Eutropius, a native of Aquitaine, and a well-known historian, who accompanied the Emperor Julian in his expedition against the Persians, and who lived to become a Roman senator; Julius Ausonius, who was as deeply learned in philosophy as in medicine, and who occupied the post of prefect of Illyria, besides becoming a senator of Bordeaux and of Rome; Vindicianus, whom St. Augustine calls the greatest doctor of his

century. The medical works of many of the early Bordelais physicians have unfortunately been lost, but the books of Quintus Serenus Sammonicus, who was assassinated in 222 A.D. by order of Caracalla, have been preserved and have frequently been reprinted. Sammonicus was extremely superstitious, especially with regard to his remedy for malarial fever, which consisted of wearing round the neck a linen thread from which was hung a paper on which was written the mystic word *Abracadabra*, the letters of which were arranged above in the form of a cone. It is interesting to learn that the Jews of this period had a similar method of curing the same disease, the only difference being that they pinned their faith to the word *Abracalan*, which was written on the amulet. Marcellus Empiricus, who flourished in the fourth century, and wrote a large number of books on medicine, was equally superstitious. He seems, however, to have doubted the efficacy of his mysterious prescriptions, for in one of his works, which is dedicated to his children, he advises them in the case of serious illness to disregard the advice it contains and call in the doctor. He himself had a firm belief in the following method of expelling a foreign body from the eye. The patient must hold the injured organ open with three fingers of the left hand on which there are no rings, and spit thrice upon the ground, saying, "Rica, rica, soro," when the offending object will fall out of the eye upon the ground It is believed that these three words are derived from some unknown Gaulish or Celtic dialect of which no trace has as yet been discovered.

The November number of *Travel and Exploration* contains four articles, dealing respectively with Macao, Tripoli, New Zealand, and the Arctic regions, while in the *Exploring World* there are some interesting notes on Papua by the Governor, Mr. G. H. P. Murray. In Mr. John Horne's description of his trip to Tripoli he gives the following account of the Arab leech:

Close by the Arab doctor had pitched his little tent. I looked in vain for pills and powders; his only stock-in-trade seemed to consist of paper and ink and sand to dry it with. Was he a faith healer? Should I witness a miracle, I wondered. But before long my doubts were set at rest. The doctor's method was simplicity itself. Where we go to a specialist, pay a guinea, and get a prescription made up by the chemist, the Tripolitan patient pays a halfpenny—swallows the prescription, paper, ink and all, and goes home—let us hope, vastly the better for it. As I watched, a woman brought her little girl for treatment. The doctor made her sit down before him, and recited a long incantation for all the world like an indifferent Scottish minister "putting up" an extempore prayer. From time to time he touched the girl's bare breast with two fingers of the left hand. Then the prescription was solemnly written, and as solemnly eaten, by the small patient—a copper coin changed hands—and mother and daughter went their way smiling, and perhaps—*chi lo sa?*—cured. Should I propose myself as a "case"? I was in excellent health, but that could make no difference. The leech, however, seemed to divine my infidel intentions; under his disdainful stare my courage failed me, and I fled.

Another interesting paper is Mr. C. M. Enriquez's description of a tour in Western Thibet. Among other things he gives an account of polyandry as practised by the Ladakhis, who are Buddhists belonging to the Mongolian branch of humanity. The system is deliberately employed as a means of keeping down the population. Speaking of the Ladakhis, he says:

They are, in fact, slit-eyed, pig-tailed Thibetans—a happy, cheery, and well-to-do people. They practise polyandry, by which system a maid takes unto her as husbands a family of three or four brothers, and one or two strangers besides. Her children refer to her husbands as their "Number One" or "Number Four" father, there being no certainty to which husband they owe their existence. No doubt to Western ideas such a system appears outrageous in the extreme, but in truth it is a means by which Nature keeps within bounds the population of a country which is utterly destitute of vegetation, except for an oasis of crops here and there round a village. The lowest valleys of Ladakh are 12,000 feet, and Ladakhis who venture to such low-lying places as Kashmir (which is 5,000 feet) contract fevers and die. A certain part of the population live at 16,000 feet above sea level, and dwell at a higher altitude than any other people in the world. An outlet for a growing population by emigration is thus impossible. The result is that the population cannot be allowed to increase.

The population question is greatly to the fore just now among us; have neo-Malthusians seriously considered the advantages of polyandry?

LEGISLATION AFFECTING THE MEDICAL PROFESSION.

A SPECIAL meeting of medical men resident in the electoral division of Rossendale was held on Wednesday, November 30th, at 3.45 p.m, at the Queen's Hotel, Rawtenstall. There was a good attendance. Dr. J. BROWN, of Bacup, was called to the chair, and Dr. Falconer, of Stacksteads, was asked to act as secretary.

The CHAIRMAN stated that the meeting was convened to discuss the question of State sickness and invalidity insurance, and of coroners' law and death certification, as affecting the medical profession.

Several members who had had experience in other parts of the country of club and contract practice spoke of its being most unsatisfactory.

The following resolution was then proposed by Dr. BROOMHEAD, of Haslingden, and seconded by Dr. EDWARD, of Rawtenstall:

That the principle of limited payment for unlimited medical services has, to a large extent, proved most unsatisfactory to the patients and to the doctors. This meeting, therefore, is strongly opposed to this principle, and urge on the Government in any future legislation in the proposed State Sickness and Invalidity Insurance Bill that there shall be freedom of choice of doctor by the patient, and that the principle of payment shall be for medical services rendered.

This was carried unanimously, and copies were ordered to be sent to the Right Hon. Lewis Harcourt, the Right Hon. Lloyd George, and the Central Council of the Brititsh Medical Association.

Dr. MACILRAITH, of Rawtenstall, then proposed, and Dr. HARRISON, of Haslingden, seconded:

That the proposed Coroners' Law and Death Certification Bill should be amended as follows: "That the body be viewed within three days of death having taken place, and that there be a minimum fee and mileage for the certificate."

This was also carried unanimously. The resolution was ordered to be sent to the Right Hon. Lewis Harcourt, Sir W. Collins, and the Central Council of the British Medical Association.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

THE deaths from plague in India during the months of July, August, September, and October (to the 22nd), were distributed as follows:

July	3,580
August	4 768
September	8,405
October (up to the 22nd)	14,075
	20,828

The total number of deaths from plague from January 1st to October 22nd amounts to 381,460, reported from all India and Burma. Of the 20,828 deaths which occurred between June 1st and October 22nd, 9 651 occurred in the Bombay Presidency, 2,441 in the Punjab, 1,037 in Bengal, 1,951 in the United Provinces, 4,017 in the Central Provinces, 2,614 in Mysore, 4,280 in Raputanja, 1.268 in the Madras Presidency, 1,793 in Hyderabad, 800 in Burma. In Central India the deaths were few, but between September 1st and October 22nd there were 1,558 deaths recorded.

PERSIA.

Plague prevailed at Bushire in May, when 43 cases of plague and 34 deaths were recorded. Since May the outbreak has practically ceased.

HONG KONG.

During the weeks ended August 20th and 27th 1 case of plague was recorded during the latter week. Hong Kong was declared free from plague on September 10th, 1910.

CHINA.

At Amoy and the district around plague prevailed during the summer of 1910 more severely than in any previous year. In Shanghai a case of plague was reported in September; rats have been infected with plague for the past two years in Shanghai.

MAURITIUS.

From August 8th to November 10th, 1910, the fresh cases of plague in Mauritius numbered 204, and the deaths from the disease amounted to 121. Plague has increased during the autumn months to a serious extent; during September the fresh cases numbered 36, and the deaths 25; during October the fresh cases amounted to 146, and the deaths to 82. Between January 1st and November 10th. 1910, the fresh cases of plague in Mauritius numbered 339 and the deaths 234.

British Medical Journal.

SATURDAY, DECEMBER 10TH, 1910.

THE MEDICAL ASPECTS OF THE PARLIAMENTARY SESSION.

THE Parliament elected in January last and dissolved so recently will be remembered less for the work it accomplished than for its short and troubled career. It never had a fair opportunity of showing its legislative capacity. It was opened with the shortest King's speech on record, and with the briefest programme of legislation; for only two subjects were mentioned, namely, Finance and the Relations between the two Houses of Parliament. Till those two contentious matters were settled, it was clear at the commencement of the session that no progress in general legislation could be accomplished. The output of Parliament, as is shown in our record of the session (page 1879), has, therefore, been comparatively small and uninteresting; nevertheless many questions of importance to the profession engaged from time to time the attention of our legislators. As soon as the difficulties connected with the Budget of 1909 were settled by the Lords accepting the proposals of the Government, the resolutions on the relations of the two Houses were brought forward and carried in the Commons after several days' debate. After this most of the other Government time up to the spring recess was necessarily devoted to the Financial Estimates of the year.

When the recess was reached on April 29th, there had been no time for debates on social questions except in connexion with private members' bills. One notable debate did take place early in April on the second reading of the Prevention of Destitution Bill. This measure opened up the whole question of Poor Law reform, and marked the first move in the parliamentary campaign organized in the interests of the Minority Report. The discussion was almost of necessity academic, for the mover of the second reading, realizing the impossibility of carrying his bill, announced early in his speech that he did not intend to proceed beyond the second reading stage. The discussion revealed some interesting facts. First it was clear that the advocates of the Minority Report had strong and well-organized support in the House of Commons, especially among the Labour Party. It was also evident that both the Prime Minister and the Leader of the Opposition, while favourable to well-considered changes in Poor Law administration, were firmly convinced that great and remarkable success had attended Poor Law work, and that revolutionary changes would be resisted. The Prime Minister said, "the boards of guardians will die very hard." The main defect of the speeches in our view was the absence of any adequate statement of the medical aspect of the proposed reforms of the Minority Report, and their far-reaching effects on the character, authority, and social relations of the medical profession. In the new Parliament that question will have to be fought out in many a long discussion, and we trust the future status of the general practitioner will, in the interest of the public, be fully and adequately guarded. It must be carefully and deliberately considered if far-reaching evils are to be avoided.

The session, which had really accomplished little up to the spring recess, was destined to run the remainder of its course under unique and paralysing conditions. The lamented death of King Edward and the accession of King George broke in upon the holidays and upset all arranged plans. Parliament, indeed, did not meet again for ordinary business till June 8th. The truce as regards political controversy which had been observed during the national mourning was prolonged through the summer sittings by the institution of a Conference to consider the constitutional question. The proceedings of both Houses in consequence were more or less of a routine character, until Parliament assembled after the failure of the Conference. There were, nevertheless, many topics connected with public health before the Chambers. The Census Bill, which really ought to have been passed last year, led to discussion in both Houses. Under the Act as now passed some improvements will be made in the form of the Census returns which, it is expected, will facilitate inquiries in connexion with vital statistics and public health. The fall in the birth-rate of 8 per 1,000 in some fifty years suggests some serious reflections which the Census may answer by giving figures bearing on the fertility of marriages and the ratio of infant mortality. The existence of overcrowding will also be disclosed by the returns showing the rooms occupied by each family in tenement dwellings. We observe with satisfaction that Mr. Burns apologized for not including a quinquennial numbering of the people in the Act. He said it would cost £100,000 to £185,000, and the Treasury could not find the money. This is a penny wise and pound foolish policy, for we hold that a permanent Census office would save much money now wasted on creating a new organization every ten years, and would be of constant use to the Government in the conduct of many inquiries connected with vital and other statistics that have to be undertaken by the several Government departments under special arrangements from time to time. The necessary expenditure ought not to stand in the way in the case of the richest country in the world when it is undertaken with advantage by younger and poorer communities.

If we had only created a department for the Census and vital statistics when the last Census was taken, it would have proved of incalculable value to the Government in their investigations in connexion with the proposed sickness and invalidity insurance. This is a very complex and difficult problem, and although the Government is said to have its bill ready and is pledged to bring it forward at the earliest possible date, it is almost certain that unforeseen difficulties and dangers will arise when the details of the scheme come under public criticism.

The Government made two unsuccessful attempts in the Lords to amend the Midwives Act of 1902 on the lines of the report of the Departmental Committee. The main objects of amendment were the constitution of the Central Midwives Board and the payment of fees to medical practitioners called in by midwives. The chief point of dispute, when the second bill was in committee, was whether the fees should be paid by the guardians or by the local authorities. The Government tried to meet the objection to the

guardians by proposing that the payment of fees should not be considered as ground for any pauper disqualification. This was eventually accepted in the Lords after a strong protest, but the bill had to be dropped on account of the sudden closing up of the session previous to the dissolution.

On another occasion in the Upper Chamber some instructive remarks were made on the provision of ambulances for the Territorial Force and the certification and instruction of nurses for the work. The British Medical Association was repeatedly referred to in this discussion in connexion with the demand for payment to medical men holding the classes for teaching. The Water Supplies Protection Bill and the Education Physical Training Bill, both initiated by Peers, also gave rise to comments of interest to hygienists, and at the later end of the session the best statement made in connexion with the rat plague in East Anglia was given in the Upper House.

In the Commons it was in Committee of Supply that matters of most importance to the profession were brought forward. The unfortunate arrangement sanctioned in connexion with the Prisons Board was referred to in our leader columns at the time,[1] and we would still press upon the Home Office the necessity of reverting to the arrangements recommended by the Departmental Committee and practically accepted by both sides of the House of Commons and the Government of that day, whereby there should be always a medical member of the Prisons Board. This in any case should be a recognized position to be always continued and not to be evaded by any temporary arrangement. The Local Government Board Vote led to a debate on vaccination, and was notable for a strong defence by Mr. Burns of the Act of 1907, which made conscientious objections easier. The necessity for legislation to secure the purity of the milk supply has been long admitted, and promises of legislation have been made over and over again. This year, like others, has failed to give us the necessary protection, and shown us by the rejection of the milk clauses in the London County (General Powers) Bill that the law cannot be made effective except by Government action. It is hard to understand why there should be this long delay in a matter of such vital importance to public health. The President of the Local Government Board has over and over again admitted the urgency of the question, yet he has failed to pass the necessary law. We would most strongly urge that Parliament should find time, in spite of disputes as to the constitution and powers of the House of Lords, to take up and settle in its earliest days this question so essential to the prevention of tuberculous and other diseases.

There was a very noteworthy attempt at legislation made by Dr. Addison (whom we congratulate on being once more returned to the House of Commons) in connexion with the teaching of hygiene in elementary schools His little bill had no chance of passing this year, but it was most favourably received, and we hope to see it placed on the statute book in the new Parliament.

The session has done little to advance either medical or sanitary science, but it has not been altogether barren, for medical topics have been constantly before both Houses, and the increasing interest taken by members in sociological questions augurs well for the future. Progress is slow in these matters, but when we look back for the last twenty years, we can confidently say that the influence of the profession in guiding and shaping legislation has steadily grown, and we believe will continue to grow, to the great advantage of the people and State.

[1] BRITISH MEDICAL JOURNAL, April 30th.

SIGHT TESTING IN THE MERCANTILE MARINE.

THE official Report of the Sight Tests used in the Mercantile Marine for the year ending December 31st, 1909, recently issued, contains much interesting matter.

At the Merchant Shipping (Colonial) Conference held in April, 1909, a resolution was adopted urging the Board of Trade to consider the efficiency of the system of sight tests then in force. The Board decided to add two new skeins—a dark purple and a light yellow—to the Holmgren wool test. These additional colours came into use on and after November 1st, 1909. Under the old rule, which consisted of the use of the well-known Holmgren test, 65 candidates failed; 20 of these appealed, with the result that 10 of them passed and 10 were rejected; after the new test came into use, 21 men were rejected, and of these 11 appealed, when 5 of them passed and 6 were rejected; 13 officers already in possession of certificates were rejected on re-examination; 8 of them failed in the form test, and 5 in colours.

Could any report be more lamentable than this, and could a public body stand more fully convicted out of its own mouth?

Let us see what the report really means. In the first place, it shows that under the old Holmgren test 50 per cent. of the rejected men who appealed were normal-sighted (that is, 10 out of 20). With the new colours added, practically 50 per cent. of normal-sighted persons were also rejected (5 out of 11). When these two additional colours were recommended, Dr. Edridge-Green prophesied that, so far from assisting in the detection of colour-blindness, they would probably lead to greater confusion still. Although the figures do not show worse results, it is not fair to contend that 5 wrongful rejections out of 11 is any better than 10 mistakes out of 20; for practical purposes, it means that half were improperly rejected.

In many of the Continental physiological laboratories the Holmgren test is not to be found. Professor Nagel, late of Berlin and now of Rostock, for one, considers it too bad even to give it house room. Yet our own Board of Trade still goes on with it and publish the shocking figures here quoted.

At first sight it may appear that the test excludes not only all men with defective colour sense but a certain proportion of others who have no dangerous defect. If this really were so, the only persons to whom harm would be done are the long-suffering seamen who are at the mercy of the Board of Trade. This, however, is not the case. No fact is better known to workers on the subject than that the Holmgren test, as well as rejecting a number of normal-sighted persons, fails to detect a large percentage of dangerously colour-blind individuals. We read in the same report that 5,942 candidates were successful in the colour test. It would be interesting to know how many colour-blind individuals were included in this number. We venture to say that, were it possible for a skilled examiner to test each of these men by reliable methods, a percentage of dangerously colour-blind men would be shown to have passed

which would be equally amazing to that shown on the other side. The published figures themselves prove the probability of this statement being correct, for on the re-examination of a body of men (numbers not stated) who had previously passed, 5 out of 13 who failed were returned as colour blind. While it is well known that certain grave diseases of the central nervous system may cause colour blindness, as well as other affections of the sight, yet such cases are rare; and it is more than probable that every one of the 5 was really a case of congenital colour blindness previously certified as being normal sighted. It is, however, equally likely that half of them had no defect at all, and that their means of livelihood was taken away from them because the unskilled examiners using discredited tests were unable to know whether their colour vision was correct or not. If no reliable tests existed the hardship to the seamen and the danger to the public would have to be endured; but inasmuch as the work can perfectly well be done by skilled examiners with reliable methods, it is little short of scandalous that the Board of Trade should still employ amateur examiners, and give them unreliable tests with which to conduct this important inquiry.

It is amusing to see it gravely stated in the report that no case of colour ignorance came before the examiners. Of course it did not, for the simple reason that colour ignorance, apart from colour blindness, is non-existent. Would it be possible for a man of adult age who has sufficient intelligence to present himself for examination to be ignorant of the difference between red and green? One might as well expect him not to know the difference between black and white.

A committee of inquiry is at present being held under the auspices of the Board of Trade, and we can only trust that this report will in no uncertain terms condemn the present condition of affairs. It is, however, a pity that none of those workers who have been instrumental in bringing about this inquiry are represented on the committee now sitting.

RATS AND FLEAS.

An appropriate note was struck at the opening meeting of the Zoological Society, when no fewer than three communications were made dealing with rats and fleas. The popular and scientific interest aroused by the epizootic in East Suffolk in regard to both these animals accounted for the appearance of at least two of the exhibits, but whether their juxtaposition was due to the wisdom of the society's able secretary or to a happy chance we are not in a position to say. We should prefer that the former were the case; and further, we would wish in all such eventualities as the present, where medicine is confronted with difficult bionomical problems, that the Zoological Society, through a recognized authority or authorities, should take the opportunity of making a definite pronouncement on the matter from their point of view. Such would be an excellent occasion for a review of existing knowledge on the subject, which would form an invaluable basis for medical and administrative action. It is imperative that we should have a thorough knowledge of the bionomics of all the animals habitually associated with man, not so much of the domesticated animals, which we can control, but of the large number of other animals such as rats, mice, flies, cockroaches, fleas, and so forth, over which we have little or no control except by a radical change of environmental conditions. The importance of this, we are glad to say, has been to some extent realized by the Local Government Board, but it is astounding to reflect that in the present year of grace we are still in such a regrettable state of ignorance with regard to even a common pest like the ordinary house-fly.

At the same time it does not appear that, however perfect our knowledge in these respects may be, we can ever expect to cope with such animals by direct attack—as, for instance, by random extermination of vermin. The prospects of success are about as promising as those of attempting to depopulate the sea of its fishes. It is a defensive, rather than an offensive, policy that we must adopt, and hygienic improvement constitutes our chief shield. All these pests must be further and further denied access to dwellings, their food supplies must be cut off, and their breeding places eradicated. These lines have been many times indicated before now, but they cannot be too urgently insisted upon. The importance of the biological factor, the living carrier, in the transmission of disease was clearly demonstrated by Houston in his epoch-making opening paper at the Bacteriological Section of the recent British Medical Association meeting.[1] The close association of transmissible disease, not with dead and lifeless matter, but with living beings, man's fellow creatures, involves a striking change of view, but one which has been more and more borne in upon us by the researches of the last few decades. We owe a realization of this perhaps more to the study of tropical medicine than to any other branch. The number of tropical diseases transmitted both mechanically and cyclically by other animals is already large, and additions are continually being made to the list.

The exhibits made at the Zoological Society consisted in the first place of a series of fleas, shown by Rothschild, which included *Ceratophyllus fasciatus*, the common rat flea of this country; *C. londiniensis*, a flea which was first obtained in a house near the Natural History Museum, and has since been met with in various parts of the world, seemingly associated with ships; *Ctenocephalus canis* and *felis*, the dog and cat fleas, and *Ctenopsylla musculi*, the flea of the mouse. All these fleas and many others may occur on the rat. It is interesting to know that *Xenopsylla cheopis*, the commonest rat flea of India and warm countries, has only been met with once in this country, at Plymouth. It was with regard to this flea that most of the work of the Plague Commission in India was done, and it was definitely proved to be a carrier of plague. Whether *Ceratophyllus fasciatus* may play the same rôle in this country remains to be demonstrated, although two successful experimental infections are recorded by the Plague Commission. That it may bite human beings there can be little question. The specific distinctness, denied by some, between the dog flea and the cat flea was reiterated by Rothschild, but to one familiar with the two species this seemed hardly necessary.

The second exhibit, by Pocock, consisted of two very fine specimens of the black rat, *Mus rattus*, and the brown rat, *Mus norvegicus* (olim *decumanus*). It was pointed out that the colour is not a specific feature for brown "black rats" and black "brown rats" are quite common. It is well known, of course, that it is the brown rat which is common in this country. Hitherto it has been generally stated that the familiar

[1] British Medical Journal, November 12th, 1910, page 1499.

tame rat is a descendant of *M. rattus*, but in his assertion that *M. norvegicus* is the true ancestor, Pocock was supported by more than one authority. The third exhibit, by Minchin and Nicoll, consisted of two larval tapeworms from the rat flea. Not content with biting and annoying the rat, the flea adds to its iniquities by transmitting the plague bacillus, *Trypanosoma lewisi*, and two different tapeworms. It is nearly half a century since the discovery was made that the dog flea served as an intermediary for the common dog tapeworm, *Dipylidium caninum*. Until a year ago no similar case was known, when Minchin found a cysticercoid in a rat flea, which Nicoll, during the course of his work as one of the Research Scholars of the British Medical Association, has since definitely shown to be that of *Hymenolepis diminuta*, an occasional parasite of man. Nine months later a third find was reported from Russian Turkestan in a flea from the jerboa; while most recently Minchin and Nicoll have found a second larval tapeworm in the rat flea, which appears to correspond in every detail with the rat tapeworm, *Hymenolepis murina*. The particular interest attaching to this latest find is that for the last thirty years this tapeworm has been believed to have an unusual life history, shared with *Hymenolepis nana* of man, in having no intermediate host. The possibility, however, of the cysticercoid belonging to some hitherto unknown tapeworm, closely resembling *H. murina*, is not ignored by its discoverers.

If for nothing else, these various exhibits have served a useful purpose in demonstrating the close relation between man and rats in regard to their parasites, both external and internal.

THE REPORT OF THE SPECIAL POOR LAW COMMITTEE.

THE reports of meetings of Divisions and the correspondence columns of the JOURNAL have shown the great interest taken by members in the subject of State sickness and invalidity insurance and other subjects which were dealt with in the special report submitted by the Special Poor Law Reform Committee to the Annual Representative Meeting. Anxiety has been shown to learn when the revised report will be submitted to the Divisions. We are informed that the Committee appointed by the Council to revise the report and issue it to the Divisions has received communications from Divisions and members of the Association which, in its judgement, made it a duty to reopen the consideration of certain important subjects dealt with in the report, especially the question of the relative advantages of capitation payment and payment per attendance which has been so fully discussed in our correspondence columns in recent months. In order that the Divisions may have before them such a complete and impartial analysis of the whole matter as is, in the opinion of the Committee, necessary to enable them to arrive at a sound judgement as to the policy of the Association, the Committee has conferred with Representatives of the Altrincham and Bristol Divisions, and with others considered specially qualified to assist them in framing an adequate statement of every point of view. This process of conference and deliberation has necessarily entailed considerable delay in the preparation of the revised report, and we understand that it cannot now be expected to be ready for issue to the Divisions until after Christmas. It is hoped, however, that the result of this further consideration will be to facilitate the discussion of the subject by the Divisions to an extent which will more than compensate for the delay in placing the report before them, and, having regard to the present position in general politics, it is probable that it will not be necessary for the Association to decide upon its policy at so early a date as at one time was thought possible. We have reason to believe that the Association will be afforded full opportunity of placing its views before the Chancellor of the Exchequer before any decision is finally arrived at by the Government as to the lines upon which its sickness and invalidity insurance scheme shall be framed in so far as it affects the medical profession. An address by the Medical Secretary of the British Medical Association, delivered before the South-Wales and Monmouthshire Branch, in which he discusses, among other matters, State sickness and invalidity insurance and Poor Law reform, will be found in the SUPPLEMENT for this week. With regard to the basis of medical remuneration, Mr. Smith Whitaker said that the difficulties surrounding the matter would be placed fully before the Association by the Special Poor Law Committee, when the relative merits of the two systems—payment by fee per attendance and payment on the basis of capitation—would be fully set out.

PRESENTATION TO MR C. J. BOND, OF LEICESTER.

A VERY representative assembly of members of the profession was present on December 1st at the Grand Hotel, Leicester, when a presentation of plate was made to Mr. C. J. Bond. The proceedings commenced with an informal dinner, to which nearly ninety gentlemen accepted an invitation, though, owing to the exceedingly inclement weather, several were prevented from attending. The chair was occupied by Mr. C. J. Bryan, the oldest practising member of the profession in the town, supported by Mr. Bond and the President of the Leicester Medical Society, the Chairman of the Leicester Division of the British Medical Association, and the Chairman of the Leicester Medical Union. At the close of dinner the Chairman gave the toast of "The King," and then briefly proposed Mr. Bond's health, reserving further remarks for the subsequent presentation ceremony. Mr. Bond made a short reply. The party then adjourned, and a reception was held in an adjoining room, which was attended by a large number of the wives or daughters of the subscribers. The company was received by Mr. and Mrs. C. F. Bryan, and by Mr., Mrs., and Miss Bond. The Mayoress of Leicester (Miss Vincent) was also present. After coffee and refreshments, and a little music partly contributed by two well-known vocalists belonging to the profession, Mr. Bryan made the presentation. In felicitous terms he spoke of Mr. Bond's career at University College, where he carried off many prizes, and held the appointments of house-surgeon and assistant demonstrator of anatomy. After being house-surgeon at Bedford Infirmary and Leicester Infirmary he joined the staff of the latter institution in 1886 and was now senior surgeon. Mr. Bond would continue to perform the duties of this office though he had relinquished private practice. The Chairman went on to speak of the almost unique position which Mr. Bond held among the medical profession in Leicester and Leicestershire. He counted almost every medical practitioner as a personal friend, and many of them and of their wives and families had been his patients. As a consultant Mr. Bond had won the respect of all by his unfailing tact and consideration. While never neglecting the interests of the patient, Mr. Bond had invariably contrived to increase the latter's confidence in his medical attendant. Mr. Bond's fame extended far

beyond the borough and county of Leicester; it was almost national, and Leicester might think itself fortunate in having had Mr. Bond's services for so many years when London might have claimed him. He had been selected to deliver the address in surgery at the annual meeting of the British Medical Association in Leicester, and had read papers of great value before it, notably at Toronto. Almost every medical practitioner in the district had contributed towards the presentation. Mr. Bryan then stated that it gave him the sincerest gratification to present the articles of plate to Mr. Bond. These consisted of a massive silver tea and coffee service and salver, on the last of which was inscribed: "To C. J. Bond, F.R.C.S., from his medical friends in Leicester and neighbourhood as a token of affection and esteem on his retirement from practice, 1910." Mr. Bond, in acknowledgement, said that whatever he was able to say could only inadequately express his feelings. He wished all to understand that he felt very deeply the kindness of every one of the subscribers. After recalling the memory of colleagues who practised in Leicester when he first came there, but had now passed away or retired, he said his best wish for all his fellow practitioners was that when it became their turn to retire they should have the same assurance of the loyal fidelity of their colleagues as he had had. The characteristic of loyalty was what he wished to insist on that evening. He could assure the younger members of the profession, especially those who were likely to practise as consultants in the future, that loyalty to their colleagues would be one of the most important factors in their success. Loyalty not only in the sick chamber and the subsequent consultation but in general intercourse with patients' friends and the public. These latter not infrequently took advantage of accidental meetings with the consultant to put such questions as, "Well, what do you *really* think of So-and-so? Is he really suffering from such and such, and do you think Jones really understands his case?" These and similar occasions were those where loyalty was needed. Mr. Bond then referred to the change in the nature of general medical practice which was now in progress. In his opinion the practitioner's time was and would be increasingly occupied with public health subjects in relation to bodies of men such as boards of guardians, public health authorities and the like, and less with individual patients and cases. In these circumstances there would be no less need of loyalty, but in all difficult positions the man who would put himself in his neighbour's place would succeed in retaining his confidence and esteem. The necessity for the profession as a whole was to be co-ordinated and educated. Mr. Bond concluded by again thanking Mr. Bryan and the company. This report can, with the best intentions, only very inadequately convey the atmosphere of the gathering. It was most apparent that all present were conscious that they were losing the advice and assistance of a great surgeon, a sympathetic consultant, and a real friend.

WORKMEN'S INSURANCE IN GERMANY.

A VERY large library has been called into existence dealing with the law and the social significance of compulsory insurance against accident, sickness, invalidity, and old age in Germany. Many of the treatises on the subject are massive volumes, full of instructive and interesting data, but far too long and complicated for the average busy man to digest. Many shorter articles and studies have appeared in newspapers, journals, and pamphlets, and nearly all of them have served a useful purpose. We have ourselves contributed to this library, but it is not too great for the needs of to-day. For this reason we welcome a pamphlet of some thirty-five pages from the pens of Sir Thomas Oliver and Mr. Hermann Belger, which deals briefly with the rise, progress, and prospect of this vast project. The pamphlet is a reprint of an article published in the *Yorkshire Post*. The pamphlet is divided into six parts, but, in point of fact, it may be said to be divisible into three sections. First, the historical evolution of the social problems involved is given and given with a fairness and freedom of political bias, which is peculiarly praiseworthy. Next, the actual working of the insurance schemes, or at least the salient points in this working, are set forth. Lastly, some of the effects of the introduction are painted. There are a few points in which we differ from the authors in their general survey of the present state of the question, and we are not so sanguine that the 1909 bill, with its 1,754 paragraphs, will become law. Be this as it may, the treatment of the complicated subject by the authors deserves very careful consideration by all those members of the Association who are now endeavouring to take an active part in the provision of relief during the various forms of incapacity in this country. Sir Thomas Oliver and his colleague might perhaps have emphasized the economic side of the question a little more forcibly. After all, the student of German modern history is always struck by the fact that while the workman has gained immensely from the introduction of the Bismarckian legislation, the primary object of the movement was not to behave kindly to the individual, not to check misery because the Legislature sympathized with the sufferers, but to introduce a system which would work economically for the nation—a system which would produce the maximum number of working days from the population with the minimum expense to the State. Another matter is passed over lightly by the authors. This is the remuneration of the medical profession under the scheme. The fact that nearly one-fifth of the income derived from the insurance is paid to the doctors might be regarded as highly satisfactory from the medical man's point of view, but in reality the work has to be done at a very low rate. It must be borne in mind, however, that Sir Thomas Oliver and Mr. Belger were addressing a lay public, and therefore this last-mentioned subject did not call for special treatment. Finally, attention should be called to the fact that the review is essentially objective and not composed from a narrow or single-minded point of view. This comes out most clearly in the section dealing with the causes of invalidity and accident. We can therefore again recommend those interested in social problems to obtain a copy of this very excellent pamphlet, which is sold for threepence.

VEXATIOUS LITIGATION AGAINST DOCTORS.

A CASE of considerable interest to medical men, and to Poor Law medical officers in particular, has recently been decided at the Leeds Assizes. As will be seen from the report on page 1896, the action was for damages arising out of an alleged libel contained in a report to the Halifax Board of Guardians, given in response to an application made by the relieving officer as to whether the plaintiff in the action was a suitable person to be received into the union hospital. It is four years since the certificate was signed. During this period—and, indeed, for many years previously—the plaintiff has been the source of much trouble to the guardians and all the Poor Law officers. We are informed that she has written hundreds of

letters complaining of her treatment at the hands of the guardians themselves, the clerk to the guardians, the district medical officers in districts in which she has resided, and the relieving officers. Letters of complaint have, we believe, been sent to the President of the Local Government Board, the President of the Education Department, the Home Secretary, and, within the past few weeks, to Her Majesty the Queen. The plaintiff has brought actions against the whole board of guardians in the local county court, and has made applications to the local justices on several occasions, all arising out of the idea that she was being illegally and unjustly treated by the guardians and their officers. It is highly vexatious that Poor Law medical officers should be annoyed with the worry and expense of defending actions such as this. It is part of the duty of these officers to report when required to the guardians on the cases which come under their notice. It would be intolerable if such reports were not privileged. If this were not so, the necessary duties of these officers could not be discharged properly, and the public authority would not be protected against malingering and imposture. The case against the Halifax doctors fell through on the two points raised by counsel—privilege and the plea that the case came within the meaning of the Public Authorities Protection Act, 1893. As this Act is seldom invoked and its provisions do not seem to be generally known, it may be worth while to quote the words on which this defence relied: "Protection of persons acting in execution of statutory or other public duty. Where after the commencement of this Act any action, prosecution, or other proceeding is commenced in the United Kingdom against any person for any act done in pursuance or execution or intended execution of any Act of Parliament, or of any public duty or authority, or in respect of any alleged neglect or default in the execution of any such Act, duty, or authority, the following provision shall have effect: The action, prosecution, or proceeding shall not lie or be instituted unless it is commenced within six months next after the act, neglect, or default complained of, or, in case of a continuance of injury or damage, within six months next after the ceasing thereof."

SCHOOL MEDICINE.

IN another part of this issue will be found the remainder of our abstract of the second annual report of the chief medical officer to the Board of Education. The report is for the most part a discussion of principles, illustrated by examples of their application, rather than a record of work done, so that it is hardly possible to do it justice in any summary. For this reason we have contented ourselves with setting forth on each subject the more important of such dicta as the volume may be considered to contain. This, again, has not been an easy task, for the expressions of opinion are often of a very qualified kind, and on points of special interest a delicate balance is sometimes established between the considerations on one side and the other of a question. The report, in short, is eminently conspicuous for openness of mind—an admirable quality in a judge or a scientific investigator, but a little embarrassing perhaps at times in an administrative body such as the Board of Education. Nevertheless, there are certain points on which that Board has clearly made up its mind. One of these is, that before any local authority institutes schemes of treatment, it should place itself in a position to determine the extent and relative importance of the defects among the school children under its care by a complete and thoroughly well organized system of medical inspection. This is the basis, and a very reasonable basis, of the Board's condemnation of the London County Council, which, during the year ending July 31st this year, had not arranged for the statutory medical inspection of as many as 800 of its schools. The Board has also set before itself a very admirable ideal. This is to secure for all children whose education is undertaken by ratepayers advantages which, to the best of our belief, have been enjoyed by very few children, even among the richest classes. In rate-supported schools the predominant influence will not be pedagogic, but medical; and each child's health will be the common object of solicitude on the part of senior and junior teachers on the one hand, and of those who detect defects and those who treat them on the other. Those who "treat" will be a composite body, including teachers, physical trainers, care committees, parents, nurses, and medical men. The attitude of the Board in regard to this matter is, perhaps, best exemplified by its repeated asseveration that surgical removal of adenoids is merely the commencement of treatment. Much stress is laid, too, on the consideration that to obtain good results there must be absolute coaptation between all parts of the medico-educational organization, and that between those who inspect and those who treat the relations must be especially intimate. It is this fact which makes the favourable attitude of the Board towards schemes of treatment which depend mainly on subsidizing hospitals a little difficult to understand, for by the Board's own showing "following up" any case (or the application of remedial measures revealed to be desirable by medical inspection) becomes in such circumstances especially difficult, if not impossible. But hospital schemes are admittedly only on their trial, and meantime it is clear that an excellent start has been made by the Board of Education.

SANATORIUMS AND TUBERCULIN DISPENSARIES.

THE medical officer of health for Portsmouth has presented to his borough council a report which is likely to attract a considerable degree of attention and criticism. Dr. Mearns Fraser, impressed by the cost of erecting and maintaining sanatoriums, and by the comparatively small proportion of cases in which lasting cure has been shown to have resulted from sanatorium treatment, advises his council to hesitate before incurring a large expenditure on building. He points out, further, that for the amount of the annual cost of maintaining each bed in the sanatorium a trained health visitor could be employed to visit the homes of the poor consumptives, and instruct the patient and his family in the principles of treatment and prevention. He is perhaps over-sanguine when he states that the health visitor "would recognize other members of the family affected with consumption whilst yet in the early stage"; though, if she carried out her duties efficiently, she might be the means of persuading contacts to present themselves for medical examination. Dr. Fraser then proceeds to recommend the council to establish a tuberculin dispensary on the lines of the one recently opened by Dr. Camac Wilkinson in South London. There are many advocates of antituberculosis dispensaries, which are well known on the Continent and in America, and have already been established in this country, but it is not such institutions as these that Dr. Fraser is recommending. He is asking for a special kind of treatment. It is unfortunate that, in quoting Dr. Newsholme in favour of tuberculosis dispensaries, he does not point out that the extract does not specially refer to tuberculin dispensaries, as the context might lead the reader to

suppose. When Dr. Fraser says that he does not feel that tuberculin treatment, and in particular the form advocated by Dr. Camac Wilkinson, has had a sufficiently long trial for any one to dogmatize upon the subject, we believe this to be true. The evidence brought forward by Dr. Fraser in his report seems hardly sufficient to justify the adoption of tuberculin as the official remedy for consumption in the borough without further inquiry. The proper attitude for the medical profession at the present time would seem to be a suspension of judgement until sufficient time has elapsed to warrant the publication of the results of the trial in South London. At the same time, if Portsmouth embarks on the experiment of establishing a tuberculin dispensary the experience will be followed with great interest.

FISH OUT OF SEASON.

IT is a cruel affliction of humanity to hanker after forbidden fruit. The desire seems deeply engrained and even the disastrous consequences liable to ensue are frequently insufficient to deter. To many misguided persons laws exist apparently only that they should be broken, and no matter in whose interests, those of a particular section or of the community at large, the laws are framed, there will never be wanting individuals who see in them food for grievance, an opportunity for sporting risk or a prospect of pecuniary gain by circumventing or evading them in every possible way. There is a still more unfortunate class who, knowingly or otherwise, take advantage of these infringements and who, exempt from the immediate hazard, shut their eyes to the possible dangers to which they may expose themselves. There is perhaps no more apt example of this than the case of the game and fisheries protection laws. It is somewhat unnecessary to say that these laws are framed, for the most part, in a true economic and scientific spirit, and particularly so is the case of the fresh-water fisheries laws; it is to the latter that we wish here to draw attention. An article on the same subject appeared in this JOURNAL some twenty-five years ago,[1] and we cannot do better than refer to that. The provisions embodied in the Fresh-Water Fisheries Act are not directed solely towards the preservation of property. They are intended to ensure that that property, private or public, shall not be misused, and that it shall have a reasonable and adequate opportunity of recuperating itself. It is obvious that this property, consisting as it does of live stock, will eventually perish unless the natural means of replenishment are afforded. This is absolutely essential in the case of trout, which have a definite and normal spawning period. During that time protection and freedom from molestation is necessary. Yet, in spite of its obvious nature, this economic principle apparently fails to convince in some cases. The practice of catching spawning trout, which appears to be increasingly prevalent in some parts of the country, cannot be too strongly condemned. Not only is it illegal, but it is wasteful and unsportsmanlike. On the fisheries it works great havoc and leads to much future loss. On biological and economic grounds alone, therefore, the practice is unquestionably reprehensible, but there is the further not unimportant consideration of public health to be added, and it is in this respect that we would strongly appeal to those who indirectly countenance the nefarious practice by purchasing out-of-season fish. It is a well-known fact that fish when spawning and for some time after are out of condition. The reproductive process is a great drain on their other functions; their flesh in particular suffers, the muscles becoming soft and flabby. In this "run-down" condition the fish are especially prone to attack by bacterial and parasitic diseases. These cause further deterioration in the fish, and in many cases lead to their death. Here we must be understood to be considering the condition in fresh-water fishes. In their habits and circumscribed life they differ in many respects from the freer and more widely roaming marine food fishes, and statements with regard to the one are not necessarily applicable to the other. There is no doubt, however, that trout suffer from this "run-down" condition, and when captured in this state their flesh decays more rapidly than usual. To consumers, therefore, there is the by no means negligible danger of food poisoning from the presence of deleterious organisms. It is, we confess, surprising that there should be people, pardonably fond of fish, who insist on eating trout all the year round. To them the great wealth and variety of British food fishes must assuredly be unknown. Fishes of many various kinds and in the best of condition may be had at all seasons of the year, and offhand we might mention some of those, which ought to be familiar to every one—namely, cod, haddock, whiting, smelts, pollack, torsk, ling, hake, halibut, turbot, plaice, sole, flounder, dab, brill, herring, pilchard, bass, red mullet, grey mullet, bream, mackerel, dory, catfish, salmon, eel, and conger—a list surely long enough to satisfy the most fastidious of palates.

[1] BRITISH MEDICAL JOURNAL, February 27th, 1886, p. 412.

THE ANTIQUITY OF LEPROSY.

IN the latest *Bulletin* (No. 6) *of the Archaeological Survey of Nubia*, Professor Elliot Smith and Dr. D. Derry describe and figure a case which shows all the typical lesions of leprosy. The subject of the disease was found in a Nubian cemetery assigned to an early Christian century. Although the tissues are at least 1,600 years old they cut and stain perfectly, but so far no leprosy bacilli have been found in them, although various forms of cocci are seen in abundance. The authors have had many opportunities of examining the remains of many thousands of Ancient Nubians—covering a period of at least 6,000 years, yet this is the first instance they have seen suggestive of leprosy. No certain signs of syphilis have been found, but typical examples of tuberculosis do occur although not abundantly. Many of the pathological specimens described in these *Bulletins*, including the one of leprosy just mentioned, are to be seen in the Museum of the Royal College of Surgeons of England. No collection in the world can rival this in giving a continuous representation of the diseases of one people through a period extending over 6,000 years. These *Bulletins* contain a wealth of absolutely fresh data relating to the physical characters, evolution and diseases of the Egyptian people, collected, arranged, and illustrated by accurate observers and clear thinkers.

BRITISH DENTAL ASSOCIATION.

THE annual meeting of the Metropolitan Branch of the British Dental Association was held in the school buildings of St. Bartholomew's Hospital on the evening of December 7th; Mr. W. B. Paterson, dental surgeon to the hospital and president of the branch, was in the chair. After the transaction of formal business, the president delivered an address, in the course of which he described the origin and growth of the dental department of the hospital, the scope of its work as a charity, and its teaching in the medical school. The department was founded in 1837, when Mr. Arnold Rogers was appointed the first dental surgeon with the duty of visiting the hospital on one day in the week. Upon the retirement of

Mr. Rogers in 1849, and his appointment as consulting dental surgeon, he was succeeded by Mr. Tracy, who in turn was followed by Mr. Alfred Coleman. Five years before the latter gentleman's retirement through ill-health in 1884, the department was reconstituted and met twice weekly. At the present time the department is in charge of four dental officers, and meets daily in the morning, Tuesdays and Fridays being full mornings. The dental teaching offered to the medical student is carried out on definite lines. Quarterly classes are held for those about to commence surgical dressing in the wards, and these are recognized as dressers' classes. The elements of dental surgery are taught in these classes, and extraction operations are practised in the dissecting rooms. The student during his dressership period is encouraged to attend the casualty dental department, where his work is superintended by the dental staff. Dresserships in the dental department itself are open and free to all students, and are specially recommended to those who intend joining the Army and Navy Medical Services. With regard to the question of dental students in the hospital no special provision has been made, but it was thought probable, in view of the fact that training in the mechanical work of dentistry was now being taught at most of the dental schools, that dental students would tend to seek the medical portion of their curriculum in the larger medical schools of the metropolis, especially as the facilities of rapid locomotion had become more numerous. At the conclusion of the address Mr. F. Coleman described the cases collected for the members' inspection in the dental department, and a move was therefore made to that department. Afterwards the members visited the great hall of the hospital, the new pathological block, and museum, the proceedings terminating in a *conversazione* in the library. Votes of thanks were passed to the medical staff and the hospital authorities for the use of the buildings, which had contributed so much to the interest and enjoyment of the meeting.

A NEW LOCAL ANAESTHETIC.

IF we are to believe Privatdozent Dr. Richard Werner of Heidelberg,[1] zykloform is a non-toxic, mildly drying, non-irritant, prompt, and strong local anaesthetic, which influences the healing of wounds favourably, and which acts locally and superficially. These excellent qualities have been ascertained in Exzellenz Czerny's Institute for Cancer Research. The preparation is the iso-butyl ester of para-amido-benzoic acid. It is readily soluble in alcohol and ether, but little soluble in water, which accounts, we are told, for its slight toxicity. The evidence adduced that it is not toxic is contained in the statement that, although several grams of zykloform were applied daily for three or four weeks to extensive wound surfaces, no signs of an intoxication ensued. With regard to its anaesthetic action, we are informed that it was used both in powder form and as an ointment, together with naftalan, lanolin, olive oil, zinc oxide, and boric acid. Fresh wounds, such as those produced by fulguration of cancers, were powdered with zykloform and then covered with a dressing soaked in acetate of aluminium. The pain of these wounds was less when dealt with in this way, and the changing of the dressings, too, was less distressing to the patient. When the ointment was used on granulating and inflamed surfaces, pain is said to have been instantly removed, and the inflammatory process began to heal up. A few failures are readily explained away. The sedative effect is said to have been produced within a few minutes of the application of the powder, but less rapidly when the ointment was employed. Very severe pain could be completely removed, although complete anaesthesia or paraesthesia was not met with. All these claims for the new drug may be fully justified, but it seems desirable to call attention to the fact that it is most dangerous to place any reliance on accounts of the actions of new pharmaceutical preparations which are written without any definite clinical records or objective evidence. The action of an ointment containing six chemical substances of the type of those mentioned above cannot be ascribed to any one of the ingredients, nor, indeed, would we be surprised if the organism chose to react irregularly to such a mixture. The evidence of non-toxicity is distinctly weak. Next the author claims that pain is abolished without complete anaesthesia supervening, but speaks of the drug as a new local anaesthetic. We would warn practitioners not to use new drugs on the recommendation of papers written in so loose a style as the one to which reference has been made.

[1] *Muench. med. Woch.*, September 20th, 1910.

SLEEPING SICKNESS.

DR. OLD, acting for the Principal Medical Officer, Dr. Hearsey, has continued the diary on sleeping sickness in the Nyasaland Protectorate.[1] Some very important information is contained in this part (XI). Seven new cases of the disease have recently been reported, and it seems certain, Dr. Old says, that, of those 7 cases, none can have been exposed to the bites of *G. palpalis*. Considering them along with some previous cases, he considers that one or more species of diptera must be incriminated. *G. morsitans* is conspicuous in the histories of some of these new cases, but *G. fusca* has also been found in many of the localities mentioned. Much remains, however, to be done in mapping out infested areas. Drs. Murray and Sanderson have remarked on the large number of parasites in some of the cases, and believe that these trypanosomes are larger than *T. gambiense* and differently shaped. They also draw attention to the rapidity and severity of the symptoms in one of the cases. The point of outstanding importance, Dr. Old thinks, is that no free communication whatever should be allowed from the infected portions of the respective territories in Nyasaland and North-Eastern Rhodesia; all persons returning from the Loangwa and beyond, and Tanganyika, should be kept under observation for a month at a station of entry, and be given a reliable certificate before discharge by the medical officer in charge. He also recommends that the state of health of all native workers in the country being sent home sick should be reported by their friends to the nearest Resident periodically, and that they should be confined to their villages, as other cases may now be expected to be heard of scattered over the country.

THE King has awarded the Edward Medal of the second class to Dr. Edwin Arthur Dando for courage shown on the occasion of the underground fire which occurred at the Russell Colliery, near Dudley, on April 17th, 1910, and in connexion with which the Edward Medal was awarded on July 23rd, 1910, to Arthur Cartwright, Isaiah Walker, Samuel Slater, and Anthony Willetts. Dr. Dando, who was summoned to the mine when the fire broke out, went down the pit and bravely assisted in the rescue work for several hours. He was at last overcome by the poisonous gases, and was brought to the surface unconscious, and he has not yet completely recovered from the effects of his courageous action.

[1] *Nyasaland Protectorate, Sleeping Sickness, Diary.* Part XI. By the Officiating Principal Medical Officer, Zomba. Printed by the Government Printer. 1910.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

The Parliamentary Session.

THE record of the session of 1910 becomes, in consequence of the dissolution, the record of a Parliament, the shortest for twenty-five years. The Commons met for the first time on February 15th, and dispersed to face the constituencies on November 28th, but the session was a very broken one, and there was in consequence of the lamented death of King Edward a long period of inactivity. The output of the session has consequently been small, and the conditions under which the Parliament was elected did not conduce to the production of many social schemes, as the great question of the relative powers of the Lords and the Commons overshadowed all other subjects. Moreover, a session which commenced with the Budget of the previous year unpassed, had to begin with a load of arrears to overcome before it could undertake new legislation. Altogether 223 bills were introduced as compared with over 300 last year. Of the 223, 42 were Government bills, of which 32 passed, while of the 181 private members' bills, only 9 became law. The 32 Acts passed by the Government were made up of two necessitated by the demise of the Crown—namely, the Regency Act and the Statute dealing with the Civil List. The Act altering the Accession Declaration also may be referred to the same cause indirectly. There were also six Acts connected with the two Budgets, double the usual number, consisting of Consolidated Funds, Appropriation, and Finance Acts for each year. Then there were two Census Acts, one for Great Britain and one for Ireland, the Education Choice of Employment Act, the Expiring Laws Continuance and the Army Annual Acts, together with the measure amending the Development and Roads' Improvement Act of last year. The remainder of the legislative product of the Government consisted of less important additions to the law. One of these which was passed to amend the law of Registration of Births, Deaths and Marriages in Scotland, was a small alteration to enable the Scottish Registrar General to certify extracts from his registers by seals instead of by the signature of his name.

Of the proposals which the Ministry failed to pass there was only one of first-rate importance, the Parliament Bill, which was based on the resolutions passed by the Commons to limit the powers of the House of Lords. On seven parliamentary days these resolutions were debated, but the bill itself which brought about the breaking up of Parliament and the General Election was never discussed in either House. Two other bills, the Shops Bill and the Public Health Visitors Health Bill, we are sorry to have lost, but there is good hope that they will come on early in the next Parliament. Two attempts were made in the House of Lords to amend the Midwives Act, but both were unsuccessful.

The private work of Parliament was not so much interfered with by the political situation, for 40 Provisional Order Acts were passed, and also 22 Scottish measures under the Scottish Procedure Act, and 82 private bills passed out of 110 introduced.

Turning now to private members' bills, 181 were brought in, compared with 230 last year. The 9 Acts put upon the Statute Book by private members this year compare with 16 passed last year. None of them had any direct interest for the medical profession. There were, however, a number of bills of much interest to public health and medicine among those which did not pass. First of these was Mr. Cathcart Wason's Parochial Medical Officers (Scotland) Bill, which has been before Parliament for some years, but has been unlucky in many sessions. The Coroners' Law and Death Certification Bill affected the interests of medical men seriously, and has been dealt with in our leading columns.[1]

[1] BRITISH MEDICAL JOURNAL, July 9th, 1910.

A small bill, introduced by Mr. Gill, and called Death Certificates (Charges) Bill, on the other hand, only sought to reduce the charges made for copies of certificates. There were several bills promoted by the antivivisectionists, none of which made any progress. The Nurses' Registration Bill was also never practically before the House, but will most probably have better luck in the new Parliament. There were several bills introduced by private members dealing with the Public Health Acts, and one of these obtained a good place in the ballot, through Mr. Roberts. It was called the Public Health Act (1875) Amendment Bill, and dealt with water supply, but it had to be dropped early in the session. The one bill that attracted much public attention was the Prevention of Destitution Bill, introduced by Sir Robert Price, who drew first place in the ballot. The second reading discussion was a full-dress affair, and both the Prime Minister and the Leader of the Opposition spoke benevolently as regards Poor Law reform, but not in any way committing themselves to the views of the Minority Report, which the bill embodied. Dr. Addison introduced a very interesting proposal in the Elementary Schools (Instruction in Hygiene) Bill under the ten minutes' rule, and by this method he was able briefly to state the arguments for such instruction. Lastly, the Milk and Dairies Bill, introduced to force the question of milk inspection to the front, and induce the Government to legislate, may be mentioned as one of the failures to be regretted. There were several occasions in Committee of Supply in which medical questions occupied a considerable amount of attention. The debate on the Local Government Board led to a discussion on the payment of vaccination officers. On the naval vote reference was made to the committee investigating the naval medical service, and to the demands for the establishment of a Royal naval medical school and other changes. The Home Office vote opened up the subject of dangerous trades, and lead poisoning, as usual, was critically considered, and the position of certifying surgeons and medical referees under the Compensation Act was also discussed. On the Report of Supply there was also a warm debate on the altered arrangement about the Medical Commissioner of Prisons.

As in other years, it was, however, by the use of questions that medical topics were most frequently raised. The list of subjects dealt with in this way shows how all matters connected with sanitary and medical work interest both Houses of Parliament, and how useful it is to call attention to important matters by this method. Some of the points raised by way of question and answer dealt with: Payments under the Midwives Act, the petrol tax and the profession, motor ambulance service for London, the Senate of the University of London, vaccination officers and superannuation, fish diet for soldiers and sailors, invalidity insurance, Mediterranean fever, forcible feeding and heart disease, the Tuberculosis Commission, licences for experiments on living animals, the Notification of Births Act in Scotland, sanitation and water supply in Wales, deaths from starvation, Sunday golf, deaths from tuberculosis in Ireland, official certifying surgeons, Poor Law children, the use of anaesthetics, glanders, disinfection of schools, Madras Medical College, lead poisoning, deaths from anthrax, formaldehyde and chilled meat, Chinese pork, deaths from camping out in wet weather, sleeping sickness on the Congo and in Nyasaland, vivisection, typhoid in Madeira, medical officers in the Transvaal, Indian Medical Service, metropolitan asylums, technical grants to medical schools, plague in East Anglia, etc. Questions year by year grow in volume, and must be regarded as one of the most effective ways of calling attention to defects in administration as well as in the law, and a most important method of keeping medical matters before Parliament and the public. Considering the almost unique character of the session, and the comparatively few opportunities it gave for the discussion of sanitary and medical subjects, this record should satisfy the profession that their interests have not been ignored in either House.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

THE ROYAL COMMISSION ON THE CARE AND CONTROL OF THE FEEBLE MINDED.

Effect of the Proposals in London.

VARIOUS committees of the London County Council—the Asylums, Education, Public Control, Local Government, Finance and General Purposes Committees—reported on December 6th as to the bearing of the recommendations of the Royal Commission on the Care and Control of the Feeble-minded upon lunacy administration in the metropolis.

The Commissioners considered that the position in London with regard to the care of the mentally defective was exceptional and that the difficulties were due less to insufficiency of accommodation than to the want of any machinery which would lead to a readjustment of the relations of the several authorities concerned—namely, the guardians, the Metropolitan Asylums Board, and the County Council. This division of work, in the opinion of the Commissioners, involved also a division of authority and a lack of co-ordination fatal to any successful treatment of the problem. Accordingly the Royal Commission addressed itself specifically to the question of setting up administrative machinery in London.

The Views of the Council Committees.

On the recommendation of the Commission that there should be "one central authority for the general protection and supervision of mentally defective persons" the Local Government Committee raised the question whether this work could not be undertaken conveniently by the Local Government Board, suggesting that the overlapping of jurisdiction was as great in Government departments as in the case of local authorities. In regard to the work of the local authority under the Commission's proposals, the Local Government Committee urged the desirability of so constituting the statutory committee for the feeble-minded that when the recommendations of the Poor Law Commission came to be dealt with the nucleus of the organization for public assistance would be already in existence. Although the powers proposed to be given to the statutory committee were not exclusively of the nature of public assistance, in practical administration there would be very considerable similarity, and the two matters were so interwoven that if the two services were placed under separate authorities there would be a danger of overlapping and friction. The difficulty would also occur of finding sufficient members to man two important statutory committees of this kind.

The Asylums Committee was of opinion that the recommendation of the Commission with regard to "friendly visitors" to advise as to training, education, or marriage, was a serious and common-sense attempt to deal with a very complicated phase of the lunacy question—the inter-marriage and consequent propagation of imbeciles. The committee had been endeavouring for years to secure the establishment of receiving houses and receiving wards, and was therefore much gratified to find the Royal Commission recommending their compulsory establishment. Generally speaking, the Commission gave the proposed committee a very wide discretion, and only experience could show what would be the best course to pursue under certain conditions. The Asylums Committee laid stress on the importance of insanity and feeble-mindedness being comprehensively dealt with. At present the ascertainable amount of insanity was obscured by a wide fringe of feeble-mindedness which could not be dealt with adequately under existing powers, and from this fringe lunatics, officially recognized as such, were being recruited constantly. Unless drastic measures were adopted, the only prospect of elimination of future generations of insane and degenerate stock seemed to lie in such measures as suggested by the Royal Commission.

Mentally Defective Children.

On that portion of the recommendations of the Commission dealing with mentally defective school children the Education Committee agreed that a register of mentally defective children should be kept, and thought that the duty of compiling it should fall on the Education Committee, and that some effective means should be devised to prevent duplication or conflict of medical certificates. The committee also agreed that observation centres, or homes for scientific and medical differentiation, should be established, but was of opinion that the provision of intermediate schools for dull or backward children needed careful consideration; perhaps an experimental school should be established in the first instance. As to what authority should be responsible for the education and training of mentally defective children, considerable difference of opinion existed, but the Education Committee had come to a conclusion in agreement with the Royal Commission that the proposed central authority should be responsible for both children and adults.

The Asylums Committee and the Public Control Committee were in general accord with the recommendations of the Commission with regard to criminal mental defectives and inebriates. The Public Control Committee, however, pointed out that if the recommendation that such inebriates as were mentally defective should be dealt with under the proposals of the Commission a heavy additional financial burden would fall upon local authorities.

Effects upon Local Taxation.

"Having to a certain extent located and described the recommendations," the County Council committees went on to deal with their probable effects on local taxation. The Local Government Committee considered both the methods suggested by the Royal Commission for readjusting local expenditure and exchequer contributions to be open to objection. The block grant system would be unfair to London and other urban areas where the higher rateable values necessitated a higher rate of expenditure. The second method—of adding a new grant for new cases to the grants now paid—would complicate still further the system of imperial subventions. The proposal to give for a limited time grants towards the provision of accommodation would be of most assistance to authorities which had been most backward in making proper provision for the mentally defective. It would be more equitable to base the grant on the total accommodation provided.

The Finance Committee pointed out that the extension of control to all mentally defective persons would involve an increase in expenditure, and the financial operations of the proposed statutory committee would be very large. The cost to the Council would come under two heads: (1) Expenditure on services now carried out by other authorities and the Council's own present expenditure; (2) new expenditure involved by carrying out the proposals of the Commission. There would not be an addition presumably to the burdens of the London ratepayer under the first head. Shortly stated, the enlarged scope of operations of the new committee would involve increased expenditure in carrying out the following new duties:

(*a*) Detention and control of defective children after school age.
(*b*) Compilation of register of mentally defectives.
(*c*) Appointment of medical officers and certifying medical practitioners.
(*d*) Detention of mentally defective persons convicted of offences, and control over defective persons who would otherwise frequent the casual wards of workhouses and other shelters.
(*e*) Compulsory provision of accommodation for mentally defective inebriates.

It was impossible to estimate the cost to London of carrying out the whole of these recommendations, but some idea might be gathered from the figures given by the Commissioners for the whole of England and

Wales. They estimated the additional cost at £899 532, or an increase over the present cost of £541,492. The Finance Committee pointed out that saving in administrative expenses, owing to co ordination and economy, would occur as the result of better classification. Under the present system there was considerable pressure on the relatively costly asylum accommodation by reason of the "feeble and decrepit" old people whom the guardians passed on. The exclusion from lunatic asylums of persons who did not need such expensive treatment should result in considerable economy. It was in order to avoid clogging special institutions with unimprovable cases that the Commission proposed the appointment of one authority in each county or county borough to ensure that persons should be passed on to institutions best fitted for them. It might be assumed that some economy to the public purse would ensue from the avoidance of the duplication and even triplication of certificates prior to admission which occurred so frequently under the present system. The Finance Committee rejoiced to see, in the Royal Commission's recommendations, unity of financial administration foreshadowed, thus securing to ratepayers the fullest possible economy. The committee endorsed the objections of the Local Government Committee with regard to the readjustment of cost between local authorities and the Government, and remarked in conclusion that the care and control of the mentally defective was universally recognized as a national rather than a local question, and it was satisfactory to note that the Commission realized and pointed out the need for "substantial financial assistance" from the Exchequer. When the time came it would be imperative for the Council to take steps to ensure that adequate assistance was granted from Imperial funds to meet the cost of carrying out effectively any proposals made as a result of the Commission's report.

The Committee's Recommendations.

The recommendations attached to the joint report of the committees were:

(*a*) That the Council welcomes proposals for the co-ordination of the administration of controlling persons of all ages coming under the term "mentally defective" as defined by the Royal Commission.

(*b*) That no opinion be expressed with regard to the constitution of the proposed Board of Control, but that in the opinion of the Council the control should be vested in a single Government department.

(*c*) That if the Council is required to undertake the work, it should be discharged through a statutory committee of the Council, with the power of co-option, financial control, and the determination of new principles to rest with the Council.

(*d*) That adequate provision should be made for close co-operation with any authority that may be set up hereafter for dealing with the administration of public assistance.

(*e*) That, in the opinion of the Council, the care and control of mentally defective persons is a national service administered locally; and while not agreeing with the methods proposed by the Royal Commission for the allocation of Imperial grants, the Council is of opinion that provision for an appropriate measure of Exchequer assistance should accompany any reorganization or extension of the administrative machinery for dealing with such persons.

(*f*) That a copy of the foregoing resolutions be forwarded to the Government.

Owing to the absence of leading members of the Council in connexion with the parliamentary contests, the consideration of the question was adjourned.

SCHOOL ACCOMMODATION FOR THE MENTALLY DEFECTIVE.

Reporting concurrently on the provision of accommodation for mentally defective children in London, the Education Committee mentioned that in 1908 the Council decided that no additional schools for the mentally defective should be provided pending the issue of the report of the Royal Commission. In the event of the proposals of the Commission becoming law, the special schools for the mentally defective provided by the Council would continue to be carried on, in all probability, by the Council, although the expenditure connected with them would not be charged to the education account. Until it was known what action would be taken in regard to the report of the Commission, the committee considered that the work of the Council should continue substantially on the present lines—that is, that accommodation should be provided to meet immediate needs, but the question of future requirements should remain in abeyance. Following proposals to provide 220 school places for mentally defective children already agreed to, the committee submitted further schemes to provide 610 more places.

The Finance Committee, reporting on these proposals, stated that it had postponed their consideration until the Council's policy in regard to the report of the Royal Commission had been formulated. However, the recommendations of the various committees (see above) were confined to a general approval of the principles of the Commissioners' report, and did not afford much help in the direction of settling the important question of policy to be adopted in meeting the present need for accommodation for mentally defective children in London. It seemed likely that, for some considerable time to come, day-school accommodation will be required for these children, whether or not the education authority continued to be entrusted with their care, and therefore the Finance Committee had given its approval to the Education Committee's proposals. Remembering that special cost twice as much as ordinary school accommodation, the Finance Committee would have advocated, if it were practicable, that some temporary measures should be adopted until the trend of future legislation was ascertained, but the committee was assured that certain difficulties prevented the adoption of this course.

Mr. Leon raised the question whether it was desirable to rescind the Council's decision not to make any further provision for defective children until the whole question had been dealt with by Parliament. He hoped the provision of additional accommodation would be delayed, because the Royal Commission advocated the segregation of these children, and it might be that expenditure on the present lines would be wasted. It was handicapping the normal child to ask the Finance Committee to find a large sum of money for mentally defective children, when the normal child was being crowded in unduly large classes. It would be worth while to wait one or two years—he did not think it would be longer—for the whole question to be settled by Parliament. In his view, it was wrong to spend large sums in educating defective children who, by reason of the education they received, might be more likely to perpetuate their stock.

Mr. Jay, Chairman of the Committee, said he had a great deal of sympathy with Mr. Leon; but as there seemed no prospect of the Government dealing with the question, no other course was open to the Council than to provide for children actually out of school, which was all that was proposed. He feared the expenditure might turn out in the end to be unremunerative and unsatisfactory, but unfortunately the Council could not help that.

The proposals for additional accommodation were then approved.

TREATMENT OF SCHOOL CHILDREN.

At the end of a long sitting of the Education Committee of the London County Council on Wednesday a debate arose on a proposal by a subcommittee to renew for twelve months the agreements for medical treatment of school children with the Belgrave Hospital, the Charing Cross Hospital, the Hospital for Diseases of the Throat, Golden Square; the London Hospital, the Metropolitan Ear, Nose, and Throat Hospital; and St. George's Hospital, Hyde Park Corner. In some cases the numbers to be treated was proposed to be increased, and in others diminished. The subcommittee promised a report shortly on the general working of the present scheme of medical treatment. An amendment was moved by Mr. Bray to renew the agreements for six months only, the suggestion being that the Council might wish after considering the forthcoming report on the whole scheme to resort to school clinics. Mr. Bray also urged that an inquiry should be made into the rumours, which he said were heard constantly, of unsympathetic treat-

ment of the children by the hospitals. Mr. Sanders, a Labour member, said that a movement was on foot amongst working men in opposition to the Saturday and Sunday Hospital Funds as a protest against being forced by the Council to pay for treatment at voluntary institutions to whose funds they contributed already by workshop collections and otherwise. The chairman of the subcommittee, Mr. Anderton, gave an assurance that no complaints had been justified in respect of the six hospitals whose agreements were under consideration, and by a small majority the Committee decided to recommend the Council to renew the agreements for twelve months.

THE SANATORIUM WORK OF THE CHARITY ORGANIZATION SOCIETY.

The Charity Organization Society in London, working through its forty one district committees, sends every year an increasing number of patients to sanatoriums. Last year over 100 people were sent; this year the numbers are larger. The total number sent from 1902, when the work started, to December 31st, 1909, was 385. The applicant requires no recommendation beyond a good chance of recovery, a matter in which character and environment, as well as the condition of his lungs, have to be taken into account; he is examined and passed by a specialist in chest diseases; he goes with the minimum of delay to a sanatorium, where he is kept, as a rule, as long as the doctor wishes him to remain; his family is provided for while he is away, and on his return efforts are made to find him suitable work if his own occupation is unsuitable, or to improve the conditions under which he must work. The following sanatoriums are used by the society: Kelling Sanatorium, Norfolk; Brompton Hospital Sanatorium, Frimley; Maitland Sanatorium, Peppard, Oxon.; Maltings Farm Sanatorium, Essex; and Boxgrove Cottage Sanatorium, Tilehurst. Six permanent beds are kept at Kelling Sanatorium. The average length of stay at the sanatorium is seventeen weeks and four days.

As to the results obtained. All the 385 patients sent away before December 31st, 1909, were looked up early this year; from their own statements their condition was as follows: 50.12 per cent. were working, fit for work, or improved, and 11.42 per cent. were ill; we were informed that 26.49 per cent. were dead, and 11.94 per cent. could not be traced. It should be added that these results are not presented in an unduly favourable light; the figures are a bald statement of fact. It should be added, also, that the present medical referee did not begin his work till 1904; that the figures include cases sent to three sanatoriums which no longer exist; that new methods bring constantly improving results; and that the results in the future are likely to be even better than in the past. The results obtained justify, it is felt, the continuance of the work, and the society appeals for larger financial support. The cost of the sanatorium work is shared by district committees and the central council of the society. The district committee finds 15s. a week towards the cost of the patient's treatment, and has besides to find whatever money may be necessary to keep the family going. The money is raised on each case separately from relations who can help—if any—clergy, employers, local charities, etc. The medical subcommittee finds the balance of the cost of treatment—that is, 10s. to 15s. a week. For this purpose over £900 a year has to be found; of this sum only about £50 is received in regular subscriptions.

Contributions, marked "Sanatorium Fund," may be sent to C. S. Loch, at Denison House, 296, Vauxhall Bridge Road, S.W., or to Messrs. Coutts and Co., Strand, W.C.

MANCHESTER AND DISTRICT.

THE NORTHERN COUNTIES HOSPITAL FOR INCURABLES.

THIS hospital occupies a unique position among the hospitals of Manchester, inasmuch as it deals with a class of patients who have, as a rule, been regarded by the other hospitals as incurable, but whose condition and symptoms may often be considerably relieved by proper nursing and medical attendance. There are two institutions connected with the hospital: one at Mauldeth, near Manchester, which at present has 72 patients—28 men and 44 women—and the other at Walmersley, which has 46 women patients, a total of 118. Of these there are altogether 120 free patients, the remainder paying as they can afford. The annual report shows that during the past year there were 16 deaths and 3 removals, and that the net receipts on current account was £6,240 and the expenditure £6 646, which, after transferring a sum from legacy and investment account, leaves a debit balance of £335. There has been a fairly liberal response to the special appeal for fresh donations or the deficit would have been much greater. Among the donations are included £1,000 from Mr. B. C. Brierley of Rochdale, and £1,000 from the executors of the late E. S. Massey. The legacies include a sum of £2,250 from the late D. S. Jackson and £1,414 from the late Miss E. Gauthorpe, and amount in all to £4,899. At the annual meeting resolutions were passed adopting the annual report and thanking the ladies' committee and the officers for their services.

SICK POOR NURSING IN MANCHESTER.

There is no institution in Manchester, said the Lord Mayor at the annual meeting, that ought to appeal more to philanthropic people than the Manchester and Salford Sick Poor and Private Nursing Institution. In the forty-fifth annual report, read by Dr. Arthur Helme, the honorary secretary, it was stated that the district nursing staff now numbers 73 nurses, an increase of 2 during the year, and the total work of the nurses was represented by more than a quarter of a million visits to 9,798 patients—that is, about 5,000 visits a week. The serious character of the financial position was again mentioned. The grants required by the separate districts amounted to £600 more than they did three years ago, and the annual income from subscriptions was less rather than more. In response to the special appeal for funds, £500 was mentioned as received in the last annual report, and a further sum of £271 had since then been received, as well as an anonymous donation of £100 for the Harpurhey and Bradford Homes. The private nursing department had during the year brought a profit of £183. The Memorial Nursing Home had by the generosity of Miss Gaskell been enlarged to accommodate 16 patients, and since its reopening in March 120 patients had been admitted, of which 112 were surgical cases. The report was adopted, and several minor alterations in the rules were made. After the meeting a sale of work was opened by Lady Donner in aid of the funds of the institution. Lady Donner said it was hardly creditable to Manchester and Salford that it should be necessary to have a sale of work to meet expenses for such a useful and beneficial institution. At the present time there was urgent need for still more nurses, and yet the committee was faced with the possibility that instead of increasing its staff of nurses it might be compelled to restrict their work.

There is no doubt that medical men are often very considerably assisted in attending the working classes by the nurses of this institution, and the convenience of being able to obtain freely nursing aid for their patients may cause some danger at times lest the institution should be abused by patients who could well afford to pay something for nursing attendance. Every possible care is taken by the authorities to prevent anything like unqualified medical practice by the nurses themselves, who only attend under medical supervision, and it is believed that there is a practical absence of those attempts by nurses to supplant medical men which seem to be so common in some parts of the country.

A "CLEAN SHAVE" FROM A MEDICAL STANDPOINT.

The example set by the Salford Hairdressers' Association in appointing a special medical officer to give the benefit of his knowledge to members of the association, not only when legal cases arise, but as to the

general antiseptic precautions to be used by hairdressers, has been followed in various parts of the country. The interest taken in the use of aseptic and antiseptic methods has no doubt been stimulated by actions for damages brought against hairdressers. In some cases claims for damages made on account of skin diseases said to have been caused by foul shaves have little ground in fact, and in most cases there must be the greatest difficulty in proving that a shave was the direct cause of disease apart from any pre-existing causes present on the customer's face. The possibility, however, is such that the hairdressers' associations throughout the country are evidently roused to the necessity of using more scientific methods, and in several towns special courses of lectures for hairdressers are now given at the technical schools. One of the functions of the medical advisers appointed is to give occasional lectures, and last week Dr. Wolstenholme, medical adviser to the Salford Hairdressers' Association, gave a lecture to the members, in which he dealt with what is known as a "clean shave." After summarizing a previous lecture in which the structure of the skin had been described, Dr. Wolstenholme said that by a "clean shave" he meant one that not only made a person look clean, but which left no disease behind it, and to this end the hands and all the appliances of the barber, as well as the face of the customer, must be free from germs that cause disease. He next gave a popular account of the general characters of bacteria, and pointed out that most of the diseases of special importance to hairdressers were due to germs which are always to be found on the skin, lips, hands, and mouth of both the hairdresser and the customer, and that to cause local disease there must be some abrasion or some irritation of the skin. It was also probable that the health of the person infected must be in some peculiar condition. The germs might be carried by any of the appliances used by the barber, such as towels, brushes, the fingers used in lathering, the razor, sponges, etc. He understood that the Bristol Hairdressers' Association had made arrangements with the university authorities to make a full bacteriological inquiry to find out which of the barber's implements it was that carried the infection. In order to destroy the germs, he pointed out that either heat or antiseptics might be used, but that both must be of considerable strength and used for a sufficient length of time. Probably the best plan for all the instruments was to boil them for at least twenty minutes, and some inexpensive arrangement for use with a gas burner should be obtained. Towels should only be used once, and then washed and thoroughly boiled. The razor should be wiped, not on bits of newspaper, but on fresh pieces off a sanitary roll, and it should be sterilized by boiling for at least five minutes. A number of brushes and sponges should be kept, boiled each time after use, and then kept in a solution of 1 in 20 carbolic acid or 1 in 1,000 perchloride of mercury, and rinsed out in boiling water before use. Some useful hints were then given as to the fitting up of a shop with a view to antiseptic precautions. Particular stress was laid on the fact that after a slight abrasion customers might often infect themselves by rubbing their faces with a dirty hand or handkerchief. As a styptic for a cut there was nothing better for general use than calcined alum applied on a piece of sterilized cotton-wool. As far as ringworm was concerned, for practical purposes the barbers should act as if it were possible for ringworm of the chin to be caught from ringworm of the head or body. Combs should be soaked in 1 in 20 carbolic acid and rinsed before use, while scissors and clippers should first be taken to pieces and then sterilized by boiling. With regard to the "septads" which the Federation advised to be used, he had a good idea as to what they contained, but thought that medical advisers should be informed in confidence what the exact strength of the ingredients was. Referring to prosecutions against hairdressers, in every case it was absolutely necessary for the barber to be able to prove that he had taken every possible precaution in sterilizing his implements and using antiseptics to prevent the possible spread of disease. At the close of the lecture a hearty vote of thanks was accorded to Dr. Wolstenholme for his useful and practical address.

BIRMINGHAM.

General Medical Practitioners' Union.

The annual smoking concert arranged by the Birmingham and District General Medical Practitioners' Union was held at the Midland Hotel, Birmingham, on December 2nd, and, in spite of wretched weather and several other social and political functions taking place the same night, attracted a large gathering. An excellent programme had been arranged, and full justice was done to it by the following ladies and gentlemen: Madame Marie Nock (songs at the piano), Miss Lillie Aston (soprano), Mr. Leslie Bartleet (pianist), Mr. Leonard Brown (tenor), Mr. Douglas Wakefield (baritone), Mr. Ernest Jones (banjo recitals), and Mr. Walter Newman (humorous selections).

While all turns were of a most attractive nature, special mention must be made of "The G.P.," sung by Madame Marie Nock, and the character sketch of Mr. Walter Newman, in which he was able to introduce some topical allusions which evidently appealed to the audience.

During an interval in the proceedings Dr. Langley Browne (president of the union), who occupied the chair, presented Dr. James Neal with an illuminated address, accompanied by a cabinet of table plate, which had been subscribed to by over 100 medical men practising in the district. Prefacing his remarks by congratulating the union upon its continued success, Dr. Langley Browne proceeded to ascribe this largely to the energies of Dr. Neal, who had been secretary of the union since its formation eleven years ago. Nor was this all that Dr. Neal had done for the profession. He had been a member of the Executive Committee of the Central Division of the British Medical Association since Divisions were formed, holding the office of Chairman for twelve months. He was now the Representative of that Division, and had recently been elected a member of the Central Ethical Committee of the Association. He had been on the committee of the Birmingham Medical Institute for many years and was a vice-president. Dr. Neal's constant endeavours had been directed towards securing adequate recognition for the general practitioner, and in doing so he had devoted an enormous amount of time to the uphill task of medical reform. He asked Dr. Neal to accept the address and presentation as a small token of the regard in which all branches of the profession held him, and of the appreciation they felt at his efforts.

Mr. George Heaton associated himself with the remarks that had fallen from Dr. Langley Browne. It was, he said, some twenty years ago that he and Dr. Neal had first been associated at the old General Hospital in Birmingham, and the friendship then formed had never been interrupted. He could not understand how Dr. Neal got through all the work he did, but supposed he was another example of the fact that the busiest man is always able to find some spare time. He considered that the work Dr. Neal did for all branches of the profession in the many offices he held was of incalculable benefit to it, and he hoped that the presentation made would convince him that his medical friends and colleagues so regarded it.

Dr. Neal, whose rising was greeted with prolonged applause, said he regarded it as a very high honour and distinction to receive such a token of appreciation from his medical friends and colleagues, and it was to him the greatest possible pleasure to have such a substantial assurance that the work he had done in the interest of the profession had met with such genuine approbation. He could not help feeling, however, that to some extent the importance of his work had been over-estimated, for although he had always done his utmost to improve the organization and status of the general practitioner, and to promote good feeling

and fair dealing between the different branches of the profession, still he realized that his efforts would have been of little value except for the able assistance and loyal co-operation of such men as Dr. Brauson, Dr. Lydall, Dr. Parsey, and many others. This occasion, he said, was a red-letter day in his life, and he desired to thank most heartily all who had contributed to such a generous recognition of his services. He would especially thank Dr. Langley Browne and Mr. George Heaton for the very kind way in which they had made the presentation, and for their very flattering remarks. But he felt that no words could adequately express his gratitude. He would only assure them that the recollection of that evening would always be retained in his memory, and that the address and presentation would always be his most valued possessions.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

ROYAL INSTITUTE OF PUBLIC HEALTH.

A PUBLIC meeting was held in the Mansion House, Dublin, on November 30th, for the purpose of appointing a committee to make arrangements for the visit of the Sanitary Congress of the Royal Institute of Public Health next summer. The Lord Mayor, who presided, said that the Congress would find in the slums of Dublin and in the tenement system sufficient material for consideration, and he deplored the fact that the Corporation were invested with such insufficient power to deal with slum property. On the motion of Dr. McGuiness, those present were formed into a general committee to make arrangements for the meeting, and it was also resolved that the use of the halls of Trinity College should be asked for the purpose of the Congress, and that the Right Hon. Viscount Iveagh should be requested to act as President.

A "NERVE SPECIALIST."

Recently, at a special court in Granard, a Mr. Fenley St. Clair, an Australian, was brought up on remand charged with obtaining money under false pretences from Thomas Kiernan and others by falsely representing himself as a tooth and nerve specialist. On the evidence of Mr. Kiernan the accused pretended to extract nine nerves from his (Kiernan's) teeth, and had been paid 7s. 6d. for so doing. The case had been remanded from the petty sessions on the application of the Crown, to permit the production of expert evidence as to the alleged nerves. Dr. Edmund Tapper, to whom the bottles containing the supposed nerves had been submitted, deposed that as a result of a chemical and microscopical examination he had found no trace of nerve structure. The accused was returned for trial, and subsequently at the assizes produced a paper which he said showed that he was qualified as a dentist in New South Wales. The case was finally dismissed on the accused giving his own recognizances in £20 to come up for judgement when called upon.

ASSAULT ON A MEDICAL MAN.

On November 30th a summons was heard at the Southern Police Court, Dublin, at the instance of Sir William Smyly, against a lady who had assaulted him in the street. The complainant stated that on the previous Sunday the defendant met him and began to abuse and curse him. Later she struck both himself and his son. The defendant had threatened him on previous occasions. It appeared that the defendant had been in the Adelaide Hospital under Sir William Smyly's care, and had, probably as a result of the state of her health, taken exception to her treatment there. An apology was tendered by her solicitor on the defendant's behalf, and a fine of 40s., with the alternative of a month's imprisonment, was imposed by the magistrate. Sir William Smyly is to be congratulated on his prompt action in relation to this disagreeable incident.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

GLASGOW.

Proposed Notification of Infantile Ophthalmia.

DR. JAMES ERSKINE, one of the Town Councillors of the city, has given notice that he will move the following motion in the Town Council:

> That with a view to preventing blindness resulting from infantile ophthalmia, the Corporation, as local authority for the City and Royal Burgh of Glasgow under the Infectious Disease (Notification) Act, take the necessary procedure for having that affection included in the list of diseases compulsorily notifiable within their district.

Treatment of Phthisis a Municipal Duty.

At the thirty-ninth annual meeting of the Orphan Homes and Consumption Sanatoriums of Scotland held in Glasgow on November 30th, ex-Baillie J. P. Maclay, in submitting the report for the year, said the time had come when the Corporation of Glasgow ought to do something in connexion with the treatment of consumption. More slums were being made in Glasgow than were being taken away from it, and so long as that went on he did not think that consumption sanatoriums could expect the demands on them to become less. The problem in Glasgow should be properly tackled at once. Mr. Cameron Corbett, who also spoke, said that from every point of view the treatment of consumption ought to be a municipal work. If a man happened to be a pauper lunatic every scientific remedy was placed at his disposal, but if he was an artisan upon whose life the interests of his family, and in a measure the welfare of the community, depended, he could not receive the treatment which phthisis required. Sanatoriums were required for cases admitting of cure, and hospitals for the more advanced cases, and that was a burden which ought to be borne by the community.

Medical History of Glasgow.

A most interesting lecture was delivered in Glasgow on November 29th, by Dr. James Erskine, on the medical history of the city. The lecturer sketched the origin and development of hospital and medical treatment from pre-Reformation times to the present day. He treated the subject under the heads of Parochial, Municipal, and Voluntary provision, and showed that with the exception of the charities, medical assistance was already supported by public assessment. The lecture was illustrated by lantern slides and diagrams.

Eastpark Home for Infirm Children.

The Lord Provost of Glasgow has interested himself in the movement to provide a cottage home in the country in conjunction with Eastpark Home, and at a drawing-room meeting in the City Chambers, on November 29th, the project had a splendid send-off. Eastpark Home was established in 1874, and exists for infirm children who are unsuitable for the Sick Children's Hospital, but not incurable. It has rendered incalculable service in alleviating and curing hundreds of children belonging to the poorer classes, who were afflicted with serious physical infirmities and diseases, and it is the only institution of its kind in Glasgow. For such cases a country cottage home is urgently needed to relieve the pressure on the accommodation in the existing institution, and afford more healthful surroundings for the treatment of tuberculous and other similar cases. A bazaar will be held in October next, and in moving a resolution commending it for support, Sir George Beatson said the home was taking its share in work for the welfare of the child life of the nation. At the same time a good deal of the work was palliating mischief which had already been done. Many of the cases were the results of remediable causes—young, hasty, ill-considered marriages, defective parental health, intemperance, etc. The teaching of social reformers who held that environment was everything in the case of individuals, was not the best

guidance. Heredity must also be taken into consideration. Social legislation of the future should be based on the fact that children had a prescriptive right to be born healthy in body and in mind.

Treatment of the Feeble-minded.

Dr. R. D. Clarkson, Larbert, delivered a lecture at Glasgow University on December 2nd on the present treatment of the feeble-minded. Heredity, he said, was a most important influence in bringing about feebleness of mind, but a great many of the people who were stated to be hereditarily feeble-minded went wrong not so much from anything inherited as from the manner in which their feeble-minded parents brought them up. They found just as many feeble-minded in the wealthy parts of towns as in the slums, and rather more in the country than in towns. He urged that there should be some authority to look after the feeble-minded children of the well-to-do. He dealt next with the treatment of the feeble-minded by one or other of the four authorities—the school board, the Lunacy Commission, the Prison Commission, and the parish council—and said that nearly every one seemed to be agreed that if the feeble-minded were to be taken proper care of two main principles must be followed—unity of control and continuity of policy. The present system was utterly indefensible, costing a vast amount of money and doing incalculable damage to the next generation. The feeble-minded ought to be prevented from having children, and that could be done only by segregation. He urged that the recommendations of the Royal Commission which reported in 1908 should be carried on to the Statute Book as soon as possible.

Old time Public Health Administration.

Dr. Hugh A. McLean, whose antiquarian researches in the domain of medicine have already been referred to in the JOURNAL, recently delivered a lecture in the Trades Hall, Glasgow, on A Review of the Public Health Administration in Glasgow. He quoted the opinions of early visitors to Glasgow, showing how they united in praising the natural beauty of the city and the salubrity of its atmosphere. A series of extracts from the old burgh records showed the civic treatment of certain diseases. In 1574 protective measures were in vogue against plague, and the measures for its treatment were, in theory, not improved upon even to day. These included compulsory notification of all sickness, house to house visitation, districts mapped out and quartermasters (sanitary inspectors) appointed to watch each district, compulsory removal of rich and poor alike to the isolation camp on the town's moor with the corollary of treatment and upkeep at the city's expense, the appointment of a superintendent to manage the camp and of a councillor (in rotation) to visit the camp twice or thrice weekly, and the cleansing of infected houses and clothes and removal in enclosed carts of infected filth. The lecturer dealt also with leprosy, describing the old leper hospital and the regulations imposed upon all sufferers from this disease. By means of coloured diagrams he contrasted the health of the city in 1775 and 1885. In 1775 the general death-rate was 31.25 per 1,000, in 1885 it was 24.6 per 1,000, and last year 18 per 1,000. Deaths from zymotic diseases in 1775 were 39.75 per cent.; in 1885 the percentage was 16.2. The percentage of deaths from respiratory diseases, however, rose from 19.35 in 1775 to 35.21 in 1885, the increase being due to the increased density of the population. The rise and progress of the industrial development of the city was sketched, the great increase in population, and how this, in conjunction with the absence of water supply and the filthy habits of the people, brought repeated epidemics of typhus and cholera. The former treatment of these scourges was reviewed, the stirring of the civic conscience, the appointment of a "committee of nuisances," and eventually of a medical officer of health. Cholera disappeared when the city ceased to use for domestic purposes the sewage-polluted water of the river and started to use Loch Katrine water. For typhus there was no regular line of treatment, but only the panic treatment of each epidemic as it occurred. Until the people ceased to tolerate filth and overcrowding no satisfactory treatment could be adopted. This condition was contrasted with the condition to-day, when the weekly death-rate was at times as low as 12 per 1,000. The lecturer sketched the gradual development of the public health organization, the operations of the City Improvement Trust, the opening of the first municipal fever hospital, and the recent movements for the purification of the atmosphere. In concluding, he said that the nearer sanitary perfection was approached, and all that this term implied, the more secure became the foundation on which we rested, morally, physically, socially, and nationally.

THE POSITION OF WOMEN: ACTUAL AND IDEAL.

The sixth of a series of lectures on this subject was given in Edinburgh on Monday, November 28th, by Dr. T. S. Clouston, whose subject was The Psychological Dangers to Women in Modern Social Development. Dr. Byrom Bramwell presided.

There were, the lecturer said, no definite means of testing the intensity of the emotions. Tests showed that bodily sensation was somewhat less in woman than in man. If the intensity of the emotions was tried by its expression in poetry, which was the literature of feeling, man had given greater proof of a greater depth of feeling than woman, but that might be because his power of literary expression had been more developed. Man, it was said, had more power of control of the outward expression of emotion than woman. If true, that had many social aspects and some dangers. Woman educated by modern standards was gradually acquiring more power of controlling her emotions, up to a certain point at least, and that could not fail to have a steadying effect on woman. It was when they came to the emotions and actions connected with the maternal instinct that the real crux as to the effects of modern social developments on the sex was reached. The great question was whether there was anything in modern social developments that did or would be likely to change, lessen, or destroy the maternal instinct. Ominous ideas were abroad on the subject. Sir James Crichton-Browne had boldly stated the other day that professional women, namely, those who had devoted themselves during adolescence to hard study and had attained the highest culture that modern education could give, were having few children, and did not want to have many. Statistics seemed to bear that out. If it were true, there was something radically wrong with the culture of young women, or with their mode of acquiring it. Far better for them to have health and ignorance than that. Thirty years ago he said to his audience at the Philosophical Institution that "there is no time nor place of repentance provided by Nature for some of the sins of the schoolmaster," and at the same he asked "Why should we spoil a good mother by making a bad grammarian?" Even the slightest diminution of the maternal instinct was dangerous. The ideals that would exalt culture above motherhood were suicidal and should be abandoned. On the other hand, mothers of high brain power were as much needed for the advancing races as fathers—rather more so in fact. Choices might be made, but they would have to be on the lines of evolution. The problem was a very difficult one. He thought enough was now known to show that to subject 100 girls of more than average ability to the stress of modern study and competitive examinations was attended with the risks of atrophied maternal instincts, loss of feminity, and a lessened development of "woman's ways" in a considerable number of the 100 who might, but for the conditions under which they passed their adolescence, have possessed these gifts. The delicate graces and the subtle feminities that attracted the other sex were sometimes not conserved or stimulated in the strenuous life of the student. They were, in fact, frequently neglected, or even held as despicable and unworthy. The social instincts were sharper in woman than in man. He thought the higher education in some ways lessened the craving and necessity

for social intercourse. He believed that woman was frequently not talked of, and even not treated, by men with that form of practical idealism which was the basis of chivalry, and that some matters were now openly discussed by women in much-read books and in personal intercourse which would have shocked a modest woman of fifty years ago. Both tendencies were absolutely evil. The special qualities of man and woman were complementary, and were both needed for the evolution of the ideal society of the future. Changes should be gone about in a scientific spirit, and the equality of the sexes should be limited to opportunity and social position, and should not be attempted as to faculty and instinct.

Radium and X Rays.

At a meeting of the Royal Scottish Society of Arts at Edinburgh on November 28th, Dr. Dawson Turner read a paper on a comparison between the physical and physiological properties of x rays and radium rays. In their nature and mode of production, these rays, he said, were entirely different. The x rays were regarded as consisting of short pulsations of the ether produced by the sudden stoppage of the cathode stream. For their production powerful electric apparatus and highly exhausted vacuum tubes were required. Radium gave off spontaneously and continuously three kinds of rays and an emanation of gas. The alpha rays of radium were projectiles fired out by the radium as though it were a perpetual Maxim gun. A grain of radium expelled each second about ten thousand of these particles, which were undoubtedly composed of the element helium. The beta rays were also projectiles which radium was shooting in every direction, but they were much smaller than the alpha particles, and they had about ten times the initial velocity. Their speed was so great that they would go round the world six or seven times while one snapped one's fingers. They consisted of electrons, or disembodied units, of negative electricity. The gamma rays might consist of pulses in the ether, or of neutral particles of electricity. The emanation was of a gas of an inactive nature belonging to the argon group. In many of their physical properties the x rays and radium rays resembled each other. They both produced ionic, fluorescent, and photographic effects; but radium, in addition, produced both light and heat; it decomposed water, oxidized metals, and disintegrated cotton, wool, paper, and indiarubber. The heating effect was very great, and it led Professor Rutherford to calculate that a gram of radium contained a store of energy sufficient to raise 500 tons to a height of one mile above the earth's surface. An important physical difference was found in their relative penetrative power and in their magnetic deflectibility. The x rays had more penetrative power than the alpha and beta rays, but decidedly less than the gamma rays; the x rays could be used to take radiographs of the bones of the living body, while radium rays could not. It was remarkable that the x rays, which were the first to be discovered, should be endowed with exactly the right degree of penetrative power to enable us to see shadows of our bones. Had it not been for this singular property they would hardly have excited the same amount of public attention. It was difficult to institute a comparison between the physiological properties of x rays and radium rays, because the subject had not yet been thoroughly worked out. Both produced burns if applied in a sufficient dose to the skin. X rays had a selective action on the bones and retarded their growth. Radium rays more particularly attacked nervous tissue; the central nervous system and the spinal cord were very susceptible. Small animals exposed to the emanations of radium were seized in a few hours with convulsions and paralysis, and soon died. Minute haemorrhages were always found in the brain and cord with degeneration of the blood vessels. X rays could arrest the development of the brain of a young rabbit. They seemed to have little or no effect on bacteria, but radium rays and emanation were markedly destructive. Anthrax, typhoid, comma, and diphtheria bacilli were rapidly killed. Even snake venom was found by Phisalix to lose its toxic nature under the influence of radium emanation. It was possible that mud baths, which had for a long time been in vogue at certain health resorts, owed their beneficial results to the presence of traces of radio-active substances. The same might be said of certain mineral waters.

Dunfermline and Rosyth.

The Corporation of Dunfermline has lodged parliamentary plans regarding the proposed new drainage area and extension of the town. Two years ago the problem of draining the area between Dunfermline and the Firth of Forth was under consideration, as in this area the new town in connexion with Rosyth dockyard will be raised. At the instigation of the Dunfermline authorities a joint committee of the various parties interested was formed, and a comprehensive drainage scheme was formulated with an outfall above North Queensferry. After prolonged negotiation as to the possibilities of joint action, Dunfermline now proposes to assume sole responsibility for the execution of the scheme, and at the same time desires to be entrusted with the administration of the area to be drained. The Corporation has, therefore, given notice of its intention to promote a provisional order, having as its object the extension of the burgh boundaries to include Rosyth district, and the authorization of the main drainage scheme for the burgh and extended area. The estimated cost of the drainage scheme is about £120,000.

The Milk Supply of Edinburgh.

Edinburgh and Leith Medical Practitioners' Association has unanimously passed a resolution:

> That much of the milk supplied in Edinburgh is unsatisfactory in quality, and that it is necessary that there should be an adequate inspection and supervision of it.

In order to add to the weight of the resolution when it is sent to the Town Council, postcards have been sent out so that all the members of the association may give their opinion.

Royal Victoria Hospital for Consumptives, Edinburgh.

On December 2nd the patients in the Royal Victoria Hospital for Consumption made a presentation of two portraits to the hospital, one of Queen Victoria and one of the late King Edward. Sir Alexander Christison presided and Mr. J. A. Scott made the presentation on behalf of the patients. The Chairman said it was gratifying to know the kindly feeling made manifest by this gift, and he and his colleagues greatly appreciated the presentation.

Special Correspondence.

PARIS.

"606."—*A New Neurosis.*

Pythagoras, Philolaus, and Archytas all preached the wonderful virtue of numbers. The astrologers of Chaldea—*Babylonios tentaris numeros*, as Horace says—read the secret of our destinies in different combinations of figures. It must be admitted, even by those who are not prepared to go so far as to look upon them as the principles of human affairs, that numbers exercise a strange, almost mysterious, influence on the mind of man—an influence that imaginative literature knows how to put to use. At present, as every one knows, one number has recently done a very bad turn to the eminent Professor Ehrlich in France. Of course, I speak of number "606." At first sight this appears harmless enough, and Ehrlich could not foresee the disastrous consequences of giving this name to his recent discovery, "diamidoarsenobenzol," though his attention should have been aroused by this fact, that the name of his Japanese collaborator, Hata, never succeeded in

getting itself substituted in place of "606" as a designation for this product, the chemical name of which was beyond the ordinary powers of human articulation. This fact alone proves a strange power of resistance; but it was not until its fame crossed the French frontier that number "606" showed its full malignity. The discovery for which it stood all at once assumed a romantic aspect which caused the world of savants to take up arms, and when this number appeared at the head of columns in such papers as *Le Temps*, *Le Journal*, or *Le Matin*, a shudder of horror ran through the whole world of syphilitics. An unreasoning distrust followed the first outburst of legitimate enthusiasm, and people began to note that these mysterious figures were quite cabalistic. In the first place, why was it in its triad of figures so extraordinarily symmetrical? Why did it give itself the appearance of wishing to symbolize by the middle zero the annihilation of the pale *Treponema* held between the two sixes as between two policemen? Why did it recall the sensational "813," which Arsène Lupin, gentleman-burglar, had given as the title of his last exploits? Had we not already read of the "628-E8" of that great ironist, Mirbeau? Did there not remain to us the recollection of the *dossier* "113" of Gaboriau, forerunner of authors of detective fiction? Hum! All that was very literary, and a great surgeon, inventor of two or three serums and vaccines, on the ground of certain exaggerated or inaccurate statements in the lay press, sharpened his pen, already as keen as a scalpel, and took the field. Happily he came back before he had done any mischief. The high scientific probity of Professor Ehrlich, and the indisputable value of his work, the reports of facts by numerous conscientious clinicians, put things in their right light. The form in which the precious discovery was promulgated was forgotten, and the medical press reclaimed what belonged to it from the daily newspapers. The study of the new remedy was pursued with the proper calm, and dioxydiamidoarsenobenzol will soon take its place beside older remedies such as mercury, atoxyl, hectine, with its own efficacy, and its special indications. Thanks to it chemiotherapy, which has almost specialized itself on the territory of syphilis, has just made a step in advance. Serumtherapy must not lag behind, and it will be able to vindicate itself. Nevertheless, it must be emphasized that a medical discovery has nothing to gain from premature publicity, that scientific men must more and more distrust the professional indiscretion of newspapers which, owing to the parliamentary recess, are short of copy, and that the right appreciation of their work runs the risk of being wrongly influenced by sensational headlines. To conquer the reason it is dangerous to use even involuntarily the same methods that are employed to seduce the imagination.

As a triumph has been scored over one disease, it was but fair that some compensation should be made to medicine. A new one has, therefore, been invented in which again, strange to say, we discover the influence of numbers. This is the neurosis of telephonists. This might have been foreseen. To place women, who, as is well known, have not that mathematical spirit spoken of by Pascal, in presence of inert and unsuggestive arithmetical abstractions, to shake up their sensibility by sharp ringings, and to make their dainty dreams constantly come into collision with the obsession and brutality of figures, and not even figures—simple numbers—is deliberately to put them in the way of nervous breakdown. Is there, however, any ground for making a new nosological species—telephonitis or telephonosis? Unquestionably not. The telephone does not imprint a specific character on the affection. It is simply a new cause of nervous disorders, such as science brings into being with almost every one of its applications. But this new etiological factor is very powerful, inasmuch as it may cause hysteria, neurasthenia, tachycardia, insomnia, or, on the other hand, a kind of sleeping sickness, in which, according to Dr. Thébault, the unhappy girls sleep on their feet, lose the power of distinguishing their "jacks," and place their pegs at haphazard for the greater satisfaction of the subscriber, who is storming at the other end of the wire. They are fortunate if he is a doctor, who, knowing such pathological contingencies, philosophically picks up his receivers saying, "I will not insist further. I know what is the matter. It is another case of allopathy." Here the remedy is clearly indicated, and one must not think of suggesting to the poor overworked telephonist a medicament ticketed with a number. What is needed is a cure of "denumeration." It is necessary for the patient to live in the open air, in the quietest and most retired part of the country, preferably in a small island not reached by the electric wire and disdained even by the hertzian waves. Moreover, there seems to be little doubt that with the progress of civilization we shall soon be obliged, in order to re establish the equilibrium of our sensibility torn to pieces from all sides, to go every year through a season of barbarism. In vain will infectious diseases have disappeared. Our nerves, brought in contact with vibrations and waves from which Nature had carefully isolated us, will be the prey of new tortures. This will doubtless take place about the year two thousand six hundred . . . Great Heaven! I was on the point of ending with a number!

Correspondence.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—I am sorry again to have to traverse Dr. Buist's statements. Last week it was his logic which was at fault; this week it is his mathematics. He says in his letter in the BRITISH MEDICAL JOURNAL of December 3rd, 1910:

> On Dr. Fothergill's figure of 10s. per head I had an idea this was Dr. Taylor's figure the income of a doctor who was responsible for the domiciliary treatment of an average parcel of 1,500 members of the population would be £750, and if he were popular enough to draw his patients from a parcel of 2,000 he would have exactly £1,000 a year, and would know that it was secure as long as his personal relations to his patients were satisfactory. Possibly some members of the profession would be willing to give their whole time at this rate.

I have very little doubt that a good many of the profession might be induced to adopt contract practice and put up with all its drawbacks for a guaranteed income of £1,000 a year. But there are one or two rather serious errors in the calculation. First, there are between 30,000 and 40,000 practitioners in this country, and if each of these is to have 1,500 to 2,000 clients, as Dr. Buist calculates, $30,000 \times 1,500 = 45,000,000$; $40\,000 \times 2,000 = 80,000,000$. I understand Mr. Lloyd George is only providing for 15,000,000; at all events, the total population of the country is only 45,000,000. So evidently Dr. Buist is considerably out in his calculation.

But, again, does Dr. Buist suggest that we shall ever get 10s. per head *all round?* Some of the 15 millions to receive sickness benefits will be women and children (who will get considerably more attendance than the men), and does he suggest that a man with a wife and twelve children will have £7 a year paid for medical attendance alone for himself and family? I very much doubt it, and I think if Dr. Buist will just consider such a case he will also see that he is again making an unwarrantable assumption. I make it that 10s. per head on 15,000,000 divided amongst 40,000 practitioners gives £187 10s., which is a very different figure from Dr. Buist's; but as we should certainly not get 10s. per head for every woman and child, the real figure would be very much below this. We must really ask Dr. Buist to be a little more careful when he undertakes to instruct us.

I do not base my opposition to contract practice, however, merely on the *amount* of remuneration; it is on the *principle* of remuneration. I do not use as an argument that we shall make more by one method or the other; but I do say, and as far as I can see everyone agrees with me, that payment per attendance, with free choice on both sides, is the fairer and juster method, that it preserves our own and our patients' independence, and favours a higher standard of practice all round.

I claim that it *is in the interests of the community even more than of the medical profession* that the principle of

payment according to work done—that is, per attendance—should be adopted in any scheme of State sickness and invalidity insurance. I therefore ask the members of the Special Poor Law Committee to consider very seriously before they send down to the Divisions with their imprimatur a scheme of contract practice to which they are opposed in principle.

Also I would ask, in common fairness, that the alternative scheme of payment per attendance should also be submitted to the Divisions. I would finally urge that no deputation should wait upon the Chancellor until the whole question has been fairly considered by the Divisions—if possible at Divisional meetings, to which non-members of the Association should be invited—and until a decision has been arrived at by the rank and file of the profession.

I agree that the matter is urgent, but there is plenty of time for this to be done, special meetings being called if necessary, but once we are committed to a contract scheme it will not be easy to shake off our fetters.—I am, etc,

Bowdon, Dec. 3rd. P. R. COOPER.

SIR,—As it has been suggested that "Representatives are wedded to payment *per capita*," and as the discussion is important, perhaps you will permit me to express my views as briefly as may be.

Dr. Buist deals with matters which primarily and chiefly concern the Government; and as the Government will doubtless be found capable of managing its own affairs without our assistance, I shall not offer any opinion upon the important points which he has raised.

But we can, I think, render the Government some assistance in its attempt to provide efficient medical attendance on the sick poor by pointing out clearly to it the conditions under which efficient work is most likely to be done. While I do not mean to say that all club work is bad and all private practice is good, I challenge serious contradiction when I assert that club patients, as a class, are not so carefully treated as private patients.

The Government proposes to deal with the medical treatment of some 15,000,000 of people, a large number of whom are at present dealt with in private practice. If payment for attendance on these people is made on any system of capitation, it means that a large number of persons now treated as private patients will be transferred to the class of club patients. I think that will be bad for them and, perhaps, worse for us. Worse for us—not from a pecuniary standpoint.

On that point I have no data upon which to form an opinion; but worse for us is the temptation it affords for more slipshod work and consequent depreciation in our own self-respect. It is quite true that the mode of payment will not make a man a scientific enthusiast; neither will it make him honest and conscientious. These things cannot be purchased, but time and care can. It requires scientific enthusiasm *plus* time and care, and perhaps some other things, to make an ideal doctor; it requires a moderate amount of science *plus* time and care to make a reasonably efficient practitioner; and I should imagine that is the type of man the Government want.

Now it is admitted that more time and care will be given if payment is made for work done. Indeed, it has been alleged that more attendances will be given under this system of payment than are required—that some men, for the purpose merely of making money, will give more time to their patients than therapeutic considerations alone would necessitate. That is probably true. It is equally true, however, that men who are inspired entirely by commercial ideals will give under a capitation system of payment the minimum of time and care which will secure the retention of their emoluments.

If there is a danger that commercial practitioners will cheat the Government out of money, can this type of man be trusted not to cheat his patients out of the time and care to which they are entitled if he be paid a lump sum? I think all who are acquainted with the exacting nature of efficient medical work will reply in the negative. If this reply be correct—and I submit its correctness is not open to reasonable doubt—it follows that if some of our colleagues be cheats, and if the Government desire a more efficient medical attendance upon the sick poor than obtains at present, they will have practically no option but to pay for work done. [The analogy between an efficient whole-time public health service and whole-time contract practice is, I think, invalid, owing to the fact that the conditions of work are so radically different.] It will remain for the Government to take such measures as may be necessary to safeguard the public purse against dishonest practitioners, who, after all, are surely a very small minority of the profession.

With regard to men who are influenced by scientific rather than purely commercialc oneiderations, it is certain, while human nature is what it is, that payment for work done will supply a stimulus in periods of disappointment and weariness; it will undoubtedly be a factor (not the determining factor, but still a factor) in getting the best out of a man of the best type.

I think, therefore, that in the interest of efficient medical work, and consequently in the interest of the sick poor, the position taken up and so ably advocated by Dr. Cooper:

1. As to payment for work done; and
2. As to free choice of doctor,

should receive the unanimous support of the profession.

One shrinks from complicating farther an already complicated discussion, but, if I might in a tentative manner venture to add a third desideratum of a really efficient medical service, it would be:

3. Some restriction of some kind upon the number of patients to be dealt with by each doctor.

Human energy, mental and physical, has its limitations. After a certain point, which of course varies in different individuals, the quality of one's work rapidly deteriorates. I feel strongly that the public would make a better bargain if they restricted our work and paid us better. They would be much more likely to get something of real value in return. Sweated medical work may be quite satisfactory from a commercial standpoint to the practitioner. It is of little (if any) real value to the public.

I submit that these three points are not merely matters of detail; they are intimately—indeed, one might almost say fundamentally—connected with effective medical work. They are, therefore, matters which at the present juncture are worthy of the attention, not only of the profession, but of the Government.—I am, etc.,

Manchester, Dec. 6th. J. STAVELEY DICK.

SIR,—I am really sorry to trespass upon your space again, but I feel that it would be wrong to let Dr. Buist's letter go unchallenged, not for its intrinsic worth, but because it shows the attitude taken by one of our Representatives.

Although the general tenor of Dr. Buist's letter is quite clear, the exact meaning of some sentences is most difficult to determine, and I should like to get to something definite on certain points.

In a former letter I asked Dr. Buist whether he was prepared to advocate steps being taken to obtain the view of the majority of that part of the profession—namely, general practitioners—who alone are affected (adversely) by this invalidity insurance scheme, and having obtained that view will he help the general practitioner all he can in its attainment?"

That question Dr. Buist has not answered. The next point which appears to be definite is his claim that both he and Dr. Taylor will never represent the profession, even if they find that my estimate of what the majority of the profession want is correct. This is a very serious statement and I am really surprised to find Dr. Taylor pledged to such a course.

In Dr. Buist's third paragraph he makes the remark, "It has been stated that the profession should not be asked to take the risk." Will Dr. Buist say definitely if he thinks that the profession ought to take the risk? as this, again, is a very vital point to the profession.

Coming to the practical illustration of Dr. Buist's *per capita* system, we find he assumes that 10s. per head will be paid. I much doubt it, but whether it is, anybody seeking the information can readily discover the exact sum payable to the doctors in any given district; and when a man has got a neat little "parcel" of 2,000 patients in a small area it will soon attract men who have not got such neat "parcels" from other areas, and the £1,000 per annum will soon have many newcomers nibbling at it, and

of necessity splitting it up. If, on the other hand, the "parcel" is in a rural district and spread over a considerable area of country, it will mean keeping an assistant and one or two motor cars to do the work for 2,000 people with unlimited credit on the doctor, will need a vast amount more attendance than the present private patients, and the £1,000 per annum will look a sickly sum when working expenses have been deducted from it.

The more one studies the two systems of payment the more unworkable does the *per capita* system appear; and Dr. Buist's sneer at the men who are trying to solve the problem in a statesmanlike manner, by calling them an "irresponsible and undefined group," is not the judicial or open-minded tone one associates with the requirements of a Representative.—I am, etc,

Northwich, Dec. 5th. HENRY EDWARD GOUGH.

INSTRUCTION IN ETHICS.

SIR,—I shall be obliged if you allow me to make two corrections in the report of a speech I made recently at the General Medical Council, which appears in the SUPPLEMENT to the JOURNAL of December 3rd. I am reported as having said that advertising should be done publicly, whereas I deprecated any procedure of the sort. The reference to advertising arose from my contention that we have special rules of ethics in our profession which it is necessary that its members shall know, and that an indulgence in this practice of self-laudation brings those who adopt it under the penal laws of the General Medical Council. Some of the members of this body, in the discussion following the speech I made on introducing my motion on an instruction in ethics, stated that the golden rule of doing to others as you would be done by covers the whole subject. My contention is that this is not the case in its entirety. Over and above this golden rule is the fact that certain procedures which are not wrong in themselves are regarded in that light by the governing body of our calling. The ban on advertising is just one instance in point. In commerce it is extensively used, and its practice is commended. In an honourable profession, such as ours is, it is rightly regarded as being injurious both to the public and to ourselves, for an indulgence in it can only lead to the self-laudation of those who advertise, and to the detriment of the self-respecting, scientific worker who cannot, with any regard to propriety or truth, adopt such methods of getting on in life.

Again, I am reported to have said: "With regard to the time when the instruction should be given, he thought the post-graduate period would be the most convenient." This is exactly the opposite of what I remarked. I advocated a short lecture or two being given to advanced students, saying that that was the appropriate time for such instruction, before they left the medical schools. Very few men, I stated, went in for post-graduate courses, and these men, inasmuch as they were mostly of a scientific type who were looking to professional advancement by perfecting themselves in knowledge, were the very ones who were unlikely to require any teaching of the kind I was suggesting.—I am, etc.,

Swansea, Dec 5th. H. A. LATIMER, M.D.

ALCOHOLISM AND DEGENERATION.

SIR,—Sir Victor Horsley and Dr. Mary D. Sturge say that I now admit that Miss Elderton and I never ascertained in beginning our investigation, "the essential datum whether the alcoholism in the parents came before or after the child." I have, of course, made no such admission at all. I have pointed out that if Sir Victor Horsley had statistical training he would be able, as we did, to see from our material that there had been no appreciable transfer of parents during the school lives of the children from the non-alcoholic to the alcoholic sections. Further, I have asked him why, when he accuses us of working without what he deems an essential datum, he quotes with approval Dr. MacNicholl, whose papers do not even allow of our measuring the possibility of this transfer, for he gives in no case the ages of his children. Sir Victor has *not* yet answered that question.

Now, Sir, this is really a very important illustration of a principle of which, owing to your courtesy, I have been able recently to give other samples. Sir Victor Horsley is a most distinguished surgeon, and on points of surgical manipulation his mere judgement is, I have no doubt, of value. But in certain chapters in his book on alcohol he appraises the value of evidence in a field where he has had absolutely no training. He presumes to discuss dogmatically, as in his letter to you to day, what is and what is not deducible from statistical evidence. In this field I have no hesitation whatever in saying that his judgement carries no weight beyond that of any man in the street, that is, it has just so far weight as he has logically demonstrated it. An *ex cathedrâ* statement is purely idle. His mere reiteration of the statement that our memoir on alcoholism is valueless is entirely worthless until Sir Victor Horsley faces the actual figures given in that memoir. It is not a question of skill in surgical manipulation, it is a question of skill in interpreting figures, and, therefore, the mere dogmatic opinion of Sir Victor Horsley carries, on this point, no weight whatever in the scientific world.

The medical profession is learning to recognize the vital fact that, until the statistically trained medical man is produced, there must be joint work for statistician and medical man in their common field. In neither statistics nor medicine can a man, without training in the one or other of these branches of science, any longer afford—for the sake of his own reputation—merely to reiterate that this or that is nonsense, that this or that has no scientific basis, without daring to face the logical argument presented to his notice.—I am, etc,

KARL PEARSON.

Eugenics Laboratory, University of London, Dec. 3rd.

SIR,—I beg to submit a few figures which may be of interest with reference to the subject under discussion. (See table at foot of page.)

It will be noticed that the excess of incidence is on the elder born. Jules Voisin, in his *L'Idiotie*, accounts for this fact as follows:

> L'homme était ivre au moment de ses premiers rapports avec sa femme et celle-ci reste écœurée, attristée pendant le début de sa grossesse, tandis que lorsqu'elle conçoit le second, elle s'est deja habituée en quelque sort au vice de son mari, et n'a plus pour lui la même répugnance.

As, however, the excess of incidence is on the elder born, whether the parents are drunken or sober, it is difficult to see the necessity for the explanation.

That alcohol may play some part in the causation of mental defect would seem to be suggested by the following: Thus, of families in general in which idiocy occurred, of 378 "last-borns" 107 were idiots, a percentage of 28.3. In families where one or both parents was alcoholic, of 174 "last borns" 61 were idiots, a percentage of 35.1.

Tuberculosis of the parents, still more than alcoholism, seems to be associated with a "closing" incidence of idiocy on the offspring. In families with a history of parental tuberculosis, out of 190 "last borns" 74 were idiots, a percentage of 38.9.

While we have at work in our midst such a powerfu factor for national degeneration—for the creation of mental defect—as the restriction of offspring, it seems

Table showing Distribution in Order of Birth of 191 Idiots Born of Parents one or both of whom was Alcoholic. A History of Parental Alcoholism was obtained in about 12 per cent. of Cases.

Order of births	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Idiots observed	50	43	26	18	15	15	7	7	3	1	2	2	1	0	1
Idiots calculated	35.7	33 6	30.4	25.4	20.3	15.4	11.1	7.8	4 1	2 5	1.6	1.2	0 8	0.6	0.4
Total offspring in each order of birth	174	164	148	124	99	75	54	38	20	12	8	6	4	3	2

a pity that so much attention has been and is being directed to factors which, granted they play a part at all, can only be of very secondary importance.—I am, etc.,

Lan r, Nov. 30th. D. W. HUNTER.

SIR,—I shall be obliged if you will allow me, as a member of the Association, and also as a reader of the JOURNAL, to enter a protest against the somewhat pontifical pronouncement which Sir Victor Horsley and Dr. M. Sturge have uttered upon your editorial treatment of this problem.

The question whether alcohol imbibed by parents does or does not prejudicially affect their offspring is one of great scientific interest, in the first place, and, in the second place, it is a question the settlement of which has important bearings upon national welfare. A thorough discussion of the problem is, therefore, eminently desirable; and it is a matter which directly concerns your readers that the Editor of the JOURNAL should be perfectly at liberty to criticize unfavourably, either directly as Editor or indirectly as reviewer, any conclusions which may appear to be erroneous without being told that he is using the editorial column "in an undesirable manner."

Your reputation for impartiality in respect to the treatment of controversial topics is so well known that your readers may fairly resent this attempt to dictate to you the lines and limits of your editorial activity.—I am, etc.,

Brighton, Dec. 4th. R. J. RYLE.

THE APPOINTMENT OF MEDICAL OFFICER OF HEALTH FOR THE COUNTY OF BRECONSHIRE.

SIR,—On whom will the blame lie if the ratepayers do not get their money's worth, when the above appointment is filled up according to the advertised conditions?

The salary of £500 a year is to include expenses of travelling, etc., in a very large county, with very scattered towns and villages, and difficult and very faulty communications.

Under a temporary scheme the inspection of school children—enterers and leavers only—was carried out by local practitioners at a rate of 3s. 6d. a head, and 2s. 6d. mileage over one mile and one way. The fact that this examination last year cost more than the salary offered for the new appointment will indicate pretty fairly the amount of work that is in store for the successful candidate, who, it would appear, will have no assistance either for the education or the town planning portion of the duties.—I am, etc,

November 29th. MEMBER B.M.A.

EPSOM COLLEGE.

SIR,—I should like to say how entirely I agree with the writer of the letter appearing in the BRITISH MEDICAL JOURNAL of to-day (December 3rd), and signed "Parent, M.D., D.P.H.," which expresses exactly what I feel with regard to Epsom College.

As a parent I consider the Eton dress not only unsuitable but involving needless expense. During the holidays one is only too thankful to allow one's boy to be comfortable in a lounge suit. This necessitates a different set of clothes for the holidays, and a growing boy outgrows these clothes before they are worn out.

With regard to sleep I certainly think the little boys do not have sufficient, though personally I am very grateful to the matron of the lower school, who found when my boy started there at 9 years old that he required more sleep, and sent him to bed early. The medical inspection I think so necessary that my boy was thoroughly overhauled by a medical friend before returning to school, and was ordered to lie down for half an hour every day after dinner, with the result that his health has greatly improved. This is a most excellent plan, far better than exercise directly after a meal.

One other thing I should like to add: Why are the boys not taught dancing, especially the little boys, at a time when it is easy for them to learn? Besides being a healthy exercise, it would help to fit them for social life, so many evening parties for young people now have degenerated into card parties, which can come later in life, and I think the reason for this is because so few men can dance.—I am, etc.,

December 3rd. ANOTHER PARENT.

DR. HADWEN AND THE "CRIMSON CROSS REMEDIES."

SIR,—The correspondence which you have kindly published under the above heading leaves Dr. Hadwen in a sorry plight. At his own request I published a letter from him in defence of "The Crimson Cross Remedies" and in defence of an advertisement of those remedies in which his name appeared. I ventured to criticize that letter and to ask Dr. Hadwen a number of specific questions. He has written twice to the JOURNAL on the subject since then, and has has carefully avoided any reference to my criticism in detail, and now pleads that his "thick-headedness" prevents him from seeing "anything to reply to" in my letter. Dr. Hadwen's self-conviction of density is his excuse for not being able to comprehend the following, which are examples of the simple questions in my letter.

"Your name disappeared from the advertisement in the very next issue of the *Inquirer* after a reference to the 'humorous advertisement' in the *Jennerian*. Why?"

"You say the composition was long ago published in the medical press. Where?"

"Your large manuscript books are stated to contain information collected 'independently.' Are you prepared to state the actual source of this information?"

"By whom and for whom was this independent information collected?"

On another point mentioned in my letter the question was asked, "Does your large manuscript book contain any evidence on this point?"

Dr. Hadwen explains that he has no lack of desire to reply, but blames his "thick-headedness" for not seeing in these questions a single issue which he has not already answered, though he has not made the slightest reference to any one of them. This explanation is, indeed, the only one which Dr. Hadwen could expect your readers to believe, and, coming as it does from Dr. Hadwen himself, it can be accepted without offence. The simple questions above are described by Dr. Hadwen as "enigmatical queries," and yet he says he does "not propose to bandy words with Dr. Drury." In his complete surrender and capitulation Dr. Hadwen waves the white flag, and on the point of these questions announces that he leaves me "master of the field." He has invited me to go to Gloucester to see those manuscript books. I am surely entitled to an answer to the above questions without being put to the expense of a journey to Gloucester.

Dr. Hadwen's second point is that he has nothing to add to his defence of the Crimson Cross Remedies. That, of course, is not surprising. His third point is that he begs "to be excused" from defending his public offensive pronouncement containing one of the most scandalous attacks on the medical profession ever uttered. This was quoted in my letter of November 29th, and concluded with these words:

> . . . "There was no more dangerous set of people than medical men when they had the power against the bodies and the consciences of the people.

This had reference to "new professional methods," and Dr. Hadwen was speaking about the medical inspection of school children. Dr. Hadwen has now been challenged to defend this in the columns of the JOURNAL, where he has an audience of different calibre from the one before which he showed such bravery. His courage now fails, and while admitting the "quotation," he is cowed into retreat, which he covers by calmly begging to be excused.

Along with many other members of the medical profession, I have received challenges from the secretary of the National Union for the Abolition of Vivisection and from officials of the Antivaccination League, on behalf of Dr. Hadwen, to debate these subjects with him in public. My reply has been that if Dr. Hadwen wished to meet me I was ready with my answer, if he would approach me directly. For reasons best known to himself he has never done so. In my opinion Dr. Hadwen has no right to expect any member of the medical profession to meet him in public debate so long as he admits the correctness of the above quotation, and has nothing more to say of it than that he begs to be excused.

Dr. Hadwen remarks that this quotation has nothing to do with the subject in hand. I beg to remind him that he himself is one of the subjects in hand from the very first in this controversy. He accuses me of being "a bit

spiteful "" in firing this Parthian shot." This is intensely amusing. My spitefulness amounts to this—I simply quoted Dr. Hadwen's own words!—I am, etc.,

Halifax, Dec. 5th. ARTHUR DRURY.

ANAESTHETICS ACT.

SIR,—I wish to call the urgent attention of the profession to the suggested alteration by the Anaesthetics Committee of the General Medical Council in the rough draft of an Anaesthetics Act transmitted to them by the Lord President of the Privy Council (see SUPPLEMENT, BRITISH MEDICAL JOURNAL, December 3rd, 1910).

According to this Act, a dental surgeon will be allowed to administer one or more of the drugs specified in a schedule for a *dental* operation, act, or procedure.

Now the suggested alteration by the above committee allows a dentist to administer for a legally qualified practitioner one or more of the scheduled anaesthetics in connexion with an operation, act, or procedure, *other than dental*, conducted by such medical practitioner. This alteration is unsafe for the public, not, I think, desired by the main body of dental surgeons, and unfair to the medical profession. Most medical men recognize that the administration of nitrous oxide gas and of local anaesthetics rightly forms part of the practice of the dental surgeon, and is reasonably safe. The fact that nearly all dental patients are fit enough to come to a dentist's rooms shows that they can with ordinary safety bear nitrous oxide or local anaesthesia, and we know that practically all dental operations can nowadays be performed by these means.

But any one who is called upon to administer nitrous oxide for general surgical purposes must be prepared to change to other anaesthetics and must be able to judge for himself of the state of the patient's heart, lungs, and other organs. The conditions of administration of nitrous oxide in dental and general surgical work differ very greatly, and we must remember that nitrous oxide mixed with oxygen is being increasingly used alone and in combination with other drugs administered by injection, such as morphine and scopolamine, or by inhalation, such as ether, for serious operations, and it is not right that dental surgeons whose experience is specially limited to the administration in the dental chair of certain drugs to comparatively healthy people should be allowed to administer them to patients suffering from all sorts of severe diseases and injuries and possibly under the influence of narcotics or shock.

I think, Sir, this matter is a very serious one for the public, the dental surgeon, and medical man, and I hope it will be fully discussed in the pages of your JOURNAL with a view to obtaining the deletion of the objectionable recommendation.—I am, etc.,

Birmingham, Dec. 6th. W. J. MCCARDIE.

PREGNANCY AFTER FALLECTOMY.

SIR,—In the BRITISH MEDICAL JOURNAL, November 19th, p. 1648, you refer to cases in which pregnancy occurred after division and and ligature of the Fallopian tubes, etc. You refer to one patient becoming pregnant *two months* after removal of the tubes, etc., and a second, three months after operation, and a third, several years after.

May I ask, has it yet been decided how long can an ovum remain in the uterus and retain its vitality? An answer to this might decide if it is not quite possible for many ova to remain in the uterus for months, arriving there *before* the tubes have been excised, impregnation taking place *after* the operation. We know so very little regarding the travelling power, staying power, and fertilization of the sperm and germ, that nothing is gained by mere dogmatism.—I am, etc.,

Liverpool, S., Nov. 24th. ROBERT R. RENTOUL.

* It is not, we believe, certain how long an ovum can remain in the uterus and retain its vitality. Dr. Rentoul's theory explaining the significance of pregnancy beginning a few months after removal of the tubes is quite reasonable in respect to Dr. J. O. Polak's first and second case, but will hardly explain the third. In Meredith's case (Pregnancy after Removal of both Ovaries for Dermoid Tumour, JOURNAL, vol. i, 1904, p. 1360) the patient became pregnant one year and eleven months after the removal of a pair of dermoids, and in Doran's case (Pregnancy after Removal of both Ovaries for Cystic Tumour, *Trans. Obstet. Soc*, vol. xliv, p. 231, and *Journ. of Obstet. and Gynaec. of Brit. Emp*, vol. ii, p. 1, with notes on similar cases) pregnancy occurred two years after the second of two ovarian cysts had been removed. In neither could an ovum have lived so long in the uterus. In J. F. Baldwin's case (Pregnancy after the Removal of both Ovaries, *Amer. Journ. Obstet.*, vol. xlvi, 1902) a pair of cysts were removed during pregnancy, and within nine years the patient bore two more children. It is certain, as a fact above all theory, that the stumps of amputated Fallopian tubes may transmit ova. As regards the ovaries, "ovary" and "ovarian tissue" are not necessarily synonymous. In double ovariotomy for cystic disease both ovaries come away entire, but there may be ovarian tissue in the (utero-)ovarian ligament, or in the broad ligament, which escapes excision. When the uterine appendages are amputated for chronic inflammatory disease, a piece of one or both ovaries is often left behind, complete excision being hardly possible on account of the shortness of the pedicle. After both operations, however, the stumps of the tubes forming part of the pedicle sometimes manage to transmit ova, hence these remarkable pregnancies.

HYPERTENSION.

SIR,—I have read the admirable address on this subject by Dr. H. Batty Shaw (BRITISH MEDICAL JOURNAL, December 3rd, p. 1761) with great interest. Dr. Shaw deals very exhaustively with the causation of this condition, which he considers falls under one of two categories—mechanical or chemical. One class of persons who very commonly show hypertension are not specifically mentioned by Dr. Shaw—namely, the individuals suffering from neurasthenia, or conditions in which the symptoms are of a neurotic character. These cases are usually considered (for want of a more precise term) to be of a functional character. No doubt if their exact pathology was known they could be placed in one of Dr. Shaw's categories. But I have had now a considerable number of cases of this character referred to me by doctors during the last eight years, in which the medical attendant could not discover any organic heart, kidney, or liver disease. Most of the patients have been women, and the symptoms have been great nervousness, insomnia, sometimes gastric disturbances, and erratic pains in various parts of the body. The blood tension has varied from 130 to 180 taken by the Riva-Rocci sphygmomanometer. The normal tension is usually lower in women than in men, and naturally the corresponding ratio is considered in calculating the effect of treatment.

This brings me to a point Dr. Shaw does not mention, and which probably does not arise in connexion with the class of cases he discusses. I allude to treatment by electrical currents. I have found that by a twenty minutes to half an hour application of high-frequency currents by auto-condensation on the cover, or by an application of general static electricity for a like period, the mercury in the manometer falls 10 to 20 mm. It is true that it rises again, but not usually to the same level, and the gradual diminution after several applications becomes permanent. I have observed that where the condition has been associated with defective metabolism, high-frequency currents have been the most successful; but where the only discoverable symptoms were those of a nervous character static electricity has acted most efficiently. It looks to me as if the arterial tension in these cases is kept up by some toxic agent. At any rate, many of them improve in a really remarkable manner, the nervous symptoms, anorexia and insomnia, entirely disappearing. That the effect is not simply psychic is, I consider, amply proved by the sphygmomanometric readings.—I am, etc.,

Bradford, Dec. 3rd. JAMES METCALFE.

DRAUGHTS.

SIR,—In the correspondence which has been appearing in your columns concerning the effects of draughts, I have been surprised to notice the very general assumption that they directly cause attacks of fever in the human body. Now, in any seemingly more important department of medicine, different methods would be pursued and careful experiment would be made.

This is a subject in which I have for years taken special interest, made many experiments upon myself, and countless observations in others. And I have not the least hesitation in saying that (in spite of almost universal belief to the contrary) a feverish attack called "a cold" never does arise from exposure to a draught, wetting, or piece of damp clothing. Let me beg those who read this to experiment on themselves and to note the unintentional experiments performed by others. Though my observations extend over a dozen years of general practice, I have never yet met "a cold" which was not traceable by infection, nor found any of the exposures, which are generally regarded as very dangerous, to be followed by feverish attacks.

A draught, of course, may make one sneeze, may indeed be the means of conveying the catarrhal germs to the nostrils; but such occurrence must be rare. It can no more produce a catarrhal attack than it can produce scarlet fever. And as to its "predisposing" influence, if on *experiment* "a cold" is not found to follow exposure to a draught, there will be no need to call in "a lowering of resistance."

The importance of this subject is surely enough to justify the appointment of a special committee to examine, experiment, and take evidence. Erroneous belief can only lead to erroneous practice. As matters rest, our profession, whilst worshipping fresh air in theory, in practice largely avoids it. We certainly do not by our own example teach the public to prefer a draught to bad air; nor can we do so whilst we continue to believe that there is scarcely any malady which cannot be caused by the movement of a current of air of a certain temperature. A profession which is noted for its scepticism should not, surely in so important a matter, be content to rest its belief on mere inference and hearsay. I only ask for an open mind till experiment—in this case so easily made—show where the fact lies.—I am, etc.,

Sevenoaks, Dec. 5th. F. MARSDEN BURNETT

PUERPERAL FEVER.

SIR,—I have read the various lectures and letters written about puerperal fever, and the elaborate precautions recommended by certain medical men to overcome it. In my opinion, however, as one who has done a fair midwifery practice for the last twenty-seven years, the cause of puerperal fever is greatly due to ignorant midwives and nurses who are left to carry out the duties in their own way and without any supervision on the part of the medical attendant, who (especially if he is a young man) will generally think that when the baby is born the nurse can do the rest.

I would, therefore, venture to recommend to the medical attendant the following simple rules, and which I always adopt myself: (1) Always wash the patient yourself with disinfectants before leaving the first time, unless the nurse is well known to you. (2) Insist that all dirty clothes and diapers should be immediately taken away from the bedroom, and not left for a future occasion. (3) To find out whether the nurse uses the chamber with water when she washes the patient, and to insist upon it being discontinued if such is the case. (This is a very common occurrence even with experienced nurses.) There is a so-called "puerperal fever" produced by laceration of the perineum. The temperature does not usually exceed 102°, and becomes normal in three days. The abdomen, however, remains in the same condition, and the discharges are not diminished. These cases need not cause any anxiety, but could probably have been prevented if the perineum had been properly washed and disinfected by an experienced nurse.—I am, etc.,

Bristol, Dec. 4th. W. HOWARD CORY.

A PLEA FOR THE NASO-PHARYNX.

SIR,—With reference to your preliminary remarks in the article "A Plea for the Naso-Pharynx" (p. 1730), I would draw attention to the fact that the Royal College of Surgeons of Edinburgh requires candidates to be specially examined in a special branch of surgery for the Fellowship, such as aural, abdominal, ophthalmic, or obstetric surgery, in addition to the surgery, surgical anatomy, surgical pathology, etc.—I am, etc.,

November 29th F.R.C.S.EDIN. (OPHTH. SURG.).

THE BRITISH RED CROSS SOCIETY.

SIR,—I see the Red Cross Society has been requested by the Territorial Army Associations, at the suggestion of the Army Council, to provide organized assistance in the scheme of national defence.

A county branch has been started in Aberdeenshire, and the medical men have received a circular letter from the local president asking them to help in the work by giving courses of lectures on first aid and home nursing to those who may wish to join the movement, and I dare say very many medical men throughout Britain have been approached in this matter. I consider this matter one for the profession collectively; if the Army Council wishes the services of medical men in civil life to train civilians for work in war time, let it approach the profession directly, and offer them a suitable status in the scheme, and an adequate emolument for work efficiently done.

I myself should be inclined to amalgamate the Red Cross Society to the various ambulance associations in the country as a first step, and, using the local knowledge of the Territorial associations, appoint local skeletal units of officers (commandant, medical officer, pharmacist, quartermaster, and so on) with a definite status (rank and pay) in the new body, any equipment to be provided by the county and to remain its property.

From my experience in teaching first-aid classes I deprecate any shortening of such a course. One should work for quality not quantity. The textbooks used should be brought up to date, even rewritten if necessary.—I am, etc,

Meikle Wartle, N.B., Nov. 21st. ALLAN GRAY.

*** At the last Annual Representative Meeting (SUPPLEMENT, July 30th, p. 198) a discussion took place with regard to the fee for ambulance lectures given to the British Red Cross Society, when the following resolution was adopted:

> That a fee should be charged for ambulance lectures given to the British Red Cross Society, and that the fee should not be less than £1 1s. for each lecture.

THYROID EXTRACT IN RHEUMATOID ARTHRITIS.

SIR,—I have read with much interest Dr. Wilson's remarks on the treatment of rheumatoid arthritis by means of thyroid extract.[1] The idea is not new. Quite thirty years ago it was foreshadowed by Dr. Spender of Bath, and over twenty years ago Dr. Ed. Blake called attention to the coincidence of arthritis and myxoedema. The credit of emphatically advocating the use of thyroid extract in arthritis belongs as much to R. Llewelyn Jones as to C. Macalister. I have for quite four years used thyroid extract when treating cases of arthritis deformans, and the results are gratifying. In many cases, long before the skin becomes dry and scaly, one can pinch up thick folds ever in emaciated subjects. Dr. Jones says that rheumatoid arthritis is more often associated with symptoms of Graves's disease, osteoarthritis with myxoedema. Although the administration of thyroid extract may turn the scale in many cases, it is best to make assurance doubly sure by employing spinal blistering, as recommended by Dr. P. W. Latham.

I consider 5 grains three times a day far too large a dose to begin with. It would poison many patients. Some of my patients take as little as 1½ grain to commence with, and occasionally I do not find it necessary to increase this dose. I have now given thyroid extract in 37 cases of arthritis deformans, and invariably with good results, since I am most careful in regulating the dose.

I heartily congratulate Dr. Wilson on his success—I am, etc.,

Bournemouth, Dec. 4th. W. J. MIDELTON.

THE CAUSE OF APPENDICITIS.

SIR,—The theoretical causes of appendicitis which appear in this discussion in the BRITISH MEDICAL JOURNAL are all very interesting, and probably *all* of them may be causes. May there not be many causes? mechanical and toxaemic: stones and seeds of fruit, shot from game—

[1] BRITISH MEDICAL JOURNAL, December 3rd, p. 1769.

hares and rabbits (I have heard of a grain of shot being found in one case operated upon)—uratic deposits, decomposition of food remains, etc, which might account to some extent for the success of treatment in some cases and its failure in others. For instance, sodium salicylate would not have much effect on a grain of shot or a plum stone.

Dr. Gurney suggests influenza as a cause, and states that "appendicitis was rare twenty years ago, but as soon as influenza appeared in this country the number of cases increased enormously." But there were many very severe epidemics of influenza prior to 1839. Not to go so far back as that of 1580, severe epidemics have been recorded in 1708, 1712, 1728, 1733, 1743, 1758, 1762, 1767, 1775, 1782, 1788, 1789, 1803, 1831, 1833, 1837, and 1847, and yet no one seems to have remarked any increase in appendicitis or typhlitis, or anything which might cause similar symptoms though called by other names.

In the epidemics of 1833, 1837, and 1847 the late Professor Graves, of Dublin, in his clinical lectures, pointed out differences in the symptoms of those epidemics, and remarked: "It would conduce greatly to the advantage of medical science if a brief and accurate history was left to posterity of the character, symptoms, pathological phenomena, and treatment of every epidemic" (that is, of influenza).

A fact which struck me during seven or eight years' practice in North Wales was that amongst the native Welsh, who eat comparatively little meat, but drank copiously of tea—one admitting to twenty four cups a day—I never saw a case of appendicitis. I do not put this down to the tea, but the abstention from meat might have something to do with it. On the other hand, I had several cases amongst English and American visitors. On inquiry I found the Americans had three meat meals daily.

Twenty two years ago I saw a man with acute pain, tenderness, and swelling in the region of the appendix, with pyrexia and quick pulse. I considered it at the time to be a case of typhlitis. He was bad about four days, and the last two days had constipation. My treatment and several large enemata having no effect, I suggested an operation as being necessary, but he had a strong objection, stating that a friend of his had just died after a similar operation. I then tried injecting, by means of a long tube, a quantity of hot olive oil, and, after some perseverance, succeeded—more by good luck than cleverness—in dislodging a large globular mass of what appeared to be meat fibre, perfectly *alive* with maggots. I never saw anything like it before nor since. The man had previously been in such agony that he could not bear the weight of a light linseed poultice. He soon got quite well. The decomposition seemed to have set up the acute symptoms.

I believe I have read of a Parisian doctor who reported 60 consecutive cases of appendicitis treated by small doses of calomel and tea, the tea being vehicular, I suppose; and I myself have had a number of cases which presented the symptoms of appendicitis and got well with salicylates, ammonium bromide, and small doses of calomel, and strictly dieting on warm milk and plasmon. One case was diagnosed, in a town eighty miles away, as appendicitis, and travelled to North Wales, which did not improve her condition; another diagnosed at a hospital as probably appendicitis, but "no bed available at present"; and another was the son of a doctor, and the father was inclined to an operation, but the boy got on splendidly, and I believe never had any return of it, now some ten years ago.—I am, etc.,

London, W., Dec. 2nd. DOUGLAS MACDONOGH, D.P.H.

SIR,—As this subject is again to the fore, I should like to record my own experience in the matter. Having had at various times several attacks of appendicitis, or, perhaps, I ought rather to say of pain in that organ, not sufficiently severe to disqualify me from work, as well as one which confined me to bed for some days, in which the late Dr. Dreschfeld saw me and prescribed sodium salicylate, I was naturally led to seek for the cause for so recurring and painful a malady. I found that the cushions of my carriage had not been properly dried. On remedying this the attacks ceased, and, except for some fugitive pains when I have sat upon a cold or open seat, I have ceased to be troubled in this way. I have kept, fortunately, both my health and my appendix. This now for several years. This led me to make inquiries, and I found that not only did this seem to be a sufficient cause for other attacks in my patients, but that many cases of pelvic and uterine trouble seemed due to a similar cause. Electric trams are an introduction of recent years which are patronized by all classes of the community. It is to the use of them for considerable distances and sitting upon the cold or damp seats which appears quite sufficient to account for the increased number of cases that now occur. An inquiry in this direction would, I feel convinced, give the key to many an otherwise inexplicable case. Of course there may be concomitant causes, as constipation and excess of any kind.

Personally I abhor fads of any kind, and have ridiculed the agency of cold as a factor in causing disease. Now I think I know better, and have more respect for trivial causes than formerly.—I am, etc,

Lytham, Dec. 4th. B. JONES, M.D.

SIR,—There is nothing new in the theory that meat eating is the cause of appendicitis. The opinion of Dr. Coates, who suggested that preserved meats were the cause of appendicitis, has not received the approval it merited from your correspondents who have written on the subject. It is suggested that tubercle and influenza may be the causes of this disease. If this were so, should we not have had a great number of cases when influenza visited our shores many years ago, and seeing the deaths from tubercle are getting fewer each year, should not the number of cases of appendicitis be decreasing somewhat? As a matter of fact, the practitioner sees an increasing number of cases each year. In my opinion there is much to be said in favour of the cause of appendicitis being the enormously increased amount of meat now being consumed in this country. When I was a student appendicitis was not often seen in hospital wards; now many scores of cases are operated on in all large hospitals every year, and very many cases are seen in private practice which never reach the operation table.

During the last twenty-five or thirty years the habits of the people of this country have changed a good deal in regard to meat-eating. When I was a boy, the foreign meat shop was unknown in this city, now one sees them in every street almost. The amount of home-killed meat consumed per head of the population has increased enormously during the last twenty-five years. The total consumption in 1908 was 25,857,000 cwt. (*Live Stock Journal*), and on the top of this we have the vastly-increased amounts of imported meat. To show the enormous expansion of the chilled meat traffic, may I quote the following:

> In 1838 there were 57 ships engaged in the business, whilst in 1908 there were 190; the carrying capacity has increased from 955,000 carcasses to 12,756,400, reckoning each carcass at 56 lb. Last year 9,651,413 frozen sheep and lambs were imported, compared with less than 2 millions in 1888.

The writer goes on to say, "the average annual consumption per head of beef, mutton and lamb is 89 lb.," which we must bear in mind is on the top of the British-grown meat.

I am quite aware we are using more tea per head of the population and more tobacco, but I do not think we can lay the blame on these articles.

Appendicitis being due to the action of bacteria, I think there is some ground for suspecting meat to be the cause. The bowel contents of a meat eater are infinitely more foul than the bowel contents of a non-meat eater, and therefore must contain enormous numbers of colonies of bacteria compared with the non-meat eater, and therefore increased liability to appendicular inflammation. Children nowadays commence to eat meat at a much earlier age than formerly, and are consequently often sufferers from appendicitis. I am quite sure this enormous increase in the consumption of meat is a factor in the causation of other diseases which are on the increase in this country, and cannot help thinking that this subject has not received the attention it deserves.—I am, etc.,

Leeds, Dec. 5th. A. HAWKYARD, M.D.

TREATMENT OF SCHOOL CHILDREN.

Sir,—With reference to the treatment by general practitioners of school children found upon medical inspection to be suffering from ringworm, Mr. Louis Dods appears to regard an *x*-ray apparatus in the surgery as a *sine qua non*.

Being engaged in the medical inspection of school children in North Warwickshire, I have been more than surprised at the large number of cases cured by practitioners and others, and that in a comparatively short time, by drug treatment alone, especially those cases seen and diagnosed early before the microsporon has penetrated deep into the hair follicles. Severe and inveterate ringworm of the scalp, like "running ears," brings little kudos to the medical attendant, parents soon becoming dissatisfied if a cure is not effected within a few weeks. These, then, are the cases, *caeteris paribus*, suitable for *x*-ray treatment, such treatment to be by no means in the hands of an amateur, but of a skilled operator only.

But now that medical inspection of school children has become an established fact, why, I ask, should there be any severe and inveterate cases at all, and, therefore, why the necessity for *x* ray treatment? In a recent Memorandum issued by the Local Government Board on the prevention of the spread of infectious diseases occurring among children attending public elementary schools, the notification by head teachers to the school medical officer and the medical officer of health of cases of notifiable and non-notifiable infectious diseases, and of suspected infectious disease, is recommended, cases of ringworm being naturally included. Such a scheme is at present in operation in Warwickshire, and will, no doubt, shortly be general throughout the country. Suspected cases of ringworm will therefore be notified to the school medical officer, seen by him *quam primum*, diagnosed as such, the parent recommended to seek medical advice, and the health visitor instructed to visit the home to see that such advice has been sought and properly carried out. Thus, through the agency of the school medical officer, will cases of ringworm be nipped in the bud, the necessity for *x*-ray apparatus or clinics obviated, and treatment retained in local surgeries, with credit to the practitioner and satisfaction to the education authority.—I am, etc.,

A. Hamilton Wood, M.D.,
Assistant County M.O.H., Warwickshire.

Birmingham, Dec. 5th.

Sir,—In his letter of December 3rd Mr. Louis Dods says, "It is time, I think, the General Medical Council woke up," etc.

It is useless to think that either the General Medical Council or the Council of the British Medical Association can help those who will not help themselves. If the position of the general practitioner is to be bettered the general practitioner must find out for himself what he wants, and then by organizing and being united he must see that he gets it. There must be an effort made by each individual man. The machinery exists in our Divisions.

As an instance of how those Divisions are used may I relate the experience in my own Division last Saturday? In order to stimulate interest it was decided to hold the meeting in a town ten miles from our head quarters. The attendance out of a roll of just over fifty was eight; three from the head quarter town, three from a town thirteen miles off, one from a town eight miles off, and *one* from the town the meeting was held in, and this when an important matter in regard to club practice was on the agenda. If men are so lethargic they must reap the consequences, but it is hard that those seeking to improve matters must sink with them.—I am, etc.,

Herbert P. Tayler,
Chairman of the Trowbridge Division.

Bradford-on-Avon, Dec. 5th.

Sir,—Mr. Louis Dods has evidently forgotten that at the meeting to which he alludes a resolution was carried to further the provision of school centres for exactly the reasons he states have been lost sight of. Further, the meeting in question was not a meeting of the Association but of the whole of the local profession. Lastly, Mr. Louis Dods evidently attributes to the General Medical Council powers it does not possess. As secretary of the organization committee elected at the meeting, I would be pleased to give Mr. Dods, or any others who care to inquire, any information respecting the whole question of the treatment of school children.—I am, etc.,

Shoreham, Dec. 5th. C. Rawdon Wood.

THE INTRAPERITONEAL INJECTION OF PURE GLYCERINE.

Sir,—In a notice of the discussion, etc., at the thirty-ninth meeting of the German Society of Surgery, Friedrich, of Marburg, making observations on the treatment of tuberculous peritonitis, drew attention to his employment of pure glycerine injected intraperitoneally in doses from 15 to 30 c.cm. In this connexion I would like to point out the effect on two cases in which, from theoretical grounds, I was led to use pure sterile glycerine intraperitoneally in acute peritonitis.

The first case, attended in May, 1908, was one of duodenal perforation of twenty and a half hours' duration in a man aged 21. The peritoneum was filled with the usual fluid, was deeply congested, and showed innumerable haemorrhagic spots. The following procedure was carried out: A No. 16 rubber catheter was passed through the perforation down the duodenum for about 6 in. and fixed in that position. The stomach wall was sutured over it for about 2 in. The extravasated contents were washed out with sterile saline, three openings being made into the lower abdomen, and finally about 1 pint of pure glycerine poured into the peritoneal cavity. The patient was treated in the Fowler position, and had frequent salines per rectum. The subsequent course of the case so far as the peritoneum was concerned was entirely satisfactory; indeed, at a subsequent operation (gastro-enterostomy) no trace of the past trouble was visible. The general condition quickly improved. For the first forty-eight hours the patient was very drowsy. On the day following the operation a well marked haemoglobinuria occurred, which lasted so for two days and then gradually subsided. The object of the catheter being inserted into the duodenum was for the purpose of feeding—the pylorus being much obstructed, and his very critical condition at the time of operation prohibiting a gastro-enterostomy. Besides being fed through the catheter, the bowels were kept well under control, and salines, etc., could be administered as desired. For the treatment of pyloric stenosis with duodenal perforation this procedure has been found by me to be highly satisfactory when gastro-enterostomy cannot be performed. The glycerine was poured into the abdomen for the purpose of extracting fluid *plus* toxins from the peritoneum. The excess of glycerine with its extracted matter drained freely from the four openings left. Thus fluid was put into the bowel through the tube and extracted by the glycerine, so establishing an excellent drainage.

The second case was one of general peritonitis of four days' duration. At the operation it was found to be tubal in origin. The diseased tube, with an adherent appendix, was removed, the abdominal cavity washed with saline, and about a pint of glycerine poured into the lower abdomen. Ample drainage was provided for. The abdominal condition steadily cleared up, but next day the patient was jaundiced, and only 4 oz. of urine were passed. On the following day, as the urine again only amounted to 4 oz., one kidney was decapsulated. The surface of the kidney was adherent, there were numerous necrotic patches, and the kidney was generally enlarged and pale. The excretion of urine was not increased, and the patient died on the fifth day. A necropsy was not allowed. In this case the glycerine did not give rise to the kidney condition, but it must be borne in mind that the passage of glycerine through a kidney irritates it, and in this instance the kidneys were in a diseased condition to begin with, so the glycerine could be accredited with the suppression. There was no haemoglobinuria present.

In desperate cases of general peritonitis I think glycerine in large quantities has a most beneficial action, but it must not be forgotten that it is highly toxic. In the treatment of peritonitis of a tuberculous origin it must be used with the greatest care.—I am, etc.,

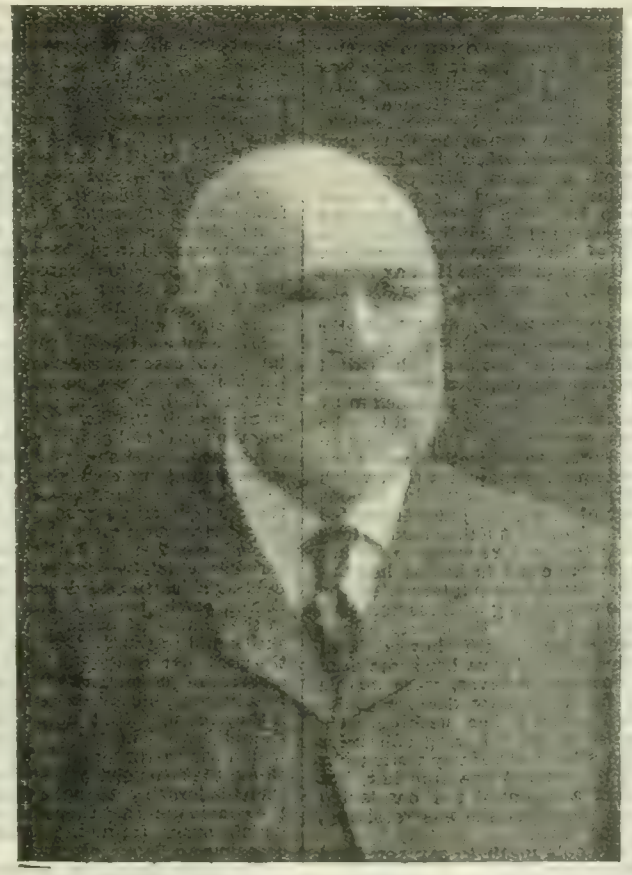
Glasgow, Nov. 27th. Alex. MacLennan.

Obituary.

GEORGE ARTHUR BROWN, M.R.C.S., J.P.

We regret to announce the death of Dr. G. A. Brown of Tredegar, which took place with tragic suddenness in the house of a patient which he was visiting on November 17th. He was apparently in his usual good health and spirits up to the moment of his death.

He was born on December 23rd, 1842, and educated at King's College, where he had a distinguished career, obtaining the diplomas of M.R.C.S. and L.S.A. In 1865–8 he held appointments at the Salop and Sheffield General Infirmaries. In 1868 he went to Tredegar, where he has been resident ever since. He held the appointments of Chief Surgeon to the Tredegar Company's workmen and Surgeon to the Cottage Hospital, Medical Officer of Health, Tredegar District Council; Medical Officer to the Union Infirmary, Medical Officer and Public Vaccinator for the Tredegar District and Workhouse of the Bedwellty Union. He was also a Justice of the Peace for Monmouthshire. Dr. Brown was a keen Freemason and founder and Past Master of St. George's Lodge, and was for many years a Warden of St. George's Church. His connexion with the British Medical Association began many years ago, and he has been a most active and enthusiastic member. He has served the South Wales and Monmouthshire Branch both as President and member of Council. He was a regular attendant at the meetings of the Monmouthshire Division, and had been chairman; at the time of his death he was a member of the Branch Council, and also of the Executive Committee of the Division.



DR. GEORGE ARTHUR BROWN.

In his professional work Dr. Brown had strong leanings towards ophthalmic surgery, and he was a dextrous and careful operator and a diagnostician of great acumen. His kindness of heart and his capacity for hard work had obtained for him a large circle of friends and patients. To his colleagues he was invariably courteous and considerate, and his advice which was very frequently sought, was sound and to the point. He was pleased and delighted to go out of his way to help a professional brother in any difficulty.

In the deliberations of the Division he was a most valuable asset, his tact, diplomacy, wisdom, and real unselfishness combining to make him a great power for good. He was an easy and fluent speaker, with that touch of gentleness and refinement which was so characteristic of him, and which endeared him to all those who knew him. He was laid to rest in the little churchyard of Bedwellty on Monday, November 21st, amidst manifestations of profound grief, the long procession being headed by the police force and followed by representatives of the workmen, friendly societies, ministers, magistrates, county and district councillors, representatives of the South Wales and Monmouthshire Branch and Division of the British Medical Association, nurses of the union infirmary and cottage hospital and professional colleagues from all parts of the county.

EDWARD H. BRIEN, M.D.

Deep regret is generally expressed in Rock Ferry and district for the loss of Dr. Edward H. Brien, who died there with painful suddenness on November 24th, at the age of 52 years. He commenced practice in Rock Ferry twenty-two years ago, in succession to the late Dr. Nixon. His father, a Fleet Surgeon, R.N., who served in the Crimean War, died whilst Edward Brien was yet a boy, and his uncle, Archdeacon Brien, acted, in consequence, as his guardian. From boarding school he proceeded to Trinity College, Dublin, and there graduated, first as B.A., and later as M.D. In his practice he was a general favourite with all classes, and he will be sadly missed, especially by the poor, to whom he was more than kind. He was a keen politician and an energetic public man. He served for years on the Birkenhead Town Council, acting on many committees; he did excellent service as Chairman of the Electricity Committee, for which position he was well fitted by his practical knowledge of mechanics. Later he was elected Chairman of the Watch Committee, and he had just been reappointed to this post at the time of his death. He was a keen motorist, and understood his car better perhaps than any other medical man in the town. He was, in fact, the pioneer of motoring in the district, his first steam car being the first of its kind, and also the first doctor's motor in Birkenhead. He was a member of the Birkenhead Division of the British Medical Association, and was President of the Birkenhead Medical Society in 1904, and was a constant and active member up to the end He was also Chairman of the Conservative Party in his district, and in all branches of his work he was universally popular, and noted for his great geniality. He apparently enjoyed robust health until a short time ago, when he occasionally complained of pains in the neck and left shoulder, which he attributed to rheumatism, and it was only on October 16th, while doing his morning round, that a severe attack caused him to realize that he was the victim of angina pectoris, and attention then being drawn to the urine, sugar was found. On the morning of his death he expressed himself as well, and fit for work, and indeed the fatal seizure was probably induced by running upstairs for his visiting list, for he fell down in the room and died almost immediately with the book in his hand. The funeral was a very representative one, the mayor, many members of the town council, corporation officials, fire brigade, police, and a large number of his professsional brethren turning out to do the last honour to one who had been the best of companions, adviser, and fellow worker, and who had served his town so well. Much sympathy is felt for his wife and two sons, the elder of whom is studying for his father's profession.

AN anthropological society has been founded at Bonn. Professor Verworn has been elected the first President.

THE number of medical students in the United States diminished from 24,930 in 1902–3 to 20,554 in 1908–9.

Medico-Legal.

LIBEL ACTION AGAINST HALIFAX DOCTORS.

AN action which had long been pending was brought in the civil court at the Leeds Assizes on November 22nd before Mr. Justice Lawrence and a jury. The plaintiff, Mrs. Louisa Robinson, sought to recover damages against Drs. Harty and Brushfield, who practise in partnership at Halifax, for an alleged libel contained in a medical report written in November, 1906, to the Halifax Board of Guardians, in which it was alleged the defendants suggested she was a malingerer. The plaintiff conducted her own case, making her statement from the solicitors' table, and afterwards entering the witness-box. The defence was in the hands of Mr. J. A. Compston, instructed by Messrs. Hirst and Whitley, solicitors, Halifax. His Lordship asked if there was any statement of claim. Mr. Compston explained that the plaintiff claimed damages for an alleged libel contained in a certificate to Mr. John Holroyd, relieving officer. It was not a proper statement of claim, but his clients would not take any advantage of that. The defendant, Dr. Harty, was a District Medical Officer under the Halifax Board of Guardians, and Dr. Brushfield, his partner, was Deputy District Medical Officer.

The plaintiff in her statement stated she had required the doctor six times, and each time she did not get any medicine. She had to go to the expense of consulting other doctors. She called upon the relieving officer to produce the certificate which was handed to the judge. A bundle of certificates was handed in by plaintiff from other doctors. Mr. Compston pointed out that he had good ground to object to these certificates. The judge concurred, but Mr. Compston did not press the objection, and some of them were read. After a long statement by the plaintiff, in which she stated that some arrangement existed between the various Poor Law officers to deprive her of relief, the judge suggested she should go into the witness box. The plaintiff then made a long statement. She complained that the doctors came to see her and treated her very badly. They came and looked at her, but did not order her any medicine. His lordship interrupted the plaintiff, and mentioned that she was dealing with matters that had nothing to do with the complaint before the court. When she sent for other doctors, continued the plaintiff, they sat down by her side and looked into her health, and gave her something to make her better. Private doctors, however, were unable to order her nourishment as the Poor Law doctors could, but Drs. Harty and Brushfield ordered her nothing. On November 24th, 1906, she applied to the relieving officer for an order to go into the union hospital. Dr. Harty visited her and refused to sign the order; he did not examine her, but wrote the certificate complained of and sent it to the relieving officer. That certificate stopped the relief she was receiving, and she had had to go without food at all.

His Lordship interposing: You don't mean to say you have had to go without food since November, 1906?

Plaintiff replied: No; but she had to rely on what was given her.

Mr. Compston then cross-examined the plaintiff: It was true she had written letters complaining of the treatment of other district medical officers as long ago as 1893. She had also made charges of improper conduct against the relieving officer about that time. Counsel put to witness numerous letters written by her to different people. In one of these, written to the clerk to the guardians, she admitted she said: "Dr. Harty is lying about my health, and states I am a malingerer, which being interpreted means that I am acting illness, putting me down an impostor, which is a serious matter, and I will make it hot for him and have him punished. Dr. Harty is depriving me of the nourishment I need so bad. A cowardly conspiracy between the lot of you to take my life!" Replying to counsel, she said she had forgotten that the guardians stopped her relief three days before Dr. Harty wrote the certificate of which she complained.

In further cross-examination she insisted that Dr. Harty had never examined her at all, and did not do so on the day he signed the certificate. Counsel handed her a letter written by her on November 28th to the Clerk of the Guardians, which she admitted, after some hesitation, was her writing, and referred to the visit in question. In that letter she wrote: "I told him (Dr. Harty) I had a pain round my heart, and showed him with my hand. Dr. Harty then put his instrument to three places on my chest and round my heart; then he said there was nothing wrong with me. I will swear on my oath this is true."

Dr. Robertson (Halifax), called by the plaintiff, had given her a certificate saying she was suffering from partial paralysis and cardiac weakness. He did not recollect examining her on December 13th, 1906. Witness admitted he gave the certificate produced. He saw her on two dates in December, and again three or four times in January, finally telling her not to call any more.

Mr. Compston submitted that there was no case to answer. The certificate was signed and published without malice, and in the honest belief that it was true, and on a privileged occasion, and was a privileged communication. He further submitted that the duty discharged by the defendants in issuing the certificate was a public duty within the meaning of the Public Authorities Protection Act, 1893, and the action was therefore hopelessly out of date. No evidence was called for the defence.

His Lordship agreed on both points raised by counsel, and at his direction the jury returned a verdict for the defendants.

DENTIST CONVICTED OF MANSLAUGHTER IN COUNTY CORK.

JOHN TOUGH, an unregistered dentist belonging to a firm called "Cole and Company," who have offices in both Belfast and Cork, was charged at the Munster Winter Assizes with feloniously killing and slaying one Ellen Collins in Bantry on June 18th last. The facts of the case have already been reported in the JOURNAL, but a short recapitulation may be of interest. Ellen Collins, a young school teacher, aged 19 years, came from her country home to Bantry to have some teeth removed by this travelling unregistered dentist. For some days before she had some bleeding from her gums and showed discoloration of skin on face and hands, as well as on other parts of her body, which marked the condition known as purpura haemorrhagica. The accused injected cocaine hypodermically under the gums and proceeded to draw the teeth—four front teeth from the upper jaw and two teeth from the lower, six in all. The girl left the room bleeding excessively from the mouth, and the prisoner let her go without making any attempt whatever to stop the profuse bleeding which followed the extraction of the teeth. She went to the house of a neighbour and had fainting fit after fainting fit. The prisoner was summoned to the house and tried to stop the bleeding with tinct. ferri perchlor., but with no success, and Dr. Bennett, of Bantry, was called in, but, despite the latter's skilful treatment, the girl continued to bleed till she died some forty-eight hours afterwards.

Mr. Justice Kenny, in summing up, said it was a very important case for the community at large. His Lordship did think it was a very serious thing to send out a man who was not qualified, though, as the solicitor for the accused had stated in his speech, the law allowed any man to practise as a dentist, whether qualified or unqualified. So far as the citizens were concerned, he thought it was a highly dangerous thing that these young men should be let out to try their prentice hand—for it was nothing else—upon patients. Did the jury think there was criminal misconduct arising from gross ignorance or that there was a mere error of judgement? The prisoner purported to act scientifically and to act professionally, and to do services which would be done or might be done by a person holding a legitimate degree or diploma. People paid him for it, and was he bound to use, in the course of the operation and in the course of extraction in this concrete case, all his own skill could suggest, or was he bound to go further, and use all the skill that medical science suggested? If it was a matter of an error of judgement, although the prisoner was an unlicensed practitioner, his lordship thought they should acquit him; but if they thought that, under the circumstances of the case, he should have sent for a doctor, and that the case was one in which the marks should have shown to him, if he knew anything, that this girl was suffering from this particular disease, then his lordship thought they should be justified in coming to the conclusion that there was criminal misconduct on his part, which arose from the gross ignorance displayed on the occasion.

The jury found the prisoner guilty of manslaughter, but recommended him to mercy on the grounds of his ignorance, and considered the firm who sent him most culpable.

His Lordship, in passing judgement, said the prisoner had been found guilty of negligence—gross negligence, criminal negligence—as the jury had found; but, having regard to all the circumstances, his Lordship did not think he should send a particular individual to gaol who was the mere instrument of this company. He would allow the accused out on a personal recognizance of £100, to come up for judgement when called on.

WORKMEN'S COMPENSATION ACT.

Cerebral Haemorrhage.

DR. JOHN T. HISLOP (Wrexham) writes: In the JOURNAL of December 3rd, on page 1830, you comment on a recent decision of the House of Lords, under the Workmen's Compensation Act, *in re* "a death from cerebral haemorrhage." The case you refer to is that of Barnabas *v.* The Bersham Colliery, and you compare it to the well-known case of Hughes *v.* Glover, Clayton, and Co., in which the House of Lords decided the other way. You say: "The two cases are somewhat analogous; still, the decisions given are directly opposite." As one having a pretty intimate knowledge of both cases, I should like to point out that there is really no analogy between the two. In the case of Barnabas, where the House of Lords decided in favour of the employers, the man was not even seen to fall, but was found by a fellow workman in the stupor of an apoplectic seizure, from which he never recovered. In the Hughes case, where the decision was directly opposite, the spanner which the man was using slipped, and as a consequence he fell—was seen by his fellow workmen to fall—ruptured his aneurysm, and died. The all-important point is that in the one case there was proof of an *accident*, and in the other there was not.

A NATIONAL College of Physicians and Surgeons of Cuba was recently organized at Havana. Dr. Juan Santos Fernandez, President of the Academy of Sciences, delivered an address setting forth the need of such an organization to promote the interests of the medical profession. A committee on organization was then appointed. President Gomez, in his message to the Cuban Congress, referred to the institution of the college as an important step in the progress of the medical profession in Cuba.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

PRACTITIONERS AND PUBLIC VACCINATORS.

VEXATUS.—If the facts stated can be substantiated, our correspondent should address a letter to the public vaccinator in question, giving the particulars of this and any other cases, also asking for an explanation and an undertaking that the irregularity would not be repeated. Should this plan fail, a similar letter should be addressed to the clerk of the guardians, to be laid before the Vaccination Committee. A public vaccinator is exceeding his duty if he visits the home of a child before it is 4 months and 1 week old, unless he has received a "request" from the parent or guardian of the child. A public vaccinator is not justified in seeking to divert a parent from any expressed intention of employing the regular medical attendant. It sometimes happens that the father requests the public vaccinator to call without mentioning the fact to the mother. It also often happens that public vaccinators are questioned about the lymph they use, and the conversation in such cases might be erroneously repeated or misunderstood. It would be well for our correspondent to satisfy himself on these points, and, having done so, he need have no hesitation in adopting the course suggested above.

THE UNQUALIFIED ASSISTANT.

M. F. D. asks to what extent, in addition to dispensing and dressing, is a final year's student who has completed his hospital curriculum allowed to assist in a general practice.

*** The resolution of the General Medical Council (November 24th, 1897) prohibits the use of unqualified assistants to attend or treat any patient, and only modifies this so far as to say that this is not intended "to restrict the proper training and instruction of bona fide medical students as pupils, or the legitimate employment of dressers, midwives, dispensers, and surgery attendants under the immediate personal supervision of registered medical practitioners." To visit or prescribe for patients except under "direct supervision," which we understand to mean in the presence of the registered medical practitioner, would be, in our opinion, a contravention of the letter and spirit of the resolution of the General Medical Council.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have been approved at the examination indicated:

D.P.H. (*Part I*).—H. S. Burnell-Jones, D. G. Evans, F. R. Seymour, C. B. Roscrow.
D.P.H. (*Part II*).—G. Finch, Rachel E. W. Mackenzie.
D.P.H. (*Both Parts*).—P. N. Cave, T. Chetwood, R. A. Clapham, W. P. MacArthur, A. C. Parsons, O. P. Turner, G. C. Welch.

GLASGOW UNIVERSITY.

Statistical Report.

THE secretary of the University Court has issued the report of statistics relative to the University of Glasgow for the academic year ending September 30th. The teaching staff comprised 32 professors, 54 lecturers, and 88 assistants and demonstrators. The salaries paid to principal and professors amounted to £26,512; to lecturers, £8,217; and to assistants and demonstrators, £9,747. The total number of students (including 642 women) was 2,728, of whom 701 (including 71 women) were in the faculty of medicine and 449 (including 24 women) in the faculty of science. The total degrees in medicine conferred were 109, and in the faculty of science 64. The general council of the university as at September 30th numbered 7,660.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary comitia was held at the college on Thursday, December 1st, the President, Sir Thomas Barlow, in the chair.

Arms of Harvey.

It was announced that Sir James Sawyer had offered a reproduction of the Arms of Harvey to the college. Its preparation had entailed a considerable amount of labour and research, and a cordial vote of thanks was passed to Sir James Sawyer for his welcome gift.

Communication.

A communication was received from the Secretary of the Royal College of Surgeons, dated November 11th, regarding the proceedings of the council.

The rest of the business was ordered to be regarded as *secreta collegii*.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Fellowship Examination.

THE following candidates have been approved at the examination indicated:

FIRST FELLOWSHIP.—J. D. Cherry, Miss Z. A. De Cruz, T. O. Graham, J. R. May, G. E. Pepper, S. R. Rao.
FINAL.—Miss I. M. Clarke, H. English, K. T. Nath, G. F. Shepherd, Miss C. F. Williamson.

Public Health AND POOR LAW MEDICAL SERVICES.

MILK PROSECUTIONS IN SCOTLAND.

LAST month an interesting development regarding milk prosecutions occurred when the Justiciary Appeal Court, sitting in Edinburgh, quashed a conviction obtained in a sheriff court against an Argyllshire farmer for having sold milk as pure sweet milk when it was 28 per cent. under the standard in fat. The questions submitted to the court were whether the manner of taking the samples was a fair one, whether the method of averaging was a proper one, and whether a respondent in such circumstances discharged the onus laid upon him by the regulations, by the evidence of himself and his servants. The court answered all the questions in the affirmative, the last being the important one. Lord Salvesen said it was open to the person accused to show his bona fides in the matter, and to establish by such evidence as was available to him that the milk had not failed to reach the proper standard through his tampering. This is an important decision in view of the movement to ensure the punishment of the actually guilty persons in cases of milk deficiency. Hitherto a person selling milk under the standard was liable to conviction and the same penalty whether he unintentionally or wilfully offered inferior milk for sale. The man who skimmed milk or watered it was in exactly the same position as the man whose cows yielded milk below the standard, or the man who purchased milk which he did not know to be inferior, and resold it as he got it. At a recent meeting of the Scottish Chamber of Agriculture, the report of a committee which considered this question was not adopted. It failed to state clearly the real difficulties, and offered only a partial remedy. Tampering is so easy, and so difficult to detect in the case of milk, and the public interest in a pure milk supply is so paramount, that some more satisfactory and fairer method of dealing with offenders is called for.

The remedy which has been suggested as most likely to meet the difficulty is to treat the unintentional offender in a different way from the wilful offender. Keep the standard as at present and treat any one—farmer, middleman, or retailer—in possession of inferior milk as guilty of a police offence. But as a further safeguard to the public, have increased penalties for repeated offences. The usual causes for inferiority, such as recent calving, wet grass, nature of feeding, quality of cow, can all be ascertained by the farmer and guarded against, so that he may not guarantee milk which is inferior. With the retailer the case is different. He must take the risk of buying from a reliable seller and getting a guarantee. If this does not make him escape conviction and fine, it enables him to recover the penalty from the seller. For the wilful offender the onus of proof should be, as in other charges, on the prosecutor, previous convictions of having inferior milk to be allowed as evidence. The mere possession of inferior milk should not hold him guilty of the graver offence. That milk in his possession is inferior may be a presumption that it has been tampered with by some one, but it should not without further proof be presumption of the guilt of the retailer. The usual course of criminal procedure should be followed, making the offence a serious one, and an Act framed on these lines would, it is suggested, meet the case of those who are moving for some alteration in the law, and yet give the public the requisite protection.

LOCAL GOVERNMENT BOARD REPORTS.

Bridgnorth Borough and Rural District (by Dr. F. St. George Mivart. New series, No. 25.)—No reason is given for the inspection of these two Shropshire districts. The need for houses in the town of Bridgnorth appears to be very great, and not alone for the poorer labouring classes but also for the well-to-do. A striking feature of some of the older dwellings is the manner in which they are built into the rock or against the steep hillsides. There is a duplicate public water supply, after the manner of the county town of Shrewsbury; spring water intended only for drinking purposes is laid on to public stand pipes, and filtered water from the river Severn is delivered through pipes at or into houses. A portion of the sewage is treated at outfall works and a portion enters the Severn untreated. Practically all the houses in the town have water-closets. The most serious nuisance in the borough is that caused by the keeping of pigs. In one case, where a pigsty was placed upon an enormous accumulation of manure and

filth, Dr. Mivart found the smell extremely offensive and swarms of flies were in evidence. In one case pigs were being kept in a stable, while they were also found in a slaughterhouse along with a large quantity of poultry. The slaughterhouses come in for special condemnation. They are generally much too near dwellings, and complaints are made of foul smells, of soakage of filthy liquids and of the presence of flies. Many of the slaughterhouse structures are old and dilapidated sheds unsuited to their purpose. In the Bridgnorth Rural District the cottage property compares not unfavourably with that of the average rural district, though there appear to be a fair number of exceptions. For the most part the water supplies are fairly satisfactory, separate wells being in use. In one case the inhabitants of a row of cottages have to carry water from a source nearly 200 yards distant. The village of Claverley, with a population of about 160 persons, has no public supply, and in Dr. Mivart's opinion one should be provided. The condition of the cowsheds was found to be moderately satisfactory. As in so many other rural districts the chief defect, and the one apparently most difficult to remove, being the accumulation of enormous masses of dung and filth, solid and liquid, in a central foldyard or a yard with which cowhouses in one way or another communicate. In some instances an unusual number of flies was noticed in the cowhouses.

SEWER VENTILATION.

M. O. H.—There is still a good deal of difference of opinion among sanitary engineers and others as to whether a sewer should be ventilated by means of street manholes or not. There is no law compelling the provision of this form of ventilation.

DISCHARGE OF SCARLET FEVER PATIENTS.

S.M.O.—The responsibility for discharging patients from a scarlet fever hospital rests as a rule with the medical superintendent of the institution. If return cases among school children could be traced definitely to the discharge of a patient after three weeks' illness the circumstance might be pointed out to him by the education authority. It is not now so generally held that the infective period of scarlet fever is the whole of the period of desquamation. Much more importance is attached to discharges from the ears, throat, or nose.

MEDICAL OFFICER OF HEALTH AND OTHER PRACTITIONERS.

A COUNTRY PRACTITIONER.—The Local Government Board has repeatedly expressed the opinion that only in very exceptional circumstances can it be necessary for a medical officer of health to see a patient notified to him by another practitioner as suffering from an infectious disease. If such an occasion should arise the visit to the patient should be made in consultation with the medical attendant, whose consent and also that of the patient should be obtained. It is distinctly the duty of a medical officer of health to investigate the cause of any case of infectious disease of which he is notified. But he can do this quite easily without seeing or interviewing the patient. It is most improper for a sanitary authority to suggest that a medical officer of health should verify the diagnosis of a case notified to him. We do not think that any medical officer of health would be a party to such a proposal.

MEDICAL ORDERS FOR MIDWIFERY ATTENDANCE.

C. S. W., who is a district medical officer, states that his board of guardians has recently passed a resolution to prohibit medical orders for midwifery attendance being granted to applicants who live in the neighbourhood of a certified midwife, and that *in consequence of this resolution* a poor patient who was delivered by instrumental aid a year back cannot now procure a medical order for such attendance as was then found to be necessary.

*** We regard any such resolution as that which our correspondent describes as being quite contrary to the spirit of the Poor Law Acts, and if this view of the matter is correct, it would not be binding on any of the board's own officials, who, when called upon at any time to provide relief (medical or other) in urgent cases, would then be expected to use their own judgement as to granting or refusing any applications which might be made to them.

FORTY-SIX cases of scarlet fever were notified in Edinburgh during the week ending December 3rd, and 247 cases were under treatment in the hospital at Colinton Mains.

THE experience of the Massachusetts General Hospital in the control of typhoid infection among its nurses and ward-tenders by means of antityphoid inoculation has led to the adoption of voluntary inoculation among nurses and internes of several other hospitals in Boston.

The Services.

TERRITORIAL FORCE REGULATIONS AMENDMENTS.

IN the Army Orders issued on December 2nd the amendments of the Territorial Force Regulations comprise the following:

A county association will be allowed a capitation grant of 1s. in respect of medical examination for each recruit who joined the Territorial Force within the association county area, and also for each member who enlists into the Special Reserve category (B), transfers from a dismounted branch of the service, re-engaged (in cases where the company consider such examination necessary), is discharged for medical unfitness, or enrols into the Special Service section. On mobilization one suit of service dress, with one greatcoat per man, will be provided for those men who enlist in the R.A.M.C. Territorial Force to complete the war establishment of general hospitals. To enable associations to meet the cost of the provision of clothing and personal equipment for men enlisted on mobilization to complete the war establishments of general hospitals a grant will be made on the order to mobilize being given at the rates per man of £2 6s. for clothing and 9s. for personal equipment.

Lectures to R.A.M.C. Officers.

In connexion with the technical training of the Royal Army Medical Corps in field duties, in the Scottish Command, a series of lectures on the principles of staff duties in the field is being given in Edinburgh by officers of the General Staff. The opening lecture was given in the Carlton Hotel, Edinburgh, by Colonel A. Hunter Weston, Chief of Staff, Scottish Command, on December 2nd, the subject being the "Organization of the British Army for War."

The first of a special series of lectures for officers of the R.A.M.C., Regulars and Territorials, in the Scottish Command, was delivered in the Library of the Military Hospital at Edinburgh Castle on December 2nd by Colonel M. T. Yarr, Medical Inspector of Recruits. The subject was "British, French, and German field medical organizations compared." The lecturer dealt in some detail with the various units employed on active service in the field, commenting on the fact that the foreign organizations had not yet been tried in the field except on manœuvres. How the paper organization might stand the strain in actual warfare was quite another matter. He drew attention to the points which, in his opinion, we might profit from, showing what he considered the good points, and also the weaknesses or defects in each system. At the close of the lecture discussion was invited, and several points of interest were elucidated by Colonel Woodhouse, P.M.O., and Lieutenant-Colonel Heuston, R.A.M.C.

Another series of lectures will be delivered by officers of the R.A.M.C. at the Castle, Edinburgh, on the organization and administration of the medical service, and these lectures will be delivered on the afternoon of the same day as the first series.

Lowland Mounted Brigade Field Ambulance.

The third of the series of special lectures for officers and non-commissioned officers of this unit took place in the head quarters at 17, Royal Terrace, Glasgow, on December 6th, when Major H. McMiching, D.S.O., Divisional Staff Officer, dealt with the preliminary stages of the Franco-German war, with special reference to mobilization and concentration.

Scottish Red Cross Brigade.

At a public meeting in Falkirk, on November 29th, an account of the working of the Red Cross Brigade was given by Major C. C. Fleming, D.S.O., General Secretary, and an address was also delivered by Lieutenant-Colonel Greig, R.A.M.C.(ret.). A local committee and two recruiting committees for voluntary aid detachments in the district were formed.

THE GILBERT BLANE MEDAL.

THE gold medal founded by the late Sir Gilbert Blane, Bart., to be given biennially, has been awarded by the Medical Director-General of the Navy and the Presidents of the Royal College of Physicians and the Royal College of Surgeons to Fleet Surgeon G. Trevor Collingwood, M.V.O., for his journal of H.M.S. *Racer*, April 20th to December 31st, 1909, and to Fleet Surgeon Arthur R. Bankart, M.V.O., M.B., K.H.P., for his journal of H.M. yacht *Victoria and Albert* for the year 1909.

AT the meeting of the Metropolitan Water Board on December 2nd, the resignations of Dr. Percy Pope and Dr. C. E. Adams, District Medical Officers for the Barrow Hill Division of the Western District and the Buckhurst Hill Division of the Eastern District respectively, were reported. To fill these vacancies it was resolved to appoint Dr. Beresford Kingsford, M.D., D.P.H., in the Western District, and Dr. P. W. Moore, M.B., M.R.C.S., L.R.C.P., in the Eastern District. Notice of the resignation of Dr. T. E. B. Meyler, of the Battersea, Brixton, and Wandsworth Division of the Southern District, was received. Dr. W. Anderson, who was appointed to act jointly with his partner, Dr. Cobb, in the East of Lee Division of the Eastern District, has removed from the neighbourhood, but it was not considered necessary to fill the vacancy thus caused.

Medical News.

DR. SYLVANUS G. MORRIS has been appointed a Knight of Grace of the Order of St. John of Jerusalem in England.

DR. F. W. MOTT, Fullerian Professor of Physiology, will give six lectures on heredity at the Royal Institution before Easter, and Professor Arthur Keith two lectures on giants and pigmies.

DR. EBEN H. EDWARDS has received the Royal permission to accept the Third Class of the First Division of the Imperial Chinese Order of the Double Dragon, conferred upon him by the Emperor of China in recognition of valuable services rendered by him.

WE regret to have to record the death on December 5th of Mr. W. H. Horrocks, F.R.C.S., senior surgeon to the Bradford Royal Infirmary, formerly president of the Bradford Division of the British Medical Association, and for five years representative of the Bradford Division at the Representative Meeting.

THE thirty-second meeting of the German Balneological Congress will be held in Berlin from March 2nd to 6th, 1911. There will be an exhibition of apparatus and preparations in connexion with the congress. All communications should be addressed to the General Secretary, Geheimrat Brock, Berlin, N.W., 52, Thomasinsstrasse 24.

IN a note appended to an account of the discussion in the Academy of Medicine on the new colonial bill on the Notification of Infectious Diseases, the editor of the *Semaine Médicale* states that a new case of Malta fever by laboratory contagion has been reported to the Academy of Medicine by Dr. S. Arloing and Drs. P. Courmont and J. Gaté of Lyons. The last named is a worker in the Department of Experimental Medicine and having handled cultures of *Micrococcus melitensis* during the whole of the month of April showed on May 8th the first symptoms of the disease, which lasted sixty days. The patient had never been in contact, either at the moment when he was taken ill or during the preceding months, with any patient affected with typhoid fever, Malta fever, or other analogous diseases; he had not quitted Lyons for a long time nor had he drunk goats' milk for years previously, but as has been already stated during the month which preceded the commencement of his illness he had constantly manipulated cultures of *Micrococcus melitensis*, and it is noteworthy that he was the only experimenter in the laboratory in contact with them.

THE dinner of the Glasgow University Club, London, has always been well attended, but the gathering on November 5th must have been one of the largest in its annals. Lord Curzon of Kedleston, who was in the chair, found himself presiding over an assembly which, including several distinguished guests with Lord Lamington at their head, numbered upwards of 200. The toast to "The University and The Club" was moved by the Chairman, who reminded his audience that he had the double honour and advantage of being both Rector of Glasgow and Chancellor of Oxford. This led him on to a consideration of the respective values of different forms of university life. In a general way the old universities of England were, he indicated, best fitted to the needs of those seeking culture for itself, while men for whom study at a university meant the commencement of a professional career should resort to the younger bodies. The University of Glasgow held a mediate position, being equally capable of supplying technical knowledge and pure culture. It was specially successful in its medical and scientific teaching. Between the old universities and the new ones there should not be any sense of rivalry, and he did not think there was. Each recognized the special scope of its congeners, and the directions in which its own strength lay. The toast to "The Guests" was proposed by Sir Donald Macalister, President of the General Medical Council, several members of which were present. While endorsing all that had been said in praise of Glasgow by Lord Curzon, he would like to add a further point in its favour. It was always hospitable not only to new ideas, but to those who embodied them. Among the guests whom he more specifically mentioned were Lord Lamington, Sir Thomas Barlow, the President of the Royal College of Physicians of London; Sir Christopher Nixon, Vice-Chancellor of the University of Dublin; Sir John Moore, and Sir John Batty Tuke.

Letters, Notes, and Answers.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

M.O.H. asks where he can get a portable and efficient sprayer for disinfecting with formalin.

HAIRY MOLES.

H. S. asks whether the effect of treating hairy moles by carbonic acid snow is permanent as regards the removal of the hairs.

*** Sometimes coarse hairs can be removed by the action of the snow, but to obtain this effect a more depressed scar than is advisable is produced. When the hairs resist the snow, electrolysis must be employed to destroy them. This resistance of hair is observed, too, after liquid air. Of course, the coarse hairs could be removed by electrolysis *before* employing the snow to the hairy mole.

REBATE OF LICENCE DUTY.

J. L. K. sends an extract from the *Justice of the Peace* of September 24th, 1910, in which the opinion is expressed that the use by a practitioner or his family of a car for other than professional purposes destroys the right to "exemption."

*** Section 86 of the Finance (1909–10) Act, 1910, provides for the allowance of one-half the licence duty on a car "if a duly qualified medical practitioner proves to the satisfaction of the Commissioners or Council, by whom the licence is granted, that any car kept by him is kept for the purpose of his profession." The words adopted in this section, which allows remission of only one-half the duty, are clearly intended to bear a meaning different from that attaching to the words "used solely" for certain purposes. The latter words are the words that are applied to vehicles in respect of which complete exemption from licence duty is granted under other Acts. There is no doubt that the intention of the Legislature was that, in considering the title to relief from one-half the duty, regard shall be had to the purpose for which the car is kept, and not to the question whether an entirely incidental use is made of the car for private purposes. So long as the use of the car for non-professional purposes is, in fact, purely subsidiary and incidental, the title to relief will, in our opinion, remain.

INCOME TAX.

RETIRED sold his one-quarter share in a partnership to the remaining partner on June 30th, 1910. He inquires what share of the income tax for the year 1910-11 each should pay.

*** As our correspondent enjoyed one-quarter of the profits for one-quarter of the fiscal year he should pay one-sixteenth of the income tax charged.

NORFOLK has one-half share of a practice, the profits of which are assessed at £820. He inquires whether each partner can claim to be assessed at £410 and obtain the abatement of £150, or whether income tax must be paid before the profits are divided.

*** Though not entitled to separate assessment, either partner can claim the allowance of £150 if his total income from all sources, including any that his wife may have, does not exceed £500. He may claim £120 if his total income does not exceed £600, or £70 if not exceeding £700. Application should be made to the surveyor of taxes.

ASSISTANT, who receives a salary of £200 a year with board and residence desires to know what sum should be returned for assessment to income tax.

*** The salary only should be returned. The benefit of board, etc., is not assessable to income tax.

ANSWERS.

F. B.—The next meeting of the International Medical Congress will be held in London in 1913; the exact date has not yet been decided on. The secretary is Mr. G. H. Makins, C.B., F.R.C.S., 47, Charles Street, Berkeley Square, London, W.

INVOLUNTARY MICTURITION.

DR. PERCY ALLAN (Croydon) writes, in answer to F. F.: The patient would probably find the distressing condition complained of would be entirely relieved by hypnotic suggestion. Hypnotism is specially efficacious in the treatment of functional conditions of the urino-genital organs.

CHRONIC INTERNAL HAEMORRHOIDS.

DR. H. J. THORP (Ipswich) recommends for the treatment of chronic internal haemorrhoids ung. hamamelis within and around the anus, absolute cleanliness, and, when possible, the recumbent posture for ten minutes after defaecation, and the use of a sponge in preference to paper.

GLYCERINE "TINCTURES."

E. R. B.—Glycerine possesses to a considerable degree solvent and preservative properties similar to those of alcohol, and can therefore replace the latter to a large extent in preparations in which alcohol is used; but golden syrup does not possess either property to a sufficient extent to make it suitable for the purpose, and its use would be little, if any, better than the employment of water.

LETTERS, NOTES, ETC.

B. W. J. has omitted to enclose his card.

CORRECTION.—Dr. Sidney Phillips writes: Will you allow me to correct an error in the abstract of my paper on fevers, read at the Harveian Society, and reported in the JOURNAL of December 3rd, p. 1776? It was not *pityriasis rubra* but *pityriasis rosea* which I stated might resemble measles rash.

DR. T. HOUGHTON MITCHELL (Ambleside) writes: Now that vegetarianism has been in existence for a number of years, and its advocates apparently on the increase, would it not be worth while to gather some statistics as to sex incidence in the conception products of this dietetic atavism of a partly simian nature; whether, in a word, the offspring will, in betting parlance, be worth a "monkey" or a nut. The result of an inquiry may make us heed Sir John's warning:

> *Falstaff.* There's never none of these demure boys come to any proof; for thin drink doth so over-cool their blood, and making many fish meals, that they fall unto a kind of male green-sickness; and then, when they marry, they get *wenches*.

A DISCLAIMER.

MR. JOHN MURRAY, publisher (London) writes: An advertisement of Dr. Ross's forthcoming book on cancer has been issued, which I greatly regret to learn has caused offence. I write entirely on my own initiative to tell you that that advertisement was issued from my office, in ignorance of any objection to it, and that Dr. Ross is in no way responsible either for the wording or circulation of it. I accept the whole responsibility, and I trust that no prejudice may lie against him for the mistake, as he was not consulted beforehand, and asked us to withdraw the advertisement the instant he saw it.

WATER FOR WASHING THE MOTOR.

A CORRESPONDENT who resides outside the area of the Metropolitan Water Board, after reading the annotation entitled "Water for Washing the Motor," published in the JOURNAL of November 19th, 1910, page 1644, wrote to his local water company demanding relief from a rate imposed upon him in respect of horses and traps. He has now received a reply from the secretary of the water company in which he states that "we quite admit it is clear that any water authority whose powers incorporate section 12 of the Waterworks Clauses Act, 1863, may not charge a special rate for water for washing private carriages or horses when the water for that purpose is obtained from property included in the gross assessment upon which the domestic water rent is based and where such water is used by bucket or basin, etc., and without hose pipe or other apparatus. Section 19 of the said Act prohibits any owner, occupier, or other person from affixing or permitting to be fixed any pipe or apparatus without the consent of the undertakers in every case. The whole question is purely a matter of arrangement, that is, if a hose pipe be used for stable purposes then the charge is correct, and can be enforced, as also a heavy penalty for use without agreement. If no hose pipe be used then no charge should be made."

THE HEALTH OF NAPLES.

LIEUTENANT-COLONEL W. S. P. RICKETTS, M.B., I.M.S. (ret.), who resides at Naples, writes to state that the reports with regard to the cholera there have been grossly exaggerated. There were, he says, some sporadic cases last August and September, imported from the country districts, but never any epidemic; in fact, it is a question whether cholera could now visit Naples, with its perfectly pure water supply from the distant Apennines, and justly considered to be one of the best in the world. He sees no cause for alarm for any visitor intending to include Naples in an Italian tour during the winter and spring months, as visitors live in the best part of the town in well-appointed and carefully-managed hotels and pensions far removed from any possible source of infection. The town is now cleaner and pleasanter than it has been for some time, and the state of the public health excellent; the average death-rate for the past seven years from acute infectious diseases being less than 5, compared to 6 in Paris, nearly 7 in Berlin, over 8 in Vienna, 10½ in Nice, 9½ in Rome, and 11⅓ in London, for 10,000 inhabitants. Surely Naples should be classed among the finest winter resorts on the southern Italian coast, if not in the entire Mediterranean.

EVERY ONE'S OWN PHYSICIAN.

WE have received from a correspondent a copy of a booklet named *Every One's Own Physician*, which was sent to him as secretary of a golf club, to be placed in the club room. It purports to be a "popular handbook of sound medical advice for the home treatment of nervous and chronic diseases," but except for a brief introductory statement, explanatory of the functions of the body, the contents are in keeping with the sort of stuff familiar to all students of the literature circulated by the more ingenious classes of quack. It terminates with a list of points on which information should be given by those writing for advice, and presumably the chief object is to attract attention to a homoeopathic institution, of which we had never before heard. Its author describes himself as a "consulting homoeopathist," and claims to have an Austrian degree in medicine. We regard the work as a libel on homoeopathy, and merely draw attention to it in order that others of our readers who see it either at their patient's houses or elsewhere may know what sort of thing it is. That they may encounter it is possible, because certain newspapers have, for reasons best know to themselves, elected to treat it as if were a serious publication.

SECRET REMEDIES AND PROPRIETARY PREPARATIONS.

DR. ZERNIK contributes a further article on this subject to the *Deut. med. Woch.* of September 15th, 1910. In this article he deals with a few extraordinary secret preparations.

Bauch's Busennährcreme (bosom nutrient cream) is sold at 4s. 6d. for two boxes, which are said to be necessary for the production of full breasts. The actual value of the boxes and their contents is between 4d. and 5d., the cream consisting of a mineral fat perfumed with oil of rose. The Karlsruhe authority has issued a warning on the ground that the substance cannot possibly produce the effect claimed in view of its composition.

Ninetta is a similar preparation. It is described as an oriental strengthening and nutrient powder. It consists of a powdered leguminous flour with sugar and lecithin.

Büsteria (made by D. F. Steiner, of Berlin), is another "oriental strength giving powder," which is sold at an absurdly high price. The Berlin police have issued a public warning against it. It consists of bean and pea flour.

Dr. J. Schäfert's physiological nutrient (nerve) salts for neurasthenia is a preparation made in Barmen. The prospectus states that it is composed of glycerine phosphate compound with certain physiological salts, which act on the formation of the red blood corpuscles and improve the circulation generally; 100 grams of the salts put up in a glass vessel costs 4s. It consists of 40 parts of glycerine phosphate of calcium, 30 parts of glycerine phosphate of sodium, and 20 parts of sodium chloride with a trace of iron.

Professor Tissander's cure for rheumatism, gout, and sciatica is stated by Zernik to be sent for 4s. 6d. by "The Sabalek Syndicate," of London. Quoting from a letter received from this firm, the "cure" is said to be composed of a number of reagents which act against uric acid. These reagents, together with a kidney stimulant and a blood purifier, are combined by "Professor" Tissander in a very concentrated form. It is pleasant to take, and does not produce any deleterious effects of any kind. The examination revealed that the tablets contained sulphur, salts (chiefly alkali phosphates), and an emodin containing vegetable powder (rhubarb, senna). Zernik concludes by saying: "This composition indicates sufficiently in how far the preparation can possess the action ascribed to it."

Spiritol is supposed to be an ideal substitute for spirit and to have nearly all the physical qualities of spirit, to be free from acid and alkali, to be miscible in all proportions with water or spirit, and to volatilize without residue. It is introduced for the preparation of cosmetic and pharmaceutic preparations, etc. The analysis revealed that it consisted chiefly of methyl alcohol, which was not even pure. Zernik comments on this preparation.

Verophen mouth water is advertised as a protective against all infectious diseases. It consists of a 0.2 per cent. solution of chinosol in water. A bottle containing 100 c.cm. of the fluid costs 1s. 6d. "Verophen" for mouth washes is also sold at 1s. 6d., while verophen for the telephone costs 3s.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste Restante* letters addressed either in initials or numbers.

Presidential Address

ON

A PLEA FOR GRADUATION IN LARYNGO-OTOLOGY ON A BROAD BASIS.

DELIVERED BEFORE THE SECTION OF LARYNGOLOGY OF THE ROYAL SOCIETY OF MEDICINE.

BY

P. WATSON WILLIAMS, M.D.LOND.,

LECTURER IN LARYNGOLOGY AND RHINOLOGY, UNIVERSITY OF BRISTOL AND IN CHARGE OF DEPARTMENT FOR DISEASES OF THROAT, NOSE, AND EAR, BRISTOL ROYAL INFIRMARY.

Ω ἀνεξέταστος βίος οὐ βιωτὸς.
(Life without examination is not worth living.)
Plato.

COMING from Bristol, where, as you are aware, we have recently developed a university, my thoughts have perforce been turned in the direction of educational matters, and as a lecturer on diseases of the nose, throat, and ear, I have given much consideration to the position of our own speciality in medical education, which, in the interests of practitioners and of patients, leaves something to be desired.

We hear it said that this is a day of specialism, and specialism in medicine and surgery is thought to be a modern development. Yet we learn from the Ebers papyrus that in the thirteenth century B.C. patients applying for relief to the medical temple at Thebes had to state their complaint, and that it was left to the principal of the medical staff to send the specialist best suited for the case. We find that the practice of surgery was distinguished from medicine even earlier than the thirteenth century B.C., and it is recorded that in Egypt each physician treated a single disorder and no more, some devoting themselves to the eye, others to the teeth (they made artificial teeth, and some have asserted that they have found traces of gold stoppings in the mummies), and others again devoted themselves to disorders of the intestines, while yet others were obstetric physicians called in by midwives to the difficult cases.

In our own land, when in 1460–61 a charter was granted to the Barber-Surgeons, and the Edinburgh Charter was obtained in 1505, surgery in a humble way started on its career divorced from medicine, and under the paternal fostering of the Colleges of Surgeons became a science and art distinct from internal medicine.

We find in consequence that in Great Britain, and later also in Ireland, the field of medical science was long occupied by rival schools of medicine and of surgery. Hence arose our academic distinction between medicine and surgery peculiar to this country, for in practically every European nation except our own a certain course of study is laid down, and for all practitioners alike State examinations must be passed. If a degree is obtained it is always that of Doctor of Medicine—there is no distinct qualification in surgery; and it is the same in Canada and the United States. Thus, after qualifying on a common basis, the graduate is free to follow his own bent; and if he seeks to become a pure physician, surgeon, or specialist, he must establish himself as such, not by passing further examinations, but by his clinical and research work. Thus while the degree of M.D. serves for all physicians, surgeons, and specialists alike, their subsequent differentiation is clinical, and not academical as with us.

We alone carry examinations quite beyond the qualifying stage to the higher standards of medicine and surgery, and he who aspires to the charge of a teaching clinic and consulting practice must, as a rule, first obtain a higher and special qualification in medicine or in surgery respectively, involving a further and more advanced course of study. Though not without drawbacks, this has the advantage of ensuring that the more highly qualified physician or surgeon has received, over and above what is necessary for qualification, a very thorough grounding in current medical or surgical science and all that immediately pertains to it, and the custom has coincided with an increasingly high standard of original medical and surgical work in this country. The plan has answered so long as the whole range of medicine on the one hand or of surgery on the other could be mastered by one individual, but with advancing knowledge, pure medicine and surgery are no longer the only specialities, and with the growth and development of newer special branches the objections to our English system appear. Either we must continue our unfortunate custom of mentally placing each speciality under the category of medicine or of surgery, and of demanding as the *sine quâ non* for teaching clinics the corresponding medical or surgical qualification, although it may have no special bearing whatever on the specialities in question—in my own hospital both the laryngologist and the obstetrician of the future are distinguished in that they will have to possess all the higher qualifications both of the physicians and of the surgeons—or we must be consistent, and offer opportunities for a qualified practitioner taking his higher qualification in his speciality after a course of post-graduate study and practice *parallel* to that required for the physician or the general surgeon.

No one could be more opposed to too early or too narrow specialization than I am, for it is certain that a sound upbringing in the whole range of general medicine and surgery is the only safe foundation for any special branch. But the tendency is to make another speciality, general surgery, the academic test of fitness in laryngology; medicine, and even a systematic training in our own department are made secondary considerations, with a consequent danger of our becoming too exclusively surgical. In no other speciality would this be more deplorable than our own, for which I believe general practice is as good taking-off ground as pure surgery. We want contributions from all points of view, and it should always be open to every practitioner to specialize in any direction according to his opportunities for so doing.

To our fellow countryman, Robert Liston, belongs the honour of publishing, in 1837, directions for laryngoscopy, which he recommended to be employed for observing diseases in the larynx.* Eighteen years later Manuel Garcia published his epoch-making observations, to be followed by those early giants in our speciality, Türck and Czermak, while so many of those who are here to-day have had the privilege of personal acquaintance with the slightly later but hardly less distinguished pioneers, when laryngology was still in its infancy, and many members of this section have not only witnessed, but have generously contributed to its exceedingly rapid growth and development. Indeed, most of us have had to acquire our knowledge to a large extent first hand, and it has not always been easy to keep so thoroughly in touch with the rapid advances all the world over.

But things are very different from what they were when I started practice, and hardly any individual is capable of a complete mastery of the whole range of rhino-laryngology; and if otology be superadded the ground is so extensive that, without devoting his whole time and attention to those subjects over several years, no one can hope to be a scientific expert throughout such a large territory.

It is no small matter to acquire an accurate knowledge of anatomy, pathology, and, in so far as they bear on the diseases of the nose, throat, and ear, of neurology and general medicine, the etiology, diagnosis, and treatment of diseases of these, together with a fair acquaintance with the various methods of treatment and operations which have been or are employed, as well as the acquirement of the operative and diagnostic technique, including the trachea and oesophagus; for it is to the honour of our speciality that our laryngological colleagues abroad—where the development of specialities has been better fostered—have originated and made practical tracheoscopy, bronchoscopy, and oesophagoscopy.

I think no one who is not ignorant of the work that is being done by laryngologists and otologists can deny that, *as an addition* to that sound general education in the principles of medicine and surgery for pass qualifications

* Liston: *Practical Surgery*, London, 1837. The following reference is on page 350: "The existence of this swelling can often be ascertained by careful examination with the finger, and by means of a speculum by such a glass as is used by dentists on a long stalk, previously dipped in hot water, introduced with its reflecting surface downwards, and carried well back into the fauces, a view may often be had of the parts."

all this involves as much, if not more, study as is demanded of those who present themselves for a Fellowship of the Royal Colleges of Surgeons or a Mastership of Surgery at a university, or an M.D. in obstetric medicine, in State medicine or in pathology, or an M.S. in dental surgery.

All these degrees in special branches may be acquired at the London University, and I sincerely hope that on similar lines a graduate may ere long be able to take a higher degree in our speciality. Surely the practitioner who so qualified himself for work in laryngo-otology should have the opportunity of being tested by examination and of obtaining his higher degree in this department. He would be better equipped for making the utmost use of his riper clinical experience than by devoting himself instead to acquiring an exact knowledge of the anatomy of the whole body and the whole range of advanced medicine or general surgery, *at the expense of* systematic liberal study of his speciality and all that pertains to it. To test such study by examination too late in life would be a misfortune.

Nowadays one might suppose Plato's maxim read "Life without examinations is not worth living"! for already the tendency in this country is to continue medical examinations unduly, and thus to trench too far on the precious years of early adult life, when a man's best original ideas are germinating and should be cherished and allowed spontaneous growth, instead of being trammelled and choked out of life by scientific pedagogy.

We gather fruits in autumn, but life's spring is the sowing time. It is worse than useless to spend too long a time in tilling and preparing the ground, and still worse to disturb the roots by examination when we should be looking for the blossoms of research. There is more truth in the world-renowned Oslerism than is generally suspected, and, particularly in the field of science, it is an open question whether after the age of 40 one's mind ever breaks new ground in the sense of being original.

An Address

ON

SOME POINTS IN THE DIAGNOSIS AND LOCALIZATION OF INTRACRANIAL TUMOURS.*

BY

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Dr. Risien Russell said the problem as to whether tumour or functional affection of the nervous system was to be held responsible for certain cephalic and other symptoms that might occur had first to be dealt with. It would have been possible for him to quote cases in which hysteria and tumour had been confounded, and in which patients had been trephined for the organic condition when hysteria accounted for the clinical picture, but as his time was limited he preferred to deal with the cases in which difficulties arose in the diagnosis between neurasthenia and tumour, for this problem was becoming more and more common owing to the rapid increase of neurasthenia in the community. He could have quoted many cases in which the question that he had been asked to decide was whether tumour existed when, in reality, neurasthenia was alone responsible for the symptoms, but he thought it more instructive to refer to two in which neurasthenia was supposed to account for symptoms which were due to tumour. In one of those cases the patient died without revealing any of the positive signs by which tumour could have been recognized, while in the other the absence of organic signs allowed the patient to be sent for a voyage from which he returned with unmistakable indications of tumour which proved rapidly fatal.

After dealing with the physical signs on which reliance must be placed for the diagnosis of tumour, he referred to a case in which the symptoms ultimately proved to be due to neurasthenia, but in which he had to reserve his diagnosis for some time, owing to the fact that the optic discs were rather high coloured and one plantar reflex, though not by any means extensor in type, was not as definitely flexor as the other. There were certain physical signs that could not possibly exist in the absence of organic disease, but, nevertheless, he from time to time met medical men who allowed their knowledge of the patient's hysterical tendencies or a neurotic family history to outweigh this evidence in a way that was wholly unjustified. What he had said about neurasthenia would prepare his audience for what was to follow in regard to general paralysis of the insane, for it was no uncommon thing for this grave disease to be met with when the symptoms had appeared to be adequately accounted for by neurasthenia. To those who expected grandiose delusions and other characteristic signs of madness this would seem absurd, but he must remind them that general paralysis revealed itself in the earlier stages in many different ways, and that the diagnosis had constantly to be made in the absence of grandiose delusions or any other obvious signs of madness.

He had met with more cases in which tumour was suspected where general paralysis accounted for the symptoms, but he was also familiar with the other class of case in which tumour accounted for what was supposed to be due to general paralysis. In calling attention to the physical signs that should be relied on in differential diagnosis, he referred to the value of lumbar puncture and the Wassermann test, and directed attention to a paper by Dr. Grainger Stewart in *Brain*, in which he had brought out the points that favour the diagnosis of a frontal tumour of the brain, a variety that was especially liable to be confounded with general paralysis.

He next discussed cases in which vascular disease occasioned a clinical picture which caused tumour to be suspected, and pointed out that although under ordinary circumstances vascular lesions of the brain resulted in the sudden or rapid appearance of symptoms, exceptions occurred in which the progress of symptoms was so slow as to justify the suspicion of tumour. Two classes of cases were met with in this connexion, one in which there were general symptoms of intracranial disease without paralysis, and the other in which hemiplegia of slow onset formed part of the clinical picture. Two cases were quoted in which there had been great uncertainty in his mind as to the correct diagnosis. In one he suspected tumour where the subsequent course of the case justified the view that vascular disease accounted for the symptoms; in the other, after much hesitation as to the correct diagnosis, the patient was trephined, a procedure that proved to be fully justified by the increase of intracranial pressure revealed at the operation, and by the subsequent course of the case. In considering the evidence on which differential diagnosis must rest, emphasis was, of course, laid on the state of the vascular system and kidneys, but, unfortunately, the vascular system was not above suspicion in some cases of tumour, and moreover, vascular lesions might complicate tumours in a manner that might readily lead to errors in diagnosis.

It was impossible to discuss these vascular cases in relation to tumour without being reminded of the confusion that might arise between them and aural vertigo, and between the latter affection and intracranial tumour. The cerebellum was naturally the supposed seat of the tumour that was suspected in the instances that he had experienced, so that attention was called to the indications that would favour the graver diagnosis of cerebellar tumour. Dr. Risien Russell took the opportunity of referring to a difficult case in which tumour of the cerebellum had been diagnosed; in this diagnosis he had not been able to concur. Nevertheless, aural vertigo could not account for all that was present. In a younger subject this class of case might well pass for an anomalous case of disseminated sclerosis, but in a person at the patient's more advanced age it was more likely to be due to vascular disease and its consequences.

Time did not allow him to deal with migraine in the way that he had hoped would be possible, but he could not pass over this subject without referring to the special liability there might be of confounding the variety known as *migraine ophthalmoplégique* with intracranial tumour,

* The annual address at the Department of Pathology of the Oxford Medical Society, November 11th, 1910.

owing to the oculo-motor paralysis which accompanied the headache. The recovery from the paralysis which was to be expected in the earlier attacks had been responsible for an error in diagnosis on his part in a case in which a patient died of intracranial tumour who was supposed to be suffering from this variety of migraine, owing to the remarkable improvement without antisyphilitic treatment which took place in the ocular paralysis accompanying the headache. There was no optic neuritis or any other organic sign except the ocular paralysis on which the diagnosis of tumour could be based.

To those familiar with the ordinary classical picture of disseminated sclerosis it must seem a little far-fetched that this affection, so largely spinal, should be capable of being mistaken for tumour of the brain. Nevertheless, such confusion did occur, and he could recall many instances in which errors had been made, and even some in which patients had been sent into hospital in the hope of operation for cerebellar tumour when, in reality, disseminated sclerosis existed. Two typical cases of this kind were quoted, in one of which the extraordinary unilaterality of the signs and the absence of sensory defect and sphincter disturbance fully justified the suspicions of tumour at first entertained and subsequently abandoned by the medical man under whose care the patient had been. A third case was quoted in illustration of the opposite state of things, in which disseminated sclerosis was suspected where tumour obtained. Emphasis was laid on the presence of optic neuritis and the absence of indications of involvement of the pyramidal tracts as in favour of cerebellar tumour, in addition to what had already been said in regard to sensory defect and affection of the sphincters.

Time only allowed of brief reference to a few points in regard to difficulties that might arise in localization; but he referred his audience to an important paper by Dr. James Collier on this subject. A wrong conclusion might be arrived at owing to the case coming under observation late when possibly sufficient weight was not given to the significance of the earlier manifestations. How readily mistakes could occur was illustrated by a case in which all the indications save one pointed to the cerebellum as the probable seat of the tumour, but the presence of hemianopia resulted in trephining over the correct position, namely, the occipital lobe. Concomitant vascular lesions might, however, complicate matters, and lead to errors in localization. It was impossible to overrate the value of every physical sign that could be determined in these cases, so that he was glad to have the opportunity of calling attention to a point brought forward by Dr. Farquhar Buzzard at a discussion in the Ophthalmological Section of the recent meeting of the British Medical Association in London. He had found that loss of the pupil reflex to light justified the conclusion that the tumour was deep-seated, and was notably met with in those which involved the third ventricle. Attention to such details was most important, in view of the possibility of relief by operation, for while decompression might give considerable relief in deep-seated tumours, the attempt to remove such growths could lead to no good result. How important it was to give strict attention to what might possibly be regarded as insignificant details was illustrated by a case in which defect of upward movement of the eyes and a few other manifestations so well set out by Dr. Gordon Holmes as part of the symptom-complex that was produced by mesencephalic tumours, enabled him to arrive at a correct diagnosis, but in which, in opposition to his view, the patient was operated on for supposed tumour of the cerebellum, with fatal result.

THE value of the estate left by the late Dr. Sydney Ringer, Emeritus Professor of Medicine at University College, has been sworn at £54,287.

THE autumn dinner of the Southern Branch of the Durham University Medical Graduates' Association was held on December 2nd, at the Criterion Restaurant, when many members and guests were present. The Vice-President of the Association, Dr. J. Inglis Parsons, occupied the chair. The toast of the University and Association, proposed by Sir W. H. Allchin, was acknowledged by Dr. Wm. Rawes, and that of the visitors by Mr. Charters Symonds. Dr. W. Davis made a delightful speech in proposing the vice-president's health. Excellent music was provided by Mr. John W. Trimey.

A Lecture

ON

THE TREATMENT OF GASTRIC AND DUODENAL ULCER.

DELIVERED AT THE MEDICAL GRADUATES' COLLEGE, OCTOBER 10TH, 1910.

BY

E. C. HORT, F.R.C.P.EDIN.,

LONDON.

TREATMENT of ulceration of the stomach and duodenum is, except in a prophylactic sense, of course in no way concerned with treatment of such results of ulceration as perforation, stenosis, visceral deformity, abscess, etc. The treatment of these is strictly surgical, a standing witness to unconfessed failure to cure the ulcerative lesion which gives rise to them. Happily, not all of such tokens of failure are often seen, though ulceration itself of duodenum or stomach, whether acute or chronic, is a much commoner event than is frequently supposed. Ulcer of the stomach demands practically the same treatment as does that of the duodenum. We have therefore only to consider the treatment of acute and chronic ulceration itself, and of its two most frequent accompaniments, haemorrhage and pain, when not due to adhesions or other results of ulceration.

Until comparatively recent years the treatment of gastric and duodenal ulcer, both acute and chronic, has been entirely medical. Medical treatment, until towards the end of last century, may be summed up in the word "rest and starvation," both for acute ulcers and for chronic. All gradations in rest and starvation were observed, according to the needs of the individual case, from absolute rest for many weeks or months with the merest pittance of food administered by the bowel, to less restricted movement and the administration by the mouth of nutriment mainly of a liquid nature. As improvement set in, as it often did, a gradual return to active life and more satisfying diet was allowed, and the seal of professional approval was set on an almost universal practice. To a large extent the same method of treatment, and the same satisfaction with the results obtained, prevail to-day. Gradually, however, especially on the Continent, it began to be seen that confidence in the time-honoured method of treatment by rest and starvation for all cases alike was seriously misplaced. Not only did many cases fail to respond to the treatment, but others considered as cured were found, either during life or on autopsy, not to have been cured; or, again, cases in which temporary cure was apparently an actual fact repeatedly relapsed. In consequence it came to be realized, though by no means generally, that starvation was not essential to the production of cure, and that the small nutrient enemata, measured in ounces, previously given could be safely replaced by nutrient rectal injections measured in pints. The food-absorptive power of the large bowel was, however, much over-estimated, and the results were not materially improved. Tentatively then experiment was made of increasing the amount of food by the mouth, and it was found, chiefly by Lenhartz, that food could safely be given in larger quantities, and of higher nutritive value, than had previously been held wise or safe. The Lenhartz treatment was widely tried, and, though the results *quâ* cure are not strikingly superior to those of the older method, the treatment had a great educational value in demonstrating how dangerous and unnecessary the starvation inseparable from rectal feeding is. He also unquestionably proved that feeding by the mouth in all but the most urgent cases is not necessarily fraught with risk. In spite, however, of his teaching, and to some extent because of it, even those who grasped the importance of avoiding starvation in the treatment of these cases continued and still continue, when administering food by the mouth, to adhere to the custom of giving it mainly in liquid form. This they do quite regardless of the unscientific nature of such a proceeding, a statement which I shall presently justify. About the time that the

medical world was beginning to appreciate the fact that rest, starvation or semi-starvation, and slops was not the ideal treatment for all cases of ulcer, their surgical *confrères* began to claim the stomach and duodenum as their own. They soon were able to show, pre-eminently the Mayo brothers in America, and Moynihan in England, that by excision, or for choice by short-circuiting, with or without simultaneous obliteration of the pyloric orifice, brilliant results could in many cases be obtained, expressed in total relief of symptoms and relative permanence of cure. This not unnaturally gave place to increased confidence, followed by the somewhat rash assertion that, for chronic duodenal cases at least, operation was the only rational treatment once diagnosis was sure. The position, therefore, to-day is that whilst in some quarters medical treatment by rest and starvation is giving place to rest and semi-starvation, in others both are giving way to the somewhat insistent claims of modern surgery.

Whilst, however, conceding fully the undoubted fact that rest and starvation, or semi-starvation and slops, cure many cases, even permanently, of gastric and duodenal ulcer, and whilst conceding fully the wonderful results achieved by surgeons, both as regards immediate relief and apparent permanence in numerous instances, the attitude of the profession, both medical and surgical, is based, in my belief, on three grave fallacies:

The *first fallacy* is concerned with the question of rest. It is generally believed and taught that complete rest in bed, when coupled with deprivation of food by the mouth, necessarily involves complete rest of the stomach and duodenum, expressed in absence of visceral movement and secretion. This belief has little solid foundation of fact. The injection of food into the bowel is always apt to start gastric movement and gastric secretion, as has been amply proved. So also will the sight or even the thought of food. Not only so, but it appears from recent experiment by Dr. P. O. Shirokieh that the stomach is never motionless for long, even when completely empty. There is again some evidence to show that secretion of the digestive juices is not necessarily restricted to the times of intake of food even in absence of psychic stimulus. If this be true, it is clearly impossible to secure absolute visceral rest, though restriction of general movement and of food supply must certainly assist. Passing of hyperacid secretion over the pylorus is also, as we know, productive of contraction of the gastric wall. It is, of course, not suggested that some beneficial restriction of movement and secretion cannot be induced by appropriate means. But it has become the custom for many writers to assert that they are able by rest in bed and deprivation of food to immobilize the stomach as one would speak of immobilizing a limb. It is therefore necessary to call attention to the fact that such immobility is largely imaginary.

The *second fallacy* is concerned with the administration of liquid food. It is believed that if food is to be given by the mouth in these cases of ulcer it should be given in liquid or in semi-liquid form. This is not good practice, partly because an ulcer that will not heal, such as the chronic form of lesion, will not the more readily do so if its floor and edges are constantly being soaked and steeped by an infected decomposing medium charged with fatty organic acids and the products of fermentation. That such is a common state of the gastric contents in cases of chronic ulcer numberless analyses show. One of the reasons for infection and decomposition is the gastric stasis that is almost the rule in long-standing cases of ulcer, and very frequently in cases with a shorter history. The gastrostasis is the result of gastrectasis, itself the expression either of stenosis or, more generally, of toxaemic atony. To add meals in a fluid or semi-fluid state to a stomach already heavily laden, as is often the case, with many ounces, or even pints, of unescaped relics of previous meals, is the best possible method of retarding healing. For not only is the ulcer itself liable to infection and the formation of healthy granulations to serious inhibition, but from the constant hyperévolution of gas incessant movement of gastric and duodenal walls is excited and repair made doubly difficult. Add to this the profound interference with general nutrition by the contamination of each succeeding meal by the undischarged remains of many last meals, and we are led to wonder how, under these conditions, healing can ever take place. For if general nutrition be impaired the power of local healing must be seriously hampered, quite apart from the obstruction to healing due to the rigid barrier that so frequently exists between the floor and sides of a long-standing lesion and the vivifying influence of a well-fed lymph stream.

The *third fallacy* is one that seriously affects the position of both physicians and surgeons alike so long as they regard treatment of the ulcer equivalent to treatment of the cause of ulcer. The whole question, indeed, of the permanent value of any method of treatment of gastric and duodenal ulcer turns on this: Is the ulcer that you wish to cure a disease in itself, or is it merely the local sign of a general dyscrasia whose very existence you have never suspected? If "simple" ulcer, with its attendant miseries of pain and haemorrhage, be a disease *sui generis*, as has been taught for so long, we can never attain to unanimity of opinion as to what, taking the cases as a class, is the ideal method of treatment to adopt, and the present state of chaos and uncertainty must always continue. For, so far, whatever be the method followed, even in the early stages, success is only spasmodic, and relapses and failures form a high percentage which is daily being added to even from the clinics of the most successful exponents of modern surgery. If, on the other hand, gastric and duodenal ulcer, with attendant pain and haemorrhage, are merely local symptoms of a general dyscrasia characterized by the recurrent appearance in the blood of toxins with a specific cytolytic affinity for gastric and duodenal tissues, how different the problem of treatment becomes! If the gastrolytic theory of the production of haemorrhage and of ulcer which I have elsewhere fully elaborated, and in support of which there is much indirect evidence, be sound, it becomes essential to reconsider our position. For, on the one hand, it becomes increasingly clear that to be content with such purely local measures as the administration of antacids, alterations of the secretions by administration of oils, and futile attempts to secure complete local rest by restriction of movement and homoeopathic administration of food, when the general diathetic condition is clamouring for aid, is to court eventual failure. On the other hand, to expect to secure universal immunity from present and recurring ulcer by any devices of the knife becomes clearly equivalent to expecting to cure syphilis by excision of a gummatous tumour, and equally liable to disaster. This third fallacy, then, of mistaking a mere symptom for the disease is fundamental, and its importance cannot be overestimated if we desire real advance.

As a result of holding these views on the pathogenesis and treatment of gastric and duodenal ulcer, I devised the serum and dry protein treatment some three years ago. The results have been so good as regards temporary relief of all symptoms in the large majority of cases treated that one is encouraged to believe that the *rationale* of the treatment is based on sound lines. No kind of finality is claimed at present, as a considerable number of years should be allowed to elapse before making any definite statement as to permanency of results. I have treated personally or by correspondence in this time a large number of cases, gastric and duodenal, mainly in the chronic stage, and can confidently assert that the results abundantly justify one in encouraging other workers in this field to extend observations on the same lines. My intention here is briefly to outline the main points of the treatment, postponing tabulation and full consideration of all the cases treated till one can speak more definitely on the question of permanency of results than is at present possible. I should like to point out that every one of the chronic cases on which this lecture is based were derelicts of other methods of treatment—that is to say, were failures of other methods. Hence the test was in each case a most severe one. Not only so, but the majority of the cases were private ones—that is, had never received hospital treatment. Now in all hospital cases it is a familiar experience that the transition from bad food, or improper food, or too scanty food, is often followed by excellent immediate results whatever be the method of treatment adopted. This simple fact at once destroys the value of all statistics relating to the advantages or the reverse of any one method of medical treatment adopted in hospitals as regards this particular affection. To my cases, however, this objection does not apply, as, since most were private cases, and the larger number of them chronic cases that had repeatedly undergone treatment of

various kinds, there was no such transition from grossly improper food to the dietary I prescribed.

For convenience of description the treatment of ulceration can be dealt with under four headings:

Group I.

(*a*) Chronic cases who have never had haemorrhage or only slight haemorrhage.

(*b*) Chronic cases who have had haemorrhage, sometimes perhaps severe, but who, when coming for treatment, are suffering from varying degrees of haemorrhage, but which is never severe.

Group II.

(*c*) Chronic cases exhibiting at the time of treatment acute exacerbations, haemorrhagic or other.

(*d*) Acute cases with alarming haemorrhage or other grave symptoms.

In my hands the first two classes of case receive the same kind of treatment. They can therefore be considered in one group. The last two classes of case also receive one form of treatment; they can also be considered in one group.

GROUP I.

Chronic cases not suffering from haemorrhage, or suffering from haemorrhage that is not severe. In cases of this group particular attention is paid to the following details:

A.—*Condition of the Mouth and Teeth.*

Until the mouth has been passed as free from any focus of infection by a reliable dentist all treatment is, if possible, postponed. It is amazing to find in what a large percentage of cases, in which gastric pain and haemorrhage occur, marked pyorrhoea or dental caries exists.

B.—*Condition of the Bowels.*

Whether constipation is present or not a purgative pill is administered, in most cases every night for at least a fortnight. The reason for this is that one frequently finds in these cases that the slightest degree of constipation appears to increase congestion of the whole tract, showing itself in increased pain. Also a considerable amount of constipation is sometimes present without being in the least suspected, even in patients who make positive statements to the contrary. The point can be proved by comparing the bulk and weight of the dejecta for a few days after mild but continuous purgation with that before the beginning of treatment. The results are sometimes astonishing, even in patients who deny constipation.

C.—*Fluid Intake.*

Tea, coffee, wine, spirits, liqueurs, are rigidly forbidden. Soups, broths, beef-teas, and, in most cases, milk in any form, are also excluded. The number of patients who have found from long experience that milk aggravates the pain due to ulcer has been to me in these cases a revelation. Sometimes the converse is found, but comparatively seldom. It must be remembered that nearly all statements, based on hospital experience, with regard to the value of milk and other liquid food for all chronic cases of ulcer alike are worthless. This is so because a patient with a chronic ulcer who has been on an improper diet previous to admission into hospital will almost certainly experience relief of pain when put on a milk diet after admission. In many private cases put on milk the same treatment has been previously given. In such cases milk very rarely relieves the pain, because there has been no such transition from grossly improper diet as obtains in hospital cases after admission.

D.—*Rest.*

In the group of cases under consideration absolute rest in bed for more than a few days is seldom necessary or desirable, if the other points in the treatment are adhered to. One's object in these cases is to improve general nutrition as rapidly as possible, in order to give local repair its maximum chance. This ideal is apt to be seriously compromised by prolonged rest, which impairs appetite and usually involves relative curtailment of air supply. In the majority of cases treated ten days or a fortnight's rest in bed is all that is necessary, which is then followed by the use of a chaise-longue, for preference in the open air, for another fortnight; the idea being that if the disease has a toxaemic basis abundant supply of fresh air is of great importance. The degree and extent of rest must, of course, in all cases be adapted to individual needs, and is best gauged by the time of disappearance of pain. In many instances pain has materially lessened in a week or even less, and has completely disappeared in a month. After this time, if all be well, a gradual return to active life is allowed, the transition period occupying another two or three weeks. In many cases the time consumed in inaction can be very materially shortened, so that no hard-and-fast rules can be laid down. You will notice that I offer no suggestions as to the length of time required for the healing of acute or chronic ulcer in man. The fact is we do not know. Observations on acute experimental ulcer in animals do not help us.

E.—*Diet.*

In these chronic cases in which haemorrhage is either absent or in which, if present, it is not of an alarming nature, the following articles of food I have found necessary to veto: Bread, potatoes, vegetables, milk, or farinaceous puddings of sago, rice, tapioca, etc., cheese, as well as other articles more obviously inappropriate. The avoidance of milk itself as a food, and of soups, broths, etc., and of the custom of drinking with meals has been already insisted on. Such veto is based on the impropriety of introducing into a stomach that is often dilated, with a corresponding degree of stasis of gastric contents undergoing fermentation, material that aids stasis and fermentation, such as, in particular, starchy and milky food. The avoidance of stasis of the gastric contents in cases of ulcer is of the utmost importance. It has been asserted that liquid food leaves the stomach in cases of ulcer in man sooner than does meat food in purée form. The only evidence so far offered in support of this statement is based on experiments on animals. Unless, however, the animals selected for experiment be habitually carnivorous and have atonic or dilated stomachs this evidence is of no value, quite apart from the fact that experimental ulcers can so far only be produced in animals under absolutely artificial conditions. Clinical experience in this matter far outweighs observations from the laboratory. Most cases of chronic ulcer exhibit some degree of stasis of gastric contents which repeated observation shows to be decreased by dry diet, and increased by food in liquid form. No doubt the improved nutrition induced by meat involves improvement in the tone of gastric muscle that is unattainable by milky or starchy foods. The object of the following list of foodstuffs that I have found to give the best results is twofold—first, to give mainly protein food in solid form which will saturate the digestive secretions which are often, in cases of ulcer, not only hyperacid but hyperpeptic; secondly, to give the food in as small a bulk as possible, consistent with high nutritive value. The object of the diet is, in short, to avoid stasis, fermentation, flatulence, to promote rapid and easy digestion, and to relieve pain. Finally, to treat not the ulcer by administration of carbonates, bismuth, etc., but to treat the condition which gives rise to ulcer. In practice the important practical point emerges that as the general condition improves, so does the local in the majority of cases. Cases that do not improve, owing to the lesion being cut off from the lymph stream by thickening of floor and sides of the ulcer sufficiently to make cure impossible by these means, are best turned over to the surgeon. All the objects of the diet mentioned can be attained by giving dry meals, mainly of meat, and by never allowing the stomach to go many hours without food. I am now frequently asked by medical men to draw up elaborate diet tables suitable for all cases. This is not necessary or desirable, because once the principles of the treatment are grasped it is far better that each diet sheet should be drawn up to suit the needs of each individual treated. Moreover, there can be little real value in a treatment that is not sufficiently elastic to be moulded to individual peculiarities by the personal attention of the individual practitioner. A fair sample of a suitable diet table will, however, perhaps be of service as a model. At 1 p.m. and 7 p.m., beef, mutton, or lamb, either as joint, steak, chop, cutlet, etc., lightly cooked but not raw, fresh, tender, and served in fresh gravy, without vegetables. This should be the entire meal, except for toast or one or two rusks, if preferred, with butter. In hospital practice it is not easy to obtain the personal attention to these details that is essential to success. In order, therefore, to satisfy oneself as to the value of a meat dietary cases of private patients offer better material for study. The amount allowed should be regulated only by the appetite

of the patient. If eaten slowly, and if all the points mentioned are adhered to, the more a patient can eat of this food the sooner will his pain disappear, as well as all other symptoms. In a recent paper by Dr. C. Bolton—who is responsible for some most important work on the pathology of acute gastric ulcer in animals—it is stated that "when the process of gastric ulceration (in the cat) is going on, one point in the treatment of such a case is obviously to stop the flow of gastric juice, not to encourage it by giving a diet such as recommended by Lenhartz." This observation well illustrates the difficulty of attempting to express laboratory results in clinical terms. For not only does deprivation of food not necessarily inhibit entirely gastric secretion and movement, but the absence of albuminous substrate eager for saturation by digestive juices effectively excludes gastric mucosa from the protection which it would otherwise receive. It also entirely ignores the supreme importance of improving general and local nutrition by adequate food supply. As a matter of fact, if we were able to inhibit entirely movement and the secretion of gastric juice in these cases, we should be doing our patients great disservice by making it impossible to ensure efficient nutrition. For breakfast—toast, butter, and eggs lightly cooked; for tea the same, with, if necessary, a little hot water to drink. At 11 a.m. 2 oz. to 3 oz. of raw beef-juice freshly made, and again at 9 p.m. During the night, if disturbed by pain, small sandwiches made of stale bread containing freshly pounded chicken or game may be given, also fresh. During the first week of treatment this dietary is gradually worked up to. Once established it should be continued for at least a month after the ordinary occupation has been resumed. In this group of cases there are, of course, some on the borderland of the second group which may at any moment—from increase in haemorrhage, etc.—merge into the second group. The dietary appropriate to these cases will be considered under that heading.

F.—*Serum.*

The chief value of the oral administration of a normal serum, whether of man, horse, sheep, or ox, is, in these cases, a local one. Its action in enabling an ulcer to heal is both direct and indirect. Indirectly it is of value on account of the power possessed by mammalian serums to disinfect an ulcer and to check its advance by virtue of the antiferment activities that all such serums possess. In this way obstruction to healing is to a large extent removed. The action of a normal serum in these respects can be readily studied after applying to a superficial ulcer, sinus, or fistula, sterile gauze soaked in, for example, normal horse serum, as I have frequently shown. If, for instance, such dressing be applied to the floor and walls of an old-standing ulcer or fistula soaked in purulent discharge, the eroding activity of cytolytic enzymes from bacteria, broken-down leucocytes and other cells can often be very rapidly arrested—so much so that lesions which are easily open to inspection, such as large superficial ulcers of the arm or leg, may be seen to clear up in a most striking manner, with total arrest of suppuration. This is due to the restraining power that normal serum has on the lytic activity of enzymes acting on proteins, fats, etc., in virtue of its antitryptic, antipeptic, and antilipolytic functions. There can be little doubt that gastric and duodenal ulcers which, whilst open, are constantly being bathed in secretions laden with trypsin and other ferments set free from disintegrated leucocytes, tissue cells, and from bacteria, owe in large measure their continued patency to the action of these ferments as well as to the pepsin and trypsin of the secreted digestive juices. The administration by the mouth, then, of a serum strong to inhibit such action has certainly a rational basis, which also explains to a great extent the excellent results that can be obtained in superficial lesions that refuse to heal by adopting any of Bier's methods of artificial hyperaemia. Auto-serum therapy, properly so-called, owes, in fact, much of its value, as I pointed out in 1908, to the calling up from the lymph stream of antiferment reinforcement locally so much in demand. In addition to the indirect power of normal serums in aiding healing is the marked direct stimulating effect that a serum that is atoxic and sterile has on ulcers. This again can be demonstrated on superficial lesions that the eye can control. If serum be applied to an ulcer of the arm, leg, or trunk bathed in pus-laden secretion, and totally innocent of any attempt at granulation, a transformation frequently takes place in a very few hours. Not only may suppuration be arrested, but in many cases healthy pink granulations spring up in a surprisingly rapid manner, even in ulcers that have remained open without showing any attempt at repair for twenty and thirty years. I have observed this fact again and again, and have been at a loss to know to what constituent of the serum to attribute this direct stimulating effect. In view, however, of the recent work of Drs. Macalister and Ross on induced cell proliferation, it may possibly be that globin derivatives in the applied serum are to a large extent responsible for this stimulating action. It is therefore difficult to believe that the stimulation to healing given by the local application of normal serums to superficial lesions does not also apply to gastric and duodenal ulcer, within, of course, obvious limitations.

Quite apart, however, from direct stimulation of healing, and from indirectly aiding in cure of an ulcer by inhibition of septic processes, is the action of the serum after absorption in restraining haemorrhage. Previous to 1907 it had been shown by Emile Weil of Paris that intravenous injections of normal serums were often of great value in haemophilic and purpuric conditions. Early in that year, encouraged by Weil's results, I found that equally good results could be obtained by subcutaneous injection, and even by oral administration, in cases of purpura, though sometimes the serum failed to arrest haemorrhage in this condition. In the same year I extended the antihaemorrhagic properties of normal serums to the treatment of gastric and duodenal haemorrhage, as well as to many other forms of bleeding for which a toxic basis could reasonably be surmised. Since then a very large number of cases of haemorrhage of all kinds has been treated in this way, and, though failure does occur, the results as a whole have been most satisfactory. It was very difficult to control the results by methods of observation other than the purely clinical, particularly so when the serum was given by the mouth. But I found by careful blood counts and haemoglobin estimations before and after oral administration in cases of anaemia, mainly of the chlorotic type, that great improvement in the blood picture followed. It was therefore clear that oral administration of normal serum had a certain value *quâ* absorption, which then cannot be excluded in determining its value in ulceration of the stomach or duodenum, whether haemorrhagic or not. How it acts after absorption it is as yet impossible to say, though it is quite conceivable that it inhibits the action of gastrolytic toxins (and, as regards haemorrhage in particular, of the endotheliolytic toxins) that I postulated as possible causes of ulceration and haemorrhage. Personally I regard this as of much greater importance than any effect which serum may have in accelerating the coagulation time of the blood. However this may be, the fact remains that in these chronic cases of ulcer with or without haemorrhage of moderate severity the serum has a most pronounced action in relieving pain, in arresting haemorrhage, and in directly and indirectly aiding in cure of the ulcer. It has been suggested, not unreasonably, that the good results obtained have been due entirely to the generous diet and other details of the treatment, and not to the serum. This, I think, can hardly be the case, as, apart from the palpable effect of the serum on superficial lesions, I find that when the serum is not made part of the treatment the results are not nearly so good.

With regard to the method of administration, normal serums should in cases of open ulcer never be given to starving patients or on an empty stomach, as troublesome and even serious symptoms may ensue. I generally prescribe serum in chronic cases of gastric or duodenal ulcer in doses of 10 c.cm. three or four times a day, immediately after food, in ½ oz. of cold water. It must be atoxic, as proved by injection into guinea-pigs, and sterile, as shown by the same method or by attempts at culture. It should be stored, if possible, on ice, and is better not preserved by addition even in small quantities of antiseptics, as its antiferment activity is thereby seriously impaired. This I have proved by numerous control observations with the viscosimeter. If kept in a sufficiently cool place its activity is not seriously impaired even after a year by mere keeping. If there is the slightest reason from its appearance to suspect deterioration from autolysis

t should not be used, as otherwise severe gastro-intestinal rritation may be set up. It has happened more than once hat a horse when being bled for the purpose of supplying erum has been sufficiently refractory to necessitate the dministration of ether. Serum from such an animal etains the smell and taste of ether for many months, and as been known to produce violent vomiting. The serum hould be administered for at least a month in all ulcer ases, except the mildest, and then gradually discontinued. f given in the way directed, immediate symptoms of erum disease are of very rare occurrence. Personally I ave never seen them. It has, however, happened in cases that I have knowledge of that signs of hyper-ensitization have appeared, in 4 of which they were phemeral and of little consequence. The symptoms were hose of mild purpura and of eczema. Serum of the sheep ives as good results as horse serum. Human serum can lso be used with proper precautions, but its chief use is n serious cases of haemorrhage. Antilytic serum, which as prepared for me by Messrs. Allen and Hanbury two ears ago, can be used in the same way, by oral adminis-ration, or as normal horse serum; and, in virtue of its ncreased antitryptic strength, is of great value. It is, of ourse, normal serum artificially treated. Unfortunately, t has not proved possible to increase materially the anti-erment values of the serum of the horse by injection of he appropriate ferment.

GROUP II.

Chronic cases exhibiting acute exacerbations, or acute ases with initial severe haemorrhage.

The treatment of this group of cases is primarily that f severe haemorrhage.

Immediate and absolute rest is, of course, essential. If he bleeding still continues, or recurs to an alarming xtent, good results are sometimes obtained by promoting erebral anaemia by raising the head. This failing to rrest the bleeding in really urgent cases, the rapid but areful passing of a well-oiled tube just past the cardiac rifice with a funnel attached to the distal end, followed y the injection of a few ounces of iced water, is said to e sometimes followed by gratifying results. In all cases howing great disquiet a preliminary hypodermic injection f morphine and atropine is useful. Atropine alone in full ypodermic dose I have more than once found successful hen everything else had failed. Ergot by mouth or skin, r adrenalin solution is of no value; calcium salts of less. Amyl nitrite inhalations are sometimes of slight service. ce-bags on the epigastrium give occupation to the patient's riends, but they do not help the patient, may even greatly ncrease the pain, and certainly aggravate stasis of the astric contents. Injections of gelatine may be followed y cessation of bleeding, but are subsequently painful and re not free from risk. Food by the mouth is as a rule out f the question so long as haemorrhage is severe; food by he bowel except for a day or two gives a feeling of false ecurity, and is synonymous with starvation, even if given n large quantities. The injection, repeated if necessary wo or three times, at intervals of three hours into a ein, or under the skin of the flank or axilla, of normal orse serum, guaranteed as fit for injection, is of the tmost value. Sometimes it fails. Injections may have o be repeated once or twice for a day or two after the nitial day of haemorrhage. As soon as twenty-four hours ave elapsed after the bleeding has ceased to be alarming, ood by the mouth should be carefully begun. As quickly s possible the way should be then very cautiously felt till he case has been transferred into Group I, when the full reatment suitable thereto is adopted and maintained. ases that have begun in Group I and have been success-ully transferred to Group II naturally require very areful watching, but it is surprising how quickly the everest haemorrhagic cases respond to generous feeding n the lines laid down. The diet suitable for cases whilst till in Group I, when the worst haemorrhage is over, may oughly be outlined as follows, special care being taken to void milk and soups:

First Twenty-four Hours.—Every three hours during the day or 3 drachms of freshly made chicken jelly alternating with alf the yolk of a lightly boiled egg can be given. Occasionally he jelly increases the pain, in which case half an ounce of fresh aw beef juice, double the ordinary strength, can be given. old water in 1-oz. doses may be given to allay thirst.

Second Twenty-four Hours.—Three or four drachms of pounded hicken may be given after boiling and rubbing through a hair sieve, alternating with raw beef-juice and the whole yolk of a lightly boiled egg, intervals of two and a half hours separating the meals. During the night the interval may be increased to four hours.

Third Twenty-four Hours.—Pounded chicken, pounded meat, and the yolks of eggs can now be given every three hours in rotation, in rather larger quantities. Hot water is now useful in 5 oz. doses if slowly sipped, and if not given within an hour of a meal.

The subsequent dietary must be graduated according to the presence or absence of indications of recurrence of haemorrhage. If this has quite ceased, rapid progress can be made. If it still continues, a day or two longer should be spent in very careful dieting, repeating once, or more often if necessary, injections into the stomach of iced water. During the days or hours in which at any time haemorrhage is a cause of anxiety, free purgation with suitable salts is often necessary and always useful.

Such in sketchiest outline are the views that guide my own practice in the treatment of gastric and duodenal ulcer. If I have taken advantage of the opportunity offered by this lecture of presenting a somewhat unorthodox way of looking at these distressing complaints, I have done so in the hope that you will test for yourselves the truth of the principles involved. In conclusion, let me repeat that this serum and dry protein treatment lays no claim to being more than a stepping-stone to the final attainment of a truly specific treatment of the dyscrasia of which ulceration and haemorrhage are but the local signals. In the meanwhile it is sufficient to accentuate the urgent necessity of fresh efforts to determine the essential meaning of the dyscrasia itself, about which we at present know absolutely nothing, and to remember that it is only in prevention of recurrence that the real merit of any form of treatment of these conditions lies.

AN UNUSUAL CASE OF TOXIC DERMATITIS; WITH REMARKS ON SYMMETRICAL ERUPTIONS.

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THE following details of an unusual case observed by the late Dr. Radcliffe Crocker and myself are worth placing on record:

The patient, a woman aged 54, was first seen by the late Dr. Radcliffe Crocker in January, 1908. The notes he made at that time were as follows (Q. 232): Duration one month. Commenced with redness and swelling of the back of the neck, which soon became worse and extended to other parts of the body. Large patches over shoulders, elbows, back, buttocks, back of thighs, and to some extent on lower limbs. The appearances were as if the epidermis had been raised up by an effusion of fluid, which had subsequently been absorbed, leaving black or otherwise discoloured epidermis still adherent. There was also swelling of left arm. The patches appeared at successive outbreaks, and not all at once, accompanied by much itching and burning. The temperature had been a little over 99° at times. Bowels kept open by aperients. Tongue was very furred.

There was a history of having partaken of a rabbit, which was so bad that the patient did not eat much of it. This was about two weeks before the skin became affected. Under treatment the condition subsided.

Early in June of the same year the patient was admitted to hospital, when she gave the following account of herself: In November a rash of beetroot-red colour made its appearance on the face and neck, which gave rise to great irritation. After a few weeks the rash got better somewhat, but did not entirely disappear, and the superficial layers of the skin began to peel off. The armpits were next attacked by the rash, but after some weeks they got better. Then the knees were involved. In all the parts affected there had been much irritation, and in the later stages shedding of the superficial layer of the skin as well. The upper part of the chest had also been attacked in a similar manner. As the rash disappeared there was a tendency for the parts affected to become brown. About a fortnight before the rash appeared the patient had some rabbit, which was bad. There were no intestinal symptoms after partaking of the rabbit.

Personal History.—Influenza (?) as a child. Very temperate. Menopause ten years previously. No leucorrhoea. Patient has had three children; healthy.

Family History.—Mother died of phthisis. Father also dead, cause unknown. Brothers, four, died young (?). Sisters, two, quite healthy.

Present Condition.—A well-built woman of 54. Pulse 102, regular. Heart apex beat normal. Heart not enlarged. Heart

sounds normal. Pulmonary system: emphysema. Some crepitations at left base. Alimentary: bowels regular, tongue furred. Teeth: most of upper and some lower gone. Abdomen distended, and a large smooth mass felt rising from the pelvis as far as the umbilicus, really due to distended bladder. Pus in urine.

Nervous System.—The patient of hysterical disposition; weeps with small provocation. The cranial nerves are all normal except the sixth; there is nystagmus, right eye only on looking to the left. The upper limbs have good power, and sensation and co-ordination are normal. The trunk is normal in power; the abdominal reflexes are present. The lower limbs are normal. Flexor response. Knee-jerks present; no ankle-clonus. These are the notes made by the clinical clerk.

As to the skin. The following details are mine: Distributed about the body are a number of red vascular areas, which become pale on pressure. The red vascular areas are most marked on the face and neck. A butterfly-shaped area occupies the centre of the face, covering the nose and cheeks and ending sharply on the upper lip, giving rise to a distinct circumoral pallor; elsewhere the area has a diffuse edge. There are symmetrical patches over the eyebrows, about a half-crown in size. The reddened area occupies the front of the neck, and extends over clavicles and on to the upper part of the chest, symmetrically. At the back of the neck, a palm-sized patch. The other symmetrical patches are on the backs of the shoulders, elbows, knees, and popliteal spaces. There is also a patch about the epigastrium.

A glance at the diagrams will show the symmetrical distribution better than a description (see Diagrams A, A *a*). I would

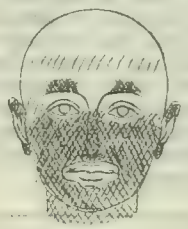


Diagram A.—Toxic dermatitis. Note the circumoral pallor.

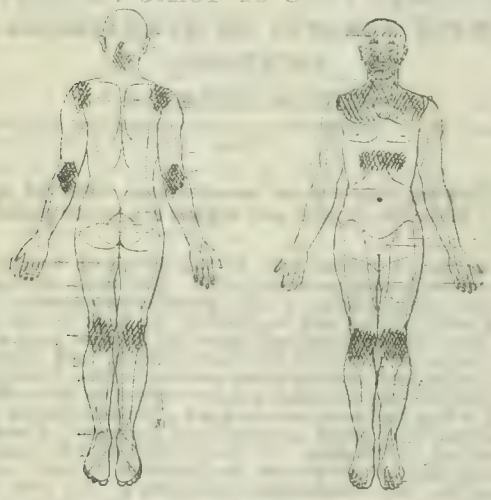


Diagram A *a* (see also A).—Toxic dermatitis.

call attention to the distribution about the face and neck, which recalls that observed in some cases of lupus erythematosus. What I also desire particularly to emphasize, in addition to the symmetry, is the fact that the vascular areas were distinctly made up of numerous dilated vessels (telangiectases). They were not inflammatory. Before the case was transferred on account of possible malignant disease (abdominal) the following notes were made by the clinical clerk:

July 20th: There is a large amount of pus in the urine and the patient is of a very hysterical temperament.

July 26th: The pus in the urine has to a great extent disappeared as a result of boric lotion wash-outs, etc. The hysterical condition has greatly improved under bromide, valerian, and electric treatment.

No definite diagnosis having been made, the patient went home. She died not long after. No necropsy was allowed.

Commentary.—The original symmetrical rash, which manifested itself in successive outbreaks and which followed the ingestion of bad rabbit, appeared to have been due to an intoxication, the more so as no intestinal symptoms (elimination) followed. But taking the case as a whole, there were no doubt other factors (malignant disease, pus in the urine); and the patient was very probably already in a toxic condition when she ate some of the bad rabbit.

There is no record of the condition of the urine when the patient was first seen; and, as no necropsy was allowed, no firm diagnosis could be made as to abdominal conditions. During life nothing definite was made out by those who examined the patient from purely medical (apart from dermatology) and gynaecological points of view. That the intoxication was a severe one is sufficiently borne out by the condition of the skin when seen by the late Dr. Radcliffe Crocker a month after the first skin lesions had appeared. This is further emphasized, in my opinion, by the vascular, telangiectatic state of the affected areas which followed, showing that the vessels had been smartly attacked in the first place. Perhaps the general toxic condition of the patient added to the damage already experienced by the vessels in the affected areas prevented their recovery. In a small way, a close examination with a lens of some of the elements of a squamous syphilide recently observed by me, which had been present some time and untreated by mercury, revealed a telangiectatic condition (H. 278), may be mentioned here from a comparative point of view. The telangiectatic form again of lupus erythematosus should be alluded to in the present connexion. At the present moment I have under my care an obstinate case of chronic lupus erythematosus of a vascular type distributed about the eyebrows, temples, and cheeks (G. 313). This case had previously been under the care of the late Dr. Radcliffe Crocker, and was seen by him originally after the disease had been present for two years.

The symmetrical distribution in the toxic case I have described was very marked. With regard to symmetry in diseases of the skin, various theories have been brought forward to explain them. Testut's monograph, 1877, on the subject is a classic now[1]; and other writers have followed on the same subject since that time. I do not propose to enter into details on this score as the matter is well known to those who have made a study of dermatology. I would merely in this place compare the distribution I have described with what obtains in some other more or less acute conditions.

First and foremost, as a typical symmetrical affection of the skin, I would again refer to lupus erythematosus. The bat's wing or butterfly patterns observed in that disease are familar to you all, but what is perhaps less so, on account of its rarity, is the distribution observed in acute lupus erythematosus d'emblée, a case of which I had under my care and which I have dealt with at large elsewhere.[2] In the patient I observed the distribution will be readily made out by a reference to Diagram B.

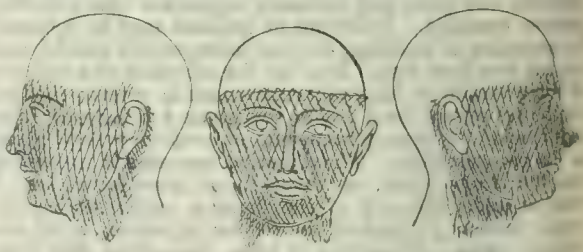


Diagram B.—Acute lupus erythematosus d'emblée.

There is also the early butterfly swelling observed in leprosy, as in Diagram C (for which I am indebted to Dr. Ashburton-Thompson of Sydney).

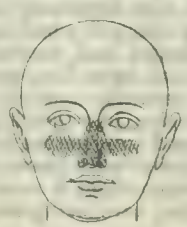


Diagram C.

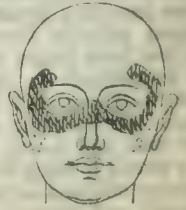


Diagram D.—Erythema haemorrhagicum faciei.

A more interesting symmetrical condition, however, is that exhibited in Diagram D (*Dermatology*, Book IV, E.). The patient was a female aged 23, and the condition—that is, erythema haemorrhagicum faciei—had been present fourteen days. The rash began on the face, the

orms being subsequently affected. These are the notes me at the time by me: Purpuric punctiform and patchy ry netrical eruption of the face and nose. The patch lo not disappear on pressure. Extensor surface of forms: Slight mottling, leaving pale yellowish stain on re sure. Nothing on ears or fingers. The patient had e under a doctor for six years for asthma, she says. N history of rheumatic fever, scarlet fever, etc. No joint troubles. No haemorrhage from mucous membranes. Is not prone to excessive bleeding. Catamenia scanty. Bowels regular. Tongue furred. Father, *felo de se*. Mother phthisical. As to origin, the only thing that could be made out was that the patient had been a good deal in the sun. When seen not long after first visit little remained of the rash.



agram E. — Pel- (note pale areas and orbits and th.)

There is another condition—namely, pellagra—in which symmetry may also be fairly marked, as can be seen in Diagram E (from cast of a pellagrous ask" in possession of Professor Ludwig Merk of sbruck). Here, again, we have pale areas about the uth and orbits.

his short contribution to the subject of acute toxic and metrical rashes of the skin may be of some interest. to theories, I feel somewhat in the position of the n who did not believe in ghosts because he had seen many.

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VARIATION AMONG BACTERIA.*

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hat the medium in which a bacillus is growing may er the morphology of the micro-organism has been own to be true by a number of observers. Thus the *typhosus* has been found to grow out into threads hen acted on by various dyes (Ainley Walker[1]), salts éju and Rajat[2]), urea (Wilson[3]), and by sewage lmquist[4]). Similarly, Adami[5] has shown that by the tion of a high temperature and the presence of perineal fluid the *B. coli communis* assumed a diplococcoid rm, and in this case the fermentative characters of the cillus were also profoundly modified. In most of these ses the organisms soon regained their normal characters hen the active agents were removed; in other words, ey were examples of fluctuating variations. Torrey,[6] lotz,[7] and Twort[8] have shown that bacilli belonging to phoid-coli and dysentery groups can be made to ferment gars, on which at first they had no action, by growing em for some time in contact with these sugars.

I have on several occasions isolated from the intestine cilli which required seven to twenty-one days to produce an acid reaction in lactose litmus broth, and two or hree days more to produce gas. Where the reaction is so ng delayed it is difficult to say whether one is to regard he organism as a slow fermenter of lactose or as a on-lactose fermenter which by contact with the lactose as acquired a new property. That there is this difficulty can be readily shown by the facts regarding the *typhosus*. It is invariably stated that this bacillus oes not ferment dulcite, yet, like Penfold,[9] I find that hen this bacillus is grown in peptone water containing his substance acidity is produced at the end of ten days. n the case of the several varieties of dysentery and seudo-dysentery bacilli there is great irregularity in the me required to bring about fermentation of maltose and accharose.

The explanation of the delayed reaction may be that variations occur among the bacilli growing in the medium and that hese bacilli which are able to make use of a sugar which the thers are unable to touch crowd out the latter. When a loopful of a culture which after a long delay has fermented lactose is planted out on the Endo or on the Conradi-Drigalski medium, the colonies formed become slowly reddish, a few being deeper in tint than the others.

When fermentation has occurred in a lactose tube and a second tube is inoculated from the first, in the second tube acid and gas are produced, as a rule, in twenty-four to forty-eight hours, although in the first tube it required several weeks to produce the same result. A third transfer to lactose broth results in acid and gas being produced in a single night. For the development of the lactose splitting enzyme it is necessary to have lactose present in the medium. By growing a bacillus which slowly ferments lactose in glucose broth the fermentative action on lactose is unaltered. The action on lactose results from adaptation. "The simple forms of life are able to adapt themselves to their surroundings, and the adaptation cannot be ascribed to chance, for with a given environment one particular alteration in properties surely results" (Adami[10]).

I recently isolated a bacillus from the urine of a patient, which is interesting from the fact that it possesses characters intermediate between those possessed by the *B. typhosus* and the *B. coli communis*. The patient was probably an "effective" typhoid carrier. Four years ago an epidemic of typhoid fever occurred in a fashionable district of Belfast, and the cases were centred round a certain milk supply. On investigation, it was found that one of the milkers had recently suffered from "influenza," complicated with jaundice, and her blood gave a well-marked positive Widal reaction in a 1 in 50 dilution. When the supply of milk from this dairy was stopped the epidemic came to an end. There were 30 cases notified, several of whom died. I had no opportunity of examining the urine and stools of this woman, but I have no doubt that at that time they contained the *B. typhosus*. This woman developed Bright's disease, from which a few months ago she died. Through the kindness of the doctor in attendance, I obtained a specimen of her urine a week before she died, and it was from it that I isolated this peculiar bacillus. Its characters were as follows:

The growth on all the ordinary media was very similar to that of the *B. typhosus*, and gelatine was not liquefied. At 37° C. the bacillus grew well, but the growth was slightly more profuse at 22° C. It was Gram-negative and showed marked oscillatory characters, but no true movement of transposition. In peptone water a trace of indol was produced. The character which made the bacillus remarkable was its behaviour in media containing lactose. I noticed that the colonies on a Conradi-Drigalski plate remained blue as long as the bacillus was kept at 37° C., but that at room temperature they became red. Lactose-litmus-agar inoculated with this bacillus and kept at 22° C. became red in two days, whilst at 37° C. no change of reaction occurred even at the end of a month's incubation. The lactose in litmus broth tubes was but slowly acted on even at 22° C., but when the same medium was poured out into a Petri dish fermentation occurred in three days. The explanation of this phenomenon might be found either in supposing (1) that at 37° C. the lactose-splitting enzyme was not developed, or (2) that at this temperature products of proteid decomposition neutralized the acid resulting from the fermentation of the lactose. The following experiment showed that the first hypothesis was the correct one: Ten c.cm. of lactose peptone water were added to a series of sterile Petri dishes, some of which were inoculated with the bacillus, the remainder serving as controls. Half of these dishes were put into the incubator at 37° C., and half at 22° C. At the end of a week the amount of fluid in each dish was made up to 25 c.cm., and the number of cubic centimetres required to reduce 5 c.cm. of boiling Fehling solution was determined. It was found that all the sugar had disappeared from the plates which had been inoculated and kept at 22° C., whereas the amount of lactose present in the plates at 37° C. was the same as that in the control uninoculated plates.

We have here an example of the development of an enzyme being dependent on the temperature at which the bacillus is cultivated. This may be compared with the behaviour of the *B. prodigiosus*, which produces little or no pigment at 37° C. Coplans Myer[11] has met with bacilli which possess a similar peculiarity in reference to dulcite.

It was of interest to discover whether the agglutinogens of the bacillus were in any way associated with the lactose-splitting enzyme. The following experiment showed that there was no connexion between the two characters:

A guinea-pig was inoculated on several occasions with a growth of the bacillus on litmus-lactose-agar at 37° C., and a second guinea-pig with a similar amount of a culture grown at 22° C. The serum of these guinea-pigs was then found to have the same action on the two growths, and an absorption experiment proved that both strains could exhaust the agglutinins from both serums.

* A paper read before the Bacteriological Section at the Annual Meeting of the British Medical Association, London, July 29th, 1910.

Durham[12] showed that the saccharose-splitting variety of the *B. coli*—the *B. coli communor*—may be agglutinated by the serum of an animal immunized against a strain of the *B. coli communis*, whilst the serum may have no action on other strains of the *B. coli*, even although they are culturally identical with the one used to produce the serum. Torrey[13] also found, in his study of dysentery bacilli, that organisms acting in a different manner on the various sugars might have an agglutinable substance which was identical. Twort[14] and Penfold[15] have also shown that when the *B. typhosus* has been made to ferment lactose, no alteration in its agglutinable properties occurs.

The other fermentative characters of this bacillus were as follows:

At 37° C. mannite and maltose were fermented with the production of acid and a small amount of gas, whilst salicin, saccharose, and glucose showed acid formation alone. At 22° C., with mannite, maltose and salicin, acid and much gas were produced, with glucose and saccharose acid only. In the case of lactose gas was formed only at the end of eight days. Glucose neutral red agar shake cultures showed no fluorescence and no gas formation. In the fermentation experiments Durham's tubes were at first used, but in many cases the amount of gas formed was too small to be detected by their use. Agar and gelatine shake cultures were then used. We may state that typhoid serum had no action on this bacillus, and its homologous serum had no action on the *B. typhosus*.

To sum up, then, we have a bacillus which was isolated from a former typhoid carrier, and which formed acid but no gas in glucose media, and which fermented lactose at 22° C. but not at 37° C. In not developing gas in glucose media but forming some from mannite it resembles certain colon bacilli of the "anaërogenes" class previously described by me,[16] and which form connecting links between the *B. coli* and the *B. typhosus* group of micro-organisms.

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THE THERAPEUTIC ADVANTAGES OF USING MERCURY IN THE COLLOID FORM.

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FOR a long time mercury has held a very important place in the list of drugs. So valuable has it been in the treatment of syphilitic disorders that it has been recognized till quite recently as the specific drug *par excellence*.

The only difference of opinion with regard to mercury seems to be not as to its value, but as to the best method of administering it.

There are many methods of using the drug—such as inunction, fumigation, baths, endermically (by dusting), hypodermically, inhalations, and per rectum—and the mere fact that so many methods have been tried is evidence not only of a praiseworthy determination, but also that each method has some unfortunate disadvantage.

To introduce a method that diminishes the disadvantages, but at the same time destroys the value of the drug, is waste of time; but if one can suggest a form of administering the drug which possesses advantages over all the others, and at the same time is *minus* most, if not all, their disadvantages, one is, I venture to think, justified in making it public.

The form of mercury that is, in my opinion, worthy of such justification is hydrargyrum colloidalis, or colloid mercury.

The subject of colloids is one that has become of great interest during the last few years, and is one that is worthy of great attention and much study.

In the *Practitioner* for September of this year I made an attempt to point out the part played by colloids in physiology and pathology, and, imperfect and incomplete as is that attempt, it is sufficient, I think, to show how great are the possibilities of the subject.

The term "colloid" was first suggested by Graham about 1861, but is employed now in a sense somewhat different from that in which he used it. At present the term "colloid" refers not so much to a certain class of substances, but rather to a condition which a large number of chemical compounds may assume more or less readily.

One great characteristic of colloids is that the substance forming the "solution" is unable to pass through an animal or vegetable membrane—that is, a dialyser.

Colloids are classified as reversible and irreversible. By reversible we mean those colloids whose solutions leave a residue soluble in water when desiccated at the ordinary temperature, and by irreversible those that yield an insoluble residue.

As examples of reversible we have dextrin, gum arabic, many albumens, isinglass, etc.; whilst the colloidal metals are irreversible. If solutions of reversible are added to those of irreversible colloids the latter may become reversible, in which case they are often protected against precipitation by salts.

In this way is explained the great value of adding gum arabic or barley water to milk in order to prevent the coagulation of casein—at least, in huge masses.

Colloid mercury, therefore, comes under the heading of "irreversible colloids."

Colloidal solutions of the heavy metals are prepared by passing a suitable electric current through water in which the metal is suspended, when particles of the metal are torn off in such a fine state of division that they do not subside on standing for months.

The solution appears homogeneous under the microscope, though the presence of the particles are readily demonstrated by means of the ultra-microscope. The metallic solution passes through filter paper, but has no osmotic pressure; the freezing and boiling points are those of water.

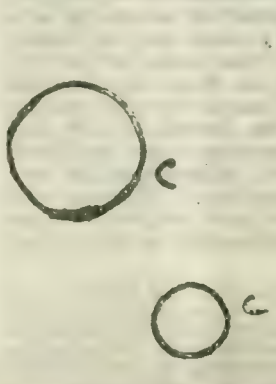
When a colloid such as colloid mercury has separated out, it is quite impossible to restore it to the original condition by any mechanical means (as one does with suspensions), because the separation is due to an irreversible change which is described as coagulation.

In order to convert this separated mass into the colloid form again one must employ chemical or electrical energy, and naturally when coagulation occurs energy in the form of heat is given off. The importance of this statement is very great, as it means that the energy in the case of colloids is kinetic, whence the value of such a drug as colloid mercury.

The kinetic energy of a drug such as colloid mercury is closely associated with the surface tension of its ultra-microscopic particles. On the surface of a round body like a blood corpuscle floating in a liquid there is a practically constant surface tension which is necessary for its life, and any interference with that surface tension interferes with the life not only of the corpuscle, but also of the whole body.

The same remark applies to the various micro-organisms, which have their own special surface tension and require such pabulum as is consistent with the maintenance of that surface tension.

Around the ultramicroscopic particles of a colloid solution is a certain definite surface tension, and the introduction of electric energy has the effect of increasing the surface tension by diminishing the size of the particles, but at the same time increasing the surface area. The mixing of two colloids may have the effect of causing such a great interference with the surface tensions of the particles of both as to cause coagulation.



The meeting of colloids with, say, cocci or corpuscles has exactly the same effect—namely, an alteration of the surface tension—and consequently the life of the cocci or corpuscles is affected.

o appreciate this statement to the full one is helped by ance at the diagram, where C and P represent the ive sizes of cocci and ultramicroscopic particles.

ke as the faintest suspicion of a touch destroys a ole, so does the presence of these minute particles t the surface of the cocci, with perhaps not quite so atic a result.

isease affects the colloidal contents of the blood serum, ering it possible for the micro-organisms to thrive by ting their life or surface tension to the new conditions, the object of giving drugs is so to alter the colloidal or surface tension of the serum as to make it incom- ble for the micro-organisms or the *inimical enzymes* to ive.

passant one may remark that the enzymes are all idal.

e value of the calcium salts, such as the chloride, e or permanganate, is due to the fact that they ulate the leucocytes to increased work in the form of ocytic action, a result produced by altering or ting the surface tension.

ith the object of testing the effect of colloidal mercury icro-organisms, some experiments were carried out e at the laboratory of Mr. Seyler, county analyst for organ, and it was found that 1 in 1,000 of a 1 per solution of colloidal mercury supplied by Merck ed the growth of the *Bacillus coli communis* on agar, h means that 1 in 100,000 of the drug was effective.

colloidal mercury we have, therefore, a very powerful eptic. A 1 per cent. solution of hydrargyrum colloidalis greenish-brown transparent liquid, without any smell, as a faint metallic taste. It is non-irritant, non- sive, and relatively non-toxic. As a drug it can be both externally and internally. Externally it has a good cleansing effect on wounds, when applied in ions of ¼ to ½ per cent.

ringworm of both the large and small spored ties, as well as in two cases of alopecia areata, dal mercury has been very beneficial.

these cases my rule has been to remove the grease e scalp with petrol before applying the drug, other- it has no opportunity of coming into close enough ct with the disease.

a mouth wash mercury in this form is very effective y filthy states of the mouth, whilst as a spray its has been extremely good. In typical diphtheria a few applications of the spray have produced an almost as rapid and satisfactory as that following njection of antitoxin. For tonsillar patches of all it is of extreme value, though for mere redness or mation of the tonsils and pharynx it is not quite so ive.

ministered internally it is of value in acute gastritis, of babies, children, or adults. I usually prescribe bies 3 minims of the 1 per cent. solution to a drachm ter, and for adults 20 to 30 minims. The ease of nistration compares favourably with that of, say, powder.

is in syphilitic cases, however, that the great tage of colloidal mercury is seen. I have not seen pleasant symptoms, such as salivation, sickness, or te for food, but in one patient who was taking chms daily the bowels were evacuated too freely he dose was reduced by half.

patient who came to me in the first stage of the disease hard sore on the dorsum penis was able, after taking ng for twelve months, to state a complete freedom from or sore throat.

ents with secondary rashes have responded well and to the treatment, but the best or most striking effects seen in cases generally reserved for the iodide of potas- or calcium.

ng-standing tertiary infiltration or inflammation of the had resisted all attempts to remove it. Potassium iodide impossible on account of the coryzal symptoms, and h calcium iodide was easily taken without any un- effects, the result was not satisfactory. After four treatment with colloidal mercury the scalp and fore- egan to clear rapidly, and at the end of ten weeks the was quite free.

In his case the dose was 6 drachms daily.

Another case was that of a soldier who had contracted the sea in India, and presented tertiary sores of a very trouble- and unpleasant nature. Colloid mercury was applied locally and given internally, with rapid and very satisfactory results, although all other previous attempts had completely failed.

An interesting case of locomotor ataxia, seen also by a well-known brain specialist, who suggested the daily application of blue ointment to the spine, was placed by me on colloidal mercury, with a most satisfactory result. The bladder trouble has disappeared and the shooting pains down the legs are less severe and less frequent.

A case of spastic paraplegia, however, quite failed to take the drug even in the smallest doses, on account of the severe "depression" it produced.

Organic nervous lesions which fall into the category of syphilides respond to a certain degree to the internal administration of colloid mercury, but the other organic nervous lesions do not respond at all.

THE ETIOLOGY OF IRITIS.

BY

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IN a leading article in the BRITISH MEDICAL JOURNAL of July 16th last, my opinion that rheumatic iritis is a very rare disease is referred to, and I am rightly quoted as holding an extreme view. Mr. C. W. Jennings, of Philadelphia, on the other hand, believes that it is a common disease. This divergence of opinion is probably due to a difference of diagnosis rather than to a difference in the incidence of the disease. It is extremely unlikely that certain forms of iritis are more prevalent, to any considerable extent, in some countries than they are in others, and it is much more probable that the explanation is to be found in the grouping and labelling—that is, in the personal equation. Critical inquiry in many cases will, I believe, show that the "rheumatism" which produces rheumatic iritis is not true rheumatism, but a gonococcal or other toxaemic infection. No one now, I suppose, believes in gonorrhoeal rheumatism, the vestigial term remains as a mere *façon de parler;* but we all accept the fact of a gonorrhoeal arthritis. We still make use of the antiquated term much in the same way as we still call our bronze ha'pence "coppers." We can, if we like, keep our strychnine in a sulphate of magnesia bottle, as long as we remember the fact. Nevertheless, there are manifest objections to doing so, and in like manner the sooner we get rid of the term "gonorrhoeal rheumatism" the better.

My views concerning the rareness of rheumatic iritis were published in the BRITISH MEDICAL JOURNAL (July, 1908), and I will not trouble you any further with them. With regard to the differential diagnosis of gonorrhoeal from other forms of toxaemic iritis, there is as yet no extensive literature, but the chief distinction seems to me to be that in the former the arthritic (or periarthritic ?) symptoms are more pronounced.

It has been, I think, too much the custom to classify all cases of iritis that are not obviously specific, or gonorrhoeal, or traumatic, or occurring in gouty patients, as rheumatic, including amongst them a number of cases due to various forms of toxaemic absorption. As time goes on we may expect a more limited definition of the term "acute rheumatism" than the present all-embracing one of a polyarticular synovitis with pyrexia; and when that time comes there will be a corresponding fission in the definition of rheumatic iritis.

From Mr. Kenneth Campbell's letter in the BRITISH MEDICAL JOURNAL of July 23rd, 1910, criticizing the leader above referred to, it is clear that he is not only a supporter of my view, but also that he goes a step further than I have ventured to go with regard to the existence of rheumatic iritis, for he excludes rheumatism absolutely as an etiological factor in iritis. In the present state of our knowledge I have not made this final renunciation, because careful observers say that they have seen cases as a result of chronic rheumatism, and cases are also reported as occurring in acute rheumatism. It is desirable that full details of all cases of iritis occurring during the acute stage of rheumatic fever should be recorded. It does not follow, because a patient has an intercurrent attack of iritis during rheumatic fever, that it is due to the same virus. Moreover, it may be that occasionally the arthritis is not rheumatic.

The incidence of iritis during the acute stage of rheumatism is universally allowed to be extremely rare, but a case in which it followed shortly after is recorded by Forster,[1] of Lowestoft, and it is a most interesting and instructive one. The patient, a girl aged 12½, had an attack of acute rheumatism in which the acute symptoms lasted fourteen days and then subsided. Three days later chorea came on, and when it had lasted four weeks a monocular iritis developed, followed by endocarditis. It is to be noted that the iritis did not develop during the acute stage of the rheumatism. Eventually the child got quite well. Here the sequence of events is so marked, so obvious, that to argue that we are not dealing with cause and effect would appear to require the strategy of a dialectician. Strategy has no place in a scientific discussion, and we must allow that if cases such as this were frequent there would be nothing more to be said. But the fact of their extreme rarity requires very great consideration, especially when we remember how common are cases of so-called rheumatic iritis. The weakness of the position is shown if, instead of arguing from the particular to the general, we reverse the process. A patient is brought to us with so-called rheumatic iritis. How do we know that it is rheumatic? Having excluded syphilis and gonorrhoea, and found that at some time the patient has had acute rheumatism, we label the case and pack it away in a mental pigeon-hole as an undoubted instance of rheumatic iritis. Perhaps if we had asked the patient if he had ever had measles we should have received also an affirmative answer. If, however, the patient has not had acute rheumatism we inquire about rheumatic pains, and rest satisfied with our diagnosis if we can detect more or less evidence of swollen joints or aching limbs.

Turning from the clinical aspects to bacteriological investigations, we find evidence pointing to the artificial production of iritis by the rheumatic diplococcus or micrococcus. Although Fritz Meyer, Ainley Walker, and Beaton do not appear to have produced it, Poynton and Paine, in their contribution to the *Transactions of the Ophthalmological Society* (vol. xxiii, p. 39), report that iritic symptoms ensued in rabbits after the intravenous injection of cocci, in one case from ordinary rheumatic fever in a child, and in another from malignant endocarditis of rheumatic origin. In no other case were there symptoms pointing to iritis, although they made repeated experiments. In their first successful case, on the seventh day there was injection of the conjunctival vessels, discoloration of the iris, and considerable exudation into the anterior chamber. But they state that the appearance was not like that of hypopyon. The rabbit died on the tenth day. The symptoms do not appear to have resembled altogether those one is accustomed to see in the condition generally designated rheumatic iritis, and they suggest the possibility of a purulent or metastatic choroiditis. The iritis occurred in the left eye only, but it is not stated into which ear the injection was made. In the second case the injection was made into the ear of a rabbit intravenously, the culture being prepared from the case of a boy who died from malignant endocarditis two years after an attack of acute rheumatism. In four other rabbits that were injected from the same source there was no iritis. In this case the evidence furnished by the authors seems hardly sufficient proof that the endocarditis was undoubtedly due to the *Diplococcus rheumaticus*. Bearing in mind the multiplicity of organisms capable of producing malignant endocarditis, and the fact that the ordinary pyogenic organisms are responsible for the greater number of cases, it seems desirable that further investigation as to the identity of the micro-organism should be made.

According to C. W. Jennings, rheumatic iritis is a common form of the affection, 25.4 per cent. of all cases being due to it. Nevertheless, the absolute connexion of rheumatism and iritis, both clinically and bacteriologically, is still lacking.

In looking through my cases, I find that in the last 80 private patients suffering from iritis, excluding traumatic, there were 4 who had suffered from acute rheumatism at some previous time; 5 per cent. is not a strong basis upon which to erect an etiological superstructure. Many of the other patients confessed to "rheumatic" pains of varying intensity when asked; but do not a large number of patients suffering from any disease usually acknowledge that they are rheumatic when the leading question is asked? Evidences of rheumatism, or at least of arthritic disease—such as distorted or fixed joints or nodules—were seen in 7, whilst gonorrhoea was acknowledged to have preceded the iritis by not more than two years in 9 patients, a specific disease accounted for 15. I repeat that I think it too frequently happens that if we can exclude syphilis and gonorrhoea, we are satisfied, when we find that a patient has indiscriminate pains in indeterminate regions to call an iritis rheumatic. In many of such cases further investigation might throw doubt upon the diagnosis. Patients cannot be expected to say anything about diseases which they think have no connexion with their eye trouble, and so it happens that nothing is mentioned by them about a previous septic throat or pyorrhœa alveolaris. Haematemesis and dysentery and dyspepsia are overlooked, and toxaemias of all descriptions are forgotten.

In conclusion, it is desirable that full details of all cases of iritis occurring during the acute stage of rheumatic fever should be recorded. If the physicians of the large London and provincial general hospitals who see so many cases of acute rheumatism, would aid in this direction, a definite conclusion might be arrived at.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, 1903, vol. i, p. 543.

THE NORMAL ORTHOGRADE POSTURE

BY

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In the course of my clinical work, in order to effect a lasting cure of many throat, nose, voice, and speech patients, I found the absolute necessity of certain measures which, when first adopted by me, were purely empirical. Such measures were suggested by the results of gymnastics, breathing exercises, and voice training as adjuvants to accepted medical and surgical treatment and educational and hygienic routine.

At that time these collateral measures were completely ignored in the textbooks on, and in the clinical teaching of, laryngology and rhinology in this country. But to such an extent had they become part of my own regular treatment and instruction that in 1893[1] and onwards published clinical lectures and statements advocating regular postural, respiratory, voice, speech, and nerve coordination training for the re-education of patients defective in those respects. Continuous experience has naturally led to many improvements in detail for therapeutic application, while incessant inquiry into the scientific basis of such matters has opened up many interesting problems.

The point I desire to refer to on the present occasion is the uncertain signification of the term "normal grade," "perfect erect," or "correct" posture. Since the erect posture is the resultant response of man's entire nervous system and musculo-skeletal machinery to gravitation—"the chief resistance to be met by terrestrial animals" (Herbert Spencer[2])—and the contest is a long one, there should be no doubt or ambiguity about what is the "normal" in posture.

Without any precise conception of what is man's normal erect posture in standing, few have denied the importance of a good carriage. The Greeks, indeed, we learn from Aeschylus, Xenophon, and Hippocrates, had special words signifying "upright posture," and such erectness was doubtless one of the main aims and results of their physical training. Among the Latins both Ovid and Cicero spoke of "erectness" as the great human feature. Surgeons recognize the influence of habitual exaggerated faulty postures in producing numerous deformities. Physicians also seek to correct a rounded back, sunken chest, which cramp and crowd the lungs, heart, and abdominal viscera. Anatomists, too, have recognized the vast changes in man which have de-

sulted from his assumption of the erect posture in his scent from a pronograde ancestor; and lastly, physiogists are well aware of the influence of gravitation and extreme changes of posture on the circulation.

In spite of all this, as far as I can find, no attempt has en made to accurately define the "normal orthograde sture," or to consider whether certain variations of sture—habitual deviations from the normal which might first be thought minor or insignificant—might not be sponsible for very grave derangements in the working of e body, although the latter might be of very slow olution.

My contentions are:

1. That gravitation is potent in varying the relative sitions and mutual pressures and frictions of such conuous solid organs in the body as are capable of relative splacement as well as in altering the tensions these perience in postures differing, perhaps, but slightly om each other. Such variations in posture tend to duce different types of respiration which still further ter the distribution of mechanical force incident at any ot. It is obvious that the brain and musculo-skeletal echanisms bring about co-ordinated adjustments to preve the equilibrium, while at the same time the necesry movements for the oxygenation of the blood and other ternal movements are going on. Also the injurious fects of any excessive incident mechanical forces are conrrently obviated by similar co-ordinated adjustments, nich are deep reflexes initiated in end organs at sites of cessive incident forces, and having as their objects the hibition of the conditions causing such abnormal pressres. There are nevertheless limits of time and degree Nature's protective adjustments. If faulty postures and eir concomitant faulty modes of respiration—especially lly-breathing—are habitually and incessantly adopted, large body of clinical evidence shows that pathological anges take place at the sites of incidence of excessive trinsic mechanical forces, and as a direct consequence ereof, and of a nature varying with the intensity and ration of the incident force, and the variety of cell or sue acted on.

2. These facts can and should be utilized by physicians potent aids in the cure and prevention of disease and omotion of health. The method I have elsewhere tlined,[3] and have named psycho-postural-respiratory aining.

3 Systematic inculcation of the normal erect posture ring growth, and the type of respiration naturally sociated with it—being the active conscious neutralizing antagonizing of the faulty postures of modern civilized e—is the main factor in the arrest of physical degenera-n, and will promote the return of the human form to at of the ancient Greek.

An essential preliminary to the examination of my ntentions is an accurate definition of terms. What, en, is the normal orthograde posture? The word rthograde" is a hybrid not discoverable in the classics, t having been adopted by anatomists and anthropologists the equivalent of "erect," I shall use it in that sense.

The subject of "posture" appears to be consigned by neral consent to a "no man's land" adjacent to the rders of many sciences. None of them seems to desire

Most leading works on anatomy and physiology ignore Schäfer's[4] standard textbook is a notable exception, t even in this his contributor, Haycraft, after discussg the experimental work of the Webers, Braune, Fischer, d himself, lays down no conclusion for the guidance of ysicians and educationalists.

Is the problem insoluble? I think not. It is quite true at three serious fallacies beset all the inductive work at has hitherto been done.

1. On setting out to determine the "normal," the perimenter has started with the assumption that the bject under observation was "normal," which may not ve been the case.

2. It has been assumed that the distribution of weight the same in the horizontally-placed, non-breathing, zen cadaver as in the vertical-standing breathing man. is obviously omits the influence of gravitation, one of main factors in the normal erect posture.

3. There has been mental confusion between the ormal" and the "average."

The true normal in living man cannot be found by measuring a chance hundred of so-called "ordinary healthy individuals" and taking an "average." Each of these individuals of to-day has been more or less similarly subjected to similar injurious influences of civilized life—for example, long-continued and repeated bad postures during growth and habitual work, such as lounging, school desks, easy chairs, feather beds, corsets, badly-shaped boots, imitation of bad models, sedentary habits—without sufficient compensation for those influences by others calculated to systematically antagonize their injurious effects on the working and form of the body. The average obtained from such subjects must be something "abnormal" or "subnormal," even if not greatly removed from the "normal." Although "normal" is a term with many meanings and applications, it surely should imply in anatomy a "standard of perfection of form and structure" to be aimed at; and in physiology the "mode of obtaining optimum efficiency" out of the human machine or of getting it to do its routine work with least possible expenditure of power. If orthodiagraphs, etc., had been available 500 B.C. and applied to a chance hundred "ordinary healthy individuals" among the ancient Greeks, the resulting average would have given a so-called "normal" very different to that gained from civilized moderns to-day.

The "normal," then, must be an "ideal," gained from all men of all time. Loose unsatisfactory conceptions as to the "normal" are responsible for a large part of the defects, deformities, disease, and degeneration of to-day, because slighter deviations therefrom, which can be corrected in an early stage by training, are neglected until their results are irremediable. It follows that what is "normal" should be authoritatively laid down by scientific experts to doctors and teachers wherever possible. Is this possible in the matter of posture?

We may have been driven to the conclusion that in living man the "normal" in such matters as posture and breathing is not determinable by experiment or observation of averages. The inductive method, supreme as it is in arriving at conclusions when only one variable exists in the phenomena under observation, shows its limitations when there are indefinite simultaneous variables, including man's central nervous system, gravitation, oxygenation, etc.

In such cases to find truth it is necessary to work deductively from general philosophical principles and frame hypotheses to be subsequently tested whenever possible by experiment, but also by reasoning from the observed effects.

The advertising schools of physical culture have, of course, prematurely exploited the unoccupied field. I show pictures of what is deemed the "correct posture" in standing, published by the professors of eight of these systems, English or American, vaunted as original. When analysed by vertical and horizontal parallel lines, they are seen to be purely fancy pictures, *ad captandum vulgus*, and some show incompatibility with the law of gravitation. They all differ from each other, and from what I show as, and give reasons for regarding as, the "normal" erect posture to be aimed at in education and in therapeutics. It will be seen from other pictures shown how largely my conception agrees with that of the figures on vases and monuments of all ancient races as contrasted with modern sedentary and slouching peoples.

Approaching posture from a deductive standpoint my arguments are as follows: The living body is a complex machine or engine for the transformation of energy derived from its intake. The object of the life of an animal is the dominance and persistence of the species to which it belongs. To secure optimum efficiency for each individual of the species as long as it is at work, and to maintain such efficiency as long as possible, afford an ample object for economy of force in the living machine. A maximum aggregate of power is thus rendered available for the whole species in its combat with the environment.

Man's erect posture is an immense source of economy to him, owing to the increased vertical elevation above the ground of the distance receptors—the organs for sound, light, and smell. He has, therefore, an enlarged horizon of environment. This not only gives him increased and early knowledge of favourable and unfavourable events in that environment, but affords time for deliberation and contrivance in avoiding dangers or pursuing benefits—an

immense advantage in the economy of energy both for the individual and the species as against most pronograde competitors in the struggle for existence. The chief change producing maximum vertical elevation of the head is the bringing the axis of the vertebral column and of the lower extremities into the same vertical line. This is rendered possible by man's increased power of extension of the hip and knee joints. The necessary distancing is effected by the willed extension of the vertical axis in which are the centre of gravity of the cranium, the vertebral column, the pelvis, and the lower extremities.

The weight of the body being borne entirely by the lower limbs, the upper limbs, freed from the task of aiding in station and progression, become available for prehension and movements involving delicacy of touch and manipulation, such as writing—that is, making distinct signs to represent sounds or things, and setting free the jaws, teeth, and mouth for other purposes. These latter, eased of their functions as weapons of offence and defence against enemies, and from the duties of seizing food, are left free for the duties of speech—that is, the modification of the laryngeal voice to make distinct articulate sounds to represent different things and the better expression of the emotions. Hence the erect posture gives man advantages as to sight, sound, smell, touch, and delicate manipulation, voice, and speech, which are represented structurally in the increased intricacy and quantity of his brain structure. These increasing powers demand increased attention to man's early training. Man's education does not always demand conscious instruction. In the absence of unfavourable circumstances, he can learn by unconscious imitation of good models.

While natural selection was bringing about maximum vertical elevation of the head, *pari passu* man was learning to secure maximum stability of bodily equilibrium in the most erect posture. To do this with the minimum expenditure of energy involved much redistribution of the weight of the skeletal and visceral structures around the new vertical axis, in obedience to gravitation, so that the plumb-line through the centre of gravity might fall within the diminishing area of support now restricted to the feet.

Among the changes promoting maximum stability of equilibrium are:

(*a*) The structure and strength of the foot and ankle-joint.

(*b*) The inclination of the pelvis to the spine.

(*c*) The anterior convex lumbar curve of the spine.

(*d*) Shortening of the antero-posterior diameter of the thoracic cage as compared with the transverse.

(*e*) The balancing of the head on the atlas by the occipital condyles coming to lie in the median fifth of the base of the skull: (*b*), (*c*), (*d*), and (*e*) help to bring the centre of gravity of the trunk over the hip joints.

Further changes to save power are:

(*a*) The adhesion of the central tendon of the diaphragm to the fibrous pericardium and so to the deep fasciae of the thorax and neck so as to aid in mechanically supporting the viscera.

(*b*) The fixation of the intestine to the abdominal wall by additional mesenteric adhesions forming mechanical supports.

(*c*) The maximum use of the passive skeletal structures (bones, cartilages, and ligaments) to resist gravitation and maintain the form and posture of the body, the equilibrium being automatically controlled by the cerebellum so as to minimize expenditure of energy on both cerebral and muscular accounts.

(*d*) The increased complexity of brain organization and development.

The tendency of all these modifications in structure is to promote economy in the expenditure of power in the working of the human machine. Nature exemplifies this "principle of optimum efficiency" in all her works, and man's structure and function are "normal" in as far as he is educated to habitually conform to this ideal or standard.

Applying these considerations to the present problem, the normal orthograde posture may be defined as that in which:

1. The centre of gravity of the head is vertically over the centre of the base of support.

2. The vertical plumb-line joining these points bisects the median transverse occipito-condyloid axis, and also the intercotyloid axis, passing through also the centre of gravity of the mass made up of the trunk and upper limbs.

3. The centre of gravity of the head, that of the trunk, and the centre of the base of support, are actively distanced as much as possible from each other by fullest possible extension of the vertical axis in which the above points lie with each in-breath until the extension becomes automatic and unconscious.

This posture should be the basis of all physical education for the young. It is the ideal we should seek for every child, the one we should endeavour to get stereotyped by growth in form and structure, the one to which such child should automatically return after action or relaxation. The subject trained thus has an easy and graceful carriage, a straight back, well-poised head, a raised, expanded, and mobile thorax well distanced from the pelvis, a flat abdomen, and all the internal organs in constant correct position for best work. The postures permitted and taught by some physical culturists with retracted head, stiff neck, protruded abdomen, hollowed back, and bent knees, do not comply with my definition, and are absolute caricatures of the normal erect posture, and directly produce deformity and disease. Moreover, the normal erect posture is the fundamental essential for all efficient respiration, correct voice production, and speaking. Lastly, the influence of the normal erect posture in the prevention and treatment of disease is of a potency as yet but barely suspected. Limits of time and space prevent my entering into details here, and I must refer readers to other papers on the subject. For the present I venture to invite scientific experts to consider my definition of the normal orthograde posture.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

COLLAPSE IN A BABY.

THE following case seems to me of interest from the cause of the attack compared with its severity:

A few months ago I was called in to see a baby who was said to have had a "fit." He was a male baby, 5 months old, was farmed out, and had only been with the present people about a month. So far as could be made out the following was his history. He was bottle-fed after the first month, but had always been healthy except that for the last six weeks the bowels had been irregular, chiefly constipated, though for a week previous to the attack he had had slight diarrhoea and seemed to have pain when his bowels acted. About 5.30 p.m., when he was having his bottle before being put to bed, he took a little of the feed and then cried, took a little more and cried again, and then finished the bottle. Almost immediately he became sick and brought up most or all of the feed, which was said to be in the same state as when swallowed. As this had soaked his nightdress he was laid down to have it changed, but he suddenly became pale and unconscious.

While the people were waiting for a doctor to come he was put in a warm bath and then rolled in a blanket, but he did not show any signs of reviving and gradually got colder. Once or twice he was supposed to be dead, and they were not quite certain if he were alive when I came.

On my arrival, about half an hour after the attack commenced, I found him quite limp, the head and limbs falling about when he was moved; he was cold all over, extremely pale, no pulse to be felt; the eyes were partly open and the conjunctivae insensible to touch. There were slight sighing respirations at intervals, but no other signs of life. I do not remember auscultating the heart.

I put him in a hot bath and splashed cold water in his face, while a blanket and flannels were being heated, and when they were ready he was dried and laid on a warm

blanket in front of a fire and rubbed with a hot flannel. At this time his tongue and the inside of his mouth felt cold and clammy and were quite pale, and on putting my finger in as far as the epiglottis to see if I could stimulate the breathing there was no sign of sensation and the whole region felt cold.

I had no hypodermic with me, but had some sal volatile, so I dropped a mixture of that and peppermint water on the back of his tongue. In ten to fifteen minutes this stimulated the throat sufficiently to cause swallowing, and, continuing with the sal volatile, fire, and hot flannels, he slowly revived. In a few days' time he seemed all right again.

This case evidently was not a fit, but a faint, due seemingly to some stomach irritation. Instead, however, of relief having been given by the bringing up of the stomach contents, this seems to have been the cause of the collapse.

It is rather interesting to find so long a collapse from so seemingly trivial a cause, for the baby must have been nearly an hour without a pulse that could be felt, and with sighing respiration, and when the pulse did appear it went again unless sal volatile was given freely.

I have no reason to doubt the history of the attack, and poisoning can be excluded, as two other babies in the same house were not affected in any way.

I have never seen such a case of collapse in a baby before, and for some time did not expect him to recover—a dead faint for nearly an hour, and mouth and tongue cold and clammy, seemed hopeless. I should be grateful if any of your readers who have had a similar case could let me know what the mouth or rectal temperature fell to, as I did not take it, and do not think an ordinary thermometer would register it.

RONALD T. HERDMAN, M.B., C.M., D.P.H.Camb.
London, N.

FRACTURE OF THE FEMUR AT BIRTH.

IN April, 1909, I was called in to attend the confinement of a primipara, and on examination found a breech presentation with the legs extended. The labour was protracted, and the patient considerably weakened. Attempts at version and at bringing down a leg were made, but without success. It was also found impossible to effect delivery with the fillet or the finger in the groin. At this stage it was thought that the child could not be born alive, and the patient being anaesthetized, a blunt hook was used. Considerable force had to be exerted before delivery could be accomplished. The child was a large boy, and was alive, but the upper part of the shaft of the left femur was found to be fractured, and there was some laceration and considerable bruising of the soft parts in the groin. The question of treatment was a difficult one, for the conditions of the groin precluded the use of most of the recognized methods of treatment. For example, it was soon found impossible to maintain the limb flexed against the abdomen, according to Credé's original method, on account of the difficulty of looking after the wound complicating the case. Suspension in a special frame, with the legs vertical, has been tried with success in these cases, but I soon abandoned it as unsatisfactory.

The extension seemed quite unnecessary, and there was constant trouble and difficulty in keeping the limbs in proper position without interfering with the circulation. Feeding and bathing were also rendered very difficult by this apparatus. Whilst beset with all these difficulties in looking after the case, Dr. Isbister of North Sydney published an account of a splint which he had used with success for similar cases. In the BRITISH MEDICAL JOURNAL, April 17th, 1909, is a complete account of his apparatus with illustrations. Messrs. Maw and Sons made a similar splint for me and the treatment of the case was comparatively simple by its employment. It is made of aluminium, only weighs about 2 oz., and consists of a band which surrounds the abdomen, an angular splint which keeps the knee and hip joints flexed, and a connecting band between the two parts. From my experience of its use I have nothing but praise for it. The mother and nurse were extremely pleased, for the infant was quite comfortable in this splint; he could be fed at the breast without any difficulty; he could be bathed and dressed quite easily, and could be taken out in the perambulator without attracting any special attention. The result was quite satisfactory. Union took place with fragments in good position. After about six weeks the splint was discarded and gentle massage begun. There was considerable formation of callus but this gradually disappeared. There was no deformity and a shortening of only about ¼ in. The case was seen about six months after birth by Mr. G. Lenthal Cheatle, who wrote:

> I am sure you are to be much congratulated on the result, as it was a most difficult case.

I attribute the successful issue in great measure to the splint which was used, and am happy to add my experience of its success to that of Dr. Isbister.

East Sheen, S.W. CECIL JOHNSON, M.B., Ch.B.Vict.

ACUTE POISONING BY *TRACHINUS VIPERA* IN NORMANDY.

A FEW days after our arrival at Les Grandes Dalles, Normandy, I caught a number of prawns and small fish with a prawning net, and had placed the catch in a fisherman's basket, when my son, a Merchant Taylors boy, aged 15, handled the contents of the basket and seized a small fish, which happened to be a small *Trachinus vipera*. The fish stung the boy on the index finger of the right hand about the middle of the second phalanx. Immediately after the injury had taken place the boy complained of severe, nauseating pain going up the hand, arm, and up to the shoulder. I was not cognizant at first of what had happened, but on being told by an old sailor that the wound of this fish, called in Normandy "vive," was considered to be very dangerous, I at once went some three-quarters of an hour's distance with the patient to a chemist, no medical man being in the vicinity, who told me that to his knowledge four persons who had received similar wounds had died from the effects. In the meantime, about one hour after the accident, the finger had swelled up, and was of a dark blue colour and very painful; the hand was swollen up to the wrist, and the boy felt very faint and ill. I had seen cases of snake bite in the West Indies, and had seen good results from alcoholic stimulation (brandy and wine), and injections of permanganate of potash solution into the wound; but as the boy was in great agony—in fact, he said he felt he was going to die—I decided at once to get rid of as much venous blood from the affected area as possible, and accordingly made a deep and long incision into the swollen tissues of finger with a scalpel which the chemist lent me. Bleeding from the incision was encouraged by rubbing the arm and forearm in a downward direction. After about one hour's interval less pain was experienced, and the finger, which before had been perfectly stiff, could be slightly bent.

Treatment afterwards consisted in bathing the hand and forearm continuously for days with 1 in 600 permanganate of potash solution and 5 per cent. carbolic acid alternately—the carbolic seemed to give the greatest relief—and giving quinine in small doses internally. The finger and hand remained swollen for quite a fortnight after the injury, and close upon six weeks have elapsed, and the wound has only just healed. On the day following the sting an axillary gland became painful and enlarged, but subsided gradually as the symptoms of swelling in hand and finger lessened. During the whole course of the case the temperature was below normal.

Description of Trachinus Vipera.

This fish is about 4 to 6 in. in length, about the size and colour of a large sardine, with a rather broad head and the eyes close together. The black dorsal fin possesses three sharp, long spines. The operculum on each side has a sharp spine projecting backwards—the defensive and offensive weapon—and the chemist at Sassetot told me that zoologists have discovered a poisonous gland in the floor of the mouth, from which poison is ejected from under the gill simultaneously when the fish inflicts the wound. The fish are very good eating, either fried or boiled, but the fishermen cut off the heads immediately after catching

them, as the cooks decline to touch the fish unless the heads have been severed from the body. I read in Leuni's *Synopsis* that these fish were much feared by the ancients.

London, E.C. JOHN H. SPITZLY, L.R.C.P., M.R.C.S.Eng.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL VICTORIA HOSPITAL, DOVER.

THREE CASES OF STRANGULATED EPIGASTRIC HERNIA.

[Reported by J. C. RIDGWAY, M.B., B.Ch., B.A.O., Trin. Coll., Dublin, House-Surgeon.]

As the occurrence of an epigastric hernia is somewhat rare, I venture to record the three following cases, which came under my notice during the past one and a half years, and which were operated on by Mr. C. E. Murphy, Visiting Surgeon to the Hospital, with whose permission I now publish them.

CASE I.

A. P., a labourer, aged 60, was admitted on March 11th, 1909, with the following signs and symptoms: He had a painful tumour situated in the epigastric region, and had had persistent vomiting for two days, no flatus or faeces being passed during that time; his temperature was 100.4° F. and the pulse 120 on admittance. In size the tumour was about that of a large turkey's egg, being situated in the middle line midway between the ensiform cartilage and the umbilicus. The skin over the tumour was normal. The tumour was tense and elastic to the touch, and gave no impulse on coughing. A rather interesting coincidence was that he had another tumour in his right groin, which was an old-standing inguinal hernia, and which on examination proved to be non-reducible. It had been present for about forty years, but had up to a year of his admittance to hospital been kept in place by the use of a truss. Then, however, he left off wearing it. An impulse on coughing was easily elicited, and it was plainly evident that the symptoms of strangulation were confined to the epigastric tumour.

A strangulated epigastric hernia being diagnosed, the following operation was performed. A vertical incision was made through the skin over the tumour extending for about 4 in. On opening the hernial sac, fluid blood-stained in colour escaped, in all about 1½ oz. A loop of transverse colon, measuring 3 in., was found very adherent to the sac; the bowel was purple in colour, but the peritoneal covering had not quite lost its lustre. It was found that the loop of intestine was tightly constricted by the neck of the sac. The neck was ½ in. in diameter. A director was passed through the constriction and the neck of the sac divided in a vertical direction upwards; the constriction then being relieved, the loop of intestine was drawn down into the wound and the point of constriction carefully examined. As the peritoneal covering above was intact, the bowel was carefully reduced into the abdomen again. The sac was then excised. The edges in the linea alba were freshened and the aperture then closed by interrupted silk sutures. In bringing the recti together the right was brought across the middle line and united to the anterior aspect of its fellow, thus forming a flap over the site of the previous hernia. The skin was then sewn up with salmon gut.

The patient was greatly relieved by the operation. Flatus being passed twenty-five hours later, and a normal action of the bowels occurring forty-six hours after leaving the table. Good progress was made until the morning of the fifteenth day, when he complained of feeling unwell, and stated that he felt pain in his right groin. On examination, the impulse which was clearly elicited before had now gone. His temperature, normal since operation, had risen to 99.8° and the pulse to 116. The skin was normal, but great pain was complained of on touching the tumour. As his condition became worse, it was decided to operate the same evening. On opening the sac, it was found to contain a mass of adherent omentum. This was transfixed, ligatured in two places, divided, the ligatured stump being reduced into the abdomen and the adherent omentum and sac removed, the abdominal wall being closed by a modified Bassini. He made a good recovery and left hospital on April 25th. When seen on July 6th last, he was in excellent health.

CASE II.

M. W., a woman aged 58, was admitted on August 8th, 1909. She related that she first noticed a lump in the epigastric region over thirty years ago, but, although it had latterly become larger, it had never given her any trouble until three days before being admitted, when, in endeavouring to move a heavy sideboard, she felt something give way in the site of the tumour. The same evening she vomited after taking her tea, and her symptoms becoming worse a doctor was called in, who advised immediate removal to hospital. When seen in the ward on admittance she was in a collapsed condition; vomiting had been constant for fifteen hours previous. A clammy sweat covered her face. The pulse was 134 and the temperature 97.8°. A tumour somewhat resembling a lipoma was seen situated in the middle line between the ensiform cartilage and the umbilicus, in size about that of a large Java orange. No impulse was felt when she coughed. The skin over the tumour was tense and of a darkened colour.

Immediate operation was decided on. On opening the sac, which contained very little fluid, three coils of small intestine were found closely matted together; these were freed from one another with great difficulty. It was doubtful whether the bowel should be excised, owing to its condition bordering on gangrene, but as the patient was in a collapsed state the constriction was relieved, and the bowel returned into the abdomen, the recti being brought together with two layers of Japanese silk and the wound closed, a Kocher drainage tube being inserted. Before leaving the table 1 pint of hot saline was injected into the rectum and retained. The patient came round from the anaesthetic, but three hours after signs of severe collapse set in. The pulse was 160 and the respirations 42. The foot of the bed was raised, the limbs bandaged, and saline injected into the axilla up to 1½ pints. Strychnine and digitalis being also given hypodermically. She gradually came round and made a satisfactory recovery. She left hospital on September 22nd, and was last seen in January, when she was attending as an out-patient with bronchitis, but unfortunately in April she contracted pneumonia, to which she succumbed.

CASE III.

H. F., a farm labourer, aged 66, was admitted on February 16th, 1910. For over forty years he had been in the habit of putting staves into the ground for netting rabbits by leaning on them and using his body as the driving force. He first noticed a swelling at a point about 2 in. above the umbilicus in the site of pressure about thirty years ago, but as it never troubled him he did not pay much attention to it. It had remained the same size for several years, namely, that of a hen's egg, but latterly he said that it had gradually become bigger. He stated that when in the act of sneezing he felt as if something had given way, and the same evening on endeavouring to lean on a stave, felt great pain in the tumour. On retiring to bed he examined the tumour and found it had become much larger. Next day he had increasing pain, and that evening vomited his food. His condition becoming worse a local doctor was called in and ordered his admittance to hospital, which, however, was delayed until the evening of the day following. His condition then was most serious. The pulse recorded 122, the temperature 100.2° F. The skin over the tumour was in an inflamed condition, being thin and upon the point of ulceration. The tumour itself was spherical in shape and 3 in. in its longest diameter. No impulse was present, and well marked signs of intestinal obstruction were in evidence. Immediate operation was performed. On opening the sac a loop of transverse colon 2½ in. in length and a mass of adherent omentum were found, the bowel was of a darkish colour, but the peritoneal covering retained its lustre. The omentum was exised, and the same proceeding followed as in Case I. His further progress was most satisfactory. He left hospital on March 12th. When seen in July, 1910, he was in good health.

In all three cases the skin was painted before and after operation with a 2 per cent. solution of iodine in rectified spirit; chloroform was the anaesthetic used.

THE Rural Housing and Sanitation Association was formed in 1902 for the purpose of improving the condition of housing and sanitation in country working class homes throughout England, so as to prevent the rural population from being driven into towns by the inadequacy and unwholesomeness of their habitations. It is sought to attain these objects by educating public opinion as to the need for reform, by advising as to the carrying out of the Public Health and Housing Acts, by inducing sanitary authorities to enforce remedial measures in specific instances brought to their notice, and in other ways. In the last annual report of the association it is urged that the public body administering the Public Health and Housing Acts in rural districts should be drawn from a wider area than is the case at present, and that there should be an improvement in the qualifications and the positions of rural health officers, for it is contended that the terms on which these officials hold their posts are not calculated to encourage them in the efficient performance of their duties. At the foot of page 7 of the report there is displayed a singular want of knowledge of the duties of a county medical officer of health, who is referred to as an official who supervises the carrying out of the Public Health and Housing Acts in rural districts. The carrying out of these Acts is still in the hands of the district councils, whose executive officers are the district medical officers of health.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

METROPOLITAN COUNTIES BRANCH: HAMPSTEAD DIVISION.

Friday, December 9th, 1910.

J. FORD ANDERSON, M.D., in the Chair.

Practical Value of Vaccine-therapy.

DR. J. C. BRISCOE read a paper on the practical value of vaccine-therapy. He said it was but a short time since the discussion on this subject was held at the Royal Society of Medicine, at which many and various opinions were expressed on different points, but the general consensus of opinion was favourable to the good effects produced by vaccination in general. On the whole, far more successes than failures were recorded. As they were no doubt quite familiar with this discussion, he thought it would be advisable to leave out, as far as possible, the opinions of other people and to put forward his own ideas on the subject, and to give shortly, without minute detail, some of the results, favourable or otherwise, which had followed this method of treatment in his hands. If properly carried out, vaccination offered the greatest hopes of success in the treatment of disease. These hopes, however, were not always fulfilled, and he proposed, in the first place, to inquire into the reason why the results did not always correspond to theoretical expectations. In his opinion, recovery from an infection depended largely on the patient's power of resistance, and in employing vaccination it was essential to support this treatment with all the auxiliary measures which would tend to raise the resistance. The vaccination should be regarded as an adjuvant to the older and tried methods. As an example he instanced tuberculosis, in which he advocated fresh air, proper dietary, and well controlled exercise. He recognized that this doctrine might possibly detract from the prestige of vaccination, but that could not be helped. In the next place, it was essential to employ local treatment together with vaccination. The neglect of this was often responsible for failure. It would be unwise and tantamount to courting failure to inject a vaccine for boils, without either opening the boils or aspirating them. He placed considerable value on local treatment by cupping and by the production of hyperaemia. In the third place, the success of the vaccine treatment depended to a certain degree on the extent of the infected focus. It might be stated that the success to be gained would stand in inverse proportion to the size of the lesion. The fourth point was persistence of irritation. He was strongly of opinion that a vaccine applied to a case in which an irritant was allowed to remain could not but fail. Pus acted as an irritant, and should therefore be removed before the vaccination was performed, and he was convinced that many failures of vaccine treatment for urinary infections were due to the fact that calculi were present in the kidney. The speaker then passed on to the consideration of the causes of failure associated with the condition of the blood. Blood which was too viscid and which clotted too rapidly could not gain access to the infected focus. The effect of citric acid in lowering the coagulability of blood demonstrated the truth of this view. He explained the popular belief that hot lemonade "cut the phlegm" in bronchitis as due to this fact. On the other hand, he believed that there were many persons in whom the vaccine treatment did not produce the desired effect on account of the fact that their blood did not coagulate readily enough. It was also necessary to consider the distance to which the body fluids could penetrate into diseased tissues. The speaker had, together with Mr. Cheatle, experimented in this direction. They had attempted to ascertain how far the body fluids penetrated into a preformed abscess. They found that only the outermost surface was so penetrated. He had also performed experiments to show that there was a considerable difference between the plasma and the serum derived from clotted blood in regard to the immune substance content. A heart, removed after ligature of the vessels, containing unclotted blood, was injected with cocci. The same proportion of cocci were mixed with equivalent volumes of serum and blood corpuscles. Both the heart and the serum mixture were incubated for a measured period, and it was then found that many times as many cocci were taken up by the leucocytes in the serum mixture as by the leucocytes in the fluid heart blood. If, however, the cocci were first sensitized with serum from coagulated blood, the power of phagocytosis of the leucocytes in the heart was almost as high as that of the leucocytes in the serum mixture. A further experiment which confirmed this was also given. Four rabbits were taken. Two were bled to the extent of 10 c.cm. of blood, while the other two were not bled. On the following day each received a fatal dose of staphylococci through a vein of the ear, and the first received an intravenous injection of 6 c.cm. of its own serum as well, the second only 6 c.cm. of saline solution, the third an injection of 6 c.cm. of the serum of the second rabbit, and the fourth, which had not been bled, an injection of 6 c.cm. of saline solution. Death occurred on the tenth day in the first, after twenty-four hours in the second, and on the sixth day in the fourth, while the third rabbit recovered. This, he urged, proved that the serum acted by delaying or preventing death after the introduction of a fatal dose of the cocci. Clinically, a similar state of affairs could be observed. In malignant endocarditis it was possible to raise the opsonic index by vaccines without improving the patient's condition. This he interpreted as follows: The circulating plasma contained the immune substances in an inactive condition, and in order to render them active it was necessary for the blood to come into contact with the necrotic areas of a localized focus, in order that clotting might take place. Theoretically these cases should be treated by vaccines combined with a local bleeding and reinjection of the serum from the removed blood after clotting. He had not had an opportunity of carrying this out. Dr. Briscoe then turned to the clinical side of the treatment. First he dealt with staphylococcic affections. Boils treated by vaccines yielded most excellent results. Even better results were obtained in cases of ulceration due to staphylococci. He instanced the case of a nurse who had an ulcerating sore on the hand. The ulcer healed under vaccine treatment alone in three days, but the affected glands remained large and suppurated. As soon as the pus was evacuated by aspiration the whole infection cleared up rapidly. The absence of drainage prevented the immune substances from completing its work in the closed area. In a similar manner good results were obtainable in unresolved bronchitis, infections of the urinary tract due to *B. coli communis*, sinuses, unless surrounded by a dense fibrous wall, and nasal discharges. In pulmonary affections, bronchial catarrhs, either associated with asthma or not, vaccines often yielded satisfactory results. Dr. Briscoe spoke of a case of bronchitis associated with periodic attacks of dyspnoea. In this case there was marked eosinophilia. The vaccine, prepared from a diplococcus isolated from the case, resulted in the removal of the dyspnoea attacks. The eosinophilia persisted. No effect on the blood eosinophilia was produced by the local treatment of an existing nasal obstruction. Later a quinsy developed, and the tonsils were removed, and the eosinophilia diminished from 19.5 per cent. to 13 per cent. in two weeks. Good results were also obtained in some cases of bronchopneumonia, provided that the condition was not very acute. The vaccine could be made from the micro-organisms isolated from the sputum or from the material gained by paracentesis. Some very remarkable results have been reported even in desperate cases. Dr. Wilcox was the first to employ the pneumococcus vaccine for acute pneumonia. The speaker had not used it. Empyema did not as a rule benefit by vaccines. Unless the pus was let out it was useless to apply a vaccine. If the empyema was due to the pneumococcus, recovery usually took place under the older form of treatment. Infective processes of the urinary tract which might be treated by vaccines fell into two classes: (1) bacilluria in which there was no appreciable pus, and in which there was no localized focus; (2) infections with a local focus in the urinary organs. Of the first, the best results obtained were those which were dependent on an infection caused

by *Bacillus coli communis*. In these cases, however, he strongly urged giving intestinal disinfectants, such as creosote, guaiacol, calomel, etc., by the mouth, or antiseptics per rectum, and urotropine or one of its derivatives to disinfect the urinary tract. Harm might be done in some cases by vaccine, by inducing the "vaccine habit," since the general symptoms were often relieved without any real objective improvement, and a secondary nephritis might arise. In the second class of case, the most common form was that of a stitch abscess due to *B. coli* or gonococcus. The results, however, varied in these cases. The speaker stated that subacute rheumatoid arthritis cases were among the most satisfactory for vaccine treatment. In certain cases due to oral, nasal, or other septic affections, vaccines acted like a charm. The pain disappeared at once, and the swelling within a short time. He then related the history of a case illustrative of joint affections due to *B. coli* infection, in which the vaccine treatment failed, even when associated with massage, strapping, Bier's hyperaemia, and the application of Scott's dressing. After aspiration of the joint, cure followed. Passing over primary infections of the cutaneous system, and the mouth, he concluded by a consideration of the vaccine treatment of pulmonary tuberculosis. If the lesion was large, he found that the treatment would not be productive of good in the majority of cases. Men reacted better than women. Vaccine did not stop haemorrhage, but in such cases tended to increase the liability to it. Secondary infections disappeared with open air and creosote inhalations. He again emphasized the necessity of employing every means of raising the resistance of the patient as well.

Dr. WHITFIELD, who was next called upon to address the meeting, fully endorsed what Dr. Briscoe had said about irritants. He illustrated this point by referring to that resistant form of boil which affected men much more commonly than women, and which caused much difficulty in treatment. In inquiring why men were affected and not women, he found that the only contributory cause which he could discover was the fact that men often either had the napes of their neck shaved at more or less long intervals, or had an instrument called the "clippers" applied to this situation. The result was that short, stiff hairs grew, which rubbed against the collar and acted as irritants. Women, also, wore collars, at times starched and dressed with irritants, like men, or septic soft cloth collars, yet they did not suffer in the same way. The difference lay in the fact that they wore their hair long. By attending to this point, vaccines proved more beneficial than if it were neglected. He was pleased to find that Dr. Briscoe had spoken of "vaccine-therapy," and not "opsonin-therapy." The former meant vaccine treatment carried out in any way that might be desired, while the latter meant vaccine treatment controlled by the opsonic index. He had opsonized every one of his lupus patients for the course of three years, and the results were so unsatisfactory that at the end of this time he had no more patients to opsonize. Nodules did not disappear when vaccines were applied in this way. Since then he had tried with some fear another form of treatment and had obtained highly satisfactory results. This was injecting Koch's Old Tuberculin. Great care was necessary, since Old Tuberculin was slightly dangerous. Even in the early days of Old Tuberculin, some very marvellous results were obtained. Old Tuberculin, however, made the patient very ill. The opsonic index did not agree with the results obtained by this means of treatment. He started with $\frac{1}{4000}$ c.cm., and either repeated the same dose or doubled it, according to the clinical manifestations. He cited a case treated in this manner some eighteen months ago, in which a very extensive lupus of the nose resolved completely. Breathing had become satisfactory, all the nodules had disappeared and had been replaced by innumerable depressed scars, while the interior of the nose had become considerably atrophied. Dr. Whitfield passed to the consideration of the necessity of examining the lesions microscopically when possible in each case before applying a vaccine. He instanced cases of mistakes in this direction. Scabies, ringworm, and iodine acne had been treated with streptococcic vaccines with negative results. The two former would be readily dealt with properly if a microscopical examination had preceded the treatment.

Mr. KENNETH GOADBY objected to the term "opsonic-treatment" because the opsonic index was only one method of controlling the treatment. Vaccine-therapy, the term adopted by the Royal Society of Medicine, was preferable. In applying himself to his own subject, he stated that he agreed with Dr. Briscoe that oral infections were frequently the causes of arthritic affections. He considered local and general treatment in association with vaccines as highly important. The group of affections usually spoken of as pyorrhoea alveolaris (this was not one disease but a number of bacterial entities) were often treated promiscuously by scaling deeply down the teeth with instruments which the dental surgeon might or might not sterilize beforehand. It was essential to raise the resistance of the patient prior to surgical procedure of this sort. In speaking of the extraction of teeth for infective processes, he strongly deprecated the practice of extracting as many as possible in one sitting. The production of local immune bodies was of the utmost importance for the welfare of the patient. He held that preliminary microscopical examination of the pus or other material was absolutely necessary in order to ascertain what bacteria were present before making vaccines. He added a few words with regard to the application of vaccines by the mouth.

Dr. BUTLER HARRIS stated that he was a general practitioner who five years ago had started a bacteriological laboratory, and strongly advised other practitioners to do the same. He maintained that at least 20 per cent. of the cases which the general practitioner was called upon to treat were caused by an infecting organism. Since vaccine treatment had come to stay, it was essential that every practitioner should examine the material of each case under the microscope in order to ascertain what was present in the case. He claimed to have been the first to apply vaccine-therapy in cases of acute pneumonia. He cited cases. The effect of the injection of a vaccine prepared from Fraenkel's pneumococcus was a fall of temperature followed by a rise after about thirty-six hours. If the injections were repeated several times the temperature fell ultimately by lysis. Pneumonia which did not resolve properly might be cured by injections. In the acute cases he advocated the early employment of a stock vaccine prepared from a highly virulent strain, to be followed by an autogenous vaccine as soon as possible. It was naturally important to distinguish cases of pneumonia due to Friedländer's bacillus from those caused by the pneumococcus. He also reported good results obtained in *coli* infections of the urinary tract, and spoke of a trial which he was making with vaccine of *coli* in a pregnant woman who previously habitually miscarried, and in whose urine and uterine scrapings *coli* had been isolated.

Dr. CLAUDE TAYLOR asked whether in the case cited by Dr. Briscoe the tonsils were guillotined or enucleated. He spoke of a case of septic endocarditis and malignant aneurysm.

Dr. FORD ANDERSON regretted there was no time to review the proceedings. He supported Dr. Briscoe in his statement that rheumatoid arthritis cases were benefited by vaccine. He asked whether Bier's hyperaemia method was not highly valuable as an adjunct. He also asked for his opinion as to whether in cases of acute pneumonia stock vaccines like those supplied by the Lister Institute could be recommended when there was no time to obtain an autogenous vaccine. He had placed a number of such stock vaccines on the table for members to examine.

In his reply Dr. BRISCOE said that the tonsils referred to were enucleated. He, too, was heartily glad that it was proved that it was no longer necessary to work out the opsonic index in vaccine work in order to get successful results. He apologized for having been ignorant of the fact that Dr. Butler Harris had been the first to use pneumococcic vaccines in the treatment of pneumonia. He considered that Bier's treatment produced stasis and allowed the plasma to produce the alteration mentioned before and discharge active immune bodies.

After the reply had been given, Dr. BRISCOE and Mr. GOADBY exhibited on the screen some very excellent photomicrographs of some organisms which play a part in producing infections.

At the motion of Dr. MACEVOY, a hearty vote of thanks was passed to Dr. Briscoe and the other speakers.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, December 12th, 1910.

Mr. CHARTERS J. SYMONDS, President, in the Chair.

Fröhlich's Syndrome.

R. DAVID FERRIER, in a paper on acromegaly, said this isease was supposed by Marie to be due to hypo-tuitarism—that is, absent or diminished secretion of ie gland, analogous to the myxoedema and cretinism ssociated with a similar state of the thyroid. That view eemed to harmonize with the frequently destructive ature of the neoplasms which were found *post mortem.* n the other hand, some investigators, and especially amburini, contended that the disease was due to the pposite condition—namely, hyperpituitarism, especially f the anterior lobe. That view, which seemed to the peaker preferable, was supported by the fact that the dministration of pituitary extracts in acromegaly tended ather to increase than to alleviate the symptoms. There ad, however, been many cases of tumour of the pituitary ody in which there had been neither acromegaly nor iantism. Frankl Hochwart referred to over 160 such ases at the last meeting of the International Medical ongress. In those cases the symptoms of cerebral umour, localized posterior to the optic chiasma, were in eneral more pronounced than in acromegaly. Headache nd sickness were common, and signs of mental alteration imilar to those occurring in connexion with the disease of he frontal lobes had been frequently observed. A great endency to somnolence was also the rule. Bitemporal emianopsy was pathognomonic. Sometimes there was omplete blindness in one eye and temporal hemianopsy in he other. Occasionally also there were various forms of culo-motor paralysis. Optic neuritis was rare. More often here was primary optic atrophy. But in addition to those ymptoms, indicative of localized tumour in the sella turcica, here had been observed a remarkable tendency to the eposition of fat, with defective sexual power, hypoplasia f the generative glands, absence of sexual hair, and the eneral characters of eunuchism. The condition had been rmed dystrophia adiposa genitalis, or Fröhlich's syn-rome. Those cases were not infrequently associated ith polyuria, polydipsia, and glycosuria. They often ran a pid course. Almost every kind of neoplasm had been und after death, either in the hypophysis, or invading it. everal cases had recently been reported of successful moval of pituitary tumours associated with Fröhlich's ndrome, with remarkable improvement, not only in spect of the general tumour symptoms, but also of the strophy. The difficulty of explaining all the symptoms a simple hypoactivity or hyperactivity of the pituitary nd had led many pathologists to see in the phenomena acromegaly and allied affections indications not merely a local affection of the pituitary but of a widespread turbance of equilibrium of the system of internal secre-ry organs, all closely bound up with each other—a so-lled multiglandular syndrome. There were many facts hich favoured that hypothesis. It had been shown by gowitsch that the pituitary gland underwent hypertrophy er removal of the thyroid; and it had been shown by y experiments of Cushing and the surgical operations of chenegg that the thyroid underwent hypertrophy after moval of the pituitary.

THE ROYAL SOCIETY.

Thursday, November 17th, 1910.

Sir ARCHIBALD GEIKIE, K.C.B., President.

A New Method for the Differentiation of Bacteria.

NARD S. DUDGEON, P. N. PANTON, and H. A. F. WILSON pented a second report on the influence of bacterial ntoxins on phagocytosis. They had failed to demon-te an action of the endotoxic substances on the leuco-cys, and experiments leading to similar results were obtained by allowing bacteria to be exposed to the action of the specific endotoxic substances. The results published in their first communication, that the phagocytic result was dependent upon the interaction of endotoxin of serum, were confirmed. In the case of normal serum, the amount of phagocytosis permitted when bacteria and endotoxin interact was not related to the amount of haemolytic complement present. The action of endotoxin appeared to be specific even with bacteria so closely related as the typhoid and paratyphoid family. These results strongly suggested that this method could be employed for the differentiation of bacteria. The amount of endotoxin had been shown to be strongly thermo-stable.

Isolation and Cultivation of the Lepra Bacillus.

Dr. F. W. TWORT described experiments undertaken to obtain a method whereby the lepra bacillus of man and allied bacilli might be cultivated outside the body on artificial media. The material tested was obtained from a typical leper. Cultivations made on ordinary laboratory media and on media containing extracts from animal organs and tissues gave negative results. In view of the close relationship between the tubercle bacillus and the lepra bacillus, it appeared highly probable that these two micro-organisms would require the same chemical substances for building up their protoplasm, which could be elaborated from the ordinary media only by the tubercle bacillus. It was thought that if these substances could be supplied already formed to the lepra bacillus it might grow, and the easiest method of supplying these substances would be by adding to some good medium the ground-up bodies of the tubercle bacilli containing them; accordingly a medium was made as follows: Egg three parts, 0.8 per cent. sodium chloride one part, ground tubercle bacilli 1 per cent, and glycerine 5 per cent. or less, mixed, placed in tubes, sterilized, and set in slopes. Leprosy material was placed in 2 per cent. ericolin to kill contaminating micro-organisms, and then inoculated on the tubercle medium. On this the lepra bacillus grew very slowly as a delicate colourless streak along the inoculated track, and showed the typical morphological and staining characters of the lepra bacillus; the bacillus could be sub-cultured only on the tubercle medium. Experiments would be made to prepare a lepra vaccine and to grow the lepra bacillus of rat. In conjunction with Mr. Ingram the speaker had also succeeded in growing the bacillus found in Jöhne's disease of cows. It grows on the same medium, much like lepra bacillus, but somewhat faster.

ROYAL SOCIETY OF MEDICINE.

SECTION OF ANAESTHETICS.

Friday, December 2nd, 1910.

Dr. MCCARDIE, President, in the Chair.

Hypnotism in Relation to Surgical Anaesthesia.

DR. EDWIN ASH, in a paper on hypnotism in relation to surgical anaesthesia, said that the work of Dr. Esdaile, who served the old East India Company, formed a starting point from which to consider scientific work in this connexion. It was well known that he performed hundreds of operations on patients in the state of hypnosis in India. No one else had ever been able to repeat his results. When a deep stage of hypnosis was obtained it afforded the condition of an ideal anaesthesia, with no disagreeable preliminaries and no possible serious after-effects. But the difficulty was that the requisite state could only be induced in comparatively few people—roughly about one in ten or twelve. The theory of the process was obscure. Probably it was largely owing to concentration of the attention on some particular object or idea in the hypnotic state that consciousness to painful stimuli was lost. Owing to the uncertainties attaching to its use, hypnotism could not be considered applicable to ordinary cases. In the case, however, of patients for whom a general anaesthetic was undesirable, there was no reason why their suitability as subjects for hypnotic suggestion should not be tested some days before the date fixed for an operation. In addition there was a great field for the use of simple suggestion as an aid to anaesthetists. An arrangement by which a nervous patient about to be operated on could receive the benefits of "suggestion" for some time before the operation would unquestionably result in the anaesthetic being taken very much more satisfactorily

than might otherwise be the case, and the advantages to the surgeon both during the operation and in the light of after results would probably also be great. Dr. LLOYD TUCKEY instanced an anaesthetist at a dental hospital who became very successful in gauging the susceptibility of persons to suggestion from their appearance, and could often produce anaesthesia in favourable cases by using an empty gas bag. Dentists had told him also that Christian Scientists could often stand the extraction of teeth without apparently feeling any pain. He considered that a "burly policeman" represented a type favourable to hypnosis. Dr. NATHAN had found that the people who came to him to be hypnotized fell largely into two groups: first, highly neurotic individuals, for whom hypnotism was a last resource, and secondly, persons who looked on it more or less as a joke. Neither of these groups represented favourable subjects. On one occasion, when giving a demonstration on hypnotism, he had 7 men from an institute for retired soldiers on whom to demonstrate. All 7 were readily hypnotized. He considered that it was difficult to gauge accurately the degree of anaesthesia in a hypnotized person. A patient who had not responded to a pin prick might shout out at an incision. Dr. WINGFIELD said there were many curious and interesting points about hypnotic anaesthesia; general anaesthesia might be obtained or, when desired, one limb only might be rendered anaesthetic, rigidity appearing first and being followed by anaesthesia. A patient might be at the same time anaesthetic and hyperaesthetic in the same part; for instance, any downward touch on a limb might be unfelt, but the slightest upward touch be felt acutely. Dr. ASH, in reply to the PRESIDENT and Mrs. DICKINSON BERRY, said he thought it might be said the more suggestion the less chloroform. After-effects, due to toxic absorption, would not be affected by suggestion. Confidence in the result to be obtained on the part of the hypnotizer was certainly a factor in success, but beyond that he thought the hypnotizer was unimportant. Black races were, as a rule, much more susceptible than white.

SECTION OF OBSTETRICS.

Thursday, December 1st, 1910.

Dr. MACNAUGHTON-JONES in the Chair.

Uterine Cancer.

Dr. ARCHIBALD LEITCH, in a paper on the pathological bases of operations for cancer of the uterus, said that as it was impossible to determine from clinical or histological examination the exact extent of cancerous disease in any given case, it was justifiable to conclude that the only way of obtaining a radical extirpation of the disease was to apply to every case of cancer of the uterus a technique which was designed for the most advanced. Statistics had shown that 55 per cent. of cases were free from visceral or glandular metastases at the time of death, but these figures only applied to dissemination outside the pelvic cavity. Three lymphatic tracts were described: (1) To the interiliac glands; (2) to glands along branches of the internal iliac artery; (3) to pararectal glands. The last set were very rarely affected, in spite of the supposed frequency of invasion of the utero-sacral ligaments. The interiliac glands were the most important, and were in communication with another set on the outside of the common iliac artery. Both sets should be removed when there was evidence of glandular infection. Along the course of the ureter, through the broad ligament, lymphatic infection of the cellular tissue occurred, and by fibrotic contraction, as well as by direct invasion of its walls, the ureter became constricted, and hydronephrosis ensued in no less than 75 per cent. of all cases. Invasion of the vagina by cancer of the cervix occurred in all but 2·5 per cent. of cases; this was explained by the rich anastomosis of lymphatics between the cervix and upper segment of vagina. Thus the excision of a wide cuff of vagina in Wertheim's operation removed a highly dangerous tissue. The bladder was involved in two-thirds of *post-mortem* cases, and the rectum in one quarter of the cases; while vesical perforation occurred in 4·4 per cent., and rectal perforation in 1·6 per cent. of cases. Free and timely removal of the upper segment of the vagina prevented the occurrence of these distressing and hopeless sequelae.

Wertheim's Operation.

Mr. CHILDE, in a paper based on twenty-three Wertheim operations performed by himself, reached the conclusion that this method was superior to vaginal hysterectomy in every particular for the following reasons: (1) It was exploratory in the first instance, and enabled the surgeon, after opening the abdomen, to decide with accuracy whether the case was suitable for radical treatment or not; (2) in cases comparable with vaginal hysterectomy its primary mortality was just as low; (3) it was a more scientific operation than vaginal hysterectomy, which was a shot in the dark; (4) it was on all-fours with the more extensive operations for cancer elsewhere, which had been performed of late years, and which had given infinitely better results than the old partial operations; (5) there was evidence to show that it did give better results than vaginal hysterectomy; (6) if infected glands were present in early cases (though this was exceptional), it permitted of their removal; (7) it increased the percentage operability, and enabled more advanced cases to be dealt with. This he considered the least of its advantages. It was in the early cases that the good results were to be expected.

SECTION OF LARYNGOLOGY.

Friday, December 2nd, 1910.

Dr. WATSON WILLIAMS, President, in the Chair.

THE following were among the exhibits:—Mr. HERBERT TILLEY: An instrument he had found useful in the removal of nasal spines in the operation of submucous resection of the septum. Dr. H. J. DAVIS: (1) A case of *Leprosy* under treatment by subcutaneous injections of nastin B; (2) a *Thyro-lingual cyst* and a patient who had recovered after operation for acute sphenoidal sinusitis; (3) a boy aged 7 who had suffered from empyema of the maxillary antrum, thought by some members to be due to osteomyelitis of the upper jaw. Mr. CHARLES A. PARKER: *Tonsillith* of very large size successfully removed by traction with forceps. Dr. ADOLPH BRONNER: A pedunculated fibroma of the posterior pillar of fauces. Dr. KELSON: A case of lupus of the larynx in a woman aged 36; treatment by cautery had been only partially successful, and the exhibitor proposed to try tuberculin and to show the case again later on. Mr. J. GAY FRENCH: A case of stricture of the lower end of the oesophagus which he considered spasmodic. Some other members, however, were inclined to deny the existence of spasmodic stricture at all. Mr. SOMERVILLE HASTINGS: A case of early *Myasthenia gravis* with laryngeal symptoms; the patient was unable to whistle or close his eyes, but was improving. Dr. E. A. PETERS: Cases showing very good results following the removal of *Singers' nodules* from the cords by means of the galvano-cautery. Mr. CYRIL HORSFORD: A case of *Laryngeal tuberculosis* apparently cured by amputation of the epiglottis and followed by application of pure carbolic acid. Dr. WILLIAM HILL: A case of *Carcinoma of the oesophagus* in which very great improvement and possibly temporary cure had been obtained by radium treatment. In the course of the evening Dr. SCANES-SPICER gave a demonstration illustrating his views on the connexion between faulty postures and mode of breathing and laryngeal cancer.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Friday, December 9th, 1910.

Dr. J. F. J. SYKES, Vice-President, in the Chair.

Municipal Control of Pulmonary Tuberculosis.

Dr. WILLIAM ROBERTSON (Leith) said that it was now generally conceded that every sanitary authority should adopt some scheme for dealing with phthisis. Voluntary notification had been in force in Leith since 1904, and power to impose compulsory notification could now be obtained in Scotland, provided the authority satisfied the Local Government Board that active steps would be taken to supplement notification. While approving generally of the Sheffield notification clauses, the speaker advocated an additional provision requiring removal of cases which the medical officer of health considered were unsuitably housed or where there was no adoption by the patient of the precautions advised. The original twelve beds in the

Leith Hospital had now been increased to twenty. Advanced cases were not received. All the patients were made to do light work. Occasionally contacts had been taken to the hospital from a house where there was a patient in an advanced stage of the disease. The pale-faced children of consumptive parents were those selected for residence in the open air ward. The patient might die soon, but the children had a decidedly good opportunity afforded them to gain in tone and bodily resistance. Periodical visitation of the house after the return of the contacts ensured the continuance of the open air principles. Dr. SIDNEY DAVIES advocated compulsory notification, but considered it should not be insisted on too rigorously. Drs. SANDILANDS and DUDFIELD urged the importance of providing tuberculosis dispensaries. Dr. E. H. T. NASH agreed that sanitoriums were important, but considered that tuberculin treatment should be carried out in them. Dr. W. BUTLER dealt with the importance of improving the sanitary surroundings of the people, and Dr. A. H. BYCOTT pointed out that the boards of guardians never supervised the sanitary conditions of those persons to whom outdoor relief was granted. Dr. CAMAC WILKINSON gave an account of the work he was carrying out at the Kennington Road Dispensary with tuberculin.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, December 1st, 1910.

Dr. T. R. BRADSHAW, President, in the Chair.

The Pathogeny of Eclampsia.

Dr. LEITH MURRAY, in a paper on some points in the pathogeny of eclampsia, said that his investigations led him to believe that the toxin was one containing cytolytic, hæmagglutinative, and endothelilytic elements, and pointed out how a polymorphism of the lesion was produced by interaction of these. He admitted a difficulty in deciding to what extent the lesions in the central nervous system were due to direct intoxication or to vascular disturbances. The effects on the circulation produced by snake poisoning presented an extraordinary similarity in type to those of eclampsia. Burgers had lately demonstrated the presence in maternal serum of a cobra-hæmolysin-inhibiting factor. The speaker had confirmed this observation in several cases, and had found the factor present in a case of eclampsia. He was still investigating the point, and meantime suggested Calmette's antivenin might well be tried in eclampsia, the injections being given subcutaneously in the pre-eclamptic stage and intravenously in the eclamptic stage. The PRESIDENT thought that an appropriate serum might be found for puerperal pyæmia, but doubted whether antivenin was likely to be useful. The various venoms were much more closely related to each other than any of them were to the toxins causing eclampsia, and yet these antiserums were practically useless against any but their own particular venom. The action of venom neurotoxin was always paralytic, and that of eclampsia was for the most part convulsivant. Dr. BLAIR BELL said that there was little doubt that whatever the primary cause of eclampsia was, the ultimate results in fatal cases were due to the establishment of a secondary vicious circle whereby the changes in the liver led to intoxication of the patient by the products of its disintegration. He did not think it likely that antivenin would prove specific, but he was much impressed by Dr. Murray's interesting arguments in favour of the serum.

Exhibits.

Among the specimens demonstrated was one of cerebral hæmorrhage associated with granular kidneys and hypertrophied heart in a girl of 20; she had suffered from headache for a year. Also a specimen of hæmorrhage in the left lateral lobe of the cerebellum, in which there was no paralysis, contracted pupils, and a temperature of 100; the pons was normal, there was no blood in the fourth ventricle. The specimens were shown by the President, Dr. BRADSHAW, who said there had only been one case of cerebellum hæmorrhage in the records of 5,000 *post-mortem* examinations at the infirmary in the last seven years.

WEST LONDON MEDICO-CHIURGICAL SOCIETY.

Friday, December 2nd, 1910.

Dr. PHINEAS S. ABRAHAM, President, in the Chair.

"606."

MR. J. E. R. MCDONAGH, in a paper on practical experience with Ehrlich's new specific for syphilis, indicated that the name "606" had been chosen by Ehrlich because it was the 606th preparation chemically prepared and biologically and therapeutically tested. As atoxyl and arsacetin produced amaurosis it was feared that "606" might do the same, but since more than 20,000 injections had been given without this occurring, and since the drug seldom gave rise to toxic symptoms, its general employment had been considered absolutely safe. The route first chosen was intramuscular, but the intravenous method was without doubt preferable. The patient suffered only a slight inconvenience in the form of a rigor or two and vomiting a few hours after the injection, compared with the severe pain which the intramuscular injection might cause. Of still greater importance was the fact that the organisms were killed forthwith, whilst with an intramuscular injection the absorption was slow, and some of the arsenic might become encapsuled, thereby increasing the risk of a second injection, should such be necessary. The best plan was to give an intravenous injection, and if the symptoms showed no marked improvement by the end of the third day, to give an intramuscular injection. On the other hand, if the lesions improved one should wait for about four weeks, and be guided by a Wassermann reaction as to whether a second injection (intramuscular) was necessary. For the intravenous injection 3 to 6 grams of the powder should be dissolved in 100 c.cm. of warm distilled water and 10 to 15 c.cm. of $\frac{N}{5}$ sodium hydrate added until a clear solution was formed, the bulk being finally made up to 250 c.cm. with distilled water. In cases of sleeping sickness, tubercular forms of leprosy and leukæmia, psoriasis, and lichen planus, "606" had exerted some beneficial action; and other infections superadded on syphilis, such as tubercle, streptococci and staphylococci, had often been markedly improved. A number of cases in point were shown. One case of tabes was cited in which the Argyll Robertson pupil had disappeared and the knee-jerks returned. Seventeen cases of tabes had been injected, but only three improved insomuch as the lightning pains had disappeared. Cases of general paralysis of the insane before degeneration had commenced improved considerably. Chronic superficial glossitis, which hardly ever responded to mercury, had greatly benefited by "606." In all the speaker had treated 130 cases, 3 of which had recurred, 2 of these being cured by a second injection, and only 5 did not respond to "606."

NORTHERN ASSOCIATION OF MEDICAL WOMEN.

AT a meeting in Liverpool on December 6th Miss IVENS, M.S., analysed 23 consecutive cases of operation for *Uterine fibroids*. In all the abdominal route had been selected. In 8 panhysterectomy, in 11 supravaginal hysterectomy, and in 4 myomectomy, had been chosen as the needs of the individual case indicated. Except in patients past the menopause an attempt was made to leave one ovary. Among the series were 3 cervical tumours and 1 subperitoneal tumour of an adenomyomatous nature, characterized by dense adhesions. The commonest complication was salpingo-oöphoritis, of which one was tuberculous, another hæmorrhagic. The ovaries were frequently cystic; 2 cases were associated with ectopic pregnancy and 1 with carcinoma of the cervix. In one tumour necrobiosis had occurred, in another calcification of a subperitoneal tumour which was causing rectal pressure symptoms. Fifty per cent. of the married patients were sterile and 2 had had only one child. All the cases terminated favourably and healed by primary union. Statistics were quoted showing that it was more dangerous to leave a fibroid than to remove it, unless there was some definite contraindication.

Reviews.

DIET AND DIGESTION.

THE latest fasiculus we have received of Professor ALBU'S Encyclopaedia of Diseases of Digestion and Metabolism[1] is that on the Dietetic Treatment of Gout, by Professor SCHITTENHELM of Erlangen and Dr. J. SCHMID of Breslau. Of the thirty-six pages of text twenty are devoted to a discussion of modern theories of gout and an account of the recent researches upon which they are based. This is written clearly, and is an excellent introduction to the second part devoted to dietetic treatment. The authors fully accept the nuclein origin of uric acid, although they concede that a small portion may have another source, such as, for example, the histidin of albumen. They say it is not known what the human being does with his uric acid, but 50 per cent. of it appears in the urine. Uric acid is always present in the blood of gouty persons even after months of abstinence from purin food, but in the non-gouty it is found only after the ingestion of food containing a large amount of purins, such as sweetbread. Uricaemia occurs in chronic nephritis when the kidneys are failing, also in pneumonia and in splenic leukaemia. They ask whether this uricaemia is due to retention or to over-production. In chronic gout the excretion of uric acid is below that of normal persons, a fact which points to the former explanation. There is a renal gout caused by kidney disease or defect, but gout may occur in persons with quite healthy kidneys. The true explanation seems to be that there is a retardation of the destructive processes of uric acid in the body, for which view there is experimental evidence, the addition of purin bases to the diet of a gouty person causing a fall in the uric acid excretion. Uric acid gives rise to three kinds of disorder: (1) that of metabolic gout with constant marked uricaemia and slow destruction of purin uric acid; (2) renal gout with variable uricaemia apparently dependent upon the activity of the renal function; this condition includes the gout due to lead poisoning; and (3) uric acid lithiasis, or the formation of uric acid stones in the kidney or bladder, a condition which gives rise ultimately to chronic nephritis. The dietetic treatment they recommend is the adoption of purin-free diet, and in addition they counsel abstinence from alcohol, as experiment and experience alike show that its use interferes with the destruction of nuclein. They give a table of the purin contents of different articles of diet, but practically it comes to the elimination of all kinds of animal food with the exception of eggs, cheese, butter, and milk, with abstinence from tea, coffee, and cocoa, and the prohibition of alcohol. In chronic gout they suggest that an attempt should be made to determine, by a sort of test-diet, the patient's tolerance or certain articles of animal food, those containing small amounts of purins being allowed, for which purpose the table of purin values is useful. They point out the extreme difficulty of dieting complicated cases of gout, in which diabetes and obesity are present, and profess their inability to lay down rules for them as each case must be dealt with individually. Furthermore, while recognizing that there may be cases in which it would be advisable to carry out a preventive treatment by inducing a patient with a marked hereditary predisposition to adopt a modified vegetarianism, they do not formulate any definite rule on the subject.

The short monograph on the uses and application of hydrotherapy in the diseases of digestion and metabolism, by Dr. ERNST TOBIAS of Berlin, is a chapter of Professor ALBU'S Encyclopaedia of Diseases of Digestion and Metabolism.[2] Dr. Tobias says in his introduction that during the last two decades hydrotherapy has made great strides, but it will only secure the confidence of the profession if its limitations are recognized. Water will not cure everything, and the method is nothing more than a more or less general factor in the sphere of physical therapeutics. He has endeavoured to describe its use and application from the standpoint of the practitioner, and to distinguish where and in what respect it is equal or superior to other kinds of treatment. He divides his subject into two main branches of diseases of the digestive apparatus and diseases of metabolism. In the former he discusses the subject under Diseases of the Oesophagus, Stomach, Intestine, Peritoneum, and Liver, and in the latter under the headings of Obesity, Gout, and Diabetes. He believes that hydrotherapeutic treatment is valuable in neuroses of the oesophagus and stomach, in hyperacidity, atony, gastroptosis, and catarrh, also in many affections of the intestine, including catarrh, nervous diarrhoea, mucous colic, meteorism, constipation, haemorrhoids, and enteroptosis. It is also an agent of value in the treatment of acute and chronic peritonitis, either general or localized. In diseases of the liver he finds it useful in catarrhal jaundice, cholecystitis, gall stones, and in relieving hepatalgia and other painful affections. In the latter class it has, as is well known, a large sphere of action in the treatment of obesity when combined with neurasthenia or with gout, also in thyreogenous obesity, as well as in gout in its numerous manifestations, in diabetes associated with gout or obesity, in diabetic neurasthenia, and in relieving the neuralgias and neuritis of severe diabetes. Dr. Tobias deals with all these points briefly and clearly, and does not claim too much.

In this fasciculus of Professor ALBU'S[3] Encyclopaedia of Diseases of Digestion and Metabolism, Professor TH ROSENHEIM deals with the diseases of the sigmoid flexure. He justifies singling out this part of the colon for a monograph, as he holds that it is an independent portion of the large bowel and is anatomically and functionally distinct; moreover, it is especially the seat of election for numerous diseases. He divides its affections into inflammatory, including acute and chronic sigmoiditis with their varieties; new growths, including cancer and adenoma; and, lastly, functional or nervous affections. Of the inflammatory conditions, chronic sigmoiditis is most important on account of the frequency with which it occurs and the difficulty of its diagnosis. For this purpose he claims that great assistance can be obtained from the use of the endoscope. Membranous or mucous colitis may, no doubt, be associated with nervous spasm and constipation, but it is often seen in connexion with various pathological conditions. He recommends for it treatment diet as free as possible from cellulose and containing little meat and no condiments, much butter, cream, yolk of egg, and soft cheese; vegetables and fruit should be given in *purée;* milk puddings, milk coffee, milk tea, gruels, and mineral waters. Rest and warmth are important, hot compresses may be employed locally or hot sitz baths. He uses bromides, belladonna, or opium to soothe peristalsis, and oil enemata to empty the bowel with irrigations of warm water or hot solution of Carlsbad salts or hot Carlsbad or Vichy water. He recommends for the various inflammatory conditions of the sigmoid irrigation with medicated solutions, which should be run in with a funnel and allowed to remain from three to ten minutes; the quantity used is from 500 to 600 c.cm. The patient should first lie on the left side and then on the right with the hips raised; after the fluid has run out an opium or morphine suppository may be introduced if there is any pain. He uses nitrate of silver 1 to 1,000, tannin ½ to 1 per cent., protargol 0.3 to 0.8 per cent., bismuth or chalk 60 to 90 grains in half a pint of water at the temperature of the body. These injections should not be used more than every other day, and he warns us against excessive zeal in the use of local remedies. He thinks that surgical aid should only be asked as a last resource and never in nervous cases; a fistulous opening may be made and the

[1] *Verdauungs- und Stoffwechsel-Krankheiten.* Herausgegeben von Professor Dr. A Albu in Berlin. Band II, Heft 7. *Die Gicht: ihre diaetetische Therapie.* Von Professor Dr. A. Schittenhelm, Erlangen, und Privatdozent Dr. J. Schmid, Breslau. Halle-a-S.: Carl Marhold. 1910. (Med. 8vo, pp. 38. M. 1.)

[2] *Anwendungsformen und Wirkungsweise der Hydrotherapie bei den Verdauungs- und Stoffwechsel-Krankheiten.* Von Ernst Tobias. Halle-a-S.: Carl Marhold. 1910. (Med. 8vo, pp. 54. M 1 40.)

[3] *Sammlung Zwangloser Abhandlungen aus dem Gebiete der Verdauungs- und Stoffwechsel-Krankheiten.* Herausgegeben von Professor A. Albu in Berlin. II Band, Heft 6. *Die Erkrankungen der Flexura Sigmoidea.* Von Professor Dr. Th. Rosenheim. Berlin. Halle-a-S.: Carl Marhold. 1910. (Med. 8vo, pp. 78. M. 1 80.)

bowel irrigated with medicated solutions. He gives a good description of cancer affecting this part of the bowel, and lays stress upon the latency of its early symptoms and the fact that the disease may last five or six years. He does not approve of early colotomy in order to prevent the occurrence of obstruction, as he finds it does not always give the relief anticipated, and the condition of the patient is, in his opinion, a wretched one. Under functional affections of the sigmoid he discusses Hirschsprung's disease, and quotes Schreiber's case of a young girl, where the condition was apparently due to spasm at the junction of the pelvic colon with the upper part of the rectum; it was cured by judicious treatment in which opium played a chief part, and he uses this as an argument in favour of medical treatment: but he might have quoted Dr. Hertz's case (*Constipation and Allied Intestinal Disorders*, p. 220) of the little boy whose condition was apparently caused by the valvular action of a ball of hardened faeces, and was cured by this being broken up and the colon kept empty by appropriate means. Professor Rosenheim is certainly right in what he says about surgical intervention, for although when successful the result is splendid the mortality is too high for it to be undertaken until all other means have failed.

We have received Parts VIII and IX of the American translation of Professor VON NOORDEN'S *Pathology and Therapy of Disorders of Metabolism and Nutrition*.[4] They deal with inanition and fattening cures, and the technique of reduction cures and gout, each part being translated and edited under the supervision of Dr. A. C. CROFTAN of Chicago. We reviewed the German edition of Parts VIII and IX last year (June 5th, 1909, p. 1362). The former contains a description of the metabolism of fasting, and explains the method of calculating the degree of undernutrition in a given case. On this basis Professor von Noorden establishes his fattening cures, of which the essential part is the addition of 1,000 heat units to the normally sufficient diet of the individual concerned, tables being given to enable the practitioner to construct his dietaries. Stress is laid on the need for active exercise if an increase of weight is to be anything more than an accumulation of fat. We note on pages 44 and 56 a reference to page 13, which in both instances should be page 26. In Part IX Professor von Noorden regards obesity as in the vast majority of cases dependent upon over-feeding, assisted often by want of exercise, but he admits that there are rare instances in which there is no evidence of excess of food and where investigation has shown that there is diminished metabolism; this group he attributes to hypothyroidism or defective action of the thyroid gland. Following these principles, his reduction cure consists of a reduced diet. His minimal diet contains 120 grams of albumen, 30 grams of fat, and 100 grams of carbohydrates, the total heat value being only 1,182 calories; his maximal diet contains 180 grams of albumen, 30 grams of fat, and 100 grams of carbohydrates, giving a total heat value of 1,500 calories. He emphasizes the need for weighing and measuring food. He insists that all cases should be treated individually, and that the practitioner should avoid routine. Bodily exercise on the part of the patient he regards as most important, but this must be in the form of walking, cycling, rowing, or tennis; he thinks massage and horseback riding useless. He does not speak favourably of mineral waters, which have little effect, except in so far as they are accompanied by strict regimen or where their action produces purging and impairs absorption. He thinks the effect of sweating cures is transient unless they be maintained by diet. Cool or cold baths are beneficial by hardening the patient, stimulating the circulation, and increasing the katabolism of fat. For the cure of hypothyroidism he recommends cautious thyroid medication, the preparation he generally uses being Merck's Thyroidinum siccatum, of which he gives 1½ to 5 grains daily.

In the treatment of gout he lays stress first of all upon the importance of accurate diagnosis, and complains that in Austria, at least, where true gout is rare, this name is often applied to cases that are really rheumatic, and could be cured by adequate doses of salicylates. In true gout he considers it important first to determine the amount of the endogenous uric acid by giving a purin-free diet. This in healthy persons should be about 0.42 gram, and it is diagnostic of the gouty constitution that upon such a diet the uric acid eliminated does not fall so low as this. He thinks salicylate of soda and its derivatives, mineral acids, thyminic acid, and possibly also saline mineral waters, increase the value for endogenous uric acid a little, while alcohol decreases it; that is to say, the former probably improves elimination while the last causes a certain amount of retention; he does not believe that either exercises any influence upon the formation of uric acid. He recommends that the gout should be treated in the first instance by a purin-free diet, and that the tolerance of each patient for purins should be determined just as we determine the tolerance of diabetic patients for carbohydrates. With regard to drugs he prefers calcium salts to alkalis and mineral waters such as Wildungen and Contrexéville water to Vichy or Fachingen. He believes that solurol or thyminic acid is of advantage, but should be used only for a week at a time, and he employs colchicum and salicylate of soda in his treatment.

In this work on dyspepsia[5] Dr. SOLTAU FENWICK tells us that he has given the outcome of the clinical experience gained by the personal examination and treatment of more than 18,000 persons. His view is that in a large proportion of cases of dyspepsia the symptoms originate entirely in the intestines, and are caused by a derangement of the liver, pancreas, or bowel. According to him, "disturbance of the digestion in the stomach is rarely due to a primary disorder of that viscus," and again, "chronic inflammation of the stomach is invariably due either to toxic poisoning or to serious disease of some other vital organ of the body." He classifies dyspepsia as due to (1) abnormalities of secretion; (2) failure of the muscular power of the stomach; (3) inflammation of the stomach; (4) disturbances of the nervous mechanism of the stomach; (5) displacement of the stomach; (6) the presence of foreign bodies and living creatures in the stomach; (7) the dyspepsia of infancy and old age; (8) dyspepsia dependent upon diseases of other organs; (9) intestinal indigestion; the disadvantage of this method being that two or more of these conditions are often associated in the same case. We do not think it is satisfactory to take "dyspepsia" as a starting point, as it is a symptom which is common to such a large number of diseases, many of them not primarily affecting the digestive organs, and yet Dr. Fenwick for some reason excludes from his consideration dyspepsia due to such definite diseases of the stomach as ulcer and cancer. One of the best chapters is that on hypersecretion of gastric juice, of which he holds the main indication to be the presence of more than 20 c.cm. of acid contents containing free hydrochloric acid in the fasting stomach. This condition he believes is always due to organic disease, either in the stomach or in some other abdominal organ, so that he suggests in all these cases the abdomen should be opened, and if there is no ulcer in the stomach or duodenum, the presence of gall stones and appendicitis should be looked for. He finds flatulence an invariable symptom in this affection, but we doubt whether he is right in saying that it is "chiefly due to the fermentation of the carbohydrate constituents of the food," for as he has elsewhere pointed out, the presence of abundant hydrochloric acid checks this fermentation, and so far as we are aware all recent investigations of the nature of the stomach gases go to show that these mainly consist of atmospheric air, and that the amount of gas produced by fermentation is inconsiderable and insufficient to cause the distension of which these patients complain. This mistake, as we believe it to be, is repeated in other places. We notice that on p. 122 the author states

[4] *Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition.* By Professor Carl von Noorden. Parts VIII and IX. Inanition and Fattening Cures; Technique of Reduction and Gout. Edited and Translated under the supervision of A. C. Croftan, M.D., Chicago, U.S.A. London: Rebman, Limited. 1910. Demy 8vo, Part VIII, pp. 103; Part IX pp. 112. 5s. each.)

[5] *Dyspepsia: Its Varieties and Treatment.* By W. Soltau Fenwick M.D.Lond. London: W. B. Saunders Co. 1910. (Med. 8vo, pp. 485 Illustrated. 13s.)

that "a gastric splash which can be obtained an hour or more after a meal is a certain indication of impairment of the muscular power of the stomach," yet on a previous page he had noted that this sign may be elicited occasionally "in healthy persons at the end of the digestion of a large meal, or from the presence of liquid and gas in the colon," so that on his own showing it cannot be regarded as a "certain sign," and in our opinion it is an exceedingly fallacious one. The statement to which we have just referred occurs under the heading of Myasthenia Gastrica or Stomach Atony; and, as a further test for this condition, Dr. Fenwick recommends giving a test meal and examining the stomach seven hours afterwards, when, if the stomach contains undigested food, the presence of stomach atony may be diagnosed. This is, we are convinced, a mistake. If undigested food can be found in the stomach seven hours after a meal, there is not merely weakness of the muscular walls but obstruction at the pylorus. It is most important that simple atony should be distinguished from pyloric obstruction, and, in our opinion, this can be done by examining for stasis seven, or even six, hours after a meal. It has been our invariable experience that even myasthenic stomachs empty themselves completely in six hours, and that where stasis exists there is always something more than stomach atony. We are surprised at Dr. Fenwick's preference for such an uncertain method as auscultatory percussion for determining the size of the stomach, and we regard his reference to the dangers or disagreeableness of distension by air or CO_2 as fanciful. We do not believe it possible by his way to determine accurately the size of the stomach when surrounded by air-containing organs; and if the point is worth deciding, as we believe it to be, it should be done by a method less likely to lead the observer astray. Chapter VII deals with the presence of hair balls, bezoars, gastroliths, beetles, slugs, lizards, and even snakes, in the stomach, and contains many curiosities of medical literature, but we may wonder why it is included here. The sections on treatment are sensible but somewhat general, and afford no very precise information as to the administration of food or drugs.

WE have received a copy of the third edition of Major BASU'S booklet on the *Dietetic Treatment of Diabetes*,[6] of which we noticed the first edition in October last year, so that it has evidently been favourably received in India, where, as is well known, diabetes is a common disease. Major Basu recommends the total withdrawal of meat, alcohol, tea, coffee, and cocoa from the dietary of diabetics, while he uses cocoanut and other oleaginous seeds as a substitute for animal proteid.

THE CAUSES OF FLATULENCE.

THE feeling of distension after eating is to the public mind perhaps the commonest indication of a disordered digestion, and the eructation of gas by which this symptom is relieved is generally assumed to be the expulsion of a product of an abnormal stomach zymosis. This view, which is practically universally held by the laity, was also until lately that accepted by the medical profession: but during the last twenty or thirty years there has been a decided tendency to adopt a simpler explanation, and at the present time most authorities on diseases of the stomach accept the view that flatulence is mainly due to air which has been swallowed, and that the amount of gas present resulting from gastric fermentation is, as a rule, minute in quantity and of little moment, although under certain conditions considerable quantities of gas may be produced in the stomach, and not only carbonic acid gas but marsh gas and sulphuretted hydrogen. Chemical investigation has shown that the gas in the stomach consists mainly of nitrogen with only small quantities of other gases (Linossier, Soupault, Ewald, and Ruppstein). The fermentation theory has been far the most popular, but another which has found some favour with physiologists at various times, mainly owing to an experiment of Magendie, is that gas may be exhaled from the mucous membrane of the stomach or intestine; but there is not the slightest evidence that this ever takes place, and in the experiment of Magendie just referred to, where gas was formed in a ligatured loop of intestine, there was nothing to show that the gas was not formed by fermentation of remains of food in the portion of bowel. The other view is that the gas might originate in the intestine by fermentation of cellulose, which we know takes place to a considerable extent with abundant formation of gas, but there is good reason to believe that the pylorus under ordinary conditions is capable of resisting much greater pressure than would be produced in this way. Dobrovici (*Thèse de Paris*, 1909), experimenting on dogs, found the pylorus remained closed under five times the normal pressure, but undoubtedly under certain pathological conditions the pylorus may give way, gas as well as other intestinal contents may enter the stomach, as, for example, in peritonitis; but the ordinary flatulence of dyspepsia is not to be thus explained.

The Roentgen-rays method of examining the stomach has shown that after eating there is always a certain amount of gas in the stomach, occupying the highest part of the fundus, and there can be no question that this gas enters the stomach with food and drink; its quantity varies with circumstances, but the most common conditions which favour its presence in excess are imperfect mastication of food from habit or want of teeth, and atony of the wall of the oesophagus and the cardiac opening, such as is often present in neurasthenia. By far the most common form of stomach ailment is that of the neurasthenic woman whose main complaint is of flatulence. No doubt among the poorer classes the teeth are often defective, but the same symptom is common enough among neurasthenics with good teeth and who masticate reasonably well, so that the other factor, want of tone in the gullet and cardiac sphincter is an important element in the production of this symptom. This subject is discussed in a little book written by Dr. H. MAUBAN entitled *L'aérophagie*,[7] to which Dr. Albert Mathieu has written a preface, as it is a question to which he has given much attention and made numerous contributions during the last ten years. Dr. Mauban is a warm advocate of the view that deglutition of air is the chief cause of flatulence. He shows in his history of the subject that swallowing of air has been recognized as an occasional occurrence for many years. The first recorded instance quoted by him was that of a young conscript who in order to evade military service succeeded in imitating severe tympanites, the case being recorded in the thesis of Déjardin in 1814. Andral in 184 admitted that certain individuals have the power of swallowing air, and can thus produce an instantaneous tympanites and this was allowed by Longet (1861), Demarque (1866 Willième (1868), and Piorry (1871), but the first to recogni its importance and frequency was Bouveret (1891), althoug he noted its occurrence mainly in nervous and hysterica subjects. In 1898 Mathieu drew attention to its frequen in dyspepsia apart from hysteria. He said that aërophag was frequent among dyspeptics, and particularly amon nervous dyspeptics, and when he brought the subject befor the Société Médicale des Hôpitaux he was supported b Soupault, who subsequently, in his book on *Diseases of th Stomach* (Paris, 1906, p. 225), stated it as his opinio that a large part of the stomach gas is introduced b the mouth and oesophagus either with the saliva with food and drink, and that gases which resu from fermentation are small in quantity under norm conditions, and only acquire some intensity in disease while most authors attribute the principal importance this last cause for the production of gas, he believed th they exaggerated the part it played. Dr. Mauban chiefly concerned with those cases in which the patient constantly eructating, and he believes that this is acquired habit; the patient feels his stomach distende and in the endeavour to expel wind swallows more, un the gas in the stomach reaches a certain tension, wh the cardiac opening gives way, it escapes in a no fashion, and the patient feels considerable relief; but

[6] *The Dietetic Treatment of Diabetes.* By B. D. Basu. Third edition. Allahabad: The Panini Office, Bhuvaneshvari, Ashram. 1910. (Cr. 8vo, pp. 52.)

[7] *L'Aérophagie.* Par le Dr. H. Mauban. Paris; G. Steinheil. 1 (Cr. 8vo, pp. 158. Fr. 2 50.)

ees not take into sufficient account the part played by nperfect mastication and weakness of the walls of the esophagus and stomach in favouring the initial entrance f air. In consequence of this, the treatment that he ecommends is not very practical, and is mainly conerned with checking the habit of eructation. In our iew, it is most important to see that the patient's teeth re sufficient and that mastication is duly performed, hile in addition the muscular atony should be treated by ll measures that can improve the general health, such as erve tonics, douches and baths, and bracing climate. For he prevention of the habit of eructation Dr. Mauban ecommends keeping the mouth open by holding a piece f cork between the teeth or by tying a ribbon tightly ound the neck above the thyroid cartilage so as to make eglutition painful and thereby check a habit which has ecome involuntary.

RECORDS OF HEART MOVEMENTS.

ROFESSORS F. KRAUS AND G. NICOLAI,[8] the director and ssistant respectively in the second medical clinic of the harité, Berlin, have given us an instructive book on the lectro-cardiogram. The method of recording the heart by he string galvanometer of Einthoven is coming daily into rominence, and this instrument will shortly have to form art of the equipment of all the large hospitals. The authors ive in the first part a lucid account of the theory and prace of this instrument and the normal electro-cardiogram nd its interpretation. The second part of their book is taken p with the clinical use of the instrument. The electroardiogram helps greatly in the elucidation of all irregulrities of conduction of the excitatory wave either in ime or place. The authors illustrate and elucidate the ffect of extrasystoles, of irritation of the auriculo-venicular node of Tawara, etc., by experiments on the dog's eart. The book has been published without cognizance f the recent valuable researches carried out by Dr. T. ewis in this country, and published some in our own olumns, some in *Heart*. These researches show, among ther things, that what Mackenzie termed nodal rhythm s really due to fibrillar contraction of the auricles, and hat this may be set up experimentally by interfering ith the blood supply and nutrition of the auricles. The ork of J. Mackenzie on the venous pulse of Wenckebach, nd the invention of the string galvanometer by Einthoven, ave made a great step forward in the study and treatent of heart disease, and the new laboratory methods of nquiry are destined to render the greatest service to edicine.

COPENHAGEN MATERNITY HOSPITAL.

n commemoration of the Copenhagen Royal Maternity ospital, the site of which is to be changed, Professor EOPOLD MEYER[9] and his staff have published a volume f papers dealing with the work of the hospital in recent ears. In his introduction Professor Meyer points out that he change of quarters on this occasion is not due to puerral fever, as was the case in 1840 and 1844. The deathte from true puerperal fever is, in fact, now so low that any of the midwives trained in the hospital have never en a case. After a careful analysis of the 21 deaths om puerperal fever in the years 1900–1909, only 6 could laid to the hospital's account, as the remaining 15 were arly infected before admission. The mortality, therere, out of 13,874 admissions is as low as 0.43 per 1,000. mpare this with the mortality of 4.95 per 1,000 in the ars 1880–89, and 7 per cent. in the years 1860–64! The atine procedure which gives such a satisfactory result is scribed. Patients are admitted only when labour pains ve begun. The whole body is washed with soap in a rm bath. The patient is then put to bed, and the ternal genitals are washed first with sterilized jute (?) p and tepid water, then with sterilized water, and ally with 1 in 1,000 perchloride or 2.5 per cent. carbolic. fore washing the genitals or making an exploration, the operator's hands undergo a series of antiseptic rites lasting ten minutes. No vaginal douche is given unless an exploration has been made before admission, and even then it is not always given. Local treatment, such as curetting and douching of infected cases, has been abandoned in favour of a masterly inactivity, which is much to the patient's advantage, according to Professor Meyer, who, on this point, has the support of the Gynaecological Congress at Strassburg in 1909.

Oluf Thomsen supplies an interesting paper on the need for testing candidates for wet nursing with Wassermann's reaction. He found the milk of fifty-three syphilitic mothers give a positive reaction with but one exception, whereas only thirty-three of the mothers gave a positive serum test. The milk should be examined before birth or within a couple of days after birth as the reaction is less certain later. A positive reaction with 0.05 c.cm. or less of milk is certain proof of syphilis. With larger quantities of milk, that is 0.1 or 0.2, a positive reaction may be given by a healthy mother. Folmer Bentzen reports on Pirquet's tuberculin reaction, which was negative in all the 317 newborn infants tested with undiluted "Alt Tuberculin." His results coincide, therefore, with other workers in this field.

In a second paper Professor Meyer gives a clinical lecture on Bandl's ring, its pathology and treatment. Victor Albeck reviews the course and treatment of eclampsia; and E. Hauch contributes papers on extramembranous pregnancy (hydrorrhoea amnialis), and on methods of delivery *per vias naturales* before there is full dilatation of the os. This procedure was necessitated by eclampsia in half the cases, which amounted altogether to 1 per cent. of all the admissions during the past ten years. Birger Olesen deals with the development of the fetus in placenta marginata, and Oscar Horn discusses labour in elderly primiparae. The prophylaxis of gonorrhoeal ophthalmia is described by Otto Möller. E. Hauch and J. E. Lohse report on a case of pregnancy with hydronephrosis. Several excellent illustrations are given, and most of the articles are admirably concise and digestible.

NOTES ON BOOKS.

THE *Therapeutischen Leistungen* for 1908,[10] which was published last year, completes the fifth lustre of its existence. This practical little handbook is the joint work of Dr. ARNOLD POLLATSCHEK, of Karlsbad, and Dr. HEINRICH NÁDOR, of Máramarossziget. Compiled in the form of a dictionary, it forms a complete and up-to-date guide in every branch of therapeutics, and should prove of great value as a book of reference to the practising physician.

Dr. R. J. COLLIE has reprinted in a pamphlet entitled *Medico-Legal Aspect of the British Workmen's Compensation Act, 1906*,[11] a paper he read before the Congrès International des Maladies Professionelles, held in Brussels last September. The author, from the nature of his position as medical officer to a large employer of labour, and also to an insurance company, has acquired such an experience as qualifies him to entertain few doubts as to the value of his opinion. The matters discussed are none of them very new, but they are set out in a very interesting style. Dr. Collie has sympathy for "the moral degradation which actions for damages bring upon the working classes." He points out the paths of duty to his medical colleagues and has much advice for our lawmakers. "Contracting out" of the Act is favoured, the necessity of the presence of a medical assessor sitting with the county court judge is urged, and also that Section 15, Schedule I, should be so amended that the registrar of the court may refer the matter to a medical referee on application being made by *either* party; further, Dr. Collie holds that in large cities whole-time salaried official medical referees should be appointed and have an independent position.

Das Elektrokardiogramm des gesunden und kranken Menschen. Professor F. Kraus and Professor G. Nicolai. Leipzig: Veit and Co. 1910. (Med. 8vo, pp. 344. Mk. 12.)

[9] *Arbejder fra den Kongelige Fødsels og Plejestiftelse i Kjöbenhavn.* Udgivne af Professor Leopold Meyer. Gyldendalske Boghandel Nordisk Forlag. 1910. (Sup. roy. 8vo, pp. 199.)

[10] *Die Therapeutischen Leistungen des Jahres 1908.* Ein Jahrbuch für praktische Ärzte. Bearbeitet vom Herausgeber Med. and Chir. Dr. Arnold Pollatschek, Brunnenarzt in Karlsbad Korrespondierendes Mitglied der K.K. Gesellschaft der Ärzte in Wien, und Med. U. Dr. Heinrich Nádor, in Máramarossziget. XX. Jahrgang. Wiesbaden: Verlag von J. F. Bergmann. 1909. (Pp. 354.)

[11] *Medico-Legal Aspect of the British Workmen's Compensation Act, 1906.* By R. J. Collie, M.D., J.P. London: Bailliere, Tindall, and Cox. 1911. (Price 1s.)

Dr. TAGESON-MOELLER thinks that the strap apparatus used by Oldevig,[12] who is the director of an institute for Swedish exercises at Dresden, ought to be better known to the medical profession, considering the interest taken in the treatment of scoliosis. Moreover, the method is applicable to other conditions. It has been used by Oldevig since 1890 and was described by him in the Swedish periodical, *Svenska gymnastiken i in- och utlandet*, 1905, 1909, and is in use in nineteen institutes. The chief advantage of the strap exercise lies in the possibility of the careful isolation of particular groups of muscles, and it has the marked superiority over any treatment by supports that it calls out the greatest possible activity on the part of the patient. Its disadvantage is that it requires several assistants, but this is not felt in an institute, and even an operator working alone can overcome it by a little arrangement. It may appear at first to be difficult to learn, but it is really plain and easy to manage; the exercises given in this book are only examples and any operator of experience should with this introduction be able to extend it in various ways. The straps must be made of non-elastic material and furnished at each end with handles; they are 1½ to 2 metres long and of various breadths. Their use is to maintain certain muscles at rest while the opposed weakened and relaxed are brought into action; it is in fact an application of the method of resistance movements, but the straps give the operator as it were longer and stronger arms and greatly extend the possibilities of the method. The book describes the proceedings in the treatment of various deformities and is illustrated by photographs. Its publication will doubtless serve the purpose of drawing attention to the method, which seems to have good testimony in its favour.

Churchill's Medical Directory[13] for 1911 has grown to 2,168 pages, although, judging from the numerical summary of the medical profession which is given in the introduction, it would appear that the actual growth in numbers as compared with 1910 was only 173, which is considerably below the average of the quinquennium. Of the 40,642 persons whose names appear, 3,300 are officers in the Navy or Army or Indian Medical Services, and 5,188 reside abroad; of the remainder 6,415 give an address in London, 17,721 in the English provinces, 1,336 in Wales, 3,958 in Scotland, and 2,724 in Ireland. The information provided in the introductory pages has been increased in several directions. A very useful addition is a list of coroners for England and Wales. The notes upon British health resorts have been revised, and in a short list of Continental spas and climatic health resorts, many useful indications are afforded; both these sections will no doubt be found useful for reference. To the legal section has been added an abstract of the law and regulations as to cremation. The new issue seems to us, so far as we have examined it, not merely to have maintained the high reputation won by the directory in the past, but to be calculated even to have added to it.

The edition of *Who's Who*[14] for 1911 contains some 80 pages more than that for 1910. The growth would appear to be due to an increase in the number of biographies, for the present volume contains some 23,000 separate entries. Although mainly concerned with British citizens it contains the names of a few distinguished persons in other countries—such as, for instance, Mr. Roosevelt, M. Anatole France, Dr. Bethmann Hollweg, M. Briand, and Herr R. Strauss, the composer. The volume is really indispensable to any one who wishes to be accurate in his references to contemporary statesmen, writers, artists, and men of science.

The Writers' and Artists' Year Book[15] for 1911 is a useful directory giving particulars of journals, magazines, and publishers both at home and abroad, and of the kind of literary or artistic material likely to be acceptable.

Although Mr. D. W. HORNER'S pamphlet on *Weather Instruments and How to Use Them*[16] has been written specially for amateur meteorologists, it contains many suggestions which should prove useful to the more expert. In successive chapters are well and clearly described the methods of using a rain gauge, the different forms of thermometers and barometers, sunshine recorders, and anemometers. Illustrations of these instruments are given from photographs, some of which are excellent reproductions. The picture of the Snowdon pattern rain gauge would have been more intelligible to a learner if it had been reproduced from a line drawing.

[12] *Ein neues Geraet und neue Uebungen der schwedischen Heilgymnastik zur Behandlung von Rueckgrats-Verkruemmungen.* Von Geh. Hofrat J. Oldevig, Dresden. Mit einer Einleitung von Dr. med. Axel Tagesson-Moeller. Berlin; Eduard Trewendt's Nachfolger. (Med. 8vo, pp. 51. M. 1 80. Abb. 26.)

[13] London: J. and A. Churchill. 14s.

[14] London: A. and C. Black. 10s.

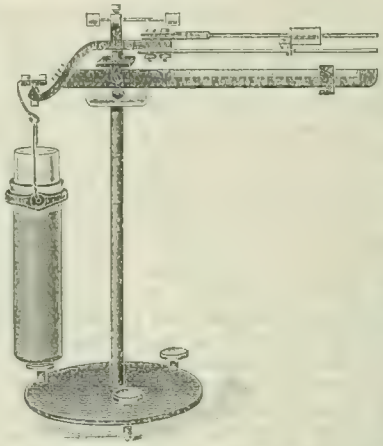
[15] London: A. and C. Black. 1s.

[16] *Weather Instruments and How to Use Them.* By D. W. Horner, F.R.Met.S.Lond. Witherby and Co. (Cr. 8vo, pp. 48; 9 illustrations; price 6d.)

MEDICAL AND SURGICAL APPLIANCES.

A Specific Gravity Appliance.

A SPECIFIC gravity appliance, which has been devised by Dr. C. BUTLER SAVORY, of Fleet, Hants, is shown in the accompanying drawing; but though it makes the general structure evident, it does not bring out the scientific character and extreme neatness of the device, nor the ease with which it may be used for the purpose of testing the specific gravity of any liquid. It stands about 5 in. high, and can be carried about in a small leather wallet measuring about 6 in. long by 3 in. wide and 1 in. deep. The amount of liquid required is very small, 10 c.cm., or 150 drops, sufficing. The whole operation of determining the specific gravity of a liquid can be completed in less than a minute. The determination is real and precise, and not merely roughly approximate, as are the results when a specific gravity float is used. The shoulder and beam are made of metals having different expansions, and in this way lengthening owing to variation in temperature is reduced to a minimum. Two scales are used, the top or ivory scale being graduated to hundreds, and the lower scale to tens and units. In addition, the lower scale carries a rider, which is arranged as a vernier, thus allowing of results being read to an extra decimal point. Its combination of accuracy in results with ease of use makes it admirably suited to the needs of practitioners for urine and milk testing.



MEDICINAL AND DIETETIC PREPARATIONS.

Bismuth Gauze.

MESSRS. BURROUGHS, WELLCOME, AND CO. (Snow Hill, London, E.C.) have submitted samples of their "Tabloid" brand bismuth gauze, which is recommended as an antiseptic dressing, especially in gynaecology and in aural and nasal practice. It is supplied in 1-yard rolls of various widths, sterilized; each is enclosed in a wrapper and an outer coating of the nature of a varnish, by which the contents are protected from contamination. The gauze is odourless, and is stated to be non-toxic; it is claimed that when packed in the uterus as an absorbent dressing it has remained odourless much longer than iodoform gauze, and it is put forward as suitable for use in curetting and operations on the cervix and vagina.

Tuberculin and Tubercle Vaccine.

Messrs. Burroughs, Wellcome and Co. (Snow Hill, London, E.C.) have submitted specimens of several of their tubercle preparations, which will, no doubt, be largely employed in view of the increased use which is now being made of such means of treatment. New tuberculin and tubercle vaccine are prepared from both human and bovine strains; these are supplied in hermetically sealed vials each containing one dose (1 c.cm.), and the new tuberculin, human and bovine, is also supplied in the form of hypodermic tabloids, to be dissolved immediately before injection. Another preparation is tuberculin (human) for von Pirquet's cutaneous reaction; this diagnostic medium is put up in tubes drawn out at both ends and sealed, and small indiarubber ejectors are supplied with each box for blowing the liquid out on to the scarified surface. The manner in which all these preparations are put up leaves nothing to be desired.

CENTRAL MIDWIVES BOARD.

REPORT ON THE WORK OF THE BOARD FOR THE YEAR ENDING MARCH 31ST, 1910.

THERE were sixteen Board meetings during the year, including four special meetings for the investigation of cases where a local supervising authority had reported a midwife for malpractice, negligence, or misconduct.

The annual meeting of the Board was held on April 22nd, 1909, Dr. Champneys being again elected Chairman; Sir George Fordham was chosen Honorary Treasurer, but resigned the office in March, 1910.

Mr. J. Ward Cousins, who had represented the Royal College of Surgeons since the formation of the Board, retired on March 31st, 1909, and was succeeded by Mr. Cuthbert Hilton Golding-Bird, F.R.C.S. The death occurred on January 18th, 1910, of Dr. Stanley Atkinson, for nearly three years the representative on the Board of the Incorporated Midwives Institute. Dr. Atkinson was a regular attendant at the meetings of the Board and its committees, and his zeal and capacity for work have caused his loss to be deeply felt by his colleagues. He has been succeeded by Dr. G. E. Herman.

The Midwives' Roll.

On March 31st, 1910, the names on the Midwives' Roll amounted to 29,209, an increase for the year of 1,928. Of the total 8,147 have passed the Board's examination, and 9,643 have been admitted to the Roll in virtue of prior certification under Section 2 of the Midwives Act. The total number of trained midwives is therefore 17,790, as against 11,419 untrained, the percentages being 61 and 39. Owing to the incompleteness of the returns made by the local supervising authorities it is impossible to estimate with accuracy the respective proportions in the case of practising midwives. A large percentage of the trained women obtained their certificate without any intention of ever practising, many others have ceased to do so, and a considerable number practise in the Colonies or in foreign countries. There can be no doubt that at the present time the untrained practising midwives are largely in excess of the trained.

Training and Examination.

Of the 2,683 candidates who entered for the examinations 2,219 passed, the percentage of failure being 17.3, as against 19.2 for the previous year; 1,272, or 57.3 per cent., of the successful candidates declared their intention of practising as midwives, and of this number 758, or 60 per cent., intended to practise in rural districts. This latter class constituted a percentage of 34.2 of the total number of successful candidates.

Leeds has been made an examination centre, and the written part of the examination is held at Plymouth and Cardiff, as well as at the regular centres. This has been found a great convenience to candidates from Cornwall, Devon, and South Wales.

There are 108 institutions at which midwives may be trained under the rules of the Board, including four in India and one at Hong Kong. Of the 103 in the United Kingdom 53 are Poor Law institutions.

The Board's memorandum on the meaning of the words "personally delivering," occurring in Rule C 1 (1), sent to all the recognized training schools in January, 1909, has, it is believed, had a good effect in securing more careful observance of the requirements of the rule. An instance having occurred in which a training school was found to have neglected to pay due attention to the terms of the Board's circular, the training school was in consequence removed from the list of institutions in which midwives may be trained. At a subsequent date the Board, being satisfied that the rule was now being strictly complied with, restored the institution to the list.

Penal Procedure.

Fifty-three penal cases have been heard by the Board, with the result that 23 women have been struck off the Roll, 14 censured, 13 cautioned, and 3 permitted to resign voluntarily.

The number of penal cases apparently shows a large diminution in the charges of negligence and misconduct brought against midwives by local supervising authorities when compared with the 92 cases of last year. This diminution is, however, mainly due to the fact that the penal sittings usually held in March were this year held in April, and consequently do not come under review in this report.

The penal procedure of the Board as laid down in Rule D has been under consideration during the year. The rule provides that "the secretary, or other person appointed by the Board for the purpose," shall conduct the case on the hearing by the Board of a charge of malpractice, negligence, or misconduct against a midwife in respect of which a local supervising authority has found a prima facie case to be established. In one or two cases, however, the local supervising authority has claimed to have the conduct of the case; and as in the opinion of the Board this would introduce confusion into the proceedings, the following resolution has been passed:

> Resolved, that Local Supervising Authorities be not allowed a hearing in penal proceedings before the Board, except by special leave of the Board, which may be given when, in the course of such proceedings, charges are made against an Authority, or its officers, to which an answer may be reasonably expected.

The Local Supervising Authority of Hertfordshire is desirous that, where the authority so wishes, the collection of evidence, the formulation of the charges to be met, and the conduct of the case at the hearing, should be left entirely to the authority, and that the Board should act in the matter in a purely judicial capacity. On receipt of this suggestion from the County Council, the Board decided to communicate with the local supervising authorities of England and Wales, stating the proposals made, and inquiring whether the authorities were in favour of amending Rule D accordingly. The replies received show that twenty-one authorities are in favour of the alteration of procedure and sixty-six against it, while five favour the establishment of a circuit system whereby provincial courts for groups of counties might be held at certain appointed centres.

Another instance of obtaining admission to the Roll by virtue of a false certificate of character, similar in all essential features to the case of R. *v.* Inglis, already reported, came to light during the year. In March, 1905, Sarah Ann Marsh, of Eccles, applied for and was granted a certificate under Section 2 of the Midwives Act in virtue of a certificate of good character signed by a medical man of Eccles. The woman had in fact been frequently convicted of drunkenness before the date of the medical man's certificate, and has been repeatedly convicted since. Her name having been removed from the Roll, the papers in the case were forwarded to the Director of Public Prosecutions, who then instituted proceedings against the medical man and Mrs. Marsh under Sections 11 and 12 of the Midwives Act. The magistrates dismissed the case against the medical man, but committed Mrs. Marsh for trial at the Salford Hundred Quarter Sessions. She pleaded not guilty, but was convicted and bound over under the First Offenders Act to come up for judgement when called upon.

Finance.

The recovery from the local supervising authorities of the apportioned adverse balance appearing on the Board's financial statement for 1908, amounting to £1,853 8s. 5d., was effected without serious difficulty, though some of the authorities delayed payment till nearly the close of the year, and in the case of one Welsh county it became necessary to give notice that the Board would apply to the High Court for a mandamus unless prompt payment were made.

The apportionment in respect of 1909 amounts to £2,007 3s. 1d. The number of midwives returned by the local supervising authorities as having notified their intention to practise during 1909 was 13,608. This total compares with 13,348 in 1908, and 12,964 in 1907, and the apportioned contribution from the local supervising authorities works out at the rate of about 2s. 11½d. per midwife.

Proposed Amendment of Midwives Act.

The Board held a special meeting in October to consider what action should be taken on the recommendations of the Midwives Act Committee. The following is a summary of the resolutions carried:

1. Any amendment of the Midwives Act, 1902, in the light of the report of the Midwives Act Committee must provide for:
   (*a*) Adequate and certain remuneration of medical practitioners called in under the Board's regulations.

(*b*) More definite powers of suspension of midwives, whether by the local supervising authority or by the Central Midwives Board.
(*c*) Subvention from public funds of midwives who are unable to maintain themselves in sparsely populated and poor districts.
(*d*) Revision of the constitution of the Central Midwives Board so as to afford two representatives, to be chosen without restrictions, of the Midwives Institute.
(*e*) Systematic purging of the Midwives Roll in accordance with D (3).
(*f*) Revocation of the right of delegation of their powers under the Act by the local supervising authorities.

2. In the event of the establishment throughout the country of county nursing associations, working in co-operation with the local supervising authorities, and affiliated to the Queen Victoria's Jubilee Institute, as recommended by the committee, the institute should have two representatives.

3. Any deficiency in the Board's accounts should be apportioned on the basis of population, instead of on the basis of the number of practising midwives.

4. The Notification of Births Act, 1907, should be generally adopted throughout the kingdom as a valuable supplement to the operation of the Midwives Act. The addition of a column in the Register of Births for the entry of the name and status of the person who actually delivered the mother, would probably help to promote efficiency and check abuses in the practice of midwives. It would be desirable that such particulars should be required in all notifications under the Act of 1907, and, if necessary, the Act should be amended in this sense.

5. State provision should be made for the registration of still-births.

6. The medical officers of counties and county boroughs should be required to report annually to their authorities on the administration of the Act in their areas; copies of these reports should be forwarded to the Privy Council, the Local Government Board, and the Central Midwives Board, who should include a digest in their own report.

7. Midwives should be supplied with stamped forms for all notifications which they are, or may be, required to make to the local supervising authorities or the Central Midwives Board, and any books prescribed for their use should be provided gratuitously by the authority.

It was subsequently resolved to take no further action at present.

Ophthalmia Neonatorum.

The number of cases of ophthalmia neonatorum coming to the notice of the Board in the course of its penal administration has made it apparent that strong efforts should be made to combat the ignorance and carelessness which so frequently lead to the total destruction of the infant's eyesight. The rules have accordingly been strengthened by substituting "must" for "should" in the rule dealing with the cleansing of the child's eyelids, and by placing on the midwife the obligation of advising medical help in case of a purulent discharge in a woman who is pregnant or in labour.

By request of the Board the Chairman drew up a leaflet, adapted for the use of midwives, calling attention to the nature, causes, and consequences of the disease, and the preventive treatment to be adopted. Minute directions were also given as to the method of cleansing the eyelids, and the material to be used. About 24,000 of these leaflets have already been distributed to local supervising authorities, nursing associations, training schools, recognized teachers, and midwives having the supervision of pupils. The demand for the leaflet still continues, and a copy is sent with each certificate issued by the Board.

Rules.

The existing code of rules, originally sanctioned for a period ending on September 30th, 1909, was continued in force by an Order of Council for a further period of one year, and has since been similarly extended until June 30th, 1911.

The Period of Grace.

From time to time the Board has received applications for the grant of a certificate from women who, though duly qualified to have claimed the Board's certificate during the period of grace which expired on March 31st, 1905, nevertheless failed to do so. Many of the applicants were suitable and competent women whose services were required in the rural districts where they had been acting as midwives for a considerable number of years. In nearly every case the omission to claim was due to the fact that the local supervising authority had failed to give due notice of the effect of the Midwives Act as provided by Section 8 (7). In order to meet these cases of undoubted hardship, and acting on Recommendation (*a*) (3) of the Midwives Act Committee, the Board framed a rule in the following terms:

2. A candidate who has failed to claim to be certified under the Midwives Act within the time limited by Section 2 of the Act, and who satisfies the Central Midwives Board that, but for her failure so to claim, she would have been entitled to be certified under the Act, may be admitted by the Central Midwives Board to the roll of midwives upon such conditions as the Central Midwives Board shall think fit, and shall receive a certificate in the form set out in the schedule, and her name shall be entered by the secretary in the roll of midwives (Schedule, Form II, B). Provided always that no such candidate shall be admitted to the roll of midwives after September 30th, 1910.

The new rule was sanctioned by an Order of Council of March 14th, 1910, and under its provisions 555 women have been admitted to the Roll during the period ending September 30th.

Evidence of Improvement.

It is satisfactory to observe that the reports of the medical officers of health show in many cases a continued improvement in the old type of midwife still practising under their supervision in respect of cleanliness, carefulness, and observance of the rules.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

MOTHERSILL'S SEASICK REMEDY.

A 2s. 3d. package contained six capsules, three containing pink powder and three brown. The dose is given as one of each kind, taken together, so that the package contains three doses.

The average weight of the contents of each capsule was 11½ grains. Analysis showed the powders to have the following composition:

Pink Powder.

Sugar of milk	33.3 per cent.
Caffeine	8.2 ,,
Stearic acid	18.0 ,,
Chlorbutol	40.1 ,,
Colouring matter	a trace.

Brown Powder.

Powdered cinnamon	29.4 per cent.
Caffeine	8.4 ,,
Stearic acid	17.4 ,,
Chlorbutol	44.5 ,,

Chlorbutol is also known under the trade name, "chloretone." The stearic acid is probably added as a lubricant, to facilitate the filling of the powder into the capsules, although the amount is large for the purpose.

DR. LECOY'S VIGOROIDS.

These consisted of sugar-coated tablets, coloured blue externally. After removing the coating, the tablets had an average weight of 2.2 grains. The dose is stated to be two, three times daily.

Analysis showed them to contain:

Ferrous phosphate.
Quinine.
Strychnine.
A vegetable extract.
Sugar.
Starch.
Talc.

The ferrous phosphate, calculated as $Fe_3(PO_4)_2\,8H_2O$, from the iron found, was 8.7 per cent., or 0.19 grain in each tablet. The quinine and strychnine together amounted to 4.35 per cent., or 0.09 grain in one tablet; the strychnine was clearly not more than one-twentieth of the total alkaloid (= 0.005 grain in one tablet), but it was not possible to determine the amount exactly on the quantity available. The vegetable extract showed no well-marked properties by which it could be identified; the amount was small, the sugar constituting the largest part of the tablet.

* Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL: 1904, vol. ii. p. 1585; 1906, vol. ii, pp. 27, 1645; 1907, vol. i, p. 213; vol. ii, pp. 24, 160, 209, 393, 530, 1653; 1908, vol. i, pp. 833, 942, 1373; vol. ii pp. 86, 505, 1022, 1110, 1193, 1285, 1566, 1697, 1876; 1909, vol. i, pp. 31, 909, 1128; vol. ii, p. 1419; 1910, vol. i, pp. 151, 213, 393, 1005, 1063, 1120; vol. ii, pp. 982, 1350.

LITERARY NOTES.

In the *Bristol Medico-Chirurgical Journal* for March, 1910, there appeared an interesting paper by Captain V. B. Green-Armytage, I.M.S., entitled "Oriental Medicine—Stray Jottings." As usual in medical folklore, the first appearance of a new member of the human family in the world is surrounded with superstitious rites and observances. In Northern India the following method of foretelling the sex of an unborn child is adopted: At the seventh month a number of relations gather at the house of the expecting mother, and a few drops of milk are squeezed out of her breasts on to a piece of yellow cloth; when it dries, if it is white, the offspring will be a girl; if yellow, a boy.

Immediately after the birth of the child the mother is given a small piece of metal copper to swallow, called "dumree," which is supposed to expel the placenta. After this she is given a dose of asafoetida, to prevent her catching cold and to relieve the after-pains; this drug being also affirmed to be a stimulant. The midwife, like the gipsy of the West, is wise in her generation, for she demands at this stage something shining, such as a silver or gold coin, just to touch the umbilical cord with "for luck"; and then she proceeds to deal with it in the usual way—appropriating the coin for herself. In the East—unlike the West—the placenta is not a thing despised, but is buried with due state, along with a sacred leaf and small coin, to propitiate the gods; and the knife that cut the cord is kept sacredly for forty days, alongside the mother and child wherever they go or move, for it has a certain power against all ghosts and evil spirits.

During the puerperium the mother is looked after with great care. For forty days she is only allowed to drink boiled water in which a red-hot horseshoe has been cooled. No dog or cat is suffered to come near her; the influence of the cat in particular is dreaded as it is regarded as a witch. Any stranger coming to the house has to throw myrrh on the fire to ward off evil spirits. Musulman boys are circumcised between the ages of 7 and 14. The boy is placed on an earthen drum and *bhang* (cannabis indica) is administered. After the operation a peacock's feather and a copper ring are tied round the boy's neck as a safeguard against evil spirits and the wound is dressed with powdered benzoin. Of the native "hakim" in whom the uneducated Indians put their trust, Captain Green-Armytage says that it is difficult to describe his methods, for his eye and his conversation elicit the information he requires. He once asked a "hakim" how he proposed to make a diagnosis, as the patient was delirious. The reply was: "Sir, God knows his disease; we only know whether it is a hot or a cold disease, and according to which I find or think it, I shall give him of my drugs." Captain Green-Armytage admits, however, that the hakim's treatment has often excellent results; we venture to think that suggestion is the most potent remedy in his pharmacopoeia. The hakim sends his surgical cases and others in which his treatment has failed to the Civil Surgeon. Among curious methods of treatment are mentioned the application of an oil expressed from the head of a cobra to a septic ulcer; and in cases of impotence the administration of a powder made from the penis of a crocodile which has been dried in the sun. A compress of sugar and soap is a very common local remedy for sores and boils. It is almost superfluous to say that charms play a large part in native Indian medicine. Captain Green-Armytage particularly mentions an amulet consisting of a metal disc inscribed with figures which added up vertically, diagonally, or horizontally make up the same total. This is believed to be a sovereign remedy for piles and confluent smallpox; all that is required is to wash the disc two or three times a day in water, drink the water, and mutter: "La-la-hah, il-lul-ha-ho, Mohamed. oor Rasul-Ullahah" (there is no other God but the true God, and Mohamed is the prophet of God). Among the lower classes in India surgery, except the use of the bluntest knife, is unknown; cases of compound fracture or peripheral gangrene are left untreated, except for the application of neem oil, till they are past all cure, and then they are sent to hospital.

The November number of *L'Hygiène* should receive special attention from its English readers, if only on account of a most interesting article it contains in which Professor Ehrlich's famous "606" is discussed from the French point of view. The writer of this article, who simply signs himself "Dr. V. C.," freely gives the great German scientist the praise which is justly due to him, but he himself has more confidence in the French preparation "hectine" than in the more widely known German remedy. Moreover, he claims the right of seniority for the French invention. "Hectine," which is composed, amongst other things, of arsenic, was invented two or three years ago by Dr. Mouneyrat, and it was employed with great success in several cases in France before the announcement of Ehrlich's discovery took the scientific world by storm. Though the latter is much more rapid in its effects, "hectine" and another and similar preparation, called "hectargyre" (the invention of Dr. Salmon, a young French physician), are, according to "V. C.," at once equally efficacious and far less dangerous. No deaths have ever resulted from the application of either of the latter remedies, whereas it is alleged that the former has already killed some dozen persons; and whilst treatment by "606" is extremely painful and necessitates a week in bed under close medical supervision, "hectine," on the contrary, causes so little bodily inconvenience that the patient is able to carry on his usual occupation. It must be remembered, however, that it needs twenty injections of hectine to produce an effect similar to that brought about by a single dose of "606." *L'Hygiène* contains several other items of interest besides this discussion of a most important question. A long article on the care of the eyes has been contributed by Drs. E. and Marc Landolt; whilst Dr. E. Agasse-Lafont has written an interesting account of the diseases to which workers in felt factories are peculiarly liable, amongst which mercury poisoning may be reckoned as the most deadly. Some little space is likewise devoted to that charming pleasure resort, "Les Terrasses," which has been built on the coast between Le Tréport and Dieppe, and which appears to offer every possible attraction to the visitor, whether he is in search of health or of amusement; and Drs. Lucien Jacquet and P. Jourdanet offer some valuable advice on the care and prevention of chilblains, principally by means of massage and gymnastic exercises for the hands and feet. The illustrations are, as usual, beautifully reproduced. In response to several inquiries we may state that the price of this most attractive magazine, which is published by Messrs. Goupil and Co., 25, Bedford Street, Strand, W.C., is 2s. a number.

AUSTRALASIAN MEDICAL CONGRESS.

THE ninth session of the Australasian Medical Congress will be held in Sydney from September 18th to the 23rd, 1911, under the Presidency of Dr. F. Antill Pockley. The Senate of the University of Sydney has granted the use of its buildings and grounds, and the Government of New South Wales has given its countenance and support to the Congress. Lord Dudley, Governor-General and Commander-in-Chief of the Commonwealth of Australia; Lord Chelmsford, Governor of New South Wales; Vice-Admiral Sir Richard Poore, Bart., Naval Commander-in-Chief of the Australasian Station; Lord Islington, Governor of the Dominion of New Zealand; Sir Thomas D. Gibson-Carmichael, Bart., Governer of Victoria; Sir William MacGregor, Governor of Queensland; Admiral Sir Day Bosanquet, Governor of South Australia; Sir Gerald Strickland, Governor of Western Australia; Major-General Sir Harry Barron, Governor of Tasmania; Sir Everard F. Im Thurm, Governor of Fiji, High Commissioner of the Pacific Islands; The Honourable J. H. P. Murray, Lieutenant-Governor and Chief Judicial Officer of New Guinea; the Honourable W. P. Cullen, LL.D, Chief Justice of New South Wales; Lord Plunkett, late Governor of New Zealand; Admiral Sir Harry Rawson, late Governor of New South Wales; and Sir Norman MacLaurin, Chancellor of the University of Sydney, are patrons of the Congress.

Officers of the Congress.

In addition to Dr. Antill Pockley, the following are the officers of the Congress: Treasurer, Dr. S. H. MacCulloch, Sidney; General Secretary, Dr. Arthur Palmer, Elizabeth Bay; Associate Secretary, Dr. A. J. Brady, Sydney; Vice-Presidents, Dr. J. C. Verco, President Adelaide Congress, 1887; Sir P. Sydney Jones, President Sydney Congress,

1892; Dr. F. C Batchelor, President Dunedin Congress, 1896; Hon. G. H. Butler, President Hobart Congress, 1902; Professor E. C. Stirling, President Adelaide Congress, 1905; Professor H. B. Allen, President Melbourne Congress, 1908; Surgeon-General W. D. C. Williams, Director-General of the Army Medical Services of the Commonwealth, Melbourne; Fleet Surgeon V. Gunson Thorpe, Senior Naval Medical Officer, Australasian Station; Fleet Surgeon F. Falconer Hall, late Senior Naval Medical Officer, Australasian Station.

Sections.

The work of the Congress will be distributed among twelve sections as follows: Medicine—President: Dr. W. T. Hayward, Adelaide. Surgery—President: G. A. Syme, Melbourne. Obstetrics and Gynaecology—President: Dr. G Rothwell Adam, Melbourne. Anatomy, Physiology, and Pharmacology—President: Dr. E. H. Embley, Melbourne. Pathology, Bacteriology, and Tropical Medicine—President: Dr. Wilton W. Love, Brisbane. Public Health and State Medicine—President: Dr. James W. Hope, Fremantle. Ophthalmology—President: Dr. J. W. Barrett, Melbourne. Psychological Medicine and Neurology—President: Dr. W. Beattie Smith, Melbourne. Diseases of Children—President: Dr. A. Jeffreys Wood, Melbourne. Naval and Military Medicine and Surgery—President: Colonel C. S Ryan, Melbourne. Dermatology, Radiology, and Medical Electricity—Presidents: Drs. H. F. Lawrence and F. J. Clendinnen, Melbourne. Laryngology, Rhinology, and Otology—President: Dr. W. L. Robertson, Brisbane.

State Secretaries of Congress.

The following are the State Secretaries of the Congress:—Victoria: Dr. Arthur Jeffreys Wood, Melbourne. Queensland: Dr. Wilton W. Love, Brisbane. South Australia: Dr. John B. Gunson, Adelaide. Tasmania: Dr. Gregory Sprott, Hobart. West Australia: Dr. A. J. H. Saw, Perth. New Zealand (South Island): Dr. Stanley Batchelor, Dunedin; (North Island): Dr. W. E. Herbert, Wellington.

AUTOMOBILES FOR MEDICAL MEN.

Tyre Tubes and Covers.

THE Challenge Rubber Mills Company, whose London offices are in Eagle Wharf Road, City Road, N., is making an offer which seems worth attention. It invites readers to send it any tube covers which in their present condition are unfit for use. If such covers are in the firm's opinion unfit for retreading, it will itself supply, without charge, secondhand covers of the same size and grade, and use them for the purpose of producing retreaded covers. For the whole job it will charge what it claims to be less than the prices demanded by other firms merely for retreading. Dissatisfaction with retreading the firm holds to be due to the fact that many makers attempt to retread tyres which are too far gone for satisfactory results, and use retreading compounds which they buy, and with the precise nature of which they are not really acquainted. The Challenge Rubber Mills Company makes its own compound, which is a pure Para rubber mixture, and as it will not apply it to any cover which is too far gone, it makes the offer in question in order that readers may have an opportunity of proving for themselves how much the cost of motoring, created by tyre troubles, can be reduced if the work is put in their hands.

To the device from which the firm derives its name we drew attention soon after it was brought out, but take this opportunity of mentioning that the Challenge Reinforced tube has since then been still further improved. In addition to the two-ply fabric which is embedded in the rubber for four-fifths of the circumference of the tube, another insertion of a segmental piece of fabric, bound in Egyptian cotton, has been embodied, the outer ends of this slightly overlapping the edges of the fabric proper. It has been added for the purpose of preventing any failure of the tube at the point where the original fabric ends without interfering with the resiliency that is secured by leaving untouched the thickened one-fifth of the tube—that which enters the tube bed. There is ample testimony, derived both from official investigation by the Royal Automobile Club and private experience, to the value of these tubes. They seem to add very materially to the life of a tyre, by making it possible to run quite safely with covers so worn that in ordinary circumstances they would be deemed only fit for scrapping.

BEIT FOUNDATION FOR MEDICAL RESEARCH.

AT a meeting of the trustees of the Beit Memorial Fellowships for Medical Research, held last week, the reports by the fellows on their work during the past year, which had been considered by the Advisory Board, were approved, and the following were elected to Fellowships:

Thomas Renton Elliott, M.D.Cantab., M.R.C.P.Lond., who proposes to carry on a research on the pathological changes in the suprarenal glands, at the Medical School of University College Hospital.

Eric Edwin Atkin, M.B.Cantab., who proposes to investigate, in the Bacteriological Laboratory of the London Hospital, a group of toxins with respect to the manner of destruction, mode of neutralization by antibody, and effect of the various modifications upon the animal organism.

Frances Mary Tozer, B.Sc.Lond., who will investigate, in the Physiological Laboratory of the Liverpool University, the presence of sensory fibres in the third, fourth, and sixth cranial nerves; their influence upon ocular paralysis in locomotor ataxia and other diseases, and the site of the ganglion cells.

Richard Williams Harold Row, B.Sc.Lond., who will inquire into the structure, development, and functions of the pituitary body in vertebrata. The research will be carried on in King's College, London, the Marine Biological Association's Laboratory, and the Naples Zoological Station.

Henry Priestley, M.B., Ch.M., Sydney, who, at the Lister Institute of Preventive Medicine, will study the diphtheroid organisms with regard to their distribution, morphology, cultural characteristics, pathology, and relationship to diseased conditions of man and animals.

Frederick Perera Wilson, M.D., M.Sc., Liverpool, who, in the Bio-Chemical Department of the University of Liverpool, will investigate the changes in the lipoids of the tissues produced by syphilis and their relation to haemolysis and immunity.

Arthur Gurney Yates, M.D.Edin., who will study the bacteriology of acute rheumatism in the Pathological Department of the University of Sheffield.

Annie Homer, D.Sc., T.C.D., who proposes to investigate the following subjects in the Physiological and Chemical Laboratories, Cambridge: The chemistry and physiology of tryptophane; the metabolism and chemistry of haemoglobin in so far as they bear on its production in the animal body; the comparison of normal and pathological tissues as regards their content of intracellular ferments.

Frederick James Fitzmaurice Barrington, M.B., B.S.Lond., F.R.C.S., who will investigate the functions of the male accessory genital glands in University College Medical School.

John Foster Gaskell, M.B., B.C.Cantab., M.R.C.P.Lond., who proposes to investigate the origin of the suprarenal body in the invertebrates and lower vertebrates, and the function of chlorogogen cells in invertebrates. The research will be carried on at St. Bartholomew's Hospital Medical School.

Professor C. S. Sherrington, F.R.S., of Liverpool, and Dr. William Bulloch, Director of the Bacteriological Laboratory of the London Hospital Medical School, were appointed members of the Advisory Board.

The next election of Fellows will be held in December, 1911. The last date for receiving applications from the Colonies and abroad is October 1st, 1911, from Great Britain and Ireland November 1st, 1911. Communications should be addressed to the Hon. Secretary, Beit Memorial Fellowships for Medical Research, 35, Clarges Street, London, W.

DR. DAVID SUTTEE, who for the last fourteen years has been medical officer to the Birsay, Harray, and Sandwick Medical Association, Orkney, was on December 1st, on the occasion of his leaving for Glasgow, presented with a purse of sovereigns in appreciation of his faithful services. Mrs. Suttee, who had been organizer of the nursing scheme, received a similar token of respect.

MR. BENJAMIN C. BROOMHALL, F.R.C.S., L.R.C.P., has received the King's permission to accept the Imperial Chinese Order of the Double Dragon, Third Class, First Division, conferred upon him by the Emperor of China in recognition of valuable services rendered by him. Captain Howard Ensor, D.S.O., R.A.M.C., has received the Royal permission to accept the Imperial Ottoman Order of the Fourth Class, conferred upon him by the Khedive of Egypt in recognition of his valuable services.

British Medical Journal.

SATURDAY, DECEMBER 17TH, 1910.

THE HYGIENE OF SLEEP.

No subject can be of greater importance than the study of the condition we call sleep. Like so much else we possess, its real value and the causes which lead to its imperfection interest us only when it is no longer our own possession. To the physician, however, interest in the subject is a present and permanent necessity, for disturbance of sleep—insomnia—is a ghost constantly stalking amongst his patients with a variability in etiology which, if imperfectly understood, may lead to faulty treatment.

With the progress of thought there has come a growing curiosity on the part of the layman to know more of the physiology and pathology of life, and we find a ready public, judging at least by the reports of meetings in the daily press, who are only too glad to learn more of what medical science can teach of everyday life in so far as it can tell how best to avoid and so prevent calamities which, when once initiated, prove themselves to be irremediable at the hands of medicine. We have even been, perhaps, a little overdone of late years with the "crusade against consumption" and kindred topics; our public conveniences are plastered over with the latest virtues of fruitarian and other diets, and the cellularity of our clothing is made to assume an importance unknown to our fathers.

Looking at this subject of the hygiene of life in the abstract, and without paying too much attention to absurdities which are bound to attach themselves to any movement, no sensible person could be found amongst laymen or laywomen, and certainly none should be found in medical circles, who would object to simple lessons, whether physiological or pathological, being given to the public with open-handed freedom. Every encouragement should be given to the dissemination of principles which he who runs may read. But the mouthpieces of the movement must be well chosen, for nothing is more likely to eradicate from our national thought the idea that science is humbug writ in a different way than a clear exposition of its truths. In the October number of *Science Progress* there is an article written on the relations of insomnia to types of sleep, by Dr. David Fraser Harris, Lecturer in Physiology in the University of Birmingham, and a rather more popular article on the physiology and hygiene of sleep has reached us, being the annual public lecture on "The Laws of Health" delivered at the Midland Institute, Birmingham, by the same physiologist, on September 16th. The thesis of both these contributions is that if we but knew what are the fundamental processes upon which sleep depends, we should also know how insomnia might be produced by any cause which militates against their due operation. Sleep is not a state dependent upon one cause any more than "public opinion" is the result of any one influence that may be operating upon men's minds. Dr. Harris has, in a clear exposition, shown that the causes of sleep are at least four in number, and in speaking of sleep, he adopts a broad view and includes all those states of loss of consciousness which, when effected by causes which are of natural origin and of normal intensity, are physiological in type, and when they lose this physiological character become pathological. He shows most clearly that if the flow of blood to the brain is short-circuited, so that its blood supply is lessened, sleep may ensue, and that when this short-circuiting is effected by agencies which are abnormal, then pathological sleep or coma is the result. The unwisdom, then, of attempting mental or bodily work shortly after a meal which attracts blood to the splanchnic or digestive area is apparent, just as it is also not necessarily unwise to have a heavy meal shortly before retiring to sleep, *pace* the advice of past teaching. In the former case, mental or muscular effort is hampered by the want of blood in the organs thus dragged into function: and in the latter, the anaemia of the brain produced by the operation of the digestive tissues is just one of the effects which it is desirable to secure to induce sleep. The meal, of course, must not be an injudicious one, which, by producing discomfort in the process of sleep-digestion (Pavlow), disturbs such sleep, and in the awakening moments leads to the development of dreams or nightmares.

Discussing a second factor in the causation of sleep, Dr. Harris touched upon a matter which is of vital importance to the national health, and more especially to that part of the national life which is spent in large cities. Sleep may be induced by the diminution or absence of sensory stimulation arriving through such channels as the eye, hearing, or common sensation. No doubt we can get over the almost day-like illumination of many a town or city bedroom by the use of blinds at night, but how can we with the "open window" shut out the fiendish noises which are created alike by cats and dogs, and by the bawling rowdy boys and girls who, to their own undoing as well, are allowed to make night hideous? Dr. Harris is quite right when he points out that in our slavish worship of "freedom of the subject" we tolerate a licence to make these unnecessary noises in our public thoroughfares. These acts of rowdyism should be treated as misdemeanours as rigorously as any other public nuisance.

A third factor in the production of sleep is the relative diminution of psychic activity. Not only is sleep impossible to the child after the excitement of a party or a pantomime, but in the same way insomnia is one of the frequent possessions of those who, by necessity or by custom, pursue mental work to within a few moments of the hour of retiring. A certain well-known divine, who was asked how he managed to preserve his health and vigour to a ripe old age, explained it on the ground that at 10 p.m. he refused to worry about anything. And, lastly, Dr. Harris brings to our notice the physiological belief that sleep in its periodic recurrence in the night hours—a recurrence which in a normally balanced individual persists in some cases undisturbed throughout life—may be but an expression of chemical influences which, hitherto unsuspected, have at last been given their due prominence. Perhaps far too much has been said of the periodic activity of our nerve centres, which, on the one hand, are capable of producing the rhythmic discharge of cardiac energy familiar to us all at least in the pulse-beat, and on the other, by rhythmic reservation of energy, bring about

that filling of the capillaries of the skin which is held by some to be such a regular accompaniment of sleep. The tendency of modern thought is to view these recurrent changes rather as the effect of recurrent causes, such as the manufacture in unknown recesses of the body of "fatigue toxins." Sleep, then, becomes but an expression of the relative increase or concentration of these suspected but undemonstrated agencies, and insomnia may, in the absence of the other three groups of causes, be merely due to an absence, or, curiously and yet truly enough, to an excess of them.

It is well the public should receive such lessons as those of Dr. Harris, for then they will find their own salvation in the way of insomnia and the use of such homely remedies as "hot bottles to the feet" or of woollen sheets, the taking of a cup of milk on occasions of sleeplessness, or the obtaining of a period of mental quiet before retiring to bed, or the due exercise of the body as a part of the day's duties will become more widespread. When all such remedies fail, then it remains for the physician to choose such agencies as will combat the difficulty, supposing the cause cannot be removed, and in the pathological conditions which also give rise to insomnia he will be a wise physician who seeks rather as a first duty the removal of the cause where it is possible, and failing this betakes himself to the particular sedatives which suit the case.

As Dr. Harris no doubt would say, his mission was the instruction of the layman and not the medical man in matters which are so vital to his welfare. We are sure that no intelligent person could read his recent utterances without deriving from them lessons which, if but acted upon, would often lead to his losing the particular form of insomnia from which he suffers.

A FRENCH VIEW OF "606."

In an important communication made to the Academy of Medicine of Paris on November 15th, Professor Gaucher related his experiences of the Ehrlich-Hata remedy which, thanks to the lay press, is so well known as "606." Professor Gaucher has gone the right way to work about it, for the new arseno-benzol compound has been dealt with from all points of view. Before beginning to employ it, the chemistry, toxicology, and the pathological and physiological action of "606" were tested by MM. Desmoulière and Paris, and by M. Camus. As regards the chemistry, M. Desmoulière found that the quantities of arsenic, nitrogen, and chlorine did not correspond with those put forward in the formula. This is an interesting point. The pathological and physiological details of the experiments on animals cannot be dealt with completely here, and the experiments were not, in fact, sufficiently numerous to give any finality to the conclusions arrived at. Suffice it to say that in the animals (eleven guinea-pigs) that succumbed visceral congestions and haemorrhages were found. Blood pressure in animals was studied by M. Camus after intravenous and other injections. The general circulation and vasomotor apparatus were not much affected. When intravenous injections were employed, somnolence, vomiting, and respiratory changes were observed. Injections into the cerebro-spinal spaces were followed by death. When very small doses were used a period of latency preceded the fatal symptoms; during this latent period the animals presented no special symptoms of intoxication. The conclusion is that the compound is toxic to the nervous system. In addition to these investigations, the clinical application to man, under the supervision of Professor Gaucher, was carried out publicly at the Saint-Louis Hospital before a number of medical men, French and foreign, by M. Emery, who did the injections with 606 Hy. obtained directly from Professor Ehrlich. He was assisted by MM. Joltrain, Jacob, and Guggenheim. The ophthalmological examinations were in the hands of M. Antonelli. Professor Gaucher points out that only those patients who requested, and in writing, that "606" should be used were treated in this way.

The relative non-toxicity in man is admitted, but relapses were in some cases observed, whilst in others the results were *nil*. On the other hand, a markedly beneficial effect was observed in ulcerating lesions, especially superficial lesions, of the skin and mucous membranes. Rapid cicatrization occurred in many of the cases of this type, but not in all. It may be observed that the doses of "606" employed were not apparently maximum ones; but in the case of hospital patients, who are not usually up to the mark from the point of view of nutrition and weight, it was no doubt considered safer to keep to medium doses. Nevertheless it is a point to be borne in mind.

Professor Gaucher concludes, from his personal observations and as a result of this investigation, carried out in a public hospital service, that "606" does not cure syphilis, nor does it prevent relapses and recurrences, even when the specific manifestations disappear, in some instances rapidly, for the time being. When "606" acts beneficially, it does so more rapidly than mercury. Moreover, when the latter has failed, "606" may clear up syphilitic lesions very quickly. These good results may in some instances be temporary only. In some cases which had resisted mercurial treatment, "606" also remained inefficacious. Professor Gaucher considers that arseno-benzol is not satisfactory when there are visceral complications, and may even then do harm. Finally, he expresses the opinion that mercurial treatment must have priority over "606," the latter being kept in reserve for use in patients intolerant of mercury, or when the latter has failed.

RESIGNATION OF THE STAFF OF NEWCASTLE INFIRMARY.

The announcement in the daily press of the resignation of the honorary staff of the Newcastle-upon-Tyne Royal Victoria Infirmary must have come to many as a surprise; but it appears that for some time past there have been signs of disagreement between the House Committee and the staff. The climax was reached a few days ago, when a printed report was presented by the chairman of the In-patients Committee which the honorary staff considered contained allegations against its integrity. The staff, therefore, felt that it could not allow the report to be adopted without protest. The protest having been disregarded, the entire staff has resigned. As the resignation at the time of our going to press had not been considered by the House Committee it is impossible at this stage to foretell how events may turn out. Much of the difficulty has arisen from the manner in which in-patients are admitted. For delays in the admission of patients the great demands upon the accommodation are partly to blame. It is alleged by the chairman of the In-patient Admission Committee that the rules for the

admission of patients are almost entirely ignored, and that every member of the honorary staff acts as his own admission officer; in view of the delays in admission applicants are said to have turned to working-men governors and besought them to use what influence they could to get them admitted without delay. It is also alleged that favouritism has been shown to patients who had, on their own initiative or in conjunction with their medical practitioner, previously consulted members of the honorary staff. These and other equally uncalled-for statements in the report the members of the honorary staff have resented, and, failing to have them withdrawn, they have in a body resigned.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

SIR ALFRED KEOGH, K.C.B., presided at the autumn dinner of the Irish Medical Schools' and Graduates' Association on November 23rd. Despite the weather the company numbered over a hundred, those present including Mr. P. Brady, M.P., Dr. Mouillot, Surgeon-General W. L. Gubbins, and Mr. S. J. Duncan. The toast of the evening, that of "The Association," was in the hands of the Mr. Duncan, who referred to the disabilities under which men with Irish medical qualifications laboured, these qualifications being esteemed less highly in the free and open market than those derived from universities and medical schools in other parts of the United Kingdom. It was only in the medical profession that this Irish grievance existed. In the law, particularly at the Bar, the man with Irish qualifications was esteemed fully equal to the man from the English or the Scottish university. Moreover, the fact that medical training in Ireland was fully as efficient as medical training anywhere else was proved by the number of Irishmen who had obtained first-class positions in the army and navy medical services. This was surely, he said, a supreme test of capacity. Sir Alfred Keogh, replying to the toast, also referred to these disabilities, but he said that they were rapidly disappearing and he looked to a time, not far distant, when full appreciation would be given to qualifications obtained in Ireland. The toast of "The Guests," proposed by Dr. H. Macnaughton-Jones, was acknowledged by Mr. P. Brady, M.P., who took occasion to congratulate the medical profession not only on its devotion, but on a certain faculty of concentration which members of other professions often lacked. The great and solid work done by medical men was due in no small measure to the fact that they had not frittered away their energies upon outside interests having no relation to their special work. The final toast was "The President," which was accorded musical honours. In responding, Sir Alfred Keogh said that although drawn from all Ireland, and widely divided in religion and politics, no differences due to those subjects disturbed the harmony of the association.

THE EHRLICH-HATA REMEDY.

DURING the past few weeks the leading medical journals in Germany have published a large number of new articles on the action of Ehrlich-Hata's remedy for syphilis. With certain reservations—important reservations, no doubt, as will be seen—the general results of the continued observations with this drug agree with those expressed in the earlier articles. Each author speaks of extraordinary symptomatic improvement, of rapid clearing-up of threatening signs, and of wonderful healing processes. Relapses and recurrences of symptoms figure but sparsely in these new reports, and it is stated that no accidents or serious ill effects follow the use of the medicament. Before the effect on cases of syphilis is examined more closely a brief reference to two articles should be made. In the first Professor Gerber[1] deals with the power of "606" in clearing off the spirochaetes of the mouth. He found in 3 carefully observed cases that the remedy had a distinct destructive influence on the spirochaetes of the mouth, and further that at first a parallelism existed between these spirochaetes and the *Spirochaeta pallida*, as far as the effect of "606" on them was concerned. He suggests utilizing this action as a criterion of the effect which the drug is exercising on the syphilitic parasite within the organism. The second article is one by Dr. M. Gioseffi, of Trieste,[2] who reports that after studying a case of leprosy treated with the Ehrlich-Hata remedy, in which the Wassermann reaction was strictly negative from the first, no influence was noted on the course of the disease, and nothing approaching the granular degeneration of the bacilli like that described by Ehlers could be discovered. A number of authors—Montesanto,[3] Hausmann,[4] A. Geronne,[5] Gennerich,[6] and Touton[7]—advocate intravenous medication, either associated with subcutaneous injections, or alone. The idea is that it is desirable to act as energetically on the syphilitic parasite or its products as possible, while to a smaller extent the fact that the intravenous application is painless also influences some clinicians. Pasini[8] advises giving the drug in suspension in *adeps lanae anhydricus* and *vaselinol*. The method which he describes appears to be somewhat cumbrous, and not likely to gain popularity. In regard to the dangers and ill effects of the intravenous injections, there is almost complete agreement. A general reaction takes place in a certain number of cases, but this is not of consequence provided the patient is not suffering from advanced disease of the central nervous system or of the arteries, or from severe forms of diabetes. The reaction at times is somewhat alarming, but passes off rapidly. Several authors, including Treupel,[9] Willige,[10] Frenkel-Heiden,[11] Touton,[12] and others, record excellent results obtained in syphilis of the central nevous system. The majority find that only symptomatic improvement occurs in tabes, and that not more is to be expected from treatment by "606" than from treatment by mercury. Still more emphatically do some authors, such as C. Hirsch,[13] extol the remarkable results obtained in syphilitic processes of the eye, while Kowalewski[14] speaks of the occurrence of optic neuritis, as a recurrence of the syphilitic process after the injection of "606." Chrzelitzer[15] has nothing but good to report as to the action of the drug, while H. Ritter[16] speaks in scarcely less favourable terms. K. Zieler[17] is less enthusiastic, but regards Ehrlich's preparation in many respects as more active and more powerful than mercury. Hecht[18] considers that the drug does not act only by killing the spirochaetes, but that it stimulates the organism to produce protective substances, and assists it to battle against

[1] Gerber, *Deut. med. Woch.*, No. 46, 1910.
[2] Gioseffi, *Muench. med. Woch.*, No. 48, 1910.
[3] Montesanto, ibid., No. 49, 1910.
[4] Hausmann, ibid., No. 48, 1910.
[5] Geronne, *Berl. klin. Woch.*, No. 49, 1910.
[6] Gennerich, ibid., No. 46, 1910.
[7] Touton, ibid., No. 49, 1910.
[8] Pasini, *Muench. med. Woch.*, No. 47, 1910.
[9] Treupel, ibid., No. 46, 1910.
[10] Willige, ibid.
[11] Frenkel-Heiden, *Berl. klin. Woch*, No. 45, 1910.
[12] Touton, loc. cit.
[13] Hirsch, *Muench. med. Woch.*, No. 49, 1910.
[14] Kowalewski, *Berl. klin. Woch.*, No. 47, 1910.
[15] Chrzelitzer, *Muench. med. Woch.*, No. 48, 1910.
[16] Ritter, ibid., No. 43, 1910.
[17] Zieler, ibid., No. 47, 1910.
[18] Hecht., ibid., No. 49, 1910.

the infection. Munk[19] comes to the conclusion that the substances on which the Wassermann reaction depends are not produced by the living spirochaetes, but in all probability by their disintegration products. "606" has no effect on these substances. It follows, therefore, that the Wassermann reaction in general terms cannot reveal the effect of the injections of "606" until at least six or eight weeks have passed. Rosenthal[20] strikes a warning note against exaggeration. He and some others have come to the conclusion that the remedy does not effect a sterilization of the body in respect of spirochaetes after one injection. Most of the writers believe that symptomatic cure can be gained by repeated injections, and Gennerich[21] frequently follows the injection up with a few calomel injections. That only with repeated injections can syphilis be definitively cured by "606," if at all, appears to be the opinion of several, while Hecker[22] goes even so far as to utter a note of warning against acceptance of the optimistic belief that "606" cures syphilis. Some urge the employment of local remedies as well as the injections. Finally, all who have had large experience are inclined to express themselves with caution as to the ultimate result of the present method of applying the remedy. Nevertheless, the vast majority of observers still hold that Ehrlich has done the highest service in introducing another powerful remedy for syphilis, which is doubtless of great value in special cases. A French view of the effect of the remedy will be found in the Paris Letter (p. 1942); reference is also made to the subject in a leading article which appears on p. 1932.

THE DESTRUCTION OF RATS.

THE Board of Agriculture and Fisheries has just issued a leaflet (No. 244) on the destruction of rats. It is pointed out that the females, both of the black rat and the brown or sewer rat, breed at a very early age. Though they go with young for six weeks, they have several litters in a year, comprising from six to fourteen young. Apart from their capacity of communicating plague to man through the fleas by which they are infested, the damage done to food and houses warrants the destruction of these animals by hunting, trapping, or the use of poisons or rat virus. Of the poisons, barium carbonate is said to be one of the cheapest and most effectual. It causes thirst, and therefore induces the rats to seek water in the open, where they die. It may be employed in the proportion of one part to four parts of meal mixed to a dough with water, or it may be spread on fish or moist toasted bread. It is added that rats if they find any of their fellows die after eating any kind of food avoid such food for some time, so that it is generally necessary to vary the form and appearance of the bait. Apart from the risk of prosecution under the Poisoned Grain Prohibition Act, 1863, and the Poisoned Flesh Prohibition Act, 1864, care should be taken that poisoned baits are only laid by authorized and responsible persons, their whereabouts being carefully reported. With regard to rat virus, the results are described as uncertain, owing partly to the difficulty of securing a successful infection in all cases, and partly to the fact that if only slightly infected, rats recover and become more or less immune to the disease. When it is proposed to exterminate the rats in a large district, all methods should be employed, and the attack made in a circle radiating from a spot in which it is considered that the final work of destruction can be accomplished with the least difficulty. Copies of the leaflet can be obtained free of charge on application to the Secretary of the Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W.

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[19] Munk, *Deut. med. Woch.*, No. 43, 1910.
[20] Rosenthal, *Berl. klin. Woch.*, No. 47, 1910.
[21] Gennerich, loc. cit.
[22] Hecker, *Deut. med. Woch.*, No. 46, 1910.

A NEW THEORY OF MAN'S ORIGIN.

ACCOUNTS are beginning to appear in the English press of a remarkable theory of man's origin recently formulated by Hermann Klaatsch, Professor of Anthropology in the University of Breslau. He is a voluminous writer, and has contributed more than a fair share to the extensive literature descriptive of palaeolithic man which has appeared in Germany during the last ten years. As our readers are probably aware, four skeletons of palaeolithic man have been discovered in France during the last two years. With the discovery and description of two of these Professor Klaatsch was closely concerned; indeed, the theory of man's origin which he has now formulated arose from observations he made on these two ancient skeletons. The first skeleton (the Moustierien) investigated by him was of the same type as the Neanderthal man; the vault of the skull was low, the eyebrow ridges prominently developed, the face large, the impressions on the base of the skull for the attachment of the neck muscles greatly pronounced, the limb bones short, stout, and massive. The second skeleton (the Aurignac) was found in a stratum which, from the character of the palaeolithic flints and other remains of palaeolithic civilization, is counted more recent than that in which the Moustierien skeleton was found, and evidently belonged to a race which had followed the older or Neanderthaloid race. This Aurignac or newer race is much more like the modern European, the vault of the skull being high, the supraorbital ridges not pronounced, and the basal impressions for the neck muscles of the modern form and the bones of the limbs rather of a long and slender type. Professor Klaatsch was so impressed by the superficial resemblance of the Neanderthal man to the gorilla and of the Aurignac man (the human remains found at Galley Hill, near Gravesend, are of the same type) to the orang, that he has formulated a theory of double origin for the human race. The gorilla and the Neanderthal race are, he suggests, co-descendants of one branch of a basal anthropoid stock, while the orang and the Aurignac race are co-descendants of another branch. We expect a great deal from evolution, but we do not remember a theory which has made such a demand on the ingenuity of Nature, and on the ingenuousness of the scientific public, as this theory now promulgated by Professor Klaatsch. That the orang and gorilla may have diverged and become the distinct genera which they now are can be understood, and that from the basal stock of the one or the other man may have arisen, can be accepted as a working hypothesis; but that from the basal stock of two such different genera Nature could produce two stocks of men which in the process of time converged, and at last fused in one species, seems somewhat incredible. The writer who introduced this theory to English readers in a recent issue of *Nature* (November 24th, p. 120), described anthropoid apes as "unsuccessful attempts and dashes forward towards the goal of the definite creation of the human race." He had evidently in his mind some of the later literature on Arctic exploration; the theory he introduces has some resemblance to the account given by a recent explorer who claimed to have reached the Pole.

THE PATHOGENESIS OF DIABETIC COMA.

AT a recent meeting of the Berlin Medical Society (November 23rd, 1910), Professor Ehrmann referred to the commonly accepted view that diabetic coma depends upon acidosis, on the basis of the analogy thought to exist between diabetic coma and the condition of a rabbit intoxicated by the injection of a large dose of any mineral acid. In his opinion this analogy is vague, as all the symptoms of diabetic coma are not present in the acid intoxication of the rabbit; in a series of experiments performed by the reporter in association with Dr. Esser, also on the rabbit, he has succeeded in producing true coma without administering to the animal any trace of acid, but by employing sodium butyrate, a feebly alkaline compound which administered in suitable doses reproduces experimentally all the symptoms of coma, even those which are less generally known. An animal so treated becomes apathetic and unconscious, its respiration is slowed to half the normal number, its expiration is prolonged, and the respiratory waves are large. The tension of the eyeball is diminished as in diabetic coma, while the urine contains diacetic acid and beta-oxybutyric acid. The blood shows diminution of its alkalinity and of carbonic acid, but the diminution of carbonic acid is in his opinion not important in the production of coma, for it was observed in the control animals treated with substances incapable of determining coma, such as sodium isobutyrate, which is identical in chemical composition with normal butyrate and sufficiently analogous in many of its physico-chemical properties, the fact that it is impossible to cause coma by equivalent doses of isobutyrate is held to prove the specific action of butyric acid. Moreover, the rabbit is not the only animal which can be rendered comatose by its means, for as Marx has shown, it is produced also in the dog, provided the animal is young and has been fasting before the experiment. On the other hand, acid coma has only been demonstrated in the rabbit, although carnivorous animals naturally present a greater resemblance to man. In conclusion, the reporter urged that the whole question of the production of diabetic coma should be reopened.

THE RELATIVE GERMICIDAL POWERS OF SOME ESSENTIAL OILS.

ALTHOUGH many of the essential oils in medicinal use are generally regarded as possessing considerable value as antiseptics, little information has hitherto been available as to their comparative germicidal power, or their relation in this respect to other antiseptics. The fact that many of these oils contain a large proportion of bodies homologous with phenol, or otherwise closely related to it, is a sufficient justification, on chemical grounds, for ascribing antiseptic properties to them, but throws very little light on their respective values, as the relative germicidal powers of the higher phenols themselves have not been established. In a paper appearing in the current number of *The Perfumery and Essential Oil Record*, Mr. W. H. Martindale, Ph.D., gives an account of experiments carried out on the antiseptic powers of a number of essential oils of known purity, and containing known proportions of their principal constituents, and the results are of some interest, and in certain cases somewhat surprising. The method of testing adopted followed that of Rideal and Walker in its general principles, the organism employed being *B. coli communis*. Aqueous solutions of the oils were employed in one series of tests, and "saponaceous solutions" in another; the object of the latter was to provide dilutions of the oils stronger than could be obtained by merely dissolving in water, but the value of the results is diminished by the fact that no particulars are given of the composition or mode of preparation of these "saponaceous solutions," which are also referred to as emulsions. It is generally believed that when emulsions are used the germicidal powers of the emulsified substance are supplemented by the effects of the physical condition of the particles, and unless precisely similar emulsions are used in all cases (which is practically impossible with oils of different nature) the comparative results may be no criterion of the relative antiseptic powers of the oils when in solution. The bacilli were submitted to the action of the antiseptic solution for two minutes and for thirty minutes, and the results compared with those given by phenol in the usual way; the carbolic acid coefficient was calculated separately from the two minute and thirty minute tests, and the mean of these values taken. The highest activity was shown by origanum oil, which is assigned a coefficient of 25.8; the specimen of oil used contained 82 per cent. of the phenol carvacrol, but this phenol when tested alone only showed a coefficient of 21.3. Thymol had a coefficient of 19.4, and oil of thyme containing 40 per cent. of thymol, 13 to 15. Oil of cloves, which contained 90 per cent. of the phenol engenol, only gave a coefficient of 8 9, while oils of wintergreen and eucalyptus, which are generally supposed to have rather high antiseptic value, showed respectively 4.6 and 3.5; it appears that eucalyptol is not the strongest antiseptic constituent of eucalytus oil, since its coefficient was only found to be 3.8, while a sample of oil from *E. amygdalina*, which contains less of this constituent, gave 4.3. Of all the essential oils examined—about twenty in number—oil of sandal wood showed the lowest co-efficient, namely, 1.7; of tar oils, birch tar oil gave the same figure, and oil of cade showed a coefficient below 1. In the table contained in Dr. Martindale's paper the coefficients are given to two decimal places; but as the second decimal clearly can have no significance, and the detailed results show that the first decimal figure is at best extremely doubtful, we have omitted the former in quoting the figures above.

INTESTINAL OBSTRUCTION AFTER VENTRIFIXATION OF THE UTERUS.

THE treatment of uterine displacements is still a subject about which there is great difference of opinion. Members of the British Medical Association will remember the instructive discussion on the question introduced by Dr. Herman at the Sheffield meeting in 1908.[1] Altogether, ventrifixation seems to be the most popular operation, at least as a remedy for retroflexion. In cases of prolapse few gynaecologists consider it sufficient to ensure success, but many operators practise it in combination with plastic operations on the vagina. Whether the uterus be fixed with or without the latter procedure, the possibility of intestinal obstruction must ever be borne in mind. Let us trust that cases of this complication are not allowed to fall into oblivion. Dr. Guggisberg, of Berne, has set us a good example by reporting a case.[2] He observes that, roughly speaking, there are two methods for suspending the uterus. Olshausen advocates the passage of the suture through the uterus at the point of the attachment of each round ligament,

[1] Discussion on the Treatment of Uterine Displacements, JOURNAL, vol. ii, 1908, p. 790.
[2] Darmeinklemmung nach Ventrifixation, *Zentralbl. f. Gynäk.*, No. 39, 1910, p. 1262.

the pair of sutures being made fast to corresponding points in the parietes. It would be thought that intestine could hardly slip between the parietes and the greatly shortened round ligaments, but experience shows that this formidable complication may occur. Olshausen admits one instance in his own practice, and Dr. Guggisberg reports a similar mishap. Theoretically the other method—the Leopold-Czerny operation—would appear far less safe than Olshausen's. The fundus of the uterus alone is fixed to the parietes. It is now known that a band is apt to develop which may be dragged down by the weight of the uterus, forming a *ligamentum uteri tertium*. Howard Kelly includes in his *Operative Gynaecology* a most instructive drawing of a uterus as seen a year after suspension. In that instance there were two such "ligaments," which meant failure of the object of the operation, whilst a glance at them is enough to make any one experienced in abdominal surgery shudder. Two cases of obstruction were reported some time ago, whilst more recently a third was published; in the latter resection was successfully performed. Guggisberg's experience is worth remembering. He operated last February on a woman aged 26, who had borne six children; all her labours were complicated owing to contracted pelvis, and the uterus was retroflexed. The uterus was fixed after Olshausen's principle. A silk suture was brought three times round each round ligament at its uterine insertion and passed through peritoneum, muscle, and fascia, its ends being tied against the fascia. The Fallopian tubes were excised in order to sterilize the patient. Within five months this patient was readmitted into hospital as an emergency case. Acute symptoms had come on a few hours earlier, when the patient was pushing a heavy perambulator, but there had already been signs of obstruction. On opening the abdomen over 11 in. of small intestine, deeply congested, were found to have slipped between the round ligaments and the parietes. Yet those ligaments still remained fixed to the parietes at their uterine attachment, just as they had been sutured. The adhesions were divided and the bowel replaced; resection was not deemed necessary, as peristalsis was not abolished, and the patient was saved. Dr. Guggisberg dwells on several modifications of ventrifixation, but they are well known to our readers, and more than one British authority has devised methods which Continental writers seemed to have overlooked. It is clear that the round ligaments may become stretched below the point of fixation, sufficiently to allow intestine to slip under the points of suture, and that is the essentially important feature in Dr. Guggisberg's report.

NON-TUBERCULOUS PYOSALPINX IN VIRGINS.

SCIENTIFIC gynaecology is a plant of very recent growth, but it has already borne fruit. Perhaps its cultivators have trumpeted the virtues of its produce a little too loudly, but they can tell of other matters than radical operations for uterine cancer and the precise indications for Caesarean section. The close relation of suppuration of the Fallopian tube to abortion, puerperal complications, and gonorrhoea has been well established. Pyosalpinx is also associated with tubercle. Comyns Berkeley and Dymock Turner verified this long-suspected fact when they showed that in a large proportion of necropsies on subjects who had died of phthisis in the Brompton Hospital the Fallopian tubes were infected with tubercle. Cullingworth, on the other hand, was among the first to teach, on the ground of long clinical and pathological research that tubal disease in virgins is usually tuberculous. It has been felt that such a statement requires scrutiny, for tuberculosis is, on ethical grounds, uncompromising when it occurs in single women, whilst the case is quite otherwise in respect to any pathological condition where the gonococcus or germs associated with the puerperium are essential factors in its production. A non-tuberculous pyosalpinx, however, it is now known, is not always a sequel of pregnancy or gonorrhoea. The close relation of appendicitis to tubal disease has been recognized for over twenty years, and Loewenhart recently collected reports of instances in which the tube became inflamed although the vermiform appendix had not suppurated. Bégouin of Bordeaux discussed the subject of non-tuberculous pyosalpinx in the virgin at the recent meeting of a medical association at Toulouse.[1] His experience about appendicitis and pyosalpinx agreed with Loewenhart's records, but he surprised an actually suppurating appendix *flagrante delicto*. The patient was 15, and suffered from a characteristic attack of suppurative appendicitis; the appendix was in contact with the right Fallopian tube, which was thickened, and pus oozed from the ostium on pressure. Bégouin, however, observes that this type of secondary salpingitis is unilateral, and the tube is rarely closed, so that there is no true pyosalpinx. Further experience led him to consider that there may be a primary bilateral pyosalpinx in a virgin. A single lady aged 33 came under his care for recurrent appendicitis. He operated and found the appendix the seat of simple inflammation of its mucosa and muscular wall, without any periappendicitis, nor did the appendix touch the Fallopian tubes. Yet there was double pyosalpinx, the tubes being as big as Tangerine oranges. No trace of tubercle could be detected and no germs, at least no aërobic microbes, were discovered. The patient recovered from the operation for removal of the diseased parts and has been free ever since from any clinical evidence of tuberculosis. Bégouin admits that this case is not absolutely clear, nor will others feel certain that the appendix might not have been to blame during some earlier attack of inflammation. A second instance of pyosalpinx under his care seemed more authentic. The patient was a young lady aged 16, under his treatment for an attack of pelvic inflammation. She had been in perfect health, and was quite free from tubercle. Bégouin therefore suspected axial rotation of a small ovarian dermoid, for there was a mass in the pelvis. He operated, and discovered a most characteristic double pyosalpinx, and removed the uterus as well as the appendages. There was accidental infection beyond the field of operation, and severe febrile symptoms followed, but the patient one year after convalescence was in perfect health. The walls of the tubes were examined at several points, and found free from Koch's bacillus and giant cells. The pus from the tubes held anaërobic microbes in abundance, but none of any aërobic species. Bégouin was doubtful about the source of infection, but thought that it was probably of the ascending type. Both his patients had been subject to severe leucorrhoea, and the second admitted that the discharge had become fetid. Germs must have entered the vulva infecting the discharge. He supports his theory from Riedel's researches. In 49 abdominal sections for acute appendicitis performed on female children under 10 years of age, that observer discovered purulent salpingitis in no less than 9, the appendix being healthy. In 2 out of the 9, where the pus was properly examined, streptococci were detected.

[1] "Des pyosalpinx non-tuberculeux chez les vierges." Report of meeting of the Congrès National de Gynécologie, d'Obstétrique et de Paediatrie, Toulouse, September, 1910. *Annales de gynéc. et d'obstét.*, October, 1910, p. 663.

Bégouin holds that his cases represented milder attacks of the same disorder. Infection from leucorrhoeal discharge ascended the genital tract and attacked the Fallopian tubes, which fortunately became obstructed, so that peritonitis, fatal in Riedel's subjects, did not occur.

RENAL SURGERY AND PREGNANCY.

THIS interesting theme—the effects of an operation on the kidneys during pregnancy and its effects on future pregnancies—was made the subject of a discussion at a recent meeting of a French Congress.[1] Pousson of Bordeaux found that patients subjected to nephrectomy fared about as well as most women when they became pregnant. Out of 66 such cases, 59 were delivered at term, leaving but 7 miscarriages, and most of the patients suckled their children, one actually becoming a professional wet-nurse. Pinard made an important statement. Tuberculous disease of the kidney is a malady which we associate with very sickly young women. Yet it may be cured by nephrectomy, and the patient, should she conceive, may pass through a normal pregnancy. Israel has reported no less than 15 pregnancies in a series of 8 of his own cases from whom he had removed a tuberculous kidney, and declared that in none were there any of the complications of pregnancy, and that in all labour was normal. Hartmann, who quoted Israel in the course of the discussion, read an instructive communication on 113 cases of renal operations, 35 during pregnancy and 78 followed sooner or later by pregnancy. In the 35 he included Cragin's vaginal nephrectomy for the removal of a displaced cystic kidney in the pelvis obstructing labour; normal delivery occurred on the next day. In Twynam's case certain complications, hitherto absent, made the induction of labour necessary three weeks after a nephrectomy. Twenty-six more nephrectomies during pregnancy were included; 2 proved fatal, but one patient had uronephrosis and died of eclampsia on the second day, and the other had phlebitis already before the removal of the kidney. Out of the remaining 24 the pregnancy continued till term in no less than 22. In 4 out of 5 nephrotomies in pregnancy gestation continued to term, but the remaining case died on the second day after premature labour. One nephropexy and one incision into a perinephritic abscess during pregnancy were not followed by premature delivery or any other complications. Hartmann also recorded his collection of 78 cases where pregnancy followed renal operations. Out of 74 nephrectomies 72 became pregnant to term from one to four times and 2 aborted. Two only died in the puerperium, one with eclampsia, the other with anuria, without convulsions; thus, in seventy instances a single kidney did very well throughout gestation, which was sometimes repeated. Out of three women who had undergone nephrotomy, one had a miscarriage, one became pregnant twice to term, and one three times, also to term on every occasion. The last case was a bilateral decapsulation, and it is interesting to bear in mind that the patient afterwards became pregnant once, and was delivered at term. A good special report of the after-histories of patients treated after Edebohls's method is much to be desired. What supplies the place of the capsule, and how does the deputy capsule answer in respect to the renal functions? Altogether, renal surgery seems distinctly favourable to normal gestation.

[1] Report of the Congrès National de Gynécologie, etc. Toulouse. 1910. *Annales de gynéc. et d'obstét.*, October, 1910, p. 674.

LEBANON HOSPITAL FOR THE INSANE, ASFÛRIYEH.

IN this week's SUPPLEMENT (page 458) is printed an abstract of the annual report of Dr. H. Watson Smith, the Medical Superintendent of this international, Christian and philanthropic institution, which was founded by Theophilus Waldmeier, and opened in August, 1900. Till then there was no asylum in the whole of Palestine, nor, indeed, between Constantinople and Cairo. Beliefs in devil-possession prevailed, and to this day, Mr. Waldmeier says, there are no other words for mental diseases than *sikuy* (possessed) and *majnoon* (demon-possessed). Exorcism was practised, the patients kept bound in chains, and closely confined in convents and elsewhere. For the history of this beneficent institution we would refer readers to the successive annual reports, which may be obtained from the Secretary of the Lebanon Hospital for the Insane, 35, Queen Victoria Street, E.C.: but, as showing the growing estimation in which the work is held in Syria, it may be mentioned that the receipts for patients have risen from £153 for the year 1900–1 to £2,007 for the year 1909–10. Side by side with this increasing appreciation of its value, however, the demands made upon the institution are growing also. As Dr. Sandwith said at the last annual meeting, the asylum can never become self-supporting unless it become a private institution for the wealthy instead of for the poor. As it receives no financial help from the State, it is likely to remain largely a charitable institution, and as such we cordially commend it to the notice of our readers.

"LOCAL ANAESTHETICS IN DENTAL SURGERY."

IN a paragraph under this heading published in the JOURNAL of November 26th, page 1734, discussing a recent action at the Bolton County Court, it was stated that the witnesses for the defence "maintained that neither the preparation of the gum nor sterilization of the instruments was either necessary or usual." We are informed that the medical witnesses for the defence did not take up this position, and did not state that the sterilization of the instruments was neither necessary nor usual. We have therefore to express our regret that the statement above quoted, which we are satisfied is incorrect, should have appeared in the JOURNAL.

GENERAL ELECTION.

MEDICAL MEMBERS OF PARLIAMENT.

THE following are among the list of successful candidates possessing medical qualifications whose elections have been announced up to the time of going to press:

England.

*Dr. Christopher Addison (L.), Hoxton.
*Mr. C. H. Dixon (U.), Boston.
*Sir G. H. Pollard (L.), Eccles.
*Sir R. J. Price (L.), East Norfolk.
*Sir G. Scott Robertson, K.C.S.I. (L.), Central Bradford.

Scotland.

*Dr. W. A. Chapple (L.), Stirlingshire.
*Sir Robert Finlay, K.C. (U.), Edinburgh and St. Andrews.
*Dr. A. R. Rainy (L.), Kilmarnock.

Ireland.

*Mr. J. Dillon (N.), Mayo East.
*Mr. A. Lynch (N.), West Clare.

* Represented the same constituency in the last Parliament.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.

As briefly reported in the last issue of the BRITISH MEDICAL JOURNAL (p. 1881) the Education Committee of the London County Council discussed on December 7th a report in which some particulars were given with regard to the working of the Council's scheme for medical treatment through the agency of the hospitals. The report, and the discussion upon it, are of sufficient interest to be given in greater detail.

The Children's Care Subcommittee stated that the agreements with the six hospitals which were the first to accept the Council's scheme would expire during the Christmas recess. The promise to submit a report in which the first year's working of the scheme would be reviewed in the light of the experience gained, had not been forgotten, but most of the agreements with the hospitals fell far short of a year, and sufficient time had not elapsed to enable a considered judgement to be formed upon the merits of the scheme. A section had the question under consideration, and would report later. Meanwhile it was necessary to deal at once with the renewal of the agreements with the Belgrave Hospital for Children, the Charing Cross Hospital, the Hospital for Diseases of the Throat, the London Hospital, Metropolitan Ear, Nose, and Throat Hospital, and the St. George's Hospital. The subcommittee was not able to give full particulars as to the attendance of the children at these hospitals, but from a sample of cases taken at random it appeared that upwards of 85 per cent. of those who attended continued attendance until they were discharged. It was probable that a proportion of the remainder obtained treatment, but, not presenting themselves at the hospital, were returned as having ceased attendance before being discharged.

Amendments of the Hospital Agreements.

The subcommittee went into detail in regard to the agreements with each of the six hospitals. The Belgrave Hospital promised to provide treatment of 880 eye and 880 ear, nose, and throat cases during the year. During the period the agreement had been in force just over 500 cases had been treated in each department, but 670 cases should have attended in each department after making allowance for holidays. The subcommittee thought the governing body should be asked to regard its present number of cases as the minimum, and to be prepared to treat further cases up to a maximum of 2,640, or twice as many as at present. Charing Cross Hospital undertook to treat 1,000 eye, 1,000 ear, nose, and throat, and 200 ringworm cases. So far, 1,104 children had attended, and the full number who should have attended was 1,734. Although this hospital was central and easily accessible, there were within a reasonable distance other hospitals, not included in the Council's scheme, where free treatment was available, and to these many parents had had recourse. In this case the subcommittee recommended a reduction in the number of cases to be referred to the hospital to 500 ear, nose, and throat, 440 eye cases, and 200 ringworm cases. At the Hospital for Diseases of the Throat the Council had paid 4s. for each case. There was no provision in the agreement as to numbers nor as to the payment of the medical staff. It was provided, however, that the staff should be qualified. Between January 24th and October 31st, 1910, 131 children attended, and it was estimated that from 100 to 200 would attend annually. As parents in this district had a wide choice of hospitals, at some of which free treatment was given, no number should be guaranteed to this hospital. At the London Hospital, between January 17th and October 31st, 2,150 children attended the ophthalmic department, 1,331 children in the ear, nose, and throat department, and 198 children in the skin department; total, 3,679. The agreement with the hospital provided for 3,654 cases in this period. This hospital was available for an extensive and thickly-populated area of very poor people, and there was no difficulty in securing the attendance of large numbers of children. In the aural department there was at present a large waiting list. The subcommittee estimated that in this district 9,600 children would require treatment for ear, nose, and throat ailments; 3,800 for affections of the eye; and 950 for skin diseases. The governing body of the London Hospital should be asked to arrange for the treatment of a minimum of 3,000 ear, nose, and throat cases, 3,000 eye cases, and 250 ringworm cases annually, and for the treatment of further ear, nose, and throat cases up to a maximum of 6,000. The present agreement should continue until the hospital was prepared to deal with the whole or part of the increase. At the Metropolitan Ear, Nose, and Throat Hospital, which agreed to take cases up to a maximum of 500, 222 children had attended so far with the Council's voucher cards. The governing body of the St. George's Hospital (whose agreement covered 700 ear cases, 1,100 eye cases, and 200 ringworm cases) had dealt with 1,068 children between January 17th and October 31st, and did not desire to renew the agreement, although, to avoid inconvenience to the Council, it would continue a few months longer. The King's College Hospital had also intimated that it did not desire to renew its agreement when it expired next month. The subcommittee recommended that the agreements with the six hospitals be renewed for twelve months, except in the case of the St. George's Hospital, in which six months was suggested.

Discussion.

Mr. Bray moved an amendment to renew the agreements for six months only. He strongly criticized the way the scheme had been carried out, and stated that no attempt had been made to get detailed information from the hospitals as to whether treatment had been carried out effectually. Members of the Council heard constant complaints that in certain hospitals children had been treated unsympathetically; that children had been discharged too soon and had been found bleeding in tramcars; and that children were sometimes treated by inexperienced persons. There might be nothing in these charges, but the Council could not say so because it had taken no steps to find out. Mr. Bray asked, further, whether it was not a fact that in one hospital money paid by the Council as salary to a clinical assistant had been diverted to the hospital funds.

Miss Adler seconded, and said that the recently issued report of the Medical Officer to the Board of Education contained many criticisms of the Council's scheme of medical treatment which deserved careful consideration. She believed the hospitals themselves felt the very great difficulties inherent in the present scheme; there were great irregularities in the attendance of the children at the hospitals, due to the difficulty parents found in taking them sometimes as many as three times. Sometimes, owing to shortage in the number of children the time of the doctor was wasted; if, on the other hand, too many children came some had to be sent away without treatment. She believed these difficulties could not be avoided in the hospitals' scheme, but perhaps something could be done by getting school nurses to accompany the children, and by bringing the school doctors into closer co-operation with the hospitals. Criticising points of detail Miss Adler said the committee proposed to send a far larger number of children to the London Hospital, but it did not know whether the authorities of the hospital could deal with them, and no suggestion was made that a special department should be established.

Mr. Cyril Jackson said he was sorry the information on the paper was not fuller, but there had been great pressure of work at the education offices in connexion with this scheme. He assured the committee that any complaints which had been made had no reference to the six hospitals whose agreements were at present under consideration. It would be a breach of the

initial arrangement if the agreements were renewed for six months only.

Mr. H. E. A. Cotton thought the radical defect of the whole scheme was that the Council had no right to supervise the treatment at the hospitals; he also gave some instances of children having to be taken long distances to the hospitals.

Mr. Sanders spoke strongly of the "fatal blunder" the committee and the hospitals had made in turning voluntary institutions into institutions demanding payment. A conference of workmen was about to be called with a view of starting an anti hospital Saturday and Sunday fund agitation in London. Workmen said they contributed to various funds to the hospitals, by workshop collections and otherwise, and now when their children went to these hospitals for treatment they had to pay over again. It was a scandal that children should have to wait, as he knew they had in some cases, from 2 o'clock till 7 or 9 before being attended to. The hospitals were being put on the rates, and, as in the case of the feeding of necessitous children, it would be found that the effect of this would be to make voluntary funds dry up.

Mr. Anderton assured the committee that no complaints had been made with regard to the treatment at these six hospitals, and it was decided by a majority of six to recommend the Council to renew the agreements for twelve months.

THE BOARD OF EDUCATION AND THE COUNCIL.

It was reported at the meeting of the Education Committee of the London County Council on December 14th that two letters had been received from the Board of Education—one with reference to the reply of the Council to the Board's criticisms of the existing arrangements for medical inspection (BRITISH MEDICAL JOURNAL, October 29th, p. 1364), and the other on the proposals for beginning dental treatment at the Deptford Children's Health Centre and the Poplar Hospital for Accidents (BRITISH MEDICAL JOURNAL, October 15th, p. 1180).

Reorganization of Medical Inspection.

In the first letter the Board stated that the question whether the Council's arrangements for medical inspection were adequate and satisfactory was one which could not be considered merely in relation to the number of officers employed and the number of inspections which each officer might be able to carry out, and the Board was not yet in a position to express any considered opinion on the question. The Board reminded the Council that investigations had disclosed a great lack of that organization, direction, and control of the medical staff which was essential in dealing with the enormous area and numbers involved in the case of London schools, and particularly when the work was attempted by means of part-time school doctors. The Board could not find in the Council's reply to its previous criticisms any clear indication of the means by which the Council was remedying, or was proposing to remedy, these defects. The effectiveness of the increased staff described must depend upon the instructions under which the scheme was worked henceforward and the manner in which those instructions were observed in practice. The Board presumed, though this was not stated, that detailed instructions had been given already by the principal school medical officer to secure that the work of inspection was being regularly and conscientiously carried out on a definite system designed to cover the ground effectively, and that such a system was in actual operation all over London. The Board could only express the hope that when the working of the new arrangements came to be examined it would be found that the urgent needs of the metropolis in respect of medical inspection had been adequately provided for at last.

The Dental Treatment Experiment.

With regard to the proposal for dental treatment, the Board wrote that while it recognized that it was essential to proceed tentatively in attacking the problems with which the Council was confronted in the sphere of medical treatment, there existed an obvious and relatively pressing need that some early action should be taken to deal with those defects which seriously threatened the physical welfare of the children. The Board had been willing, therefore, to sanction certain experiments in the matter of medical treatment. It was necessary, however, that the Council should understand that the Board now felt it imperative to adopt a more critical attitude in regard to the Council's proposals, and, in particular, that the time was approaching when it would be unable to sanction the adoption of further schemes, even on an experimental basis, unless each particular scheme of treatment proposed had been (*a*) carefully thought out as regards all important details; (*b*) was so framed as to furnish full and definite information on the particular matters with which the experiment was concerned; and (*c*) had been devised so as not to hamper or embarrass the local authority in adopting any comprehensive system of treatment which might commend itself to them in the future. The Board could not too strongly impress on the Council that any satisfactory system of treatment of necessity must rest and be contingent upon adequate arrangements, in real working order, for regular medical inspection. As regards the proposals now in question, the Board had considerable doubt whether the three conditions just laid down were satisfied even approximately. For instance, it was doubtful whether the Council, in deciding to apply the dental treatment scheme to children of 8 and 9, had selected the most appropriate age group for conservative dental treatment. The Board noted, of course, that one of the Council's reasons for selecting this group was that arrangements were contemplated for the general medical inspection of children at this period, and that it was expected that the school doctors would be able then to select children for dental treatment. For two reasons, however, the Board doubted the wisdom of basing dental treatment upon the general medical inspection of a third age-group. In the first place, it might prove impossible for the authority to inspect this group in addition to entrants and leavers. The latter was compulsory, but the optional inspection might have to be postponed or only partially carried out. In the second place, experience showed that the findings of school doctors engaged in general inspection could not be adopted in any considerable degree as the basis for arrangements for conservative dental treatment. Reliance on this source of information involved risk of embarrassment and early confusion in the working of the scheme and a probable failure to discover many cases which needed, and would probably repay, conservative treatment.

In view of these and other considerations, the Board had had considerable hesitation in deciding to sanction the two proposals now before it, and the Council must not expect that the Board would be prepared to sanction for general or permanent adoption a scheme of dental treatment framed on the lines of these proposals. As they were limited in scope, of local application only, and admittedly put forward as tentative and experimental, the Board had decided to sanction the proposals, since at this juncture it would be reluctant to interpose obstacles to any scheme which, however imperfect, offered a prospect of furnishing data for the Council's future guidance. The Board accordingly sanctioned the two proposals for twelve months, subject to facilities of inspection being afforded to the Board's medical officers and to a report by the Council upon the general working of the schemes.

THE ROYAL COMMISSION ON THE FEEBLE-MINDED.

The County Council on December 13th approved without discussion—although the need for debate was made an excuse for postponement last week—the whole of the recommendations attached to a survey of the Report of the Royal Commission on the Feeble-Minded in its bearing upon lunacy administration in London.[1]

[1] BRITISH MEDICAL JOURNAL, December 10th, p. 1881.

Fees for Examining Evening Classes.

We have received the following note from a medical correspondent:

The London County Council asks doctors to examine their teachers and evening classes in home nursing, first aid, etc., and offers £1 1s. and travelling expenses for any number of candidates under twenty. There is a written paper (six questions) and *viva voce*. Each paper takes at least ten minutes to read and mark, and the *viva voce* another ten minutes. Each candidate therefore occupies the examiner for twenty minutes, and the pay 1s.! I pointed this out to the officials, and although their medical adviser reported that he considered the scale of fees "very meagre," and suggested alteration, I have just been offered examinations at the old rate. Up to last November these examinations took place at each teaching centre, and consequently one often got five to nine candidates, and was paid £1 1s.; but from that date the pupils from several centres were gathered to one school, and now it is very rare to get less than fifteen, and more often the full twenty, for £1 1s. There is one last point which illustrates the red tape of the officials. Travelling expenses up to first-class railway fare are paid. My rail fare would have come to about 2s. 6d., I stated "journey by private motor, say 1s." The answer: "No other expenses but first-class rail actually incurred are allowed."

MANCHESTER AND DISTRICT.

Manchester Royal Infirmary and Medical Women.

Several months ago considerable dissatisfaction was expressed by the medical women who had graduated at the Manchester University that no resident posts at the Royal Infirmary were open to them, and strong representations were made that they had no opportunities of post-graduate clinical work at the infirmary. The board of management at the time adhered to its opinion that it was impracticable to appoint women to the resident posts; but after repeated discussions a special subcommittee was appointed to consider the question how the post-graduate education and training of medical women could be assisted. The committee has now issued its report, and states that it is possible to create one or more non-resident posts, to be called "qualified clinical assistantships," for medical women, and also that the posts of anaesthetist and assistant director of the clinical laboratory might well be open to medical women. The following are suggested as conditions to be attached to the new clinical assistantships:

1. Only fully qualified medical women who have been students throughout their whole course at the infirmary shall be eligible, and the posts are to be tenable for six months, with an honorarium of £35 for the period.
2. Candidates are to be appointed for merit only, without any prescriptive right.
3. They shall attend at the infirmary daily from 9 a.m. to 6 p.m., except that attendance on Saturday after 1 p.m. and on Sunday shall be optional.
4. Their work shall be for two months in the women's medical wards, two months in the women's surgical wards, and two months in the special departments.
5. They shall work with and under the immediate direction of the resident medical or surgical officer and of the senior house-physician or house-surgeon of the unit, or the house-surgeon of the special department, performing the duties allotted to them by the honorary physician or surgeon in charge.
6. While in the special departments they shall assist, if required, in the out-patient department during the attendance of the honorary officer.
7. They shall assist, if required, at operations while engaged in the surgical wards or the special departments.
8. They shall live as near as possible to the infirmary, providing their own board and lodging.
9. When in the infirmary and not on duty they shall occupy the women students' room in the teaching block, and shall conform to the usual regulations and to any additional by-laws which may be laid down by the board of management.

It remains to be seen how far this will satisfy the demands of the women medical graduates of the university. The special committee evidently still adheres to the resolution that it is not practicable to appoint women to the resident posts, but the recommendations given above show that it is in full sympathy with the demand for fuller opportunities for post-graduate clinical training for women.

Midwife Heavily Fined.

Under the Midwives Act of 1902 a case was last week heard by the Manchester City stipendiary, the defendant being an elderly woman who was at one time a certified midwife, but whose certificate had been cancelled, following a suspension by the local supervising authority. Police evidence was given to the effect that between August and November of the present year she had attended several midwifery cases, for which she had been paid in some cases the sum of 7s. 6d., without a medical practitioner being present. The defendant pleaded that she had been engaged before the confinements, and had arranged only to attend with a doctor, and that the doctor had told her that she would be all right if she stayed till he came. In every case she said she had telephoned for the doctor. Evidence was given by four witnesses that the doctor only arrived the following day. It was stated that she had been fined for a similar offence last July, and on the present occasion the stipendiary imposed a fine of £5 and costs, amounting to £6 10s. in all.

WEST YORKSHIRE.

Infant Mortality in Huddersfield.

Special interest attaches to the birth notification experience of Huddersfield, since it is longer than that of any other locality, for the Corporation is still acting under the private bill which it obtained some five years ago; while before that it had obtained analogous experience, thanks to the scheme of voluntary notification introduced at his own expense by the mayor of the time, Mr. Benjamin Broadbent. Dr Moore M.O.H., has attempted to summarize for the information of his authority the effect of this Act, which expires next year, as evidenced by the rise and fall in the infant mortality rate during its operation and for thirty years previously. In the thirty years ending December 31st, 1906, the average infant mortality was 154 per 1,000 registered births, the highest infant mortality in any one year being 183, and the lowest 119. On the other hand, during the forty-five months which had elapsed at the date of the report since the Act came into full operation, the average annual mortality rate was only 99—a reduction of over 35 per cent. on the original mean. Some part of this reduced mortality may no doubt rightly be ascribed to the more favourable climatic conditions which have prevailed in the past few years, but the balance is certainly the outcome of the much greater care of infants which notification of births usually induces. Dr. Moore gives the corresponding figures for thirty-three large towns in England and Wales, which show material reduction in infant mortality during the years 1907–8–9; there are great variations, and, with the exception of those of Huddersfield's near neighbour, Halifax, they are none of them quite as satisfactory. The lowest percentages of improvement were at Swansea, 5.2, and Nottingham, 12.6, while next highest to Huddersfield and Halifax come Norwich with 31.0, and Preston with 31.3. The towns which had the highest infantile mortality, and therefore the greatest scope for reduction, do not, as might have been expected, show a larger percentage of decrease than localities in which the initial mortality was comparatively low. For example, at Brighton, where the mean infantile mortality figure during the thirty years terminating December 31st, 1906, was 146, the mean percentage reduction in the three following years was 28.8; while Croydon, with an initial mean of 125, reduced this for the three years 1907–8–9 by 27.2. On the other hand, Nottingham, with the high mean of 175, only showed a percentage reduction of 12.6; and Swansea, again with an initial mean of 155, only managed, as has been shown, to reduce this by 5.2 per cent. The tentative conclusions which the lower rates of reductions would seem to suggest are two: One is that improved climatic conditions probably do not account for the very improved results in some of the localities; another is that in towns where a higher percentage of reduction has not been obtained either notification has not been effectively carried out, or causes of infantile mortality are at work other than those which notification is intended to counteract.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

KING EDWARD'S SCOTTISH MEMORIAL.

REFERRING to the Scottish memorial to King Edward, the *Edinburgh Medical Journal* says:

We put forward the suggestion that Scotland should make its memorial to King Edward a seaside hospital on the lines of Berck-sur-Mer, where, on the sandy dunes of Normandy, the little wrecks of Paris are turned into strong, sturdy bairns. Fresh air, sea breezes, and plenty of good food cure the tuberculous little Parisians, and they will do the same for our little ones. A site should be chosen which is reasonably accessible to all Scotland; it should be on the East Coast, for that is generally admitted to be the most suitable for such cases, and the district which fits these needs best is Fife. It is the cities which will provide the cases, and Fife is readily accessible from all our large cities. On its wind-swept coast there are many suitable sites where a sanatorium could be erected, where the sandy dunes would provide the playground, and the children would get the chance which at present is restricted to the well-to-do.

This suggestion of our contemporary is well worth consideration.

COMPULSORY VACCINATION.

At the last meeting of the Town Council of Edinburgh the Public Health Committee recommended that the Council memorialize the Government on the subject of compulsory vaccination, pointing out that, as local authority under the Public Health Act, it viewed with great concern the grave danger to the community of the increasing number of children growing up who have not been vaccinated, and that steps should be taken at as early a date as possible with the view of legislation to compel compulsory vaccination. On Tuesday, December 6th, the committee received a deputation from the Edinburgh and Leith Medical Practitioners' Association, consisting of the President, Dr. T. R. Ronaldson, Dr. James Ritchie, and Dr. James Smith. This deputation pointed out that their society represented the great majority of the medical profession of Edinburgh and Leith, and that they desired to support the local authority in securing stringent measures for enforcing vaccination, if not revaccination, and in greatly restricting the exceptions in favour of "conscientious objectors." Dr. James Ritchie gave figures of German returns on the point. A subcommittee has been instructed to prepare the statistics asked for by the Town Council.

SMALL-POX HOSPITAL ACCOMMODATION IN EDINBURGH.

At a recent meeting of the Edinburgh Town Council the convener of the Public Health Committee made a statement on the proposal from the Local Government Board as to combining with neighbouring local authorities for providing additional hospital accommodation for the treatment of small-pox. The committee was satisfied as to the accommodation available for the city. What the Local Government Board suggested might entail an outlay of anything from £100,000 upwards. The cause of the Board's action was to be found mainly in a rule passed by the Local Government Board for England, establishing a quarter of a mile radius, because of aërial diffusion of infection. The convener indicated the difficulty of applying this rule to Leith, and suggested that that was the reason for the proposed co-operation of Edinburgh with other local authorities. He also read a letter from Dr. John M. Bowie, the Honorary Secretary of the Edinburgh and Leith Medical Practitioners' Association, in which the opinion was strongly expressed that if compulsory vaccination and revaccination were enforced, there would be no necessity for a joint hospital for small pox, and that in any case Edinburgh was already sufficiently provided for. Mr. Stevenson said his experience, gathered from people who came to him as a justice of the peace to claim exemption, had opened his eyes as to the number of persons who had no idea as to what vaccination meant. Mr. Rusk asked that statistics should be furnished bearing on the question. With a view to the provision of these statistics the convener, on behalf of his committeee, agreed to the recommendation being delayed.

At the annual dinner of the Edinburgh South Side Merchants' Association on Thursday, December 8th, Bailie Laing, referring to the proposed new small-pox hospital for the city, maintained that there was no necessity for the Local Government Board taking up the attitude they had done. The Board had said that owing to the "conscience" clause being taken so large an advantage of they were bound to have an epidemic before long. The Council's answer was that the Government should at once withdraw the "conscience" clause. If the proposed small-pox hospital were erected it would be nothing but a large white elephant.

GLASGOW.

Honour to Sir Hector C. Cameron, M.D.

On the occasion of his retirement from the Chair of Clinical Surgery in Glasgow University, and from the Western Infirmary staff, Sir Hector C. Cameron was entertained to dinner in the Central Station Hotel on December 5th by his former assistants and house surgeons. The chair was occupied by Mr. A. E. Maylard, Surgeon to the Victoria Infirmary, while the croupiers were Dr. Marshall, Rothesay, Dr. Jas. H. Nicoll, and Dr. R. H. Parry. The company numbered about fifty. In proposing the toast of "Our Guest," the Chairman referred to the admiration in which Sir Hector had always been held by those associated with him. As a teacher and a leader in surgery they honoured him; as a man they loved and respected him; and they might justly say that everything he had said was worth listening to, and everything he had written was worth reading. Sir Hector was endowed with a wonderful memory, and they hoped he would long be spared to give to the profession, as he was still so capable of giving to the public, "valuable material from his carefully garnered store." Dr. Joshua Ferguson, Paisley, on behalf of the company, presented Sir Hector with a loving cup, bearing the inscription, "H. C. C., Magistro Carissimo, Discipuli, MCMX." This graceful gift Sir Hector gratefully accepted, and the proceedings terminated with the singing of "Auld Lang Syne."

Medical Mission.

Sir Donald MacAlister presided at the annual meeting of the Glasgow Medical Mission on December 6th. The report of the Mission for the year showed that 47,000 patients had been attended to at the Dispensary, 1,369 visits had been made by the superintendents, the assistants had visited 300 cases; the Bible-woman had made 2,770 visits, and the nurse 2,002 visits. Principal MacAlister said that in view of the fact that one-twelfth of the population of Glasgow had been attended at the Dispensary, one could not but feel that the Mission was one of the most important organizations for the amelioration of physical as well as spiritual distress.

Examination of Nurses.

On November 22nd, 23rd, 24th, and 25th the Local Government Board held an examination, for the certification of trained nurses, at Glasgow University and Glasgow Western Infirmary, when fifty-seven candidates presented themselves. The subjects of examination were (*a*) elementary anatomy and physiology, (*b*) hygiene and dietetics, (*c*) medical and surgical nursing, and (*d*) midwifery.

A DOCTOR THRICE PROVOST.

At a recent meeting of the Town Council of the Royal burgh of Dornoch Dr. James MacLachlan was unanimously re-elected Provost for the third time. He has already held the office of Chief Magistrate of Dornoch for six years, and we congratulate him on the rare honour paid him in his re-election for a further term of three years. We also congratulate the burgh on having a man deemed so worthy of municipal honours. We understand that at the recent election practically every ratepayer within the burgh voted for Dr. MacLachlan. We mentioned a short time ago that Professor McKendrick, F.R.S., Emeritus Professor in the University of Glasgow, had been elected Provost of Stonehaven.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

PATHOLOGICAL MUSEUM OF THE ROYAL COLLEGE OF SURGEONS.

THE Pathological Museum of the Royal College of Surgeons in Ireland has lately been enriched by the presentation to it by Dr. Macnaughton Jones of a valuable series of specimens collected by himself. The specimens, which are well mounted and preserved, are for the most part examples of pathological conditions of the female pelvic organs, and were carefully selected by Dr. Macnaughton Jones from time to time from the very large amount of material which he met with during the course of operation work. In consequence they represent a very complete series of the abnormal conditions of the uterus and adnexa. A special feature about the collection, which adds considerably to its value, is the fact that careful clinical notes of the condition of the patient before and after operation have been kept in connexion with each of the specimens.

DUBLIN HOSPITALS TUBERCULOSIS COMMITTEE.

The quarterly meeting of the Dublin Hospitals Tuberculosis Committee was held on December 8th. Sir John Moore was in the chair, and there were also present Her Excellency the Countess of Aberdeen, Dr. Cox, Dr. Herbert Byrne. Dr. Delahoyde, Dr. Frank Dunne, Dr. Kirkpatrick, Dr. O'Carroll, Dr. G. Peacocke, and the Honorary Secretary, Sir William J. Thompson. The committee adopted the report of a subcommittee appointed to draw up a resolution with regard to the notification of tuberculosis. This report, which points out "that the detection and isolation of cases of pulmonary tuberculosis in all stages are necessary in the interests of the public health," was directed to be sent to the Local Government Board and also to the Presidents of the Royal College of Physicians and the Royal College of Surgeons. Dr. J. T. Daniel reported that during the quarter he had made 20 visits to patients at their own homes, and that 25 had visited him at his residence. He had examined 8 patients for homes, and had obtained admission of 3 to the Hospice for Dying, and of 2 to the South Dublin Union Infirmary for special treatment. The rooms occupied by the patients removed to institutions were disinfected by the Corporation before new tenants took possession. The committee also received a report of the work done by three tuberculosis district nurses in Dublin during the nine months ending November 19th; 353 cases (139 old and 214 new) had been attended, involving 4,719 visits. Many patients had been assisted by gifts of clothes or rent, and 117 children of parents suffering from tuberculosis had been sent to the country through the fresh-air fund. The work done by the nurses was much appreciated, and was strikingly illustrated by the large proportion of patients who voluntarily asked for their services. Her Excellency reported to the meeting that the P. F. Collier Tuberculosis Dispensary in Charles Street was fast approaching completion, and that early next year it would be ready and all arrangements made to commence work.

SANATORIUM FOR COUNTY CLARE.

At the half-yearly meeting of the Clare County Council a deputation was received from the Ennis Branch of the Women's National Health Association in connexion with Lady Inchiquin's offer to erect at her own expense a complete cottage sanatorium with accommodation for six consumptive patients. The National Health Association has agreed to provide the necessary funds for the equipment of the sanatorium, and local medical men have offered their services on condition that the County Council will guarantee the funds necessary for the annual maintenance of the home. A small weekly charge will be asked from each patient, and it is hoped that the sum thus obtained will largely recoup the county funds. Lady Inchiquin's offer was unanimously accepted by the Council.

DAIRY FARMS.

The action taken by the North Dublin Rural District Council against the manager of the Model Farm, Glasnevin, particulars of which were published in our issue for December 3rd, p. 1811, came up for further hearing about three weeks ago, but, owing to the fact that the magistrates were equally divided in opinion, was again adjourned until Friday, December 9th, when the solicitor for the Rural District Council stated that his clients wished to withdraw the case. As no objection to this was raised on behalf of the Department of Agriculture, the attending magistrate assented.

Special Correspondence.

PARIS.

Fresh Difficulties in Medical Practice.—International Cancer Conference.

My readers have not yet heard the last of "606." Unfortunately I must return to this subject, for the figures are causing great trouble to medical men. There can hardly be one *in nostro docto corpore* who has not been the recipient of a letter like the following, which I received quite recently:

Dear Doctor,—When could you find the time to call and give me an injection of 606 in the left thigh? People were right in telling me that doctors do not read the papers. Here is a new remedy just discovered, one that is capable of destroying, in the course of one application, all the spirochaetes that I can feel moving in my veins, and yet you do not use it! Do you intend to go on much longer playing with your benzoate of mercury which is hopelessly out of date? Do you think it is pleasant for me to be pityingly asked the name of my doctor, as I was yesterday, when one of my brothers in pathology, who is in the confidence, informed me that he himself was injected with it a fortnight ago? You make me look like a fool, doctor, for your treatment is quite out of date. I shall expect you to-morrow morning, for I want to be cured in three days' time. P.S.—Do not to hurt me too much.

The following day I visited my patient and took with me my syringe, the physician's faithful companion since the beginning of time. (Molière, could he see our modern implements, would be astonished at nothing but their reduced dimensions!) I was about to fill my syringe, when the sick man seized my arm. "One moment, doctor," he said, "have you read *L'Omnilogue* this morning? Really, you are a trifle hasty with your doses of '606.' What about Professor Bouchard's article? Don't you think it is impossible to be too careful with these novelties? At any rate, are you quite certain of this preparation of yours? Health has nothing to do with the fashion, and up to now your old treatment did very well. After all, doctor, there is no hurry. The German chemists have not said their last word on the subject, and since they have succeeded in discovering more than one products of the same kind, of which the efficacy increases at the same rate that the toxic property decrease, let us have full confidence in them. Put up your syringe, and, to quote the words of their wise and eminent leader, let us wait for No. 607." I did as my patient wished, and a few days later I met him in the street, so absorbed in the perusal of a newspaper called *La Feuille*, that he ran against me. Without waiting to apologize for his clumsiness, he began at once: "The proof has been made, here is the report of the Congress of Koenigsberg. Two thousand savants from every quarter of the globe have collaborated in the apotheosis of '606.' Out of the 11,000 cases treated by them, there were only 12 deaths, and these were due to other causes, and had nothing to do with the treatment. (After all, there are always eccentrics who lack *savoir-vivre*, are there not?) Moreover, '606' is not only useful in cases of syphilis, but for sleeping sickness, recurrent fevers, and malaria. Ehrlich foretells its use, however, in nervous and cerebral affections. Hear what Alt has to say: Paralytics and consumptives are cured with lightning-like rapidity. After all this, doctor, I have no more objections to undergo this treatment. I will delay no longer, but will go

your next consultation." He did not keep his word, however, and a short time ago I met him again, and asked him why he had not been to see me. By way of answer he swore at the newspapers, declaring that it was entirely owing to the contradictory statements they published on medical questions, and showed me a copy of the *Omniloque*, in which was printed in letters an inch long:

We are certainly the most simple nation under the sun. Dr. Ehrlich's famous discovery is nothing more than an ancient French treatment, abandoned because it proved to be dangerous.

I tried to console him by remarking that we could not be so simple after all if, with Professor Mouneyrat, we had given up the treatment on account of its danger. "That is not the point," he replied; "the question is, how am I to be cured? The reading of all these articles, issued by a thoughtless press, is exactly like submitting to consultations for which I have not asked, and has the same result—I feel more bewildered than ever. Doctor, I put myself in your hands; do what you like. I shall read no more newspaper articles." I told him to take comfort; that his spirochaetes belonged to me, as it were, and that I would do all I could for them; and he agreed that that was certainly the simplest way out of the difficulty.

The International Cancer Conference was recently held at the School of Medicine in Paris, thanks to the French Association for the Study of Cancer. The result of each sitting may be expressed in one word—Statistics. Let no reader, however, imagine that I speak ironically. I firmly believe that it is a good plan to begin the study of a disease like cancer with a kind of catalogue, and to follow Homer in enumerating the enemy's forces. Unhappily, statistics are not so easily established as is popularly supposed, and the members of the conference were quite right to open the proceedings by endeavouring to get a correct estimate of cancer statistics. Though Professor Delbet preached the curability of cancer by means of a surgical operation in the early stages of the disease, it was evident at the second meeting of the congress that the majority of his colleagues put more faith in vaccination and serum-therapy. It appears, therefore, that the surgical cure is by no means so certain as these latter methods of treatment. The reason of this is that cancer is, perhaps, the disease in which the two elements of infection and predisposition play the most equal parts, and the truth of this is proved by the fact that the disease seldom appears in a patient before the age of 35 or 40. In all probability the close study of the exceptional cases—that is to say, of precocious cancer—combined with a full knowledge of the patient's history, would do much towards the discovery of the predisposing causes of the disease—causes which, in such cases, must be peculiarly active and virulent. Cancer belongs to the surgeon in virtue of its infectious element, but when it is a question of predisposition it enters the domain of the physician. It is, in my opinion, the latter who has the last word on this subject, for I venture to disagree with the eminent Secretary-General of the Conference, and hold that, in spite of the tremendous progress of surgery, in general practice it is almost as useless to operate on an internal cancer as to brush the dust off a peasant who is winnowing his grain. Patient, rational study may give us the key to the problem, and the greatest confidence should be felt on the part of the public with regard to the work done by such a meeting as the International Conference.

BUDAPEST.

The Care of Mentally Deficient School Children.—The Weaning of Young Children.

INVESTIGATIONS which, though principally confined to the city of Budapest, have been extended throughout Hungary, have proved conclusively that the Hungarian public schools year after year receive as pupils thousands of children who are mentally, morally, and physically unfit to cope with the conditions under which they will be obliged to live during school hours. These investigations are being conducted by Dr. Menyhèrs Edelmann, Director of the Children's Home at Nagyvàrad. "Fully 10 per cent. of the pupils of our public schools require special supervision," said Dr. Edelmann at a recent meeting of the Pediatric Society. "I am convinced that from 500 to 1,000 of the 25,000 children who attend the schools of Budapest (with the exception of private and denominational schools) are so deficient in mind or body as to render it an absolute necessity for them to receive special instruction in small classes if they are to be made fit to take any part in the battle of life, and they ought to have the most careful attention. Up to the present there has been no compulsory medical inspection of school children in Hungary, and therefore no child is examined unless his appearance is such as enables his teachers to realize that he is unlike other children. The time will come, however, when every child will be examined by a doctor at the commencement of his school career, so that it may be known at the outset if he has any bodily or mental ailments which threaten to prevent his following the proper school course, and steps will be taken to ensure proper treatment. For instance, if a boy has weak eyes, it will be the duty of those in authority to see that his parents provide him with spectacles, and that a front seat in school is delegated to him; whilst in cases of partial deafness every care will be taken for the child to be placed where he can hear properly. Again, a great many school children show symptoms of developing curvature of the spine, and in such cases the teacher should be informed of the fact, and impressed with the necessity of insisting upon a correct position when sitting over lessons. It is quite possible that, in the majority of cases, such precautions would result in overcoming any tendency towards spine disease." Dr. Edelmann then referred to the oft-repeated statement that ten thousand children go every day hungry to school, and declared that this report was very much exaggerated. "All the same," he said, "it is the teacher's duty, when any of his pupils appear to be starving, to do all in his power to remedy such a state of affairs. With regard to such children it is obviously unwise to put them in the regular classes, for not only do they interfere with the progress of their classfellows, but they cannot possibly receive the special attention they require. Such mentally deficient children as attend the public schools are, of course, on quite a different level from the children in State institutions and asylums, and yet they are quite incapable of following the usual curriculum of our public schools. Nevertheless, with proper care and treatment, they can be made into useful and self-supporting members of society. The first care of those in charge of them should be to teach them to work with their hands, so that they will be able to earn their own living, and they should be taught to read and write and sufficient arithmetic to enable them to manage their own money. It is obviously impossible to expect the teachers of the regular classes, each of which consists of some fifty pupils, to do any work of this kind. These backward children should be placed in separate classes, comprising not more than fifteen pupils in each, under special teachers, who will thus be able to study each child, and give individual instruction and attention. At present there are facilities for teaching 150 of such children in Budapest, although the city contains from 1,000 to 1,500, who all require special care and a special training."

In a book on the care of young children Professor Behrens says the usual time for weaning a baby is at the end of the first year; but if the child is thriving and has already proved itself capable of digesting cow's milk, it may be done a couple of months earlier, provided that it is not during the heat of summer. The weaning should never take place immediately before or after the warm weather; roughly speaking, therefore, it should not be attempted from the month of May to the end of September. Prolonged lactation is dangerous, causing both ill-development of the child's bones,

and delay in his dentition. The weaning should be very gradual; and during the first year the child should be fed solely on milk, since soups, vegetables, wine, etc., are apt to cause rickets. As regards the mother, during the critical period of weaning her child every care should be taken to avoid fatigue, whilst the breasts should be swathed in a cotton binder, and gently rubbed with warm, sweet almond oil both morning and evening. There is no necessity for the use of purgatives; but the patient should be careful to diminish the quantity of fluids in her diet. During the second year, in fact, until the appearance of the twentieth tooth, the child's dietary should consist of milk, eggs, and bread, the latter including not only the various forms of bread, but also cereals. Towards the end of the second year a purée of potato may occasionally be given in small quantities. The proprietary cereal preparations should be avoided, and all food should be liquid or semiliquid—entirely liquid at first. The main food for a child is milk, and a child of twelve months old should take about a quart a day, a quantity which ought not to be exceeded during the second year. The greatest care should be exercised to avoid overfeeding, which is more frequently the cause of insufficient nourishment than underfeeding. At first a simple gruel should be given once daily, with only sugar and salt added; later on it should be given twice a day, with the addition of a little butter. When, in the course of time, eggs take their place in the nourishment of the child, the yolk alone should be given mixed with the gruel or milk; later the whole egg can be used. But it should be remembered that eggs are often the cause of constipation. Until the child has cut his twentieth tooth his diet should be very closely watched during the summer months.

Correspondence.

NATIONAL MEDICAL SERVICE.

SIR,—The rapidity with which Dr. Cooper and I approach each other induces me to ask for your indulgence once more before the end of the year. My logic and mathematics I leave ranged alongside his comments, and welcome the emerging distinctness of the practicability, the adequacy, and the advisability of proposed modes of medical organization as separate phases of the discussion. Dr. Cooper seems almost to admit that, whether advisable or not, a *per capita* rate of 10s. would be adequate over a parcel of 2,000, and then proceeds to argue that payment in the same proportion would be inadequate over a smaller parcel because there are only small parcels. Even if we assume with him that the 15,000,000 were divided among the 40,000 doctors, physicians, surgeons, and alienists included, so that each received £187 10s., we may surely also assume that the 30,000,000 omitted, as not in need of the State grant, will pay no less, and we should have an average income of £562 10s. for the 40,000. His trouble here arises from mixing the rate of payment with the difficulty of getting enough of it—a problem quite different, and needing other measures.

Dr. Cooper is very fond of exceptional cases; and Dr. Fothergill's figure of 10s., which I took because I thought it practicable, he now gets into difficulties by taking it into a corner with a man who has a wife and twelve children. If all of the twelve children are of school age we shall have to recommend their hero father to some of the organizations who fear that we have a declining birth-rate. For each child under 16 Mr. Lloyd George has already made to the smaller income-tax payers a grant of 7s 6d. a head, and if he do no less for the working class 10s. does not seem very far away. Each child over 16 would be at work, and would, of course, make his individual contribution.

With Dr. Gough it is extremely difficult to maintain a discussion, since he seems to regard me as an incarnate sneer, finding characteristic expression even in my accurate statement of the way in which Dr. Fothergill asked the British Medical Association, a body with definite membership, an organized mode of formulating opinion and representatives responsible to their constituents, to come into line with a group whose members are responsible only to themselves, whose limits are unknown, and whose object is defined by Dr. Fothergill as State control.

To the request for a further pledge I must give an unqualified negative, because it is based on the incorrect statement that the general practitioners alone are affected by the scheme of insurance, and because the general practitioner has now the control of the British Medical Association and its whole organization. If the consultants do not realize that the solution of the problem of sickness insurance may alter the whole relations of the profession throughout Britain there may be a rude awakening for their successors, and if the general practitioners should wish to solve the problem without regard to the whole profession they will have to divest themselves of both the intelligence and the sense of fair play which they have hitherto so conspicuously exhibited in declaring the policy of the British Medical Association.

On the discussion of the advisability of the two modes of organization, raised by Dr. Cooper and Dr. Dick, I do not propose to enter at present, and perhaps the report of the Poor Law Committee may render needless any further demand on your space.—I am, etc.,

Dundee, Dec. 11th. R. C. BUIST.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—I have read, and I hope every member of the British Medical Association will read and ponder, the careful and exhaustive paper by our Medical Secretary published in the SUPPLEMENT, BRITISH MEDICAL JOURNAL, December 10th, 1910, on the present "crisis" in the medical profession. With the definition of "crisis" I fully agree; to paraphrase Shakespeare—There is a tide in the affairs of groups, as of individual men, which taken at the flood leads on to victory. Those who cannot see that such a tide is now before us in the affairs of the medical profession must indeed be blind or indifferent. And it behoves each one of us to very seriously consider the situation, not from a mere personal or pecuniary standpoint, but from a broad statesmanlike one, bearing in mind the golden rule of the greatest good of the greatest number; at the same time considering the immediate and practical application of any suggested scheme or schemes.

On the whole Dr. Smith Whitaker in this address presents the problems before us in a very full, fair, and impartial manner, not seeking to prejudice any particular view or proposal. With his main contention for united action there can be no cavil; but unfortunately there is a very big "if" prefixing it. *If* the profession can only be united and firm, especially when it is only demanding fair and just treatment by the Government or the country, it is practically bound to get what it asks. Dr. Smith Whitaker's great experience as an organizer, however, teaches him that such unanimity is extremely unlikely. When he states that, in addition to those who strongly support the principle of payment per attendance, "others are equally strongly of opinion that, on the whole, the profession would come off best, would get the most remuneration, and be in the most satisfactory condition if they obtained the basis of capitation payment," I confess I see little likelihood of reconciliation between these "equally strong" but diverse views. I do not doubt for one moment that Dr. Smith Whitaker has very good evidence for the statement just quoted; but I venture to hope that those who hold this opinion are in a considerable minority, and that they do so not so much because they are enamoured of the system, but because they would rather "suffer the ills they have than fly to others they know not of." In other words, they do not like giving up a certain £100 or £200 a year for a possibly higher but uncertain and variable annual income. All I can say is that I have yet to meet the medical man who is firmly wedded to contract practice for its own sake, and in the course of the long correspondence in your columns on the subject the advocates of contract practice have been strangely silent. On the other hand, the Association has repeatedly and "in multitude assembled" condemned the principle of contract practice, whilst the experience of State sickness and invalidity insurance in Germany, where this system is in vogue, should open our eyes to its evil and oppression.

The argument which seems to emerge from some of the criticisms offered is that since we cannot expect unanimity,

and as some medical men (never mind how many) are content with the servitude of contract practice, and this will undoubtedly be the simplest method for the Government, and therefore the one they will in all probability adopt, we who are opposed to contract practice in principle, and believe it is a pernicious system—bad alike for patient and doctor—should withdraw our opposition, even although we believe ourselves to be in a large majority, and bow to the inevitable.

If this is the way medical politics is to be conducted it does not speak very well for the influence of our powerful Association, and it is rather different from general politics (not that I would have us copy all the methods of politicians), but surely if our representatives and councillors are really representative they should ascertain and interpret the true wishes and opinions of the *majority*. I do not mean that we should ride roughshod over any minority—let us as far as possible avoid injuring them—*but the will of the majority must prevail*. If the question is put to a vote, and a majority is given against the principle of payment according to work done, we must accept the verdict, for the time being at any rate. But there is no reason why, by straightforward and constitutional means, by argument and reasoning, we should not continue to strive for what we consider to be a better state of things.

It seems to be thought by some that we should remain silent whilst our representatives and councillors are considering the matter for us; with all respect and deference I must maintain that this *is a matter we must decide for ourselves*—our representatives and councillors should then loyally carry out *our* wishes.—I am, etc.,

Bowdon, Dec. 10th. P. R. COOPER.

SIR,—Dr. Buist, in the JOURNAL of December 3rd, while failing to reply to the challenges made to him in my communication of the previous week, would seem to convey the impression that I advocate a capitation grant of 10s. a head. This is absolutely incorrect.

The complaint of those now opposed to Dr. Buist is, and I am certain of the majority of the profession later on will be, that no sound evidence has been produced by him in favour of the proposal of a capitation grant being accepted by the doctor. He dangles before us as baits £750 and £1,000 in payment for attendance on "parcels" of beneficiaries. Why he stops at these amounts it is difficult to comprehend. Baits, however, are not evidence.

The challenges made to Dr. Buist and those who are associated with him are these:

1. *To produce an actuarial opinion stating that his proposal of a capitation grant to a doctor is insurance and not an honorarium.*
2. *To define the services for which this honorarium is to be the reward.*
3. *To advance some scheme by which to prevent the amount of benefits which can be obtained in return for this honorarium exceeding a maximum limit.*

Challenge 1.—To assist the answer to this may I quote the actuary of the Century Insurance Company (Edinburgh)? His statement, based on twenty-five years' returns of a scheme for *professional and business men*, is (1) that, while mortality is improving, invalidity is increasing; (2) that the average of illness for all the beneficiaries insured is three weeks a year each. Dr. Buist, in accepting the 10s. capitation payment, therefore advocates this sum as a satisfactory remuneration for *a known three-weeks' attendance on a beneficiary*. He goes further: he advocates it as acceptable for attendance on those the State will insure—namely, the aged, chronics, casual labourers, and those engaged in hazardous employments. The attendance on his parcel of 1,500 beneficiaries would be at least fifty visits a day; all surgery attendances being in addition. He suggests that £750 makes this a tempting offer to a doctor, and a scheme to be recommended to the Government. We say such a fee is an honorarium; Dr. Buist calls it a scientific process, and repudiates it being a gamble.

Challenge 2.—Then the services to be rendered for this honorarium. Does Dr. Buist exclude confinements, fractures, dislocations, consultations, anaesthetics, night calls, special visits, certificates, attendance on those ill through "personal misconduct," operations? If he *does exclude* them, how does he propose we shall get payment for them, and how does he propose to convince the Government that his scheme is inclusive? If he *does not exclude* them, does he propose that the doctor who receives the 10s. shall pay the surgeon, the physician, and the anaesthetist called in on the demand of the beneficiary? Such insurance may be "a scientific process," but the general practitioner will be apt to decide that, so far as he is concerned, the process will only lead him to an early grave or the bankruptcy court, and his family to the union.

Challenge 3.—Then the prevention of the amount of benefits that can be demanded exceeding a maximum limit. Can Dr. Buist quote a single instance of an insurance policy being issued which leaves the decision as to whether the beneficiary is entitled to demand his insured benefit solely to the determination of the beneficiary? Possibly a beneficiary could not demand more than one operation for removal of the uterus or prostate, but this would not limit the exactions of a neurasthenic. Here again Dr. Buist would have us believe it to be a scientific process; others term it a gamble.

If the report to the Divisions of the Poor Law Reform Committee does not contain replies to these challenges, the medical profession will not be slow to appreciate the reason why. But will Dr. Buist anticipate this report and so help us?

In the meanwhile, those of us who are interested in the improvement of the health of the community, morally and physically, as also in our own economic existence, will do well to fight shy of all baits of £1,000 for "parcels" of beneficiaries, the acceptance of which can only mean that the collar of servitude at present around the necks of the few will be clasped as well around the necks of many others of our profession whose financial circumstances, fortunately for them, have placed them for the present beyond the necessity for accepting any such terms.—I am, etc.,

Southfields, Dec. 11th. E. ROWLAND FOTHERGILL.

SIR,—I had not intended to enter into this discussion until the report of the Poor Law Reform Committee had been issued, as I was anxious to hear all the arguments and arrive as nearly as possible at the logical issue, but after reading Dr. Cooper's letter[1] I feel bound to correct not his arithmetic, but the false premisses from which he makes his deductions. I will assume for the time that he reads Dr. Buist rightly—he states that the 15,000,000 persons to be provided for under Mr. Lloyd George's scheme must be divided among 40,000 medical men, giving, at a fee of 10s. per head, £187 10s. for each practitioner.

Now, according to this year's *Medical Directory*, the number of medical men in the United Kingdom is 32 000 (approximately), and of these we must count only those in ordinary general practice, deducting all those who would not act as medical officers under the scheme. Such are resident medical officers at hospitals, asylums, sanatoriums, prisons, etc., school medical officers, whole-time medical officers of health, consultants, specialists, men in what are called "better class" practices, and retired medical men. I can only guess their number, but do not think that 20 per cent. would be too large a proportion. This would leave about 25,000 to share the fifteen million half-sovereigns, giving an average of £300.

If we take all the medical men, we must take the whole population, assume that they are all to be provided for under the scheme, and all at the same rate. We shall have 45,000,000 divided among 32,000 practitioners, less those retired, whole-time medical officers of health, and pure consultants—say 30,000—giving exactly 1,500 for each officer, an average income of £750—not so very bad.

But I think that Dr. Cooper misreads Dr. Buist, who does not say that 1,500 or 2,000 would be the average number of persons that would be on the list of every medical man, but that any medical man with an average of 1,500 or 2,000 on his list would draw £750 to £1,000 a year; and in manufacturing towns or colliery districts there must be many men in charge of an average population of quite these numbers. I know men making £400 or £500 a year from clubs alone, and that at a rate of 4s. a head or less, representing a membership of 2 000 to 2,500, which at 10s a head would give them satisfactory

[1] BRITISH MEDICAL JOURNAL, December 10th, 1910, p. 1887.

incomes of £1,000 to £1,250. I should think that in many country and country town practices £100 was not an unusual sum to be derived from clubs; at 4s. a head that would mean a membership of 500, worth at 10s. a head £250.

Then Dr. Cooper says that we shall certainly not get as much as 10s. a head all round. Why not, if we ask for it? Just as likely as so much for each attendance. It has been calculated that the average number of attendances that a club patient receives in a year is about five; that at a fee of 10s. would mean a payment of 2s. for each attendance. If we are to be paid "per attendance," are we not likely to get as much as that for each visit? I hope so.

Lastly, Dr. Cooper argues that the working man will not be likely to pay such a fee, and suggests the case of a man with wife and twelve children who would have to pay £7 a year. One would really think that Dr. Cooper knew nothing of the suggested Government scheme. Does he not know that it is proposed to divide the annual contribution between the workman, the employer, and the State? so that the man with the exceptionally large family would pay, not £7, but one-third of that sum, that is, £2 6s. 8d.; but even this deduction is not correct, for we may fairly assume that of the twelve children, five would be over 16 years of age, and so paying for themselves, leaving the father only nine persons to pay for, requiring, according to Dr. Cooper, £4 10s., but really only £1 10s.—I am, etc.,

Bradford-on-Avon, Dec. 13th. CHAS. E. S. FLEMMING.

REPORT OF THE EDUCATION COMMITTEE OF THE GENERAL MEDICAL COUNCIL.

SIR,—With the greatest respect for my old friend and colleague on the Council, Principal Mackay, I cannot conceive a stronger instance of the *non sequitur* in logic than the assertion in the report of the Education Committee that raising the standard of preliminary examination to the higher level of the senior plane would have the effect of lowering the standard of the corresponding examination. Surely the result would be exactly the opposite, as has been abundantly proved by the experience of the improvement of the standard of teaching and passes in purely professional studies, by insisting on higher tests. Strict and thorough examination are indeed the surest and most direct means for bringing about such improvements.

Again, the report of the same committee speaks of the time not being "ripe" for relegating the study of physics, chemistry, and biology to a period prior to beginning medical study proper, on the ground that the secondary schools are not prepared to teach these subjects effectively. I am astonished to find a Scotsman ignorant of the great advance in this respect in Scottish central schools. Here, in this remote town in the Highlands, our "Academy" is carrying on a three years' course in science embracing these subjects—surely an immensely better system than a single year's cram, as is the rule at present in most medical schools. But is not this another instance of "putting the cart before the horse"? Make the position open to secondary schools, institute a searching examination, and the result will surely follow; these teaching *home* centres will surely and certainly arrange their courses of study to meet the demands of the medical licensing bodies.

Further, the committee has taken much trouble to show that for the great majority of students five years is too short a time to get through the present curriculum (and a fuller one is wanted). What does it propose as a remedy? Neither of the two possible ways out of the dilemma—that is, dropping or placing outside certain subjects of study or lengthening the present course to six years.

Why, Sir, all this fruitless beating about the bush? There is only one possible explanation, and the reasons are not far to seek. *Quieta non movere.*—I am, etc.,

Dingwall, Dec. 6th. WILLIAM BRUCE, M.D., L.L.D.

EPSOM COLLEGE.

SIR,—With regard to the letters about Epsom College appearing in your columns on December 3rd and 10th, may we say a few words?

The first objection raised is that of the dress of boys in the Lower School. Your correspondents object to the Eton suits both from a hygienic point of view and from point of view of expense, and speak as if it was a regulation of the school that the smaller boys should wear them. There is nothing said in the rules except that coats must be black and trousers dark, and it is entirely the choice of the parents if their sons return in Eton suits.

Secondly, the writer advocates a medical inspection at the beginning of each term, and the registering of height and weight. The latter is done every year by a member of the staff, while the former, if necessary, should be done at home by a medical man who has known the boy, and is much more competent to judge under such circumstances. It would be absolutely impossible for the school doctor to examine thoroughly every boy in the school during the time devoted to the school attendance.

Again, may we point out that Epsom College is not a kindergarten, and that if between ten and eleven hours' sleep is not sufficient for a boy he ought not to be sent to a public school? Dancing, also, is not a usual subject of instruction, except in a preparatory school, and should be learnt in the holidays, though we do not deny that every one should know how to dance.

With regard to the corrugated windows referred to, we might point out that they are not so much to prevent members of classes looking out as to prevent people outside looking in. There would appear to be some discrepancy in your correspondent's remarks, since in one place he refers to the highly satisfactory report of the Joint University Board and in another implies that the teaching does not hold the attention sufficiently to prevent "wandering eyes."

But on one point we do agree, that something more than bread-and-butter should be given at the evening meal, not only in the Lower School, but also in the College itself, though we do not see any objection to bringing certain delicacies from home.

Hoping you will find room to insert this in your columns, as we speak from experience.—We are, etc.,

Epsom College, Dec. 11th. MEMBERS OF THE SCHOOL.

ALCOHOLISM AND DEGENERATION.

SIR,—Professor Pearson has apparently misunderstood our point. His claims as a mathematician and statistician are not in dispute, and never have been. The issue that we, with many others, have raised is not one of mathematical expert knowledge but of scientific accuracy in an ordinary biological problem. Briefly stated, it is simply that statistically exact deductions cannot be drawn from statistically inexact and incomplete biological data.

There are many points which are essential to a research into the effects produced on children by their parents taking alcohol, but the first datum to be determined is whether the parents began taking the alcohol before the children were born.

This is our point, and we thought we had clearly expressed it in our former letters. Professor Pearson, however, states that he does not admit that Miss Elderton and he failed to obtain this essential datum, but he does not explain why their memoir is absolutely silent on this primary point. Indeed, the argument in the sentence from his second (controversial) paper, quoted in your editorial—namely, that "if some children were born before parental alcoholism had started, some were certainly born after"—is in itself an admission that he and Miss Elderton based their results on conjecture and without any ascertained data before them as to the habits of the parents previous to the birth of the children.

In the absence of such data, it seems to us it was not justifiable for Miss Elderton and Professor Pearson to speak in their memoir, and as he does in his letter, of the "non-alcoholic" and "alcoholic" sections into which they grouped the parents.

These authors have never had before them a group of "non-alcoholic" parents, and the *Times* and other papers have unfortunately been gravely misled by these terms "alcoholic" and "non-alcoholic" into believing that Professor Pearson and Miss Elderton had made unexpected discoveries as to the non-injurious effects on children of alcoholism in the parents.

Professor Pearson suggests that one of us (V. H.) has not "faced the figures" in their *Memoir*. We both have

done this frequently, and it was because this operation revealed the fact that from their statistics fundamentally important figures were wanting that we thought you were in error in editorially charging Professor Marshall and Mr. Keynes with being "overhasty," when, as a matter of fact, these authorities had already pointed out the same fatal omissions in the *Memoir*.

Dr. Ryle has failed to realize our position respecting the admission of anonymous attacks in the columns of our JOURNAL, just as he originally failed to realize the fallacies in Professor Pearson's and Miss Elderton's *Memoir*. (See the *National Temperance Quarterly*, September, 1910.)

As regards Dr. MacNicholl's work, Professor Pearson informs us he is about to publish a critique on the work of that gentleman and others. When he does so we will take what he says into consideration and reply thereto.—We are, etc.,

MARY D. STURGE,
VICTOR HORSLEY.

Dec. 11th, 1910.

CARCINOMA IS A PARASITIC DISEASE.

SIR,—Sir Alfred Pearce Gould, in his most interesting and suggestive lecture on cancer, at which I had the satisfaction of presiding at the Royal College of Surgeons on December 7th, criticized very courteously the views which were expressed in my Bradshaw Lecture five years ago.[1] He quoted my "text" correctly: "That the carcinoma cell is an independent organism," etc., but he did not correctly quote the arguments I used later in the lecture. For his next paragraph (addressed to me) was as follows: "You shrank from accepting Hauser's suggestion that the protozoal cells of cancer are derived or descended from the living cells of the host, and asserted rather that 'the parasite is introduced into the body from without.'"[2]

My actual words are thus quoted, and the only place in which I can find them in your report of my lecture is in the following sentence: "I suppose we must then assume that *the parasite is introduced into the body from without*, after the manner of parasites generally; or that it is formed, in some unknown manner, within the body of the host."[3]

After discussing the evidence in favour first of the external, then of the internal origin of the carcinoma cell, I said: "It must be admitted that these three features of carcinoma—the characters of the cell, the structure of the tumour, and the age-incidence—make it difficult to conceive the idea of a parasite introduced into the body from without. And they do strongly suggest that the parasite is actually formed or developed within the body of the host, and that it is in some manner derived from the elements of the host. Hauser has no doubt that his new race of cells is derived from the elements of the host, and appears to find no difficulty in the hypothesis. I confess to me it is an astounding proposition; for, set forth in plain terms, it is none other than the origin of new species of the lowest forms of animal—of protozoa. The mode of origin which is suggested is so different from that we have been accustomed to accept for the last five-and-twenty years, that I scarcely dare to set it down in words. That there will be much discussion and dispute over it I cannot doubt; for I am quite confident that time and research will confirm the view I have expressed to-day of the nature of the carcinoma cell."[4]

In order to be sure of the views I had expressed, I read my lecture through very carefully. There is no doubt that I heartily wished, at the time I delivered it, that the evidence would be in favour of the entrance of the carcinoma cell from without. But I was forced to acknowledge that the evidence was stronger in favour of the formation of the cell within the body. Following the argument to its logical conclusion, I was further forced to admit that, if this were so, it would be necessary to admit that the carcinoma cell is a new creation; and, still further, that it was probable this new creation was derived from the elements of the host. No wonder, in the face of this conclusion, I was astonished at the light manner in which Hauser treated the hypothesis. I am sure the real truth never dawned upon him. Nor do I think that Dr. C. Powell White,[5] who expressed the view "that the cells themselves of cancer act as parasites," really appreciated the significance of his suggestion; for he takes the view of Adami that the cells acquire the "habit of growth." "Once the cells have acquired this habit, they behave as independent parasites."[6]

I am very glad that Sir Pearce Gould has given me the opportunity of again stating my case. It has never been out of my mind for long together during the last five years. I have been watching all the new evidence which has been derived from observation and experiment, and have been collecting certain evidence on my own part, with the intention of again advancing and defending the argument of the Bradshaw Lecture of 1905. I shall hope to do this in the course of the coming year, either in a couple of lectures or in some other manner.

In the meantime, I would say that every discovery of the last five years is in favour of the "text" of my Bradshaw Lecture: "That the carcinoma cell is an independent organism, like many a protozoon; that it lives a life which is wholly independent and proper to itself; and that it lives as a parasite in the body of the animal which is affected with carcinoma, deriving its nourishment from this host, and doing nothing to repay the host for the sustenance of which it robs him."

The evidence which was at that time a little in favour of the internal as against the external origin of the carcinoma cell has been much strengthened.

And I am prepared to apply the theory to cancer of every kind instead of limiting it (as I did five years ago for convenience) to carcinoma.—I am, etc.,

London, W., Dec. 12th. HENRY T. BUTLIN.

THE BRADSHAW LECTURE ON CANCER.

SIR,—I am sure all your readers are very grateful to Sir Alfred Pearce Gould for his luminous exposition of the recent experimental work done in cancer. What an appalling and tragic drama Sir Alfred presents to our contemplation—1 in 8 women above the age of 35 doomed to die in intense suffering!

Without in any way wishing to disparage the work done by the Cancer Commissioners, it is evident that the only advance made in our knowledge of the subject is that cancer can be inoculated from animal to animal of the same species; further than this the veil has not been lifted, and the mystery is still unsolved.

I am tempted to ask if the problem has ever been properly tackled from the clinical standpoint. I suggest that medical men in all parts of the world should focus their attention on one particular part of the body—say, of the breast—with the view of elucidating such points as I roughly indicate: Age; heredity; climate; influence of child-bearing; food and drink; material worn next the skin (flannel, flannelette, linen, cotton, silk); how often is the skin washed and what kind of water is used; what particular kind of soap; is the soap properly washed off; what method of washing employed—for example, hand, sponge, or glove; influence of corsets. If such an investigation was carried out and the results scientifically analysed, some common denominator might be found.

Or take the case of the tongue. Has a case ever been recorded in which the teeth were good, there was no history of syphilis, and the patient a non-smoker? A medical friend of mine recently died from cancer of the tongue, and I know that for years he was in the habit of smoking fifty cigarettes a day.—I am, etc.,

December 11th. KENNETH CAMPBELL, F.R.C.S.

DR. HADWEN AND THE "CRIMSON CROSS REMEDIES."

SIR,—I had no intention of taking further notice of the erratic communications of Dr. Drury, who is wandering farther and farther from the point at issue. I hope this may be my last letter, for the correspondence is reaching somewhat absurd proportions.

[1] BRITISH MEDICAL JOURNAL, 1905, ii, p. 1565.
[2] BRITISH MEDICAL JOURNAL, 1910, ii, p. 1836.
[3] Loc. cit. p. 1559.
[4] Loc. cit., p. 1570.
[5] When I first formed the opinion that the carcinoma cell is an independent organism, and acts as a parasite in the body of the host, I did not know it had ever been previously expressed. Shortly before delivering the Bradshaw Lecture I discovered Hauser's paper in *Ziegler's Beiträge*, 33, section i, 1903. And, two years ago, Dr. C. Powell White pointed out to me that he had made a similar suggestion in his Erasmus Wilson Lectures at the College of Surgeons in 1902. In his "Lectures on the Pathology of Cancer," Manchester, 1908, he concludes the last lecture with these words: "We can say, then, that cancer is not due to a specific parasite or parasites, but, on the other hand, we can say that the cancer cells themselves act as parasites. This latter view will explain all the phenomena of cancer."
[6] *Lancet*, 1902, i, 494.

If it gratify your correspondent to suppose that I am in "a sorry plight," that I have "completely surrendered and capitulated" and "waved the white flag," etc. I have not the least objection. All these fireworks will not alter the simple fact that I have fully answered his question as to the results of my investigations concerning the use of the "Crimson Cross Ointment" in the Gloucester epidemic of 1896 and that I am ready to show him my case-books and detailed statistics, and give him any further explanation which lies in my power when he likes to avail himself of the opportunity of looking at them.

He now draws my attention to five questions which he intimates I decline to answer, and he says he is "entitled to an answer without being put to the expense of a journey to Gloucester." Very well, if that will satisfy him, I will reply again, for, except in one unimportant particular, I have already answered these irrelevant trivialities.

He asks:

1. Why did my name disappear from the advertisement of the Crimson Cross remedies in the "Inquirer" in the very next issue after he (Dr. Drury) had referred to it in the "Jennerian"?

How do I know? I have already told him I never saw the "*Jennerian*" nor the advertisement. I only know what he tells me about it, and I have never troubled myself to look for it. He had better ask the advertiser.

2. Where was the composition of the Crimson Cross Ointment long ago published in the medical press?

I don't carry these things in my head, and I am too busy to take the trouble to look up such an insignificant detail. If it be any advantage to Dr. Drury to know, he can explore the medical files for 1896–7, about which time it was ridiculed a good deal.

3. Am I prepared to state the actual source of the information contained in my case-books

Where does he suppose it could come from except from the patients themselves or from their immediate friends?

4. By whom and for whom was this independent information collected?

As I have told him, it was collected by myself for the most part, *for* myself, and I hold myself responsible for it all.

5. Was oil in some form not used in any way during the epidemic except as an ingredient of Captain Feilden's remedy?

No, it was not, except by Dr. Brooke, as I have already stated in my letter of June 13th.

Having now once more answered all his questions I hope Dr. Drury will be satisfied.

Now as to his side-issues. As he interprets my refusal to "defend" myself, concerning a certain utterance he has quoted, into cowardice, let me at once say, I stand by every word I have said. Nowhere has the tyranny and despotism of the medical profession been witnessed more clearly than in the case of the Vaccination Acts, where medical law and the policeman's truncheon have kept close company. In all ages the medical priestcraft has been as despotic as the religious priestcraft when endowed with unlimited power. And no one has proved it more bitterly than I have in my own personal experience.

Dr. Drury has the temerity to say that on account of the quotation from a speech of mine he has told certain officials, when challenged to meet me in public debate and to justify his numerous reckless assertions, that he will be ready with his answer if I will approach him directly. I know of no one who has ever received such a message. No such message has ever been conveyed to me. But I have seen several evasions from his pen of an altogether different type.

If Dr. Drury is as anxious as he professes to be to have a justification of my position and my views, let him meet me openly before any public or medical society that he may choose to select, and, upon his formulating his case, I will undertake to be present and defend myself and answer him. And to do away with any further excuse of "expense," I will be prepared to bear the whole burden of it out of my own pocket.—I am, etc.,

Gloucester, Dec. 12th. WALTER R. HADWEN.

PLAGUE AMONG EUROPEANS.

SIR,—I agree with the whole of Dr. W. J. Simpson's letter in the JOURNAL of November 19th, p. 1658, which conveys a very timely corrective against the opinion that white peoples, by reason of their race, have a special, or inherent, freedom from liability to plague.—I am, etc.,

G. BAINBRIDGE, M.D.,
Surgeon-General, I.M.S. (ret.).

Bournemouth, Nov. 21st.

Medico-Legal.

GUARDIANS AND MEDICAL OFFICER.

Macnamara v. T. Shaw and Co.

THIS was an action for libel tried before Mr. Justice Ridley and a special jury on December 7th, 8th, and 9th. Mr. Clavell Salter, K.C., and Mr. Hugh Fraser, instructed by Messrs. Hempsons, appeared for the plaintiff, and Mr. Ralph Bankes, K.C., and Mr. Tyrrell Payne, instructed by Mr. G. M. Folkard, appeared for the defendants.

From Mr. Clavell Salter's opening it appeared that Dr. Macnamara, a medical man practising in Lewisham, and occupying the position of medical officer to the Ladywell Workhouse, an institution under the control of the Bermondsey Guardians, brought his action for libel against the proprietors, printers, and publishers of the *Southwark and Bermondsey Recorder* by reason of the publication of what he alleged to be an unfair, inaccurate, misleading, and malicious report of the proceedings at a meeting of the board of guardians. In 1909, in consequence of a scandal at the workhouse, entirely unconnected with the plaintiff, a Local Government Board inspector, Mr. Oxley, held an inquiry into the general conduct and administration of the workhouse. In his report he criticized three matters in connexion with the medical administration—namely, alcohol, diet, and tobacco—upon which the guardians, on a letter from the Local Government Board, called upon Dr. Macnamara to offer an explanation. This the latter did, and the matter was dealt with by the Workhouse (Ladywell) Committee of the guardians, who, without hearing the medical officer in his own defence, passed a condemnatory recommendation, and submitted a draft letter to the board of guardians to be forwarded to the Local Government Board. As a result of this the plaintiff, after correspondence with the board of guardians, appeared in person, and by his solicitor, Mr. Hempson, before them on January 27th, 1910. Dr. Macnamara then gave evidence, and the result of the proceedings was that the guardians considered no good purpose would be served by their making any observations on the subject-matter of the letter. On the day following the meeting of the guardians the defendants published the libel complained of—"Dr. Macnamara in trouble. The board discussed a report of the Ladywell Workhouse Committee relative to Dr. Macnamara's conduct at that establishment. The report was of a private character, and had reference to several items; one specially referred to the distribution of stimulants amongst the inmates. A particular feature of that distribution was that complaint having been made by the committee of what they considered an excess of supply, the medical officer ordered of the apothecary supplies of spirit. vini gallici. This was discovered by Mr. Oxley, Local Government Board inspector, on one of his visits. Consequently, the attention of the guardians was called to the fact, and Dr. Macnamara was asked for an explanation of his conduct. His report and observation were submitted to the guardians, and by them sent to the Local Government Board. They, in turn, asked for the guardians' observations thereon. A committee of the whole board recommended that the Local Government Board be informed that considering all the circumstances of the case, they did not consider Dr. Macnamara was a fit and proper person to retain the position of medical officer of the institution. Upon this report being formulated, Dr. Macnamara consulted the solicitor to the Medical Officers' Union, Mr. Hempson, with the result that that gentleman attended the board meeting, and by the method of treating Dr. Macnamara as a witness, endeavoured to exonerate him from all the charges contained in the report. The examination and subsequent discussion was conducted in the presence of Mr. Oxley, Local Government Board inspector, who attended for the purpose. After a long debate it was moved by Mr Eoroyd that in the opinion of the guardians, as the Local Government Board had been supplied with the report and observations of the committee, no good purpose would be served by making further observations, and that the matter be left to the Local Government Board to decide. This proposal was seconded by Mr. Guerin, and after a long debate, in which many contradictory statements were made, it was carried by nine votes to seven."

The plaintiff and Mr. Hempson having given evidence, Mr. Ralph Bankes, for the defence, disclaimed any intention on the part of the defendants to make any attack upon Dr. Macnamara, and urged that the words complained of were a fair and accurate report of what took place at the meeting, were not libellous, and were published without malice and as a matter of public interest. He called Mr. Joseph Watson, editor and reporter of the *Southwark and Bermondsey Recorder*, and Mr. E. Pitts Fenton, Clerk to the Guardians, after which counsel addressed the jury.

Mr. Justice Ridley, in his direction to the jury, said that, while the question was for their decision, there was no doubt that what had appeared in the defendant's paper was a libel, inasmuch as, with observations, it held the plaintiff up to discredit, unless the defendants were protected by the Newspapers Act of 1888, in which case, if the jury were satisfied that what was published was a fair and accurate report of what took place at the meeting of the guardians, they would be entitled to say it was not libellous. Whilst it was proper to accord to the press that liberty and freedom of public criticism of all public matters which it ought to have, yet it must not be conducted in such a way as to deprive private individuals of their most precious possession—namely, their characters.

Turning to the facts, his lordship said, without blaming him in the least, that probably Mr. Oxley, the Local Government Board inspector, was the cause of all the trouble, and that if he had seen the plaintiff before writing his report, the jury would not have been troubled with the action. But the fact was the doctor, having been "brought to book," so to speak, by the inspector's report, was asked to make his observations thereon, which he did, and upon that the Ladyweil Workhouse Committee of the guardians (not the committee of the whole of the guardians) reported that in their opinion the plaintiff was not a fit and proper person to be the medical officer, and recommended that their report should be adopted by the guardians. The committee's report and observations were sent to the Local Government Board, and there was therefore an accusation against the plaintiff, which he would have to answer before the guardians, as to whether he was entitled to retain his office. His lordship thought, speaking for himself and without desiring to place any emphasis upon it, that, before making so hostile a report about Dr. Macnamara, it would have been better if the committee had seen him again. He had, however, made his observations, and the committee thought, his lordship supposed, that he would have nothing to add if called upon. On the first occasion when the guardians met the plaintiff, although in attendance, was not called in. Through the intervention of his solicitor correspondence passed, and at the adjourned meeting he was admitted. He was then examined and cross-examined, and after the withdrawal of him and his solicitor, Mr. Hempson, a resolution was arrived at by nine votes to seven, and the matter was dropped Whilst it was for the jury to say what that amounted to, to him (the Judge) it seemed an acquittal of the plaintiff. It was true that there remained the possibility of the Local Government Board proceeding further, but no one suggested they were invited to do so, and, in point of fact, the time which had since elapsed showed that nothing further was intended to be done.

Having directed the jury on the law relating to the subject, his lordship dealt with the libel: "Bermondsey Guardians. Dr. Macnamara in trouble." Whilst the view might be taken that to say Dr. Macnamara had been acquitted was not absolutely correct and there was a scintilla of possibility of his being proceeded against, yet, considering that before the meeting took place he was in imminent danger of being turned out, the committee of the workhouse being against him and recommending that he was not a fit and proper person, and that after the meeting was over the board had decided to take no further steps, was it fair to say, "Dr. Macnamara in trouble?" Might it not have been said: "Dr. Macnamara out of trouble"? Dr. Macnamara, if not out of trouble, was out of immediate danger, at all events. And yet it was said: "Dr. Macnamara in trouble." Further, in the words complained of, there were: "This was discovered by Mr. Oxley, Local Government Board inspector, on one of his visits." Did that state the whole truth? It was for the jury to say what ordinary persons reading the report would understand. Would they think that it indicated that something had been found out at once and as a new discovery by Mr. Oxley, throwing suspicion upon the conduct of the doctor, who, it was suggested, had been buying brandy under the name of "spiritus vini gallici"? The whole truth would have been to say it had been going on since the year 1902, and the doctor had done it because, from his skilled knowledge as a doctor, he considered it ought to be done in that way. The expression, "A committee of the whole board," was inaccurate, although, perhaps, too much emphasis should not be laid on the matter. It was only half the truth to say Mr. Hempson "endeavoured to exonerate" the plaintiff by treating him as a witness: it was an endeavour in one sense, but it resulted in an acquittal. That was proved by the result, and, therefore, to say, "endeavoured to exonerate him" did not state the truth, but only half of it. What ought to have been stated was the fact that Mr. Hempson called the plaintiff, who gave evidence which induced the board of guardians to pass the resolution that they would proceed no further. Another thing was, might it not be thought that the "endeavour" failed? Further, when the total result had been what he (the Judge) thought was (subject to the jury's judgement) an acquittal of the plaintiff, it seemed a little unnecessary to put in that the matter was left to the Local Government Board, as though to say, with a nod of the head, that something might yet be done.

The defence was to take the report, expression by expression, and say it was true. The question was, Was it the whole truth or only half the truth? The Act of Parliament said that a report was privileged unless proved to be made maliciously; and unless, further, the defendant had been requested to insert a letter of apology, and had refused. In the present case the defendant certainly offered to insert a statement, but he had not been requested so to do, and his lordship doubted whether the proviso applied, and felt he was obliged to leave the question of malice to the jury. Having drawn their attention to the law on the point, the Judge pointed out that a week after the report a letter favourable to the doctor appeared above the signature "Argus," and under the heading, "Partisanship and Efficiency," an article stating that Dr. Macnamara, some years ago, resigned his seat on the board of guardians, and asking why so many of his Roman Catholic co-religionists voted for his appointment as medical officer. When the writer of the article was asked, "What did you do that for?" he said, "I was calling to mind a piece of history." That was an extremely damaging answer. What had they to do with history at all? The doctor had just been acquitted, and back goes the reporter in the following week to call up something which was thought to tell to his discredit. Under all the circumstances it was for the jury to say whether, if the report was a fair and accurate report, it was not deprived of the privilege claimed because of the malice exhibited by the subsequent publication.

Having directed the jury on the question of damages, the jury, after a short absence, found a verdict of £250 for the plaintiff and judgment was entered accordingly.

DEATH CERTIFICATION.

DUBIOUS.—With regard to the question, "What interval should be the maximum between seeing a patient and the patient's death—that would justify a certificate being given?" there is no fixed rule.

The Select Committee on Death Certification, 1893, recommended in their report that "attendance during last illness" should be defined as meaning "personal attendance by person certifying upon at least two occasions, one of which should be within eight days of death." But no coroner, we think, would regard this as the sole criterion in deciding whether to hold an inquest or not. It is impossible to lay down any hard and fast rule. Each case has to be considered on its merits. We certainly think it is not right or safe for a medical attendant to certify the cause of death if he has not seen the patient for several months, and did not then diagnose a condition which might be expected to end as and when it did in fact end.

A very safe rule, and one which is freely adopted in many coroner's jurisdictions, is to lay the facts fully before the coroner at the earliest possible moment, and signify willingness to certify if the coroner approves. If he does, the coroner signifies to the registrar that the case has been reported to him and that he does not propose to hold an inquest. The medical attendant is then free to give such certificate as he can truthfully give without straining the meaning of the words "attendance during last illness."

"Dubious" would not be justified in giving a certificate of death in the case he states. He saw the woman only once, and then her condition was not, presumably, very serious. Had it had been serious he would no doubt have seen her again or insisted on some one else doing so. In fact, she did not die until six months later, when he could not of his own knowledge certify anything as to the cause of death All he could certify is that six months ago she had a disease which in his opinion might account for her death. It is obvious that death, for all he could say of his own knowledge, might be due to some cause not even remotely connected with her condition six months previously.

The proper course for "Dubious" to take would be to report all the facts to the coroner, and to express his opinion as to the probable cause of death, and, as far as possible, give his reasons. All responsibility would then be off his shoulders, and the coroner personally, or through his officer, would make such further inquiries as he might think necessary, on the result of which would depend his decision—(1) as to the necessity for inquest, (2) as to the necessity for *post-mortem* examination.

PARTNERSHIP EXPENSES.

V. V. V. sends us the following query: A. and B. have been partners in a practice for some years, and they share the profits equally. Owing to local changes it happens that A. does more work than B. and earns a much larger proportion of the income. Hitherto the expenses have been equally divided between A. and B., and A. now desires to have a motor car to do his work, and considers that as he makes more than twice as much of the income as B. the expenses ought not to be equally divided.

*** It is customary for the working expenses of a practice to be divided in the same proportion as the income, and not in proportion to the work done by the several partners. If A. has the use of the motor car solely, a very much larger percentage of the expenses will be expended on him than on B. If the deed of partnership between A. and B. has been properly drawn up the subject under discussion will have been duly settled, and it is neither equitable nor legal for either of the partners to endeavour to go outside that deed except by mutual consent. Most partnerships are for terms of years, and when the term has expired then is the time for making fresh arrangements to meet such inequalities as seem to have arisen in this partnership.

FEES TO COUNTY COUNCILLORS.

CHRISTOPHER GREY writes that he is a member of a county council which has appointed various committees, to some of which it has delegated statutory powers belonging to itself. By one of these—an education committee, consisting of members of the county council, school managers, and others interested in education—he was requested to report on two children after inspection. Afterwards, on sending in a bill for one guinea, payment was refused on the ground that he could not accept payment, being a member of the county council. On his pressing his claim he finally received a cheque, sanctioned by a minute of the County Education Committee, the payment being "at Dr. ———'s risk." Our

correspondent understood that where a committee of a county council has independent authority a member of the former, if not on the latter committee, might accept payment for services rendered.

*** Our correspondent had better consult his solicitor. We can only say that, although when a county council nominates an entirely independent authority, over which it has no control, our correspondent's contention would no doubt be correct, it is by no means clear that this education committee is an independent authority. The mere fact that some of the statutory powers of the council have been conferred on it does not make it so. It is therefore doubtful whether the acceptance of payment under the circumstances narrated is free from risk, taking into consideration the Local Government Act, 1888, and Section 75 of the same; and also Section 12, Municipal Corporations Act, 1882, together with Section 41 of the same Act, which lays down a fine of £50 for acting as a councillor after having become disqualified. In Nell *v.* Longbottom (1 Q. B., 767, 1894) a member of a corporation was disqualified from exercising his public functions on account of having sold to his council oil to the value of 4d. If our correspondent wishes to remain a member of his county council he may be advised to return the guines, since otherwise when he next exercises his functions as county councillor he may incur a serious liability.

WORKMEN'S COMPENSATION ACT.

Reports by Employer's Doctor.

C. F. W.—We are of opinion that it is not advisable for the medical man called in by the employers to make suggestions to employers with regard to treatment without communicating with the medical practitioner in charge of a case. In the case placed before us it would be advisable for the employer to endeavour to arrange a consultation between the medical inspector and the practitioner; a line of treatment could then be discussed.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

H. D. asks whether there is any objection to having a consulting-room in a town eleven miles away, where he would attend one day a week; and further, whether he might put on the brass plate the day of attendance.

*** There are precedents for practitioners in certain specialities possessing consulting-rooms in two places; but there are obvious inconveniencies in carrying on general practice in two places so far apart. It seems to us undesirable, and we do not approve that the door-plate should contain more than the practitioner's name.

RIGHT TO STATISTICS.

STATISTICS.—We are afraid any institution would claim the right to publish its own statistics, and that no paid medical officer has a legal or even a moral right to prevent such publication; but the reason given against immediate publication appears to have some force, and if brought properly before the authorities should receive due consideration.

SUPERSESSION.

H. L. writes: A. is referee for an insurance company in a large district. The company ask B., another practitioner in the same district, to become an additional referee, and B. consents, knowing that most if not all of the work will be diverted from A. to B. Is B. acting unprofessionally in accepting the appointment, and if so, what must be done in regard to those cases he has already examined and been paid for?

*** There would seem to be no ethical objection to B. accepting the appointment. Such transfers constantly take place.

INSURABLE INTEREST.

TRIPOS.—A creditor has unquestionably a legal as well as a moral right to insure the life of a debtor whose income stops at death.

The Services.

HEALTH OF THE NAVY.*

THE *Statistical Report of the Health of the Navy for the Year 1909* was issued on November 15th, 1910. Attention is called to the fact that owing to the reorganization of the Fleet in March, 1909, the Channel Fleet was absorbed into and became part of the Home Fleet. The returns from the Channel Fleet for the period prior to this reorganization have therefore been included in those from the Home Fleet.

Summary of Returns for Total Force.

The returns for the total force for the year 1909 show a continuous improvement in the general health of the Fleet as compared with the preceding five years. Not only are the case, invaliding, and death ratios for the year under review lower than the average ratios for the last five years, but the average loss of service for each person has further dropped from 10.8 to 9.76 days. The final invaliding ratio also shows a small decrease in comparison with the previous five years' average. The total force, corrected for time, in the year 1909, was 112,700, and the total number of cases of disease and injury entered on the sick list was 72,540, which gives a ratio of 643.65 per 1,000, a decrease of 75.34 as compared with the average ratio for the preceding five years. The number of entries per man for disease and injury was: Home Station, 0.76; Home Fleet, 0 56; Atlantic Fleet, 0.62; Mediterranean, 0.61; North America and West Indies with Fourth Cruiser Squadron, 0.71; China, 0.71; East Indies, 0.95; Australia, 0 61; Cape of Good Hope, 0.56; and the Irregular List, 0.85. For the total force the average was 0.64, a decrease of 0 05 as compared with 1908. The average number of men sick daily was 3,015.25, giving a ratio of 26.75 per 1,000—a decrease of 2.84 in comparison with the previous five years. The total number of days' sickness on board and in hospital was 1,100,568, which represents an average loss of service of 9 76 days for each person, a decrease of 1.04 in comparison with the average for the preceding five years. The ratio per 1,000 of men sick daily on the various stations was: Home Station, 35.42; Home Fleet, 23.19; Atlantic Fleet, 24.01; Mediterranean, 23 83; North America and West Indies and Fourth Cruiser Squadron, 25.42; China, 28.09; East Indies, 25.78; Australia, 20 41; Cape of Good Hope, 20.14; and the Irregular List, 45 76. For the total force the ratio was 26.75. As was the case in the preceding four years, the Cape of Good Hope shows the lowest, and the Irregular List the highest, sick-rate.

Invalidings.

The total number invalided was 2,007,† which gives a ratio per 1,000 of 17.8, a decrease of 4 3 per 1,000 in comparison with the average ratio for the preceding five years. The total number of persons finally invalided was 1,764, of whom 66 were invalided after refusing operative treatment. The ratio per 1,000 of final invalidings was 15 65, a decrease of 0 86 per 1,000 as compared with the average for the previous five years. Of the 2,007 invalids, 1,851, giving a ratio of 16 42 per 1,000, were for disease, and 156, a ratio of 1.38 per 1,000, were for injury. In comparison with the average ratios of the previous five years, the ratio per 1,000 of force invalided has decreased in the Mediterranean from 31.49 to 17.64; in China, from 22.63 to 17.43; in the East Indies, from 34.37 to 25.53; in Australia, from 18 41 to 9.79; Cape of Good Hope, from 22.14 to 14 15; Atlantic Fleet, from 23 86 (four years' average) to 16.29; North America and West Indies, with Fourth Cruiser Squadron, from 18.51 (four years' average) to 16.04; in the Home Fleet, as compared with an average of the Home and Channel Fleets for 1908, from 15 86 to 14.15; and on the Home Station, as compared with 1908, from 27.93 to 26.42. Only in the Irregular List has there been a fractional increase, namely, from 16.81 to 16.85.

Deaths.

The total number of deaths was 362, giving a ratio of 3.21 per 1,000, a decrease of 0 54 in comparison with the average ratio for the last five years. Of this number, 258, or 2.28 per 1,000, were due to disease, and 104, giving a ratio of 0.92 per 1,000, to injury. In comparison with the death ratios of the preceding five years, the ratio per 1,000 decreased from 3.94 to 2 01 in the Mediterranean; from 4.02 to nil at the Cape of Good Hope: from 4.02 to 1.12 in the Irregular List; from 3.02 (four years' average) to 2.32 in the Atlantic Fleet; from 3.1 (four years' average) to 2 46 in the North America and West Indies with Fourth Cruiser Squadron; and from 4.05 (average of the Home and Channel Fleets for 1908) to 2.73 in the Home Fleet. There were increases in four stations—namely, in China, the East Indies, and Australia—from five years' averages of 4.15, 7 83, and 4.19 respectively to 4.78, 9.04, and 6.52, and on the Home Station, where the ratio was 4.11 as compared with 3.04 in 1908.

* London: Printed for His Majesty's Stationery Office, by Eyre and Spottiswoode, Ltd., Printers to the King's Most Excellent Majesty. And to be purchased, either directly or through any bookseller, from Wyman and Sons, Ltd., Fetter Lane, E.C., and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Tweeddale Court, Edinburgh; or E. Ponsonby, Ltd., 116, Grafton Street, Dublin. (Price 1s 2d.)

† This number includes men temporarily invalided from foreign stations, many of whom are again able to join the active force. The number finally invalided represents the waste of the service from this cause during the year.

General Diseases.

The following is a summary of the returns under the head of general diseases:

Small-pox.—No single case was recorded during the year among our 100,000 men, a large proportion of whom, as on the East Indies, China, and Mediterranean Stations, are exposed to considerable risk of infection.

Cow-pox.—482 cases, 370 of which were from the Home Station and 42 from Australia.

Chicken-pox.—13 cases; 12 from Home waters and 1 from the Cape of Good Hope.

Measles.—159 cases; 92 from the Home Station, 50 from the Home Fleet, and 11 from the North America and West Indies with the Fourth Cruiser or Training Squadron. This is an improvement on 1908, when 231 cases were recorded.

Rubella.—109 cases; 59 from the Home Station and 33 from the Home Fleet.

Mumps.—14 cases; 4 from China and 10 from Australia.

Mumps.—156 cases; 60 from the Home Station and 83 from the Home Fleet.

Influenza.—2,280 cases with 4 deaths, giving a decrease in the ratio of 4.24 per 1,000 as compared with the average for the preceding five years. The Home Station contributed 639 cases, the Home Fleet 1,218, and the Mediterranean 109 cases.

Scarlet Fever.—138 cases, with 1 invaliding and 1 death. The Home Station contributed 69, the Home Fleet 38, the Atlantic 15, the Fourth Cruiser Squadron while in home waters, 4, Mediterranean 5, and Australia 7 cases.

Diphtheria.—35 cases, with 1 invaliding and 1 death, giving a ratio practically identical with the average. The Home Station returned 22 cases and the Home Fleet 7.

Enteric Fever.—150 cases, with 28 deaths. The case and death ratios per 1,000 were 1.33 and 0.24 respectively, as compared with 1.67 and 0.25, the average ratios for the preceding five years. The Home Station returned 31 cases; the Home Fleet 46; the Atlantic Fleet, 8; the Mediterranean, 30; North America and West Indies, with Fourth Cruiser Squadron, 8; China 9; East Indies, 6; Australia, 5; Irregular List, 7; while the Cape of Good Hope is the only station where no case of the disease is reported.

Typhoid Fever.—16 cases are recorded, giving a case ratio of 0.14 per 1,000 as compared with an average ratio of 1.92 for the preceding five years. This compares unfavourably with 1908, when only 9 cases were recorded, but it is to be noted that the cases contributed from the Home Station and Home Fleet were recurrences of previous infections, while the 11 entries from the Mediterranean Station referred only to 10 individuals. Unlike 1908, no case was invalided from the Service, and there were no deaths, while the number of days lost to the Service totalled 900, as compared with 1,000 in 1908 and 30,541 in 1907.

Malaria.—411 cases. The East Indies contributed 183, China and the Mediterranean 69. The case ratio per 1,000 was 3.64, as compared with an average ratio of 5.58 in the previous five years.

Cholera.—2 cases from China, 1 fatal.

Dysentery.—55 cases, with 1 final invaliding and 3 deaths. East Indies furnished 22 cases and China 14.

Malaria.—472 cases, with 4 final invalidings and 37 deaths. The Home Station with 218 entries, and the Home Fleet with 173 contribute the large majority, but every station reports cases.

Venereal.—611 cases, with 9 invalidings from foreign stations, 3 final invalidings, and 2 deaths. The case, invaliding and death ratios per 1,000 were 5.42, 0.02, and 0.01 respectively, as compared with 5.09, 0.01, and 0.02, the average ratios for the preceding five years. Although not such a bad year for malarial fever in the East Indies as 1908, this station once again heads the list with 273 cases, while the Mediterranean contributes 79. The highest case ratios are furnished by the East Indies, Cape of Good Hope, 21.23; China, 11.49; and the Mediterranean, 7.96. The total number of cases (611) does not indicate that number of men was affected, as a large number of relapses occurred.

Erysipelas.—27 cases, all erysipelas.

Tuberculosis.—320 cases, with 209 final invalidings and 22 deaths, the case, invaliding, and death ratios per 1,000 were 3.19, 2.19, and 0.19, as compared with an average for the preceding five years of 3.24, 2.41, and 0.38 respectively. The total invaliding only represents 315 individuals affected, as 5 are still on the sick list. Of the whole number, pulmonary cases contributed 253 cases; joints, 17; glands, 10; testis, peritoneum, 4; kidney, 1; and larynx, bones, and skin, general tuberculosis, 9, with 7 deaths; while pulmonary cases caused 13 and tuberculous peritonitis 2 deaths. The East Indies contributed the highest case ratio, and the Cape the lowest.

Venereal Diseases.—The total number of cases recorded is 5,974, namely, chancroid, 2,364; syphilis (primary), 954; syphilis (secondary), 3,278; gonorrhoea and sequelae, 6,878. There were 155 final invalidings—namely, 1 for chancroid, 107 for secondary syphilis, and 47 for gonorrhoea and sequelae. The 8 deaths were due to secondary syphilis, and 1 to gonorrhoea. The case, invaliding, and death ratios per 1,000 were 51.35, and 0.06 respectively, as compared with 120.19, 2.05, the average ratios for the preceding five years. The number of days' loss of service was 325,889, while the daily number of men ineffective from these diseases was 893.4, as compared with 889.15 in 1908, and 903.9 in 1907. The China Station shows the highest case ratio per 1,000 with 163.46, closely followed by the Irregular List with 163.46, and Home Station coming next with 143.33. Australia, which in 1908 headed the list and has almost always shown a high ratio, shows 111.25, an interesting fact in view of the legislative action recently taken in New South Wales.

Rheumatic Fever.—814 cases, with 60 final invalidings and 3 deaths. As in 1908, the case ratio shows a decided increase (3.76), which is possibly in part due to the concentration of the Fleet in the cold and stormy Home waters, and to more careful classification. Of the total (814) the Home Fleet and Station return 298 and 269 cases respectively, the Atlantic Fleet 50, and the Mediterranean 80.

Other Infective Diseases.—18 cases, which include 5 cases of septicaemia with 3 deaths; 3 of pyaemia with 4 deaths from that disease; 1 of acute toxaemia, which proved fatal; 2 of acute infective periostitis, with 1 invaliding and 1 death; 1 of cerebro-spinal meningitis, with 1 invaliding; 1 of osteomyelitis, and 2 invalidings for that disease; 1 of actinomycosis, and 1 of whooping-cough. Where deaths and invalidings exceed the number of cases, the difference represents entries left over from 1908.

Parasitic Diseases.—3,669 cases, of which scabies represented 3,564. The Home Fleet contributed 1,596 of the latter, the Home Station 1,453 and the Atlantic Fleet 217.

Poisons.—111 cases, with 1 final invaliding and 4 deaths. Lead poisoning was responsible for 21 cases, and ptomaine for 57; 1 of the latter was invalided. It is stated that the deaths were the result of carbolic acid, coal gas, carbon monoxide, and gas and ether given as an anaesthetic.

Alcoholism.—115 cases, with 1 final invaliding and 4 deaths.

Gout.—197 cases.

New Growths.—173 cases of "non-malignant," and 13 cases of "malignant"; of the latter 8 died.

Diabetes.—7 cases, with 3 invalidings and 1 death.

Other General Diseases.—Under this heading 96 cases are recorded, and include 22 of beri-beri, 10 of scurvy, 32 of anaemia, and 3 of pernicious anemia, 2 of goitre and 2 of exophthalmic goitre, 10 of "general debility," 3 of chorea, 2 of osteo-arthritis, 4 of purpura, and 1 each of sprue, obesity, and defective growth and weight. Five cases of beri-beri and 2 of pernicious anaemia died.

Local Diseases.

The following is a summary of the diseases under the heading of "Local Diseases."

Diseases of the Nervous System.—781 cases, with 248 final invalidings and 21 deaths. The case, invaliding, and death ratios per 1,000 are 6.92, 3.17, and 0.17 respectively, as compared with 8.38, 2.41, and 0.13, the average ratios for the preceding five years. "Nervous diseases" accounted for 700 cases, with 209 invalidings and 19 deaths; and "mental diseases" for 81 cases, 39 invalidings, and 2 deaths.

Diseases of the Eye.—790 cases, with 125 final invalidings.

Other Organs of Special Sense.—540 cases, with 120 final invalidings and 8 deaths. Ear diseases accounted for 489 cases, 113 final invalidings, and all the deaths.

Diseases of the Circulatory System.—598 cases, with 180 final invalidings and 36 deaths. Organic heart disease accounted for 199 cases, with 137 final invalidings and 25 deaths; functional heart disease for 151, of which 12 were finally invalided; aneurysm for 12, of which 5 were invalided and 6 proved fatal; diseases of veins, 213; and other diseases included under this system, 23, with 5 deaths.

Diseases of the Respiratory System.—7,762 cases, with 53 final invalidings and 12 deaths. The case ratio shows a decrease of 4.56 per 1,000, in comparison with the average ratio for the preceding five years. "Catarrh" furnished 6,617 of the cases under this heading.

Diseases of the Digestive System.—11,691 cases, with 274 final invalidings and 20 deaths, giving case, invaliding, and death ratios per 1,000 of 103.73, 2.43, and 0.17 respectively, as compared with 107.82, 2.06, and 0.23, the average ratios for the preceding 5 years. Mouth and teeth diseases accounted for 917 cases, sore throat for 2,389, tonsillitis for 3,208, diseases of the stomach for 1,075 and of the intestines for 2,897, hernia for 696, haemorrhoids for 329, hepatitis for 42; other diseases of the liver, chiefly catarrhal jaundice, for 133. The highest case ratios were furnished by the Home station, the Irregular List, and the East Indies, and the lowest by the Home Fleet and Australia.

Diseases of the Lymphatic and Glandular System.—450 cases, with 3 final invalidings.

Diseases of the Urinary and Generative System.—935 cases, with 82 final invalidings and 14 deaths. Diseases of the kidneys accounted for 13 deaths, and the remaining death was due to stricture.

Diseases of the Organs of Locomotion.—1,531 cases, with 70 final invalidings and 1 death. Diseases of the joints furnished 21 of the final invalidings.

Diseases of the Connective Tissue and Skin.—8,268 cases, with 15 invalidings and 1 death from intra-abdominal abscess. The case ratio varied from 155.19 in the East Indies to 60.04 and 60.35 in the Home Station and Fleet respectively.

Injuries.

(*a*) *General.*—285 cases, with 3 final invalidings and 80 deaths, giving very similar case and invaliding ratios to the average for the preceding five years. The deaths were due to: Burns and scalds, 9; heat-stroke, 3; multiple injury, 9; drowning, 58, as compared with 98 in 1908, when the total was swollen by the *Gladiator* and *Tiger* disasters. The unfortunate sinking of submarine C 11, with a loss of 13 lives, and the pinnace of the *Encounter*, with a loss of 15, were the chief accidents of the

sort to be recorded in 1909. Three cases of caisson disease are recorded.

(*b*) *Local.*—14,760 cases, with 137 invalidings and 15 deaths, giving a case, invaliding, and death ratio per 1,000 of 130.96, 1.21, and 0.13, as compared with 148.43, 1.17, and 0.16 respectively. The one case of wound in action was a recrudescence of trouble from a wound received years ago in South Africa.

Suicide.

Ten deaths are returned under this heading. The case ratio shows a decrease of 0.03 in comparison with the average for the preceding five years.

Papers.

In an appendix to the report are records of cases of caisson disease by Fleet Surgeons J. McIlwee and R. C. Munday, Surgeon H. D. Drennan, Surgeon E. R. Lockwood Thomas, and Staff Surgeon J. H. Lightfoot; and papers by Fleet Surgeon W. W. Pryn on tests for colour vision; reports on the examination of eyesight at gunnery schools, by Fleet Surgeon A. G. Wildey and Fleet Surgeon W. A. Whitelegge. Papers are also contributed by Staff Surgeon Oswald Rees on stoker's cramp; by Staff Surgeon C. H. J. Robinson on heat cramp; by Fleet Surgeon F. H. A. Clayton on the effects of heat on H.M.S. *Cressy* in 1903. Staff Surgeon W. H. Pope reports on an outbreak of scurvy on board H.M.S. *Philomel*. There is a paper on urticarial fever by Surgeon J. Verdon, one on beri-beri by Staff Surgeon A. J. Laurie, and one on the serum diagnosis of syphilis by Fleet Surgeon P. W. Bassett-Smith.

GLASGOW R.A.M.C. TERRITORIAL UNITS.

AT the monthly meeting of the Glasgow Territorial Force Association, held on December 6th, the minutes of the Recruiting and Property Committee submitted contained a paragraph regarding R.A.M.C. hall accommodation. A letter had been received from the Assistant Financial Secretary at the War Office stating that, in view of the reports by the A.M.O. and the Adjutant of the School of Instruction, he was prepared to recommend that sanction be given for the erection of a drill hall of the size applied for if the association would agree to modify the sizes of the various rooms. It was agreed to ask the A.M.O. whether he would accept the proposal, and, if so, the secretary was instructed to write the War Office accordingly. The association approved of the minute. The table of strengths of units submitted showed the Lowland Mounted Brigade Field Ambulance to be 3 short of establishment owing to withdrawals of time-expired men; the 1st Lowland Field Ambulance 7 short; the 2nd Lowland Ambulance 8 short; the 3rd Scottish General Hospital 1 short; and the 4th Scottish General Hospital up to establishment.

GLASGOW R.A.M.C. OFFICERS' MESS DINNER.

THE annual mess dinner of the Glasgow R.A.M.C. Territorial Officers has been fixed for February 18th in the Grosvenor Restaurant, Gordon Street, when the Director-General of the Army Medical Services will be the guest of the officers.

Public Health AND POOR LAW MEDICAL SERVICES.

SUSPECTED BOVINE TUBERCULOSIS.

THE case in which a farmer appealed against an order of the Corporation of Sunderland prohibiting him from delivering milk in the borough from three of his cows on the ground that the medical officer had reason to suspect the animals were suffering from tuberculosis was reported in the BRITISH MEDICAL JOURNAL of December 3rd, page 1831. The presiding barrister, after hearing the evidence on both sides, intimated that he would report to the Board of Agriculture and Fisheries. The Board has now decided that the order of the Corporation was made without due cause so far as it related to the three cows in question, and they found that George Greenshields was not in default, and withdrew the order against him, the costs of the appeal to be paid by the Corporation.

WHOOPING-COUGH AND SCHOOL ATTENDANCE.

PERTUSSIS.—In the Memorandum on Closure of and Exclusion from School issued by the Local Government Board in September, 1909, it is stated that the rules for the exclusion from school for whooping-cough should be similar to those for measles, except that the infection of whooping-cough probably lasts six weeks, and the children in the house who attend the infant school should, therefore, be excluded from school for this period—or as long as the cough continues. The procedure recommended in the memorandum as regards contacts living in measles-infected houses is to exclude from school attendance only those children of the same household who attend the infant school, and those older children of the same household who have not had measles. It is admitted that this procedure is a compromise which is obviously not a counsel of perfection and may need future modification. Even under present conditions it may need to be modified in accordance with the special circumstances of a particular district.

DUTY OF CLUB DOCTORS WHEN THEIR PATIENTS BECOME PAUPERS.

H. asks for our opinion on the following case: A. is a member of a friendly society and I am his doctor. A. has a long illness, and as his club pay becomes reduced, and having a family, is compelled to apply to the parish for relief, and is there allowed the services of the parish doctor. The club say that *I must* attend him. Is this so?

*** We cannot give a decisive answer to this question, as we do not know the terms on which our correspondent accepted the office of medical attendant on the members of A.'s club. We may, however, suggest that it is probable that the Poor Law medical officer was called upon by the guardians to certify to A.'s incapacity for work, etc., and not for the purpose of providing the patient with medical attendance. If such be the case, it would be well for our correspondent and the district medical officer of the union to come to an amicable arrangement in order that the unfortunate patient may by means of the certification by the former continue to receive all he is entitled to from his club and by the certificates given by the latter be able to secure all the parochial assistance which his case demands.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

JAPAN.

DURING April, May, and June the fresh cases of plague numbered 4, 9, and 9 respectively: the deaths from the disease amounted during these months to 3, 5, and 9 respectively. In Formosa during the three months in question 17 cases were reported and 15 deaths.

CHINA.

Plague has occurred in Hankow, Pakhoi, Chao Yang, Canton, Fatchow, Hsin Heri, and Sunning district, Hoihow, Kiunghow, Lintschow (near Canton), and Lienchow during the summer months of 1910. No exact returns are procurable.

STRAITS SETTLEMENTS.

A few cases of plague, for the most part imported, occurred in Singapore during the month of May, 1910. Not more than 6 cases in all were notified. On June 22nd Singapore was declared free from plague.

SIAM.

During the months of April, May, and June, 1910, the plague cases reported numbered 30 and the deaths from the disease 2. Previous reports show that between November 1st, 1909, and April 1st, 1910, the fresh cases of plague amounted to 78 and the deaths from the disease to 72.

TURKEY IN ASIA.

During the month of May, 1910, plague caused in Djedda 1 death, in Loheia 27 deaths; in Hadhur, inland from Loheia, a serious epidemic prevailed. In Basra, during June, July, and August, 4 cases and 4 deaths from plague occurred.

PERSIA.

In Bushire plague disappeared gradually during June, and on July 2nd the port was declared free from the disease.

EGYPT.

During July and August (to the 12th) 35 cases of plague were reported in Egypt, and 38 deaths from the disease.

TUNIS.

Plague was detected in the port, but all the cases were imported.

RUSSIA.

In the Astrachan district and in Odessa cases of plague were reported during the months of June, July, and August—22 cases in all and 19 deaths from the disease.

SOUTH AMERICA.

Brazil.—Two cases of plague in Bahia, and 1 case in Brazil in April.

Chile.—During June and July no cases reported.

Ecuador.—During June 6 cases of plague reported and 1 death.

Venezuela.—Plague prevailed during July and August in Caracas.

Peru.—During May and June plague was reported from the Arequipa Department. Between October 1st, 1909, and April, 1910, the cases reported numbered 379, with 95 deaths in Peru.

ENGLAND.

Four deaths from pneumonic plague occurred in the month of September, 1910, in the county of Suffolk. Rats and other rodents were found infected.

Obituary.

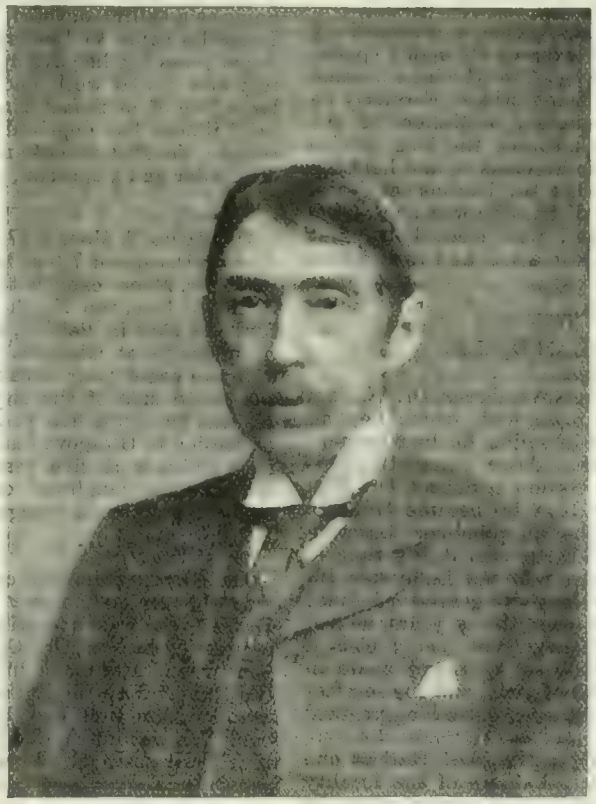
WILLIAM HENRY HORROCKS,

M.B.LOND., F.R.C.S.ENG.,

SENIOR HONORARY SURGEON TO THE BRADFORD ROYAL INFIRMARY.

It is with feelings of profound regret that we have to record the death of Mr. W. H. Horrocks of Bradford. Mr. Horrocks had been in the active practice of his profession up to six or seven weeks previous to his decease, and his well known personality and influence were in such constant evidence in the life of Bradford that it is difficult to realize that they have passed irrevocably out of it. The memory of his skill, of his work for his profession and his sacrifices for the poor will, however, long remain as an inspiration to his successors and a source of happiness to his townsmen.

Mr. W. H. Horrocks was the second son of the late Mr. W. H. Horrocks of Blundellsands, Liverpool, and was born on the 18th of June 1857. He received his medical education at University College, Liverpool; Owens College, and University College, London. He took the Membership of the Royal College of Surgeons in 1882, the Licentiateship of the Apothecaries Society in 1883, and graduated M.B. of the University of London in 1886, taking Honours in Forensic Medicine, Physiology and Botany. In the latter year he also obtained the Fellowship of the Royal College of Surgeons. Shortly after graduating Mr. Horrocks acted for some months as a Junior Resident at the Rotunda Hospital, Dublin. He always spoke of his residence at the Rotunda as having been of invaluable service to him in his later career. For nearly three years Mr. Horrocks acted as Resident Surgeon to the Northern Hospital, Liverpool—first as Ambulance Surgeon and later on as House-Surgeon. He then returned to London for one year as Demonstrator of Anatomy at University College. He next received the appointment of House-Surgeon at the Bradford Infirmary, remaining in the city on his adoption from that time until his death on December 5th. Mr. Horrocks was an excellent house-surgeon. His able and solid surgical education, his keen insight into character, his sympathy with suffering, and his administrative talent all combined to this happy result. He continued in residence at the Infirmary for two years and a half, eventually resigning to take up a partnership in the town with Dr. Rabagliati. In 1891 he was elected Honorary Assistant Surgeon to the Infirmary, and in 1892 he was appointed to the full staff. Mr. Horrocks remained in partnership with Dr. Rabagliati for some years, but eventually it was decided to carry on the work separately. Although in general practice, Mr. Horrocks was called in consultation, especially for operative surgery, by a large number of medical men in Bradford and the surrounding towns and districts.



The Bradford Medico-Chirurgical Society has been greatly indebted to Mr. Horrocks for the great enthusiasm with which he worked for it. He was an honorary member during the time of his house-surgeoncy at the infirmary, and was elected an ordinary member on resigning that position. Until his death he was a constant attendant at the meetings, reading many papers and exhibiting a large number of specimens. He was elected President of the Society for 1899–1900, and gave as his presidential address "Sir Astley Cooper—His Life and Times." This excellent and most interesting address was after reprinted in book form and circulated amongst a large number of medical friends.

Mr. Horrocks was greatly interested in the work of the British Medical Association, and was elected Representative in Representative Meetings of the Association at the inaugural meeting of the Bradford Division on May 6th, 1903. He served in this capacity until 1908. He became Vice-Chairman in 1907 and Chairman in 1908, giving, as his introductory address, a paper on "Quacks and Quackery." He also represented the Division on the Yorkshire Branch Council. He read many papers, both on scientific and medico-political subjects, before the Division, and his report on the work of the Representative Meeting was always a feature of the session. Although he considered the Representative Meeting was a most useful and necessary part of the Association, he was somewhat antagonistic to the idea that the Representative Body should be supreme. He considered that the Council should be able, if desired, to veto any resolution of the Representative Body it considered unwise.

In addition to his *Life* of Sir Astley Cooper, Mr. Horrocks was also the author of "Medical Notes on the Life of Edward Gibbon." He contributed an article on "Resection of the Intestine for Malignant Disease" to the BRITISH MEDICAL JOURNAL, afterwards quoted in Jacobson's *Surgery;* also an article on "Porro's Operation and a Suggested Modification" in the same journal; articles on "Atresia Ani Vaginalis" and "Pylorectomy for Carcinoma" to the *Lancet*, and "Gastroplication for Dilatation of the Stomach" to the *Annals of Surgery*. Other articles were contributed to the *Quarterly Medical Journal* and the *Provincial Medical Journal*. Mr. Horrocks was widely read in general literature, and had written papers on "Some Political Opinions of C. E. Fox" and "Political Caricatures." He took an especial interest in old prints. His knowledge of the latter was very extensive, and his greatest delight was to get an interested friend into his study and read the history of the past through the medium of his prints. His coloured prints were especially beautiful and rare, and he had probably one of the finest collections of old prints of distinguished medical men in the country.

A man of indomitable energy but of somewhat delicate physique, it can be easily understood how his various activities were likely to put a strain on his constitution. This, alas! was the case, and was the immediate cause of his untimely end.

At the service at the Church of St. Paul's there was probably a larger gathering of medical men than had ever been seen in Bradford before. In addition to these were the Lord Mayor and the Vicar of Bradford and a great number of sorrowing relatives, friends, and patients. The people amongst whom he worked went to show their sorrow and mourn their loss. In Mr. Horrocks they had lost a kind friend, a sympathetic adviser, and a great doctor, and his sorrowing wife, his son, and daughter a devoted and loving husband and father.

COLIN MACKENZIE, M.B., C.M.ED., D.P.H.R.C.S.ED.,
TRINITY, EDINBURGH.

WE regret to record the death, from enteric fever, of Dr. Colin Mackenzie, which took place at his residence on the morning of December 4th, 1910. Dr. Mackenzie was born at Ullapool, Ross-shire, on December 6th, 1854, and received his early education first at Dingwall, and afterwards at Daniel Stewart's College, Edinburgh. He then proceeded to the study of medicine in the University of Edinburgh, where he graduated M.B., C.M. in 1877. In 1890 he took the Diploma of Public Health of the Royal College of Surgeons of Edinburgh. After graduation he was appointed House-Surgeon to Leith Hospital, and he acted as assistant to the late Dr. Murray of Leith. Later he settled at Tain, where he quickly built up a large practice, and was held in high esteem. Fourteen years ago he moved to Trinity, one of the suburbs of Edinburgh, and soon established himself as one of the leading practitioners of the district. As a doctor he was very successful, endearing himself to his patients not only by his efficiency and skill, but by his kindly ways and his tender solicitude for the welfare of his patients. He was much respected by his fellow practitioners.

With his fine physique, Dr. Mackenzie was essentially an outdoor man, and an ardent lover of all manly sports. Latterly his chief recreation was golf, in which he became so proficient that he carried off many prizes. Formerly he was a Lieutenant in the Volunteer Battalion of the Seaforth Highlanders, and was awarded the long service medal. He was an enthusiastic Freemason, and held the office of R. W. Master of Lodge St. Duthus at Tain. After coming to the Edinburgh district he was one of the founders of Lodge Trinity, and was elected its first R. W. Master. He leaves a widow, a son, and a daughter to mourn his premature death.

WILLIAM HALL, M.D., J.P.,
LANCASTER.

WE regret to record the death in November of Dr. William Hall, of Elmsfield, Lancaster, a town with which he had been connected all his life, and in which he had been in practice for some forty years. After completing his general education at Lancaster Grammar School, Dr. Hall went to Edinburgh, where in 1871 he became L.R.C.P. and S., and then joined his father in practice. Later on he became F.R.C.S.Edin. and M.D.Brux. At the time of his death he was Senior Surgeon to the Lancaster Infirmary; his services to it were long and great, for besides holding a post on its staff for over thirty years, he had taken a large part in its management, being elected President of the Governing Body in 1904 and again in 1905. His father had held a like position, and the services to the institution of son and father together aggregated sixty-seven years.

Besides carrying on a large practice, Dr. Hall at one time played a part in the municipal affairs of the locality as a member of the Town Council. For several years he was Chairman of the Tramways Company, and he held a commission in the Artillery Volunteers long enough to obtain the rank of Surgeon-Colonel. He was an old and active member of the British Medical Association, and at one time President of its North Lancashire Branch. He had also been President of the Lancaster Medical Book Club, and held a considerable number of appointments, including the Surgeoncy of the London and North-Western Railway.

Dr. Hall, who was in good health up to within two or three days of his death, is survived by a widow and five daughters. Some ten years ago his name was added to the Commission of Peace for the borough.

BRIG.-SURG.-LIEUT.-COLONEL JOHN ROSS MURRAY, M.D., F.R.C.S.E.

ON November 17th, at Gipsy Hill, an old officer of the medical service of the army passed away in the person of Brigade-Surgeon-Lieutenant-Colonel John Ross Murray, who graduated M.D.Edin. in 1858, and F.R.C.S.E. in 1889.

He joined the army as a Staff Assistant Surgeon in June, 1861, his commission being antedated in recognition of valuable services rendered during the New Zealand war as an acting Assistant Surgeon. He was gazetted to the 107th Foot in 1863, and to the Royal Artillery in 1868, in which regiment he remained until the introduction of the unification scheme in 1873. In 1875 he was promoted Surgeon-Major, and shortly after this his services were specially mentioned by the Commander-in-Chief in India for good work done during a cholera epidemic at Lucknow. In 1889 he was promoted Brigade-Surgeon-Lieutenant-Colonel. He served in India and Bermuda with distinction, and during the New Zealand campaign was present in three actions, receiving the medal. He retired in 1892. He was a member of the British Medical Association for many years.

DR. RICHARD LORD, who closed a long and honourable career at Ealing in his seventy-third year, on November 5th, received his medical education at Edinburgh, where he took the degree of M.D. in 1862, choosing as the subject of his thesis "Synovial Membranes, with Especial Reference to the Bursae Mucosae." In the following year he was admitted a Member of the Royal College of Surgeons of England. He practised principally in Crewe, where he was Medical Officer of Health, and made his name as a skilful, devoted, and conscientious practitioner. Later he came to London, and practised at Notting Hill. Some years ago he gave up his general practice for laboratory and similar work, and acted as medical adviser to a large firm of manufacturing chemists. His death after a brief illness has deprived Dr. Lord's family of an affectionate, devoted parent and his many friends of a capable counsellor and a cheerful, unselfish companion.

DR. JAMES T. MOORE, 27, Buckingham Terrace, Glasgow, died on December 7th at his residence, in his seventy-sixth year. Dr. Moore came with his brother, the late Dr. Samuel J. Moore, from the North of Ireland, and, after teaching for some time in Paisley, the brothers took up the study of medicine at Glasgow. Dr. James graduated in 1869, and two years later became M.D. He first practised on the south side of the city, subsequently removing west. He was for thirty-five years a prominent member of the profession in Glasgow, but owing to his health he retired from active work five years ago. He is survived by two sons and two daughters, one of his sons, Dr. S. J. Moore, being in practice in Glasgow.

DR. STEVEN, who died on December 5th at the age of 81, was the senior member of the Association in Dundee. Dr. Steven was a native of Dundee, and served his apprenticeship to Dr. Cocks there, acquiring then the bent which later made him for so many years Surgeon to the Dundee Eye Institution. Dr. Steven had retired from practice some time ago, but was brisk and active to the end. He was much liked by his colleagues, though of a retiring disposition. He was unmarried.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.D.—G. H. A. C. Berkeley.
M.B.—L. S. T. Burrell, R. Crawford, G. Graham, A. Hamilton.
B.C.—L. S. T. Burrell, R. Crawford, A. Hamilton.

GLASGOW UNIVERSITY COURT.

AT a meeting of Glasgow University Court held on December 8th, Principal Sir Donald MacAlister presiding, Professor Phillimore was welcomed as the assessor appointed by the Senatus. A recommendation that Professor Bryce be appointed honorary curator of the anatomical collections in the Hunterian Museum was confirmed.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary council was held on December 8th, Mr. H. T. Butlin, President, in the chair.

Issue of Diplomas.

Diplomas of Fellowship were granted to twenty-four candidates found qualified at the recent examination.

Diplomas of the Licence in Dental Surgery were granted forty-two candidates found qualified for it.

Annual Meeting of Fellows and Members.

At this meeting, held on Thursday, November 17th, a resolution was passed affirming the desirability of admitting Members to direct representation on the Council. To this resolution the Council returned the answer that, as the matter referred to in the resolution was fully considered by the Council during the present year, they are not prepared to reopen the discussion.

Vacancy on the Court of Examiners.

The President reported that a vacancy had occurred, which would be filled up in January, 1911. Any Fellow wishing to become a candidate must apply in writing to the Secretary.

General Medical Council.

The thanks of the Council were given to Sir Henry Morris for his services as representative of the College on the General Medical Council.

Memorial to King Edward.

A letter was read from the Right Hon. the Lord Mayor announcing the opening of the Mansion House Fund for providing a memorial to King Edward in London, and asking the President to bring the appeal to the notice of members of the College living in London.

Scale of Medicines in Mercantile Marine.

A letter of November 29th was read from the Secretary of the Marine Department of the Board of Trade stating that the Board propose to revise the scales of medicines and medical stores issued by them for merchant ships, and to entrust the revision to a committee consisting, as on the occasion of the last revision in 1888, of members of their medical staff and representatives of the Royal College of Surgeons, Royal College of Physicians, and Pharmaceutical Society of Great Britain, with the addition, this time, of a representative of the shipping interests concerned; and asking the Council to nominate a representative of the College to act on the committee.

Mr. Clinton Dent was appointed to represent the Royal College of Surgeons.

Fellowship Examination.

The following candidates have been approved at the examination indicated:

FINAL FELLOWSHIP.—T. G. Fenton, Krishna M. Pardhy, W. B. Ainger, E. E. Maples, G. E. O. Fenwick, G. W. Thomas, J. M. Wyatt, E. T. H. Davies, J. B. F. Wilson, C. W. G. Bryan, J. B. Macalpine, P. J. Verrall, A. Richardson, H. Blakeway, H. D. Gillies, E. L. M. Lobb, H. Chapple, M. Muthu Kumarasamy, J. F. O'Malley, E. Mapother, C. A. Pannett, R. N. Porter, B. Quick, P. B. Roth.

In all there were 67 candidates, of whom 26 were approved and 41 were referred. Messrs. E. M. Cowell and A. K. Dalal passed the examination, but cannot be admitted to the Fellowship until they have reached the requisite age of 25 years.

Medical News.

THE income of the Surgical Aid Society as reported at the annual meeting on December 6th was £28,380, which is an increase of over £1,800 on the income of the previous year, the number of surgical appliances issued was 40,401, an increase of nearly 1,200.

A COURSE of instruction in hospital administration for the diploma in public health will be given by Dr. J. Coombie, medical superintendent of the North-Western Hospital, Hampstead, on Mondays at 3 p.m., and Thursdays at 11 a.m., beginning on January 9th, 1911. The fee is three guineas, and further particulars can be obtained from the Clerk of the Metropolitan Asylums Board, Embankment, E.C.

IT appears from the report of the council of the Metropolitan Hospital Sunday Fund for the year ending October 31st that the collections in various places of worship on Hospital Sunday amounted to £40,778. This is an increase of some £1,600 over the collection of the previous year. The largest collection was made at St. Paul's Cathedral—£4,483.

THE Friday evening meetings of the Royal Institution of Great Britain will be resumed on January 20th, when Sir James Dewar will give an address on Chemical Change at Low Temperatures. Among other lectures before Easter will be one on Grouse Disease by Mr. Arthur E. Shipley, on Digestive Activity by Professor H. E. Armstrong, and on Water Supply by Mr. J. H. Balfour-Browne, K.C.

IN the report of the libel action against Halifax doctors which was dismissed at the Leeds Assizes, published in the JOURNAL on page 1896 of last week's issue, we omitted to mention that the local solicitors, Messrs. Hirst and Whitley, Halifax, whose names were given, acted as agents for Messrs. Le Brasseur and Oakley, solicitors, of London, and that the latter firm represented the London and Counties Medical Protection Society, Limited, in this case.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

IGNORAMUS asks how to destroy "worm" which has attacked oak furniture.

A. M. asks for a manual on nursing such as would cover the syllabus of lectures prescribed by the Red Cross Society.

*** The following books would probably answer our correspondent's requirements: *Our Sick, and How to take Care of them*, by Miss Stacpoole. Cassell's Home Handbooks. 1s. *Nursing at Home*, by R. J. Collie and J. D. E. Mortimer. London: G. Gill and Sons. 1906. 8d. *Handbook for Untrained Nurses.* Published by the National Health Society, 53, Berners Street, W. 3d. *Hints and Help for Home Nursing and Hygiene.* Published by the St. John Ambulance Association. 1s.

HOME FOR TROUBLESOME BOY.

L. E. M. asks for advice in finding a school or institution for a troublesome and unruly boy who has got beyond the control of his widowed mother who has slender means.

*** It is difficult to recommend a school without knowing more of the boy's peculiarities. If morally defective the best plan would be to write to the Secretary, National Institutions for Persons Requiring Care and Control, 14, Howick Place, Westminster, S.W., who might be able to indicate a suitable institution.

CONSUMPTIVE SCHOOL CHILDREN.

A MEDICAL CORRESPONDENT, who has been appointed a member of a subcommittee of a county council to report as to the best means of dealing with cases of tuberculosis in children who have been forbidden to attend school, asks what is being done by other county councils, his own view being that the best solution would perhaps be to allow the children, who number some 80 to 100, to run wild. On the other hand, some members of the county council think that should the children recover, they will join the ranks of the unemployed.

*** The latest information as to what is being done by various county councils in dealing with cases of tuberculosis in school children may be obtained from the Annual Report for 1909 of the Chief Medical Officer of the Board of Education. (Open Air Schools, page 144. Schools for Consumptive Children, page 148.) It will be seen that, at present, very little is being done in this direction. The objections to allowing such children to "run wild" when excluded from school are: That they need medical supervision; that the home conditions are often unfavourable to recovery; that the disease tends to be of long duration, so that the children may miss their chance of education. Children excluded from school for tuberculosis at say 10 years of age sometimes never return to school at all, though they may be quite fit for school work under proper special conditions. The National Association for the Prevention of Consumption (20, Hanover Square, W.) published a pamphlet on tuberculosis in school children (Leaflet No. 6) which gives some suggestions as to the provision which may be desirable for such children.

FERTILITY OF WOMEN.

A. B. C. asks to be referred to statistics or literature bearing on the relative fertility of women at different ages.

*** See Matthews Duncan, On the Variations of the Fertility and Fecundity of Women according to Age, *Transactions of the Royal Society of Edinburgh*, vol. xxiii, p. 475; also the same author, On the Laws of the Fertility of Women, same *Transactions*, vol. xxiv, p. 287; and also in vol. xxiv, p. 481, a remarkable monograph by Professor Tait, entitled, Note on Formulae representing the Fecundity and Fertility of Women.

"STILL'S DISEASE."

DR. JOHN W. TAYLOR writes: In the review (JOURNAL, December 3rd) of Dr. Cautley's *Diseases of Children* the reviewer mentions: "On careful perusal we can find no subject of importance omitted;" and, further, it is stated "the most recent works on the subject are laid under contribution." Still's disease has been dealt with of late, but no notice of it whatever occurs in Dr. Cautley's work. It would be interesting to know if your reviewer has overlooked this omission, or whether Still's disease is not regarded by the profession generally as a distinct disease. For my part, I believe

Still's disease is regarded by some as a distinct disease. It would be interesting to know if Dr. Cautley and his reviewer are opposed to this view.

*** The reviewer had not overlooked the point. From the author's description of rheumatoid arthritis, however, it seemed clear that he is well acquainted with Still's work. There is a conflict of opinion as to whether the complaint often associated with Dr. Still's name is a separate and distinct one. Dr. Cautley is probably in agreement with many, if not a majority, of those with the requisite experience who do not regard it as a distinct disease. The reviewer's view is to the directly opposite effect; but such a difference of opinion was not considered to justify him in fixing upon the author the charge of an important omission. At the same time, it may be conceded that it might have been well if the author had referred to Still by name.

ANSWERS.

W. R. E.—Our correspondent might apply to the Secretary of the National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W.C., who, we believe, has a list of suitable institutions for cases of hemiplegia, and might be willing to render assistance.

TREATMENT OF FLAT FOOT.

DR. FREDK. F. MIDDLEWEEK (Wallington) writes, in reply to "Bodmin's" query in the JOURNAL of November 26th: The exercises I make use of are: (1) Practise walking on tip-toes five or six times daily. (2) Practise walking on the heels with the feet dorsiflexed as much as possible. (3) Practise walking on the outer borders of the feet; the inner borders should be well raised from the ground and the feet kept parallel with each other. (4) Practise extension, inversion, flexion, and eversion of the feet, first as a passive exercise by the aid of the surgeon making the movements to the utmost limit, then as an active one. (5) Practise standing with the toes in and heels out; now raise on the toes and press out the heels as much as possible. (6) Practise standing with the feet parallel and about 8 in. apart; now raise the inner side of the feet, throwing the weight on the outer sides. In addition to movements massage should be given, especially deep friction on the painful spots, which are usually found over the calcaneo-navicular ligament, the anterior end of the os calcis, and short plantar ligament. The tibialis anticus is usually found to be hypertrophied; this should also receive massage treatment. Messrs. A. Winkler and Co., 5, Charterhouse Buildings, Aldersgate, E.C., supply a good instep support. It would be interesting to know if "Bodmin's" patient has scoliosis.

LETTERS, NOTES, ETC.

A MEDICAL CORRESPONDENT sends us a circular which has been received by a matron and a sister-in-charge of a lying-in home. It is got up to resemble typewriting, but would seem to be produced either by printing or some other process. The first paragraph of the circular suggests that the recipient is "doubtless occasionally asked for advice and information by women whom circumstances have rendered unfit for child-bearing; for instance, women who have contracted some constitutional or local disease which makes the avoidance of pregnancy a necessity." The remainder of the circular is in commendation of certain quinine pessaries sold by the company issuing the circular. The ladies who have received this circular are naturally indignant, and feel that they are insulted by receiving such a request as is contained in the circular. Every medical man will, we feel sure, sympathize with them, but the only remedy would appear to be to put all such communications in the waste-paper basket.

LICENCE DUTY ON MOTOR CARS.

THE question whether medical men who use motor cars in their practice are entitled to use them for their own convenience and pleasure, notwithstanding that they claim exemption from half the rate of motor taxation, has, we learn from the *Autocar*, led to the Motor Union addressing a letter on the subject to the Treasury, and the following is the text of the reply received:

Treasury Chambers,
November 18th, 1910.

Sir,—In reply to your letter of the 10th inst., I am directed by the Lords Commissioners of His Majesty's Treasury to state that in accordance with Section 86 (4) of the Finance (1909–10) Act, 1910, it is for the County Council to satisfy itself on the question of fact whether a motor car, in respect of which a medical practitioner claims relief of half the rate of duty payable, is kept for the purpose of his profession. Provided that the Council is satisfied on this question, My Lords are of opinion that the medical practitioner is entitled to the allowance, although he may at times use the car for other purposes.

I am, sir, your obedient servant,
(Signed) J. H. MURRAY.

The Assistant Secretary,
The Motor Union,
Caxton House, S.W.

A FILTERING TOBACCO PIPE.

MESSRS. FOSTER-JOSEPHS (1, Clement's Inn, Strand) have brought out a pipe with two bowls, one in front of the other. In the front bowl the tobacco is burned, and in the back bowl the smoke is filtered through cotton wool. The smoke necessarily passes through the cotton wool, because, emerging from the first bowl through the bottom of the second bowl, it enters the pipe stem through an aperture high up in the second bowl. The pipe would certainly prevent the passage of half-burned particles of carbon and the liquid matters which cause bubbling in ordinary pipes, and sometimes get into the smoker's mouth. The smoke, too, is cooled down. Its advantage over other special pipes which have the same object in view is that, the smoke-filtering material being packed quite loosely, it offers no obstruction.

A SAFETY RAZOR.

WE are asked to express an opinion upon the Gillette safety razor, an advertisement of which appears elsewhere in the JOURNAL. After a considerable experience we can say without hesitation that it is an excellent razor; it is simple to use, well made, and portable. It is put up in several different ways, but our experience has been with the standard pattern which costs 1 guinea. The pocket edition, which we have not seen, is sold at the same price, but is said to take up no more room than a cigarette case.

THE POLYCLINIC.

DRS. JAS. WHITTON (Oamaru, New Zealand) and J. A. NEWLI (Lyttelton, New Zealand) write: We have just finished six months' post-graduate work in London, and have completed the courses at the Polyclinic in Chenies Street. We should like to make known through your paper, for the benefit of Colonial men coming to London, the high value of the classes there and the helpfulness and kindnesses of the teachers one and all. Everything in their power is done to assist students both with lectures and clinical work.

SICK ROOM FIRES.

DR. GRIFFITH C. WILKIN (Paignton) writes in praise of coke which he has tested in his sitting-room for some time past. The material, he says, quickly becomes incandescent, gives off much heat, but no smoke; the fire does not require poking and the ash is very small.

IS ECZEMA ON THE INCREASE?

MAJOR FINK, I.M.S. (ret.), London, W.) writes: Dr. J. C. McWalter in the JOURNAL of October 15th, p. 1195, asks the question "Is eczema on the increase?" and suggests a plan current in Buenos Aires, he tells us, for verifying the figures in the British Isles, which may run from 3,000 to 300,000. My opinion is that the term "eczema" is loosely applied to a manner of skin eruptions at the present day by a certain class of the public, who try to treat themselves with secret nostrums over a patch of psoriasis, lichen, acne, or any rash and when the remedy fails it is still eczema of a badder which has turned chronic. Even contagious impetigo, which is so effectually and simply cured with an ointment of hydrargyri ammon. dil., is converted into eczema. Anything possible for anything, therefore, to be converted into the disease, which is said to be on the increase. It is therefore not always the doctor's fault if the patient likes to use a so easily pronounced and so widely advertised. I once had patient with varicose ulcer of the calf with intense pruritus and oedema around, which I proceeded to treat, but he would insist that he had an eczema for which he had used "a tin with a sediment at the bottom of it," and all he wanted was an ointment to apply when he got home. Every effort employed to convince him that varicose veins were present his calf which required careful treatment; but he knew and would have an eczema ointment. It is well known every medical man that thoroughness and persistence of treatment are essential for the cure of any obstinate skin disease. We are told by one authority recently that "A great many failures are no doubt due to the fact that the parents or nurses do not carry out instructions properly." I am of opinion that a great many patients prefer to diagnose their complaints, and try nostrums which often create eczema, mask the original skin eruption, which may be the simple form of disease to cure by the proper diagnostician before it in time.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	15	0
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office. No responsibility will be accepted for any such remittance not safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *Restante* letters addressed either in initials or numbers.

Introductory Address

ON

REST AND MOVEMENT IN TUBERCULOSIS.

DELIVERED BEFORE THE EDINBURGH SANITARY SOCIETY, SESSION 1910–11,

BY

R. W. PHILIP, M.A., M.D., F.R.S.EDIN.

FOUR years ago, when I had the honour to deliver the introductory address to your society, I directed your attention to the public aspects of the prevention of consumption.[1] It was my endeavour to show the need which exists in every community for a systematized plan of antituberculosis effort similar to that which is now generally known as the "Edinburgh scheme."

In responding to the kind invitation of your President that I should again inaugurate the course of winter lectures, it has occurred to me that you may be interested to hear something regarding the application of the great principles of rest and movement in the treatment of tuberculosis. My thoughts run in this direction because it chances that this year has witnessed the opening of an important addition to the institutions of Edinburgh concerned with the combat against tuberculosis. The Farm Colony—the latest outpost in the campaign—will occupy itself especially with the application of the principle of movement in the treatment of tuberculosis. It is a principle which has for long constituted a chief element in the regimen pursued at the Royal Victoria Hospital for Consumption.

My hope and expectation is that the Farm Colony will succeed, through the longer residence and fresh interest, in rendering permanent for a still larger number the satisfactory recovery which is commonly achieved by the Hospital Scheme of graduated activity.

Change of Outlook on Tuberculosis.

A quarter of a century ago, the conception of the treatment of consumption and allied diseases was entirely different from to-day. *Then* the patient, whose illness was interpreted as the result of exposure and neglected cold, was protected in every possible way. The pallid, worn, emaciated—perhaps hectic—sufferer was metaphorically and often practically wrapped in cotton wadding and preserved, as it were, in a glass case or bandbox. The physician of that time commonly believed he "might not beteem the winds of heaven visit his patient's face too roughly."

Now contrariwise aërotherapy, or the physiological application of open air in treatment, is one of the widely accepted facts of modern therapeutics. It is happily beginning to be recognized that aërotherapy is serviceable not merely in consumption, but in the treatment of most diseases. Aërotherapy is a principle of universal applicability in all lands, at all seasons, and in every sick room. Aërotherapy is a preventive measure of incomparable value. My profound conviction is that, were the vitalizing properties of open air truly understood and utilized, the larger part of disease would cease to be. The day-by-day life of the community would be run on a higher level and the advance of old age would be hindered. The world has yet far to go before it realizes practically the tremendous significance of the mighty principle. Its half-hearted application in prevention and treatment remains one of the most unintelligible sins of the age.

For our purpose to-night it suffices to recall that the majority of physicians have adopted more or less fully the principle of aërotherapy in the treatment of tuberculosis. The question now before us is—Granted that the patient is to be treated on open-air principles, what then? Is he to be kept at rest? or is he to be allowed movement, and, if so, in what form and to what extent?

Most of the older school of doctors—and the school is far from extinct—favoured almost complete rest of the consumptive patient. It was argued that to heal a congested and perhaps ulcerated lung rest was essential. It seemed an almost elementary proposition that the less movement the better for the patient. Movement would presumably injure the lung, both directly and indirectly, through excitement of the circulation and nervous system. I quote from a recent American writer. "A lung," he says,[2] "that is tuberculous should be exercised as little as possible. It should be kept as still as may be, to the end that its recovery may be hastened." The statement contains a truth, but the proposition is made too universal. And so in a good many places still, the majority of consumptive patients are kept for lengthy periods at almost constant rest.

We shall see presently that while rest is helpful, and indeed essential, at certain times, the prolonged continuance of resting treatment is fraught with unsatisfactory results. The patients may seem in many instances to improve. Perhaps they put on weight in large amount. Often they become heavy and corpulent, but it is commonly mere fat; the skin textures remain pallid and toneless; the muscular tissue remains soft and flabby, and the individual himself is far from physiologically fit.

The practice of continued rest in consumption proceeded from a faulty, because insufficient, conception of the disease. The attention of the physician was directed chiefly to the local lung lesion. The conception had hardly dawned—even yet it is insufficiently realized—that the lung lesion is a relatively small part of the illness. The gradual descent downwards, pathetically described in popular language as "decline" or "consumption," is not an expression of the lung disease as such, but rather of a systemic or constitutional intoxication to which I shall presently refer more fully.

Even in respect of the affected lung itself insistence on rest beyond a certain degree and in special circumstances is most fallacious. Let me cite a fact or two in this connexion. In the early days of my work in this department—more than twenty years ago, when the systematized scheme of activity had not been elaborated, when there was no sanatorium for consumption in Great Britain—we instituted classes for physical movement and respiratory exercises in connexion with the Victoria Dispensary for Consumption. With the help of successive officers of the Dispensary I arranged such classes for selected cases from the immense *clientèle* of the institution. The patients used to come—often long distances—at fixed hours and enjoy regular training with regard to posture and healthy respiratory movement. More especially the young were taught the value of a healthy form of chest. Such physiological points were insisted on as nose breathing and the value of slow and full diaphragmatic movement. In addition to this, measured walks of varying amount and gradient were prescribed, exactly as we prescribed medicines. Thus we had walks radiating from the Dispensary round the Meadows, walks over the Bruntsfield Links, and walks in various directions on the slopes of Arthur's Seat. The patients reported, at successive visits, their experience in carrying out such instructions, and notes were made of the effects produced.

The results were eminently satisfactory. The patients did remarkably well, and no accident was traced to the adoption of active movement instead of rest. The experience led to a change in my outlook in relation to the meaning of treatment in tuberculosis.

Two practical conclusions of public interest forced themselves early on my mind. The first was that an enormous amount of benefit might be achieved for tuberculous patients of the poorer class by an extension of the system of home visitation and direction; in other words, that the home treatment of the tuberculous poor from a well-regulated tuberculosis dispensary might be made to play a most effective part in the solution of the great tuberculous problem. This led to the completer development of the dispensary system. The second conclusion was that we might hope, by the establishment of hospitals or sanatoriums for patients in the earlier stages, to achieve permanent cures to a degree not hitherto dreamt of, by elaboration of the principle of regulated exercises and graded activity of different kinds.

I am happy to say that these conclusions have been justified in the results obtained from day to day, on the one hand in the home treatment undertaken for so many years from the Victoria Dispensary, and, on the other, in

the systematized regimen of work at the Royal Victoria Hospital and the recently opened Farm Colony.

Neuro muscular Intoxication.

The conclusions involve a much wider conception of tuberculosis than that which concerns the local mischief within the lung. This has regard to the effects of the disease on the patient's system. Tuberculosis implies a progressive intoxication. The toxins produced by the tubercle bacillus appear to exert their vicious influence particularly on the neuro-muscular apparatus.[3] The toxin is especially a muscle poison.

This view can hardly be accentuated too much. It illuminates many points in the morbid history of the consumptive which have not been hitherto sufficiently explained.

Thus, what are the earliest symptoms which the patient manifests? They are not, as is usually supposed, referable to the lungs. The disease is far on when the patient begins to cough and expectorate. Long before local symptoms show themselves, the patient—although he may not understand it or still less complain of it—has experienced a sense of tiredness, languor, disability for mental and bodily effort, enfeeblement of circulation and gastro-intestinal disablement, including loss of appetite, dyspepsia, constipation, etc.

The occurrence of such symptoms must not be passed over lightly. Contrariwise, the practitioner of experience watches for their first appearance. They are to be interpreted not vaguely as evidence of overwork, but as evidence of the systemic, and, more particularly, the muscular poisoning to which I have alluded.

This process of muscular poisoning reveals itself *visibly* and *palpably* in the progressive wasting of the muscles, both of trunk and extremities, their advancing flaccidity and the increase of what is termed "myotatic irritability." This condition of muscle is an expression of malnutrition. It is a muscular dystrophy dependent on intoxication.

In this sense, tuberculosis may be defined as a constitutional disease, dependent on invasion by the tubercle bacillus and characterized by various local lesions and widespread systemic intoxication, which reveals itself especially by generalized progressive muscular dystrophy.

Incidentally, it is interesting to note that while the toxin of tuberculosis constitutes a muscle poison, muscle itself is one of the few structures on which the tubercle bacillus does not readily grow. It is possible that the elective affinity of the toxin for muscular structure may have some bearing on this.

Indications for Alternating Rest and Movement.

Returning to the question of rest or movement, how are we to apply the principle to the varying manifestations of disease which occur?

So long as the tuberculous process is in active operation toxins are readily elaborated and passed freely to the muscles with resultant progressive dystrophy. This dystrophy affects not only the muscles of the trunk and extremities *where it is evident*, but affects likewise the heart muscle, the muscles of the vessels, and the muscles of other viscera. At this stage the indication for treatment is mainly rest. Rest has the double advantage of tending to stay the active local lesion and of limiting the output of energy by the dystrophic muscles.

On the other hand, when the tuberculous lesion is less active or in process of arrest, and the production and carriage of toxins is correspondingly less abundant and rapid, the dystrophic muscles tend to recover themselves physiologically.

Nothing repairs muscular tissue so certainly as natural movement. This is the *motif* and guide in the institution of regular activity.

Let me recall the fact that tuberculosis tends to occur more frequently in persons who lead a sedentary, or at least a relatively inactive, life. This is not an absolute rule, but its application is a wide one. I may go further and say that, in proportion as the individual whose work involves a sedentary existence indoors counteracts the fault of his life by regular activity in the open air after working hours, the tendency to tuberculosis is limited and may be overcome.

I may remind you that the same principle may be traced in comparative pathology. Which are the animals most frequently affected by tuberculosis? Not the dog, not the horse, not the goat. It is the stalled cow which suffers most; and of the bovine species there is a marked difference as to frequency between comfortably-housed milch cattle and Highland cattle living a relatively active out-of-door life during the greater part of the year.

It is likewise freely admitted that nothing so certainly checks the earliest threatenings of tuberculous disease in the child, whether in glands, lungs, or elsewhere, as turning the patient out into the wild and letting him lead the natural, active life of the Highland pony.

It is a different matter, when the tuberculous process is further advanced and lung destruction is in progress. Here we are face to face with morbid conditions, both local and general, which are best met by rest.

Take, for example, the occurrence—say, the repeated occurrence—of bleeding from a cavity within the lung. It goes without saying that here rest, both mental and physical, is to be enjoined.

Again, where the lung is breaking down rapidly and there is continued absorption of poisonous products, with corresponding systemic intoxication, evidenced by disturbance of temperature, increased pulse-rate, and rapid muscular wasting, rest must be the order of the day. The excessive waste must be met by economy in wear and tear. The circulation, which is the chief channel of dissemination of the poison, must be kept as quiet as possible.

As acuter manifestations disappear under the influence of rest, and the risk of local and constitutional disturbance is reduced, the need for complete rest is lessened or removed. This is in keeping with the facts of pathology in relation to other acute morbid processes.

As recovery proceeds further, the aim comes to be the restoration of physiological function—both locally, so far as the respiratory function of the lung is concerned, and generally, so far as the circulation and musculature are concerned. The process of repair is most *readily traceable in the muscles of the trunk and extremities.* By the institution of natural movements, the physiological cure or "recreation" is assisted, and there follows a gradual return towards the normal condition of health of every organ. I need hardly remind you that, for us all, health is largely governed by the harmonious alternation of activity and rest.

While natural repair is thus hastened by carefully adjusted movement, there is reason to suppose that at the same time a degree of relative immunization to tuberculosis is secured. It may be that under the influence of activity a process of autoinoculation is instituted. That is to say, by reason of the accelerated circulation a certain amount of toxin is carried through the system. The presence of the toxin stimulates the system to react, and to produce certain opposing elements or antibodies.

If we can adjust the activity so nicely as to lead to the discharge of just so much toxin as will cause a serviceable and not an excessive reaction, we may hope to achieve by natural methods what we seek to effect in the treatment of tuberculosis by vaccine therapy—that is, by the use of tuberculin.

It will be readily understood that during an *acute* tuberculous process, with disintegration of lung tissue, the manufacture of toxins and their subsequent discharge into the circulation may be in excess of the possible production of antibodies by the system. The tissues are thus left to soak in a highly toxic element, without the antagonistic influence which in *less acute* processes Nature herself is able to provide unaided or may be induced artificially to afford.

Regulation of Dosage.

The amount of activity allowed must in every case be determined with exactness. There must be a careful estimation of dosage. Regard must be paid not vaguely to the nature of the case or the so-called stage of disease, but adjustment must be guided by the needs of the *individual* patient. It is easy by over-keenness and haste to thwart the effect which the physician is seeking to attain. Activity in excess may serve to aggravate the local process. The lung trouble may once more take on an acute character, and, what is especially significant, the

excessive discharge of toxins through the system may be recommenced. In other words, an exaggerated auto-inoculation may ensue with corresponding retardation of cure.

Systemic disturbance from excessive activity reveals itself by evidence which is available to the physician and even to the patient. Unhappily, both patient and physician, if not keenly alive to the possibility, may fail to trace the disturbance to its proper source. The evidence available may include such symptoms as loss of appetite, malaise, headache, less or more fever, and increased pulse-rate.

The possible occurrence of these untoward effects implies the need for most careful supervision of persons undergoing treatment by movement for some little time at least. It is only the watchful observer in frequent relationship with the patient who can quickly discriminate the effects of excessive dosage and who can wisely determine the decrease or increase of dose in a given case.

On this account, such treatment can be more efficiently initiated in a hospital or farm colony, where the patients are more or less constantly under the eye of a trained observer and where increase of dosage is sanctioned only where no contraindication is present. Under such conditions the degree of tolerance on the part of the patient can be studied with great exactness. The regulation of the dosage thus becomes a scientific procedure.

It is another matter when patients endeavour to regulate the treatment themselves. There is, of course, a natural desire on the part of the patient to progress. Minor indications of danger or positive harm are apt to be missed and the limits of tolerance passed. Danger signals are passed and accidents happen. The result is failure, disappointment, and even larger disaster. The fault is not one of the system but of the manner in which it was carried out.

I have said that indications for the reduction of activity will be found in increased rapidity of pulse-rate and irregular oscillation of temperature just above the normal line. Indications for the *completer* cessation of active movement and a return to more or less complete rest are afforded by elevation of temperature over 99° F., a continuing pulse-rate of over 95 per minute with corresponding diminution of blood pressure, recurrent headache, especially at the end of the day, and an undue sense of fatigue.

Where no such contraindications occur, it is found possible to increase the activity undertaken until its amount be as great as, or, indeed, until it is much greater than, the activity previously undertaken by the individual in health.

After sufficient trial at this high level, the patient may commonly be allowed to guide himself as to the discharge of energy, which is sufficient to keep him in condition and is not excessive. It is possible that by this time the local and constitutional damage have been satisfactorily repaired and the affected person has undergone a sound, physiological education which he is not likely to forget.

Such considerations and facts have formed the basis of the scheme of physical treatment which has gradually been elaborated and systematized during the past eight or ten years at the Royal Victoria Hospital, and to the details of which I shall refer in a moment or two.

For the majority of the patients, the regimen as carried out within the hospital is found to be complete, and the patients are commonly rendered fit to return to ordinary duty. In the case of some 25 per cent. of the patients, however, there is need for something more. It has been found that, after the disease seems to have been arrested and the muscles have recovered size and tone, these persons remain unduly liable to relapse. An immediate return to their ordinary avocations, more especially in the case of indoor workers, is apt to involve recurrence of trouble. This implies disappointment and economic leakage, which I believe might be saved. It is for this class of persons that the Farm Colony was conceived. The colony is a kind of post-graduate school suited to the requirements of a certain number of individuals, who need more prolonged surveillance and direction than is convenient at the hospital.

Scheme of Physical Treatment.

A rapid sketch of the scheme as carried out at the Royal Victoria Hospital will serve to illustrate the significance of the alternating principles of rest and movement.

On admission each patient is placed at complete rest. During this stage, in addition to minute examination of every organ, the patient's general condition is carefully observed. According to the estimate which is made, the length of the resting period is fixed. Thereafter, in the absence of contraindication, the patient is gradually advanced through the other stages, according to his or her physical condition. The nature and amount of activity are definitely prescribed, just like drug treatment. The dose is increased or diminished as the temperature chart, pulse-rate, and other indications suggest. A coloured badge is given to the patient to denote the stage he has reached.

I. RESTING STAGE. (*White Badge.*)

On admission to the hospital all patients are prescribed complete rest, lasting from a few days to several weeks, according to the individual case.

II. STAGE OF REGULATED EXERCISES. (*Yellow Badge.*)

This includes:

1. Walking varying distances, from ¼ mile to 5 miles—(*a*) on the level; (*b*) on sloping ground.
2. Various respiratory exercises once or twice a day.
3. Other forms of movements to improve carriage of shoulders, head, chest, etc.

III. STAGE OF REGULATED WORK.

The work is chosen with a view to utility and with due regard to the patient's individual case, and to his past trade. This stage is subdivided into four grades (*A.*, *B.*, *C.*, *D.*).

III A. (*Pale Blue Badge.*)

Picking up papers, leaves, and other light rubbish in the grounds.
Knitting. Sewing. Drawing.

III B. (*Green Badge.*)

Emptying garden waste boxes, and assisting to carry away rubbish.
Carrying light baskets for various gardening purposes.
Light painting work (gates, fences, furniture, etc.).
Wiping shelters. Setting tables and laying cloth in patients' dining-room.
Cleaning silver.
Cleaning brasses, towel rails, and taps.

III C. (*Deep Blue Badge.*)

Raking. Hoeing. Mowing. Sweeping leaves.
Drawing two-wheeled barrow with assistance.
Other gardening jobs requiring a similar amount of exertion.
Heavier painting work.
Sweeping shelters. Scrubbing floors.
Cleaning boots. Cleaning knives.
Assisting in laundry (folding clothes, etc.).
Washing and drying dishes.

III D. (*Red Badge.*)

Digging. Sawing.
Carrying heavy baskets for various gardening purposes.
Wheeling and drawing full wheelbarrow, and other heavy gardening work.
Drawing bath chair.
Bathing other patients.
Mangling. Window cleaning.
Polishing floors. Sweeping and cleaning courtyard.
Carpentering. Joinering.
Attending boiler. Engineering.

N.B.—In Grades *B.*, *C.*, and *D.* patients make their own beds and go errands if necessary.

Results.

As to results, I am happy to say that it has worked admirably. The progressive improvement on the majority of the patients has been striking. Physically, the results are registrable from day to day in satisfactory fashion.

The results include a progressive sense of well-being, keenness to live and work, healthy appetite and digestion, return of fresh colour to face and skin, and gain in weight. I find, for example, that of a total of 109 patients now under treatment at the Royal Victoria Hospital, no fewer than 103 have gained weight. I would have you especially note that the gain in weight is dependent *not* on fatty overloading but on *increase of muscular tissue*. The latter is the most striking phenomenon of all, and I shall throw on the screen several illustrations of this *visible* and *palpable* change. It is an increase in both size and tone, with corresponding increase of working capacity.

Taking the collective body of patients present in the hospital at any one time, the system produces a fine procession of persons, some just emerging from serious

sickness and others at varying stages of advance towards perfect recovery, the patients severally and literally "working out their own salvation."

At the present moment—and this is a pretty usual distribution—I find that more than one-third of the patients have already reached the two highest grades of activity, namely, III C. and III D. Taking the male patients, who happen to number 47, I find that no fewer than 17 have reached these higher stages. I have before me a detailed report of the progress of these individuals. I shall not trouble you with all the details, but content myself with the statement that every one of them has made a remarkable increase in muscle value, and all have put on weight, from a few pounds up to 21 lb. While on admission the record of the patient's condition commonly includes one or other of the following phrases: "weakness," "hectic flush," "quite unfit for work," "very thin and delicate," "very great weakness," "worn-out appearance," "easily tired on exertion," "quite done up," "thoroughly run down," etc., with corresponding involvement of lung (in all patients both lungs having been affected), the present record runs somewhat as follows: "symptoms have almost entirely disappeared," "feels splendid," "looks very fit," "general and local symptoms have entirely passed away," "able to do a full day's hard work," "enjoying very hard work which he has never been able to do before, with no feeling of tiredness," "never felt better in his life," with corresponding improvement of the local condition within the lungs.

We have, of course, our disappointments. Tuberculosis strikes different persons unequally. At times the course of illness is so acute that no help is of avail. At other times treatment, from one cause or another, has been delayed too long. Sometimes the resisting power of a patient is unduly low. But given a patient of ordinary resisting power, in whom the disease has made slight inroad or, at most, only moderate advance, there is good expectation that under sufficiently prolonged treatment by aërotherapy, rest, and carefully graded activity, a return to health will be achieved. In many instances, the physiological value of the procedure is such as to place the individual on a higher plane of health than he ever reached hitherto.

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A Lecture ON "EYE" IN SPORT.

DELIVERED AT ST. THOMAS'S HOSPITAL BEFORE THE MEDICAL AND PHYSICAL SOCIETY.

BY

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My attention was first particularly drawn to the subject by an article in *Fry's Magazine* in 1908 by "R.A.M.C." It purported to describe the physiology of sight in games, and was entitled "The Eye in Sport." The article was well written and interesting. I feel convinced that "R.A.M.C." is a sportsman and a good fellow. This impression will give me grounds for hoping that he will forgive me for attacking his article, and for pointing out that there was scarcely a correct explanation throughout.

When we speak of "eye" we do not mean the two portions of one's body that are situated on each side of the nose. They have, indeed, a very important share in establishing "eye," but nothing more. "Eye" really exists in the brain. It is, in fact, a very compound thing, a subconscious brain judgement involving many other organs than the actual anatomical eyes. It involves knowledge, experience, very largely the sense of touch, and sometimes the sense of hearing or smell. This important fact is generally lost sight of, and it is the pitfall in which "R.A.M.C." hopelessly flounders. He and others, among whom are particularly gunmakers, are obsessed with ideas of the power of the so-called master eye. It is the use of the master eye, they say, that enables you to shoot straight, to hit a golf ball, to smash a tennis ball, to pot the red, and such other things in the same category that call for the use of "eye." "R.A.M.C." emphasizes this mistake at every turn, and it is the main object of this lecture to explain what is the real meaning of "eye," and to remove the false impression that the master eye in the normal individual is of the paramount importance that is usually attributed to it. I wish to point out, among other things, why in golf the phrase "Keep your eye on the ball" should be (*pace* "R.A.M.C.") "Keep your eyes on the ball"; why in shooting your gun should not be twisted into all sorts of fantastic shapes at the will of the gunmaker; why in cricket the more modern position of standing square to and facing the bowler generally produces the best bats, and why in billiards you should use both eyes as most do, and not only the master.

There is no doubt of the fact that there is a master eye, and this can be proved in numerous ways. In right-handed people, where the acuity of vision in each eye is equally good or nearly so, it is usually the right eye. When, however, the visual acuity of one eye is defective, then the other eye, whichever it may be, is selected for the mastership. In certain pursuits, rifle shooting for instance, the use of one eye is essential, for it is a physical impossibility to align backsight, foresight, and the target with each eye at the same time, and if you do not mentally grasp this point, it is easily illustrated by a rough drawing. Place two dots side by side to represent the two eyes, put another dot as far off as you like to represent the target. Now draw lines to represent the lines of vision from the two eye dots to the target dot. Let a fourth dot represent the sights of the rifle and it is obvious you cannot place it in both lines of vision at the same time. You can place it in one or the other, but not in both; and here I may explain what is the stock argument of gunmakers and others who advocate cast-off guns when the left eye is the master. They point out that, if he fires from the right shoulder, the left master eyed man places the breech end of the barrels which corresponds to the back sight of a rifle in the line of vision of the right eye and the bead at the end of the barrel in the line of vision of the left eye, and consequently the shot goes wide to the left; and this is perfectly true if the individual tries to shoot in this way, but the cure is not to make a distorted monstrosity of his gun, but to teach him to shoot properly, which, as I shall presently point out, is to disregard his gun altogether so far as direct vision is concerned.

Destructive criticism is very cheap; therefore I propose now to devote my attention to constructive criticism and to explain in greater detail the meaning of "eye." I am fully aware that I shall lay myself out in turn to a vast amount of adverse criticism, but in my arrogant belief in the correctness of my views I am prepared to meet all and sundry on this ground. I have taken a good deal of trouble, not being an expert at games myself, in talking over the subject fully with those who are experts, and I have found that in nearly all cases they are ready to discuss freely the points of the games in which they are proficient. There is only one class of men that I have found an exceeding great difficulty, and they are in other matters, I should think, the most genial, the most interesting, and come more universally than others into the category of "good sorts." I allude to artists. Knowing nothing about art myself, I have always approached them with great humility and simply as a learner. I am armed with a certain amount of physiological knowledge, and I wish to ascertain how this is dealt with from an artistic point of view. I remember once trying to get some information from a member of my club, a good artist and one of the most genial men at other times whom I have ever met, but all I could get from him was flat contradictions, not on the question of art, but on the facts of physiology of vision, of which presumably I ought to know something. He is not by any means the only one, as I have said before, from whom I have found it impossible to learn. Artists seem to think that one is attacking their art and that no outsider has any right to assume any knowledge that concerns the question of their art. But, of all problems, I think "eye," where it concerns art, is the most interesting, for it is so obviously the mental eye that they use and not merely the

anatomical eyes. However, the question of art does not come within the range of my lecture. Now "eye" is, as I have before suggested, one of the highest products of the brain, and it involves brain stimulation in various centres and in very delicate degrees. "Eye" is not a definite anatomical part of the body, as I have said before, but a judgement of supreme delicacy, and the more delicate the judgement the greater is the proficiency of the performer in the particular direction to which he has given his attention. One must always remember, therefore, when speaking of "eye," that it is the brain potentiality that one has to consider and reckon upon, and not the visual acuity of the anatomical eyes. High visual acuity is, of course, a detail of some importance, but it is not nearly so important as is popularly supposed. One of our best-known cricketers of the present time, who has never worn glasses for playing games, has only one-tenth of the normal visual acuity, and would have been at once rejected from the army on the score of his sight had he wished to enter. It is an interesting fact, but quite true, that when any one boasts that he has far better sight than his friends, his visual acuity is generally below the normal, and sometimes a very considerable degree below the normal. Visual acuity is so relative a thing that a person whose vision, previously good, has fallen to two-thirds of normal acuity will declare that he is going blind, whereas it is frequently the case that a patient who never had more—at any rate, since childhood—than one-tenth the average normal visual acuity will claim to see practically as well as other people; and though possibly he may allow that some may see distant details a little bit better than he does he will not admit that there is much in it. Those who are experienced in sight testing will readily endorse what I say, but to those who are not experienced the statement will seem almost incredible. That veteran ophthalmic surgeon and most genial of men, Henry Power, used to say that a Red Indian with bad sight will see a snake in the grass long before a European whose vision is good. Such things are so much more the result of experience and brain judgement than of actual visual acuity. In the same way a keeper will be able to tell three fields off that there is a hare feeding, whereas a pure cockney might see some little brown patch and not know what it was, though the actual visual acuity of the latter might be better than that of the former. Some years ago, when the notorious cattle maiming case occurred in the Midlands, it was brought forward by some, who I was surprised did not know better, that the fact that the accused had rather a high degree of short sight and had never worn glasses was proof that he could not have seen well enough to have gone about at night and to have done the maiming. Now the fact that he had never worn glasses was the very reason why his short sight should not prevent him finding his way about under such conditions. His brain judgement being trained to draw correct conclusions from imperfect images, he would be the better able to find his way about in uncertain light than one whose brain judgement had been trained to require clear retinal impressions; in the same way a shortsighted person in foggy weather will often more readily recognize acquaintances across a street than one who has normal acuity of vision. In the one case they are trained to establish facts from very indefinite images, and in the other case they are accustomed to rely upon definite images, and miss them to a greater degree when they are not attainable. The myope, besides, recognizes people by their gait, the way they carry their heads, and so on, while a person whose sight is acute is trained to depend on details of features which are not visible under unfavourable conditions.

As regards the cattle maiming case, I am not expressing any opinion as to the guilt of the man who was convicted. I only point out that the fact of his short sight would not weigh one way or the other.

Now, to apply myself more to concrete instances than to abstract ideas, I will point out that judgement of distance by the average sighted person is obtained, not by action of the master eye, but by the action of the two eyes in forming the angle that the line of vision of one eye makes with that of the other by means of the muscles that turn the eyes towards the object—in other words, the muscles that cause the eyes to converge on the object looked at. It is only those who are one-eyed or who have only one useful eye that rely upon the state of the focussing muscle. This is an alternative method, and is a comparatively successful one in those who have never had, or never since childhood, the use of both eyes, but the degree of success is in the inverse ratio to the age of the individual when the second eye was lost. If it requires proof that this method is not ordinarily adopted, it can be obtained in many ways. As everybody knows, a man who has lost one eye has great difficulty, especially at first, in judging distance. In pouring out a glass of wine, he is apt to pour it over the edge, and things of that sort. It is illustrated, too, by failure in the parlour game of walking across a room with one eye bandaged, and attempting to knock over with a side stroke of the finger a cork placed in some conspicuous position; or again, by putting a prism before one eye, base inwards, and thus altering the direction of the rays of light so that the eyes have not to converge so much on looking at any particular object, which will then look as if it were rather further off. Judgement of distance, then, except in a few rare instances, is estimated by the brain effort that has to be sent to the muscles that converge the eye upon the object, and this information is essential to the judgement of how fast an object is travelling, which can then be estimated as relative to its stationary surroundings, but unless you have formed a judgement of the distance of the object, the movement of the eyeballs in following it will not give you any trustworthy information whatsoever. There is another point to which I must allude, and that is the plane in which we use our eyes. It must necessarily, from the position of our eyes in our heads, be the horizontal plane, but when we have fixed the object, our mental judgement, in other words "eye," is exercised in both vertical and horizontal planes, though perhaps more readily in the vertical plane. With these facts before us we may proceed to explain why "keep your eyes on the ball" in golf is more correct than "keep your master eye on the ball." In order to avoid striking the ball untruly you have to possess a subconscious brain knowledge of the exact distance the ball is from you and the exact length of your club. With these two facts impressed on your subconscious mind you must practise the muscles that you use in golf to work in accordance with these two facts, and it is accordingly of very great importance that you should not swing your head too far round to avoid cutting off with your nose the view of the ball with one eye—either the master eye or the other, it does not matter which. If it were essentially necessary to keep only your master eye on the ball, you should strike it as truly when the other eye is covered. Let any one who doubts what I say tie up his non-master eye and see how he strikes the ball. I maintain that in the usual normal-sighted person you can only get a true appreciation of the distance of the golf ball by using both eyes, and you can only strike it truly when you have a proper appreciation of the length of your club, again by the use of both eyes. These are the two factors necessary for training yourself to be successful in driving. As regards putting, these points come out rather clearly. I understand from those who play that it is correct in putting to keep the eyes fixed on the ball and the whole body stationary, except the arms or wrists, many particular judgements having to be made, and the brain being better able to make them the more simple the process that is involved. Thus in giving the exact force that is needed, as well as the proper direction, the fewer muscles that are employed the easier matter it is for the brain to estimate it, and though not a golfer myself I rather fancy all the strokes in golf, some of them no doubt requiring the most delicate judgement, depend mainly on the subconscious "eye," and it has seemed to me that the wriggling movements some players go through in addressing the ball may tend to prevent the "eye" becoming "stale" as regards aim.

Now, passing on to billiards, "R.A.M.C." goes fatally astray because he points out that the principle of the master eye aligning the cue and ball in the vertical plane of the master eye is the keynote of the principles he advocates throughout his article. Now, if he will watch any billiard player, professional or otherwise, he will be able to observe that nine times out of ten, or nineteen times out of twenty, the player does not align with the master eye or the other, he uses the brain "eye," and the line of vision of this mental eye represents a line drawn at right angles from a point midway between the two eyes, and when I speak of this line

of vision of "eye," this is what I mean. A great deal has been said about whether you should look at the object ball or the cue ball, the actual fact being that, in ordinary strokes, once you have the correct aim, which is, as I have said, a matter of brain judgement, you do not need to look at any spot in particular but take in the table generally. In billiards the use of both eyes is especially important. The game continually involves the estimation of distance and angles, and the stroke has to be made after such estimation, and it would seem an obvious inference that if the estimation of distance and angles required both eyes for such mental process involved, the further delivering of the stroke should be made in the same way. And as a matter of fact that is nearly always the case.

Now, as regards cricket, there are many interesting problems, and they are nearly always matters of brain judgement rather than of visual acuity. I have often tried to get from expert cricketers how soon they form a judgement of what kind of ball they are going to receive. There is no doubt that it takes place very soon after the ball leaves the bowler's hands, of course long before the ball pitches. If this requires proof, the fact that a batsman moves out of his ground to a certain distance to take a ball half volley, shows that before he moves he has estimated where he has to go, and for that purpose he has to make up his mind where the ball is going to pitch. The wicket-keeper's job, too, is a matter that concerns brain judgement. He has the whole thing in train beforehand, so that, although the ball is hit away, his hands close as if upon it at the exact moment and position that he has prepared himself beforehand to receive it. The same sort of judgement is needed by tennis players, and I have often asked them how soon they form a judgement of where the ball is going to pitch and what it is that guides them to the conception. This is a very complicated act, and illustrates the many points that are concerned in making a good player, besides the actual power of getting the ball over the net when it comes within reach. The earliest sign that I have found that anyone recognized is the position of the face of the racquet possibly a moment before the ball is struck. But there are, of course, other things upon which the expert player depends. He places the ball in such a position that his opponent can only return it in a certain direction, and again he relies to a certain extent upon the eyes of his opponent and the position of his head, for a player may often be deceived by his opponent turning his head and looking in one direction while he hits the ball in another direction. I only bring these points forward as illustrating how involved a process it is, and not so simple as the onlooker might think, and that one becomes the best player who has the power of making observations in all these different directions.

Now, returning to cricket, "R A M.C." says that the man who makes a catch does so by means of his master eye, and the master eye, his hands, and the ball will all be found in the same vertical plane. It is not much of an argument to say that it is not so; I will merely suggest to any one, if he has any doubt upon the point, to try it, when he will find out the importance of using both eyes. As a matter of fact, the fielder uses the horizontal plane of both eyes to fix the ball and to form a mental judgement of the vertical plane. In other words, he forms his judgement as to how fast the ball is travelling and exactly where it is going to arrive very early in the flight of the ball, and has his hands ready long before the ball has arrived, as in the case of the wicket-keeper.

Let me now speak of the blind spot of cricketers. This is one of the most interesting investigations I have made, and I confess that I was for a long time completely baffled by it. Of course any one with any knowledge of the physiology of the eye will admit that it is ridiculous to suppose that the difficulties depend upon the image of the ball coming upon what is known anatomically as the blind spot. I will not even discuss the question, but if it is not that, what is it? At first I must confess that I was more or less in agreement with "R.A.M.C.," not in that it might be due to the master eye being shut out, as he suggests, by the nose, but because one or other eye might be so shut out, the data for judgement from binocular vision then being destroyed; moreover, the more modern position of facing the bowler and using the horizontal plane of the eyes by the batsman would lend colour to this view. I have conversed with many expert cricketers on this subject, and I will now clear up the point in a way which answers every physiological requirement. The so-called blind spot occurs with a well-pitched ball. And, as I have said just now in speaking of a half-volley, the judgement of where a ball is going to pitch is made very soon after the ball has left the bowler's hand, and, relying upon that judgement, the batsman has prepared himself to deliver his hit, the bat will be uplifted and ready to strike in the position he has estimated that the ball is going to arrive. Now, as regards a well-pitched ball, he has formed the estimation of where the ball is going to pitch, and prepares himself to act upon it. He may play forward to the pitch of the ball or he may play back to it. Now if he plays forward to the pitch of the ball, not having recognized that it has a twist upon it, he may miss it and be bowled. Therefore, if he is in any doubt as to the twist on the ball, he has to cast overboard the judgement he has made of the ball from data soon after it left the bowler's hand and form a new judgement from the pitch of the ball, and there is a moment, when he has given up his old judgement and before he has formed his new one, of mental blindness. That would account for it from the physiological point of view, and all the cricketers to whom I have spoken on this subject have agreed with me that it would answer the description of their blind spot. There is a true moment of mental blindness which would correspond to what the batsman experiences.

There is, however, another kind of blind spot which is due to faulty estimation of where the ball is going to pitch, the batsman strikes at the ball and misses it clean, and, in explanation says it got on his blind spot.

There are two other instances of blind spot occurring in games that I may mention, the one again in cricket, and the other in tennis, and the two conditions are really identical. When a bowler has delivered a ball—it occurs usually in the case of a half-volley—and the batsman strikes the ball directly back to him, there is often a moment of mental blindness during which he does not know where the ball is coming. The explanation of this is that, as I have pointed out, the individual to whom the ball is coming forms very early in its flight a conception of where the ball is coming, he takes subconsciously a point in its flight and relatively to surrounding objects forms his opinion, but if a ball is coming straight back at him, it may seem to be motionless, and his brain does not readily get an impression of its relation to surrounding objects, from which, as a rule, he gets his estimation of its pace and flight.

The second instance is at tennis, when the ball is hit hard and straight back to the opponent. These conditions are the same, and the explanation is the same. The data for forming judgement are insufficient, and the process becomes delayed, and, until a judgement is formed, the individual is mentally blind as to the exact direction of the ball, although he realizes generally that it is coming towards him.

Now, the subject that interests me most of all is that of shooting, and here I am prepared for a large amount of opposition. Gunmakers would join in a howl if they concern themselves at all with my remarks. All this master-eye business is worked to the uttermost, not, I admit, with deliberate intention to deceive, but from incorrect appreciation of the physiology of vision. Just as you estimate the pitch of a ball in cricket, or any of the other instances I have mentioned, so again you should shoot with your brain and not with your eye. I am not, of course, now speaking of rifle shooting. Actually, in shooting, the mind should not be concerned consciously with the position of the gun. The position of the gun should be due to a subconscious effort brought about by training. The same conditions should always be capable of being readily fulfilled, and, to put this concretely, it is above all things essential that a gun should be well fitted and come up easily to the shooting position. It should not catch in the shoulder or press unduly against the chest muscles. It should be able to come up smoothly and evenly and relatively always the same way, and this is the essential point in a good gun. Some cast-off is useful for a purpose that I will mention, but it is from a wrong conception of vision altogether that a gun is cast off enormously, so as to secure alignment with the left eye when it happens to be the master eye. In shooting, as in other things, the process is the result of a mental judge-

ment, and the eyes should not be directly concerned with the gun, but with the object that is being fired at. You require both eyes fixed on the object, in order to judge of its distance, and that is an essential datum for forming a judgement as to the rate at which it is travelling past stationary objects, and the angle the eye has to travel through in following it. Now, if it be granted that the sportsman does not look exactly along the barrel of his gun with his master eye, there must be another requirement, and that is estimation of the angle of deviation of the gun from the line of vision, not of the master eye, but of the two eyes; and, as I explained just now, that is from a point halfway between the two eyes. There is usually a certain amount of lateral or horizontal deviation, because the head cannot be got sufficiently over so as to bring the vertical plane of the line of vision over the vertical plane of the gun. There will also be a certain amount of vertical deviation, and the head is accordingly inclined to the gun to reduce these angles of deviation to the smallest degree, for the smaller the angle of deviation the easier it is to estimate, and a certain amount of cast-off helps this. The same process is gone through with people who shoot rabbits from their hip. They do not try to force their master eye down in a line with the gun. They look at the rabbit with both eyes. They estimate the lateral, if any, and vertical deviation that is required; and this process of rabbit shooting from the hip is not different from shooting from the shoulder, though there is more difficulty in estimating the correct aim. In shooting, then, you require to have a gun well fitted that will always come up to the shoulder true. When you have a gun that will come up readily, and you have trained it to come up true with your mental line of vision, then all you have to do for the purpose of a good shot is to estimate the distance and secondarily the pace of the object and to make due allowance for them. Your gun should subconsciously feel the line of vision and swing slightly in front of the bird as you fire. If you begin to concern yourself greatly about the position of your gun, you begin to poke and miss by shooting behind; poking is produced by trying to make quite sure that your gun is aimed truly and then a brain impulse is sent down to the muscles of the forefinger to pull the trigger—in other words, trying to align with one eye along the barrel, and then when you think you are well on the mark sending a brain impulse down to the muscles of the forefinger to pull the trigger. Now, there is always a latent period before the muscles respond to the brain impulse, and during this latent period the bird or whatever it is at which you are shooting has moved on. I must, however, point out that there are some, and a few who are quite good shots, who do not shoot in the way I have described. They add another estimation to the process, namely, the point in front of a bird that they have to shoot at in order that when the latent period required for pulling the trigger combined with the flight of the bird is allowed for, the bird will arrive at that point at the same moment as the shot. They do not swing on to the bird but fire at a fixed spot in front of the bird. Though, as I have said, some few good shots adopt this method, they must rely upon a human factor that is notoriously variable, and that is the latent period, the latent period being, as I have said, the time the muscles take to act after the impulse has been given to pull the trigger. This latent period has been shown by physiologists to be delayed by alcohol, hastened by tea or coffee, again delayed by fatigue, and this mental process being entirely subconscious, the individual considered cannot allow for the variation. As regards rifle shooting, the matter is different; no immediate judgement is needed for distance, that is estimated beforehand, and allowance for movement is not required to any very great extent; nearly the whole question at the moment of pulling the trigger is one of keeping the aim true—a question of extremely minute detail. Aim like this of such extreme exactitude cannot be estimated by brain judgement or experience, it has to be made anew each time the rifle is aimed, and can only be secured with the exactitude that is required by direct alignment, which can only be done by the use of one eye.

I said at the beginning of the lecture that the eye very largely involved the sense of touch. This is so especially in the case of fencing, where touch is actually of more importance in establishing "eye" than the anatomical eyes themselves. It is generally supposed by those who do not practise the sport that very acute sight is required. So little is this the case that it is by no means difficult to fence with the eyes bandaged, either of one or of both the combatants.

I have briefly skimmed over some of the points in which "eye" is involved in several sports. Of course, I have attempted no more than a sketch, but such as it is I hope you will accept it as a sporting attempt.

THE INFLUENCE OF DIET UPON THE FORMATION AND HEALING OF ACUTE ULCER OF THE STOMACH.*

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THE present research is one of a series which was initiated in order to inquire into the exact part played by the gastric juice in the production and healing of acute gastric ulcer. For many years the hypothesis has been prevalent that the gastric juice plays an important rôle in the pathology of gastric ulcer, mainly because ulcers having the characters of those found in the stomach are almost entirely limited to the parts of the alimentary canal which are directly exposed to the action of the gastric juice. Many experiments indirectly bearing upon this problem have been performed in order to substantiate this hypothesis, but, it must be confessed, without much success. I have no intention in this short communication of discussing the relative merits of these experiments, because I have already referred to most of them in various other papers, and because they have no particular bearing upon the subject of this discourse. In all my experiments acute gastric ulcers have been produced in animals by the injection of gastro-toxic serum, the preparation of which I was able to demonstrate some years ago.[1] By means of this method of producing gastric ulcer I have arrived at the following definite conclusions, which have been already published in various papers:

1. That acute ulcer fails to appear if the gastric juice be put out of action, although the animal may die from the effects of the poison.

2. That the ulceration produced in the presence of hyperacid gastric juice is much more extensive than that produced in a stomach secreting juice of the normal acidity.[2]

3. That the gastric juice is able to attack the gastric cells and produce an ulcer, although the cells are not actually killed by the poison. It is merely necessary to damage the cells to some extent.

4. That hydrochloric acid of the various strengths found in the condition of hyperacidity in the human subject is able to act as a poison for the gastric cells.

5. That acute gastric ulcer heals equally well, whether the gastric juice be increased or diminished in acidity to the extent usually found in man, provided that the stomach empties itself in the normal time.[3]

6. That acute ulcer is more easily produced in the digesting than in the resting stomach, and that in the former case it is much more extensive in character.

7. That undue retention of food in the stomach delays the healing of acute ulcer for at least twice the normal time, because the prolonged action of the gastric juice irritates the base of the ulcer, and may cause necrosis of the granulation tissue in the early stages, and excessive formation of fibrous tissue in the later stages. The growth of the new mucous membrane over the base of the ulcer is thus delayed, and there is produced more inflammatory thickening than usually occurs in the condition of normal healing.[4]

Since motor insufficiency of the stomach prolongs the period of healing of an ulcer, it follows that food which is retained for a considerable time in the stomach, and which excites a copious secretion of gastric juice, should be more

* A paper read before the Pathological Section of the Royal Society of Medicine.

unfavourable to the healing of ulcer than food which leaves the stomach rapidly and excites only a moderate flow of gastric juice.

This is a question of great importance to the clinician, as I think most physicians will agree that rectal feeding is inadvisable in any case in which it can be avoided, so that it is necessary to have the question definitely settled with regard to what diet is the most suitable for a case of gastric ulcer. In all the present experiments cats were used. The ulcer was in each case produced on the anterior wall of the stomach midway between the cardiac and pyloric orifices, by the local injection of gastro-toxic serum, obtained by immunizing the goat with the gastric cells of the cat, as described in a former paper.[5] The two diets chosen were meat and milk respectively.

After a meal of 100 to 120 grams of meat the cat's stomach is usually not empty till a period of about twelve hours has elapsed, whilst after a meal of 6 oz. of milk it is empty in three hours. The stomach of a 3,000 gram cat will hold, when fully distended, a little over half a pint, but the animal will only drink about 6 oz. at once. There is the mechanical irritation of the meat also to be taken into account, but perhaps this is not of so much importance, because small clots are formed in the milk which will act in a similar manner. It was first demonstrated by Griffini and Vassale[6] that after removal of a portion of mucous membrane by the knife the new mucous membrane was regenerated by proliferation of the glandular epithelium at the edge of the lesion, the cells growing over the raw surface, which they cover in a single layer. The glands are subsequently developed from this single layer of cells.

In my experiments on motor insufficiency I found that the delay in healing occurred in the early stages before the single layer of cells had developed, but that when once the base of the ulcer was covered with epithelium the regeneration of the mucous membrane was chiefly a question of time, but was also to some extent dependent upon the density of the fibrous base of the ulcer. From the clinical point of view, therefore, the important point in promoting the healing of ulcer is to exercise special care in the early stages of the healing, so that the single layer of cells covers the base of the ulcer as rapidly as possible, and when once that is accomplished, the chief difficulty is over. I have observed the healing of acute ulcer in 26 cats up to the stage at which the base of the ulcer is covered with a single layer of epithelial cells, because for the purposes of my inquiry it was sufficient to observe the healing up to this stage. Thirteen cats were placed on a meat diet, and 13 on milk. The animals were killed at various stages, and the ulcers of 20 of these animals examined microscopically. It was not necessary to examine the remaining 6 with the microscope, because they were in quite an early state and the condition obvious to the naked eye. The exact time of healing of course depends upon the size of the ulcer. The size of the ulcer varies in proportion to the strength of the serum, which in its turn depends upon the stage of immunization to which the goat has reached. In the present instance all the ulcers were produced by injection of the same dose of serum obtained from a goat at the same time, so that all the ulcers were of the same size. The serum, which is injected so as to cause a local oedema of the stomach wall, soaks into the mucous membrane and other tissues. The portion of stomach wall so exposed to the action of the serum is digested by the gastric juice and converted into a slough, which separates, leaving a clean ulcer.

The formation of the ulcer varies according to the condition of the contents of the stomach. When the animal is on a meat diet, so that the walls of the stomach are exposed to the prolonged action of the gastric juice, the slough is rapidly formed, and has separated by the fourth day in most cases, a clean ulcer resulting. In the case of animals fed on milk, however, the period of formation of the ulcer is longer. In two of the cases the sloughs had not separated on the seventh day, and in two other animals, killed on the eighth and eleventh days respectively, a small slough was still adherent to the centre of the base. Out of a large number of animals fed on a meat diet in previous experiments, I have never yet encountered an unseparated slough like this at so late a date. There is no doubt whatever that the condition of the stomach contents exercises a great influence upon both the formation and extension of an ulcer in whatever way it is produced, and we know that in the human being acute ulcer is initiated in several ways, but in all cases by the action of the gastric juice the different lesions are eventually converted into the same kind of ulcer. It is by no means uncommon for a sudden haemorrhage or perforation to occur after a meal, and this is not altogether due to the stretching and movements of the walls of the stomach, but also to digestion by the gastric juice. These experiments support the result which I gave at the beginning of this paper, namely, that an ulcer is produced more easily in the digesting than in the resting stomach. On account of the delay in the separation of the slough on a milk diet, I placed six further animals on meat for the first four days and subsequently on milk, so that the experiments would be more strictly comparable with those in which the animals were fed on meat all the time.

The microscopical examination of a lesion on the third day shows the overlying mucous membrane completely necrosed, the tissue being shrunken and unstained, and at the junction of the dead and living tissue an infiltration with round cells, chiefly leucocytes. The muscularis mucosae has a hyaline appearance and stains badly.

The submucous and muscular coats are thickened, infiltrated with haemorrhages, and contain much necrotic tissue having a hyaline appearance. There is commencing infiltration with cells around the edge which are invading the dead tissue.

After the slough has separated, the base of the ulcer is formed of the remains of the muscular coat or the subperitoneal tissue infiltrated with round cells. Towards the end of the second week the deeper layers of the base have become fibrous and the peritoneum is thickened, the superficial layers being formed of granulation tissue. At the end of the third week the whole base is formed of fibrous tissue in which strands of muscular tissue can be seen. This blends with the muscular and submucous layers at the edges of the ulcer.

Until the epithelium has grown over the base the most superficial layer is formed of more vascular and cellular tissue. This is the invariable course of events in every animal fed on milk, but in those fed on meat the granulation tissue on the surface of the base and extending to various depths is liable to become necrotic. It may be only in a part of its superficial extent or in the whole of it. In this case the growth of the epithelium over the base is completely prevented, and when the whole superficial extent is involved the epithelium has merely commenced to grow at the edge of the ulcer and the whole is completely unhealed at the end of three weeks. The size of such an ulcer is always much smaller than the original ulcer owing to contraction of the fibrous tissue in the base. This necrosis of the granulation tissue of the base of the ulcer occurred in three out of five animals which were fed on meat and which were killed from the fourteenth to the twentieth day. The ulcers of eight animals fed on milk were examined during the same period, and in not a single case was there any sign of such necrosis.

This is the essential difference between the healing in the two cases, the granulation tissue of the base is unable to withstand the prolonged action of the gastric juice and undergoes necrosis, with the result that the healing is delayed and the base of the ulcer becomes more dense from increased formation of fibrous tissue.

I will next consider the regeneration of the mucous membrane. As soon as the edges of the mucous membrane are separated from the slough and all the necrotic portions of glands have been removed by the gastric juice, the cells lining the ducts and bodies of the glands, which are apparent on the raw surface, commence to proliferate and cover this surface with a single layer of, at first flattened, and later cubical, cells.

In this way the edge becomes smooth and rounded. On section this edge is composed of short, irregular glands separated by a considerable cellular stroma, the surface being covered by a layer of cubical cells, which is continued in a single layer on to the surface of the ulcer. Not uncommonly the edge has been inverted by retraction of the muscularis mucosae, and in this case the epithelial cells are compelled to grow round the angle between this inverted edge and the base of the ulcer. This, however, appears to offer little or no obstacle to their growth. By the tenth or eleventh day in the case of milk-fed, and by

the thirteenth and fourteenth in the case of meat-fed animals, the layer of epithelial cells has extended a little way over the base of the ulcer.

On the twentieth day the base of the ulcer was completely covered in four milk-fed animals, and almost completely in three others.

Of the animals fed on meat the layer of cells had only extended a short distance over the base on the fifteenth day, and of three cases examined on the twentieth day one had a large uncovered area in the centre, and in the other two the base was completely uncovered owing to its superficial layers having undergone necrosis. The earliest time at which I have seen primitive glands develop is the tenth to the fifteenth day. They appear at first as little pouches, invaginated, as it were, from the layer of cubical cells.

These results, therefore, confirm those of my experiments dealing with motor insufficiency, and show that the delay in healing in that condition is merely an exaggeration of that which occurs under normal circumstances when a diet is administered which remains for a long period of time in the stomach, the fault being in both cases in the base of the ulcer rather than in the overgrowing epithelium.

The conclusions to be drawn from these experiments are as follows:

1. The theory with regard to the part played by the gastric juice in the production of gastric ulcer receives further confirmation, because ulceration is the more rapidly produced in proportion as the gastric juice is allowed a longer period of contact with the wall of the stomach.

2. The epithelium grows over the base of an ulcer more rapidly when the animal is given a milk diet than when it is given a meat diet. In the case of a milk diet the base of a moderately sized ulcer is usually completely covered by the twentieth day, whilst in the case of a meat diet the same sized ulcer would in most cases be uncovered in the centre at that time.

3. Frequently, in the case of meat-fed animals, the ulcer is completely uncovered on the twentieth day, the granulation tissue of the base of the ulcer having become necrotic. Such an ulcer may be only one-fifth of the size of the original ulcer owing to the contraction of the fibrous tissue in the base, although healing has only commenced at the edge.

4. In the treatment of a case of ulcer of the stomach the following principles should be observed:

(*a*) During the early stages of the healing of acute ulcer the patient should be given a food which does not stay long in the stomach and which does not excite a copious flow of gastric juice.

(*b*) The period of treatment in bed should be at least three weeks.

(*c*) The starvation diet of the older physicians is not necessary, because the general nutrition suffers too much, and because ulcers heal well on some diet such as the above.

(*d*) In the case of acute ulcers which are extending, or chronic ulcers, healing cannot be expected to occur in three weeks, because the ulcer must first be got into a suitable condition for healing, and then, owing to its size and thickness, the healing must take some weeks longer to be completed, so that the treatment in bed is to be conducted like that of simple acute ulcer, but extended over a period at least twice as long.

(*e*) Since in many cases of gastric ulcer there is hyperacidity of the gastric juice, and when the gastric juice is acting destructively hyperacidity increases this destructive tendency, this high degree of acidity should be controlled by the administration of alkali. This is not so necessary in acute ulcer as in the more chronic forms, because the few estimations that have been made of the gastric secretion in acute ulcer show that it is not hyperacid, and I have found experimentally that the effect of acute ulcer is to diminish the secretion in the early stages, and that the latter becomes normal as the ulcer heals.

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THYROID GRAFTING AND THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITRE.

BY

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So long as the causation of exophthalmic goitre and myxoedema was regarded merely as being an excess or deficiency of thyroid secretion the treatment of these conditions was comparatively simple, being merely the removal of thyroid excess or the making good of thyroid deficiency. But we know now that the matter is of far greater complexity. Not only have the parathyroids to be taken into consideration, but the possibility of abnormal, as well as excessive, thyroid secretion has to be borne in mind. Further, there are the interactions of the various glands with internal secretion to be reckoned with, and the organic changes in nervous and cardiac structures brought on as the result of prolonged functional disturbance. In a severe case of exophthalmic goitre we have, therefore, (1) to lessen the thyroid secretion, (2) to counteract the thyroid toxicity, and (3) to add some source of normal secretion. In cretinism and myxoedema the thyroid-therapy has recently been supplemented or replaced by thyroid grafting, and we are indebted to the personal suggestion of Sir Victor Horsley for the idea of applying this procedure to the cure of a severe case of exophthalmic goitre:

The patient, F. S., aged 19, had suffered for over twelve months with typical Graves's disease, with protruding eyeballs, goitre, dyspnoea, and tachycardia. For this she had been treated by Dr. Michell Clarke by various medicinal remedies, together with the *x* rays, without any amelioration. In September, 1909, we removed the right lobe and isthmus of the gland under novocain (subcutaneous) anaesthesia, with very marked improvement of her symptoms. But this improvement disappeared at the end of ten days, coinciding with the healing of the drainage track, from which a rather profuse discharge had been taking place. By December, 1909, all her previous symptoms except the exophthalmos were as pronounced as ever, the respirations often being over 100 and the pulse 190 per minute. On December 21st, 1909, the greater part of the left lobe was removed, fragments being left at the upper and lower poles. It was hoped that thereby a sufficiency of thyroid, together with the parathyroids, had been retained.

On December 26th, 1909, she developed a very severe attack of typical tetany, which lasted for four days and nearly proved fatal. She was treated by calcium lactate, morphine, saline infusions, and thyroid extract. In spite of continued thyroid medication she had three or four slight attacks of tetany during the next few months, but on the whole her condition was improved. The dyspnoea and accelerated pulse, with orthopnoea, continued, however, and her condition was very far short of cure, the exophthalmos being the only sign which definitely disappeared after the first operation.

From December, 1909, until June, 1910, her face and hands became somewhat puffy, and the menstruation, which had been free, almost ceased. She often suffered during this time from severe headache, which she attributed to the absence of menstrual flow. It was evident, however, that psychical excitement had a good deal to do with her symptoms, because although the respirations were 100-120, and the pulse 100-140 when awake, they were only 16 and 88 respectively when asleep. On June 1st, 1910, we grafted a piece of thyroid from another patient, who had a small adenoma, into her neck. The graft was about 2 cm. × 1 cm. × 1 cm. in size, and we were fortunate enough to identify two well developed parathyroid bodies which were separately implanted. The grafting was performed under novocain anaesthesia into the left side of the neck under the sterno-mastoid muscle. During the same day as the operation nothing special was noted, but much to our astonishment the next day (June 2nd, 1910) she had well marked tetany; that is to say, the hands were clenched in the characteristic attitude, the arms pronated, and the whole trunks and limbs were absolutely rigid. Chvostek's sign was also well marked, the facial muscles contracting when a light tap was made over the seventh cranial nerve.

This condition continued for twelve days, but it was very remarkable that in spite of the extreme tetany, the patient's general condition remained perfectly good, and she slept soundly at night. During sleep the contractions were to a large extent relaxed. These features strongly suggested a functional origin for the condition, and I asked Mr. Green Armytage if he would try the effect of hypnotism upon her. This he kindly did, with the most gratifying results. She readily succumbed to the hypnotic sleep, and the next day she could roll bandages and feed herself. By June 17th she was up and about, and her

general condition had much improved, but Chvostek's sign only disappeared very slowly. During the last six weeks she has been better than at any time for the last two years. The pulse is seldom over 100, and the respirations are 16 to 40. She can lie down in the bed with only a high pillow, which she has never been able to do since her illness began. She had an almost natural though rather scanty menstrual period at the end of June, three weeks after the thyroid grafting, and the neck became slightly swollen over the graft at that time. On July 18th the skin over the graft became inflamed and painful, and after fomentation the wound opened and discharged a small quantity of thick fluid with a catgut suture, after which it healed up.

Of course it still remains to be seen whether the amelioration of her condition will be a permanent one.

In view of the comparative novelty of this treatment by thyroid grafting it has appeared to us that this case is worthy of record, and we may now proceed shortly to review the work that has been done on this subject, the clinical part of which has been chiefly connected with the treatment of cretinism and myxoedema.

The application to practical therapeutics by Murray of Horsley's experimental work on the thyroid has made it possible to extirpate the whole thyroid for malignant disease or exophthalmic goitre, and to treat cretinism and myxoedema on rational lines. The results of this form of treatment, whether by extracts of the dried gland or by preparations of the active principle (iodothym), have not been, however, uniformly satisfactory.

There are cases after removal of the whole thyroid in which the individual fails to respond to thyroid medication in any of its forms, or in which toxic symptoms are produced by very small doses. Cases of myxoedema occur in which doses sufficient to maintain mental vigour produce tachycardia, and one or two deaths have been recorded as a result. Add to these objections the difficulty of persuading certain patients to take thyroid preparations regularly or continuously, the necessity for varying the dose in proportion to the amount of bodily exercise, and the inconvenience and expense to the patient of this mode of treating thyroid inadequacy, it is not surprising that efforts are being made to solve the problem by thyroid grafting.

In this paper we wish to lay stress on the methods and results of thyroid transplantation in man, referring only incidentally to the experiments on animals in so far as they bear on the main part of our subject.

It has been fully established that heteroplastic transplantations—that is, the grafting of thyroid from one animal into an animal not closely related to it zoologically—is futile, for, even though vascular connexions be established, the secretory portion of the graft is rapidly destroyed by the cytolysins of the host.

The retention of vitality in an implanted piece of thyroid tissue depends on several factors. Given that a perfect technique has been achieved there are still certain vital factors to consider. Sufficient nutrition for the new tissue is furnished partly from the fluids in the piece of tissue itself, partly from the lymph surrounding it, but the final source must be the blood vessels which grow into it from the surrounding tissue. In a successful case these blood vessels can be found growing into the graft within three or four days. Even after this there is still a danger that the autolysins in the graft and the cytolysins of the host will destroy the secretory cells, though this must be rare in homoplastic transplants.

The experimental work of von Eiselsberg,[1] Cristiani,[2 3 4] and others has established that thyroid grafts in animals "take" and that they functionate. These results cannot be said to have been completely transferable to the procedure in man, and it has been denied by some operators that human grafts "take" at all, it being held that they are rapidly absorbed. Others, while admitting the feasibility of thyroid grafting, argue that sufficient tissue cannot be transplanted for full functional purposes having regard to the varying requirements of the individual in exercise, child-bearing, etc. The latter objection is borne out to a certain extent by some of the cases mentioned below, for in nearly all some thyroid had to be taken by the mouth even after an apparent y successful graft, the dose necessary being considerably less than before the operation.

Other important questions to be settled are the selection of the best technique, the best locality for placing the grafts, and the source of the thyroid for grafting purposes. When possible, a piece of healthy thyroid, taken from a self-sacrificing relative, is, of course, best; but, failing that, the healthy tissue of a lobe removed for localized adenoma will serve. This is recommended by Horsley (discussion on the surgery of the thyroid, British Medical Association, Bath and Bristol Division, March, 1910), and was actually used in our case.

Finally, we have to inquire whether the reported improvement in the condition of patients after thyroid grafting is maintained throughout life.

Lannelongue,[16] in 1890, performed heteroplastic transplantation of a sheep's thyroid into a patient without success—a result to be expected on *a priori* grounds. Kocher[19] reports several favourable cases of transplantations of pieces of thyroid into the tibia. He holds that the requirements for success are fresh pieces of healthy gland and a highly vascular bed for them to be placed in. He prefers the tibial marrow cavity to the spleen on account of the greater ease and safety of the operation and the equally vascular site. The cases are not quoted very fully, and it appears unlikely that the results were in any sense perfect. The disadvantage of a very vascular site is that unless complete haemostasis is secured the graft is surrounded by an envelope of clotted blood offering a barrier to rapid vascularization of the grafts. Kocher secures haemostasis by operating in two stages. Several others have adopted Kocher's method with slight modifications in technique.

Chava Sermann[20] experimented on dogs under Kocher's direction, but in two cases only out of eight did the engrafted tissue functionate and show healthy glandular tissue on microscopical examination. A rubber ball was placed for ten days in the marrow cavity to prepare a bed for the grafts in these two cases.

Müller of Rostock, in the discussion of Kocher's paper, reported two cases of cretinism with marked intellectual improvement following transplantation of thyroid tissue into the tibia, and von Eiselsberg had two similar cases.

Garré[21] of Bonn at the same time mentioned a case of chronic tetany after thyroidectomy in which he grafted a parathyroid removed from a case of Graves's disease into the tibia, with marked improvement. He, however, expressed a preference on theoretical grounds for transplantation of an entire organ or lobe with vascular suture.

Cristiani,[2 3 4 5 6 7] to whom we are indebted for the bulk of the work, both experimental and clinical, on thyroid grafting, points out that thyroid grafts "take" better in thyroidectomized animals than in those not so treated. From his researches he has arrived at the following conclusions relating to technique: He uses small fragments of thyroid tissue the size of a wheat grain, and places each by a separate small stab wound in the subcutaneous tissue of the neck and shoulder regions. He emphasizes the necessity for absolute asepsis; no antiseptics must be used for either the graft or the implantation wound. Rapidity of execution he considers very important, as he finds small pieces of thyroid die if exposed to the air for two minutes. The best results were obtained when the grafts were kept warm in a strictly isotonic solution, preferably Locke's or Ringer's; isotonic salt solution is far less satisfactory. Grafts can be kept in human blood serum for an hour without suffering appreciably.

Cristiani (loc. cit.) has shown that, by using very small pieces of thyroid tissue, the area of central necrosis found even in satisfactory grafts is relatively small, and Carrel,[8] by further diminishing the size of the pieces, obviated necrosis altogether. Cristiani and Charrin,[9] using the technique described above, operated on a patient, aged 14, with predominant symptoms of myxoedema and some of those of Graves's disease. When 17 years old total extirpation of the thyroid was performed by another surgeon in two stages. After the operation the symptoms of myxoedema were aggravated, and required the exhibition of a daily dose of thyroid equal to one or one and a half grams of the fresh gland. Even a slight diminution of the dose caused a relapse, and if she indulged in sport she had pain in the lower limbs and other symptoms of thyroid inadequacy.

On two occasions, at three months' interval, they grafted thirty-eight pieces of thyroid tissue into the subcutaneous tissue. Slight but transitory symptoms of thyroidism followed, but she could soon reduce the dose of thyroid by the mouth very considerably. Six months after the second graft she became pregnant, and was

delivered of a normal child in due course. An interesting feature of the case was the increase in size of the grafts during the pregnancy and their recession after delivery (Cristiani and Kummer[10]).

Gauthier and Kummer[11] agree as to the necessity for keeping the graft warm, and for rapid working. They adopted Cristiani's method of multiple subcutaneous grafts. One patient was a nearly idiotic girl of 3, unable to speak, uttering meaningless cries, and with constant rotatory movements of the head and hands. She was not myxoedematous, and thyroid medication had failed. Within one month of the grafting she walked, and showed signs of great improvement in intelligence; this improvement has been maintained one year at the time the paper was written.

Carraro[12] experimented with thyroid grafts, and made observations from the second to the thirtieth day. He obtained the best results with thin discs of thyroid gland implanted in the subcutaneous tissue. One side of the transplanted piece must be still covered with some of the connective tissue capsule of the gland to ensure its vitality.

Salzer[13] experimented on rabbits because of the ease of removal of the thyroid, there being only one thyroid artery, and the parathyroids are easily distinguished and avoided. He confirmed Cristiani's conclusion that thyroid grafts "take" better in thyroidectomized than in normal animals. He selected the properitoneal tissue of the anterior abdominal wall, and found that in a short time the following zones are distinguishable in a grafted piece of tissue:

1. An outer zone of well-nourished normal follicles.
2. A zone of tubular epithelial glands which probably afterwards become regenerated into normal follicles.
3. A zone of granulation tissue.
4. A central area of necrotic tissue.

At a later stage, all traces both of granulation tissue and necrotic areas have disappeared, and except for a central knot of connective tissue the whole mass consists of colloid containing follicles. As a result of these experiments, he considers that in thyroidectomized animals the grafts came to their full function in five to seven weeks.

Bircher[14] refers to Wilson's statement that implantation in the neck gives better physiological results than other methods. He is very sceptical as to any permanent good results from thyroid grafting, and refers to three cases in his own practice to bear out this.

Case I was a typical cretin 11 years old. In May, 1908, Bircher implanted three pieces of healthy thyroid, 2, 4, and 10 mm. in diameter, from a woman 26 years of age, into the subcutaneous tissue of the occipital region. After a short improvement there was in August of the same year a relapse into the former state. In the same month he implanted five pieces from a girl of 19, which similarly failed. In September he excised the grafts and found on histological examination that no normal thyroid tissue was left; necrosis, connective tissue, and capillaries had replaced the whole.

Cases II and III, both aged 23, showed similarly negative results.

Payr[15 16] of Griefswald, in the discussion on Kocher's paper, referred to a case of transplantation into the spleen two years before. The case had been a very unfavourable one, in which Payr had transplanted a large piece of maternal gland into the spleen. The child for three years previously had been treated internally with various thyroid preparations, with but little success. After the grafting the intellectual and somatic conditions during the first month and up to the end of the first year improved rapidly; after that the improvement was slower.

With regard to the intellectual state, the child had been entirely imbecile and did not react to sensory impressions. All these symptoms were much ameliorated, and growth and increase of weight were very evident. Towards the end of the second year the progress was less evident and the child became anaemic, developed general glandular enlargement, including the spleen, and became very liable to catarrhal conditions. The weight was the average for a child of her age; dentition, nails, and hair were normal; and the skin showed no evidence of the former myxoedema. The posture and carriage of the child were not absolutely straight, and the gait became spastic. Payr refers to the work of Scholz and Zinguli, who demonstrated important changes in the central nervous system, especially the cerebrum in cretinism, and on this bases his belief that these organic cerebral defects cannot be improved by thyroid grafting. Finally, he maintains his preference for the spleen as a site for the graft.

Czerny, at the German Surgical Congress in 1906, spoke of a case of tetany after complete thyroidectomy for cancer in which immediate relief was afforded by grafting a piece of fresh gland into the spleen. On autopsy at the sixth day the thyroid was found perfectly healed into the splenic tissue.

Bramann[17] reports 3 cases of myxoedema and cretinism where transplantation was done with marked bodily and intellectual improvement. The recent great advances in vascular surgery have made it possible to transplant whole lobes or glands with preservation of circulation through them. Stich and Makkas,[22] using the so-called "patching" method of vascular suture, removed half the thyroid from dogs with the superior artery and vein and a piece of the carotid and jugular stems attached. The half gland was then sewn into the neck muscles of thyroidectomized dogs, the vessels being sutured to the corresponding artery and vein. In 10 cases the functions were fully carried out by the transplanted glands. In 3 cases the gland was reimplanted into the same animal from which it had been removed, and in the remaining 7 into other animals. Autopsies were made from 51 to 245 days, and the circulation found good in all, though in the central parts there were usually necrotic patches.

Carrol and Guthrie[23] similarly extirpated the thyroid of a dog and replaced it in his neck. The vessels were anastomosed and the circulation re-established about half an hour after the extirpation. The gland was observed from time to time by opening up the wound, and it was found to remain quite normal. The case we have reported illustrates very well the complexity of the various factors concerned in exophthalmic goitre. The following are its features of special interest:

1. The temporary improvement following partial thyroidectomy, which lasted only as long as the wound discharged.
2. The occurrence of tetany after subtotal thyroidectomy in which the parathyroids had apparently been preserved.
3. The cure of this tetany by thyroid medication.
4. The persistence of dyspnoea and tachycardia in spite of subtotal thyroidectomy.
5. The occurrence of tetany of a functional type after thyroid grafting.
6. The cure of this form of tetany by hypnotic suggestion.
7. The great amelioration of the symptoms by thyroid grafting.
8. The occurrence of menstruation and coincident swelling of the grafts after thyroid transplantation.

It is obvious both from a consideration of our case, together with the review of the literature of the subject, that the value of thyroid grafting is by no means settled, but enough has been said to encourage further work in this direction. It seems fairly certain that grafting can be successfully undertaken as far as the immediate vitality of the grafts is concerned. Further, that in recent cases of thyroid inadequacy, a good functional result will accrue from this method. But time only can show what are the permanent results of this method.

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COMMON CAUSES OF DISCHARGE FROM THE EARS. AND ITS TREATMENT.*

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DISCHARGE from the ears is a subject of considerable importance, particularly now, when the inspection of school children is rigorously carried out, and hundreds of children suffering from otorrhoea are to be treated. A complete list of causes of aural discharge I shall not attempt, but intend only to deal with those that may be met with daily.

Cases of discharge from the ears may be simply divided into two classes: (1) *Non-purulent;* (2) *Purulent.* Of these the former is small compared to the latter, and will be briefly dealt with first.

1. *Non-purulent.*

Discharge may come from the pinna, the meatus, the middle ear, or the cranium.

(*a*) The *pinna.* A common condition met with here is an eczema, seen often in children and often passing to an impetigo; it is either a primary infection or secondary to a suppurative discharge from the middle ear. This condition is best treated by the daily application of a 5 per cent. solution of silver nitrate combined with some ointment for home use—either boracic or yellow oxide of mercury; under this it is remarkable how quickly improvement follows.

(*b*) The *meatus. Wax* is a common cause of discharge, especially when it has been present some time. Removal by syringing is the obvious treatment. Should difficulty be experienced in this removal, a few drops of hydrogen peroxide, 5 or 10 volumes per cent., will facilitate matters.

Meatitis.—There are many causes of meatitis, but the commonest are an eczema and suppuration of the middle ear. An eczema may be localized to the ear, or may be part of a general eczema. It gives rise to a scaling of the meatal wall and a thin serous discharge. In many cases this discharge does not come out from the ear, but forms a collection of débris, consisting mainly of desquamated epithelium, in the deep parts of the meatus, very irritating, and causing deafness. This collection of débris often occurs in the groove formed by the floor of the meatus and the anterior inferior part of the membrane, which meet at an acute angle. Painting the meatus with the 5 per cent. solution of silver nitrate two or three times a week gives good results. In the cases where the débris collects, this must be carefully and thoroughly removed with the aid of a fine probe armed with small pieces of cotton-wool. It may be a tedious performance but the results are most gratifying, and well repay the time spent. For the patient's own use, a few drops of the following, used every night, will be found most useful in allaying irritation and preventing the scaling:

℞ Ung. hydr. nitr. dil.... ... ... ʒj
Ol. amygdalae ... ... ad ʒj.

Should this not be satisfactory, perhaps ung. picis carbonis will sometimes prove useful. Meatitis in adults and children often causes great narrowing of the meatus, making a view of the membrane very hard or, indeed, impossible to obtain. Very frequently this marked narrowing without any obvious otorrhoea is due to a perforation in Shrapnell's membrane. In these cases as well as painting with silver nitrate, packing the meatus tightly with strips of gauze will soon cause dilatation. This should be done every day until finally a good view is obtained of the Shrapnell membrane fistula, which can then be treated.

Blood from the meatus is unusual and perhaps should not be included in my list, but the condition is so interesting that I include it. It is the result of self-inflicted injuries, and is seen, as a rule, in girls of a neurotic disposition. The following case is an example:

A girl of 17 had suffered from almost daily haemorrhage from the ears for nine months. For six of these months she also had frequent epistaxis. Her medical man had her under constant observation, suspecting self-inflicted injuries, but never was able to detect her. She was a healthy-looking girl—described as a tomboy when at school—but her look was somewhat furtive. Examination of the ears revealed nothing abnormal and she heard perfectly; in the nose were seen scabs on either side of the septum. She was put under observation, and during the first two days her ears bled twice, on both occasions while the nurse was absent from the room. One ear was then covered with wool and gauze and sealed with collodion; she bled from the opposite ear; this was then covered in a similar way and no bleeding occurred at all. Her mother was told, and some weeks after sent the report that the attacks of bleeding had practically stopped and the girl was much better and brighter.

(*c*) *Middle Ear.*—Discharge of blood occurs as a result of rupture of the tympanic membrane; the tear is usually found in the posterior part of the membrane, and follows a blow on the ear or a severe fall on the head, or, as I saw recently, a dive from a height, coming down with the side of the head on the water. The treatment must be directed towards keeping the meatus aseptic, not by syringing, but by the insertion of a strip of antiseptic gauze, or perhaps by a plug of aseptic wool.

(*d*) *Cranium.*—In fracture of the base of the skull across the middle fossa discharge of blood and cerebro-spinal fluid occurs through the almost invariably accompanying rupture of the tympanic membrane. Treatment here must, as far as the ears are concerned, be as for the cases of ruptured membrane—aseptic wool plugs in the ears.

2. *Purulent.*

The discharge may come from the pinna, the meatus, or the middle ear, the last being the most frequent source.

The Pinna.—The eczema previously mentioned often becomes impetiginous, and the treatment is on similar lines—silver nitrate applications and yellow oxide of mercury.

The Meatus.—Sometimes boils give rise to a discharge from the ear when the opening in the boil is small; the treatment consists in laying the boil freely open and packing with gauze.

The Middle Ear.—In the vast majority of discharging ears the middle ear is the cause. Why is this so? Here is a temporal bone cut across in such a way as to show the middle-ear cleft; and it shows very well the direct connexion between the Eustachian tube, the tympanum, and the mastoid antrum, and makes clear the ease with which infection can occur in the tympanum from the Eustachian tube.

Infection of the middle ear always, or almost always, takes place per the Eustachian tube; it is only very rarely that infection passes in from the meatus, and only in a very few cases does infection arise by the blood stream. The infection by the Eustachian tube from the naso-pharynx takes place more easily if there is any obstruction in the tube, and obstruction can easily occur by congestion of the mucous membrane, infection itself following on any inflammation about the pharynx—for example, a tonsillitis, a pharyngitis, or a naso-pharyngitis.

In children adenoids account for the greatest number of discharging ears, since infection follows from the frequent attacks of tonsillitis or pharyngitis consequent on the mouth breathing. The treatment is clear: Remove the adenoids and restore nasal breathing, not by any means an easy task in many cases, but one of great importance. Previous to removal of adenoids the patient should be made to do nasal breathing exercises for one to two weeks unless the case is one where the patient cannot breathe at all through the nose; after removal of the adenoids the exercises are continued, and a course of arsenic and iron prescribed. It must be insisted upon that the presence of any ear symptoms, not necessarily otorrhoea, but deafness or occasional pain in the ears, gives *the* indication for removal of adenoids, since prevention is far better than cure.

Any other cause of nasal obstruction leading to mouth breathing may be a cause of inflammation of the ear, and so of an otorrhoea—for example, chronic nasal catarrh, hypertrophied anterior or posterior ends of the inferior turbinals, deflected septum, or the remnants of adenoids, which may persist till 25 or 30 years of age. Should any

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of these defects be present in a case of otorrhœa, they must be remedied before local ear treatment can be expected to give good results.

Apart from these causes, there is an important group of diseases which cause otitis media—specific fevers, scarlet fever, diphtheria, measles, whooping-cough, influenza, and pneumonia. The severity of the resulting otitis varies with the infecting organism, scarlet fever and diphtheria, and perhaps influenza, giving rise to the worst forms.

The inflammation in the middle ear is in the first case *acute*, the discharge from the ear being preceded by great pain for one or two days. If untreated, these cases, after a few days, may subside and the discharge cease, or they pass over into a condition of chronic otorrhœa.

The treatment in these acute cases is to encourage free drainage; should the perforation in the membrane be very small, it is best enlarged, or a fresh incision made in the posterior inferior part of the membrane; clean with hydrogen peroxide, and put in a strip of gauze, and change each day till healing occurs. Should the pus be very thick, it may be sucked out with a Siegle's speculum. It is not good to syringe, because considerable pain may be caused by the impact of the fluid on the inflamed membrane.

When treated thus many acute cases subside, but unfortunately many cases are allowed to have their acute attacks without the medical man being called in, and so drift into the next group, those suffering from *chronic otitis media*. We will suppose that all the possible nasal and naso-pharyngeal defects have been remedied, and still the discharge continues; let us inquire why this should be so.

Here are specimens of temporal bones cut across in various directions to show the tympanum and its surroundings; it will be seen at once that the tympanum is far from being one simple space bounded externally by the tympanic membrane; here is (1) the attic, the space above the main tympanum, and containing the largest parts of the malleus and incus; (2) the antrum, leading back into the substance of the mastoid process, and having its opening into the tympanum considerably above its floor; (3) the hypotympanum, a small gutter-like part on the floor of the tympanum; (4) the niche leading to the round window; (5) air cells around the Eustachian tube. After seeing the complicated structure of the middle ear one can easily understand why disease once started should continue in spite of apparently free drainage, such as is obtained by a large perforation through the membrane; and when this perforation is small or is in Shrapnell's membrane the reason for continuance of the disease is clearer still.

The treatment of suppurative otitis media must vary to some extent with the character of the discharge, but in all cases the following is to be recommended in the first instance. The ear is mopped out as clean as possible with wool on a probe; and then a strip of iodoform gauze half an inch broad and about two and a half or three inches long is introduced down to the perforation. When possible this process is repeated daily or on alternate days; in cases where the patients can only be seen once or twice a week, hydrogen peroxide drops are to be used twice a day by the patient after removal of the gauze, which should take place twenty-four hours after its introduction. In many cases under this treatment the discharge diminishes or stops altogether; when it has become very slight, a powder of boracic and iodoform 4 : 1 blown in is useful in accelerating the healing. Syringing as practised at home, particularly among poor patients, is of very doubtful value; not only does the lotion fail to wash away the pus, but there are drawbacks to its use; some patients become very giddy and some experience pain.

When the local treatment just described fails and the otorrhœa continues, more must be done; perhaps there may be found polypi or granulations on the membrane; in the former case the polypi should be removed with the snare and gauze treatment continued, and in the case of granulations trichloracetic acid should be painted on to cauterize them, and again gauze treatment continued. If after these simple measures have been adopted no improvement follows after three weeks' continuous treatment, the probability is that some operative treatment must be undertaken—either permeatal removal of ossicles and outer attic wall, or the radical mastoid operation.

Should the discharge contain cholesterin crystals—indicative of cholesteatoma—no time should be spent in permeatal treatment, but the radical operation performed, since the presence of cholesteatoma makes the prognosis as to the course of the disease gloomy, many serious complications—intracranial abscess, sinus thrombosis, and the like—often being due to cholesteatoma.

There are many indications for operative interference in chronic otitis media—acute inflammations of the mastoid process, lateral sinus thrombosis, cerebral abscess, and so on—but here I wish only to mention two conditions which call for operation: facial paralysis and evidence of labyrinth infection.

In the specimens passed round, the position of the facial canal is seen from various aspects, and it will be noted how very close is the relation of the nerve to the tympanum, the bony wall of the Fallopian aqueduct being always very thin, and in some cases actually deficient; it is, therefore, easy to see how the facial nerve may be pressed upon by granulations in the tympanum, or by an exudation into its canal. Those cases of facial paralysis due to pressure are often relieved by the radical mastoid operation.

Again, in the specimens there is to be seen a white ridge of bone at the inner part of the entrance to the antrum from the tympanum; this ridge is due to the bulge of the external semicircular canal. In some cases of chronic otitis media the disease attacks the external semicircular canal, and produces erosion of the white ridge of bone; should the inflammation spread, this erosion of the bony canal may be followed by inflammation in the membranous canal lying inside; when this is so, even in very early stages, attacks of vertigo are experienced by the patient; as a sign of this vertigo nystagmus of a rotatory character is noticed, and some signs of disturbance of equilibrium may be detected. Should a patient show constant and definite signs of this labyrinth "irritation"—it may not be worthy the name of a labyrinthitis—a radical operation should be performed. In several such cases one has found that these symptoms previously present disappeared after the radical operation, and at operation a small erosion was seen on the external bony canal.

A last cause of discharge from the ear I wish to mention—that is, tubercle of the middle ear. Lately it has been said that tubercle is a common cause of otitis media among children, especially quite young children. There are three characteristic features of a tuberculous otitis: the perforation of the membrane is not preceded by pain, the discharge is inclined to be thin and watery, and the membrane is frequently perforated in two or more places. The glands about the ears are often enlarged, and facial paralysis is apt to develop early. The treatment should be gauze strips and hydrogen peroxide as before; the radical operation should only be advised in patients who are healthy, and in whom is found no other focus of tubercle. If patients are losing weight, do not operate, as the wound may not heal. Naturally, should acute complications arise in the course of a tuberculous otitis, operation must be resorted to to save life.

THERE are at present seven medical members of the Hungarian Chamber of Deputies.

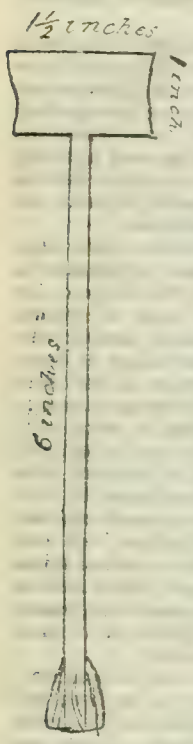
WE regret to observe that Livingstone College for Missionaries has ended up its year with a debit balance of £246. Its financial position, which so far as capital funds are concerned is sound, would soon become quite satisfactory, however, if missionary authorities adequately recognized their duty in the matter and sent more students. If it is impossible to post a qualified medical man at every missionary station in the tropics, the laymen dispatched to work there should receive sufficient instruction in medicine and surgery to enable them to guard themselves and their native assistants against the commoner dangers of life in such localities. To send out men trained in theology, but with less knowledge of hygiene than that possessed by an average board school teacher, is quite wrong. There is some probability of reform, since the question was considered last summer at the World's Missionary Conference in Edinburgh. The report of its transactions contains a chapter devoted to it, and Livingstone College is one of the two institutions mentioned as desirable training schools; the other is at Tübingen. The medical delegates at the conference also dealt with the matter, passing a series of definite resolutions in support of the same thesis.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HYSTERECTOMY FOR CANCER OF THE UTERUS OR CERVIX: A SUGGESTION.

To render the division of the vaginal walls more easy and rapid I have had an instrument made locally which acts very satisfactorily. It is practically a vaginal "director," and consists of a straight handle which carries at one end a flat plate 1½ in. wide and 1 in. in length.



Vaginal "director."

This plate is slightly curved like a duckbill. Before opening the abdomen the operator pushes the plate into the anterior fornix, and leaves the instrument lying there.

As soon as the uterine arteries are ligated the instrument is pushed upwards by the nurse and defines sharply the anterior wall of the vagina. Upon this support the wall can be divided by knife or thermocautery without the least trouble. When the anterior wall is divided the instrument is passed into the posterior fornix, and the uterus being pulled forward, the posterior wall is seen very well defined, and division is easy.

A second suggestion I would like to make is the treatment of a diseased cervix.

To avoid any infection of the abdominal cavity it has hitherto been imperative that the ulcerated surface should be scraped or cauterized.

A method I think much simpler is as follows: A volsella is clamped upon the cervix before the abdomen is opened. The instrument described above is pushed into the anterior fornix. The abdomen is then opened and the usual steps of a hysterectomy performed. When the uterine arteries are ligated the uterus is amputated above the cervix, care being taken to protect the surrounding parts with sponges. The walls of the vagina are then divided upon the little instrument I have described, and the cervix is withdrawn per vaginam by traction on the volsella. By this procedure no infection of the abdominal cavity can occur.

I am not aware if I am suggesting any procedure already adopted, but I think the above will perhaps be of value to operators, like myself, who have not unlimited assistance at hand.

P. CLENNELL FENWICK, M.D., F.R.C.S.E.,
Honorary Surgeon to Christchurch Hospital, New Zealand.

TWO CASES OF ACUTE TETANUS TREATED BY ANTITETANIC SERUM: RECOVERY.

A. M., aged 38, female farm servant, was placed under my care in the Western Infirmary by Dr. Love, of Cumbernauld, on November 13th, 1908.

Ten days before admission, while driving a horse at the mill, her right foot was caught in the wheel and badly lacerated. On examination I found the right foot had a large lacerated wound over the dorsum and another across the sole, extending upwards on the outer aspect of the foot and leg. She complained of stiffness in her jaw, the following day she complained of stiffness in her back, and in the afternoon she had a distinct attack of opisthotonos. The discharge from the wound was examined by Professor Muir, who found the bacillus. Antitetanic serum was injected once in the twelve hours, but no improvement took place in two days, and, after consultation with Professor Muir, I used Parke Davis's serum, which rapidly produced a marked improvement, and she gradually recovered.

H. S., aged 5, was admitted on March 10th, 1909, with a history that three weeks previously she had the ring and little fingers of the left hand injured with a reaping machine. Half of the little finger had been amputated. Four days before arriving at the infirmary she developed symptoms of tetanus. On examination the stump of the ring finger was found to be in an unhealthy condition, and it was therefore amputated. Opisthotonos and trismus were well marked in her case also. Parke Davis's serum was used, as in the case above, and the patient's recovery was quite satisfactory.

REMARKS.—Cases of tetanus are so frequently fatal that it seems right to record the above two in which recovery took place. In lacerated wounds it is important to have any discharge examined, in order that, if the tetanus bacillus is found, doses of serum ought to be given; indeed, in every lacerated wound where healing is not progressing favourably a prophylactic dose of serum ought to be administered, as the bacilli might be absorbed before they could be discovered in the discharge.

J. CRAWFORD RENTON, M.D.
Surgeon and Lecturer on Clinical Surgery, Western Infirmary, Glasgow.
Glasgow.

DYSTOCIA DUE TO VENTRIFIXATION OF UTERUS TREATED BY CAESAREAN SECTION.

ON August 17th, 1910, at 2 a.m., I was sent for to assist Dr. J. C. Galloway at a difficult case of labour. The patient is the wife of a farm labourer resident some two and a half miles from Banff. She is 27 years of age, and her obstetrical history is as follows:

Her first three pregnancies were in rapid succession, were quite normal, and three living children were delivered without any interference whatsoever. In October, 1907, she aborted at the third month, and after that she had a certain amount of prolapsus uteri, in connexion with which she consulted Dr. Galloway. Dr. Galloway advised her to go into Aberdeen Infirmary, where ventrisuspension was advised and performed by Mr. Marnoch on August 1st, 1908. The patient came home after this operation on August 22nd, and had one menstrual period after her return, when she again became pregnant. In May, 1909, she gave birth to a very small premature child, which was stillborn, and was born before Dr. Galloway arrived. She informed me that it came "feet first." During the pregnancy which resulted in her most recent labour "she did not feel at all like she had done in previous pregnancies," but did not consult Dr. Galloway until she had to send for him on June 12th for sudden haemorrhage, which came on while she was lying in bed at midnight. This haemorrhage was very severe, but stopped soon after Dr. Galloway's arrival, without any treatment, and is explained by the fact that at the subsequent Caesarean section the placenta was found to be lying well down in the lower uterine segment. She stayed in bed till June 16th, and was then able to do light housework till August 16th, when she fell into labour about 11 a.m. She did not send for Dr. Galloway till about 10 p.m., and on his arrival he found on examination a transverse position, the membranes intact, the os very high up and dilated sufficiently to admit two fingers. He attempted version, and, the membranes rupturing, the liquor amnii drained away. He got hold of the left foot, but could not get the child turned round at all, the head lying persistently in the left iliac fossa. He sent into town at 2 a.m. and I went out. I gave the patient chloroform, and he again endeavoured to turn, without avail. He then asked me to attempt to deliver, which I did, he giving the anaesthetic. I found the uterus very much thinned out and firmly adherent to the abdominal wall, in the line of the ventrisuspension scar. The os was well dilated and the cord prolapsing and pulsating strongly. I worked away for a long time, but could not get the child delivered.

After talking over the case, Dr. Galloway and I agreed that to persist in attempting the delivery by version or even by embryotomy would probably lead to rupture of the uterus. Her pulse was now very weak and running at 130 per minute. We accordingly decided that Caesarean section was the safest course to adopt, and the house

being merely a labourer's cottage, we arranged to remove her immediately to Chalmers Hospital, some two and a half miles distant. She stood the drive into hospital fairly well, arriving shortly after 6 a.m. On admission her temperature was 100° F., her pulse 140, and very weak. Before putting her on the table she was given $\frac{1}{30}$ gr. strychnine and $\frac{1}{100}$ gr. digitalin hypodermically and a rectal saline with brandy. With Dr. J. H. Stephen giving chloroform and Dr. J. Anderson assisting me I opened the abdomen; the uterus was found fixed to the abdominal wall by a strong fibrous band not more than 1 in. in length, about $\frac{1}{4}$ in. thick and 1 in. broad, about $1\frac{1}{2}$ in. to 2 in. above the pubes. The uterine wall above the adhesion was very much thinned out and followed every contour of the fetus, but below the adhesion it was much thicker. On opening the uterus there was a good deal of haemorrhage, which was soon checked by very hot saline after the removal of the child and placenta. The child was quite full time, weighed fully 8 lb, but unfortunately could not be revived. Owing to the woman's exhausted condition I decided to leave the uterus, but ligatured and cut both Fallopian tubes and finished the operation as quickly as possible, suturing in the usual manner.

An intramuscular injection of Parke Davis's aseptic ergot was given and repeated every four hours for four doses. Rectal salines with brandy were given frequently. Four hours after operation $\frac{1}{4}$ grain of morphine was given hypodermically, which effectually stopped the sickness which was very severe.

The temperature remained at 100° F. for eight hours and then fell below normal and remained there and the pulse-rate gradually diminished in frequency. Involution followed a normal course and the lochia remained quite pure, in fact the patient made an uninterrupted recovery. I have reported this case at length for several reasons: First, because I have never heard or read of such a troublesome case following ventrisuspension; secondly, that I have never heard of Caesarean section recommended should such a case occur; thirdly, because of the remarkably good recovery made by this patient from Caesarean section, performed as it was at 7 a.m., some twenty hours after the outset of labour, and even then after considerable vaginal manipulations, which says a great deal for the aseptic precautions taken by the medical attendant, Dr. Galloway. I would like to take this opportunity of recording my thanks to Dr. Stephen for his administration of the anaesthetic to such a bad case, and to Dr. Anderson for his very able assistance at the operation.

W. MANSON FERGUSSON, M.B., Ch.B.,
L.M.Rotunda;
Assistant Surgeon, Chalmers Hospital, Banff, N.B.

Reports of Societies.

THE ROYAL SOCIETY.

Thursday, December 8th, 1910.

Mr. A. B. KEMPE (Treasurer and Vice-President) in the Chair.

The Trichromatic Theory of Colour Vision.

SIR W. DE W. ABNEY, continuing his papers on colour blindness and the trichromatic theory of colour vision, made a contribution on incomplete red or green blindness. In Part I he had treated of complete colour blindness, and in this paper of incomplete colour blindness. He argued that the amount of incompleteness could be accurately determined from the luminosity curve of a colour-blind person both red and green blind, and that the amount of incompleteness could be determined from observations made by the red or green blind at any part of the spectrum, if someone with normal vision made observations at the same place using unchanged white light for the comparison. He adduced evidence that the three sensation components of the different colours of the spectrum, as determined by himself, were verified by the results; and that the trichromatic theory accounted for all cases of incomplete colour blindness which he had measured.

Enumerative Studies in Malaria.

The object of researches reported by Professor RONALD ROSS and Dr. DAVID THOMSON was to make a minute co-ordinated study of cases of malarial infection occurring in the tropical ward of the Royal Southern Hospital at Liverpool. A measured quantity of blood was made into a dehaemoglobinized thick film, and the organisms contained in it counted. Almost daily estimates of the number of parasites, with frequent estimates of the leucocytes, the haemoglobin and the excreted urobilin, were made since the beginning of this year in 24 cases of *Plasmodium falciparum*, 8 cases of *P. vivax*, and 1 case of *P. malariae* and *P. falciparum*. Correlation, with minor deviations, was found between the number of asexual parasites present and the degree of fever. If the asexual forms did not number more than several hundreds per cubic millimetre they were not numerous enough in these cases to produce fever. The asexual forms did not disappear between relapses as usually thought, but tended to diminish. It was roughly estimated from these cases that quinine reduced the asexual forms by 50 to 80 per cent.

Haemoglobin Metabolism in Malarial Fever.

In a preliminary note Dr. G. C. E. SIMPSON said that in the pyrexia of malaria there was a marked fall in the haemoglobin of the blood, and further investigation of this question was undertaken in the hope that it might throw light on the relationship of malaria and blackwater fever. In benign tertian malaria a slightly increased output of urinary urobilin occurred; in malignant tertian malaria, a greater increase; and in the malignant form, marked urobilinuria was sometimes found. More urobilin was excreted in the faeces than in the urine, a fact which had been largely neglected by previous observers. In benign malaria faecal urobilin was excreted in amounts comparable to those in other pyrexial diseases; in malignant malaria a higher output was the rule, and might represent as much as 25 per cent. of the total blood. This showed that the haemoglobinometer readings recorded an actual destruction of haemoglobin. The number of corpuscles destroyed was larger than the number infected by parasites. It appeared that in malignant tertian malaria the removal of free haemoglobin by the liver prevented haemoglobinaemia of sufficient grade to produce haemoglobinuria. A remarkable excretion of urobilin was found in a case of blackwater fever, representing the destruction of an amount of haemoglobin equal to the whole of the circulating blood, the amount of haemoglobin passed unchanged in the urine being negligible in comparison. Haemoglobinuria in this case was not due to failure of the normal mechanisms to deal with an amount of haemoglobin such as was set free in ordinary malaria, but to a slight overflow of haemoglobin through the kidneys owing to the exceptional amount of haemolysis.

Sleeping Sickness.

Professor RONALD ROSS and Dr. DAVID THOMSON reported further observations on a case of sleeping sickness studied by precise enumerative methods. (1) The trypanosome cycle recorded in their previous paper continued till the patient's death. (2) The amount of fever was greater during the trypanosome increase. (3) The total leucocytes increased coincidently with the trypanosome increase. The mononuclears increased relatively more than the polymorphonuclears. During the trypanosome fall the leucocytes continued to increase in number. The number then decreased rapidly to normal and under when the trypanosomes again commenced to increase. A very marked mononuclear increase, coincident with a decrease of trypanosomes, was accompanied by a remarkable clinical improvement. (4) Atoxyl in small doses, 2 to 4 grains, and quinine and methylene blue in large doses had no appreciable trypanocidal action. (5) Subcutaneous injection of vaccines of trypanosomes obtained from heavily infected rats seemed to cause a premature rise in number of the patient's trypanosomes; the effect depended upon the time of injection in relation to the cycle. (6) Subcutaneous injection of leucocytic extract caused a marked leucocytosis on the day after the injection, and on one occasion this leucocyte increase was coincident with a marked clinical improvement. The conclusions drawn by the authors were as follows:

(1) The increase of trypanosomes is due to their active multiplication depending on the following conditions: (*a*) The liberation of a reproductive stimulant from the dead trypanosomes of the previous fall; (*b*) the small number of leucocytes, especially mononuclears: (*c*) the habituation of the trypanosomes to their antibodies; (*d*) the absence or diminution of antibodies. (2) The decrease of trypanosomes is due to their rapid death, and to a cessation of multiplication depending on the following conditions: (*a*) The large increase of leucocytes, especially of mononuclears; (*b*) the formation of antibodies in the serum. (3) The trypanosomes remaining between the rises are resistant forms. (4) Extracts of dead cells would appear to stimulate the corresponding live cells to multiply or divide.

Periodic Variations in Trypanosome Infections.

A paper communicated by H. B. FANTHAM, D.Sc., and Dr. J. G. THOMSON, on enumerative studies on *Trypanosoma gambiense* and *Trypanosoma rhodesiense* in rats, guinea pigs, and rabbits, may be summarized as follows:—(1) The strains of trypanosomes used in these investigations were: (*a*) *T. gambiense*, old laboratory strain; (*b*) *T. rhodesiense* (Stephens and Fantham), from a patient suffering from sleeping sickness in Rhodesia. (2) Rats, guinea-pigs, and rabbits were inoculated with a definite number of trypanosomes, and daily counts were made of the parasites in the peripheral blood of the animals. (3) Periodic variation was found in all these animals comparable to that discovered by R. Ross and D. Thomson in the blood of the sleeping sickness patient. (4) Rats inoculated with each strain showed either a periodic increase or a continuous rise in the numbers of parasites. (5) The average life of rats inoculated with *T. rhodesiense* was 11.3 days; with *T. gambiense*, 13.8 days. (6) The average incubation period in rats in the case of *T. rhodesiense* was 2.9 days; in *T. gambiense*, 4.4 days. The average weights of the animals and the average number of parasites inoculated were approximately the same in the two strains. (7) In rats infected with *T. rhodesiense* the period between the crests of the graph was 3 to 4 days, while in *T. gambiense* this period was 4 to 6 days. (8) In guinea-pigs the trypanosomiasis tended to run a chronic course, but the life of animals infected with *T. rhodesiense* was shorter. The period between the crests of the graph in both strains was longer than in rats—namely, 5 to 8 days. (9) Rabbits inoculated with *T. rhodesiense* also exhibited periodic variation. (10) The periodicity was explained by (*a*) variations in resistance on the part of the host, accompanied by (*b*) the formation of latent bodies by the trypanosomes in the internal organs of the host during fall in numbers of the parasites in the peripheral blood.

Trypanosomes in Rats and Guinea-pigs.

Mr. H. B. FANTHAM also contributed a paper on the life-history of *Trypanosoma gambiense* and *Trypanosoma rhodesiense* as seen in rats and guinea-pigs, the main points of which may be summarized as follows: (1) The researches were undertaken to investigate the parasitological aspect of the numerical cyclical development found by R. Ross and D. Thomson in the trypanosome of a patient suffering from sleeping sickness contracted in Rhodesia. Rats and guinea-pigs inoculated with *T. rhodesiense* and with *T. gambiense* were killed at various stages of infection and their internal organs examined, controls being used. (2) The formation of a non-flagellate, latent or rounded body from a trypanosome was observed in life, much of cytoplasm and flagellum of the flagellate being cast off. (3) Non-flagellate bodies were seen to grow into flagellate trypanosomes when placed in fresh, warm, uninfected blood. (4) The latent or non-flagellate stages are formed at or near the time when the trypanosomes are most numerous in the peripheral blood. (5) The latent bodies are relatively numerous in the internal organs when the flagellates are few in the peripheral blood of the host. (6) The formation of latent bodies takes place especially in the lungs. The latent bodies collect in the spleen and bone-marrow, as stated by Salvin-Moore and Breinl. (7) Latent bodies from the spleen of an infected rat inoculated into another rat produced trypanosomiasis. (8) The latent bodies are the post-flagellate stages of one generation of trypanosomes and the pre-flagellate stages of the succeeding generation. (9) There is a life-cycle of *T. gambiense* and of *T. rhodesiense* in vertebrate hosts. Compare *Crithidia* and *Herpetomonas* in invertebrates. (10) The occurrence of latent bodies explains the recurrence of trypanosomiasis in hosts when it has apparently died out. (11) Mutual action and reaction of the host and the parasite lead to the formation of rounded bodies, which are relatively resistant. (12) Some flagellate trypanosomes do not form latent bodies, but degenerate. Some latent bodies die, and do not flagellate.

Treatment of Trypanosomiasis.

Professor R. ROSS and Dr. J. G. THOMSON reported experiments on the treatment of animals infected with trypanosomes by means of atoxyl, vaccines, cold, *x* rays, and leucocytic extract. In all the animals used in these experiments regular daily counts were made of the parasites in the peripheral blood by means of thick film method. (1) Small repeated doses of atoxyl prolonged the lives of rats infected with the Rhodesian strain of trypanosomes, but failed to have any trypanocidal action, as was demonstrated by the fact that the parasites increased rapidly and showed very active division. (2) They suggested that small doses of atoxyl actually stimulated the trypanosomes of this strain to divide, and that the drug was also a tonic to the body cells of the host. (3) Large doses of atoxyl were trypanocidal, but the parasites formed resistant bodies, and cure was only temporary. The dose required to approach as near lethal as possible, and even then a cure was not obtained in the Rhodesian strain. (4) Vaccine treatment gave indefinite results, and insufficient experiments prevent definite conclusions being formed. The life of one rat seemed to be prolonged when the vaccine was administered in doses of 10,000 000 trypanosomes, with an interval between the doses. They suggested that the time of administration, the amount given, and the interval between the doses, were all of importance, and further work was being carried out. (5) Animals suffering from trypanosomiasis had the incubation period delayed, and their lives prolonged in the cold. (6) *X* rays had no trypanocidal action, but the life of the animal might have been prolonged. (7) Leucocytic extract gave indefinite results.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Friday, December 9th, 1910.

Sir A. PEARCE GOULD, President, in the Chair.

THE following were among the exhibits: Dr. W. HUNTER: A patient who came under observation in July, 1900, showing the typical features of *Addisonian anaemia*. The red blood cells were reduced by 25 per cent., and haemoglobin by 35 per cent. The case was treated by strict oral antiseptic measures, combined with the administration of antistreptococcic serum. The primary recovery was rapid and striking. A relapse occurred in the end of 1901, and another at the end of 1902. There was a severe relapse at the end of 1903, but the patient had remained without any relapse during the last seven years. The present condition of the blood was: Red blood cells 105 per cent., haemoglobin 115 per cent. The case showed, at the onset of the disease and during the relapses, characteristic clinical features, including glossitic gastro-intestinal disturbances, haemolytic changes with evidence in the blood and urine, pyrexia, and peripheral nervous disturbances. During the last seven years those features had been absent. Drs. J. GALLOWAY and W. J. FENTON: A case of *Stokes-Adams symptoms* in a lad aged 18. Mr. LAWRIE MCGAVIN: (1) A case of *varix* of the right superficial epigastric vein, and (2) a case of trunk lesion of the fifth and sixth cervical nerves, with keloid development in scars. Mr. L. VERNON CARGILL: A case of *double proptosis* due to a growth invading each orbit. Dr. G. A. SUTHERLAND and Mr. F. F. BURGHARD communicated a paper on two cases of *splenectomy* for splenic anaemia. The diagnosis of splenic anaemia or primary splenomegaly was based on certain clinical features, namely, anaemia of the chlorotic type, absence of any leucocytosis, and splenic enlargement without any known cause. Medical treatment had not proved curative, and the best results had been obtained from splenectomy according to the authors.

SECTION OF SURGERY.

Tuesday, December 13th, 1910.

Mr. RICKMAN GODLEE, President, in the Chair.

Septicaemic Haemorrhage.

MR. W. G. SPENCER, in a paper on septicaemia haemorrhagica, said its peculiarity lay in its occurrence from a mucous or serous membrane without any naked-eye breach of surface, or from a raw surface without any special blood vessel being opened; if it were parenchymatous it took place without any preliminary traumatism or degenerative process in the organ. Such haemorrhages were well known in connexion with specific and tropical fevers, and in veterinary pathology. Experimental investigation with strains of streptococcus obtained from haemorrhagic infections had established the rôle of micro-organisms in initiating the condition. Special interest attached to cases of haemorrhagic cellulitis; in these little or no pus escaped when the part was incised, but blood welled up in large quantity, though no vessel could be detected, and frequently proved so refractory to control that the patient died exsanguinated. There was evidence that these cases were due to a streptococcus. Streptococci were not the only organisms concerned, but their preponderance in recorded instances suggested the advisability of immediate administration of antitoxin, to be followed, if possible, by autovaccination.

Mr. HUTCHINSON, in a paper on gastro-intestinal haemorrhages occurring after abdominal operations and usually of septic origin, related a personal experience of the condition after a cholecystectomy in the presence of pus. A gastrotomy was performed to ligature the bleeding points, and the definite ulcer and erosions then discovered prompted a search through the *post-mortem* records of the last few years for similar cases at the London Hospital. Altogether 40 cases were found, and in 80 per cent. of them there was some septic process present. Twenty-four of the cases had been operated upon, but the proportion dependent on infection was exactly the same in the unoperated.

Commenting upon these two papers, the PRESIDENT said he was not altogether convinced that the renal cases mentioned by Mr. Spencer were really dependent on infection. In all cases of kidney disease, where there was a very low specific gravity of the urine, there was great risk of continued bleeding after operation. Some cases of "cellulitis" in which blood was found where pus was expected were due to actinomycosis. With regard to Mr. Hutchinson's cases, he thought more detail as to the anaesthetic should have been given.

Fracture of the Patella.

MR. A. E. JOHNSON, in a paper on fracture of the patella without separation of the fragments, referred specially to those which were dependent on indirect violence. So long as the bone only was fractured, even transversely, and the aponeurosis remained intact, no separation occurred. A patient with this injury might go up and down many flights of stairs or do a day's work before seeking advice, or before some secondary strain tore the fascia and allowed the fragments to part. Diagnosis, apart from the *x* rays, was practically impossible, as none of the usual signs could be elicited. Treatment by immobilization, massage, and movement gave excellent results, but return to work was delayed in some cases to three months. Mr. HUTCHINSON added two examples to those mentioned by the author. He had noted a slight groove on the surface of the damaged bone, which was, he believed, the only recognizable sign. Mr. BRUCE CLARKE related a similar case he had seen some years ago.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, December 8th, 1910.

Dr. T. R. BRADSHAW, President, in the Chair.

Liquid Air and Carbon Dioxide Snow.

DRS. STOPFORD TAYLOR and R. W. MCKENNA, in a paper on liquid air and carbon dioxide snow in the treatment of skin disease, said they had used these agents with much advantage for over three years. Liquid air was approximately two and a half times colder than carbon dioxide snow, and was easily applied on a piece of cotton-wool twisted round a cane; the application should be shorter than that of snow. The drawbacks to its use were its cost and the fact that it evaporated very quickly. The snow, on the other hand, was easily procurable and cheap, pencils of it were easily prepared and applied. The application of either air or snow was not very painful, except near superficial nerves, or over a bone, carious teeth, or on the ears. The therapeutic use depended upon the reaction; this varied according to the nature of the tissue, the duration of the application, and the pressure applied. It consisted in the copious outpouring of serum with the formation of a bulla; there was a marked diapedesis of leucocytes, the corrective tissue became swollen and enlarged, many of the capillaries became thrombosed. The epithelium, however, sustained the chief damage, and in most cases was completely destroyed. The after-treatment was simple: the bulla might be left unbroken for a few days, and then clipped off, and the resulting raw surface dressed with some simple dressing. Healing was somewhat slow, but restitution was complete, and sometimes surprising. The writers gave their experience in the treatment of naevi, moles, *x*-ray warts, lupus erythematosus rosacea, and lupus vulgaris. Their best results in lupus vulgaris were obtained by linear scarification, followed in a day or two by refrigeration with snow. Refrigeration should not be used in old people, or in those suffering from broken-down constitutions, or from arterio-sclerosis or nephritis.

Exhibits.

The following were among the cases shown:—PRESIDENT: Congenital heart disease in a woman aged 38, married fifteen years, and with three healthy children. Cyanosis had been present since infancy. There were also clubbing of the fingers, polycythaemia, and a systolic murmur over the ventricles. The heart was not much enlarged, and the patient enjoyed fairly good health. Dr. GORDON GULLAN: A child aged 3, suffering from haemorrhages from various mucous membranes and the kidneys. The child had been fed upon tea, and bread-and-butter. The case was considered one of scurvy rickets.

OXFORD MEDICAL SOCIETY.

Friday, December 9th, 1910.

Mr. WHITELOCKE, President, in the Chair.

THE following were among the exhibits:—Mr. BEVERS: (1) A woman who for several years had suffered from a large ventral hernia which had been cured by the implantation of a *Wire filigree*. (2) A man of 60, whose large irreducible inguinal hernia had been successfully treated by McGavin's double filigree operation. The method of inserting the filigrees in each case was demonstrated. He advocated the use of a wire filigree in those cases of ventral hernia which were of large size and when the muscles had undergone such wide separation that in order to bring them together and overlap them would necessitate a severe operation accompanied by shock and an undue increase in the intra-abdominal pressure. The final result in such cases without filigree was always doubtful. With a wire filigree a firm unyielding plaque was formed which could neither stretch nor bulge and appeared to be the most rational method of closing a gap in the abdominal wall. In inguinal hernia the operation was indicated when the rings were large and the inguinal canal practically non-existent due to atrophy of the muscles. The double filigree method would here give a good result, and, as McGavin stated, would bring all varieties of hernia within the reach of the surgeon. Mr. DODDS-PARKER: A tumour which he had removed from the abdomen of a woman. It consisted of of a cyst the size of a large cocoanut firmly attached to the convex surface of the spleen. The spleen had to be removed with the tumour. Clinically the tumour had been freely movable in the abdomen, but no certain diagnosis of its anatomical relations had been possible previous to the operation. The interior of the cyst contained a thickish jelly, in which no evidence of its origin could be seen microscopically. Sections of the wall showed that it consisted of granulation tissue, and by none of the ordinary methods of examination was any evidence forthcoming that it was caused either by a parasite or by a bacterium. Dr. GIBSON demonstrated a heart which showed aortic, mitral, and tricuspid stenosis due to old-standing rheumatic lesions. The patient in the wards had shown the ordinary features of severe heart failure of the right side.

MANCHESTER MEDICAL SOCIETY.

Wednesday, December 7th, 1910.

Mr. E. STANMORE BISHOP, President, in the Chair.

Malnutrition in Infancy.

DR. C. P. LAPAGE, in a paper on malnutrition in infancy, said that one cause thereof, tuberculosis, though not uncommon, must not be diagnosed without definite evidence. Treatment of the majority of cases consisted of exact and scientific methods in infant feeding, the percentage method being most valuable if not unnecessarily elaborated. In suitable cases lavage was of great value, especially when there was a tendency to spasmodic contractions of the stomach. Infusion was another therapeutic measure which often had striking results, especially in infants suffering from great loss of fluid. The prognosis of tuberculosis in infancy was by no means hopeless.

Glaucoma.

Mr. A. A. BRADBURNE read a paper on the early diagnosis and treatment of "simple" glaucoma. He advocated a modification of the ordinary disfiguring operation of iridectomy in selected cases. His modification, he considered, lessened the reactionary leucocytic infiltration, which tended to block up the already inefficient excretory channels and ultimately to seal up the iridectomy wound. It also permitted early massage, the latter being necessary since cases of "simple" glaucoma did not, as was the case with acute and chronic forms, possess a tendency to hypertension such as would assist maintenance of the patency of the wound.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

Wednesday, December 7th, 1910.

W. MORLEY WILLIS, F.R.C.S., President, in the Chair.

The Mortality of Appendicitis.

IN opening a discussion on the mortality of appendicitis and how it can be reduced, Mr. A. R. ANDERSON said that during the last ten years 973 operations had been performed for appendicitis at the Nottingham General Hospital; 89 of the patients died, and of these only one had not had pus present at the operation. The number of operations had yearly increased, and the yearly mortality decreased. During the first eleven months of the present year there had been 138 operations with only seven deaths. The explanation lay in the earlier recognition of the disease, and prompter operations. The rapidity with which the symptoms, in some cases, passed from bad to worse was amazing. Most operators had found pus present within twenty-four hours of the commencement of the attack. Mr. R. G. HOGARTH said that 80 per cent. of all cases of appendicitis, no matter what complications arose, recovered without operation. The way to reduce mortality was to improve the diagnosis and the technique of the operation. In cases of doubt morphine should be avoided, and the pulse-rate watched every hour; if it increased, operation was indicated. The "quiet interval" due to perforation of the appendix was very dangerous, as it led one to a feeling of false security. Dr. C. H. CATTLE said that many patients had got safely through three or four attacks of appendicitis. Where these attacks became so frequent as to incapacitate the patient, he advised operation. One never knew when a mild case would become serious, and therefore he advised operation if the symptoms did not improve after twenty-four hours. Mr. K. BLACK advised operating where the symptoms persisted after forty-eight hours. He had had the opportunity of watching 400 operations for acute appendicitis performed by various eminent surgeons at four large hospitals, and he had observed that the mortality varied greatly with the individuality of the surgeon. If the operation was properly performed in the early cases the mortality should be *nil*. Dr. W. T. ROWE related a case where the pulse rate did not rise above 72 per minute, yet at the operation the appendix was perforated. During the convalescence it was discovered that the normal rate of that patient's pulse was 56. Mr. A. R. TWEEDIE did not advocate the removal of the appendix in cases of peri-appendicular abscess. Mr. T. B. GILBERT SMITH said he gave morphine when the pain was acute and the signs not clear. The PRESIDENT recommended immediate and early operation where possible. In localized cases of several days' duration operation might be delayed a short while; these cases did best when they were simply drained and the appendix left. It was impossible to foretell whether a case would run a mild course or not, and he advised operation, leaving the responsibility of a refusal on the friends.

HARVEIAN SOCIETY OF LONDON.

Thursday, December 8th, 1910.

Dr. HANDFIELD-JONES, President, in the Chair.

"606."

MR. ERNEST LANE, in a paper on the treatment of syphilis by the arsenical compounds, admitted the value of various arsenical compounds, but recalled the fact that irremediable blindness had followed the use of some of them. Excellent results had been obtained with "606" by Professor Wechselmann, from whose account it might be imagined that a new epoch in medicine had been reached. But there was another side to the picture: the enthusiasts had greatly minimized the pain produced by the injection. Ehrlich himself now admitted that there were many conditions in which the employment of "606" was inadvisable. Two cases of blindness had been recorded and two others hinted at. Twelve deaths following its use were incontestable. Early recurrences of symptoms were frequent, and the drug had not been long enough in use for any one to speak positively on the question of late recurrences. He had submitted some of his own cases to injection by Sir Almroth Wright and Mr. J. E. R McDonagh. The results were in the main favourable so far as he could judge in so short a time, but no better than he would have expected from mercurial treatment. One case of syphilitic ulceration improved temporarily but soon relapsed; another injection was given, followed again by improvement and another relapse, the ulceration spreading to twice its former size. The condition was now improving on intramuscular injections of grey oil. This case had been somewhat prematurely recorded in the *Lancet* as one of the successes of "606." Another patient had malignant syphilis, which had resisted mercury, and receiving no benefit from "606," ultimately died some ten weeks after the injection. Other cases were mentioned in which improvement was not particularly satisfactory although the Wassermann test became negative. He showed a chart in which the temperature went up to 104 after the injection, and hyperpyrexia was present every evening for ten days following. Of his 17 cases, 5 certainly called for no enthusiasm. Syphilis was a mild disease, generally perfectly amenable to mercury; intolerance of that drug was rare, and would be the only justification for looking elsewhere for a remedy. In appropriate cases "606" was a valuable addition to our therapeutical stock. Laboratory research in syphilis as in other diseases, was of great importance, but should not replace the results of clinical experience. Dr. D'ESTE EMERY, speaking of the Wassermann reaction, claimed for his own modification the advantages of rapidity and accuracy. When a quantitative method was used and interpreted in the light of the clinical history the percentage of error was extremely small. Sir ALMROTH WRIGHT considered that "606" undoubtedly caused the disappearance of the spirochaete and therefore cured syphilis; further clinical manifestations were probably due to a secondary streptococcal or staphylococcal infection. Mr. ARTHUR SHILLITOE related some successful results from the use of "606" in his practice. Mr. CAMPBELL WILLIAMS drew attention to three deaths following the injection of "606" additional to the twelve mentioned by Mr. Lane, and gave cases within his experience in which relapses had occurred. In view of the risk attaching to the use of "606," he suggested a form to be signed by the patient for the surgeon's protection. Many of the cases reported as having been cured by "606" were nervous affections, generally regarded as parasyphilitic, and in these, theoretically, "606" should have no action. If it were ultimately found to have this specific action, views of the pathology of these cases would have to be altered.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Friday, November 25th, 1910.

Dr. W. H. CHEETHAM in the Chair.

THE following were among the exhibits: Mr. J. STEWART: An *Inverted Meckel's diverticulum* from a child, aged 5½ years, who was seen at the end of 78 hours' suffering from signs of intussusception. On opening the abdomen fetid fluid escaped in large quantity. There was an enteric intussusception, which, by coaxing, was reduced with the exception of a small truncated mass inside the gut. This was seen to be a Meckel's diverticulum. An incision was made in the gut below this, it was drawn through the incision, tied and cut off, and the wound closed. The child died. Dr. C. OLDFIELD: A *Fibroid uterine tumour*, looking like adipocere; under the microscope the muscle outlines and nuclei could be seen, but staining was faint. Oöphorectomy had been done seventeen years before; this relieved the menorrhagia from which the patient was suffering, but pain and urinary symptoms had called for radical treatment. No change in the size of the tumour had resulted from the oöphorectomy. Mr. B. C. A. MOYNIHAN: A series of specimens from a case of *Cholecystectomy*, three of which illustrated a difficulty and a danger in the operation. In these three a portion of the hepatic duct had been removed with the gall bladder. It was shown by reference to the specimens that a distortion of a distended hepatic duct might result from the cicatricial contraction of a gall bladder, the seat of repeated inflammation. The gall bladder became then broadly sessile, and in its pedicle the hepatic duct was drawn up. The defect could be remedied by suture over a catheter pushed upwards from the common duct. Dr. W. H. MAXWELL TELLING: A *Factitious dermatitis* in a girl of 18. By rubbing with a wet finger she had produced oval lesions about 1 in. to 1½ in., looking like patches of ordinary moist eczema. The distribution of these extended from below Poupart's ligament to the dorsa of the feet, and was on the anterior surface of the limbs. There were no other lesions. The first lesion appeared three months before. Since that date there had been one or two fresh lesions regularly every day, and the lesions were almost identical in size and shape and practically equidistant from each other. No treatment was adopted, the girl admitting that they were self-inflicted.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

Mrs. DICKINSON BERRY, President, in the Chair.

Dental Clinics.

THE PRESIDENT, after giving an account of some of the papers read at the late International Congress on School Hygiene, expressed herself as strongly in favour of school clinics, at all events in many localities. Dental clinics were greatly needed, but must be free, otherwise the parents would not send their children to be treated, as they did not think it necessary to attend to teeth that were not aching.

Tuberculin Treatment.

Dr. HILDA CLARK, in a paper on the tuberculin dispensary, described the methods in use at her own dispensary which were based on those of Dr. Wilkinson. The patients attended twice a week; they were weighed and had their temperature taken by the nurse, who also visited the homes and gave the necessary instruction in general hygiene. Koch's Old Tuberculin was used in large doses. A test dose of 0.001 c.cm. P.T.O. (bovine) was given, and if necessary increased until a reaction was obtained. Then doses of 0.005 c.cm. increasing to 0 8 c.cm. P.T.O. were given twice a week. This course was followed by one of P.T., and if immunity was found not to be established to it, by one of Old Tuberculin (human). During the few months in which the dispensary had been open, cases in all stages of tuberculosis had been treated with excellent results in a large majority. Most of the patients continued at work during the treatment. None were any the worse, except sometimes during the first two or three weeks. Some complained of violent abdominal pain after the injections. Dr. JANE WALKER said she had tried new tuberculin, given at intervals of not less than six days, but did not think there had been any benefit from the treatment. In a chronic disease like pulmonary tuberculosis any special treatment must be tried with many patients and for many years before its effect could be judged. Dr. ESTHER CARLING reported the results in the first 3 cases to whom she had given tuberculin treatment: (1) A fairly advanced case of phthisis, which was not doing well on ordinary treatment; this patient went from bad to worse. (2) An early laryngeal case; there was no improvement. (3) A very early case of pulmonary disease; the patient did less well than before the treatment was started. The speaker had since then given the treatment further trials, but in no case had there been any striking result.

Reviews.

MEDICO-LEGAL ASPECTS OF ACCIDENTS.

THERE can be no question that the principles which underlie the Workmen's Compensation Act have given rise to a need for a new kind of learning amongst lawyers and doctors. To perform his duty properly the lawyer who essays to practise in compensation cases must know the Act and all the cases decided thereunder and something of medicine; the doctor must know all of medicine and surgery and something of the Compensation Act. New tracts have been opened up in the regions where law and medicine meet.

In the portly volume, *Accidents in their Medico legal Aspect*,[1] edited by Mr. DOUGLAS KNOCKER, barrister-at-law, we have a compendium—nay, an encyclopaedia—which will be invaluable to both classes of practitioner. The editor is well qualified for the task he has undertaken. Not only is he a member of the Bar, but he is also a member of the medical profession, which latter qualification he modestly conceals. In addition to that, he is the editor of *Butterworth's Compensation Cases*.

To have produced a work of the kind before us without assistance would have been impossible. To judge from the list of contributors, it is clear that Mr. Knocker has been fortunate in enlisting the help of members of the medical profession well qualified to deal with the subjects allotted to them. The list is as follows:

Harold Leslie Barnard, M.S., F.R.C.S. (Rupture); Harold Barwell, F.R.C.S. (Nose, Throat, and Ear); Frederick E. Batten, M.D., F.R.C P. (Brain, Nerves, and Spinal Cord); A. P. Beddard, F.R.C.P. (Expert Evidence); Norman G. Bennett, M.B., L.D.S. (Teeth); James Berry, F.R.C.S. (Heart, Lungs, and Trachea); Hubert E. J. Biss, M.D., and H. Campbell Thompson, F.R.C.P. (Neurasthenia [Traumatic]); J. Bland-Sutton, F.R.C.S. (Breast); J. Blumfield, F.R.C.S. (Anaesthetics); A. E. Boycott, M.D. (Ankylostomiasis); Rupert Bucknall, M.D. (Wounds); E. Rock Carling, F.R.C.S., and A. H. Tubby, F.R.C.S. (Bursae, Fasciae, Joints, Muscles, Tendons); G. Lenthal Cheatle, F.R.C.S. (Infection); R. J. Collie, M.D. (Malingering); Edred M. Corner, F.R.C.S. (Gangrene, Glanders, Rabies, Tetanus); Lieutenant-Colonel Andrew Duncan, F.R.C.P., F.R.C.S. (Tropics); Herbert Eason, M.D. (Eye); F. W. Eurich, M.D. (Anthrax); Frederick Hobday, F.R.C.V.S. (Glanders, Rabies); C. M. Hinds Howell, M.D. (Electrical Injuries); Theo. B. Hyslop, M.D. (Insanity); Thomas H. Kellock, F.R.C.S. (Children); Douglas Knocker Barrister-at-Law (The Legal Aspect of Accident, and Case Guide); Thomas Lister, F.R.C.S. (Heart, Lungs, Trachea); John H. Macleod (Skin); John Pardoe, F.R.C.S. (Bladder, Genital Organs—Male); Louis Bathe Rawling, F.R.C.S. (Blood Vessels, Lymphatics); Percy Sargent, F.R.C.S. (Bones, Brain, Nerves, Spinal Cord); James Sherren, F.R.C S. (Abdomen, Appendix, Intestines, Liver, Oesophagus, Pancreas, Peritoneum, Rupture, Spleen, Stomach, Suprarenal Glands); F. J. Smith, F.R.C.P. (Poisons); David Somerville, M.D. (Preservatives and Adulterants in Food); Thomas Stevens, F.R.C.S. (Genital Organs—Female); J. W. Thompson Walker, F.R.C.S. (Kidney); Frank J. Wethered (Alcohol); W. H. Wilcox, M.D. (Ptomaine Poisoning).

A number of original illustrations which appear in the text have been supplied by Mr. Bluett, of St. Thomas's Hospital. Other drawings were taken with permission from well-known medical textbooks. His Honour Judge

[1] *Accidents in their Medico-legal Aspect*. By leading medical and surgical authorities. Edited by Douglas Knocker, Barrister-at-law. London: Baillière, Tindall, and Cox; Butterworth and Co. 1910. (Roy. 8vo, pp. 1282, illus 206. 30s.)

Emden and His Honour Judge Willis, K.C., and a number of members of the Bar (Messrs. R. F. Colam, E. Jones Williams, H. C. Harbord, W. F. L. Braidwood, K. Francis, S. S. Abrahams, and D. Nowell Pritt) lent their aid in correcting proofs, and in making suggestions.

The book is intended to give an anatomical, medical, and surgical account of the effects of personal injuries, whether due to breach of contract, negligence, or crime, and whether productive of an action at common law, a claim under an insurance policy, or under the Workmen's Compensation Act, or kindred cases. It is divided into three parts; in the first the editor gives a condensed account of the law of personal injury by accident, intended to be used by medical men, and arranged on the same plan as the medical part, which deals with the medical and surgical effects of accidents; the third part is a case guide, containing information of some five hundred legally decided cases.

The comment usually made upon a work which embodies the views of a number of persons is that there is no cohesion, no orderly scheme of arrangement amongst them. Mr. Knocker, however, must have had previous warning of this danger, for all the articles follow the same orderly and logical scheme of arrangement, and the medical articles have been planned by the editor with a view to assist the lawyer to understand the consequences of an accident to the part of the body alleged to have been injured, and to help him to follow the medical witnesses when they deviate slightly from the beaten track. Technical expressions are avoided as far as possible, but are explained when used, and with a view to securing uniformity of treatment contributors were invited to deal *seriatim* with the following questions:

1. What are the immediate consequences of the accident?
2. What chance is there of disease supervening as a remote consequence of the injury?
3. Was there any disease existing before the accident and aggravating its effects?
4. Within what time will the man be physically cured, and when will he be fit to return to his former work or to undertake some other employment?
5. Is there any need for an operation, and, if so, is it such an operation as a reasonable man would elect to undergo?
6. Is there any likelihood of a recurrence of the consequences of the injury?

Where all is excellent it were almost invidious to select any particular article for special commendation, but for the benefit of the medical practitioner we may draw attention to the admirable article on "Expert Evidence," by Dr. A. P. Beddard. The following passage serves to show the nature of the sound practical advice which is here given to the medical witness:

> The medical witness should remember what is his proper function in a case. Unlike counsel, he is not in court on behalf of a particular individual or opinion, but he is there as an interpreter of facts, who is to assist the court to reach the truth by expressing opinions of his own, and criticizing any contrary opinions which others have deduced from the same facts. He should adopt a simple and matter-of-fact style, avoiding exaggeration or any attempt at dramatic effects. . . . Other witnesses err in treating counsel as laymen, ignorant of medical matters. It is always wise to assume that counsel has made himself thoroughly familiar with the medical aspects of the case in question and has consulted the standard authorities.

In another place Dr. Collie gives to the two professions the result of his wide experience in the detection of malingerers. If the malingerer is sometimes adroit enough to deceive "the very elect," how easily may he practise his art upon judge and counsel? To lawyer and doctor, therefore, this chapter is of special value.

"Traumatic neurasthenia," a complaint which is frequently made the peg on which to hang a claim for compensation, is also most ably dealt with in this volume. To the lawyer who has to examine a doctor on the subject a brief description of this obscure complaint will be invaluable. If, however, Mr. Knocker's work gains the popularity it deserves, it will be necessary to be canny in the use of it. For the "expert on the other side," who is about to undergo the ordeal of cross-examination, may have taken the precaution of preparing his answer to the passages cited!

Another useful portion of the work, from the medico-legal point of view, is the digest of cases. An ordinary digest of cases reveals little that is of medico-legal interest. This epitome, however (for which the editor is responsible), is designed (*a*) to afford lawyers numerous instances of cases where medical points have arisen and been threshed out, in order to assist them in advising upon or conducting similar cases; (*b*) to give as far as possible to all engaged in litigation some idea of the amount of damages which will probably be recovered; (*c*) to assist doctors in estimating the probable duration of incapacity after injury.

An exhaustive index of no less than 160 pages completes a work which cannot fail to be invaluable to any member of the legal or medical profession who is concerned in a workmen's compensation case.

PERIODICITY IN WOMEN.

NEARLY 750 pages on the duration of pregnancy and the prediction of the day of delivery indicate an amount of toil of which hardly anybody in the world but a German professor is capable. Yet this is what Professor SCHATZ[2] has given us. He frankly says in his preface that he does not expect any one will read his book straight through. If they will study it a little bit at a time he will be satisfied. The book might have, as an alternative title, "a study of periodicity." The author studies not only the periodicity of pregnancy, of menstruation, of ovulation, and of epileptic fits. He tells us of electric months, of lunar months, of solar months, and of blood-pressure months. There are elaborate charts on almost every other page, showing curves indicating fluctuations of many different things. He holds that the duration of pregnancy depends partly on the father, partly on the fetus, as well as on the mother. There are precise records of 480 cases and 281 charts of curves. There is a familiar metaphor that sometimes one cannot see the wood because of the trees. This metaphor fits this book. The cases and the charts are detailed, and doubtless accurate records of cases. There is a full table of contents; but there is no alphabetical index and no summary o conclusions. We admire the industry of the author, and we commiserate the reader who has to wade through more than 700 pages and study 281 charts, of a by no means simple kind, to discover what it is all about. This work reminds us of the literary fate of Jeremy Bentham. His works fell almost stillborn in England: they called up interest in no one. They aroused attention only when they had been translated and summarized by a Frenchman. English readers were attracted by the brevity and clarity of the Gallic editor. In time we hope Dr. Schatz may find —will he pardon us if we say?—an accoucheur who will put his conclusions briefly before his professional brethren.

MOTHERHOOD.

Practical Motherhood[3] adds another to the long series of handbooks which have been written to assist women in taking care of their own health and in the rearing of their children. In the first part of the book Dr. HELEN CAMPBELL discusses the management of pregnancy and the minor troubles which occur at that time, and gives useful advice as to the preparations for the confinement and the general hygiene of the mother and child. Much space is devoted to the question of infant feeding, which is treated in all its details and simplified by the inclusion of a number of tables showing the quantities of food which may be given, and explaining the modification of milk for infant's use. The author recommends whey as a diluent, with the addition of a liberal amount of cream, thus raising the proteid and fat percentages of the mixture higher than that ordinarily advised. The dietary for children in the second year suggests for babies of 12 to 18 months beef or mutton juice at one meal and veal or mutton broth in which an egg has been beaten up at another, with the addition of cereals in the form of oat,

[2] *Klinische Beiträge zur Physiologie der Schwangerschaft.* Von Professor Dr. Friedrich Schatz, Geh. Medicinalrat, etc., in Rostock. Leipzig: J. A. Barth. 1910. (Med. 8vo. pp. 764. M. 20.)

[3] *Practical Motherhood.* By Helen T. Campbell, L.R.C.P. and S.Edin., L.F.P. and S.Glasg. Published by Longmans, Green, and Co., London, and R. L. Esson and Co., Johannesburg. 1910. (530 pages, 31 illustrations.)

wheat, or plasmon jelly at the three other meals. Although it is recognized that children require relatively more proteid food than adults, the tendency to feed abundantly with nitrogenous materials is easily overdone. The diet suggested for children of 18 months to 2 years consists of five meals, at three of which plasmon jelly is to be given, in addition to porridge and milk, soup or broth, pounded chicken or tongue, and a boiled egg; this would appear to be rather more than the normal infant can comfortably digest. Similarly in the third year the daily meals are to include porridge and an egg at one time, soup and mince at another, and farinaceous food with plasmon jelly and milk at a third. In the sixth year the child is to have porridge and fish, soup, meat, and pudding, and egg and plasmon as well as milk, fruit, and other things every day. Fish and eggs are not considered to be substitutes for meat, while it is suggested that red meat, rather underdone, may be given daily after the thirteenth month. The effect of such a highly nitrogenous diet upon the temper and nerves of the average child cannot be altogether satisfactory. The book contains some excellent advice as to the treatment of minor infantile ailments and emergencies, which will prove especially useful to parents living at a distance from medical aid. It also deals at considerable length with the early education and training of young children, and with the special needs of school children, showing how to recognize and prevent overstrain, and giving practical ideas concerning the hygiene and care of older children which will be found to be extremely valuable.

EMERGENCIES OF GENERAL PRACTICE.

THE volume which has been published by Mr. PERCY SARGENT and Dr. ALFRED E. RUSSELL under the title of *Emergencies of General Practice*[4] will be found useful in many respects to a large number of practitioners. It contains instruction in the treatment of emergencies which may be relied upon as conveying the latest and most approved methods of management in many difficulties that men in general practice are called upon to deal with. But, like similar treatises, it fails to devote enough attention to the more commonplace exigencies of the daily routine as carried out under circumstances of single-handed responsibility and under conditions often far removed from the assistance of skilled nursing or of laboratory investigations. A book equal to the requirements of the country practitioner must needs be written by one who, having been himself engaged in general practice, is familiar with the many minor emergencies which call constantly for the exercise of ingenuity and the adaptation of available resources—which are often of the most meagre description—to the solution of the difficult problem of utilizing simple and homely measures to the conquest of unexpected and often serious contingencies as they arise in everyday contact with disease and injury. The guidance of the authors' teaching is excellent, so far as its recommendations are available by those who consult its pages for assistance and who are in touch with the modern facilities of medicine and surgery, but it is written from the point of view of hospital experience, and hardly provides fully enough for the doubts and uncertainties which beset those whose emergency difficulties have to be met by a limited command of recent methods of prevention and treatment. It deals much more fully with surgical than with medical questions, and in this respect again is of restricted value as a guide to the average practitioner whose work in a wide and sparsely populated district is, as a rule, that of a physician far more than that of a surgeon. The book is clearly written, well illustrated, and is supplied with an excellent index which makes reference easy to the various subjects with which it deals.

This book,[5] *Medicina d'Urgenza* (which is somewhat stouter in form than the usual Hoepli manual), attempts to do for medicine what has been often done for surgery, namely, to deal with the emergency cases likely to be met with in daily practice, on the medical side. Professor TROMBETTA has cast his net pretty wide, for he includes almost every acute medical type of illness. A condensed account of each disease is given and appropriate remedies described. There is a useful chapter on the treatment of pain *per se* where most of the more recent drugs and applications are discussed. Other sections deal with various poisons, uraemia, acute zymotic diseases, heat apoplexy. The section devoted to the nervous system deals with epilepsy, eclampsia, apoplexy, neuralgia, etc. And the seventh, eighth, and ninth parts deal with asthma, croup, appendicitis, haematemesis, peritonitis, renal colic, etc., to name only a few of the morbid conditions. The book is eminently practical in its aim and is indeed the result of the experience of many years' practice, the author making free use of the notes he has made during past years. He expressly warns his readers that it is not meant to exclude the use of larger and fuller textbooks which will always have their place—but looked on as a condensed extract of these larger works and of the practical wisdom gained in practice, the work well holds its own with others of its class.

[4] *Emergencies of General Practice.* By Percy Sargent, M.B., B.C. Cantab., F.R.C.S., Surgeon to Out-patients, St. Thomas's Hospital; Surgeon to the National Hospital for the Paralysed and Epileptic, Queen Square; and Alfred E. Russell, M.D., B.S.Lond., F.R.C.P., Physician to Out-patients, St. Thomas's Hospital. Oxford Medical Publications. London: Henry Frowde, and Hodder and Stoughton. 1910. (Demy 8vo, pp. 376, illustrations 91. 15s.)

[5] *Medicina D'Urgenza.* Par Dott. Professor E. Trombetta. Milan: U. Hoepli. 1910. (Pott 8vo, pp. 720. L. 6.)

SURGICAL ANATOMY.

WE have to confess that on receiving Mr. WHITTAKER'S *Manual of Surgical Anatomy*[6] we were to a slight degree prejudiced against it. There seems no good reason for adding another to the long list of books on this subject. Mr. Whittaker's modest preface disarms our criticism, for he says: "The book was written at the request of many of his students, and is not in any sense a textbook but merely an outline to be filled in by the study of larger works, attendance at lectures, and above all by diligent work in the dissecting room," although indeed we imagine that by the time a student begins to read anatomy as surgical anatomy he believes the dissecting room to belong to the things of the past. The arrangement of text is very similar to that in other books on surgical anatomy. The sections on the anatomy of the ear, eye, and nasal cavities are well written, though the description of the course of the facial nerve fails just at the point where the nerve is most interesting surgically, namely, after it leaves the inner wall of the tympanum and before it reaches the stylo-mastoid foramen.

Much of the information contained in the book is arranged in tabular form; on every other page we find tables of nerves, tables of muscles, tables of lymphatic nodes. We suppose it is bordering on the ideal to wish that anatomy might be written interestingly, for we *have* read books on surgical anatomy which flowed like a romance, but we find the style of this book and the mode of presenting the facts hard and uncompromisingly severe. There are forty-eight illustrations, many of them very crude diagrams. It is difficult to understand upon what plan they have been introduced, as there are many parts unillustrated where an illustration might have been very helpful, and others where the diagram seems unnecessary. On the whole it seems to us that Mr. Whittaker's book is not likely to be of more than local use for his own students or for men who have already got up the subject, and wish a rapid summary before an examination. There are numerous blunders in the text which we hope will be corrected in the next edition. We will content ourselves with pointing out that on page 20 we find "Stackie's director" where "Stacke's protector" is meant; on page 160 we are told that the "appendix arises from the postero-internal aspect of the ileum"; and on page 912 "abductor tubercle" should be "adductor tubercle."

MEDICAL SERVICE IN THE FIELD.

A HANDBOOK entitled *Medical Service in Campaign*[7] has been prepared under the direction of the Surgeon-General,

[6] *A Manual of Surgical Anatomy.* By Charles R. Whittaker, F.R.C.S.Edin. Edinburgh: E. and S. Livingstone. 1910. (Pp. 248; illustrations 48.)

[7] *Medical Service in Campaign.* By Major Paul F. Straub, Medical Corps (General Staff), United States Army. Philadelphia: Blakiston's Sons and Co. 1910. (Post 8vo, pp. 164, illustrated. 6s. 3d.)

United States Army, and published by authority of the War Department. It includes the substance of a series of lectures delivered to the Medical Department, Camp of Instruction, at Antietam in 1909. In the introductory chapter Major STRAUB points out that the army medical officer who is content with possessing merely a good knowledge of his strictly professional work will be of very little use in war time, and that if he is to be worth his pay he must, in addition to being thoroughly familiar with the medical organization for war, have some general knowledge of army organization, map reading, and military tactics.

Chapter II deals with "Collateral Military Subjects," and is of considerable general interest. The writing of orders is clearly explained. This is always a troublesome subject, and one that requires some study and not a little practice if the writer of the order hopes to see his wishes carried out. The sections on map reading, weapons, and efficiency are practical, and should prove useful to any medical officer, or, indeed, any one taking the field for the first time. The section on casualties contains some very useful figures showing the actual losses sustained by both sides in the more important battles which have taken place since 1862. On page 48 Major Straub expresses the opinion that the care and treatment of the less severely wounded is of greater importance to the army in the field than that of the serious cases, as a large percentage of the former may be expected to recover soon and resume duty at the front.

The chapter on organization applies to the American army, and is therefore of little interest to us except for purposes of comparison with our own establishments. The general principles laid down under "Administration" and "Battle Dispositions" are very sound, and applicable to all armies. In the chapters on "Regimental Service" and "Dressing Stations" the author gives some practical directions based on a careful study of the literature dealing with the work of the medical services in recent campaigns.

Questions affecting the location and work of field hospitals, stations for slightly wounded, and medical units on the lines of communication, are all discussed in a thoroughly practical manner, and some very useful rules are given for the guidance of officers who may find themselves placed in charge of one of these formations. Major Straub has evidently made a careful study of the not inconsiderable literature which has appeared in recent years on the working of the medical services in the field, and has succeeded in assimilating the best of the foreign ideas and applying them to the American army medical organization. This somewhat detracts from the value of the book for officers of the British service, but the work is well worth studying by any one wishing to acquaint himself with the general principles which should govern the employment of the medical services in the field.

SPEECH READING.

IN a compact volume of 166 pages, Mr. A. J. STORY, Headmaster of the North Staffordshire Blind and Deaf School, treats of the principles and practice of *Speech Reading*[8] for the use of those who have become deaf in after-life. The work is, indeed, intended as a manual for self instruction in speech reading in the case of those who have lost their hearing after having attained a full knowledge of the English language, and not as an aid in teaching "lip reading" to the congenital mute. In deafness supervening in adult life, the one-sided disability to take part in conversation is often acutely felt; and although no book can adequately take the place of tutorial instruction in the art and practice of reading from the lips of another, yet when skilled personal aid is not available, a manual such as this may be of much utility. A series of exercises in recognizing the visible phenomena of speech, based upon a detailed study of the production of each sound element, is set out at length, and if these be studied and practised with the help of a hearing friend, the deaf patient may gradually overcome many of his difficulties, and escape from the comparative isolation in which his auditory defect has placed him. The book is the work of an expert in the oral method of teaching the deaf, and bears evidence of scientific knowledge and practical skill, though couched in language as free as possible from technicality so as to be intelligible to any deaf person of average education.

[8] *Speech Reading for the Deaf-not-Dumb.* By A. J. Story, Headmaster of the North Staffordshire Blind and Deaf School. London: The Celtic Press. 1910. (Post 8vo, pp. 175. 5s.)

LETTERS OF LINNAEUS.

THE University of Upsala, subsidized by the Swedish Government, is publishing the letters[9] to and from Carl Linnaeus in two parts. Part I includes letters to and from Swedish friends; Part II is devoted to letters to and from foreign correspondents. The correspondence between Linnaeus and Abraham Bäch occupy the whole of Part I, Division IV, and extend over the period 1741-1776. The friendship between the two writers appears to date from 1730, when they met as medical students at the University of Upsala. Curiously enough, the friendship increased, and the correspondence began in the year 1740 or 1741, when the two were rival candidates for the appointment of Professor vacated by Rudbeck. Doubtless the intrigues which existed at this period to favour a third candidate did much to cement the friendship of the two whose correspondence continued till the death of Linnaeus. The letters from Linnaeus are far more numerous than those from Bäch, being 523 to 15. This disparity may be accounted for by the fact that Bäch took charge of his dead friend's correspondence, from which he probably withdrew his own letters by permission. The letters of Linnaeus aim at no literary perfection or polish, but are the hasty notes and comments on the everyday life and thoughts of a man whose intense energy involved him in an almost endless variety of interests. He was at this period engaged in a scientific literary work and correspondence with fellow workers throughout the whole of the civilized world. Lectures and other work connected with the university also occupied much of his time, and his letters to his friend appear to have been a pleasant recreation, as well as a diary of his life. Many of the letters are in Latin—of a sort—and this will be appreciated by the many readers to whom the Swedish language is strange. In some letters the writer maintains his carefully worded Latin sentences to a point where patience is lost, and Swedish is necessary as an easy channel for his thoughts. Nearly all the letters contain references to matters connected with botany, and some are of special interest to the medical profession, as they give the great botanist's opinion on the medical value of certain plants. Thus:

Chamomilla tam romana quam nostras debet assumi prior in duritie mammarum, in Nephritide, colica, torminibus a partu, in enematibus, vi sudorifera puerperis, etc., insiguis. posterior in Dysuria, vomitu gravidar., Cardialgia, Tertiana, Balneis, Pediluviis, fomentis, etc., usitatissima est: nec iisdem viribus gaudet cum antecedenti: haec enim magis amara: haec$_{00}$ caeruleum dat, quodnon praecedens, indicio virium diversarum. Paeoniae radix et flores excludi non debent, nec video qua ratione has in dubium vocare poteris; at vero flores (si de his sermo sit) forte possent omitti, absque insigni damno medicinae, quamvis in Eclampsia utator nom semper frustra.

On Christmas eve, 1754, the botanist's wife, his "uxorcula," was seized with epidemic malignant fever, and her condition was critical for over a month—a period which Linnaeus found the most terrible in his life. All his time was spent in the sick room while his wife moaned and tossed about. To Bäch he wrote *Amico sine pari*:

Fato pulsante ostia dulcissimae per tot annos conjugis, ad coelum tendentibus manus innocentissimas tot orbes futuris tenellis infantibus, ubi nec Apollo nec Æsculapius opem ferre poterant, ego extra me ipsum constitutus seposui res humanas, ludicras et vanas, oblitus amicorum, imo mei ipsius oblitus.

And later:

Nondum cessarunt meae lacrymae: altera quavis nocte etiamnum periclitatur uxor mea: di meliora.

On January 31st he wrote *Amico Integerrimo*:

Ex carcere quasi extractus incipio aura hujus orbis frui, convalescente sensim uxorcula mea.

[9] *Bref och Skrifvelser af och till Carl von Linné. Med. Understöd af Svenska Staten. Utgifna of Upsala Universitet.* Part I, Division IV. Stockholm: Aktiébolaget Lgns. 1910. (Roy. 8vo, pp. 369. Kr. 6 50.)

Referring to the epidemic a week later he says:

It is most distressing that so many should suffer and die from a disease the causation of which is unknown. Were the state to offer a prize of 50 ducats to the discoverer of the cause, research work would be encouraged. No one cares to investigate the causation of the disease, for the finder will get no thanks, rather the opposite.

Evidently the lot of the sanitary reformer was no more happy a century and a half ago than it is to day.

NOTES ON BOOKS.

WE have received from Lieutenant-Colonel DE ZOUCHE MARSHALL a pamphlet entitled *Fairplay for Territorials*,[1] in which he suggests a scheme for proportional army pay for the Territorial Forces; that is to say, that the Territorial soldier, instead of only receiving pay when in camp, as is now the case, should also receive pay at proportional army rates for attending drills of two hours' duration twice a week for three months. Taking a soldier's day at twelve hours, the Territorial's pay should be a twelfth of that for each hour he is on parade. Elaborate tables are provided showing what each arm of the service would receive in the various ranks. The extra cost to the country would in round figures be a quarter of a million, and, in the author's opinion, this would produce an adequate supply of officers and men, and is the only means of retaining a voluntary force and saving the necessity of resorting to universal compulsory service, which he estimates would cost four millions a year. The suggestion is no doubt a good one from some points of view: it would cover men's out-of-pocket expenses, and we know that many men who are quite willing to give their time are not willing, indeed sometimes cannot afford the frequently repeated small payments entailed in going to drill and instruction. But we think that many persons would consider that a quarter of a million added to the cost of the Territorial Force could be spent to better advantage than in providing forty-eight hours' extra drill.

The Pharmacy Acts, 1851-1908, is the title of a small handbook of 126 pages on pharmacy legislation past and present by HUGH H. L. BELLOT, D.C.L., Barrister-at-Law.[2] It is an epitome of all the statutory regulations with regard to the sale of drugs in this country. The author gives *in extenso* the Arsenic Act, 1851, the Pharmacy Act, 1852, the Pharmacy Acts, 1868, 1869, and 1898, and the Poisons and Pharmacy Act, 1908, and between the sections of these Acts there are in many instances interspersed notes by the author on cases which have been decided in the law courts on the sections in question. On page 98 there is a useful and convenient tabular exposition of poisons, giving a comparison of the old schedule with the new, sulphonal being the latest addition. On page 107 is a report of the decision of the House of Lords in the celebrated case, the Pharmaceutical Society of Great Britain *v.* the London and Provincial Supply Association, Limited, touching the right of a company to carry on the business of a pharmaceutical chmist by employing qualified managers. The arrangement of the book is concise and simple, and affords a means of quickly ascertaining points of law in connexion with the sale of poisons.

The thirty-fifth volume of the *Transactions of the Edinburgh Obstetrical Society*,[3] edited by Dr. WILLIAM MCCRAE TAYLOR, brings the record of its work down to the middle of the current year. The papers of an obstetrical order number half a dozen, the total being brought up to fifteen by gynaecological and miscellaneous communications. Among the latter are a report of a case of antenatal lumbar pneumonia, by Dr. Alexander Don, and the valedictory address of the retiring president, Professor Stephenson. The gynaecological papers include an account by Professor Kynoch of suprapubic transverse incisions, as introduced by Küstner and modified by Pfannenstiel. A paper on the same subject, it may be noted, by Dr. A. W. W. Lea, will be found summarized at page 1777 in our account of the last meeting of the North of England Obstetrical and Gynaecological Society. Papers of special interest among those devoted to obstetrics are a short record by Dr. H. M. Church of two cases of rheumatoid arthritis presumed to be of puerperal causation, and Dr. Ballantyne's expression of views on the rational puerperium. Neither the latter paper, nor that by Professor Haultain, to which it may be regarded as an answer, should be missed by practical obstetricians. Professor Haultain's paper will be found in the twenty-fourth volume of the *Transactions*, and also at page 307 of the second volume of the BRITISH MEDICAL JOURNAL for 1909. Dr. Ballantyne's paper also appeared in full in our columns, and will be found at page 4 of the first volume for the current year.

The American Climatological Association held its meeting in May this year at Washington under the presidency of Dr. E. R. Baldwin of Saranac Lake, and the twenty-sixth volume of the association's transactions[4] contains a complete record of what passed thereat. Few of the papers read were, strictly speaking, of a climatological order, though Norway as a resort for neurasthenics came under consideration. In an elaborate paper on the climatology of cancer, Dr. R. V. Curtin attempted to determine the comparative distribution of this disease in all parts of the world, and to draw therefrom conclusions as to its causation. Most of those on which the author ventures are of a negative character, though he agrees with others who have studied the same subject from differerent points of view, that cancer is mainly a disease of civilization and commoner among the well fed than the ill fed. The other communications included several dealing with the tuberculin treatment of out-patients.

A general election in December is almost as inconvenient to compilers of year books as a general election in January. *Whitaker's Almanack* for 1911,[5] in order that it might reach distant parts of the world for Christmas and New Year, had to be sent to press in November, at a time when it was not even certain that a general election would take place. In consequence the volume contains a list of the last House of Commons, which is, of course, already out of date, but the publishers undertake to supply to every purchaser who will forward his name and address in a prepaid envelope, a supplement free of charge containing the results of the election which is just coming to an end. The accession of King George V alone involved a number of changes in the official sections of the almanack, and a chronological summary is given of the chief events of the reign of Edward VII. Several new features have been introduced into the present issue, including a comprehensive table of the monetary units of the world, and the weights and measures of the principal countries. There are also articles on the military and educational systems of the world, the naval programme of the maritime powers and the administration of the British Army. This annual is so well known that it must be unnecessary for a reviewer to attempt either to describe it or to praise it. It is probably one of the most comprehensive and compact annuals published in any country and is an indispensable companion for the writing table.

We have also received a copy of the new edition of *Whitaker's Peerage, Baronetage, Knightage, and Companionage*,[6] which has reached its fifteenth issue. The volume contains a great many additions and we observe that it is brought so closely up to date that it contains the names of Sir Alfred Pearce Gould and Sir J. K. Fowler. The demise of the Crown has led to a revision of the Court appointments, and the editor has added an account of the coronation of King Edward VII, which he thinks, no doubt with justice, will be read with interest in view of the coronation of King George V, which is to take place next June. The book contains a complete list of peers, baronets, and knights arranged in alphabetical order, and in each case some personal and family details are given.

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[1] Published by Bull and Son, Victoria Road, Surbiton.

[2] *The Pharmacy Acts, 1851-1908*. By Hugh L. Bellot, M.A., D.C.L., Barrister-at-Law, of Trinity College, Oxford, and of the Inner Temple and Midland Circuit; with a Foreword by Jesse Boot. London: Jesse Boot. (Demy 8vo, pp. 134. 3s. 6d.)

[3] *The Transactions of the Edinburgh Obstetrical Society*. Vol. XXXV. Edinburgh: Oliver and Boyd. 1910. (Demy 8vo, pp. 215.)

[4] *Transactions of the American Climatological Association*, vol. xxvi. Philadelphia. 1910. Printed for the Association. (Demy 8vo, pp. 235.

[5] *Whitaker's Almanack* for 1911. London: J. Whitaker and Sons. 1911. (Cr. 8vo, pp. 971. Price 2s 6d.)

[6] *Whitaker's Peerage, Baronetage, Knightage, and Companionage* for the year 1911. London: J. Whitaker and Sons. 1911. (Cr. 8vo, pp. 812. 5s.)

MR. HENRY SILVER, a former member of the staff of *Punch* and a member of the famous table from 1857 to 1870, and an intimate friend of Charles Keene, who died on November 30th, leaving property of the net value of over a million sterling, has bequeathed £50,000 to the Royal Free Hospital, and £25,000 each to the Royal Victoria Hospital for Children and the Hospital for Children, Great Ormond Street.

MEDICINAL AND DIETETIC PREPARATIONS.

Casona Cheese.

WE referred recently in these columns to the employment of agar-agar in the treatment of chronic constipation, on account of its property of preventing the formation of hard faecal accumulations in the bowel. An ingenious application of this property has now been brought to our notice by the Severn Valley Dairy Products Company (Stonehouse, Glos.) who has submitted samples of "Casona" cheese, prepared with the addition of agar-agar so as to form a non-constipating and easily-digestible cheese. The samples submitted consisted of a soft cheese of mild and agreeable flavour: analysis of the plain "Casona" showed it to contain: Protein, 18.2 per cent.: fat, 21.9 per cent.: water, 57 per cent. Other samples were "piquant," "savoury," and "celery" flavoured. No doubt this form of cheese will permit those who are unable to digest ordinary cheese properly to enjoy again a valuable article of diet: it is intended either to be eaten with bread or biscuit, and to be used in the preparation of various dishes.

MEDICAL AND SURGICAL APPLIANCES.

A Combined Tongue Clip and Junker Terminal.

DR. G. A. H. BARTON (London) writes: During operations on the upper air passages the anaesthetist not infrequently has his hands literally full. To render his task a little easier I have designed the combined tongue clip and Junker terminal here illustrated, and made for me by Messrs. Mayer and Meltzer. The tongue clip is of the Watson Williams pattern, except that the point protector has a little slit on either side, allowing of the passage of the fine end of the pin in or out when the spring is depressed, rendering its adjustment slightly easier. The



pin is set on the Junker terminal at 1½ in. from its free extremity. The terminal is short, its cross section oval, and slightly curved upwards at its free end to carry the orifice away from the dorsum of the tongue. Whilst not suggesting for a moment that this device should replace the many excellent gags which are supplied with Junker terminals attached, I think it a useful alternative in the class of case indicated above—and, indeed, in many operations on the head and neck region where Junker's method is a convenient one. When no traction is required on the tongue, the pin serves to hold the terminal in place; if traction is required it can be effected by a single finger in the loop.

New Cellulose Films.

We have received from Mr. W. Martindale (10, New Cavendish Street, London, W.) samples of cellulose films in three forms and thicknesses: "Taffetas" (yellow, moderately thick, and substantial, as thick as ordinary gutta percha tissue); "aseptafilm" (colourless and thin); and "cellafine" (colourless and very thin). They are all transparent, and tear equally in all directions. These films are intended for use as substitutes for oil silk or green protective, gutta-percha tissue and such like materials. The advantages claimed are that they are sterilizable both by boiling and by dry heat in a sterilizer, that they are indifferent to the action of chloroform, ether, and alcohol, and that they are cheaper than the other substances mentioned. They are machine made, and can be supplied in rolls 33 inches wide, and any desired length. We have applied the tests described by the manufacturers as well as some others, and have found these cellulose films stand them all. It is a very decided advantage that they can be boiled in an ordinary soda solution for five minutes without the slightest perceptible alteration. We find them in every way most elegant preparations, worthy of the reputation of the manufacturer. The only fault we have is that the descriptive names of the three different kinds are not happy. These cellulose films may be strongly commended to the notice of surgeons in such operations as skin-grafting, where a delicate strong membrane is to be interposed between the graft and the gauze dressing, and in drainage of abdominal abscesses, where it is undesirable that gauze packing should become firmly adherent to the wall of the cavity: the family practitioner also will be glad to have at hand such excellent and fine materials for everyday use.

THE MEDICAL SCHOOL AND THE HOSPITAL.

Address by Lord Ilkeston.

THE prizes gained by students of the Westminster Hospital Medical School were distributed on December 15th, by the Right Hon. Lord Ilkeston, P.C. Sir JOHN W. WOLFE-BARRY, chairman of the hospital, presided, and among others present were Lady Ilkeston, Sir Douglas Straight, Mr. H. D. Erskine (Serjeant-at-Arms), Colonel Sparks, Mr. Montague Smith, and the members of the hospital medical staff. Among those who sent letters of regret at enforced absence were Mr. Justice Swinfen Eady, Mr. Justice Warrington, Lord Hemphill, Mr. Burdett-Coutts, M.P., Sir Edward Davidson, Mr. Frank Heath, and Mr. Edmund Sargant.

The CHAIRMAN, after welcoming Lord Ilkeston, dwelt upon the advantages of a close alliance between the hospital and the school—advantages which, he said, the House Committee and governors recognized to the full. These advantages were mutual. It was not possible to obtain a proper education for the medical student without the clinical teaching in the ward; the hospital gained in increased efficiency by adding to its ordinary functions that of a teaching centre, and the public gained most of all, because one of the great hopes of the future lay in a thorough education for those who intended to seek medical practice. The financial resources of Westminster Hospital were not very great, and the governors had been able to assist the school only to a moderate degree. The help they had been able to give was strictly in accord with the recommendation of Sir Edward Fry's committee, namely, that no money should be diverted from the sick and suffering poor to medical education unless with the consent of the subscribers. Sir John added that the House Committee had been able to start a laboratory under Dr. Carmalt-Jones, which was now in full operation, and already it had been of service to their medical staff.

The DEAN (Mr. E. Rock Carling, F.R.C.S.) then read his report, in which he stated that since the last occasion, two years ago, when the prizes gained in the school were distributed, there had been continued progress in every direction. The work of the students, as evidenced in the examinations for which the prizes were awarded and in the examinations of the licensing bodies, had been very good. The arrangement with King's College whereby the earlier subjects of the curriculum were taught by the University continued to work successfully. The conditions which had embarrassed metropolitan medical schools of late years were still in operation, but some measure of relief was confidently anticipated from the labours of the Royal Commission on University Education in London, which was now sitting. In the meantime the school had greatly improved its position and status by the recognition it had obtained from the Board of Education.

Lord ILKESTON, after distributing the prizes, said:

I am glad to have been able to present these prizes to men who will, I hope, become distinguished members of a great profession. When your Dean asked me to perform this duty I was induced, after a little thought, to consent and that for two reasons. In the first place, during the last twenty-five years I have on many occasions visited Westminster Hospital in order to see sick colleagues of mine—members of the House of Commons—who had been sent here by accident or illness. I also recall several occasions on which, in cases of sudden illness occurring among members of the House of Commons, we were able to have at St. Stephen's the valuable and immediate aid of your resident medical staff.

But there was another reason which made me glad to come here to-day. I have been looking forward to seeing again the keen, bright, eager faces of medical students. It was fifty years last October since I began to teach medical students, and during forty-two years, year in and year out, I was never without a class of students at the Birmingham Medical School. The memories of those happy days crowd back upon me positively with a rejuvenating effect. Forty-two years is a long period in the history of any profession, and much more in the life of a man, and during that time we have seen great changes. Students to-day have a great deal more to learn and a great deal

more to do than when I was a student, and indeed more than was the case during the first twenty years or so that I was teaching anatomy and other subjects. But while you have, on the one hand, enormous tracts of learning to explore and to master, yet, on the other, you have splendid assistance in the shape of improved appliances and methods of teaching. When I compare the modern school with the scanty help that we had in my time—we were practically without a library, and we never saw the other side of the laboratory door except when we made certain chemical tests during the summer session—I marvel at your advantages. Indeed, I sometimes think that too much is done for you and too little left for you to do for yourselves. It is hardship and difficulty that make men, and it would be well perhaps if the struggle on your own part were even a little more strenuous than it is.

But if you have the path made smooth at the splendid medical schools and institutions which are now open to you, you still have a hard and difficult time before you when you start in practice. For although there are many more openings now for medical students than there used to be, and although there are larger opportunities in the public services, the army and navy, and the colonial service, as well as the great public health service of this country, offering increasing chances of useful and remunerative work, and paying more honour and regard to your profession than formerly, yet, after all, general practice is the end and aim of most of you, as it is of the greater number of members of your profession. And general practice is beset with more difficulties and greater competition than ever it was. It is not only in competition with public institutions, but it is threatened—possibly in the near future—with a great State medical service, which is bound, if it is realized according to the dreams of some of our friends, to be a very grave competitor with the ordinary general practitioner.

I look forward with some apprehension lest the prospects of the general practitioner should be vitally injured, for after all he is the backbone of our profession. He is the man I wish to guard and protect in his calling. I trust we may always have with us that noble class of men we have had during my lifetime—men who have done their work among all classes of the community with no hope of great pecuniary reward, although having, perhaps, the greatest of all rewards in the knowledge that their lives are well spent in alleviating the sufferings of others. The general practitioner in his daily work in the community is the representative of the medical profession. He is given the most responsible of all charges—the charge of our loved ones in times of suffering and danger. He enters the home as a friend and not as an official, and I should be sorry to see him replaced by any man acting as an officer of the State, because the attention which a State official can give could never replace the personal devotion of the family doctor.

Students of Westminster School,—Some of you may think my praise of general practice is a little overdone. In your mind general practice may not be an attractive prospect for young men of ability and character like yourselves, and it necessarily entails a large amount of drudgery. Well, be as ambitious as you please, but never be afraid of drudgery, because it is the drudgery in all callings which trains the best men. It is the man who works daily in the sick ward of the hospital, or, what is perhaps still more difficult, in the out-patients' department, who wins the most useful place in his profession. Lectures do not make practitioners. The only way in which you can learn your business effectively is by constant study of disease at close quarters, and therefore the drudgery the general practitioner has to undergo after his student career is often the best possible means of making his life-work more useful and more effective to that end to which the most commonplace medical work is consecrated—the lessening of suffering and the blessing of humanity.

One advantage that you possess at the Westminster Hospital Medical School is that you are closely attached to the hospital during your student career, and it is this attachment which furnishes you with the opportunity of becoming thoroughly practical men. It is by doing the ordinary work, seeing the ordinary cases, learning the common teachings of daily practice that you are fitting yourselves best to become useful, if not eminent, in your profession. In addition to the Westminster School, you are also students of another great institution—the School of Medicine of London. I think of the School of Medicine in London in comparison with the schools of medicine in Paris, Vienna, Berlin, and New York, and I am bound to say that if you searched the world over you could not find a worse organized medical school than that of our own metropolis. Nevertheless, it is the greatest, and in some respects the best, of all the medical schools. Under the conditions of modern civilization we have gathered together in this city the greatest population the world has ever known aggregated in one place, and for that reason it furnishes us with the grandest of all collections of clinical material for the study of medicine and surgery. You have before you the richest of all fields of study. It is your great and inestimable privilege to have the advantages of that school open to you, in order that you may learn all the intricacies of the maladies that affect human kind.

In this great school of medicine I think that changes are impending, and that improvements in it in the future will, through more co-operation and better concentration, give to the whole of the academic side of the teaching of the London School a great impetus. That, I think, will sooner or later be brought about. But I want it brought about mainly in the direction of the academic portion of your teaching. I want your science teaching to be obtained through the best possible teachers, and if London would only concentrate on the effort there is no reason why you should not have the advantage of sitting under the best men in the world. But what I do not want is to see taken away from the hospital a single branch of the teaching it gives at present so excellently in the arts of medicine and surgery. However well your academic teaching may be carried through, it is in the wards and out-patients' rooms of your hospitals that you really learn the daily work of your calling. In 1860, when I was, like you, a student just entering upon the practice of his profession, I was appointed assistant physician in the hospital at Birmingham. Here circumstances forced me, though I was little more than a boy, to do the work of two full physicians. There were about thirty or forty beds in the hospital under my charge, and I had five hundred out-patients a week to see for a considerable period. It was hard work, but it taught me to be a physician, and I owe my success to the hard discipline of doing all that work under the critical eyes of medical students. After all, the critical eyes of medical students are of great help to the man who is doing the work. The students of medicine gave me valuable discipline, as I have no doubt they give their teachers in the present day. I know of no class of men more keenly critical as to the efficiency of their teachers, or more generously appreciative of that efficiency when it is found. Altogether I would say that systematic lectures on medicine and surgery must go; the time for them in their academic form has long passed. Eloquent word-pictures of disease must be replaced by practical demonstrations in connexion with hospital work. Book-learning, laboratory work, and academic lectures are all good in their way, but they can never of themselves make good doctors. To be a physician or surgeon you must learn your work at the bedside and absorb your knowledge day by day in the hospital wards.

And now let me say a few words about the medical school as a help to the hospital. It is a help because it forces every member of the staff to do some teaching. If there were no medical school there would be no compulsion upon the members of the staff to do teaching daily in the wards, and every man who has to teach has to keep on learning. Moreover, each member of the staff has to do his work constantly under the watchful eyes of young critics, who thus insensibly teach their teachers. You are mutually helping one another to make the work of the hospital better, more thorough, more perfect than it would be if you were not brought together in common. In that way the school has a wonderful influence upon the hospital, and, on the other hand, the whole tone of the place and the character of the teaching are raised by the combination. I admit that hospitals where there have been no students have done excellent, and in some cases magnificent, work, especially in connexion with surgery, but I venture to think that it

would have been done even more perfectly if it had been carried out before a clinical class. And it is that clinical class, going round the wards, studying individual cases, questioning the teacher, that makes for the efficiency of the hospital; and the hospital, on the other hand, gives to the medical school the best, and indeed the only, field in which a young man can properly learn the work of his calling.

In conclusion, I want to say a word or two about the school and the public. In these days there are amongst us some people who would remove all connexion between medical schools and hospitals. If this were done, I say that not only would they injure the hospitals to a great extent, but that they would injure the public even more. After all, a hospital like this does the public enormous good, and that in two ways. In the first place, it does good by relieving every applicant that comes to its doors, helping him to bear the ills of life more successfully, often giving him back the best of all blessings in the shape of restored health, and this work of alleviation is reinforced and perfected by the medical school. But, in the second place, the great mass of the public—the public that does not come to your doors—is benefited too. Every rich man in this town who requires the most skilled help of the physician or surgeon to save him can obtain that help through a man who has taught and been taught in the school attached to a hospital. The rich man on his bed of pain and suffering gets better value for his money—to put it on the lowest ground—because there is a medical school, and one which is attached to such an institution as this.

That portion of the public that is called the middle class does not perhaps get as much benefit as the richer class on the one hand, commanding the most skilful and best-educated men in science, or the poorer class on the other, receiving assistance directly at the hospital. Nevertheless, the middle class does receive help from the institution of the medical school and the hospital. It receives it indirectly through the general raising and improvement of the whole tone of medical practice outside the hospital as a result of the combination of medical education with hospital work. In London with our dozen medical schools we are apt to overlook this aspect of the influence of a school, but we have only to go for an example to any provincial town. If we take two towns, one of which has a medical school while the other has not, we shall find that although there may be brilliant and able doctors in both, yet where the school exists we have a body of men who through the daily influence of the teaching work which is going forward are able to raise the profession locally to a pitch of greatly increased efficiency. The fact that students frequent the wards and the class-rooms raises the whole tone of medical practice in that town. In another town where there is no school the stimulus and inspiration which comes from a medical staff employed in teaching is lost.

Therefore the public draws from every medical school immeasurable benefit in the way of help and relief in suffering. I hope that, as time goes on and wiser counsels prevail in the committees and cabinets of Governments, statesmen through one or other of their departments may see their way to bestow public grants more and more upon such institutions as the Westminster School of Medicine. I am confident that grants from public funds or gifts in the way of private benevolence will yield a rich harvest of blessing when bestowed in this direction, and a blessing which will reach and help every class of the community.

A vote of thanks to Lord Ilkeston was proposed by Sir ROBERT HUDSON Mr. T. F. SQUAREY, Chairman of the School of Medicine Committee, in seconding the motion, said they loyally accepted the decision of the King's Hospital Fund Committee, and, nevertheless, hoped not only to survive but also to flourish.

Sir WILLIAM H. ALLCHIN asked to be allowed to associate himself with the motion.

The vote was suitably acknowledged by Lord ILKESTON.

Canon DUCKWORTH proposed a vote of thanks to the Chairman, which was seconded by Dr. F. DE HAVILLAND HALL.

The CHAIRMAN'S acknowledgement on behalf of the Dean and teachers, as well as himself, brought the proceedings to a close.

LUNACY IN LONDON.

THE Twenty first Annual Report of the Asylums Committee of the London County Asylums,[1] for the year ended March 31st, 1910, including the medical statistics for the year 1909, shows that on January 1st, 1909, the total number of lunatics chargeable to London County, and lunatics in Metropolitan Asylums Board's asylums and in workhouses, or with relatives and friends, was 26,848, and on January 1st, 1910, 27,003. This gives an increase for the year of only 155 as compared with 678 for the previous year, or with the average annual increase since the year 1890 of 532. Of the total number on January 1st, 1910, 19,914 were lunatics under reception orders (county cases), 6,676 were lunatics in Metropolitan Asylums Board asylums, and 413 were in workhouses or with friends, giving an increase of 198 in the county cases, a decrease of 89 in the Metropolitan Asylums Board cases, and an increase of 54 in those in workhouses or with friends.

It should be said here that the above figures exclude the private patients at Claybury Hall—and, of course, private patients, properly speaking, belonging to London—but include "private list" patients—that is, patients admitted in the first instance as paupers, but who are transferred to the private list on the payment of the bare maintenance rate. Practically, the above furnish a gauge to London pauper lunacy, and for this reason the diminution of the numerical increase is satisfactory. This is further supported by the fall of the ratio of the total pauper lunatics to population from 5·62 per 1,000 on January 1st, 1909, to 5.61 on January 1st, 1910. As bearing on this apparent diminution in the rate of increase of London's lunacy, the Asylums Committee prints a table showing the numbers of applications for beds received, month by month, during the past six years. The monthly average shows a fairly steady fall from 364 applications per month in the year 1904-5 to 314 in 1909-10. These applications, the Committee says, may be trusted to give a general idea of the number of cases of occurring insanity, and the decline seems not to be without importance.

Of the 19,914 county cases remaining on January 1st of this year 19,082 were parish patients at the Manor Asylum, and 2 at the Epileptic Colony, 453 were "private list" patients in various London County asylums, and only 206 were in other county and borough asylums. Practically the whole of London's pauper insane are thus now accommodated in London asylums.

MEDICAL STATISTICS.

Admissions.

On January 1st, 1909, there were 19,440 patients on the registers of the London County Asylums, and on the last day of the year there were 19,823. The total cases under treatment during the year numbered 23,371, and the average number daily resident 19,643.

During the year 3,931 were admitted, as compared with 4,079 in 1908 and 5,289 in 1907. Further, of the total admissions in 1909, 3,449 were direct admissions, as compared with 3,613 in 1908 and 3,558 in 1907. As to the duration of disorder prior to admission, in 1,397 the attacks were first attacks within three, and in 414 more within twelve, months of admission; in 652 not-first attacks within twelve months; in 83 also within twelve months it was unknown whether the attacks were first attacks or not; in 167 the duration was unknown, and in the remainder (733), including 151 congenital cases but excluding 3 not insane on admission, the attacks were of more than twelve months' duration on admission. The proportion of old-standing cases was considerably greater than in either of the two preceding years. The average age on admission was 42.33, as compared with 42.44 for 1905 and 42.56 for 1900, suggesting that the certification of aged persons as insane has passed its maximum—a suggestion which is strengthened by an analysis of the ages at the commencement of the attack, Table B.4 showing that 409 were over 60 years of age when the illness began, as compared with 462 in the previous year, and 98 over 70, as compared with 135 for the previous year.

Turning to the forms of mental disorder, and considering

[1] The Twenty-first Annual Report of the Asylums Committee as the London County Asylums for the year ended March 31st, 19... P. S. King and Son, Great Smith Street, Victoria Street, Westminster, S.W. Price 2s., per parcel post 2s. 6d.

only the direct admissions, these were classified as follows: Recent mania, 489, chronic, 62, and recurrent, 165; recent melancholia, 795, chronic, 85, and recurrent, 191; senile and secondary dementia, 155; delusional insanity, 457; general paralysis of the insane, 313; insanity with epilepsy, 209; confusional insanity, 163; insanity with grosser brain lesions, 69; stupor, 39; primary dementia, 35; volitional insanity, 21; alternating insanity, 11; acute delirium, 10; congenital or infantile defect, 177; and not insane, 3. The total general paralytics admitted numbered 334, and formed 8.5 per cent. of the total admissions; while the directly admitted general paralytics formed 9.0 per cent. of the direct admissions. With regard to causation, alcohol was assigned in 684, or 19.8 per cent. of the direct admissions; acquired syphilis in 324, or 9.3 per cent.; influenza in 60; tuberculosis in 34; and other toxins (including congenital syphilis, 24) in 60; critical periods in 604; child-bearing in 123; diseases of the nervous system (including epilepsy, 252) in 442; various bodily affections (of which the principal was cardio-vascular degeneration, 294) in 528; bodily trauma in 137; and mental stress in 882. An insane heredity was ascertained in 898, or 26.0 per cent.; an epileptic heredity in 110; a neurotic heredity in 46; one of eccentricity in 18; and an alcoholic heredity in 263, giving a combined total of neuropathic hereditary factors in 1,335, or 38.7 per cent. Also congenital mental defect was assigned in 263, and eccentricity in 21.

The above statistics refer to the whole number of the asylums, but a reference to the individual reports of the several medical superintendents shows wide differences both with regard to the classification of the admissions according to the forms of mental disease and with regard to the proportions assigned to the separate etiological factors, the reason for these differences lying evidently in the personal views of the various observers who investigate the cases. Accepting, however, these statistics with the reservation which this calls for, they show that in London, as one would expect, alcoholism and syphilis play a more important rôle in the causation of insanity than in the country generally, with, in consequence, a high proportion of general paralytics. An interesting table (B. 9) shows, with regard to the general paralytic direct admissions, that in 7 the attack began under 25 years of age, in 74 between 25 and 34, in 132 between 35 and 44, in 66 between 45 and 54, in 19 between 55 and 64, and in 15 the commencement of the illness was unknown. Also 164, or 52.3 per cent. of the total 313, paralytics furnished positive evidences of syphilis. Another interesting fact brought out by this table is that, of the 313 general paralytics, 249 were or had been married, and that of the 164 with positive signs of syphilis, 131 were or had been married.

Discharges, etc.

During the year 1,223 were discharged as recovered, giving a recovery-rate on the direct admissions of 35.46 per cent., or of recoveries in the direct admissions on the direct admissions of 33.54 per cent. Also 398 were discharged as relieved and 182 as not improved. Cases of recent or recurrent mania and recent or recurrent melancholia naturally furnished the greater bulk of the recoveries, but we see that there were also discharged as recovered 6 cases of general paralysis, 27 cases of systematized delusional insanity, and 18 cases of senile or secondary dementia.

During the year also 1,745 died, giving a death-rate on the average numbers resident of 8.88 per cent. In 555 the deaths were due to diseases of the nervous system, including 363, or over 20 per cent. of the total deaths, from general paralysis; in 154 to heart disease, and in 106 to diseases of the blood vessels; in 81 to respiratory diseases; in 34 to diseases of the digestive system; in 63 to diseases of the urinary system, mostly chronic Bright's disease; in 4 to diseases of the generative or locomotive systems and diseases of the skin, in 140 to senile decay, in 4 to suicide, and in 603 to general diseases, including 74 from carcinoma, 37 from dysentery, 122 from bronchopneumonia, 79 from lobar pneumonia, and 203, or 11.5 per cent. of the total deaths, from tuberculous diseases. As both principal and contributory cause of death, however, tuberculosis existed in 278, or 15.93 per cent. of the total deaths. Of the total 1,745 deaths, as many as 614, or 35.19 per cent., were in-patients over 60 years of age, and of these 281, or 16.10 per cent., were over 70 years of age. Of the number of patients remaining in the asylums at the end of the year, 24.15 per cent. were suffering from senile or secondary dementia, 2.46 per cent. from general paralysis, 9.65 per cent. from epilepsy, 14.55 per cent. from chronic mania, 8.93 per cent. from chronic melancholia, 8.71 per cent. from systematized delusional insanity, and 1.972 from non-systematized delusional insanity. Of this large mass of lunacy, only 2.49 per cent. were considered to offer a favourable prospect of recovery, in the rest the outcome being deemed either doubtful (6.48 per cent.) or unfavourable (91.03 per cent.).

THE PATHOLOGIST'S REPORT.

The report of Dr. F. W. Mott, the Director of the Pathological Laboratory and Pathologist of the London County Asylums, consists very largely and—on account of the great amount of research work carried on at the Pathological Laboratory—of necessity of a simple catalogue of the important investigations made either by him or his co-workers in the laboratory, and published or being prepared for publication in the *Proceedings of the Royal Society* or other scientific publications. A tabular statement of the *post-mortem* findings at Claybury Asylum is given and the usual statistics relating to pulmonary tuberculosis and dysentery in the London County Asylums. With regard to the former of these two, out of 1,635 deaths in London County Asylums 1,471 necropsies were made. Active pulmonary lesions were found in 14.95 per cent. of the number of necropsies. Dr. Mott says that this proportion does not show much variation from year to year. With regard to dysentery and diarrhoea, from March 1st, 1909, to February 28th, 1910, there were 223 cases of dysentery and 250 cases of diarrhoea among the patients in the London County Asylums, as compared with 268 and 540 respectively for the previous twelve months. Nearly all the asylums reported a reduced number of cases.

HEREDITY IN RELATION TO INSANITY.

For some time Dr. Mott has been engaged in the collection of cases in the London County Asylums in which two or more patients are related to one another. Up to the time of publication of the report, Dr. Mott had obtained particulars of 1,834 such cases. These were made up from 854 families as follows: Two instances of 6 of a family; 3 instances of 5 of a family; 12 instances of 4 of a family; 85 instances of 3 of a family, and 752 of 2 of a family. In order to obtain an independent opinion the records were handed to Dr. Edgar Schuster for analysis. Briefly, Dr. Schuster's results were as follows: Periodic insanity, delusional insanity, mania and melancholia all showed a distinct correlation between parents and offspring and a stronger correlation between members of the same co-fraternity; that is, that where parents and offspring are insane there is a greater likelihood of the offspring showing the same form of mental disorder as their parents than any other form. Dr. Schuster's material, so far as dementia praecox and imbecility are concerned, was too meagre for any definite conclusions, but with regard to general paralysis no correlation between parents and offspring or between members of the offspring could be deduced. Dr. Mott says, further, that there is a great tendency for children of the same parents to become insane at the same period of life, and also that there is a much greater incidence of transmission from parents to offspring through the female than through the male side.

Cost.

The total net weekly cost per head for patients maintained in London asylums during the year ended March 31st, 1910, was 10s. 0.34d.

THE total church collections for the Birmingham Hospital Sunday Fund amounted this year to £4,128 0s. 2d. and the special donations to £2,011 13s. 10d., making £6,139 14s. One-third of the net amount of the general collection was given to the General Hospital, one-third to the Queen's Hospital, and the remaining third was divided among the other charities participating in the fund. The special donations were handed over to the institutions for which they were intended.

SCIENCE NOTES.

THE strange "growths" observed in mineral substances under osmotic pressure have not been greatly studied in this country, although we believe that Professor Crum Brown once showed some examples before the Royal Institution. Dr. Stéphane Leduc of Nantes, however, has been making a long series of researches on this subject, and his British collaborator and translator is Mr. W. Deane Butcher, M.R.C.S., who lectured on the topic before the Roentgen Society on December 1st. In the course of his lecture Mr. Butcher showed what he called his "osmotic window-garden," consisting of the curious "growths" obtained within a few hours under special conditions by placing certain mineral substances in solutions. Calcium chloride, although free from any trace of germ or organic matter and uninfluenced by radio-activity, would "grow" if it were dropped into a solution of sodium silicate which also had been sterilized by heating. Within a few moments, with a peculiarly jerky motion, it would put forth a stem, not unlike in shape and structure the stem of a tree, and this, on reaching a layer of solution of less density, would project branches and even something approximating to the appearance of leaves. An extraordinary variety of "growths" could be obtained under different conditions. Some of them were mineral mushrooms, hardly to be distinguished in appearance from the organic fungus; others, when nitrate was employed in solution, showed a curious spiny projection; others, again, simulated the sea shell. In Mr. Butcher's opinion, when the calcium chloride was dropped into the sodium silicate solution, the water tore apart some of the calcium chloride molecules, and, the ions being set free to roam through the gas, a precipitate was formed with the ions of the silicate. The osmotic force by which these things "grew"—"osmose" meaning a "push" or "thrust"—was identical with the pressure which drove the blade of grass through the sod and lifted the sap to the topmost twig of the tree. He thought that there was seen here something of the mechanism which Nature employed in growth. He showed a number of the ringed and other deposits obtained by liquid diffusion to illustrate how closely natural appearances, even the markings and colours of a butterfly's wing or a peacock's tail, could be simulated when chemical substances were employed similar to those found in the organic structure. Haematin, for instance, in certain solutions, gave an appearance closely resembling blood corpuscles. Osmotic pressure, he maintained, was gaseous pressure in disguise. It showed the same volume and temperature relationships as gaseous pressure, and had the same absolute value. Imprisoned atoms could be set free either by reheating or dissolving. In the former case their rush for freedom produced vapour, and, in the latter, osmotic pressure. A vigorous discussion followed the lecture, and several physicists present expressed astonishment at the light-hearted manner in which it had been suggested that these things were living simply because they resembled the appearances of living things. Mr. Butcher replied that he did not introduce them as finished living organisms, but only as illustrations of the rough machinery which Nature employed in the work of growth.

Henri Piéron, in the *Revue générale des sciences* for September 15th, has a long article on the origin of the slave-making and parasitic instincts of ants. He deals only with the facts such as we know them, and reserves for a later contribution the discussion of the theories advanced to explain these curious instincts. The subject of ants is a favourite theme of writers on natural history, and many of the wonderful stories told of them are familiar to everybody. Piéron has set himself the task of collecting and summarizing these numerous scattered observations, and endeavouring to trace through them some evolutionary order. The first point he takes up is the founding of new colonies. This is in many cases the special and exclusive work of the females. The methods employed are of very varied complexity. In what may be regarded as the simplest cases the fertilized female is entirely responsible for the founding of the colony. By her own unaided efforts she digs out a nest for the reception of her eggs. She has to seek her own food throughout this time, but she lives to a large extent on the histolysis of her own body muscles, for, after the nuptial flight, the wings are of no further use, and the large alar muscles are absorbed. Another method, more advantageous to the female, is that of founding a new colony in an already existing nest. This practice is followed by a considerable number of species. Certain species do not go so far as this, but are content to establish their nest in the immediate neighbourhood of a nest belonging to an allied species. This is the case with the tiny *Solenopsis fugax*, which builds its nest around that of *Messor barbatus*. It very cunningly, too, bores passages into the nest of its large neighbour and steals its provisions. *Messor* is too large to get into the passages, and so the robbers escape. Usually the nest taken possession of by the female is an abandoned one, but occasionally she is received into a nest still fully occupied. Sometimes the original inhabitants quit; in rare cases they continue to live symbiotically with the new colony. The third method of founding a colony is by aid of workers of the same species, either belonging to the same nest as the female comes from or more usually to another nest. A fourth method calls in the aid of workers belonging to a different species. The female is actually adopted by the latter and made their queen; this is quite a common occurrence amongst American ants, and is universal in such species, of which there are a number, in which there are no workers. The fifth and last method is the most remarkable of all. The female enters a foreign nest, kills or puts to flight the queen and workers, and takes possession of the pupae. When these develop into workers she makes them her slaves. A colony having been founded by a queen in one or other of these diverse ways, its perpetuation rests chiefly in the hands of the workers. On them devolves the duty of procuring food, of caring for the queen, larvae and pupae, and a dozen other different things. In a large number of cases the workers perform each and all of these multifarious duties without any division of labour. In certain species some are differentiated as soldiers for attack and defence. When the queen has founded a colony in a foreign nest, the workers treat her exactly as they would their own queen, and devote themselves to rearing her progeny. As the latter grow older the original workers gradually disappear. In the meantime, however, the nest is inhabited by a mixed colony. Curiously enough the offspring of the queen not infrequently show a tendency to carry off the larvae and pupae of the species which has nursed them, and so add to the numbers in their own nest. This occurs more particularly when the nest is not sufficiently populated. In many mixed colonies the two species live entirely separate, but one may be dependent on the other for its sustenance. From this the step to complete parasitism is not far, and many cases are known where one species takes up its abode with another, and lives entirely by the efforts of the other. This may be a matter of compulsion, for several species consist wholly of soldiers, who, although incapable of doing ordinary work, may compel the workers of another species to work for them. Species in which no workers occur and all the individuals are sexual have of necessity to become parasitic on other species, and many interesting observations have been made on the various ways in which they treat their hosts. It is impossible, however, in a short space to give details of their various habits, and we have merely attempted to indicate the method in which Piéron has treated a marvellously fascinating study.

THE late Mr. C. H. Leaf left estate of the gross value of £20,682 with net personalty £20,392.

THE long-expected order amalgamating the judicial offices of Masters in Lunacy and the offices of Commissioner in Lunacy was issued by the Lord Chancellor at the end of November. The amalgamation was recommended by the Royal Commission on the Care and Control of the Feeble-minded, which reported rather more than two years ago. This was one of the transitory measures recommended by the Commission, but another linked with it—the appointment of two medical commissioners to the amalgamated office—has not yet been carried out. We believe there is no doubt that this addition is urgently needed.

British Medical Journal.

SATURDAY, DECEMBER 24TH, 1910.

SECURITY OF TENURE FOR MEDICAL OFFICERS OF HEALTH.

THE General Order of the Local Government Board, dated December 13th, 1910, prescribing regulations with respect to medical officers of health and inspectors of nuisances appointed by urban and rural sanitary authorities in England and Wales, outside London, endorses, though in a hesitating, half-hearted fashion, the policy which has been advocated by the British Medical Association consistently and persistently for many years past. The Order is accompanied by a memorandum and circular letter, and certain discrepancies between these documents and the Order itself seem to argue some haste in the preparation, or at least in the final revision.

Until a comparatively recent period the Board has maintained that medical officers of health and inspectors of nuisances must be appointed for a specified time, and there are cases on record of the Board's refusal to sanction an appointment without reference to time, even when an authority desired to appoint an officer on these terms. This position can no longer be taken up, for Article IV of the new Order provides that the appointment may be made without limit of time, and by Article IX an officer so appointed cannot be removed from office except by the Board or with the Board's assent. But the position to which health officers have taken most exception, and which many of them have felt to be intolerable, was the fact that, being elected for a limited period, their periodical re-election might be made the opportunity by interested members of the electing body whose insanitary property had perhaps been adversely reported upon, to oppose the re-election. The principle of electing any public official for a limited period, at the termination of which he may automatically cease to hold office without any reason being assigned, and without even a day's notice that his services are to be dispensed with, is so unjust and altogether so opposed to public policy that it is extraordinary it should have survived as long as it has. It is to be regretted that the Board has not had the courage to abolish entirely this anomalous position and give to medical officers of health outside London the same security as that which has been given to those within the metropolitan area, to those in Ireland and Scotland, to county medical officers of health, and to Poor Law medical officers in England and Wales and in Ireland. Article X of the Order, however, goes some way towards bettering the position, for it does away with the necessity for periodical re-election. It provides that if a sanitary authority desires to remove a medical officer of health or inspector of nuisances from office, three months' notice shall be given to him, the notice expiring at the termination of the period for which he was elected. If no such notice is given he will continue in office from year to year until he dies, resigns, is proved to be insane, or is removed by the Board or with the Board's assent. Instead of an automatic lapsing of the appointment there will thus be an automatic re-election without the necessity for the formal resolution of the electing authority which is now requisite, or, so long as the terms of the appointment remain unaltered, without any further approval of the Board. This is not enough, and does not satisfy the aspirations of the British Medical Association; but it will, at any rate, ensure publicity, and, it may be expected, inquiry by the Local Government Board, for the obligation has been placed on the authority to inform the Board when notice has been given to an officer to terminate his appointment, and it may be assumed that in the intervening three months before its expiration inquiries would be made as to the reasons which had led the authority to tender the notice. Article XI authorizes an authority at any time by a resolution, and with the consent of the Local Government Board, to appoint an officer who holds an appointment for a specified term to hold the office without limit of time. Article XIII provides, as would appear to be reasonable, that where any change in the extent of the district of an officer, or in his duties or salary, is deemed necessary by the authority or by the Board and he declines to acquiesce, the authority, with the consent of the Board, may give the officer six months' notice to determine his office.

Section 191 of the Public Health Act, 1875, gives to the Local Government Board the same power with regard to the tenure of office of a medical officer of health whose salary is paid out of moneys voted by Parliament as it has in the case of a district medical officer of a Poor Law union. The Board exercised its power with regard to Poor Law medical officers who reside within their districts by making an Order, dated May 25th, 1857, providing that they could only be removed from office by the Board or with the Board's consent. It has always been contended by the British Medical Association that the Board could make an identical Order with regard to medical officers of health, but apparently some of the permanent officials of the Board were not of this opinion. At an interview some years ago between the present President of the Board and a deputation from the Association, the view of the Association was strongly asserted, and Mr. Burns, who admitted that it was an aspect of the question which was new to him, undertook to give it his consideration. The terms of the Order and Memorandum appear to show that the opinion held by the Association has had some weight with the Board, though it has failed fully to carry out the principle involved. The new Order may, we hope, be taken as an earnest of stronger action in the near future.

DEPARTMENTAL LEAD INQUIRY AND MINUTES OF EVIDENCE.

IN Volume III of the Reports of the Departmental Lead Committee[1] is collected information upon plumbism from medical men and technical chemists, factory inspectors, manufacturers and

[1] Report of the Departmental Committee appointed to inquire into the Dangers attendant on the Use of Lead, etc., in the Manufacture of Earthenware and China. Vol. III. Minutes of Evidence. Messrs. Wyman and Sons, Fetter Lane, E.C. Price, 4s. 9d.

practical potters, which make this part of the report a valuable contribution to the literature of industrial lead poisoning. Owing to the wide terms of the reference to the committee it was hardly to be expected that there would be unanimity among the witnesses any more than that the views held by the members of the committee would be identical. An attempt has been made to obtain uniformity out of variety. No one can read through the 500 odd pages of evidence without being struck by the distinct advance which has taken place in the hygienic conditions of pottery manufacture during the last few years. Much of the ill health of present-day workers is attributed by some of the manufacturers to the ignorance of employers of the past and to the fact that twenty years ago and less boys of 9 years of age were employed in the potteries in carrying heavy weights. Although we have travelled far since those days many hardships are still imposed upon young workers. One of the lady inspectors of factories stated that she had noticed boys and girls carrying heavy wedges of clay and trays of scrap far beyond the ability of the children. A boy of 13, who himself only weighed 63 lb., was found carrying a wedge of clay 70 lb. in weight. It is these inhuman acts which rouse public opinion. The loading of youths, especially young girls, with such burdens can hardly fail to produce deformity of the bony framework, the effects of which may be serious in days to come. The inquiry has, therefore done much good by showing up defects to which it can only be necessary to draw attention to ensure their remedy, but there is still in many works an absence of that sympathetic consideration for young persons which factory legislation has tended to bring home to employers a responsibility which cannot be ignored.

As one of the results of the operation of the Workmen's Compensation Act, it is stated by an employer that the number of cases of sickness has increased 12 to 20 per cent., and that to insure the workpeople insurance offices require a disproportionate amount of the wages paid to the workers. The attempt by the employers to form an insurance fund, on the recommendation of Lord James of Hereford, was not carried to a successful issue, largely because they were not sufficiently united. Under present arrangements workers in potteries, if suspended, receive one-half of their wages in compensation, or, if removed from a particular job and given other employment, one-half of the loss of wages has to be made up to them. This circumstance creates an anomaly between compensated workmen and the gang of persons engaged in the same kind of occupation.

The *pros* and *cons* of leadless glazes are discussed at considerable length, and, while there is general agreement as to the value of lead in the glazes as a flux, there can be observed, in reading between the lines of the report, not only indications of a desire on the part of the committee to obtain all possible information upon the subject, but the wish to see lead glazes reduced to a minimum and abolished wherever possible. Where so many witnesses have given evidence it would be idle to single out for approval or otherwise the information supplied by one or other, since the object of the inquiry was to obtain information from a variety of sources, in the hope that out of plurality of opinions helpful data would be obtained which might become a basis of useful recommendations.

In the recommendations made by the committee are included periodical medical examination of the workers, the keeping of a register of persons examined by the certifying surgeon, the supply daily of half a pint of milk or of cocoa made with milk to women and young persons at the expense of the occupiers, increased washing facilities, and the use of a solution of soluble sulphides to remove traces of lead from the hands, exclusion of women under 45 years of age from the most dangerous lead processes, forty-six hours of work per week for women and young persons, forty-eight for men, and fifty-four for glost-placers, an interval after each four and a half hours of work, constant supervision of the factories by the occupiers themselves to see that the regulations are being carried into effect, while a similar duty is required of the operatives. For the prevention of industrial lead poisoning there must be co-operation of employers and employed.

KING EDWARD'S HOSPITAL FUND

An account of the distribution meeting of King Edward's Hospital Fund for London, which took place last week, will be found in the Supplement to this week's issue. It was the first which has been held since the constitution laid down for the Fund last year came into full operation. His Majesty King George, formerly President of the Fund, is now its Patron, the post which he formerly occupied being now held by three Governors—the Duke of Teck, Lord Iveagh, and the Speaker of the House of Commons. In accordance with the terms of the private Act applying to the Fund, they were appointed by His Majesty on the nomination of the Prime Minister, the Lord Chancellor, and the Governor of the Bank of England. Another point of interest is that this year the Fund has distributed £5,000 more than the total amount that at the date of its foundation it was hoped the Fund would ever be able to distribute in one year—namely, £150,000. No departure in policy was announced, unless it be the award made to certain sanatoriums for holding a certain number of beds at the disposition of London hospitals which have cases of pulmonary tuberculosis in a curable stage on their hands. If the plan works well, it is proposed to make in future years capital awards as well as maintenance awards, so as to facilitate the provision of more accommodation for such cases. One announcement, however, of great interest was made. This is, that in accordance with a suggestion made by His Majesty, when Prince of Wales and President of the Fund, a special committee is to hold an inquiry into the methods prevailing in the London voluntary hospitals with regard to the admission of patients to the casualty and out-patient departments, and especially as to the precautions taken to prevent the admission of persons who are unsuitable. The committee will also inquire whether adequate provision is made for the admission of suitable persons. It consists of Lord Mersey, better known until recently as Mr. Justice Bigham, Lord Northcote, until recently Governor-General of the Commonwealth of Australia, and the Bishop of Stepney (Dr. H. Luke Paget, a son of the late Sir James Paget). The committee may therefore be considered a strong committee, although we think it would have been strengthened by the addition of a member of the medical profession having personal experience of the working of out-patient and casualty departments. In appointing a body of laymen, however, the Fund has followed what is a very general custom in the conduct of affairs in this country, and it would appear to be

intended that it should receive evidence, for we are informed that all communications intended for the committee should be addressed to the secretary, Mr. H. R. Maynard, King Edward's Hospital Fund for London, 7, Walbrook, E.C. It is anticipated that the committee will begin its sittings early in February.

RULES FOR NURSING ASSOCIATIONS.

THE sick have derived great advantages from the institution of district nurses, while the skilled attendance has been highly appreciated by the medical profession in many districts, both in town and country, but, like every other human necessity, such associations, established with the very best intentions and capable of doing most admirable work if the nurses are strictly confined to the proper spheres of their duties, have in some cases developed defects which have given rise to friction. The nurses have not always been judicious and the rules of the association have not always been drawn with a sufficient knowledge of possible pitfalls. A debate on the subject took place at the Representative Meeting of the British Medical Association this year. It arose on a report from the Council submitting a set of model rules for nursing associations. These rules, as finally approved by the Representative Meeting to take the place of those adopted by the meeting in 1909, are published in the SUPPLEMENT of this week. They will, we make no doubt, be of great service to nursing associations and of assistance to medical men who may be called upon to co-operate with such associations or advise as to their constitution and administration. A memorandum on a question of alleged covering in connexion with a district nursing association embodying a letter from the Assistant Secretary of the General Council of Medical Education indicates one of the dangers which may arise, and which ought always to be guarded against in the rules adopted by a nursing association.

INHERITANCE AND INFECTION IN CANCER.

DR. MUNCH SOEGAARD, of Norheimsund, in Norway,[1] has endeavoured to solve the question of the etiology of cancer by a careful study of the cases which have arisen during the twenty-three years, 1886–1909, in a village called Vikör, of some 3,400 inhabitants. Following the lead given by Dr. Bashford, of the Imperial Cancer Research Fund, he limits himself to persons who have died after having attained the age of 35 years. In the period named 703 persons of this age died from all causes, and of these 64 were said to have died of cancer. This represents a cancer mortality of 9·1 per cent. of the total mortality. It may be pointed out in this place that Dr. Soegaard does not in any instance record a histological confirmation of the diagnosis, and in determining the occurrence of cancer in the families he is apparently quite satisfied with the statement of doctor or patient's relatives that the mother or some other relative died of cancer. The value of his deduction is therefore greatly impaired, because we cannot be quite sure that the reported cases were in reality cases of cancer, and further that the negative cases did not contain some cases of carcinoma or sarcoma. In the families of these 64 patients he found that 10 parents had likewise died of cancer. Since some of the patients were brothers and sisters, he states that the whole series descended from 114 parents. Four of these died under the age of 35 years, and 4 are still living, thus yielding 106 persons among the parents who died over the age of 35, with 10 cancer deaths, that is, 9·35 per cent. Next he turns to the brothers and sisters of the patients. On inquiry he found that there were in all 250 brothers and sisters. Of these 100 had died after having attained their 35th year and 11 of them died of cancer, representing a somewhat higher percentage than the whole population yielded. He attempts to explain this by referring to four families, in which cancer appears to have been somewhat common. But since the total number of the cases with which he deals is so small and the possibilities of error are so large, it is unnecessary to follow up his cases any further in respect to inheritance. We may, therefore, register the verdict with regard to this account as "not proven." The author is more interesting when he deals with so-called "cancer à deux." But here again it is wise to exercise a sharp criticism on his article, for the words employed would imply a preconception—a deduction before the case is stated. He calls the cottages in which some of the patients lived and died, "Krebshöfen," or cancer cottages. His observations lead him to summarize that in 18 out of 68 cases the cancer patient had lived in intimate contact with another cancer patient. The cottages or "Höfe" are described in vivid colours, and certainly appear to be veritable insanitary nests, in which infection might readily occur. But where overcrowding and other evils are found, it must be assumed that other factors of a deteriorating type must also prevail, and the mere occurrence of cancer in several persons living in these hovels does not prove infection. In the same way, when he tries to prove infection by citing the experience that those persons who left the neighbourhood to live elsewhere escaped from the ravages of the terrible malady, while those who remained at home were more or less attacked, it must be emphasized that other factors have to be taken into consideration, of which the mode of feeding, the habits with regard to irritation and local stimulation, may be instanced. Again, it is inconceivable that one infection should at times produce carcinoma, at other times sarcoma, and at still others rodent ulcer. Dr. Soegaard records cases of all three arising in one and the same environment. In attacking Dr. Bashford's deductions that the absence of infection in his mice speaks against any risk of infection, the author regards the conditions obtaining in his Norwegian village as favourable to infection, and those obtaining in the Imperial Cancer Research laboratories as unfavourable. To this proposition exception must be taken. In the former case innumerable factors may be playing a part, and the results obtained are uncertain, since histological confirmation of the diagnosis is wanting; while, in the latter, contact is present and other factors are to a great extent excluded, and scientific investigation of each tumour enables the observer to be certain of every record.

[1] Reprint from the *Norsk Magazin f. Laegevidenskaben*, October, 1910.

THE ACTION OF BLEACHING POWDER AS A DISINFECTANT.

IN a lecture given recently at the Manchester School of Technology, Mr. R. L. Taylor detailed some valuable conclusions, reached as the result of several years' investigations of the action of air and carbon dioxide on bleaching powder, the ordinary calx chlorinata of the *Pharmacopœia*. The conclusions are interesting as showing that some modification is needed in the ordinary teaching as to the chemical reactions that occur when calx chlorinata is simply exposed to the air and moisture, as in disinfecting the

atmosphere of sick rooms, without the addition of mineral acids. It is recognized that some doubt exists as to the exact composition of calx chlorinata, for though it is said to contain both calcium chloride and calcium hypochlorite. it is noticed that fresh bleaching powder is much less deliquescent than one would expect if it contained any considerable proportion of calcium chloride. Moreover, though calcium chloride is freely soluble in alcohol, if fresh, well-made bleaching powder is shaken with alcohol, very little residue is left when the alcohol is separated and evaporated, showing that there can only be a very small proportion of the chloride present in the dry powder. It seems to be probable that when chlorine gas is passed into slaked lime, a body is formed with the formula $CaCl_2O$, which only forms $CaCl_2$ and $CaCl_2O_2$ when the powder is dissolved in water, as shown by the equation $2CaCl_2O = CaCl_2 + CaCl_2O_2$. It has generally been stated that when bleaching powder is exposed to moist air, free hypochlorous acid gas is slowly given off, which soon breaks up into free chlorine, chloric acid and water, while the chloric acid being very unstable soon breaks up into oxygen, chlorine, water, and perchloric acid, the final result being that the small amount of hypochlorous acid given off yields about fourteen-fifteenths of its chlorine in the form of chlorine gas. Mr. Taylor claims to have shown that the action of carbon dioxide in the air on bleaching powder is to liberate chlorine only, with no hypochlorous acid, the carbon dioxide acting just like any other acid, and decomposing both the hypochlorite and any chloride contained in the bleaching powder. His researches further show that ordinary moist air liberates, even at first, a large amount of free chlorine and only a very small amount of hypochlorous acid, while after a time nothing but free chlorine is produced. And if ordinary air is passed through a solution of bleaching powder, a mixture of chlorine and hypochlorous acid is swept out, at first in about equal amounts, but later the free chlorine is increased to about 90 per cent. Mr. Taylor concludes that in the ordinary processes of bleaching the active agent is probably free chlorine, any hypochlorous acid playing only a very minor part, and the same would seem to apply when calx chlorinata is used without a mineral acid for disinfecting purposes.

HOW HIGH CAN THE RECTAL TUBE BE PASSED?

The student is certain, when he has reached the position of dresser, to hear disputations about the passage of tubes up the bowel, and the house-surgeon soon finds by practical experience that there is some difficulty in settling this question. To his dying day the qualified doctor usually maintains either that he has often succeeded in passing a stiff or soft rectal tube a foot or more up the colon, or else that neither he nor anybody else can pass either variety of that instrument for more than a few inches up the rectum. Dr. Wellington Yates,[1] as the result of some researches well worth study, is entirely of the latter opinion, which is that of Nothnagel, Naunyn, and Boas. Schule, too, denies Kuhn's assertion that a metallic spiral spring could be passed into the colon by combined manipulation of the sigmoid. Von Aldor, as Dr. W. Yates reminds us, advised the use of a 32-inch tube in the treatment of colitis, and prepared skiagraphs to prove that he had succeeded in passing such a tube, but Yates finds that faulty technique in the preparation of the pictures rendered them valueless for proof. Von Aldor repeated his assertion in a second publication, declaring that fluid introduced into the rectum alone, and without the use of the long tube, never goes higher in normal individuals. Dr. Yates maintains that the truth is, as experiment proves, absolutely in the contrary direction, as fluids can be passed well up into the colon when the tube is only introduced a short distance into the rectum. Soper and Hanes have insisted that within the past two years they have proved by skiagraph that fluids pass easily whilst tubes cannot pass at all into the colon. Dr. Yates publishes some highly successful skiagraphs which confirm Soper and Hanes's views. They show the tube turning round on itself as it passes up to the sigmoid, although it seems to the surgeon's or nurse's touch as though it were gliding easily up the descending colon. They demonstrate the fallacy of the "horse catheter" or coiled wire spring. Yates used every different type of flexible instrument, and never was able to prove by skiagraph that he had passed any of them into the colon, in whatever position the patient was placed and whatever manipulations were employed. By manipulations he means such as are adopted in the general treatment of patients to whom enemata are administered—change of position, for example; but Yates purposely excludes experiments with special instruments like that of Hanes, another sceptic, who was able in one instance to pass the tube beyond the hepatic flexure, but only with the aid of a sigmoidoscope after the patient had been placed in an inverted position. But the experimenter might have been mistaken, and in general treatment the sigmoidoscope is not always either available or necessary. Yates shows, very reasonably, that the anatomy of the rectum, sigmoid flexure, and colon explains how the tube cannot be passed far upwards. The lowest part of the rectum is fixed, its course is curved, and its upper portion mobile; the mesosigmoid is long, and permits free movement. This last fact explains why many surgeons have been confident that stiff instruments have passed into the colon, when in reality the bowel was pushed forwards, and the instrument never passed into its lumen. Yates refers to another error, familiar to us all, yet treated as a truth by at least one writer. When the tube is passed, if water be thrown up it during its passage, the surgeon or nurse, it is believed, can ascertain with certainty that the tube has entered the colon. The truth is that when the tube bends so that its upper end points for an inch or more downwards, the enema will pass upwards out of its eye with perfect facility. The prejudiced experimenter will, in these circumstances, retain the erroneous impression that the tube, as well as the water, has passed high up the bowel. The sole object of all these attempts to pass the tube as high as possible is the conveying of fluid direct into the upper colon for ablution or food absorption. Yates shows, first, that the tube cannot be passed far, and, secondly, that fluids on the other hand if injected 4 or 5 in. above the anus are carried up into the colon, and may be detected at the caecum in about ten minutes. Yates's skiagraphs show, as we have already noted, the tube doubling back on itself below the sigmoid, and they also display how a quart of bismuth mixture injected into the lower rectum could be defined occupying the entire colon and also the caecum. Hence the introduction of a tube for more than 5 in., for therapeutic enemata or irrigation of the bowel is useless and likely to defeat its own object. Yates believes that a reversed peristalsis is set up when fluids are injected into the rectum, and as a surgeon, he further insists that attempts to effect the impossible with the tube cause irritation of the

[1] Present State of the Colon Tube. *Amer. Journ. Obstet.*, November, 1910, p. 761.

intestinal mucosa if not worse effects. An instructive discussion followed the reading of Dr. Yates's report at the last annual meeting of the American Association of Obstetricians and Gynaecologists in September; and the author's skiagraphs, published in the *American Journal of Obstetrics*, were much appreciated. The anatomical researches of Hanes of Louisville, especially his observations of the variation in length of the sigmoid colon, were referred to by a collaborator, Dr. Garland Sherrill, and deserve the consideration of the surgeon.

CANADIAN WATER SUPPLIES.

THERE was held in Ottawa in October last, at the instance of the Committee on Public Health of the Senate of Canada, a conference between Dominion and provincial public health representatives and the Committee on Public Health of the Commission on Conservation. At that conference Dr. Charles Hodgetts, the medical adviser to the Commission, delivered an instructive and exhaustive address upon the water supplies of Canada, with special reference to the manner in which they are polluted by sewage, etc. After describing the chief sources of water supply in the Dominion as coming from the lakes and rivers, he stated that it was now almost the general rule to consider that a continued typhoid death-rate of over 0.2 per 1,000 of the population was an indication that the public water supply was greatly at fault. He then gave typhoid statistics relating to a large number of cities in Canada and in the United States and to European and American countries as a whole. The United States death-rate from typhoid fever he gave as 0.46 per 1,000, the Canadian as 0.35, and that in England and Wales as 0.11 per 1,000. He summarized the laws in force in the various Canadian provinces relating to water supplies, and then expressed the opinion that, though they looked well on paper, they were in the main non-efficient, for in practice municipal authorities did pretty much as they pleased. The great difficulty in securing the great waterways of Canada from pollution appears to be the fact that they flow not only through parts of the Dominion which are under different legislative control, but in the case of the chain of the St. Lawrence and the Great Lakes the waterway forms an international boundary. Dr. Hodgetts maintained, therefore, that the difficulties to be met would not be solved by provincial legislation, but that the Federal Government would have to deal with them. The question is one of the greatest importance to the inhabitants of Canada.

FORCIBLE DILATATION OF THE SPHINCTER ANI.

NOT a few things which are taught to the student of medicine rest on no solid basis of fact. Even in examinations, stereotype replies to questions are insisted upon, in spite of the fact that the examiner or the teacher would have difficulty in justifying the answer expected. The most usual subterfuge in such cases is the statement that experience teaches that "it is so." From time to time the correctness of these inherited views is challenged, and then two schools take up opposed opinions: the one denying the truth of the older doctrines, and the other stoutly defending the messages from the past. A typical instance of a doctrine based upon slender foundation, yet transmitted through generations of medical students, is that the infectivity of scarlatina is derived from the desquamated skin. From the *Muenchener medizinische Wochenschrift* of September 20th we learn that Dr. E. Melchior, working in the Breslau University, has challenged a firmly-rooted doctrine in surgery. It is generally accepted that the sphincter ani is so long-suffering a muscle that it is satisfied to perform its functions satisfactorily in spite of any kicks which it may receive from the "rectal" surgeon. Cut the fibres radially or dilate the ring muscle with as much force as you like, and after a short-lived paresis, the full tone of the closure will return. Dr. Melchior has already called attention to the frequency with which permanent loss of control ensues after division of the sphincter with the knife. He has now investigated the condition of all patients who were subjected to forcible dilatation of the sphincter during the period 1905 to 1909 at the Breslau Clinic. He found 8 cases of fissure which were treated by dilatation alone, and 25 of haemorrhoids in the treatment of which dilatation was carried out. Of these, 6 of the first class and 20 of the second could be traced. That means that he was able to examine the ultimate results of 26 cases of forced dilatation of the sphincter ani. In 3 cases there was permanent incontinence of faeces. The histories of these cases are given in sufficient detail to render it certain that Dr. Melchior was correct in attributing the incontinence to the forcible stretching of the sphincter. In two cases flatus and liquid stools passed involuntarily, while in a third there was a complete loss of control. In summing up, the author states that the danger of incontinence of faeces can be avoided by limiting the amount of force in dilating, and more especially in undertaking the stretching only when the patient is in a condition of deep anaesthesia. It thus appears that the sphincter ani is not so tolerant as the surgeons of old and those of to-day who blindly accept inherited doctrines would have us believe.

ZOOLOGICAL NOMENCLATURE.

ZOOLOGICAL nomenclature is a sore point not only with zoologists but with the general scientific public, and in particular with medical men whose work calls for a knowledge of animals and an occasional reference to their scientific names. The disconcerting changes which have been widespread throughout the whole system of zoological names have been a source of great annoyance and much confusion. The names of even the most common animals have not been spared—names familiar for generations have been ruthlessly cast aside and replaced by others of uncouth and foreign aspect. Not only so, but in several cases names have been interchanged, with the result that the name which our grandfathers used to designate a certain animal applies now to some entirely different one. To such of us as in our youthful scientific enthusiasm learnt a few zoological names and were naturally proud of being able to repeat their euphonious syllables, it is a grievance that they should be replaced by others strange and barbarous to our tongue; yet it is of some small comfort to know that even professed zoologists, even teachers and professors of zoology, are not exempt, for it is a general confession that they find it impossible to recognize by their scientific names animals outside their own particular speciality. This must appear the height of absurdity, and it will be interesting to see how such an impasse has come about. The system of binominal nomenclature dates from Linnaeus; he gave names to the bulk of the animals known in his time. His descriptions, however, were not always remarkable for their accuracy, and they have provided much mental exercise for later zoologists. This system of nomenclature became of general use during the nineteenth century, and wa

found of extreme service in classification. In the beginning of the century the number of known and described animals was still comparatively small, and to distinguish them from each other the enumeration of a few striking characteristics was generally sufficient. Not infrequently, from lack of discrimination, several different animals were herded together under one name. With the great expansion of knowledge in later years the number of known animals became greater and greater. It was of frequent occurrence to find that two, or more than two, animals fitted the description of the earlier writers, and the puzzle was to determine which should have the established name and which a new one. In many cases, too, before the general dissemination of scientific periodicals, the works of earlier authors got lost or buried in out-of-the-way corners of libraries. A result of this was that many animals were described as new and given new names half a dozen times over. In this way the labours of the zoologists towards the end of the century became exceedingly complicated. New facts coming to light, and the display of greater acumen and historical ingenuity, showed that many discrepancies existed. Animals known by one name for fifty years were found to be the same as those known under another name at an earlier period, and so on. A great deal of confusion and controversy arose, which reached a climax in the appointment of an International Commission of Zoological Nomenclature. This body set itself to frame a code of rules, the chief of which advocated the strict adherence to the law of priority, by which is meant that an animal shall be known under the scientific name which was first definitely and unmistakably given it. This has been to a large extent carried into effect, with the present result. Assiduous individuals have spent their days and nights ransacking musty archives for long-forgotten tomes. From these they have extracted a galaxy of paradoxically new yet old names, which they have tacked on to the familiar friends of our youth. The binominal system, advantageous in so many other respects, has been of advantage here too, for it has provided individuals with the opportunity of changing two names or only one. Everybody, however, is agreed that some sort of finality is absolutely necessary, and to most zoologists the only hope seems to lie in the direction of the strict enforcement of the priority law. Notwithstanding this, a considerable section of British zoologists in particular are of opinion that some regard should be paid to the names of the more familiar animals, and that they should be exempted from the rigid application of the law. The matter was discussed at the last scientific meeting of the Zoological Society, and there was an almost unanimous agreement that such "fiat" names, as they have been termed, should be upheld as far as possible. Dr. W. E. Hoyle, the British representative on the International Commission, gave an account of the recent meeting at Graz, and indicated that the tendency was to ignore the wishes of the British zoologists in the matter of "fiat" names. The discussion which followed was largely of the nature of a protest against this. Desirable enough as the retention of these "fiat" names may be, however, we cannot see that there is much to be gained by the restriction of the principle to a limited few, if this be done merely in the interests of the general public, whose claims, after all, are of quite secondary importance. What the mass of zoologists want is a system which will secure stability, which will obviate the necessity for antiquarian research, which, at the same time, will reject enigmatical descriptions, and will insist on the reference of all species to a central authority.

RESIGNATION OF THE STAFF OF THE NEWCASTLE INFIRMARY.

AT the meeting of the House Committee on December 15th a resolution from the House Committee was conveyed to the honorary staff suggesting that "eight members of each body should meet in order to remove, if possible, any cause of misunderstanding between the two bodies." This resolution will, therefore, be discussed by the honorary staff at an early date.

A MEMORIAL of Abbot Mendel, whose name is much in the mouths of students of the problems of heredity, will shortly be unveiled at Brünn.

THE County of Flint has now associated itself with the project of raising a sum of not less than £300,000 for the promotion of a crusade against consumption and as a Welsh memorial to His late Majesty King Edward.

THE library and offices of the Royal Society of Medicine, which are at present established at 15, Cavendish Square, W., will be closed from Saturday, December 24th, till Wednesday, December 28th, both days inclusive.

DR. DÉJERINE has been appointed to the Chair of Clinical Neurology in the University of Paris, recently rendered vacant by the death of Professor Raymond. The name of Professor Déjerine is so well known to neurologists, that nothing need be said as to his special fitness to occupy a chair made illustrious by Charcot.

WE regret to record the death on December 18th of Dr. James Edward Pollock in his 93rd year. Dr. Pollock, who was for many years physician to the Brompton Hospital for Consumption, was the author of two books which, each in its time, were of great value to the profession; one was *Elements of Prognosis in Consumption*, published in 1865, and the other a *Medical Handbook of Life Assurance*, first published in 1889. We hope to publish some account of his career in an early issue.

THE will of the late Sir George Sutherland Mackenzie, K.C.M.G., son of Sir William Mackenzie, M.D., who received his decoration in recognition of services rendered to develop British industries in Africa and Persia, and who was formerly Administrator of the Imperial British East Africa Company's Territories, contains a provision of medical interest. Subject to the life interest of his brothers, he has bequeathed a sum of £30,000 to the Presidents and Councils of the Royal College of Physicians of London and the Royal College of Surgeons of England for the endowment of scientific research by students of ability and of registrable medical qualification, who may thus be able to devote their whole energies to such work, and be independent of ordinary practice. He made this bequest in the hope that the combined results of the systematic work of so many trained workers may prepare the way for a genius to come who will make great discoveries, and he also stated that this bequest was in memory of Sir William MacKinnon, Bart., to whose kindness and influence in earlier years he owed both the means and the inclination to make the gift.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LEEDS.

THE GENERAL INFIRMARY.

FOR some months a good deal of discussion has taken place at the meetings of the weekly board of the General Infirmary as to the propriety of members of the honorary staff holding appointments at the other charitable institutions of the city. The custom and rules on this subject, as is well known, vary in different institutions and in different centres of the kingdom, and it may be granted that what is a suitable and equitable rule in one centre may be unwise and unjust in another. The main, and indeed the only primary consideration, to which all others are subordinate, must be the welfare of the different institutions, that is to say, of the patients for whom the institutions exist. The admission of this principle, which of course cannot be gainsaid, leaves abundant room for a difference of opinion as to whether any rules at all against what is termed pluralism should be framed, and if such rules are framed what degree of stringency should attach to them. There are some who hold that so long as a man occupying the position of honorary officer to any institution discharges his duties to the satisfaction of the board of management, it ought to be a matter of no concern to that board, or, indeed, to any one except himself, what other demands are made on his time, whether these demands arise from his private engagements or his public duties, and that the board has as little right to look into these matters as to concern itself with the various occupations of its lay members at times when they are not engaged in infirmary duties. Those who hold this view it are probably of opinion that the kind of man who is likely to be entrusted with the responsible position of an honorary officer to an important hospital is not likely to assume other duties which would interfere with his work, and that in those rare instances in which anything of the kind might happen, the board of management should be strong enough to take the matter up, and should not shrink from doing so. Some there are also who, while of opinion that no man should hold similar positions at two hospitals, yet feel that it is unwise to debar members of the honorary staffs of our larger hospitals—and especially junior members of those staffs—from being attached to special hospitals, such as children's hospitals and those dealing with special diseases—for example, those of the skin, tuberculosis, venereal diseases, etc.

Such a restriction might be a hardship, especially in cases where the members of the junior staff are not entrusted with the care of in-patients, but are concerned exclusively with the out-patient departments. After a very full discussion, in which, as happens from the wise provision that has always prevailed at Leeds, that every member of the honorary staff of the infirmary is a member of the board of management, the professional aspects of the case received full recognition, the following rules were agreed to with practical unanimity, and, on being submitted to a general meeting of the governors, were adopted:

That from and after January 1st, 1916, members of the full honorary staff shall not hold any other honorary hospital appointment than their appointment at the infirmary.

That from and after January 1st, 1916, members of the assistant honorary staff shall not hold more than one honorary hospital or dispensary appointment in addition to their appointment at the infirmary, and that such additional appointment must not involve the charge of beds.

Provided that this shall not be held to prevent members of the staff from holding consulting appointments at other hospitals, appointments at the University of Leeds, or appointments to offices in the Territorial Medical Force, or (so long as they are not elected to a different position from that now held by them) from retaining appointments now held by them.

In considering the propriety of these rules having been passed, one must have in one's mind the special conditions which prevail at the Leeds Infirmary, which are that all departments of medicine and surgery are represented in the institution. The eye and ear departments are very large, and the number of women and children treated is greater than that for which treatment is provided at any of the other charitable institutions of the city. These rules, again, must not be considered by themselves, but in connexion with some recent regulations, which provide that every member of the junior or assistant staff is entitled from the day of his election to the use of a certain number of beds. During the time the framing of the rules was under discussion representations were made to the board of the infirmary by other institutions to the effect that the passing of such rules would deprive them of the services of the kind of man they desired to see on their staffs. Here, again, it must be borne in mind that it has always been the custom for any man on his appointment to the honorary staff of the infirmary to resign his position on the staff of any other institution with which he has been connected if there was any one eligible for election thereto, and only to retain the position if there were not.

A position as honorary assistant physician or surgeon to the infirmary is, under the new rules, still compatible with being on the staff of the Leeds Public Dispensary; but promotion to the full staff of the infirmary would call for resignation of the dispensary post. The objections on the part of the authorities of the dispensary were met by the understanding that this would not be called for until time had been given for them to make arrangements—it might be by the attracting to Leeds of someone desirous of going in for consulting work—for filling the position.

The special case of the Association for the Prevention and Cure of Tuberculosis, a position on the honorary staff of which involves the charge of beds, was not met by this consideration; but this also will be effected by the passing of a rule, which cannot be here mentioned, because, though it is known to be generally agreed upon, it has not as yet been brought before a general meeting of the governors.

Those who feel that the system which prevails in Leeds that all the members of the honorary staff are on the board of management is a good one, will be disposed, and very rightly so, to point to the practical unanimity with which these rules have been adopted as another example, of which there have been many in the past, of the facility with which important changes, if they are thought wise, may be made without friction. Though every member of the staff is on the board, and is entitled to take part in all discussions, the voting power of the staff is limited to eight votes, which in the event of a party vote—an occurrence which has never taken place—leaves the final verdict, as is proper, in the hands of the lay members.

MANCHESTER AND DISTRICT.

THE SALE OF MEDICATED WINES.

AN important case concerning the sale of medicated wines was recently brought before the Manchester County Court. A chemist of Old Trafford and his employer, a chemist of Stalybridge, were both summoned for selling Wincarnis without a licence. For the prosecution it was stated that the summons was taken out under Section 3 of the Licensing Act of 1872 for selling intoxicating liquor without a licence. Evidence was given as to the purchase of two bottles of Wincarnis, one of which was analysed by the county analyst and found to contain 14.2 per cent. alcohol present as a product of fermentation. In cross-examination it came out that the bottle was labelled in several places as "Wincarnis with Quinine." For the defence it was submitted that Section 72 of the Act did not apply to the sale of medicated spirits, or to spirits made up in medicines and sold by

medical practitioners or chemists and druggists, and the evidence of the analyst was that the Wincarnis analysed was sufficiently medicated to be unpalatable as a beverage, and the defendants claimed that they were within the protection of the clause referred to. They also said that they sold it not as a beverage but as a medicine. Dr. E. S. Reynolds, who gave evidence for the defence, said that he considered Wincarnis to be a drug, that he had known it to be ordered by many doctors as a drug, and he thought that it would produce quinine poisoning before it produced intoxication. The case was adjourned for the stipendiary to take time to consider his decision, and at the adjourned hearing he said that an intoxicating liquor was defined to be any fermented liquor which could not be legally sold without a licence. In the opinion of the court Wincarnis was a fermented liquor, but as this was the first case of the kind that had come before the court, the small penalty of 20s. would be imposed, with costs in each case. The court agreed to an application that a case should be stated.

Mining under a Hospital.

The Trustees of the Manchester Children's Hospital at Pendlebury recently applied for an injunction against Messrs. Knowles and Sons, colliery proprietors, to prevent them extracting coal from below the hospital. The plaintiffs alleged that by the extraction of coal from below the hospital serious damage had been done to the premises. After several sittings and hearing a considerable amount of evidence, the Vice-Chancellor of the Lancashire Court of Chancery decided to grant the injunction restraining defendants from working the mines below the hospital, and also an inquiry as to damages. The injunction would be stayed for three weeks with regard to the working of one of the seams, and, if the defendants decided to appeal, the stay would be continued until the appeal had been heard.

Medical Women and the Royal Infirmary.

Last week an account was given in this column of the recommendations made by a special committee of the Board of Management of the Manchester Royal Infirmary on the question as to how best to provide post-graduate training in medicine and surgery for medical women graduates of the Manchester University. After considering these recommendations, the Manchester Branch of the Northern Association of Medical Women has passed the following resolutions:

1. That this association is grateful for the efforts of the sub-committee of the Royal Infirmary Committee to afford post-graduate experience for women.
2. The association hopes that the scheme, which appears to be a tentative one, may be soon replaced by one giving more responsibility and a more clearly defined position to the women graduates.

Care of the Feeble Minded.

The report presented to the annual meeting of the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded, which was held in the Manchester Town Hall under the chairmanship of the Lord Mayor, showed that the colony at Sandlebridge is now quite full, there being 225 residents, 50 of whom are between the ages of 19 and 22. During the year 4 children had been removed by their parents on reaching the age of 16, though the parents had given a promise not to interfere. The report stated that in each case it was selfishness on the part of the parents that had led to the removal, as they thought they could get some work out of the children, and the governors had been quite convinced of the urgent necessity for powers of detention to be given to proper authorities. Several extensions to the buildings had been taken in hand, notably a house for men, which would leave room for about 12 more boys, a dormitory for girls, and a laundry; the hope was expressed that funds might be obtained to build a hospital in connexion with the colony. The income of the society is only just enough to enable it to pay ordinary expenses, but it cannot meet the demands constantly made for increased accommodation. The Lord Mayor pointed out that the Poor Law Commission had agreed as to the advisability of the permanent care of the feeble-minded, and he hoped the Government would render the needed State assistance. Especially should it be made impossible for parents and relations to enforce the removal of the children, and the sooner legislation was passed to bring this about the better. Sir T. T. Shann said that 217 patients now depended entirely upon the society, an increase of 33 during the year, while 51 were over the age of 16, the age at which local authorities as a rule ceased to contribute. This last class had increased by 13, and the society was gradually increasing the number of those who would entirely depend on its funds. What would happen when the whole of the 220 children attained manhood and womanhood needed some courage to contemplate. "Surely," he said, "if the Government can contribute three-fifths of the cost of a normal child's education it can do something better than find what is not a sixth part of the cost of saving these afflicted children, whose lives will largely be spent in the workhouse, as loafers or unemployed, or as criminals, a danger to themselves and a danger in a far greater degree to the whole, community."

It may be noted that the Manchester Education Committee has freely availed itself of the provision made by the society which undertakes the care of the children for life, although the contribution of the authority ceases at the age of 16. Teaching and instruction are carried out in the happiest surroundings at Sandlebridge, where there is a farm of about 120 acres with gardens and greenhouses which afford work for the older boys, whilst the girls are employed in laundry work and household duties. The town special day schools cannot provide anything like these favourable conditions, as the children have to go out into the world at 16, and the after-care committees, as the Education Committee points out, afford but a poor substitute for the permanent care that may be grafted on the residential schools. The additional cost, however, is a serious item, as each child in the residential school costs about £25 a year, even in an institution of 200 inmates, and the Education Committee agrees with the society that this additional cost is a matter that ought to be met by the Government.

LIVERPOOL.

Education Committee and Eyesight Testing.

The Education Committee of the City of Liverpool has now adopted the following resolutions in regard to the testing of the eyesight of children attending the elementary schools who are reported by the school medical officers to have defective vision, and whose parents are found to be unable to defray the cost. Resolved:

1. That every child shall receive a voucher to be redeemed at the price of 3s. if signed by a registered medical practitioner recognized by the local education authority for this function.
2. That a list be prepared of such hospitals and registered medical practitioners as the subcommittee considers to be properly equipped for such work, and have expressed their desire to undertake it.

Liverpool Medical Students' Dinner.

The medical students of the Liverpool University held their annual dinner on December 17th. Mr. R. W. Murray, Surgeon to the Northern Hospital, was in the chair, and Dr. Ernest Glynn acted as Vice-Chairman. Certain topical songs were a striking feature of an enjoyable evening. A large number of the staff of the medical school were present, and there were guests from the two schools of Manchester and Leeds.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

BACTERIOLOGIST TO DUBLIN CORPORATION.

SOME weeks ago the Dublin Corporation, from amongst a large number of candidates, elected Dr. M. J. Russell as City Bacteriologist, but the Local Government Board has refused to confirm the appointment. Dr. Russell already holds the posts of Medical Superintendent Officer of Health to the South Dublin Rural District, and of Medical Officer to the Castle Street Dispensary, and in consequence, in the opinion of the Local Government Board, is not in a position to undertake the very responsible duty of advising the Corporation of Dublin on a subject which requires close and unremitting work in the laboratory. Having regard to the extreme importance of the post of City Bacteriologist in relation to public health and expenditure, the views of the Local Government Board are shared by many independent persons. No action has so far been taken by the Corporation regarding the matter.

CONFERENCE OF POOR LAW GUARDIANS.

A conference of Poor Law guardians was held in Dublin early in December, under the presidency of the Earl of Mayo, for the purpose of discussing proposed alterations in the Poor Law system. The following resolutions were adopted:

1. That the county should be the area for which special institutions for the sick and aged should be maintained, and the cost should be paid out of the county and county borough rates.
2. That the county council should have the duty of administering relief to the sick and to the aged and infirm, and should act through committees directly responsible to it, each committee to consist of (1) members of the council, and (2) persons of experience from outside.
3. That the duty of making suitable provision for persons suffering from mental defects should be laid upon county authorities, as recommended by the Royal Commission on the Feeble-minded.
4. That the duty of making suitable provision for the feeble minded should be an Imperial charge.

IMPURE GAS IN DUBLIN.

Considerable anxiety has been caused to many of the Dublin householders of late by the prevalence in their houses of an exceedingly unpleasant and all-pervading smell. In many cases it was attributed to a breakdown of the house drainage system under the strain of the recent heavy floods, and in consequence testing of drains has been carried out apparently on an extensive scale, without disclosing the cause. The explanation has, however, been provided by the city gas examiner, who states that from December 1st up to the date of his letter to the press, December 9th, very heavy traces of sulphuretted hydrogen, traces of ammonia, and an excess of carbon dioxide gas have been present in the city gas supply, owing to some temporary defect in the purifying chambers at the gas works. It is stated that the percentage of sulphuretted hydrogen likely to escape into rooms would be insufficient to produce ill health, but as no accurate statement regarding the amount of this impurity in the gas is furnished it is only natural that attacks of nausea and headache which have been complained of in some houses where the smell has been particularly offensive, should be attributed to the condition of the gas. Some dissatisfaction is expressed that the gas company, although aware of the impurity of its product, did not notify the public of the fact until several days after the discovery was made.

FEEDING OF SCHOOL CHILDREN.

At a public meeting recently held at the Mansion House, Dublin, a resolution was adopted demanding the extension to Ireland, with whatever special provisions are found necessary, of the Act empowering local authorities to make provision for the feeding of necessitous children.

ASSOCIATION OF FELLOWS, R.C.S.I.

The first annual dinner of the members of the Association of Fellows of the Royal College of Surgeons in Ireland was held in the Gresham Hotel, under the presidency of Lieutenant-Colonel Adye-Curran, and was well attended. Dr. Sheppard Boyd, of Harrogate, who proposed the first toast, that of "Our Association," spoke strongly on the attitude of many English committees in reference to the filling of hospital vacancies, which, he said, was summed up in the formula "No Irish need apply." Their new association, by binding together all the Fellows of the Irish College, would, he hoped, help them to overcome this grievance, against which Irishmen had been contending for fifteen years. The President, in replying to the toast, said that for some time past it had been urged that the Irish should resent the English attitude complained of by excluding those with English degrees from Irish hospital appointments, but stated that in his opinion such a course of action would be mistaken.

ALLEGED BRIBERY AT DISPENSARY ELECTION.

In the issue of the JOURNAL for December 3rd (p. 1810) the decision of the Local Government Board to disallow the appointment of Dr. Holmes as medical officer to the Scariff Union, co. Clare, in consequence of certain alleged acts of bribery, was referred to. Since that date the Scariff guardians have discussed the matter, and have apparently come to the conclusion that the Local Government Board has acted *ultra vires*. The guardians have, therefore, requested Dr. Holmes to continue his duties at the usual salary until the appointment has been ratified, and have requested the Local Government Board to state specifically its grounds for refusing to sanction the appointment.

PRESENTATION TO DR. J. A. SINTON.

On the evening of December 16th a number of friends of Dr. Sinton met at the Medical Institute, Belfast, to show their high appreciation of his work as Riddell Demonstrator of Pathology, and to offer him their warmest hopes for the future. Dr. Sinton has held the post for two years, and has rendered many medical men—alike general practitioners, specialists, and consultants—most valuable services in the innumerable examinations for Widal's reaction of sputum, blood films, and urine (bacteriology) which he has made. Nothing has ever seemed a trouble to him, and the work has been quickly and accurately done. Professor Symmers was in the chair, and over thirty were present, although many more joined in the movement. The chairman, in a most amusing speech, detailed some of the work of the laboratory and the foibles of the workers; he bore testimony to the high character and ability of Dr. Sinton and to his unimpeachable discharge of duty; he asked him to accept the gift of a microscope as a remembrance of these happy days and a mark of their indebtedness to him and their high appreciation of his worth. Dr. Sinton expressed his very sincere thanks for the honour shown him, which he thought was far in excess of his merits. Many contributed to the amusement of the evening by original poetry, songs, stories, and recitations. Tea, coffee, and tobacco were supplied by a few of the laboratory workers. The microscope is one of the latest and best, with all improvements. Dr. Rankin kindly acted as secretary, and much of the success of the evening was due to him.

DR. CLIBBORN, J.P.

At the Belfast City Hall, on the evening of December 12th, a representative meeting of the Belfast dispensary medical officers and members and officials of

the Public Health Committee was held for the purpose of making certain presentations to Dr. Clibborn, late Local Government Board Inspector. Dr. Stanley Coates presided, and, on behalf of himself and his colleagues, expressed the hope that Dr. Clibborn would long be spared to enjoy his well-earned retirement. He called upon Dr. Milligan to make the first presentation. Dr. Milligan paid a high compliment to the upright and courteous manner in which Dr. Clibborn had always discharged his duties; this was heartily supported by Dr. Osborne. Dr. Clibborn, in reply, said it would be hard to answer all the kind things said of him. His work was rendered pleasant by the men with whom he had to work; he would always treasure the beautiful gift made, and asked the donors to accept his very sincere thanks.

Dr. Robert Thomson, Chairman of the Public Health Committee, said they desired to take advantage of that meeting to show their high appreciation of Dr. Clibborn's valuable assistance and worth to the committee on many occasions. He would ask Dr. Clibborn to accept a silver cigar box and cigarette case as a small memento. This was supported by Dr. Bailie, Medical Officer of Health, and Mr. Meyer, Town Clerk, who referred to Dr. Clibborn's unfailing tact and courtesy, which so tended to promote the smooth working and friendliness of the Corporation and Local Government Board. Dr. Clibborn again replied, and tendered his warmest thanks.

The presentation from the Dispensary Medical Officers consisted of a very handsome solid silver salver of over 70 oz. weight, with the following inscription in the centre and autographs of the staff engraved around:

Presented to
Cuthbert J. Clibborn, Esq., M.D., J.P., on his retirement from the position of Medical Inspector, Local Government Board for Ireland, with the best wishes of the members of the Dispensary Medical Staff of Belfast Union, and in recognition of the marked ability, courtesy, and consideration which he invariably displayed in the discharge of the duties of his office.

12th December, 1910.

John Barron, William Burns, Stanley B. Coates, W. D. Donnan, James Fulton, James C. Ferguson, Hugh J. Irvine, John Kennedy, J. C. Loughridge, H. C. Manley, Joseph Martin, Chas. J. Milligan, William Minford, R. Jackson Munn, H. B. Murray, H. D. Osborne, William Patton.

ELECTION OF A DISPENSARY MEDICAL OFFICER.

An interesting light is thrown on the method of conducting dispensary elections in Ireland by the events that occurred at a recent meeting of the Mount Bellew (co. Galway) Board of Guardians. The meeting was the third that had been called for the purpose of electing a medical officer. At the two previous ones two candidates had offered themselves for the appointment, and the voting had resulted in a tie. On this occasion a member of the board who had on former occasions been absent attended, and as a result one of the candidates was elected by a majority of 15 votes to 14. The report of the proceedings states that, as on former occasions, the board-room was crowded with interested ratepayers, who followed and at times took part in the proceedings, members of the board who did not vote to their liking coming in for some nasty remarks. The feeling ran so high in the district that the authorities, fearing a disturbance, sent a district inspector and eight or nine constables to keep the peace if necessary. On the declaration of the poll the successful candidate was triumphantly carried round the board-room on the shoulders of some of his supporters amidst a wild scene of enthusiasm.

WE regret to announce the death of Dr. Franz König, Professor of Surgery in the University of Berlin, aged 78. He was one of the foremost surgeons of Germany, and his name is known throughout the surgical world as the editor of the *Spezielle Chirurgie*. His own work was largely concerned with tuberculous disease of bones and joints.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EDINBURGH POST-GRADUATE COURSES IN MEDICINE.

IN a report submitted to a meeting of the lecturers and demonstrators who took part in the recent post-graduate courses, the Executive Committee stated that the termination of the fifth successive annual course was an opportune time for reporting progress. The first of the series, a course of three weeks' duration, was held in the autumn of 1906. The following September this course was extended to four weeks, divisible into two independent fortnights. A four weeks' course in surgery, the attendance limited to 25, was held in 1908, simultaneously with the general course, while the committee consented to advertise a series of independent classes on methods of diagnosis during the last fortnight of August. The arrangements for September, 1909, were very similar, but the August lecturers extended their classes throughout the whole of that month. This year (1910) the general and surgical courses during September were run on the same lines as in the past. The Executive Committee, however, took over the management of the August classes, and, by adding to these two hours of clinical instruction daily, instituted a four weeks' course on internal medicine, with an attendance limited to 25. The September courses in 1910 had been at least as successful as in previous years, while the August course was admitted to have given general satisfaction. The total number of entries for the surgical course were received nearly two months before its commencement, and many applications had to be refused: 23 graduates entered for the August course on internal medicine, and some 60 for the general course in September. There has thus been a gradual development in the scope of the course from year to year, while the attendance has been increasing. The announcement of the arrangements decided upon by the Executive Committee for 1911 will be awaited with interest.

THE CARE OF THE BLIND IN EDINBURGH.

Edinburgh is noted for its charitable institutions, and of the many labouring among the poor and afflicted the Royal Blind Asylum and School deserves every support. Among the many claimants upon public generosity there is no class more worthy than the aged deserving blind who are in needy circumstances and unable to provide in any way for themselves. The annual report of the Royal Blind Asylum and School just issued shows the amount of good work which has been done in connexion with these afflicted ones. No less a sum than £18,152 was received by the manufacturing and sale departments for work done by the inmates. Another very interesting fact mentioned was the success of one of the boys of the school, who passed the University preliminary examination. He is the first boy who has proceeded from the school to the university, and the directors believe he is the first totally blind boy who has passed this examination.

GLASGOW.

Medical Temperance Association.

The Glasgow Branch of the British Medical Temperance Association held its fifth annual social gathering on December 8th, Dr. W. L. Reid, President of the branch, presiding. Referring to the question of temperance, the Chairman referred to the prohibition laws in Norway and the lessons to be learnt from them. During the year Dr. Brownlie McKendrick had resigned the honorary secretaryship of the branch and Dr. John H. Martin had succeeded him. Several addresses and a programme of music followed.

Infantile Mortality in Glasgow.

The annual meeting of the Glasgow Infant Health Visitors' Association was held in the City Chambers on December 6th, Mrs. McInnes Shaw, wife of the Lord Provost, presiding. The report for the year

showed that an amount of valuable work was being done by the Association, more than double the number of infants having received attention—3,320, as against 1,500 the previous year. The number of visitors was 262, and 16 branches were located in different parts of the city. Dr. A. K. Chalmers, City Medical Officer of Health, gave some details as to the work. In order to obtain some definite information the results had been analysed of the visitation of those children born in the year ending October, 1909, the youngest of whom would have completed one year on November 1st, 1910. These numbered 2,420, and the information regarding them might be summarized thus: Attained the age of one year, 905, or 37.4 per cent.; died under one year, 279, or 11.5 per cent.; removed, 766, or 31.8 per cent.; visits unnecessary, 132, or 5.4 per cent.; visits objected to, 6, or 0.2 per cent.; final reports not received, 226, or 9.2 per cent.; not reported upon, 106, or 4.5 per cent. It was thus only possible to deal definitely with the 905 who attained the age of one year and the 279 who died. Taking these figures, there was a death-rate of 236 per 1,000 born, but if they assumed that the 226 not yet finally reported upon were all alive, then the rate was reduced to 198 per 1,000. These rates were much in excess of the general rates in the districts visited, but it was because of the unsatisfactory and adverse conditions existing that these children were specially selected for visitation. Almost a third of the total were lost sight of because of removal, while in regard to 106 others there was no information. If a greater number of visitors could be obtained these figures might be considerably reduced, and they were submitted to show the necessity for pushing forward and extending as far as possible this beneficent work.

The Crusade against Phthisis.

The report by the Council of the Glasgow and District Branch of the National Association for the Prevention of Consumption indicates progress, slow but steady. The education of the public was being undertaken by means of lectures and addresses, and the distribution of pamphlets. The combined action of the Corporation and public companies had considerably reduced the evil of promiscuous spitting in public conveyances and public places. The dispensary was proving a valuable agency also in advising and treating cases, and selecting suitable cases for the Bellefield Sanatorium. The sanatorium had admitted 136 cases during the year, of whom 126 had been discharged. The results were encouraging. Of the 126 cases discharged, 19 had the disease apparently arrested, 31 were very much improved, 49 were improved, 19 were not improved, while 4 were dismissed, 1 left and 3 died. Owing to the increased accommodation at the sanatorium it was necessary to institute a maintenance fund and to ask for the financial assistance of the public towards this fund.

Work of Public Health Department.

Lecturing at Glasgow University on the Public Health Department and its Work, Dr. A. K. Chalmers, Medical Officer of Health for Glasgow, said that the precise function of a public health department at any given period could only be described by a review of the several Acts of Parliament which for the time being prescribed its functions. This was due to the practice of utilizing existing administrative machinery for the carrying out of each new Act. The medical officer of health must, for instance, under the Factory Acts report on the provision of fire escapes, while the operation of the Notification of Births Act may occasionally lead to a prosecution of parents under the Children Act, although one Act is administered by the Home Office and the others by the parish council. Public health legislation grew out of inquiries into Poor Law relief, and the essential unity of many of the problems of Poor Law and public health administration was still maintained in the principal functions of the Local Government Boards of the separate divisions of the kingdom. Again, the supervision by the education authorities of the health of the child at school ages was administratively convenient, but the hygienic problems of the school ages were part only of the general problem of hygiene at all ages, and in any scientific grouping of the functions of government fell into the same category. So, also, in the application of the Factories and Workshops Act, which was applicable throughout the whole kingdom, there were many clauses designed to protect the health of the worker, most of which fell under the supervision of the Home Office staff, but some of which were made operative through the local public health authorities. Also included was a requirement to notify the occurrence of any trade disease, such as anthrax, lead poisoning, and phosphorus, arsenic, or mercurial poisoning, to the Home Office. To get back, however, to the basal factor in determining the present-day functions of public health administrations the dominating influence of environment in the conception of the causes of disease must be remembered. And as environment was without meaning apart from its local operation, the Public Health Acts, applicable generally to the several divisions of the United Kingdom, were supplemented in almost every community of any considerable size by local Acts for special purposes—such, for example, as water supply, sewage disposal, and buildings regulations. On the other hand, some had wide application—such as the Factories and Workshops Act, the Food and Drugs Act, the Dairies, Cowsheds, and Milkshops Order, the Foreign Meat and Unsound Food Regulations.

A SCHOOL BOARD AND MEDICAL CERTIFICATES.

A report was submitted to Dunfermline Parish School Board on December 5th by the attendance officer, in which he suggested that some effort should be made to check non-attendance at school and "toying with medical certificates." He instanced what he described as several glaring cases in connexion with the medical certificate question, where medical certificates were supplied whenever asked for, till within a fortnight of the day for leaving school, when the children suddenly recovered health and went to work. All such cases, he urged, should be referred to the school medical officer. In the course of the discussion which followed, it was pointed out that it seemed inconsistent that the school medical officer should send an ailing child home, and that after it was home no further notice was taken of it. The board eventually agreed to ascertain what the school medical officer's duties were, and if the work of examining a child at home was not within his office, to see that all medical certificates from other practitioners be given on soul and conscience. It is to be hoped that the practitioners in question will insist on the board making provision for the payment of these.

EXAMINATION OF TINNED FOODSTUFFS AT LEITH.

The Leith public health authorities have recently been examining tinned foodstuffs for the presence of the salts of tin. They have taken this action in view of an order which the American authorities have issued to the effect that they will prohibit the importation of tinned foodstuffs prepared after January 1st, 1911, if, upon examination, the foods are found to contain the salts to the extent of more than 2 grams to the lb. The Leith Medical Officer of Health has recommended the local authority to petition the British Government to make a similar regulation for this country.

QUEEN VICTORIA'S JUBILEE INSTITUTE FOR NURSES.

At the annual meeting of the Scottish Branch of the Queen Victoria's Jubilee Institute for Nurses, held on December 13th, it was shown that the work of the institute in Scotland is being carried on with much vigour. During the year 39 nurses had successfully passed through the six months' training, while the number of Queen's nurses in Scotland now totals 345, being an increase of 22 over last year. This year there were 216 nursing associations affiliated to the institute, being an increase of 9 over last year. The number of patients attended had been 5,828, while the number of visits paid was 142,586.

COST OF SCHOOL MEDICAL INSPECTION.

The medical inspection of school children in Fife during the past twelve months cost £1,610, being at the rate of 7¼d. per pupil.

BRONZE AGE FINDS.

At a recent meeting of the Society of Antiquaries of Scotland, Dr. Anderson gave a description of a hoard of bronze implements and beads of gold, amber, and glass recently discovered at Adabrock, in the Island of Lewis. The hoard, which was found by a crofter digging peats, consisted of two socketed axes, a gouge, a tanged chisel, a socketed hammer, a spear head, and three razor blades, all of bronze, one doubly conical bead of gold, two amber beads, and one of greenish glass with whitish spots. With these objects there were two polishing stones or whetstones, and the whole seemed to have been contained in a vessel of thin bronze, of which only a portion of the rim and of the side towards the bottom remained. Such hoards of bronze implements and other objects may be classed according to their composition as individual property concealed temporarily and not again resumed by the owner, or the property of a travelling merchant, consisting of articles that have not been used, or the hoard of a founder in bronze, consisting of much worn out and broken implements ready to be melted and remade. This hoard appeared to belong neither to a trader nor a founder, but to be a deposit made by a private individual, including not only his own stock of tools and one weapon, but the personal ornaments of a female member of his family. The fact that there are three razor blades is paralleled by a similar occurrence of three in a Bronze Age find in Dunbar. This hoard belongs to the latter part of the Bronze Age, which is reckoned to be a few years prior to the Christian Era.

INEBRIATES ACTS.

The seventh report of the Inspector for Scotland under the Inebriates Acts, for the year ending December 31st, 1909, has just been issued. The Inspector, Dr. J. C. Dunlop, states that during the year under review there were in all nine institutions inspected, including three licensed retreats, five certified inebriate reformatories, and one State reformatory. The total number of persons dealt with during the year was 239, of whom 121 were retreat patients and 118 reformatory inmates. Compared with the returns of the previous year, 1908, the institutions number one more, a new retreat having during the year received a licence: but the persons dealt with are 34 fewer, retreat patients being 1 fewer and reformatory patients 33 fewer. These figures show that licensed retreats continue to about the same extent as formerly, but that the reformatory treatment of the police-court drunkard is now being less seldom used. Experience gained in Scotland has shown that these institutions for the care and treatment of inebriates can fulfil useful functions. Retreats have been found to be of value as curative institutions for the treatment of habitual inebriety, and reformatories as places for the segregation and control of drunken persons, and to some extent as curative institutions. The "recovery rate" in well-conducted retreats is found to approach 50 per cent., and that of reformatories to be about 7 per cent.; the former figure is satisfactory, and sufficiently good to enable an inebriate to enter such an institution with a reasonable hope of recovery; but the latter is small, it could not well be otherwise, because the conditions required for conviction under the Inebriates Acts are so severe that the more hopeful class of inmate is excluded.

The value of a reformatory as a place of segregation has been illustrated at Greenock. In that town the reformatory is of sufficient size to accommodate all the worst of the female drunken pests. Full advantage has been taken of it, and the removal of those drunken pests from the town has been found to be very beneficial, resulting in a marked diminution in the number of drunken and riotous scenes in the streets, and in a marked diminution in the number of female apprehensions.

Licensed Inebriate Retreats.

The retreats referred to under this heading are those licensed in terms of the Habitual Drunkards Act, 1879, as modified by the Inebriates Act, 1898, to receive and detain for the purposes of care and treatment habitual inebriates, both dipsomaniacs and narcomaniacs, whose application for admission is attested by a justice of the peace, and supported by a statement signed by two friends, in proof of the existence of habitual inebriety. At the commencement of the year 1909 there were in Scotland two licensed retreats, during the year one new one was opened. All three are conducted by private enterprise, and are designed to meet the requirements of the upper and middle classes. There is still in Scotland no licensed retreat accommodation adapted to the requirements of the labouring and artisan classes, as the fees necessarily charged in the three existing retreats are more than members of these classes can afford. So far in Scotland no county council or town council has seen fit to exercise the power given by the Act of 1898, to contribute towards the expense of retreats, and thus make provision for patients of the less well-to-do classes.

Certified Inebriate Reformatories.

These institutions are established for the detention and possible reformation of inebriates sentenced to detention in them in terms of Sections 23 and 24 of the Inebriates Act, 1898. For conviction under Section 23 it is necessary that a person be an habitual drunkard and be convicted of an offence punishable by penal servitude or imprisonment without the option of a fine, and which offence was committed under the influence of drink, or be such that drink was a contributing cause. For conviction under Section 24 it is necessary that an person be a habitual drunkard, and that he should have been four times within twelve months convicted of one or other of certain scheduled drunken offences, such as being drunk and disorderly, or drunk and incapable, and not in charge of a responsible person.

There were five certified reformatories in Scotland during the year, four of them being for female inebriates and one for male inebriates.

The State Inebriate Reformatory.

This reformatory has accommodation for 14 males and 25 females. At the commencement of the year there were 29 female inmates and 6 male inmates. During the year 5 women and 2 men were admitted, and 6 men were admitted, having been transferred from certified reformatories on account of their uncontrollability. Discharges during the year numbered 18, 4 being men and 14 women; at the end of the year there were 30 inmates.

Special Correspondence.

PARIS.

The Tendencies of Present-day Therapeutics.—The Pathological Rôle of Curative Remedies.

I COULD not help heaving a sigh of relief the other day when I read an advertisement of a new publication on "La thérapeutique en 30 médicaments," written by one of our ablest and most celebrated physicians. It is true that thirty medicines would seem to afford but little scope for the skill of the modern doctor; but how much better it would be for his patients if the present-day physician knew how to use these few remedies wisely instead of prescribing those specimens of polypharmacy which are the delight of the druggists! Thirty medicines! The reader must remember that at the present moment we possess, not only this number of remedies, but a variety of general methods of medicinal treatment. When, later on, the history of the medicine of our time is written, people will most certainly be struck by what I cannot help calling (somewhat disrespectfully, perhaps) our therapeutical flightiness. Every

six months or so it happens that some young teacher rushes into print to ventilate a new theory and illuminate the darkness in which we are groping with a flood of fresh light, which, alas! is very often deceptive. In this way we have witnessed the ephemeral glories of the formic panacea, the phosphorus medicine, thalasso-therapy, high frequency currents, radium therapy and *x*-ray treatment, musico-therapy, photo-therapy—in fact, all the kinds of physio-therapy, and I do not know how many antitoxins, paratoxins, bacillines, and mycolysins. All these things may have a certain value; certainly, many of those I have just cited are most useful in the treatment of disease. To get a proper idea of their true value, it is best to regard them from a standpoint as far removed from the wild enthusiasm raised by their first introduction as from the disfavour into which they afterwards inevitably fall. It is a thousand pities that the feverish haste and excitement aroused by a fresh scientific discovery should too often be wasted over its introduction to the general public rather than reserved for perfecting the new treatment. There are two features which are displayed in the conquest of disease just as in the disease itself—the assailant and the assailed, the infection and the soil. Those who look upon the latter as the first consideration are merely clinging to the ancient and general belief in the panacea. All their efforts are expended in the endeavour to safeguard the integrity of the organism by some means which will render it immune against all attacks. Nowadays, Quinton with his marine cure, and Doyen with his mycolysin, belong to this class, just as formerly did Guy Patin with his belief in bleeding, and Renaudot and his antimony. Considered from this point of view, the question is vast and yet quite simple. It turns upon the unity of life, which, at all costs, must be imitated and retained. Another class consists of those who regard all disease as caused by microbes, and believe there is a special means of defence against each one, whether it is bacilli, serums, or vaccine. Carried to its logical conclusion, this will mean that the therapeutic arsenal of the future will contain simply the one drug that the profession has finally adopted; or rather that the chemists will empty the innumerable bottles of the ancient pharmacopoeia in order to refill an equal number with extracts that will either cure or render immune from disease.

We have followed with great interest Professor Dieulafoy's lectures on the opsonins and vaccines of Wright, which seem to foreshadow the possibility of a reconciliation between the two systems; the organism and disease, studied in every detail of their conflict with one another, are here considered, in a reduced form, as microbe and phagocyte. But a third element has to be taken into consideration—the serum, which has so great an influence on the result of the combat between the two former elements. In some cases the phagocytes in the serum are the cause of death, in others the micro-organisms; and all this can be seen and proved (under proper conditions) equally well in a glass tube as in a blood vessel. What is the mysterious power that plays the same part in the serum of the blood that the Saxons did at the battle of Leipzig? The answer is contained in one word—opsonins. I believe this to be true, but as no one has as yet succeeded in isolating and defining physically and chemically these same opsonins, we should take care not to look upon the problem as solved because a name has been given to a hypothesis. Every one holds more or less by opsonins; but how do these opsonins act? If they increase the activity of microbes, then they, too, must be specific and varied; but if, on the other hand, they increase the power of the phagocytes, their general composition is probably invariable, and it may be possible, instead of using different vaccines, to discover something that by itself alone will encourage the growth of our opsonins. If such is the case, we shall only come back to the universal panacea of which, in spite of everything, we all dream. In any case, we all attach a certain amount of importance to the individual vitality—the opsonic index. This is a new theory which may overthrow all the present theories concerning evolution and social phenomena. As a matter of fact, it is easy to see how valuable the determination of organic resistance may be in the selection and formation of the races of mankind. Quite recently a law was passed in America forbidding marriages between such persons as are unable to show a medical certificate to the effect that they are completely healthy in mind and body. It will be even better when, in similar circumstances, every one is obliged to give his opsonic index as well as an account of his worldly possessions. What will the ballad writers of the future make of such a state of things? In the meantime, however, to come back to the serious side of the question, of what value are the results which have been obtained so far? People are beginning to get tired of statistics. I venture to suggest another means of estimating the value of a remedy—a certain criterion. My readers may perhaps have noticed that if the first result of a successful remedy is to cure the disease, the second is to increase the number of its victims. There have never been so many cases of diphtheria as since the discovery of the antidiphtheria serum. Formerly only a sore throat which killed the patient was called "diphtheria," but nowadays that name is given to a sore throat which is cured by an injection of serum. Such examples could be multiplied indefinitely. It is quite certain that if a successful method of vaccination against typhoid fever was discovered to-morrow, there would be immediately ten times as many cases of that disease. It is true that many cases of common enteritis will have disappeared from our diagnostics, but what of that? In the midst of the difficulties of medical experimentation one must be contented with the indications of common experience. One day we shall realize that we have discovered the universal remedy by the infallible sign that we are all constantly ill and perpetually being cured.

BUDAPEST.

Progress in the Study of Cholera.

AT the recent meeting of the Budapest Royal Medical Society, Professor Hugo Preisz read a paper on the progress of cholera research. He pointed out the fact that ever since the acquisition of knowledge concerning immunity reactions, the bacteriological diagnosis of cholera has been on a much firmer basis than was formerly the case. Hardly any other vibrios are known which are capable of reacting with such promptitude as the cholera vibrio. Although the vibrios which originate from undoubted cholera cases are always exactly alike, no bacteriologist can pronounce them to be cholera vibrios without having first applied immunity reactions. Such experiments as have been made in Europe of recent years have all served to strengthen the belief that rivers play an important rôle in the dissemination of cholera. Almost every observer has stated that this disease is most prevalent in districts where river water is generally drunk; and it has been proved that cholera vibrios exist in the waters of the Neva, the Volga, the Doneca, the Pejho, and the Danube. At St. Petersburg it has been shown that in 19 per cent. of samples cholera bacteria are to be found in unfiltered water from the Neva, and even when the water is filtered they occur in 13 per cent. of samples. This latter fact, by the way, is a strong condemnation of the efficacy of the filtering system in the Russian capital. It is interesting to note, continued Preisz, that though vibrios taken from the water and kept carefully for experiment and inspection, have sometimes appeared not to possess the usual properties of cholera vibrios, they have always developed the usual characteristics either after passage through animals or prolonged cultivation. On the other hand, it has been found that cholera vibrios lose much of their property of agglutination by cultivation in water. The reason of this is doubtless that cholera

bacteria, like other bacteria, vary according to circumstances.

From the epidemiological standpoint, it is most important to realize that the cholera vibrio may exist for days, even for a fortnight, in the intestines, not only of persons who have recovered from cholera, but also in quite healthy subjects. Although the vibrios of such "vibrio-carriers" are not very virulent, and such people are not so likely to spread the germs of cholera as are genuine cholera patients, there can be no doubt that the former are capable of disseminating cholera. It is quite possible that of the people about a cholera patient 5 to 7 per cent. may be bacteria carriers, and yet appear perfectly healthy. The germs may also be carried by flies, in which, it has been proved, the fibrios may exist for days and may be inoculated into food. This is an important point if we remember that in the summer vibrios propagate most luxuriantly in foodstuffs. According to recent investigations the vibrio-killing capacity of the contents of the stomach depends not only upon the concentration of the hydrochloric acid, but upon other factors, such as the general gastric contents. Dr. Preisz proved this by pumping out the contents of a stomach after a test meal; in this way he found that it took much longer to kill the vibrios when the stomach contained 0·2 per cent. of hydrochloric acid than when it contained nothing more than a glass of water containing 0.03 per cent. of hydrochloric acid alone. Peptone, albumose, and mucus all weaken the vibrio killing property of the gastric juice to a considerable extent. An interesting epidemiological fact is the variety of circumstances which explain the abatement or complete disappearance of cholera during the winter, such as the decrease in the use of river water for such purposes as drinking, bathing, etc.; the lower temperature, which is unfavourable for the propagation of vibrios both in water and elsewhere: the diminution of traffic; and the far smaller quantity of raw fruit which is consumed during the winter months. But that the cholera germs do remain alive during the cold weather is an established fact, and with the advent of summer they begin to propagate once more on a larger scale; and should their virulence increase and circumstances be favourable, another epidemic may break out. Moreover, the vibrios may remain alive for over three months in the excrements of cholera patients. But one question remains to be solved, What happens to the vibrio when the cholera is really in a dormant state? Does it actually die, or does it by losing its virulence, become an innocent bacillus which cannot recover its pathogenic properties in our climate? It is equally important to discover whether, in places where the cholera is endemic, the vibrios live permanently in the human body or outside it? Serumtherapy has hitherto been useless in cholera since, although serums do kill bacteria the infected body does not in consequence of this get rid of the poison contained in the vibrios: and the serums called antitoxic have been proved to be only vibrio-killing. Recent investigations seem to show that inoculation by means of dead vibrios is an efficacious method of prevention. The recent cholera epidemic in Hungary chiefly ravaged the districts lying along the banks of the Danube: and considering the large number of infected villages the hygienic authorities ought to be very active in enforcing preventive measures if they do not desire to go through some unpleasant experiences.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Nathaniel Pendleton Dandridge, Professor of Surgery at Cincinnati, aged 64; Dr. Ulrich Krönlein, Professor of Surgery in, and Director of, the Surgical Clinic in the University of Zürich; Dr. Stanislaus von Kostanecki, Professor of Organic Chemistry in the University of Berne, aged 50; and Dr. N. Manolesco, sometime Professor of Clinical Ophthalmology in the Medical Faculty of Bucarest.

Correspondence.

STATE SICKNESS AND INVALIDITY INSURANCE.

SIR,—In his letter in the JOURNAL of December 17th Dr. Buist observes: "The rapidity with which Dr. Cooper and I approach each other . . ." If he means by this that we are nearer together because *both* of us have moved from our original positions, the implication is quite erroneous. I stand precisely where I have always stood as the steadfast opponent of the principle of contract practice and the earnest advocate of payment according to work done in medical attendance under any State sickness and invalidity insurance scheme. I cannot see how any language of mine can be twisted into any other meaning. If therefore there be any convergence in our views it must be that Dr. Buist is coming round to the principle I advocate, but I see little evidence of this in the remainder of his letter.

To another statement of Dr. Buist I must take emphatic exception. He says: "Dr. Cooper seems almost to admit that, whether advisable or not, a *per capita* rate of 10s. would be adequate over a parcel of 2,000." I certainly never "almost" admitted any such thing. I said: "I have very little doubt that a good many of the profession might be induced to adopt contract practice and put up with all its drawbacks for a guaranteed income of £1,000 a year"; but I never said that *I* would, and I strongly repudiate Dr. Buist's erroneous inference. In fact, I went on definitely to say that I was opposed, on principle, to contract practice, *whatever the remuneration.*

I think I succeeded in showing that Dr. Buist's tempting bait of £1,000 per annum for medical practitioners, under a capitation fee of 10s., was wide of the mark. On his own showing (p. 1944), and even including the whole of the population of these islands, the average gross income only works out at £562 10s., which is very nearly one-half of Dr. Buist's original figure. (Possibly that is where the convergence alluded to by Dr. Buist comes in. I admit that a drop of nearly 50 per cent. in one week on his part is a considerable step nearer to my estimate.)

But, unfortunately both for Dr. Buist and Dr. Flemming, who takes up the cudgels on his behalf, we cannot include the remaining 30 millions of the population in such a calculation, *for from 10 to 15 millions of these are actual or potential paupers*, who are separately provided for by the Poor Law, and it is certainly not the Government's intention at present to include these in a State sickness and invalidity scheme, so where is the 10s. a head from these to come from? It must, further, be remembered that any income derived from *per capita* payments would be a *gross* income—that is, all professional expenses, cost of premises, conveyances, assistance, and all medical and surgical equipment—would have to be deducted from this, so that the *actual net income* would be very much less than this.

Dr. Buist suggests that we can make up our incomes by attending those who are not included in the State grant. It is only too certain, however, that a very large number of practitioners in the poorer districts would get very few of these outsiders. Further, the amount of time they would have to give to their contract patients, who would certainly have the first claim upon their services, would permit very little, if any, time for outside work.

As Dr. Fothergill points out, the attendance on a parcel of 1,500 beneficiaries would mean at least fifty visits a day, apart from attendances at the surgery. Anyone who knows anything of medical attendance must admit that it is quite impossible to attend to such a large number of cases, spread over a large area, with anything like adequacy, so that a gross annual income of £750 would be a practical impossibility to maintain.

Dr. Buist objects to my reference to exceptional cases. It is just because I know what a lot of exceptional cases there are that I mentioned one, and because the *per capita* system takes no note of exceptions. It merely pushes all the risks of such exceptions on to the already overburdened shoulders of the profession. Indeed, where it is intended that we should take over actual cases of chronic illness requiring constant attendance the whole principle of insurance drops out: it is no longer a possibility or contingency but a certainty of work to be done, which we

should be expected to undertake at an insurance rate. It is, I consider, neither just nor honest to saddle the profession with a heavy load of work, and expect them at the same time to bear all the risks of insurance for all possible temporary illnesses, and to include, as one of the conditions, the great burden of attending the constantly sick or infirm.

The only fair way is to pay for the work actually done according to a reasonable and proper scale of fees. Dr. Flemming's strictures are, I think, somewhat hastily prepared. I have already pointed out one serious omission in his calculation. In my letter to which he refers I stated that the number of medical practitioners in this country was from 30,000 to 40,000; Dr. Flemming says there are 32,000. I will accept this estimate. He then goes on to whittle these down to 25,000 by excluding consultants, specialists, hospital and asylum medical officers, school medical officers, etc. Presumably these are to have nothing to do with any of the 15,000,000 State beneficiaries, or, if so, the State is not going to pay for it; if not the State, who? Does Dr. Flemming suggest that the medical practitioner who formerly received the 10s. capitation grant for a certain beneficiary will continue to receive it when the latter has been removed to an asylum or sanatorium as incurably insane or phthisical? Dr. Flemming questions my opinion that we should probably not get 10s. a head all round, and says, "Why not if we ask for it?" I happen to know that at the present moment the Government is paying for certain medical attendance at *per capita* rates, and instead of giving 10s. it only gives 6s. per head. Is the Government likely to pay 10s. if it knows it can get the work done for less?

Finally, Dr. Flemming taxes me with ignorance of the Government scheme, saying that I argue that a working man with a wife and twelve children would have to pay £7 a year—that is, out of his own pocket. If he had only taken the trouble to read my letter carefully he would have seen that I said "will have £7 a year paid for medical attendance alone for himself and family"—this clearly means paid *for* him out of the insurance fund, not paid *by* him out of his own pocket. The £7 for medical attendance *alone* means that, of course, more would have to be paid to cover the other benefits—namely, payment whilst off work, annuity in case of permanent invalidity, burial fees in case of death, etc.

I may add that I have studied the Government scheme as far it is possible to do (seeing that it is not yet published), but I have never seen it suggested that the *employer* should pay a contribution not only for his employee, but *for the wife and children as well!*

If this were ever contemplated it would be putting a heavy premium upon the unmarried workers, and would hardly have the effect of raising the marriage and birth-rates, about which some of us are nowadays rather seriously concerned.—I am, etc.,

Bowdon, Dec. 17th. P. R. COOPER.

SIR,—The numerous letters on the subject of invalidity and sick insurance, which it is assumed will also provide for medical attendance, have brought out, more than anything else, the deep rooted objection to so called club or contract practice.

Apart from the fact of low payment, excessive work, unnecessary calls, well to-do members, prolonged attendance, and no means of getting rid of the patient, however objectionable he may be, there is one fact that is apt to be forgotten, and that is that the club doctor is bound to go to any club member who sends for him night or day and at all times. If he does not go, and another doctor is called in, it has been a common thing for the club doctor to be called upon to pay the fee, or perhaps he is summoned before the committee to explain his conduct.

A club doctor cannot refuse to attend any club member; he is absolutely bound to go. In the case of a private patient he may tell them to go to another doctor, but he cannot tell a club patient this. He *must* attend him. He has contracted to attend so many members at so much a head, and he is bound to carry out his contract or provide a substitute.

If a certain stated fee were fixed for each visit and medicine, and choice of doctor allowed, this objection would be overcome.

Another difficulty in the present contract system is that the benefits cease when the man is out of the district, and no provision is made for his medical attendance elsewhere. For instance, a case occurred quite recently where a member of a club was working nine miles away. He had an accident, fracturing the neck of the humerus, and sustaining other severe injuries. He was attended by two medical men, who administered an anaesthetic, and spent a long time attending him at a distance of five miles from their home. In this case there is no provision whatever for payment of these two doctors. The man himself is one who never pays any one, and will never pay for this medical attendance, even if he recovers. Is this right, and is it fair that these two doctors should do all this without being paid? And yet the man may say that he had provided for a doctor by joining a club. But if a general scheme existed on the basis of payment for work done they would be paid in due course.

I am quite aware that I am assuming that friendly society members would be absorbed into the invalidity scheme, and I am certain that it must be so, and, in my opinion, it will be much better for us if this does happen, for the manner in which many friendly societies treat their doctors is most exasperating. The sooner we dissociate medical attendance from these societies and all other clubs the sooner shall we regain our independence.

The important point for us is to see that we do not let ourselves in for a worse slavery even than this. We do not mind if the arrangements for medical attendance are managed by a committee consisting of medical men and others, but to be called upon by a committee of working men, or, more usually, self-important small tradesmen, to explain one's conduct is degrading and lowering to any self-respecting medical man.

Another point we must keep in mind is that the club or contract system could never exist without the hospitals. If we had to treat all our club patients at home—severe illnesses and operation cases as well—without proper nursing and nourishment, the system would break down at once. Therefore, in a scheme of medical attendance, provision must be made for hospital treatment in special hospitals provided out of the fund, for it is hardly likely that voluntary hospitals, supported by charitable subscriptions, would consent to take on all bad cases occurring among the beneficaries without a protest.

It is thus seen that it will either be a case of subsidizing the hospitals, or erecting special ones, or something on the line of nursing homes; so that if the Government grant *plus* the contributions of employer and workman do not come to a very much larger amount than the present 3s., 4s., or 5s. a year, it will be totally inadequate to provide proper medical attendance.

In conclusion, I should like to express my appreciation of the very statesmanlike way the whole question was put by Mr. Smith Whitaker in his Cardiff address, and for which the profession owes him a deep debt of gratitude. When we consider the foremost part he took in the reorganization of the Association, and the grasp of detail in all matters pertaining to general practice that he possesses, I think we can leave our interests in his hands with great confidence, believing that he will take a broad view of the whole question, and endeavour to secure an ultimate solution of the matter that is to the advantage of the whole profession. We must agree to seek our differences on points of detail and agree on the main principles, and the minority must be willing to accept the decision of the majority.

Let us hope that few will follow the example of the Gateshead Division, and threaten to resign from membership unless they can have their own way. That is not the spirit which should animate members of our Association.—I am, etc.,

Buckingham, Dec. 17th. ARTHUR E. LARKING.

SIR,—Perhaps you will allow me to give my experience as regards the controversy now waging. For the last five years I have been interested in a men's medical club, which has the following rules:

1. The members pay 2d. a head per week.
2. They pay medical fees for work done on the lines, roughly, of the National Deposit.
3. They choose their own doctor.
4. They get back a bonus each year after paying one third of the surplus to a deposit account.

The actual medical fees paid out work out on an average to a contribution of 1d. a head a week for each member.

This small experiment shows some interesting results:

(*a*) The actual fees amount to almost the same as ordinary club practice.
(*b*) The men run the club with enthusiasm. They appreciate the freedom of choice of doctor, and feel they are treated like other people.
(*c*) If they are not ill, they do not trouble the club.
(*d*) The doctor feels that he is treating some one who desires his services in preference to any one else.
(*e*) The existence of the club tends to increase the good feeling in the profession locally.

It may be true, as we are told, that payment per head is the easiest plan to adopt, and the plan sanctioned by years of abuse—in fact, the "good old way"; but I sincerely hope the State will refuse to lend the enormous prestige of its sanction to what is not the best way.

I am convinced that payment for work done is best for us as a profession, but equally and certainly best for the patient. We must surely stand up for the standard which is going to enhance the dignity and progress of our profession, however great the forces of inertia are.—I am, etc.,

Letchworth, Dec. 18th. NORMAN MACFADYEN.

ALCOHOLISM AND DEGENERATION.

SIR,—Sir Victor Horsley appears to have descended to some very slight extent from his pontifical position, and accordingly I will venture again to bring to his notice two questions, to which not only I, but I have reason to believe a good many others, would much appreciate his answers:

First, Why does he quote with approval in his work on alcoholism, not only Dr. MacNicholl, but a variety of other writers, who have not investigated whether the alcoholism of the parent preceded or followed the conception of the child? The answer to this question has nothing to do with our forthcoming criticism of Dr. MacNicholl. It is a criticism of Sir Victor Horsley, and if he does not answer it the readers of this controversy will draw their own inferences.

Secondly, Will Sir Victor explain how it is possible for two groups of persons, one of whom were alcoholic at a given epoch, and one of whom were not, to have children showing no marked difference[1] in age distributions, if the alcoholic habit were largely acquired as the parents grew older? Perhaps he will explain at the same time in which of the two groups—the sober, with no police, employer's, or local record of insobriety, or the alcoholic, reported by police, employers, and local visitors to drink in excess—he places the parents whose alcoholism does affect the health and mentality of their children; for in one or other of these classes (if such a group exists, and he confidently asserts in his book that it does) they must be placed. If parents who were alcoholic before the conception of their children are not in our alcoholic group, but all those parents became alcoholic after the birth of their children (*whether those children be of age 5 or age 14*), where, then, are the parents whose alcoholism before the conception of their children is producing the extensive evils on which Sir Victor Horsley discourses at such length in his book?

These are the questions which it is absolutely necessary for Sir Victor to answer, if he wishes to retain the position he claims for himself as an authority on alcoholism. He will find the less difficulty in doing this in the pages of the BRITISH MEDICAL JOURNAL, because he informs us that Dr. Sturge and he have faced the figures "frequently." I have been so unfortunate as to be unable to discover any serious treatment by either of them of the memoir by Miss Elderton and myself. Their only references that I have seen to our memoir are:

(*a*) A speech by Sir Victor Horsley made on July 28th of this year at a National Temperance League annual breakfast. There was no analysis of our figures, only post-prandial oratory, concluding with a serious misstatement of the circumstances under which our first memoir was published. This misstatement was corrected in your issue of August 13th. We have been awaiting an apology from Sir Victor ever since. The misstatement is repeated again under Sir Victor Horsley's name in the September number of the *National Temperance Quarterly*.

(*b*) An extract from the new edition of Sir Victor Horsley and Dr. Sturge's *Alcohol and the Human Body*. This is purely a rhetorical production, largely interspersed with notes of astonishment, and apparently intended for readers of a shilling edition of their book issued as a temperance manual.

What I demand from Sir Victor is that he shall descend from the temperance platform, where his attitude may impress a popular audience, and condescend to discuss points in a logical and scientific manner such as befits the pages of a scientific journal. If Dr. Sturge and he have "faced the figures" of our memoir, then it must be quite easy for him to reply to the questions I have put to him, and, instead of dogmatically asserting that "fundamentally important figures" are wanting, state what these figures are and how they affect the argument as developed above. If Sir Victor does not do this, I can draw no other inference than the one that he is more keen to defend certain preconceived opinions than to discover actual truths.—I am, etc.,

KARL PEARSON.

Eugenics Laboratory, University of London, Dec. 17th.

[1] The *youngest* group of children is relatively slightly larger in the alcoholic group.

DR. HADWEN AND THE "CRIMSON CROSS" REMEDIES.

SIR,—After evading my questions for several weeks, the "thickheadedness" of which Dr. Hadwen accused himself has at last been penetrated. He expresses a hope that his answers will satisfy me. They do on one point, at least, since they confirm the opinion which most readers will have derived from this correspondence, that Dr. Hadwen is a past-master in the art of evasion. "How do I know?" (I did not ask how he knew, I asked if he did know.) "I don't carry these things about in my head." These are examples of answers which it is suggested ought to satisfy me. At last Dr. Hadwen has frankly confessed that the information "collected independently" in the manuscript books about the Gloucester small-pox epidemic, to which he attaches so much importance, was collected by himself. The value of so-called independent information on that subject, collected by one so full of prejudice, is, in my opinion, a very doubtful quantity, and I am not so anxious to see those large manuscript books, now that I know by whom and for whom they were compiled.

Dr. Hadwen seems to gloat over the offensive attack on the medical profession made by him in a speech from which I quoted. Although I was "a bit spiteful" in introducing it, he now adds further insult. He stands by every word contained in his base insinuations, and goes further by his allusions to the "tyranny and despotism" of the "medical priestcraft." He complains that no one has proved the latter more "bitterly" than he has in his own personal experience. If by this he refers to any annoyance he may have bitterly experienced because his fellow practitioners keenly resent his repeated insults, surely he cannot cavil at this, and has only himself to blame.

He concludes by giving me the direct invitation to meet him in public debate, which he has not given before. As I said in my previous letters, such a challenge has come indirectly on many occasions from various sources, and I have answered that I would deal with Dr. Hadwen if he cared to communicate direct with me. He has the temerity in his last letter to throw doubt on the veracity of those assertions. "I know of no one," he writes, "who has ever received such a message. No such message has ever been conveyed to me." Dr. Hadwen has evidently a convenient memory. In August, 1908, Miss Beatrice Kidd, the Secretary of the National Union for the Abolition of Vivisection, wrote to me on behalf of Dr. Hadwen, seeking to arrange a debate. My reply was to the effect that I would deal with Dr. Hadwen if he himself would communicate with me. On August 28th, 1908, Miss Kidd replied, and informed me that she had submitted my reply to her previous letter to Dr. Hadwen. I have her letter before me now. What of Dr. Hadwen's audacious attack on my veracity in this matter in view of this exposure?

My answer to the invitation to debate, and the magnanimous generosity in offering to bear the whole cost out of his own pocket, is an emphatic No. My reason is, that in my opinion he has forfeited all right to expect medical

men to meet him as suggested, because of his offensive attacks on the honour and integrity of the medical profession. This may have been an example of another bitter experience. If Dr. Hadwen cares to introduce the subject before any medical society at which I might be allowed to do so, I am quite prepared to be present—not at his expense—to stand up for the faith that is in me.—I am, etc.,

Halifax, Dec. 17th. ARTHUR DRURY.

PUBLIC DEBATES ON VACCINATION.

SIR,—The identity of the writer of the article bearing the above title in your issue of December 3rd is not difficult to detect. When Artemus Ward sent a business letter to the editor of a paper asking for a "puff" for his imaginary waxwork show he appended the postscript: "You scratch my back & Ile scratch your back." That is allowable, but that your columns should be open for self-aggrandizement passes comprehension.

We do not get debates with Dr. Drury so frequently as we get General Elections! At the end of practically ten years' trying my score with him now amounts to one, and the sooner it is increased the better shall we all—apparently—be pleased. Therefore, permit me to reiterate what I have so often said—namely, that anywhere and at any time mutually agreeable I shall be glad to meet either Dr. Drury or any other member of the profession to discuss the vaccination question. There need not be any quibbling over details.

With the personal element introduced by your contributor I have little concern, but would like to point out that what I said at Lewisham is typical of my speeches elsewhere, and that even Dr. Drury congratulated me openly upon my "moderation." That scarcely bears out your statement that—

> Paid lecturers . . . attack in a virulent manner the honour and integrity of the medical profession, and vilify all who practise vaccination.

Further, I may draw attention to the fact that these lecturers are not rate-paid, but are voluntarily supported by those who believe in the value of and necessity for their propaganda.

If my chief qualification is what you state, the League must be getting very bad value for the handsome salary they pay me, and for several years I must have held the present position without any substantial qualification whatsoever, for it was long after my appointment that I "endured the penalty of the law." A further inference is advanced that Dr. Drury's experience at this debate whetted his appetite for more. Is it unreasonable to assume that a similar effect was produced upon myself? and it may interest your readers to know that a friend of mine has already challenged the doctor for a debate in Halifax.

I have addressed thousands of audiences, both medical and lay, and have never yet known one to get out of control. Perhaps those whose language is calculated to produce that undesirable effect will consider the advisability of moderation. The solitary approach to anything of the kind at Lewisham was when the seconder of the vote of thanks classified antivaccinators as "ignorant." When such meetings as that have been freely advertised and admission is open to all, does not the fact that the majority present are antivaccinators prove that their views are held by the great bulk of the people? I fail to understand what other deduction can be drawn. My opinion is that the case against vaccination as presented by pro-vaccinist publications and official reports is far too strong to call for either "unrestrained bitterness or animus" on the part of its opponents, but I would like to say that pro-vaccinists in their advocacy, either by pen or voice, do not monopolize the gifts of politeness and fairness.

I take it as a compliment—possibly quite unintentional—that my name is not included amongst the champions of the so-called letter-writing ring who have not been spared by this Colossus of controversy, seeing that he and I have frequently antagonized each other in the public press. The verdict of the readers of the effusions of Dr. Drury and the gentlemen you specify would furnish interesting information.—I am, etc.,

Leicester, Dec 15th. JOHN H BONNER.

THE BRADSHAW LECTURE ON CANCER.

SIR,—On opening my JOURNAL this morning my eye was caught by the following strange words: "It is evident that the only advance made by the Cancer Commissioners in our knowledge of the subject is that cancer can be inoculated from animal to animal of the same species," to which is appended the signature, "Kenneth Campbell, F.R.C.S." It is to be concluded that by "Cancer Commissioners" Mr. Campbell can only refer to that earnest and energetic body of inquirers who are trying to unravel the tangled skein of the cancer question at the laboratories of the Cancer Research Fund on the Embankment. If so, I would ask your correspondent a few plain questions. Does he know of his own knowledge that the only thing which has been accomplished by the staff of that important centre of research is that cancer can be inoculated specifically from one to another animal? Has he not overlooked the important fact that the discovery of the inoculability of this disease and the practice of transplantation of it beneath the skin of another animal is not only—nay, not even primarily—to create another growth of the same nature as the other? Is he not aware that the absorption of a spontaneous new growth by an animal into which it has been transplanted exerts an inhibitive, even an immunizing, influence on the body fluids of the recipient, and, so far as it does so, is working for the limitation of new growths in the members of that species to which the preventive measure has been thus applied? Has not Mr. Campbell overlooked the massive labours connected with "early stages" research which have solved for ever the enigma of the actual workings of the implanted graft, in order to establish its new foothold in the new host for the beginnings of its beneficent work of inhibition and immunization? Is it nothing that by such research the resisting power against the incidence of cancer to a given animal may be greatly strengthened by the inoculation under its skin of various specific body tissues, with the enumeration of which, however, I will not weary you? Time would fail me to remind your correspondent of the important truths already brought to light on haemorrhagic mammary new growths of mice, their susceptibility and resistance to inoculation; of the effects of surgical interference with the blood supply on growth of transplanted carcinoma and sarcoma; "of the study of the development of sarcoma under experimental conditions"; of the "natural and induced resistance of mice to the growth of cancer"; and many others which are quite obviously connected with the question under discussion; but finally Mr. Campbell might be able to inform us if he has really considered the important truths bound up with that most recent achievement the patient tracing of the evolution of a carcinoma into a mixed tumour first, and then into a round celled sarcoma in the second place, accomplishing its own final extinction in the process. With all these questions his "Cancer Commissioners'" names appear to me to be inseparably connected.—I am, etc.,

London, W., Dec. 16th. FREDK. W. WRIGHT.

SIR,—The cases of the cure of cancer reported by Sir Alfred Pearce Gould in the BRITISH MEDICAL JOURNAL of December 10th are extremely interesting, including, as they do, cases of cure *after* removal by operation as well as cases of cure *apart* from operative removal. I have myself seen one such case of cure, in a lady of 70, who was attended by two medical men and by myself for carcinoma uteri, and who is still alive and well, six years after the cure. I have also heard from medical men in England and in Germany of other cases of such cures personally known to them. All these were cures of cancer, apart from operative removal. The case of the lady of 70 resembled, in many of its clinical features, the case of Mrs. E. W., reported by Sir Alfred Pearce Gould, on p. 1843, but the exaggerated peripheral neuritis was severest in the left upper limb, and the fingers of the left hand did not *fully* recover all their former strength and power.

With regard to treatment, Sir Alfred Pearce Gould's statement that "all therapeutic cures are obtainable only by the working of physiological forces" is fully endorsed by Dr. Kleinschrod's "inherent law of life," but Dr. Kleinschrod's book[1] takes us one step further in know-

[1] See Franz Kleinschrod's *Eigengesetzlichkeit des Lebens*, or the English translation, *The Inherent Law of Life* (Belland Sons).

ledge. Briefly stated, Dr. Kleinschrod maintains that in the living organism physiological phenomena follow the antimechanical laws of Nature, and pathological phenomena the mechanical laws of Nature. The antimechanical laws make for evolution of the organism; the mechanical laws make for devolution. Therapeutic measures which call into activity the latent antimechanical forces of the organism are curative; and no disease—be it cancer or any other—is incurable so long as these can be called forth. The so-called "crisis" in disease is regarded by Dr. Kleinschrod as signal of the victory of the antimechanical forces over the mechanical forces. When the struggle of the antimechanical forces against the mechanical forces is abandoned by the organism, the disease becomes incurable and the organism adapts itself as well as it can to the mechanical law which it finds itself unable to overcome, and it henceforth lives on a lower rung of the biological evolutionary scale.

Dr. Kleinschrod's theory opens up a wide and hitherto unexplored field of research in therapeutics.—I am, etc.,

Wörishofen, Dec. 13th. LOUISE APPEL.

MASSAGE OF THE HEART IN CHLOROFORM COLLAPSE.

SIR,—With reference to the letters of those who have, both in your columns and privately, done me the honour of surveying the "Heart Massage" article which appeared three weeks ago in the JOURNAL, I beg to state that the time mentioned by me as requisite to anaesthetize the patient was at most a rough concept, as I was, during that time, otherwise engaged, and should it seem to the anaesthetist in the case as in any way a reflection on his work, I disclaim any idea or any real ability to vouch for accuracy in this matter, and hope he will give his own "time," which alone is authoritative. I have my own views, however, about the adequacy of four minutes.—I am, etc.,

Aberdeen, Dec. 15th. J. WALLACE MILNE.

TREATMENT OF SCHOOL CHILDREN.

SIR,—While the general practitioner seems to have awakened to the necessity of resenting, and taking steps to prevent, his adult private patients being interfered with by the State, he appears to view with equanimity an equally objectionable proceeding with his juveniles. I refer to the complacency with which the Divisions of the Association are assisting in the formation of "school clinics," which will as completely destroy the position of the "family physician" as clubs and hospitals have hitherto done, and more than State contract practice would in the future do. The argument that these clinics will be officered by general practitioners is beside the mark; even if this proved feasible, and education authorities were content to be served by men who must rust during their term of "off duty," the general practitioner who treats the child is not that child's usual medical attendant, and there is introduced that element of unfair advantage accruing to the doctor who has the opportunity of treating his *confrère's* patients. More serious than this, however, is the compulsion of the patient to be treated by any other than the doctor he chooses, or whom his parent chooses.

Our attitude on this question of the treatment of school children should be the same as we have taken up in regard to State sickness insurance—freedom of choice of doctor, payment by piecework, and the rejection of "institutionalism." If possible, temporize with the municipal authorities, and advise them to wait and see whether the State proposals may not cover treatment of the insured's whole family; if temporizing is impossible, then let us fight this matter out in the town councils as we intend to fight it out in the State parliament, and say flatly that those children whom the municipality wants doctored, and whose parents cannot pay for it, must be left to the private practitioner, his bill being met as "per attendance given."

School clinics have been suggested as an alternative to subsidized treatment at hospitals; subsidized treatment at hospitals is in the hands of the hospital medical staffs, and a word from them is sufficient to prevent it; but even were it not so, I regard the institution of a *second* form of abuse as a greater evil than the continuance or extension of an established one. With State insurance in the air, the hospital question—as the Medical Secretary pointed out at Cardiff—is not far from a solution, but the school clinic, once established, will rather extend than decrease in influence, and will be much harder to get rid of.—I am, etc.,

Bristol, Dec. 10th. HARRY GREY.

"606."

SIR,—In view of the fact that "606" is now being put on the market, it is worth while considering how far this preparation has fulfilled its original expectations. That it has a marked healing effect in certain cases appears certain, but the earlier reports of its miraculous effects were premature, and in many cases exaggerated. The claim that an abortive cure of syphilis, or *sterilisatio magna*, could be obtained by "606" has not been substantiated. Professor Neisser, who was at first a strong advocate of the new treatment, has since modified his opinion, and now suggests a combination with mercury and iodides. Professor Gaucher is by no means enthusiastic, and considers that "606" is only indicated in cases which do not improve under mercurial treatment, but that such cases are rare. As regards the toxic effect of the drug, it is true that so far no case of optic atrophy has been reported, as was the case with atoxyl and arsacetin, but several deaths have occurred after its injection, some of which, if not entirely attributable to the drug, were probably accelerated by it. Taking all this into consideration, it appears questionable whether we are justified in submitting patients, in the great majority of cases of syphilis, to treatment by "606," and perhaps losing valuable time by abandoning mercury and iodides.—I am, etc.,

London, N.W., Dec. 10th. C. F. MARSHALL.

PINEAL EXPERIMENTATION.

SIR,—As there is at least one aspect of this interesting question that is in some danger of being overlooked, I should like, with your kind permission, to draw attention to it.

It will be remembered that recently Dixon and Halliburton[1] prepared in four distinct ways extracts of the pineal organ of 125 adult sheep and injected these intravenously into cats fully anaesthetized with urethane. The only effect they got by large injections was a slight and transient fall of blood pressure; chemical examination showed that it was not choline that cause this fall. Their conclusion was that their work throws no light on the question of the possible physiological action of the pineal body in mammals, and that other methods must be used to determine its functions, if it have any.

But it so happens that a few months previously Marburg[2a] had expressed his belief that the pineal is active in the human subject, but only in early childhood. If he be right, then clearly Dixon and Halliburton have prematurely rejected the extract-injection method, since their extracts were prepared from adult animals.

It is greatly to be hoped, therefore, that the question should be reinvestigated with extracts of the pineal of newly-born or very young rabbits, kittens, puppies, or guinea-pigs; of course, lambs are out of the question, for commercial reasons. It seems to me that the experiments should be performed on two series of animals—namely, (1) very young ones, (2) adults. It is possible that in the case of the former a condition of experimental hyperpinealismus might be induced; in the case of adult animals there should be subsequent microscopical examination of their pituitary, thyroid, parathyroid, adrenals, and genital glands. Marburg described (1) universal adiposity as due to hyperpinealismus, (2) premature development of the genital organs or genital hypertrophy as due to hypopinealismus, and (3) cachexia as A. pinealismus. Of these, Nos. 1 and 2 are the exact reverse of hyperpituaritismus and hypopituaritismus. It seems to me that there may be a functional relationship between the pineal and the pituitary, the former's function waning as the latter's begins to wax. They unquestionably resemble

[1] Dixon and Halliburton: *Quart. Journ. Exper. Physiol.*, vol. ii, July, 1909, pp. 283-285; 4 figs.

[2] Marburg: (*a*) *Deutsch. Zeitschr. f. Nervenheilk.*, vol. xxxvi, 1908, Nos. 1 and 2; (*b*) *Arb. a. d. Wiener Neurol. Institut*, 17, 1909, s. 217.

each other in one respect, in that great phylogenetic changes have taken place in each.

A point of great interest has been recently brought out by the experiments of Crowe, Cushing, and Homans[3]—namely, that puppies survive after complete (that is, microscopically proved complete) hypophysectomy much longer than adult dogs.

These authors suggest an explanation of this fact. Here I would merely throw out the suggestion that there may be another explanation, namely, that the puppy's active pineal may secrete a substance that to some slight extent takes the place, physiologically, of his at present immature pituitary. One would like to see whether injection of pineal extracts made from very young animals increases the duration of life in cases of completely hypophysectomized puppies. Also pineal feeding and transplantation experiments ought to be tried. Fichera's experiments on chickens are of interest in this connexion. They are discussed by Crowe, Cushing, and Homans.

The case of v. Frankl-Hochwart[4a] is instructive: A boy, aged 5½ years, showed at the age of 3 years excessive growth and mental precocity. About five months before death signs of a mid-brain tumour began to appear. About four weeks before death the penis became abnormally large, pubic hair appeared, erections occurred, and the voice became deeper. Autopsy showed a teratoma of the pineal about the size of a walnut; the sella turcica was not enlarged.

Frankl-Hochwart teaches that one should think of a pineal tumour in the case of a young patient who presents, along with signs of a mid-brain lesion: (1) abnormal growth of the body, (2) unusual development of pubic hair, (3) obesity, (4) somnolence, (5) premature genital and sexual development, and (6) mental precocity. On comparing this case with Marburg's views, it seems reasonable to think that it confirms them, for the adiposity, etc., due to hyperpinealismus occurred as the primary condition. We know that excess of function is much more likely to occur early than late. The signs of diminution or loss of pineal function appeared only four weeks before death.

Since this case was published Exner and Boese[5] have published a brief note of their extirpation experiments. They extirpated the pineal in 95 young dogs; they were able to observe 22 of these for a long time subsequently, but only 6 up to the time of the accession of puberty. Their experiments showed no influence on growth, nor on the accession of puberty. The detailed publication of their work is to follow, so that at present we do not know the difficulties and dangers of the operation.

In conclusion, I may refer readers who are interested in the pineal and its possible function to the following abstracts in this year's *Review of Neurology and Psychiatry*—namely, (1) January, p. 47; (2) March, p. 184; (3) April, p. 226; (4) June, 1910, p. 382.

I think I have here included everything, or almost everything, of immediate importance for the experimentalist and the medical practitioner. I append a list of references.—I am, etc.,

London, N.W. LEONARD J. KIDD.

THE CAUSE OF APPENDICITIS.

SIR,—In the JOURNAL for December 3rd Dr. Rainsbury asks for particulars of appendicitis in India. If he will consult the *Indian Medical Gazette* for November he will find details of the surgical work performed in two Indian provinces for 1909.

	Punjab.
Total surgical operations	220,243
Major or "selected" operations ...	23,629
Cataract, extraction of lens	10,663
Stone in bladder	2,248
Hernia	266
Liver abscess	103
Abdominal sections	74
Ovariotomy	26
Appendicectomy	17
Hysterectomy	16

Thus, in the Punjab, of 23,000 major operations, only 17 were for removal of the appendix!

In the United Provinces the figures are somewhat similar:

Total operations	188,045
Major operations	not quoted
Amputations	474
Cataract	5,485
Abdominal section	98
Hernia	190
Liver abscess	77
Stone	989
Hydrocele	1,490
Ovariotomy	23

In this table appendix operations are probably included with abdominal sections, so that they are presumably about as numerous as in the Punjab. The total for the two provinces would be 40 appendix operations in over 40,000 major operations! How does this compare with England?

Another correspondent in the same number of the JOURNAL (Dr. Maclachlan) discusses the relationship of rheumatism to the appendix. It is well known that scarlet fever, acute rheumatism, and, perhaps, tonsillitis are far from common in India, especially amongst natives of the country. Some interesting figures were given in the *Indian Medical Gazette* for April last.—I am, etc.,

E. E. WATERS, M.D.,
London, S.W., Dec. 15th. Major, I.M.S.

SIR,—Dr. Rainsbury (BRITISH MEDICAL JOURNAL, December 3rd, p. 1824) asks whether appendicitis is as common in India as in England. My own experience in one of the native States in the Punjab during six years is that appendicitis is a rare disease in India.

During the period I saw only two cases, both in Mohammedans, who, as is well known, are meat-eaters. The population I worked in was chiefly agricultural, and mixed of Hindus and Mohammedans in equal proportions. Their mode of defaecation is natural—that is, squatting position, as usual waterclosets are quite unknown in that part, so much so that on being shown a square closet-box with a massive mahogany lid, the farmer thought that it must be to keep the bread covered and warmed for the evening meal, so as to avoid baking again in the evening (bread in India is always eaten hot and prepared with each meal). Whether Nature's intended way for men to defaecate in the above position has to do with absence of appendicitis in India or not, I cannot say, though "squeezing" of the solitary glands as suggested by your correspondent would hardly make any effect on the glands, which are so deep-seated. It is possible that the freely hanging appendix changes its position if defaecation is done in Indian fashion, and that may have certain influence in determining and protecting the organ against an inflammatory attack. However that may be, one thing is certain: that the rarity of the disease among the Hindus is on account of the buccal hygiene they carry to perfection. No man or woman, rich or poor, would dream of eating or drinking before cleaning his or her teeth with a slender branch of certain trees, which on chewing give a beautiful soft brush, excites salivation, and give pleasant fragrance and taste. After each meal the mouth is rinsed in an orthodox way six or seven times with cold or warm water. Further, they are very regular in attending to the call of Nature every morning directly they get out of bed.

There are two more reasons, in my opinion, why appendicitis is so uncommon among the Indians: First, their indulgence in sour milk as an article of diet with the morning meal; secondly, their abstention from or very little use of meat. Among the Jains, who are strictly vegetarians, appendicitis is unknown.

It would, perhaps, be interesting if other medical men from different districts in India would give their opinions, as customs, habits, and diet are so different in different parts of the country.—I am, etc.,

PAIRA-MALL, M.D., M.R.C.S., L.R.C.P.
London, N., Dec. 6th.

SIR,—The speculations of your correspondents as to the cause of the great increase of appendicitis that we have witnessed of recent years are extremely interesting, and *prima facie* convincing; but before accepting them wholly

[3] Crowe, Cushing, and Homans: *Bull. Johns Hopkins Hosp.*, vol. xxi, May, 1910, pp. 127-169; 44 figs.
[4] v. Frankl-Hochwart, L.: (*a*) *Deutsch. Zeitschr. f. Nervenheilk.*, Bd. 37, 1909, p. 455; (*b*) *Wien. med. Wochenschr.*, February 26th, 1910, p. 506.
[5] Exner and Boese: *Neurol. Centralbl.*, No. 14, July 16th, 1910, pp. 754-755.

it might be well to observe some caution. If, as your correspondents suggest, a widespread change in the mode of life, distributed over years somewhere about the years of the increase of appendicitis, is to be accepted as the cause of the increase, then there are several other probable causes. Appendicitis has been much more prevalent of late years—say the last twenty, for punctilious accuracy is mere pedantry—and twenty years ago we had our first epidemic of influenza. The claim of influenza to be recognized as the cause of the increase of appendicitis would, therefore, be irresistible if it were not that in about the same time—excessive accuracy is finnicking and irritating—we have altered our treatment of tuberculosis and increased our consumption of meat. Undoubtedly the increase of appendicitis must be attributed to these three causes, unless our mode of life has changed in other ways within the prescribed time. And, Sir, it has changed in other ways. Not only has our consumption of meat enormously increased, but our consumption of alcohol has enormously diminished within the same time. Whatever pernicious influence alcohol may exert on the human body, its bactericidal power cannot be contested.

Then, too, it is during the last twenty years that the telephone has attained such an enormous extension. The influence of mental states over bodily processes, and especially the influence of violent emotions on the abdominal functions, needs no insistence on in these days of Christian Science. Who can doubt that the grave emotional disturbance that is produced by the replies "Don't go away," and "Wrong number, sorry," and by the sudden clearance of the line in the middle of an important conversation, especially when this disturbance is repeated daily and hourly, must modify seriously the metabolism of the appendix? Nor must it be forgotten that it was about twenty years ago that the bicycle and the photographic camera became popularized, and it is exactly twenty years ago that the new Lunacy Act came into force. This Act has materially influenced the lives of a large section of the population, and its possible influence, coming into force as it did about the time that appendicitis began to increase in prevalence, must not be ignored. Many other factors stand in much the same relation to the increase in this disease. The habit of riding in tramcars is mentioned by one of your correspondents, and I may mention a negative instance. The practice of rubbing bear's grease into the hair, so prevalent when appendicitis was a comparatively rare disease, is now unknown, and it is unquestionable that a vast increase in the disease has followed the discontinuance of the practice. Let us not therefore be too hasty in assigning the cause of the increase of appendicitis. It may not, after all, be as simple an affair as it seems.—I am, etc.,

London, W., Dec. 12th. CHARLES MERCIER.

PUERPERAL FEVER.

SIR,—Dr. Cory in his letter on puerperal fever states his belief "that the cause of puerperal fever is greatly due to ignorant midwives and nurses who are left to carry out the duties in their own way." I should like to call attention to statements made by Dr. Hope, the Medical Officer of Health for Liverpool, in his report for 1909:

> Out of a total of 23,591 births which occurred in the city during the year 1909, 16,996 births were attended by women. Sixty-two cases of puerperal fever were notified to the medical officer of health in the year, and proved fatal in 21 cases: 34 cases, of which 9 died, were found to have occurred in the practice of midwives; and 2 cases, of which 1 died, occurred in the practice of unregistered women.

This statement should be read with another—namely, that

> Of the rest of the births in Liverpool, 787 were attended by Poor Law institutions, and 2,985, or 12.5 per cent. of the whole number of births, were attended by medical attendants.

Among these two groups—15 per cent. of the whole number of Liverpool births—there occurred 26 cases of puerperal fever with 9 deaths. Some of these deaths would, no doubt, be among cases where there was no birth registered, but, however that may be, it is evident that Dr. Hope implies that among the births attended by medical men there was a large proportion of puerperal fever, though perhaps not to the amount of 51 per cent. that the figures indicate. I think Dr. Hope's figures make two points: First, midwifery in Liverpool is very largely attended by women, there being only an average of about 2 cases per doctor in the city.

Secondly, that the practice of medical attendants has a higher mortality from puerperal fever than that of midwives in proportion to the number of births registered by each. I fear that the undiminished death-rate from puerperal fever throughout the country must not all be put down to careless and dirty midwives; it has been pointed out by Sir William Sinclair and others how often a medical attendant is tempted to use unnecessary operative interference. I would ask, Are medical attendants always mindful of the danger of attending septic cases of various kinds along with midwifery patients? Is it not time that the medical profession declined to undertake the prolonged and responsible attendance on lying-in women for the ridiculous remuneration that is usual? Can those members of the profession who accept guinea midwifery fees honestly undertake to give the time and the careful attention to aseptic technique that are necessary to get good results in midwifery cases? Unless they are, it seems from Dr. Hope's figures that the lay public will become aware that their services do not secure the safety of their patients, and so great discredit will be brought to the profession. I feel quite sure that if Dr. Cory will bring instances of such misdemeanours on the part of midwives as he mentions in his letter to the notice of the supervising authority of his district the cases will receive adequate attention, and the midwives will be so admonished that the evils do not happen again.—I am, etc.,

Liverpool, Dec. 13th. ALEXANDER STOOKES.

SHIP SURGEONS.

SIR,—Several letters have appeared recently in the JOURNAL on this subject, and it is suggested that an association be formed to remedy the position. In my humble opinion the whole matter rests in a nutshell, and is simply a matter for the surgeons themselves. One word—"Combine"—covers all that is necessary. Make one golden rule—that no surgeon shall give his services for less than a minimum salary of £10 a month. I know at least two lines sailing out of Liverpool who invariably engage their surgeons on a shilling a month, and are always able to get plenty of men who want a change—men in practice, who put a locumtenent in charge, and go away for a holiday. They get a nice trip, good table, pleasant society, with a few fees thrown in. This is wrong, to begin with; if a hard and fast rule was made, and surgeons combined, refusing to sail except they received adequate remuneration, and be allowed to charge for advice except the most ordinary complaints, there would be no kick. So long as men will give their services for a shilling a month, it is not likely that shipowners will pay more. Why should they? it is not business. This last voyage a patient consulted me for neuritis of the arm, caused by a fall from his "bicycle," *four months* ago; he never consulted a doctor on shore, but waited till he got afloat, when he can do so for nothing. A few years ago I booked my passage from Melbourne to London via the Cape, in an Aberdeen White Star boat. The captain called on me and asked if I would act as surgeon for the voyage home. I replied, "I would be very pleased to do so, on the usual terms, namely, a return of the £50 I had paid for a first-class ticket, and the usual £10 a month." He answered, "I will give you £25 on arrival in London." "Thank you for nothing," I said, "I am to pay you £25 for the privilege of being your doctor. Not much; consider the deal off." Eventually he had to give a man and his wife a free passage, equalling £100 outlay, the cost of two first-class tickets. Just one more illustration. I took a man out of a steamer in Calcutta to go up country, the captain agreeing on condition that I acted in his place. He was receiving £8 a month. When I signed on the captain said, "One shilling a month," and informed me, as the ship was full up I would have to share a cabin: to get one to myself I had to pay the second officer £10 for the use of his. After retiring from India I wished to take a voyage or two before settling down, so obtained an introduction to Messrs. H. and W. Nelson and Co., who were just building a lot of new steamers for the Argentine chilled and frozen meat trade, sailing to and from Buenos Aires, carrying 130 first and second class passengers. I found these boats very comfortable: the pay was £10

a month, with an excellent well-furnished cabin on the bridge deck, containing writing desks, lockers, two chests of drawers, and a hanging wardrobe, with bunk and sofa, two electric lights, and heated by hot air; with a dispensary on the lower deck, supplied with instruments, including full surgeon's operating case, midwifery and tooth forceps, and Board of Trade scale of drugs, which are fairly liberal.

In conclusion, I consider the whole thing rests with the surgeons themselves; by all means form an association, but make it penal for any one to sign on for less than £10 a month, and things will right themselves. Unity is strength.—I am, etc.,

S. O. BISHOP,
Late District Medical Officer, Galaghat, Assam;
Surgeon to the *Highland Corrie*.

Buenos Aires, Nov. 17th.

CONTROL OF VENEREAL DISEASES.

SIR,—Major French's article in the JOURNAL of December 3rd on the control of venereal diseases raises many interesting questions.

I desire only to call attention at present to his treatment of army statistics. He truly says that there are no reliable figures as to the relative incidence of venereal diseases in civil communities in England, and that we must rely on the army statistics. What do the statistics of the home army show during the last fifty years?

In 1860 the rate was 309 admissions per 1,000. It fell steadily till 1870, when it was 201. The statistics from 1873 to 1879 are admitted to be unreliable, owing to concealment of disease. In 1880 it had risen again to 245, and it continued to rise till 1886, when it was 267. From this date till the present time there has been a regular and steady fall, except for an interruption at the time of the South African war. The most recent figures—those for 1908—are 68·4 per 1,000.

Can these variations be connected with any legislative measures, such as those advocated by Major French? The Contagious Diseases Acts were gradually introduced between the years 1864 and 1869. They were in full operation for fourteen years, were suspended in 1883, and repealed in 1886. There was certainly a low incidence of disease in the earlier part of this period, but as the ratio was falling before the introduction of the Acts, and as it was rising again during the later years of their operation, it seems likely that the fall was one of the periodic variations with which we are familiar in other diseases. Since the final repeal of the Acts in 1886 there has been a steady and fairly rapid decrease, and the ratio is now less than one-third of what it was in the last year of their operation.

Turning now to the British Army in India, we find that in 1861 the ratio was 369. There was a fairly steady fall until 1873, when it got down to 166, followed by a fairly steady rise till 1884, when it reached 294. During these eleven years the Lock Hospital system was in full force. During the next eleven years there were frequent changes of policy in India as to this matter, and the unsettled condition must in itself have had a detrimental effect; the rise was accelerated, and in 1895 the ratio was 522.3 (I do not know where Major French gets his figure of 537). Since that time the ratio has been falling every year with accelerated velocity, and now it is only 69·8. This fall Major French explains by the cantonment rules, which provide for notification and Lock Hospitals for women. For my part I am content with the explanation given by the Sanitary Commissioner with the Government of India for the year 1907, who says:

> The fall in the ratio relating to these diseases, which is one of the most remarkable features of the health statistics of European troops in India during recent years, is common to all kinds of venereal diseases. It is attributed to a number of causes, among which may be mentioned, as being the most important, the efforts of regimental officers and other officers to occupy the spare time of the men in healthy pastimes, to make the regimental institutes attractive and comfortable, and to influence the men to avoid contracting these diseases; the better education and higher moral tone now existing among soldiers generally; increased knowledge of the dangers of these diseases, leading to greater care as regards personal prophylaxis; less indulgence in alcohol; the more thorough treatment now carried out in all cases.

Not a word is said about the cantonment rules. This explanation has the advantage of being applicable to the home army as well as to the Indian army. If Major French attributes the Indian improvement to the special measures under the cantonment rules, we may fairly ask him to what cause he attributes the corresponding improvement in the home army, where no such measures are in force.—I am, etc.,

London, S.W., Dec. 14th. H. W. WILSON, M.D.Lond.

SIR,—Major French, in his article in the JOURNAL of December 3rd, urges notification of venereal disease.

This remedy may appear attractive to a military man whose patients are under strict discipline, but for general practitioners who are dependent for their living on the confidence and goodwill of their patients, I fear such a regulation would lead to disastrous results.

Suppose a patient presents himself or herself for treatment, and is notified, the notification is followed by a visit from a sanitary inspector, questions as to the nature of the disease from members of the family and household are inevitably asked, and domestic unhappiness as inevitably follows. What patient will not avoid the regular practitioner and fly to a quack under these circumstances? All the more so if notification is to be followed by two months' detention as Major French desires. That compulsion defeats its own ends is evident.

In Italy police control was rescinded by administrative ordinance in 1904, on the ground that every sort of direct compulsion for the ascertainment and cure of venereal disease is injurious to public prophylaxis, as it increases the number of persons impelled to conceal their malady and avoid the means of cure. It is claimed that in proportion as the non-compulsory nature of this State aid has come to be understood, increasing numbers of patients, both men and women, have resorted to it, to the great advantage of public health.—(*Preventive Hygiene*, 3rd edition, 1909.)

Nothing but good can result from increased facilities for the treatment and study of venereal disease which Major French rightly advocates; but why not let the treatment be voluntary?

I confess that the position that it is better to let a child run the risk of contracting disease rather than speak to him or her on sexual matters appears to me indefensible. A study of botany and seed formation leads up to the subject in a natural manner, and it ought not to be so impossible to utter a few words of kindly warning on the necessity of controlling the passions until they can be legitimately gratified. It is not necessary to enlarge on the diseases due to vice in order to do this.

If parents, teachers, and guardians are so modest, the child's school-fellows frequently do not observe the same reticence, and often impart information in a coarse and vulgar manner, to the lasting injury of the pupil. With regard to the Mosaic law to which Major French alludes the following quotations are of interest:

> If there be a damsel that is a virgin betrothed unto an husband, and a man find her in the city and lie with her; then ye . . . shall stone them with stones that they die.—Deut. xxii, 23 and 24. If a man find a damsel that is a virgin which is not betrothed . . . and lie with her, then . . . she shall be his wife . . . and he may not put her away all his days.—Deut. xxii, 28 and 29.

—I am, etc.,

Sandycove, Dec. 5th. T. G. PROSSER.

OPHTHALMOLOGICAL QUALIFICATIONS.

SIR,—F.R.C.S.Edin. (Ophthal. Surg.) in the JOURNAL of December 10th, p. 1892, draws attention to the fact that the Royal College of Surgeons of Edinburgh requires candidates to be specially examined in a special branch for the Fellowship, such as aural, abdominal, ophthalmic or obstetric surgery, and it is fair to assume from the signature that your correspondent approves of this method of obtaining an approach to a special qualification in ophthalmic surgery.

It is, perhaps, the nearest approach available to a special ophthalmic qualification, but surely the F.R.C.S. Edin. is short of the ideal; for, like the newly-instituted diploma of the Oxford University, the course of special study demanded, and the examination itself, falls far short of the thoroughness with which the graduate must devote himself to the study of general surgery for the highest surgical qualifications.

Why should there not be properly instituted degrees in ophthalmic surgery, requiring that, after graduation in general medicine and surgery, the candidate should pursue a special course, laid down by ophthalmic surgeons, for, say, two years; and that, instead of an exhaustive study of general surgery, a thorough knowledge of neurology, and other branches of general medicine in their special bearing on diseases of the eye, should be demanded—of course, in addition to a complete knowledge of the anatomy of the eye, and of all the operative and therapeutic measures, and of the pathology of the eye, which are now, or have been in recent times, recognized by the speciality?

Why should the ophthalmic graduate or diplomate be required to show an exhaustive knowledge of the anatomy of the lumbar vertebrae, or of the surgery of the prostate and pylorus, and only a relatively superficial knowledge of his own speciality? Or is it to be inferred that three months is sufficient to make a post-graduate a master of ophthalmology?—I am, etc.,

December 11th. GRADUATE.

EXPRESSION OF THE LENS IN ITS CAPSULE.

SIR,—The great interest which all ophthalmic surgeons must feel in operations for extraction of the lens in its capsule must be my apology for troubling you with this letter, which is suggested by Major Fink's remarks on the subject in the JOURNAL of December 3rd, p. 1825.

We are probably all agreed that, provided extraction in the capsule can be safely done, and that the after-results be even only as good as those gained by the more usual operation, then the former is the ideal method of dealing with cataract, except in juvenile cases.

Three years ago, when the British Medical Association met at Sheffield, I attended mainly on account of my interest in Major Smith's paper, and the exhaustive discussion which I hoped would follow it. Unfortunately, the paper was apparently taken as read, for no mention was made of it. However, he very kindly consented to demonstrate his operation on a patient whom I was able to offer him (with her consent) at the New Hospital for Women, and to discuss it fully afterwards.

I have also read, I believe, the whole of the literature of this investigation, and, so far as I can judge, Colonel Smith is entirely justified in claiming the technique as *his own*. With regard to iridectomy: He did one in the single operation I witnessed, and Major Birdwood in his report in the February number of the *Ophthalmic Record* incidentally mentions that this is still a part of the "Smith" operation. I would venture to refer Major Fink to this report, which will, I feel sure, interest him, if he has not already come across it.

So convinced am I personally that Colonel Smith's operation is ahead of any so far practised, that I am, at considerable cost in many ways, sailing in January to accept his generous invitation to place myself under his tuition for some weeks and to investigate the whole matter for myself.

Whether or no his operation prove, so far, the one best suited to European conditions and needs, the ophthalmic world and the world of suffering humanity owe much, in my opinion, to "Smith of India," or as I have recently heard him called, "Smith of Asia," pending the coming of some genius who shall teach us to how to prevent the necessity for any such operation.—I am, etc.,

London, Dec. 5th. AMY SHEPPARD.

THE COLOUR-BLIND FACE AND VOICE.

SIR,—Candidates for admission to the railway service enter the room in which they are to be tested by Holmgren's wools four at a time, and generally are vigorous and healthy youths and young men. They face the examiner in a mental condition common to the four. The examiner will note the expression of each face. Faces may be classified from a colour sense standard into three divisions: (1) the colour blind; (2) normal colour sense with the mind indifferent to colour; and (3) normal colour sense with mental appreciation of colour.

Select from the four the most suggestive of class 3. Make him first to pick the wools, and direct the remaining three to watch closely. The only difficulty will be the mental equation. The dull face may be an entirely mental condition, and although to the trained observer a distinction can be drawn between a face that is colour blind and a face that is simply colour indifferent, the colour indifferent face is nearly always associated with a dull and unobservant mind, and it will require much experience to avoid mistake. The trained observer will generally be able rapidly to classify the three watching faces. There may remain one about whom he has doubt. His mind must be absolutely critical, his conclusion based upon the value of the face alone. The fact that one face shows strength and intelligence and the other dullness and an ox-like eye indicates mind value, not colour value. I have seen many intelligent colour blind faces, but never a face blind to red and green with any humour in it or any play of expression; it is always a still face and devoid of warmth. The face of a deaf candidate watching the selection of wools is a little suggestive of colour blindness, but should not be confused with one. The voice of the red or green blind in my experience has no appeal in it, and is devoid of inflection or ring. It is as monotonous to the ear as the face of the colour blind is to the eye.—I am, etc.,

Sydney, N.S.W. S. H. TAYLOR.

YELLOW FEVER IN ST. KITTS.

SIR,—I have read Sir R. Boyce's article on yellow fever with great interest and pleasure, as it confirms what I have said for the last twenty-four years of the fever in St. Kitts. A great deal of the so-called bilious remittent fever there is of a continued type, and does not react to quinine, and I have no doubt that the success of the carbolic acid treatment in an epidemic prior to 1886 was due to the fact that the fever was not malarial.—I am, etc.,

Goudhurst, Kent, Dec. 10th. G. H. MAPLETON, M.B.

ADIPOSIS DOLOROSA.

SIR,—I have read the letter of Dr. Middleweek upon adiposis dolorosa[1] with interest, and some degree of painful surprise.

Surely the assumption that this disease is a neurosis (with the lesion in the sympathetic nervous system) is not likely to be accepted to-day. Precisely the same assumption was taught twenty years ago as to the origin of Graves's disease—both instances of readiness to accept the obviously untrue merely because the truth is as yet beyond our knowledge.

To-day both these diseases must be regarded as examples of thyroid gland disturbance, of some excess or diminution or alteration in character of the secretion of that gland. A paper by Dr. Rutherford Jeffrey on the cause of neuropathic states (JOURNAL of November 19th), seems to me to avoid or to ignore the fact that most neuropathic (neurasthenic) states *must have some organic or physical cause*.

That this view will be received as truth in the near future I am fully assured, and in the location of the cause (for example, a toxaemia) must lie the only hopeful method of dealing with these states. I hope to be allowed shortly to contribute something to the study of the connexion between chronic moveable or dropped kidneys and neurasthenia, in my judgement one of the most important, as it is one of the most interesting, issues in practical medicine to-day.

As to Dr. Middleweek's remarks on the Swedish treatment of adiposis dolorosa, I may add a few words on a classic case of this disease that has been under my observation for two years. In this case, occurring in a woman of middle age, the adiposis was extreme and covered practically the whole surface of the body; varying in degree from thick brawny masses over the hips, buttocks, and abdominal walls, to quite small swellings upon the face, fingers, and feet. The case was complicated by the presence of cardiac changes not yet compensated; and this was probably the reason why thyroid extract could not be tolerated in even small doses. Thyreoidectin, however, has given excellent results; and it is interesting to note that whereas three or four capsules were well borne during the height of the disease, one dose daily is as much as the patient can take now that she is convalescing. Massage has always been of great value causing softening and dispersal of the swelling, and giving

[1] BRITISH MEDICAL JOURNAL, December 3rd, p. 1818.

great personal comfort. Any form of gymnastics has been unsuitable for this patient up to the present.

Minor degrees of adiposis dolorosa are perhaps not very uncommon, if looked for. The "dolorosa" is always regarded as rheumatic by the patient; the "adiposis," when very slight, has commonly not been observed, or no importance has been attached to it; it is, perhaps, most common in the upper arms.—I am, etc.,

Leamington, Dec. 3rd. PHILIP HICKS.

THE TREATMENT OF MORPHINOMANIA BY THE "COMBINED" METHOD.

SIR,—Having read with the greatest interest Dr. Crichton Miller's paper on the above subject in the JOURNAL, p. 1595, I shall be glad if you will give me space for a few remarks thereon. I wish particularly to emphasize the necessity of treating the psychical side of the disease, while fully appreciating, as does Dr. Crichton Miller, the physical side also. It is the physical rather than the psychical side that has been treated in the past, and very well treated, and it is the absence of the psychical side of the treatment that has prevented the physical treatment of the past being the complete success it should have been had psychic treatment been combined with it. I have treated morphinists by the gradual withdrawal method of Jennings, with the help of his "therapeutic triad," and by the more rapid method of Crothers under bromides, and I have found that in both there has been something wanting, and that something, like Dr. Crichton Miller, I am satisfied is to be found in rightly-applied hypnotic suggestion. There is a physical crave and a psychical crave, and, although without psychic treatment or such conscious psychic treatment as is given by hypnotic suggestion, the suppression of the morphine can be accomplished in most cases with a small amount of distress by either Jennings's or Crothers's method, it can be accomplished in most cases with far less distress—for there is mental as well as physical distress—when psychic treatment by hypnotic suggestion is employed in conjunction with physical treatment.

It is, however, in the after-treatment of morphinomania, the period that begins on the completion of the withdrawal of morphine, that psychic treatment becomes of paramount importance, and it is exactly here where treatment without such psychic treatment has failed in the past and led so often to relapse. Jennings and others have realized the cause of relapses to be the want of what they call re-education, but have not seemed to realize the value of hypnotic suggestion in bringing about this re-education. My experience in the use of hypnotic suggestion in these cases is, like Dr. Crichton Miller's, not of long enough duration to make my records of any great value; but I can certainly say that the cases I have treated by combined psychic and physical treatment have done far better than those which in the past I treated by physical measures only. My tendency has been to rely more and more on bromidization in effecting the withdrawal of the morphine, on account of the possibility of a rapid withdrawal, under conditions less distressing to the patient than a long drawn out gradual withdrawal even when symptoms are relieved to the utmost.

My experience is that except in such cases where it is obviously contraindicated by organic disease of the heart or lungs, rapid withdrawal in a few days under sufficient sedation is without any real danger, heart tonics (sparteine and digitalis) together with alkalis, and other drugs, being given to allay physical symptoms as they arise, and will arise, during morphine suppression. I have never reached the height of sedation and the complete withdrawal of morphine in three days, having contented myself hitherto in attaining my object in from six to eight days after the first dose of bromide was given.

My practice has recently been to commence treatment with hypnotic suggestion for about a fortnight, with the object of training the suggestibility of my patient, and gaining his complete confidence, by full explanation of the treatment, and getting him to understand that I want his complete co-operation, and that I shall do everything I can to assist him to co-operate. During this preliminary treatment the morphine is gradually withdrawn with the patient's complete knowledge and consent; when the suppression begins to be in any way distressing, the bromide treatment is commenced, and when it begins to be effective the morphine is more rapidly withdrawn in proportion to the bromide sedation produced. At the end of from six to eight days the patient is in the semicomatose condition described by Dr. Crichton Miller, and both bromide and morphine are then withdrawn completely, and as soon as the patient becomes again sensible enough, hypnotic suggestions are resumed and continued in decreasing doses during the remainder of the treatment.

While appreciating Dr. Miller's opinion that the treatment should be as short as nine weeks if possible, I think it is a mistake to attempt to make any hard and fast rule, as so much will depend on the physique of the patient, upon his mental health, and the response he makes to therapeutic suggestion. I fully endorse the importance which Dr. Miller gives to the teaching of autosuggestion to the patient as a stand-by when he is left once more to his own devices, and to accustoming of the patient to see and handle the syringe and drugs he has been accustomed to abuse before the completion of his course of treatment. I wish to advocate the preliminary preparation of the patient by hypnotic suggestion before commencing the rapid withdrawal of the morphine under bromides as of value when suggestion has again to be resorted to after the bromide and morphine withdrawal. The patient then knows what is required of him, and is more likely to respond to suggestions, when quick and thorough response to suggestion is of the greatest importance.

Dr. Bérillon, I believe, prepares his morphine patients for treatment in this way before commencing reduction at all, or at all events before carrying it to any extent.

It is as unscientific and irrational to treat morphinomania by physical measures without psychic measures as it is to treat it by psychic measures without physical measures.—I am, etc.,

J. W. ASTLEY COOPER, L.R.C.P.Edin.

Ghyllwoods Sanatorium, near Cockermouth, Cumberland, Nov. 22nd.

"INDUCED CELL DIVISION AND CANCER."

SIR,—In a volume just published by Messrs. John Murray and Sons, entitled *Induced Cell Division and Cancer*, by Mr H. C. Ross and Dr. J. W. Cropper, our names are quoted either in the preface or in the body of the work. We desire to say that, having had no opportunity of seeing the work previous to publication, either in manuscript or in proof, we think it only fair to disclaim any responsibility for the statements made and the conclusions arrived at by the authors.—We are, etc.,

R. J. HARVEY-GIBSON.
W. A. HERDMAN.
B. MOORE.
J. REYNOLDS GREEN.
C. S. SHERRINGTON.

Liverpool, Dec. 19th.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have been approved at the examinations indicated:

FIRST M.B. (*Organic Chemistry*).—W. G. V. Blogg, K. G. Bowes, L. R. Broster, L. G. Brown, W. H. Butcher, J. B. Cavenagh, R. W. J. A. Cushing, J. F. Haynes, R. J. Inman, O. G. Parry-Jones, P. P. Reitlinger, S. W. F. Underhill, H. St. H. Vertue, D. M. P. Whitcombe.

FIRST M.B. (*Human Anatomy and Physiology*).—A. C. Ballance, C. H. Carlton, J. C. Davies, A. W. Dennis, C. H. L. Harper, A. L. Pearce-Gould, T. O. Thompson, T. A. Townsend.

SECOND M.B. (*Materia Medica and Pharmacology*).—H. T. Evans, R. A. Fawcus. D. P. McDonald, W. R. Reynell, R. C. Wingfield.

SECOND M.B. (*Pathology*).—H. C. Bazett, W. H. Bleaden, N. G. Chavasse, P. L. Gibson, E. G. Martin, G. E. Neligan, W. J. Pearson.

SECOND M.B. (*Forensic Medicine and Public Health*).—A. R. Chavasse, W. A. Cooke, G. E. Downs, H. J. B. Fry, A. D. Gardner, P. L. Gibson, G. W. Johnson, G. E. Neligan, E. O'Connor, E. L. Pearce-Gould, J. F. Penson, R. C. Wingfield.

SECOND M.B. (*Medicine, Surgery, and Midwifery*).—R. F. B. Bowes, A. W. Donaldson, G. E. Downs, G. W. Johnson, E. P. Poulton, A. S. Roe, R. C. Wingfield.

UNIVERSITY OF LONDON.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

Building Debt.

THE Council has received the following sums towards the repayment of the building debt: The Goldsmiths' Company, £100; The Mercers' Company, £52 10s.; Miss S. A. Turle, £200;

F. C. N., £52 10s.; The late Mrs. Isabel Thorne, £50; Dr. May Thorne, £50; F. C. T., £30; Sir Charles Burt. £10 10s.; collected by Mrs. Starling, £74 1s.; and smaller sums amounting to £10 10s.

Demonstrators.

The Council has appointed Miss N. Laycock, B.Sc., to be demonstrator in Biology, and Miss I. Pendlebury, B.Sc., to be demonstrator in Physics for 1910–11.

Exhibition and Scholarship.

The St. Dunstan's Exhibition of £60 a year for three years has been awarded to Miss Lilian A. Clark of the City of London Girls' School, and the School Scholarship of £30 to Miss C. I. Fox, of the Mount School, York; Miss K. Lloyd, of the Welsh Girls' School, Ashford, being named *proxime accessit*.

VICTORIA UNIVERSITY OF MANCHESTER.

The following candidates have been approved at the examinations indicated;

First M.B. (*Organic and Bio-chemistry*).—Gwendolen Birch-Jones, D. R. Garrett.

Second M.B., Ch B. (*Anatomy and Physiology*).—*L. B. Baird, A. Barrett, F. A. Bearn, J. G. Bennett, E. S. Brentnall, F. S. Charnock, H. F. Hutchinson, H. Kempsey, E. Leahy, *F. L. Newton, W. L. Nicholson, T. P. Robertson, H. A. Sandiford, *E. Talbot, †H. Taylor, C. Thompson, F. K. Tomlinson, C. H. Whittall, H. W. F. Williams, G. W. Wood.

Third M.B. (*Pharmacology, Therapeutics, and Hygiene*).—W. Barnes, ‡C. T. G. Bird, L. S. Daly, R. B. Gorst, C. L. Graham, H. Harrison, G. B. Horrocks, T. P. Kilner, F. Oppenheimer, W. J. A. Quine, H. Sheldon.

Third M.B. (*General Pathology and Morbid Anatomy*).—F. S. Bedale, §B. B. Berry, §A. G. Bryce, G. C. Dixon, G. Fildes, W. H. Kauntze, J. A. Lees, §P. H. Midgley, §T. H. Oliver, §S. B. Badley, L. W. Sparrow, C. F. White, §A. G. Wilkinson, H. D. Willis.

* Anatomy only. † Physiology only.
‡ Pharmacology and Therapeutics only.
§ Distinction in Pathology.

UNIVERSITY OF LIVERPOOL.

Dutton Chair in Tropical Entomology.

In 1905 the late Dr. Dutton lost his life in the Congo from spirillum fever, a disease which he, together with the other members of the twelfth expedition of the school were investigating. In view of the many great services that Dr. Dutton had rendered to the investigation of tropical medicine, although he died at the early age of 28, the Liverpool School of Tropical Medicine set about collecting a sufficient sum of money to endow a Professorship in the University of Liverpool connected with Tropical Medicine, to commemorate the sacrifice of his life.

The school has recently been able to offer the university the sum of £10,000 for the establishment of a Chair in Tropical Entomology. This offer has duly been laid before the university, and at a meeting of the council held on December 13th, it was resolved gratefully to accept the offer of the school.

This makes the second Chair given to the university by the Liverpool School of Tropical Medicine, the first being the "Sir Alfred Jones Chair in Tropical Medicine."

Associate Professorship of Pathology.

On the recommendation of the Faculty of Medicine and the Senate, the council has conferred the title of Associate Professor upon Dr. Ernest E. Glynn: for the last six years he has been Lecturer in Pathology in the university.

Tropical Medicine.

The following candidates have been approved for the diploma in Tropical Medicine:

E. Brabazon, L. Castellino, J. A. Caulcrick, W. E. Haigh, H. F. Hamilton, W. St. M. Hefferman, A. Hipwell, J. Homer, W. M. Houston, D. P. Johnstone, A. G. Macdonald, C. C. Murison, P. D. Oakley, I. C. Pratt, E. L. Sieger, P. J. de Sousa, J. H. Waterhouse.

THE JOINT MATRICULATION BOARD.

The annual report of the Joint Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield, which conducts the matriculation examinations on behalf of the four universities, has just been issued. The report shows that 1,954 candidates presented themselves for the matriculation, which is almost the same number as last year, but the number of those who satisfied the examiners fell from 1,087 to 855. In the previous year the number of failures was less than usual, and the fall in the percentage of passes was partly to be accounted for by the requirement of prose composition in Latin, though the failures were above the average in nearly every subject. While undue strictness in the examination was not desirable, it was felt that it would not be to the advantage either of the candidates or the universities if persons were passed who would not be likely to qualify for their first university examination at the end of their first year of study. It was noted that many candidates had not been well advised in presenting themselves for papers in the higher subjects. These papers were not adapted for candidates for the ordinary subjects, and presupposed at least one year's advanced study. They were intended rather for the best candidates from the higher forms in schools, or for those who intended to enter the honours schools of the universities.

Under the regulations for the inspection and examination of schools, examinations had been held for school certificates, and also form examinations and inspections. The Board had also conducted on behalf of a large number of education authorities in Lancashire, Cheshire, and Yorkshire examinations on which recommendations for the award of scholarships were made, as well as examinations for certain entrance scholarships in some of the universities.

Revised regulations for school examinations will shortly be issued, and will be obtainable from the Secretary at the offices of the Board, 24, Dover Street, Manchester.

UNIVERSITY OF SHEFFIELD.

Chair of Surgery.

Mr. R. J. Pye-Smith has resigned the Professorship of Surgery. The Council has adopted the following resolution:

> That the resignation of Mr. Pye-Smith as Professor of Surgery in the University be accepted with great regret. Mr. Pye-Smith, who is the senior member of the teaching staff, has been a teacher of surgery for thirty-four years, first in the old medical school, next in the University College, and finally in the University, and the Council desire to place on record their appreciation of the distinguished services which he has rendered to the cause of medical education in Sheffield.

Lectures in Materia Medica.

Mr. E. W. Adams, M.D. (London and Sheffield), has been appointed to the post of Lecturer in Materia Medica and Assistant to the Professor of Materia Medica, Pharmacology, and Therapeutics.

The Services.

DIFFICULTIES IN CONNEXION WITH THE MEDICAL ADMINISTRATION AND ORGANIZATION OF THE TERRITORIAL FORCE.

[From a Correspondent.]

Judging from recent articles and discussions in the lay press, there is undoubtedly a somewhat widely prevalent belief that there are many matters concerning the administration and organization of the Territorial Force as a whole which call for prompt remedial action on the part of the authorities. The present seems to be a suitable opportunity, therefore, for indicating some of those which more particularly affect the medical service of the Force, and while the following summary does not claim to be exhaustive, it is thought that it covers the more salient points involved.

It will be convenient to deal with the subject under the several heads given below.

General Considerations.

General officers and their staffs of the regular service at divisional and command head quarters often fail fully to realize the difficulties under which Territorial officers labour, and the result is that the latter do not always receive that specially sympathetic and considerate treatment to which they are entitled in virtue of their disinterested services to the State. The hectoring attitude not infrequently adopted in the regular army by seniors towards juniors is by no means uncommonly employed by the regular staff towards Territorial officers. There is too great a tendency also to hustle the latter with letters marked "urgent" and "pressing" (often quite unnecessarily) and demanding the immediate submission of replies and reports; and to issue orders calling for action within a period entirely inadequate for the purpose. Medical officers of the Force have their share of these worries, and as most of them are busy practitioners, it will be readily understood that procedure of this nature is apt to prove extremely vexatious to them.

Administrative Medical Officers.

The responsibilities and duties devolving on these officers are very onerous, continuous, and increasing daily. The work is, however, cheerfully done, though it is very discouraging to them to have to make bricks without straw—that is to say, to carry on with insufficient funds the medical administration of their divisions, together with that of such mounted brigades, army troops, territorial units of coast defences, general hospitals, and R.A.M.C.(T.F.) schools of instruction as may be within the divisional areas.

A serious blow to the prestige of A.M.O.s has recently been dealt by the orders conveyed in paragraph 354, Regulations for the Territorial Force, 1910, which places on Command Principal Medical Officers the duty of carrying out the greater and more important part of the annual inspection of field ambulances (including that directed to test their readiness for war and mobilization arrangements), and the whole of that of general hospitals

and sanitary companies. Paragraph 46 of the same regulations, however, lays down that A.M.O.s are responsible for all matters, including mobilization arrangements connected with R.A.M.C. units; but how they can be expected to carry out their duties in these respects, with their hands tied as regards inspection, is a matter which defies comprehension. It can, further, be readily understood that so long as paragraph 354 remains in force in its present shape Territorial medical officers will regard their A.M.O.s as officials of no particular consequence, and will look to Command P.M.O.s for guidance on doubtful points. It is therefore imperative that, so far as medical units are concerned, it be modified forthwith.

There is room for a good deal of decentralization and simplification of work now unnecessarily devolving on A.M.O.s. For instance, while officers commanding medical units are responsible for making promotions to and in the various ranks of non-commissioned officer, and for admitting men to the highest and lowest rates of corps pay, admission to the intermediate (third and fourth) rates of the latter have to be authorized by A.M.O.s. This is anomalous and illogical, and all these advancements should be left in the hands of Os.C. Again, the discretionary powers as to the short-circuiting of routine correspondence allowed by King's Regulations do not appear to be sufficiently realized by regular staff officers in their relations with A.M.O.s, with the result that the latter have frequently to deal with letters and returns which it is quite unnecessary to send through them, and the forwarding of which is mere post-office work, besides entailing avoidable expenditure of time, postage, and stationery.

In view of the exacting nature of their duties, it is not too much to ask that A.M.O.s should receive the same consolidated allowance of £150 per annum as brigade and divisional artillery commanders draw. They certainly have more arduous duties than the former, and probably more than the latter. The allowance might be held in abeyance when they are on inspection, etc., duty, for which pay at regular R.A.M.C. rates is admissible.

Lastly, a more liberal allotment from the R.A.M.C. training grant should be placed at the disposal of A.M.O.s to enable them to arrange more frequent courses of instruction than can now be held.

Staff Officers to Administrative Medical Officers.

Under present conditions these appointments, which are made from regular R.A.M.C. officers on the retired list (though, on paper, those on the active list are also eligible), can only be described as impossible ones, and some half of the total number of posts are vacant. In the first place, the allowance of £100 per annum for each officer is most inadequate, and should be raised to £150 at least. In the second place, their office allowance of £25 per annum for rent, clerical assistance, postage, stationery, and contingencies should be raised to £50, as in the case of brigade majors of mounted and infantry brigades and staff officers of divisional artillery, whose office work is probably much less. At present staff officers to A.M.O.s, owing to the insufficiency of their office allowances, have themselves to do much clerical work—for example, copying, registering, and addressing correspondence and correcting books of regulations from the amendments published in profusion in monthly army and other orders—which should not fall on officers. They may, of course, elect to have their general office expenditure met by county associations concerned (which would each obtain a grant of £20 per annum for the purpose), but the result would in this case be chaotic, as the allowance would be hopelessly inadequate to provide anything but indifferent and very occasional clerical aid, or to meet other expenses. A regular R.A.M.C. clerk should be allowed if the office allowance is not increased; this would be a satisfactory arrangement, as the work is really too technical for a civilian.

Staff officers ought to be paid travelling expenses for themselves and families when they join their appointments and be indemnified against all financial loss whenever they have to move their quarters, owing to change of A.M.O.s.

Lastly, they should be allowed to accompany their A.M.O.s on inspection duty, their assistance being then very necessary. At present this is not allowed, and the regulations relating to their attendance at camp are very nebulous.

Royal Army Medical Corps (T.F.) Schools of Instruction.

It is much to be feared that the utility of these excellent institutions is much cramped owing to the inadequacy of the training grant, from which the pay and allowances of officers and men attending courses are met. Voluntary evening work, not carrying pay, etc., can be and is arranged, both at headquarters and other centres where medical units are stationed, but the really essential courses of instruction, consisting of at least eight working days or twenty-four attendances of one hour each, which are practically obligatory for Captains R.A.M.C.(T.F.) before promotion to Major, and highly necessary for all officers of the corps preparing for examinations, as well as for the men from time to time during their service, cannot often be arranged, as in practice pay and allowances must be issued to those attending, owing to the fact that they have to forego their civil occupations during these courses.

Medical Units.

The quality of the personnel, their keenness and smartness, leave nothing to be desired, but as regards the technical efficiency of the N.C.Os. and men we are again met with difficulties due to the insufficiency of the training grant.

The "Memorandum on the Training of the R.A.M.C.(T.)" issued by the War Office unfolds a somewhat ambitious scheme, on perusal of which one might be led to think that the arranging of the training of the men in military and civil hospitals and other institutions as nurses, masseurs, mental attendants, skiagraphists, electro-therapeutists, operating room attendants, cooks, etc., is a very simple matter. But when it is realized that the funds available are barely enough to provide for anything but the most elementary training in technical subjects, one is driven to the conclusion that the "Memorandum" is an impracticable counsel of perfection. One month's initial training, and a "refresher" course of a fortnight's duration every other year thereafter—say, in lieu of camp—should be the irreducible minimum of training for any of these highly technical branches. The men must, of course, be paid while undergoing the instruction.

While on the subject of "medical units," it may be mentioned that a somewhat peculiar situation may be created (and, indeed, at least one example is known to exist at the present time) by paragraph 72, Regulations for the Territorial Force, which lays down that at centres with more than one unit of R.A.M.C. the senior executive officer in a medical field unit (that is, a field ambulance) will command the corps at the station, and on questions affecting more than one unit will be the channel of communication between units and higher military authority, as well as between units and county associations. This rule apparently overlooks the fact that at a station where there is a Territorial general hospital, the officer commanding the latter may be senior in rank to the officer commanding the field ambulance.

Personnel for Medical and Allied Duties with Combatant Units.

R.A.M.C.(T.F.) personnel for water duties form an addition to the establishment of field ambulances, but are attached on mobilization and for annual training to combatant units. This is an unworkable scheme. Men are not eager to join field ambulances, only to be detached at the very times when they would most wish to remain with them. Some do enlist, it is true, but there can be little doubt that they do so with the intention of transferring to the normal establishment of their ambulances at the earliest opportunity. Men for water duties with Territorial units should, therefore, be taken from the establishment of the latter, but should, of course, be specially trained, as in the case of the present R.A.M.C. men for this work.

Combatant units find their own non-commissioned officers and men to act as medical officers' orderlies, and for sanitary and stretcher-bearer duties. None of these duties are popular, but as regards the orderlies, if it were more generally known that "working pay" at Royal Army Medical Corps rates is admissible (Articles 772 and 790, Pay Warrant), plenty of men would volunteer. Men performing sanitary and stretcher-bearer duties, who do not at present draw working pay, should also be given it, in order to make the work more attractive.

Summary.

It will be clear from the foregoing remarks that the most pressing need of the medical branch of the Territorial Force is a more liberal financial treatment. Other desiderata are the avoidance of impracticability and ambiguity in framing regulations and orders, and the exercise of more judgement and consideration on the part of general officers and their regular staffs in interpreting and giving effect to the same.

ROYAL ARMY MEDICAL CORPS (TERRITORIAL).

First Home Counties Field Ambulance.

The prizes in connexion with the 1st Home Counties Field Ambulance, which has its head quarters at Maidstone, were distributed this year by the Director-General of the Army Medical Service, Surgeon-General W. L. Gubbins, who congratulated Maidstone on the fact that its field ambulance was second to none in the country. He did not attach much importance to the fact that it had not yet reached its full establishment, for quality was more important than quantity. Lieutenant-Colonel Pye Oliver, M.D., in command of the corps, said that its strength was now 10 officers and 238 men. Upwards of 40 more recruits were still required, for 58 men of the corps belonged to the special reserve. At the annual training this year, held near Brighton, 9 officers and 153 men remained for the whole period, and 49 other men for eight days. There was only one man now on the list of non-efficients. The new recruits during the year numbered 51, and 23 men had left the corps to join the regular army or navy. A toast to the Chairman was submitted by Lord Castlereagh, who said that for many years to come Lieutenant-Colonel Pye Oliver would be remembered in medicine for the magnificent work he had done in connexion with the Army Medical Service. He had worked, perhaps, harder than any one filling a similar capacity in the country, and the high standard which the corps had reached was to a very large extent due to his efforts.

A smoking concert followed.

SIXTH LONDON FIELD AMBULANCE.

The second annual dinner of the 6th London Field Ambulance took place on Saturday, December 17th. It was presided over by the Commanding Officer, Lieut.-Colonel E. Lloyd-Williams, and there was a large gathering of members and their friends. There were very few speeches, the only toasts being "The 6th Field Ambulance," proposed by the A.M.O., and "The Visitors," proposed by Major O'Connor. A musical and variety entertainment was much appreciated by those present.

THE FIRST SOUTHERN GENERAL HOSPITAL.

The second annual supper of the 1st Southern General Hospital was held in Birmingham on December 17th, the Administrator, Lieutenant-Colonel Jordan Lloyd, presiding. There were present about seventy, and among these were Colonel Whitcombe, Lieutenant-Colonel Barnsley, Lieutenant-Colonel C. H. Howkins, Majors Kauffmann, Eales, Sawyer; Captains Craig, Lucas, Billington, J. M. Young, W. J. Clarke; Lieutenants Forrest, Buchanan, Lunn, McCall, Boeddicker, Boome, Kimpton, Hobling, Hingston, Webb; Mr. Registrar Lowe, and Mr. Howard Collins. Colonel Whitcombe presented the prizes for general knowledge of corps work. Lieutenant-Colonel Barnsley proposed "The Hospital," and Lieutenant-Colonel Jordan Lloyd responded to the toast. Major Sawyer proposed "The Visitors," and Mr. Registrar Lowe responded. Musical and other items were rendered during the evening. During the past year a large amount of work has been accomplished by the Birmingham Branch of the British Red Cross Society, so as to make it possible for the 1st Southern General Hospital to be mobilized in the case of a national emergency. The society has now arranged for the site of the hospital, and also for its equipment in the event of mobilization.

Medico-Legal.

BURIAL CERTIFICATES FOR STILLBORN CHILDREN.

E. E. C. inquires whether the curator of a burial ground can refuse to bury a stillborn child if the medical certificate is written upon ordinary notepaper instead of the printed burial certificate form, as supplied by the registrar.

*** If the same information is given on the written certificate of the practitioner as would be present on the form supplied by the registrar, such certificate would be perfectly legal, and a curator of a burial ground would have no right to refuse to accept it.

MOTOR CAR EXPENSES.

Scrutator.—A. and B. are partners. A. possesses a motor car, which is used exclusively for the practice, B. paying a third share towards the cost of maintenance, repairs, etc., but nothing for depreciation. In the event of buying a new car to be used exclusively for the practice, would it be fair to ask B to pay in addition to maintenance and repair, something towards depreciation, and if so, what amount, bearing in mind that A. does not want B. to acquire an interest in the car?

*** The data in this query are contradictory. It is said the car is used exclusively for the practice, and yet A. wants to regard the car as his personal property. Where a car is to be used *exclusively* for the practice, it should be owned by the firm, and its expenses paid for like the other expenses of the practice. Where one of the partners claims rights in the car not possessed by the other, it is impossible, without knowing exactly what those rights are, to say what contribution the other should pay towards the car expenses; it is entirely a private matter to be decided by the partners between themselves.

LUNACY CERTIFICATION.

General Practitioner writes that he notified the relieving officer of his district that a patient of his was a lunatic, and that he, in our correspondent's opinion, required removal to an asylum. The Poor Law medical officer called to see the patient, declined to certify, and accepted him as a private patient.

*** We cannot understand how or by what means this patient has now been accepted as a private patient by the Poor Law medical officer of the district. If this state of affairs has been brought about by the letter written by our correspondent to the relieving officer, we are led to doubt whether the latter has complied with the provisions of the Lunacy Act which bear upon the case in question. We should recommend our correspondent to call once more to see his late patient, and if he then continues to hold the same opinion as before, to write again to the relieving officer to inform him that, in his opinion, the patient is a lunatic *not under proper care and control* and fit for an asylum. He may with propriety add that he is fully prepared to certify to this effect if he should be called upon by any proper authority to do so.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

THE COURTESY CALL.

Nonex is recommended to communicate with the Honorary Secretary of the local Division of the British Medical Association, who would be ready to advise him. The general principle governing the matter is that the courtesy call should be made upon all practitioners with whom the newcomer may be brought into professional relation, direct or indirect.

CIRCULARS TO PATIENTS.

C. H. W. P.—There is no objection to the circular being sent out so long as it only reaches bona fide patients of the practice. This may not necessarily include all persons whose names are to be found upon the books, if by "books" is to be understood those which have been in use for more than two years.

THE ETHICS OF CONSULTATION.

Tenax.—A.'s position in the case is that of a specialist, although he is in general practice; he should advise on the case and ask permission to write to the family practitioner.

THE OBLIGATIONS OF A LOCUMTENENT.

B.D.—A. and B. were in partnership for seven years, and after the dissolution they continued to practise separately in the same town for five years, A. acting during that time on occasion as locumtenent for B. On B.'s death C. purchased the practice and obtained an assurance from A. that he would not attend any patient of B.'s for six months. We are asked to say whether after the lapse of this time A. is free to attend any patients of B.'s or what he should do if any patients of B.'s consult him.

*** On the facts stated it would seem that after the expiration of the six months A. is at liberty to attend any former patient of B.'s.

Obituary.

Dr. James Maxwell, who was for thirty years Medical Officer for Tobermory, Isle of Mull, died on December 11th at Campbeltown. Compelled to retire recently from active work owing to failing health, he went to Campbeltown for rest. He was born in Glasgow, and studied at Glasgow University. After settling in Tobermory he took a deep interest in all local affairs, was a member of the school board, and an officer in the Argyll and Bute Artillery Volunteers. He was very popular throughout the island and was identified with a number of local organizations. At his death he was 54 years of age, and unmarried.

YET another Crimean veteran has passed away in the person of Deputy Surgeon-General JOHN MEANE, who died at Bournemouth at the age of 82. He obtained the diploma of M.R.C.S.Eng., in 1850, and entered the Army Medical Service in November, 1852, attaining the rank of Brigade Surgeon in March, 1880, and retiring with the honorary rank of Deputy Surgeon-General in 1881. He went to the Crimea in 1855, and was present at the siege and fall of Sebastopol, where he was wounded, and at the attacks on the Redan on June 18th and September 9th. He was mentioned in dispatches, and received a medal with clasp and the Turkish medal. He also served in the Afghan war in 1878–80, was again mentioned in dispatches, and received a medal.

DR. HENRI HUCHARD, one of the leading physicians of Paris, has just died at the age of 66. His clinical treatise on diseases of the heart and blood vessels (1889-1893) is a classic, and he wrote much also besides—on caffeine, antipyrin, strophanthus, rheumatism, dyspepsia, etc. He was also the author of a well-known work, entitled *Consultations Médicales*, published in 1901. Dr. Huchard was a man of strong personality and a strenuous advocate of the reform of medical education.

Public Health AND POOR LAW MEDICAL SERVICES.

LAVATORY ACCOMMODATION AT RAILWAY STATIONS AND TEASHOPS.

IN the JOURNAL of January 8th, 1910, pp. 89 and 109, we called attention to the question of the lavatory accommodation for ladies at railway stations, and we are glad to find that the matter has been taken up by a conference of representatives of the Royal Sanitary Institute, the National Health Society, the Women's Imperial Health Association, and the Women's Sanitary Inspectors' Association, held on November 21st. Mrs. Oxley Grabham, who has conducted an extensive investigation into the subject, was also present. The following resolutions were carried:

1. That in the opinion of this meeting sufficient sanitary accommodation for women's use should be provided free of charge by sanitary authorities, railway companies, and in places of public entertainment and resort.
2. That in the opinion of this meeting it is essential in the interests of public health and decency that there should be an attendant in charge of the sanitary convenience provided for women's use in public places.
3. That, in the opinion of this meeting, all sanitary conveniences provided for the use of women should be subject to periodical inspection by women sanitary inspectors appointed by the local sanitary authorities.
4. That this meeting desires to call the attention of the railway companies, and managers of theatres and other places of public resort, to the unsatisfactory character of much of the sanitary accommodation provided for women, and to the necessity for having only sanitary conveniences of good modern type and construction.

With regard to Resolution No. 1, it is pointed out that, although the system now so largely adopted by the railway companies of providing lavatory carriages on long-distance trains has proved an enormous benefit to both men and women travellers, still there is considerable evidence that the accommodation for women at railway stations all over the country is often insufficient and insanitary, whilst the necessity for payment, which is still universal for women at railway stations, operates harshly on the travelling public of the more necessitous classes.

Appropriate communications on the subject of the aforesaid resolutions have been addressed by the Council of the Royal Sanitary Institute to the Local Government Board, the Board of Trade, the London County Council, and the principal railway companies.

A CLEAN MILK SUPPLY.

IT has been pointed out more than once that a pure and clean milk supply will be provided as soon as milk consumers realize its necessity and formulate a demand for it. In the meantime, every effort should be made to educate the milk producer as well as the milk consumer in the right methods to be adopted to secure cleanliness and purity. With this object in view, a series of three leaflets have been issued jointly by the National Health Society and the National League for Physical Education and Improvement. The first of the series is addressed to farmers and other milk producers, the second to distributors and retailers of milk, and the third to housewives and all consumers of milk. The advice given in each case is altogether admirable, and is contained in language of the simplest and most understandable. One piece of advice which we do not remember to have seen in any similar pamphlet is very appropriately included. It is, that no child should be allowed to take any part in handling the milk or milk utensils, as children often suffer from unrecognized forms of infectious disease. The printing of the leaflets is excellent, and by a frequent interspersion of thick block type prominence is given to important statements.

DUTIES OF M.O.H. AND SCHOOL MEDICAL OFFICER.

X. Y. Z. will find a great deal of useful information relating to the duties of a medical officer of health and of a school medical officer in the *Public Health Service Directory*, published by Hodgetts, 36-38, Whitefriars Street, Fleet Street, E.C. The duties of a medical officer of health are referred to at some length in Whitelegge and Newman's *Hygiene and Public Health* (Cassell). With regard to the duties of a school medical officer, our correspondent might consult *The Medical Inspection of School Children*, by W. Leslie Mackenzie, assisted by E. Matthew (Edinburgh and Glasgow: Wm. Hodge and Co., 1904. 10s. 6d.), and *Medical Examination of Schools and Scholars*, by T. N. Kelynack (London: P. S. King and Sons, 1910. 10s. 6d.).

DUTIES OF COUNTY SCHOOL MEDICAL OFFICER.

F. W. P.—The county school medical officer is entitled to ask as to the probable duration of a child's absence from school. It might be argued that the education authority should pay a fee to the practitioner for such information, but we believe that medical men have hitherto been in the habit of giving the information as a matter of courtesy and in the interests of their patients. As the inquiry objected to by "F. W. P." refers to a certificate signed by himself, it is difficult to see how the district school medical officer can be involved. As a matter of fact, such questions are dealt with by the school attendance officer, and may not come under the notice of the school medical officer at all.

Medical News.

A SCHOOL of tropical medicine has recently been established in Brussels by Royal decree.

THE King Edward Memorial Fund at Ealing is to be devoted to completing the new hospital in that locality.

THE Berkshire memorial to His late Majesty is to take the form of a children's ward, now in course of erection at the Royal Berkshire Hospital.

THE Duke of Connaught during the course of his visit to Sierra Leone received a telegram from the King containing the following passages: "From the reports of the Governor, Sir Leslie Probyn, who has just relinquished his post after several years of successful administration, I am glad to know of the progress of the Colony and the Protectorate both in civilization and in wealth. It is particularly gratifying to notice that the efforts of the medical staff, supported by the chiefs and the people, have resulted in a marked improvement in the health of the community. I ask you to make it known to my subjects throughout the Colony with what interest I watch over their welfare, and that I trust they may be blessed with peace, happiness, and prosperity."

WE are glad to observe that the Hospital for the Study of Obscure Diseases, Cambridge, has received a legacy of £200 from Miss Marian Julia James, of Hindhead, who died on November 10th. We have several times called the attention of our readers to the work done by this hospital, which is of the highest value from the practical as well as from the purely scientific point of view. Most of its work hitherto has been devoted to that indeterminate condition known as rheumatoid arthritis. It is from the medical profession that the greater part of the contributions towards the upkeep of the institution have hitherto come; but if sufficient support is forthcoming from the public, it is hoped to enlarge the scope of its activity and to include other obscure diseases within the range of its researches. Miss James has also left £500 to the paying patients' ward of St. Thomas's Hospital, and it is directed that in certain circumstances the residue of her estate, which would appear to be over £50,000, shall be devoted to the maintenance of hostels and the making of grants of money for the benefit of educated persons of the professional class of limited means who are in need of a holiday.

Letters, Notes, and Answers.

QUERIES.

M.D., C.C., who suffers from early granular kidney, will be grateful for any hints as to treatment by means of renal or other extracts.

INCOME TAX.

B. AND C. ask advice in the following circumstances: They were in partnership with A., who took nearly half of the profits, and each was assessed separately to income tax. On the death of A the assessments of B. and C. were raised, on the ground that they will in future have the deceased partner's share.

*** If the practice was an ordinary partnership practice the individual assessments on A., B, and C. were incorrect, and the assessment should have been made in one sum in the partnership named. Had that course been adopted the assessment would have been continued as before, unless B. and C. could prove to the surveyor of taxes at the end of the first year that the profits had fallen on account of the death of A. If the profits are likely to be less than the sum assessed, B. and C. should give notice of appeal, and ask for the duty to be allowed to remain unpaid until they can produce the accounts of the first year of the new partnership.

TREATMENT OF INEBRIETY.

ANTIALCOHOL writes: A gentleman, stated to be a medical man, is being paid by the Government of South Australia to treat drunkards. He is, I understand, an American, and represents an institute which treats alcoholism, and which has its origin in America. The treatment is said to consist in giving a mixture containing cinchona, lobelia, and, I think, cocillana, with plenty of alcohol, for three days. Our correspondent asks for any information as to this institute, its treatment and results, and the ethical position of any one taking it up.

*** We have no information as to the particular institute, but from the claims made it would seem to be one of those irresponsible agencies for getting money under promise of cure for a fee, which are rife in this country, and still more so in America. Cocillana bark is obtained from a number of species of guarea, and is stated to possess some purgative and emetic properties. It has been recommended in the treatment of acute and subacute bronchitis, etc.: it seems doubtful whether it differs materially in its action from ipecacuanha. It is, of course, open for a medical man to adopt any form of treatment (and be paid for it) so long as he exercises his judgement as to its suitability in each case and has an adequate knowledge of the materials he is using. His method of obtaining patients must also be free from criticism. Professional opinion is still strongly opposed to the employment of secret remedies.

ANSWERS.

INVOLUNTARY MICTURITION.

L. D. PARSONS (Gibraltar) writes: In reply to "F. F." in the JOURNAL of December 3rd, I would suggest that his patient be tested with tuberculin to exclude the possibility of any tuberculous focus.

DESTRUCTION OF FLEAS.

DR. FREDERICK WOOLRABE (Health Officer, Government of Queensland) writes: If "M.D." (BRITISH MEDICAL JOURNAL, September 24th) is still troubled with fleas, he might try taking a dose of sulphur daily. I have been in the habit of dealing out a ration of sulphur to the rat gang during plague times.

MOTOR CAR DEPRECIATION.

MOTORIST.—There is an immediate drop in value directly a car has been used and becomes "second-hand." Its amount varies greatly, some makes of cars selling second-hand far better than others. Perhaps an average depreciation would be 20 per cent. for the first year and 15 per cent. per annum afterwards; this is from a selling point of view. A good car well maintained is far from being worn out in six years. To obtain an accurate actuarial estimate of the cost of maintaining the car the loss of interest on the initial outlay must, of course, be taken into account, but not everybody is so accurate in other expenditure.

DISINFECTING SPRAY.

DR. LENNOX WAINWRIGHT (Folkestone) writes, in reply to "M. O. H.": There is a tobacco spray made by Messrs. Merryweather and Sons of Long Acre, W.C. This is an extremely fine spray, and there is a gauge provided to the cistern. It is on wheels and provided with a hose pipe, and may be used for many purposes. For small rooms and ships' cabins or sleeping berths on railroads, one of the Vilbis atomisers, No. 16, can be used, or as an adjunct to the formaline lamp. This is a very small and handy spray, but possesses very little power of penetration.

CHRONIC INTERNAL HAEMORRHOIDS.

VERTEX writes: No one seems to have remembered the remedy so strongly recommended by Sir James Sawyer in the BRITISH MEDICAL JOURNAL, 1904, vol. i, p. 14—namely, suppositories, etc., prepared from the fresh entire plant of pilewort. I have found these answer admirably when all the remedies recently suggested have failed.

LETTERS, NOTES, ETC.

HAEMORRHAGE OF THE NEWBORN.

DR. LEONARD H. BRYSON (Colinsburgh, Fife) writes: May I add another case of the above to those recently reported in the JOURNAL? On visiting a patient two or three days after her confinement I found that, just before my arrival, the baby had vomited a quantity of blood. Blood was lying on the floor, bright red and clotted, to the amount of 2 oz. or 3 oz. I gave a grave prognosis and went home for enlightenment, which I failed to find. Beyond being slightly blanched the baby showed no signs of illness and took the breast well all through. It passed a few tarry stools. The baby is now three months old and quite well.

A POSSIBLE FALLACY IN FEHLING'S TEST FOR SUGAR.

DR. L. C. S. BROUGHTON (Birmingham) writes: Dr. J. N. F. Fergusson refers (BRITISH MEDICAL JOURNAL, December 3rd, p. 1825) to this test as an excellent one. The method he gives is a slight modification of Hoppe-Seyler's orthonitro-phenylpropiolic acid test. I cannot agree with him as to its reliability as the great majority of normal adult urines give a positive reaction with it. Professor von Jaksch says that "the indigo test does not afford a reliable means for the detection of grape sugar in urine, seeing that urines proved by reliable tests to be free from sugar will give positive results with Hoppe-Seyler's reagent"—a statement which I believe will be endorsed by any one who has tried it thoroughly.

SICKNESS INSURANCE: PAYMENT FOR WORK DONE.

DR. HENRY HICK (New Romney) writes: We are hearing a good deal about the sickness insurance scheme of the Government, and various plans are suggested by which the general practitioner may be safeguarded from ruin. Now most of these plans appear to be proposed by townsmen for townsmen; the country general practitioner has little chance to attend meetings and make his voice heard, and apparently his town brother does not care enough to consider his interests in his absence. For instance, we are told that payment must be for work done, and "The National Deposit Society" is pointed to as an example of this system working well, and, presumably, one which may be copied in any Government scheme, with the approval of the profession. Will you allow me to give an instance to show what this society does for the country general practitioner? In a sparsely populated district, it is impossible for a doctor to get all round his district each day, and, if he could, the amount of work would not justify his doing so. So it is the habit, in many places, to visit in the ordinary course, each village on alternate days. Now the country general practitioner has to travel many miles between patients, and the National Deposit gives him 1s. for four miles. I have a patient at a village four miles away, less a few hundred yards. If he keeps a horse and trap for hire, if he sends for me on the day I do not visit that village—say, I may cycle over, but finding the wind too strong to allow my cycling back, I take his trap, he charges me 4s.; the society allows me 2s. 6d. for the visit and medicine, and 1s. for mileage—so I owe my friend 6d. on that transaction. But suppose he has pneumonia, and needs seeing next day, and I cannot cycle. I take his trap for the double journey, and he charges me 6s. I get from the society 1s. 6d. for the visit, and 1s. for the journey, so I owe him 3s. 6d.

CORRECTION.—In the report in the JOURNAL of December 17th, p. 1921, of Mr. J. E. R. McDonagh's paper on "606," read before the West London Medico-Chirurgical Society, the sentence, "For the intravenous injection 3 to 6 grams of the powder should be dissolved in 100 c.cm. of warm distilled water," should be altered to read as follows: "For the intravenous injection 0.3 to 0.6 gram of the powder should be dissolved in 100 c.cm. of warm saline which has been prepared with distilled water." Ordinary tap-water cannot be used, since a precipitate forms on adding sodium hydrate.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£ s. d.
Eight lines and under	0 4 0
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A Post-Graduate Lecture

ON

HYPERCHLORHYDRIA AND ITS COMPLICATIONS.

Delivered on September 26th, 1910,

BY

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Two reasons weighed with me in selecting this subject as the one on which to speak to you this afternoon: the one was that there has been a good deal of writing about it during the past twelve months, and a very marked difference of opinion expressed regarding it; while the second was that I had myself written on this subject as long ago as 1903,[1] and that I had not written on it since then.

When I made the communication referred to before the Edinburgh Medico-Chirurgical Society it met with two lines of hostile criticism: the one was that the condition could not be differentiated from other gastric disorders; and the other that it was purely a neurotic manifestation. More recent writings, especially by some surgeons, have again called in question or denied the existence of such a condition as hyperchlorhydria, and have attributed the symptoms referred to that condition to ulceration either of the stomach or of the duodenum.

We may with advantage approach the consideration of this important practical question from the physiological standpoint, and may on physiological grounds postulate this—namely, that

The Secretion of HCl Varies in Amount.

Pawlow and others have, by their experimental researches on dogs, shown conclusively that the amount of secretion of HCl can be varied—can be stimulated, can be controlled, and can even be inhibited by the administration of certain substances. In the human subject there is no more reason to doubt that the HCl secretion of the stomach varies in amount in different persons, or in the same person at different times, than that variations occur in every other gland in the body, whether it be salivary gland, liver, or mamma. It seems, indeed, unnecessary to argue this point—the proposition is recognized as a fundamental truth whenever the activity of the various glands of different individuals is considered. If this be true the further proposition must also be true—namely, that variation in secretion means that it may be below or above a certain standard in quantity or in potency—which of these it may be is of no importance to the argument.

When the secretion of HCl is under the standard it is hypochlorhydria, when over it is hyperchlorhydria. It is with the latter we are to deal at present.

The Use of HCl.

There is, however, the other secretion of the stomach—namely, pepsinogen. It is one of those interesting substances which only attains its acme of potency when acting in consort with another substance. This is the great purpose to which HCl is applied. It is said that digestion never fails from deficiency in pepsinogen, because of its great power even in small quantity; that, in fact, when gastric digestion fails, it does so from an insufficient supply of HCl, and not of pepsinogen.

The Stimulus to HCl.

It is well known that the secretion of these two substances is for the disintegration and digestion of flesh and other proteid foods. Pawlow has established our knowledge of this action, and has shown how savoury flesh foods stimulate the secretion of HCl. In the perfectly normal condition the amount of secretion is in direct ratio to the work which is required—that is, to the amount and kind of proteid taken. It surely puts no great strain on our credulity to believe that that physiological balance can be disturbed—that there can be too much as well as too little; yet we are told from some quarters that our belief in over-secretion is in a mere Will-o'-the-wisp—an *ignis fatuus*.

I therefore ask your attention to the following cases as helping us to form a judgement on this question. I begin with what may appropriately be called acute cases.

Acute Cases of Hyperchlorhydria.

The symptoms of hyperchlorhydria not infrequently come on somewhat acutely, in strong, vigorous persons who have not suffered previously from digestive disturbance of any kind. As examples of this I may mention two cases:

Case I.

A gentleman, aged 37, who was sent to me in November, 1908, had suffered for one month from pain and flatulence. The pain came on about two hours after breakfast, two hours after lunch, and two hours after an eight o'clock dinner. He had sometimes been wakened in the night with the pain. The pain lately had become almost constant, but he had noticed that taking food put it away for a time. The bowels had been constipated from the onset of the symptoms, and he had for this taken an occasional laxative. The tongue was furred. On examination of the abdomen, succussion showed the lower border of the stomach to be at the level of the umbilicus. There was nothing to note in his other systems. He had no worries, and he led the open-air life of a country gentleman. "Indigestion was common in his family, and his father died of it."

I advised a considerable reduction in the amount of food, wine, and malt liquor he was taking, and gave him belladonna and soda to take thrice daily. He saw me again at the end of a week and of a fortnight; he had no pain since he began the medicine, and by the latter date the dilatation of the stomach had entirely disappeared. I met him a few days ago, when he assured me that he had been perfectly well, and had had no return of his symptoms since he had seen me nearly two years ago.

Case II.

A retired officer of the R.A.M.C., aged 54, consulted me in August, 1909. He had been attacked by pain between three and four weeks before, two hours or more after lunch, and it had lasted for a couple of hours. This pain kept recurring about two hours after taking food. He dieted himself very strictly, and found that the pain kept away if he lived on milk, biscuits, and lightly boiled eggs. He was, as a result of this meagre diet, getting weak and out of condition. The pain sometimes kept him awake at night. He found that taking hot milk removed the pain. The stomach was not dilated. There were no further points I need refer to.

I gave the patient belladonna and sodium bicarbonate, and a laxative pill of cascara, belladonna and nux vomica; I took off the restrictions on his feeding, but advised that he should have red flesh and chicken minced. The belladonna and soda were to be taken after food, as soon as the discomfort began. He reported himself to me in the end of September, and assured me that the medicine had very promptly removed his symptoms. He kindly reported himself on September 21st, 1910, when passing through Edinburgh, and informed me that he had had occasional threatenings of a return of his symptoms, but found that he had the remedy in the drugs I had prescribed.

In cases of this kind the diagnosis is so simple that neither for purposes of diagnosis or treatment is it necessary to obtain the gastric contents. If you do remove them, as one does sometimes, you will find that they contain much free HCl.

I have selected these two cases as I have seen them so recently, and as there has been sufficient lapse of time since I saw them first to judge of the results.

Cases of Hyperchlorhydria of Longer Duration.

I select the following cases for the illustration of this class:

Case III.

The patient was a medical man, aged 47, who consulted me in June, 1907. He had suffered off and on with acidity for twenty years. The attack from which he was suffering when he came to me had lasted for two weeks, and was unusually severe. Pain came on about two hours after food, and might continue up to the taking of the next meal; taking food relieved the pain. There was no vomiting, and the bowels moved daily and freely. There was no gastric dilatation, but as there was something in his stomach it was drawn off, and was found to be intensely acid from free HCl, while the material removed consisted of fluid and starch. The diet was regulated, and I recommended belladonna before food and bicarbonate of soda after food, as soon as the pain threatened. Ten days later he wrote saying how much better he was, and that, "although the weather has been simply atrocious, I have not suffered any more." I saw this patient a few weeks ago, when he assured me that he had been able to restrain his old enemy as soon as there was a threatening of reappearance. He repudiated the suggestion of having either a gastric or a duodenal ulcer.

Case IV.

Another medical man, aged 35, consulted me in November, 1908. He had not suffered so long as our preceding friend, but was finding his energy sapped and life burdened by his recurring

attacks. He was cured, and has become an able exponent of the clinical manifestations of hyperchlorhydria, and a curer of the condition in others.

I select these cases as they were in medical men.

I now ask your attention more definitely to the symptoms of this disorder.

THE SYMPTOMS OF HYPERCHLORHYDRIA.

In approaching the consideration of the symptoms, I would preface it with a few general remarks on what is recognized as acid dyspepsia, where the symptoms are burning pain at the cardiac orifice of the stomach, acid eructations, water-brash, usually flatulence and constipation. The prevalent idea that these symptoms are due to the presence of other acids—as lactic or butyric—caused by the presence of fermentative processes in the stomach, is a mere myth. The acid which is present, and present in abundance, is HCl, secreted by the oxyntic cells of the stomach. In early adult life the symptoms are often such as have just been indicated. In other cases there is a sense of dragging or weariness, referred to the stomach, or a *hunger-discomfort*, coming on two hours or less after breakfast perhaps, and removed by taking a glass of milk, a drink of cold water or soda water, or a cup of tea.

In other cases, and more commonly somewhat later in life, much gastric discomfort, or definite pain comes on from one or two hours after a meal; and this is associated with mental depression, and great difficulty, amounting in some instances to complete incapacity for mental or physical effort. The misery of the hyperchlorhydric leads him to reduce and reduce his feeding in the hope of freeing himself from his depression, and he becomes thin and haggard in appearance. Sometimes he gets relief by vomiting, more commonly he does not vomit. He often gets relief by the eructation of some mouthfuls of very acrid stuff. His pain lasts for an hour or two, and if it lasts up to his next meal, the taking of it relieves him for some time, the duration of the relief depending upon the composition of the new meal. Some patients tell you that they relieve their symptoms by taking sodium bicarbonate, others by taking milk or by drinking water.

On removing the gastric contents, they are found to be intensely acid and to contain much free HCl. The contents consist of a slightly opalescent fluid, and a deposit consisting almost entirely of the remains of farinaceous food, giving a strong starch reaction, and microscopically seem to consist of starch grains and granules. No trace of milk curd, of white of egg, or of fish or flesh fibre may be found, although the finding of the latter depends upon the amount of these foods taken at the previous meal, and the time which has elapsed before the stomach contents are withdrawn.

The retention of broken-down cereal food in an intensely acid fluid is the usual characteristic of the material removed from the stomach, when the symptoms are present in these cases.

That this hyperacid fluid in the stomach is the cause of the pain and depression is proved by the immediate relief of the symptoms when it is withdrawn.

A like effect on the symptoms is produced by a sufficient dose of an alkali, and the best is probably bicarbonate of soda, without peppermint. The symptoms are also promptly relieved by taking milk or raw egg. Whenever in fact the free acid is sufficiently diluted, or fixed in combination with proteid, or neutralized by an alkali, or removed mechanically, complete relief is obtained.

PATHOGENY.

The question of pathogeny is beyond my present object. In persons subject to the condition, unsuitable feeding or drinking, fatigue, worry, chill, may determine an attack. To call it "neurotic" is a mere euphemism to denote the unknown or the misunderstood. The view I expressed seven years ago, that it was a manifestation of an *acid dyscrasia*, has been confirmed by the additional years of critical observation.

THE TREATMENT.

The dietetic treatment depends upon various considerations—mere reduction in quantity may be sufficient. Speedy relief may be obtained by a proteid dietary which can be rapidly digested and is not too highly seasoned. I have a simple test for digestive conditions in Scotland, namely, that if porridge and milk cause acidity the digestion is not right. As regards drugs, sodium bicarbonate not only counteracts the free HCl, but, as Pawlow has shown, it inhibits acid secretion. For the inhibition of secretion various drugs can be used, but belladonna stands at the head of the list in my experience.

CONCLUSIONS.

I began by giving you notes of a few cases of acute and chronic hyperchlorhydria, and indicating to you the results of treatment in them. I have outlined the symptoms which characterize the condition; I have indicated how easy it is to remove them promptly, and the line to be followed if more permanent relief is aimed at. I could multiply these cases were it necessary. To me there is no doubt that we have in hyperchlorhydria a clinical entity, capable of exact diagnosis, and highly amenable to intelligent medical treatment.

THE COMPLICATIONS OF HYPERCHLORHYDRIA.

In the next place, I seek to draw your attention to what may be quite appropriately called the complications of hyperchlorhydria. And here we get into deeply interesting and very important questions, where your knowledge of gastric and abdominal examination, of skill in getting a clear history of symptoms from your patient will determine the correctness of your differential diagnosis. In considering what we term the complications of hyperchlorhydria, it must not, of course, be assumed that all the different conditions which we look at as complicating hyperchlorhydria are necessarily and always associated with it, or that they do not occur apart from it. A tabulated list of important complications may be made as follows:—

Complications.

1. Acute gastric or duodenal ulcer.
2. Pyloric spasm.
3. Chronic gastric ulcer.
4. Chronic duodenal ulcer.
5. Gastric dilatation—
   (*a*) Of fundus;
   (*b*) Ptosis of lower border (including other cause leading to the lower border being below the level of the pyloric outlet).
6. Gastroptosis.

1. *Acute Gastric or Duodenal Ulcer.*

I need not occupy your time by dwelling on the symptoms of acute gastric ulcer. Its association with hyperacidity is well known, and the most enterprising surgeon does not suggest that such ulcer demands immediate surgical measures. In fact, acute gastric ulcer, as we know clinically, and as it has recently been studied experimentally in animals by Dr. Charles Bolton,[2] heals rapidly under suitable conditions. That what is true of acute gastric ulcer should also be true of acute duodenal ulcer seems to me a rational corollary. That healing of duodenal ulcer takes place without surgical interference cannot be questioned. I may mention, as illustrating this fact, the case of a medical student, sent to me by one of my surgical colleagues, who had a history of hyperchlorhydria, and also evidence of duodenal ulcer, as indicated by pain and melaena on two occasions at least. Rest in bed and appropriate dietetic and medicinal treatment led to the disappearance of all the symptoms, and he has continued free from any recurrence for a number of months. Another patient—a woman—was sent into my ward with a history of having had a very severe illness due to duodenal ulcer, over a year before, from which, under the care of a doctor in Morayshire, she had completely recovered. Before admission to the infirmary symptoms returned which again indicated the existence of duodenal ulcer. We tried dietetic and medicinal treatment for some weeks, but without effecting a cure. She was accordingly operated on. The scar of the healed ulcer was seen on the anterior wall of the duodenum, near the pylorus. A gastro-enterostomy was performed, and the patient made an excellent recovery. Whether she is thereby rendered safe from developing another ulcer is a point on which we do not have much evidence. The case, which is one of several, proved not only that duodenal ulcer may heal without operation, but that once having

ıad an ulcer does not secure the patient from having ; second.

2. *Pyloric Spasm.*

Spasm of the pyloric sphincter, and sometimes of the ıntrum also, is a marked phenomenon in the more severe ases of hyperacidity. It is the cause of the severe pain ı these cases. During the spasm the pyloric end of the tomach can be readily palpated. It is allayed by eutralizing the acid and by other means. Its persistence r recurrence leads to dilatation, and even to ptosis.

3. *Chronic Gastric Ulcer.*

Chronic ulcer means an ulcer the existence of which has een indicated by symptoms for weeks. The prominent ymptom of gastric ulcer is pain after the ingestion of food, nd its continuance until the stomach is emptied. Some ıme ago I had a man in my ward with hyperchlorhydria, ır which he was successfully treated. Months afterwards e returned, not only with hyperacidity but with symtoms pointing to gastric ulcer having been present for ɔme time. I at once recommended a gastro-enterostomy, hich was performed. An ulcer with thickened edges as found some distance from the pylorus. He made a ood recovery, but did not get the measure of relief that e anticipated. The ulcer itself was not dealt with, and is a question for the surgeons to determine if it might ot be wiser to do so.

4. *Chronic Duodenal Ulcer.*

The medical treatment of chronic duodenal ulcer is, to y mind, not worth spending time over, in the expectation ıat it will be healed by such measures. For both it and ıronic gastric ulcer I strongly advise operation. Were it tablished that a serum treatment had been found which ısured the healing of chronic ulcerations, one's attitude wards this question would be changed.

5. *Gastric Dilatation.*

Under the name of "gastric dilatation" there is some conısion of idea, or the fact has not been apprehended that ıere are at least two conditions to which the name is ɔplied. The first and commoner form of dilatation is haracterized by enlargement of the fundus of the viscus ith extension of the great curve upwards and to the left, ıd a corresponding increase in the antero-posterior ameter of the organ. This type of dilatation is met with big feeders, and may sometimes be regarded merely as a g stomach. It may or may not be associated with symoms calling for medical treatment. The other form of latation is that in which the inferior border of the omach has fallen below the level of the pyloric outlet, hen at the same time there is enlargement of the cavity ıd atony, although not immobility, of the muscular coat. ıis form can be conveniently called *ptosis of the inferior rder;* there is ptosis or sagging of the great curve, with-t ptosis of the viscus as a whole, including the lesser rve.

In this connexion let me remind you that the position of e pyloric outlet moves somewhat with the position of e stomach; it moves somewhat to the right and slightly wnwards, but it does not descend in proportion to the gree of ptosis of the inferior border. One result is that, ıen this form of ptosis occurs, the pyloric outlet is conderably above the lower border; and, as ptosis is always sociated with considerable muscular atony, the stomach kes long to empty itself, and in many cases may never ɔpty itself completely. This condition of things is prone occur in hyperchlorhydria; it is the cause of much comfort; the condition tends to increase, and the mptoms to become more severe. When recognised rly, the checking of the hyperchlorhydria is followed by storation of tone, and by recovery from the ptosis. With recurrence of the hyperchlorhydria the ptosis, however, curs also, with its accompanying miseries. In a patient ıom I have seen from time to time during the last three ars there have been several outbursts of hyperchlorhydria with accompanying ptosis, and a prominent ature in the case has been that with the recurrence of hyperchlorhydria extraordinary quantities of fluid are ured out into the stomach. He has been entirely with-t symptoms for as long as eight months. When he is e of gastric symptoms there is a relaxation of dietetic es: he is a busy and a hard-working man, who will travel to London one night, transact business during the day, dine, and return to Edinburgh by the night mail, with the result that his symptoms may return. He can manage himself so well that he often cuts the attack short; but, if he does not succeed, I see him again, and I have warned him that these recurring attacks may leave his stomach in such a condition that he will ultimately require a gastro-enterostomy. In this case it is probable that there are pyloric or duodenal adhesions intensifying the mechanical difficulty, by keeping the pyloric outlet in a fixed position, and that consequently there is no movement of accommodation on its part. He is not desirous of having an operation, as he has a friend who, in spite of a gastro-enterostomy having been performed, has still to exercise caution in his dietetic habits.

This leads me to point out to you that this condition of ptosis of the lower border is more intractable, not only where there are adhesions or narrowing from old healed ulcer, but also in cases where there is congenital narrowing of the pyloric outlet, or where the pylorus is abnormally high in position. I saw a case of the last description in a medical man, who had suffered so long and so severely from digestive miseries that I thought it quite likely that his pylorus, which I determined was high in position, might be fixed in its high position by old adhesions, and yet at the operation it was shown that none existed. A gastro-enterostomy was, however, done, with marked benefit. In this patient, from the position of the pylorus to the lower border of the stomach, it was clear that the stomach could not empty itself properly, and the new opening afforded a channel which presumably enabled it to do so. Another patient, whom I saw some months ago, had a like sagging of the lower border, which had not yielded to treatment, and who also had symptoms indicating duodenal difficulty from previous duodenal lesion. I at once recommended gastro-enterostomy. At the operation old duodenal lesion with adhesions was found of such a kind that would have made an attempt at medical treatment ridiculous. She also did well, and was much benefited by the gastro-enterostomy. This patient had been diagnosed a year before as a neurasthenic; but blunders of this kind are no more to be taken as the standard of the physician's work than the blunder of opening the abdomen unnecessarily is to be taken as the standard of the surgeon's capacity. The aim of the physician ought ever to be to reduce the margin of error in internal diagnosis to vanishing proportions.

6. *Gastroptosis.*

In gastroptosis there is a falling down of the whole stomach, including the lesser curve. The greater part of the stomach is much below the level of the pyloric outlet, so that it is never emptied by way of that channel. I need not dwell upon the symptoms; there is no condition easier of diagnosis, and no condition which more lends itself to such methods of examination as I demonstrated to some of you in Ward 27 the other day. The precise limits of such stomachs can be traced, without either artificially blowing them up, or submitting them to *x*-ray examination after loading them with bismuth. I do not believe that we have any means of curing the inevitable symptoms of such a condition but by gastro-enterostomy.

Conclusion.

In conclusion, I would summarize the position by saying that, if chronic gastric and duodenal ulcer are excluded, the question of operation hangs upon, *first*, the determination of the position of the inferior border of the stomach to the pyloric outlet; and, *secondly*, upon the prospect of being able to restore the sagged lower border. The first of these conditions is, in my experience, easy of attainment; the second depends upon there being no natural or acquired barrier to the passage of food through the pylorus or the duodenum. Upon the accuracy of the answer to this last problem hangs the accuracy of the prognosis, and it will determine the important question whether it is wise or not to try to restore a proper relation of stomach axis to outlet. It must, however, be clearly stated that many cases are most amenable to suitable medical treatment. The attempt, however, to cure all cases of ptosis—either partial or complete—can only end in loss of prestige to the physician. Physical laws hold here as elsewhere; and there are physical barriers to the

emptying of some stomachs by their natural outlet—it is so impossible that it is simply fatuous to try to bring it about. Accuracy of diagnosis is not unattainable, and on such accuracy or inaccuracy the physician's prestige naturally depends. If he attempts to cure what correct diagnosis would tell him he cannot cure, and the patient is driven by force of his misery into the hands of the willing operator, only one result can follow—namely, discredit to himself and the art he professes.

REFERENCE.

[1] W. Russell: Gastric Hyperacidity—Hyperchlorhydria: Its Nature, Diagnosis, and Treatment. BRITISH MEDICAL JOURNAL, April 18th, 1903. [2] Bolton, *Practitioner*, September, 1910, p. 237; *Journ. of Path. and Bact.*, April, 1910, p. 418.

THE SCIENCE COMMITTEE

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REPORT CXXIII.

THE DISTRIBUTION OF APPENDICITIS, WITH SOME OBSERVATIONS ON ITS RELATION TO DIET.

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DURING the past few decades, while attention has been so forcibly focussed on appendicitis, much has been written and many theories advanced as to its etiology. While there can be no doubt that infection is the final cause of the clinical condition met with, the underlying factors predisposing to this infection are as yet undetermined. The influence of age and sex are well known, but opinion is divided as to the influence of nationality or diet. Accuracy of diagnosis has until recently considerably influenced the statistics which have been available, and, further, only within the past few years has the disease been mentioned in national statistics. Even yet in some countries such information is not obtainable. These conditions explain the diversity of opinion which is held as to its frequency.

Sporadic references are to be found in the textbooks, the American authors stating that it is comparatively rare in the negro.

Murphy[1] states "Lucas-Championnière (1904), in an analysis of 22,000 patients among Roumanian peasants, found but 'one case of appendicitis'; they live mostly on vegetables. The Roumanians living in the city, chiefly on animal diet, are frequently affected—1 case of appendicitis among every 221 patients. The vegetarian diet of the Japanese and of the Indians of India seems to protect them against appendicitis."

That these are not the only striking evidences of the influence of diet is shown in the evidence from other countries mentioned below.

Hare[2] of Philadelphia states that "appendicitis is more frequent in the well-to-do than in the poorer classes." A comparison of the Poor Law hospitals with others in this country shows the same difference in incidence.

In observations previously recorded[3] I have shown that intestinal sand and appendix concretions are allied in chemical constitution, and also that abnormal bodies sometimes found in the intestine and producing symptoms of disease are formed of compounds of saturated fatty acids.

These observations led to the conclusions that there are conditions in the intestines in which certain soaps or other insoluble compounds of fatty acids are not absorbed, or are excreted by the intestinal mucous membrane, and that with the presence of these conditions certain diseases of the alimentary tract are related. The fats and soaps found in these conditions were compounds of saturated fatty acids. The richness of these bodies in calcium and fatty acids, which are constituents of the excretion of intestinal mucous membrane, point to their originating in the intestine as a result of some excess in excretion or defect in absorption.

These calcium soaps, when formed in the intestine in excess, produce intestinal sand, and associated with this there are symptoms of colic with, under some circumstances, an associated form of mucous colitis, or, as the French authors call it, muco membranous entero-colitis.

On examination of the concretions, the frequency of which in appendicitis is undoubted, I have found that they consist of the same calcium soaps of saturated fatty acids as occur in intestinal sand. They are unquestionably formed in the appendix.[4] Kelly states[5]:

> The histological examination shows that the most important factor in the formation of the calculus is the mucus secreted by the glands of the mucous membrane. The mucus which is deposited in layers round the central nucleus becomes desiccated, and the lime salts are deposited secondarily. Frequently fragments of epithelium, a few leucocytes, and altered blood are found in the different layers. Ribbert noted that in favourable specimens stained with Weigert's fibrin stain, the outer layers of mucus may be seen to be directly continuous with the glands of Lieberkuhn. In one case, besides the two large enteroliths in the canal of the appendix, *I found three smaller bodies embedded in the mucous membrane, which had evidently developed within gland lumina.*

By suitable methods of staining I have shown that the above-mentioned soaps are found in this so-called mucus in the appendix, and further that they are actually deposited in large quantity in the submucosa of the appendix, thus cutting off the blood supply to the mucous membrane, and so rendering the invasion by organisms an easy matter.

The cause of these pathological changes is possibly an excess of saturated fats in the foodstuffs, giving rise to the formation of calcium soaps of more saturated fatty acid in the mucosa and submucosa than is normally the case. These soaps are not so easily absorbed or excreted as the soaps of the unsaturated fatty acids, and therefore act as foreign bodies in the wall, and at times in the appendix as a concretion.

The nature of the fat in the food determines to some extent the nature of the fats in the tissues. The absorbability of the various forms of fats is very different; for example, olive oil (containing unsaturated fatty acids) is absorbed to the extent of 98 per cent., while of stearin (saturated fatty acid) only from 9 to 14 per cent. is absorbed. Mixtures of the saturated and unsaturated compounds are absorbed in varying degree, depending upon the amount of unsaturated fatty acid present.[6]

In reference to the above investigations, I have endeavoured to find if the nature of the food fats has any relation to these pathological processes, whether an excess of saturated fat (as in animal fats, particularly beef and mutton) in the diet is associated with an increased incidence as compared with unsaturated fat (as in olive oil, butter, fish oil, etc.).

The difficulty of an inquiry such as this is obvious, and few deductions can be drawn from the statistics obtained. One point seems to be established, and that is, that diet plays a definite part in the production of the disease, and further, that animal food seems to be associated with an increased number of cases.

The following statistics and statements are quoted from a large mass of correspondence, and are of interest apart from any deductions which may be drawn from them. For comparison it may be stated that the death-rate in England from appendicitis is about 90 per million persons living. The names of the gentlemen to whom I am indebted for the information and statistics given below are mentioned in each case.

ABYSSINIA.

Dr. Frank Wakeman, Medical Officer to the British Legation, writes:

During a residence of eight years or so in this country and a practice among all classes of the population, I have never come across a single case of appendicitis, nor have my colleagues, with whom I have at one time and another discussed the subject, ever met with what could be described as authentic cases of the above malady. It is generally believed that this complaint, as well as enteric fever, does not exist in this country. Sporadic cases of gastric fever (so-called) are occasionally seen, but in no instance have the characteristic signs and symptoms peculiar to appendicitis ever been observed, and the disease usually runs a short course seldom attended with fatal results.

The staple article of diet in this country is a small-grain cereal, known as "teff" (*Poa abyssinica.*) It consists mainly of carbohydrate material with a small percentage of proteid substance, but scarcely any fatty matter. Owing to this reason the Abyssinians are obliged to partake of large quantities of animal food at certain periods, of being eaten in the raw state, while such dishes as are cured by cooking from meat (mutton, chicken, and and leguminous vegetables, are richly charged with oper (chillies, dried and ground), together with pungent and aromatic spices, and a *considerable of melted butter*,* the latter being the principal fatty constituent of their diet.

It is, perhaps, worthy of note that, owing to the universal prevalence of tapeworm (*Taenia mediocanellata*) among the people, the practice of drinking large doses of a cold infusion of "kousso" as an anthelmintic and purgative, is indulged in regularly every two months or so. As a result of the above, the intestinal tract received such a scouring as to produce a condition of acute gastro-intestinal catarrh, frequently attended with collapse. It may, therefore, be reasonable to assume that any faecal concretions which might accumulate as a result of tendency to obstinate constipation, caused in part by the diet, are thus swept away.

BELGIUM.

Dr. G. P. Nicholeb writes:

I have made inquiries in several directions, but regret to say I cannot get any data as to the frequency of appendicitis. There are no statistics here which could show how much appendicitis is frequent in the population.

I wrote to several physicians and surgeons who see a good many of the cases, but I have not been able to get the information.

As regards the second point—diet—I wrote to Dr. Stasse, of the Institute of Sociology and Physiology. He is making researches on the diet in the working classes, and will publish them shortly. He tells me that it is difficult to ascertain the exact quantities of the various articles of diet taken by the population, but he tells me that the quantity of fat taken is very great, chiefly in the form of butter, lard, and some margarine. Fat pork and bacon are eaten in comparatively great quantity.

My own impression is that appendicitis is not a frequent disease in Belgium. I have seen only three or four cases since I began practice here fifteen years ago. There are not many cases of appendicitis in the hospitals. The Belgians, as a rule, are fond of fat, and the working men eat a great deal of butter with bread. The very poor spread lard over their slices of bread.

CHINA.

Dr. Douglas Gray, Physician to H.B.M. Legation, Peking, writes:

1. Appendicitis is an extremely rare disease in China. Some time ago inquiries were made, through the *China Medical Journal*, among all the medical practitioners throughout the empire, with the following results:

44	said "Yes"—the disease is very rarely seen.
69	had seen a few cases, but the disease is uncommon among the Chinese.
49	had not seen any cases at all.
162	

2. In China the only sick reports available are those published by medical missionaries, most of which are of a lay nature and do not give detailed tables of the disease treated. In eight reports I can find no mention of typhlitic trouble; these are the only reports so far for the past year.

3. The best kept statistics of disease and mortality are those in Hong Kong. During the year ending December, 1906, out of a total of 8,379 deaths, 3 were due to appendicitis, and those, curiously enough, all occurred in one out of seventeen health districts. In the public mortuary, out of 2,140 *post-mortem* examinations made, appendicitis is not once mentioned as a cause of death, nor does it occur in the list of 215 surgical operations performed in the Government Civil Hospital.

4. Foreigners resident in China have no immunity from it, notwithstanding the apparent freedom of the native population. The only hospital dealing exclusively with foreigners on a large scale is the Shanghai General Hospital, where out of a total of 1,203 admissions, 21 were for appendicitis, and of these 4 died.

5. Diseases of the alimentary system are more common among the Chinese than those of all the other systems. Dyspepsia, intestinal parasites, constipation, diarrhoea, dysentery, gastric ulcer, peritonitis (mostly tuberculous), hepatic abscess, in the order named, are the ailments most frequently met with.

6. The system of diet, bolting of food, system of solid and liquid manure used in the cultivation of vegetables, and causing a prevalence of intestinal parasites, the quantities of over-ripe or bad fruit eaten, are the main causes of the frequency of digestive troubles.

7. The usual diet of the Chinese is as follows:—Rice, one to three bowlfuls of which are eaten at each meal; relish—such as salted turnip, bean curd, salted fish, cabbages; occasionally a little pork or mutton. The poor and agricultural people rarely have any meat at all. Sugar is not much used—only on occasions such as feasts, or on the tables of the rich. On summing up this dietary, it will be seen that while starch is in excess, there is a deficiency of nitrogenous elements, fats and proteids.

8. It will thus be seen that there are two outstanding points of difference between the Chinese and European dietaries, namely, the lessened quantities of sugar and meat in the former scale.

(*a*) *Sugar.*—The native article is very different from the refined sugar in use at home. The former is simply the crystallized juice of the sugar cane got by passing it between stone rollers, while the modern refined sugar is the result of a highly specialized process in which milk of lime and sulphurous acid are used for clarifying. Concurrent with the improved manufacture and increased output, there has in recent years been an enormous increase in the consumption of sugar in Europe, while in China it appears to have been the same for ages past.

(*b*) *Meat.*—This is eaten fresh, and there is an entire absence of tinned and frozen meats, which, by their cheapness and adequate supply, have increased the consumption of meat per head during the past decade or two in Europe, especially in England.

9. No one here has been able to offer as yet any feasible explanation of the freedom from appendicitis, though most doctors think there must be a predisposing cause in the European diet. I am inclined to attribute it to an anatomical cause, namely, a racial tendency to a longer mesentery than is the case with the Anglo-Saxons, among whom, owing to the prevailing congenital shortness of the mesentery, the appendix is often to be found twisted and kinked on itself. The ban on human dissection by the Chinese Government, and the objection that relatives have to *post-mortem* examinations, make it impossible at present to prove this inference. During six years of medical work in a hospital for Chinese, in the course of which I have performed over thirty abdominal operations, I have not yet had occasion to do so for appendicitis.

10. I append some expressions of opinion by leading medical missionaries in China:

(*a*) Dr. W. F. Plummer, of Wenchow:

". . . Insufficient mastication.—That insufficient mastication is a cause of indigestion there can be no doubt, and the Chinese, who are very guilty of this bad habit, are often victims of dyspepsia. The practice of helping themselves from common dishes in the centre of the table leads to rapid eating, as the tortoise would find all the titbits gone if he did not keep pace with the hares, for on these occasions the hares do not go to sleep. Yet, although so given to bolting their food, the Chinese apparently do not suffer from appendicitis to the extent that we do, so that this cause by itself seems insufficient.

(*b*) Dr. John MacGowan, of Amoy:

"Foreign physicians who have opened hospitals and treated large numbers of those who have consulted them, have come to the conclusion that the large majority of the population are below par, and are suffering from indigestion. Salted turnips, which is a popular condiment persistently eaten through all the months of the year, is very responsible for this latter ailment. But it is cheap, and so the evil has to be endured. It would be an interesting question to discuss what effect this general and widespread indigestion has upon the character of the people and upon the course of their history." Dr. MacGowan

*Butter contains a good deal of unsaturated fatty acid compounds.

speaks of the Southern Chinese, but his experience is borne out by Dr. D. Christie, of Mukden, in Manchuria, who, after 25 years' experience among the Chinese of the North, writing independently, says: "If dyspepsia, indigestible food, and bolting without masticating have any share in the causation of appendicitis, we should have plenty of it here."

(σ) Dr. P. B. Cousland, of the London Mission:

"For twenty years I had charge of hospitals and dispensaries in the Swatow district, the beds in the former ranging from 60 to 180. I never operated on a case of appendicitis, nor saw any of my colleagues do so."

Denmark.

The death-rate is about 12 per million.

It may be said, however, that the staple diet will be about the same as that of Great Britain, only that less meat and vegetables are eaten, whereas more potatoes, rice, and other starch-containing articles are consumed.

Egypt.

H. B. Day, M.D., B S., writes:

From the experience at Kasr-el-Ainy Hospital, Cairo, it appears that appendicitis is very much less common in Egypt than in England. The statistics of the last two years show 8 cases out of a total of 6,691 in-patients treated here in 1906. In 1907 there were only 6 cases among 6,980 in-patients.

The staple diet of the lower classes consists of bread and uncooked vegetables; meat is only eaten in small quantities. Cooked beans in oil form a common dish. The commonest articles of food which contain fat are, besides meat, cheese and goat's milk, which is drunk sour.

Greece.

Dr. C. Savas, Physician to the Royal Household and Professor in the University of Athens, writes:

In order to establish the comparative incidence of appendicitis in Greece I have addressed myself to the leading surgeons of Athens. They very willingly have procured me the statistics, and they are of the opinion that this disease is very frequent in our country as elsewhere.

Concerning the diet, there is to state a difference between the poor classes and the upper class people. The former class nourish themselves especially with legumen in winter and with vegetables in summer, both prepared with olive oil. The upper classes, however, make use of meat and cook with butter. In the vicinity of the sea a great deal of fish is consumed. I add that pork is little, and bread and butter almost never, used. In conclusion, I think that the amount of fat in the diet of the Greeks is comparatively very limited according to our hot climate.

Out of 28,067 cases admitted to hospitals there were only 393 cases of appendicitis—a limited number compared with English hospitals.

Iceland.

The Chief Physician of Iceland, Dr. G. Björnsson, writes:

The disease is, in my own and other medical officers' opinion, of the same comparative occurrence here as in other countries. The symptoms and course of the disease are the same here as elsewhere.

As to the staple article of diet, I beg to state that mutton, beef, milk, fish, and breadstuffs are the principal articles of food of the inhabitants.

Black bread is the most common breadstuff. Fats (butter and suet) are, in my opinion, consumed in a higher degree up here than among common people in most other countries. A good deal of potatoes is also consumed, but very little of other vegetables. Vegetables are not grown to any considerable extent, and the same is the case with fruit. Coffee is used to a high degree, but not much tea. Intoxicating drinks are less used than in any other country of Europe.

India.

I have no statistics personally, but quote from the *Lancet*, April 18th, 1908, p. 1162: "It seems to be clear that appendicitis is rare in India." Mr. James Harris, the writer of the article, suggests the simple diet of the people as the cause of their comparative immunity. He further suggests the frequent habit of purgation and the mode of defaecation as factors. Lewkowitsch[1] states that linseed and rape oils are largely taken in India.

Italy.

Dr. G. Sandison Brock writes:

Professor Bastianelli says that the disease is very prevalent in Rome, and that part of Italy is and always has been liable to the disease, but knows of no statistics which would give a precise idea of the actual number of cases.

An Italian doctor visiting the Royal Infirmary, Liverpool, stated that the disease was comparatively rare in Italy. The statistics of operation which Professor Bastianelli sends through Dr. Brock show that an average of 156 cases are operated on in Rome annually from a population of 500,000. This would give the incidence as far less than that of Liverpool and district.

As to the staple article of diet in Central Italy, I should say it was maize in the form of polenta. In the country, where appendicitis is quite common, a good deal of oil is used with the food. Meat is very little eaten even by people fairly well off, and, except in the form of oil, very little fat.

Netherlands.

Dr. C. Eykman writes:

Respecting the incidence of appendicitis in the Netherlands . . . so far as is known, statistical data of the above-mentioned nature are only to be found in the *Statistiek van de Sterfte naar den leeftyd en naar de oorsaken van den Dood* (Statistics of deaths according to age and causes of death), published by the Central Bureau for Statistics. These statistics naturally give no statement of the number of cases of the disease, but only of the number of those which ended fatally. In the *Bydragen tot de Statistiek van Nederland* (Contributions to the statistics of the Netherlands), published annually under that title, statements relative to appendicitis have only been given since 1903, under No. 118 of the "extended list" of causes of death. Prior to that year the classification took place in accordance with the "short list," in which appendicitis was not mentioned separately but was included in heading No. 34, "other diseases," comprising no less than ninety causes of death. Meanwhile, in a recently published "contribution" of the said bureau (*Nieuwe volgreeks* (new series), xcvii, 1908), figures, going slightly further back, are given in a table of deaths classified in accordance with the "extended list" for the years 1901 to 1904 inclusive.

As regards deaths from appendicitis (including phlegmon of the fossa iliaca), these are shown to have amounted to:

1. For the kingdom 8 88
2. For communes of more than 20,000 inhabitants 10.64
3. For communes of less than 20,000 inhabitants... 8.00

per 100,000 persons in the years 1901 to 1904 inclusive, thus in a period of four years.

The proportionately greater number of deaths in the larger communes is not attributable to the fact that patients from elsewhere are taken up in the hospitals; for since 1901, deaths—no matter where the death has taken place, are regarded for statistical purposes to have occurred in the actual place of residence of the deceased. However, the smaller number of deaths from appendicitis in communes of less than 20,000 inhabitants may have its origin in the circumstances that this disease has not been recognized, and has therefore been included in other headings.

It appears that in the kingdom there died of both sexes from appendicitis:

Years.	Men.	Women
20–29	12.09	7.94
30–39	8.11	5.51
40–49	12.31	6.48
50–64	11.18	11.69
65–79	17.82	15.82
80 and older	62.36	40.39

According to the statistics, 11.3 men and 8 8 women died from appendicitis per 100,000 of the average population of both sexes in the quadrennial period 1903 to 1906 inclusive.

The question as to the principal article of diet in this country and the nature and amount of fats in the food, cannot be answered in a general way, as these vary greatly according to local circumstances, the season of the year, occupation, social position, personal taste, etc. However, it can be said that besides bread, potatoes, and a comparatively large variety of vegetables are taken very generally and that, as everywhere else, the diet of the well-to-do classes differs from that of the poorer classes in that the former consume a greater amount of meat, and, in that connexion, of albumen and fat. Accurate data on this subject are, however, not available, and still less respecting a possible connexion between diet and the incidence of appendicitis. Two clinical professors of this city, in reply to a question on this point, have stated that they have not noticed anything whatsoever of such a connexion.

NORWAY.

Professor Stron and Dr. Malthe, of Kristiania, write:

The disease is very frequent in this country. It seems to be the more so in the greater towns than in the rural districts. With more prosperous circumstances and a more liberal diet the frequency seems to increase. In many cases there has been a preceding catarrh of the intestine or liability to obstruction. Periods in which the acute appendicitis occurs more frequently than usual are not seldom met with.

PERSIA.

Dr. A. R. Neligan has very kindly sent me numerous statistics with a letter which I quote in full:

The facts collected may be summarized as follows:

1. Appendicitis is very uncommon among Persians.

2. It is proportionately much more common among Europeans resident in the country than among natives.

3. It is more common in Teheran, where the conditions more nearly approach those of the West than elsewhere.

4. Diseases of the digestive tract are common, and include: Pyorrhoea alveolaris (universal); dyspepsia, generally of a "sthenic" type; dilatation of the stomach; intestinal worms are very common, especially lumbricoides; enteric fever is common, but not of so severe a type as in Europe; dysentery; cholera, epidemics about every ten years; constipation is continually complained of, but is not really common, at any rate in an aggravated form; the Persian loves taking medicine, and a purge above all things.

5. The Persian is a gross eater, but his diet is simple and soft.

6. Fat is largely eaten by all classes.

The food eaten in Teheran is much the same as in the provinces, but is not of such good quality. The richer natives (Persians and Armenians) also go in for European dishes, tinned foods, etc. The Persian eats a large quantity at a sitting and bolts it; he has practically only two meals in the day, one at midday, the other just before bed.

Whole-meal bread is the staple article of diet; meat and rice are eaten largely by the richer classes only; large quantities of fruit are eaten in season, especially melons, grapes, pomegranates, and dates.

The most popular vegetables are lettuce, cucumber, and beetroot; cheese made from goats' milk is much eaten. In the spring Persians of all classes drink large quantities of curdled milk and of buttermilk.

Everything cooked is drowned in fat "roghan"; *it is a form of "ghee," or clarified butter*, made from sheep's and goat's milk; it varies in quality, but that generally used is very offensive in smell, taste, and appearance.

The meat eaten is almost entirely mutton of very poor quality. For those who cannot get meat, a broth made of simmering lumps of meat and fat in water for many hours is used. Animal fat is also eaten in large quantities by the richer classes in the form of "kabobs," which consists of alternate cubes of meat and fat grilled on a skewer over a brazier.

The Persian stomach delights in bitter and acid things, its owner cooks all sorts of bitter plums, fruits, and herbs with his food. Tea is a great drink; it is taken very weak.

Town or District.	Physician.	No. of Cases of Appendicitis.	No. of Years.	No. of Patients Seen in No. of Years.	Remarks.
Teheran	Dr. Wishart, American Mission...	13	11	1,600	All in-patients; 7 were Mohammedans, 3 were Armenians, 2 were Jews, 1 was a Christian convert.
	Dr. Scott, Indo-European Telegraph Department	10	5	—	3 Europeans (see Dr. Neligan's second letter).
	Dr. Neligan, H.B.M. Legation ...	4	2	3,000	Seen in the legation dispensary and elsewhere; 2 were Europeans, 1 was a Mohammedan, 1 was an Armenian.
	Dr. Schulz, Persian Hospital ...	4	3	10,000	In and out-patients. During the past three years, out of 400 operations, only 2 for appendicitis. All Mohammedans.
Isfahan	Dr. Carr, Hospital of C.M.S. ...	4	13	5,298	In-patients.
Hamadan	Dr. Fank, American Mission Hospital	1	6	—	An Armenian.
Shiraz	Dr. Scott, Indo-European Telegraph Department	2	5	20,000	Seen in dispensary and elsewhere; 1 was a European, 1 was a Persian.
	Dr. Woolatt, Indo-European Telegraph Department	4	2½	—	
Yezd	Dr. White, Hospital of C.M.S. ...	0	10	2,000	
Bushire and Keimanshah	Captain Williams, I.M.S., Consular Hospital and Dispensary	4	4	—	1 was a Persian, 3 were Europeans.
Seistan	Captain Dalzell Hunter, I.M.S., Consular Hospital and Dispensary	0	3½		
Meashed...	Captain Battys, I.M.S., Consular Hospital and Dispensary	2	3½	—	No cases in the native hospital. Both cases were in Europeans and followed attacks of subacute dysentery.
Tabriz	Dr. Vanneman, American Missionary Society	—	—	—	*Has had long experience of Persia: practice largely consulting, so that most serious cases are seen: thinks he may possibly see 1 case a year, but is certain more cases have occurred during his residence among the 100 odd Europeans than among the 200,000 of Persians in Tabriz.*
Kerman	Dr. Dodson, Hospital of C.M.S. ...	5	5	—	All Persians.
Keimanshah	Captain Crossle, I.M.S., Consular Dispensary	0	2	—	
Yazoin	Dr. Laurence, American Mission Dispensary	4	6	12,000	All Persians.

A great deal of "arak"—a native spirit—is also drunk, and in the cities inferior European wines (in preference to the very heady native ones) and brandies.

I think I have given the main facts about appendicitis in Persia and the other subjects about which you desire information.

I hope your investigations will add much to our knowledge of the etiology of the disease; certainly the diet idea seems the most important, to judge from these short notes and from Indian experience.

The interesting statistics contained in the table on p. 2019 were sent me by Dr. Neligan.

ROUMANIA.

The statement of Lucas-Championnière is quoted above.

SPAIN.

Dr. Bryden Glendining writes:

The facts are, first, that it is in comparison decidedly rare. In my occasional visits to various hospitals during the last year I have not seen a single case of appendicitis.

Secondly, it is slightly more common among the aristocratic classes; personally I have not seen a single case, but Dr. Gutierrez, who decidedly has much the largest consulting practice in Madrid, tells me that he has personally seen four cases in the last year and has heard of another three as being seen by colleagues.

As to literature, there is nothing of recent publication except review or abridgement of the publications of Paris, principally of the diagnosis between colitis and appendicitis.

On the question of case incidence, I am unable to find anything, but in a country such as this, where statistics are so difficult to obtain and when obtained regarded with such decided scepticism, it is scarcely surprising that little is done in that way. With regard to the explanation of the rarity of incidence on the supposition that diet is an oily one, it is I think, scarcely tenable, as the poor man's diet is a thin decoction of poor meat, rice, bread and water, boiled up day after day, with occasional additions of that which fortune may send, and of garbage. The more well-to-do persons live on practically a French cuisine. My information is limited solely to Madrid.

SWEDEN.

Rennel Rodd, Esq., H.B.M.'s Minister, kindly sent me the following letter, statistics, etc.:

I have endeavoured to obtain for you such statistics as are available on the subject of appendicitis in Sweden. The latest figures published are those for 1905. With the exception of the cases dealt with in the military hospitals, the figures issued are for *operations* and not for cases. There do not appear to be any statistics available as to actual or suspected cases.

Sweden.

Total population in 1905—5,377,055.

Cases of appendicitis recorded in the military hospitals at Stockholm and Karlsberg in 1905:

	Cases.	Deaths.
Stockholm	25	None.
Karlsberg	9	None.

Of these, 7 (aged between 15 and 50) were treated by operation.

Operations for perityphlitis or appendicitis in civil hospitals, nursing homes, etc., throughout Sweden during 1905:

In hospital	2,072
In private nursing homes	143
At home...	48
Total	2,263

Deaths from appendicitis in the various cities and towns of Sweden during 1905:

Age.	Male.	Female.
1 to 5	2	4
5 to 10	2	4
10 to 15	3	3
15 to 20	7	2
20 to 40	24	6
40 to 60	7	11
Over 60	1	5
	46	35

The death-rate is about 16 per million.

With regard to the diet of the people, I have made a few notes for you from such sources as are open to me. The statistics are, however, not of very recent date.

For consumption of meat no recent figures are available; for the years 1885–8 it was reckoned at about 28 kilograms—and has no doubt since increased—per inhabitant.

The consumption of milk about the same time was reckoned at 183 litres per head. (Much more milk is now devoted to making butter, and skimmed milk is largely consumed.)

The consumption of butter was reckoned about the same time at some 5½ kilograms per inhabitant.

Rye is still more largely used than wheat, and in some districts rye and oats mixed. A favourite form is a sort of rye biscuit, something resembling oat cakes, only harder in consistency.

The people consume very largely smoked, salted, and dried animal food as a relish with their butter and hard bread.

In the long winters potatoes are practically the only vegetable obtainable by a great proportion of the population.

The consumption of sugar has probably increased considerably since the table given above was issued, owing to the cheapening of sugar by the introduction of the beet industry.

CONCLUSION.

It would be unwise to draw any broad deductions from the above incomplete statistics, except that appendicitis has a markedly different incidence in various countries, and that this different incidence may be very largely a question of diet.

Many theses have been advanced to explain this relationship to diet. The above statistics, if they show anything, show that where there is a large meat-eating population there appendicitis is a common disease, whereas in those countries where little meat is eaten appendicitis is rare if not almost unknown.

There is no doubt, according to most people, that apart from improved diagnosis appendicitis has greatly increased in the British Isles in the last few decades. Very little evidence has so far been advanced to any explanation of this. The greatest change in the diet of the people has undoubtedly been the marked increase in meat eating. With the amount of foreign meat and canned food the poorer classes even are now able to supply themselves in fair quantity with meat of varying kinds, more particularly mutton.

The fat of meat, more particularly of mutton and beef, is characterized by the small amount of unsaturated fatty acid they contain.* That the fat in the food determines the nature of the fat in the tissues is well known. From the clinical and chemical work quoted above it would seem that this factor determines the nature of the soaps to be found in the wall of the intestinal tract (probably as a manifestation of their excretion), and where these soaps are the calcium soaps of saturated fatty acids there is usually some evidence of disease, either a mucous colitis or an intestinal lithiasis. In appendicitis, with which these two conditions are clinically associated,[9] there is the same occurrence of these calcium soaps in the wall or in the lumen.

In my opinion, therefore, there is some evidence to connect the nature of the fat in the food with the incidence of the disease.

Further observations are being made on the lines indicated at the beginning of this paper, and investigations are being carried out as to the nature of the fats in the food, the tissues, and, more particularly, in the intestinal tract. Experiments which have been recorded[8] show that the fats in the tissues are not neutral fats but complex phosphatides, the fatty acid radicles of which are largely unsaturated, and evidence is being obtained which would tend to show that these unsaturated fatty acid radicles are those which are used for the immediate use of the body, and it is possible that the calcium soaps above-mentioned are evidences of some excreting process of the intestinal tract for the purpose of eliminating either the calcium or saturated fatty acid radicle.

My thanks are due to the gentlemen mentioned for the time and trouble they have taken in collecting and forwarding the above statistics and observations, to Sir James Barr for assisting in obtaining them, and to

* The iodine value of beef and mutton fats are about 40.

Professor Benjamin Moore for his constant advice during the conduction of the chemical investigations.

References.

[1] *Keen's Surgery*, vol. iv, 1908, p. 737. [2] *Textbook of Medicine*, 1907, p. 617. [3] Abnormal Fat Assimilation, etc., British Medical Journal, July 27th, 1907; *Bio-Chemical Journal*, vol. ii, p. 395, 1907. [4] Abnormal Fat Assimilation, loc. cit. [5] Kelly, *Vermiform Appendix and its Diseases*, p. 300. [6] Schmidt and Strasburger, *Die Faeces der Menschen*, p. 156. [7] *Chemical Technology of Oils and Fats*, vol. ii, 1904. [8] *Bio-Chemical Journal*, vol. iv, No. 10, p. 455.

A CONTRIBUTION TO THE CLINICAL STUDY OF CHRONIC MOVABLE KIDNEY.

BY

PHILIP HICKS, M.D Cantab.,

LEAMINGTON.

The object of this paper is to plead for more general patient investigation into the effects of chronic movable kidneys upon general health—particularly as regards their influence upon neurasthenic and mental conditions.

It is therefore unnecessary for me to discuss in any way the more acute cases; such are usually obvious enough, and they have been ably dealt with in a recent monograph by Wilson and Howell.

Etiology and anatomy are also beyond my scope here; and pathology need only be mentioned to introduce the question of toxaemic states resulting from the more chronic displacements.

Abdominal (and perhaps cardiac) symptoms are mostly due to various alterations in the relation of the parts, to dragging upon connexions, and to disturbances of the nerve plexuses concerned.

The case is not so simple with regard to toxic conditions.

Most chronic movable kidneys are probably the seat of some degree of hydronephrosis, not acute enough in its incidence or condition to cause pain. It is a fact that in acute cases, where hydronephrosis is believed to exist, it is difficult to estimate its extent by palpation through the abdominal walls, operation often revealing a much more extensive collection of fluid than had been suspected.

The inevitable "kinking" of the ureter must always, or almost always, produce retention of urine in the kidney pelvis; and the degree of pressure upon renal substance of this retained urine must depend directly upon the degree of ureteric obstruction.

The inevitable result of long-continued pressure, aided perhaps by some interference with nerve supply and with blood circulation, must be to impair the renal function, and it is probable that many sufferers from this condition live in a state of mild uraemia.

It is not certain whether any direct absorption of toxins from the retained urine can occur; such absorption probably depends upon tension.

Some such explanation is necessary if it be accepted that various general symptoms (neurasthenic, etc.) can be caused by movable kidneys; for it is plain that such conditions cannot be explained by the effect of long-continued pain, or by the wasting influence of dyspepsia alone, since they occur in many patients who present no abdominal symptoms whatever, yet in whom examination reveals definite displacement.

This is, after all, a question of pathology; and it leaves untouched the fact that certain morbid conditions are frequently found to be associated with movable kidneys.

This association, known to be common, is probably far more so than many practitioners suppose; and if it shall be proved that readjustment of the kidneys cures or materially benefits the patients, then the order of cause and effect must be accepted.

To-day the most divergent views on this question are held in the profession. We are all agreed that where the displacement is associated with the usual obvious symptoms—pain, dyspepsia, etc.—measures should be taken to support the kidney in its proper position. Here the sequence of cause and effect are plain, and no dispute can arise.

But it has been asserted that these kidneys are capable of causing many other symptoms, mostly of a nervous character—symptoms which are not necessarily accompanied by any abdominal disturbance whatever, and where the actual discovery of the kidney condition may be an incident of a routine examination.

It has been further asserted that such cases are exceedingly common; that all chronic downward displacements of the kidneys, however free from local symptoms, are almost certain to be, sooner or later, the cause of consequences the most serious and most diverse, covering a very wide range of neurasthenic and mental disease.

Many physicians are honestly of opinion that these painless displacements are quite harmless; that they are "anatomical peculiarities," such as are known to exist commonly enough in many domestic animals; that no good will result from treatment; and that it is in the patient's best interests that nothing should be said about the discovery.

The most advanced views as to the effects produced upon health by movable kidney have probably been presented in this country by Suckling. It is hardly going too far to say that his conclusions, as exhibited in writings and practice, are nowhere accepted in their entirety; yet it is likely that, for certain reasons, neither fair examination nor due value have been accorded to his work.

I may at once admit that my own experience during the last few years has convinced me that there exists a large number of cases that support Suckling's contentions.

I have had no experience of asylum cases, nor has any definite case of melancholia with movable kidney come into my hands; but I have seen certain cases of marked neurasthenic and minor mental symptoms in which the discovery and support of movable kidneys have been followed by most remarkable improvement. I have been anxious to maintain an open mind and level judgement, and for a long time I distrusted my growing conviction in this matter. But I am now satisfied that there exists, at any rate, a case for careful and continued inquiry. Such inquiry should be upon the broadest lines, conducted with independent intelligence, and the final verdict must depend upon the results of treatment; whilst I am strongly of opinion that the proper and fittest tribunal can only consist of general practitioners throughout the country. Time and opportunity are both theirs, and it is by them rather than in hospital or consulting work that the range of symptoms can be studied in their origin and in their development; it is by them, who know the life-history and the environment of their patients, that the value of nervous symptoms can be best estimated; *moreover, they have the better chance of discovering these cases in the earlier stages, when treatment is most likely to be successful.*

Any inquiry as to the effect of movable kidneys upon the production of more serious mental disease—for example, melancholia—is, of course, the province of the alienist.

Now, the alienist has already admitted the probable toxic origin of certain morbid mental states, and it is surely worthy of careful determination whether the toxic results of movable kidneys may contribute towards filling our asylums.

The difficulties of any such investigation are apparent; but they make it none the less worth carrying out.

Symptomatology.

The following symptoms of chronic movable kidney have occurred in my recent experience, and I shall not amplify my remarks with regard to such as are well known.

Pain.—This varies widely in character; it may consist of aching, dragging, or neuralgic sensations, and it may radiate over any part of the abdomen into the back and occasionally down the thighs; in my cases the common type of pain has been felt in the sacral region. It is generally aggravated by walking, by any active exertion, or by motoring, and usually soon ceases when the patient lies down.

Dyspepsia.—Generally atonic, characterized by uneasiness and flatulence, anorexia, foul tongue, and constipation.

Nausea and Vomiting are often prominent, especially after the patient has been up for some hours.

Urinary symptoms are uncommon, unless any unusual degree of hydronephrosis is present. Urine is occasionally

described as scalding and is certainly apt to be offensive at times.

Palpitation, Tachycardia.—That such conditions can be produced by movable kidneys I am assured. The heart action may be uniformly rapid or there may be paroxysmal attacks of tachycardia (see Case 1).

Loss of flesh always occurs in chronic cases—that is, is always present in such cases. Here may lie material for a pretty discussion as to cause and effect. I must express my own very strong opinion that the wasting is one of the many neurasthenic symptoms often caused by the long-continued existence of movable kidney. It must also be remembered that displacements of the kidney occur often enough in very well nourished, even fat, people, though in such cases the symptoms are more acute. It is no exaggeration to say that one can often pick out at their first visit, from their appearance, patients who have chronic movable kidney.

Pelvic Symptoms.—On this point I do not feel justified in saying more than that I have had some reason to believe that movable kidneys may be concerned in the causation of certain pelvic symptoms—for example, metrorrhagia and endometritis. It has seemed to me possible that the often unsatisfactory treatment of endometritis—curetting, etc.—may at times be due to the fact of a kidney displacement underlying the condition; and here it may not be inapt to recall the relations between the renal and spermatic plexuses of nerves. The possibilities of renal toxaemia are manifest in this connexion. Here, again, as with insanity, it seems to me that there is enough material to stimulate independent and careful investigation by gynaecologists.

Neurasthenic and Mental Symptoms.—These form without doubt the crux of the whole matter. It is unnecessary to particularize the symptoms of neurasthenia—too well known, alas! to every practitioner. *It will be admitted that only in the recognition of possible physical causes, and that in an early stage, lies our chance of dealing successfully with this curse of modern life.*

That temperament plays its own part is undeniable, and that the overwhelming hurry of life must have its exhausting influence is sure enough; but it must always be remembered in this latter connexion that neurasthenia is most common amongst women, and remarkably so amongst women who have never been called upon to face severe strain.

Guthrie Rankin and others have pointed out the probability that many cases originate in the absorption of intestinal toxins, and this may or may not be true. Yet this theory of toxaemia is the most reasonable explanation that can be supplied to fit the position; and, in my judgement, a toxaemia dependent upon deficient kidney action is a far more likely and satisfying explanation than one due to intestinal absorption, and this notwithstanding Metchnikoff.

If asked for a definition of neurasthenia, one can only reply "nerve exhaustion." That there must be in most cases some concrete definite reasons for the growth of the exhaustion has become obvious to intelligent thinkers; and any future success in the treatment of this disorder must depend upon exact location of the originating causes.

The history of Graves's disease during the last quarter of a century affords a striking commentary upon the too common custom of classifying as "neurotic" any condition of which the physical cause is as yet undiscovered. That which for long years was accepted as a neurosis is now known to be due to some perversion of thyroid secretion, and pathologists no longer grope amongst the cervical sympathetic nerves for evidence of disease.

It is true that neurasthenia may be met with often enough in patients suffering from chronic movable kidneys, where no improvement follows the treatment of support. It may even be true that some such patients, newly acquainted with the discovery, may revel in the knowledge that they "have broken out in a fresh place": but surely the fact that old-established cases of neurasthenia may be incurable does not prove it impossible to deal with the earlier cases, if only the relations of cause and effect can be once definitely settled. I therefore submit:

1. That no neurasthenic symptoms in any young person of either sex, or in an early stage, should be accepted as neurotic in origin without the fullest investigation and examination, and that, if necessary, such examination should be repeated over and over again under the different conditions to be described later before the final "condemnation" is uttered.

2. That no case of movable kidney discovered in any such patient should be allowed to go untreated, and this even and especially so in cases where no abdominal symptoms are present.

3. That in all cases of early mental disturbance accompanied by depression, unreasonable weeping, loss of memory, vagueness, restlessness, suicidal tendencies, and especially where these symptoms are accompanied by any sort of "pains in the head," the same methods of investigation and, where necessary, of treatment should be used.

Diagnosis.

Various methods of examination are in use. Some physicians advise the erect, some the recumbent, position. In my opinion it is vital to recognize that the discovery of a movable kidney is not *always* a simple matter. I prefer to examine my patients lying down, with the shoulders slightly raised on pillows. Each side can be best explored (and should be so) by the physician standing upon the opposite side, both hands being used, one in the loin and one in front, the kidney being felt between them as it descends on a slow, deep inspiration. The degree of descent should always be estimated.

Both the fact of descent and its degree may require correction by an examination in the erect position. If necessary, another examination is best performed after the patient has been up and walking about for some hours, and it is certain that by this method displacements may be discovered that have not been revealed by repeated examinations made before the patient rises in the morning. I am quite certain that in some cases one examination is insufficient, and that a negative diagnosis must not always be relied upon. Where the symptoms give rise to the suspicion that a movable kidney may be present, it is imperative that the matter should be set at rest beyond doubt; and in such cases, where the issue may be important, I always examine up to four or five times if necessary (see Case 1).

I have known a kidney to "shoot down" through my hands as the patient, an elderly neurasthenic, suddenly gave a violent cough. I had previously examined this woman several times without result. Complete relaxation of the abdominal muscles is desirable; doubtless each physician has his own methods of securing this relaxation during examination. Any tenderness of the kidney, or enlargement should be carefully noted; sometimes an examination may itself result in pain and tenderness; this latter always passes off after a day or two of rest.

The physician has next to determine whether in any given case the mobility of the kidney is causing trouble, abdominal or general.

If the answer is in the negative, and all of us see such cases, then not only should no treatment be suggested, but the *patient* should not be told of the discovery. Wilson and Howell (page 75) advise that in this class of case "the prudent man will keep his discovery to himself." I entirely disagree. Such reticence would be the acme of imprudence.

Some relative or friend of the patient should always be told of the fact; reasons being given, of course, to explain why the patient is to be kept in ignorance. All such cases, however, should be under some sort of observation, and interference may be found expedient at some later period under altered conditions.

But if the kidney is accepted as the cause of trouble, what is to be done in the way of treatment?

Treatment.

Rest in bed always allows the return to normal position of any but adherent or greatly enlarged kidneys, or of a very loose (floating) example; and rest may always be relied upon to relieve the symptoms. In cases where tenderness of the organ is marked, or where any of the symptoms are severe enough to demand it, the necessary period of rest must be insisted upon.

The next step is to have made and *carefully fitted* a truss or a belt, which will support the kidney in its place *or as nearly so as can be achieved by these methods.*

Whether truss or belt be ordered must depend upon various factors—physique, age, duties in life, etc. A truss is less bulky, but perhaps more rigid and uncomfortable at first; many women prefer the comfort of warmth and sense of general support conferred by a belt. In either case the strength and stoutness of the instrument should be graduated to the life it is meant to assist. Belt pads should always be pneumatic, and also graduated in size to the individual; these pads are sometimes fixed too low down on the belts—the exact best position can generally be sketched upon the patient if necessary.

Application.

It is most important that the support should be properly applied; and this must *always* be carefully demonstrated to the patient, who should lie flat upon the back with a pillow under the hips. The belt can then be fixed in position with the knowledge that the kidney is well up. It is best worn over a vest or combinations; and since it is safer that the fixture should take place before the patient has walked about at all, I always advise that the bath shall be taken at night instead of in the morning.

A belt will always require tightening up from time to time, and should be ultimately worn strapped as firmly as can be borne with comfort.

The pads require attention and reinflation from time to time, and the belt itself will often require alteration at the hands of the maker after some weeks' wear.

The practitioner should always satisfy himself that the support is properly fitted and properly applied; it must be examined in position for this purpose. The early irksomeness of the treatment should be explained to the patient.

Such measures are generally efficacious in supporting the kidney in position; and many patients assert that they distinctly feel their kidney (or kidneys) "slip down" when the belt is removed.

It will sometimes occur that a kidney will slip down or be forced down when the belt is in position. The former is, of course, due to an ill-fitting appliance; the latter may occur from a fall, a severe motor jolt, or a violent effort. In such cases there is generally a good deal of pain, which, however, is easily relieved by a loosening and readjustment of the belt.

It is wonderful how quickly in some cases the beneficial effects of support are felt by the patient. As a rule, the more recently acquired the trouble, the more rapid is the relief, and vice versa.

In old-standing cases it is wise to warn the patient that from three to six months is not too long a test of the treatment before a final opinion should be formed. No definite promise of amendment should be made in any of these cases.

It is, alas! too true that in old cases, with marked neurasthenia of long duration, success is not to be secured, nor even any real benefit, from support; and such cases may seem to strengthen the contention that the kidneys have nothing to do with the neurasthenia. If, however, the early cases respond to treatment, no such argument can be logically deduced from the failures.

Patients will often ask: "Must I wear this thing always?" and the answer must be guarded. It is certain that sometimes symptoms will clear up, and that the support can be safely dispensed with for a time; but it must be well understood that a relapse is almost inevitable sooner or later, since a chronic movable kidney can only be finally secured in position by operation.

Operation.

With regard to operation, I am not in the habit of suggesting it prematurely in any chronic case.

If recovery, or marked relief, occur from the support from a belt or truss, then the diagnosis may be finally accepted as correct, and the case is complete. It is then possible to discuss the question of operation with all its *pros* and *cons*.

With the technique of nephrorrhaphy I have nothing to do in this paper. The modern operation, performed by whatever method, is practically without mortality, and is generally successful in "mooring" the kidney in its place; consequently it is the ultimate cure of the condition.

Yet there are many considerations that must be weighed, and that should be placed quite fairly before the patient. The expense is often not the least of these; my own experience has been that, though ultimately successful, a long and tedious convalescence may ensue, generally unseen by the surgeon. Complications do occur, since I have seen a right pleural cavity opened during the operation, and a temporary urinary fistula, with its attendant suppuration. In all cases much pain and discomfort occur for forty-eight hours, and pain in the back may be persistent for many months.

Position in life, strength, work and age should be all notable factors in deciding what advice we may offer; whilst perhaps at this stage the patient is generally in a position to make the final decision. Some may prefer the plunge of operation in spite of its terrors, and the prospect of being once for all relieved of a serious encumbrance in life: some may prefer to "let well alone."

The following cases seem to me specially worthy of record:

CASE I.

Miss P. S., aged 19, came into my hands early in March, 1910. Had been ill for nearly two years, and had been under treatment from "Dan to Beersheba" during that period. The chief symptoms were "heart attacks," which consisted of very severe attacks of paroxysmal tachycardia, occurring frequently, with intervals of fair health. There was no doubt from the history that this girl had been considered seriously ill. The final diagnosis from various excellent physicians had always been neurosis. My first examination revealed nothing new. Anorexia, a very foul tongue, constipation, severe nausea, and occasional vomiting were present; anaemia was marked, but a blood count revealed no special features; she had almost daily attacks of very severe palpitation, with some cardiac dilatation and faintness. Some sort of toxaemic condition appeared to be the probable explanation, but the only opinion I could offer was that I was *certain* that she had some definite cause for the attacks. It was not until the fourth or fifth careful examination, made in the afternoon after she had been about for several hours, that I was able to distinguish the descent of the right kidney right down between my hands. I was in grave doubt as to the possibility of this condition causing the heart attacks. A very light belt was fitted, and improvement began almost immediately, and now for some time she has been perfectly well and able to undergo considerable exertion; her digestion has gradually recovered, she has no cardiac symptoms, and regards herself as cured. On one occasion lately she left off the belt for a day, but was immediately ill, and was glad enough to return to it.

CASE II.

Miss L. W., aged 24, a shop assistant. For two years health very bad, and under constant treatment for "nerves." She suffered from depression, constant fatigue, complete loss of memory at times—on one occasion she was found miles from home, utterly unable to explain why she was there—and always with more or less pain in the head. Such were her misery and weariness of life that her mother and sister, with whom she lived, were afraid that she would commit suicide. She was brought to see me, and the only abnormality I could discover after a thorough examination was that both her kidneys "dropped" very badly.

Treatment.—A belt, and that only. Recovery was very rapid, and she is to-day a very active, cheerful, hard-working girl, and regards herself as perfectly well, whilst her home is said to be "not the same place."

I wish that I could refer "doubters" to these two patients—and after all their opinions are worth a good deal!

THE USE OF OLD TUBERCULIN OINTMENT IN THE DIAGNOSIS AND TREATMENT OF LUPUS VULGARIS.

(From the Skin Department of the Royal Infirmary, Edinburgh.)

BY

A. VERGE, M.B., CH.M.SYDNEY, F.R.C.S.EDIN.,

HOUSE-PHYSICIAN.

IF one reviews the lengthy list of the various methods employed in the treatment of lupus vulgaris, such as *x* rays, Finsen light, carbon dioxide snow, carbolic acid spiking, salicylic acid plasters, surgical measures, etc., it is at once evident that no one method can be used to suit all cases, and therefore no apology is needed for the description of another means of treatment which has been found of great value in certain cases. As a result of the observation of von Pirquet's reaction in numerous cases of lupus, carried out by Dr. Cranston Low in the wards of the Royal Infirmary, it occurred to Dr. Norman Walker that it would be interesting to observe the result of the application of Tuberculin (Old) direct, either in the

form of an ointment, or in solution, to lupus tissue. This was done, and the lesions so treated appeared to be improved on healing. It was therefore decided to continue the investigations as to the merits of the ointment. After a series of experiments, the method described below has been adopted as a means of treatment in selected cases.

The part being carefully cleansed, and after the application of a starch poultice to soften and remove any crusts which may be present, an ointment consisting of a 5 per cent. solution of Koch's Old Tuberculin in a basis of paraffin molle, is well rubbed in from one to two minutes. A piece of linen or lint, freely smeared with the ointment, is then applied, and allowed to remain for twenty-four hours. Where possible, a firm bandage is used, or fixation ensured, by means of plaster, to prevent the ointment being spread over the surrounding skin and reaching undesirable positions.

On removal of the application, varying degrees of hyperaemia and swelling are seen in the actual lupus tissue, with a moderate amount of hyperaemia, with reddish papules extending one or two inches into the surrounding healthy skin (Moro reaction).

After cleaning the surface, similar applications are made for the next three or four days, the number being regulated by the pain experienced, in some cases considerable, and by the natural objection of the patient to the peculiar odour which arises in all cases. In forty-eight hours the swelling and hyperaemia are very well marked. As one proceeds with the treatment the part becomes more and more inflamed and swollen, small vesicles appear over the situation of the lupus nodules, and these on rupturing leave small ulcers behind, showing that the nodules have been eroded.

The appearance of the lesion now closely resembles that produced by the application of a salicylic acid plaster. This is the desired effect, and the treatment is now suspended, and the inflammation allowed to subside under some soothing application. Healing is usually complete within ten days, when the beneficial result may be observed.

The most outstanding features are the remarkable diminution in extent of the actual disease and the reduction of the infiltration and thickening This is especially marked in lupus of the face, where infiltration and thickening are so often to be seen. None the less noticeable is the improvement in colour and the softer and more pliable nature of the lesion.

Perhaps the best results were obtained where the lupus tissue surrounded joint areas. Here where formerly, owing to the contraction of the scar tissue, the joints were rendered almost useless, or much restricted in action, there was in some cases practically complete restoration of movement, in others much improvement.

The typical reaction only obtains in the actual disease, and does not extend into the surrounding healthy skin.

In the earlier cases treated the Moro reaction produced round the lesion gave rise to some trouble owing to the inflammation spreading to undesirable positions, such as the eye and mouth.

This is now controlled by smearing an ointment of hyd. ammon. gr.v, zinci oxidi ʒj, in vaseline ʒj, around the edge of the lesion, so preventing the tuberculin ointment from coming in contact with the healthy skin.

In none of the cases treated was there any general systemic reaction. The temperature and pulse remained normal. No headache was complained of in the face cases under treatment, but many of these patients objected to the odour.

The pain, which is considerable, prevented me in some cases from making more than one or two applications; in others six or seven could be endured, and in the latter series more beneficial results were obtained.

A good deal of satisfaction was derived from the attitude of the patients treated in this manner. Although objecting somewhat strongly to the pain, odour, and inconvenience of having an unsightly application on their faces, when they saw the results obtained the majority returned for a second and third course of treatment. All of them thought their condition much improved. One girl, who had had lupus of the face with much scarring and disfigurement for eighteen years, and who had undergone many varieties of treatment, said that nothing had benefited her in a like degree.

From time to time letters have been received from medical men inquiring as to what form of treatment had produced in their patients such satisfactory results.

While carrying out these observations my attention was drawn to the fact that in 1908 Emil Senger of Berlin, Moro of München, and others had made use of a 5 to 10 per cent. Old Tuberculin ointment for the purpose of diagnosis and treatment, but the method does not appear to have attracted much attention in this country.

The following list of cases are a few selected from about fifty under treatment at the present time:

CASE I.

J. P., aged 21. In this patient both arms were affected with lupus vulgaris. The lesions consisted of patches of lupus tissue, in which there were many nodules, much scarring, and a good deal of contraction of the elbows. Tuberculin ointment (5 per cent.) was well rubbed into the elbow regions, and an application made on lint for twenty-four hours. At the end of this time there was a good deal of swelling and hyperaemia, and after the third and fourth day marked erosion of the lupus nodules. The treatment was now suspended owing to the pain, and the inflammation allowed to settle down. At the end of ten days healing was completed, and it was then seen that there was marked diminution of the actual disease, and much improvement in the use of the elbow joints. No general systemic reaction. Temperature and pulse normal.

CASE II.

M. C., aged 22. Extensive lupus of the face in the region of the nose, cheeks, and upper lip. Numerous nodules, scarring, and infiltration, etc. Received a course of six applications of tuberculin ointment. The nodules were eroded and greatly diminished in number, and there was marked diminution of the infiltration. No rise of temperature, headache, etc.

CASE III.

G. O'B., aged 30. Lupus vulgaris affecting left side of the face, left ear and side of the neck, and right upper arm. Many nodules in edges, with much scar tissue in all areas. Had two courses of four to five days on the arm, and one on the face of four days' duration. Had a marked local reaction, with erosion of the nodules. The result was very good, the disease being lessened and the scar tissue became more pliable. Pulse and temperature normal. No headache.

CASE IV.

M. C., aged 11. Lupus vulgaris of right side of face over the parotid region. Numerous scars on neck the result of operations on the glands. Had four applications of tuberculin ointment. A marked reaction occurred, and on healing practically no disease remained in the scar tissue. Had no headache. Pulse and temperature normal.

CASE V.

M. T., aged 15. Has a large patch of lupus on the flexor aspect of the right elbow joint, 6 in. long and 3 in. wide. Much scarring in the centre of the lesion, causing marked contraction of the joint. Lupus nodules very evident in the edges of the patch. Received four applications of the ointment. A marked reaction was produced, and the nodules clearly picked out and eroded. After healing there was evident diminution of the disease, with almost complete restoration of the movements of the elbow.

CASE VI.

J. A., aged 17. Extensive patch of lupus on the chest, with another smaller one on the neck. The throat was also affected. Had four applications to each lesion. The reaction was very marked, the nodules being eroded in the usual manner. Such an improvement was observed on healing that Dr. Logan Turner, under whose care the patient was for the throat condition, sent to inquire what was the treatment which had produced so much improvement in so short a time.

CASE VII.

N. S., aged 14. Large lupus patch on flexor aspect of right elbow joint, with numerous nodules in the edge and much scar tissue causing contraction of the joint. Received five applications of ointment. Reaction well marked, and on healing the disease was less and a greater range of movement in the joint was observed.

As a means of diagnosis, the application of tuberculin ointment is of undoubted value. Numerous control tests were made in many other forms of skin diseases, such as psoriasis, lichen planus, sycosis, various forms of syphilis, dermatitis seborrhoeica, eczema, etc. In none of these did the typical reaction occur in the lesion, and the Moro reaction in the surrounding healthy skin was entirely absent. Therefore it may be fairly claimed to be a specific reaction occurring only in lupus.

Several cases of doubtful diagnosis were cleared up, and so useful has the method proved that it is now employed in the skin department of the Royal Infirmary wherever

there is any doubt as to the lesion not being lupus. Von Pirquet's reaction alone leaves one in doubt as to whether there may not be an internal focus of disease.

The local reaction is more definite than that produced by the injection of Koch's Old Tuberculin, and does not lead to the general systemic discomfort caused by the latter.

I am much indebted to Dr. Norman Walker for the permission to publish these observations, and for his help in estimating the value of the results obtained.

CANCER OF THE BREAST: AMPUTATION AND AFTER-TREATMENT BY SECONDARY X RAYS OF KNOWN QUALITY: A SUGGESTION.

BY WILLIAM MITCHELL, M.B.,
HONORARY PHYSICIAN IN CHARGE OF ELECTRICAL DEPARTMENT, BRADFORD ROYAL INFIRMARY.

TAKING the general average of trustworthy reports, based on the three years limit, amputation of the breast, done by the most approved methods by the most noted surgeons, shows a rate of cure of about 40 per cent. If we were to extend the limit to five years it probably would not show 20 per cent. of cure. In other words, in three years there are 60 per cent. of recurrences, and in five years probably about 80 per cent. or more of recurrences. Recognizing this fact and the limitations of the most careful surgical technique, many leading surgeons have the mammary regions of patients on whom amputation has been performed irradiated by x rays once a month or once in three weeks, for a considerable time after the amputation. There is good reason to believe that were this course universally adopted, the proportion of recurrences would be sensibly diminished, and the proportion of absolute cures greatly increased. At the recent meeting of the British Medical Association, Sir J. J. Thomson read a most interesting and suggestive paper, in which he dealt with the recent work of Professor C. G. Barkla, who had been able to show that when x rays of any ordinary type strike against a substance, metallic or otherwise, that substance gives off secondary rays of a special quality, and that the same substance struck always produces the same quality of rays.

In the BRITISH MEDICAL JOURNAL, November 12th, 1910, Professor Barkla himself carries the subject a stage further, and states that elements of high atomic weight transform x rays which strike them into a secondary radiation much more absorbable and more intensely ionizing than the incident rays. These secondary radiations are, he states, of two sorts: x radiation, which depends for its quality upon the characteristics of the particular element emitting it, and a β radiation similar to the radiation of radio-active substances. He further states that the physiological effect upon the tissues, normal or pathological, depends upon the amount of the ionization of the tissues in question. Further, he states that if a tissue be injected with a heavy substance like bismuth carbonate, and then irradiated with an x-ray tube in the ordinary way, this substance (bismuth carbonate) will give off x rays of a constant quality, and that these secondary rays will produce a much greater and more intense ionization of the tissue, and hence greater physiological effect, than would have been produced by the irradiation had the bismuth carbonate not been injected. This brings to my mind a suggestion that might be useful to surgeons and radiologists alike—namely, why not, after amputation of the breast, impregnate the wound, before closing it, with sterilized carbonate of bismuth? This, if done not too profusely, would not in any way interfere with the healing of the wound. The bismuth then would become incorporated with the tissues at the very points where recurrence would be most likely, namely, along the lines of excision, and when healed, or even before, one would have all ready prepared the very condition which Professor Barkla says is the ideal one for further treatment by irradiation. If the views of Professor Barkla and Sir J. J. Thomson are correct, and I think all must agree that we must accept them as such, then I should think this well worth trying. It would obviate the necessity of painful injections later on, and give to x ray treatment of such cases all the benefits to be derived from treatment by radium. Many years ago bismuth was used as a dusting powder for healing wounds, and quite recently the beneficial effects noticed after injecting sinuses with bismuth for diagnostic purposes must be within the experience of many; hence, I can think of no reason why this suggestion should not be carried out tentatively, at all events, and with probably beneficial results.

A NOTE ON CLEFT PALATE OPERATIONS.

BY THOMAS SINCLAIR KIRK, M.B., B.Ch., R.U.I.,
SENIOR SURGEON, BELFAST CHILDREN'S HOSPITAL.

SOME years ago gastric and intestinal surgery was revolutionized by the introduction of the use of continuous suturing. The success attending this method of suturing depends on the fact that this suture gives a watertight wound on account of the close and uniform approximation of its edges, and that the tissue taken up by the suture is not liable to be strangulated, as in interrupted sutures, with consequent partial or complete failure of union in the wound, due to the necrosis.

The same result is desired in cleft palate operations as in abdominal surgery, and as the continuous suture is so successful and so universally used now in the latter work, I have used it in cleft palate work and in the closure of all wounds in which complete and rapid union without any drainage is essential.

Acting on these principles I have used a continuous suture (No. 1 or 2 silkworm gut) in cleft palate operations with satisfactory results during the last three years, and on account of the good results obtained would never think of going back to the interrupted method.

The operation I perform is the ordinary one with muco-periosteal flaps in the case of the hard palate, and in the soft palate the latter is freed from the posterior margin of the bony palate and its muscles are divided.

Apart from the ultimate good results obtained, it will be found that this continuous suture can be inserted more rapidly and easily than the interrupted one, and that the necessity for great care to insert the stitches exactly opposite each other and to tie the sutures with the correct amount of tension is obviated. The ease and rapidity of operation make the operation less serious, and it can easily be done when the child is 18 months old.

The amount of tension to be put on this suture must be sufficient, after it has been put in and before it is finally tied, to prevent the escape of any bubbles from the nose to the mouth in any part of the line of suture, when the patient is breathing quietly.

The suture should be put in close to the edges of the flaps, only taking up enough tissue to give a firm hold and not enough to invert the margins. The suturing is easiest done from before backwards. The form of needle I use is a small Durham's cleft palate needle, bent at a right angle to the right, and I insert it from below on the right side and from above on the left side, usually rethreading before each introduction. Only about $\frac{1}{2}$ in. of the silkworm gut should be passed through the eye of the needle, as the gut is apt to get frayed by the constant threading and unthreading. The suture can be left in for ten days or longer.

What I claim for the use of a continuous suture is that it gets rid of two of the causes of failure of union in cleft palate operations, namely, (1) imperfect apposition of the flap edges; (2) necrosis of the flap edges from stitch pressure, and that it considerably shortens the operation, thus materially diminishing its risk.

UNDER the will of the late Mrs. Edith Annie Freeman of Knaresborough, Halifax Infirmary and the Royal Albert Asylum each receive a sum of £1,000: while the Royal Bath Hospital, Harrogate, benefits to the extent of £500.

BRIGADE-SURGEON-LIEUTENANT COLONEL JOHN ROSS MURRAY, M.D., formerly of Rawal Pindi, Punjab, India, and of the Army Medical Service, who saw service in New Zealand in 1860 and 1861, left estate valued at £30,230.

A CASE OF DWARFISM.

BY

A. A. JUBB, M.D., B.Sc.PUB.HEALTH,

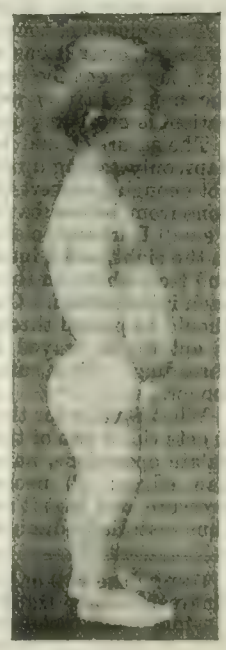
SCHOOL MEDICAL INSPECTOR, WEST RIDING COUNTY COUNCIL.

H. W., a schoolboy, is aged 9, his height is 36½ in., and his weight in clothes 38 lb. The photographs exhibit the following features, which are present in more or less degree: The large head, the depressed nose, prognathism, and the pendulous abdomen with lordosis, and the decentralization of the body. In the profile picture a divergence of the middle and ring fingers of the hand can be seen, though they were pressed together to avoid exaggeration.



The humerus measures 4½ in., and the clavicle 4 in. The skull is 21 in. in circumference, and is markedly protuberant in the frontal and parietal regions. The palate is very narrow, the superior alveolus thick, the teeth irregular and decayed, and mouth-breathing is present. The skin is smooth and supple, and fat is abundant in the lower half of the body. There is a slight convergent strabismus, and a small inguinal hernia was present at one time. The centre of the body is above the umbilicus at a point nearly one-third of the distance to the xiphoid. The principal joints are enlarged, but there is only a faint rachitic rosary. The face is pale and the expression vacuous, still the boy is physically active, though not quite up to the average in intelligence. Sexual development is unimpaired.

The family history is uneventful. The boy is the second of five children, and his mother says he was "like the others" when born, but his teeth came late, he did not walk till the age of 3, and he was treated for "rickets and water in the head." When he was 4 years old she noticed that he had acquired a habit of scratching his head with his foot. He can easily put his toes into his mouth without bending the knee. The obvious shortening of the upper segments of the arms and legs might suggest a taint of achondroplasia, but against this some particulars may be noted: (1) Absence of congenital micromelia; (2) disproportion between trunk and limbs is only slight, the fingers fall below the level of the great trochanter; (3) though there is a fork between the middle and ring fingers, the *main en trident* is not present; (4) the skull is not vaulted but bossed; (5) the decentralization of the body is due to the size of the skull, not to shortness of the legs.



The deformity is no doubt due to infantilism and rickets. The rickets has affected the skull and joints; the infantilism, which may affect different parts, and even single organs at different times, has involved the sexual development not at all, and the mental faculties only to a slight extent. Its chief effect is seen in the infantile moulding of the trunk and limbs. The conjunction of rickets and a mild degree of hydrocephalus suggests that congenital syphilis has been the cause of the infantilism.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RHUBARB POISONING.

I RECEIVED an urgent call to see a man who was stated to be suffering from a severe attack of diarrhoea. The patient was lying supine in bed when I entered the room. The eyes were closed; the face extremely pale and bathed in perspiration; the extremities cold; the fingers and ears slightly cyanosed; the respiration rapid and shallow; he could only be roused with difficulty; the pulse was 140, regular, very feeble. A hypodermic injection of ether soon restored consciousness with improved circulation, and he was able to answer questions. He stated that, with the exception of slight lumbar ache, he was quite free from pain. He complained, however, of a little numbness in the extremities. He had not vomited, and had no feeling of nausea and no headache. He had no flatulence nor eructations. He said that the pain which preceded and accompanied the action of the bowels was of a griping character, had come on suddenly, and was so severe that he almost fainted. He had three watery stools which were expelled with violence. These were followed, after an interval of half an hour, by two actions of the same kind at an interval of a few minutes. After this he felt so exhausted that he retired to bed. Rhubarb had always acted upon him as a purgative, and two years before it had caused a similar attack to that from which he was now suffering, but of not so severe a nature. On that occasion he had vomited before the action of the bowels. On the present occasion the rhubarb had been cooked in the same way (stewed). His wife, who had partaken freely of the rhubarb on both occasions, was not affected thereby.

On examination the mouth temperature was 97.8° F., the tongue was clean and the breath not offensive. On removing the bedclothes it was noticed that he had passed a small motion into the bed. The abdomen was not distended, but was resistant to pressure, and was tender over the entire surface, but more markedly over the hypogastrium. The lumbar pain was distinctly increased during bimanual palpation of the kidneys.

The patient was ordered to remain in bed for twenty-four hours; and to keep strictly to milk diet during that time; each portion of milk to be mixed with an equal quantity of lime water.

When seen five hours later the paranaesthesia of the limbs had completely cleared up, but the loin pain had slightly increased. A few ounces of high-coloured urine had been collected, and this, after standing, deposited, along with many uric acid crystals, a considerable number of small, transparent, calcium-oxalate crystals. The latter were also found in the urine passed the following morning, but not subsequently. There was an uneventful recovery.

In another case the patient—a healthy man of 36 years—had partaken freely of stewed rhubarb, which, with the exception of the paranaesthesia, had given rise to symptoms similar to those which occurred in the first case. On this patient also rhubarb had generally acted as a purgative.

Garden rhubarb (*Rheum rhaponticum*)—of which there are several varieties—is rightly regarded as a wholesome food and an excellent substitute for fruit. Since 1573, when it was first introduced into this country from Russia, the young leaves were used, and continued to be used, as a vegetable until the end of the eighteenth century. That it does not agree with every one is, it would appear, evident from its effect in the two cases above mentioned; and also—and with startling emphasis—in that of the patient whose death from its use formed the subject of a coroner's inquest at Catford some weeks since, as reported in the daily papers.

As to the precise nature of the agent responsible for the toxic action of rhubarb on some organisms, I possess no knowledge. It would seem probable that the presence of oxalates in the urine and the severe intestinal irritation

indicate oxalic acid as being one such agent in the first case. In the root of *Rheum rhaponticum* are found, besides oxalic acid and oxalates, chrysophan, chrysophanic acid, and phaoretin, each of which is of a highly irritating nature; while in the petioles and leaves oxalic and malic acids only have been noticed, so far as I can find. A few cases of poisoning by eating strawberries have been mentioned from time to time, and these contain oxalic acid.

London, W. WILLIAM E. BURTON.

HENOCH'S PURPURA.

IN the JOURNAL of November 26th I read with interest Dr. Stewart McMillan's report of a case of Henoch's purpura. Having attended a similar case in the early months of this year the details may be interesting in view of the scanty accounts in the textbooks.

In January, 1910, I was called to see a girl aged 11½ years. She was suffering from pain, tenderness and swelling of the knees, ankles and elbows. The temperature was 101° F., and the pulse 88. A provisional diagnosis of rheumatism was made. The following day there was severe and persistent vomiting of bilious material. Excessive pain was complained of in the umbilical region. The tongue was coated and bowels constipated. There was considerable pigmentation of the skin of the abdomen. The pain was so severe as to demand the cautious use of morphine. Purpuric spots developed at the affected joints and one or two on the abdomen. The spots varied in size, some being about ½ in. in diameter. The urine examined in the usual course was found to contain a considerable amount of albumen, +6 on Esbach's albuminometer. Tube casts were scanty and of the epithelial type. No endocarditis was detected and no splenic enlargement could be made out.

The symptoms subsided at the end of a week, and there was a week's remission. The second attack resembled the first but the vomited material contained blood, as did also the faeces. There was also some haematuria. Albumen was still persistent in the urine and continued to be so during the whole illness, although the haematuria varied. The attacks occurred with great regularity and the last attack came on about four months after the onset of the disease.

Blood examination revealed anaemia of the secondary type. There was a variable leucocytosis.

Treatment was mainly directed towards the albuminuria, and the usual remedies, potassium citrate, liq. amm. acetatis were tried with tr. hyoscyami. Liq. morph. mur. was used sparingly on account of the albuminuria. Salicylates were tried, but seemed to do more harm than good. I should have mentioned that there was considerable swelling of the legs, pitting being quite distinct.

The patient is now quite well, albumen almost absent, but the pigmentary changes in the skin are still present.

Dunsyre, Auchinleck. DAVID MANSON, M.B., Ch.B.

SPONTANEOUS CURE OF CANCER.

NOT the least interesting part of Sir Alfred Pearce Gould's admirable Bradshaw Lecture on Cancer is his account of cases in which a "spontaneous cure" had taken place. In support of his cases the following may be of interest.

Some years ago a man of 54 was brought to me by a colleague in the country with what I took to be carcinoma of the left tonsil, root of tongue, and left lateral wall of the pharynx. He had suffered severe pain in the throat, he was emaciated and cachectic, there was foul discharge from an extensively ulcerated surface of the irregular hard growth, and there were enlarged glands in the neck on the affected side. As surgical treatment appeared to be out of the question, I told him that nothing could be done except treatment to relieve his suffering, and that he could not live many months.

He was taken to London and seen by four surgeons of St. Bartholomew's staff, who concurred in the diagnosis and prognosis; and also by two surgeons on the staff of the Cancer Hospital, with the same result. A portion of the growth, removed for examination, proved it to be epithelial cancer. About eighteen months later the patient came to see me. I did not recognize him, and was thunderstruck when he told me who he was, as I had thought of him as dead. He was in perfect health, and the only trace of the growth was some smooth scar tissue. He told me that shortly after returning home and settling his affairs the pain and discharge ceased, and the growth began to disappear. He had had no treatment except antiseptic gargles and sprays, and anodynes to relieve pain.

Scarborough. FRANK GODFREY.

Reports of Societies.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, December 14th, 1910.

Dr. BYROM BRAMWELL, President, in the Chair.

Clinical Evening.

AMONG the patients shown were the following:—Dr. J. V. PATERSON: A case of *Dystrophia epithelialis corneae* (Fuchs), in a man aged 48, who had had visual defect for eight years, and who now showed on each cornea a patch of roughened and oedematous epithelium. Dr. NORMAN WALKER: A case of *Multiple tumours of the skin* in a man aged 30. There was a possible syphilitic taint, and in some respects the condition was not unlike tuberculous leprosy. But a recent rapid enlargement of the growth, in spite of iodide, made a diagnosis of multiple sarcoma the most probable one. Dr. E. BRAMWELL: A case of *Brown-Sequard paralysis*, caused by a rifle bullet penetrating the seventh and eighth cervical and the first dorsal segments on the right side. There was atrophic motor paralysis in certain muscles in the right upper limb, and paresis of the right leg, with ankle and knee clonus and Babinski; while on the left side there was loss of temperature and pain sensation below the fourth rib. Further, the loss of sense of position and bone conduction on the right side showed that these fibres did not decussate on entering the cord. Dr. G. A. GIBSON: A case of *Partial acromegaly*, with excessive growth of the cranial and facial bones, and of the transverse processes of the lumbar vertebrae, but without hypertrophy of hands and feet and other parts. A case of patent arterial duct with the pathognomonic thrill and murmur lasting from mid systole till beyond the second sound. Professor Sir THOMAS R. FRASER: Two cases of *Beri beri*, illustrating the oedematous and atrophic varieties, the former showing rapid disappearance of oedema under treatment, the latter the signs and symptoms of peripheral neuritis. The PRESIDENT: (1) A case of obscure *Nervous disease* in a dock labourer, aged 29. When he was about 21 difficulty in moving the limbs, facial muscles and tongue gradually developed, and there had been three attacks of dysphagia. Attempted movements excited strong spasmodic muscular movements, which slowly passed off on further attempts. He could neither walk, stand, nor speak; and on protrusion of the tongue, which was much enlarged, its tip was rolled up. There was no change in the electrical reactions of the affected muscles. Deep reflexes were absent, but the organs were healthy. The cerebro-spinal fluid was normal. Sensory functions were unimpaired. The patient had had a continuous fetid discharge from one ear since he was aged 7. (2) A case of *Myxoedema*, in which thyroid treatment had been suspended, and in which relapse occurred with very large ascites. That complication was very rare in myxoedema, and in his experience had only occurred once before in a similar case of relapse. A single tapping was sufficient, and the resumption of thyroid treatment had effected a rapid cure. Professor CAIRD: (1) A case of *Cancer of the pylorus* in a man, aged 28, in whom, clinically, abundance of free HCl was found. Mr. ALEXIS THOMSON: (1) A case of impacted ureteral calculus in a man, aged 29, who had symptoms of renal and ureteral calculus for four years. (2) A case of periosteal *Sarcoma of the humerus* in a boy aged 12, in which resection was performed in September, 1910, and repeated a year later on recurrence of the growth in the lower end of the bone. In no case of periosteal sarcoma, in the exhibitor's experience, in which

amputation had been performed, had the patient lived for a year, and the result of resection justified this mode of operation. Mr. DAVID WALLACE: A case of annular epitheliomatous stricture of the upper end of the oesophagus, diagnosed by oesophagoscopy, and treated by excision and insertion of an oesophageal tube. Mr. H. J. STILES: (1) A case of *Congenital hydronephrosis* in a boy aged 10, in which the cyst occupied the greater part of the abdomen, and from which 7½ pints of fluid were removed before the kidney could be brought through the incision. (2) A case of acute inflammation of a *Hydronephrotic kidney* in a youth, simulating appendicitis. Mr. G. CHIENE: A case of a young woman, admitted in a state of collapse, and in whom a ruptured *Ectopic gestation* was suspected. Menstruation, however, was regular. On operation, the ovary was found to be the seat of a very early gestation sac. Mr. J. W. STRUTHERS: A case in which there had been *Haematuria* for two years, and in which by urinochromoscopy the left kidney was found to be alone implicated. Exposure, splitting, and suturing of this kidney had led to a complete cessation of the bleeding. Mr. HENRY WADE: A boy, aged 4 years, in which a very movable abdominal tumour was found to be the right kidney. *Nephropexy* had resulted in great improvement both physically and mentally. Mr. E. S. CARMICHAEL: A girl, aged 9, with extensive tuberculous disease of ulna and tibia. Subperiosteal resection of the diaphyses of both bones had been done after Mr. Stiles's method, and skiagrams now showed a very satisfactory *Growth of new diaphyses*. Mr. D. P. D. WILKIE: A patient who became profoundly collapsed after operation for *Perforated duodenal ulcer*, and in whom the intraperitoneal administration of oxygen, through a glass drain in the pelvis, was followed by immediate and rapid improvement.

EDINBURGH OBSTETRICAL SOCIETY.

Wednesday, December 14th, 1910.

Dr. F. W. N. HAULTAIN, President, in the Chair.

Narrow Pelvis.

PROFESSOR SIR HALLIDAY CROOM, in a paper on the narrow pelvis, said that when its measurement was between 3 and 3½ inches, if the case was seen early, premature labour might be induced; and, if late, forceps might be employed. In premature labour the risk to the mother was very small, but the fetal mortality averaged 30 per cent., and this rate was much increased by further deaths occurring in the first year of life. Alternative treatments were Caesarean section, pubiotomy or symphysiotomy, and the intrapelvic application of forceps supplemented by pubiotomy. In high forceps cases, the maternal mortality was 4 per cent., and the fetal 30 to 40 per cent. As regards symphysiotomy and pubiotomy, these operations ought to be carried out in a hospital. In a primipara with a seriously contracted pelvis, the option seemed to him to lie between premature labour and Caesarean section; the latter was preferable. Pubiotomy did not do more to save the child, and the risk to the mother was high. In cases of moderate contraction, with the head not engaged, high forceps was a dangerous method, but if combined with pubiotomy it often proved serviceable. Dr. MUNRO KERR said that in the Edinburgh school high forceps was looked on as a suitable method of treatment in many cases. He used to pull children through a conjugate below 3 inches, but that gave a fetal death-rate of 50 per cent. Now he gave endless time for moulding during the second stage, and he found that spontaneous delivery occurred in 50 to 60 per cent. of cases. He entirely agreed with Sir Halliday Croom regarding pubiotomy. It was an operation to be kept in reserve, and should not be selected during pregnancy as the operation of choice. Dr. BALLANTYNE said that obstetricians were still called to do craniotomy in the third stage, when the doctor had not recognized the contracted pelvis, or had not been summoned till labour had set in. Dr. HAIG FERGUSON agreed that the high forceps operation was not now justifiable if the head was not engaged at the brim; the results of pregnancy in contracted pelvis had been greatly improved since it was recognized that the second stage need not be restricted to three or four hours. Dr. DEWAR having asked what was the smallest diameter in which a practitioner could safely use forceps at full time, Sir HALLIDAY CROOM answered not under 3½ inches. Dr. RITCHIE and Dr. FORDYCE also spoke. The latter said little attention had been paid to the old operation of turning, on which many country doctors relied. The PRESIDENT said that with high forceps in experienced hands the mortality of 4 per cent. did not occur. He had never seen a woman die from the injudicious use of forceps. The discarding of forceps in high cases was a swing of the pendulum. Professor CROOM, in reply, stated that, in his experience, turning was worse than high forceps. He did not think that it was difficult very closely to estimate the conjugate diameter at the brim.

The Fetal Structures and Maternal Tissues.

Dr. JAMES YOUNG, in the course of a lantern demonstration of sections from the premenstrual uterus, the pregnant uterus, and Fallopian tube, and the uterus with chorion-epithelioma, stated that in the opening up of the material vessels the cellular elements of the mucosa played an active part as well as the chorionic cells. This consisted in an active inhibition of fluid by the cells of the stroma, as the result of which they swelled up, and finally gave way, so that first lymph and then blood were liberated. The same process led to a widening of the capillaries to sinuses. It was due to a substance liberated by the fetal cells. In Fallopian tube pregnancy the oedema and haemorrhage were uncontrolled, while in the uterus the decidua acted as a more complete defence. Dr. WATSON agreed that the Fallopian tube showed changes in advance of the early ovum, but disputed that the endothelium of the vessels consisted of stroma cells. Did not the imbibition of fluid more nearly represent a dying condition of the cells? Mr. LOCHHEAD drew attention to the importance of the oedema of early pregnancy for the nutrition of the embryo, and held it could not be considered identical with the oedema of a limb in venous or lymphatic obstruction.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DISEASES OF CHILDREN.

Friday, November 25th, 1910.

Dr. E. CAUTLEY, President, in the Chair.

Congenital Obliteration of Bile Ducts.

DR. PARKES WEBER and Dr. G. DORNER read a paper on congenital obliteration of bile ducts with hepatic cirrhosis. The case was that of a female child, aged 6 months at the time of death, who had jaundice of the obstructive type, with complete absence of urobilin (and urobilinogen) from the urine and the faeces. The liver and spleen were both considerably enlarged. The necropsy showed that the distal part of the hepatic duct, the cystic duct, and the common bile duct were represented by connective tissue cords without any lumen, but the cord representing the choledochus could not be traced as far as the duodenum. Sections of the connective tissue cord showed not only complete absence of any biliary channel, but furnished no evidence that there ever had been any lumen. Perhaps the term "congenital atresia of bile ducts," as suggested by Lavenson, was, therefore, more suitable for the present case. The gall bladder contained a little slimy, colourless fluid. In the spleen the pulp tissue and supporting fibrous tissue were increased in amount. The liver was green in colour, the cirrhosis being of the unilobular (interlobular) type, which can be experimentally produced by ligature of bile ducts (obstructive "biliary cirrhosis"). The liver and microscopical sections from the case were exhibited.

Cases.

The following cases were also shown: Dr. J. L. BUNCH: *Morphoea* in band form in a girl aged 5 years. Three years ago the child fell and bruised her forehead. Shortly afterwards a patch of sclerodermia appeared on the right temple, gradually spreading upwards on to the scalp and downwards on to the nose. Over the affected area the hair had disappeared and the skin was tense and atrophic. Dr. E. CAUTLEY: *Splenic enlargement* in a boy aged 6 years, whose family history was good, and free from tuberculosis and syphilis. Three weeks previously sudden pain and swelling occurred in the ankles, which rapidly subsided. The eyelids and feet at first were

oedematous; the urine was normal. The spleen was considerably enlarged and the liver slightly so. The blood showed a leucopenia. In the discussion both tubercle and syphilis were suggested as a diagnosis. Mr. H. S. CLOGG: *Extensive necrosis of the lower jaw* in a girl aged 7½ years. Two months previously the child had toothache and swelling of the face and submaxillary regions. The mouth could only be opened ½ in., and the tissues on the floor were indurated. The constitutional disturbance was great, the temperature rising to 103° F. On the gum and lower lip were large sloughs and a copious purulent discharge. The lower central incisors fell out, and the whole of the alveolus in this region was exposed. Other loose and carious teeth were removed, and antiseptic mouth washes were used, with little improvement. As the pus yielded a pure streptococcus, 10 c.cm. of serum were given with marked benefit. Four other injections caused a fall of the temperature to normal on the tenth day. The child rapidly improved in health, but the sequestrum was still firmly attached. Dr. T. R WHITHAM: *Patent ductus arteriosus* with deficient interventricular septum in a girl aged 11 years. There was a history of cardiac distress since infancy, but there was no "clubbing" and no cyanosis except on occasions. The dullness of the heart and great vessels was increased to the left. At the apex there was a blowing systolic murmur, and over a localized area in the pulmonary region there was a continuous thrill and a loud "churning" rumble throughout systole and diastole. There was no evidence of enlarged glands. Dr. PARKES WEBER: (1) *Naevus verrucosus linearis* in a boy, aged 3½ years. The skin of the trunk, neck, and extremities was largely affected with pigmented and verrucose naevus, the distribution of which in lines and patches was typically "segmental" or "zoniform." The abnormality began when the child was 7 months old. (2) *Congenital transposition of the viscera* in a girl aged 10 years. Clinical signs and a skiagram showed a complete transposition of all the viscera. There was no valvular disease of the heart. Dr. F. LANGMEAD: (1) *Rheumatoid arthritis* in a boy, aged 13 years. The condition began two years ago, and the knees, ankles, elbows, wrists, and hands had been affected. The axillary glands were slightly enlarged, but no enlargement of the spleen had been detected. Skiagrams showed that the enlargement of the joints was periarticular. Improvement was brought about by treatment with thyroid extract, which was given on account of the mother having had myxoedema for fifteen years. (2) *Malformation of the heart* in a male infant, aged 8 months, who was cyanosed, but did not show any appreciable "clubbing." The heart was enlarged to the left; a systolic bruit was audible over the cardiac area, especially at the xiphi-sternal junction, and was accompanied by a thrill. The condition was possibly one of deficient interventricular septum. Mr. O. L. ADDISON: (1) *Old healed tuberculous disease of knee-joint* with increase in length of the limb. The boy first had signs of tuberculous disease of the knee in 1906. He was treated for six months, and afterwards had a Thomas's splint. For the last eight months he had been walking about and was free from recurrence. Movement in the joint was almost perfect, but the leg was 1 in. longer than the other, the femur and tibia being each ½ in. longer. Skiagrams showed increased translucency of the tibial and femoral epiphyses with some irregularity of outline. (2) *Sarcoma of the femur* in a girl aged 1½ years. The growth, which was in the right femur, had been noticed for two months and did not appear to penetrate the bone (*x* rays). The liver and spleen could both be felt, and there were a few small glands in the left groin. It was not proposed to operate. (3) *Interstitial hernia* in a boy, aged 2 years, who had been operated upon for left inguinal hernia. There was a subcutaneous hernia of the size of a pigeon's egg above Poupart's ligament on the same side, and the left testicle was undescended. Dr. G. A. SUTHERLAND: *Cardiolysis for adherent pericardium* in a boy aged 6 years. Eleven months ago the patient was admitted suffering from subacute rheumatism and rheumatic nodules. There was bulging of the precordial region and a heaving impulse. The heart was greatly enlarged and a double murmur was audible at the apex. The boy became a chronic invalid, and adherent pericardium with dilatation and hypertrophy was diagnosed. Six months ago Mr. Clayton Greene removed parts of the cartilages of the fourth to seventh ribs at the sternal junction to allow more freedom of action for the heart. Since then the boy had had one attack of cardiac failure, but on the whole he had been better and much more active. The paper and cases were discussed by the PRESIDENT, Dr. CARR, Dr. SUTHERLAND, Dr. H. D. ROLLESTON, Dr. J. D. ROLLESTON, Dr. PORTER PARKINSON, Dr. GARROD, Dr. T. R. WHIPHAM, Dr. SPRIGGS, DR. HIGGS, Mr. MILNER BURGESS, and Mr. P. L. MUMMERY.

BALNEOLOGICAL AND CLIMATOLOGICAL SECTION.

Wednesday, December 14th, 1910.

Dr. SOLLY, President, in the Chair.

British Health Resorts for Foreign Invalids.

DR. NEVILLE WOOD, in a paper on British health resorts for foreign invalids, pointed out that the policy of British municipalities exhausted itself in the endeavour to keep Britons from foreign countries, rather than to bring the foreigner to Great Britain; and, in addition, no serious attempt had been made by the profession in England to inform their foreign colleagues that there existed in the island both spas and climatic stations of the highest rank. Speaking generally, the category of foreign invalids, for which British spas were typically suitable, included those who thrived in a relatively cool climate, and were able to walk well, those who in association with complete change derived benefit from baths which were neither very hot nor taken in close succession, and those whose maladies were held to be amenable to the special waters of the country. It had been objected that English spas were intolerably dull, but they were as lively as many on the Continent. Excessive rainfall had been urged against them; but on the European mainland, too, it was not uncommon for a whole season to be spoilt by a persistent downpour of rain; as a matter of fact, in summer less rain fell in the eastern division of England than at some of the stations of western Europe. At some of the inland climatic stations in Great Britain the air, though bracing, was not devoid of sedative qualities. Among such stations were Hindhead, Church Stratton, Crowborough, Okehampton, and Ben Rhydding. When the inhabitants of central Europe became aware of the advantages of British health resorts, there would be a free interchange of invalids, instead of as now a movement in only one direction, and that away from our shores. In order to accomplish this purpose a book was now under consideration containing descriptive monographs collated by whatever chapters might appear to be necessary.

CLINICAL SOCIETY OF MANCHESTER.

Tuesday, December 20th, 1910.

Mr. J. HOWSON RAY, President, in the Chair.

THE following were among the exhibits: Drs. A. G. BROOKS and L. SAVATARD: A case of *Primary lupus vulgaris* of the scalp in a youth. Dr. J. G. CLEGG: Case of *Traumatic vertical hemiopia* of the right eye. A short time before being seen the patient had received a blow on the right side of the root of the nose, and with the ophthalmoscope a haemorrhage into the sheath of the right optic nerve was easily seen. Dr. C. C. HEYWOOD: A case of *Muscular rigidity* in an infant of 18 months, and a case of *Intention tremor* in a boy of 13 years. The PRESIDENT: Several children illustrating affections of the hip joint, with *x* ray photographs of each case, and demonstrating the diagnostic points of difference in coxa valga, coxa vara, tuberculous hip disease, and tuberculous disease of the great trochanter. Mr. H. H. RAYNER: Two cases of congenital dislocation of the hip joint undergoing fixation treatment, with *x*-ray photographs. Mr. J. A. K. RENSHAW: Cases of tuberculous laryngitis, parathyroid, and cerditis tuberosa. Mr. P. R. WRIGLEY: A case of cerebellar abscess, and a case of sarcoma of the left frontal bone; both in young girls.

THE estate of the late Patrick Aloysius Smith, M.D., Glasgow, has been sworn at £8,024 7s.

Reviews.

NERVOUS DISEASES.

THE seventh and last volume of Professor OSLER and Dr. T. MCCRAE'S *System of Medicine*[1] deals with diseases of the nervous system, and worthily keeps up the standard set by so many of the writers in the previous tomes of the "System." Its twenty-one chapters are the work of sixteen different contributors; twelve are Americans, three English, and one is a Canadian. Professor L. F. Barker leads off with an excellent introduction to diseases of the nervous system, going very thoroughly into the pathological disturbances of sensation, perception, mental processes, and motor system generally. The diseases of the motor tracts are described by Professor W. G. Spiller, the primary myopathies being included in this chapter. Dr. C. K. Russel contributes a brief account of the combined system-diseases of the spinal cord; Dr. Edwin Bramwell writes on the scleroses of the brain, in which are included disseminated sclerosis, pseudo-sclerosis, diffuse, tuberose, and miliary sclerosis; he also gives an account of the diseases of the meninges, and of lumbar puncture. The diffuse and focal diseases of the spinal cord, including tumour, syringomyelia, myelitis, Landry's paralysis, and several other affections, are well described by Dr. E. F. Buzzard; admirable illustrations of the microscopical appearances presented by the cord in anterior poliomyelitis are given. Professor J. Collins contributes chapters on the topical diagnosis of diseases of the brain and on aphasia; apraxia is considered under the first of these headings. An excellent account of the diseases of the cerebral blood vessels is from the pen of Professor H. M. Thomas: and equally well-written chapters on tumours of the brain and meninges and on hydrocephalus are contributed by Professor Harvey Cushing, whose brief account of the surgery of these conditions will be read with peculiar interest. Diseases of the peripheral nerves are detailed by Dr. G. M. Holmes: those of the cerebral nerves by Dr. E. W. Taylor in a particularly lucid article. Professor D. J. McCarthy describes paralysis agitans, chorea, and infantile convulsions; he is inclined to attribute the first of these diseases to some pathological change in the affected muscles or muscle spindles. Acute encephalitis and abscess of the brain are well discussed by Professor E. E. Southard, with copious references to the literature of these subjects. Professor W. P. Spratling has incorporated a great deal of practical experience in his article on epilepsy; Dr. B. Sachs contributes interesting accounts of the syphilitic and parasyphilitic diseases of the central nervous system, and on amaurotic family idiocy. The articles on neurasthenia and traumatic neuroses are excellent, and written by Professor C. W. Burr: those on hysteria, migraine, neuralgia, professional spasms, occupation neuroses, and tetany, are by Dr. S. E. Jelliffe, whose account of tetany is particularly thorough and up to date. The indices at the end of the volume are satisfactory. That a certain number of misprints should occur in a book of this size is inevitable; most of those we have noted in this volume seem to occur in foreign or classical terms (such as "adiadokokinesis," p. 74 and index, correctly spelt on p. 649; "chorioditis," p. 37; "sessamum," p. 679; "zwiebach," p. 733; "sphacelae," p. 819), and one may doubt whether an Italian would recognize "passio caduca et perdito" (p. 654) as a specimen of his own tongue; a Frenchman "parcella epilepsy" as French (p. 655); or a Greek the derivation "συριγξ, marrow; μυελος, tube" (p. 214); it would seem that there is no limit to the knowledge of languages that may be expected of a modern editor. In conclusion, we must congratulate Professor Osler and Dr. McCrae on the success with which they have carried through and brought to a conclusion the great work of editing this well designed and executed "System." Few books nowadays can claim to be indispensable; no practitioner could do better than invest in the seven volumes of this "System."

A small book on general paralysis and tabes dorsalis from the points of view of etiology, clinical course, and treatment, by Professor SPILLMANN and Dr. PERRIN,[2] is well worth reading, not so much because of any fresh light thrown upon these diseases as on account of the convincing manner in which their syphilitic origin is proved from the extensive material personally observed by the authors. This material consisted of 79 cases of general paralysis and 105 cases of tabes dorsalis. A brief summary of the principal results of the authors' inquiries will perhaps prove the most useful fashion of reviewing their book.

First, with regard to general paralysis, the authors' cases showed that the most common age-period for the onset of symptoms was between 32 and 45, thus coinciding with the results of other investigators. As to frequency of previous syphilitic infection, out of 75 this was acknowledged in 49 and denied but proved in 11, giving certain infection in 81.08 per cent.; moreover, infection was considered probable in 8 more, the factors warranting probability being such as series of miscarriages, a high infant mortality, cohabitation with a known syphilitic, etc. Thus in only 7 was syphilis not proved. As to the length of the interval between infection and onset of symptoms, the authors' results accord with those of Professor Fournier, namely, that in the great majority of cases it is from six to twelve years, and as a rule ten years after infection. Another important point of note is that in none of the authors' cases had the syphilitic attack been severe; and consequently the treatment had been of brief duration, and, in their opinion, insufficient. Of all the other etiological factors considered by the authors, none but neuropathic heredity and alcoholism were ascertained in any considerable proportion, and grouping all the causes other than syphilis together, the combined result fell far short of syphilis alone.

Turning to the 105 cases of tabes dorsalis, syphilitic infection was admitted in 81; denied but proved in 5; was deemed probable in 9; and was absent or not proved in 10. That is, infection had occurred certainly in 81.9 per cent., and including the probable cases, in 90.47 per cent. A comparison of the relative periods of incubation of general paralysis and tabes shows that although in the latter disease the most common period was from the sixth to the fifteenth year, there was not the same marked maximum at the tenth year, due to the fact that the cases were more widely distributed over a much longer period than in general paralysis by both their early and late appearance. As in general paralysis, however, all the tabetics had had only mild syphilitic attacks and had undergone only brief antisyphilitic treatment. As an interesting comparison it is mentioned that one of the authors (P. Spillmann) had under observation for fifteen years 32 syphilitics who had been treated rationally and intensively, and that none of these, not even those with a neuropathic heredity, had become either paralytic or tabetic. We may pass by the authors' discussion of the symptomatology of their tabetics and also the very grave results of their inquiries into the descendants of their cases, and proceed at once to the results of what in this country is considered a forlorn hope—the specific treatment of general paralysis and tabes. Here they at once admit its inefficacy in general paralysis so far as cure is concerned, though they consider that the ameliorations which occur at times justify its employment. It is otherwise, however, they maintain, with tabes. "Of all parasyphilitic affections," they say, "tabes is undoubtedly that which benefits the most from mercurial treatment." Of their 105 cases, 34 were insufficiently followed and are therefore omitted from their statistics. Of the remaining 71, 2 were cured absolutely; in 18 prolonged arrest of the disease followed; in 4 a temporary arrest; in 8 the development of the disease process was retarded, and

[1] *A System of Medicine.* Edited by William Osler and Thomas McCrae. Vol. viii, Diseases of the Nervous System. With a general index. The Oxford Medical Publications. London: H. Frowde, and Hodder and Stoughton. 1910. (Roy. 8vo, pp. 969, plates 38. Seven vols., 24s. per vol.; each vol. 30s.)

[2] *Études sur la paralysie générale et sur le tabes.* By Drs. Paul Spillmann and Maurice Perrin, with Preface by Professor Fournier. Paris: A. Poinat. 1910. (Post 8vo, pp. 94. Fr. 2·50.)

in 30 there was mitigation of the symptoms and amelioration. In only 9 was mercurial treatment of no avail. The clinical notes given by the authors leave no manner of doubt as to the nature of the disease in those absolutely cured. The results which the authors obtained they attribute solely to the intensive and antisyphilitic treatment employed by them, generally in the form of subcutaneous injection of mercury with the usual addition of one of the iodides. A few weeks ago attention was drawn in this JOURNAL to a paper by Drs. Froude Flashman and Graham Butler on general paralysis, in which the theory was advanced that parasyphilitic diseases were the result of spirochaete infection. The good results obtained by Drs. Spillmann and Perrin are in harmony with this view and should encourage the prolonged and thorough antisyphilitic treatment of a class at present regarded with the utmost pessimism.

Some time ago a small monograph on morbid audition, by Dr. A. MARIE, was reviewed in the JOURNAL. This, which formed vol. iii of the *Bibliothèque de psychologie expérimentale et de métapsychie*, was a brief study of the disorders of audition which are determined by central cerebral lesion. In the present work, under the title of Auditive Degenerescences,[3] Dr. MARIE considers the several degenerative lesions of the peripheral organ of hearing—that is, the internal, middle, and external ear. These two volumes are advertised in the small ready-made reviews which are kindly furnished with many French *coupe de presse* copies of newly issued books, as composing together a very complete monograph on the psychopathology of audition. Both works are, however, composed almost entirely of excerpts from the writings of a large number of other observers, strung on the thinnest thread of original discussion, and fall between the two stools of simple bibliography and independent observation, either of which would have been of real service. Volume xiv of the same series, entitled *Les folies à éclipse*,[4] by Dr. LEGRAIN, is of another class. Instead of a series of bald statements culled from the writings of others, he considers the insane from an entirely original point of view, and so clothes his facts in picturesque and varied imagery that many times they disappear entirely, as if in an ascending throng of skilfully blown and iridescent soap-bubbles. Without prejudice to more usual classifications, which he in no wise wishes to displace, the author—to take one of his ever-changing metaphors—likens a delusion to a vegetable parasite, and says concerning its course: First, the cure may be complete, absolute and real; the parasite has been detached from the trunk, which remains intact and vigorous, and no more may be said. Secondly, the parasite may continue to vegetate, but is wilted, because the principal trunk, having almost killed it, absorbs the larger part of the sap—this is attenuation, or *remission*. Thirdly, the parasite shrinks to a mere bud (*bourgeon*) or germ, still, however, containing the potentiality of revival—this is the "eclipse." In another place he compares this process of partial recovery from a delusion to a meteor, which flashes through our firmament, or consciousness, to pursue its incalculable way, intact, beyond our ken in the world of the subconscious—Dr. Legrain makes great use of the "subconscious." Hence the term "eclipse." That is, Dr. Legrain is considering here only such mental phenomena as delusions from which the patient appears to have recovered, in so far that they have no active relation with the present and actual mental life, but are still uncorrected by experience, still real, but, as it were, encapsuled, and which, though no longer considered by the subject as having any present existence, are regarded by him as real experiences in the past. From the psychological point of view such delusions *à éclipse* are deeply interesting, and, beneath a confusing medley of metaphor, Dr. Legrain treats of these in very suggestive and interesting fashion under the heads of nosography, diagnosis, etiology, and prognosis.

[3] *Les dégénérescences auditives.* By Dr. A. Marie, Medical Superintendent of the Asylum of Villejuif, Paris. *Bibliothèque de psychologie expérimentale et de métapsychie.* Vol. xii. Paris: Bloud et Cie. 1909. (Pp. 112. Fr. 1.50.)

[4] *Les folies à éclipse.* By Dr. Legrain, Médecin en chef des asiles d'aliénés de la Seine. Collection de psychologie expérimentale et de métapsychie. Vol. xiv. Paris: Librairie Bloud et Cie. 1910. (Pp. 117.)

VACCINE THERAPY.

THE second edition of Professor HEWLETT'S *Serum and Vaccine Therapy*[5] contains much information which was unknown when the first edition appeared in 1903. The general plan of the book remains unchanged. It is an outline, with no pretensions to completeness, of this large and complicated subject, upon which there has been an enormous output of work during recent years. Professor Hewlett expresses a somewhat sceptical opinion with regard to the practical utility of the opsonic theory. "Stimulating and suggestive as the opsonic theory has been, it must be recognized that it does not contain the whole truth as regards immunity and the cure of infective diseases." He still believes that "serum therapy is the ideal method for treating infections." Without any intention of putting in a special plea for the opsonists, we think it only fair to point out that such expressions of opinion on controversial questions require the support of more detailed argument than is possible within a book of this small compass. A similar criticism may be raised about the book as a whole. The reader who merely wants a preliminary first glance at the subject will find it all very interesting; but if he is a medical man and wants to know whether the statements he reads will justify his adoption of definite lines of treatment in definite cases, he will probably feel it desirable to consult larger treatises before making up his mind.

We see from the new third edition of Dr. ALLEN'S *Vaccine Therapy*[6] that the author's confidence in the accuracy and importance of determinations of the opsonic index has not been shaken by recent adverse criticisms. His explanation is that observers must be divided into two classes: (1) those who can determine an opsonic index accurately, and (2) those who are not skilful enough to do so. It is unfortunate that defenders of Sir A. E. Wright's methods should take up this line of defence; as some of the pathologists in the opposite camp have a high reputation for skilful technique, it seems that some more satisfactory explanation ought to be found, which would pave the way for a reconciliation of divergent views. Dr. Allen's book has been thoroughly revised and brought up to date. It may be recommended as giving a good account of the progress which opsonists are making in vaccine therapy.

ANAPHYLAXIS.

IN his book on the problem of albumen anaphylaxis[7] Dr. PFEIFFER starts from the general principle that after treatment with an albumen-antigen there is formed in the living organism an antialbumen (precipitin, etc.), which, on coming into contact with the antigen, leads to certain changes. When the contact takes place *in vitro* these changes are of a physico-chemical nature (precipitation, etc.), and are associated with a formation of toxin; when it occurs *in vivo* there is a liberation of toxic cleavage-products, and these lead to the manifestations of anaphylactic shock. Dr. Pfeiffer then proceeds to consider how far the production of the anaphylactic phenomena can be utilized for the differentiation of albumens in forensic work. He finds that the delicacy of the anaphylactic method, when adopted with proper precautions, does not fall far short of the precipitin method in the case of unaltered albuminous substances and traces of blood; and in the case of blood stains which have been damaged by heat or other deleterious influence the anaphylactic method is much the more delicate. This new method has the advantage of simplicity; it yields results which are objectively demonstrable and comparable quantitatively,

[5] *Serum and Vaccine Therapy.* By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H. Second edition. London: J. and A. Churchill. 1910. (Crown 8vo, pp. 416. 7s. 6d.)

[6] *Vaccine Therapy: Its Theory and Practice.* By R. W. Allen, M.D., B.S. Third edition. London: H. K. Lewis. 1910. (Demy 8vo, pp. 287. 7s. 6d.)

[7] *Das Problem der Eiweissanaphylaxie; mit besonderer Berücksichtigung der praktischen Antigendiagnose pro foro.* Von Dr. Hermann Pfeiffer. Jena: Gustav Fischer. 1910. (Roy. 8vo, pp. 231. M. 6.

and are in these respects not much inferior to those obtained by the precipitin method. How far the former method may suitably replace the latter for forensic purposes is not yet fully determined, but the author thinks the use of the former is already justified (1) in doubtful cases of blood stains which have suffered a profound alteration, and (2) in the differential diagnosis of rare but nearly related bloods for which a reliable immune serum is not available. Dr. Pfeiffer's book contains a careful and comprehensive digest of published researches on this subject, and may be recommended as useful to all who wish to study the problems of anaphylaxis.

PATHOLOGICAL ANATOMY.

M. BÉRIEL'S work on the elements of pathological anatomy[8] is intended to equip medical students with the knowledge necessary for passing their examination in this subject. He writes in an easy and elementary fashion, explaining things clearly and simply, with careful avoidance of elaborate detail or discussion of controversial questions. A good feature of the book is the writer's method of bringing into close relationship the naked-eye appearances of morbid tissues and their characteristics as seen in section under a low power of the microscope. The illustrations, reproduced from drawings made by the author, are also commendable; they show careful and artistic workmanship, and will give the student a good idea of what he must learn to recognize as typical. To this extent the book can be recommended as suitable for students who like to begin by breaking new ground gently. But we cannot advise them that it will provide all they need to learn for the purpose of obtaining a medical qualification. The average English textbook on pathological anatomy and histology enters more seriously into the difficulties and complexities of the subject, and some appreciation of these will be expected from the student who wishes to find favour with his examiner. The diagnosis of malignant disease in its various forms, of tuberculosis, of syphilis, and, indeed, of the various disorders which provide the stock-in-trade of the examiner's questions, needs more amplification than is provided in the pleasantly categorical simplicity of M. Bériel's class-book on pathological anatomy.

BACTERIOLOGY.

UNDER the ambitious title of "The virulence problem of the pathogenic bacteria,"[9] Herr LAURENT has put together a very bulky volume. Its large size is partly due to the mass of clinical notes which it contains; pp. 84–207, for example, consist entirely of records of cases of diphtheria. The book is also packed with an abundance of quotations, many of them very lengthy, from the literature of diphtheria. Out of this overwhelming accumulation of detail it is not easy to sift the gist of the author's meaning. It appears that he has made a lengthy epidemiological study of epidemics of diphtheria in Stockholm and the neighbourhood of that town. These observations have led him to draw certain general conclusions, which he thinks are valid not only for diphtheria, but apparently for all diseases due to pathogenic bacteria. All such infective agents conform to "a general biological law," which he defines as follows: "Every organism arises out of other organisms, and is itself a part of higher organisms, which are all subservient to the laws of life, and therefore are born, grow, reach a maximum, grow old, die, and are subjected to corresponding changes." In fairness to the author, who admits that his opinions and arguments are out of the ordinary, and therefore demands that they should be scrutinized by the medical profession with great care, we must leave it to those who may wish to read the book to determine for themselves the precise significance and value of the above somewhat vague and abstruse proposition. So far as we can make out, the author starts with the view that the diphtheria bacillus, in non-virulent form, is of common occurrence in normal persons, that outbreaks of the disease, diphtheria, are due to the development of non-virulent into virulent forms, and that the subsidence of outbreaks is attributable to the degeneration of virulent into non-virulent forms. This course of events is the expression of a "biological law" which is applicable to infective organisms in general and to the diseases arising therefrom. We may remark that the author's epidemiological and clinical studies need more precise confirmation from bacteriological evidence before such broad generalizations can be regarded as proved. The element of truth in his ideas is obvious; it is well known, for example, that it is common for persons to harbour diphtheria bacilli or pneumococci without contracting diphtheria or pneumonia; but to admit so much is a very different matter from conceding that Herr Laurent has discovered a new law explaining the causation of disease.

Professor JORDAN'S[10] *General Bacteriology* (second edition) covers the usual ground of a student's elementary textbook, and also contains interesting chapters on the bacteriology of milk from the standpoint of public health, the uses of bacteria in the arts and industries, and the bacterial diseases of plants. Amongst the preliminary chapters, that on technique might with advantage have entered more fully into matters of practical detail. In describing the meningococcus, points of differentiation from the *Micrococcus catarrhalis* should have been discussed. The chapter on diphtheria gives Wesbrook's morphological types of this organism, but the morphological features of the pseudo-diphtheria bacillus of Hofmann might have been set out with greater precision. Other chapters, also, give the impression of incomplete treatment, and reduce the general standard of the book below that which has been attained by many English writers of elementary textbooks on bacteriology.

MICROSCOPIC TECHNIQUE.

THE Encyclopaedia of Microscopic Technique,[11] edited by Professor EHRLICH, in conjunction with other distinguished scientists, is a useful publication which will help research workers to keep abreast of the multifarious additions and improvements which are constantly being made in laboratory work involving the use of a microscope. We are glad to see that a second and improved edition has now been published of volume ii, covering the subjects catalogued under the letters L to Z. The title of the book is not happily chosen, and may be misleading, as it suggests limitations to such appurtenances of the microscope as are usually discussed in the class of book devoted to what is called "microscopy." The range of the present work is very much wider. It includes, for example, chemicals which are used for staining specimens or for other laboratory purposes, some of which have no particular relation to the microscope. In fact, chemical compounds seem sometimes to be included merely because they are of general scientific interest. Thus we find a brief account of leucin, with its formula, properties, distribution in the animal body, and the tests for its identification. An important feature of the *Enzyklopädie* is that, in addition to reagents and appliances, the objects for which particular reagents and appliances are suitable find their separate places in alphabetical order. The pathogenic bacteria are included, and the special methods of staining them are given very fully. "Tubercle bacilli," for instance, occupy seventeen pages. The descriptions of staining methods appropriate for the various tissues of the body and for animal parasites are also given at considerable length, and are most useful to refer to.

[8] *Eléments d'anatomie pathologique.* Par Dr. L. Bériel. Paris: G Steinheil. 1910. (Demy 8vo, pp. 573; 232 illustrations. Fr. 10.)

[9] *Das Virulenzproblem der pathogenen Bakterien, Epidemiologische und klinische Studien von der Diphtherie ausgehend.* Von Edv. Laurent. Jena: Gustav Fischer. 1910. (Roy. 8vo, pp. 870, with 7 plates. M 30.)

[10] *A Textbook of General Bacteriology.* By Edwin O. Jordan, Ph.D. Second edition. Philadelphia and London: W. B. Saunders Company. 1910. (Med. 8vo, pp. 594, illustrated. 13s.)

[11] *Enzyklopädie der Mikroskopischen Technik.* Herausgegeben von Professor Dr. Paul Ehrlich, Dr. Rudolf Krause, Professor Dr. Max Mosse, Professor Dr. Heinrich Rosin, und Professor Dr. Karl Weigert. Zweite Auflage. Band II, L—Z. Berlin and Vienna: Urban and Schwarzenburg. 1910. (Sup. roy. 8vo, pp. 680, 111 illustrations. M 25.)

THE CARE AND TRAINING OF CHILDREN.

IN his book, *The Care and Training of Children*,[12] Dr. KERR deals with the problems of the older child. He sets forth general principles in a plain and practical way, and his work should lead to a fuller appreciation of the needs of the child and better knowledge of the practical methods of dealing with those needs. The subject of the child's room, with its appropriate furnishings, ventilation, and temperature, is fully dealt with. It must combine attractiveness with the necessary hygienic conditions, and cleanliness is a first consideration. The author advises parents upon the kind and fashion of clothing, and deals at some length with the important subject of diet. Children need about twice as much proteid food in proportion to their weight as adults, but the too abundant use of animal proteid is discouraged. Many useful suggestions are made about the different kinds of food and the times and methods of eating. Speaking of coffee, he says that after school life has begun a small amount of coffee may be given. He advises one small cup daily, freshly prepared, not strong, and without milk or cream in it. This may be taken either at breakfast or at the mid-day meal. The child's natural craving for sugar and sweets should be at least partially satisfied. The best time for such indulgence is one or two hours after a meal, but not before going to bed. Bathing, both indoor and outdoor, is discussed, and such matters as sleep, constipation, and the care of the teeth receive special attention. The education of the child begins at the time when there is personal relationship between parent and child, and it is in the home that the foundations of human life are laid. The duty of the parent and schoolmaster is to make a proper environment for the child and to assist the child to develop his capacity for selection and acquisition. The educator should co-operate with the physician, for the physiological and mental health are closely related, and proper education is not possible without physical vigour. Much stress is laid upon the necessity for the early recognition of mental overstrain, and the writer considers that children have two "physiological fatigue periods," when they very readily give evidence of fatigue. There is a deficiency of physical vigour between the ages of 7 and 9, after which age there is a progressive increase in the capacity for physical and mental work until the next period of fatigue, which occurs in girls about the thirteenth year and in boys in the fourteenth. The second period lasts for several months, during which time concentration of attention upon one subject is not possible for more than twenty minutes without fatigue. The place which nutrition occupies in the education of the child is of the highest importance. In dealing with children the need for individualizing must not be lost sight of, and gentle methods of government will be found to be the best in moulding the mind and character. This book does not give set rules, but abounds with advice and helpful suggestions, which should be a help to parents in solving their individual problems.

NOTES ON BOOKS.

IN a pamphlet which has reached us Dr. HENRY STRACHAN, Principal Medical Officer of Southern Nigeria, gives a succinct account of the special precautions which should be taken by residents in West Africa in order to avoid climatic disease. It is entitled *A Guide to the Preservation of Health in West Africa*,[13] and is based on a memorandum written for the Government of Southern Nigeria for distribution among Government officials. House sanitation, structure of mosquito-proof rooms and houses, clothing, disposal of excreta, general antimalarial precautions, and the taking of quinine, are the principal subjects dealt with. These are all subjects on which Dr. Strachan's experience enables him to speak with authority, and his very practical treatment of them makes this small book a useful one to place in the hands of any prospective resident in the locality in question.

[12] *The Care and Training of Children*. By Le Grand Kerr, M.D. New York and London: Funk and Wagnalls Company. 1910.

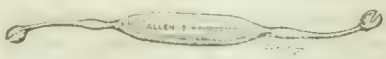
[13] *A Guide to the Preservation of Health in West Africa*. By Henry Strachan, C.M.G., Principal Medical Officer of Southern Nigeria. London: Constable and Co. (Imperial 32mo, pp 23. Price 6d.).

Dr. JOHN GRIMSHAW of Birkenhead has reprinted in a pamphlet a series of articles entitled, *The Medical Care of the School Child*, which appeared in the *Birkenhead News* a few months ago. Dr. Grimshaw urges that some steps should be taken to treat those school children found defective on medical inspection, but he does not consider that this duty should be undertaken by the voluntary hospitals, for the reason that the use of these institutions in this way would involve a perversion of the charitable system upon which they have hitherto been conducted and a diversion of the funds, premises, and materials of the hospitals from the purpose for which they have been given by the benevolent, and for which the medical profession has contributed in charity both its services and time. He does not consider that the school authorities, even in consideration of payment to the hospitals, should be able to claim treatment for school children requiring it, but he is not averse to "school clinics" being established on hospital premises, payment being made to the hospital boards in respect of the accommodation used and to the medical practitioners who are appointed to carry out the treatment.

MEDICAL AND SURGICAL APPLIANCES.

Comedo Extractor.

MR. T. P. BEDDOES, F.R.C.S. (London), writes: Messrs. Allen and Hanburys have constructed for me a comedo extractor, by means of which graduated pressure may be applied whilst the blackhead remains under observation.



The instrument consists of a broad handle with a curved shank at both ends, terminating in a concavo-convex head or dish applicator with a V-shaped nick or slot, the two slots differing in size. The curved shank is so constructed that it adapts itself to all parts of the face. The shape of the slot enables graduated pressure to be applied exactly around the blocked duct, whilst the slightly convex lower surface of the head allows an even pressure on the skin. The edge of the slot is bevelled and rounded, thus preventing any injury to the skin. The slightly concave upper surface allows each comedo to be removed after extraction quite easily, so that the slot may not become blocked. The method of use is to place the edge of the slot 3 mm. (one-tenth of an inch) from the comedo and to advance it gradually with increased pressure.

Balopticon Lantern.

We have already drawn attention to a form of projection lantern known as the "convertible Balopticon." It is an instrument possessing certain adjustments which make it a suitable means of showing on the screen the diversified objects, transparent or opaque, that may illustrate a scientific lecture, particularly in the domain of physics. A further catalogue now reaches us from the manufacturers, the Bausch and Lomb Optical Company, 19, Thavies Inn, Holborn Circus, E.C., in which prominence is given to the considerable range of optical equipment, in the shape of finely corrected objectives for smaller or greater magnifications, now available for use with such projection apparatus. A feature of the lantern arrangement is the latitude in the size of the objects which may be projected, ranging from small areas of the skin to an anatomical atlas or textbook.

MEDICINAL AND DIETETIC PREPARATIONS.

Infants' Food.

MESSRS. J. R. NEAVE AND CO. (Fordingbridge) who are well known as makers of infants' foods, have submitted for our examination two new preparations which they have introduced. The first of these, Neave's Milk Food, is a non-starchy food for the hand-feeding of very young infants. It is a dry powder, packed in hermetically closed tins. It is prepared for use by the addition of hot water. Our analysis showed it to contain 17.8 per cent. of protein, and 24.2 per cent. of fat; the drying has been carried out without any impairment of the flavour. The second food is called Neave's Health Diet; this is partly farinaceous, and is intended for somewhat older children and invalids, or the aged. Our analysis showed 17.7 per cent. of protein and 13.9 per cent. of fat; the food is not excessively sweet. It is intended to be prepared for use by boiling with water only.

"Soloids" of Culture Media.

The possibility of preparing extemporaneously small quantities of culture media removes one of the greatest difficulties in the way of occasional bacteriological testing by those whose equipment in apparatus for such work is small. Such extemporaneous preparation of some of the media most frequently required is rendered easy by the "soloid" culture media which have been introduced by Messrs. Burroughs, Wellcome and Co. (Snow Hill, London, E.C.). These are made by thoroughly drying the fully prepared culture medium and compressing the residue into soloids, one of which represents 5 c.cm. of the medium. When required for use, one soloid is added to the requisite quantity of water, heated to boiling point in a test tube plugged with sterilized wool, and the tube then kept in a boiling water bath for half an hour; dissolution and sterilization are effected simultaneously, and after cooling the medium is ready for use in tube or plate cultures. The samples which have been submitted to us were MacConkey's Bile Salt Agar-agar, containing bile salt, peptone, lactose, and neutral red. These dissolved in water without trouble to a bright fluid, which on cooling solidified in a satisfactory manner. Similar products are prepared with broth and gelatine.

LITERARY NOTES.

ANDREW LANG has said somewhere that the reason why the married lives of literary men are so often unhappy is that the husband does his work at home, and is therefore always, from the housewife's point of view, more or less in the way. That the housewife may get on the author's nerves from excess of zeal over a trifle of what Lord Palmerston, or someone else, called "matter in the wrong place," or from fussing about culinary matters, is amusingly illustrated by Oliver Wendell Holmes, when he describes Mrs. Shakespeare's repeated interruptions of the poet, struggling with "To be or not to be," with questions about his dinner. A way of keeping a fidgety man quiet in the home is described by Mrs. L. B. Walford in her recently published *Recollections of a Scottish Novelist*. Speaking of one of her books she says:

Troublesome Daughters elicited a letter from a daughter of Robert Chambers (and sister of Lady Priestley, in whose reminiscences she figures as "Annie") which is so brimful of sprightly charm—rare in a middle-aged woman—that for its own sake I append a portion of it.

"My husband happened to be kept at home yesterday—*no vera weel*—(awful business a man in the house, and not ill enough to be in bed—only able and willing, alas! to go poking and prying about, discovering mares'-nests in every sort of unexpected and unthought-of quarter)—when I set him down to *Troublesome Daughters*, and peace ensued. I had no further trouble, except to get him to put out the *candle*, which one night, in the middle of the second volume, he would *not* do. We fought and struggled till he jumped out of bed, flung on his dressing-gown, and bounded and banged into the spare room. No sheets there, of course—but that was a trifle. He had *your book*, and peace to devour it.

This may supply a hint to wives whose husbands happen to be kept at home by circumstances which leave them to exercise their activity in a manner that tends to upset the routine of the household.

The *Cornhill Magazine* for December contains an article by Mrs. W. Y. Sellar, entitled "Some Recollections,' supplementary to her *Recollections and Impressions*, published by Blackwood three years ago. The following story will, we hope, edify those who cling to our insular pronunciation of Latin. At the commemoration of the eighth centenary of the University of Bologna, Great Britain was represented by the famous scholar Sir Richard Jebb, who read a Latin address. The next day a Bolognese journal, after mentioning the language in which each address had been delivered, added, *parlò il rappresentante dell' Inghilterra in Inglese* (the representative of England spoke in English). The unconscious satire of this is none the less keen because the story is a modern variant of one that has been told of an English scholar who addressed Scaliger, and of another who paid his homage to a Pope in Latin pronounced "after the scole of Stratford-atte-Bowe"; in both cases the reply given by the person addressed was that he did not understand English! Mrs. Sellar, speaking of Lord Lister as a young man at Edinburgh, says:

It was evident that he had been brought up in an earlier generation when the Fifth Commandment had not yet been abrogated, but was held to be as binding on the conscience as the others. In distinct contradiction to this theory was the experience, so characteristic of the present time, of a Scotsman who was heard exclaiming, "Weel, I man not have had an ower high opeenion o' my ain parents, but I never considered them the pairfect eediots my bairns think me!"

She quotes Dr. John Brown as saying of Lister: "You have only to look at his face to see how uninjured he has been in his walk through life." She tells the following story:

"He came to our house one day, in consultation with Dr. John Brown, to see one of our daughters who had sprained her leg in walking too far in Switzerland. They put on a splint, and condemned her to a month's complete rest in bed. Professor Lister's kind, sympathetic manner lessened the severity of his treatment, which was very patiently submitted to. At last the day of deliverance arrived, and the patient's clothes were hung on the fender to be aired, and there was a general air of rejoicing: but when the Professor came and said, 'I am afraid I must order another week of rest,' Dr. John Brown looked, with a sadly humorous glance at the clothes airing, and said, 'Then she must make a shift to do without them!' I may add the drastic cure was efficacious."

Lister's manner, says Mrs. Sellar, like his face, was most gentle and gracious—a contrast to that of his father-in-law Syme, who was somewhat reserved and dry, and, in consequence, rather alarming to a stranger. Beneath this stern expression, however, beat a warm heart which won the deep devotion of those who were privileged to see behind the veil with which the great surgeon hid his emotions.

The December number of *The Child* is as attractive as either of its predecessors. This month a good deal of space has been devoted to that most important subject, the proper feeding of young children. Dr. Christopher Addison, M.P., has contributed an excellent article on Education in Regard to the Feeding and Care of Infants, in which he speaks of the urgent need for the establishment of some system by means of which it will be possible to carry out the measures suggested by him in the bill which he recently brought forward in Parliament, "by which it is provided that instruction in the care and feeding of infants and in simple domestic hygiene shall be given to all senior girls in public elementary schools." With practical common sense Dr. Addison points out that "a high infant death-rate generally means a high death-rate up to 20 years of age," and lays infinite stress upon the fact that the sole means of ensuring mental and physical efficiency for the children of the future is to give those who are to be their mothers a chance of acquiring necessary and adequate knowledge. Dr. Addison's wish that every child in England shall receive a sufficiency of wholesome nourishment is shared by Mr. Francis S. Fremantle, whose interesting article on "Milk and Child Welfare" contains a description of the "clean milk campaign" recently undertaken by the National League for Physical Education; its aim is to eliminate every possibility of infection from cow's milk by enforcing a strict observation of certain rules upon all who have to do with this necessary article of diet, from the producers down to the consumers. But other problems besides the important one of food are discussed in the present number of *The Child*. Miss Alice Ravenhill, in her most interesting article on "The Play Interests of English Elementary School Children," gives a list of the games most in favour amongst normal children at different stages of their development; Mr. Kingsley Fairbridge, of Exeter College, Oxford, discusses the pressing question of "Child Emigration to British Colonies" in all its different bearings; and Mr. N. Percy Marsh offers much useful advice with regard to "the functional nervous disorders of infancy and childhood." Other articles of interest are Mr. Frank J. Adkins's article on "Youth and Evening Schools"; Miss Emily Lant's sketch of Pestalozzi's wonderful life-work; and an interesting account of "The School Child in Ireland," by Professor James Alexander Lindsay, of Belfast.

British Medical Journal.

SATURDAY, DECEMBER 31ST, 1910.

THE STATISTICS OF OPSONINS.

In a recent number of *Biometrika* appears a further contribution by Drs. Greenwood and White[1] to the statistical study of phagocytic distributions as obtained by the ordinary opsonic method. Their former study[2] was based on samples of cells not exceeding 2,000 in number, and from such material they had deduced the important fact that the frequency-curves of the total distributions, as well as those of the means of small samples, exhibited a pronounced asymmetrical or skew character. In the present work the material employed was a count of 20,000 cells, made by one of the authors (J. D. C. W.) at the Inoculation Department of the London Hospital, the greatest care being taken to ensure the homogeneity of the bacterial emulsion (tubercle bacilli) and its thorough incorporation with the leucocytes and serum. The strength of the emulsion was calculated to give an average of 3 to 4 bacilli per cell, and the incubation time was fifteen minutes. The actual counting of the 20,000 cells, with the aid of a mechanical stage, involved about a month's work.

The frequencies of the leucocyte contents were then classified in the ordinary way, and it was found that a Pearson frequency-curve of skew type could be fitted with approximate accuracy to the results. The closeness of fit was not all that could be desired, however; but the discrepancy, which was due largely to a paucity of cells containing one bacillus and an excess of those containing three bacilli, was not very appreciably remedied either by including cells with bacillary clumps, or by excluding from the count those groups of 500 cells whose curves presented the greatest individual irregularities.

The authors then attacked the main problem of the investigation—namely, the distribution of means of samples of 25, 50, and 100, taken from the total series of 20,000 cells. Thus three skew curves were obtained in which the ordinates represented the number of samples (of 25, 50, and 100 cells respectively), and the abscissae the respective indices in terms of the mean of the whole sample of 20,000 cells. The odds against the occurrence of various deviations from the mean were then calculated for the three curves, and it was determined that, taking a 10 to 1 chance as the limiting value for evidence of differentiation, the index limits were 1.3 to 0.7 in the case of samples of 25, 1.25 to 0.75 in the case of samples of 50, and 1.2 to 0.85 in the case of samples of 100. In other words, for single determinations of the index, any variations between these limits were of no significance.

An interesting problem arose out of these calculations. As has been mentioned, the various indices were calculated on the basis of the mean of the whole series of cells, but in actual practice it is usual to form indices from two small samples of not more than 100 cells, and the question therefore arose what amount of qualification of their results would be rendered necessary by taking into consideration the large number of possible indices which could be derived by dividing the count of any one sample of, say, 100 cells by that of any other in the whole series of such samples. The authors attempted an empirical solution of this problem, which agrees closely with that developed from purely mathematical considerations by Professor Karl Pearson,[3] to whom the data were submitted.

The method adopted by Drs. Greenwood and White was briefly as follows: Packs of cards each having on it the number of bacilli, for example, in a sample of fifty cells, were shuffled (that is, 400 cards altogether); one was then drawn and not replaced; the remaining cards were reshuffled and another card drawn, and so on, till all the cards had been drawn. One series of numbers was thus obtained. All the cards were again shuffled, and the process of drawing repeated.

A second set of numbers was thus furnished. Each number of the first set was then divided by the corresponding number of the second set, and the various indices analysed in the usual way. The result showed that a considerable reduction of the odds previously calculated was demanded when the index was determined from a comparison of two small samples. Thus, taking for example the odds against a second sample of the same material giving an index outside the limits 1.2 to 0.8, these were reduced from 3 to 1, 6 to 1, and 15 to 1 (in the case of samples of 25, 50, and 100 respectively) to 1.5 to 1, 2 to 1, and 4.6 to 1.

The general conclusion arrived at by the authors is that no reliance can be placed on single determinations of the tuberculo-opsonic index which fall within the limits of 20 per cent. of the mean. Unless the index-determination can be repeated several times under comparable conditions, little value can be attached to the result. In diagnosis, therefore, such multiple determinations, though time-consuming, would always be practicable; but in the process of vaccination the results of successive determinations would, as the authors rightly point out, be falsified by the rapidly varying antibody content, and the labour and time which would be involved in order to obtain reasonably comparable conditions would militate against the method as a useful guide in controlling the injections.

It may be pointed out, in conclusion, that the authors' results hold good only for the tuberculo-opsonic index as it is at present practised; and it would be well if all who carry out such estimations in tuberculosis were to reflect carefully on the limitations to which Drs. Greenwood and White have shown that the method is liable, and, before drawing far-reaching conclusions, to contrast their results with the elaborate tables of calculated chances which accompany this important paper.

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[1] M. Greenwood, jun., and J. D. C. White (1910): A Biometric Study of Phagocytosis, with Special Reference to the "Opsonic Index." Second memoir. On the Distribution of the Means of Samples (from the Statistical Laboratories of the Lister Institute and the London Hospital). *Biometrika*, vol. vii, p. 505.

[2] Vide *Biometrika*, vol. vi, p. 377, and this JOURNAL, 1909, i, p. 1562.

[3] Karl Pearson (1910): On the Constants of Index-distributions as deduced from the like Constants for the Components of the Ratio with Special Reference to the Opsonic Index. Ibid., p. 531.

ANAEMIA DUE TO PARASITIC WORMS.

THE relation between parasitic worms and anaemia is one which has engaged considerable attention, both clinically and experimentally. Many of these worms induce changes in the blood—for example, eosinophilia—without causing obvious symptoms of anaemia. As far as observations go, eosinophilia seems to be much more frequently associated with the presence of nematode worms than with tapeworms or flukes, and there is no doubt that it is an almost constant symptom of miner's worm anaemia, due to *Ankylostoma duodenale*. So constant, indeed, is it in this disease and to such an extent does its degree indicate the severity of infection, that it has been recommended by Boycott as the most important diagnostic sign, next to the presence of ova in the faeces, in endemic areas. The explanation of the phenomenon of eosinophilia, as well as the other blood changes due to parasitic worms, is still quite obscure. Many are the attempts that have been made and varied the methods employed to probe the mystery, but the measure of success has not been great. A suggestion not infrequently made is that in the case of "biting" worms, such as *Ankylostoma*, the anaemia is mainly due to continued small losses of blood.

Possible enough as this may be, it is not supported by experimental evidence, and it is far from explaining the blood condition. In the case of tapeworms it is entirely inapplicable. No loss of blood occurs in "*Bothriocephalus* anaemia," and yet *Dibothriocephalus latus* is accredited with the production of one of the most profound forms of anaemia. This fact has led to search for a cause in other directions, and has naturally strengthened the present toxic theory of the etiology of the graver anaemias. It is evident that if *Dibothriocephalus* and *Ankylostoma* are to be regarded as the cause, direct or indirect, of the anaemias with which they are associated, some link must be found connecting the worm with the blood condition. The fact that certain toxic substances when injected into the blood can give rise to profound anaemia, and the demonstration that analogous substances can be isolated from the bodies of the parasites establish this link. In the case of *Dibothriocephalus latus*, which from its bulk is more suited for experimental work than the small *Ankylostoma*, Tallqvist has definitely shown that such substances are present in the tissues of the tapeworm. By suitable means they can be extracted and their nature to some extent determined. Amongst them are found a haemolysin and a haemagglutinin, which act not only *in vitro*, but also when injected into a normal animal. By such injection Tallqvist was able to reproduce an anaemic condition resembling to some extent true *Bothriocephalus* anaemia. The haemolysin is of a lipoid nature, and substances of this kind can be extracted from various normal organs of the body, in particular the intestinal mucosa, as well as from certain malignant neoplasms. The theory is, therefore, very tempting that the anaemia is the direct result of the absorption of these substances by the blood. Under what conditions they are absorbed and in what manner is still a matter of great doubt. It is of some significance, in support of this view, that no other human tapeworm is known to give rise to anaemia of a pernicious type, and that repeated attempts have failed to isolate from these a haemotoxic substance in demonstrable quantity.

The case of *Ankylostoma* anaemia is somewhat different. The anaemia is of a different type, resembling more closely the hydraemia of chlorosis. That the condition is actually hydraemic has been demonstrated by Haldane in one case. The occurrence of repeated small haemorrhages is, as already mentioned, not without some importance in the etiology, but attempts have not been wanting to ascertain the existence in *Ankylostoma* of haemotoxic substances resembling those found in *Dibothriocephalus*. The difficulties in this direction are somewhat great, for a large amount of material is necessary for a continued series of experiments. More than one observer, however, has stated that a haemolytic substance can be extracted from the tissues of *Ankylostoma*. On the other hand, the latest contribution to the subject by Loeb and Fleischer[1] contains a direct negative statement on this point. Using worms which had been dried and ground to powder, these workers were quite unable to detect the presence of any direct haemolytic substance, or of any substance which could be activated by combination with lecithin. At the same time they were able to isolate from the anterior end of the worm a substance possessing a remarkable power of inhibiting coagulation of blood; the substance is extremely stable, and is not destroyed by boiling nor by being preserved in a dried condition. It behaves very much like an analogous anticoagulin obtained by Weinberg from the sclerostome of the horse, but it appears to be of quite a different nature from the corresponding substance in the leech. The authors draw a further interesting comparison between it and the anticoagulating principle in cobra venom. In how far it is to be regarded as effecting the blood changes of *Ankylostoma* anaemia does not appear, and to determine this point much further work is necessary.

[1] *The Journal of Infectious Diseases*, vii, No. 5, October 25th, 1910, pp 625–31.

THE MEDICAL REPORT OF THE LOCAL GOVERNMENT BOARD.

THE Medical Supplement to the thirty-ninth annual report of the Local Government Board, which relates to the year 1909–10, has just been issued. It makes a volume of over 600 pages. Only some thirty-five are occupied by the report of the Medical Officer to the Board. These Dr. Newsholme devotes to a general review of the work of his department for the year, and gives up the rest to publishing in full the reports of his various assistants on special pieces of work conducted by them. Certain of these have been issued previously and been noticed at the time in our pages, but others make a first appearance. The work covered by these appendices as a whole falls into two classes, of which the first is made up of literary research in the form of reviews of the manifestations of various diseases throughout the world during the year under consideration. It is work which could be done anywhere, but nowhere better, and probably nowhere so well, as in the offices of such a centre of information as the Local Government Board. The other class consists of investigations of a purely scientific but thoroughly practical character. The reports on these will, we have no doubt, be the subject of frequent reference in our own columns and elsewhere, and meantime, as they all alike form good examples of the admirable work which the Medical Department of the Local Government Board is performing, we are unwilling to pick out any of them for

special notice on the present occasion. One of the pieces of literary investigation, however, deserves special mention—namely, the review by Dr. J. C. Ledingham of existing knowledge on the subject of "typhoid carriers." It covers upwards of 100 pages and includes a full bibliography. Dr. Newsholme, it may be noted, is of opinion that the danger associated with a known "carrier" may easily be exaggerated, and that the need for such extreme measures as protracted isolation of such persons, unless they are mentally irresponsible, has not been proved.

FLANNELETTE'S DEATH-ROLL.

IT has frequently been remarked that while the loss of a few hundred lives in a battle, a shipwreck, a mining accident, or in some similar way, attracts a great deal of public attention, hundreds of thousands of lives are lost annually through preventable diseases or the casualties of industrial life, without exciting any particular notice. This is no doubt partly due to the very different extent to which the two classes of occurrences provide journalistic "copy" of a sensational kind, and partly to the fact that large numbers impress the average person far more than a long series of small numbers. The apparent indifference of the public to the sheer wastage of life that is continually going on is perhaps a little disturbed occasionally by collected returns for a year, or some other period, when the impression due to numbers is by no means wanting; but all such summaries receive, as a rule, very scanty notice in the lay press. These considerations are well illustrated by a collection of newspaper cuttings that is before us, relating to deaths by burning during the month of November, 1910, excluding those due to conflagrations. These cuttings are 125 in number; nine only are from London daily or evening papers, and about half a dozen from Sunday newspapers; the remainder are all from provincial papers, circulating in a more or less restricted area. The number of cases of burning by mishaps—in nearly every case ending fatally—in this one month alone is 125, involving 131 persons; in no less than 39 of these death is ascribed to the rapid burning of flannelette clothing (nightdresses and underclothing) worn by the victim of the accident, and in 60 other cases it is related that the clothing took fire, without information being given as to what it was made of. In some of the latter, aprons or pinafores are mentioned as having caught fire; these are not likely to have been made of flannelette, and from the nature of the garments it would be quite possible for the flames rapidly to get such a hold that they could not be immediately extinguished; but with other articles of clothing this would hardly have occurred unless they were made of some very rapidly burning material, and it is safe to assume that in a great many of the cases where the fatal result was due to the clothes burning, when no material is mentioned, flannelette was being worn, as well as in those where it is specifically named. It thus appears that the use of this material must have been answerable for something like half the deaths caused by accidental burning; this is in consonance with the statement in the report of the Committee on Coroners' Inquests, already cited in these columns,[1] giving 176 as the probable figure for the deaths in which flannelette played a part in three months. At first sight it must appear a matter for wonder that this dangerous material continues in use to so great an extent; it might be supposed that most people must have read in the newspapers or heard of inquests in which the danger of flannelette has been publicly proclaimed, or have had brought to their notice some of the warnings that have been issued. But the memory of the public is a short one; and it is not necessary to impute any unusual degree of callousness to people to suppose that any warnings they may have received are apt to be absent from the mind at the time when underclothing, or the material for making it, is being bought for themselves or their children. The attractive qualities of flannelette are its soft, cosy feel, and its cheapness in comparison with woollen fabrics, and there is nothing surprising in finding that these considerations prevail, and any cautions that may have been previously received are forgotten. The remedy most likely to be efficient would appear to be the compulsory marking of all such material, in a manner that could not be overlooked, with a caution as to its dangerous nature, thus reminding the intending purchaser at the moment when the warning is most needed. This is one of the cardinal points in the legislation recommended by the British Fire Prevention Committee;[2] and it is not easy to suggest anything more likely to be effectual, or to find any solid objection to urge against it. Protection is required for those who are totally unable to protect themselves, and on whose behalf the public authority alone can effectively intervene; of the 39 cases referred to above, in which flannelette is specifically named as concerned in the result, in 28 the average age of the victim was under 4 years, and in 5 the average age was 80. More, no doubt, might also be done in the issuing of public warnings, either by the central or the local authorities; and if adequate means were taken to prevent flannelette being used through real ignorance of the danger involved, parents and others in charge might well be held guilty of punishable negligence in any case in which the use of flannelette was proved to have contributed to the death of a child. The fact, to which we have more than once drawn attention, that there is on the market a flannelette which is free from danger, being no more inflammable than flannel or other fabrics, while retaining the other characters of flannelette, appears to complete the case for such legislative restriction on the sale of the dangerous material as that recommended above.

[1] BRITISH MEDICAL JOURNAL, October 22nd, p. 1272.

CINEMATOGRAPHIC MICROSCOPY.

PART of the entertainment provided for its guests by the Royal Society of Medicine at the recent annual dinner was a display of moving pictures illustrative of physiological phenomena and the life of microscopic human parasites. Unfortunately, the projection lamp used was not sufficiently powerful for the very long dining hall of the Connaught Rooms; the exhibit, therefore, was not entirely satisfactory. It sufficed, however, to awaken interest, and a view since obtained of the same slides in a room of adequate proportion to the lantern used proved exceedingly attractive. It is remarkable to see apparently enormous blood cells in actual process of haemolysis, and spirochaetes and trypanosomes the size of conger eels butting their way amid the blood cells in every direction. Impressive, too, are the pictures of the flora of the large intestine, and of the development of the axolotl. In real life the latter, an amphibian of the genus *Amblystoma*, is quite small, but as it jumps on to the screen out of an egg in an aqueous nest it looks as big and as dangerous as an alligator. The pictures of spirochaetes and trypanosomes are the more interesting because, being taken by ultra-microscopy, they go some way towards confirming the opinion expressed by Mr. Bayly in the *Reports from the Clinical and Research*

[2] BRITISH MEDICAL JOURNAL, July 23rd, p. 216.

Laboratories of St. George's Hospital, which we reviewed recently, to the effect that ultra-microscopy offers the best method of diagnosing the existence of *Spirochacta pallida*. There were obvious differences, even during movement, in the various species of spirochaete shown. The pathological films at present in possession of the Pathé Frères Company number some nine or ten, and include specimens of the blood of a rat from beginning to end of an attack of Lewis's rat disease, tick fever, sleeping sickness, Vincent's angina, and syphilis. We saw also some notably clear moving pictures of fresh-water microscopic life, of the development of birds from eggs, and their maternal feeding. The company hopes to get these pathological films used in places of scientific study, and the other films used wherever higher education is in progress and as an adjuvant to lectures on hygiene. We are disposed to wish it success, for nothing could better bring home the desirability of cleanliness and the avoidance of possible causes of infection. Apart from its scientific interest, observation of the activities of the *Spirochaeta pallida* might in itself prove a wholesome lesson to many a thoughtless young man. The company, which has its head quarters at 31 and 33, Charing Cross Road (not far off the National Gallery), is ready, we understand, to give a private exhibition of its films to any registered medical man on presentation of his card.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.

FOR the first time for a good many months the quarterly instalment of the *Oxford English Dictionary*[1] is a single (not a double) part. The rubrics run from *Si* to *Simple*, and even within these somewhat restricted limits there are some interesting medical terms. After a passing reference to the very rare word *siagonology* (the science of jaw bones), Dr. Craigie passes at once to a medical name in *sialagogue* (spelt also *sialogogue*), used both as an adjective and as a substantive and meaning "inducing a flow of saliva" and "a medicine which has the effect of producing a flow of saliva." It seems to have been first used towards the close of the eighteenth century, and it belongs to a group of words, such as *cholagogue* and *emmenagogue*, having the Greek *ἀγωγός*, "drawing forth,' as their common part. A most interesting obstetric word is *silly-how*, used only in Scotland and the North of England—a child's caul. Here *silly*, or *seely*, means happy or blessed, and *how* is *houve*, which signifies a hood, cap, or coif; so it is sometimes called *happy how*, and in German *Glückshaube*. Of course, it is quite exceptional for a child to be born with this bag of amnion or of amnion and chorion over its head, and this rarity is probably the reason why it is accounted fortunate to be so born. This idea appears in one of Dr. Craigie's illustrative quotations: "Any one possessing a seely-hoo' legally is always progressing in fortune"; but it brings bad fortune sometimes, for the rest of the quotation (not given in this *Dictionary*, but to be found in Wright's *Dialect Dictionary*) is, "while to possess one in a surreptitious manner brings grief and ruin." There is a belief in Northumberland that the *silly-how*, if preserved, sympathizes with the person whose face it covered, so that it is dry when he is well and moist when he is ill; it ought therefore to be kept dry. In Scotland it was believed to be a sure safeguard against drowning, and it used to be advertised for sale in newspapers where it was likely to catch the eye of sailors. Among the other medical terms in this part of the *Dictionary* are those of the two lung diseases, *siderosis* and *silicosis*, which come close together in etiology as well as in alphabetic sequence; the one is, of course, accumulation of iron dust in the lungs, whilst in the other the retained particles are flinty or siliceous. A curious term is *sideration*, which has three meanings: one is the blasting of trees or plants, another is sudden paralysis or complete mortification of any part of the body, and the third is erysipelas of the head and face. In each case the maleficent influence of the planets is indicated in the etymology. Other medical words which are treated at great length and with much analytical and lexicographic skill are *sick*, *sick-bed*, *sickening*, *sick-house* (a hospital), *sickliness*, *sickly*, *sick-nurse*, and *sick-room*. *Siege* has, as obsolete meanings, those of anus, rectum, evacuation, and excrement; and *sig* is a dialectical and United States word, signifying urine. *Signature* has among its obsolete meanings that of a birth-mark or naevus, and under this rubric is to be found an illustrative quotation, which brings into evidence the universal belief in the influence of the maternal imagination; it is from a book published in 1682, and reads thus: "The fancy of the Mother can form the stubborn matter of the Foetus in the womb, as we see it frequently doth in the instances that occur of Signatures and monstrous Singularities."

[1] *A New English Dictionary on Historical Principles. Si—Simple* vol. ix. By W. A. Craigie, M.A., LL.D. Oxford: At the Clarendon Press. London, Edinburgh, Glasgow, New York, Toronto, and Melbourne: Henry Frowde. January 2nd, 1911. (2s. 6d.)

THE TEACHING OF INFANT MANAGEMENT.

THE memorandum of the Board of Education respecting the teaching of infant care and management in elementary schools affords further evidence that this body is fully awake to the fact that one of its functions is the education of local education authorities. If the advice given in the memorandum[1] were to be widely and intelligently acted upon by local authorities, it would go far towards ending the dominance of the "three R's" which has been the curse of all so-called elementary education. As Sir Robert Morant remarks in his prefatory note, "The ultimate aim of a State system of education given to girls in the public elementary schools should be to equip them in the best possible way for the duties which will fall to them in after-life. What is commonly called book-learning has in past years been too much regarded as the supreme purpose of our elementary schools, and it is beginning to be widely realized that the teaching given in these schools might with advantage be made more practical in certain directions, and that it might, especially in the case of elder girls, be more definitely directed towards arousing interest in, and increasing the knowledge of, the ordinary routine of domestic hygiene, including infant care." That this is not a mere truism must be admitted when we consider the effects of the old policy, boys and girls alike being turned out with an almost useless smattering of the elements of a literary education, which, as a rule, they have neither opportunity nor inclination to develop. In fact, in the industrial districts at all events, their reading is too often confined to the "betting news" and their arithmetic to the calculation of the "odds." The memorandum itself has been very ably drafted by Dr. Janet Campbell, and is a document worthy of the most careful attention. No attempt has as yet been made to construct a syllabus for instruction; it is rather a review of the little that has already been done in this direction, and a suggestion of ideals for the future. The advice given throughout is carefully thought out and wise. Dr. Campbell rightly insists that "the teaching of infant care and management should not be attempted as an isolated and separate subject, but should form part of

[1] Board of Education Circular, 758.

a general course in personal and domestic hygiene and home management." Such instruction must be practical, it must spread over a sufficient number of years, it must be in the hands of qualified teachers, and, when possible, combined with actual practice in the handling of infants and young children. Above all, it should not involve the provision of any expensive paraphernalia, because school girls should be taught to make the best of the conditions which will actually confront them in their own homes. The national benefit which would accrue from the universal adoption of such teaching of the mothers of the next generation is so obvious that it is to be hoped that all who have any opportunities of doing so will compel the attention of local education authorities to this extremely important document.

THE IPECACUANHA TREATMENT OF DYSENTERY AND HEPATITIS.

WE have received a reprint from the *Indian Medical Gazette* reporting the discussion in the Medical Section of the Asiatic Society of Bengal (June and July, 1910) on the treatment of dysentery and hepatitis by ipecacuanha. It was introduced by a paper by Lieutenant-Colonel H. W. Pilgrim, Surgeon Superintendent of the Calcutta General Hospital, entitled, the Ipecacuanha Treatment of Acute Hepatitis, in which he says he has been induced to bring the subject before the society in order "to neutralize the unfavourable effect and prejudice likely to arise in the minds of many" who have read recent contritions to this subject, in which the value of ipecacuanha is, in his opinion, insufficiently appreciated. Moreover, many books speak of this drug as of special value in bacillary cases, whereas it is in the amoebic class that it is, in his opinion, of signal value. He believes that diffuse hepatitis as a rule precedes the formation of a liver abscess. He finds that those who suffer from liver abscess have had for some time a general feeling of slackness, increasing to actual weakness, anorexia, foul tongue, discomfort or pain in the right shoulder and liver region, usually with enlargement of the liver, loss of weight, some rise of temperature which is generally intermittent, sweating, occasionally rigors, and disordered bowels; the blood count shows a marked leucocytosis with distinct polymorphonuclear increase, and by the *x*-ray examination the diaphragm on the right side is found to be abnormally high. These symptoms for a definite period precede the formation of pus, and in this stage ipecacuanha is indicated whether dysentery is present or not. The mode in which the drug is administered is of importance; the patient should not eat or drink anything for two hours before and after the dose, but twenty minutes previously he should take 20 grains of chloral; the dose of ipecacuanha is 30 grains for the first three or four nights, reduced to 25 and 20 grains gradually, a single dose daily being usually sufficient. If given in keratin capsules the patient suffers only for a short time from nausea, and if he lies absolutely still he usually drops to sleep under the influence of the chloral. When the leucocytosis has fallen to 10,000 or less, the temperature has become normal, and the discomfort in the region of the liver has disappeared, the drug may be continued for another week in daily doses of 20 grains, and then the patient be allowed to get up, and a few days later he may be sent away for a change of air; but all patients who have had such an attack should abstain from alcohol so long as they reside in India. With regard to the statistics of which so much has been made, showing the want of relation between the incidence of dysentery and hepatic abscess in the British and native armies, Colonel Pilgrim believes the British habits of taking alcohol, eating meat freely, and perhaps eating too much, afford a sufficient explanation; he referred to the extreme rarity of hepatic abscess in European ladies, although they suffer frequently from dysentery. The blood count is of great value in determining the supervention of suppuration, and for that reason one should be made every two or three days. Ipecacuanha should be tried, except where there is evident bulging of the intercostal spaces or pointing of the abscess, and, if administered as described, it is capable of curing hepatitis and preventing the formation of abscess. In support of his opinion he appeals to his hospital experience, where for the last four years more than 200 cases of dysentery and about 82 cases of hepatitis have been treated annually; during the last three years ipecacuanha had been systematically employed, and not a single case of dysentery has been complicated by hepatitis, while every case of hepatitis has recovered without suppurating; his average number of operations for liver abscess has fallen from ten or twelve to three or four in the year, and for the last eight months he had only had one case. His personal experience is confirmed by that of Colonel Firth and Major Rogers, and he gives a table of the admission-rate and death-rate per 1,000 and case mortality for liver abscess amongst British troops in India, which shows that, whereas up to 1907 the figures remained at much the same level for the past fifteen years, since that time there has been a marked reduction, which he does not think can be entirely attributed to the decreased consumption of alcohol, but is the result of the revived and systematic use of ipecacuanha in the treatment of hepatitis and dysentery during the last two years. In the subsequent discussion Lieutenant-Colonel Calvert, Professor of Materia Medica at Calcutta, expressed his strong reliance upon ipecacuanha in tropical dysentery, and said he believed it was the only drug of any value in chronic cases or in the hepatitis which so frequently accompanied it. His *post-mortem* experience had satisfied him that tropical liver abscess invariably meant antecedent amoebic dysentery, but the dysentery might be latent and the patient unaware of it. Captain E. D. W. Greig said it was generally admitted that tropical abscess of the liver was caused by amoebic infection secondary to intestinal infection by the same organism, but the primary lesion of the intestine might be very slight and give rise to no definite symptoms. He had found that a very high leucocytosis might occur in severe bowel lesion without any liver complication. The effect of administering full doses of ipecacuanha in early cases of amoebic hepatitis was to produce a fall in the temperature and leucocytosis with disappearance of the subjective symptoms, and he quoted cases to illustrate this statement. Lieutenant-Colonel Knott, Superintendent of the General Hospital at Howrah, admitted that he had been extremely sceptical of the value of ipecacuanha, and when the revival of its use commenced a few years ago he looked on incredulously, but, after reading Major Leonard Rogers's articles on the treatment of pre-suppurative hepatitis, he resolved to give it a trial, and was obliged to admit that his results were better than he could have expected from any other treatment. Since that time he had used ipecacuanha practically in every case of hepatitis, and had become absolutely convinced of its value. During the last year he had used ipecacuanha in the treatment of liver abscess after aspirating and injecting quinine solution into the cavity without draining

it on the plan suggested by Major Rogers, and was assured of its utility. Major Leonard Rogers believed that he had shown that living amoebae could always be found in the walls of liver abscesses, and that these organisms could be readily killed by quinine; this had induced him to suggest aspirating and injecting quinine into the abscesses without drainage, a method which the previous speaker had approved. He had found that leucocytosis was present in hepatitis long before any abscess had formed, and that amoebic dysentery always preceded liver abscess formation. He claimed the fall of the death-rate from hepatic abscess in the British army in India, amounting to 60 per cent. in the last three years, as due to the reintroduction of the ipecacuanha treatment. Other speakers spoke in the same sense, and the effect of the discussion was to leave no doubt that the ipecacuanha treatment of amoebic dysentery and hepatitis is at present as popular as it was forty or fifty years ago. It is probable that its superior efficiency in amoebic dysentery and its comparative inutility in bacillary dysentery was the cause of the loss of faith in its power. As the two forms can be readily distinguished, this reason should no longer operate to its disadvantage.

PRIZES OF THE ACADÉMIE DE MÉDECINE.

AT a meeting of the Paris Academy of Medicine held on December 13th the list of the prizes awarded during 1910 was read out by the Secretary, M. Weiss. Only the principal of these need be mentioned here. The François-Joseph Audiffred prize (£960) was not awarded, but sums of £40 were granted to MM. Xavier Delore and André Chalier of Lyons for their work on tuberculosis of bone, by way of encouragement; in the same way a sum of £20 was given to M. Jules Lemaire of Paris for his researches on the skin reaction to tuberculin, especially in children. The Baillarger prize (£80) was awarded to Dr. Gabriel Doutrebente of Tours for his work on the medical organization of lunatic asylums. The Prix Barbier (£80) was divided between Dr. Maire of Villejuif, for a memoir on the colonization of the epileptics of the Seine Department, and Dr. E. Sacquépée of the Val-de-Grâce Military Hospital, for his notes on paratyphoid infection. The Boggio prize (£172) was awarded to Dr. Rappin of Nantes for his researches on a method of vaccination and immunization against tuberculosis. The Adrien Buisson prize (£420) was awarded to Drs. de Beurmann and Gougerot of Paris, for their work on sporotrichosis; the Campbell-Dupierris prize (£92), to Dr. M. Jungano, of Naples, for a memoir on the flora of the urinary apparatus, normal and pathological; the Théodore Herpin prize (£120), to Dr. Félix Rose, of Paris, for a work on apraxia; the Huguier prize (£120), to Dr. Salva Mercadé, of Paris, for an essay on cysts and abscesses of the uterus; the Laborie prize (£200), to Dr. H. Dominici, of Paris, for his work on the treatment of malignant tumours with radium; the Louis prize (£120), to MM. P. Emile Weil, F. Lévy, and G. Boyé, for a paper on internal haemostatic methods; the Meynot prize (£104), to Dr. Louis Baldenweck, of Paris, for an anatomical and clinical study of the relations between the internal ear and the point of the petrous bone, the Gasserian ganglion, and the sixth pair of cranial nerves. The Orfila prize (£240), for the best essay on the purification of town water after use, and of polluted factory waters, was divided between MM. Edmond Rolants, E. Boullanger, Léon Massol, and Félix Constant. The Perron prize (£152) was divided between M. Albert Frouin of Paris (on the possibility of keeping alive animals after complete removal of the thyroid apparatus, by the addition of calcium salts or magnesium to their food); M. Genaro Sisto of Buenos Aires (the cry of sucklings and hereditary syphilis); and MM. Noël Fiessinger and Pierre Louis Marie of Paris (notes relating to the protease and lipase of leucocytes). The Saintour prize (£176) was awarded to M. Gabriel Petit of Alfort for a contribution to pathological anatomy and pathogeny of tumours of the breast; the Tarnier prize (£170) to M. André Delmer for a contribution to the study of auto-intoxications of pregnant women and female bovine animals.

THE MEDICAL PROFESSION IN GERMANY.

THE total number of medical practitioners in Germany in 1910 is given in Professor Schwalbe's *Reichs-medizinal-Kalender*, published on November 1st, as 32,449. According to official statistics, the population of Germany in the middle of 1910 was 64,775,000; the proportion of doctors to inhabitants is therefore for the whole Empire 5.01 per 10,000. The increase in the number of practitioners as compared with last year is 480, and this figure represents an appreciable increase in proportion to the increase of population. The proportion in the larger cities is as follows: Wiesbaden, 22.6; Munich, 16.6; Strassburg, 13.9; Greater Berlin, 12.3; Königsberg, 11.8; Halle (on the Saale), 11.8; Kiel and Frankfort-on-the-Main, 11.5; Breslau, 11.3; Hanover, 11.1; Posen, 10.6; Karlsruhe, 10.1; Köln, 9.8; Kassel and Stuttgart, each 9.7; Dresden, 9.2; Danzig, 9.1; Brunswick, 8.7; Erfurt, 8.4; Leipzig, 8.3; Nürnberg and Bremen, each 8.1; Magdeburg, 8.0; Stettin, 7.7; Düsseldorf and Hamburg, each 7.7; Aachen, 7.6; Mannheim, 6.8; Dortmund, 6.2; Altona, 5.9; Elberfeld, 5.8; Crefeld and Chemnitz, each 5.6; Barmen, 5.3; Bochum, 5.0; Plauen, 4.8; Essen, 4.5; Duisburg, 4.3; Geisenkirchen, 4.0. It must be remembered that many of the towns in which the number of doctors appear disproportionately large are the seats of universities. The number of medical women has increased from 55 in 1908 and 69 in 1909 to 102; of these there are 32 in Berlin, 6 in Munich, 6 in Frankfort, 6 in Dresden, and 4 in Hamburg. In 10 other towns there are 2, and in 28 communes 1. The number of women studying medicine has largely increased during the past year; in the winter semester there were 371 and in the summer 512. These figures include foreign students.

A GENERAL meeting of the Association of Public School Science Masters will be held at the London Day Training College, Southampton Row, W.C., on January 11th and 12th. The President, Sir Edwin Ray Lankester, will deliver an address on Compulsory Science *versus* Compulsory Greek. Among the other communications promised is one by Mr. A. Vassall of Harrow, which should be of special interest to the medical profession, as it deals with the education of medical students.

WE regret to announce the death of Dr. William Hoffmeister, M.V.O., which occurred suddenly at Cowes on December 28th. Dr. Hoffmeister, who was 67 years of age, was educated at University College and at Heidelberg, where he took the M.D. degree in 1865. In the same year he was admitted a Member of the Royal College of Surgeons of England and a Licentiate of the Society of Apothecaries; in 1866 he became a Licentiate of the Royal College of Physicians of London. He was Surgeon to the late Queen Victoria and to the Royal Family in the Isle of Wight, and had been Surgeon to the Royal Yacht Squadron for forty-four years. He was also for many years Medical Officer of Health for the Port and Urban District of Cowes, and held several other public appointments.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

EARLY TREATMENT OF INCIPIENT INSANITY.

By sitting for twelve hours at its last meeting before the Christmas recess on December 20th, the London County Council succeeded in dealing with various matters on the agenda of medical interest, some of which had been adjourned on several occasions.

The notification by the Parliamentary Committee that it was too late to proceed further with the preparation of the proposed Lunacy Acts Amendment (Receiving House, London) Bill[1] was one of these, and the matter was discussed at some length.

Sir John McDougall regretted that the three committees concerned had not been able to come to an agreement. In a scheme for a receiving house no great expenditure or hazardous experiment was involved, but because of the differences between the committees a beneficial reform had been dropped. It would not have meant even extra cost, for the expense of treatment by the guardians would have been saved.

The Earl of Stanhope remarked that the difficulty arose on the question whether *all* cases should be compulsorily removed to the receiving house or not.

Mr. W. Claremont declared that the spirit of parsimony had wrecked the scheme.

Mr. Rowe, Chairman of the Asylums Committee, said it was not the fault of his committee that the scheme had fallen through. He and his Vice-Chairman had not receded from the position they took up in favour of two receiving houses instead of one receiving house; they had simply been outvoted.

Mr. E. Smith regretted the failure of the negotiations, because the establishment of receiving houses would have tended to stop, at any rate, the increase in the amount of lunacy. Workhouse wards were wholly unsuitable places for the treatment of the insane, on grounds of economy, of the necessity for classification, and on humanitarian grounds. Under present conditions there was a danger of people being sent to the asylums when their condition was such that their chance of recovery was seriously impeded thereby.

Mr. Goodrich, a member of the Asylums Committee, declared that two receiving houses was the lowest number practicable. One would not cover the ground; there must be one on either side of the Thames. The difficulty must be considered that many workhouses had spent large sums improving the lunacy wards until these had won the praise of the Lunacy Commissioners. The receiving houses would clash with newly-built wards, and before further steps were taken some use should be found for them. The local authorities and the guardians should be asked to consult with the Council.

Mr. Pilditch, the Acting Chairman of the Parliamentary Committee, said the delay had arisen from the difficulty of getting a definite interpretation of the intentions of the Council.

The report was then received.

MEDICAL TREATMENT OF SCHOOL CHILDREN.

The proposals of the Education Committee to extend for twelve months the agreements with certain hospitals for the medical treatment of school children[2] were reached at midnight, and the lateness of the hour may have accounted for the fact that the speeches came from one side of the chamber only, and that the Chairman of the Committee alone of the promoters of the present scheme of medical treatment offered any reply to the various criticisms offered. The Education Committee, as its Chairman promised, supplied some further details with regard to the working of the arrangements with the six hospitals whose agreements were proposed to be extended. The following tabulated statement as to the results obtained was given:

Hospital. (1)	No. of Children asked to Attend up to Oct. 31st, 1910. (2)	No. of Children the Hospitals could have Treated up to Oct 31st, 1910. (3)	No. of Children who Attended up to Oct. 31st, 1910. (4)	No. of Cases which have been Investigated as to Result of Treatment. (5)	No. of Children under Col. 5 who Attended the Hospital until Discharged. (6)	Percentage of Children who Attended until Discharged. (7)	Cost per Case. (8)
							s. d.
1. Belgrave Hospital for Children	1,809	1,340	1,024	326	298	91.4	5 8
2. Charing Cross ...	1,941	1,575	942	433	400	92 4	6 0
3. Hospital for Diseases of the Throat Golden Square ...	316	750	131	40	33	32 5	4 0
4. London Hospital ...	4,203	3,467	3,481	550	417	75 8	3 4
5. Metropolitan Ear, Nose, and Throat	383	375	222	110	87	79 1	4 0
6 St. George's	1,523	1,416	960	237	221	93.2	7 6
	10,175	8,923	6,760	1,696	1 456	85.8	4 8

The average cost of the 463 cases of ringworm treated at Charing Cross, London, and St. George's Hospitals was £1 1s. 10d. each.

Mr. Matthew commented on the considerable leakage of those who needed treatment and did not receive it which the figures showed. Treatment seemed to depend on the child's willingness to go to the hospitals, whereas the Council's interest was to make it compulsory, so that the children might be made healthy. The hospital scheme broke down because there was no means of forcing the children to go or the parents to take them. Until the County Council was in control of places where children could be taken and treated under the discipline of the school, the money spent, to a great extent, would be wasted. Mr. Matthew alluded to the difficulties which had been experienced in obtaining the proper treatment of infected ears in support of this contention. The hospital scheme had been tried long enough; it was not even cheap, it was not effective, it did not cure the children, and it was preventing subscriptions reaching the hospitals. It was hurting the hospitals and also the parents, who previously could get their children treated for nothing. Nobody was satisfied with the scheme; one hospital did not want it, another accepted it under protest, and the work was carried on generally as a favour to the Council.

Mr. Bray feared that the Board of Education would not pass the scheme, as it had only given its sanction in the first instance on the understanding that a report on the general question would be submitted, and this had not been done. The Council was placed in a difficulty because the report was brought up at the end of the session; if it was not passed, treatment in the districts served by these hospitals would cease altogether. His objections to the present scheme were two-fold: (1) It abolished free medical treatment of children; (2) the Council knew nothing of what went on in the hospitals.

Mr. Frank Smith spoke of an estimate by the Council's medical officer that the children could be treated in clinics at an average cost of 3s. 4d. a head, and said that on this basis the hospital scheme besides being less efficient was more expensive, especially when it was remembered that the cost of travelling had to be added.

Mr. Bray moved an amendment that agreements with the hospitals should include the following words:

> Subject to the condition that nothing in the agreement shall prevent the Council's representatives from visiting the premises at which treatment is provided when the treatment is being given.

[1] BRITISH MEDICAL JOURNAL, November 26th, p. 1738.
[2] BRITISH MEDICAL JOURNAL, December 17th, p. 1938.

These words he said were the very ones that had been accepted by the associations of local medical practitioners of Hampstead, Norwood, and Wandsworth.

Miss Adler, who seconded, believed that the hospitals would welcome such a clause, as it would be a step towards linking them with the schools and ensuring that the recommendations of the clinical assistants were carried out. The amendment, however, was lost, and the recommendations of the committee were then agreed to.

Payment of Public Vaccinators.

For some years the grants from the Imperial Exchequer to London County Council funds have shown a marked tendency to decline, and the Finance Committee has had under consideration the steps which should be taken if the amount of grant should fall below the charges which by law are paid out of it. Amongst charges which are met out of the Exchequer contribution are the fees of public vaccinators, and in view of the doubt whether the Exchequer grant this year would be sufficient to pay the whole of the statutory charges under this head, the Finance Committee reported to the London County Council on December 20th that it had decided to pay on account 75 per cent. of the sums due to public vaccinators until the state of the fund was known. While the Council would desire that every effort should be made to satisfy the legitimate claims of these public servants in regard to services actually performed, the course proposed was the only safe one. The Local Government Board was in communication with the Treasury on the matter, and meanwhile had observed that the withholding of any part of the grants due to public vaccinators would create hardship, and the Board would be glad if the Council could see its way to pay in full pending a settlement of the question. The services of public vaccinators were national in character, and as it was averse to putting the payment for them on the county rate, the Finance Committee held to its position, and intended to pay only 75 per cent.

Medical Examiners in Compensation Cases.

Mr. Frank Smith asked the Chairman of the General Purposes Committee whether it was advisable that medical men who held positions as advisers to insurance companies should hold appointments under the Council in respect of cases coming within the Compensation Acts.

Mr. Gray, the Chairman, replied that the more experience a medical man had in cases of this character the better fitted he was to examine cases, and give evidence if required on cases submitted to him by the Council.

Mr. Smith: Seeing that a medical officer may also have to advise a private insurance company, does the chairman think it desirable?

Mr. Gray: I should say in cases of this sort a doctor would be very much in the position of a barrister; and if not, I am not prepared to impugn the honesty of the men who are employed by the Council, and whose whole life's record goes to show that the opinions they give are honestly expressed, and are substantiated whenever further inquiry has taken place.

MANCHESTER.

Epileptic Children in Manchester.

For some time past the Manchester Education Committee has been sending numbers of their epileptic children to the David Lewis Epileptic Colony, and the medical superintendent, Dr. A. McDougall, has spoken very highly of the success that has attended the treatment at the colony. He says that if children are sent to a residential epileptic school at the beginning of the disease, a large proportion of them cease to have fits, and are saved from the mental, moral, and physical degeneration which are so likely to occur when children are treated at home, where they are inevitably made to feel themselves unlike their playmates. In spite, however, of the good results that have been accomplished at the David Lewis Colony, the Board of Education has recently raised some objections to the bringing-up of children in an institution where there are adult epileptics, and the Education Committee has been practically compelled to make fresh arrangements. It has now provided special residential schools at Soss Moss, near Alderley Edge, and at a meeting of the committee last week, Sir T. T. Shann described the accommodation provided. He said the institution comprised four houses, each designed for twenty-four children, with day school buildings and residence for the superintendent. All the accommodation provided for the children is on the ground floor, and each house contains a spacious dormitory with night observation room, a dining room, with rooms for recreation, and a wide corridor for play, in addition to baths, lavatories, and domestic offices. Every possible provision has been made for the health of the children, and Sir T. Shann had reason for hoping that the Soss Moss school would afford the best possible provision for successful treatment.

Lancashire Education Committee and the Board of Education.

The extensive requirements of the Board of Education are now causing something like a revolt in several towns of Lancashire, and some of the education committees seem inclined to defy the Board. A short time ago the Board threatened to withdraw its grant from the County Education Committee because the committee has not rebuilt and replaced all the schools which the Board required; and at a meeting of the Elementary Education Committee the Chairman said the Board evidently thought the committee was a dilatory authority. He moved a report which was intended to show that the Board's view was not correct, and to protest against the attitude assumed by the Board. From the report it appears that when the committee took up its work in 1903 there were 554 defective schools. Up to the present 400 of these had, with the assistance of the managers, been placed on a satisfactory basis, and a considerable amount had been spent in improving at least half of the remaining 154, though they had not yet been brought up to the modern standard. During the same period, 40 unsatisfactory schools had been closed, 61 new schools opened, 15 remodelled, and numerous improvements effected in others. They had also made arrangements for 20 new Council schools, which would be opened by March, 1913, and another 10 which would be ready by March, 1914. It was expected that the whole scheme which the committee had taken in hand would require years to complete and would involve an average capital expenditure of between £50,000 and £60,000 a year. The Special Committee did not think that the County Council ought to spend more than that sum, especially as it will also have to meet a sum of nearly £250,000 for higher education. When the whole of the building schemes were completed the county would be liable for a sum approaching £1,500,000, and the committee felt that, in view of what it had already done and the schemes which it had in hand, it might have expected far more reasonable treatment than it has received from the Board of Education. In spite of all its good work done at great cost to the ratepayers, the Board has definitely threatened to withhold the grant from fourteen schools which have been condemned, and the Education Committee now says that any school whose grant is thus withheld will simply be closed. This would involve great loss to the teachers and inconvenience to the parents in sending their children to more distant schools, or perhaps even to a voluntary school, instead of a Council school, but the committee feels that it is bound to avoid the risk of exciting a feeling against education among the ratepayers on account of the excessive cost. The committee suggests that Parliament ought to provide a special grant in respect of all new Council schools built after a certain date; and if the Chancellor of the Exchequer had to find a substantial sum for each case, it would act as a salutary check on the now uncontrolled requirements of the Board. At any rate, the Education

Committee feels justified in firmly resisting pressure to incur increased expenditure for purposes which are not in its opinion of pressing necessity. The report of the committee was adopted, and copies ordered to be sent to the President of the Board of Education and to all the county education authorities in England and Wales.

CANCER RESEARCH AT THE ROYAL INFIRMARY.

The Board of Management of the Manchester Royal Infirmary is issuing an appeal for contributions to a special fund for the purpose of placing on a firmer basis the researches on cancer which for several years have been carried on in the infirmary. It appears that the general funds of the infirmary are not available for special purposes such as this, and though some special assistance was received last year, it was far from sufficient. About 600 cases of cancer were treated during 1909, and it is said that some important facts were noted, but the means for fuller investigation are quite inadequate. A small laboratory for the study of cancer has been fitted up, but to pay for the services of a special investigator and to meet other expenses of the work a sum of £2,500 is needed.

WEST YORKSHIRE.

PROSECUTION OF BRADFORD MILK DEALERS.

SOME important prosecutions, initiated at the suggestion of the medical officer of health, were heard at the Bradford City Police Court on December 15th. One dealer was fined for exposing his milk under conditions making it liable to contamination. It appeared that the defendant kept his milk in a cellar kitchen in which were dirty clothes, slops, fish, and vegetable refuse. Another was fined for selling milk from a can which had not been inscribed with his name and address, as required by the local by-laws. This is a very necessary regulation to allow the source from which the milk is obtained to be traced, and as a guarantee of its purity. The third case was one of a peculiarly repulsive and dangerous character. The analysis of the medical officer of health, corroborated by that of Dr. Eurich, showed that the milk had been taken from cows suffering from diseased udders. A large number of pus cells were found, indicating that the udders were in an inflammatory condition. The defendant in this case was fined more heavily, as he had been previously warned. Such cases as these show the necessity there is for the local authorities to be always on the alert in the interests of public health.

ST. CATHERINE'S HOME FOR CANCER AND INCURABLES, BRADFORD.

The annual meeting of this institution was held in Bradford on December 16th, the Lord Mayor presiding. The report stated that 41 cases had been treated during the year, 28 of them being cancer cases. The gross expenditure had amounted to £1,153 15s., the average cost per bed being £54 16s. 11d. Many most pitiable chronic cases had had to be refused admittance on account of the lack of accommodation. It was hoped that during the next year a long-cherished plan could be carried out to make such structural alterations as would increase the number of beds at the disposal of the committee.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

EDINBURGH.

Low Death-rate.

DURING the week ending Saturday, December 24th, the death-rate of Edinburgh stood at the very unusual figure of 9 per 1,000, and that despite the fact that there is a considerable epidemic of scarlet fever.

GLASGOW.

Western Infirmary, Glasgow.

During the past year the building of the new wards has been proceeding, and at the annual Christmas meeting for the distribution of gifts to the patients the chairman of the directors was able to give a satisfactory report of the progress made. The new wards are expected to be ready for use in two or three months, and will provide accommodation for nearly one hundred more patients. The new clinical laboratory is also nearing completion. A covered shelter for the entrance of the outdoor department has been provided, and has proved most serviceable. The managers have only one other building in contemplation—a connecting wing between the new block and older building. In this connecting wing it is proposed to form a much needed new admission department, and to provide operating theatres and administrative rooms. To erect the connecting wing will cost about £35,000, but a generous donor, who desires to remain anonymous, has already promised the sum of £3,500 to provide one of the operating theatres.

Lanfine Home for Incurable Consumptives.

The pressing need for increased accommodation for incurable consumptives was strongly urged at a public meeting held in the City Chambers, on December 19th, in support of an appeal for increased financial assistance for the Lanfine Home. This institution was opened in 1904. It was erected and endowed with a legacy of £20,000 left by Miss Martha Brown of Lanfine, of which £5,000 was used for building, leaving £15,000 as an endowment fund. The original building of 18 beds proved utterly inadequate to accommodate all those seeking admission, but 110 patients have been admitted. Unfortunately the endowment did not prove sufficient, and, after six years, the financial deficit amounted to over £1,800. Consequently, when in 1909 the directors received from three gentlemen an offer to erect and fully furnish a new wing for 26 patients, the financial difficulties made the directors hesitate to assume the increased responsibilities entailed on the generous offer. Encouraged by a most welcome donation of £2,000 from the trustees of the Dick Bequest, which wiped out the existing deficit, the directors ultimately decided to accept the offer, and the new wing was opened on December 3rd. The cost of caring for incurable consumptives is great, amounting to at least £60 per annum per bed, so that the expense of maintaining the 44 beds fully occupied will amount to at least £2,640, of which only about £840 will be obtained from the original endowment, donations, and such small payments as may be made by some of the patients. It is to be hoped that the public will provide the extra funds required to carry on the work of the extended home. Every admission to the home secures to the patient efficient nursing and kindly care, and removes from the household and community a dangerous source of infection.

SIDLAW SANATORIUM.

At a meeting of the Dundee Infirmary directors, held on December 12th, it was reported that the sanatorium had been transferred to the infirmary, at a cost of £618 for legal expenses, and for the working of the sanatorium the directors had appointed Dr. H. G. Watson to be resident medical officer, and Dr. William Foggie to be visiting physician, while the visiting surgeons of the infirmary would act as honorary visiting surgeons. The sanatorium was opened on November 15th by the admission of five children, and since then ten other children had been admitted. The full accommodation for children will be 30 beds, and for adults 20. It is expected that it will be possible to receive adult patients in January. There are 6 endowed beds, and the Town Council has arranged for 7 beds for patients sent from the municipal tuberculosis dispensary.

MEMORIAL TO THE LATE DR. SPENCE, BURNTISLAND.

A public clock has been erected in Aberdour, by public subscription, as a memorial of the late Dr. Spence (Burntisland), who for nearly forty years was medical officer of the village. It has been erected on the top of the embrasured walls which form a part of

the original session house, in front of the Parish Church, and is a prominent feature in the High Street. Underneath the square-built erection, with finial, is the following inscription on a tablet: "This clock was erected by the inhabitants of Aberdour, in memory of Dr. Robert Spence, their friend and physician for nearly forty years. 1910."

MEDICAL OFFICER OF LEVEN.

Dr. D. M. Macdonald has been appointed Medical Officer of Health for the Burgh of Leven (Fifeshire), in room of Dr. Balfour Graham, resigned.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

WOMEN'S NATIONAL HEALTH ASSOCIATION.

THE Countess of Aberdeen presided over the annual meeting of the Dublin Branch of the Women's National Health Association held in the Royal College of Physicians on December 14th. Satisfactory reports of the work done by the special tuberculosis nurses, by the Samaritan Fund, and by the Pasteurized Milk Dépôt were received and adopted. Lady Aberdeen spoke of the results that were being obtained by the Sutton Holiday Home, and by the newly opened Allan Ryan Hospital for Tuberculosis. She also referred to the further extensions of work which the branch had just inaugurated, or hoped shortly to inaugurate. Amongst these are the establishment of a body of voluntary helpers to work under the lady sanitary inspectors in connexion with the Early Notification of Births Act; the formation of tuberculosis classes on the lines suggested and carried out by Dr. Pratt of Boston; and the extension of the means of supplying Pasteurized milk.

RED TICKETS AND BLACK TICKETS.

One of the grievances which Irish dispensary medical officers complain of and have been contending against for years is the improper use of red tickets by members of boards of guardians. The grievance still continues, and is well illustrated by some recent proceedings at the Newry No. 2 Rural District Council, at which a letter was read from Dr. Flood complaining of two red tickets which he had received. One ticket was handed in at 10.30 p.m., on Christmas Eve, 1909, and on arrival he found the patient for whom it was issued sleeping peaceably, with apparently nothing much the matter with him. The other ticket complained of was issued for a child with a "scabby head," who was well able to attend the dispensary and to whom a black ticket only should have been given. The issuing guardian in the latter case was so ignorant of his duties as to ask what was the difference between a red and a black ticket, apparently being unaware that a red ticket necessitates a visit at the patient's house by the doctor, while a black one only entitles the patient to call at the dispensary. Very little satisfaction was gained by the doctor in the present instance, but there is little doubt that ventilation of the subject helps to keep the guardians in check.

DAIRY AND COWSHEDS ORDER.

Decision was given in the Court of Appeal on December 21st in the matter of the King (Local Government Board) *v.* the Rural District Council, Kilmallock. Under Section 11 of the Public Health Act, 1878, the Local Government Board ordered the District Council of Kilmallock to appoint a veterinary inspector, and to put in force the Dairies, Cowsheds, and Milkshops Order of 1908. The Council refused to make the appointment, alleging that it was unnecessary, and that it was not advisable to incur the expense that such an appointment would involve. Thereupon the Board applied for a mandamus, but this was refused in the Court of the King's Bench on the ground that the Order was *ultra vires*, and the case was in consequence carried to the Court of Appeal, which has now reversed the decision in the King's Bench Division, with costs. Lord Justice Holmes, in his judgement, stated that, taking the statutes as they stood, he was of opinion that the duty which originally had been imposed upon boards of guardians under the Diseases of Animals Act had been transferred to the urban and rural sanitary authorities under the Public Health Code. He did not think that the Dairies and Cowsheds Order was *ultra vires*, and he thought it was competent for the Local Government Board to define the necessary qualifications of a veterinary inspector. Lord Justice Cherry and the Lord Chancellor concurred in the main statements of this judgement.

Special Correspondence.

PARIS.

Public Disinfection Service in Rural Districts.

I HAVE already had occasion to explain to the readers of the BRITISH MEDICAL JOURNAL how the application of the recent laws concerning medical assistance (that is to say, the treatment of old people and incurables and the prevention of the spread of infectious disease) has been placed entirely in the hands of the local authorities of each district in France instead of being under the control of a central bureau, and I now propose to show the various advantages and disadvantages of this system.

On the one hand, it prevents an increase of the central budget and other complications, whilst the estimation of expenses can be made more easily and with greater accuracy, and a more immediate control of monetary and other matters is rendered possible. On the other hand, however, it sometimes happens that the local authorities do not always realize the great importance of this work with which they are entrusted, possibly because they come into direct contact with the people, and therefore naturally hesitate to adopt any novelty which at first means fresh taxes. It is this that causes all the delays, economies, and half-measures; but in spite of this reluctance on the part of the authorities, the law is gradually making its way, and people are becoming more and more reconciled to its drawbacks as they realize the benefits they derive from it. There is no need, therefore, for excessive surprise or indignation caused by the discovery that the disinfection service in country places is not yet in perfect working order, though the law authorizing its institution dates from 1902. It is a departmental service. At the commencement the great object was to cut down expenses to the utmost farthing, and for that reason the new institution was placed under the management of officials of the road service. This was a mistake; for the latter, with all the goodwill in the world, were naturally inadequately equipped with technical knowledge, and did not understand the details of the work, with the result that the measures they took for disinfection were incomplete and consequently useless. As a result, whatever money they saved was afterwards lost. The system, therefore, stands condemned. A special service of this kind requires to be both properly organized and autonomously worked. As a matter of fact, in several districts it has already been established on a practical working basis, thanks to the intelligence of the prefects and general councillors and the devotion of the departmental medical inspectors of hygiene. The Department of Seine-Inférieure, in particular, possesses a service which should serve as a model to many others. I will give an outline of the plan upon which it is worked, and which, in my opinion, is well worthy of adoption elsewhere. Let us suppose that a doctor diagnoses a case of contagious disease amongst his patients. He is bound to report the case immediately to the *sous-préfet*, and since every doctor is provided with specially printed forms for use in these circumstances, he has to send in one of these papers stating (1) the name and address of the patient, (2) the name of the head

of the family, who is responsible for the disinfection, (3) the supposed cause of disease, and (4) any extra measures that he may consider necessary for the prevention of the spread of infection besides those in common and general use. The doctor, who receives a small fee for his report, is also obliged, if necessary, to explain to the authorities the value of the precautions he indicates, and to urge them to carry them out properly. His report, which is registered by an employee of the *sous-préfeture*, is sent at once to the departmental inspector of hygiene and to the official who is responsible for the disinfection of the patient's house and surroundings.

Each *arrondissement* possesses one of these officials, whose duty it is to go as quickly as possible to the home of the patient and take with him all that is necessary for a thorough and complete disinfection of the whole household. Not only must he show those in charge of the sick person, and even the latter himself, all that must be done to guard against a spread of infection, but he has to return later to superintend these operations, and even to carry them out himself if the carelessness or stupidity of others renders it necessary. That these officials are fully competent to undertake so responsible a duty is proved by the fact that they are all thoroughly well instructed and trained both in the theory and practice of their duties. After each visit the disinfecting officer is bound to send in a brief report to the inspector, who is thus kept informed of the course of events, and is enabled to judge when it is necessary for him to go in person to quell rebellious patients, or to undertake anything of an important or delicate nature.

When the disease has run its course the doctor or the disinfecting officer notifies the inspector, and a general disinfection of the district takes place. This will shortly be carried out by means of a service of motor cars. The head quarters will be in the chief town of the locality, and the motors will be ready to be dispatched to any district at a moment's notice, furnished with an oven and all other appliances necessary for the establishing of an extemporary disinfecting station. Owing to the rapidity of transport in motor vehicles, three cars and three employés will usually be all that is required for each department. The charges for disinfection vary according to the means of the householder; in some cases a moderate fee is asked, in others the process is carried out for nothing. If the master of a house wishes to disinfect his family and property himself, and in any particular fashion, he is allowed to do so, but the authorities are bound to keep a close watch on his proceedings, and to satisfy themselves that the methods of disinfection employed are adequate. In most cases, however, people are quite content to have the responsibility taken off their shoulders, and the system is becoming more and more popular, as the public realizes more fully its ability and efficacy. The fact that this complementary work of medicine has been so cordially adopted by the general public is of far more importance than the law in which it had its origin; and, thanks to the popularization of the Pasteurian pathogeny, and to the microphobia which has resulted therefrom, the disinfection of the country is considered by the public quite as necessary and as logical from a hygienic standpoint as pharmacy is from the point of view of therapeutics. The example given by the Department of Seine-Inférieure proves that a little goodwill is all that is needed to obtain an equally good result throughout every department in France.

BERLIN.

Tribute to the late Dr. Robert Koch.

When Robert Koch died last spring his funeral was marked by a complete absence of anything in the form of public ceremonial. In deference to the widow's wish—a wish which, it was understood, had been expressed by Koch himself during the last illness—only a few among the most intimate of his personal friends were present at the simple cremation ceremony in Baden-Baden, where his death had taken place; and, it being just then vacation time, the Berlin University took no immediate steps towards arranging a *Trauerfeier*. Indeed, there was no need for haste no reason to fear that the general sense of loss would seem less poignant, the general, almost boundless, admiration for Koch's life-work grow feebler, in a few months' time. And so it was not until the noise and bustle of the university centenary fêtes were well over and the Berlin scientific institutes quietly settled to the work of the winter term that a meeting was convened to do honour to Koch's memory.

This meeting took place on Sunday, December 11th, at midday, in the fine new hall of the Berlin University. The severe beauty of this hall seemed admirably suited to the occasion; it was well-nigh filled by Koch's colleagues and pupils, by Government and municipal delegates and distinguished representative persons interested in medical science, in public hygiene, and philanthropic work. Many had come from afar; among them Professor Arloing of Lyons, whose researches have done so much to advance modern methods of combating tuberculosis. Five Prussian and Imperial Cabinet Ministers were present, and nearly all the Under Secretaries of State; the directors and heads of department from the Prussian Cultus Ministry; the chief general surgeons of the army and navy, with their staffs; the chief burgomaster of Berlin and a large number of town councillors, magistrates, etc.: delegations from an immense number of medical and hygienic societies and corporations. In the centre of the front row was a small group in deep mourning, the family of Robert Koch.

Most effective was the old Italian requiem chant sung by the *capella* chorus of the Royal School of Music. When its last notes had died away Professor Gaffky, Koch's oldest pupil and his successor as Director of the Berlin Institute for Infectious Diseases, rose and in warm and simple words, inspired by deep-rooted reverential affection, sketched Koch's life from its simple beginnings as one of the thirteen children of a Klausthal mining official of restricted income, to his calm and painless death, full of years, full of honours, after an earthly pilgrimage each step of which, even to the last, was marked by tireless effort in the cause of science and humanity. He described Koch's epoch-making discoveries, his methods, which rank as discoveries likewise, his powers of organization that enabled him to build up his great system for combating epidemics, his simple, independent mode of life, his fearlessness and moral courage, his genial good humour among his friends. Goethe's words, "To have solved the solvable, and to regard with calm reverence the unsolvable," were aptly illustrated in Koch's achievements and in his cast of mind and thought.

Gaffky's address was pithy, incisive, and filled with a warm enthusiasm that sat well on a man known for his critical acumen—himself a bacteriologist and hygienist of distinction and long, long past the years of youthful "*Schwärmerei*." When he had finished, an *adagio* for three violoncelli was beautifully played by Professor Becker, Carlo Guaita, and Miss Beatrice Harrison (the young English 'cellist, whose great powers have secured her so exceptional a position in the Berlin musical world), and a solemn four-voiced chorus "*Welt, ade*," brought the proceedings to a close.

BUDAPEST.

The Preventive Treatment of Syphilis.—Dr. Lorand on the Prolongation of Life.—Crusade against Tuberculosis.

Whether it is possible to abort syphilitic infection after the initial lesion has appeared is considered by many to be still an unsolved problem; for it is as yet undecided whether the chancre is a strictly local lesion or whether the general infection has already taken place when the sore appears. Dr. Emil Kanitz, of Kolozsvár, has recently published his observations on a series of 16 cases which he has treated and kept

under continuous observation. He destroyed the chancre with the Paquelin cautery, never bringing the glowing point in actual contact with the lesion. He claims that by this means heat rays penetrate much more readily and extensively into the tissues than when the cautery point itself enters the skin. In the latter case the instrument merely cuts, and the effect is mechanical rather than thermic. Among the 16 cases operated upon, later syphilitic lesions developed in 5, while some of a more doubtful nature appeared in two others. The remaining cases remained free from further symptoms for periods varying from four months to two years. Two of these patients married, and in no case was the wife infected; one even bore healthy children. It was also found that in a number of instances where swelling of the adjoining lymphatic glands was present, it subsided. Another point which the author determined was the difference in the behaviour during cauterization of the specific and non-specific lesions. If, after cauterization of an ulcer, without bringing the glowing point into actual contact with the sore, the base of the latter is scraped with a sharp spoon, not a fragment of tissue can be scraped away if the lesion is syphilitic, and no bleeding results. (This was first described by the German observer, Holländer.) In the case of a non-specific ulcer, however, the entire base of the sore can readily be scraped away, and bleeding follows, no induration being present. The non-specific ulcer also heals up very quickly, while in the chancre cicatrization may take several weeks. In those cases in which further specific lesions developed, the entire course of the disease was found to be much less severe than in ordinary cases; and the author believes that the destruction of the primary sore has a marked beneficial influence. The proof of definite healing also seems to be established by the fact that in a few cases the patients again became infected with a hard chancre.

In his book, lately published in the Hungarian language and translated into almost every modern tongue, Dr. Lorand says that from recent reports of the register offices of Austria, Germany, France, and England, it appears that we are justified in assuming that, though life is usually limited to 55 to 60 years, it may occasionally be prolonged to 100, or even more, by the operation of certain internal and external agencies. By studying these, we may eventually be able to prolong the lives of many individuals beyond 80 or even 90; and to prolong our term of youthfulness by ten or twenty years. We need no longer grow old at 40 or 50. This can be brought about by improving the functions of a certain few of the glandular structures of the body, provided one or more of the main organs have not already been too gravely compromised by incurable organic disorders. To prevent old age coming on too soon, the first condition necessary is the possession of healthy ductless glands, (chief among them being the thyroid, the adrenals, the pancreas, and the liver), and this depends upon heredity. Marriage is an invaluable aid in the struggle against old age. If married life is one of the best means of resisting the approach of old age, on the other hand, it is positively certain that unhappy marriages are the surest means of hastening its oncoming. To avoid premature old age and early death we have to follow these rules: Wear loose collars, because a tight collar presents obstacles to the free circulation of the blood through the thyroid. Do not take too much meat, because abundance of meat alters the ductless glands. Take large quantities of milk, this being the extract of various glands, and especially that of the thyroid. Be as much as possible in the open air, and especially in the sunshine; and take plenty of exercise, taking care to breathe deeply and regularly. Take a bath daily, and, in addition, once a week or every two weeks take a Turkish or vapour bath. Wear porous clothing, light hat, and low shoes. Go early to bed and rise early. Sleep in a very dark, very quiet room, and with a window open; and do not sleep less than six or more than seven and a half hours. Have one complete day's rest in each week, without even reading or writing. Avoid mental disturbances or worries. Be temperate in the use of alcohol and also in the use of coffee or tea. Avoid places that are overheated, especially by steam, and badly ventilated. Replace or reinforce the functions of the organs which may have become changed by age or disease, by means of the extracts from the corresponding organs of healthy animals. But of course the application of this precept must always be adapted to the individual case.

Preliminary announcement of a far-reaching crusade against tuberculosis has been made by Professor Dr. Tauszk, Director of the Society for the Prevention of Tuberculosis, who is acting in conjunction with Dr. Ruthy, late Director of the Elisabeth Sanatorium. Compulsory registration of cases of the disease is to be the first step in the plan as outlined. Added to this will be the removal of infected persons (in Budapest) to a camp established in a mountainous region of the country. An endeavour is to be made to secure the co-operation of the State authorities, as the camp would at first have to be sustained by grants, though it is believed that later it could be made self-supporting. The scheme as outlined will take a considerable time to put into working order, but it will be pushed on as fast as the necessary aid can be secured.

Correspondence.

STATE SICKNESS AND INVALIDITY INSURANCE.

Sir,—May I assure Dr. Hick that the advocates of "payment for work done" or "payment per attendance," in quoting the *principle* of the National Deposit Society system, have no idea of adopting or recommending the abuses or drawbacks of that or any other society? The tariff of fees which the Association will, I hope, fight for will be a tariff which will ensure the possibility of good work—that is to say, adequate fees and adequate mileage rates, at least as good as one obtains in working-class practice at present, and in some cases much better. For instance, Dr. Stookes asks in the Journal of December 24th, "Is it not time that the profession declined to undertake confinements for the ridiculous remuneration that is usual?" It *is* time; the usual guinea fee covers just the seven (or, in the country, three) *post partum* visits, and the actual attendance—often several hours in the middle of the night—is a free gift to the patient, thrown in as charity or advertisement. We shall ask the State for an adequate fee for each particular service—visit, advice, mileage, confinement, etc.—and it rests with Dr. Hick and the profession to declare what they will be satisfied to accept.—I am, etc.,

Bristol, Dec. 23rd. Harry Grey.

Sir,—It would be interesting to know how many of the gentlemen taking part in this discussion have *practical* experience of contract practice.

Dr. Cooper in his last letter says, "The advocates of contract practice have been strangely silent." They can afford to be; his arithmetic renders any opinion from them quite unnecessary. Does he really think the majority of the profession would oppose a *per capita* rate of 10s. because of some elusive principle which ultimately involves a distinction without an atom of difference? If so, his sense of proportion is in need of active treatment.

The "majority must prevail." True; but I question if it is to be found behind Dr. Cooper; further, I doubt if even in his own Division, despite the circularizing of a "unanimous" resolution, a referendum asking the choice between payment of 10s. a head or for work done would bring a majority in favour of his principle.

Again, Dr. Cooper asks us to consider the situation from a "statesmanlike standpoint"; putting aside Shakespeare and platitude, as a statesman, which would he consider the more important, 15,000,000 of the ordinary population or a portion of a profession numbering 32,000 all told?

Payment for "work done" is impossible in a practical

scheme which necessitates a fixed sum being budgeted for each year, whereas a generous *per capita* rate, with allowance for contingencies, such as operations, special treatment, etc., is the position the medical profession will concentrate upon if "statesmanlike," "practical," and "sensible."

Dr. Fothergill's letter would no doubt be instructive if from the mass of superfluous verbiage we could derive his meaning, though it is difficult to understand what benefits follow the answering of questions which merely complicate a subject already sufficiently involved.

The troubles of the medical profession are natural and economic; they are similar to those existing in every other class of the community—competition within and without is bringing the usual result. Palliatives may relieve to some extent, but so long as the political power of the profession remains negative—that is, until they pick out the proper men and place them to directly represent their views in the Legislature itself—so long will the profession be exploited by those who are better able to pull the strings of social progress.—I am, etc.,

C. ADOLPHE K RENSHAW, M.A.Cantab.,
Sale, Dec. 21st. L.R.C.P., etc.

SIR,—Is Dr. Cooper correct in assuming that the majority of practitioners are in favour of payment per attendance? He infers this because letters favouring payment by contract do not appear in such quantity in the JOURNAL as those for the opposite view; one must remember, however, that the bulk of letters on this subject appear above the names of three or four gentlemen, all in favour of the same system. This is no criterion of the opinion of the profession. Neither is the gathering "in multitude"—referring, I presume, to the annual British Medical Association meeting, when, perhaps, 1,000 out of 32,000 assemble together.

No one would argue that contract practice is all bliss; it is sadly abused, the chief abuses being the absence of a wage limit and the capitation rate; but, with all its drawbacks, many of us feel that to have a fixed cheque coming in every quarter or half year, covers a multitude of sins. Will not the profession as a whole also annually lose a considerable sum of money by accepting payment per attendance?

I believe I am correct in saying that the annual medical bill of the National Deposit Friendly Society does not work out at as much as if the present accepted capitation rates were taken on the membership of the society.

Also, will there not be a temptation and danger of men, anxious to develop this kind of practice, touting and advertising amongst people to increase their list? and it is certain that one's income will be at the mercy of one's popularity.

It must be remembered also that, besides the two systems of payment mentioned above, the Government may suggest the appointment of whole-time medical officers. I feel assured, however, there will be little division of opinion as to our feelings about this mode of payment.

If any consideration is to be shown us by the Government, it will only be if our spokesmen, when making their demands, can say that they have the united voice of the profession behind them, or at any rate the large majority. I quite agree with Dr. Cooper that *the will of the majority must prevail*; and I hope the minority will cheerfully, loyally, and without haggling, accept the view of the majority.

But how are we to obtain the reliable opinion of the voice of the profession? I trust not by the votes of the few who usually attend Divisional meetings. Let the Divisional Secretaries arouse the interest of their members in the best way they can on this subject, and let those who will attend meetings, thresh out and discuss and pass resolutions, but let the final vote be taken by *a postcard referendum* in each Division.—I am, etc.,

Exeter, Dec. 20th. A. W. FORTESCUE SAYRES.

SIR,—I am sorry to write again so soon, but my excuse still is that I want to get at the real facts on which our discussion should be based.

Dr. Fothergill writes (BRITISH MEDICAL JOURNAL December 17th, p. 1945): "The attendance on his parcel of 1,500 beneficiaries would be at least fifty visits a day, all surgery attendance being in addition." I take it from his letter that Dr. Fothergill is quite prepared to stand by these figures, which show that each beneficiary would, on an average, require a little over twelve visits a year, not including attendances at the surgery. I want to know what is about the amount of "the fair average fee" which the advocates of payment per attendance expect us to receive—I presume nothing less than 2s. In that case fifty visits a day would equal £1,825 per annum, not counting payment for attendances at the surgery and extra fees for "confinements, fractures, dislocations, consultations, anaesthetics, night calls, special visits, certificates, attendance on those ill through 'personal misconduct,' operations." And in many districts a medical man has charge of more than 1,500 persons.

If Mr. Lloyd George is going to provide for attendance on 15,000,000 persons at the above rate there will somehow have to be found £18,250,000 per annum to pay for this attendance, an average of £750 for each of 25,000 medical men.

If the suggestion of providing attendance for the whole population is carried out, the 45,000,000 would require £54,750,000 to be found every year to pay for their medical attendance, or an average of £1,825 for each of the 30,000 medical practitioners in the United Kingdom, and to these figures must be added something for attendance at the surgery and for "confinements, fractures, etc." Truly there are halcyon days in store for us.

Dr. Cooper (BRITISH MEDICAL JOURNAL, p. 1998), endorses Dr. Fothergill's statement as to the probable number of attendances. In all the correspondence that has lately taken place on this subject, I have seen no suggestion as to the amount of the desirable fee or fees for ordinary visits, and, with the exceptions referred to in this letter, no estimate of the number of attendances that would probably be required. When one of the questions at issue is the practicability of the scheme it is of the utmost importance that those who would have to run it should have some idea of its probable cost, and that we who would have to work under it should have some idea of our probable remuneration.

The enormous cost that I have estimated is calculated on a fee of 2s. per visit, without mileage or any extras, but I am told that the minimum fee required would be 2s. 6d., which would mean a cost of at least £22,800,000 per annum. If Dr. Fothergill's estimate of necessary attendance is a good one, our prospect of getting fair payment for work done is a bad one. The Chancellor will say to himself: "This is to cost me £23,000,000 without any extras, say £25,000,000 altogether. Toward this the beneficiaries, if they pay as much as 5s. per head, will contribute £3,750,000; the employers, possibly, a further £1,500,000, leaving me to provide some £20,000,000 a year for medical attendance alone."

Dr. Cooper contends that Dr. Buist's and my calculation for attendance on the whole 45,000,000 of the population is invalid, as "from 10 to 15 millions" of those not included in Mr. Lloyd George's 15,000,000 "are actual or potential paupers." I should like to know how he arrives at these figures. According to *Whitaker's Almanack* there were in the year 1909 1,161,000 paupers in the United Kingdom, and under the Government scheme this number should be considerably reduced. Later on in his letter Dr. Cooper criticizes my figures, but I maintain that they are correct. He contends that I have not allowed for the attendance on the incurably insane and phthisical in Mr. Lloyd George's 15,000,000; but I assume that the Chancellor, in estimating that number, did not include in it those who are in asylums and sanatoriums. He (Dr. Cooper) then asks, Is the Government likely to pay 10s. per head, as it is now paying only 6s. per head for certain attendance? I would ask, as the Government knows that it can get such work done for 6s., why does it pay 8s. 6d. for its Post Office servants? But I can better answer Dr. Cooper's question by asking, in his own terms, "Is the Government likely to pay 3s. 6d., or even 2s., per attendance when it knows that it can get the work done for 6s. per head per annum?"

For my mistake in carelessly reading his sentence about the man with a wife and twelve children I gladly

apologize. I only want to see the case correctly and fairly stated on each side.—I am, etc,

Bradford-on-Avon, Dec. 27th. CHAS. E S. FLEMMING.

SIR,—Mr. Lloyd George having publicly declared that "Our scheme for insurance against sickness and unemployment is complete," it seems to me rather superfluous for the profession to continue the discussion of what it wants. Would it not be much more useful for us to concentrate our energies on finding out what it has been decided that we shall get?—I am etc.,

Burton-on-Trent, Dec. 24th. H. D. O'SULLIVAN.

ALCOHOLISM AND DEGENERACY.

I.

SIR,—Professor Karl Pearson's last letter reveals a great deal, but not enough to make his methods and position quite clear to those of your readers who have not seen the original "Memoir" by Miss Elderton and himself.

As regards his accusation of "pontifical" language against us, his own memoir both begins and ends with general denunciations of previous workers on the subject, and claims for its authors intellectual superiority.

In the same spirit his supplemental controversial memoir, the reply to "The Cambridge Economists," Professor Marshall and Mr. Keynes, which was, through your editorial, the cause of this correspondence, begins as follows:

> The memoir has been subjected to much biassed criticism to which it would be pure waste of time and energy to reply.

We are unaware of having in any way imitated these "pontifical" methods of Professor Pearson.

The question of alcoholism is a national one, and all social reformers are agreed that to the "temperance platform" and its teaching we owe the present gratifying diminution of drinking and its consequences. Hence it seems to us unscientific on the part of Professor Pearson to sneer at a national instrument of education which could not have achieved so much unless it had been guided by truth—that is, science.

Professor Pearson, still endeavouring to evade our point, now challenges one of us (V. H), actually asserting that he does not know "what fundamentally important figures are wanting" from the memoir by Miss Elderton and himself, which has so gravely misled the press and the public.

Although, being aware of his methods of controversy, we have always in each of our letters carefully restated the point we made in our first note, on November 19th, his demand obliges us to repeat our charge once more. Putting the position in the plainest possible words, his and Miss Elderton's memoir professed to be a study of the children of "alcoholic" and "non alcoholic" parents respectively. As the deductions arrived at by Professor Pearson and Miss Elderton were in favour of alcoholism, the memoir was naturally welcomed by that section of the press which supports the liquor trade.

Our point, however, is not that Professor Pearson's and Miss Elderton's mathematics led to this result, but that their memoir biologically and statistically is not what it professes to be, and that their deductions are consequently erroneous. It nowhere contains the figures and data of a group of non-alcoholics—that is, abstaining parents and their children—contrasted with alcoholics. Consequently, the fundamental comparison (essential to a study of the heredity of parental alcoholism) between the children of alcoholic and non-alcoholic parents has never been made by Professor Pearson and Miss Elderton, though repeatedly referred to by them as if they had done it.

Even so lately as in Professor Pearson's letter to you of December 10th is their unjustified assertion repeated.

Further, the memoir does not contain any figures showing whether the children (whose condition Professor Pearson and Miss Elderton examined mathematically) were born after the parents began taking alcohol or before.

Professor Pearson answers to this that "if some were born before parental alcoholism had started, some were certainly born after," etc. This passage proves that the basis of his and Miss Elderton's calculations is not "figures" but mere conjecture, as we said in our first letter, and as Professor Alfred Marshall showed in the *Times* last July and August. Thus the memoir does not contain the figures necessary to justify its title, language, or deductions.

We have thus answered Professor Pearson's so-called questions addressed to one of us (V. H) on the first and only point concerning him raised by us in this correspondence.

II.

We now turn to the side issues which Professor Pearson has raised, and with which we deal with the view of preventing any more attempts being made by him to confuse the main issue dealt with above.

(*a*) *Dr. MacNicholl.*

Dr. MacNicholl's work was not a make-believe, but a real attempt to arrive at a solution of the question how far a toxic agent (alcohol) taken by parents affects their offspring.

Dr. MacNicholl compared the children of abstaining—that is, genuinely non-alcoholic—parents with the children of alcoholic parents. As he thus obeyed the fundamental biological requirement—namely, provision of controls—in what may justly be regarded as a toxicological research, his work is a true scientific contribution to the subject, and Professor Pearson's and Miss Elderton's is not. This is the reason why we have "quoted Dr. MacNicholl with approval" in our book, and will now add that whatever notice we take of Miss Elderton's and his second "memoir," we refuse to discuss this side-issue any further in this particular correspondence, as it was only raised in his letter of November 26th by Professor Pearson in the hope of diverting attention from our demonstration of the fundamental flaws in his and Miss Elderton's memoir.

(*b*) *Our "treatment" of the memoir.*

The second side-issue raised by Professor Pearson is that we have never given his and Miss Elderton's memoir serious treatment till now. That this statement is not true is shown by Professor Pearson's own letter, since he quotes from:

1. Your brief report of the Annual Meeting breakfast of the British Medical Association,
2. The September, 1910, number of the *National Temperance Quarterly*, which, besides a fuller report of the breakfast meeting, contains a discussion of the memoir by six writers.
3. The last edition of our book,

in each of which one or both of us "seriously treated" the memoir.

As regards 1, he says that one of us (V. H.) at the Annual Meeting made "a serious misstatement" which he (Professor Pearson) corrected during the vacation, and for which he demands an apology.

We have looked up the correction referred to, and which we had not noticed during the holidays. It appears that at the end of a sentence referring to the condemnation in the *Times* of the memoir by the Chairman of the Eugenics Society, Sir Victor Horsley spoke of the work of the Galton Eugenics Laboratory as though it were connected with the Eugenics Society, of which the patron of Professor Pearson's laboratory, Sir F. Galton, was the president. In his "correction" Professor Pearson disclaims in strong terms the assumed existence of any connexion between the Galton Eugenics Laboratory and Sir F. Galton's Eugenics Society. Now that the correction has been brought to our notice, one of us (V. H.) desires to express his regret for his inadvertent error. But while Professor Pearson mentions your report in order to demand an apology for a natural and trifling mistake, he omits to tell your readers that the same report he quotes shows that Sir Victor Horsley treated the memoir "seriously," pointing out fundamental errors which in his opinion rendered its deductions valueless. So also did the chairman, Sir Alfred Pearce Gould, who raised precisely the same fundamental objections as we do now. We can only suppose that Professor Pearson was "unable to waste time and energy" on this "serious treatment" of the memoir, but he is not entitled to tell your readers that that "treatment" was not applied to the work, above all, seeing that he actually refers to the report of the meeting, thus showing that he had read it.

As regards 2, he refers to the *National Temperance Quarterly*, September, 1910, but again omits to tell your readers that the same number contains a "serious treat-

ment" of the memoir by one of us (M. D. S.) as well as by other competent critics.

As regards 3, namely, the criticism of the memoir which we give on pages 245 7 of the new edition of our book, *Alcohol and the Human Body*, he says of it, "this is purely a rhetorical production," etc., and that it is not "serious treatment" of the memoir.

If your readers will kindly refer to our book, pages 245–7, they will find that we there give the same reasoned objections to the memoir we have both of us stated in this correspondence and elsewhere.

III.

One point has arisen clearly out of this discussion, and that is that the second half of Professor Pearson's material—namely, the manuscript account of the children in the special schools of Manchester, prepared for him and Miss Elderton by Miss Mary Dendy—should be published. It has been constantly referred to in the columns of our JOURNAL, and, as scientific material, therefore ought not, in our opinion, to have been kept private. We invite Miss Dendy to make this contribution to science at once, and particularly as we wish to see whether her facts have suffered at the hands of Miss Elderton and Professor Pearson the same treatment, which we are about to show in a detailed paper, these authors have applied to the report of the Edinburgh Charity Organization Society.—We are, etc,

MARY D. STURGE.
VICTOR HORSLEY.

December 27th, 1910.

SIR,—As a matter of handling of statistics, Professor Karl Pearson seems to have completely answered his critics, yet no one with much practical medical knowledge can doubt that he is wrong in his conclusions.

Where the fallacy lies does not appear to have been pointed out, yet it seems fairly evident. The materials used are derived from a decidedly "submerged" population. The causes of the submergence must be very various and numerous, and in each individual instance probably multiple.

We must assume that the forces they exert are fairly uniform in amount throughout the mass, their tendency to produce idiocy in the next generation will therefore be fairly uniform also.

Take x as representing the combined force of all these causes, the two groups have as such forces in Group 1 — simply x, left unexamined and unanalysed. In Group 2 we have x analysed into forces due to alcohol and others (unexamined).

The weak point in Professor Pearson's case appears to be that he says

Forces and causes in Group 1 $= x$.
Forces and causes in Group 2 $= x +$ alcohol.

The real facts are:

Forces and causes in Group 1 $= x$.
Forces and causes in Group 2 $= x = y +$ alcohol.

The forces y act in both groups. In Group 2 + alcohol. In Group 1 + other forces not represented, or less strongly represented, in y. These are largely no doubt various mental and physical disabilities.

Professor Pearson does not prove that alcohol has no effect in producing idiocy, but only that it has no more effect than some other causes that are of equal effect with alcohol in producing "submergence."—I am, etc.,

T. A. CHAPMAN.

Reigate, Dec. 24th.

ANAESTHETICS ACT.

SIR,—I wish fully to endorse the opinion which Dr. W. J. McCardie has expressed in his letter to the JOURNAL of December 10th, wherein he deplores the action of the Anaesthetics Committee of the General Medical Council in recommending that a dental surgeon shall be allowed to administer one or more of drugs, specified in schedule, for operations other than dental conducted by a legally qualified medical practitioner.

The committee apparently make no attempt to show the necessity for granting any such licence, which in spirit would be quite antagonistic to the main principles of the bill—namely, the protection of the public by providing that anaesthetics shall be administered only by such members of the community as have undergone a training calculated to render them efficient to administer these drugs with the greatest possible degree of safety.

The mere administration of nitrous oxide (probably the first drug to be included in the schedule) for dental purposes is an art in which proficiency can be fairly easily acquired without any previous medical or surgical training. But the administration of this drug for prolonged surgical procedures presents quite a different aspect, and is at times, even in experienced hands, beset with such difficulties as to call for special clinical knowledge on the part of the anaesthetist, or even for the application of one or more of the more dangerous anaesthetics if the surgical procedure in question is to be conducted with any degree of satisfaction to the operator or of safety to the patient.

The recommendation of the committee would almost certainly entrust nitrous oxide anaesthesia to a person not possessed of that clinical experience which alone could enable him to (1) discriminate between suitable and unsuitable subjects, (2) appreciate danger signals early enough to avoid disaster, (3) deal with danger when it arrived.

The adoption of the recommendation would surely be a retrograde step in a forward movement; it would stultify, in a great measure, the prevailing teaching—that a sound clinical training is essential to safety in anaesthetization.

It would tend to produce a condition of mental anorexia in the medical student, who would feel ill disposed to apply himself seriously to the study of a subject which the law could treat with such indifference. It requires no great stretch of imagination to picture the suggested concession as forming the thin edge of a wedge the base of which might be represented by a school for teaching the art of anaesthetizing to lay members of the community who had had no preliminary training in medical subjects.

As the progress of surgery is so directly dependent upon advances made in the study of anaesthesia it would be interesting to hear comments from surgeons upon the suggested alteration in Clause 1 of the Anaesthetics Bill. —I am, etc.,

ARTHUR L. FLEMMING.

Clifton, Bristol, Dec. 12th.

THE CAUSE OF APPENDICITIS.

SIR,—In the JOURNAL of December 3rd, there are three letters on the cause of appendicitis, and one by Dr. Rainsbury asks for information relative to the frequency of appendicitis in India.

For six years I was in charge of fifteen mission hospitals in the native State of Travancore, in the extreme south of India, and I have notes that, of 1,123 major operations performed during this time, only 10 were for appendicitis. The year after I left, my successor records 553 major operations by himself and Indian assistants, with no cases of appendicitis. This conclusively shows a rarity of that condition in that part of India at least.

It may be of interest further to notice that out of the 10 cases recorded, 7 were merely appendicaecal abscesses, and of the remaining 3, 1 was complicated with salpingitis, which furnished the only death in the series. The second was a simple recurrent appendicitis with no adhesions or evidence of trouble, and the third was in a neurotic youth who was not much improved by the operation.

Referring to Dr. Maclean's letter, I may say that tuberculous disease is common, tonsillitis rare, and acute rheumatism unknown. Then Dr. Gurney mentions influenza as a possible cause. This is a disease we never saw.

I may say that I have two or three pamphlets by Indian practitioners in favour of the idea put forth by Dr. Rainsbury, claiming that the freedom of the Indian from appendicitis is due to the natural position assumed in the act of defaecation.—I am, etc,

WM. C. BENTALL.

Southport, Dec. 19th.

THE BRADSHAW LECTURE ON CANCER.

SIR,—The parasitic theory of cancer in the sense that cancer is due to a specific extrinsic living organism is quite untenable; but the existing evidence nevertheless points to the probability that cancer may sometimes be propagated by a *contagium vivum*—that is, by living cancer cells, direct descendants of the living body cells of

the parent organism. This even is not "parasitism" in the accepted use of the term.

Mouse cancer may be accepted as genuine cancer; but I desire to point out that the mice experimented upon by grafting are not born, bred, and kept under natural conditions of mouse life. They are reared or, if wild, detained in confinement for a large proportion of their lives in comparatively small spaces; they lack their natural free run, exercise, and habits of life; their diet is artificial, and they become suboxygenated, overfed, and torpid—in fact, they are subjected to just the very mode of life which brings about the neural asthenia and low-efficiency posture and breathing such as produce the portal autotoxaemia in sedentary civilized people and in domesticated animals. The blood and tissues of such imprisoned mice become, indeed, a suitable soil for the growth of cancer cells derived from the cancerous tumour of another mouse or from the stimulation of any *indifferent*, accidentally, but permanently resident coccus or organism which may excite at some spot such a chronic irritation as to start *de novo* a cell proliferation under circumstances favourable to, and indeed essential for, the biological syndrome known as cancer.

That life is very persistent in these cancer cells of malignant tumours is evident in that the tumour can be sent from one country to another in sterilized glass tubes, and then transplanted into another animal of the same species. Sometimes the graft takes and sometimes it does not. The difference, in my opinion, depends on whether the blood and tissues of the new host are sufficiently prepared by a portal autotoxaemia or cachexia which may possibly consist in the presence of certain toxins or alkaloidal substances competent to stimulate abnormal cell proliferation, to alter relative tissue tensions, and in the absence of certain catalytic ferments necessary to maintain normal chemical changes in living cells.

As the vitality of cancer cells is maintained at all events for days in tumours after removal from their host, it is not improbable that detached cancer cells, under favourable conditions of moisture and temperature, may live for a time outside the body, and may reside in dust, air, or water, or on walls, curtains, or other furniture. This affords a strong argument in proof of disinfection. The duration and conditions of such independent life and activity of these cells, however, is quite unknown.

Such a detached cancer cell of a malignant growth—the *contagium vivum*—not improbably itself manufactures a toxin or alkaloidal poison which incites or keeps up the rapid cell division of its own daughter cells. Further, it not improbably influences similarly the tissues of its new host; if that host is in a state of depressed vitality from portal autotoxaemia, and predisposed to undergo similar changes, and such tissues acquire similar toxic-producing qualities. Each cancer cell, in fact, acts as a poison factory.

It is obvious that a cancer cell *may* be conveyed directly from the parent organism by flies, fleas, bugs, or other insects to a new host, or indirectly *may* be deposited by such animals on articles of food, or on utensils, or on objects which come into intimate contact with the body. Earthworms and the water of the gardener's pot are not unlikely means of transfer of such cells from the soil or water to the surface of garden vegetables. Lastly, the drinking water supply *may* be contaminated by these living cancer cells, the actual progeny of living cells of the human organism which gave rise to them, but living in a free state and possibly after the general death of the parent individual in whom they arose. These possibilities strongly support the practice of cremation.

If such a free, wandering cancer cell becomes grafted on to a new host, such cell and its progeny are in a relation to that new host somewhat parallel to that of the fecundated ovum to the maternal tissues.

It might be considered that the fact that about 75 per cent. of all cancers in man occur somewhere in the alimentary canal, was strong evidence in favour of the conveyance of a graft from a pre-existing cancer by the food or drink. But this would not be correct, because it is very difficult to get a cancer-graft to infect a spot with an uninjured epithelium even in a person the subject of cancer, and even when an ulcerating and fungating tumour is always in contact with such spot; for example, in cancer of one vocal cord the opposite one playing against it is very rarely infected by contact, indeed that it has ever been proved to take place is denied by some authorities.

As between the parasitic theory and the new mechanico-biological theory I have put forward, the balance is overwhelming in favour of the new—that the upsetting of the normal biological course of events is brought about by the conjunction of intrinsically produced irritation and cachexia, resulting from the faulty working of the body as a complex machine, and in orthograde man more especially with faulty postural and respiratory efforts to comply with the demands of gravitation and oxygenation.

The supplementary hypothesis of the cancer cell acting as a *contagium vivum* affords an intelligible interpretation of the undoubted fact of the existence of cancer houses, of cancer districts, and of the rarer contact infections, is consistent with the experimental findings of laboratory workers, and harmonizes with the clinical and natural history facts about cancer which suggested my mechanico-biological theory.—I am, etc.,

ROBT. HY. SCANES-SPICER, B.Sc., M.D.Lond.

London, W., Dec. 18th.

PULMONARY TUBERCULOSIS IN SCOTLAND.

SIR,—I have read with great interest your account of the paper read before the Royal Society of Edinburgh by Professor Hunter Stewart on pulmonary tuberculosis in Scotland since 1861,[1] and particularly his conclusion "that in the rural area of Scotland the percentage reduction of mortality at the age periods under 60 years has been less in both sexes than in the urban area." *A priori*, one would expect the reverse to be the case, and I strongly suspect that, were the Highlands excluded from the survey, this would actually be found to be the true state of affairs.

During my twenty-seven months' tenure of a practice in the North-West Highlands, I was appalled at the extraordinary prevalence of phthisis pulmonalis. A district in which the climate is mild but not relaxing—exposed, however, it may interest readers of Dr. William Gordon's recent book to know, to prevailing S.W. and W. winds—in which destitution is practically unknown; where the general housing is good and food is plentiful, where all labour, both male and female, is almost wholly performed out of doors, and where the general physique, with the exception of the teeth, of the inhabitants is excellent—such a district I found to be subjected to a much higher incidence of this disease than, to take the direct antithesis, a densely populated North of England colliery one. Other forms of tubercle, in my experience, were rare. I regret that these impressions cannot be supported by definite statistics, the value of which, if official, would at any rate be questionable. My practice included two registration districts, and in one of these there was 100 per cent. of uncertified deaths during the period I am speaking of.

My own explanation of this phenomenon is as follows: Up to fifty or sixty years ago, before steamships and railways afforded facilities for a more or less rapid interchange of men and goods between the Highlands and the southern centres of industry, the Highlands was very completely cut off from the rest of the world, and thus the inhabitants were not able, until a comparatively recent date, to take sufficient part in the evolution against the toxins of tubercle that the other civilized races were all the time undergoing. True, there was some interchange. A stray traveller occasionally visited these *terra incognita;* Highland chiefs and their retinue were not unknown at the courts and in the cities; young men from the Highlands congregated at the seats of learning here and abroad; and her superfluous manhood was found all over the Continent of Europe wherever war or rumours of war were in the air. And doubtless all this tended to disseminate in the Highlands, then much more populous than now, the bacillus of tubercle. With increased facilities for travel and traffic, however, this isolation was completely overcome, and, the tubercle bacillus finding a comparatively virgin soil, the Highlands some sixty years ago had to begin almost from the beginning that slow process of racial immunization, during which the unfit or highly susceptible become ruthlessly eliminated that the end may be an approximately immune race. Further—and this is the important point—the Highlands had to begin it at a

[1] BRITISH MEDICAL JOURNAL, December 3rd, 1910.

very much later date than their—in this respect, more fortunate—neighbours.

To my mind this fully accounts for the present prevalence of phthisis pulmonalis in the Scottish Highlands and for the greater mortality in that area or any area which includes it with respect to this disease than in a corresponding urban one, which has known and suffered from tuberculosis for generations longer.—I am, etc.,

Whitley Bay, Dec. 5th. A. RUGG GUNN, M.B.

THE EXPRESSION OF THE COLOUR BLIND.

SIR,—I cannot agree with Dr. Taylor that the colour blind have any characteristic expression. As will be seen from the cases I have recorded, colour blindness is very frequently associated with exceptional intelligence and ability. No one could for a single instant apply the description which Dr. Taylor has given to any of these men. I note, however, that he still uses the Holmgren test, and as most of the colour-blind men to whom I have alluded can pass this test with ease, he is hardly in a position to judge of the expression of similar cases.—I am, etc.,

London, N.W., Dec. 23rd. F. W. EDRIDGE-GREEN.

DR. HADWEN AND THE "CRIMSON CROSS REMEDIES."

SIR,—I do not wish to deprive Dr. Drury of any satisfaction he may glean from the contemplation of my own shortcomings and of his own virtues. Among my press-cuttings a few days ago I came across a leaderette from the *Medical Officer*, apparently written by your correspondent, in which he tells his readers in graphic language of how he has smashed, ground, and pulverized me in the columns of the BRITISH MEDICAL JOURNAL. From your issue of this week I gather that he thinks I need a little more bruising before he finally disposes of my remains.

Whether it be the result of his exertions for several weeks past in this demolition process, it is not for me to say, but it now appears that whilst, unlike the Queen of Sheba, he has "proved me with hard questions" from a safe question, yet, like that famous historical potentate, having received his answers, "there is no more spirit left in him"! He declines to come from the far country to see the wonderful writings he has been so deeply concerned about for weeks past, and about which he has written columns of letterpress.

He says: "Now that he knows by whom and for whom my statistics were compiled," he considers them "a very doubtful quantity." Did he expect to find they had been collected by and for somebody else? Had he made that discovery, I suppose it would have provided a still more cogent reason for not examining them. The logic of it all is delicious. The real authority for the statements in my case-books are the patients and their relatives. If my statistics are such "a doubtful quantity," what a score Dr. Drury might have made by exposing them! But Dr. Drury prefers innuendo to exposure. Although I have told him in perfectly plain language that I know nothing whatever about the insertion or withdrawal of my name from an advertisement which I never saw, he persists, both in the BRITISH MEDICAL JOURNAL and in the *Medical Officer*, in practically charging me with prevarication and lying. He hurries away from this to deal with the proposal of his crushed and pulverized victim.

He refers to a correspondence he had with Miss Beatrice Kidd in August, 1908, and states that Miss Kidd informed him on August 28th that she "had submitted his reply to her previous letter to Dr. Hadwen." That reply, which is now before me, was a post-card containing the enigmatic sentence:

> Dr. H. knows where I live,

and it formed part of a lengthy correspondence between Dr. Drury and Miss Kidd on the subject of vivisection, concerning which, on a still later date (August 30th), Dr. Drury wrote:

> Replying to yours of the 28th inst., I am utterly unable to find one single reason why I should discuss Dr. Hadwen's views on vivisection either in public or in private.

Miss Kidd inquired the meaning of the enigmatical sentence, and was told that Dr. Drury did "not like intermediaries," but as it was obvious from his letter that he did not mean to debate, I wrote to her:

> This man does not mean business; do not waste any more of your time on him.

I am gratified to find, two years afterwards, from his own pen, that I had formed such a correct judgement of his professed prowess.

When I now request him to "meet me openly before any public or medical society that he may care to select to formulate his case, and I will answer him," he replies:

> My answer is an emphatic No. My reason is that, in my opinion, he has forfeited all right to expect medical men to meet him.

But, with that strange lack of logic which characterizes him, he says in the next sentence:

> If Dr. Hadwen cares to introduce the subject before any medical society . . . I am quite prepared to be present . . . to stand up for the faith that is in me.

In the first place, I hardly know what it is I have to "introduce." It is Dr. Drury who has denounced my conduct, challenged me to defend my utterances, and charged me with being a coward, etc. When I ask him to select his audience, formulate his charges, and I will defend myself, he runs away, saying, "You are not a fit person for a medical man to meet, but if you will call a meeting before a medical society and speak first, I will meet you"!

I have debated publicly with Mr. Stephen Paget, Professor Starling, and other "leading lights," and I could mention some strange experiences of the conditions offered, and in some cases imposed, in connexion therewith in order to secure their own advantage; but allow me to give a recent experience in regard to medical societies.

I was approached last June by the Honorary Secretary of the Charing Cross Hospital Medical Society to give a lecture (to be followed by a debate) on the subject of Experiments on Living Animals. A full month after the notices had been sent out a certain leader of the vivisection party, becoming acquainted with the fact, created a perfect storm about such an innovation being allowed. And although several students were looking forward with keen interest to the discussion, and some of the qualified men were busying themselves in preparing "posers" for me, I was politely informed by the new Honorary Secretary (for the former one had promptly resigned) that it had been decided not to hold the debate. In my acknowledgement I put four questions which, if answered in the affirmative, would have seriously reflected upon those in authority, so the committee declined to answer them. The full correspondence is published in the *Abolitionist* for December.

When Dr. Drury, therefore, asks *me* to "introduce the subject" before "a medical society"—not a *public* one—he asks me with his tongue in his cheek. He no doubt thinks he is safe.

As public speaking, however, forms my chief recreation from a busy practice, Dr. Drury will have plenty of opportunity in the future of hearing me "introduce" various subjects, and will have the privilege of being present to "stand up," as he bravely adds, "for the faith that is in him." I can assure him he will be allowed the fullest liberty.

It only remains for me to thank you, Sir, for your generosity and courtesy in allowing this lengthy correspondence in your columns, which has trespassed far too much upon your valuable space.—I am, etc.,

WALTER R. HADWEN, M.D., J.P.,
President of the British Union for the Abolition of Vivisection.

Gloucester, Dec. 26th.

PROGRESSIVE DOSES OF TUBERCULIN.

SIR,—In your comment on the proposal of the Medical Officer of Health for Portsmouth to establish a tuberculin dispensary you seem to imply that Dr. Camac Wilkinson's dispensary is the only place where tuberculin is being used in what would until recently have been thought "heroic" doses.

In a private sanatorium, where I have been a patient for more months than I care to count, nearly all the patients are being treated with tuberculin in progressive doses, gradually working up to large immunizing doses. The

treatment is modelled on the lines suggested by Koch, Spengler, and many other German physicians. I know also at least one dispensary out of London where a similar treatment is being successfully carried out. Of course, as you say, it is too early to dogmatize; but during the time that the treatment has been carried on the results have been surprisingly good.

It is a great pity that the most conspicuous advocate of vigorous tuberculin treatment should take every opportunity to belittle the value of the sanatorium. Dr. Wilkinson has indeed demonstrated the fact that phthisis can be cured without sanatorium treatment, and this should be a glad gospel for the poor man who cannot leave his work for long; but that does not for a moment discredit the value of the rest, the diet, and the general discipline of sanatorium life for those who can afford an ideal form of treatment.

It seems to me there is a danger in thus opposing the two systems. It should not be tuberculin *versus* sanatorium, but rather tuberculin *plus* sanatorium, wherever possible. The experience with tuberculin here goes to show that, though with care danger from large doses can certainly be avoided, yet care—and great care—is necessary. A close and careful watch must be kept on the temperature as a guide to the quantity of the next dose and the best time for its administration. Unless that can be done, the treatment cannot be entirely free from dangerous guess-work. This is a point which cannot be too strongly emphasized. The attendance by a patient at the dispensary twice a week on stated days does not give the doctor sufficient opportunity to judge the idiosyncrasies of each case, and in that careful judgement lies the secret of success.

Tuberculin dispensaries ought not, in my opinion, to displace sanatoriums; but the use of tuberculin can undoubtedly greatly shorten the stay of a patient and thereby diminish the cost of the upkeep. In a month the working man would have learnt the value, and also the charm, of abundance of fresh air, and would probably, by the force of example, have begun to take the trouble with himself which is necessary to aid the dispensary doctor in his cure.

Moreover, particularly among the working classes, the importance of thorough rest and generous diet in the early stages of the disease must not be overlooked. The danger of treatment at public tuberculin dispensaries without a preliminary course of training at a sanatorium is that, owing to the carelessness and ignorance of patients, mistakes in dosage may be made, possibly with disastrous results, tending to bring discredit on the whole system.—I am, etc,

December 12th. E. MARIETTE, M.B.Lond.

HYPODERMIC INJECTIONS OF COCAINE, ETC., FOR LOCAL ANAESTHESIA, AND THE ANAESTHETICS BILL.

SIR,—Before the recent Commission on Anaesthetics, one of the experts examined was reported to have said that he was only aware of one death having taken place as a result of an injection of cocaine for tooth extraction. If statistics were forthcoming, I think it would be found that this number is incorrect; in any case, one may confidently expect it to be largely increased at no very distant date, and for this reason:

There are at the present moment innumerable proprietary preparations containing cocaine, supplied without any restrictions under the Poisons Act to persons of all descriptions who find the "painless extraction" of teeth a profitable side line.

Why the Commission should apparently pay so much more attention to the administration of one narcotic (that is, nitrous oxide) than to another (that is, cocaine) for the extraction of teeth seems on physiological grounds difficult to understand, both being taken up by the blood stream and conveyed to the great nerve centres, are equally liable, in the hands of laymen, to end in disastrous results. Moreover, it is a question whether a higher degree of skill is not required to resuscitate the patient, once toxic symptoms have supervened, from the use of cocaine than from nitrous oxide. The following account of a death after the injection of novocain (unquestionably one of the safest of the substitutes for cocaine), and reported toxic symptoms after the use of even this anaesthetic tends I think, to show that none of these so-called local anaesthetics are free from danger, and that even in skilled hands there is always a possibility of these symptoms arising.

The case to which I refer appears in one of the August numbers of the *Deutsche Zahnärztliche Wochenschrift*, reported by a medical practitioner, Dr. B. Christensen of Aalborg, and is a translation from the Swedish;

On February 23rd, 1910, a Miss E. S., aged 28, consulted the reporter about a root in the lower jaw; she was wearing a denture, and in the neighbourhood of the root periosteal inflammation was noticeable. Miss S. was very nervous and wished for a local anaesthetic, saying she had had the other roots and teeth removed by the same means a year ago. At 1.45 p.m. I injected about 1½ c.cm. of a little less than a 2 per cent. solution of novocain-suprarenin (Tablet B containing novocain 0.1 gram, suprarenin 0.00045 gram), but, as the anaesthesia was insufficient, ten minutes later I injected some more, in all about 3 c cm. The root was removed, but, as the gum bled somewhat, Miss S. remained in my waiting-room whilst I attended to my other patients.

Later, as she felt rather unwell, I let her lie down on the sofa in my surgery; her pulse was somewhat quick, but good. From 4 to 4 30, sitting up, she chatted with me about her experiences, in answer to questions I put to her. After drinking a cup of strong coffee, Miss S. moved to the window to get a little fresh air, still feeling somewhat giddy. At 5 30 Miss S. wished soon to be going home, and, as her condition had so much improved, I thought I might leave her, having a sick visit to pay, telling my wife to give an eye to her.

Soon after my going, the patient, still feeling giddy, laid herself down on the sofa and fell into a natural sleep; my wife, who is used to nursing, went in several times to see her. At 6.30 the patient turned over, opened her eyes, and gazed at my wife. A quarter of an hour later my wife thought she was breathing rather deeply, and ran to her to find the patient pulseless and very weak; she gave her a camphor injection, telephoned for Dr. O., who was not in, and sent then for an ambulance from the hospital. On my return at 7 p.m. I performed artificial respiration and gave the patient another injection of camphor, also ether. With the help of Dr. K. and Bandagist R. artificial respiration was maintained. The pulse improved, but the breathing gradually became worse and worse.

As the condition of the patient did not improve and symptoms of oedema of the lungs set in, at 8 p.m. she was removed to the hospital and died an hour later without regaining consciousness.

This and some other references to the same anaesthetic are:

"Ett fall af novokainsuprareninbedöfning med dödlig utgang, af L. B. Christensen, Aalborg." "*Svensk Tandläkare Tidskrift*," 1910.

Dr. Klein: "Novocain, Kein ungefährliches Anaesthetikum?" *D. Z. W.* 1908. (Novocain, not an undangerous anaesthetic?)

Landsberger: "Novocainintoxikation." *D. Z. W.* 1905.

Guido Fisher: "Einen Fall narkotischen Schlummers nach lokaler Anaesthesie" (Novocain). *D. Z. W.* 1908. (A case of narcotic sleep after local anaesthesia).

Dr. Kehr, Stettin: "Ein Fall von Novocainvergiftung?" *D. M. f. Z.* 1910. (A case of novocain poisoning.)

Toxic symptoms after an injection of novocain. *British Dental Journal*, 1910.

—I am, etc.,

Tunbridge Wells, Dec. 8th. J. K. PEDLEY, L.D.S.Ed.

"INDUCED CELL DIVISION."

SIR,—With reference to the letter by Professor Harvey-Gibson and others in your issue of December 24th, will you permit me to say that there appears to be nothing in my book which attempts to involve them in any responsibility for my statements? I mentioned these gentlemen merely to acknowledge (properly, I hope) the help and encouragement which I have received from them. I alone am responsible for all the statements contained in my book.

These statements depend upon what I believe to be observed facts. If your correspondents will do me the honour to point out exactly where I have been mistaken, I shall be glad either to admit my mistakes or to discuss the matter further with them.—I am, etc.,

Liverpool, Dec. 26th. H. C. ROSS.

PUBLIC DEBATES ON VACCINATION.

SIR,—It is quite natural that Mr. Bonner should exhibit some exasperation about the article in the JOURNAL on "Public Debates on Vaccination." The article in question happened to contain a few facts concerning the part I have played in the defence of vaccination. Mr. Bonner does not call in question one of those facts. Being quite unable to do so, he resorts to Artemus Ward's well worn

back-scratching wheeze, and talks nonsense about self-aggrandizement. Mr. Bonner and one or two other "anti" champions appear to be obsessed with the idea that debates on vaccination are desiderata. They never weary in throwing about their challenges. The circumstances in which Mr. Bonner is placed are entirely different from those in which any medical man I know is placed. He receives a "handsome" salary for this kind of thing, according to his letter. Possibly he is beginning to feel that alone he is not a sufficient "draw," and that the touts for invitations for his services issued so often in the *Vaccination Inquirer* are not receiving the response he would like.

It is quite true that I remarked at Lewisham on Mr. Bonner's "moderation," but he misses the point entirely when he suggests that this does not bear out the statement in the article about the manner in which paid lecturers abuse the medical profession. It was the exceptional tone that called forth the remark. Mr. Bonner knows well enough that antivaccinators, when assembled together, show little or no toleration for the opinions and views expressed by those who differ from them; instead of this, sneers and insolent personalities prevail. He knows quite well the importance of a firm chairman on such occasions, as contended in the article which he so feebly criticizes. He says he has never known such an audience get out of control. I have before me an account, written by Mr. Bonner, of such a meeting, where he refers to matters becoming "sultry." It is not very doubtful as to what might have happened both in Manchester and Lewisham when I was speaking but for the firmness of the chairman on each occasion, though in both instances the antivaccinator was allowed to proceed without interruption.—I am, etc.,

Halifax, Dec. 27th. ARTHUR DRURY.

Obituary.

JAMES EDWARD POLLOCK, M.D., F.R.C.P.,

CONSULTING PHYSICIAN OF THE HOSPITAL FOR CONSUMPTION, BROMPTON.

As announced last week, Dr. James Edward Pollock, one of the oldest Fellows of the Royal College of Physicians of London, passed away at his residence in London on December 18th in his 93rd year. He was the son of Mr. Edward Pollock, barrister, and received his medical education in Dublin, where he took the diploma of L.R.C.S.I. in 1840. Two years later he settled in Rome, where he practised till 1849, becoming a Fellow of the Accademia dei Quiriti. In 1850 he took the degree of M.D.Aberd., and shortly afterwards settled in London, being appointed First Physician to the Western General Dispensary, and then Physician to the Hospital for Consumption and Diseases of the Chest, Brompton. For this institution he continued to work for many years, and won the esteem of every one who was associated with him by his sound knowledge of medicine, his tactful treatment of all the small difficulties which must arise in its practice, and his genial courtesy towards every one from the highest to the lowest. One result of his work at the hospital was his book entitled *The Elements and Prognosis of Consumption*, published in 1865, which became a standard work, and is still often consulted. He was elected a Fellow of the Royal College of Physicians in 1864, delivered the Croonian Lectures in 1883 and the Harveian Oration in 1889. He was a Censor in 1884–5, and Senior Censor in 1893, when, owing to the unexpected death of the President, Sir Andrew Clark, he was appointed Pro-President until the Presidential election.

Dr. Pollock was at one time an active member of medical societies, and especially shone in discussions, where his critical faculty, memory, and ready wit came into full play. He was President of the Harveian Society, and also delivered the lectures on the Prognosis of Heart Disease before that body. He was the first President of the Life Assurance Medical Officers' Association, and always took a lively interest in its affairs. He also at one time frequented the clinical and pathological societies.

Dr. Pollock made a special study of medical relations of life assurance, and in 1889 published a *Medical Handbook of Life Assurance*, which was of great value, being founded upon long personal experience and characterized by the excellent judgement and discrimination which distinguished its author in all relations of life. In 1895 Dr. Pollock was appointed Physician Extraordinary to the late Queen Victoria.

Dr. Pollock had many friends, and the position which he held in the medical life of London is very inadequately expressed by the bald statements given above. He enjoyed for many years a large consulting practice and was esteemed alike by his professional brethren and by his patients, who could not fail to appreciate his sympathetic temperament and shrewd common sense.

The funeral took place on Thursday, December 22nd, at Highgate Cemetery, and was attended, in addition to members of his family, and of a number of old friends, by the President of the Royal College of Physicians, Sir Thomas Barlow, Bart.; the Senior Censor, Sir William Allchin; the Emeritus and present Registrars, Dr. Liveing and Dr. Ormerod; members of the Brompton Hospital staff, Dr. Theodore Williams, Dr. Maguire, Dr. Habershon, Dr. Batty Shaw, and Mr. Godlee, with the Secretary to the Hospital, Mr. Frederick Wood, all anxious to pay a last tribute to the man they loved so well.

Dr. THEODORE WILLIAMS writes: I wish to add my humble tribute to the great worth of the veteran in medicine, Dr. James Edward Pollock, whose death occurred on December 18th. I made Dr. Pollock's acquaintance through his excellent book on the *Elements of Prognosis in Consumption*, which appeared in 1865. I became his colleague at the Brompton Hospital in 1867, and since then we have maintained an unbroken friendship of forty-three years, during which period I have learnt much from his wise cautions, his ripe experience, and his calm judgement. Dr. Pollock made various contributions to medical literature, but his best work (already mentioned) was the *Elements of Prognosis in Consumption*, founded on ten years' experience in the out-patient department of the Brompton Hospital, in which a careful analysis of 3,500 cases (all noted by himself) is given to the profession, and sound and practical deductions made. How few of us can offer such a faithful account of our stewardship? For many years this book was a medical classic, and few assistant physicians ventured to cope with the out-patient department at Brompton without its aid.

Dr. Pollock was an eloquent speaker and a good lecturer, and his Hibernian nature rejoiced in a fight; but such was the man and such were his weapons that the fight generally ended in a friendship, often of the warmest and closest kind—witness his attack on the late Sir Andrew Clark's fibroid phthisis at the Clinical Society, which Dr. Pollock pronounced to be "chronic pneumonia," recommending its author to "improve his pathology," but the dispute ended in the warm friendship of the two men.

Dr. Pollock was largely occupied as a medical officer of life assurance. He was at one time medical adviser to no less than three life insurance companies, and probably had the largest experience in that department. When the Life Assurance Medical Officers' Association was founded he was by general consent chosen its first president. I remember hearing a splendid presidential address from him. At a later date he brought out a valuable handbook of life assurance, based on his unrivalled experience.

His cautious conduct, clear judgement, and dignity of manner made him an excellent chairman, and many Fellows of the College of Physicians will remember how, after the unexpected death of Sir Andrew Clark, Dr. Pollock, as Senior Censor, became Pro-President, and during the interregnum presided with such wonderful tact and judgement, that the office of President lost none of its prestige during his occupancy of the chair.

Dr. Pollock practised medicine for many years in Rome before he established himself in London, and was an accomplished Italian scholar, and well versed in the art and literature of that glorious country.

By his death at a ripe age, many of us lose a wise and loyal friend, and also the fine example of what a physician should be.

THOMAS NADAULD BRUSHFIELD, M.D.,

BUDLEIGH SALTERTON.

DR. THOMAS NADAULD BRUSHFIELD, who died at his residence, The Cliff, Budleigh Salterton, on November 28th, had attained the age of 81 years. He was a son of the late Mr. Thomas Brushfield, J.P., a merchant of the City of London, and was born in London; he received a private education, and became a student at the London Hospital, where he obtained three gold medals and was later Resident House Surgeon. He was M.R.C.S.Eng. and M.D. of St. Andrews University.

His distinguished medical career was devoted to the study and treatment of mental diseases, in which department he was eminently successful. After being Medical Superintendent of the Chester County Asylum for fourteen years, he was appointed Medical Superintendent at Brookwood Asylum, Surrey. Full of zeal in his work and with a remarkable capacity for organization and management, Dr. Brushfield's talents found ample scope in the necessary extension of accommodation for the insane. He was a first-rate asylum superintendent, and practically introduced a new era in the treatment of the insane. His kind and thoughtful solicitude for the welfare of his unfortunate patients caused him to promote schemes for their entertainment which have been adopted in every asylum since that time. He was seriously assaulted by a patient, and this brought about his retirement in 1882, after thirty years' valuable service in lunacy, sixteen of which were spent at Brookwood. Many tributes of high esteem from the Surrey magistrates and all with whom he had been connected were paid at that time. He was a member of the British Medical Association and of the Medico Psychological Association. He was also a member of the British Archaeological Association, an ex-President of the Devonshire Association, a Fellow and Local Secretary of the Society of Antiquaries, and a well-known Freemason, having held the rank of P.P.G.S.W. of Surrey.

On his retirement, Dr. Brushfield settled in Devonshire. The literature of that county has been enriched by many contributions from his pen. Conspicuous among these are a number of articles relating to Sir Walter Ralegh and his family, including his bibliography. Those members of the British Medical Association who were present at the Exeter meeting, and who were conducted over the birthplace of Sir Walter Ralegh at Hayes Barton by Dr. Brushfield, will have pleasant recollections of his unbounded enthusiasm, genial nature, and charming personality. He took a deep interest in the erection and maintenance of the local cottage hospital, being ten years Chairman of the board. He also took a keen interest in church work. Up to the time of his death Dr. Brushfield was a constant contributor to the *Transactions* of various literary and antiquarian societies. He was one of the oldest and largest readers for the Oxford English Dictionary, to which he contributed upwards of 70,000 slips. With this record it is obvious that Dr. Brushfield's death closes a valuable and useful life, and his loss will be deeply mourned.

Dr. Brushfield leaves a widow, three sons, and three daughters. Two of the sons, Drs. T. and A. N. Brushfield, have adopted their father's profession; the third is an engineer. Two of the daughters married medical men.

Dr. G. H. SAVAGE (London) writes: Dr. Brushfield, whose death has been recently reported, belonged to the last generation, but I feel that I cannot let his passing be unnoticed by me, who had known him for some thirty years. He was a man of unbounded energy, and with many interests. As Superintendent of the Asylum at Brookwood he was not only a successful director of the institution, but play writer, composer, stage manager, and actor of no mean capacity. When he was pensioned many years since we all thought he would not enjoy his pension long; but the fate of pensioners was his, and he enjoyed his well-earned repose in Devonshire. Here rest for him was diversity of work and interests. He was a leader in all the local clubs; he took interest in the physical and moral welfare of those about him. He was a most voluminous writer on general subjects, and was the recognized authority on Sir Walter Ralegh and his family. He was constantly at work unearthing points of local interest, and he destroyed several myths, such as that there was a time in England when by indentures apprentices agreed to have salmon only once a week. He traced the last wolf killed in England, and also collected the local records of the rewards for the destruction of vermin. All this represents the many-sided nature of Thomas Brushfield, but nothing but personal knowledge could fully appreciate his genial, bright personality. He was a confirmed punster, ever ready with a jest and joke. The world has lost a bright, useful man.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examinations indicated:

FIRST M.B. (*Chemistry*).—G. F. V. Anson, B. F. Bailey, J. V. Bates, T. Batstone, J. T. Bleasdall, E. L. Caldwell-Smith, H. Chadwick, S. J. Cowell, J. G Davies, J. R. Earp, L. E. A. B. Farr, J. D. Gabb, S. G. Galstaun, C. Gardiner-Hill, E. D. Goldsmith, J. R. Harris, E. H. V. Hensley, F. E. Higgins, L. W. Jones, H. W. Leatham, T. R. M. Livesey, F. McCormick, G. L. Maule, E. O. Morrison, F. P. Nicholas, P. R. O'R. Phillips, E. N. S. Rogers, R. L. M. Wallis, F. G. Wood, G. W. Woodhouse

FIRST M.B. (*Physics*).—G. F. V. Anson, L. M. Arnold, J. V. Bates, R. C. Bentley, J. T. Bleasdall, E. L. Caldwell-Smith, H. Chadwick, H. Chell, A. J. Cowell, E. H. Dendy, J. R. Earp, J. S. Ellis, H. J. Ewart, S. G. Galstaun, C. Gardiner-Hill, H. W. Hales, J. R. Harris, W. Hillbrook, F. E. Higgins, W. H. Hurst, L. W. Jones, G. L. Loo, M. E. MacGregor, L. C. H. Master, E. O. Morrison, C. G. T. Mosse, G. Y. Oliver, H. B. Padwick, K. Playfair, P. R. O'R. Phillips, R. M. Savur, G. E. Seon, J. A. D. Skinner, E. F. Smith, J. G. T. Thomas, R. L. M. Wallis, A. G. P. Wills, F. G. Wood, R. H. Yollond.

FIRST M.B. (*Biology*).—W. G. Alexander, J. V. Bates, J. J. O. Beven, E. L. Caldwell-Smith, R. H. Clarke, S. J. Cowell, E. T. Fletcher, H. K. Graham Hodgson, F. E. Higgins, S. H M. Johns, F. G. Lewtas, T. R. M. Livesey, C. R. Mackenzie, G. Y. Oliver, G. G. Powell, H. E. Rhodes, E. N. S. Rogers, C. H. Savory, R. M. Savur, G. B. Sellwood, H. W. Spicer, N. S Tirard, F. H Vey, R. L. M. Wallis, W. L. Willett, V. G. Williams, R. H. Yollond.

SECOND M.B., PART I (*Pharmacology and General Pathology*).—A. H. Birks, T. R. H. Blake, L. Bromley, H. H. Brown, J. D. Clarke, S. S. Crosse, J. P. H. Davies, A. J. S. Fuller, H. D. Gillies, P. Hamill, E. C. Hardwicke, T. L. Hardy, J. P. Hill, W. H. Hodgson, R. S. Kennedy, G. A. Lilly, W. M. Oakden, W. A. Pocock, E. G. T. Poynder, R. Pretty, E. C. Rayner, J. F. Taylor, J. R. A. Todhunter, J. W. Tonks, R. J. Vernon, C. B. Wainwright, H. K. Waller, L. C. Walker, C. Warner.

SECOND M.B. (*Human Anatomy and Physiology*).—E. D. Adrian, C. S. Atkin, L. W. Barlow, H. A. Bell, P. H. Berry, M. W. K. Bird, P. R. Boswell, E. J. Boyd, E. C. Bradford, E. J. Bradley, E. H. P. Brunton, F. L. Cassidi, W. H. W. Cheyne, B. K. T. Collins, G. D. Compston, L. P. Costobadie, G. M. Cowper, H. E. Creswell, H. L. Cronk, J. Ll. Davies, H. P. Dawson, H. V. Deakin, J. M. Evatt, G. C. Fairchild, W. D. Galloway, C. L. Gimblett, W. B. Gordon, A. Griffith-Williams, H. Hartridge, A. D. Haydon, R. J. Hearn, T. J. H. Hoskin, A. M. Humphry, B. L. Hutchence, J. S. Kennedy, S. D. Kilner, G C. King, C. L. Lambrinudi, A. A. Lees, W. M. Lupton, T. W. Maunsell, E. S. Mawe, C F. Mayne, R. K. Merson, A. E. Panter, F. S. L Piggott, H. A. Richards, E. L. K. Sargent, C. J. Scholtz, J. E. Sharp, L. W. Shelley, W. H. Shephard, R. P. A. Starkie, M. T. W. Steedman, C. R. A. Thacker, A. G. G. Thompson, E. W. Todd, A. W. Uloth, D. C. L. Vey, P. Wallice, C. A. Weller, F. A. Williamson, K. J. Yeo.

THIRD M.B. (*Surgery, Midwifery, and Medicine*).—H. W. Barber, H. G. Baynes, C. C. H. Binns, A. S. Cane, J. R. Dick, A. Feiling, R. Fisher, A. J. S. Fuller, H. D. Gillies, H. G. Greaves, P. Hamill, T. W. S. Hills, T. H. Just, N. Mutch, R. L. Rawlinson, A. E. Rayner, H. B. Richmond, J B. Ronaldson, F. D. Saner, K. I. Singh, R. M. Soames, C. J. Stocker, R. M. R. Thursfield, W. W. C. Topley, J. Van Schalkwijk, J. M. Weddell, P. F. Wilson, W. B. Wood.

UNIVERSITY OF LONDON.

THE following have been approved at the examinations indicated:

FIRST M B.—R. G. Abrahams, F. M. Allchin, K. D. Atteridge, C. P. Barber, K. R. Batra, C. W. W. Baxter, E. Biddle, F. Chadwick, Dorothy Chick, L. I. Davies, E. G. Dingley, J. R. Dingley, G. B. Dowling, *L. P. L. Edwards, R. H. Fleming, B.Sc., R. K. Ford, Annie M. Forster, G. F. P. Gibbons, O. Gleeson, G. E. Heath, †G. O. Hempson, Dorothy M. Henty, E. E. Herga, H. L. G. Hughes, J. P. J. Jenkins, R. B. John, L. G. Le Blanc, Adeline M. Matland, A. H. Morley, H. R. Partridge, L. G. Phillips, Emma C. Pillman, W. K. A. Richards, R. L. Robinson, T. C. Russell, L. F. Strugnell, R. C. Thomas, W. H. Thomas, *W. L. Thomas, H. W. S. Wright.

* Awarded a mark of distinction in Physics.
† Awarded a mark of distinction in General Biology.

M.D. (*Branch I, Medicine*).—C. J. Armstrong-Dash, B.S., H. S. Brown, J. H. Burgess, O. Clarke, H. R. Davies, E. V. Dunkley, D. A. Powell, W. H. Smailes, W. R. Thomas, R. A. Veale.

M.D. (*Branch II. Pathology*).—E. H. Kettle.

M.D. (*Branch III, Mental Diseases and Psychology*).—J. G. P. Phillips.

M.D. (*Branch IV, Midwifery and Diseases of Women*).—Mary A. Blair, H. O. Brookhouse, Ethel C. Cousins, H. B. Gibbins, W. Gilliatt, Middlesex Hospital (University Medal), Anna M. S. Smith, T. G. S. Smith, Bessie W. Symington, Ruth H. Western, Sophia M. V. Witts.

M.D. (*Branch V, State Medicine*).—Lilian E. Wilson.

M.D. (*Branch VI, Tropical Medicine*).—L. Gilbert, H. C. Keates, J. P. Maxwell.

M.S.—F. J. F. Barrington, H. Blakeway, B.Sc., E. M. Woodman (University Medal).

UNIVERSITY OF DUBLIN.

The following were among the degrees conferred at a meeting of the Senate of December 20th:

M.B., Ch.B., B.A.O.—R. A. Albertijn (*stip. cond.*), J. B. Burgess, R. V. Dixon, J. M. Elliott, H. Fleming, C. M. Finny, G. F. C. Healy, T. W. E. Henry, H. G. Holdbrook, W. M. L. Johnstone, F. J. A. Keane, E. M. Maxwell, C. W. M'Kenny, A. Stokes, R. T. Vaughan, T. A. Watson.

M.D.—R. A. Albertijn, W. E. M. Armstrong, W. G. Harvey, F. J. A. Keane, V. B. Kyle, C. W. M'Kenny, G. E. Nesbitt, C. J. Pentland, A. J. Powell, J. C. A. Ridgway, *T. W. Myles, *J. E. N. Ryan.

* *In absentid.*

SOCIETY OF APOTHECARIES OF LONDON.

The following candidates have been approved in the subjects indicated:

Surgery.—*†A. de Luyck, *†J. Ellison, *†O. Marshall, †G. Meyer, *†R. P. Wylde.

Medicine.—*E. C. Banks, †E. G. Brisco-Owen, *O. Marshall, *T. F. O'Mahony, *†W. H. Parkinson.

Forensic Medicine.—A. de Luyck, W. H. Parkinson, J. E. S. Sheppard Jones.

Midwifery.—E. C. Banks, A. de Luyck, M. J. A. Des Ligneris.

* Section I. † Section II.

The diploma of the Society has been granted to Messrs. W. H. Parkinson and R. P. Wylde.

Public Health AND POOR LAW MEDICAL SERVICES.

PUBLIC HEALTH APPOINTMENTS AND THE D.P.H.

Sanitarian.—(1) The whole-time appointments of medical officers of health or school medical officer which have been made during the past few years have, as a rule, been given to men under 45 years of age, though there have been one or two exceptions. (2) For the Diploma in Public Health of the London Colleges the following books may be read: Notter and Firth's *Theory and Practice of Hygiene* (Churchill); Whitelegge and Newman's *Hygiene and Public Health* (Cassell); Kenwood's *Public Health Laboratory Work* (Lewis); MacEwen's *Food Inspection* (Blackie); Robertson and Porter's *Sanitary Law and Practice* (Sanitary Publishing Co.). (3) The rules of the General Medical Council relating to the examinations in Public Health and State Medicine which have reference to prescribed periods of study prior to examination, do not apply to medical practitioners registered, or entitled to be registered, on or before January 1st, 1890. We should advise our correspondent to obtain definite information as to the examination of the Joint Board from the Secretary, Examination Hall, Victoria Embankment, W.C.

ATTENDANCE ON "BOARDED OUT" CHILDREN.

State Children.—The house referred to by our correspondent evidently comes in the category of what are known as "scattered homes." This system has been tried extensively by several boards of guardians. One authority has three such homes, a central one for 28 children, and three others each accommodating 12 children, also a rented house accommodating 14 boys. The district medical officer attends all these houses, and is paid a separate salary for each, namely, £8 per annum for the central, and £5 for each of the other homes. Another authority has 25 "scattered homes," with an average accommodation of 12. These are divided into five groups, each group being attended by a separate medical officer. The medical officers are "allowed 2s. 6d. per quarter for each child reported on. They are required to make an official visit once a month, in addition to attending whenever needful, and to render a written report each quarter." This would be equivalent to an annual salary of £7 10s. for a home accommodating 15 children.

The Services.

LECTURES FOR R.A.M.C. OFFICERS IN EDINBURGH.

The second lecture in connexion with the technical training of R.A.M.C. in field duties was delivered in the Carlton Hotel, Edinburgh, on December 16th, when Major R. J. Ross, general staff officer, coast defences, dealt with the co-ordination of the fighting and administrative services, with special reference to the medical service. The lecturer referred to intercommunication and the various kinds of orders, how they were issued and by whom. Colonel Woodhouse, principal medical officer, presided.

In the afternoon the second lecture of the other series was delivered in the library of the Military Hospital, Edinburgh Castle, by Lieutenant-Colonel F. W. Gordon Hall, R.A.M.C., the subject being the tactical uses of mobile field medical units. The lecturer referred to the necessity of a knowledge of the whole situation and the tactics of the field force on the part of officers commanding the medical units, in order not only that they might be of advantage to the fighting force, but that they might so move their units as not to impede the force or give away any movement to the enemy by the display of ambulance wagons in prominent situations. At the close of the lecture discussion was invited, and the P.M.O. gave some apt illustrations from his own experience of the value of tactical knowledge.

Medico-Legal.

WORKMEN'S COMPENSATION CASES.

Alleged General Paralysis.

In Sisson *v.* Manners Colliery, heard at Nottingham on November 22nd, an allegation was made to the effect that the applicant was suffering from the complaint known as "general paralysis of the insane" in consequence of an accident. The applicant had been a healthy, powerful man all his life, and for many years had been employed as a deputy at the colliery. On April 4th last a man named Samuel Dawes was said to have been working with Sisson, and the latter sent him to fetch some timber, and while he was away a fall of roof occurred, which injured Sisson about the head and body. The latter completed his shift and reported the accident at the pit bottom. When he got home his injuries were dressed by his wife, and he was afterwards seen by three medical men. He went to work again after being off a short while, but was finally compelled to give up owing to brain trouble. It was contended that the latter was the result of the accident. The applicant was in receipt of a fixed income of £2 0s. 6d. a week, and he asked for compensation of £1 a week.

Dr. Wood said Sisson came to his surgery in April suffering from pains in the head, giddiness, and want of sleep. A fortnight later he showed signs of insanity.

Dr. Roache said that in April he dressed a small wound some days old on the top of the applicant's head.

The respondent company produced evidence of mine officials and workmen disproving that any accident had occurred to the applicant, and of Dr. McPhail, Medical Superintendent of the Derby Borough Asylum, who said he found the applicant suffering from general paralysis of the insane.

Dr. Vaudrey (Derby) sat with the judge as medical assessor.

His Honour dismissed the case, the medical evidence not being sufficient to show that the applicant's state was the result of the accident. No costs were applied for.

Medical Referees in Compensation Cases.

In a case at Birmingham (November 22nd) Judge Amphlett had something to say about the value of the services of the medical referee. It appeared that a man named Mason was engaged in September last to assist in removing plates from the accumulators at one of the Birmingham Corporation power stations. In the course of his work it was necessary for him to dip his fingers into the solution of sulphuric acid, and towards the end of the first day he was engaged his fingers became very painful. He complained to the foreman, who advised him to wash his hands with a soap powder. The following morning he went to work again, but had not been there long when the pain recommenced, and his fingers turned black. He went to the hospital, and there it was found that he was suffering from sulphuric acid burns. It became necessary to amputate one of the fingers of the left hand, and there was also the probability of a further operation being necessary. Under cross-examination the applicant admitted that he had previously been employed in a brass foundry, but said his hands were in a thoroughly healthy state when he started to work for the respondents.

His Honour said this case forcibly illustrated the very scanty use which was made of the services of medical referees in cases which were eminently suitable for them. There was in some quarters, he gathered, an impression that assistance of that kind was not altogether congenial to a county court judge. He did not know whether it much signified if it were so or not, but in Birmingham he had never countenanced such an impression. On the contrary, he had testified on more than one occasion to the valuable services which had been rendered him by medical referees whose practical experience enabled him to solve highly technical medical theories with a reasonable chance of arriving at the truth. In the present case everything pointed to the injury having been incurred during the course of the applicant's employment, and His Honour awarded him compensation at the rate of 13s. 9d. per week.

Tuberculous Peritonitis.

In this case (Hanley, September 21st), Samuel Cotton, labourer, of Tunstall, claimed from the Chatterly-Whitfield Collieries Co., Limited, damages for injury, under the Workmen's Compensation Act. It was stated that applicant strained himself while lifting a tippler on December 10th. The medical opinion was at variance, and the judge decided that a medical referee should be called in. The judge stated that the real dispute between the parties was as to whether the applicant's condition was due to an accident or to a constitutional disease. One said that he was suffering from tuberculous peritonitis or some growth of a similar character. As usual in those cases, doctors were apt to disagree, and the issue turned largely upon the question as to whether the applicant's account of the accident was to be believed. He (the Judge) believed that he did

meet with an accident. On December 10th he did strain himself, and having regard to the medical evidence, he (the Judge) had referred the matter to Dr. Shuttleworth. Having read that gentleman's report, he had come to the conclusion that the applicant was suffering from tuberculous peritonitis, and that it was brought about by the accident.

There must be compensation, and costs would be allowed on Scale B.

THE EMPLOYMENT OF UNQUALIFIED PERSONS.

RHONDDA.—The general tenour of the General Medical Council's pronouncements seems to recognize a distinction between assistance rendered by an unqualified person under the eye of his qualified principal and acts done in the absence of the latter. Notwithstanding this, as a matter of general medical ethics, we do not think the practice referred to should be habitual. Moreover, the club might have some ground for complaint. The notice of the General Medical Council with reference to the employment of unqualified persons as assistants or otherwise was printed in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of December 24th, 1910, p. 462.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

MEDICAL ETIQUETTE AND THE RIGHTS OF PARENTS.

DUNELMENSIS.—Our correspondent, after denouncing "the growing tendency among city practitioners to despise, or rather depreciate, the work and skill of the country or colliery practitioner," states that his wife and he, being lately in a city where his daughter is at school, called to see her and found that she had contracted measles. He saw her and prescribed for her, but has since received "a very discourteous letter" from the practitioner who had been called in to attend her. The words our correspondent finds discourteous are that the city practitioner is "surprised" at his action and asks whether "it is desired that he should attend the child or not." These words hardly justify the charges of "bumptiousness" and "discourtesy" complained of, nor do we think they afford ground for the complaint that city practitioners as a class look down upon their brethren in country or colliery practices. Our correspondent would have done well to inquire whether any medical practitioner had seen his child, and, if so, he should have called upon him: if his time would not allow this he should have written him a letter indicating the course of treatment he would like to see followed. On the other hand, the city practitioner would probably have sympathized with the father's anxiety and have made allowances.

Medical News.

THE annual general meeting and *conversazione* of the Harveian Society will be held at the Society's Rooms in Titchborne Street on Thursday next, January 5th. The retiring President, Dr. Handfield-Jones, will deliver an address on "Science and Practice." A smoking concert will follow.

THE usual monthly meeting of the Executive Committee of the Medical Sickness Annuity and Life Assurance Society was held at 429, Strand, London, W.C., on December 16th, 1910, under the presidency of Dr. de Havilland Hall. During the autumn of this year there has been a marked decrease in the number and duration of the sickness claims experienced by the society, and the increase of sickness disbursement usually noted when the late autumn changes into winter has not been experienced this year. In fact, the amount of sickness paid away in November was less than the monthly average, although in November, as in the other winter months, a considerable payment over the average is looked for. This improvement in the sickness experience has been caused by the very short duration of the claims that have been received. They had been rather less in number than usual, but consist almost exclusively of short illnesses, entailing only small amounts of disbursement. On the other hand, the list of permanent or chronic cases show no signs of shrinking. On this list are not a few claims of over ten years' duration and over forty cases in which there is little or no hope that the member will ever be able to resume professional work. Prospectuses and all further particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

H. S. asks for information as to the treatment of a woman five months pregnant, who is suffering from gonorrhoea. She is being treated by injections of a stock polyvalent vaccine (small doses, 5 million), but H. S. would like to try also the local treatment by lactic acid bacilli introduced into the vagina, which is recommended by Watson in the BRITISH MEDICAL JOURNAL, 1910, vol. i, p. 192, and Whitehouse in the *Practitioner* for April, 1910. He asks whether the treatment would be attended with risk of causing abortion or sepsis, and also whether, if it were adopted, the removal of the lactic acid bacilli by swabbing with an antiseptic afterwards would not be preferable to douching, since this might possibly bring on uterine action; further, if the above method by lactic acid bacilli is not approved, he asks to be referred to any publication in which he can obtain details of treatment of gonorrhoea in pregnancy by yeast.

CHLORETONE IN WHOOPING-COUGH.

PERTUSSIN asks for information about the action of chloretone in whooping-cough, with special reference to (*a*) its sedative action on the spasm; (*b*) its harmful effects or otherwise on children; (*c*) which form to use; and (*d*) the dosage. He proposes to use it for three children aged 4½ years, 3½ years, and 22 months respectively.

RHEUMATISM AND NURSING MOTHERS.

E. W. writes: Should a child aged 2½ months be taken off the breast because the mother has an attack of subacute rheumatism? The symptoms in the case in point were pain with slight swelling in various joints; temperature 100·5, pulse 100. Besides the question of possible harm to mother or child from continuing nursing under such conditions, there is the further question whether, if nursing were continued and salicylates were given in the usual large doses, the drug, being excreted in the milk, might injuriously affect the child. In this particular case nursing was discontinued, but as the patient quickly improved under treatment, it would be interesting to know whether nursing might safely have been continued. Being a poor woman, it seems unfortunate that, owing to a comparatively slight illness, her child has lost some six months of breast-feeding.

ANSWERS.

EDUCATIONAL.—We do not know of any satisfactory portable lamp suitable for ophthalmoscopic examination in schools. Nothing is better than an ordinary paraffin lamp with either a duplex burner or a circular wick. If electric light is available, either a wall bracket or a lamp with a wandering lead answers every purpose, and could doubtless be arranged by any electrician. If portability is essential, an ordinary bicycle lamp, acetylene or oil, is not a bad substitute for the larger and better standard lamp.

LETTERS, NOTES, ETC.

MONORCHISM AND FERTILITY.

W. A. H. writes: Apropos of the correspondence in the columns of the BRITISH MEDICAL JOURNAL some weeks ago respecting differentiation of sex and kindred matters, the following case, which came recently under my notice, may be considered worth recording. A congenital monorchid, 34 years of age, married some few years ago a young lady who promptly presented her husband with male twins, and afterwards with a single son. The three boys are alive and healthy. The father's scrotal sac on the left side was never occupied by a testis. There was no hernia when I saw the case.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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An average line contains six words.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive postes *Restantes* letters addressed either in initials or numbers.

THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

SUPPLEMENT

CONTAINING

PROCEEDINGS OF COUNCIL

REPORTS OF STANDING COMMITTEES

MEETINGS OF BRANCHES AND DIVISIONS

PROGRAMME OF ANNUAL MEETING

MEDICAL BILLS IN PARLIAMENT

PROCEEDINGS OF THE GENERAL MEDICAL COUNCIL

ETC.

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British Medical Association.

SPECIAL REPRESENTATIVE MEETING

TUESDAY, JUNE 28th, 1910.

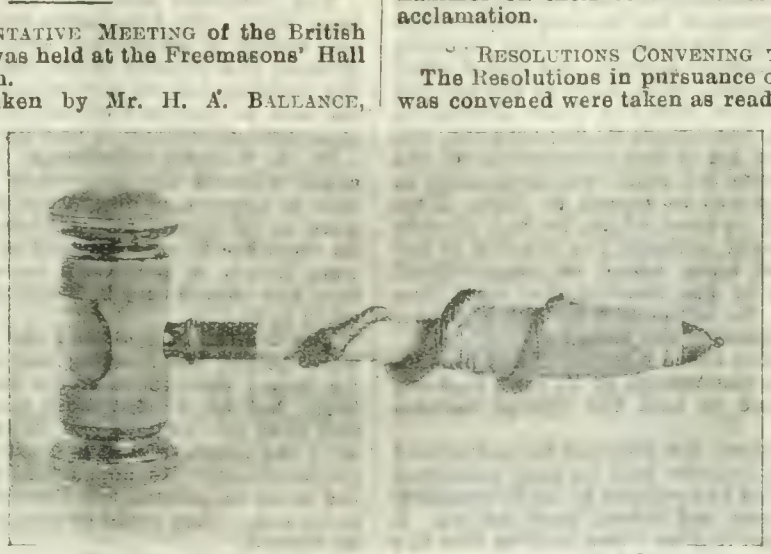
A SPECIAL REPRESENTATIVE MEETING of the British Medical Association was held at the Freemasons' Hall on Tuesday, June 28th.

The chair was taken by Mr. H. A. BALLANCE, Chairman of Representative Meetings, at 3 p.m.

The meeting was convened by the Council for the consideration of two matters contained in a special report of the Council, published in the SUPPLEMENT of May 28th, 1910:

I. The new draft Articles and By-laws for the Association, including certain alternative draft By-laws recommended by the Council.

II. Recommendations made by the Council in view of the reply received from the Privy Council to the application of the Association for a Royal Charter of Incorporation, and upon the action which should now be taken, in accordance with Minute 216 of the Representative Meeting at Belfast, in order to obtain the necessary extension of the powers of the Association.



PRESIDENTIAL HAMMER PRESENTED TO THE REPRESENTATIVE BODY.

The hammer is made of solid ivory, with a beautifully modelled silver-gilt serpent twining round the handle suggesting the staff of Aesculapius. The handle and head are further enriched with silver-gilt mounts, and a plate bearing the following inscription is placed in a suitable position:

"Presented to the Representative Meeting of the British Medical Association by its members, 28th June, 1910."

The hammer has been executed by the Goldsmiths and Silversmiths Company, Ltd., Regent Street, W.

PRESENTATION OF CHAIRMAN'S HAMMER.

As a preliminary to the business of the Meeting Mr. EDMUND OWEN (Chairman of Council) on behalf of the Representatives, presented to the Chairman a handsomely decorated ivory hammer to be used by Chairmen of the Meetings in future.

The CHAIRMAN asked whether it was the wish of the Representatives present that he should receive the hammer on their behalf. This was agreed to by acclamation.

RESOLUTIONS CONVENING THE MEETING.

The Resolutions in pursuance of which the Meeting was convened were taken as read and entered on the minutes.

APPOINTMENT OF SUBSTITUTES.

The notices of appointment of substitutes was entered on the minutes.

LETTERS OF APOLOGY.

The MEDICAL SECRETARY read letters of apology from those unable to be present, including the President, Sir William Whitla.

CHAIRMAN'S OPENING STATEMENT.

The CHAIRMAN observed that this was the second Special Representative Meeting held since the new Constitution was adopted. The first, held in May, 1907, had to do with the Charter. At that time the Charter was a very healthy and vigorous youngster; but during the last eighteen months or so it had become the victim of what, perhaps, might be called

a chronic infective process, and a month ago its decease was chronicled. At the last Representative Meeting at Belfast the Council was instructed that if the Charter were not obtained it was to bring before the Representative Meeting such alterations in the Articles and By-laws of the Association as would make them correspond to the Ordinances and By-laws in the Draft Charter. Very prolonged consideration had been given to the matter by the Organization Committee in conference with the Solicitor and with Counsel, and the question arose when those alterations should be presented. The Council was instructed to do this with as little delay as possible in order to meet more especially the requirements of the Members of Colonial Branches. In order to alter an Article of Association it was necessary to hold, in addition to the Representative Meeting, two Statutory General Meetings of the Association. The Special Representative Meeting had been convened in order to save as much time, and in order to put the Association to as little expense, as possible. The quorum of the Statutory General Meetings was 100, and Statutory General Meetings of the Association had been held in past times which had to be adjourned because there was no quorum. It had been conceived desirable that the Statutory General Meeting to follow on that Representative Meeting should be held the next day, in order that the necessary quorum might be ensured. The first Statutory General Meeting had to be followed by a second to confirm the resolutions of the first, and that Meeting had to be held about three weeks after the first. That second Statutory Meeting had been made to coincide with the Annual Meeting, so as also to save expense and to ensure a quorum being present. The agenda of the Statutory General Meeting summoned for the next day had to be made dependent on the proceedings of that day, and as alternative forms of certain by-laws would be before the Meeting, it was a matter of some difficulty to put the agenda of the next day's Meeting in proper legal form. The Solicitor to the Association had drafted the agenda of the next day's Meeting in consultation with Counsel, and had arranged that whichever alternative form were adopted, that form would come before the Statutory Meeting of the next day for adoption or otherwise as the Meeting thought fit. He wished to impress on the Meeting the fact that the proceedings of that day determined very precisely the agenda of the next day's Meeting, and that if other alterations were attempted to be made in the Articles and By laws before them that day those alterations would have effect on the Agenda of the next day, but under the Companies Act it was necessary to fix the Agenda of the following day, and it was impossible to alter that Agenda except in regard to those three alternative forms of By-laws which he had already mentioned. He thought, perhaps, the bearing of the remarks he had just made would be more evident during the business of the Meeting they were then about to commence. He would now ask the Members to begin the real business of the Meeting.

Mr. Russell Coombe asked whether if any Amendments were passed to the Articles or By-laws that day it would be impossible to hold the Special General Meeting next day.

The Chairman desired the Meeting to understand that the form of the Articles and By-laws presented that day had been fixed by decisions of the Representative Meeting last year and indeed years before. If there was any proposal to alter those Articles that day notice of such proposals ought to have been issued with the agenda of that Meeting. Standing Order No. 12 of the Representative Meeting was as follows:

> No motion to rescind any Resolution of a Representative Meeting, arrived at after due consideration of the Divisions, shall be in order at any subsequent Representative Meeting, unless at least two months' notice of such proposed motion shall have been given to the Divisions through the Supplement to the Journal.

The Meeting were acting that day under two resolutions of the Representative Meeting at Belfast last year, Nos. 216 and 217 (see page 4). He asked them to notice very carefully the wording of Resolution 217. The Council was instructed to bring all the regulations of the Association into accordance with those which had been approved by the Association in the Draft Charter. The regulations put before the Meeting that day were the regulations which had been approved by the Association in the Draft Charter, and there arose the difficulty, and the impossibility from a legal point of view, of altering Articles or By-laws presented that day without due notice of the same being given.

Mr. Russell Coombe asked if two months' notice of Amendment ought to have been given before that day's Meeting.

The Chairman said that was so under the Standing Orders.

Mr. Coombe remarked that the regulations had been sent out in the Supplement of May 28th for the consideration of the Divisions.

The Chairman said that the question of two months' notice had to do with the rescission of Resolutions, and not with the time required for the publication of the agenda of a Special Representative Meeting.

Mr. Russell Coombe understood that no amendments could be moved to the Articles and By-laws without two months' notice being given of the intention to move those amendments.

The Chairman said that the notice validating the submission of the Articles and By-laws to the Meeting was the instruction contained in Minute 217. Any Amendments to the Articles and By-laws which had been published two months previously to the Meeting were valid.

Dr. W. Douglas (Maidstone, Rochester, and Chatham) asked whether it was not the fact that the Articles and By-laws were within the knowledge of all Members of the Association, who wished to avail themselves of the opportunity of knowing, a year ago.

Dr. Macdonald (West Somerset) drew attention to the following words in Article XLVII: "New By-laws may be made . . . provided that . . . notice thereof shall have been given through the Journal not less than three months before the Annual Representative Meeting or one month before a Special Representative Meeting, as the case may be."

The Chairman said that the present Agenda had been before the Association through the Journal for one month in accordance with the regulation. The Articles and By-laws before the present Meeting were the Articles and By-laws which were approved a year ago and on previous occasions by the Association in Representative Meeting, and directly in Minute 217.

Dr. A. Walker (Edinburgh, South and North-East) asked whether the members of the Meeting would be able to approve or disapprove of the proposals which were to be placed before them, or were they to have no opportunity of suggesting any alteration? If they were simply to perform a merely mechanical operation, why should they be brought from the ends of the earth to do it?

The Chairman said that the Articles and By-laws were before the Meeting for approval or rejection. He hoped that there would be a full discussion of them, but he wanted those present to recognize the fact that the Articles and By-laws had been framed with the greatest care and after the most prolonged consideration. He hoped that if flaws in their drafting could be pointed out, Representatives would point them out. They could be rejected, but they could not be altered.

Dr. E. W. Goodall (London, City Division) asked whether it would be possible for any Representative to move the rejection of any single Article or By-law, or must the Articles and By-laws be dealt with *en bloc*?

The Chairman said that the Articles and By-laws were put forward in convenient groups.

Dr. R. W. W. Henry (Leicester and Rutland) said that the difficulty was that there had only been a month's notice of the present Meeting, and there had been no opportunity for the Divisions to meet together to discuss the Agenda and to give legal notice of opposition to any particular point. It was not to the

Articles of Association as they appeared on the agenda paper that the Association in the previous year finally assented, but it was to the compromise which was proposed by Sir Victor Horsley, which many of the Branches approved and thought would finally be carried out.

The CHAIRMAN again drew attention to Minute 217, which said that the Regulations of the Association should be altered in accordance with those approved in the Draft Charter. The Organization Committee had been permitted to bargain with the Privy Council as regarded certain concessions which the Meeting was prepared to make if the Charter were granted. The instruction to the Organization Committee was to draft new Articles and By-laws in accordance with the provisions of the Draft Charter.

AMENDMENT OF PRESENT BY-LAWS.

The following notice of motion by the Cardiff Division, which had been duly published in the BRITISH MEDICAL JOURNAL of April 9th, 1910, was considered:

That By-law 23 be amended by the inclusion of a new Subclause as follows, to be Subclause (*d*), the present Subclause (*d*) being made Subclause (*e*):

(*d*) 4 by the Representative Meeting, which shall have power to elect such Members at such time and in such manner as the Meeting may decide, provided that the term of office of each Member so elected shall expire at the close of the Annual Representative Meeting next following the date of his election.

[*Existing By-Law 23.*

COUNCIL.

23. *Composition.*

The Council shall be composed of the Members *ex officio* mentioned in Article XXXVIII and of Members elected in manner following, namely:

(*a*) 24 by the Branches and Divisions of the Association in the United Kingdom which shall be grouped for that purpose as hereinafter mentioned;

(*b*) 7 by the Branches of the Association not in the United Kingdom which shall be grouped for that purpose as hereinafter mentioned;

(*c*) 12 by the elected Representatives of the Constituencies comprised in the Branches and Divisions of the Association in the United Kingdom, which Branches and Divisions shall be formed for that purpose into 12 Groups as hereinafter mentioned, the Representatives of all the Constituencies in each such Group being entitled together to elect one Member of Council.

(*d*) One Medical Officer on the active or retired list of each of the following services—namely: The Royal Navy Medical Service, the Army Medical Service, and the Indian Medical Service, to be elected by the Representative Meeting from Officers nominated by the Council, but so that no Officer shall be elected who shall have retired from the active list more than five years before the election.]

The CHAIRMAN stated that the Motion by the Cardiff Division had been placed in the forefront of the programme in order that the question should be settled in the present By-laws. Then, when the Meeting came to the new By-laws, it could adopt the amended form.

Dr. MACLEAN (Cardiff), in moving the Amendment, pointed out that as the By-law stood the Council would consist of 7 *ex officio* Members, 24 Members elected by the grouped Branches, 7 Members elected by the Colonial Branches, 12 Members elected by the Representatives of the Constituencies comprised in the grouped Branches and Divisions of the Association in the United Kingdom, and 3 Members to represent the Services, making a total of 53, as against 73 on the old Council. That was a notable diminution of 20—a point to which previous Representative Meetings had very properly attached considerable importance. In the draft By-law there was a rigid adherence to topographical distribution—that was to say, with the exception of *ex officio* Members, and possibly also the Service Members, there was no method whereby any body in the Association could elect to its central executive body Members chosen from the Association as a whole. If a rigid topographical basis were adhered to, it would inevitably follow that a number of men whose services on behalf of the Association had been as distinguished as they had been prolonged would of necessity be dropped out, and their services lost to the Association. He was glad to have an opportunity of speaking on the point, because a certain amount of suspicion had gathered around the Amendment of the Cardiff Division, very largely, he believed, on account of lack of information as to its true bearing. It was not co-option, and was not a substitute for co-option. Co-option was the adding by the Council to its own numbers by its own vote. The Amendment of the Cardiff Division would mean not co-option but accretion, the Representative Meeting being given the power to put on to the Council the moderate number of four additional Members who had, in its view, rendered such service to the Association as to merit that distinction. The Motion left it entirely to the Representative Meeting to arrange the method or the source of nomination, and also the time of election.

Dr. HASLIP (Westminster) asked whether the Cardiff Division would agree to the election being made on the principle of proportional representation. By it the minority of the Representative Meeting would have a voice, and would have an opportunity of electing a Member to the Council.

Dr. W. JOHNSON SMYTH (Bournemouth) said the proposition had been put forward in the best possible manner, but he had to oppose it. The plan of electing twelve Members by grouping in order to more fully carry out the geographical distribution of seats in the Council was fair. He thought if the four Members were elected in the way proposed the whole spirit of geographical distribution of seats in the Council would be completely nullified.

Dr. GOODALL (London, City Division), in opposing the Resolution, said that the mover had said it was not co-option; he thought it was a form of co-option—not by the Council itself, but by the Representative Meeting on to the Council. His Division was opposed to it because it disapproved the principle of co-option altogether. It had been seen in public bodies how tyrannical such a mode of election might become where a very small minority got into power, and by a principle of co-option proceeded at once to make themselves a very formidable body.

Dr. MACDONALD prefaced his remarks in support of the Amendment by inquiring whether, as the Cardiff Amendment was for the purpose of amending the proposed By-laws, it was capable of amendment itself.

The CHAIRMAN said he was informed by the Solicitor that it had been always the rule, if a By-law were before the Meeting and an Amendment had been proposed, and due notice of that Amendment had been given, that Amendment must either be passed or rejected; that was to say, no alteration of that Amendment could be allowed of which notice had not been given. If another Division had given notice of amendment to the proposal of the Cardiff Division in proper time it might have come before the Meeting.

Dr. MACDONALD further inquired whether Dr. Maclean's statements as to the number of the Council was correct; that was to say, whether it was 52 or 53.

The CHAIRMAN replied that he was informed by the Medical Secretary that the number was 53 with the Past-Chairman of Council, who was *ex officio* a member of the Council for one year.

Dr. MACDONALD thought it was possible to carry the idea of geographical representation on the Council

too far. The Cardiff Resolution would give power of sending back to the Council men who had done good work and thoroughly understood its business. There were certain men who, through the operation of geographical representation, did not come on the Council, whose presence would be a great advantage. He suggested that the Members to be thus elected by the Representative Meeting should be nominated by the Council, because the Council knew the men who had been doing good work.

The Chairman, in putting the Amendment to the Meeting, stated that, as it was an alteration of a By-law, it was necessary to have a two-thirds majority. He then put the Amendment to the Meeting, and announced that 79 voted in favour and 25 against. He therefore declared that the Amendment was carried by the requisite two-thirds majority.

The amended By-law was then put as a substantive motion and duly carried.

The Chairman said it would be necessary to arrange the procedure by which the election should be carried out. If he were instructed to do so he would put before the Annual Representative Meeting to be held next month a Standing Order for the election.

Dr. Robertson (Glasgow Southern) asked that attention should be given to the geographical distribution of the four Members.

The Chairman said he would give the Meeting an opportunity of deciding on that point when he laid the Standing Order before it.

Dr. Haslip (Westminster) asked whether the principle of proportional representation would be embodied.

The Chairman thought it would be possible to so draft the Standing Order that the Meeting, if it wished proportional representation, could adopt it.

Dr. Macdonald said he took it that it would be quite open to arrange, in the proposed Standing Order, that the nomination should be in the hands of the Council.

The Chairman replied that the difficulty was that there would be no meeting of Council at which the nomination could be made this year. The Representative Meeting began on July 22nd, and there would not be a Council meeting till July 26th.

Special Report of Council.

The Chairman of Council (Mr. Edmund Owen) moved, "That the special report of the Council to the Meeting be received and entered on the Minutes." He said the spade work of all this had been done by Mr. Andrew Clark and the Organization Committee, and speaking for the Council and on behalf also of the Representatives he said that gratitude could not be too strongly expressed to those gentlemen for the great care and attention they had given to the matter.

The Motion was put to the Meeting and agreed to.

I.

Draft Articles and By-laws.

The first part of the special report of the Council had reference to the action taken under the following instruction of the Representative Meeting at Belfast:

Minutes 207-212.

That the Organization Committee be accorded full power to act on behalf of, and in the name of, the Representative Meeting of the British Medical Association in respect of the consideration by the Privy Council of the following points concernin the Charter now before the Council:

1. Register of Members of the Profession.
2. Adjudication between Members of the Medical Profession who are not also Members of the British Medical Association.
3. Right of all Members of the Medical Profession, whether Members of the Association or not, to approach or appeal to the various ethical bodies and authorities of the Association.
4. Establishment of a Benevolent Fund in competition with existing Funds, provident or otherwise.
5. To grant that thirty Members of Council present and voting may determine a Referendum by postal vote.

Minute 213.

That this Meeting decides that the Association shall not go to a hearing before the Privy Council on the application for a Charter.

Minute 216.

That, in the event of the Petition for the Charter being refused, and in respect that the powers now possessed by the Association do not entitle it to grant the more important requirements of the South African Branches, this Meeting instructs the Council to take into consideration how, with the least possible delay, the Association may acquire such additional powers as will enable it to do so.

Minute 217.

That the following words be added (to the foregoing Resolution): and to prepare such alterations of the Articles and By-laws as are necessary to bring all the Regulations of the Association into accordance with those which have been approved by the Association in the Draft Charter, and to submit such amended Articles and By-laws for the approval of a Representative Meeting, and, as regards the Articles, of the Statutory General Meetings required by the Companies Acts.

With reference to these instructions, the Council reported that, as stated in Paragraph 51 of the Annual Report of the Council (British Medical Journal Supplement, May 21st, 1910, page 260), the Organization Committee submitted to the Privy Council a revised Draft of the Charter giving effect to those concessions which the Representative Meeting approved. In April, 1910, an intimation was received from the Privy Council that these concessions had not appreciably diminished the objections of opponents, and the Association was asked whether it desired to be heard by Counsel in support of its application. Having regard to Minute 213 of the Representative Meeting, the Council had replied that the Association was not prepared to incur the expense which a hearing by Counsel would involve.

In these circumstances, it became the duty of the Council to consider the contingent instructions contained in Minutes 216 and 217 of the Representative Meeting at Belfast, and the Report pointed out that inasmuch as the alterations of the Articles and By-laws necessary to bring them into harmony with the Regulations contained in the Draft Charter, Ordinances, and By-laws are entirely within the power of the Association itself, as at present constituted, this matter could be more easily disposed of, and was first dealt with in the Report. The draft of new Articles and By-laws submitted to the Meeting had been prepared by Mr. T. R. Colquhoun Dill, the Counsel who drafted the Charter, Ordinances, and By-laws, and had been so framed as to correspond exactly with the provisions of the Charter, Ordinances, and By-laws which were before the Annual Representative Meeting at Belfast. In respect of some of the By-laws the attention of the Council had been drawn to certain Amendments which the Council thought it desirable that the present opportunity should be taken to effect. Having regard to the terms of the instruction of the Representative Meeting, the Council had not felt justified, however, in definitely carrying out these Amendments in the document submitted. It was considered more suitable that they should be submitted separately in alternative clauses.

The Articles of Association.

The Articles of Association were submitted as follows:

I. Interpretation.

1. In these Articles of Association (where not repugnant to the context) the words and expressions following have the meanings hereinafter assigned to them respectively:—

"The Association" means the above-named Association.

"The Regulations" means the Regulations contained in these Articles of Association, with such modifications thereof or additions thereto as may from time to time be in force.

"The By-laws" means the By-laws set forth in the Schedule hereto, or other the By-laws of the Association for the time being in force.

"The Council" means the Council hereinafter mentioned.

"The Journal" means the journal to be published as hereinafter provided.

"Division" and "Branch" mean, respectively, a Division and Branch constituted as hereinafter provided.

"Existing" means existing at the time when these Regulations come into operation.

Expressions defined in the Companies (Consolidation) Act, 1908, shall have the meanings so defined.

2. The Interpretation Act, 1889, shall apply for the purpose of the interpretation of the Regulations as it applies for the purpose of the interpretation of an Act of Parliament.

II. MEMBERSHIP.

Existing and Future Members.

3.—(1) The existing Members of the Association are those whose names are entered in the Register of Members of the Association as Members at the time when these Articles come into operation.

(2) Future Members shall be those persons who, being eligible, shall, after the date when these Articles come into operation, be duly elected in such manner and upon such conditions as may be prescribed from time to time by the By-laws.

Eligibility.

4. Any Medical Practitioner registered in the United Kingdom under the Medical Acts, and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualification as shall, subject to the By-laws, be prescribed by the Rules of the said Branch, shall be eligible as an ordinary Member of the Association. Subject as aforesaid the mode and conditions of election to membership shall from time to time be determined by or in accordance with the By-laws.

Honorary and Extraordinary Members.

5.—(1) The Association shall have power to elect as Honorary Members such persons, and in such manner as the By-laws may provide, and to admit Members so elected to such privileges (other than that of voting as Members of the Association) as may from time to time be conferred on them by or under the By-laws.

(2) Each Division or Branch shall have power to admit to certain of the privileges of membership of such Division or Branch, other than that of voting: (*a*) Members of the Association who are not entitled to be Ordinary Members of such Division or Branch; and (*b*) Members of the Medical Profession, or persons distinguished in other sciences, who are not eligible as Ordinary Members of the Association. The By-laws may prescribe the designation under which persons shall be admitted to such privileges, the nature of the privileges to be conferred upon them, and the conditions of admission thereto.

Subscriptions.

6. Save as otherwise provided by the By-laws every Member shall pay to the Association a subscription of such amount as may for the time being be prescribed by the By-laws. The said subscription shall be considered due in advance on the 1st of January of each year, or in the case of Members elected during the year, at the time of election.

7. Each year's subscription shall entitle the Member to all privileges of membership of the Association, including that of receiving the Journal for the current year, and to the ordinary privileges of membership of that Division and of that Branch of which he is an ordinary Member.

Re-eligibility.

8. No person who shall have been a Member of the Association and ceased to be such shall be eligible for re-election until he shall have paid all arrears of subscription (if any) due from him to the Association at the date when his former membership ceased, and no person whose former membership shall have been terminated by reason of his conviction or expulsion as hereinafter provided shall, without the previous sanction of the Council, be eligible for re-election by any Branch Council.

Duration of Membership.

9. Every Member, whether an existing Member or a future Member, shall remain a Member until his membership is terminated in accordance with the provisions hereinafter contained.

Termination of Membership.

10. Membership of the Association may be terminated in any of the following ways, namely:

(*a*) By resignation, subject to such notice as may be prescribed by the By-laws and subject to the provisions of the next succeeding Article.

(*b*) *Ipso facto*, save as hereinafter provided, by default in the payment of subscriptions to the Association for such period as may be prescribed by the By-laws.

(*c*) *Ipso facto* (i) upon sentence (after conviction in a Court of Justice of any crime) to imprisonment with hard labour without the option of a fine, or to any greater punishment; or (ii) upon erasure from the Medical Register under Section 29 of the Medical Act of 1858; or (iii) upon erasure from the Medical Register of any British Colony or Dependency on the ground of professional misconduct; or (iv) upon forfeiture through misconduct of the medical qualification by virtue of which the Member shall have been eligible for membership.

(*d*) By expulsion (after the enquiry and in the manner prescribed in the next succeeding Article) on the ground that the conduct of the Member is detrimental to the honour and interests of the Medical Profession or Association, or calculated to bring the Profession into disrepute, or on the ground that the Member has wilfully and persistently refused to comply with the Regulations of the Association or the Rules of any Division or Branch of which he may be a Member.

Expulsion.

11. (*a*) The Council shall have power, on the representation of any Division or Branch, and after due enquiry, of which not less than fourteen days' notice specifying a time and place at which he may be heard in his defence, shall have been served on the Member in the manner prescribed by the By-laws, finally to expel from membership of the Association any Member of such Division or Branch whose conduct shall be held by the Council to be such as renders him liable to expulsion under paragraph (*d*) of the last preceding Article.

(*b*) The Council of each Branch not in the United Kingdom having a membership of not less than thirty shall have power on the representation of any two Members of such Branch and at a Special Meeting convened at not less than one month's notice, and after due enquiry of which not less than twenty-eight days' notice in writing, specifying a time and place at which he may be heard in his defence, shall have been given to the Member, to expel from membership of the Association any Member of such Branch whose conduct shall be held by the Council of the Branch to be such as renders him liable to expulsion under paragraph (*d*) of the last preceding Article.

(*c*) A majority of two-thirds of those present and voting at a Meeting, whether of the Council or of a Branch Council, shall be required for the purpose of exercising the powers conferred by the last two preceding clauses.

(*d*) An expelled Member shall, notwithstanding that he has ceased to be a Member, be liable to pay all sums due from him to the Association, or any Division or Branch thereof, at the time of his expulsion.

(*c*) No Member, in regard to whom a representation as aforesaid has been made, or whose conduct is under investigation, or is the subject of enquiry by the Council, or by a Branch Council, or by any Council or Committee of a Division, or by any Committee authorized in that behalf by any such Council as aforesaid, shall be capable of effectively resigning his membership of the Association, nor shall his membership be terminated in pursuance of paragraph (*b*) of the last preceding Article, or of any By-law, until the investigation or enquiry is completed and the decision thereunder is made known. An enquiry or investigation shall, for the purpose of this clause, be deemed to commence at the time when the matter of such investigation or enquiry is first brought officially under the notice of the body authorized by or in pursuance of this Article to make such investigation or enquiry.

III. Divisions or Branches.

Formation.

12. The members of the Association shall be formed into separate local bodies styled Divisions and Branches.

13. (1) Each Division shall have a local area to be determined as hereinafter provided and a Branch shall be a Division or a group of Divisions.

(2) Subject in the case of Divisions and Branches not in the United Kingdom to the provisions of the By-laws, it shall rest with the Council from time to time to determine, recognize, and declare by resolution published in the Journal, what bodies of Members shall be Divisions, and what Divisions and groups of Divisions shall be Branches of the Association, and what shall be the local area of each Division, and accordingly the Council shall have full power from time to time to amalgamate, subdivide, and modify Divisions and Branches and the local areas thereof. Nevertheless, not less than one calendar month's notice in all cases shall be given (in the manner prescribed by the By-laws) to any Division or Branch in whose boundaries or area any change is proposed.

Boundaries.

14. In determining the boundaries or areas of Divisions and Branches, the Council shall have regard to the expressed wishes of the local bodies concerned, and to the facilities of communication by railway and otherwise, and the opportunities thus afforded to Members of local bodies for meeting to transact the business thereof, and to the expediency of making such boundaries coincide with those of Parliamentary constituencies, counties, or other administrative divisions of the country.

Membership.

15. Every Member whose address as registered for the time being in the books of the Association is at a place situate within the area of any Division shall, *ipso facto*, be an ordinary Member of that Division and of no other, and every Ordinary Member of a Division shall, *ipso facto*, be an Ordinary Member of the Branch which comprises that Division and of no other.

Grants.

16. The By-laws may provide for contributions, grants, and subscriptions out of the general funds of the Association to Divisions or Branches, and may impose on the Members of any Division or Branch such obligations towards the Association and the Division and Branch respectively as may seem expedient.

Autonomy.

17. (*a*) Subject to the Regulations and the By-laws each Division and each Branch shall be free to govern itself in such a manner as it shall think fit, and for that purpose to make from time to time such Rules as it may think fit, and to repeal or alter the same, and when it shall consider it expedient.

(*b*) The Rules so made, and for the time being in force, shall be binding on the Members constituting the Division or Branch in reference to which they are made. Provided that, except in the cases specified in the By-laws, such Rules shall be submitted for approval to the Council, and shall not come into operation unless and until they are approved by the Council.

IV. General Meetings of the Association.

Annual General Meeting.

18. The Annual General Meeting of the Association shall be held at such time (not being more than fifteen months after the holding of the last preceding Annual General Meeting) and place as may be fixed by the Council, and if no time is so fixed shall be held on the 20th October (or if that day be a Sunday on the 21st October), and if no place is so fixed shall be held at the registered office of the Association.

Extraordinary General Meetings.

19. All General Meetings other than the Annual General Meeting shall be called Extraordinary General Meetings.

20. The Council may, whenever it thinks fit, and it shall, upon a requisition made in writing as hereinafter provided by any 100 or more Members, convene an Extraordinary General Meeting for the purpose of transacting any such business as by Statute or by the Regulations or the By-laws is appointed to be transacted by a General Meeting.

21. Any such requisition shall state the object of the Meeting proposed to be called, such object being to transact some business which by Statute or by the Regulations or the By-laws is required to be transacted by a General Meeting, and the said requisition shall be left at the registered office of the Association.

22. Upon the receipt of such a requisition the Council shall forthwith proceed to convene a General Meeting, and if it do not do so within twenty-one days from the leaving of the requisition, any 100 Members may themselves convene a Meeting for the object specified in the requisition.

Notice of Meetings.

23. Seven days' notice at the least of the holding of a General Meeting, specifying the place, the day, and the hour of meeting, and in the case of special business, the nature of such business, shall be given to the Members in the manner prescribed by the By-laws, but the non-receipt of such notice by or accidental omission to give such notice to any Member shall not invalidate the proceedings at any General Meeting. When it is proposed to pass a Special Resolution, the two requisite Meetings may be convened by one and the same notice, and it shall be no objection to such notice that it only convenes the second Meeting contingently on the Resolution being passed by the requisite majority at the first Meeting, or that it does not specify the day for the second Meeting otherwise than by stating that the same will be held at an interval of fourteen clear days from the day on which the first Meeting is concluded.

Business of Annual General Meeting.

24. The business of an Annual General Meeting shall be (*a*) such business as by Statute or by the Regulations or the By-laws shall for the time being be appointed to be transacted at such Meeting; and (*b*) the reception of the addresses and other communications, and the discussion of such matters pertaining to the Medical and Allied Sciences as the Council shall have arranged to be received or discussed at such Meeting.

25. The Council shall arrange the order of business of an Annual General Meeting, and shall fix the times at which matters described under the heads (*a*) and (*b*) of the last preceding Article shall respectively be considered. At the expiration of the time appropriated for the transaction of any particular business, any portion of such business remaining for consideration shall be adjourned by the Chairman without discussion to such time as may have been appointed by the Meeting for the resumed consideration of business of that description.

Annual Scientific Meetings.

26. The Council shall at least once a year arrange Meetings or Conferences, alone or in conjunction with other bodies, which it shall be open to every Member of the Association to attend, for the purpose of receiving addresses or other communications relating to the medical or allied sciences, and discussing such subjects pertaining thereto as the Council may think proper, and the Council may arrange to hold such Meetings or Conferences in the United Kingdom or abroad. When held in the United

Kingdom, one such Meeting shall be convened at the same place as the Annual General Meeting of the Association, and in connection, but so as not to conflict therewith. For the more convenient consideration of the matters to be discussed, the Council may provide that they shall be considered in Sectional Meetings, and the Council shall appoint a President and other Officers of such Section as well as readers of any addresses that may be given.

Special Business of General Meetings.

27. Special business includes all business discussed or transacted at Extraordinary Meetings, and also all business discussed or transacted at Annual General Meetings, except the ordinary business referred to in Article 24. No business shall be discussed or transacted in any General Meeting as special business, except such business as by Statute must be dealt with by Special Resolution, and such business as the Regulations or By-laws of the Association may at any time expressly require to be dealt with in General Meetings.

Procedure at General Meetings.

28. Subject as provided in the Regulations the proceedings at any General Meeting shall be such as may from time to time be prescribed by the By-laws and any Resolution passed at any such Meeting shall (save as hereinafter provided) be subject to the provision as to Referendum hereafter contained.

V. REPRESENTATIVE BODY.

General Powers.

29. Subject to the provisions of any statute the general control and direction of the policy and affairs of the Association shall be vested in a body of Representatives styled "the Representative Body" and composed of members of the Association elected by the Divisions in the manner prescribed by the By-laws, and of the Members of the Council for the time being in office or elected to take office.

Representative Meetings.

30.—(1) The Representative Body shall hold an annual meeting (hereinafter called the "Annual Representative Meeting"), and may hold other meetings (hereinafter called "Special Representative Meetings").

(2) No Member of the Association who is not a Member of the Representative Body, shall be entitled to take part in any Representative Meeting.

(3) Subject as provided in the Regulations the mode of convening Representative Meetings and the proceedings thereat and relating thereto shall be such as may from time to time be prescribed by the By-laws.

Resolutions.

31.—(1) Subject as provided by the Regulations a resolution of the Representative Body (not being a resolution inconsistent with the provisions of any statute or of the Memorandum of Association) which affects the funds of the Association, or relates to the Regulations, or By-laws, or to the policy of the Association in matters affecting the honour or interests of the medical profession and is carried by a majority of not less than two-thirds of the votes given thereon in the manner prescribed by the By-laws, or which relates to any other business within the powers of the Representative Body, and is carried by a simple majority, shall be deemed to be a decision of the Association.

(2) Provided that no resolution of the Representative Body to make any addition to or any amendment, alteration, or repeal of any Regulation or By-law, or to make any new regulation or By-law, shall have any operation unless a proposal to make the same shall have been previously approved and submitted to the Representative Body, either by the Council, or by a Branch, or by a Division, and shall have been published in the Journal, not less than two months before the Annual Representative Meeting, or one month before the Special Representative Meeting at which such resolution is passed.

VI. REFERENDUM.

32. In respect of every resolution of a General Meeting of the Association (except a resolution capable of being confirmed as a special resolution or a resolution confirming as a special resolution a resolution previously passed, or an extraordinary resolution or a resolution relating solely to the procedure of the Meeting), and in respect of every resolution of the Representative Body the following provisions shall have effect:

(*a*) Within three months after the date on which the resolution is passed the Council shall hold a Meeting for the purpose of considering the resolution. Such Meeting may be convened by a notice given either before or after or during the progress of the Meeting at which the resolution is passed.

(*b*) The Council, at its said Meeting, may approve the resolution, and shall be deemed to have approved the same unless one half at least of the total number of the Council be present, and it be determined by a majority of not less than two-thirds of the votes given on the question that the resolution does not properly represent the wishes of the Association, and that a Referendum is expedient.

(*c*) If the Council at its said Meeting determine in manner aforesaid that a Referendum is expedient then an officer of the Association to whom such duty shall be assigned by the Council shall as soon as may be after the said meeting, and not later than eight weeks from the date thereof, send by post to the Secretary of each Division of the Association a requisition requiring him within four weeks to convene a Meeting of the members of his Division (hereinafter called "the Division Meeting") for the purpose of considering the resolution and shall with each such requisition transmit such observations on the subject of the resolution as the Council may direct.

(*d*) The Secretary of each Division shall convene the Division Meeting accordingly and shall immediately after the holding thereof certify in writing to the Council the number of the votes given at the Division Meeting for and against the resolution.

(*e*) If the aggregate number of votes given for the resolution at all the Division Meetings shall exceed the aggregate number of votes given against the resolution at all the Division Meetings, or if no vote shall be given at any Division Meeting against the resolution the same shall be deemed to have been approved on a Referendum. Provided that for the purpose of this provision no vote shall be reckoned unless the same shall be included in such certificate as aforesaid and such certificate shall have been received at the Head Office of the Association within four months after the date of the said meeting of the Council.

(*f*) If the said Meeting of the Council shall not be held within the said period of three months, or if the requisition prescribed by paragraph (*c*) of this Article shall not have been issued within the said period of eight weeks, then the resolution shall come into operation immediately upon the expiration of the said period of three months or of the said period of eight weeks (as the case may be). Save as aforesaid the resolution shall have no operation unless and until it shall have been approved either by the Council or on a Referendum as hereinbefore provided and if and when so approved the same shall come into operation as a valid and effectual decision of the Association.

(*g*) The fact of the resolution having been so approved shall be forthwith published in the Journal.

VII. COUNCIL.

Composition.

33. The Council shall be composed of the President of the Association, the President-Elect, the Past-President, the Chairman of Representative Meetings, the Chairman of Council, the Past Chairman of Council, and Treasurer *ex officio*, and of Members of the Association elected by the bodies, and in the manner prescribed in that behalf by the By-laws.

Powers and Duties.

34. It shall be the duty of the Council to carry into execution resolutions passed by a General Meeting or of the Representative Body, and administer the affairs of the Association in accordance with the Memorandum of Association and the Regulations and the By-laws, and the Council shall exercise such powers and do such acts and things as may be exercised or done by the Association, and are not by the provisions of any Statute or of the Regulations or the By-laws directed to be exercised or done by a General Meeting or by the Representative Body.

VIII. Publications.

Journal.

35. A Journal, under the title of the British Medical Journal, shall be published weekly in London by the Association, and shall be conducted by a paid Editor, who shall be responsible for all that appears therein, except such matters as are inserted in accordance with the Regulations and By-laws, or by direction of the Council. The Editor shall be appointed by and be subject to the control of the Council.

Other Publications.

36. Such lists of medical practitioners, records of transactions and other papers of interest to the medical profession shall be published as and when the Council may think fit.

IX. Officers.

37. There shall be the following officers of the Association—namely, a President, a President-Elect, a Past-President, a Chairman of Representative Meetings, a Chairman of Council, Vice-Presidents, and a Treasurer. The Officers aforesaid shall hold office for such term, and shall have and enjoy such duties, powers, and privileges as shall be determined from time to time by the By-laws.

X. Committees.

38. Committees may be appointed in such manner and having such powers as may be prescribed by the By-laws or as the Representative Body or the Council, subject to the provision of the By-laws, may think proper.

XI. Expenses.

39.—(1) The expenses, as defined in the By-laws, within the United Kingdom of Members of Council and Representatives of Divisions attending any Representative Meeting shall be defrayed out of the general funds of the Association.

Attendance of Representatives of Divisions for this purpose shall be construed to mean attendance at each Session of the Representative Meeting, unless the Council shall be satisfied that good cause existed for absence from any particular Session or Sessions. The expenses, defined as aforesaid, within the United Kingdom of all Members attending Meetings of Council or of Committees and of all Members authorized by the Representative Body or by the Council to attend, and attending, any Conference shall be defrayed in like manner.

(2) The Council shall (subject as hereinbefore provided) determine what shall be considered an attendance for the purpose of this Article.

XII. Financial and other Reports and Audit.

40. The Council shall annually prepare a Balance Sheet and Financial Statement of the Association for the past year, an Estimate of the probable income and expenditure of the Association for the coming year, and a Report of the general state and proceedings of the Association for the past year to be presented to the Annual Representative Meeting. Such Balance Sheet and Statement shall be audited by a professional Accountant and a copy of the same as audited and also a copy of such Estimate and Report shall be sent to the Secretary of every Branch and Division, and published in the Journal not less than two months before the said Meeting.

41. In addition to the above-mentioned Report, the Council shall have power to present to any Representative Meeting such further report or reports as it may deem advisable, and the same shall be published in the Journal if time permits.

XIII. By laws.

42. Save so far as determined by Statute or by the Regulations the constitution and mode of government of the Association, the rights and obligations of every Member and separate body of Members thereof, the appointment, duties, powers, and privileges of all Officers, and of all Councils, Committees, and governing and administrative bodies both of the Association and of every Division and Branch, shall be such as may from time to time be prescribed and determined by or in accordance with the By-laws, and the By-laws may from time to time be added to, amended, altered, or repealed by the Representative Body, subject to the provisions hereinbefore contained with respect to a resolution of that body for the purposes aforesaid.

43. The By-laws set forth in the Schedule hereto (including the Schedule to the said By-laws) are hereby approved by the Association, and shall remain in force until and save in so far as the same shall be added to, amended, altered, or repealed in pursuance of the foregoing powers.

XIV. Saving for Existing Constitution.

44. The existing Representatives of Divisions of the Association shall be deemed to be the Representatives duly elected under these Articles and the By-laws, and shall continue to hold office as such until their successors are appointed in pursuance of the Regulations and the By-laws and the existing Members of the Council of the Association shall be deemed to be the Members of and to form the Council constituted under these Articles and the By-laws and shall continue to act as such until a new Council is elected in pursuance of the Regulations and the By-laws and all existing Officers and Committees of the Association shall continue to hold their respective offices and discharge their respective duties and receive such emoluments, if any, as pertain to the offices which they fill until it shall be otherwise determined in pursuance of the Regulations and the By-laws and the existing Divisions and Branches of the Association, with their Officers, Councils, and Committees shall be deemed to be Divisions and Branches, Officers, Councils, and Committees constituted or appointed in pursuance of these Articles and the By-laws, and shall continue until it shall be otherwise determined as aforesaid.

Mr. Andrew Clark, in rising to move the adoption of the Articles, thanked the Chairman of Council on behalf of the Committee for the manner in which he had referred to its work, and the Meeting for the cordial manner in which the reference had been received. There were many members of the Organization Committee who had better earned that mark of appreciation than he, because they had come from north, south, east, and west to attend its meetings. The Organization Committee very much regretted that the Charter was not granted, but felt that the Association would not have been justified in going to the expense of a hearing before the Privy Council by counsel. The Committee had held several meetings in order to make the new Articles of Association and By-laws coincide with the Draft Charter as nearly as possible. He need not repeat what the Chairman had said at the beginning of the Meeting, but he desired to make it plain that the Articles of Association and By-laws were on the lines of the scheme adopted at the Sheffield Meeting. The concessions granted at Belfast had not been introduced into those new Regulations, for the Organization Committee believed that it was not the wish of the Association that they should be included. The Regulations submitted differed a little from the Draft Charter in the way in which the provisions were expressed, but the sense was the same. He moved that the Draft Articles be approved.

The Chairman said he believed Dr. Brown of Rochdale had an Amendment to propose, but in view of the legal advice he had received he could not allow the Amendment of the Rochdale Division to come before the Meeting. After the Articles and By-laws were adopted and a new company formed, it would be perfectly competent for any Representative of a Division to bring before the next Representative

Meeting any alteration that his Division commissioned him to propose.

Dr. E. W. GOODALL (London, City Division) said his Division had instructed him to move certain amendments, and he asked for a definite ruling on the point.

The CHAIRMAN said in view of the opinion given by the Solicitor he must rule Dr. Goodall's Amendments also out of order. They could be brought forward on due notice at next year's Annual Meeting.

In reply to Lieutenant-Colonel DECIMUS CURME (West Dorset), the CHAIRMAN said that if any one Article was not passed it would affect the Agenda of the Meeting on the following day, which could not be held.

Sir VICTOR HORSLEY moved that the Motion be now put.

Dr. F. TODD (Sunderland) seconded, and this was carried.

The CHAIRMAN then put the Motion, "That the Draft Articles of Association submitted by the Council be approved," and it was carried *nemine contradicente*.

BY-LAWS.

By-laws 1 to 19, inclusive.

These By-laws, dealing with conditions of membership and subscription, and with the local managements of Branches and Divisions, were adopted as drafted. (SUPPLEMENT, May 28th, pp. 294–295.)

By-law 20—Grants to Branches: Ordinary.

The Council reported that experience of the new system of distribution of Capitation Grants, under the By-laws approved by the Representative Meeting at Sheffield, had led it to the conclusion that the wording of Draft By-law 20 might with advantage be simplified. It contained a provision that the grants to Branches should be calculated on the basis of so much per head of those Members who had paid their full annual subscription for the year, or who, being elected after the 1st July, had paid half the current annual subscription. When the amounts per head of capitation grants to Branches were fixed by the By-laws the provision in question served an object which had disappeared now that these amounts were placed at the discretion of the Council, and under existing circumstances it introduced an unnecessary complication into the system of distribution of grants. The Council therefore proposed that the By-law be amended to read as follows:

Grants to Branches: Ordinary.

(1) The Treasurer of the Association shall annually pay or allow, out of the funds of the Association, to the Treasurer of each Branch, such sum not exceeding Four Shillings, as the Council shall order to be paid, in respect of each Member of that Branch whose name appears in the Annual List for the time being in force.

(2) A Grant made under this By-law to any Branch shall be applied at the discretion of that Branch in or towards defraying expenses properly incurred in using such of the means for the attainment of the objects of the Association as that Branch may for the time being be competent to use.

Mr. ANDREW CLARK said that there was a feeling among a considerable number of Members of the Association that the Council was trying to cut down the money which was handed over to the various Branches and Divisions. This feeling had no foundation. What was wanted was that the moneys of the Association which were not required for Association purposes should remain in the hands of the Treasurer and not in the hands of the Branches and Divisions, where they could be of no use to the Association.

Dr. W. L. MUIR (Glasgow) said he had been instructed by his Division to oppose the proposal, but in view of the decision from the Chair he considered that it was useless to do so.

The CHAIRMAN pointed out that it was perfectly within Dr. Muir's competence, and within the competence of the Meeting, to accept By-law 20 as at present drafted or the Amendment proposed by the Council. Members who preferred the old draft could vote for it, and if they preferred the Amendment proposed by the Council they could vote for that.

Dr. MACNIDDER (East York and North Lincoln) asked whether, in any new Articles of Association, it would be possible for Branches to subscribe to medical charities.

Mr. ANDREW CLARK stated that under the present Memorandum Branches could not subscribe to medical charities. If the Association got the extended Memorandum which was proposed there would be the same power as under the Draft Charter.

The By-law in its amended form was then put to the meeting and carried.

By-laws 21 to 40, inclusive.

These By-laws, dealing with the application of grants by Branches, with the annual reports of Divisions, with the conduct of proceedings at General Meetings, and with the constitution of the Representative Body, and the conduct of the business of Representative Meetings, were approved as drafted. (SUPPLEMENT, May 28th, pp. 296–297.)

By-law 41—Composition of Council.

The CHAIRMAN moved that By-law 41 be approved, and called upon Dr. Maclean to move the Amendment standing in the name of the Cardiff Division. Though the subject had already been discussed as an alteration to the present By-law 23, it was necessary to approve it again as regards the new By-law.

Dr. MACLEAN formally moved the Cardiff Amendment, which was carried, and on the amended By-law being put as a substantive Resolution, the Motion was carried *nemine contradicente*.

By-laws 42–55, inclusive.

These By-laws dealing further with the constitution and powers of the Council, and with the election of the President, were approved as drafted. (SUPPLEMENT, May 28th, pp. 298–299.)

By-law 56—Election of Chairman of Representative Meetings.

The Council reported that it had been brought to its notice that, unintentionally, a provision introduced into the Draft Charter, By-law 53, with the object of enabling the Constituency represented by the Chairman of Representative Meetings to appoint another Representative, and repeated in the By-law under consideration, had been so framed as to have the effect, when read in conjunction with By-law 31 of Draft Charter (By-law 35 of By-laws now submitted), of disqualifying the Chairman of Representative Meetings of any year for re-election to that position for the succeeding year. The Council therefore recommended that By-law 56 be adopted in the following form:

By-law 56—Officers: Election of Chairman of Representative Meetings.

The Chairman of Representative Meetings shall be elected annually at the Annual Representative Meeting, and shall enter upon the duties of his office at the close of the Meeting, and shall continue in office until the close of the next succeeding Annual Representative Meeting, and shall be re-eligible. He shall not while holding office as Chairman act personally as the Representative of any Constituency, but the Constituency which he represents at the time of his election to the said office shall be entitled to select (in manner provided by By-law 32) a Deputy to act on his behalf as Representative during such time as he holds the said office.

Mr. ANDREW CLARK, in moving the alternative form recommended by the Council, said that a careful study of the By-law as it stood showed that under it the Chairman would not be eligible for re-election, and it was thought that this was very undesirable. It had always been customary for the Chairman to hold office for two years at least.

Dr. WALTER SMITH (Islington) asked if the Chairman was to elect his own Deputy.

The CHAIRMAN replied that the constituency selected the Deputy.

Mr. ANDREW CLARK said the Meeting must elect one of their own Members to be the Chairman. If the Chairman was no longer a Representative, another should be elected in his place.

Dr. MACDONALD asked whether, if the Chairman was a Representative of a Division, that Division could elect a Deputy at the same time.

Mr. ANDREW CLARK replied in the affirmative.

Mr. H. W. ARMIT (Hampstead) asked how, if a Representative was elected as Chairman of the Meeting, and his Division was some distance from the place of meeting, it would be possible to get the Deputy in his stead for that particular meeting.

Mr. ANDREW CLARK said the Chairman did not take office till the end of the meeting, so that before another Representative Meeting took place there would be plenty of time to elect a Deputy.

Dr. SHADWELL said if the Chairman had a vote and a casting vote, that particular constituency would have three votes at the Meeting — namely, the Deputy's vote, the Chairman's vote, and the Chairman's casting vote.

Mr. ANDREW CLARK said the Chairman would not have a vote; his Deputy voted on all questions.

Dr. FOTHERGILL remarked that the Standing Order said he was to have a casting vote.

The CHAIRMAN referred to By-law 37, the latter part of which ran: "The Chairman shall, in the case of an equality of votes, have a casting vote, but shall not otherwise be entitled to vote."

Dr. A. H. WILLIAMS asked what was to happen if the constituency which had returned the elected Chairman the previous year did not return him the next year.

The CHAIRMAN said that the Chairman held office till the end of the Annual Meeting. If his Division wished to re-elect him as a Representative they could do it next October, nine months before the next Annual Meeting.

Dr. WILLIAMS asked what would happen if the Division did not elect him.

The CHAIRMAN said he would in that case cease to be Chairman.

The By-law in its amended form was then adopted.

By laws 57 to 73 and the Schedule.

These By-laws, which dealt further with the officers of the Association, with Committees and Standing Committees, with travelling expenses, with the use of the seal, and with the issue of notices, as also the schedule containing a list of the Standing Committees and provisions as to their constitution, duties, and powers, were approved *nemine contradicente*. (SUPPLEMENT, May 28th, pp. 293–299.)

APPROVAL OF ARTICLES AND BY LAWS.

Mr. ANDREW CLARK moved: "That the Draft Articles and By-laws be approved as a whole, in accordance with the foregoing Resolutions, and that the Chairman be authorized to submit the same to the Extraordinary General Meeting to be held on Wednesday, June 29th, 1910, and to the necessary confirmatory Extraordinary General Meeting, in order that they may be adopted, in accordance with the requirements of the Companies Acts, as the Regulations of the Association in substitution for all existing Regulations."

Mr. RUSSELL COOMBE wished to know the date on which the Articles and By-laws were finally approved by the Organization Committee, and the date on which they were approved by the Council.

Mr. ANDREW CLARK replied—by the Organization Committee on April 20th, and by the Council on April 27th.

Dr. JOHNSON SMYTH asked whether, if the Motion were accepted, there would be any opportunity to amend it in reference to the Referendum; would the door be closed for any discussion?

The CHAIRMAN replied that it would not in any way close the door in the future. The particular proposal to which allusion was made had been discussed in the past, and the Representative Meeting had decided in a certain way. It was quite possible to bring it up again at the next Annual Representative Meeting, when possibly the decision might be different. He added that it was necessary for this Motion to be carried by a two-thirds majority.

The Motion was then put to the Meeting, 94 voting for it, and 2 against, and it was declared carried by the requisite majority.

II.

EXTENSION OF POWERS OF THE ASSOCIATION.

The special report of the Council stated that the question had been carefully considered as to how the Association might best obtain, failing the grant of a Royal Charter, those extended powers which it considered necessary for the due fulfilment of its general object of the maintenance of the honour and interests of the medical profession, and which either were clearly not covered, or in some instances were not with certainty covered, by the present Memorandum of Association.

The full powers desired by the Association and referred to in Minute 216 of the Representative Meeting at Belfast as necessary to meet the wishes of the South African Branches, were set forth in Clause 2 of the Draft Charter as follows:

2.—(1) We do hereby declare the objects of the Association to be the promotion of the medical and allied sciences, the maintenance of the honour and interests of the medical profession and of the Members thereof collectively and individually, and the co operation of the Members of the Association for their mutual assistance and support in all matters affecting them in their professional capacity, including the encouragement, promotion or provision of means for protecting Members and their families against the exigencies of age, sickness, death or misfortune.

(2) Without prejudice to the generality of the foregoing objects and to the other powers conferred by these presents and so that the said objects and powers shall be in no wise restricted by the powers next hereinafter specified, We do hereby expressly declare that for the attainment of the aforesaid objects the Association may adopt any or all of the following means, that is to say:

(i) May hold meetings and conferences at any place in the United Kingdom or in any part of Our Dominions or elsewhere for the discussion of the affairs, interests, and duties of the medical profession and for promoting personal and friendly intercourse between Members of the Association and between members of the medical profession in general.

(ii) May provide, equip, manage, and carry on circulating and other libraries and rooms and buildings for social intercourse for the benefit of Members of the Association and of the medical profession in general.

(iii) May compile, revise, publish and distribute or sell lists and registers of medical practitioners and records of events, transactions and proceedings of interest to the members of the medical profession.

(iv) May publish periodically and sell the BRITISH MEDICAL JOURNAL or any other journal of a character specially adapted to the needs of the medical profession.

(v) May encourage research in the medical and allied sciences by grants from the funds of the Association, by the establishment of scholarships, prizes or rewards and in such other manner as the Association may determine upon.

(vi) May originate, support, promote, and oppose alterations in the law of the United Kingdom or any British Colony or Dependency affecting the Public Health or the Medical Profession and may promote the candidature of any

Member of the Association for Parliament or for any British Legislative Assembly.

(vii) May take or defend and assist persons in taking or defending any legal proceedings civil or criminal (including proceedings before the General Medical Council) in which in the opinion of the Association the honour or interests of the Medical Profession or of any Member of the Association in his professional capacity or any question of professional principle is or are involved, and may establish, contribute to, organize, and manage a fund or funds for the purposes aforesaid.

(viii) May provide facilities for sales or transfers of medical practices, for the arrangement of medical partnerships, and for the engagement of qualified assistants and temporary substitutes for medical practitioners being Members of the Association.

(ix) May establish, endow, contribute to, organize and manage provident or benevolent funds for the benefit or assistance of Members of the Association at home or abroad, or of the Medical Profession and their families or dependents, and of the staff employed by the Association.

(x) May undertake and carry out the execution of any trusts which the Association may deem to be directly or indirectly conducive to the interests of the Association, or of the Medical Profession or any branch thereof.

(xi) May take such other means (whether of the same nature as the means hereinbefore stated or not) as may seem to the Association incidental or conducive to the promotion or carrying out of the foregoing objects or any of them.

The Representative Meeting and Divisions were aware that full inquiry was made, before the Charter was applied for, as to the possibility of so amending the present Memorandum of Association as to cover the various additional objects which are desired. The opinions of high legal authorities reported to the Representative Meeting at Leicester showed that it was at least doubtful whether the High Court, whose consent is necessary for an alteration of the Memorandum of Association, would sanction such an enlargement of the objects of the existing Company as was desired. This procedure was therefore abandoned.

Of the various remaining courses open to the Association the Council was of opinion that the simplest and most satisfactory in every respect would be the formation of a new Company, incorporated under a Memorandum of Association covering all the objects which the Association desired to be in a position to undertake, and otherwise constituted in the same manner as the present Company. The objections above mentioned to the alteration of the Memorandum of an existing Company would not apply to the framing of the Memorandum of a new Company. The Articles and By-laws of the new Company might be identical with those which the Special Representative Meeting approved, and Extraordinary General Meetings adopted, as the result of the consideration of the proposals of the Council referred to in the earlier portion of this Report.

The Council had considered the possible alternatives of (1) continuing the existing Company and carrying out by means of Trusts or subsidiary Companies, under the control of the Association, those objects which were not covered by the present Memorandum of Association; (2) converting the Association into an unincorporated Society, and protecting the Funds and managing some of the affairs of the Association, such as the BRITISH MEDICAL JOURNAL, by a subsidiary Company; and (3) converting the Association into a registered Friendly Society. The Council was satisfied that each of these procedures would be open to greater objection than the formation of a new Company under the Companies Acts as proposed, and recommended:

That the Council be instructed to take all necessary steps with a view to the formation of a new Company, under the title of the British Medical Association, incorporated in the same manner as the existing Company, but with a Memorandum of Association providing for all the objects which are detailed in Clause 2 of the Draft Charter applied for by the Association.

Mr. ANDREW CLARK, in moving that the Recommendation of the Council be adopted, said that the Organization Committee had been giving this matter its attention for the last twelve months because it had felt that the instructions of the Representative Meeting rendered it necessary to prepare such a Recommendation to place before the Representative Meeting that year in the event of the Charter not being obtained. It would be seen that the Recommendation included everything that the Association desired to have.

A discussion then ensued, during the course of which the SOLICITOR answered various questions.

MEMORANDUM OF ASSOCIATION.

The following Motion, notice of which had been given by the Wandsworth Division after the issue of the Agenda paper, was then considered:

19 (A) That it be an instruction to the Council in framing the Memorandum of Association of the proposed new Company to modify the provisions contained in Clause 2 of the Draft Charter in the following respects:

(*a*) That if the use of the word "registers" in Clause 2 (2) (iii) is considered to interfere with the statutory functions of the General Medical Council, the word be omitted and some other word used, if necessary, to define the wishes of the Association.

(*b*) That if the use of the word "or" in line 2 of Subclause 2 (2) (iv) of the Draft Charter be held by the legal advisers of the Association to restrict the Association to the publication of one Journal only at one and the same time, such words be used as will permit the Association, if it so desire, to have at the same time more than one Journal or other periodical.

(*c*) That with respect to Clause 2 (2) (vi) of the Draft Charter such words be added as may be necessary to enable the Association, should it think fit, to support in whole or in part any Member of Parliament or of any British Legislative Assembly during his term of office.

(*d*) That such additions be made as will allow the Association, should it at any time be decided by the Members to be desirable, (i) to establish, endow, contribute to, organize and manage any Life, Fire, or other Insurance Fund for the benefit of members of the medical profession, their families and dependents; (ii) to establish, endow, contribute to, organize or manage any system of Insurance of members of the community against the cost of medical treatment for themselves, their families, and dependents.

Dr. FOTHERGILL moved Paragraph (*a*), which was carried *nemine contradicente*.

Dr. FOTHERGILL, in moving Paragraph (*b*), pointed out that it was possible that in the future the Association might wish to have some other periodical as well as the JOURNAL, and the use of the word "or" in Clause 2 (2) (iv) of the Draft Charter would limit the Association to having no more than one periodical.

Mr. ANDREW CLARK accepted the suggestion, observing that it was only a question of legal wording.

The paragraph was put and carried *nemine contradicente*.

Dr. FOTHERGILL, in moving Paragraph (*c*), urged the Association to help the Colonies to secure local option in the matter of Parliamentary representation. The clause in the Draft Charter as it stood would deprive the Colonies and the home Members alike of local option.

Mr. ANDREW CLARK said if "support" in the Draft

Charter meant "pay," that was a question which had never been raised, and must be settled.

Sir Victor Horsley pointed out that the Meeting was not asked to carry the principle as such. He understood that all the Wandsworth Division requested the Meeting to agree to was that the matter should be left open in case at any future time the Association wished to do what was suggested.

Dr. Andrew Walker (Edinburgh) was opposed to the Association supporting any Parliamentary candidate or interfering with political matters; it was impossible to separate representation in Parliament from the party system, and the introduction of party politics would naturally cause a good deal of heart-burning in the Association. The Association could not be represented apart from parties, either in the United Kingdom or in the Colonies.

Mr. Straton (Salisbury) thought it impossible for the Association's money to be spent upon a member of any political party without raising opposition within the Association itself. At the same time, his Division had asked him to urge that steps be taken to procure direct representation of the Association in the same way that the Universities were now represented.

Dr. Rose (Stratford) thought it rather late in the day to discuss the question. Previous Representative Meetings had already decided that the Association should have the power as defined in Clause 2 of the Draft Charter.

Dr. Muir (Glasgow) said his Division was strongly opposed to the inclusion of anything regarding Parliamentary matters at all in the Charter.

Dr. Todd (Sunderland) agreed with Dr. Rose that it was rather late to discuss the question. The matter had been discussed time after time, and he was surprised at the insular point of view from which the question seemed to be regarded that day. He trusted the members of the Representative Meeting would strongly support the Amendment brought forward and show that they were prepared to carry out their duties as loyal members of the Association and help on the good work intended to be done in the future.

Dr. Johnson Smyth said that if those who advocated this particular form of Parliamentary representation would restrict it to purely medical work, he would go with them, but under the present organization of Parliamentary affairs it was an impossibility for a man to enter Parliament and stick purely to medical questions. He hoped the Meeting would vote against the proposition, as he thought it would lead to a great deal of heart-burning. He should object to any part of the funds to which he subscribed going to support a man holding different political opinions to his own. In his opinion it was a very dangerous proposal.

Dr. Michie (Transvaal) wished to thank the Council for the speedy and prompt way in which it had taken up Resolution 216, which he had the honour to second at the Belfast Meeting. He was quite sure that South African Branches would be most grateful for the work which had been done. At the present moment the South African Branches were fighting tooth and nail to be represented in Parliament. He was quite aware that there was a rule which applied to Branches not in the United Kingdom, and under that rule the Council might allow such Branches to exercise powers which were not exercised at home. He had not the slightest doubt that the Council would be asked to grant that power to the South African Branches. The Executive Council of the Transvaal some time ago proposed to force the medical profession to do certain things which every medical man objected to. The profession wanted to be represented in the Government of the country, and, whatever resolution was passed at that Meeting, as far as South Africa was concerned that would be done. They wanted every medical man in South Africa to belong to the British Medical Association, but if the British Medical Association said No, he could assure them it would be done in some other way.

The Chairman wished to correct a possible misapprehension with regard to some remarks made by the last speaker. A Branch, even in the Colonies, would not be able to do certain things that it might perhaps wish to do in the matter of the promotion of a candidature in Parliament unless that power were included in the Memorandum of Association. It was proposed that the Memorandum of Association should contain a permissive or enabling clause. It it were inserted the Council could allow the Colonial Branches to do a certain thing which the Home Branches might not be enabled to do. Dr. Michie said that the Colonial Branch could do certain things which the Home Branches were not allowed to do; but all that they were allowed to do in the revised Articles and By-laws would be included in the Memorandum of Association defining the general powers obtained by the Association. The Colonial Branches could not do anything which the Association as a whole was not enabled to do.

Dr. J. S. Darling (Portadown) said no doubt a number of Members would vote against the proposal if it were to be carried out in England, but it seemed desirable that the power should be obtained.

Dr. Lauriston Shaw suggested that the Wandsworth Division should accept the Amendment, "Member or Members." In an association like the British Medical Association it was possible to get over the difficulty of party representation by supporting two Members. That had been done in other organizations similar to theirs.

The Chairman said the Solicitor's opinion was that the words "any Member" included the plural "Members."

Dr. Johnson Smyth asked if the Transvaal assumed that the payment of the Member would be made from its accumulated funds or from the general funds of the Association.

The Chairman replied that the answer would be found in By-law 17, which provided that Branches not in the United Kingdom could apply their funds for the benefit of the profession in any manner authorized by the Memorandum of Association, but must not impose by so doing any liability upon or pledge the credit of the Association in connexion with any act, matter, or thing done.

Dr. Macdonald asked whether, if the Meeting refused to accept the Amendment of the Wandsworth Division, it would bar such a thing being done by any Branch either at home or in the dominions beyond the seas.

The Solicitor said that unless an enabling power was obtained in the Memorandum of Association no Branch, not even a Colonial one, could do such a thing.

Dr. Macdonald said that Dr. Fothergill seemed to emphasize the fact that it was the Colonial Branches only that he was considering. Did the Wandsworth Amendment propose to limit the power to the Colonial Branches? ("No.") Then there was no necessity for emphasizing the Colonial question. He could quite understand that it would be possible to have Parliamentary representation in a colony in which party questions might not be burning, but he did not think that it was possible to have in Parliament at home a Representative of the British Medical Association who would not be influenced by party considerations. It had been proposed that there should be two Members, one on each side of the House, but at the present time there were at least five parties in the House of Commons. He thought that the Association could apply its money to much better purposes.

Sir Victor Horsley asked whether it was not the fact that the Teachers' Union had carried such a scheme through for many years with great success by choosing a member from each side of the House, and supporting him up to the point of one member entering the Government.

Dr. Buist asked whether, if in the future the opinion of the Association in the matter should change, it would be necessary to apply for a new Memorandum of Association and a new Company.

The Chairman said he was advised that if it was not put in now a new Memorandum of Association or

an altered Memorandum of Association would have to be applied for. That meant applying to the High Court under the Companies Acts. He took it that if it was put into the Memorandum of Association it would rest with the Representative Meeting to decide where the extended power would apply.

Dr. WALTER SMITH (St. Pancras and Islington) moved that the question be now put, and this was agreed to.

The Motion was put to the Meeting and carried, 67 voting for, and 33 against.

Dr. FOTHERGILL moved Paragraph (*d*).

Dr. HASLIP (Westminster) asked whether the Meeting ought to discuss a question which had never been before the Divisions. The matter was undoubtedly one which should go before the Divisions before the Representative Meeting stamped the proposal even slightly with its approval.

The CHAIRMAN said that the Meeting was not asked to decide any question of policy, but to give an instruction to the Council concerning one definite matter in the proposed Memorandum of Association. When that Memorandum of Association was drafted it would come before the Representative Meeting to be approved or disapproved as the case might be.

Dr. FOTHERGILL, with regard to the first half of (*d*), said that it was well known that by a side wind what was dealt with in it had been going on in the Association, and it would put the matter on a much better footing if it was incorporated in the Memorandum. With regard to the second point, he would strongly urge making the carrying out of the proposal permissive in the Memorandum.

Dr. MACDONALD understood the Chairman to say that the Memorandum of Association would be discussed by a Representative Meeting before any further action was taken.

The CHAIRMAN said the right way to proceed, if the Association included these matters in their new Memorandum of Association, would be for the Draft Memorandum to be finally fixed by the Association before entering into negotiations with the Board of Trade. The extended Memorandum would have to go down from the Council to the Divisions to be discussed by the Association generally, and it would, he presumed, have to come up again at a Representative Meeting before the negotiations with the Board of Trade were opened.

Mr. ARMIT (Hampstead) understood the Chairman's ruling was that the instruction to the Council would be to draft a Memorandum and submit it to the Divisions of the Association to consider and approve. That was not taking all the necessary steps to form a new Company. He thought, reading the Resolution, that that would mean that the Council was to do it off its own bat.

The CHAIRMAN thought the issue of the new Memorandum of Association to the Divisions and Branches was the first of the necessary steps for the formation of the new Company.

Dr. DOUGLAS (Maidstone, Rochester, and Chatham) thought the Memorandum of Association ought to have been already prepared or drafted, because otherwise it would apparently take a further year to carry out the instructions given at Belfast.

The CHAIRMAN pointed out that at the moment no instruction had been given to form a new Company. What was under discussion was the advisability of winding up the present Company, and forming a new Company with an extended Memorandum of Association. It would have been useless to draft a new Memorandum of Association before a decision was arrived at on that point; and, in answer to Dr. BRUCE GOFF, he added that there would be no interval between the life of the old Company and the birth of the new.

Dr. HASLIP (Westminster) continuing the discussion on Paragraph (*d*), said that he believed in extending the objects of the Association as much as possible, but thought the question of insurance should be very carefully dealt with. No better insurance could be given than that effected with old established offices, and if insurance was to be dealt with, a new and independent Company should be formed for the purpose.

Dr. J. H. TAYLOR (Manchester, Salford) suggested that the paragraph be divided into two parts, to which the CHAIRMAN assented.

The first part of the paragraph, (*d*) (i), was then put to the Meeting and lost.

The second part, (*d*) (ii), was then put and carried by a very large majority.

The CHAIRMAN said, having considered Dr. Fothergill's Amendment sectionally, he would ask the Members to pass it as a whole with the elimination of the first part of (*d*).

Dr. PERCY ROSE asked, if the Amendment were not passed, would it be possible to get on with the new Company twelve months earlier?

The CHAIRMAN said that question was a very important one. Dr. Fothergill's Amendment suggested that certain new principles should be put into the Memorandum of Association for consideration by the Divisions, and then by a Representative Meeting. Under the Motion as drafted he thought there was no doubt that the Council could go ahead and get a new Memorandum of Association drafted incorporating Clause 2 of the Draft Charter in it, and could apply to the Board of Trade without consulting the Divisions. If Dr. Fothergill's Amendment were carried, the matter would have to go to the Divisions again and be submitted to a Representative Meeting, Special or Annual, before application was made to the Board of Trade. He did not wish in any way to burke discussion, because it was a very important matter.

Dr. BUIST asked if any estimate could be made of the relative delay that would be involved in adjusting the Memorandum in accordance with the Resolution.

The CHAIRMAN said he would rule that (*d*) (ii), which the Meeting had approved as part of the Amendment, would not be included in Section ix of Clause 2 of the Draft Charter.

Dr. FOTHERGILL said that this was an important crisis. It had been asked what delay this would cause, but if a delay of six months or even a year were caused by waiting to incorporate the second part of (*d*), he thought it was worth while. He was speaking in the interests of the general practitioner, and he urged them to stand out for time if it were necessary to incorporate his proposal in the Memorandum.

Dr. BUIST said when he asked the question he hoped that the delay would be so short that those who were anxious to proceed forthwith would be reconciled to it. He strongly urged them to support the paragraph, even if it did involve a certain amount of delay.

The SOLICITOR, in reply to Dr. JOHNSON SMYTH, said Section 12 did not contain within its four corners permission to carry out the proposal.

Dr. RAYNER (the Treasurer) supported Dr. Fothergill's propositions, which he thought would lead to a saving of time rather than otherwise. The work defined in (*d*) (ii) would certainly have to be done by the Association, and it was very much better that everything suggested that day should go down for the consideration of the Divisions and come up again at a subsequent meeting to be rejected or confirmed.

The CHAIRMAN, in putting the Motion of the Wandsworth Division as a whole, with the omission of (*d*) (i), said that the Meeting must remember that it must be perfectly fair between that Meeting and the Association as a whole. It must not attempt to put in anything to tie the Association in any way to any new regulation which had not been considered by the Divisions. It must not in any sort of way try and steal a march on the Association. He only suggested that for their consideration.

The Motion of the Wandsworth Division as amended was then carried by a large majority, only three dissenting.

The CHAIRMAN announced that an Amendment had been handed in by Mr. Verrall to the Motion of the Council, as amended by Dr. Fothergill's Amendment, as follows: That the last two lines of the Motion by the Council be amended to read as follows: "Powers and objects which are detailed in the Draft Charter applied for by the Association."

Dr. MACDONALD seconded the Amendment. He

thought to retain the words "Clause 2 of" would hamper them very much.

The Amendment was put and carried *nemine contradicente*.

The CHAIRMAN said that the following Amendment, handed in by the Southampton Division, could not be accepted, for the reasons already stated:

That at the end of the Motion the following words be added:

And that it be an instruction to the Council in preparing the Articles and By-laws of the proposed new company to provide that three-fifths of the Members of Council have power to demand a Referendum, which shall be by postal vote.

Dr. FOTHERGILL submitted that this Amendment was an instruction to the Council to so draft By-laws at a future date.

The CHAIRMAN said the proposal by the Southampton Division conflicted with the previous decisions of the Representative Meeting with regard to Articles and By-laws. It proposed to alter the mode of voting on the Council, and to introduce a Referendum to be obtained by personal votes. Those two matters had up to date been decided by the Association, and he could not accept even an instruction to the Council to alter the Articles and By-laws of the new Company to that effect.

The CHAIRMAN said that he was advised by the Solicitor that under the notice for the Special General Meeting on the following day Amendments to the Regulations could not be admitted, but it would be perfectly competent for Members to introduce Amendments a few months later, when the new Company was formed, or in the course of the present Company's life, upon giving proper notice.

The Recommendation of the Council with the view to the formation of a new Company, with the addition of the Wandsworth Motion as amended, was then carried *nemine contradicente*.

The Meeting then adjourned.

CONFIRMATION OF MINUTES.

The Special Representative Meeting assembled again on Wednesday morning, June 29th, when Mr. H. A. BALLANCE took the chair, and the Minutes of the proceedings of the previous day were confirmed.

EXTRAORDINARY GENERAL MEETING.

AN Extraordinary General Meeting of the Association was held at the Connaught Rooms, Freemasons' Hall, on Wednesday, June 29th, 1910, at 11 a.m., for the purpose of considering, and, if thought fit, passing the following Resolution:

That the Regulations contained in the printed document submitted to this Meeting, and for the purpose of identification initialled by the Chairman thereof, be and the same are hereby adopted as the Regulations of the Association in substitution for all the existing Regulations of the Association.

Mr. EDMUND OWEN, Chairman of Council, was in the chair.

The CHAIRMAN said that all present were aware of the reason of the Meeting being called. The Representative Meeting some years ago conveyed to the Council its opinion that it was desirable that the sphere of work and benevolence of the Association should be enlarged, and it was suggested that the best way to carry out the proposal would be to apply for a Royal Charter of incorporation. The Council had devoted much time and care and thought to the preparation of the application for a Charter. The Privy Council had not acceded to the application. The Representative Meeting had instructed the Council that, failing the Association obtaining a Charter, the Council was to do the best that could be done in some other way to increase the sphere of work and benevolence of the Association, and for the interests of the Profession. The Council had, therefore, set to work to prepare new Articles and By-laws for a new Company, in accordance with the clauses of the Draft Charter, the grant of which had been refused. Those Articles and By-laws had been before the Council, the Representative Meeting, and the Divisions time after time. They were before the Meeting to-day for its approval or refusal. No suggestions of Amendment could be received, although those present could say all they liked against the Resolution, and might do their best to cause the Meeting to refuse to pass it. That, he thought, was not an un-English, but an English way of dealing with the matter.

Mr. BALLANCE said that it became his duty as Chairman of Representative Meetings to move the Resolution which had been read. He wished it to be distinctly understood that the only matter before the Meeting was the question of the substitution of the new Articles and By-laws for the existing Articles and By-laws of the present Company. At the Representative Meeting of the previous day another subject of great importance to the Association was also considered, namely, the proposed formation of a new Company. This matter of a new Company was not before the Meeting. The only matter which it had to consider was the adoption or rejection of the proposed new Articles and By-laws. For some years past the Association had been busy drafting a Charter, because it had been advised that it would be well for the Association to apply for the grant of a Royal Charter. The matter was first considered at the central office and then the draft form was sent down to the Divisions. Then it came up to the Representative Meeting and then was sent back to the head office again and then back to the Divisions again, and the final form had been adopted two years ago. For various reasons, upon which he need not enter, the Charter had not been granted. It appeared that the work in which the Association had been occupied for the last few years might be wasted, but at the Representative Meeting at Belfast it was recognized that the work, extremely valuable as it was from the Association's point of view, should, if possible, be utilized, and it was decided that in the event of the Association not being granted a Charter the present Articles and By-laws should be altered to bring them into accordance with the Ordinances and By-laws of the Draft Charter. During the last year the Organization Committee of the Association, in conference with the Solicitor and with Counsel, had drafted new Articles and By-laws in the form in which they occurred in the Draft Charter. They had been submitted in their new form to the Council of the Association and approved, and on the previous day they were submitted to a Special Representative Meeting, and at that Meeting were taken seriatim and approved. The final Resolution, which was operative and which included the whole of the Draft Articles and By-laws as they came from the Council, with one addition, was approved by the overwhelming majority of 94 to 2. In the new Articles and By-laws certain matters with regard to the Association generally—at the head office, in the Branches, and in the Divisions in the United Kingdom—had been carried through. The constitution of the Branch Councils, the powers of the Branch Councils, the constitution of the Representative Meeting, and the method of electing Representatives of Divisions, were matters that had all undergone certain alterations which it was found would be conducive to the work of the Association. In the new Articles and By-laws special powers had been given to the Colonial Branches; year after year the Association had been told by the Colonial Representatives that extended powers were desired by those Branches. The subscription of 25s. was not sufficient for the Colonial Branches to do the work they had to do. What could be bought for a penny in England cost 3d. in South Africa, or in Australia, as the case might be. Under the old Articles and By-laws, Colonial Branches were not enabled to levy any further subscription on their Members; and it had been said by the Colonial Branches that they must have the power of levying an extra subscription. The Association wanted to keep the Colonial Branches as a part of the parent Association, and in order to do so extended powers were necessary. In the Articles and By-laws submitted that day extended powers were given to the Colonial Branches for

managing their own affairs. The Colonial Branches were allowed to levy an extra subscription; they were allowed to determine the boundaries of their own Divisions and Branches; they were allowed, if they thought fit, to adopt proxy voting, because the areas over which the Branches ranged were enormous as compared with the Branches in the Old Country. Members were separated for hundreds of miles, and Meetings were, or might be, impossible. In conclusion, he proposed the Resolution which had been read out by the Chairman of Council, and earnestly asked the Meeting to pass it because it was confirmatory, and really the logical issue of what had been done during the last three or four years by the Association at great labour.

Mr. ANDREW CLARK (Chairman of the Organization Committee), seconding the Resolution, said the Committee knew that the Articles and By-laws for which approval was asked were not exactly put together so as to meet with the approval of everybody. The Organization Committee had had numerous letters and suggestions with regard to the matter; but the amount of time spent by the members of the Organization Committee, and the distances they had come, would show that the best way of getting for the Association what the Association required had been well considered. Though the Association had not been granted a Royal Charter, it was felt that it would be a pity to waste all the time expended on preparing the Ordinances and By-laws for the Draft Charter, and therefore, during the last two or three months, since it had been known the Charter would not be obtained, the Resolutions of the Representative Meeting and the discussions that had taken place during the last three or four years had been fully considered by the Organization Committee, and the proposed Articles and By-laws were the outcome of that. The majority of those who had gone into the matter felt sure that the Resolution, which he hoped would be carried, would be greatly to the advantage of the Association as being the next best thing to a Royal Charter, to get what was desired. It would be also an advantage to Members in the Colonies, as it would enable them to carry on the work of the Association in the way they thought best in the particular place in which they were. Though no Amendments were permissible he would be glad to answer any question on any points which Members did not thoroughly understand.

Mr. PYE-SMITH (Sheffield) as an individual Member was not in favour of the Resolution, and he knew there was a considerable minority of that opinion. It had been said that these Resolutions were the next best thing to the Charter, but the document submitted to the Meeting did not include the Memorandum of the Association, and without an alteration of it the Association would not get what was wished. Even if it were possible to do so, he would not have proposed an Amendment, as he felt it would be useless, but he did not agree that it was the proper English way to call a meeting of a society and say at the commencement no Amendments would be permitted. If notice of amendment was necessary, that ought to have been stated in the notice calling the Meeting. However, this was only part of the general policy in the way things had been managed and were being managed. (No, no.) It seemed unfair, after the long discussion that had taken place during the past few years on certain important points, especially in regard to the Referendum, that, when the Charter was suddenly dropped, all the discussion and the wishes of the minority should be ignored, and the status of two years ago, before negotiations took place between the majority and minority, reverted to. To adopt this course appeared to him unfair, and it would be unwise and impolitic to risk a large secession from the membership of the Association, which might have been avoided by a fair consideration of the suggestion for a postal Referendum. All hope of meeting the views of the minority was now at an end, and although he should not propose any Amendment, he certainly would vote against the Resolution, and believed he would not be in a minority of one.

The CHAIRMAN called attention to the notice convening the Meeting, and said it was impossible to accept Amendments on these occasions, as otherwise no finality would be obtainable. He assured them that there was no thought whatever of snatching a vote or ignoring the righteous minority. They had all had plenty of opportunities of discussing the matter over and over again at Divisional meetings and everywhere else. It was the custom when a Company such as the British Medical Association, registered under the Companies Acts, was asking for power to alter its Constitution, to pass or refuse such a Resolution as was presented.

Dr. MACDONALD said he was exceedingly sorry to hear a gentleman in the position of Mr. Pye-Smith make such a statement as that the affairs of the Association had not been conducted fairly. He thought it was a very poor compliment to Members who had been spending an enormous amount of time and trouble in doing the work of the Association that men who had not taken so much trouble, some of whom would not even take the trouble to understand the work of the Association, should criticize it in that fashion.

Mr. PYE-SMITH, as a personal explanation, said that he certainly did not intend to say that the affairs of the Association had been unfairly managed, and if he had said that he would withdraw it. What he intended to say was that it was not fair that the negotiations with the minority should be ignored.

Dr. MACDONALD said that the question with regard to the postal Referendum was one which seemed to have created a great deal of feeling. He was speaking because he was in the Chair of the Representative Meeting at Belfast where the matter was dealt with. The Representative Meeting had again and again discussed the matter, and the conclusion was come to that the postal Referendum was not advisable. The compromise was come to upon the footing that if those who were in favour of the Charter would give way upon the point as to the Referendum, the opposition would be allowed to drop. He would ask that the Minute of the Representative Meeting upon the point should be read.

The MEDICAL SECRETARY then read the following:

Proposed by Sir Victor Horsley, seconded by Dr. Lauriston Shaw (Council):

> That the Organization Committee be accorded full power to act on behalf of, and in the name of, the Representative Meeting of the British Medical Association in respect of the consideration by the Privy Council of the following points concerning the Charter now before the Council:
>
> (1) Register of Members of the Profession.
>
> (2) Adjudication between members of the Medical Profession who are not also members of the British Medical Association.
>
> (3) Right of all members of the Medical Profession, whether members of the Association or not, to approach or appeal to the various Ethical bodies and authorities of the Association.
>
> (4) Establishment of a Benevolent Fund in competition with existing Funds, provident or otherwise.
>
> (5) Referendum by postal vote.

Dr. MACDONALD said that the Representative Meeting never passed a Resolution against the ordinary Referendum, and never accepted the postal Referendum. The position was that they were willing to give the Committee power to negotiate before the Privy Council upon the point. The Representative Meeting had never gone back from that position. He wanted to urge the Meeting to give the Association power to have the Articles and By-laws altered as suggested. He did so upon the ground suggested by the Chairman of the Representative Meeting of the assistance that it would give to our dominions beyond the seas. He did it also upon the ground that it would help those at home. They hoped that by the alteration they would get more freedom of action, and make the Association much more powerful than it was at the present time for the advantage of its Members. The Association at the present time was

doing very much more for the profession than ever it had done before.

Sir Victor Horsley said that Mr. Pye-Smith was like a great many Members of the Association—he did not read the documents as published in the Supplements of the Journal. A great many did not. He was not alone. Therefore he (the speaker) was not in the least surprised to hear him say that he was going to hold up his hand against the Resolution, and that he would not be alone in doing it. He wanted to ask Mr. Pye-Smith not to hold up his hand against the Resolution. He wanted the Resolution, if possible, to be carried *nemine contradicente*. When a question had been before a great Association like theirs, and had been discussed in every possible way, a man had no right to say that it had not been fairly discussed and that the minority had not had opportunities of being heard. He would go further, and say that those who had entered into opposition to the movement of progress and reform after the great meeting at Sheffield had not behaved in a right way towards the Association. Those Members of the Association who took up the attitude of opposition did not do it, he believed, of malice prepense. He believed they did it, as most men erred in this world, from sheer ignorance. If they carried the Resolution *nemine contradicente* they would be not merely doing a good turn to themselves as practitioners in the Medical Profession but help to establish the British Medical Association on a truly British basis—an Imperial basis.

Dr. G. B. Michie (Transvaal) said that by passing the Resolution the Meeting would be helping the Colonial Branches much more than was sometimes thought. He urged the adoption of the Resolution.

Dr. Buist (Dundee) wished to enforce the appeal of Sir Victor Horsley. He had found, in discussing matters with individual Members who had taken action similar to that of Mr. Pye-Smith, that a very large part of the opposition was due to misapprehension. He wished to enforce the idea that the minority would not be one iota worse off under the new Articles and By-laws than they were at present. The Articles and By-laws were a restatement of the mechanism, but did not alter the position or the powers of one party or another in the Association in the least.

Dr. A. Walker (Edinburgh, South and North-East) felt that he was in duty bound, not merely to offer his silent vote against the adoption of the Motion, but to say a few words in order to justify the position which those whom he represented in Edinburgh had taken up. Their opposition upon the points to which they took exception was not merely factious opposition, nor was it merely obstructive or destructive in its object. It had been distinctly constructive. They wished to have the Charter, and they also wished to have such Rules and By-laws as would make the Association more useful. In fact, they thoroughly approved of nine-tenths of the policy pursued by those who had had the labour of drafting the Articles and By-laws, and they felt the utmost gratitude to them. But they desired to improve the basis of the Associaciation as a whole, and to make it wider, so that each individual Member might have a voice in the affairs of the Association. Another thing was that they did not wish the Associaticu to be governed by a single chamber; they wished it to be governed by a chamber such as the Representative Body constituted, and an advising chamber such as the Central Council ought to be. The whole policy of the Draft Charter had been to confine the voting to the Divisions, and to exclude the individual unless he attended the Division Meetings. It was almost as difficult in some parts of Scotland for a Member to attend a Division Meeting as it was in South Africa. Secondly, under the Charter the Council was reduced from 73 to 53, and that his Division approved of from motives of economy. But the Representative Body was allowed direct representation to the extent of twelve members, and indirect representation to the extent of several more, and by the new Amendment another four were added, making, with *ex officio* members, twenty. That really gave the preponderance to the Representative Body. It must be remembered that the Association represented only 50 per cent. of the members of the medical profession. In Edinburgh efforts had been made to increase the number of Members, but the efforts had been unavailing and members had been lost. Their opinions had been ignored, and in some cases treated with contumely. He would not have spoken but for the minatory language of Sir Victor Horsley. They had been described as acting from ignorance. He thought that expression ought to be withdrawn. He appealed to those present not to pass the Resolution *in nemine contradicente*, but to express in a manly way their own convictions.

Mr. Verrall said that it was obvious, although it had been distinctly announced that Amendments were not to be permitted, every word of the last speaker was a speech to an Amendment. It was just as if he had moved that postal votes should be permissible, and had then made his speech thereon. Was it necessary once more to say that the position of the Association for getting such things as a postal vote or obtaining a Referendum by postal means was exactly the same whether the Resolution was passed or not? It seemed impossible to get that simple fact into the brains of some Members of the Association. It seemed an extraordinary thing that because Edinburgh and parts of the Association which wished to get the alterations with regard to the Referendum had not been able to get them they were therefore prepared to refuse South Africa something which South Africa wanted and meant to get.

Mr. Ballance, in reply to Mr. Pye-Smith, said that it was not competent for the Meeting to deal with the Memorandum of Association, because there was no mandate to deal with it. The Council had prepared such alterations in the Articles and By-laws as were necessary to bring the Regulations of the Association into accordance with those which had been approved in the Draft Charter. That was all that the Council had been instructed to do. But if a new Company were obtained to replace the present Company, he might state that if any new powers were incorporated in the Memorandum, he was sure that the Draft Memorandum would go down to the Divisions first for discussion before it was finally approved. There would be no attempt to snatch a vote or involve the Association in any matter which had not been thoroughly considered. Mr. Verrall had dealt with the other matters on which he might have replied so thoroughly that he need only say that it was only with the present Company that the Meeting that day was concerned. If a new Company were formed in the future, or if the present Company were continued, it would be easy to alter any Article or any By-law; any kind of Referendum could be obtained, and any proxy votes, or postal votes, if adequate notice were given and the Representative Meeting were persuaded that it was to the advantage of the Association to adopt it.

The vote was then taken, when the Resolution was declared carried by 200 to 5. (Loud applause.)

Votes of Thanks.

Dr. Milner Moore thought the Meeting could not separate without recording its thanks to the Chairman, who had conducted the proceedings, as he always did, with the greatest ability, good temper, and *bonhomie*. He therefore moved a hearty vote of thanks to him for his conduct in the chair.

The Treasurer seconded, and it was carried with acclamation.

Mr. Edmund Owen acknowledged the compliment.

Dr. W. Douglas (Maidstone) proposed that the best thanks of the Association, as represented by this Meeting, be accorded to the Chairman and members of the Organization Committee for the great amount of work they had bestowed on this subject.

The motion was carried by acclamation.

Mr. Andrew Clark, on behalf of the Committee, expressed his thanks, and the proceedings terminated.

British Medical Association.

SEVENTY-EIGHTH ANNUAL MEETING, LONDON, JULY 22nd–29th, 1910.

GENERAL ARRANGEMENTS.

THE Central Offices, Reception Room, and Sectional Meeting Rooms will be established in the University of London, the Imperial Institute, and the Imperial College of Science at South Kensington.

NOTIFICATION OF ATTENDANCE: RAILWAY TICKETS.

All members of the British Medical Association who purpose to attend the Annual Meeting in London at the end of this month, including those resident in London, are requested at once to fill up, if they have not already done so, the form of "notification of attendance" which was published in the SUPPLEMENT of June 18th, p. 405, and again in the advertisement pages of the JOURNAL of June 25th, p. 9. If the form is filled up and returned to the address shown, a voucher or vouchers will be issued from the Central Office, 429, Strand, giving the right to the special terms which have been arranged with the railway companies. The companies will issue return tickets at a single fare and a quarter, available from July 21st to August 2nd, both dates inclusive.

LIST OF HOTELS AND LODGINGS.

A list of hotels and lodgings, with a scale of charges, was published in the SUPPLEMENT of June 18th, p. 406. Members are requested to communicate direct with the persons whose names are given in the list, or with the managers of the hotels mentioned.

GUIDE BOOK.

A short guide book has been compiled for distribution to members attending the Annual Meeting. It gives a brief sketch of the history of the medical institutions of London, and a general survey of the developments in scientific and practical teaching in the various schools, and of the enlargements and other changes of the hospitals and other medical institutions of the metropolis during the fifteen years that have elapsed since the British Medical Association held its Annual Meeting in London in 1895. The booklet also contains all the information necessary to enable members to find their way to the museums and other places likely to be of special interest to them. For this purpose the means of locomotion—by omnibus, tramway car, electric and tube railways—are described; and further help to the visitor in threading the labyrinth of London is given by diagrams and a coloured map.

RECEPTION ROOM.

The Reception Room will be established in the University of London and Imperial Institute, South Kensington. The University may be conveniently reached by electric tube or Underground Railways (South Kensington Station), or by omnibuses traversing Piccadilly. Copies of the *Daily Journal* will be obtainable, as well as full particulars of entertainments and excursions. Guide books, timetables, and other works of reference will be provided, and there will be a postal office for the receipt and dispatch of letters and telegrams. There will be writing and reading rooms, and a typewriting office; a typewriting office will also be established in the Imperial College of Science. Accommodation will be arranged for members desiring to smoke.

LUNCHEONS.

Luncheons will be provided daily in the Quadrangle of the Imperial Institute. Messrs. Stewart and Co., the caterers at Brooklands, have been appointed, and luncheons will be served at 2s. a head.

CLUB ACCOMMODATION.

The Club Accommodation Subcommittee of the Reception Committee beg to announce that a limited amount of accommodation has been offered to members of the Association and foreign visitors to the forthcoming Annual Meeting.

Those desirous of availing themselves of this club accommodation are requested to send in their names on the accompanying form, addressed to the Chairman of the Subcommittee, Dr. Maurice Craig, 429, Strand, W.C., on or before July 11th.

Application Form for Club Accommodation.

Name and titles .....

Address .....

.....

*Clubs of which applicant is a member..... (social and otherwise)

* This is for introduction purposes to the London club

POST, TELEGRAPH, AND TELEPHONES.

Letters and Telegrams.

Full postal facilities for the receipt and dispatch of letters and telegrams will be provided in the Post-office which will be established in the Reception Room, University of London, South Kensington, S.W.

Telephones.

Two telephones will be available for the use of members in the Reception Room, and one in the Imperial College of Science.

SPECIAL SERVICE IN WESTMINSTER ABBEY.

The service in Westminster Abbey will be held at 3 p.m., on Wednesday, July 27th. The sermon will be preached by the Very Rev. the Dean of Salisbury. Special tickets of admission will be necessary, and as the accommodation is limited, early application for tickets to be reserved should be made to Dr. W. Griffith, 1, Chester Gate, N.W. Separate tickets admitting to the Abbey by different entrances will be issued to—

1. Men intending to wear academic costume (Form A).
2. Women intending to wear academic costume (Form B).
3. Men or women *not* intending to wear academic costume (Form C).

Robing rooms will be provided within the precincts of the Abbey. Members should therefore specify in their application which form of ticket they desire.

The final allotment of tickets will be made on Tuesday morning, July 26th, and tickets not previously forwarded by post will be issued in the Reception Room, University of London, South Kensington, on personal application.

This form of application may be cut out and used.

I wish to attend the service in Westminster Abbey, and shall be glad to have reserved for me, if available, a ticket of

Form {A* / B* / C*}

If my ticket is forwarded by post please send it to the following address:

Name.....

Address .....

* For explanation of letters see above. Please strike out the two letters not required.

ENTERTAINMENTS AND EXCURSIONS.

SPECIAL NOTICE.

Members are earnestly requested not to make application for tickets for functions unless they are confident of being able to attend, and to return IMMEDIATELY *any ticket allotted to them which they find themselves unable to use.*

Members who have already notified their intention to attend the Annual Meeting will assist the Executive by filling up the following forms indicating which of the functions and excursions, of which particulars are given further on, they prefer to take part in. The forms, when filled up, should be addressed to Dr. Lauriston Shaw, 429, Strand. In the allotment of tickets, the numbers of which are limited, preference will be given to those who make early application. The allotted tickets will be retained by the Committee, and given out on personal application in the Reception Room, University of London, South Kensington, during the meeting.

I.

I should be glad to have an opportunity of attending the following functions, and have numbered them in order of my preference:

Order of Preference.	—
.....	The President's Address.
.....	The Corporation's Reception.
.....	The Metropolitan Counties Branch Reception.
.....	The Garden Party at Ranelagh.
.....	The Garden Party at Bethlem Hospital.

Applications for tickets for the Special Service in Westminster Abbey, the Annual Dinner, and for the various excursions should be made on the separate forms provided.

Name.....

Address.....

II.

I should be glad to have an opportunity of joining one of the following excursions, and have numbered them in order of my preference:

Order of Preference.	—
.....	Sir William Treloar's Cripples' Home.
.....	Bath.
.....	St. Albans.
.....	Eastbourne.
.....	Brighton and Hove.
.....	Windsor.

Name.....

Address.....

ENTERTAINMENTS IN LONDON.

Receptions and Dinners.

A reception will be given at the Guildhall by the Court of Common Council at 8.30 p.m. on Wednesday, July 27th.

The Apothecaries Society has invited fifty members to dinner on the evening of Wednesday, July 27th.

The annual dinner of the Association will take place on Thursday, July 28th, at Freemasons' Hall, Great Queen Street. Tickets, price 10s. 6d., exclusive of wine, can be obtained from the Honorary Secretary of the Dinner Committee, 429, Strand, London.

On the same evening a ladies' dinner will be held at the Hotel Cecil, to be followed by a reception at the Lyceum Club. It is proposed by the Ladies Entertainment Committee to invite to this dinner the wives or daughters of those members of the Association who have purchased a ticket for the annual dinner. Members who propose to be present at the dinner are therefore requested to communicate with Mrs. Scharlieb, M.S., M.D., 149, Harley Street, W., nominating a lady to receive hospitality on this occasion.

A reception will be given by the Metropolitan Counties Branch, at the Natural History Museum, Cromwell Road, South Kensington, on the evening of Friday, July 29th, for which 4,000 invitations will be issued.

A reception will be given at the Royal Army Medical College, Millbank, when a demonstration illustrating the equipment of foreign armies will take place.

Academic Dress.

Academic dress or uniform will be worn at the General Meeting at St. James's Hall, Great Portland Street, on Tuesday, July 26th, at 8.30 p.m., when Mr. Butlin will deliver his presidential address, and foreign guests and Colonial delegates will be presented and honorary members inducted.

Academic dress will also be worn at the service in Westminster Abbey on Wednesday afternoon, July 27th, at 3 p.m., and at the conversazione on Wednesday evening, July 27th, given by the Lord Mayor and Corporation of London at the Guildhall.

It is desired also that academic dress should be worn at the evening reception to be given by the Metropolitan Counties Branch at the Natural History Museum on Friday evening, July 29th.

Garden Parties.

The President, Treasurer and Governors of the Royal Hospitals of Bridewell and Bethlem will entertain 500 at a garden party at Bethlem Royal Hospital on Wednesday afternoon, July 27th, for which special tickets will be required.

The President and members of the Metropolitan Counties Branch will give a garden party to 4,000 members in the picturesque Polo Grounds of the Ranelagh Club on the afternoon of Thursday, July 28th; for this also special tickets will be required.

A luncheon and garden party will be given at St Bartholomew's Hospital on Thursday, July 28th.

Ladies' Reception Committee.

The Ladies' Reception Committee are making extensive arrangements for the entertainment of ladies accompanying members attending the Annual Meeting in London. In addition to the dinner mentioned above, arrangements have been made for several mornings and afternoons. On Tuesday, July 26th, visits will be made to the Sesame Training Home, Passmore Edwards Settlement, the School of Medicine for Women, and St. Paul's Cathedral; the visit to the School of Medicine for Women will take place at 11 a.m. On Tuesday afternoon Stafford House will be visited. On Wednesday morning visits will be paid at Apsley House, and at 11.30 a.m. to Westminster Abbey; in the afternoon Mrs. D'Arcy Power will conduct a party of seventy ladies over Barbers' Hall and St. Bartholomew's Priory, where tea will be served. On Thursday morning a visit will be made to the Tower at 11 a.m., and Miss Scharlieb will conduct a party over the Charterhouse and St. Giles's, Cripplegate. On Friday at noon a visit will be paid to Grosvenor House. The Chairman of the Committee is Mrs. Rose Bradford, and communications may be addressed to the Honorary Secretary, Mrs. Dudley Buxton, 82, Mortimer Street, W.

Visits to Private Mansions.

By the kindness of the Dukes of Wellington, Westminster, and Sutherland, arrangements have been made for small parties of about twenty-five to visit the following mansions, which contain fine collections of pictures and other objects of interest:

Apsley House, the residence of the Duke of Wellington.

Grosvenor House, the residence of the Duke of Westminster.

Stafford House, the residence of the Duke of Sutherland.

Visits to Various Places of Interest.

Members will have an opportunity of visiting the Royal Mews, Buckingham Palace, by kind permission of Sir Henry Ewart, Master of the Horse; special tickets will be required.

The new premises of the Royal Sanitary Institute, Buckingham Palace Road, will be open to members, who will be conducted over the Parkes Museum and the Institute.

The Society of Medical Officers of Health will throw open their rooms (1, Upper Montague Street, Russell Square) to members throughout the day, and provide tea between 4 and 5 o'clock. Admission by member's card.

Visits to the Tower of London have been arranged, and parties will be conducted by special warders.

Visits may also be made to the Royal Mint.

Visits to the various docks have been arranged by permission of the Port of London Authority.

A visit to the offices and printing works of the *Daily Telegraph* has been arranged.

The National Telephone Company will show its exchange station to members.

Visits to the following manufactories have been arranged, and tickets may be obtained on application in the Reception Room.

Firm.	Size of Party.	Hours.	Dates.	Remarks.
Brinsmead ...	10–12	At 11 and 3	July 26th, 27th, 28th, and 29th (morning only).	Only two parties a day (84 in all).
Doulton	50	At 2.30 and 3	July 26th, 27th and 28th	300 in all.
Maple	—	At 11 and 2	Each day	Will take parties over any time.
Slazenger ...	12	11 till 3	July 26th, 27th, and 28th	300 roughly.
Lincoln Bennett	—	11 and 12 3 and 4	Tuesday	Negotiating.
Price's Candle Company ...	20	10 till 11 2 till 4	July 27th or 28th	120 in all.
Clarke, Nicholls and Co. ...	4	11 till 1 2.30 till 6	July 26th, 27th, 28th, and 29th	Five parties can go round at one time (900 in all).
Thurston Strode (Osnaburgh St.)	—	3 till 5	July 26th, 27th, and 28th	Any time, go as you like.
Peek Frean ...	12	2	July 26th, 27th, 28th, and 29th	Number of parties per day depends on number of visitors.

Members are invited to visit the Zoological Gardens on Sundays, July 24th or 31st. Application must be made for special tickets.

KING'S COLLEGE HOSPITAL.

The members of the medical staff of King's College Hospital are making arrangements whereby members attending the Annual Meeting may have an opportunity of inspecting the new hospital buildings situated at Denmark Hill. In order to facilitate these arrangements we have been requested to ask those who desire to avail themselves of the hospitality of the medical staff to intimate the fact to the Honorary Secretary of the Medical Museum Committee (Mr. H. W. Armit, Lister Institute of Preventive Medicine, Chelsea Gardens, S.W.).

EXCURSIONS.

Friday, July 29th.

ST. ALBANS.

The Mayor of St. Albans (Dr. E. H. Lipscombe) has invited a party of fifty members to St. Albans, where they will be shown over the cathedral and entertained by him to luncheon. Members will leave by the 12.15 or the 1.5 train from St. Pancras Station, which can be most speedily reached from the University by travelling by the Piccadilly electric tube railway from South Kensington Station.

Saturday, July 30th.

LORD MAYOR TRELOAR CRIPPLES' HOME AND COLLEGE.

Sir William Treloar has invited a party of 200 members to visit the Cripples' Home and College at Alton, Hampshire. A special train will leave Waterloo at 10.5 a.m., and will arrive at the platform in the grounds of the institution at 11.23; a return train will leave the same platform at 4.35, and is due to arrive at Waterloo at 5.54. The visitors on arrival will be conducted over the institution in separate parties by the sisters. Luncheon will be served in the grounds at 1 p.m. and tea at 4 p.m. After luncheon Sir William Treloar will give a short address, and papers will probably be read by members of the medical advisory board and by the medical superintendent, who will give a demonstration on the use of plaster-of-Paris.

BATH.

The Mayor and Corporation of Bath have invited 200 members to visit the city of Bath. The Corporation will arrange for conveying the members of the party to and from London in special trains from Paddington Station, and will entertain them at luncheon. The programme will include a visit to the hot mineral bathing establishments and a drive round the city. (The leading hotels are prepared to offer special terms to any member of the party desirous of staying the week-end in Bath.)

EASTBOURNE.

The Eastbourne Division has invited 100 members to visit Eastbourne, where they will be entertained to luncheon, and will make an excursion to Beachy Head.

BRIGHTON AND HOVE.

The Corporations of Brighton and Hove will invite 100 members to visit these sister towns. After driving round the town of Hove, inspecting the Bath on the King's Esplanade, and visiting the St. Anne's Well Gardens, there will be an Official Reception and Public Luncheon at the Hove Town Hall. The luncheon is timed to take place at 1.45, after which the party will proceed to the Royal Pavilion, Brighton, where the Mayor of Brighton will receive them and entertain them to a garden party.

WINDSOR.

The arrangements have not yet finally been made but there will probably be an excursion to Windsor to visit Windsor Castle and Eton College, and an excursion by train to Maidenhead, thence to Henley by launch, and return by train.

GOLFING.

The Ulster Cup.

A letter from Dr. F. J. Smith explaining the arrangements made for this annual competition, which is to take place at Burhill on Friday, July 29th, will be found at p. 53 of the JOURNAL of this week.

It will be remembered that a cup was presented by the Ulster Branch last year, and is to be played for annually on the following conditions, as laid down by the Ulster Branch:

Bogey play under handicap, not exceeding 18; cup to become the property of the member of the Association winning it twice in succession, or three times in all; one round of 18 holes to be played on one day at the Annual Meeting, with no previous play.

The cup is a copy of the famous Ardagh Cup, which is in the National Museum in Dublin, and whose history is known from the eleventh century.

Dr. F. J. Smith gives notice that entries for the cup must reach him at 138, Harley Street, W., not later than Friday, July 15th. The links of the Burhill Golf Club are near Walton-on-Thames Station, which is easily reached from Waterloo Station, and Waterloo is itself easily and quickly reached from most parts of London by the Baker Street and Waterloo Tube railway, which has communications with the Central London Railway at Oxford Circus and with the Piccadilly Railway at Piccadilly Circus.

As will be seen from Dr. F. J. Smith's letter, the officers of the Burhill Golf Club have extended their hospitality a good deal beyond the arrangements for the Ulster cup competition, for they have offered the following additional facilities:

1. They have offered to make all members of the Association attending the annual meeting temporary members of the club for the Wednesday, Thursday, and Friday of the meeting.
2. They have, in the name of the Burhill Club, offered one, if not five, extra prizes for competitions to be determined later.

3. There are two courses at the club, so that possibly foursomes can be played after the competition proper is finished, or even simultaneously with it.

4. There will be an unlimited putting competition during Friday—cards, 6d. each—the pool to be divided in proportions to be determined later.

5. They have placed at the disposal of visiting members the catering establishment of the club, so that those who wish to do so can dine there in the evening at a reasonable cost.

6. There is ample accommodation for ladies, who can, at any rate, take out as many cards as they like for the unlimited putting competition, or, indeed, arrange one for ladies only.

Members intending to compete for the Ulster cup or in any other competitions will be required to furnish a certificate of their handicap signed by the club secretary. Further details, including the starting time, which must be strictly adhered to, will be posted in the Reception Room at the University of London, South Kensington, during the meeting.

Annual Match.

The usual annual match will take place on Wednesday afternoon, July 27th. It will be between the Metropolitan Counties Branch and the visitors, and it is hoped that at least twenty a side will take part. It will be played, by the kindness of the committee, on the well-known Northwood Links. All members who wish to play are asked to send their names at once to Mr. Percy Furnivall, 28, Weymouth Street, Portland Place, W., in order that the best selection available may be made. It is particularly requested that names should be sent in as early as possible, and each should be accompanied by the player's club and lowest handicap.

Honorary Membership of Clubs.

The following clubs have invited members to use their links: Acton, Ashford Manor, Burnham Beeches, Bushey Hall, Burhill, Edgware, Eltham Warren, Fulwell, Hanger Hill, Home Park, Mid-Surrey, Neasden, Princes', Richmond, Romford, Sandy Lodge, Sunningdale, Totteridge, Tooting Bec, Walton Heath, Wembley, West Middlesex, Royal Wimbledon, and Worplesdon.

Arrangements will be made by which members wishing to play a round may leave their names and handicaps at the Reception Room not later than the day before, in order that matches may be arranged.

ANNUAL REPRESENTATIVE MEETING.

A committee of the Metropolitan Counties Branch has issued a circular to Representatives of Divisions and members of the Central Council showing the arrangements which have been made for the entertainment of the members of the Representative Meeting on Saturday and Sunday, July 23rd and 24th. They include visits to Folkestone, with a day trip, if desired, to Boulogne, and to Maidenhead, with a day trip, if desired, to Henley. The members of the Representative Meeting will dine together on Friday, July 22nd, at 7 p.m., at the Waldorf Hotel. If any Representative or member of the Council has not received the circular, he is requested to communicate with the Secretary of the Committee, Dr. E. Rowland Fothergill, at 429, Strand, W.C.

Motor Garage.

It has been arranged with the Alveston Motor Garage, whose premises open out of Roland Gardens, South Kensington, London, S.W., to provide garage accommodation for members bringing their cars from the provinces. The charge will be 2s. a day, to include standing in a lock-up garage and use of electric light and water. Members desirous of availing themselves of this accommodation should make early application to the Alveston Motor Garage.

National Temperance Breakfast.

The Annual Temperance Breakfast will be held on the morning of Thursday, July 28th, at 8 a.m., under the presidency of Mr. Pearce Gould (Vice-President, Royal College of Surgeons of England).

THE MEDICAL MUSEUM.

In accordance with custom, a medical museum has been organized in connexion with the Annual Meeting. The function of this museum is twofold.

In the first place, it serves the office of safeguarding and displaying those specimens which are required to illustrate papers in the Sections; and, in the second place, it is intended to depict advances in medicine and the allied sciences within recent years. The specimens shown by members of the various Sections will be arranged so as to be readily accessible to the visitor and form a special feature of the museum.

In order that the museum may discharge its second function, it has been divided into sections, and each section has been placed under an honorary curator.

Alimentary system	Dr. Hertz, of Guy's Hospital.
Anaesthetic section	Dr. Ada M. Browne, of the Chelsea Hospital for Women.
Bacteriology	Dr. Henderson Smith, of the Lister Institute.
Cardio-vascular system ...	Dr. T. Lewis, of City of London Hospital.
Cancer Research	Dr. Murray, of the Imperial Cancer Research Fund.
General Surgical Pathology	Dr. Braxton Hicks, of the Westminster Hospital.
Genito-urinary system ...	Dr. Swift Joly, of St. Peter's Hospital.
Gynaecology	Dr. Helen Chambers, of the Royal Free Hospital.
Laryngology	Dr. Harmer, of St. Bartholomew's Hospital.
Neurology	Dr. Wilson, of the Queen Square Hospital.
Ophthalmology	Dr. Mayou, of the Paddington Green Children's Hospital.
Otology	Dr. Sydney Scott, of St. Bartholomew's Hospital.
Physiological and Pathological Chemistry	Dr. Ryffel, of Guy's Hospital.
Protozoology	Miss Muriel Robertson, of the London University.
Radiology	Dr. Ironside Bruce, of Charing Cross Hospital.
Respiratory System	Dr. Lakin, of Middlesex Hospital.
Tropical Medicine	Dr. Hutton, of the London School of Tropical Medicine.
Tuberculosis	Dr. Petrie, of the Lister Institute.

In most of the departments special attention has been given to the illustration of methods. In view of the increasing importance of protozoology to general medicine, it was thought that something approaching a complete series of parasitic protozoa might be exhibited with advantage to the practitioner. Many of these forms of life, it is true, are not at the present time found in man, but each series illustrates a type, and is of theoretic importance to-day, and may be of practical importance to-morrow. A number of life-cycles have been set up, and the visitor will be struck by the excellence of the specimens. Over 100 microscopical specimens are on view in the sections of protozoology and tropical medicine alone.

The museum, which is situated in the Elementary Physics Laboratory in the Imperial College of Science, will be open from 10 a.m. till 5 p.m. on each day, and notice of special demonstrations given by the honorary curators at convenient times will be posted at the doors. A catalogue has been compiled and will be distributed to visitors in the museum.

The Annual Exhibition.

The annual exhibition of surgical instruments, drugs, foods, books, and sanitary appliances will be held in the Great Hall and West Gallery of the Imperial Institute, the Jehanghier Hall being reserved for *x*-ray and high frequency apparatus. The exhibition will be opened from 9 a.m. to 6 p.m. from Monday, July 25th, to Friday, July 29th, inclusive.

Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL *]*

BIRMINGHAM BRANCH:

CENTRAL DIVISION.

THE eighth annual meeting of this Division was held at the Medical Institute on Wednesday, June 15th, at 3.30 p.m. Dr. WALTER R. JORDAN was in the chair, and twenty-eight other members attended.

Confirmation of Minutes.—The minutes of the previous annual meeting were read, confirmed, and signed.

Election of Officers.—The CHAIRMAN announced that there was no opposition for the offices of chairman, vice-chairman, and two honorary secretaries, and declared the following duly elected: *Chairman*, Mr. F. Marsh; *Vice-Chairman*, Mr. J. F. Jordan; *Honorary Secretaries*, Mr. A. W. Nuthall, and Dr. W. T. Lydall.

Election of Representatives on the Branch Council.—To fill the four vacancies Drs. Aldren, W. R. Jordan, Kirby, Neal, and Purslow were nominated. Dr. Wilkinson and Mr. B. J. Ward were appointed scrutineers, and the voting resulted in Drs. Jordan, Kirby, Neal, and Purslow being returned.

Election of Members on the Executive.—The following nine nominations were made: Drs. Aldren, Alldridge, S. Barnes, Dale, White, Messrs. Gamgee and Lucas, Drs. Mackay and Featherstone; the first seven were duly elected.

Coventry Dispensary.—The CHAIRMAN moved a resolution condemning a member of the staff of the Coventry Dispensary, and explained the reason for the proceeding. This was seconded and carried *nemine contradicente.*

Ebenezer Sick Society.—The HONORARY SECRETARY read a letter from Dr. Osborne (Honorary Secretary, Birmingham Ebenezer Medical Officers' Association), in which the help of the Division was sought in obtaining increased remuneration for the medical staff of that society. Dr. JORDAN moved and Dr. ALLDRIDGE seconded the following resolution:

> That the Central Division has considered the application from the medical staff of the Birmingham Ebenezer Provident Sick Society, and is of opinion that the present rate of pay is inadequate and should be raised to not less than 4s. per member per annum, on the grounds of the increased cost of professional attendance and the increased sickness incidence in the society.

This was supported by Drs. NEAL and LYDALL and carried *nemine contradicente.*

Instructions to Representative.—The various matters referred to the Division in the JOURNAL SUPPLEMENTS mentioned in the circular convening the meeting were considered seriatim, and the Representative instructed thereon. With the exception of a verbal alteration in one amendment, the resolutions moved on behalf of the Executive received the support of the Division.

Special Representative Meeting.—The business of this meeting was considered, and it was resolved:

> That the Representative approve of the proposed reconstruction of the Association; that he support the draft articles and by-laws submitted by the Council, and the Council's amendments to Draft By-laws 20 and 56; and that he use his discretion with regard to the amendment to By-law 41, proposed by the Cardiff Division.

Annual Report of Executive Committee.—The annual report of the Executive Committee was taken as read, and received. After some remarks from Mr. MARSH, it was approved and ordered to be entered on the minutes.

Further Instructions to Representative.—The following resolution was carried unanimously:

> That the Executive be empowered to instruct the Representative upon any matter that may arise between this date and the Annual Representative Meeting.

Votes of Thanks.—Drs. KIRBY and NEAL proposed and seconded a hearty vote of thanks to the Chairman for his services during the past year. This was carried by acclamation and acknowledged by Dr. JORDAN. A vote of thanks to the other officers, the Representatives on the Branch Council, and the members of the Executive Committee, was proposed by the CHAIRMAN, seconded by Dr. OSBORNE, and carried unanimously. Dr. TRUMPER proposed, and Dr. VOKES seconded, a vote of thanks to the scrutineers. This was also carried unanimously. This concluded the meeting, which lasted one hour and fifty minutes.

DORSET AND WEST HANTS BRANCH.

Election of Officers.—The following members were elected office-bearers for the ensuing year at the annual meeting held at Bournemouth on May 18th, a report of which appeared in the SUPPLEMENT of June 11th, p. 361: *President*, T. Fred. Gardner, M.D., M.R.C.P.Lond.; *Vice-Presidents*, G. G. Morrice, M.D., M.R.C.P.Lond., and W. Johnson Smyth, M.D., C.M.Edin.; *Immediate Past-President*, Charles J. Marsh, L.R.C.P. Edin., M.R.C.S.Eng; *Honorary Secretary and Treasurer*, James Davison, M.D., M.R.C.P.Lond. *Representative on Council*, James Davison, M.D., M.R.C.P.Lond.; *Council*, Eleanor C. Bond, M.D., F. C. A. Bushman, Decimus Curme, Frank Fowler, M.D., G. H. Field, M.B., G. G. Morrice, M.D., P. W. MacDonald, M.D., C. H. Watts Parkinson, F. W. Ramsay, M.D., W. Johnson Smyth, M.D., R. H. Unwin, M.B., and J. F. L. Whittingdale, M.B.

WEST DORSET DIVISION.

A SPECIAL meeting of this Division was held at the County Hospital, Dorchester, on June 21st; Mr. FLOWER (Chairman of the Division) was in the chair, and eleven other members were present.

Proposed Amendment of By-law 23.—Seven voted in favour, 1 against, 4 did not vote.

Draft New Articles and By-laws.—No objection made to any save on Referendum.

Proposed Formation of a New Company.—The recommendations of Council as to the formation of a new company, Clause 2 of Draft Charter, and the paragraphs relating thereto in SUPPLEMENT of May 28th last were read. Eight members voted in favour of this recommendation, and 4 did not vote.

Referendum.—On the Referendum it was unanimously passed that a postal referendum of the individual members ought to be taken, as in the country districts it was nearly always difficult, and often impossible, for members to attend a Divisional meeting.

Cases.—After the meeting the staff of the hospital showed some interesting cases.

LANCASHIRE AND CHESHIRE BRANCH.

THE seventy-fourth annual meeting of this Branch was held at Burnley on Wednesday, June 15th.

President's Address.—The PRESIDENT (Mr. James Ferguson, J.P.) delivered his address, entitled, "The Hospital Treatment of Scarlet Fever," which was mainly a plea for the systematic stamping out of scarlet fever in the way plague and cholera have been dealt with.

Report of Branch Council for the Year 1909–10.

The following is the text of the report:

Last year the Branch Council urged on Divisions to make a great effort to increase the membership of the Association. The response, however, has been poor and the official annual list shows an increase of but two members—from 1,638 to 1,640; 93 new members have been elected against 62 in the preceding year, but deaths, resignations, etc., have nearly neutralized this, and the Branch Council regrets to report that several have had to be struck off the list of members through non-payment of subscription for two years. To cease membership in this way is most unfair and dishonourable, and the Branch Council trusts that all who have so left us will reconsider their position.

Out of our 30 Divisions, 17 have fewer members now than they had a year ago. Compared with five years ago, 10 have more and 18 fewer members.

Burnley is a bright exception, having steadily, year by year, grown, and is now just double the strength it was five years ago—64 against 32.

The Branch Council feels it to be its duty once again to urge on Divisions the importance of proselytizing work, and to consider the advisability of appointing a canvassing committee to visit every practitioner in their area. The work of the Association is for the good of the profession in general, and not merely for the benefit of its own members. This work increases yearly, and with increased work comes increased expenditure which can only be met by increased membership. Moreover, the importance of the Association depends greatly on its numbers. With the prospect of early reorganization of the Poor Law, of compulsory invalidity insurance, of compulsory treatment of defects of school children, and of the formation of a public medical service, added to the increasing abuses of hospital management and of contract practice, the very existence of the profession as a means of earning a reasonable livelihood is now in the balance, and its future will depend upon our organization and unity during the next few years.

Though one or two Divisions have become less active, greater activity has been shown by most, and the Branch Council congratulates them on the good work they have done.

Many Divisions are still meeting monthly—a practice, in the opinion of the Branch Council, greatly to be commended. Several are holding scientific and clinical meetings regularly, and libraries have been started by at least two. These are developments of great value which the Branch Council is prepared to support by grants as far as lies in its power.

The list of lecturers prepared by the Science Committee has been avilable for the use of Divisions throughout the year, but has not been used as much as might be desired.

The work of the Branch Council has not been heavy. Few serious ethical cases have arisen, and of those that have occurred most have been settled without difficulty.

Several interesting matters of organization have arisen and the central authorities have been induced to order a more exact delimitation of Division boundaries.

The grant received from the Association was only 2s. per capita, the increased cost of the necessary work of the Central Executive having made it necessary to curtail expenditure wherever possible. The grant did, however, cover the demands made on the Branch funds during the year.

There have been 143 Division meetings during the year, with an average attendance of 13·5. The largest number was held at Burnley—18, and Altrincham, and Burnley tied for the highest average attendance—20

The Branch Council hopes that by now all Divisions have adopted rules of ethical procedure and of contract practice; but if any have not they are urged to do so without delay.

The annual meeting of the Branch was held at Chester; 60 members were present.

The hospitality of Chester was greatly appreciated.

The Branch Council has held five meetings with an average attendance of 26.

The report was approved.

Financial Statement.—The financial statement was also approved.

Election of Officers.—The following officers were elected: *President elect*, Alfred Greenwood M.D. (Medical Officer of Health, Blackburn); *Vice-Presidents*, J. C. M. Given, M.D. (Mossly Hill), J. H. Taylor, M.A., M.B., Ch.B. (Salford); *Secretary*, F. C. Larkin, F.R.C.S. (Liverpool); *Auditors*, W. Murray Cairns, M.B., Ch.B., F. Strong Heaney, M.A., M.D., F.R.C.S.Ire.

Next Annual Meeting.—It was decided to hold the next annual meeting in Blackburn.

Election to Central Council.—It was announced that Dr. J. H. Taylor and Mr. Larkin had been returned unopposed as direct representatives of the Branch on the Council of the Association.

Alteration of Law.—A small alteration of law was carried.

Scientific Communications.—The following scientific communications were presented—Dr. T. R. Bradshaw: A case of cerebro-spinal meningitis treated with a vaccine; recovery. Dr. G. H. Lancashire: Some points in the modern treatment of lupus vulgaris. Dr. Craven Moore: Remarks on the modern medical treatment of gastric ulcer. Dr. A. Ramsbottom: Some points in the vaccine therapy of gonococcal infections. Dr. Percy Cooper: Note on a case of concealed accidental haemorrhage. Mr. F. C. Larkin: Some recent exceptional cases of hernia. Dr. Karl Grossmann demonstrated his method of examining the fundus oculi by transillumination from the mouth.

Entertainment at Towneley Hall.—The members were entertained to afternoon tea by the Chairman of the Burnley Education Committee at Towneley Hall, a fine historic mansion, now the property of the Corporation, and used as a museum and art gallery.

Annual Dinner.—The annual dinner in the evening was largely attended, and presided over by the President (Mr. James Ferguson).

LEINSTER BRANCH:

East Leinster Division.

The annual general meeting of this Division was held in the Royal College of Physicians, Dublin, on June 22nd, at 5 p.m.

Election of Officers.—The election of officers for the ensuing year resulted in the following: *Chairman*, Colonel W. T. Johnston, M.D., R.A.M.C.; *Vice-Chairman*, W. Verner Furlong, M.D.; *Honorary Secretary and Treasurer*, Reginald Peacocke, M.D., Blackrock; *Representative for Representative Meeting*, Colonel W. T. Johnston, M.D., R.A.M.C., 8, Vesey Place, Kingstown; *Representatives on Branch Council*, J. W. Boyce, M.D., J. J. Cullinan, W. V. Furlong, M.D., R. L. Heard, M.B., and R. C. Peacocke, M.D.; *Executive Committee*—the above and Drs. Bennett, Dawson, Earl, Lyons, Moran, and Professor A. H. White, Honorary Secretary of Branch (*ex officio*).

Instructions to Representative.—The agenda for the Representative Meeting for 1910 was gone through, and Colonel Johnston was given instructions how to vote on several questions that would come up.

Special Representative Meeting.—With regard to the Special Representative Meeting to be held at the end of June, it was proposed by Dr. Peacocke, seconded by Professor White, and passed unanimously:

> That the Representative of the East Leinster Division be instructed to vote for the formation of a new company, under the title of the British Medical Association, incorporated in the same manner as the existing company, but with a memorandum of association providing for all the objects which are detailed in Clause II of the draft Charter applied for by the Association.

The meeting then terminated.

METROPOLITAN COUNTIES BRANCH.

The fifty-eighth annual meeting of the Branch was held on Thursday, June 23rd, at 4.30 p.m., in the Council Chamber of the Association, at 429, Strand, W.C., about fifty-five members being present. Dr. J. Ford Anderson, President, was in the chair.

Confirmation of Minutes.—The Senior Honorary Secretary (Dr. E. W. Goodall) read the minutes of the last meeting, held in St. James's Vestry Hall, Piccadilly, on June 24th, 1909, which were approved and signed by the Chairman as correct.

Election of Officers.—The following report of the scrutineers was read:

> We have to report that for the offices of President-elect and Honorary Treasurer one member was proposed, namely, Mr. Betham Robinson, and that therefore he is duly elected to these offices.

We have to report that the following candidates have been elected Vice-Presidents:

Dr. C. Buttar,
Dr. J. F. J. Sykes,
Dr. J. H. Macevoy,
Mr. H. P. Parsons.

We have to report that the following candidates have been elected Honorary Secretaries:

Dr. E. W. Goodall,
Dr. W. Griffith.

H. BECKETT-OVERY,
M. L. DOBBIE,
A. G. SOUTHCOMBE,
ALEXANDER BROWN,
A. POTTINGER-ELDRED.

Annual Report of the Branch Council and Financial Statement.

On the motion of the CHAIRMAN, the annual report was received.

The report was considered paragraph by paragraph.

With reference to the paragraph relating to "The Medical Treatment of Elementary School Children found Defective on Medical Inspection," Dr. FOTHERGILL asked for information as to the present condition of the matter.

Sir VICTOR HORSLEY replied that the Committee of the Branch was in co-operation with the Central Committee, and the matter was entirely in the hands of the Divisions to organize clinics staffed by medical practitioners in their districts.

As regards the paragraph headed "Annual Meeting of the Association in London, 1910," Dr. HAWTHORNE asked where the Branch Council obtained its authorization to expend money on the badge, and further, what amount had been so expended.

At the request of the CHAIRMAN, the SENIOR HONORARY SECRETARY read the following resolution passed by the Council of the Metropolitan Counties Branch:

1. That the Branch Council, on the recommendation of the Reception Committee, desires to commemorate the holding of the Seventy-eighth Annual Meeting of the Association in London by presenting to the Association, on behalf of the Metropolitan Counties Branch, a presidential badge of office to be worn by each successive President on ceremonial occasions.
2. That to carry the above resolution into effect, the Finance Committee of the London meeting, 1910, be requested to make a grant not exceeding sixty guineas, and the Reception Committee be requested to make all the necessary arrangements.

Mr. BETHAM ROBINSON, the Treasurer, also explained that the Finance Committee had sanctioned the expenditure as a legitimate one.

On the motion of the CHAIRMAN, it was resolved:

That the annual report of the Council of the Branch and the annual financial statement be adopted.

Report of Representatives on Central Council.

It was resolved, on the motion of Sir VICTOR HORSLEY, that the report be received.

The report was taken paragraph by paragraph.

On consideration of the paragraph headed "New Articles and By-laws," it was resolved:

That the President be authorized to circularize the members of such Divisions of the Branch as he may deem desirable, calling attention to the importance of a large attendance of members at the Extraordinary General Meeting of the Association to be held on June 29th next.

As regards the paragraph headed "Hampstead Hospital Matter," the last sentence at the foot of page 1, it was moved by Dr. FOTHERGILL, seconded by Mr. PARSONS, and resolved:

That the word "all," the third word in the last line, be deleted.

The amendment was put and lost.

On consideration of the "Hampstead Hospital Matter," it was moved by Dr. TAYLOR, seconded by Dr. MACEVOY, and resolved:

That this meeting is of opinion that the Central Council should, without delay, communicate revised ethical rules to all the Divisions for their consideration.

The report, as amended, was adopted.

Alteration of Rule 14 (a).—The CHAIRMAN moved:

That Rule 14 (*a*) of the Rules of the Branch be altered to read as follows:

Nomination papers must contain a certificate signed by two members of the Association stating that the candidate for election is personally known to one of them, and is a fit and proper person to be elected a member of the British Medical Association.

No candidate shall be elected unless at least seven days' notice of his candidature has been given to all members of the Branch Council.

Whereupon an amendment was moved by Mr. HERBERT TANNER, seconded by Dr. BECKETT-OVERY:

That Rule 14 (*a*) be altered to read as follows:

That nomination papers must contain a certificate signed by a member of the Association stating that the candidate for election is personally known to him, and is a fit and proper person to be elected a member of the British Medical Association.

No candidate shall be elected unless at least seven days' notice of his candidature has been sent to all members of the Branch Council.

The amendment having been put from the chair was carried—21 to 7. On the CHAIRMAN putting it as a substantive resolution, an amendment was moved by Dr. FOTHERGILL, seconded by Mr. PARSONS:

That the whole of the rule be deleted.

The CHAIRMAN ruled the amendment out of order, and after a motion to proceed to the next business had been put and lost, the Chairman declared Mr. Tanner's amendment carried as a substantive resolution.

Induction of New President.—The PRESIDENT then called upon Dr. Lauriston Shaw, the incoming President, to take the chair. Dr. LAURISTON SHAW then took the chair.

Vote of Thanks to Retiring Officers.—It was moved by Dr. FOTHERGILL, and resolved unanimously:

That a hearty vote of thanks be accorded the retiring officers for their services during the past year.

Dr. FORD ANDERSON briefly returned thanks.

President's Address.—Dr. LAURISTON SHAW read an address which was entitled, "The Aim of a United Medical Profession and the Handicap of the Trade Union Bogey." A vote of thanks to Dr. Shaw for the address was proposed by Dr. FORD ANDERSON, seconded by Sir VICTOR HORSLEY, and carried with acclamation. Dr. SHAW thanked the meeting, which then terminated.

CITY DIVISION.

A GENERAL meeting of this Division was held at the Town Hall, Hackney, on June 21st, at 4 p.m., to consider the agenda of the Special Representative Meeting and instruct the Representative. E. A. LERMITTE, M.B., Chairman, presided, and there were present: Drs. E. W. Goodall (Representative), Stanhope Dawson, C. E. Evans, A. Withers-Green, J. W. Hunt, C. F. Hadfield, Major Greenwood, A. L. Marshall, and the Honorary Secretary.

Confirmation of Minutes.—The minutes of the annual meeting of May 27th were read, confirmed, and signed by the Chairman.

Apology for Non-attendance.—Dr. Jaffé wrote regretting unavoidable absence.

Special Representative Meeting.—Dr. E. W. GOODALL addressed the meeting, explaining the cause of the present situation and the proposed procedure. The meeting then discussed the proposed new Articles and By laws, and the following definite instructions were carried:

DRAFT ARTICLE VI.—*Referendum.*

The meeting was of opinion that the Referendum should be taken by voting by postcards sent to every member, and not by the voting at meetings of the Divisions. Carried unanimously.

BY-LAWS.

III.—*Subscriptions.*

By-law 11.—That a member admitted after November 1st of any year should, upon payment of the annual subscription, forthwith be entitled to the privileges of membership as from the date of joining to end of ensuing year.

VII.—*Council.*

By-law 41, *Section* (*a*).—For 24 substitute 36.

Section (*c*).—The Division is opposed to all representation of the Representative Meeting on the Central Council by direct election thereto.

Section (d).—Proposed amendment by the Cardiff Division. The Representative was instructed to oppose the amendment.

Election of Central Council.

By-law 43, *Section* (3).—To read: "That the voting papers shall contain full particulars of all the nominations on behalf of a candidate, whether made by a Division or by members."

On all other points the Representative was instructed to act at his discretion.

Greenwich Division.

The inaugural meeting of the Greenwich Division of the British Medical Association was held at the Lewisham Infirmary on June 2nd. There were present: Dr. E. W. Goodall (Honorary Secretary, Metropolitan Counties Branch), Mr. J. Smith Whitaker (Medical Secretary, British Medical Association), and twenty-six members. Dr. Toogood having been voted to the chair, Dr. Goodall read the letter convening the meeting.

Address by the Medical Secretary.—On the invitation of the Chairman, Mr. J. Smith Whitaker then addressed the meeting on the aim and objects of the British Medical Association. The speaker pointed out that the advantages of having such an Association were not only the obvious benefits to be derived from co-operation, but also the fact that it furnished a means whereby a parliamentary or municipal authority could ascertain the views of the medical profession upon any point with which they were directly concerned.

Model Rules.—The model rules suggested by the Organization Committee were then adopted.

Election of Officers.—The following officers were elected: *Chairman*, Dr. H. C. Burton; *Vice-Chairman*, Dr. C. J. Parke; *Honorary Secretary and Treasurer*, Dr. L. F. Hemmans; *Representative on the Branch Council*, Dr. F. S. Toogood; *Representative at the Representative Meetings*, Dr. J. H. Keay; *Executive Committee*, Drs. F. S. Hogg, W. W. Wilson, C. H. Hartt, J. P. Purvis, R. Muir, W. H. Payne, L. Stokes, and F. Harvey Bateman.

Votes of Thanks.—The thanks of the meeting were passed to: (*a*) Dr. Toogood, for his hospitality; (*b*) Dr. Goodall, for his valuable assistance in the inauguration of the Division; (*c*) Mr. J. Smith Whitaker, for his excellent address.

This concluded the business of the meeting.

Lambeth Division.

A meeting of members of the medical profession resident in the area of the Lambeth Division was held at the Camberwell Town Hall on Thursday, June 2nd, at 4 p.m.

Medical Treatment of School Children.

Sir Victor Horsley first addressed the meeting, and pointed out that the position was that the medical profession was frequently exploited at the hands of various public bodies, and that this had occurred again and again in respect of the medical treatment of school children found defective. He referred to the work that had been done by the Association at the annual general meetings at Sheffield and Belfast, and to the report that had been drawn up by the Medico-Political Committee of this Association. He then mentioned the Special Committee of the London County Council, on which he had been a representative of the Association, and mentioned that this Committee proved that the number of children who would need treatment was enormous, and that treatment at centres or clinics was the only method applicable to the London area. That he had drawn up a report advising that these local clinics should be staffed by private practitioners of their own neighbourhood, and that this report had been passed by the Committee in opposition to the report of the Chairman, Mr. Gooch. That in spite of this, the County Council had accepted the report of Mr. Gooch, and had passed a scheme whereby the children were sent to certain hospitals which undertook the work against the approval of the Council of the Metropolitan Council's Branch. It was soon found out that the work which these hospitals could do was only a tithe of what would be necessary.

A deputation to Dr. Newman, of the Board of Education, by the Branch Council, elicited the fact that this arrangement was only a temporary one, hence the medical profession had still a chance of evolving a scheme which should be fair alike to the children, the Council, and the profession.

Dr. W. H. B. Stoddart (President of the Division) mentioned that such clinics were already in existence in Norwood and Wandsworth, and showed that if the same were started in the Lambeth area nearly the whole of South London would thereby be under such a system.

It had been ascertained that there were in this area 49 medical men who were prepared to undertake the treatment of diseases of the throat and ears, 41 diseases of eyes, 12 diseases of the skin—including *x* ray treatment and ringworm—and 58 to undertake administration of anaesthetics. There were, however, a very large number of children to be treated. He called upon the Secretary to read the figures which had been supplied by the Education Officer, which were as follows:

Borough.	No. of Schools, L.C.C. and Non-provided.	No. of Children on Roll.	Estimated No. of Children suffering from		
			Bad Vision.	Ringworm.	Discharging Ears.
Lambeth (except county electoral division of Norwood)	41	30,300	1,366	162	682
Southwark	41	34,600	1,302	207	649
Bermondsey ...	41	31,600	1,186	407	636
Camberwell ...	48	47,100	1,658	206	931

The following resolutions, which were on the agenda paper, were then put to the meeting and carried after some discussion:

A.—1. That it is desirable that the local profession should arrange with the London County Council for the medical treatment of children found defective upon medical inspection.

2. That arrangements should be made for the area corresponding with the Lambeth Division of the British Medical Association.*

3. The following principles form the basis upon which such arrangements shall be made:

(*a*) Children whose parent or guardian can afford to pay shall be referred to their own medical attendant.

(*b*) The procedure of reference shall be as follows:
- i. The medical inspector reports to the Education Committee of the London County Council, stating in writing the defects found.
- ii. The Education Committee causes the parent or guardian to be notified that the defects must at once be treated by their medical practitioner.
- iii. The form of notification shall be as Form I (see Appendix).
- iv. The parent or guardian takes the child to his own doctor.
- v. The medical practitioner who treats the child will certify this fact upon the certificate (Form II, see Appendix), which will be sent by the parent or guardian to the head teacher for transmission to the medical inspector.
- vi. The form of certificate shall be as Form II.

(*c*) In the event of the parent or guardian being unable to pay, treatment shall be by private practitioners at convenient centres, to which the child shall be referred.

(*d*) The procedure of reference shall be as follows:
- i. The medical inspector reports the defect to the Education Committee.
- ii. The Education Committee notifies the parent or guardian that the defect must be treated (Form I).
- iii. The parent or guardian takes the child to his own doctor.
- iv. The medical practitioner, if in his opinion the parent is unable to pay for the necessary treatment, certifies to that effect.

* The area of the Lambeth Division includes:
The Borough of Lambeth—except Norwood.
The Borough of Southwark.
The Borough of Bermondsey.
The Borough of Camberwell—including Peckham.

v. The form of certificate shall be as Form III (see Appendix).
vi. The parent or guardian satisfies the Education Committee also of his inability to pay, and they countersign the medical certificate (Form III), which then becomes the order for treatment at the centre or clinic.
vii. The parent is responsible that the child attends, with the order, at the centre for treatment.
viii. The order (Form III), together with the notification (Form I), is handed to the member of the staff and filed for subsequent reference
ix. The member of the staff who treats the child will state this fact on a certificate which must be handed by the parent to the head teacher for transmission to the school medical officer (Form II).

4. That the machinery of the Lambeth Division be utilized for the purpose of negotiating with the local authority.
5. That the remuneration of the staff of the clinic be on a scale in agreement with the local Education Authority, and at a rate of not less than £50 per annum for each half-day (of two hours) per school week devoted to the work, and that this remuneration cover professional services only.

B.—To elect a Committee which shall have the following terms of reference:
1. To elaborate this scheme and to negotiate with the London County Council on the lines of the foregoing resolutions.
2. To report to another meeting of the local profession so soon as the negotiations are completed.

APPENDIX.

FORM I.

.....Local Education Authority.

To the Parent or Guardian of .....

Registration No.....

This child has been examined and found to be defective in .....

You are requested to consult your doctor immediately and to return one of the attached forms, after it is filled in, to the Head Teacher of the.....School without delay.

.....19..... .....

FORM II.

.....Local Education Authority.

To the Head Teacher of.....School, for transmission to the School Medical Officer.

This is to certify that I am undertaking the treatment of .....Registration No.....of.....

.....

Registered Medical Practitioner.

Address.....

.....19..... .....

FORM III.

To the.....Local Education Authority.

This is to certify that .....

Registration No ..... is a suitable patient for treatment at the expense of the Local Education Authority.

.....

Registered Medical Practitioner.

Address.....

.....19..... .....

Appointment of School Clinics Committee.—The PRESIDENT then stated that the next business was to appoint a committee to draw up some scheme for such clinics in the district, and suggested that it should consist of eight representatives from each of the four boroughs in the area, and that half of these should be from those who were not members of the Association. It was proposed by Dr. BRENCHLEY, and seconded by Dr. ALSTON, that the Committee of the Lambeth Division of the Association should form part of this committee. Ten more names were then added to the committee, and it was given power to co-opt ten further members to complete its number. Dr. LAURISTON SHAW then addressed the meeting, and said that he was very pleased to find the medical profession was at last taking some steps in constructive work with regard to these matters. That he had for long lamented the way in which various public bodies had tried to use gratuitous services of medical men, but that now, for the first time, were they really acting instead of talking. He laid stress on the need to get the scheme complete before the Annual General Meeting of the Association in July.

Votes of Thanks.—A vote of thanks was then passed to Sir Victor Horsley and Dr. Lauriston Shaw for so kindly having come there that afternoon. The proceedings terminated by a vote of thanks to the Council of the Borough of Camberwell for allowing the use of the Town Hall for the meeting.

MUNSTER BRANCH.

THE annual general meeting of this Branch was held on Saturday, June 18th, Dr. H. R. TOWNSEND in the chair.

Confirmation of Minutes.—The minutes of the last annual general meeting were read and signed. The minutes of meeting since held were read.

Apologies for Non-attendance.—Apologies for non-attendance were received from Professor H. Corby, Drs. J. J. Byrnes (Bruree), B. Mangan (Killarney), G. Myles (Limerick), T. B. Moriarty (Cork), and J. Reid (Bandon). The latter referred in his letter to Saturday being a difficult day for country members to attend, and the Honorary Secretary was directed to note it.

Election to Central Council.—The HONORARY SECRETARY reported that, in accordance with rule, Professor H Corby had been duly nominated and elected member of the Council of the Association.

Election of Representative to Representative Meetings.—Dr. H. R. Townsend, Sidney Place, Cork, was elected unanimously.

Representative of Branch on Irish Committee.—Dr. J. Giusani, Patrick's Hill, Cork, was unanimously re-elected for 1910–1911.

Election of Officers and Council for 1910–1911.—The following members were elected: *President*, Professor C. Yelverton Pearson, M.D.; *Vice-President*, Dr. H. R. Townsend; *Retiring President*, Dr. J. J. Fitzgerald; *Council*, Professor W. Ashly Cummins, Drs. Lucy Smith, P. J. Cremen, D. J. O'Connor, O. McCarthy, T. B. Moriarty, N. Henry Hobart, T. O'Meara, M. Cagney, J. Giusani, J. T. O'Connor, and T. Gelston Atkins; *Honorary Secretary and Treasurer*, Philip G. Lee (Patrick's Hill, Cork).

Election of Members.—Drs. Michael E. Cusser (Pallaskenry, co Limerick), J. J. Kearney (Roscarbery co. Cork), Gerard J. Pierce (Lixnaw, co. Kerry), were elected members of the Association.

The meeting then adjourned.

NORTH WALES BRANCH:

DENBIGH AND FLINT DIVISION.

THE annual meeting of this Division was held on June 3rd at Ruthin. The CHAIRMAN (Dr. J. C. Davies) presided.

Election of Officers.—The following members were elected to office for 1910–11: *Chairman*, Dr. David Fraser; *Vice-Chairman*, Dr. W. Vaughan-Griffith; *Honorary Secretary*, E. D. Evans; *Honorary Treasurer*, Dr. Enoch Moss; *Representative for Representative Meeting*, Dr. J. E. H. Davies; *Representatives on Branch Council*, Dr. H. Drinkwater, Dr. David Lloyd, and Dr. Enoch Moss; *Executive Committee*, Dr. Richard Evans, Dr. Richard Owen, and Dr. D. L. Williams.

Autumn Meeting.—It was decided to hold the autumn meeting at Rhyl.

Medical Inspection and Treatment of School Children.—The following resolutions were passed:

That this Division does not approve of payment per head, but by fixed salary.
That this Division disapproves of school clinics and is in favour of all cases found defective by the school medical officer being referred to the family medical attendant, and in cases where the parents are unable or unwilling to pay the education authorities shall be held responsible for payment.

Model Rules of a Public Medical Service.—It was resolved:

That this meeting approves of the institution of public medical services under the direct control of the profession.

Medical Men and Midwives.—It was resolved:

That the letter (Appendix B) suggested to be sent to the local supervising authority and embodying the recommendations of the Manchester Corporation Supervising Committee be adopted, and a copy be sent to the county and borough members of Denbigh and Flint with a request that they support this recommendation when the bill is brought before the House of Commons.

SOUTH-EASTERN BRANCH.

The sixty-sixth annual meeting of this Branch was held at the Albany Hotel, Hastings, on Wednesday, June 15th. Drs. Macan (Cheam), President, was in the chair. There were present Drs. Allfrey (St. Leonards), Eastes (Folkestone), Culhane (Hastings), H. R. Mansell (Hastings), Scott (Hove), Campbell Pope (Hove), Parr Dudley (East Malling), Falwasser (Maidstone), Saunders (Eastbourne), W. M. Smith (Eastbourne), Vernon (Ashford), Douglas (Goudhurst), Potts (Maidstone), Henchley (Canterbury), Oliver (Maidstone), Warrack (Gravesend), Tew (Tonbridge), Hessey (Hastings), Grandy (St. Leonards), Stanley (St. Leonards), Vernon Dodd (Folkestone), Jones (Worthing), Dodd (Brighton), Fry (St. Leonards), Lucille Leslie (St. Leonards), Christopherson (St. Leonards), Benham (Hove), Usher (Tunbridge Wells), Whittington (Brighton): Hill Joseph (Bexhill); Johnston (St. Leonards), Weld (Sandhurst), Barker (St. Leonards), E R. Mansell (Hastings), Ballingall (St. Leonards), W. A. Hollis (Hove), Ewart (Eastbourne), Bagshawe (St. Leonards), Kaye-Smith (St. Leonards), Hackney (Hythe), Scott (Bromley), Cressey (Tonbridge), Jackson (Purley), Pasmore (Warlingham), Hewland (St. Leonards), Adeney (Tunbridge Wells), Batterham (St. Leonards), Barrett (Folkestone), Lewis (Folkestone); and the Honorary Secretary and Treasurer, Dr. Starling (Tunbridge Wells).

Confirmation of Minutes.—The minutes of the previous annual meeting were read and confirmed.

Election of Officers.—The following were then declared elected officers for 1910-11: *President*, Dr. Allfrey (St. Leonards); *President-elect*, Dr. Geo. Wilks (Ashford); *Vice-Presidents* 1910-11, Dr. Macan (Cheam), Dr. Batterham (St. Leonards); *Vice-Presidents* 1911-12, Dr. Allfrey, Mr. J. Cooper Wilkinson (Ashford); *Honorary Secretary and Treasurer*, Dr. E. A. Starling (Tunbridge Wells).

Installation of New President, etc.—Dr. Macan vacated the chair, which was taken by Dr. Allfrey, the new President.

Vote of Thanks to Retiring Officers.—A vote of thanks was then accorded to the retiring officers. The Auditors, Drs. D. Davies and C. Elliott, were thanked and asked to continue to act for the ensuing year.

Death of Dr. Whitehead Reid.—The President called on Dr. Ewart, who moved that a record be made on the minutes of the regret of the Branch at the death of Dr. Whitehead Reid, of Canterbury, a Past-President of the Branch and a member of the Central Council. This was seconded by Dr. Allfrey and supported by Drs. Henchley and Eastes—and a letter of condolence was directed to be sent to Mrs. Whitehead Reid.

Removal of Mr. T. Jenner Verrall.—The President also referred to the loss the Branch had sustained by the removal to Bath of Mr. T. Jenner Verrall, who was Secretary to the Branch for many years, also President and member of the Central Council.

Statement of Accounts and Annual Report.—The annual report and balance sheet were presented by the Secretary and duly adopted. On the report it was proposed by Dr. Mansell, and seconded by Dr. Culhane, that it be an instruction to the Council to encourage in every way conjoint meetings of the Divisions in the Branch, and this was carried *nemine contradicente*.

Alteration of Rules.—It was proposed by the Secretary, seconded by Dr. Macan, and carried unanimously, that the Branch approve of the alteration proposed by the Council in Rule 7 (*a*), (2), "that the words 'two weeks' be inserted instead of 'one month' in line 9."

President's Address.—The President (Dr. Allfrey) then delivered an address on "Fifty Years of Medical and Surgical Progress, with the Part Played in it by Experimental Research." It was received with much attention and appreciation, and at its conclusion Dr. Macan proposed, and Dr. Hewland seconded, a hearty vote of thanks to the President, which was carried by acclamation.

Dinner, etc.—The members were kindly entertained to tea at Fairlight Place by the Rev. W. C. and Mrs. Sayer-Milward. At the dinner in the evening the Mayor (Alderman R. W. Mitchell, J.P.) was a guest, and thirty-six members were present.

Hastings Division.

The annual meeting was held on Monday, June 13th, at the Eversfield Hotel, St. Leonards-on-Sea, at 5 p.m.; Mr. E. Kaye Smith took the chair. The following members were present: Dr. Allfrey, Mr. E. Kaye-Smith, Dr. Allford, Dr Batterham, Dr. Weld, Dr. Grandy, Mr. E. R. Mansell, Mr. H. R. Mansell, Mr. Farrant Fry, Dr. Bagshawe, Dr. G. Vickerman Hewland.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Honorary Secretary's Report.—The Secretary gave an account of the year's work, combined meetings only having been held.

Election of Officers.—The following were elected officers for the ensuing year: *Chairman*, Dr. Hill Joseph, Bexhill-on-Sea; *Vice-Chairman*, Dr. Ballingall; *Honorary Secretary*, Dr. G. Vickerman Hewland; *Representative for Representative Meetings*, Mr. E. Kaye-Smith; *Representative on Branch Council*, Dr. Batterham; *Executive Committee*, Dr. Allfrey, Dr. A. Brodribb, Mr. Culhane Mr Farrant Fry, and Dr. Redmayne.

Resolution.—The following resolution was passed:

That in the event of Mr. E. Kaye-Smith not being able to attend the annual meeting of the Representatives, the Chairman and Secretary shall be able to appoint a substitute.

SOUTH MIDLAND BRANCH:

Buckinghamshire Division.

A meeting was held at the Royal Bucks Hospital on Tuesday, June 21st, at 3 p.m., Dr. Baker in the chair. There were present: Drs. Benson, Bradbrook, Buxton, Carruthers, Deyns, Drake, Eagles, Larking, Morrison, Perrin, Reynolds, A. T. Turner, E. O. Turner, Shaw, West, Wheeler, Woollerton, and Hogarth. Drs. Kerr and Cooke joined later. Total, 21.

Apologies for Non-attendance.—Expressions of regret for absence were received from Drs. Gardner, Graham, Kennish, and Lucas.

Doctors and Midwives.—A letter received from the Newport Pagnell Board of Guardians, in answer to a protest sent in by the Division at so low a sum as 10s. being offered to medical men called in by midwives, was read, in which the board stated that they had, in accordance with the suggestion of the Division, raised the fee to £2 for cases of difficulty.

Report of Committee.—The report of the Committee for the past year was read and accepted.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman*, Dr. Reynolds; *Vice-Chairman*, Dr. E. O. Turner; *Members of Branch Council*, Drs. Benson and Morrison; *Representative*, Dr. Bradbrook; *Deputy*, Dr. Baker; *Committee*, Drs. Baker, Carruthers, Graham, Shaw, West, and Wheeler; *Secretary*, Dr. Larking.

Instruction to Representative.—The Representative was unanimously instructed to attend the special meeting and support the formation of a new company.

Section on Medical Sociology.—Drs. Humphrey Wheeler and Larking were nominated to take part in the discussion in the Medical Sociology Section at the annual meeting.

Parliamentary Representation of the Profession.—A letter from the Chelsea Division was read *re* parliamentary representation, but, as this was provided for in the proposed new Articles, it was thought best to defer the matter for the present.

Medical Inspection and Treatment of School Children.—A resolution passed by the Division, fixing a fee of 2s. 6d. as that for each inspection, was rescinded, and the Committee was instructed to deal with the matter and take any action considered necessary. The Committee were instructed to draw up a scheme in readiness for any proposal that may arise for the treatment of children found defective. Dr. Hogarth was added to the Committee for this purpose, and they were given power to add to their number if desirable.

The Association and the Pharmaceutical Society.—Dr. BENSON drew attention to the proposed conference between the Association and the Pharmaceutical Society, and pointed out that one of the objects of that society was to stop dispensing by medical men. It was decided to write to the Council and point out that this should be opposed, as many general practitioners would be unable to carry on their practices if they were not allowed to dispense their own medicine.

Visit to Stone Asylum.—After the business meeting the members were entertained at the Stone Asylum by the Medical Superintendent (Dr. Kerr), shown over the institution, and spent a very pleasant and instructive afternoon. The thanks of the Division are due to Dr. Kerr for his hospitality.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

SOUTH-WEST WALES DIVISION.

THE annual meeting of this Division was held at the Ivy Bush Hotel, Carmarthen, on Tuesday, June 14th, Dr. RICHARD HOPKIN in the chair. There were also present Drs. D. J. Williams, Owen Williams, J. E. P. Davies, D. A. Hughes, David Phillips, E. Ward, R. G. Price, Bowen-Jones, Cambria Thomas, E. R. Williams, J. L. Davies, and D. R. Price.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Annual Report.—The annual report was read. It was noticed that the Committee had met on several occasions during the year, to deal with ethical matters throughout the Division.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman elect*, Dr. D. A. Hughes (Ammanford); *Honorary Secretary and Treasurer*, Dr. D. R. Price (Ammanford), re-elected; *Representatives on Branch Council*, Drs. J. E. P. Davies, Ll. M. Bowen-Jones, and Owen Williams; *Executive Committee*, Drs. Bowen-Jones, E. Evans, D. A. Hughes, C. D. Mathias, T. Morgan, D. Phillips, R. G. Price, S. J. Roderick, S. Williams, R. Hopkin, and *ex officio*, J. E. P. Davies, D. R. Price, D. J. Williams, and Owen Williams; *Representative for Representative Meeting in London*, Dr. D. R. Price; *Representatives on Branch Contract Practice Committee*, Drs. S. J. Roderick, D. J. Williams, and Owen Williams.

Installation of New Chairman.—Dr. J. E. P. Davies, Llanelly, was then installed as chairman for the ensuing year. Dr. Davies, who has acted as Secretary of the Division for six years until last year, was enthusiastically applauded on taking the chair.

Vote of Thanks to Retiring Chairman.—A hearty vote of thanks, proposed by the CHAIRMAN, was given to Dr. R. Hopkin for the able manner in which he carried out the duties of the chair during his term of office.

Special Report of Central Council.—The Special Report of the Council of the Association was approved.

Midwives Act.—Dr. LL. M. BOWEN JONES, D.P.H. (Carmarthen), opened a discussion on the Midwives Act. Several members took part in the discussion, and it was resolved:

That the following form a special committee to report on the working of the Act in the Division: Drs. Bowen-Jones (Carmarthen), Owen Williams (Burry Port), J. L. Davies (Llanelly), D. A. Hughes (Ammanford), and R. Hopkin (Llangadock).

Medical Inspection of School Children.—Dr. D. A. HUGHES, D.P.H., read a most interesting paper on the medical inspection of school children. The high literary style of Dr. Hughes's paper was very much appreciated by the members.

Votes of Thanks.—Votes of thanks to Dr. Bowen-Jones and Dr. Hughes concluded the meeting.

SWANSEA DIVISION.

THE annual meeting of the Swansea Division was held at the General Hospital, Swansea, on Thursday, June 2nd, at 3.15 p.m., Dr. E. LE CRONIER LANCASTER in the chair.

Confirmation of Minutes.—The minutes of the last annual meeting were read and signed by the Chairman as correct.

Annual Report of Executive Committee.—The report of the Executive Committee for 1909 stated that on January 1st, 1909, the total membership was 84. During the year 1909 four new members had been added, one member had died, one had resigned, and two had been lost through change of address. The total membership at the end of the year was therefore 84. The following showed the financial condition of the Branch:

BALANCE SHEET, 1909.

Cr.	£ s. d.	Dr.	£ s. d.
Balance in hand ...	8 11 0	Printer's bill, including printing, stationery and postage	8 1 0
Grant received from Branch Council 1s. per capita ...	4 4 0	Clerical aid	0 5 0
		Secretaries' expenses	0 11 6
		Balance	3 17 6
	£12 15 0		£12 15 0

The Executive pointed out that the grant from the Branch had been considerably reduced owing to a change in the by-laws of the Association, and that unless a further grant could be obtained, the useful work of the Division must be seriously curtailed. In addition to the annual meeting fourteen meetings were held during the year, at nine of which scientific or clinical matters only were discussed, at three both ethical and scientific subjects were considered, whilst two were called for ethical and Association business. The average attendance at meetings was 13·5, an improvement on last year. Of the eighty-four members of the Division forty-three attended at least one meeting. The annual dinner was held on October 16th, and though the attendance was disappointing (twenty-seven members and friends sat down) the proceedings were of an enjoyable nature. The Executive held four meetings, at which the routine business was carried on. The report concluded as follows: "It is satisfactory to note that there has been an increase in the amount of scientific and clinical matter brought forward at the meetings, and that there has been no necessity to discuss any point of local dispute during the year."

Election of Officers.—The following officers were duly elected for the ensuing year: *Chairman of the Division*, A. W. Cameron, M.D.; *Vice-Chairman*, F. G. Thomas, M.B.; *Honorary Secretaries*, L. Freeman Marks, M.B., and H. E. Quick, F.R.C.S.; *Representatives of the Division on the Branch Council*, A. W. Cameron, M.D., J. M. Morris, M.B., and F. G. Thomas, M.B.; *Ordinary Members of the Executive Committee*, E. Le Cronier Lancaster, M.B., D. E. Evans, M.B., B.S., A. Hanson, W. F. Brook, F.R.C.S., A. C. Begg, M.D., J. Arnallt Jones, M.D.; *Three Members to Serve on the Branch Contract Practice Committee*, J. Arnallt Jones, M.D., E. Brice, and J. S. H. Roberts.

Representative Meetings.—The agenda of the Annual Representative Meeting, and of the Special Representative Meeting were then considered.

British Medical Association.

NOTICE OF EXTRAORDINARY GENERAL MEETING.

NOTICE IS HEREBY GIVEN by the Council that, the following Resolution having been passed by the requisite majority at an Extraordinary General Meeting of the above-named Association, at the Connaught Rooms, Freemasons' Hall, Great Queen Street, London, on Wednesday, the 29th day of June, 1910, a further Extraordinary General Meeting of the above-named Association will be held at the Court of Common Council Chamber, Guildhall, London, on Friday, the 22nd day of July, 1910, at 2 o'clock in the afternoon, for the purpose of receiving a Report of the proceedings at the above-mentioned Meeting, and of confirming, if thought fit, as a Special Resolution the Resolution here set forth:

"That the Regulations contained in the printed document submitted to this Meeting, and for the purpose of identification initialled by the Chairman thereof, be and the same are hereby adopted as the Regulations of the Association in substitution for all the existing Regulations of the Association."

Dated this 30th day of June, 1910.

BY ORDER,

GUY ELLISTON,

Financial Secretary and Business Manager.

Association Notices.

ELECTION OF MEMBERS OF COUNCIL BY GROUPED REPRESENTATIVES.

NOTICE is hereby given that Nominations for candidates for election of Members of Council by Grouped Representatives for the year 1910-11 will be received by the Medical Secretary up to the end of the first hour of the proceedings of the Annual Representative Meeting on Monday, July 25th, 1910. Each Nomination must be on the prescribed form, copies of which will be forwarded by the Medical Secretary upon application.

Separate forms have been prepared (1) for Nomination by a Division and (2) for Nomination by a Representative of a Division included in the Group, and those applying are requested to state for which purpose the form is desired.

The voting papers will be issued at the Representative Meeting to each Representative or Deputy Representative of a constituency in the United Kingdom, in attendance at the Meeting.

By Order of the Council,

J. SMITH WHITAKER,

Medical Secretary.

BRANCH AND DIVISION MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH: WALTHAMSTOW DIVISION.—A meeting of this Division will be held, by the kind invitation of the Chairman, Dr. R. Jones, at Claybury Asylum, Woodford Bridge (nearest station, Woodford, G.E.R.), on Tuesday, July 5th, at 3.30 p.m. Agenda: (1) 3.30 p.m., Address by Dr. R. Jones, entitled, "What Constitutes Insanity?" (2) 4 p.m., Lantern Demonstration in the Pathological Laboratory of the London County Council, by Dr. F. W. Mott, F.R.S., on Syphilis of the Nervous System. (3) 5 p.m., Tea at Dr. Jones's house. (4) Meeting of the Executive Committee. Visitors are invited.—A. POTTINGER ELDRED, Honorary Secretary.

NORTH OF ENGLAND BRANCH.—The annual meeting of the Branch will be held at the Zetland Hotel, Saltburn, on Wednesday, July 6th. The President-elect (Dr. Burnett, Saltburn) and the members of the Cleveland Division offer a very cordial welcome to the members of the Branch, and will be glad to see as many as possible present. Programme: 1 p.m., Lunch. 2 p.m., Annual Meeting of Branch, election of officers, and President's address. 3 p.m., Golf match at Saltburn, Branch *v.* Cleveland; drive and motor car excursion to Gisboro' Priory and Colonel Challoner's grounds; visit to brine baths. Tea provided in each instance. 7 p.m., Dinner. Tickets, 6s. each.—RUTHERFORD MORISON, President; DAVID F. TODD, Honorary Secretary.

NORTH WALES BRANCH.—The annual meeting of the Branch will be held at Llangollen on Tuesday, July 12th.—H. JONES ROBERTS, Honorary Secretary.

OXFORD AND READING BRANCH.—The annual meeting of the Branch will be held at Reading, in the Library of the Royal Berkshire Hospital, on Monday, July 4th, at 4.30 p.m., under the presidency of Dr. J. D. Dickson. Agenda: (1) Minutes of last meeting (2) The President for 1910–11 takes the chair. (3) The President moves a vote of condolence to His Majesty the King on the death of King Edward VII. (4) Election of President-elect and other officers. (5) Treasurer's balance sheet. (6) Council's report. Cases: (7) Dr. Freeman will show two cases of lichen planus, and a case of dermatitis herpetiformis. Also cases illustrating the *x*-ray treatment of scalp-ringworm, and the treatment of angiomatous growths by CO_2 snow and liquid air. (8) Mr. Whitelocke, notes on two cases of intussusception in infants. (9) Dr. Holden, notes on a case of pernicious anaemia with ataxic symptoms. (10) Dr. Gibson, a note on paroxysmal tachycardia. (11) Dr. Abram, a case of Mongolism; a case of gigantism. (12) Mr. Bevers, a case of gastrostomy (to be shown if possible). (13) Dr. Duigan, notes on a case of latent infective endocarditis. Other cases and specimens will be exhibited if time permits The annual dinner, to which members are invited to bring guests, will be held at the Caversham Bridge Hotel, at 6.45 p.m., at a cost of 6s per head (exclusive of wine). Morning dress. Dr. Freeman, of 30, London Road, and Mr. Clowes, of 45, London Road, invite members to tea at 4 p.m. at the above addresses, if they will kindly send a postcard stating their intention to come.—W. DUIGAN, Honorary Secretary.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.—A special meeting of this Division will be held at the Kent County Asylum, Chartham, on Friday, July 8th, at 3.15 p.m. Agenda: Dr. G. C. Fitzgerald, Medical Superintendent, will give a clinical demonstration on cases at the asylum. It is hoped that all members will make an effort to attend the meeting, to avail themselves of this opportunity to visit the asylum and to accept Dr. Fitzgerald's kind hospitality.—HUGH M. RAVEN, Honorary Divisional Secretary.

SOUTH-EASTERN OF IRELAND BRANCH.—A meeting of this Branch, as also a meeting of the Branch Council and the local Division, will be held at the Club House, Carlow, on Wednesday, July 6th, at 5.30 p.m. Agenda: (1) Minutes of last meeting. (2) Letters of apology. (3) Correspondence. (4) Any other business. (5) Tea.—J. QUIRKE, Honorary Secretary, Piltown.

SOUTHERN BRANCH.—The annual meeting of this Branch will be held at the Infirmary, Salisbury, on Thursday, July 14th, at 12.45.—J. OGDIN MARSH, Honorary Secretary.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: MONMOUTHSHIRE DIVISION.—A meeting of the Division will be held at The Cedars, Chepstow, on Thursday, July 7th, 1910.—R. J. COULTER, S. HAMILTON, Newport, Honorary Secretaries.

EDINBURGH AND BORDER COUNTIES BRANCHES.

Motor Meet.

A JOINT meeting of the Edinburgh Branch and the Border Counties Branch will be held at Moffat on Friday, July 8th. Lunch will be served at the Hydropathic at 1.30 p.m., after which a discussion will be introduced by Dr. Veitch on Motor Cars for Medical Men. To enable the management of the Hydropathic, who have promised to provide lunch for those members taking part, to make the necessary arrangements, it is requested that members intending to be present will send their names to either of the secretaries. It is hoped that members who have spare seats will bring those members of the Branches who are not in possession of a car. Any member of the Association who may be motoring in Scotland at the time will be very welcome. A circular will be issued shortly with, it is hoped, the names of those who will take part in the discussion, and indicating the lines upon which a profitable discussion may run. Names may be sent to either of the secretaries, from whom any further information may be obtained,

MICHAEL DEWAR, Honorary Secretary, Edinburgh Branch.

GEORGE R. LIVINGSTON, Honorary Secretary, Border Counties Branch.

ELECTION OF COUNCIL, SESSION 1910—11.

BRANCHES IN THE UNITED KINGDOM.

North of England, and North Lancashire and South Westmorland Branches	Dr. DAVID F. TODD	—	..	Unopposed
Yorkshire Branch	Dr. J. E. EDDISON	—	..	Unopposed.
Lancashire and Cheshire Branch	Mr. F. C. LARKIN	—	..	Unopposed
	Dr. J. H. TAYLOR	—	..	Unopposed
East York and North Lincoln, and Midland Branches	Dr. FRANK M. POPE	—	..	Unopposed
Cambridge and Huntingdon, East Anglian, and South Midland Branches	Dr. B. H. NICHOLSON	—	..	Unopposed
Birmingham and Staffordshire Branches	Mr. ALBERT LUCAS	**135**	..	Elected.
	Dr. Herbert Manley	98	..	——
North Wales, Shropshire and Mid-Wales, and South Wales and Monmouthshire Branches	Mr. D. J. WILLIAMS	**220**	..	Elected.
	Dr. H. Jones Roberts	106	..	——
	Dr. Edward Cureton	79	..	——
Metropolitan Counties Branch	Sir VICTOR HORSLEY, F.R.S.	—	..	Elected.
	Dr. LAURISTON E. SHAW	—	..	Elected.
	Dr. A. J. RICE-OXLEY	—	..	Elected.
	Dr. MAJOR GREENWOOD	—	..	Elected.
	Dr. G. E. Haslip	—	..	——
	Mr. H. W. Armit	—	..	——
	Mr. Hugh R. Ker	—	..	——
	Dr. J. J. Macan	—	..	——
	Dr. St. Clair Shadwell	—	..	——
Bath and Bristol, Gloucestershire, West Somerset, and Worcestershire and Herefordshire Branches	Dr. J. A. MACDONALD	—	..	Unopposed
Dorset and West Hants, and South-Western Branches	Mr. E. J. DOMVILLE	**210**	..	Elected.
	Dr. James Davison	87	..	——
Oxford and Reading, and Southern Branches	No Nomination.			
South-Eastern Branch (excluding Bromley and Croydon Divisions)	Mr. J. H. EWART	—	..	Unopposed.

SCOTLAND.

Aberdeen, Northern Counties, Dundee, and Perth Branches	Dr. J. MUNRO MOIR	—	..	Unopposed
Edinburgh and Fife Branches	Dr. J. R. HAMILTON	—	..	Unopposed.
Glasgow and West of Scotland Branch (4 City Divisions)	Dr. D. J. MACKINTOSH, M.V.O.	**68**	..	Elected.
	Dr. Grant Andrew	69	..	——
Glasgow and West of Scotland (4 County Divisions), Border Counties and Stirling Branches	No Nomination.			

IRELAND.

Connaught and South-Eastern of Ireland Branches	Dr. DENIS WALSHE	—	..	Unopposed.
Leinster Branch	No Nomination.			
Munster Branch	Professor HENRY CORBY	—	..	Unopposed.
Ulster Branch	Mr. R. J. JOHNSTONE	—	..	Unopposed.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns 8,110 births and 3,633 deaths were registered during the week ending Saturday last, June 25th. The annual rate of mortality in these towns, which had been 11.8, 11.4, and 11.1 per 1,000 in the three preceding weeks, was 11.2 per 1,000 last week. The rates in the several towns ranged from 5.1 in Walthamstow, 5.3 in Hornsey, 5.7 in Burton-on-Trent, and 6.3 in Willesden and in Northampton to 15.9 in Oldham, 16.0 in Liverpool, 16.4 in Wallasey, 17.2 in Ipswich, and 19.0 in Merthyr Tydfil. The death-rate from the principal infectious diseases averaged 1.1 per 1,000; in London the rate did not exceed 0.8 per 1,000, while among the seventy-six other large towns it ranged upwards to 2.8 in Tynemouth, 3.3 in Manchester, 3.7 in West Bromwich, and 5.2 in South Shields. Measles caused a death-rate of 1.5 in Bootle, 1.6 in Barrow-in-Furness, and 1.7 in South Shields; whooping-cough of 1.5 in Manchester and in Salford, 2.2 in South Shields, 2.5 in Stockport, and 2.8 in Tynemouth; and diarrhoea of 1.4 in Wallasey and 2.9 in West Bromwich. The mortality from scarlet fever, from diphtheria, or from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,461, 1,401, and 1,363 at the end of the three preceding weeks, further declined to 1,353 at the end of the week under notice; 187 new cases were admitted during the week, against 203, 181, and 166 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, June 25th, 920 births and 484 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 14.3, 14.2, and 13.9 per 1,000 in the three preceding weeks, further declined to 13.3 last week, and was 2.1 per 1,000 above the mean rate during the same period in the seventy-seven large English towns. Among these Scottish towns the death-rates ranged from 10.6 in Greenock and 11.2 in Aberdeen and in Perth to 13.8 in Leith and 19.9 in Dundee. The death-rate from the principal infectious diseases averaged 1.7 per 1,000, the highest rates being recorded in Paisley and in Dundee. The 218 deaths recorded in Glasgow included 4 which were referred to measles, 5 to scarlet fever, 6 to diphtheria, 7 to whooping-cough, and 9 to diarrhoea. Three deaths from scarlet fever occurred in Edinburgh; 4 deaths from measles, 3 from whooping-cough and 3 from diarrhoea in Dundee; and 3 deaths from measles in Paisley.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, June 25th, 539 births and 396 deaths were registered in the twenty-two principal urban districts of Ireland, as against 702 births and 418 deaths in the preceding period. The annual death-rate in these districts which had been 18.0, 17.8, and 18.9 per 1,000 in the three preceding weeks fell to 17.9 per 1,000 in the week under notice, this figure being 6.7 per 1,000 higher than the mean annual death rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 15.5 and 20.9 respectively, those in other districts ranging from 4.8 in Ballymena and 6.9 in Armagh, to 29.4 in Newry, and 29.5 in Kilkenny, while Cork stood at 18.5, Londonderry at 12.0, Limerick at 19.1, and Waterford at 19.5. The zymotic death-rate in the twenty-two districts averaged 2.3 per 1,000, as against 3.1 per 1,000 in the preceding week.

Naval and Military Appointments.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL G. J. COATES, M.D., half-pay list, retires on retired pay, June 25th. He was appointed Surgeon, February 5th, 1881; Surgeon-Major, February 5th, 1893; and Lieutenant-Colonel, February 5th, 1901. He was placed on half-pay in 1904, restored to the establishment in 1906, and again went on half-pay in December, 1908, on account of ill health. He served with the Bechuanaland Expedition in 1884-5; with the Tirah Expeditionary Force in 1897-8 (medal with clasp); on the hospital ship *Gwalior* during the China war in 1900 (medal); and in Cape Colony during the South African war in 1902 (medal with two clasps).

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL P. D. PANE, Bengal, is permitted to retire from the service, from May 17th. He joined the Bengal Medical Department as a Surgeon March 31st, 1880, and became Lieutenant-Colonel March 31st, 1900. He took part with the Mahsud Waziri expedition in 1881.

Lieutenant-Colonel C. C. MANIFOLD, M.B., is promoted to be Colonel, March 29th. He was appointed Surgeon-Captain, Bengal Medical Department, March 31st, 1887, and became Lieutenant-Colonel, November 29th, 1900. He served in the China war in 1900, for which he was mentioned in dispatches, promoted to be Lieutenant-Colonel, and received a medal with clasp.

Lieutenant H. M. INMAN to be Captain, February 2nd. His first commission is dated February 2nd, 1907.

Lieutenant-Colonel G. W. P. DENNYS is appointed Principal Medical Officer, Aden Brigade, vice Colonel W. A. Quayle, M.D., transferred to the Abbottabad and Sialkot Brigades.

Lieutenant-Colonel R. JAMES, M.B., Madras, is permitted to retire from the service from April 29th. He joined the department as Assistant Surgeon, March 31st, 1879, and was made Lieutenant-Colonel, March 31st, 1899.

Captain J. M. SKINNER, M.B., Brigade Laboratory, Jhelum, is appointed Specialist in the Prevention of Disease, from March 22nd.

Lieutenant-Colonel F. W. GEE, M.B., is granted an extension of tenure for one year as Staff Officer, Medical Mobilization Stores, 8th (Lucknow) Division.

ERRATUM.—The words "British Service" should be substituted for "Royal Army Medical Corps" after the names of Surgeon-General A. T. SLOGGETT, C.M.G., and Colonel R. H. FORMAN, M.B., in the *London Gazette* of March 22nd. (BRITISH MEDICAL JOURNAL, April 2nd.)

CHANGES OF STATIONS.

THE following changes of stations amongst the officers of the Army Medical Service have been officially reported to have taken place during May, 1910:

		FROM		TO
Colonel	M. W. Kerin	... ...	Lucknow ...	Naini Tal.
Lieut.-Col.	F. J. Lambkin	... ...	Rochester Row	South Africa.
,,	R. H. Firth, F.R.C.S.	...	Training Schl.	Simla.
,,	W. E. Berryman	... ...	Delhi	Fyzabad
,,	S. Powell, M.D.	... ...	Rawal Pindi ...	Rangoon.
,,	J. Meek, M.D.	... ...	Simla	Quetta.
,,	R. H. Hall, M.D.	... ...	Bedford ...	Colchester.
,,	H. P. G. Elkington	...	Buttevant ...	Queenstown.
,,	D. M. Saunders, M.D.	...	Dublin	Cork.
Major	T. McCulloch, M.B.	... ...	Lebong... ...	Mandalay.
,,	M. P. C. Holt, D.S.O.	... ...	Ambala ...	Kasauli.
,,	H. I. Pocock ...	... ...	Shahjehanpur	Nowshera.
,,	C. R. Elliott, M.D.	... ...	Lahore	Dalhousie.
,,	R. J. Copeland, M.B.	... ...	Meerut	Darjeeling.
,,	A. J. Luther ...	... ...	Thayetmyo ...	Cahir.
,,	C. W. R. Healey ...	... ...	Kamptee ...	Nasirabad.
,,	H. J. Parry, D.S.O., M.B.	...	Pietermaritz-burg	Cosham.
,,	J. W. Jennings, D.S.O.	... ...	Warrington ...	Trawsfynydd Camp.
,,	H. J. M. Buist, D.S.O., M.B.	...	War Office ...	Pirbright.
,,	F. J. Wade-Brown	... ...	Cork	Tipperary.
,,	H. N. Dunn, M.B.	... ...	Multan	Dagshai.
,,	S. H. Withers, M.B.	... ...	Ambala ...	Gharial.
,,	J. D. Alexander, M.B.	... ...	Shwebo ...	Thayetmyo.
,,	T. McDermott, M.B.	... ...	Lucknow ...	Woolwich.
,,	A. F. Tyrrell ...	... ...	Fermoy ...	Kilworth Camp.
,,	E. S. Clark, M.B.	... ...	Belfast	Ballykinler Camp.
,,	W. Tibbits, M.B.	... ...	Shoeburyness	Chatham.
,,	A. E. Milner ...	... ...	London District	Tidworth
,,	H. W. Grattan ...	... ...	Lucknow ...	Naini Tal.
,,	J. Grech	... ...	Meerut	Warrington.
,,	W. A. Ward ...	... ...	Rochester Row	Bulford.
,,	A. W. N. Bowen ...	... ...	Jersey	Poona.
,,	C. J. O'Gorman, D.S.O.	...	Nowshera ...	Peshawar.
,,	H. B. G. Waltou ...	... ...	Pontefract ...	York.
Captain	F. J. Brakenridge	... ...	London ...	Eastern Com.
,,	H. M. Nicholls, M.B.	... ...	Deolali	Colaba.
,,	H. S. Anderson ...	... ...	Fermoy ...	Buttevant.
,,	E. B. Knox, M.D.	... ...	Ipswich ...	Colchester.
,,	C. R. Evans ...	... ...	Halifax ...	Strensall.
,,	F. S. Walker, F.R.C.S.I.	...	Cahir	Fermoy.
,,	T. E. Fielding, M.B.	... ...	London Dist.	Woolwich.
,,	H. A. Davidson, M.B.	...	Buttevant ...	Curragh.
,,	G. F. Sheehan ...	... ...	Calcutta ...	Barrackpore.
,,	J. W. S. Seccombe	... ...	Jullundur ...	Kasauli.
,,	S. M. W. Meadows	... ...	Landguard Fort	Chatham.
,,	F. C. Lambert ...	... ...	Cosham ...	Wool Camp.
,,	T. E. Harty ...	... ...	Mandalay ...	Woolwich.
,,	D. P. Watson, M.B.	... ...	Aden	Lancaster.
,,	J. T. McEntire, M.B.	... ...	Potchefstroom	York.
,,	N. E. Dunkerton	... ...	Pretoria ...	Woolwich
,,	E. M. Glanvill, M.B.	... ...	Devonport ...	Okehampton.
,,	H. C. Hildreth, F.R.C.S.Ed.	...	Dublin ...	Glen Island.
,,	W. MacD. MacDowall	...	Okehampton ...	Devonport.
,,	T. J. Wright ...	... ...	Bere Island ...	Dublin.
,,	J. Fairbairn, M.B.	... ...	Edinburgh ...	Buddon Camp.
,,	J. H. Douglass, M.D.	... ...	Secunderabad	Dublin.
,,	E. C. Whitehead, M.B.	...	Cork	Ballincollig.
,,	J. A. Turnbull ...	... ...	Nowshera ...	Pershill.
,,	D. P. Johnstone	... ...	Maymyo ...	Preston.
,,	E. H. M. Moore ...	... ...	Potchefstroom	Ross Camp.
,,	F. J. Garland, M.B.	... ...	Aden	Chester.
,,	H. C. Winckworth	... ...	Limerick ...	Queenstown.
,,	M. Sinclair, M.B.	... ...	Sialkot	Cork.
,,	K. A. C. Doig ...	... ...	Shahjahanpur	Muttra.
,,	L. V. Thurston ...	... ...	Peshawar ...	Khanspur.
,,	A. W. Gater ...	... ...	Jullundur ...	Cliffden.
,,	J. S. Pascoe ...	... ...	Cyprus	Cairo.
,,	W. G. Maydon ...	... ...	Bangalore ...	Secunderabad.
,,	T. Scatchard ...	... ...	Agra	Kailana.
,,	M. Keane	... ...	Muttra	Landour.
,,	C. F. White, M.B.	... ...	Shwebo ...	Rangoon.
,,	A. S. Littlejohns	... ...	Potchefstroom	Pretoria.
,,	W. R. Galwey, M.B.	... ...	Ferozepore ...	Dalhousie.
,,	F. Forrest ...	... ...	Kasauli ...	Ambala.
,,	V. C. Honeybourne	... ...	Rawal Pindi ...	Mhow.
,,	T. T. H. Robinson, M.B.	...	Mhow	Neemuch.
,,	W. Mitchell, M.B.	... ...	Ambala ...	Sabathu.
,,	E. D. Caddell, M.B.	... ...	Sabathu ...	Ambala.
,,	C. W. Bowle ...	... ...	Multan	Dalhousie.
,,	E. J. Kavanagh, M.B.	...	Bareilly ...	Ranikhet.
Lieutenant	D. F. Mackenzie, M.B.	...	Calcutta ...	Dinapore.
,,	T. H. Scott, M.B.	... ...	Lahore	Ferozepore.
,,	F. J. Stuart, M.B.	... ...	Meerut	Kailana.
,,	H. Gibson ...	... ...	Poona	Jhansi.
,,	C. A. T. Conyngham, M.B.		Curragh ...	Quetta.
,,	H. W. Carson, M.B.	...	Nowshera ...	Peshawar.
,,	J. C. L. Hingston ...		Cosham ...	Hilsea.
,,	B. A. Odlum ...	... ...	Tidworth ...	Perham Down Camp.
,,	A. Hendry, M.B.	... ...	Neemuch ...	Mhow.
,,	J. E. Ellcome ...	... ...	Tregantle ...	Kamptee.
,,	R. M. Dickson, M.B.	...	Glasgow ...	Lucknow.
,,	F. Worthington, M.B.	...	Buttevant ...	Queenstown.
,,	A. L. Stevenson, M.B.	...	Curragh ...	Bangalore.
,,	J. W. Houston, M.B.	...	Poona	Belgaum.
,,	W. J. Dunn, M.B.	... ...	,, ...	Kirkee.
,,	F. B. Dalgliesh ...	... ...	,, ...	Mhow.
,,	A. H. T. Davis ...	...	Bangalore ...	Secunderabad.
,,	T. B. Nicholls, M.B.	...	Hilsea	Tidworth.
,,	S. S. Dykes, M.B.	...	Edinburgh ...	Barry Camp.
,,	A. D. Stirling, M.B.	...	Ashton ...	Edinburgh
,,	G. P. Taylor, M.B.	...	Glasgow ...	Irvine Camp.
,,	J. J. H. Beckton ...	...	Dover	Canterbury.
,,	A. G. Jones, M.B.	...	Bulford ...	Tidworth.
,,	R. M. Davies, M.B.	...	Chatham ...	Gravesend.

Lieutenants T. W. Stallybrass, M.B., and V. P. Hutchinson, appointed on probation, July 31st, 1909, have been stationed at Netley.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM: QUEEN'S HOSPITAL.—(1) House-Physician. (2) House-Surgeon. Salary at the rate of £50 per annum each.

BIRMINGHAM: YARDLEY ROAD SANATORIUM FOR CONSUMPTIVES.—Resident Medical Officer. Salary, £150 per annum.

BRADFORD: ROYAL EYE AND EAR HOSPITAL.—Lady Resident. Salary, £80.

BRIGHTON: ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—Honorary Skiagraphist.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum, increasing to £90.

CALCUTTA: LADY DUFFERIN VICTORIA HOSPITAL.—Lady Medical Superintendent. Salary, Rs 550 a month.

CANCER HOSPITAL, Fulham Road, S.W.—Senior and Junior House-Surgeons. Salaries at the rate of £80 and £70 per annum respectively.

CARDIFF INFIRMARY.—(1) House-Surgeon. (2) House Surgeon for Ophthalmic and Ear and Throat Departments. Honorarium, £50 for six months in each case.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Resident House-Surgeon. Salary, £50 per annum.

CHESTER COUNTY ASYLUM.—First Assistant Medical Officer. Salary, £250 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £60 per annum.

DERBYSHIRE ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £30 for six months.

DORCHESTER: DORSET COUNTY HOSPITAL.—House-Surgeon. Salary, £100 per annum.

FRIMLEY: BROMPTON HOSPITAL SANATORIUM.—Assistant Resident Medical Officer. Salary, £150 per annum, rising to £200.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

GLASGOW SCHOOL BOARD.—Lady Assistant Medical Officer. Salary, £250 per annum.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Honorarium, £20 for six months.

HIGHBURY HILL HIGH SCHOOL FOR GIRLS.—Female Practitioner for Inspection of Pupils. Salary, £50 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Radiographer. Honorarium, 50 guineas per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon. (2) House-Physician. (3) Assistant Casualty Medical Officer. Salary, £30 for six months and £2 10s. washing allowance each.

LINCOLN COUNTY HOSPITAL.—Junior Male House Surgeon. Salary at the rate of £75 per annum.

MERIONETH COUNTY COUNCIL.—Medical Officer of Health. Salary, £450 per annum.

MIDDLESEX COUNTY ASYLUM, near Tooting.—Fourth Assistant Medical Officer.

NOTTINGHAM CITY ASYLUM.—Junior Assistant Medical Officer. Salary, £200 per annum.

ORKNEY: ISLAND OF SHAPINSAY.—Medical Officer and Public Vaccinator. Salary at the rate of £80 per annum and fees.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Resident Medical Officer for Out-patient Department. Salary at the rate of £60 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) House-Physician. (2) House-Surgeon. Salary at the rate of £80 per annum each.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester Square, W.C.—Joint Morning House Anaesthetist. Honorarium, £25 per annum.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Junior Resident Medical Officer. Salary at the rate of £40 per annum.

SALISBURY INFIRMARY.—Assistant House-Surgeon. Salary, £50 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary at the rate of £80 per annum.

SHEFFIELD EDUCATION COMMITTEE.—Assistant Medical Officer for Elementary Schools. Salary, £250 per annum, rising to £300.

SHEFFIELD ROYAL HOSPITAL.—(1) Casualty Officer. (2) Assistant House-Surgeon. (3) Assistant House-Physician. Salary, (1) £50 and (2) and (3) £50 per annum each.

SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Officer. Salary, £60 per annum.

STOCKPORT INFIRMARY.—Junior House-Surgeon (male). Salary, £80 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon. Salary at the rate of £50 per annum.

THREE COUNTIES ASYLUM, Arlesey, near Hitchin.—Medical Superintendent. Salary, £800 per annum, rising to £1,000.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer. Salary, £100 per annum.

WAKEFIELD: WEST RIDING ASYLUM.—Assistant Medical Officer. Salary, £140 per annum, rising to £150.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House-Surgeon. Salary, £120 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Assistant Resident House-Surgeon. Salary, £75 per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—Junior House-Surgeon. Salary at the rate of £75 per annum.

WINCHESTER: ROYAL HAMPSHIRE COUNTY HOSPITAL.—House-Physician (male).

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary, £80 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces vacancy at Hatherleigh, co. Devon.

APPOINTMENTS.

BARBER, Hugh, M.D.Lond., M.R.C.S., Assistant Physician to the Derbyshire Royal Infirmary.

BAXTER, G. S. M., L.R.C.P. and S.Edin., Resident Assistant Medical Officer of the Bolton Union Workhouse.

BINGHAM, S. O., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Alfreton District, co. Derby.

BRADFORD, J. Rose, M.D., F.R.C.S., Holme Lecturer in Clinical Medicine at University College Hospital Medical School.

CASS, E. E., M.B., B.S.Durh., Certifying Factory Surgeon for the Eskdale District, co. Cumberland.

CHAPLIN, Arnold, M.D., F.R.C.P., Medical Officer in London to the Standard Life Assurance Company, vice Dr. James Johnston, retired.

COLLINS, J. Rupert, M.A., M.D.Dub. Univ., Honorary Physician to the Cheltenham General Hospital.

EMRYS-JONES, F., B.A.Cantab., L.M.S.S.A., Honorary Radiographer to the West Bromwich Hospital.

FLEMMING, Percy, M.D., F.R.C.S., Lecturer in Ophthalmology at the London (Royal Free Hospital) School of Medicine for Women.

HART, Bernard, M.B.Lond., M.R.C.S., L.R.C.P., Lecturer in Mental Diseases and Mental Physiology at University College Hospital Medical School.

HAY, A. E., M.R.C.S., L.R.C.P., Medical Officer and Public Vaccinator for the District of Cowes, Isle of Wight.

HOOD, Basil, M.R.C.S., L.R.C.P., Medical Superintendent of the St. Marylebone Infirmary.

MACKENZIE, Eneas K., M.D.Aberd., Medical Officer for the Parish of Inveravon, Ballindalloch.

MACPHERSON, Louis, M.D., D.P.H.Edin., Assistant Medical Officer of Health for Mid-Lothian, Linlithgow, and Peebles.

MARTIN, G. H., M.B., Medical Officer of Health of the Blaenavon Urban District.

OULTON, E. V., M.B., B.C.Camb., M.R.C.S., L.R.C.P., Assistant Inspector of the First Class and Surgeon to the Ophthalmic Hospitals of Egypt.

PEARCE, George Harper, D.P.H.Camb., Medical Officer of Health to the Urban District of Heckmondwike.

ROWEL, J. G., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the West Huddersfield District, co. York.

VAUGHAN, Sawyer, M.D., B.S., Lecturer in Gynaecology at the London (Royal Free Hospital) School of Medicine for Women.

WATSON, J. K., M.D., Certifying Factory Surgeon for the Witney District, co. Oxford.

WINGRAVE, V. H. Wyatt, M.D., Resident Pathologist to the Polyclinic, London.

GUY'S HOSPITAL.—The following have been appointed Dental House-Surgeons: N. Edgar, A. J. Reynolds, A. L. Saul.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BLAYNEY.—On June 25th, to Dr. J. A. B. Blayney and Mrs. Blayney (née Bang), at Park Lane, Roundhay, Leeds, a boy.

SHARP.—On June 23rd, at 1, Headingley Terrace, Leeds, the wife of Alexander D. Sharp, F.R.C.S.E., of a son.

PUBLISHERS' ANNOUNCEMENTS.

THE edition of *Horace*, which has just been issued by Mr. Philip Lee Warner, as publisher to the Medici Society, Limited, will appeal not only to all classical scholars but to all lovers of the beautiful in books. Special permission has been given by the delegates of the Clarendon Press to reproduce the well-known Oxford text and Riccardi type, printed in two colours; Riccardi hand-made paper, and Michalet board cover in the Kelmscott style, have been combined to produce a work in every way worthy of the earlier issues of the Riccardi Press.

RECENT PUBLICATIONS.

Progressive Medicine. Volume I. 1910. Edited by H. A. Hare and H. R. M. Landis. London: Rebman, Limited. 1910. (Royal 8vo, pp. 328. 12s. Four volumes, £2 per annum.)

The first volume of a quarterly publication representing an unusually elaborate kind of year book, seemingly awarded a grand prize at the Paris Exhibition in the year 1900. Of the nineteen contributors to the present volume all but two are American surgeons or physicians. They supply between them a synopsis, sometimes of a critical character, of recent work and literature dealing with the surgery of the head, neck, and thorax, infectious diseases, including influenza, and otology, rhinology, laryngology, and the diseases of children.

Tourist Guide to the Continent. Edited by Percy Lindley for the Great Eastern Railway Company. (Cr. 8vo, pp 120. Price 6d.)

A guide to parts of the Continent easily reached by travellers via Harwich, helped out by numerous maps and pictures. The editor has made excellent use of the space at his disposal, and some ten pages of travel talk in English, French, and German are added. Obtainable at any of the company's stations and agencies, and from ordinary booksellers.

Hungarian Self-Taught. With Phonetic Pronunciation. By the Count de Soissons. London: E. Marlborough and Co. 1910. (Cr. 8vo, pp. 112.)

An addition to a well-known and extensive series, which is of real value in acquiring a colloquial knowledge of the languages treated. The system employed is to give classified lists of English words and useful short sentences with their foreign equivalents first correctly and then phonetically written. An outline of the grammar and etymology of the language is also included.

DIARY FOR THE WEEK.

FRIDAY.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Charles Street, Cavendish Square, W.—(1) Papers:—Dr. George Mackay: Note on an Interfascicular Endothelioma of the Choroid situated at the Optic Disc; pathological report by Mr. E. Treacher Collins. Mr J. B. Lawford: Further Note on the Case of Optic Atrophy and Oculomotor Palsy due to Intracranial New Growth, and shown on February 10th, 1910. (2) Annual General Meeting.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Lectures: Tuesday, at 3.45 p.m., Clinical Cases. Friday, at 3.45 p.m., Accessory Sinuses.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Monday and Wednesday, 5.15 p.m., Infant Feeding and Food Diseases. Tuesday and Thursday, 5 p.m., General Surgical Diseases. Thursday, 4 p.m., Naso-Pharyngeal Trouble in Children.

LONDON SCHOOL OF CLINICAL MEDICINE, Seamen's Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday; Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m., Thursday.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C. The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Medical; Friday, Ear, Nose and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, Gynaecological Therapeutics: Tuesday, The Principles of Treatment of Pulmonary Emphysema; Wednesday, Treatment of Appendicitis; Thursday, Simple Infantile Anaemia.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square. W.C.—Tuesday, 3.30 p.m., Disseminated Sclerosis. Friday, 3.30 p.m., Myopathy.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, 10 a.m., Surgical Out-patient Clinic; 2.30 p.m., Medical Out-patient Clinic: Nose, Throat, and Ear Diseases. Tuesday, 10 a.m., Medical Out-patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological, 3.30 p.m.: Medical In-patient. Wednesday, 2.30 p.m., Medical Out-patient Clinic: Diseases of the Skin; Diseases of the Eye; *X* Rays. Thursday, 2.30 p.m., Gynaecological Operations; Medical Out-patient Clinic; Surgical Out-patient Clinic; 3 p.m., Medical In-patient Clinic. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient; Eye; 3.30 p.m., Medical In-patient.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—The following are the arrangements for next week: Daily, 2 p.m.: Medical and Surgical Clinics. Operations, *X* Rays. Monday, 10 a.m.: Surgical Registrar; 12 noon, Pathological Demonstration; 2 p.m., Eye. Tuesday, 10 a.m., Gynaecological Operations; 2 p.m., Throat, Nose and Ear; Skin. Wednesday, 10 a.m., Diseases of Children: Throat, Nose, and Ear Operations; 12.15 p.m., Practical Medicine; 2 p.m., Eye; Gynaecology. Thursday, 10 a.m., Surgical Registrar; 2 p.m., Eye; Orthopaedics. Friday, 10 a.m. Medical Registrar: Gynaecological Operations; 2 p.m., Throat, Nose and Ear; Skin. Saturday, 10 a.m., Diseases of Children; Eye. Daily, 5 p.m., Clinical Lectures.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
JULY.	
3 Sunday ..	
4 MONDAY ..	OXFORD AND READING BRANCH, Annual Meeting, Royal Berkshire Hospital, Reading, 4.30 p.m.; Tea, 4 p.m.; Annual Dinner, Caversham Bridge Hotel, 6.45 p.m.
5 TUESDAY ..	WALTHAMSTOW DIVISION, *Metropolitan Counties Branch*, Claybury Asylum, Woodford Bridge; Address, 3.30 p.m.; Lantern Demonstration, 4 p.m.; Tea, 5 p.m.; Executive Committee.
6 WEDNESDAY	NORTH OF ENGLAND BRANCH, Annual Meeting, Zetland Hotel, Saltburn, 2 p.m.: Lunch, 1 p.m.; Golf Match, 3 p.m.; Dinner, 7 p.m. SOUTH EASTERN OF IRELAND BRANCH, Meeting of Branch, also Branch Council and local Division, Club House, Carlow, 5.50 p.m.; Tea, 5 p.m.
7 THURSDAY ..	MONMOUTHSHIRE DIVISION, *South Wales and Monmouthshire Branch*, The Cedars, Chepstow.
8 FRIDAY ..	LONDON: Conference between Special Poor Law Reform Committee and the Contract Practice Subcommittee, 12 noon. BORDER COUNTIES AND EDINBURGH BRANCHES, Motor Meeting, Moffat. ISLE OF THANET DIVISION, *South-Eastern Branch*, Special Meeting, Kent County Asylum, Chartham, 3.15 p.m.
9 SATURDAY ..	
10 Sunday ..	
11 MONDAY ..	LONDON: Standing Ethical Subcommittee, 3 p.m.
12 TUESDAY ..	NORTH WALES BRANCH, Annual Meeting Llangollen,

Date.	Meetings to be Held.
JULY *(continued).*	
13 WEDNESDAY	
14 THURSDAY ..	SOUTHERN BRANCH, Annual Meeting, Infirmary, Salisbury, 12.45 p.m.
15 FRIDAY ..	
16 SATURDAY ..	LONDON: Science Committee, 2 p.m.
17 Sunday ..	
18 MONDAY ..	
19 TUESDAY ..	
20 WEDNESDAY	
21 THURSDAY ..	
22 FRIDAY ..	ANNUAL GENERAL MEETING, Court of Common Council Chamber, Guildhall, London, 10 a.m. ANNUAL REPRESENTATIVE MEETING, immediately after Annual General Meeting. EXTRAORDINARY GENERAL MEETING, Court of Common Council Chamber, Guildhall, London, 2 p.m.
23 SATURDAY ..	ANNUAL REPRESENTATIVE MEETING, 9.30 a.m.
24 Sunday ..	
25 MONDAY ..	ANNUAL REPRESENTATIVE MEETING, 10 a.m.
26 TUESDAY ..	CENTRAL COUNCIL, 10 a.m. ANNUAL REPRESENTATIVE MEETING, 10.30 a.m. ADJOURNED GENERAL MEETING, 2.30 p.m.
27 WEDNESDAY	CENTRAL COUNCIL, 9.30 a.m.
28 THURSDAY ..	
29 FRIDAY ..	
30 SATURDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 9TH, 1910.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs. BY ORDER.

MATTERS REFERRED TO DIVISIONS.

British Medical Association.

AGENDA

OF

Annual Representative Meeting, 1910.

THE Annual Representative Meeting will take place in the Court of Common Council Chamber, Guildhall, King Street, Cheapside, London, E.C., on Friday, July 22nd, immediately after the Annual General Meeting, which will be held at 10 a.m.; on Saturday, July 23rd, at 9.30 a.m.; on Monday, July 25th, at 10 a.m.; on Tuesday, July 26th, at 10.30 a.m.; and on Wednesday, July 27th, if required.

In this Agenda are printed, not only Notices of Motion received not less than three months before the Annual Representative Meeting, as required by the Regulations, but also Notices of Amendments to such Motions, Motions arising out of Reports of Council or Committees, and other Motions which the Chairman finds to be in order and which were received in time for inclusion. The printing of such Amendments and Motions does not affect the position of relevant Amendments or Motions subsequently received.

H. A. BALLANCE,
Chairman of Representative Meetings.

July 5th, 1910.

A. Reception of Return of Representatives Elected.

1. **Motion:** That the Return of election of Representatives of Divisions for the year 1910–11 be received, approved, and entered on the Minutes.

2. **Motion:** That the Notices (if any) of appointment of substitutes for Representatives under Article XXX and By-law 19 be received, approved, and entered on the Minutes.

B. Standing Orders.

(For Standing Orders as adopted at Belfast, see BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st, page 242; or Minutes of Annual Representative Meeting, Belfast, page 76.)

3. **Motion:** That the Standing Orders, submitted by the Chairman, be adopted as Standing Orders of the Meeting.

The Chairman will submit the Standing Orders adopted at Belfast with the addition of the following new Standing Orders proposed by the Council, and subject to such other additions and such alterations as may hereafter be notified to the Representatives:

Section III of Standing Orders ("Procedure"): Election of Members of Council by grouped Representatives. (Proposed new Standing Orders.)

1. That the election take place at the time of the Annual Representative Meeting.

2. That a nomination for a Member of Council to be elected by any group of Representatives be required to be made by a Division or a Representative of a Division included in the group.

3. That nominations be required to be on the form appended. (See British Medical Journal Supplement of May 21st, page 245.)

4. That nominations be received up to the end of the first hour of the third day's session of the Annual Representative Meeting.

5. That there be issued to each Representative or Deputy Representative of a Constituency in the United Kingdom in attendance at the Meeting a voting paper containing the names of all candidates duly nominated for election as Members of Council by the group to which such Representative belongs.

6. That the voting paper be in the form appended. (See British Medical Journal Supplement of May 21st, page 246.)

7. That the voting papers be returned to the Medical Secretary within one hour from the commencement of the fourth day's Session of the Annual Representative Meeting.

8. That in the event of equality of votes the election be determined by the aggregate number of Members in the Constituencies represented by the voters for each candidate, as in the case of a card vote.

9. That the details of the voting be placed before and verified by the Chairman before being declared.

C. Annual and Supplementary Reports of Council.

(For Annual Report of Council, 1909-10, see British Medical Journal Supplement of May 21st, 1910, page 248. For Supplementary Report of Council, see pages 40–45 of this Supplement.)

4. **Motion**: That the Annual Report of the Council for the year 1909–10, and Estimate of Income and Expenditure for the year 1910, be received.

5. **Motion**: That the Supplementary Report of the Council for the year 1909–10 be received.

6. **Motion** (By the Chairman): That all Motions by Divisions or Branches which relate to matters dealt with in the Annual Report of Council be considered as amendments or riders to the Recommendations, if any, to which they are relevant, or to the Motion: "That the remainder of the Report under the heading . . . be approved."

7. **Motion**: That paragraphs 1 to 4 of the Annual Report of the Council be approved.

8. **Motion**: That the Financial Statement and Balance Sheet for the year 1909 be approved.

9. **Motion**: That paragraph 7 of the Annual Report of Council (Estimate of Receipts and Expenditure for 1910) be approved.

10. **Motion**: That paragraph 8 of the Annual Report of Council (Apportionment of Members' Subscriptions) be approved.

11. **Motion**: That paragraph 9 of the Annual Report of Council (Issue of Supplement to Non-members) be approved.

12. **Motion**: That paragraphs 10 to 13 of the Annual Report of Council (Control of Advertisements in Journal) be approved.

13. **Motion**: That paragraph 14 of the Annual Report of Council (Duties of Secretariat) be approved.

14. **Motion**: That paragraphs 15 to 20 of the Annual Report of Council (*re* Accident Policy in connexion with British Medical Journal) be approved.

15. **Motion**: That paragraph 22 of the Annual Report of Council (Medical Benevolence) be approved.

16. **Motion**: That paragraphs 23 to 27 of the Annual Report of Council (the British Medical Journal) be approved.

Articles in "British Medical Journal."

17. **Rider** by Chelsea Division:

That this Meeting requests the Council to cause to be inserted on the leader page of every issue of the Journal a disclaimer, stating that the views expressed in the articles therein, represent the opinions of the writer only, and not necessarily those of the general body of the British Medical Association; and that all articles be signed.

(Supplement, April 23rd.)

Articles and Letters forwarded by Members to "British Medical Journal."

18. **Rider** by Rochdale Division:

That the Journal of the British Medical Association is, among other things, the medium for expressing the views of its Members, and if any article or letter be excluded, the Editor should reply within a reasonable time, stating the reason for its exclusion. If the Member be not satisfied with the explanation, the question shall be referred to the Journal Committee.

(Supplement, April 23rd.)

19. **Motion**: That paragraph 1 of the Supplementary Report of Council "as to Finance" be approved (page 40 of this Supplement).

ORGANIZATION.

Capitation Grants.

20. **Motion**: That the following Recommendation of Council be adopted (paragraph 38 of Annual Report, British Medical Journal Supplement of May 21st, page 259).

That, concerning the following Motion, submitted by a Division to the Annual Representative Meeting, 1909, and referred by that Meeting (Minute 195) to the Council for consideration, namely:

194. That in view of the facts (1) that the policy of the Association is to consider the Division as the primary unit, each Division being free to govern itself in such manner as it shall think fit; (2) that the decision as to what additional subjects shall be forwarded to the Divisions for consideration rests with the Representative Body and the Central Council, and not the Branch Councils, this Representa-

tive Body considers that it is illogical any longer to place in the hands of Branch Councils the funds for distribution to the Divisions, while at the same time depriving them of any control over the objects for which the money is used, and instructs the Central Council to so amend the By-laws as to place the distribution in the hands of the Central Council, which can make Capitation Grants to all Divisions and Branch Councils as may be required,

it is inadvisable to adopt the policy referred for the consideration of the Council.

Election of Representatives.

21. **Motion:** That the following Recommendation of Council be adopted (paragraph 41 of Annual Report):

That the Meeting approve of the principle that each Constituency elect at least one Representative and (in the United Kingdom) an additional Representative for each 100 members after the first 50, and that on a card vote the voting power of a Constituency which has more than one Representative be equally divided among all the Representatives of that Constituency.

Formation of British Medical Students' Union.

22. **Motion:** That the following Recommendation of Council be adopted (paragraph 49 of Annual Report):

That the instruction contained in Minute 197 of the Annual Representative Meeting, 1909, relative to the formation of a British Medical Students' Union, be continued.

Appointment of President of Association.

23. **Rider** by ROCHDALE DIVISION:

That, with regard to the appointment of the President of the British Medical Association, the Representative Meeting resolves that the Council should consider the question of the abolition of the custom of choosing the President from the place in which the Annual Meeting is held, and the fact that eminence in the scientific side of the profession should not outweigh years of strenuous work on behalf of the Association. They should also bear in mind in appointing to this—the highest honour—that of the 22,000 Members by far the greatest majority are general practitioners.

(SUPPLEMENT, April 23rd.)

24. **Motion:** That the remainder of the Annual Report of Council under heading "Organization" (paragraphs 28 to 54) be approved.

Procedure for Election of Members of Council.

25. **Rider** (in connexion with paragraph 44 of Annual Report of Council, *see* page 260 of BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st) by CITY DIVISION:

That with reference to By-law 43 (3) of the Draft New By-laws of the Association, as to Mode of Election of twenty-four Members of Council by Groups of Branches in United Kingdom, it be an instruction to the Council to consider whether the form of voting papers should contain particulars of nominations whether by Divisions or Members.

Membership.

26. **Rider** by ROCHDALE DIVISION:

That there be two grades of subscriptions—one as at present, to include membership of Association and JOURNAL; and one, say at 10s. 6d. annually, to include membership and the SUPPLEMENT of the JOURNAL only, and that the Council be instructed to take the necessary steps for the requisite alterations of the Regulations of the Association.

(SUPPLEMENT, April 23rd.)

(For report of Journal and Finance Committee on foregoing Motion *see* Supplementary Report of Council, paragraph 1, page 40 of this SUPPLEMENT.)

27. **Rider** by WIGAN DIVISION:

That in order to bring as large a number of the profession as possible into close touch with Medical Politics and Sociology there shall be two kinds of membership of the Association:

(*a*) Full membership at present rate with the existing privileges.

(*b*) Part membership at, say, ten shillings a year, which should entitle such Member to attend Divisional and general Branch meetings and to receive the SUPPLEMENT weekly, but not the JOURNAL itself.

(SUPPLEMENT, April 23rd.)

(For report of Journal and Finance Committee on foregoing motion *see* Supplementary Report of Council, paragraph 1, page 40 of this SUPPLEMENT).

28. **Rider** by DUNDEE BRANCH:

That no Member shall be able effectively to resign his membership while any discussion as to the conditions of professional employment is in progress between the Association and any organized body, public or other, affecting the area of his Branch or Division, and that it be an instruction to Council to prepare the necessary amendments of the Articles and By-laws.

(SUPPLEMENT, April 23rd.)

29. **Rider** by GLASGOW EASTERN DIVISION:

That it be an instruction to the Council to consider the advisability of the following alteration of present Article VIII of the Association:

That the first six lines of present Article VIII be deleted, and the following words, or words to similar effect, substituted:

"Any member whose subscription shall not have been paid on or before the 30th June of the current year shall receive a second notice asking for payment, and if subscription is still unpaid by 30th September, he shall, without prejudice to his liability to the Association, be suspended from all privileges of membership, and at the end of the year, if the arrears be still unpaid, he shall, *ipso facto*, cease to be a member."

Grouping.

(*For grouping of Branches not in United Kingdom for 1910–11, as determined by Council, see* BRITISH MEDICAL JOURNAL SUPPLEMENT *of May 21st, page 246.*)

30. **Motion** (from the Chair): That the Grouping of Divisions and Branches in the United Kingdom for the election of Members of Council for the year 1911–12 be the same as for the year 1910–11.

31. **Motion** (from the Chair): That the Grouping of Divisions and Branches not in the United Kingdom for the election of Members of Council for the year 1911–12 be the same as for the year 1910–11.

32. **Rider** (arising out of paragraph 43 of Annual Report, "Grouping of Branches not in United Kingdom," BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st, page 260) by BOMBAY BRANCH:

That the present grouping of Indian Branches with Burma, Hong Kong, China, and Ceylon Branches will cause a great delay in any communication likely to be carried on between the grouped Branches. That it would be better to give one Member to the following Branches—namely, Bombay, Punjab, South Indian and Madras and Assam; and another to the other Branches —namely, Burma, Colombo, Ceylon, and Hong Kong and China.

(SUPPLEMENT, April 23rd.)

33. **Rider** (arising out of paragraph 43 of Annual Report, "Grouping of Branches not in United Kingdom," BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st, page 260) by CAPE OF GOOD HOPE—WESTERN PROVINCE BRANCH:

That the South African Branches, including over 500 Members, be represented by one member of Council.

(SUPPLEMENT, April 23rd.)

Elections.

34. **Rider** by DUNDEE BRANCH:

That it be an instruction to the Council to take the necessary steps for the adjustment of the Regulations of the Association so as to provide as far as possible for the conduct of all elections in the Association by the method of the transferable vote.

(SUPPLEMENT, April 23rd.)

Matters Referred to Divisions.

35. **Rider** (arising out of Report of Council under heading "Organization") by WEST SUFFOLK DIVISION:

That in the opinion of the Representative Meeting it is desirable, as a means of awakening fresh interest in the work of the Association, that when matters are referred to Divisions in the SUPPLEMENT of the JOURNAL, a blank leaf, naming the subjects, should be inserted in the same SUPPLEMENT, and attention called to it in the "Special Notice to Members."* Upon this leaf any Member who is unable to attend the meeting of his Division, when these subjects are placed on the agenda, may write his opinion and send it to the Secretary of his Division to be considered at the meeting.

*[EXISTING FORM OF SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this SUPPLEMENT, which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs.

Words Proposed by West Suffolk Division to be Added.

"If unable to attend the Division meeting, he should write his opinion on the blank leaf attached, and send it to the Secretary of his Division."]

(SUPPLEMENT, April 23rd.)

36. **Motion**: That paragraph 2 of the Supplementary Report of Council, as to Application for a Charter (see page 40 of this SUPPLEMENT), be approved.

37. **Motion**: That the Meeting approve and adopt, as a Report of the Representative Meeting to the Association, the Memorandum submitted by the Council to the Meeting on the history of the application of the Association for a Royal Charter.

38. **Motion**: That the following Recommendation of Council be adopted (paragraph 3 *b* of Supplementary Report, pages 40–1 of this SUPPLEMENT):

That the Annual Representative Meeting authorize the Council, after submitting the draft Memorandum of Association to the Divisions, to settle the terms thereof in accordance with the replies of the Divisions, and to proceed forthwith to take the steps necessary to the formation of a new Company, incorporated in the same manner and having the same Articles of Association and By-laws as the present Company as constituted at the time of application, but with a Memorandum of Association as hereinbefore stated.

39. **Motion**: That the remainder of the Supplementary Report of Council under the heading "Organization" (paragraphs 3–7, pages 40–1 of this SUPPLEMENT) be approved.

SCIENCE.

40. **Motion**: That the following Recommendation of Council be adopted (paragraph 55 of Annual Report, BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st, page 269):

That, having regard to the considerable facilities for research which at present exist in various parts of the country, and the heavy financial requirements of such an undertaking, it is inadvisable for the British Medical Association to attempt to establish a Central Research Laboratory.

41. **Motion**: That the remainder of the Annual Report of Council under heading "Science" (paragraphs 55 to 61) be approved.

42. **Motion**: That the Supplementary Report of Council under heading "Science" (paragraphs 9–15, pages 41–2 of this SUPPLEMENT) be approved.

MEDICAL ETHICS.

43. **Motion**: That the following Recommendation of Council be adopted (paragraph 63 of Annual Report, page 270 of BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st).

That having regard to the replies received from the Divisions, the Representative Meeting does not deem it advisable to proceed at present to the drafting of any regulations to govern a special class of consultants.

44. **Amendment** by KENSINGTON DIVISION:

That the Representative Meeting await the final report of the Council with the completed returns from the Divisions as to a special class of consultants before coming to a decision, and that in their final report the Council be requested to analyse the returns from the different Divisions, showing the nature and size of the Divisions making the respective replies.

45. **Motion**: That the remainder of the Annual Report of Council under heading "Medical Ethics" (paragraphs 62 to 72, pages 270–271 of BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st) be approved.

Ethics of Consultation.

46. **Rider** (in connexion with paragraph 64—Ethics of Consultation) by SALFORD DIVISION:

That the following principles dealing with the ethics of medical consultation be approved:

(a) When a patient who has not previously been seen in consultation calls on a consultant at his rooms without introduction from a general practitioner, inquiry should be made in every case as to whether the patient is under the care of any practitioner.

(b) If it is ascertained that the patient is not under the care of another practitioner, there is nothing ethically wrong in the consultant prescribing at his rooms for the patient; but it is inadvisable for any practitioner who wishes recognition as a consultant to attend any patient at the patient's own house except in co-operation with a general practitioner.

(c) If it is ascertained that the patient is under the care of another practitioner, it is the duty of the consultant to use every endeavour to persuade the patient to allow him to communicate with the attending practitioner, but should the patient refuse this permission, the consultant has the right to make an examination and to express an opinion, but not to undertake the treatment of the case.

(SUPPLEMENT, April 23rd.)

Uniform Ethical Rules for Association.

47. **Rider** by WATFORD AND HARROW DIVISION:

That it is desirable that all Members of the Association should be bound by a uniform Code of Ethical Rules instead of having varying codes for different Divisions.

(SUPPLEMENT, April 23rd.)

48. **Rider** by EAST YORK DIVISION:

That in view of the inadequate and inefficient support accorded to a Division of the Association which has passed a Resolution in terms of Rule Z, uniform Ethical Rules common to the whole of the Association be adopted as rapidly as possible.

Supporting Local Profession.

49. **Rider** by EAST YORK DIVISION:

That in cases where action sanctioned by the Central Ethical Committee is taken by any Division of the Association under Rule Z, it shall be binding upon all Members of the Association to support such action so far as is within their power.

Relation of Association to Homœopaths.

50. **Motion:** That the following Recommendation of Council be adopted (paragraph 16 of Supplementary Report, p. 42 of this SUPPLEMENT):

1. That the Association should not attempt to pronounce, in connexion with the question of homœopathy, or in any other connexion, what constitutes sound doctrine in medicine or surgery, nor condemn individual practitioners on the ground that they hold peculiar views of pathology or treatment, or give effect to such views in the practice of their profession.

51. **Motion:** That the following Recommendation of Council be adopted (paragraph 16 of Supplementary Report, p. 42):

2. That in the opinion of the Representative Meeting it is contrary to the recognized principles of professional conduct for any medical practitioner to advertise the holding of peculiar views of pathology or treatment, or the fact that his practice is based thereon, as a means of attracting to himself patients.

52. **Motion:** That the following Recommendation of Council be adopted (paragraph 16 of Supplementary Report, p. 42):

3. That, accordingly, the Representative Meeting express its disapproval of the conduct of those medical practitioners who permit the publication of their names in the *Homœopathic Directory* or similar compilations, or who make use of door-plates or similar means to intimate to the public that they are guided in their practice by peculiar theories of pathology or treatment.

53. **Motion:** That the following Recommendation of Council be adopted (paragraph 16 of Supplementary Report, p. 42–3):

(4) That practical effect be given to the foregoing Resolutions by an expression of opinion of the Representative Meeting as follows: (*a*) That it is desirable that the bodies which have the power of electing Members should not elect those who are reasonably believed to have acted unprofessionally in any of the ways stated; and (*b*) that, concerning those who are already Members, the disciplinary powers of the Council and of the Branches should be duly exercised if, and when, cases of the kind are brought under their notice in conformity with the ordinary Rules of Procedure of the Association in ethical matters.

Position of Practitioners Examining on Behalf of Interested Persons.

54. **Motion:** That the Interim Report of Council on the Position of Medical Practitioners examining on behalf of Interested Persons be received.

(See p. 46 of this SUPPLEMENT.)

55. **Motion:** That the Interim Report of Council on the Position of Medical Practitioners examining on behalf of Interested Persons be provisionally approved.

Warning Notice.

56. **Motion:** That the following Recommendation of Council be adopted (paragraph 21 of Supplementary Report, p. 43 of this SUPPLEMENT):

That, in the opinion of the Representative Meeting, it is the duty of Members of the Association, and of those Members of the medical profession who desire to co-operate with the Association for the maintenance of the honour and interests of the medical profession, to apply for information in accordance with the terms of the Warning Notice in respect to any appointment referred to in that Notice, and to take such action in respect of the information or advice received, in response to such application, as may be most conducive to the maintenance of the honour and interests of the profession.

57. **Motion:** That the remainder of the Supplementary Report of Council under heading "Medical Ethics" (paragraphs 16–22, pp. 42–3 of this SUPPLEMENT) be approved.

MEDICO-POLITICAL.

Rules of Nursing Associations.

58. **Motion:** That the following Recommendation of Council be adopted (paragraph 87 of Annual Report, page 272 of BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st):

That the following Model Rules for inclusion in the Rules of District Nursing Associations be adopted in place of those approved by the Annual Representative Meeting, 1909 (Minute 128):

1. The nurse shall in every case carry out the directions of the Registered Medical Practitioner in attendance.

2 The nurse, when requested in an emergency, may visit and render first aid to any person without awaiting instructions from a doctor.

3. If, in the nurse's opinion, the attendance of a doctor is necessary, she must insist that he be sent for; and if for any reason his services are not immediately available, she must, if the case be still one of urgency, remain with the patient and do her best until he arrive, or until the emergency is over.

Should the advice to call in a doctor be not acted upon, the nurse must at once leave and report the case to her Secretary, and must not attend again except in case of fresh emergency.

4. Should any further attendance be requested by the patient after the emergency is over, the nurse must explain that the doctor will decide whether or not this is necessary.

5. No attendance after a first visit shall be given by a nurse unless she has informed a doctor and received his instructions with regard to the case, if any.

6. Apart from her duties as a certified midwife, a nurse must on no account prescribe or administer on her own responsibility such drugs for her patients as should only be prescribed by a medical man.

7. It is desirable to obtain the co-operation of all the medical men in the district, and in the larger associations to obtain, if possible, the assistance of one or more of them on the Committee.

(Attention is drawn to the fact that the machinery of the local Divisions of the British Medical Association is available for this purpose.)

8. No midwife in the employment of a Nursing Association should accept an engagement without first asking the patient to state, and herself registering, the name of the doctor to be called in should any emergency arise.

9. A nurse shall in no case attempt to influence a patient in the choice of a doctor.

10. No person shall be employed by the ..... Association as a midwife, or received for training as a midwife, without having first signed an agreement not to practise as a midwife within a radius of ..... miles from ..... within a period of ..... after leaving the service of the Association, without the consent in writing of the Association.

(Note.—For the Model Rules as adopted at Belfast *see* page 247 of British Medical Journal Supplement of May 21st.)

Instruction in Hygiene, Nursing, First Aid, etc.

59. **Motion**: That the following Recommendation of Council be adopted (paragraph 101 of Annual Report):

That members of the Medical Profession should be suitably remunerated for teaching subjects in connexion with the Public Health, such as Nursing, First Aid to the Injured, and Hygiene, and that the fee adopted by the London County Council of £1 1s. for each lecture is one which appears suitable for general adoption.

Ambulance Lectures to British Red Cross Society.

60. **Rider** by Winchester Division:

That a fee should be charged for ambulance lectures given to the British Red Cross Society, and that the fee be £5 5s. for each course of lectures.

(Supplement, April 23rd.)

61. **Motion**: That the remainder of the Annual Report of Council under heading "Medico-Political" (paragraphs 73 to 112) be approved.

Prescribing by Chemists.

62. **Rider** (in connexion with paragraph 97 of Annual Report of Council, page 273 of British Medical Journal Supplement of May 21st, Unqualified Practice—Appointment of Royal Commission) by East Norfolk Division:

That the British Medical Association should take immediate steps to stop illegal prescribing by chemists, as also the indiscriminate sale by them of abortifacients.

(Supplement, April 23rd.)

Parliamentary Representation.

63. **Rider** by Chelsea Division:

That this Meeting recognizes the necessity for a Union of Medical Practitioners with Parliamentary representation, and requests the Council of the British Medical Association to ascertain the wishes of Members in the United Kingdom by referendum at the earliest possible date.

(Supplement, April 23rd.)

Treatment of School Children found Defective.

64. **Motion**: That the Special Report of Council on the Treatment of School Children found upon Inspection to be Defective be received.

65. **Motion**: That the Special Report of Council on the Treatment of School Children found upon Inspection to be Defective be provisionally approved.

Centrally Controlled Provident Medical Service.

66. **Motion**: That the Interim Report of the Poor Law Reform Committee on the question of a Centrally Controlled Provident Medical Service (Minute 118 of Annual Representative Meeting, Belfast) be received.

67. **Motion**: That the Interim Report of the Poor Law Reform Committee on the question of a Centrally Controlled Provident Medical Service be provisionally approved.

Reports of Departmental Committee on Coroners' Law, etc.

68. **Motion**: That the Special Report of Council on the Reports of the Departmental Committee on Coroners' Law be received.

Riders by Coroners' Juries to Their Verdicts.

69. **Motion**: That the following Recommendation of Council be adopted (paragraph 13 of Special Report of Council on Reports of Departmental Committee):

That the Association continue its efforts to prevent the passing by Coroners' Juries of riders which include reflections upon the conduct of individuals who have not been afforded the opportunity of giving evidence on their own behalf.

70. **Amendment** by Manchester (South) Division:

That whereas the Report of the Coroners Departmental Committee recognizes the appending of a rider by the jury to their verdict, and in view of the fact that a rider is a judgement (frequently carrying with it a severe penalty) on one who is not on trial, who has no opportunity of defence and who may be absent or entirely ignorant of what is taking place, and is therefore an infraction of every principle of law and justice, it be an instruction to the Council to oppose to the uttermost in future legislation any such right of a jury to add a rider.

(Supplement, April 23rd.)

71. **Motion**: That the following Recommendation of

Council be adopted (paragraph 24 of Special Report of Council on Reports of Departmental Committee):

That the Representative Meeting instruct the Council to approach the Lord Chancellor and the Home Secretary and press upon them the views of the Association in reference to death certification and registration and the Coroner and his court, and to take all steps necessary to secure adequate reforms therein.

72. **Motion:** That the remainder of the Special Report of Council on the Reports of the Departmental Committee on Coroners' Law (paragraphs 1–24) be approved.

73. **Motion:** That the remainder of the Supplementary Report of Council under heading "Medico-Political" (paragraphs 23–34, pp. 43–45) be approved.

PUBLIC HEALTH AND POOR LAW.

74. **Motion:** That the Annual Report of Council under heading "Public Health and Poor Law" (paragraphs 113–124, pp. 275–276 of BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st) be approved.

Medical Officers of Health.

75. **Rider** (arising out of paragraphs 113–115 of Annual Report of Council) by RICHMOND, ROCHDALE, and SALFORD DIVISIONS:

That Minute 234 of the Annual Representative Meeting, 1909, be rescinded.

[*Minute 234 Referred to.*

Resolved: That the Recommendation of the Committee, as amended, be approved, namely:

That in the interests of the public health, and in view of the multiplicity of duties thrown upon medical officers of health by recent enactments, it is desirable that, in future appointments, medical officers of health should be required to devote their whole time to the duties of their office, and be debarred from private practice, except as consultants; that they should be adequately paid, and, if necessary, districts should be grouped for the purpose; and that it is further desirable that medical officers of health should be protected in carrying out their duties, and be secured from capricious dismissal or reduction of salary, and that they be allowed to participate in any superannuation scheme approved by a Local Government Board.)

(SUPPLEMENT, April 23rd.)]

[For the Report which was before the Annual Representative Meeting, 1909, and upon consideration of which the above Resolution was carried, *see* BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st, pp. 247–248.

76. **Rider** by ROCHDALE DIVISION:

That in the interests of public health medical officers of health should have security of tenure, and that in all boroughs and large urban districts, where practicable, whole-time appointments be made with adequate salary.

(SUPPLEMENT, April 23rd.)

Medical Appointments in Public Medical Services in General.

77. **Rider** by SALFORD DIVISION:

That in every form of public medical service the system of part-time appointments of medical practitioners should be maintained as far as such appointments can be made consistently with the requirements of the services, and that all public medical officers should be protected in carrying out their duties, should be secured from capricious dismissal or reduction of salary, and should be allowed to participate in any superannuation scheme approved by a Local Government Board.

(SUPPLEMENT, April 23rd.)

Pathological Branch of Public Health Service.

78. **Rider** by BRIGHTON DIVISION:

That the Central Council of the Association do seek information from the Divisions as to the need for a pathological branch of the Public Health Service, and report on the same to the Annual Meeting of 1911.

(SUPPLEMENT, April 23rd.)

79. **Motion:** That the Supplementary Report of Council under heading "Public Health and Poor Law" (paragraphs 35–38, page 45 of this SUPPLEMENT) be approved.

HOSPITALS.

Payment for Compensation Certificates.

80. **Motion:** That the following Recommendation of Council be adopted (paragraph 125 of Annual Report of Council (BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st, p. 276).

That the fee for a certificate of the kind referred to in Minute 148 of the Representative Meeting, 1909, should not be less than one guinea.

[Minute 148 of Annual Representative Meeting, 1909, referred to:

148. Resolved: That, in the opinion of the Representative Meeting, any member of an honorary or paid medical or surgical staff of a hospital who signs any certificate or gives any report on any case under the Workmen's Compensation Act, ought to receive personally the usual fee in full.]

81. **Motion:** That the remainder of the Annual Report of Council under heading "Hospitals" (paragraphs 125–130) be approved.

Payment of Hospital Staffs.

82. **Rider** by WINCHESTER DIVISION:

That the Council be instructed to prepare a Report for consideration of the Divisions and the Representative Meeting on the advisability of all members of the Staffs of Voluntary Hospitals being paid for their services.

(SUPPLEMENT, April 23rd.)

83. **Motion:** That the Supplementary Report of Council under heading "Hospitals" (see paragraphs 39–40, p. 45 of this SUPPLEMENT) be approved.

NAVAL AND MILITARY.

84. **Motion:** That the Annual Report of Council under heading "Naval and Military" (paragraphs 131–4, BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st pages 276–277) be approved.

85. **Motion:** That the Supplementary Report of Council under heading "Naval and Military" (paragraph 41, page 45 of this SUPPLEMENT) be approved.

SCOTLAND.

86. **Motion:** That the Annual Report of Council under heading "Scotland" (paragraphs 135–8, page 277, of BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st) be approved.

87. **Motion:** That the Supplementary Report of Council under heading "Scotland" (paragraph 42, p. 45 of this SUPPLEMENT) be approved.

IRELAND.

88. **Motion:** That the Annual Report of Council under heading "Ireland" (paragraphs 139-40, page 277 of BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st) be approved.

THE BRANCHES OUTSIDE THE UNITED KINGDOM.

89. **Motion:** That the Annual Report of Council under heading "The Branches outside the United Kingdom" (paragraphs 141–4, page 277 of BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st) be approved.

90. **Motion:** That the Supplementary Report of Council under heading "The Branches outside the United Kingdom" (paragraphs 43–5, p. 45 of this SUPPLETENT) be approved.

GENERAL APPROVAL OF ANNUAL AND SUPPLEMENTARY REPORTS OF COUNCIL.

Annual Report.

91. **Motion:** That, subject to the Amendments and other Resolutions adopted by the Meeting with reference thereto, the Annual Report of Council be approved as a whole.

Supplementary Report.

92. **Motion:** That, subject to the Amendments and other Resolutions adopted by the Meeting with reference thereto, the Supplementary Report of Council be approved as a whole.

D. Other Special Reports of Council (if any).

E. Election of Officers.

Elect a Chairman of Representative Meetings and a Deputy Chairman of Representative Meetings for the year 1910-11.

F. Election of Council.

(i) Election of 12 Members of Council by Grouped Representatives, pursuant to By-law 23 (*c*). [For Nomination Forms and Voting Papers *see* pages 245, 246 of BRITISH MEDICAL JOURNAL SUPPLEMENT of May 21st.]

(ii) Election of 4 Members of Council by Representative Meeting, pursuant to By-law 23 (*d*).

(iii) Election of 3 Members of Council by Representative Meeting, pursuant to By-law 23 (*e*), to represent Royal Navy Medical Service, Army Medical Service, and Indian Medical Service.

G. Election of Committees.

Election by Representative Meeting, pursuant to By-law 41, of members of Finance, Organization, Journal, Central Ethical, Medico-Political, Public Health, Hospitals, Naval and Military, and Colonial Committees; and other Committees, if any.

H. Standing Orders.

Consider proposed amendments of Standing Orders, other than those relating to the order of business.

I. Any other Business.

J. Confirm Minutes.

By Order,

J. SMITH WHITAKER,
Medical Secretary.

SUPPLEMENTARY REPORT OF COUNCIL.

FINANCE.

MOTIONS INVOLVING EXPENDITURE FOR CONSIDERATION AT ANNUAL REPRESENTATIVE MEETING, 1910.

1. In accordance with the Standing Orders approved by the Annual Representative Meeting at Belfast, with regard to Motions on the Agenda of the Representative Meeting involving special expenditure, the Council submits a report by the Journal and Finance Committee on the following Motions placed by the Rochdale and Wigan Divisions respectively on the Agenda of the Annual Representative Meeting, 1910.

Rochdale.

That there be two grades of subscriptions—one as at present, to include membership of Association and JOURNAL; and one, say at 10*s.* 6*d.* annually, to include membership and the *Supplement* of the JOURNAL only; and that the Council be instructed to take the necessary steps for the requisite alterations of the Regulations of the Association.

Wigan.

That in order to bring as large a number of the profession as possible into close touch with Medical Politics and Sociology, there shall be two kinds of membership of the Association:—

(*a*) Full membership at present rate with the existing privileges.

(*b*) Part membership at, say, ten shillings a year, which should entitle such member to attend Divisional and General Branch Meetings and to receive the *Supplement* weekly, but not the JOURNAL itself.

Both Motions are to the effect that there should be two grades of membership—"full" members being in the position of present members; whereas "part" members would be entitled to all privileges of membership of the Association and to the receipt of the *Supplement* of the JOURNAL, but not of the JOURNAL itself.

In the opinion of the Journal and Finance Committee, Members of the new class would not pay their fair share of the working expenses of the Association; the actual saving to the Association resulting from not having to supply the JOURNAL to them would be little more than the cost of the paper on which the JOURNAL is printed. On the other hand the value of the JOURNAL as an advertising medium would be seriously depreciated upon it becoming known that it was no longer circulated to all the members of the Association. As regards the expenses of membership, apart from the supply of the JOURNAL, the Annual Report of the Council shows that the expense of producing and supplying the JOURNAL to each member is 6*s.* 3*d.* per head, while 18*s.* 9*d.* is applied to the general work of the Association, the benefits of which it is proposed that this class of members should continue to enjoy.

ORGANISATION.

APPLICATION FOR CHARTER.

2. In view of the refusal of the Privy Council, already reported to the Special Representative Meeting, to grant the Charter applied for by the Association, the Council has prepared a Memorandum of the history of the application of the Association for a Charter, and of the opposition thereto, which is submitted with this Report for the consideration of the Annual Representative Meeting.*

SPECIAL REPRESENTATIVE MEETING.

3. The Council has considered the following resolutions of the Special Representative Meeting held on Tuesday, June 28th, 1910:—

Minute 24.—Resolved (by 94 votes to 2): That the Draft Articles and By-laws be approved as a whole, in accordance with the foregoing Resolutions, and that

* Will be circulated to members of the meeting.

the Chairman be authorised to submit the same to the Extraordinary General Meeting to be held on Wednesday, June 29th, 1910, and to the necessary confirmatory Extraordinary General Meeting, in order that they may be adopted, in accordance with the requirements of the Companies Acts, as the Regulations of the Association in substitution for all existing Regulations.

Minute 37.—Resolved (*nem. con.*): That the Council be instructed to take all necessary steps with a view to the formation of a new Company, under the title of the British Medical Association, incorporated in the same manner as the existing Company, but with a Memorandum of Association providing for all the powers and objects which are detailed in the Draft Charter applied for by the Association, subject to the following amendments and additions, namely :—

(*a*) That if the use of the word "registers" in Sub-Clause 2 (2) (iii) is considered to interfere with the statutory functions of the General Medical Council, the word be omitted and some other word used, if necessary, to define the wishes of the Association.

(*b*) That if the use of the word "or" in line 2 of Sub-Clause 2 (2) (iv) of the Draft Charter be held by the legal advisers of the Association to restrict the Association to the publication of one Journal only at one and the same time, such words be used as will permit the Association, if it so desire, to have at the same time more than one Journal or other periodical.

(*c*) That with respect to Sub-Clause 2 (2) (vi) of the Draft Charter such words be added as may be necessary to enable the Association, should it think fit, to support in whole or in part any Member of Parliament or of any British Legislative Assembly during his term of office.

(*d*) That such additions be made as will allow the Association, should it at any time be decided by the Members to be desirable, to establish, endow, contribute to, organise or manage any system of Insurance of members of the community against the cost of medical treatment for themselves, their families, and dependants.

New Articles and By-laws.

3 (*a*). The new Articles and By-laws of the Association approved by the Representative Meeting were adopted on Wednesday, June 29th, by the requisite majority of an Extraordinary General Meeting of Members of the Association convened in accordance with the Companies Acts, and if this Resolution be confirmed by a majority of the second Extraordinary General Meeting, to be held at 2 p.m. on Friday, July 22nd, they will become the Articles and By-laws of the Association as at present constituted.

Proposed New Company.

3 (*b*). Concerning Minute 37 of the Representative Meeting, the Council has given instructions for the preparation of a draft Memorandum of Association, which will be submitted to the Annual Representative Meeting, and it is hoped that by this means and by the adoption of the procedure indicated in the following Recommendation, the Divisions will be afforded every opportunity of considering the extended Memorandum of Association, while the Association will be saved the expense, and the Representatives the inconvenience involved in the holding of a further Special Representative Meeting :—

Recommendation.

That the Annual Representative Meeting authorise the Council, after submitting the draft Memorandum of Association to the Divisions, to settle the terms in accordance with the replies of the Divisions, and to proceed forthwith to take the steps necessary to the formation of a new Company, incorporated in the same manner and having the same Articles of Association and By-laws as the present Company as constituted at the time of application, but with a Memorandum of Association as hereinbefore stated.

Capitation Grants.

4. Upon full consideration of the information afforded by the Annual Reports and Financial Statements of Branches in the United Kingdom which have furnished such reports for the year 1909, and of the average expenditure of each Branch for the past three years, the Council has made grants at the rates of from two shillings to four shillings per head, according to the requirements of each Branch, to those Branches which have furnished reports and appear to the Council to need grants in order to meet the expenditure of the current year. The Council has not thought it necessary to make grants to those Branches which had in hand on December 31st, 1909, a sufficient amount to meet expenses for the current year equivalent to the average of the past three years and to leave a substantial surplus in hand on December 31st, 1910.

5. To the Branches outside the United Kingdom a uniform grant has been made of four shillings per head.

6. The total grants which the Council has made amount to £766 14*s.* 6*d.* for the Home Branches, and £808 18*s.* 0*d.* to the Branches outside the United Kingdom.

7. If any Branches in the United Kingdom appear to the Council to require further grants in order to meet the expenditure necessary for the work of the current year, these will be made up to the limit of four shillings per head imposed by the By-laws.

Grouping of Colonial Branches.

8. Communications have been received from various Branches outside the United Kingdom, objecting to the method, determined by the Council in January, of the grouping of these Branches for the purpose of election of Members of the Central Council. As the matter is raised in the Agenda of the Annual Representative Meeting by Motions from two of these Branches, the Council summarises for the information of the Meeting the replies which have been sent to certain Branches which have sent in objections. These were to the effect (i) that the decision of the matter will in future rest with the Representative Meeting ; (ii) that the liberty either of the Council or of the Representative Meeting in dealing with the matter is restricted by the fact that the aggregate number of Representatives on the Council, of Branches outside the United Kingdom is restricted to seven, this reduction in the number of Representatives of these Branches corresponding to the reduction which has also been made in the number of Members of Council representing Branches in the United Kingdom, and the number now fixed for Branches outside the United Kingdom having been agreed to by the Representatives of Colonial Branches in the Special Representative Meeting held in London in May, 1907, when the provisions of the present By-law were determined ; (iii) that some of the difficulties of which the Colonial Branches complain are necessary incidents of any system of grouping, inasmuch as provision must be made for those Branches or topographically associated groups of Branches, which are too small to enjoy independent representation ; and (iv) that no practical hardship results in respect of the procedure of election, inasmuch as voting is by post, there is ample time for making all arrangements for nomination, the election is by voting paper, and all expenses are defrayed from the Central Funds.

SCIENCE.

Central Library.

9. The Lending Department of the Library, to which reference was made in paragraph 58 of the Annual Report of Council, is now open, so far as Periodicals, Transactions, and Monographs are concerned, to all Members of the Association under the following conditions :—

1. No book shall be issued except to a Member whose address is registered with the Financial Secretary and Business Manager.

2. A Member desiring to borrow a book or periodical shall make an application to the Librarian, in writing, which application shall be filed by the Librarian, who shall forward the book as soon as it is available.

3. A Member requiring a book to be forwarded shall send with his application sixpence for packing and carriage.

4. Books shall not be retained for a period exceeding fourteen days without special permission of the Librarian, and any book in the custody of a member shall be despatched carriage paid within twenty-four hours of the receipt of a written application from the Librarian for its return.

5. All books must be returned to the Librarian on or before July 15th in every year, and none shall be issued between that day and the first day of September next following. No Member may borrow more than four volumes at a time.

6. Ordinary text-books can only be consulted at the Library. Only works of reference will be circulated.

7. Each borrower will be held liable for loss of, or damage to, any work while in his possession.

Note.—It will not be possible to undertake to lend fasciculi of current volumes of periodicals.

10. The Council trusts that this extension of the facilities afforded to Members in connection with the Library of the Association will be justified by the large number of Members who will make use of the Lending Department.

Chloroform Committee.

11. The Special Chloroform Committee which was appointed in July, 1901, has issued its final Report (*see* p. 47 of this Supplement). It is intended to republish it in book form, together with the appendices containing the papers written by various members of the Committee.

Stewart Prize.

12. The Council has awarded the Stewart Prize to Major George Lamb, I.M.S., Director of the Pasteur Institute of India, and Senior Member of the Plague Research Commission in India, in recognition not only of his own work, but also of the entire work of the Commission and of every Member thereof.

13. The Stewart Prize is awarded not oftener than every two years, from the proceeds of a sum of £400 left by the late Alexander Patrick Stewart, M.D., the objects of the Trust being the recognition of important work done, or instituted, regarding the origin, spread, and prevention of epidemic disease.

Middlemore Prize.

14. The Council has decided that the Middlemore Prize shall be awarded in 1911 to the writer of the best essay on "Serum and Vaccine Therapy in connection with Diseases of the Eye."

15. The Middlemore Prize is awarded triennially, from the proceeds of a sum of £500 left in trust to the Association by the late Richard Middlemore, F.R.C.S., to the writer of the best essay on the Scientific and Practical Value of Improvements in Ophthalmic Medicine and Surgery (made or published) during the previous three years.

MEDICAL ETHICS.

The Relation of the Association to Homœopaths.

16. The Council issued to the Divisions in February, 1910, a Report on the Relation of the Association to Homœopaths (*see Supplement*, February 12th, pp. 65–66). Up to the time of preparation of the present Report, 87 Divisions have replied. Their replies are to the following effect:—

Question A.

Is the Division of opinion that the Association should not attempt to pronounce in this or in any other connection what constitutes sound doctrine in medicine or surgery, nor condemn individual practitioners on the ground that they hold peculiar views of pathology or treatment, or give effect to such views in the practice of their profession?

Answers.

Affirmative, 78. Negative, 5. No answer, 4.

Question B.

Is the Division of opinion that the Association should express the opinion that it is contrary to the recognised principles of professional conduct for any medical practitioner to advertise the holding of peculiar views of pathology or treatment, or the fact that his practice is based thereon, as a means of attracting to himself patients?

Answers.

Affirmative, 79. Negative, 4. No answer, 4.

Question C.

Is the Division of opinion that the Association should express its disapproval of the conduct of those medical practitioners who permit the publication of their names in the Homœopathic Directory or similar compilations, or who make use of door-plates or similar means to intimate to the public that they are guided in their practice by peculiar theories of pathology or treatment?

Answers.

Affirmative, 67. Negative, 9. No answer, 4

(Also 6 who had no objection to Homœopathic Directory, and 1 Division which was equally divided on the question.)

Question D.

If the reply of the Division to the above questions *B* and *C* is in the affirmative, is the Division of opinion that it is desirable that the bodies which have the power of electing members should not elect those who are reasonably believed to have acted unprofessionally in any of the ways stated?

Answer.

Affirmative, 60. Negative, 4. No answer, 23.

Question E.

In the same event as stated in the previous question, is the Division of opinion that, concerning those who are already Members, the disciplinary powers of the Council and of the Branches should be duly exercised if, and when, cases of the kind are brought under their notice in conformity with the ordinary Rules of Procedure of the Association in ethical matters?

Answer.

Affirmative, 44. Negative, 11. No answer, 32.

Recommendation.

The Council recommends:—

(1) That the Association should not attempt to pronounce, in this or in any other connection, what constitutes sound doctrine in medicine or surgery, nor condemn individual practitioners on the ground that they hold peculiar views of pathology or treatment, or give effect to such views in the practice of their profession.

(2) That the Association should express the opinion that it is contrary to the recognised principles of professional conduct for any medical practitioner to advertise the holding of peculiar views of pathology or treatment, or the fact that his practice is based thereon, as a means of attracting to himself patients.

(3) That, accordingly, the Association should express its disapproval of the conduct of those medical practitioners who permit the publication of their names in the Homeopathic Directory or similar compilations, or who make use of door-plates or similar means to intimate to the public that they are guided in their practice by peculiar theories of pathology or treatment.

(4) That if the above recommendations (2) and (3) are approved, practical effect should be given to them by an expression of opinion of the Representative Meeting: (*a*) that it is desirable that the bodies which have the power of electing Members, should not elect those who are reasonably believed to have acted unprofessionally in any of the ways stated; and (*b*) that, concerning those who are already Members, the disciplinary powers of the Council and of the Branches should be duly exercised if, and when, cases of the kind are brought under their

notice in conformity with the ordinary Rules of Procedure of the Association in ethical matters.

POSITION OF PRACTITIONERS EXAMINING ON BEHALF OF INTERESTED PERSONS.

17. An Interim Report (*see* p. 46) has been prepared and issued to the Divisions, dealing with the subject of the following instruction of the Annual Representative Meeting at Belfast :—

> That the Council be instructed to prepare and submit to the Divisions a Report on the position of medical practitioners who are called upon to examine, on behalf of employers, insurance companies, and persons similarly interested, patients who are under the care of other practitioners.

Upon consideration of the replies of the Divisions, a further report will be prepared and submitted to the Representative Meeting. In the meantime, the Council considers that a preliminary discussion of the subject in this year's Annual Representative Meeting will be of advantage.

PRESENTATION OF CASES TO THE GENERAL MEDICAL COUNCIL.

18. The Annual Representative Meeting, in 1906, decided as follows :—

> That it is absolutely necessary, in the interests of the Medical Profession, that the Association should take up cases of a penal nature before the General Medical Council as complainants.

This decision was confirmed by the Annual Representative Meeting in 1907.

19. Until the present year, no cases had been brought under the notice of the Association which appeared to the Central Ethical Committee (to which the Council have delegated the duty of dealing with the matter) to be of such a nature, or to be supported by such evidence, as to justify submission by the Association to the General Medical Council. At the May Session of the Council this year the Association appeared as complainant in the following cases, with the results stated :—

(*a*) A case, to which attention was drawn by the Sheffield Division, of a medical practitioner who employed his dispenser, a person not medically qualified, to attend in confinement a patient whom the practitioner had engaged to attend. The patient died from septicæmia, the result of retention of placenta. In view of the circumstances of the attendance on the deceased by an unqualified person, the Medical Officer of Health brought the matter to the notice of the coroner, who obtained sanction for exhumation of the body, and held an inquest. The jury included in their verdict a finding that the patient ought to have been attended by a qualified medical practitioner. The Division asked that the Association should take the necessary steps to secure an inquiry into the case by the General Medical Council on account of the public scandal which had been occasioned, the members of the Division considering that it would be invidious for them, either as a Division or individuals, to appear before the General Medical Council as complainants.

The Council found the facts alleged in the complaint of the Association to be proved, and directed the erasure of the name of the practitioner from the Medical Register.

(*b*) A case, to which attention was drawn by the Nottingham Division and the Midland Medical Union, of a medical practitioner who persistently, and after warning, was a party to canvassing in association with a medical aid society established by a collecting insurance company.

The practitioner against whom complaint was made, admitted, through his Solicitor, the substantial accuracy of the allegations of the Association, explained that the canvassing had taken place without his knowledge or approval, but admitted his responsibility therefor, expressed his regret and undertook not to repeat the offence. In consideration of these admissions and this undertaking, the Medical Secretary, on behalf of the Association, and with the approval of the Chairman of the Central Ethical Committee who was present, decided not to produce his evidence before the Council, and the case was withdrawn with the consent of the Council.

(*c*) A case brought under notice by the Council of the Metropolitan Counties Branch, as well as by various individual members of the profession, of a practitioner who is associated as a medical officer and as a member of the Committee of Management with an Institution called "The Eye and Ear Clinique," at which patients are charged fees of 5*s.* and 10*s.* 6*d.*, and which advertises widely in newspapers for patients.

The case was partly heard and adjourned by the Council for further consideration at the November Sessions, in order that the accused might produce further evidence.

20. In the opinion of the Council these cases illustrate the utility, and indeed the necessity, of the Association taking the action which it decided in 1907 to take of appearing as complainant before the General Medical Council.

WARNING NOTICE.

21. The Council, after prolonged consideration of the Standing Orders governing the publication of Warning Notices in the BRITISH MEDICAL JOURNAL, has adopted new Standing Orders, devised, chiefly, with the object of securing more effective central control over the conditions of insertion of such Notices, without impairing the necessary promptitude of action in urgent cases. The Council considers it desirable that the position of the Association should be clearly defined as regards the effect which the appearance of a Warning Notice with respect to any appointment should have upon the consideration of any question of professional conduct arising out of the acceptance of that appointment.

The Council **recommends**:—

> That the Representative Meeting express the opinion that it is the duty of Members of the Association, and of those Members of the medical profession who desire to co-operate with the Association for the maintenance of the honour and interests of the medical profession, to apply for information in accordance with the terms of the Warning Notice in respect to any appointment referred to in that notice, and to take such action in respect of the information or advice received, in response to such application, as may be most conducive to the maintenance of the honour and interests of the profession.

HAMPSTEAD HOSPITAL.

22. In view of questions arising out of the Hampstead Hospital dispute which may require the consideration of the Representative Meeting, the Council has authorised the circulation to the Representatives of documents which were before the Council when it considered the case in January last.

MEDICO-POLITICAL.

MEDICAL TREATMENT OF SCHOOL CHILDREN FOUND UPON INSPECTION TO BE DEFECTIVE.

23. The provisional scheme for the Medical Treatment of School Children, referred to in paragraph 83 of the Annual Report of the Council as in course of preparation, has now been circulated to the Honorary Secretaries of Divisions, with an indication that copies will be supplied for distribution when any Division has the matter under consideration, and with a request to each Division to consider the matter (*a*) as regards the general policy of the Association, and (*b*) as regards any local action which the Division may think desirable. The Report is submitted to the Representative Meeting[1] for preliminary discussion.

[1] The report has already been circulated to the Divisions.

Recommendations of the Departmental Committee on the Working of the Midwives Act, 1902.

24. The Recommendations of the Departmental Committee on the working of the Midwives Act have been carefully considered, and the Council is glad to report that in the main they agree with the views which have been expressed by the Representative Meeting, and which were placed before the Departmental Committee by the witnesses of the Association. An important difference between the Recommendations of the Committee and the policy of the Association is in respect of the authority which should deal with the payment of medical men called in by midwives.

25. In view of the introduction of the Midwives Bill of the Government, the Council has made representations to the Lord President of the Council and the President of the Local Government Board to the following effect, and has asked that a deputation be received from the Association :—

(*a*) That payments to medical men summoned in cases of emergency on the advice of midwives be made, pending reform in the Poor Law, by the Local Supervising Authorities, and not by the Poor Law Authorities as recommended by the Departmental Committee.

(*b*) That, upon receipt of a declaration from the Medical Practitioner in attendance that he is unable to obtain payment of his fee from the patient or her representatives, the Local Authority should pay the fee to the Medical Practitioner, and should itself be empowered, if thought fit, to charge the fee paid as "relief on loan."

(*c*) That the scale of fees should be fixed by order of the Local Government Board.

(*d*) (i) That the recommendation as to a system of uniform fees in emergency cases contained in (*b*) (6) of the Departmental Committee's Recommendations be not approved; and (ii) that the term "any ordinary after attendance" be defined by the Local Government Board as meaning not more than three subsequent visits.

26. It has also been decided that in the event of the adoption of an Act containing the above provision (*c*) the Association shall press upon the Local Government Board the adoption of the following scale :—

	£	s.	d.
Visit (including any necessary prescription)—			
Day (7 a.m. to 7 p.m.)	0	3	6
Night (7 p.m. to 7 a.m.)... ...	0	7	6
Attendance at cases without operative interference and three subsequent visits, if necessary	1	1	0
Attendance at cases of operative interference and three subsequent visits, if necessary	2	0	0
Assistance for the administration of an anæsthetic	1	1	0
Travelling Expenses.			
For attendance at a case more than 1 mile from the Practitioner's registered address; for each mile or part of a mile	0	2	0

Note.—The above are minimum fees. Powers should be obtained to pay special fees in special cases with the consent of the Local Government Board.

The Medical Profession as a Career.

27. The following Resolution of the Representative Meeting, 1909, having received the consideration of the Council,

> That the following Motion be referred to the Council for consideration and action at their discretion :—
>
> That having considered the reference from the Council contained in paragraph 24 of the Supplementary Report of the Council (p. 132), the Representative Meeting request the Council to consider the advisability of drawing the attention of headmasters of schools to the overcrowded conditions of the medical profession, and the small income received by many medical men after much expenditure of time and money.

A letter has been drawn up for circulation to the Headmasters of schools.

Conference with the Representatives of the British Pharmaceutical Conference.

28. The Conference between Representatives of the Association and Representatives of the British Pharmaceutical Conference, to which reference was made in paragraph 105 of the Annual Report of the Council, met on May 19th, 1910, at the Offices of the Association, under the Chairmanship of the Chairman of Council, when the following points were discussed :—

(*a*) Medical Dispensing—its extent—whether it should be transferred to pharmacists, and, if so, how the transfer could be effected ;

(*b*) The nature and extent of prescribing by unqualified persons, and the means by which it may be prevented ;

(*c*) The possibility of co-operation in action concerning the sale of dangerous, secret, or useless nostrums ;

and the following Resolution was carried :—

> *Minute* 5.—That the Members of this Conference recommend to their respective bodies the institution of a Joint Standing Committee consisting of at least ten Members of the British Medical Association and the British Pharmaceutical Conference to be elected at the Annual Meeting of each Association ; and that meantime this Conference adjourn and delegate to the Chairman and Secretaries the work of preparation leading up to the institution of the said Joint Standing Committee.

29. The Council has approved the appointment of a Standing Joint Committee, consisting of at least ten Members of the British Medical Association and ten Members of the British Pharmaceutical Conference.

Public Medical Service.

30. The Annual Representative Meeting, 1909, resolved :—

> *Minute* 118.—"That the following Motion be referred to the Council for consideration and report :—
>
> That the time is now opportune for the British Medical Association to take into consideration the drafting of a scheme for Public Medical Services, to embrace Philanthropic Dispensaries and Medical Services, School Clinics, the Poor Law Medical Service, Provident Dispensaries, and the Medical Services of Friendly Societies and Clubs."

This instruction has received prolonged consideration from the Medico-Political Committee and also from the Special Poor Law Reform Committee as a matter arising out of the discussion of the Reports of the Royal Commission on the Poor Law. Owing to the importance and complexity of the subject it has not been found possible to prepare a report in time for issue to the Divisions before this year's Annual Representative Meeting, but it is hoped to circulate an Interim Report to the Representatives in order that a preliminary discussion may take place in that Meeting.

Reports of Departmental Committee on Coroners Law, &c.

31. After careful consideration of the Reports of the Departmental Committee on Coroners Law, &c., and comparison of these Reports with the Memorandum of Evidence of the Association, the Council submits for the consideration of the Representative Meeting a Special Report[1] containing Recommendations as to the future action of the Association in regard to this important subject.

Action taken in Contract Practice Cases.

32. Since the issue of the Annual Report of Council action has been taken in connection with the following Contract Practice Appointments :—

Cwmtillery (Collieries Medical Officer), East Kirkby and Kirkby-in-Ashfield (Friendly Societies' appointment), Bradninch Club appointments.

[1] Will be circulated to members of the Meeting.

ACTION TAKEN IN SCHOOL MEDICAL OFFICER APPOINTMENTS.

33. Action, not previously reported to the Representative Meeting, has been taken in respect to the following public appointments :—

Ilkeston (Lady School Medical Officer and Assistant Medical Officer of Health), Aberdeen (Chief Medical Inspector), Gloucestershire (Lady School Medical Officer), and Inverness County (School Medical Officer).

CENTRAL EMERGENCY FUND.

34. The Central Emergency Fund began the year 1909 with a balance in hand of £74 12*s.* 6*d.* By subscriptions from January 1st to December 31st, 1909, the sum of £222 13*s.* was received, by subscriptions from January 1st, 1910, to June 22nd, 1910, £187 6*s.* 10*d.*, making a total of £484 12*s.* 4*d.* for a year and a half.

Payments amounting to £300 have been made to the South Wales Branch Fund for Ebbw Vale, £30 has been paid to the Birmingham Branch for the Coventry dispute, and £30 to the Norwich Division for the assistance of a Member concerned in a dispute with certain Friendly Societies.

There is thus a balance in hand of £124 12*s.* 4*d.*

PUBLIC HEALTH AND POOR LAW.

PUBLIC HEALTH OFFICERS BILL.

35. As mentioned in paragraph 115 of the Annual Report of the Council, the Public Health Officers Bill of the Association has been redrafted, and arrangements are being made for its introduction into Parliament.

MEDICAL OFFICERS OF HEALTH SUPERANNUATION BILL.

36. Clauses which provided for the Superannuation of Medical Officers of Health were removed from the Old Public Health Officers Bill of the Association under the advice of supporters in Parliament, who thought the question should be dealt with separately. The Council has now drafted a Bill, which it is hoped to introduce into Parliament during the present Session.

PREMIUM-PAYING ASSISTANT MEDICAL OFFICERS OF HEALTH.

37. A question has arisen as to the insertion in the BRITISH MEDICAL JOURNAL of an advertisement for an Assistant Medical Officer of Health (pupil), for whom a premium was required. The Council is of opinion that it is undesirable that a premium-paying pupil of a Medical Officer of Health should in any circumstances be designated "Assistant Medical Officer of Health," and instructions have been given to decline advertisements of the kind.

ACTION TAKEN WITH REGARD TO PUBLIC HEALTH AND POOR LAW APPOINTMENTS.

38. Action has been taken with regard to the following Public Appointments not previously reported to the Representative Meeting : Radstock (Medical Officer of Health), and Midlothian, Linlithgow, and Peebles (Assistant Medical Officer of Health).

HOSPITALS.

REPRESENTATION OF LOCAL MEDICAL PROFESSION ON BOARDS OF HOSPITALS AND SIMILAR BODIES.

39. In accordance with the Instruction contained in Minutes 157 and 158 of the Representative Meeting, Belfast, the Council has directed the issue of a circular.[1]

Minute 157.—"That, in the opinion of the Representative Meeting, the association of officially recognised representatives of the local medical profession in the promotion and general management of hospitals and other medical charities is desirable in the interests of those institutions as well as of the profession, and that for the appointment of such representatives use should be made of the machinery afforded by a Division of the British Medical Association."

Minute 158.—"That it be an instruction to the Central Council to prepare a scheme for the nomination and election of representatives in accordance with the above Resolution, and to submit the same for the approval of the Divisions and of this Body."

[1] This is being circulated to the Divisions.

OUT-PATIENT DEPARTMENTS OF LONDON HOSPITALS.

40. In view of the fact that it is proposed by the Council of the King Edward VII Hospital Fund to appoint a Committee to enquire into the question of Out-Patient Departments of London Hospitals, the Council has instructed the Hospitals Committee to co-operate with the Metropolitan Counties Branch in preparing evidence for submission at the proposed enquiry.

NAVAL AND MILITARY.

SERVICE REPRESENTATION IN COUNCIL.

41. In accordance with By-law 23 (*d*) the Council makes the following nominations for the election by the Representative Meeting of Members of Council representing the Services :—

Royal Navy Medical Service.

Insp.-Gen. Robert Bentham, R.N.
Dep. Insp.-Gen. W. Bowden, R.N., D.S.O.

Army Medical Service.

Surg.-Gen. Sir Alfred Keogh, K.C.B.
Lieut.-Col. F. W. H. Davie-Harris, R.A.M.C.

Indian Medical Service.

Surg.-Gen. W. R. Browne, C.I.E., I.M.S.
Surg.-Gen. J. P. Greany, I.M.S.

SCOTLAND.

MIDWIVES (SCOTLAND) BILL.

42. The Scottish Society of Medical Officers of Health has submitted for the consideration of the Council a Draft Midwives (Scotland) Bill. The Bill has been referred to the Scottish and Medico-Political Committees.

THE BRANCHES OUTSIDE THE UNITED KINGDOM.

MEDICAL REGISTRATION IN INDIA.

43. The Council has considered an application for advice from the Bombay Branch concerning a Draft Bill for the Registration of Medical Practitioners in the Bombay Presidency, forwarded to the Branch by the Surgeon-General to the Government of Bombay. The principal point upon which the Branch desired advice was as to the inclusion in the Register of certain classes of medical practitioners known as "Hospital Assistants" and "Military Assistant Surgeons."

44. The Council has communicated to the Secretary of State for India its opinion that the time has now arrived when there should be a system of Medical Registration covering the whole of India and Burma. In informing the Bombay Branch of this action, the Council has expressed the opinion that no system of registration would be complete which did not include Military Assistant Surgeons and Hospital Assistants.

MEDICAL REGISTRATION IN THE EAST AFRICA PROTECTORATE.

45. The Secretary of State for the Colonies has forwarded for the observations of the Association a proposed Ordinance for the Registration of Medical Practitioners and Dentists in the East Africa Protectorate, and the observations of the Association were duly forwarded. The Council would take this opportunity of expressing its appreciation of the action of the Colonial Office in thus systematically affording the Association a means of expressing professional opinion upon questions of medical legislation in His Majesty's Dominions beyond the Seas.

REPORT OF COUNCIL

ON

POSITION OF MEDICAL PRACTITIONERS CALLED UPON TO EXAMINE (OTHERWISE THAN BY THE REQUEST OF THE PATIENT OR PERSONS ACTING UPON HIS BEHALF) PATIENTS WHO ARE UNDER THE CARE OF OTHER PRACTITIONERS.

Reference.

The Annual Representative Meeting passed the following Resolution, which has been referred by the Council to the Central Ethical Committee, and by the Central Ethical Committee to the Standing Subcommittee, for consideration and report:

Minute 40*a*.—That the Council be instructed to prepare and submit to the Divisions a Report on the position of medical practitioners who are called upon to examine, on behalf of employers, insurance companies, and persons similarly interested, patients who are under the care of other practitioners.

Memorandum.

I. *Question of* locus standi.—Any right of one person to employ a medical practitioner to make an examination and report on the health of another will usually arise under (*a*) a contract of employment, including those which fall within the purview of the Workmen's Compensation Act, or (*b*) a contract of insurance. It may suffice for the present to confine the consideration of the subject to these groups of cases.

II. The fundamental difference between the relations to one another of the medical practitioners concerned in a case of the kind under consideration and that of the practitioners in an ordinary consultation, such as was dealt with in the Report on the Ethics of Consultation, arises from the fact that in an ordinary consultation the practitioners taking part are all engaged in the interest of the patient, whereas in the cases to be dealt with in the present Memorandum they act for persons whose interests are divergent. Each medical practitioner is concerned in the interests of the person who employs him. Their rights and duties in respect of one another, apart from ordinary courtesy and the consideration which members of the profession are in every case bound to show to one another, depend upon the rights, and the obligations to one another, of those for whom they act.

III. It is necessary, therefore, to consider briefly what are the rights and duties of the persons in whose interests the medical practitioners are respectively acting.

IV. Of the cases in which the examination in question is made in connexion with a contract of employment a large number arise under the Workmen's Compensation Act. In these cases the rights of the employer and of the workman, as regards the medical examination of the latter by doctors employed by the former, are to a great extent defined by statute. The workman will forfeit his claim to compensation if he throws any unreasonable difficulty in the way of his examination by the employer's doctor in the manner prescribed. On the other hand, the employer cannot demand as part of his statutory rights that any examination should be carried out in a manner which may injure the workman's health, of which the workman's doctor is the recognized guardian.

V. Other cases in which an employer may claim to satisfy himself, by an examination made by a doctor acting in his interest, as to the state of health of a workman, are those in which the question is to be determined of the workman's fitness for employment, apart from any question of compensation. In these cases, again, a workman has to consider whether it is more to his interest to submit himself to examination by the employer's doctor or to risk losing his employment. If he decide that it is to his in terest, on the whole, to be examined, it is clear that hi s doctor can claim no right to interpose any difficulties in the way of examination other than those which are necessary for the protection of the workman's health.

VI. In insurance cases the person or company who have incurred a liability to pay compensation in respect of disease or injury are entitled to satisfy themselves by medical examination, by a doctor employed by them, as to the extent of such disease or injury, and the patient by refusing unreasonably to submit himself to examination, risks forfeiting his right to compensation. It is reasonable that he should be protected against injury in connexion with the examination, and he may demand, if he think proper, that his own doctor should be present at the examination to watch his interest in this and any other respect.

VII. In view of the considerations above stated it may be assumed for the purpose of the present Report that in every case which requires consideration in the Report the patient is satisfied, before any question of relations of the two doctors arises, that it is to his interest to submit himself to examination, and the medical practitioner who acts on his behalf can claim no rights upon grounds of medical ethics or medical etiquette, the exercise of which would conflict with the interest of the patient.

VIII. On the other hand, any rules of which the Association may express approval should be so framed as to tend by their operation to secure that the interests of the patient shall be properly safeguarded through the agency of the doctor employed by him.

IX. For convenience, the two practitioners concerned are spoken of in the following paragraphs and Rules as the "Medical Inspector" and the "Medical Attendant" respectively.

X. It may be the duty of the Medical Inspector to make such examination and enquiries as will enable him to report upon any of the following matters:

(*a*) Present state.
(*b*) Etiology of any existing disorder.
(*c*) Prognosis.
(*d*) Treatment.

XI. It will be the duty of the Medical Attendant:

(i) To give any information which his patient may authorize him to give.
(ii) To facilitate the examination in every way consistent with the patient's welfare.

Suggested Rules.

The following Rules are suggested as complying with the principles above stated:—

(1) Except as hereinafter mentioned, the Medical Inspector should give the Medical Attendant such notice of the date, time, and purpose of his visit as will afford reasonable opportunity for the Medical Attendant to be present should he or the patient so desire.

The exceptions are—

(*a*) When circumstances justify a surprise visit.
(*b*) When circumstances necessitate a visit within a period which does not afford time for notification.

(2) The Medical Attendant must not put any unnecessary difficulties in the way of fixing a time convenient to both practitioners.

(3) If the Medical Attendant fails to appear at the time appointed, the Medical Inspector may proceed with his examination forthwith.

(4) The Medical Inspector must not, without the consent of the Medical Attendant, do anything in the course of his examination which involves active interference with the treatment of the case. Examples of improper interference would be the removal of dressings or splints.

(5) The Medical Inspector must not make any comments to the patient which are of the nature of criticisms of, or reflections upon, the treatment, nor must he express, without the concurrence of the Medical Attendant, any opinion to the patient as to the etiology, diagnosis, or prognosis of the case. His duty is strictly confined to examining into such matters as are necessary for the purpose of his report, and reporting to his employer, and to his employer only, his conclusions from such examination.

British Medical Association.

FINAL REPORT

OF

SPECIAL CHLOROFORM COMMITTEE.

SECTION I.

INTRODUCTION.

AT the Annual General Meeting of the British Medical Association held at Montreal in 1897, Dr. A. D. Waller, F.R.S., delivered an address upon anaesthetics. He insisted that it was all-important to appreciate the great power of chloroform, and that of the deaths which occur during its use many were avoidable and so were unjustifiable. He pointed out that when the power of chloroform was recognized—and by recognition he meant the recognition in numerical values—the preventable deaths would not occur.[1] In 1898 he returned to this subject in a communication made to the (then) Society of Anaesthetists,[2] in which he dealt mainly with the question of the accurate dosage with chloroform during anaesthetization by that drug. He says, "Successful chloroform anaesthesia requires the regular respiration of air in which the chloroform vapour is maintained between the limits of 1 and 2 per 100." In May, 1901, Dr. Waller wrote the subjoined letter to the Council of the British Medical Association:

Weston Lodge,
16, Grove End Road, N.W.
May 20th, 1901.

To the President and Council of
The British Medical Association.

SIRS,

I am anxious to again bring under the serious consideration of the B.M.A. the question of accidents during anaesthesia.

The numerous attempts to obtain further knowledge and consequent diminution of death-rate are well-known to me, and I do not think the time, labour, and money bestowed upon inquiry into the subject have produced the result hoped for, viz: a diminution of death-rate. Nevertheless, I believe that one clear fact has come to light, viz., that deaths (chiefly under chloroform) are in the overwhelming majority of instances attributable to overdose.

When, however, an attempt is made to teach this important principle by an appeal to numerical data, it is found that such data are not in existence.

We do not know by direct experiment how much chloroform is contained in the body of an animal fully "anaesthetized" to a surgical degree, or deliberately anaesthetized to death. Nor does any thoroughly well tested quantitative method exist by which these principal facts could be determined. I venture to think that it would greatly contribute to diminish danger if it should be clearly established that accidental death is due to accidental overdose, and if data could be obtained enabling us to estimate and teach what are "sufficient" and "excessive" quantities of absorbed chloroform under given conditions.

I do not think that such knowledge would be of *direct* value to the practical anaesthetist, but I do believe that its *indirect* value in laying the foundations of his knowledge, and affording a positive basis of teaching, would ultimately be very great. And I consider that a rough, but wholly impartial, indication of the influence of such knowledge might be looked for in the annual death-rate under anaesthesia, as returned in the reports of the Registrar-General.

On these grounds, in particular on the ground that this method of approaching the subject has not yet been adopted, I venture to suggest to the Council of the Association the formation of a small Committee with the definite and restricted instruction *to study the methods of quantitative determination of chloroform in air, in fluids, and in the bodies of animals variously chloroformed.*

I venture further to suggest that a definite problem of this nature will require not merely close and critical control by experienced members of such a committee, but the undivided attention and daily work of some one person giving his undivided attention to the subject, and that the nature of the inquiry is such that the Council of the Association or its Scientific Grants Committee may think fit to devote to it one of the Research Scholarships of the Association.

I am, Sirs,
Your obedient servant,
(Signed) AUGUSTUS D. WALLER.

[1] BRITISH MEDICAL JOURNAL, November 20th, 1897.
[2] *Proceedings*, vol. i, p. 72; also BRITISH MEDICAL JOURNAL, April 23rd, 1898.

It was resolved by the Council[3]:

1. That a Special Chloroform Committee be appointed to investigate methods of quantitatively determining the presence of chloroform in the air and in the living body.
2. That the Special Chloroform Committee have power to co-opt two members, and enter on an expenditure of £100.

The Council of the British Medical Association[4] further appointed the Committee[5] to consist of Dr. Barr (now Sir James Barr), Dr. Dudley Buxton, Sir Victor Horsley and Professor A. D. Waller with the instruction to "investigate methods of quantitatively determining the presence of chloroform in the air and in the living body." The Committee co-opted two members, viz, Mr. A. Vernon Harcourt, F.R.S., sometime Reader in Chemistry at Christ Church, Oxford, and subsequently Professor Dunstan, F.R.S., and these joined the Committee.

The object of the reference was made more plain and the work of the Committee led into more obviously practical lines by the suggestion of Sir Victor Horsley conveyed in a letter to the Council of the Association and adopted. The addition to the reference ran, "and determine if possible what is the minimal dose of the drug" (chloroform) "which would secure an adequate anaesthesia for operations and at the same time not endanger life."

The object of the original reference was to obtain accurate data for the examination of the methods in use and to promote others whereby chloroform could be quantitatively recovered from the air respired as well as from the fluids and tissues of the body. This being done, it would be possible to determine the actual dose given and the amount of the drug in the body which induced anaesthesia, and that which produced the deeper narcosis culminating in failure of tissue life, respiratory failure, and circulatory collapse.

The importance of anaesthetics as ancillary to surgical practice has always been accepted, but although much scientific work has been done from the times of Snow, of the issue of the Glasgow Chloroform Report of the British Medical Association and of Paul Bert down to the publication of the Hyderabad Commissions, and of the various other reports to which they led, no permanent lessening in the number of fatalities has resulted. Most of the reports have been couched in technical language and have not been accepted by the bulk of the profession as possessing a practical as well as an academic side. The discussion as to whether a patient dies through failure of the heart or as a result of respiratory syncope, when isolated from practical considerations of the best methods of preventing all fatalities, has not appealed to busy practitioners. The scientific methods proposed by Snow, Bert, Clover and others fell into desuetude and most teachers adopted the methods of giving ether from closed inhalers with little regard to the quantity the patient inhaled, and of giving chloroform either by a *guttatim* method on an open mask or surface, or by a semiclosed plan of pouring a drachm of the anaesthetic into a Rendle's mask or Hyderabad cone held over the patient's face. The rule in the latter case was to watch for symptoms of danger, and, when such occurred, to remove the chloroform mask. Possibly in the most skilled hands this method gave fairly good results, but such results could only be assured when *all* the conditions were favourable, as no danger was suspected or warning given until the physiological effects of the overdose made themselves evident. The actual quantity given, and the actual strength of the vapour inhaled, were not accurately known, and were only guessed at by the results seen in the patient. Obviously, however, chloroform, *like all other drugs, must possess its dose*—such a dose would give a

[3] BRITISH MEDICAL JOURNAL, July 20th, 1901, p. 168.
[4] By a minute of Council, 5173.
[5] The personnel of the Special Chloroform Committee underwent several changes subsequently. Professor Waller, after acting as Chairman for some time, retired and was succeeded by the late Dr. H. Radcliffe Crocker, while Professor Brodie, F.R.S., Professor C. J. Martin, F.R.S., Professor Sherrington, F.R.S., Dr. McCardie (Birmingham), and Mr. G. Rowell were elected members. The Committee at the end of its work consisted of: Sir James Barr, M.D.; Professor J. G. Brodie, F.R.S. (but owing to his absence from England Professor Brodie was obliged to cease active co-operation); Dr. Dudley Buxton (Honorary Secretary); Professor Dunstan, F.R.S.; A. Vernon Harcourt, F.R.S.; Sir Victor Horsley, F.R.S. (Treasurer); Dr. McCardie; Professor C. J. Martin, F.R.S.; Professor Sherrington F.R.S.; G. Rowell, F.R.C.S.

definite strength of vapour in air, as well as a definite amount circulating in the organism, and would produce definite effects thereon. These will produce the results aimed at—in the first place, induction of unconsciousness, and, in the second, maintenance of this state. These must be constant, with possible variations in individuals, or under unusual conditions. To give more than the requisite strength of vapour during inhalation, or to allow more than the requisite amount of chloroform to enter and circulate in the tissues of the organism, must lead to further physiological effects than those grouped in the state called "anaesthesia." Experience and experiment prove such to be the case. When anaesthesia is exceeded, failure of the necessary machinery of life, respiration and circulation, ensues, and systemic death ultimately occurs.

When an unknown strength of vapour and an unknown quantity in the circulation are employed no scientific method can be pursued and no true safeguard can be imposed upon the employment of chloroform. Watching symptoms only is at best an unscientific plan and only justifiable when the experimentalist possesses no absolute knowledge of the drug he is using or of the effects it, in its minimal and maximal doses, will provoke.

Dr. Waller in his letter to the Council of the British Medical Association referred to the various inquiries which have been made to elucidate the action of anaesthetics and to determine the means, if any, which might be found to prevent fatal accidents under these agents. The question is one of the first importance and involves not only professional but public interests, since if some deaths are preventable they are, as Dr. Waller says, "unjustifiable." The public has every right to demand that the subject should be dealt with on wide lines and conclusions arrived at which should dominate medical practice in the use of anaesthetics.

One of the first inquiries was that initiated by the Royal Medical and Chirurgical Society (now the Royal Society of Medicine) and published in their *Transactions* in 1864.[1]

The Committee investigated the physiological action of chloroform and ether, and arrived at the conclusion that the danger of the former arose from its use in concentrated vapour. The value of Mr. Clover's inhaler was admitted, but its use was limited by its intricacy and nonportability. Dr. Harley's method of dilution was also commended, chloroform being diluted as follows:

Mixture A.

Alcohol	...	...	1 part (sp. gr. .838)
Chloroform	...	...	2 parts (sp. gr. .735)
Ether ...	...	...	3 parts (sp. gr. .149)

Mixture B.

Chloroform	...	...	1 part
Ether ...	...	...	4 parts

Mixture C.

Chloroform	...	...	1 part
Ether ...	...	...	2 parts

Valuable as is this report, yet it failed to supply any definite data concerning the actual percentages of chloroform vapour which correspond respectively to safety or danger, although in the rules relating to the administration of chloroform which are drawn up it is stated:

> Three and a half per cent. is the average amount and 4½ per cent., with 95½ per cent. of atmospheric air is the maximum of the anaesthetic which can be required, given cautiously at first, the quantity within this limit should be slowly increased according to the necessities of the case, the administrator being guided more by its effect on the patient than by the amount exhibited.

In 1877 the British Medical Association inaugurated their public-spirited policy of devoting large sums of money to the thorough investigation of the questions involved in the use of anaesthetics. At the Annual General Meeting held that year in Manchester a committee was appointed to investigate: (1) Wherein lies the special danger of chloroform, and (2) to try and discover if any anaesthetic existed whose use would avoid these dangers.[2]

The members of the Committee were Dr. Joseph Coats, William Ramsay, Ph.D (now Sir William Ramsay, K.C.B.), Professor J. G. McKendrick. Dr. David Newman replaced Sir William Ramsay when the latter left Glasgow. This report contains a large amount of careful physiological research, and gives the pharmacology of many of the agents which from time to time have been employed as anaesthetics. The specific question of dosage by chloroform was not dealt with, and the Committee's findings therefore do not enter into the purview of the present report. One important part of that Committee's work—that dealing with the effects produced by anaesthetics upon the gases of the blood—was unfortunately not completed.

The British Medical Association granted, further, money for the prosecution of a research (1888) upon the action of anaesthetics to Professor McWilliam, whose reports have been published in the British Medical Journal (1890, ii, pp. 831 and 948). In his twenty-third conclusion he says:

> Free dilution of chloroform with air—the restriction of the percentage of chloroform vapour to 4 or 4½ per cent.—gives no security against an overdose. A percentage that gives safe anaesthesia during ordinary breathing may lead to fatal collapse if given during exaggerated respiration.

Professor McWilliam's conclusions are dealt with later in the present report.

In 1888 the Hyderabad Commission published its first report, and subsequently the second Hyderabad Commission Report and the Clinical Report undertaken through the enterprise of the *Lancet* were published in a volume.[3] This contained also the tracings obtained during the laborious physiological investigations undertaken under the direction of Lieutenant-Colonel Lawrie, M.B., at the charges of the Nizam of Hyderabad.

The conclusions arrived at in these reports have been much criticized, but they possess great value, although unfortunately they did not touch directly upon the dosage question.

Various further reports arising out of the controversy which followed were presented by Drs. Gaskell, Shore, Hare and Thornton, and others, but these also bore upon the physiological action of chloroform, and not upon the question of its use in vapours of definite percentage value.

In 1891 the Council of the British Medical Association appointed a committee with the following reference:

> To investigate the clinical evidence with regard to the effects of anaesthetics upon the human subject; and especially the relative safety of the various anaesthetics, the best methods of administering them, and the best methods of restoring a patient in case of threatened death.[4]

The Executive Committee which drew up the report was composed of Mr. Teale (chairman), Dr. Dudley Buxton (vice-chairman), Mr. (now Sir Jonathan) Hutchinson (*ex officio*), Professor Chiene, the late Mr. G. Eastes, Dr. Hewitt, Mr. David Wallace, Dr. Childs (honorary secretary), and Mr. Rowell (honorary assistant secretary). Sir William Ramsay, K.C.B., and Lieutenant-Colonel Laurie contributed reports, which were published by the Association in 1900 as appendices to the main report. This dealt with forty-five methods of using the usual anaesthetics. In the conclusions at which the committee arrived (p. 124) it is stated:

> No method of administration of chloroform is free from danger, but an examination of the communicated cases appears to show that the occurrence of danger depends largely upon the administrator who employs any particular method.

No evidence appears to have been tendered to the committee bearing upon the question of safety when chloroform is used in vapours of definite percentage value.

The next step taken by the British Medical Association was the appointment of the Special Chloroform Committee (1901), of which the present volume is the final report.

As is indicated by the wording of the extended reference (see p. 47), the scope of the Committee's work included, if it did not mainly consist in, an effort to promote such knowledge concerning methods for administering chloroform as would tend to lessen the number of "preventable" deaths under that anaesthetic.

[1] The Committee consisted of: T. B. Curling (Chairman), Thomas Bryant, Saml. Cartwright, Arthur Farre, George G. Gascoyne, George Harley, Prescott Hewett, F. W. Mackenzie, William Marcet, Charles H. Moore, James Paget, William O Priestley, Richard Quain, Francis Sibson, R. Dundas Thomas, Charles West; Septimus W. Sibley and George W. Callender being reporters, and John Birkett Honorary Secretary. Mr. Clover assisted although not on the Committee.

[2] British Medical Journal, 1880, vol. ii, pp. 957 and 984, gives a full report of the work of this Committee, and includes the three preceding reports. See British Medical Journal, 1879, vol. i, pp. 1, 708, 921.

[3] *The "Lancet" and Hyderabad Commissions on Chloroform.* London: The *Lancet* Office, Strand, 1893, pp. 193.

[4] British Medical Journal, 1891, vol. ii, pp. 1088 and 1329.

It was felt by the Committee that the principal reason of e large number of deaths which every year occur, either ectly through the inhalation of chloroform or indirectly ring its employment, was to be sought in the methods ed for inducing anaesthesia by that drug. Inasmuch no method of administering chloroform by known doses as in use, fatalities had occurred in practice during the ployment of unknown quantities of chloroform. rther, the strength of chloroform in the air breathed ries within wide limits during both the induction and intenance of anaesthesia. One school of thought advoted large quantities of chloroform with free access of ; another insisted upon drop doses which evaporate ar the entrances of the air passages. Certain inhalers—ow's, Bert's, Clover's, Dubois's, Junker's—were proted to give more definite quantities of chloroform pour in air. Of these only Junker's at present is used all largely, and its capability of delivering definite rcentages depends, as in the open or semi-open methods, tirely upon the acumen and skill of the person conlling the air supply. The rules which have guided, and e still laid down in most of the manuals as guiding, idents in the use of these methods are summed up in e instructions: (1) Watch the respiration, (2) cease to re chloroform when respiration is obviously interfered th.

As an unknown quantity of chloroform has entered the ngs, and as its effect upon respiration cannot be evinced til it has entered the blood stream and actually produced effects upon the nervous tissue which innervates all action, no chloroformist can tell whether the dose given fatal or not.[1] It may be said that the expert administor can and does notice the most trivial changes in spiration, and so safeguards his patient. As even the most lful men, like Snow and Clover, met with deaths, it is dent that the prevailing methods are not safe. Further, is the general practitioner or young house-surgeon who called upon most frequently to give chloroform, and erefore it is imperative that the problem of safe loroform-giving should be solved as far as possible, ch in the interests of the general public and of the dical profession at large.

In order to learn what effects known percentages of loroform vapour in air when inhaled will produce on the body as a whole, it is necessary that we ould express the strength of the mixture of air and oroform offered to the blood and tissues in terms of centages of vapour inhaled.

The Committee had, therefore, first to ascertain the st reliable methods of estimating chloroform (*a*) in air, in liquids, (*c*) in the bodies of animals variously esthetized.

A very considerable time was spent in this investigan, which was carried out partly in London, partly in ris, and partly in Oxford—Professor Dunstan, Mr. Vernon Harcourt, and Professor A. D. Waller undering the physico-chemical parts of the research. Dr. sot assisted in France, and various workers in England. eir results appear in the appendixes of the Reports.

Having assured themselves of the substantial accuracy the previous workers, who affirmed that chloroform acts ectly according to the strength of the vapour inhaled, t ultimately according to the quantity in circulation, Committee sought for a method capable of conling the percentage strength of vapour. Their results given in detail later on; but it may be said here t (*a*) any drop method was excluded, since the minim ue varies within wide limits according to the dropper ployed; evaporation, which determines the percentage ue of the vapour inhaled, varies according to the nature closeness of structure of the fabric upon which the oroform is dropped, and with the rapidity of dropping well as the area of fabric which is moistened; evaporan also varies with the temperature of the liquid, that is, he drop bottle held in the hand, and the temperature of air in the room, as well as the vigour of the patient's rerations. (*b*) Any method of dilution such as the alcohol, oroform, ether, chloroform and ether, or Schleich's (chloroform, ether, and "petroleum ether") mixtures, fails to give accurate percentage vapour values for the chloroform as inhaled, since their rate of evaporation is uncertain, being conditioned by circumstances outside the control of the administrator.

Dr. Waller also placed at the disposal of the Committee the work which he with the assistance of Dr. Dodgson had prosecuted at St. Mary's Hospital Physiological laboratory, by aid of a grant from the British Medical Association.[2]

The methods of quantitative estimation hitherto employed are set out in chronological order as follows:

1. That of Lallemand, Perrin, and Duroy, 1850.
2. That of Schmiedeberg, 1867 (modified under his direction by Pohl, 1891).
3. That of Gréhant and Quinquant, 1883.
4. That of Chancel and Parmentier, 1885.

In principle the method of the French observers consists in the decomposition of chloroform by a strong solution of potash and subsequent volumetric estimation of chlorine in the resultant potassium chloride.

This procedure is directly applicable to an aqueous solution of chloroform, and can be applied to a mixture of chloroform and air, the gas being first brought into aqueous solution by shaking with a sufficient volume of chloride-free water. In the case of blood and tissues, the chloroform present is first distilled off *in vacuo* and a chloride estimation made as before in the distillate. Gréhant estimated chloroform in the distillate by the reducing power upon Fehling's solution.

In the German method of estimation the chloroform present in a fluid or tissue is distilled off and slowly aspirated through a combustion tube filled with calcium or preferably magnesium oxide, and the resultant chloride estimated as before by nitrate of silver solution. This method is also applicable to the quantitative estimation of chloroform in air, a known volume of the gaseous mixture being slowly driven through the combustion tube by mercury displacement.

After trial of all these various methods with known weights of chloroform in water, in blood, and in small animals, the following procedure was adopted as giving the most trustworthy results as regards the quantitation of chloroform in small animals and organs of large animals:

APPARATUS AND METHOD.

A.—*Distillation and Combustion.*

A glass vessel is used with two-way Drechsel stopper to contain the distilland (water, blood, organ, or small animal) and placed in a water bath. The inlet and outlet tubes are connected respectively with a wash-bottle and a froth-chamber. The volatile products of distillation are slowly drawn through a combustion tube by means of the aspirator. The combustion tube, 80 cm. long and 14 mm. in diameter, is filled with granulated magnesium oxide (previously washed until chloride free), and kept at red heat in an ordinary gas furnace. Two wash bottles containing respectively potash and nitrate of silver placed between the combustion tube and aspirator, serve to stop and to indicate any possible escape of hydrochloric acid through the combustion tube. It was found that no such escape occurred, however; the rate of aspiration was maintained at about 60 bubbles per minute.

Estimations were also made without heat in the cases of chloroform in water and chloroform in blood—in the latter case for the sake of avoiding coagulation of proteids—air being slowly aspirated through the solution at ordinary temperature. In this case a longer duration of experiment was necessary than when heat was employed. The two ends of the combustion tube were bent at a right angle, and connected with the other parts of apparatus by mercury joints at the two ends.

The duration of a distillation was generally four to six hours, at the end of which time the chloride present in the combustion tube was titrated, and from this result the amount of chloroform in the distilland calculated.

B.—*The Estimation of Chloride.*

This was conducted as follows:—The combustion tube when cooled was turned up and filled with 30 per cent. nitric acid. The solution when complete is transferred to a beaker; the tube is washed out with a known volume of distilled water. The titration of chloride is carried out with nitrate of silver and sulphocyanide of ammonium with iron alum as the indicator (Volhardt's process). By preliminary trial the error of this stage of the process was determined to be ± 0.0001 gram chloride.

Other methods were examined, among which may be noted that suggested by Dr. Waller, based upon the absorption of chloroform vapour in air by means of olive oil. Dr. Waller's paper describing this, and Professor Dunstan's report, are given in the appendix.[3] (First Report, pp. 17–23.)

Mr. Vernon Harcourt's method[4] of estimating chloroform in a current of air, and chloroform by passing it through a tube heated by an incandescent platinum wire is described in a paper by him in the appendix. (First Report, p. 12.)

The methods of quantitative estimation of chloroform in water, in air, in blood, having been thus tested, the

[1] This fact itself offers a strong argument against the value and importance of verdicts obtained in coroners' courts after inquests held on cases of deaths occurring during anaesthesia. See the evidence given by the British Medical Association before the Departmental Committee appointed to inquire into the law relating to coroners and coroners' inquests.

[2] BRITISH MEDICAL JOURNAL, July 12th, 1902, p. 118 et seq.

[3] See also BRITISH MEDICAL JOURNAL, July 12th, 1902, p. 124.

[4] Ibid., p. 121.

Committee adopted those of Mr. Vernon Harcourt and Dr. Waller and employed them, first, to determine the amount in blood, etc., and later to estimate the chloroform which entered the lungs during inspiration and left during expiration. With the selection and amplification of these methods ended the first part of the Committee's work. It next undertook an examination of the various apparatus employed to give chloroform in accurate percentages in air, in order to arrive at what is the minimum dose of the drug which will produce adequate anaesthesia for operations and at the same time not endanger life. These apparatuses are described and criticized in a later section (p. 63).

It was decided to use the Vernon Harcourt model, and a large number of patients were chloroformed by it. The chloroform in the inspired and expired air was estimated, and a 2 per cent. mixture adopted as the minimum requisite for induction; a lower percentage was found to be sufficient to maintain anaesthesia. These proportions of chloroform and air varied with the length of time during which the patient inhaled and with his physical development. Blood estimates also were made from animals to which definite percentages of chloroform were given. Very complete experiments were made by Professor Sherrington and Miss Sowton, with a view of ascertaining the effects of definite percentages of chloroform upon the isolated heart, circulation, and so on, and the results at which the workers arrived are given in the section on the Physiological Action of Chloroform.

The effects of chloroform upon respiration and the relation between the amount inhaled and exhaled were studied and reported upon by Professor Brodie and Miss Widdows, and by Mr. Vernon Harcourt. Sir Victor Horsley, with Mr. Harcourt, reported upon the part played by the constituents of the blood, and especially the red corpuscles, in retaining chloroform when brought into contact with blood. The examination was undertaken of inhalers employed in giving exact doses of chloroform and the effects noted clinically. Such doses upon patients were studied. It should be noted that in the earlier stages of their inquiry the Committee had the advantage of Dr. Waller's advice and experience; during this time he sat as Chairman of the Committee and directed much of the work.

SECTION II.

PHYSIOLOGICAL PROCESSES OF ANAESTHESIA.

Synopsis of the Action of Chloroform upon the Tissues of the Body.

INTRODUCTORY.

The following brief summary of the physiological action of chloroform upon the different tissues and mechanisms of the body is based primarily upon the experiments performed on behalf of the Committee, but for the sake of greater completeness the work of others has been freely drawn upon.

By the reference to the Committee they were particularly concerned with the effect of chloroform as administered in different strengths, and therefore especial emphasis is given to experimental results in which the percentage of $CHCl_3$ in the air administered has been ascertained, while in the case of isolated organs and tissues the quantity of $CHCl_3$ in the fluids with which they were supplied has been known.

In the case of the intact animal this has been accomplished by some reliable arrangement for mixing chloroform vapour with air so as to supply a variable but known percentage of the former.

The mixture enters the air passages either through the mouth and nose, in which case a dead space is introduced (to this reference will be made latter), or directly through a tracheal tube in the case of the lower animals, and in man, when a preliminary tracheotomy has been required. The mixture having entered the lungs becomes commingled with the residual air, and rapidly diffuses into the pulmonary alveoli. The passage of the chloroform through the walls of the alveoli and its assumption by the blood follows. What constituents of the blood are operative in this connexion constitutes not only an important question in the physiological inquiry but presses for answer when we have to face the behaviour of chloroform towards pathological states of the blood—for example, anaemia, toxaemia. The chloroform is conveyed by the blood stream to the tissues, whose constituent cells absorb it in varying amount according to their chemical composition. The actual effect upon individual tissues exerted by chloroform in different concentration constitutes the ultimate basis of the problem.

Whilst chloroform acts as a general protoplasmic poison, different tissues vary greatly in their sensibility to the drug and different portions of the same tissue—for example, different groups of nerve cells exhibit varying degrees of susceptibility to its action. It is entirely due to this individual peculiarity of cell mechanisms to chloroform action that it can be employed as an anaesthetic. By arranging the dose of chloroform in the blood the essential mechanisms of circulation and respiration may be maintained at a sufficient degree of efficiency, whilst the functional activity of much of the nervous system is in abeyance.

The working margin between a concentration of chloroform which will permit of entire suspension of function of one group of cells and not influence essential mechanisms to a dangerous extent is not a large one, and it is precisely with a view to ascertain what this margin is that much of the experimental work of the Committee has been undertaken.

Effects Produced by Strong Chloroform Vapour on the Upper Air Passages.

As the chloroform vapour and air enter the upper air passages strong vapours—that is, over 2 per cent.—have been shown (Brown Séquard) to excite laryngeal spasm, and it has been demonstrated further that they excite reflex inhibition of the heart and through the superior laryngeal nerve reflexly affect the respiratory centre. It is desirable, therefore, to commence the inhalation, especially in the case of children whose mucous membrane is very sensitive, with a 0.2 per cent., and in the case of adults, with a 0.5 per cent. mixture. The irritability of the upper air passages is usually lessened or lost in a minute, and the dosage can then be increased to 0.5 per cent. and 1 per cent. in the respective cases.

Chloroform also produces salivation, especially in certain diseases, for example, goitre, and interference with breathing from this cause often occurs.

THE CHLOROFORM TENSION IN THE INSPIRED ALVEOLAR AND EXPIRED AIR.

Preliminary Considerations.

The average amount of air inspired with each breath is somewhat less than 500 c.cm. This amount is drawn into the lungs and air passages which already contain upwards of 3,000 c.cm. Take the case in which $CHCl_3$ is being administered by means of an inhaler which delivers 1 per cent. of the vapour; 500 c.cm. of air containing this strength is drawn into the lungs, but a considerable proportion is required to fill the trachea, bronchi, and upper air passages. The chloroform diffuses throughout the whole quantity of air in the lungs, but the interval between the respirations is insufficient to permit of equilibrium being attained. Nor would equilibrium occur if the interval were longer, because $CHCl_3$ is all the time being absorbed from the alveoli so that a steady grade of tension of vapour from the upper air passages where it is highest to the alveoli where it is lowest results.

A number of observations upon the chloroform tension in the inspired and expired air during the administration of the anaesthetic to man and animals have been made for the Committee and are published in the appendices. (See papers by V. Harcourt and Brodie and Widdows in Fifth Report, BRITISH MEDICAL JOURNAL, ii, 1906.)

"The Dead Space."

Of the 450 to 500 c.cm. of air inspired during an ordinary respiration about 150 c.cm. does not reach the alveoli, as it is required to fill the air passages. This constitutes the respiratory "dead space."

A further increase in dead space cannot be avoided when a mask connected with a draw-over inhaler is used.

The dead space between the lips and walls of the mask may be taken as about 130 c.cm., and the dead space within the body between the lips and the lungs as 150 c.cm., giving a total of 280 c.cm. The volume of

expired air is usually about twice as much as this, and therefore at the end of an expiration the dead space contains air which has been in contact with the lungs. With the ensuing inspiration this air is drawn into the lungs again, together with a similar quantity of air containing chloroform vapour.

The same air now fills the dead space, and forms the first portion of the air which on expiration passes through the expiration valve, the second portion only being air which has entered the lungs.[1]

From the figures mentioned above it follows that if diffusion equilibrium were attained, and no $CHCl_3$ absorbed into the blood, the tension in the alveolar air at the end of the first respiration would be 0·14 per cent. Neither of these conditions is, however, fulfilled, and the percentage of chloroform in the alveoli at the end of the first inspiration must be considerably less than 0·1 per cent.

With succeeding respirations it will slowly but progressively rise, because each successive 500 c.cm. of air and vapour drawn into the lungs mixes with or diffuses into alveolar air containing chloroform in increasing amounts.

The results show some irregularities which are no doubt due to variations in the depth and rate of respiration at the time of taking the samples. When examined together they permit of the conclusion that when 1 to 2 per cent. vapour is administered an amount varying from one-half to one-third as the administration continues is retained. It follows from these facts that in the ordinary administration of $CHCl_3$ for surgical purposes the tissues do not become charged with $CHCl_3$ to an extent corresponding to the amount of $CHCl_3$ in the air. Collingwood has, however, administered 1.3 per cent. $CHCl_3$ to cats until the amount contained in the expired was equal to that in the inspired air. The time required was fifty to eighty minutes. In the experiments the dead space was reduced to a minimum by attaching a tube with inlet and outlet valves directly to the trachea.

In the case of man with the greater mass of tissues to be charged with the $CHCl_3$ in proportion to the respiratory surface, and the added dead space of the upper air passages and inhaler the time required to arrive at equilibrium with the tension of chloroform in the inspired air would be much longer. If during the progress of anaesthesia the amount in the inspired air is considerably lowered, the proportion retained diminishes.

Assumption of Chloroform by Blood and its Absorption by the Tissues.

Solubility of Chloroform in Blood.

To determine the solubility of chloroform in blood the method was adopted which is fully described in the Committee's first report, Paper IIa, by A. Vernon Harcourt,[2] in which air and chloroform were led through blood at 37° C. The chloroform was extracted and determined and air passed through while the temperature was gradually raised to 90° C. The full determination gives the weight of chloroform dissolved in 100 c.cm. of blood at 37° C., and at a pressure of 21·5 mm., as 0.071 gram, or 0.71 per litre. In order to ascertain the blood content of chloroform when the anaesthetic enters the blood after being inhaled and to investigate the question in which of the constituents of the blood the chloroform was retained, other methods were sought. Mr. J. H. Wells, whose early death is deeply regretted by those with whom he worked, was the assistant appointed by the Committee and worked under Dr. Waller.[3] He conducted experiments upon the extraction of chloroform from blood by the French method (extraction *in vacuo* followed by digestion with alcoholic potash and titration of chlorides), and found a fundamental difference between blood and simple salt solution or water as regards their absorptive power towards chloroform vapour.

The Committee's report states:

> The inference from these two data (that blood absorbs more chloroform, that blood delivers less chloroform than water under extraction[4]) is that blood possesses greater affinity for chloroform than does water, and that therefore in the transfer of chloroform by blood from the pulmonary air to the nerve centres, that fluid does not act as a simple solvent but rather as a temporary retaining and restraining medium, that helps to convert irregular into constant flow.

The Constituents of the Blood with which the Chloroform is Associated.

The bulk of the $CHCl_3$ contained in blood appears to be loosely combined with the corpuscles.

Pohl[5] estimated that the red corpuscles hold from 87 per cent. to 90 per cent. of the chloroform in the total blood; Nicloux's[6] figures are somewhat below these results, while G. A. Buckmaster and J. A. Gardner[7] accept Pohl's estimate as probably correct, and as corresponding with the results to which their experiments have led them.

The experiments of Waller and Wells were confirmed and extended by Moore and Roaf. Moore and Roaf estimated vapour pressures of chloroform in water, serum, and haemoglobin solutions, the latter being equivalent to the strength of that proteid in the blood. Their results show that the absorption of chloroform by these protein solutions does not obey the Dalton Henry law, but that it enters into aggregation with the proteids. In water it obeys this physical law. They have also shown, for a given content of chloroform in the mass investigated, that the vapour pressure of chloroform in water or saline always exceeds that which is found for haemoglobin or an emulsion of serum. They therefore conclude that the chloroform is associated with the proteins of the blood in some sort of loose, reversible combination.

Further experiments upon the content of chloroform in blood were made by the Committee.[8] Solutions of urea were added to blood containing chloroform to keep it liquid, and as a test experiment proved that 99.9 per cent. of chloroform could be recovered the method was employed to estimate the amount of chloroform in the blood of animals inhaling that anaesthetic. It was found that such blood remained unchanged for three or four days. Having thus obtained correct results in estimating the percentage of chloroform in the blood it became possible to attempt to ascertain with which of the constituents of the blood the chloroform was associated. After centrifugalizing the resulting plasma clotted slightly, the clear serum and unclotted plasma were separated, and after adding urea solution with known quantities of chloroform the two portions were examined. The whole of the chloroform was extracted from the serum plasma, but only 79·71 per cent. from the corpuscles and clot mixture. To determine whether the clot or the corpuscular part retained the chloroform specimens were taken and some were laked before adding chloroform. In all these the recovery of the added chloroform was complete; in others in which the charge of chloroform was received before the laking process the recovery of the added chloroform was incomplete. The inference from these facts may justly be that the retaining power of the blood is also associated in some degree with the integrity of the corpuscles at the time of the entry of the chloroform into the blood, and this bears directly on all methods of estimating chloroform in blood. Further actual examination by these methods of blood taken from an animal chloroformed by means of an accurate percentage method showed that the percentage of chloroform in the blood during adequate anaesthesia was found to correspond very nearly with the observations made earlier by Pohl, but in the case of the experiments carried out for the Committee the fatal dose was not twice the amount required to produce unconsciousness to pain.

Gases of the Blood during Chloroform Anaesthesia.

The association of chloroform with the components of the blood—the aggregation of Moore and Roaf—is certainly not a firm one, and the red corpuscles readily pass on the associated chloroform to the tissues, provided the tissue chloroform tension is below that present in the corpuscles. This association, or aggregation, appears to superinduce no permanent change in the blood itself. The theory once held that the state called anaesthesia was due to deoxidation of the blood and tissues is disproved by Tissot's experiments.[9] The changes in the proportion of the gases

[1] Vernon Harcourt, BRITISH MEDICAL JOURNAL, ii, 1906, p. 85.
[2] BRITISH MEDICAL JOURNAL, July 12th, 1902.
[3] See *Proc. Roy. Soc.*, vol. lxxiv, 1905. Paper by Dr. A. D. Waller, "On the Physical Relation of Chloroform to Blood," pp. 55-59.
[4] The figures given by Mr. Harcourt in his paper are: Water, 0·54 gram per litre; blood, 0.71 gram per litre. (See First Report Appendix, p. 16.)
[5] *Arch. f. exp. Path. u. Pharmak.*, vol. xxviii, 1890-1.
[6] *Comptes rendus*, 1906.
[7] *Proc. Roy. Soc.*, Series B, vol. lxxviii, 1906.
[8] Third Report, Appendix III, D. B. Byles, A. Vernon Harcourt, and Victor Horsley, BRITISH MEDICAL JOURNAL, July 23rd, 1904.
[9] See Committee's First Report, July 12th, 1902, pp. 31 and 32.

of the blood in a person under chloroform, if any, are due entirely to variations in the thoracic movements and the volume of the respiration. As the respiratory movements nearly always decrease both in frequency and amplitude, a corresponding decrease in the amount of oxygen in the blood is nearly always observed. At the moment of the cessation of respiration the blood becomes deprived of almost all its oxygen, and to a degree even more pronounced than is the case in ordinary asphyxia through want of oxygen. The carbonic acid gas present usually varies inversely as the oxygen. It is lessened by polypnoea, increased by feeble lung ventilation. During chloroform narcosis the blood retains up to the time of death its normal power of taking up oxygen. If the amount of this gas (oxygen) diminishes in the blood, the decrease is solely due to the slowing of the rhythm of respiration.

Dr. Tissot's results are given in the table at the foot of this page.

The general conclusions which may be drawn from the observations briefly reviewed above are: (1) That blood takes up about three and a half times as much chloroform as water under the same conditions as regards temperature and pressure. (2) That it exists for some part in combination with the proteins of serum and haemoglobin. (3) That these combinations are reversible, and the chloroform is given up again when the pressure of chloroform is decreased.

Evidence pointing to a Reversible Combination between Chloroform and the Proteins of the Tissues.

Moore and Roaf have extended their observations[1] showing that $CHCl_3$ forms a loose combination with haemoglobin and serum proteins to the constituents of some tissues. They used emulsions of heart, liver, and brain cells, to which a definite amount of $CHCl_3$ in saline was added, and compared the vapour pressure developed with that of the saline alone after the addition of a similar quantity of $CHCl_3$. The results obtained were analogous to those they obtained with serum and mentioned above. Parallel observations with the ethereal extracts of serum and brain showed that only a small proportion of the combined $CHCl_3$ was dissolved in the lipoids. Further, it must be remembered, as is pointed out by Moore and Roaf, that with regard to any theory of anaesthesia based upon the high content in cholesterin, lecithin, and fatty derivatives soluble in ether of the nerve cell and its processes for chloroform, these substances are not demonstrably present in any quantity in by far the greater number of animal and vegetable cells, and yet such cells are readily affected by anaesthetics.

These observers believe that their experiments justify the conclusion that chloroform forms an unstable chemical compound or physical aggregation with the proteids experimented on, and that it is carried in the blood in such a state of combination. Since proteids build up the protoplasm of living cells, it appears probable that chloroform and other anaesthetics must form similar combinations with protoplasm, and that anaesthesia is due to the formation of such compounds which limit the chemical activities of the protoplasm. These compounds are unstable, and dissociate when the chloroform tension is lowered. The effect of the aggregations is to render the protoplasm of all tissues less able to perform its function. It is, during the continuance of the effect, paresed. Moore and Roaf are led to believe that the effect of anaesthetics upon the protoplasm of such tissues as those which compose the heart, the nervous system, voluntary muscles, and so o is directly proportional to the tension of chloroform; other words, to its concentration or osmotic pressure.

Distribution of Chloroform in the Tissues.

The investigations[2] of Lallemand, Perrin, and Duro are a source from which several important data hav become (and have remained) current in the literature anaesthetics. They make the important statement tha in the bodies of animals killed by chloroform the anae thetic is not equally distributed to all kinds of tissue, th proportions of chloroform found in one of their experiment was—

In the brain ...	...	3.92 c.cm.	per 100 grams.
In the liver ...	...	2.08	,, ,,
In the blood ...	...	1.00	,, ,,
In the muscle	...	0.16	,, ,,

The principle of unequal distribution is probabl accurate, but the figures cited cannot be accepted a accurate, since the methods pursued were obviously defective. The theory advanced by Hans Meyer and Overton, working independently, to explain anaesthesi may be thus described:

Chloroform and other anaesthetics are absorbed by th lipoids, bodies in which the cell constituents of th nervous system are extremely rich.

This they regard as explaining the rapidity with whic chloroform acts upon and pareses the nervous system.

Examination of the following sections will indicate that the cells of the various structures of the body behave differently in degree though not in kind towards chloroform. The most sensitive is the nerve cell; the muscle of the intestine is the least.

Elimination.

We have now traced the entrance of air impregnated with chloroform into the lungs, its absorption by the circulating blood, and conveyance by blood corpuscles to the tissues, first to the heart and blood vessels, then to the skeletal and other muscles, the nervous structures and glands. It has been shown that taken in their isolated state each of these tissues shows effects produced by chloroform which are directly proportional to the chloroform tension in the circulating fluid. As soon as the tissue which has a lower chloroform tension is brought into relation with a fluid with a higher chloroform tension it takes up chloroform until its content or tension equals that of the circulating fluid. On the other hand, when the tissues possess a higher chloroform tension than that of the blood they part with an aliquot portion of the chloroform, which is conveyed away by the lymph and venous blood to the lungs, where if the tension of $CHCl_3$ in the alveolar air is less than that in the blood, $CHCl_3$ passes out. It will be evident that under normal conditions the order of events is, first, the tissues acquire chloroform from the blood, and when the amounts taken and that given off are equal equilibrium exists. It is a safe equilibrial state which is to be aimed at, on one side of which lies lessened narcosis, on the other deeper narcosis. If the definite percentages of chloroform which correspond with safe production of anaesthesia with a dangerous degree of narcosis respectively, are known and can be accurately produced and controlled, the problem of finding a safe method of inducing and maintaining anaesthesia by

[1] *Proceedings of the Royal Society*, November, 1905.

[2] First Report, 1902, July 12th, British Medical Journal.

Proportion of Gases in 100 c.cm. of Arterial Blood.

Blood in the Order of Removal.	Total Volume of Gases.	Carbonic Acid.	Oxygen.	Nitrogen.	Remarks.
	c.cm.	c.cm.	c.cm.	c cm.	
1	50.13	26.85	21.65	1 60	Normal blood before anaesthesia.
2	43.55	21.15	20.80	1.60	Blood removed during apparently normal respiration.
3	46.21	26.06	18.10	2 05	,, ,, ,, ,, ,,
4	46.90	32.80	12.41	1.69	During a respiratory arrest of 20 seconds.
5	55 41	39.30	14.24	1.87	At the commencement of a respiratory arrest of one minute.
6	44 20	42 20	0.78	1.22	Ten seconds after commencement of final cessation of respiration, the heart still beating.

chloroform has been solved. This the Committee believe is now possible by the dosimetric method—that is, percentage administration.

EFFECT OF CHLOROFORM UPON THE HEART AND CIRCULATION.

It is not proposed to recapitulate the theories which have been made a fighting ground for the adherents of various schools of thought with regard to the effect of chloroform upon the heart.

The weight of physiological and clinical evidence appears to support the view that whatever may be the actual order of events occurring when death from chloroform poisoning takes place, the heart is profoundly influenced by that anaesthetic. If chloroform does not cause death through a primary effect upon the heart's structure, there is every reason to believe that the heart's vital resistance is so lessened by chloroform as to prevent its withstanding the strain incident to intercurrent asphyxia, shock, or vagal inhibition. For the purpose of this report it is unnecessary to pass in review much of the work which has been done upon this subject. The problem the Committee have attempted to solve is, "What are the effects upon the isolated mammalian heart of known concentrations of chloroform, and what are the effects of such concentrations upon the heart of the intact animal?" The blood, which, as we have seen, has aggregated a certain amount of chloroform in the serum and red corpuscles, passes very rapidly from the pulmonary vessels to the heart. The first important vessels to be entered are the coronary system supplying the cardiac muscle, so the brunt of the effect of the chloroform in the blood stream must fall upon the tissues of the heart. But little, if any, of the chloroform passing in the blood stream from the lungs will have been absorbed or dissipated before the blood enters the myocardium. Professor C. S. Sherrington and Miss S. C. Sowton[1] have shown that the isolated mammalian heart reacts towards chloroform in the following manner: When the anaesthetic is presented in solution without blood in a percentage of 0.015 all perceptible beat, both of the auricles and ventricles, is extinguished, but can be restarted when chloroform is withdrawn and a physiologically competent fluid is perfused. More prolonged perfusion with this concentration destroyed the ventricular beat, although the auricular beat was recoverable after a perfusion of five minutes of chloroform-free solution. The resistance of the auricle muscle to $CHCl_3$ in such high percentages appears to be much greater than that of the ventricular. With a concentration of 0 003 per cent. the ventricular beat was in some experiments temporarily abolished. The reduction of its beat varied in different hearts between 15 per cent. and 95 per cent., the auricular between 45 per cent. and 85 per cent., with a mean of 66.8 per cent. in 21 experiments. The weakening of the auricle did not occur so rapidly as did that of the ventricle. With so low a concentration as 0.001 per cent., only a slight reduction of the beat took place, the ventricular averaging 21.7 per cent. and the auricular slightly more. Recovery was complete, but not obviously more rapid than after perfusion with stronger solutions. It is stated (p. 16):

> A notable feature of the action of $CHCl_3$ in dilute solution on the isolated mammalian heart is absence of all cumulative aggravation. . . . With strong $CHCl_3$ solutions the duration of the administration does, no doubt, aggravate the depression of vitality. . . . Of moderate and weak solutions it may be confidently asserted that on the mammalian heart their influence is marked by absence of cumulative effect. . . . It is the concentration of the $CHCl_3$ in the perfused solution which seems practically alone to decide the depth of the depression of activity produced.

It is added:

> The results of our dosage experiments suggest that the cardiac tissue exposed to a fluid of a certain $CHCl_3$ pressure takes up almost at once a certain quantity, and that further continued exhibition of the drug under the same tension does not lead to further relative absorpton of it by the tissue.

The work of Ringer also shows that the direct effect of chloroform upon the heart muscle when perfusing the organ is at first one of weakening, and ultimately causes loss of contractility with acute dilatation.

[1] Second Report, 1903, p. 9, Paper VI.

The experiments of Embley[2] dealing with the effects of chloroform upon the mammalian (dog's) heart isolated from the central nervous system are particularly important. In these experiments the drug was administered through the lungs by inflating them with air containing accurately known percentages of $CHCl_3$ vapour. The heart was not removed from the body, and continued to be fed by the animal's own blood, but by the ligature of all the large systemic vessels except one artery and vein, which were connected together by a glass cannula, the circulation was limited to the heart and lungs.

The heart is very sensitive to the action of chloroform. When the air inspired contained 0.8 per cent. chloroform vapour, blood pressure fell to zero in 17 min.; with 1.2 per cent. chloroform vapour, blood pressure fell to zero in 10 min.; with 2 per cent. chloroform vapour, blood pressure fell to zero in less than 2 min. The rapidity with which these quantities (0.8 to 2 per cent.) paralysed the isolated heart was surprising, for, so far, he had not succeeded in killing an intact animal by artificial inhalation and the vagi cut, with 0.8 and 2 per cent. in less time than five to six and one to two hours respectively.

The amount of blood in circulation in these experiments is probably not more than one-tenth of the animal's total blood, and the fact that 0.8 per cent. of chloroform vapour in the inspired air produced paralysis of the heart under these circumstances in 16 min. 25 sec. must be due to the rapidity with which the small amount of blood and of body tissue involved—heart and lungs only—becomes saturated with $CHCl_3$. Equilibrium between tissue and blood and between blood and air is therefore quickly obtained. For the same reason, when chloroform administration was suspended in these experiments the rapidity of recovery corresponded to the rapidity with which the heart was affected. No sudden failure occurs from the action of chloroform on the isolated heart. The fall of blood pressure is gradual or steep according to the percentage of chloroform vapour in the air administered, but there were no abrupt variations in the rate or efficiency of the heart such as occur in an animal with an intact nervous system.

McWilliam's experiments also indicate progressive dilatation and loss of function when choloroform in increasing percentages is brought into contact with the heart muscle. A large number of experiments carried out by Wood, Hare and Thornton, Dastre, Morat and Doyen, also by Gaskell and Shore, as well as those done by Leonard Hill, prove that in proportion as the strength of the chloroform is increased, respiration and circulation—the latter shown by the fall of blood pressure and weakening of the heart beat—steadily fail. When high concentrations are used the declension is more sudden, and may take the form of collapse. It is outside the scope of the present argument to discuss the differences of opinion which exist among those whose names we have mentioned, since they refer, not to questions of the results of low and high percentages of chloroform—on these they agree—but to the extent to which the different factors producing the results are concerned. Whether the dilatation of the heart or loss of the vasomotor centre control, or whether failure of respiration or circulation primarily cause collapse, are for the present purpose of less importance than to recognize that whatever be the order of events the result of inhaling percentages of chloroform above a certain level always and under all conditions leads to destruction of the essential mechanisms by which alone life can be prolonged. Dastre and other French physiologists, with Leonard Hill as well as many workers in this country, have recognized from their experiments that death from chloroform occurs early in the induction period. Embley[3] has shown experimentally that the principal factor in death under chloroform is the use of percentages over 2 per cent. He investigated vagus inhibition as a cause of circulatory failure, and it is clear from his work that chloroform increases the excitability of the vagus mechanism, particularly in the early part of the administration. This enhanced excitability of the vagus mechanism is due to the direct action of the chloroform upon the vagus centres. The diminution in the spontaneous excitability of the heart muscle itself consequent upon the action of the chloroform also renders the heart more readily affected by vagus action,

[2] BRITISH MEDICAL JOURNAL, April 5th, 1902.

[3] Causation of Death during the Administration of Chloroform. Reprinted from the BRITISH MEDICAL JOURNAL, April 5th, 12th, and 19th, 1902.

so that it is more liable to inhibition. Embley found (p. 5):

That when air containing more than 2 per cent. of chloroform vapour was administered, slowing of the heart ensued, and that when higher percentages were employed, the degree of the inhibition was rapidly intensified.

The slowing of the heart was accompanied by a steady fall of blood pressure which rose when the vagi were cut. When a 2.5 per cent. vapour was used inhibition of the heart occurred frequently, though ultimately the heart recommenced in all cases with this percentage. With 3 per cent. and upwards the recovery was not constant, the inhibition sometimes lasting too long for the heart to escape. In such cases the failure of circulation causing asphyxia also rendered recovery impossible. The reason why some hearts recover and some do not, appears to be that in the latter the heart muscle is too extensively damaged by the action upon it of the chloroform before the inhibition for it to be able to survive the effects, circulatory and respiratory, of the inhibition itself. Embley contends further that fatal inhibition through vagus action is always obtainable under chloroform provided the blood pressure has fallen to about 40 to 50 mm. Hg. It appears, then, to be well within the limits of our present knowledge to assert that fall of blood pressure due to chloroform inhalation is occasioned by (1) action of that narcotic upon the musculature of the heart and the muscular coats of the blood vessels causing paralysis; (2) slowing of the heart's beat; and, when the fall is sudden, to (3) inhibition. All these causative factors are effected proportionately to the strength of the vapour of chloroform inhaled, and so are entirely under the control of the person giving the chloroform.

As has been indicated again and again, the dangers of chloroform, when it is used without strict regard to its percentage value in the air inhaled, arise in part through direct overdosage, and in part through intercurrent conditions often themselves determined by the extended influence of the chloroform. Of these asphyxia is the most important. An attempt has been made by very careful observers to attribute to intercurrent asphyxia the main peril arising during chloroform inhalation. The grave danger of allowing any interference with respiration during inhalation of chloroform is too well recognized to need emphasis. This danger may arise whatever method of giving chloroform is adopted, and may be due not only to an overdosage by the anaesthetic, but to mechanical causes quite independent of the drug used. Faulty posture, foreign bodies in the upper air passages, pressure on the trachea by growths—for example, goitres—are all examples of this. Inadequate supply of air due to breathing through too narrow a tube of an inhaler apparatus which imposes excessive resistance is also urged as a cause of asphyxial complication. Also, it must not be lost sight of that any asphyxial complication renders the respiratory centre more sensitive to drug action, so that in its presence a strength of vapour which would under normal conditions be safe becomes dangerous and even lethal. But it is a mistake to suppose that chloroform is only capable of destroying life when asphyxial complications are allowed to intrude. As has been insisted upon above, chloroform acts directly upon tissues even when their normal supply of oxygen is maintained, and induces those bio-chemical changes which at first check the activities of their cells and ultimately destroys them altogether.

Experiments have proved that chloroform in percentages over 2 per cent., or even less, when inhaled continuously for a long period of time, is able to kill an animal in spite of the fact that artificial ventilation of the lungs has been practised and no asphyxia exists. Thus the continued inhalation of chloroform vapours of certain percentages destroys life. Not even the most assiduous attention paid to the respiration will prevent the occurrence of this danger if the vapour strength of the anaesthetic is maintained. It is quite true, as we shall see later, that respiration being secondarily affected interference with its rhythm or depth can be seen, and may warn of imminent danger. The warning thus conveyed will, however, in many or even in most cases, come too late if a high percentage of chloroform is allowed to persist in the inhaled air.

Sherrington and Sowton have shown that the heart more readily loses its irritability when chloroform reaches it in a circulation which has been freed from oxygen. They have also demonstrated the truth of the converse—namely, that the greater the amount of oxygen the more capable is the heart of resisting the depressant action of chloroform.

The weakening of the heart is associated with a fall in blood pressure—a result assisted by the effect of imperfectly oxygenated blood upon the vasomotor and respiratory centres.

The blood pressure may decline quite gradually, and the lessening in the thoracic movements may also be so gradual as to escape observation. At a certain point in this fall of blood pressure the nerve centres will cease to receive sufficient oxygenated blood to enable them to carry on their function and respiratory failure occur. There are two danger points in this procession of events: the first occurs when the heart and nerve centres are weakened by failing blood supply, since they are then peculiarly liable to vagus inhibition; and the second is the final cessation of respiration, associated as it is with an emptied arterial system.

Experiments have shown that the fall of blood pressure is directly proportional to the strength of the chloroform vapour inhaled. Respiration can only continue so long as the blood pressure is maintained above a certain level, and the maintaining of this necessary level is, during chloroform administration, simply a question of the strength of the vapour supplied. During a prolonged administration other conditioning circumstances also arise, such as loss of blood, shock, and so on, and these render it necessary to lessen the strength of vapour supplied in order to counteract the increased tendency of the blood pressure to fall.

Embley further insists that "with a good blood pressure failure of respiration by inhalation of chloroform is practically impossible." It must be remembered that "a good blood pressure" can only exist when the percentage of chloroform in air inhaled is lower than 2 per cent. He adds: "Restoration of failed respiration is dependent upon restoration of blood pressure." Respiratory failure during the period of induction occurs as frequently after as it does before the heart ceases to act (Embley). Leonard Hill, although his experiments were not performed with definite percentages of chloroform, came to a like conclusion.

Embley has emphasized how easily the causes which interact, dominating respiration and circulation, promote the establishment of a vicious circle, and him we may quote in summary of this section. A patient breathes an overstrong percentage vapour of chloroform—that is, over 1½ per cent, or 2 per cent., as the case may be; cardiac inhibition occurs, and in its turn produces a dangerous fall of blood pressure, and as a result the respiration ceases, and the asphyxia consequent upon this increases the inhibition and prevents the heart escaping from the vagus action. An unduly strong percentage of chloroform vapour taken by deep breaths, if the circulation is vigorous as in healthy, strong persons, will rapidly enter the coronary circulatory system, paresing the heart muscle by its direct action. This occasions fall of blood pressure, and then, in its turn, brings about respiratory failure. The breathing having ceased asphyxia is produced, and with its advent vagus inhibition occurs, resulting in a further fall of blood pressure, and so the inhibition becomes fatal.

Individual Susceptibility to Chloroform.

Another point of importance which is brought out in Professor Sherrington's work on the heart is that of individual dosage. He found that the lower animals evinced distinct variations in their reaction to chloroform, and this is equally true of human beings. Although all subjects are rendered anaesthetic by inhaling up to 2 per cent., they differ in the respect that some take longer to reach the third degree than do others. This is, of course, a question of saturation, and its importance lies in the danger of continuing a 2 per cent. vapour to those who become rapidly saturated. The heart muscle is the most sensitive; 1,000 mg. of chloroform to the litre quickly and permanently abolishes the beat. This dose produces no obvious depression when exhibited to voluntary muscle; 2,500 mg. to the litre is not more poisonous to such tissue than 333 mg. chloroform to the litre is to the heart.

These experiments show how extremely sensitive cardiac tissue is to chloroform, and how the gradation of the effect of the anaesthetic upon the myocardium is proportional to the concentration of the chloroform within the limits of its solubility. The gradation of the action of the drug is, therefore, a function of its tension in the solvent.

A considerably higher concentration of chloroform is required when presented to the heart tissues in a circulation of blood compared to a saline fluid. This must necessarily follow from the greater solubility of $CHCl_3$ in blood. The same amount of $CHCl_3$ added to an equal volume of blood and saline gives a smaller tension in the former, the tension being the measure of the free chloroform. The further explanation may be hazarded that blood maintains greater tissue vitality, and so antagonizes the depressant action of the chloroform. Or, putting the same thing in other words, if chloroform acts by checking the catalytic processes in tissues, it could do so less readily when the tissues were sustained by blood than when they were merely washed through by saline. We see, then, that both the blood vessels and the heart react when chloroform is brought into contact with them, and the effects produced are directly proportional to the concentration or dosage of the anaesthetic. Within certain limits, small and medium concentrations, the effects are not increased by the duration of the contact with the drug, in the case of tissues isolated from their normal physiological environment. When the percentage is lessened or increased, the effects produced are always and at once diminished or enhanced. Up to a certain percentage concentration, the declension of the heart's beat and the alteration of the vessel's calibre is recoverable when the chloroform is withheld and a circulation maintained which contains no chloroform. The drug in this case passes from the tissues to the fluid.

Influence of Oxygen Supply upon the Effect of Chloroform.

In certain of the experiments the circulating fluids were oxygenated, and their oxygen content was maintained whatever percentage of chloroform was employed. In the intact animal, for example, during surgical anaesthesia under chloroform concomitant circumstances may occur which influence the supply of oxygen to the tissues. It is, then, important to learn what alteration in effect does occur when definite percentages or concentrations of chloroform are exhibited to tissues the oxidation of which is imperfect. Sherrington and Sowton[1] have demonstrated that concentrations of chloroform capable of depressing, although not of abolishing, the heart beat produce greater depression when oxygen is not present but is replaced by carbonic dioxide, and that the depression is under these circumstances more persistent and more difficult to remove by perfusion with a chloroform-free circulation. These experiments explain the recognized clinical observation that patients under chloroform who are allowed to become "blue" very rapidly show signs of toxaemia. It is commonly believed that the danger of asphyxial complication is one affecting the medullary centres, and no doubt this is so, but associated with this is the increased liability to permanent damage to the tissues of the body, especially of the myocardium. The chances of recovery in such cases are dependent, as the experiments show, upon the tissues, and when these are deprived of oxygen and their chloroform and carbonic dioxide contents are increased, such chances of recovery are small, and wholly dependent upon the extent of the deoxidation and the chloroform toxaemia.

Effect upon Blood Vessels.

Bowditch and Minot came to the conclusion that the effect of chloroform was to cause dilatation of the blood vessels. Gaskell and Shore demonstrated by their cross-circulation experiments that in the early stages of chloroform administration the direct effect upon the vasomotor centre is stimulative. Embley confirmed these results, but has shown that the net effect on the whole body is one of vaso-dilatation. Although the medullary centres are stimulated, the subsidiary mechanisms, for example, either in the cord or the nerve endings in muscle, or the muscle of the arterial wall, or all three, are from the first paresed. Schäfer and Scharlieb[2] found that perfusion of frogs with a solution of chloroform in saline produced constriction and not dilatation. Their results may be explained, as is pointed out by Embley and Martin,[3] by the fact that they employed a percentage of chloroform in their experiments unattainable by respiration.

In the following year Schäfer and Scharlieb[4] extended their observation on the effect of perfusion of Ringer's fluid containing chloroform, to isolated mammalian organs, namely, kidney, heart, and limbs, and arrived at the result that, whereas with the last two chloroform of various strengths produced either no effect, or else constriction, with the kidney, on the other hand, solutions containing 1 in 20,000 to 1 in 1,500 of $CHCl_3$ occasioned dilatation, but stronger solutions produced constriction.

In Embley and Martin's experiments an artificial circulation was sent through the isolated bowel or kidney, in order to determine in this way the action of chloroform in anaesthetic quantities upon the peripheral vessels separated from the central nervous system. Only undiluted defibrinated blood was used, and this was perfectly oxygenated by having a double circulation in which it was pumped first through the isolated lungs of the animal, and then by a second pump through the organ (the small intestine or kidney) and returned to the lung circulation.

The chloroform was administered in the air with which the lungs were rhythmically inflated by a mechanical pump. The strength of chloroform in the air used for inflation was controlled and determined by the method used by Embley and described in the BRITISH MEDICAL JOURNAL, April, 1902.

They point out that the results of Schäfer and Scharlieb and their own are not contradictory, but apparently supplementary, and it is interesting to find that the vessels of different parts of the body react in such an opposite manner to the same poison. In chloroform poisoning the dilatation would appear to be more or less confined to the splanchnic area.

The splanchnic area can, however, accommodate the whole blood of the body, and they remain firm in the conviction that the action of chloroform in the blood in such quantities as may occur with the inhalation of 1 to 3 per cent. vapour is to directly paralyse the neuro-muscular mechanism of the blood vessels of the kidney and bowel, and that a considerable part of the fall in blood pressure which is constantly associated with the administration of chloroform may be accounted for in this manner.

The view advanced by Sherrington and Sowton that chloroform when perfusing the isolated heart produces constriction of the arterioles, is not accepted by Martin, as he points out that all substances (including atropin) which diminished the efficiency of the cardiac contractions also diminish the flow through the heart, and do so even when the pressure and other conditions remain constant.

Effect upon Muscle.

Chloroform acts upon voluntary muscle in the same manner as upon the heart muscle. The former is, however, much less sensitive, in other words the dose of chloroform required to produce abolition of contractility in voluntary muscle is far larger than suffices to annul the ventricular beat. Involuntary muscle fibre, excepting the muscles of the heart and blood vessels, is again less sensitive than voluntary muscle, so that as regards their susceptibility to chloroform muscular tissues must be placed in the order (1) the musculature of the heart and blood vessels, (2) voluntary muscles, (3) involuntary muscular fibre, for example, intestinal muscles, uterine fibres. It is generally true that the more highly functionating tissues evince the greater sensibility to chloroform, a lower percentage paretising function and ultimately annulling it.

Effect upon Nerve Tissues.

Isolated Peripheral Nerves.

Waller has shown with great precision that chloroform affects isolated nerve directly as the concentration varies, and that it resumes its function upon withdrawal of chloro-

[1] Fifth Report, p. 11.

[2] *Proc. Physiol. Soc.*, 1903.
[3] *Journ. Phys.*, vol. xxxii, p. 148.
[4] *Trans. Roy. Soc. Edin.*, 1904, vol. xli, p. 31.

form provided the concentration is below a certain percentage, but loses its irritability permanently when high percentages are brought in contact with it.

Professor Waller's method is briefly as follows: A nerve preparation is placed in a gas chamber into which can be blown chloroform vapour. The nerve is excited by electrodes connected with a secondary coil and the magnitude of the electrical response to stimulation is taken as an indication of the functional activity of the nerve. This is measured by a galvanometer outside the chamber. The movements of the spot of light shown by the galvanometer are photographed. When chloroform vapour is blown into the chamber the nerve becomes anaesthetized, or "immobilized," as Professor Waller prefers to term the condition, and gives no response to excitation. The method enables the experimenter to demonstrate the effect of different strengths of chloroform vapour, and that a certain dose of the anaesthetic not only "immobilizes" the nerve but destroys its conductivity.

Effects of Chloroform on the Nerve Centres.

It may now be pointed out that all nerve structures appear to follow the same laws as those demonstrated by Waller for isolated nerve: they either incur depression of function, from which they can be recovered by withdrawal of the chloroform, or they are destroyed. The margin between mere temporary loss of function and permanent paralysis is a narrow one. The behaviour of nerve centres exhibit much more complex effects when brought into contact with chloroform. Take, for example, the effect upon the vagus and the centres in the floor of the fourth ventricle. We do not as yet know with any degree of accuracy what differences exist in the reactions towards chloroform of various nerves and nervous mechanisms of different function. That differences exist is shown by Sherrington and Sowton, as by others. In their research upon the differences of the effects produced by chloroform upon the different kinds of muscular tissue, they found that[1] the susceptibility of the intramuscular nerve twigs and motor nerve endings to the influence of chloroform was less than was expected; indeed, it was less than that displayed by the tissue of the heart wall.

Much of our knowledge of the action of chloroform upon the nervous system we owe to the researches of C. Bernard. Under the influence of this anaesthesia there is a progressive but continuous loss of function of the centres. The highest centres of the cerebral hemispheres are the first to be affected, consciousness disappears, and successively the lower centres lose their activity. Excitement, more or less marked, follows, and although stimulation from without is no longer responded to by voluntary movements reflex and co-ordinated muscular action takes place. The loss of sensation in nerves is from the periphery to the centre (C. Bernard). The spinal cord gradually becomes affected, sensory nerves cease to respond before motor nerves, reflex action persisting after sensory perception has been lost. The reflexes disappear in regular order, the superficial are lost early in narcosis, the deep persisting until the narcosis is deepened. The patellar reflex is exaggerated in early narcosis but rapidly disappears, occasionally to be followed by muscular tremor of the lower limbs. The medulla oblongata is only affected late, and although rendered less excitable during normal anaesthesia, it is not paralysed until a degree of narcosis is reached which is inconsistent with life, since respiration and circulation can no longer be sustained. The conjunctival reflex is lost in the third degree of narcosis, and almost simultaneously the eyeballs become fixed and pupillary reaction grows sluggish. In profound narcosis the pupils no longer respond to light. The nasal, anal reflexes, and, according to Dastre, the reflex of the lower lip excited by pinching the incisor area of mucous membrane persist into deep narcosis.

Effect of Chloroform on Respiration.

As pointed out in the previous paragraphs chloroform suspends the activity of all nervous structures. The groups of nerve cells comprising the respiratory and vasomotor centres are, however, considerably more resistant to its influence than the majority of nerve cells. It is for this reason that it is possible to employ it for the production of anaesthesia. The range of sensibility of different nervous mechanisms to chloroform has not been determined, because it is impossible to ascertain what the tension of chloroform surrounding the nerve cells may be, but it is probable that it is not a large one.

We now know[2] that quite from the commencement of inhalation of chloroform respiration is affected. The breathing becomes slower and more shallow from the second minute up to the sixth or eighth minute. Hughlings Jackson has pointed out that the actual muscular movement of expiration is more notably affected early in the induction period.

The depression of respiration varies in extent in different animals, and probably varies within limits in different individuals. The depression is also dependent upon the degree of concentration of the vapour offered—a factor of cardinal importance in the practice of anaesthesia.

If chloroform of 1 or 2 per cent. be administered long enough to an animal the respiration will ultimately cease, and the stronger the vapour the shorter will be the interval before this occurs.

Such slow gradual impairment of the activity of the respiratory cells must, however, be very rarely a cause of death in the administration of this anaesthetic.

The majority of accidents occur within the first fifteen minutes of the commencement of the anaesthetization, and are complicated with simultaneous happenings to the circulation.

The experiments of Gaskell and Shore,[3] Hill,[4] and Embley[5] have shown what an important influence the blood pressure exercises upon a respiratory centre already to some extent depressed by chloroform. From a very extensive series of experiments Embley came to the conclusion that with a good blood pressure failure of respiration by inhalation of chloroform is practically impossible, and that restoration of respiration after failure is dependent upon restoration of blood pressure.

The influence of circulatory disturbances upon respiration, and the interdependence of these two physiological mechanisms, has, however, already been adequately discussed in the section devoted to the circulation.

Some Effects upon Respiration during the Induction Period.

There is a marked difference when the phenomena are compared between the way in which patients are affected by strong and weak chloroform vapours.

Breathing of strong or moderately strong vapours (2 per cent.) produces holding of the breath and even spasmodic closure of the glottis. The patient feels distress from the feeling of impending suffocation. The breath held for a period is followed by a violent and deep inspiration, and the lungs are flooded with the vapour of chloroform. The main feature of such cases is the irregular breathing; its chief dangers are the sudden intake of an excessively strong vapour, which paralyses respiration, and may also cause reflex arrest of the heart; the strain imposed upon the heart is due to interference with pulmonary and systemic circulation, and the rapid rise of chloroform tension in the blood causes tissue poisoning, fall of blood pressure, and respiratory arrest. In contrast: When the chloroform vapour inspired is weak—that is, 0 5 per cent. or thereabouts—the patient respires easily, has no sense of discomfort, and in time goes to sleep. He does not become anaesthetized. Gradual increase of the strength of the vapour up to 2 per cent.—the limit imposed by Snow (in his experiments), Bert, Waller, and the present Committee—develops anaesthesia in a variable time, differing in individual cases, but averaging about six to eight minutes.

SECTION III

THE DOSE OF CHLOROFORM

Although in his first trials of chloroform Simpson did not attempt to associate with any definite doses the conditions of (*a*) anaesthesia, (*b*) respiratory failure, or (*c*) circulatory collapse, he very early recognized the dangers of using unduly large quantities of chloroform, since the

[1] Fifth Report, p. 12.

[2] Fifth Report, T. G. Brodie and S. T. Widdows, Appendix I, British Medical Journal, July 14th, 1906.

[3] British Medical Journal, 1893, pp. 106 and 171.

[4] Ibid., 1897, p. 960.

[5] Ibid., 1902.

"unstinted quantity" only remained a non-lethal dose when all circumstances were favourable. Such circumstances he recognized were regular breathing, the atmospheric condition and the constant supply of air sufficient to dilute the chloroform to a "safe" percentage. What the percentage was wherein safety lay Simpson did not inquire. He, however, recommended a more careful method than that at first adopted for giving chloroform, since many deaths had occurred as a result of chloroform inhalation. His words are "*one* single layer of a towel or handkerchief is laid over the patient's nose and mouth, care being taken not to cover the eyes, and on this single fold the chloroform is poured drop by drop, until complete anaesthesia is induced."[1] This was written in 1860. In 1883 M. Bert communicated Dr. Peyraud's "drop method," which is merely a systematic plan of regulating the supply of chloroform inhaled at each inspiration. Neither observer proved experimentally what dosage the systematic dropping represented, although Peyraud calculated his dosage as being 2 per cent. to 2.8 per cent., but he regarded lower percentages as sufficient.

It is important, if we are to understand correctly the work and words of the earlier investigators, that we should appreciate the fact that their method of administering chloroform differed wholly from that adopted at the present time, in that they pursued an intermittent plan. Anaesthesia was induced, then the anaesthetic was withdrawn, only to be reapplied if the person giving the chloroform found that consciousness was beginning to return. This plan, while it increased the danger of the patient through the constant change in the level of chloroform tension, possibly preserved him from the danger due to prolonged irrigation of the tissues by chloroform-laden blood.

Snow upon hearing of Simpson's experiments with chloroform at once commenced to experiment with it upon animals. He placed them in atmospheres with a known percentage of the drug and calculated what such percentage actually represented as dosage in the entire animal. These are his conclusions:

> Percentages below 1 per cent. fail to produce anaesthesia.
> Percentages from 0.96 to 1.5 per cent. produce anaesthesia.
> Percentages from 1.7 per cent. to 2.9 per cent. interfere with respiration.

The experiments were carefully performed, and although Snow possessed none of the physiological apparatus which is at our command to-day, his work laid the foundation of a scientific knowledge of anaesthesia. Snow estimated that the lethal dose was about double the anaesthetic dose.

Snow proceeded to adopt a dosimetric method[2] and his inhaler (see section on Regulating Inhalers) supplied a possible 5 per cent., although, it must be remarked, his experiments upon animals proved that 2 per cent. was adequate for anaesthesia and 4 per cent. was the lethal dose. This contradiction is explained by the following considerations.

The inhaler was capable of giving only approximately a 5 % percentage, and the percentage was subject to considerable variations. This Snow appreciated, and safeguarded himself and his patients by admitting air into the face-piece by means of a valve. This in practice lessened the amount of vapour given to 2 or 2.5 per cent. Further, Snow adopted the intermittent plan and cut off his vapour as soon as anaesthesia was induced. It is not too much to say that Snow, while working with an inhaler which might supply an unduly high percentage vapour, did not actually employ the maximum limit of its capacity.

The anaesthesiometer of M. Duroy was described in *Journ. de pharm. et de chir.*, Mars, 1856. It was a very ingenious machine designed to supply automatically 4, 10, 15, 40, or 60 drops of chloroform per minute upon a tray on which were circles. The area of evaporation was made to vary directly as the strength required. The patient inhaled through a face-piece and tube air which passed over the evaporation area. Intermittent inhalation was practised.

Snow's criticism upon the chloroform machine of Duroy, the anaesthesiometer, points out that although the *quantity* of the anaesthetic was regulated, the dilution of the portion inhaled was not, and hence the dosage was inexact and out of control. No sufficient provision was made in the anaesthesiometer to meet the variations of respiration, so that while excessive doses might easily be given, insufficient doses were also possible and fatality or failure was always imminent.

We now come to a further definite attempt to arrive at precise dosage of chloroform. In 1881 Paul Bert read his communication to the Société de Biologie.

Working by experiment upon animals, Bert showed that 2 per cent.[3] was competent to produce full and complete anaesthesia. Percentages below this produced only heavy sleep, and percentages above 2 rapidly killed the recipient.

Further results claimed by Bert, as proved by his experiments, went to show that it was the percentage strength of the vapour inhaled which killed, and not the quantity ultimately taken into the organism. He says:

> En d'autres termes le chloroforme n'agit pas par la quantité qu'on respire, mais par la proportion qui s'en trouve dans l'air inspiré.[4]

He showed that prolonged inhalations of percentages of chloroform, although too weak to cause insensibility, determine death, after being inhaled continuously for some hours. Thus Bert was led to believe that metabolic function was destroyed before the higher nerve centres were attacked.

The following tables explain these results:

TABLE I.—*Percentages by Volume of Vapour.*

Anaesthetic Dose.	Lethal Dose.	Ratio.
Dog 1.8 (9 grams à 100 litres of air) ...	3.8 (19 à 100)	2.1
Mouse 1.2 (6 grams à 100 litres of air) ...	2.4 (12 à 100)	2
Sparrow 1.8 (9 grams à 100 litres of air)	3.6 (18 à 100)	2

TABLE II.—*Dog.*

Percentage.	State.	Died.	Rectal Temperature.
0.8 (4 à 100)	Sensible	Alive after 9 hours 30 minutes	To 35°
1.2 (6 à 100)	,,	Died in 6 to 7 hours	31° to 29°
1.6 (8 à 100)	Insensible, but easily roused	——	—
2 0 (10 à 100)	Insensible in few minutes	Died in 2 hours to 2 hours 5 minutes, no convulsion	35° to 33°
2.5 (12.5 à 100)	,,	Died in 1 hour to 1 hour 25 minutes.	35° to 34°
2.8 to 3.2	,,	Died in 40 minutes	39° to 37°
3.6 to 4	,,	Died in 30 minutes	—
6		Died in 3 minutes	—

We may summarize Bert's conclusions:

1. Even large quantities of chloroform passing into the lungs over a lengthened period produce no objective phenomena except that of lowered temperature, provided they are introduced in low percentages.
2. Slightly higher percentages, when given for very long periods of time, kill without causing insensibility. The temperature is lowered, the nutritive functions apparently failing before those of the nervous system.
3. Higher percentages cause insensibility, and always kill when the inhalation is prolonged. The duration of life is inversely as the strength of the vapour. The more rapidly death occurs the less is the fall of temperature.
4. The animals evinced individual peculiarities as regards their reaction to chloroform, even when they appeared to be physically equivalent.
5. The heart-beats persisted after failure of respiration.
6. After inhalation chloroform is not found in the urine.

Bert next experimented to ascertain whether it was possible to obviate fatal results following prolonged inhalation. He found that employing a vapour of 2.4 per cent. (12 à 100) for induction and following this by a vapour of 1 6 per cent. (8 à 100) he kept the animals alive for three to five hours without failure of respiration or circulation.

[1] *Anaesthesia*, 1871, p. 179.
[2] *Chloroform and Other Anaesthetics*, p. 69 et passim. London, 1858.
[3] It may be well to note that Bert's figures are commonly misunderstood. He says "le nombre de grammes du liquide anaesthésique ajouté à 100 litres d'air," p. 769. Ten grams of liquid chloroform produce at 16° C. 1.98 litres of gaseous chloroform, and therefore when mixed with 100 litres of air give a mixture containing 1 94 of chloroform, very nearly the 2 per cent. of our notation. In all cases we have translated Bert's figures into the English notation, in order to avoid confusion.
[4] *Comptes rendus*, vol. xciii, p. 770.

He then applied his method to producing anaesthesia in human beings for surgical purposes. A vapour strength of 1.6 per cent. was used in most cases, a complete mixture of air and chloroform vapour being effected in large gasholders.

The induction period was about seven minutes.

In his second communication (1884) he details a number of cases anaesthetized with this strength vapour (1.6 per cent.), and reports absence of sickness, excitement, or other unpleasant complication. He appears to have employed a *continuous* administration, and in some cases to have obtained the best results with even more dilute vapours.

Subsequently Bert, Quinquaud, and others adopted another method of obtaining low-tensioned vapours. Alcohol, olive oil, or other materials were added in definite proportion to ensure a definite rate of evaporation of chloroform. The same idea was advanced by the Committee of the Royal Medical and Chirurgical Society, the report of which was issued in 1864. In it were proposed mixtures of alcohol, ether, and chloroform, and others containing chloroform and ether. These mixtures have been employed also in France, Germany, and England by various advocates of mixtures. Mixtures of this kind, however, when used in clinical apparatus, give very variable quantities of chloroform vapour.

Dr. Junker also designed an apparatus for pumping air through a liquid anaesthetic. It was used originally for giving "bichloride of methylene," but later also for chloroform. The original pattern was open to many objections, and was never accurately tested to ascertain the precise percentage of chloroform vapour it delivered under various circumstances. It is described in the section on Regulating Inhalers (p. 63).

R. Dubois,[1] a pupil of Bert, further increased our knowledge. He reaffirmed Bert's method of *mélanges titrés*, and described the most ingenious mechanical apparatus (see section on Regulating Inhalers) which goes by his name, and is one of the most accurate means for obtaining exact percentages of chloroform in air. By the arrangement the patient breathes from a *plenum*, and so has no added mechanical difficulty in performing respiration.

The apparatus consists essentially of a mixing chamber, and is controlled by a handle which works a wheel. Each turn causes a definite volume of air to enter and a definite amount of chloroform to be evaporated into it. A simple adjustment permits of percentages up to and including 2 per cent. to be presented to the person inhaling. The percentages can be varied according as the exigencies of the occasion may require.

It may be noted that various attempts have been made to arrive at the dosage of chloroform given by other methods, and these may now be considered.

Lord (then Mr.) Lister in 1861,[2] in an article contributed to *Holmes's System of Surgery*, discussed the percentage value of chloroform vapour supplied to patients by different methods. He criticized Snow's view that chloroform deaths

> could result only from a faulty method of administration; and, assuming that when chloroform is given from a folded cloth it is apt to be in too concentrated a form, he attributed most of the deaths which have occurred to paralysis of the heart from this cause,

and experimented to ascertain what percentage of chloroform vapour is inhaled from a cloth. Lord Lister points out that much of the vapour evaporating from the lower portion of the cloth is blown away by the patient's expiration, and even so he asserts the optimum value of the evaporation is below that assigned by Snow as competent to produce cardiac paralysis, that is, over 5 per cent. The plan of the experiment was: A cloth such as is used in practice, was supported by a light wire framework, and suspended a short distance from the floor by a thread connected at one end to the beam of a balance. The weight of the cloth having been ascertained, a weighed quantity of chloroform equal to ʒjss (average quantity used) was poured on the centre of the lower surface. This hung close above the mouth of the person experimenting, who expired against it, inspiring pure air through an india-rubber tube. The weights on the scale of the balance indicated the amount of chloroform lost by evaporation. The effect on rate of evaporation by inspiration was regarded as negligible—after other experiments. Various precautions were adopted, and allowance made for absorption of moisture by the cloth. The evaporation at 70° F. was proved to be, taking the average of several experiments, 24 grains per minute during the first half-minute (Snow estimated 20 grains chloroform corresponded to 15.3 cub. in. of vapour, and that 400 cub. in. of air are inspired per minute), equivalent to 4.5 per cent. Lord Lister adds:

> 5 per cent. being what Dr. Snow was led by his experiments to regard as the proportion at which the respiration was quite sure to fail before the circulation. . . . On the other hand Dr. Snow assumed that when the cloth is used at a temperature of 70° F. 9.5 per cent. of chloroform is really inhaled, whereas in truth, of the 4.5 per cent. a large amount is dissipated in the surrounding air.

Snow's actual words[3] are:

> If, for instance, a person inhales chloroform from a handkerchief or an inhaler, in such a way that the air he breathes shall be half saturated with the vapour, then supposing the temperature of the apartment, the handkerchief, etc., to be 50°, the air he breathes will contain 4 per cent.; but if the temperature be 70°, the air will contain 9.5 per cent. of the vapour.

The conditions of Lord Lister's experiment demonstrate that evaporation into unlimited space does not presumably produce a rate of evaporation competent to semisaturate the air inspired, but it does not invalidate Snow's statement, nor does it give us data to estimate what percentage of chloroform vapour actually enters with the inspired air under various degrees of respiratory effort. In 1882[4] Lord Lister discussed the then recently published work of Paul Bert, and undertook some experiments on mice to determine whether the percentages of safety and danger of Bert were admissible in all cases. The experiments were not numerous, but, as Lord Lister says, "although I have failed to verify M. Paul Bert's precise conclusions, yet I believe we owe him a debt of gratitude for his researches." Lister's experiments convinced him that:

> Even in animals which seem to have been peculiarly sensitive to the action of chloroform, atmospheres which produced anaesthesia in a very few minutes did not cause death till they had been continued in action considerably more than an hour. These atmospheres had the peculiarity of being, on the one hand, extremely mild, and, on the other hand, constant in quality; and, assuming that effects more or less closely analogous would follow in the human subject, it is clear that we ought to make a systematic attempt to attain them. If for the fitful mode of administration by the folded towel, with atmospheres perpetually oscillating between the needlessly strong and the uselessly weak, we can substitute a method which shall give a uniform and at the same time a mild anaesthetic air, we may anticipate beneficial results.

But he adds (p. 165):

> Moreover, the facts which M. Paul Bert has elicited may well embolden us to continue a steady administration of the chloroform after the patient has been brought fully under its influence. For we know that, when complete anaesthesia has been brought about, a very much smaller proportion of the chloroform is needed for the maintenance of that state than was required for its production; all that is necessary being to supply enough to compensate for the elimination of the drug by the lungs and other emunctory organs.

It will be seen from these later writings of Lord Lister that his acute mind realized the value of a definite percentage atmosphere of chloroform vapour, nor was he slow to recommend that methods should be sought for which would satisfy the conditions of supplying a mild and uniform atmosphere and one capable of being lessened for maintenance of anaesthesia when once that state has been attained. While believing that dropping measured quantities of chloroform upon a cloth produced a safe percentage, he yet admitted that the method was open to the objection that it produced an atmosphere which always oscillated between what is "needlessly strong and uselessly weak." These words of Lord Lister's epitomize the whole argument in favour of administering chloroform by a method which controls the strength of the vapour and maintains it at a level of safety. Bert's subsequent trial of accurate percentage administration of chloroform to man fixed his *zone maniable* at 1.6 per cent. Lord Lister, by subsequent investigations, came

[1] *Anesthésie physiologique*. Par le Dr. Rafaël Dubois. Paris: Georges Carrét. 1894. (Pp. 34, 100 et passim.)

[2] See *The Selected Papers of Joseph Baron Lister*, Oxford, 1909, pp. 135–175 passim.

[3] *Chloroform*, p. 34.

[4] Ibid., p. 161.

to the conclusion that about 1.2 per cent. by volume was sufficient for anaesthesia. This figure is of great interest as demonstrating that Lord Lister, although not advocating any regulating apparatus, yet recognized that the best and safest plan of giving chloroform centred round accurate dosage.

Dr. Waller, at the annual general meeting of the British Medical Association, 1897,[1] in his Presidential address on Anaesthetics in the Section of Physiology, dealt with the question of the dosage of chloroform and other anaesthetics from a novel standpoint. Taking isolated nerve, he investigated by a most ingenious method the effects of various percentage strength vapours of chloroform and of other anaesthetics. He demonstrated that while low percentages diminished nerve excitability, higher percentages destroyed the nerve tissue altogether. Pursuing the matter more in detail, Waller[2] experimented upon isolated nerve by various methods of giving chloroform. His conclusions were in harmony with those already arrived at by Snow and Paul Bert, namely, that 1 per cent. was, for human beings, insufficient for induction, though sufficient for maintaining anaesthesia, and that 2 per cent. was safe and sufficient in most cases for induction, but too high for safe prolonged maintenance of anaesthesia. He presented vapours of chloroform at a value of 1 per cent., 2 per cent., 3 per cent., 4 per cent., etc., and found that the effect upon the nerve was directly as the strength of the anaesthetic vapour which reached it.

Waller considered, further, that the lethal dose was about double the anaesthetic one. In this estimate he agrees with that at which Snow and Bert had arrived independently.

Subsequently to the investigations of Waller the Committee examined the question of dosage.

In their second report[3] are given the results of the first trial of the dosimetric induction of anaesthesia by the Vernon Harcourt inhaler. In these cases a 2 per cent. was the maximum percentage employed, and the results demonstrated that 2 per cent. sufficed for induction, although a lower percentage was sufficient in some instances. Subsequent work has given better results, as the apparatus then in its trial stage has been made more exact. In the same report the dosage of the isolated mammalian heart was considered.[4] Sherrington and Sowton show the effect on the heart is one of depression, and this is directly dependent upon the actual dose of chloroform presented to it. They calculate:

> About 300 c.cm. of a 2 per cent. admixture of chloroform with air administered to an adult man, if its chloroform all reached the heart, and reached it under the above solution pressure, would, for the time being, practically annul cardiac action.

They point out that the problem is more complex, and that such a dosage reaching the heart in the intact animal depends upon many things, and that data are as yet wanting before we can solve the practical problems. It is, at least, clear that the heart is very sensitive to chloroform, and its safety depends upon dosage.

In 1903 the Committee made the following trial of inhalation of definite dosage upon human beings under test conditions. A member of the Committee and one of their assistants were the persons who inhaled. Two methods (*a*) inspiring air pumped through chloroform—the plenum system—and (*b*) air drawn over chloroform by the person's respiratory efforts, were employed. In each case approximate dosage was secured.

(*a*) A nominal dosage of 0.64 per cent. chloroform vapour in air was pumped synchronously with inspiration for ten minutes. No loss of voluntary movement occurred.

(*b*) A nominal value vapour of 0 5 per cent. was inspired for ten minutes without loss of consciousness. Both persons inhaling stated they could go on inhaling that dose of vapour indefinitely without inconvenience.

After a five minutes' interval a nominal 1 5 per cent. was given by the (*a*) method, 30 c cm. of air being pumped at each inspiration. Anaesthesia was obtained in fourteen minutes, was light, and consciousness returned in under two minutes, 8.25 grams of chloroform having been consumed. By (*b*) method a nominal dosage of 1.0 per cent. was given, and response to light pricking with a pin was lost in eight minutes; in ten minutes the conjunctival reflex was sluggish, and became abolished in fourteen minutes. Consciousness returned in one minute; the consumption of chloroform was 7.0 grams. Under the conditions present the nominal percentages cited were probably higher than the actual percentages inhaled. The anaesthesia produced was a light one, and as a subsequent trial showed, was below the depth of narcosis requisite in surgical anaesthesia. There were no sequelae, such as nausea, headache, and so on.

In the Committee's fifth report[5] is given the investigation of the amount of chloroform retained in the body after definite dosage with various percentage value vapours. Patients in hospital inspired percentages—always below 2 per cent.—and the inspired and expired air was analysed. A member of the Committee, the same who underwent the experiment by the (*b*) method cited above again volunteered for experiment. Inhaling 1 per cent. the blood pressure sank, at first slowly, later more rapidly, from 130 mm. to 110 mm. Hg. With 1 5 per cent. it fell in ten minutes to 90. When the dosage was made smaller the blood pressure at once rose. Consciousness persisted with 1 per cent. for ten minutes, in fifteen minutes he gave no reply to questions, in twenty-five minutes conjunctival reflex was present and the dosage was increased to 1.5 per cent. In thirty-two minutes the breathing was noisy and conjunctival reflex abolished, and he was insensitive to painful stimulation. The dosage was steadily decreased and after thirteen minutes air only was given. In thirteen minutes after this he showed signs of consciousness, and in twenty minutes could answer a question. Besides these test cases the Committee examined in some detail the effects upon hospital patients inhaling definite doses of chloroform for surgical operations.

The actual mixture of chloroform vapour and air was estimated for chloroform both as it was inspired and when it was exhaled. The condition of the patients during the induction and maintenance of anaesthesia under the influence of different doses was studied. The results were uniform, although within the limits of the 2 per cent. range. The individuals differed; with some the induction time was long, with others short; with some a maximum below 2 per cent. was sufficient, others needed 2 per cent. to be inhaled for several minutes before complete muscular relaxation appeared.

EXAMINATION OF THE METHODS USED IN ADMINISTERING CHLOROFORM AND THE DOSAGE OF VAPOUR SUPPLIED.

These fall into the categories:

A. Open methods.
B. Methods in which some inhaler is employed.

A.—OPEN METHODS.

These methods, as employed by Simpson, Syme, Lister, Lawrie, Esmarch, Schimmelbusch, and others, depend upon two main plans.

The Douche Method.

In this method known quantities of chloroform, usually one or two fluid drachms, are poured upon an evaporating surface of lint, cambric or some such material, and supplying a vapour which, being held at a distance of 2 or 4 in. from the face, is breathed freely mixed with air. The quantity of chloroform is renewed when the first supply is exhausted. In other plans a metal frame (Skinner, Esmarch, Schimmelbusch) is covered with lint or domette and the chloroform poured on this. Another way is to fold a towel or handkerchief into a cone and pour the anaesthetic into the apex. The Hyderabad method replaces the towel by a calico cone strengthened by thin wood cut into strips like whalebone, with cotton-wool in the apex of the cone.

The Drop Method.

The drop method differs from the douche method in that drops of chloroform are allowed to fall at a given rate upon the surface of evaporation. These drops vary in size according to the dropper in use, while the strength of the vapour varies according to the physical conditions, such as the nature of the surface, the area wetted, the temperature, air currents, and so on.

[1] BRITISH MEDICAL JOURNAL, November 20th, 1897.
[2] BRITISH MEDICAL JOURNAL, April 23rd, 1898.
[3] BRITISH MEDICAL JOURNAL, July 18th, 1903.
[4] See Sect. II, p. 50, "Physiological Processes of Anaesthesia."
[5] BRITISH MEDICAL JOURNAL, July 14th, 1906.

Various attempts have been made to determine the accurate dosage involved when such methods are in use, and these we propose to deal with in this place.

Lister's experiments have been already cited, and, as has been seen, his estimate was that a dosage of between 4 per cent. and 5 per cent. was attained when douching with ʒjss doses, while lower percentages, ranging from 1.5 to 3 per cent. were reached when a limited area of towel was kept wet by a carefully regulated supply of chloroform. Waller, assisted by J. H. Wells, the assistant appointed by this Committee, examined the dosage of the drop method in 1904.[1] They stated that the "drop" varies according to the size of the orifice through which the $CHCl_3$ chloroform escapes, but this is not the chief condition, which is the area (thickness of tube wall) on which the drop forms. Thus Eschbaum gives 38 mg. (7.6 c.cm. of vapour), Dubois 66 mg. (13.2 c.cm. of vapour). Waller gives 20 mg. to 25 mg. (4 to 5 c.cm. of vapour) when the drop falls from a stoppered bottle, but when the drop is given from an average pipette its weight is practically uniform. Waller further states that a drop of chloroform the vapour of which is inhaled in an ordinary inspiration of 400 to 500 c.cm. supplies a 1 per cent. vapour of chloroform in air. Waller, by estimations with his densimetric method, has shown that the ordinary percentage of chloroform vapour and air presented to the patient by the open method—lint or a towel being used—lies between 1 and 2, but it may reach 10 per cent. or more if the surface of evaporation is closely applied to the patient's face. By pouring drops of chloroform upon a layer of absorbent material resting on a frame and aspirating air from beneath it,[2] Waller estimated the percentages of vapour supplied under varying conditions of the experiment. He demonstrated that the possible percentages varied from a safe zone—that is, 1 to 2 per cent.—up to those of lethal strength.

W. Legge Symes sought to determine the concentration of chloroform vapour in air drawn from beneath a Skinner's mask.[3] The amplitude of the aspirations were measured by a spirometer, the percentage of chloroform by a densimeter; the temperature and barometric pressure were noted. Chloroform was applied to the mask (*a*) by continuous dropping, or (*b*) by a single douche. The concentration of the vapour in the densimeter was practically constant for an indefinite period during continuous dropping; after a douche it gradually subsided. With flannel on the mask a douche of 1 c.cm. after five aspirations gave 1 per cent., dropping to 0.8 per cent. after twenty aspirations; domette on the mask gave 1.6 per cent., and dropped to 1 per cent. A douche of 3 c.cm. gave 2.4 per cent. after five aspirations, and 1.6 per cent. after fifteen aspirations with flannel, but 2.9 per cent. and 2.1 per cent. with domette.

The effect of varying the quantity of chloroform applied to the mask is shown in the following table:

$CHCl_3$ Applied.	Amplitude of Aspiration.	Frequency of Aspiration.	Concentration of Vapour.
10 drops per min.	350 c.cm.	10 per min.	0.65 per cent.
20 " "	"	" "	1.0 "
30 " "	"	" "	1.4 "
40 " "	"	" "	2.0 "
43 " "	"	20 per min.	1.1 "
55 " "	"	" "	1.2 "
66* " "	"	" "	1.4 "
1 c.cm.† douche	400 c.cm.	10 per min.	1.7 "
1 " "	"	" "	2.1 "
3 " "	"	" "	2.5 "

* 65 drops from burette = 1 c.cm.
† Estimations made in this series after 10 aspirations.

The concentration in the densimeter did not increase proportionately to the amount applied to the mask. When the frequency of aspiration was varied while the amplitude was constant, it was found that increased frequency produced lowered concentration of vapour. Further, for a given quantity of chloroform used, greater amplitude led to lower concentration, but the effect of varying amplitudes is less marked than that of varying frequency. These experiments show that at ordinary room temperatures with moderate and approximately equal quantities of chloroform, the Skinner's mask supplies 1 and 2 per cent., but 3 to 4 per cent. or more when the chloroform is copiously applied. Open fabrics supply a higher percentage vapour, and with the douche less uniformly sustained concentration, aspirations of lower frequency and smaller volume give greater concentration. The drop method gives more uniform effects than the douche.

Although, as is pointed out, the conditions obtaining in the experiments may not be entirely reproducible in the actual use of a Skinner's mask for a living being, yet they are sufficiently alike to demonstrate the increased dosage which occurs in practice when the respirations become slow and of lessened amplitude.

Levy,[4] in his experiments upon this method, employed a bellows to counterfeit human respiration so arranged as to regulate the volume of air drawn in by suction (inspiration) and driven out by expulsion (expiration). With regard to the effect of temperature Levy found:

> A required anaesthetic effect may be perfectly maintained in spite of temperature variations, provided that definite and small quantities of chloroform be applied at definite intervals of respirations. When large quantities of chloroform are being evaporated, a prolonged and slow series of temperature changes may result and will no doubt give rise to varying tensions which will be sufficiently long-continued to induce corresponding general anaesthetic effects.

The effect on dosage of the material of fabrics used as evaporating surfaces is also shown by Levy to be considerable, while the permeability of the material again introduces further possible discrepancies in rate of evaporation and therefore of dosage; "breathing through" and "breathing over" are dosimetrically different matters. The area of evaporation determines the amount of evaporation, and hence the fabric which allows "spread" of the chloroform supplies a larger evaporating area. Loosely woven materials such as domette, by allowing air to permeate and take up the chloroform held in suspension in the tissue which is being tested, afford a higher percentage vapour than do the closer woven fabrics such as linen. The effect of withdrawal of the mask to varying distances from the face was examined. Variations in the force of breathing produce material differences when the surfaces are approximated, but very slight when the mask is at a considerable distance from the face. The use of an impermeable material renders regulation of the vapour strength practically impossible. The folded towel, masks covered with more than one layer of lint, etc., fall into this category, since, although one layer is pervious to the breath, two or more are not so. A further disturbing factor is the damping of the lint or cloth by the moisture from the breath. A single layer of domette gave percentages of chloroform nearly proportional to the fraction of the area wetted when aspiration only was practised. Levy adds:

> Unfortunately this relation fails under the double-phased aspiration—alternate suction and propulsion [inspiration and expiration]—when the lower percentages are raised in value and the higher are lowered.

It thus appears that the accuracy of a percentage value of chloroform administered by the "open" or quasi-"open" methods is dependent upon many factors.

Dr. Levy considers that by the open method an approximate percentage is obtainable if the depth of respiration, the area of spread, the temperature, and so on, are closely watched and the supply of chloroform gauged to meet the necessities of their variations. This, it need hardly be pointed out, leaves so much to the individual, and makes so great a demand upon his special skill, power of observation, and accurate deduction, that it cannot be regarded as of universal application.

B.—Methods of Producing Accurate Percentages by Inhalers.

Various inhalers have been designed to supply definite percentages of chloroform. Most of these are described in detail in the section devoted to inhalers, but they may be mentioned in this place, since their successful use demonstrates the value of the method of definite dosing.

[1] *Lancet*, July 9th, 1904, p. 76.
[2] BRITISH MEDICAL JOURNAL, November 28th, 1903.
[3] BRITISH MEDICAL JOURNAL, July 9th, 1904.
[4] BRITISH MEDICAL JOURNAL, August 4th, 1906.

now's inhaler (see Section IV, p. 63). In his record of
es Snow does not enter into detail concerning the
age used in the individual cases.
lover constructed an inhaler in 1864, which delivered
apour of 4.5 per cent., the maximum strength which he
arded as safe (see Section IV, p. 63).
he mechanism of this consisted of a receiver of known
acity into which the required quantity of chloroform
injected, so that when fully vaporized the resulting mix-
e was of the desired chloroform tension. The patient
athed from the receiver by means of a face-piece and
e similarly to the arrangement in Snow's inhaler.
ver's inhaler is open to the objection that there is a
ility in prolonged operations when the breathing is
v, that the heavy vapour of chloroform gradually settles
he receiver, and so it is difficult to secure an absolute
formity of strength. This inhaler did not achieve
ularity, probably owing to its somewhat cumbersome
earance, and to the fact that ether and ethydine
loride rather usurped the inventor's attention in
r years. That he used so high a percentage vapour
h some success indicates the watchfulness and skill
he administrator. He adopted a method of continuous
alation, but was able by opening a valve to give the
ent access to a large extra supply of air and so diluted
vapour, and in this probably lay the secret of Clover's
ess. Although theoretically using a 4.5 per cent.
our, he employed actually a much lower strength of
our.
ert's method, that of mixing chloroform vapour in
nite proportion in gasholders, was only applicable
hospitals, and never passed beyond the stage of
riment. It is referred to later (Section IV, p. 64).
he invention of Dr. Junker's inhaler marked a further
mpt to control the dosage of chloroform. The original
el was open to many objections, and was never
ously tested by the inventor to ascertain what per-
age of vapour the person inhaling actually obtained.
Krohne, of the firm of Krohne and Sesemann, intro-
d some improvements, and attempted to standardize
strength of vapour delivered by compressions of the
tance ball.
aller has investigated the percentages delivered from
nodified [Krohne's] Junker's inhaler.[1] He points out
the three elastic balls which force air through the
oform in the bottle deliver nominally 10, 30, or 60 c.cm.
ch compression, and are intended to volatilize $\frac{1}{6}$, $\frac{1}{2}$, or
um of chloroform. Assuming the inspiration to average
cm., the 10 c.cm. ball will supply 3 c.cm. of chloroform
ur equalling 0.75 per cent. in 400 c.cm. of air, the
m. ball 9 c.cm., or 2.25 per cent., and the 60 c.cm. ball
m., or 4.25 per cent.[2]
periments made to test the nominal values showed five
ressions of the 10 c.cm. ball delivered to the flask
gram—that is a percentage = 4.0, or 0.8 per com-
ion. Further flask estimations with the largest ball
3.13 per cent. against the nominal 4.25 per cent. in
se and a greater deficit (between 3.13 and 1.18) in
s. Waller gives as an average for the three balls
gram $CHCl_3$ or 0.8 per cent. in 400 c.cm. of air,
gram or 1.8 per cent., and 0.070 gram or 3.5 per cent.,
t the nominal 0.75 per cent., 2.2 per cent., and 4.4
ent. It was found, further, that the weight
rated varied also when the area was varied, when
mperature of the chloroform altered, and also when
be delivering the air into the liquid chloroform was
or less deeply immersed—that is, according as the
bbled through a greater or less depth of anaesthetic.
experiments were made under laboratory con-
s, and the accuracy of which cannot be reproduced
the actual clinical use of the apparatus.
Paul Chapman[3] has made experiments with the
r method, and his conclusions are in accord with
what is stated above. He found unless there is free admission of air to the face-piece a percentage of 5.2 or even higher is delivered. Warming the bottle gave 6.5 per cent., and the variations in the depth of the chloroform in the bottle produced marked differences in the percentage.

In 1884[4] Dr. Raphael Dubois, in conjunction with M. Tatin, devised the Dubois anaesthetic machine which delivers accurate percentages of chloroform in air. The inhaler is described in a succeeding section, but the results obtained with it may be noted here. With a dosage varying from 1.6 per cent. to 2 per cent. full surgical anaesthesia was obtained by Dubois and others in France.

The Dubois apparatus has been tried in London hospitals and elsewhere, and the percentages below and up to 2 per cent. have been proved by demonstration to have sufficed in the cases in which it was tested.

To obtain definite percentage values of chloroform in air, Mr. Vernon Harcourt designed his inhaler (chloroform regulator), and at the instance of the Committee, of which he became a member, modified the apparatus to its present form. Essentially it is an empirically adjusted inhaler, which enables the patient to aspirate air from over the surface of chloroform. By a very simple arrangement the apparatus allows percentages of from 0.2 per cent. to 2 per cent. to pass into the face-piece. It is described fully in the following section.

Dr. B. J. Collingwood[5] devised a method of regulating chloroform percentages by driving air over chloroform. The apparatus is described on p. 67. The apparatus does not appear to have been employed in practical surgical anaesthesia.

Working on similar lines to those suggested by Mr. Harcourt, Dr. Levy[6] constructed a regulating inhaler, fixing his maximum at 3.5 per cent., described on p. 66. Dr. Levy has demonstrated that induction of complete anaesthesia with vapours for 0.5 per cent. to 3 per cent. or 3.5 per cent. is accomplished in five to six minutes and maintained at 2 per cent. or less.

Dr. Waller[7] designed two regulating inhalers. The one —the Wick vaporizer—is described on p. 66. The principle of the second inhaler includes the use of the chemical balance, and is described on p. 67.

Dr. Alcock[8] designed a regulating inhaler, described on p. 67, which delivers accurate percentages of chloroform vapour; percentages up to 3 per cent. were given for induction if that period was restricted to seven or ten minutes, and a lower strength sufficed for maintaining anaesthesia. A series of successful applications of this inhaler in surgical work has been recorded.

The majority of the workers just alluded to have found that 2 per cent. is an adequate percentage for induction; but it should be noted that Snow in his inhaler, Lister in his experiments, Levy and Alcock, have employed a higher percentage, and have regarded 3 per cent. as within the range of safety for ordinary surgical work. The experiments made by Snow, Bert, Dubois, Waller, and the work of the present Committee, have established that percentages of chloroform vapour in air up to 2 per cent. in the cases of both the lower animals and man may, for induction of anaesthesia, be inhaled without danger. Percentages above 2 have been shown not to be safe. The exact dose for safety is, according to Bert, a variable one, but may be taken as lying between 1.5 per cent. and 2 per cent. for induction. It has been shown also that a percentage which lies well within the zone of safety at the commencement of the inhalation becomes dangerous and even fatal if continuously inhaled for a long time. The length of time during which a percentage may be safely inhaled varies directly as the strength or tension of the vapour of chloroform in the mixture, and has to be decided for each individual case.

The regulation of the dosage in the use of chloroform affects the safety of the patient not only during the induction period, but during the period of maintenance and during that of recovery from narcosis. The danger of the induction period has been considered, and evidence has been offered that any dosage above a certain level (that

[1] ISH MEDICAL JOURNAL, April 25rd, 1898. p. 106, and *Lancet*, July
, p. 77. The original apparatus was introduced in 1860, but the
tion here dealt with was designed by Mr. Krohne, the instru-
aker. This is provided with an influx tube to which are
three elastic balls arranged in sequence, the larger being
o the chloroform chamber. These are made of such a size that
sing one or other will pump a certain known quantity—that is,
60 c.cm.—of air into the chamber. This air passes through
roform, escapes by the efflux tube into the face mask, and is
by the patient. The face-piece is open at its summit.
ning 17 minims = 1 c.cm. and 1 minim $CHCl_3$ = 0.082 gram,
approximately 17 c.cm. of vapour.
[3] ISH MEDICAL JOURNAL, vol. i, 1906, p. 615.

[4] See *Soc. Biol.*, 1884, June 14th, and *Mem. Soc. Biol.*, 1885, p. 1. See also *Anésthésie physiologique et ses applications*, Paris, 1894, p. 106.
[5] *Trans. Roy. Med. Chir.*, November, 1904.
[6] *Trans. Roy. Med.-Chir. Soc.*, November, 1906. See chapter on Inhalers, p. 63.
[7] Ibid. Also see chapter on Inhalers; also *Science*, vol. ii, p. 621.
[8] BRITISH MEDICAL JOURNAL August 15th, 1908, and February 6th, 1909.

is, over 2 per cent.) is unsafe. Early investigators surmised this, and the work of the Committee has confirmed it. The danger of prolonged action of even low percentages of chloroform was recognized by Bert, who regarded death following prolonged chloroform inhalation as due to tissue catalysis. This is explicable, according to modern views, by regarding the first effect of chloroform upon the tissues engaged in nutrition to be that of rendering them unable to carry on their functions, and the prolonged effect to be that of their destruction. Bert and Snow speak of a lethal dose as double that necessary for induction, and even this limit is narrow and easily transcended when chloroform is given in unmeasured percentages. But the term "lethal dose" is, in fact, only applicable to the dosage during the induction period, even if we can accept its use in that restricted sense. When the question of time comes in —that is, during prolonged inhalation—the lethal dose is a sliding one, varying within wide limits. This Snow appears to have recognized[1]: "If animals are kept for a very long time under the deep influence of chloroform [that is, under a dosage safe for induction], they become ultimately exhausted; the circulation and respiration are gradually weakened, and cease nearly together." He noted that increase in the dose given, even when concentrations are gradually changed, produces cessation of respiration; while, when the lungs are suddenly flooded with a high percentage of chloroform, the heart's action is stopped as soon as the chloroform passes through the coronary circulation (see Experiments 24 and 25). He also traced the progressive action upon the central nervous system, showing that deaths arise either from the effects of unduly strong vapours (that is, over 2 per cent.) upon the lungs and heart or as the result of gradually increasing narcotism of the nervous tissue through prolonged inhalation of too great a concentration—a concentration, however, which does not paralyse the lungs or heart, except through nerve interaction. In clinical work we see the effect of prolonged dosing with chloroform. The appearance of a patient who has taken chloroform, especially by a method which is not truly dosimetric, after a prolonged administration, is typical. The face is white, the pulse is soft, small, and compressible, the body and limbs are flaccid, the breathing is soft, respiratory rhythm slow, and the thoracic excursion small. The skin is cold and bloodless. The resumption of consciousness is delayed, sometimes only occurring after an hour or more. After-effects—gastric, renal, or pulmonary—frequently arise, and tissue destruction may even extend to the condition found in cases of acid intoxication. Vagal inhibition usually occurs in the induction period, but may be provoked during operations upon the neck, or the viscera, at a later stage of the proceedings. Clinical experience thus leads us to believe that these dangers are the direct result of over-dosage, and can be prevented by the adoption of an accurate method of giving chloroform in percentages, provided the percentage is varied according to the necessities of the patient and the operation.

It may be claimed, then, that experiment has shown that, as in the case of isolated tissues, so in the case of the intact animal, the immediate effects produced by chloroform are directly in proportion to the dose given —that is, the percentage inhaled—and that the later effects depend both upon the percentage inhaled and the length of time during which it is inhaled. Over-dosage in the induction period produces sudden death; during the period of maintenance death occurs more gradually. When prolonged inhalation has been allowed and a too high percentage has been offered, death may ensue through destruction of the tissues of organs such as the liver, the kidneys, and so on. The Committee accepts the 2 per cent. as the safe dosage for the average adult during the period of induction, but recognizes that clinical conditions, such as the presence of serious lesions or great shock, may render that maximum too high. They can offer no definite limit of safety of dosage in the later stages of maintenance of anaesthesia; but the examination of cases taking definite percentages leads them to believe that extremely low percentages—1 or 0·5 per cent.—are sufficient to maintain anaesthesia, and the employment of higher percentages at this time must eventually prove most deleterious to the patient.

The clinical evidence upon which the above results are based were obtained by the Committee, and are refe to at the conclusion of the following section o n regul inhalers, but it may be noted here that, as shown i second and fifth reports of the Committee, a consi able number of patients were subjected to percentag chloroform in air up to 2 per cent. The accuracy of nominal strengths used was proved as the inspired expired vapours were examined in a number of cases the percentage values checked. Anaesthesia sufficien surgical operations was obtained in adults by a maxi of 2 per cent., in children by a lower percentage, usu 1.5 per cent. Maintenance in these cases was effecte a lower percentage, usually 1 per cent. or less. This re was obtained by employing the Vernon Harcourt, Dubois, and the Roth-Dräger. In the case of the two inhalers no quantitative examination of the chl form in the mixture was made. The results of hos as well as those of private practice in cases for which Vernon Harcourt inhaler has been used may be a here to those described in the second and fifth repor the Committee.

In hospital and private practice over 5,000 cases been recorded. Besides these a considerable numbe patients who were regarded as fitting subjects for e were rendered anaesthetic by that agent in conjun with nitrous oxide or chloride of ethyl, and subsequ the anaesthesia was maintained with chloroform by m of the Vernon Harcourt inhaler.[2]

Except very rarely, patients were anaesthetized vapours up to 2 per cent. When the masks or v were carelessly manipulated or the administrator a beginner, the period of induction was somewhat longed—ten or fifteen minutes. This, however, is not n sary. Less struggling and fewer minor complica incident to the induction period occur with this me The increase tube giving a 2.5 per cent. has only used seldom in hospital, scarcely at all in private pra and only used to save time. The experience of years of hospital work indicates that a 2 per cent. va produces complete surgical anaesthesia in practically type of patient. It does not produce, however, in vig subjects an appreciable effect upon the respiratory c unless the inhalation of 2 per cent. is persisted in prolonged period. No deaths due to chloroform—th due to strength or quantity of the anaesthetic—a occurred in the hospitals and practice the recor which have been placed at the disposal of the Comm and, so far as published records are concerned, o appears to have occurred elsewhere.

The following cases of deaths which occurred aft patient had been anaesthetized may be cited, alt they appear to have been "unpreventable" from th of anaesthesia. In them the death took place aft induction period was complete, and was due to m causes.

The first was that of a man, aged 51, upon wh laminectomy was performed. The patient was lying his chest and his head hung over the end of the Induction of anaesthesia was normal, and 2 per cen exceeded. Maintenance was easily obtained as resp was restricted by the position, and 0·2 per cent. at vapour was soon reached, and even this was given occasionally. Haemorrhage was very severe and not be completely controlled; the patient gradual cumbed to shock before leaving the table. The nex was that of a female, aged 21, who had actinom affecting the tissues below the jaw. An attempt ha made upon a previous occasion to administer ether but the lungs rapidly became choked with fluid, and condition was obviously one of danger, the attem given up and the operation deferred. On the subs occasion she was given chloroform from the V Harcourt inhaler and took it badly. Retching and vomit and profuse bronchorrhoea occurred; 2 per cen at no time transcended. When brought into the op theatre the operation was about to be commenced retching and movement occurred and the operati suspended until these had ceased, and when th junctival reflex was lost the operation was p Respiration, however, soon become impaired; the and pharynx were mopped out. In spite of t

[1] *Chloroform*, p. 109

[2] This method, now commonly adopted in suitable cases, the dangerous after-effects common to prolonged etherizat permits the patient the initial ether stimulation, often a gree

breathing became worse and the patient, who was in a poor condition, eventually died. The necropsy showed fluid and bilious straining in the air passages and lungs.

The next case was that of a female, aged 31, who suffered from exophthalmic goitre. The anaesthesia was devoid of any abnormal phenomena, and death, which occurred when the thyroid tumour was being drawn from its attachments, was sudden and of the cardiac type, no doubt arising from vagal inhibition. The patient was anaesthetic, but not profoundly narcotized at the time of collapse; 0·5 per cent. was being inhaled.

The next case was of a similar nature. The patient was a man over 60, with advanced heart and renal disease, and he was in a very poor condition. The operation, rendered necessary by his sufferings, was the removal of the prostate, which blocked the bladder outlet. The patient, after being warned that his life would be in grave danger, elected to take his chance. Anaesthesia was easily attained and maintained with a low percentage—0·2 per cent. Manipulation of the bladder caused very grave shock, and as the case was a difficult one, it was impossible to prevent its continuance. The man was quite anaesthetic, but at no time deeply narcotized. As the prostate was dragged out the patient's heart stopped, and respiration failed immediately. As the blood pressure had fallen the strength of vapour given was 0·2 per cent., and this was discontinued before the final catastrophe. In this case oxygen was administered with the chloroform and after the discontinuance of the anaesthetic.

The Committee's experience also shows that after prolonged inhalations the patients take longer to recover, the result probably of higher tissue saturation. When the dosage was steadily decreased during the period of maintenance the recovery was less delayed, and any after-effects—sickness, and so on—were markedly diminished, or even absent. The explanation of this is given in the section on "Physiology of Chloroform."

The ultimate conclusions at which the Committee has arrived with regard to dosage of chloroform may be summed up as:

1. That a 1 per cent. vapour is generally insufficient to induce surgical anaesthesia in an adult, at all events within the limits of time ordinarily available.

2. That a 2 per cent. vapour of chloroform in air is sufficient to induce full surgical anaesthesia.

3. That in pathological conditions, such as depraved blood states, some diatheses, grave pathological states, the safety dose or percentage is below 2 per cent., and must be determined in each case.

4. That the dosage for the maintenance of anaesthesia is of as much importance as that of the induction period, and the neglect of recognizing this has caused many deaths, and constantly delays convalescence.

5. That no definite limit of safety can be fixed for this dose, but that it is in most cases 1 per cent. at first, and must be lowered as time goes on.

SECTION IV.

REGULATING INHALERS AND DEFINITE PERCENTAGES OF CHLOROFORM VAPOUR.

INHALERS DESIGNED TO SUPPLY ACCURATE PERCENTAGES OF CHLOROFORM.

The following is a list of the apparatus designed for giving accurate percentages of chloroform:

Snow's Inhaler.
Charrière's Inhaler.
Duroy's Anaesthesiometer.
Junker's Inhaler.[1]
Clover's Chloroform Inhaler.
Paul Bert's Apparatus.
Dubois's Machine.
Harcourt's Regulator.
Roth-Dräger.
Levy's Inhaler.
Waller's Wick Inhaler.
Waller's Balance Inhaler.
Collingwood's Inhaler.
Alcock's Inhaler.

[1] This inhaler was considerably modified by Krohne and others, and tempts made to render it more accurate as an exact dosage inhaler (see p. 61).

The Committee examined more particularly the Junker, the Dubois, the Vernon Harcourt, and the Roth-Dräger apparatus.

Snow's Inhaler (1847).[2]

The inhaler is made of metal, consists of a double cylinder, the outer space of which contains cold water, the inner serves as an evaporating chamber for the chloroform. Into the inner part of the cylinder is screwed a frame, having numerous openings for the admission of air, and four stout wires which descend nearly to the bottom of the space, and are intended to support two coils of stout bibulous paper, which are tied round them and reach to the bottom of the inhaler. In the lower part of this paper four notches are cut to allow air to pass. The quantity of chloroform which is put in should never fill the apertures or notches; the air which passes through the inhaler meets with no obstruction whatever. A glass tube communicating with the interior of the inhaler allows the administrator to see how much chloroform is left. An elastic tube with a ¾ in. internal diameter carries the vapour to the face-piece. This last has expiration and inspiration valves, and the former is arranged so as to be displaceable laterally, thus permitting entrance of air to dilute still more the chloroform vapour given by the inhaler. It thus appears that although the inhaler presented a possible 5 per cent. of vapour as a maximum it provided ample means for lessening this dose. This maximum is undoubtedly highly dangerous, and Snow's success was due no doubt to the movable valve and his personal experience. Of the fifty deaths under chloroform of which Snow gives details, three—namely, Nos. 41, 44, and 45—occurred when Snow's inhaler was being employed. A water bath at room temperature was employed to counteract the cooling of the chloroform due to evaporation and to ensure continuous and equal evaporation of the chloroform. Snow arranged the bibulous paper in the inhaler "to contrive that the air passing through, in the ordinary process of inhalation and at the ordinary temperature of 60° F. should take up 5 per cent. of vapour." The quantity can be diminished as much as is desired by turning the expiratory valve of the face-piece a little to one side. Two to two and a half fluid drachms of chloroform were placed in the inhaler at first.

Charrière's Inhaler.

This inhaler, formerly much used on the Continent, depends upon the physical law of evaporation from a given area of a surface exposed to a current of air.

The apparatus supplied only very approximately any desired percentage, and has passed out of use.

Duroy's Aesthesiometer.

This permitted a certain number of drops of chloroform to fall upon an evaporating surface. The number of drops was under the control of the administrator. If, as Snow points out, 60 drops, which weigh 20 grains, fell per minute and produced 15.3 cub. in. of vapour, and mixed with an average adult's breathing of 400 cub. in. per minute, the air breathed would contain 4 per cent., but if the breathing were slow or feeble, or if the breath was held, the inspired air would rapidly become charged with a dangerously high vapour of chloroform. Rapid breathing, on the other hand, would lead to inspiring an inadequate percentage of vapour.

Clover's Inhaler.

Clover's inhaler[3] consisted of a bag of known capacity and lined with goldbeater's skin. A metal box kept warm by water containing blotting paper had in its lid an aperture into which a graduated syringe was fixed, and this permitted the introduction of a known quantity of liquid chloroform into the receptacle. The box was connected on one side with the bag and on the other with a foot bellows pleated like a concertina. Air was pumped through the metal receptacle and took up the chloroform in vapour and passing on filled the bag. This last was then detached and hung upon the back of the anaesthetist. Any percentage was thus obtained. Clover used 40 minims of chloroform to 1000 cubic inches of air, that is, 4.5 per cent. The facepiece was connected with the bag by tubing, and was fitted with valves made of ivory supported on springs.

[2] *On Chloroform and Other Anaesthetics*, 1858, p. 82.
[3] *Lancet*, 1864, vol. ii.

The manipulation of these valves really regulated the percentage value of the vapour received by the patient, so that the safety of the inhaler depended upon the personal skill of the person who employed it. As in the case of Snow's inhaler, so in that of Clover's, the nominal maximum percentage was never allowed to reach the patient's lungs. This inhaler was constructed on the "draw through" system, but, as has been pointed out, it was liable to variations of percentage owing to failure of the proper mixing of the air and chloroform vapour. Clover's plan appears to have been to supply a maximum and dangerously high tensioned vapour, the strength of which he diminished by opening the valves in his face-piece. This method, even in his expert hands, proved to be not devoid of danger, and failed because it gave no definite indication either of the real strength of the air and chloroform mixture in the mixing chamber, and none of the actual strength of vapour which the patent inhaled. The method appears to have fallen entirely into desuetude. Some accidents occurred during its use.

Paul Bert's Apparatus.

Bert's method of *mélanges titrés* applied to human beings was carried out by using large gasholders for mixing the chloroform in air; a definite percentage of 1.6 was employed. The apparatus was designed by M. St. Martin.

Junker's Inhaler (Present Form).

In the section referring to dosage the value of this inhaler is discussed, and, as Waller and Chapman have shown, it cannot be accepted as reliable, except under the most rigid conditions, which are seldom, if ever, attainable in giving anaesthetics for surgical operations. In 1903[1] the Committee examined this inhaler, and came to the conclusion that, although under favourable conditions it might deliver a safe percentage—that is, one below 2, yet in practice it could not be relied upon to supply such a vapour. For, independently of the physical laws controlling the evaporation from the chloroform in the bottle, there are always two uncontrollable sources of danger—irregular working of the bellows, and the variations in the breathing of the patient inspiring the mixture of chloroform vapour and air. The variation in the rate and force in the use of the hand or foot pump influences the percentage value of the mixture, and the rate of breathing, unless the face mask is supplied with open valves admitting air very freely, may produce a percentage of 5, or even more.

The apparatus is too well known to need description in detail. The Committee regard the chief objections to the Junker method to be that (1) the administrator has no means of knowing what percentage vapour he is giving, and (2) that the apparatus is capable of supplying dangerously high percentages of chloroform vapour, and may do so without the anaesthetist being aware of the fact. Indeed, the percentage can only be kept within safe limits by the most sedulous care even by an administrator of experience. Many fatal accidents have occurred during the use of the method, due either to overdosage or to faulty arrangement of the component parts of the apparatus.

The modern forms of the inhaler are safer in many ways than the older ones, but as the principle is the same, they are all open to objection. It should be noted that a Junker's bottle worked by a motor, so that a definite quantity of air enters by regular strokes of the piston, is an absolutely different apparatus from that which is controlled by a hand or foot bellows. In the last case, splashing and irregular passage of varying quantities of air must occur. Of this the Committee are confident, and in this lies the danger of the method.

Dubois's Machine.

The Dubois chloroform machine[2] is a plenum inhaler, and consists of a pump which is worked by the hand or foot. The piston forces a definite volume of air with a measured quantity of chloroform into a mixing chamber. The chloroform is delivered automatically into a small receiver which is kept at an even temperature by a spirit lamp. As soon as the receiver is filled the descent of the piston empties it into the evaporating chamber, and the piston rising, fresh chloroform flows into the receiver. The percentage value of the vapour depends upon the amount of chloroform and the volume of the air mixed at each descent of the piston, and the accuracy of this has been abundantly proved by the inventor and by estimations made in this country by Waller, Chapman, and others. The machine is usually constructed to deliver percentages up to 2 per cent., although by an additional arrangement 3 per cent. can be secured. Dubois, however, found that a strength of 1.6 per cent. sufficed in most cases to produce anaesthesia, and 1.2 per cent. to maintain it if the operation is a long one. He stated that seven to ten minutes is the time required for the production of anaesthesia.

Operations on the mouth, larynx, pharynx, etc., necessitate replacing the ordinary face-piece by a mouth or nasal tube, and the mixture is pumped through it into the air passages.

Dubois's apparatus is admirable for hospital work, and has been extensively employed abroad. In this country Dr. Chapman has demonstrated its value, and published a record of ten years' work without any danger or difficulty. Waller, who has given demonstrations in London hospitals with the Dubois machine, regards it as highly satisfactory. Its size and weight render it less adapted for routine medical practice, while its high price presents a further drawback to its general adoption.

The examination of this apparatus made by the Committee led them to accept it as one of the best of the plenum inhalers; but they regarded its size, bulk, and price as prohibitive, and they therefore sought for a simpler, cheaper, and more portable means of providing an apparatus which any medical man could employ.

The Vernon Harcourt Inhaler.

This inhaler possesses the advantages of simplicity, exactness, and portability, and therefore appears to be well adapted for universal employment. The Committee adopted it in their experiments.

The Harcourt inhaler[3] provides, in sufficient quantity for full and free respiration, a mixture of air and chloroform which is automatically limited to a maximum strength of 2 per cent., and this can be diluted at will with additional air down to any smaller proportion.

The two-necked bottle is filled with chloroform to near the top of the conical part, and two coloured glass beads are dropped into the liquid to indicate when the temperature is within the range 16° C. and 18° C. If the temperature of the chloroform is below 16° C. both the coloured beads will float; if it is above 18° C. both will sink; in the former case the proportion of chloroform inhaled will be less than the pointer of the stopcock indicates; in the latter case it will be greater. The proportion is also increased by any agitation of the bottle. During inhalation the chloroform is cooled by evaporation; its temperature may be kept between 16° C. and 18° C. by now and then warming the bottle by holding in the hand till the blue bead has sunk and the red bead is beginning to sink. The dimensions of the bottle have been arrived at after a great deal of experimental work and careful analysis. The diameter of the upper portion has been proportioned to the average rate of human respiration and to the rate of evaporation of chloroform between 16° C. and 18° C. To compensate for varying rates of respiration the inlet and outlet of the bottle are placed near together and at some distance from the surface of the liquid; while to compensate for the lowering of the liquid surface by evaporation the vessel widens as the surface of the chloroform descends, thus increasing the area of evaporation. The nearness of the two necks one to another, and the distance between them and the surface of the chloroform, diminish the variation in the proportion of inhaled air to chloroform vapour which is caused by unusually shallow or unusually deep breathing. When the flow of air is gentle, much of it passes in at one neck and out at the other without reaching the surface of

[1] See Committee's Second Report, Paper III, BRITISH MEDICAL JOURNAL SUPPLEMENT, July 18th, 1903.

[2] *Anésthésie physiologique et les applications*, par le Dr. Raphael Dubois, Paris, 1894, p. 108.

[3] See Appendix (Committee's Second Report, Paper II; Third Report, Appendix II, BRITISH MEDICAL JOURNAL, July 18th, 1903, and July 23rd, 1904), for the scientific data upon which depend the construction and accurate use of the regulator.

the chloroform or displacing wholly the mixture of air and chloroform which occupies the upper half of the bottle. On the other hand, the strong current caused by deep breathing drives out all the vapour which has been formed, and promotes further evaporation by stirring the surface of the liquid. If the rate of breathing is voluntarily reduced to 3 litres a minute instead of 7 litres, or raised above this, the proportion of chloroform may be raised to about 2.5 or lowered to about 1.5 per cent. By lengthening the cylindrical part of the bottle it would be possible to correct more completely for variations in the rate of breathing; but two ratios have to be considered in judging of the probable effect upon a patient—that of chloroform vapour to air, which is lowered by larger breathing, and that of the mass of chloroform inhaled to the mass of the body through which it is distributed, which is increased. Further, the increase of absorptive lung-surface, with deep breathing, is balanced by the diminished proportion of chloroform and vice versa.

The stopcock is so made that when the pointer is at the end of the arc nearest the bottle of chloroform the maximum quantity is being administered—namely, 2 per cent. When the pointer is at the opposite end only air will be inhaled; and when it is midway, dilution of the 2 per cent. mixture with an equal volume of air will make the proportion 1 per cent. The shorter lines on either side indicate intermediate quantities—namely, 0.8, 0.6, 0.4, 0.2; and towards the chloroform bottle, 1.2, 1.4, 1.6, 1.8.

The valves in the glass chambers on the top branches of the inhaler prevent the entrance into the apparatus of expired air, and also serve to show whether the stopcock is working rightly. Only one valve opens when the pointer is at either end of the scale, both equally when the pointer is midway, and for all other positions one valve opens more and the other less, in the degree indicated by the position of the pointer on the scale. The movement of these valves shows also how full and regular the breathing is, and the slight click which they make conveys this information to the ears, and so obviates the necessity of constantly looking at the apparatus.

It is generally found that beginning with the pointer at 0.2 and moving it on towards the chloroform bottle at the rate of one division about every half-minute up to 1.6 or 1.8 produces narcosis as quickly as is desirable. Unless the patient is a child or is unusually sensitive to the vapour, time may be saved by passing from a 0.2 per cent. in a breath or two to 0.5 per cent., then in half a minute to 1 per cent., and so on to 2 per cent. Induction usually occupies six minutes for adults, less for children. Stout, vigorous, and alcoholic persons may take longer to become completely anaesthetized, but as a rule failure to induce anaesthesia within a reasonable time arises from the mask not fitting accurately, so that the patient does not get a full 2 per cent.

For the maintenance of narcosis a dose of 1 per cent. or even less is sufficient. The stopcock can be moved by a touch of the finger so as at once to increase or diminish the dose.

If by the fall of temperature or agitation of the bottle the yield of chloroform is diminished or increased, this may be allowed for at once by a movement of the stopcock.

The face-piece, which is provided with an expiratory valve, and can be fixed in any position, is either attached directly to the inhaler, which in this case is held in the hand, and should be kept as nearly vertical and as steady as possible, or can be connected by about 20 inches of half-inch bore rubber tubing; the inhaler in this case being supported on a stand or hung on to the back of the bed or from a strap going round the neck of the administrator.

The mask is made of solid toughened rubber, fitted with a rubber air-cushion. It can be washed, or boiled, and as it becomes plastic in hot water the shape can easily be modified, if required, so as better to fit the patient's face.

No chloroform evaporates excepting that which is inhaled by the patient; and only that which is exhaled passes into the air of the room. There is, therefore, but slight chance of the formation of hydrochloric acid and phosgene gas when the inhaler is used in a room in which gas or lamps or candles are burning.

If, as in hot weather, the temperature of the chloroform rises to above 17° C., both pink and blue beads sink, and the percentage delivery will be slightly above that indicated. This rapidly corrects itself as the increased evaporation cools the liquid. Of course, the administrator can by slightly shifting the indicator effect the required correction of 0.2 per cent. or 0.3 per cent.

The inhaler has been now in regular use in University College Hospital, the Hospital for Paralysis and Epilepsy, Queen Square, and elsewhere, for seven years, and several thousands of cases have been carefully recorded. There have been no deaths. The experience has shown the inhaler to fulfil its object very satisfactorily. (See page 62.)

For a detailed account of the use of this inhaler see Appendix, p. 69.

THE VERNON HARCOURT INHALER.



Pointer adjusted to give 2 per cent.

Pointer adjusted to give 1.4 per cent.

The Roth-Dräger Apparatus.

This is capable of supplying a dosimetric system of chloroform inhalation; it possesses a further advantage in that it mixes the chloroform vapour with oxygen. Dr. Hagen's[1] description has been followed in the account of the apparatus which is here given, except for the omission of any reference to the concurrent use of ether as suggested by Professor Krönig. Chloroform is placed in a glass vessel so arranged that when the stream of oxygen is turned on a definite number of drops of the

[1] *Muench. med. Woch.*, No. 20, May 15th, 1906.

anaesthetic fall in a unit of time into an evaporating chamber. The amount of oxygen is under control, so that the percentage of chloroform vapour is capable of being regulated. The percentage value is recorded upon a dial, being estimated as corresponding to the number of drops volatilized. The oxygen and chloroform vapour are carried by a tube to a metal face-piece which fits the patient's face. This face-piece is provided with expiratory and inspiratory valves of mica; the latter prevents fouling of the oxygen with exhalations; the excess of oxygen passes into a spare bag, and there is a permanent opening admitting air. It is estimated that the patient receives 4 litres of oxygen and 8 litres of atmospheric air per minute. The spare bag receives the oxygen and narcotic vapour during the expiration, and empties during the next inspiration, so preventing waste. The apparatus, although looking formidable, is easily worked. It was tried for operations at University College Hospital, and was found satisfactory. A smaller portable form is constructed, but it is necessary to convey a large cylinder of oxygen for its use, and so this admirable apparatus fails as a really portable means of supplying an accurate percentage of chloroform.

Over a thousand cases in which the Roth-Dräger instrument was used abroad have been recorded, and during these some fatalities occurred. These are not given in detail, and probably arose through excessive dosage, since no definite limit of strength appears to be set during its use, and the apparatus can supply high percentages if the administrator chooses to employ them. Using a 2 per cent. vapour, the results obtained were very good.

Levy's Inhaler.[1]

The main principle involved is the suction of air over a surface of chloroform by the respiration, and the dilution of the mixture of air and chloroform vapour thus obtained by such a further proportion of air as may be desired before it reaches the respiratory passages.

The evaporating chamber is annular in form. At one point it is intersected by a vertical radial diaphragm, and in the top, to one side of this, a short air inlet tube is attached, and on the other side a similar outlet tube.

The chamber is made of thin copper, and it forms part of the cover of a larger vessel of about a litre capacity. This latter is filled with water at 20° C., and serves as a water-jacket to regulate the temperature of the chloroform. The chloroform chamber is connected with the regulating valves and face-piece by means of a length of aluminium pressure tubing.

The tube is connected at its further end directly to a brass mounting, which contains a circumferential air slot, which may be covered up to any desired extent by a revolving collar. This device is termed the "compensator." This mounting is screwed on to the tubular valves which constitute the regulator. This consists of two concentric cylinders fitted one within the other, the inner of which can be made to revolve within the outer by moving a lever. The cylinders contain reciprocally-acting apertures, one leading from the chloroform chamber, the other communicating direct with the air. When either is partly open the other is shut in the same proportion. Thus the chloroform may be diluted to any desired extent.

The lever before mentioned carries an index hand which travels over a scale indicating percentages of vapour. This scale was plotted out by means of a series of experimental estimations.

The air passes from this regulating apparatus through a glass valve chamber in which is registered the strength of the inspirations by measuring the swing of a hinged inlet valve constructed of mica. The hinge is made of oiled silk, and the necessary elastic resistance supplied by a length of thin, spirally-coiled, manganin wire. The swing of the valve is measured off on a curved index engraved with marks denoting various degrees of force of inspiration.

A curved metal tube connects this chamber to the face-piece, into one side of which is inserted a spring valve, which opens during expiration.

For aspirating air through the apparatus natural respiration through the face-piece is resorted to, voluntarily controlling the inspirations to the various grades of strength marked on the valve scale, and thus the experiments were performed under conditions such as occur in actual practice.

The marks on the valve scale correspond to the following velocities:

4	equals	860	c.cm. per second	(forcible breathing)
3	,,	660	,, ,,	(strong breathing)
2	,,	460	,, ,,	(moderate breathing)
1.5	,,	310	,, ,,	(weak breathing)
1	,,	220	,, ,,	(very weak breathing)

The important differences in the percentage of vapour corresponding to the various velocities of the air current have been combated and brought to a common reading by means of the adjustable slit styled the compensator. But it is only necessary to employ this in the series of high percentages—2.5 per cent. and over. At lower percentages than this the compensation is carried out automatically by reason of the viscosity effects upon the air currents in the long connecting tube affecting more powerfully the low-pressure currents. A certain amount of overcompensation is unavoidable in the case of very faint aspirations of about 200 c.cm. Such a weakness in strength of breathing should as far as possible be avoided.

At the 2.5 mark and over the automatic compensation progressively fails, and the compensator has to be used.

In use anaesthesia may be completely induced by this instrument in five to six minutes, proceeding gradually from a 0.5 per cent. mixture to a 3 per cent. or 3.5 per cent. When narcosis is complete the regulator is at once put back to the 2 per cent. mark, and is subsequently manipulated according to clinical indications. One—the most important of these evidences—is the respiration; and a complete account of this function is rendered by the action of the valves. Dr. Levy has published a series of cases of anaesthesia produced by his inhaler.[2]

Waller's Inhalers.

Dr. Waller has devised two forms of plenum inhalers; in both cases the air is driven into a mixing chamber by foot bellows or by a motor, but the methods of regulating the percentage of the mixture differ. These inhalers are respectively the Wick Inhaler and the Balance Inhaler, and they may be briefly described as follows:

(A) The *Wick Inhaler* is based upon the plan adopted in certain makes of motor cars of evaporating required quantities of petrol by means of wicks of known size and heating power. This applied to chloroform is obviously simple. The mixture is led from the mixing chamber to a face-piece.[3]

"The apparatus consists of a three-wick lamp containing liquid chloroform to be sucked by the wicks, and vaporized in the mixing chamber, into which air is pumped by an ordinary foot bellows as used by glass-blowers.

"The volume of air supplied by the bellows is determined by an appropriate stop, of which the orifice has been adjusted to give with the bellows reservoir at ordinary tension the desired volume of air per minute—12 to 15 litres in the case of the human subject.

"The volume of chloroform vapour taken up by the air is determined by the area of wick exposed and the volume of air supplied to the mixing chamber—in the case of the human subject a wick area of 100 cm. obtained by turning up two of the three wicks was found to give a mixture of about 2 per 100, with an air supply of 10 to 15 litres per minute.

"The face-piece, in the case of the human subject, need not be closely applied, and is provided with orifices of overflow, the principle aimed at being to supply to that face-piece a constant flow of chloroform and air in liberal excess of the normal volume of inspired air."

(B) *Balance Inhaler.*[4]—Air is pumped by a small electric motor through an ordinary wide-mouthed bottle containing liquid $CHCl_3$ into a large mixing chamber of 30 litres capacity, containing the $CHCl_3$ balance and provided with an inlet from the $CHCl_3$ bottle supplying the mixture, and an outlet to the tube and face-piece. The flow of air is rendered uniform and of suitable volume per minute by means of an elastic reservoir and a perforated stop on the

[1] Described originally in *Trans. Roy. Med. Chi. Soc.*, 1904-5, and *Lancet*, November 26th, 1904, p. 1496. A slight modification of the inhaler is described in the *Lancet*, May 27th, 1905.

[2] *Trans. Roy. Soc. Med.*, vol. ii, 1909.

[3] *Trans. Roy. Med. Chir. Soc.*, vol lxxxviii, p. 685 et seq.

[4] *Science Progress*, vol. ii, 621.

course of the supply tube. The percentage of the mixture is watched on the pointer attached to the beam of the balance, the point of which travels over the scale. From one end of the beam hangs a large sealed glass bulb and from the opposite end hangs a counterpoise. When the balance case contains air only the counterpoise is slightly the lighter of the two, and the index points to 0 at one end of the arc over which it moves. When the mixture of air and chloroform passes into the balance case, the bulb being far larger than the solid metal counterpoise and therefore displacing more of the gas around, it loses more of its weight when the density of the mixed gas increases, and therefore the index moves over the arc to a position which is determined by the density of the mixed gases. The arc is graduated at intervals of 0.2 per cent. and figured at the points corresponding to 1, 2, and 3 per cent.

The percentage is regulated by varying the depth of a tube in the chloroform bottle and by admitting more air into the mixing chamber. The chamber can be placed at any distance from the patient, the mixture being carried to the face-piece by means of a tube. As the inhaler is made on the plenum system no respiratory difficulty arises through the length of this supply tube. A slight addition to the machine can be made by which a permanent record can be made of the strength of the vapour given throughout the narcosis.

Both these inhalers have been employed in some cases for surgical anaesthesia, and with success.

In their present form, however, they are hardly applicable for everyday surgical use. The accuracy of their delivery has been tested, and it has been demonstrated that the nominal percentage can be maintained with some degree of accuracy.

Collingwood's Inhaler.

Dr. B. J. Collingwood[1] has described his method as follows: The method consists of drawing air up an inclined tube down which a fine stream of chloroform is constantly running. There are a series of inlets along this tube which can be opened or closed at will. The amount of chloroform taken up by the air is regulated by opening one or other of these inlets. In this way the air is made to pass over a longer or shorter stream of chloroform. The inclined tube ends in a vessel which receives all the chloroform which has not been vaporized.

The air is sucked in by two pairs of bellows which act alternately. Each pair of bellows is connected with inlet and outlet ball-valves. The inlets of these valves are in communication by a T-piece with the inclined tube, the outlets in a similar manner leading to the delivery tube.

The bellows are worked by a horizontal shaft, on which two cams are fixed, which close the bellows alternately. These cams are of such a size that one or other of the bellows is always being closed.

The opening of the bellows is brought about by weights attached to the handles. Thus the bellows opens independently of the turn of the shaft, and always at the same rate. That the rate of opening should be constant is a very important point, for any variation in the rate of intake current would of necessity produce a variation in the percentage of chloroform vapour.

In addition to the handle, the operating shaft is provided with a grooved wheel, so that the apparatus can be worked either by hand or by motor.

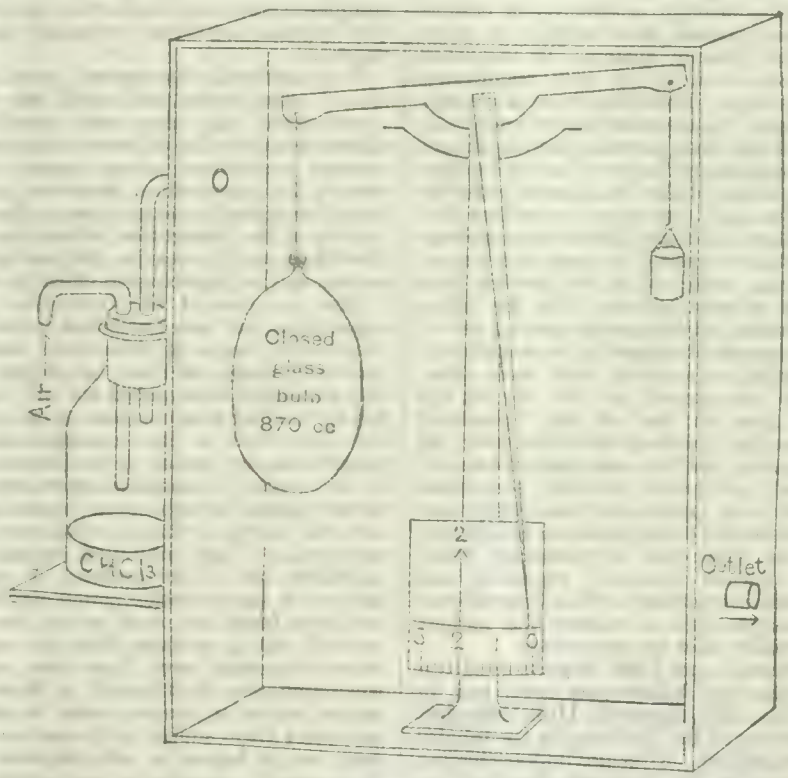
The stream of chloroform enters the inclined tube by a siphon tube, whose upper end dips in a Mariotte flask containing chloroform. It was found that if a Mariotte flask was not used a rise of chloroform level in the flask of 3.5 cm. caused a rise of percentage of chloroform vapour from 1.55 per cent. to 1.75 per cent.

Variations in the percentages delivered arise when the rate of turn of the handle occurs. These variations can be explained by the fact that the longer pause there is between each intake of the bellows, the longer time is given for chloroform to accumulate in the tube.

Alcock's Inhaler.

This inhaler[2] is a further example of a plenum inhaler, and, as it has been used with considerable success in hospital practice, may be described fully.

It consists of a circular copper vessel, 5 in. in diameter and 4½ in. deep, which contains 150 c.cm. of chloroform; 1¼ in. from the bottom is fixed a shelf, closed, except for two oblong holes. Immediately above and touching this shelf is a circular plate, movable by means of a hollow rod in the centre, and pierced by two triangular apertures. These can be adjusted by the centre rod, so as to expose more or less of the fixed oblong holes in the shelf, and so produce greater or smaller openings into the space below. Air (supplied by a foot bellows or from an electric fan) enters the chamber by one tube opposite one aperture and leaves by another tube opposite the other, taking up more or less chloroform vapour, according to the size of the apertures. The temperature of the chloroform is read from a thermometer in the hollow rod, and the chamber is surrounded by a water-jacket. The apparatus was tested, and variations from the nominal value of the vapours delivered were slight. It allows percentages of chloroform vapour up to 3 per cent. With its use in hospital several cases required this high percentage. Dr. Alcock remarks



Dr. Waller Balance Inhaler.

> If it is desired to induce anaesthesia in from eight to ten minutes, the ordinary adult must be given percentages rising to 2 per cent. in two minutes, then to 2.5 per cent. in three minutes. This amount usually will suffice. There is no objection to raising the percentage to 3 per cent. in five minutes (*not sooner*), if it is required, *provided due care is exercised*.

The italics are those of Dr. Alcock, and the closing line of the quotation appears to contradict the statement that a 3 per cent. may be used with absolute safety, as the words used imply danger if a 3 per cent. vapour is employed—a danger calling for the exercise of care, and that there is grave danger if such a vapour is used early in the induction period. The apparatus tested clinically appears to have been a success as far as the present experience gained with those patients upon whom it was tried permit us to arrive at any definite judgement.

[1] *Trans. Roy. Med. Chi. Soc.*, vol. lxxxviii, p. 695 et seq.

[2] BRITISH MEDICAL JOURNAL, August 15th, 1908, and February 6th, 1909.

Summary of Facts Governing the Adequate and Safe Dosimetric Administration of Chloroform.

Many circumstances have to be considered in selecting the best form of chloroform inhaler to obtain accurately a given dose of chloroform. The necessity for simplicity and portability of the apparatus has to be taken into account, as well as the absolute accuracy of the system controlling the strength of vapour supplied. A further and imperative requirement is that the apparatus shall be under the control of the administrator, and he shall be able to increase or decrease the strength of the vapour according to the exigencies of the patient and the nature of the operation in progress. It is also essential that there shall be some easily seen index of the strength of vapour which is being given to the patient.

The apparatuses of Snow, Clover, and of their era are too inexact and cumbersome; the Junker inhaler is open to the first of these objections.

Bert's method of *mélange titré*, in which large gas-holders are necessary, is clearly only applicable for use in hospitals. All inhalers fall into one or other of two classes. In one a definite mixture of known chloroform value is presented to the patient by the following means: Air is driven either through or over liquid chloroform and delivered to the patient, who breathes it as an atmosphere. This is the plenum system. In the other method the patient draws the air by his own respiratory efforts through an apparatus. Breathing from a plenum possesses some advantages. The members of the Committee, after large experience, found that provided the length and calibre of the tube through which patients had to breathe were adequate, no respiratory difficulty occurred with the Harcourt type of inhaler, and that there is neither disability nor detriment. They also found that to use a plenum inhaler a motor or assistant is needed to work the pump. Under ordinary conditions, such aid is not possible in a hospital, much less in private practice. On the other hand, there are many actual advantages in making use of the patient's respiratory power for inspiring an anaesthetic. Its variations are required as a guide, and such variations are more easily recognized in the use of the "draw-over" system than in that of the "plenum." Of the plenum inhalers the Dubois is one of the best. In hospital work it is accurate, and its use easily mastered, although it is like all mechanical inhalers, somewhat complex and too heavy for general or emergency use. The other plenum inhalers also suffer from the complexity of their mechanism and their lack of portability. The Committee tested the Vernon Harcourt regulator, and found it reliable as well as portable. The anaesthetist who uses it can see what strength of vapour the patient is receiving, and can readily alter the percentage.

In the Committee's Second and Fifth Reports are given details of cases in which this inhaler was used, and in their Fourth Report (July, 1905, Appendix II) is described the testing of the accuracy of the delivery by the inhaler for various types of respiration. After preliminary testing the inhaler was employed in St. Thomas's Hospital[1] by Mr. Tyrrell, and in University College Hospital[2] by a member of the Committee. The trials were satisfactory, and subsequently a large number of patients in hospital and private were anaesthetized by its use.[3] Students readily learnt to use it, and with success. The initial difficulties arising from variation in rate and force of breathing were entirely removed by modifications in the size and shape of the two-necked chloroform flask. Splashing of chloroform was not found to occur in practice unless as the result of great carelessness. In the early days of its use splashing did occur on a few occasions but no serious results followed. Induction was found by these observers to take about six minutes, and if delayed it usually arose from failure to make the mask fit properly. The graduation of the apparatus and the strength of vapour it is made to supply are, of course, matters controlled entirely by physical laws. The maximum of the percentage delivered could be of whatever value the Committee decided. But the terms of the extended reference required that they should fix upon a maximum which is sufficient "to produce full surgical anaesthesia without permitting any risk to the person inhaling." Such a maximum had been stated by Snow and Bert and Dubois to be below 2 per cent. This refers, of course, only to risk of overdosage by chloroform.

The work of the Committee was therefore directed to answer the two questions: (1) Is a 2 per cent. vapour of chloroform sufficient to produce full surgical anaesthesia? (2) Is a 2 per cent. vapour of chloroform in air a safe strength to use in routine practice?

The first question could only be answered by clinical observation, and the results arrived at were in complete accord with those of Snow and Bert, namely, that a percentage of 2 of chloroform vapour eventually induces complete surgical anaesthesia in all subjects. Dr. Waller has insisted in recent years that the 2 per cent. vapour of chloroform in air should be adopted as a maximum, and with this view the Committee agrees. That patients should differ in their reaction to such a percentage of vapour was to be expected. The patients who habitually "take chloroform badly," such as the victims of alcohol, required more prolonged periods of inhalation than others. Persons who breathe in a very shallow way, and so give poor lung ventilation, also take longer to anaesthetize; such patients are commonly nervous or neurotic. Children and asthenic subjects needed shorter periods of inhalation, and could be completely anaesthetized with percentages below 2, but the average individual required the full 2 per cent. vapour.

The answer to the second question needed more prolonged examination, and could only be arrived at when experiments had been made elucidating the effects of chloroform upon the different structures of the body—the nervous system and nerve tissues, the heart and blood vessels, the myocardium, muscular and nervous elements; blood, unstriated muscular tissue, glands, and so on. The reports of the Committee indicate the work done in these directions, and the results obtained are given fully in the section on the physiological effect of chloroform (p. 50).

The members of the Committee have now had large experience, and have found that in induction of anaesthesia there is no danger of chloroform death when percentages gradually rising to 2 are employed. Sufficient proof of this statement is advanced not only by previous observers but by the fact that no death is known to the members of the Committee to have occurred during the induction of anaesthesia by means of the Harcourt inhaler; whereas it is a matter of common knowledge that the induction period is fraught with grave danger, and many deaths have occurred during it when non-dosimetric methods have been employed. Vagal inhibition, which has been shown to constitute one of the greatest, if not the greatest, peril incident to the induction period of chloroform narcosis, has not been found to occur when less than 2 per cent. is inhaled, but is always liable to occur and cause death when a vapour of over 2 per cent. value is breathed. It was found, also, that the fall of blood pressure—the usual active source of danger, since it determines loss of the necessary blood supply to the nervous system and heart—does not go beyond a safe degree of declension provided 2 per cent. is not exceeded nor continued after the required degree of narcosis has been attained, but rapidly reaches a dangerous limit with the use of higher percentages.

The effects of various percentages of chloroform vapour upon blood pressure have already been considered.[4]

The dangers due to struggling are minimized with percentages below 2, as muscular contractions are seldom marked with low vapour values, and struggling is infrequent. The absence, when low-grade vapours are inhaled, in most cases, of sickness, headache, and the other symptoms of chloroform toxaemia, leads the Committee to believe that cases of so-called delayed chloroform poisoning are less liable to occur.

The Committee found that the time required for induction varies in different subjects, being determined by very many factors besides the rate of entrance of chloroform vapour. As the continued administration of chloroform vapour at the value of 2 per cent. after induction is complete leads to deepening of the narcosis, and as lower percentages, such as 1 per cent. or even 0.5 per cent., according to the case, are sufficient to keep up anaesthesia, the prolonged administration of 2 per cent. is unsafe. In very prolonged operations, such, for example, as those which last over two hours, persistence in the use of a 2 per cent. would be quite unnecessary as well as dele-

[1] Committee's Second Report, Paper V.
[2] Ibid., Paper IV.
[3] See Section III, p. 56.
[4] See Section II, p. 50.

terious. When an apparatus is used which allows the administrator to lessen the strength of the vapour inhaled at will it is easy to avoid excessive dosing, and the percentage vapour requisite for any case can readily be discovered and as readily applied to the patient.

As prolonged inhalation of even 2 per cent. vapour induces gradual lowering of blood pressure with the associated conditions of weakened heart action and fall of the body temperature, even though the fall of blood pressure is slow and the immediate effects may not appear to be serious in most cases, the Committee suggest that the safety limit for adults for induction should be 2 per cent., and that this percentage should be lowered at the end of the period of induction. In some persons persistence of muscular spasm over painful areas, for example, in the right hypochondrium in cases of appendicitis, may necessitate a more prolonged use of a 2 per cent. vapour than is usually required. Such muscular rigidity is commonly due to tissue asphyxia, and is best overcome by giving oxygen *pari passu* with the chloroform.

The Committee determined to accept the 2 per cent. vapour of chloroform as a sufficient maximal dose for adults during the induction period, and therefore suggested that limit as the maximum on the scale of the Vernon Harcourt inhaler. To exceed this, they are convinced from their experiments and from the study of those who have made researches upon the question outside the Committee, is dangerous for patients. Whether the risk must be run in some exceptional cases, such as in high abdominal operations, is outside the reference of their enquiry. If higher percentages are employed—and Levy, Alcock, and others assert a 3 per cent. is often required for induction of anaesthesia—their use must be undertaken only with a due recognition of their danger, and after careful weighing of all the facts to determine whether the exigencies of the case justify the increased risk to the patient.

The chief danger of non-dosimetric methods lies in their adoption by persons who have had little experience in anaesthetics and who are unable to guess at the strength of vapour they are using even if they realize that safety or danger with chloroform is ultimately a question of a sufficient or too high a percentage vapour.

It has been alleged that the use of a closed inhaler is dangerous, as it interferes with respiration and unduly curtails the patient's supply of air and imposes extra respiratory labour.

These points were considered by the Committee at the commencement of their work.

It is undoubtedly true that to interpose any length of narrow tubing between the mouth and the source of air supply must impose increased labour in breathing. This is obviated by using a wide and short connecting tube as has been observed in patients who have respired from a Vernon Harcourt inhaler. One member of the Committee has had the opportunity of enquiring from patients, in many cases from medical men, whether any dyspnoea existed, and the answer has been in the negative.

To test this matter further, more than one member of the Committee have actually taken chloroform by this method, and they confirm the above statement.

Dangers arising from falling back of the tongue, the status lymphaticus, Graves's disease, blood or mucus in the air passages, escape of pus into the lungs from an empyema, or what not, are matters which have nothing to do with a particular apparatus; they are incidental to anaesthesia, and fall outside the range of the present report.

A dosimetric chloroform inhaler is, after all, an instrument; its safe use must depend upon the user. Deaths may occur during its use which are due to many causes; the only one which the use of such an inhaler can obviate is that of giving an excessive dose. This report advances evidence that chloroform does not kill when inhaled in a vapour below a certain strength; it indicates that to avoid deaths, vapours below the danger limit, that is, not exceeding 2 per cent. during induction, should always be employed, and it further indicates that the most reliable way of accomplishing this end is to adopt an inhaler which can only supply vapours of chloroform within the safe zone. The machine must remain a machine and demands that the user shall possess knowledge and adequate skill. The safest method is that which leaves least to chance, and this it is believed is to be found in a dosimetric inhaler with a maximal delivery of a 2 per cent. vapour.

DUDLEY W. BUXTON,
Honorary Secretary.

July, 1910.

APPENDIX TO REPORT.

MANAGEMENT OF THE VERNON HARCOURT INHALER IN DETAIL.

By Dr. DUDLEY BUXTON,

Honorary Secretary of the Committee.

The main points needing attention are: (1) Keeping the inhaler steady, so that the glass bottle is prevented from being shaken and the chloroform in it from splashing. Every splash means an increase in the area from which evaporation takes place, and this must cause a slightly higher percentage of chloroform vapour passing into the inhaler. The best means of preventing this in hospital work is to have a solid stand, to which the inhaler is clamped, with a branch carrying a plate, on which the bottle rests. The addition of a lower branch, carrying a night light, facilitates the regulation of the temperature of the chloroform.

In private practice a leather strap, or "lawyer's strap" and buckle, passed round the administrator's neck and supporting the inhaler, answers well, since a slight swing does not cause splashing. In this case the inhaler is connected with the facepiece by a length of tubing. The plane of the two valve chambers must be horizontal.

2. The valves must be all working freely. The expiration valve is best placed beneath the stem of the inhaler, where the flexible tube is attached. A stopcock may also be inserted at the same point for use if oxygen is to be employed with the chloroform. Mr. Harcourt has designed a special arrangement, whereby a constant oxygen supply from a bottle can be maintained without affecting the percentage marked on the indicator and without loss of oxygen during expiration. With this, also, the presence of the oxygen may be used to produce a *plenum*, when, owing to the nature of the operation, inhalation cannot be used, or in place of oxygen, bellows giving a continuous air pressure or timed to suit the breathing, can be employed.

It will be best to consider how to work this inhaler in the case of (1) children, (2) adults, (3) the aged, (4) unusual difficulties.

Special sizes of masks are supplied. As a rule three are sufficient—one very small, a medium, and larger size.

I.—IN CHILDREN.

It is sometimes difficult to obtain an accurate fit of the mask to the soft round face of infants, but the difficulty is more theoretical than real. The flanged mask is best, and even, not too forcible, pressure will usually prevent air leakage. If this fails a warm, moistened, soft towel placed below the chin and round the mask will secure a proper fit. The usual fault committed by inexperienced users of the mask is the use of excessive hand pressure. This causes pain and makes the child shrink from the mask. Most children are frightened whatever method is adopted, and it is a mistake to think their terror is increased by using a mask rather than a handkerchief. It is the pungency of the vapour they dislike, and breathing from an open mask such as a Schimmelbusch gives more vapour than the Harcourt. As a rule, a child will breathe quite steadily from the mask attached to this inhaler if the process is explained and encouragement is given to it. A few breaths of air followed by a 0.2 per cent. vapour reassures the child, and the percentage can rapidly be increased. If the child shrieks the mask and head must be gently but firmly kept in proper position, and the indicator turned to 0.5 per cent. Unless some abnormal symptom is present which indicates interference with breathing the mask should not be taken off the face at this stage. In a minute or so the deep inspirations associated with the screaming will ensure a rapid induction. As a rule, 1 per cent. suffices for babies, 1.5 per cent. for children up to 10 or 12. Children, however, vary within wide limits, and it is always desirable to lessen the time of the induction period for them, so that, if a

child aged between 5 and 15 does not go under within five minutes, it is best to raise the percentage to 2 for a few seconds until conjunctival reflex is abolished. At this point the percentage should at once be put back to 1.5 per cent., and as soon as the skin incisions are made, if no reflex muscular movements are evoked, the percentage should be made 1 per cent.

In long operations, when once the breathing has settled down to normal and complete anaesthesia is present, a 0.5 per cent. vapour will suffice. The lid reflex will be just present, light reaction brisk, and the pupil neither dilated nor contracted. The colour and skin temperature (felt by the hand) should be noticed; pallor and cooling are indications of excessive dosing with chloroform, and the percentage must be lessened or the mask removed altogether. If the case has been managed properly, and provided the operation is not one which as such causes great shock—that is, fall of blood pressure—the child's face should remain a coral pink throughout and at the end of inhalation. It must be remembered that children are very readily affected by posture; raising the head will at once deepen narcosis and cause fall of blood pressure. With weakly, feeble children, as soon as they have ceased to struggle, or, if no struggle has occurred, as soon as the breathing has settled down to the physiological normal, the head-rest should be lowered, the face turned to the side, and the head allowed to hang, so that it is just below the level of the thorax. Over-extension is as bad as over-flexion, and must be avoided. Every child has some particular posture in which he breathes most easily; the position chosen is usually determined by the length and fullness of the neck. Long thin necks are usually easily turned to the side, short thick necks are intolerant of lateral flexion unless the shoulder is also slightly turned by hunching up the pillow under it. As most children salivate easily even under chloroform, the lateral position is advisable, unless anatomical conditions render it impossible. It will be found that a child which breathes badly when the head is turned during the early stages of inhalation will respire easily and well when muscular relaxation is complete, that is, when the third degree of narcosis has been reached. The veins of the neck should never be allowed to become distended, and if they grow full the position of the head should be changed, the occiput tilted a little forwards, and the chin brought well in advance of the head.

A difficulty is at times experienced through the shallow breathing common among children. If they have not screamed and taken a few deep breaths, they become soothed by the chloroform vapour and doze off to sleep. In this state they present many of the recognized signs of anaesthesia. The eyeballs are turned up, and are either fixed or move so slowly that their oscillation is not detected. The lid reflex is practically abolished, and the pupils are about the size which exists in narcosis of the third degree. If the skin is cut at this stage, the child awakens with a howl and struggles. To prevent this mishap the breathing should be carefully studied throughout the induction period, and if it grows shallow and ineffectual early in the case while the colour remains good and the child is obviously well, the administrator should arouse the patient by moving the lower jaw forwards and backwards upon the maxilla, and rub the head and face with the hand. Thus disturbed, the child will resent being awakened, and will move, his breathing becoming more voluminous.

In other cases the shallow breathing is associated with pallor, and is the harbinger of vomiting. Provided it is known—and to be sure of a boy of 9 or 10 is not always easy—that no solid food has been taken for some hours before the inhalation, the best plan to adopt is to remove the mask, rub the lips briskly with a towel until they are red. The head should be lowered and the jaw pushed forward by the fingers placed behind the angles. If vomiting has taken place, the mask must be quickly wiped out, the face rubbed, and the inhalation resumed. It is always wise to detach the tube from the mask and shake it to see if any moisture has been coughed up into it. As vomiting is usually associated with some fall of blood pressure, heedful care must be taken in these emergencies to ensure that the circulation is properly restored. This is best done by posture, and it will be found that so soon as the head-rest is lowered, the colour will return and the pulse improve.

Too much reliance should not be placed upon ocular phenomena in children. The lid reflex often persists in one or both eyes even when the child is insensitive to pain. Indeed, having regard to what has been said about their tendency to sleep, the best test of anaesthesia in children is stimulation of a sensory area by pinching or what not. Reflex movements are very common in such operations as circumcision, incising the peritoneum in cases of appendicitis; and the mistake must not be made of pushing the anaesthetic, as, provided the third degree of narcosis has been reached, the only effect of deepening the sleep is to paralyse the nerve centres and subject the child to a risk of dangerous fall of blood pressure.

The respiration of children is easily interfered with and must be watched most closely. Pallor, blueness, failure of force of expiration may all indicate something prejudicing the proper filling and emptying of the lungs. Falling back of the tongue, pressure upon the chest, as when the child is turned on its side and the arm is hanging, an assistant's arm or excessive dosing with chloroform are all causes of this. Mucus, vomit, haemorrhage from the nose, engorgement of hypertrophied or inflamed tonsils, or a growth in the neck pressing on the trachea, may produce respiratory distress. The breathing under such circumstances will very often fail, though slowly and gradually, and unless looked for, the failure of respiration may escape observation. It cannot be too strongly insisted upon that weakening of respiration must never be passed by as of no importance. It always makes for danger, whether it is due to an overstrong chloroform vapour acting upon the respiratory centre, or to mechanical interference with the efficient to-and-fro breathing through the upper air passages. The nostrils of infants are commonly blocked by mucus, post-nasal adenoid growths or crusts, and if mouth breathing is prevented by faulty holding of the mask the child's breathing will be hampered or even prevented. If slimy mucus collects on the cheeks and the rubber of the mask it is quite easy for an unobservant person to allow the mask to slide completely, so that its lumen no longer coincides with the mouth and nose of the patient. From time to time it should be adjusted, and care be taken to see that the plane of the open end of the mask is exactly set at right angles to the plane of the child's face. Any undue pressure in one direction, such as may arise if the attention is allowed to flag, or if the hand has become tired through too much force having been expended in holding the mask in position, leads to the mask slipping out of position, and it then ceases to fit.

It is often suggested by persons who have had no experience of the use of the Vernon Harcourt inhaler, that the labour required to breathe through the inhaler is too much for delicate children, and itself produces an "asphyxial factor" fraught with ultimate danger. Experience, however, proves this is not so. The method in question is an ideal one for children, and should be pursued in all cases. When the operation is to take place upon the buccal cavity or naso-pharynx, induction of anaesthesia—that is, the time of maximum danger—should be carried through by means of this inhaler, and anaesthesia maintained by a mouth tube, through which chloroform vapour is blown by a hand-bellows fitted to the inhaler. When this is in use, the strength of the vapour will be less than the percentages marked if the blast of air raises the valve higher than usual.

II.—In Adults.

The head should be turned to the side opposite to that on which the operation is to be performed; in the case of a median operation the side elected should be the one usually adopted by the patient in sleep. When the lithotomy position will be adopted, the head should face the side on which the neck strap passes behind the shoulder.

The mask selected should fit without causing discomfort and should reach from the root of the nose, but must not rest upon the forehead, to the curve of the chin. When the buccal fat pads are wasted the air cushion should press upon the cheeks upon each side of the nose. When the nose is of the Roman type with a high bridge, too much pressure must not be made at the apex or discomfort will be felt and the nose be sore after a long operation. It

is easy to avoid this by placing a fold or two of soft lint or cambric handkerchief over the bridge of the nose. This can be made to protect the eyes also. When the rubber pad is filled with water (instead of air) the inconvenience due to pressure is much diminished. Leakage of air from a badly-fitting mask or through irregular pressure takes place most commonly at the root of the nose or opposite the cheeks. When the mask is held on the upper side the tendency is to lift the mask off the face on the side on which it lies. If held on the lower side the converse obtains. If a dental prop is not inserted before the administration—and this is not as a rule necessary—the lower jaw should be advanced when the mask is applied and care taken that the lower lip is neither then nor later allowed to be sucked in between the teeth, or it may be bruised or bitten.

Experience has shown that the inhalation can be commenced with a 0.2 per cent., and after a few breaths increased to 0.5 per cent., then within half a minute 1 per cent. can be used. If the patient breathes this freely after a minute 1.5 per cent., and after another 2 per cent., should be given. It is essential that the patient should be encouraged to breathe freely; if he does not do so it arises from timidity, too strong a vapour, or because the mask is not fitting, and he is enabled by soft inspirations to draw in air round the inflated pad without aspirating through the inhaler.

The appropriate treatment is obvious, and must not be neglected. In semi-unconsciousness the breathing often becomes very shallow, the patient dozes, and his lung ventilation can be promoted by pushing the jaw forwards two or three times, or by turning the head and so rousing him. If in the first two minutes the breathing becomes rapid, deep, and irregular, the percentage should be kept at 1 per cent. until the normal rhythm is regained. Struggling, holding of the breath need not cause alarm. The patient cannot get more than a 2 per cent. vapour, and this during the induction period is safe, and so the mask can be kept on.

This statement is true only when the administrator is certain that no intercurrent cause exists which is interfering with respiration. Such causes may be mucus, regurgitation from the stomach, faulty posture, falling back of the tongue, dropping of the chin, insuck of the lips against the teeth, glottic spasm, foreign bodies, such as detached nasal polypi, blood clots from epistaxis, portions of fungating growths, and even lumbrici worms. To this list we must add the rare but occasional supervention of muscular spasm affecting the buccinators, masseters, and palate muscles, leading to rigid closure of the jaws and fixation of the larynx behind the retracted tongue. Again, central causes affecting the medullary centres may exist and produce respiratory arrest.

Induction takes on an average six or eight minutes; children grow anaesthetic more quickly, while weak breathers, powerful and vigorous adults, subjects of the alcohol or drug habits, require more time. The usual reason why patients take a long time is that the mask is not fitting accurately.

When the lid reflex is lost and the muscles are relaxed, the breathing having settled down into its normal rhythm, the vapour strength of chloroform can be lessened according to the necessities of the patient and the requirements of the operation. As the depth of narcosis is dependent entirely upon the level of partial saturation of the blood and tissues with chloroform, the quality and quantity of these will determine the length of time during which the 2 per cent. will be required. Some persons after fifteen minutes will not need more than 1 per cent., others must inhale 2 per cent. for thirty minutes or more. If cyanosis, weakening of the breathing or muscular rigidity appears, the percentage must be lowered. If very sensitive structures such as the anal, rectal, or genito-urinary organs, or the peritoneum, are being manipulated, 2 per cent. will probably be required. As soon as the operation is well forward, and no reflexes occur which may interfere with operation, the percentage must be gradually lowered. At the end of an operation, when the peritoneum or skin is being stitched, it is frequently necessary to return to a 2 per cent. for a few breaths.

Although the Committee adopted the 2 per cent. as a maximum, being convinced that higher percentages are always dangerous and frequently cause fatal accidents, they recognize that in the practice of some surgeons and for some operations a high-strength vapour may be called for, and this is provided by the increase tube, which permits of the use of a 2·5 per cent. vapour. They suggest, however, that such strength should be used only most exceptionally, and even then only with the clear appreciation that such a vapour may cause serious dangers either during inhalation or by producing serious after-effects.

The incidents of the induction period call for little further notice—struggling is uncommon, nausea and vomiting in exceptional cases may come on and are due to some gastro-intestinal cause or to nervousness.

During the maintenance of anaesthesia for a prolonged operation the Vernon Harcourt inhaler is of especial value. The conditions of shock leading to fall of blood pressure, and so involving diminished activities of the respiratory and circulatory centres and rendering them more liable to profound narcosis by even a 2 per cent. vapour or less, require definite changes in the dosage of the chloroform given. This is readily effected by lessening the percentage. When temporary shock is relieved, as when the peritoneal or cerebral tissues are relieved from dragging, or haemorrhage is controlled, the patient may require a slightly stronger vapour, and this again is instantly obtained by putting the indicator to 1 per cent. or 1.5 per cent., as the case may be. Even when no serious shock is produced a uniform inhalation of 2 per cent. or of a lower percentage will after an hour cause shock by lowering the blood pressure and overdrugging the centres. This can be at once remedied, or, still better, can be obviated altogether, by gradually decreasing the amount of chloroform presented to the patient. When complete mastery of the method has been obtained an extremely small amount of the anaesthetic will be used for the most prolonged cases, and even after three or four hours the patient will retain a good blood pressure, evidenced by the bright colour of the face, lips, and ears and the rapid resumption of consciousness.

In *obstetric practice* the Vernon Harcourt inhaler can be suspended at the head of the bed and the patient can hold the facepiece. When full anaesthesia is required, the attendant completes the induction by holding the mask in position. In no class of cases is the advantage of being able to vary at pleasure the strength of the vapour given more conspicuous.

The *after effects* due to chloroform are directly proportionate to the amount of the anaesthetic inhaled. They are due to its elimination, which takes place from the lungs, causing chilling; through the liver and kidneys, causing catarrh. When excessive quantities have to pass through the organs, as must be the case when massive doses have to be eliminated, these after-effects are severe.

The *recovery* of patients chloroformed by dosimetric methods presents a marked contrast to that seen when the older methods are adopted. There is little headache, nausea, or vomiting, and the mind becomes clear within a short time of the discontinuance of the inhalation. Since pursuing this method those of the Committee who have had practical knowledge upon this point are greatly impressed by the more favourable results obtained, and the patients themselves expressed the benefit of dosimetric methods.

III.—In Old Persons.

Perhaps these patients demonstrate most thoroughly the advantage of using a low percentage vapour. Their tissues are less easily able to combat heavy doses of chloroform, and struggling offers more danger to their arteries and heart than is the case with younger persons. They are more liable to catarrh and to nephritis. Since, then, a low percentage vapour lessens the danger of such complications, *pro tanto* are old persons benefited by it.

The practical difficulties of using the inhaler centre round the fitting of the mask. When the jaws are edentulous and absorbed, the cheeks are atonic and baggy, some special care has to be taken to insure the air way being kept well open, and yet the mask so held that no leakage occurs round the pad. This can always be done. If the case is extreme, a covered mouth prop between the gums in front and a wet towel round the mask, while the lower

jaw is pushed forward and the chin *not* pressed up, will secure an accurate coadaptation between the face and the mask.

IV.—The Employment of the Vernon Harcourt Inhaler in Special Cases.

(*a*) Operations of the mouth, nose, and throat.
(*b*) Operations on the brain and spinal cord
(*c*) Abdominal sections.
(*d*) Abdominal sections in the Trendelenburg position.
(*e*) Operations on the pleurae and lungs.
(*f*) In cases of severe shock and collapse.

(*a*) The only special feature in such cases is the possibility of there being some pathological condition interfering with normal respiration—for example, fixation of the tongue, or the liability of its stump falling back if extirpation had been performed at an antecedent operation. Stenosis of the larynx, blocking of the nostrils, or semiclosure of the faucial arch by inflamed hypertrophied tonsils are all conditions which render it necessary to keep the mouth open during the induction. This can be done by a dental gag or mouth tube of large bore secured by tape and fixed between the front teeth, or gums. The tongue should be secured by a stitch passed through it as soon as semi-unconsciousness has developed. This procedure is far less painful and leaves less soreness than keeping the tongue forward by tongue clips or forceps, and the ligature can be secured under the mask. It is always worth while to use this inhaler for the induction, since in this period the chief danger of chloroformization exists, even if the exigencies of the operation require the employment of a Junker's bottle, bellows, and mouth tube during the actual operation. It is, however, possible in some cases, by connecting the supply tube of the Harcourt inhaler with a nasal or laryngeal tube, to pursue the after-anaesthetization by its means. When the mouth is widely open and there is much blood effused it is not easy to establish sufficient continuous breathing through such a tube. Or the means described on p. 69 may be used.

Operations for the removal of goitres require a minimal quantity of chloroform and a low percentage vapour. There is usually a profuse salivation and great liability to reflex inhibition of respiration and circulation. In many of such cases an "asphyxial factor" exists, and those who have no experience of the Vernon Harcourt inhaler would be inclined to think this offered an impediment to any method which required a patient to obtain his air supply through a dead space—the mask and tube—and an inhaler. As a matter of fact the inhaler is of singular value in these very cases and removes most of the anxieties which they occasioned when the older methods were in vogue. Some members of the Committee have enjoyed a large experience of such operations, including many where the graver dangers of exophthalmic goitre were present, and their experience has shown that no increased respiratory difficulty occurs, while the inhaler enables the administrator to control the percentage in a way which renders it possible to obtain the exact degree of analgesia or anaesthesia requisite for the various stages of the operation. The reflex inhibition of the heart or of respiration is under these circumstances no longer a peril which is likely to provoke serious consequences.

(*b*) In the case of operations upon the brain and spinal cord, it is essential as soon as complete anaesthesia is established to give a very low percentage of chloroform vapour or to withhold the anaesthetic altogether at times. Even great experience of such operations cannot divest the anaesthetic of danger unless the administrator can ensure an accurate and exact control of the percentage value of the vapour inhaled. With the Vernon Harcourt inhaler this is secured, and complete but light anaesthesia may be relied upon during the actual manipulation of the nervous structures and a slightly increased depth of narcosis when the flaps are being sutured. In all these cases, and especially when the patients are children, the maximum percentage must be low, probably 1 per cent. or 1.5 per cent. at first and 0.5 per cent. or less after induction.

(*c*) and (*d*). The main difficulties are those due to imperfect relaxation of the abdominal parietes. Two causes of this are active. Over painful areas muscles assume a spasmodic contraction—no doubt primarily a protective reflex—and this takes a considerable time before it is overcome, although steady traction made after the incision is completed will usually control it. The other cause is asphyxial, and commonly results from the administrator of the anaesthetic, anxious to obtain rapid relaxation, being tempted to press the chloroform and give too concentrated a vapour. The recti abdominis muscles are to all intents and purposes respiratory muscles, and do not lose their tonus until the respiratory centre is overdosed with chloroform and is failing; while in slight degrees of asphyxia when cyanosis is present these muscles are provoked to vigorous contractions, and rigidity results. The head-down position is very commonly productive of some venous engorgement of the head, and is provocative of muscular rigidity. Indeed, in some cases it is necessary to employ large quantities of oxygen with the chloroform to overcome the condition.

To obtain quiet, regular breathing, which is the essential requirement of relaxation, it is usually advisable to devote more than the common length of time to the induction, and to avoid pressing the anaesthetic, that is, withholding the 2 per cent. until just before complete anaesthesia, judged by loss of the conjunctival reflex, is obtained. At this stage 2 per cent. will in time produce muscular relaxation, provided all cyanosis is prevented and the breathing is encouraged by pushing forward the lower jaw with each inspiration. Slow, weak breathing, so usual in cases of painful abdominal affections, the result of efforts persevered in for days or weeks to prevent pressure by contraction of the abdominal parietes over a painful area, will frequently persist even into the period of induction, and when this occurs the patient will go under very slowly unless the suggestions made above are adopted. When time is a matter of urgency a slightly higher percentage may be employed as soon as the ocular reflexes show that the third degree of narcosis has been reached and the pupils are contracting while the eyeballs are fixed. This percentage should be discontinued as soon as the skin incision is made, as this will act as a stimulus to respiration and the patient will readily inhale full breaths of the vapour.

During the operation different depths of narcosis are required. Extrusion of the stomach and duodenum in gastro-enterotomy, pulling up the stomach into the wound in gastrostomy, extrusion of the liver over the costal border in gall bladder operations, presentation of the kidney into the flank in renal operations, manipulation of the caecum or large gut in appendicotomy, or inguinal colotomy, and introduction of the hand into the bladder for enucleation of the prostate, all require full narcosis of the third degree, and a 2 per cent. vapour will be usually required, and may be continued.

During the further stages of these proceedings the percentage may be lowered, but at the close of the operation, when the peritoneum has to be sewn up—and this applies also to hysterectomies and pelvic operations performed through the abdominal route—it is necessary to increase the percentage to the maximum 2 per cent. until the muscles are secured.

(*e*) In thoracic surgery, especially where a bronchiectasis, an empyema, or a pulmonary abscess opens into a bronchus, profound narcosis would lead to grave respiratory embarrassment, and death through retention of secretions in the lungs. Also the sudden liberation of a quantity of fluid from the pleural cavity may suddenly affect the position of the heart and produce serious interference with its action, and this, in the case of a heart which has been subjected to a high tension of chloroform in its blood supply, often proves fatal. These dangers are overcome by the employment of a regulating inhaler, which, as soon as true anaesthesia is obtained, should be made to deliver as low a percentage vapour as is consistent with abolition of pain. Probably 0.5 per cent. will suffice.

(*f*) In conditions of grave collapse the effect of even low percentages of chloroform causes further fall of blood pressure, so that it is best to commence the inhalation with 0.2 per cent. and increase the percentage slowly until 1 per cent. is reached. It is seldom necessary or safe to exceed this limit. The patient's condition commonly improves as he goes under, and this is especially the case if there has been much actual pain. Small quantities of chloroform cause anaesthesia in these cases, and very low percentages—for example, 0.5 per cent. or less—are competent to maintain anaesthesia during operation.

Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.]

BIRMINGHAM BRANCH:
COVENTRY DIVISION.

THE annual general meeting was held at the Masonic Hall on June 21st.

Election of Officers.—The following were elected officers for 1910–11: *Chairman*, Dr. E. H. Snell; *Vice-Chairman*, Dr. John Horton; *Honorary Secretary and Treasurer*, Dr. Vaughan Pendred; *Representatives on Branch Council*, Drs. Orton and Pendred; *Executive Committee*, Drs. Rice, Phillips, Brown, Lowman, Soden, Kendrick; *Representative at Representative Meeting*, Dr. Milner Moore was unanimously re-elected.

Report of Executive Committee.—The annual report of the Executive Committee for the year and the balance sheet was presented to the meeting.

Formation of New Company.—The decision of the Central Council to form the Association into a new company with increased powers was approved.

BORDER COUNTIES BRANCH:
ENGLISH DIVISION.

THE third annual meeting of this Division was held at Carlisle on Friday, June 24th, at 3.15 p.m. Dr. FARQUHARSON (Carlisle) was in the chair.

Election of Officers.—The members elected to office for the ensuing year were: *Chairman*, J. W. Crerar, M.B. (Maryport); *Vice-Chairman*, D. Edington, M.D. (Penrith); *Honorary Secretary*, James R. S. Anderson, M.B. (Carlisle); *Representative for Representative Meeting*, Dr. C. W. Graham (Carlisle); *Representatives on Branch Council*, Drs. Bowser, Penny, and Graham; *Ethical Committee*, Drs. Macdonald and Barnes; *Executive Committée*, Henry Barnes, M.D., J. E. Bowser, M.B., J. R. Burnett, M.D., D. S. Doughty, M.D., F. H. Morison, M.D., G. B. Muriel, M.B.

EAST ANGLIAN BRANCH.

THE annual meeting of the Branch was held at the Town Hall, Thetford, on Thursday, June 16th.

Council Meeting.

The Council meeting was held at 11.45 o'clock, and there were present: Dr. W. H. Slimon, Dr. Pembroke Minns, Dr. Nicholson, Mr. Ballance, Dr. Gutch, Dr. Caie, Dr. Thomas, Dr. Thompson, Dr. Potts, and Dr. Barton.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

New Members.—The following gentlemen were elected members of the British Medical Association: Dr. J. W. Cook (Clacton-on-Sea), Dr. McCail (Colchester), Dr. Smyth (Colchester), Dr. Charles Allen (Southend).

Annual Report.—The annual report was read by the SECRETARY, and on the proposition of Dr. CAIE, seconded by Dr. GUTCH, it was adopted.

Autumn Meeting.—It was proposed by Dr. THOMAS, and seconded by Dr. CAIE, that the autumn meeting should be held at Hunstanton, and the resolution was agreed to.

General Meeting.

The general meeting commenced at 12.15 o'clock, Dr. SLIMON (President of the Branch) being in the chair.

The Death of King Edward.—The CHAIRMAN, in a few remarks, proposed that a letter of condolence, in the following terms, be sent to His Majesty King George V, and to Her Majesty Queen Alexandra:

To the King's Most Excellent Majesty. May it please your Majesty—We the members of the East Anglian Branch of the British Medical Association do beg to approach your Majesty for the purpose of conveying an expression of our heartfelt sorrow at the bereavement which has befallen your Majesty, the members of the Royal Family, and the whole empire, at the death of our beloved King.

To Her Majesty Queen Alexandra. May it please your Majesty—We the members of the East Anglian Branch of the British Medical Association desire to offer to your Majesty an expression of our profound grief at the irreparable loss which has befallen your Majesty by the death of our beloved Sovereign, King Edward VII. We hope your Majesty may be long spared to your devoted people.

This proposition was agreed to in silence, all standing.

Confirmation of Minutes.—The SECRETARY then read the minutes of the last general meeting, which were signed.

Annual Report.—The annual report, which was read by the SECRETARY, was to the following effect: The Council have pleasure to report that the Branch is in a prosperous condition. Twenty-one new members have been elected during the year. There are 442 members in the Branch, exclusive of associate members. The annual meeting was held at Clacton-on-Sea, under the presidency of Dr. W. H. Slimon. The meeting was largely attended, and was most successful. Luncheon was kindly given by the President, and was attended by about sixty members and friends. Dr. Slimon addressed the members on Severe gastric disturbances caused by trivial pathological conditions of uterus and adnexae. At the conclusion of the address a hearty vote of thanks was accorded to Dr. Slimon, on the proposition of Major Freeman, seconded by Dr. Curl. Dr. H. Macnaughton-Jones read a paper on Uterine haemorrhage, and illustrated the paper by most interesting specimens. The Council desires to express its warm thanks to Dr. and Mrs. Slimon for their unbounded hospitality to every one present on that occasion. The autumn meeting was held at the Royal Assembly Rooms, Great Yarmouth, in October. Interesting papers were read by Dr. Muir Evans (Lowestoft), Dr. Leonard Lay (Great Yarmouth), and Dr. Milner Burgess (Frinton-on-Sea); and Dr. A. F. Cleveland (Norwich) showed some interesting specimens. A special meeting of the Council was held at Ipswich in March for the consideration of the reports of the Divisions. The work of the Divisions has been most satisfactory. The spring meeting was held at Southend-on-Sea in April. The President (Dr. Slimon) read a paper on Menorrhagia, and Dr. Robert Hutchinson, of the London Hospital, read a paper on the Therapeutic value of diet; Dr. George Pernet read a paper on the Intramuscular treatment of syphilis. The Council desires to place on record its sincere thanks to the Southend Division for their kind hospitality on that occasion. It was resolved that the annual meeting in 1911 should be held at Norwich, and that Dr. Burton-Fanning should be invited to become President. Dr. Burton-Fanning has replied in a kind letter accepting the honour.

Election of Officers.—It was announced that the following had been elected officers for 1910–11: *President*, Dr. Pembroke Minns (Thetford); *President-elect*, Dr. Burton-Fanning (Norwich); *Vice-Presidents*, Dr. R. W. Brogden (Ipswich), Dr. D. G. Thomson (Norwich), and Dr. W. H. Slimon (Clacton-on-Sea); *Secretary for Essex*, Dr. B. H. Nicholson (Colchester); *Secretary for Norfolk*, Dr. H. A. Ballance (Norwich); *Secretary for Suffolk*, Dr. H. A. Gutch (Ipswich); *General Secretary and Treasurer*, Dr. B. H. Nicholson (Colchester).

Financial Statement.—The financial statement showed a balance in hand on December 31st, 1909, of £81 2s. 3d.

Adoption of Reports.—The CHAIRMAN formally moved the adoption of the reports, Dr. GUTCH seconded, and the resolution was carried unanimously.

Paper.—The CHAIRMAN, having got through the formal business of the meeting, then called upon Dr. PEMBROKE MINNS, President-elect, to read a paper on Notes on two cases of errors in diagnosis. At the conclusion of the paper, which was discussed by the CHAIRMAN (Dr. Slimon) and Mr. BALLANCE, a hearty vote of thanks was accorded to Dr. Pembroke Minns, by the members present.

Luncheon.—Luncheon was partaken of at one o'clock in the Town Hall by the kind invitation of the

President-elect, Dr. Pembroke Minns, at which about forty gentlemen were present.

Installation of New President.—The general meeting was resumed in the Town Hall at two o'clock, and Dr. SLIMON introduced Dr. Pembroke Minns as President of the Branch for 1910 11. Dr. MINNS replied and thanked the members of the Branch for the honour they had conferred upon him.

Vote of Thanks to Retiring President.—Dr. SINCLAIR HOLDEN then proposed a vote of thanks to Dr. SLIMON. The following resolution was adopted:

> That a hearty vote of thanks be accorded to Dr. W. H. Slimon for the very excellent and assiduous manner in which he has carried out his duties as President of the Branch, and that he hereby be elected a Vice-President for the next three years.

This resolution was seconded by Dr. THOMSON and carried by acclamation. Dr. SLIMON replied and thanked the Branch for the kindness he had received during his year of office.

Papers.—Mr. JOSEPH GRIFFITHS, F.R.C.S. (Cambridge), read a paper on Fractures of the ankle and their treatment. The paper was illustrated by many interesting specimens, and was discussed by Dr. SLIMON and Mr. BALLANCE, and Mr. GRIFFITHS replied. Dr. H. H. BROWN, of Ipswich, read a paper on Appendicitis, and some points in connexion with operations. The paper was discussed by Mr. BALLANCE and Mr. GRIFFITHS, and Dr. BROWN replied. Dr. BERNARD BATT (Bury St. Edmunds) read a paper on Sudden death during or immediately following labour. The paper was discussed by Dr. SLIMON, Dr. HINNELL, Dr. POTTS, Dr. CAIE, and Dr. HOWIE, and Dr. BATT replied.

Garden Party.—At four o'clock a garden party was held at The Limes by the kind invitation of Miss Minns, Mrs. Harris, and Mrs. Allen Minns.

Exhibit.—Surgical instruments were shown by Messrs. Down Brothers.

Members Present.—The following gentlemen were present: Drs. Slimon, Pembroke Minns, Curl, Barton, Whartham, Archer, Steele, Hinnell, Shinnie, Howie, Owers, Masson, Batt, Caie, Thomson, Allen Minns, J. Thomson, Adams, Coutts, Howard, Potts, Beverley, Muriel, Kevern, Thomas, Bassano, Alexander, Harris, Cowan, Pickworth, Gutch, Cross, Ballance, Thomson, H. H. Brown, Nicholson, and Griffiths.

EDINBURGH BRANCH:

NORTH-WEST EDINBURGH DIVISION.

THE annual meeting of the Division was held on Monday, June 20th, at 5, St. Andrew Square, Edinburgh. Dr. RITCHIE presided.

Confirmation of Minutes.—The SECRETARY read the minutes of the last meeting, which were approved.

Annual Report.—The annual report was read and approved.

Election of Office-bearers.—The office-bearers for 1910–11 were elected as follows: *Chairman*, Dr. Jas. Ritchie; *Vice-Chairman*, Dr. James; *Secretary and Treasurer*, Dr. F. D. Simpson; *Executive Committee*, Drs. Gibson, Haig Ferguson, Lackie, W. T. Ritchie, Peddie, and Graham; *Representatives on Branch Council*, Drs. Ballantyne and Simpson; *Representative of Division at Annual Meeting*, Dr. Sinclair.

Matters Referred to Divisions.—The meeting then considered the various matters referred to Divisions, and instructions were given to the Representative regarding them.

GLASGOW AND WEST OF SCOTLAND BRANCH.

THE annual general meeting of the Branch was held in the Grosvenor Restaurant on Friday, May 27th, at 8.30 p.m. Professor STOCKMAN presided.

Confirmation of Minutes.—The minutes of the previous meetings—(*a*) annual meeting, (*b*) special meeting—were read and approved.

Apologies for Non-attendance.—Letters of apology from Drs. Yellowlees, W. L. Reid, John McVail, Professor Bryce and others were read.

Secretary's Report.

The HONORARY SECRETARY'S report was to the following effect:

On December 31st, 1908, the membership of the Branch was 687; on December 31st, 1909, the membership was 672, a decrease of 15 members; 36 new members have been added; 51 members have been lost to the Branch—9 by death, 9 by resignation, 26 through change of address, and the remainder due to unpaid arrears. There have been three meetings of the Branch and twelve Branch Council meetings. The following matters have engaged the attention of the Council and the Branch:

Glasgow School Board Part-time Medical Appointments.—Two special meetings of the Branch and practitioners resident in Glasgow and district were held in the Faculty Hall, 242, St. Vincent Street, Glasgow, to consider the question of payment offered by the Glasgow School Board to medical practitioners. As the remuneration offered did not seem adequate for the work to be performed, and, further, as it did not meet the minimum adopted by the Association at its annual meeting in Belfast, a subcommittee was appointed to confer with the Glasgow School Board on this question. This conference took place, and a report was submitted to a special meeting convened in a similar manner to the first. The School Board of Glasgow did not accede to the wishes of the Association, and as a result their appointments were placed on the Warning Notice of the JOURNAL. It is a matter of great regret that several members of the Association did not fall in line with the policy of the Association, and that, further, they accepted part-time appointments under the Glasgow School Board. Four members who accepted these appointments resigned their membership; four members who also had accepted appointments were dealt with by the Central Council.

Question of Payment for Attendance on Street Accidents.—A subcommittee comprising Professor R. Jardine, Dr. William Bryce, and the Secretary, interviewed the Glasgow Town Council (Lighting and Watching Committee) on this matter. The satisfactory result of this conference has already been communicated to the Branch by special circular.

Govan Medical Association v. the Govan Cottage Nurses' Training Home.—As the result of prolonged discussion and correspondence, the Govan Cottage Nurses' Training Home Executive agreed to forego the charge which was being made by them for the attendance on midwifery cases by their nurses. It is hoped that an amicable settlement will be arrived at, and Dr. Campbell Munro, ex-President of the Association, is conferring with both parties to effect such a result.

Dr. Ponder and Dundonald and Symington Nursing Association.—Considerable difficulty and prolonged correspondence was occasioned by the differences of Dr. Ponder and the Nursing Association. The Council investigated matters on Dr. Ponder's behalf. Dr. Ponder's untimely death ended the matter.

Medical Inspection of School Children.—The medical inspection of school children and treatment of those found on examination to be defective is under consideration of the subcommittee appointed by the Branch and practitioners resident in Glasgow and district at the special meeting called for that purpose.

Abuse of Medical Charities in Glasgow.—The subcommittee—consisting of Professor Stockman, Dr. A. Campbell Munro, Mr. James Grant Andrew, and the Secretary—has had several meetings to consider the question of the abuse of medical charities. It has likewise had a conference with the medical superintendents of the Royal, Western, and Victoria Infirmaries, and also with the managers of these same infirmaries. A further conference with the managers of these institutions is to be held.

Treasurer's Report.—The following is an abstract of income and expenditure for the year ending December 31st, 1909:

INCOME.

	£	s.	d.
Balance in hand, December 31st, 1908	312	3	2
Capitation grant for year 1909	67	2	0
Returned by Divisions	20	5	1
Bank interest—Royal Bank of Scotland .. £0 15 0			
Bank of Scotland 3 7 9			
	4	2	9
	£403	13	0

EXPENDITURE.

	£	s.	d.
Grants to Divisions:			
1. Ayrshire	4	19	0
2. Dumbartonshire	3	10	6
3. Lanarkshire	5	14	0
4. Renfrewshire	5	18	6
5. Glasgow Central	9	7	6
6. Glasgow Eastern	5	14	0
7. Glasgow North-Western	8	15	6
8. Glasgow Southern	6	12	0
Additional to Glasgow Southern	1	12	7
Hire of rooms	11	16	6
Secretarial expenses:			
Printing and posting circulars, etc.	30	12	5
Stationary and postages	3	14	11
Clerical aid	8	11	6
Bank charges	0	2	10
Items not included in above:			
Expenses incurred by Branch Ethical Committee	2	8	2
Advertising and incidental expenses of social meeting	4	16	0
Balance at December 31st, 1909	289	7	1
	403	13	0

March 10th, 1910.—Examined, compared with the vouchers, and found correct, balance at the bank being £289 7s. 1d.

(Signed) W. SEMPLE YOUNG, W. F. BROWN } *Auditors.*

Election of Office-bearers.—The following office-bearers were duly elected: *President*, Dr. J. N. Marshall; *President-elect*, Dr. W. L. Muir; *Vice-Presidents*, Professor Ralph Stockman and Dr. A. Campbell Munro; *Secretary*, Dr. W. D. Macfarlane, jun.; *Treasurer*, Dr. J. P. Duncan.

Dr. W. L. MUIR stated that members who were in arrears with annual subscriptions often had the JOURNAL sent to them for long periods without payment. This should be rectified. Questions were raised by Drs. S. SLOAN, MURDOCH CAMERON, and J. HAMILTON regarding the School Board part time appointments. Dr. W. D. MACFARLANE explained to the meeting the position of the Branch, and the finding of the Central Committee. His statement was unofficial, as he had received no intimation of what had happened at the committee meeting in London. Dr. FREELAND FERGUS moved the adoption of the Secretary's report. Dr. HAMILTON seconded, and it was unanimously agreed to. Dr. SYME moved, and Dr. G. BURNSIDE BUCHANAN seconded, the adoption of the Treasurer's report, and it was unanimously agreed to. A discussion took place on the question of the annual grant. Dr. W. L. MUIR said that the Branch should receive a payment of 4s. per head. He would raise this question at the Annual Representative Meeting.

President's Address.—Professor STOCKMAN cordially welcomed Dr. J. N. Marshall as President, and was certain he would maintain the high traditions of the chair. Dr. MARSHALL, having thanked the Branch for the honour, delivered the following address:

I have to congratulate the Branch on the work which has been accomplished during the past year. Several difficult problems have been discussed, and in some, at any rate, a way towards a solution has been found. At the present time the profession, and especially that part of it which is made up of general practitioners, is faced with a state of affairs which threatens to alter materially our mode of earning a living. There seems to be on the part of the public an increased demand for what might be called institutional treatment—for treatment in a nursing home or a hospital—and on the other hand, on the part of our governing bodies there is an increased tendency to become responsible for the care of sick people. In either event the work of the general practitioner is encroached upon. If it were possible, and if it were for the good of the public, to eliminate altogether the general practitioner, then there would be nothing more to say. But it is not possible to do without the general practitioner. There must always remain work, and important work too, which he alone can do, and upon the doing of that work will depend in large measure the health and comfort of the community. But if he is to remain, then it is the duty and interest of the public, as it is also the duty and interest of the British Medical Association, to see that his position is one that will enable him to earn a decent living, and to see also that in his work he will have facilities for using the best methods of medical science. The Association can do much for medical men if the men will only help themselves by working loyally together. Its function lies in influencing and advising rather than in coercing, for its powers of coercion are limited. But if it is to influence the public as well as the whole body of the medical profession it must be prepared to show that what it advises is for the interest of the whole community. The Association has been called by some a trades union, the term being used as one of opprobrium, but for my own part I see no opprobrium in its use. It is our duty to use all means to conserve our own best interests, for we know that those are also the best interests of the public. The Royal Commission on the Poor Law has forcibly pointed out that it is as bad for a public body as for an individual to get something for nothing, and it is clearly our duty to circumvent public bodies when they endeavour to exercise the gentle art of getting something for nothing. There is one aspect of affairs which has for long seemed to me to want improving, and that is the relation of general practitioners to hospitals. The question of hospital abuse is, and has been, long before the profession, but the simple policy of restricting patients from going to free hospitals will not, I think, do very much for us. Many patients have got it into their heads that the best medical treatment is to be obtained at institutions where there is a full equipment of instruments and apparatus, a service of nurses, and an attendance of hospital surgeons and physicians, and it cannot be denied that those patients are sometimes right. It would, moreover, be useless to try and convince the public that the man who needed those things should not have them unless he was either poverty-stricken or in affluent circumstances. The great majority of our population are neither. The method by which the attendance of doctors at hospitals has been secured in the past has been mainly by the granting of a sort of monopoly. The doctor gives his services to the hospital for a very small remuneration, the main consideration being that he has the opportunity of acquiring skill and practice, which those outside the hospital do not have. This system has worked fairly well in the past, and must necessarily, I suppose, be the one used at the large teaching hospitals. In view of the great changes which have taken place and which are now taking place in medical practice, it seems that some modification of the system is required. The hospital physicians and surgeons are having work thrust upon them which they hardly bargained for: First, people who are not poor, but who are not able to pay large fees; and, secondly, poor people who are sent by public bodies. The hospitals are being enlarged and hospital staffs increased, but still there seems no meeting of the demand. On the other hand, the general practitioner is being deprived of his legitimate work. This not only diminishes his income, but hurts him in an even more important manner by depriving him of work which is educative in a high degree. If his important cases go away from his care to nursing homes or hospitals, can it be wondered at that his practice becomes uninteresting and his work second-rate? Is there any remedy for this state of afiairs? I believe a good remedy is to be found in the extension of the cottage hospital plan, which means, in other words, the providing of hospitals to be used by general practitioners. But it would be no remedy, but only an extension of the evil, if the monopoly plan were carried out in the appointment of the staff to these hospitals. The practice of the hospital must be open to all the

medical men living in the district, the medical men sending in their own patients and attending them themselves with or without the assistance of a colleague or consultant. The other point in which these hospitals should differ from the large teaching hospitals is that each patient should pay what he can afford, both to the hospital and to the medical man attending him. There would necessarily be some patients who could not afford to pay anything, and if these were not provided for by public bodies, it would be for the doctors in the district to decide whether each should do his own gratuitous work, or whether they should appoint in rotation one of their own number to do it. Besides the working classes, these institutions might well accommodate in private rooms those who were better off, and thus provide an economic nursing home. In many country districts such hospitals are in existence and are working well. The establishment of them in town would seem to present more difficulty, but I do not believe that the difficulties are insuperable, and the advantages are certainly very great. An institution like this would help to solve many difficult questions. Hospital abuse would be lessened, for the workman could have hospital treatment from his own doctor near his own door, and those patients who still went to free dispensaries, and who were unsuitable, might be more easily restricted when there was an institution like this to which they might be referred. The cottage hospital would provide an excellent school clinic where the general practitioner, whether paid privately or by the School Board, might carry out treatment satisfactorily. The provident dispensary outlined by the Majority Report of the Poor Law Commission, if it ever comes into existence, would find in the cottage hospital excellent machinery for its working. The cottage hospital would not, of course, supersede the large general hospital. It would be complementary to it, and would relieve it of many minor cases and at the same time feed it with important ones. As an example of such a cottage hospital, it might be worth while to refer for a moment to one which we have had in Bute for about fifteen years. It was built at a cost of £3,000, and accommodates 10 ward and 3 private patients. The number of patients admitted in one year is 120, with about the same number of outdoor patients, and the cost of upkeep amounts to about £700. The income is made up in nearly equal proportion by subscriptions from the public, interest on endowment, and payments by patients. Ward patients pay, when they are able, 7s. per week, and private patients 30s. per week. About one-third of the patients are admitted free. Private patients and many of the ward patients pay such fees as they can afford to the doctors attending them. This hospital serves a population of about 12,000, with some five or six doctors, who all send in patients and attend them, not in rotation, but simultaneously, the patients being passed in by a committee on a line from the doctor. The management consists of a representative committee, and includes all the medical men. The hospital is recognized as an institution which may be used, and is used, by the whole community, rich and poor alike. The out patients are not treated dispensary fashion, but are sent up by appointment by their doctors, mostly for minor operations. This part of the work costs the hospital comparatively little, but it is of great value. Taking it all round, the system has been found to work very well in Bute, and, moreover, it is mainly in accordance with the plan for cottage hospitals laid down by the British Medical Association. In other localities, no doubt, some modification might require to be made. In large towns like Glasgow it has often seemed to me that many of the smaller dispensaries might be used in such a manner as we use our out-patient department. It is often of incalculable value for a practitioner to have access to a well-appointed place where he has the assistance of a nurse in order that he may examine or perform minor operations on his patients. It may be asked, How are the public to be induced to subscribe to such institutions when medical services are not wholly gratuitous? A community will soon come to recognize the extreme value of such an institution in its midst, and the public must be educated to see that it will get the best work out of the medical profession by paying fairly for its services, and by supporting a class of hospital which offers advantages to the many and is not the privilege of the few.

Vote of Thanks.—Dr. JOHN ADAMS moved, and Dr. A. C. MUNRO seconded, a very hearty vote of thanks to Professor R. Stockman for the exceedingly able manner in which he had acted as President of the Branch. Professor STOCKMAN suitably replied.

Smoking Concert.—A very enjoyable smoking concert followed the business meeting. Nearly a hundred members were present.

LANCASHIRE AND CHESHIRE BRANCH:

BLACKBURN DIVISION.

A MEETING of this Division was held at the Old Bull Hotel on June 21st. Dr. MOIR occupied the chair. The following members were present: Drs. Henry, Burnham-Smith, Hogan, Butterfield, John Patchett, Aitken, Beaton, Heywood, Lees, Ballantyne, Jones, Taylor, Prebble, Johnston, Jeffrey Ramsay, Linton, Askins, Cran Duthie, and Greenwood.

Apologies for Non-attendance.—Apologies for non-attendance were received from Drs. Aitchison and Owen.

Confirmation of Minutes.—The minutes of the last meeting were read, confirmed, and signed by the Chairman.

Medical Treatment of Elementary School Children.—A discussion on the medical treatment of elementary school children was then opened by Dr. GREENWOOD. The following gentlemen took part in the discussion: Drs. MOIR, TAYLOR, JONES, and BALLANTYNE. It was moved, seconded, and resolved:

That this subject be discussed again at a future meeting of the Division.

State Medical Relief of the Poor.—A discussion on the reorganization of the State medical relief of the poor was opened by Dr. HEYWOOD. The following gentlemen took part in the discussion: Drs. MOIR, HENRY, and GREENWOOD. It was moved, seconded, and resolved:

That this subject be discussed again at a future meeting of the Division.

Voluntary Medical Charities.—A discussion on voluntary medical charities was then opened by Dr. TAYLOR and Drs. MOIR and HENRY took part in the ensuing discussion. It was moved, seconded, and resolved:

That this subject be discussed again at a future meeting of the Division.

It was moved, seconded, and resolved:

That the Representative, Dr. Prebble, be instructed to vote in favour of the three resolutions passed at a meeting of the Blackburn Division on March 10th, 1910, respecting the report of the Poor Law Reform Committee of the British Medical Association with reference to medical matters, giving special attention to the resolution that the payment should be adequate and in accordance with the professional services rendered.

BURNLEY DIVISION.

THE annual meeting of this Division was held in the Bull Hotel, on Tuesday, May 31st. There was a good attendance of members; Dr. G. S. PULLON was in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Election of Officers.—The following were elected office-bearers for the ensuing year: *President*, Dr. F. E. Crossley; *Vice-President*, Dr. G. S. Pullon; *Honorary Secretary and Honorary Treasurer*, Dr. A. Edward Bird; *Representative for Representation Meeting*, Dr. J. M. Ferguson; *Branch Representatives*, Drs. F. E. Crossley and J. S. Wilson; *Executive Committee*, Drs. W. J. D. Bromley, A. Callam, A. Dickey, H. Edmondson, J. Howarth, J. Gardner, T. Scott, A. M. Sinclair, R. Stewart, J. S. Wilson.

Annual Report.—The HONORARY SECRETARY then read the annual report as follows: The annual report is again a matter for congratulation. The Division has been very much alive and active. Members to a great extent have shown interest in the working of the Association generally, and particularly in matters affecting directly or exclusively our own Division. The Division area includes Burnley, Brierfield, Barrowford, Barnoldswick, Colne, Hapton Nelson, and Padiham. The membership still shows an increase from 62 to 65. There have been seven meetings of the Division during the year, with an average attendance of 18 per meeting. The Executive Committee has met on nine occasions, with an average attendance of 8.2. It is to be regretted that since last summer the monthly report on current work of the Association has not been sent down from London. A matter has been raised in Burnley by the Federated Friendly Societies to establish a medical association of their own, to provide members and their families with medical advice and medicine. The Division did not neglect its duty, but immediately took steps to protect the medical profession. In this the Division was advised and supported by the Central Office of the Association, the BRITISH MEDICAL JOURNAL, and the *Lancet*. It is gratifying to know that from information gathered in the town this movement of the friendly societies is not gaining the approbation of all the members; but the societies' officials are still trying their best to induce them to adopt such a scheme. It has been decided that the Division shall treat all ambulance work as a matter of business and not philanthropy. This also applies to instruction in first aid and field nursing to voluntary detachments of the Territorial Forces, and a minimum fee of £1 1s. per lecture to a class not exceeding thirty members, was fixed. A code of ethics, together with general minimum charges, is to be printed at the expense of members and a copy sent to every member. This is being prepared. The code of ethics approved by the whole Division has not been sanctioned by the Central Ethical Committee. The Parliamentary candidates in the Division were interviewed and answered the set of questions most satisfactorily to the views of the profession. The Division has also been in communication with the local Midwives Supervising Committees regarding the payment of medical practitioners called in to assist midwives, but nothing definite has been settled. As was the case last year, again the Division joined with the local Medico-Ethical Society in providing a good syllabus of clinical meetings. These gatherings were fairly well attended, but it would be more gratifying if members generally would take more advantage of these edifying meetings. Some of the matters referred to Divisions which have been considered are: Employment of medical inspectors of school children; systems of payment of school medical officers; duties of school nurse in connexion with inspection and treatment; the treatment of school children found on inspection to be defective; special class of consultants; model rules of a public medical service; and many other matters. Two ethical cases have been brought before the committee during the year. The financial side of our Division is very gloomy. The Honorary Treasurer got a cheque from the Branch Secretary the other day for £3 4s. At the same time he received a bill from the printers for £6 2s. 3d. alone. How to make the less equal to the greater is a matter which must be submitted to the Branch. The Division has been honoured by the Branch deciding to hold its annual meeting in Burnley this year, and last year appointed Dr. Ferguson President-elect of the Branch. It is to be hoped that every member of the Division will do his utmost to make the meeting and the dinner in the evening a success. Most of the medical men in the district are now members of the Association—still there are a few who have not joined us. It would be an excellent thing if members who come in contact with those practitioners would not let them rest until they have induced them to become members of the Association. The fee will only be half now for the remainder of the year. It is now generally recognized that the profession has to face new legislature directly affecting the general practitioner, and some extremely important problems of State insurance against invalidity, Poor Law reform, etc., and if the Association can feel sure that it is backed up by the *whole* of the medical profession it can speak with no uncertain voice, and make its power felt to the future well-being of the general practitioner. But this can *only* be done by *union*.

Special Representative Meeting.—The meeting resolved to instruct its Representative to vote, in the Special Representative Meeting:

> That the Council be instructed to take all necessary steps with a view to the formation of a new company under the title of the British Medical Association, incorporated in the same manner as the existing company, but with a Memorandum of Association providing for all the objects which are detailed in Clause 2 of the draft Charter applied for by the Association.

It was resolved that the Representative use his own discretion in any matter on which he has not been instructed.

Nominations.—It was resolved that the Division give its official nomination to Mr. Larkin and Dr. Taylor for election by the Branch; and to Mr. Garstang for election by the Representatives in the 1910 election of Members of Central Council; at the same time recognizing their good services on the Central Council during the past year.

Votes of Thanks.—The Honorary Secretary was instructed to send the Division's thanks to the Directors and Honorary Secretary of the Mechanics' Institute for the kind offer of the free use of their exchange reading and news rooms, coffee room, chess, and billiard and smoke rooms, etc., to members of the Lancashire and Cheshire Branch at the annual meeting on June 15th. A similar vote of thanks was also to be sent to the Chairman and members of the Art Gallery Committee for their invitation to the members attending the Branch meeting to visit Towneley Hall and its grounds, and the summer exhibition of pictures and antiquities, etc.; and to Councillor E. Whitehead, J.P. (the Chairman) for extending his kind offer of "afternoon tea" to members visiting Towneley Hall.

Draft Model Rules of Division.—The Division adopted the Draft Model Rules of a Division (not itself a Branch) to regulate the procedure thereof in ethical matters, with the addition of Rule 14 to rules of the Burnley Division.

A MEETING of the Division was held on June 2nd. Dr. PULLON was in the chair, and twenty-five members were present.

Poor Law Invalidity and State Insurance.—Dr. J. H. TAYLOR gave an able address on Poor Law Invalidity and State Insurance. A discussion followed, and Dr. Taylor was heartily thanked for his address, and incidentally for the time and trouble he took in the work of the Association for the betterment of the general practitioner.

LIVERPOOL (CENTRAL) DIVISION.

THE annual meeting was held at the Liverpool Medical Institution on Wednesday, June 22nd. Dr. FRANCIS W. BAILEY, Vice-Chairman, occupied the chair, and there were present Frank H. Barendt (Secretary) and six members.

Apology for Non-attendance.—Dr. Palmer, the Chairman of the Division, intimated his regret at being unable to be present.

Election of Officers.—The following gentlemen were elected officers and members of the Executive Committee for the ensuing year: *Chairman*, Dr. Francis W. Bailey; *Vice-Chairman*, Mr. E. Malcolm Stockdale; *Secretary*, Dr. Frank H. Barendt; *Representative for Representative Meeting*, Dr. Thomas Bushby; *Representatives of Branch Council*, Drs. Thomas R. Bradshaw and Frank H. Barendt; *Executive Committee*, Drs. Sydney J. Palmer, N. Percy Marsh, F. J. Strong Heaney, and Messrs. R. W. Murray and A. Nimmo Walker; *Joint Committee of Combined Liverpool and Birkenhead Divisions.*—The following gentlemen were elected: Drs. T. Bushby and Frank H. Barendt (*ex*

officio), F. J. Strong Heaney, A. Gordon Gullan, and Mr. George P. Newbolt.

Report of Executive Committee.—The report was read by the SECRETARY, and it was resolved that an additional paragraph be appended emphasizing the importance of members taking more interest in the British Medical Association than they hitherto have done. The Secretary was instructed to circulate the report among the members.

Special Representative Meeting.—The suggestions of the Executive Committee arising out of the Agenda were submitted to the Division and unanimously adopted, and the Divisional Representative advised accordingly.

Annual Representative Meeting.—The Agenda previously discussed at length by the Executive Committee were considered, and Dr. Bushby was instructed accordingly.

Vote of Thanks to Retiring Officers.—Votes of thanks to the retiring officers were passed for their valuable services during the past year.

ST. HELENS AND WARRINGTON DIVISIONS.

A JOINT meeting of these Divisions was held on Monday, June 27th, at the Fleece Hotel, St. Helens. There were present: Drs. Buchan, Cotton, Dowling, Merrick, and Reid (St. Helens); Bowden, John Hutchinson, and Murray (Warrington).

Election of Officers.—Dr. Bowden (Vice-Chairman Warrington Division) was elected Chairman. Dr. F. P. Bassett (St. Helens) was unanimously elected Representative to the Representative Meeting 1910-11.

Election to Central Council.—It was unanimously resolved that the Representative (Dr. Bassett) be requested to support Dr. Garstang, a candidate for election to the Central Council.

Annual Representative Meeting Agenda.

23. Rider by Rochdale Division. Resolution:

That this meeting does not agree with this rider.

Passed unanimously.

47. Rider by Rochdale Division. Resolution:

That this meeting agrees with this rider.

Passed unanimously.

39 and 40. Ambulance, etc., Lectures. Resolution:

That this meeting agrees with these riders, and that a rider be added that any special circumstances under which it may be desired to vary this principle should be brought before the Division for consideration.

Passed unanimously.

SOUTHPORT DIVISION.

A SPECIAL meeting of this Division was held on June 24th at the Temperance Institute, Dr. SYKES in the chair. There were present: Drs. Ashworth, Baildon, Littler, Russel, Schofield, Walker, and Harris.

Apologies for Non-attendance.—Apologies for non-attendance were received from Drs. Lewis and Speirs.

Confirmation of Minutes.—The minutes of the last special meeting were read and confirmed.

Representatives at Representative Meetings.—A letter was read announcing that, in consequence of illness, Dr. Stanley A. Gill would be unable to act as Representative at Representative Meetings. Dr. HARRIS, who had been elected Deputy Representative, stated that an important engagement would prevent his attending the special meeting on June 28th, but that Dr. Baildon was willing to attend. It was consequently resolved unanimously:

That Dr. Baildon be elected Representative at the special meeting to be held on June 28th, and that Dr. Harris be the Representative at the Annual Representative Meeting on July 22nd and following days.

Special Representative Meeting.—The Agenda of the Special Representative Meeting was considered, and it was resolved unanimously:

That this meeting approves generally the report of the Council of the Association respecting the formation of a new company, but leaves the Representative to use his own judgement in voting at the special meeting to be held on June 28th.

Annual Representative Meeting.—The provisional agenda of the Annual Representative Meeting was considered, and it was resolved unanimously:

That the Representative at the Annual Representative Meeting use his own judgement in voting on all matters except in so far as decisions have already been recorded by the Division.

Election to Central Council.—It was resolved unanimously:

That the Secretary be instructed to nominate Dr. Garstang for election by the Representatives of the Lancashire and Cheshire Branch as a member of the Central Council, and that as Representative at the Annual Representative Meeting he be instructed to vote for him.

METROPOLITAN COUNTIES BRANCH:

CHELSEA DIVISION.

THE annual meeting was held on June 21st.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman*, James Young, M.B. (2, Sherbrooke Road, Fulham, S.W.); *Vice-Chairman*, Campbell Boyd, Esq. (13, Sloane Court, S.W.); *Honorary Secretary and Treasurer*, J. R. Gallard, Esq. (512, Fulham Palace Road, S.W.); *Representative for Representative Meeting*, G. H. Coltart, M.B. (714, Fulham Road, S.W.), *vice* John Fletcher, M.B., resigned; *Representatives on Branch Council*, James Young, Esq., G. H. Coltart, Esq., J. R. Gallard, Esq.; *Executive Committee*, R. T. Bedford, Esq.; Wm. A. Bonney, M.D.; Campbell Boyd, Esq., H. J. Butler, Esq.; G. H. Coltart, M.B., J. Hamilton, M.D., W. S. Lee, Esq., P. H. Parsons, Esq.; D. A. Simon, M.B., M. J. Williams, Esq. At the extraordinary meeting of Representatives on June 28th, Dr. M. J. Williams, of 19, Jerdan Place, Walham Green, S.W., will act as deputy for Dr. O'Sullivan, of 39, Matheson Road, West Kensington.

HAMPSTEAD DIVISION.

THE annual meeting of this Division was held at 4.30 p.m., at the Hampstead Conservatoire, on Friday, June 24th, Mr. H. W. ARMIT in the chair.

Confirmation of Minutes.—The minutes of the last Divisional meeting were read and confirmed.

Election of Officers and Members of Committee.—The following officers were elected for the ensuing year: *Chairman*, Dr. Ford Anderson; *Vice-Chairman*, Dr. A. R. Oakley; *Honorary Secretaries*, Mr. W. P. Parsons and Mr. C. W. Cunnington; *Representative of the Division*, Mr. H. W. Armit (previously elected); *Deputy Representative*, Dr. H. Oppenheimer: *Representatives on Branch Council*, Dr. Coram James and Miss Dobbie. A ballot took place for the election of members of the Executive Committee, and resulted in the election of the following gentlemen: Drs. H. J. Macevoy, Claude Taylor, A. R. Roche, Percy Evans, F. E. Scrase, G. F. McLeary, C. J. MacFadden, E. E. Ware, A. W. Picard, and G. D. Pidcock.

Special Representative Meeting.—Motion 4: The proposal of the Cardiff Division was discussed, and the Representative was instructed to oppose this motion.

Instruction to Secretary.—The Secretary was instructed to call the attention of the Central Ethical Committee to the request of the Division to be heard before new ethical rules are formulated and recommended to the Divisions for their adoption.

Annual Representative Meeting.—Mr. ARMIT placed before the Division certain items in the agenda upon which he desired special instruction. Instructions were given as follows: To oppose Nos. 17, 21, and 23, riders by the Rochdale Division relating to alterations in the conduct of the JOURNAL, in the appointment of President, and in the rules relating to membership of the Association. To amend No. 25, rider by the Dundee Branch, so as to preserve the idea but provide a more suitable form of words in order to prevent resignation from the Association of a member whose conduct is likely to come under disapproval. To support No. 30, rider by the Dundee Branch (method of the transferable vote). To support No. 31, rider by the West Suffolk Division, in so far as the

principle is concerned, but to oppose the suggested method of carrying this out (enabling members to write their opinions for consideration at Divisional meetings). To support No. 34—the inadvisability of drafting regulations to govern a special class of consultants. No instructions were given on No. 49, as the Division is not in possession of information to guide it.

NORTH OF ENGLAND BRANCH:
NORTH NORTHUMBERLAND DIVISION.

THE annual meeting was held at the Infirmary, Alnwick, on Thursday, June 23rd, for the purpose of electing officers for the ensuing year. Dr. SCOTT PURVES occupied the chair, and there were present: Drs. Main, Moyse, Pringle, Robson, Burrow, Dey, and Burman. Dr. Beatrice Coxon was present as a visitor.

Apology for Non-attendance.—Apology for absence was received from Dr. Welsh of Amble.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Election of Officers.—After being duly proposed and seconded, the following officers were appointed for the ensuing year: Dr. Dey was appointed Chairman, and Dr. Macaskie Vice-Chairman. Dr. Scott Purves having vacated the chair in favour of the new Chairman, Dr. Burman was reappointed Secretary, and the old Representatives on the Branch Council—namely, Drs. Robson and Maclagan—were reappointed. The following members were appointed to the Executive Committee: Drs. Moyse, Mackay, and Macdonald.

Public Medical Service.—The several officers having returned thanks on their appointment, the SECRETARY reported that, in accordance with the resolution passed at the last meeting, he had procured and forwarded to each member of the Division a copy of the Model Rules of a Public Medical Service, the consideration of which was deferred to a subsequent meeting.

Doctors and Midwives.—Acknowledgments of the receipt of the letter on the question of the payment of medical men called in by midwives from clerks of the county council (Midwives Committee) and other local authorities were read.

Proposed "Black List."—The question of the formation of a "Black List" was deferred pending the answer of the Central Ethical Committee to an inquiry by the Secretary as to the legal risks involved.

Treatment of School Children.—The question of the treatment of school children was reported on by the SECRETARY, and he announced that the matter was under the consideration of the Branch Council, and the result would be communicated to the members at the next meeting.

Fees for Ambulance Lectures.—A letter from a member regarding fees for ambulance lectures was read, and intimating that a medical man (not a member of the Association) had offered to conduct a class for half the amount agreed upon by the Division. The meeting expressed dissatisfaction with such conduct, and urged the Division to support those members who were insisting upon the fee of £5 5s. as a minimum.

Dr. Macaskie's "Notes."—The SECRETARY announced that the first instalment of Dr. Macaskie's Notes worth Remembering was now circulating among the members in alphabetical rotation.

Annual Representative Meeting.—The provisional agenda for the Annual Representative Meeting was considered. The SECRETARY OF THE BLYTH DIVISION announced his intention of calling a meeting for the purpose of electing a Representative of the combined Divisions of Alnwick, Blyth, and Morpeth at the Annual Representative Meeting on Friday, June 24th.

Invitations to Non-members.—The SECRETARY reported that members of the profession practising in the Division who had not joined the Association had been invited by him to do so, and forms of application for membership forwarded to them. The Secretary was requested to write to a member who had resigned and endeavour to retain his name in the list of members.

Annual Social Meeting.—An invitation was received from the Secretary and his wife to hold the annual social meeting at Bamburgh in September next as their guests. The invitation was accepted.

NORTH WALES BRANCH:
SOUTH CARNARVON AND MERIONETH DIVISION.

THE annual meeting of this Division was held at Dolgelley on Thursday, June 16th.

Election of Officers.—The following were elected officers for the ensuing year: *Chairman*, Dr. W. R. Williams (Machynlleth); *Vice-Chairman*, Dr. J. R. Jones (Penrhyndeudraeth); *Secretary*, Dr. H. Gladstone Jones (Plas Gwilym, Criccieth); *Representative to Representative Meeting*, Dr. W. R. Williams (Chairman); *Representatives on Branch Council*, Drs. J. W. Rowlands (Llanaelhaiarn), Hugh Jones (Dolgelley), H. Gladstone Jones (Criccieth), Richard Jones (Festiniog); *Members of the Executive Committee*, Richard Griffith (Portmadoc), Howel White (Corwen); *Representative North Wales Branch*, Dr. H. Jones Roberts (Penygroes).

OXFORD AND READING BRANCH:
OXFORD DIVISION.

THE annual meeting of the Oxford Division was held on Friday, June 24th, in the Masonic Buildings, Oxford, at 2.30 p.m.

Installation of New Chairman.—After luncheon, which was attended by eighteen members, Dr. CAUDWELL inducted the new CHAIRMAN, Dr. Turrell of Oxford, into the chair.

Vote of Thanks to Retiring Chairman.—A hearty vote of thanks was accorded Dr. Caudwell for his services as Chairman during the past session.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Chairman's Address.—Dr. TURRELL (Chairman) gave an address on the Control of the Milk Supply in Towns in this Country. It was unanimously resolved that Dr. Turrell's address should be printed at the expense of the Division, and circulated to all members.

Report of Executive Committee.—The SECRETARY read the report of the Executive Committee on the work of the Division during the past session. In addition to the December and March meetings, there had been a special business meeting in May, arranged by the Branch, and held at Oxford; also the Tuberculosis Conference in October, held under the auspices of the Branch. All these meetings were well attended by members of the Division. The Committee wished to express their obligation to the Regius Professor of Medicine (Dr. Osler) and to Dr. Wingfield, of London, for opening discussions at the two ordinary meetings, as well as to other contributors to the agenda of these meetings. No disputes had arisen within the area of the Division requiring the assistance of the Executive Committee in their settlement. On Dr. Caudwell's invitation, the practice of collecting small subscriptions at the general meetings in aid of the British Medical Benevolent Fund had been established, and it was hoped it would continue. The report was accepted and adopted.

Balance Sheet.—The balance sheet was read and adopted.

British Medical Benevolent Fund.—On the motion of the CHAIRMAN, a collection was made for the British Medical Benevolent Fund (16s. 6d. being collected).

Election of Officers.—The following elections were then made: *Chairman-elect*, Mr. M. Styles (Moreton-in-the-Marsh); *Divisional Representative*, Mr. Drew; *Secretary and Treasurer*, Dr. Duigan; *Two New Members of Executive Committee*, Dr. R. C. Yelf and Dr. Gibson.

Annual Representative Meeting.—The recommendation of the Executive Committee that Mr. Drew, Representative, be given a free hand at the Representative Meeting was adopted *nemine contradicente*.

The proceedings then terminated.

Dr. and Mrs. Turrell subsequently entertained the members to tea on the river Cherwell.

SOUTH-EASTERN OF IRELAND BRANCH.

A meeting of this Branch was held in the Council Chamber, Town Hall, Clonmel, on June 10th, at 12 o'clock noon. The President (Dr. R. R. O'Brien) occupied the chair. The other members present were: Drs. P. J. Byrne, J. W. H. Jellett, Geo. Mackesy, T. O'Connell, J. D. Wymil, Lieutenant-Colonel Riordan, P. J. Murphy, D. Walsh, Joseph Power, and J. Quirke, Honorary Secretary.

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed.

Apology for Non-attendance.—A letter from Dr. Laffan apologizing for non-attendance was read.

Foresters' Society and Medical Officers.—It was proposed by Dr. Byrne and seconded by Dr. Jellett:

> That Dr. Joseph Power be appointed to meet the Mayor of Clonmel with a view to discuss the question of the medical officers to the Foresters' Society, and that he be instructed that this Branch is of opinion that either an ample public apology be tendered to Dr. O'Brien, and published in the local press, or else that he be reinstated in his office as publicly as he was dismissed.

As the result of discussion which took place, the following amicable settlement was arrived at, namely:

> That the following note be inserted in the *Clonmel Chronicle* and other local newspapers:
>
> *Clonmel Foresters' Society and South-Eastern of Ireland Branch, British Medical Association.*
>
> A conference suggested by Mr. T. F. O'Brien, solicitor, with a view to ending a dispute between the above bodies was held on June 15th, 1910, Dr. J. Power (Ardfinnan) representing the Medical Association, and the Mayor of Clonmel representing the Foresters' Club. As a result we are happy to say that the dispute has been amicably arranged, and Dr. R. R. O'Brien has been reappointed Medical Officer to the Foresters' Club.

Vote of Thanks to Dr. Power.—It was proposed by Dr. Jellett and seconded by Dr. Mackesy:

> That the best thanks of the meeting be conveyed to Dr. Power for so ably representing the Association at a conference with Mr. Sheehan, the Mayor of Clonmel, and having successfully brought the dispute to a satisfactory termination.

Instructions to Representative.—After a lengthened debate on the fifth item on the agenda paper, it was unanimously resolved:

> That Dr. Laffan be allowed to exercise his own discretion regarding the Royal Charter and the formation of a new Association, at the Special Representative Meeting to be held at London on June 28th, 1910.

Paper.—Dr. Jellett read a most interesting paper on a case of suspected tuberculosis of the conjunctiva.

Vote of Thanks to the Mayor.—The meeting concluded with a unanimous vote of thanks to the Mayor and Corporation of Clonmel for the use of the Council Chamber.

Dinner.—The members dined at the Ormonde Hotel.

SOUTHERN BRANCH:

Jersey Division.

A general meeting of this Division was held on June 23rd. In the absence of the Chairman, Dr. P. B. Bentlif presided.

Confirmation of Minutes.—The minutes of the last general meeting were read and confirmed.

Public Medical Service.—The report of the committee to which this question had been referred was read. That report was to the effect that, in the opinion of the committee, the scheme in question, whilst possessing certain merits, could not be recommended as suited to the conditions obtaining in Jersey at the present time. After discussion, it was resolved:

> That the conclusions of the committee be affirmed, and that the Division, whilst heartily appreciating the aims and labours of the Council in the matter, was not able, as at present advised, to support the scheme.

Special Report of Central Council.—This report, which was published in the British Medical Journal Supplement of May 28th, was gone into carefully, and the proposals of the Council, consequent upon the withdrawal of the application for a Charter, were generally approved. A free hand, however, was given to the Representative of the Division in regard to the question when it should come before the Special Representative Meeting.

Communications.—A paper entitled, "Observations on Trance, with Notes of a Fatal Case," was read by Dr. H. C. Major. A discussion followed.

ULSTER BRANCH:

Portadown and West Down Division.

A meeting of this Division was held at Lurgan on June 22nd. Dr. Deane was in the chair, and fifteen members were present.

Election of Officers.—The following elections were made for the ensuing year: *Chairman*, Dr. Howard Sinclair; *Vice-Chairmen*, Drs. W. E. Hadden and Moore; *Secretary and Representative for Representative Meetings*, Dr. J. Singleton Darling; *Representatives on Branch Council*, Drs. S. Agnew, Lawless, and Taylor; *Executive Committee*, Drs. Deane, Simpson, McKee, S. E. Martin, Flood, Fergus.

Annual Report.—The annual report was submitted by the Secretary and adopted.

Fees for Insurance Examinations.—The report of the committee appointed at the last meeting to take a *plébiscite* of the members of the Division as to fees to be required from insurance companies was read and discussed, and the committee was reappointed with instructions to ascertain how many members would agree to abide by a minimum scale of fees assented to by the great majority of those who replied—52 per cent. of the members.

Address.—Dr. Thomas Houston, of Belfast, gave a most instructive and interesting address on the present position of treatment of tuberculosis by tuberculin. He was followed by Dr. Sinclair and other members. On the motion of Dr. McKee, seconded by Dr. Simpson, a hearty vote of thanks was passed to Dr. Houston.

Election of Honorary Member.—On the motion of Dr. Agnew, seconded by Dr. Deeny, Dr. Houston was elected an honorary member of the Division.

Next Meeting.—At the request of Drs. Martin and Beamish the next meeting was appointed to be held in Newry in September.

WEST SOMERSET BRANCH.

The sixty-eighth annual meeting of this Branch was held at the George Hotel, Ilminster, on Friday, June 24th, when there was a good attendance.

Induction of New President.—Dr. Maidlow, F.R.C.S., was inducted to the chair by the retiring President, Mr. C. Farrant.

Confirmation of Minutes.—The minutes of the last meeting were read and signed.

Annual Report and Balance Sheet.—The annual report and balance sheet were adopted.

Election of Officers.—Mr. W. B. Winckworth was elected President-elect, Dr. J. A. Macdonald was re-elected Representative, Mr. Winckworth was re-elected Honorary Secretary and Treasurer, and Dr. Balfour, of Chard, was elected to a vacancy on the council of the Branch.

Association Business.—A resolution was unanimously passed authorizing Dr. Macdonald, as Representative of the Branch, to support the alteration of the Articles and Memoranda of the Association on the lines suggested by the Organization Committee.

President's Address.—Dr. Maidlow read an address entitled "After Ten Years," which contained many original ideas and deductions, and in which he reviewed the additions and improvements which had taken place during the period named in many spheres of medical work and practice.

Vote of Thanks.—A cordial vote of thanks was given to Dr. Maidlow for his address, on the proposition of Mr. C. J. Marsh, seconded by Mr. C. Farrant, and the hope was expressed that the paper would be published.

YORKSHIRE BRANCH.

THE annual meeting of the Branch was held at the University of Sheffield on Wednesday, June 22nd, at 4 p.m. Dr. GODFREY (President) was in the chair, and thirty-seven other members were present.

Confirmation of Minutes.—Dr. BRONNER (Honorary Secretary) read the minutes of the previous annual meeting, which were approved and adopted.

Election of Officers.—The election of officers for the next year then took place. Dr. EDDISON (Leeds) proposed, and Dr. DYSON (Sheffield) seconded, that Mr. R. J. Pye Smith (Sheffield) should be President for the ensuing year. This was carried with acclamation. Dr. GRIFFITH (Leeds) proposed that Dr. Churton (Leeds) should be President-elect. This was seconded by Dr. SOLLY (Harrogate) and carried. Dr. CAMERON (Leeds) proposed, and Dr. MOSSOP (Bradford) seconded, the re-election of Dr. Bronner as Honorary Secretary and Treasurer. On being put to the vote this was carried by acclamation.

Annual Report of Branch Council.—The HONORARY SECRETARY then read the annual report of the Branch Council on the past year's work: During the year three meetings have been held—at Bradford, Scarborough, and Halifax. At the annual meeting held at Scarborough, Dr. Godfrey was elected President, and it was decided to hold the next annual meeting at Sheffield. Mr. Pye-Smith was elected President elect. The average attendance has been 35. Only 64 new members have been added—30 by election, 24 by change of address, and 10 by change of boundary. Seventy-one members have been lost by death and resignation, making a net decrease of 7 members. Owing to the largely increased expenses of the London office, the capitation grant to the Branches has been reduced from 4s. to 2s. per head. The full amount received has been remitted to the Divisions (in three cases more than the full amount), which accounts for the reduced balance in hand. We began the year with a balance of £180 10s. Receipts, £99 2s. 4d.; grants to Divisions, £105 10s. 6d.; Branch expenses, £29 12s. 6d.; balance in hand, £141 10s. 6d. The Branch has sustained severe losses by the death of three prominent members: Mr. Snell, whose death while occupying the position of President of the Association, was greatly deplored, not only by the Branch, but by the whole of the Association. By the death of Dr. Wheelhouse the Branch has lost one of its oldest members. Though he had lived in retirement for many years, he was held in affectionate remembrance by many of the older members of the Branch. Dr. Kilner Clarke, a past-President of the Branch, took an active part in the work of the Association. The Wakefield and Doncaster Division has been reorganized, and now has fifty eight members. The Council suggest that the next annual meeting be held at Leeds, and that Dr. Thomas Churton be elected President elect. On the proposition of the PRESIDENT, seconded by Dr. METCALFE (Bradford), this was adopted. Dr. BRONNER, in explaining that the allowance from the Central Body for Branch and Divisional expenses had been reduced to 2s. per member, drew attention to the fact that any active Division that required further funds for any special purpose could obtain them by making the necessary application.

President's Address.—The PRESIDENT then read his address (which will be published). At the conclusion of the address, Dr. EDDISON moved that a hearty vote of thanks should be accorded to Mr. Pye-Smith. Mr. Pye Smith had touched on numerous questions that were most important to them all. Dr. GODFREY seconded, and on being put to the meeting it was carried unanimously.

Installation of New President.—Dr. GODFREY, the retiring President, then vacated the chair. He said he would make way for a better man, and one who would look after and foster all the interests of the Branch and their great Association. Mr. Pye-Smith was too well known in Sheffield for him to say anything further about him.

Election of Dr. Godfrey as a Permanent Vice-President.—Dr. GORDON BLACK (Harrogate) proposed that Dr. Godfrey should be elected a permanent Vice-President of the Branch. He had given them a most interesting address a year ago, and had been an ideal President. All would wish him good health and prosperity, and thanked him for his work during the past year. Dr. MARTIN (Sheffield) seconded. He had known Dr. Godfrey for many years, and knew that all the good things that had been said of him were deserved. The motion was carried. Dr. GODFREY thanked the members for their vote and for the honour they had done to him in electing him Vice-President of the Branch. His year of office had been a real pleasure to him, although he did not think he had done all he might have accomplished in the chair. He wished to cordially thank the officials, the council, and the members of the Branch for the cordial way in which they had supported him.

New Articles of Association.—Dr. CARTER (Sheffield) then moved the following resolution:

> That this meeting is disappointed to see no reference to a postal referendum in the proposed new Articles of Association, and expresses its opinion that no new articles will be satisfactory which do not provide for a postal referendum either on a simple majority vote in the Council or on the requisition of a certain proportion of members, Divisions, or Branches, as recently discussed between the Organization Committee and certain members with reference to the Draft Charter.

Dr. GRIFFITH (Leeds) seconded. The resolution was carried.

Cases and Specimens.—Dr. ARTHUR HALL (Sheffield) showed the following cases: (1) Neuro-fibromatosis (Von Recklinghausen's disease); (2) diabetes insipidus in two childless brothers. Dr. SKINNER (Sheffield) showed: (1) Parakeratosis psoriasiforme, with histological note; (2) furunculosis with subsequent lichenification, with section.

Papers.—Dr. CARTER (Sheffield) read notes on a case of Stokes-Adam's disease. The PRESIDENT thanked Dr. Carter for his paper. Cases such as he had described were very rare. He asked if any sphygmographic tracings had been made of the pulse. He desired to draw attention to the great relief obtained in the sort of flatulency mentioned if the patient were moved up when lying on her back. Dr. RABAGLIATI (Bradford) said that he had heard the description of the case with the greatest interest. Apparently very little improvement had resulted from treatment. In his opinion this kind of case was often seen, especially with a very slow pulse. The feeding had no doubt been of a wrong character for a long period before the actual illness. He suggested the application of a hot poultice to the epigastrium every morning and evening; and, with regard to diet, simply a hot drink, such as tea or milk, in the morning, about mid-day a mutton chop, and in the evening again a hot drink. A limited dietary of this description for six or eight weeks would probably materially improve the patient's condition. Dr. LONGBOTTOM (Sheffield) said that he was very interested in hearing the recital of the case by Dr. Carter. He had a very similar case under treatment. The radial pulse sometimes stopped for ten or twelve seconds—in fact it appeared at times as if the heart had stopped altogether. The beat was frequently only eighteen to the minute. He had found that most relief was obtained by the hypodermic injection of morphine. Dr. Rabagliati's suggestions were most interesting, and he would bear them in mind. Dr. CARTER replied. He thanked Drs. Rabagliati and Longbottom for their remarks. In answer to the PRESIDENT, he had not made sphygmographic tracings. He had found that it was necessary to raise the patient up to get relief from the flatulency. The treatment had been chiefly by belladonna in full doses, but glonoin and other drugs had also been used. He did not think he could have done anything further in regard to diet. The patient was a total abstainer and light eater. She had been given white fish, fruit, bread and butter, etc., and had been reduced 1 st. in weight by her dietary.

Intranasal Treatment of Asthma and Hay Fever.—Dr. BRONNER (Bradford) read a paper on Notes on Some Cases of Asthma and Hay Fever Cured by Intranasal Treatment. He gave a short summary of the

various theories of the causation of asthma and hay fever. There was no doubt that asthma was, in a large number of cases, due to intranasal irritation. Often the mucous membrane of the nares was apparently normal, but on careful examination certain areas were found to be hypersensitive. These areas were generally situated on the anterior and middle parts of the lower turbinates, and near the tubercle of the septum. If these areas were treated with a large, flat, hot cautery point, the attacks of asthma often ceased, or became less acute. The cautery points generally used were much too small. A solution of 10 per cent. cocaine and 1 in 1,000 adrenalin chloride applied to these parts for ten to fifteen minutes rendered the operative treatment practically painless. The same treatment was useful in many cases of hay fever. Of course, general treatment was often necessary, especially in cases of hay fever and vasomotor rhinitis. If there was any nasal obstruction (spurs, polypi, deviated septum), this should, of course, be removed. Every case of hay fever and asthma which did not yield to the ordinary methods of treatment should be carefully examined, and the nares, if necessary, treated. If this were systematically done at the early stages of the disease, many of these most distressing cases could be cured, or at least relieved. Of course the longer the patient had suffered from asthma, especially if the lungs had become affected, the more difficult was it to cure the asthma. Numerous cases of hay fever and asthma cured, or relieved, by intranasal treatment were recorded. The PRESIDENT said he had listened to Dr. Bronner's paper with the greatest interest, and must thank him for bringing the subject before the Branch. The time had, however, arrived for bringing the meeting to a close, and unfortunately no further discussion could take place.

The meeting then terminated.

Association Notices.

ELECTION OF MEMBERS OF COUNCIL BY GROUPED REPRESENTATIVES.

NOTICE is hereby given that Nominations for candidates for election of Members of Council by Grouped Representatives for the year 1910-11 will be received by the Medical Secretary up to the end of the first hour of the proceedings of the Annual Representative Meeting on Monday, July 25th, 1910. Each Nomination must be on the prescribed form, copies of which will be forwarded by the Medical Secretary upon application.

Separate forms have been prepared (1) for Nomination by a Division and (2) for Nomination by a Representative of a Division included in the Group, and those applying are requested to state for which purpose the form is desired.

The voting papers will be issued at the Representative Meeting to each Representative or Deputy Representative of a constituency in the United Kingdom, in attendance at the Meeting.

By Order of the Council,
J. SMITH WHITAKER,
Medical Secretary.

NOTICE OF THE FORMATION OF A NEW DIVISION OF THE ASSOCIATION.

Manawatu and West Coast Division.

THE following change has been made in accordance with the Regulations of the Association, and takes effect from the date of publication of this notice:

The members of the Association resident in the district comprising the counties of Horowhenua, Manawatu, Kairanga, Oroua, Pohangina, Kiwitea, Rangitikei, Wanganui, and Waitotara, at present forming part of the Wellington Division (New Zealand Branch), are constituted a Division of the Association designated the Manawatu and West Coast Division.

BRANCH AND DIVISION MEETINGS TO BE HELD.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—The annual meeting of the Branch will be held at the Imperial Golf View Hotel, Nairn, on Saturday, July 16th, at 11.30 a.m.—J. MUNRO MOIR, Honorary Secretary.

NORTH WALES BRANCH.—The sixty-first annual meeting of the Branch will be held at the Hand Hotel, Llangollen on Tuesday, July 12th, at 2 p.m. Luncheon at 1 p.m. punctually; tickets, 3s. The Branch Council will meet at 1.45 p.m. Agenda: (1) To read the minutes of the last meeting. (2) To read correspondence. (3) To introduce the President-elect. (4) To receive the report of the Branch Council. (5) To elect President for 1911-12. (6) To elect Honorary Secretary. (7) To report election of members on Branch Council. (8) To select place of meeting for 1911. (9) To consider a letter received from the Secretary of the Research Defence Society. The President will deliver his address. The following papers, etc., will be read:—Mr. E. D. Evans: (1) Short notes of a case illustrating the rôle of entozoa in the etiology of appendicitis; (2) Short notes of two cases of *Bacillus coli* infection during the puerperium. Dr. H. Drinkwater will show radiographs of brachydactylous hand and foot. Dr. H. Jones Roberts: Note on a case of radical cure of hernia. Dr. W. Blair Bell: Some points in regard to the diagnosis and treatment of cancer of the cervix. Dr. N. Percy Marsh: Infant feeding in difficult cases. Mr. G. B. Newbolt: Non-union and delayed union in fractures of the leg. Dr. R. J. M. Buchanan: (1) Auscultation and tuning-fork vibration: (2) Pulmonary affections and syphilis. Mr. W. Thelwall Thomas: Ureteral calculi (with specimens and rays). Dr. J. Lloyd Roberts: Some cases of mediastinal tumour. Dr. C. J. Macalister: Note on some therapeutic applications of pituitary extract.—H. JONES ROBERTS, Honorary Secretary, Penygroes, S.O.

SOUTHERN BRANCH.—The annual meeting of this Branch will be held at the Infirmary, Salisbury, on Thursday, July 14th, at 12.45.—J. OGDIN MARSH, Honorary Secretary.

British Medical Association.

NOTICE OF EXTRAORDINARY GENERAL MEETING.

NOTICE IS HEREBY GIVEN by the Council that, the following Resolution having been passed by the requisite majority at an Extraordinary General Meeting of the above-named Association, at the Connaught Rooms, Freemasons' Hall, Great Queen Street, London, on Wednesday, the 29th day of June, 1910, a further Extraordinary General Meeting of the above-named Association will be held at the Court of Common Council Chamber, Guildhall, London, on Friday, the 22nd day of July, 1910, at 2 o'clock in the afternoon, for the purpose of receiving a Report of the proceedings at the above-mentioned Meeting, and of confirming, if thought fit, as a Special Resolution the Resolution here set forth:

"That the Regulations contained in the printed document submitted to this Meeting, and for the purpose of identification initialled by the Chairman thereof, be and the same are hereby adopted as the Regulations of the Association in substitution for all the existing Regulations of the Association."

Dated this 30th day of June, 1910.

BY ORDER,
GUY ELLISTON,
Financial Secretary and Business Manager.

BRITISH MEDICAL ASSOCIATION LIBRARY.

BOOKS NEEDED TO COMPLETE SERIES.

THE Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

Asylum Journal of Mental Science. Vol. 1, 1854.
Bentley and Trimen. Atlas of Medicinal Plants.
British Journal of Dermatology. Vol. 2, part 3.
British Laryngological and Rhinological Association 1896–7–8–9, 1900, and since 1903.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Carmichael Essays. Rivington, 1879.
Centralblatt für Augenheilkunde. Hirschberg. All prior to 1891; Index to 1891.

British Medical Association.

SEVENTY-EIGHTH ANNUAL MEETING, LONDON, JULY 22nd–29th, 1910.

GENERAL ARRANGEMENTS.

THE Central Offices, Reception Room, and Sectional Meeting Rooms will be established in the University of London, the Imperial Institute, and the Imperial College of Science at South Kensington.

NOTIFICATION OF ATTENDANCE: RAILWAY TICKETS.

All members of the British Medical Association who purpose to attend the Annual Meeting in London at the end of this month, including those resident in London, are requested at once to fill up, if they have not already done so, the form of "notification of attendance" which appears in to-day's issue amongst the advertisements on pp. 9 and 10. If the form is filled up and returned to the address shown, a voucher or vouchers will be issued from the Central Office, 429, Strand, giving the right to the special terms which have been arranged with the railway companies. The companies will issue return tickets at a single fare and a quarter, available from July 21st to August 2nd, both dates inclusive.

LIST OF HOTELS AND LODGINGS.

A list of hotels and lodgings, with a scale of charges, was published in the SUPPLEMENT of June 18th, p. 406. Members are requested to communicate direct with the persons whose names are given in the list, or with the managers of the hotels mentioned.

GUIDE BOOK.

A short guide book has been compiled for distribution to members attending the Annual Meeting. It gives a brief sketch of the history of the medical institutions of London, and a general survey of the developments in scientific and practical teaching in the various schools, and of the enlargements and other changes of the hospitals and other medical institutions of the metropolis during the fifteen years that have elapsed since the British Medical Association held its Annual Meeting in London in 1895. The booklet also contains all the information necessary to enable members to find their way to the museums and other places likely to be of special interest to them. For this purpose the means of locomotion—by omnibus, tramway car, electric and tube railways—are described; and further help to the visitor in threading the labyrinth of London is given by diagrams and a coloured map.

RECEPTION ROOM.

The Reception Room will be established in the University of London and Imperial Institute, South Kensington. The University may be conveniently reached by electric tube or Underground Railways (South Kensington Station), or by omnibuses traversing Piccadilly. Copies of the *Daily Journal* will be obtainable, as well as full particulars of entertainments and excursions. Guide books, timetables, and other works of reference will be provided, and there will be a postal office for the receipt and dispatch of letters and telegrams. There will be writing and reading rooms, and a typewriting office; a typewriting office will also be established in the Imperial College of Science. Accommodation will be arranged for members desiring to smoke.

LUNCHEONS.

Luncheons will be provided daily in the Quadrangle of the Imperial Institute. Messrs. Stewart and Co., the caterers at Brooklands, have been appointed, and luncheons will be served at 2s. a head.

CLUB ACCOMMODATION.

The Club Accommodation Subcommittee of the Reception Committee beg to announce that a limited amount of accommodation has been offered to members of the Association and foreign visitors to the forthcoming Annual Meeting.

Those desirous of availing themselves of this club accommodation are requested to send in their names on the accompanying form, addressed to the Chairman of the Subcommittee, Dr. Maurice Craig, 429, Strand, W.C., on or before July 11th.

Application Form for Club Accommodation.

Name and titles .....

Address .....

.....

*Clubs of which applicant is a member..... (social and otherwise)

* This is for introduction purposes to the London club.

POST, TELEGRAPH, AND TELEPHONES.

Letters and Telegrams.

Full postal facilities for the receipt and dispatch of letters and telegrams will be provided in the Post-office which will be established in the Reception Room, University of London, South Kensington, S.W.

Telephones.

Two telephones will be available for the use of members in the Reception Room, and one in the Imperial College of Science.

SPECIAL SERVICE IN WESTMINSTER ABBEY.

The service in Westminster Abbey will be held at 3 p.m., on Wednesday, July 27th. The sermon will be preached by the Very Rev. the Dean of Salisbury. Special tickets of admission will be necessary, and as the accommodation is limited, early application for tickets to be reserved should be made to Dr. W. Griffith, 1, Chester Gate, N.W. Separate tickets admitting to the Abbey by different entrances will be issued to—

1. Men intending to wear academic costume (Form A).
2. Women intending to wear academic costume (Form B).
3. Men or women *not* intending to wear academic costume (Form C).

Robing rooms will be provided within the precincts of the Abbey. Members should therefore specify in their application which form of ticket they desire.

The final allotment of tickets will be made on Tuesday morning, July 26th, and tickets not previously forwarded by post will be issued in the Reception Room, University of London, South Kensington, on personal application.

This form of application may be cut out and used.

I wish to attend the service in Westminster Abbey, and shall be glad to have reserved for me, if available, a ticket of

Form {A* B* C*

If my ticket is forwarded by post please send it to the following address:

Name.....

Address.....

* For explanation of letters see above. Please strike out the two letters not required.

Special Service at Westminster Cathedral for Roman Catholic Members.

By the kindness of the authorities of Westminster Cathedral, special front places will be reserved at the Solemn High Mass at 10.30 a.m., or Vespers at 3 p.m., for as many Members of the British Medical Association as desire to attend either of these services on Wednesday, July 27th, and will notify their intention of being present. Special tickets will not be necessary, but members who desire to be present are asked to send a postcard intimating their intention to Dr. Finucane, 10, Ashley Place, S.W., so that a sufficient number of seats may be reserved.

ENTERTAINMENTS AND EXCURSIONS.

Special Notice.

Members are earnestly requested not to make application for tickets for functions unless they are confident of being able to attend, and to return IMMEDIATELY *any ticket allotted to them which they find themselves unable to use.*

Entertainments in London.

Annual Dinner of the Association.

The annual dinner of the Association will take place at the Connaught Rooms, Freemasons' Hall, Great Queen Street, W.C., on Thursday, July 28th, at 7.30 p.m. punctually.

The price of the dinner ticket is 10s. 6d., exclusive of wines. As the accommodation is limited, those desirous of attending should make early application to Mr. Atwood Thorne, 429, Strand, London. The necessary form of notification is published in the advertisement pages 9 and 10.

Ladies' Dinner.

A dinner for ladies accompanying those Members of the Association who are attending the annual dinner will take place at the Hotel Cecil on the same evening. Members attending the annual dinner and who are accompanied by a lady should advise Mrs. Mary Scharlieb, M.S., M.D., 149, Harley Street, London, if they desire to obtain an invitation for the ladies' dinner. A reception at the Lyceum Club has also been arranged.

Receptions.

A reception will be given at the Guildhall by the Corporation of the City of London, at 8.30 p.m. on Wednesday, July 27th, for which special tickets of admission will be required.

A reception will be given by the Metropolitan Counties Branch, at the Natural History Museum, Cromwell Road, South Kensington, on the evening of Friday, July 29th, for which 4,000 invitations will be issued.

A reception will be given at the Royal Army Medical College, Millbank, when a demonstration illustrating the equipment of foreign armies will take place.

Academic Dress.

Academic dress or uniform will be worn at the General Meeting at St. James's Hall, Great Portland Street, on Tuesday, July 26th, at 8.30 p.m., when Mr. Butlin will deliver his presidential address, and foreign guests and Colonial delegates will be presented and honorary members inducted.

Academic dress will also be worn at the service in Westminster Abbey on Wednesday afternoon, July 27th, at 3 p.m., and at the conversazione on Wednesday evening, July 27th, given by the Lord Mayor and Corporation of London at the Guildhall.

It is desired also that academic dress should be worn at the evening reception to be given by the Metropolitan Counties Branch at the Natural History Museum on Friday evening, July 29th.

Garden Parties.

The President and members of the Metropolitan Counties Branch will give a reception and garden party to 4,000 members and their friends in the picturesque Polo Grounds of the Ranelagh Club on the afternoon of Thursday, July 28th; for this also special tickets will be required.

The President, Treasurer, and Governors of the Royal Hospitals of Bridewell and Bethlem will entertain 500 at a garden party at Bethlem Royal Hospital on Wednesday afternoon, July 27th, for which special tickets will be required.

A luncheon and garden party will be given at St. Bartholomew's Hospital on Wednesday, July 27th.

Ladies' Reception Committee.

The Ladies' Reception Committee are making extensive arrangements for the entertainment of ladies accompanying members attending the Annual Meeting in London. In addition to the dinner mentioned above, arrangements have been made for several mornings and afternoons. On Tuesday, July 26th, visits will be made to the Sesame Training Home, Passmore Edwards Settlement, the School of Medicine for Women, and St. Paul's Cathedral; the visit to the School of Medicine for Women will take place at 11 a.m. On Tuesday afternoon Stafford House will be visited. On Wednesday morning visits will be paid at Apsley House, and at 11.30 a.m. to Westminster Abbey; in the afternoon Mrs. D'Arcy Power will conduct a party of seventy ladies and gentlemen over Barbers' Hall and St. Bartholomew's Priory. The party will be met in the square of St. Bartholomew's Hospital, West Smithfield, at 1.30 p.m., and will proceed to the Priory Church of St. Bartholomew's the Great, which is one of the oldest and most interesting in London. The Barbers' Hall in Monkswill Street, which is rarely open to the public, will be inspected at 3 o'clock by the kind permission of the Master and Wardens of the Barbers' Company, and a short sketch of its history and its relation to the development of British medicine will be given. Mrs. D'Arcy Power will be at home at 10A, Chandos Street, Cavendish Square. Tea at 5 o'clock. The distance to be walked during the afternoon is under a mile. On Thursday a visit will be made to the Tower at 11 a.m., and Miss Scharlieb will conduct a party over the Charterhouse and St. Giles's, Cripplegate. On Friday at noon a visit will be paid to Grosvenor House. The Chairman of the Committee is Mrs. Rose Bradford, and inquiries only concerning these may be addressed to the Honorary Secretary, Mrs. Dudley Buxton, 82, Mortimer Street, W. All applications for tickets must be sent to 429, Strand, W.C.

Visits to Private Mansions.

By the kindness of the Duke of Wellington, Westminster, and Sutherland, arrangements have been made for small parties of about twenty-five to visit the following mansions which contain fine collections of pictures and other objects of interest:

Apsley House, the residence of the Duke of Wellington.

Grosvenor House, the residence of the Duke of Westminster.

Stafford House, the residence of the Duke of Sutherland.

Visits to Various Places of Interest.

Members will have an opportunity of visiting the Royal Mews, Buckingham Palace, by kind permission of Sir Henry Ewart, Master of the Horse; special tickets will be required.

The new premises of the Royal Sanitary Institute, Buckingham Palace Road, will be open to members, who will be conducted over the Parkes Museum and the Institute.

The Society of Medical Officers of Health will throw open their rooms (1, Upper Montague Street, Russell Square) to members throughout the day, and provide tea between 4 and 5 o'clock. Admission by member's card.

Visits to the Tower of London have been arranged, and parties will be conducted by special warders.

Visits may also be made to the Royal Mint.

Visits to the various docks have been arranged by permission of the Port of London Authority.

A visit to the offices and printing works of the *Daily Telegraph* has been arranged.

The National Telephone Company will show its exchange station to members.

Members are invited to visit the Zoological Gardens on Sundays, July 24th or 31st. Application must be made for special tickets to 429, Strand, W.C. Representatives and Members of Council can obtain tickets for July 24th on application to Dr. Rowland Fothergill, Torquay House, Southfields, S.W.

EXCURSIONS.

Friday, July 29th.

ST. ALBANS.

The Mayor of St. Albans (Dr. E. H. Lipscomb) has invited a party of fifty members to St. Albans, where they will be shown over the cathedral and entertained by him to luncheon. Members will leave by the 12.15 or the 1 5 train from St. Pancras Station, which can be most speedily reached from the University by travelling by the Piccadilly electric tube railway from South Kensington Station.

Saturday, July 30th.

LORD MAYOR TRELOAR CRIPPLES' HOME AND COLLEGE.

Sir William Treloar has invited a party of 200 members to visit the Cripples' Home and College at Alton, Hampshire. A special train will leave Waterloo at 10.5 a.m., and will arrive at the platform in the grounds of the institution at 11.23; a return train will leave the same platform at 4.35, and is due to arrive at Waterloo at 5.54. The visitors on arrival will be conducted over the institution in separate parties by the sisters. Luncheon will be served in the grounds at 1 p.m. and tea at 4 p.m. After luncheon Sir William Treloar will give a short address, and papers will probably be read by members of the medical advisory board and by the medical superintendent, who will give a demonstration on the use of plaster-of-Paris.

BATH.

The Mayor and Corporation of Bath have invited 200 members to visit the city of Bath. The Corporation will arrange for conveying the members of the party to and from London in special trains from Paddington Station, and will entertain them at luncheon. The programme will include a visit to the hot mineral bathing establishments and a drive round the city. (The leading hotels are prepared to offer special terms to any member of the party desirous of staying the week-end in Bath)

EASTBOURNE.

The Eastbourne Division has invited 100 members to visit Eastbourne, where they will be entertained to luncheon, and will make an excursion to Beachy Head.

BRIGHTON AND HOVE.

The Corporations of Brighton and Hove will invite 100 members to visit these sister towns. After driving round the town of Hove, inspecting the Bath on the King's Esplanade, and visiting the St. Anne's Well Gardens, there will be an Official Reception and Public Luncheon at the Hove Town Hall. The luncheon is timed to take place at 1.45, after which the party will proceed to the Royal Pavilion, Brighton, where the Mayor of Brighton will receive them and entertain them to a garden party.

WINDSOR.

The arrangements have not yet finally been made, but there will probably be an excursion to Windsor to visit Windsor Castle and Eton College, and an excursion by train to Maidenhead, thence to Henley by launch, and return by train.

Members who have already notified their intention to attend the Annual Meeting will assist the Executive by filling up the following forms indicating which of the functions and excursions, of which particulars are given earlier in this article, they prefer to take part in. The forms, when filled up, should be addressed to Dr. Lauriston Shaw, 429, Strand. In the allotment of tickets, the numbers of which are limited, preference will be given to those who make early application. The allotted tickets will be retained by the Committee, and given out on personal application in the Reception Room, University of London, South Kensington, during the meeting.

I.

I should be glad to have an opportunity of attending the following functions, and have numbered them in order of my preference:

Order of Preference.	—
.....	The President's Address.
.....	The Corporation's Reception.
.....	The Metropolitan Counties Branch Reception.
.....	The Garden Party at Ranelagh
.....	The Garden Party at Bethlem Hospital.
	Applications for tickets for the Special Service in Westminster Abbey, the Annual Dinner, and for the various excursions should be made on the separate forms provided.

Name.....

Address.....

II.

I should be glad to have an opportunity of joining one of the following excursions, and have numbered them in order of my preference:

Order of Preference.	—
.....	Sir William Treloar's Cripples' Home.
.....	Bath.
.....	St. Albans.
.....	Eastbourne.
.....	Brighton and Hove.
.....	Windsor.

Name.....

Address .....

GOLFING.

The Ulster Cup.

A letter from Dr. F. J. Smith explaining the arrangements made for this annual competition, which is to take place at Burhill on Friday, July 29th, was published in the JOURNAL of July 2nd, p. 53.

It will be remembered that a cup was presented by the Ulster Branch last year, and is to be played for annually on the following conditions, as laid down by the Ulster Branch:

Bogey play under handicap, not exceeding 18; cup to become the property of the member of the Association winning it twice in succession, or three times in all; one round of 18 holes to be played on one day at the Annual Meeting, with no previous play.

The cup is a copy of the famous Ardagh Cup, which is in the National Museum in Dublin, and whose history is known from the eleventh century.

Dr. F. J. Smith gives notice that entries for the cup must reach him at 138, Harley Street, W., not later than Friday, July 15th. The links of the Burhill Golf Club are near Walton-on-Thames Station, which is easily reached from Waterloo Station, and Waterloo is itself easily and quickly reached from most parts of London by the Baker Street and Waterloo Tube railway, which has communications with the Central London Railway at Oxford Circus and with the Piccadilly Railway at Piccadilly Circus.

As will be seen from Dr. F. J. Smith's letter, the officers of the Burhill Golf Club have extended their hospitality a good deal beyond the arrangements for the Ulster cup competition, for they have offered the following additional facilities:

1. They have offered to make all members of the Association attending the annual meeting temporary members of the club for the Wednesday, Thursday, and Friday of the meeting.
2. They have, in the name of the Burhill Club, offered one, if not five, extra prizes for competitions to be determined later.
3. There are two courses at the club, so that possibly foursomes can be played after the competition proper is finished, or even simultaneously with it.

4. There will be an unlimited putting competition during Friday—cards, 6d. each—the pool to be divided in proportions to be determined later.

5. They have placed at the disposal of visiting members the catering establishment of the club, so that those who wish to do so can dine there in the evening at a reasonable cost.

6. There is ample accommodation for ladies, who can, at any rate, take out as many cards as they like for the unlimited putting competition, or, indeed, arrange one for ladies only.

Members intending to compete for the Ulster cup or in any other competitions will be required to furnish a certificate of their handicap signed by the club secretary. Further details, including the starting time, which must be strictly adhered to, will be posted in the Reception Room at the University of London, South Kensington, during the meeting.

Annual Match.

The usual annual match will take place on Wednesday afternoon, July 27th. It will be between the Metropolitan Counties Branch and the visitors, and it is hoped that at least twenty a side will take part. It will be played, by the kindness of the committee, on the well-known Northwood Links. All members who wish to play are asked to send their names at once to Mr. Percy Furnivall, 28, Weymouth Street, Portland Place, W., in order that the best selection available may be made. It is particularly requested that names should be sent in as early as possible, and each should be accompanied by the player's club and lowest handicap.

Honorary Membership of Clubs.

The following clubs have invited members to use their links: Acton, Ashford Manor, Burnham Beeches, Bushey Hall, Burhill, Edgware, Eltham Warren, Fulwell, Hanger Hill, Home Park, Mid-Surrey, Neasden, Princes', Richmond, Romford, Sandy Lodge, Sunningdale, Totteridge, Tooting Bec, Walton Heath, Wembley, West Middlesex, Royal Wimbledon, and Worplesdon.

Arrangements will be made by which members wishing to play a round may leave their names and handicaps at the Reception Room not later than the day before, in order that matches may be arranged.

ANNUAL REPRESENTATIVE MEETING.

A committee of the Metropolitan Counties Branch has issued a circular to Representatives of Divisions and members of the Central Council showing the arrangements which have been made for the entertainment of the members of the Representative Meeting on Saturday and Sunday, July 23rd and 24th. They include visits to Folkestone, with a day trip, if desired, to Boulogne, and to Maidenhead, with a day trip, if desired, to Henley. The members of the Representative Meeting will dine together on Friday, July 22nd, at 7.45 p.m. for 8 p.m., at the Waldorf Hotel. If any Representative or member of the Council has not received the circular, he is requested to communicate with the Secretary of the Committee, Dr. E. Rowland Fothergill, at 429, Strand, W.C.

Motor Garage.

It has been arranged with the Alveston Motor Garage, whose premises open out of Roland Gardens, South Kensington, London, S.W., to provide garage accommodation for members bringing their cars from the provinces. The charge will be 2s. a day, to include standing in a lock-up garage and use of electric light and water. Members desirous of availing themselves of this accommodation should make early application to the Alveston Motor Garage.

National Temperance Breakfast.

The Annual Temperance Breakfast will be held on the morning of Thursday, July 28th, at 8 a.m., under the presidency of Mr. Pearce Gould (Vice-President, Royal College of Surgeons of England).

THE MEDICAL MUSEUM.

In accordance with custom, a medical museum has been organized in connexion with the Annual Meeting. The function of this museum is twofold.

In the first place, it serves the office of safeguarding and displaying those specimens which are required to illustrate papers in the Sections; and, in the second place, it is intended to depict advances in medicine and the allied sciences within recent years. The specimens shown by members of the various Sections will be arranged so as to be readily accessible to the visitor and form a special feature of the museum.

In order that the museum may discharge its second function, it has been divided into sections, and each section has been placed under an honorary curator.

Alimentary system	Dr. Hertz, of Guy's Hospital.
Anaesthetic section	Dr. Ada M. Browne, of the Chelsea Hospital for Women.
Bacteriology	Dr. Henderson Smith, of the Lister Institute.
Cardio-vascular system ...	Dr. T. Lewis, of City of London Hospital.
Cancer Research	Dr. Murray, of the Imperial Cancer Research Fund.
General Surgical Pathology	Dr. Braxton Hicks, of the Westminster Hospital.
Genito-urinary system ...	Dr. Swift Joly, of St. Peter's Hospital.
Gynaecology	Dr. Helen Chambers, of the Royal Free Hospital.
Laryngology	Dr. Harmer, of St. Bartholomew's Hospital.
Neurology	Dr. Wilson, Queen Square Hospital.
Ophthalmology	Dr. Mayou, of the Paddington Green Children's Hospital.
Otology	Dr. Sydney Scott, of St. Bartholomew's Hospital.
Physiological and Pathological Chemistry	Dr. Ryffel, of Guy's Hospital.
Protozoology	Miss Muriel Robertson, of the London University.
Radiology	Dr. Ironside Bruce, of Charing Cross Hospital.
Respiratory System	Dr. Lakin, of Middlesex Hospital.
Tropical Medicine	Dr. Hutton, of the London School of Tropical Medicine.
Tuberculosis	Dr. Petrie, of the Lister Institute.

In most of the departments special attention has been given to the illustration of methods. In view of the increasing importance of protozoology to general medicine, it was thought that something approaching a complete series of parasitic protozoa might be exhibited with advantage to the practitioner. Many of these forms of life, it is true, are not at the present time found in man, but each series illustrates a type, and is of theoretic importance to-day, and may be of practical importance to-morrow. A number of life-cycles have been set up, and the visitor will be struck by the excellence of the specimens. Over 100 microscopical specimens are on view in the sections of protozoology and tropical medicine alone.

The museum, which is situated in the Elementary Physics Laboratory in the Imperial College of Science, will be open from 10 a.m. till 5 p.m. on each day, and notice of special demonstrations given by the honorary curators at convenient times will be posted at the doors. A catalogue has been compiled and will be distributed to visitors in the museum.

The Annual Exhibition.

The annual exhibition of surgical instruments, drugs, foods, books, and sanitary appliances will be held in the Great Hall and West Gallery of the Imperial Institute, the Jehanghier Hall being reserved for *x*-ray and high frequency apparatus. The exhibition will be opened from 9 a.m. to 6 p.m. from Monday, July 25th, to Friday, July 29th, inclusive.

THE SECTIONS.

The following additional information has been received between June 25th and July 6th.

MEDICAL SOCIOLOGY.

President: JAMES ALEXANDER MACDONALD, M.D., Taunton.

Vice-Presidents: R. COCHRANE BUIST, M.D., Dundee; MAJOR GREENWOOD, M.D., London; HUGH R. KER, F.R.C.S.Edin., London; Professor JAMES T. J. MORRISON, M.B., Birmingham.

Honorary Secretaries: DONALD JOHN ARMOUR, F.R.C.S., 89, Harley Street, W.; HARVEY HILLIARD, M.R.C.S., 30, Wilton Place, Knightsbridge, S.W.; JAMES HENRY TAYLOR, M.B., 299, Eccles New Road, Salford.

The following is a provisional time table of the subjects selected for discussion. A syllabus is appended in each case.

Wednesday, July 27th, 10 a.m.

I.—THE ECONOMIC BASIS OF HOSPITAL MANAGEMENT.

1. *Provision of Funds:*—
Proportion of payments by—

i. Public grants:
Asylum boards,
Corporations,
Boards of guardians,
Education committees.

ii. Charitable or philanthropic:
Sunday funds,
Works collections,
Private subscribers and endowments.

iii. Payments by patients.

2. *Conditions of Admission:*—
In and out patients:

i. Free,
ii. Subscribers' letters,
iii. Partial payments,
iv. Recommendation by public bodies,
v. Almoners.

3. *Professional:*—
Staff:

i. Public subscriptions,
ii. Private subscriptions.

Principles of Resolutions adopted by the Association.

In the case of patients maintained from public funds, the medical service should be paid.

In the case of patients maintained from charitable funds, the medical service should be charitable.

In the case of patients paying for themselves, the medical service should be chosen by the patient and paid for by him.

4. *The Economic Basis of the Out-patient Department:*—

(*a*) Consultative.
(*b*) Dispensary:

i. From the professional point of view,
ii. From the patient's point of view,
iii. From the hospital point of view.

The discussion will be opened by Professor Benjamin Moore, followed by Sir Henry Burdett, K.C.B., Dr. Rentoul, Dr. Saundby, Mr. Hugh R. Ker, Dr. Mackintosh, Dr. Lauriston Shaw, and many others.

Professor BENJAMIN MOORE (Liverpool) will speak on the following points: (1) The fundamental notion that a hospital is an eleemosynary institution dependent upon charity is erroneous. The hospital ought to be regarded from the point of view of economics as an institution for the study and treatment of disease which cannot be adequately performed elsewhere, and hence as an institution for the benefit of the community or State, rather than primarily that of the individual. (2) The conception of a hospital as a voluntary charity produces the evil of two distinct types of hospital—namely, the Poor Law and the voluntary hospital, existing for two kinds of necessitous people, whereas there should be but one type of hospital. (3) As a result of the operation of No. (2), there arises the view in the lay mind that it is a disgrace to be attended in a Poor Law hospital, but that attendance in a voluntary hospital is no evidence of poverty, and even is a thing which can be claimed as a right by all. (4) An attempt should be made to place all hospitals on a common basis, and to insist that admission, except to accidents, should only be allowed upon a doctor's certificate that the case can be best treated in a hospital. (5) Persons possessing means admitted to a hospital, because their illness can best be treated there, should be compelled to pay, and the fees should be paid over to those giving them attention, or who have sent them in. (6) The view which regards the doctor in the hospital as a philanthropist should be discouraged, the present system of paying back consultants in kudos or by introductions to practitioners should be abandoned as a radical evil, and these physicians and surgeons should be properly paid for their work like any other body of public servants. (7) The system of voluntary hospitals is a failure, because of the facts (*a*) that these hospitals undertake a great deal of work which should not be done in hospital at all. (*b*) they leave undone a great deal of work which ought to be done, and (*c*), especially in their out-patient departments, they waste an inordinate amount of the time of workers in the community. The system of Poor Law hospitals is also a failure, first, because of the taint of the Poor Law system; secondly, because the attention to patients is inadequate, although the resident officers are sweated in their work, and a great deal of truly medical work is performed by nurses instead of by medical men who alone can perform such work properly; and, thirdly, because the hospitals are antiquated, insanitary, and overcrowded, so spreading disease from patient to patient and depreciating the health of the people. To replace this a properly organized, adequate, modern service of State hospitals is required, in which all cases shall be properly attended to by properly qualified and adequately paid medical officers. The reason for such a system is not charity or philanthropy, but purely and simply the economic demand for a healthy people, physically fit and capable of carrying on the work of the country; such a system will repay itself over and over again even from the monetary point of view, not to mention matters more important than money. (8) Since all medical service would be paid for under such a system, either by State or individual, the doctor does not suffer, he is able to carry out his work under better economic and social conditions, and the public have an infinitely better service. It is further obvious that hospital abuse is impossible, and many other evils, for the profession itself works the system and lay committees and charitable donors with their well-meant but unscientific interference have ceased to exist.

Friday, July 29th.

III.—SOCIAL ASPECTS OF THE FALLING BIRTH-RATE.

1. The facts: (*a*) Comparative national statistics; (*b*) comparative social statistics—that is, evidence as to the relative rates of decline in various social strata.

2. The factors: (*a*) spontaneous; (*b*) artificial.

3. The effects: (*a*) on selection, reproductive from more fertile classes natural, comparative class death-rates, infantile and juvenile; (*b*) on national efficiency, industrial, professional, and military; (*c*) on character, individual and national.

Problems for Discussion.

(*a*) Biological gain or loss in the process and its controllability.

(*b*) Methods of control, economic, ethical, medical.

The discussion will be opened by Dr. J. W. Ballantyne (Edinburgh), Dr. Fremantle, M.O.H. Herts, Dr. Gilchrist (Nice), and Dr. J. W. Hunter.

The following is a synopsis of Dr. J. W. Ballantyne's paper:

Tennyson's "torrent of babies" now reduced to a rivulet. The dangers of any attack upon the monogamic marriage shown in Rome under Augustus; the present-day dangers of an attack upon the constitution of the family as the sociological unit. Definition of the family. Some causes of the falling birth-rate; they cannot from their nature be easily counteracted; indication of the most hopeful lines of advance. The conservation of existing lives (antenatal and neonatal) and the prevention of the present wastage due to frequent abortion and stillbirth, neglect of maternal health in pregnancy, defective hygiene in the case of newborn infants, the divided duties of the working married woman, and the like. The ultimate restoration of the normal birth rate is not hopeless, but the tide is still flowing in the other direction. What shall be the immediate and future means of facing the existing situation?

Paper:

Gilchrist, Dr. A. W. (Nice). A Study in Eugenics or Genetics.

NAVY, ARMY, AND AMBULANCE.

President: Colonel Andrew Clark, A.M.S.(T.F.) London.

Vice-Presidents: Fleet Surgeon Percy W. Bassett-Smith, R.N., Haslar; Lieutenant-Colonel James Harper, R.A.M.C.T., London; Lieutenant-Colonel Michael W. H. Russell, R.A.M.C., London; Lieutenant-Colonel Robert J. S. Simpson, C.M.G., R.A.M.C., London.

Honorary Secretaries: Staff Surgeon James Garfit Wallis, M.B., R.N., Royal Naval Barracks, Chatham; Major Alfred Percy Blenkinsop, R.A.M.C., c.o. Messrs. Holt and Co., 3, Whitehall Place, S.W.; Major Arthur M. Connell, R.A.M.C.T., 79, Hanover Street, Sheffield.

The following programme has been arranged:

Wednesday, July 27th.—Papers:

Spencer, Major C. G., R.A.M.C. Local and Spinal Analgesia in Relation to Active Service.
Wildey, Fleet Surgeon, A. G., R.N. Hypodermic Injection in Action.
Wilson, Lieutenant-Colonel E. M., C.B., C.M.G., D.S.O., R.A.M.C. Medical Requirements in War for Assisting the Royal Army Medical Corps on Mobilization.

Thursday, July 28th.—Papers:

Pryn, Fleet Surgeon W. W., R.N. Colour Vision.
Collingwood, Fleet Surgeon G. T., R.N. Naval Recruits.
Lloyd, Captain Langford, D.S.O., R.A.M.C. Education and Intelligence from a Recruiting Point of View, with special regard to the Royal Army Medical Corps Regular and Territorial Service.
Giles, Colonel P. D., V.D. Training of Medical Units.

Friday, July 29th.—Papers:

Cummins, Major S. L., R.A.M.C. Isolation of Disease Carriers and Methods of Dealing with Them.
Cope, Surgeon L. F., R.N. Air and Ventilation in Modern Warships.
Clayton, Fleet Surgeon F. H. A. Tuberculosis in the Navy.

OTOLOGY

President: Edward Law, M.D., London.

Vice-Presidents: Albert Alexander Gray, M.D., Glasgow; Hunter F. Tod, M.D., London; Frederick H. Westmacott, F.R.C.S., Manchester.

Honorary Secretaries: Cecil Irving Graham, F.R.C.S., 47, Queen Anne Street, W.; Herbert James Marriage, F.R.C.S., 109, Harley Street, W.

The following subjects have been selected for special discussion:

Wednesday, July 27th.—Discussion on Aural Tuberculosis in Children. [The discussion will be limited to diagnosis, prognosis, and treatment, without details of operative procedure.] To be opened by Dr. W Milligan.

The following is an abstract of the opening paper:

Dr. Milligan will deal, in the first instance, with the frequency of aural tuberculosis in childhood, and will discuss in detail the usual routes of infection. The importance of recognizing the disease as of primary origin in the middle-ear cleft in a large proportion of the cases met with will be insisted upon. The main symptoms of aural tuberculosis—subjective and objective—will then be considered, and the various methods of establishing a definite diagnosis described and criticized. The complications most frequently met with will be enumerated and their relative importance dealt with. The important questions of prognosis and of treatment will be discussed and the results of treatment analysed. Suggestions will be made as to how to deal with cases of aural tuberculosis in school children, as to how to prevent dissemination of disease, and as to the advisability or otherwise of isolating infected children.

Thursday, July 28th.—Discussion on the Diagnosis and Treatment of Infective Labyrinthitis, to be opened by Docent Dr. Robert Bárány (Vienna), and Mr. C. E. West.

The following are abstracts of the opening papers:

(*a*) Dr. Bárány (Vienna) distinguishes the following forms of the disease: (1) Acute purulent labyrinthitis. (2) Latent purulent labyrinthitis. (3) Fistula of the labyrinth with intact membranous labyrinth (circumscript labyrinthitis). (4) Fistula of the labyrinth with slight lesion of the membranous labyrinth. (5) Fistula of the labyrinth with severe lesions of the membranous labyrinth. (6) Serous labyrinthitis. The differential diagnosis between these diseases is made possible by investigation of the condition of the semicircular canals, the methods of which were partly originated, partly worked out by the author. The most important sign of the diseases of the semicircular canals is the spontaneous vestibular nystagmus, which may be present either continuously (acute labyrinthitis), or only during attacks (circumscript labyrinthitis). The investigation into the function of the semicircular canals consists in the experimental irritation of the canals by means of (1) turning, (2) rapid head movements, (3) syringing with cold and hot water, (4) galvanization, (5) compression and aspiration of the air in the meatus. All these different irritations produce quite definite forms of vestibular nystagmus, which must be observed carefully. Also intracranial diseases produce vestibular nystagmus, especially those of the posterior fossa (cerebellar abscess, meningitis). The author gives the differential diagnosis between the diseases of the labyrinth and the intracranial complications which often accompany the labyrinth trouble. This diagnosis is built upon the observation of the spontaneous nystagmus and the exact examination of the irritability of the semicircular canals.

(*b*) C. Ernest West: Infections of the labyrinth may be either pyogenic or non-pyogenic; the former constitute the main subject of the paper. Pyogenic infection may be either diffuse or localized to a portion of the labyrinth; this part may be restricted to the labyrinthine wall. Diffuse infection may be either acute or chronic; localized infection is always chronic. Necrosis of the labyrinthine capsule may take place in either acute or chronic conditions. The dangers and incapacities caused by infective labyrinthitis. Treatment of infective labyrinthitis chiefly operative by the necessity of the case. The aims of operative treatment. The treatment of chronic local infections by the radical mastoid operation and curettage. The operative treatment of the diffuse infections, whether acute or chronic, by drainage of the labyrinth. The vestibulotomies, inferior and double—technique and after-treatment. Tuberculous labyrinthitis. Necrosis of the labyrinthine capsule. Non-pyogenic infections of the labyrinth, syphilis, mumps. Non-suppurative labyrinthitis in otitis media.

After the discussion a demonstration with the Epidiascope of specimens illustrating diseases of the labyrinth will be given by Professor A. Politzer of Vienna.

Friday, July 29th.—Papers:

Horne, Dr. Jobson. Deafness and Diseases of the Ear in relation to the Public Services and Insurance; and their Bearing upon Forensic Cases and the Choice of a Means of Earning a Livelihood.

YEARSLEY, Mr. Macleod. The Value of Ossiculectomy in Chronic Middle-Ear Suppuration.
HOVELL, Mr. Mark. Some Remarks on the Connexion between Affections of the Mucous Membranes throughout the Body and Middle-Ear Disease.
BARR, Dr. J. Stoddart. Experiments bearing upon the Practicability of Treating Meningitis (septic and specific) by Means of Lavage of the Cerebro-Spinal Subarachnoid Spaces; preliminary communication.

Members are invited to contribute any preparations, specimens, or drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects.

PHYSIOLOGY.

President: Professor WILLIAM H. THOMPSON, M.D., Dublin.

Vice-Presidents: JOHN SCOTT HALDANE, M.D., F.R.S., Oxford; Professor PERCY THEODORE HERRING, M.D., St. Andrews, N.B.

Honorary Secretaries: T. GRAHAM BROWN, M.B., Physiological Department, University, Glasgow; J. STRICKLAND GOODALL, M.B., Physiological Laboratory, Middlesex Hospital, W.

The following programme has up to now been arranged:

Wednesday, July 27th.—Opening remarks by the President, Professor W. H. Thompson. Discussion on the Food Requirements of Man for Sustenance and Work. To be opened by Lieutenant-Colonel Melville, R.A.M.C.; followed by Professor J. G. Hopkins, Professor Haldane, Dr. M. S. Pembrey, Dr. Robert Hutchison, Dr. Chalmers Watson, and others.

The following is a synopsis of Lieutenant-Colonel MELVILLE'S paper:

Discussion of a concrete case. Subject of experiment, 20 infantry soldiers, taken at random. Average weight, 64 kg. Duration of experiment, 12 days. Average amount of work done, internal and external, 4 034 calories per diem. Internal work placed at 3,000 calories. Reasons for this estimate given. Food supplied:—First six days: Proteids, 190 grams; carbohydrates, 510 grams; fat, 58 grams. Second six days: Proteids, 145 grams; carbohydrates, 450 grams; fat, 110 grams. Average: Proteids, 168 grams; carbohydrates, 480 grams; fat, 84 grams. Energy value: First six days, 3,426 calories; second six days, 3 503 calories; average, 3,481 calories, or net 3,140 calories (10 per cent. deducted); deficit, about 890 calories. Effect on weight and condition: General rise in early part of experiment, followed by steady fall during latter part. Discussion of primary rise in weight: Attributed to retention of proteid, the result of stimulus to muscular activity given by marching, *plus* increase in amount of proteid and carbohydrate ingested in comparison with barrack rations. Discussion of secondary fall: Daily loss of weight during second period roughly about equal to estimated deficit of energy supplied in food during that period. Illustration from starvation experiment by Benedict. Discussion of amount of proteid ingested: Reasons for believing that allowance in second week not at all too high. Difficulty in giving proteid ration on active service. Variety more important than actual quantity. Discussion of carbohydrates: Limitations as regards amount of starchy food that can be eaten by certain classes. Discussion of fats: Craving for fat felt in second week of experiment, even on allowance of 110 grams. Suggestion for discussion: Given a demand for 5,000 calories of energy, of which 2,600 are given in the form of beef and biscuit (the conditions of first six days), in what proportions should fats and sugars be given to supply the deficit of 1,400 calories?

PSYCHOLOGICAL MEDICINE AND NEUROLOGY.

President: THEO. BULKELEY HYSLOP, M.D., F.R.S.E., London.

Vice-Presidents: ARCHIBALD R. DOUGLAS, L.R.C.P., Lancaster; WILLIAM GRAHAM, M.D., Belfast; THOMAS D. GREENLEES, M.D., London; J. RISIEN RUSSELL, M.D., London; DAVID G. THOMSON, M.D., Norwich.

Honorary Secretaries: ARTHUR STANLEY BARNES, M.D., 141, Great Charles Street, Birmingham; ROBERT HUNTER STEEN, M.D., City of London Mental Hospital, Dartford; REGINALD JOHN STILWELL, M.R.C.S., Moorcroft, Hillingdon, Uxbridge.

Thursday, July 28th.—Discussion on the Treatment of Tabes. To be opened by J. Risien Russell, M.D., London. The following will take part in the discussion: Drs. David Ferrier, Byrom Bramwell, Ernst Feibes, Alexander Bruce, Lieven, Judson Bury, J. Michell Clarke, and G. Farquhar Buzzard.

The following is a synopsis of Dr. RISIEN RUSSELL'S opening statement:

The only rational treatment of the disease is that based on a correct conception of its etiology and pathology. The evidence in support of the belief that the disease owes its origin to syphilis far outweighs that which can be adduced in favour of any other view of its etiology. It is impossible to overestimate the importance of antisyphilitic treatment of the affection. It is contrary to fact that the subjects of tabes are made worse by antisyphilitic treatment. Mercury is the drug on which most reliance is to be placed. The plan of exhibiting the drug by inunction, which is in vogue at Aachen (Aix-la-Chapelle) either alone or in conjunction with intramuscular injections, is that to be recommended. Difficulties of securing efficient conduct of the treatment in this country. No reliance should be placed on the administration of mercury by the mouth. Adjuncts in the treatment. Precautions that are necessary while it is in vogue. Contraindications to the treatment. A long interval between the primary syphilis and the occurrence of tabes is no necessary bar to the possibility of good resulting from the treatment. Statistics that appear to prove that the more the primary syphilis is treated by mercury the shorter the interval before tabes develops, should not be allowed to deprive the patient of the only rational method there is of treating his disease. The fact that the primary syphilis has been well treated is no adequate reason why antisyphilitic treatment should be withheld from the patient suffering from tabes.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held at Caxton House, Westminster, on June 30th, with Sir FRANCIS CHAMPNEYS, Bart., in the chair.

Honour to Chairman.

The following resolution was unanimously passed:

That the hearty congratulations of this Board be accorded to its Chairman on the distinguished honour conferred on him by the King, an honour they feel he so well deserved for the dignity, courtesy, and impartiality with which he has presided over the Board's deliberations since its commencement.

Suspension of Midwives.

A letter was considered from Miss F. M. Bernard-Boyce, Inspector of Midwives for the County of Norfolk, stating that the period of suspension for the purpose of disinfection in that county had been reduced to seven days. The Board passed the following resolution:

The Board considers that it is unfortunate that the arrangements for disinfection in the County of Norfolk are so far from adequate, and hopes that they will be provided without delay.

A second letter was considered from Miss F. M. Bernard-Boyce, inquiring whether the local supervising authority has power to suspend a midwife, for the purpose of preventing the spread of infection, on the ground that she has been in attendance on a case of puerperal fever as a maternity nurse, and not as a midwife.

The Board decided to reply that the local supervising authority has power to suspend a midwife under the circumstances mentioned.

Retirement of Midwives.

A third letter was considered from Miss F. M. Bernard-Boyce suggesting that women whose names had been removed from the roll on their own application should be entitled to receive from the Board a document vouching that they had been duly certified by the Board, and that being desirous of retiring from practice they had voluntarily resigned their certificate.

The Board decided that in the case of certificates voluntarily surrendered the cancellation should be effected by writing across the face of the certificate the words, "Cancelled at her own request." The certificate may then be returned to the holder.

Provision of Midwives by the State.

A letter was considered from the Right Hon. G. W. Palmer, of Newbury, as to the difficulty of maintaining midwives in country districts by voluntary efforts, and the necessity of their provision by the State.

The Board instructed the Secretary to reply that the Board had considered the question at the instance of the President of the Local Government Board, and thought that it was desirable that the State should subsidize midwives for poor and sparsely populated districts unreached by existing institutions.

Midwives and Pupils.

A letter was considered from the British Medical Association as to the danger of midwives employing their pupils as substitutes, and suggesting that a midwife should be made directly responsible for any misconduct on the part of her pupil.

The Board decided that the British Medical Association be informed that a midwife employing a pupil is already responsible to the Central Midwives Board for any breach of the rules by her pupil.

Complaint Against a Midwife.

A letter was considered from Dr. J. Lloyd Davies of Newport, Mon., complaining of the conduct of a certified midwife.

The Board decided that Dr. J. Lloyd Davies be informed (1) That as regards the complaint, it did not appear to come under the jurisdiction of the Board. (2) That as regards the alleged breach of the Board's rules on the part of the midwife, the proper quarter to which complaint should be made in the first instance was the local supervising authority. If that body found a prima facie case within the meaning of Section 8 (2) of the Midwives Act to be established against the midwife, the Board would then proceed to deal with the matter.

Practice of Midwifery by Unqualified Men.

A letter was considered from Sir Donald MacAlister, President of the General Medical Council, as to the practice of midwifery by unqualified men.

The Board decided that a copy of the Board's resolution of May 26th, 1910, dealing with the practice of midwifery by unqualified men, be forwarded to the President of the General Medical Council. [The resolution was to the effect that the Board should make representations to the Privy Council as to the desirability of amending the law so as to prevent the practice of midwifery by unqualified men.]

Amendment of Midwives Bill.

A letter was considered from the Clerk of the Worcestershire County Council, suggesting an amendment of Clause 17 of the Midwives Bill, 1910, and the Board suggested that the Worcestershire County Council should communicate direct with the Privy Council.

Exemption from Supervision.

Correspondence which had passed between the Secretary and the Monmouthshire Training Centre for Midwives as to an application by that body for the grant of exemption from supervision by the local supervising authority was considered.

The Board directed the Secretary to reply, pointing out that the Board has no power to grant exemption from supervision further than that which is automatically conferred by Rules E, 24 and 25.

CORONERS' LAW AND DEATH CERTIFICATION (AMENDMENT) BILL.

THIS bill was presented on April 27th by Sir William Collins, supported by Colonel Lockwood, Sir Philip Magnus, Sir Luke White, Dr. Hillier, Dr. Chapple, and Mr. O'Grady.

MEMORANDUM.

This bill, which does not apply to Scotland or Ireland, is intended to remove certain anomalies in the law relating to coroners and inquests, and to the certification of deaths, disclosed by reports of several committees during recent years.

The Coroners Act, 1887, did little more than codify the principal features of the law and practice of coroners, which had become confused and complicated by numerous statutes dating from the reign of Edward I. In 1893 a Select Committee was appointed to "inquire into the sufficiency of the existing law as to the disposal of the dead, for securing an accurate record of the causes of death in all cases, and especially for detecting them where death may have been due to poison, violence, or criminal neglect." The report of that committee indicated the urgent necessity for reform. The Inter-Departmental Committee on Physical Deterioration which sat in 1903 also directed attention in their report to the dangers incidental to the defects in the law relative to the registration and certification of deaths and recommended the registration of stillbirths.

The law relating to coroners is not adapted to modern necessities, its administration is costly to local authorities without securing efficiency in results.

In December, 1908, a Departmental Committee of the Home Office was appointed to inquire into the law relating to coroners and coroners' inquests, and into the practice in coroners' courts.

The provisions of this bill are intended to give effect to many of the recommendations of the Departmental Committee of 1908 and of the Death Certification Committee of 1893.

The report of the Departmental Committee drew attention to anomalies existing in the appointment of coroners in certain "franchise districts," in the qualifications required of coroners, the conditions of their appointment, the mode of their remuneration, the provision of deputies, the areas of jurisdiction, etc.

The law does not at present contemplate inquiry by a coroner except in view of a subsequent formal inquest, nor can he order a *post-mortem* examination except in a case of inquest. The coroner's officer, to whom important duties are confided, is an official unknown to the law. The viewing of the body by the jury is still compulsory though no longer deemed necessary in all cases. Attention was also directed by the committee of 1908 to the need for better provision in regard to skilled medical investigators and to the remuneration of medical witnesses.

The Departmental Committee recall the findings of the Select Committee on Death Certification of 1893, which have not hitherto been the subject of legislation, as bearing directly on the functions of the coroner. Thus at present the law does not require a certificate of death to certify as to the fact of death or the identity of the deceased, but merely the cause of death. They further state that "it is no fault of the law if premature burials do not take place. The present law of death certification offers every opportunity for premature burial and every facility for concealment of crime."

ARRANGEMENT OF CLAUSES.

PART I.

CORONERS.

Clause.

1. Appointment of coroners. Coroners' districts.
2. Payment of coroners.
3. Retirement of coroners.
4. Superannuation of coroners.
5. Qualifications of coroners.
6. Deputy coroners.
7. Coroners' courts, etc.
8. Service of summonses, etc.
9. Inquiry without inquest.

Clause.
10. Medical investigators.
11. Medical witnesses' fees.
12. View of body at inquest.
13. Records.
14. Rules for guidance of coroners.
15. Definition of "coroner."

PART II.
REGISTRATION AND CERTIFICATION OF DEATH AND BURIAL.
16. Production of certificate of death.
17. Inspection and identity of dead body.
18. Form of death certificate.
19. Filing of certificate of death.
20. Notification of death.
21. Penalties.
22. Inspection of certificates of death by coroners.
23. Certificates of burial.
24. Retention of unburied bodies.
25. Definition of "certificate of death."

PART III.
MISCELLANEOUS.
26. Definition of "dead body" and "person."
27. Construction, citation, and repeal.
SCHEDULES.

A BILL to amend the law relating to coroners' law and the certification and registration of deaths and burial.

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

PART I.
CORONERS.

1. *Appointment of Coroners.*—(1) Except as provided by section twenty-nine of the Coroners Act, 1887, section one hundred and seventy-one of the Municipal Corporations Act, 1882, or section five or section thirty-four of the Local Government Act, 1888, every power to appoint a coroner shall cease upon the first occurrence of a vacancy in the office of coroner after the *commencement of this Act.*

(2) Upon the occurrence of a vacancy as aforesaid the district in respect of which the vacancy occurs shall cease to be a separate coroner's district:

Coroners' Districts.—Provided that where such district or any part of such district is included within the district of a borough coroner, it shall, upon the occurrence of such vacancy as aforesaid, be deemed to form part of such borough coroner's district, and where such district or any part of such district is included within any area under the jurisdiction of a council whose duty it is to appoint a coroner or coroners under the Local Government Act, 1888, such district or any part of such district shall be deemed to be included within the area in respect of which such council must appoint a coroner or coroners, and the council may assign such district or part of such district to one of the existing county coroners, or may present a petition to His Majesty for the rearrangement of the county into districts in the manner provided for in the Coroners Act, 1844.

(3) Where the district and duties of a coroner are increased in consequence of this section, it shall be the duty of the county or borough council, as the case may be, to reconsider the question of the salary assigned to such coroner.

(4) The district of every franchise coroner may cease to be a separate coroner's district at any earlier date than that of avoidance of office of coroner by agreement between the county or borough council and the person or persons who at present exercise the right of appointment to the franchise.

2. *Payment of Coroners.*—There shall be paid to every coroner such salary as the authority by whom he is appointed and paid may decide, provided that after the lapse of five years from the date of appointment of the coroner, and of every successive period of five years, it shall be lawful for the authority to revise and thereby increase or diminish such salary, and if the coroner is dissatisfied with such revision the Secretary of State may determine the amount of such salary on the application of either the authority or the coroner.

3. *Retirement of Coroners.*—Every coroner shall cease to continue to hold the office of coroner on reaching the age of sixty-five years, provided that the Secretary of State may continue such coroner in office for a further period not exceeding five years on the application of either the authority by whom he was appointed or the coroner.

4. *Superannuation of Coroners.*—Any local authority who appointed a coroner may grant to him, if he is a whole-time officer, and if by reason of compulsory retirement or from infirmity he becomes incapable of executing the duties of his office, an annuity by way of superannuation allowance for such an amount, and under such regulations, as may be prescribed by the Secretary of State, and such allowance shall be defrayed out of the fund from which the salary or fees of such coroner would have been paid if he had continued in office.

5. *Qualifications of Coroners.*—No person shall be appointed a coroner unless he be a practising barrister of not less than five years' standing, or a solicitor of not less than five years' standing, or a registered medical practitioner who is also a barrister or a graduate in law of a university in the United Kingdom, provided that no member of the authority making the appointment, nor any person who has been a member of such authority within a period of twelve months immediately before the making of the appointment, shall be eligible for appointment as a coroner by such authority.

6. *Deputy Coroners.*—Within six months after *the passing of this Act* every county and borough council shall appoint a deputy coroner to the coroner in each district of the county or borough, and shall further appoint a second deputy to each such district or borough to act in times of emergency when the first deputy coroner is unable to perform the duties of coroner. Every such deputy coroner, when acting as coroner, shall be paid such remuneration out of the fund from which the coroner is paid as the Secretary of State may approve.

7. *Coroners' Courts, etc.*—Every coroner's district shall be provided by the authority who appoints the coroner with suitable accommodation for holding inquests, and with a coroner's officer or officers and other assistance as may be necessary for the proper carrying out of the duties of the office of coroner.

8. *Service of Summonses, etc.*—Every summons, warrant, notice, or other document issued by a coroner, and requiring personal service, shall be served only by the coroner's officer, who shall be duly sworn in as a constable before a justice of the peace for the district in respect of which he is acting.

9. *Inquiry Without Inquest.*—(1) Notwithstanding anything in subsection (1) of section three of the Coroners Act, 1887, a coroner after due inquiry into any case referred to him may decide not to hold an inquest if he is satisfied that the deceased died a natural death.

(2) For the purposes of an inquiry under this section, the coroner may order a *post-mortem* examination, and the cost of such examination, being such sum as the Secretary of State may by regulation prescribe, shall be defrayed as if the examination were made in connexion with an inquest.

10. *Medical Investigators.*—Any county or borough council may appoint one or more medical investigators or pathologists in each coroner's district to assist the coroner in his inquiries and inquests and to make *post mortem* examinations. Such medical investigators or pathologists shall be paid such remuneration out of the county or borough rate as the county or borough council may determine.

11. *Medical Witness's Fees.*—(1) Where a medical witness is not a medical investigator or pathologist appointed by the county or borough council he shall be entitled to receive such remuneration as the Secretary of State shall by regulation prescribe.

(2) Section twenty-two of the Coroners Act, 1887, shall be repealed as from the date when a regulation made under this section shall come into operation.

12. *View of Body at Inquest.*—(1) Notwithstanding the provisions of subsection (1) of section four of the Coroners Act, 1887, it shall not be necessary for the

jury at any inquest to view the body unless the coroner or, at any time during the first sitting of the inquest, a majority of the jury shall deem a view necessary.

(2) Subsection (6) of section eighteen of the Coroners Act, 1887, shall be construed as if the words "the first sitting of the inquest" were substituted for the words "view of the body."

13. *Records.*—Every coroner shall cause a record of every inquiry and inquest to be kept, and shall transmit such record to the clerk of the council or borough council, as the case may be, and it shall become the property of such county council or borough council, as the case may be, and such record shall be so made and transmitted as the Secretary of State may by regulation prescribe.

14. *Rules for Guidance of Coroner.*—The Secretary of State may frame rules and orders for regulating the procedure or practice of coroners' inquiries and coroners' courts and forms of proceedings therein, the fees to be charged for copies of depositions, records, or any document in the custody of the coroner or the local authority, and any other matter not regulated by statute on which it may, in the opinion of the Secretary of State, be desirable to prescribe the practice of coroners, and may from time to time amend such rules, orders, forms, and fees.

15. *Definition of "Coroner."*—In this part of this Act, except for the purposes of section four, the expression "coroner" shall include deputy coroner.

Part II.

Registration and Certification of Death and Burial.

16. *Production of Certificate of Death.*—No death shall be registered under the Registration Acts without the delivery to the registrar of a certificate of death duly signed by a registered medical practitioner, or by a coroner, after holding an inquiry or inquest.

17. *Inspection and Identity of Dead Body.*—Before giving a certificate of death, a registered medical practitioner shall personally inspect the body and identify it as the body of the person named in the certificate whom he has attended during his last illness, and shall certify to the fact of death as well as to its cause.

18. *Form of Death Certificate.*—(1) Every certificate of death shall be in the form set forth in the First Schedule to this Act or in such other form as shall from time to time be prescribed for the purpose by the Registrar-General of Births, Deaths, and Marriages, after publication of his intention to prescribe such form in the *London Gazette* with the proposed form annexed, provided that any such other form of certificate shall include the particulars set forth in the said schedule.

(2) The Registrar-General shall gratuitously supply forms of certificate to any registered medical practitioner who applies for the same.

19. *Filing of Certificate of Death.* — (1) Every registered medical practitioner who shall give a certificate of death shall, within twenty-four hours after such death takes place, send such certificate to the registrar of deaths for the district in which the death took place.

(2) Certificates of death sent by post to the registrar of deaths under this section shall be exempt from postage.

20 *Notification of Death.*—(1) When the registered medical practitioner who attended a person during his last illness is unable to give a certificate of death, he shall forthwith notify to the coroner the fact of such death with the reasons for his inability to give such certificate.

(2) When no registered medical practitioner has attended the deceased person during his last illness, the relatives, friends, or other persons having cognizance of the death, or of any doubtful or suspicious circumstances attending the death, shall themselves report full particulars thereof to the coroner.

21. *Penalties.*—Every registered medical practitioner who fails to comply with any of the provisions of this part of this Act shall for every such offence be liable, on summary conviction, to a penalty not exceeding *forty shillings.*

22. *Inspection of Certificates of Death by Coroners.*—The Registrar-General of Deaths shall make arrangements whereby each district registrar shall afford facilities to the coroner for the inspection by such coroner or his officer of the certificates of death of any persons who have died within the district of the said coroner, or whose body may have been brought within his jurisdiction.

23. *Certificates of Burial.*—Every person who shall bury or otherwise dispose of any dead body shall certify, by endorsement of the burial order (which endorsement shall be in the form set forth in the Second Schedule to this Act), the name of the place, the date, and the mode of burial, or other mode of disposal of the dead body, and shall send such order to the registrar of deaths in whose district the death was registered within five days after such burial or other disposal of the dead body. Such certificate shall, together with the certificate of death, or finding of the coroner after inquiry, or verdict after inquest, as the case may be, be entered in a book kept for the purpose, to be called the "register of deaths and burials."

Any person who fails to comply with the provisions of this section shall, on summary conviction, be liable to a fine not exceeding *fifty pounds* for every day during which he fails to comply as aforesaid.

24. *Retention of Unburied Bodies.*—No person responsible for the burial or other disposition of any dead body shall retain the same, or delay the burial or other disposition of the same for any longer period than eight days after death, except with the previous written consent of a justice of the peace. Before giving this consent such justice shall be satisfied that such retention or delay is reasonable, and the consent shall state the period and grounds of such retention or delay. Any person who fails to comply with the provisions of this section shall, on summary conviction, be liable to a fine not exceeding *five pounds* for every day during which he fails to comply as aforesaid.

25. *Definition of "Certificate of Death."*—For the purposes of this part of this Act a certificate of death shall be deemed to be a certificate of the cause of death within the meaning of the Registration Acts.

Part III.

Miscellaneous

26. *Definition of "Dead Body" and "Person."*—Any dead child which has issued forth from its mother after the expiration of the twenty eighth week of pregnancy, whether alive or dead, shall be the dead body of a person within the meaning of the Coroners Act, 1887, and this Act, and a person within the meaning of the Births and Deaths Registration Act, 1874.

27. *Construction, Citation, and Repeal.*—(1) Part I of this Act shall be construed as one with the Coroners Acts, 1887 and 1892.

(2) Part II of this Act shall be construed as one with the Registration Acts.

(3) This Act may be cited as the Coroners and Death Certification Act, 1910.

(4) This Act shall not apply to Scotland or Ireland.

(5) The enactments mentioned in the Third Schedule to this Act are hereby repealed to the extent specified in the third column of that schedule.

SCHEDULES.

FIRST SCHEDULE.

Certificate of Death.

I hereby certify that I attended ..... during his (her) last illness; that such person's age was stated to be ..... ; that I last saw him (her) alive on the .....day of .... 19..... ; that he (she) was stated to have died on the ..... day of ..... 19..... at ..... o'clock in the .....noon, and that I examined the body on ....day at ..... o'clock in the ..... noon and hereby certify to the fact of death of such person, and that to the best

of my knowledge and belief the cause of death was as hereunder written, and that the particulars given in reply to the questions are correct.

CAUSE OF DEATH.

Primary .....
Secondary .....
.....

Was the cause of the death ascertained or confirmed by an autopsy? .....

Was any surgical operation performed upon the deceased person during life and within one month previous to death, and if so what was the nature of the operation? .....

Have you any reason to think that any accident, neglect, poison, violence, or any other than natural causes contributed to the death? .....

Witness my hand this.....day of.....19.....
Signature.....
Qualification as registered by Medical Council.....
Residence.....

SECOND SCHEDULE.

ENDORSEMENT OF BURIAL ORDER.

Name of burial ground .....
No. of grave .....
Parish.....
Date of burial .....
Whether earth burial, vault, or cremation.....

THIRD SCHEDULE.

ENACTMENTS REPEALED.

Session and Chapter.	Short Title.	Extent of Repeal.
23 & 24 Vict. c. 116	The Coroners Act, 1860	The whole Act.
37 & 38 Vict. c. 88	The Births and Deaths Registration Act, 1874	Subsection (2) of section twenty, and in the same section the words "if any person" to the end of the section.
50 & 51 Vict. c. 71	The Coroners Act, 1887	Sections twelve, subsections (1), (2), (3), and (4) of section eighteen, and the words "in payment of a reasonable sum for the same, not exceeding the rate of three halfpence for every folio of ninety words," in subsection (5) of that section, and thirty-three.
55 & 56 Vict. c. 56	The Coroners Act, 1892	Subsections (1), (2), and (3) of section one.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns 8,350 births and 5,588 deaths were registered during the week ending Saturday last, July 2nd. The annual rate of mortality in these towns, which had been 11.4, 11.1, and 11.2 per 1,000 in the three preceding weeks, declined to 11.0 per 1,000 last week. The rates in the several towns ranged from 3.7 in East Ham, 6.3 in Willesden and in Hornsey, and 6.4 in Derby, to 16.2 in St. Helens, 17.1 in Huddersfield, 18.1 in Oldham, 19.2 in Warrington, and 21.3 in Tynemouth. The death-rate from the principal infectious diseases averaged 1.0 per 1,000; in London the rate did not exceed 0.8 per 1,000, while among the seventy-six other large towns it ranged upwards to 2.8 in Grimsby and in Warrington, 2.9 in Oldham, 3.0 in Stockport, and 3.3 in Barrow-in-Furness. Measles caused a death-rate of 1.2 in Liverpool, 1.7 in Preston, 1.8 in Oldham, 2.0 in Merthyr Tydfil, and 3.3 in Barrow-in-Furness; whooping-cough of 1.1 in Manchester, 1.4 in Ipswich, 1.5 in Stockport and in Bootle, and 2.1 in Warrington; and diarrhœa of 2.1 in Grimsby. The mortality from scarlet fever, from diphtheria, or from enteric fever, showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital which had been 1,401, 1,363, and 1,353, at the end of the three preceding weeks, rose to 1,378 at the end of the week under notice; 133 new cases were admitted during the week, against 181, 166, and 187, in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, July 2nd, 936 births and 477 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 14.2, 13.9, and 13.3 per 1,000 in the three preceding weeks, further declined to 13.2 last week, and was 2.2 per 1,000 above the mean rate during the same period in the seventy-seven large English towns. Among these Scottish towns the death-rates ranged from 10.1 in Aberdeen and 11.7 in Edinburgh to 14.4 in Leith and 22.1 in Dundee. The death-rate from the principal infectious diseases averaged 1.3 per 1,000, the highest rates being recorded in Paisley and in Dundee. The 215 deaths from all causes recorded in Glasgow included 1 which was referred to measles, 2 to scarlet fever, 2 to diphtheria, 5 to whooping-cough, and 10 to diarrhœa. Five deaths from measles and 4 from whooping-cough were registered in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, July 2nd, 665 births and 355 deaths were registered in the twenty-two principal urban districts of Ireland, as against 539 births and 396 deaths in the preceding period. The annual death-rate in these districts, which had been 17.8, 18.9, and 17.9 per 1,000 in the three preceding weeks, fell to 16.1 per 1,000 in the week under notice, this figure being 5.1 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 15.3 and 18.3 respectively, those in other districts ranging from 4.0 in Dundalk and 4.4 in Lurgan, to 27.2 in Galway and 33.6 in Sligo, while Cork stood at 17.8, Londonderry at 7.2, Limerick at 20.5, and Waterford 15.6. The zymotic death-rate in the twenty-two districts averaged 1.8 per 1,000, as against 2.3 per 1,000 in the preceding period.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Fleet Surgeon H. X. BROWNE to the *Andromeda*, on its becoming the parent ship, June 18th; Fleet Surgeon A. G. WILDEY, to the *President*, additional, for three months' course at Dreadnought Hospital, Greenwich, July 2nd; Fleet Surgeon A. MACLEAN, M.B., to the *Jupiter*, July 2nd; Staff Surgeon J. K. RAYMOND, M.B., to the *Hearty*, temporarily, June 18th; Staff Surgeon W. R. CENTER, M.B., to the *Collingwood*, temporarily, June 28th; Staff Surgeon J. S. DUDDING to the *Ganges*, for the *Ganges II.*, June 28th; Surgeon F. COCK, to the *Latona*, June 18th; Surgeon C. R. M. BAKER, M.B., to the *Antelope*, on commissioning, June 25th; Surgeon W. MEARNS, M.B., to the *Redbreast*, July 2nd; Surgeon J. McA. HOLMES, M.B., to the *Aclaeon*, July 2nd; Fleet Surgeon J. C. FERGUSON, M.B., to the *Crescent*, July 2nd; Fleet Surgeon H. CLIFT to the *Venerable*, July 2nd; Fleet Surgeon C. S. FACEY, M.B., to the *President*, additional, for temporary service at the Admiralty Recruiting Department, July 14th; Staff Surgeon L. S. WHITWAM, M.B., and C. A. G. PHIPPS to the *Pembroke*, additional, for disposal, July 2nd; Surgeon A. B. MARSH to the *Vivid*, additional, for disposal, July 2nd; Staff Surgeon S. CRONEEN to the *Bulwark*, temporarily, for the manœuvres, July 1; Surgeon T. A. SMYTH, M.B., to the *Victory*, additional, for the *Rainbow*, July 11th.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL J. M. F. SHINE, M.D., serving in India as Senior Medical Officer, Naini Tal, assumed temporary charge of the office of Principal Medical Officer, 8th (Lucknow) Division, from May 8th.

Lieutenant-Colonel A. A. SUTTON, D.S.O., has been appointed Senior Medical Officer, Sierra Leone, vice Major F. J. W. Porter, D.S.O.

Major T. W. GIBBARD, M.B., has been appointed Lecturer in Syphilology at the Royal Army Medical College, vice Colonel F. J. Lambkin.

Lieutenant HAROLD BEVIS resigns his commission, June 22nd. His appointment bore date August 1st, 1908.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL G. W. P. D. DENNYS, Administrative Medical Officer, North-West Frontier Province, has been selected for appointment as Principal Medical Officer, Aden Brigade. Lieutenant-Colonel A. L. DUKE succeeds him at the North-West Frontier Province.

The undermentioned officers are appointed Specialists as noted: Ophthalmology—Captain W. H. HAMILTON, 2nd (Rawal Pindi) Division, April 6th; Captain P. S. MILLS, M.B., 5th (Mhow) Division, April 4th. Electrical Science—Lieutenant J. A. SHORTEN, M.B., 2nd (Rawal Pindi) Division, April 7th. Otology, Laryngology, and Rhinology—Lieutenant R. E. WRIGHT, M.B., Burma Division, May 1st. Midwifery and Diseases of Women and Children—Major G. TATE, M.B., 2nd (Rawal Pindi) Division, May 1st.

Lieutenant-Colonel P. D. PANE, Bengal, has retired from the service, from May 17th. He was appointed Surgeon, March 31st, 1880, and Lieutenant-Colonel, March 31st, 1900. He served with the Mahsud Waziri Expedition in 1881.

Lieutenant-Colonel W. S. P. RICKETTS, M.B., also retires from the service, from June 10th. He joined the Bombay Medical Department as a Surgeon-Captain, March 30th, 1889, and became Lieutenant-Colonel, March 30th, 1909. He took part in the operations in Somaliland in 1902-3, receiving a medal with clasp.

The retirement of Lieutenant-Colonel D. S. E. BAIN, which has been already noted in the BRITISH MEDICAL JOURNAL, has received the approval of the King.

The promotion of Captain R. F. BAIRD to be Major is antedated from January 28th, 1910, to July 28th, 1909.

The retirement from the service of Lieutenant-Colonel R. JAMES, M.B., Madras, which has been already announced in the BRITISH MEDICAL JOURNAL, has received the approval of the King.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

THE following to be Lieutenants (on probation) from the dates specified: CLAUDE JOHNSON, M.B., May 25th; JOHN R. R. TRIST, May 30th; THOMAS A. WESTON, May 31st.

The following officers from the Unattached List, Territorial Force, and the Edinburgh University Contingent, Officers Training Corps, to be Lieutenants (on probation), dated August 11th, 1909: Captain W. DARLING, M.B., and Captain J. M. DARLING, M.B.

PAUL M. ROTH, M.B., to be Lieutenant (on probation), May 26th.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Eastern Mounted Brigade Field Ambulance.—Supernumerary Lieutenant M. S. DOUBBLE is restored to the establishment, March 1st.

First Highland Field Ambulance.—Major F. KELLY, M.D., from the 2nd Highland Field Ambulance, Royal Army Medical Corps, to be Lieutenant-Colonel, May 22nd.

Fifth Southern General Hospital.—Major B. H. MUMBY to be Lieutenant-Colonel, June 25th.

For Attachment to Units other than Medical Units.—JAMES T. R. MACGILL, M.B., to be Lieutenant, March 23rd; EDMUND L. ANDERSON, M.B. (late Lieutenant, 9th Battalion the King's (Liverpool Regiment)), to be Captain, April 7th; JOHN GRAHAM, M.B., to be Lieutenant, May 7th; JOHN GOSS to be Lieutenant, May 10th; Surgeon-Major H. P. BERRY, M.B., from the 4th Battalion the Lincolnshire Regiment, to be Major, with precedence as from September 15th, 1902, June 25th.

Attached to Units other than Medical Units.—Lieutenant A. A. MARTIN, M.D., to be Captain, October 10th, 1909; Captain H. S. OLIVER to be Major, February 24th; Lieutenant J. M. BOWIE, M.D., to be Captain, May 1st; Captain D. M. MACDONALD, M.D., resigns his commission, June 25th.

Third East Anglian Field Ambulance.—WILLIAM I. COWELL, to be Lieutenant, May 10th.

Unattached List for the Territorial Force.—NORMAN C. RUTHERFORD, M.B., F.R.C.S.Eng., to be Lieutenant for service with the Medical Unit of the Royal College of Surgeons (Dublin) Contingent, Senior Division, Officers' Training Corps, June 6th.

Second North Midland Field Ambulance.—Captain A. MACGREGOR resigns his commission, July 2nd.

ROYAL GARRISON ARTILLERY.

Tynemouth.—Surgeon-Major H. R. BRAMWELL, M.B., resigns his commission, July 6th.

INFANTRY.

Fourth Battalion the King's Own (Royal Lancaster Regiment).—Surgeon-Captain and Honorary Surgeon-Major R. J. MORRIS resigns his commission, retaining his rank and uniform, July 6th.

Fifth (Prince of Wales's) Battalion the Devonshire Regiment.—Surgeon-Lieutenant WALTER CHAPMAN resigns his commission, July 6th.

Fourth (Denbighshire) Battalion the Royal Welsh Fusiliers.—Surgeon-Lieutenant J. W. ANDERSON, M.B., to be Surgeon-Captain, June 1st.

THE OPERATIONS IN SOMALILAND.

THE *London Gazette* of June 24th contains dispatches from the officers in charge of the operations in Somaliland in 1909. Among those brought to notice for "exceptionally good work" is the name of Captain M. J. QUIRKE, of the Indian Medical Service.

Hospitals and Asylums.

ABERDEEN DISTRICT ASYLUM, KINGSEAT.

THE annual report of Dr. H. de Maine Alexander, the medical superintendent of this village asylum, for the year 1909 shows that on December 31st, 1903, there were 414 patients in residence, and that on the last day of 1909 there were 451. The total cases under care during the year numbered 532, and the average daily number resident 434. All of these figures show considerable increases on those of the previous year. During the year 118 were admitted, of whom 87 were first admissions and undergoing their first attacks. In 66 the attacks were first attacks within three, and in 12 more within twelve months of admission; in 26 not-first attacks within twelve months; in 10 the attacks were of more than twelve months' duration, and in 4 the illness was of congenital origin. The total admissions were classified into: Mania, 20; melancholia, 29; senile and secondary dementia, 8; delusional insanity, 12; general paralysis, 10; insanity, with other nervous diseases, 5; exhaustion psychoses, 10; insanity with alcoholism, 12; primary dementia, 6; and cases of defective mental development, 5. As to causation, alcoholism was assigned in 12; syphilis in 4; and tuberculosis in 1; critical periods in 27; nervous diseases in 5; general debility in 18; influenza, pneumonia, or parturition in 4; and emotional stress in 6. A neurotic inheritance was ascertained in 29, and 30 had had previous attacks. As to prognosis, 48 were considered curable, 46 incurable, and in 24 the prospect of recovery was doubtful. During the year 33 were discharged as recovered, giving a recovery-rate on the admissions of 27.9 per cent., as compared with 40.7 per cent. for the previous year; 20 as relieved and 1 as not improved. Dr. Alexander says that, acting in collaboration with the inspector of the poor, a beginning has been made at this asylum in boarding out patients in the vicinity of the asylum, who are visited at intervals by the medical officers of the institution. It may be noted here that this is not the usual course followed in Scotland, in which country boarded-out patients are customarily visited by the inspector of the poor, the parochial medical officer, and His Majesty's Commissioners in Lunacy for Scotland, and are detached entirely from the supervision of the medical officers of the asylum. Dr. Alexander has in fact adopted the plan long associated with Belgium, and now adopted by several other countries. Dr. Alexander says that the neighbouring farmers were interviewed, and that only one was willing to try the experiment. Others, however, soon applied for patients when the first applicant expressed himself as pleased with his new farm hand. The patients, Dr. Alexander says, are well cared for, are treated as ordinary members of the household, attend church with their guardians, and occasionally attend the asylum entertainments. Kingseat, we believe, is admirably placed for such an experiment, whose further development we shall await with interest. During the year 27 patients died, giving a death-rate on the average numbers resident of 6.2 per cent. The deaths were due in 7 to cerebro-spinal diseases, including 5 from general paralysis, in 4 to heart disease, in 2 to lobar pneumonia, in 4 to genito-urinary diseases, in 3 to pulmonary tuberculosis, in 1 each to carcinoma and pernicious anaemia, and in 3 to senile decay. The general health was good throughout the year, and there was only one accident—a fractured clavicle in an epileptic patient, due to a fall. There were 5 escapes, all patients being brought back on the next day. Dr. Alexander points out that "escape" is merely a statutory expression. During the year the remaining closed female villa was opened, permitting of more convenient classification, as on the men's side. Dr. Alexander's report contains a suggestion which will doubtless be realized eventually: "The village asylum system has many advantages, but segregation could with infinite advantage be carried a step further: and it will not be until the maniacal and depressed cases entering the institution can be accommodated in separate admission blocks constructed on the hospital plan that the ideal system of segregation will be attained, as the mere proximity of a maniacal or excited patient is a constant source of irritation to the heightened sensibilities of the sufferer from mental depression."

VICTORIA HOSPITAL FOR WOMEN AND CHILDREN, CORK.

THE Secretary's report presented to the thirty-fifth annual meeting of subscribers to this hospital contained a sympathetic reference to the death of Dr. N. J. Hobart, who was one of the founders of the hospital, and was for some years before he died its Consulting Surgeon. Unlike most other institutions of a similar character, Victoria Hospital lives within its means, and one of the axioms of its management is that it shall not get into debt. The medical staff report a large number of major operations, such as Caesarean section, removal of abdominal tumours, etc., with no resulting mortality. The extern department has been housed in new buildings with immense advantage to the patients and correspondingly increased comfort to the staff. Within recent years a new policy has been adopted in dealing with legacies and bequests. It had been the custom to use them as revenue, but now wiser counsels prevail, and only the interest accruing from their investment is utilized in the yearly income of the hospital.

ANNUAL REPORTS OF DUBLIN MEDICAL INSTITUTIONS.

THE Medical Superintendent of the Stewart Institution for Imbecile Children, Palmerston, Dublin, states that the general health of the inmates during the past year has been exceptionally good. Seventy boys and more than fifty girls are now looked after in this institution, which is the only one of its kind in Ireland, although the last Government census showed that there were 5,000 imbecile children in the country. Considerable attention is now directed towards teaching the less severely afflicted patients some industrial employment, such as mat-making, weaving, and farm work. The results have been most gratifying, and during the year 10 cases were discharged as sufficiently trained to look after themselves.

The Cheeverstown Convalescent Home for Little Children was founded four years ago for the reception of poor children in need of rest after recovery from illness. It is entirely unsectarian, the only credentials for admission being poverty and a certificate of being non-infectious. The annual report states that the original capital, which is now exhausted, has accomplished the desired purpose in founding and equipping the institution, which must depend in the future on support from the public. During the four years of its existence 565 children have been cared for.

During the last half-century the Stillorgan Convalescent Home has played a most important part in connexion with the Dublin Hospitals by receiving patients who, while not ill enough to be kept in hospital, are not yet sufficiently strong to return to active work. During the past year 1,145 patients were admitted, and in all, since its foundation, nearly 34,000 patients have received its benefits. The committee reports that the expenditure has recently exceeded income, and in consequence now appeals for increased support. There is no more deserving charitable institution in the neighbourhood of Dublin.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £60 per annum.

BIRMINGHAM: GENERAL HOSPITAL.—(1) Two House-Physicians; (2) House-Surgeon; (3) House-Surgeon to Special Departments; (4) two Assistant House-Surgeons. Salary at the rate of £50 per annum for (1), (2), and (3), and £40 per annum for (4)

BIRMINGHAM: QUEEN'S HOSPITAL.—(1) House-Physician; (2) House-Surgeon. Salary at the rate of £50 per annum each.

BIRMINGHAM UNIVERSITY.—Walter Myers Travelling Studentship, value £150 for one year.

BIRMINGHAM: YARDLEY ROAD SANATORIUM FOR CONSUMPTIVES.—Resident Medical Officer. Salary, £150 per annum.

BRADFORD: CHILDREN'S HOSPITAL.—House Surgeon (male). Salary, £100 per annum.

BRADFORD ROYAL INFIRMARY.—Two House-Surgeons (males). Salary, £100 per annum each.

BRISTOL ROYAL INFIRMARY.—Honorary Medical Registrar.

BROOKWOOD ASYLUM, Knaphill, near Woking.—Medical Superintendent. Salary, £300 per annum, rising to £1,000.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum, increasing to £90 after six months.

CAMBRIDGESHIRE, ETC., ASYLUM, Fulbourn.—Senior Assistant Medical Officer. Salary, £150 per annum, rising to £200.

CANCER HOSPITAL, Fulham Road, S.W.—Surgeon.

CARDIFF INFIRMARY.—House-Surgeon for Ophthalmic and Ear and Throat Departments. Honorarium, £30 for six months.

CENTRAL FOUNDATION SCHOOLS OF LONDON.—Medical Officer for the Boys' School, Cowper Street, E.C. Salary, £50 per annum.

CHESTER COUNTY ASYLUM.—First Assistant Medical Officer. Salary, £250 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £60 per annum.

DERBYSHIRE ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £30 for six months.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

GLASGOW SCHOOL BOARD.—Lady Assistant Medical Officer. Salary, £250 per annum.

HIGHBURY HILL HIGH SCHOOL FOR GIRLS.—Female Practitioner for Inspection of Pupils. Salary, £50 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—(1) House-Physician; honorarium 30 guineas for six months. (2) Dental Surgeon. Honorarium, 50 guineas per annum.

HOSPITAL FOR WOMEN, Soho Square, W.—(1) Resident Medical Officer; (2) Pathologist and Registrar. Salary at the rate of £60 and £100 per annum respectively.

HULL ROYAL INFIRMARY.—Two Casualty House-Surgeons. Salary at the rate of £60 per annum for six months and £80 for twelve months each.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon. Salary, £100 per annum.

KING'S NORTON AND NORTHFIELD URBAN DISTRICT COUNCIL EDUCATION COMMITTEE.—Lady as Temporary Assistant Medical Officer for Inspection of Children. Remuneration at the rate of £250 per annum.

LINCOLN COUNTY HOSPITAL.—Junior Male House-Surgeon. Salary at the rate of £75 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—(1) Resident Medical Officer; (2) Assistant House-Surgeon. Remuneration at the rate of £120 and £105 per annum respectively.

MAIDSTONE: KENT COUNTY OPHTHALMIC HOSPITAL.—Locumtenent from July 23rd to August 6th inclusive. Honorarium, £6 6s.

MANCHESTER CHILDREN'S HOSPITAL, Gartside Street.—Assistant Medical Officer (non-resident). Salary, £100 per annum.

MANCHESTER ROYAL INFIRMARY.—Accident Room House-Surgeon. Salary at the rate of £100 per annum.

MERIONETH COUNTY COUNCIL.—Medical Officer of Health. Salary, £450 per annum.

METROPOLITAN ASYLUMS BOARD.—Assistant Bacteriologist. Salary, £300 per annum, rising to £350.

NOTTINGHAM GENERAL HOSPITAL.—(1) Assistant House-Surgeon; (2) Assistant House-Physician. Salary, £100 per annum each.

POPLAR HOSPITAL FOR ACCIDENTS, E.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham.—Pathologist. Honorarium, £20 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Resident Medical Officer for Out-patient Department. Salary at the rate of £60 per annum.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Ventnor.—Assistant Resident Medical Officer. Salary, £100 per annum.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND, Newcastle, co. Wicklow.—Senior Resident Medical Officer. Salary, £300 per annum.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Junior Resident Medical Officer. Salary at the rate of £40 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary, £80 per annum.

SHEFFIELD EDUCATION COMMITTEE.—Assistant Medical Officer for Elementary Schools. Salary, £250 per annum, rising to £300.

SHEFFIELD ROYAL HOSPITAL.—(1) Casualty Officer; (2) Assistant House-Surgeon; (3) Assistant House-Physician. Salary, (1) £60, and (2) and (3) £50 per annum each.

SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Officer. Salary, £60 per annum.

STOCKPORT INFIRMARY.—Junior House-Surgeon (male). Salary, £80 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon. Salary at the rate of £70 per annum.

THREE COUNTIES ASYLUM, Arlesey, near Hitchin.—Medical Superintendent. Salary, £800 per annum, rising to £1,000.

WAKEFIELD: WEST RIDING ASYLUM.—Assistant Medical Officer. Salary, £140 per annum, rising to £150.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House-Surgeon. Salary, £120 per annum.

WINCHESTER: ROYAL HAMPSHIRE COUNTY HOSPITAL.—House-Physician (male).

WEST HAM AND EAST LONDON HOSPITAL, Stratford.—Junior House-Surgeon. Salary at the rate of £75 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Drogheda, co. Louth, and Ross, co. Hereford.

MEDICAL REFEREE.—The Home Secretary announces a vacancy as Medical Referee for the County Court Circuit No. 9.

APPOINTMENTS.

AINSCOW, H., M.B., B.S.Lond., District Medical Officer of the Wigan Union.

AWBURN, G. J., M.B., C.M.Edin., Medical Officer of Health of the Tintwistle Rural District.

BOREHAM, F. S., L.R.C.P. and S.Edin., District Medical Officer of the Basford Union.

BRODIE, W. B., M.D.Glasg., District Medical Officer of the Dunmow Union.

COULSON, T. E., M.D.Edin., District Medical Officer of the Wincanton Union.

CROWE, H. Neville, M.B., Ch.B.Birm., M.R.C.S., L.R.C.P., Honorary Anaesthetist and Honorary Medical Pathologist to the General Infirmary, Worcester.

DAWES, E. P., L.R.C.P. and S.Edin., District Medical Officer of the Alcester Union.

DEVEY, T. V., L.R.C.P. and S.Edin., District Medical Officer of the Reeth Union.

DIGHTON, Chas. A. Adair, M.B., Ch.B.Edin., Ophthalmic and Aural Surgeon to the Scarborough Hospital and Dispensary.

DIXON, T. Benjamin, M.R.C.S., L.R.C.P., Honorary Assistant Anaesthetist to the Bristol General Hospital.

DUCKETT, A. H., M.B., Ch.B.Aberd., Resident Assistant Medical Officer of the Brighton Parish Workhouse.

FOOKS, W. P., M.B., B.C.Camb., District Medical Officer of the King's Norton Union.

GREVES, E. Hyla, M.D.Edin., M.R.C.P.Lond., Honorary Visiting Physician to the County Mental Hospital, Herrison, near Dorchester.

HINCKS, T. E., M.D.Edin., Medical Officer of the Hay Union Workhouse.

HUNTER, J., M.D.Edin., Certifying Factory Surgeon for the Linlithgow District, co. Linlithgow.

KEALY, J. W. G., L.R.C.P., M.R.C.S., D.P.H., Medical Officer of Health of the Gosport and Alverstoke Urban District.

KENNEDY, R. Foster, M.B., B.Ch.R.U.I., Assistant Physician to the Neurological Institute of New York, U.S.A.

LAWTON, J. J., L.R.C.P. and S.Edin., L.F.P.S.Glasg., Certifying Factory Surgeon for the Midleton District, co. Cork.

LIVERMORE, William Barclay, M.B.Aberd., Medical Superintendent of the Devon and Cornwall Sanatorium for Consumptives, Didworthy, South Brent, Devon.

LOUGHRIDGE, J. A., M.B., Ch.B.Edin., Medical Officer of Health of the Amble Urban District.

LYALL, C. H. Gibson, L.R.C.P. and S.Edin., L.F.P.S.Glasg., Senior Assistant Medical Officer at the Leicester Borough Asylum.

MACFARLANE, W. D., jun., M.B., C.M.Glasg., Surgeon to the Royal Samaritan Hospital, Glasgow, vice Dr. John Edgar, deceased.

MAGOWAN, S. M., M.B., B.Ch., R.U.I., Certifying Factory Surgeon for the Glenarm District, co. Antrim.

MAYO, T. A., M.B., F.R.C.S., Medical Officer of Health of the Cowes Urban District.

ORMEROD, E. W., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Southam District, co. Warwick.

PHILLIPS, Llewellyn Powell, M.A., M.D., B.C.Cantab., F.R.C.P.Lond., F.R.C.S.Eng., Professor of Medicine in the Egyptian Government School of Medicine and Senior Physician to the Kasr el Aini Hospital, Cairo.

POMFRET, H. W., M.D.Vict., Medical Officer of Health of the Hollingworth Urban District.

PYWELL, E. A., M.R.C.S., L.R.C.P., District Medical Officer of the Peterborough Union.

SLINGER, R. Townley, M.B., Ch.B.Vict., F.R.C.S., Honorary Anaesthetist and Honorary Surgical Pathologist to the General Infirmary, Worcester.

SPARK, Percy Charles, M.R.C.S., L.R.C.P.Lond., Medical Superintendent of the Banstead Asylum, vice Dr. D. Johnston Jones.

THOMAS, D. J., M.D.Brux., M.R.C.S., L.R.C.P., Medical Officer of Health of the Bedwellty Urban District.

THOMPSON, Alexander Dey, M.B., Ch.B.Glasg., M.P.C., Medical Superintendent, the County Asylum, Cambridge.

WEST, L. F., M.R.C.S., L.R.C.P., District Medical Officer of the Driffield Union.

WOOD, J. L. M., M.B., Ch.B.Edin., District Medical Officer of the Barnstaple Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

CADDICK.—On July 1st, at 44, Bradford Street, Walsall, the wife of C. J. Caddick, F.R.C.S.E., of a son.

CLAY.—On July 3rd, at 198, Moseley Road, Birmingham, the wife of Ernest L. Clay, M.B., of a son.

MARRIAGE.

SCOTT—PHILLIPS.—On June 30th, at Trinity Church, Hampstead, by the Rev. Basil Phillips, M.A., cousin of the bride, assisted by the Rev. H. Summerhayes, M.A., Vicar of the Parish, William Lochhead Scott, M.D., B.S., M.R.C.S., L.R.C.P., of Liss, Hants, second son of Horatio C. Scott, of 20, Carleton Road, N., to Gwendolen Maud Lucy, daughter of the late Edward Nunes Phillips, of Aelybryn, Llanelly, Carmarthenshire.

DEATHS.

BUSHNELL.—At Worthing, on June 29th, Laura Dunstan Bushnell, widow of the late Robert Bushnell, of Chiswick, in her 83rd year.

LANGWILL.—At 4, Hermitage Place, Leith, on June 22nd, Alice Margaret Moorhead, L.R.C.P. and S.E., wife of Hamilton Graham Langwill, M.D., F.R.C.P.E.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Lectures: Tuesday, 3.45 p.m., Larynx. Friday, 3.45 p.m., Nose.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Monday and Wednesday, 5.15 p.m.: Diseases of the Chest in Children. Wednesday, 5 p.m.: Deformities. Thursday, 4 p.m.: Lymphatic Glandular Enlargements.

LONDON SCHOOL OF CLINICAL MEDICINE, Seamen's Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday; Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m., Thursday.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Medical; Friday, Eye. Lectures at 5.15 p.m. each day will be given as follows: Monday, The Local Application of Salicylates; Tuesday, Appendicitis in Children; Wednesday, Modern Methods of Diagnosis in the Surgery of the Urinary Organs; Thursday, The Diagnosis and Prognosis of Acute Pneumonia.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient: Nose, Throat, and Ear. Tuesday, 10 a.m., Medical Out-patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient. Wednesday, 2.30 p.m., Medical Out-patient. Skin and Eye Clinics: *X* Rays; 4.30 p.m., Demonstration: Treatment of Naevus by Radium and other Methods. Thursday, 2.30 p.m., Gynaecological Operations: Clinics: Medical Out-patient; Surgical Out-patient; 3 p.m., Medical In-patient. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Eye; 3 p.m., Medical In-patient.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, Operations, *X* Rays, 2 p.m. daily. Monday: Surgical Registrar, 10 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m. Lecture: Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Surgical Registrar, 10 a.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Medical Registrar, 10 a.m.; Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Eye, 10 a.m. Clinical Lectures, 5 p.m. daily.

RECENT PUBLICATIONS.

The Dental Directory, 1910. London: John Bale, Sons, and Danielsson. (Post 8vo, pp. 254. 2s. 6d.)

A well-turned-out reference book, giving both alphabetical and topographical lists of dental surgeons and their qualifications and places of education. Details are also supplied concerning dental schools, clinics, societies, and publications, together with information as to the legal position of dentists and the education they have to undergo.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. REBMAN, LTD., will publish in the autumn a work on the abdomen proper, by Dr. W. Cuthbert Morton. The publishers state that in the work a definition of the principles which ought to be followed in anatomical description is accompanied by an illustration of both text and plates of the thorough and consistent application of those principles to the abdomen proper. The method of the work is at once destructive and constructive; the abdomen can be reduced to its parts, the parts can be studied both individually and in relation to each other, and, lastly, the parts can be rebuilt into the whole. In the text each part is described in natural sequence to what has gone before and in natural precedence to what is to follow, and all the parts are further correlated by references. The plates, though few in number and by no means overcrowded with detail, present a complete abdomen proper, with every structure *in situ*. The work ought to be of service to every one who is interested in anatomy, whether student or teacher, general practitioner, surgeon or physician.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
JULY.	
11 MONDAY ..	
12 TUESDAY ..	NORTH WALES BRANCH, Annual Meeting, Hand Hotel, Llangollen, 2 p.m.; Luncheon, 1 p.m.; Branch Council, 1.45 p.m.
13 WEDNESDAY	LONDON: Organization Committee, 10.45 a.m.
14 THURSDAY ..	SOUTHERN BRANCH, Annual Meeting, Infirmary, Salisbury, 12.45 p.m.
15 FRIDAY ..	
16 SATURDAY ..	LONDON: Science Committee, 2 p.m. NORTHERN COUNTIES OF SCOTLAND BRANCH, Annual Meeting, Imperial Golf View Hotel, Nairn, 11.30 a.m.
17 Sunday ..	
18 MONDAY ..	
19 TUESDAY ..	
20 WEDNESDAY	
21 THURSDAY ..	
22 FRIDAY ..	ANNUAL GENERAL MEETING, Court of Common Council Chamber, Guildhall, London, 10 a.m. ANNUAL REPRESENTATIVE MEETING, immediately after Annual General Meeting. EXTRAORDINARY GENERAL MEETING, Court of Common Council Chamber, Guildhall, London, 2 p.m.

Date.	Meetings to be Held.
JULY *(continued).*	
23 SATURDAY ..	ANNUAL REPRESENTATIVE MEETING 9.30 a.m.
24 Sunday ..	
25 MONDAY ..	ANNUAL REPRESENTATIVE MEETING 10 a.m.
26 TUESDAY ..	CENTRAL COUNCIL, 10 a.m. ANNUAL REPRESENTATIVE MEETING 10.30 a.m. ADJOURNED GENERAL MEETING 2.30 p.m.
27 WEDNESDAY	CENTRAL COUNCIL, 9.30 a.m.
28 THURSDAY ..	
29 FRIDAY ..	
30 SATURDAY ..	
31 Sunday ..	
AUGUST.	
1 MONDAY ..	
2 TUESDAY ..	
3 WEDNESDAY	
4 THURSDAY ..	
5 FRIDAY ..	
6 SATURDAY ..	
7 Sunday ..	
8 MONDAY ..	
9 TUESDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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THE BRITISH MEDICAL ASSOCIATION.

78th ANNUAL MEETING, LONDON, JULY 22nd to JULY 29th, 1910.

THE Annual General Meeting of the British Medical Association this year will be held on July 22nd, 26th, 27th, 28th, and 29th, in the University of London, Imperial Institute Buildings, and the adjacent collegiate buildings at South Kensington.

The Annual Representative Meeting, which will assemble on Friday morning, July 22nd, will meet in the Council Chamber of the Guildhall, by kind permission of the Lord Mayor and Corporation of the City of London.

The seat of the University was removed to the Imperial Institute Buildings at South Kensington in March, 1900. The main central portion of this fine building, including the great hall and grand entrance, and the east wing and its accessory structures are appropriated to the use of the University.

The University possesses a large number of spacious rooms which will be available for the general purposes of the Annual Meeting, including the Reception Room, Pathological Museum, and the Annual Exhibition, as well as for some of the Sections. Other accommodation for Sections will be provided in the several buildings of the Imperial College of Science and Technology.

The South Kensington stations of the District Railway and of the Brompton and Piccadilly Electric Tube are about seven minutes' walk from the University buildings, and omnibus lines pass along Cromwell Road to the south, and Kensington Gore to the north, within about five minutes' walk.

President

Sir WILLIAM WHITLA, M.D., LL.D., Professor of Materia Medica and Therapeutics, Queen's College, Belfast.

President-elect:

H. T. BUTLIN, D.C.L., LL.D., F.R.C.S., Consulting Surgeon, St. Bartholomew's Hospital, London.

Past President:

SINCLAIR WHITE, M.D., M.Ch., F.R.C.S., Senior Honorary Surgeon, The Royal Infirmary, Sheffield.

Chairman of Representative Meetings

HAMILTON ASHLEY BALLANCE, M.S., Surgeon, Norfolk and Norwich Hospital, Norwich.

Chairman of Council:

EDMUND OWEN, LL.D., D.Sc., F.R.C.S., Consulting Surgeon to St. Mary's Hospital, London.

Treasurer:

EDWIN RAYNER, M.D., F.R.C.S., Consulting Surgeon, Stockport Infirmary, Stockport.

Honorary Local Secretaries of the London Meeting:

Dr. EDWARD W. GOODALL, Eastern Hospital, Homerton, N.E.

Dr. WILLIAM GRIFFITH, 1, Chester Gate, Regent's Park, N.W.

Dr. LAURISTON E. SHAW, 64, Harley Street, W.

PROGRAMME OF BUSINESS.

The Address in Medicine will be delivered by John Mitchell Bruce, M.D., F.R.C.P., London.

The Address in Surgery will be delivered by Harry Gilbert Barling, B.S., F.R.C.S., Birmingham.

THE SECTIONS.

The scientific business of the meeting will be conducted in twenty-one Sections, which will meet on Wednesday, July 27th, Thursday, July 28th, and Friday, July 29th.

The President, Vice-Presidents, and Honorary Secretaries of each Section constitute a Committee of Reference for that Section, and exercise the power of inviting, accepting, or declining any paper, and of arranging the order in which accepted papers shall be read. Communications with respect to papers should be addressed to one of the Honorary Secretaries.

A paper read in the Section must not exceed fifteen minutes, and no subsequent speech must exceed ten minutes.

Papers read are the property of the British Medical Association, and cannot be published elsewhere than in the British Medical Journal *without special permission.*

The following are the general arrangements so far as they are yet complete:

ANAESTHETICS.

President: Frederic William Hewitt, M.V.O., M.D., London.

Vice-Presidents: Donald C. A. McAllum, Edinburgh; George Rowell, F.R.C.S., London; Alexander Wilson, F.R.C.S., Manchester.

Honorary Secretaries: Miss Ada M. Browne, L.S.A., 64, Belsize Park, N.W.; William Joseph McCardie, M.B, 89, Cornwall Street, Birmingham; Herbert J. Scharlieb, C.M.G., M.D., 49, Wimpole Street, W.

The following subjects have been selected for discussion:

Wednesday, July 27th.—10 a.m., Discussion on The Percentage System of Chloroform Administration. To be opened by Dr. Dudley Buxton and Professor Waller, F.R.S., followed by Mr. Alexander Wilson, Dr. Herbert Scharlieb, Dr. Paul Chapman, Dr. A. G. Levy, Lieutenant Colonel Lawrie, and Dr. H. T. Wightman.

In connexion with this discussion Dr. Dudley Buxton will formally present the Report of the Special Chloroform Committee of the British Medical Association, published in the Supplement to the Journal of July 9th, pp. 47–92, which will be taken as read.

The following are synopses of the two opening papers:

(*a*) Dr. Dudley Buxton: Unless chloroform differs from all other drugs it must produce effects proportional to the strength of the dose inhaled. It possibly affects different individuals more or less when the same strength of dose is given as do other drugs; the difference is one of degree, not of kind. Idiosyncrasy, if it exists, is displaced in this way, a small dose producing unusually severe effects. Chloroform, it has been stated, produces results which vary in degree directly as the strength of the vapour inhaled. The evidence of this was produced by Snow, Bert, Clover, Dubois, Lister. The work of the Special Chloroform Committee of the British Medical Association supports their view. Waller has insisted upon this, and advanced evidence to prove it. The evidence from all sources is derived in part from experiment upon the lower animals and in part by clinical examination of patients subjected to chloroform inhalation. Admitting that chloroform acts proportionally to the strength of the vapour inhaled, it is necessary to supply means whereby exact dosing may be obtained. Do the common methods in use provide any exact dosage? Examination of these methods: The open method, by douche, by dropping; method by mixtures; method by inhalers, the plenum inhalers; the draw-over inhalers. The heads under which it is suggested the discussion shall be considered are: (i) The desirability of accepting a maximum strength of vapour of chloroform for ordinary cases. (ii) Whether present methods supply an adequate means of supplying and controlling the strength of vapour supplied. (iii) Whether dosimetry offers a more efficient means of achieving this end. (iv) What is the best known way of practising dosimetry in chloroform inhalation which is applicable to everyday work by practitioners who are not experts. (v) What are the objections to dosimetry, and how such objections may be met. (vi) Failing dosimetry in chloroform inhalation, what safeguards can be offered which will give promise of safe anaesthesia by that anaesthetic. (vii) What criteria of safety are best, those derived from observing the effects of doses of the anaesthetic, the amount of which can only be guessed by such effects; or those derived from an accurate knowledge acquired by experiments which have proved that certain percentages of chloroform produce certain effects.

(*b*) Professor Waller: It is desirable that the inhalation of chloroform vapour should be uniform and, as far as possible, continuous, at a percentage of between 1 and 2. This indication can be fulfilled without apparatus, but is most easily fulfilled with the aid of apparatus. Apparatus worked on the *plenum* principle is preferable to apparatus on the *vacuum* principle. Any increase of respiratory work by obstruction of the airway is an unfavourable condition.

Thursday, July 28th.—10 a.m., Discussion on The "Open" System of Ether Administration. To be opened by Mr. Bellamy Gardner and Mr. A. L. Flemming; followed by Messrs. G. Rowell, H. J. Paterson, Alexander Brownlee, E. J. Quirk, G. A. H. Barton, Stuart V. Stock, Sydney Haynes, H. T. Wightman, and Herbert Tanner.

The following are synopses of the two papers introductory to this discussion:

(*a*) Mr. Bellamy Gardner: (1) The open system consists in the avoidance of all extrinsic mechanical factors which otherwise cause laboured respiration in the patient. (2) Abolition of the rebreathing of expiratory products. *Method:* A preliminary hypodermic injection of atropinae sulphatis gr. $\frac{1}{150}$, which keeps the air passages clear of mucus, prevents sweating, and diminishes surgical shock. This is combined in very athletic, nervous and alcoholic subjects with morphinae acetatis gr. $\frac{1}{6}$. *Apparatus:* A wire mask covered with twelve layers of gauze intended to be laid upon a gauze face pad, and a large ether drop bottle. A surgical mouth prop for insertion between the side teeth, and a tongue clip to maintain an oral airway. After the operation the patient to be propped up in bed and encouraged to clear the airways if mucus be present. *Results:* Surgical anaesthesia of a singularly perfect type, with regular, moderately deep respiration, strong pulse, absence of reflex disturbance by operative measures, and entire absence of after-sickness in the great majority of cases. *Remarks:* The method is suitable for all kinds of abdominal and other operations requiring complete muscular relaxation. The safety and obtundent effect of ether in preventing shock are remarkably apparent. The danger of acidosis with chloroform in cases of acute septic infection and in children is entirely avoided, and adds greatly to its value. Dental operations may safely be performed in the dental chair in the sitting position under its influence. *Warnings:* An inelastic chest wall, chronic bronchitis, and emphysema are complete contraindications, acute bronchitis and pneumonia being liable to ensue in such subjects.

(*b*) Dr. A. L. Flemming: (1) The property which ether possesses of increasing the activity of the respiratory machine is probably a potent factor in rendering the anaesthesia produced by this drug comparatively free from symptoms of danger. (2) During anaesthesia by

this method there is especial need of caution as regards the collection of mucus in the trachea and larynx, which accumulation when it occurs, may give rise to a marked respiratory and circulatory depression not necessarily accompanied by cyanosis.. (3) In absence of cyanosis the anaesthesia of open ether may not be accompanied by any noticeable increase in the tendency to haemorrhage during operation.

Thursday, July 28th.—11 a.m., Discussion on The Prevention and Treatment of Surgical Shock during Inhalation Anaesthesia. To be opened by Dr. Crile, and Messrs. G. Rowell, Lockhart Mummery, and J. D. Malcolm; followed by Professor Leonard Hill, F.R.S., Messrs. H. J. Paterson, Bellamy Gardner, Thompson Rowling, Stuart V. Stock, and H. T. Wightman.

The following are synopses of the opening papers:

(*a*) Dr. CRILE: The tearing, crushing type of trauma and the exposure to the air are particularly shock-producing, and are, to a large degree, under technical control. A knowledge of the comparative shock-value of the various tissues often permits the shifting of the burden of trauma to the more nearly neutral tissues. Whenever possible, the large nerve trunks should be blocked by an intraneural injection of cocaine prior to operation upon them or upon the fields they supply. The loss of blood is an active predisposing cause of shock. Rapid division of large masses of tissue, especially if attended by massive trauma of the wound—for example, the quick and rough hip-joint amputation—under certain circumstances causes more shock than when done in less haste, in a more orderly manner and with lighter touch. If available, mechanical pressure, evenly applied upon the extremities and the abdomen, is a valuable aid to the maintenance of the circulation of the head and chest. In desperate cases a direct transfusion of blood is an efficient method of preventing the failure of the circulation. There is apparently less shock in operations under nitrous oxide anaesthesia than under ether, and the combination, under certain circumstances, of general and of local anaesthesia is the least shock-producing.

(*b*) Mr. ROWELL will briefly review the phenomena observed clinically, and allude to the almost general acceptance of Dr. Crile's view that the one essential characteristic of shock is a low blood pressure. Attention will then be drawn to the intimate connexion of shock with the nature and dose of the particular anaesthetic employed, with the previous condition of the patient, with obstructed respiration during the administration, and with the duration and character of the operation. The protective influence of ether, particularly when administered by the open method, will then be considered, and the propositions advanced that to prevent shock in severe cases the most important means at disposal are: (1) The use of "open ether" except in rare instances; (2) free saline transfusion subcutaneously before and during the administration; and (3) the use of the extract of the infundibular portion of the pituitary gland. The principle upon which the treatment of shock depends is the restoration of the blood pressure with the immediate object of resuscitating the centres.

(*c*) Mr. P. LOCKHART MUMMERY: For the purpose of this discussion, shock may be defined as a condition of lowered blood pressure resulting from exhaustion of the vasomotor centres. The prevention of shock is best secured by: (1) Taking steps to keep the patient warm during the operation; (2) using ether or a mixture of ether and chloroform whenever shock is anticipated, in preference to chloroform; (3) the use of the Trendelenburg position tends to prevent shock by increasing the circulation in the vital centres, but it is most important that the patient's abdomen should be bandaged before lowering the table; (4) it seems certain that shock is more readily set up under light than under deep anaesthesia, but this is to a considerable extent counterbalanced by the fact that deep anaesthesia itself tends to produce shock; (5) the administration of morphine just before the administration of a general anaesthetic undoubtedly helps to prevent the occurrence of shock, and is in my opinion of great value as a preventive. The treatment of shock depends for its success upon maintaining the blood pressure at or near the normal level by artificial means until such time as the vasomotor centres have recovered. Strychnine or any kind of stimulant is absolutely contraindicated, and will do serious harm. In the absence of other drugs, small doses of morphine are beneficial. Most reliance should be placed upon: Bandaging firmly the limbs and abdomen, maintenance of the head down position, intravenous infusion with saline solution with the addition of adrenalin in serious cases. The drug, however, of most value is extract of the infundibular portion of the pituitary gland. This drug should be administered at the first sign of shock, and repeated in an hour. In all cases of shock the administration of easily assimilated nourishment is of the highest importance; this is often overlooked.

(*d*) Mr. J. D. MALCOLM The facts recorded by George W. Crile in his works on shock will be accepted as of the utmost value. His interpretation of these facts will be regarded as altogether erroneous and misleading as a guide to treatment. His assertion that a low blood pressure must be due to vascular relaxation will be rejected as obviously inconsistent with the well-known fact that haemorrhage lowers blood pressure. It will be pointed out that all Crile's argument is built upon this too-comprehensive statement, and that his theory that the vasomotor centres are paralysed in shock is therefore unproved. Attention will be drawn to the work of W. T. Porter, M. G. Seelig, Eugene Boise, and others, who have found these centres active in every stage of shock. The vascular conditions in the state of shock will be attributed to an intense stimulation to contraction of the vascular system, affecting primarily the arterioles and venous radicles, but extending to all the vessels and followed by an escape of serum from the blood into the tissues and by a loss of fluid from the body as sweat. It will be argued that this loss of fluid may lower the blood pressure to a fatal extent. It will be urged that if the vessels relapse after being tensely contracted and after profuse sweating has been established—that is to say, if a tendency to recovery begins after a severe or prolonged injury has been inflicted—the blood pressure in the large vessels must fall very low, and it will be pointed out that this low blood pressure does not arise because the vascular capacity becomes excessive, nor because the vasomotor centres are paralysed, but because the volume of the blood is relatively diminished. The danger of death from collapse at this time will be considered obvious. It will be advised that treatment should be divided into two stages—that in the first stage, when the causes of shock are active, measures should be taken to prevent vascular contraction; whilst later, when the causes of shock cease to act, the treatment should be directed to the prevention of a too rapid dilatation of the vessels and to filling them up with fluid. Yandell Henderson's theory of the relationship of acapnia to shock will be referred to as promising valuable therapeutic developments. It will be held that, if his views are confirmed, the prevention of shock should come under the complete control of the anaesthetist in all ordinary cases.

Demonstrations by Professor Waller and by Dr. Crile have provisionally been fixed for 1.45 p.m. on Thursday, July 28th, in the Physiological Laboratory of the University of London.

Friday, July 29th.—10 a.m., Discussion on The Present Position and Limitations of Spinal Analgesia. To be opened by Dr. J. Blumfeld, Mr. E. Canny Ryall, and Dr. W. J. McCardie; followed by Messrs. Lawrie McGavin, H. Tyrrell Gray, Cecil Hughes, G. A. H. Barton, Arnold Lea, Miss Taylor, M.D., Captain Houghton, R.A.M.C., and Dr. G. P. Shuter.

Syllabus of the opening papers:

(*a*) Dr. J. BLUMFELD: (1) The results obtained up to the present time by the use of spinal analgesia do not warrant its being employed as a routine anaesthetic

under ordinary circumstances. (2) There are certain special cases in which probably spinal analgesia should be used in preference to any of the present methods of employing general anaesthesia. (3) Opinion is still divided as to which is the best drug to employ for the purposes of spinal analgesia, and whether the analgesic should or should not be used in conjunction with suprarenal preparations or with strychnine. (4) The use of spinal analgesia for operations above the umbilicus is at present too uncertain as to its efficiency or too dangerous in its attendant symptoms to justify its employment. (5) Apart from all other considerations, the presence of consciousness on the part of the patient during operation is a thing which is in many cases highly disadvantageous.

(*b*) Mr. E. Canny Ryall: 1. *Drugs Employed.*—A. Stovaine, novocain, tropacocaine, alypin: (1) Properties, sterilization, keeping properties, toxicity, irritability, compatibility with suprarenin, action on motor nerves and nerve cells, analgesia (behaviour of). (2) Clinical, action on heart, kidneys, respiratory centre, vomiting, headaches, etc. (3) Deaths. B. Suprarenin. 2. *Dose and Site for Injection.*—(1) Importance of diminishing the dose in certain diseases, etc., if good results without danger are to be obtained. The general idea is to give the same dose in all cases, no matter what the operation or condition of patient. (2) Exploration of how one can obtain analgesia in the arm by means of a lumbar injection if an operation on the upper extremity is desired. 3. *Secondary and After Effects, with Treatment.*—(1) How to avoid. (2) How to treat. 4. *Advantages and Disadvantages of the Method.*—(1) Contrast with general anaesthesia. (2) Death-rate. (3) Dangers. (4) Percentages of secondary and after effects. 5. *Indications and Contraindications.*

(*c*) Dr. W. J. McCardie: (1) Drugs commonly and recently used; (2) death-rate, danger-rate, percentage of failures, and psychical effect as compared with general anaesthesia; (3) local surgical effect—for example, on muscular relaxation, bleeding, etc.; (4) shock and blood pressure from surgeon's and patient's point of view; (5) after effects—testimony of nurses, etc.; (6) suitable cases.

Should time permit, the following subjects will also be discussed: Acidosis; The Anaesthetization of Diabetic Subjects; and The Use of Morphine and Other Drugs prior to Anaesthesia; and Professor E. S. Faust of Würzburg will make a communication on Intravenous Narcosis (Ether and Chloroform).

The President of the Section (Dr. Hewitt, M.V.O.) gives notice that he will move, and Mr. Digby Cotes-Preedy, Barrister-at-Law, will second, the following recommendation to the Council of the British Medical Association:

> The Section of Anaesthetics fully approve the form of the proposed legislation suggested by the General Medical Council and by the Departmental Committee of the Home Office respectively, and recommend the Council of the British Medical Association, on behalf of the Association, to take such steps as they may think desirable to represent to the Privy Council and to the Home Secretary the need for the proposed legislation in the interests of the public safety.

Sir William Collins, M.P., who is in favour of early legislation, hopes to attend and speak. The date and hour when the recommendation will be moved will be announced in the *Daily Journal*.

It has been arranged to hold an exhibition of past and present anaesthetic apparatus and appliances under the auspices of the Medical Museum Committee of the meeting, and a special committee has been appointed by the officers of the Section to select those modern anaesthetic appliances which seem to them worthy of exhibition. Members of the Association attending the Annual Meeting will therefore be in a position to make themselves acquainted with the most recent and trustworthy methods of anaesthetizing. Further information can be obtained on application to Miss A. M. Browne, Honorary Curator, Anaesthetic Section of the Medical Museum, 429, Strand, London, W.C.

ANATOMY.

President: Professor Arthur Keith, F.R.C.S., London.

Vice-Presidents: Professor David Hepburn, M.D., Cardiff; Fredk. Gymer Parsons, F.R.C.S., London; Professor Grafton Elliot Smith, M.D., F.R.S., Manchester; Professor William Wright, F.R.C.S., London.

Honorary Secretaries: Professor A. Campbell Geddes, M.D., Dublin; Alex. Macphail, M.B., Anatomy Dept., Medical School, Charing Cross Hospital, W.C.

The following programme has been arranged:

Wednesday, July 27th. Discussion on the Question of the Supply of Anatomical Material.

Papers:

Symington, Professor J. The Pharyngeal Tonsil.
Frazer, Mr. J. Stuart. The Development of the Naso-pharynx and Eustachian Tube.
Geddes, Professor A. C. (*a*) The Inter-relation of the Size of the Antrum of Highmore and the Position of the Permanent Teeth. (*b*) Six Abnormalities from the Dissecting Room.
Benians, Mr. J. C. The Trigonum Vesicae.
Anderson, Professor R. J. Notes on the Limbs of Primates.

Thursday, July 28th.—Discussion on Methods of Preservation of Anatomical Material.

Papers:

Gladstone, Dr. R. J. (*a*) Fissura Facialis in a Human Fetus. (*b*) Agnathia and Cyclops in a Lamb.
Rutherford, Dr. N. C. (*a*) A Comparative Study of the Ligaments and Mechanism of the Occipito-Atlantal and Atlanto-Taxial Joints. (*b*) A Case of Absence of the Transverse Mesocolon.
Kidd, Mr. F. S. Para-urethral Follicles in the Male.
Crymble, Mr. P. T. The Plica Duodeno-jejunalis and the Muscle of Treitz.
Spicer, Mr. R. H. Scanes. The Normal Orthograde Posture.

BACTERIOLOGY.

President: Charles J. Martin, M.B., D.Sc., F.R.S., London.

Vice-Presidents: John W. H. Eyre, M.D., London; Professor Arthur H. White, L.R.C.P.I., Dublin.

Honorary Secretaries: Carl Hamilton Browning, M.D., Pathological Department, University of Glasgow; John Charles Grant Ledingham, M.B., Lister Institute, Chelsea Gardens, S.W.

The following subjects have been chosen for the work of the Section:

Wednesday, July 27th.—Discussion on Recently Acquired Knowledge concerning the Bionomics of Pathogenic Organisms, and its Bearing on the Spread of Disease. To be opened by Dr. A. C. Houston London. The following gentlemen propose to take part in this discussion: Professor Lentz, Berlin (The Results of the Typhoid Campaign in South-West Germany, with Particular Reference to Carriers); Dr. W. G. Savage; Drs. Macalister and Menzies (On Dysentery Carriers); Drs. Bainbridge and O'Brien (On the Natural History of Certain Bacilli belonging to the Food poisoning Group); Dr. Petrie (The Natural History of *B. pestis*). If time permits, other papers not connected with the above discussion may be taken on this date.

The following is a synopsis of Dr. Houston's paper:

Distinction between (*a*) the passive accidental transmitters, and (*b*) the storehouses or manufactories of disease; and the importance of trying to bridge over the gap which links together in some mysterious fashion successive epidemics. Consideration of some of the agencies concerned, or supposed to be concerned, in the propagation of disease, and their relative importance: Soil; air; defective drains, sewage emanations, foul smells, etc.; water (description of two microbes isolated from river water, the one closely resembling Gaertner's bacillus and the other *B. typhosus*); sewage; solid foods; liquid foods;

dust; direct personal infection, ambulatory cases; "carriers," infections through animals, flies, and insects. Danger of exaggerating the influence of (*a*) the passive non-multiplying, and underestimating the importance of (*b*) the active multiplying agencies of disease; and suggestions that future progress in preventive medicine lies not in purifying sewage and water, in preserving our foods from pollution, in building on virgin soil, in perfection of drainage arrangements and in ventilation, but in searching for, and when found in treating and rendering inoperative, the "producers" of disease. Other points considered are (1) whether, in view of existing knowledge respecting carrier cases in typhoid fever, views as to the infectious periods of other diseases do not require reconsideration; (2) the question of dose in relation to infection, and the possibility of enhanced virulence, seasonally or occasionally; (3) the bearing of recent discoveries on future legislation. Finally, it is suggested that the key to further progress probably lies in studying living, not dead, matter.

Thursday, July 28th.—Joint Discussion with the Pathological Section on Complement-Deviation Methods in Diagnosis. To be opened by Professor Wassermann (Berlin). The following gentlemen propose to take part in this discussion: Dr. H. W. Bayly (The Practical Value of the Wassermann Reaction as shown by eighteen months' use at the London Lock Hospitals); Professor R. Muir; Dr. J. Henderson-Smith (On the Structure of Complement in Relation to Deviation); Fleet Surgeon P. W. Bassett Smith (1, Results of over 1,000 Examinations of Serums, with particular reference to Diagnosis in Early Stages; 2, Remarks on Variations from use of Heated and Unheated Serums); Dr. Ivy McKenzie (Individual Properties of Complement and Organ Extract in relation to the Wassermann Reaction); Dr Carl H. Browning (Lecithin and Cholesterin as Reagents in the Detection of Syphilitic Serums); Dr. J. O. Wakelin Barratt; Dr. H. R. Dean (Comparison of the Original Wassermann Method with some of its Modifications.)

Friday, July 29th.—Papers on Bacteriological Subjects.

FAUST, Professor (Würzburg). The Haemolysin of *Bacterium putridum*.
NABARRO, Dr. Acid-fast Organisms found in Butter and Margarine.
WILSON, Dr. W. J. Variation among Bacteria.
PENFOLD, Dr. W. J. (1) Remarks on Variation and Mutation; (2) Studies on the Anaerobic Growth of Intestinal Micro-organisms.
WELSH AND CHAPMAN, Drs. On the Interpretation of the Precipitin Reaction.
DEAN, Dr. H. R. Identification of *B. typhosus* in Mixed Cultures by Complement Fixation.
TODD AND WHITE, Drs. On the Haemolytic Immune Isolysins of the Ox and their Relation to the question of Individuality and Blood Relationship.
BAINBRIDGE, Dr. A Food-poisoning Outbreak due to *B. aertryck*.

DERMATOLOGY.

President: PHINEAS ABRAHAM, M.D., London.

Vice-Presidents: ALFRED EDDOWES, M.D., London; GEORGE PERNET, M.D., London; WALTER G. SMITH, M.D., Dublin; ROBERT BRIGGS WILD, M.D., Manchester.

Honorary Secretaries: WILLIAM GRIFFITH, M.B., 1, Chester Gate, Regent's Park, N.W.; G. NORMAN MEACHEN, M.D., 11, Devonshire Street, W.; J. GOODWIN TOMKINSON, M.D., 9, Sandyford Place, Glasgow.

The following programme has been arranged:

Wednesday, July 27th.—Discussion on Modern Methods in the Diagnosis and Treatment of Syphilis. To be opened by Dr. Feibes (Aix-le-Chapelle).

Thursday, July 28th.—Discussion on the Influence of Diet in Diseases of the Skin. To be opened by L. Duncan Bulkley (New York). At 12.30 p.m., jointly with the Sections of Surgery and Laryngology, Demonstration on Radium, by Dr. Louis Wickham, Paris.

Friday, July 29th.- Paper on Palaeogenesis as illustrated in Certain Affections of the Skin, by Sir Jonathan Hutchinson. Papers upon the following subjects have been accepted; many of them will be illustrated by lantern slides:

ABRAHAM, Dr. P. S. Some Varieties of Molluscum Contagiosum.
BUNCH, Dr. J. L. The Treatment of some Diseases of the Skin by Vaccine Therapy.
DALBY, Dr. J. F. Halls. Recent Experiences in the Treatment of Favus.
DAWSON, Mr. G. W. Diphtheria of the Skin.
EDDOWES, Dr. A. The Treatment of *X*-ray Burns.
EVANS, Mr. Willmott. Some Points in connexion with Electrolysis for Hirsuties.
MCDONAGH, Mr. J. E. R. The Serum Diagnosis of Syphilis.
MORTON, Dr. Reginald. The Use of Solid Carbon Dioxide in Dermatology.
PERNET, Dr. George. (*a*) An Unusual Case of Toxic Dermatitis, with Remarks on Symmetrical Skin Eruptions. (*b*) A Case of Pemphigus Vegetans, with Remarks on Treatment.
TOMKINSON, Dr. J. Goodwin (Glasgow). A Case of Pityriasis Rubra Pilaris.
WALSH, Dr. D. An Investigation of a Plant Dermatitis or Lily Rash amongst Flower Gatherers and Packers in the Scilly Islands.
WILD, Dr. R. B. (Manchester). Some Cases of Actinomycosis.

Cases of interest will be shown at the Section each morning at 10 a.m., in addition to drawings, photographs, and microscopic sections.

DISEASES OF CHILDREN

President: ARCHIBALD E. GARROD, M.D., F.R.S., London.

Vice-Presidents: CHAS. P. B. CLUBBE, M.R.C.S., Sydney; THOMAS SINCLAIR KIRK, M.B., Belfast; H. D. ROLLESTON, M.D., London; FRANCIS JAMES STEWARD, M.S., F.R.C.S., London.

Honorary Secretaries: HAROLD ARTHUR THOMAS FAIRBANK, M.S., 137, Harley Street, W.; FRANCIS W. GOYDER, F.R.C.S., "Marley House," Bradford; HUGH THURSFIELD, M.D., 84, Wimpole Street, W.

The following subjects have been selected for discussion:

Wednesday, July 27th.—Discussion on the Diagnosis and Treatment of Non-Tuberculous Joint Diseases in Children. To be opened by Dr. Coutts and Mr. E. M. Corner; followed by Messrs. Robert Jones, W. B. Parsons, J. Keogh Murphy, H. Tyrrell Gray, and others.

The following is a synopsis of Dr. COUTTS'S paper:

(1) Rheumatism by far the most frequent cause of joint trouble in children. The importance of rheumatic arthritis in spite of its slight severity in childhood. Some recent views as to treatment and the frequency of acute cardiac dilatation. (2) The arthropathies associated with anterior poliomyelitis and their pathological connexion with Charcot's disease. (3) Syphilitic joint affections in early infancy and later childhood. (4) Pneumococcal joint affections. They may occur as an acute disorder in a general pneumococcal infection, or as a subacute one where some remote localized pneumococcal lesion, often an empyema, acts as a focus. A similar rule applies to other pneumococcal affections, such as pericarditis and peritonitis. (5) Gonococcal arthritis may occur in the youngest infants with ophthalmia. In older children more frequent, and at a younger age in girls than in boys. (6) Joint affections in haemophilia and purpura. Rheumatoid arthritis and Still's disease. Joint affections with the acute specific fevers.

The following is an abstract of Mr. CORNER'S paper:

From a surgical point of view, the discussion of the inflammation of joints of non-tuberculous origin offers great opportunities for excursions into the more or less enchanting and romantic regions of haemophilia and kindred conditions. Tempting though that prospect may be, it offers a very unpractical review of the subject, a surgeon seeing few cases of such affections. The most frequent cases of inflammation of joints to be seen in the surgical wards of a children's hospital are undoubtedly those due to tuberculous disease. Next in frequency would be cases which are mistaken for tuberculous disease. These latter are members of a large class of infective diseases of joint

the infection not being due to the tubercle bacillus. The more subacute or chronic the infection, the greater similitude to the clinical pictures in the text-books ascribed to tuberculous disease. In the more acute forms they approach the clinical condition ascribed to septic arthritis. Of these infective, but non-tuberculous, diseases of joints, several varieties will be brought forward illustrating this the most frequent class of non-tuberculous arthritis seen in the practice of the surgical diseases of children. Such examples will include cases due to streptococcus infection, staphylococcus infection, pneumococcic infection, uncertain infections; infections of joints with the colon bacillus, the typhoid bacillus, the influenza bacillus, after specific fevers, gonorrhœa, injury, surgical operations, etc. In the disease of children such conditions have a distinct peculiarity as contrasted with the corresponding conditions of adults. In children the joint disease is not infrequently secondary to a blood stream infection of the bone in the neighbourhood of the joint, the acute joint disease being secondary to the acute bone disease. Diagnosis will be briefly discussed. The treatment must consist of rest followed by massage, or operative measures, both being aided by medicinal and vaccine treatments.

Thursday, July 28th.—Discussion on the Diagnosis and Treatment of Infections of the Urinary Tract by the *Bacillus coli*. To be opened by Dr. C. R. Box, Dr. Dudgeon, and Mr. John Pardoe; followed by Drs. J. Porter Parkinson, J. Graham Forbes, W. M. Jeffreys, and others.

The following is an abstract of Mr. Pardoe's paper:

(1) The more serious forms of *Bacillus coli* infection of the urinary tract in children appear to be of much less frequent occurrence than in adults. (2) Autogenous infections are much less common than those due to other conditions, such as calculus in the kidneys or in the urinary bladder. (3) Acute infections, occurring apart from other conditions, show the same tendency as in adults to rapid and complete cure. (4) Chronic infections, occurring apart from other conditions, are notable by their rarity. (5) Chronic infections dependent upon, or occurring during the course of other conditions, tend to more complete cure than in similar circumstances in adults.

Friday, July 29th.—Papers:

Elgood, Dr. Olive. Human Milk and Breast Feeding.
Parsons, Mr. W. B. The Diagnosis of Affections about the Hip joint in Children.
Pritchard, Dr. Eric. The Value of Banana Flour in Infant Feeding.
Murphy, Mr. J. Keogh. The Results of Radical Treatment of Tubercle in the Tarsus and Ankle-joint in Young Children.
Zangger, Dr. Theodore. The Therapeutics of Whooping-cough.
Gauvain, Mr. H. J. The Conservative Treatment of Tuberculous Cripples.
Gray, Mr. H. Tyrrell. Lesions of Solitary Appendices in Hernial Sacs.

GYNÆCOLOGY AND OBSTETRICS.

President: Mrs. Mary A. D. Scharlieb, M.D., London.

Vice-Presidents: John W. Ballantyne, M.D., Edinburgh; Comyns Berkeley, M.B., London; Professor John A. C. Kynoch, M.B., Dundee: Thomas Wilson, M.D., Birmingham; Thomas H. Wilson, F.R.C.P.I., Dublin.

Honorary Secretaries: W. Blair Bell, M.D., 7, Rodney Street, Liverpool; John Prescott Hedley, M.B., 11, John Street, Berkeley Square, W.; Carlton Oldfield, M.D., 32, Park Square, Leeds.

The following provisional programme has been arranged:

Wednesday, July 27th.—Discussion on Dysmenorrhœa, its Causes and Treatment. To be opened by Dr. G. E. Herman, followed by Drs. W. E. Fothergill, Inglis Parsons, Curtis Webb, and others.

Papers:

Döderlein, Professor D. (Munich). Die Entstehung und Verhütung des Puerperalfiebers. Discussed by Dr. A. G. R. Foulerton and others.
Campbell, Dr. John (Belfast). Air Embolism during Labour.
Munro Kerr, Dr. J. M. (Glasgow). Additional Cases of Rupture of the Uterus.
Young, Dr. James (Edinburgh). The Structure of the Stroma of the Uterine Mucous Membrane and its Bearing on the Menstrual Changes.

Thursday, July 28th.—Discussion on the Treatment of Fibromyomata Complicating Pregnancy. To be introduced by Dr. W. W. H. Tate, followed by Mr. Stanmore Bishop, Drs. A. J. Wallace, J. H. Willett, and others.

The following is an abstract of Dr. Tate's paper:

The occurrence of pregnancy in a woman suffering from fibroids is a cause of serious danger in only a small proportion of cases. The nature of these complications is discussed. It therefore follows that interference during pregnancy is necessary only in a small minority of cases. The induction of abortion or premature labour is not to be recommended. When surgical interference during pregnancy becomes necessary myomectomy should be the operation of election. Whether myomectomy should be done in the interest of the child, where other fibroids are present in the uterus, which *may* cause trouble later, is discussed. The preservation of the child's life demands special consideration, as the one and only chance of having a child may depend on the successful management of the pregnancy.

Papers:

Lockyer, Dr. Cuthbert (London). Some Cases of Pregnancy Complicated by Fibromyoma Uteri.
Gottschalk, Professor S. (Berlin). Two Cases of Occlusion of the Bowels by the Retroverted Uterus.
Leitch, Dr. Archibald (Dundee). The Pathological Basis of Operations on Cancer of the Uterus.
Ivens, Dr. Frances (Liverpool). Localized Necrosis in an Adenomyomatous Right Tube associated with Left Tubal Mole.

Friday, July 29th.—Papers:

Nagel, Professor W. (Berlin). Is it Justifiable to leave the other Ovary, if it appears unchanged, when Removing a Proliferating Papillary Ovarian Cyst?
Herff, Professor Von (Basle). The Causal Treatment of Dystocia in cases of Pelvic Contraction.
McIlroy, Dr. A. Louise (Glasgow). The Surgical Treatment of Fibrosis of the Uterus.
Wallace, Dr. A. J. (Liverpool). Intraperitoneal Hæmorrhage in Cases of Fibromyoma Uteri.
Longridge, Dr. C. Nepean (Cheltenham). The Involution of the Puerperal Uterus.

Professor Gottschalk will show some lantern slides of erosion of cervix.

It has been arranged for a section of the Pathological Museum to be specially set aside for the exhibition of specimens, microscopic slides, photographs, etc., relating to Adenomyoma of the Uterus. The Committee will also be glad to receive other specimens of interest.

LARYNGOLOGY.

President: Herbert Tilley, F.R.C.S., London.

Vice-Presidents: J. Lacy Fibth, M.D., Bristol; A. Brown Kelly, M.D., Glasgow; Stephen Paget, F.R.C.S., London; H. Betham Robinson, M.S., M.B., London.

Honorary Secretaries: Geo. Nixon Biggs, M.B., 30, Harley Street, W.; Henry John Davis, M.B., 8, Portman Street, W.; John Smith Fraser, M.B., 50, Melville Street, Edinburgh.

The following preliminary programme has been arranged:

Wednesday, July 27th.—10 a.m., Discussion on the Technique of the Direct Examination of the Œsophagus and Lower Air Passages. To be introduced by Professor Dr. von Eicken (Freiburg), and Dr. D. R. Paterson (Cardiff).

Thursday, July 28th.—10 a.m, Discussion on Vasomotor Rhinitis. To be introduced by Dr. H. S. Birkett (Montreal), and Mr. E. B. Waggett (London), followed

by Mr. Stuart Low, and Drs. Dan McKenzie, Scanes Spicer, H. J. Davies, Watson Williams, and others. 12.30 p.m. to 1 p.m., Conjoint Meeting with the Section of Dermatology when Dr. Wickham (Paris) will give a Demonstration of Radium.

Friday, July 29th.—10 a.m., Reading of the following among other Papers.

MCKENZIE, Dr. Dan. Enucleation of the Tonsil.
SECCOMBE-HETT, Mr. The Anatomy of the Capsule of the Tonsil and its Significance in the Treatment of Diseases of the Tonsil.
WILKINSON, Dr. W. Camac. Tuberculin in the Treatment of Laryngeal Tubercle.
SMITH FRASER, Mr. J. Congenital Stenosis of the Choanae.
SCANES-SPICER, Dr. Cancers of the Throat, etc.
HEMINGTON-PEGLER, Dr. L. A Note on Headaches in Association with Obstruction in the Nasal Passages.
WATSON-WILLIAMS, Dr. P. A Note on the Osteo-plastic Radical Operation for Frontal Sinus Suppuration.
ONODI, Professor. Exposure of the Endocranium and the Brain by Way of the Nasal Cavity.

In order to save time and to facilitate the necessary arrangements, all communications relating to the exhibition of preparations, specimens, drawings, etc., may be addressed to Mr. H. W. Armit, Honorary Secretary, Medical Museum Committee of the British Medical Association, Lister Institute of Preventive Medicine, Chelsea, London, S.W.

MEDICAL SOCIOLOGY.

President: JAMES ALEXANDER MACDONALD, M.D., Taunton.

Vice-Presidents: R. COCHRANE BUIST, M.D., Dundee; MAJOR GREENWOOD, M.D., London; HUGH R. KER, F.R.C.S.Edin., London; Professor JAMES T. J. MORRISON, M.B., Birmingham.

Honorary Secretaries: DONALD JOHN ARMOUR, F.R.C.S., 89, Harley Street, W.; HARVEY HILLIARD, M.R.C.S., 30, Wilton Place, Knightsbridge, S.W.; JAMES HENRY TAYLOR, M.B., 299, Eccles New Road, Salford.

The following is a provisional time table of the subjects selected for discussion. A syllabus is appended in each case.

Wednesday, July 27th, 10 a.m.

I.—THE ECONOMIC BASIS OF HOSPITAL MANAGEMENT.

1. *Provision of Funds:*—

Proportion of payments by—

i. Public grants:
Asylum boards,
Corporations,
Boards of guardians,
Education committees.

ii. Charitable or philanthropic:
Sunday funds,
Works collections,
Private subscribers and endowments.

iii. Payments by patients.

2. *Conditions of Admission:*—

In and out patients:

i. Free,
ii. Subscribers' letters,
iii. Partial payments,
iv. Recommendation by public bodies,
v. Almoners.

3. *Professional:*—

Staff:

i. Public subscriptions,
ii. Private subscriptions.

Principles of Resolutions adopted by the Association.

In the case of patients maintained from public funds, the medical service should be paid.

In the case of patients maintained from charitable funds, the medical service should be charitable.

In the case of patients paying for themselves, the medical service should be chosen by the patient and paid for by him.

4. *The Economic Basis of the Out-patient Department:*—

(*a*) Consultative.

(*b*) Dispensary:

i. From the professional point of view,
ii. From the patient's point of view,
iii. From the hospital point of view.

The discussion will be opened by Professor Benjamin Moore, followed by Sir Henry Burdett, K.C.B., Dr. Rentoul, Dr. Saundby, Mr. Hugh R. Ker, Dr. Mackintosh, Dr. Lauriston Shaw, and many others.

Professor BENJAMIN MOORE (Liverpool) will speak on the following points: (1) The fundamental notion that a hospital is an eleemosynary institution dependent upon charity is erroneous. The hospital ought to be regarded from the point of view of economics as an institution for the study and treatment of disease which cannot be adequately performed elsewhere, and hence as an institution for the benefit of the community or State, rather than primarily that of the individual. (2) The conception of a hospital as a voluntary charity produces the evil of two distinct types of hospital—namely, the Poor Law and the voluntary hospital, existing for two kinds of necessitous people, whereas there should be but one type of hospital. (3) As a result of the operation of No. (2), there arises the view in the lay mind that it is a disgrace to be attended in a Poor Law hospital, but that attendance in a voluntary hospital is no evidence of poverty, and even is a thing which can be claimed as a right by all. (4) An attempt should be made to place all hospitals on a common basis, and to insist that admission, except to accidents, should only be allowed upon a doctor's certificate that the case can be best treated in a hospital. (5) Persons possessing means admitted to a hospital, because their illness can best be treated there, should be compelled to pay, and the fees should be paid over to those giving them attention, or who have sent them in. (6) The view which regards the doctor in the hospital as a philanthropist should be discouraged, the present system of paying back consultants in kudos or by introductions to practitioners should be abandoned as a radical evil, and these physicians and surgeons should be properly paid for their work like any other body of public servants. (7) The system of voluntary hospitals is a failure, because of the facts (*a*) that these hospitals undertake a great deal of work which should not be done in hospital at all, (*b*) they leave undone a great deal of work which ought to be done, and (*c*), especially in their out-patient departments, they waste an inordinate amount of the time of workers in the community. The system of Poor Law hospitals is also a failure, first, because of the taint of the Poor Law system; secondly, because the attention to patients is inadequate, although the resident officers are sweated in their work, and a great deal of truly medical work is performed by nurses instead of by medical men who alone can perform such work properly; and, thirdly, because the hospitals are antiquated, insanitary, and overcrowded, so spreading disease from patient to patient and depreciating the health of the people. To replace this a properly organized, adequate, modern service of State hospitals is required, in which all cases shall be properly attended to by properly qualified and adequately paid medical officers. The reason for such a system is not charity or philanthropy, but purely and simply the economic demand for a healthy people, physically fit and capable of carrying on the work of the country; such a system will repay itself over and over again even from the monetary point of view, not to mention matters more important than money. (8) Since all medical service would be paid for under such a system, either by State or individual, the doctor does not suffer, he is able to carry out his work under better economic and social conditions, and the public have an infinitely better service. It is further obvious that hospital abuse is impossible, and many other evils, for the profession itself works the system and lay committees and charitable donors with their well-meant but unscientific interference have ceased to exist.

Thursday, July 28th, 10 a.m.

II.—STATE SICKNESS INSURANCE (PROVISION OF MEDICAL ATTENDANCE) AS AFFECTING THE PUBLIC HEALTH AND THE MEDICAL PROFESSION.

To be introduced by the Medical Secretary, Dr. J. Smith Whitaker; followed by Drs. Armit, J. Pearse, E. J. Maclean, W. E. Thomas, and others.

The following is a synopsis of Dr. WHITAKER'S paper:

1. *The Public Health.*

A. Summary of the existing systems of medical relief of the wage-earning classes, including

(i) Private medical practice.
(ii) Contract medical practice.
(iii) Charitable services.
(iv) Public services.

B. Examination of the efficiency of such treatment, and consideration of the effects on the community of inefficiency, particularly in respect of the delay in obtaining proper treatment, and consequent prolongation of treatment or permanent disability.

C. Desirability of public provision to facilitate prompt treatment.

D. Importance of maintaining the provident element in such provision.

E. Examination of the effects of a system of national insurance in providing that prompt medical attendance shall be within the reach of every wage-earner, under conditions which secure:

(i) That he shall contribute to the cost.
(ii) That he shall have a measure of control over the provision made.

2. *As Affecting the Medical Profession.*

A. Defects of existing arrangements, particularly as regards underpayment or non-payment of those members of the profession who attend the wage-earning classes.

B. Advantages of a system of national insurance as affording means whereby the profession, if it take the proper steps, may secure adequate remuneration and satisfactory conditions of service.

C. Examination of the objections to a system of national insurance, especially:

(i) That it would perpetuate the present evils of contract medical practice.
(ii) That it would deprive the medical practitioner of his independence.

D. Indirect effects of a system of national insurance on:

(i) Charitable medical organizations.
(ii) The Poor Law medical service.

Friday, July 29th.

III.—SOCIAL ASPECTS OF THE FALLING BIRTH-RATE.

1. The facts: (*a*) Comparative national statistics; (*b*) comparative social statistics—that is, evidence as to the relative rates of decline in various social strata.

2. The factors: (*a*) spontaneous; (*b*) artificial.

3. The effects: (*a*) on selection, reproductive from more fertile classes natural, comparative class death-rates, infantile and juvenile; (*b*) on national efficiency, industrial, professional, and military; (*c*) on character, individual and national.

Problems for Discussion.

(*a*) Biological gain or loss in the process and its controllability.

(*b*) Methods of control, economic, ethical, medical.

The discussion will be opened by Dr. J. W. Ballantyne (Edinburgh), Dr. Fremantle, M.O.H. Herts, Dr. Gilchrist (Nice), and Dr. J. W. Hunter.

The following is a synopsis of Dr. J. W. BALLANTYNE'S paper:

Tennyson's "torrent of babies" now reduced to a rivulet. The dangers of any attack upon the monogamic marriage shown in Rome under Augustus; the present day dangers of an attack upon the constitution of the family as the sociological unit. Definition of the family. Some causes of the falling birth-rate; they cannot from their nature be easily counteracted; indication of the most hopeful lines of advance. The conservation of existing lives (antenatal and neonatal) and the prevention of the present wastage due to frequent abortion and stillbirth, neglect of maternal health in pregnancy, defective hygiene in the case of newborn infants, the divided duties of the working married woman, and the like. The ultimate restoration of the normal birth rate is not hopeless, but the tide is still flowing in the other direction. What shall be the immediate and future means of facing the existing situation?

The following points will be raised by Dr. HUNTER:

That the elder born children of a family are more liable to suffer from defective conditions than the younger ones. Of children of the working classes this holds good up to and including the seventh born. With the eighth born, however, there is a sudden sharp rise in the liability to "defect," and the type of "defect" has become still more severe than that affecting the elder born; with still later members this liability to "defect" steadily increases. The offspring of parents who are themselves elder born members of a family shows more "defect" than the offspring of parents who are younger members. This holds good up to and including an eighth born parent. With the offspring of a ninth born parent, however, there is a marked rise in "defect." (The difference of one in order of birth between parents and children is probably due to earlier age at marriage of grandparents.) The "defect" at the close of the large family is generally of so marked a type that few such individuals survive to become parents, hence from a practical point of view the "defect" among the early born is more important. That somewhere about 24 to 25 years of age, a woman is best fitted to give birth to her firstborn. That after 25 years the capacity to bear a good child with the firstborn rapidly diminishes. That with regular pregnancies the power to reproduce well steadily increases until the mother reaches 35 years of age, after which it declines very rapidly. That a period of sterility, natural or artificial, lowers the quality of a child subsequently born. That the limitation of the family to two or three children means the annihilation of the race.

Paper:

GILCHRIST, Dr. A. W. (Nice). A Study in Eugenics or Genetics.

MEDICINE.

President: R. W. PHILIP, M.D., Edinburgh.

Vice-Presidents: Professor HARRY B. ALLEN, M.D., Melbourne; GEORGE A. HERON, M.D., London; WALTER K. HUNTER, M.D., Glasgow; HENRY L. MCKISACK, M.D., Belfast; GEORGE R MURRAY, M.D., Manchester; SIDNEY P. PHILLIPS, M.D., London.

Honorary Secretaries: H. MORLEY FLETCHER, M.D., 98, Harley Street, W.; HERBERT FRENCH, M.D., 62, Wimpole Street, W.; JOHN HAY, M.D., 12, Rodney Street, Liverpool.

The following preliminary programme has been arranged:

Wednesday, July 27th.—Discussion on the Pathogenesis, Prophylaxis, and Treatment of Acidosis. To be opened by Professor Edsall of Philadelphia, followed by Drs. E. I. Spriggs, G. Guelpa (Paris), A. P. Luff, Langdon Brown, A. P. Beddard, Leonard Guthrie, M. S. Pembrey, and J. H. Ryffel.

After the discussion on Acidosis, Dr. Leonard Hill M.D., F.R.S., will give a demonstration on Improved Methods of giving Oxygen, with an account of their Effects.

The following is a synopsis of Professor D. L. EDSALL'S remarks:

While there is an important distinction between acidosis and acid intoxication, there is, from the

clinical as well as from the pathological standpoint, another equally important distinction between the forms of acidosis, sometimes severe and sometimes mild, that are due to lack of carbohydrates or inability to utilize them, as in diabetes, and those forms which are incidental to severe disease which is most commonly situated in the liver. Even in the latter forms, however, diet at times plays an important part in treatment as to alkalies, probably less through checking the direct effects of acidosis than through controlling secondary effects, perhaps an autolysis. While it is not certain that acid intoxication is the prime cause of the violent toxic symptoms in diabetes—and some evidence points to the contrary—it is highly probable that it is the main cause, as well as in the occasional cases of coma of the same type in non-diabetic persons. The manner in which the severe symptoms are produced is not clear. The relation of the loss of inorganic salts to the production of symptoms, and the possible relation of the same salts to the production of acidosis, need further study. It is not improbable that these salts have some relation to the symptoms in the earlier course of diabetes before severe toxic symptoms come on, especially to the common muscular fatigue. Metabolism studies, not yet complete, bearing upon this point will be cited. It seems probable that adding other bases besides sodium in the treatment of acid intoxication may help better than sodium alone in postponing a fatal issue.

Thursday, July 28th.—Discussion on the Treatment of Chronic Constipation. To be opened by Dr. J. F. Goodhart, followed by Sir Lauder Brunton, F.R.S., Professor C. Baümler (Freiburg), Sir James Sawyer, Drs. H. D. Rolleston, Hale White, A. Mantle, Nathan Raw, A. F. Hertz, George Herschell, and Mr. W. R. Arbuthuot Lane.

The following is a synopsis of Dr. GOODHART'S paper:

(1) Constipation defined to be unnatural delay in the passage of the intestinal contents along the colon. What constitutes unnatural delay? From bismuth observations the average period for the passage of the intestinal contents along the colon only would appear to be some twenty hours from taking the meal; to this must be added for delay in the collecting chamber a variable time, probably in most people three to four hours, more or less, until the call for expulsion comes. (2) Constipation thus falls into two groups—constipation of the colon, and constipation of the collecting chamber or rectum. The one is an automatic reflex outside the control of the will; the other is largely aided by voluntary effort, and the trouble comes into being when voluntary muscular effort fails. The latter is mostly present in old people, or in women of lax habit who have borne children, and in such as have habitually neglected to form good habits. (3) Constipation of the main tract of the colon is a much more intricate subject; it is in the main a physiological one. Its causes concern themselves with (*a*) the neuro-muscular apparatus of the intestinal wall; (*b*) the intestinal contents. The nervous element in the circuit a dominant one in constipation habit; nervous vigour and its oscillations; the temparament of the subject; the mental condition, and related thereto all the disturbances of secretion, absorption, excretion, associated as they are with flatulence, pain, and mucular cramp. Muscular power is also all-important. The attributes of peristalsis; a sleeping dog; its relation to the passage of scybala; its bearing on kinks and adhesions; scybala seldom cause intestinal obstruction. (*b*) The intestinal contents. The quantity, quality, and variety of food. The colon a great feeder; it is meant to be full, not empty; the function of the colon muscle in this respect. Intestinal tone; scybala; "sheep's droppings" starvation; aperients. (4) Treatment; not every case needs it. Constipation healthy for many. The doctrine of intestinal auto-intoxication, as developed of late years, extreme and physiologically unsound. Intestinal antiseptics. The surgical treatment of chronic constipation. When treatment is necessary. Much to be gained by common-sense physiology. The obsession of the urgency of a daily stool to be attacked; so also that other, that blocks readily occur; so also a third, that the colon is a poison bag. Treat bad habits; irregularity of meals; too little food; the dietetic fad; the curse of pill-hunger. Instil the need of patience and perseverance; leave the bowels alone by thought and deed to work out their own salvation. The rôle of massage, water, salines, dinner pills, enemata.

Friday, July 29th.—Papers:

HARRIS, Wilfred, M.D. The Injection Treatment of Neuralgia and Sciatica.
HUMPHRY, Laurence, M.D. (1) A Case of Acromegaly with Hypertrophied Heart; Pressor Substance in the Urine; with *Post-mortem* Specimens. (2) Aneurysm of Aorta Communicating with the Superior Vena Cava.
SAYER, Miss Ettie, M.B., B.S. The Effects of Electrical Currents upon Blood Pressure.
JORDAN, A. C., M.D. The Roentgen-Ray Appearances of Thoracic Aneurysm; illustrated by lantern slides.
MACKINTOSH, Dr. J. S. The Evolution of Racial Types of Europe and its Bearing on the Racial Factor in Disease.
WILKINSON, W. Camac, M.D. Tuberculin in the Treatment of Pulmonary Phthisis.
RAW, Nathan, M.D. The Treatment of Addison's Disease by Tuberculin.

Members who desire to take part in either of the set discussions or to read papers should communicate as soon as possible with the Honorary Secretaries.

NAVY, ARMY, AND AMBULANCE.

President: Colonel ANDREW CLARK, A.M.S.(T.F.) London.

Vice-Presidents: Fleet Surgeon PERCY W. BASSETT-SMITH, R.N., Haslar; Lieutenant-Colonel JAMES HARPER, R.A.M.C.T., London; Lieutenant-Colonel MICHAEL W. H. RUSSELL, R.A.M.C., London; Lieutenant-Colonel ROBERT J. S. SIMPSON, C.M.G., R.A.M.C., London.

Honorary Secretaries: Staff Surgeon JAMES GARFIT WALLIS, M.B., R.N., Royal Naval Barracks, Chatham; Major ALFRED PERCY BLENKINSOP, R.A.M.C., c.o Messrs. Holt and Co., 3, Whitehall Place, S.W.; Major ARTHUR M. CONNELL, R.A.M.C.T., 79, Hanover Street, Sheffield.

The following programme has been arranged:

Wednesday, July 27th.—Papers:

SPENCER, Major C. G., R.A.M.C. Local and Spinal Analgesia in Relation to Active Service.
WILDEY, Fleet Surgeon, A. G., R.N. Hypodermic Injection in Action.
WILSON, Lieutenant-Colonel E. M., C.B., C.M.G., D.S.O., R.A.M.C. Medical Requirements in War for Assisting the Royal Army Medical Corps on Mobilization.

Thursday, July 28th.—Papers:

PRYN, Fleet Surgeon W. W., R.N. Colour Vision.
COLLINGWOOD, Fleet Surgeon G. T., R.N. Naval Recruits.
LLOYD, Captain Langford, D.S.O., R.A.M.C. Education and Intelligence from a Recruiting Point of View, with special regard to the Royal Army Medical Corps Regular and Territorial Service.
GILES, Colonel P. D., V.D. Training of Medical Units.

Friday, July 29th.—Papers:

CUMMINS, Major S. L., R.A.M.C. Isolation of Disease Carriers and Methods of Dealing with Them.
COPE, Surgeon L. F., R.N. Air and Ventilation in Modern Warships.
CLAYTON, Fleet Surgeon F. H. A. Tuberculosis in the Navy.

ODONTOLOGY.

President: J. HOWARD MUMMERY, M.R.C.S., L.D.S., London.

Vice-Presidents: WILLIAM DONALD ANDERSON, F.F.P.S., L.D.S., Glasgow; ARTHUR W. W. BAKER, M.D., L.D.S., Dublin; W. H. DOLAMORE, M.R.C.S., L.R.C.P., L.D.S., London; WILLIAM HERN, M.R.C.S., L.D.S., London; JOHN MATHIESON MACMILLAN, L.R.C.P. and S. Edin., L.D.S., Glasgow.

Honorary Secretaries: ERNEST B. DOWSETT, M.R.C.S., L.R.C.P., L.D.S., 1, Gloucester Street, W.; A. HOPEWELL-SMITH, M.R.C.S., L.R.C.P., L.D.S., 58, Park Street, Park Lane, W.; CYRIL H. HOWKINS, M.R.C.S., L.R.C.P., L.D.S., 83A, Edmund Street, Birmingham.

The following programme has been arranged:

Wednesday, July 27th.—Special Discussion on the Prevention of Dental Caries, to be taken under the following headings: (1) The Effect of Various Food Stuffs. To be opened by Dr. Sim Wallace. (2) The Care of the Mouth during General Disorders. To be opened by Dr. Hector Mackenzie. (3) The Influence of Climate, etc. To be opened by Mr. A. S. Underwood.

The following are synopses of the opening papers:—

1. Dr. Sim Wallace: The effect of the foodstuffs in preventing dental caries is twofold. First, the *predisposing causes* of caries may to a large extent be prevented. The two chief predisposing causes which may be most effectually prevented by foodstuffs are (*a*) the irregularities in position of the teeth and (*b*) recession of the gums in later life. When food which stimulates efficient mastication is habitually consumed the muscles of mastication, including the tongue, become well developed and the jaws grow sufficiently large to accommodate all the teeth without irregularity or crowding. Further, such foods tend to keep the mouth and alimentary canal in a hygienic condition, and thus largely prevent the ill-health and emaciation which so generally result from chronic interference with normal digestion and assimilation. This is an important factor in preventing irregularities, because ill health associated with emaciation prevents the normal development of the jaws and thus gives rise to crowding of the teeth. Recession of the gums is also prevented by the habitual use of food which demands efficient mastication, for the teeth are kept free from tartar and other irritants which lodge about the necks of the teeth and injure the gums. The amount of nutrition, including the proportion of lime salts in the water, need not be considered, as it is never lack of nutrition of any kind *per se* which induces or predisposes to dental caries, though the unhygienic state of the mouth and alimentary canal resulting in constitutional disease may give rise to developmental defects in the enamel and thus predispose to caries. Secondly, the *immediate or exciting cause* of caries may be prevented by foods which clean the mouth and leave the teeth free from adhering carbohydrates. To secure this end, without requiring to restrict the kinds of foods eaten, it is necessary to have the meal arranged in such a way that the last foodstuff eaten will be of a detergent nature.

2. Dr. Hector Mackenzie: The neglect of the hygiene of the mouth during illness all too common even at the present day. Sordes in fever a sign of neglect and inefficient nursing. Septic conditions of mouth often aggravate the effects of general illness. The prevalence of pyorrhoea and caries. Their relations to chronic toxaemia, various forms of anaemia, and affections of the joints. Their relation to chronic dyspepsia and intestinal disorders. Their effects on tuberculosis, etc. The relations of general disorders to dental caries and pyorrhoea. To what extent the latter are dependent on general disorders. Conditions of ill-health no doubt responsible for dental disease, but the latter is the cause of much ill-health.

3. Mr. A. S. Underwood: The results of a comparison of a large number of skulls of various races and periods undertaken with a view to determine, if possible, the factors favouring the occurrence of dental caries, the effects of climate and varying degrees of civilization being specially kept in view.

Thursday, July 28th.—Continuation of the Special Discussion on the Prevention of Dental Caries—(4) The Effect of Variations in the Buccal Secretions, and the Part Played by Bacteria Normally Present. To be opened by Mr. Kenneth W. Goadby. (5) The Need for the Correction of Malposition of the Teeth. To be opened by Mr. J. H. Badcock. (6) The Correction of the Effects of Drugs taken as Medicine. To be opened by Dr. Harold Austen. (7) The Reasons for Susceptibility and Natural Immunity. To be opened by Mr. Howard Mummery.

4. Mr. Kenneth W. Goadby: Dental caries presents a difficult bacteriological problem, due to the number of species of bacteria involved, and the fact that until the tooth pulp is involved little or no physiological reaction takes place in the invading bacteria. Normal flora of the mouth. Bacteriological flora in acute caries. Bacteriological flora in chronic caries. Factors of etiological significance. Bacteria most closely associated with caries. Biological facts of mouth bacteria in relation to the commencement of caries.

5. Mr. J. H. Badcock: It is taken for granted that one of the chief causes of caries is stagnation of food and other débris around the teeth. Any oral conditions which tend to uncleanliness will favour caries, while conditions tending to cleanliness will aid in its prevention. It is natural for the mouth to be clean, and the mouths of animals living under natural conditions are clean. This natural cleanliness is due to several factors—namely: (*a*) Friction of hard food upon the teeth and gum in the act of chewing; (*b*) the hard and polished surfaces of the teeth; (*c*) the shapes of the individual teeth; (*d*) the arrangement of the teeth with relation to one another. Description of the normal arrangement of the teeth and demonstration that any departure from this arrangement favours the lodgement and stagnation of food. The correction of irregularities of the teeth tends to the prevention of caries in direct proportion to the degree in which the result attained approaches the normal.

6. Dr. Harold Austen: There is a very widely-spread and deeply-seated popular belief that the taking of medicines is a common cause of the decay of the teeth. This belief is fostered, first, by the fact that certain drugs, such as iron, cause an obvious, though superficial, blackening; and, secondly, that decay of the teeth is found to be prevalent after such disturbances of the general health as are commonly treated by the administration of medicines. The belief that drugs injure the teeth appears, however, to rest upon but slender foundations, the popular prejudice resting upon a basis of "post, ergo propter, hoc." Two classes of drugs would appear *prima facie* to be a potential source of caries: (1) Acids, administered internally or used as local applications to the fauces. Very dilute solutions of weak acids, if applied continuously, have been shown by experiment to appreciably destroy the enamel. But in the mouth acid medicines and gargles are not applied continuously, but very intermittently, and in the case of fluids, mostly to the exposed surfaces, which are constantly washed by the saliva. All modern research tends to prove that the acids really injurious to the teeth are those generated *in situ*, in places which do not admit of natura cleansing, by the fermentation of the remains of carbohydrate foods. (2) Mercury. Mercurials when administered in infancy have been credited with the production of hypoplasia of the teeth, the so-called honeycombing. The evidence for this is far from convincing. If, however, the point be proved, it would be an instance of a medicine causing predisposition to decay, to which hypoplastic teeth are very liable. Mercurials administered in large doses have long been known to cause well-marked disturbances in the associated tissues, the gums, and even bone. It is conceivable that mercury acting in this way, where there has been actual ulceration and permanent loss of tissue, may cause a predisposition to caries at the necks of the teeth. Lead, bismuth, silver, or copper, being drugs partly excreted by the oral mucous membrane, have been credited with occasionally producing similar effects to mercury in septic mouths. The only treatment for the correction of the effects of these drugs, if any is required, seems to be to maintain complete cleanliness of the mouth, and to neutralize the effects of acids taken by the immediate use of an alkaline mouth wash.

7. Mr. J. Howard Mummery: Immunity to caries in certain individuals; how accounted for. Constitution of the teeth; attribution of antiseptic powers to saliva; potassium sulpho-cyanide in the saliva; alkalinity of saliva; chemiotaxis (attraction of white corpuscles by saliva); action of saliva on soluble

products of bacteria; antagonism and symbiosis of bacteria in the mouth. Can the subordination of natural selection in modern communities account in some measure for the increased susceptibility to caries?

Friday, July 29th.—Paper: The Value of Teeth to the Human Economy, by J. G. Turner.

OPHTHALMOLOGY.

President: CHARLES HIGGENS, F.R.C.S., London.

Vice-Presidents: HENRY L. FERGUSON, F.R.C.S.I., Dunedin; CECIL E. SHAW, M.D., Belfast; GEORGE WM. THOMPSON, F.R.C.S., London.

Honorary Secretaries: N. BISHOP HARMAN, F.R.C.S., 108, Harley Street, W.; ARTHUR HENRY HAVEN SINCLAIR, M.D., 5, Walker Street, Edinburgh.

The following discussions have been arranged:

1. The Future of Ocular Therapeutics: (*a*) Local and General. To be opened by Dr. G. A. Berry (Edinburgh). (*b*) Bacterial Products. To be opened by Dr. J. W. H. Eyre (London), followed by Sir John Tweedy and Mr. R. W. Doyne.

The following is a syllabus of Dr. BERRY'S paper:

Undoubted advances in ocular therapeutics have been few of recent years, though, particularly as regards local treatment, the number of new substances and new methods employed have been considerable. Modern treatment professes to be "rational," and is based on indications afforded by advances in scientific knowledge; there are great difficulties in complying with these indications, and rational treatment, though making progress, is often no more efficacious than the older empirical methods of treatment. Various reasons why this should be the case: Directions in which views as to treatment tend towards change and advance. General treatment: Influence of current scientific investigations. The position and scope of general as opposed to local treatment in eye affections. Reasons for efficacy of various empirically established lines of treatment in the light of modern knowledge, etc.

2. The More Chronic Forms of Anterior Uveal Inflammation: (*a*) Extra-Ocular Manifestations. To be opened by Mr. Holmes Spicer (London). (*b*) Intra-Ocular Manifestations. To be opened by Mr. Stephen Mayou (London), followed by Mr. R. W. Doyne and Mr. A. W. Ormond.

The following are synopses of the two opening papers:

(*a*) Mr. HOLMES SPICER: Incidence as to age and sex. Conditions of general health in relation thereto. The local signs: Involvement of the cornea, involvement of the deeper parts. Pathological and bacteriological investigations. Treatment: Local applications, surgical methods, ionization, vaccine.

(*b*) Mr. STEPHEN MAYOU: Cyclitis. (1) The nature and sources of the infection and the means by which it is conveyed to the eye. Staphylococcal. Tuberculous. Syphilitic. The reason why both eyes are not infrequently affected. (2) The intra-ocular manifestations. K. P. Its origin and diagnostic significance. The changes in the iris. Cause of the lenticular opacity. The manifestations in the choroid. The variations in the tension of the eye mainly dependent on changes in the vitreous. (3) The means of diagnosis. The value of tests to determine the presence of organisms within the body—for example, von Pirquet's and Wassermann's reactions. The value of the local reaction after the injections of toxins into the blood. The direct bacteriological diagnosis by examination of the aqueous. (4) The treatment by vaccines.

3. The Diagnostic Values of Ophthalmoplegia, Partial and Total. To be opened by Dr. Risien Russell (London), followed by Mr. L. Vernon Cargill, Dr. E. Farquhar Buzzard, and Dr. W. H. Brailey.

The following is a syllabus of Dr. RISIEN RUSSELL'S paper:

The value of ophthalmoplegia in the diagnosis of organic as opposed to functional affections of the nervous system. What estimate can be formed of the probable nature of the case from a study of the ophthalmoplegia alone. The conclusions justified by a knowledge of the mode of onset and progress of the paralysis. The significance of the combination in which the ocular muscles are affected. The value of associated ocular phenomena as aids to a correct diagnosis. The deductions that are warranted when other cranial nerves are concomitantly affected. Is a diagnosis ever justified from a study of the ophthalmoplegia in conjunction with symptoms, without the additional assistance that can be derived from a general physical examination of the patient? The importance of a knowledge of the general physical state before a correct conclusion can be formed. To what extent ophthalmoplegia is of assistance in the diagnosis of intracranial disease from general affections of the nervous system.

The following papers have been accepted:

TRAQUAIR, H. M., M.D. The Treatment of Purulent Keratitis by Ionotophoresis.
HARMAN, N. Bishop, F.R.C.S. The Use of Carbon Dioxide Snow in Eye Work.
LAWSON, Arnold, F.R.C.S. Radium-Therapy in Ophthalmology.
THOMPSON, A. Hugh, M.D. The Operative Treatment of High Myopia.
BENSON, Arthur H., F.R.C.S.I. A Method of Enlarging Certain Forms of Contracted Socket.
PISANI, Lieutenant-Colonel L. J., F.R.C.S., I.M.S. On the Conditions which may account for the greater Prevalence of Cataract in India.
MACCALLAN, A. F., F.R.C.S. Five Months' Clinical Work at Luxor in 1910.
HARMAN, N. Bishop, F.R.C.S. The Education of High Myopes.

DEMONSTRATIONS.

The following demonstrations have been arranged in the meeting-room of the Section at 9 o'clock on Thursday, July 28th:

Methods of Testing for Colour Blindness. By Dr. F. EDRIDGE-GREEN.
New Operation for the Production of Filtration Cicatrix in Chronic Glaucoma. By Dr. H. HERBERT.
Use of New Registering Form of Diaphragm Test for Measuring Binocular Vision. By Mr. N. BISHOP HARMAN.

On the third day the following resolution will be brought forward by Mr. N. Bishop Harman, and supported by Messrs. Walter Edmunds, A. Hugh Thompson, W. H. Brailey, and J. A. Menzies.

> In view of the importance of obtaining continuity of treatment of defects of vision in school children throughout the period of education, and of proper co-ordination of medical inspection and treatment, it is the opinion of the Ophthalmological Section of the Association that the organization of school clinics is desirable.

OTOLOGY.

President: EDWARD LAW, M.D., London.

Vice-Presidents: ALBERT ALEXANDER GRAY, M.D., Glasgow; HUNTER F. TOD, M.D., London; FREDERICK H. WESTMACOTT, F.R.C.S., Manchester.

Honorary Secretaries: CECIL IRVING GRAHAM, F.R.C.S., 47, Queen Anne Street, W.; HERBERT JAMES MARRIAGE, F.R.C.S., 109, Harley Street, W.

The following subjects have been selected for special discussion:

Wednesday, July 27th.—Discussion on Aural Tuberculosis in Children. [The discussion will be limited to diagnosis, prognosis, and treatment, without details of operative procedure.] To be opened by Dr. W. Milligan.

The following is an abstract of the opening paper:

Dr. MILLIGAN will deal, in the first instance, with the frequency of aural tuberculosis in childhood, and will discuss in detail the usual routes of infection. The importance of recognizing the disease as of primary origin in the middle-ear cleft in a large pro-

portion of the cases met with will be insisted upon. The main symptoms of aural tuberculosis—subjective and objective—will then be considered, and the various methods of establishing a definite diagnosis described and criticized. The complications most frequently met with will be enumerated and their relative importance dealt with. The important questions of prognosis and of treatment will be discussed and the results of treatment analysed. Suggestions will be made as to how to deal with cases of aural tuberculosis in school children, as to how to prevent dissemination of disease, and as to the advisability or otherwise of isolating infected children.

Thursday, July 28th.—Discussion on the Diagnosis and Treatment of Infective Labyrinthitis, to be opened by Docent Dr. Robert Bárány (Vienna), and Mr. C. E. West.

The following are abstracts of the opening papers:

(*a*) Dr. BÁRÁNY (Vienna) distinguishes the following forms of the disease: (1) Acute purulent labyrinthitis. (2) Latent purulent labyrinthitis. (3) Fistula of the labyrinth with intact membranous labyrinth (circumscript labyrinthitis). (4) Fistula of the labyrinth with slight lesion of the membranous labyrinth. (5) Fistula of the labyrinth with severe lesions of the membranous labyrinth. (6) Serous labyrinthitis. The differential diagnosis between these diseases is made possible by investigation of the condition of the semicircular canals, the methods of which were partly originated, partly worked out by the author. The most important sign of the diseases of the semicircular canals is the spontaneous vestibular nystagmus, which may be present either continuously (acute labyrinthitis), or only during attacks (circumscript labyrinthitis). The investigation into the function of the semicircular canals consists in the experimental irritation of the canals by means of (1) turning, (2) rapid head movements, (3) syringing with cold and hot water, (4) galvanization, (5) compression and aspiration of the air in the meatus. All these different irritations produce quite definite forms of vestibular nystagmus, which must be observed carefully. Also intracranial diseases produce vestibular nystagmus, especially those of the posterior fossa (cerebellar abscess, meningitis). The author gives the differential diagnosis between the diseases of the labyrinth and the intracranial complications which often accompany the labyrinth trouble. This diagnosis is built upon the observation of the spontaneous nystagmus and the exact examination of the irritability of the semicircular canals.

(*b*) C. ERNEST WEST: Infections of the labyrinth may be either pyogenic or non-pyogenic; the former constitute the main subject of the paper. Pyogenic infection may be either diffuse or localized to a portion of the labyrinth; this part may be restricted to the labyrinthine wall. Diffuse infection may be either acute or chronic; localized infection is always chronic. Necrosis of the labyrinthine capsule may take place in either acute or chronic conditions. The dangers and incapacities caused by infective labyrinthitis. Treatment of infective labyrinthitis chiefly operative by the necessity of the case. The aims of operative treatment. The treatment of chronic local infections by the radical mastoid operation and curettage. The operative treatment of the diffuse infections, whether acute or chronic, by drainage of the labyrinth. The vestibulotomies, inferior and double—technique and after-treatment. Tuberculous labyrinthitis. Necrosis of the labyrinthine capsule. Non-pyogenic infections of the labyrinth, syphilis, mumps. Non-suppurative labyrinthitis in otitis media.

After the discussion a demonstration with the Epidiascope of specimens illustrating diseases of the labyrinth will be given by Professor A. Politzer of Vienna.

Friday, July 29th.—Papers:

HORNE, Dr. Jobson. Deafness and Diseases of the Ear in relation to the Public Services and Insurance; and their Bearing upon Forensic Cases and the Choice of a Means of Earning a Livelihood.

YEARSLEY, Mr. Macleod. The Value of Ossiculectomy in Chronic Middle-Ear Suppuration.

HOVELL, Mr. Mark. Some Remarks on the Connexion between Affections of the Mucous Membranes throughout the Body and Middle-Ear Disease.

BARR, Dr. J. Stoddart. Experiments bearing upon the Practicability of Treating Meningitis (septic and specific) by Means of Lavage of the Cerebro-Spinal Subarachnoid Spaces; preliminary communication.

Members are invited to contribute any preparations, specimens, or drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects.

PATHOLOGY.

President: S. G. SHATTOCK, F.R.C.S., London.

Vice-Presidents: FREDERICK W. ANDREWES, M.D., London; ERNEST F. BASHFORD, M.D., London; Professor STUART MCDONALD, M.B., Newcastle.

Honorary Secretaries: JULIUS BERNSTEIN, M.B., 10, Bentinck Street, Cavendish Square, W.; ARTHUR E. BOYCOTT, M.D., Guy's Hospital, London, S.E.; ERNEST E. GLYNN, M.B., 62, Rodney Street, Liverpool.

The following is the provisional programme for the Annual Meeting:

Wednesday, July 27th.—Dr. Mott, F.R.S., will read a paper on the Histological Changes occurring in the Nervous System in Certain Cases of Chronic Alcoholism (with lantern demonstration), with the object of raising a discussion on the effects of alcohol.

The following is a synopsis of Dr. MOTT'S paper:

Brief introductory remarks upon the methods of recognition of functional and degenerative changes in the neurones. Necessary precautions before ascribing changes in the neurone to alcohol. The poisonous effects of alcohol are dependent upon the dose, but still more upon the susceptibility of the individual. The neuropathic and psychopathic tendency, inherited and acquired, as shown by hospital and asylum experience. (1) The transient effects upon the stable healthy nervous system of occasional alcoholic abuse. (2) The permanent effects of the continued abuse of alcohol on the stable healthy nervous system: (*a*) the subtle, unrecognizable changes which constitute a vicious habit, (*b*) the structural recognizable changes in the brain, spinal cord, and nerves found in certain cases of chronic alcoholism, occurring especially in women. These changes may be correlated with a characteristic complex of symptoms known as polyneuritic psychosis. The tendency of these cases is to get well and all the symptoms eventually to disappear under the influence of proper treatment and withdrawal of alcohol. In such, therefore, there cannot be widespread permanent destruction of the nervous elements. The fatal termination in this disease may be due to intercurrent complications; for example, pneumonia, bronchopneumonia, tuberculosis, septic infections, etc. Occasionally death may occur from heart failure or cerebral haemorrhage. These uncomplicated cases are infrequent, but obviously are the most useful for studying the effects of the alcohol *per se* on the nervous system. However, similar changes may be observed in chronic arsenic and lead poisoning; consequently we do not know whether the changes found in the nervous tissues are due to the direct influence of the alcohol or to the effects produced by the derangement of various organs of the body and the production of auto intoxication. The cases are sufficiently numerous to definitely associate the lesions with the alcoholic poisoning. Description of an uncomplicated acute fatal case of alcoholic neuritis and psychosis with degeneration of the vagus nerves, fatty degeneration of the heart, and multiple cerebral haemorrhages—illustrated by lantern slides. The literature of the subject and the speaker's experience shows that alcoholic neuritis is due to a segmental and not a Wallerian degeneration of the peripheral nerves. In most of the recorded cases and in all the

speaker's cases changes in the spinal sensory and in the spinal motor nerve cells were found. Similar changes are also found in the ganglion cells of the cranial nerve nuclei. Description of the changes in the spinal motor and spinal sensory cells and of the peripheral nerves. Changes in the brain. In chronic cases met with in asylums where the dementia has become permanent we find thickening of the soft membranes, atrophy of the superficial cells and fibres of the cerebral cortex. (*a*) Microscopic changes in the cortical cells. The most notable change is in the large psycho-motor Betz cells; the changes are similar to those in the spinal motor cells. (*b*) Changes in the cortical fibres. These are not always present, but they are found in cases of permanent dementia. They consist mainly of a disappearance of the myelin staining of the tangential and supraradial fibres. Neuroglia proliferation is not marked, and may even be absent. There is, in my opinion, not sufficient evidence to show correlation between the mental symptoms of the disease as manifested in its intense form and the morbid changes found in the brain. The mental picture corresponds more with a toxic psychosis than with organic brain disease.

Paper:

WILLCOX, Dr. W. H. Therapeutic Uses of Alcohol Vapour mixed with Oxygen.

Thursday, July 28th.—A conjoint meeting will be held with the Section of Bacteriology, when Professor Wassermann will open a discussion on the Complement-Deviation Method of Diagnosis.

Friday, July 29th.—Short papers on pathological subjects, including:

ADDIS, T., M.D. Pathogenesis of Hereditary Haemophilia.
WARD, Gordon, M.R.C.S. Polychromasia and the Pathology of Haematomata.
GLYNN, E. E., M.B. Some Observations upon Fatal Cases of Primary Thrombosis in the Pulmonary Artery.
HICKS, Braxton, M.B. An Investigation of the Effects of Artificial Respiration on the Stillborn.
GOODHART, G. W., M.B. Chloroform Necrosis of the Liver.
CHISHOLM, R. A., M.B. The Blood in Malignant Disease.
PRICE-JONES, C., M.B. Alterations in the Size of Red Blood Corpuscles.
BOYCOTT, A. E., M.D. Experiments on Soap Anaemia.

Members desiring to contribute papers to this Section should communicate notice thereof, with abstract, to Dr. Julius Bernstein, 10, Bentinck Street, W.

Arrangements will be made for the exhibition in the Pathological Museum of specimens illustrating the work of the Section. Members wishing to exhibit specimens or photographs should communicate with the Secretary of the Pathological Museum, Mr. H. W. Armit, Lister Institute of Preventive Medicine, S.W.

PHARMACOLOGY AND THERAPEUTICS.

President: Professor ARTHUR ROBERTSON CUSHNY, M.D., F.R.S., London.

Vice-Presidents: EDMUND H. COLBECK, M.D., London; ROBERT HUTCHISON, M.D., London.

Honorary Secretaries: ARTHUR FREDERICK HERTZ, M.D., 1, Weymouth Street, Portland Place, W.; DOUGLAS CHALMERS WATSON, M.D., 22, Coates Crescent, Edinburgh.

The programme, as at present arranged, is as follows:

Wednesday, July 27th.—Discussion on Treatment with Lactic Acid Organisms. To be opened by Drs. O. F. F. Grünbaum, R. Tanner Hewlett, Alexander Bryce and Vaughan Harley; followed by Drs. Saundby, Willcox, T. D. Luke, Craven Moore, George Herschell, and others.

The following are synopses of the opening papers:

(*a*) Dr. GRÜNBAUM: (1) Evidence from experiments by various authors that it is the presence of lactic acid in the intestinal tract that modifies the growth of the various bacilli which normally inhabit this region, and that the main advantage gained by the administration of the bacillus rather than its product is that the antiseptic is manufactured in the place where it is needed, and does not run the risk of being absorbed before it reaches that part. (2) During administration it is necessary that for a time the diet shall be such as to permit the bacillus to multiply in the intestine, and the organism given must be vigorous, and a strain which manufactures large quantities of lactic acid from carbohydrates. There are a number of different kinds of bacilli and cocci which conform to this, but there is an advantage in using a pure culture rather than a culture of several micro-organisms, in that it gives the medical man a chance to determine rapidly by the microscope whether there is any great accidental contamination. (3) The diseases which are apparently improved by the treatment come under three headings: (*a*) Those suffering from toxaemia, or rather those who either absorb toxins with abnormal ease, or have difficulty in eliminating them; (*b*) those who suffer from irritation of the intestinal mucosa caused by some micro-organism which cannot flourish in an acid medium; (*c*) a certain percentage of individuals who suffer from *maladie imaginaire*, and in whom this treatment acts by suggestion.

(*b*) Dr. TANNER HEWLETT: 1. The bacteriology of sour milks. 2. Influence of the ingestion of soured milk on the lactose-fermenting organisms of the digestive tract. 3. Influence of the ingestion of soured milk on the putrefactive organisms of the digestive tract. 4. Influence of the ingestion of soured milk on the chemical changes occurring in the digestive tract. 5. The bacteriology of various commercial preparations employed in the preparation of soured milk.

(*c*) Dr. ALEXANDER BRYCE: The indiscriminate use of curdled milk by no means free from risk. The most notable and serious deleterious effect of its use is rheumatism in some form or other. Explanation of this untoward result, with illustrative cases. Indications for the use of lactic acid therapy. Cases in which it is quite unsuitable. Curdled milk valuable as a nutrient more frequently than as a therapeutic agent.

Thursday, July 28th.—Discussion on the Effect of Digitalis on the Human Heart. To be opened by Professor Wenckebach of Gröningen, Dr. James Mackenzie, Dr. Thomas Lewis, and Dr. H. H. Turnbull; followed by Professor Huchard (Paris), Sir Lauder Brunton, Professor Faust (Würzburg), Drs. Windle, Gossage, and others.

The following are synopses of the opening papers:

(*a*) Dr. MACKENZIE: A preliminary investigation into the action of cardiac drugs revealed the fact that some that are supposed to have a powerful effect in treatment are entirely without effect, while others of the digitalis group, which had been supposed to be capricious or uncertain in their action, were found to be very reliable, provided the nature of the disease from which the individuals were suffering was taken into consideration. Moreover, the great advances that have been made in late years in recognizing the nature and mechanism of many cardiac phenomena enable the observer to detect the actual effect of certain remedies on the heart with great precision. From these considerations a plan has been instituted in the cardiac wards of Mount Vernon Hospital for the purpose of studying the effect of drugs upon the heart, and it is intended to describe the methods employed, and to indicate the results, with particular reference to the action of digitalis.

(*b*) Dr. T. LEWIS: Auricular fibrillation and the action of digitalis as it is observed clinically. A brief outline of fibrillation as it is met with in man and as it is seen experimentally. The known methods of slowing the action of the ventricle while the auricle is fibrillating. The action of the vagus and of damage to the auriculo-ventricular bundle. Complete section and the production of haemoglobin by asphyxia. Digitalis slowing in cases of auricular fibrillation. Frequency of occurrence. Type of case in which it occurs. The known action of digitalis in producing heart-block. Slowing with retention of

irregularity. Slowing with return of pulse to a regular rhythm.

(*c*) Dr. H. H. Turnbull: The results of the study of the therapeutic action of digitalis on a number of different types of case will be recorded. In this investigation special attention was paid to the dose of the tincture of digitalis necessary to produce the full physiological effect, to the character of the effects produced, and to the varying reactions shown by different forms of cardiac disease under the influence of full doses of the drug.

Papers:

Meyer, Professor Hans (Vienna). Lime Salts.
Unna, Professor P. G. (Hamburg). The Chemistry of Chrysarobin and its Effect upon the Skin.
Fortescue-Brickdale, Dr. J. M. The Comparative Therapeutic Value of the Organic and Inorganic Compounds of Certain Elementary Bodies.
Sharp, Dr. J. Gordon. Ergot as a Therapeutic Agent in the Light of Recent Investigation.
Dale, Dr. H. H. The Active Principles of Ergot.

Other papers from Dr. Crichton Miller, Professor Dixon, Professor Faust, and Dr. Ninian Bruce, have been accepted.

PHYSIOLOGY.

President: Professor William H. Thompson, M.D., Dublin.

Vice-Presidents: John Scott Haldane, M.D., F.R.S., Oxford; Professor Percy Theodore Herring, M.D., St. Andrews, N.B.

Honorary Secretaries: T. Graham Brown, M.B., Physiological Department, University, Glasgow; J. Strickland Goodall, M.B., Physiological Laboratory, Middlesex Hospital, W.

The following programme has up to now been arranged:

Wednesday, July 27th.—Opening remarks by the President, Professor W. H. Thompson. Discussion on the Food Requirements of Man for Sustenance and Work. To be opened by Lieutenant-Colonel Melville, R.A.M.C.; followed by Professor J. G. Hopkins, Professor Haldane, Dr. M. S. Pembrey, Dr. Robert Hutchison, Dr. Chalmers Watson, and others.

The following is a synopsis of Lieutenant-Colonel Melville's paper:

Discussion of a concrete case. Subject of experiment, 20 infantry soldiers, taken at random. Average weight, 64 kg. Duration of experiment, 12 days. Average amount of work done, internal and external, 4,034 calories per diem. Internal work placed at 3,009 calories. Reasons for this estimate given. Food supplied:—First six days: Proteids, 190 grams; carbohydrates, 510 grams; fat, 53 grams. Second six days: Proteids, 145 grams; carbohydrates, 450 grams; fat, 110 grams. Average: Proteids, 168 grams; carbohydrates, 480 grams; fat, 84 grams. Energy value: First six days, 3,426 calories; second six days, 3,503 calories; average, 3,481 calories, or net 3,140 calories (10 per cent. deducted); deficit, about 890 calories. Effect on weight and condition: General rise in early part of experiment, followed by steady fall during latter part. Discussion of primary rise in weight: Attributed to retention of proteid, the result of stimulus to muscular activity given by marching, *plus* increase in amount of proteid and carbohydrate ingested in comparison with barrack rations. Discussion of secondary fall: Daily loss of weight during second period roughly about equal to estimated deficit of energy supplied in food during that period. Illustration from starvation experiment by Benedict. Discussion of amount of proteid ingested: Reasons for believing that allowance in second week not at all too high. Difficulty in giving proteid ration on active service. Variety more important than actual quantity. Discussion of carbohydrates: Limitations as regards amount of starchy food that can be eaten by certain classes. Discussion of fats: Craving for fat felt in second week of experiment, even on allowance of 110 grams. Suggestion for discussion: Given a demand for 5,000 calories of energy, of which 2,600 are given in the form of beef and biscuit (the conditions of first six days), in what proportions should fats and sugars be given to supply the deficit of 1,400 calories?

Thursday, July 28th.—Discussion on the Factors that make for an Efficient Circulation. To be opened by Professor E. A. Schäfer; followed by Messrs. Geo. Oliver, M. S. Pembrey, J. Mackenzie, Professor Starling, Dr. Hill, Professor McWilliam, and Dr. Ivy Mackenzie.

The following is an abstract of Professor E. A. Schäfer's paper:—

In considering the factors which make for an efficient circulation our attention is naturally directed in the first instance to the heart and blood-vessels since the efficiency of the circulation depends immediately upon the conditions of these organs. But as their condition depends in large measure upon the condition of the nervous system and this upon the state of nutrition of the body and upon other circumstances which are at present imperfectly understood, the subject which is put down for discussion is wider than might at first sight appear. I propose, however, in the meantime to restrict my remarks to the circumstances which more immediately affect the circulatory mechanism under normal conditions. The effective action of the heart varies (1) with its rate of rhythm, (2) with the force of the individual beats, (3) with its condition of tone. All these conditions are influenced through the cardiac nerves, by the nervous system. By way of the vagi, influences pass which moderate the rate, diminish the force, and lower the tone; by way of the sympathetic, others which make the rate of contraction more frequent and the individual beats more powerful, and which increase the tone of its musculature. The proper balance of these opposite effects, in accordance with the variations in the work which the heart at any given time is called upon to perform, must be looked upon as one of the most important factors in the maintenance of the efficiency of the circulation. The influences which reach the heart by way of the central nervous system do not originate in the cardio-inhibitory and cardio-accelerator centres. These are themselves excited to action by impulses which come to them from the periphery, or from higher nerve centres, the ultimate source of excitation being in the latter case also, probably, peripheral. These impulses come from all parts: from the skin and other sense organs, from the viscera, from muscles and tendons and serous membranes, from the blood vessels, and even from the heart itself; they may or may not be accompanied by conscious sensation. According to the manner in which they affect the heart-regulating centres, the cardiac contractions are caused to vary so as to promote under the given conditions the efficiency of the circulation to the best advantage. The action of the heart is also affected by the condition of the respiratory system, along with which may be included the tone of the abdominal muscular wall. The importance of this as a factor in the maintenance of the circulation was shown by the experiments of Dr. Leonard Hill and his co-workers. The respiratory apparatus acts by facilitating the flow of blood to the thorax, and thus to the heart. Within limits the greater the rate of blood flow to the heart the more efficient will be the circulation, for the heart is a machine which reacts to the amount of work thrown upon it in the same way that a gas engine, by more frequent explosions of its gases, produces a greater amount of energy in proportion to the resistance which it has to overcome. But in the case of the heart the response to increase of resistance does not take the form of increased rate of rhythm; the rate of rhythm tends, indeed, rather to diminish with increase of arterial pressure. This is a regulating effect produced through the vagi. On the other hand, increase of pressure up to a certain point within the coronary arteries is a direct excitant to cardiac activity. An isolated mammalian heart which has ceased to beat spontaneously may be started again by introducing fluid under pressure into the coronary system. Such

fluid need not be of a nutrient character for this result to be manifested, since it will show itself even if liquid paraffin be injected into the coronary vessels; although, for the continuance of the contractions, a saline oxygenated fluid is essential. The condition of the blood vessels, and especially of the arteries, is scarcely, if at all, second in importance to that of the heart. Disregarding the slow rhythmic contractions which the vessels occasionally exhibit, and which may to a slight extent aid in the promotion of the blood flow, a condition of tonic contraction of the vessels is essential to the maintenance of the circulation. With all the vessels fully dilated the blood becomes contained in a system of flaccid tubes quite incapable of passing it on to the heart. The tonic contraction of the vessels adapts the vascular system to the amount of blood it contains, and by exercising pressure upon it, forces it forward, the direction being determined by the fact that the greatest amount of contraction and pressure is on the arterial side and the least on the venous, as well as by the presence of valves at the commencement of the arterial system and in the veins. When we inquire into the measures by which this tonic contraction of the vessels is maintained, we again find an obvious answer to our inquiry in the nervous arrangements connected with the vascular system. The vessels, and especially the arterioles, are provided with two sets of nerve fibres, operating from a double set of nerve centres, the activities of which balance one another. The one set sends out impulses which increase the contraction of the musculature, the other set impulses which diminish it; these are the vaso-constrictors and vaso dilators respectively. Their origin and path are for the most part different. The vaso-constrictors follow the ordinary course taken by motor nerves, except that they are distributed through the sympathetic; whereas most of the vaso dilators, as Dr. Bayliss has demonstrated, follow the course of the afferent nerve fibres and have their origin or distribution along with these, or may even be identical with them. Through these nerves the tone of the blood vessels and thus the efficiency of the circulation is maintained by the nervous system. The impulses which start from the nerve centres to produce vaso-constriction or vaso-dilatation originate, as in the case of these which affect the heart, mainly from the periphery—from the skin and other sense organs, viscera, muscles, heart, and even from the blood vessels themselves. The impulses therefore act in a reflex manner, causing either general or local effects according to the nature and situation of the part where they originate and of the particular afferent nerve terminations which are set in activity. But as in the case of the heart the several effects may also be produced by the action of higher centres upon the centres of origin of the vasomotor fibres. In these various ways a balance is maintained in the vascular system, whereby at a given time, and for a given set of conditions, the general or local blood pressure and the efficiency of the circulatory mechanism are normally regulated. Not very long ago the above would have been all that could have been postulated regarding the means by which the circulation is maintained in its efficiency. The work of Bernard and of Ludwig about the middle of the last century and the innumerable researches which were set in activity by their discoveries, established beyond a doubt the important relations which subsist between the vascular and nervous systems, and especially the control which the nervous system exercises over the musculature of the heart and arteries. Certain facts were, however, not easily explained by this, such, for example, as the retention or recovery of some amount of tone after complete severance of parts of the vascular system from the central nervous system; although an attempt was made to explain these phenomena by the assumption of peripheral ganglia acting as reflex centres. Although it is not impossible that such centres may exist it is no longer necessary to assume their existence, since the phenomena they were required to account for may now be otherwise explained. For we know that certain glandular organs—which not long ago were regarded as of little importance and as to the functions of which nothing had been ascertained—yield on extraction materials which when introduced into the blood markedly influence both the rhythm and tone of the heart and the contraction of the blood vessels. Those which produce the greatest effect of this nature are the medulla of the suprarenal capsules and the posterior lobe of the pituitary body. The action is not entirely similar in the two cases, for while an extract of suprarenal medulla increases both the rate of rhythm and the tone of cardiac muscle, and strongly stimulates to contraction the muscular tissue of the blood vessels (with the exception of those of the heart, and perhaps also of the lungs), an extract of the pituitary body, whilst markedly raising the tone of the cardiac muscle, does not increase its rate of rhythm, but may even diminish it, and while producing constriction of nearly all the arterioles in the body, tends to produce dilatation of those of the kidney, associated with an increased secretion of urine. Although it has not yet been possible to prove in the case of the pituitary body that the substances which cause these effects are passed into the blood, and are thus normally brought to bear upon those tissues which are affected when the extracts are artificially introduced into the blood stream, such passage into the blood has been definitely proved to occur in the case of the suprarenal capsules. The blood flowing from these can, in fact, be shown to contain a larger amount of the pressor substance of the extract than ordinary blood. We are probably justified in concluding that a similar passage into the blood, either directly or indirectly (through lymph channels or by the cerebro-spinal fluid), occurs in the case of the pituitary body also. In both cases it is probable that the substances secreted exercise a material influence upon the circulatory system; this is, indeed, evidenced in the case of the suprarenals by the weakness of the heart and the low blood pressure which follow their destruction by disease or their experimental removal. And the fact that experimental removal of the pituitary body is equally fatal with that of the suprarenal capsules points to the supreme importance to the organism of the substances which are produced by it, the most active of these substances being those which affect the circulatory system. The pituitary contains also a depressor substance which diminishes the force of the heart and inhibits the contraction of the arterioles, but the action of this is usually far overbalanced in the artificial extract by the material which produces the opposite effects. It is, however, possible that naturally the two substances may be passed into the blood in such proportions as the requirements of the vascular system and of the organism in general appear to indicate. If this is the case there would be a balancing action caused by the materials of the secretion comparable to that caused by the nerves which influence the contraction of the vascular musculature. It must further not be forgotten that a direct action upon the heart and blood vessels of hormones produced by these organs—perhaps also by other ductless glands—only represents a portion of their influence in increasing the efficiency of the circulation. It is probable that they also assist the nervous factors by their beneficial action upon the nerve centres themselves. In the instance of the pituitary body at least there appears to be evidence, mainly of a clinical character, that its extracts exert a tonic effect upon the nervous system in general. Such an effect is manifest in cases of shock, and may under normal circumstances be presumed to assist in maintaining condition of tonus of the nerve centres, which is essential to the performance of their functions, not the least important of which is, as we have seen, their action in maintaining the proper balance of the circulation. In the above remarks I have dealt only, as I proposed at the start, with the circulation under normal conditions, and with such factors alone as are more strictly concerned with the vascular mechanism.

I have not attempted to deal with the manner in which the circulation is affected by varying conditions of the blood, by variations in the general nutrition of the body, by drugs, or under abnormal conditions of the heart and vessels. I am content to leave the consideration of these to succeeding speakers, who will be better able than myself to discuss them satisfactorily.

Friday, July 29th.—Paper: Dr. Edridge-Green, Some Visual Phenomena connected with the Yellow Spot. Dr. Edridge-Green will also demonstrate his lamp for testing colour vision.

Demonstrations will be given by Professor Haldane on the Causes of Absorption by the Lungs in Animals and Man, and Dr. C. G. Douglas on the Production of Cheyne-Stokes Breathing.

PSYCHOLOGICAL MEDICINE AND NEUROLOGY.

President: Theo. Bulkeley Hyslop, M.D., F.R.S.E., London.

Vice-Presidents: Archibald R. Douglas, L.R.C.P., Lancaster; William Graham, M.D., Belfast; Thomas D. Greenlees, M.D., London; J. Risien Russell, M.D., London; David G. Thomson, M.D., Norwich.

Honorary Secretaries: Arthur Stanley Barnes, M.D., 141, Great Charles Street, Birmingham; Robert Hunter Steen, M.D., City of London Mental Hospital, Dartford; Reginald John Stilwell, M.R.C.S., Moorcroft, Hillingdon, Uxbridge.

The following subjects have been selected for special discussion:

Wednesday, July 27th.—Discussion on Marriage and Insanity. To be opened by Dr. G. H. Savage; followed by Sir James Crichton-Browne, Drs. Bevan-Lewis, Shuttleworth, Mercier, Percy Smith, Robert Jones, Maurice Craig, and others.

Paper:

Baugh, Dr. Leonard D. H. Paranoidal Symptoms at the Female Climacteric.

Thursday, July 28th.—Discussion on the Treatment of Tabes. To be opened by J. Risien Russell, M.D., London. The following will take part in the discussion: Drs. David Ferrier, Byrom Bramwell, Ernst Feibes, Alexander Bruce, Lieven, Judson Bury, J. Michell Clarke, and G. Farquhar Buzzard.

The following is a synopsis of Dr. Risien Russell's opening statement:

The only rational treatment of the disease is that based on a correct conception of its etiology and pathology. The evidence in support of the belief that the disease owes its origin to syphilis far outweighs that which can be adduced in favour of any other view of its etiology. It is impossible to overestimate the importance of antisyphilitic treatment of the affection. It is contrary to fact that the subjects of tabes are made worse by antisyphilitic treatment. Mercury is the drug on which most reliance is to be placed. The plan of exhibiting the drug by inunction, which is in vogue at Aachen (Aix-la-Chapelle) either alone or in conjunction with intramuscular injections, is that to be recommended. Difficulties of securing efficient conduct of the treatment in this country. No reliance should be placed on the administration of mercury by the mouth. Adjuncts in the treatment. Precautions that are necessary while it is in vogue. Contraindications to the treatment. A long interval between the primary syphilis and the occurrence of tabes is no necessary bar to the possibility of good resulting from the treatment. Statistics that appear to prove that the more the primary syphilis is treated by mercury the shorter the interval before tabes develops, should not be allowed to deprive the patient of the only rational method there is of treating his disease. The fact that the primary syphilis has been well treated is no adequate reason why antisyphilitic treatment should be withheld from the patient suffering from tabes.

Papers:

Barany, Dr. (Vienna). The Vestibular Apparatus and the Cerebellum.

Williams, Dr. Tom A. (Washington). The Practical Lessons to be Derived from Recent Work upon Hysteria.

Friday, July 29th.—Papers.

Thomson, Dr. D. G. A Post-Graduate Curriculum and Diploma in Psychological Medicine.

Ash, Dr. Edwin. The Psychological Treatment of certain Functional Conditions.

Hernaman-Johnson, Dr.: On the Occurrence of Pain and other Sensory Disturbances in the Chronic Stage of Infantile (Spinal) Paralysis.

Dr. S. A. K. Wilson will give a demonstration by lantern slides: The Diagnostic Value of the *X* Rays in Nervous Diseases.

Members are invited to contribute any preparations specimens or drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects. In order to save time and to facilitate the necessary arrangements, all communications relating to the exhibition of preparations, specimens, drawings, etc., may be addressed to Mr. H. W. Armit, Honorary Secretary, Medical Museum Committee, British Medical Association, Lister Institute of Preventive Medicine, Chelsea, London, S.W.

RADIOLOGY AND MEDICAL ELECTRICITY.

President: J. Mackenzie Davidson, M.B., London.

Vice-Presidents: C. Thurstan Holland, M.R.C.S., Liverpool; H. Lewis Jones, M.D., London; Cecil R. C. Lyster, M.R.C.S., London; William F. Somerville, M.D., Glasgow.

Honorary Secretaries: W. Ironside Bruce, M.D., 10, Chandos Street, W.; Leonard A. Rowden, M.B., 32, Park Square, Leeds.

The following programme has been arranged:

Wednesday, July 27th.—Addresses by the President of the Section and Sir J. J. Thomson, F.R.S.

Papers:

Jones, Dr. Lewis. On the Treatment of Some Corneal Ulcers by Zinc Ions. Zinc ionization has proved successful in the treatment of four cases of Mooren's ulcer or marginal ulcer of the cornea. Reinfection of the cornea from the conjunctival sac, to which the intractable nature of this form of ulceration is due, can be prevented by the use of a zinc lotion, but it does not suffice to cure the corneal ulceration, for which the penetration of zinc ions into the substance of the cornea is necessary. Currents of 1 or 2 milliampères are sufficient.

Holland, Mr. Thurstan. A Screen for Examination in the Upright Position. The necessity of the screen examination of the chest and abdomen (for stomach work) being made with the patient standing or sitting. The difficulty of ensuring adequate protection to the operator during the screen examination *and whilst handling the patient.* A method of protection devised by the author, especially for hospital work. A model of the screen will be shown.

Morton, Dr. Reginald. Some Bony Changes Observed in a Case of Chronic *X* Ray Dermatitis.

Somerville, Dr. W. F. The Relief of Pain and Discomfort by High Frequency Currents.

Thursday, July 28th.—Papers:

Jellinek, Dr. On Electro-Pathology.

Freund, Dr. On the Conditions Necessary to Obtain Radical Cures from *X*-Ray Treatment.

Turner, Dr. Dawson, and Dr. T. G. George. Some Experiments on the Effects of the *X* Ray in Therapeutic Doses on the Growing Brains of Rabbits. Object of research: To determine the action, if any, of *x* rays on the developing nervous system when the rays are administered in therapeutic doses. One half of a rabbit's cranium was exposed to a therapeutic dose of *x* rays, repeated in some cases two, three, and four times, at proper intervals. Macroscopic and microscopic examinations of the two halves of the brain were afterwards made. Difficulties in carrying out the experiments and in coming to conclusions.

Bailey, Dr. Fred. Description of a Method of Treatment by Radiant Heat and Iodine Ionization. The treatment is applicable to fibrotic deposits, thickenings, or adhesions present in or about joints in fibrositis, chronic rheumatic and rheumatoid arthritis, etc. Its object is to increase the

supply of arterial blood to the joints, and to drive iodine ions into the affected parts to effect a solvent action on the fibrinous deposits. The apparatus required and the method of application will be fully described, as well as the method of treating two joints at the same time, and also a matter of estimating roughly when the disease is above the average, the value of movements to stretch adhesions at as early a stage as possible, and of application, concluding with an analysis of 21 cases.

ROWDEN, Dr. Leonard. The Value of Screen Examination in the Diagnosis of Renal Calculus. By proper screen examination many errors in the *x*-ray diagnosis of renal calculus can be avoided, its advantages being: (1) The proper quality of rays for the particular case in hand can be more certainly obtained, and therefore better contrast secured, and more likelihood of detecting a shadow. (2) The movement of any shadow or shadows can be studied, which in many cases will differentiate shadows cast by objects other than calculus. (3) The area of illumination can be accurately cut down to very small dimensions, thus very greatly increasing the definition of any suspicious spot.

SIMPSON, Dr. J. B. The Advantages of *X* Rays in Country Practice. (1) Difficulties in country practice in diagnosis, prognosis, and treatment of injuries and diseases of bones and joints. (2) Advantages of *x* rays in these conditions. (3) Simple apparatus only required. (4) A few illustrative cases, with lantern slides, will be related.

SIMMONS, Dr. The Constitution and Organization of the *X*-Ray Department of a General Hospital. The necessity of every general hospital having an *x*-ray department conducted by a qualified medical man of special experience in *x* ray and electrical work. The requirements from the surgical, medical, and special departments of a hospital that must be met by an *x* ray department. A description will be given of the *x* ray and electrical department of St. George's Hospital and of the various pieces of electrical and *x*-ray apparatus, their distribution in the *x*-ray room, and the reason for the particular position of each piece of apparatus.

Friday, July 29th.—Papers:

LAZARUS-BARLOW, Dr. On the Skotographical Properties of Tissue.

BARCLAY, Dr. The Normal and Pathological Stomach as seen by *X* Rays.

WENCKEBACH, Professor. A New Stand for *X*-Ray Work.

ORTON, Dr. Harrison. Some Points in the *X*-Ray Diagnosis of Pulmonary Tuberculosis. Apparatus required. Position of patient during examination; examination of apices of lung and of diaphragm movements. The earliest signs; examination by screen and by negatives. Importance of not relying on *x* ray findings alone. Can *x* rays detect tubercle of the lungs before ordinary physical signs appear?

JORDAN, Dr. Alfred. Types of Phthisis from the Radiographer's Point of View. Early diagnosis: Comparisons with clinical, pathological, and bacteriological diagnosis. Diaphragm: In phthisis; in other diseases of the chest. Heart: In phthisis; in other pulmonary diseases. Pulmonary phthisis: Principal types as regards distribution, place of starting, appearance of lesion, etc.; appearances of a progressive case, of a case undergoing cure. Differential diagnosis: Old fibrosis, bronchiectasis, bronchitis and emphysema, pneumonia, aneurysm. Phthisis complicating other diseases: The above (under differential diagnosis); also pleural effusion, pneumothorax, pyopneumothorax, etc.

PIRIE, Dr. Hyperidrosis Treated by *X* Rays. Effect of *x* rays on quickly growing and young cells. Preliminary observations of sweat glands unintentionally destroyed by *x* rays. Type of case suitable for *x*-ray treatment. Axillae the most troublesome part. Hands and face also treated. Characteristics of the perspiration treated—namely, worse in cold weather, excitement, or worry; none at night. Account of six cases and results.

STATE MEDICINE.

President: The Right Hon. Sir WALTER FOSTER, P.C., M.D., D.C.L., London.

Vice-Presidents: FRANCIS CLARK, M.D., M.R.C.P., D.P.H., Hong Kong; S. MONCKTON COPEMAN, M.D., F.R.S., London; THOMAS W. H. GARSTANG, M.A., M.R.C.S., D.P.H., Altrincham; HERBERT JONES, L.R.C.S.I., D.P.H., Hereford; JAMES MALCOLM MASON, M.D.Brux., L.R.C.P., D.P.H.Camb., London; CHARLES E. PAGET, M.R.C.S., Northampton.

Honorary Secretaries: GEO. FREDERICK MCCLEARY, M.D., 7, Belsize Park Gardens, Hampstead, N.W.; JOHN EDWARD SANDILANDS, M.D., Town Hall, Kensington, W.

The following discussions have been arranged:

Wednesday, July 27th:

1. The Relation of Poor Law Reform to Public Health Administration. To be opened by Mrs. Sidney Webb; followed by Mr. C. S. Loch, Drs. Ford Anderson, H. Cooper Pattin (M.O.H., Norwich), J. F. J. Sykes (M.O.H., St. Pancras), and R. A. Lyster (M.O.H., County Hants).

The following is an abstract of Mrs. WEBB'S paper:

The sweeping condemnation of the existing Poor Law Medical Service that the recent Royal Commission unanimously pronounced did not proceed from any dissatisfaction with the Poor Law medical officers, but from public health considerations. The defects revealed by the Commission are (1) the failure to provide any treatment at all for many cases, and to reach the others at the incipient stage; (2) the "deterrent" effect of the relieving officer and of the whole Poor Law system; (3) the adverse influence on treatment of the unsatisfactory system of remuneration of the district medical officer and of its inadequacy; (4) the saddling of the district medical officer with the cost of drugs, etc.; (5) the failure to provide for nursing, suitable nourishment, and convalescence; (6) the lack of connexion between the domiciliary and the institutional treatment; (7) the inadequacy of the mixed workhouse as a general hospital (in structure, in method of government, in professional staffing, in equipment, etc.); (8) the lack of suitable provision for (*a*) phthisis, (*b*) measles and whooping-cough, etc. The position is complicated by the amount, hitherto unrealized, of duplication and overlapping of rival rate supported medical agencies. The ubiquitous public health medical service (with its 700 municipal hospitals, treating 100,000 patients annually, opening their doors to one disease after another and beginning to add out-patient departments; its growing staffs of "health visitors," giving "hygienic advice"; its domiciliary nursing staffs, its "milk dispensaries," its "school clinics") is rapidly coming to deal with as many individual cases annually as the Poor Law. Both alike are undermining the general practitioner. Three courses are open: (1) The *status quo*, with minor improvements, tempting to many, but (*a*) not practicable; (*b*) would mean still more undermining the private practitioner. (2) The Majority Report, based on extension of "provident" system and "contract practice." This (*a*) does not stop the overlap; (*b*) leaves both the Poor Law and the public health service to develop at the cost of the private practitioner; (*c*) giving up the "deterrent" Poor Law system. (3) The Minority Report unites the Poor Law medical service and the public health medical service *en bloc*, saving all personal rights, in a combined county medical service, under health committees and Minister for Health. It provides instant treatment for all in need, but safeguards private practice by providing for rigorous charge and recovery, so as to discourage resort to it, to all families above bare subsistence (say, 3s. per week per adult unit).

2. The Etiology and Prevention of Summer Diarrhoea. To be opened by Dr. Niven (M.O.H., Manchester), followed by Dr. Boobbyer (M.O.H., Nottingham) and Dr. J. H. Clement (M.O.H., Beckenham).

The following is a synopsis of Dr. NIVEN'S paper:

Summer diarrhoea may be described as an infectious disease, with low intensity of infection. A high fatality appears to be determined by such factors as previous health of the infant, want of maternal care or knowledge, and artificial feeding. The disease is most fatal in the central parts of large towns, and it is one of the diseases closely linked with social condition. Its infectious character seems to be shown by its predilection for centres of population, by the mode in which its fatality shifts from one part of a large area to another, by direct investigation of fatal cases, and by the steep summer wave. This wave is the important feature in diarrhoea. It coincides with the fly season, fatal cases beginning to increase, however, after flies have become fairly numerous. A close correspondence exists between the number of flies captured in traps distributed in Manchester and the number of fatal cases commencing in the same week, or of deaths occurring in the following week or in the week next but one. Reasons are given for supposing that this relationship is not fortuitous, but that houseflies transmit the infection of the diarrhoea. It follows that all horse manure and other fermentable refuse should be removed to a distance from centres of population at intervals not exceeding a week.

Thursday, July 28th:

1. Town Planning in Relation to Public Health. To be opened by Dr. John Robertson (M.O.H., Birmingham), followed by Drs. E. W. Hope (M.O.H., Liverpool), Raymond Unwin, T. C. Horsfall, Fremantle, and others.

The following is a synopsis of Dr. JOHN ROBERTSON'S paper:

Town planning is a revival in very modern times of a process which is of very ancient origin. The Housing and Town Planning Act cannot be regarded as a contribution to the needed legislative powers. Objects of Act stated to be the "Securing proper sanitary conditions, amenity, and convenience." The necessity for town planning has largely arisen from enormous growth of towns, uncontrolled except as to their structure and sanitation of the dwellings. On the other hand, many Continental towns have for economic reasons paid great attention to the plan. A study of many of these inspired Mr. Horsfall to think that that part of the work relating to planning might usefully be combined with our existing regulations relating to dwellings. One of the most important results of town planning will be reducing the number of houses per acre. Number of houses per acre cannot be uniform, but for new cottage houses probably not more than an average of twelve per acre. This can only be rendered possible if traffic roads are constructed partly at expense of local authority, while non-traffic roads are cheapened and 'adopted.' It is possible to arrange narrow non-traffic roads in healthful manner, and to arrange that some of them may become traffic roads if necessary. Land should be set aside for recreation grounds or playing fields, etc., in advance of requirement. Spreading of urban population necessitates rapid means of locomotion. Almost as necessary as spreading the population is the duty to assist manufacturers with cheap land, canal, railway, gas, electric power, and other needful adjuncts. This means that most factories should be allotted special areas, thus removing dust and smoke from residential properties, and making it possible for them to carry on business with other than steam power. Amenity has powerful indirect influence on public health.

2. The Administrative Control of Ophthalmia Neonatorum. To be opened by Dr. Geo. Reid (County M.O.H. Staffordshire), followed by Mr. Falker and Mr. Bishop Harman.

The following is a summary of Dr. REID'S paper:

No argument is needed to emphasize the importance of providing machinery for dealing with cases of ophthalmia neonatorum, which is the cause of at least one-third of the cases of permanent blindness. Apart from the humanitarian aspect of the question, the financial return would amply warrant the trifling expenditure needed to cope with the disease, as the cost of educating a blind child amounts, in round figures, to £500 compared with £30, the cost of educating an ordinary child. A blind person is also of less value to the State than one who possesses his sight. Public health authorities have ample powers for establishing the necessary preventive machinery, and there is no branch of public health work which, from the point of view of success, will better repay the work entailed. All that is needful is to ensure (*a*) that the public health staff receives early information of cases; and (*b*) that arrangements shall be made to ensure that every case at once receives medical treatment. The first essential can be secured (1) by including the affection among the list of diseases which must be compulsorily notified, and (2) by the adoption of the Notification of Births Act, 1907. The second essential may be provided for under Section 133 of the Public Health Act, 1875. For immediate information one must depend upon notification, but it is well also to possess the means of following up the cases after the completion of treatment in case of a relapse, and this can readily be done by a health visitor appointed under the Notification of Births Act. The procedure on receiving notice of a case should be to cause immediate inquiry to be made as to whether a medical man has been called in, and if this has not been done the authority should urge such a course, and, if need be, defray the cost according to a pre-arranged scale of payment. In addition to medical treatment, however, skilled nursing is also an essential, and the services of two nurses should be available for each case, one for the day and the other for the night; and these also should be provided by the authority in all cases where the circumstances of the family do not allow of the necessary payment for such services. Such cases are not numerous; the duration of treatment is usually short; and the cost, having regard to the enormous gain, is trifling. In some cases, owing to poor home conditions, it may be desirable to send the infant to a hospital; but usually this is not necessary, and when it is the families are so poverty-stricken as to come under the pauper class, for whom the workhouse infirmary is available.

Friday, July 29th:

1. The Provision of Medical Treatment by Local Education Authorities. To be opened by Dr. James Kerr, followed by Professor Kenwood, Drs. A. E. Remmett Weaver (M.O.H., Abertillery), Barwise (M.O.H., County Derbyshire), Cooper Pattin (M.O.H., Norwich), R. H. Lyster (M.O.H., County Hants), W. G. Savage (M.O.H., County Somerset), Mr. Cyril Jackson, and Mr. A. F. MacCallan, F.R.C.S. (Chief Inspector of Ophthalmic Hospitals, Egypt).

2. The Reform of Death Certification. To be opened by Sir William Collins, followed by Dr. R. A. Lyster (M.O.H. County Hants.).

Papers:

FREMANTLE, Mr. F. E., County M.O.H., Herts. The Influence of Part-time Medical Officers of Health on Public Health.
HOGARTH, Dr. A. H., County M.O.H., Bucks. The Tuberculosis Problem in County Areas.
BUTLER-HOGAN, Dr., M.O.H., Tottenham. English Public Health Law and its Administration.

SURGERY.

President: Sir VICTOR HORSLEY, F.R.C.S., M.B., F.R.S. London.

Vice-Presidents: FREDERICK DOUGAN BIRD, M.S., M.R.C.S., Melbourne; JOHN BLAND-SUTTON, F.R.C.S., London; Professor A. J. MCAULEY BLAYNEY, F.R.C.S.I., Dublin; GEORGE H. MAKINS, C.B., F.R.C.S., London; F. N. GISBORNE STARR, M.B., Toronto; Professor HY. ALEXIS THOMSON, M.D., Edinburgh.

Honorary Secretaries: HERBERT SHERWELL CLOGG, M.S., 143, Harley Street, W.; DOUGLAS DREW, F.R.C.S., 6, Wimpole Street, W.; WILLIAM J. GREER, F.R.C.S.I., 19, Gold Tops, Newport, Mon.

The following programme has been arranged:

Wednesday, July 27th.—Discussion on the Principles which should Govern the Operative Treatment of Simple Fractures. To be opened by Mr. Arbuthnot Lane; followed by Messrs. Gilbert Barling, E. Deanesly, W. G. Spencer, C. H. Fagge, Maynard Smith, Robert Jones, Heygate Vernon, H. J. Paterson, R. H. A. Whitelocke, Crawford Renton, W. Wheeler, Archibald Young, C. J. Morton, E. Hey Groves, Donald Armour, Andrew Fullerton, A. S. Barling, Ch. Willems (Ghent), G. N. Huggins, E. W. H. Shenton, W. S. Haughton, and others.

The following is a synopsis of Mr. Lane's paper:

(1) The possibility of effecting the restoration of a broken bone to its normal form by any means other than operative. (2) The results of such treatment. (3) The value of radiography. (4) The advantages gained by operative interference. (5) The best operative technique. (6) Any special objection to operation whether general or local.

The title of this discussion has been purposely chosen with the view of obtaining a definite and authoritative statement with regard to when it is essential that operative treatment should be undertaken. At the present time the question of the complete restoration of a fractured bone is of primary importance from a medico-legal point of view, and is

very incompletely discussed in works on surgery; of equal importance is the correct interpretation of a radiogram of a fractured bone.

The attention of those taking part in the discussion is directed to the above suggestions. It is desired that records or statistics of individual cases should not be presented to the Section.

Thursday, July 28th.—Discussion on the Surgical Treatment of Exophthalmic Goître. To be opened by Professor Theodore Kocher and Dr. Hector Mackenzie; followed by Messrs. G. Heaton, Robert Campbell, R. Kennedy, Gilbert Barling, Donald Armour, E. Deanesly, C. H. Fagge, W. G. Spencer, Thelwall Thomas, F. Greaves, E. Hey Groves, Wilfred Trotter, C. Leedham Green, Dr. H. A. Bruce (Toronto), and others.

The following is a synopsis of remarks by Dr. HECTOR MACKENZIE:

(1) Overactivity or perverted activity of the gland explains most of the symptoms of the disease, and the surgical treatment is based upon the assumption that overactivity is the cause of the disease. (2) The relation of mental strain, fright, worry, etc., to the onset of the disease in certain cases suggests that overactivity of the gland is not entirely responsible for the symptoms. (3) The significance of the enlarged thymus always present in fatal cases is uncertain. (4) The immediate risk to life from operation. (5) Results of operation. (6) Results of operation compared with those of medical treatment. (7) The question whether results justify operation in cases of severe type, and whether operation is desirable in cases of mild type.

Immediately following the discussion on the surgical treatment of exophthalmic goître, Professor Crile will read a paper, entitled, Observations on some of the Factors that Determine the Results of Surgical Operations. At 2.30 p.m. a joint meeting of the Surgical, Dermatological, and Laryngological Sections will be held, when Dr. Louis Wickham (Paris) will give a demonstration on radium in the treatment of cancer.

Friday, July 29th.—The time at the disposal of the Section is limited, but it is proposed that the following papers should be read in the order indicated:

BIRD, Mr. Fred. D. (Melbourne). Conditions Simulating Cancer of the Stomach.
THOMSON, Professor Alexis. The Pathological Anatomy of Cancer of the Stomach and the Conditions which are mistaken for it. (With lantern demonstration.)
PATERSON, Mr. H. J. Early Diagnosis and Treatment of Gastric Cancer.
DEANESLY, Mr. E. Excision of Gastric Ulcers.
WHEELER, Mr. W. Two Cases of Extensive Disease of the Stomach Treated by Gastrectomy.
MILES, Mr. W. Ernest. The Radical Abdomino-perineal Operation for Cancer of the Rectum and of the Pelvic Colon, with a table showing the results of 24 cases in which the method has been employed.
BOND, Mr. C. J. Remarks on a Method of Establishing Colotomy Openings and Ureteral Permanent Fistulae by means of Elevated and more Readily Controlled Mucous Openings. (With lantern slides.)
MACLAURIN, Mr. C. (Sydney). The Clinical Manifestations, Diagnosis, and Treatment of Liver Hydatid.
KENNEDY, Mr. R. A Case of Suture of the Circumflex Nerve.
BIDWELL, Mr. L. Hepatic Abscess following Acute Appendicitis.
MACLENNAN, Mr. Alex. Fracture of the Carpal Scaphoid.
MUMMERY, Mr. P. Lockhart. The Operative Treatment of Chronic Mucous and Ulcerative Colitis.
MOULLIN, Mr. C. Mansell. The Action of Gastro-enterostomy in cases of Gastric and Duodenal Ulcer in which there is no Mechanical Difficulty.
FENWICK, Mr. E. Hurry. Removal of the Urinary Bladder.
BISHOP, E. Stanmore. Some Points in the Technique of Gastric Surgery.

TROPICAL MEDICINE.

President: FLEMING M. SANDWITH, M.D., London.

Vice-Presidents: HENRY P. KEATINGE, M.B., Cairo; GEORGE C. LOW, M.B., London; LAURANCE DUDLEY PARSONS, M.B., Gibraltar; Colonel JAMES R. ROBERTS, I.M.S., F.R.C.S., Indore, C. India; RAGHAVENDRA ROW, M.D., Bombay.

Honorary Secretaries: H. SINCLAIR COGHILL, M.B., London School of Tropical Medicine, Royal Albert Dock, E.; WILLIAM THOMAS PROUT, C.M.G., M.B., 78, Rodney Street, Liverpool; EMRYS ROBERTS, M.D., 5, Buckingham Place, Queen's Road, Clifton, Bristol.

The following subjects have been selected for discussion:

Wednesday, July 27th.—10 a.m., Human Trypanosomiasis. The discussion will be opened by Colonel Sir David Bruce, C.B., F.R.S.

Thursday, July 28th.—10 a.m., Special Factors Influencing the Suitability of Europeans for Life in the Tropics. The discussion will be opened by Lieutenant-Colonel Sir R. H. Charles, K.C.V.O., M.D.

The following is a syllabus of the paper of Sir R. HAVELOCK CHARLES:

The classes of people affected by the discussion. The tropics—torrid zone: Meaning of the terms. (1) Local conditions: (*a*) Climatic—torrid and third temperate zones; (*b*) racial surroundings—civilization or non-civilization; customs due to religious beliefs; innate inertia. (2) Character of the European, his temperament and physique. (3) Three factors peculiar to the tropics: What they tend to produce; the physiological effect on the European; the pathological consequences. Two things required for a good crop: (*a*) Good seed (*b*) suitable soil. Tropical parasitic life. "Acclimatization": What it is; its consequences; possible results when the sojourner in the tropics returns to Europe; a severe illness in the tropics; subsequent necessity. The best type of man for the tropics. The best type of woman to accompany him; her trials. The woman to be shunned. The man *not* wanted. Some "unfit" who may, and do, live at ease in the tropics. Consideration of tropical factors in passing candidates for Government or private service in the tropics; the side of the employer of labour; the side of the would-be emigrant; assurance offices. Returned "old Indians": What they are; where are those who went out with them, and why? The man that nothing can kill; the danger of his example and immunity. The best endowment for life and service in the tropics; the three qualifications; the greatest of these three.

Friday, July 29th, 10 a.m., will be devoted to reading the following and other papers.

ARCHIBALD, Captain, R.A.M.C. Human Botriomycosis.
BALFOUR, Dr. Andrew. The Question of Water Supply in the Tropics as Illustrated by the Supply for Khartum.
BIRT, Lieutenant-Colonel C., R.A.M.C. Phlebotomus Fever.
FÜLLEBORN, Professor. Demonstration on the Development and Morphology of Microfilaria.
PEARSE, Dr. T. Frederick. Epidemic Dropsy.

The Museum Committee will be glad to receive pathological specimens, microscopic preparations, drawings or photographs of any subject connected with tropical medicine. Lantern demonstrations will be especially welcomed.

BLACK-AND-WHITE EXHIBITION.

An effort is being made to get together for the Annual Meeting of the Association, and in connexion with the Museum Committee, a collection of prints and black-and-white drawings having reference to the medical profession and medical men. Many such pictures have appeared in *Punch* and other illustrated papers, and no doubt there are many old prints in existence which would interest and amuse. Dr. Rice-Oxley, 5, Kensington Square, W., who has undertaken the work of arranging the collection, will be most grateful for the loan of drawings, prints, or cartoons, or for any suggestions towards the carrying out of the idea. Every possible care will be taken of loans. Any good original paintings respecting medical men or matters would be acceptable. As the time is somewhat short, Dr. Rice-Oxley will be glad of immediate response to this appeal.

PROVISIONAL TIME TABLE.

Friday, July 22nd, 1910.

10 A.M.—Annual General Meeting, followed by Representative Meeting.

2 P.M.—Extraordinary General Meeting.

8 P.M.—Dinner of Councillors and Representatives.

Saturday, July 23rd, 1910.

9.30 A.M.—Representative Meeting.

Monday, July 25th, 1910.

10 A.M.—Representative Meeting.

Exhibition of Surgical Instruments, Drugs, Foods, etc., from 9 A.M. to 6 P.M.

Tuesday, July 26th, 1910.

10 A.M.—Representative Meeting.

2.30 P.M.—Adjourned General Meeting. Induction of President.

4 P.M.—Annual Conference of Secretaries of Divisions and Branches.

8.30 P.M.—*President's Address.

Demonstrations in the Medical Museum, 2 to 4 P.M.

Exhibition of Surgical Instruments, Drugs, Foods, etc., from 9 A.M. to 6 P.M.

Wednesday, July 27th, 1910.

9.30 A.M.—Council Meeting at South Kensington.

10.30 A.M.—High Mass at the Roman Catholic Cathedral, Westminster.

10 A.M. to 1 P.M.—Sectional Meetings.

12.30 P.M.—Address in Medicine.

3 P.M.—*Service, Westminster Abbey.

8.30 P.M.—*Reception at the Guildhall.

Demonstrations in the Medical Museum, 2 to 4 P.M.

Exhibition of Surgical Instruments, Drugs, Foods, etc., from 9 A.M. to 6 P.M.

Thursday, July 28th, 1910.

9.30 A.M.—Council Meeting at South Kensington.

10 A.M. to 1 P.M.—Sectional Meetings.

12.30 P.M.—Address in Surgery.

3 P.M.—Garden Party at Ranelagh.

7.30 P.M.—Annual Dinner.

Demonstrations in the Medical Museum, 2 to 4 p.m.

Exhibition of Surgical Instruments, Drugs, Foods, etc., from 9 A.M. to 6 P.M.

Friday, July 29th, 1910.

9.30 A.M.—Council Meeting at South Kensington.

10 A.M. to 1 P.M.—Sectional Meetings.

9 P.M.—*Reception, Natural History Museum.

Demonstrations in the Medical Museum, 2 to 4 P.M.

Exhibition of Surgical Instruments, Drugs, Foods, etc., from 9 A.M. to 6 P.M.

Saturday, July 30th, 1910.

Excursions.

* Academic dress or uniform should be worn on these occasions, but is optional.

GENERAL ARRANGEMENTS.

The Central Offices, Reception Room, and Sectional Meeting Rooms will be established in the University of London, Imperial Institute Buildings, and the Imperial College of Science at South Kensington.

Notification of Attendance: Railway Tickets.

All members of the British Medical Association who purpose to attend the Annual Meeting in London at the end of this month, including those resident in London, are requested at once to fill up, if they have not already done so, the form of "notification of attendance" which appears in to-day's issue amongst the advertisements on pp. 7 and 8. If the form is filled up and returned to the address shown, a voucher or vouchers will be issued from the Central Office, 429, Strand, giving the right to the special terms which have been arranged with the railway companies. The companies will issue return tickets at a single fare and a quarter, available from July 21st to August 2nd, both dates inclusive.

List of Hotels and Lodgings.

A list of hotels and lodgings, with a scale of charges, was published in the Supplement of June 18th, p. 406. Members are requested to communicate direct with the persons whose names are given in the list, or with the managers of the hotels mentioned. The list has been reprinted, and copies can be obtained on application to Dr. Lauriston Shaw, 429, Strand, W.C.

Guide Book.

A short guide book has been compiled for distribution to members attending the Annual Meeting. It gives a brief sketch of the history of the medical institutions of London, and a general survey of the developments in scientific and practical teaching in the various schools, and of the enlargements and other changes of the hospitals and other medical institutions of the metropolis during the fifteen years that have elapsed since the British Medical Association held its Annual Meeting in London in 1895. The booklet also contains all the information necessary to enable members to find their way to the museums and other places likely to be of special interest to them. For this purpose the means of locomotion—by omnibus, tramway car, electric and tube railways—are described; and further help to the visitor in threading the labyrinth of London is given by diagrams and a coloured map.

Reception Room.

The Reception Room will be established in the University of London and Imperial Institute, South Kensington. The University may be conveniently reached by electric tube or Underground Railways (South Kensington Station), or by omnibuses traversing Piccadilly. Copies of the *Daily Journal* will be obtainable, as well as full particulars of entertainments and excursions. Guide books, time-tables, and other works of reference will be provided, and there will be a postal office for the receipt and dispatch of letters and telegrams. There will be writing and reading rooms, and a typewriting office, a typewriting office will also be established in the Imperial College of Science. Accommodation will be arranged for members desiring to smoke.

Luncheons.

Luncheons will be provided daily in the Quadrangle of the Imperial Institute. Messrs. Stewart and Co., the caterers at Brooklands, have been appointed, and luncheons will be served at 2s. a head.

Club Accommodation.

The Club Accommodation Subcommittee of the Reception Committee beg to announce that a limited amount of accommodation has been offered to members of the Association and foreign visitors to the forthcoming Annual Meeting.

Those desirous of availing themselves of this club accommodation are requested to send in their names on the accompanying form, addressed to the Chairman of the Subcommittee, Dr. Maurice Craig, 429, Strand, W.C., on or before July 11th.

Application Form for Club Accommodation.

Name and titles .....

Address .....

.....

*Clubs of which applicant is a member..... (social and otherwise)

* This is for introduction purposes to the London club.

POST, TELEGRAPH, AND TELEPHONES.

Letters and Telegrams.

Full postal facilities for the receipt and dispatch of letters and telegrams will be provided in the Post-office which will be established in the Reception Room, University of London, South Kensington, S.W.

Telephones.

Two telephones will be available for the use of members in the Reception Room, and one in the Imperial College of Science.

SPECIAL SERVICE IN WESTMINSTER ABBEY.

The service in Westminster Abbey will be held at 3 p.m., on Wednesday, July 27th. The sermon will be preached by the Very Rev. the Dean of Salisbury. Special tickets of admission will be necessary, and as the accommodation is limited, early application for tickets to be reserved should be made to Dr. W. Griffith, 1, Chester Gate, N.W. Separate tickets admitting to the Abbey by different entrances will be issued to—

1. Men intending to wear academic costume (Form A).
2. Women intending to wear academic costume (Form B).
3. Men or women *not* intending to wear academic costume (Form C).

Robing rooms will be provided within the precincts of the Abbey. Members should therefore specify in their application which form of ticket they desire.

The final allotment of tickets will be made on Tuesday morning, July 26th, and tickets not previously forwarded by post will be issued in the Reception Room, University of London, South Kensington, on personal application.

This form of application may be cut out and used.

I wish to attend the service in Westminster Abbey, and shall be glad to have reserved for me, if available, a ticket of

Form {A* / B* / C*}

If my ticket is forwarded by post please send it to the following address:

Name.....

Address .....

* For explanation of letters see above. Please strike out the two letters not required.

SPECIAL SERVICE AT WESTMINSTER CATHEDRAL FOR ROMAN CATHOLIC MEMBERS.

By the kindness of the authorities of Westminster Cathedral, special front places will be reserved at the Solemn High Mass at 10.30 a.m., or Vespers at 3 p.m., for as many Members of the British Medical Association as desire to attend either of these services on Wednesday, July 27th, and will notify their intention of being present. Special tickets will not be necessary, but members who desire to be present are asked to send a postcard intimating their intention to Dr. Finucane, 10, Ashley Place, S.W., so that a sufficient number of seats may be reserved.

ENTERTAINMENTS AND EXCURSIONS.

SPECIAL NOTICE.

Members are earnestly requested not to make application for tickets for functions unless they are confident of being able to attend, and to return IMMEDIATELY *any ticket allotted to them which they find themselves unable to use.*

ENTERTAINMENTS IN LONDON.

Annual Dinner of the Association.

The annual dinner of the Association will take place at the Connaught Rooms, Freemasons' Hall, Great Queen Street, W.C., on Thursday, July 28th, at 7.30 p.m. punctually.

The price of the dinner ticket is 10s. 6d., exclusive of wines. As the accommodation is limited, those desirous of attending should make early application to Mr. Atwood Thorne, 429, Strand, London. The necessary form of notification is published in the advertisement pages 7 and 8.

Ladies' Dinner.

A dinner for ladies accompanying those Members of the Association who are attending the annual dinner will take place at the Hotel Cecil on the same evening. Members attending the annual dinner and who are accompanied by a lady should advise Mrs. Mary Scharlieb, M.S., M.D., 149, Harley Street, London, if they desire to obtain an invitation for the ladies' dinner. A reception at the Lyceum Club has also been arranged. Special attention is called to the fact that the white card of invitation does *not admit* to the Ladies' Dinner at the Hotel Cecil. Ladies receiving these invitations will receive a pink admission card on receipt of their acceptance.

Receptions.

A reception will be given at the Guildhall by the Corporation of the City of London, at 8.30 p.m. on Wednesday, July 27th, for which special tickets of admission will be required.

A reception will be given by the Metropolitan Counties Branch, at the Natural History Museum, Cromwell Road, South Kensington, on the evening of Friday, July 29th, for which 4,000 invitations will be issued.

A reception will be given at the Royal Army Medical College, Millbank, when a demonstration illustrating the equipment of foreign armies will take place.

The Chairman and the Committee of the Army and Navy Male Nurses' Co-operation are holding a reception at the Grafton Galleries, Grafton Street, W., on Monday, July 25th, at 4.30 to 7 p.m., and will be glad to entertain members of the British Medical Association attending the Annual Meeting. Application for invitations should be made to the Honorary Secretary of the Co-operation, 47B, Welbeck Street, W.

Academic Dress.

Academic dress or uniform will be worn at the General Meeting at St. James's Hall, Great Portland Street, on Tuesday, July 26th, at 8.30 p.m., when Mr. Butlin will deliver his presidential address, and foreign guests and Colonial delegates will be presented and honorary members inducted.

Academic dress will also be worn at the service in Westminster Abbey on Wednesday afternoon, July 27th, at 3 p.m., and at the conversazione on Wednesday evening, July 27th, given by the Lord Mayor and Corporation of London at the Guildhall.

It is desired also that academic dress should be worn at the evening reception to be given by the Metropolitan Counties Branch at the Natural History Museum on Friday evening, July 29th.

Garden Parties.

The President and members of the Metropolitan Counties Branch will give a reception and garden party to 4,000 members and their friends in the picturesque Polo Grounds of the Ranelagh Club on the afternoon of Thursday, July 28th; for this also special tickets will be required.

The President, Treasurer, and Governors of the Royal Hospitals of Bridewell and Bethlem will entertain 500 at a garden party at Bethlem Royal Hospital on Wednesday afternoon, July 27th, for which special tickets will be required.

A luncheon and garden party will be given at St. Bartholomew's Hospital on Wednesday, July 27th.

Ladies' Reception Council.

The Ladies' Reception Committee are making extensive arrangements for the entertainment of ladies accompanying members attending the Annual Meeting in London. In addition to the dinner mentioned above, arrangements have been made by the Morning Excursions Subcommittee for several mornings and afternoons. On Tuesday, July 26th, visits will be made to the Sesame Training Home, Passmore Edwards Settlement, the School of Medicine for Women, and St. Paul's Cathedral; the visit to the School of Medicine for Women will take place at 11 a.m. On Tuesday afternoon Stafford House will be visited. On Wednesday morning visits will be paid at Apsley House, and at 11.30 a.m. to Westminster Abbey; in the afternoon Mrs. D'Arcy Power will conduct a party of seventy ladies and gentlemen over Barbers' Hall and St. Bartholomew's Priory. The party will be met in the square of St. Bartholomew's Hospital, West Smithfield, at 1.30 p.m., and will proceed to the Priory Church of St. Bartholomew's the Great, which is one of the oldest and most interesting in London. The Barbers' Hall in Monkswill Street, which is rarely open to the public, will be inspected at 3 o'clock by the kind permission of the Master and Wardens of the Barbers' Company, and a short sketch of its history and its relation to the development of British medicine will be given. Mrs. D'Arcy Power will be at home at 10A, Chandos Street, Cavendish Square. Tea at 5 o'clock. The distance to be walked during the afternoon is under a mile. On Thursday a visit will be made to the Tower at 11 a.m., and Miss Scharlieb will conduct a party over the Charterhouse and St. Giles's, Cripplegate. On Friday at noon a visit will be paid to Grosvenor House. The Chairman of the Subcommittee is Mrs. Rose Bradford, and inquiries only concerning these may be addressed to the Honorary Secretary, Mrs. Dudley Buxton, 82, Mortimer Street, W.

Mrs. Dudley Buxton regrets that she is unable to send tickets for any of the excursions, as they are only obtainable at the Bureau at the Imperial Institute during the week of the meeting.

Mrs. Dudley Buxton wishes to notify that she is the Honorary Secretary of the Morning Excursions Subcommittee, and not the Honorary Secretary of the Ladies' Reception Council.

Visits to Private Mansions.

By the kindness of the Dukes of Wellington, Westminster, and Sutherland, arrangements have been made for small parties of about twenty-five to visit the following mansions, which contain fine collections of pictures and other objects of interest:

Apsley House, the residence of the Duke of Wellington.

Grosvenor House, the residence of the Duke of Westminster.

Stafford House, the residence of the Duke of Sutherland.

Visits to Various Places of Interest.

Members will have an opportunity of visiting the Royal Mews, Buckingham Palace, by kind permission of Sir Henry Ewart, Master of the Horse; special tickets will be required.

The new premises of the Royal Sanitary Institute, Buckingham Palace Road, will be open to members, who will be conducted over the Parkes Museum and the Institute.

The Society of Medical Officers of Health will throw open their rooms (1, Upper Montague Street, Russell Square) to members throughout the day, and provide tea between 4 and 5 o'clock. Admission by member's card.

Visits to the Tower of London have been arranged, and parties will be conducted by special warders.

Visits may also be made to the Royal Mint.

Visits to the various docks have been arranged by permission of the Port of London Authority.

A visit to the offices and printing works of the *Daily Telegraph* has been arranged.

The National Telephone Company will show its exchange station to members.

Members are invited to visit the Zoological Gardens on Sundays, July 24th and 31st. Members of Council and Representatives desirous of visiting the Gardens on Sunday, July 24th, will be able to obtain tickets on personal application to Dr. Rowland Fothergill, at the Court of Common Council Chamber, Guildhall. Other members of the Association desiring tickets must apply in writing to Dr. Lauriston E. Shaw, 429, Strand, W.C.

EXCURSIONS.

Friday, July 29th.

ST. ALBANS.

The Mayor of St. Albans (Dr. E. H. Lipscomb) has invited a party of fifty members to St. Albans, where they will be shown over the cathedral and entertained by him to luncheon. Members will leave by the 12.15 train from St. Pancras Station, which can be most speedily reached from the University by travelling by the Piccadilly electric tube railway from South Kensington Station.

Saturday, July 30th.

LORD MAYOR TRELOAR CRIPPLES' HOME AND COLLEGE.

Sir William Treloar has invited a party of 200 members to visit the Cripples' Home and College at Alton, Hampshire. A special train will leave Waterloo at 10.5 a.m., and will arrive at the platform in the grounds of the institution at 11.23; a return train will leave the same platform at 4.35, and is due to arrive at Waterloo at 5.54. The visitors on arrival will be conducted over the institution in separate parties by the sisters. Luncheon will be served in the grounds at 1 p.m. and tea at 4 p.m. After luncheon Sir William Treloar will give a short address, and papers will probably be read by members of the medical advisory board and by the medical superintendent, who will give a demonstration on the use of plaster-of-Paris.

BATH.

The Mayor and Corporation of Bath have invited 200 members to visit the city of Bath. The Corporation will arrange for conveying the members of the party to and from London in special trains from Paddington Station, and will entertain them at luncheon. The programme will include a visit to the hot mineral bathing establishments and a drive round the city. (The leading hotels are prepared to offer special terms to any member of the party desirous of staying the week-end in Bath.)

EASTBOURNE.

The Eastbourne Division has invited 100 members to visit Eastbourne, where they will be entertained to luncheon, and will make an excursion to Beachy Head.

BRIGHTON AND HOVE.

The Corporations of Brighton and Hove will invite 100 members to visit these sister towns. After driving round the town of Hove, inspecting the Bath on the King's Esplanade, and visiting the St. Anne's Well Gardens, there will be an Official Reception and Public Luncheon at the Hove Town Hall. The luncheon is timed to take place at 1.45, after which the party will proceed to the Royal Pavilion, Brighton, where the Mayor of Brighton will receive them and entertain them to a garden party.

WINDSOR.

The arrangements have not yet finally been made, but there will probably be an excursion to Windsor to visit Windsor Castle and Eton College, and an excursion by train to Maidenhead, thence to Henley by launch, and return by train.

Members who have already notified their intention to attend the Annual Meeting will assist the Executive by filling up the following forms indicating which of the functions and excursions, of which particulars are given earlier in this article, they prefer to take part in. The forms, when filled up, should be addressed to Dr. Lauriston Shaw, 429, Strand. In the allotment of tickets, the numbers of which are limited, preference will be given to those who make early application. The allotted tickets will be retained by the Committee, and given out on personal application only in the Reception Room, University of London, South Kensington, during the meeting. No tickets can be forwarded by post.

I.

I should be glad to have an opportunity of attending the following functions, and have numbered them in order of my preference:

Order of Preference.	—
.....	The President's Address.
.....	The Corporation's Reception.
.....	The Metropolitan Counties Branch Reception.
.....	The Garden Party at Ranelagh.
.....	The Garden Party at Bethlem Hospital.
	Applications for tickets for the Special Service in Westminster Abbey, the Annual Dinner, and for the various excursions should be made on the separate forms provided.

Name.....

Address.....

II.

I should be glad to have an opportunity of joining one of the following excursions, and have numbered them in order of my preference:

Order of Preference.	—
.....	Sir William Treloar's Cripples' Home.
.....	Bath.
.....	St. Albans.
.....	Eastbourne.
.....	Brighton and Hove.
.....	Windsor.

Name.....

Address.....

GOLFING.

The Ulster Cup.

A letter from Dr. F. J. Smith explaining the arrangements made for this annual competition, which is to take place at Burhill on Friday, July 29th, was published in the JOURNAL of July 2nd, p. 53.

It will be remembered that a cup was presented by the Ulster Branch last year, and is to be played for annually on the following conditions, as laid down by the Ulster Branch:

Bogey play under handicap, not exceeding 18; cup to become the property of the member of the Association winning it twice in succession, or three times in all; one round of 18 holes to be played on one day at the Annual Meeting, with no previous play.

The cup is a copy of the famous Ardagh Cup, which is in the National Museum in Dublin, and whose history is known from the eleventh century.

Dr. F. J. Smith gives notice that entries for the cup must reach him at 138, Harley Street, W., not later than Friday, July 15th. The links of the Burhill Golf Club are near Walton-on-Thames Station, which is easily reached from Waterloo Station, and Waterloo is itself easily and quickly reached from most parts of London by the Baker Street and Waterloo Tube railway, which has communications with the Central London Railway at Oxford Circus and with the Piccadilly Railway at Piccadilly Circus.

As will be seen from Dr. F. J. Smith's letter, the officers of the Burhill Golf Club have extended their hospitality a good deal beyond the arrangements for the Ulster cup competition, for they have offered the following additional facilities:

1. They have offered to make all members of the Association attending the annual meeting temporary members of the club for the Wednesday, Thursday, and Friday of the meeting.
2. They have, in the name of the Burhill Club, offered one, if not five, extra prizes for competitions to be determined later.
3. There are two courses at the club, so that possibly foursomes can be played after the competition proper is finished, or even simultaneously with it.
4. There will be an unlimited putting competition during Friday—cards, 6d. each—the pool to be divided in proportions to be determined later.
5. They have placed at the disposal of visiting members the catering establishment of the club, so that those who wish to do so can dine there in the evening at a reasonable cost.
6. There is ample accommodation for ladies, who can, at any rate, take out as many cards as they like for the unlimited putting competition, or, indeed, arrange one for ladies only.

Members intending to compete for the Ulster cup or in any other competitions will be required to furnish a certificate of their handicap signed by the club secretary. Further details, including the starting time, which must be strictly adhered to, will be posted in the Reception Room at the University of London, South Kensington, during the meeting.

Annual Match.

The usual annual match will take place on Wednesday afternoon, July 27th. It will be between the Metropolitan Counties Branch and the visitors, and it is hoped that at least twenty a side will take part. It will be played, by the kindness of the committee, on the well-known Northwood Links. All members who wish to play are asked to send their names at once to Mr. Percy Furnivall, 28, Weymouth Street, Portland Place, W., in order that the best selection available may be made. It is particularly requested that names should be sent in as early as possible, and each should be accompanied by the player's club and lowest handicap.

Honorary Membership of Clubs.

The following clubs have invited members to use their links: Acton, Ashford Manor, Burnham Beeches, Bushey Hall, Burhill, Edgware, Eltham Warren, Fulwell, Hanger Hill, Home Park, Mid-Surrey, Neasden, Princes', Richmond, Romford, Sandy Lodge, Sunningdale, Totteridge, Tooting Bec, Walton Heath, Wembley, West Middlesex, Royal Wimbledon, and Worplesdon.

Arrangements will be made by which members wishing to play a round may leave their names and handicaps at the Reception Room not later than the day before, in order that matches may be arranged.

ANNUAL REPRESENTATIVE MEETING.

A committee of the Metropolitan Counties Branch has issued a circular to Representatives of Divisions and members of the Central Council showing the arrangements which have been made for the entertainment of the members of the Representative Meeting on Saturday and Sunday, July 23rd and 24th. They include visits to Folkestone, with a day trip, if desired, to Boulogne, and to Maidenhead, with a day trip, if desired, to Henley. The members of the Representative Meeting will dine together on Friday, July 22nd, at 7.45 p.m. for 8 p.m., at the Waldorf Hotel. If any Representative or member of the Council has not received the circular, he is requested to communicate with the Secretary of the Committee, Dr. E. Rowland Fothergill, at 429, Strand, W.C.

MOTOR GARAGE.

It has been arranged with the Alveston Motor Garage, whose premises open out of Roland Gardens, South Kensington, London, S.W., to provide garage accommodation for members bringing their cars from the provinces. The charge will be 2s. a day, to include

standing in a lock-up garage and use of electric light and water. Members desirous of availing themselves of this accommodation should make early application to the Alveston Motor Garage.

Irish Medical Schools' and Graduates' Association.

The summer meeting and luncheon will be held at the Holborn Restaurant on Wednesday, July 27th, at 1.15 for 1.30 p.m. Members wishing to be present will please, as soon as possible, inform Dr. W. Douglas, Goudhurst, Kent.

National Temperance Breakfast.

The Annual Temperance Breakfast will be held on the morning of Thursday, July 28th, at 8 a.m., under the presidency of Mr. Pearce Gould (Vice-President, Royal College of Surgeons of England).

THE MEDICAL MUSEUM.

In accordance with custom, a medical museum has been organized in connexion with the Annual Meeting. The function of this museum is twofold.

In the first place, it serves the office of safeguarding and displaying those specimens which are required to illustrate papers in the Sections; and, in the second place, it is intended to depict advances in medicine and the allied sciences within recent years. The specimens shown by members of the various Sections will be arranged so as to be readily accessible to the visitor and form a special feature of the museum.

In order that the museum may discharge its second function, it has been divided into sections, and each section has been placed under an honorary curator.

Alimentary system	Dr. Hertz, of Guy's Hospital.
Anaesthetic section	Dr. Ada M. Browne, of the Chelsea Hospital for Women.
Bacteriology	Dr. Henderson Smith, of the Lister Institute.
Cardio-vascular system ...	Dr. T. Lewis, of City of London Hospital.
Cancer Research	Dr. Murray, of the Imperial Cancer Research Fund.
General Surgical Pathology	Dr. Braxton Hicks, of the Westminster Hospital.
Genito-urinary system ...	Dr. Swift Joly, of St. Peter's Hospital.
Gynaecology	Dr. Helen Chambers, of the Royal Free Hospital.
Laryngology	Dr. Harmer, of St. Bartholomew's Hospital.
Neurology	Dr. Wilson, of the Queen Square Hospital.
Ophthalmology	Dr. Mayou, of the Paddington Green Children's Hospital.
Otology	Dr. Sydney Scott, of St. Bartholomew's Hospital.
Physiological and Pathological Chemistry	Dr. Ryffel, of Guy's Hospital.
Protozoology	Miss Muriel Robertson, of the London University.
Radiology	Dr. Ironside Bruce, of Charing Cross Hospital.
Respiratory System	Dr. Lakin, of Middlesex Hospital.
Tropical Medicine	Dr. Hutton, of the London School of Tropical Medicine.
Tuberculosis	Dr. Petrie, of the Lister Institute.

In most of the departments special attention has been given to the illustration of methods. In view of the increasing importance of protozoology to general medicine, it was thought that something approaching a complete series of parasitic protozoa might be exhibited with advantage to the practitioner. Many of these forms of life, it is true, are not at the present time found in man, but each series illustrates a type, and is of theoretic importance to-day, and may be of practical importance to-morrow. A number of life-cycles have been set up, and the visitor will be struck by the excellence of the specimens. Over 100 microscopical specimens are on view in the sections of protozoology and tropical medicine alone. Among the series of drawings to be lent by Sir Jonathan Hutchinson are a number of illustrations of pricks of the various blood-sucking insects. The whole collection which Sir Jonathan Hutchinson will show will be extensive, and will comprise drawings likely, on account of their novelty or rarity, to be specially instructing and interesting. They will include illustrations of a number of types of lupus, of pigmentation, and of loss of colour, of xanthoma and xanthelasma, and of cases of recovery from leprosy.

The museum, which is situated in the Elementary Physics Laboratory in the Imperial College of Science, will be open from 10 a.m. till 5 p.m. on each day, and notice of special demonstrations given by the honorary curators at convenient times will be posted at the doors. A catalogue has been compiled and will be distributed to visitors in the museum.

By the kindness of the Museum Committee arrangements are being made to place on exhibition, in the Anaesthetic Section of the Annual Museum, certain original and interesting documents, kindly lent by Mrs. Frances Long Taylor, daughter of one of the discoverers of surgical anaesthesia—Crawford W. Long of Athens, Georgia, U.S.A. The right of Long to be regarded as the true discoverer of anaesthesia has recently been recognized on an increasing scale in America, and it will doubtless be of interest to members of the Association to inspect some of the documentary evidence upon which the claims of Long are based.

HOSPITALS AND LABORATORIES.

The following hospitals and infirmaries have signified their intention of receiving members of the British Medical Association during the week of the Annual Meeting, July 24th to 29th.

General Hospitals.

St. Bartholomew's Hospital, West Smithfield, E.C.—Parties will be personally conducted over the hospital and school on Monday, July 25th, at 3 p.m., on Tuesday, Thursday, and Friday at 3.30 p.m., and on Wednesday between 3.45 and 4 p.m. On Tuesday, at 12.30 p.m., there will be a demonstration of specimens in the museum, and on Friday at the same hour a demonstration of Wassermann's reaction in syphilis. At 3 p.m. on Wednesday 400 guests will be entertained at a garden party in the quadrangle to meet the President of the British Medical Association.

Charing Cross Hospital, Agar Street, Strand, W.C.—The wards and special departments will be open for inspection on Tuesday, July 26th, from 2 to 4 p.m., when demonstrations in the various departments will be given by members of the staff.

French Hospital, Shaftesbury Avenue, W.C.—Foreign visitors will be received at the hospital on Tuesday, July 26th, at 10 a.m.

St. George's Hospital, Hyde Park Corner, S.W.—On Thursday, July 28th, interesting medical and surgical cases will be demonstrated between 1.30 and 3.30 p.m. From 2 to 4 p.m. there will be demonstrations in the museum by Dr. Trevor, in the Bacteriological Department of the ultra-microscope and methods of vaccine treatment by Dr. Slater, and in the X Ray and Electrical Department by Dr. Simmons and Dr. Fox; at 3 p.m. Dr. Spitta will give a demonstration in the Microphotography Department. The physicians and surgeons in the special departments will also demonstrate interesting cases.

German Hospital, Dalston, N.E.—Members visiting the hospital will be heartily welcomed, and shown over the buildings.

Great Northern Central Hospital, Holloway Road, N.—The hospital will be opened to members on Thursday, July 28th, between 3 and 5.30 p.m., when cases and pathological specimens will be demonstrated. Tea and light refreshments will be provided.

Guy's Hospital, S.E.—On Thursday, July 28th, from 2 to 4.30 p.m., 100 members will be received, and there will be an exhibition of medical and surgical cases, and selected *x* ray cases. Tea will be provided in the Court Room at 4.30 p.m.

Italian Hospital, Queen Square, Bloomsbury, W.C.—Members visiting this institution will be welcomed.

King's College Hospital, Lincoln's Inn Fields, W.C.—Members will be shown daily over the new buildings of the hospital at Denmark Hill. Members desirous of inspecting the new buildings are requested to intimate the fact to Mr. H. W. Armit, Lister Institute of Preventive Medicine, Chelsea Gardens, Honorary Secretary of the Medical Museums Committee.

London Hospital, Whitechapel, E.—Parties not exceeding thirty members will be received daily between 10 a.m. and 5 p.m., and shown any interesting cases.

St. Mary's Hospital, Paddington, W.—On Monday and Tuesday, July 25th and 26th, Dr. Luff and Dr. Phillips will demonstrate cases in the medical wards between 2 and 4 p.m. respectively. The larger operating theatre will be opened to members daily between the same hours. The museum will also be open daily for viewing a special series of preparations.

Middlesex Hospital, Berners Street, Oxford Street, W.—Members will be received by the honorary staff on Thursday, July 28th, from 2 to 5 p.m., and shown over the hospital; surgical operations of interest will, if possible, be arranged. The cancer research laboratories will be open for inspection, and the director will arrange an exhibition of specimens in the museum. Tea will be provided in the residential college.

Royal Free Hospital, Gray's Inn Road, W.C.—Facilities will be afforded daily to members to inspect the hospital, including the recently built suite of operating theatres, sterilizing room, etc.

London (Royal Free Hospital) School of Medicine for Women.—The council and staff will be at home, 8, Hunter Street, Brunswick Square, W.C., to the members of the Association on Friday afternoon, July 29th, from 4 p.m. to 6.30 p.m.

Seamen's Hospital (Dreadnought), Greenwich, S.E.—The out-patient department will be opened from 10 a.m., and operations will be performed on Monday, Tuesday, Thursday, and Friday afternoons at 2 p.m. Ward visits will be paid by the physicians on Tuesday and Thursday afternoon. The hours for the special departments are: Throat—Monday and Thursday, 10 a.m. to 1 p.m.; Skin—Tuesday and Friday, 12 noon to 2 p.m.; Eye—Wednesday and Saturday, 11 a.m. to 2 p.m.

St. Thomas's Hospital, Albert Embankment, S.E.—The hospital will be open for inspection daily by 100 members. Mr. Shattock will attend at the museum and explain various interesting specimens, and Mr. Dudgeon will explain the work of the Louis Jenner Clinical Laboratory. Operations will be conducted between 2 and 5 p.m. Members will be welcome to attend clinical rounds made on Monday, Tuesday, Thursday, and Friday afternoons. The Governor of the hospital will entertain members to tea on Thursday, July 28th, from 4 to 4.30 p.m.

University College Hospital, Gower Street.—The hospital will be open to members on the afternoons of July 26th, 27th, 28th.

Westminster Hospital.—Members are invited daily between 3 and 5 p.m. Operations will be performed on July 25th, 26th, 27th, 28th, and possibly the 29th. A special demonstration on infective arthritis will be given by Dr. Murrell on Thursday, July 28th.

INFIRMARY.

Hampstead Workhouse Infirmary, New End, Hampstead, N.W.—The medical officer, Dr. E. Claude Taylor, will be glad to show members over the wards of the infirmary on Tuesday, July 26th, between 3 and 5 p.m.

SPECIAL HOSPITALS.

City of London Hospital for Diseases of the Chest, Victoria Park, E., will be open for inspection on Wednesday, July 27th, between 3 and 5 p.m. Tea will be provided.

Norwood Sanatorium, Beckenham.—At this institution the treatment of inebriety by drugs is carried on under the general superintendence of an honorary advisory medical committee. A garden party will be given on Friday, July 29th, at 4.30 p.m.

The Royal Hospital for Diseases of the Chest, City Road, E.C., will be open to members daily from 2 to 4 p.m. On Friday, July 29th, from 3 to 5 p.m., demonstrations of thoracic diseases will be given by the physician in the wards, *x*-ray demonstrations of thoracic diseases by Dr. Jordan, the radiographer; and pathological demonstrations by the clinical pathologist. Tea and light refreshments will be served in the Board Room at 4 p.m.

Hospital for Sick Children, Great Ormond Street, W.C.—A demonstration of clinical cases will take place at 2.30 p.m., on Thursday, July 28th, prior to the garden party, for members of the Section of Diseases of Children at 4 p.m.

Bethlem Royal Hospital, St. George's Field, S.E.—The hospital will be open for inspection on the afternoons of July 26th, 28th, and 29th. On Wednesday there will be a garden party, and members will be shown round the wards.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—A party of fifty are invited on Thursday, July 28th, between 4 and 6 p.m., to inspect the hospital, the new out-patient and the electrotherapeutic departments. Demonstrations of selected cases will also take place. Tea will be provided.

Royal National Orthopaedic Hospital, Great Portland Street, W.—Opportunities will be afforded to members to see the working of the hospital from July 25th to 29th inclusive, between 2 and 4 p.m., and on July 25th and 28th from 9 to 11 a.m., and to see any operations which may be performed during their visit.

Hospital for Diseases of the Throat, Golden Square, W.—Members are invited to see the work of the hospital. Operations take place daily in the morning. Clinics are held every afternoon, and Tuesday and Friday evening. The staff will hold a reception on Friday, July 29th, at 4 p.m., when refreshments will be provided, and at 4.30 p.m. there will be a demonstration of selected cases.

Royal London Ophthalmic Hospital, City Road, E.C.—The staff will be pleased to show the working of the hospital, and afford opportunities of seeing cases.

St. John's Hospital for Diseases of the Skin, Leicester Square, W.C.—Members can attend the clinics daily from 2 to 4 p.m. Special demonstrations of selected cases will be given on the afternoons of July 27th, 28th, and 29th. The laboratories and *x*-ray rooms will be open to visitors, and tea will be provided.

COLLEGES AND LABORATORIES.

Royal College of Surgeons, Lincoln's Inn Fields, W.C.—The museum and library of the College will be open to members on each day of the Annual Meeting from 10 a.m. to 5 p.m. The Conservator and Pathological Curator will receive 150 members to inspect the museum on Wednesday, July 27th, from 4 to 6 p.m. An account of the museum was published in the BRITISH MEDICAL JOURNAL of May 21st, 1910, p. 1244.

Lister Institute of Preventive Medicine, Chelsea Gardens, S.W.—Members will be shown round the institute daily between 3 and 5 p.m. On Tuesday afternoon a party of fifty will be invited to visit the Serum Department at Elstree.

Royal Army Medical College, Millbank, S.W.—On Thursday, July 28th, from 3 to 4.30 p.m., there will be a reception and demonstration on equipment of foreign armies. The party is limited to 150.

Medical Graduates' College and Polyclinic, Chenies Street, W.C.—The Polyclinic and Hutchinson Museum will be open to members daily.

Wellcome Physiological Research Laboratories.—A party of fifty is invited on Tuesday, July 26th, at 3 p.m., to see over the laboratories.

THE ANNUAL EXHIBITION.

The annual exhibition of surgical instruments, drugs, foods, books, and sanitary appliances will be held in the Great Hall and West Gallery of the Imperial Institute, the Jehanghier Hall being reserved for *x*-ray and high frequency apparatus. The exhibition will be opened from 9 a.m. to 6 p.m. from Monday July 25th, to Friday, July 29th, inclusive.

Association Intelligence.

PROCEEDINGS OF COUNCIL.

A Meeting of the Council was held at 429, Strand, London, W.C., on Wednesday, June 29th, 1910.

Present:

Mr. Edmund Owen, LL.D., London, Chairman of Council, in the Chair.

Mr. H. T. Butlin, P.R.C.S., D.C.L., LL.D., London, President-Elect.

Dr. Sinclair White, Sheffield, Past-President.

Mr. H. A. Ballance, Chairman of Representative Meetings.

Dr. Edwin Rayner, Stockport, Treasurer.

Dr. Ford Anderson, London
Dr. Grant Andrew, Glasgow
Inspector-General Robert Bentham, R.N., ret., London (Representative of Royal Navy Medical Service)
Dr. R. C. Buist, Dundee
Dr. W. A. Carline, Lincoln
Mr. Andrew Clark, D.Sc., London
Dr. James Davison, Bournemouth
Mr. E. J. Domville, Exeter
Mr. A. J. Drew, Oxford
Dr. George Edmond, Aberdeen
Dr. David Ewart, Chichester (New Zealand Branch)
Dr. A. C. Farquharson, Bishop Auckland
Mr. C. E. S. Flemming, Bradford-on-Avon
Mr. T. W. H. Garstang, Altrincham
Dr. David Goyder, Bradford
Dr. T. D. Greenlees, London (Cape of Good Hope, Eastern Province; Cape of Good Hope, Western Province; and Border Branches).
Dr. G. E. Haslip, London
Sir Victor Horsley, F.R.S., London
Mr. Herbert Jones, Hereford
Col. C. H. Joubert de la Ferté, I.M.S. (Representative of the Indian Medical Service)
Mr. Hugh R. Kerr, London
Mr. R. H. Kinsey, Bedford
Mr. F. C. Larkin, Liverpool
Mr. Albert Lucas, Birmingham
Dr. J. A. Macdonald, Taunton
Dr. D. J. Mackintosh, M.V.O., Glasgow
Dr. Ewen J. Maclean, Cardiff
Dr. C. J. Martin, F.R.S., London (Sydney and New South Wales Branch)
Dr. C. H. Milburn, Hull
Dr. C. G. D. Morier, London (South Australian and West Australian Branches)
Dr. F. M. Pope, Leicester
Dr. H. Jones Roberts, Penygroes
Mr. W. St. A. St. John, Derby
Dr. Cecil E. Shaw, Belfast
Dr. Lauriston E. Shaw, London
Lieutenant-Colonel R. J. S. Simpson, C.M.G., London (Griqualand West, Natal, and Transvaal Branches)
Dr. W. Mitchell Stevens, Cardiff
Mr. C. R. Straton, Wilton
Dr. J. H. Taylor, Salford
Dr. D. F. Todd, Sunderland
Dr. Alexander Trotter, Perth
Dr. G. E. Twynam, London (Sydney and New South Wales Branch)
Mr. T. Jenner Verrall, Brighton
Professor A. H. White, Dublin
Mr. D. J. Williams, Llanelly
Lieut.-Colonel E. M. Wilson, C.B., C.M.G., South Farnborough (Representative of the Army Medical Service)

Minutes.

The Minutes of the last Meeting, April 27th, having been printed and circulated, were taken as read, and signed by the Chairman as correct. The Minutes of the Special Meeting of Council held earlier in the day were also confirmed.

Apologies.

Letters of apology for non-attendance were received from: The President, Mr. J. Ward Cousins, Dr. Cureton, Dr. Manley, Dr. Mason (returned to New Zealand), and Dr. Munro Moir.

Congratulations.

Sir Walter Foster.

The Council resolved to offer its hearty congratulations to the Right Hon. Sir Walter Foster, on his elevation to the Peerage. The Association has reason to be very grateful to Sir Walter Foster for the continued interest which he has taken in its affairs during the last forty years: as one of the signatories to the Memorandum of Association on its Incorporation under the Companies Acts in 1874; as an active Member of the Medical Reform Committee before the passing of the Act of 1886; as President of the Council of the Association; as a Member of many Committees; as one of the signatories of the Application for a Royal Charter in 1908; and for the manner in which he has, during these last years, supported the action which the Association has taken in the interests of Public Health in the House of Commons.

Colonel Andrew Clark, V.D., A.M.O.

The Council also congratulated Colonel Andrew Clark on his appointment as Honorary Surgeon to the King.

Death of King Edward VII.

Read acknowledgement to the Letter of Condolence forwarded to the Royal Family on the Death of King Edward VII, which was ordered to be entered on the Minutes.

It was decided to forward an Address of loyalty and congratulations to His Majesty King George V.

Deaths.

The acknowledgements to the Resolutions of Condolence passed by the Council upon the deaths of Mr. Manning, Dr. Whitehead Reid, and Colonel Boileau were read and ordered to be entered on the Minutes.

Annual Meeting, 1911.

A letter was read from Mr. Albert Lucas, Honorary Secretary of the Birmingham Branch, inviting the Association to hold its Annual Meeting in 1911 in Birmingham, with Professor Saundby as President-elect.

The Council decided to recommend the Annual Meeting to accept this invitation.

Annual Meeting, 1912.

A letter was read from Dr. K. Grossmann, transmitting on behalf of the Local Divisions an invitation for the Association to hold its Annual Meeting in Liverpool in 1912.

The Council decided to thank the Liverpool Divisions for their invitation, and to have the same entered on the Minutes.

Meetings to be held during the Annual Meeting.

Permission to hold Meetings during the Annual Meeting of the Association was granted to the Continental Anglo-American Medical Society.

A Meeting to consider the State Registration of Trained Nurses was also sanctioned.

Journal and Finance Committee.

The Treasurer presented the Minutes of the Journal and Finance Committee of June 22nd, 1910.

Owing to the continued demand for the book, *Secret Remedies*, it was decided to print a further 20,000 copies.

The accounts for the quarter ending June 11th last, amounting to £10,043 0s. 10d., were received and approved, and the Treasurer was empowered to pay those remaining unpaid, amounting to £2,264 18s. 2d.

A Report relating to Motions on the Agenda of the Annual Representative Meeting involving expenditure was approved and ordered to be transmitted to the Representative Meeting.

The Council decided to recommend the Annual General Meeting to elect Dr. Edwin Rayner, of Stockport, Treasurer of the Association.

The remainder of the Minutes were approved.

Organization Committee.

Mr. Andrew Clark presented the Report of the Organization Committee of June 7th, 1910.

A Memorandum prepared by the Organization Committee on the history of the application of the Association for the grant of a Royal Charter, and of the opposition thereto, was ordered to be placed before the Annual Representative Meeting.

Grants were approved to Branches in the United Kingdom for the year 1910 as follows:

(A) *Branches of more than one Division.*

	Grant Recommended. At the Rate of per Head.		Amount.		
	s.	d.	£	s.	d.
Birmingham	4	0	103	0	0
East Anglian	2	6	55	7	6
East York and North Lincoln ...	4	0	36	8	0
Leinster	4	0	57	4	0
South-Eastern of Ireland	4	0	11	16	0
South Midland	3	0	37	19	0
South Wales and Monmouthshire ...	4	0	114	12	0
South Western	4	0	91	0	0
Ulster	3	0	60	6	0
Yorkshire...	3	0	132	9	0

(B) *Branches of one Division.*

	s.	d.	£	s.	d.
Cambridge and Huntingdon	2	0	15	8	0
Fife	2	0	8	4	0
Gloucestershire	4	0	25	16	0
Northern Counties of Scotland ...	3	0	17	5	0

No grant is to be made for the year 1910 to any of the following Branches, which had in their possession on December 31st, 1909, a balance equivalent to over 5s. per head of their membership:

(A) *Of more than one Division.*

Aberdeen, Dorset and West Hants, Edinburgh, Glasgow and West of Scotland, Lancashire and Cheshire, Metropolitan Counties, Midland, Munster, North Lancashire and South Westmorland, North Wales, Oxford and Reading, South Eastern, Staffordshire.

(B) *Of one Division.*

Dundee, Perth, Stirling, West Somerset.

The remainder of the Report was approved.

The Council instructed the Organization Committee to prepare, with the assistance of the legal advisers of the Association, a Draft Memorandum of Association giving effect to Minute 37 of the Special Representative Meeting, and to submit the same to the Annual Representative Meeting.

It was decided to recommend the Annual Representative Meeting to authorize the Council, after submitting the Draft Memorandum, as provisionally approved by that Meeting, to the Divisions, to settle the terms in accordance with the replies of the Divisions, and proceed forthwith to take the steps necessary with a view to the formation of a new Company, incorporated in the same manner, and having the same Articles of Association and By-laws as the existing Company, but with a Memorandum of Association framed as stated.

The Chairman of Council and the Chairman of the Organization Committee were requested to prepare and issue forthwith to the Divisions a Special Report stating the present position as regards the proposed formation of a new Company, and the decisions of the Special Representative Meetings and of this day's Meeting of Council.

SCIENCE COMMITTEE.

Dr. POPE presented the Report of the Science Committee of June 11th, 1910.

The Stewart Prize has been awarded to Major George Lamb, I.M.S., Director of the Pasteur Institute of India, and Senior Member of the Plague Research Commission in India, in recognition not only of his own work, but also of the work of every Member thereof.

The Middlemore Prize will be awarded in 1911 to the writer of the best Essay on "Serum and Vaccine Therapy in connexion with Diseases of the Eye."

The Council granted the sum of £200 for carrying out, under the supervision of the Therapeutic Committee, certain pharmacological and therapeutic investigations recommended by that Committee and by the Science Committee.

The remainder of the Report was approved.

CENTRAL ETHICAL COMMITTEE.

Dr. MACLEAN presented the Report of the Ethical Committee of June 8th, 1910.

The Council adopted the Standing Orders in reference to Warning Notices in the BRITISH MEDICAL JOURNAL submitted by the Medico-Political and Central Ethical Committees, and approved the Regulations appended thereto dealing with those matters which will, in future, rest in the discretion of the Central Ethical Committee.

It was affirmed that in the opinion of the Council it is the duty of Members of the Association and of those Members of the Medical Profession who desire to co-operate with the Association for the maintenance of the honour and interests of the Medical Profession, to apply for information in accordance with the terms of the Warning Notice in respect of any appointment referred to in that Notice, and to take such action in respect of the information or advice received, in response to such application, as may be most conducive to the maintenance of the honour and interests of the Profession.

The Council decided to recommend the Representative Meeting to pronounce to the same effect.

The remainder of the Report was approved.

MEDICO POLITICAL COMMITTEE.

Dr. MACDONALD presented the Report of the Medico-Political Committee of June 1st and 8th, 1910.

Representations are to be made to all teachers of Pharmacology and Materia Medica that the teaching of these subjects, both theoretical and practical, should now be in accordance with the Metric System.

The Council approved the appointment of a Standing Joint Committee, consisting of at least ten Members of the British Medical Association and ten Members of the British Pharmaceutical Conference.

A Report upon the differences between the Recommendations of the Departmental Committee on Coroners' Law, etc., and the decisions of the Association, as contained in the Memorandum of Evidence submitted to the Departmental Committee, was approved and ordered to be submitted to the Representative Meeting for consideration.

With reference to the question as to the Medical Profession as a Career, referred by the Annual Representative Meeting, 1909, to the Council for consideration and action at their discretion, a circular letter was approved for issue to Head-masters of schools.

The remainder of the Report was approved.

PUBLIC HEALTH COMMITTEE.

Mr. DOMVILLE presented the Report of the Public Health Committee of June 14th, 1910.

The Council resolved that in its opinion it is undesirable that a premium-paying pupil of a Medical Officer of Health should, in any circumstances, be designated "Assistant Medical Officer of Health."

The remainder of the Report was approved.

HOSPITALS COMMITTEE.

Mr. HUGH R. KER presented the Report of the Hospitals Committee of June 9th, 1910, which was received and approved.

NAVAL AND MILITARY COMMITTEE.

Colonel JOUBERT DE LA FERTÉ presented the Report of the Naval and Military Committee of June 6th, 1910, which was received and approved.

COLONIAL COMMITTEE.

Dr. GREENLEES, in the absence of the Chairman (Dr. Morier), presented the Report of the Colonial Committee of June 13th, 1910.

It was decided to make representations to the Secretary of State for India in favour of the institution of a system of Medical Registration. The Council resolved that in its opinion no system of Medical Registration would be complete which did not include those persons mentioned in Parts A and B of the First Schedule to the Draft Bill

for the Bombay Presidency forwarded by the Bombay Branch, namely:

Part A.

Persons holding Medical Degrees and Diplomas from Indian Universities.

Persons holding Medical Degrees and Diplomas from such British and Colonial Universities and Royal Colleges as have their Degrees and Diplomas recognized by the General Medical Council of Great Britain and Ireland and as have recognized our Indian Degrees and Diplomas.

All Graduates of the Grant Medical College who received their Diplomas from the College before the year 1866.

Part B.

Persons holding Medical Diplomas from Indian Medical Colleges and Schools recognized by Government, and entitling the holders thereof to practise Medicine, Surgery, and Midwifery.

The remainder of the Report was approved.

SCOTTISH COMMITTEE.

Dr. BUIST presented the Report of the Scottish Committee of June 8th, 1910, which was received and approved.

SPECIAL POOR LAW REFORM COMMITTEE.

Dr. MACDONALD presented the Report of the Special Poor Law Reform Committee of May 27th and June 17th, 1910, which was received and approved.

SUPPLEMENTARY REPORT OF COUNCIL.

The Supplementary Report of Council to be placed before the Representative Meeting, 1910, was considered and approved. (The Report was published in the SUPPLEMENT of July 9th, p. 40.)

The Council decided to recommend to the Annual General Meeting that Sir William Whitla, Mr. Edmund Owen, and Dr. Edwin Rayner, be elected Vice-Presidents of the Association, in accordance with By-law 39.

ELECTION OF COUNCIL, SESSION 1910–11.

The CHAIRMAN reported the return of members of the 1910–11 Council elected by the Branches by voting paper. (The Return was published in the SUPPLEMENT of July 2nd, p. 29.)

CHLOROFORM COMMITTEE.

A Communication from Dr. Dudley Buxton, Honorary Secretary of the Special Chloroform Committee, was referred to the Journal and Finance Committee for consideration and report.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BIRMINGHAM BRANCH:

COVENTRY DIVISION.

Election of Officers.—On June 21st the following appointments were made in this Division: *Representative*, Dr. Milner-Moore; *Chairman*, Dr. E. H. Snell; *Vice-Chairman*, Dr. J. Orton; *Secretary and Treasurer*, Dr. Vaughan Pendred; *Executive Committee*, Drs. Rice, Soden, Lowman, Brown, Phillips, Kendrick.

BOMBAY BRANCH.

A MEETING of the members of the Branch was held on June 23rd, at 5.30 p.m. (S.T.), in the University Library, when Dr. SORAB K. NARIMAN, M.D., the Vice-President, occupied the chair. The following were also present: Major E. F. Gordon Tucker, I.M.S., Dr. Arthur Powell, Drs. J. M. Mehr-Homjee, H. J. Dadysett, R. Khambata, Assistant Surgeon Khandwalla, Drs. V. S. Sauzgiri, Dosabhai Patel, S. S. Battliwalla, D. D. Sathaye, K. S. Engineer, K. D. Cooper (a visitor), Charles Bentley (a visitor), and the Honorary Secretary (Dr. D. R. Bardi). Half an hour was spent in social intercourse, when the members were entertained to tea.

Confirmation of Minutes.—The minutes of the last meeting were read, confirmed, and signed by the Chairman.

The late King Edward.—Before the regular business of the meeting was commenced, the VICE PRESIDENT (Dr. Nariman), in the chair, said that since their last meeting the whole British Empire had to mourn the loss of their revered and beloved Sovereign King Edward VII. On behalf of the Bombay Branch of the British Medical Association he expressed their deep sorrow for his untimely death, and condoled with the Royal house in their sad bereavement. He also tendered homage and loyalty to the present Sovereign King George V.

Yellow Fever.—Major GORDON TUCKER, I.M.S., then read his paper on yellow fever, India's future danger, which was illustrated by maps and diagrams. The paper described in detail how India is threatened with the scourge and in what way India may get infected. Already certain parts of India are affected.

Specimens of Stegomyia Fasciata.—Dr. CHARLES BENTLEY showed specimens of the mosquito, *Stegomyia fasciata*, and gave some account of it. These specimens were collected in Byculla, near the Sir Jamsetjee Jeejeebhoy Hospital. In the discussion which followed Dr. BENTLEY, Dr. ARTHUR PURCELL, and the CHAIRMAN took part.

Vote of Thanks.—The CHAIRMAN, in proposing a hearty vote of thanks to Major Tucker for his paper, said the paper was very lucid, interesting, and excellent. He said it could not be denied that, looking to the extensive trade and great shipping, Bombay stood in danger of epidemic diseases, like yellow fever, being imported. He agreed that the local medical profession and the Government medical officers ought to be fully prepared for such a contingency. It was the opinion of several scientists that had the medical men in Bombay been able to recognize plague in time, when it first appeared, the city would not have suffered so badly, and other parts of India would possibly have escaped from the ravages of plague. This bitter past experience ought to warn them doubly for inroads of other epidemic diseases. He also thanked Dr. Bentley for the demonstration of mosquitos concerned in the spread of yellow fever. Both the votes of thanks were passed unanimously and with cheers. The meeting was then dissolved.

BORDER COUNTIES BRANCH:

SCOTTISH DIVISION.

THE annual general meeting of this Division was held in the Dumfries and Galloway Royal Infirmary, on Friday, June 10th. Dr. BELL occupied the chair.

Apologies for Non-attendance. — The SECRETARY intimated apologies from several members.

Confirmation of Minutes. — The minutes of last meeting were read and approved.

Report of Executive Committee. — The Executive Committee's annual report also was read and approved.

Election of Officers.—The meeting proceeded to the election of officers of the Division, when the following appointments were made: *Chairman*, Dr. Anderson (Dalbeattie); *Vice-Chairman*, Dr. Easterbrook (Crichton Royal Institution); *Honorary Secretary and Treasurer*, Dr. Raeburn; *Representatives on Branch Council*, Dr. Easterbrook, Dr. Scott, Dr. Maxwell Ross; *Ordinary Members of Committee*, Dr. Rodger, Dr. Sanders, Dr. Livingstone, Dr. Cowan; *Representative at Annual Meeting*, Dr. Raeburn or Dr. Martin.

The Treatment of Acute Abdominal Cases, with Special Reference to Cases of Appendicitis.

In the absence of the new Chairman and Vice-Chairman, Dr. LIVINGSTONE moved that Dr. Bell remain in the chair. Dr. BELL then asked Dr. Kerr to open the

discussion on the treatment of acute abdominal cases, with special reference to cases of appendicitis.

Dr. KERR in the course of his remarks laid great emphasis on the need for the practitioner in attendance on the case being prepared to have an operation done without delay on the occasion for it arising. He quoted many cases from his own experience, all of which bore out his contention that the surgeon must be ready to act promptly when dealing with this disease.

Dr. BRYSON said that cases of appendicitis are the most anxious and worrying that they were called upon to deal with in the daily work of the general practitioner. There were many emergencies which demand all their nerve and resource, but the indications were comparatively clear. In such a condition as appendicitis it was vastly different. From the moment the diagnosis was made the great question confronted one, "How far are we justified in treating this case on medical lines?" They knew that on their answer depended in many cases the patient's life; in others whether he was to make a rapid and complete recovery or to drag through a long and painful illness. Their difficulties were not rendered less by the differences which still existed among leading authorities. At one extreme there were men who advocated operation in every case; at the other those who maintained that purely medical treatment would give results every whit as good as surgical. To this should be added that this was a disease upon which the general public considered itself particularly well informed—that the responsibility of deciding on surgical intervention arose often when the patient's friend could not realize that there was any occasion for alarm, and that if one advised removal of the patient and no operation was required one would be severely criticized. Dr. Bryson proceeded to discuss the question under the following heads:

1. *Etiology.*—Is the increase of appendicitis real or apparent—that is, can the greater number of cases at the present day be accounted for by increased knowledge and greater precision in diagnosis? I can remember when perityphlitis was dealt with by the lecturer on medicine, when operation was unknown, and when cases of "inflammation of the bowels" were vigorously treated by poulticing, blistering, leeches, and opium. Many of these cases—perhaps three out of four—were cases of appendicitis. With regard to predisposing causes, many theories have been advanced, nearly all assuming that these cases are really more frequent than they used to be—for example, the increase in the use of chilled, frozen, and canned foods, early decay in teeth and consequent imperfect mastication, oral sepsis. The condition of the mouth seems a plausible factor. There is, I think, no possible doubt that dental caries, leading to imperfect mastication and oral sepsis, is increasing in frequency. One objection to this theory, it seems to me, is that appendicitis is not more frequent among the poorer classes, who are more careless about their teeth. Another is that it does not occur more frequently among girls, who seem to be greater sufferers from septic mouth condition. Dr. Still has recently drawn attention to the frequency with which thread-worms are found in the appendix.

2. *Treatment.*—There can be little doubt that, in many cases, the onset of definite symptoms—acute pain, vomiting, fever, etc.—does not really mark the beginning of the disease. There has probably been a period during which some slight abdominal discomfort was present, attributed, perhaps, to indigestion. During this period a purgative with light diet and rest might be efficacious in warding off an attack. Our forefathers, when they were not bleeding, were purging, and it may be that their prompt resort to blue pill and black draught prevented the development of many of these cases. Bilious attacks, so-called, especially in children, are undoubtedly sometimes due to catarrhal appendicitis. As a rule, we do not see our cases until the symptoms are well marked—pain, vomiting, fever, muscular rigidity, tenderness, absence of peristalsis. It is well to remember that pain exactly like that felt in appendicitis sometimes occurs in pneumonia, especially in children, and if the physical signs are not marked, may lead to some uncertainty, if not to error. Now, to my mind, the ideal treatment of all cases of appendicitis in country practice is immediate removal to a nursing home or hospital. I quite agree that the majority of cases get well under medical treatment, but the indications for operation often show themselves so suddenly, and are so immediately imperative, that the patient, who is placed in such favourable conditions, enjoys an immense advantage. Consider what is too often our experience at present. We are called to attend a case of appendicitis of moderate severity. For a couple of days it apparently goes on well and seems to be subsiding, when suddenly the symptoms take an unfavourable turn and operation becomes clearly necessary. We have now to remove our case—a delay of six or twelve hours is unavoidable—the patient, in some cases, runs a decided risk in removal. The operation has to be done hurriedly, perhaps at night; the chances of a good result are decidedly lessened. And what of the cases in which the indications are not by any means plain, though no less decisive to the expert? We have frequently cases reported in which the symptoms to the ordinary observer with a limited experience seemed to be quite favourable, and yet the experienced surgeon could detect that disaster was impending. This is no reproach to us; it is only by an experience such as we may never have the opportunity to acquire that one can form a reliable opinion in such cases. I have not yet found any one prepared to teach us how to know infallibly that our cases are going to the bad. Fall of temperature, a rising pulse, are bad signs—often signs that the time for hopeful intervention is slipping fast away. The aspect of the patient, sudden increase of pain, recurrence of vomiting, distension and immobility of the abdomen are all signs of grave import; but if five or six hours elapse before operation the surgeon too often finds the state of affairs almost hopeless. Is it not only fair that the surgeon who is to operate should have something to say as to when operation is to be done? Is it fair to send in a patient in a desperate condition and then discredit the operation? In a case of malignant tumour the surgeon frequently refuses to operate because he sees no reasonable prospect of success. In appendicitis there is always the fighting chance; although he may shrink from operation, he cannot refuse; sometimes a miracle happens. If operation is unnecessary the patient will have lost nothing by the careful and skilful nursing he receives in hospital. The course of the disease can be more precisely observed, pulse and temperature, etc., noted at frequent intervals, and if unfavourable symptoms arise the patient can be prepared without undue haste. I am convinced the sooner we adopt the principle of removal of all cases and teach our patients that it is the proper thing to do, the sooner we will be able to reduce the mortality in cases of appendicitis. In this connexion, may I say that a motor ambulance is a necessity to a well-equipped hospital in such a district as this? Failing immediate removal, what can the general practitioner do for cases of appendicitis? He can keep his patient at rest with the knees supported, and apply heat or the ice bag for the relief of pain. Poultices and blisters should be avoided. Opium in any form should not be given, as it often masks the symptoms. With regard to diet, for the first twenty-four hours the less food of any kind the better. Early vomiting then usually ceases of its own accord. With regard to enemata, one of soap and water in the early stage to relieve the lower bowel may do no harm. The pulse and temperature should be carefully noted and rectal examination should never be omitted. Unfavourably symptoms calling for immediate removal are: Persistence of well-marked symptoms after thirty-six hours, sudden increase in pain, especially if followed by a rising pulse, which may indicate impending perforation, a sudden decrease in pain, without corresponding improvement in the pulse and general appearance, may be even more ominous. When the

temperature and pulse fall on the second day and then gradually begin to rise, an abscess is most likely forming. With regard to aspect, we must be careful not to mistake the dulled and impassive aspect of toxaemia for improvement. Many of these danger signals, though most useful to the surgeon, come too late for the country practitioner. They are indications for operation, not for removal. The rule for the country practitioner should be to remove all cases of well-marked appendicitis, and, failing this, to remove all cases, unless there is a definite improvement, within thirty-six hours. Even then he will probably lose a certain proportion of fulminating cases.

3. *Removal.*—With regard to removal, there are some points of importance:—(*a*) *Time:* We should, as far as possible, arrange to have our cases sent in in the morning when the staff are at hand, and fresh and ready for the day's work. Of course, this is not always possible, but we should give the patient and the surgeon this advantage if we can. (*b*) *Conveyance:* The motor ambulance is, of course, the ideal. If a comfortable ambulance is not available it is sometimes better, both for speed and comfort, to use the railway, though this, of course, means more frequent disturbance of the patient. In children, who are more easily handled, the train is often the best conveyance, the hospital ambulance being in readiness at the station. (*c*) *Preparation of the patient:* Adequate clothing and hot-water bottles should, of course, be provided, and a nurse, if possible, should accompany the patient, if only to guard against the unnecessary administration of stimulants by attendants with more zeal than discretion. Bearing in mind that the upper part of the peritoneum is much more susceptible to septic invasion than the lower, we should adopt the Fowler position. In a case where severe pain is present it may be advisable to give a dose of morphine, the house-surgeon being duly informed. It is also as well to inquire as to when the bladder was emptied, especially in children. In the case of young children, I think the mother should accompany the patient. Dr. Nicoll of Glasgow has lately stated that in his opinion the best nurse in these cases for a few days after operation is the mother. She must not, of course, be present at the operation itself, but afterwards her presence may be most valuable. A young child suffers greatly from a hurried removal to hospital, followed, perhaps, almost immediately by a serious operation. It must be a great shock to wake up from the anaesthetic to find only strange faces around the bed. (*d*) A careful history of the case should always be sent, noting particularly the course of the temperature and the pulse. This is only fair to the surgeon and may be of the utmost importance. The statements of friends cannot be relied on. You have all no doubt been at times horrified to find how your remarks have been transformed and embellished. At the same time, I wish to say most emphatically that it is just as much the duty of the surgeon to see that a full account of the conditions found at operation is sent to the doctor who sent in the case, if he has not been present. If the removal of all cases is impracticable, it is only by the careful comparison of the conditions found at operation with the symptoms and signs, that we can hope to make that progress and improvement in the treatment of these cases, which will enable us to avoid the reproach so often laid at our door that we send in our cases too late. In appendicitis in children operations should be done as soon as the diagnosis is made. The conditions are so comparatively unfavourable, progress is so rapid, and toxaemia so quickly lowers the vital powers that, unless operation is early, it is nearly hopeless.

Dr. Robson gave his experience of these cases from the physician's standpoint, and said he had come to the conclusion that early operation was advisable.

Dr. Martin advised first treating these cases with a purgative, such as Epsom salts or calomel.

Dr. Murdoch said that the successful treatment of these cases dated from the time when first the abdomen could be safely opened. He also spoke of the difficulties encountered in removing these cases.

Dr. Sanders (Lochmaben) gave his experiences in treating this disease, and said he had come to the decision that early operation should be the practice in suitable cases.

Dr. Livingstone emphasized the importance of careful and correct diagnosis in all abdominal cases, and he cautioned the members against exploratory incisions. He instanced some cases of mistaken diagnosis, and said that although ordinarily the incision was not dangerous, in those cases where the vitality was much lowered the incision might be too much for the debilitated patient to stand. He also spoke of the added difficulties when morphine had been administered, and the true symptoms of the disease masked.

At this point the meeting adjourned for tea. On resuming, Drs. Kerr and Bryson replied to the criticisms that had been passed on their papers.

Motor Ambulance Wagon for District.—Dr. Livingstone then moved:

> That this meeting of the Division considers that the time has come when the provision of a motor ambulance wagon for the district should be considered.

Dr. Kerr seconded the motion, which was agreed to. Dr. Maxwell Ross moved:

> That the Secretary be instructed to write the directors of the hospital, stating that the Division will be willing to send representatives to discuss the subject of the motor ambulance.

Dr. Martin seconded, and the motion was agreed to. The following members were appointed to act as representatives of the Division to meet the directors of the hospital: Dr. Maxwell Ross, Dr. Sanders, Dr. Kerr, and Dr. Scott.

County Nursing Associations.—An informal discussion then took place on the subject of county nursing associations. It was resolved to remit to the Executive Committee, who will consider the subject and report their recommendations, and afterwards, if necessary, make their representations to the County Nursing Association.

Matters Referred to Divisions.—Regarding matters referred to the Divisions, the Representative was directed to use his discretion.

BURMA BRANCH.

A general meeting of this Branch was held on March 24th.

Election of Officers.—The following officers have been elected for the ensuing year: *Honorary Secretary and Treasurer*, Captain H. H. G. Knapp, M.A., M.D., I.M.S., vice Major E. R. Rost, I.M.S.; on May 12th Colonel H. St. C. Carruthers, I.M.S., was elected *President*, vice Colonel W. G. King, C.I.E., I.M.S.

CAPE OF GOOD HOPE—EASTERN PROVINCE BRANCH.

A clinical evening was held at the Albany General Hospital, Grahamstown, at 8 p.m., June 17th, Dr. Grenfell in the chair. There were present: Drs. Lillie, Purvis, Mullins, Bruce-Bays, Lea, Forster, and Harrison.

Apologies for Non-attendance. — Apologies for absence from Drs. Jones-Phillipson, Dru Drury, and Fitzgerald were read.

Minutes.—The minutes of the meeting held on April 15th were read and confirmed. The minutes of meeting of Colonial Medical Council (May 3rd) were laid on table.

Election of Representative of Central Council.—Dr. Duncan Greenlees received a unanimous vote as representative for South Africa in General Council.

Cases and Paper.—Dr. Bruce Bays read notes on a case of strangulated umbilical hernia complicated by acute appendicitis in a kaffir, the latter condition was not diagnosed until the *post-mortem* examination. The ultimate end of umbilical hernia

of kaffir children was discussed. The condition, which is extremely common in kaffir children, is rare in adults, while strangulated hernia is extremely rare. The parents, so far as is known, apply no treatment. Dr. LILLIE, the Resident Medical Officer of the hospital, showed 2 cases illustrative of the Calmette conjunctival (tuberculin) reaction. He also read a paper on this reaction with notes on over 100 cases in which this test had been applied; his conclusions agreed almost exactly with those of Calmette. All joined in the discussion.

Votes of Thanks.—A unanimous vote of thanks was passed to Dr. Lillie for his paper; he was requested to publish the same in the *South African Medical Record*. A vote of thanks was passed to Dr. Jones-Phillipson for gift of specimens and photographs to the Branch Museum.

Honorary Member.—Mr. Louw, L.D.S., was unanimously elected by Members of Council an Honorary Member of the Association for the year 1910.

GLASGOW AND WEST OF SCOTLAND BRANCH:

AYRSHIRE DIVISION.

The annual meeting of this Division was held on June 30th.

Election of Officers.—The following office-bearers were elected for the ensuing year: *President*, Dr. Macfarlane (Maybole); *Vice-President*, Dr. Gairdner (Ayr); *Secretary and Treasurer*, Dr. Jones (Prestwick); *Representative*, Dr. Brown (57, Bellevue Crescent, Ayr); *Representatives on Branch Council*, Drs. Brown and Jones; *Council*, Dr. Aitken (Kilmarnock), Dr. Carruthers (Muirkirk), Dr. Robertson (Patna).

LANCASHIRE AND CHESHIRE BRANCH:

BLACKBURN DIVISION.

A MEETING of this Division was held at the Old Bull Hotel, Blackburn, on June 30th. Dr. MOIR (Chairman) presided. There were present Drs. Prebble, Henry, Butterfield, Stephenson, Jeffrey Ramsay, Scott-Heyliger, Aitken, Beatson, Gregson, Keighley, Rigby, and Greenwood.

Confirmation of Minutes.—The minutes of the last meeting were read, confirmed, and signed by the Chairman.

Congratulations to Dr. Rigby.—Dr. MOIR congratulated Dr. Rigby, the Vice-chairman of the Division, on his restoration to health, and Dr. RIGBY replied appropriately.

Annual Representative Meeting.—The Provisional Agenda for the Annual Representative Meeting to be held on July 22nd in London was then considered.

Instructions to Representative.—The Representative (Dr. Prebble) was instructed to vote against the proposals following: (1) Abolition of custom of choosing President from the place in which the Annual Meeting is held; (2) institution of two grades of subscription for membership of the British Medical Association. Riders 25 and 30 (by the Dundee Branch), Resolution 18, section 194 (*re* Capitation Grants), and Rider 37 (by Watford and Harrow Division) were left to Dr. Prebble's discretion. Dr. Prebble was instructed to vote in favour of the other resolutions named in the Provisional Agenda.

Visit of Mr. Smith Whitaker.—Dr. MOIR, as Chairman, expressed the hope that there would be a large attendance on the occasion of the visit of Mr. J. Smith Whitaker to the Division on Tuesday, July 5th.

CHESTER AND CREWE DIVISION.

A MEETING of this Division was held on July 8th.

Election of Officers.—The following members were elected to the various offices: *Chairman*, J. Elliott, M.D.; *Vice-Chairman*, J. G. Taylor, M.D.; *Representative at Representative Meetings*, E. J. Liddle, M.B. (Lisgooli, Crewe); *Representatives on Branch Council*, John J. Blagden, A. G. Hamilton; *Executive Committee*, F. M. Granger, Alfred Mann, M.D., E. J. Liddle, M.B., Charles Jephcott, Meredith Young, M.D.

LEINSTER BRANCH:

NORTH WEST LEINSTER DIVISION.

Election of Representative at Annual Meeting.—At a special meeting summoned for the purpose of electing a Representative for the Branch, Dr. ARTHUR FINEGAN in the chair, it was unanimously carried that Dr. Finegan, The Asylum, Mullingar, be appointed to represent the Branch.

Election of Officers.—The following officers were also appointed: *President*, Dr. Arthur Finegan, The Asylum Mullingar; *Vice-President*, Dr. Joseph Kenny, *Honorary Secretary*, Dr. Owen P. Kerrigan.

METROPOLITAN COUNTIES BRANCH:

CHELSEA DIVISION.

THE annual meeting of the Division was held at the Fulham Town Hall on June 21st, Dr. P. H. PARSONS in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Election to Central Council.—A letter was read from Dr. E. R. Fothergill, Representative of the Wandsworth Division, with reference to the election of a member of the Central Council by Representatives at the Representative Meeting. On the proposition of the CHAIRMAN, it was decided to instruct the Representative to vote for Dr. Malcolm Mackintosh, the nominee of the Wandsworth Division.

Medical Charities Committee.—A letter was read from the Medical Charities Committee with reference to the effect which the abuse of hospital out-patient departments had on provident dispensaries in the district. This was laid on the table for future consideration.

Letters.—Other letters were read, as follows: (1) From Dr. Fletcher, requesting that a deputy be appointed to act for him at the forthcoming Representative Meeting; (2) from Dr. O'Sullivan; (3) a letter from the Medical Secretary, *re* fees for first-aid instruction, was ordered to be laid on the table.

Election of Officers.—The following gentlemen were elected officers of the Division for the ensuing year: *Chairman*, Dr. James Young; *Vice-Chairman*, Dr. Campbell Boyd; *Honorary Secretary and Treasurer*, Dr. J. R. Gallard; *Representative at Representative Meeting* (for Dr. Fletcher), Dr. G. H. Coltart; *Representatives on Branch Council*, Drs. Young, Coltart, and Gallard; *Executive Committee*, Drs. Bedford, Bonney, Boyd, Butler, Coltart, Hamilton, Lee, Parsons, Simon, and Williams; *Contract Practice Committee*, Drs. Coltart and Lee; *Ward Committees* (for Chelsea), Drs. Boyd and Lee; (for Fulham), Dr. Gallard.

Proptosis of Broad Ligament as a Cause of Constipation.

A paper was read by W. ERNEST MILES, F.R.C.S., Surgeon to the Gordon Hospital for Diseases of the Rectum, on proptosis of the left broad ligament as a cause of chronic constipation, associated with abdominal pain, in women: its pathology, symptoms, and treatment by obliteration of the ligament in a series of 150 cases. The author said that in spite of the dictum that had recently gone forth condemning the colon in the constipated and advocating its removal, experience had convinced him that the large intestine was capable of recovering its natural tone when the cause of its temporary disablement had been removed. Such a cause, he was now quite confident, existed in the obstructive action of a proptosed left broad ligament to the daily evacuation of a sufficient quantity of faeces; a cause sufficiently operative to induce a train of symptoms and a state of chronic invalidism, which not only incapacitated the sufferer but so undermined vitality that eventually life might be placed in jeopardy. In the year 1902 his attention was directed to the possibility of there being some exciting cause of persistent constipation in women, associated with pain in the right iliac fossa, by the circumstance that such symptoms were often erroneously attributed to appendicitis and by the fact that he had so often seen apparently

healthy appendices removed without benefit to the patient. Consequently he determined to treat such cases by opening the abdomen by a median subumbilical incision in search for a possible cause. By so doing, he came to notice that in all the cases thus operated upon the inlet to the pelvic cavity was considerably obstructed by the left broad ligament having assumed a horizontal instead of a vertical position, and thus forming a distinct shelf. It was further observed that the proximal portion of the pelvic colon rested upon this shelf, and that the remainder of that portion of the bowel, in order to pass downwards into the cavity of the pelvis, was obliged to cross over the tense free border of the ligament with the result that a definite kink in its lumen was made. Such a condition of affairs seemed to him to account for the obstruction to the faecal movement in the colon. Moreover, in all these cases definite adhesions were found to exist between the broad ligament or the uterine adnexa and the pelvic colon, and were contributory to peristaltic impediment. These observations convinced him that obliteration of the left broad ligament was the only means by which the obstruction to the pelvic inlet could be remedied, and accordingly he devised the operation by which it could be done. He had now performed this operation upon 150 occasions, and could state that all the patients, excepting two hopeless neurasthenics, had been cured of their symptoms and reclaimed from that state of chronic invalidism which rendered them for the time being comparatively useless members of the community.

Pathology.—The sequence of events was briefly this: (1) A general sliding down of the posterior peritoneum. (2) Proptosis of the left broad ligament, so that it occupied a horizontal instead of a vertical position, with attendant alteration in relative peritoneal attachments. (3) The formation of secondary adhesions between the ligament and neighbouring structures which exerted a definite influence upon the severity and character of the symptoms produced. The assumption that proptosis of the broad ligament was due to a general sliding down of the peritoneum was supported by the fact that it was frequently associated with proptosis of the stomach and of portions of the large intestine.

Symptoms.—(*a*) Constipation, which had in most cases gradually supervened in those whose bowels were in the habit of acting regularly, and in whom the occasional use only of aperients was needed. In nearly half the cases this symptom began to manifest itself after the first pregnancy, which indicated that that occurrence might be one of the predisposing causes of proptosis of the left broad ligament. In these cases, although an action of the bowels could be obtained by the daily use of aperients, the quantity voided was insufficient, and after stool a sensation of incomplete relief remained necessitating fruitless straining. (*b*) Left iliac pain, which prevented the patient walking or standing for long but did not occur whilst in the recumbent position. (*c*) Right iliac pain, which recurred periodically, irrespective of the posture of the body. It was most marked when the daily action of the bowels had not taken place, and usually disappeared after a copious evacuation. (*d*) Flatulent distension of the abdomen. (*e*) Gastric disturbance. (*f*) Passage of mucus per rectum was an occasional symptom. (*g*) Pain in the lumbo-sacral region occurred in 30 cases, and was always associated with prolapse of the left ovary into Douglas's pouch. (*h*) A state of chronic invalidism characterized by loss of weight, mental apathy, sallowness of complexion, progressive anaemia, loss of appetite, and inability to take sufficient exercise or to perform the ordinary duties of everyday life.

Physical Examination.—The condition was more common in women who had borne children. The abdomen was generally distended, and percussion over the caecum showed that it was distended and larger than normal. Its walls could be felt to be hypertrophied; it might be loaded with faeces when first seen so as to resemble a tumour, but lavage and purgation soon disclosed its real nature. The descending colon and the commencement of the pelvic colon could be felt to be hypertrophied, and usually contained scybala. An examination of the rectum should always be made to ascertain the condition of Douglas's pouch. A prolapsed left ovary would often be found there, and any enlargement due to cystic degeneration could thus be ascertained. The cervix uteri was generally found to be drawn up into the left posterior quadrant of the pelvis due to the traction exerted by the lower border of the left broad ligament, which could be felt as a tense band passing backwards and to the left.

The operation of obliteration of the left broad ligament, which was described in detail, consisted of removing a wedge-shaped piece out of the ligament, the base of the wedge being situated at the free border of the ligament. All the patients upon whom the writer had operated (150) had recovered, and all, with two exceptions, had been relieved of their symptoms. The abdominal pain disappeared, especially that in the left iliac fossa, and the difficulty in obtaining a complete evacuation of the bowels was satisfactorily overcome. The most striking effect of the operation was the gradual and steady disappearance of the symptoms of auto-intoxication. It was essential that a course of intestinal lavage combined with the daily use of suitable aperients should be persisted with for several months afterwards, as in this way only could the large intestine recover from the effects of prolonged faecal overloading. The uniformly beneficial effect of the operation afforded abundant evidence that proptosis of the left broad ligament was a genuine cause of chronic constipation associated with abdominal pain, and this conclusion was further supported by the significant and undeniable fact that the train of symptoms described was invariably met with in women.

Vote of Thanks.—Dr. Campbell Boyd proposed a vote of thanks to Mr. Miles for his instructive paper, which was carried with acclamation.

NORTH OF ENGLAND BRANCH:

Blyth Division.

Election of Officers.—At the annual meeting of this Division the following office-bearers were elected for 1910–11: *Chairman*, J. Cromie (Blyth); *Vice-Chairman*, R. A. Morris (Bedlington); *Honorary Secretary*, W. T. Brook Fox (Blyth); *Representative on Branch Council*, J. Anderson (Seaton-Delaval); *Additional Member of Executive*, A. Fairlie (Blyth). Also the *Representative for Representative Meetings*, W. T. Brook Fox, was elected at a combined meeting of the North Northumberland, Morpeth and Blyth Divisions.

NORTH WALES BRANCH:

North Carnarvon and Anglesey Division.

A meeting of this Division was held at Bangor on June 30th.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman*, R. H. Mills-Roberts, C.M.G., F.R.C.S.E., J.P. (Llanberis); *Vice-Chairman*, J. R. Prytherch, M.B. (Llangefni); *Honorary Secretary*, Dr. John Evans (Carnarvon); *Representatives on Branch Council*, Dr. John Evans (Carnarvon), R. A. Prichard, J.P. (Conway), J. R. Prytherch, M.B. (Llangefni), and J. Lloyd Roberts, M.B., J.P. (Colwyn Bay); *Executive Committee*, G. Llew. Jones (Llangefni), Corbet W. Owen, M.B. (Bangor), R. Lumley Roberts (Bethesda), and W. G. Pritchard (Bethesda).

Representative at Annual Representative Meeting.—Dr. Emyr O. Price was re-elected Representative of Division to Annual Representative Meeting, and, as he will be unable to attend the Annual Meeting in London, the Division appointed as a deputy Mr. Bradley Hughes (Penrhyn Quarry Hospital, Bethesda).

SOUTH-EASTERN BRANCH:

Bromley Division.

The annual general meeting of this Division was held at the Bell Hotel, Bromley, on Thursday, July 7th, Dr. Scott, the Chairman of the Division, in the chair.

Confirmation of Minutes.—The minutes of the May meeting were read and confirmed.

Election of Officers.—The following office-bearers were elected for the ensuing year: *Chairman*, Dr. Lewis (Bromley); *Vice-Chairman*, Dr. Stillwell (Beckenham); *Honorary Secretary and Treasurer*, Dr. Tennyson Smith (Orpington); *Representative for Representative Meetings*, Dr. Tennyson Smith (Orpington); *Representatives for Branch Council*, Dr. Scott and Dr. Tennyson Smith; *Executive and Ethical Committee*, Drs. Ilott, Scott, Seale, and Wolseley.

Election to Central Council.—It was decided by the Division to instruct its Representative for Representative Meetings to support strongly the proposal to be brought forward by the Honorary Secretary of the South-Eastern Branch regarding the election of members to the Central Council.

Resolution.—The following resolution was passed, and the Honorary Secretary was instructed to forward it at once to the Central Council:

> That the Bromley Division, feeling that it should have separate representation at the Representative Meetings, requests the Central Council of the Association to consider the question of making the Division a constituency entitled to elect a Representative.

CANTERBURY AND FAVERSHAM DIVISION.

THE annual meeting of this Division, to which all members of the other districts comprised in the old East Kent District (Dover, Folkestone, Thanet) were invited, was held at the Kent and Canterbury Hospital at Canterbury, on June 30th. Dr. J. W. HAYWARD, of Whitstable, presided.

Address on Fractures.—A most instructive and interesting address was given by Dr. THOS HERBERT KELLOCK, F.R.C.S. of Middlesex and Great Ormond Street Hospitals, on Fractures. The address, which dealt chiefly with the immediate treatment of fractures, was greatly appreciated and evoked interesting discussion. A hearty vote of thanks was accorded to lecturer.

Preliminary Meetings.—A meeting of the Division was held previous to the combined meeting for the election of officers for the year 1910–11.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Election of Officers.—The following officers were elected: *Chairman*, Chas. J. Evers, M.D. (Faversham); *Vice-Chairman*, Frank Wacher (Canterbury); *Honorary Secretary and Treasurer*, T. Barrett Heggs, M.D. (Sittingbourne); *Representative for Representative Meetings* (in conjunction with Isle of Thanet Division), Wm. Gosse, M.D. (Sittingbourne); *Deputy*, Dr. Street; *Representative on Branch Council*, A. R. Henchley, (Canterbury); *Executive Committee*, Drs. Garrett, Evers, Selby, Wacher.

Presentation to Dr. Heggs.—A presentation of silver plate and an illuminated album of subscribers was made by the CHAIRMAN, on behalf of the members, to Dr. Heggs, the Honorary Secretary, on the occasion of his recent marriage.

CHICHESTER AND WORTHING DIVISION.

THE annual meeting of this Division was held at the Infirmary, Worthing, on June 17th, Dr. W. S. SIMPSON in the chair. There were also present: Dr. Gostling, Dr. Densham, Dr. Hyde, Dr. Millbank Smith of Worthing, and Dr. Morris of Bognor.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Autumn Meeting.—It was decided to hold the autumn meeting at Chichester.

Election of Officers.—The following officers were elected for the year: *Chairman*, Dr. W. S. Simpson; *Vice-Chairman*, Dr. Eustace; *Representative at Representative Meetings*, Dr. Hinds; *Joint Honorary Secretaries and Treasurers*, Dr. Densham and Dr. A. S. Morton Palmer; *Representative on Branch Council*, Dr. Cameron; *Members of Medico Political Committee*, Dr. Cameron, Dr. Eustace, Dr. Ewart, Dr. Haydon, Dr. Hinds, Dr. Morris, Dr. Last, and Dr. Millbank Smith.

Vote of Thanks to Retiring Honorary Secretary.—The CHAIRMAN proposed and Dr. GOSTLING seconded a vote of thanks to the retiring Honorary Secretary, Dr. Morris, for his services during his ten years of office.

Annual Report.—The HONORARY SECRETARY read his annual report.

Resolution Submitted by Chelsea Division.—The resolution submitted by the Chelsea Division was approved of, and the Representative was asked to support the same at the Representative Meeting.

Annual Representative Meeting.—The Provisional Agenda of the Representative Meeting were discussed, but no additional subjects were suggested.

CROYDON DIVISION.

Election of Officers.—The following have been elected officers for the year 1910–11: *Chairman*, Mr. C. Wray; *Vice-Chairman*, Dr. C. Owen Fowler; *Direct Representative*, Dr. J. J. Macan; *Deputy*, Dr. C. Owen Fowler; *Branch Council Representatives*, Dr. C. Owen Fowler, Mr. C. G. C. Scudamore; *Honorary Secretaries*, Mr. E. H. Willock, Mr. C. G. C. Scudamore; *Committee*, Dr. Braddon, Dr. Carpenter, Mr Cressy, Dr. Partridge, Dr. Pasmore, Dr. Gripper, Dr. Redfern, Dr. Rosser Mr. Wale, Dr. Wayte, Dr. Hugo, Dr. F. Nicholls.

MAIDSTONE DIVISION.

THE annual meeting of this Division was held at the Kent County Ophthalmic Hospital, Maidstone, on June 23rd, at 4.45 p.m., Dr. H. WOLSELEY LEWIS in the chair. There were present: Drs. and Messrs. W. Douglas, R. T. Caesar, sen., R. T. Caesar, jun., J. A. Gibb, C. Pye-Oliver, A. T. Falwasser, Joyce, Parr-Dudley, Travers, Whitestone, Killick and Potts; Dr. H. Macnaughton-Jones, Ross-Brown, and Captain Parry, R.A.M.C., were present as visitors.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman*, Dr. W. Douglas; *Vice-Chairman*, A. T. Falwasser; *Honorary Secretary and Treasurer*, George Potts; *Representative at Representative Meeting*, Dr. W. Douglas; *Representative on Branch Council*, A. T. Falwasser; *Executive Committee*, Drs. Joyce, Killick, Mapleton, and Oliver. Dr. H. W. Lewis was elected *ex officio* as ex-Chairman.

Report of Executive Committee.—The annual report of the Executive Committee was received and taken as read.

Annual Representative Meeting.—Dr. W. DOUGLAS gave an extract of the business at the Annual Representative Meeting.

The Charter.—Dr. W. DOUGLAS explained the objects of the Royal Charter and the objections to it. It was resolved to leave Dr. Douglas to use his discretion as regards the Royal Charter.

Paper.—Dr. H. MACNAUGHTON-JONES read a most interesting paper on prevention of mortality in pelvic operations (which was published in the JOURNAL of July 9th, p. 77), and showed a variety of instruments which he uses.

Annual Dinner.—The annual dinner was held at the Royal Star Hotel, Maidstone, at 7.30, when twenty-two members and their friends dined together.

SOUTH MIDLAND BRANCH.

THE annual meeting of this Branch was held at Bedford County Hospital on Thursday, June 16th, at 2.30 p.m., under the presidency of Dr. H. SKELDING (Bedford).

Luncheon.—Before the meeting the President had very kindly entertained fifty-three members and friends to luncheon at the hospital out-patient hall. The meeting was a large one, there being fifty-eight members and intending members present.

Confirmation of Minutes.—The minutes of the autumnal meeting were signed.

New Members of Branch Council.—The President announced the election by the Branch Council of four new members: H. J. Beddow, M.R.C.S. (Rugby), H. G. Peel, L.S.A. (Woburn Sands), W. Draper, M.R.C.S. (Gerrard's Cross), and W. Archibald, M.D. (Luton).

Vote of Thanks to Mr. Kinsey.—A hearty vote of thanks, proposed by Mr. Percival and seconded by Dr. Bower, was accorded to Mr. R. H. Kinsey for his painstaking and most distinguished services on the Central Council for the past fifteen years, and the hope was expressed that he would again in the near future undertake to represent this Branch.

Cases.—The following clinical cases were shown and discussed at the early part of the meeting: Dr. Coombs: (1) Enlarged spleen (leukaemia); (2) Aortic aneurysm. Dr. Goldsmith: Lupus of face, with tubercle of conjunctiva. Dr. Garner: Pseudo-hypertrophic paralysis. Drs. Skelding and Garner: Rickety tibiae and fibulae. Dr. Skelding: Ranula. Dr. Butters: Fragilitas ossium. Dr. Stanbury Phillips: Ateliosis. Dr. F. Goldsmith: Hydrocephalus. Dr. Coombs: Aortic dilatation.

Microscopic Slides, etc.—A series of microscopical slides were shown by Dr. S. J. Ross, and some *x*-ray negatives by Dr. Mawhood.

President's Address.—The subject of Dr. Skelding's address was hernia. He said this was commonly inguinal and congenital, injury being as a rule no more than an exciting cause. In his experience heredity was important. As to treatment, trusses were only palliative, so called cures recurring later. Operation was the only treatment, where possible, performed just after weaning, and done as rapidly as possible to prevent prolonged anaesthesia. The important point was "the careful transfixion of the neck of the sac by ligature," and the dressing should be a light collodion one, without pad or bandage. In strangulated hernia, he approached the constriction from the outer side with the tip of the finger as director, and not with herniotomy knife from inner side. Taxis to be used only when prepared to operate.

Acute Arthritis of Doubtful Origin.—Dr. Rolleston (St. George's Hospital) then spoke on acute arthritis of doubtful origin. He referred to those forms of joint affections which failed to react to salicylates, and said that reaction to salicylates did not necessarily mean that the case was rheumatic, as the sweating produced might reduce temperature, whatever the cause. He had found that rheumatism might prepare a joint for other affections. Acute arthritis might be due to (1) presence of microbes—for example, streptococci, pneumococci, and gonococci, epidemic meningitis, colon bacillus, influenza, etc.; (2) presence of toxins—for example, after using antidiphtheritic serum, in scarlatina, intermittent hydrarthrosis, toxines from alimentary canal, oral sepsis, etc. (generally chronic), during course of appendicitis, and rectal affections—for example, dysentery.

Bedford and Herts Division.

The annual meeting of this Division was held at Luton on May 24th last.

Luncheon.—Twenty members of the Division were entertained to lunch by Dr. Bone, the President.

Election of Officers.—The following officers were elected: *President*, Dr. S. J. Ross; *Vice-President*, Dr. Batters; *Honorary Secretary*, Dr. G. H. Goldsmith; *Representatives of the Branch Council*, Drs. Bone, Chillingworth, and Bennett; *Representative at Representative Meeting*, Dr. Coombs; *Executive Committee*, Drs. Hartley, Lipscombe, Parbury, together with the *ex officio* members.

Paper.—Dr. Nestor Tirard read an instructive and interesting paper on some forms of diarrhoea. In the subsequent discussion Drs. Ross, Bone, Boys, Wells, and Sworder took part; Dr. Tirard briefly replied.

South Wales and Monmouthshire Branch: Monmouthshire Division.

A meeting of this Division was held at the Cedars, Chepstow, the residence of the Chairman, on Thursday, July 7th. The Chairman (Dr. A. G. Lawrence) presided, and the attendance numbered eighteen.

Confirmation of Minutes.—The minutes of meetings held on May 27th and June 10th were read and confirmed.

Report re Disputes.—A report on the position of the disputes in the Division area was presented.

Papers and Clinical Cases.—Dr. H. S. Elworthy read a paper on miners' nystagmus, and exhibited an apparatus which he had invented to illustrate the visual effects of the disease. The paper was discussed by Drs. Acomb, Coulter, J. L. Thomas, and Cowie; and Dr. Elworthy replied. Dr. J. L. Thomas read a paper on staphylococcus infection of a mother and baby at breast. The Chairman showed patients illustrating the results to be obtained by conservative surgery and a patient with dextrocardia. Dr. Goldsmith (for Dr. Drapes) showed two cretins with photographs showing improvement under treatment with thyroid extract.

Skiagrams.—Drs. Greer and Acomb showed skiagrams.

Tea.—At the conclusion of the meeting the members present were entertained to tea by Dr. Lawrence.

South-Western Branch.

The annual meeting of this Branch was held at Plymouth on June 22nd, when fifty-five members and one visitor were present.

The late King Edward.—The Branch unanimously passed the following resolution, all standing:

> That the humble condolences of this Branch, comprising the County of Devon and the Royal Duchy of Cornwall, on the death of His late Majesty King Edward VII be suitably conveyed to His Most Gracious Majesty.

King George.—The Branch unanimously passed the following resolution:

> That the humble congratulations of this Branch, comprising the County of Devon and the Royal Duchy of Cornwall, congratulating Their Most Gracious Majesties King George and Queen Mary on their accession to the throne be suitably conveyed to Their Majesties, and that they be assured of the loyalty of all members to their throne and persons.

Confirmation of Minutes.—The minutes of the last annual meeting were read and confirmed.

Installation of New President.—The President then resigned the chair to the new President (Dr. Noy Scott), who immediately moved that a hearty vote of thanks be accorded to Dr. Toye for his services during his year of office, and that he be elected a Vice-President of the Branch. This was carried by acclamation.

Report of Council and Financial Statement.—The annual report of the Council was read. It stated that the Branch membership on April 30th, 1910, was 455, as against 452 on April 30th, 1909, an increase of 3 as compared with last year; but the Branch still numbered two under its greatest strength, which was at the time of the annual meeting of the Association at Exeter. The Council deeply regretted having to report the death of Dr. T. E. Smyth, of Tavistock, at the early age of 47, after an operation for appendicitis. He would be remembered for the excellent way in which, on the occasion of the Association's visit to Tavistock in 1907, he organized a highly successful expedition to Endsleigh, and for the hospitality he showed by entertaining the party at tea at Tavistock. The Secretary had been instructed to write a letter of condolence to his widow. They also regretted to have to report the death of Dr. H. J. Smyth, of South Molton, which occurred recently. The annual meeting at Bideford was well attended. The President (Dr. Toye) hospitably entertained those present to luncheon. In his inaugural address he pointed out that this was the first annual meeting of the South-Western Branch that had been held at Bideford, and spoke with pride of the fact that every

medical man in Bideford belonged to the Association. As the main subject of his address he discussed the excessive mortality—namely, medical, 966; law, 821; clergy, 533; 953 being the figure for occupied males in the aggregate, and mentioned that these figures were practically the same in other countries. He discussed the causes of death, and pointed out that the rates for circulatory and urinary disease and for suicide were higher, whilst those for tubercle and respiratory disease and accident were lower; the causes were thus shown to be those of overwork and strain. He emphasized that excessive mortality implied excessive morbidity. The causes of these conditions were discussed in detail, and sundry remedies were suggested: (*a*) Avoidance of Sunday work, so as to get one day's rest per week; (*b*) a proper annual holiday; (*c*) provision of houses of rest such as exist in France for medical men. Finally he propounded a summary of rules. After the meeting, Dr. Ellis Pearson kindly entertained the members present at tea. The annual dinner was well attended and made a pleasant gathering. Intermediate meetings of the Branch were held at Plymouth, November 17th, 1909; Exeter, February 10th, 1910; and St. Austell on April 20th, 1910. Those who contributed to the scientific proceedings of the meetings were: Messrs. Cheyne Wilson, Woollcombe, Eales, Langridge, Whiteford, Webber, Deputy Inspector-General Eames, R.N., J. R. Harper, Dyball, Gordon, J. D. Harris, Pethybridge, Panting, and Russell Coombe. The matters which had specially occupied the attention of the Branch Council during the past twelve months have been: (*a*) Work in connexion with the application of the Association for a Charter. The Annual Representative Meeting at Belfast accepted the principle of a post-card referendum which this Branch had so strongly contended for, and in so far the Branch must be pleased at the success of its efforts. The majority in the Council required for a Referendum was, however, decided most unsatisfactorily, and the Branch at special meetings held on August 12th, August 23rd, and September 3rd, 1909, decided that it could not accept the suggestions made, and consequently, when the Privy Council intimated to the associated Branches the modifications which had been offered by the Association to that Council, the Branch joined with five other Branches in pointing out to the Privy Council that in this direction the so-called concession was no concession at all, but really the reverse. The Branch Council, however, noticed with deep regret that the application for a Charter having failed, the Central Council now suggested an application for a new Association, and had reverted to the points originally objected to by this Branch. A considerable amount of work had had to be done, and probably would continue to have to be done, in connexion with the nursing associations which were springing up throughout the country. The Branch Council was glad to report that its efforts had been markedly successful in promoting improved relations between the members of the Branch and these associations. The rearrangement of the Divisions of the Branches was now only waiting the final decision of the Organization Committee on the matter. The new grouping of Branches adopted at Belfast had come into play this year, and in future this Branch would be represented jointly with the Dorset and West Hants by one member on the Central Council. The representatives of the Divisions of the Branch would also, conjointly with a larger group of Branches, elect one member of the Central Council. The finances of the Branch were distinctly unsatisfactory. The cutting down of the capitation of the Branch had reduced the amount received in the year from the Central Office to £47 12s., whereas the year's expenses had amounted to £92 0s. 2d., nearly double the amount received, and the balance in hand had been reduced from £74 16s. to £30 7s. 10d. It was perfectly clear that if this reduction was adhered to, the whole of the Branch work, including its scientific meetings, would have to be very seriously curtailed. This was a state of things the council could not look upon save with the greatest apprehension as to the future success of the Branch. The Branch Council recommends that the annual meeting in 1911 be held at Exeter.

Vote of Thanks to Dr. Gordon.—The following resolution was then carried unanimously:

> That this meeting desires to record its cordial appreciation of the services of Dr. Gordon, in conjunction with the Honorary Secretary, in securing consideration for the declared wishes of the members of the Branch in connexion with the recent application for a Charter.

Alteration of Rule.—The following alteration in Branch Rule 6 was then proposed:

> The Branch Council shall, every year at the first meeting held in that year, proceed to consider the names of members eligible for election to the Central Council under Association By-laws 24 and 25. They shall select the candidate who is, in their opinion, most suitable for this office, and the Branch Secretary shall thereafter at the proper time take the necessary steps for his nomination; and shall further inform all members of the Branch of the selection made by the Branch Council, and request the votes and interest of all members of the Branch in securing his election.

An amendment was moved that it be referred back to the Council to consider whether joint meetings of the South-Western and of the Dorset and West Hants Branches could be arranged for the purpose referred to in the new rule. It having been explained that railway communication rendered such a course impossible, the original resolution was carried unanimously.

Addition to Rule.—The following addition to Rule 15 was carried unanimously:

> . . . with verbal explanations only. No written notes to be read after the papers.

Election of Officers.—Dr. Toye, on vacating the chair in favour of Dr. S. Noy Scott was elected Vice-President. Mr. Russell Coombe (Exeter) was re-elected Honorary Secretary and Treasurer.

Next Annual Meeting.—It was decided to hold the next annual meeting at Exeter, when Mr. A. C. Roper (Exeter) will be the President-elect.

President's Address.—The PRESIDENT delivered his inaugural address, which is published at p. 135 of this week's JOURNAL.

Vote of Thanks to President.—A hearty vote of thanks was unanimously accorded to the President for his address.

Steamboat Excursion.—This completed the business of the meeting, the members present being entertained to tea and a steamboat excursion by the members of the Plymouth Division.

BARNSTAPLE DIVISION.

THE annual meeting of this Division was held at the Barnstaple Infirmary on April 27th.

Election of Officers.—The following were elected officers for the ensuing year: *Chairman*, A. W. Lemarchand; *Vice-Chairman*, J. G. Macindoe, M.B.; *Executive Committee*, H. J. Edwards, M.D., H. C. Jonas, G. D. Kettlewell, H. Compton Parsons, H. J. Smyth, E. J. Toye, M.D., J. Tucker; *Representatives on Branch Council*, John Harper, W. A. Valentine, M.D., Ellis Pearson, F.R.C.S.E.; *Honorary Secretary and Treasurer*, Ellis Pearson, F.R.C.S.E.; *Representative at Representative Meeting*, Ellis Pearson, F.R.C.S.E., Strand House, Bideford.

EXETER DIVISION.

THE annual meeting of the Division was held at the Royal Devon and Exeter Hospital on Tuesday, July 5th. Dr. DAVY presided.

Report of Executive Committee.—The annual report of the Executive Committee was read and adopted.

Election of Officers.—The following officers were elected: *Chairman*, E. J. Domville (Exeter); *Vice-Chairman*, J. M. Ackland; *Honorary Secretary*, A. W. F. Sayres, M.D. (Exeter); *Representatives on Branch Council*, C. Beesley, W. H. Evans, A. W. F. Sayres, M.D., R. V. Solly, M.D., and Leonard R. Tosswill.

Thanks to Retiring Officers.—The outgoing officers were thanked for their services, and the Provisional Agenda for the Representative Meeting was considered.

ULSTER BRANCH:

Belfast Division.

The annual meeting of this Division was held on May 26th, at the Medical Institute, College Square North, Belfast. Dr. Kevin, Chairman, presided.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Votes of Congratulation and Thanks.—Mr. Johnstone proposed and Dr. Calwell seconded the following motion:

> That Dr. Thompson be congratulated on being elected Chairman of the Public Health Committee of the Belfast City Council, and that Dr. King Kerr be thanked for his services in the past.

Election of Officers.—The following office-bearers were elected for the next session: *Chairman*, Dr. J. Simpson; *Honorary Secretary and Treasurer*, Dr. J. C. Rankin; *Representative*, Mr. H. Hanna; *Council*, Drs. Trimble, Fullerton, Kevin, Johnstone, O'Connell (town), St. George (Lisburn), Rentoul (Lisburn), Reid (Whiteabbey) (country).

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

The annual meeting of this Branch was held on June 23rd at the Herefordshire General Hospital under the presidency of Dr. G. Crowe. Nineteen members were present.

Confirmation of Minutes.—The minutes of the meeting of May 5th were read and confirmed.

Election of Officers.—President elect: It was proposed by Dr. G. Crowe, and seconded by Dr. John Steed, that S. Colen Legge, Esq., be elected President for 1911–12. Carried unanimously. *Honorary Secretary and Treasurer:* It was proposed by Mr. Edgar Morris, and seconded by Dr. J. O. Lane, that Mr. C. S. Morrison be reappointed to the joint office. Carried unanimously.

Report of Branch Council.—The Honorary Secretary read the report of the Council on the affairs of the Branch, and presented the annual financial statement. On the proposition of Dr. G. Crowe the report was unanimously adopted. Arising from a recommendation in the report the Branch unanimously resolved that on suitable occasions an invitation be sent by the Branch to every medical practitioner within the area of the two Divisions to its meetings and any social function in connexion with the same.

Financial Statement.—The financial statement showed a balance in hand at the end of December, 1909, of £27 7s. 0½d., as against £64 15s. 5½d. for 1908.

Installation of New President.—On the conclusion of business, the President introduced Dr. John Steed as the President for the ensuing year.

Vote of Thanks to Retiring President.—Dr. Steed proposed a hearty vote of thanks to Dr. Crowe for the courteous manner in which he had discharged the duties of the office during the past year. Carried by acclamation. Dr. G. Crowe returned thanks for the honour that had been conferred on him by the Branch.

Industrial Lead Poisoning.—Dr. T. M. Legge, His Majesty's Chief Medical Inspector of Factories, read a paper entitled, "Industrial Lead Poisoning," shortly indicating by statistics the gradual, and in the case of white lead trades the remarkable, decline in the incidence of industrial lead poisoning since 1900. Dr. Legge expressed the opinion, confirmed by certain laboratory experiments, that more poisoning resulted from the inhalation of particles of lead than by swallowing such as followed as the result of unclean hands. Drs. G. Crowe, Paul Chapman, Morrison, Herbert Jones, and Miller requested further information, to which Dr. Legge replied. Dr. J. Steed moved a cordial vote of thanks to Dr. Legge for his informing and interesting paper. This was carried by acclamation.

President's Address.—The President read his address entitled, "The Doctor, the Philanthropist, and the Law." He outlined the present and prospective position of the doctor in reference to the agencies and activities of the philanthropist and the benevolent law maker, both of whom largely endeavoured to get as much philanthropy as possible at the expense of the medical practitioner. A spirited discussion followed, in which Drs. Paul Chapman, J. O. Lane, G. Crowe, Darling, Herbert Jones, Averay Jones, Scales, and Morrison took part.

Communication.—Dr. A. Wood gave a short account of a thorn removed from a patient's eye, which had lain embedded for several weeks without the patient suspecting he had a foreign body.

Case.—Members were invited by Mr. Edgar Morris, in the unavoidable absence of Dr. Lilly, to see a patient in the hospital ward suffering from chronic lead poisoning.

Dinner.—Subsequently to the meeting twelve members dined together.

British Medical Association.

NOTICE OF EXTRAORDINARY GENERAL MEETING.

NOTICE IS HEREBY GIVEN by the Council that, the following Resolution having been passed by the requisite majority at an Extraordinary General Meeting of the above-named Association, at the Connaught Rooms, Freemasons' Hall, Great Queen Street, London, on Wednesday, the 29th day of June, 1910, a further Extraordinary General Meeting of the above-named Association will be held at the Court of Common Council Chamber, Guildhall, London, on Friday, the 22nd day of July, 1910, at 2 o'clock in the afternoon, for the purpose of receiving a Report of the proceedings at the above-mentioned Meeting, and of confirming, if thought fit, as a Special Resolution the Resolution here set forth:

> "That the Regulations contained in the printed document submitted to this Meeting, and for the purpose of identification initialled by the Chairman thereof, be and the same are hereby adopted as the Regulations of the Association in substitution for all the existing Regulations of the Association."

Dated this 30th day of June, 1910.

BY ORDER,

GUY ELLISTON,
Financial Secretary and Business Manager.

Association Notices.

ELECTION OF MEMBERS OF COUNCIL BY GROUPED REPRESENTATIVES.

Notice is hereby given that Nominations for candidates for election of Members of Council by Grouped Representatives for the year 1910-11 will be received by the Medical Secretary up to the end of the first hour of the proceedings of the Annual Representative Meeting on Monday, July 25th, 1910. Each Nomination must be on the prescribed form, copies of which will be forwarded by the Medical Secretary upon application.

Separate forms have been prepared (1) for Nomination by a Division and (2) for Nomination by a Representative of a Division included in the Group, and those applying are requested to state for which purpose the form is desired.

The voting papers will be issued at the Representative Meeting to each Representative or Deputy Representative of a constituency in the United Kingdom, in attendance at the Meeting.

By Order of the Council,

J. Smith Whitaker,
Medical Secretary.

BRANCH AND DIVISION MEETINGS TO BE HELD.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—The annual meeting of the Branch will be held at the Imperial Golf View Hotel, Nairn, on Saturday, July 16th, at 11.30 a.m.—J. MUNRO MOIR, Honorary Secretary.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: MONMOUTHSHIRE DIVISION.—A special meeting of this Division will be held at the Newport and Monmouthshire Hospital, Newport, on Monday, July 18th, at 4 p.m.—R. J. COULTER, Honorary Secretary.

BRITISH MEDICAL ASSOCIATION LIBRARY.

BOOKS NEEDED TO COMPLETE SERIES.

THE Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Climatological Transactions. Vols. 1, 4, 5, 6.
——— Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
——— Journal of the Medical Sciences. New series, vols. 4, 5, 1842–3; vols. 14, 15, 1847–8; vols. 18–30, 1850; vol. 33, 1857; vol. 46, 1864–5; vol. 59; or any parts of these vols.
——— Journal of Ophthalmology. Vols. 1–9.
——— Laryngological Association. Transactions. Vols. 1–6, 8–9.
——— Medical Association. Transactions, 2, 4, 6, 7, 11, 12, 14, 15, 16, 19, 20, 22, 31, after vol. 33, and the *Journal*.
——— Otological Society. Transactions. Vol. 3, part 2, 1883.
——— Public Health Association. Transactions. Any vols.
Analyst. Vols. 1–24.
Annals of Surgery. Vols. 13, 14, 26, 27.
Archiv für Dermatologie und Syphilis. 1892 and 1893.
Archives générales de Médecine. Third new series 7–8 (1839–40); 4th series, 10–17, 20–25, 1852–55, 1858–64, 1872–1897; 1846–55 inclusive; 1857–64 inclusive; 1871.
——— of Ophthalmology. Vols. 1–3, 6, 7, 14, 15, 16 and 20.
——— of Otology. Vols. 1–7, and 20–22.
——— de Parasitologie. Vols. 1–8.
——— of Pediatrics. Vols. 1–11.
Asylum Journal of Mental Science. Vol. 1, 1854.
Bentley and Trimen. Atlas of Medicinal Plants.
British Journal of Dermatology. Vol. 2, part 3.
British Laryngological and Rhinological Association, 1896–7–8–9, 1900, and since 1903.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Carmichael Essays. Rivington, 1879.
Centralblatt für Augenheilkunde. Hirschberg. All prior to 1891; Index to 1891.
Centralblatt für Bakteriologie. Bound volumes prior to 1899.
——— für medicinischen Wissenschaften. Vols. 1–19.
Congrès Français de Chirurgie. Transactions 1, 2, 3, 6, and 10, and all since 11th.
——— Internat. d'Obstétrique et de Gynécologie. 3. Amsterdam, 1899.
Congress für innere Medicin, Verhandlungen. 1–12, 14, and since 18.
Dermatological Congress. Vienna, 1892.
Dermatologischer Jahresbericht, 1906–1908.
Dublin Quarterly Journal of the Medical Sciences. Vols. 1, 10, 17, 20, 28, and 35–40.
Edinburgh Obstetrical Transactions. Vol. 5.
Glasgow Medical Journal. 1833–1868.
——— Pathological Society. Transactions 1 and 2.
Guy's Hospital Gazette. Nos. 1 and 5. 1872.
Indian Medical Gazette. 1868–1884.
International Congress of School Hygiene. Transactions of First Congress, Nuremberg.
International Congress of Hygiene. Transactions of Congresses 1–6 and 10–12.
——— Ophthalmological Congress. Transactions of Fifth; New York, 1876.
Jahresbericht Neurologie und Psychiatrie, 1, 2, 5–9, 11–13.
Journal of Laryngology. Vols. 1 to 9.
Lakeside Hospital Clinical and Pathological Papers, Series 2.
Montreal Medical Journal, prior to 1900.
New York Pathological Society. Proceedings.
New York State Journal of Medicine, 1906.
Ophthalmic Review. January, 1882.
Pediatrics, prior to 1902.
Provincial Medical and Surgical Journal. March to September, 1841, and May 11th, 1852.
Recueil d'ophtalmologie, prior to 1893.
Revue générale d'ophtalmalogie, prior to 1893.
St. Bartholomew's Hospital Gazette. Vols. 1–6.
St. George's Hospital Gazette. Vols. 1–7.
St. Mary's Hospital Gazette. Vol. 4.
Sei-i-kwai Medical Journal. Vols. 1–11.
Semaine Médicale, prior to 1884. Titles for 1884 and 1895.
South African Medical Journal. February and April, 1895, Titles, Vols. 3 and 4.
United States Department of Agriculture, Bureau of Animal Industry. Reports 1–7 10–14.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Staff Surgeon J. H. FERGUSSON, to the *President*, additional, for temporary service at the Admiralty Recruiting Department, July 14th; Staff Surgeon D. W HEWITT, M B, to the *Hood*, on its becoming the Receiving Ship at Queenstown, undated; Fleet Surgeon C. M. BEADNELL, to the *Fisgard*, July 13th.

ARMY MEDICAL SERVICE.

COLONEL H. J. W. BARROW is placed on retired pay, July 7th. He was appointed Assistant Surgeon September 30th, 1871; Surgeon, March 1st, 1873; Surgeon-Major, September 30th, 1883; granted the rank of Lieutenant-Colonel, September 30th, 1891; made Brigade-Surgeon, May 7th, 1896; and Colonel, September 25th, 1901. He served with the Soudan Expedition in 1885, receiving a medal with clasp and the Khedive's bronze star, and again in the Soudan in 1885–6, with the Frontier Field Force, when he was present in the action of Giniss.

Lieutenant-Colonel T. J. O'DONNELL, D.S O., from the Royal Army Medical Corps, to be Colonel, vice H. J. W Barrow, July 7th. Colonel O'Donnell joined the department as Surgeon, February 5th, 1881; was made Surgeon-Major, February 5th, 1893; and Lieutenant-Colonel, February 5th, 1901. His war record includes—The Egyptian Expedition, 1882 (medal and bronze star); Bechuanaland Expedition, 1884–5; operations in Zululand, 1888; North-West Frontier of India, 1897–8 (medal with clasp); South African War, 1899–1902, including the advance on Kimberley, the action at Magersfontein, the relief of Kimberley, actions at Paardeberg, Poplar Grove, Dreifontein, Karee Siding, Houtnek (Thoba Mountain), Vet River and Zand River; operations in the Transvaal, including actions near Johannesburg, Pretoria, and Diamond Hill; and operations in Orange River Colony, including actions at Bethlehem and Wittebergen; subsequently in the Transvaal (twice mentioned in dispatches, Queen's medal with six clasps, and King's medal with two clasps)

Captain W. BENNETT, M D., Brigade Laboratory, Calcutta, is appointed Specialist in the Prevention of Disease from April 30th.

INDIAN MEDICAL SERVICE.

COLONEL G. W. P. DENNYS, Bengal, having arrived from Peshawur, on being appointed Principal Medical Officer, Aden Brigade, from June 10th, assumed charge of that office on June 22nd. Colonel Dennys is granted ninety days' privilege leave from July 15th.

ROYAL ARMY MEDICAL CORPS SPECIAL RESERVE.

THE KING has been pleased to approve of the formation of a Field Ambulance, to be designated "Number 18 Field Ambulance, Royal Army Medical Corps, Special Reserve."

No. 18 Field Ambulance.—The undermentioned officers of the Royal Army Medical Corps (Territorial Force) are appointed in the ranks as stated against their names, March 7th: Lieutenant-Colonel J. B MANN, 1st East Lancashire Field Ambulance, Royal Army Medical Corps, to be Lieutenant-Colonel: Major W. B PRITCHARD, 1st East Lancashire Field Ambulance, Royal Army Medical Corps, to be Major; Major F. D. WOOLLEY, 2nd East Lancashire Field Ambulance, Royal Army Medical Corps, to be Major; Captain G ASHTON, M.D., 2nd East Lancashire Field Ambulance, Royal Army Medical Corps, to be Captain; Captain C. ROBERTS, 1st East Lancashire Field Ambulance, Royal Army Medical Corps, to be Captain; Captain H G SMEETH, M.D., 1st East Lancashire Field Ambulance, Royal Army Medical Corps, to be Captain; Lieutenant A E. HODDER, M B, from the List of Officers attached to Units other than Medical Units, to be Lieutenant; Lieutenant T CARNWATH, M.B., 2nd East Lancashire Field Ambulance, Royal Army Medical Corps, to be Lieutenant; Lieutenant W. H. P. HEY, 3rd East Lancashire Field Ambulance, Royal Army Medical Corps, to be Lieutenant.

TERRITORIAL FORCE.

ROYAL FIELD ARTILLERY.

Second West Riding Brigade—Supernumerary Surgeon-Captain J. C. WRIGHT, M.B., is restored to the establishment, January 17th.

INFANTRY

Fifth Battalion the York and Lancaster Regiment.—Surgeon-Lieutenant H. F. HORNE, to be Surgeon-Captain, May 6th.

ROYAL ENGINEERS.

Lancashire (Fortress).—Surgeon-Captain J W. LLOYD to be Surgeon-Major, April 1st 1908 Surgeon-Lieutenant J. OWEN to be Surgeon-Captain, October 5th, 1908.

ROYAL ARMY MEDICAL CORPS.

Third East Anglian Field Ambulance.—Major and Honorary Surgeon-Lieutenant-Colonel H T. CHALLIS, M.D., takes precedence next above Major J Oldfield, M.D.

Second Northern General Hospital.—LEONARD R. BRAITHWAITE, M B, F R C S Eng, to be Captain, whose services will be available on mobilization, May 1st.

Unattached List for the Territorial Force—Cadet L. L. CASSIDY, from the Royal College of Surgeons (Ireland) Contingent, Senior Division, Officers' Training Corps, to be Lieutenant, for service with the Royal College of Surgeons (Ireland) Contingent, Senior Division, Officers' Training Corps, July 9th.

Second Western General Hospital.—ARCHIBALD DONALD, M D., to be Captain, whose services will be available on mobilization, March 6th GEORGE R MURRAY, M D, to be Captain, whose services will be available on mobilization, March 7th.

Attached to Units other than Medical Units.—Captain J. F. CROMBIE to be Major, May 26th. Captain ROBERT RANNIE, M.B., to be Major, June 1st. Lieutenant J. B. ROUS resigns his commission, July 13th.

For Duty with Units other than Medical Units.—ARTHUR H. BURNETT to be Lieutenant, June 1st. PERCY L. ARMSTRONG, M B., to be Lieutenant, June 3rd. ALFRED S. BRUZAUD to be Lieutenant June 4th.

COLONIAL MEDICAL SERVICES.

The following changes in the Colonial Medical Services are notified by the Colonial Office:

West African Medical Staff.—*Appointments:* J. W. S. Macfie, M.B., Ch.B.Edin., Northern Nigeria; W. Morrison, M.B., Ch.B.Edin., Northern Nigeria. *Promotions:* E. W. Graham, M.B., Ch.M.Glasg., Medical Officer, Southern Nigeria, to be Senior Medical Officer, Northern Nigeria; C. B Hunter, M.B., Ch.M Glasg., Medical Officer, Sierra Leone, to be Senior Medical Officer, Gold Coast; G. J. Rutherford, M R.C S Eng., L.R.C P Lond., Senior Medical Officer, Gold Coast, to be Provincial Medical Officer for Ashanti; E H. Tweedy, L.R.C.S., L R.C.P., L M Irel., Senior Medical Officer, Gold Coast, to be Provincial Medical Officer for the Northern Territories of the Gold Coast.

Other Colonies and Protectorates.—H. L. Duke, B.A.Cantab., has been selected for temporary employment as a Medical Officer in Uganda; R E. McConnell, M D, C.M.McGill, has been selected for temporary employment as a Medical Officer in Uganda; J. O. Shircore, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., M.B.Edin., has been appointed a Medical Officer in Nyasaland.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns 8,344 births and 3,579 deaths were registered during the week ending Saturday last, July 9th. The annual rate of mortality in these towns, which had been 11 1, 11 2, and 11.0 per 1,000 in the three preceding weeks, was again 11.0 per 1,000 last week The rates in the several towns ranged from 3 2 in Hornsey, 5.7 in Willesden, 5.9 in Newport (Mon.), and 6.0 in East Ham and in Aston Manor, to 17 1 in Huddersfield, 17.7 in Oldham, 18 3 in Dewsbury, 18 9 in Stockport, and 20 6 in Swansea. The death-rate from the principal infectious diseases averaged 1.1 per 1,000; in London the rate was equal to 1.0 per 1,000, while among the seventy-six other large towns it ranged upwards to 2 9 in Oldham, 3.1 in Manchester, 3 8 in Burton-on-Trent, and 3 9 in Merthyr Tydfil. Measles caused a death-rate of 1 3 in Sunderland and 1.6 in Barrow-in-Furness; diphtheria of 2 8 in Burton-on-Trent; whooping-cough of 1 3 in South Shields, 1.4 in Oldham, and 1 6 in Tottenham and in Gateshead; enteric fever of 1 4 in Smethwick; and diarrhoea of 1 5 in Burnley and 3 3 in Merthyr Tydfil. The mortality from scarlet fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,363, 1,353, and 1,378 at the end of the three preceding weeks, increased to 1,439 at the end of the week under notice; 188 new cases were admitted during the week, against 166, 187, and 183 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, July 9th, 864 births and 439 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.9, 13 3, and 13.2 per 1,000 in the three preceding weeks, further declined to 12 1 last week, and was 1 1 per 1,000 above the mean rate during the same period in the large English towns. Among these Scottish towns the death-rates ranged from 6 1 in Paisley and 7 9 in Aberdeen to 15 6 in Greenock and 18 2 in Perth. The death-rate from the principal infectious diseases averaged 1 2 per 1,000, the highest rates being recorded in Greenock and in Dundee. The 210 deaths from all causes recorded in Glasgow included 4 which were referred to measles, 1 to scarlet fever, 4 to diphtheria, 2 to whooping-cough, 1 to enteric fever, and 11 to diarrhoea. Three deaths from measles, 3 from diphtheria, and 3 from diarrhoea were registered in Dundee.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, July 9th, 627 births and 376 deaths were registered in the twenty-two principal urban districts of Ireland, as against 665 births and 355 deaths in the preceding period. The annual death-rate in these districts, which had been 18 9, 17 9, and 16.1 per 1,000 in the three preceding weeks, rose to 17.0 per 1,000 in the week under notice, this figure being 6 0 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 16.8 and 19.3 respectively, those in other districts ranging from 8 9 in Lurgan and 9 3 in Wexford to 20 6 in Armagh and 26 4 in Queenstown, while Cork stood at 13 0, Londonderry at 20 4, Limerick at 10 9, and Waterford at 15.6. The zymotic death-rate in the twenty-two districts averaged 2.1 per 1,000, as against 1 8 per 1,000 in the preceding week.

Hospitals and Asylums.

BARNWOOD HOUSE HOSPITAL FOR THE INSANE.

The annual report for 1909 of Dr. James Greig Soutar, the medical superintendent, shows that on January 1st, 1909, there were 147 certified patients and 3 voluntary boarders in the asylum, and that on the last day of the year there were 150 certified patients and 3 voluntary boarders. The total cases under care numbered 182 certified patients and 7 voluntary boarders, and the average number of certified patients daily resident 148. During the year 35 certified patients and 4 voluntary boarders were admitted. Of the certified admissions 28 were direct admissions, 6 were transfers from other institutions, and one was a statutory readmission. In 12 of the direct admissions the attacks were first attacks within three, and in 4 more within twelve months of admission; in 7 not-first attacks within twelve months; in 2 the duration was unknown, and in the 3 remaining the attacks were of between twelve and eighteen months' standing on admission. The direct admissions were classified according to the forms of mental disorder into: Mania 5, recent melancholia 16, delusional insanity 5, and general paralysis and primary dementia 1 each. The proportion of cases of recent insanity was good, and, Dr. Soutar says, if events justify his anticipations, about 45 per cent. of those admitted in 1909 should be discharged ultimately as recovered. As to causation in the total direct admissions neither alcohol nor syphilis was assigned in any case; tuberculosis was given as cause in 2 and influenza in 1, critical periods in 3, nervous diseases in 4, various bodily affections in 8, and prolonged mental stress in 14. An insane heredity was ascertained in 7, an epileptic heredity in 1, and a neurotic heredity in 5. An inherited neurotic taint was ascertained in 45.7 per cent. of the total admissions, but concerning this matter Dr. Soutar says some words worth repeating: "When stated in this way, it would seem that heredity is far and away the most potent factor in the causation of insanity; but on that conclusion doubt is cast by the reflection that insanity occurs in but a trifling proportion of those who come from the same so-called 'neurotic' stock. Gross instances there are in some families of wholesale mental failure which tells of the potency of the taint transmitted by physiologically faulty ancestors. But such instances are relatively rare. Much more common is it to find in succeeding generations only isolated cases of mental defectives amongst a host of healthy and vigorous persons. It is clear that in these two classes very different values appertain to the influence of heredity as a causal factor, and figures which show the percentage of ascertained insane and neurotic heredity in the total admissions should be accepted with the reservation which this consideration requires." During the year 14 were discharged as recovered, giving a recovery-rate on the direct admissions resident of 50 per cent., or of recoveries in the direct admissions on the direct admissions of 46 4 per cent.; also 2 were discharged as relieved, and 11 as not improved. During the year 5 died, giving the low death-rate on the average numbers resident of 3.3 per cent. All deaths were from natural causes, 4 being from senile decay and 1 from pneumonia. A favourable class of admissions, a high recovery-rate, and a low death-rate sum up the distinguishing features of the year at this institution. The general health was good throughout the year, and beyond a scalp-wound self-inflicted by one patient no accident of any importance occurred. As usual, a large amount of benevolent work was done, 5 patients being maintained gratuitously and 69 others below the average rate, entailing a cost upon the hospital of £3,156 13s. 9d.

THE LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.

The forty-sixth annual report of the Liverpool Hospital for Consumption states that 162 patients were under treatment in the wards during the year 1909, of whom about 150 were suffering from phthisis. The results of treatment show, as is the case in other similar institutions, the immense advantage of commencing systematic treatment in the early stage of the disease—77 per cent. of early cases showing improvement as against only 27 per cent. of advanced cases. Nearly 2,000 out-patients were treated during the year, of whom 660 were suffering from pulmonary phthisis. The differential cutaneous reaction has been largely employed for diagnostic purposes. 194 patients having been thus tested. In the sanatorium at Kingswood, Delamere Forest, 190 patients were treated during 1909, the average duration of residence being about three and a half months. The patients are tested as to their capacity for work, and in the majority of cases this has materially increased during their stay in the sanatorium. The statistical results given in the report show that the sanatorium is doing excellent work.

ULSTER HOSPITAL FOR CHILDREN AND WOMEN, BELFAST.

At the annual meeting of this institution the Lord Mayor (Mr. R. J. McMordie, M.A.) occupied the chair, and it was reported that 227 children had been admitted to the wards, with a mortality of 3.5 per cent.; 319 operations, including 145 minor operations, had been performed in the out-patient department, in which 2,260 new children's cases were seen; 74 women had been admitted, and 269 maternity cases attended. The building fund now amounted to £7,550, but a beginning would not be made till £10,000 had been compleled.

DOWN DISTRICT ASYLUM.

In his annual report on the Down Lunatic Asylum Dr. Nolan, the medical superintendent, states that the physical condition of almost every one of the 147 cases admitted during the year was unsatisfactory, and that in the vast majority of the other 752 cases in the asylum it called for special treatment. The recovery-rate as compared with the admissions was 55.1, which is much in excess of the average percentage of recoveries on the admission for all the Irish asylums for the last recorded year. The average cost of each patient for the year was £22 17s. 5d., a decrease of 12s. 2d. per head as against the previous year. During the year the asylum farm had been worked satisfactorily and had yielded a profit of over £1,200.

THE NIGHTINGALE FUND.

The latest annual report of the Nightingale Fund shows that of a total of 141 probationer nurses training during the year 1909 at the school at St. Thomas's Hospital, 40 were discharged as unsuitable or left the school from other causes; 45 having completed their

probationary year were taken on the staff of the hospital as extra-nurses and 56 still remained on the books at the end of the year. Among the appointments obtained during the year by old students of the school were about a dozen matronships. The year ended with a balance in hand of some £600. Arrangements are being made for the establishment of a preliminary training school as a means of sifting out those who might prove inefficients if admitted to the status of probationer nurse.

DEWSBURY AND DISTRICT INFIRMARY.

THE report for the year read at the annual meeting showed that the number of cases treated was 5,545. A commodious and comfortable nurses' home had been erected, and great alterations and improvements made in the interior of the infirmary, the principal being the construction of an enlarged operation theatre. The financial position was stated to be satisfactory.

HOME FOR PROTESTANT INCURABLES, CORK.

ESTABLISHED nearly forty years ago, largely through the efforts of the late Archbishop Gregg, this institution continues to enjoy the confidence of the citizens, as is evidenced by the annual report, which shows that it closed its year practically free of debt. On January 1st, 1910, there were 57 indoor patients, of whom 16 were men or boys and 41 women or girls. The articles of incorporation have been drawn up, and are now in the hands of the Board of Trade. The effect of incorporation will be to put all leases, household property, endowments and investments on a sure and knowable basis. Half the number of patients are admitted free, the other half, either of themselves or by their friends contributing.

THE BIRMINGHAM EAR AND THROAT HOSPITAL.

THE number of in-patients treated in 1909 was 1,686, and the number of out-patients 8,267. The total ordinary income amounted to £2,780, and the expenditure to £3,242, making an adverse balance of £462. The beds had been well occupied during the year, and there was quite a large number of patients waiting for admission.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BAPTIST MISSIONARY SOCIETY.—Locumtenent for one or two years at the Mission Hospital, East Bengal. Salary, £150 per annum.

BRADFORD: CHILDREN'S HOSPITAL.—House-Surgeon (male). Salary, £100 per annum.

BRISTOL ROYAL INFIRMARY.—Honorary Medical Registrar.

BRISTOL UNIVERSITY.—Demonstrator of Dental Histology.

BROMPTON HOSPITAL SANATORIUM, Frimley.—Assistant Resident Medical Officer. Salary, £150 per annum, rising to £200.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum.

CAPE TOWN: SOMERSET HOSPITAL.—Assistant Medical Officer. Salary, £200 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—Surgeon.

DERBYSHIRE CHILDREN'S HOSPITAL.—Lady Resident Medical Officer. Salary at the rate of £60 per annum.

DOVER: ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum.

DURHAM COUNTY HOSPITAL.—House-Surgeon. Salary, £120 per annum.

ENNISKILLEN: FERMANAGH COUNTY HOSPITAL.—House-Surgeon. Salary, £72 per annum.

GLASGOW SCHOOL BOARD.—Lady Assistant Medical Officer. Salary, £250 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

HASTINGS: ST. LEONARD'S AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Honorarium, £20 for six months.

HEMEL HEMPSTEAD: WEST HERTS HOSPITAL.—House-Surgeon. Salary, £100 per annum.

HÔPITAL FRANCAIS, Shaftesbury Avenue, W.C.—Second Resident Medical Officer. Salary, £50 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—(1) House Physician; honorarium, 30 guineas for six months. (2) Dental Surgeon; honorarium, 50 guineas per annum.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, New Cavendish Street, W.—Assistant Clinical Pathologist.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—(1) Resident Medical Officer; (2) Assistant House-Surgeon. Remuneration at the rate of £120 and £105 per annum respectively.

MANCHESTER CHILDREN'S HOSPITAL, Gartside Street. Assistant Medical Officer (non-resident). Salary, £100 per annum.

MANCHESTER EAR HOSPITAL.—Assistant Anaesthetist.

METROPOLITAN ASYLUMS BOARD.—Assistant Bacteriologist. Salary, £300 per annum, rising to £350.

NOTTINGHAM GENERAL HOSPITAL.—(1) Assistant House-Surgeon; (2) Assistant House-Physician. Salary, £100 per annum each.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—Honorary Dental Surgeon.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road.—House-Physician. Salary at the rate of £80 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150, and £5 annually in lieu of stimulants.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Ventnor.—Assistant Resident Medical Officer. Salary, £100 per annum.

SALISBURY GENERAL INFIRMARY.—(1) House Surgeon. (2) Assistant House-Surgeon. Salary £100 and £50 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—(1) Casualty Officer; (2) Assistant House-Surgeon; (3) Assistant House-Physician. Salary, (1) £60, and (2) and (3) £50 per annum each.

SOUTHWARK UNION INFIRMARY.—Assistant (male) Medical Officer. Salary, £100 per annum.

SURREY COUNTY COUNCIL EDUCATION COMMITTEE.—Assistant Medical Officer. Salary, £250 per annum, rising to £300, and £50 for travelling and out-of-pocket expenses.

STOCKPORT INFIRMARY.—Junior House Surgeon (male). Salary, £80 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon. Salary at the rate of £70 per annum.

WINCHESTER: ROYAL HAMPSHIRE HOSPITAL.—House-Physician (male).

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Tewkesbury, cos. Gloucester and Worcester, and Youlgreave, co. Derby.

APPOINTMENTS.

ANDERSON, Robert, M.D., Surgeon to the Erdington Dispensary, vice William Donovan, M.D.

CHESSON, Herbert, M.R.C.S., D.P.H., Chief Health and Medical Officer for the Cook Islands, Eastern Pacific.

CLEMINSON, F. J., B.C.Camb., M.R.C.S., L.R.C.P., House-Surgeon to University College Hospital.

DAVIES, Trevor B., M.B., B.S., B.Sc., M.R.C.S., L.R.C.P., Obstetric Assistant to University College Hospital.

DAY, H. B., M.D., B.S.Lond., M.R.C.P., Professor of Clinical Medicine to the Egyptian Government School of Medicine, and Physician to Kasr-el-Ainy Hospital, Cairo.

DONOVAN, William, M.D., L.R.C.P.Ed., Honorary Consulting Physician to the Erdington Dispensary.

GILROY, E. W., M.D.Durh., Certifying Factory Surgeon for the Hemel Hempstead District, co. Hertford.

LAVERTY, T., M.B., B.S., R.U.I., Certifying Factory Surgeon for the Rathfriland District, co. Down.

MAMOURIAN, Marcus, M.B., Ch.B.Edin., Honorary Assistant Surgeon to the District Infirmary and Children's Hospital, Ashton-under-Lyne.

MARTIN, A., M.D., Certifying Factory Surgeon for the Elstree District, co. Hertford.

MAYO, T. A., M.B.Cantab., F.R.C.S., Certifying Factory Surgeon for the Cowes District, co. Hants, and Medical Officer of Health to the Cowes Port Sanitary District.

MOIR, J. L., M.B., M.S.Vict., Certifying Factory Surgeon for the Congleton District, co. Chester.

PETERS, Benjamin Alfred, B.A., M.B., B.C., D.P.H.Cantab., Resident Medical Officer at the Ham Green City Hospital, Bristol, vice James Fletcher, M.D.Aberd., D.P.H., now Medical Superintendent of Monsall Hospital, Manchester.

STEADMAN, F. St. J., M.R.C.S., L.R.C.P., L.D.S., Honorary Dental Surgeon to the Belgrave Hospital for Children.

MANCHESTER ROYAL INFIRMARY.—The following appointments have been confirmed:

Parker, W. P. H., L.R.C.P. and S.I., Assistant Medical Officer to the Barnes Convalescent Home, Cheadle.
Jones, J. A., L.S.A., House Physician, Royal Infirmary.
Anderton, Dr. W. B., reappointed as Pathological Registrar.
Buck, Howard, F.R.C.S., reappointed as Surgical Registrar.
Douglas, W. R., F.R.C.S., Assistant Surgical Officer.
Macalpine, J. B., M.B., Ch.B.Vict., M.R.C.S., L.R.C.P., Medical Officer at the Central Branch.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGES.

MCLEAN—BYRNE.—On Wednesday, July 6th, at All Saints, Fulham, by the Rev. W. C. Muriel, Vicar, William W. L. McLean, M.R.C.S., L.R.C.P.Lond., D.P.H., to Margaret, younger daughter of the late John Byrne, of Birr, King's County, and of Mrs. Byrne, 18, Landridge Road, Fulham Park Gardens, S.W.

SWEETING—STOKER.—On July 12th, at St. Andrews, Ashley Gardens, S.W., by the Rev. J. H. Cardwell, Rector of St. Anne's, Soho, assisted by the Rev. and Hon. J. Stafford Northcote, Vicar of the parish, Neelie, younger daughter of Dr. R. Deane Sweeting, of Iverna Gardens, Kensington, to Noël Thornley, only child of Bram Stoker, Esq., of Durham Place, Chelsea.

DEATH.

HEARNDEN.—On July 6th, suddenly, at the "Shrubbery," Mulgrave Road, Sutton, Surrey, William Frank Hearnden, M.R.C.S.E. and L.S.A., in his 54th year.

RECENT PUBLICATIONS.

The Matriculation Directory, No. 55, June, 1910. University Tutorial Series University Correspondence College, Burlington House, Cambridge. (Cr. 8vo, pp. 220. 1s.)

Contains the papers set at the matriculation examination of the University of London in June, 1910, with solutions. The introduction gives the regulations for the examination, and hints as to textbooks.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. J. AND A. CHURCHILL will shortly publish new editions of the following works: *Serumtherapy, Bacterial Therapeutics, and Vaccines*, by Professor Tanner Hewlett; *The Microscopical Examination of Foods and Drugs in the Entire, Crushed, and Powdered States*, by H. G. Greenish, Professor of Pharmaceutics at the Pharmaceutical Society of Great Britain; *A Manual of Dental Metallurgy*, by Ernest A. Smith, late Demonstrator in Metallurgy, Royal School of Mines; and *Hernia, its Cause and Treatment*, by Mr. R. W. Murray, Surgeon, David Lewis Northern Hospital.

Messrs. Kegan Paul, Trench, Trübner and Co., Ltd., will publish shortly a work entitled *Medicine and the Church*, which is described as a series of studies on the relationship between the practice of medicine and the Church's ministry to the sick. The writers are Sir Clifford Allbutt, A. W. Robinson, D.D., Dr. Charles Buttar, Mr. Stephen Paget, the Bishop of Bloemfontein, the Hon. Sydney Holland, Prebendary Fausset, M.A., Dr. Jane Walker, Dr. T. Hyslop, Mr. Ellis Roberts, Miss M. Carta Sturge, and Dr. H. G. Mackenzie. Mr. Geoffrey Rhodes, who is the editor of the book, has written an introduction. The Bishop of Winchester has contributed a foreword.

The second volume of the *National Health Manuals*, which Dr. T. N. Kelynack is editing, will be issued during the next two or three weeks by Robert Culley. It is entitled *Childhood*, and deals with all aspects of child-life. Twelve well-known medical authorities contribute chapters. The work is intended to be of service to all social workers.

Under the title, *Medical Examination of Schools and Scholars*, Messrs. P. S. King and Son, of Westminster, are about to issue a work for the use of medical inspectors of schools, and which contains information likely to be of value to school managers, teachers, educationalists, and all interested in the welfare of the school child. The volume is edited by Dr. T. N. Kelynack, and Sir Lauder Brunton contributes the introduction. The book consists of thirty-two separate essays, all the writers being well-known experts in Great Britain, America, and the progressive countries of Europe.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Monday and Wednesday, 5.15 p.m.: Diseases of the Chest in Children. Tuesday and Thursday, 5 p.m.: Deformities. Thursday, 4 p.m.: Meningococcal Meningitis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Museum Demonstration; Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, Skin Rashes and their Treatment; Tuesday, Prognosis in Phthisis Pulmonalis; Wednesday, Intestinal Stasis; Thursday, Sterility, its Etiology and Treatment.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, 10 a.m., Surgical Out-patient Clinic; 2.30 p.m., Medical Out-patient Clinic: Nose, Throat, and Ear Diseases. Tuesday, 10 a.m., Medical Out-patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient. Wednesday, 2.30 p.m., Medical Out-patient Clinic: Diseases of the Skin; Diseases of the Eye; *X* Rays. Thursday, 2.20 p.m., Gynaecological Operations; Medical Out-patient Clinic; Surgical Out-patient Clinic; 3 p.m., Medical In-patient Clinic. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient; Eye; 3.30 p.m., Medical In-patient.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Daily arrangements, Medical and Surgical Clinics: Operations, 2 p.m., and *X* Rays, 2 p.m. Monday: Surgical Registrar, 10 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Eye, 10 a.m. Clinical Lectures at 5 p.m. daily.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
JULY.	
16 SATURDAY ..	LONDON: Science Committee, 2 p.m. NORTHERN COUNTIES OF SCOTLAND BRANCH, Annual Meeting, Imperial Golf View Hotel, Nairn, 11.30 a.m.
17 Sunday ..	
18 MONDAY ..	MONMOUTHSHIRE DIVISION, *South Wales and Monmouthshire Branch* Special Meeting, Newport and Monmouthshire Hospital, Newport, 4 p.m.
19 TUESDAY ..	
20 WEDNESDAY	
21 THURSDAY ..	
22 FRIDAY ..	ANNUAL GENERAL MEETING, Court of Common Council Chamber, Guildhall, London, 10 a.m. ANNUAL REPRESENTATIVE MEETING, immediately after Annual General Meeting. EXTRAORDINARY GENERAL MEETING, Court of Common Council Chamber, Guildhall, London, 2 p.m.
23 SATURDAY ..	REPRESENTATIVE MEETING, 9.30 a.m.
24 Sunday ..	
25 MONDAY ..	REPRESENTATIVE MEETING, 10 a.m.

Date.	Meetings to be Held.
JULY *(continued)*.	
26 TUESDAY ..	ANNUAL MEETING (*See detailed Programme pp. 97 to 121*). REPRESENTATIVE MEETING, 10 a.m. GENERAL MEETING, 2.30 p.m.
27 WEDNESDAY	ANNUAL MEETING (*See detailed Programme pp. 97 to 121*). CENTRAL COUNCIL, South Kensington, 9.30 a.m.
28 THURSDAY ..	ANNUAL MEETING (*See detailed Programme pp. 97 to 121*). CENTRAL COUNCIL, South Kensington, 9.30 a.m.
29 FRIDAY ..	ANNUAL MEETING (*See detailed Programme pp. 97 to 121*). CENTRAL COUNCIL, South Kensington, 9.30 a.m.
30 SATURDAY ..	
31 Sunday ..	
AUGUST.	
1 MONDAY ..	
2 TUESDAY ..	
3 WEDNESDAY	
4 THURSDAY ..	
5 FRIDAY ..	
6 SATURDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 23RD, 1910.

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THE BRITISH MEDICAL ASSOCIATION.

78th ANNUAL MEETING, LONDON, JULY 22nd to JULY 29th, 1910.

THE Annual General Meeting of the British Medical Association this year will be held on July 22nd, 26th, 27th, 28th, and 29th, in the University of London, Imperial Institute Buildings, and the adjacent collegiate buildings at South Kensington.

The Annual Representative Meeting, which will assemble on Friday morning, July 22nd, will meet in the Council Chamber of the Guildhall, by kind permission of the Lord Mayor and Corporation of the City of London.

The seat of the University was removed to the Imperial Institute Buildings at South Kensington in March, 1900. The main central portion of this fine building, including the great hall and grand entrance, and the east wing and its accessory structures are appropriated to the use of the University.

The University possesses a large number of spacious rooms which will be available for the general purposes of the Annual Meeting, including the Reception Room, Pathological Museum, and the Annual Exhibition, as well as for some of the Sections. Other accommodation for Sections will be provided in the several buildings of the Imperial College of Science and Technology.

The South Kensington stations of the District Railway and of the Brompton and Piccadilly Electric Tube are about seven minutes' walk from the University buildings, and omnibus lines pass along Cromwell Road to the south, and Kensington Gore to the north, within about five minutes' walk.

President

Sir WILLIAM WHITLA, M.D., LL.D., Professor of Materia Medica and Therapeutics, Queen's College, Belfast.

President-elect:

H. T. BUTLIN, D.C.L., LL.D., F.R.C.S., Consulting Surgeon, St. Bartholomew's Hospital, London.

Past President:

SINCLAIR WHITE, M.D., M.Ch., F.R.C.S., Senior Honorary Surgeon, The Royal Infirmary, Sheffield.

Chairman of Representative Meetings

HAMILTON ASHLEY BALLANCE, M.S., Surgeon, Norfolk and Norwich Hospital, Norwich.

Chairman of Council:

EDMUND OWEN, LL.D., D.Sc., F.R.C.S., Consulting Surgeon to St. Mary's Hospital, London.

Treasurer:

EDWIN RAYNER, M.D., F.R.C.S., Consulting Surgeon, Stockport Infirmary, Stockport.

Honorary Local Secretaries of the London Meeting:

Dr. EDWARD W. GOODALL, Eastern Hospital, Homerton, N.E.

Dr. WILLIAM GRIFFITH, 1, Chester Gate, Regent's Park, N.W.

Dr. LAURISTON E. SHAW, 64, Harley Street, W.

PROGRAMME OF BUSINESS.

The Address in Medicine will be delivered by John Mitchell Bruce, M.D., F.R.C.P., London.

The Address in Surgery will be delivered by Harry Gilbert Barling, B.S., F.R.C.S., Birmingham.

THE SECTIONS.

The scientific business of the meeting will be conducted in twenty-one Sections, which will meet on Wednesday, July 27th, Thursday, July 28th, and Friday, July 29th.

The President, Vice-Presidents, and Honorary Secretaries of each Section constitute a Committee of Reference for that Section, and exercise the power of inviting, accepting, or declining any paper, and of arranging the order in which accepted papers shall be read. Communications with respect to papers should be addressed to one of the Honorary Secretaries.

A paper read in the Section must not exceed fifteen minutes, and no subsequent speech must exceed ten minutes.

Papers read are the property of the British Medical Association, and cannot be published elsewhere than in the British Medical Journal *without special permission.*

The following are the general arrangements so far as they are yet complete:

ANAESTHETICS.

President: Frederic William Hewitt, M.V.O., M.D., London.

Vice-Presidents: Donald C. A. McAllum, Edinburgh; George Rowell, F.R.C.S., London; Alexander Wilson, F.R.C.S., Manchester.

Honorary Secretaries: Miss Ada M. Browne, L.S.A., 64, Belsize Park, N.W.; William Joseph McCardie, M.B., 89, Cornwall Street, Birmingham; Herbert J. Scharlieb, C.M.G., M.D., 49, Wimpole Street, W.

The following subjects have been selected for discussion:

Wednesday, July 27th.—10 a.m., Discussion on The Percentage System of Chloroform Administration. To be opened by Dr. Dudley Buxton and Professor Waller, F.R.S., followed by Mr. Alexander Wilson, Dr. Herbert Scharlieb, Dr. Paul Chapman, Dr. A. G. Levy, Lieutenant-Colonel Lawrie, and Dr. H. T. Wightman.

In connexion with this discussion Dr. Dudley Buxton will formally present the Report of the Special Chloroform Committee of the British Medical Association, published in the Supplement to the Journal of July 9th, pp. 47–92, which will be taken as read.

The following are synopses of the two opening papers:

(*a*) Dr. Dudley Buxton: Unless chloroform differs from all other drugs it must produce effects proportional to the strength of the dose inhaled. It possibly affects different individuals more or less when the same strength of dose is given as do other drugs; the difference is one of degree, not of kind. Idiosyncrasy, if it exists, is displaced in this way, a small dose producing unusually severe effects. Chloroform, it has been stated, produces results which vary in degree directly as the strength of the vapour inhaled. The evidence of this was produced by Snow, Bert, Clover, Dubois, Lister. The work of the Special Chloroform Committee of the British Medical Association supports their view. Waller has insisted upon this, and advanced evidence to prove it. The evidence from all sources is derived in part from experiment upon the lower animals and in part by clinical examination of patients subjected to chloroform inhalation. Admitting that chloroform acts proportionally to the strength of the vapour inhaled, it is necessary to supply means whereby exact dosing may be obtained. Do the common methods in use provide any exact dosage? Examination of these methods: The open method, by douche, by dropping; method by mixtures; method by inhalers, the plenum inhalers; the draw-over inhalers. The heads under which it is suggested the discussion shall be considered are: (i) The desirability of accepting a maximum strength of vapour of chloroform for ordinary cases. (ii) Whether present methods supply an adequate means of supplying and controlling the strength of vapour supplied. (iii) Whether dosimetry offers a more efficient means of achieving this end. (iv) What is the best known way of practising dosimetry in chloroform inhalation which is applicable to everyday work by practitioners who are not experts. (v) What are the objections to dosimetry, and how such objections may be met. (vi) Failing dosimetry in chloroform inhalation, what safeguards can be offered which will give promise of safe anaesthesia by that anaesthetic. (vii) What criteria of safety are best, those derived from observing the effects of doses of the anaesthetic, the amount of which can only be guessed by such effects; or those derived from an accurate knowledge acquired by experiments which have proved that certain percentages of chloroform produce certain effects.

(*b*) Professor Waller: It is desirable that the inhalation of chloroform vapour should be uniform and, as far as possible, continuous, at a percentage of between 1 and 2. This indication can be fulfilled without apparatus, but is most easily fulfilled with the aid of apparatus. Apparatus worked on the *plenum* principle is preferable to apparatus on the *vacuum* principle. Any increase of respiratory work by obstruction of the airway is an unfavourable condition.

Thursday, July 28th.—10 a.m., Discussion on The "Open" System of Ether Administration. To be opened by Mr. Bellamy Gardner and Mr. A. L. Flemming; followed by Messrs. G. Rowell, H. J. Paterson, Alexander Brownlee, E. J. Quirk, G. A. H. Barton, Stuart V. Stock, Sydney Haynes, H. T. Wightman, and Herbert Tauner.

The following are synopses of the two papers introductory to this discussion:

(*a*) Mr. Bellamy Gardner: (1) The open system consists in the avoidance of all extrinsic mechanical factors which otherwise cause laboured respiration in the patient. (2) Abolition of the rebreathing of expiratory products. *Method:* A preliminary hypodermic injection of atropinae sulphatis gr. $\frac{1}{75}$, which keeps the air passages clear of mucus, prevents sweating, and diminishes surgical shock. This is combined in very athletic, nervous and alcoholic subjects with morphinae acetatis gr. $\frac{1}{3}$. *Apparatus:* A wire mask covered with twelve layers of gauze intended to be laid upon a gauze face pad, and a large ether drop bottle. A surgical mouth prop for insertion between the side teeth, and a tongue clip to maintain an oral airway. After the operation the patient to be propped up in bed and encouraged to clear the airways if mucus be present. *Results:* Surgical anaesthesia of a singularly perfect type, with regular, moderately deep respiration, strong pulse, absence of reflex disturbance by operative measures, and entire absence of after-sickness in the great majority of cases. *Remarks:* The method is suitable for all kinds of abdominal and other operations requiring complete muscular relaxation. The safety and obtundent effect of ether in preventing shock are remarkably apparent. The danger of acidosis with chloroform in cases of acute septic infection and in children is entirely avoided, and adds greatly to its value. Dental operations may safely be performed in the dental chair in the sitting position under its influence. *Warnings:* An inelastic chest wall, chronic bronchitis, and emphysema are complete contraindications, acute bronchitis and pneumonia being liable to ensue in such subjects.

(*b*) Dr. A. L. Flemming: (1) The property which ether possesses of increasing the activity of the respiratory machine is probably a potent factor in rendering the anaesthesia produced by this drug comparatively free from symptoms of danger. (2) During anaesthesia by

this method there is especial need of caution as regards the collection of mucus in the trachea and larynx, which accumulation when it occurs, may give rise to a marked respiratory and circulatory depression not necessarily accompanied by cyanosis.. (3) In absence of cyanosis the anaesthesia of open ether may not be accompanied by any noticeable increase in the tendency to haemorrhage during operation.

Thursday, July 28th.—11 a.m., Discussion on The Prevention and Treatment of Surgical Shock during Inhalation Anaesthesia. To be opened by Dr. Crile, and Messrs. G. Rowell, Lockhart Mummery, and J. D. Malcolm; followed by Professor Leonard Hill, F.R.S., Messrs. H. J. Paterson, Bellamy Gardner, Thompson Rowling, Stuart V. Stock, and H. T. Wightman.

The following are synopses of the opening papers:

(*a*) Dr. CRILE: The tearing, crushing type of trauma and the exposure to the air are particularly shock-producing, and are, to a large degree, under technical control. A knowledge of the comparative shock-value of the various tissues often permits the shifting of the burden of trauma to the more nearly neutral tissues. Whenever possible, the large nerve trunks should be blocked by an intraneural injection of cocaine prior to operation upon them or upon the fields they supply. The loss of blood is an active predisposing cause of shock. Rapid division of large masses of tissue, especially if attended by massive trauma of the wound—for example, the quick and rough hip-joint amputation—under certain circumstances causes more shock than when done in less haste, in a more orderly manner and with lighter touch. If available, mechanical pressure, evenly applied upon the extremities and the abdomen, is a valuable aid to the maintenance of the circulation of the head and chest. In desperate cases a direct transfusion of blood is an efficient method of preventing the failure of the circulation. There is apparently less shock in operations under nitrous oxide anaesthesia than under ether, and the combination, under certain circumstances, of general and of local anaesthesia is the least shock-producing.

(*b*) Mr. ROWELL will briefly review the phenomena observed clinically, and allude to the almost general acceptance of Dr. Crile's view that the one essential characteristic of shock is a low blood pressure. Attention will then be drawn to the intimate connexion of shock with the nature and dose of the particular anaesthetic employed, with the previous condition of the patient, with obstructed respiration during the administration, and with the duration and character of the operation. The protective influence of ether, particularly when administered by the open method, will then be considered, and the propositions advanced that to prevent shock in severe cases the most important means at disposal are: (1) The use of "open ether" except in rare instances; (2) free saline transfusion subcutaneously before and during the administration; and (3) the use of the extract of the infundibular portion of the pituitary gland. The principle upon which the treatment of shock depends is the restoration of the blood pressure with the immediate object of resuscitating the centres.

(*c*) Mr. P. LOCKHART MUMMERY: For the purpose of this discussion, shock may be defined as a condition of lowered blood pressure resulting from exhaustion of the vasomotor centres. The prevention of shock is best secured by: (1) Taking steps to keep the patient warm during the operation; (2) using ether or a mixture of ether and chloroform whenever shock is anticipated, in preference to chloroform; (3) the use of the Trendelenburg position tends to prevent shock by increasing the circulation in the vital centres, but it is most important that the patient's abdomen should be bandaged before lowering the table; (4) it seems certain that shock is more readily set up under light than under deep anaesthesia, but this is to a considerable extent counterbalanced by the fact that deep anaesthesia itself tends to produce shock; (5) the administration of morphine just before the administration of a general anaesthetic undoubtedly helps to prevent the occurrence of shock, and is in my opinion of great value as a preventive. The treatment of shock depends for its success upon maintaining the blood pressure at or near the normal level by artificial means until such time as the vasomotor centres have recovered. Strychnine or any kind of stimulant is absolutely contraindicated, and will do serious harm. In the absence of other drugs, small doses of morphine are beneficial. Most reliance should be placed upon: Bandaging firmly the limbs and abdomen, maintenance of the head-down position, intravenous infusion with saline solution with the addition of adrenalin in serious cases. The drug, however, of most value is extract of the infundibular portion of the pituitary gland. This drug should be administered at the first sign of shock, and repeated in an hour. In all cases of shock the administration of easily assimilated nourishment is of the highest importance; this is often overlooked.

(*d*) Mr. J. D. MALCOLM The facts recorded by George W. Crile in his works on shock will be accepted as of the utmost value. His interpretation of these facts will be regarded as altogether erroneous and misleading as a guide to treatment. His assertion that a low blood pressure must be due to vascular relaxation will be rejected as obviously inconsistent with the well-known fact that haemorrhage lowers blood pressure. It will be pointed out that all Crile's argument is built upon this too-comprehensive statement, and that his theory that the vasomotor centres are paralysed in shock is therefore unproved. Attention will be drawn to the work of W. T. Porter, M. G. Seelig, Eugene Boise, and others, who have found these centres active in every stage of shock. The vascular conditions in the state of shock will be attributed to an intense stimulation to contraction of the vascular system, affecting primarily the arterioles and venous radicles, but extending to all the vessels and followed by an escape of serum from the blood into the tissues and by a loss of fluid from the body as sweat. It will be argued that this loss of fluid may lower the blood pressure to a fatal extent. It will be urged that if the vessels relapse after being tensely contracted and after profuse sweating has been established—that is to say, if a tendency to recovery begins after a severe or prolonged injury has been inflicted—the blood pressure in the large vessels must fall very low, and it will be pointed out that this low blood pressure does not arise because the vascular capacity becomes excessive, nor because the vasomotor centres are paralysed, but because the volume of the blood is relatively diminished. The danger of death from collapse at this time will be considered obvious. It will be advised that treatment should be divided into two stages—that in the first stage, when the causes of shock are active, measures should be taken to prevent vascular contraction; whilst later, when the causes of shock cease to act, the treatment should be directed to the prevention of a too rapid dilatation of the vessels and to filling them up with fluid. Yandell Henderson's theory of the relationship of acapnia to shock will be referred to as promising valuable therapeutic developments. It will be held that, if his views are confirmed, the prevention of shock should come under the complete control of the anaesthetist in all ordinary cases.

Demonstrations by Professor Waller and by Dr. Crile have provisionally been fixed for 1.45 p.m. on Thursday, July 28th, in the Physiological Laboratory of the University of London.

Friday, July 29th.—10 a.m., Discussion on The Present Position and Limitations of Spinal Analgesia. To be opened by Dr. J. Blumfeld, Mr. E. Canny Ryall, and Dr. W. J. McCardie; followed by Messrs. Lawrie McGavin, H. Tyrrell Gray, Cecil Hughes, G. A. H. Barton, Arnold Lea, Miss Taylor, M.D., Captain Houghton, R.A.M.C., and Dr. G. P. Shuter.

Syllabus of the opening papers:

(*a*) Dr. J. BLUMFELD: (1) The results obtained up to the present time by the use of spinal analgesia do not warrant its being employed as a routine anaesthetic

under ordinary circumstances. (2) There are certain special cases in which probably spinal analgesia should be used in preference to any of the present methods of employing general anaesthesia. (3) Opinion is still divided as to which is the best drug to employ for the purposes of spinal analgesia, and whether the analgesic should or should not be used in conjunction with suprarenal preparations or with strychnine. (4) The use of spinal analgesia for operations above the umbilicus is at present too uncertain as to its efficiency or too dangerous in its attendant symptoms to justify its employment. (5) Apart from all other considerations, the presence of consciousness on the part of the patient during operation is a thing which is in many cases highly disadvantageous.

(*b*) Mr. E. CANNY RYALL: 1. *Drugs Employed.*—A. Stovaine, novocain, tropacocaine, alypin: (1) Properties, sterilization, keeping properties, toxicity, irritability, compatibility with suprarenin, action on motor nerves and nerve cells, analgesia (behaviour of). (2) Clinical, action on heart, kidneys, respiratory centre, vomiting, headaches, etc. (3) Deaths. B. Suprarenin. 2. *Dose and Site for Injection.*—(1) Importance of diminishing the dose in certain diseases, etc., if good results without danger are to be obtained. The general idea is to give the same dose in all cases, no matter what the operation or condition of patient. (2) Exploration of how one can obtain analgesia in the arm by means of a lumbar injection if an operation on the upper extremity is desired. 3. *Secondary and After Effects, with Treatment.*—(1) How to avoid. (2) How to treat. 4. *Advantages and Disadvantages of the Method.*—(1) Contrast with general anaesthesia. (2) Death-rate. (3) Dangers. (4) Percentages of secondary and after effects. 5. *Indications and Contraindications.*

(*c*) Dr. W. J. MCCARDIE: (1) Drugs commonly and recently used; (2) death-rate, danger-rate, percentage of failures, and psychical effect as compared with general anaesthesia; (3) local surgical effect—for example, on muscular relaxation, bleeding, etc.; (4) shock and blood pressure from surgeon's and patient's point of view; (5) after effects—testimony of nurses, etc.; (6) suitable cases.

Should time permit, the following subjects will also be discussed: Acidosis; The Anaesthetization of Diabetic Subjects; and The Use of Morphine and Other Drugs prior to Anaesthesia; and Professor E. S. Faust of Würzburg will make a communication on Intravenous Narcosis (Ether and Chloroform).

The President of the Section (Dr. Hewitt, M.V.O.) gives notice that he will move, and Mr. Digby Cotes-Preedy, Barrister-at-Law, will second, the following recommendation to the Council of the British Medical Association:

> The Section of Anaesthetics fully approve the form of the proposed legislation suggested by the General Medical Council and by the Departmental Committee of the Home Office respectively, and recommend the Council of the British Medical Association, on behalf of the Association, to take such steps as they may think desirable to represent to the Privy Council and to the Home Secretary the need for the proposed legislation in the interests of the public safety.

Sir William Collins, M.P., who is in favour of early legislation, hopes to attend and speak. The date and hour when the recommendation will be moved will be announced in the *Daily Journal*.

It has been arranged to hold an exhibition of past and present anaesthetic apparatus and appliances under the auspices of the Medical Museum Committee of the meeting, and a special committee has been appointed by the officers of the Section to select those modern anaesthetic appliances which seem to them worthy of exhibition. Members of the Association attending the Annual Meeting will therefore be in a position to make themselves acquainted with the most recent and trustworthy methods of anaesthetizing. Further information can be obtained on application to Miss A. M. Browne, Honorary Curator, Anaesthetic Section of the Medical Museum, 429, Strand, London, W.C.

ANATOMY.

President: Professor ARTHUR KEITH, F.R.C.S., London.

Vice-Presidents: Professor DAVID HEPBURN, M.D., Cardiff; FREDK. GYMER PARSONS, F.R.C.S., London; Professor GRAFTON ELLIOT SMITH, M.D., F.R.S., Manchester; Professor WILLIAM WRIGHT, F.R.C.S., London.

Honorary Secretaries: Professor A. CAMPBELL GEDDES, M.D., Dublin; ALEX. MACPHAIL, M.B., Anatomy Dept., Medical School, Charing Cross Hospital, W.C.

The following programme has been arranged:

Wednesday, July 27th.—Discussion on the Question of the Supply of Anatomical Material.

Papers:

SYMINGTON, Professor J. The Pharyngeal Tonsil.
FRAZER, Mr. J. Stuart. The Development of the Naso-pharynx and Eustachian Tube.
GEDDES, Professor A. C. (*a*) The Inter-relation of the Size of the Antrum of Highmore and the Position of the Permanent Teeth. (*b*) Six Abnormalities from the Dissecting Room.
BENIANS, Mr. J. C. The Trigonum Vesicae.
ANDERSON, Professor R. J. Notes on the Limbs of Primates.

Thursday, July 28th.—Discussion on Methods of Preservation of Anatomical Material.

Papers:

GLADSTONE, Dr. R. J. (*a*) Fissura Facialis in a Human Fetus. (*b*) Agnathia and Cyclops in a Lamb.
RUTHERFORD, Dr. N. C. (*a*) A Comparative Study of the Ligaments and Mechanism of the Occipito-Atlantal and Atlanto-Taxial Joints. (*b*) A Case of Absence of the Transverse Mesocolon.
KIDD, Mr. F. S. Para-urethral Follicles in the Male.
CRYMBLE, Mr. P. T. The Plica Duodeno-jejunalis and the Muscle of Treitz.
SPICER, Mr. R. H. Scanes. The Normal Orthograde Posture.

BACTERIOLOGY.

President: CHARLES J. MARTIN, M.B., D.Sc., F.R.S., London.

Vice-Presidents: JOHN W. H. EYRE, M.D., London; Professor ARTHUR H. WHITE, L.R.C.P.I., Dublin.

Honorary Secretaries: CARL HAMILTON BROWNING, M.D., Pathological Department, University of Glasgow; JOHN CHARLES GRANT LEDINGHAM, M.B., Lister Institute, Chelsea Gardens, S.W.

The following subjects have been chosen for the work of the Section:

Wednesday, July 27th.—Discussion on Recently Acquired Knowledge concerning the Bionomics of Pathogenic Organisms, and its Bearing on the Spread of Disease. To be opened by Dr. A. C. Houston London. The following gentlemen propose to take part in this discussion: Professor Lentz, Berlin (The Results of the Typhoid Campaign in South-West Germany, with Particular Reference to Carriers); Dr. W. G. Savage; Drs. Macalister and Menzies (On Dysentery Carriers); Drs. Bainbridge and O'Brien (On the Natural History of Certain Bacilli belonging to the Food-poisoning Group); Dr. Petrie (The Natural History of *B. pestis*); Dr. Arkwright (Diphtheria Carriers). If time permits, other papers not connected with the above discussion may be taken on this date.

The following is a synopsis of Dr. HOUSTON'S paper:

Distinction between (*a*) the passive accidental transmitters, and (*b*) the storehouses or manufactories of disease; and the importance of trying to bridge over the gap which links together in some mysterious fashion successive epidemics. Consideration of some of the agencies concerned, or supposed to be concerned, in the propagation of disease, and their relative importance: Soil; air; defective drains, sewage emanations, foul smells, etc.; water (description of two microbes isolated from river water, the one closely resembling Gaertner's bacillus and the other *B. typhosus*); sewage; solid foods; liquid foods; dust; direct personal infection, ambulatory cases; "carriers," infections through animals, flies, and insects. Danger of exaggerating the influence of

(*a*) the passive non-multiplying, and underestimating the importance of (*b*) the active multiplying agencies of disease; and suggestions that future progress in preventive medicine lies not in purifying sewage and water, in preserving our foods from pollution, in building on virgin soil, in perfection of drainage arrangements and in ventilation, but in searching for, and when found in treating and rendering inoperative, the "producers" of disease. Other points considered are (1) whether, in view of existing knowledge respecting carrier cases in typhoid fever, views as to the infectious periods of other diseases do not require reconsideration; (2) the question of dose in relation to infection, and the possibility of enhanced virulence, seasonally or occasionally; (3) the bearing of recent discoveries on future legislation. Finally, it is suggested that the key to further progress probably lies in studying living, not dead, matter.

Thursday, July 28th.—Joint Discussion with the Pathological Section on Complement-Deviation Methods in Diagnosis. To be opened by Professor Wassermann (Berlin). The following gentlemen propose to take part in this discussion: Dr. H. W. Bayly (The Practical Value of the Wassermann Reaction as shown by eighteen months' use at the London Lock Hospitals); Professor R. Muir; Dr. J. Henderson-Smith (On the Structure of Complement in Relation to Deviation); Fleet Surgeon P. W. Bassett Smith (1, Results of over 1,000 Examinations of Serums, with particular reference to Diagnosis in Early Stages; 2, Remarks on Variations from use of Heated and Unheated Serums); Dr. Ivy McKenzie (Individual Properties of Complement and Organ Extract in relation to the Wassermann Reaction); Dr. Carl H. Browning (Lecithin and Cholesterin as Reagents in the Detection of Syphilitic Serums); Dr. J. O. Wakelin Barratt; Dr. H. R. Dean (Comparison of the Original Wassermann Method with some of its Modifications.)

Friday, July 29th.—Papers on Bacteriological Subjects.

FAUST, Professor (Würzburg). The Haemolysin of *Bacterium putridum*.
NABARRO, Dr. Acid-fast Organisms found in Butter and Margarine.
WILSON, Dr. W. J. Variation among Bacteria.
PENFOLD, Dr. W. J. (1) Remarks on Variation and Mutation; (2) Studies on the Anaërobic Growth of Intestinal Micro-organisms.
WELSH AND CHAPMAN, Drs. On the Interpretation of the Precipitin Reaction.
DEAN, Dr. H. R. Identification of *B. typhosus* in Mixed Cultures by Complement Fixation.
TODD AND WHITE, Drs. On the Haemolytic Immune Isolysins of the Ox and their Relation to the question of Individuality and Blood Relationship.
BAINBRIDGE, Dr. A Food-poisoning Outbreak due to *B. aërtryck*.
RUFFER AND WILLMORE, Drs. Serum Treatment of Dysentery, with Notes on the Bacteriological Diagnosis of Dysentery.

DERMATOLOGY.

President: PHINEAS ABRAHAM, M.D., London.

Vice-Presidents: ALFRED EDDOWES, M.D., London; GEORGE PERNET, M.D., London; WALTER G. SMITH, M.D., Dublin; ROBERT BRIGGS WILD, M.D., Manchester.

Honorary Secretaries: WILLIAM GRIFFITH, M.B., 1, Chester Gate, Regent's Park, N.W.; G. NORMAN MEACHEN, M.D., 11, Devonshire Street, W.; J. GOODWIN TOMKINSON, M.D., 9, Sandyford Place, Glasgow.

The following programme has been arranged:

Wednesday, July 27th.—Discussion on Modern Methods in the Diagnosis and Treatment of Syphilis. To be opened by Dr. Feibes (Aix-le-Chapelle); followed by Mr. J. Ernest Lane, Drs. R. B. Wild, George Pernet, Stopford Taylor, Mr. J. E. R. McDonagh, and others.

Thursday, July 28th.—Discussion on the Influence of Diet in Diseases of the Skin. To be opened by Dr. L. Duncan Bulkley (New York); followed by Drs. Eddowes, R. B. Wild, and others. At 12 noon Dr. Reginald Morton will introduce the subject of the use of Solid Carbon Dioxide in Dermatology, after which Dr. J. Hall Edwards and Mr. Willmott Evans will demonstrate various forms of apparatus. At 2.30 p.m., jointly with the Sections of Surgery and Laryngology, Demonstration on Radium, by Dr. Louis Wickham, Paris.

The following is a synopsis of Dr. DUNCAN BULKLEY'S paper:

The influence of diet upon nutrition is a matter of everyday observation, both in man, animals, and the vegetable world. The evil effect of what is eaten and drank is well recognized in many tissues of the human body, as in gout, stone, obesity, cirrhosis, etc., and even in favouring the development and action of micro-organisms, as in tuberculosis. It is but reasonable, therefore, to expect that the skin would also be affected thereby. Relatively little definite has been accurately determined along this line, but as experience widens, data are accumulating which show conclusively that a proper dietary treatment is most important in connexion with many dermatoses; and if certain skin affections are produced and others strongly influenced thereby, it follows that the nutrition and action of the skin as an organ are so affected, and therefore when it is diseased in any manner the effect of diet must be of greater or less importance. The ill-effects of indiscretion in eating and drinking in urticaria, acne, eczema, and psoriasis, are well known to all, and xanthoma diabeticorum stands as a striking illustration of a dietary dermatosis, as does also scorbutus. It is not possible at the present time to determine accurately just the manner in which errors in eating and drinking affect the skin, but it is probably in the main through perverted metabolism, following deranged action of internal organs. It is also probably more or less through the action of the skin itself, for we know that alcohol is excreted through the skin, and iodides, bromides, and certain other drugs can excite an eruption in suitable cases. The careful study of the urine, by means of complete and repeated volumetric analyses, furnishes a more valuable guide for the determination of metabolic conditions, and an efficient aid in directing the dietary in many diseases of the skin and other organs.

Friday, July 29th.—Paper on Palæogenesis as illustrated in Certain Affections of the Skin, by Sir Jonathan Hutchinson. Papers upon the following subjects have been accepted; many of them will be illustrated by lantern slides:

ABRAHAM, Dr. P. S. Some Varieties of Molluscum Contagiosum.
BEDDOES, Dr. T. B.: Post-syphilitic Pruritus.
BUNCH, Dr. J. L. The Treatment of some Diseases of the Skin by Vaccine Therapy.
DALLY, Dr. J. F. Halls. Recent Experiences in the Treatment of Favus.
DAWSON, Mr. G. W. Diphtheria of the Skin.
EDDOWES, Dr. A. The Treatment of *X*-ray Burns.
EVANS, Mr. Willmott. Some Points in connexion with Electrolysis for Hirsuties.
MCDONAGH, Mr. J. E. R. The Serum Diagnosis of Syphilis.
MORTON, Dr. Reginald. The Use of Solid Carbon Dioxide in Dermatology.
PERNET, Dr. George. (*a*) An Unusual Case of Toxic Dermatitis, with Remarks on Symmetrical Skin Eruptions. (*b*) A Case of Pemphigus Vegetans, with Remarks on Treatment.
TOMKINSON, Dr. J. Goodwin (Glasgow). A Case of Pityriasis Rubra Pilaris.
WALSH, Dr. D. An Investigation of a Plant Dermatitis or Lily Rash amongst Flower Gatherers and Packers in the Scilly Islands.
WILD, Dr. R. B. (Manchester). Some Cases of Actinomycosis.

Amongst the clinical cases that are expected to be shown at the meeting are the following:—Dr. Abraham: (1) Lepra; (2) Dermatitis herpetiformis; (3) Multiple lupus; (4) Prurigo of Hebra; (5) Leucoderma with canities; (6) Granuloma annulare. Dr. Meachen: (1) Lupus erythematosus of scalp; (2) Epidermolysis bullosa; (3) Darier's disease; (4) Multiple teleangiectases with haemorrhages; (5) Urticaria pigmentosa; (6) Peculiar dystrophy of nails; (7) Tinea unguium. Dr. Halls Dally: Untreated favus of scalp and nails. Dr. Eddowes: (1) Multiple lupus vulgaris; (2) Lupus erythematosus, showing various lesions; (3) Tuberculous gummata; (4) Hypertrophic rosacea, probably specific, and others. Dr. Agnes Savill: *X*-ray ulcer cured by Hilton's method.

Cases of interest will be shown at the Section each morning at 10 a.m., in addition to drawings, photographs, and microscopic sections.

DISEASES OF CHILDREN

President: ARCHIBALD E. GARROD, M.D., F.R.S., London.

Vice-Presidents: CHAS. P. B. CLUBBE, M.R.C.S., Sydney; THOMAS SINCLAIR KIRK, M.B., Belfast H. D. ROLLESTON, M.D., London; FRANCIS JAMES; STEWARD, M.S., F.R.C.S., London.

Honorary Secretaries: HAROLD ARTHUR THOMAS FAIRBANK, M.S., 137, Harley Street, W.; FRANCIS W. GOYDER, F.R.C.S., "Marley House," Bradford; HUGH THURSFIELD, M.D., 84, Wimpole Street, W.

The following subjects have been selected for discussion:

Wednesday, July 27th.—Discussion on the Diagnosis and Treatment of Non-Tuberculous Joint Diseases in Children. To be opened by Dr. Coutts and Mr. E. M. Corner; followed by Messrs. Robert Jones, W. B. Parsons, J. Keogh Murphy, H. Tyrrell Gray, and others.

The following is a synopsis of Dr. COUTTS'S paper:

(1) Rheumatism by far the most frequent cause of joint trouble in children. The importance of rheumatic arthritis in spite of its slight severity in childhood. Some recent views as to treatment and the frequency of acute cardiac dilatation. (2) The arthropathies associated with anterior poliomyelitis and their pathological connexion with Charcot's disease. (3) Syphilitic joint affections in early infancy and later childhood. (4) Pneumoccal joint affections. They may occur as an acute disorder in a general pneumococcal infection, or as a subacute one where some remote localized pneumococcal lesion, often an empyema, acts as a focus. A similar rule applies to other pneumococcal affections, such as pericarditis and peritonitis. (5) Gonococcal arthritis may occur in the youngest infants with ophthalmia. In older children more frequent, and at a younger age in girls than in boys. (6) Joint affections in haemophilia and purpura. Rheumatoid arthritis and Still's disease. Joint affections with the acute specific fevers.

The following is an abstract of Mr. CORNER'S paper:

From a surgical point of view, the discussion of the inflammation of joints of non-tuberculous origin offers great opportunities for excursions into the more or less enchanting and romantic regions of haemophilia and kindred conditions. Tempting though that prospect may be, it offers a very unpractical review of the subject, a surgeon seeing few cases of such affections. The most frequent cases of inflammation of joints to be seen in the surgical wards of a children's hospital are undoubtedly those due to tuberculous disease. Next in frequency would be cases which are mistaken for tuberculous disease. These latter are members of a large class of infective diseases of joint, the infection not being due to the tubercle bacillus. The more subacute or chronic the infection, the greater similitude to the clinical pictures in the text-books ascribed to tuberculous disease. In the more acute forms they approach the clinical condition ascribed to septic arthritis. Of these infective, but non-tuberculous, diseases of joints, several varieties will be brought forward illustrating this the most frequent class of non-tuberculous arthritis seen in the practice of the surgical diseases of children. Such examples will include cases due to streptococcus infection, staphylococcus infection, pneumococcic infection, uncertain infections; infections of joints with the colon bacillus, the typhoid bacillus, the influenza bacillus, after specific fevers, gonorrhoea, injury, surgical operations, etc. In the disease of children such conditions have a distinct peculiarity as contrasted with the corresponding conditions of adults. In children the joint disease is not infrequently secondary to a blood stream infection of the bone in the neighbourhood of the joint, the acute joint disease being secondary to the acute bone disease. Diagnosis will be briefly discussed. The treatment must consist of rest followed by massage, or operative measures, both being aided by medicinal and vaccine treatments.

Thursday, July 28th.—Discussion on the Diagnosis and Treatment of Infections of the Urinary Tract by the *Bacillus coli*. To be opened by Dr. C. R. Box, Dr. Dudgeon, and Mr. John Pardoe; followed by Drs. J. Porter Parkinson, J. Graham Forbes, W. M. Jeffreys, and others.

The following is an abstract of Mr. PARDOE'S paper:

(1) The more serious forms of *Bacillus coli* infection of the urinary tract in children appear to be of much less frequent occurrence than in adults. (2) Autogenous infections are much less common than those due to other conditions, such as calculus in the kidneys or in the urinary bladder. (3) Acute infections, occurring apart from other conditions, show the same tendency, as in adults, to rapid and complete cure. (4) Chronic infections, occurring apart from other conditions, are notable by their rarity. (5) Chronic infections dependent upon, or occurring during the course of other conditions, tend to more complete cure than in similar circumstances in adults.

Friday, July 29th.—Papers:

ELGOOD, Dr. Olive. Human Milk and Breast Feeding.
PARSONS, Mr. W. B. The Diagnosis of Affections about the Hip-joint in Children.
PRITCHARD, Dr. Eric. The Value of Banana Flour in Infant Feeding.
MURPHY, Mr. J. Keogh. The Results of Radical Treatment of Tubercle in the Tarsus and Ankle-joint in Young Children.
ZANGGER, Dr. Theodore. The Therapeutics of Whooping-cough.
GAUVAIN, Mr. H. J. The Conservative Treatment of Tuberculous Cripples.
GRAY, Mr. H. Tyrrell. Lesions of Solitary Appendices in Hernial Sacs.

GYNAECOLOGY AND OBSTETRICS.

President: Mrs. MARY A. D. SCHARLIEB, M.D., London.

Vice-Presidents: JOHN W. BALLANTYNE, M.D., Edinburgh; COMYNS BERKELEY, M.B., London; Professor JOHN A. C. KYNOCH, M.B., Dundee; THOMAS WILSON, M.D., Birmingham; THOMAS H. WILSON, F.R.C.P.I., Dublin.

Honorary Secretaries: W. BLAIR BELL, M.D., 7, Rodney Street, Liverpool; JOHN PRESCOTT HEDLEY, M.B., 11, John Street, Berkeley Square, W.; CARLTON OLDFIELD, M.D., 32, Park Square, Leeds.

The following provisional programme has been arranged:

Wednesday, July 27th.—Discussion on Dysmenorrhoea, its Causes and Treatment. To be opened by Dr. G. E. Herman, followed by Drs. W. E. Fothergill, Inglis Parsons, Curtis Webb, and others.

Papers:

DÖDERLEIN, Professor D. (Munich). Die Entstehung und Verhütung des Puerperalfiebers. Discussed by Dr. A. G. R. Foulerton and others.
CAMPBELL, Dr. John (Belfast). Air Embolism during Labour.
MUNRO KERR, Dr. J. M. (Glasgow). Additional Cases of Rupture of the Uterus.
YOUNG, Dr. James (Edinburgh). The Structure of the Stroma of the Uterine Mucous Membrane and its Bearing on the Menstrual Changes.

Thursday, July 28th.—Discussion on the Treatment of Fibromyomata Complicating Pregnancy. To be introduced by Dr. W. W. H. Tate, followed by Mr. Stanmore Bishop, Drs. A. J. Wallace, J. H. Willett, and others.

The following is an abstract of Dr. TATE'S paper:

The occurrence of pregnancy in a woman suffering from fibroids is a cause of serious danger in only a small proportion of cases. The nature of these complications is discussed. It therefore follows that interference during pregnancy is necessary only in a small minority of cases. The induction of abortion or premature labour is not to be recommended. When surgical interference during pregnancy becomes necessary myomectomy should be the operation of election. Whether myomectomy should be done in the interest

of the child, where other fibroids are present in the uterus, which *may* cause trouble later, is discussed. The preservation of the child's life demands special consideration, as the one and only chance of having a child may depend on the successful management of the pregnancy.

Papers:

LOCKYER, Dr. Cuthbert (London). Some Cases of Pregnancy Complicated by Fibromyoma Uteri.

GOTTSCHALK, Professor S. (Berlin). Two Cases of Occlusion of the Bowels by the Retroverted Uterus.

LEITCH, Dr. Archibald (Dundee). The Pathological Basis of Operations on Cancer of the Uterus.

IVENS, Dr. Frances (Liverpool). Localized Necrosis in an Adenomyomatous Right Tube associated with Left Tubal Mole.

Friday, July 29th.—Papers:

NAGEL, Professor W. (Berlin). Is it Justifiable to leave the other Ovary, if it appears unchanged, when Removing a Proliferating Papillary Ovarian Cyst?

HERFF, Professor Von (Basle). The Causal Treatment of Dystocia in cases of Pelvic Contraction.

MCILROY, Dr. A. Louise (Glasgow). The Surgical Treatment of Fibrosis of the Uterus.

WALLACE, Dr. A. J. (Liverpool). Intraperitoneal Haemorrhage in Cases of Fibromyoma Uteri.

LONGRIDGE, Dr. C. Nepean (Cheltenham). The Involution of the Puerperal Uterus.

Professor Gottschalk will show some lantern slides of erosion of cervix.

LARYNGOLOGY.

President: HERBERT TILLEY, F.R.C.S., London.

Vice-Presidents: J. LACY FIRTH, M.D., Bristol A. BROWN KELLY, M.D., Glasgow; STEPHEN PAGET, F.R.C.S., London; H. BETHAM ROBINSON, M.S., M.B., London.

Honorary Secretaries: GEO. NIXON BIGGS, M.B., 30, Harley Street, W.; HENRY JOHN DAVIS, M.B., 8, Portman Street, W.; JOHN SMITH FRASER, M.B., 50, Melville Street, Edinburgh.

The following preliminary programme has been arranged:

Wednesday, July 27th.—10 a.m., Discussion on the Technique of the Direct Examination of the Oesophagus and Lower Air Passages. To be introduced by Professor Dr. von Eicken (Freiburg), and Dr. D. R. Paterson (Cardiff).

Thursday, July 28th.—10 a.m, Discussion on Vasomotor Rhinitis. To be introduced by Dr. H. S. Birkett (Montreal), and Mr. E. B. Waggett (London), followed by Mr. Stuart Low, and Drs. Dan McKenzie, [Scanes Spicer, H. J. Davies, Watson Williams, and others. 12.30 p.m. to 1 p.m., Conjoint Meeting with the Section of Dermatology when Dr. Wickham (Paris) will give a Demonstration of Radium.

Friday, July 29th.—10 a.m., Reading of the following among other Papers.

MCKENZIE, Dr. Dan. Enucleation of the Tonsil.

SECCOMBE-HETT, Mr. The Anatomy of the Capsule of the Tonsil and its Significance in the Treatment of Diseases of the Tonsil.

WILKINSON, Dr. W. Camac. Tuberculin in the Treatment of Laryngeal Tubercle.

SMITH FRASER, Mr. J. Congenital Stenosis of the Choanae.

SCANES-SPICER, Dr. Cancers of the Throat, etc.

HEMINGTON-PEGLER, Dr. L. A Note on Headaches in Association with Obstruction in the Nasal Passages.

WATSON-WILLIAMS, Dr. P. A Note on the Osteo-plastic Radical Operation for Frontal Sinus Suppuration.

ONODI, Professor. Exposure of the Endocranium and the Brain by Way of the Nasal Cavity.

In order to save time and to facilitate the necessary arrangements, all communications relating to the exhibition of preparations, specimens, drawings, etc., may be addressed to Mr. H. W. Armit, Honorary Secretary, Medical Museum Committee of the British Medical Association, Lister Institute of Preventive Medicine, Chelsea, London, S.W.

MEDICAL SOCIOLOGY.

President: JAMES ALEXANDER MACDONALD, M.D., Taunton.

Vice-Presidents: R. COCHRANE BUIST, M.D., Dundee; MAJOR GREENWOOD, M.D., London; HUGH R. KER, F.R.C.S.Edin., London; Professor JAMES T. J. MORRISON, M.B., Birmingham.

Honorary Secretaries: DONALD JOHN ARMOUR, F.R.C.S., 89, Harley Street, W.; HARVEY HILLIARD M.R.C.S., 30, Wilton Place, Knightsbridge, S.W.; JAMES HENRY TAYLOR, M.B., 299, Eccles New Road, Salford.

The following is a provisional time table of the subjects selected for discussion. A syllabus is appended in each case.

Wednesday, July 27th, 10 a.m.

I.—THE ECONOMIC BASIS OF HOSPITAL MANAGEMENT.

1. *Provision of Funds:*—

Proportion of payments by—

i. Public grants:
Asylum boards,
Corporations,
Boards of guardians,
Education committees.

ii. Charitable or philanthropic:
Sunday funds,
Works collections,
Private subscribers and endowments.

iii. Payments by patients.

2. *Conditions of Admission:*—

In and out patients:

i. Free,
ii. Subscribers' letters,
iii. Partial payments,
iv. Recommendation by public bodies,
v. Almoners.

3. *Professional:*—

Staff:

i. Public subscriptions,
ii. Private subscriptions.

Principles of Resolutions adopted by the Association

In the case of patients maintained from public funds, the medical service should be paid.

In the case of patients maintained from charitable funds, the medical service should be charitable.

In the case of patients paying for themselves, the medical service should be chosen by the patient and paid for by him.

4. *The Economic Basis of the Out-patient Department:*—

(*a*) Consultative.

(*b*) Dispensary:

i. From the professional point of view,
ii. From the patient's point of view,
iii. From the hospital point of view.

The discussion will be opened by Professor Benjamin Moore, followed by Sir Henry Burdett, K.C.B., Dr. Rentoul, Dr. Saundby, Mr. Hugh R. Ker, Dr. Mackintosh, Dr. Lauriston Shaw, and many others.

Professor BENJAMIN MOORE (Liverpool) will speak on the following points: (1) The fundamental notion that a hospital is an eleemosynary institution dependent upon charity is erroneous. The hospital ought to be regarded from the point of view of economics as an institution for the study and treatment of disease which cannot be adequately performed elsewhere, and hence as an institution for the benefit of the community or State, rather than

primarily that of the individual. (2) The conception of a hospital as a voluntary charity produces the evil of two distinct types of hospital—namely, the Poor Law and the voluntary hospital, existing for two kinds of necessitous people, whereas there should be but one type of hospital. (3) As a result of the operation of No. (2), there arises the view in the lay mind that it is a disgrace to be attended in a Poor Law hospital, but that attendance in a voluntary hospital is no evidence of poverty, and even is a thing which can be claimed as a right by all. (4) An attempt should be made to place all hospitals on a common basis, and to insist that admission, except to accidents, should only be allowed upon a doctor's certificate that the case can be best treated in a hospital. (5) Persons possessing means admitted to a hospital, because their illness can best be treated there, should be compelled to pay, and the fees should be paid over to those giving them attention, or who have sent them in. (6) The view which regards the doctor in the hospital as a philanthropist should be discouraged, the present system of paying back consultants in kudos or by introductions to practitioners should be abandoned as a radical evil, and these physicians and surgeons should be properly paid for their work like any other body of public servants. (7) The system of voluntary hospitals is a failure, because of the facts (*a*) that these hospitals undertake a great deal of work which should not be done in hospital at all, (*b*) they leave undone a great deal of work which ought to be done, and (*c*), especially in their out-patient departments, they waste an inordinate amount of the time of workers in the community. The system of Poor Law hospitals is also a failure, first, because of the taint of the Poor Law system; secondly, because the attention to patients is inadequate, although the resident officers are sweated in their work, and a great deal of truly medical work is performed by nurses instead of by medical men who alone can perform such work properly; and, thirdly, because the hospitals are antiquated, insanitary, and overcrowded, so spreading disease from patient to patient and depreciating the health of the people. To replace this a properly organized, adequate, modern service of State hospitals is required, in which all cases shall be properly attended to by properly qualified and adequately paid medical officers. The reason for such a system is not charity or philanthropy, but purely and simply the economic demand for a healthy people, physically fit and capable of carrying on the work of the country such a system will repay itself over and over again even from the monetary point of view, not to mention matters more important than money. (8) Since all medical service would be paid for under such a system, either by State or individual, the doctor does not suffer, he is able to carry out his work under better economic and social conditions, and the public have an infinitely better service. It is further obvious that hospital abuse is impossible, and many other evils, for the profession itself works the system and lay committees and charitable donors with their well-meant but unscientific interference have ceased to exist.

Thursday, July 28th, 10 a.m.

II.—State Sickness Insurance (Provision of Medical Attendance) as Affecting the Public Health and the Medical Profession.

To be introduced by the Medical Secretary, Dr. J. Smith Whitaker; followed by Drs. Armit, J. Pearse, E. J. Maclean, W. E. Thomas, and others.

The following is a synopsis of Dr. Whitaker's proposed remarks:

1. *The Public Health.*

A. Summary of the existing systems of medical relief of the wage-earning classes, including

(i) Private medical practice.
(ii) Contract medical practice.
(iii) Charitable services.
(iv) Public services.

B. Examination of the efficiency of such treatment, and consideration of the effects on the community of inefficiency, particularly in respect of the delay in obtaining proper treatment, and consequent prolongation of treatment or permanent disability.

C. Desirability of public provision to facilitate prompt treatment.

D. Importance of maintaining the provident element in such provision.

E. Examination of the effects of a system of national insurance in providing that prompt medical attendance shall be within the reach of every wage-earner, under conditions which secure:

(i) That he shall contribute to the cost.
(ii) That he shall have a measure of control over the provision made.

2. *As Affecting the Medical Profession.*

A. Defects of existing arrangements, particularly as regards underpayment or non-payment of those members of the profession who attend the wage-earning classes.

B. Advantages of a system of national insurance as affording means whereby the profession, if it take the proper steps, may secure adequate remuneration and satisfactory conditions of service.

C. Examination of the objections to a system of national insurance, especially:

(i) That it would perpetuate the present evils of contract medical practice.
(ii) That it would deprive the medical practitioner of his independence.

D. Indirect effects of a system of national insurance on:

(i) Charitable medical organizations.
(ii) The Poor Law medical service.

Friday, July 29th.

III.—Social Aspects of the Falling Birth-Rate.

1. The facts: (*a*) Comparative national statistics; (*b*) comparative social statistics—that is, evidence as to the relative rates of decline in various social strata.

2. The factors: (*a*) spontaneous; (*b*) artificial.

3. The effects: (*a*) on selection, reproductive from more fertile classes natural, comparative class death-rates, infantile and juvenile; (*b*) on national efficiency, industrial, professional, and military; (*c*) on character, individual and national.

Problems for Discussion.

(*a*) Biological gain or loss in the process and its controllability.

(*b*) Methods of control, economic, ethical, medical.

The discussion will be opened by Dr. J. W. Ballantyne (Edinburgh), Dr. Fremantle, M.O.H. Herts, Dr. Gilchrist (Nice), and Dr. J. W. Hunter.

The following is a synopsis of Dr. J. W. Ballantyne's paper:

Tennyson's "torrent of babies" now reduced to a rivulet. The dangers of any attack upon the monogamic marriage shown in Rome under Augustus; the present-day dangers of an attack upon the constitution of the family as the sociological unit. Definition of the family. Some causes of the falling birth-rate; they cannot from their nature be easily counteracted; indication of the most hopeful lines of advance. The conservation of existing lives (antenatal and neonatal) and the prevention of the present wastage due to frequent abortion and stillbirth, neglect of maternal health in pregnancy, defective hygiene in the case of newborn infants, the divided duties of the working married woman, and the like. The ultimate restoration of the normal birth rate is not hopeless, but the tide is still flowing in the other direction. What shall be the immediate and future means of facing the existing situation?

The following points will be raised by Dr. Hunter:

That the elder born children of a family are more liable to suffer from defective conditions than the younger ones. Of children of the working classes

this holds good up to and including the seventh born. With the eighth born, however, there is a sudden sharp rise in the liability to "defect," and the type of "defect" has become still more severe than that affecting the elder born; with still later members this liability to "defect" steadily increases. The offspring of parents who are themselves elder born members of a family shows more "defect" than the offspring of parents who are younger members. This holds good up to and including an eighth born parent. With the offspring of a ninth born parent, however, there is a marked rise in "defect." (The difference of one in order of birth between parents and children is probably due to earlier age at marriage of grandparents.) The "defect" at the close of the large family is generally of so marked a type that few such individuals survive to become parents, hence from a practical point of view the "defect" among the early born is more important. That somewhere about 24 to 25 years of age, a woman is best fitted to give birth to her firstborn. That after 25 years the capacity to bear a good child with the firstborn rapidly diminishes. That with regular pregnancies the power to reproduce well steadily increases until the mother reaches 35 years of age, after which it declines very rapidly. That a period of sterility, natural or artificial, lowers the quality of a child subsequently born. That the limitation of the family to two or three children means the annihilation of the race.

Paper:

GILCHRIST, Dr. A. W. (Nice). A Study in Eugenics or Genetics.

MEDICINE.

President: R. W. PHILIP, M.D., Edinburgh.

Vice-Presidents: Professor HARRY B. ALLEN, M.D., Melbourne; GEORGE A. HERON, M.D., London; WALTER K. HUNTER, M.D., Glasgow; HENRY L. MCKISACK, M.D., Belfast; GEORGE R. MURRAY, M.D., Manchester; SIDNEY P. PHILLIPS, M.D., London.

Honorary Secretaries: H. MORLEY FLETCHER, M.D., 98, Harley Street, W.; HERBERT FRENCH, M.D., 62, Wimpole Street, W.; JOHN HAY, M.D., 12, Rodney Street, Liverpool.

The following preliminary programme has been arranged:

Wednesday, July 27th.—Discussion on the Pathogenesis, Prophylaxis, and Treatment of Acidosis. To be opened by Professor Edsall of Philadelphia, followed by Drs. E. I. Spriggs, G. Guelpa (Paris), A. P. Luff, Langdon Brown, A. P. Beddard, Leonard Guthrie, M. S. Pembrey, and J. H. Ryffel.

After the discussion on Acidosis, Dr. Leonard Hill M.D., F.R.S., will give a demonstration on Improved Methods of giving Oxygen, with an account of their Effects.

The following is a synopsis of Professor D. L. EDSALL'S remarks:

While there is an important distinction between acidosis and acid intoxication, there is, from the clinical as well as from the pathological standpoint, another equally important distinction between the forms of acidosis, sometimes severe and sometimes mild, that are due to lack of carbohydrates or inability to utilize them, as in diabetes, and those forms which are incidental to severe disease which is most commonly situated in the liver. Even in the latter forms, however, diet at times plays an important part in treatment as to alkalies, probably less through checking the direct effects of acidosis than through controlling secondary effects, perhaps an autolysis. While it is not certain that acid intoxication is the prime cause of the violent toxic symptoms in diabetes—and some evidence points to the contrary—it is highly probable that it is the main cause, as well as in the occasional cases of coma of the same type in non-diabetic persons. The manner in which the severe symptoms are produced is not clear. The relation of the loss of inorganic salts to the production of symptoms, and the possible relation of the same salts to the production of acidosis, need further study. It is not improbable that these salts have some relation to the symptoms in the earlier course of diabetes before severe toxic symptoms come on, especially to the common muscular fatigue. Metabolism studies, not yet complete, bearing upon this point will be cited. It seems probable that adding other bases besides sodium in the treatment of acid intoxication may help better than sodium alone in postponing a fatal issue.

Thursday, July 28th.—Discussion on the Treatment of Chronic Constipation. To be opened by Dr. J. F. Goodhart, followed by Sir Lauder Brunton, F.R.S., Professor C. Baümler (Freiburg), Sir James Sawyer, Drs. H. D. Rolleston, Hale White, A. Mantle, Nathan Raw, A. F. Hertz, George Herschell, and Mr. W. R. Arbuthnot Lane.

The following is a synopsis of Dr. GOODHART'S paper:

(1) Constipation defined to be unnatural delay in the passage of the intestinal contents along the colon. What constitutes unnatural delay? From bismuth observations the average period for the passage of the intestinal contents along the colon only would appear to be some twenty hours from taking the meal; to this must be added for delay in the collecting chamber a variable time, probably in most people three to four hours, more or less, until the call for expulsion comes. (2) Constipation thus falls into two groups—constipation of the colon, and constipation of the collecting chamber or rectum. The one is an automatic reflex outside the control of the will; the other is largely aided by voluntary effort, and the trouble comes into being when voluntary muscular effort fails. The latter is mostly present in old people, or in women of lax habit who have borne children, and in such as have habitually neglected to form good habits. (3) Constipation of the main tract of the colon is a much more intricate subject; it is in the main a physiological one. Its causes concern themselves with (*a*) the neuro muscular apparatus of the intestinal wall; (*b*) the intestinal contents. The nervous element in the circuit a dominant one in constipation habit; nervous vigour and its oscillations; the temparament of the subject; the mental condition, and related thereto all the disturbances of secretion, absorption, excretion, associated as they are with flatulence, pain, and mucular cramp. Muscular power is also all-important. The attributes of peristalsis; a sleeping dog; its relation to the passage of scybala; its bearing on kinks and adhesions; scybala seldom cause intestinal obstruction. (*b*) The intestinal contents. The quantity, quality, and variety of food. The colon a great feeder; it is meant to be full, not empty; the function of the colon muscle in this respect. Intestinal tone; scybala; "sheep's droppings" starvation; aperients. (4) Treatment; not every case needs it. Constipation healthy for many. The doctrine of intestinal auto-intoxication, as developed of late years, extreme and physiologically unsound. Intestinal antiseptics. The surgical treatment of chronic constipation. When treatment is necessary. Much to be gained by common-sense physiology. The obsession of the urgency of a daily stool to be attacked; so also that other, that blocks readily occur; so also a third, that the colon is a poison bag. Treat bad habits; irregularity of meals; too little food; the dietetic fad; the curse of pill-hunger. Instil the need of patience and perseverance; leave the bowels alone by thought and deed to work out their own salvation. The rôle of massage, water, salines, dinner pills, enemata.

Friday, July 29th.—Papers:

HARRIS, Wilfred, M.D. The Injection Treatment of Neuralgia and Sciatica.

HUMPHRY, Laurence, M.D. (1) A Case of Acromegaly with Hypertrophied Heart; Pressor Substance in the Urine; with *Post-mortem* Specimens. (2) Aneurysm of Aorta Communicating with the Superior Vena Cava.

SAYER, Miss Ettie, M.B., B.S. The Effects of Electrical Currents upon Blood Pressure.

Jordan, A. C., M.D. The Roentgen-Ray Appearances of Thoracic Aneurysm; illustrated by lantern slides.

Mackintosh, Dr. J. S. The Evolution of Racial Types of Europe and its Bearing on the Racial Factor in Disease.

Wilkinson, W. Camac, M.D. Tuberculin in the Treatment of Pulmonary Phthisis.

Raw, Nathan, M.D. The Treatment of Addison's Disease by Tuberculin.

NAVY, ARMY, AND AMBULANCE.

President: Colonel Andrew Clark, A.M.S.(T.F.), London.

Vice-Presidents: Fleet Surgeon Percy W. Bassett-Smith, R.N., Haslar; Lieutenant-Colonel James Harper, R.A.M.C.T., London; Lieutenant-Colonel Michael W. H. Russell, R.A.M.C., London; Lieutenant-Colonel Robert J. S. Simpson, C.M.G., R.A.M.C., London.

Honorary Secretaries: Staff Surgeon James Garfit Wallis, M.B., R.N., Royal Naval Barracks, Chatham; Major Alfred Percy Blenkinsop, R.A.M.C., c.o. Messrs. Holt and Co., 3, Whitehall Place, S.W.; Major Arthur M. Connell, R.A.M.C.T., 79, Hanover Street, Sheffield.

The following programme has been arranged:

Wednesday, July 27th.—Papers:

Spencer, Major C. G., R.A.M.C. Local and Spinal Analgesia in Relation to Active Service.

Wildey, Fleet Surgeon, A. G., R.N. Hypodermic Injection in Action.

Wilson, Lieutenant-Colonel E. M., C.B., C.M.G., D.S.O., R.A.M.C. Medical Requirements in War for Assisting the Royal Army Medical Corps on Mobilization.

Thursday, July 28th.—Papers:

Pryn, Fleet Surgeon W. W., R.N. Colour Vision.

Collingwood, Fleet Surgeon G. T., R.N. Naval Recruits.

Lloyd, Captain Langford, D.S.O., R.A.M.C. Education and Intelligence from a Recruiting Point of View, with special regard to the Royal Army Medical Corps Regular and Territorial Service.

Giles, Colonel P. D., V.D. Training of Medical Units.

Friday, July 29th.—Papers:

Cummins, Major S. L., R.A.M.C. Isolation of Disease Carriers and Methods of Dealing with Them.

Cope, Surgeon L. F., R.N. Air and Ventilation in Modern Warships.

Clayton, Fleet Surgeon F. H. A. Tuberculosis in the Navy.

ODONTOLOGY.

President: J. Howard Mummery, M.R.C.S., L.D.S., London.

Vice-Presidents: William Donald Anderson, F.F.P.S., L.D.S., Glasgow; Arthur W. W. Baker, M.D., L.D.S., Dublin; W. H. Dolamore, M.R.C.S., L.R.C.P., L.D.S., London; William Hern, M.R.C.S., L.D.S., London; John Mathieson MacMillan, L.R.C.P. and S. Edin., L.D.S., Glasgow.

Honorary Secretaries: Ernest B. Dowsett, M.R.C.S., L.R.C.P., L.D.S., 1, Gloucester Street, W.; A. Hopewell-Smith, M.R.C.S., L.R.C.P., L.D.S., 58, Park Street, Park Lane, W.; Cyril H. Howkins, M.R.C.S., L.R.C.P., L.D.S., 83A, Edmund Street, Birmingham.

The following programme has been arranged:

Wednesday, July 27th.—Special Discussion on the Prevention of Dental Caries, to be taken under the following headings: (1) The Effect of Various Food Stuffs. To be opened by Dr. Sim Wallace. (2) The Care of the Mouth during General Disorders. To be opened by Dr. Hector Mackenzie. (3) The Influence of Climate, etc. To be opened by Mr. A. S. Underwood.

The following are synopses of the opening papers:—

1. Dr. Sim Wallace: The effect of the foodstuffs in preventing dental caries is twofold. First, the *predisposing causes* of caries may to a large extent be prevented. The two chief predisposing causes which may be most effectually prevented by foodstuffs are (*a*) the irregularities in position of the teeth and (*b*) recession of the gums in later life. When food which stimulates efficient mastication is habitually consumed the muscles of mastication, including the tongue, become well developed and the jaws grow sufficiently large to accommodate all the teeth without irregularity or crowding. Further, such foods tend to keep the mouth and alimentary canal in a hygienic condition, and thus largely prevent the ill-health and emaciation which so generally result from chronic interference with normal digestion and assimilation. This is an important factor in preventing irregularities, because ill health associated with emaciation prevents the normal development of the jaws and thus gives rise to crowding of the teeth. Recession of the gums is also prevented by the habitual use of food which demands efficient mastication, for the teeth are kept free from tartar and other irritants which lodge about the necks of the teeth and injure the gums. The amount of nutrition, including the proportion of lime salts in the water, need not be considered, as it is never lack of nutrition of any kind *per se* which induces or predisposes to dental caries, though the unhygienic state of the mouth and alimentary canal resulting in constitutional disease may give rise to developmental defects in the enamel and thus predispose to caries. Secondly, the *immediate or exciting cause* of caries may be prevented by foods which clean the mouth and leave the teeth free from adhering carbohydrates. To secure this end, without requiring to restrict the kinds of foods eaten, it is necessary to have the meal arranged in such a way that the last foodstuff eaten will be of a detergent nature.

2. Dr. Hector Mackenzie: The neglect of the hygiene of the mouth during illness all too common even at the present day. Sordes in fever a sign of neglect and inefficient nursing. Septic conditions of mouth often aggravate the effects of general illness. The prevalence of pyorrhoea and caries. Their relations to chronic toxaemia, various forms of anaemia, and affections of the joints. Their relation to chronic dyspepsia and intestinal disorders. Their effects on tuberculosis, etc. The relations of general disorders to dental caries and pyorrhoea. To what extent the latter are dependent on general disorders. Conditions of ill-health no doubt responsible for dental disease, but the latter is the cause of much ill-health.

3. Mr. A. S. Underwood: The results of a comparison of a large number of skulls of various races and periods undertaken with a view to determine, if possible, the factors favouring the occurrence of dental caries, the effects of climate and varying degrees of civilization being specially kept in view.

Thursday, July 28th.—Continuation of the Special Discussion on the Prevention of Dental Caries—(4) The Effect of Variations in the Buccal Secretions, and the Part Played by Bacteria Normally Present. To be opened by Mr. Kenneth W. Goadby. (5) The Need for the Correction of Malposition of the Teeth. To be opened by Mr. J. H. Badcock. (6) The Correction of the Effects of Drugs taken as Medicine. To be opened by Dr. Harold Austen. (7) The Reasons for Susceptibility and Natural Immunity. To be opened by Mr. Howard Mummery.

4. Mr. Kenneth W. Goadby: Dental caries presents a difficult bacteriological problem, due to the number of species of bacteria involved, and the fact that until the tooth pulp is involved little or no physiological reaction takes place in the invading bacteria. Normal flora of the mouth. Bacteriological flora in acute caries. Bacteriological flora in chronic caries. Factors

of etiological significance. Bacteria most closely associated with caries. Biological facts of mouth bacteria in relation to the commencement of caries.

5. Mr. J. H. BADCOCK: It is taken for granted that one of the chief causes of caries is stagnation of food and other débris around the teeth. Any oral conditions which tend to uncleanliness will favour caries, while conditions tending to cleanliness will aid in its prevention. It is natural for the mouth to be clean, and the mouths of animals living under natural conditions are clean. This natural cleanliness is due to several factors—namely: (*a*) Friction of hard food upon the teeth and gum in the act of chewing; (*b*) the hard and polished surfaces of the teeth; (*c*) the shapes of the individual teeth; (*d*) the arrangement of the teeth with relation to one another. Description of the normal arrangement of the teeth and demonstration that any departure from this arrangement favours the lodgement and stagnation of food. The correction of irregularities of the teeth tends to the prevention of caries in direct proportion to the degree in which the result attained approaches the normal.

6. Dr. HAROLD AUSTEN: There is a very widely-spread and deeply-seated popular belief that the taking of medicines is a common cause of the decay of the teeth. This belief is fostered, first, by the fact that certain drugs, such as iron, cause an obvious, though superficial, blackening; and, secondly, that decay of the teeth is found to be prevalent after such disturbances of the general health as are commonly treated by the administration of medicines. The belief that drugs injure the teeth appears, however, to rest upon but slender foundations, the popular prejudice resting upon a basis of "post, ergo propter, hoc." Two classes of drugs would appear *prima facie* to be a potential source of caries: (1) Acids, administered internally or used as local applications to the fauces. Very dilute solutions of weak acids, if applied continuously, have been shown by experiment to appreciably destroy the enamel. But in the mouth acid medicines and gargles are not applied continuously, but very intermittently, and in the case of fluids, mostly to the exposed surfaces, which are constantly washed by the saliva. All modern research tends to prove that the acids really injurious to the teeth are those generated *in situ*, in places which do not admit of natural cleansing, by the fermentation of the remains of carbohydrate foods. (2) Mercury. Mercurials when administered in infancy have been credited with the production of hypoplasia of the teeth, the so called honeycombing. The evidence for this is far from convincing. If, however, the point be proved, it would be an instance of a medicine causing predisposition to decay, to which hypoplastic teeth are very liable. Mercurials administered in large doses have long been known to cause well-marked disturbances in the associated tissues, the gums, and even bone. It is conceivable that mercury acting in this way, where there has been actual ulceration and permanent loss of tissue, may cause a predisposition to caries at the necks of the teeth. Lead, bismuth, silver, or copper, being drugs partly excreted by the oral mucous membrane, have been credited with occasionally producing similar effects to mercury in septic mouths. The only treatment for the correction of the effects of these drugs, if any is required, seems to be to maintain complete cleanliness of the mouth, and to neutralize the effects of acids taken by the immediate use of an alkaline mouth wash.

7. Mr. J. HOWARD MUMMERY: Immunity to caries in certain individuals; how accounted for. Constitution of the teeth; attribution of antiseptic powers to saliva; potassium sulpho-cyanide in the saliva; alkalinity of saliva; chemiotaxis (attraction of white corpuscles by saliva); action of saliva on soluble products of bacteria; antagonism and symbiosis of bacteria in the mouth. Can the subordination of natural selection in modern communities account in some measure for the increased susceptibility to caries?

Friday, July 29th.—Paper: The Value of Teeth to the Human Economy, by J. G. Turner.

OPHTHALMOLOGY.

President: CHARLES HIGGENS, F.R.C.S., London.

Vice-Presidents: HENRY L. FERGUSON, F.R.C.S.I., Dunedin; CECIL E. SHAW, M.D., Belfast; GEORGE WM. THOMPSON, F.R.C.S., London.

Honorary Secretaries: N. BISHOP HARMAN, F.R.C.S., 108, Harley Street, W.; ARTHUR HENRY HAVEN SINCLAIR, M.D., 5, Walker Street, Edinburgh.

The following discussions have been arranged:

1. The Future of Ocular Therapeutics: (*a*) Local and General. To be opened by Dr. G. A. Berry (Edinburgh). (*b*) Bacterial Products. To be opened by Dr. J. W. H. Eyre (London). Discussion will be continued by Sir John Tweedy and Mr. R. W. Doyne.

The following is a syllabus of Dr. BERRY'S paper:

Undoubted advances in ocular therapeutics have been few of recent years, though, particularly as regards local treatment, the number of new substances and new methods employed have been considerable. Modern treatment professes to be "rational," and is based on indications afforded by advances in scientific knowledge; there are great difficulties in complying with these indications, and rational treatment, though making progress, is often no more efficacious than the older empirical methods of treatment. Various reasons why this should be the case: Directions in which views as to treatment tend towards change and advance. General treatment: Influence of current scientific investigations. The position and scope of general as opposed to local treatment in eye affections. Reasons for efficacy of various empirically established lines of treatment in the light of modern knowledge, etc.

The following is a synopsis of Dr. EYRE'S paper:

Scientific therapy depends primarily on accurate diagnosis. In many diseases clinical observation does not give sufficient information for an accurate diagnosis to be made; recourse must be had to bacteriological methods of investigation. Specific poisons require specific antidotes. Diseases due to bacteriological infections should be combated by remedies directed primarily against the infecting organisms. Bacterial therapeutics merely a close imitation of Nature's methods of cure. Serumtherapy in eye diseases. General principles of vaccine-therapy. Vaccines in the treatment of external diseases of the eye. Vaccines in the treatment of intraocular lesions. Ophthalmic surgeon or physician *versus* the bacteriologist. Co-operation of bacteriologist with the ophthalmic surgeon.

2. The More Chronic Forms of Anterior Uveal Inflammation: (*a*) Extra-Ocular Manifestations. To be opened by Mr. Holmes Spicer (London). (*b*) Intra-Ocular Manifestations. To be opened by Mr. Stephen Mayou (London), followed by Mr. R. W. Doyne and Mr. A. W. Ormond.

The following are synopses of the two opening papers:

(*a*) Mr. HOLMES SPICER: Incidence as to age and sex. Conditions of general health in relation thereto. The local signs: Involvement of the cornea, involvement of the deeper parts. Pathological and bacteriological investigations. Treatment: Local applications, surgical methods, ionization, vaccine.

(*b*) Mr. STEPHEN MAYOU: Cyclitis. (1) The nature and sources of the infection and the means by which it is conveyed to the eye. Staphylococcal. Tuberculous. Syphilitic. The reason why both eyes are not infre-

quently affected. (2) The intra-ocular manifestations K. P. Its origin and diagnostic significance. The changes in the iris. Cause of the lenticular opacity. The manifestations in the choroid. The variations in the tension of the eye mainly dependent on changes in the vitreous. (3) The means of diagnosis. The value of tests to determine the presence of organisms within the body—for example, von Pirquet's and Wassermann's reactions. The value of the local reaction after the injections of toxins into the blood. The direct bacteriological diagnosis by examination of the aqueous. (4) The treatment by vaccines.

3. The Diagnostic Values of Ophthalmoplegia, Partial and Total. To be opened by Dr. Risien Russell (London), followed by Mr. L. Vernon Cargill, Dr. E. Farquhar Buzzard, and Dr. W. H. Brailey.

The following is a syllabus of Dr. RISIEN RUSSELL'S paper:

The value of ophthalmoplegia in the diagnosis of organic as opposed to functional affections of the nervous system. What estimate can be formed of the probable nature of the case from a study of the ophthalmoplegia alone. The conclusions justified by a knowledge of the mode of onset and progress of the paralysis. The significance of the combination in which the ocular muscles are affected. The value of associated ocular phenomena as aids to a correct diagnosis. The deductions that are warranted when other cranial nerves are concomitantly affected. Is a diagnosis ever justified from a study of the ophthalmoplegia in conjunction with symptoms, without the additional assistance that can be derived from a general physical examination of the patient? The importance of a knowledge of the general physical state before a correct conclusion can be formed. To what extent ophthalmoplegia is of assistance in the diagnosis of intracranial disease from general affections of the nervous system.

The following papers have been accepted:

TRAQUAIR, H. M., M.D. The Treatment of Purulent Keratitis by Ionotophoresis.
HARMAN, N. Bishop, F.R.C.S., and MORTON, E. R., M.D. The Use of Carbon Dioxide Snow in Eye Work.
LAWSON, Arnold, F.R.C.S., and DAVIDSON, J. Mackenzie, M.B. Radium-Therapy in Ophthalmology.
THOMPSON, A. Hugh, M.D. The Operative Treatment of High Myopia.
BENSON, Arthur H., F.R.C.S I. A Method of Enlarging Certain Forms of Contracted Socket.
PISANI, L. J., F.R.C.S., Colonel I.M.S. On the Conditions which may Account for the Greater Prevalence of Cataract in India.
MACCALLAN, A. F, F.R.C.S. Five Months' Clinical Work at Luxor in 1910.
HARMAN, N. Bishop, F.R.C.S. The Education of High Myopes.
FINK, G. H., M R C.S., Major I.M.S. A Plea for Efficient Drainage after Cataract Operations.

DEMONSTRATIONS.

The following demonstrations have been arranged in the meeting room of the Section at 9 o'clock on Thursday, July 28th:

Methods of Testing for Colour Blindness. By Dr. F. EDRIDGE-GREEN.
New Operation for the Production of Filtration Cicatrix in Chronic Glaucoma. By Dr. H. HERBERT.
Use of New Registering Form of Diaphragm Test for Measuring Binocular Vision. By Mr. N. BISHOP HARMAN.

On the third day the following resolution will be brought forward by Mr. N. Bishop Harman, and supported by Messrs. Walter Edmunds, A. Hugh Thompson, W. H. Brailey, and J. A. Menzies.

In view of the importance of obtaining continuity of treatment of defects of vision in school children throughout the period of education, and of proper co-ordination of medical inspection and treatment, it is the opinion of the Ophthalmological Section of the Association that the organization of school clinics is desirable.

OTOLOGY.

President: EDWARD LAW, M.D., London.

Vice-Presidents: ALBERT ALEXANDER GRAY, M.D., Glasgow; HUNTER F. TOD, M.D., London; FREDERICK H. WESTMACOTT, F.R.C.S., Manchester.

Honorary Secretaries: CECIL IRVING GRAHAM, F.R.C.S., 47, Queen Anne Street, W.; HERBERT JAMES MARRIAGE, F.R.C.S., 109, Harley Street, W.

The following subjects have been selected for special discussion:

Wednesday, July 27th.—Discussion on Aural Tuberculosis in Children. [The discussion will be limited to diagnosis, prognosis, and treatment, without details of operative procedure.] To be opened by Dr. W. Milligan.

The following is an abstract of the opening paper:

Dr. MILLIGAN will deal, in the first instance, with the frequency of aural tuberculosis in childhood, and will discuss in detail the usual routes of infection. The importance of recognizing the disease as of primary origin in the middle-ear cleft in a large proportion of the cases met with will be insisted upon. The main symptoms of aural tuberculosis—subjective and objective—will then be considered, and the various methods of establishing a definite diagnosis described and criticized. The complications most frequently met with will be enumerated and their relative importance dealt with. The important questions of prognosis and of treatment will be discussed and the results of treatment analysed. Suggestions will be made as to how to deal with cases of aural tuberculosis in school children, as to how to prevent dissemination of disease, and as to the advisability or otherwise of isolating infected children.

After the discussion Dr. Birkett (Montreal) will give a demonstration illustrated by radiograms of the mastoid process.

Thursday, July 28th.—Discussion on the Diagnosis and Treatment of Infective Labyrinthitis, to be opened by Docent Dr. Robert Bárány (Vienna), and Mr. C. E. West.

The following are abstracts of the opening papers:

(*a*) Dr. BÁRÁNY (Vienna) distinguishes the following forms of the disease: (1) Acute purulent labyrinthitis. (2) Latent purulent labyrinthitis. (3) Fistula of the labyrinth with intact membranous labyrinth (circumscript labyrinthitis). (4) Fistula of the labyrinth with slight lesion of the membranous labyrinth. (5) Fistula of the labyrinth with severe lesions of the membranous labyrinth. (6) Serous labyrinthitis. The differential diagnosis between these diseases is made possible by investigation of the condition of the semicircular canals, the methods of which were partly originated, partly worked out by the author. The most important sign of the diseases of the semicircular canals is the spontaneous vestibular nystagmus, which may be present either continuously (acute labyrinthitis), or only during attacks (circumscript labyrinthitis). The investigation into the function of the semicircular canals consists in the experimental irritation of the canals by means of (1) turning, (2) rapid head movements, (3) syringing with cold and hot water, (4) galvanization, (5) compression and aspiration of the air in the meatus. All these different irritations produce quite definite forms of vestibular nystagmus, which must be observed carefully. Also intracranial diseases produce vestibular nystagmus, especially those of the posterior fossa (cerebellar abscess, meningitis). The author gives the differential diagnosis between the diseases of the labyrinth and the intracranial complications which often accompany the labyrinth trouble. This diagnosis is built upon the observation of the spontaneous nystagmus and the exact examination of the irritability of the semicircular canals.

(*b*) C. ERNEST WEST: Infections of the labyrinth may be either pyogenic or non-pyogenic; the former constitute the main subject of the paper. Pyogenic

infection may be either diffuse or localized to a portion of the labyrinth; this part may be restricted to the labyrinthine wall. Diffuse infection may be either acute or chronic; localized infection is always chronic. Necrosis of the labyrinthine capsule may take place in either acute or chronic conditions. The dangers and incapacities caused by infective labyrinthitis. Treatment of infective labyrinthitis chiefly operative by the necessity of the case. The aims of operative treatment. The treatment of chronic local infections by the radical mastoid operation and curettage. The operative treatment of the diffuse infections, whether acute or chronic, by drainage of the labyrinth. The vestibulotomies, inferior and double—technique and after-treatment. Tuberculous labyrinthitis. Necrosis of the labyrinthine capsule. Non-pyogenic infections of the labyrinth, syphilis, mumps. Non-suppurative labyrinthitis in otitis media.

After the discussion a demonstration with the Epidiascope of specimens illustrating diseases of the labyrinth will be given by Professor A. Politzer of Vienna.

Friday, July 29th.—Papers:

HORNE, Dr. Jobson. Deafness and Diseases of the Ear in relation to the Public Services and Insurance; and their Bearing upon Forensic Cases and the Choice of a Means of Earning a Livelihood.

YEARSLEY, Mr. Macleod. The Value of Ossiculectomy in Chronic Middle-Ear Suppuration.

HOVELL, Mr. Mark. Some Remarks on the Connexion between Affections of the Mucous Membranes throughout the Body and Middle-Ear Disease.

BARR, Dr. J. Stoddart. Experiments bearing upon the Practicability of Treating Meningitis (septic and specific) by Means of Lavage of the Cerebro-Spinal Subarachnoid Spaces; preliminary communication.

PATHOLOGY.

President: S. G. SHATTOCK, F.R.C.S., London.

Vice-Presidents: FREDERICK W. ANDREWES, M.D., London; ERNEST F. BASHFORD, M.D., London; Professor STUART MCDONALD, M.B., Newcastle.

Honorary Secretaries: JULIUS BERNSTEIN, M.B., 10, Bentinck Street, Cavendish Square, W.; ARTHUR E. BOYCOTT, M.D., Guy's Hospital, London, S.E.; ERNEST E. GLYNN, M.B., 62, Rodney Street, Liverpool.

The following is the provisional programme for the Annual Meeting:

Wednesday, July 27th.—Dr. Mott, F.R.S., will read a paper on the Histological Changes occurring in the Nervous System in Certain Cases of Chronic Alcoholism (with lantern demonstration), with the object of raising a discussion on the effects of alcohol.

The following is a synopsis of Dr. MOTT'S paper:

Brief introductory remarks upon the methods of recognition of functional and degenerative changes in the neurones. Necessary precautions before ascribing changes in the neurone to alcohol. The poisonous effects of alcohol are dependent upon the dose, but still more upon the susceptibility of the individual. The neuropathic and psychopathic tendency, inherited and acquired, as shown by hospital and asylum experience. (1) The transient effects upon the stable healthy nervous system of occasional alcoholic abuse. (2) The permanent effects of the continued abuse of alcohol on the stable healthy nervous system: (*a*) the subtle, unrecognizable changes which constitute a vicious habit, (*b*) the structural recognizable changes in the brain, spinal cord, and nerves found in certain cases of chronic alcoholism, occurring especially in women. These changes may be correlated with a characteristic complex of symptoms known as polyneuritic psychosis. The tendency of these cases is to get well and all the symptoms eventually to disappear under the influence of proper treatment and withdrawal of alcohol. In such, therefore, there cannot be widespread permanent destruction of the nervous elements. The fatal termination in this disease may be due to intercurrent complications; for example, pneumonia, bronchopneumonia, tuberculosis, septic infections, etc. Occasionally death may occur from heart failure or cerebral haemorrhage. These uncomplicated cases are infrequent, but obviously are the most useful for studying the effects of the alcohol *per se* on the nervous system. However, similar changes may be observed in chronic arsenic and lead poisoning; consequently we do not know whether the changes found in the nervous tissues are due to the direct influence of the alcohol or to the effects produced by the derangement of various organs of the body and the production of auto intoxication. The cases are sufficiently numerous to definitely associate the lesions with the alcoholic poisoning. Description of an uncomplicated acute fatal case of alcoholic neuritis and psychosis with degeneration of the vagus nerves, fatty degeneration of the heart, and multiple cerebral haemorrhages—illustrated by lantern slides. The literature of the subject and the speaker's experience shows that alcoholic neuritis is due to a segmental and not a Wallerian degeneration of the peripheral nerves. In most of the recorded cases and in all the speaker's cases changes in the spinal sensory and in the spinal motor nerve cells were found. Similar changes are also found in the ganglion cells of the cranial nerve nuclei. Description of the changes in the spinal motor and spinal sensory cells and of the peripheral nerves. Changes in the brain. In chronic cases met with in asylums where the dementia has become permanent we find thickening of the soft membranes, atrophy of the superficial cells and fibres of the cerebral cortex. (*a*) Microscopic changes in the cortical cells. The most notable change is in the large psycho-motor Betz cells; the changes are similar to those in the spinal motor cells. (*b*) Changes in the cortical fibres. These are not always present, but they are found in cases of permanent dementia. They consist mainly of a disappearance of the myelin staining of the tangential and supraradial fibres. Neuroglia proliferation is not marked, and may even be absent. There is, in my opinion, not sufficient evidence to show correlation between the mental symptoms of the disease as manifested in its intense form and the morbid changes found in the brain. The mental picture corresponds more with a toxic psychosis than with organic brain disease.

Paper:

WILLCOX, Dr. W. H., and COLLINGWOOD, Professor B. J. (Dublin). Therapeutic Uses of Alcohol Vapour mixed with Oxygen.

Thursday, July 28th.—A conjoint meeting will be held with the Section of Bacteriology, when Professor Wassermann will open a discussion on the Complement-Deviation Method of Diagnosis.

Friday, July 29th.—Short papers on pathological subjects, including:

ADDIS, T., M.D. Pathogenesis of Hereditary Haemophilia.

GLYNN, E. E., M.D., and KNOWLES, R. E., M.B. Some Observations upon Fatal Cases of Primary Thrombosis in the Pulmonary Artery.

HICKS, Braxton, M.B. An Investigation of the Effects of Artificial Respiration on the Stillborn.

GOODHART, G. W., M.B. Chloroform Necrosis of the Liver.

CHISHOLM, R. A., M.B. The Blood in Malignant Disease.

PRICE-JONES, C., M.B. Alterations in the Size of Red Blood Corpuscles.

BOYCOTT, A. E., M.D. Experiments on Soap Anaemia.

WARD, Gordon, M.R.C.S. Polychromasia and the Pathology of Haematomata.

BECKTON, A., M.D. Further Observations on the Absence of Altmann's Granules from Malignant New Growths.

BERNSTEIN, J. M., M.B. A Case of Phlegmonous Oesophagitis.

Arrangements will be made for the exhibition in the Pathological Museum of specimens illustrating the work of the Section. Members wishing to exhibit specimens or photographs should communicate with the Secretary of the Pathological Museum, Mr. H. W. Armit, Lister Institute of Preventive Medicine, S.W.

PHARMACOLOGY AND THERAPEUTICS.

President: Professor ARTHUR ROBERTSON CUSHNY, M.D., F.R.S., London.

Vice-Presidents: EDMUND H. COLBECK, M.D., London; ROBERT HUTCHISON, M.D., London.

Honorary Secretaries: ARTHUR FREDERICK HERTZ, M.D., 1, Weymouth Street, Portland Place, W.; DOUGLAS CHALMERS WATSON, M.D., 22, Coates Crescent, Edinburgh.

The programme, as at present arranged, is as follows:

Wednesday, July 27th.—Discussion on Treatment with Lactic Acid Organisms. To be opened by Drs. O. F. F. Grünbaum, R. Tanner Hewlett, Alexander Bryce and Vaughan Harley; followed by Drs. Saundby, Willcox, T. D. Luke, Craven Moore, George Herschell, John Haddon, and others.

The following are synopses of the opening papers:

(*a*) Dr. GRÜNBAUM: (1) Evidence from experiments by various authors that it is the presence of lactic acid in the intestinal tract that modifies the growth of the various bacilli which normally inhabit this region, and that the main advantage gained by the administration of the bacillus rather than its product is that the antiseptic is manufactured in the place where it is needed, and does not run the risk of being absorbed before it reaches that part. (2) During administration it is necessary that for a time the diet shall be such as to permit the bacillus to multiply in the intestine, and the organism given must be vigorous, and a strain which manufactures large quantities of lactic acid from carbohydrates. There are a number of different kinds of bacilli and cocci which conform to this, but there is an advantage in using a pure culture rather than a culture of several micro-organisms, in that it gives the medical man a chance to determine rapidly by the microscope whether there is any great accidental contamination. (3) The diseases which are apparently improved by the treatment come under three headings: (*a*) Those suffering from toxaemia, or rather those who either absorb toxins with abnormal ease, or have difficulty in eliminating them; (*b*) those who suffer from irritation of the intestinal mucosa caused by some micro-organism which cannot flourish in an acid medium; (*c*) a certain percentage of individuals who suffer from *maladic imaginaire*, and in whom this treatment acts by suggestion.

(*b*) Dr. TANNER HEWLETT: 1. The bacteriology of sour milks. 2. Influence of the ingestion of soured milk on the lactose-fermenting organisms of the digestive tract. 3. Influence of the ingestion of soured milk on the putrefactive organisms of the digestive tract. 4. Influence of the ingestion of soured milk on the chemical changes occurring in the digestive tract. 5. The bacteriology of various commercial preparations employed in the preparation of soured milk.

(*c*) Dr. ALEXANDER BRYCE: The indiscriminate use of curdled milk by no means free from risk. The most notable and serious deleterious effect of its use is rheumatism in some form or other. Explanation of this untoward result, with illustrative cases. Indications for the use of lactic acid therapy. Cases in which it is quite unsuitable. Curdled milk valuable as a nutrient more frequently than as a therapeutic agent.

Thursday, July 28th.—Discussion on the Effect of Digitalis on the Human Heart. To be opened by Professor Wenckebach of Gröningen, Dr. James Mackenzie, Dr. Thomas Lewis, Dr. H. H. Turnbull, and Dr. Windle, followed by Professor Huchard (Paris), Sir Lauder Brunton, Professor Faust (Würzburg), Dr. Gossage, and others.

The following are synopses of the opening papers:

(*a*) Dr. MACKENZIE: A preliminary investigation into the action of cardiac drugs revealed the fact that some that are supposed to have a powerful effect in treatment are entirely without effect, while others of the digitalis group, which had been supposed to be capricious or uncertain in their action, were found to be very reliable, provided the nature of the disease from which the individuals were suffering was taken into consideration. Moreover, the great advances that have been made in late years in recognizing the nature and mechanism of many cardiac phenomena enable the observer to detect the actual effect of certain remedies on the heart with great precision. From these considerations a plan has been instituted in the cardiac wards of Mount Vernon Hospital for the purpose of studying the effect of drugs upon the heart, and it is intended to describe the methods employed, and to indicate the results, with particular reference to the action of digitalis.

(*b*) Dr. T. LEWIS: Auricular fibrillation and the action of digitalis as it is observed clinically. A brief outline of fibrillation as it is met with in man and as it is seen experimentally. The known methods of slowing the action of the ventricle while the auricle is fibrillating. The action of the vagus and of damage to the auriculo-ventricular bundle. Complete section and the production of haemoglobin by asphyxia. Digitalis slowing in cases of auricular fibrillation. Frequency of occurrence. Type of case in which it occurs. The known action of digitalis in producing heart-block. Slowing with retention of irregularity. Slowing with return of pulse to a regular rhythm.

(*c*) Dr. H. H. TURNBULL: The results of the study of the therapeutic action of digitalis on a number of different types of case will be recorded. In this investigation special attention was paid to the dose of the tincture of digitalis necessary to produce the full physiological effect, to the character of the effects produced, and to the varying reactions shown by different forms of cardiac disease under the influence of full doses of the drug.

(*d*) Dr. WINDLE: (1) Digitalis slows the heart most constantly, certainly, and rapidly in cases of rheumatic failure in which the pulse has a persistent irregularity of a nondescript character. (2) Polygraph records of slowing under digitalis in this class of case will be shown: (*a*) Early state of fibrillation; (*b*) a later stage; (*c*) from a case of eighteen years' duration; (*d*) in nodal bradycardia. Incidentally the clinical symptoms coinciding with rate of pulse: the inadequacy of small doses of digitalis; the rapid slowing and improvement with appropriate doses; and the necessity for its continued administration in certain cases will be illustrated. Coupled digitalis beats; their therapeutic significance; relation to respiration. (3) Heart failure in cardio-sclerosis with nodal rhythm pulse slowing to the degree occurring in rheumatic nodal rhythm is the exception in cardio-sclerosis. Records will be shown of cases which did not react after continued full doses, and those in which reaction occurred. (4) The action of digitalis when the rhythm of the heart is normal. A regular slowing of the heart to the degree met with in nodal rhythm does not occur, as the pulse slows under digitalis towards the normal rate; an irregularity very frequently occurs, either (*a*) periodic and coinciding with respiratory movements; (*b*) a non-periodic irregularity. The therapeutic significance of this arrhythmia. (5) Heart-block and extra-systoles due to digitalis; their relation to respiration. (6) The action of digitalis in cases with extra-systoles. (7) The action of digitalis on pulsus alternans.

Papers:

DALE, Dr. H. H. The Active Principles of Ergot.
SHARP, Dr. J. Gordon. Ergot as a Therapeutic Agent in the Light of Recent Investigation.
MEYER, Professor Hans (Vienna). Lime Salts.
FORTESCUE-BRICKDALE, Dr. J. M. The Comparative Therapeutic Value of the Organic and Inorganic Compounds of Certain Elementary Bodies.
UNNA, Professor P. G. (Hamburg). The Chemistry of Chrysarobin and its Effects upon the Skin.
LAIDLAW, Dr. P. P. The Action of Cotarnine and Hydrastine.
EASON, Dr. John. Hormonal Method of Treating Morphomania.

MILLER, Dr. Crichton. The "Combined" Treatment of Lobar Pneumonia.
MATHISON, Dr. A. J.

Other papers from Dr. Crichton Miller, Professor Dixon, Professor Faust, and Dr. Ninian Bruce, have been accepted.

PHYSIOLOGY.

President: Professor WILLIAM H. THOMPSON, M.D., Dublin.

Vice-Presidents: JOHN SCOTT HALDANE, M.D., F.R.S., Oxford; Professor PERCY THEODORE HERRING, M.D., St. Andrews, N.B.

Honorary Secretaries: T. GRAHAM BROWN, M.B., Physiological Department, University, Glasgow; J. STRICKLAND GOODALL, M.B., Physiological Laboratory, Middlesex Hospital, W.

The following programme has up to now been arranged:

Wednesday, July 27th.—Opening remarks by the President, Professor W. H. Thompson. Discussion on the Food Requirements of Man for Sustenance and Work. To be opened by Lieutenant-Colonel Melville, R.A.M.C.; followed by Professor J. G. Hopkins, Professor Haldane, Dr. M. S. Pembrey, Dr. Robert Hutchison, Dr. Chalmers Watson, and others.

The following is a synopsis of Lieutenant-Colonel MELVILLE'S paper:

Discussion of a concrete case. Subject of experiment, 20 infantry soldiers, taken at random. Average weight, 64 kg. Duration of experiment, 12 days. Average amount of work done, internal and external, 4,034 calories per diem. Internal work placed at 3,000 calories. Reasons for this estimate given. Food supplied:—First six days: Proteids, 190 grams; carbohydrates, 510 grams; fat, 58 grams. Second six days: Proteids, 145 grams; carbohydrates, 450 grams; fat, 110 grams. Average: Proteids, 168 grams; carbohydrates, 480 grams; fat, 84 grams. Energy value: First six days, 3,426 calories; second six days, 3,503 calories; average, 3,481 calories, or net 3,140 calories (10 per cent. deducted); deficit, about 890 calories. Effect on weight and condition: General rise in early part of experiment, followed by steady fall during latter part. Discussion of primary rise in weight: Attributed to retention of proteid, the result of stimulus to muscular activity given by marching, *plus* increase in amount of proteid and carbohydrate ingested in comparison with barrack rations. Discussion of secondary fall: Daily loss of weight during second period roughly about equal to estimated deficit of energy supplied in food during that period. Illustration from starvation experiment by Benedict. Discussion of amount of proteid ingested: Reasons for believing that allowance in second week not at all too high. Difficulty in giving proteid ration on active service. Variety more important than actual quantity. Discussion of carbohydrates: Limitations as regards amount of starchy food that can be eaten by certain classes. Discussion of fats: Craving for fat felt in second week of experiment, even on allowance of 110 grams. Suggestion for discussion: Given a demand for 5,000 calories of energy, of which 2,600 are given in the form of beef and biscuit (the conditions of first six days), in what proportions should fats and sugars be given to supply the deficit of 1,400 calories?

Thursday, July 28th.—Discussion on the Factors that make for an Efficient Circulation. To be opened by Professor E. A. Schäfer; followed by Messrs. Geo. Oliver, M. S. Pembrey, J. Mackenzie, Professor Starling, Dr. Hill, Professor McWilliam, and Dr. Ivy Mackenzie.

The following is an abstract of Professor E. A. SCHÄFER'S paper:—

In considering the factors which make for an efficient circulation our attention is naturally directed in the first instance to the heart and blood-vessels since the efficiency of the circulation depends immediately upon the conditions of these organs. But as their condition depends in large measure upon the condition of the nervous system and this upon the state of nutrition of the body and upon other circumstances which are at present imperfectly understood, the subject which is put down for discussion is wider than might at first sight appear. I propose, however, in the meantime to restrict my remarks to the circumstances which more immediately affect the circulatory mechanism under normal conditions. The effective action of the heart varies (1) with its rate of rhythm, (2) with the force of the individual beats, (3) with its condition of tone. All these conditions are influenced through the cardiac nerves, by the nervous system. By way of the vagi, influences pass which moderate the rate, diminish the force, and lower the tone; by way of the sympathetic, others which make the rate of contraction more frequent and the individual beats more powerful, and which increase the tone of its musculature. The proper balance of these opposite effects, in accordance with the variations in the work which the heart at any given time is called upon to perform, must be looked upon as one of the most important factors in the maintenance of the efficiency of the circulation. The influences which reach the heart by way of the central nervous system do not originate in the cardio-inhibitory and cardio-accelerator centres. These are themselves excited to action by impulses which come to them from the periphery, or from higher nerve centres, the ultimate source of excitation being in the latter case also, probably, peripheral. These impulses come from all parts: from the skin and other sense organs, from the viscera, from muscles and tendons and serous membranes, from the blood vessels, and even from the heart itself; they may or may not be accompanied by conscious sensation. According to the manner in which they affect the heart-regulating centres, the cardiac contractions are caused to vary so as to promote under the given conditions the efficiency of the circulation to the best advantage. The action of the heart is also affected by the condition of the respiratory system, along with which may be included the tone of the abdominal muscular wall. The importance of this as a factor in the maintenance of the circulation was shown by the experiments of Dr. Leonard Hill and his co-workers. The respiratory apparatus acts by facilitating the flow of blood to the thorax, and thus to the heart. Within limits the greater the rate of blood flow to the heart the more efficient will be the circulation, for the heart is a machine which reacts to the amount of work thrown upon it in the same way that a gas engine, by more frequent explosions of its gases, produces a greater amount of energy in proportion to the resistance which it has to overcome. But in the case of the heart the response to increase of resistance does not take the form of increased rate of rhythm; the rate of rhythm tends, indeed, rather to diminish with increase of arterial pressure. This is a regulating effect produced through the vagi. On the other hand, increase of pressure up to a certain point within the coronary arteries is a direct excitant to cardiac activity. An isolated mammalian heart which has ceased to beat spontaneously may be started again by introducing fluid under pressure into the coronary system. Such fluid need not be of a nutrient character for this result to be manifested, since it will show itself even if liquid paraffin be injected into the coronary vessels; although, for the continuance of the contractions, a saline oxygenated fluid is essential. The condition of the blood vessels, and especially of the arteries, is scarcely, if at all, second in importance to that of the heart. Disregarding the slow rhythmic contractions which the vessels occasionally exhibit, and which may to a slight extent aid in the promotion of the blood flow, a condition of tonic contraction of the vessels is essential to the maintenance of the circulation. With all the vessels fully dilated the blood becomes contained in a system of flaccid tubes quite incapable of passing it on to the heart. The tonic contraction of the vessels adapts the vascular system to the amount of blood it contains, and by exercising pressure upon

it, forces it forward, the direction being determined by the fact that the greatest amount of contraction and pressure is on the arterial side and the least on the venous, as well as by the presence of valves at the commencement of the arterial system and in the veins. When we inquire into the measures by which this tonic contraction of the vessels is maintained, we again find an obvious answer to our inquiry in the nervous arrangements connected with the vascular system. The vessels, and especially the arterioles, are provided with two sets of nerve fibres, operating from a double set of nerve centres, the activities of which balance one another. The one set sends out impulses which increase the contraction of the musculature, the other set impulses which diminish it; these are the vaso constrictors and vaso dilators respectively. Their origin and path are for the most part different. The vaso-constrictors follow the ordinary course taken by motor nerves, except that they are distributed through the sympathetic; whereas most of the vaso dilators, as Dr. Bayliss has demonstrated, follow the course of the afferent nerve fibres and have their origin or distribution along with these, or may even be identical with them. Through these nerves the tone of the blood vessels and thus the efficiency of the circulation is maintained by the nervous system. The impulses which start from the nerve centres to produce vaso-constriction or vaso-dilatation originate, as in the case of these which affect the heart, mainly from the periphery—from the skin and other sense organs, viscera, muscles, heart, and even from the blood vessels themselves. The impulses therefore act in a reflex manner, causing either general or local effects according to the nature and situation of the part where they originate and of the particular afferent nerve terminations which are set in activity. But as in the case of the heart the several effects may also be produced by the action of higher centres upon the centres of origin of the vasomotor fibres. In these various ways a balance is maintained in the vascular system, whereby at a given time, and for a given set of conditions, the general or local blood pressure and the efficiency of the circulatory mechanism are normally regulated. Not very long ago the above would have been all that could have been postulated regarding the means by which the circulation is maintained in its efficiency. The work of Bernard and of Ludwig about the middle of the last century and the innumerable researches which were set in activity by their discoveries, established beyond a doubt the important relations which subsist between the vascular and nervous systems, and especially the control which the nervous system exercises over the musculature of the heart and arteries. Certain facts were, however, not easily explained by this, such, for example, as the retention or recovery of some amount of tone after complete severance of parts of the vascular system from the central nervous system; although an attempt was made to explain these phenomena by the assumption of peripheral ganglia acting as reflex centres. Although it is not impossible that such centres may exist it is no longer necessary to assume their existence, since the phenomena they were required to account for may now be otherwise explained. For we know that certain glandular organs—which not long ago were regarded as of little importance and as to the functions of which nothing had been ascertained—yield on extraction materials which when introduced into the blood markedly influence both the rhythm and tone of the heart and the contraction of the blood vessels. Those which produce the greatest effect of this nature are the medulla of the suprarenal capsules and the posterior lobe of the pituitary body. The action is not entirely similar in the two cases, for while an extract of suprarenal medulla increases both the rate of rhythm and the tone of cardiac muscle, and strongly stimulates to contraction the muscular tissue of the blood vessels (with the exception of those of the heart, and perhaps also of the lungs), an extract of the pituitary body whilst markedly raising the tone of the cardiac muscle, does not increase its rate of rhythm, but may even diminish it, and while producing constriction of nearly all the arterioles in the body, tends to produce dilatation of those of the kidney, associated with an increased secretion of urine. Although it has not yet been possible to prove in the case of the pituitary body that the substances which cause these effects are passed into the blood, and are thus normally brought to bear upon those tissues which are affected when the extracts are artificially introduced into the blood stream, such passage into the blood has been definitely proved to occur in the case of the suprarenal capsules. The blood flowing from these can, in fact, be shown to contain a larger amount of the pressor substance of the extract than ordinary blood. We are probably justified in concluding that a similar passage into the blood, either directly or indirectly (through lymph channels or by the cerebro-spinal fluid), occurs in the case of the pituitary body also. In both cases it is probable that the substances secreted exercise a material influence upon the circulatory system; this is, indeed, evidenced in the case of the suprarenals by the weakness of the heart and the low blood pressure which follow their destruction by disease or their experimental removal. And the fact that experimental removal of the pituitary body is equally fatal with that of the suprarenal capsules points to the supreme importance to the organism of the substances which are produced by it, the most active of these substances being those which affect the circulatory system. The pituitary contains also a depressor substance which diminishes the force of the heart and inhibits the contraction of the arterioles, but the action of this is usually far overbalanced in the artificial extract by the material which produces the opposite effects. It is, however, possible that naturally the two substances may be passed into the blood in such proportions as the requirements of the vascular system and of the organism in general appear to indicate. If this is the case there would be a balancing action caused by the materials of the secretion comparable to that caused by the nerves which influence the contraction of the vascular musculature. It must further not be forgotten that a direct action upon the heart and blood vessels of hormones produced by these organs—perhaps also by other ductless glands—only represents a portion of their influence in increasing the efficiency of the circulation. It is probable that they also assist the nervous factors by their beneficial action upon the nerve centres themselves. In the instance of the pituitary body at least there appears to be evidence, mainly of a clinical character, that its extracts exert a tonic effect upon the nervous system in general. Such an effect is manifest in cases of shock, and may under normal circumstances be presumed to assist in maintaining condition of tonus of the nerve centres, which is essential to the performance of their functions, not the least important of which is, as we have seen, their action in maintaining the proper balance of the circulation. In the above remarks I have dealt only, as I proposed at the start, with the circulation under normal conditions, and with such factors alone as are more strictly concerned with the vascular mechanism. I have not attempted to deal with the manner in which the circulation is affected by varying conditions of the blood, by variations in the general nutrition of the body, by drugs, or under abnormal conditions of the heart and vessels. I am content to leave the consideration of these to succeeding speakers, who will be better able than myself to discuss them satisfactorily.

Friday, July 29th.—Paper: Dr. Edridge-Green, Some Visual Phenomena connected with the Yellow Spot. Dr. Edridge-Green will also demonstrate his lamp for testing colour vision.

Demonstrations will be given by Professor Haldane on the Causes of Absorption by the Lungs in Animals and Man, and Dr. C. G. Douglas on the Production of Cheyne-Stokes Breathing.

PSYCHOLOGICAL MEDICINE AND NEUROLOGY.

President: THEO. BULKELEY HYSLOP, M.D., F.R.S.E., London.

Vice-Presidents: ARCHIBALD R. DOUGLAS, L.R.C.P., Lancaster; WILLIAM GRAHAM, M.D., Belfast; THOMAS D. GREENLEES, M.D., London; J. RISIEN RUSSELL, M.D., London; DAVID G. THOMSON, M.D., Norwich.

Honorary Secretaries: ARTHUR STANLEY BARNES, M.D., 141, Great Charles Street, Birmingham; ROBERT HUNTER STEEN, M.D., City of London Mental Hospital, Dartford; REGINALD JOHN STILWELL, M.R.C.S., Moorcroft, Hillingdon, Uxbridge.

The following subjects have been selected for special discussion:

Wednesday, July 27th.—Discussion on Marriage and Insanity. To be opened by Dr. G. H. Savage; followed by Sir James Crichton-Browne, Drs. Bevan-Lewis, Shuttleworth, Mercier, Percy Smith, Robert Jones, Maurice Craig, and others.

The following is a synopsis of Dr. SAVAGE'S paper:

At present we can only make suggestions. Legislation may follow in time. Should there be a bar to the marriage of those who have had an attack of insanity; if so, what exceptions should be made? The objection is stronger in some forms of insanity than in others—for example, in developmental insanity, epochal insanity, recurring insanity, epileptic insanity, moral insanity, general paralysis of the insane and pseudo general paralysis of the insane, brain syphilis, locomotor ataxy. The question is one of the danger to the individual and the danger to the offspring. In many cases of so-called hysterical and adolescent insanity marriage may not only be allowed but recommended after a period of some years of perfect soundness of mind and body; both the contracting parties should have full knowledge of the nature of the illness. I see dozens of blighted lives, women who have missed their mate and their mission. Marriage should never be advised as a cure for any form of mental disorder, however slight; examples; some questions of divorce and nullity depending on insanity.

Paper:

BAUGH, Dr. Leonard D. H. Paranoidal Symptoms at the Female Climacteric.

Thursday, July 28th.—Discussion on the Treatment of Tabes. To be opened by J. Risien Russell, M.D., London. The following will take part in the discussion: Drs. David Ferrier, Byrom Bramwell, Ernst Feibes, Alexander Bruce, Lieven, Judson Bury, J. Michell Clarke, G. Farquhar Buzzard, and Gullan.

The following is a synopsis of Dr. RISIEN RUSSELL'S opening statement:

The only rational treatment of the disease is that based on a correct conception of its etiology and pathology. The evidence in support of the belief that the disease owes its origin to syphilis far outweighs that which can be adduced in favour of any other view of its etiology. It is impossible to overestimate the importance of antisyphilitic treatment of the affection. It is contrary to fact that the subjects of tabes are made worse by antisyphilitic treatment. Mercury is the drug on which most reliance is to be placed. The plan of exhibiting the drug by inunction, which is in vogue at Aachen (Aix-la-Chapelle) either alone or in conjunction with intramuscular injections, is that to be recommended. Difficulties of securing efficient conduct of the treatment in this country. No reliance should be placed on the administration of mercury by the mouth. Adjuncts in the treatment. Precautions that are necessary while it is in vogue. Contraindications to the treatment. A long interval between the primary syphilis and the occurrence of tabes is no necessary bar to the possibility of good resulting from the treatment. Statistics that appear to prove that the more the primary syphilis is treated by mercury the shorter the interval before tabes develops, should not be allowed to deprive the patient of the only rational method there is of treating his disease. The fact that the primary syphilis has been well treated is no adequate reason why antisyphilitic treatment should be withheld from the patient suffering from tabes.

Papers:

BARANY, Dr. (Vienna). The Vestibular Apparatus and the Cerebellum.

WILLIAMS, Dr. Tom A. (Washington). The Practical Lessons to be Derived from Recent Work upon Hysteria.

Friday, July 29th.—Papers.

THOMSON, Dr. D. G. A Post-graduate Curriculum and Diploma in Psychological Medicine.

ASH, Dr. Edwin. The Psychological Treatment of certain Functional Conditions.

WILSON, Dr. S. A. K. The Diagnostic Value of the *X* Rays in Nervous Diseases (lantern demonstration).

BRUCE, Dr. Alexander. Sclerosing Lymphangitis of the Spinal Cord with Multiple Neuromata (lantern demonstration).

RENTOUL, Dr. R. R. The Proposed Sterilization of Certain Degenerates.

HERNAMAN-JOHNSON, Dr. The Occurrence of Pain and other Sensory Disturbances in the Chronic Stage of Infantile (Spinal) Paralysis.

JOLLY, Dr. W. A. The Knee-jerk and Simple Reflexes.

Dr. S. A. K. Wilson will give a demonstration by lantern slides: The Diagnostic Value of the *X* Rays in Nervous Diseases.

RADIOLOGY AND MEDICAL ELECTRICITY.

President: J. MACKENZIE DAVIDSON, M.B., London.

Vice-Presidents: C. THURSTAN HOLLAND, M.R.C.S., Liverpool; H. LEWIS JONES, M.D., London; CECIL R. C. LYSTER, M.R.C.S., London; WILLIAM F. SOMERVILLE, M.D., Glasgow.

Honorary Secretaries: W. IRONSIDE BRUCE, M.D., 10, Chandos Street, W.; LEONARD A. ROWDEN, M.B., 32, Park Square, Leeds.

The following programme has been arranged:

Wednesday, July 27th.—Addresses by the President of the Section and Sir J. J. Thomson, F.R.S.

Papers:

JONES, Dr. Lewis. On the Treatment of Some Corneal Ulcers by Zinc Ions. Zinc ionization has proved successful in the treatment of four cases of Mooren's ulcer or marginal ulcer of the cornea. Reinfection of the cornea from the conjunctival sac, to which the intractable nature of this form of ulceration is due, can be prevented by the use of a zinc lotion, but it does not suffice to cure the corneal ulceration, for which the penetration of zinc ions into the substance of the cornea is necessary. Currents of 1 or 2 milliampères are sufficient.

HOLLAND, Mr. Thurstan. A Screen for Examination in the Upright Position. The necessity of the screen examination of the chest and abdomen (for stomach work) being made with the patient standing or sitting. The difficulty of ensuring adequate protection to the operator during the screen examination *and whilst handling the patient.* A method of protection devised by the author, especially for hospital work. A model of the screen will be shown.

MORTON, Dr. Reginald. Some Bony Changes Observed in a Case of Chronic *X* Ray Dermatitis.

SOMERVILLE, Dr. W. F. The Relief of Pain and Discomfort by High Frequency Currents.

Thursday, July 28th.—Papers:

JELLINEK, Dr. On Electro-Pathology.

FREUND, Dr. On the Conditions Necessary to Obtain Radical Cures from *X*-Ray Treatment.

TURNER, Dr. Dawson, and Dr. T. G. GEORGE. Some Experiments on the Effects of the *X* Ray in Therapeutic Doses on the Growing Brains of Rabbits. Object of research: To determine the action, if any, of *x* rays on the developing nervous system when the rays are administered in therapeutic doses. One half of a rabbit's cranium was exposed to a therapeutic dose of *x* rays, repeated in some cases two, three, and four times, at proper intervals. Macroscopic and microscopic examinations of the two halves of the brain were afterwards made. Difficulties in carrying out the experiments and in coming to conclusions.

BAILEY, Dr. Fred. Description of a Method of Treatment by Radiant Heat and Iodine Ionization. The treatment is applicable to fibrotic deposits, thickenings, or adhesions present in or about joints in fibrositis, chronic rheumatic and rheumatoid arthritis, etc. Its object is to increase the supply of arterial blood to the joints, and to drive iodine ions into the affected parts to effect a solvent action on the fibrinous deposits. The apparatus required and the method of application will be fully described, as well as the method of treating two joints at the same time, and also a matter of estimating roughly when the disease is above the average, the value of movements to stretch adhesions at as early a stage as possible, and of application, concluding with an analysis of 21 cases.

ROWDEN, Dr. Leonard. The Value of Screen Examination in the Diagnosis of Renal Calculus. By proper screen examination many errors in the *x*-ray diagnosis of renal calculus can be avoided, its advantages being: (1) The proper quality of rays for the particular case in hand can be more certainly obtained, and therefore better contrast secured, and more likelihood of detecting a shadow. (2) The movement of any shadow or shadows can be studied, which in many cases will differentiate shadows cast by objects other than calculus. (3) The area of illumination can be accurately cut down to very small dimensions, thus very greatly increasing the definition of any suspicious spot.

SIMPSON, Dr. J. B. The Advantages of *X* Rays in Country Practice. (1) Difficulties in country practice in diagnosis, prognosis, and treatment of injuries and diseases of bones and joints. (2) Advantages of *x* rays in these conditions. (3) Simple apparatus only required. (4) A few illustrative cases, with lantern slides, will be related.

SIMMONS, Dr. The Constitution and Organization of the *X*-Ray Department of a General Hospital. The necessity of every general hospital having an *x*-ray department conducted by a qualified medical man of special experience in *x* ray and electrical work. The requirements from the surgical, medical, and special departments of a hospital that must be met by an *x* ray department. A description will be given of the *x* ray and electrical department of St. George's Hospital and of the various pieces of electrical and *x*-ray apparatus, their distribution in the *x*-ray room, and the reason for the particular position of each piece of apparatus.

Friday, July 29th.—Papers:

LAZARUS-BARLOW, Dr. On the Skotographical Properties of Tissue.

BARCLAY, Dr. The Normal and Pathological Stomach as seen by *X* Rays.

WENCKEBACH, Professor. A New Stand for *X*-Ray Work.

ORTON, Dr. Harrison. Some Points in the *X*-Ray Diagnosis of Pulmonary Tuberculosis. Apparatus required. Position of patient during examination; examination of apices of lung and of diaphragm movements. The earliest signs; examination by screen and by negatives. Importance of not relying on *x* ray findings alone. Can *x* rays detect tubercle of the lungs before ordinary physical signs appear?

JORDAN, Dr. Alfred. Types of Phthisis from the Radiographer's Point of View. Early diagnosis: Comparisons with clinical, pathological, and bacteriological diagnosis. Diaphragm: In phthisis; in other diseases of the chest. Heart: In phthisis; in other pulmonary diseases. Pulmonary phthisis: Principal types as regards distribution, place of starting, appearance of lesion, etc.; appearances of a progressive case, of a case undergoing cure. Differential diagnosis: Old fibrosis, bronchiectasis, bronchitis and emphysema, pneumonia, aneurysm. Phthisis complicating other diseases: The above (under differential diagnosis); also pleural effusion, pneumothorax, pyopneumothorax, etc.

PIRIE, Dr. Hyperidrosis Treated by *X* Rays. Effect of *x* rays on quickly growing and young cells. Preliminary observations of sweat glands unintentionally destroyed by *x* rays. Type of case suitable for *x*-ray treatment. Axillae the most troublesome part. Hands and face also treated. Characteristics of the perspiration treated—namely, worse in cold weather, excitement, or worry; none at night. Account of six cases and results.

STATE MEDICINE.

President: LORD IKESTON, M.D., D.C.L., London.

Vice-Presidents: FRANCIS CLARK, M.D., M.R.C.P., D.P.H., Hong Kong; S. MONCKTON COPEMAN, M.D., F.R.S., London; THOMAS W. H. GARSTANG, M.A., M.R.C.S., D.P.H., Altrincham; HERBERT JONES, L.R.C.S.I., D.P.H., Hereford; JAMES MALCOLM MASON, M.D.Brux., L.R.C.P., D.P.H.Camb., London; CHARLES E. PAGET, M.R.C.S., Northampton.

Honorary Secretaries: GEO. FREDERICK MCCLEARY, M.D., 7, Belsize Park Gardens, Hampstead, N.W.; JOHN EDWARD SANDILANDS, M.D., Town Hall, Kensington, W.

The following discussions have been arranged:

Wednesday, July 27th:

1. The Relation of Poor Law Reform to Public Health Administration. To be opened by Mrs. Sidney Webb; followed by Mr. C. S. Loch, Drs. Ford Anderson, H. Cooper Pattin (M.O.H., Norwich), J. F. J. Sykes (M.O.H., St. Pancras), and R. A. Lyster (M.O.H., County Hants).

The following is an abstract of Mrs. WEBB'S paper:

The sweeping condemnation of the existing Poor Law Medical Service that the recent Royal Commission unanimously pronounced did not proceed from any dissatisfaction with the Poor Law medical officers, but from public health considerations. The defects revealed by the Commission are (1) the failure to provide any treatment at all for many cases, and to reach the others at the incipient stage; (2) the "deterrent" effect of the relieving officer and of the whole Poor Law system; (3) the adverse influence on treatment of the unsatisfactory system of remuneration of the district medical officer and of its inadequacy; (4) the saddling of the district medical officer with the cost of drugs, etc.; (5) the failure to provide for nursing, suitable nourishment, and convalescence; (6) the lack of connexion between the domiciliary and the institutional treatment; (7) the inadequacy of the mixed workhouse as a general hospital (in structure, in method of government, in professional staffing, in equipment, etc.); (8) the lack of suitable provision for (*a*) phthisis, (*b*) measles and whooping-cough, etc. The position is complicated by the amount, hitherto unrealized, of duplication and overlapping of rival rate-supported medical agencies. The ubiquitous public health medical service (with its 700 municipal hospitals, treating 100,000 patients annually, opening their doors to one disease after another and beginning to add out-patient departments; its growing staffs of "health visitors," giving "hygienic advice"; its domiciliary nursing staffs, its "milk dispensaries," its "school clinics") is rapidly coming to deal with as many individual cases annually as the Poor Law. Both alike are undermining the general practitioner. Three courses are open: (1) The *status quo*, with minor improvements, tempting to many, but (*a*) not practicable; (*b*) would mean still more undermining the private practitioner. (2) The Majority Report based on extension of "provident" system and "contract practice." This (*a*) does not stop the overlap; (*b*) leaves both the Poor Law and the public health service to develop at the cost of the private practitioner; (*c*) giving up the "deterrent" Poor Law system. (3) The Minority Report unites the Poor Law medical service and the public health medical service *en bloc*, saving all personal rights, in a combined county medical service, under health committees and Minister for Health. It provides instant treatment for all in need, but safeguards private practice by providing for rigorous charge and recovery, so as to discourage resort to it, to all families above bare subsistence (say, 3s. per week per adult unit).

2. The Etiology and Prevention of Summer Diarrhoea. To be opened by Dr. Niven (M.O.H., Manchester), followed by Dr. Boobbyer (M.O.H., Nottingham) and Dr. J. H. Clement (M.O.H., Beckenham).

The following is a synopsis of Dr. NIVEN'S paper:

Summer diarrhoea may be described as an infectious disease, with low intensity of infection. A high fatality

appears to be determined by such factors as previous health of the infant, want of maternal care or knowledge, and artificial feeding. The disease is most fatal in the central parts of large towns, and it is one of the diseases closely linked with social condition. Its infectious character seems to be shown by its predilection for centres of population, by the mode in which its fatality shifts from one part of a large area to another, by direct investigation of fatal cases, and by the steep summer wave. This wave is the important feature in diarrhoea. It coincides with the fly season, fatal cases beginning to increase, however, after flies have become fairly numerous. A close correspondence exists between the number of flies captured in traps distributed in Manchester and the number of fatal cases commencing in the same week, or of deaths occurring in the following week or in the week next but one. Reasons are given for supposing that this relationship is not fortuitous, but that houseflies transmit the infection of the diarrhoea. It follows that all horse manure and other fermentable refuse should be removed to a distance from centres of population at intervals not exceeding a week.

Thursday, July 28th:

1. Town Planning in Relation to Public Health. To be opened by Dr. John Robertson (M.O.H., Birmingham), followed by Drs. E. W. Hope (M.O.H., Liverpool), Raymond Unwin, T. C. Horsfall, Fremantle, and others.

The following is a synopsis of Dr. JOHN ROBERTSON'S paper:

Town planning is a revival in very modern times of a process which is of very ancient origin. The Housing and Town Planning Act cannot be regarded as a contribution to the needed legislative powers. Objects of Act stated to be the "Securing proper sanitary conditions, amenity, and convenience." The necessity for town planning has largely arisen from enormous growth of towns, uncontrolled except as to their structure and sanitation of the dwellings. On the other hand, many Continental towns have for economic reasons paid great attention to the plan. A study of many of these inspired Mr. Horsfall to think that that part of the work relating to planning might usefully be combined with our existing regulations relating to dwellings. One of the most important results of town planning will be reducing the number of houses per acre. Number of houses per acre cannot be uniform, but for new cottage houses probably not more than an average of twelve per acre. This can only be rendered possible if traffic roads are constructed partly at expense of local authority, while non-traffic roads are cheapened and "adopted." It is possible to arrange narrow non-traffic roads in healthful manner, and to arrange that some of them may become traffic roads if necessary. Land should be set aside for recreation grounds or playing fields, etc., in advance of requirement. Spreading of urban population necessitates rapid means of locomotion. Almost as necessary as spreading the population is the duty to assist manufacturers with cheap land, canal, railway, gas, electric power, and other needful adjuncts. This means that most factories should be allotted special areas, thus removing dust and smoke from residential properties, and making it possible for them to carry on business with other than steam power. Amenity has powerful indirect influence on public health.

2. The Administrative Control of Ophthalmia Neonatorum. To be opened by Dr. Geo. Reid (County M.O.H. Staffordshire), followed by Mr. Falker and Mr. Bishop Harman.

The following is a summary of Dr. REID'S paper:

No argument is needed to emphasize the importance of providing machinery for dealing with cases of ophthalmia neonatorum, which is the cause of at least one-third of the cases of permanent blindness. Apart from the humanitarian aspect of the question, the financial return would amply warrant the trifling expenditure needed to cope with the disease, as the cost of educating a blind child amounts, in round figures, to £500 compared with £30, the cost of educating an ordinary child. A blind person is also of less value to the State than one who possesses his sight. Public health authorities have ample powers for establishing the necessary preventive machinery, and there is no branch of public health work which, from the point of view of success, will better repay the work entailed. All that is needful is to ensure (*a*) that the public health staff receives early information of cases; and (*b*) that arrangements shall be made to ensure that every case at once receives medical treatment. The first essential can be secured (1) by including the affection among the list of diseases which must be compulsorily notified, and (2) by the adoption of the Notification of Births Act, 1907. The second essential may be provided for under Section 133 of the Public Health Act, 1875. For immediate information one must depend upon notification, but it is well also to possess the means of following up the cases after the completion of treatment in case of a relapse, and this can readily be done by a health visitor appointed under the Notification of Births Act. The procedure on receiving notice of a case should be to cause immediate inquiry to be made as to whether a medical man has been called in, and if this has not been done the authority should urge such a course, and, if need be, defray the cost according to a pre-arranged scale of payment. In addition to medical treatment, however, skilled nursing is also an essential, and the services of two nurses should be available for each case, one for the day and the other for the night; and these also should be provided by the authority in all cases where the circumstances of the family do not allow of the necessary payment for such services. Such cases are not numerous; the duration of treatment is usually short; and the cost, having regard to the enormous gain, is trifling. In some cases, owing to poor home conditions, it may be desirable to send the infant to a hospital; but usually this is not necessary, and when it is the families are so poverty-stricken as to come under the pauper class, for whom the workhouse infirmary is available.

Friday, July 29th:

1. The Provision of Medical Treatment by Local Education Authorities. To be opened by Dr. James Kerr, followed by Professor Kenwood, Drs. A. E. Remmett Weaver (M.O.H., Abertillery), Barwise (M.O.H., County Derbyshire), Cooper Pattin (M.O.H., Norwich), R. H. Lyster (M.O.H., County Hants), W. G. Savage (M.O.H., County Somerset), Mr. Cyril Jackson, and Mr. A. F. MacCallan, F.R.C.S. (Chief Inspector of Ophthalmic Hospitals, Egypt).

The following is a synopsis of Dr. JAMES KERR'S paper

Public arrangements for medical treatment of school children is the inevitable result of general medical inspection. The medical inspector should never treat his own cases. The school cases can be grouped into five classes, including 90 to 95 per cent. of all cases: (i) Dental; (ii) visual; (iii) aural (including throat); (iv) debilitated, anaemic, and strumous children; (v) ringworm. The Class (iv) can be left out, as medical treatment is second to hygienic environment. For the majority of these 95 per cent. neither hospitals nor private doctors offered material help. Not one in fifty appeared to get the slightest benefit from the private practitioner, perhaps because they did not go; to the hospitals they were simply cases to be got rid of. If starting *de novo*, the school clinic appears the only complete and scientific solution; it gives every doctor his chance and reasonable reward, saves the parents' time and much annoyance, relieves the hospitals, and obtains relief for every child requiring it. The way must be made easy. The Medical Treatment Act blocks the way now. London County Council acquiring experience from its arrangements with

hospitals and existing institutions. The arrangements are, on the one hand, the Council pays the hospital 2s. per head for establishment charges, and £50 yearly for each half-day weekly given by doctors; and, on the other hand, the Council charges parents about 4s a case, remitting a proportion to destitute cases. This is a business arrangement, and in no way charity. Arrangements negotiated in special districts with associations of medical men. The scheme set forth in the British Medical Journal, of medical men assessing suitability of individuals for public provision, not likely ever to come into field of practical politics. The difficulties of general practitioner have nothing to do with medical inspection or treatment of school children, but are largely due to the snobbish idea that there is something more dignified in unpaid work. The idea of school clinics has been ignorantly condemned by general practitioners. If school clinics are ever run by councils there are advantages to the general medical profession in working them on a rota of several years. Councils must then select the best men, and not give preference to a class. The same with associations of medical men. Local general practitioners should not object in order to have special selective or protective treatment; bolstering up a class would not be in the interests of either the profession or the public. Any hospital doctor or clinical assistant who does this public work at less than the recognized fee paid to the hospital is virtually a blackleg, but this is the only case where other practitioners would have a logical case against medical treatment as a public provision.

2. The Reform of Death Certification. To be opened by Sir William Collins, followed by Dr. R. A. Lyster (M.O.H. County Hants).

Papers:

Fremantle, Mr. F. E., County M.O.H., Herts. The Influence of Part-time Medical Officers of Health on Public Health.

Hogarth, Dr. A. H., County M.O.H., Bucks. The Tuberculosis Problem in County Areas.

Butler-Hogan, Dr., M.O.H., Tottenham. English Public Health Law and its Administration.

SURGERY.

President: Sir Victor Horsley, F.R.C.S., M.B., F.R.S. London.

Vice-Presidents: Frederick Dougan Bird, M.S., M.R.C.S., Melbourne; John Bland-Sutton, F.R.C.S., London; Professor A. J. McAuley Blayney, F.R.C.S.I., Dublin; George H. Makins, C.B., F.R.C.S., London; F. N. Gisborne Starr, M.B., Toronto; Professor Hy. Alexis Thomson, M.D., Edinburgh.

Honorary Secretaries: Herbert Sherwell Clogg, M.S., 143, Harley Street, W.; Douglas Drew, F.R.C.S., 6, Wimpole Street, W.; William J. Greer, F.R.C.S.I., 19, Gold Tops, Newport, Mon.

The following programme has been arranged:

Wednesday, July 27th.—Discussion on the Principles which should Govern the Operative Treatment of Simple Fractures. To be opened by Mr. Arbuthnot Lane; followed by Messrs. Gilbert Barling, E. Deanesly, W. G. Spencer, C. H. Fagge, Maynard Smith, Robert Jones, Heygate Vernon, H. J. Paterson, R. H. A. Whitelocke, Crawford Renton, W. Wheeler, Archibald Young, C. J. Morton, E. Hey Groves, Donald Armour, Andrew Fullerton, A. S. Barling, Ch. Willems (Ghent), G. N. Huggins, E. W. H. Shenton, W. S. Haughton, and others.

The following is a synopsis of Mr. Lane's paper:

(1) The possibility of effecting the restoration of a broken bone to its normal form by any means other than operative. (2) The results of such treatment. (3) The value of radiography. (4) The advantages gained by operative interference. (5) The best operative technique. (6) Any special objection to operation whether general or local.

The title of this discussion has been purposely chosen with the view of obtaining a definite and authoritative statement with regard to when it is essential that operative treatment should be undertaken. At the present time the question of the complete restoration of a fractured bone is of primary importance from a medico-legal point of view, and is very incompletely discussed in works on surgery; of equal importance is the correct interpretation of a radiogram of a fractured bone.

The attention of those taking part in the discussion is directed to the above suggestions. It is desired that records or statistics of individual cases should not be presented to the Section.

Thursday, July 28th.—Discussion on the Surgical Treatment of Exophthalmic Goitre. To be opened by Professor Theodore Kocher and Dr. Hector Mackenzie; followed by Messrs. G. Heaton, Robert Campbell, R. Kennedy, Gilbert Barling, Donald Armour, E. Deanesly, C. H. Fagge, W. G. Spencer, Thelwall Thomas, F. Greaves, E. Hey Groves, Wilfred Trotter, C. Leedham Green, Dr. H. A. Bruce (Toronto), and others.

The following is a synopsis of remarks by Dr. Hector Mackenzie:

(1) Overactivity or perverted activity of the gland explains most of the symptoms of the disease, and the surgical treatment is based upon the assumption that overactivity is the cause of the disease. (2) The relation of mental strain, fright, worry, etc., to the onset of the disease in certain cases suggests that overactivity of the gland is not entirely responsible for the symptoms. (3) The significance of the enlarged thymus always present in fatal cases is uncertain. (4) The immediate risk to life from operation. (5) Results of operation. (6) Results of operation compared with those of medical treatment. (7) The question whether results justify operation in cases of severe type, and whether operation is desirable in cases of mild type.

Immediately following the discussion on the surgical treatment of exophthalmic goitre, Professor Crile will read a paper, entitled, Observations on some of the Factors that Determine the Results of Surgical Operations. At 2.30 p.m. a joint meeting of the Surgical, Dermatological, and Laryngological Sections will be held, when Dr. Louis Wickham (Paris) will give a demonstration on radium in the treatment of cancer.

At 4 p.m. cases illustrating the surgical treatment of diseases of the nervous system will be shown at the National Hospital for the Paralysed and Epileptic, Queen Square, W.C., by Sir Victor Horsley, Mr. Donald Armour, and Mr. Sargent.

Friday, July 29th.—The time at the disposal of the Section is limited, but it is proposed that the following papers should be read in the order indicated:

Bird, Mr. Fred. D. (Melbourne). Conditions Simulating Cancer of the Stomach.

Thomson, Professor Alexis. The Pathological Anatomy of Cancer of the Stomach and the Conditions which are mistaken for it. (With lantern demonstration.)

Paterson, Mr. H. J. Early Diagnosis and Treatment of Gastric Cancer.

Deanesly, Mr. E. Excision of Gastric Ulcers.

Wheeler, Mr. W. Two Cases of Extensive Disease of the Stomach Treated by Gastrectomy.

Miles, Mr. W. Ernest. The Radical Abdomino-perineal Operation for Cancer of the Rectum and of the Pelvic Colon, with a table showing the results of 24 cases in which the method has been employed.

Bond, Mr. C. J. Remarks on a Method of Establishing Colotomy Openings and Ureteral Permanent Fistulæ by means of Elevated and more Readily Controlled Mucous Openings. (With lantern slides.)

MacLaurin, Mr. C. (Sydney). The Clinical Manifestations, Diagnosis, and Treatment of Liver Hydatid.

Kennedy, Mr. R. A Case of Suture of the Circumflex Nerve.

BIDWELL, Mr. L. Hepatic Abscess following Acute Appendicitis.

MUMMERY, Mr. P. Lockhart. The Operative Treatment of Chronic Mucous and Ulcerative Colitis.

MOULLIN, Mr. C. Mansell. The Action of Gastro-enterostomy in cases of Gastric and Duodenal Ulcer in which there is no Mechanical Difficulty.

FENWICK, Mr. E. Hurry. Removal of the Urinary Bladder.

BISHOP, E. Stanmore. Some Points in the Technique of Gastric Surgery.

TROPICAL MEDICINE.

President: FLEMING M. SANDWITH, M.D., London.

Vice-Presidents: HENRY P. KEATINGE, M.B., Cairo; GEORGE C. LOW, M.B., London; LAURANCE DUDLEY PARSONS, M.B., Gibraltar; Colonel JAMES R. ROBERTS, I.M.S., F.R.C.S., Indore, C. India; RAGHAVENDRA ROW, M.D., Bombay.

Honorary Secretaries: H. SINCLAIR COGHILL, M.B., London School of Tropical Medicine, Royal Albert Dock, E.; WILLIAM THOMAS PROUT, C.M.G., M.B., 78, Rodney Street, Liverpool; EMRYS ROBERTS, M.D., 5, Buckingham Place, Queen's Road, Clifton, Bristol.

The following programme has been arranged:

Wednesday, July 27th.—10 a.m., Introductory remarks by the President.

10.15 a.m., Discussion on Human Trypanosomiasis. To be opened by Colonel Sir David Bruce, C.B., F.R.S.

The following is a synopsis of Colonel Sir DAVID BRUCE's paper:

The last discussion on sleeping sickness by this Section of the British Medical Association took place in 1904, when I had the honour of opening it. At that time I laid down a series of propositions, and said it would be interesting to find out in the future how many of them would hold good. I will run rapidly over these six-year old propositions: (1) *The first was that the trypanosomes found in the blood of natives on the West Coast of Africa and in Uganda are identical.* This still holds good. (2) *The second was that the so-called trypanosoma fever of West Africa is the first stage of sleeping sickness.* This has also held good. (3) *The third was, that neither the native nor the European is immune to this disease.* This, again, has held good up to the present year. (4) *The fourth was, that as regards prognosis, instead of being favourable, as had been stated, the mortality was* 100 *per cent.* This is a controversial point, but, in my opinion, there is no absolute proof up to the present that a single person has recovered from sleeping sickness. (5) *The fifth was, that there was no evidence to show that any of the lower animals take any important part in the spread of sleeping sickness.* This, so far as direct evidence goes, is still true. But it is possible that some modification will require to be made in regard to this opinion in the future. On the lake shore, near the Sleeping Sickness Commission's laboratory at Mpumu, in Uganda, the tsetse flies have been found to retain their infectivity for some two years after the native population have been removed from the sleeping sickness area. It is difficult to understand how these flies retain their infectivity for such a long time. It may be that the flies live for more than two years, and that they are able to retain their infectivity as long as they live. Or it might be that some of the natives creep back to the lake shore, and in this way infect the flies. Or, thirdly, it may be that some of the wild animals or birds on the lake shore are acting as a reservoir of the virus, and so keep up the infectivity of the flies. It is true that we kept flies infective in the laboratory for some seventy-five days, and it is probable that flies may live much longer than this in their native haunts. It is also probable that a fly retains its infectivity as long as it lives. In regard to the fly being able to obtain the virus from infected natives that was also to some extent possible, as natives during that time were passing to and fro between the islands and the mainland to attend a local market. Against this there is the fact that the tsetse flies on the island of Damba were found to be infective as late as May of the present year, and, so far as I am aware, this island has been uninhabited for a long time. As to the possibility that some of the wild animals on the lake shore may have become infected, and so are acting as a reservoir of the virus, it is quite an easy matter to infect cattle with *Trypanosoma gambiense*, to infect flies from them, and to pass on the disease by means of these flies to healthy animals. It has also been proved by direct experiment that the antelope, such as the water-buck and the bush-buck, are just as capable as the cattle of being infected with sleeping sickness. In one case a naturally infected ox was found on one of the islands in the lake, and on another occasion a naturally-infected wild monkey was also found. However, the result of the injection of the blood of several hippopotami, antelope, crocodiles, and birds, shot in the sleeping-sickness area, has up to the present proved negative. We must, therefore, wait and make further experiments before we are able to answer the question as to whether the lower animals take any part in the spread of sleeping sickness. But the opinion is growing in my mind that it is more than probable that the wild game on the lake shore will be found to act as a reservoir. In this case the fly area may remain infective for an indefinite period, and the return of the native population may require to be postponed for a longer time than was at first anticipated. Other methods of stamping out the disease may require to be experimented with. Among these the gradual bringing of the lake shore under cultivation might be feasible. Wild game, tsetse flies, and sleeping sickness are not compatible with civilization and cultivation. (6) *The sixth proposition was that sleeping sickness is conveyed from the sick to the healthy by means of a biting fly—the Glossina palpalis.* During the last six years this has been proved up to the hilt. In every part where sleeping sickness is found there also is found the *Glossina palpalis*. Lately, however, there has been a revival of the disposition to believe that sleeping sickness may be spread by other species of tsetse flies, such as *morsitans* and *pallidipes*. In North-East Rhodesia cases of the disease have occurred in the valley of the Luangwa, which are supposed to have been contracted there, although up to the present *Glossina palpalis* has never been found in that valley. The tsetse fly found in this valley is *Glossina morsitans*, and the suspicion is that this fly is responsible for these cases. Until, however, this has been thoroughly investigated, we must cling to the belief that in Nature *Glossina palpalis* is the only carrier. Otherwise the present plan of preventing and stamping out sleeping sickness by removing the natives from the *Glossina palpalis* area would have doubt and suspicion thrown upon it, and administrative authorities would be less keen to act. (7) *The seventh proposition was that it had been proved by laboratory experiment that other members of the genus Glossina were able to convey the virus from the sick to the healthy, and that if this proved to be true under natural conditions, there was a real danger that sleeping sickness might spread to the East Coast fly belt.* Up to the present, with the exception of the Luangwa valley in North-East Rhodesia, no evidence has been brought forward to show that sleeping sickness is ever spread except by means of *Glossina palpalis*. We must therefore watch carefully for any indication of the spread of this disease beyond the *Glossina palpalis* area, and try to anticipate and prevent the invasion of the east and south. (8) *The eighth proposition was, that although there is some laboratory proof that more than one species of the genus Glossina can convey this trypanosome, there is no proof that other genera of biting flies, such as Stomoxys, Tabanus, etc., carry the infection under natural condition.* This also holds true at the present moment. (9) *The ninth proposition was that there is no proof that Trypanosoma gambiense passes through any metamorphosis in Glossina palpalis, but that the transference of the parasite by this fly from one animal to another is purely mechanical.* In regard to

this point, a good deal of evidence has been brought forward since our last discussion. At the end of 1908 Dr. Kleine, in German East Africa, discovered that *Glossina palpalis* could convey trypanosome disease some twenty days after having bitten an infected animal. The Sleeping Sickness Commission carried out a large number of experiments in 1900 to throw light on this subject. The result we came to was that *Trypanosoma gambiense* multiplies in the gut of about 1 in 20 flies (*Glossina palpalis*) which have been fed on an infected animal; that the flies become infected, on an average, thirty-four days after their first feed upon the infected animal; and that when the flies become infected they may remain infective as long as seventy-five days. Seventy-five days was the longest time we were able to keep an infected fly alive in the laboratory. The Commission then made a number of experiments to find out whether in fact any mechanical transference of any kind ever takes place. From these experiments it was found that mechanical transference takes place if the flies are transferred instantaneously from the infected to the healthy animal. This is known as interrupted feeding. It was further found that no mechanical transference takes place even if only half an hour is allowed to elapse between the feeding of the flies on the infected animal and their transference to the healthy one. All our old experiments in regard to the mechanical transference of sleeping sickness up to forty-eight hours were, therefore, interpreted wrongly. They depended for their success upon the fact that they were carried on sufficiently long to enable the late development of the parasites to take place in the interior of the fly. At the same time, it must be borne in mind that there is still no evidence up to the present of any sexual cycle or metamorphosis taking place in the fly. All we can say is, that after a certain time a development takes place in a small percentage of flies, which renders these infective, and that the flies retain this power of infectivity for a long time. *I said in 1904 that in all probability some development does take place, but I had no hesitation in asserting that this development would be found to be quite a different thing from the metamorphosis which has been prophesied, and which we know takes place in the case of the malarial parasite and the mosquito.* The discovery of a sexual cycle of development in the tsetse fly therefore still remains a *desideratum. The tenth proposition was, that all the evidence went to show that all the stages of the development of Trypanosoma gambiense take place in the human host.* At the present time there does not seem to be much meaning in this proposition, and it may therefore be passed over. The last proposition gave the various proposed means of combating the disease. *These were to prevent, as far as possible, the movement of healthy natives into sleeping sickness areas; the evacuation, if possible, of these areas: the destruction of the breeding places of the tsetse fly, and of the fly itself, as far as possible.* Of these four preventive measures, the second—the removal of the native population from the sleeping sickness area—has been the most successful. During the last two years in Uganda proper, all the natives have been taken from the lake shore and from the islands, and placed in fly-free areas away from the lake shore. This, so far as I am aware, has been successful, and it is probable that, as the result of this exodus, not a single case of fresh infection is occurring in Uganda. It is comparatively easy in Uganda to carry out this method of stamping out the disease. The fly-area is confined to the islands and to the edge of the lake, and does not run up the river valleys into the interior of the country except in the case of the river Nile. The natives, moreover, as a rule are docile and obedient to their chiefs. The pity of it is that the fertile islands and lake shore have gone back to the jungle, and things rank and unprofitable possess them. The destruction of the breeding places of the fly has only been possible in restricted areas, such as round the Government cantonment of Entebbe and the various landing places and ferries on the lake shore and the Nile. As long as the islands were inhabited there was necessarily a good deal of intercourse between the natives of the islands and those of the mainland. Now that the islands are empty of their inhabitants this no longer occurs, and the cleared landing places will now revert to the jungle, like the rest of the lake shore. This destruction of the breeding-places of the fly by clearing the edge of the lake and bringing it under cultivation has been quite successful so far as I am aware, and has, for example, rendered Entebbe a safe and habitable place. I have now run rapidly through the eleven propositions laid down in 1904, and as you have heard, although most of them remain true, some of them require to be profoundly modified.

Paper:

Roberts, Lieutenant-Colonel J. R., I.M.S. (Indore, India). Some Features of Tuberculosis in India.

Thursday, July 28th.—10 a.m., Discussion on Special Factors Influencing the Suitability of Europeans for Life in the Tropics. To be opened by Lieutenant-Colonel Sir R. Havelock Charles, K.C.V.O., M.D.

The following is a syllabus of the paper of Sir R. Havelock Charles:

The classes of people affected by the discussion. The tropics—torrid zone: Meaning of the terms. (1) Local conditions: (*a*) Climatic—torrid and third temperate zones; (*b*) racial surroundings—civilization or non-civilization; customs due to religious beliefs; innate inertia. (2) Character of the European, his temperament and physique. (3) Three factors peculiar to the tropics: What they tend to produce; the physiological effect on the European; the pathological consequences. Two things required for a good crop: (*a*) Good seed; (*b*) suitable soil. Tropical parasitic life. "Acclimatization": What it is; its consequences; possible results when the sojourner in the tropics returns to Europe; a severe illness in the tropics; subsequent necessity. The best type of man for the tropics. The best type of woman to accompany him; her trials. The woman to be shunned. The man *not* wanted. Some "unfit" who may, and do, live at ease in the tropics. Consideration of tropical factors in passing candidates for Government or private service in the tropics; the side of the employer of labour; the side of the would-be emigrant; assurance offices. Returned "old Indians": What they are; where are those who went out with them, and why? The man that nothing can kill; the danger of his example and immunity. The best endowment for life and service in the tropics; the three qualifications; the greatest of these three.

Papers:

Counal, Dr. A. (Lagos). A Case of Horse Trypanosomiasis treated by the Serum Method.

Phillips, Dr. (Cairo). Typhoid Fever in Egypt.

Whyte, Dr. Duncan (Swatow, China). Report on Analysis of Air within Mosquito Nets.

Friday, July 29th, 10 a.m., will be devoted to reading the following and other papers.

Archibald, Captain, R.A.M.C. (Khartum). Human Botriomycosis.

Balfour, Dr. Andrew (Khartum). The Question of Water Supply in the Tropics as Illustrated by the Supply for Khartum.

Birt, Lieutenant-Colonel C., R.A.M.C. Phlebotomus Fever.

Fink, Major G. H., I.M.S. Dysentery.

Füllerborn, Professor (Hamburg). Demonstration on the Development and Morphology of Microfilaria by means of the Epidiascope.

Pearse, Dr. T. Frederick (Calcutta). Epidemic Dropsy.

Phillips, Dr. (Cairo). Phlebotomus Fever.

Madden, Dr. F. C. (Cairo). The Incidence of Bilharziasis in Egypt and its Clinical Manifestations (with 39 photographs).

Row, Dr. R. (Combay, India). Further Observations on *Leishmania Tropica* of Oriental Sore of Combay.

The Museum Committee will be glad to receive pathological specimens, microscopic preparations, drawings or photographs of any subject connected with tropical medicine. Lantern demonstrations will be especially welcomed.

PROVISIONAL TIME TABLE.

FRIDAY, JULY 22ND, 1910.

10 A.M.—Annual General Meeting, followed by Representative Meeting.

2 P.M.—Extraordinary General Meeting.

8 P.M.—Dinner of Councillors and Representatives.

SATURDAY, JULY 23RD, 1910.

9.30 A.M.—Representative Meeting.

MONDAY, JULY 25TH, 1910.

10 A.M.—Representative Meeting.

Exhibition of Surgical Instruments, Drugs, Foods, etc., from 9 A.M. to 6 P.M.

TUESDAY, JULY 26TH, 1910.

10 A.M.—Representative Meeting.

2.30 P.M.—Adjourned General Meeting. Induction of President.

3.30 P.M.—Annual Conference and Dinner of Secretaries of Divisions and Branches.

8.30 P.M.—*President's Address.

Demonstrations in the Medical Museum, 2 to 4 P.M.

Exhibition of Surgical Instruments, Drugs, Foods, etc., from 9 A.M. to 6 P.M.

WEDNESDAY, JULY 27TH, 1910.

9.30 A.M.—Council Meeting at South Kensington.

10.30 A.M.—High Mass at the Roman Catholic Cathedral, Westminster.

10 A.M. to 1 P.M.—Sectional Meetings.

12.30 P.M.—Address in Medicine.

3 P.M.—*Service, Westminster Abbey.

8.30 P.M.—*Reception at the Guildhall.

Demonstrations in the Medical Museum, 2 to 4 P.M.

Exhibition of Surgical Instruments, Drugs, Foods, etc., from 9 A.M. to 6 P.M.

THURSDAY, JULY 28TH, 1910.

9.30 A.M.—Council Meeting at South Kensington.

10 A.M. to 1 P.M.—Sectional Meetings.

12.30 P.M.—Address in Surgery.

3 P.M.—Garden Party at Ranelagh.

7.30 P.M.—Annual Dinner.

Demonstrations in the Medical Museum, 2 to 4 p.m.

Exhibition of Surgical Instruments, Drugs, Foods, etc., from 9 A.M. to 6 P.M.

FRIDAY, JULY 29TH, 1910.

9.30 A.M.—Council Meeting at South Kensington.

10 A.M. to 1 P.M.—Sectional Meetings.

9 P.M.—*Reception, Natural History Museum.

Demonstrations in the Medical Museum, 2 to 4 P.M.

Exhibition of Surgical Instruments, Drugs, Foods, etc., from 9 A.M. to 6 P.M.

SATURDAY, JULY 30TH, 1910.

Excursions.

* Academic dress or uniform should be worn on these occasions, but is optional.

GENERAL ARRANGEMENTS.

THE Central Offices, Reception Room, and Sectional Meeting Rooms will be established in the University of London, Imperial Institute Buildings, and the Imperial College of Science at South Kensington.

NOTIFICATION OF ATTENDANCE: RAILWAY TICKETS.

All members of the British Medical Association who purpose to attend the Annual Meeting in London at the end of this month, including those resident in London, are requested at once to fill up, if they have not already done so, the form of "notification of attendance" which appeared in the last issue of the JOURNAL amongst the advertisements (pp. 7 and 8). If the form is filled up and returned to the address shown, a voucher or vouchers will be issued from the Central Office, 429, Strand, giving the right to the special terms which have been arranged with the railway companies. The companies will issue return tickets at a single fare and a quarter, available from July 21st to August 2nd, both dates inclusive.

REGISTRATION.

The first duty of every member on reaching London is to visit the Reception Room at South Kensington in order to register his name and obtain his member's card. He should thenceforth consult the *Daily Journal* for the programme and full particulars.

LIST OF HOTELS AND LODGINGS.

A list of hotels and lodgings, with a scale of charges, was published in the SUPPLEMENT of June 18th, p. 406. Members are requested to communicate direct with the persons whose names are given in the list, or with the managers of the hotels mentioned. The list has been reprinted, and copies can be obtained in the Reception Room.

GUIDE BOOK.

A short guide book has been compiled for distribution to members attending the Annual Meeting. It gives a brief sketch of the history of the medical institutions of London, and a general survey of the developments in scientific and practical teaching in the various schools, and of the enlargements and other changes of the hospitals and other medical institutions of the metropolis during the fifteen years that have elapsed since the British Medical Association held its Annual Meeting in London in 1895. The booklet also contains all the information necessary to enable members to find their way to the museums and other places likely to be of special interest to them. For this purpose the means of locomotion—by omnibus, tramway car, electric and tube railways—are described; and further help to the visitor in threading the labyrinth of London is given by diagrams and a coloured map.

RECEPTION ROOM.

The Reception Room will be established in the University of London and Imperial Institute, South Kensington. The Imperial Institute Buildings may be conveniently reached by electric tube or Underground Railways (South Kensington Station), or by omnibuses traversing Piccadilly. Copies of the *Daily Journal* will be obtainable, as well as full particulars of entertainments and excursions. Guide books, time-tables, and other works of reference will be provided, and there will be a postal office for the receipt and dispatch of letters and telegrams. There will be writing and reading rooms, and a typewriting office; a typewriting office will also be established in the Imperial College of Science. Accommodation will be arranged for members desiring to smoke.

LUNCHEONS.

Luncheons will be provided daily in the Quadrangle of the Imperial Institute. Messrs. Stewart and Co., the caterers at Brooklands, have been appointed, and luncheons will be served at 2s. a head.

CLUB ACCOMMODATION.

The Club Accommodation Subcommittee of the Reception Committee beg to announce that a limited amount of accommodation has been offered to members of the Association and foreign visitors to the forthcoming Annual Meeting.

POST, TELEGRAPH, AND TELEPHONES.

Letters and Telegrams.

Full postal facilities for the receipt and dispatch of letters and telegrams will be provided in the Post-office which will be established in the Reception Room, University of London, South Kensington, S.W.

Telephones.

Two telephones will be available for the use of members in the Reception Room, and one in the Imperial College of Science.

SPECIAL SERVICE IN WESTMINSTER ABBEY.

The service in Westminster Abbey will be held at 3 p.m., on Wednesday, July 27th. The sermon will be preached by the Very Rev. the Dean of Salisbury. Special tickets of admission will be necessary, and as the accommodation is limited, early application for tickets to be reserved should be made to Dr. W. Griffith, 1, Chester Gate, N.W. Separate tickets admitting to the Abbey by different entrances will be issued to—

1. Men intending to wear academic costume (Form A).
2. Women intending to wear academic costume (Form B).
3. Men or women *not* intending to wear academic costume (Form C).

Robing rooms will be provided within the precincts of the Abbey. Members should therefore specify in their application which form of ticket they desire.

The final allotment of tickets will be made on Tuesday morning, July 26th, and tickets will be issued in the Reception Room, University of London, South Kensington, on personal application.

SPECIAL SERVICE AT WESTMINSTER CATHEDRAL FOR ROMAN CATHOLIC MEMBERS.

By the kindness of the authorities of Westminster Cathedral, special front places will be reserved at the Solemn High Mass at 10.30 a.m., or Vespers at 3 p.m., for as many Members of the British Medical Association as desire to attend either of these services on Wednesday, July 27th, and will notify their intention of being present. Special tickets will not be necessary, but members who desire to be present are asked to send a postcard intimating their intention to Dr. Finucane, 10, Ashley Place, S.W., so that a sufficient number of seats may be reserved.

ENTERTAINMENTS AND EXCURSIONS.

SPECIAL NOTICE.

Members are earnestly requested not to make application for tickets for functions unless they are confident of being able to attend, and to return IMMEDIATELY *any ticket allotted to them which they find themselves unable to use.*

ENTERTAINMENTS IN LONDON.

Annual Dinner of the Association.

The annual dinner of the Association will take place at the Connaught Rooms, Freemasons' Hall, Great Queen Street, W.C., on Thursday, July 28th, at 7.30 p.m. punctually.

The price of the dinner ticket is 10*s.* 6*d.*, exclusive of wines. As the accommodation is limited, those desirous of attending should make early application to Mr. Atwood Thorne, 429, Strand, London. The necessary form of notification was published at pages 7 and 8 of the advertisements in the last issue of the JOURNAL.

Ladies' Dinner.

A dinner for ladies accompanying those Members of the Association who are attending the annual dinner will take place at the Hotel Cecil on the same evening. Members attending the annual dinner and who are accompanied by a lady should advise Mrs. Mary Scharlieb, M.S., M.D., 149, Harley Street, London, if they desire to obtain an invitation for the ladies' dinner. A reception at the Lyceum Club has also been arranged. Special attention is called to the fact that the white card of invitation does *not admit* to the Ladies' Dinner at the Hotel Cecil. Ladies receiving these invitations will receive a pink admission card on receipt of their acceptance.

Receptions.

A reception will be given at the Guildhall by the Corporation of the City of London, at 8.30 p.m. on Wednesday, July 27th, for which special tickets of admission will be required.

A reception will be given by the Metropolitan Counties Branch, at the Natural History Museum, Cromwell Road, South Kensington, on the evening of Friday, July 29th, for which 4,000 invitations will be issued.

A reception will be given at the Royal Army Medical College, Millbank, when a demonstration illustrating the equipment of foreign armies will take place.

Academic Dress.

Academic dress or uniform will be worn at the General Meeting at St. James's Hall, Great Portland Street, on Tuesday, July 26th, at 8.30 p.m., when Mr. Butlin will deliver his presidential address, and foreign guests and Colonial delegates will be presented and honorary members inducted.

Academic dress will also be worn at the service in Westminster Abbey on Wednesday afternoon, July 27th, at 3 p.m., and at the conversazione on Wednesday evening, July 27th, given by the Lord Mayor and Corporation of London at the Guildhall.

It is desired also that academic dress should be worn at the evening reception to be given by the Metropolitan Counties Branch at the Natural History Museum on Friday evening, July 29th.

Garden Parties.

The President and members of the Metropolitan Counties Branch will give a reception and garden party to 4,000 members and their friends in the picturesque Polo Grounds of the Ranelagh Club on the afternoon of Thursday, July 28th; for this also special tickets will be required.

The President, Treasurer, and Governors of the Royal Hospitals of Bridewell and Bethlem will entertain 500 at a garden party at Bethlem Royal Hospital on Wednesday afternoon, July 27th, for which special tickets will be required.

A luncheon and garden party will be given at St. Bartholomew's Hospital on Wednesday, July 27th.

On Friday there will be a garden party for 500 guests at the Norwood Sanatorium, Beckenham.

Ladies' Reception Council.

The Ladies' Reception Committee are making arrangements for the entertainment of ladies accompanying members attending the Annual Meeting in London. In addition to the dinner mentioned above, arrangements have been made by the Morning Excursions Subcommittee for several mornings and afternoons. On Tuesday, July 26th, visits will be made to the Sesame Training Home, Passmore Edwards Settlement, the School of Medicine for Women, and St. Paul's Cathedral; the visit to the School of Medicine for Women will take place at 11 a.m. On Tuesday afternoon Stafford House will be visited. On Wednesday morning visits will be paid at Apsley House, and at 11.30 a.m. to Westminster Abbey; in the afternoon Mrs. D'Arcy Power will conduct a party of seventy ladies and gentlemen over Barbers' Hall and St. Bartholomew's Priory Church. The party will be met in the square of St. Bartholomew's Hospital, West Smithfield, at 1.30 p.m., and will proceed to the Priory Church of St. Bartholomew's the Great, which is one of the oldest and most interesting in London. The Barbers' Hall in Monkwell Street, which is rarely open to the public, will be inspected at 3 o'clock by the kind permission of the Master and Wardens of the Barbers' Company, and a

short sketch of its history and its relation to the development of British medicine will be given. Mrs. D'Arcy Power will be at home at 10A, Chandos Street, Cavendish Square. Tea at 5 o'clock. The distance to be walked during the afternoon is under a mile. On Thursday a visit will be made to the Tower at 11 a.m., and Miss Scharlieb will conduct a party over the Charterhouse and St. Giles's, Cripplegate. On Friday at noon a visit will be paid to Grosvenor House.

Visits to Private Mansions.

By the kindness of the Dukes of Wellington, Westminster, and Sutherland, arrangements have been made for small parties of about twenty-five to visit the following mansions, which contain fine collections of pictures and other objects of interest:

Apsley House, the residence of the Duke of Wellington.

Grosvenor House, the residence of the Duke of Westminster.

Stafford House, the residence of the Duke of Sutherland.

Visits to Various Places of Interest.

Members will have an opportunity of visiting the Royal Mews, Buckingham Palace, by kind permission of Sir Henry Ewart, Master of the Horse; special tickets will be required.

The new premises of the Royal Sanitary Institute, Buckingham Palace Road, will be open to members, who will be conducted over the Parkes Museum and the Institute.

The Society of Medical Officers of Health will throw open their rooms (1, Upper Montague Street, Russell Square) to members throughout the day, and provide tea between 4 and 5 o'clock. Admission by member's card.

Visits to the Tower of London have been arranged, and parties will be conducted by special warders.

Visits may also be made to the Royal Mint.

Visits to the various docks have been arranged by permission of the Port of London Authority.

A visit to the offices and printing works of the *Daily Telegraph* has been arranged.

The National Telephone Company will show its exchange station to members.

Members are invited to visit the Zoological Gardens on Sundays, July 24th and 31st. Members of Council and Representatives desirous of visiting the Gardens on Sunday, July 24th, will be able to obtain tickets on personal application to Dr. Rowland Fothergill, at the Court of Common Council Chamber, Guildhall. Other members of the Association desiring tickets for July 31st must apply in the Reception Room.

EXCURSIONS.

Excursions have been arranged to St. Albans, Bath, Eastbourne, Brighton and Hove, Windsor, and Maidenhead. Full particulars will be found in the *Daily Journal*.

Members who have made written application for tickets for various entertainments and have not been successful in the first distribution should inquire whether further application is necessary, and should watch the notice boards, on which particulars on these points will be from time to time exhibited.

GOLFING.

The Ulster Cup.

A letter from Dr. F. J. Smith explaining the arrangements made for this annual competition, which is to take place at Burhill on Friday, July 29th, was published in the JOURNAL of July 2nd, p. 53.

It will be remembered that a cup was presented by the Ulster Branch last year, and is to be played for annually on the following conditions, as laid down by the Ulster Branch:

Bogey play under handicap, not exceeding 18; cup to become the property of the member of the Association winning it twice in succession, or three times in all; one round of 18 holes to be played on one day at the Annual Meeting, with no previous play.

The cup is a copy of the famous Ardagh Cup, which is in the National Museum in Dublin, and whose history is known from the eleventh century.

The links of the Burhill Golf Club are near Walton-on-Thames Station, which is easily reached from Waterloo Station, and Waterloo is itself easily and quickly reached from most parts of London by the Baker Street and Waterloo Tube railway, which has communications with the Central London Railway at Oxford Circus and with the Piccadilly Railway at Piccadilly Circus.

As will be seen from Dr. F. J. Smith's letter, the officers of the Burhill Golf Club have extended their hospitality a good deal beyond the arrangements for the Ulster cup competition, for they have offered the following additional facilities;

1. They have offered to make all members of the Association attending the annual meeting temporary members of the club for the Wednesday, Thursday, and Friday of the meeting.
2. They have, in the name of the Burhill Club, offered one, if not five, extra prizes for competitions to be determined later.
3. There are two courses at the club, so that possibly foursomes can be played after the competition proper is finished, or even simultaneously with it.
4. There will be an unlimited putting competition during Friday—cards, 6d. each—the pool to be divided in proportions to be determined later.
5. They have placed at the disposal of visiting members the catering establishment of the club, so that those who wish to do so can dine there in the evening at a reasonable cost.
6. There is ample accommodation for ladies, who can, at any rate, take out as many cards as they like for the unlimited putting competition, or, indeed, arrange one for ladies only.

Members intending to compete for the Ulster cup or in any other competitions will be required to furnish a certificate of their handicap signed by the club secretary. Further details, including the starting time, which must be strictly adhered to, will be posted in the Reception Room at the University of London, South Kensington, during the meeting.

Annual Match.

The usual annual match will take place on Wednesday afternoon, July 27th. It will be between the Metropolitan Counties Branch and the visitors, and it is hoped that at least twenty a side will take part. It will be played, by the kindness of the committee, on the well-known Northwood Links. All members who wish to play are asked to send their names at once to Mr. Percy Furnivall, 28, Weymouth Street, Portland Place, W., in order that the best selection available may be made. It is particularly requested that names should be sent in as early as possible, and each should be accompanied by the player's club and lowest handicap.

Honorary Membership of Clubs.

The following clubs have invited members to use their links: Acton, Ashford Manor, Burnham Beeches, Bushey Hall, Burhill, Edgware, Eltham Warren, Fulwell, Hanger Hill, Home Park, Mid-Surrey, Neasden, Princes', Richmond, Romford, Sandy Lodge, Sunningdale, Totteridge, Tooting Bec, Walton Heath, Wembley, West Middlesex, Royal Wimbledon, and Worplesdon.

Arrangements will be made by which members wishing to play a round may leave their names and handicaps at the Reception Room not later than the day before, in order that matches may be arranged.

ANNUAL REPRESENTATIVE MEETING.

A committee of the Metropolitan Counties Branch has issued a circular to Representatives of Divisions and members of the Central Council showing the arrangements which have been made for the entertainment of the members of the Representative Meeting on Saturday and Sunday, July 23rd and 24th. They include visits to Folkestone, with a day trip, if desired, to Boulogne, and to Maidenhead, with a day trip, if desired, to Henley. The members of the Representative Meeting will dine together on Friday, July 22nd, at 7.45 p.m. for 8 p.m., at the Waldorf Hotel. The Secretary of this Committee is Mr. Rowland Fothergill.

MOTOR GARAGE.

It has been arranged with the Alveston Motor Garage, whose premises open out of Roland Gardens, South Kensington, London, S.W., to provide garage accommodation for members bringing their cars from the provinces. The charge will be 2s. a day, to include standing in a lock-up garage and use of electric light and water. Members desirous of availing themselves of this accommodation should make early application to the Alveston Motor Garage.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

The summer meeting and luncheon will be held at the Holborn Restaurant on Wednesday, July 27th, at 1.15 for 1.30 p.m. Members wishing to be present will please, as soon as possible, inform Dr. W. Douglas, Goudhurst, Kent.

NATIONAL TEMPERANCE BREAKFAST.

The Annual Temperance Breakfast will be held on the morning of Thursday, July 28th, at 8 a.m., under the presidency of Mr. Pearce Gould (Vice-President, Royal College of Surgeons of England).

THE MEDICAL MUSEUM.

In accordance with custom, a medical museum has been organized in connexion with the Annual Meeting. The function of this museum is twofold.

In the first place, it serves the office of safeguarding and displaying those specimens which are required to illustrate papers in the Sections; and, in the second place, it is intended to depict advances in medicine and the allied sciences within recent years. The specimens shown by members of the various Sections will be arranged so as to be readily accessible to the visitor and form a special feature of the museum.

In order that the museum may discharge its second function, it has been divided into sections, and each section has been placed under an honorary curator.

Alimentary system	Dr. Hertz, of Guy's Hospital.
Anaesthetic section	Dr. Ada M. Browne, of the Chelsea Hospital for Women.
Bacteriology	Dr. Henderson Smith, of the Lister Institute.
Cardio-vascular system ...	Dr. T. Lewis, of City of London Hospital.
Cancer Research	Dr. Murray, of the Imperial Cancer Research Fund.
General Surgical Pathology	Dr. Braxton Hicks, of the Westminster Hospital.
Genito-urinary system ...	Dr. Swift Joly, of St. Peter's Hospital.
Gynaecology	Dr. Helen Chambers, of the Royal Free Hospital.
Laryngology	Dr. Harmer, of St. Bartholomew's Hospital.
Neurology	Dr. Wilson, of the Queen Square Hospital.
Ophthalmology	Dr. Mayou, of the Paddington Green Children's Hospital.
Otology	Dr. Sydney Scott, of St. Bartholomew's Hospital.
Physiological and Pathological Chemistry	Dr. Ryffel, of Guy's Hospital.
Protozoology	Miss Muriel Robertson, of the London University.
Radiology	Dr. Ironside Bruce, of Charing Cross Hospital.
Respiratory System	Dr. Lakin, of Middlesex Hospital.
Tropical Medicine	Dr. Hutton, of the London School of Tropical Medicine.
Tuberculosis	Dr. Petrie, of the Lister Institute.

In most of the departments special attention has been given to the illustration of methods. In view of the increasing importance of protozoology to general medicine, it was thought that something approaching a complete series of parasitic protozoa might be exhibited with advantage to the practitioner. Many of these forms of life, it is true, are not at the present time found in man, but each series illustrates a type, and is of theoretic importance to-day, and may be of practical importance to-morrow. A number of life-cycles have been set up, and the visitor will be struck by the excellence of the specimens. Over 100 microscopical specimens are on view in the sections of protozoology and tropical medicine alone. Among the series of drawings to be lent by Sir Jonathan Hutchinson are a number of illustrations of pricks of the various blood-sucking insects. The whole collection which Sir Jonathan Hutchinson will show will be extensive, and will comprise drawings likely, on account of their novelty or rarity, to be specially instructing and interesting. They will include illustrations of a number of types of lupus, of pigmentation, and of loss of colour, of xanthoma and xanthelasma, and of cases of recovery from leprosy.

The museum, which is situated in the Elementary Physics Laboratory in the Imperial College of Science, will be open from 10 a.m. till 5 p.m. on each day, and notice of special demonstrations given by the honorary curators at convenient times will be posted at the doors. A catalogue has been compiled and will be distributed to visitors in the museum.

By the kindness of the Museum Committee arrangements are being made to place on exhibition, in the Anaesthetic Section of the Annual Museum, certain original and interesting documents, kindly lent by Mrs. Frances Long Taylor, daughter of one of the discoverers of surgical anaesthesia—Crawford W Long of Athens, Georgia, U.S.A. The right of Long to be regarded as the true discoverer of anaesthesia has recently been recognized on an increasing scale in America, and it will doubtless be of interest to members of the Association to inspect some of the documentary evidence upon which the claims of Long are based.

A Black-and-White Exhibition consisting of prints and drawings having reference to the medical profession has been arranged by Dr. Rice Oxley in connexion with the Museum.

HOSPITALS AND LABORATORIES.

The following hospitals and infirmaries have signified their intention of receiving members of the British Medical Association during the week of the Annual Meeting, July 24th to 29th.

GENERAL HOSPITALS.

St. Bartholomew's Hospital, West Smithfield, E.C.—Parties will be personally conducted over the hospital and school on Monday, July 25th, at 3 p.m., on Tuesday, Thursday, and Friday at 3.30 p.m., and on Wednesday between 3.45 and 4 p.m. On Tuesday, at 12 30 p.m., there will be a demonstration of specimens in the museum, and on Friday at the same hour a demonstration of Wassermann's reaction in syphilis. At 3 p.m. on Wednesday 400 guests will be entertained at a garden party in the quadrangle to meet the President of the British Medical Association.

Charing Cross Hospital, Agar Street, Strand, W.C.—The wards and special departments will be open for inspection on Tuesday, July 26th, from 2 to 4 p.m., when demonstrations in the various departments will be given by members of the staff.

French Hospital, Shaftesbury Avenue, W.C.—Foreign visitors will be received at the hospital on Tuesday, July 26th, at 10 a.m.

St. George's Hospital, Hyde Park Corner, S.W.—On Thursday, July 28th, interesting medical and surgical cases will be demonstrated between 1 30 and 3 30 p.m. From 2 to 4 p.m. there will be demonstrations in the museum by Dr. Trevor, in the Bacteriological Department of the ultra-microscope and methods of vaccine treatment by Dr. Slater, and in the X Ray and Electrical Department by Dr. Simmons and Dr. Fox; at 3 p.m. Dr. Spitta will give a demonstration in the Microphotography Department. The physicians and surgeons in the special departments will also demonstrate interesting cases.

German Hospital, Dalston, N.E.—Members visiting the hospital will be heartily welcomed, and shown over the buildings.

Great Northern Central Hospital, Holloway Road, N.—The hospital will be opened to members on Thursday, July 28th, between 3 and 5.30 p.m., when cases and pathological specimens will be demonstrated. Tea and light refreshments will be provided.

Guy's Hospital, S.E.—On Thursday, July 28th, from 2 to 4.30 p.m., 100 members will be received, and there will be an exhibition of medical and surgical cases, and selected *x* ray cases. Tea will be provided in the Court Room at 4.30 p.m.

Italian Hospital, Queen Square, Bloomsbury, W.C.—Members visiting this institution will be welcomed.

King's College Hospital, Lincoln's Inn Fields, W.C.—Members will be shown daily over the new buildings of the hospital at Denmark Hill. Members desirous of inspecting the new buildings are requested to intimate the fact to Mr. H. W. Armit, Lister Institute of Preventive Medicine, Chelsea Gardens, Honorary Secretary of the Medical Museums Committee.

London Hospital, Whitechapel, E.—Parties not exceeding thirty members will be received daily between 10 a.m. and 5 p.m., and shown any interesting cases.

St. Mary's Hospital, Paddington, W.—On Monday and Tuesday, July 25th and 26th, Dr. Luff and Dr. Phillips will demonstrate cases in the medical wards between 2 and 4 p.m. respectively. The larger operating theatre will be opened to members daily between the same hours. The museum will also be open daily for viewing a special series of preparations.

Middlesex Hospital, Berners Street, Oxford Street, W.—Members will be received by the honorary staff on Thursday, July 28th, from 2 to 5 p.m., and shown over the hospital; surgical operations of interest will, if possible, be arranged. The cancer research laboratories will be open for inspection, and the director will arrange an exhibition of specimens in the museum. Tea will be provided in the residential college.

Royal Free Hospital, Gray's Inn Road, W.C.—Facilities will be afforded daily to members to inspect the hospital, including the recently built suite of operating theatres, sterilizing room, etc.

London (Royal Free Hospital) School of Medicine for Women.—The council and staff will be at home, 8, Hunter Street, Brunswick Square, W.C., to the members of the Association on Friday afternoon, July 29th, from 4 p.m. to 6.30 p.m.

Seamen's Hospital (Dreadnought), Greenwich, S.E.—The out-patient department will be opened from 10 a.m., and operations will be performed on Monday, Tuesday, Thursday, and Friday afternoons at 2 p.m. Ward visits will be paid by the physicians on Tuesday and Thursday afternoon. The hours for the special departments are: Throat—Monday and Thursday, 10 a.m. to 1 p.m.; Skin—Tuesday and Friday, 12 noon to 2 p.m.; Eye—Wednesday and Saturday, 11 a.m. to 2 p.m.

St. Thomas's Hospital, Albert Embankment, S.E.—The hospital will be open for inspection daily. Operations will be performed between 2 and 5 p.m. Members will be welcome to attend clinical rounds made on Monday, Tuesday, Thursday, and Friday afternoons. On Thursday afternoon, July 28th, the Governors of the hospital invite 100 members to tea from 4.30 to 5 p.m. Mr. Shattock will attend at the museum and explain various interesting specimens, and Dr. Dudgeon at 3 o'clock will give a demonstration on bacteriology and clinical pathology in the Louis Jenner Laboratory.

University College Hospital, Gower Street.—The hospital will be open to members on the afternoons of July 26th, 27th, 28th.

Westminster Hospital.—Members are invited daily between 3 and 5 p.m. Operations will be performed on July 25th, 26th, 27th, 28th, and possibly the 29th. A special demonstration on infective arthritis will be given by Dr. Murrell on Thursday, July 28th.

INFIRMARY.

Hampstead Workhouse Infirmary, New End, Hampstead, N.W.—The medical officer, Dr. E. Claude Taylor, will be glad to show members over the wards of the infirmary on Tuesday, July 26th, between 3 and 5 p.m.

SPECIAL HOSPITALS.

City of London Hospital for Diseases of the Chest, Victoria Park, E., will be open for inspection on Wednesday, July 27th, between 3 and 5 p.m. Tea will be provided.

Norwood Sanatorium, Beckenham.—At this institution the treatment of inebriety by drugs is carried on under the general superintendence of an honorary advisory medical committee. A garden party will be given on Friday, July 29th, at 4.30 p.m.; 500 guests are invited.

The Royal Hospital for Diseases of the Chest, City Road, E.C., will be open to members daily from 2 to 4 p.m. On Friday, July 29th, from 3 to 5 p.m., demonstrations of thoracic diseases will be given of the physician in the wards, *x*-ray demonstrations by thoracic diseases by Dr. Jordan, the radiographer; and pathological demonstrations by the clinical pathologist. Tea and light refreshments will be served in the Board Room at 4 p.m.

Hospital for Sick Children, Great Ormond Street, W.C.—A demonstration of clinical cases will take place at 2.30 p.m., on Thursday, July 28th, prior to the garden party, for members of the Section of Diseases of Children at 4 p.m.

Bethlem Royal Hospital, St. George's Field, S.E.—The hospital will be open for inspection on the afternoons of July 26th, 28th, and 29th. On Wednesday there will be a garden party, and members will be shown round the wards.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—A party of fifty are invited on Thursday, July 28th, between 4 and 6 p.m., to inspect the hospital, the new out-patient and the electro-therapeutic departments. Demonstrations of selected cases will also take place. Tea will be provided.

Royal National Orthopaedic Hospital, Great Portland Street, W.—Opportunities will be afforded to members to see the working of the hospital from July 25th to 29th inclusive, between 2 and 4 p.m., and on July 25th and 28th from 9 to 11 a.m., and to see any operations which may be performed during their visit.

Hospital for Diseases of the Throat, Golden Square, W.—Members are invited to see the work of the hospital. Operations take place daily in the morning. Clinics are held every afternoon, and Tuesday and Friday evening. The staff will hold a reception on Friday, July 29th, at 4 p.m., when refreshments will be provided, and at 4.30 p.m. there will be a demonstration of selected cases.

Royal London Ophthalmic Hospital, City Road, E.C.—The staff will be pleased to show the working of the hospital, and afford opportunities of seeing cases.

St. John's Hospital for Diseases of the Skin, Leicester Square, W.C.—Members can attend the clinics daily from 2 to 4 p.m. Special demonstrations of selected cases will be given on the afternoons of July 27th, 28th, and 29th. The laboratories and *x*-ray rooms will be open to visitors, and tea will be provided.

COLLEGES AND LABORATORIES.

Royal College of Surgeons, Lincoln's Inn Fields, W.C.—The museum and library of the College will be open to members on each day of the Annual Meeting from 10 a.m. to 5 p.m. The Conservator and Pathological Curator will receive 150 members to inspect the museum on Wednesday, July 27th, from 4 to 6 p.m. An account of the museum was published in the BRITISH MEDICAL JOURNAL of May 21st, 1910, p. 1244.

Lister Institute of Preventive Medicine, Chelsea Gardens, S.W.—Members will be shown round the institute daily between 3 and 5 p.m. On Tuesday afternoon a party of fifty will be invited to visit the Serum Department at Elstree.

Royal Army Medical College, Millbank, S.W.—On Thursday, July 28th, from 3 to 4.30 p.m., there will be a reception and demonstration on equipment of foreign armies. The party is limited to 150.

Medical Graduates' College and Polyclinic, Chenies Street, W.C.—The Polyclinic and Hutchinson Museum will be open to members daily.

Wellcome Physiological Research Laboratories.—A party of fifty is invited on Tuesday, July 26th, at 3 p.m., to see over the laboratories.

THE ANNUAL EXHIBITION.

The annual exhibition of surgical instruments, drugs, foods, books, and sanitary appliances will be held in the Great Hall and West Gallery of the Imperial Institute, the Jehanghier Hall being reserved for x ray and high frequency apparatus. The exhibition will be opened from 9 a.m. to 6 p.m. from Monday July 25th, to Friday, July 29th, inclusive.

Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

BORDER COUNTIES BRANCH.

THE forty-third annual general meeting of the Border Counties Branch of the British Medical Association was held in the County Hotel, Carlisle on Friday, June 24th, at 3.45 p.m.

Confirmation of Minutes.—The minutes of the previous general meeting were read by the SECRETARY, approved, and signed by the President.

Apologies for Non attendance.—The SECRETARY intimated that he had received apologies from Dr. Hill, Dr. Rodger, Dr. Bennett, Dr. McKie, Dr. Clarke, and Dr. Kerr.

Report of Branch Council.—The PRESIDENT stated that the report of the Branch Council had been printed and circulated among the members, and he therefore moved that the report be taken as read, and he accordingly moved its adoption. Dr. PENNY seconded this motion, which was unanimously agreed to.

Officers and Council.—The SECRETARY then intimated that the new Branch Council was constituted as follows: *President*, Dr. Bird; *Vice President*, Dr. Murdoch; *President-elect*, Dr. Logan; *Secretary and Treasurer*, Dr. Livingston; *Representatives from Scottish Division*, Dr. Easterbrook, Dr. Maxwell Ross, Dr. Scott; *Representatives from English Division*, Dr. Bowser, Dr. Graham, Dr. Penny; *Six Members Elected at the Annual Meeting*, Dr. Farquharson, Dr. Hill, Dr. Macdonald, Dr. Martin, Dr. Kerr, Dr. Robson; *The Secretaries of the Divisions, ex officio*, Dr. Anderson and Dr. Raeburn; *Auditors*, Dr. Easterbrook and Dr. Jeffrey.

Introduction of New President.—Dr. MURDOCH, in vacating the chair, introduced the new President, Dr. Bird.

Vote of Thanks to Retiring President.—Dr. BIRD moved a very hearty vote of thanks to the retiring President for his interest and assistance in the work of the Branch in his capacity as President throughout the year.

President's Address.—There was then an adjournment for tea, after which Dr. BIRD gave his Presidential address. "The Value of the Estimation of the Arterial Blood Pressure in General Practice." After mentioning the methods in use and the precautions to be observed in taking the arterial blood pressure, Dr. Bird referred to types of patients in the diagnosis and treatment of whose ailments the sphygmomanometer was of great service, and cited concrete cases of patients suffering from a tendency to cerebral haemorrhage, from loss of cardiac tone, from angina pectoris, from cerebro-bulbar symptoms, and other diseases in conjunction with increased arterial tension with or without thickened arteries. He emphasized the possible service of nitrites in the group of cases of angina pectoris where persistent arterial tension is present. The theory that the nitrites, by their action of relaxation, allow an increased amount of blood to flow through the capillaries in the arterial walls, and through the coronary system in the heart, and thereby cause an improvement in the nutrition of these structures, seemed to be borne out in practice, as several patients suffering from angina pectoris with high arterial tension had ceased to have attacks for some years after the exhibition of nitrites along with tonics. Naturally some credit must be given to other measures undertaken for the general improvement of health. The value of attacking the cause of increase of blood pressure in those cases of migraine where the blood pressure is found persistently raised was commented upon by Dr. Bird, also the assistance derived from the sphygmomanometer in the early detection of chronic granular kidney, haemorrhage and perforation in typhoid fever, and collapse and shock during operations. The importance of observation of arterial blood pressure in cases of sleeplessness were shortly referred to; when the arterial pressure was high a warm bland drink induced refreshing sleep in many cases, probably by determining a flow of blood to the splanchnic system.

Vote of Thanks to President.—Dr. MACLAREN moved a very hearty vote of thanks to Dr. Bird for his able address, and referred to some of the points which he had raised. Dr. EASTERBROOK seconded this motion, which was unanimously carried.

DORSET AND WEST HANTS BRANCH:

BOURNEMOUTH DIVISION.

A MEETING of this Division was held at the Medical Society's Rooms, Bournemouth, on Wednesday June 22nd. Dr. BUSHMAN, Chairman of the Division, was in the chair, and nine other members were present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Special Report of Council.—It was resolved, after discussion, to support the Council in their proposals contained in their special report.

Annual Representative Meeting.—The meeting unanimously agreed with the suggestion of Dr. Johnson Smyth that he should bring up at the Annual Representative Meeting, should a suitable occasion offer, the subject of refreshment at meetings where the business of the Association is done.

Candidate for Central Council.—Dr. JOHNSON SMYTH proposed, Dr. MONTGOMERY seconded, and it was carried unanimously:

That Dr. James Davison be nominated by this Division as a candidate for election to the Council by Representatives of grouped Divisions.

EAST ANGLIAN BRANCH:

NORWICH DIVISION.

Election of Officers.—The following have been elected officers for the ensuing year: *President*, Mr. H. A. Ballance; *Vice-President*, Mr. A. M. Ross; *Representative on Branch Council*, Dr. Barton; *Representative in Representative Meeting*, Mr. H. A. Ballance; *Honorary Secretary*, Dr. G. P. Claridge.

SOUTH SUFFOLK DIVISION.

Election of Officers.—The following were elected officers of the South Suffolk Division at the annual meeting: *Chairman*, Dr. Brooks; *Vice-Chairman*, Dr. J. Staddon; *Secretary and Treasurer*, Dr. J. Gotch; *Executive Committee*, Drs. Brogden, G. S. Elliston, Mahon, Redpath, E. L. Rowe, and H. L. Heath; *Representatives on Branch Council*, Drs. G. S. Elliston and E. L. Rowe; *Representative at Representative Meeting*, Dr. Havell, failing whom Dr. A. M. N. Pringle, failing whom Dr. Barnes.

EDINBURGH BRANCH AND BORDER COUNTIES BRANCH.

A COMBINED meeting of these two Branches was held at the Hydropathic, Moffat, on July 8th. Representatives from Edinburgh, Carlisle, Dumfries, Hawick

and Jedburgh journeyed by motor car to Moffat, reaching there about 1 p.m. After luncheon in the Hydropathic, the meeting was convened by Dr. BIRD (Carlisle), who took the chair. About forty members of the two Branches were present.

The Value of the Motor Car to the Profession.—Dr. VEITCH (Edinburgh) opened a discussion on the history of the motor car and its value to the medical profession. Drs. BIRD (Carlisle), BLAIR (Jedburgh), and SAUNDERS (Lochmaben) took part in the discussion, which was of much interest and value. A photograph was taken of the attending members and their guests, after which tea was served in the lounge of the Hydropathic.

Moffat Mineral Waters.—At a drawing room meeting thereafter, Dr. HUSKIE delivered a dissertation on the chemical properties and therapeutic uses of the Moffat mineral waters. This was cordially received by the members of the Association. Songs and music entertained the company till 5.30 p.m.

Vote of Thanks.—After a vote of thanks was proposed by the President of the Edinburgh Branch (Dr. RUSSELL) to all those who had contributed towards the day's enjoyment, the members of the Branches returned home by motor car. The outing, which was favoured with splendid weather, was by all acknowledged to be a great success.

GIBRALTAR BRANCH.

A VERY successful and interesting meeting of this Branch was held on June 27th, at 4 p.m., at the Royal Naval Hospital. Owing to the presence of the Atlantic and Mediterranean Fleets there were 20 present all told: Deputy Inspector-General F. J. Lilly, Dr. Lyons (Vice-President), Colonels Faunce and Johnson, R.A.M.C.; Fleet Surgeons Hall, Miller, Page, Hodnet de CourtMacSherry, A. and E. Pickthorn, Kidd, O. W. Andrews; Staff Surgeons Spicer and Dartnell; Surgeons Griffiths, Petch, Ramsay, and Rooney; Drs. Gill, and Parsons.

Confirmation of Minutes.—After tea at Dr. Lilly's the minutes of the last meeting were read and confirmed.

Cases.—Dr. PARSONS showed a case of amputation of thigh for extensive tuberculous disease of knee-joint of twenty two years' standing. Also a case of double hydrocele operated on by excision of the sacs. Dr. GILL showed a case of multiple tumours in a phthisical patient, for diagnosis, with microscopical section of tumour. Staff Surgeon SPICER showed a case of fissured glossitis for diagnosis. Fleet Surgeon KIDD read notes on and showed two cases of stricture urethrae, and a case of syphilis of unusual course. The various cases were discussed by those present.

Visit to the Hospital.—A visit to the wards of the hospital was conducted by Dr. Lilly, and some interesting cases were seen and demonstrated.

Paper.—Fleet Surgeon MILLER, of H.M.S. *London*, read a paper on some legal aspects of revaccination, which was attentively listened to and proved very interesting and instructive.

Votes of Thanks.—A vote of thanks to the Chairman, and to those who showed cases and read papers, brought the meeting to a close.

NORTH WALES BRANCH.

THE annual meeting of the Branch was held at the Hand Hotel, Llangollen, on Tuesday, July 12th, at 2 p.m. Dr. H. GREY EDWARDS, the President, was in the chair, and forty members were present.

Confirmation of Minutes.—The minutes of the last meeting were confirmed and signed.

Introduction of President-elect.—The PRESIDENT introduced the PRESIDENT-ELECT (Mr. O. Wynne Griffith, Pwllheli), who took the chair, and proposed a hearty vote of thanks to the retiring President for his able conduct in the chair during the past year. It was seconded by Mr. E. D. EVANS (Wrexham), and carried unanimously.

Report of Branch Council.—The HONORARY SECRETARY read the report of the Branch Council. Mr. R. ARTHUR PRICHARD (Conway), in proposing the adoption of the report, referred to the fact that owing to the rearrangement of the seats on the Central Council and the grouping together of Branches for that purpose, the North Wales Branch had no longer its own separate Representative. He had been requested by the Branch Council to refer to the services rendered during the past five years by Dr. H. Jones Roberts as their Representative on the Central Council, and proposed a hearty vote of thanks to him. This was seconded by Dr. H GREY-EDWARDS (Bangor) and unanimously carried.

Election of Officers.—The following were elected officers for the ensuing year: *President-elect*, Mr. Evan Williams (Bala); *Honorary Secretary*, Dr. H. Jones Roberts (Penygroes), re elected; *Members of Branch Council*, Mr. E. D. Evans (Wrexham), Dr. H. Drinkwater (Wrexham), Dr. E. Moss (Wrexham), Mr. David Lloyd, M.B. (Denbigh), Dr. John Evans (Carnarvon), Mr. J. Lloyd Roberts, M.B. (Colwyn Bay), Mr. R. Arthur Prichard (Conway), Mr. J. R Prytherch, M.B. (Llangefni), Mr. H. Gladstone Jones (Criccieth), Mr. Hugh Jones, M.B. (Dolgelly), Dr. Richard Jones (Blaenau Festiniog), and Mr. J. W. Rowlands (Llanaelhaiarn).

Places of Meeting for 1911.—It was decided to hold the intermediate meeting at Criccieth and the annual meeting at Conway.

Research Defence Society.—Dr. H. Drinkwater (Wrexham) was appointed a corresponding member for the Branch.

President's Address.—The PRESIDENT delivered his address, taking as his subject "A Plea for a Better Organization of the Profession." On the proposal of Mr. R ARTHUR PRICHARD (Conway), seconded by Dr. HUGH JONES (Dolgelly), a hearty vote of thanks was accorded to the President for his able and timely address.

Papers.—The following papers, etc., were read: Mr. E. D. EVANS: (1) Short notes of a case illustrating the rôle of entozoa in the etiology of appendicitis. (2) Short notes of two cases of *Bacillus coli* infection during the puerperium. Dr. H. DRINKWATER showed radiographs of a brachydactylous hand and foot. Dr. H. JONES ROBERTS: A note on a case of radical cure of hernia. Dr. W. BLAIR BELL: Some points in regard to the diagnosis and treatment of cancer of the cervix. Dr. N. PERCY MARSH: Infant feeding in difficult cases. Mr. G. P. NEWBOLT: Non-union and delayed union in fractures of the leg. Dr. R. J. M. BUCHANAN: (1) Auscultation and tuning-fork vibration. (2) Pulmonary affections and syphilis. Mr. W. THELWALL THOMAS: Ureteral calculi, with specimens and rays. The papers of Dr. J. Lloyd Roberts (Liverpool) and Dr. Macalister were deferred.

Luncheon and Tea.—Prior to the meeting the members lunched together at the Hand Hotel, and after the meeting were entertained to tea by Mr. F. A. W. Drinkwater at his residence, The Woodlands, Llangollen.

OXFORD AND READING BRANCH.

THE annual meeting of this Branch was held on Monday, July 4th, at the Royal Berks Hospital, Reading. Dr. J. D. DICKSON (Great Marlow) President, in the chair, and thirty members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Induction of New President.—Mr. WHITELOCKE inducted the new President into the chair.

The late King Edward.—The PRESIDENT then proposed a vote of condolence to His Majesty the King in the following terms:

> That this meeting of the Oxford and Reading and Maidenhead Branch of the British Medical Association desires to record with most profound sorrow its sense of the irreparable loss which the nation as a whole, and the medical profession in particular, have sustained by the sudden and unexpected death of His Most Gracious Majesty King Edward VII. It also desires to place on record its expression of sincere and respectful sympathy with His Majesty King George V, the Queen Mother, and the whole of the Royal Family in their affliction and sad bereavement, and an assurance of continued loyalty and devotion to His Majesty's Throne and Person.

The vote was passed in silence, the meeting rising to its feet.

Election of Officers.—The following officers were elected: *President-elect*, Dr. Turrell (Oxford); *Honorary Secretary*, Dr. Duigan; *Honorary Treasurer*, Dr. Freeman; *Representative on Council*, Mr. Drew (provisionally elected); *Five New Members of Council*, Drs. Gibson, Bevers, Croly, Yelf, and Squire.

Balance sheet.—The TREASURER read the balance-sheet, which was accepted and adopted *nemine contradicente*.

The Capitation Grant to Branches.—Some discussion took place on the withholding of the capitation grant to the Branch. Mr. WALTERS (Reading) proposed:

> That in view of the unsatisfactory attitude of the parent Association towards its Branches the Oxford and Reading Branch form an independent society.

This was ruled out of order by the PRESIDENT on the ground of insufficient notice.

Exhibits and Cases.—Dr. FREEMAN gave a demonstration of the use of CO_2 snow in the treatment of naevi. He also showed a series of cases to demonstrate the various stages of *x*-ray treatment in ringworm of the scalp. Later he showed a case of lichen planus. Mr. E. C. BEVERS showed a case of gastrostomy. The patient, a man of over 60, was operated on a year ago for malignant stricture of the oesophagus, situated above the cardiac opening of the stomach. He used Senn's method, opening the stomach by puncturing near the cardiac end and inserting a No. 12 rubber catheter, which was fixed by a purse-string suture. By a series of sutures round this the mucous membrane was pouched into the stomach, which prevented leakage. Finally, the stomach wall was slung up to the parietal peritoneum and sheath of rectus muscle. The patient was fed immediately after through the tube, the quantities of milk being gradually increased from 4 oz. to a pint. The patient, after eight days, could take the tube out between feeds, and had ever since enjoyed reasonable comfort. He got some satisfaction from chewing solid food, but it was always regurgitated later. He now took 2 pints of milk, two eggs, stout, and porridge through the tube. Mr. Bevers had since operated on two other cases with success. He advocated Senn's operation as being easy and rapid; it did not diminish the capacity of an already contracted stomach; it allowed of immediate feeding; there was little movement of the stomach walls, and, above all, there was no leakage. Vomiting, regurgitation, and eczema of the abdominal wall were avoided. Mr. WHITELOCKE congratulated Mr. Bevers on his results, and said he had seen several successful cases of this nature lately at Edinburgh. Mr. GILFORD mentioned the good results obtained in a few cases by passing radium, in a tube, down to the seat of obstruction. Dr. ABRAM showed two cases of arrested development. One, a girl aged 4½, was of the Mongolian type, with the round face, strabismus, open mouth, soft skin, and rounded hands, with incurving little finger. She could neither walk or talk. The other, a boy aged 8, presented features of gigantism; weighed 5 st. 3 lb.; his limbs were large, muscles soft and feeble; he was unable to walk; sexually he was undeveloped, and there was some defect of sensation. Mr. WHITELOCKE recorded 2 cases of intussusception in very young children, both recovering after operation. One was an infant of 11 months, where the diagnosis was difficult, the main symptoms being vomiting, with attacks of screaming and collapse. No tumour could be felt, even under an anaesthetic. The vomit becoming grumous, Mr. Whitelocke operated, and found an ileo colic intussusception, a large appendix and a short mesentery preventing the invagination going far. The child recovered. Within a week he had an almost precisely similar case in an infant aged 8½ months; intense screaming and collapse were again the chief features, no tumour being felt. Dr. HOLDEN read notes of a case of pernicious anaemia which developed ataxic symptoms. The patient, aged 58, suffered from weakness and constipation, with intense anaemia. The blood examination showed the anaemia to be of the pernicious type, with the exception that the colour index was low. She improved on arsenic, but ataxic symptoms developed. There was some improvement till paralysis of the bladder set in, necessitating use of catheter during last three months of life. The plantar reflexes were lost, and the ataxy increased till death took place from exhaustion. Dr. GIBSON spoke on a case of tachycardia: a gentleman, aged 63, suffered from paroxysmal rhythmical disturbance of the heart's action since the age of 49. The attacks recurred about every two weeks, flatulence being sometimes the probable cause. There was no organic disease. Blood pressure 150 mm. Seeing that at the age these attacks first developed (49) arterio-sclerotic lesions are prone to develop, Dr. Gibson considered it likely that there was some developing sclerosis of one of the coronary arteries. He therefore treated the arterio-sclerosis on general principles, limiting meat and alcohol, prescribing regular exercise, and giving 2 grains of potassium iodide at night. The attacks were charted, and showed a marked diminution; there were twenty-three the year previous to treatment, and thirteen during the subsequent year. He considered his diagnosis, therefore, was justified. Dr. DUIGAN recorded a case of latent infective endocarditis in a lady who underwent an operation for recurrent intracystic papillomatous growth of the right ovary. The left ovary had been involved a year previous, and had been removed, the patient enjoying excellent health in the interval. She complained of feeling a "little out of sorts," and Dr. Duigan, on examination, found evidence of recurrence of the growth, and advised a further operation. The point of interest in the case was the presence of a few bruises on the lower limbs, slightly tender, and which she could not account for. Her heart was examined, but appeared normal; there was no rise of temperature, and no other symptoms whatever. In spite of the serious surgical aspect of the case, the patient described herself as feeling much better for a tonic she was taking in the ten days' interval before operation; she did not look really ill, and continued to live her usual active life. Mr. Parker operated, and the growth appeared to be more easily removable than was anticipated; but the patient never recovered consciousness after the anaesthetic (ether), sank into deep coma, and died eight hours later; the temperature rose steadily during the last two hours of life. Dr. Gibson did the *post-mortem* examination, and found recent vegetation on the mitral valve, with infarcts in spleen and kidneys, and corpus striatum. A small recent haemorrhage was also found in the optic thalamus The growth was an endothelioma, and two cystic portions were found between the uterus and bladder. Dr. Duigan quoted Dr. Horder's classification of infective endocarditis (*Quarterly Journal of Medicine*, April, 1909) and pointed out how seldom these latent types were diagnosed in life. The skin ecchymoses in this case were the key to the situation.

Dinner.—About twenty members dined together after the meeting at the Caversham Bridge Hotel.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

NORTH GLAMORGAN AND BRECKNOCK DIVISION.

Election of Officers.—The following have been elected officers for the ensuing year: *Direct Representative of this Division*, Dr. W. E. Thomas (Ystrad, Rhondda Valley); *Chairman*, Dr. G. B. Francis (Brecon); *Vice-Chairman*, Dr. H. L. Hughes (Dowlais); *Honorary Secretary and Treasurer*, C. J. Weichert (Penygraig); *Representatives on Branch Council*, Dr. C. Biddle (Merthyr Tydfil), Dr. D. N. Morgan (Gilfach Goch), Dr. W. E. Thomas (Ystrad); *Executive Committee*, Drs. C. Biddle, D. N. Morgan, T. J. Webster, W. Llewellyn Jones, R. Gabe-Jones, J. Shaw Lyttle, Edwin Morgan, James Lloyd, J. Armstrong.

SOUTHERN BRANCH:

WINCHESTER DIVISION.

Election of Officers.—The following have been elected officers for the ensuing year: *Chairman*, J. C. Hoyle, M.B. (Upham); *Vice-Chairman*, E. D. Ritchie,

M.D. (Chandlersford); *Honorary Secretary and Treasurer*, H. J. Godwin, M.B., F.R.C.S. (Winchester); *Representative for Representative Meeting*, R. A. Lyster, M.D., D.P.H. (Winchester); *Representatives on Branch Council*, E. D. Ritchie, M.D. (Chandlersford), R. A. Lyster, M.D. (Winchester); *Executive Committee*, W. M. Harman, M.D. (Winchester), J. L. Livingstone, M.D. (Hursley), J. F. Briscoe (Alton), H. C. Williams, M.B. (Alton), G. F. A. England, M.D. (Winchester), F. W. Jollye, M.D. (Alresford).

Association Notices.

ELECTION OF MEMBERS OF COUNCIL BY GROUPED REPRESENTATIVES.

NOTICE is hereby given that Nominations for candidates for election of Members of Council by Grouped Representatives for the year 1910-11 will be received by the Medical Secretary up to the end of the first hour of the proceedings of the Annual Representative Meeting on Monday, July 25th, 1910. Each Nomination must be on the prescribed form, copies of which will be forwarded by the Medical Secretary upon application.

Separate forms have been prepared (1) for Nomination by a Division and (2) for Nomination by a Representative of a Division included in the Group, and those applying are requested to state for which purpose the form is desired.

The voting papers will be issued at the Representative Meeting to each Representative or Deputy Representative of a constituency in the United Kingdom, in attendance at the Meeting.

By Order of the Council,

J. SMITH WHITAKER,
Medical Secretary.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns 8,142 births and 3,692 deaths were registdred during the week ending Saturday last, July 16th. The annual rate of mortality in these towns, which had been 11.2, 11.0, and 11.0 per 1,000 in the three preceding weeks, rose to 11.4 per 1,000 last week. The rates in the several towns ranged from 4.4 in Willesden, 4.7 in Leyton, 4.9 in King's Norton, 5.9 in York, 6.5 in Smethwick, and 6.6 in Walthamstow to 15.3 in Dewsbury, 15.8 in Rhondda, 17.7 in Merthyr Tydfil, 18.1 in Rotherham, and 21.3 in Barrow-in-Furness. The death-rate from the principal infectious diseases averaged 1.0 per 1,000; in London the rate did not exceed 0.8 per 1,000, while among the seventy-six other large towns it ranged upwards to 3.0 in Bootle, 4.2 in Grimsby, 4.7 in Rotherham, and 4.9 in Barrow-in-Furness. Measles caused a death-rate of 1.1 in Bradford and in Newcastle-on-Tyne, 1.3 in Merthyr Tydfil, 1.4 in Grimsby, and 4.1 in Barrow-in-Furness; whooping-cough of 1.5 in Burnley, and 2.8 in Grimsby; enteric fever of 1.5 in Middlesbrough; and diarrhoea of 1.0 in Burnley, 1.1 in St. Helens, and 1.5 in Bootle. The mortality from scarlet fever or from diphtheria showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,353, 1,378, and 1,439, at the end of the three preceding weeks, further rose to 1,530 at the end of the week under notice; 249 new cases were admitted during the week, against 187, 183, and 188, in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, July 16th, 899 births and 449 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.3, 13.2, and 12.1 per 1,000 in the three preceding weeks, rose to 12.4 last week, and was 1.0 per 1,000 above the mean rate during the same period in the large English towns. Among these Scottish towns the death-rates ranged from 10.0 in Paisley and 11.2 in Perth to 14.7 in Dundee and 22.0 in Greenock. The death-rate from the principal infectious diseases averaged 0.9 per 1,000, the highest rates being recorded in Dundee and in Greenock. The 202 deaths from all causes recorded in Glasgow included 1 which was referred to measles, 2 to scarlet fever, 2 to diphtheria, 2 to whooping-cough, and 6 to diarrhoea. Two deaths from diphtheria were registered in Aberdeen, and 2 from scarlet fever in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, July 16th, 686 births and 347 deaths were registered in the twenty-two principal urban districts of Ireland, as against 627 births and 376 deaths in the preceding period. The annual death-rate in these districts, which had been 17.9, 16.1, and 17.0 per 1,000 in the three preceding weeks, fell to 15.7 per 1,000 in the week under notice, this figure being 4.3 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 14.8 and 18.1 respectively, those in other districts ranging from 4.1 in Drogheda and 5.2 in Portadown to 23.9 in Ballymena and 25.2 in Newry, while Cork stood at 18.5, Londonderry at 6.0, Limerick at 12.3, and Waterford at 19.5. The zymotic death-rate in the twenty-two districts averaged 1.6 per 1,000 as against 2.1 per 1,000 in the preceding week.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE

THE following appointments have been made at the Admiralty: Fleet Surgeon G. LEY to the *Triumph*, July 25th; Surgeon K. D. BELL to the *Victory*, additional, July 11th; Surgeon E. J. O'CONNELL to the Royal Marine Division, Plymouth; Surgeon R. H. MCGIFFIN, M.B., to the *Vivid*, additional, for disposal, July 25th; Fleet Surgeon C. J. MANSFIELD, M.V.O., M.D., and Surgeon A. A. SANDERS, M.B., to the *Indomitable*, on recommissioning, August 9th; Fleet Surgeon J. P. HALL, M.B., and Surgeon J. BARRETT, M.B., to the *Duncan*, on recommissioning, August 9th; Staff Surgeon B. S. ROBSON, M.A., to the *Royal Arthur*, August 2nd, and to the *Alacrity*, on recommissioning, undated; Staff Surgeon S. CONNER, M.B., Surgeon H. M. LANGDALE, and Surgeon F. J. GOWANS, M.B., to the *Royal Arthur*, for the voyage home, undated; Staff Surgeon A. K. SMITH-SHAND, M.B., to the *Victory*, additional, for disposal, August 12th; Staff Surgeon A. WOOLLCOMBE and Surgeon G. L. BUCKERIDGE to the *Astræa*, on recommissioning, undated; Staff Surgeon J. A. FORREST, M.B., to the *Charybdis*, for the voyage home, undated; Staff Surgeon A. T. GAILLETON, M.B., to the *Halcyon*, August 2nd; Staff Surgeon C. A. G. PHIPPS to Chatham Hospital, August 2nd; Surgeon A. B. MARSH to the *Hibernia*, August 2nd; Surgeon W. W. D. CHILCOTT to the *Impregnable*, August 2nd; Surgeon M. H. LANGFORD to the *Collingwood*, August 9th; Surgeon N. B. V. JACOB to the Royal Marine Dépôt, Deal, August 12th; Surgeon E. D. RUTHERFORD, M.D., to the *Royal Arthur*, August 2nd, and to the *Cadmus*, on recommissioning, undated; Surgeon G. W. M. CUSTANCE to the *Royal Arthur*, August 2nd, and to the *Clio*, on recommissioning, undated.

ARMY MEDICAL SERVICE.

COLONEL T. J. R. LUCAS, C.B., M.B., who has been appointed Principal Medical Officer, 1st (Peshawar) Division, assumed charge of the duties of that appointment from June 16th.

INDIAN MEDICAL SERVICE

LIEUTENANT-COLONEL G. W. P. DENNYS, Bengal, is promoted to be Colonel from June 16th. He was appointed Surgeon, October 31st, 1879, and became Lieutenant-Colonel, October 31st, 1899. He was in the Afghan war in 1879-80, receiving a medal.

Colonel W. G. KING, C.I.E., M.B., Madras, retires from the service from May 25th. He joined the department as Assistant Surgeon, March 31st, 1874, and became Colonel, April 29th, 1906.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS

Third Lowland Field Ambulance.—Lieutenant D. G. DAVIDSON to be Captain, June 22nd.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BARNSLEY: BECKETT HOSPITAL.—Honorary Surgeon.

BIRMINGHAM: QUEEN'S HOSPITAL.—House-Surgeon. Salary at the rate of £50 per annum.

BLACKBURN COUNTY BOROUGH.—Resident Medical Officer of the Fever Hospital and Assistant to Medical Officer of Health. Salary, £100 per annum.

BRISTOL ROYAL INFIRMARY.—Honorary Medical Registrar.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer (Male). Salary to commence at £140 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £60 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum.

DORCHESTER COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £140 per annum.

DOUGLAS: NOBLE'S ISLE OF MAN HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £90 per annum.

DURHAM COUNTY HOSPITAL.—House-Surgeon. Salary, £120 per annum.

ENNISKILLEN: FERMANAGH COUNTY HOSPITAL.—House-Surgeon. Salary, £72 per annum.

GLOUCESTERSHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary, £250 per annum, rising to £300.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Anæsthetist. Honorarium, 10 guineas per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

HAMMERSMITH INFIRMARY, Ducane Road, W.—Junior Assistant Medical Officer (male). Salary, £50 for six months.

HASTINGS, ST. LEONARD'S, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Honorarium, £20 for six months.

HÔPITAL FRANÇAIS, Shaftesbury Avenue, W.C.—Second Resident Medical Officer. Salary, £50 per annum.

HULL: ROYAL INFIRMARY.—Two Casualty House-Surgeons. Salary at the rate of £60 per annum for six months, and £30 per annum for twelve.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, New Cavendish Street, W.—Assistant Clinical Pathologist.

LINCOLN GENERAL DISPENSARY.—Resident Junior Medical Officer. Salary, £175 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Gartside Street. Assistant Medical Officer (non-resident). Salary, £100 per annum.

METROPOLITAN ASYLUMS BOARD.—Assistant Bacteriologist. Salary, £300 per annum, rising to £350.

MILE END OLD TOWN (HAMLET OF).—Senior Assistant Medical Officer. Salary, £150 per annum, rising to £170. Junior Assistant Medical Officer. Salary, £120 per annum, rising to £145.

NEWCASTLE-UPON-TYNE UNION.—Second Assistant Resident Medical Officer (female) for the Workhouse. Salary at the rate of £100 per annum, rising to £130.

OLDHAM INFIRMARY.—Three House Surgeons. Salaries at the rate of £120, £100, and £80 per annum.

OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Junior House Surgeon. Salary at the rate of £80 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—House-Surgeon. Salary at the rate of £80 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150, and £5 annually in lieu of stimulants.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester Square, W.—Joint Morning House Anaesthetist. Honorarium, £25 per annum.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion Square, W.C.—Clinical Assistant. Salary, 50 guineas per annum.

SALFORD UNION INFIRMARY, Hope.—Medical Superintendent, non-resident. Salary, £350 per annum, rising to £500.

SALISBURY GENERAL INFIRMARY. — (1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £50 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician. Salary, £50 per annum each.

SUNDERLAND INFIRMARY.—Two Male House-Surgeons. Salary, £80 per annum each.

TAUNTON AND SOMERSET HOSPITAL. — Resident Assistant House-Surgeon. Salary at the rate of £70 per annum.

TRURO: ROYAL CORNWALL INFIRMARY. — House-Surgeon. Salary, £100 per annum.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer. Salary, £100 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House-Surgeon. Salary, £120 per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—Junior House-Surgeon. Salary at the rate of £75 per annum.

WINCHESTER: ROYAL HAMPSHIRE HOSPITAL.—House-Physician (male).

WORCESTER GENERAL INFIRMARY.—House-Physician. Salary, £100 per annum.

MEDICAL REFEREE.—The Home Secretary announces a vacancy as Medical Referee to County Court Circuit No. 21.

APPOINTMENTS.

ARCHIBALD, Alexander, M.B., Ch.B.Edin., Junior House-Surgeon, Stockport Infirmary.

GOODMAN, G., L.R.C.P. and S.Irel., Medical Officer of Health of the Brigg Urban District.

GRIEVES, J. P., M.R.C.S., L.R.C.P., District Medical Officer of the Long Aston Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGE.

BUTLER—HALL.—On the 19th inst., at St. Peter's, West Bromwich (by the Rev. Barnes Hunter, Vicar), Percival Butler, M.R.C.S., L.R.C.P., of Great Bridge, to Frances, daughter of Samuel Hall, London. No cards.

DEATH.

STEELL.—On the 17th inst., at Anson Road, Victoria Park, Manchester, Agnes Dunlop, the dearly-loved wife of Graham Steell, M.D., F.R.C.P.

RECENT PUBLICATIONS.

A Handbook of Human Parasitology. By Dr. M. Braun and Dr. M. Lühe. Translated by L. Forster. London: J. Bale, Sons, and Danielsson. 1910. (Roy 8vo, pp. 216; 10s. 6d.)

This is a translation of a book which was reviewed in the JOURNAL of May 8th, 1909, p. 1125, *Leitfaden zur Untersuchungen der tierischen Parasiten des Menschen* (see also correspondence, p. 1580; and vol. ii, 1909, p. 160).

PUBLISHERS' ANNOUNCEMENTS.

Mr. H. K. Lewis informs us that the fourteenth edition of the *Extra Pharmacopoeia*, by Martindale and Westcott, is in the press, and will be ready very shortly. In order to include the large amount of new matter, the size of the page has been enlarged to 6⅞ by 4⅛ inches. Among the more important changes in the matter of the book are the following: A large number of new chemical and pharmaceutical preparations have been introduced; the pages devoted to vaccine and organotherapy have been completely revised; patent medicines to the number of 250 in all are now fully described; the article on radium has been recast, and deals with the question recently raised regarding the standardization of this element; the epitome on iontophoresis brings together much scattered work that has been done and published on this matter; the revision of the molecular weights has been made throughout the book in accordance with the alterations in eight atomic weights within the last two years by the International Commission. The new work also includes a chapter on acid lactic bacilli-therapy, being conclusions of a considerable amount of experimental work in which the authors have been engaged, with up-to-date literature on the subject. A supplement containing the results of analyses of over 300 organic bodies accompanies the present issue. This may be obtained separately if desired.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Monday and Wednesday, 5.15 p.m., Diseases of the Chest in Children; Tuesday and Thursday, 5 p.m., Deformities.

NORTH EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient; Nose, Throat, and Ear. Tuesday, 10 a.m., Medical Out-Patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient. Wednesday, 2.30 p.m., Medical Out-patient Skin and Eye Clinics: X Rays. Thursday, 2.30 p.m., Gynaecological Operations: Clinics: Medical Out-patient; Surgical Out-patient; 3 p.m., Medical In-patient. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient Eye; 3 p.m., Medical In-patient.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics: Operations and X Rays, 2 p.m. daily. Monday, Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Eye, 10 a.m.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
JULY.	
23 SATURDAY ..	ANNUAL REPRESENTATIVE MEETING, Court of Common Council Chamber, Guildhall, London, 9.30 a.m.
24 Sunday ..	
25 MONDAY ..	REPRESENTATIVE MEETING, 10 a.m.
26 TUESDAY ..	ANNUAL MEETING (*See detailed Programme pp. 137 to 164*). REPRESENTATIVE MEETING, 10 a.m. GENERAL MEETING, 2.30 p.m.
27 WEDNESDAY	ANNUAL MEETING (*See detailed Programme pp. 137 to 164*). CENTRAL COUNCIL, South Kensington, 9.30 a.m.
28 THURSDAY ..	ANNUAL MEETING (*See detailed Programme pp. 137 to 164*). CENTRAL COUNCIL, South Kensington, 9.30 a.m.
JULY (*continued*).	
29 FRIDAY ..	ANNUAL MEETING (*See detailed Programme pp. 137 to 164*). CENTRAL COUNCIL, South Kensington, 9.30 a.m.
30 SATURDAY ..	
31 Sunday ..	
AUGUST.	
1 MONDAY ..	
2 TUESDAY ..	
3 WEDNESDAY	
4 THURSDAY ..	
5 FRIDAY ..	
6 SATURDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

LONDON, 1910.

ANNUAL GENERAL MEETING.

The Annual General Meeting of Members of the British Medical Association was held at the Court of Common Council Chamber, Guildhall, London, on Friday, July 22nd, 1910.

Sir Horatio Davies, Acting Lord Mayor, attended by the Sword Bearer, was welcomed by the Chairman of Council, and took the Chair.

Confirmation of Minutes.

The Minutes of the last Annual Meeting were confirmed and signed.

Welcome by Acting Lord Mayor.

Sir Horatio Davies said that some twelve years ago, when he had the honour of filling the office of Lord Mayor of London, it was his privilege to entertain the medical profession of that community. Therefore it was, perhaps, a fitting position for him to occupy that day in the unavoidable absence of the Lord Mayor. His duties that morning were very brief. He was called upon to preside at that Meeting, not for the purpose of keeping those present in order, but that they might elect a gentleman who would be better able to do that than he. On behalf of the Lord Mayor, the Corporation, and the citizens of London he held out to the British Medical Association the heartiest possible welcome. He trusted that their deliberations would be valuable to themselves, and then it would be known that the suffering community would be better for their deliberations that day. He had much pleasure in declaring the Congress open, and called upon them to elect their Chairman for that day. (Loud applause.)

Letter from the King.

The Chairman of Council read the following communication, which was received with loud applause:

Marlborough House,
Pall Mall, S.W.,
July 21st, 1910.

Dear Sir,

I am commanded by the King to inform you that His Majesty is graciously pleased to become Patron of the British Medical Association.

Yours faithfully,

Signed) W. Carrington,
Keeper of His Majesty's Privy Purse.

Vote of Thanks to Deputy Lord Mayor.

The Chairman of Council next moved that the Association's heartiest thanks be given to Sir Horatio Davies for coming there to open the meeting. His presence would be a very happy augury for the Meeting of the British Medical Association in London.

The Chairman of Representative Meetings, seconding the Motion, said the Meeting assembled within the walls of the Council Chamber would discuss during the next three or four days many matters; it was the Parliament of the Medical Profession. As Parliaments went, it was a youthful Parliament, but not so young as many. That day its seventh birthday was celebrated, and, if that were a lucky year, they were able to signalize their good fortune by meeting in the first city in the world, and also in being able to partake in the hospitality which the City of London's distinguished Corporation offered. The Motion was carried by acclamation.

Sir Horatio Davies, returning thanks, understood the Meeting was to carry out a sort of parliamentary campaign. He trusted it would not be a political campaign, but if it were, that the deliberations would be carried out more harmoniously than in some other legislative assemblies. (Laughter.)

The Chairman of Council then took the chair. He moved that the Meeting be adjourned until Tuesday, July 26th, at half-past 2, and this was duly carried.

[The report of the Adjourned Annual General Meeting will be found at p. 220.]

EXTRAORDINARY GENERAL MEETING.

An Extraordinary General Meeting of the British Medical Association was held at the Court of Common Council Chamber, Guildhall, London, on Friday, July 22nd, 1910, at 2 o'clock in the afternoon, for the purpose of receiving a report of the proceedings at the Extraordinary General Meeting held at the Connaught Rooms, Freemasons' Hall, Great Queen Street, London, on Wednesday, June 29th and of confirming, if thought fit, the following Resolution

> That the Regulations contained in the printed document submitted to this Meeting, and for the purpose of identification initialled by the Chairman thereof, be and the same are hereby adopted as the Regulations of the Association in substitution for all the existing Regulations of the Association.

The Chairman of Council was in the Chair.

The Minutes having been signed, the Chairman of the Organization Committee moved the Resolution above set forth.

The Chairman of Representative Meetings seconded.

Dr. Haddon (Hawick), protesting against the Resolution being passed, said he looked upon the whole organization of the society as at present constituted as burking the opinion of a very great number of the Members. He himself had been one of the earliest to attempt to reorganize the Association on a better plan than existed in his youth.

After having been called to order, the speaker went on to say that if the Association was to pay its way care must be taken of the expenditure. The Resolution had seemed to him intended to take the money of the Association and use it for other purposes than the scientific advancement of medicine or the honourable interests of the medical profession. Dealing with Divisional meetings, what did he find when he went to the Divisional meeting? He found nobody there. The meetings used to be well attended. At present the Divisional meeting was defunct. The Members of the Representative Meeting were not the best men of the Association. A Representative had to support a proposal whether he thought that it was right or not. The Representative Meeting was going to be worse than the old Council.

The Motion was then put to the Meeting and carried with 1 dissentient.

The Meeting then concluded.

ANNUAL REPRESENTATIVE MEETING.

FRIDAY, JULY 22nd.

Mr. H. A. Ballance (Chairman of Representative Meetings) in the Chair.

Reception of Return of Representatives Elected.

Upon the motion of the Chairman, the return of the election of Representatives of Divisions for the year 1910–11, with the names of substitutes for Representatives unable to be present, was received, approved, and entered upon the Minutes.

Dr. Dawson Williams.

The Chairman of Council asked whether the Chairman was able to give the Meeting any cheering intelligence concerning with Dr. Dawson Williams, who had, as they all knew, met with a serious accident. The Members were very anxious to hear about him.

The Treasurer (Dr. Rayner) stated that he had that morning received the following letter:

Dear Dr. Rayner,—You will have heard of my mischance, the only person, out of eight involved, to receive any serious injury. I have been most kindly and skilfully attended to by Mr. Jamison, of Horsham, the Honorary Secretary of that Division, British Medical Association, and I have had the advantage of the opinion in consultation of Dr. Howard Tooth and of Mr. Robert Jones, of Liverpool, so that I think that everything that

could be done has been done. But there is not the least prospect of my being able to get out of bed in time to be present in London during the Annual Representative and General Meetings. I don't want to put you to the trouble of answering this letter.

He was quite sure that everybody present would be delighted to hear that Dr. Dawson Williams was going on satisfactorily. He would suggest that the Meeting should send him an expression of sympathy with him in his misfortune together with an expression of hope for his speedy recovery.

This was agreed to unanimously.

DEPUTY REPRESENTATIVES.

On the motion of the CHAIRMAN the notices of appointment of substitutes for Representatives under Article XXX and By-law 19, which were reported by the Medical Secretary, were received, approved, and entered on the Minutes.

APOLOGIES FOR ABSENCE.

The MEDICAL SECRETARY reported that letters expressing regret at inability to be present had been received from the following Representatives: Mr. F. E. Daniel (Furness, Kendal), Dr. C. G. Havell (South Suffolk), Dr. E. O. Price (North Carnarvon, Anglesey), and Dr. C. R. Stewart (Consett, Gateshead); and the following Members of Council: Dr. A. C. Farquharson (North of England Branch), Dr. Cecil Shaw (Connaught and Ulster Branches), and Dr. Denis Walshe (Leinster and South-Eastern of Ireland Branches).

INVITATION TO INCOMING MEMBERS OF COUNCIL.

The CHAIRMAN stated that he had taken it upon himself to invite the Members of the incoming Council to attend the Meeting in addition to the outgoing Members of Council who were present by right. The incoming Members of Council were not present by right. Next year they would be present in their own right. He hoped that the Meeting would approve of his action.

The Meeting approved of the action of the Chairman.

STANDING ORDERS.

The CHAIRMAN moved the adoption of the Standing Orders as they were adopted at the Belfast Meeting, after the following verbal and technical amendments had been agreed to:

That Standing Order I, 1, ix—

Election of Members of Medico-Political and Ethical Committees.—Elect at such time, before the conclusion of the third day's proceedings, as the Chairman may, pursuant to Standing Order III, 16, prescribe:

(*a*) Six Members of the Association to serve on the Medico-Political Committee for the ensuing year.
(*b*) Five Members of the Association to serve on the Ethical Committee for the ensuing year.
(*c*) Such Members of other Committees, if any, as it falls to the Representative Meeting to elect.

be amended to read as follows:

Election of Members of Council.—Elect at such time as the Meeting shall determine:
(*a*) Twelve Members of Council under By-law 23 (*c*);
(*b*) Four Members of Council under By-law 23 (*d*);
(*c*) Three Members of Council under By-law 23 (*e*).

This was agreed to.

That the following new subparagraph I, 1, x, be added, and that the present subparagraph I, 1, x, become I, 1, xi:

Election of Members of Committees.—Elect Members of Standing Committees in accordance with the By-laws, and such Members of other Committees and Conferences, if any, as it falls to the Representative Meeting to elect.

This was agreed to.

It was suggested that Section I, 8, as follows:

8. *Resolutions involving Special Expenditure.*—Every Resolution involving special expenditure shall, before final adoption by the Representative Meeting, be remitted to the Finance Committee for report to a later session,

should be amended as follows:

Resolutions involving Special Expenditure.—The Meeting shall not proceed on any Motion involving special expenditure which has not previously been considered by the Finance Committee.

This was agreed to.

That in the following Section II, 1, line 5, for the words "General Secretary" be substituted the words "Secretary of the Meeting."

II. *Composition and Arrangement of the Meeting.*

1. *Composition.*—The persons constituting the Meeting, hereinafter called Members of the Meeting, shall be those duly elected Representatives of Divisions, or substitutes duly appointed under Article XXX and By-law 19, of whose election or appointment the General Secretary shall have received due notice, together with Members of Council for the time being.

This was agreed to.

That in the following Section III, 4, line 1, for the word "hereinbefore" be substituted the word "herein."

4. *Reports: Notice.*—Subject as hereinbefore provided, no Report by the Council, or by a Committee, to the Representative Meeting shall be considered by the Meeting unless it shall have been sent to the Divisions and published in the JOURNAL at least one month before such Meeting. The exceptions to this rule shall be—

(A) That the Council shall submit, in addition to their Annual Report, a Supplementary Report dealing with those matters of importance, arising subsequent to the issue of the Annual Report, in which action has been taken, or action by the Representative Meeting is recommended.
(B) That any Special Committee appointed by the Representative Meeting shall report in accordance with the terms of the instructions given to such Committee by the Meeting.

This was agreed to.

That in the following Section III, 7 (3), line 4, the words "Council or" be inserted before the word "Committee."

Amendments and Riders.—(3) To a Motion that a Report, or a specified paragraph of a Report, be approved, an Amendment may be moved to the effect that the Meeting do disagree with, or do refer back to the Committee, any specified portion thereof, or that with reference thereto the Meeting do express an opinion in terms stated.

This was agreed to.

That in the following Section III, 9, line 4, after the words "Order III" there be inserted "(6 and 8)."

9. *Absence of Authorized Mover of Adoption of Report or other Motion.*—In the absence of any Member authorized to make any Motion referred to in Standing Order III, any other Member deputed by such Member may make such Motion on his behalf, and if no Member shall have been so deputed, such Motion shall be made formally by the Chairman.

This was agreed to.

The CHAIRMAN said it was necessary for the meeting to know earlier in the proceedings than was contemplated above who were going to be the Chairman and Deputy Chairman of the Representative Meetings for the ensuing year. The Chairman of the Representative Meetings would be *ex officio* member of the Council, and therefore it would be necessary for the Representative Meeting to elect him on the Council, so that, in order to put back the time when the nomination for Chairman and Deputy Chairman came in, he proposed the following:

That in the following Section III, 15, first paragraph, under the head of "Nomination," end of line 4, the words "one hour after the commencement" be inserted in place of the words "the termination."

15. *Election of Chairman and Deputy Chairman of Representative Meetings: Nomination.*—Nominations for the office of Chairman of Representative Meetings, and Deputy Chairman of Representative Meetings for the year, shall be handed in writing to the Secretary of the Meeting not later than the termination of the second day's proceedings.

This was agreed to.

That Section III, 16, as follows, be deleted:

16. *Election of Committees.*—Nominations for election by the Representative Meeting of members of Standing Committees should be handed in writing to the Secretary of the Meeting not later than the termination of the second day's proceedings. Each nomination shall be signed by the nominator and shall contain a declaration that the candidate nominated has agreed to serve. No Member shall be eligible for nomination who having been a member of a Standing Committee during the previous year shall have failed to attend at least half the meetings of the Committee for that year. The names of all candidates duly nominated shall be included in a voting paper issued to each voter, and shall be arranged in three lists, one of those residing in England and Wales, one of those residing in Scotland, and one of those residing in Ireland. Each voter shall be entitled to vote for not

more candidates than there are members to be elected, and of these not more than two-thirds of the total number shall be those of candidates in the English list, not more than one-fourth in the Scottish list, and not more than one fourth in the Irish list. In counting the votes the candidates on the English list who have obtained the highest number of votes, being not more than one-half of the total number of members to be elected, the candidates on the Scottish list who have obtained the highest number of votes, being not more than one-fourth of the total number to be elected, and the candidates on the Irish list who have obtained the highest number of votes, being not more than one-fourth of the total number to be elected, shall be deemed to be elected. If any place on the Committee be still vacant, that candidate or those candidates shall be deemed to be elected who shall have obtained the highest number of votes, irrespective of the list in which the name of any such candidate appears. Scrutineers to conduct the election shall be nominated by the Chairman, and the details of the voting shall be placed before and verified by the Chairman before being declared to the Meeting.

This was agreed to.

The next subject considered was the Standing Order with regard to the election of Members of Council by grouped Representatives. Proposed new Standing Orders:

1. That the election take place at the time of the Annual Representative Meeting.
2. That a nomination for a Member of Council to be elected by any group of Representatives be required to be made by a Division or a Representative of a Division included in the group.
3. That nominations be required to be on the form set forth in the Agenda.
4. That nominations be received up to the end of the first hour of the third day's session of the Annual Representative Meeting.
5. That there be issued to each Representative or Deputy Representative of a Constituency in the United Kingdom in attendance at the Meeting a voting paper containing the names of all candidates duly nominated for election as Members of Council by the group to which such Representative belongs.
6. That the voting paper be in the form set forth in the Agenda.
7. That the voting papers be returned to the Medical Secretary within one hour from the commencement of the fourth day's session of the Annual Representative Meeting.
8. That in the event of equality of votes the election be determined by the aggregate number of Members in the Constituencies represented by the voters for each candidate, as in the case of a card vote.
9. That the details of the voting be placed before, and verified by, the Chairman before being declared.

The CHAIRMAN said, with reference to Paragraph 7, that since this Standing Order was drafted it had been decided that the Representative Meeting should in addition to the twelve Members of Council elect another four, because if the election of the twelve Members of Council were put so late as there laid down it would be difficult to arrange for the subsequent election of the additional four. Therefore it was desired to antedate the election of the twelve Members to the previous day. This had been represented to the Chairman of Council, who quite agreed in making an alteration of the date. He took upon himself to say that he was sure that it would be with the approval of the Council that this alteration in the Standing Orders should be made.

Mr. W. L. MUIR (Glasgow Eastern) said he had been requested to bring forward an amendment; but the CHAIRMAN pointed out that this election was governed by By-law 23, the last part of which says: "(*c*) 12 by the elected Representatives of the Constituencies comprised in the Branches and Divisions of the Association in the United Kingdom, which Branches and Divisions shall be formed for that purpose into twelve groups as hereinafter mentioned, the Representatives of all the Constituencies in each such group being entitled together to elect one Member of Council." As that By-law governed the situation Mr. Muir's amendment would be out of order.

This was agreed to.

The CHAIRMAN said the next matter had reference to the election of four additional Members of Council, whom, it would be remembered, it was decided at the Special Representative Meeting held a month ago to elect, at which time he was asked to put before that Meeting certain Standing Orders governing this election; and he was also asked to put before that Meeting the method of electing them by what was known as the transferable vote. He moved:

That the following Standing Orders be adopted, subject to the preference of the Meeting as between Form A and Form B.

It would be seen there were two alternative methods of voting: (*a*) by the ordinary voting paper, and (*b*) by the transferable vote. With regard to voting papers the following recommendation was made:

3. Voting papers containing the names of all candidates duly nominated, with such particulars as to their previous official experience as are stated in the nomination papers, shall be distributed to all Representatives or Deputy Representatives in attendance at the Meeting at the commencement of the afternoon session on Tuesday, July 26th.

He also wished to insert a section which should be very strict as regarded the eligibility of candidates for this election. It was certainly contemplated under the By-law that any Member of the Association should be eligible for election as one of the four additional Members of the Council to be elected by that Meeting, but it was not definitely so stated in the Standing Orders as now drafted, and he would like to propose a Standing Order as regarded the eligibility of candidates as follows:

Any Member of the Association may be nominated for election.

Dr. C. E. ROBERTSON (Glasgow Southern) asked if attention had been given to the geographical distribution of the four Members, as it seemed to him that in all the preceding voting of Members for election, for any purpose whatever, one of the stipulations had always been that the whole country should be represented as far as possible. He suggested that one Member should be allocated to England, one to Scotland, one to Ireland, and one to London. By doing that, they would be keeping to their topographical principle, and doing what was right in the interests of the Association. This was the British Medical Association, and he would protest against the selection of four men from any district whatever. They might have four Londoners or four Members from any particular town, and that, he thought, would be a very unfortunate thing.

The CHAIRMAN said it was certainly the fact that in the other elections topographical distribution had been observed; but it was stated when the election of four additional Members was proposed that the Meeting should not be fettered with regard to those four Members by geographical distribution. They wanted to have more regard to previous services in the work of the Association. Of course, it would rest with the Meeting to decide, when the matter came before them, whether they wished to pay attention to geographical distribution or not.

Dr. R. C. BUIST (Dundee) said it was quite possible that one year there might be two geniuses from Scotland, in whom the Meeting might be tempted to select; and it might be desirable that they should be returned by the Representative Meeting.

Dr. C. E. ROBERTSON (Glasgow Southern) said he would be quite satisfied with the election of Dr. Buist for Scotland as a permanent Member.

The Motion was agreed to.

The CHAIRMAN moved:

A nomination may be made by any person entitled to take part in the Meeting. Each nomination shall be on the prescribed form, which shall contain a statement of the candidate's experience in the Central Executive work of the Association, and shall contain, or be accompanied by, a statement by the candidate that he is willing to serve if elected.

Dr. E. R. FOTHERGILL (Wandsworth) moved to delete the words "which shall contain a statement of the candidate's experience in the Central Executive work of the Association." They had never had in any election a requirement that the candidate's virtues should be stated against his name. It might be that one man holding a lot of offices could make a good show on his nomination paper, while there might be points in favour of another candidate who had not done so much.

Dr. JOHN BROWN (Bury, Rochdale) seconded.

In reply to Mr. JACKSON (Plymouth) the CHAIRMAN said the account would be merely a statement of fact as to the previous experience of the candidates, and that could be

got from the candidate himself or from the officials of the Association.

Dr. E. J. MACLEAN (Cardiff) hoped the Meeting would not accept the Amendment, because if accepted, practically the whole object of this additional election of Members of Council would be defeated. Reference had properly been made to the topographical basis of election, but if this Amendment were passed the topographical arrangement would practically break down.

The Amendment was lost.

In reply to Dr. ST. CLAIR B. SHADWELL (Walthamstow) the CHAIRMAN said this would be the Standing Order for this year's election. Each Meeting considered the Standing Orders as its first business.

Dr. SHADWELL said he was instructed by his Division to vote against the Cardiff proposition—"four by the Representative Meeting, which shall have power to elect such Members at such time and in such manner as the Meeting may decide, provided that the term of office of each Member so elected shall expire at the close of the Annual Representative Meeting next following the date of his election." His own Division, with many others, was wishful to reduce the number of Members on the Central Council, but if the nomination was carried out as proposed here, it simply added four more Members to the twelve the Representative Meeting had already the right to nominate. He understood from the Cardiff Representative that the object was to retain on the Council those men who were useful to the work of the Council who under the new conditions might be excluded. In conclusion, he thought the right thing would be to have the nomination in the hands of the Central Council and not in the hands of the Representative Meeting.

The CHAIRMAN OF REPRESENTATIVE MEETINGS pointed out that such a thing could not be effective at the present year's election; but next year it might, and an opportunity would come when consideration was given to proposed amendments of Standing Orders other than those relating to the order of business.

The Standing Order was then agreed to.

Issue of Voting Papers.

The following was also agreed to:

3. Voting papers containing the names of all candidates duly nominated, with such particulars as to their previous official experience as are stated in the nomination papers, shall be distributed to all Representatives or Deputy Representatives in attendance at the Meeting, at the commencement of the afternoon session on Tuesday, July 26th.

Voting and Counting of Votes: Alternative Methods.

The next matter to be considered was the alternative methods of voting and counting of votes, as follows:

A.	B.
Voting.	*Voting.*
4. Each voter shall mark with a cross the names of those, not more than four in number, for whom he desires to vote, and sign the paper.	4. Each voter shall number the names of candidates one, two, three, etc., in the order of his preference, and sign the Voting Paper.
Counting of Votes.	*Counting of Votes.*
5. The four candidates who receive the greatest number of votes (being a clear majority of the votes given) shall be declared to be elected.	5. The votes shall be counted and the result of the election ascertained by the method of the single transferable vote.
Second Ballot.	
6. If the number of candidates who have received a clear majority of the votes given on the first ballot be fewer than the number of candidates to be elected, a second ballot shall be taken on the names of the non-elected candidates. If, in the opinion of the Chairman, the number of candidates renders it desirable, the names of those who are lowest on the first ballot and have received less than 25 per cent. of the votes may be excluded from the second ballot.	
Declaration of Result.	*Declaration of Result.*
7. The details of the voting shall be submitted to and verified by the Chairman before the result is declared.	6. The details of the voting shall be submitted to, and verified by, the Chairman before the result is declared.

Dr. J. J. MACAN (Croydon) moved that the voting be as under B.

Dr. BUIST (Dundee) seconded, and the Motion was carried.

Dr. BUIST suggested with regard to B. (4) that the words "one, two, three, etc.," should come after the word "preference." This was agreed to, and the paragraph as amended carried.

Election of Service Members of Council.

The following Motion by the CHAIRMAN was then agreed to:

That the election of Members to represent the Royal Navy Medical Service, the Army Medical Service, and the Indian Medical Service on the Council be conducted as follows:—

1. That voting papers containing the names of the candidates nominated by the Council be circulated to the Representatives and be collected at the same time as the voting papers for the election of the Chairman and Deputy Chairman of Representative Meetings.

2. That the details of the voting be submitted to the Chairman of Representative Meetings and verified by him before the result is declared.

Election of Members of the Standing Committees.

The CHAIRMAN announced that some Amendments had been received in regard to the following Motion which he proposed:

That the following Standing Orders be adopted to govern the election by the Representative Meeting of Members of Standing Committees of the Association, and other Committees, if any, of which Members are appointed by the Representative Meeting:

1. There shall be an Election Returns Committee of the Representative Meeting, which shall consist of the Chairman of Representative Meetings, the Chairman of Council, the Deputy Chairman of Representative Meetings, and the Chairmen of those Standing Committees of which, under the By-laws, Members are appointed by the Representative Meeting.

Dr. BUIST (Dundee) moved that the word "and" in paragraph 1, line 5, be deleted, and at the end of the paragraph be added, "and the Chairmen of the Scottish and Irish Committees."

Dr. J. A. MACDONALD (West Somerset) seconded, on the ground that the addition of the two Chairmen in question would give the Election Returns Committee an idea of the capabilities of the men on the Committees which otherwise would not be had.

The paragraph, amended as follows, was agreed to:

1. There shall be an Election Returns Committee of the Representative Meeting, which shall consist of the Chairman of Representative Meetings, the Chairman of Council, the Deputy Chairman of Representative Meetings, the Chairmen of those Standing Committees of which, under the By-laws, Members are appointed by the Representative Meeting, and the Chairmen of the Scottish and Irish Committees.

Paragraph 2, as follows, was agreed to:

2. The Committee shall prepare a Return showing for each Committee, Members of which are elected by the Meeting: (1) The Members of such Committee for the past year (those not appointed by the Representative Meeting being specially indicated); (2) the years of service on the Committee; (3) their possible and actual attendances at (i) Meetings of the full Committee, and (ii) Meetings of its Subcommittees, held up to three weeks before the commencement of the Annual Meeting. The Return shall be issued to each Representative with the Agenda of the Meeting.

On paragraph 3:

Only Representatives of Constituencies in the Representative Meeting shall be eligible for appointment to the Finance, Journal, and Organization Committees.

Dr. FOTHERGILL moved the following Amendment:

That only Representatives of Constituencies shall be eligible for appointment to those Standing Committees of which, under the By-laws, Members are appointed by the Representative Meeting.

He thought the Representative Meeting should be able to put their own Representatives of Divisions on to all Standing Committees. The Council could put their own people on; therefore, why should not the Representatives

put their men on the Committees? If the paragraph as drafted were passed it would defeat the object in many of the Committees.

Mr. F. C. LARKIN pointed out that the Finance, Journal, and Organization Committees were very important executive committees of the Association, and it was felt that no one but Representatives of Divisions should be on those Committees. It was really a self-denying ordinance. With regard to the other Committees, it might not be convenient to find suitable Representatives to put on them.

Dr. MACAN (Croydon) seconded the Amendment.

The CHAIRMAN pointed out that Dr. Fothergill's Amendment was that only Representatives of Divisions could be elected on any Standing Committees.

Dr. MACLEAN (Cardiff) said that the point was not so much the degree of importance of the Committees as special qualifications for service upon them. The point being that special qualifications were necessary for service upon the three Committees named, then the fact of Representatives of that Meeting only being eligible would mean that the electors to those Committees would have a fuller knowledge of the qualifications necessary.

Dr. E. W. GOODALL (City, Metropolitan Counties Branch) thought that Members of the Council, as well as Members of the Representative Meeting, were wanted upon all the Committees. He should vote not only against Dr. Fothergill's Amendment, but against the Standing Order.

Dr. BUIST (Dundee) said that in the drafting of the Standing Order it was recognized that the work of the Journal, Finance, and Organization Committees involved, perhaps, greater responsibility to the Meeting than the work of other Committees. It would be a pity that they should give up their right to choose the best man for any particular piece of work.

Dr. MACAN (Croydon) pointed out that, according to page 48 of the By-laws, the Science Committee consisted of eight members, none of whom were elected by the Representative Body.

Dr. J. S. DARLING (Portadown and West Down) said that if Dr. Fothergill's motion were carried it would very seriously restrict the Members of the Association in Ireland in getting suitable men to act.

Dr. F. G. BUSHNELL (Brighton) said, with regard to what Dr. Macan had stated about the Science Committee, that he thought every important Committee ought to have a Representative of the Association upon it.

Dr. S. K. H. HACKMAN (Portsmouth) thought that it was very important that the choice should be open. Taking the Journal Committee, for instance, there might be a gentleman in some Division who was not an active man in the work, but who might have special knowledge of journalism, and he thought that it was very much to be desired that it should be possible to choose him.

Colonel JOUBERT DE LA FERTÉ (Indian Medical Service) asked why they should not have a free choice for all the Committees, and not have their hands tied.

Dr. W. GOSSE (Isle of Thanet, Canterbury and Faversham) also asked why the Representative Meeting should not have a free choice of the best men. They would naturally choose their own Members if they could.

The Amendment of Dr. Fothergill was then put to the Meeting and lost.

Dr. FOTHERGILL (Wandsworth) moved that there should be no limitations at all.

Dr. J. A. MACDONALD (West Somerset) supported the Standing Order as first proposed.

Dr. C. E. ROBERTSON (Glasgow Southern) asked whether the Council had power to elect Members of the Representative Meeting to the Council.

The CHAIRMAN stated that the Council, according to their Standing Orders, restricted themselves as regards certain Committees to their own body. As regarded the Finance Committee, they always restricted themselves to electing Members of the Council.

Dr. ROBERTSON asked whether the Council had ever elected a Representative who was not upon the Council.

The CHAIRMAN: Not on the Finance Committee.

The Standing Order was then agreed to in the following form:

3. With regard to the Finance, Journal, and Organization Committees, only Representatives of Divisions shall be eligible for appointment,

the alteration of the wording being upon the suggestion of Chairman with the object of making the meaning more clear.

The CHAIRMAN then moved:

4. After the commencement of the Annual Representative Meeting, the Committee shall prepare a list of nominations for the various Committees. In this list it shall indicate which of those nominated are Representatives, and which, if any, are Members of Council for the ensuing year.

This was agreed to. He then moved:

5. In preparing the list the Committee shall have regard to (*a*) geographical representation on Committees where this is important, (*b*) the previous attendance of Members on Committees, (*c*) the declarations of Members as to the Committees on which they are prepared to serve.

This was agreed to.

He then brought forward the following:

6. With the Agenda of the Representative Meeting nomination papers for Committees shall be issued to all Representatives.

Instead of "Representatives," he should like to move that there should be inserted the words "Members of the Meeting."

The Standing Order was agreed to, altered in the way suggested by the Chairman.

The CHAIRMAN then moved:

7. Each Representative shall be entitled to nominate not more than one Member for each Committee.

This was agreed to with a similar alteration. He the brought forward the following:

8. Nomination papers by Representatives shall be handed to the Secretary of the Meeting not later than the close of the morning session of the third day of the Meeting.

He suggested that the words "by Representatives" should be omitted. The Motion was agreed to, altered as suggested. He then moved:

9. No Representative shall be eligible for election by the Representative Meeting as a Member of more than two Committees, and no person not a Representative shall be eligible for election by the Representative Meeting as a Member of more than one Committee. If any Representative be nominated as a Member of more than two Committees, the Committee shall ascertain from him on which he prefers to serve, or, if this be impracticable, shall decide which nomination shall stand; and if any person, not a Representative, be nominated for more than one Committee, the Committee shall decide which of such nominations shall stand.

Dr. FOTHERGILL asked why the Members of the Representative Meeting should be limited to two Committees, and why the Members of the Association who were not Members of the Representative Meeting should be limited to one Committee. He proposed that this differentiation between the two sets of men should be taboo, and that the words from "no person" to the words "more than one Committee," and that the words from "and if any person" to the end should be omitted.

This Amendment was not seconded, and therefore fell to the ground.

The Standing Order as moved by the CHAIRMAN was then agreed to.

The CHAIRMAN then moved:

10. Voting papers, containing the names of all candidates duly nominated, shall be circulated to all Representatives at the commencement of the fourth day's proceedings, and shall be collected before 1 p.m. that day.

This was adopted.

The CHAIRMAN then moved:

11. The word "Representative" in these Standing Orders shall be taken as meaning the duly appointed Representative of a Constituency, or, in his absence, the Deputy duly appointed in his stead, in attendance at the Meeting.

Dr. HACKMAN asked whether the Standing Order applied to a Deputy?

The CHAIRMAN stated that a Deputy was a Deputy in every sense.

The CHAIRMAN then moved that the Standing Orders as amended be adopted as the Standing Orders of the Meeting.

This was agreed to.

ANNUAL AND SUPPLEMENTARY REPORTS OF COUNCIL.

The CHAIRMAN OF COUNCIL moved:

That the Annual Report of the Council for the year 1909–10 and Estimate of Income and Expenditure for the year 1910 be received. [Published in SUPPLEMENTS of BRITISH MEDICAL JOURNAL of May 21st and July 9th, 1910, respectively.]

This was agreed to.

THE CHAIRMAN OF COUNCIL moved:

That the Supplementary Report of the Council for the year 1909–10 be received. [Published in SUPPLEMENTS of BRITISH MEDICAL JOURNAL of May 21st and July 9th, 1910, respectively.]

This was carried.

The CHAIRMAN moved:

That all Motions by Divisions or Branches which relate to matters dealt with in the Annual Report of Council be considered as Amendments or Riders to the Recommendations, if any, to which they are relevant, or to the Motion: "That the remainder of the Report under the heading . . . be approved."

Dr. FOTHERGILL said that the right of Divisions to need no seconders of their Motions should not be done away with. He asked the Chairman whether, if the Members of the Meeting passed the Motion without some modification, they would not be losing some right.

The CHAIRMAN stated that the question raised by Dr. Fothergill would be dealt with directly.

Dr. BUIST (Dundee) suggested the insertion of these words in the Motion, "subject to Standing Orders 3–10"

The CHAIRMAN said the point was this: If a Motion sent up by a Division were put into the Agenda, the Standing Orders provided that it might be considered with the Council's Report; and, if the Motion were taken as an Amendment, the mover of the Amendment, although it was sent up as an original Resolution or Motion by a Division, would not have the right to reply. They did not want to penalize any Representative in that way; and it was thought he should not be deprived of the right of reply through his Motion being turned into an Amendment. This difficulty could be met by the addition to the Motion which he had just proposed, "but without prejudice to the right of the Representative of a Division or Branch to move any Motion of which notice has been given by his Division or Branch without a seconder being required or to the mover's right of reply."

This was agreed to.

ANNUAL REPORT OF COUNCIL.

This Report was published in the BRITISH MEDICAL JOURNAL on July 9th, 1910.

The CHAIRMAN then moved that paragraphs 1 to 4 of the Annual Report of the Council be approved.

This was agreed to.

The TREASURER (Dr. Rayner) moved:

That the Financial Statement and Balance Sheet for the year 1909 be approved.

The Report showed that the liabilities of the Association were heavier, but the assets had increased by £750. The loan for the rebuilding of the Strand premises stood at the total of £43,754. It would be seen that the general expenses of the Association had increased by £1,450; and there might be some question why it was that they had increased to such an extent. Up till the end of last year the interest on the outlay in respect of the new buildings had been paid out of capital; but the Auditors now said that that must not go on any longer, and it was in future to be paid out of the ordinary funds of the Association. Central Meeting expenses had increased by £260; the explanation being the increased activity of the Committees. The Central printing, stationary, and postage showed an increase of £96.

Dr. W. B. DOW (Fife) said there seemed to be a tremendous waste in printing. The whole of the documents supplied to each member must be, he thought, a fearful waste, and he asked the Committee to try and amend it.

Dr. MACDONALD (West Somerset) said he was perfectly certain that if Members took the trouble to read the mass of documents they would find that they were all absolutely necessary, and they would know more about the work of the Association.

Dr. HACKMAN thought there was a good deal of unnecessary duplication.

The TREASURER said the Central Staff expenses showed an increase of £483, due partly to the increase in the salaries of the officials; also, to the fact that during the year the Association had enjoyed the services of a Deputy Medical Secretary. With reference to the Library Account, the Council had appointed a clerk to assist the Librarian.

Dr. JACKSON (Plymouth) asked if the appointment was a permanent one.

The TREASURER replied in the affirmative, and said it was very necessary for the Librarian to have an assistant.

Dr. JACKSON (Plymouth) expressed the hope that a suitable person had been engaged.

The TREASURER said he thought they had got an exceedingly suitable person. The production of the JOURNAL had cost the Association £927 more than in the previous year, but on reference to Schedule B it would be found that the charge against subscriptions was £850 less. So that although the JOURNAL appeared to have cost the Association more it had really cost less to produce. Compositors' wages were rather less; 25,632 more copies of the JOURNAL had been sold than in the previous year. With regard to *Secret Remedies*, it would be observed that £937 was entered as the cost of producing that book. The book had met with a great success, and before the end of the year 42,000 copies had been sold, and there was a profit of £271 on the sales. Since the end of the year a considerable number of copies had been sold, and 20,000 copies more had recently been ordered.

Dr. FOTHERGILL said it occurred to him that *Secret Remedies* was an unfortunate title.

The CHAIRMAN was afraid it was too late to alter the title.

The TREASURER said he thought the title had conduced to the very great success of the book. There had been an increase of £537 in advertisements, and Capitation Grants to Branches showed a decrease of £1,470.

Dr. JOHN BROWN (Bury, Rochdale) said the capitation grant to the local Members was 2s. a Member. On looking over the Colonial Branches he found that they had a balance of something like £1,600 in hand, and they had a grant of 4s. There was only one of the Colonial Branches that had a deficiency—namely, one in South Africa In the United Kingdom there was one Branch that had no funds. He thought there should be an equal distribution of the capitation grant in proportion to the balance in hand. He thought they were acting unfairly to the United Kingdom.

Dr. MUIR (Glasgow, Eastern) said his Branch had no money at all, and their position was that the capitation grant had been stopped. He agreed with Dr. Brown that the Colonial Branches got a full 4s, but it should be remembered that the postage of the JOURNAL to them cost a great deal more than the postage of the JOURNAL in the three kingdoms, so that they were really a petted section of the Association.

Mr. T. JENNER VERRALL (South-Eastern) said even if the statements made by the last speaker were correct, surely the power of obtaining certain luxuries in the Association was to be considered. They were treating the Colonies better than themselves, but they must remember that such moneys as were accumulating in the Colonies would be spent, most of it, if not all, directly power was given to those Branches to do certain things which could not be done now.

Dr. W. DOUGLAS (Maidstone, Rochester, and Chatham) wished to point out that 4s. to the Colonies was not equal to a grant of 2s. here. That should be carefully considered. He did not know what the Glasgow Branch had done with its money. He would not cast any reflection upon it, but there were Branches that had considerable funds in hand, and they had those funds in hand because of the little work they did. He supposed that in granting this sum to the different Branches the Council considered how much they had in hand and what sort of work they were doing, and if that were so he thought the Council ought to be allowed to differentiate with regard to the sums given to the Branches.

Mr. RUSSELL COOMBE (Exeter) said it had been stated that there was a surplus on the year's work of £995. That was more than covered by the £1,4'0 which had been saved in capitation grants to the Branches. He would point out that the Branches had spent £623 more than they had

saved this year owing to the reduction in the capitation grants. This reduced the real saving to £847, and it reduced the annual profit on the working of the Association to £148. The profit was not quite a true one, because it was produced by the old money certain Branches spent.

Lieutenant-Colonel CURME (West Dorset) wished to point out that the fact that they had accumulated a little money was not because they had not done work; it was because they were thrifty, and he failed to see, that being so, why they should be deprived of the capitation grant. It might be that in future years they would have work in hand which would require a large expenditure. All the Branches should get a certain amount of the capitation grant, whether they had money in hand or not.

Dr. MACAN (Croydon) inquired the sum total of the balance last year in the hands of the Home Branches of the Association, and pointed out that the Glasgow and West of Scotland Branch had a balance of £289 7s. 1d.

The TREASURER, replying to questions on the subject, disagreed with Colonel Curme that every one should have the same. That had been the case in the past, and some of the Branches had accumulated hundreds of pounds which had not always been used for the benefit of the Association. With regard to the Glasgow Branch, he did not understand whether they had no money at all or whether they had no grants. If the Branch had no money at all, and it was found it had made good use of the money in its hands, if they had not 4s. a head in hand they would get the grant. He thought the Representative Meeting were agreed it was no good sending a fixed sum to Branches and Divisions who were doing nothing but accumulating money and letting it lie idle, when there were other Branches and other Divisions doing good work, and they required more than a 4s. grant. If any Branch or Division could show it was expending more than its grant in work for the benefit of the Branch or Division or of the Association, that Branch or Division would get a supplementary and quite sufficient grant. It had been considered wrong that the Branches should accumulate large funds which could be better used in the Central Offices of the Association. The estimated deficit of £750 for this year had been turned into a balance of £995 without doing harm to anybody. As regarded the Colonial Branches, Mr. Verrall had put the case very clearly; they required more money, and he (the Treasurer) hoped they would be able to make very good use of the extra grant.

Subscription Losses.

Dr. MUIR (Glasgow) pointed out that in the year 1909, £876 had been written off in respect of subscriptions not paid through death or arrears. He inquired whether it would not be advisable to split the item into two so as to show what was due to trade losses in connexion with the JOURNAL, and how much was due to the loss from Members not paying their subscriptions. He further inquired how much of the particular £876 was due to losses in trade, and how much to losses by deaths and non-payment of subscriptions.

The TREASURER pointed out that they were not trade losses. Although the losses were written off as subscription losses, yet at least half would come into the Association ultimately. In respect of part, however, some members were really too poor to pay them, or they had died, leaving their wives and families not well provided for. Under those circumstances he was sure the Meeting would agree that the Association should not press those very needy people for what they owed the Association.

In answer to Mr. JACKSON, the TREASURER said the JOURNAL was still sent to subscribers who were in arrear with their subscription, for a certain time. Members were very dilatory in paying their subscriptions, but ultimately the larger proportion of it came in.

Mr. J. H. EWART (Eastbourne) inquired if the number of Members expelled each year for non-payment of subscription might be stated.

The TREASURER replied, if the Meeting required, it could be done next year.

Depreciation and Investments.

The TREASURER said the depreciation written off was no loss to the Association. The auditors said it had to be done; but nothing would be lost as long as there was no realization.

He then announced that the letting and prospective letting of the shops on the premises of the Association were satisfactory.

The Treasurer's motion

That the Financial Statement and Balance Sheet for the year 1909 be approved

was agreed to.

The TREASURER moved:

That paragraph 7 of the Annual Report of Council (Estimate of Receipts and Expenditure for 1910) be approved.

Dr. FOTHERGILL (Wandsworth) suggested that the estimate of receipts and expenditure for the year previous to 1910 should be published side by side with the estimate for 1910.

The CHAIRMAN OF REPRESENTATIVE MEETINGS pointed out that it could be seen in the bound volume of the Belfast Minutes.

The Motion was then agreed to.

The TREASURER moved:

That paragraph 8 of the Annual Report of Council (Apportionment of Members' subscriptions) be approved.

This was carried.

The TREASURER moved:

That paragraph 9 of the Annual Report of Council (Issue of SUPPLEMENT to Non-members) be approved.

This, after discussion, was carried.

Control of Advertisements in the "Journal."

The TREASURER moved:

That paragraphs 10 to 13 of the Annual Report of Council (Control of Advertisements in JOURNAL) be approved.

Dr. J. NEAL (Central Birmingham) moved:

That the Meeting do refer back to the Council paragraphs 10 to 13 for further consideration, on the ground that advertisements of the nature objected to still appeared.

When the Resolution of the Birmingham Division was last before the Annual Meeting at Belfast no opinion was expressed upon it, but it was referred to the Council for consideration and report. Briefly, the essence of that Resolution was that a Special Subcommittee should be appointed whose duty it would be to pass all advertisements for the JOURNAL, and that in the case of certain kinds of advertisements that Special Subcommittee should have no option but to refuse them. Those kinds of advertisements which the Subcommittee was to be compelled to refuse were three in number: First, they were those which contained misleading or exaggerated statements; secondly, those of preparations or appliances advertised elsewhere than in the medical press, and remedies for morbid conditions of such a character as to demand in use medical supervision in the interests of the patient; and, thirdly, those advertisements of preparations anywhere advertised in misleading or exaggerated terms.

Lieutenant-Colonel CURME (West Dorset) seconded. He thought it was at the Belfast Meeting that his Division instructed him to bring the matter forward, but on the understanding that the matter would be taken in hand and objectionable advertising refused, he said nothing whatever about it.

Mr. C. E. S. FLEMMING (Bath and Bristol) asked what was the good of appointing a Committee if it was to have no discretion. Surely the work could be done equally well by one official.

Mr. HACKMAN said that if they accepted some advertisements and rejected others they were placing upon those which they accepted an imprimatur which gave a very greatly increased value to the advertisement. Was it advisable that the Association should give such an imprimatur to any so-called secret preparation?

Dr. W. JOHNSON SMYTH (Bournemouth) thought that the difficulty could be got over by placing either a headline or a footnote upon each page containing advertisement matter saying that the British Medical Association must not be considered as in any way responsible for the genuineness of the advertisements. It was hardly fair to expect the Committee to supervise the whole thing.

Sir VICTOR HORSLEY (Metropolitan Counties) said that the question raised by the Birmingham Division was one of immense importance both to the public and to medical men. He hoped that the Resolution would be carried. It was a very modest Resolution. It only asked the Council

to take the matter once more into consideration. At present all advertisements were looked over and decided upon by the Financial Secretary and by the Medical Secretary, but the Association had no right to lay upon those officers duties the principles governing which it had not itself decided. If the Meeting accepted Dr. Neal's Motion and asked the Council to consider the matter once more, and to come back to the Representative Meeting with definite proposals for rules governing the kind of advertisements which should be admitted, its officers would be in a proper position to carry on the work allotted to them. The American Medical Association had considered the whole question from the point of view of principle. The British Medical Association certainly ought not to be behind the American Medical Association.

Dr. F. E. WYNNE (Leigh, Wigan) supported the proposal that the paragraphs should be referred back. If the Committee was appointed it should have authority to decide what were proper drugs or appliances to be represented, and it should be made known to the vendors and to the public that all advertisements appearing in the columns of the JOURNAL appeared under the aegis of the approval of the Association. That would enhance the value of the advertisements, and although the Association would lose a great many advertisements, it would be able to charge a very much enhanced rate, and thereby be able to reconcile the alteration with the business requirements of the Association.

Mr. LARKIN said they should recollect at the very outset that the Association had now a Committee appointed entirely to deal with the JOURNAL, apart from the Finance Committee, and he hoped that the management of the JOURNAL would be improved thereby. But it seemed to him they had gone off on a side issue; they had been speaking as though the JOURNAL they published was to go to the public; the JOURNAL was really published for themselves, and those who advertised in it were advertising not to the public but to the Members of the Association. He took it that when people advertised in their JOURNAL they appealed to the doctor, who could use his own judgement and was not likely to be misled by an advertisement. They did not want any Committee to stand between the manufacturer and the doctor.

Dr. BUIST (Dundee) said that when the Committee had this matter under consideration they had to deal with facts as they were before them, and they really had no general rules which would enable them to lay down a definition of the classes of advertisements which were objectionable. As far as there might be materials at the disposal of the office, each advertisement ought to be considered on its own merits, and the paragraphs in the Report were therefore so much narrative. There was no objection to this matter being referred back for reconsideration, and those who had suggestions to make as to the means by which the Committee could succeed in making a classification of advertisements should send them to the Committee. The suggestion Dr. Wynne had made practically amounted to this: That the Committee should take up the consideration of the advertisements itself. That was not practicable, but he thought there might be suggestions which might be sent on to the Central Committee, which would enable them to make a better Report in future years.

Mr. VERRALL said that Sir Victor Horsley and himself did not look with the same eyes at this question. When it was suggested that a matter involving a large question of principle should be referred back to the Committee, which had already pronounced upon it, it was important that the reference back should be accompanied by a distinct expression of opinion as to the principle which the Association wished to be adopted. It was no good sending the question back unless the Association gave the Committee a free hand to recommend a certain course quite regardless of what was going to be the financial result.

Dr. FOTHERGILL wished to answer the remark made by Mr. Larkin to the effect that the JOURNAL was the journal of the Medical Profession. To a certain extent that was so, but there was a large body of the laity who were interested in certain questions. He hoped this question would be referred for the reconsideration of the Committee to see if they could find a *modus vivendi* which would meet all interests.

Dr. F. M. POPE said that to refer the matter back was equivalent to saying, in a mild way, that the people who drew up the Report had not done their work properly, and had not rendered a Report of which the Association approved. But he did not think the effect of the Resolution, if carried, would be to produce any more careful revision of the advertisements. The new Journal Committee must go into it; that was one of the things it would do; and therefore what was desired would be done without the Resolution being carried. It seemed to him they could easily exclude things that were really false and misleading; but where exaggerated claims were made he did not see how they were going to draw the line. To take another point, other people might read the JOURNAL, and sometimes they read articles contributed by Members of the Association; and he was not quite sure that in some of those articles they would not find quite as exaggerated claims made for certain drugs as were to be found in any of the advertisements. If they were going to set themselves up as approving of every drug that was advertised in the JOURNAL they must have also a censorship for papers contributed. That might be a very fine thing, but he should not like to be the censor. He thought this matter had better be dropped with the assurance that the Journal Committee would give attention to the matter.

Mr. W. J. GREER (Monmouth) wished to know if the Birmingham Branch had passed any Resolution prohibiting its Members from prescribing preparations of the kind to which the mover had referred.

Dr. E. J. MACLEAN (Cardiff) said he was not in agreement with Dr. Pope as to the reflection on the Committee by a reference back. He thought those concerned in the production of this Report should take it as merely a matter of procedure, the object of which was to keep this very important subject alive. He was in favour of the Amendment in several senses, and in particular on account of the moderation of its terms. He felt sure the mover of the Amendment would recognize that this was a subject of great difficulty. The matter should be approached in a compound sense—a proper admixture of the desirable deal with the practical—and in that sense he felt sure the Journal Committee would consider the subject. He hoped the Meeting would not support the Amendment in the sense spoken of by Mr. Verrall, requiring rigid rules to be formulated by the body considering the question.

The TREASURER said there was more in the Amendment than appeared on the surface. At the Belfast Meeting the Council were called upon to appoint a Subcommittee to do certain things. The suggestion of the Birmingham Central Division was considered by the Journal and Finance Committee and by the Council, and it was found that it would be absolutely impossible to do what was suggested. The fact of having a Subcommittee to go all through the advertisements would mean that they would get comparatively few advertisements in the JOURNAL. Many advertisements came in almost at the last moment; they were sieved by the Financial Secretary, again by the Medical Secretary, and if there was any doubt about them he (the Treasurer) had to sieve them again. So that there were three persons who were responsible for the advertisements. Advertisements which were sent in making exaggerated claims were returned to the advertisers and if they cut them down and put them straight then they were inserted. Reference had been made to some advertisements which had appeared during the present year, and which he admitted were not proper, but they had been taken in with regard to them. There were certain advertisements which were required to be certified by medical men as being proper. They had had certificates from medical men that they considered them proper, but subsequently they had been informed by outsiders that they were not. If the gentlemen who complained so much when they saw what they considered an improper advertisement would communicate with the Financial Secretary it would save a great deal of time and discussion at the Meetings. He was quite sure that the new Journal Committee would make this subject one of its first considerations, and what had been stated at that Meeting would not be forgotten. He could not say that he was willing to take it back, because, knowing what he did about it, he did not think there was anything to be gained by so doing.

The Chairman then put the Amendment to the Meeting as follows:

That this Meeting do refer back to the Council paragraphs 10 to 13 for further consideration, on the ground that advertisements of the nature objected to still appear.

The Amendment was lost.

The original Motion was then put to the Meeting and agreed to.

[The Meeting was adjourned to 2 o'clock, when the Extraordinary General Meeting was held.]

The proceedings of the Representative Meeting were then resumed.

Dr. Johnson Smyth (Bournemouth) moved as a Rider:

That on the head of each page allotted to advertisers a note be inserted stating that the British Medical Association does not in any way hold itself as approving of the thing advertised.

He said that personally he thought the Committee superintending the advertisements had a free hand in the matter, but, as many others thought more pressure should be brought to bear on the Committee, he brought forward this Rider so as to make it clear that the Association did not hold itself responsible for the articles advertised.

Dr. R. W. W. Henry (Leicester and Rutland) seconded.

Mr. Verrall hoped this Rider would not be passed. It was all very well for a man to write a letter to the Journal and that the Journal should express its freedom from responsibility for the statements contained in the letter. It did not seem proper that they should take money for inserting advertisements and at the same time say they were not responsible for the statements contained in them. The very fact of making such a statement would only raise questions. They should either take the advertisement or refuse it. Some temperance people might like to know whether a certain article advertised contained more or less alcohol.

The Treasurer said he had never heard a more unbusiness-like proposal. As for considering the alcoholic strength of things, if they got a good advertisement from a respectable wine merchant they would be only too glad to take it.

The Rider was lost.

Dr. C. H. Milburn (Cambridge and Huntingdon, and East York and North Lincoln—United) moved as a Rider:

That the Council be instructed to consider the principles on which advertisements should be inserted in the British Medical Journal and report to the Representative Meeting.

He moved this Rider on the ground that the discussion had more or less taken the lines as to whether it was expedient to put certain advertisements in the Journal. The time had now arrived for laying down the principles on which they should act.

Dr. D. F. Todd (Sunderland) seconded.

Mr. Jackson (Plymouth) said he should imagine that the Council had done this already.

Dr. Pope said everybody who had spoken on the former discussion was agreed that whatever side they took they could not lay down principles. They must decide on whether or not they should take an advertisement on its merits.

The Rider was lost.

Duties of Secretariat.

The Treasurer moved:

That paragraph 14 of the Annual Report of Council (Duties of Secretariat) be approved.

Agreed to.

Accident Policy in connexion with the "British Medical Journal."

The Treasurer moved:

That paragraphs 15 to 20 of the Annual Report of Council (re Accident Policy in connexion with the British Medical Journal) be approved.

Agreed to.

Medical Benevolence.

The Treasurer moved:

That paragraph 22 of the Annual Report of Council (Medical Benevolence) be approved.

Agreed to.

The "British Medical Journal."

The Treasurer moved:

That paragraphs 23 to 27 of the Annual Report of Council (the British Medical Journal) be approved.

Agreed to.

Articles in "British Medical Journal."

The following Rider by the Chelsea Division was next considered:

That this Meeting requests the Council to cause to be inserted on the leader page of every issue of the Journal a disclaimer, stating that the views expressed in the articles therein represent the opinions of the writer only, and not necessarily those of the general body of the British Medical Association; and that all articles be signed.

Dr. Macan (Croydon) suggested that this Rider should be taken in two parts.

The Chairman said the Rider dealt with two distinct subjects, the first part going down to the last line but one, ending with the words "British Medical Association," and the second part "that all articles be signed." He would ask the Meeting to consider first of all the first part of the Rider.

Dr. Macan said he did not see any objection to the first part.

Dr. Buist (Dundee) said it seemed unfair to put the question to the Council, and he suggested that the form be that the matter be referred to the Council for consideration. There was a Journal Committee coming into operation, and one of its first duties would be to consider these matters. He would move as an Amendment:

That the matter be referred to the Council for consideration.

Dr. J. H. Taylor (Salford) seconded the Amendment.

Dr. J. A. Macdonald (West Somerset) said they were all exceedingly sorry that Dr. Dawson Williams was unable to be there that day, as he was perfectly certain that he could have put it before them in a light that no one else could. He knew the difficulties that an editor had in dealing with these matters, and he very lamely would put it before the Meeting. If these restrictions were put upon an editor, he would find great difficulty in dealing with it in a satisfactory manner, and he very much doubted whether any editor would undertake it. He would support the Amendment that the whole matter be referred to the Council. They were about to establish a Committee called the Journal Committee, which it was hoped would bring the Editorial Department of the Journal more in contact with the Executive Members of the Association. He would ask the Members not to discuss the matter more fully, because, although he was in sympathy with the complaints that were made, still this was not the time to bring it forward.

The Amendment was put to the Meeting and carried.

Upon the second part of the Rider, "and that all articles be signed," Dr. Buist moved the same Amendment.

Dr. James Metcalfe (Bradford) seconded.

Dr. F. E. Wynne (Leigh, Wigan) said he was instructed to oppose the Rider. It was felt that the whole business amounted almost to an attempt to make this Association submit to the excision of its own tongue. There were matters of policy to be discussed, and they must be authoritatively expressed by the Journal of the Association as their official organ. To say that every article should be signed, those in his part of the world regarded as absurd and putting an unfair responsibility on the writer of the article. The speaker had hoped that the whole thing would have been withdrawn by the Chelsea Division, because on looking at the facts the Rider appeared to be a very paltry thing indeed. In his Division it was thought that this momentous policy should not be foisted upon them.

Mr. H. W. Armit (Hampstead) thought the present was an ill-chosen time to discuss matters connected with the Journal after the deplorable accident to their excellent Editor. The question had been raised whether they should refer the matter back to the Council or reject it altogether. He hoped the Meeting would take the latter course, and for very definite reasons. He could assure the Meeting, as a writer of some experience, that no journal would last for a fortnight if the articles were signed. No editor would undertake the responsibility. The carrying of the Resolution before the Representatives would mean the closing of

the JOURNAL. Anonymity was absolutely essential to the daily press. In the BRITISH MEDICAL JOURNAL the movements of the Association were followed in order that the JOURNAL might act as a mouthpiece of the Association, but policies were never anticipated, and in the editorials the Editor was exceedingly careful not to say one word which could possibly implicate the Association with regard to questions of policy. To insist on the signature of each article would be tantamount to insisting on the leaders going, the editorials going, and the portion which was called "the Week" going. He was not at all certain that the Editor would be able to find a staff to do the Epitome of Current Medical Literature. He was quite convinced that the paragraphs dealing with medico legal matters and medico-ethical matters would all go, and the only possible thing that would remain would be the ordinary scientific notices, correspondence, and the obituary, and the last obituary notice would probably be that of the BRITISH MEDICAL JOURNAL itself. In these circumstances he hoped that the Meeting would not consider the question of sending this back to the Council but reject it altogether.

Dr. J. A. MACDONALD (West Somerset) supported Mr. Armit with regard to absolutely rejecting this, because it would be a hopeless case to have the JOURNAL with every article signed. As a matter of fact, since this matter arose, and the notice of motion was put in the JOURNAL, they had been informed that one of the best sources of information which the JOURNAL at present possessed would be stopped at once. That occurred inside the last week; and, no doubt, there was a lot of information which they got from certain sources which had to be kept more or less secret, pains being taken to get assurance that the writers were in good faith. They would lose these sources of information immediately; those writers would refuse to sign their articles. He supported the suggestion of Mr. Armit, that the whole matter of signing articles be at once rejected.

Dr. J. NEAL (Central Birmingham) said that he had also been instructed by the Birmingham Division to oppose the Resolution; and he did so with very great pleasure, because in the first instance, it coincided with his own opinion, and, speaking with nine years' experience as editor of a medical journal, he was convinced it was quite impossible to carry on the BRITISH MEDICAL JOURNAL if the Rider of the Chelsea Division were accepted. He certainly hoped that, in the peculiar circumstances under which it had been brought forward, this Meeting would throw it out and not refer it to the Council.

The Amendment was lost; and the Rider of the Chelsea Division, "and that all articles be signed," was also rejected.

Articles and Letters forwarded by Members to the "British Medical Journal."

Dr. JOHN BROWN (Bury, Rochdale) moved the following:

> That the JOURNAL of the British Medical Association is, among other things, the medium for expressing the views of its Members, and if any article or letter be excluded, the Editor should reply within a reasonable time, stating the reason for its exclusion. If the Member be not satisfied with the explanation, the question shall be referred to the Journal Committee.

The Members of his Division were of the opinion that if any Member of the Association had reason to complain of the exclusion of any article or letter, he should be able to refer it to some Committee by whom the matter could be dealt with. Whilst his (the speaker's) experience of the Editor had been that on the whole Members of the Association were dealt with very fairly, and whilst he believed the Editor exercised a great discretion, yet, like others, he was not infallible. He and his predecessors had made one or two mistakes.

Dr. PERCY ROSE (Stratford), speaking against the Rider, thought it unfair to handicap the Editor of the JOURNAL. The proposition seemed to be to constitute a Journal Committee to sit in judgement upon the Editor; but no journal could be dealt with like that, and the matter should be left entirely in the discretion of the Editor.

Mr. LARKIN said that nearly all the mover of the Rider wanted at present existed. Members wrote the Journal Committee fuming letters because their communications had not been inserted in the JOURNAL; but so far his experience was that the JOURNAL had had to congratulate the Editor on the refusals.

Dr. M. DEWAR (South Edinburgh), having spoken against the Rider, it was put and lost.

Dr. H. BECKETT-OVERY (Kensington) said he had been asked to move the following:

> In view of the fact that the BRITISH MEDICAL JOURNAL is the official organ of the British Medical Association, no definition of policy should be enunciated by the Editor in the JOURNAL, or comments made on any subject which is under discussion by any Committee or Subcommittee of the association, without the permission of the Chairman for the time being of that Committee or Subcommittee.

But in view of what had been already said, he was willing that the same course be adopted as was taken with the first part of the Chelsea Division Rider.

Dr. MACDONALD asked that an Amendment by him to the Rider should be put—namely:

> That it be referred to the Council to consider the Kensington Motion and the whole subject to which it relates.

The Amendment was seconded by Dr. MACLEAN.

Dr. MACDONALD said he was in sympathy with the Rider. It was desirable to get the Editorial Department and Committees brought into closer touch, so that there might be no clashing of opinion.

Mr. ARMIT (Hampstead) pointed out that the editorial pronouncements were very carefully guarded so as not to clash with the policy of the Association or any special Committee.

The Amendment was then put to the Meeting and carried, whereupon it was put and carried as a substantive Motion.

SUPPLEMENTARY REPORT OF COUNCIL AS TO FINANCE.

The TREASURER moved, and it was agreed:

> That the consideration of paragraph 1 of the Supplementary Report of the Council as to finance be postponed until the consideration of the Riders of the Rochdale and Wigan Divisions.

ORGANIZATION.

Capitation Grants.

The CHAIRMAN OF THE ORGANIZATION COMMITTEE moved that the following Recommendation of Council be adopted:

> That, concerning the following Motion, submitted by a Division to the Annual Representative Meeting, 1909, and referred by that Meeting (Minute 195) to the Council for consideration, namely:
>
> 194. That in view of the facts (1) that the policy of the Association is to consider the Division as the primary unit, each Division being free to govern itself in such manner as it shall think fit; (2) that the decision as to what additional subjects shall be forwarded to the Divisions for consideration rests with the Representative Body and the Central Council, and not the Branch Councils, this Representative Body considers that it is illogical any longer to place in the hands of Branch Councils the funds for distribution to the Divisions, while at the same time depriving them of any control over the objects for which the money is used, and instructs the Central Council to so amend the By-laws as to place the distribution in the hands of the Central Council, which can make Capitation Grants to all Divisions and Branch Councils as may be required,
>
> it is inadvisable to adopt the policy referred for the consideration of the Council.

The Recommendation was adopted.

Election of Representatives.

The CHAIRMAN OF THE ORGANIZATION COMMITTEE moved that the following Recommendation of Council be adopted:

> That the Meeting approve of the principle that each Constituency elect at least one Representative and (in the United Kingdom) an additional Representative for each 100 members after the first 50, and that on a card vote the voting power of a Constituency which has more than one Representative be equally divided among all the Representatives of that Constituency.

He said the Organization Committee had considered every possible combination of numbers. It was considered by the Council, referred back to the Organization Committee, and the Recommendation before the Meeting was the conclusion adopted.

Dr. Fothergill (Wandsworth), before moving a Rider on the Recommendation, thought that more information as to figures ought to be given before the point was discussed.

The Chairman said the Minutes had been sent for.

Thereupon the Meeting proceeded to the next item on the Agenda.

Formation of British Medical Students' Union.

The Chairman of the Organization Committee moved:

That the following Recommendation of Council be adopted (paragraph 49 of the Annual Report):

That the instruction contained in Minute 197 of the Annual Representative Meeting, 1909, relative to the formation of a British Medical Students' Union, be continued.

He said that this matter had been under consideration, but no definite opinion had been arrived at, and the Organization Committee asked that the instruction should be continued.

The Motion was carried.

He then moved:

That the remainder of the Annual Report of Council under heading "Organization" be approved.

This was agreed to.

Appointment of President of the Association.

Dr. John Brown (Bury, Rochdale) moved the following Rider:

That, with regard to the appointment of the President of the British Medical Association, the Representative Meeting resolves that the Council should consider the question of the abolition of the custom of choosing the President from the place in which the Annual Meeting is held, and the fact that eminence in the scientific side of the profession should not outweigh years of strenuous work on behalf of the Association. They should also bear in mind in appointing to this—the highest honour—that of the 22 000 Members by far the greatest majority are general practitioners.

He said that in 1905 they decided to apply for a Charter; they considered the question for three years, and then at the Sheffield Representative Meeting by 106 votes to 1 vote against decided to make the application. The Member who objected really was not against the Charter, but, on the ground that the Association had been going at too great a speed, wanted to have the matter considered for another year. When the Association went to big cities or towns they wanted a man with long pockets, but he need not necessarily be a consultant. Some of the general practitioners in large cities were well able to sustain the dignity of the office of President of the Association. The time would come when the President of the Association should be a man who was in close sympathy with the general practitioner. The general practitioner never had a harder time than he was having at present. He believed that was one reason why the Association did not progress more. Something like 190 Members were struck off last year, possibly because they could not afford the subscription. The Rider did not exclude those men who were consultants.

The Motion was seconded by Dr. J. H. Taylor (Salford).

Dr. J. A. Macdonald (West Somerset) said that the present method of electing the President seemed to him to be the only practicable method. When the Association was invited to go to a certain district to hold its Meetings there it was one of the conditions upon which it was invited that the man whom the local profession delighted to honour should have the right to occupy the position of President; whether he should hold it for the year was another matter.

Dr. Metcalfe (Bradford) hoped that the Motion would be rejected.

The Rider was put to the Meeting and lost.

Procedure for Election of Members of Council.

Dr. E. W. Goodall (City, Metropolitan) moved the following Rider in connexion with paragraph 44 of the Annual Report of Council:

That with reference to By-law 43 (3) of the Draft New By-laws of the Association, as to Mode of Election of twenty-four Members of Council by Groups of Branches in United Kingdom, it be an instruction to the Council to consider whether the form of voting papers should contain particulars of nominations, whether by Divisions or Members.

He said that there had been considerable complaint with regard to the form in which the voting papers were drawn up. The papers simply gave a list of the candidates for election, and nothing else. The opinion had been expressed to him that it ought to be stated upon the papers whether the candidates had been proposed by a Division or by Divisions of his Branch or whether by Members, because it was felt that if a man was proposed by one Division, or, as was sometimes the case, by more than one Division, the fact was of great weight in supporting his candidature, and it showed that he had more honour in his Branch than a man who was merely nominated by the number of Members, whatever the number was, which was necessary to nominate him.

Dr. E. J. Maclean (Cardiff) said that it would be a great mistake to carry the principle too far.

Dr. E. R. Fothergill (Wandsworth) hoped that the matter would go to the Council for consideration. Possibly the Council might make the adoption of the suggestion optional, and say that each Branch might do as it liked.

The Rider was put to the Meeting and carried.

Membership and Grades of Membership.

Upon this subject there were the following Riders upon the Agenda:—

Proposed by the Rochdale Division:

That there be two grades of subscriptions—one as at present, to include membership of Association and Journal; and one, say at 10s. 6d. annually, to include membership and the Supplement of the Journal only, and that the Council be instructed to take the necessary steps for the requisite alterations of the Regulations of the Association.

Proposed by the Wigan Division:

That in order to bring as large a number of the profession as possible into close touch with Medical Politics and Sociology there shall be two kinds of membership of the Association:

(*a*) Full membership at present rate with the existing privileges.

(*b*) Part membership at, say, ten shillings a year, which should entitle such Member to attend Divisional and general Branch meetings and to receive the Supplement weekly, but not the Journal itself.

The Chairman said that, as the matter had to do with finance, the Journal and Finance Committee had considered it, and had reported to the Council upon the point. The Meeting must consider the two Riders, having in view the Report by the Council.

[For Report of Journal and Finance Committee on the foregoing Riders, see Supplementary Report of Council, paragraph 1.

In that Report, in the Supplement of July 9th, p. 40, it was stated that in the opinion of the Journal and Finance Committee Members of the new class would not pay their fair share of the working expenses of the Association; the actual saving to the Association resulting from not having to supply the Journal to them would be little more than the cost of the paper on which the Journal is printed. On the other hand, the value of the Journal as an advertising medium would be seriously depreciated upon it becoming known that it was no longer circulated to all Members of the Association. As regards the expenses of Membership, apart from the supply of the Journal, the Annual Report of the Council shows that the expense of producing and supplying the Journal to each Member is 6s. 3d. per head, while 18s. 9d. is applied to the general work of the Association, the benefits of which it is proposed that this class of Members should continue to enjoy.]

Dr. F. E. Wynne (Leigh, Wigan), said that as the Riders were so nearly identical he was quite willing that the Rider by the Wigan Division should be withdrawn provided that he was permitted to express the views of his Division in the discussion upon the Rider by the Rochdale Division.

The Chairman said that the withdrawal of the Rider by the Wigan Division would simplify matters considerably.

The Meeting allowed Dr. Wynne to withdraw the Rider.

Dr. John Brown (Bury, Rochdale), said last year Dr. Fothergill brought forward a Resolution with the object of increasing the membership of the Association, which he (Dr. Brown) had seconded; and it seemed strange that such a motion should have been defeated. It was most desirable that the British Medical Association should do everything possible to increase its

membership. In 1906 the net increase was 1,256; in 1907 it got down to 131; in 1908 it fell to 39; this year he was happy to say they had an increase of 242. During those years they had had something like 6,000 new Members; and they had lost by resignation 2,600. It was evident there was a tremendous leakage going on, and the question was, how to stop it. It was undoubted that with an increased membership they could speak with one voice and get justice done to the medical profession in all the departments of the service. It was believed that having two classes of subscribers would be one way of meeting the point. He was not very hopeful of success, because he gathered there was an opinion that it would lead to a very large decrease of revenue. He believed that 80 to 90 per cent. were "JOURNAL Members," and they would be more than likely to continue their membership. There were many thousands who did not need the JOURNAL. It could be seen in nearly all the free libraries of the country; and they could not expect that medical men would go on paying 25s. for working expenses if they did not need the JOURNAL. There were three ways of increasing the membership: the first was by giving more tangible benefits; and he was glad to see that the Council were considering that point. The second method was that which the Bury and Rochdale Divisions had suggested—namely, having two classes: membership with the JOURNAL, 25s., and membership without the JOURNAL, something less; and the third method would be by having the cost of the JOURNAL to each member ear-marked, so that those who did not need the JOURNAL might have the cost of it devoted to the Benevolent Fund. It had been said that they would lose in the matter of advertisements; he did not think this was the case, because there was not a journal in the world that was so well read as the British Medical Association JOURNAL.

Dr. F. E. WYNNE (Leigh, Wigan) said it was sometimes very invidious to be the Representative of two Divisions, especially when these Divisions took divergent views, neither of which was in accordance with his own. He had been instructed to put forward the Rider which he had withdrawn in favour of Dr. Brown. The Wigan Division was numerically very weak, but they were very loyal. They had a considerable percentage of practitioners in partnership, and it was not thought worth while for more than one member of the firm to pay 25s. and receive the JOURNAL. They had held a joint Meeting of the two Divisions, and they gave their unqualified support to the 10s. membership being limited to those who were either in partnership or had relatives who were taking the JOURNAL.

Dr. D. F. TODD (Sunderland) was really surprised at Dr. Brown's statements. They should compare what was done in kindred associations, for instance, the Law Society, and even what the working men paid per annum to their societies. The idea that their having a 10s. or a 15s. contribution would bring in more Members was a fallacy. He would rather suggest that the subscription should be increased, and he appealed to the Members to vote solidly against it, just to show that they wanted to go ahead and not stick in the mud, as suggested by Dr. Brown.

Dr. HACKMAN (Portsmouth) said this question affected other societies as well as their own. The idea of a smaller or modified subscription was carried out very well by the Cyclists' Touring Club, which had a so-called family ticket. He thought it was worthy of consideration by the Journal Committee if they could not do something on the same lines.

Dr. FULTON (Nottingham) supported Dr. Brown's Rider. In Nottingham they tried to amalgamate the local Division of the British Medical Association with the old-established Medical Society, but it came to nothing, because of the high subscription to the British Medical Association. While the local society had increased its membership by 50 per cent. in twelve months, the British Medical Association had not increased at all.

Dr. G. PARKER (Bristol) said that many men, owing to insurance and subscriptions to local medical societies, were unable to pay 25s. a year, and many cases had been mentioned in which there was some such reason for not paying the 25s. Some means should be found of bringing those men into the Association.

The Rider of the Rochdale Division was lost by a large majority.

The TREASURER moved:

That paragraph 1 of the Supplementary Report of Council as to "Finance" be approved.

This was agreed to.

Resignation of Membership.

The following Rider was submitted by the Dundee Branch:

That no Member shall be able effectively to resign his membership while any discussion as to the conditions of professional employment is in progress between the Association and any organized body, public or other, affecting the area of his Branch or Division, and that it be an instruction to Council to prepare the necessary amendments of the Articles and By-laws.

Dr. BUIST (Dundee) said his Branch had found by experience that this was an essential condition in the procedure of educating the local authorities, because one of the sources of weakness in meeting with those authorities was their inability to recognize the fact that the medical profession as such was able to supply them with information as to suitable conditions of medical employment. The local authorities sometimes refused to meet the medical profession in consultation, and it was a great source of weakness that a respectable practitioner should resign his membership of the Association for the purpose of securing what he considered a little personal advantage and because he knew that other Members of the Association were not going to apply for a post. He regarded the matter as a very serious one.

Dr. MACLEAN (Cardiff) said no one could deplore more than the Members of the Ethical Committee that it was possible for Members to resign in order to take advantage of a dispute in the district to secure certain appointments. At the same time, this Rider as it stood was impracticable. He had been a Member of his Branch for a considerable time, and there never had been a time when the Branch had not been engaged in some conflict with outside bodies. It was an active Branch, and for that reason they must have disputes and debates with outside bodies. It had never been competent for a Member to resign his membership in his own Branch, and however desirable it might be to keep Members within their ranks, they wished to keep them by persuasion and not by compulsion.

Dr. BUIST wished to point out that Dr. Maclean had misinterpreted the words "effectively to resign his membership." A Member might offer his resignation, but it depended upon the proper authorities of the Association to accept it before it became operative.

Mr. RUSSELL COOMBE (Exeter) said that in his Division it would be impossible without having a row with somebody to prevent a Member from resigning. Where they had to deal with large Branches it was quite impossible to keep people resident 100 miles away from resigning.

Dr. MUIR (Glasgow Eastern) sympathized with what Dr. Buist had brought forward if it could be carried into effect. The point Dr. Buist brought forward was one from which they suffered very much in Glasgow, Members resigning their membership to offer themselves as candidates for the half-paid posts under the School Board.

Mr. ANDREW CLARK said that when he read the Rider it occurred to him it would be impracticable to carry out. He was of much the same opinion as Dr. Maclean. It seemed to him that in a great many Branches nobody would be able to resign if they carried this. It was very imperative; it did not recommend that it should be done, but it was an instruction that the Council "shall" do a certain thing.

Mr. ARMIT (Hampstead) thought Dr. Buist's Resolution, no matter how it was interpreted, was a little too binding. The resignation of a Member was only to be accepted if the Branch or Division thought fit. In his own Division, in recent times, a most awkward position had arisen, where a Member had attempted to resign in order to accept an appointment, and it was only under rather lucky conditions that he was able effectively to prevent his resignation. They had heard from every corner of the room that almost every large Division or Branch had got some dispute going on; this might mean that in every case a resignation tendered would have to be accepted by the Branch. Then there would be no rapid illicit resignations, and the resignations would come before the Branch

and be passed or not, according to the case involved. He moved as an Amendment:

> That the Council be instructed to consider the advisability of providing that a Member shall not be able effectively to resign his membership until such resignation be accepted by his Branch, when any question is raised with regard to the ethical conduct of a Member, or when any discussion as to the conditions of professional employment is in progress between the Association and any organized body, public or other, affecting the area of his Branch or Division; and, if thought advisable, to prepare the necessary amendments of the Articles and By-laws.

Dr. J. S. Darling (Portadown and West Down) asked if the Association had any legal power to retain a Member beyond his annual subscription. If a Member sent in 25s. and no more, had the Association power to refuse to release him?

Dr. Pope thought it would be rather difficult to carry out Mr. Armit's Resolution in very large Branches which met only once a year.

Mr. Armit suggested the meeting of the Branch Council.

The Chairman said it would be in accordance with the Branch rules whether that resignation should be accepted by the Branch as a whole or by the Branch Council. He did not think it was necessary to tie the hands of the Branch in that way.

Dr. Maclean (Cardiff) asked if it were not a fact that lately, in connexion with the consideration of a certain case, a recommendation was made to the effect that no resignation should become effective without previous reference to the Division to which the Member proposing to resign belonged.

The Chairman of Representative Meetings replied that under the present procedure a resignation was not effective until it had been considered by some Committee at the Central Office, who would probably consult the Division or Branch concerned, but there was no definite ruling to that effect. With regard to there being any impossibility of a Member resigning if he wished, there were certain conditions under which a Member was not able effectively to resign his membership, as, for instance, if there were an inquiry pending.

Dr. Buist, with the consent of the Meeting, withdrew his Motion.

Dr. C. E. Robertson (Glasgow Southern) regretted that Dr. Buist had withdrawn his Resolution. As his colleague Mr. Muir had said, a very fair sample of the class of thing under consideration had been happening in Glasgow within the last few months, where the medical profession in a certain district declined to apply for certain situations on the understanding that they would be supported by the whole of the profession in Glasgow. Notwithstanding that, some medical men, knowing a large number of their fellow practitioners had withdrawn their applications, applied for the posts. He maintained it should not be possible for such men who happened to be Members of the Association to withdraw at the time of the discussion of their conduct. The only power the Association had over them was to punish them by expulsion, and the Association ought not to be deprived of such a power.

Dr. Brown (Bury and Rochdale) said his Division were unanimous in their support of the proposition of the Dundee Branch, and he asked if he could move the Dundee Rider in the name of the Rochdale Division.

The Chairman of Representative Meetings said that Dr. Brown could move an Amendment.

Dr. Brown said he desired to move as an Amendment the Rider of the Dundee Branch.

Dr. Maclean (Cardiff) rose to support the Resolution before the Meeting. He emphasized what had been said by Dr. Robertson and Mr. Muir, and he spoke with very full knowledge of the case to which they referred. Nothing was more deplorable than the attitude of certain Members of the Association resigning at that time.

Mr. C. R. Straton (Salisbury) suppported the Resolution on the same grounds. He reminded the Meeting that when a man resigned his membership of the Association he nevertheless, for one year, retained certain financial liabilities to the extent of his guarantee. He, for his part, thought it would be very desirable that a Member should also retain his ethical liabilities for the same period. That was a question which the Council could very well consider.

Mr. Verrall (South-Eastern Branch) did not quite like the last part of the Resolution. What was wanted was a provision that a man should not resign when there was any trouble on, but it was undesirable that there should always be investigation whether there was trouble or not. If the Resolution were carried the delay in the man getting his resignation effectively registered only took place if there was any personal or general row on, so to speak, whereas if there were a reasonable delay allowing a reference in all cases to the Division and the Branch, irrespective of whether there was a row on or not, it would get rid of the appearance of delaying it only in such cases where there was a row, personal or otherwise.

Dr. Fothergill (Wandsworth) thought the Resolution rather limited the power of the Association. He thought the matter of resignation should be referred to the Members of the Branch or Division.

Mr. W. J. Greer (Monmouth) inquired whether it was a fact that a man who had sent in his resignation could not effectively leave the Association until the Council had accepted his resignation.

The Chairman of Representative Meetings said that all resignations came before the Council, which meant the appropriate Committee concerned, before being accepted.

Lieutenant-Colonel Curme (West Dorset) desired a definition of what was meant by "effective resignation."

The Chairman of Representative Meetings replied that an effective resignation was one accepted by the Council, and until accepted by the Council the resignation was not effective.

Dr. R. L. Langdon-Down (Richmond) moved, and Dr. R. Esler (Lambeth) seconded, that the Resolution be put, which was agreed to.

The original Motion was then put and carried.

Dr. W. L. Muir (Glasgow Eastern) moved:

> That it be an instruction to the Council to consider the advisability of the following alteration of present Article VIII of the Association:
>
> That the first six lines of present Article VIII be deleted, and the following words, or words to similar effect, substituted:
>
> "Any member whose subscription shall not have been paid on or before the 30th June of the current year shall receive a second notice asking for payment, and if subscription is still unpaid by 30th September, he shall, without prejudice to his liability to the Association, be suspended from all privileges of membership, and at the end of the year, if the arrears be still unpaid, he shall, *ipso facto*, cease to be a member."

He said that his Division felt very strongly about this matter, and they wanted to have the privilege of presenting the Treasurer with about £500 a year. For one subscription of 25s. a Member received all the benefits of the Association and the Journal weekly for fifty-two weeks. If at the end of the fifty-two weeks his subscription fell into arrears, the same privileges were continued for another fifty-two weeks. So a Member might receive for two years all the privileges of the Association for one solitary subscription. His Division thought that if at the end of the first twelve months the subscription had not been paid, *ipso facto* the Member should cease to be a Member. There was an even more ridiculous state of things. If a Branch or a Division nominated a Member of the profession as a Member of the Association, he might not, when he was accepted by the Central Council, pay his first subscription, and still for two years he would receive all the benefits of the Association.

Dr. L. D. Parsons (Gibraltar) said that the present rule seemed to work very well, and he did not think that the ultimate financial loss was great.

Mr. Larkin said that it was found that the present practice paid. He hoped that the Meeting would not pass the Motion.

Professor Moore (Birkenhead) thought that more money would be lost than would be gained if the present proposal was carried.

The Treasurer said that, according to the balance sheet, the subscriptions in arrear were £2,358. Of that amount, at least £1,900 would be got in. If the present suggestion was acted upon, the greater part of the £2,358 would be lost. He asked the Meeting not to encourage the present proposal.

The Motion was put to the Meeting, and lost.

Election of Representatives.

The Meeting then resumed the consideration of the Motion upon this subject, the discussion of which had been

postponed pending the obtaining of figures bearing upon the matter.

The CHAIRMAN OF THE ORGANIZATION COMMITTEE said that the Constituencies could be grouped so that 300 Representatives could be elected, but they were so grouped at present that only 199 could be elected. As a matter of fact, 163 only were elected at the present time. Beyond that, out of those 163, only 150 attended the Meeting last year, and only 136 the year before. The Organization Committee had had the matter under consideration, and they had gone into various combinations of the numbers, and had found that if after the first 100, 50 were elected, it would be possible to elect 223 instead of 199. If the proposal in Dr. Fothergill's Amendment was adopted the number would be 205. Therefore if the meeting adopted the Recommendation of the Committee there would be elected 18 more than would be elected on Dr. Fothergill's proposal and 24 more than the present number.

Dr. DOUGLAS (Maidstone, Rochester and Chatham) asked whether the attendances were counted only where Members attended on every day of a Session.

The CHAIRMAN OF THE ORGANIZATION COMMITTEE said that those Representatives who entered their names and had their fares paid and came up were counted.

Dr. FOTHERGILL (Wandsworth) said his Division was directly opposed to this proposition, because it was rather felt that some of the Divisions which were in the infancy of their organization were able to steal a march by splitting up their Divisions, and thereby getting as many Representatives as other Divisions not so wide awake. Those Divisions having found that their tactics failed, why did they not combine and make themselves into larger Divisions? The arguments against increasing the Representative Body were very strong. Dr. Macdonald had raised a point which showed that the Amendment was not understood by some. The idea was that any Division which had fifty Members would *ipso facto* send a Representative; and it was suggested that every Division after the first 100 Members should send another Representative. Personally, he should like to vote against it, because he thought they had quite enough intelligence represented at the Meeting.

The CHAIRMAN said the proposal of the Committee was that in the larger Divisions an extra Representative should be given for every 100 Members over the first 50. Dr. Fothergill proposed that an extra Representative should be given for every 100 members over the first 100.

Dr. FOTHERGILL said the Amendment he had put down to move did not say that a Division which had only 50 Members should not have a Representative.

The CHAIRMAN said such a Division would have a Representative just in the same way.

Dr. MACDONALD asked if there was any guarantee that any Division with less than 100 Members should have any Representative at all if Dr. Fothergill's Amendment was passed.

The CHAIRMAN said that in his view the Resolution only took into account the question of multi-representation in the large Divisions. It meant the present regulations as regards the large Divisions.

Mr. LARKIN said the Council's proposition was that for a membership of 50 they might have a Member, and that when the membership got up to 150 they could have another Member. Whereas, if the suggestion by the Representative for Wandsworth was carried, they would get their first Member at 50 or less, and they would not get another till they got up to 200.

The CHAIRMAN said that was quite true.

Mr. LARKIN said the whole question seemed to be on the fairness of proportionate representation in the large Divisions. In that body they wanted as far as they could to get reflected the opinion of the constituents outside in general. They did not want large bodies of 600 or 700 Members to be equally represented with those having only 30 to 40. The result had been that somewhat astute towns had split themselves up into small Divisions. The effect of this was that the local organization tended to become disjointed. He thought the local organization was a matter of great importance. If such towns as Liverpool and Manchester were going to be placed on an equal footing with small Divisions, they would not entertain it. He felt sorry the objection had been raised that they would have too many Representatives. He considered the educative power of that Association was a very good one. Every man who had attended a Representative Meeting had gone back to his home the better for attending; if with nothing else, he went back with a feeling of *esprit de corps*.

Dr. MACAN (Croydon) moved that the question be now put.

This was seconded and agreed to.

Dr. TAYLOR (Manchester) asked if it was to be compulsory? Because, if it was, he was not quite certain that such a place as Manchester and Salford, which had five Divisions, would agree to it. Would they be compelled to unite into one Division?

The CHAIRMAN said he took it that they might have another Representative for the additional Members, if they wanted one.

Dr. MACLEAN said it would surely not alter the constitution of a Division.

The CHAIRMAN replied that the constitution of a Constituency being the minimum number of fifty Members remained as it was at present.

Dr. TAYLOR, as part of his previous question, said he was afraid if it was not compulsory it would defeat its object. The object was to get proportionate representation; and, if Manchester stood out they would be defeating that object.

The CHAIRMAN said he had perhaps been misunderstood in his reply to Dr. Taylor. It was optional in this way: if locally an area divided itself into a number of Divisions, that area could have a Representative for each Division of fifty Members or over. If the area formed one big Division it would elect one Representative for the first fifty Members, and an extra Representative for the ensuing 100, as the case might be.

Dr. TAYLOR said when it came to be worked out in practice it would be found that the number of Representatives would be lessened.

The CHAIRMAN said under Dr. Fothergill's Amendment there would be an increase of 6 in the number of Representative Members. Under the Committee's proposal the increase would be 24. The increased expense of the 24 would be £50 roughly.

Dr. Fothergill's Amendment:

That the number 50 be altered to 100.

was put, and lost.

The CHAIRMAN then put the Council's Motion:

That an extra Member be allowed after the first 50.

Dr. E. W. GOODALL (City) said it might be suggested that if they wanted to give a large number of Members greater representation, why not split up the large Divisions in London into small Divisions, so that each Division should have a Representative? If that were done it would increase the expense of the Association, because they would have to have an Executive Committee for each Division. He pleaded for London that the Committee's Recommendation be carried. London was very much under-represented, and it was felt that they lost many good men for that reason. He had taken the trouble to go through the List of Representatives and the Constituencies they represented, and he was quite surprised to see the number of small Constituencies of only thirty to forty Members each which could command a vote. When it came to taking a show of hands, the man who represented only thirty would vote on equal terms with the Representative of the Marylebone Division, who represented more than 600.

Dr. TAYLOR said, speaking for his Division, he heartily supported the proposition. He was not pleased to be told they had adopted sharp practice. At any rate, they would with pleasure give up entirely what they had been doing. He thought Dr. Fothergill might be inclined to withdraw his not very generous suggestion.

Colonel C. H. JOUBERT DE LA FERTÉ (Indian Medical Service) said he represented a Division comprising 350 Members, and it was felt that the Division was very much under-represented. Many Divisions contained a much smaller number of Members, and it seemed only an act of justice that the larger Divisions should have better representation.

Dr. W. Douglas (Maidstone. Rochester and Chatham) would like to say for the smaller Divisions that it had been the representation of the smaller Constituencies which had in a great measure preserved the national aspect of their Association. They wanted to be a British Association. If they had a large number of Representatives in London or the large Midland towns they might make a combination which would place power in the hands of the Northern towns, and that, he thought, would be greatly to be deplored. They had succeeded, at any rate, in steering clear of that danger. He thought there was something to be said for the smaller associations, and he hoped they would not forget them. He had had experience of both town and country, and he thought that where a large place like Birmingham might have proportionately fewer Representatives it gained in force.

Dr. John Brown (Bury and Rochdale) asked if there was a Constituency of thirty or forty members.

The Chairman said he could not tell straight off, but he thought there might be.

Dr. G. E. Haslip (Metropolitan Counties) observed that if they always had a card vote they would not have such discussions as this, and it would not be necessary that four Members should come from Marylebone.

The Chairman said there would be considerable loss of time if they always voted by card, but the effectiveness of Members coming to represent a Constituency did not depend on their voting power, but sometimes depended on their speaking power, and that was why he thought large Divisions should be represented by more than one Member.

Dr. A. Drury (Halifax) said that five Members representing a large Constituency could make themselves very objectionable by opposing the card vote.

The Resolution was carried by 108 votes to 15, with the following addendum:

> That the Council be instructed to prepare for the consideration of the Representative Meeting such alterations of the Regulations as are necessary to carry this Resolution into effect.

Grouping.

The Chairman of Representative Meetings moved:

> That the grouping of Divisions and Branches in the United Kingdom for the election of Members of Council for the year 1911-12 be the same as for the year 1910-11.

He explained the grouping of 1910–11 was arranged by the Council for the following year. For the next year the grouping was in the hands of the Representative Meeting, and it would be their business to approve, or otherwise, of the Motion. One or two Amendments had been handed in, in particular one affecting the grouping of the Metropolitan Counties Branch and constituent Divisions or one or two Divisions concerned. He asked if the movers of Amendments would agree to an addition to the end of the Motion to the following effect:

> Subject to such Amendments as the Council may think desirable after reference to the Branches and Divisions concerned.

The Amendments proposed were by Dr. E. A. Starling (Tunbridge Wells), seconded by Dr. J. J. Macan (Croydon):

> Except that the Croydon and Bromley Divisions be not separated from the Branch to which they belong.

By Dr. Fothergill:

> That the following words be added: "Except as regards the Metropolitan Counties Branch, and for that Branch the grouping be so arranged that, the area being divided into four districts, one Member of Council shall be returned from each."

The Branches concerned were Croydon and Bromley and the South-Eastern Division. The Metropolitan Counties Branch were also concerned with reference to the question of four Members of Council. He thought it perhaps not the best thing for the Representative Meeting as a whole to decide exactly as regards the individual Divisions where they should be placed. If it were left in the hands of the Council to consult those Divisions, he thought a more amicable arrangement could be come to and local approval would be more easily gained.

Dr. E. A. Starling (Tunbridge Wells) accepted the proposition of the Chairman of the Representative Meeting.

Dr. Fothergill (Wandsworth) said the idea that four Members should be elected by the whole of London instead of London being divided into four, and one Member being elected from each, was carried by the casting vote of the Chairman. The result was that the number of Representatives from Marylebone and suchlike Divisions was large and outvoted those from districts further out of London. Hence South London had lost its Member on the Central Council. Two of the seats had gone to Marylebone and one to Kensington, which, being cheek by jowl, represented practically the same interest. It was only fair that South London should have its Representative on the Council.

The Chairman of Representative Meetings thought that, in view of the decision having been arrived at by the casting vote of the Chairman, it would be better to leave it in the hands of the Council again to get the views of the Metropolitan Counties Branch on the matter and let them settle it.

Dr. Fothergill agreed.

The Chairman of Representative Meetings put the Motion as amended.

Dr. C. E. Robertson (Glasgow Southern) inquired whether the different Divisions were definitely laid out on a map in the possession of the Secretary, as there had been some difficulty in finding out, in connexion with one of the borders in Glasgow, to which Division a man belonged.

The Medical Secretary replied that a complete set of maps was in course of preparation.

The amended Motion was then put and carried.

The Chairman of Representative Meetings moved from the Chair:

> That the Grouping of Divisions and Branches not in the United Kingdom for the election of Members of Council for the year 1911-12 be the same as for the year 1910-11.

He explained it had to do with the grouping of Branches not in the United Kingdom. On the Agenda Paper were two Riders arising out of the proposition he had just made, the first of which was:

> That the present grouping of Indian Branches with Burma, Hong Kong, China, and Ceylon Branches will cause a great delay in any communication likely to be carried on between the grouped Branches. That it would be better to give one Member to the following Branches, namely, Bombay, Punjab, South Indian and Madras, and Assam; and another to the other Branches, namely, Burma, Colombo Ceylon, and Hong Kong and China.

The effect of the proposed Rider was to give two Colonial Members on the Council to India and the adjacent countries. In order to give an extra Representative to that part of the world it involved an alteration of a By-law, and therefore could not be accepted in the form suggested. On the other hand, if it were wanted to rearrange the grouping of the various Branches to elect the same number of Colonial Representatives to the Council, that had not been actually expressed in the Rider before the Meeting. The same applied to the next Rider with regard to the South African Branches:

> That the South African Branches, including over 500 Members be represented by one Member of Council.

It was proposed that the South African Branches should have a Member of Council to themselves; but it did not state what should be done with the Members residing in Egypt, North Africa, and the Mediterranean, and if they were to have a Member to themselves it might mean an additional Colonial Representative. The proposers of the two foregoing Riders had agreed to accept a Rider in their place. He accordingly proposed the Motion, and it was agreed to.

The Chairman said that the Motion which he would move on behalf of the two Colonial Representatives was as follows:

> That it be an instruction to the Council to consider and report to the next Annual Representative Meeting on the whole subject of the election of Members of Council by Branches outside the United Kingdom, and to include in its recommendations such proposals, if any, as the Council may think desirable for the amendment of the By-laws in order to secure due proportionate representation of these Branches on the Council.

It was not possible to give an extra Colonial Representative for next year, as that meant an alteration of the By-law.

Dr. R. ROW (Bombay) asked permission to draw attention to one or two points in connexion with the claim of those whom he represented to a better representation. According to the present By-laws, there was only one Representative for the whole of India, including Bombay, Southern India, Burma, Assam, and also the Farthest East Dominions—namely, Burma, Ceylon, and some portions of China. Under present circumstances it would be more easy for the men who were actually in India, in Bombay, Southern India, and Assam to communicate with each other if they had one Representative for themselves, and if the other Members, such as those in Ceylon and other parts of the Farthest East Dominions, had another. There was another matter to which he might draw attention. In India—at all events, in Bombay—where the Associations were young and where the profession was just growing, there was a great need of the guidance and the disciplinary and educational influence of the Association. He requested the Council to reconsider the claim of those for whom he spoke.

The CHAIRMAN assured Dr. Row that the representation which he had made would be duly considered by the Council when it considered the Colonial grouping next year.

Dr. T. D. GREENLEES (Cape of Good Hope) said that he had been specially elected to the Representative Body by the Western Province Branch (Cape of Good Hope) for the purpose of bringing forward this question. The South African Branch, which included over 500 Members, was represented by one Member of Council. It had been said that the Colonies were being pampered too much, but in the United Kingdom there was a Representative on the Council for every 411 Members. In the Colonies they had only one for every 612. There was another matter which concerned his constituents even more, and that was the very serious condition of South Africa at present. The political state of South Africa influenced the medical profession. The Branches were in a very critical condition, and they were saying to themselves that they had wellnigh arrived at breaking point, so far as loyalty to the parent Association was concerned. There were over 500 Members in South Africa, and they formerly had two Members on the Council, but now that number was going to be reduced to one, and not only had that one to represent South Africa, but he had to represent also those innumerable Members of the Association on the Continent, in Gibraltar, Malta, Egypt, West Africa, and so on. He quite understood the difficulty which the Executive was in in the matter. He had much pleasure in supporting the proposal which had been made by the Chairman, to the effect that it be an instruction to the Council to consider the matter and report again.

Surgeon-General W. R. BROWNE (S. Indian and Madras) said that he wished to draw the attention of the Representative Body to the feeling which had been excited in the Branch which he represented by the doing away of the privilege which that Branch formerly enjoyed of nominating a Member of the Council. The last arrangement, by which only one Member was to be allotted for the whole of Bombay and the East, had stirred his Branch up very much, and he had received a letter in which he was asked to urge the matter before the proper tribunal. Those whom he represented would be satisfied to be grouped with either Ceylon or Bombay, but, they being grouped with so many Branches, it was quite possible that the candidate they nominated and elected might never be finally elected on the Council, and they would be represented by a Member quite unknown to the Branch, and who also knew nothing about their requirements. So strong was the feeling against the grouping of the Branches that several very prominent Members of the Branch had suggested that they should cut themselves off from the British Medical Association and form a Medical Association of their own. They really wanted a reconsideration of the grouping as it at present existed. He was glad to hear that the subject was to be relegated to the Council and that the whole matter would be considered. Scattered over the enormous area from Bombay to China there were 784 Members. Why was it necessary that there should be 5 Members on the Council to represent the 863 Members in Ireland—about 1 in every 144—whereas all over the East there was only 1 for 784. He hoped that when the matter came up for consideration some practicable means would be found, if necessary by the enlargement of the Council by one or two Members, to give upon the Council a better representation to those whom he represented than the present system afforded.

Upon the suggestion of Dr. FOTHERGILL, the Motion was altered by the deletion of the word "annual," and as so altered was carried.

Elections.

The DEPUTY-CHAIRMAN (Dr. Maclean, Cardiff) took the Chair, when the following Rider by the Dundee Branch was proposed:

> That it be an instruction to the Council to take the necessary steps for the adjustment of the Regulations of the Association so as to provide as far as possible for the conduct of all elections in the Association by the method of the transferable vote.

Dr. R. C. BUIST (Dundee) said he should like to suggest a slight modification in the terms of his Rider, taking out the second line and making it read:

> That it be an instruction to the Council to consider the advisability of adjusting the Regulations of the Association so as to provide as far as possible for the conduct of all elections in the Association by the method of the transferable vote.

Mr. H. W. ARMIT (Hampstead) asked why Dr. Buist wanted to make the alteration he proposed.

Dr. BUIST said it would create unnecessary difficulties at that stage of the proceedings to give an instruction to the Council to take necessary steps. It meant a two-thirds majority instead of a simple majority. It would give rise to many matters of detail which they had not the time to consider.

Mr. ARMIT said the alteration would lead to a waste of time. There was no particular reason why they should not discuss the original proposition that day in a very brief time, and give the Council directions to carry it out.

The DEPUTY-CHAIRMAN pointed out that the Rider in its original form would require a two-thirds majority. In the amended form suggested by Dr. Buist a simple majority would be sufficient. He then put to the Meeting whether Dr. Buist should go on with the Rider in its amended form.

This was agreed to.

Dr. BUIST said as it was an instruction now to the Council to consider the Report he need not say much in defence of it, because the Representative Meeting had in such detail adopted the method of the vote with regard to the election of the Chairman and Deputy-Chairman, and now with regard to the election of four Members, that they would be prepared, when the Recommendation was presented in proper form, to apply the method to all elections.

The Rider was agreed to.

Matters Referred to Divisions.

The following Rider arising out of the Report of Council under heading "Organization," proposed by the West Suffolk Division, was submitted:

> That in the opinion of the Representative Meeting it is desirable, as a means of awakening fresh interest in the work of the Association, that when matters are referred to Divisions in the SUPPLEMENT of the JOURNAL, a blank leaf, naming the subjects, should be inserted in the same SUPPLEMENT, and attention called to it in the "Special Notice to Members." Upon this leaf any Member who is unable to attend the Meeting of his Division when these subjects are placed on the agenda may write his opinion and send it to the Secretary of his Division to be considered at the Meeting.

Dr. J. S. HOLDEN (West Suffolk), in moving this Rider, said it was among the general practitioners that the least interest was taken in the work of the British Medical Association. It was impossible in many country districts for Members to attend the Divisional Meetings, because it meant the loss of a day, and consequently they were apathetic. They seldom read the SUPPLEMENT, and knew absolutely nothing of what was going on. If a blank leaf were inserted in the JOURNAL, which would cost nothing, they could make suggestions, which would be sent on to the Secretary to be discussed at a Divisional Meeting.

Dr. J. METCALFE (Bradford) that this was a refinement of procedure which was entirely unnecessary.

Mr. J. Brydon (Darlington, Hartlepools. Stockton) thought very few of the Members would take the trouble to tear out the blank sheet and send it to the Divisional Meeting. Another question was as to whether it was to be regarded as proxy voting.

Dr. Fothergill (Wandsworth) said they had no experience behind them as to how this would work. He suggested to the mover that he should try it on the Agenda first, and then report to them.

Dr. J. S. Darling (Portadown and West Down) pointed out to the mover that the Rider had quite distinctly a Hibernian flavour; because it was to be a blank sheet which stated the objects. It might be put as a leaf stating the objects with a blank space. In the next place, he could see no possible objection to it; but, on the other hand, there were many cases in which it might encourage practitioners to take an interest in what was going on.

Mr. F. C. Larkin drew attention to the apparent instruction to the Divisional Meeting that they must consider all these answers. He could picture a somewhat dismal Divisional Meeting, where 6 men would turn up and 60 stay away and another 60 would write their answers. He was afraid those 6 members would not turn up at the next Divisional Meeting. For his own part he would oppose it all.

Dr. Macdonald (West Somerset) said they should remember one fundamental point. The Divisional Meetings had been the foundation of the Association and this Rider afforded a means of escaping the duty of attending them. They ought to oppose in every possible way any scheme for doing away with the work of the Divisional Meetings. He belonged to a Division which was as widely spread as most of them, being from 35 to 40 miles from one end to the other; they regularly got something like 50 per cent. of the members present. This Rider would give the Members an additional excuse for staying away.

Dr. J. H. Taylor (Salford) opposed the Resolution for exactly the same reasons stated by Dr. Macdonald. The irony of the situation was intensified by the proposer's speech. He began by saying that many of the Members knew nothing at all about the business, and he wound up by asking them to send their opinions on blank sheets.

Dr. Pope moved that the question be now put.

Mr. Armit seconded.

The Rider was lost.

The Charter.

Mr. Andrew Clark moved that paragraph (2) of the Supplementary Report of the Council as to the application for a Charter be approved. The Report had been circulated, and he did not think it necessary to spend time in talking about it. If any Representative wanted to ask a question he would answer it.

The Motion was agreed to.

Mr. Andrew Clark moved:

> That the Meeting approve and adopt, as a Report of the Representative Meeting to the Association, the Memorandum submitted by the Council to the Meeting on the history of the application of the Association for a Royal Charter.

The special Report had been circulated; it was a long document, and here, again, he did not intend to say anything except in any answer to questions if required.

The Motion was then agreed to.

Some discussion then took place on a Rider moved by Dr. Fothergill, when it was decided to proceed to the next business. The Meeting then adjourned till Saturday.

SATURDAY, JULY 23rd.

Mr. H. A. Ballance (Chairman of Representative Meetings) in the Chair.

The business of the Representative Meeting was resumed on Saturday, July 23rd, 1910.

The Minutes of the previous day's proceedings were corrected, confirmed, and signed.

Proposed New Company.

The Chairman of Organization Committee moved as follows:

> That the Special Report on the Memorandum of Association be received.

This was agreed to.

The draft Memorandum of the Association and the Report of the Organization Committee thereon was discussed at considerable length clause by clause, and agreed to.

Next Year's Chairman.

The Chairman said he had an announcement to make of great interest and importance, and it was one upon which he thought the Representative Meeting should be congratulated. It was that there was only one nomination for the Chairmanship of the Meeting for next year, Dr. Maclean. He therefore declared Dr. Maclean duly elected. (Applause.)

Dr. Maclean, in acknowledging his election, said he thought he should say a few words on this very important post to which he had been elected. In the first place he would like to say to the Meeting that he did very much appreciate the honour the Meeting had done him in electing him. The honour was very great, especially having regard to the fact that in the capacity of Chairman of this Representative Meeting one became a lineal descendant of Horsley, Macdonald, and Ballance. If he might say one word in regard to their present Chairman, he felt he was not expressing his own views only, but those of the whole Meeting, when he said that they very deeply regretted that Mr. Ballance had not seen his way to continue in office. Whilst his appointment as Chairman would certainly add to his responsibilities, it would certainly also add to his ideal in that he had to follow such a man as Mr. Ballance. He thought it due, furthermore, to the Meeting that he should say that he viewed this office with a very grave sense of responsibility. To represent this Meeting, not only to preside over its deliberations but to represent this Meeting, which in turn represented the true hopes and aspirations of the profession at a time when that profession was placed in an economic crisis such as had never occurred in its history, was a responsibility which he really trembled to face. He thought it further due to the Meeting to say, as regarded himself, that no efforts on his part would be spared to carry out as effectively as his abilities would permit the duties of this post, and to some extent that very determination on his part did create a sense of confidence—that sense of confidence arising not so much from that consideration as from the conviction that the Meeting, both individually and collectively, would extend to him a large measure of tolerance and kindness.

Science Committee.

Proposed Central Research Laboratory.

Dr. Pope moved that the following Recommendation of Council be adopted:

> That, having regard to the considerable facilities for research which at present exist in various parts of the country, and the heavy financial requirements of such an undertaking, it is inadvisable for the British Medical Association to attempt to establish a Central Research Laboratory.

Dr. F. G. Bushnell (Brighton) said this Recommendation of the Science Committee affected the Members of the Association and general practitioners, perhaps, a little more than might be thought the case at first sight. He was quite sure the Science Committee had given the subject full consideration, but he thought they might take the Meeting a little more into their confidence as to the grounds on which the Recommendation was made. He should ask the Members not to pass this Recommendation, but to accept an Amendment that he should put before them. His Amendment was as follows:

> That the Recommendation be referred back to the Council for an estimate of the cost of the establishment and maintenance of a small Research Laboratory with a comparative statement of its advantages and disadvantages, such report to be forwarded to the Divisions for consideration.

Dr. R. A. Lyster (Winchester), who seconded the Amendment, said he thought they ought to have the *pros* and *cons* of the matter very clearly placed before them. As an Association they did not undertake any very considerable work for the advancement of science or the purely scientific side of medicine. They ought to justify their existence by showing that they were considering the advisability of undertaking such work. Without any reflection on the Committee which had formulated the Report, he hoped they would take it back and report more fully to the Meeting.

Mr. ARMIT (Hampstead) opposed the Amendment. It appeared to him that what was wanted by Dr. Bushnell when he asked the Meeting last year to refer the matter to the Central Council was to establish a satisfactory research laboratory; and the words in the Report of the Science Committee, "heavy financial requirements," showed that the Central Council or the Finance Committee were of opinion that what was asked for was a large undertaking. If Dr. Bushnell would be satisfied with a small laboratory, he had no doubt the whole thing could be carried through; but that would do no good. He maintained that, at all events in London, there was ample laboratory accommodation. What was really wanted at the present moment was endowed scholarships; and he took it that if they got a new Memorandum, as he hoped they would, in the form they had been just discussing, they would be able to endow further scholarships if the funds of the Association would admit of it. During the last few years, the Beit Scholarships had been a considerable assistance to the scientific research workers. And, some little time ago, in the world of chemistry, money was obtained and Dr. Mond instituted a large laboratory where work could be carried out. The result which had accrued from that excellent endowment had been that the laboratories remained empty, because there had been no funds to support the workers in the laboratory. What was wanted was funds to support the workers by the endowments of scholarships. He assured them that, at all events in London, there was no difficulty in obtaining rooms where workers could carry out their work. For that reason, he thought it unnecessary to refer the matter back.

Dr. GOODALL (City, Metropolitan) said the Council had gone fully into the question, and had found there were all sorts of financial difficulties. He agreed that a small laboratory would not be any good. New laboratories should not be in only one place and available only for a very few men; they should be set up all through the kingdom. The proper way to carry out any scheme of this sort was to make use of the ample accommodation already provided. He knew that in London some of the medical schools afforded facilities for carrying out reasonable research work in hired laboratories with proper light and space. He thought it would be a great mistake if the Association went into any scheme of this sort. The proper way of dealing with the matter was to provide money and to let the men go where they liked.

The Amendment was lost.

Dr. POPE moved that the Science Report be approved.

In answer to Dr. FOTHERGILL, Dr. POPE, on Section 61, relating to athleticism in schools, stated that the Editorial Department had undertaken the matter, and had communicated with the daily press with request for comment, and with the schoolmasters as well.

Dr. JOHN BROWN (Bury and Rochdale), on paragraph 57, dealing with the Central Library, inquired as to the facilities now offered for the Library being utilized.

Dr. POPE said the Library was open from 10 a.m. to 5 p.m.

The Motion was agreed to.

Dr. POPE moved that the Supplementary Report be approved.

Dr. FOTHERGILL asked the reason why Members could not have books out of the Library during certain months of the year at a time when he thought people might be able to do a little reading.

Dr. POPE said he wished the Editor were there (of course they all regretted his absence), as he did the Library work of the Science Committee. His recollection of the reasons for closing the Library during certain months was that it was absolutely necessary that all the books should be in the Library for some little time in the year, or else the losses would be innumerable, and the books could not be catalogued, repaired, cleaned, and so on. The period was a little over six weeks.

The CHAIRMAN said Dr. Goodall had sent in the following Amendment dealing with the Library Rules:

> That in view of the fact that the Rules submitted for the use of the Lending Department of the Library do not make it clear whether or not a Member, on application, is to be allowed to take away a book himself, and that Rule 6 is somewhat ambiguous, the Council be instructed to amend the Rules accordingly.

Dr. GOODALL (City, Metropolitan) said he did not think Rule 2 made it clear that a Member could go to the Library and ask for such-and-such a book, and if it was not in, it could be sent to him on filling up a form and on payment of the carriage. It gave the impression that application would have to be made, and that it might be perhaps twenty-four hours before the Member could get the book he wanted. He did not think that was what the Committee intended at all. Then with regard to Rule No. 6, which said that "Ordinary textbooks can only be consulted at the Library. Only works of reference will be circulated," he wished to know what sort of books Members were to be allowed to take away from the Library, and as to what sort of books was it going to be said that they should not be taken. He hoped that whatever Committee had to do with these Rules they would amend them so as to make it quite clear.

Dr. POPE said he had not the slightest objection to putting in anything which would make the Rules perfectly clear. By Rule 3 "A Member requiring a book to be forwarded shall send with his application 6d. for packing and carriage." That implied that if the Member went and fetched it he could take it out without paying the 6d. With regard to Rule 6 a Member could get a list of the books that could be taken out and that would answer that question. They were all plainly put down. Certain textbooks were in such large demand that the Committee would have to purchase 100 of them to supply the demand. Certain books, therefore, must always remain in the Library as the Treasurer did not seem inclined at present to allow the Committee to purchase a large number of duplicates.

Dr. GOODALL asked to be allowed to withdraw the Amendment, having heard what Dr. Pope had said.

The Supplementary Report was then adopted.

APPOINTMENT OF DEPUTY CHAIRMAN.

The CHAIRMAN said, as regarded the nominations for Deputy Chairmanship of the Representative Meeting for the ensuing year, three names had been sent in, those of Dr. Buist, Mr. Garstang, and Mr. Verrall.

The CHAIRMAN subsequently said he had much pleasure in informing the Meeting that Mr. T. Jenner Verrall had been elected. (Applause.)

Mr. T. JENNER VERRALL said that he was sure that he should be setting a good example if he said as few words as possible upon that occasion. So far as the applause set the seal to anything which he had tried to do for the Association, he was very much obliged to the Meeting.

MEDICAL ETHICS.

Proposed Special Class of Consultants.

The CHAIRMAN OF THE ETHICAL COMMITTEE (Dr. Maclean) moved:

> That the following Recommendation of Council be adopted (paragraph 63 of Annual Report):
>
> That having regard to the replies received from the Divisions, the Representative Meeting does not deem it advisable to proceed at present to the drafting of any regulations to govern a special class of consultants.

Dr. H. BECKETT-OVERY (Kensington) moved the following Amendment:

> That the Representative Meeting await the final report of the Council with the completed returns from the Divisions as to a special class of consultants before coming to a decision, and that in their final report the Council be requested to analyse the returns from the different Divisions, showing the nature and size of the Divisions making the respective replies.

He said it seemed to his Division that the Motion of the Council deliberately shelved the whole matter, and the object in bringing forward the Amendment was to prevent the matter being shelved. A majority of the Divisions had stated that they were in favour of the recognition of a special class of consultants. That being so, it would be well to await the returns from the Divisions which had not yet answered. He understood that since the Report of the Council was issued quite a number of Divisions had sent in their replies, and that many of them were in favour of the recognition of a special class of consultants. What was proposed was that the arrangement should be permissive. There was no suggestion in the Report of any compulsion, or that any one man would be obliged to style himself a consultant, and, to use legal phraseology, "take silk." It would be a very great pity if the whole matter were shelved. The adoption of the Amendment which he

moved would keep the thing going until next year, and would give the Association a chance of considering the matter again.

Dr. MACLEAN said that whilst the Recommendation of the Ethical Committee was arrived at after consideration of the returns received from the Divisions, still he thought personally, as the Chairman of the Committee responsible for the Recommendation of the Council, that it would be quite consonant with the feeling of the Divisions as a whole if the matter were kept open for a little longer. Reference to the figures, he thought, would show that the feeling of the Divisions might be interpreted in the sense that it was desirable as an ideal that a class of consultants should be established, but that, in the view of the Divisions, the means of effectively establishing such a class did not practically appear. If the subject were allowed to incubate for some time longer some of the practical difficulties which at present obviously occurred to the Divisions might disappear. He thought he ought to impress upon the Meeting that if the Amendment was accepted it did not mean that any additional push was given to the machinery. Nothing forceful in the matter of recommendation would of necessity eventuate from the acceptance of the Amendment. He would accept the Amendment in that sense.

Dr. W. B. DOW (Fife) said that, as representing a University in Scotland, he thought the proposal to draw up a list of consultants and to say to the profession: "These are the men you have to consult," was really degrading. He felt very strongly upon the matter, and his Branch had asked him to speak very strongly against it.

Dr. LANGDON-DOWN (Richmond) said that it would hardly be right to allow the remark of the last speaker to go unanswered before the vote was taken, because it so totally misrepresented the objects of the Report. What the Report did was simply to say that certain men who desired to conduct their practice on certain lines should be at liberty to say so, so that those who wished to consult them would know where they stood. The adoption of the proposal would in no sense debar the ordinary practitioner from consulting any man who set up as a consultant of any kind; but if a man desired to confine his practice strictly to co-operating with another medical practitioner, he should be at liberty to say so.

Mr. VERRALL said that it would be a very good thing to keep the matter open.

Dr. SHADWELL (Walthamstow) said that he saw a difficulty in the matter. How was a consultant to let the whole of the medical profession know that he was a pure consultant?

Mr. DONALD ARMOUR (Marylebone), as the Representative of the Division which contained the largest number of consultants, wished to state that they had passed a Resolution in sympathy with this matter. His Division considered that the question needed further consideration and elaboration; therefore he had been instructed to support the Amendment to refer the whole matter back to the Ethical Committee.

The Amendment was put and carried.

The CHAIRMAN then put the Amendment as a Substantive Resolution, which was carried.

The CHAIRMAN announced that Dr. Neal proposed that the words "and giving the numbers present and voting" should be added to the Resolution. He would remind the Meeting that the Divisions were not compelled to give the numbers present and voting at their meetings. They might give them if they chose.

Dr. J. NEAL (Central Birmingham), in moving the addition of the words stated by the Chairman, said in Birmingham they felt very strongly on this point. They sympathized with the attitude taken up by the Ethical Committee, and he (Dr. Neal) had been instructed to support the Amendment which had just been accepted.

Dr. ROBERTSON (Glasgow Southern) was referring to the use of the words "consultant" and "specialist," when

The CHAIRMAN ruled him out of order. The Meeting were merely discussing the addition of a few words.

On being put to the Meeting the suggested addendum was lost.

Dr. MACLEAN (Cardiff) moved:

> That the remainder of the Annual Report of Council under the heading "Medical Ethics" be approved.

The Motion was agreed to, and the further proceedings were adjourned for an hour for luncheon.

Ethics of Consultation.

On reassembling, Dr. TAYLOR (Salford) proposed the Rider standing in the name of the Salford Division, which, with certain alterations, read as follows:

> That the following matters dealing with the ethics of medical consultation be referred to the Ethical Committee for consideration and report:
>
> (*a*) When a patient who has not previously been seen in consultation calls on a practitioner who desires recognition as a consultant at his rooms without introduction from a general practitioner, inquiry should be made in every case as to whether the patient is under the care of any practitioner.
>
> (*b*) If it is ascertained that the patient is not under the care of another practitioner, there is nothing ethically wrong in the consultant prescribing at his rooms for the patient; but it is inadvisable for any practitioner who wishes recognition as a consultant to attend any patient at the patient's own house except in co-operation with a general practitioner.
>
> (*c*) If it is ascertained that the patient is under the care of another practitioner, it is the duty of the consultant to use every endeavour to persuade the patient to allow him to communicate with the attending practitioner, but should the patient refuse this permission, the consultant has the right to make an examination and to express an opinion, but not to undertake the treatment of the case.

It might be useful for the Meeting to know the origin of these Resolutions. As the Ethical Committee had last year issued to the Divisions an excellent document of Rules for medical consultation, the Manchester Division decided that it was a good opportunity for an attempt to arrive at some more amicable relations between the consultant and the general practitioner. In Manchester they were fairly well situated in regard to these Resolutions, but it was thought they might be improved, and the Joint Committee of Manchester and Salford Divisions elected a Committee consisting of sixteen consultants and sixteen general practitioners for the purpose of seeing whether they could not arrive at some amicable arrangement on one or two very doubtful points. They met and considered the document issued by the Ethical Committee, and they agreed practically to the whole of it. Then, unfortunately, it was found that one of the subjects on which more dispute than on anything else occurred was, curiously enough, omitted from the document sent out—namely, the question of what should be done in a case where a patient who had not previously been seen in consultation went to a consultant at his room without an introduction from the general practitioner—what would then be the duty of the consultant? They found that that really was one of the most difficult questions of all. The Ethical Committee omitted to consider it, and, after a number of meetings, the Joint Committee of consultants and general practitioners drew up the three Resolutions embodied in the Rider. He was quite sure it would hardly be advisable for this Meeting either to pass or reject them as they were. They introduced one of the most important points in medical consultation that could be possibly introduced.

Dr. GRANT DAVIE (Manchester, South) asked if the Ethical Committee would reconsider the definition of the term "consultant" as expressed in the Report.

The CHAIRMAN said the Chairman of the Central Ethical Committee would bear that point in mind.

Dr. TAYLOR said with reference to the other Amendments on the Agenda, he was perfectly willing to move that the whole of them be referred.

In reply to the CHAIRMAN, Dr. NEAL agreed to his Amendment being sent up to the Committee.

Agreed.

Uniform Code of Medical Ethics.

Dr. A. H. WILLIAMS (Watford and Harrow) moved the Rider standing in the name of his Division:

> That it is desirable that all Members of the Association should be bound by a uniform Code of Ethical Rules instead of having varying codes for different Divisions.

He thought there would be very little difference of opinion. The Division recently had a quarrel with the clubs and benefit societies, and they found they could not do anything in regard to the quarrel unless they adopted some ethical rule. When they joined the Association they thought it brought them under the Ethical Rules, and

they were surprised that this was not so. That was why they had sent up the suggestion. They sent up to head quarters and in return they received the code of Ethical Rules, and they were asked to make a selection. They selected what were known as the Bradford rules and sent them back to head quarters. It seemed to him rather a cumbersome proceeding, and they did not see any objection to the whole Association being bound by one uniform code of ethical rules.

Dr. J. MACNIDDER (East York and North Lincoln) proposed the following Rider standing in the name of the East York Division:

> That in view of the inadequate and inefficient support accorded to a Division of the Association which has passed a Resolution in terms of Rule Z, uniform Ethical Rules common to the whole of the Association be adopted as rapidly as possible.

Like the Harrow Division, the East York Division had a dispute; and they wrote to the Medical Secretary for advice. The Medical Secretary came down to the Division, and he advised that these rules should be adopted; and the Division adopted them accordingly. They did not realize that, in adopting these rules, the whole Association were not adopting them. The reason for the Division adopting them was that at that time there was a dispute between the local board of guardians and the medical officer, and the Division found themselves under the painful necessity of breaking off professional relationship with a Member of their own Division, and they enforced the Z rule. That rule was practically a boycotting rule, and was to this effect: that if a member of the profession chose to make himself a tool in the hands of a public or a semi public body, the profession, in turn, had a right to make him a tool in order that they may fight that public body. One of the neighbouring Divisions was hostile to the action of his Division; and, by its hostility, had frustrated the action of his Division. Under those conditions, it was thought there should be some uniformity of ethical rules, and that such rules should be adopted as soon as possible in the interests of the unity of the Association.

The CHAIRMAN OF THE ETHICAL COMMITTEE was sure his Committee would accept the validity of the principle embodied in the two Riders in question. There was a code of ethical rules which had received the most careful attention of the Rules Committee of the Ethical Committee, and which was now practically ready for circulation to the Divisions. The Secretaries of Divisions and Branches who would take part in the Secretarial Conference the ensuing Tuesday had been supplied with a copy of those rules, and the Ethical Committee hoped for useful guidance from the consideration of those rules by the Conference, so that the development foreshadowed as desirable by the two Riders was in hand and was being very carefully watched and guided by the Ethical Committee. If those rules were approved generally by the Divisions, then would come the question as to whether and to what extent those rules would become binding upon the Divisions after expression of a certain kind by the Meeting. He understood that the matter of the autonomy of the Divisions must be safeguarded, and in his view the best method of ensuring the general adoption of a code of ethical rules by the Divisions at large would be an expression of opinion of the Meeting as to its urgency and desirability. The Ethical Committee had time and again found the greatest difficulty in dealing with cases emanating from Divisions which had not adopted the rules. If he might so express it, one had noticed that the clinical development of ethical cases was fraught with many more complications in those Divisions where those rules had not been adopted. If the movers would accept his statement as to the present position of affairs, he thought that would be the best way of furthering the objects which he took it these Riders were intended to conserve.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said that Dr. Langdon-Down had sent in an Amendment limiting the question of a uniform code of ethical rules to the Home Divisions. The following was the Amendment:

> That it is desirable that all the Home Divisions of the Association should have a uniform code of Ethical Rules instead of having varying codes for various Divisions.

He thought that Amendment rather better worded than the Riders on the Agenda paper, but it dealt with the Home Divisions only and not with the Colonial Divisions. The Meeting might think it better to deal only with the Home Divisions and leave Colonial Divisions. It complicated the matter to bring them in in that respect.

The Mover and Seconder of the Riders accepted the Amendment.

The CHAIRMAN OF REPRESENTATIVE MEETINGS suggested the addition of:

> and that the steps necessary for carrying this principle into effect be taken as soon as possible.

He asked if the Meeting would accept that Resolution instead of those placed on the Agenda paper.

This was agreed to.

Dr. LANGDON-DOWN, dealing with Dr. MacNidder's proposal, printed above, desired to add:

> That all the Home Branches should have an ethical code and rules, including Rule Z.

The CHAIRMAN OF REPRESENTATIVE MEETINGS understood the suggestion was to ensure that the Home Branches should also have uniform ethical rules, and included in those rules he presumed would be a Rule Z.

Dr. JAMES METCALFE (Bradford) inquired if a minimum number of rules could not be added to the Amendment, because some Divisions required more ethical rules to carry on the Division effectively than others. He thought there ought to be some provision by which, if any Division wished to adopt other rules it might do so, or have the option of doing so.

The CHAIRMAN OF REPRESENTATIVE MEETINGS asked if what was wanted was to get the least common denominator, to which Dr. METCALFE replied in the affirmative.

Dr. LANGDON-DOWN (Richmond) thought the objections raised by Dr. MacNidder would possibly not be met simply by having a uniform code of rules for Divisions. It seemed to him that where disputes spread outside one Division and involved two or three, what was needed was a co-ordinating mechanism which would embrace a wider area. For that purpose it seemed necessary that the Branch should also have a code of ethical rules somewhat similar to those already in force for Divisions, and in those rules there should be embodied a rule which would spread over the whole of the Branch, which would meet the difficulty in the Division referred to by Dr. MacNidder. The Ethical Committee, he was sure, would feel it was a great advantage to have it suggested from the Meeting that there should be uniformity in the matter. That Committee had for a long time felt that uniformity was desirable, but the local Divisions did not seem so anxious to follow the same suggestions, and he was sure it would strengthen their hands very much. He might say that, in addition to preparing draft rules for Divisions, they had prepared a draft rule for Branches such as he had foreshadowed in his Amendment. It was, of course, inevitable that a uniform code of rules would be longer and more cumbersome than rules which sufficed for the wants of individual Divisions. Moreover, there would be greater difficulty in altering them, because if there were a uniform code of rules for all Divisions and Branches, it would be improper to alter those at the request of one Division or Branch without also taking into consideration the views of the other Branches and Divisions. While there would be increased uniformity there would be a greater difficulty in altering the rules.

The CHAIRMAN OF REPRESENTATIVE MEETINGS considered Dr. Langdon-Down's proposal would come quite well as a Rider to the Resolution, and it would be:

> That all the Home Branches should have uniform ethical rules, including a Rule Z.

Dr. GOODALL seconded.

Dr. J. A. MACDONALD inquired whether all Branches were to have the same rules, or whether each Branch was to have rules common to each Division in it?

The CHAIRMAN replied that all Branches would have a certain number of rules which would be common to every other Branch, the same as regarded the Divisions.

Dr. MILBURN (Council) desired to emphasize the point brought out. With regard to his Branch, a difficulty

arose from the fact that the Division refused to support it. It belonged to another Branch, and therefore a neighbouring Branch had to be applied to in order to get the Division to assist. Then it was found that the neighbouring Branch was sympathetic so far as its rules would permit, but beyond that it could not help them. The Division to which reference had been made had not rules, and did not wish them, and refused to come into conference to find out whether some means might not be adopted by which help could be given.

Dr. JOHN BROWN thought that if there were uniformity of conditions of practice throughout Great Britain and Ireland the Resolution would be proper. He did not see why, if there were ethical rules for the Home Branches, there should not be the same for the Colonial Branches. The conditions existing in various parts of the country varied, owing to the varying conditions of practice. They might have broad ethical rules applicable to all Branches, but in his opinion it was impossible to formulate minute conditions of ethics applicable to all. His point was that the students in universities and colleges ought to have two or three lectures on the matter every session.

Dr. NEAL (Central Birmingham) hoped that there was no danger of an attempt being made to force a set of ethical rules upon Divisions and Branches which might not be ready to receive them. It was really a question of whether the time was yet ripe. In his Division they were gradually approximating their rules to those issued by the Ethical Committee, and he hoped that very shortly they would succeed in making their rules exactly similar.

The CHAIRMAN OF THE ETHICAL COMMITTEE said that he was ready to accept the rider of Dr. Langdon-Down. He should like to express his personal indebtedness to that gentleman for the extremely valuable work which he had done in connexion with the rules. The present position was that there was a code of rules applicable also to Branches. He (the speaker) quite appreciated the force of the remarks to the effect that there should not be any undue precipitancy in the matter of enforcing rules on Divisions and Branches. The matter would be taken into very careful consideration.

Mr. RUSSELL COOMBE (Exeter) said that the matter of the size of the Divisions had not been mentioned in the discussion, but he thought that it bore a good deal upon the subject. It had been his rule as Secretary, when any ethical point came up, to refer it immediately to the Branch Council under the Branch Council Rules, and it had further been his rule to call the Branch Council together at a place removed from the particular spot where trouble had arisen.

The CHAIRMAN said the Committee would consider the matter of size.

Dr. LAURISTON SHAW (Metropolitan Counties) said that, as a Member of the Ethical Committee, he was entirely in sympathy with the desire that there should be an absolutely uniform code of ethical rules throughout the country, but, as merely a Member of the Association, he felt that it might be a most unwise thing at the present moment to endeavour to impose such a code upon the whole country. He did not agree with Dr. Brown when he said there was such a difference in the working practice in different parts of the country that differing ethical rules were required, but he did believe there was a very great difference in different parts of the country with regard to the views of Members of the Association upon ethical matters, and that if a perfectly uniform system of ethical rules was adopted throughout the country that system must be very ineffective. If there was an absolutely uniform system only the minimum would be adopted. Instead of having a very excellent system of ethical rules in certain Divisions, to which, by gradual education, the other Divisions would come up, there would be an emasculated system of ethical rules throughout the country. He was well aware of Dr. Langdon-Down's great efforts in working out a more perfect system of rules. He had so much faith in them that he thought that if they were promulgated nearly all the Divisions would accept them. What was needed was a uniform system, but he thought that the best way to attain that system was to promulgate a very excellent system of rules and to allow the various Divisions to take them up as they liked. If an attempt was made to force upon the Divisions at the present time uniform ethical rules there would be a very considerable number of recalcitrant Divisions.

Mr. ARMIT (Hampstead) said that for many years he had been suffering a great deal from the obstinacy of a Division which refused to adopt the ethical rules or some modification of them as offered to them by the Central Ethical Committee. He had attempted to influence his Division to adopt something, but they would not. If the Ethical Committee had had the power to send down a code of rules and to say to the Hampstead Division, "This code of rules must be adopted by your Division," the Hampstead Division would have swallowed the pill, although it would have been a bitter one to them, there would have been a very great deal less difficulty than there had been. He hoped that the Meeting would make it an instruction to the Central Ethical Committee that a uniform set of rules should be drafted, and that there should be no choice on the part of the Divisions as to whether they should adopt them or not.

Dr. MACAN (Croydon) fully agreed that there ought to be a minimum code of ethics which should be made obligatory upon every Division, but as regards details the Divisions should be allowed to make their own rules. He had no doubt that a scheme of ethical rules could be formulated which would be accepted by every Division as long as it did not deal with details, which should properly be left to the Division.

The CHAIRMAN said no doubt there was a field for endless discussion in connexion with the Rider. He wished to put it in the form in which it had been put with regard to Divisions:

> That is desirable that all the Home Branches should have uniform ethical rules, including Rule Z.

It had been said that it would be desirable to compel the Divisions to adopt a uniform code of rules. He thought it very doubtful, and the Solicitor would bear him out in it, whether the machinery at the present time existed by which they could enforce a set of rules on the Divisions.

Dr. MACAN did not think they should compel the Divisions to adopt the minimum, and that the minimum should be adopted by that Meeting.

The CHAIRMAN said they were not at the present time making rules for the Divisions. He wanted to suggest to Mr. Armit that perhaps they had gone far enough that day if they passed it in the form he suggested. With regard to the word "minimum," he was sure the Chairman of the Ethical Committee had noted Dr. Metcalfe's remark. It would tie the hands of the Committee and he was quite sure the Committee would not send down more rules than it was absolutely obliged to.

Dr. WILLIAMS (Watford) asked if it was not the fact that before the Rules could be sent out to be binding on Divisions they would have to be passed by the Representative Meeting.

The CHAIRMAN replied that any rules which would be drafted by the Central Ethical Committee in pursuance of this Resolution would be sent to the Divisions without a doubt, before they came to the Representative Meeting, but it must be understood that the Representative Meeting, under the present constitution of the Association, could not draft rules which would be binding on the Divisions.

Dr. TAYLOR (Salford) was quite sure that practically the whole of the Association would agree as to the advisability of it, but they ought not to be put in the position of giving any definite opinion as to whether that should be adopted at once until they had had before them the definite rules suggested.

Dr. LANGDON-DOWN wanted the Divisions to see the drafts in all these things. He did not think they could force the Divisions.

The CHAIRMAN said the suggested Resolution was in exactly the same form as had been made for all the Divisions.

The Rider was then put to the Meeting and carried.

Supporting Local Profession.

Dr. J. MACNIDDER said he would withdraw the Rider by the East York Division, as it was merely carrying out what had already been done.

Relation of Association to Homoeopaths.

Dr. EWEN J. MACLEAN moved that the following Recommendation of Council be adopted:

> That the Association should not attempt to pronounce, in connexion with the question of homoeopathy, or in any other connexion, what constitutes sound doctrine in medicine or surgery, nor condemn individual practitioners on the ground that they hold peculiar views of pathology or treatment, or give effect to such views in the practice of their profession.

The CHAIRMAN said, as this was a question of policy, it would be necessary to have a two-thirds majority.

Dr. MACAN (Croydon) said that at Belfast last year it was decided by a large majority that it was not the duty of the Association to make a pronouncement upon any particular forms of medicine.

The Rider was put and carried.

Dr. MACLEAN moved that the following Recommendation of Council be adopted:

> That in the opinion of the Representative Meeting it is contrary to the recognized principles of professional conduct for any medical practitioner to advertise the holding of peculiar views of pathology or treatment, or the fact that his practice is based thereon, as a means of attracting to himself patients.

Dr. FOTHERGILL (Wandsworth) said the last sentence of the Rider seemed to imply that the practitioner could advertise if he did not thereby attract patients.

Dr. ROBERTSON (Glasgow Southern) agreed with Dr. Fothergill that they should lop off the last sentence with regard to "attracting to himself patients."

Dr. HACKMAN (Portsmouth) asked what was the definition of the words "to advertise."

Dr. MACLEAN asked the Meeting not to accept the suggestion of curtailing the Rider, because it had been thoroughly considered by the Ethical Committee, which came to the conclusion that the object of advertisements was to attract patients to a practitioner. That was the offensive character of the advertisement. It would rob the Rider of a great deal of its power if the limitation suggested were accepted by the Meeting.

The Rider was put to the Meeting and carried *nemine contradicente*.

Dr. MACLEAN moved that the following Recommendation of Council be adopted:

> That, accordingly, the Representative Meeting expresses its disapproval of the conduct of those medical practitioners who permit the publication of their names in the *Homoeopathic Directory* or similar compilations, or who make use of door-plates or similar means to intimate to the public that they are guided in their practice by peculiar theories of pathology or treatment.

Dr. FOTHERGILL asked if the mover would accept the word "other" in the sixth line in place of the word "similar."

Dr. LANGDON-DOWN hoped that they would not accept the word "other." They did not wish to exclude medical directories, for instance.

The CHAIRMAN said the Chairman of the Central Ethical Committee could not accept the proposal to alter the word "similar" to "other," because it would open the door a little too wide.

Dr. R. GORDON (Sheffield) said when a patient wanted to consult a homoeopathist he did not walk along the street and look at the door-plates to find one. He would take up a directory, and he would find there a report of the homoeopathic hospitals and the doctors named. There was too much disposition to jeer at an individual practitioner in a small way because he made himself known, but a man had only to connect himself with some nostrum, and then do what he pleased.

The CHAIRMAN said Dr. Neal had sent in an Amendment which was actually an addition to the Motion—namely, to add at the end of the Motion the words, "Or who are connected with any institution devoted to practice founded upon peculiar views of pathology or treatment."

Dr. NEAL (Central Birmingham) moved the Amendment. It practically answered the difficulties of the last speaker. In Birmingham they had a homoeopathic hospital which was very largely advertised amongst the laity, and they felt that the men connected with that hospital were advertised as holding peculiar views on pathology.

Lieutenant-Colonel CURME seconded.

Dr. MILBURN said he had seen brass plates advertising homoeopathic hospitals.

Dr. MACLEAN accepted very willingly Dr. Neal's Amendment. He wished to draw a distinction between an Amendment of that character and one that had reference to a single word. When a Committee had fully considered a Resolution, to accept in a hurry the alteration of a single word which would completely upset the trend of the Resolutions before the Meeting, one hesitated very much to do it; but an Amendment of substance such as Dr. Neal's one could grasp, and on behalf of the Committee he accepted it.

Dr. BUIST said that in view of the Chairman's statement he would like to know whether it reflected at all on such an institution as the British Temperance Hospital.

Dr. MACLEAN said that institution was not before the Committee as the case in point.

Dr. SHADWELL (Walthamstow) said it was a direct attack against the homoeopathic practitioner. Many of the Members belonged to hospitals which were extensively advertised, and it was making a direct attack to single out the homoeopath. It would be a great mistake for the Ethical Committee to accept the Rider then before the Meeting. The fact that a man was a homoeopath was a matter of education, and arose often from the fact that his father was one before him. A man might be perfectly conscientious and honest in his belief in homoeopathy. Many members of the public, misguided people no doubt, believed in homoeopathy, and they would have homoeopathic treatment. If they could obliterate the word "homoeopathic" altogether from the Rider it would be to their credit and to the honour of the profession.

Mr. H. W. ARMIT (Hampstead) said he was no friend of the homoeopathic practitioner or of the practitioner who indulged in peculiarities, but the whole of the debate had shown that they had been regarding this from a point entirely from their own side, and not from the side of the public, the side which really ought to be taken into consideration. The suggestion as to objecting to the indication of the sort of practice a man or woman was carrying on could only be carried out to a certain extent. They did not object to the arbitrary description of physician, surgeon, gynaecologist, and so on, and they could not prevent the appearance in the daily press of notices of the visit of Sir Somebody Somebody to a duke in the country; and provided they did not include a certain number of advertisements, the wider they made their ethical rules the better for everybody concerned. Personally he should like to see every practitioner putting boldly on his doorplate what he practised, even to the extent of the whole list—medicine, surgery, obstetrics, midwifery, etc.—as was done in Germany without there being any reflection on the practitioner. In paragraph 1 they said the Association should not attempt to pronounce, and in paragraph 3 they proceeded to pronounce; he thought they could not do better than refer the matter to the Ethical Committee for them to say how far a man or woman should be permitted to advertise, so that ethical questions would become rare, instead of being, as at present, of almost daily occurrence.

Dr. BUIST could not help regarding the addition which the Chairman had accepted as an exceedingly unfortunate one for the Association to adopt at the present stage. There was no wish to give support to homoeopathy or any other peculiar system; but he thought they would be imposing an unjust penalty against those who practised them and who would establish institutions where they would be able to carry on their practice. It would be extremely unfortunate that they should, by a back wind, do exactly what it was desired not to do.

Dr. DARLING (Portadown and West Down) said there was not merely homoeopathy, but there was quite a number of other things—hydropathy, vegetarianism—which were more or less fads. Of all these different fads he did not think they ought to take any official cognizance. Nor did he think they should disqualify a man because he practised homoeopathy or any other thing; and he thought it would be wise to leave the two paragraphs as they now stood.

Dr. WYNNE thought they were being led into a very strange position in this discussion, as an attempt was being made by speakers to confuse, with the practice of homoeopathy, such things as temperance, hydropathy, electropathy, and so on. There was a distinction in the practice of homeopathy as compared with rational treat-

ment. He did not suggest that hydropathy or total abstinence should be put in the same category as homoeopathy; that was contrary to all tradition. So far from leaving out the name "homoeopathy," he should be inclined for its further inclusion. Instead of saying "connected with any institution concerned with practice based on peculiar views," he should prefer to add to the motion "any homoeopathic institution."

Mr. FLEMMING pointed out that the object of the first Resolution was to prevent anyone holding out peculiar views for the purpose of getting patients. The second paragraph was not that at all. If the Amendment was carried they would be adopting two different policies in one Resolution.

Dr. HUGH BARBER (Derby), speaking as Representative of a Division which had discussed this matter, expressed the opinion that the *Homoeopathic Directory* was on a very different footing from a door-plate. Nobody would look at the *Homoeopathic Directory* unless they wanted homoeopathy, and there could be no objection to a man's name appearing there.

Dr. FOTHERGILL asked if the Amendment referred to anything else except homoeopathy.

The CHAIRMAN replied that the Amendment was directed to "any institution devoted to the practice founded upon peculiar views of pathology or treatment"; that would include homoeopathy.

Dr. FOTHERGILL asked if it would include other peculiar views.

Dr. NEAL (Central Birmingham) said that when this matter came before his Division, their difficulty was to know how it would apply locally. The Amendment had rather reference to the Homoeopathic Hospital.

The CHAIRMAN said that as worded, the Amendment referred to other things besides homoeopathy.

Dr. FOTHERGILL asked if three months' notice had been given of this question.

The CHAIRMAN OF REPRESENTATIVE MEETINGS ruled the Amendment in order.

The CHAIRMAN OF THE ETHICAL COMMITTEE suggested that Dr. Neal's point was already covered, and that "similar means" might cover the point; that was to say, a man in one case might be a homoeopathic practitioner, and in the other he might be connected with an institution for homoeopathic treatment. In that sense perhaps the term "similar" might be widened.

With the permission of the Meeting the Amendment was withdrawn.

Dr. LANGDON-DOWN moved that the clause be referred back.

Mr. ARMIT seconded, and on a show of hands the Motion was carried.

The CHAIRMAN OF THE CENTRAL ETHICAL COMMITTEE proposed:

> That the following Recommendation of Council be adopted (paragraph 16 of Supplementary Report):
>
> (4) That practical effect be given to the foregoing Resolutions by an expression of opinion of the Representative Meeting as follows: (*a*) That it is desirable that the bodies which have the power of electing Members should not elect those who are reasonably believed to have acted unprofessionally in any of the ways stated; and (*b*) that, concerning those who are already Members, the disciplinary powers of the Council and of the Branches should be duly exercised if, and when, cases of the kind are brought under their notice in conformity with the ordinary Rules of Procedure of the Association in ethical matters.

Dr. GOODALL (City) suggested that Recommendations (*a*) and (*b*) be taken separately, which was agreed to.

It was moved by Dr. BROWN (Bury and Rochdale), and seconded, that Clause (*a*) be referred back.

Dr. MACDONALD deprecated the referring back of Resolutions to Committees. With regard to this particular matter, the question of homoeopathy had been before the Association for some three years, and no one in the room could complain of not having had an opportunity of considering the subject before them in all its bearings. The constant sending back to Committees increased their work, and also the labour of the officials of the Association. The only doubt he had about sending the matter back was with regard to the subject of ethical rules, and there could be no doubt about what they meant. If there was any doubt, it ought to be referred back; but he himself had no doubt about it.

Dr. HENRY (Leicester and Rutland) supported the proposition to refer back.

On a show of hands the Motion was lost.

Mr. LARKIN pointed out that the Recommendation only condemned one way of attracting patients, and he suggested the Recommendation be altered accordingly.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said that the Chairman of the Central Ethical Committee preferred the Recommendation as it stood in the plural, although possibly there was only one method mentioned.

Dr. HENRY moved as an Amendment the insertion of the words "be acting" instead of the words "have acted."

Dr. BUIST suggested that the words should be "to act."

The suggestion of Dr. Buist was agreed to.

The first part of the clause as amended was then put to the Meeting and agreed to.

The CHAIRMAN OF THE ETHICAL COMMITTEE then moved Clause (*b*).

Dr. GOODALL spoke against the Motion. It seemed to him that by previous Resolutions the Meeting had condemned homoeopathy and homoeopaths; but it had to be remembered that there were in the Association a number of homoeopaths. If the Meeting passed the Recommendation, the Association might be called upon in perhaps a short time to expel these men simply because they were homoeopaths, and for no other reason. He did not think that the clause should be made retrospective. If homoeopaths in the future were not going to be elected, those who had joined would of themselves resign and a great deal of trouble would be averted.

Dr. G. PARKER (Bristol) said that his Division thought it was a mistake to make any attack on homoeopaths. If they were left alone the schism would sooner or later die out.

Dr. HACKMAN (Portsmouth) said there was an additional reason against the proposal, namely, that the phraseology which would have to be used in expelling homoeopaths would declare that they had done something against the honour and interests of the profession. The word "honour" was an exceedingly dangerous word to use applied personally to an individual.

Dr. BUIST hoped that the Meeting would not reject the clause. It did not in any way propose to penalize homoeopaths. It only penalized a man who, happening to be a homoeopath, advertised the holding of peculiar views of pathology or treatment, or the fact that his practice was based thereon as a means of attracting to himself patients.

Mr. T. W. H. GARSTANG (Lancashire and Cheshire) said that in the first Resolution the Meeting had already declared that a man would not be penalized for his opinions. The Motion now before the Meeting was to the effect that disciplinary measures should be taken whenever faults under the ordinary existing rules of the Association were brought to light. A man would not be penalized because he was a homoeopath or attached to a homoeopathic hospital.

The Motion as a whole was then carried by more than the requisite two-thirds majority.

Position of Practitioners Examining on Behalf of Interested Persons.

Dr. MACLEAN moved:

> That the Interim Report of Council on the Position of Medical Practitioners examining on behalf of Interested Persons be received.

This was agreed to.

Dr. MACLEAN moved:

> That the Interim Report of Council on the Position of Medical Practitioners examining on behalf of Interested Persons be provisionally approved.

He said the present position was that the report as a whole had been referred to the Divisions. He suggested that the Motion he had just read should be modified in this sense, "that the interim report of Council on the position of medical practitioners examining on behalf of interested persons, be provisionally approved subject to further consideration by the Representative Meeting after it had been discussed by the Divisions." One of the difficulties which the Committee had in discussing this important point was the fact that this kind of practice was comparatively young. The difficulty the Committee had on the one hand was making the Report too scanty, and, on the other hand,

enlarging it beyond reasonable limits. The suggestion of the Amendment was that when the Divisions had considered the matter sufficient time would have elapsed to ripen some of the difficulties enabling them to deal with them better, and thereby fuller knowledge would be presented to the Committee for the consideration of the subject.

Dr. HASLIP rose to a point of order. Could the Representative Meeting approve of a question which had not been before the Divisions?

The CHAIRMAN said the Motion was very carefully worded to prevent the Meeting expressing any opinion which could in any way be thought to be final. The words were, "be approved subject to further consideration by the Representative Meeting after it had been discussed by the Divisions." The only approval, he took it, comprised in that Resolution was provisional and entirely subject to the further consideration which would be given to it after they had received the reply from the Divisions.

Dr. HASLIP asked if the Chairman of the Committee simply wished to ask the Meeting to approve of sending it to the Divisions, or did he ask for approval before it was sent to the Divisions? His (Dr. Haslip's) experience in the Divisions had been that when a question had been sent down, as it had been in the past, it had been stamped as having been passed, and no opportunity was given of discussing it.

The CHAIRMAN said it was before the Divisions at the present time.

Dr. FOTHERGILL said Dr. Haslip had raised a point that he himself had raised. When they had the Report of the Finance Committee sent down to the Divisions, it contained the notice "approved for consideration by the Divisions." The result was that several men who were not keen on Division work were disgusted at being called upon to discuss a matter that had been already discussed. He urged that they would not pass a Resolution which would in any way convey the fact that they approved of what was contained in the Memorandum.

Dr. HASLIP proposed that they should pass to the next business.

Dr. FOTHERGILL said that if it was the fact that it had already gone to the Divisions, there was no need to pass a Resolution that they should enter into it then.

The Resolution was withdrawn.

Warning Notice.

Dr. MACLEAN moved:

That the following Recommendation of Council be adopted:

> That, in the opinion of the Representative Meeting, it is the duty of Members of the Association, and of those Members of the medical profession who desire to co-operate with the Association for the maintenance of the honour and interests of the medical profession, to apply for information in accordance with the terms of the Warning Notice in respect to any appointment referred to in that Notice, and to take such action in respect of the information or advice received, in response to such application, as may be most conducive to the maintenance of the honour and interests of the profession.

He said that a pronouncement of this kind had already been made by the Council, and it was considered by that body to have considerable weight; so much so, that the Resolution was adopted *nemine contradicente*. The necessity for giving the Warning Notice a due and proper status in the Association had become evident to the Ethical Committee of the Council as arising out of certain disputes with which those bodies had to deal. It had been put, by way of contention, that a Member joining the Association had no knowledge that he committed himself to absolute loyalty to such a thing as the Warning Notice. Having regard to the experience gained it was thought necessary that the Warning Notice should be given its necessary status. The Council, having voted in favour of and adopted this Resolution, had recommended that the Representative Meeting should take the same course as that set forth in the terms of the Motion.

Dr. FOTHERGILL moved to insert the following words after "in respect of any appointment": "for which they may consider the desirability of making application." He was under the impression that the Chairman of the Ethical Committee was going to draft some additional phraseology to meet the point. He did not think it was desirable to make the matter so broad, and he did not know what the Medical Secretary would do if some facetious gentleman were to write asking for a full explanatory answer.

The CHAIRMAN OF THE ETHICAL COMMITTEE asked Dr. Fothergill to have due reference to the terms of the Warning Notice. They were:

> Medical practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Secretary of the Division or Branch—

and so on. The terms of the Motion quite agreed with the terms of the Warning Notice. If a man was requested not to apply, it was, he thought, to be assumed that there was an intention to apply, and that would prevent the enormous correspondence with the Medical Secretary to which Dr. Fothergill had sympathetically alluded.

Dr. JOHN BROWN said that most of the Members were absolutely loyal to the Warning Notice, but there were a few who were not, and those who were not had been getting appointments in the Lancashire and Cheshire Divisions. He only regretted that they could not stand by the men who were loyal to the Association, as they had no funds out of which they could do it.

Mr. ARMIT said he believed he was instructed by his Division to ask the Association to destroy the Warning Notice altogether. In the past the Warning Notice had been complicated with some little difficulty, as in the case of the Hampstead Hospital dispute, to which he proceeded to refer in some detail.

The CHAIRMAN deprecated the discussion of the Hampstead Hospital question on the Motion, and if it were to be discussed it had better come up on the next Motion.

The CHAIRMAN OF THE ETHICAL COMMITTEE could not accept for one moment the allegations made by Mr. Armit.

Mr. STRATON suggested the deletion of the words "or advice" in the last line but four of the Recommendation. When the Warning Notice had been used, gentlemen who did not apply, and who thought they lost their appointments by not applying (although it was not the case), turned round and said advice had been given through which they lost the appointments. He moved the deletion of the words.

Dr. JOHN BROWN seconded.

The CHAIRMAN OF THE ETHICAL COMMITTEE could not accept the suggestion. Surely, if in response to the Warning Notice a member of the profession who contemplated applying for a post got information and advice from the Division or from the Medical Secretary, that must be taken into account.

Dr. TODD objected to the deletion of the words, and after a short discussion the Motion was withdrawn by Mr. Straton with the consent of the seconder.

The unamended Motion was then put and carried with one dissentient.

Dr. GOODALL moved as a Rider:

> That it be an instruction to the Council to give orders that this Recommendation be printed at the end of the copy of the Articles and By-laws which is given to every Member of the Association at his election.

He said his object was that Members should get information that there was such a thing as a Warning Notice; but he understood that there were reasons why it should not be put in the way he suggested, and he accepted the wording of an Amendment which Dr. Macdonald would move:

Dr. MACDONALD moved:

> That it be an instruction to the Council to consider what documents should be circulated to every Member of the Association indicating his rights and obligations as a Member.

The CHAIRMAN OF THE ETHICAL COMMITTEE seconded.

This was agreed to by the Meeting without discussion.

HOSPITALS.

Payment for Compensation Certificates.

THE CHAIRMAN OF THE HOSPITALS COMMITTEE (Mr. Hugh Ker) moved:

> That the following Recommendation of Council be adopted (paragraph 125 of Annual Report of Council.)
>
> That the fee for a certificate of the kind referred to in Minute 148 of the Representative Meeting, 1909, should not be less than one guinea.

Minute 148 of the Representative Meeting 1909 referred to in the Report was as follows:

Resolved: That, in the opinion of the Representative Meeting, any member of an honorary or paid medical or surgical staff of a hospital who signs any certificate or gives any report on any case under the Workmen's Compensation Act, ought to receive personally the usual fee in full.

Dr. FOTHERGILL said that if the Minute of the Belfast Meeting upon this subject was referred to, it would be seen that it covered two points. The first was as to the fee for notification of the accident, and the second was with regard to the report. He suggested that the Recommendation of the Council as it stood at present was incomplete.

The CHAIRMAN OF THE HOSPITALS COMMITTEE said that the Committee would consider the point. He was quite ready to take back the Recommendation. He then moved:

That the remainder of the Annual Report of Council under heading "Hospitals" be approved.

This was agreed to.

Dr. LYSTER (Winchester) moved the following Rider:

That the Council be instructed to prepare a Report for consideration of the Divisions and the Representative Meeting on the advisability of all members of the Staffs of Voluntary Hospitals being paid for their services.

He said his Division had intentionally worded the Rider so that it should be as reasonable as possible. The passing of the Rider would not commit the Meeting to any expression of opinion upon the merits of the suggestion made. All that was wanted was that the Council should consider the matter and present a Report, which in its turn would go to the Divisions and subsequently come before the Representative Meeting. As the matter was going to be referred back to the Committee, he was quite prepared not to argue in favour of the Rider at all.

The Rider was adopted.

The CHAIRMAN OF THE HOSPITALS COMMITTEE then moved:

That the Supplementary Report of Council under heading "Hospitals" be approved.

This was agreed to.

SERVICE MEMBERS OF THE COUNCIL.

The CHAIRMAN announced that the election of three Members of Council to represent the Services had resulted as follows: *Royal Naval Medical Service:* Inspector-General Robert Bentham, R.N.; *Army Medical Service:* Surgeon-General Sir Alfred Keogh, K.C.B.; *Indian Medical Service:* Surgeon-General W. R. Browne, C.I.E., I.M.S.

MEDICAL ETHICS.

The consideration of this subject was then resumed.

The CHAIRMAN OF THE ETHICAL COMMITTEE moved:

That the remainder of the Supplementary Report of Council, under the heading "Medical Ethics" be approved.

He had to call attention to the fact that the Report included the Special Report upon the Hampstead Hospital. He would like to refer quite briefly also to the fact that contained within that portion of the Council's Report was a reference to the cases brought by the Ethical Committee under the Standing Orders of the Council before the General Medical Council. The Meeting would bear in mind that some three years ago the Association decided to bring properly selected cases before the General Medical Council. The utmost care had been taken in the selection of the cases which had been brought before that body. He only mentioned this point for the purpose of referring to the fact that the Ethical Committee—and the same opinion had also been expressed by the Council—were immensely indebted to the Medical Secretary for the extremely able and effective manner in which those cases had been presented by him before the General Medical Council.

Dr. MACDONALD said, with reference to what had fallen from Mr. Armit, the Council were not afraid of dealing with the Hampstead case. The Council were prepared to go on with it; but the President-elect intervened for the sake of peace.

After further remarks by Mr. ARMIT and Dr. MACDONALD,

Dr. MACLEAN pointed out that there were very great peculiarities in the Hampstead case. He wished to emphasize that point, because to think that the Ethical Committee took a line in respect of one case which materially differed from the line they took in another case was entirely contrary to fact.

The Motion was then put and agreed to.

The Meeting was adjourned till Monday at 10.15.

MONDAY, JULY 25TH.

Mr. H. A. BALLANCE (Chairman of Representative Meetings) in the Chair.

THE proceedings of the Annual Meeting of Representatives were resumed at the Guildhall on July 25th, 1910.

VOTE OF SYMPATHY WITH DR. FLETCHER.

The CHAIRMAN OF REPRESENTATIVE MEETINGS announced that Dr. Fletcher, of the Chelsea Division, had telegraphed that, owing to his wife's death, he would be unable to read his paper.

The CHAIRMAN moved a very sincere vote of sympathy with Dr. Fletcher in his great affliction.

The vote was passed in silence, all present standing.

LETTER FROM THE EDITOR.

The TREASURER announced the receipt of the following letter from the Editor:

I desire to express my heartfelt gratitude for the sympathetic Resolution adopted by the Representative Meeting in reference to my inopportune illness. . . . My progress is considered satisfactory, but its slow pace is a great trial of patience.

He was sure that all present would be glad to hear that the Editor was going on satisfactorily.

MEDICO-POLITICAL COMMITTEE.

Rules of Nursing Associations.

Dr. MACDONALD moved that the following Recommendation of Council be adopted:

That the following Model Rules for inclusion in the Rules of District Nursing Associations be adopted in place of those approved by the Annual Representative Meeting, 19[illegible] (Minute 128):

1. The nurse shall in every case carry out the direction of the Registered Medical Practitioner in attendance.

2. The nurse, when requested in an emergency, may visit and render first aid to any person without awaiting instructions from a doctor.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE introducing the foregoing, said that some of the Rules were precisely the same as those before the Meeting at Belfast, and the Amendments were very small. He moved the adoption of Rules 1 and 2, which were agreed to.

On Rule 3:

3. If, in the nurse's opinion, the attendance of a doctor is necessary, she must insist that he be sent for; and if for any reason his services are not immediately available, she must if the case be still one of urgency, remain with the patient and do her best until he arrive, or until the emergency is over.

Should the advice to call in a doctor be not acted upon the nurse must at once leave and report the case to her Secretary, and must not attend again except in the case of a fresh emergency.

Dr. G. H. GRANT DAVIE (Manchester South) moved to insert the words "if circumstances permit," so that the latter part of the Rule would read, "should the advice to call in a doctor be not acted upon, the nurse must, if circumstances permit, at once leave," etc. It was thought in his Division that the second part of the Rule as it stood was too stringent. It was possible to conceive a case in which there would be an inquest following. If the nurse were to show the Rule as proposed by the Association it might be the means of having a very severe strictnre passed upon the Association by the jury.

Dr. J. S. DICK (Manchester North) seconded.

Colonel CURME said if a doctor were called in and the patient refused his services, he should like to know what the coroner would say, supposing the patient died and the nurse had left without rendering any service.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE observed that the first paragraph of that Rule covered all

Mr. RUSSELL COOMBE (Exeter), speaking against the Amendment, quoted a similar rule adopted by the Queen's Institute, allowing a nurse who had tied up a cut thum

for instance, to return to the case if the thumb started bleeding again, but she was not allowed to attend a patient systematically.

Dr. D. F. TODD (Sunderland) trusted the Amendment would not be accepted. The experience in the North of England had been that some of the nursing associations had tried to avoid any Rules which were brought before them, and he thought if the Rule as drawn up were adopted it would be more elastic, and would be construed by nursing association committees in a way suitable to themselves.

Dr. FOTHERGILL thought the Amendment seemed to be an endeavour to safeguard the nurse and not the medical man. The Queen's Jubilee Nurses' Institute did not question the safeguard, and accepted the draft.

Dr. EDDISON (Council) suggested it would be better to insert at the end of the clause "unless the life of the patient is endangered thereby." If a nurse were called in to a case of haemorrhage and there were no doctor near at hand, or the people had peculiar views and said they would not send for a doctor, and the nurse said, "Very well; I am going, whether the patient dies or not," the coroner's jury would be certain to comment upon the Association and not the nurse.

Mr. LARKIN (Council) hoped that the suggested alteration would not be made. It would have the effect of taking from the nurse the only power which she possessed of insisting upon the calling in of a doctor.

Dr. CHARLES MACFIE (Council) suggested the insertion after the word "until" and before the word "emergency" of the words "she consider."

The Amendment proposed by Dr. G. H. Grant Davie was put to the Meeting and lost.

Rule 3 was then agreed to.

Rules 4 and 5, as follows, were agreed to:

> 4. Should any further attendance be requested by the patient after the emergency is over, the nurse must explain that the doctor will decide whether or not this is necessary.
>
> 5. No attendance after a first visit shall be given by a nurse unless she has informed a doctor and received his instructions with regard to the case, if any.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE moved Rule 6:

> 6. Apart from her duties as a certified midwife, a nurse must on no account prescribe or administer on her own responsibility such drugs for her patients as should only be prescribed by a medical man.

He said that there had been an alteration in the wording of the rule, as a difficulty had been raised by the Nurses' Institution as regarded the phrasing of the rule adopted in Belfast.

Dr. D. F. TODD (Sunderland) suggested that instead of the word "man" at the end of the rule the word "practitioner" should be inserted.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE adopted the suggestion.

Dr. DAVID BLAIR (Lancaster) asked whether ordinary nurses were allowed by nursing associations to attend midwifery cases in an emergency.

The CHAIRMAN OF THE ETHICAL COMMITTEE said that when the Midwives Act was passed it was understood that in an actual emergency any woman, whether she was a nurse or not, could attend a case.

Dr. R. W. HENRY (Leicester and Rutland) suggested the insertion of the word "registered" before the words "medical practitioner."

The CHAIRMAN said that it was inconceivable that the Association would make Rules of this kind unless they were meant to be applied to Registered Medical Practitioners.

The suggestion was not adopted.

Dr. C. E. ROBERTSON (Glasgow Southern) asked whether it would not be well to try to define the drugs referred to in the Rule. The list would have to be a long one; but he thought that it would be wrong to adopt the Rule in its present indefinite state.

Dr. J. H. TAYLOR (Salford) said that it might be convenient to give some sort of definition. The Midwives Act said that no drug other than a simple aperient should be administered by a certified midwife unless she made a special note in her casebook. He was not at all sure that that enactment would not be a good model for the Association to follow when dealing with nurses.

Mr. C. E. S. FLEMMING (Bath and Bristol) said that there was a great difficulty about defining the drugs, and that difficulty, he thought, rather led the Committee to bring forward the Rule as it stood. It was copied from the wording used by a county nursing association. The Committee thought that it was a particularly apt Rule, because it did not try to draw an impossible line. There were, of course, lots of cases where a simple aperient might be very dangerous. A drug that at one time might be given quite properly by a nurse, at another time could only be given under the instructions of a medical man. If "drugs" was defined, it would be necessary also to draw up a list of the conditions under which the drugs could be given.

Dr. FOTHERGILL (Wandsworth) said that if the Rule was left vague, if an accident happened the onus of proof was upon the nurse; if the Rule was defined, the nurse was given permission in advance and she was covered. He suggested that the nurse should not be covered at all, but that it should be left to her to prove that what she had done was what she should have done.

The Rule as amended was then agreed to.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE moved the following:

> 7. No midwife in the employment of a Nursing Association should accept an engagement without first asking the patient to state, and herself registering, the name of the doctor to be called in should any emergency arise.

Dr. PARKER (Bristol) moved the addition of the words "who has consented" after the word "Doctor." It seemed absurd to enter the name of a doctor who had never consented and might never do so.

Dr. BROWN (Rochdale) seconded.

Dr. GOSSE (Isle of Thanet) said he did not know whether medical men would consent to be called in on an emergency.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE said he could not accept the Amendment.

The Amendment was lost.

The Rule was then put and agreed to.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE moved that:

> 8. A nurse shall in no case attempt to influence a patient in the choice of a doctor.

Dr. KEAY (Greenwich) moved that the words "or an institution," should be inserted in the Rule. In his experience some of the nurses had a bad habit of advising a patient to go to this or that particular hospital.

Dr. WHITBY (Bath) seconded the Amendment. He thought this would prove a most valuable addition.

Dr. FOTHERGILL (Wandsworth) said it was necessary to widen the Rule. In his district there was a maternity society run by ladies, but unfortunately the clergymen had got hold of it, and they failed to see, because the ladies paid so much of the guinea, they should not suggest who the doctor should be. He would like the Rule to cover those gentlemen. He would suggest the addition of the words "neither a nursing institution nor any other party."

Dr. MACAN (Croydon) rose to a point of order. It was for the nursing institution to make the rule.

Mr. BRADBROOK (Birmingham) suggested that it would be better to apply the Rule to the patient and not the nurse.

Dr. FOTHERGILL (Wandsworth) said perhaps the Chairman of the Committee would take it as a reference to consider the point and bring it up another year.

The Amendment that the words "or an institution" be added was put and carried.

Dr. BUIST (Dundee) said that this Rule, by its position, suggested that it was only with reference to midwifery cases because it came between two midwifery rules.

Mr. T. W. H. GARSTANG (Lancashire and Cheshire) pointed out that they were making rules for nurses. He did not know whether they had any power to make rules for an institution.

The CHAIRMAN OF THE COMMITTEE said the Rule was that the nurse should not suggest any particular institution. It was making a rule for the nurse.

Mr. GARSTANG understood that the institution was coupled with the nurse.

Dr. J. E. EDDISON suggested that it could be got over by

the nurse being prohibited from exercising her influence in the choice of a doctor.

The Chairman said that was the same thing. He asked Dr. Macdonald if he would accept Dr. Buist's suggestion as to the order of the Rule.

The Chairman of the Committee asked where it should be put in.

Dr. Buist (Dundee) thought it would be better to come in before the first midwifery rule.

The Chairman of the Committee had no objection to an alteration in the position of the Rule; but he did not see any force in it because it said "no nurse."

Dr. J. E. Gabner (Preston) thought nurses would always influence patients in the choice of doctors, and what would they do with the nurse if she did so? Some restriction ought to be put upon the nurse.

The Chairman said surely the penalty could be left to the Nursing Association Committee to decide.

Dr. Harris (Southport) said his experience was that in some nursing societies the nurses were bound to recommend the doctor. He thought the insertion of the word "institution" would create a difficulty.

Dr. Muir (Glasgow East) corroborated Dr. Harris. There was a nursing association in Glasgow which had the same rule.

Dr. Todd (Sunderland) said surely it would be most unfair that any institution should select individual doctors and say they were the people who should attend a case.

Mr. Flemming (Bath and Bristol) thought the facts just stated were a very strong argument in favour of getting every nursing association to adopt these Rules. These Rules had been before the Queen Victoria Nursing Association, which had altered its Rules in conformity with them; and he thought there would be very little difficulty in getting every association to adopt them.

The Rule was then agreed to.

The Chairman of the Committee moved:

> 9. No person shall be employed by the.....Association as a midwife, or received for training as a midwife, without having first signed an agreement not to practise as a midwife within a radius of.....miles from a centre within a period of.....after leaving the service of the Association, without the consent in writing of the Association.

Difficulty had been found in some nurses being employed by certain institutions; and, having made their practice there, they settled down in the district. This Rule was suggested to prevent that occurring.

The Rule was agreed to.

The Chairman of the Committee asked permission of the Meeting to keep the same word all through the Rules. It would be noticed that in some cases the word "doctor" was used and in others "medical practitioner." He suggested that the words "medical practitioner" should be used throughout.

This was agreed to.

The Chairman of the Committee moved the following Recommendation:

> "It is desirable that each District Nursing Association should obtain the co-operation of all medical practitioners in the district, and that the larger nursing associations should obtain, if possible, the assistance of one or more medical practitioners of the district on the committee.

Dr. J. B. Hughes (Stockport) failed to see why it should be limited to the larger nursing associations. His experience was that in country districts these nursing associations were run in a very loose way; the doctor was put on a lower status than the nurse. He moved as an Amendment that in country districts all the medical men practising in the district should be *ex officio* members of the nursing association.

Mr. Brown (Rochdale) seconded the Amendment.

Mr. Flemming explained that the Rule was framed in this way entirely to meet the plans of the Queen Victoria Nursing Association. There were certain districts where it would be very difficult to insist upon the medical men being *ex-officio* members of the committee, because there might be some medical men who were in many ways opposed to the work of the nursing association, and it was felt that it might be very inconvenient to have them as members of the nursing committee. It was always open to a medical man to join by paying a small subscription.

Dr. Fothergill hoped that the Rules as read would not be carried, and moved that the word "larger" be left out. There was a little confusion between "Association" and "Committee of the Association." A doctor might very well be a member of the association, but what the Meeting asked for was that he should be a member of the committee. Whether the association were big or little, at least one doctor should be on the committee.

Dr. Douglas (Maidstone, Rochester, and Chatham) asked why a distinction should be made between the larger and smaller associations. The larger association, he took it, applied only to large towns; but there were many small towns and villages in which there were nursing associations, and he thought they ought to be clear as to their phraseology.

Dr. Todd (Sunderland) thought the point they ought to establish was that medical men were to be representative of their profession. He himself would not specify any particular doctor, nor should he make any difference between larger and smaller associations. The principle they wanted to establish was that the medical practitioners in the district were representing the executive committee of the nursing institution. The difficulty they had to contend with was that it was found that there were some nursing associations who would not have any medical men upon their executive committee. He would urge the Meeting to establish the principle that medical men should be represented on the committees of nursing associations.

Dr. Lyster (Winchester) also urged on the Chairman of the Committee the desirability of omitting the reference to larger associations only. He had had a good deal of experience both of large and small associations, because in his district the nursing association controlled probably about three-fourths of the area, and the smaller associations affiliated to the area managed the rest. It seemed to him equally important that all the smaller associations should have some medical men on the committee. One speaker had suggested that the difficulty mainly was that in many of the small districts the local men were opposed to these small associations. He himself had known such instances, but in every case the medical man had had very good reasons for his opposition, and it seemed to him a particularly strong argument in favour of their being represented.

Mr. Brydon (Darlington, Hartlepools, Stockton) agreed that nurses should not recommend any special doctor. He alluded to the case of his own district nursing association, where the conditions were very unsatisfactory to the local profession.

Dr. Todd (Sunderland) said his intention was that the medical profession should be represented by the medical profession generally, and that was the intention of these Rules all through.

Dr. Henry (Leicester and Rutland) said that during the past year his own district had had difficulties arising from these nursing associations. There was one small nursing association upon the committee of which no medical men were appointed at all, some difficulty having arisen with the lay committee. They had at that time a rule that medical men in the district should be appointed on the executive committee. They saw the ladies who were running the concern, and intimated to them what an advantage it would be if medical men could work in harmony with them instead of against them. They quite realized the position, and the Rule was adopted that all medical men within the district of the association should be put upon the executive committee. Since then they had had no difficulty in the district. In the last year two representatives were appointed on the committee of the association, under the advice of the medical council. He strongly advocated that all doctors should be on the executive committee who were willing to act.

Dr. Maclean expressed himself as personally in favour of the permissive form. The objection was made that the fact of a qualified medical man being on the nursing association limited the character of his practice. They had had a pronouncement from the General Medical Council that if a doctor were on the committee of one of these nursing associations, and the nursing associations undertook certain practice, the medical man might be held responsible for covering the nurses. He therefore urged the Meeting to preserve the permissive clause and not to

import the medical man into the service, but to leave it to him to consider his personal responsibility in the matter.

Dr. HUGHES (Stockport) said that his remarks as to the doctor being controlled referred to midwifery cases.

Dr. DOUGLAS asked if Dr. Macdonald would agree to the omission of the word "larger."

Dr. MACDONALD said he would agree to do away with the distinction between larger and smaller associations in the latter part of the Resolution.

Dr. BUIST suggested that the omission of the word "larger" would bring about what was desired.

The CHAIRMAN then put the Amendment:

That the medical men practising in the district be *ex-officio* members of the nursing committee.

The Amendment was lost.

Dr. MACDONALD said the form he recommended for Rule 7 was as follows:

It is desirable that each district nursing association should obtain the co-operation of medical practitioners in the district, and that the larger associations should obtain, if possible, the assistance of medical practitioners in the district on the committee.

He was quite willing to accept the Amendment to do away with the distinction between larger and smaller associations.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE was willing to accept the following Amendment if Rule No. 7 read in its first part as printed:

It is desirable to obtain the co-operation of all the medical men in the district, and to secure, if possible, their assistance on the committee of the nursing association.

This was agreed to.

After some discussion, during the course of which Dr. HAIG (Perth) suggested that the heading should be "Model Rules for Inclusion in the Rules of County and District Nursing Associations," it was moved by Dr. J. H. TAYLOR (Salford) that the word "District" should be omitted.

Dr. ST. CLAIR SHADWELL (Walthamstow) seconded.

This, upon being put to the Meeting, was duly carried.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE moved:

That the foregoing Model Rules for inclusion in the Rules of District Nursing Associations be adopted in place of those approved by the Annual Representative Meeting, 1909.

The Motion was carried *nemine contradicente*, and therefore by more than the two-thirds majority required owing to the fact that the Motion dealt with a matter of policy.

Instruction in Hygiene, Nursing, First Aid, etc.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE moved that the following Recommendation of Council be adopted:

That Members of the Medical Profession should be suitably remunerated for teaching subjects in connexion with the Public Health, such as Nursing, First Aid to the Injured, and Hygiene, and that the fee adopted by the London County Council of £1 1s. for each lecture is one which appears suitable for general adoption.

Mr. W. BRADBROOK (Buckinghamshire) proposed that the Motion should be taken in two parts. The first part, ending at the word "Hygiene," he had no fault to find with, but he thought that the rest of the Motion was worth debating, because the Recommendation contained in it was not universally applicable.

The Motion was seconded by Mr. VICKERS, but upon being put to the Meeting was lost.

Dr. R. S. LISTER (West Norfolk) asked whether the guinea was supposed to be sufficient remuneration for a country medical man who had to go five miles.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE said that the Motion contained merely a suggestion as to the fee which would be suitable for the lecture itself, and would be open for medical men to make arrangements with regard to mileage.

In answer to a further question by Dr. LISTER,

The CHAIRMAN said that the Chairman of the Medico-Political Committee stated that the proposal was to leave open for the medical man to make arrangements locally if he had to go to a distance to give a lecture.

Dr. TODD suggested that there should be inserted in brackets the words "excluding mileage."

Dr. R. E. HOWELL (Cleveland) moved as an amendment:

That all courses of ambulance instruction be paid for at a minimum rate of 3 guineas per course, and not more than six lectures, and with half a guinea for every additional lecture.

He said that in his Division they quite supported the idea of a guinea for a lecture, but in Cleveland they had been more or less pioneers in the fight, and they had had a great deal of trouble and a good many meetings, both with the Ambulance Association and with the Red Cross people about the matter; they had now gained their point, and they had gained it upon the basis of 10s. 6d. a lecture. That was the fee given by the Education Committee. They felt that they did not want to make any money out of the St. John Ambulance Association, but they wanted to have recognized the principle that their work as medical men was to be paid for.

Mr. J. BRYDON seconded the Amendment.

Mr. BRADBROOK said that in his Division it had been arranged that no more free lectures should be given, and he hoped that the Representative Meeting would insist that throughout the whole country and in the dominions beyond the sea under the control of the Association that it should be the rule that there should be no free lectures given. In his Division they had insisted upon a minimum fee, and 5 guineas for a course, leaving the number of lectures to be determined by the local committee and the lecturer. They had no objection to a man giving a course of ten or twelve lectures if he liked if the pupils would attend them, and they did not rigidly insist that the class should be limited, say, to the usual twenty or twenty-five. If the lecturer got his 5 guineas he might have thirty or more members in his class. His Division had had some difficulty with the county council, which had offered only 4s. 6d. per hour for an attendance of not less than twenty, which was difficult to get.

Dr. MILNER MOORE (Coventry) opposed the Amendment. It was time that the Meeting should make it well understood by all the profession that nothing less than a guinea should be asked for.

Dr. METCALFE (Bradford), who also opposed the Amendment, thought the preparation for, and giving of, these ambulance lectures involved so much work that it ought to be adequately paid for. There would be no difficulty if they would all stick together. In Bradford the county council approved of a guinea; and, taking the town as a sample of the rest of the country, he thought that there would be little difficulty in getting the approval of the local bodies to it.

Dr. LOWE (Mid Stafford) thought they should stick to the guinea. The Medico-Political Committee had simply said that the fee of one guinea per lecture appeared suitable; it did not enforce it upon anybody. He thought the profession might honourably accept the guinea fee, and it was one that in his experience could usually be obtained. In his town the lecturers in connexion with the St. John Ambulance Association had ever since the start of it more than thirty years ago received a guinea fee. The question had become more acute now that the Red Cross Society had begun its operations. The Lord Lieutenant in the county where he resided had at a public meeting actually gone so far as to congratulate the medical men who gave a course of lectures without remuneration, and had asked other medical men to fall into line with them. It seemed to be implied that the men who gave these lectures without remuneration were more patriotic than those who did not. He thought no one had a right to say that a man who expected a fee for his lectures was not patriotic. Of course the Red Cross movement would only come into operation in the contingency of an invasion. Still the instruction that was given by that society was very useful to the public generally.

Dr. FREEMAN MARKS (Swansea) wished to point out a difficulty that might occur if they insisted upon making the minimum fee 1 guinea. The Glamorgan County Council remunerated the lecturer at the rate of 10s. 6d. for an hour's lecture, whilst if the lecture extended to two hours the fee was 1 guinea; so that for 5 guineas they were expected to give ten lectures of an hour each.

It was then moved and seconded that the question be now put.

Dr. HOWELL (Cleveland) asked to be allowed to with-

draw his Amendment, and, this being agreed to by the seconder, the Amendment was by leave withdrawn.

Dr. Brown (Bury and Rochdale) asked if the Resolution would be sent down to all the Divisions, because in his district not a single lecturer received anything.

Dr. Cooper (Altrincham) asked if it would apply to every officer of the St. John Ambulance Brigade.

The Chairman, in reply to Dr. Ferguson, said the Council's Recommendation came up pursuant to an instruction at the last Representative Meeting that the Council should consider the question of lectures given on public health, nursing, first aid, etc., and also for the reason that a Resolution passed by the Representative Meeting some years ago on ambulance lectures had only been given effect to in very few instances by the Divisions of the Association. The Council had brought up this Memorandum simply by the instruction of last year's Meeting.

Dr. Milburn, in reply to Dr. Cooper, who asked whether the regulations applied to the officers of the St. John Ambulance Brigade, said they were in the same position as the officers of the Voluntary Aid Detachments, in that they had to maintain their men in a state of efficiency without expecting remuneration. The lecturers of the St. John Ambulance Association instructed originally in first aid, and the persons who received that instruction could keep themselves efficient by joining the St. John Ambulance Brigade without going further.

Dr. J. M. Ferguson (Burnley) said his Division had already considered this question and pronounced upon it. He thought it would be rather a retrograde movement if the Resolution were passed. The ambulance lectures in his Division had been such a serious loss to the profession generally, that they thought it was only right they should get a little bit of their own back. His Division considered 1 guinea for a class of 20 would be reasonable remuneration; and, if the class exceeded 20, the remuneration should be 1 guinea for each 20 over the first 20. A very large number of ambulance classes had been held.

Dr. Chas. Macfie (Council) suggested that the fee of 1 guinea adopted by the London County Council should be a minimum fee suitable for adoption by this Association. His experience was that the circumstances of some of the people composing the classes were such as to make a guinea an insufficient fee.

The Chairman asked if Dr. Macfie made a formal proposition.

Dr. Chas. Macfie replied that the Chairman of the Committee might accept the word "minimum."

The Chairman of the Committee did not see his way to do so.

The Motion was carried, with two dissentients.

Dr. Lyster (Winchester) moved the Rider standing in the name of the Winchester Division:

> That a fee should be charged for ambulance lectures given to the British Red Cross Society, and that the fee be £5 5s. for each course of lectures.

The Chairman of the Committee suggested the insertion of the words "not less than" before the figures "£5 5s."

Dr. Lyster asked for the ruling of the Chairman as to whether the Motion just passed covered the Red Cross Society.

The Chairman said it had been considered that it did specifically cover the Red Cross Society.

Dr. Lyster said that Rule 59, if applied to the Red Cross Society's lectures, would be quite satisfactory to the Winchester Division.

The Chairman pointed out that there was no statement as to how many lectures were included in the course.

Dr. Lyster: Five lectures.

Mr. C. H. Milburn suggested the desirability of considering the question of the Red Cross Society separately, as certain things came into the question that were not included in the St. John Ambulance.

Dr. Lyster, speaking to the Rider, said that in the Winchester area they had considerable special difficulty with regard to the Red Cross meetings. A good deal of their difficulty with regard to the Ambulance Association had been already settled; but the subject of the Red Cross Society was still open, and he felt that if a definite pronouncement by the Association were made it would be much easier for them to give these lectures with a proper fee than to say they would do it on their own responsibility. A good many men had refused to give the lectures without remuneration, but there were one or two who had not thought it advisable to come into line; and it was felt that if they were given this excuse for not making it a personal matter and it was made an Association matter, they would take advantage of the excuse. He sincerely hoped the Association would decide to give them that loophole.

Dr. L. K. H. Hackman (Portsmouth) pointed out one little difficulty having reference more to the social position of the lecturer—namely, the difference between the Territorial officer and the private practitioner who was likely to give these lectures. The Territorial officer had to keep up a state of efficiency, and of course he charged nothing for his lecture. Additional members might be introduced into these classes, and the Territorial officer would become a *personâ gratâ* to the Council authorities. It seemed to him that the question of the fee ought to apply equally to Territorial officers as to private practitioners, because he was afraid that in counties where there were a good many retired service men they would be asked to come forward and take these lectures, and obtain, perhaps, a little advantage, or more or less advantage, in social standing over the private practitioner. In principle, he thought all lecturers should be paid, whether they were Territorial or private.

A discussion ensued with regard to limiting the number of lectures.

Dr. Fothergill moved that after the words "course of" the words should be added, "not more than six." He thought that some limit should be stated, and in order to raise a discussion and get the limits fixed he proposed it should be six.

Mr. Russell Coombe (Exeter) seconded.

Mr. Larkin suggested the number should be five. The first Resolution on the subject said a guinea per lecture and if the next Resolution said six lectures for 5 guineas it was rather like a baker's dozen.

The mover and seconder of the Amendment accepted "five," and, with the assent of the Meeting, the Amendment was altered accordingly.

Mr. Bradbrook thought it undesirable to make a hard-and-fast definition, and considered some elasticity necessary. He belonged to a railway centre where ambulance classes were held from time to time, and he had to give six or seven lectures in order to enable the men who were away to put in the necessary attendances.

Dr. J. B. Hughes (North Carnarvon) said it was laid down in the Rules of the Red Cross Society that it was no part of its duties to give lectures or train any person.

Dr. Lyster (Winchester) thought the last speaker a little out of date. The Red Cross movement was undergoing a very considerable amount of transition, and the society was about to separate itself more or less entirely from the St. John Ambulance Society. It would have to arrange instruction entirely on its own account in order to be independent of what it considered the irksome regulations of the St. John Ambulance Society. He thought the meaning of the Winchester Division in their Rider was that a guinea per lecture should be paid, and with the consent of the Meeting he would like to amend it accordingly, so that the Rider should read, "Not less than 1 guinea for each lecture."

This Amendment was accepted by Dr. Fothergill and Mr. Russell Coombe.

Dr. Langdon-Down (Richmond) thought there was no sufficient reason shown for differentiating the Red Cross Society from other societies. He thought it would be sufficient to say that the "above Resolution shall also apply to the Red Cross Society."

Dr. C. H. Milburn, desiring to supplement what had been said by Dr. Lyster, said an arrangement had been made between the Red Cross Society and the St. John Ambulance Association, but in the course of time, when negotiations went on for bringing the two more or less into line, it was found that the Red Cross Society were going to be satisfied with a lower standard than that which the St. John Ambulance required. It would be remembered that in the House of Lords a short time previously it had been stated the arrangement had broken down and the Red Cross people were going to make their own

arrangements. Under those circumstances it was necessary to consider the subject carefully, because when one body began to compete with another there was underselling, and if that happened the medical profession would, as usual, find itself between the devil and the deep sea. Therefore he hoped the Meeting would not sanction anything which would enable one body or the other to exploit the profession. Further, the Red Cross Society would gradually require more instruction, because cooking, hygiene, and possibly other things would be embraced in the course. He therefore hoped that nothing less than the £1 1s. would be accepted.

Mr. H. W. ARMIT (Hampstead) suggested that the Winchester Division should withdraw the Resolution altogether, for the simple reason that if a special case were made for the Red Cross Society it would be, as it were, inviting some differences in the legislation of the two societies—the Red Cross and the St. John. If one Resolution were passed applying to all ambulance lectures, and the policy of the Association were defined in one Resolution, it would be better.

Dr. W. HAIG (Perth) opposed the Rider and the laying down of anything definite, and suggested that the question of ambulance instruction be left as in the previous Resolution.

It was moved and seconded that the question be now put.

The CHAIRMAN said the Resolution before the Meeting was:

> That a fee should be charged for ambulance lectures given to the British Red Cross Society, and that the fee should not be less than £1 1s. for each lecture.

This was put and carried *nemine contradicente*.

The CHAIRMAN OF THE ORGANIZATION COMMITTEE moved that the Council be instructed to take all possible steps to carry into effect the two Resolutions.

The Motion was carried. He then moved:

> That the remainder of the Annual Report of Council under the heading "Medico-Political" (paragraphs 73 to 112) be approved.

Administration of the Midwives Act, 1902.

Dr. FOTHERGILL, upon paragraph 88 of the Report, asked whether the Chairman of the Medico-Political Committee would tell the Meeting what was happening with regard to the Midwives Bill, which had been withdrawn from the House of Lords for redrafting, and what steps had been taken to maintain the position of the Association with regard to the action of the other bodies concerned.

Sir VICTOR HORSLEY asked what had been done with regard to the deputations which had been decided upon to the promoters of the bill and to Mr. John Burns.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE said that instructions had been given to the Council that they were to communicate with the President of the Local Government Board and the Lord President of the Council with regard to the bill, and to ask that a deputation might be received. Letters had been sent to both those gentlemen, and they had been politely acknowledged, but nothing more had been done.

Dr. FOTHERGILL asked what were about the dates of the communications referred to.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE replied that he could not say what the dates were at the moment, but they would be ascertained and given to the Meeting.

Dr. FOTHERGILL said that the midwives' question was a burning question at the present time to the general practitioner. If the other bodies concerned went ahead and got hold of Lord Beauchamp the Association might find that the whole of its points in the original bill had been knocked out. He would like to move at once that steps should be taken forthwith to approach Earl Beauchamp in the matter. To sit tight after sending a letter and getting an answer that the matter would be attended to was not the proper attitude to be adopted. He would suggest that a letter be sent to Earl Beauchamp at once asking him to receive a deputation from the Association. It was ridiculous for the Association to stop still.

Dr. GOODALL (City, Metropolitan) asked whether it was not in order to take Amendments and Riders which had been sent in beforehand, and printed, before taking fresh ones which were proposed in the Meeting and which had not been circulated.

The CHAIRMAN said that those which had been published for three months had priority.

Dr. TAYLOR (Salford) said that the amended Midwives Bill had been already introduced into the House of Lords and had passed its second reading.

Sir VICTOR HORSLEY said that if Dr. Fothergill's Motion was in order he would second it.

The CHAIRMAN said that Dr. Fothergill's proposal was not an Amendment to the Motion. If the Motion was passed then the Meeting could consider Dr. Fothergill's proposal. The Riders to the Motion would have priority over Dr. Fothergill's proposition as they had been published for three months in the SUPPLEMENT.

Conditions of Service of Pathologists and Bacteriologists.

Dr. BUSHNELL (Brighton), referring to paragraph 99 of the Annual Report of Council asked whether the Medico-Political Committee would consent to take further evidence upon the lines on which they had already gone from public bodies and institutions on the conditions of service of pathologists and bacteriologists, and refer the same to the Divisions for further consideration. By so doing they would at a very favourable time probably obtain better conditions for those practising in pathology and bacteriology.

The CHAIRMAN said that a Subcommittee had been appointed to investigate the subject, and that Subcommittee had held one or two meetings, and certain pathologists and bacteriologists had appeared before the Subcommittee and given evidence. A draft report had been drawn up by the Subcommittee, but that draft report had not yet been before the Medico-Political Committee, and therefore it did not come to the Representative Meeting at the present time. If the Subcommittee desired to hear further evidence, or if the Medico-Political Committee was not satisfied with the report, that report would be referred back, and further evidence would be taken.

Dr. BUSHNELL asked whether the matter would be referred to the Divisions?

The CHAIRMAN stated that it would come up to a subsequent Representative Meeting first, and then the matter would be decided upon.

The Motion that the remainder of the Annual Report of Council under the heading "Medico-Political" should be approved was then carried.

Prescribing by Chemists.

In the absence of the Representative of the East Norfolk Division,

The CHAIRMAN formally moved the following Rider in connexion with paragraph 99 of the Annual Report of Council:

> That the British Medical Association should take immediate steps to stop illegal prescribing by chemists, as also the indiscriminate sale by them of abortifacients.

After a little discussion, the CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE thought the Meeting would only waste time by discussing the Rider. At the present time the Association was doing all it could in the matter. The only thing to be done was to get the Medical Acts amended, and the Association was doing its best in that direction.

Dr. TAYLOR (Salford) proposed that the subject should be referred to the Council.

Mr. LARKIN (Lancashire and Cheshire) moved that the Meeting should proceed to the next business, and this was seconded by Dr. TODD

Dr. TAYLOR withdrew his Motion in favour of that by Mr. LARKIN.

Parliamentary Representation.

The CHAIRMAN, in the absence of Dr. Fletcher, formally moved the following Rider by the Chelsea Division:

> That this Meeting recognizes the necessity for a Union of Medical Practitioners with Parliamentary representation, and requests the Council of the British Medical Association to ascertain the wishes of Members in the United Kingdom by referendum at the earliest possible date.

Dr. FOTHERGILL (Wandsworth) proposed that the matter be referred back to the Council.

Mr. LARKIN (Lancashire and Cheshire) moved that, in the absence of Dr. Fletcher, the Meeting proceed to the next business.

Dr. TODD (Sunderland) seconded, and this course was agreed to.

Dr. GOODALL (City) moved:

That this Meeting of the Representatives of the British Medical Association reaffirms its opinion that the State Registration of Trained Nurses is desirable, and approves of the bill which has been recently introduced in the House of Commons by the Right Hon. R. Munro Ferguson, and that a copy of this Resolution be forwarded to the Prime Minister and the President of the Local Government Board.

This Rider related to the State Registration of nurses. It might be remembered that upwards of a year ago a deputation from that Association waited on the Prime Minister to urge the importance of State Registration. Among other things Mr. Asquith twitted them with the fact that there was considerable difference of opinion on the subject, and that there were no fewer than three bills before the House promoting State Registration. The Prime Minister asked how they could expect the House to consider the matter when they had three bills to choose from. Following upon this, a number of societies interested in the matter arranged a conference, the outcome of which was that a State Registration Bill had been drawn up which met with the approval of all the delegates present, representing a number of associations, which had up to that time been differing on various points among themselves. He was sorry to say that the bill had not met with the luck that it was hoped it would have during the present session. It had not had a good place in the ballot, and it had also been blocked. Any one could block a bill. One of the persons who had taken part in blocking the bill, he was sorry to say, was the President of the Local Government Board. After pressure had been brought to bear upon him, he had withdrawn his blocking, but they did not like to have the chief of that department against them. His object in bringing forward this Motion was to impress upon the Prime Minister and the President of the Local Government Board the importance of this bill and the support which the Association had given to it. All the points which the Association wanted introduced into the bill would be found there in consequence of the representations made by the delegates at the conference.

Sir VICTOR HORSLEY seconded the Rider. He would remind the Meeting that this matter came up as long as five years ago at Oxford, when the Representative Meeting, by a unanimous vote, decided in favour of the principle. From that time onwards they had been very successful in bringing before the Government their views on the question. The supporters of the last bill took out the final clause, preventing nurses indulging in medical practice. That had now been inserted, and by that insertion they had obtained the support of all the bodies interested in it. If that Meeting supported Dr. Goodall's Resolution it would be adding great force to the bill and facilitate its subsequent reception and adoption by the Government.

This was agreed to.

Dr. FOTHERGILL (Wandsworth) moved as a Rider:

That steps be taken forthwith to obtain reception by the Lord President of the Council and Mr. Burns of a deputation, in order to place before them the views of the Association with reference to the proposed bill to amend the Midwives Act.

Dr. DRURY (Halifax) seconded.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE quite agreed with the Rider if Dr. Fothergill could give the Committee some idea of what they had to do. A letter had already been written to the authorities in question, which had been politely acknowledged. Was it suggested that a letter should be written every day?

Sir VICTOR HORSLEY suggested that either the Chairman of the Medico-Political Committee or the Chairman of the Meeting should officially ask the officials of the Government for a personal interview. This, so far as he knew, had never been refused. Then at a personal interview their delegate could ask that a deputation should be received. This was, as he understood, the procedure when a formal acknowledgement was received from a Government department.

The Rider was agreed to.

Medical Treatment of School Children.

The CHAIRMAN OF THE COMMITTEE moved:

That the Special Report of Council on the Treatment of School Children found upon Inspection to be Defective be received.

This was agreed to.

The CHAIRMAN OF THE COMMITTEE moved:

That the Meeting approves of the reference to the Special Report of the Council on the Treatment of School Children found upon Inspection to be Defective to the Divisions.

This was agreed to.

Dr. DARLING (Portadown and West Down) asked whether it was necessary to discuss the question if the Report was to be sent to the Divisions.

The CHAIRMAN OF THE COMMITTEE said it would be a great advantage to the Divisions if the Meeting had a discussion of the general principles of the scheme, so that the Representatives would be able to put before their Divisions the opinions of this Meeting. None of the Resolutions come to here would be binding on the Association; they would be merely statements of opinion by this Representative Body.

Proposed Centrally Controlled Provident Medical Service.

The CHAIRMAN OF THE SPECIAL POOR LAW REFORM COMMITTEE moved:

That the Interim Report of the Poor Law Reform Committee on the question of a Centrally Controlled Provident Medical Service (Minute 118 of Annual Representative Meeting, Belfast) be received.

This was agreed to.

The CHAIRMAN OF THE COMMITTEE said this matter was not on the same footing as the Report of the Medical Inspection of School Children; it had not been sent to the Divisions; and, in order to avoid this Meeting binding itself or the Association in any way, and in order to prevent any Resolution of this Meeting influencing the Divisions, he proposed the following Resolution:

That the Report and Recommendations be discussed by the Meeting and afterwards referred to the Council for further consideration prior to reference to the Divisions, and that the Resolutions of the Meeting be forwarded for the assistance of the Council as expressions of the opinion of the Representatives present, but not as the decisions of the Representative Body.

It would be seen that the Resolution carefully guarded against the Meeting making any decision which would be binding upon the Association until the Divisions had discussed the matter.

Dr. TAYLOR (Manchester, Salford) asked whether the Special Poor Law Committee was a Committee of the Council or a Committee of the Representative Meeting.

The CHAIRMAN replied that it was a Committee of the Council.

The Resolution was agreed to.

The CHAIRMAN OF THE SPECIAL POOR LAW REFORM COMMITTEE moved:

That Recommendation (*A*) of the Poor Law Reform Committee be approved, for reference to the Divisions, as follows:
(*A*) That the Association should promote a centrally organized National Provident Medical Service.

He said it was undesirable to pass the Recommendations without understanding them, and he trusted there would be a discussion on them. At the present moment there were a number of provident medical services throughout the country, but it was understood the Government was going to issue a scheme of invalidity insurance; and, if that took place, unless the Association were prepared to present a scheme to the Government, so as to be able to take part in it, the general practitioner would be swamped altogether. What was wanted was to devise a scheme to which the Association could go to the Government and say: "If you want to insure the medical treatment of the poorer classes of the community, this is what we lay before you." It was that which was coming before the Meeting that day, and it ought to be looked at from that point of view. It would be no use going to the Government and saying: "We have scattered over the country a number of medical services willing to do the work." The Government would want something more than that. What was suggested was that there should be a central public medical service which would be practically a federation of the services throughout the country, and which would control them.

The CHAIRMAN OF REPRESENTATIVE MEETINGS pointed out that the Resolution had just been passed to the effect that various Recommendations, if approved, should go to the Council, so that the form in which they could now approve, or otherwise, of the Recommendations was that the Recommendation A of the Poor Law Reform Committee be approved.

Dr. F. E. WYNNE (Leigh, Wigan) asked if, under the present constitution of the Association, there was power to do what was recommended or was it dependent upon obtaining the new Memorandum of Association? If the latter, and power were included to do what was proposed, was it likely to prejudice the application for the new Memorandum of Association?

The SOLICITOR, referring to the Interim Report of the Special Poor Law Reform Committee, drew attention to Clause 9, as follows:

> The Central Committee shall be solely responsible for the management of the Service, and no financial liability shall be deemed to be incurred by the British Medical Association in respect of any act of the Central Committee, or of any Local Committee, or of anything done under their authority.

As he read that, the funds of the British Medical Association would not be placed in peril; although it would be *qua* the Association if it were done, it would not be *of* the Association. His opinion in the circumstances was that the Association could do what was desired under the present Memorandum of Association, and *a fortiori* it could be done under the new Memorandum which was under consideration at the present Meeting.

Professor BENJAMIN MOORE (Birkenhead) thought it desirable, before proceeding further, that there should be a general expression of opinion with regard to the value of such a service. He felt strongly that the profession, as a whole, had not taken the part it ought to have in putting the matter before the public. Only the previous week the Church had been seen urging that some such scheme should be carried out. The most valuable thing that the Recommendation provided was that there was some scheme of barter. When the new legislation came forward in a short time the medical profession would have to be ready, and he himself welcomed what was proposed as a means of getting ready. A scheme of the type proposed ought to be on the very broadest lines. The interests of the public and the interests of the medical profession ought to be looked at, and the matter ought not to be considered from only one point of view. A co-ordinate scheme ought to be formulated to be placed before the Government. They were arriving at a crisis in the profession, which many feared, but he did not fear it in the least. He thought any scheme which would bring 11 million or more people under a system by which they would be provided with a more adequate and better medical service, and which was going to be paid for by the individual or the nation, would be both to the advantage of the profession and to the country. Medical men did a great deal of work for nothing. Sometimes they were compelled to do it, and sometimes it was called charity. He thought the idea of charity and philanthropy as such had a false meaning, and ought to be cast out of their deliberations. If medical men supported charity, let them support it as other people did, but not in kind. While they did their duty to the community, let them say to the community: "This is what we are paid for, and this is our means of livelihood; we cannot act upon charitable but on economic lines." It had been held that unless medical men were paid so much a job they were losing their position and their dignity, and that, moreover, a person who was not paid by the job would do his work well. He asked them to realize that 90 per cent. of the business of the country was run by men who were not paid for the job; but they were paid in such a way that they occupied a comfortable position, and could give their whole time and energies to their work. If a scheme were put forward which could not be run, no statesman would look at it, and therefore a workable scheme must be put forward. By that he meant to say that under it the work could be done with the least possible amount of vexatious machinery. Therefore he felt certain that what would be done in the end would be that for a reasonable number of hours given by the individual to the job, he would be paid a reasonable sum.

Dr. R. A. LYSTER (Winchester) inquired of the Chairman of the Committee whether it was the opinion of that Committee that the scheme introduced was solely to anticipate the demand for insurance, or whether it had been borne in mind that the scheme could afterwards be linked up so as to deal with the problems connected with the treatment of the absolutely poor—that was to say, those who could not pay any subscriptions at all—and also with the rapidly increasing service which was being provided by local sanitary authorities for the treatment of people who were poor and not poor. Had the Committee considered the relationship to those two very important problems?

The CHAIRMAN OF THE COMMITTEE, in reply, read the reference to the Special Poor Law Reform Committee, which was to the effect that the Council should consider and report upon the following Motion:

> That the time is now opportune for the British Medical Association to take into consideration the drafting of a scheme for a Public Medical Service, to embrace Philanthropic Dispensaries and Medical Services, School Clinics, the Poor Law Medical Service, Provident Dispensaries, and the Medical Services of Friendly Societies and Clubs.

He said that that reference was very wide, and he hoped that by means of the scheme which was going to be suggested the whole of those things would be linked up.

Dr. LYSTER said that he had very carefully read the report, and he could not see that it dealt very much with anything, except the class of people who were prepared to pay regular subscriptions.

Dr. FOTHERGILL (Wandsworth) said it was perfectly hopeless for the Association to discuss schemes and expect them to receive approval at the hands of the Government if the Association had not put itself into contact and conference with the various parties concerned. Up to the present the Association had not been approached by the Government, nor had it approached the Government. It might be news to the Meeting to hear that that afternoon, at his suggestion, a question was to be asked in the House of Commons upon the subject by Sir Henry Kimber. That question was:

> To ask Mr. Chancellor of the Exchequer whether the proposals of the Government for invalidity insurance include any provision for obtaining necessary medical attendance during invalidity; whether any recognized body representative of the Medical Profession has been consulted as to the proposals of the Government; and whether he would be prepared, before formulating the Government's proposals for invalidity insurance, to receive a deputation or representations from such a body on the subject.

Again, the Association must get into touch with the friendly societies. He was afraid that at present upon certain points of detail the Association had got to a deadlock with them, but it must get into touch with them. The third party with whom the Association must get into touch was the masters' associations. The employers would be called upon to pay a certain amount under the invalidity scheme. It would be utterly futile for the Meeting to elaborate any scheme in detail until it had had conferences with those different bodies.

Dr. BUIST (Dundee) said that before the Association approached any of the bodies with a view to finding out exactly how far it could meet them, it was surely important that they should come to a general agreement amongst themselves.

Recommendation (A):

> That the Association should promote a centrally-organized National Provident Medical Service

was agreed to with one dissentient.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE then moved:

> That Recommendation (B) of the Poor Law Reform Committee be approved for reference to the Divisions as follows:
>
> That the Association should undertake the central organization and control of such a service.

This was adopted. He then moved that Recommendation (C) be approved for reference to the Divisions:

> That the local organization and control be in the hands of purely Medical Committees organized through the Divisions of the British Medical Association, but including representatives of all members of the local profession, whether Members of the Association or not, who are willing to co-operate.

Professor BENJAMIN MOORE (Birkenhead) wanted to get at the reason why the local committees should be com-

posed entirely of medical men. He supposed that it ought to be so, but he would rather like to know why laymen should not be upon the committees.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE said that what was wanted was that the control of the service should be in the hands of medical men, but it would be seen that later on there was a paragraph which suggested what might be called an advisory committee upon which laymen would be.

Dr. BUIST thought that the Meeting would like to get more at what was at the back of the mind of the Committee who had made the report.

The CHAIRMAN OF THE SPECIAL POOR LAW REFORM COMMITTEE said that as Dr. Buist had been upon the Committee he could explain to the Meeting as well as he (the Chairman) could, and perhaps he would do so.

Dr. BUIST said that he had not had any personal experience of the actual working of a service of the kind referred to, and he thought that any explanation would perhaps come better from some Member in a part of the country, such as Norwich, which had had an actual detailed service working.

The CHAIRMAN said that the Norwich Public Medical Service was controlled entirely by the Norwich Division of the Association. About 15 of the medical men of the district, all Members of the Association, agreed to give their medical services to certain of the poorer classes of the community. They agreed upon a rate and upon the time at which patients could be attended, a wage limit, and so on. That service had been going on for about nine or ten years. It started with about 1,500 patients, and there were now about 6,000 or 7,000. There was a General Committee of the Service, which included all the acting members of the staff—about fifteen. The Norwich Division was represented upon that General Committee by the Chairman of the Norwich Division and one other Member. A small Executive Committee of the large General Committee of the Service, consisting of four or five members to manage the details of the Service was appointed, and it had frequent meetings. The General Committee of the Service met only once a year to approve the annual report. No new law of the Norwich General Medical Service could be made, and no old law could be altered, without the approval of the Norwich Division of the British Medical Association. In that way the control of the Norwich Public Medical Service was entirely under the Norwich Division, but no financial liability at all was incurred by the Norwich Division as such.

Dr. DARLING (Portadown and West Down) suggested that it would help the Meeting to grasp much more easily what the broad lines of the scheme were if the Chairman of the Poor Law Committee would explain what the Report really aimed at.

Mr. VERRALL (Council) said that he understood that the Norwich Public Medical Service, which had been going on for some years, was more or less—more rather than less—similar to that which it was now proposed to establish nationally.

The CHAIRMAN said that was so.

Mr. VERRALL asked how far it had been found that what had been established at Norwich was in competition with any provident or other association, friendly or otherwise; what was the condition of affairs in Norwich before the establishment of the service; and how far had those who founded the service found it difficult to hit it with the approval of the existing societies.

The CHAIRMAN, in reply, said the exact reason for the formation of the service in Norwich was as follows. They would remember that there was a decision of the General Medical Council some years ago with reference to the National Medical Aid Society, which was in association with the Victoria Legal Friendly Society. Canvassing was going on in Yarmouth in connexion with the National Medical Aid Society, and a practitioner was called up before the General Medical Council. There were five practitioners in Norwich who had appointments in the National Medical Aid Society. This action of the Council made them take thought, and they decided that if a public service could be formed in Norwich they would give up their adhesion to the National Medical Aid Society. By that means some 1,200 or 1,300 patients were got to start with. There was a large number of friendly societies in Norwich, and a large medical institute was formed of the amalgamated friendly societies, which had about 12,000 or 13,000 patients on its books. He could not tell them how many patients had been drawn from the friendly societies into the public medical service, but a large number of people in Norwich who were not in any friendly society had been drawn in, besides those who had been absolutely unattached and had no doctor at all. They had also drawn in a large number of people who did not pay at all for any medical assistance.

Dr. MILBURN asked if it had been found possible to establish the society without any agreement at all with the other societies.

The CHAIRMAN said there was a great deal of disagreement.

Dr. MILBURN asked if they found any difficulty in getting the principle of wage limit accepted.

The CHAIRMAN said the wage limit was accepted by the medical practitioners. The rules of their service simply formulated certain principles upon which the medical men were willing to give their services, and they said they would not give medical services under those terms to people who were earning more than 30s. a week. They did not have to go to any large body and say that they were going to institute a wage limit; they did it on their own account.

Dr. MILBURN asked what would happen if a man earning 30s. a week afterwards became more prosperous and earned 50s.; would he be entitled to benefits?

The CHAIRMAN replied that if a man rose above the wage limit he automatically went out of the service. In answer to Dr. POPE, he said there were 115,000 people in Norwich.

Mr. ARMIT (Hampstead) said the Chairman had referred to one of the oldest services—one which was organized with a great deal of care. That service had worked in a district where the profession were unusually unanimous. He (Mr. Armit) should like to speak with regard to a younger service, where the profession were by no means united. Certain obstacles were met with, which were exceedingly difficult to overcome at the outset. With regard to the organization, in the present scheme put forward it would be noted that it should be carried out through the local Division, and not through the local profession under the auspices of the Division. At first it seemed as if Hampstead had become of one mind, but as matters developed they found that first one and then another of the existing societies were going to make difficulties for the future. One society in particular found that it was impossible to agree to the terms of the Public Medical Service. It was then decided that those terms should not apply to that particular society in order not to institute a boycott. The result had been that members of the profession who had had special terms made for them utilized the special terms to make their scheme more difficult to work. He should advise them, in formulating a scheme for a Central Public Medical Service, not to make exceptions, because they would be merely pitfalls. With regard to the question of finance in a large metropolitan district, it was exceedingly difficult to get a sufficient amount of money together to support a service, and they might almost wreck the whole scheme unless they had a fairly large amount of money to fall back upon during the early days of the service. With regard to the question of the participation of the whole of the profession, the experience at Hampstead was that out of something like four or five hundred medical practitioners not more than thirty or forty at first would come into it until some result had been shown. It was exceedingly difficult to get a result with thirty or forty practitioners out of a total of 400. He did not want to damp the idea, but it should be carefully worked out, and more especially carefully financed; otherwise the medical profession would stand outside and say that they preferred their own little clubs from which they could gain a small amount of money each year.

Dr. GARNER (Preston) asked the Chairman whether in selecting the members of the society with regard to the wage limit they took into consideration the number in a family?

The CHAIRMAN replied that not more than four children in any family were charged for. That had reference to the wage limit.

Dr. BUIST (Dundee) said that so far as he gathered they

had not in Norwich had any question which so far required reference to a joint lay committee.

Sir VICTOR HORSLEY did not understand what the point was. He thought they were simply on the organization. Of course, he knew of the medical services which were worked by the medical committee of the Division; but as to the second part of the organization—namely, the lay committee—he did not know whether in the public medical service of Norwich there was any lay element in the management of the service.

The CHAIRMAN said there was no lay element at all. It was a purely medical committee.

Sir VICTOR HORSLEY said, arising out of that, he thought the Meeting should hear from the Chairman of the Poor Law Reform Committee some argument in favour of the Resolution.

Dr. FOTHERGILL said that the question with regard to the lay committee came under (D).

The CHAIRMAN said he was afraid questions over a rather large area had been put to him because he had been asked to explain the working of the public medical service.

The CHAIRMAN then put paragraph (C), which was carried.

The CHAIRMAN OF THE POOR LAW REFORM COMMITTEE moved:

> (D) That there be joint medical and lay committees in each area for the adjustment of questions not of a purely professional concern.

One of the questions that would arise under that would be as to whether a man was inside or outside the wage limit. The amount of the wage limit would be a matter for the Central Committee. The point as to whether he was inside or outside would be for decision between the lay committee and the joint committee. Complaints by patients and complaints by doctors against their patients would be matters for the joint committee. The reason for the establishment of the joint committee was that it was felt that there was no good in going to the Government if they did not allow the introduction of the lay element. It was thought best to have a lay committee to deal with the points which were not purely professional.

Dr. FOTHERGILL (Wandsworth) moved the insertion of the words "centrally and" after "lay committees." He suggested that as a matter of practice the lay committee would be in a local area a most necessary adjunct to the joint committee. Such things as peculiarities in colliery practice did not apply in London, and there were other points which might be enumerated which it would be desirable should be brought before a local lay committee. The local lay committee would act as the local conciliatory board, and would also bring points of policy before the Association. It was also desirable that there should be a Central Conciliatory Committee to which might be referred broad questions such as the wage limit, to which a neighbouring district might be opposed. The wage limit he regarded as a central question which ought to be settled centrally. He would like to have the opinion of others as to whether they should have central lay committees to discuss broad lines of general policy.

The CHAIRMAN asked Dr. Fothergill whether he meant a lay committee or a joint committee as the committee suggested.

Dr. FOTHERGILL: A joint committee.

Mr. JACKSON (Plymouth) asked, with regard to the wages question, whether it had been sufficiently considered that this was going to be a Government matter? If the Government were going to adopt the principle of insurance against sickness they would not stop at any wage limit?

The CHAIRMAN OF THE COMMITTEE was afraid he could not answer that question. In Germany they had a wage limit. It might be that all wages would be included; but there was no intimation from the Government of what they proposed to do.

Professor MOORE (Birkenhead) said there were people outside the profession who were interested in making a success of these committees both locally and centrally; and he thought it would be a good thing if they could include such people in order to settle quarrels.

Dr. TAYLOR (Salford) pointed out that in this scheme they were only discussing general principles. It was proposed that the Central Committee should consist of those officers of the Association who were Members *ex officio* of all local committees and a number of medical practitioners. He did not understand that they were discussing at present the details of the committees.

The CHAIRMAN said what Dr. Fothergill proposed was that, in addition to joint committees locally, there should be a joint committee centrally.

Dr. M. DEWAR (South Edinburgh) said medical officers should not be asked to subjugate their position to the lay element.

Dr. D. A. TENNYSON-SMITH (Bromley, Sevenoaks) mentioned that the provident dispensary of Chislehurst Asylum district, which had been in existence for the last thirty years, had done very good service. He brought that forward because at Chislehurst there was a central committee composed of three different groups: First, honorary members; secondly, provident members; and, thirdly, medical men and the staff. There were local committees consisting of provident members and members of the Medical Profession in each village, and, if a decision could be arrived at, the matter could be brought up before the Central Council annually. The central committee and the local committee acted together very well indeed.

Mr. STRATON (Salisbury) said that in his own district there was a joint subcommittee, which met every month, consisting of three members of the honorary subscribers, three of the financial members, and three members of the medical staff. To them every question of the class a patient should belong to was submitted, and also the question of extra fees. There was an honorary fund, from which the cost of anaesthetics and other things of that kind was paid.

Professor MOORE (Birkenhead) had a similar experience in the Provident Dispensary in his own Division, which had existed for years. The medical element was entirely swamped by the lay element and the provident members. He thought therefore, before they laid down any rule, the numbers of the lay element should be limited considerably below those of the medical element.

Mr. FLEMMING (Bath and Bristol) thought a much more important matter than limiting the numbers of the committee was that the numbers of the lay and the medical element should be proportional. It was also of importance to consider in the constitution of committees to lay great stress upon their powers. In the Report it was rather suggested that there should be some proper court of appeal which would be open to both sides. Up to the present time they had had no sort of court of appeal. In the ordinary contract practice as it stood the only appeal was to the friendly societies themselves.

Dr. HUGHES wished to know whether it was necessary at this stage to consider how the lay member should be limited.

The CHAIRMAN said they were simply discussing the principle whether there should be joint medical and lay committees.

Dr. HOWELL (Cleveland) asked whether Dr. Fothergill meant that joint committees should have no control in the management, but be only reference committees.

The CHAIRMAN replied that what Dr. Fothergill proposed was that there should be central joint committees as well as local.

Dr. HOWELL said they wanted to have lay members on the central joint committee as well as on the local joint committee. He wished to know whether Dr. Fothergill wanted to have them on the general management committee in the central committee or only on the central joint committee.

The CHAIRMAN: "Central joint committee" is how it reads.

Dr. POPE took it there would be two central committees in each area, one medical and one joint.

The CHAIRMAN said they were dealing only with the joint committee.

The Amendment was carried.

Sir VICTOR HORSLEY moved the omission of the words "not of purely professional concern," and the insertion in their place of the words "referred to them." The object of the Amendment was to get rid of the dispute which might arise as to what was or was not professional. The wage limit was certainly an important question in this respect.

Dr. METCALFE (Bradford) asked to whom the questions were to be referred.

Sir VICTOR HORSLEY said it was quite obvious that matters in dispute in working a service of this kind would go to the Central Committee. The whole principle the Association had always laid down was that the Central Committee was to be the Medical Committee. Consequently, the Medical Committee would be the referee in all cases of dispute to the Joint Committee. He was glad that the question had been asked, because it really brought out the point of view as to organization, which they had been fighting for in the Association for the last six years.

Dr. PARSONS (Gibraltar) said there would be a difficulty in referring to the Central Joint Committee without reference to the local one; and he doubted whether the suggestion of Sir Victor Horsley would get over the difficulty.

Dr. DARLING (Portadown and West Down) said it would be perfectly idle for them to discuss there what form the committee was to take, seeing there were questions of various sorts still to be decided, including that of the Government grant. The proposed committee was never going to submit to a committee which represented the Government, but to one which represented the Association; and they could not be compelled to consider any questions which had not been passed on to them by the local committee.

Dr. BUIST thought Dr. Darling's proposal meant that they were giving away beforehand some things which might be useful in negotiation instead of keeping the matter in perfectly wide terms. If they had to negotiate with powerful bodies like the Government, concessions might be made.

Dr. J. H. TAYLOR (Salford) said if the Government wanted any special point considered according to Sir Victor Horsley's resolution it would have to be first considered by the Medical Committee, and then, if the Medical Committee agreed, it might be referred to the Joint Committee. He himself was rather doubtful about any Government accepting any such scheme, and he thought Section 13 (*d*) of the Draft Scheme of Organization Rules would cover it, namely:

> 13. A Joint Committee, including both medical and lay members, may, and if required by the Central Committee shall, be formed by any Local Committee for the purpose of dealing with:
>
> (*d*) Other matters affecting the local working of the service referred to it by the Local Committee;

the local Committee being defined to be the Local Medical Committee. He thought it almost amounted to the same thing, but it allowed the Government a little choice.

The CHAIRMAN OF REPRESENTATIVE MEETINGS did not think it was possible then to settle the exact way in which the Joint Committee was to be approached, and the way in which questions were to be submitted to it. No doubt the Medical Committee would very often submit questions to it, and perhaps that would be the most frequent way; but he did not think it possible to decide all the ways in which the Joint Committee should be approached.

Sir VICTOR HORSLEY said he had not intended to convey that.

Sir Victor Horsley's Amendment was then put to the Meeting and carried.

The Motion as amended was next carried.

The CHAIRMAN OF THE POOR LAW REFORM COMMITTEE moved:

> That Recommendation (E) of the Poor Law Reform Committee be approved, for reference to the Divisions, as follows:
>
> (E) That the contract under which medical attendance is given in connexion with the service be a direct contract between the individual doctor and the individual beneficiary or person or body subscribing on his behalf.

He explained that embodied the principle laid down in contract practice some years ago, and it had been accepted by the Association, that there should be a direct contract between the doctor and the beneficiary; it was a vital thing in the scheme.

Dr. FOTHERGILL moved that the word "for" should be used for the words "under which," and that the word "is" should be struck out, so that the Recommendation would read:

> That the contract for medical attendance given in connexion with the service be a direct contract between the individual doctor and the individual beneficiary or person or body subscribing on his behalf.

He thought it necessary to define what was meant by "medical attendance." In the contract for medical attendance there were two points—the money contract and the professional contract. He wanted to see that the contract for the medical attendance should be a matter entirely between the doctor and his patient, and that the financial part should be a matter between the central provident service and the beneficiary. He moved his amendment in order to make it quite clear that the contract for the medical attendance only, and not the contract from the financial side, should be a matter between the doctor and his patient.

Dr. HILLIARD (Westminster) seconded.

Dr. POPE thought they were getting into legal technicalities, and he thought that, as it was almost a legal question, the Representative Body would prefer that it should be done by a lawyer rather than Dr. Fothergill.

Mr. FLEMMING desired to ask what sort of a contract it would be for which there was no consideration.

The CHAIRMAN OF THE POOR LAW REFORM COMMITTEE did not see how there could be a contract which was all one-sided. There was no *quid pro quo* suggested by Dr. Fothergill's Amendment.

Professor MOORE thought some such contract must be accepted as long as there was a Government aid provided; but he thought that such an arrangement, when they did get a combined service, would become impracticable. Regard must be had for the kind of people for whom they were legislating. He did not think it would be possible to arrange that one particular doctor should always be the doctor for one particular patient. It was desirable, but it would lead to endless complications. He did not propose an Amendment, but he thought what was proposed was only a temporary measure.

Dr. DOUGLAS (Maidstone, Rochester, and Chatham) thought Dr. Fothergill was trying to arrange that the patient should receive the medical services of the doctor, but that the money should be paid, not directly to the doctor, but through some body or person. That he thought was quite right. The same principle applied with regard to provident dispensaries, the officers of which paid the doctors. He thought it undesirable for the patient to pay small sums direct to the doctor, and that the doctor should not have the trouble of collecting the small sums.

Dr. FOTHERGILL said that Dr. Douglas had hit the point he was trying to elucidate, and if he could put the word "services" instead of "attendance," it might possibly convey his meaning, which was that the patient should contract with the doctor for his services; but with regard to the money, he should contract with the society they were forming.

Dr. F. E. WYNNE thought the payment by the patient to the surgeon was already provided for by a Motion before the Meeting.

The CHAIRMAN OF REPRESENTATIVE MEETINGS agreed.

Dr. Fothergill's Amendment was then put to the Meeting and lost.

Dr. FOTHERGILL moved the following Rider:

> That the contract of insurance against the act of medical attendance on a beneficiary and those dependent on him be one made between himself "and the National Provident Medical Service and for a portion only of the fees for medical attendance and on a definite scale."

He asked whether the Association was going in for a service with a stated limited payment by a patient with an unlimited amount of calls in return for that payment, or was it going in for payment to the doctor according to some scheme of payment for work done. His Amendment raised the question. The conclusion that anybody who had a little business training came to was that medical men were simply killing themselves through club practice for the benefit of the public, and that their remuneration was absolutely *nil*. If they elaborated and took to the Government any scheme which said that in return for a certain amount they would give the patient their services when he liked to call them out, they would be a ruined profession finally and for ever. He was laughed at when he stated that 15 million people would be affected by the proposed scheme, but that figure had now been given upon the highest authority. A large number of Members in that Meeting who now obtained their 2s. or half a crown or 3s. for visits would absolutely have the whole of the

patients who paid those fees swept into the scheme. Were medical practitioners willing to contract to take those patients on for a matter of half a guinea? He hoped that the Meeting would discuss the point in all its bearings, and have nothing to do with the present proposal. He was not in sympathy with his Committee. He always thought that the minority should give way to the majority, but upon this occasion he opposed the proposal of the Committee.

Mr. HARVEY HILLIARD (Westminster) seconded Dr. Fothergill's Amendment.

Dr. POPE asked the Solicitor whether the adoption of the name "National Provident Medical Service" would be allowed? There was an association called the National Provident Insurance Company.

The SOLICITOR stated that he did not think there would be any difficulty in the matter.

Dr. PEARSE (Trowbridge) said that he would like to have the ruling of the Chairman as to whether the present was the correct time at which to discuss the question of whether the Meeting should commit itself or express its opinion upon the subject of payment for work or payment by contract, or whether the proper time would be later.

After a short discussion it was agreed that Dr. Fothergill should be allowed to withdraw temporarily the two Amendments standing in his name upon the Agenda, as the points raised in them could be more conveniently dealt with upon a later Motion.

The Motion that Recommendation (C) of the Poor Law Reform Committee should be approved was then carried.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE then moved:

> That Recommendation (F) of the Poor Law Reform Committee be approved, for reference to the Divisions, as follows:
> (F) That the terms of the contract on the doctor's part be a matter of agreement between himself and the general body of the profession through the central and local committees of the Service.

Upon the suggestion of Sir VICTOR HORSLEY, it was agreed that the word "medical" should be inserted before the word "committees."

The Motion was then agreed to.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE moved:

> That Recommendation (G) of the Poor Law Reform Committee be approved, for reference to the Divisions, as follows:
> (G) That the benefits of the Service be restricted, by means of a wage limit or other suitable provision, to those sections of the community whose pecuniary circumstances are such that they cannot, as a rule, meet the cost of necessary medical attendance except through some scheme of insurance.

This was agreed to. He then moved:

> That Recommendation (H) of the Poor Law Reform Committee be approved, for reference to the Divisions, as follows:
> (H) That subscriptions to the Service be accepted from public bodies or charitable organizations on behalf of beneficiaries.

Dr. FOTHERGILL asked whether the Committee bringing forward the Report intended the Recommendation to cover the Poor Law Service. Had the Committee considered the question?

Sir VICTOR HORSLEY thought that the Meeting ought to have a full explanation from the Chairman of the Committee upon the point, because when he read the Recommendation in the Report it struck him at once as being a somewhat dangerous suggestion.

Dr. MAJOR GREENWOOD said the controversy between the Minority and Majority had not been settled. He maintained that this might give the idea that they were preferring the recommendations of the Majority, because under this scheme it would appear that any pauper might be included by the State on the same terms as they encouraged thrift among the working classes. There should be some Rider to point out that this did not apply to the Majority or the Minority.

The CHAIRMAN OF THE POOR LAW REFORM COMMITTEE said that the question whether the Poor Law patients were to come in under the scheme or not had been discussed by the Committee, and the general feeling had been that at the present time under the present conditions of the Poor Law they would not be admitted, but the matter had been left open so that it might be discussed.

Professor MOORE said that charity was one of the things which rotted the whole medical system, and if the Association was not very careful it would get off the rails. He thought that the Committee ought to draft some some stringent rules upon the point of charity.

Dr. BUIST thought that he was right in saying that the Committee had no intention whatever that any element of charity should enter into the relation between the payment and the services rendered. On whatever actuarial basis it might be calculated, the premium, by whomsoever paid, was to be adequate for the medical service required. If that was so, it was a matter of very little moment to the Association by whom the premium was paid on behalf of the individual beneficiary. So long as the management remained in the hands of purely local committees, no very vital point would be sacrificed.

Dr. POPE said the clause was quite unnecessary, and could be left out with advantage. If, for instance, the Charity Organization Society had a deserving case, and wished to pay for a widow and her children, they could hand the money over and be entered as the beneficiaries.

Dr. TAYLOR (Salford) said this was the fundamental clause in the whole scheme. If it were left out, they would be refusing to accept any part of the Insurance Department's money by entering public patients. The Committee had taken the utmost care throughout the whole of the scheme to give no opinion at all on the general principles. With regard to paupers, it was agreed to accept payment from boards of guardians or destitution authorities, but not necessarily on the same conditions as for other bodies. That would be seen from the scheme itself (Document 15, page 12, section 21), which amounted to this—that any person, the whole of whose subscription was paid by a public body, should not have the choice of doctor. To put it in another way, if a person paid any part of the premium or subscription to the service himself he should have the choice of doctor. That was the difference made between persons subscribed for wholly by any public body and those who partially paid.

Dr. POPE said Dr. Taylor's personal explanation would have been more apropos if he had said that the word "not" should be put in, which he had purposely not done.

Dr. MACAN (Croydon) agreed with Dr. Pope that the clause was unnecessary and out of place. If a national provident service was going to be founded on a system of annual payment, it would be far more judicious that that annual payment should be made by a third party to the contract, and that it should not be left for any one to say that he had paid for the doctor himself. They wanted to keep charity out of the question as much as possible.

Sir VICTOR HORSLEY was very glad that Dr. Pope had drawn attention to the fact that this paragraph was not essential, and Dr. Macan had driven that home by pointing out that, as regards the contribution on the part of a Government department, that was not to be spoken of in the terms in which the paragraph stood before them on the paper. The Government's financial share of the scheme would have to be provided for by a distinct mechanism altogether, and they would have no idea whatever of that mechanism till it was laid before the House of Commons. Their Committee had not even mentioned it. He would appeal, therefore, to the Chairman of the Committee whether he would not withdraw the paragraph altogether.

Dr. KEAY (Greenwich) said he had that morning sent in an Amendment to this clause, and should like to know whether it was ruled out of order or not.

The CHAIRMAN replied that he was sorry to say the Amendment had been overlooked. It was to this effect:

> That in order to secure adequate attendances contributions should be obtained from employers and a subsidy from the State.

Would it not meet Dr. Keay's view if the word "employers" were put before the words "public bodies"?

Dr. KEAY assented.

Dr. MUIR (Glasgow Eastern) seconded the Amendment.

Dr. KEAY said he had every possible regard for the splendid work done by the Poor Law Committee and by its most excellent Chairman, but at the same time he did think that these Motions might just as well have been put before them ten years ago; they did not take

thorough cognizance of what was happening at the present time. For some time they had been told that there would be a Sickness and Invalidity Bill. Mr. Lloyd George had himself told them that he already had that bill prepared, and it was quite well known that he had done so after communication with the heads of the friendly societies. That gentleman was to be asked that afternoon in the House what communication he had had with medical men. They could tell him that he had had none with the British Medical Association, and it might be taken that his answer would be that he had had no communication with medical men either in this country or abroad before he framed the bill. They came as a medical association a little late in the field—a not unusual thing for them to do. He had called attention to it in the pages of the British Medical Journal, and urged that the Association should take some action in the matter. At that time he was only a humble Member of the Association; but now that he had the honour of being a Representative he supposed he might claim to be heard. His point was that for a considerable number of years he had practised in one of the poorest districts in London, and there he found that there was a considerable body of people who could pay for medical attendance but did not. There was also a large body of people who could not pay. A labouring man earning 20s. a week, with 5s. or 6s. to pay for rent, and a family of four or five to support, by some means or other could keep his head above water till illness came, but when it did he was driven to the parish. Both the Majority and the Minority Reports had pointed out plainly that the want of medical attendance had led to the breaking up of many homes, and to any amount of pauperism. The remedy would be found in a bill by which the employer would be made to contribute his share. This was the only country where the employer did not pay to a considerable extent for attendance on his workmen. In Germany the employer paid two-thirds and the workman one-third. It was their duty to tell the Government plainly that there was a body of people who required to have sufficient medical attendance, and unless they asked for it he was sure it would never be granted, and he was afraid the time would come when it would be too late to ask for it.

Dr. Fothergill hoped the Chairman would withdraw this resolution or would do two things: alter the word "subscriptions" to "payments"—payments were what they were after, not subscription for what they got no return—and also insert the words "and others" between "charitable" and "organization." The question of strikes might come in in certain districts, and patients might not be able to pay during strikes. The trade unions would pay in that case, but they could not tell what the future would be; the whole thing was in the clouds, and they ought to try and elaborate and make this clause as large as possible, but certainly not to delete it.

Dr. Maclean seconded the Amendment.

The Chairman of the Committee intimated that he would accept "contributions" in place of "subscriptions," and the Amendment was agreed to.

The Amendment to insert the word "employers" before "public bodies" was also agreed to.

Mr. Armit thought that Dr. Fothergill's Amendment was unnecessary. There were only two provisions in Germany, that of the employer and that of the beneficiary, and if the beneficiary liked to get somebody else to pay his subscription the State did not interfere. If it was set down that employer and employed should contribute in certain proportions, it was quite unnecessary to say how the money was to be found. He thought it unnecessary to put in charitable organizations and public bodies, because if the State took up the matter of the contributions the State would determine what form the contribution was to take.

Dr. Douglas suggested the omission of the word "charitable" before "organization," so as to make the Motion wider.

Dr. Fothergill's Amendment was then carried.

Sir Victor Horsley said he understood that this clause would not be withdrawn by the Chairman, and it was therefore open for discussion as regarded wording. After the very illuminating exposition of Dr. Keay, who knew more about this subject probably than any man in the room, it was clear that the clause ought to include the word "employer"; let it include the word employer, but do not let it include anything that would convey the idea of charity. If they mixed up charity and business they would have a state of things which Dr. Keay had condemned, a state of things which was leading to the greatest trouble in the metropolis with hospitals. There was no necessity to introduce this word "charitable." As he understood, what they wanted was some clause saying that the service could receive payment from the Government, from employers, or from anybody else. He moved that the words "or charitable" be deleted.

Dr. Todd seconded the Amendment.

Dr. Taylor hoped the Meeting would not accept the proposal of Sir Victor Horsley, for this reason: The great difficulty with this insurance would be in the case of casual labourers, the men who were probably not at work three months in the year. The trouble in Germany had been as to where the subscription or premium for insurance was to come from in the case of the casual labourer who had no employment enabling him to pay his share of the premium. What would happen in such a case? He would be thrown entirely on the Poor Law and the State. Might he be allowed to pay what little part of the premium he could himself and get some charitable organization to pay the rest? If Sir Victor Horsley wished that the whole of his premium should be paid, not by charity but by State authority, they would be putting upon that man the stigma of pauperism and all its disabilities. He would ask Sir Victor if he wished to place upon such a man the stigma of poverty. If the premium was paid by a charitable organization that would not be the case. That was the reason which was in the mind of the Committee in putting in the word "charitable."

Dr. Fothergill (Wandsworth) was in favour of leaving out any reference to charity.

Mr. Armit (Hampstead) thought Dr. Taylor had got hold of the wrong end of the stick, because, not only was it competent for a charitable society or institution to pay if it liked, but, apart from that, the Insurance Invalidity Act would have to provide for lapses during a few months in the course of the year on the part of individuals who were incapable of paying their subscriptions, in the same way that such provision was made in Germany.

The Chairman of the Poor Law Reform Committee could not see where the objection to the word "charity" came in.

Several Representatives: We do not like the word.

The Chairman of the Committee replied that they did not like the fact either. Charity did not affect the doctor at all, and he did not come into connexion with it. The charity was simply paying into a fund to help the man. The doctor had nothing to do with that. He got his money from the fund regardless whence it came.

The Amendment that the words "or charitable" be omitted was then put and carried.

Dr. Buist then suggested that the words "on behalf of beneficiaries" should follow "That contributions to the service."

The proposition was accepted, and the Recommendation, amended as follows, was carried:

That contributions to the service on behalf of the beneficiaries be accepted from employers, public bodies, and other organizations.

The Chairman of the Committee moved:

That Recommendation (I) of the Poor Law Reform Committee be approved, for reference to the Divisions, as follows:

(I) That it be open to every Member of the Profession in each district, whose professional conduct conforms to the recognized rules of the profession, to act as a medical officer of the Service for that district.

This was agreed to. He then moved:

That Recommendation (J) of the Poor Law Reform Committee be approved, for reference to the Divisions, as follows:

(J) That the patient have a choice of doctor from among the medical officers for the district, and that the medical officer have a reciprocal right to refuse to undertake the attendance of any individual patient.

In doing so he suggested that the word "reciprocal" should be deleted; and the suggestion was agreed to.

In answer to a question as to what a patient was to

do in the event of a doctor declining to attend a certain patient, and the patient going to another doctor, who also declined, and so on, the CHAIRMAN OF THE COMMITTEE said he did not think that the question was a practical one, because he could not imagine there being a number of medical men in a district who would all refuse to attend a patient.

Dr. J. NEAL (Central Birmingham) said the difficulty was really a practical one, because in Birmingham it had been experienced in connexion with the provident dispensary there. It had happened that in certain districts patients had not been able to get any of the medical staff to undertake their treatment.

Mr. J. H EWART (Eastbourne) asked whether, under the Recommendation, a patient would have a right to change his doctor as often as he liked?

The CHAIRMAN OF THE COMMITTEE said it was not intended that the patient should be able to change his doctor at any time, but that there should be certain periods at which a change could be made, and the Committee suggested that the period should be one year.

In answer to a question by Dr. WHITBY (Bath), the CHAIRMAN OF THE COMMITTEE stated that the Committee's opinion was that where a patient paid no part of the contribution he should have no choice of the doctor, but that where he did pay any part of it he ought to have the right of choice.

Dr. POPE suggested that something should be put in about the area. Supposing the area was a large one, people ought surely to be restricted in some way. The "district" mentioned in the clause presumably meant the district over which the local committee had control.

Dr. BUIST said the details referred to were provided for in the draft scheme of organization and rules.

Dr. R. E. HOWELL (Cleveland) said the decision was entirely in the hands of the doctor; he could refuse to attend a patient.

Mr. ARMIT (Hampstead) asked whether, as to the choice of doctor, were they going to discuss how that was actually to be carried out, or were they simply going to establish the principle that there should be free choice of the doctor?

A MEMBER asked how the doctor was going to be allocated in the case of those who had no choice.

Dr. H. BECKETT-OVERY (Kensington) thought it might be taken for certain that if the public paid for any person, they would demand to have a say in the choice of the medical attendant.

The CHAIRMAN OF THE COMMITTEE referred Members to page 12 of the Report of the Committee, where they would see that nearly all the questions asked were answered. It certainly was the opinion of the Committee that where a public body paid for the patient they had a right to choose the doctor.

After some further discussion,

The CHAIRMAN put to the Meeting the Motion as drafted, deleting the word "reciprocal" in the third line.

This was agreed to.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE moved:

(K) That there be provision for the continuance of benefits to persons who move temporarily or permanently from one district to another, or other exceptional cases.

This was agreed to.

The CHAIRMAN OF THE COMMITTEE moved:

(L) That the payments of all beneficiaries in the district of one local committee be paid into a local common fund after payment of locally agreed expenses, the balance to be distributed periodically among the medical officers of that district according to such principle as may be agreed upon among themselves—for example, either by a payment per head in respect of each beneficiary who is for the time being on the list of each doctor, or by payment of fees in respect of attendance actually given by each doctor, or by such combination of these methods, or such other method, as may be locally approved.

He said there had been some difficulty with regard to people paying for work done. An alternative scheme had been introduced whereby the money was paid into a common fund, and the committee would pay it as it pleased. On the other hand, the money might be pooled, and the doctor give his bill to the society as usual, and be paid according to the amount he had actually done. They had two schemes before them.

Dr FOTHERGILL moved as an Amendment:

That, in the opinion of this Meeting, it is not desirable that the Association shall under its proposed scheme perpetuate the system known as "club practice," but rather that it should carry forward at this juncture the determination of the Representative Meeting at Leicester, which resolved in favour of the introduction of a system of payment for work actually done.

The CHAIRMAN OF REPRESENTATIVE MEETINGS asked Dr. Fothergill to define what he meant by club practice.

Dr. FOTHERGILL said that through the courtesy of the Committee he had submitted a scheme, but he wished to say that the scheme was not a necessary part of the carrying out of the principles. It might be too elaborate and have to be modified in certain details, but it was on the lines on which payment for work done should be carried out. At Leicester it was decided in the words of the Resolution that the Association should try to improve on the lines of contract practice—that was to say, what was known as club practice—and eventually to elaborate a system of payment for work done. He suggested that the time had arrived for this. The Resolution simply shelved the question. Under it one district would have payment for work done and another payment for so much per annum, which would lead to confusion when a beneficiary changed his district. Following the tendency of banks and insurance companies to absorb small local banks and companies in order to effect economies, he suggested if a local society were allowed to run a doctor's club on the footing of so much per annum being paid, that the working expenses and contingencies would cost so much that the doctor would ultimately get nothing. It had been suggested that those who changed from one district to another should have arrangements made for them, but that was absolutely futile, as shown by the following instance: A person might move, say, to Bournemouth after he had been paying 10s. a year in London. A doctor in Bournemouth would have to do the work, while a man in London would have the benefit of the 10s. paid in the past. As against that, the argument might be urged that the payment would be made out of a central fund, but what doctor would undertake the work on those terms? The call on the central fund would be so enormous that, when it came to divide up, the local doctor would get nothing at all. Again, a man of 21 might join a club and be healthy for ten years, during which time the club doctor would pocket the money. Then the doctor changed his practice, and another doctor would come in and might have to attend the patient if he fell ill, or his father, or his mother, and have to put in the work for the money which the other man had taken. It was an unbusinesslike procedure. He suggested it was impossible to conduct a dual system, and he trusted the Association would not put its approval on any scheme in the future which embraced the payment of so much per annum. Large districts in the manufacturing areas would not have clubs of any kind whatever. Such people were coming into the 15,000,000 with whom the Government were going to deal. Were medical men going to accept 10s. a year or a guinea a year in respect of such people? Were those present willing to put their approval on a scheme by which they were paid £1 a year for attending people who in the ordinary course would pay them £5, £10, or £15? Such a system was impracticable. The scheme elaborated before them to day would not do. It would engender friction between the patients and doctors. He suggested the principle on which the Association should stand was to endeavour by some scheme to put the patient on the basis of a private patient who could afford to pay for medical attendance out of his own pocket. If that were not done he was certain that any scheme would fall through.

Dr. G. PARKER (Bristol) seconded the Amendment. On behalf of his Division he protested strongly against any scheme for the continuation of payment per head, and also to maintain the Leicester decision. If the Government scheme were carried out, they would no longer have to sell their services to the very poor for what they could get, as had been the case in the past; but they would have to deal with a very large purchaser, and what must be said to that purchaser was that the purchaser would be offered that which was required at the ordinary fees and in the ordinary way. If the Government came to take away 10 or 12 millions of patients, and put them into an

insurance scheme, and there were already 2 or 3 millions treated by contract practrice, how many private patients would be left for Members of the Medical Profession? Were they to give up altogether the treatment of private individuals who were at present the backbone of the doctor's practice, and look forward to nothing themselves but constant friction with discontented patients or patients to whom they were tied for a year or longer? Were they to give up also the hope of ever getting higher fees and more leisure as they increased in skill and age and experience? Were they to be condemned for ever to the ceaseless round of fractious club patients?—for that was what it would very largely come to. He had been told that it was impossible to look forward to anything else, but he could only answer that there were plenty of means of putting a check upon the amount of attendance given. He had in his hand one scheme drawn up for the purpose, but he would not inflict it upon the Meeting then. The Association ought to take a very strong line with the Government on the subject, enunciating the principle and letting the details be worked out and threshed out afterwards. After all, the seller had the last word, and he trusted they would stick to their previous Resolution at Leicester and insist upon a demand for payment for work that was actually done.

Professor MOORE said the arguments adduced by the mover and seconder of the Amendment were against any scheme of insurance. No workable scheme of insurance could be carried out in which both the contract parties were not going to take risks. They had heard of the patient who got £5 or £6 worth for a 10s. fee, but they heard nothing about patients who paid 10s. and did not require treatment. Those contributions had to be set off against the other. Any insurance company taking risks knew it would have to pay a great deal more in the way of service for money at one time than it would at another. That was the first objection to payment by the job or work done. It was very seductive at first sight, and it was a thing which a great many Members of the Meeting and those they represented had been putting forward. But if there were going to be a national system, it was a thing which would have to be given up. What Government which was going to spend a great number of millions would deal with it in sixpences and shillings? The Association would be landed with an unworkable system if it had to be done in such detail, and no front-rank statesman would look at a scheme devised upon such lines. The Association was legislating for what was coming to them. Eleven million people were to be looked after, and he submitted that a system of the kind suggested could not be worked, although it might work for the notification of infectious diseases and such small things. It was said if doctors were not paid by the job they would shirk the work, but that was the lowest possible estimate to take of people in any profession. Doctors had to get enough money to live comfortably upon, but surely there was something in the profession and science which was above money. They wanted a position in which to develop their skill and work, and if they had to drudge along at the beck and call of every one it could not be done. The system they wanted to evolve was one in which, while they were sufficiently paid for their work, money was not to be the only ideal aimed at. A good part of the work of the world was not done on such lines. Such services as the national services, or the railway services, or any big business concern were not run on the paltry lines of paying a man for an hour or two's work. Even with trade unions it had been found, where piecework was adopted, it was a failure, and the workmen themselves had limited piecework. There were many specious things which could be introduced once they adopted the principle of payment for the job. When the payments under the insurance system were averaged out it would be found that doctors were paid better than under the system suggested.

Dr. METCALFE (Bradford) wished to contend for the proposition that all work should be paid for as done. That, he thought, was the only proper system to adopt. The scheme formulated by the Association seemed an easier one to manage, but he did not think the difficulties in the way of payment for work done were at all insuperable Either the payment must be adequate or inadequate Either the State would collect sufficient money to pay adequately for adequate services done, or it would collect an insufficient means for that purpose and pay a lump sum for them. He did not think it would make any difference, if the collection was adequate, whether the work was paid for in bulk or in detail. He suggested that all work should be paid for in detail—that was to say, that remuneration should be on a just and equitable basis. With regard to Poor Law appointments, it had not been possible to arrange for a payment of, say, 2s. 6d. or 3s. 6d. for each individual visit or consultation. They had been considering that matter in Bradford in connexion with the friendly societies and the clubs, and they had been in collaboration with some members of the friendly societies and the Labour Party to consider how the fees could actually be paid, the suggested minimum being 2s. 6d. for each individual visit, and it worked out that for some 12s. a year that could be done. The clubs were paying some 4s. or 5s. a year. They had now increased the amount that they paid, and the temptation was very great, because each man in the club knew that if he paid adequately each individual visit would be paid for, and he would get actual value for his money. The Division he represented were strongly of opinion that all work should be paid for in detail as done, and not in bulk or in gross.

Dr. JOHN BROWN (Bury and Rochdale) said he had practised in Cornwall, and also in Rossendale and the neighbourhood, and he could assure them that he had found the contract system most unsatisfactory in each district. The thing condemned itself, the position being a limited sum for unlimited service night and day. In Lancashire the doctors would have nothing to do with club work. If this great Association were going to begin on those lines they were beginning wrongly. Let them, first of all, try to get the principle they had already advocated. In three of the boroughs in his district the wages of the working population, working in weaving sheds, were from 30s. to £2 a week, and the adoption of the system of payment by results would knock out 90 to 95 per cent. of his patients. They all came under the Government bill. He might mention that last week he sent out bills—95 per cent. of his patients getting less than £2 per week—and one-half of the bills had been paid already.

Dr. TODD (Sunderland) heartily congratulated the medical practitioners of Rossendale and district, because he knew of no other district in the country where such a grand ideal of practice existed; but he was afraid it would be without the range of practical politics to carry out the Rossendale system in the other parts of the country where contract practice had gained such a large hold. Dr. Fothergill had referred to the case of a man who had paid for a number of years to a certain doctor and had good health; then that man removed to Bournemouth in a bad state of health. But surely they must admit that was an exception to all rules, and in practical work all their experience was balanced by a number of other cases in which patients had good health. He did not think for a moment it was possible to carry out the idea contained in this Amendment. If a man had a certain number of patients on his list he was responsible for those people. He would know the amount that would be coming in from them, and could form some idea of his annual income, and be able to weigh up his financial position. Under the system suggested by Dr. Fothergill he would never know where he was, and never know the number of patients he was likely to have, and it would not tend to practical working at all. With regard to the Government, he thought it was put in a very invidious position in arranging for these fees. The employment of men by the Government cost the Government so much money to carry out that they would have to lower the fees the medical men would receive. He strongly urged the Meeting to set their faces against the contract principle. The only practical thing at the present time was to carry out the Recommendation of the Committee.

Dr. FOTHERGILL (Wandsworth) said he had not suggested that the Government should pay the fees. The suggestion was that the Government would say: "We pay you from the funds so much a head; how you distribute it is a matter for the Association."

Dr. PARSONS (Gibraltar) said the principle ought to be

payment for work done. As to how the principle was to be carried out was another matter.

Dr. EWEN J. MACLEAN (Cardiff) was sorry to intervene at that stage of the debate, particularly because of the high level it had so far taken by those who were accustomed to the kind of practice which was going to be most affected by the Government scheme. At the same time, he could not help remarking that arguments of a certain kind had been used which were apt to divert the minds of the Meeting from the essential question before them. For instance, it had been advanced by several speakers that because that Association had come to a certain Resolution at Leicester some time ago, they were bound to stick to the terms of that Resolution. He submitted that altered circumstances demanded altered policy. At the time that Resolution was arrived at, he did not think it was in the mind of the Meeting that such a vast national scheme would come up for their consideration as that which it was contemplated was shortly to be advanced. In a number of the speeches there had been a tendency to sway the minds of the Meeting by the argument of the label; that was to say, the term "club practice" had been used somewhat unjustifiably. Every Member at that Meeting could not help having, with regard to club practice, a certain association of ideas which was abhorrent. At the same time, they must have regard to the fact that the scheme embodied in the Recommendations now before the Meeting, in so far as they had been permitted to deal with details, had some very distinctive points as regards club practice, as understood. There was, first of all, the scale of payment; that was not the ordinary scale in club practice. Then there was the choice of doctor, which was going to obtain in a very large number of instances. A patient in a club could not help being attended by a certain doctor; that was going to be removed by the scheme now under consideration. In many ways it did away with what were ordinarily accepted as the detrimental features of club practice. But one feature of club practice was maintained: if you asked a man why he still kept in his club, notwithstanding all these detrimental features, he would reply that it was a certain amount that came in regularly; that feature was retained under the scheme. As embodied in the matter now before the Meeting, the principle of local option was put in for the time being. They did not know what they had to accommodate themselves to. If they were in a position to dictate to the Government as to terms, they could come forward in a much more confident manner. But if the conception which had been in the minds of the conference was correct, then it should be forcibly brought before the meeting. The conception to which he referred was this: it was possible they might have to advance a scheme for the consideration of the Government; but, as compared with the scheme advanced by the friendly societies, it should be made attractive. He knew there had been in the minds of many who were responsible for the scheme now before them that it was the product of the work of the conference. They must be on their guard against putting things too high; otherwise, they would miss the chance of making a bargain with the Government.

Dr. LAURISTON SHAW said when Dr. Fothergill rose to make a personal explanation he raised a point which it was of the utmost importance that they should recognize, or otherwise all their discussion would be futile. Was it proposed by the system of payment by results that the amount of money paid by the State to the medical profession for its annual service should be a fixed sum, or should it be a variable sum? He understood that it was to be a fixed sum; that the State was to pay annually a sum which they had to fix with them. He could not imagine for a moment that any Government would adopt any other system. The Government would say: Fix the sum which has to be paid, and we will pay it. If that was so, surely the arrangement that was made by the Poor Law Committee for that sum to be allocated in one of two ways was all that was necessary. If Dr. Fothergill said they were only going to receive a certain fixed fee for each patient seen, then either that fee was too high or too low. If it did not swamp up the whole of the money which was subscribed by the State, what was to be done with the rest of it? How were the medical profession going to get it? They would lose it. The Chancellor of the Exchequer would use it to grant some other advantages to his socialistic friends. If, on the other hand, there was this big sum, why should they not divide it among themselves in whatever way seemed best to them? Those in a big district, who thought it was more convenient that it should be divided according to the number of visits actually made by the doctor, could quite well arrange it under the original Resolution of the Committee. There were those who thought it was best that each doctor should have a share which corresponded to the number of patients on his list; but they must recognize that in this system of payment by results the doctor who was using his opportunity to run up a bill would be detracting from the remuneration of his colleagues. He was not going thereby to get more money out of the State, because the State had already settled how much money it was going to pay. He would only be getting the extra money at the expense of his colleagues. He would be quite satisfied to leave any Division which thought that an efficient way of dividing up the remuneration it received from the State to try it for one year. He was quite sure they would not try it again, but that they would find it more satisfactory to adopt some other method. The Resolution of the Committee allowed any Division to divide the money as it seemed best. All that they stipulated was that the fee paid to any doctor out of the money allowed by the State should be fixed. The Resolution gave sufficient scope to deal with the problem.

Mr. BRADBROOK (Buckinghamshire) said Dr. Lauriston Shaw seemed to think that the sum voted annually by the Legislature would have to be a fixed sum. But in many things the estimates varied from year to year. Mr. Bradbrook differed from the view taken by Professor Moore that the Government could not pay out any shillings and half-crowns. The Government was at the present time paying away very large sums in small quantities.

Dr. HAIG (Perth) said that it had been stated that contract practice meant a good deal more work and worry for the doctor; but his experience was that it meant a very great pleasure, because the doctor could without fear of being thought desirous of increasing his purse urge upon patients to come as soon as they felt ill, and he found that his work was in consequence very much simplified.

Mr. VERRALL said that he had listened very carefully to the discussion, and it seemed to him that many of the speakers were very much afraid of the words "club practice." The words "club practice" ought to be dropped and the scheme should be regarded as a vast scheme of insurance conducted by a responsible Government. All that the Association had to do was to decide what people should be admitted, so that people who could pay for work done should be excluded. If this was done then nobody would be driven to the Poor Law in order to get medical attendance which was so seriously needed, and at the same time the practitioner would be relieved of a vast number of bad debts.

It was then moved and seconded that the question be now put.

The CHAIRMAN said that he hesitated to accept the proposal that the question be now put, because the matter was really one of the most important matters which they would have before them at that Meeting.

Dr. BUIST drew the attention of the Meeting to the exact effect of Dr. Fothergill's Amendment as contrasted with the scheme of the Committee. The scheme of the Committee was to send down a Report with two alternative proposals. Dr. Fothergill's scheme was to put up in front of one of those two proposals a club practice dummy from which, as had been pointed out, all the entrails had been extracted. He hoped that the Committee would not accept Dr. Fothergill's Amendment.

Dr. WYNNE (Leigh, Wigan) said that where people were entitled to unlimited service for limited payments, they saw that that service was exacted if possible. They knew that they could send for their medical man at any time of the day or night, and he became their slave. In the present case, judging from past experience, he was afraid that the profession would not be consulted by the Government, but, on the other hand, the friendly societies would have a very much greater say than the profession, and no doubt those societies would wish to continue upon the old lines, and to exploit the medical profession, as

they had exploited it in the past. He hoped that the Meeting would support Dr. Fothergill's Amendment.

Dr. Pearse (Trowbridge) thought it unfortunate that the only scheme for payment by work done before the Association was the scheme which Dr. Fothergill had adumbrated. That scheme Dr. Pearse thought was far too complicated for general acceptance. He wished that it had been possible for the Medico-Political Committee to at any rate devise some scheme on the basis of payment for work done.

Dr. Fothergill moved the adjournment of the discussion

The Motion was seconded and lost.

The Chairman of the Committee (Dr. Macdonald), winding up the debate, emphasized the fact that the Committee had, during the last three or four months, gone very carefully into the matter from every point of view, and it had come to the conclusion that payment per head per year was fairest and most workable. Dr. Fothergill's scheme was too elaborate, and seemed to the Committee to be impossible to carry out. The point in favour of contract practice was that a man had a fixed income on which to depend, and was not subject to the fluctuations to be found even in private practice. In conclusion, he urged the scheme worked out by the Committee as carefully and as thoughtfully as it could do it.

The Amendment was put and lost, and the Motion was subsequently carried

Election of Representatives to the Council.

The result of election of twelve Representatives to the Council was announced as follows :

North of England Branch ; North Lancashire and South Westmorland Branch ; Yorkshire Branch	Macdonald, J. (South Shields).
Lancashire and Cheshire Branch ...	Garstang, T. W. H. (Altrincham).
East York and North Lincoln Branch ; Midland Branch ; Cambridge and Huntingdon Branch : East Anglian Branch ; South Midland Branch	Carline, W. A. (Lincoln).
Birmingham Branch ; Staffordshire Branch ; North Wales Branch : Shropshire and Mid-Wales Branch ; South Wales and Monmouthshire Branch	Jones-Roberts, H. (North Wales).
Metropolitan Counties Branch : North and East Metropolitan Group : City, Stratford, Walthamstow, Tottenham, St. Pancras, and Hampstead Divisions	Goodall, E. W. (City).
Central Metropolitan Group : Marylebone and Westminster Divisions	
West Metropolitan Group : Richmond, Ealing, Chelsea, Kensington, and Watford Divisions	Ker, H. R. (Wandsworth).
South Metropolitan Group : Lambeth, Norwood, and Wandsworth Divisions	
South-Eastern Branch : Bromley and Croydon Divisions	
Bath and Bristol Branch ; Gloucestershire Branch; West Somerset Branch: Worcesterthire and Herefordshire Branch ; Dorset and West Hants Branch ; South-Western Branch	Flemming, C. E. S. (Bradford-on-Avon).
Oxford and Reading Branch ; Southern Branch ; South-Eastern Branch (excluding Bromley and Croydon Divisions)	Macan, J. J. (Croydon).
Scotland.	
Aberdeen, Northern Counties, Dundee, and Perth Branches; Edinburgh and Fife Branches	Dewar, M. (South Edinburgh).
Glasgow and West of Scotland Branch (4 City Divisions) ; Glasgow and West of Scotland Branch (4 County Divisions) ; Border Counties and Stirling Branches	Andrew, J. Grant, (Glasgow)
Ireland.	
Connaught and South-Eastern of Ireland Branches ; Leinster Branch	White, A. H. (Dublin).
Munster Branch ; Ulster Branch ...	Shaw, C. E. (Belfast).

The Meeting then adjourned to 9.30 the following morning.

TUESDAY, JULY 26th.

Mr. H. A. Ballance (Chairman of Representative Meetings) in the Chair.

The Representative Meeting was resumed at half-past nine.

Confirmation of Minutes.

The minutes of the previous day's proceedings were corrected, confirmed, and signed.

Public Health and Poor Law.

The Chairman of the Public Health Committee moved the adoption of the report, which was agreed to.

Medical Officers of Health.

Dr. Langdon-Down (Richmond) moved :

That Minute 234 of the Annual Representative Meeting, 1909, be rescinded.

The Minute referred to was as follows :

That the Recommendation of the Committee, as amended, be approved, namely :

That in the interests of the public health, and in view of the multiplicity of duties thrown upon medical officers of health by recent enactments, it is desirable that, in future appointments, medical officers of health should be required to devote their whole time to the duties of their office, and be debarred from private practice, except as consultants ; that they should be adequately paid, and, if necessary, districts should be grouped for the purpose ; and that it is further desirable that medical officers of health should be protected in carrying out their duties, and be secured from capricious dismissal or reduction of salary, and that they be allowed to participate in any superannuation scheme approved by a Local Government Board.

Dr. Langdon-Down said that both he and his Division felt quite clearly that such a Motion should be moved for no slight reason or on not thoroughly satisfactory grounds. His Division had held two Meetings before finally deciding to adhere to their decision to move the rescission of the Minute, and at the second Meeting the Division were unanimous. Dealing with the general considerations on which it appeared justifiable to propose the recision of a Resolution of the Representative Meeting, he thought it would be justifiable if there were uncertainty in the meaning and effect of the Resolution, especially one defining the policy of the Association, and which had all the dignity of a decision of the Association and was practically binding on Members. The second condition which might justify such action was that the effect of the Motion had not been sufficiently appreciated or considered at the time it was passed. A further condition was the circumstances had changed or a new factor had arisen, and the last condition was that the opinion of the Meeting was not truly representative of the Association and should be reconsidered. Applying those tests to the Resolution, he thought it could be said there was uncertainty in the wording of the Motion. It was uncertain when it was said it was desirable that certain things should be done, whether that meant merely that it was desirable that the Association should take action towards the Government so as to secure that such things should be done by the Government, or whether it was intended to be absolutely binding on the individual Members of the Association, dictating to them and saying that any person who acted contrary to the line of policy indicated at the Meeting was thereby acting contrary to the wishes of the Association and liable to be submitted to the penal clauses of the Association. It was a practical matter of doubt among the members affected. Members who wished to be loyal to the Association were in great uncertainty as to whether they would be exposing themselves to condemnation by the Association if they accepted posts which were not within the four corners of the Resolution. Whether they were in fact liable he did not know, and he hardly thought so ; but, at all events, such men had that feeling, and considered they must defend their position or get the Motion rescinded. Another uncertainty was whether the Minute referred to the renewal of appointments. No account was taken of that in the wording of the Minute. Many of the appointments were renewable from year to year, and therefore men who held the appointments might conceivably, by the strict wording of the Minute, be debarred from reapplying for their appointments, because it had been laid down by the Association that such appointments

were not right and proper. So much was the uncertainty as to the meaning that it actually led to the Public Health Committee issuing a note of explanation as to the meaning. A decision of the Association or a serious declaration of policy ought not to require to be explained subsequently by a committee. Dealing with the insufficient appreciation of the effect in detail, he reminded the Representatives that at the time when the Minute was passed part of the Motion was amended at the last moment. A particular difficulty was then pointed out about certain work which it might be thought advisable should be left in, and to meet that particular difficulty the words "except as consultants" were inserted by the Meeting at the end of a busy session and just to meet that little point. It was almost inevitable that an Amendment of that kind, carrying further consequences with it than those which were aimed at, might clash with other parts of the Minute and carry with it consequences which were not anticipated or intended. That was the case in regard to the words he had mentioned. It seemed an unreasonable thing that all private practice should be debarred to such men except as consultants. There was no logical ground on which it could be said men who accepted such appointments should be able to do private practice as consultants, but should not be allowed to do private practice in any other way. That was still more the case when it was appreciated that at the present Meeting they had decided to have a definition of what a consultant was. They did not know what a consultant was. In the report on consultants all they had dared to do was to deal with consultants actually when men were in consultation. They dealt with the actual fact of being in consultation, but had not at present defined what a consultant was. Therefore he said there was an insufficient appreciation of the Minute in detail, and that would be ground for reconsidering their action. As to the ground that circumstances had changed, or that a new factor had arisen, he did not know exactly whether the effect of the Housing and Town Planning Bill was known to the Meeting, or to the Divisions, when they considered the question, and the general change in the trend of the Government with regard to public policy and affairs. The effect of that Act was to compel every county to have its medical officer of health, and that was a fundamental change in the constitution. The idea upon which the Association had acted was that there would be a lot of local health officers who were whole-time officers scattered about the smaller districts, but now, with a unifying central public health officer in every county, the necessity for having the whole-time officers in all the districts was not so great. Therefore he submitted there was a change of policy and a change of principle. What had been in the mind of the Meeting was that by grouping together districts whole-time medical officers would be doing the work of a number of districts, but having got the union of the centre it was no longer necessary, in the opinion of the Government, to have union also at the extremities. Therefore the general trend of policy, he submitted, had altered in regard to the question, and justified them in reconsidering their position. Finally, he submitted the opinion of the Meeting was not truly representative, and should be reconsidered. He did not like to say too much on that point, and would not lay stress upon it. All he would say was that it was maintained by his Division that the attention given to the matter by the Divisions when it was submitted to them was very meagre as shown by the voting list. He thought that could not be denied. He therefore begged to move that the Minute be rescinded.

Dr. REES JONES (Blackpool) had been instructed by his Division to oppose the Rider and to support the original Resolution of the Representative Meeting. Their decision was come to at a meeting called specially for the purpose, and the whole of it was devoted to a discussion on the subject. The arguments in favour of whole-time appointments had been repeated over and over again, so that he would merely give the reasons put forward by his Division for supporting whole-time medical officers of health. He thought it should be clearly understood that this was only a pious expression of opinion on the part of the Meeting, and that it was not the intention of the Meeting that the Resolution should take effect now or at any particular time. The arguments in favour of whole-time medical officers of health were, first of all, that a special training was necessary, and he had only to mention in that respect that the salary of the whole-time medical officer of health was not sufficient to enable him to go in for special training; in the second place, more fearless work was done by the whole-time officer because he was not in danger of coming into conflict with the authorities; and in the third place there was less danger of conflict with medical practitioners in the neighbourhood. Public health work was, year by year, increasing in scope; as illustrating that, he had only to mention such Acts as the Midwives Act, and even the Shop Hours Bill now before Parliament. These arguments were considered by his Division to justify them in supporting the original Resolution of the Representative Meeting.

Dr. MUIR (Glasgow Eastern) said last year he certainly objected to a hard-and-fast rule of whole-time medical officers of health. No doubt it was the line of perfection, but the carrying of the line into effect sometimes failed. In the North of Scotland, with its hundreds of islands, and in the same way the West of Scotland, while theoretically a whole-time officer might be appointed, it would be physically impossible for the man so appointed to carry out the duties pertaining to his office. For that reason he moved an Amendment last year that the Minute should read that they were to be appointed where practicable, and that there should not be a hard-and-fast rule. He was prepared to vote for the Rider proposed by the Rochdale Division.

Dr. SHADWELL (Walthamstow) said he had been requested by his Division to support the Rider. His Division was divided into urban and rural districts, and they had both full-time and part-time medical officers of health. First of all it was stated that in the interest of public health it was advisable to have full-time medical officers, but the question was whether the Association had the duty of guarding the public health, or whether its function was not to look after the interests of its Members. It was very unfair for the Association to support the full-time medical officer, and to try to get rid of the part-time men who were equally Members of the Association. He would point out that the part-time medical officers had been men who had been doing pioneer work for public health, and there was no doubt that in the large urban districts a full-time medical officer was the right man in the right place, but in small rural districts he was equally sure that the part-time medical officer was the right man. Having occupied the position of a part-time medical officer for a period of thirteen years, he could speak on the matter from experience. He had known part-time men who had been enthusiastic, who had not studied their own interests, but who had done their work faithfully and well, and it did seem hard that an expression of opinion by the Association should be recorded in favour of the full-time men and disparaging the part time medical officer. Dr. Langdon-Down had put the matter so thoroughly before the Meeting that he hoped, in fairness to the part-time medical officer, the Minute would be rescinded.

Dr. J. B. HUGHES (North Carnarvon and Anglesea) thought it was only right to ask for fairness to the medical officer practising in the country, who was neither a part-time nor a full-time officer.

Dr. MANLEY (Dudley) rose to support the rescinding of the Resolution. He agreed with Dr. Langdon-Down that it was ambiguous. In addition to the private interests of their Members they had to consider the general policy of the health of the people, and he was of opinion that the part-time medical officer of health must, sooner or later, give way to the whole-time. Those who took an interest in these matters knew that that was the opinion of those who at present ruled at Whitehall. While there were questions that would come up later with regard to fixity of tenure and so on, he himself felt that the question of fixity would be more or less inseparable from the question of whole time. He could not imagine any finer training for a whole-time man than having been a part-time man first. He had had twenty-years as a part-time officer and a year or two as a whole-time, and he knew that much of the friction and occasional heartburning that took place during the twenty years had since entirely disappeared. With

regard to the ambiguity of the Resolution, those who were whole-timers considered that the consultant reservation was only intended to apply to their being consulted in cases in which they were experts, such as contagious diseases. The whole-time officer should always be available for the assistance of his colleagues in the case of infectious diseases. He did not feel that any policy had been introduced by the compulsory creation of county medical officers of health. There had been so many eminent members of that Association who had been medical officers of health without any real fixity of tenure that the profession was now, he thought, quite disposed not to regard it as a new policy, but as a development of a public health policy in the interests of the State. He hoped when the Resolution was passed that an Amendment would be moved. He was quite sure if those who represented the general practitioners were to consider the views of their colleagues, they would vote for the whole-time principle as the ideal principle as long as it could be carried out without injustice and injury to many hard-working medical officers of health who looked upon the salary as a considerable item in their income.

Dr. Fothergill (Wandsworth) moved as an Amendment:

> That this Meeting, while affirming its adhesion to the principle expressed by Minute 234—namely, that in the public service the system of whole-time is preferable in principle to that of part-time appointments—instructs the Council to reconsider the wording of the Minute, and to submit a revised Recommendation to the next Annual Representative Meeting, in order to make clear: (1) That the Association does not advocate, but disapproves, the compulsory termination of the office of the present holders, where efficient, of part-time, annual, or similar appointments; (2) the meaning of the term "consultant" as used in Minute 234.

He said that the rescission of any Resolution of the Representative Body was a most serious matter. He had always held that the interests of the profession and those of the public were absolutely upon the same lines. The Association did not wish to turn out the present holders of offices, but it wished that their areas and their possibilities for good work should be increased as time went on. A man who was in general practice, and who had to do with public health work, had two strings to his bow, and he would suggest that it was not possible for the general practitioner to take up public health work to either his own satisfaction or that of the State. As to the ambiguity which had been mentioned, there was no doubt that the word "consultants" in the Resolution was ambiguous.

Mr. Russell Coombe (Exeter) seconded the Amendment.

The Chairman of the Public Health Committee hoped that Dr. Fothergill's Amendment would be carried. He was sorry to find that Dr. Langdon-Down confirmed what he (the speaker) had previously heard, namely, that his Division had some difficulty in making up its mind, and in the first instance wrote in favour of the Resolution, but they had since had an opportunity of reconsidering the position, and had instructed Dr. Langdon-Down to oppose it.

Dr. Langdon-Down (Richmond) said that upon both occasions his Division was opposed to the Resolution.

The Chairman of the Public Health Committee said that the letter written by the Secretary said: "My Division has resolved that the appointment of whole-time medical officers of health is desirable unless local conditions preclude." The Resolution as drafted and finally accepted by the Belfast Meeting did undoubtedly contain one or two ambiguities which the Committee would like very much to have the opinion of the Representative Meeting upon. The words "future appointments" were put into the Resolution entirely with the idea of protecting the position of any present holder, but it had been pointed out that in many cases the present holder was liable to re-election annually. It was desirable that the point should be made quite clear that the Association did not in any way wish to displace a man where he efficiently performed his duties. At the same time, the fact had to be recognized that almost daily there were reports from the inspectors and officers of the Local Government Board who were members of the medical profession in favour of the grouping of districts and of amalgamating the salaries, which in many instances were of a beggarly description, so as to provide an adequate salary for a properly qualified man. It was no use for the Association to attempt to put back the hands of the clock. No doubt the Government Departments had made up their minds to put upon the Health Department such a multiplicity of offices that no man could properly attend to them unless he was able to give his whole time to them. With regard to the word "consultants," it was extremely difficult to define it. The Society of Medical Officers of Health had written and asked for a definition, and he on behalf of the Committee had given the following definition:

> The words "duties of their office" are not intended to suggest limitation of any spheres of action beyond the desire to exclude actual private practice, and are not intended to exclude, but rather to encourage, the combination of the duties of medical officers of health with school medical inspecting officers and superintendence of infectious disease hospitals, teaching, or lecturing. It is presumed that medical officers of health will be consulted in any case where their training or personal experience renders them likely to be able to give help in diagnosis or treatment to a brother practitioner.

Dr. Langdon-Down (Richmond) asked whether, if the Amendment was carried, the only thing which would be debarred was actual private practice.

The Chairman of the Public Health Committee said that that was so.

Dr. Langdon-Down asked to be allowed to explain the apparent difference between Mr. Domville and himself. When he said that on both occasions the Division opposed the Resolution, he was referring to the two Meetings held in the present year, and he thought that Mr. Domville must have been referring to a Meeting held in a previous year.

The Chairman of the Public Health Committee agreed with Dr. Langdon-Down.

Mr. Ewart (Eastbourne) asked whether it was wise to have the words "where efficient" in the Amendment.

Dr. Johnson Smyth (Bournemouth) asked whether Dr Fothergill's Amendment provided for the payment of compensation to those medical officers who might be displaced by the contemplated grouping of Districts.

The Chairman said that nothing was expressly stated in the Amendment about compensation, but he thought Dr. Johnson Smyth might take it that the Association would do everything in its power to obtain compensation from the Government for medical officers who might be displaced.

Dr. Lyster (Winchester) strongly supported the Amendment. It would be a very serious matter for the Meeting to rescind a very fully considered Resolution of the Representative Meeting last year. It would be much better to send the Resolution back again for definition and explanation, and he hoped that the Meeting would send the Resolution back for that purpose. The matter had already been referred to the Divisions, and he believed that the Divisions had very strongly expressed themselves in favour of whole-time appointments, and he was perfectly sure that if the matter was again referred to the Divisions they would again express themselves in the same way. The great body of the Association was made up of men in general practice, who were neither whole-time men nor half-time men; and no one more strongly resented the part time medical officer of health than the man who was in general practice in his area. Nothing could be more misleading than to suppose that the man who wanted to get rid of the part-time officer of health was the whole-time medical officer of health. A part-time medical officer, if he did his duties properly, must necessarily come into very delicate and dangerous relations with his fellow practitioners. It was impossible to carry out the modern interpretation of the duties of a medical officer of health and at the same time be prepared to undertake private work. He suggested to those who wished the Resolution to be rescinded that it would be wise upon their part to accept the Amendment. For the Meeting to declare that it was wrong last year and that it had misinterpreted public opinion, which now required specialization, would be a fatal policy

Dr. Taylor (Salford) said the Chairman had rather sprung this Amendment on the three Divisions which had put down Riders—namely, Richmond, Rochdale, and Salford; and he thought the Meeting had some right to

complain that this Amendment had been sprung upon them. They knew that the Public Health Committee had had the matter under consideration, and it would have been only fair to the Meeting that the Public Health Committee itself should have put down some Amendment. Of course, advocating the Rider standing in the name of his Division, he strongly opposed the Amendment. If Dr. Fothergill had simply proposed that the matter be referred back for further consideration, as Dr. Lyster seemed to suggest, he for one would have agreed with him; but the Amendment would not do. It took chains off, and bound them in other and stronger chains, and it confirmed the principle of whole-time medical officers of health as fully and possibly even more strongly than the present Minute 234. It would be waste of time to point out that this Minute had caused the Association a great deal of trouble during the past year. It was badly framed, and it had given the Council endless trouble. Any declaration on the part of the Representative Meeting, so strongly as this was worded, would encourage the shortening of the present appointments, especially appointments which were only held annually; and it would actually do what the Council had said it was not intended to do. Then there was the unfortunate phrase "shall be debarred for private practice, except as consultants." He himself did not know what that meant. By the wording of the Resolution they might practise as consultants and have private patients. They might charge as ordinary consultants and have private patients, and that showed the hollowness of the argument that the interests of private patients would not interfere with public duties. On the matter of principle, he thought the Meeting and the Public Health Committee, at any rate, were agreed that the wording was unfortunate. There was absolutely no reason why the British Medical Association should make any declaration at all. He granted what one of the speakers said, that only the Local Government Board, and generally in Government circles, there was a tendency towards whole-time appointments; but there was no necessity for the Association to make any declaration; and it seemed to him important they should not do so. The whole question of the Poor Law sanitary service was in the melting-pot, and they did not know what would come of it. They did not know what duties might be assigned to medical officers. They did not know whether medical officers of health might have control over their district or whether they might be very much limited in their duties in the future; other duties might be given to them. It would be extremely precipitous on the part of the Association to make any declaration of policy in matters they knew nothing about. He would ask the Meeting to defer the matter for another year, when it might be referred, possibly under altered circumstances, to the Divisions. Although he was supporting part-time officers of health, he wished to say very definitely that he had absolutely no personal interest; he was neither a whole-timer nor a part-timer, and never expected to be, and did not want to be; so it was purely on behalf of the general practitioners that he wished the Meeting to consider this matter. For his own part he deprecated anything like threats of resignation. By adjourning the matter for another year they would get to know what the position was, and then they might give something like a rational opinion. In his own Division, from beginning to end, they had been unanimous against whole-time appointments. It was said there was less probability of conflict between general practitioners and whole-time medical officers of health than there was between general practitioners and part-time medical officers. In Manchester and Salford their experience was directly opposite. He had found that in some districts there was practically no opposition, no conflict, no friction between the general practitioners and part-time medical officers; and there was any amount of it between general practitioners and whole-time medical officers, so that the argument was absolutely worthless. It was purely a matter of the individuality of the medical officer of health, and individuality would act in either position. He appealed to the Meeting not to do anything against the interests of the general practitioners, and he would repeat that he saw no necessity for any declaration at all.

Dr. BROWN (Bury and Rochdale) fully supported what Dr. Taylor had said. His Division was unanimously of opinion that whole-time men should be appointed only where it was practicable.. He hoped that support would be given to part-time men.

The CHAIRMAN wished to say one word of personal explanation, as the phrase as to consultants had been rather severely animadverted upon. He was responsible last year at Belfast for putting in that phrase, and the meaning it was intended to convey was that medical officers would be asked for their opinion as consultants in conference with fellow practitioners in regard to their own particular speciality. Take the analogy of a man at the head of a large asylum. He was a whole-time officer, and his opinion would be frequently asked by a fellow practitioner outside the immediate borders of his building, and in that way he would act as a consultant, and precisely in the same way medical officers of health would have their opinion asked in reference to their speciality. It was not intended that he should have private patients of his own or be consulted outside his speciality.

Dr. HOWELL (Cleveland) supported every word that had come from Dr. Taylor, and was delighted to have had such an able advocate of the views held in his own Division. The question of half-time medical officers of health had been very carefully discussed, and in their first decision the Division entirely supported the question of whole-time men as applied to his own town; but after the Meeting at Belfast one of the Members of the Division who was a part-time medical officer of a rural district came to the Division and pointed out the difficulties of men living at a long distance from those little centres. The Division came to the conclusion that the Member was right, and he had been instructed to try and get the Representatives to approve the principle of whole-time men being appointed in the larger towns and half-time men in the rural districts.

Dr. D. F. TODD (Sunderland) dissented from Dr. Taylor's remarks. The principle upon which they should act was that they were there as an Association to represent the interests of the medical profession and to represent the interests of the public at large. He was of the opinion that part-time officers had the greatest difficulty in carrying out their work, and gave instances in his own experience in support thereof.

Mr. VICKERS (Torquay) said that he had not heard a single reason why the part-time medical officer was attacked. It was impossible to legislate for exceptional circumstances, and there were many instances in which it was desirable to appoint part-time officers.

The CHAIRMAN asked Dr. Fothergill if he would agree to his Amendment reading "annual or other short-time appointments."

This being agreed to,

Mr. ARMOUR (Marylebone) asked for a card vote, but, as less than twenty members rose in support, it fell to the ground.

The Amendment was then put and carried.

Dr. WALTER SMITH (St. Pancras) moved as an Amendment:

> That the matter be adjourned for twelve months.

He disapproved of continually passing Resolutions at one Meeting and rescinding them at the next.

Dr. TAYLOR (Salford) seconded the Amendment. He suggested that the Amendment should run:

> That the matter be referred to the Council for consideration and reference to the Divisions if the Council considered it necessary.

Dr. WALTER SMITH (St. Pancras) agreed to the Amendment running in that form.

The CHAIRMAN pointed out that the Council was at the present time bound by Minute 234; and, if it was referred back to them, they would still be bound by that Minute.

Dr. TAYLOR (Salford) asked whether it was usual to allow an Amendment to a Rider? The Rider before the Meeting was in somewhat unusual form. He was not questioning the Chairman's ruling, but the circumstances were very peculiar.

The CHAIRMAN pointed out that the Rider was practically a Motion, and it was perfectly valid to accept an Amendment.

Dr. BUIST (Dundee) asked whether it would be in order to move that Minute 234 of the Annual Representative

Meeting be referred to the Council for consideration and report.

The Chairman replied that that would not be giving the Council any indication of what they were to do. The question then before the Meeting was whether they would carry Dr. Fothergill's Motion as a substantive Motion.

Mr. Armit (Hampstead) suggested that the Amendment should read:

That the Council be instructed to ascertain from the Divisions their wishes.

The Chairman said that had been already done. The only Amendment before them was:

That the matter be referred back to the Council for consideration;

and that he could not accept.

Dr. Fothergill's Amendment was then put as a substantive Motion and was carried.

The following Rider by the Rochdale Division was then moved:

That, in the interests of public health, medical officers of health should have security of tenure, and that in all boroughs and large urban districts, where practicable, whole time appointments be made with adequate salary.

The Chairman suggested to the mover that the subject had been already fully discussed, and that he might do well to withdraw it.

Dr. Brown (Rochdale) said that of course he was bound by his Division; and he asked the Meeting to vote for or against it, so that he might discharge his duty.

The Chairman said the following Rider had been handed in by Dr. Howell:

That, while approving of the principle of whole-time medical officers of health in large towns, this Meeting is of opinion that in rural districts the principle is impracticable.

This Rider was in practically the same wording as the Rider handed in by the Representative of the Rochdale Division.

Dr. Buist (Dundee) suggested that the best way would be to refer the Rochdale Rider to the Council for consideration.

Dr. Brown (Rochdale) accepted that suggestion.

Sir Victor Horsley asked if Dr. Brown would consent to add the words, "and the question of compensation for disturbance." It was really the practical point.

Dr. Brown (Rochdale) agreed to the addition of those words.

It was then agreed that the Rider should be referred to the Council.

Dr. Moore (Coventry) said they were reopening the whole question.

The Chairman said it was a qualification of the question. He thought the Council would take the Riders for what they were worth.

Medical Appointments in Public Medical Services in General.

The following Rider by the Salford Division was then moved:

That in every form of public medical service the system of part-time appointments of medical practitioners should be maintained as far as such appointments can be made consistently with the requirements of the services, and that all public medical officers should be protected in carrying out their duties, should be secured from capricious dismissal or reduction of salary, and should be allowed to participate in any superannuation scheme approved by a Local Government Board.

The Chairman said this Rider was really inconsistent.

Dr. Taylor (Salford) said the Rider of the Salford Division was intended to cover a very large extent of public services. He would formally move the Rider, wishing it to be understood that it did refer to public services under the Poor Law, treatment of schools and medical officers under provident medical service, and they wanted a declaration that part-time appointments in those services were advisable. It was simply carrying out to some extent one of the Resolutions of the Poor Law Committee. He had been defeated that day after an especially good debate, and he would appeal to those on whose behalf he had been fighting that they should abide loyally by the decision of the Association. He was sure that there would be a good deal of disappointment, but they could not complain that they had not had a good hearing.

It was agreed that the Rider, with the addition of the words "other than those of medical officer of health," inserted after the word "service," at the end of the first line, be referred back to the Council for consideration.

Pathological Branch of Public Health Service.

The following Rider by the Brighton Division was then proposed:

That the Central Council of the Association do seek information from the Divisions as to the need for a pathological branch of the Public Health Service, and report on the same to the Annual Meeting of 1911.

Dr. Bushnell (Brighton), in moving this Rider, said that bacteriologists had now arrived at such a stage in the early diagnosis of the prevention of disease and the examination of food supplies, milk, etc., that their services were as necessary to the public as in chemical analysis as carried out by public analysts. Secondly, it was considered that the subject of bacteriology was so specialized that however capable a man was all his attention was required to carry out the work with the best efficiency. Thirdly, it was thought that it would facilitate special work in examining food supplies by allowing the officer to have entry to premises, etc., and it probably would be a great help to foreigners and medical practitioners at a hospital if public bacteriologists were appointed who had a knowledge of pathology. Lastly, it would be a great advantage to the man himself to have continuity of office, and it would probably attract to the service men who would be more suitable than those who took it up for a brief period only. There was a precedent for the appointment of such officers in Ireland under the Tuberculosis Act, 1908 which allowed county councils to appoint county bacteriologists. There was an attempt last year by the Glasgow Corporation to have it put in the Scotland Milk Bill, 1909, but it was not received cordially at St. Stephens. Lastly, there was a precedent at the Local Government Board in their recent appointment of a medical inspector who had added to his duties that of the supervision of general bacteriological arrangements in the counties. The Brighton Division suggested that the way to obtain it was for the Divisions to consider it, and if they approved such appointments to affirm it by resolution or by deputation to the Local Government Board, by which it was believed it would certainly be included in the provisions of the Milk Bill.

Dr. Buist moved that the matter should be referred to the Council for consideration. The point was one of very considerable importance.

The Amendment was seconded by Dr. Walter Smith and carried.

The Chairman of the Public Health Committee moved:

That the Supplementary Report of Council, under the heading of Public Health and Poor Law be approved.

Dr. J. H. Taylor (Salford) asked what was the reason for providing for security of tenure for whole-time medical officers and making no attempt to provide for part-time medical officers. Under the Public Health Officers Bill a sanitary inspector was to have security of tenure, but a part-time medical officer was not to have. The Meeting, he thought, was entitled to have some reason beyond the simple reason that the Committee did not think it likely that security of tenure for part-time medical officers could be obtained.

The Chairman of the Public Health Committee said that he had very good reason for knowing that they would not get security of tenure for part time medical officers. By the advice of counsel there had been included in the bill a special paragraph, which allowed the Local Government Board to include in the provisions of any bill that might be brought forward protection for such medical officers of health as were efficiently carrying out their duties in areas which the Local Government Board thought sufficient. They had been assured that any provision other than that would not meet with any kind of support from the Government. It was useless for any private member to expect to get a contentious bill through Parliament unless it received the support of the Government, and they had been assured by the various Members whom they had addressed upon the subject that unless they could get the benevolent support of the

Government in the matter, it was quite useless for them to bring forward any bill at all. He assured the Meeting that the Committee had done everything that it possibly could in the interests of the part time medical officers, and that they would always continue to do so, but at the same time they were bound to consider the fact that the Government had enunciated the principle which he had referred to so far as the county medical officers were concerned, and he feared that they had told them that they would do nothing whatever to secure the tenure of office in all cases for part-time men. They would do something in suitable cases, especially in cases where it was quite impossible to secure men to give their whole time to the work. In such cases a part-time man would necessarily be protected.

Dr. HERBERT JONES (Council) said it was not the fact that sanitary inspectors, whether they were whole-timers or part-timers, had security of tenure. Whole-time sanitary inspectors were placed in the same position as whole-time medical officers of health, and part-time medical officers of health in some cases were placed in a very much better position than part-time sanitary inspectors.

Clause C was agreed to.

DRAFT MEMORANDUM.

The Report of Organization Committee and Memorandum of Association of the proposed new company was then adopted.

Mr. LARKIN (in the absence of Mr. Andrew Clark) moved that the Memorandum as amended be adopted by the Meeting.

The resolution was carried *nemine contradicente*.

Mr. LARKIN, in moving:

> That the Annual Representative Meeting authorize the Council, after submitting the draft Memorandum of Association to the Divisions, to settle the terms thereof in accordance with the replies of the Divisions, and to proceed forthwith to take the steps necessary to the formation of a new Company, incorporated in the same manner and having the same Articles of Association and By-laws as the present Company as constituted at the time of application, but with a Memorandum of Association as hereinbefore stated,

said it was quite clear that that would have to be amended. The Council wished to save the expense of another Representative Meeting, and by this motion had proposed to ask the Meeting to give the Council permission to settle the Memorandum in the terms of the answers of the Divisions. Otherwise, the Chairman having ruled that new matter had been introduced into the Memorandum, Special Representative Meetings of the Divisions would have to be held.

The CHAIRMAN said that he wished the Meeting to exactly understand what was proposed. At the Extraordinary General Meeting he informed them that this new Memorandum of Association would be sent to the Divisions. If any new matter were introduced into the Memorandum beyond what the Association had already approved in the Draft Charter, it would undoubtedly be sent to the Divisions. It was not necessary, however, that this Memorandum should go to the Divisions, because the Association were not going beyond any previous deed. Mr. Larkin's proposal was to leave out of this Motion all the words relating to submitting the Draft Memorandum of Association to the Divisions, so that the Motion would now read:

> That the Annual Representative Meeting authorize the Council to proceed forthwith to take the steps necessary to the formation of a new Company, incorporated in the same manner, and having the same Articles of Association and By-laws as the present Company as constituted at the time of application, but with a Memorandum of Association as hereinbefore stated.

The Motion was carried *nemine contradicente*.

Dr. W. CLOW (Renfrewshire) asked if the Memorandum would require that two General Meetings should be held as in the case of the By-laws.

The SOLICITOR made an explanatory statement.

Dr E. W. GOODALL (City, Metropolitan) moved the Rider standing in the name of his Division in the following amended form:

> That while recognizing the necessity of proceeding without delay with the formation of a new Company, the Representative Meeting considers it desirable that full consideration should be given by the Association to the question of the Referendum by postal vote, and the arrangements generally for securing that the decision of the Representative Meeting shall as far as possible represent accurately the opinion of the Association, and that it be an instruction to the Council to prepare a Report on these subjects for the consideration of the Divisions, and after receiving and considering the replies of the Divisions to submit a Report with recommendations to the Annual Representative Meeting of 1911, whether that takes place under the present Company or under the new Company which it is proposed to form.

Dr. Goodall, before giving his reasons for his moving the Rider, pointed out that he was not asking the Meeting to decide there the best method of carrying out the Referendum. What he asked was that the Meeting refer the question to the Council for it to make a Report to be sent on to the Divisions so as finally to ascertain what method they considered to be the best to carry out the Referendum. The first reason for bringing forward the subject was that he had been instructed by his Division so to do. He had been instructed to bring the matter forward when the new Draft Articles and By-laws were considered at the Special Representative Meeting; but he was ruled out of order then, and, as he appreciated now, quite rightly. Therefore he wished to bring it before the Meeting now in a proper way. The second reason was that the matter was not really settled, and was still smouldering. He would not discuss the form of Referendum, because he wished that to be gone into in the Council and in the Divisions. His object was to get the question raised and finally settled. He appealed to those present to let the matter go to the Council and to the Divisions again.

Dr. F. G. SWAYNE (Norwood) supported.

Dr. WALTER SMITH inquired, if the Amendment were passed, would it delay the formation of the Company?

The CHAIRMAN OF REPRESENTATIVE MEETINGS replied in the negative.

Dr. FOTHERGILL asked if the mover would accept an Amendment to knock out the words "by postal vote" so as to leave it open to the Council to consider the whole question in all its aspects.

Dr. GOODALL could not accept the suggestion.

Dr. FOTHERGILL asked, further, whether the word "annual" might be deleted and the words "next possible" inserted in lieu thereof, because it would be quite possible to get it done in three or four months' time before going to the Board of Trade.

Dr. GOODALL accepted the suggestion, and the Meeting agreed to the alteration.

Dr J. H. TAYLOR asked if the Organization Committee would accept the Rider.

Mr. LARKIN did not think the Organization Committee would object, but he had no authority to say they would, and it had better be left to the Meeting.

Dr. R. W. W. HENRY (Leicester and Rutland), Dr. JAMES METCALFE (Bradford), and Colonel CURME supported the Rider.

The Rider was then put and carried, with four dissentients.

Mr. LARKIN moved:

> That this Meeting authorize the Council to use its own discretion in regard to any matters to which the Board of Trade might take exception.

He did so on the ground that such an authority would be useful in negotiation with the Board of Trade.

Mr. ARMIT (Hampstead) desired to move, if all that was asked in the Memorandum was not obtainable from the Board of Trade under ordinary circumstances, that the Association take the title of "The British Medical Association, Limited," so as to obtain all that was wanted.

The CHAIRMAN OF REPRESENTATIVE MEETINGS reminded Mr. Armit that on the second day of the Meeting the Solicitor had stated that he did not think it would be possible for the King to allow his patronage to be extended to any Company with the word "Limited."

Mr ARMIT (Hampstead) recollected and recognized the statement.

Mr. LARKIN said, having regard to what Mr. Armit had remarked, that if the Board of Trade were going to emasculate the Memorandum, the Council would not accept it, but would bring the matter back to the Representatives.

Mr. Armit thought it would be going too far to give authority to the Council to make what terms it could with the Board of Trade.

The Chairman said the Meeting might take it from him that the Council would not be inclined to climb down upon any essential matter. If there was any real difficulty with the Board of Trade, the Council would come before the Representative Meeting previous to taking a definite stand.

The Motion was agreed to.

Declaration of Policy.

Dr. Langdon-Down moved the following Rider:

That it be an instruction to the Council to define the effect of declarations of policy on the Representative Meeting, and to consider what further provisions, if any, are desirable to safeguard the Association from ill-considered action in adopting such declarations.

What he desired was that the Association should know exactly what the effects of its declaration of policy were. It had been stated in the course of a previous debate that, after all, a particular Motion which was passed was only the expression of a pious opinion, and that it would not take effect then or at any future time; but he thought that it was a great pity that deliberate, serious decisions of the Association should be spoken of so. If the Resolutions of the Association were to be the serious considered policy of the Association, it ought to be known exactly what force they carried.

Mr. Armit (Hampstead) seconded.

Sir Victor Horsley hoped Dr. Langdon-Down would withdraw or amend his Motion so as to bring it into line with the full appreciation of the constitutional position. It was not for the Council to give its own interpretation of the declaration of policy passed by the Representative Meeting. He took it that what the mover of the Rider desired was that the Council or the Executive should collect in a document for convenience of reference the declarations of policy which the Association had come to upon various occasions in Representative Meeting. That, he thought, would be useful. If Dr. Langdon-Down would agree to take out the words asking the Council to define so-and-so and to substitute words asking the Council to collect the declarations of policy, it would be of great use to the progress of the subjects when they were being considered by that Meeting in future years.

Dr. Langdon-Down said what he desired was that the Executive should consider the whole question. He thought that perhaps he might add the words, "consider and report," and then the Rider would be in a constitutional form.

The Chairman thought that Sir Victor Horsley had misunderstood the purport of Dr. Langdon-Down's Motion, which was that it should be an instruction to the Council to define the effect of declarations of policy by the Representative Meeting. What he understood Dr. Langdon-Down to want was that the Council should ascertain what was the binding effect upon the Members of the Association of the declarations of policy adopted by the Meeting, and how far should a Resolution of that Meeting be taken to be binding upon the Members in regard to their possible expulsion from the Association later on. Another point was that it was possible to pass Resolutions at the Representative Meeting upon a report from the Council or from a Committee which came to the Meeting at very short notice, and if a Resolution was come to by the Meeting upon such a report, that Resolution was as valid a decision of the Association as a decision come to upon a Motion of which three months' notice had been given in the Journal. That state of things no doubt was a source of difficulty and of possible danger to the Association, and he took it that Dr. Langdon-Down included such a point as that in his Motion.

Dr. Langdon-Down said that was so.

Mr. Armit said that he had seconded the Motion not on the point of a defining of the policy, but on the point of a defining of what the effect of the declarations was.

Mr. Verrall said that the explanation of the Chairman made it necessary that the Meeting should think, not once or twice, but a dozen times before it accepted the Motion. If he read it aright, it simply meant that the Representative Meeting was being asked to make a plunge in certain directions and to leave it to the Council afterwards to decide what the effect of the policy decided upon was.

Dr. J. A. Macdonald advised the Meeting not to accept the Motion. The impression which it gave him was that it distinctly interfered with the authority of the Representative Meeting, and put into the hands of the Council the power to say what the Meeting meant by its Resolutions and what the effect of them was.

Dr. John Brown moved that the Meeting proceed to the next business.

The Motion was seconded by Dr. James Metcalfe and agreed to.

Dr. John Brown moved the following Rider:

That the Organization Committee should consider and report upon the enormous wastage of membership owing to resignations and arrears, and upon the best methods to prevent wastage.

He said that the matter was so serious that the causes of resignations and so on should be found out, and that some means of dealing with the difficulty should be proposed.

The Motion was seconded by Mr. F. H. Worswick (Manchester, West).

It was proposed by Dr. W. F. Brown, seconded by Dr. Greenlees, and agreed that the Meeting should proceed to the next business.

Poor Law Reform Committee's Report.

The Chairman of the Committee (Dr. Macdonald) moved that the Resolutions that were before the Meeting on the previous day be referred to the Council.

This was agreed to.

Dr. Fothergill suggested that the following Amendment had been anticipated:

That this Representative Meeting, while approving for reference to the Divisions for their consideration certain Recommendations, desire to emphasize that by doing so it does not wish to be considered as approving or disapproving any such Recommendation.

He then moved the following Rider:

That it be an instruction to the Central Council when forwarding the Interim Report of the Poor Law Reform Committee on the question of a centrally controlled National Provident Medical Service, to obtain and forward with it, amongst others:

(*a*) The Alternate Scheme and its Memorandum submitted to this Meeting.

(*b*) The report of an approved actuary on the two schemes from his point of view, with his Recommendations.

(*c*) A report of the conferences or interviews held with the Government, friendly societies, and other interested bodies on the whole question.

Dr. Fothergill said he did not think much time need be spent on this Rider. He asked if Dr. Macdonald would take this Resolution back for the consideration of his Committee.

The Chairman of the Committee (Dr. Macdonald) said the only difficulty about this Rider was subparagraph (*b*). That would involve enormous business. He was quite willing to accept subparagraphs (*a*) and (*c*).

Dr. Fothergill suggested that the time was now coming when they must have a little more outside guidance in their actions than they had at present. It would be necessary to have a great deal more information than they possessed before they could go to the Government.

The Chairman of the Committee was willing to promise that his Committee would consider the advisability of sending out an actuarial statement.

The Chairman said it would not be an instruction to the Council, but that the Council should consider it before sending out an Interim Report.

Dr. Fothergill said he would accept that it should be an instruction to the Council in sending their reports to the Divisions to suggest some definite capitation fee based on the sick pay experience of friendly societies.

Dr. Pearse (Trowbridge) said the Meeting had practically approved of the principle of capitation fees. He thought it was very essential that the Divisions should have some guidance from the Central Office as to the amount of capitation fee to be granted, which should be on some definite basis. The point of view from which he looked at it was that it was quite possible to arrive at a knowledge of the rates of sickness in friendly societies, and any capitation fee should be based on that.

Dr. Williams (Watford) said this matter was more or

less covered by Dr. Fothergill's Recommendation as to sending out an actuarial report.

It was agreed to send the matter to the Council to be considered.

The CHAIRMAN said that, with reference to an Amendment by Dr. Bushnell to the effect that leave be given to send a commission to other countries, leave had already been given for this, and therefore the Amendment was unnecessary.

Dr. FOTHERGILL said it was at this point that the question of calling a Representative Meeting came up. The Government had formulated certain schemes, and they were asking that the Government should listen to them before they published those schemes. Their organization was such that it took a tremendous time to find out what the opinion of the Association was. If they were to wait till next July to form their opinion on invalidity and insurance they would find the stable door open. He hoped the Meeting would accept the suggestion that the question be put before a Special Representative Meeting at the earliest date possible. Some time towards the end of November would be a convenient date. He moved:

That it be a definite instruction to call a Special Representative Meeting to consider the further report on the Poor Law Reform question.

Dr. BUSHNELL seconded.

Professor MOORE (Birkenhead) suggested that they should trust the Council in the matter.

Sir VICTOR HORSLEY said it was not a question of trusting the Council. It was much more serious than that. Times out of number in the last ten years things had been settled over their heads as they had not made up their minds as to what they wanted. Of course the working out in detail could not be made effective till they knew the Government's plan, but the Report agreed to by that Meeting on the last occasion was the thing they wanted. It had been agreed to send it to the Divisions. In support of Dr. Fothergill he urged on the Organization Committee to secure that the replies of the Divisions should be received at least by Christmas; and that a Special Representative Meeting at some convenient date selected by the Council—probably early in February—in order that they could thereby crystallize the opinion of the Association; and then they would at once have something to go to the Government with. Otherwise they would have nothing.

The CHAIRMAN OF THE COMMITTEE (Dr. Macdonald) supported the proposition if it was put forward in the way suggested by Sir Victor Horsley, namely, that when the reports of the Divisions came in, the Council be instructed to call a Representative Meeting after that.

Dr. HENRY (Leicester) asked if it was suggested that the Council should draw up a Report on the returns received from the Divisions. Would it be necessary in that case that two months' notice should be given of any Amendment; or, could Amendments be moved to that Report without formal notice?

The CHAIRMAN replied that it was not a question of the Regulations of the Association. Therefore, Amendments would be acceptable at the Special Meeting.

Dr. HOWELL (Cleveland) asked if the Council had considered the place of the Special Meeting.

The CHAIRMAN said the Council had already done so.

Sir VICTOR HORSLEY said he thought it would assist the Council very much if Members would make suggestions of that kind directly to the Council.

Dr. HOWELL suggested Manchester as a convenient centre.

The CHAIRMAN asked if this wording would suit the Meeting:

That the Council be instructed after receiving and considering the replies of the Divisions on the Poor Law question to call a Special Representative Meeting as soon as possible at some convenient centre.

With reference to a remark by Dr. NEAL, the CHAIRMAN said that when a Report went down to the Divisions they were asked to reply by a certain date. If they did not reply by a certain date they must take the consequences of their opinion not having been expressed.

The Motion was agreed to.

Dr. BECKETT-OVERY (Kensington) asked if it would be possible for Dr. Macdonald to give some information to Members of the Association by issuing a sketch of the provisions in Germany.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE said the Committee had already decided to do that.

REPORT OF DEPARTMENTAL COMMITTEE ON CORONERS' LAW, ETC.

The CHAIRMAN OF THE SUBCOMMITTEE (Mr. Verrall) moved:

That the Special Report of Council on the Reports of the Departmental Committee on Coroners' Law, etc., be received.

This was agreed to. He then moved:

That the Association continue its efforts to prevent the passing by coroners' juries of riders which include reflections upon the conduct of individuals who have not been afforded the opportunity of giving evidence on their own behalf.

Sir VICTOR HORSLEY called attention to an Amendment standing in the name of the Manchester (South) Division as being out of order.

The CHAIRMAN said the Amendment in question was taken as an Amendment for this reason: The Council's proposal was that they should oppose Riders which contained reflections on individuals who had not the opportunity of giving evidence. The Amendment of the Manchester Division was much wider, and suggested that no jury should have a right to pass a Rider.

Dr. G. H. GRANT DAVIE (Manchester, South) withdrew the Amendment, and the Motion was agreed to.

Mr. VERRALL moved:

That the Representative Meeting instruct the Council to approach the Lord Chancellor and the Home Secretary and press upon them the views of the Association in reference to death certification and registration and the coroner and his court, and to take all steps necessary to secure adequate reforms therein.

Sir VICTOR HORSLEY pointed out that this Resolution carried with it the question of the Riders. They must get an opportunity of going to the Lord Chancellor on the subject.

The Motion was agreed to.

Mr. VERRALL then moved:

That the remainder of the Special Report of Council on the Reports of the Departmental Committee on Coroners' Law, etc., be approved.

This was agreed to.

Dr. MACDONALD moved:

That the remainder of the Supplementary Report of Council under heading "Medico-Political" be approved.

This was agreed to.

NAVAL AND MILITARY.

Colonel JOUBERT DE LA FERTÉ moved:

That the Annual Report of Council under heading "Naval and Military" be approved.

That the Supplementary Report of Council under heading "Naval and Military" be approved.

This was agreed to.

SCOTLAND.

Dr. BUIST moved:

That the Annual Report of Council under heading "Scotland" be approved.

That the Supplementary Report of Council under heading "Scotland" be approved.

This was agreed to.

IRELAND.

Dr. J. S. DARLING (Portadown and West Down) moved:

That the Annual Report of Council under heading "Ireland" be approved.

This was agreed to.

BRANCHES OUTSIDE THE UNITED KINGDOM.

Dr. GREENLEES (Cape of Good Hope) moved:

That the Annual Report of Council under heading "The Branches outside the United Kingdom" be approved.

That the Supplementary Report of Council under heading "The Branches outside the United Kingdom" be approved.

This was agreed to.

GENERAL APPROVAL OF ANNUAL AND SUPPLEMENTARY REPORTS OF COUNCIL.

The CHAIRMAN (in the absence of the Chairman of Council) moved the following Motions, which were agreed to:

That, subject to the Amendments and other Resolutions adopted by the Meeting with reference thereto, the Annual Report of Council be approved as a whole.

That, subject to the Amendments and other Resolutions adopted by the Meeting with reference thereto, the Supplementary Report of Council be approved as a whole.

Election to Committees.

The following elections to Committees were announced:

Journal Committee: Mr. Armit, Dr. Buist, and Dr. Wynne.

Central Ethical Committee: Dr. Bateman, Dr. Bruce Goff, Dr Langdon-Down, Mr. Philip Lee, Dr. Neal, Mr. Straton

Medico-Political Committee: Dr. Dewar, Dr. Fothergill, Mr. Greer, Colonel Johnston, Dr. Taylor, and Dr. Todd.

Public Health Committee: Mr. Herbert Jones, Dr. Keay, and Dr. Lyster.

Hospitals Committee: Mr. Donald Armour, Colonel Joubert de la Ferté, Dr. Macan, Dr. George Parker, Mr. D. T. Thompson, and Dr. Trotter.

Hospitals Conference.

Dr. Fothergill moved that the twenty-five members of the Representative Meeting elected last year to the Hospitals Conference be re-elected for the present year, which was agreed to.

Standing Orders.

The Meeting then proceeded to consider proposed Amendments of Standing Orders other than those relating to the order of business.

Dr. Ewart (Eastbourne) moved:

That the twelve Members for the Council now elected by grouped Branches in future be elected by the General Representative Meeting by the transferable vote.

Without making any reflection on the way in which the election had been provided for, he thought it apparent that the working of the grouped Branches had been most unsatisfactory.

Dr. Swayne (Norwood), adverting to Section III of Standing Orders ("Procedure"), Election of Members of Council by Grouped Representatives (proposed new Standing Orders), and dealing with a nomination for a Member of Council to be elected by any group of Representatives be required to be made by a Division or a Representative of a Division included in the group, moved:

That a nomination for a Member of Council, to be elected by any group of Representatives, be required to be made by a Division through its Representative or by a Representative of the Division included in the group.

He said that as matters stood at present it was possible for a Division to nominate a man for the Council. Hence it seemed there was nothing to say that it was not possible for two men to be nominated by one Division. That did not seem satisfactory, and the logical procedure was that, as the Representatives had to elect a man to the Council, the Representatives should also nominate him. If a Division did not wish to nominate any one, they should leave it to their Representative to nominate whom they liked.

Mr. Verrall pointed out that there were two matters before the Meeting.

The Chairman agreed, and proceeded to deal with Dr. Ewart's proposal. He said it would alter the By-laws, and therefore it must go to the Council as an instruction to the Council to consider the advisability of making the alteration. The Representative Meeting could not give an instruction definitely for an alteration of the By-laws to be made. The motion would be:

That it be an instruction to the Council to consider and report as to the advisability of providing that the twelve members of the Council now elected by grouped Divisions in future be elected by the General Representative Meeting by the transferable vote.

Mr. Larkin did not wish to argue with the Chair, but that was a Resolution calling upon the Council to consider the advisability of altering a By-law, which he submitted was a little out of order.

The Chairman ruled it was in order.

Dr. Fothergill thought the matter important. It was reverting to the original proposition in the Charter, which had been whittled down to meet opposition.

Mr. T. W. H. Garstang saw considerable objection to the suggestion. Might he instance himself as an example of what was in his mind? He had made the Divisions in his constituency acquainted with himself personally, and they had returned him as their Representative on the Council for another year. If next year or in any future year he had to come to the Representative Meeting to stand as a candidate for election by the Meeting, while he admitted it would be a more honourable position, he ventured to submit it would put upon him the absolute necessity of placing himself in evidence before the Meeting. For the last four days he had not made a single speech. He had thought on several occasions he could have contributed valuable matter to the discussion; but time and the convenience of the Meeting had been of consideration. He only said that because, if he had to advertise himself to the whole Representative Meeting next year as a candidate for their suffrages for election to the Council, he would be reluctantly compelled to speak upon every Motion that came up. He ventured to think that the existing regulation, which had only been in force that year for the first time, was very much more conducive to orderly election and to the satisfactory geographical distribution of Representatives. He submitted that to the Meeting as being, from his point of view at all events, a somewhat important point.

Dr. Macdonald asked the Meeting not to proceed with the matter at present. They had not given the plan which was adopted a year ago a fair trial.

Mr. Larkin begged the Meeting not to go on tinkering with the matter, but to see how the present method of procedure would work.

Mr. Ewart's Motion was then put to the Meeting and lost.

Voting for Group Representatives.

Dr. Henry moved:

That the Council consider the desirability of voting for group Representatives on the principle of the card vote.

He said that in the group to which he belonged there were in one Branch 8 Divisions with 443 Members, and in the other three Branches there were 9 Divisions with 1,129 Members. The three Branches were widely scattered. The probability was that unless there was a considerable amount of lobbying, the small group of 8 Divisions with 443 Members would get their man in, whilst the 9 Divisions with 1,129 Members would be absolutely out of it. As to the case of the 8 Divisions in the one Branch, the largest of them had 87 members, and there were 4 with under 50, whereas most of the other Divisions had over 100 Members. He thought that the intention of the Meeting was originally that a majority of Members should return the Representatives, and not a majority of the Divisions.

The Motion was seconded by Dr. Baxter, and, on being put to the Meeting, was lost.

Nomination of Four Members for Election to the Council.

Dr. Shadwell (Walthamstow) moved:

That the four Members to be elected by the Representative Meeting to serve upon the Council should be nominated by the Council.

He said that when the proposition was made that there should be four more Members elected by the Representative Meeting he was instructed by his Division to oppose it, but after the explanation by the Member for Cardiff who brought the matter before the last Representative Meeting one saw that it was desirable to support the proposition, and that the idea was to be able to put upon the Council valuable men who in the ordinary way would not be able to render service upon that body. If those four Members were nominated and voted for by the Representative Meeting, it would simply mean adding four men to the twelve whom the Representative Meeting had a right to vote for; and therefore, to ensure that the Members to be voted for by the Representative Body were men who really were wanted upon the Council for particular work, and for services for which they were particularly qualified, he proposed that those four or more should be nominated by the Council, and that it should be left to the Representative Meeting to vote.

Dr. GOODALL (City) seconded the Amendment because it was in accordance with the wishes of his Division.

Mr. LARKIN thought that the Meeting ought to be very jealous in such matters as this, and should not place the nominations entirely in the hands of any other body. It was not right that the Meeting should be absolutely precluded from making its own nominations. He would suggest to the proposer and seconder that the Council be asked to make nominations to the Meeting, but that individual Members of the Meeting should also be allowed to nominate.

Dr. SHADWELL said that he and his seconder were prepared to agree to the suggestion that the Council should nominate and that the Representative Body should also be at liberty to nominate.

After a short discussion it was agreed that the Council should be able to nominate for the four Members to be elected by the Representative Meeting, and that in addition there should be nominations from Members of the Representative Meeting.

ELECTION OF SERVICE MEMBERS BY REPRESENTATIVE MEETING.

Colonel JOUBERT DE LA FERTÉ moved:

> That it be referred to the Council to reconsider the arrangements for the election of Service Members of the Council by the Representative Meeting.

He pointed out that the Service Members were now elected under a new procedure. Formerly they were elected by the Council, but now it was by the Representative Meeting. At present the Naval and Military Committee selected three names; that was to say, they had to ask three gentlemen of standing in each of the services whether they were willing to serve on the Council. Those three names were submitted to the Council, who selected two, and the two were submitted to the Representative Meeting, who selected one from each service, or the Members of the Representative Meeting might nominate and make their own selection. He put it to them that that was a very cumbersome and unworkable procedure. In the first place, they had to ask two gentlemen of standing if they would serve, and if they consented it was a little bit of a snub to them if they found themselves not elected. Another reason for what he urged was that the Representative Meeting had not the special knowledge of the qualification of the gentlemen concerned, and really it should rest with the Naval and Military Committee, who were acquainted with their services and qualifications, to make the nomination to the Council. He would like to see them go back to the old procedure—namely, that the Naval and Military Committee made their selection and submitted the name to the Council, and then, of course, the Council might pass it on to the Representative Meeting or not.

The CHAIRMAN OF THE MEDICO-POLITICAL COMMITTEE seconded. The matter had arisen in the Council, and the question had been whether the Representative Meeting or Council knew who were the men to select, but it seemed neither the Council nor the Representative Meeting knew much about it. As Colonel Joubert de la Ferté's proposition only meant referring to the Council to consider, there was not much to be said; but he thought if it were placed in the hands of the Naval and Military Committee they should make sure there was a limit placed to the time of a man's retirement from the service, and it should be a short time.

Colonel JOUBERT DE LA FERTÉ pointed out that that was limited by the Standing Orders. An officer might not be nominated on a Committee after he had completed five years on the retired list.

Mr. JOHNSON SMYTH supported the motion. The Representative Meeting were working in the dark.

Dr. FOTHERGILL quite agreed that the Committee should put forward three names for the Council, but he did not think they should go back on their decision that they should do the actual election. He suggested that they should add the words "by the Representative Body."

The CHAIRMAN pointed out that the words were there already.

The Motion was agreed to.

CORRESPONDENCE.

The CHAIRMAN announced that a letter had been received from the Countess Carlisle, President of the British Women's Temperance Association.

This letter having been read by the MEDICAL SECRETARY, it was agreed that it should be referred to the Council for consideration.

MINUTES.

The CHAIRMAN, with the authority of the Meeting, signed the Minutes as correct; and he announced that there was nothing further on the Agenda.

VOTE OF THANKS TO THE CHAIRMAN.

Dr. J. A. MACDONALD said: This is the second time to-day that I have been called upon to perform, as I put it in the other case, both a pleasing and a sad duty. I am certain that this Meeting will agree with me in saying that we are very sorry that Mr. Ballance has found it necessary to resign the Chairmanship of the Representative Meeting, or rather not to accept election for another year. We must all acknowledge the exceeding courtesy with which he has conducted this Meeting during the present Session, as well as the Special Meeting which was held some time ago, and, at the same time, his courtesy has been so marked that the Meeting has never in any sense got out of hand; it has kept well to its work, and the work has been well done under his management. The way in which he has handled this Meeting, the way in which he has devoted himself to the work of the Association during the year he has held office, makes our regret all the deeper that he could not see his way to continue it for another year. Those of us who are here have seen how he has conducted the business of the Representative Meeting; but that is an exceedingly small part of the work which Mr. Ballance has done for the British Medical Association for a number of years. He has attended at all the Committee Meetings, and he has conducted the affairs of the Association in the best possible way. The duty I have to perform is the pleasant one to me, if I may be allowed personally to say so, of recognizing the merit of a man for whom I have the greatest respect. I beg to propose:

> That the best thanks of the Meeting be accorded to Mr. Ballance for so ably presiding over its deliberations, and that the Meeting takes the opportunity of noting and of expressing its gratitude to Mr. Ballance for the time he has devoted and the ability he has displayed to the service of the Association.

Dr. MACLEAN: I shall be glad to have the privilege of seconding that. Dr. Macdonald referred to the fact that at the General Meeting I had to follow him in the capacity of seconder, as I again have to do; but I venture to draw this distinction between that circumstance and this, that, whereas at the General Meeting I had not met directly and personally the gentleman to whom the vote of thanks was proposed which I seconded, there is in this instance the very pleasant element of direct personal contact as between the Chairman and the Meeting which we very much prize. It is not in order, as in the other case, to take this Resolution in two parts; but there is the official part and there is the part of a friend; and I would emphasize in this instance, even more than we could do in the other, the fact that your friendship is valued by every individual Member of this Meeting; and I think in this capacity it is due to us that we should take notice of the fact that during your year of office your civil state has been altered, and we take this opportunity of wishing yourself and Mrs. Ballance long life and every happiness. (Applause.)

The CHAIRMAN: Gentlemen, as regards the business of the Representative Meeting this year, I feel that this is the most difficult business, from my point of view, I have had to tackle. I thank you all extremely for the very kind and cordial vote of thanks you have passed upon me. I was going to take you into my confidence; but Mr. Maclean, by his last remark, has let the cat out of the bag. Since I assumed the duties of Chairman of this Meeting a year ago, I have assumed other responsibilities and duties which, I must say to this Representative Meeting, make the duties and responsibilities of the Chairmanship of this Meeting almost pale into insignificance.

I really am, in one particular, in a different category from the Chairmen that you have had previously. Your first Chairman was a married man who lived in London; the second Chairman was a bachelor who had nobody to look after but himself, and who lived in the country; and now I am a married man who lives in the country. That really does make a vast difference. To come to the practical point of view, I really cannot continue to spend about six weeks in the year on Association business, which I reckon one has to do as Chairman of this body. When you come from the country to the meeting of a single Committee you have to give up a whole day, and, of course, when you are Chairman of this body you are *ex officio* a member of every Committee, and besides that you are supposed to serve on many Subcommittees. I have sometimes thought that as I have been Chairman of the Contract Practice Subcommittee for two or three years that fact may be associated with the fact that I have entered into another contract lately. (Laughter.) There is one more matter that I should like to mention to you. Your Chairman for the succeeding year, Dr. Maclean, is a bachelor in the country. What I do advise you very strongly to do is to keep his nose to the grindstone. The Medical Secretary does not very often need any urging to do that as regards the Chairman of the Representative Body; but from what I saw of Dr. Maclean in the early part of this year, when he assisted most admirably at a very important ceremony, I do really think that unless you keep him very hard at work he will follow my excellent example. You will then lose him for good and all. In concluding, I do again thank you most heartily for your very sincere vote of thanks.

VOTE OF THANKS TO THE CORPORATION.

The CHAIRMAN: There is one other matter. We ought to pass a most cordial vote of thanks to the Lord Mayor and the Corporation of the City of London for granting us the use of this building for the Representative Meeting. (Loud cheers.)

Dr. JOHN ADAMS (Glasgow Central) said that he should like to say before the Meeting broke up that, although they had done a great deal of very good work, they had also heard good deal of very enjoyable play. There had been special arrangements made at the Meeting for the enjoyment of the Representatives, and those who had taken part in the various entertainments and excursions had enjoyed them most thoroughly indeed, and they very highly appreciated the efforts and the work of Dr. Fothergill and Dr. Lauriston Shaw. (Loud applause.)

The proceedings then terminated.

ADJOURNED ANNUAL GENERAL MEETING.

(Continued from page 170.)

TUESDAY, JULY 26TH, 1910.

Sir WILLIAM WHITLA, M.D., President, in the Chair.

THE adjourned General Meeting of the Members of the Association was held at the Court of Common Council Chamber, Guildhall, London, on Tuesday, July 26th, 1910.

The PRESIDENT: Gentlemen, the part which the outgoing President is expected to play at this period of his rapidly vanishing year of office is a very minor one. I would delight to linger in the glare of the footlights and prolong the joy, or the sorrow, if you will, which I experience upon this my last possible appearance as President of the British Medical Association; but I know full well that in the fitness of things our organization does not provide for the delivery of any form of valedictory address, or would you wish to experience that most undesirable of all sensations, "that superfluous lags the veteran on the stage." The new players are behind, their parts carefully rehearsed, the scenes are all prepared for shifting, and it only remains for me to ring up the curtain and throw my unworthy mantle over the shoulders of the great man whom you have wisely selected to guide the destinies of your huge Association through the changes of the coming year. (Applause.) It requires no words of mine to introduce Mr. Butlin—(Hear, hear)—to an audience of medical men. His name is writ largely and imperishably in the annals of surgery—(Hear, hear)—and he is known by his contributions to medical science in every region of the civilized world. There has perhaps never been, in the history of the British Medical Association, a year so fraught with momentous issues as will be the one upon which we are now about to enter with our machinery set at full speed ahead for the manufacture of a new constitution. Our able Chairman of Council will find a rarely qualified colleague in the new President, who has with such skill and wisdom presided over the important affairs of the Royal College of Surgeons. Combining, as Mr. Butlin does, the highest scientific accomplishments with a profound knowledge of men, and business powers of a high order, together with a most intimate acquaintance with the details of the working of our great organization, we may congratulate ourselves upon the choice which our London brethren have unanimously made. (Hear, hear.) During the year upon which we now enter a serious weak point in our administrative department will cease to be operative. The captain will no longer be directing or guiding your ship through dangerous waters from his home on the land. He will be here upon the bridge, or with his own hand upon the helm. I say this in all sincerity, because I realize how little help I have been able to give Mr. Owen and the Council during my own year of office, living so far from the heart of the Association in London. One more word before I call upon the President. In taking my farewell of you, I wish to assure you of the sweetness of the memory left by your friendly visit to our northern city across the Channel last year. If you continue to think of us as we shall always love to think of you and of the many friendships formed during that meeting, we shall remain certain that the annual reunion of 1909 was not a failure, and we shall sacredly cherish its sweet memories and pleasant associations till these become effaced as they only can be by another visit to Belfast. (Loud applause.)

Sir William Whitla then vacated the presidential chair in favour of Mr. Henry T. Butlin, the President-elect.

The PRESIDENT: Sir William Whitla, Ladies, and Gentlemen,—In accepting this post of President, I beg to thank you most heartily for the very great honour you have done me. I wish to tell you that when the announcement was made to me, very nearly a year ago, that the Association was to meet in London I was surprised, for I thought it was only the other day that we were working for the meeting which took place now fifteen years ago; but nothing surprised me so much as to find that my name had been selected for the presidency. I could not understand the reason, and I asked Dr. Lauriston Shaw, who came to my house. He told me that the Association wished to have somebody who had worked for it; and that really was the only reason he could assign, and the only one for which I accepted the office of President. I do not speak easily now, I am sorry to say; I do not breathe as well as I used to, and I cough abominably; therefore I will reserve my serious remarks for to-night, when I hope to have the pleasure of seeing, at any rate, many of you gathered around me. I beg to thank you very heartily for having selected me as your President. I will now call upon Dr. Macdonald to move a Resolution.

Dr. J. A. MACDONALD (Chairman of the Medico-Political Committee), who, on rising, was received with loud applause, said: Mr. Chairman, Ladies and Gentlemen, I have had a Resolution placed in my hands to move, which I will read to you. It is:

> That the warmest thanks of the Association be given to Sir William Whitla, M.D., LL.D., for so ably presiding over the Association during the past twelve months, and that, in accordance with By-law 39, he be, and he is hereby elected, a Vice-President of the Association for life.

I could wish that this Resolution had been placed in the hands of a man much more able to deal with it than I am. There is one reason, and one reason only that I know, why I should have been selected for this honour; and that is, that I am a fellow countryman of Sir William Whitla. I was one of his pupils in the old school at Belfast, and I had the honour of being Chairman of the Representative Meeting during his year of office at the Meeting in Belfast last year. There is always a sense of sadness connected with such a Resolution as this. We wish to do honour to a man, and at the same time we are compelled to feel the sorrow that every one must have in saying good-bye to a man

who has occupied the position with distinction. That is a feeling we must have distinctly with regard to Sir William Whitla, because we recognize that the meeting that was presided over by him last year at Belfast was one which every one will remember with the greatest pleasure. A great deal of that was due to the presence of Sir William and Lady Whitla. Sir William had presided over the Association during a year which had been in many respects a very difficult one, and although he himself had referred to a matter which was undoubtedly a difficulty in our Association—namely, that sometimes our Chairman is away from the centre—we must acknowledge that Sir William has done more than many men could have done in assisting at the Council Meetings. It gives me the greatest pleasure to move this Resolution, and I know that in doing honour to Sir William Whitla the Association will do honour to itself.

Dr. MACLEAN (Cardiff) on behalf of the Representative Meeting very cordially seconded the Motion. He felt with him that they knew Sir William Whitla in two capacities, namely, the *ex officio* capacity and the capacity of a friend; and the only distinction he would draw between the two capacities was that while much to their regret and owing to circumstances over which they had no control the *ex officio* relation ceases they were quite confident the capacity of a friend would outlive it. He felt he was voicing the opinion of all the Members present and of those who were at Belfast last year, when he said that it would be extremely difficult if not impossible to surpass in efficiency the meeting at Belfast and the grand hospitality they received there.

The PRESIDENT before putting the Resolution heartily concurred in it. After his personal experience of Sir William Whitla at Exeter and from what he had heard of the meeting at Belfast he felt quite nervous at following such a President whose hospitality and genial courtesy left nothing to be desired, which made the post of President this year increasingly difficult.

Sir WILLIAM WHITLA expressed his hearty thanks to the mover and seconder for the very kind way in which they had proposed the vote of thanks, and also to the Meeting for the way in which it had received it. He was deeply grateful. (Loud applause.)

Sir VICTOR HORSLEY was asked to move a Resolution which was a little unusual in its terms, but one which he was sure would commend itself most heartily to the Meeting. It had to do with the financial position of the Association. The Association was developing rapidly; it needed money. The question was, who should they choose to find that money? He begged to propose that this Meeting elects Dr. Rayner as the Treasurer of the Association. (Loud applause.) The Motion was unusual in that he was proposing that Dr. Rayner should be elected for a second term to the office of Treasurer. They were, perhaps, over-indebted to Dr. Rayner for the work he had already done for the Association, and, of course, it was open to him to lay down that task at any time; but by their by-laws they were fortunately, as he (Sir Victor) thought, compelled to ask Dr. Rayner to take office for another term of three years. The Association at that moment was rejoicing in the possession of a new home, but, as the Association found before, that was not paid for at the moment of its inception, and this difficult question of gradually adjusting their revenue to paying off its cost could not be left in worthier hands than those of Dr. Rayner. He had great pleasure in proposing the Resolution.

Mr. STRATON: Mr. President, Ladies and Gentlemen,—It is with very great pleasure that I rise to second the Motion which has just been made by Sir Victor Horsley. It seems only yesterday that I heard him make the same proposition, and he predicted then, if I recollect rightly, that we should find in Dr. Rayner a real financier. I have had reason before this to verify the correctness of Sir Victor's prognosis in questions affecting the Association. On this question I am happy to say that his prognosis has been most amply verified, and that we have found in Dr. Rayner the very best financier we could possibly have found in the most difficult circumstances in which this Association has ever been placed. There is only one fault that we have to find with Dr. Rayner, and it is just this—his perennial youth. As men get older there is a certain tendency to atheroma, and he does not show a sufficient tendency in that way. The only thing we can hope is that he will harden his heart and tighten his grip on the finances of the Association, and I am quite sure he will tide us through the difficult circumstances in which we are now placed. I have great pleasure in seconding the Motion.

The PRESIDENT put the Motion, which was carried by acclamation.

Dr. HADDON (Hawick) observed that under the rules and the powers leading to the General Meeting one of the things to be done was to give the Treasurer a salary. The rule said he should be nominated and his salary fixed. He did not hear anything with regard to his salary. He hoped they would not neglect to pay the Treasurer.

The PRESIDENT said they were not there to consider the manner in which the Treasurer was elected, but the proposition before the Meeting, and if there were no Amendment upon it he would now put it to the Meeting:

> That the Annual General Meeting elect Dr. Edwin Rayner, of Stockport, Treasurer of the Association.

The Motion was carried by acclamation.

The TREASURER most feelingly returned thanks for again appointing him to the honourable and responsible position of Treasurer of the Association. When he was elected three years ago it never occurred to him that he should be re-elected, and, had the Charter gone through, the Association might possibly have got into such a condition with their finances that he would not have accepted re-election. There had been a considerable amount of financial work to do during the year, and he would be unwilling to pass over to his successor at the present moment financial anxieties, not with regard to the Association, but with regard to the arrangements with the bank for the new premises. As to that, he thought he ought to state publicly that the bank had loyally helped them in financing the new buildings, and in a short time he hoped the Association would be out of the hands of the bank. The bank had not pressed them in any way, as it was fully entitled to do. He thanked those present for giving him a further opportunity of doing something for the Association, and also for giving him a further opportunity of promoting the interests and welfare of the profession to which he was proud to belong. (Applause.)

Mr. EDMUND OWEN (Chairman of Council) in proposing that Dr. Edwin Rayner be elected a Vice-President of the Association, said that nothing had impressed him more in the Annual Meeting held in London than the expressions of gratitude on the part of Dr. Rayner at being reappointed Treasurer of the Association. They would know what a task he had accepted, and he (Mr. Owen) thought very few knew what an enormous load Dr. Rayner had taken upon his herculean shoulders. Mr. Owen did not want to incite any discussion on the subject, but the Association must be very gentle with the Treasurer on financial matters. The Association had an enormous income—not that that was a hen-roost which should be robbed (laughter)—but the wealth of an individual and the wealth of an Association did not depend upon income but upon expenditure. It must have given some of them food for serious thought when it was seen how closely the expenditure followed on the heels of the income, and he trusted all would cease from being anxious to put new work on to the Association, which meant a loosening of the purse-strings. He agreed with Mr. Straton that it was to be hoped the Treasurer would harden his heart, and he would do his work none the worse for being elected a Vice-President of the Association. He begged most heartily to move that proposition.

The Motion was carried by acclamation.

The CHAIRMAN OF REPRESENTATIVE MEETINGS moved that Mr. Edmund Owen be elected a Vice-President of the Association in accordance with By-law 39. Speaking as a member of the Council, every Member of the Council recognized the time and the labour that Mr. Edmund Owen had given up voluntarily to its service during the last three years. During that time he had presided over their deliberations in a most admirable and efficient way. The Chairmanship of Mr. Edmund Owen had been a delight to every Member of the Council. (Applause.) And in addition to the time and labour that it had been to him,

and which he had sacrificed on the Association's behalf, there was another matter to which attention must be drawn. In addition to the time and labour, Mr. Owen had given to them, in a sense, himself, because he had subordinated his own personal predilections and inclinations whenever he thought that it was in the interest of the Council and of the Association that they should be so subordinated. The Council did appreciate his action as Chairman of the Council during the last three years in a very special way, and it was with very great pleasure that he (the speaker) moved the Resolution he had proposed.

The Motion was carried by acclamation.

THE CHAIRMAN OF COUNCIL: Mr. President, Ladies, and Gentlemen,—I am very grateful to you for the kind way in which you received the Motion. I confess that as Mr. Ballance was leading up to it I did not recognize myself in the description which he gave of me. I am very grateful to you all the same for your kind acceptance of the Motion.

HONORARY MEMBERS.

THE CHAIRMAN OF COUNCIL: I beg to move:

That the Earl of Crewe, K.G., and the Right. Hon. Walter Long, M.P., be elected Honorary Members of the British Medical Association in accordance with Article X.

I will briefly say that not only has the Earl of Crewe been a good friend to the British Medical Association but that he is a good friend to the Medical Profession, and that in his high position in the Government he has always made himself extremely accessible to us when we have gone to him to ask him for advice, or, what is perhaps more likely, to tender suggestions to him. The Earl of Crewe has always received us most kindly, and I am sure that it will meet with your approval that he should have this high honour conferred upon him. As for Mr. Walter Long, you all know what he has done. He has abolished from these islands that terrible disease rabies, or hydrophobia. The public does not appreciate the magnificence of his work, but we appreciate it, the medical profession appreciate it, and our British Medical Association appreciates it, and we wish to show our appreciation by conferring upon him the honour bestowed by this Resolution.

The Motion was carried with great applause.

THE PRESIDENT: I may say that the Earl of Crewe is exceedingly sorry that he will not be able to be present to-night on account of his duties in Parliament, but Mr. Walter Long has expressed his intention of being present to-night, in order to be made an Honorary Member.

THE ANNUAL MEETING, 1911.

THE CHAIRMAN OF COUNCIL: I beg to move:

That the Annual Meeting accept the kind invitation of the Birmingham Branch to hold the Annual Meeting in Birmingham in 1911.

The Motion was put to the Meeting and carried.

THE CHAIRMAN OF COUNCIL: I beg, further, to move that Professor Robert Saundby, M.D., LL.D., F.R.C.P., be appointed President-elect. (Loud applause.) A little while ago you, Sir, remarked from the chair that the only reason that you could discover for your having been invited to be President of this Association during the coming year was that you had done work for this Association in the past. Of course we know of other reasons. If that applies to you, it applies with equal force, I may say, to Dr. Saundby, who has done an enormous amount of good work in the Council and out of it for this Association. I have very much pleasure in moving this.

THE PRESIDENT: This Resolution requires no seconder, but I should like to speak in favour of it. Dr. Saundby is an old colleague of mine; he was Chairman of the Council when I was a Member of the Council, and as far as I know was so when I was Treasurer of the Council. He has been a hard worker for the Association for many years. I am quite sure that he will make a most excellent President-elect, and after that President of the Association.

The Motion was put to the Meeting and carried by acclamation.

Professor SAUNDBY: Mr. President, Ladies and Gentlemen,—On behalf of the Birmingham Branch of this Association I beg to thank you most warmly for the kind manner in which you have received our invitation. I hope you will come in large numbers, and we will do our best to make the Meeting a successful one. It is twenty years since the Association met in Birmingham, when I had the pleasure of being Organizing Secretary, and I think we then had a very successful Meeting, though it was no doubt a smaller business then than it will be now. Birmingham has meanwhile grown, and I think we have all the facilities at hand to deal adequately with this important occasion. Speaking for myself, I thank you most sincerely for the way in which you and Mr. Owen spoke about me personally. It was a surprise to me when my friends in Birmingham came to me and asked me to accept the office of President of the Association, because, for reasons, as you will remember, connected with the General Medical Council, I retired from the Association within the past few years. But it was so great a pleasure to think that I might be useful to the Association that I gladly waived any difficulties that might arise in that way and I rejoined. I have nothing more to say than to thank you again most sincerely for the honour you have conferred upon Birmingham and upon me.

The PRESIDENT then retired from the chair, which was taken by Mr. EDMUND OWEN.

The CHAIRMAN called upon the Treasurer for the balance sheet.

Dr. RAYNER (Treasurer): Mr. Chairman, Ladies, and Gentlemen,—It is my duty to move:

That the Financial Statement for the year ending December 31st, 1909, b received and adopted.

I have also to submit the Balance Sheet, which you will find in the *Daily Journal* and in the Report of the Council, R 7, on p. 3. I do not know whether you wish it to be read or whether you will take it as read.

The Meeting signified its approval of the Report and Financial Statement being read, and the CHAIRMAN invited questions.

After some remarks by Dr. HADDON (Hawick),

The Motion: "That the Financial Statement for the year ending December 31st, 1909, be received and adopted," was carried.

AUDITORS.

The TREASURER moved:

That Messrs. Price, Waterhouse and Co. be, and they are hereby appointed, auditors of the British Medical Association until the next Annual General Meeting, at a remuneration of £105.

This was agreed to.

The Meeting was adjourned till 8.30 that evening at St. James's Hall, Great Portland Street.

ADJOURNED GENERAL MEETING.

THE Adjourned General Meeting of the Association took place at the St. James's Hall, Great Portland Street, W., on Tuesday, July 26th, 1910, at 8.30 p.m., the PRESIDENT, Mr. Butlin, in the Chair.

PRESENTATION OF PRESIDENT'S BADGE.

Dr. FORD ANDERSON: Mr. President, I have the honour, on behalf of the Metropolitan Counties Branch, and with the approval of the Central Council of the Association, to invite you to accept the custody of this badge to be worn by you on ceremonial occasions during your term of office, and similarly by each successive President. It symbolizes, by classic design, the aim of the medical profession, and it is plurally emblematic of the wide influence of the British Medical Association, whose objects throughout Great Britain and Ireland, and throughout Greater Britain, are, as you know, Sir, the promotion of medical and the allied sciences and the maintenance of the honour and interest of the medical profession. I have the pleasure to invest you, Sir, with this badge.

[The President was then invested with the badge amid loud applause.]

I have the honour also, Mr. President, to ask you to accept, as a souvenir from the Metropolitan Counties Branch, this pendant, which is a modified replica of the badge to be held by you, and to be worn by you or by whom you desire, and we all trust that in days to come it may recall pleasant memories of the London Meeting of 1910, for which you have already done so much.

The pendant was then handed to the President.

The PRESIDENT (who was received with loud applause) said: Dr. Ford Anderson, I accept on behalf of the Association these two tokens, and in doing so wish to convey my acknowledgements to the liberality, and still more to the kindly thought, of the Metropolitan Counties Branch. I assure you I will wear it on every occasion when it is appropriate to do so with great pride, and I am sure my successors in the office of President of this Association will do the same. I have also to thank you very much for this pendant which I shall hand down, I hope, to my son, as a memento of this, which I hope will be a record of the Association. (Loud applause). I have to announce, which I think will add lustre to this Meeting, that within the last few days His Gracious Majesty the King has signified his willingness to be the Patron of the British Medical Association, as his revered father was before him. (Loud applause, the audience rising and singing "God save the King"

PRESENTATION OF FOREIGN GUESTS AND DELEGATES.

Dr. LAURISTON SHAW then welcomed the following Foreign and Oversea Delegates.

Foreign Guests

Dr. Barany, Wein; Professor Baumler, Freiburg; Dr. J. H. Bryan; Dr. Bulkley; Dr. Cardenal, Barcelona; Professor Crile; Professoor Depage, Bruxelles; Professor Döderlein, Munchen; Dr. von Eickne, Basel, Freiburg; Dr. Faust, Würzburg; Professor Fulleborn, Hamburg; Professor Gottschalk, Berlin; Professor Herff, Germany; Professor Kocher, Bern; Dr. Luc, Paris; Dr. Lucas-Championnière, Paris; Professor Tait Mackenzie, U.S.A; Professor Hans Meyer, Wien; Professor Nagel, Berlin; Professor Politzer, Vienna; Dr. M. A. Ruffer, C.M.G., Ramleh, Egypt; Dr. Sahli, Bern; Dr. Unna, Heidelberg; Professor Wenckebach, Groningen; Dr. Louis Wickham, Paris; Professor Willems, Gand.

Oversea Delegates.

Bombay Branch.—Dr. A. M. Benson, Dr. J. B. Mama, Dr. Raghavendra Row, Dr. D. P. Sethna, Dr. D. R. Wadia.

Burma Branch.—Captain F. V. O. Beit, I.M.S., Major F. A. L. Hammond, I.M.S., Dr. H. H. L. Joy.

Cape of Good Hope (Eastern Province).—F. A. Saunders.

Colombo and Ceylon Branch.—Dr H. Bawa.

Egyptian Branch.—Captain R. G. Archibald, Dr. Andrew Balfour, Dr. H. P. Keatinge, Dr. Frank C. Madden.

Gibraltar Branch.—Dr. A. W. W. Dowding, Dr. L. D. Parsons.

Hong Kong and China Branch.—Dr. Francis Clark, Staff Surgeon E. Cox, R.N., Dr. G. Montagu Harston, Dr. Neil Macleod, Dr. W. J. Milles.

India.—Dr. D. E. Anklesaria, Dr. N. T. C. Kallianwalla, Dr. T. F. Pearse, Colonel James R. Roberts, I.M.S., F.R.C.S.

Malaya Branch.—Dr. Norman Black, Dr. G. A. Finlayson.

Montreal Branch.—Professor Adami, Dr. W. F. Hamilton.

Natal Branch.—Dr. W. Porritt, Dr. D. C. Watt.

New South Wales Branch.—Dr. Charles U. Carruthers, Dr. R. I. Furber, Dr T. Spiers Kirkland, Dr. A. J. Mackenzie, Dr. Charles MacLaurin, Dr. O. Maher, Dr. Frank Percival Manchester, Mr. H. M. Moran, F.R.C.S.Edin., Dr. A. Watson Munro, Dr. Eric O. Pockley, Dr. W. H. Read, Dr. F. P. Sandes, Dr. F. G. N. Stephens, Dr. R. B. Wade.

New Zealand Branch.—Dr. D. H. Bett, Dr. William Evans, Mr. H. L. Ferguson, F.R.C.S.I., Dr. James Whitton.

Queensland Branch.—Dr. E. A. Falkner.

St. John. New Brunswick, Branch.—Dr. G. Baddy, Dr. W. A. Christie, Dr. P. R. Inches, Mr. A. W. White, F.R.C.S.

South Australian Branch.—Dr. D. R. W. Cowan, Dr. Rowland E. Harrold, Dr. Melville Jay, Dr. M. J. Symons.

Toronto Branch.—Professor Irving H. Cameron, Dr. Helen MacMurchy, Professor Alex McPhedran, M.D., Professor R. A. Reeve, M.D., LL.D., Dr. G. Sterling Ryerson, Dr. John Sheahan, Dr. F. N. G. Starr, Dr. John Stenhouse, Dr. A. H. Wright.

Victoria Branch.—Professor H. B. Allen, Dr. F. D. Bird, Dr. Felix Meyer, Dr. L. J. Mitchell, Dr. J. Ramsay Webb.

HONORARY MEMBER.

Mr. EDMUND OWEN: Mr. President, one of the most important objects that the medical profession has in view is the abolition of all diseases from the face of this earth. Few persons in our profession, and none outside of it, have done more in this field of preventive medicine than Mr. Walter Long. (Hear, hear, and loud applause.) By his own unaided effort Mr. Walter Long has made to disappear from these islands one of the most dreadful of all diseases, rabies, or, as it is more often called, hydrophobia. (Hear, hear.) He has accomplished this feat by his intelligence, his strength of will, and his persistence—if you will allow me the use of the expression, I will say he has done it by his doggedness—(loud laughter and applause)—and the medical profession trust that those who follow in the high positions which he has held in this State will bear in mind the fact that hydrophobia may still be introduced into this country as likely by the lady's lapdog as by the giant St. Bernard or the Great Dane. Mr. Walter Long has accomplished a piece of work which the public do not yet understand, and therefore they do not appreciate it. (Hear, hear.) But the medical profession appreciates it, and this British Medical Association appreciates it—(hear, hear)—and that is why I have the pleasure of introducing Mr. Walter Long to you. Mr. President, all through the ranks of society from the very highest to the lowest runs a strange belief in the fact that a person who has received no scientific education in medicine or surgery is thereby the better fitted to treat the effects of accident and disease. (Loud laughter.) Although this is the highest honour that the British Medical Association can confer, I think it well to say in the presence of Mr. Walter Long that this honour will not entitle him legally to practise. I say this in the interests of Mr. Walter Long's many friends. (Loud laughter and applause.)

(Mr. Walter Long was then presented to the President).

The PRESIDENT: Mr. Walter Long, in the name of and by the authority of the British Medical Association, I admit you an Honorary Member thereof. I may tell you Sir, that your name was not given by me to the Association, although I should have liked to have given it. The truth is it seemed to come simultaneously from the lips of many men at the Committee and was instantly received with acclamation. I have to hand you this document, and to tell you what a great satisfaction it is to us all, and to myself personally, that you have consented to become one of our Honorary Members.

(The President then handed to Mr. Walter Long the deed and membership amid loud applause.)

The Right Hon. WALTER LONG: Mr. President, Professor Owen, and Ladies and Gentlemen,—I find it very difficult to express to this distinguished audience, and to you, Mr. President, and to you, my godfather (Mr. Owen), the real sense of the high honour which you have done me. I know Sir, that in an Association like this—and I welcome the fact—politics are assumed to be forbidden; and yet my old and distinguished friend the noble lord who sits behind me, and who is worthily regarded as a great representative of your great profession, will, I am sure, forgive me if I say that politics manage to obtrude themselves everywhere, and, in the address by which I was presented to you, Sir, on the great honour which you have conferred upon me, there occurred a remark which showed how it is that politics find themselves in everything. You were told that I had succeeded in extinguishing rabies in our slands by my own unaided efforts. I do not believe that there is any better case to be found in the history of this or any other country of unearned increment than is to be found in this honour (which is not the first that I have received at the hands of the medical profession), which you have conferred upon me for what, so far as I am concerned, was a very small labour, but so far as those who worked with me a very great labour. The honour is to those men who carried out a very great and very laborious, and very unpopular task, some of whom are still with us to-day, and some of whom have joined the great majority. I appreciate the honour that this great Association has done me, the more because I know that those who live now and who worked with me at that time will regard it as an honour paid to them as much as to me, realizing that we cannot all be the recipients of an honour like this, that somebody must be representative of the rest, and

because I know that those (and amongst them I would mention the name of Major Tennant, the head officer and chief of our executive, who by his courage and unfailing patience and zeal helped me more than any one man in the task we had set us), who had joined the great majority would rejoice if they were in this world to-day to realize that their labours had received at your hands, Sir, and at the hands of your Association, the great and lasting recognition which you have been pleased to confer upon me, their humble and unworthy representative. I regret to learn that I am not to be allowed to practise. (Loud laughter.) Ladies and gentlemen, we live in hard and difficult times, and I had hoped before I heard your introductory address that a new avenue of profit and income was open to me; and I reflected as I came along upon the fact that the steady increase in our population held out even to the oldest Member of your Association the prospects of an increasing number of people upon whom he might be allowed to experiment; but I gather that avenue is closed to me. I regret it for the sake of those upon whom I might have experimented quite as much as for my own pleasure. But that regret is obliterated in the knowledge I possess that you have conferred upon me to-night, however unworthily, a very great honour, which I shall treasure as long as I live. I am especially pleased that it has been conferred upon me under the presidency of one for whom I have not only the respect which all enjoy who know his name, but the respect which all feel who have the privilege to possess his friendship. (Hear, hear). I thank you, Mr. President, and those who are associated with you, and the Members of your Association, for the honour you have done me, and I hope that the fact that you have thought fit to recognize what we were able to do in connexion with this terrible disease of rabies and hydrophobia may be an incentive to others to work persistently and determinedly in the great cause of the extinction of disease, which means the preservation of human life and the lessening of human suffering. (Loud applause.)

Presentation of the Stewart Prize.

The President: Ladies and Gentlemen,—I am sorry to announce that Major George Lamb is ill at the present time from overwork in connexion with the very business for which we were going to give him the Stewart Prize. The prize is handed over to the Association to deal with, and it is awarded every year or at certain intervals. In this case it is given in a somewhat curious manner, for although Major George Lamb took the prize, yet it is intended as the mark of the approval of the Association of the work of the whole of the Plague Research Commission in India. I am sure you all regret that Major George Lamb is not able to be present, and you will approve that I should send him a message to that effect.

Mr. Edmund Owen: As Chairman of Council I now call on Mr. Butlin to deliver his Presidential Address.

The President then delivered his Address, which is printed at p. 241.

Vote of Thanks.

Sir Wm. Whilta: My Lord, Ladies, and Gentlemen,—A very pleasant duty has fallen upon me. It is to propose a vote of thanks to the President for the excellent address to which you have listened with rapt attention, and I am sure with very great profit. There has been a thought uppermost in my mind all day since I arrived in London this morning, and it was accentuated while I was taking part in that highly interesting ceremony in the Guildhall this afternoon, and a truth has been forced upon me while I sat listening spell-bound to the address which you have just heard, which is this: that when your great Association visits an outpost on the frontier of civilization like the city in which you met last year, the Association has to put up with the best presidential stuff for material the provincial nature of the locality can supply, but when the Association meets in London, in the heart of our great Empire, in the centre of the intellectual world itself, the case is very different. Scientific medicine looks for a President whose name is placed already high in the list of those names identified with the progressive march of British medicine and surgery, and the Association itself looks for a man in the Presidential Chair who not only will carry on the great traditions of the Association itself, but who will be both willing and able to shape its destiny—to lead it to higher aims and to further conquests. Now, I think if any justification were needed for the selection of your President, you have had it this evening—the address to which you have just listened with such pleasure. (Applause.) His vindication of the success of the Association in the advancement of medical reform, scientific research, and in the dominion of pure benevolence and philanthropy has shown how high were the aims of its founders, and how loyal has been the co-operation of those who have followed in their footsteps. I think at this very important epoch in its career the Association can congratulate itself, and can congratulate its President, upon his happy selection of the theme, and for the very eloquent way in which he has handled the subject. I can conceive no better answer to any carping critic who would be inclined to thwart the efforts which the Association is now putting forward to obtain increased powers under its constitution. The opportunity was a grand one, and the President has seized it and treated it in a way in which only a master could treat it. (Hear, hear.) The occasion was a great one, and the President has risen greater than that occasion; and I am quite sure that every one of you will heartily endorse the vote of thanks when it is put to the Meeting. (Hear, hear.) As for myself, I told some of my friends last year that I felt myself to be a mockery king of snow put up to melt before the sun of Bolingbroke. We did not know then who Bolingbroke was to be. We have heard him to-night. We have listened with rapt attention and great delight to his remarks, and as his sun has thawed its snow and returned it to its watery element, I am happy to say that the great honour that the Association has heaped upon me in selecting me as its President is unspeakably enhanced by my being followed by the great man whom you have delighted to honour this evening. (Loud applause.) I have great pleasure in moving that the best thanks be given to the President for his able, eloquent, and instructive Address. (Loud applause.)

Mr. Frederick Bird (Professor of Surgery, Melbourne University): Sir William Whitla, Ladies and Gentlemen,—It is my honourable and pleasant duty to second the vote of thanks to our President for his address to-night—an address most able, most interesting, and delivered in a manner which I can only describe as admirable. The event has been of the greatest enjoyment to us all here to-night, and particularly so to one like myself who has come from the uttermost parts of the world to hear it. It has been the persistent hope of the profession in Australia for some years that the Association would hold its Annual Meeting in that part of the world at no very far distant date. You have already been to Montreal, and you might go a little further to Melbourne or Sydney. If you do, Sir, I can promise you almost anything and everything, and our fulfilment will come not far off our promise. But there is one thing in which we shall fail; we shall not be able to provide a Presidential Address like the one we have heard to-night. I beg in all respect and admiration to second the vote of thanks to our President.

The Motion was put and carried with acclamation.

The President: My Lord, Ladies, and Gentlemen,—I am very much obliged to you for the patient way in which you have listened to my address. It seemed to me very flat and very tedious, and I am quite astonished that you should have accorded me a vote of thanks. To you, Sir William Whitla, I owe my hearty thanks for the kind way in which you proposed the Motion, and to you, Mr. Bird, for seconding it. I can only say if the Association goes to Melbourne I really shall be tempted to go myself.

The proceedings then terminated.

Address in Medicine.

The Address in Medicine was given by Dr. J. Mitchell Bruce in the Imperial College of Science, South Kensington, on Wednesday, July 27th.

The chair was taken by Mr. Butlin, the President of the Association, during the first part of the address, and during the latter part by Dr. W. K. Hunter of Glasgow, a Vice-President of the Section of Medicine.

The hall was crowded, and among those present were Lord and Lady Aberdeen, the President of the Association (Mr. Butlin), the Chairman of Council, Dr. Macdonald, Dr. Saundby, President-elect, and many others.

The PRESIDENT OF THE ASSOCIATION, in a few well-chosen words, introduced Dr. J. Mitchell Bruce to the audience.

Dr. BRUCE then delivered his Address in Medicine (published at p. 246), which was received with loud applause.

Professor MURRAY (Manchester) in rising to propose a vote of thanks to Dr. Bruce, said he knew he was only voicing the general feeling of all those who had listened to the able address which had just been delivered in proposing a vote of thanks to the lecturer for the masterly summary which he had put before them on the question of medicine. He had given them ample food for reflection as to the great work which had been done in the profession since the last meeting in London. Few words were necessary on his part to commend the Motion to those present, because the clearness of expression, the charming style, and the logical conclusions which had been given had been to him, and he was sure it had been so with the rest of those present, a real intellectual enjoyment. Therefore, he had much pleasure in proposing that the best thanks of the Association be given to Dr. Bruce for his able and interesting Address in Medicine.

Dr. GALLOWAY (London) said he had great pleasure, as a Member of the Metropolitan Counties Branch of the Association, in seconding the vote of thanks. He had heard from time to time senior members of the profession, both in the medical branch and the surgical branch, lamenting the time when they had to retire from their positions as surgeons and physicians at hospitals and to take up the posts of consulting physicians and surgeons to the hospital, because they felt that their time of activity had come to an end, and that their immediate connexion with the hospital and staff had also come to an end. It was not so in Dr. Bruce's case. Dr. Bruce, it was true, was a consulting physician at Charing Cross, but, not only that, he was also a student at Charing Cross, and those of his colleagues who saw him going round the wards and submitting cases to his own inspection felt that there was a critical and stimulating instruction which otherwise the hospital would not have. He recommended the example of Dr. Bruce to those senior members of the profession who sometimes lamented the fact of having had twenty years' full service in the hospital, which meant that they had to become consultants. He had peculiar pleasure in seconding the Resolution.

The Resolution was carried with acclamation.

Dr. BRUCE, in reply, wished to thank Professor Murray and his old friend Dr. Galloway for the very kind—in fact, far too indulgent—terms in which they had spoken, and he begged to thank those present collectively for the very patient way in which they had listened to his address.

Meetings of Branches & Divisions.

MIDLAND BRANCH:

BOSTON AND SPALDING DIVISION.

THE annual meeting was held at the White Hart Hotel, Boston, on Tuesday, June 28th. There were present Dr. SOUTH (in the chair), Drs. Braithwaite, Miller, Reckitt, Pilcher, Taxford, Smith, White, Wilson, and Wrinch.

Apologies for Non-attendance.—Regrets for non-attendance were received from Drs. Benson, Galletly, Mann, Mason, McNabb, and Steil. Dr. Witham was prevented by an urgent case.

Confirmation of Minutes.—The minutes were first read, confirmed, and signed.

Ethical Case.—The SECRETARY referred to an ethical case which had been submitted to the Medico-Ethical Committee.

Secretary's Report.—The Secretary's report stated that the number of members on December 31st, 1909, was 41, an increase of three on the previous year. Four meetings had been held during the year, the average attendance being nine, and the number of members attending one meeting during the year eighteen. The number of medical men practising in the Divisional area was eighty-six. The Division had a balance in hand on December 31st, 1909, of £3 4s. 6d. The yearly accounts were laid on the table.

Election of Officers.—The following were unanimously elected officers for the ensuing year: *Chairman*, Dr. R. E. South; *Vice-Chairman*, Dr. H. G. White; *Honorary Secretary and Treasurer*, Dr. A. E. Wilson; *Representative on Branch Council*, Dr. F. W. Mason; *Representative for Representative Meeting*, Dr. MacFarland (Lincoln); *Vice-President of the Branch*, Dr. F. Husband; *Executive Committee*, Drs. Allan, Bone, Mann, Miller, Pilcher, Smith, Husband, Mason, Taylor, R. Tuxford, Wrinch, and Witham.

Programme for the Year.—It was decided to hold the annual meeting next year in May and arrange for a dinner in the evening. Dr. MILLER proposed, and Dr. WHITE seconded. Carried *nemine contradicente*. The motor meet was left out, as so many engagements in the summer months made it difficult to get men to attend. Other meetings to be arranged by the Secretary as often as thought advisable or practicable.

Special Class of Consultants.—This matter was considered. Dr. WILSON proposed, and Dr. MILLER seconded:

> That in the opinion of this Division such a class is uncalled for and undesirable.

Carried *nemine contradicente*.

Fees for Assisting Midwives.—In regard to this matter, it was thought best to leave each medical man free to make his own terms.

Red Cross Society Ambulance Lectures.—It was decided to ask the Representative to support the Rider (No. 40) raised by the Winchester Division.

Vote of Thanks.—Dr. MILLER moved a vote of thanks to the Secretary for his services for the past year, which was unanimously adopted. The SECRETARY thanked the members for their kind appreciation of his services.

Luncheon.—Eleven members lunched in the hotel afterwards.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

SWANSEA DIVISION.

A MEETING of the Swansea Division was held at the Swansea Hospital on Thursday, June 23rd, 1910, at 3.30 p.m. Dr. A. W. CAMERON was in the chair, and nine other members were present.

Contract Medical Practice.—As the result of a recommendation passed at a meeting of the Branch Contract Practice Committee held on March 9th, 1910, and communicated to the Division at a meeting held on March 24th—that the Swansea Division should take such steps as they may think desirable to discourage any form of contract practice such as the appointment of a medical officer to a commercial travellers' association—the following resolution was moved by Dr. ROBERTS, seconded by Dr. FREEMAN MARKS, and carried unanimously:

> That it is against the best interests of the profession that medical men should hold such an appointment as that of medical officer to a commercial travellers' association.

It was pointed out that the necessary fortnight's notice having been given, and the terms of the resolution having been sent to every member of the Division, and it having been passed by more than the necessary two-thirds majority, this became a resolution of the Division according to Ethical Rules of the Division No. 10. The Secretary was instructed to send a notice of this resolution to the BRITISH MEDICAL JOURNAL for publication, and to inform the present holders of the appointment of the terms of the resolution. It was then proposed by Dr. VEALE and seconded by Dr. LANCASTER:

> That a copy of this resolution should be circulated to every member of the Division.

This was carried unanimously.

Ambulance Lectures.—Dr. BRICE wished to draw the attention of members to an appointment made by the Swansea Education Authority. It was generally thought by the members present that it was a matter that the Division could not take up, but that the St. John Ambulance Association should be communicated with. This, Dr. Brice said, had already been done, but no reply had as yet been received.

MIDWIVES (No. 2) BILL.

[H.L.]

MEMORANDUM.

This bill is, for the most part, founded upon the Report of the Departmental Committee appointed to consider the working of the Midwives Act, 1902 (1909, Cd. 4822), but departs from the recommendations of that Committee in one or two details.

The effect of the reconstitution of the Central Midwives Board is to increase the number of the Board from 9 to 13 members, representation being given to the following bodies, who were previously unrepresented:

1. The Local Government Board;
2. The Association of Municipal Corporations;
3. The Society of Medical Officers of Health;
4. The British Medical Association.

The member appointed by the last-mentioned Association must be a medical practitioner. No special qualification is prescribed in the case of the members appointed by the other new bodies.

In addition to this increase in numbers, the qualifications of the members appointed by the Incorporated Midwives Institute and the Royal British Nurses Association have been altered. In the future the members appointed by these bodies must be certified midwives. At present the member appointed by the Incorporated Midwives Institute must be a medical practitioner, whilst with respect to the member appointed by the Royal British Nurses Association no special qualifications are required.

ARRANGEMENT OF CLAUSES.

Central Midwives Board.

Clause.
1. Alteration of constitution of Central Midwives Board.
2. Future revision of constitution of Central Midwives Board.
3. Amendment of section five of the principal Act with respect to finance.
4. Amendment of section seven of principal Act as to evidence.
5. Payment of travelling expenses of members.
6. Annual report.

Provisions as to Midwives.

7. Fees for keeping name on roll.
8. Provisions as to suspension.
9. Expenses of midwives.
10. Offences by midwives.
11. Notification of practice.
12. Reciprocal treatment of midwives certified in other parts of His Majesty's Dominions.

Provisions as to Local Supervising Authorities.

13. Power of local supervising authorities to contribute to training of midwives.
14. Repeal of section nine of the principal Act.
15. Powers of entry.
16. Notification to local supervising authorities of removal of names from roll.

Payment of Fees of Medical Practitioners called in on Advice of Midwives.

17. Payment of fees of medical practitioners called in on advice of midwives.

General.

18. Action by General Medical Council.
19. Short title, construction, commencement, and repeal.

Schedule.

A BILL intituled an Act to amend the Midwives Act, 1902.

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

Central Midwives Board.

1. *Alteration of Constitution of Central Midwives Board.*—(1) As from such day as the Lord President of the Council may fix, the Central Midwives Board shall consist of—

(*a*) two persons (one of whom shall be a woman) to be appointed by the Lord President of the Council, and one person to be appointed by the Local Government Board;

(*b*) four duly qualified medical practitioners, one to be appointed by the Royal College of Physicians of London, one by the Royal College of Surgeons of England, one by the Society of Apothecaries of London, and one by the British Medical Association;

(*c*) two certified midwives to be appointed, one by the Incorporated Midwives Institute, and one by the Royal British Nurses Association;

(*d*) four persons to be appointed, one by the County Councils Association, one by the Association of Municipal Corporations, one by the Society of Medical Officers of Health, and one by the Queen Victoria's Jubilee Institute of Nurses.

The term of office of a medical practitioner appointed under paragraph (*b*) shall be one year; in the case of other members the term of office shall be three years. A member retiring at the expiration of his term of office shall be eligible for reappointment. Any vacancy occurring by the retirement, death, or resignation of a member shall be filled by a member appointed by the person or body by whom the member so retiring, dying, or resigning was appointed. The Board may act notwithstanding a vacancy in their number.

(2) Section three of the Midwives Act, 1902 (hereinafter referred to as the principal Act), shall have effect as if the foregoing provisions were substituted for so much of that section as is repealed by this Act.

(3) Nothing in this section shall affect the tenure of office of any member of the Central Midwives Board who holds office at the day so fixed, except that the members who then hold office as representatives of the Incorporated Midwives Institute and the Royal British Nurses Association shall cease to hold office.

2. *Future Revision of Constitution of Central Midwives Board.*—(1) The Central Midwives Board may at any time represent to the Privy Council that it is expedient to modify the constitution of the Board either by—

(*a*) increasing or diminishing the number of persons appointed by any body or person; or

(*b*) abolishing the power of appointment by any body or person; or

(*c*) conferring on any body or person a power of appointment of one or more persons; or

(*d*) altering the term of office or qualifications of any members.

(2) The Privy Council before considering such representation shall cause it to be laid before both Houses of Parliament.

(3) If either House of Parliament within forty days (exclusive of any period of adjournment for more than one week) next after such representation has been laid before the House presents an address to His Majesty declaring that the representation or any part thereof ought not to be given effect to, no further proceedings shall be taken in respect of the representation in regard to which the address has been presented; but if no such address is presented by either House within such forty days as aforesaid the Privy Council may, if they think fit, report to His Majesty that it is expedient to give effect to the representation; and it shall be lawful for His Majesty by Order in Council to give effect to the same, and any Order in Council so made shall have effect as if enacted in this Act.

3. *Amendment of Section Five of the Principal Act with Respect to Finance.*—The approval by the Privy Council of any balance against the Central Midwives Board shown in any financial statement made under section five of the principal Act shall be, and shall be deemed always to have been, binding and conclusive as to the amount of the balance to be apportioned under that section, and any apportionment of any such balance between the several counties and county boroughs under that section shall be in proportion to the population of those counties and county boroughs according to the returns of the last published census for the time being, instead of in the proportion mentioned in the said section.

4. *Amendment of Section Seven of Principal Act as to Evidence.*—The following paragraph shall be added to section seven of the principal Act:

"A certificate under the hand of the Secretary of the Board that the name of a woman whose name

appears in the roll of midwives has been removed from the roll shall be evidence that such woman is not certified under this Act."

5. *Payment of Travelling Expenses of Members.*—The Central Midwives Board may, if they think fit, pay to the members of the Board such reasonable travelling expenses as, subject to the approval of the Privy Council, may be allowed by the Board.

6. *Annual Report.*—The Central Midwives Board shall make to the Privy Council an annual report of their proceedings, containing such particulars as the Privy Council may direct.

PROVISIONS AS TO MIDWIVES.

7. *Fees for Keeping Name on Roll.*—Every certified midwife shall on or before the thirty-first of March in each year send to the Central Midwives Board on a form to be supplied by the Board for the purpose her name and address, together with a fee of one shilling, and if any certified midwife in any year fails to comply with this requirement her name shall be removed from the roll and thereupon her certificate shall be deemed to be cancelled; but where her name has been so removed on account of such non-compliance she shall at any subsequent time be entitled to have her name restored to the roll and the cancellation of her certificate rescinded on the payment of a fee not exceeding five shillings.

8. *Provisions as to Suspension.*—(1) The power of the Central Midwives Board to frame rules deciding the conditions under which midwives may be suspended from practice shall include a power of framing rules—

(*a*) authorizing the Board to suspend a midwife from practice for such period as the Board think fit, in lieu of striking her name off the roll, and to suspend from practice until the case has been decided, and (in the case of an appeal) until the appeal has been decided, any midwife accused before the Board of disobeying rules or regulations or of other misconduct;

(*b*) authorizing the local supervising authority which takes proceedings against a midwife before a court of justice or reports a case for consideration by the Central Midwives Board to suspend her from practice until the case has been decided.

(2) Where in pursuance of any power conferred by any such rule a midwife has been suspended from practice pending the decision of her case by a court or the Board and the case is decided in her favour, or where in pursuance of the duty imposed by paragraph (3) of section eight of the principal Act a midwife has been suspended from practice in order to prevent the spread of infection, the Central Midwives Board or the local supervising authority by whom she was suspended may, if they think fit, pay her such reasonable compensation for loss of practice as under the circumstances may seem just.

9. *Expenses of Midwives.*—(1) The Central Midwives Board may, if they think fit, pay all or any part of the expenses incurred by any midwife who may be required to appear before them in their own defence, and all forms required to be filled up and returned to the Central Midwives Board shall be supplied gratis by the Board to certified midwives.

(2) All other forms and books which certified midwives are required to fill up or use shall be supplied to them gratis by the local supervising authority.

(3) Where any such form is required to be returned by post to the Board or the authority, either the form shall be supplied duly stamped or a duly stamped envelope shall be supplied with the form.

10. *Offences by Midwives.*—(1) Where the Central Midwives Board decide upon the removal from the roll of the name of any midwife they may, in addition, prohibit her from attending women in childbirth in any other capacity, but such decision of the Board shall be subject to the like appeal as their decision to remove her name from the roll, and if any woman so prohibited acts in contravention of the prohibition, she shall be liable on summary conviction to a fine not exceeding *ten* pounds, unless she proves that she acted in a case of emergency.

(2) Any woman whose name is ordered to be removed from the roll for disobeying rules or regulations, or for other misconduct shall within fourteen days from the making of the order surrender her certificate to the Central Midwives Board and, if she fails to do so, shall be liable on summary conviction to a fine not exceeding *five* pounds.

11. *Notification of Practice.*—Where a woman certified under the principal Act, who has not given to the local supervising authority such a notice as is mentioned in section ten of the principal Act attends any woman in childbirth in any capacity other than that of midwife, and a duly qualified medical practitioner is not present at the time of the birth, she shall, within forty-eight hours from the birth, give to the local supervising authority notice in writing of the fact that she so attended, and if she omits to do so shall be liable on summary conviction to a fine not exceeding *five pounds*, but nothing in this section shall be construed as exempting any woman practising as a midwife, or holding herself out as so practising, from the obligation to give any notice which, under section ten of the principal Act, she is required to give.

(2) Where a woman certified under the principal Act has given a notice in compliance with section ten of that Act and subsequently changes her address, she shall, within seven days after such change, give notice of the change to every local supervising authority to which she had previously given notice under that section, and if she omits to do so shall, on summary conviction, be liable to a fine not exceeding *two pounds*.

12. *Reciprocal Treatment of Midwives Certified in other Parts of His Majesty's Dominions.*—(1) Any woman who produces to the Central Midwives Board satisfactory evidence that she has been trained as a midwife and certified in any other part of His Majesty's dominions in which there is for the time being in force any Act or ordinance for the certification and registration of midwives under a public authority, and which admits to its register midwives certified under the principal Act on reciprocal terms, shall on payment of the like fee as is payable in ordinary cases be entitled to be certified under the principal Act; provided that the standard of training and examination required in such other part of His Majesty's dominions is equivalent to the standard adopted by the Board.

(2) If any question arises under this section as to the right of a woman to be certified under the principal Act the question shall be determined by the Privy Council.

PROVISIONS AS TO LOCAL SUPERVISING AUTHORITIES.

13. *Power of Local Supervising Authorities to Contribute to Training of Midwives.*—A local supervising authority may aid the training of midwives, whether within or without their area, and may make grants for the purpose.

14. *Repeal of Section Nine of the Principal Act.*—Section nine of the principal Act (which enables county councils to delegate their powers and duties to district councils) shall be repealed; and where at the commencement of this Act any powers or duties have been delegated under that section the delegation shall, as from the commencement of this Act, be revoked.

15. *Powers of Entry.*—For the purpose of exercising the powers of supervision over midwives conferred on local supervising authorities, any officer appointed by such an authority for the purpose may at all reasonable times enter any premises which he has reason to believe to be a lying-in home within the area of the authority and in which he has reason to believe that a certified midwife is employed or practises, or that a woman not a certified midwife practises in contravention of the principal Act, and any person who wilfully obstructs any such officer in the performance of his duties shall on summary conviction be liable to a fine not exceeding *five pounds*.

16. *Notification to Local Supervising Authorities of Removal of Names from Roll.*—Where the name of a woman has been removed from the roll of midwives the Central Midwives Board shall forthwith give notice of the fact to all local supervising authorities concerned.

PAYMENT OF FEES OF MEDICAL PRACTITIONERS CALLED IN ON ADVICE OF MIDWIVES.

17. *Payment of Fees of Medical Practitioners called in on Advice of Midwives.*—(1) Where a duly qualified medical practitioner has been summoned upon the advice of a certified midwife attending a woman in childbirth to

render assistance in a case of emergency in pursuance of any rule framed by the Central Midwives Board, he shall, on complying with the prescribed conditions, be entitled to recover from the board of guardians of the Poor Law union in which the woman resided such fee in respect of his attendance as may be prescribed.

(2) Where any such fees have been paid by a board of guardians the amount thereof may, if the board of guardians think fit, be recovered summarily as a civil debt from the patient or person liable to provide the patient with medical aid.

(3) Every board of guardians shall in each quarter send to every local supervising authority concerned a list of the cases within the area of the authority in respect of which fees have been paid by the board of guardians under this section.

(4) The Local Government Board may make regulations with respect to any matter which under this section is to be prescribed, and as to the manner in which boards of guardians are to carry out their powers and duties under this section.

(5) The payment of fees by boards of guardians under this section shall not be considered to be parochial relief, alms, or charitable allowance to any person, nor shall any person by reason thereof be deprived of any right or privilege, or be subjected to any disability or disqualification.

General.

18. *Action by General Medical Council.*—The General Medical Council may, for the purposes of section three of the principal Act, act through the Executive Committee instead of through the English Branch Council.

19. *Short Title, Construction, Commencement, and Repeal.*—(1(This Act may be cited as the Midwives Act, 1910, and shall be construed with the principal Act, and that Act and this Act may be cited together as the Midwives Acts, 1902 and 1910.

(2) This Act shall come into operation *on the first day of January nineteen hundred and eleven.*

(3) The provisions of the principal Act specified in the Schedule to this Act are hereby repealed, but this repeal, so far as it applies to section three of the principal Act, shall not take effect until such day as the Lord President of the Council may fix for the reconstitution of the Central Midwives Board.

SCHEDULE.

Provisions of Principal Act Repealed.

Section 3 from the beginning to "reappointment for a like period."

In Section 5 the words "in proportion to the number of midwives who have given notice during the year of their intention to practise in those areas respectively."

Section 9.

In Section 10 the words "or to the body to whom for the time being the powers and duties of the local supervising authority shall have been delegated under this Act," and the words "or delegated body."

Section 17 from "The General Medical Council" to the end of the section.

CENTRAL MIDWIVES BOARD.

A special meeting of the Central Midwives Board was held at Caxton House, Westminster, on July 19th, with Sir Francis H. Champneys in the chair.

Midwives Struck Off the Roll.

Lottie Bloomer, that being in attendance as a midwife at a confinement, the patient suffering from severe rigor and abdominal pain, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 19 (4).

Ann Briggs, that being in attendance as a midwife at a confinement, the perineum being seriously ruptured, she did not act as required by Rules E 18 and 19 in regard to sending for a doctor.

Ellen Briggs, that being in attendance as a midwife at a confinement, the child suffering from inflammation of the eyes, she did not act as required by Rules E 18 and 19, in regard to sending for a doctor.

Sarah Collings, that being in attendance as a midwife at a confinement, the patient suffering from *post-partum* haemorrhage, she did not act as required by Rules E 18 and 19 in regard to sending for a doctor.

Mary Denyer, that having notified the local supervising authority in 1907 of her intention to cease to practise as a midwife, and to practise in future only under the supervision of a registered medical practitioner, she had nevertheless since practised as a midwife, and in cases where a doctor had been only colourably engaged, without notifying the local supervising authority.

Mary Jane Evans, that being in attendance as a midwife at a confinement, the patient suffering from severe rigor and vomiting, she did not act as required by Rules E 18 and 19 in regard to sending for a doctor.

Sarah Hook, that she was uncleanly in her person, clothing, and house.

Sarah Jarvis, that being in attendance as a midwife at a confinement, the patient suffering from constant diarrhoea and from pain in the breasts during her attendance, she did not act as required by Rules E 18 and 19 in regard to sending for a doctor.

Susannah Longney, that being in attendance as a midwife at a confinement she was under the influence of drink, and incapable of performing her duty as a midwife.

Mary Staveley, that notwithstanding repeated warnings she persistently neglected to provide herself with the bag, appliances, and antiseptics required by Rule E 2.

Jane Taylor, that being in attendance as a midwife at confinements she did not take the temperature of her patients, being unable to use a clinical thermometer, having neglected to learn how to do so in spite of previous warnings.

Isabella Tinker, that having been engaged to attend a woman in an approaching confinement, and having been sent for on March 21st, 1910, when she ascertained that the presentation was abnormal, she did not act as required by Rules E 18 and 19 in regard to sending for a doctor.

Rachel Yates, that being in attendance as midwife at a confinement the patient suffering from persistently offensive lochia with high temperature she did not act as required by Rules E 18 and 19 in regard to sending for a doctor.

Midwives Censured.

Margaret Aldred and *Louisa Thomas* were censured after charges alleged against them had been considered.

Midwives Cautioned.

Mary Ann Byfield, *Christina Shaw*, and *Mary Warburton* were cautioned after charges alleged against them had been considered.

A special meeting of the Board was held on July 20th, with Sir Francis Champneys in the chair, and, after sitting till after 8 p.m., was concluded on July 21st.

Midwives Struck Off the Roll.

Charlotte Bates, that being in attendance as a midwife at a confinement, the child suffering from inflammation of the eyes, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 19 (5).

Ann Chivers, that she persistently neglected, after being duly warned, to provide herself with the equipment, appliances, and antiseptics required by Rule E 2.

Emma Frost, that, being in attendance as a midwife at a confinement, the patient being ill, suffering from headache, abdominal pains, and vomiting, she did not act as required by Rules E 18 and 19 in regard to sending for a doctor.

Midwives Censured.

Elizabeth Jane Haines, *Sarah Harvey*, and *Ellen Porter* were censured after charges alleged against them had been considered.

Midwife Cautioned.

Annie Jane Hewitt was cautioned after charges alleged against her had been considered.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns 8,164 births and 3,620 deaths were registered during the week ending Saturday last, July 23rd. The annual rate of mortality in these towns, which had been 11·0, 11·0, and 11·4 in the three preceding weeks, fell to 11.1 per 1,000 last week. The rates in the several towns ranged from 2.8 in Burton-on-Trent, 4·8 in Walthamstow, 5.5 in Tottenham, and 5.9 in Leyton and in York to 15·1 in Bolton, 15.7 in Tynemouth, 15.9 in Wigan, 17.7 in Liverpool, 20·5 in Barrow-in-Furness, and 22.3 in Stockton-on-Tees. The death-rate from the principal infectious diseases averaged 1·1 per 1,000: in London the rate was 1.0 per 1,000, while among the seventy-six other large towns it ranged upwards to 2.5 in Manchester and in Barrow-in-Furness, and 2.6 in Salford. Measles caused a death-rate of 1·4 in Oldham and 2·5 in Barrow-in-Furness; whooping-cough of 1.7 in Birkenhead and in Salford, and 1.8 in Oldham and in Tynemouth; and diarrhoea of 1.5 in Rhondda and 1.7 in Wigan. The mortality from scarlet fever, diphtheria, and fever showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,378, 1,439, and 1,530 at the end of the three preceding weeks,

further rose to 1,548 at the end of the week under notice; 173 new cases were admitted during the week, against 183, 188, and 249 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ended Saturday last, July 23rd, 884 births and 434 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.2, 12.1, and 12.4 in the three preceding weeks, fell to 12.0 per 1,000 last week, and was 0.9 per 1,000 above the mean rate during the same period in the large English towns. Among the Scottish towns the death-rates ranged from 7.8 in Greenock and 9.6 in Leith to 12.8 in Paisley and 19.6 in Perth. The death-rate from the principal infectious diseases averaged 1.6 per 1,000, being highest in Aberdeen, Perth, and Glasgow. The 208 deaths from all causes recorded in Glasgow included 2 which were referred to measles, 3 to scarlet fever, 4 to diphtheria, 10 to whooping-cough, 4 to fever, and 13 to diarrhœa. Two deaths from diarrhœa were registered in Edinburgh, Dundee, and Aberdeen, 2 from scarlet fever in Edinburgh, and 2 from measles in Dundee.

VITAL STATISTICS OF LONDON DURING THE SECOND QUARTER OF 1910.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

IN the accompanying table will be found summarized the vital statistics of the City of London and of the metropolitan boroughs, based upon the Registrar-General's returns for the second quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the various boroughs, and are obtained by distributing the deaths in institutions among the several boroughs in which the deceased persons had previously resided. The 30,257 births registered in London during the three months under notice were equal to an annual rate of 24.9 per 1,000 of the population, estimated at 4,872,702 persons in the middle of the year; in the second quarter of the three preceding years the rates were 26.7, 26.2, and 24.9 per 1,000, the average rate in the corresponding period of the ten years 1900-9 being 27.4 per 1,000. The birth-rates last quarter ranged from 13.7 in the City of Westminster, 14.3 in Hampstead, 15.5 in the City of London, 17.3 in Kensington, 18.2 in Stoke Newington, and 18.4 in Chelsea, to 29.7 in Poplar, 30.9 in Bermondsey, 31.2 in Shoreditch and in Stepney, 31.4 in Bethnal Green, and 36.9 in Finsbury.

During last quarter the deaths of 14,094 London residents were registered, equal to an annual rate of 11.6 per 1,000, against 14.0, 12.7, and 12.8 in the corresponding quarter of the three preceding years; in the second quarter of the ten years 1900-9 the average rate was 14.4 per 1,000. Among the several boroughs the crude death-rates last quarter ranged from 7.8 in Hampstead, 8.8 in Lewisham, 9.5 in Wandsworth, 9.8 in Woolwich, and 10.0 in Fulham and in Stoke Newington, to 14.3 in Southwark, 14.6 in Holborn, 14.8 in Shoreditch, 15.2 in the City of London, 16.4 in Finsbury, and 16.7 in Bermondsey.

The 14,094 deaths from all causes last quarter included 1,304 which were referred to the principal infectious diseases; of these, 542 resulted from measles, 50 from scarlet fever, 72 from diphtheria, 446 from whooping-cough, 28 from enteric fever, 1 from ill-defined pyrexia, and 165 from diarrhœa; but not any from small-pox or from typhus. These 1,304 deaths were equal to an annual rate of 1.08 per 1,000, or 0.47 per 1,000 less than the average rate in the corresponding period of the ten preceding years. The lowest death-rates from these diseases last quarter were 0.33 in Hampstead, 0.37 in Stoke Newington, 0.53 in Kensington, 0.59 in Chelsea, and 0.64 in Wandsworth; the highest rates were 1.61 in Greenwich, 1.66 in St. Pancras, 1.77 in Finsbury, 1.83 in Shoreditch, 1.89 in Bermondsey, and 1.94 in Southwark. The greatest proportional mortality from measles was recorded in Paddington, Shoreditch, Bethnal Green, Southwark, Bermondsey, Deptford, and Greenwich; from scarlet fever in Hammersmith, St. Pancras, the City of London, Bethnal Green, and Bermondsey; from diphtheria in Hammersmith, St. Pancras, Poplar, Deptford, Greenwich, and Lewisham; from whooping-cough in St. Pancras, Islington, Finsbury, Shoreditch, and Poplar; and from diarrhœa in Hammersmith, Finsbury, the City of London, Shoreditch, Stepney, Southwark, and Bermondsey. The 28 deaths from enteric fever included 3 in the City of Westminster, 3 in Islington, and 2 each in Finsbury, Bermondsey, Lambeth, Battersea, and Deptford.

The deaths from phthisis among persons belonging to London numbered 1,288 during the quarter, and were equal to an annual rate of 1.06 per 1,000; the rates in the corresponding quarter of the three preceding years were 1.41, 1.25, and 1.20 per 1,000, the average rate in the second quarter of the ten years of 1900-9 being 1.45 per 1,000. The death-rates from this disease ranged last quarter from 0.29 in Hampstead, 0.46 in Lewisham, 0.77 in Deptford, 0.78 in Kensington, and 0.80 in Hackney to 1.34 in the City of Westminster, 1.37 in Bethnal Green, 1.48 in Finsbury, 1.54 in Bermondsey, 1.84 in Southwark, 1.89 in Holborn, and 2.11 in the City of London.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 88 per 1,000 last quarter, against 101, 90, and 92 in the corresponding quarter of the three preceding years; the average rate in the second quarter of the ten preceding years was 105 per 1,000. The rates of infant mortality last quarter ranged from 53 in Hampstead, 62 in Lambeth, 67 in Wandsworth, 77 in the City of London, and 78 in Battersea and in Lewisham to 104 in St. Pancras and in Greenwich, 116 in Fulham, and 120 in Shoreditch and in Bermondsey.

EPIDEMIC MORTALITY IN LONDON.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE accompanying diagram shows the prevalence of the principal epidemic diseases during the second quarter of the year; the fluctuations of each disease and its relative fatality compared with the average in the corresponding period of recent years can thus be readily seen.

Small-pox.—No death from this disease was registered in London last quarter; 3 small-pox patients were admitted into the Metropolitan Asylums Hospitals, and 1 remained under treatment at the end of the quarter.

Measles.—The fatal cases of measles, which had been 207, 136, and 251, in the three preceding quarters, further rose last quarter to 544, but were 131 below the corrected average number for the corresponding period of the five preceding years. Among the several metropolitan boroughs this disease was proportionally most fatal in Paddington, Shoreditch, Bethnal Green, Southwark, Bermondsey, Deptford, and Greenwich.

Scarlet Fever.—The deaths from scarlet fever, which had been 80, 86, and 73 in the three preceding quarters, further declined last quarter to 50, the corrected average being 130 in second quarter of the five preceding years. The greatest proportional mortality from this disease was recorded in Hammersmith, St. Pancras, the City of London, Bethnal Green, and Bermondsey. The Metropolitan Asylums Hospitals contained 1,358 scarlet fever patients at the end of June, against 2,717, 2,329, and 1,584 at the end of the three preceding quarters.

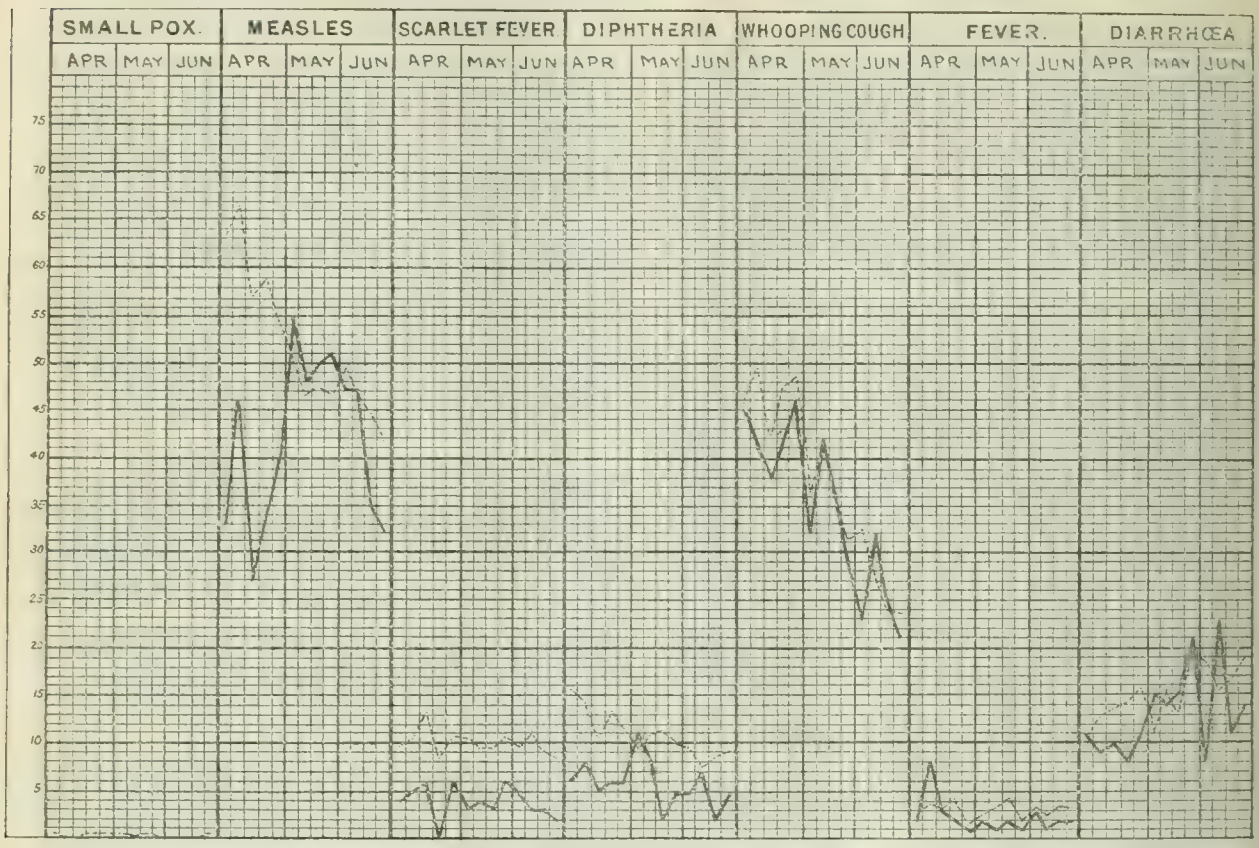
Diphtheria.—The fatal cases of diphtheria, which had been 113, 132, and 129 in the three preceding quarters, further declined to 76 last quarter, and were 65 fewer than the corrected average number. This disease was proportionally most fatal in Hammersmith, St. Pancras, Poplar, Deptford, Greenwich, and Lewisham. The number of diphtheria patients under treatment in the Metropolitan Asylums Hos-

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the Second Quarter of 1910.

BOROUGHS.	Estimated Population middle of 1910.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Infectious Diseases.	Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-cough.	Typhus.	Enteric Fever.	Ill-defined Pyrexia.	Diarrhœa.	Phthisis.	Deaths of Children Under 1 Year of Age to 1,000 Registered Births
COUNTY OF LONDON ...	4,872,702	30,257	14,094	24.9	11.6	1.08	1,304	—	542	50	72	446	—	28	1	165	1,288	88
Paddington	153,004	771	438	20.2	11.5	1.06	40	—	25	1	—	10	—	1	—	3	31	95
Kensington	184,635	796	501	17.3	10.9	0.53	24	—	9	—	4	9	—	—	—	2	36	99
Hammersmith ...	127,413	709	346	22.3	10.9	0.91	29	—	8	3	4	7	—	1	—	6	33	99
Fulham	181,282	1,085	450	24.0	10.0	1.13	51	—	25	3	1	17	—	—	—	5	44	116
Chelsea	75,457	346	220	18.4	11.7	0.59	11	—	—	—	—	8	—	—	—	3	17	98
City of Westminster	167,233	572	477	13.7	11.4	0.71	30	—	6	3	2	10	—	3	—	6	56	93
St. Marylebone ..	125,195	1,067	391	34.2	12.5	1.01	32	—	11	—	2	11	—	1	—	5	37	48
Hampstead	95,729	341	185	14.3	7.8	0.33	8	—	—	1	—	2	—	1	—	4	7	53
St. Pancras	237,792	1,415	799	23.9	13.5	1.66	99	—	31	5	6	49	—	—	—	8	74	104
Islington	353,356	2,034	973	23.1	11.0	0.75	67	—	8	1	6	40	—	3	—	9	107	79
Stoke Newington ...	54,838	249	137	18.2	10.0	0.37	5	—	2	—	1	—	—	—	—	2	14	88
Hackney	239,979	1,429	635	23.9	10.6	1.13	67	—	34	1	1	21	—	1	—	9	48	81
Holborn	53,142	379	194	28.6	14.6	0.84	11	—	3	—	1	4	—	1	—	2	25	82
Finsbury	94,578	870	386	36.9	16.4	1.77	42	—	14	1	2	16	—	2	—	7	35	101
City of London ...	17,132	65	65	15.5	15.2	0.93	4	—	—	1	—	1	—	—	—	2	9	77
Shoreditch	114,387	891	421	31.2	14.8	1.83	52	—	25	1	2	18	—	—	—	6	37	120
Bethnal Green ..	131,579	1,030	432	31.4	13.2	1.39	46	—	25	5	3	7	—	—	—	6	45	100
Stepney	314,379	2,449	944	31.2	12.0	1.12	88	—	30	3	7	28	—	1	—	19	86	90
Poplar	172,432	1,277	570	29.7	13.3	1.21	52	—	15	—	5	26	—	1	—	5	45	92
Southwark	211,832	1,476	754	27.9	14.3	1.94	102	—	65	3	1	22	—	1	—	10	97	102
Bermondsey	127,238	980	531	30.9	16.7	1.89	60	—	30	4	3	13	—	2	—	8	49	120
Lambeth	327,074	2,212	895	27.1	11.0	0.75	62	—	32	2	2	17	—	2	—	7	84	62
Battersea	188,222	1,102	475	23.5	10.1	1.04	49	—	22	1	2	20	—	2	—	2	43	78
Wandsworth	305,838	1,902	726	24.9	9.5	0.64	50	—	17	1	1	22	—	1	—	8	67	67
Camberwell	286,058	1,694	773	23.8	10.9	1.16	83	—	35	3	4	29	—	1	—	11	63	79
Deptford	119,642	801	351	26.9	11.8	1.37	41	—	24	—	4	8	—	2	—	—	23	97
Greenwich	112,935	655	333	23.3	11.8	1.61	45	—	29	1	3	11	—	1	—	7	19	78
Lewisham	164,899	888	362	21.6	8.8	0.71	29	—	7	2	4	9	—	—	1	—	34	79
Woolwich	135,422	772	330	22.9	9.8	0.75	25	—	10	2	1	11	—	—	—	—	—	—

* No correction can be made for births in lying-in institutions; the boroughs principally affected are marked thus (*).

DEATHS FROM EPIDEMIC DISEASES IN LONDON DURING THE SECOND QUARTER OF 1910.



NOTE.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the five preceding years, 1905-9.

pitals, which had been 901, 904, and 852 at the end of the three preceding quarters, had further declined to 673 at the end of last quarter.

Whooping-cough.—The deaths from whooping-cough, which had been 228, 241, and 596 in the three preceding quarters, declined again to 452 last quarter, and were 35 below the corrected average for the second quarter of the five preceding years. The highest death-rates from this disease last quarter were recorded in St. Pancras, Islington, Finsbury, Shoreditch, and Poplar.

"*Fever.*"—Under this heading are included deaths from typhus, from enteric fever, and from ill-defined pyrexia The deaths referred to these different forms of "fever," which had been 28, 39 and 38 in the three preceding quarters, declined to 30 last quarter, and were 10 below the corrected average One death was attributed to ill-defined pyrexia, but not any to typhus; of the 29 deaths from enteric fever, 3 belonged to the City of Westminster, 3 to Islington, and 2 each to Finsbury, Bermondsey, Lambeth, Battersea, and Deptford. There were 46 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last quarter, against 75, 62, and 84 at the end of the three preceding quarters; new cases were admitted during the quarter, against 132, 120, and 145 in the three preceding quarters.

Diarrhœa.—The 170 deaths from diarrhœa in London last quarter were 26 fewer than the corrected average number. This disease was proportionally most fatal in Hammersmith, Finsbury, the City of London, Shoreditch, Stepney, Southwark, and Bermondsey.

In conclusion, it may be stated that the aggregate mortality in London last quarter from these principal epidemic diseases was nearly 21 per cent. below the average. The lowest death-rates from these diseases were recorded in Kensington, Chelsea, Hampstead, Stoke Newington, and Wandsworth; and the highest rates in St. Pancras, Finsbury, Shoreditch, Southwark, Bermondsey, and Greenwich.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON A. J. PICKTHORN has been placed on the retired list, at his own request, July 25th. He was appointed Surgeon, February 18th, 1886, and became Fleet Surgeon, February 18th, 1902.

Staff Surgeon N. H. MUMMERY has been allowed to withdraw from the service with a gratuity, July 20th. His first appointment bore date February 8th, 1902; that of Staff Surgeon, February 8th, 1910.

The following appointments have been made at the Admiralty: Fleet Surgeon C. S. FACEY, M.B., to the *Vengeance*, temporarily, July 19th; Fleet Surgeon E. H. MEADEN to the *Hecla*, August 9th; Fleet Surgeon R. D. JAMESON and Surgeon J. HADWEN, M.B., to the *Cornwallis*, on recommissioning, August 9th; Fleet Surgeon J. J. WALSH, M.B., to Sheerness Dockyard and the Royal Naval Barracks, July 25th; Surgeon H. A. BROWNING to the *Vivid*, July 25th; Fleet Surgeon J. MOWAT, M.B., to the *President*, additional, for temporary service at the Royal Victoria Yard, Deptford, from August 2nd to 12th inclusive.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS

LIEUTENANT-COLONEL B. T. MCCREERY, M.B., Half-pay List, retires on retired pay, July 23rd. He was appointed Surgeon, March 6th, 1880; Surgeon-Major, March 6th, 1892; and Lieutenant-Colonel, February 5th, 1901. He was placed temporarily on the Half-pay List on account of ill health, March 6th, 1910.

The undermentioned Lieutenants are confirmed in that rank: W. H. O'RIORDAN, C. T. V. BENSON, W. P. MCARTHUR, E. M. PARSONS-SMITH, L. C. HAYES, M.B., JOHN GILMOUR, M.B., CAMPBELL ROBB, M.B., E. T. GAUNT, M.B.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL W. S. P. RICKETTS, M.B., Bombay, is permitted to retire from the service from June 10th. He was appointed Surgeon, March 30th, 1889, and made Lieutenant-Colonel, March 30th, 1909. He served during the operations in Somaliland in 1902, receiving a medal with clasp.

Colonel R. W. S. LYONS, M.D., Principal Medical Officer, Kohat Brigade, is granted ninety days' accumulated privilege leave in India, from July 18th.

Colonel W. A. QUAYLE, M.D., Madras, has been appointed Principal Medical Officer, Abbottabad and Sialkot Brigades, vice Colonel T. J. R. LUCAS, C.B., M.B., transferred to the First (Peshawur) Division.

Colonel G. W. P. DENNYS, Bengal, has been appointed Principal Medical Officer, Aden Brigade, vice Colonel W. A. QUAYLE, M.D., transferred.

Major G. TATE, M.B., is antedated from January 28th, 1910, to July 28th, 1909.

Lieutenant G. G. JOLLY, M.B., is appointed Specialist in Electrical Science, Fourth (Quetta) Division, from May 18th.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

ALEXANDER C. COURT, M.B., to be Lieutenant (on probation), June 17th.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

First East Lancashire Field Ambulance.—The undermentioned officers are borne as supernumerary whilst serving with No. 18 Field Ambulance, Royal Army Medical Corps, Special Reserve, dated March 7th: Lieutenant-Colonel J. B. MANN, Major W. B. PRITCHARD, Captain CHARLES ROBERTS, Captain H. G. SMEETH.

Second East Lancashire Field Ambulance.—The undermentioned officers are borne as supernumerary whilst serving with No. 18 Field Ambulance, Royal Army Medical Corps, Special Reserve, dated March 7th: Major F. D. WOOLLEY, Captain GEORGE ASHTON, M.D., Lieutenant THOMAS CARNWATH, M.D. CHARLES H. S. REDMOND to be Lieutenant, May 1st.

Third East Lancashire Field Ambulance.—The undermentioned officer is borne as supernumerary whilst serving with No. 18 Field Ambulance, Royal Army Medical Corps, Special Reserve, dated March 7th: Lieutenant W. H. P. HEY.

Attached to Units other than Medical Units.—Lieutenant A. E. HODDER, M.B., is borne as supernumerary whilst serving with No. 18 Field Ambulance, Royal Army Medical Corps, Special Reserve, dated March 7th.

CHANGES OF STATIONS.

THE following changes of stations amongst the officers of the Army Medical Service have been officially reported to have taken place during June, 1910:

	FROM	TO
Lieut.-Col. J. M. Irwin, M.B.	War Office	Woolwich.
,, R. H. Hall, M.D.	Colchester	Mill Hill.
,, J. H. Daly	Dalhousie	Tipperary.
,, H. H. Brown, M.B.	Nowshera	Murree.
,, D. M. Saunders, M.D.	Cork	Ballincollig.
,, H. W. Austin	Aldershot	Deepcut.
Major F. Smith, D.S.O.	Rawal Pindi	Murree.
,, C. W. H. Whitestone, M.B.	Peshawar	Cherat
,, H. J. M. Buist, D.S.O., M.B.	Pirbright	South Africa.
,, F. J. Wade-Brown	Tipperary	Cork.
,, E. C. Anderson, D.S.O.	Rawal Pindi	Kuldana.
,, L. P. More, M.B.	,,	Murree.
,, R. J. Blackham	Peshawar	Cherat.
,, H. B. G. Walton	York	Whitley Bay.
Captain J. G. Gill	Peshawar	Cherat.
,, J. W. H. Houghton, M.B.	London	Aldershot.
,, F. J. Brakenridge	,,	Dover.
,, A. M. MacLaughlin, M.B.	London District	Pirbright.
,, C. R. Evans	Strensall	Lichfield.
,, E. G. Ford, M.B.	Dehra Dun	Rawal Pindi.
,, S. B. Smith, M.D.	Dublin	Ticknock Cmp.
,, P. G. Hyde, M.B.	,,	Kilbride.
,, H. T. Stack, M.B.	Belfast	Finner Camp.
,, D. P. Watson, M.B.	Lancaster	Chapel Bay.
,, H. H. J. Fawcett	Cosham	Mudeford Camp.
,, P. J. Hanafin	Gosport	Reading.
,, W. MacD. MacDowall	Devonport	Willsworthy Camp.
,, J. H. Douglass, M.D.	Dublin	Maryborough Heath Camp.
,, A. L. Otway, M.B.	Kilbride	Dublin.
,, C. H. Turner	Rawal Pindi	Murree.
,, E. C. Whitehead, M.B.	Ballincollig	Youghal.
,, G. E. Cathcart	Rawal Pindi	Rhayader.
,, H. Harding, M.B.	Cosham	Churn Camp.
,, J. A. Turnbull	Piershill	Edinburgh.
,, D. P. Johnstone	Preston	Brackenbir Moor.
,, F. J. Garland, M.B.	Chester	Conway.
,, H. T. Wilson	Rawal Pindi	Barian.
,, H. C. Winckworth	Queenstown	Limerick.
,, A. W. Gater	Cliffden	Murree.
,, M. B. H. Ritchie, M.B.	Rawal Pindi	,,
,, H. Stewart, M.B.	Ferozepore	Upper Topa.
,, R. E. U. Newman, M.B.	Rawal Pindi	Kuldana
,, P. Sampson	Jhansi	Rawal Pindi
,, D. De C. O'Grady	Rawal Pindi	Barian.
,, A. C. Amy, M.B.	Dehra Dun	Ranikhet.
,, C. W. Bowle	Dalhousie	Ferozepore.
,, A. H Jacob	Rawal Pindi	Gharial.
Lieutenant J. E. M. Boyd	Ferozepore	Dalhousie.
,, M. O. Wilson, M.B.	Quetta	Bareilly.
,, J. du P. Langrishe, M.B.	Mhow	Poona.
,, A. C. Elliott, M.B.	Attock	Kalabagh.
,, J. B. Hanafin, F.R.C.S.I.	Rawal Pindi	Sialkot.
,, J. A. Renshaw	Peshawar	Cherat.
,, B. A. Odlum	Perham Down Camp	Bulford Camp.
,, F. B. Dalgliesh	Mhow	Indore.
,, A. L. Foster	Rawal Pindi	Kyra Gali.
,, E. V. Vaughan, M.B.	Fermoy	Tipperary.
,, T. B. Nicholls, M.B.	Tidworth	Parkhouse Camp.
,, F. H. Somers-Gardner, M.B.	Cosham	Rowlands Castle.
,, G. S. Parkinson	Athlone	Dunree Camp.
,, S. W. Kyle, M.B.	Belfast	Mosney Camp.
,, A. T. J. McCreery, M.B.	Netley	Rolleston Cmp.
,, R. C. Priest, M.B.	Bury St. Edmunds	Colchester.
,, A. D. Stirling, M.B.	Edinburgh	Tinto Camp.
,, J. R. Yourell, M.B.	Belfast	Athlone.
,, R. M. Davies, M.B.	Gravesend	Landguard Frt.

Lieutenant-Colonel S. E. Duncan, retired pay, has been placed in medical charge of troops at Shrewsbury.

Hospitals and Asylums.

THE CITY OF LONDON MENTAL HOSPITAL.

A NURSES' home for the City of London Mental Hospital at Dartford, erected in the grounds at a little distance from the ward blocks, was opened recently by the Lord Mayor. The Lord Mayor was received on his arrival by Dr. R. H. Steen, the Medical Superintendent of the hospital. Among those present were Sir James Crichton-Browne, Dr. F. W. Mott, F.R.S., Dr. F. Needham, Dr. David Nicolson, C.B., and Sir James Moody. The new building provides quarters for the assistant matron, and a separate bedroom for each of the thirty-eight nurses to be housed therein, in addition to a general sitting-room and library; their meals will be taken, as heretofore, in the main building. The rooms, disposed on three floors, are all well furnished, and the whole building is attractive, and should go a long way towards keeping the minds of the nurses fresh and their bodies vigorous by enabling them to forget for a time the nature of their responsible and very trying duties. To secure and maintain a thoroughly satisfactory staff—a point of great importance in mental work—seems to be found at this asylum a comparatively easy task. The rates of pay are not higher than usual, but the City authorities enjoy an excellent reputation for their general treatment of their employees, and this counts for much. The asylum, it may be noted, dates back to 1866, but most of the present buildings were erected only some twelve years ago. The grounds cover 33 acres, some hundred other acres being used as a farm on which find employment many of the inmates. The latter number between 500 and 600, about half being admitted nominally as private patients at a uniform charge of a guinea a week.

MIDDLESBROUGH BOROUGH ASYLUM.

THE annual report for the year 1909 of Dr. John W. Geddes, the Medical Superintendent, shows that on January 1st, 1909, there were 425 patients in the asylum, of whom 246 were chargeable to the borough, and that on the last day of the year there were 427 patients in residence, of whom 271 were Middlesbrough cases. That is, although the total asylum population only increased by 2, the Middlesbrough cases increased by 25. The proportion of certified insane to population in the borough, however, is not high, being for 1909 26 per 10,000, as compared with 36 per 10,000 for England and Wales. During the year 112 were admitted, of whom 80 were Middlesbrough cases, as compared with 68 for the previous year. Of the total admissions, 102 were direct admissions and 10 transfers. Of the direct admissions, in 47 the attacks were first attacks within three, and in 15 more within twelve months of admission; in 19 not-first attacks within twelve months; in 12 the attacks were of more than twelve months' duration, and also there were 9 congenital cases. As to the forms of mental disorder, the admissions were classified into: Mania, recent 28, chronic 5; melancholia, recent 15, chronic 1; senile and secondary dementia, 9; general paralysis, 11; insanity with epilepsy, 6; less common forms, 4; and congenital or infantile defect, 9. Among the various etiological factors alcohol was assigned in 21, syphilis in 4, tuberculosis in 5, and puerperal sepsis in 1, critical periods in 16, nervous diseases in 12, physiological errors in 15, bodily trauma in 10, and mental stress in 19. An insane heredity was ascertained in 11, an alcoholic heredity in 3, and of marked eccentricity in 4. During the year 33 were discharged as recovered, giving a recovery-rate on the direct admissions and also of the recoveries in the direct admissions on the direct admissions of 32.35 per cent. Also 1 was discharged as relieved, and 21 as not improved. During the year 55 died, giving a death-rate on the average numbers resident of 12.97 per cent. The deaths were due in 10 to nervous diseases, of whom 9 were cases of general paralysis; in 10 to diseases of the heart and blood vessels; in 5 to respiratory diseases; in 1 to perforation of the intestines by a foreign body; in 5 to chronic nephritis, and in the remainder to general diseases, including 9 deaths from lobar pneumonia, and 9 from tuberculous diseases. The general health was good throughout the year, and, with the exception of 1 case of enteric fever, no disease of an infective nature occurred.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM GENERAL HOSPITAL.—(1) Two House-Physicians. Salary, £50 per annum. (2) Two Assistant House-Surgeons. Salary at the rate of £40 per annum. (3) Resident Pathologist. Salary, £50 per annum.

BIRMINGHAM: QUEEN'S HOSPITAL.—House-Surgeon. Salary at the rate of £50 per annum.

BOURNEMOUTH: ROYAL NATIONAL SANATORIUM.—Resident Medical Officer. Salary, £10 per month.

BRADFORD CHILDREN'S HOSPITAL. — House-Surgeon (male). Salary, £100 per annum.

BRADFORD UNION SANATORIUM.—Assistant Resident Medical Officer for Phthisis Sanatorium. Salary, £130 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Two Assistant House-Surgeons. Salary, £60 and £50 per annum respectively.

BRISTOL ROYAL INFIRMARY.—Honorary Medical Officer.

CAMBRIDGESHIRE, ETC., ASYLUM, Fulbourn.—Second Assistant Medical Officer. Salary, £120 per annum, rising to £150 per annum.

CANTERBURY BOROUGH ASYLUM, Canterbury. — Assistant Medical Officer (male). Salary to commence, £140 per annum.

CARDIFF INFIRMARY.—House-Surgeon for Special Departments. Honorarium of £30 on completion of six months' service.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £60 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum.

DORCHESTER COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £140 per annum.

DOVER: ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum.

GLOUCESTERSHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary, £250 per annum, rising to £300.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

HULL: ROYAL INFIRMARY.—Two Casualty House-Surgeons. Salary at the rate of £60 per annum for six months, and £80 per annum for twelve.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, New Cavendish Street, W.—Assistant Clinical Pathologist.

LEEDS PUBLIC DISPENSARY.—Honorary Surgeon.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

MILE END OLD TOWN (HAMLET OF).—Senior Assistant Medical Officer. Salary, £150 per annum, rising to £170. Junior Assistant Medical Officer. Salary, £120 per annum, rising to £145.

NEWCASTLE-UPON-TYNE UNION.—Second Assistant Resident Medical Officer (female) for the Workhouse. Salary at the rate of £100 per annum, rising to £130.

NOTTINGHAM: GENERAL HOSPITAL.—Honorary Assistant Physician.

OLDHAM INFIRMARY.—Three House-Surgeons. Salaries at the rate of £120, £100, and £80 per annum.

OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Junior House-Surgeon. Salary at the rate of £30 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150, and £5 annually in lieu of stimulants.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Clinical Assistants.

ROYAL NATIONAL MISSION TO DEEP-SEA FISHERMEN.—Medical Officer for Hospital Steamer. Salary, £4 4s. per week.

ST. PETER'S HOSPITAL, Henrietta Street, W.C.—Two Clinical Assistants for Out-patient Department.

SALFORD UNION INFIRMARY, Hope.—Medical Superintendent, non-resident. Salary, £350 per annum, rising to £500.

SHEFFILD ROYAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician. Salary, £50 per annum each.

SUNDERLAND INFIRMARY.—Two Male House-Surgeons. Salary, £80 per annum each.

THROAT HOSPITAL, Golden Square, W.—Resident House-Surgeon. Salary, £75 per annum.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer. Salary, £100 per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—Junior House-Surgeon. Salary at the rate of £75 per annum.

WINCHESTER: ROYAL HAMPSHIRE HOSPITAL.—House-Physician (male).

WORCESTER GENERAL INFIRMARY.—House-Physician. Salary, £100 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces vacancies at Alyth, counties Forfar and Perth, and at Upton, co. Worcester.

APPOINTMENTS.

ALEXANDER, W. G., M.B., C.M.Edin., District Medical Officer of the Evesham Union.

AWBURN, G. J., M.B., C.M.Edin., Medical Officer of Health of the Mottram-in-Longdendale Urban District, and Certifying Factory Surgeon for the Mottram and Glossop District, counties Chester and Derby.

BELL, J. A., M.R.C.S., L.R.C.P., Resident Medical Officer of the Camberwell Parish Workhouse.

CAMERON, John, M.D., D.Sc., Examiner in Anatomy at the University of St. Andrews

CAMPBELL, A. J., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Ross District, co. Hereford.

COLLINS, R. E., M.B., Ch.B.Edin., First Assistant Medical Officer of the St. Marylebone Parish Infirmary.

CROWE, J. T., L.S.A.Lond., L.M.S.S.A.Lond., Senior Resident Medical Officer to the Royal National Hospital for Consumption for Ireland, Newcastle, co. Wicklow.

GRAY, M. D., L.R.C.P.and S.Irel., Certifying Factory Surgeon for the Drumlish District, co. Longford.

HAY, J. W., M.B., District Medical Officer of the Ely Union.

HODGSON, Algeon Sugden, L.D.S., R.C.S.Eng., Honorary Dental Surgeon to the Royal Halifax Infirmary.

HUMPHRYS, C. B., L.R.C.P. and S.Edin., Certifying Factory Surgeon for the Clevedon District.

IRVING, J., M.B., C.M.Glasg., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 12.

JONES, G. D. E., M.D.Durh., F.R.C.S.Eng., District Medical Officer of the Cardigan Union.

LEAKEY, C. M., L.S.A., Medical Officer of the Caistor Union Workhouse.

MCEWAN, Hugh A., M.B., Ch.B.Glasg., D.P.H.Camb., Medical Officer of Health for the County of Fife, vice Dr. T. F. Dewar.

MANN, David, M.B., Ch.B.Edin., F.R.C.S.Edin., Honorary Anaesthetist to the Wolverhampton and Staffordshire General Hospital.

MARTIN, G. H., M.B., B.Ch., District Medical Officer of the Abergavenny Union.

MORTIMER, W. G., M.B., B.S.Lond., District Medical Officer of the South Molton Union.

MURRAY, Miss J. R., M.B., Resident Assistant Medical Officer of the Birkenhead Union Workhouse.

NICHOLSON, Oliphant, M.D.Aberd., F.R.C.P.Edin., Examiner in Midwifery in the University of Aberdeen.

O'HALLORAN, J. A., M.B., B.Ch.R.U.I., Certifying Factory Surgeon for the Killashee District, co. Longford.

PARAMORE, R. H., M.D.Lond., F.R.C.S.Eng., Pathologist and Registrar to the Hospital for Women, Soho Square W.

PLUMPTREE, C. M., M.R.C.S., L.R.C.P., Resident Assistant Medical Officer of the Camberwell Parish Infirmary.

POPPLE, T. M., M.B., Ch.B.Vict., Assistant Medical Officer of the Manchester Township Workhouse.

PRICE, Frederick W., M.D., M.R.C.P., Additional Examiner in Medicine and Clinical Medicine in the University of St. Andrews.

REVIE, Dugald, M.B., C.M., Physician-Superintendent, Strathmore Hospital, Blairgowrie.

STRANGE, E. W., M.D., Honorary Anaesthetist to the Wolverhampton and Staffordshire General Hospital.

WALFORD, H. R. S., M.R.C.S., L.R.C.P., Third Medical Officer of the Surrey County Asylum, Brookwood.

WALSHE, F. M. R., B.Sc., M.B., B.S., House-Physician to University College Hospital.

WHARTON, John, M.A., M.D.Camb., Visiting Ophthalmic Surgeon to the Chorlton Union Hospitals, Manchester.

WILBERFORCE-SMITH, D., M.B., B.S., Assistant Registrar to the Samaritan Free Hospital, London.

WILLIAMS, R. M., M.B., M.S., Superintending School Medical Officer for the County of Anglesey.

WOODSEND, R. N., M.R.C.S., House-Surgeon to University College Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ORMEROD.—On July 26th, at Beauchamp Lodge, Wimborne, the wife of Ernest W. Ormerod, M.D.Camb., of a daughter.

TAYLER.—On July 21st, at Clematis Cottage, Trowbridge, Wilts, the wife of F. E. Tayler, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

BALME—CARR.—On July 8th, at Holy Trinity Cathedral, Shanghai, by the Rev. C. J. F. Symons, B.A., Harold Balme, F.R.C.S.Eng., second son of Paul Balme, Esq., Highbury, London, to Hilda Elizabeth, second daughter of the late T. W. Carr, Esq., Carlisle.

BOYD—FOX.—On July 16th, at St. Mary's, Wimbledon, by the Right Rev. Bishop Taylor-Smith, C.V.O., Sidney Boyd, M.S., F.R.C.S., of 10, Chandos Street, Cavendish Square, W., to Violet Evangeline, daughter of Mr. and Mrs. Henry Fox, of Moorfoot, Putney.

CHOLMELEY—TURNER.—On July 19th, at St. Luke's, Weaste, by the Rev. J. Butler Cholmeley, Vicar of St. Mark's, Hull (brother of the bridegroom), assisted by the Rev. H. D. Lockett, Vicar of Weaste, William Frederick Cholmeley, F.R.C.S., son of the late Rev. John Cholmeley, Rector of Carlton Rode, Norfolk, to Caroline, daughter of the late William Henry Turner, of Oswestry.

TANGYE—OAKDEN.—On July 27th, at Keresley Parish Church, near Coventry, by the Rev. W. C. Kerr, B.A., Vicar, assisted by the Rev. H. H. Devenish, M.A., Claude Edward Tangye, M.D., son of the late Edward Tangye and of Mrs. Tangye, of the Manor House, Knowle, to Eva Bertha Oakden, daughter of the late Mr. and Mrs. Oakden, of Keresley.

DEATHS.

BRETON.—On July 16th, in a nursing home in Guildford, Surrey, Moyle Breton, R.N., eldest son of the late John Breton, of Boughton Alaph, Kent, and Sayerland, Hailsham, Sussex.

GRANT.—On July 14th, at Ruthven, Ballindalloch, Banffshire, Robert Grant, C.B., M.B., M.A., Inspector-General of Hospitals and Fleets, R.N., retired, a Deputy Lieutenant for Banffshire, aged 68.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. W. B. SAUNDERS COMPANY will publish shortly a *Handbook of Practical Treatment* in three volumes, by 77 contributors, edited by John H. Musser, M.D., Professor of Clinical Medicine, University of Pennsylvania, and A. O. J. Kelly, M.D., Assistant Professor of Medicine, University of Pennsylvania. The aim of this work is said to be to furnish the general practitioner with a serviceable guide for constant use in his daily practice. Each chapter constitutes a complete and original monograph by an authority whose name is specially associated with the subject to which the chapter is devoted.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

EDINBURGH POST-GRADUATE COURSE.—The following classes meet daily, commencing on Monday, August 1st: 9 a.m., Examination of the Heart; 10 a.m., Applied Anatomy of the Thoracic and Abdominal Viscera; 11 a.m., Clinics upon Diseases of the Heart; 12 a.m., Clinics upon Diseases of the Lungs; 2.30 p.m., Clinical Haematology; 5 p.m., Examination of the Urine and Digestive Products; 6 p.m., Examination of the Nervous System.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Tuesday and Thursday, 5 p.m., Deformities.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following are the arrangements for next week: Daily arrangements—Medical Clinics, 2 p.m.; Operations, 2 p.m.; X Rays, 2 p.m. Monday, Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Eye, 10 a.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 6TH, 1910.

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SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

LONDON, 1910.

ADJOURNED ANNUAL GENERAL MEETING.

THURSDAY, JULY 28TH, 1910.

ADDRESS IN SURGERY.

THE Address in Surgery was delivered at the Imperial College of Science on Thursday, July 28th, at 12.30 p.m., by HARRY GILBERT BARLING, B.S., F.R.C.S., Professor of Surgery, University of Birmingham.

The PRESIDENT OF THE ASSOCIATION (Mr. Butlin) occupied the chair, and was supported by the President elect (Professor Saundby), Sir Victor Horsley, and others; there being a very large audience.

The PRESIDENT said it gave him great pleasure to introduce Professor Barling, the distinguished surgeon in Birmingham, Professor of Surgery to the University of Birmingham, and, so far as he himself was concerned, a very old and dear friend of his. (Applause.)

Professor BARLING then delivered his address, which was published in the BRITISH MEDICAL JOURNAL of July 30th, p. 252, at the end of which there was great applause.

Professor HOWARD MARSH (Cambridge) said he had great pleasure in proposing a hearty vote of thanks to Mr. Barling, not only on grounds of personal friendship, but also on the ground of the very remarkable address they had just listened to, which had held the audience spellbound. He was sure it was the wish of those who had been fortunate enough to hear the splendid address which he had delivered that they should convey to Mr. Barling their most respectful thanks and their deepest gratitude for his eloquent argument, and they must all feel that what he had stated to them that day was good news for the whole world. (Applause.)

Professor MURPHY (Chicago) said it was to him a particular pleasure and a duty to second the vote of thanks. He had never before listened to such a judicious analysis of the cancer problem, such a consideration of its history, of its clinical course, of the patient's individual resistance, of the results of surgical achievements, weighed in words so beautiful, so eloquent, and so impressive as to carry with them the soul of a man who had devoted his attention and life to the subject, and particularly his desire that the public should be instructed in the cancer problem before the best results of surgical treatment could be obtained. (Loud applause.)

The PRESIDENT said that, before putting the motion to the meeting, he would like to point out that Dr. Murphy was the President of the American Medical Association, which was founded on the lines of the British Medical Association. He (the speaker) thought that their Association was the largest in the world, but he was quite shocked when he was told that the American association had 30,000 members, as against 22,000 of the British Medical Association.

The resolution was carried with acclamation.

Mr. BARLING, in reply, wished to express his most cordial thanks for the way in which his rather long and technical address had been listened to. The thanks that had been given him were more than an ample reward for the trouble he had taken in the matter, and it was especially a great pleasure to him that the vote of thanks had been moved by his old friend Professor Howard Marsh.

ANNUAL DINNER.

The Annual Dinner of the Association was held at the Connaught Rooms, Great Queen Street, London, on July 28th, the President (Henry T. Butlin, F.R.C.S., D.C.L., LL.D.) being in the chair. Nearly 800 were present, and among those were: His Excellency the Earl of Aberdeen (Lord-Lieutenant of Ireland), the Right Hon. Lord Ilkeston, P.C.; Lord Justice Fletcher Moulton, the Bishop of London, Sir Victor Horsley, Mr. Andrew Clark, K.H.S.; Dr. J. A. Macdonald. Dr. Edwin Rayner, Sir Thomas Crosby, Professor Lucas-Championnière; the Principal Medical Officer, Local Government Board; Dr. Ford Anderson, Mr. H. A. Ballance, Professor Saundby, Mr. Guy Elliston, and Mr. Smith Whitaker.

The Dinner was preceded by Grace, asked by the Bishop of London.

The King.

The toast of "His Majesty the King, Patron of the Association," was proposed by the President of the Association, and also that of "The Queen, Queen Alexandra, the Prince of Wales, and the other members of the Royal Family."

The British Medical Association.

His Excellency the Earl of Aberdeen, proposing the toast of "The British Medical Association," said: The toast which has been entrusted to me is that of the British Medical Association. What an opportunity and what possibilities are presented by that sentiment! I suppose the speaker to this toast could not be accused of travelling beyond his subject if he were to review the history of the healing art during the thousands of years in which it has been practised. But even if he endeavoured to keep more closely to his text and confine himself to an examination or appreciation of the career and the work of the British Medical Association, what a theme that would present to one who might have the capacity for dealing with it! If by these remarks, Mr. President, I have created any feeling of uneasiness, alarm, or misgiving, let me hasten to reassure this company. I have no grim desire to tax the forbearance of this great assembly. I value too much the privilege and the honour of taking part in your proceedings to run the risk of having a black mark put against me, and people saying, "Don't ask him to speak at your dinner! You don't know what you are in for!" Therefore I will endeavour to keep myself to one or two points. I think when a layman is invited to contemplate what this Association is and what it means, feelings will be evoked in his mind which might best be expressed, perhaps, first by a note of exclamation, and then immediately by a note of admiration—the note of exclamation evoked by the magnitude of the Association and of its operations, and the note of admiration by the method and the merit which attach to its work. As to magnitude, I understand your membership is now about 22,000; but more than numbers is the fact that it is so widespread and its ramifications go throughout many, many parts of the globe. However, I will not dwell upon the magnitude of the British Medical Association, but I will turn at once to the other aspect of the Association—what, with all respect, I venture to describe as the merit of its methods. Of course I use that word in its comprehensive sense—method in regard to the spirit and the principle by which it is inspired and directed. You have that sure sign of vitality and growth—the capacity for adaptation. Sometimes a society is spoken of with great respect, but without any great enthusiasm, perhaps because it is resting on its oars, and it is not keeping abreast of the times. Those, however, who have noticed anything about your Association, even from the external point of view, must be aware that from time to time you have adapted yourselves to circumstances and to occasions. If I am not mistaken, at a comparatively recent date you enlarged the representative character of your organization so as to make sure that all your members should have a voice, directly or indirectly, in the management of the affairs of the Association. I only mention that by way of a topical illustration of the representative character of your Association. Turning to practical results, the President, in his most fertile and striking inaugural address on Tuesday evening, brought out in forcible manner two facts or elements, among others—namely, to put it in summarized form, that the Association not only serves the profession but serves the public—as, for example, in that systematic and continued encouragement of research which, begun in a comparatively small way, has grown steadily as opportunity offered, until now, with scholarships and other means of encouragement, the Association is doing great work in furthering research in, at least, the scientific sense. There is no diminution, as time goes on, in the need of that kind of encouragement. On the contrary, I rather think that the awakening on the part of the public which is now going on, happily, to the full meaning and the immense importance of public health and of State medicine, involves a fresh call upon your Association for the help and the strength which you can give to the movements in those directions. The Address in Medicine given by Dr. Mitchell Bruce—I venture to think no one who heard that address is likely to forget it (Hear, hear)—contained many notable passages, and incidentally the remark that the State looks to the medical and surgical professions for the material on which to construct health legislation. That remark, of course, involves and implies a great deal, and I cannot help alluding to another incidental expression of Dr. Mitchell Bruce as to advancing the principles of medicine, which is only another instance of the work which goes on in your profession. You have always fresh realms to conquer. As to the assistance which the medical and surgical professions can give to the State in the matter of health legislation, I cannot help alluding to what I think is more or less a homely example which will appeal to you. We have all been annoyed by the smoke which is exuded from the rear of so many motor cars. I think the public of London is proverbially patient and long suffering, but I cannot help thinking, if the public knew that this nuisance is as unnecessary as it is intolerable, that they would not put up with it. Have you noticed that in the portions of the public parks in which motor cars are allowed that they do not emit this smoke? Why is that? It is because the park-keepers have authority to stop and turn out of the park any car so offending. But in the streets of London the offence is committed with impunity, because the police have not sufficient authority for dealing with it. There may be theoretical rules and regulations which they are supposed to put in force, but the fact is that the procedure is too cumbrous, and therefore it is that you may see at any point of crowded traffic—for instance, at the top of St. James's Street—police constables enveloped in the abominable vapour. They could hardly take a car's number because they are lost in the smoke. I can tell you on good authority that the constables have to be relieved at short hours because of the distressing effects upon them by this smoke. That is an intolerable infliction upon the public, and what I venture to hope is that your Association will, as you so often do in regard to other matters, encourage public opinion to demand legislation on the subject. That is only an example showing that if you make the public alive to the fact that their health is concerned, and that there is a remedy, they will be stimulated to do what is necessary to stir up the authorities. I venture now to allude to one other feature and aspect of your work or operations, namely, the custom of holding annual meetings in different parts of Great Britain and Ireland and the dominions beyond the seas. I have had the pleasure of being a guest at meetings not only in the United Kingdom, but at Montreal some years ago. The impressions derived last year at Belfast have been very marked upon myself and others. When you bring the public in contact with yourselves, people are surprised to find how much they can share in and contribute to

the value of your discussions. At first sight they say, "This will be very technical and we shall not be able to understand," but when they come to the meetings they do understand and they appreciate. This applies to your meeting in London. Poor old London must have a share in your meetings, and I am delighted that I am able to appear at your meeting here. As to the participation of the public, I could not help thinking of it at the Section of Radiography and Roentgen Rays, presided over by a gentleman who has done splendid service in that direction, including protection from injury from the rays, but whose retiring disposition has prevented his services from being so well known as they might be. At that Section Sir J. J. Thomson, a well-known professor of Cambridge, gave an address, and in the course of that address I observed that he held the attention, not only of the experts in the room, but of those who had no pretension to expert knowledge. He gave us a remarkable suggestion, or, at least, he suggested this fact: That by means of radiation from certain metals when exposed to the Roentgen rays the same curative effects were obtained as from the direct action of radium. He presented that thesis, and it was remarkable to see how thoroughly it was taken up by the audience. We do expect a great deal from you of the medical and surgical professions, and we are not disappointed, but even you, with all your skill, cannot go beyond human capabilities and prevision. I was reminded the other day of how calculation may be falsified, and it is somewhat of an illustration of what I am speaking. It happened that a physician, in the course of his practice in one of the wards of a hospital, had to treat a poor old Highlander, named Mackintosh. The physician saw that Mackintosh was evidently very far gone, and he thought it his duty to say, "My poor fellow, if you have any friends, you had better send for them." Said Mackintosh, "Has it come to that? I dinna ken there's any one I would send for, but there's just ane thing I'd like." "What is that?" said the doctor. "Just ane skirl o' the pipes," was the answer. "Yes, I think I can manage that," said the doctor. "I will do what I can to send a man to play the pipes." Accordingly he found a piper, and told him to play in the ward of the hospital, but not to make too much noise. The next morning, when the physician came to the hospital, he met one of the nurses in the ward, and said, "Good morning, nurse. When did Mackintosh pass away?" "Pass away!" said the nurse; "I have just taken him a breakfast of porridge and milk." "Porridge and milk!" exclaimed the doctor, "of all the extraordinary things I ever——" The nurse interrupted him tearfully. "There's something more extraordinary than that. All the other patients in the ward have died." Let me tell you another story relating to a subject as to which even your skill cannot be always effective. A sympathetic man was visiting a poor old friend in the workhouse, and in the course of conversation he said, "You have lived a very long time. What a lot you must have seen in your life!" "Yes," was the reply, "I've lived a great many years, and if my poor sister had lived till come next Tuesday she'd have been 83 years of age." "Oh," said the visitor, "when did you lose your sister?" She was still-born," was the reply. Gentlemen, if I have been too digressive, let me assure you it is not induced from a sense of being the spokesman on this notable occasion, and, in conclusion, let me congratulate the Association on the success which has evidently attended the meeting in London. I couple with the toast of the British Medical Association the name of the Chairman of Council, Dr. J. A. Macdonald. The mantle of a good man has fallen upon him, and I am sure he will wear it well. Gentlemen, I give you the toast, "Success to the British Medical Association." (Applause.)

Dr. J. A. Macdonald (Chairman of Council) said: I feel it a very great honour that I am permitted on such an occasion as this to respond to the toast of the British Medical Association. First of all, on behalf of the Association, I should like to tender our thanks to His Excellency the Earl of Aberdeen for the very felicitous and appreciative manner in which he has proposed this toast. We recognize him as a very distinguished member of our Association, and we feel very proud to call him so. He has expressed to you to-night what we consider, as well as he, our duty and our privilege, namely, to do our best on behalf of the health of the community. Such an Association as ours, spread over the earth from one end to the other, must have an enormous influence in bringing about a good condition of affairs so far as the health of the people is concerned. This occasion is one of which the Association has reason to be proud. We meet here in what I may call the capital of the world. It is the greatest city, at any rate, in the world, and I think it marks a distinct departure in the history of this Association, and I look upon it as a happy augury, that the highest corporation in the world has condescended to give us a welcome to the Capital of the Empire. A further distinct departure to be remarked is the presence of distinguished lady members of our Association. Quite a large number of them are present to-night. This Association is principally for the furtherance of science and for the relief of needy suffering humanity, but these occasions on which we meet for social gatherings are not to be despised. We meet in different parts of the Empire at one time and another, and we very often find that the success of the Association at these meetings is to a great extent due to the very distinguished men we have present. We have many here to-night, but we have here in our President one of the most distinguished men in the world of surgery. As the Earl of Aberdeen has expressed to you, for some time there has been a distinct departure on the part of the nation in looking after the health of its poorer members, and it is one of the greatest honours which the British Medical Association takes to itself that it is doing its best to assist the Government in carrying out its great schemes. With the power in our hands I look forward to the time when every member of the profession will be a member of this Association. I beg to thank the Earl of Aberdeen for the way in which he has proposed the toast, and the members for the way in which they have received it.

The Guests.

The Treasurer (Dr. Edwin Rayner), proposing the toast of "The Guests," said: I really do not know why this toast devolved on me, but it is a very pleasant duty and a very important toast. I shall speak to it very briefly because my function is to introduce the visitors, so that you may hear from them their views of the Association. First of all, I should like to say how pleased I am, and how pleased many of the members of the Association are, in meeting with the Right Honourable Earl who was so kind to us in Canada and at Belfast, and whose presence has graced our board this evening. I am quite sure that those of us who were in Canada and at Belfast will be delighted to see him here again, and we hope that every year he will be here if he can manage it, because he is one of those men who have a certain amount of respect and admiration for the Association. (Hear, hear.) I say that because we suffer much from all sorts of Governmental Acts requiring us to perform duties "free, gratis and for nothing," and for which we receive nothing. I think if we had a little more sympathy from the various Governments, one after another, we should feel greater pleasure in doing what we can for the community without so much, what I may call, grudging. We are always ready to do them, but we never get any thanks. However, perhaps I am digressing. We all know the visitors here by name, although we may not be personally acquainted with them, and our foreign guests have a reputation all over the world. Medicine is not confined to one part of the world. Medicine is cosmopolitan, and we are always glad to learn from whoever comes to us their views on debatable points, and I must say, with the exception of Lord Lister, more good has been done by the foreigners than by us. Lord Lister is a man who ought to be remembered as long as the world lasts, and if there is a man who deserves a monument,

he is the man. I have been told I am to ask two gentlemen to respond to this toast. One is a man known all over the country as a judge, and if he had not been a judge he would have been almost still better known as a scientist; and I venture to think when he divests himself of his judicial mind and puts on his scientific garb, though it is a great change to him, it is also an advantage to those persons who, fortunately or unfortunately, perhaps, have to occupy his time. With regard to the other gentleman, Mr. Austen Chamberlain, he is unfortunately prevented from coming. I have a certain amount of sympathy with him, because he and I are much in the same boat. He has been Chancellor of the Exchequer, and I am chancellor of the exchequer of the British Medical Association. With your permission, I would digress a little, for this reason—some of our friends are not well acquainted with the English language, and I should like to address them more or less in their own language: "Messieurs et chers confrères.—De la part de l'Association Britannique Médicale, je vous souhaite le bien-venu. Il y en a parmi vous des deux hémisphères, de presque tous les pays du monde civilisé et de plusieurs langues qui sont venus de pays lointains pour rendre honneur à l'Association Médicale Britannique, et pour nous instruire en nous rendant compte de vos travaux et de vos expériences. Je crains que dans beaucoup de cas vous n'ayez pas fait très bon voyage. Acceptez, Messieurs et chers confrères, je vous prie, nos remerciments et nos hommages, et quand vous serez de retour dans vos pays, souvenez-vous de temps en temps de votre visite et du plaisir, j'espère partagé, que vous avons tous éprouvé. Messieurs et chers confrères, à votre santé."

Lord Justice Fletcher Moulton, replying to the toast, said: I have been introduced to you as a lawyer, and I avail myself of my privilege, using a legal phrase, in returning thanks for this toast, of doing so in what we lawyers call a representative capacity—I return thanks for myself and all the other "outsiders" that you have honoured by your invitation. When a plaintiff is in a representative capacity the first rule of the court is to pay no attention to the insignificant person who is chosen to be plaintiff. The court only looks at the class which he represents, and he is bound to put aside native modesty and put forward all the claims of those whom he represents as forcibly as possible. The consequence is that I return thanks for this toast in no humble spirit at all, but with a sense of our great importance. You are a great profession, nowhere so perfectly represented as in this great Association, and personally I tremble before you as a society, and I tremble still more before certain individuals belonging to it. But, for all that, I intend to keep a high tone while I address you. A change has come over medicine in my lifetime. It is no longer a study of symptoms; it is a study of causes. As wave after wave of medical students got taught the new law, although they had to look at symptoms, they got impressed on their minds the idea of universality of causes, and they saw in each disease not only that which a possible fee-producing patient might suffer from, but they saw that which might affect a nation. Gentlemen, nobody can with impunity come under the influence of great ideas; they get hold of him, they make a slave of him, they are his master. And from and since the time that the medical profession grasped this idea of disease as being national you have wanted the help of us poor outsiders. A change has come over you as great as that which changed the hermit Peter into Peter the Hermit who preached the Crusades. We find you now members of a profession that would scout asking for a patient. We find you taking communities by their throats and forcing them to listen to you. If you allow yourselves thus to be dominated by great ideas you need outside aid. What are the two great ideas which, looking back on the history of the past fifty years, I say have mastered the imagination and conquered the will of the medical profession? The first is, you have seen around you national decay due to national disregard of health; the other is, you have learnt to what a fearful extent disease is due to the irrepressible vitality of minute organisms; and therefore you have seen that the business of your profession, over, above, and beyond the care of your individual patients, was the struggle to induce nations to adopt and obey those laws of health by which alone they can have nations of men, and you have learnt that all must join in a war of extermination of small animals—perhaps I am using too complimentary a word—the small vital particle to which almost all the misery of our lives is due. Looking at your work from this point of view, I feel very proud of the people I represent in this toast. I have next to me one who in his own person and that of his wife has done work that will never be forgotten in the campaign against tuberculosis in Ireland. I see at a little distance on the other side of me one who has worked in helping the poor cripple, and he is known all over the kingdom. You have called for that assistance and it has been granted you. I look upon those I represent as coming here strangers to your knowledge, wondering at your erudition; but still with a feeling of camaraderie which makes it extremely pleasant to be welcomed by you all. (Applause.) If the respect in which your profession is now held by the world is to grow in the future as it has in the past, it will be because more and more this splendid idea of fighting as nations against that which destroys life and, still worse, destroys health, will be the watchword of those who wish their country well. They must turn to you, for it is only through you and by your advice that they can work. In doing so they feel that they can assist you; and they can assist you not only in carrying out those great ideas and winning the victories which you win and routing the enemy, but they can assist you—and it is their highest aim to assist you—in moments which are not moments of triumph, but which are moments when you are groping through darkness to twilight and through twilight to light, moments when you are misunderstood, when your aims are supposed to be erratic and misconceived. They can give you their sympathy and support in those moments. (Applause.) Gentlemen, let me tell you, as one of the despised outsiders, that as I go through the world I feel more and more that the work which the medical profession has done in the last fifty years is becoming one of the prized domains of thought among all intelligent and well-disposed citizens; and I can assure you that you will find, if you boldly go on in the good faith, you will never lack the friends or support you want. Having thus proved, in the tone of insolent self-sufficiency, that we deserve to have our health drunk by you, let me relapse to the position of the poor plaintiff and say how very little worthy I feel to have been allowed, even with such an excuse, to address so great and so learned an assembly. I thank you all. (Loud and continued applause.)

Dr. Lucas-Championnière in further response, said: I usually much regret to respond to a toast—in England, at any rate—because I find it difficult, as I quite appreciate, owing to my lack of complete understanding of the English language; but to-day I am very grateful for the invitation to respond. I am grateful because it is a good opportunity to pay off to the British Medical Association an old debt of mine. Mr. President, in your admirable address you said many things of the British Medical Association with regard to your social progress, your scientific progress, your meetings, and your grants, but you said nothing of your foreign guests. (Laughter.) I regret that, because I think your Association, by means of your foreign guests, has been able to add largely to English science in all the world. Will you allow me to tell you a very short story? It was in 1875, and thirty five years in the life of a man are a long thing; but in the life of science they are a short thing. In that time a great change has occurred in surgery, and many hundreds of years had elapsed without that change, and that change is due to one of your own countrymen. I was at that time a guest of the British Medical Association at Edinburgh. I spent

a week with the British Medical Association and a month with the Professor. On going back I said and wrote what I had seen at the time, but I was no prophet in my own country. If our friends of that time were here to-day they would agree that very few people thought, or had an idea of, what modern surgery was to become. When I went back to France after being a guest of the British Medical Association, my book was read in France, and was objected to in France. After a long time it was translated into Russian, into Italian and Spanish, and even into English. It was translated into English by an American, Dr. Gerrish, who gave, I think, a good translation. I think I had given a good idea of what I had seen on the day I was a guest of your Association. As British science grows, your guests have to thank you, not only for your celebrated British hospitality, which is not always wise, but for the advance of science. Your guests go back to their own country taking with them not only a good remembrance of your hospitality, but a good remembrance of your British medical science. Let me say, on behalf of all your foreign guests, that I am most thankful to you for your great hospitality.

The President.

Sir Thomas Crosby, proposing the toast of "The President of the British Medical Association," said: At this late hour of the evening my speech will be short, much too short for the importance thereof. I am taking the place of the right hon. gentleman (Mr. Austen Chamberlain) who is prevented from coming by some temporary illness, but you will be glad to hear that it is a temporary illness and that he is under the care of a distinguished member of this Association, and we trust the right hon. gentleman will soon be able to resume the important duties which devolve upon him. The toast, gentlemen, is to the health of our newly-elected President. I lay emphasis on the health, because we all know full well that, if he has the health, we may look forward to a successful and prosperous year for the Association. If I possessed the oratorical powers of Demosthenes or Cicero, I could not say too much in favour of your selection for this important post. You have, I believe, for the first time in the history of this Association, a President who is also President of that distinguished body, the Royal College of Surgeons. (Cheers.) You made, and it will be proved to those who live the year out, an excellent selection in Mr. Butlin when you chose him to occupy the position of your President. All I have to say is that we wish him health, for lack of that is the only thing which will prevent him doing good work for the benefit of the Association. Without further words I give you the health of your newly-elected President, Mr. H. T. Butlin.

The toast was received with loud and continued applause, followed by the singing of "For he's a jolly good fellow," cheering, and further cheers for Mrs. Butlin.

Mr. Butlin, who stood on the chair to address those present, said: There are two kinds of presidents—there is a long president with a short tongue, and a short president with a long tongue, I am sorry to say. You have been unfortunate enough to choose the latter. He has tried to increase his stature, and his other attempt will be to shorten his tongue. He cannot allow this occasion to pass without speaking of the assistance he has received in every quarter in the organization of this great meeting. When I was asked a year ago whether I would undertake the post of President, I said I was not well, that I was not fit to do it, and that some more distinguished person had better be chosen; but I was told that the Association would like me to take the post, because it was thought that it might be of some use to them that I was acquainted with the ways of working of the Association. I was told also that the work of organization would be taken largely off my hands. Dr. Lauriston Shaw told me that there would be many organization committees, that strong men would be appointed chairmen, and first-class men would be on the committees, and they would do the work. They have done the work. I was asked at one of the first meetings to encourage them, but they never wanted any encouragement. They did what was wanted with such zeal, that I really had to restrain them. We have taken care, as far as we could, to appoint first-class people to the scientific Sections. We have not made any mistake in that, but we could not appoint everybody. I have been watching the work of the Sections with great attention this week, and it has been admirably performed. Further, we have had the help of the City of London. I am sorry that the Right Hon. the Lord Mayor is obliged to go, and the Sheriff with him. We have had excellent help from them and from our honorary member, the Earl of Aberdeen. Our assembly has been graced by the Bishop of London, by Lord Justice Fletcher Moulton, and by other very distinguished persons, so that I myself really have had as little as any one man could do with the success of this meeting. For myself I will only say this: I really have been received with such kindness this week, and so many compliments have been paid me, that I have woke up in the night once or twice and actually thought myself a distinguished person. But, more than that, I have had something better—I believe I have had the kindly feeling and regard of every member of the Association. It has touched me to the heart, and I am very glad that you have given me this one opportunity of expressing to you the kindly feelings which I feel towards you all from this somewhat undignified position; but it has enabled you, I do hope, to hear what I had to say, and I am sure you would not have heard it if I had stood on the floor. I have to thank Sir Thomas Crosby, not only for the kindly way in which he proposed my health, but because he was one of the chief persons who—I will not say persuaded, because they required no persuasion—put before the Lord Mayor and the Corporation of London the desirability of entertaining the British Medical Association. (Loud applause.)

The singing of the National Anthem brought the proceedings to a close.

THE MEDICAL MUSEUM.

A more detailed inspection of the Museum, of which a general description was given in our issue of last week, has increased our regret that the collection could not have remained on view for a longer time; for, indeed, after spending the week in its midst, we found there were still many specimens which could not receive the attention they deserved.

In the following account of the different sections, each of which was under the charge of an honorary curator specially interested in the subject, all that can be done is to touch on the general scope and the specimens which we were fortunate enough to see.

I.—Bacteriological Section. (*Honorary Curator*, Dr. Henderson-Smith.)

The main portion of this exhibit was devoted to illustrating the methods commonly used for the isolation and identification of typhoid bacilli, particularly from stools or urine. Thus a number of differential media were shown with typical examples of the growth on them of typhoid, *B. coli*, and mixed cultures, including MacConkey's medium, Drigalski-Conradi, various malachite and brilliant green media. The identification of colonies isolated was shown by illustrations of the fermentation reactions of a number of the more familiar organisms on various carbohydrates, by macroscopic and microscopic agglutination, by mobility, and finally by means of the complement deviation method. Some points regarding the morphology, etc., of the typhoid bacillus were illustrated by microscopic slides showing flagella, single-cell cultures by Burri's Indian-ink method, etc. The enormous numbers of typhoid bacilli which may be excreted by typhoid carriers were clearly shown by plates made direct from the stools of such cases, and also by one made direct from the urine of a urinary carrier, when 4 drops of urine were shown to contain about 300 typhoid bacilli.

As a pendant to the complement-deviation method, the technique of the Wassermann reaction for syphilis was shown, and Dr. H. R. Dean showed the method of titrating the extracts used in this reaction. The occurrence of "group reactions" in complement-deviation experiments was also shown by Dr. Dean for typhoid and the paratyphoid bacilli. Slides of spirochaetes, etc., were exhibited.

Dr. W. J. Penfold exhibited a series of plates and cultures showing the modifications in cultural reaction which typhoid and other bacilli may be made to assume by special methods of cultivation and continued training; for example, true typhoid, which has acquired the property of fermenting lactose. The influence of the oxygen tension on fermentation reaction was also shown by plates grown under different pressures of oxygen.

Mr. Chopping (Westminster Hospital) exhibited and gave a demonstration on a series of preparations of "sol-media." These are the media used in bacteriological work for the growth of bacteria, produced in a dry stable form, which is readily portable, very easily prepared for use by the simple addition of water, and suitable for use in the tropics or in small laboratories where only a limited amount of any medium is required at a time. This exhibit, which aroused much interest, speaks well for the class to which Mr. Chopping belongs, the lay assistants of scientific workers: we anticipate for them a much better recognized position in the laboratories of the near future than at present is granted them.

II.—Tuberculosis Section. (*Honorary Curator*, Dr. Petrie.)

This Section contained a series of specimens from the Lister Institute, illustrating the examination of milk for tubercle bacilli—an exhibit forming a more striking picture of the inefficiency of the milk supply of the County of London and other large centres than all the statistics and reports on the subject that have been put before the public in recent times. The coarse filth and animal contaminations were shown side by side with the guinea-pigs that had died from tuberculosis after inoculation with the sediment from milk samples.

Some instructive examples of the newer methods of cultivating tubercle bacilli direct from the lesions and discharges were shown, namely, growth on Dorset's egg medium from glands, pus from tuberculous hip, and cerebro-spinal fluid of a tuberculous meningitis respectively, and also the method of treating in the first place with antiformin, which destroys all other organisms in sputum, etc., with the exception of tubercle bacilli. A full description of these is given in the catalogue.

Instructive also were the guinea-pigs, beautifully preserved, which showed the lesions of pseudo-tuberculosis. The large number of varieties of the tuberculins used in diagnosis and treatment were collected together with details of their mode of preparations.

Dr. Russ demonstrated in this Section his ingenious electrical apparatus for producing a transport of micro-organisms in a fluid to one or other electrode. To see *B. coli* in a saline solution all proceeding to and collecting at the anode and tubercle bacilli collecting in a dense cloud at the cathode in a mixture of ethylamine and lactic acid, and by a special contrivance being collected in a "bacterial trap," was to recognize that Dr. Russ had made a momentous step in diagnostic technique. We know from personal experience that this method, as yet only in its infancy, is far superior to the more usual laboratory methods, and we are anticipating its common application in diagnosing tuberculous effusions and milks. From Manchester Drs. Niven and Sheridan Delépine sent an exhibit of the methods used to combat tuberculosis in that large centre.

III.—Protozoology. (*Honorary Curator*, Miss Muriel Robertson.)

This exhibit was arranged to illustrate cycles of different groups of parasitic protozoa, showing the general types of protozoa rather than their relation to individual diseases. Type specimens illustrating the life-cycle of *Coccidians*, the trophic phases, the development of gametes, and conjugation were all represented.

Specimens by Miss Robertson illustrated the life-cycle of trypanosoma of skate, the resting and developmental stages in the intermediate host (the leech), and the final slender inoculative type which is reinjected from the proboscis of the leech into the skate.

Haemogregarinae, represented by the *H. balfouri* from Khartoum and by the *H. nicoriae* from the lake tortoise of Ceylon, the whole life-cycle of this last parasite being shown—that is, the two types of schizogony in the vertebrate, the sporogony in the intermediate host.

Two slides lent by Dr. Woodcock illustrated formation of microgametes (flagellation) in halteridium of the chaffinch (bird malaria).

Representative parasites of the Haplosporidia were shown—for example, *Rhinosporidium kinealyi*, which causes nasal polypi in India, and *Ichthyosporidium* of British food fishes.

Professor Minchin's specimen of encystation of *Trypanosoma grayi* is the only known instance of an encysting trypanosome.

Two specimens from Captain McCarrison, I.M.S. of *Amoeba coli* exhibited respectively the trophic phase and the enucleated cyst.

Most of the specimens were lent by the Protozoological Department of the University of London, and at all times Miss Robertson was at hand to willingly demonstrate them.

IV.—Tropical Medicine. (*Honorary Curator*, Dr. Hutton.

The work of the London School of Tropical Medicine was well demonstrated, and to detail the specimens would be to cover much of the field of tropical work. They illustrated malaria in all its different phases, kala-azar, pellagra, yaws, yellow fever, etc, the arthropoda concerned in the transmission of disease, and a large collection of helminths, as well as numerous pictures and illustrations of tropical diseases.

The latest theory as to the etiology of beri-beri was illustrated by specimens of cured and uncured rice.

The effect of nastin in leprosy was shown by microscopical specimens of cases so treated. Also there were some fine specimens showing the development of the filaria larvae in the mosquito, and a series of slides by Dr. R. Row to show the development of *Leishmania tropica* in human blood serum.

V.—Cancer Research. (*Honorary Curator*, Dr. J. H. Murray.)

The work of the various cancer research bodies in London was fully illustrated in this most fascinating Section.

That of the Imperial Cancer Research consisted of (1) wall charts illustrating statistical investigations, the phenomena of immunity induced against propagable tumours, and the development of sarcoma during the propagation of two transplantable mammary *carcinoma* of the mouse. (2) Lantern slides illustrating ethnological and zoological distribution of cancer, the reproduction of the lesions of spontaneous cancer by transplanted tumours, the phenomena of growth, and the histological features of propagation in *normal* and in *immune* animals. (3) Bottle specimens illustrating malignant new growths in the cow spontaneous and transplanted tumours in mice and rats, and (4) microscopical specimens of malignant new growths in mice.

We must confess to being somewhat mystified, after a study of the immunity problems with the complex hypersensitiveness on the one hand and immunity on the other, but there was yet the impression that these experiments were throwing some light on the question, and we were nevertheless fascinated by the specimens of cancer from other races and from other vertebrata, especially the large series from the cow.

Both the Cancer Research Department (Drs. Paine and Nicholson) and the Pathological Department (Dr. Kettle) at Brompton sent specimens of their work.

Middlesex Hospital Cancer Research Department contributed a collection of photographic plates, showing "skotographic" phenomena, and a beautiful series of slides by Dr. Beckton showing the absence of Altmann's granules from sarcoma and malignant growths generally, and their presence in inflammatory tissue, non-malignant growths, and normal tissues—a phenomenon which it is

hoped will be of assistance in the troublesome diagnoses that have to be made between these lesions.

VI.—Section of Physiological and Pathological Chemistry. (*Honorary Curator*, Dr. Ryffel.)

The exhibit was designed to illustrate practicable methods of identifying and estimating some substances of physiological and pathological importance. Tests for blood, urobilin, and acetone were shown, and methods of estimating oxygen in blood, carboxyhaemoglobin, fat in tissues, and acidity, ammonia, creatinin, cystine, and lactic acid in urine. The spectroscopic test for blood by producing acid haematin in solution and the crystals of cystine product from urine by Gaskell's method were specially interesting. It is to be hoped that this Section, which we see now for the first time in the museum, will be repeated in future years, for it is full of interest to the clinical pathologist and the physician and even to the medico-jurist.

VII.—Alimentary System. (*Honorary Curator*, Dr. Hertz.)

The various London Hospitals contributed largely to this Section, and some rare specimens were full of interest; many examples of pharyngeal and oesophageal pouches, others showing idiopathic dilatation of the oesophagus to a marked degree and some beautiful specimens of congenital hypertrophic stenosis of the pylorus, and of Hirschprung's disease showing extreme hypertrophy and dilatation of the colon.

Another interesting condition of the colon was that of multiple diverticula together with some of the pathological circumstances arising therefrom, for example, abscess formation, vesico-sigmoid fistula, perforation of a saccule, etc.

A specimen of hyperplastic colitis of doubtful origin showed an enormous enlargement of the colon (Mr. Lockhart Mummery).

There was a noteworthy collection of sarcomata from all parts of the alimentary tract, including several from the oesophagus and some from the stomach, tumours infrequently met with.

Dr. Charles Bolton contributed a series of stomachs from animals illustrating his fascinating work on gastric ulcer experimentally produced by the injection of gastrotoxic serum.

Two interesting specimens from Westminster Hospital showed typical multilobular cirrhosis of the liver in a woman aged 28, and a man aged 39, both of whom had been confirmed teetotalers.

Fifty-five foreign bodies from an Arab seaman's intestines and other specimens came from Greenwich Hospital.

Mr. Lockhart Mummery also showed pictures of sigmoidoscopic appearances.

VIII.—Genito-urinary System. (*Honorary Curator*, Dr. Swift Joly.)

This contained some instructive examples of pathological changes, and, as might be expected, St. Peter's Hospital had contributed largely to this Section. A series of kidneys mounted in natural colours included the various types of primary growth—namely, carcinoma, sarcoma, and the interesting hypernephroma, one of these latter springing from the lower pole of the kidney. All had been removed by operation. A specimen of an encapsuled tumour in the kidney was of interest, from the fact that it had been diagnosed by cystoscopy, which revealed profuse unilateral haemorrhage. One must mention a papilloma of the renal pelvis, which produced unilateral haematuria (Royal College of Surgeons), and a ruptured kidney, which had been removed four weeks after injury (Swinford Edwards), which showed some healing; also a fine series of kidneys with calculi *in situ*, some reaching an enormous size, and here the clinical data in the catalogue were of especial value; and many specimens of advanced tuberculosis.

Amongst many examples of vesical lesions were an enormous papilloma removed by operation (Swift Joly), and a large congenital and hypertrophied sacculus removed by the same exhibitor from a man aged 52. A specimen removed from a patient who died thirty-five days after suprapubic prostatectomy showed the remarkable healing capacity of the bladder, and another in sagittal section the results of this same operation and the relation of parts after it, both of practical interest. Two of Mr. Freyer's series of prostates weighed respectively 17 and 14½ oz.

Some fine specimens of prostatic calculi were to be seen in dissections, but these were more practically demonstrated in a comprehensive collection of skiagrams, which further included prostatic phleboliths, caseous tuberculosis, malignant suprarenal, and a case of hydronephrosis, all from St. Peter's Hospital.

To complete this Section a variety of cystoscopes and urethroscopes were on view.

IX.—Gynaecology. (*Honorary Curator*, Miss Helen Chambers.)

This Section included a series of specimens by Mr. Alban Doran, showing fibroids of uterus complicated by pregnancy, a striking series of cases of primary tuberculosis of the uterus, ovaries, and Fallopian tubes, and also of malignant disease. A specimen from Wertheimer's operation for cancer of the cervix with hydrosalpinx came from a patient who was well three years afterwards (University College Hospital). There was another specimen of carcinoma of the cervix which was also complicated by pregnancy; the child was saved by Caesarean section and hysterectomy performed (New Hospital for Women). There were also several specimens of that rare disease primary carcinoma of the Fallopian tubes, with which must be included a series of microscopic preparations showing the spread of cancer by the Fallopian tubes (Bryden Glendining).

Much interest was attached to the examples of red degeneration of fibroids, lent by Professor Kynoch (Dundee). The New Hospital for Women and the Royal Free Hospital sent many well-preserved preparations of ovarian tumours, and Dr. Herbert Spencer a beautiful series of black and white drawings of gynaecological subjects.

We must not ignore mention of a valuable collection of histological preparations of cancer by Dr. Archibald Leitch, the many specimens of adenomyoma of the uterus and those of chorion-epithelioma, and one case of secondary chloroma of the ovary, and another of actinomycosis.

X.—Respiratory System. (*Honorary Curator*, Dr. Lakin.)

In this Section an attempt was made to illustrate four different subjects:

1. The rarer infections to which the lungs are liable.
2. Conditions producing bronchiolectasis (honeycomb lung).
3. The appearances obtained by radiographic examination of the chest in tuberculosis and other morbid conditions.
4. The use of the portable orthodiagraph in the bedside investigation of disease.

Among the rarer infections of the respiratory tract were nine specimens of glanders, five of actinomycosis, and several specimens illustrating the effects of syphilis on the lung. Among the latter was one of white pneumonia from an infant the subject of congenital syphilis, who only survived birth a quarter of an hour. The rarity of gummata of the lung may be judged by the fact that Dr. Lakin met with considerably less than a dozen specimens in the museums of the London hospitals.

Two of the most striking specimens came from St. Bartholomew's. One was a heart showing a large hydatid cyst projecting into and almost filling the lower part of the right ventricle; a small aperture at the apex of the cyst could be observed through which the daughter cysts had been evacuated. The accompanying specimen was that of the lung from the same case, showing the daughter cysts, in the form of emboli, uniformly distributed throughout the pulmonary substance.

Dr. G. Harrison Orton exhibited a very fine series of radiograms of chest cases; and Dr. W. Pasteur kindly lent diagrams, obtained by the use of the portable orthodiagraph, illustrating impaired movements of the diaphragm. Of further interest in this connexion was

a specimen lent by the Middlesex Hospital illustrating collapse of the lower lobe of the lung from impaired diaphragmatic movement in a case of lobar pneumonia in which the upper lobe was consolidated.

XI.—Cardio vascular System. (*Honorary Curator*, Dr. T. Lewis.)

This Section constituted a complete demonstration of all aspects of modern cardio-vascular doctrines, and formed a tribute to the workers of the British school.

The anatomy of the auriculo-ventricular bundle was to be seen in man and animals, and microscopical sections of the bundle had been prepared from different cases of Stokes-Adams disease, the specimens of Dr. Cohn (New York) being specially beautiful. The dissections of the hearts of various animals satisfied many of the existence of the muscle bundle, of which previously they had only heard in connexion with discussions on peculiarities of the cardiac rhythm. But of the immense work of Dr. Thomas Lewis on the clinical pathology it is impossible to give any idea in a mere notice. The large number of tracings obtained by Mackenzie's polygraphic method and by the electro-cardiographic method only show us that this line of medical research has passed far beyond the ken of all but the highly specialized worker. We can only stand by and congratulate Dr. Mackenzie and his school on the work they are doing in this fascinating field of physiological research.

We must here mention the wonderful specimens of Professor Spalteholz (Leipzig), which show the distribution of the coronary arteries injected whilst the myocardium has been rendered almost transparent. They were the most beautiful specimens in the museum.

A specimen of calcareous aorta had been produced in a rabbit by intravenous injections of adrenalin (Charles Bolton).

XII.—Neurology. (*Honorary Curator*, Dr. Wilson.)

The most interesting part of this Section was the exhibit of Dr. R. H. Clarke of his methods and instruments for investigations of the central nervous system.

This exhibit consists of various instruments designed in accordance with a method of intracranial topography, also devised by the exhibitor, for directing fine insulated needles of iridioplatinum and glass to any desired point in the brain or spinal cord of animals; for the production of precisely localized lesions by electrolysis, with trifling injury to neighbouring parts, and the application of faradic currents by the same means; for studying the effects of stimulating definite points in deep structures.

Also a complete series of sagittal sections, one millimetre thick, of the cranium of the cat, and photographs of them prepared by R. H. Clarke and E. E. Henderson. These sections, or the photographs, are employed as charts to adjust the instrument which directs the needle, and are an essential part of the method.

A good series of acute poliomyelitis and other inflammatory affections of the cord was shown by Dr. Batten, some examples of cervical ribs which caused pressure symptoms, and Dr. Buzzard's series of specimens from myasthenia gravis.

XIII.—General Surgical Pathology. (*Honorary Curator*, Mr. Braxton Hicks.)

In this Section was a comprehensive collection of the various enlargements of the spleen, for the most part from the Westminster Hospital Museum; one of special interest had been excised from a child with splenic anaemia, who is still well two years after the operation (Mr. Walter Spencer). Microsections of these specimens were accompanied by some effective coloured drawings by Miss Hicks. Some varied affections of the tongue were shown, and a large series of water-colour drawings and microscopical prints illustrating Mr. Butlin's lecture on cancer of the tongue and some conditions that may be mistaken for cancer. The clinical data for most of these cases are to be found in the catalogue.

A good collection of muscular swellings included a rare example of haemangeioma of the gracilis and a gumma of the gastrocnemius, and a specimen of calcification of muscle (St. Bartholomew's).

From the Westminster Museum came some interesting specimens of lungs showing the effects of artificial respiration on the stillborn, illustrating Dr. Hicks's paper on the subject and the fact that the signs of live birth can be simulated.

Some interesting examples of cutaneous eruptions showed chronic ulcerations becoming malignant, chronic dermatitis due to x rays, rodent ulcer becoming epitheliomatous, Paget's disease, and glanders and anthrax.

Mr. Hopewell Smith's preparations illustrating some diseases of the jaws and teeth was specially instructive.

XIIIa.—Dermatology. (*Honorary Curator*, Dr. Hicks.)

We have in previous years commented on the beautiful wax casts by Dr. MacKenna, and we were pleased to see again these examples of British work.

The section also included numerous pictures of skin lesions lent by the President (Dr. Abraham) and Sir Jonathan Hutchinson; but of special note were the series of photographs and water-colours to illustrate the dermatitis caused by daffodils and by handling large masses of the flowers in the Scilly Isles, together with histological specimens of lesions produced (Dr. David Walsh).

Dr. Graham Renshaw exhibited a series of pictures of animals, and in an adjoining room Sir Jonathan Hutchinson had a special demonstration illustrating his work on palaeogenesis.

In this same department was a most remarkable series of x ray photographs of anatomical and surgical subjects by Dr. Fred Bird (Melbourne), showing the blood supply and distribution in various viscera after injection. Also a series of histological preparations by Dr. Wickham (Paris) on the effects of radium in cancer and rodent ulcers.

XIV.—Ophthalmology. (*Honorary Curator*, Mr. Mayou.)

The Ophthalmic Section showed some of the more recent advances in ophthalmology.

Dr. Morax (Paris) exhibited coloured transparencies of the external diseases of the eye, photographed directly from the patient by the Lumière autochrome process.

Dr. Magliott (Paris): Coloured photomicrographs by the same process, showing the formation of the rods and cones and ganglion cells.

Mr. Nettleship exhibited a pedigree of patients with glaucoma in several generations.

Mr. Mayou exhibited a case of specimens from the Central London Ophthalmic Hospital, showing a new method of mounting wet specimens in formol.

The specimens illustrated the various new growths within the eye, amongst which were three sarcomata, starting in shrinking globes, which had been previously the subject of iridocyclitis; one sarcoma of the choroid, together with several atypical growths, showing unequal distribution of pigment and degeneration forms.

Mr. N. B. Harman: A series of drawings and pedigrees of lamellar cataract.

Various new instruments and diagrams of operations, etc., were also shown.

Dr. Edridge-Green demonstrated and gave a detailed description of apparatus used in testing for colour blindness.

XV.—Laryngology. (*Honorary Curator*, Dr. Harmer.)

This Section was subdivided into Rhinology, Diseases of Pharynx and Larynx.

The President (Mr. Tilley) contributed largely to this Section. A series of 60 skiagrams and x-ray plates of rhinological conditions demonstrated the nasal sinuses to perfection (Logan Turner and W. G. Porter); other x-ray plates were shown by Mr. Tilley.

In the section dealing with the pharynx a series of specimens of mammalian and human tonsils called for attention (G. Seccombe Hett).

Dr. Logan Turner showed two series of special interest and also of medico legal import—namely, a series of cases illustrating sudden death from asphyxia due to laryngeal conditions, the cases of acute oedema with no previous symptoms being most interesting; and a series of larynges which had been artificially injected in order to demonstrate how oedema may spread through the loose tissues, and so readily close the upper laryngeal passage; these throw much light on the question of "oedema glottidis."

Of interest were the specimens of foreign bodies, coins, pins, etc., which had been removed by bronchoscopy (Tilley and H. J. Davis), the larynges which had been removed in their entirety because of malignant disease (Jobson Horne), the patients recovering and living for some months. Amongst the malignant diseases must be mentioned a specimen of fibro-sarcoma of the nose, the tumour and histological specimens being shown (Douglas Harmer).

The specimens of syphilis and tuberculosis of the larynx (Dr. Biggs) were good. Amongst some very fine histological slides of normal and pathological tonsils was a fine example of tuberculosis with bacilli *in situ* (H. G. Butterfield).

Other specimens were a specimen of carcinoma-sarcomatodes of the larynx (Douglas Harmer) and a series of pictures by Watson Williams, with stereoscopic demonstration.

XVI.—Otology. (*Honorary Curator*, Mr. Sydney Scott, London.)

Here was exhibited the Toynbee Collection, lent by the Royal College of Surgeons, and including some 900 specimens of bones and dissections illustrative of diseases of the ear in practically every aspect. From the same museum have come also the beautiful series of dissections of normal membranous labyrinths of different species of animals prepared by Dr. Albert Gray (Glasgow).

The normal anatomy of the organs of hearing was well illustrated in a series of dissections and dried specimens by several exhibitors. Professor Politzer demonstrated the topography of the middle ear and labyrinth, and Dr. H. J. Davis (West London Hospital) a series of dissections of the temporal bone and also a series demonstrating the complete operation for opening the antrum, middle, and internal ear.

A reconstruction model, of large size, of the auditory apparatus of a 16 mm. human embryo, prepared by the wax-plate method of Born, was of special interest (G. J. Jenkins, King's).

The various London hospitals largely contributed specimens illustrating the human and comparative normal and morbid anatomical changes associated with intracranial infections of the ear.

The beautiful black and white drawings of labyrinthine infections shown by Politzer formed a striking part of the illustrations in this Section, amongst which must also be mentioned the photomicrographs of the labyrinth by Fraser (Edinburgh), the lantern slides of microsections of the labyrinth by Sydney Scott (London), and some photographs of a case of optic neuritis and ophthalmoplegia following sphenoidal sinus disease and recovering after operation (H. J. Davis).

Much interest was aroused by the cinematographic demonstration of labyrinthine nystagmus evoked by rotating about a vertical axis with head erect (Sydney Scott), and also by cinematograph photographs of lip-reading exercises for the instruction of the deaf (Kinora, Limited).

XVII.—Radiological Section. (*Honorary Curator*, Dr. Ironside Bruce.)

In this Section were exhibited over 400 radiograms illustrating cases of both medical and surgical interest. An entirely new departure had been instituted by the curator in making use of "reduced positives" only, thus enabling so large a number of radiograms to be exhibited and greatly facilitating their individual inspection. The "reduced positives" used were of the usual "lantern slide" size, and were placed in sloping frames, well lighted by shaded electric lights.

The exhibit was classified under the headings of the different diseases illustrated by the radiograms. No attempt at such classification has been made before in an exhibit of this kind, which was due to the efforts of Mr. H. W. Armit, and the result amply justified this course being adopted.

Great advances have occurred in the *x*-ray investigation of disease, which made itself evident in every branch of medicine and surgery. Taking individual examples, in the subdivision Calculi, the radiograms were outstanding and received special praise. Even the most sceptical could not fail to be convinced of the accuracy and reliability of *x*-ray examination in this department. The extraordinary complexity of injuries to bones and joints in the subdivisions of dislocations and fractures of bones was amply illustrated by a large number of radiograms. Amongst others we noticed specimens showing a fracture of the os calcis of each foot, lent by Dr. J. Taylor; a fracture of the sesamoid bone of the great toe, lent by Dr. Worrall; and a vertical cleavage of the astragalus, lent by Dr. Ironside Bruce. In the subdivision Diseases of Bone, the last-named showed striking examples of tuberculous caries of the dorsal spine with abscess, and tuberculous necrosis of the neck of the femur with a sequestrum associated with disease of the hip-joint. Examples of sarcoma of fibula and other bones were shown by Dr. Harrison Orton and others, and radiograms and photographs of a case of enchondroma of the right hand, before and after operation, lent by Dr. Somerville, were most interesting.

Amongst those illustrating medical diseases mention must be made of Dr. Thurstan Holland's collection of radiograms showing examples of diseases of the oesophagus and stomach, by means of bismuth food, also what we think must surely be a unique specimen of suppurative pericarditis, lent by Dr. Ironside Bruce, who also showed an example of pneumothorax in this Section. There were radiograms showing thoracic aneurysms, tubercle of lung, rheumatoid arthritis, etc.

There were also a collection of radiograms of dry specimens illustrating diseases of bone, shown by Dr. C. J. Morton, and a series of stereoscopic radiograms and a stereoscope lent by the President of the Radiological Section.

XVIII.—Section of Anaesthetics. (*Honorary Curator*, Miss Ada Browne.)

This Section of the Museum was arranged with the object of illustrating some of the older methods of producing anaesthesia and the gradual growth and development of ideas till the present time, and in the modern portion the Committee endeavoured to show examples of the most approved and reliable apparatus now at the disposal of the anaesthetist for administering all the modern anaesthetics and mixtures and for producing spinal analgesia.

The Museum was divided into Historical and Modern Sections.

The former included a series of interesting and original documents bearing on the discovery of anaesthesia and kindly lent by Mrs. Long Taylor, daughter of the late Dr. Crawford Long, of Jefferson, Georgia, U.S.A.

Amongst the collection of old books kindly lent by Dr. Silk was an extremely interesting original pamphlet by Simpson on the discovery of chloroform and written in 1847.

There was also many examples of the older forms of inhaler, kindly lent by the Anaesthetic Section of the Royal Society of Medicine, and by various instrument makers. These included Clover's original experimental apparatus, being an early attempt to administer chloroform in a definite dilution, and made by Messrs. Mayer and Meltzer for Clover's investigations.

In the section devoted to modern apparatus perhaps the most noticeable were the varied patterns of inhaler and mask which have recently been evolved for the administration of ether by an open or semi-open method.

Illustrating the method of chloroform administration by the percentage system several appliances were shown, notably the "Dubois," by Mr. P. Chapman, and the "Vernon Harcourt," which the inventor kindly demonstrated the use of, with untiring zeal, showing his latest improvements, which admit of oxygen being added, when required, by driving it through the chloroform bottle by

means of a foot bellows, thus converting the apparatus into one on the plenum principle.

Amongst the nitrous and oxygen appliances was an elaborate arrangement known as the "Teter Outfit," and kindly obtained and lent by Messrs. Claudius Ash and Co. This apparatus provides for the addition of chloroform to the gas and oxygen, which mixture can be administered either through the mouth or the nose, and is used in America to produce analgesic conditions for long periods, with the patient in the upright position, for the filling of teeth and other slightly painful manipulations. There might also be mentioned Dr. Hewitt's nitrous oxide and oxygen apparatus, with separate bags and additional oxygen supply tap for long administrations, and an arrangement for fixing the apparatus on to the side of the bed or table, so as to allow the bags to hang free, thus providing a more reliable proportion of the gases. Several ingenious devices were to be seen for giving nitrous oxide through the nose, as also many varieties of gags, tongue forceps, etc. Mention should also be made of a very interesting series of drawings kindly lent by Dr. Härtel of Berlin and obtained by Mr. H. W. Armit, illustrating Bier's methods of lumbar and venous anaesthesia.

COLLECTION OF PICTURES, RARE OLD BOOKS, AND OBJECTS OF MEDICAL INTEREST. (*Honorary Curator*, Dr. A. J. Rice-Oxley.)

Literature, history, and art can always be associated with science for the purpose of interesting and instructing, and, with this novel purpose in view, at least as regards this Association, Dr. Rice-Oxley was able to get together, at somewhat short notice, a varied and interesting collection of paintings, prints, old books, and general objects of medical interest, which proved a very attractive feature of the Medical Museum.

It is greatly to be hoped that this idea may be enlarged upon in the future, and that medical collectors will take advantage of such excellent opportunity of exhibiting their collections, and thereby profiting and inspiring others in the still largely unexplored field of this kind of medical investigation.

Among the contributors was Mr. Henry S. Wellcome, who lent many rare early English books on medicine, and a number of valuable mezzotint portraits of famous old surgeons and physicians. Books illustrating the history of pharmacy in Europe were lent by Dr. Jobson Horne, as also a series of clever anatomical drawings by Mr. Charles Landseer, old microscopes, lancet cases, and spectacles. Other very valuable and rare books, prints, etc., were contributed by the Medical Graduates' College and Polyclinic (by the kind permission of the President, Sir Jonathan Hutchinson); the Royal College of Surgeons of England, who lent two most interesting and unique scrapbooks; Sir Victor Horsley, Sir Lauder Brunton, Drs. J. F. Payne, Selfe Bennett, Clippingdale, Phineas Abraham, Leonard Mark, who lent his capital series of photographs and drawings of pictures and works of art in British Galleries and Museums interesting from a medical point of view. Professor Keith most kindly sent some of his very rare curiosities from the Royal College of Surgeons.

The lighter side of the exhibition consisted of a set of cartoons of medical men (lent by *Vanity Fair*); original drawings by Gillray (lent by Dr. Renner), by Rowlandson (the famous "Hunter's Dissecting Room" being amongst these), by John Leech, including the well-known "Hunting Doctor" (lent by Horatio Symonds, Esq.), and other original drawings from *Punch* by Gunning King, Shepperson, and Townesend (lent by these artists). Special mention may be made of the oil paintings kindly lent by the Hon. John Collier and Mr. G. Lambert, both of which were much noticed and appreciated.

Account of the Museum would not be complete without mention of the fact that Messrs. E. Leitz placed at the disposal of the Committee 300 microscopes of modern pattern, free of charge, a leading member of the firm attending with his staff and devoting their whole time to the work during the meeting. This same firm also exhibited their dark-ground illuminator, whose praises we have already sung, and a new universal projection apparatus for projecting lantern slides or microscopical slides or illustrations, or, in fact, anything that it is desired to show to a large audience, even diseases of the skin.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

CAMBRIDGE AND HUNTINGDON BRANCH.

THE annual meeting of the Branch was held on Tuesday, July 19th, 1910, the PRESIDENT (Professor G. Sims Woodhead, M.D., F.R.S.E.), in the chair.

BUSINESS MEETING.

The general business meeting was held at Trinity Hall, Cambridge, at 12.30 p.m. There were eighteen members present.

Confirmation of Minutes.—The minutes of the last annual meeting were read and confirmed.

Balance Sheet.—The balance sheet for 1909 was presented and adopted.

Election of Officers for the Year 1910-11.—Regret was expressed at the inability of the President-elect, Dr. Odell (Hertford) to proceed to the Presidency. Professor Woodhead having expressed his willingness to continue in office for another year, resumed the chair. A vote of thanks to Professor Woodhead for consenting to continue in office for another year was carried with acclamation. Dr. E. J. Cross (St. Neots) was unanimously elected President-elect. Dr. H. B. Roderick was re-elected Honorary Secretary and Treasurer. Dr. J. C. W. Graham was elected Representative for Representative Meetings. The following were elected members of the Branch Council: Dr. Joseph Griffiths, M.C., F.R.C.S., Mr. F. E. Apthorpe Webb, Dr. J. Aldren Wright, Dr. J. R. Garrood.

New Members.—Frank Robinson, M D., D.P.H. (Sidney Street, Cambridge), proposed by Dr. Dalton and seconded by Dr. Laird, and Miss Ella Beales, M.B., B.S.Lond. (Ickleton, Essex), proposed by Dr. Robinson and seconded by Dr. Dalton, were elected members of the Branch.

Ambulance Lectures.—A resolution was passed to the effect that members of the Branch are only prepared to deliver courses of lectures to the Voluntary Aid Detachments under the conditions now existing in connexion with similar courses given under the auspices of the St. John Ambulance Association, namely, at a fee of 1 guinea per lecture, or 5 guineas for the authorized course.

Coroners Act.—Dr. BALDING brought to the notice of members the fact that by this Act medical men will have to hold some legal qualification, that is, as barrister or solicitor, but that members of the legal profession will not be required to hold any medical qualification. A small committee, consisting of the President, Dr. Balding, Dr. Griffiths, Dr. Apthorpe Webb, and the Honorary Secretary, was formed to look into the matter, and to draft a letter to the Council, and also to members of the Branch to send to their parliamentary representatives. This concluded the business meeting.

GENERAL MEETING.

After the business meeting, at the kind invitation of the President, fifty members sat down to lunch in the College Hall. After luncheon the King's health was drunk. Professor ADAMI (Montreal) proposed the health of the President, who replied to the toast.

Presidential Address.—The presidential address on the ozonizing method of sterilizing Cambridge water, was delivered at the medical schools, and was followed by a discussion on the subject.

Discussion.—An open discussion followed on the supply of midwives in country districts, opened by Dr. J. H. C. DALTON, in which several members took part.

President's "At Home."—After the meeting the President and Mrs. Sims Woodhead were "at home" in the Fellows' Gardens, Trinity Hall, to members and their wives and lady friends.

METROPOLITAN COUNTIES BRANCH:
St. Pancras and Islington Division.

A special meeting of this Division was held on Tuesday, July 19th, at the Midland Grand Hotel, N.W.

Public Medical Service.—The object of the meeting was to pass resolutions to establish a public medical service in St. Pancras and Islington. All members of the profession resident in the two boroughs were invited to attend. The number attending the meeting was thirty-three. The speakers were Dr. Lauriston E. Shaw, Sir Victor Horsley, F.R.S., Mr. J. Smith Whitaker, Dr. J. F. J. Sykes, Dr. A. E. Harris, Dr R. M. Beaton, J.P., Dr Buckell, Dr. W. Griffith, and Dr. A. R. Roche. Dr. G. F. Glinn, Chairman of the Division, presided, and after introductory remarks, called upon Dr. Lauriston Shaw to move the first resolution:

> That in accordance with the policy and practice of the British Medical Association and the expression of opinion in this Division, public medical services be formed in St. Pancras and Islington.

Dr. Lauriston Shaw clearly pointed out the advantages of a public medical service not only to the profession but to the class of patient for which it was formed, and insisted on the comparative failure and injustice of the many lay schemes for treatment of the moderately poor. He further showed how medical committees alone could make terms equitable to the doctor and patient, and concluded by pointing out that patience and hard work lay before the Division in establishing the scheme on a successful basis. Sir Victor Horsley seconded the resolution. He said he believed there was a good chance of success. He emphasized the strength of the movement in that cohesion was given it by emanating from and developing under the British Medical Association, and he clearly disposed of some arguments which have been used to show the scheme to be impracticable in London. Lastly, he gave some practical hints as to how the Division should set to work. Mr. Smith Whitaker, in supporting the resolution, pointed out that a public medical service alone would rid the profession of the underselling which was taking place. He did not blame the public for so often miserably underpaying the doctor, but rather the profession itself, and he was certain that a public medical service was the only means of securing adequate pay for the doctor and adequate treatment for the patient. The resolution being then put to the meeting was carried unanimously.

Proposed Appointment of Secretaries.—Dr. J. F. J. Sykes then moved that a secretary be appointed for St. Pancras and a secretary for Islington. He promised all the help that lay in his power. Dr. A. E. Harris seconded the resolution, and also promised his assistance at any time it was sought. The resolution was then carried unanimously.

The committees were then formed, and secured the able and experienced services of Dr. Beaton, J.P., for Secretary.

Treatment of School Children in Hampstead.—Dr. A. R. Roche, whose energy and ability in Hampstead have so largely secured for it a public medical service, said he at the present time had the satisfaction of seeing treated in Hampstead a number of school children who but for the service must have been going to the hospitals.

Vote of Thanks.—A vote of thanks to the Chairman and speakers concluded the proceedings.

NORTHERN COUNTIES OF SCOTLAND BRANCH.

The annual meeting of the Branch was held at Nairn on Saturday, July 16th. The President (Dr. Brodie Cruickshank), was in the chair. The following members were present: Dr. Mackie, Dr. Alexander, Dr. Taylor, and Dr. Stephen (Elgin); Dr. Sutter and Dr. Wilson (Nairn); Dr. John Mackenzie, Dr. Luke, Dr. Asher Forsyth, Dr. John MacDonald, Dr. H. S. MacDonald, Dr. Murray, Dr. Munro Moir (Inverness); Dr. Lindsay (Ardersier); Dr. Pender Smith (Dingwall); Dr. Miller (Aviemore); Dr. Duguid (Buckie). The following were also present: Sir James Grant, K.C.B. (Toronto); Colonel Macrae, C.I.E., I.M.S.; Captain Cruickshank, I.M.S., Dr. MacPhail (Derby); Dr. William Forsyth (Calcutta).

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

Apologies for Non-attendance.—Apologies were intimated from Dr. Adam (Dingwall), Dr. Cameron (Nairn), Dr. Miller (Fort William), Dr. Simpson (Golspie), Dr. Kaye (Strathpeffer), etc.

Autumn Meeting.—It was arranged to hold the autumn meeting at Inverness and the next annual meeting at Grantown-on-Spey.

Election of Officers.—The following members were elected office-bearers for the ensuing year: *President*, Dr. Brodie Cruickshank (Nairn); *President-elect*, Dr. Asher Forsyth (Inverness); *Vice-Presidents*, Dr. de Watteville (Kingussie) and Dr. Pender Smith (Dingwall); *Members of Council*, Dr. Kaye (Strathpeffer), Dr. John MacDonald (Inverness), Dr. Sutter (Nairn), Dr. Mackie (Elgin), Dr. Hutchison (Grantown), Dr. Miller (Aviemore); *Representative in Representative Meetings*, Dr. Brodie Cruickshank (Nairn); *Representative on Central Council*, Dr. J. Munro Moir (Inverness); *Honorary Secretary and Treasurer*, Dr. John Munro Moir (Inverness).

Medical Inspection of School Children for the Islands of Inverness-shire.—The Honorary Secretary reported the action which the Branch Council had taken in connexion with this appointment, and the meeting confirmed the same. It was resolved that as the Education Committee of the County Council had virtually made this a part-time appointment, no further action should be taken in the matter.

Medical Treatment of School Children Found on Inspection to be Defective.—It was resolved that as the educational authorities of Scotland had not, as was the case in England, any means for providing payment for the treatment of children found on inspection to be defective, to delay consideration of the memorandum on that subject which had just been issued from the central office of the Association.

ST. JOHN, NEW BRUNSWICK, BRANCH.

Election of Officers.—At the postponed annual meeting of this Branch, held on July 7th, the following officers were elected for the ensuing year: *President*, Dr. G. A. B. Addy; *President-elect*, Dr. J. Boyle Travers; *Vice-President*, Dr. T. D. Walker; *Treasurer*, Dr. Wm. Warwick; *Honorary Secretary*, Dr. Stewart Skinner; *Financial Secretary*, Dr. W. A. Christie; *Representative in Representative Meeting*, Dr. P. R. Inches; *Substitute*, Dr. W. W. White; *Members of Branch Council*, Dr. Thos. Walker, Dr. W. W. White, Dr. T. F. Sprague, Dr. F. J. White, Dr. J. R. McIntosh, Dr. Henry Lunam, Dr. F. H. Wetmore.

SOUTHERN BRANCH.

The annual general meeting of the Southern Branch was held on Thursday, July 14th, at the Infirmary, Salisbury. Dr. W. P. Purvis (Southampton), the President, was in the chair, and about forty-five other members were present.

Election of Officers.—The President announced the result of the election of officers for the ensuing year. *President*, Mr. L. S. Luckham (Salisbury); *President-elect*, Mr. C. P. Childe, F.R.C.S. (Southsea); *Vice-Presidents*, Dr. Harman (Winchester), Dr. John Phillips (Southsea); *Representatives on Council of Association*, Mr. Straton (Wilton), Dr. J. Ward Cousins (Southsea); *Council*, L. K. H. Hackman (Portsmouth), W. Carling, M.B. (Southsea), L. Maybury, M.D. (Southsea), S. Hughes, M.B. (Southampton), E. S. Hall, M.B. (Bitterne), N. E. Aldridge, M.B. (Southampton), Colonel Robinson (Guernsey), E. D. Ritchie, M.D. (Chandlersford), R. A. Lyster, M.D., D.P.H. (Winchester), L. S. Luckham (Salisbury), J. O. March (Amesbury), G. Raymond (Newport), J. A. Hammond, M.B. (Shanklin), P. B. Bentlif (Jersey); *Honorary Secretaries of Divisions:* Portsmouth—B. H. Mumby, M.D., C. P. Childe, F.R.C.S.; Winchester—H. J. Godwin, F.R.C.S., M.B.;

Southampton—G. H. Cowen, F.R.C.S., M.B.; Isle of Wight—G. B. Wood, M.B.; Salisbury—J. E. Gordon; Guernsey and Alderney—J. F. Carruthers, M.D.; Jersey—E. O. Voisin. The contest for the office of Secretary and Treasurer resulted in the return of Mr. James Green (Portsmouth), for whom 111 votes were recorded, Dr Lyster (Winchester) receiving 43, and Dr. Monnington (Salisbury) 37 votes.

Installation of New President.—Dr. Purvis then vacated the chair, which was taken by Mr. Luckham, the President for the year.

President's Address.—The PRESIDENT delivered an address, in which he compared the methods of treatment in the times of Hippocrates, Paulus Ægineta, Paré, and, later, Gooch, with those of the present time. At the conclusion of the address the PRESIDENT, on behalf of the meeting, cordially welcomed Mr. Green as Secretary of the Branch in succession to the late Mr. H. J. Manning.

Vote of Thanks to the President.—Dr. COUSINS moved, and Mr. STRATON seconded, a vote of thanks to the President for his interesting address and for his hospitality to the meeting. This was carried unanimously.

Dr. Dawson Williams.—Dr. COUSINS then moved, and Mr. WILLCOX seconded, a resolution expressing the sympathy of the meeting with Dr. Dawson Williams. The terms of the resolution, which was carried unanimously, were published in the JOURNAL of July 23rd, p. 217.

Association Notices.

ELECTION OF CENTRAL COUNCIL 1910-11.

To those Branches or groups of Branches in the United Kingdom who failed to make nominations for election of members of the 1910–11 Council,

Notice is hereby given that nominations of candidates for election of Members of Council by Branches or groups of Branches in the United Kingdom by voting papers for the year 1910–11 must be forwarded to reach the Financial Secretary and Business Manager, at the Office of the Association, not later than September 14th, 1910, and that each nomination must be on the prescribed form, copies of which will be furnished by the Financial Secretary and Business Manager upon application.

Separate forms have been prepared for a nomination by a Division and for a nomination by any three members respectively, and those applying are requested to state for which purpose the form is desired.

Voting papers containing the names of all candidates duly nominated will be issued from the Central Office on September 21st, and will be returnable not later than September 26th.

By Order of the Council,

GUY ELLISTON,

Financial Secretary and Business Manager.

August 3rd, 1910.

POOR LAW REFORM AND MEDICAL STATE AID.

THE supporters of the Minority proposals of the Poor Law Commission took advantage of the presence in London of many provincial practitioners for the Annual Meeting of the British Medical Association to enlighten them as to the scope and character of the projected reforms, and particularly as to the manner in which those reforms would affect the medical profession. A reception and discussion with this object in view took place at Caxton Hall on the afternoon of July 27th, the discussion being opened by Mr. Sidney Webb.

Dr. HERBERT MANLEY, who occupied the chair, and who was supported by Dr. Christopher Addison, M.P., Professor Benjamin Moore, Dr. R. A. Lyster, and others, urged the medical practitioner to accustom himself to a really broad idea of a State medical service, and to keep the narrow pecuniary point of view in the background. He believed that what was best for the State would ultimately be quite good for the profession, and he could not understand why the majority of his colleagues, who were willing to have their gratuitous services exploited by charitable organizations and friendly societies, were so dreadfully afraid of State remuneration. For himself, he would rather trust the State than philanthropies.

Mr. SIDNEY WEBB, after some general observations, devoted the main part of his address to the consideration of a scheme for a unified public medical service. He elaborated the present antagonism of purpose between the public health officer and the medical officer under the Poor Law. The man who combined the two offices would, in the first of these capacities, be urgent in the finding out of incipient disease, and, in the second, he would feel it his duty to deter people, who might, for instance, be the victims of early phthisis, from seeking relief unless they were destitute. Given a rational public health service, the great white scourge of phthisis, which was said to be responsible for one-seventh of the destitution which existed, could be dealt with as successfully as typhus. Coming to details, he foreshadowed the merging of the Poor Law medical and the public health services into a great unified county medical service. Such a service would be under a medical chief—an officer having medical qualifications but administrative experience. Under his supervision the county medical service would consist of three distinct sections. In the first place, there would be a clinical section for the treatment of disease in the individual patient; next, a sanitary service, concerned with large measures of general prevention; and, thirdly, an institutional service of resident medical officers. The county medical officer would be assisted by a representative of each of these sections—a clinician, a sanitarian, and a man experienced in institutional management. Prevention, a word of large area, would be their aim. It would mean the prevention of the occurrence of the disease, of its continuance, its recurrence, its transmission. But what about the private medical practitioner? Well, they must not imagine that this organized service meant that everybody was going to be treated free. What it did mean was that there should be access to the doctor with the least possible formality. After treatment had been given, inquiry would be made by the registrar, and if it were found that the person applying for medical State aid possessed means, an account would be sent in for a fee at least as large as he would have had to pay his private doctor. He had no fear at all about the practical value of this method of recovery.

A reference by Mr. Webb to the "British Medical Association scheme," which, he said, he would not discuss because it was concerned with people who were able to pay the fees, brought up Dr. FOTHERGILL with the protest that there was no "British Medical Association scheme." It was difficult to define the exact position to those unfamiliar with the organization of the British Medical Association, but although some suggestions had been drawn up by a committee and had received the provisional assent of the Representative Meeting, they had yet to be sent round to the Divisions and to be resubmitted, and the scheme in its final form might bear no relation at all to its present embryonic one. Dr. Fothergill also asked who, under Mr. Webb's plan for recovery, would have the recovered money. That money belonged to the general practitioner, and he considered the system to be one of subsidizing at the general practitioner's expense.

Professor BENJAMIN MOORE said that although not a supporter of the Minority scheme in its entirety, he thought it the most economical of the schemes before the country, and he was of opinion that with a thoroughly nationalized medical service they could make tuberculosis in this country as rare as small-pox.

Dr. A. C. RAYNER (Preston), on the ground that seven-tenths of the existing destitution was due to drink, questioned whether the proposals of the Minority would touch that evil, and thus prevent the major part of destitution.

Dr. J. H. TAYLOR (Salford) maintained, in opposition to Mr. Webb, that the "scheme"—so far as it could be called one—of the British Medical Association, had provision by which paupers could be brought under it. With regard to a free medical service, he gathered that Mr. Webb thought there was more likelihood of this under the Majority scheme than under the Minority. (Mr. WEBB: Hear, hear.)

That confusion arose out of the fact that two paragraphs of the Majority Report were contradictory. One affirmed that before any person was medically treated there should be inquiry into his circumstances, and the other that treatment should be given first. He wrote to Lord George Hamilton on this point, and in his letter in reply Lord George said that the latter paragraph should only apply to emergency treatment.

Dr. Leonard Hill and others having spoken,

Mr. Sidney Webb replied, and apologized for misunderstanding "the complicated constitution of the British Medical Association." He had no particular concern, he said, with the purpose to which the recovered money should be devoted. It might go for old age pensions for meritorious private practitioners. He thought that the drink evil was dealt with very thoroughly under the Minority scheme—among other ways, by the hold it gave the public officers over the drinking man who neglected his family. The agitation, he said in conclusion, was going to be carried on to the bitter end. The country, he believed, was prepared for a great move forward. In that move forward the medical profession could be of tremendous assistance. Medical men were a great force in the community. But they were not a great force when they fought merely for their own hand, and therefore he was glad that in this respect they fought so very badly.

CENTRAL MIDWIVES BOARD.

A meeting of the Central Midwives Board was held at Caxton House, Westminster, on July 28th, with Sir Francis H. Champneys in the chair.

Midwives Bill.

A letter was considered from the Clerk of the Council, transmitting a copy of a letter addressed to him by the Lord Mayor of Manchester, with a copy of a resolution passed by the City Council suggesting the omission of the words "conducted for profit" in Clause 15 of the Midwives Bill, 1910, as introduced into the House of Lords by Lord Wolverhampton.

It was agreed that the reply be that the Board observes that the suggested amendment has been carried out in the Midwives (No. 2) Bill, 1910.

"Covering" a Midwife.

A letter was considered from the Medical Officer of Health for Leicester as to the "covering" by a certain certified midwife of a woman whose name was removed from the roll.

The Board decided that inquiries be made as to whether the woman has in fact ever delivered a patient by herself since her name was removed from the roll, and whether she has ever visited a patient without being accompanied by the other midwife.

Advertising.

A letter was considered from the General Secretary of the Medical Defence Union calling attention to an advertisement and the issue of circulars by a certified midwife.

The Board decided that the reply be that the midwife did not appear to have infringed any of the rules of the Board.

A letter was considered from the Medical Officer of Health for Manchester calling attention to a number of advertisements by certified midwives in Manchester papers.

The Board decided that the Medical Officer of Health for Manchester be referred to Rule E 26 as the governing rule in relation to the proper description of a midwife.

Charge of Misconduct.

A letter was considered from the Clerk of the London County Council as to a charge of misconduct brought by a certified midwife against another certified midwife formerly in her employment.

The Board decided that the local supervising authority for the County of London be requested to trace the midwife if possible, and, if she can be communicated with, to consider whether a prima facie case of misconduct has been established against her.

Construction of Rule E 5.

A letter was considered from the Clerk of the Hants County Council as to the construction of Rule E 5.

It was agreed that the Board approve the Secretary's reply, stating that the clear intention of the rule is that the midwife should not attend another case until the local supervising authority are satisfied that she herself, her instruments, and other appliances have been properly disinfected.

Notification of Intention to Practise.

A letter was considered from a certified midwife inquiring as to the necessity of notification of intention to practise where, though a doctor is always engaged for a case, she herself habitually delivers the patient.

The Board decided that the midwife be informed that inasmuch as her question involved points of law the Board did not consider it their province to advise.

Nursing Association and Local Supervising Authority.

A letter was considered from the Honorary Secretary of the Derby County Nursing Association complaining of the action of the local supervising authority in interfering with the work of the association.

The Board decided that the Derby County Nursing Association be informed that the Board has no power to control the actions of the officers of the local supervising authorities, nor has it any jurisdiction in the matter.

Vital Statistics.

ENGLISH URBAN MORTALITY IN THE SECOND QUARTER OF 1910.

[Specially Reported for the British Medical Journal.]

In the accompanying table will be found summarized the vital statistics for seventy-seven of the largest English towns, based upon the Registrar-General's weekly returns for the second quarter of the year. The 110,079 births registered in these towns during the quarter were equal to an annual rate of 26.1 per 1,000 of the population, estimated at 16,940,895 persons in the middle of the year; in the corresponding quarters of the three preceding years the rates were 28 1, 27 9, and 26.6 per 1,000 respectively. In London the birth-rate last quarter was equal to 24.9 per 1,000, while it averaged 26.5 in the seventy-six other large towns, and ranged from 14 2 in Hornsey and in Hastings, 18 4 in Bournemouth, 19.1 in Halifax, and 19.5 in Handsworth (Staffs) and in Bradford, to 33.0 in Wigan, 34.3 in Coventry, 34.4 in Tynemouth, 34.6 in Swansea, 35.9 in St Helens, and 41.0 in Rhondda.

The 53,242 deaths registered in these towns last quarter were equal to an annual rate of 12 6 per 1,000; in the second quarters of the three preceding years the rates were 14 9, 13.7, and 13 9 per 1,000. The death-rate in London last quarter was equal to 11.6 per 1,000, while it averaged 13.0 in the seventy-six other large towns, and ranged from 7 4 in Hornsey, 7 5 in King's Norton, 7 7 in Walthamstow and in Handsworth (Staffs), and 8.6 in Willesden, in East Ham, and in Leyton, to 15.7 in Preston and in Tynemouth, 16 1 in Stockport, 16.2 in Manchester, 17.7 in Liverpool, 17 8 in Oldham, and 20.6 in Merthyr Tydfil.

The deaths in these seventy-seven towns last quarter included 4,855 which were referred to the principal infectious diseases; of these 6 resulted from small-pox, 1,596 from measles 315 from scarlet fever, 390 from diphtheria, 1,782 from whooping-cough, 166 from enteric fever, and 600 from diarrhoea. These 4,855 deaths were equal to an annual rate of 1.14 per 1 000, the death-rates from the same diseases in the corresponding period of the three preceding years having been 1.58, 1.13, and 1.37 per 1,000. Among the several towns the death-rates from these diseases last quarter ranged from 0 19 in Reading, 0 28 in Hornsey, 0.30 in Brighton, and 0 32 in Bournemouth and in Northampton, to 1.84 in South Shields, 1 87 in Salford, 1.90 in Oldham, 2.18 in Burton-on-Trent, 2 22 in Bootle, 2.27 in Manchester, 2.68 in Liverpool, and 4.48 in Merthyr Tydfil; in London the rate was 1.08 per 1,000. The 1,596 deaths from measles were equal to an annual rate of 0 38 per 1,000; in London the death-rate from this disease was 0.45, while among the other towns it ranged upwards to 0 87 in Stoke-on-Trent, 0 97 in Bootle, 1.09 in Liverpool, 1.18 in Bradford 1 46 in Burton-on-Trent, and 3.78 in Merthyr Tydfil. The 315 deaths from scarlet fever corresponded to a rate of 0.07 per 1,000; in London the rate was 0 04, while among the seventy-six other towns the highest rates were 0.18 in Portsmouth, 0 21 in Stoke on-Trent, 0.23 in Aston Manor, 0.27 in Bolton, 0.33 in St. Helens, 0 34 in Bury, and 0 39 in Coventry. The 390 fatal cases of diphtheria were equal to a rate of 0 09 per 1,000; in London the mortality from this cause was 0 06 per 1,000, while among the other large towns it ranged upwards to 0.21 in Salford and in Tynemouth, 0.22 in Bournemouth, in Warrington, and in Stockton-on Tees, 0.24 in Preston, 0.34 in Middlesbrough, and 0.36 in Burton-on-Trent. The 1,782 deaths from whooping-cough corresponded to a rate of 0.42 per 1,000; in London the death-rate from whooping-cough was 0.37, while among the other towns the highest rates were 0.90 in Devonport and in Gateshead, 0.97 in Liverpool and in Bootle, 1.03 in Oldham, 1.07 in South Shields, and 1.10 in Manchester The 166 fatal cases of enteric fever were equal to an annual rate of 0 04 per 1,000; in London the rate was only 0.02 per 1,000, but it ranged upwards in the other towns to 0.14 in Bury and in Bradford, 0 15 in Stockton-on-Tees, 0.16 in Warrington, 0.18 in Portsmouth, 0 22 in

Analysis of the Vital Statistics of Seventy-seven of the Largest English Towns during the Second Quarter of 1910.

Towns.	Estimated Population middle of 1910.	Births.	Deaths.	Annual rate per 1,000 Living.			Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-cough.	Enteric Fever.	Diarrhoea.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
				Births.	Deaths.	Principal Infectious Diseases.										
77 Towns	16,940,895	110,079	53,242	26.1	12.6	1.14	4,855	6	1,596	315	390	1,782	166	600	96	0.8
76 Provincial Towns	12,068,193	79,822	39,148	26.5	13.0	1.18	3,552	6	1,054	265	318	1,336	138	435	99	1.1
London	4,872,702	30,257	14,094	24.9	11.6	1.08	1,303	—	542	50	72	446	28	1 5	88	0.1
Croydon	164,485	996	431	24.3	10.5	0.78	32	—	18	3	4	6	—	61	67	—
Willesden	166,088	1,025	356	24.8	8.6	0.75	31	—	16	—	2	10	—	3	63	0.3
Hornsey	98,561	350	183	14.2	7.4	0.28	7	—	—	1	—	3	1	2	46	0.5
Tottenham	132,803	979	356	29.6	10.8	0.57	19	—	1	2	2	11	—	3	80	—
West Ham	328,585	2,229	883	27.2	10 8	0.92	75	—	27	5	14	21	1	7	71	0.1
East Ham	156,208	928	333	23.8	8.6	1.03	40	—	23	2	5	8	—	2	93	—
Leyton	133,436	846	285	25.4	8 6	0.72	24	—	7	4	6	7	—	—	57	—
Walthamstow	141,748	821	271	23.2	7.7	0.65	23	—	12	3	1	6	—	1	63	0.4
Hastings	68,520	243	205	14.2	12.0	1.17	20	—	5	1	1	13	—	—	82	1.0
Brighton	131,900	720	407	21.9	12.4	0.30	10	—	1	—	—	8	1	—	78	0 2
Portsmouth	217,989	1,448	702	26.6	12.9	1.22	67	—	7	10	10	23	10	7	84	0.7
Bournemouth	73,947	339	220	18.4	11.9	0.32	6	—	—	—	4	1	—	1	80	1.8
Southampton	127,157	762	330	24.0	10.4	0.37	12	—	—	2	2	2	1	5	60	—
Reading	84,355	457	189	21.7	9.0	0.19	4	—	—	—	1	3	—	—	70	2.1
Northampton	99,113	535	265	21.7	10.7	0.32	8	—	2	—	1	5	—	—	79	1.1
Ipswich	75,936	487	233	25.7	12.3	0.75	14	—	2	—	3	6	1	2	82	—
Great Yarmouth	53,715	337	181	25.2	13.5	0.52	7	—	—	—	2	2	—	3	89	0.6
Norwich	125,446	761	357	24.3	11.4	0.42	13	—	2	3	3	—	1	4	83	1.7
Plymouth	126,266	653	395	20.7	12.5	0.57	18	—	1	1	4	10	1	1	67	—
Devonport	84,695	509	248	24.1	11.7	1.32	28	—	2	—	4	19	—	3	90	—
Bristol	382,550	2,172	1,039	22.8	10.9	0.51	49	—	4	2	10	16	2	15	76	—
Hanley	245,726	1,972	878	32.2	14.3	1.75	107	—	53	13	12	11	5	13	106	1.8
Burton-on-Trent	54,977	320	153	23.3	11.2	2.18	30	—	20	—	5	4	1	—	78	2.6
Wolverhampton	105,962	656	337	24.8	12.8	0.95	25	—	9	2	1	12	—	1	96	0.9
Walsall	101.035	719	290	28.5	11 5	0.68	17	—	4	3	1	—	1	8	103	0.7
Handsworth	72,355	351	139	19.5	7.7	0.56	10	—	—	1	—	4	1	4	71	0.7
West Bromwich	71,138	523	215	29.5	12.1	0.63	11	—	—	3	1	1	—	6	92	2.3
Birmingham	570,113	3,815	1,767	26.8	12.4	0.97	138	—	2	19	13	89	1	14	106	2.8
King's Norton	84,673	446	158	21.1	7.5	0.56	12	—	—	—	3	7	—	2	65	3.2
Smethwick	72,350	492	188	27.3	10.4	1.16	21	—	—	3	2	6	2	8	79	1.6
Aston Manor	86,269	527	191	24.5	8.9	0.75	16	—	—	5	1	8	1	1	44	0.5
Coventry	81,449	696	283	34.3	13.9	0.74	15	—	—	8	3	1	—	3	79	2.1
Leicester	248,374	1,419	611	22.9	9.9	0.37	23	—	2	2	—	14	2	3	82	0.7
Grimsby	74,283	529	219	28.6	11.8	1.19	22	—	—	—	1	12	4	5	115	0.5
Nottingham	266,471	1,742	885	26.2	13.3	1.11	73	—	19	6	10	22	5	11	108	0.5
Derby	131,256	843	332	25.8	10.1	0.39	13	—	3	—	2	2	2	4	79	—
Stockport	105,087	679	423	25.9	16.1	1.57	41	—	18	—	2	15	1	5	135	0.2
Birkenhead	122,431	925	432	30.3	14.2	1.30	40	—	1	1	4	26	4	4	114	0.7
Wallasey	73,173	503	261	27.6	14.3	1.18	20	—	2	1	1	10	1	5	80	1.1
Liverpool	767,606	5,956	3,389	31.1	17.7	2.68	513	—	208	32	18	186	10	59	128	1.5
Bootle	70,548	521	241	29.6	13.7	2.22	39	—	17	1	2	17	—	2	121	3.3
St. Helens	96,523	864	299	35.9	12.4	0.74	18	—	1	8	—	7	—	2	95	4.3
Wigan	91,732	754	305	33.0	13.3	0.48	11	—	3	3	—	2	1	2	94	—
Warrington	73,295	596	276	32.6	15.1	1.20	22	—	4	1	4	8	3	2	99	5.1
Bolton	190,315	1,125	575	23.7	12.1	1.25	59	—	—	13	7	33	1	5	102	1.0
Bury	59,409	308	193	20.8	13.0	0.62	9	—	—	5	1	—	2	1	110	2.6
Manchester	716,354	5,209	2,902	29.2	16.2	2.27	404	—	117	20	23	195	18	30	121	0.8
Salford	244,636	1,639	932	26.9	15.3	1.87	114	—	28	4	13	46	8	15	126	0.5
Oldham	144,111	999	641	27.8	17.8	1.90	68	—	11	—	2	37	4	14	136	—
Rochdale	90,497	509	317	22.6	14.1	0.74	17	—	1	1	3	8	2	2	77	2.2
Burnley	107,448	700	375	26.1	14.0	1.31	35	—	6	4	3	13	—	9	131	0.8
Blackburn	137,972	775	463	22.5	13.5	1.22	42	1	24	6	2	1	—	8	101	3.0
Preston	119,253	738	468	24.8	15.7	1.35	40	—	16	3	7	2	4	8	148	2.8
Barrow-in-Furness	63,689	444	210	28.0	13.2	1.45	23	—	11	—	3	6	—	3	110	3.8
Huddersfield	94,702	555	360	23.5	15.2	0.84	20	—	4	3	2	10	—	1	77	0.6
Halifax	112,818	536	363	19.1	12.9	0.61	17	—	3	—	5	6	—	3	56	1.7
Bradford	295,865	1,441	1,064	19.5	14.4	1.69	124	—	87	2	9	8	10	8	119	0.5
Leeds	490,985	2,831	1,623	23.1	13 3	0.93	116	—	27	10	15	47	3	14	114	0.1
Dewsbury	51,224	283	174	22.2	13.6	0.94	12	—	7	—	—	1	1	3	124	—
Sheffield	478,763	3,205	1,470	26.9	12.3	1.12	133	1	13	12	6	82	4	15	96	0.7
Rotherham	66,414	448	205	27.1	12.4	0.90	15	—	1	1	1	7	4	1	114	0.5
York	88,159	522	224	23.7	10.2	0.37	8	—	5	—	—	2	—	1	65	—
Hull	280,006	2,047	909	29.3	13.0	0.82	57	1	21	2	6	22	1	4	82	1.4
Middlesbrough	107,014	868	397	32.5	14.9	0.95	25	—	1	1	9	5	1	8	97	0.8
Stockton-on-Tees	53,680	392	198	29.3	14.8	1.26	17	—	6	—	3	3	2	3	97	2.0
West Hartlepool	81,814	497	201	24.4	9.9	0.54	11	—	—	1	—	10	—	—	97	—
Sunderland	161,083	1,226	579	30.5	14.4	1.13	46	—	22	5	5	11	1	2	99	2.4
South Shields	119,737	890	429	29.8	14.4	1.84	55	2	14	1	2	32	—	4	104	3.0
Gateshead	133,676	978	424	29.3	12 7	1.62	54	—	13	—	2	30	1	8	139	5.4
Newcastle-on-Tyne	285,951	1,909	933	26.8	13.1	0.72	52	—	10	3	6	23	—	10	94	0.4
Tynemouth	56,378	483	221	34.4	15.7	0.85	12	—	—	1	3	5	—	3	110	1.4
Newport (Mon.)	79,729	614	284	30.9	14.3	1.21	24	—	1	2	2	17	1	1	111	0.7
Cardiff	199,189	1,299	601	26.2	12.1	1.06	53	1	25	4	5	8	3	7	85	0.2
Rhondda	138,674	1,417	495	41.0	14.3	1.10	38	—	1	6	3	12	2	14	104	0.6
Merthyr Tydfil	79,522	638	408	32.2	20.6	4.48	89	—	75	4	2	3	—	5	161	0.5
Swansea	98,817	852	369	34.6	15.0	0.76	19	—	8	—	3	6	1	1	79	—

Grimsby, and 0.24 in Rotherham. The 600 fatal cases of diarrhœa corresponded to a rate of 0.14 per 1,000; in London also the death-rate from this cause was 0.14 per 1,000, the highest rates recorded among the other towns being 0.31 in Liverpool, 0.32 in Walsall, 0.34 in West Bromwich and in Burnley, 0.39 in Oldham, 0.40 in Rhondda, and 0.44 in Smethwick. Of the 6 deaths from small-pox, 2 belonged to South Shields, and 1 each to Blackburn, Sheffield, Hull, and Cardiff.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 96 per 1,000 last quarter, against 110, 100, and 101 per 1,000 in the corresponding periods of the three preceding years. In London the rate of infant mortality was 88 per 1,000, while it averaged 99 in the seventy-six other large towns, and ranged from 44 in Aston Manor, 46 in Hornsey, 56 in Halifax, 57 in Leyton, 60 in Southampton, and 63 in Willesden and in Walthamstow to 131 in Burnley, 135 in Stockport, 136 in Oldham, 139 in Gateshead, 148 in Preston, and 161 in Merthyr Tydfil.

The causes of 434, or 0.8 per cent., of the deaths in these towns last quarter were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Croydon, Tottenham, East Ham, Leyton, Southampton, Ipswich, Plymouth, Devonport, Bristol, Derby, Wigan, Oldham, Dewsbury, York, West Hartlepool, and Swansea; among the other towns the proportion per cent. of uncertified deaths ranged upwards to 3.0 in Blackburn and in South Shields, 3.2 in King's Norton, 3.3 in Bootle, 3.8 in Barrow-in-Furness, 4.3 in St. Helens, 5.1 in Warrington, and 5.4 in Gateshead.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns 8,900 births and 3,665 deaths were registered during the week ended Saturday, July 30th. The annual rate of mortality in these towns, which had been 11.0, 11.4, and 11.1 in the three preceding weeks, rose to 11.3 per 1,000 last week. The rates in the several towns ranged from 2.1 in Hornsey, 4.3 in Leyton, 4.9 in Stockton-on-Tees, 6.2 in King's Norton, and 6.3 in East Ham, to 17.1 in Salford, 17.5 in Norwich, 17.7 in Bootle, 18.5 in Swansea, 18.7 in Huddersfield, and 19.0 in Middlesbrough. The death-rate from the principal epidemic diseases averaged 1.1 per 1,000; in London the rate was 0.6 per 1,000, while among the seventy-six other large towns it ranged upwards to 3.1 in Walsall, 3.4 in Burnley, 3.7 in Bootle, and 4.1 in Barrow-in-Furness. Measles caused a death-rate of 1.0 in Nottingham, 1.1 in Liverpool, 1.3 in Merthyr Tydfil, and 3.3 in Barrow-in-Furness; whooping-cough of 1.7 in Salford and 1.9 in Burnley; and diarrhœa of 1.5 in Rhondda, 1.7 in Wigan, 2.1 in Birkenhead, 2.6 in Walsall, and 3.0 in Bootle. The mortality from scarlet fever, diphtheria, and fever showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,439, 1,530, and 1,548 at the end of the three preceding weeks, further rose to 1,563 at the end of the week under notice; 179 new cases were admitted during the week, against 188, 249, and 173 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ended Saturday last, July 30th, 854 births and 460 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 12.1, 12.4, and 12.0 in the three preceding weeks, rose to 12.7 per 1,000 last week, and was 1.4 per 1,000 above the mean rate during the same period in the large English towns. Among the Scottish towns the death-rates ranged from 8.4 in Leith and 9.8 in Aberdeen to 13.8 in Dundee and 13.9 in Glasgow. The death-rate from the principal infectious diseases averaged 1.3 per 1,000, being highest in Paisley and Glasgow. The 236 deaths from all causes recorded in Glasgow included 3 which were referred to measles, 1 to scarlet fever, 3 to diphtheria, 9 to whooping-cough, 4 to fever, and 17 to diarrhœa.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, July 23rd, 615 births and 359 deaths were registered in the twenty-two principal urban districts of Ireland, as against 686 births and 347 deaths in the preceding period. The annual death-rate in these districts, which had been 16.1, 17.0, and 15.7 per 1,000 in the three preceding weeks, rose to 16.3 per 1,000 in the week under notice, this figure being 5.2 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 17.2 and 15.6 respectively, those in other districts ranging from 4.0 in Dundalk and 4.2 in Newry to 23.3 in Wexford and 24.6 in Kilkenny, while Cork stood at 19.9, Londonderry at 8.4, Limerick at 13.7, and Waterford at 19.5. The zymotic death-rate in the twenty-two districts averaged 2.2 per 1,000, as against 1.6 per 1,000 in the preceding week.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Staff Surgeon J. R. Muir, M.B., to the *Swiftsure*, July 25th; Surgeon R. Connell, M.B., to the *President*, additional, for the *Maine*, July 25th; Surgeon F. L. Smith, to the *King Alfred*, July 26th; Surgeon J. H. B. Martin, M.B., to the *St. Vincent*, August 1st; Staff Surgeon W. H. S. Sequeira, M.B., to the *Majestic*, on recommissioning, August 2nd; Surgeon E. Cameron, M.B., to the *Vernon*, July 29th.

INDIAN MEDICAL SERVICE.

Colonel T. E. L. Bate, C.I.E., Bengal, is permitted to retire from the service from July 12th. He joined the department as Surgeon, March 31st, 1875, and became Colonel, July 12th, 1905. He served in the Afghan war in 1879–80, receiving a medal.

Lieutenant-Colonel C. J. Bamber, Bengal, is promoted to be Colonel from July 12th. He was appointed Surgeon, September 30th, 1878, and became Lieutenant-Colonel, September 30th, 1898. He is confirmed in the appointment of Inspector-General of Civil Hospitals, Punjab, from July 12th. His war record includes—the Mahsud Waziri Expedition, 1881; the Burmese campaign, 1886–7 (medal with clasp); and the campaign on the North-West Frontier of India, 1897–8 (medal with clasp).

Major F. O'Kinealy has been appointed Surgeon on the staff of the Governor-General of India elect.

Major W. H. Cox, D.S.O., will temporarily carry on the duties of Principal Medical Officer, Aden Brigade, in addition to his own duties.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Third East Anglian Field Ambulance.—Major and Honorary Surgeon-Lieutenant-Colonel H. T. Challis, M.D., to be Lieutenant-Colonel, June 20th.

Third Lowland Field Ambulance.—Lieutenant J. W. Keay, M.B., to be Captain, June 1st.

Attached to Units other than Medical Units.—Lieutenant-Colonels F. H. Appleby and J. F. Tabe resign their commissions, retaining their rank and uniform, July 30th.

For Attachment to Units other than Medical Units.—W. T. Blackledge, M.B. (late Captain, 3rd West Lancashire Brigade, Royal Field Artillery), to be Captain, January 24th; N. W. Kidston, M.B., to be Lieutenant, May 1st; C. Douglas, M.B., to be Lieutenant, May 19th.

Hospitals and Asylums.

CRICHTON ROYAL INSTITUTION, DUMFRIES.

From the annual report for the year 1909, of which through the courtesy of Dr. C. C. Easterbrook, the Medical Superintendent, we have received an advance copy, we see that the year was one of large structural alterations and improvements. These alterations included the completion of the new detached villas, the formation of hospital accommodation, provisional and permanent, for all classes of patients, and many other minor improvements. Notwithstanding these changes, the administration of the institution, Commissioner Macpherson says in his report, was perfectly satisfactory. Perhaps the most important event of the year, however, was the establishment of a special department for psychological investigation and research. As already intimated in the Journal, the directors have instituted in furtherance of this scheme three fellowships, which are offered to medical men in order that they may devote themselves to original neurological and psychological research at the institution. One of these Crichton Fellowships has already been awarded.

On January 1st, 1909, there were 860 patients on the registers, of whom 828 were certificated patients and 32 voluntary patients, whilst on the last day of the year the certificated patients numbered 800 and the voluntary patients again 32. Excluding the voluntary patients, the total cases under care during the year numbered 960, and the average number daily resident 812.3

During the year 132 certificated patients and 28 voluntary boarders were admitted. As three of the certificated patients were admitted twice during the year, there were actually 129 persons (certificated patients) admitted, of whom 31 were transfers from other institutions and 98 receptions. Of the receptions, 81 were suffering from their first attack, and the remainder, including 3 congenital imbeciles, had had previous attacks. As to duration of disorder, in 59 the attacks were of less than three months, and in 20 more within twelve months of admission. The receptions were classified on admission into: Mania, 25; melancholia, 24; delusional insanity, 21; delirium, confusion and stupor, 8; primary and secondary dementia, 2 each; dipsomania, 5; insanity with epilepsy, 3; congenital imbecility, 3; general paralysis, 2; and moral insanity, 1. As regards causation, Dr. Easterbrook says that the onset of the illness was attributed by the patients and their relatives in most cases to such exciting causes as prolonged worry and anxiety and antecedent illness, and in others to loss of employment, overwork, shock, bodily injury, and alcoholism; but that in all cases where a complete history was obtainable there was distinct evidence of an underlying predisposition to mental disorder. No table, therefore, of etiological factors is included in the report. During the year 56 certificated cases were discharged as recovered, giving a recovery-rate on the reception (cases) of 42.4 per cent., 31 as improved, and 7 as not improved.

During the year also 66 of the certificated patients died, giving a death-rate on the average numbers resident of 8.1 per cent. The deaths were due in 22 to cerebro-spinal diseases, with 8 from general paralysis; in 15 to diseases of the heart and blood vessels; in 1 to bronchitis; in 1 to peritonitis (from duodenal ulcer); in 5 to genito-urinary diseases; and in the remaining 22 to general diseases, including 12 deaths, or over 18 per cent. of the total deaths, from tuberculosis.

The general health was good throughout the year, and apart from occasional mild cases of influenza the institution was free from zymotic disease.

NORTH CHARITABLE INFIRMARY, CORK.

The North Infirmary, Cork, reports good work for the past year. The number of patients admitted to the medical and surgical wards of the infirmary numbered 1,155, namely, 341 medical and 814 surgical. The daily average number of beds occupied was 84; the number of deaths 67, namely, 35 medical and 32 surgical. There were over 400 major operations during the year. The number of accidents was 15,328, of which 2,518 were attended during the night. The number of attendances in the medical and surgical extern

departments totalled 21,937. The Honorary Secretary, in a special appeal for funds to provide a new extern department, states that complete reconstruction of this part of the hospital is an urgent necessity, and in this reconstruction the advisability of arranging for suitable accommodation for the house-surgeons and resident pupils would have to be considered. One of the members of the committee of the hospital makes a moving appeal for funds for the improvement of the accommodation of the little children in the hospital. The ward at present adjoins the operation rooms, and the committee desired to place them elsewhere in the building.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary at the rate of £60 per annum.

BOURNEMOUTH ROYAL NATIONAL SANATORIUM.—Resident Medical Officer. Salary, £10 per month.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon (male). Salary, £100 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Two Assistant House-Surgeons. Salary, £60 and £50 per annum respectively.

BRISTOL GENERAL HOSPITAL.—Pathologist.

BRISTOL ROYAL INFIRMARY.—Honorary Medical Officer.

BRISTOL UNIVERSITY.—Demonstrator of Pathology.

CAMBRIDGESHIRE, ETC., ASYLUM, Fulbourn.—Second Assistant Medical Officer. Salary, £120 per annum, rising to £150 per annum.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer (male). Salary, to commence, £140 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer (male). Salary, £160 per annum, rising to £180.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £75 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Physician to Out-patients. Honorarium 40 guineas per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum.

DORCHESTER COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £140 per annum, rising annually.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £75 per annum.

DURBAN CORPORATION.—Medical Officer to initiate and carry on the work of a Municipal Tuberculosis Bureau. Salary, £600 per annum.

EDMONTON UNION INFIRMARY.—Resident Assistant Medical Officer (male). Salary, £100 per annum, rising to £140.

FRENCH HOSPITAL, Shaftesbury Avenue, W.C.—Resident Medical Officer. Salary, £100 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

HEREFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

HULL: ROYAL INFIRMARY.—Two Casualty House-Surgeons. Salary at the rate of £60 per annum for six months, and £80 per annum for twelve.

LINCOLN GENERAL DISPENSARY.—Resident Junior Medical Officer. Salary, £175 per annum.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £100 and £60 per annum respectively.

MANCHESTER: ANCOATS HOSPITAL.—Honorary Physician.

MANCHESTER HOSPITAL FOR CONSUMPTION, ETC.—Assistant Medical Officer and Pathologist at the Out-patient Department, Hardman Street. Salary, £60 per annum.

MIDDLESEX HOSPITAL, W.—Assistant Anaesthetist. Salary, £40 per annum.

NORFOLK AND NORWICH HOSPITAL.—Honorary Pathologist and Bacteriologist.

OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—(1) House-Surgeon. (2) Junior House-Surgeon. Salary at the rate of £80 per annum each.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150, and £5 annually in lieu of stimulants.

ROCHDALE INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum, rising to £90.

ROYAL NAVY MEDICAL SERVICE.—Dental Surgeon for duty with the Naval Forces in the United Kingdom. Inclusive salary, £1 per diem.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at the rate of £50 per annum.

SALISBURY: FISHERTON HOUSE ASYLUM.—Assistant Medical Officer (male). Salary, £50 per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician. Salary, £50 per annum each.

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House-Surgeon. Salary, £100 per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—Junior House-Surgeon. Salary at the rate of £75 per annum.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY.—Junior House-Surgeon. Salary, £100 per annum.

APPOINTMENTS.

BEESLY, Lewis, F.R.C.S.Edin., Assistant Surgeon to Chalmers's Hospital, Edinburgh, and Lecturer on Surgery to the School of Medicine for Women, Edinburgh.

BOWEN, O. H., M.R.C.S., L.R.C.P., Junior Resident Medical Officer at the London Temperance Hospital, Hampstead Road, N.W.

GREENE, R. L. W., L.R.C.P. and S.Edin., District Medical Officer of the Stratford-on-Avon Union.

HARVEY, F., M.R.C.S., L.R.C.P., District Medical Officer of the Rotherham Union.

HAY, A. E., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Isle of Wight Union.

HAYNES, H. G. L., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Market Bosworth Union.

JOHNSON, J. Anderton, M.B., Ch.B.Vict. and Liverp., District Medical Officer and Public Vaccinator to the Parish of St. Mary, Islington, N.

JOHNSTON, W. A., L.R.C.P. and S.I., District Medical Officer of the Bootle Union.

JULER, Frank A., M.B., B.Ch.Cantab., F.R.C.S., Ophthalmic Surgeon to the East London Hospital for Children, Shadwell.

LITTLEJOHN, E. S., B.A.Syd., M.D., C.M.Edin., a Senior Honorary Physician to the Royal Alexandra Hospital for Children, Sydney, vice E. J. Jenkins, M.A., M.D Oxon., M.R.C.P., M.R.C.S., L.S.A. Lond., resigned.

LOWRY, James Arthur, M.D., R.U.I., Medical Superintendent, Surrey County Lunatic Asylum, Brookwood, vice Dr. J. E. Barton, resigned.

MITCHELL, W. F., L.R.C.P. and S.Edin., District Medical Officer of the Okehampton Union.

NELIGAN, J. C., L.R.C.P.Edin., L.S.A., District Medical Officer of the Teesdale Union.

SEAL, P. H., M.B., B.S.Lond., District Medical Officer of the South Molton Union.

TATE, S., M.D., B.Ch., R.U.I., District Medical Officer of the Spalding Union.

WALKER, F. E., M.B., B.S.Lond., District Medical Officer of the Uxbridge Union.

WALKER, M. G. L., M.B., Ch.B.Leeds, District Medical Officer of the Keighley Union.

WALLACE, R. F. H. S., M.R.C.S., L.R.C.P., District Medical Officer of the Spilsby Union.

WHITEHOUSE, W. H., M.D., Medical Officer of Health of the Borough of Aston Manor.

WILCOX, H., M.B., District Medical Officer of the Blandford Union.

WOLSTENHOLME, T. B., M.B., Ch.B.Vict., District Medical Officer of the Burton-upon-Irwell Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

HOLMES.—On July 31st. at Down Hall, Rippingale, Lincs., the wife of A. Hewston Holmes, M.D., of a son.

NATTLE.—On June 24th, at Mohales Hoek, Basutoland, the wife of W. R. Nattle, M.R.C.S.Eng., L.R.C.P.Lond., of a son.

MARRIAGE.

BROTHERSTON—SMITH.—At Garrarie, Whithorn, on August 3rd, by the Rev. John Gordon, William Brotherston, Writer to the Signet, Edinburgh, and Margaret Merry Smith, M.B., Ch.B., D.P.H.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Daily arrangements—Medical and Surgical Clinics, Operations, and X Rays at 2 p.m. Monday, Surgical Registrar, 10 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Lecture, Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Surgical Registrar, 10 a.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. on Monday, Wednesday, and Thursday.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. REBMAN, LIMITED, will shortly publish a new book by Dr. Berry Hart, of Edinburgh, entitled *Some Phases of Evolution and Heredity*. The author describes the chief theories of evolution. Darwinism, Weismanism, and Mnemism are critically considered from modern points of view. A new theory of evolution and its transmission is put forward, showing that probably these two processes are intrinsic, and not affected by outside conditions so much as is generally held, and that biometric work must take a high place in future in these questions. In the remaining chapters the questions of the bearing of modern views and those of heredity, etc., are considered.

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SUPPLEMENT

TO THE

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Association Intelligence.

PROCEEDINGS OF COUNCIL.

A MEETING of the Council, 1910–1911, was held at the Imperial Institute, on Wednesday morning, July 27th, 1910.

Present:

Mr. EDMUND OWEN, afterwards Dr. J. A. MACDONALD, in the Chair.

Mr. HENRY T. BUTLIN, F.R.C.S., D.C.L., LL.D., President.

Sir WILLIAM WHITLA, M.D., LL.D., Belfast, Past President.

Dr. EWEN J. MACLEAN, Cardiff, Chairman of Representative Meetings.

Dr. EDWIN RAYNER, Treasurer.

Dr. J. GRANT ANDREW, Glasgow
Insp.-General R. BENTHAM, Ealing
Surg.-General W. R. BROWNE, London
Dr. R. COCHRANE BUIST, Dundee
Dr. W. A. CARLINE, Lincoln
Mr. ANDREW CLARK, Uxbridge
Professor HENRY CORBY, Cork
Dr. M. DEWAR, Edinburgh
Mr. E. J. DOMVILLE, Exeter
Dr. J. E. EDDISON, Leeds
Mr. J. H. EWART, Eastbourne
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Mr. T. W. H. GARSTANG, Altrincham
Dr. E. W. GOODALL, London
Dr. MAJOR GREENWOOD, London
Dr. J. R. HAMILTON, Hawick
Sir VICTOR HORSLEY, F.R.S., London
Mr. R. J. JOHNSTONE, Belfast
Mr. HUGH KER, London
Mr. F. C. LARKIN, Liverpool
Mr. ALBERT LUCAS, Birmingham
Dr. JOHN MACDON[illegible]LD, South Shields
Dr. D. J. MACKIN[illegible] Glasgow
Dr. J. MUNRO M[illegible] iverness
Dr. B. H. N[illegible]N, Colchester
Dr. FRANK M. [illegible]eicester
Dr. A. J. RICE [illegible], London
Dr. LAURIST [illegible] SHAW, London
Dr. CECIL E. [illegible]elfast
Dr. J. H. TA[illegible]rd
Dr. D. F. TO[illegible]land
Mr. T. JENN[illegible], Bath
Dr. DENNIS [illegible]igue
Professor A[illegible] Dublin
Mr. D. J. W[illegible]anelly

ELECTION OF MEMBERS OF COUNCIL.

The CHAIRMAN OF REPRESENTATIVE MEETINGS reported the Returns of the Election by the Representative Meeting of Members of Council as follows:

Twelve Members elected by the Representatives Grouped Topographically.

Dr. Grant Andrew	Mr. Garstang	Dr. John Macdonald
Dr. Carline	Dr. Goodall	Dr. Jones Roberts
Dr. Dewar	Mr. Hugh Ker	Dr. Cecil Shaw
Mr. Flemming	Dr. J. J. Macan	Professor White

Service Members.

Inspector-General Bentham, R.N., Surgeon-General Browne, C.I.E., I.M.S., and Sir Alfred Keogh, K.C.B., A.M.S.

Four Members elected by the Representative Body.

Dr. R. C. Buist, Mr. Andrew Clark, Mr. Verrall, and Colonel Joubert de la Ferté.

ELECTION OF CHAIRMAN OF COUNCIL.

Dr. J. A. Macdonald was elected Chairman of Council for the ensuing three years in accordance with Article XXXVII, vice Mr. Edmund Owen, who completed his term of office.

On the motion of Mr. ANDREW CLARK, seconded by the TREASURER, and supported by Sir VICTOR HORSLEY, a cordial vote of thanks was accorded Mr. Edmund Owen for his services as Chairman of Council for the past three years.

APOLOGIES.

Read letters of apology for non-attendance from: The President-elect, Dr. David Ewart, Sir Alfred Keogh, K.C.B., and Dr. J. J. Macan.

MINUTES.

The Minutes of the last Quarterly Meeting having been circulated were signed by the Chairman as correct.

NEW MEMBERS.

The new Members of Council were formally welcomed by the CHAIRMAN upon attending the Council for the first time.

MEETINGS.

The following dates for the quarterly Meetings of Council for the ensuing twelve months were approved:

Wednesday, October 26th, 1910; Wednesday, January 25th, 1911; Wednesday, April 26th, 1911; Wednesday, June 28th, 1911.

ANNUAL MEETING, 1913

A letter was read from Dr. Ogilvie Will, of the Aberdeen Branch, inviting the Association to meet in Aberdeen in 1913.

It was resolved that Dr. Ogilvie Will be thanked for his letter, and that the communication be entered on the Minutes for future guidance.

REPORTS OF COMMITTEES.

Election Returns Committee.

Mr. ANDREW CLARK presented the Report of the Election Returns Committee, which was received and approved.

Science Committee.

Dr. POPE presented the Report of the Science Committee.

William Nicoll, M.A., D.Sc., M.B., Ch.B., was re-appointed Ernest Hart Memorial Scholar for a further period of one year. Harold Ackroyd, M.B., Charles Bolton, M.D., and William James Penfold, M.B., were reappointed Research Scholars for a further period of one year.

Renewed grants were made as follows:

	£	s.	d.
Beattie, Professor James Martin, M.D. ...	15	0	0
Boycott, A. E., B.Sc., M.D.	25	0	0
Gray, A. M. H., M.D.	5	0	0
Halliburton, W. D., M.D. ...	20	0	0
Low, R. Cranston, F.R.C.P., M.D. ...	5	0	0
Orr, David, M.D.	20	0	0
Paterson, Herbert J., F.R.C.S.	10	0	0
Pembrey, M. S., M.D.	15	0	0
Price-Jones, C., M.B.	15	0	0
Ryfell, J. H., B.C.	5	0	0
	135	0	0

New grants were made as follows:

	£	s.	d.
Farrant, Rupert, F.R.C.S.	15	0	0
Goodhart, Gordon W., B.C., M.B. ...	20	0	0
Grünbaum, A. S. F., M.D.	25	0	0
Lloyd, W. Gibbs, M.B., Ch.B.	5	0	0
Moore, Professor Benjamin, M.A., D.Sc., M.R.C.S.	20	0	0
Phillips, J. C. B., M.B., B.S.	20	0	0
Smith, E. A., M.B., Ch.B., F.R.C.S. ...	20	0	0
Wilson, S. A. K., M.A., M.B.	50	0	0
	175	0	0

The remainder of the Report was approved.

The Council then adjourned until Friday, July 29th, at 9 o'clock in the morning.

Friday, July 29th, 1910.

ELECTION OF COMMITTEES

AT a Meeting of the Council held in the Imperial Institute, South Kensington, on Friday morning, July 29th, 1910, the following were elected to the respective Committees:

The President of the Association, the Chairman of Representative Meetings, the Chairman of Council, and the Treasurer are *ex officio* members of all Committees.

ARRANGEMENTS COMMITTEE.

Andrew, Dr. J. Grant, Glasgow
Corby, Professor Henry, Cork
Eddison, Dr. J. E., Leeds
Grossmann, Dr. Karl, Liverpool
Pope, Dr. F. M., Leicester
Shaw, Dr. Lauriston E., London

CENTRAL ETHICAL COMMITTEE.

By the Representative Meeting.	*By the Council.*
Bateman, Dr. A. G., London	Ewart, Mr. J. H., Eastbourne
Goff, Dr. Bruce, Bothwell, N.B.	Macan, Dr. J. J., Cheam
Langdon Down, Dr. R. L., Richmond	Macdonald, Dr. John, South Shields
Lee, Mr. Philip, Cork	Milburn, Dr. C. H., Hull
Neal, Mr. J., Birmingham	Shaw, Dr. Lauriston E., London
Straton, Mr. C. R., Salisbury	Williams, Mr. D. J., Llanelly

COLONIAL COMMITTEE

By the Representative Meeting.	*By the Council*
Greany, Surgeon-General, I.M.S., London	Morier, Dr. C. G. D., London
Greenlees, Dr. T. D., London	Owen, Mr. Edmund, London

And all Members of the Council who represent Colonial Branches.

FINANCE COMMITTEE.

By the Representative Meeting.	*By the Council.*
Ewart, Mr. J. H., Eastbourne	Carline, Dr. W. A., Lincoln
Langdon-Down, Dr. R., Hampton Wick	Horsley, Sir Victor, F.R.S., London
Lawson, Dr. David, Banchory	Ker, Mr. Hugh, London
Moore, Dr. Milner, Coventry	Larkin, Mr. F. C., Liverpool

And the Chairman of each of the following Committees: Organization, Journal, Science, Medico-Political, and Central Ethical.

HOSPITALS COMMITTEE.

By the Representative Meeting.	*By the Council.*
Armour, Mr. Donald, London	Domville, Mr. E. J., Exeter
Joubert de la Ferté, Colonel, Weybridge	Johnstone, Mr. R. J., Belfast
Macan, Dr. J. J., Cheam	Ker, Mr. Hugh R., London
Parker, Dr. George, Bristol	Mackintosh, Dr. D. J., M.V.O., Glasgow
Thomson, Dr. D. G., Norwich	Owen, Mr. Edmund, London
Trotter, Dr. A., Perth	Shaw, Dr. Lauriston E., London

JOURNAL COMMITTEE.

By the Representative Meeting.	*By the Council.*
Armit, Mr. H. W., Wembley	Clark, Mr. Andrew, Uxbridge
Buist, Dr. R. Cochrane, Dundee	Lucas, Mr. Albert, Birmingham
Wynne, Dr. F. E., Leigh	Verrall, Mr. T. Jenner, Bath

The Chairman of the Central Ethical Committee has been invited to attend the Meetings of the Journal Committee.

MEDICO-POLITICAL COMMITTEE.

By the Representative Meeting.	*By the Council.*
Dewar, Dr. M., Edinburgh	Eddison, Dr. J. E., Leeds
Fothergill, Dr. E. R., Wandsworth	Flemming, Mr. C. E. S., Bradford-on-Avon
Greer, Mr. W. J., Monmouth	Garstang, Mr. T. W. H., Altrincham
Johnston, Colonel W. T., Kingstown	Greenwood, Dr. Major, London
Taylor, Dr. J. H., Salford	Straton, Mr. C. R., Wilton
Todd, Dr. D. F., Sunderland	Verrall, T. Jenner, Bath

NAVAL AND MILITARY COMMITTEE.

By the Representative Meeting.

Coombs, Dr. R. H., Bedford
Cuffe, Sir Charles, K.C.B., London

By the Council.

Giles, Colonel P. B., V.D., R.A.M.C.T., Bletchley
Joubert de la Ferté, Colonel C. H., I.M.S., Weybridge

And the Representatives of the Royal Navy Medical Service (Inspector-General R. Bentham, R.N., London), the Army Medical Service (Sir Alfred Keogh, K.C.B., A.M.S., London), and the Indian Medical Service (Surgeon-General W. R. Browne, C.I.E., I.M.S., London).

ORGANIZATION COMMITTEE.

By the Representative Meeting.	*By the Council.*
Coombe, Mr. Russell, Exeter	Clark, Mr. Andrew, Uxbridge
Goodall, Dr. E. W., London	Larkin, Mr. F. C., Liverpool
Metcalfe, Dr. J., Bradford	Moir, Dr. J. Munro, Inverness

PUBLIC HEALTH COMMITTEE.

By the Representative Meeting.	*By the Council.*
Keay, Dr. J. H., Greenwich	Domville, Mr. E. J., Exeter
Jones, Mr. Herbert, Hereford	Garstang, Mr. T. W. H., Altrincham
Lyster, Dr. R. A., Winchester	Goodall, Dr. E. W., London

SCIENCE COMMITTEE.

Andrew, Dr. Grant, Glasgow	Pope, Dr. F. M., Leicester
Dixon, Professor W. E., Cambridge	Shaw, Dr. Cecil E., Belfast
Haldane, Dr. J. S., F.R.S., Oxford	Stockman, Professor R., Glasgow
Martin, Dr. C. J., F.R.S., London	White, Professor A. H., Dublin

SPECIAL POOR LAW REFORM COMMITTEE.

Chairman Hospitals Committee, *ex officio*	Greenwood, Dr. Major, London
Anderson, Dr. J. Ford, London	Jones, Mr. Herbert, Hereford
Buist, Dr. R. C., Dundee	Mahon, Dr. R. B., Ballinasloe
Darling, Dr. J. S., Lurgan	McVail, Dr. J. C., Glasgow
Domville, Mr. E. J., Exeter	Moir, Dr. J. Munro, Inverness
Flemming, Mr. C. E. S., Bradford-on-Avon	Shaw, Dr. Lauriston E., London
Fothergill, Dr. E. R., London	Straton, Mr. C. R., Wilton
Garstang, Mr. T. W. H., Altrincham	Taylor, Dr. J. H., Salford

This Committee was reappointed to act until October, with a reference to complete and issue the Report to Divisions on a Centrally Controlled National Provident

Medical Service. The Committees by whom the Committee was originally nominated have been instructed to suggest names to the Council in October of the same number as they originally nominated: Medico-Political, 5; Public Health, 3; Hospitals, 2; Irish, 2; Scottish, 2; with power to co-opt.

Territorial Forces Committee.

Clark, Colonel Andrew, V.D., K.H.S., Uxbridge	Moir, Lieutenant-Colonel J. Munro, V.D., Inverness
Elliston, Colonel G. S., V.D., Felixstowe	Thomas, Colonel J. Raglan, V.D., Exeter
Giles, Colonel P. B., V.D., A.M.S.(T.F.), Bletchley	Todd, Major D. F., Sunderland
Milburn, Colonel C. H., V.D. Hull	White, Lieutenant-Colonel Sinclair, Sheffield

Therapeutic Committee.

Chairman of Science Committee, *ex officio*	Martin, Dr. C. J., F.R.S., London
Cushny, Professor A. R., F.R.S., London	Smith, Dr. F. J., London
Davy, Dr. Henry, Exeter	Stockman, Professor Ralph, Glasgow
Dixon, Professor W. E., M.D., Cambridge	Whitla, Sir William, Belfast
Greenish, Professor, London	Wild, Professor R., M.D., Manchester
Marshall, Professor C. R., M.D., Dundee	

Reports of Committees.

Organization Committee.

Mr. Andrew Clark presented the Report of the Organization Committee of July 13th, 1910, which was received.

The Council gave instructions for the necessary steps to be taken with a view to the election of Members of Council for the year 1910–11 to fill the casual vacancies created by the non-election of Members under By-law 23, sub-paragraph (*a*), by the following groups of Branches:—the Glasgow (County Divisions), Border Counties and Stirling Group, the Oxford and Reading and Southern Group, and the Leinster Branch. The following scheme of dates was adopted for the purpose, and all the Branches concerned are to be at once informed of the arrangements that are being made:

Announcement of date for receiving nominations to appear in the Journal of	August 6th.
Last day for receipt of nominations ...	September 14th.
Day of issue of voting papers from Head Office	September 21st.
Last day for receipt of voting papers at Head Office	September 26th.

The Organization Committee was instructed to take all necessary steps on behalf of the Council to secure the election at the earliest possible date of Members of Council by those Groups of Branches outside the United Kingdom which up to the present have failed to elect.

The remainder of the Report was approved.

Irish Committee.

Dr. Cecil Shaw presented the Report of the Irish Committee of July 9th, 1910, which was received.

It was resolved that the efforts of the Association be directed to the promotion of a national medical service in Ireland on the general lines of the Recommendations of the Viceregal Commission; that a paid organizer or organizers be appointed to visit Members of the profession throughout Ireland in order to promote united action for the furtherance of reform of the Poor Law Medical Service; that the Irish Medical Association be invited to share the expense with the British Medical Association in the proportion of the membership in Ireland of the two bodies; and that the Irish Committee be authorized to incur a special expenditure, not exceeding £300, for the purpose of carrying out the foregoing Recommendations.

Minutes of Representative Meeting.

Mr. Ballance, as Chairman of Representative Meetings, 1909–10, presented the Minutes of the Representative Meeting held on July 22nd, 23rd, 25th, and 26th, 1910, which were considered page by page.

It was left to the Chairman of Council in conference with the Chairman of Representative Meetings to refer the Resolutions of the Annual Representative Meeting to the appropriate Committees.

Annual Meeting, 1911.

It was decided that the Annual Meeting arranged for Birmingham in 1911 shall commence on Friday, July 21st, and proceed through the following week, to finish on Saturday, July 29th. Further, that it be left to the Chairman of Council, the President-elect, and the Chairman of Representative Meetings to decide the actual hour for commencing business on July 21st.

Votes of Thanks.

On the motion of the Chairman of Council, it was resolved with acclamation, that the best thanks of the Association be extended to the President and Mrs. Butlin for their kind hospitality, and the splendid work accomplished by them on behalf of the British Medical Association; and that the best thanks of the Association be accorded Dr. Lauriston Shaw and his colleagues for their splendid and untiring work, whereby the success of the London Meeting was attained.

It was left to the Chairman of Council, in consultation with the Honorary Local Secretaries, to transmit the best thanks of the Association to all those who have rendered assistance in connexion with the Seventy-eighth Annual Meeting.

Association Notices.

ELECTION OF CENTRAL COUNCIL 1910-11.

To those Branches or groups of Branches in the United Kingdom who failed to make nominations for election of members of the 1910–11 Council,

Notice is hereby given that nominations of candidates for election of Members of Council by Branches or groups of Branches in the United Kingdom by voting papers for the year 1910–11 must be forwarded to reach the Financial Secretary and Business Manager, at the Office of the Association, not later than September 14th, 1910, and that each nomination must be on the prescribed form, copies of which will be furnished by the Financial Secretary and Business Manager upon application.

Separate forms have been prepared for a nomination by a Division and for a nomination by any three members respectively, and those applying are requested to state for which purpose the form is desired.

Voting papers containing the names of all candidates duly nominated will be issued from the Central Office on September 21st, and will be returnable not later than September 26th.

By Order of the Council,

Guy Elliston,

Financial Secretary and Business Manager.

August 3rd, 1910.

ANNUAL REPRESENTATIVE MEETING.

Referendum by Postal Vote.

We are asked to state that Lieutenant-Colonel Decimus Curme, Representative of the West Dorset Division, in view of the interest taken in this matter by his Division, when he supported the Rider moved by Dr. Goodall instructing the Council to prepare a report on the question of the Referendum by postal vote (Supplement, July 30th, 1910, p. 215), suggested that the Council should consider whether, in the event of a Referendum, it would be possible to allow each Division or Branch the option of taking it by postal vote or otherwise.

A Correction.

In the report of the Annual Representative Meeting published in the Supplement of July 30th, p. 219, under the heading "Election of Service Members by Representative Meeting," Colonel Joubert de la Ferté was made to say that "an officer might not be nominated on a committee after he had completed five years on the retired list." Colonel Joubert de la Ferté was not referring to nominations on committees, but to nominations on the Council.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, 29th, and 30th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[FIRST NOTICE.]

WE commence in this issue our account of the Annual Exhibition. In accordance with established custom, no selection whatever has been made in respect of priority of notice. The exhibits described in this first notice are in short merely those which happen to be the most easily dealt with forthwith. Speaking of the Exhibition as a whole, it may be said with entire truth to have reflected great credit upon all the workers in the wide field covered by it, as also on the officials of the Association responsible for the arrangements made. It was far the largest exhibition of the kind ever held, and the rooms placed at the disposition of the exhibitors were proportionately spacious. They were three in number, not taking into count the anteroom to two of them, nor yet the space on the half landing of the low flight of stairs leading from the entrance hall to the principal ground floor rooms in the centre block of the pile of buildings at South Kensington occupied by the University of London. The two chief sections of the exhibition rooms lay immediately behind the general Reception Hall, and the luncheon department could only be reached by passing through the main exhibition hall. The chamber given up to electrical appliances was some little distance from the rest of the exhibition, but being next door to the room in which the Section of Radiology and Medical Electricity was meeting was by no means overlooked.

ROBINETT SCRUBY (Sanctuary House, Westminster). This exhibitor, who devotes himself purely to telephone work, showed an appliance named "The Domestic Telephone Set." It consists of twin telephone receivers, each mounted on a neat block about 6 in. square, connected together by a silk-covered flexible wire. The length of such wire ordinarily supplied is 150 ft., but any length desired can be obtained. Midway along it is a fishing-pattern reel on which any line not required can be wound up: screw hooks of a special form are supplied to carry it along wainscots and the like. Each stand has a bell call, and the whole appliance is automatic, the base of each stand concealing a battery, which will remain in working order, we were informed, for at least a year. The appliance, designed for the benefit of those desirous of having a telephone for permanent or temporary use between different parts of a house or its annexes, was shown at the exhibition in view of its probable utility in cases of sickness. This it must be admitted to possess, since the most ordinary housemaid could instal it, and much saving of labour would result. Besides taking the place of an ordinary invalid bell a patient, if not too ill, could still keep command of a houseful of servants, and could talk to callers without admitting them to the room, a nurse give orders for things required without leaving the sick-room and without causing a servant first to come upstairs to receive an order and then to bring what was required, and it could be laid on between the invalid's room and the sleeping room of a nurse or one in which a medical man was resting while watching the progress of a confinement. In ordinary households, especially those with basement kitchens, the services it might render are equally obvious, more especially in view of the ease with which either of the twin receivers can be moved from room to room at will. It is certainly a very attractive device, and, considering the excellence of its workmanship, quite moderate in price. It can be obtained on eight days' trial free of charge.

ARNOLD AND SONS (West Smithfield). This is one of the largest and best-known firms of instrument makers, so it was not surprising to find that its exhibits covered the whole range of private and hospital operation work. Among the many useful appliances associated with its name is the "Bruce Clarke" sterilizer, which still maintains its reputation as one of the most reliable and easily managed high-pressure sterilizers obtainable. Since we last drew attention to it it has been fitted with a new two-way valve: this makes it possible to dispense with all the screw down taps which introduced so many complications into the use of most sterilizers. With this sterilizer are used Bruce Clarke kettles. These present the great, and we believe unique, advantage of keeping the dressings placed in them absolutely sterile and ready for immediate use for an almost unlimited period. Some of those shown had the improvement suggested by Dr. Van Buren of Bristol. It consists in the addition of a radial division by which the interior of a kettle may be subdivided as desired for small operations. Another useful device for use with the same apparatus is a perforated box in which to place india-rubber gloves for sterilizing purposes. There were several different patterns of operating tables shown: one of the most attractive of these in point of adaptability, both to gynaecological and general work and relative inexpensiveness, has been patented and is entitled the "Perfect Table." The array of instruments was a large one; it included those used by Mr. Charles Heath in performing his conservative operation on the mastoid, which has attracted so much attention, and also the very simple appliances used by Mr. Vernon Heygate in his operation for haemorrhoids. Among the nose and throat instruments we noted the post-nasal curettes of Cole Baker, Lockwood, and Gottstein, and good examples of all the instruments used by Killian and Jobson Horne. There were also shown the uterus drainage tubes used by Sir William Sinclair and the flushing curettes of Godwin in abdominal operations, and a large number of guillotines The array of dressing tables and instrument cabinets was specially attractive. Enamel, excellent as it is in these respects, has a tendency to chip, and its use was largely avoided in favour of one of three metals. One of these is "Everbrite," a metal of silver appearance, which has the advantage of not corroding or of rusting; nothing beyond a daily rub with a duster is required to keep it thoroughly worthy of its name. The second metal was "Aurium," which possesses much the same advantages, but is of a light golden colour; and other furniture was made of what is known as Porcelsteel. Hence, the choice in matters of taste, cost, and other points presented by the furniture of this firm is large. Furniture which is not only well and gracefully constructed, but requires little expenditure of labour in its upkeep, is of equally great advantage in hospitals, private surgeries, and nursing homes.

SIEMENS BROTHERS AND CO., LIMITED (Caxton House, Westminster, S.W.). There was scarcely an aspect of electro-medical application which the exhibit of this firm left untouched. The eye was caught first by the massive *x*-ray outfit with rotating high-tension rectifier, which represents the latest development in the production of unidirectional current for radiographic purposes. This was substantially the same apparatus as the one shown at the exhibition at Belfast a year ago and described in these columns at the time. Indeed, it is difficult to see how the principles of technique along this line could be fundamentally altered, but various improvements have been made in details, and the instrument is now capable of a somewhat higher output than before. The "G.P." (general practitioner)

x-ray outfit was also in evidence at this stand. The apparatus includes a 16-inch spark induction coil, a small but portable switch-table, a tube-stand and heavy anti-cathode tube, a fluorescent screen, and indeed every needful facility, together with a lead-lined protecting case, accommodating itself excellently to circumstances when space is a consideration, as it generally is. Among other departments of medical electricity, the new method of "thermo-penetration"—which, perhaps, with more etymological soundness, should be called "diathermy"—was illustrated at this stand in the form of a small apparatus, consisting essentially of a transformer, connected directly to the alternating current electric-light mains. The secondary current from this transformer charges the condenser of an oscillatory circuit, and, the oscillations from the condenser being passed through the primary windings of a Tesla transformer, those induced in the secondary windings are transmitted into the tissues. Here the heat is reported to give rapid results in rheumatic and other troubles, and to assist the coagulation treatment of tumours. The purpose of this method is to overcome the outstanding disadvantage of the otherwise excellent radiant heat baths—namely, the external character of the latter's action due to the fact that flesh is a bad conductor of heat. The new apparatus really involves the principle of a small wireless transmitter, with the difference that the high frequency alternating current in this case serves only to heat its path through the human body. Another exhibit of interest was a universal machine for almost every kind of electro-medical application. Its earth-free and aseptic advantages should assure it a welcome in the operating theatre. Among other instrumental refinements to be seen at this stand were a universal screening arrangement with almost infinite variety of movement, various fixing appliances for use in radioscopy, and special high-frequency apparatus with easy adjustment, and an intensive coil capable of giving 100 milliampères for instantaneous work.

Newton, Chambers, and Co., Limited (Thorncliffe, near Sheffield, Yorks.) Among modern disinfectants, or those of the hydrocarbon variety, none sprang more quickly into favour or holds a better position at the present time than that manufactured by this Yorkshire firm and known as *Izal*. It was shown in a variety of forms, including the ordinary fluid for general disinfection purposes, as a refined preparation for use in medicine and surgery, and as *Izal Perles*, a very convenient form in which to administer this drug when it is desired to submit the intestinal tract to its antiseptic properties. In the medical form it is a slaty-white emulsion containing 40 per cent. of Izal oil, the latter being distilled by the firm at its own extensive coke ovens at Thorncliffe. Of the germicidal power of *Izal* there is no doubt; it is, in fact, greater than that of perchloride of mercury, over which it has the advantage of remaining active in the presence of soap. An Izal Soap was shown, indeed, which lathers readily in hard water. Izal is a very popular disinfectant at many hospitals, and is so convenient to use that during the South African war it was more in demand than anything else. As an internal remedy, it has been used with some frequency in combination with cod-liver oil in the treatment of phthisis, and as combined with bismuth in intestinal disorders. Included on the stall were various dressings impregnated with Izal in definite percentage, some Izal throat lozenges and Izal cream, a kind of lubricant useful for both surgical and domestic purposes.

The Hygienic Syphon Company (50, Wigmore Street, W.) To the appliance of this company we pointed last year as one likely to meet with the approval of the medical profession, and this prophecy would seem to have been fulfilled. The hygienic defects of ordinary mineral water syphon bottles are numerous. Among others, the bottles can rarely be cleaned, since their heads are very difficult to remove, and hence when refilled the new liquid mixes with the dregs of the old. They also have to be filled through the spout, so that the dust or anything else collected therein may be swept into the interior of the bottle. This is a defect of importance, for syphons are sent out to households of very varying character and often remain in sick-rooms for an indefinite period. From all these drawbacks the *Hygienic Syphon is* free. With the exception of a thin gutta-percha washer nothing but ebonite, porcelain, and glass enters into its construction, and the whole apparatus can, if desired, be not only thoroughly cleansed but can be sterilized, for the head can be removed with ease in a few seconds. Moreover, when bottles fitted with this head are being filled there is no risk of extraneous matter being unintentionally carried into them, since there is no occasion to force in the liquid through the spout. The mechanism by which the syphonage action is brought about is of a practical and simple character, and it seems to be admitted that except for the initial expense of new bottling outfits, the adoption of the appliance by manufacturers would be easy and advantageous. Were it adopted, the ordinary purchaser of mineral water would receive his fresh supplies in syphons covered with a porcelain dust-tight cap and would replace this by his own tap, a change certainly in the interests of public health. Meantime the device may be commended to the notice of hospitals and other institutions which manufacture their own mineral water. During the course of the exhibition demonstrations of the whole process of bottling were given at this stall, and medical visitors could see for themselves that it presented no material difficulty.

G. H. Zeal (82, Turnmill Street, Farringdon Road, E.C.). The occupation of this firm is the manufacture of thermometers of all kinds, but it pays special attention to clinical thermometers, and those of its products which we have seen have always been excellent. They are all made of what is known as normal glass, so that the scales once placed remain permanently reliable. This is a point of much importance, for very slight variations in accuracy of scales may often serve to invalidate prognosis. In registration rapidity the thermometers shown varied from thirty seconds to two minutes. Several of them were ingeniously constructed so as to obviate some of the annoyances attaching to thermometry; among these is shaking down the mercury to normal, and this is met in the *Repello Clinical Thermometer* in the most attractive fashion. The bulb is flattened and made of elastic glass, so that the mercury can be reset merely by finger pressure. These thermometers look very fragile, but our own experience and that of others shows that they are no more readily broken than an ordinary thermometer. Some of the patterns with the Repello bulb have magnifying fronts. Another good form is the *Aseptic Clinical Thermometer*, which may truly claim to justify its name. It fits like a stopper into a liquid-tight glass case, outside which is the thermometer scale. Hence the thermometer can always be kept in a sterilizing liquid if desired, and the temperatures recorded cannot be seen until the thermometer has been replaced in its case. This is a distinct advantage when dealing with nervous patients. By way of lessening breakages, the firm flattens the back of many of its thermometers so that they will not roll off a table, and with the same end in view supplies a safety case to prevent a thermometer dropping out of the pocket. It fits any kind of clinical thermometer. Since last year also the firm has brought out a thermometer with a ruby bulb intended to mark it as for use only in cases of infectious disease.

Malted Milk, Limited (Slough, Bucks). The exhibit of this firm was *Horlick's Malted Milk*, which has enjoyed much favour for a period approaching twenty years. We found on analysis some years ago that it contained a high percentage of soluble carbohydrates, and that the fat present amounted to nearly 7 per cent. It was also free from chemical

preservatives, and contained no unconverted starch whatever. It is a dry powder, derived, we understand, from malted barley and wheat, and dried cow's milk. Its flavour is palatable, and in the dry state it remains good, in our experience, for an indefinite period. If desired, it can be taken as a powder or in sandwich form, but usually the desired quantity is made up into a paste with a little milk or water, which is at once ready to drink on the addition of a sufficiency of hot or cold water. It is also found a convenient preparation by adults who are not invalids as a warm "night-cap" when sleepless at bedtime; as a cool long drink during hot weather, by shaking it up with soda water, and in either way by those who have either no time or no appetite for an ordinary meal. In such connexions our own experience has been both extensive and very favourable. We have also seen letters from medical men which show that it is used largely as a food for infants as well as in the treatment of invalids. Inasmuch as it is entirely free from unconverted starch, its claims to consideration in the artificial rearing of children may be regarded as materially higher than those of many of its rivals. It can now be obtained in tabloid form. The firm also showed a new boat-shaped feeding bottle: readily cleaned, and having food quantities marked in raised letters on its exterior; it is fitted at one end with a new form of transparent non-collapsible teat, which will not alter in colour or become soft during use. At the other end is a solid glass valve without any india-rubber attachment whatever; while it permits no leakage, and is not liable to fall or be pulled out, it regulates the flow very satisfactorily.

Sydney Lee (51, Conduit Street, London). When describing last year the apparatus figuring on the stall of this exhibitor we said that in principle it resembled a Bunsen burner and that generically it was a bronchitis kettle. The phrases are sufficiently apt, though they hardly indicate the ingenuity of its construction and only part of its possible utility. It has a boiler which supplies steam under pressure, and this escaping upwards along a delivery tube provided with an air inlet sweeps along with it a definite proportion of air and simultaneously raises its temperature. The extent of this admixture of air and steam (medicated or otherwise), and consequently the humidity of the resulting vapour, is regulated by carefully proportioning the superficial areas of the steam vent, the air inlet, and the delivery tube, which is movable in all directions. The humidity, we understand, is exactly 2 per cent., while the velocity at which the inhalation vapour moves can be varied at will up to 300 ft. per minute. Furthermore, the ratio of the boiler capacity to that of the rest of the appliance permits of the inhalation vapour being delivered medicated in the precise percentage that may be required by the addition of a given quantity of the drug to be used to the water in the boiler. Since last year one or two slight modifications have been introduced by way of adding still further to its value, and it can be obtained built of copper throughout. It is an appliance which should not be overlooked by those who have bronchitis cases to deal with, or who are disposed to regard vapour inhalations as of utility in other respiratory disorders.

The Charles H. Phillips Chemical Company (14, Henrietta Street, Covent Garden, London, W.C.). The exhibits of this firm are both now fairly well-known products, the one being syrup of quinine and the other a fluid magnesia. The strong point of the former, which is known as *Phospho-muriate of Quinine Compound*, is that the muriate instead of the sulphate of quinine is used in its preparation, and phosphates instead of hypophosphites. Hence the preparation is acid—a fact which reduces to a negligible quantity the risk of the contained strychnine being thrown down, as sometimes occurs when strychnine is added to hypophosphite syrups. This is a strong point in its favour, and it may be added that in our own experience the compound may be written down as a pleasant bitter tonic not productive of headache. As for the fluid magnesia, this is sold as *Milk of Magnesia*, a registered title representing an odourless, white, palatable fluid with the physical appearance of milk. Microscopic examination shows it to be perfectly homogeneous in character, thus supporting the firm's statements that the solution is maintained without the addition of any suspensory matter, such as gum or glycerine. The firm believes that it is four times stronger than that of any other fluid magnesia on the market, and attributes its special value to the fact that it is a true hydrated oxide and entirely free from carbonates and other salts of magnesia. Thus, when used to neutralize free acids, it does not give rise to discomforting evolutions of carbonic acid gas. It combines readily with tinctures as well as iodides and other solutions of salts, and is useful as a suspender of fixed and volatile oils. In view of its persistent alkalinity, it is a useful preparation as a mouth wash for use at bedtime. In this connexion we have had personal experience of its use, as also in the treatment of diarrhoea amongst children and in gastric irritability. We have found it an excellent form in which to administer magnesia when indicated in such cases. There appear, too, to be a considerable number of medical men who prefer it to lime water in the modification of cow's milk.

K. Schall and Son (75, New Cavendish Street, W.). This firm has a well deserved reputation as one of the pioneers in what might be called "heavy-weight" radiography, having devoted considerable attention to powerful apparatus for lessening the duration of exposures and producing instantaneous pictures by a kind of *tour de force*. On this occasion there was exhibited for the first time a new and very powerful type of spark-coil and interrupter, by means of which a fair negative of the heart of an adult of average bulk could be obtained in a single flash. Negatives produced by this means were shown and were very effective. The sparking of the coil could only be compared to a lightning spark, which assumed curious corkscrew like and other appearances under various conditions. Thermo-penetration, or the delivery of heat into the body, was also illustrated at this stand. The instrument for this purpose was one which has already been described in the British Medical Journal in connexion with some rectal operations at St. Mark's Hospital, where it was used with considerable success in its other function—that of cold cautery. Von Lepel's system of high-frequency currents is, we believe, employed, and the internal temperature of the body can be raised by this means to any degree desired—an achievement which has apparent advantages in the treatment of gout and similar conditions. The delivery of the heat, as we proved by personal experiment, is quite painless and rather pleasant than otherwise. Three-quarters of an ampère or more may be sent through the body without producing any sensation other than that of warmth. Yet a potato was rapidly cooked by this method for our benefit. The accelerating screen at this stand was another exhibit worthy of mention. It was claimed for this screen that it reduced the time of *x*-ray exposure to about one-tenth of that which would otherwise be necessary, and the results were free from grain. Other features of this crowded display were a quartz lamp after Nagelschmidt, a general and an abdominal vibratory apparatus, and a new contrivance for sterilizing wounds by vapour of iodine. In the last named arrangement the iodine is enclosed in a small glass vessel attached to a handle, which has a platinum spiral. The spiral is made incandescent by an electrical current, and an air current is produced by an india-rubber bellows. The hot air volatilizes some of the iodine, and the vapour, after being filtered through a sieve of fine platinum wire, is carried by a nozzle of any required shape to the part where its action is required.

Keen, Robinson and Co. (Denmark Street, St. George-in-the-East). This firm, with which is incorporated J. and J. Colman, Limited, exhibited the

specialities which long since gained for the names of the incorporated firms a position among household words. These are Robinson's patent barley, Robinson's patent groats, and Colman's mustard and preparations thereof. Of the former, *Robinson's Patent Barley* is a pure farina, prepared, we were informed, from the finest Scotch barley. As is well known, it is a very suitable material for the preparation of barley water, which, when flavoured with lemon juice or other agent, is very much used as a thirst quencher in the sick room, as a substitute at meals for the plain water found by many persons distasteful, and as a diluent of milk for babies and young children. As for *Robinson's Patent Groats*, their name has long since become familiar. They are derived from Scottish-grown oats, and make most palatable gruel with the help of milk; such gruel as a food in dealing with children after weaning, with convalescents, and nursing mothers, might well be used with greater frequency than has been the case of late years. Colman's mustard was shown in three guises —as ordinary mustard powder, as *Colman's Sinapisms*, and as *Medical Mustard Bran*. They are all admirable preparations, constant in their strength and easy to use. The progress of science has abundantly proved the underlying wisdom of a good many ancient ways of meeting attacks of disease, and among these must certainly be placed the use of mustard plasters as a counter-irritant and reflex alterative of the circulation in deep-seated organs. There is much, too, to be said in favour of that old-fashioned way of dealing with a chill, which consisted in immersing the feet in a tub of hot water and mustard, swallowing some pleasant-flavoured hot posset, and jumping into a well-warmed bed. The special object of the medical mustard bran is for application in lumbago or any condition in which warmth and prolonged but very mild counter-irritation is required. It fulfils these ends very well, taking up large quantities of water, and being both cleanly and comfortable.

The Apollinaris Company, Limited (4, Stratford Place, Oxford Street, London, W.). The exhibits of this firm must have been familiar to most visitors. They included four mineral waters, of which one is a water fortified by the addition of lithium, and the other three waters in their natural state. The popular table water *Apollinaris*, from which the firm derives its name, is a natural mineral water, conspicuous for the large amount of its contained carbonic acid and for its agreeable taste. It is bottled by the firm itself at the springs, and can be obtained in glass bottles and large stone jars. The firm believes that when stored in these stone bottles the water is of a more agreeable flavour, on the whole, than when kept in glass; there is also the added advantage that when a bottle has to remain open for some little time, as in a hot dining-room, the water remains cool and sparkling in these earthenware bottles longer than would otherwise be the case. All the bottles are closed with what is known as the Crown Cork, which, though absolutely airtight, admits of instant opening when required. The *Apenta Water* shown is bottled near Budapest. It contains a certain amount of lithia, but depends for its therapeutic value mainly on the contained sulphates of soda and magnesia, the latter predominating. It is an aperient water which has won high praise from many authorities, such as Liebreich, Baccelli, Lancereaux of Paris, and Rosenstein of Leyden. Another water which has won popularity is *Johannis*, a sparkling table water drawn from springs near Neiderselters, Rhenish Prussia. It is heavily charged with natural carbonic acid, has a fresh, pleasant taste, and mixes well with wine and water. While well adapted for drinking purposes, it is believed to be specially suited to those who suffer from dyspepsia and gouty disorders. In order, however, to give it a definite therapeutic value, the proprietors of the spring also bottle it under the name of *Johannis Lithia*, adding to each bottle a small quantity of lithium carbonate.

Mayer and Meltzer (71, Great Portland Street). A very attractive feature of the exhibit of this firm was a series of excellent models, built partly of wax and partly of bone, illustrative of modern operations on the frontal and sphenoidal sinuses and the maxillary and mastoid antra. There were to be seen, too, a complete set of the various instruments which Mr. Sampson Handley uses in the operation devised by him for the relief of sufferers from inoperable cancer, and termed *Lymphangioplasty*. A full account of it, as delivered by him at the Royal College of Surgeons, will be found in the issues of this Journal for April 9th and April 16th this year. Among many useful laparotomy instruments, we noted Mr. Pollard's twin gastro enterectomy clamps, and the double-bladed form devised by Mr. Stanmore Bishop. In the same connexion may be mentioned Mr. Edmunds's enterectomy forceps and drainage tubes for intestinal anastomosis in cases of gangrenous intussusception, and an apparatus devised by Mr. Cates for continuous saline infusion, rectal injection, or rectal feeding. Some excellent realizations of Bruening ideas in bronchoscopy work were also to be seen, as well as a specimen of Mr. Harold Hay's pharyngoscope for the examination of all parts of the pharynx and larynx. It is claimed for this instrument that it can be used for ten minutes or more without discomfort to the patient, and that a satisfactory examination can be made even if the patient is in bed, or unconscious. Among the appliances for use in connexion with anaesthesia, we noted what is known as the "St. George Chloroform Bottle." Being made entirely of metal, it is not breakable, and the stopper fits so accurately that it should be possible to carry it about in an anaesthetist bag without any smell escaping or leaking taking place. Another exhibit worth noting was the Vulsellum used by Mr. Tilley, President of the Section of Laryngology, for drawing a flat tonsil into the ring of a guillotine or snare. There was also a guillotine which proved specially attractive in view of the ease with which it can be taken apart for cleaning purposes, and of the fact that its handle is large and forms part of the shaft, instead of being screwed on as usual. The instrument is thus adaptable for enucleating operations, and materially strengthened. We noted, too, some useful instruments for testing the degree of hearing power remaining in patients, and several forms of apparatus of analogous interest. They included Bárány's noise apparatus, the monochord, and Dr. Dan McKenzie's vestibulometer for estimating the activity of the vestibular sense calorically.

Mellin's Food (Stafford Street, Peckham, S.E.). It may be safely asserted that there are few people in this country unacquainted with the name of the product of this firm—a brown granular powder in which the starch of the original grains has undergone diastasis. As a food for infants and invalids it is too well known to require description. Possibly the *Mellin's Chocolate* which the firm is now producing is destined to become equally well known. Its special point is that a proportion of the cane sugar commonly used is replaced by Mellin's Food, with the idea of increasing the nutritive value and reducing excessive sweetness and tendency to produce thirst. It is a smooth eating product of excellent flavour, and likely to prove a formidable competitor to milk chocolates. A corresponding idea would seem to underlie *Mellin's Food Biscuits*, which are a mixture of Mellin's Food and ordinary wheat. An analysis which we have seen shows them to contain 10 per cent. of fat and 41 per cent. of soluble carbohydrates. They are of pleasant flavour, and a useful halfway house between ordinary and predigested foods. To the feeding bottle of the firm we drew attention as one of marked excellence some six years ago, since which time it has become familiar in many nurseries. All lettering and dose directions are on the outside of the bottle and its interior absolutely smooth, and therefore readily kept clean. Another preparation which grows in favour is *Lacto*, a blend of fresh milk and malted barley digested together until starchy matters have been completely

transformed and caseinogen so modified as to be incapable of clotting. It is then evaporated to dryness, the resulting product revealing 18 per cent. proteins, 14 per cent. fats, and 59 per cent. sugar, together with over 4 per cent. mineral matter containing phosphates. Added to warm water it forms a fluid with the appearance but free from the flavour of milk, which many people dislike. It was originally devised for use in tropical countries where cow's milk is an impossibility or at a premium, but is also well suited for use elsewhere as a substitute for milk under suspicion, and as a light fluid meal at any time.

Ronuk, Limited, Sanitary Polish Manufacturers (Portslade, Brighton). The firm which trades under the name of Ronuk has undertaken the original preparation and continued the maintenance of the floors of such a large number of modern hospitals and libraries and reception rooms in public establishments, that most people must be familiar with its work even though unaware of the fact. The principal feature of its exhibit at South Kensington was a number of sections of wood block flooring, prepared and polished with *Ronuk*, to illustrate the sanitary character of this method of treating floors of various kinds. It also showed the patent Ronuk floor-polishing brushes, which are used for keeping the prepared floors bright and in good order: they are of different sizes and weights according to the exact needs of the institution in question. In short, everything required for treating floors was shown, including the steel shavings used for removing stains from old floors, the Ronuk special stopping for hard woods, and a special pumice powder, by means of which the surface of the floor is given the required smoothness before Ronuk is applied. The firm also manufactures a sanitary polish for application to linoleum which keeps it bright without slipperiness and tends to prolong its life. Ill-kept floors are certainly likely to harbour germs, and we know no preparation which is of more assistance than Ronuk to hospital sisters and others who take a pride in the appearance of their floors. So far as private houses are concerned, the initial application of Ronuk requires care and adequate preparation of the boarding, but this trouble is well repaid by the appearance resulting and by the ease with which it is maintained.

The Denver Chemical Company (St. Anne's Road, Bow, E.). This is a New York firm, best known in this country as the producer of *Antiphlogistine*, a substance which has acquired for itself an excellent repute, and which is being freely imitated, but not successfully. In appearance it is a thin grey paste, entirely free from odour, and capable of being spread out into adherent layers any thickness. It is composed, we understand, of very fine levigated clay, with the addition of pure glycerine, some iodide salts, and minute quantities of boric and salicylic acids, and peppermint, gaultheria, and eucalyptus oils. With this composition it is easy to understand that it does not dry up, and that when spread about half an inch thick and covered with a layer of lint or cotton-wool it keeps hot for a very long period. At the present time, when inflammatory conditions are being treated on new principles, but by what are in essence old methods—namely, those which aim at facilitating phagocytosis by bringing to the affected locality an increased amount of blood serum—there are obvious advantages in its use, for in effect it is a scientifically compounded, easily used, and enduring kind of poultice. It remains hot and moist for from twelve to thirty-six hours, and can then be peeled off and replaced if required. A strong point in its favour is that the patient is not, as in the case of linseed poultices and hot fomentation treatment, perpetually worried by the need for fresh applications, and we do not know of any better way of applying moist heat in a cleanly comfortable form. The manufacturers believe that it acts reflexly and also by a process of dialysis, and that it is decidedly anodyne. In any case, we are acquainted with independent medical men of wide experience who regard Antiphlogistine as of great utility in general practice, when dealing with either deep-seated or superficial inflammatory disorders or with states of congestion in which moist heat would seem likely to be of utility.

Down Bros., Limited (St. Thomas's Street, S.E.). The very fine display of instruments and hospital furniture by this firm comprised a great many novelties besides their well known models. Not only do they claim the original models of all Mr. Lane's bone screwing instruments, but, in addition, they showed Lambotte's most ingenious brace, which employs the screw itself as drill. Lambotte's bone-holding forceps may be compared with those of Lepage, and with the Peter's forceps as modified by Lane-Joynt. Amongst other powerful apparatus may be mentioned Gray's modification of Doyen's crushing clamp; Rutherford Morison's bone-holding clamp with detachable jaws, to be left in the wound until the bones have united: Lorenz's plaster shears, which really do enable one to cut off a plaster jacket or splint without incredible exertions; Muirhead Little's modification of Tubby's wrench, the special point of which is that an adjustable heel-piece precludes danger to tender skin by slipping of the arm, and ensures a tangent action. Lynn Thomas's forceps tourniquet is pretty sure to win general acceptance for amputations at the hip and shoulder joints Two forms of coaptation forceps to facilitate skin suture were shown—those of Mr. Moynihan and the even more useful ones of Mr. Upcott. Mr. Raw's tendon-holding forceps must have appealed to those who have frequently to suture tendons. The utility of lymphangeioplasty is being slowly proved, so the large flexible silver probes of considerable length and forceps specially shaped to grasp the probes without damage to their smooth surface, attracted attention. Carwardine's simple holder for an eye-pointed Hagedorn needle ought to have a large sale, since the rectangular position permits of so many uses. The same surgeon's tubular expanding speculum for operations on growths of the bladder will be of great assistance in these difficult manipulations. Paul's long-handled instruments for similar work exhibited all the excellent workmanship associated with the name "Down." A very simple but useful little thing is the finger protector for use over a glove when the finger is used as director. The cystoscopes and urethroscopes, the lithotrites in their latest forms were tempting even to those already possessed of such weapons. The little prism for attachment to the face of the cystoscope to reinvert the image is likely to appeal to teachers. Amongst eye instruments, there were the retractors for the lacrymal sac designed by Sydney Stephenson; the little nozzle for washing out the anterior chamber without risk of Mr. Bishop Harman; Cresswell's test frame for trial lenses, which fits over the head with a spring, and is well adapted for children; corneal trephines by Stephenson, and many other new devices. Three forms of apparatus for saline infusion were shown—the electrically heated device of Paterson, the simple "thermos flask" pattern, which is portable, and Mr. Hird's more elaborate water-jacketed appliance for ward use. The surgical hand motor, for use with trephines, saws, drills, and the like, was made by the firm, is free from the disadvantages of all electrical motors, and very efficient. Tables, both elaborate in design and of simplicity, suited to portability, were also to be seen, and might fearlessly challenge comparison.

Messrs Menley and James (Menley House, Farringdon Street, E.C.). The exhibit of this firm was *Glidine* and its compounds, which are of comparatively recent appearance in this country, but have a four years' history behind them in Germany. Glidine purports to be a vegetable proteid, containing lecithin, but practically no carbohydrates, and this description an analysis which we have made proved to be perfectly justified. It is prepared, it would appear, by freeing wheat from its starch by some mechanical process, leaving only glutin, in the form of a fine yellowish-white powder, without odour or taste. It is used both

as a fortifiant of liquid and other foods and for forming organic salts of certain metals, which in the form of inorganic salts are commonly ill-absorbed, cause intestinal irritation, or have some other undesirable effect. As a food its use is very simple, the desired quantity being sprinkled over the food to be taken. It is stated to be digested usually within one hour and to be entirely absorbed. In Germany, it appears, many well known members of the medical profession have found it of much assistance in the nutrition of cases of tuberculosis, anaemia, diabetes, gastric ulcer, and other like conditions. We have seen, too, a number of letters from medical men in this country who have used Glidine with satisfaction, their testimony to its value in combination with various metals, such as iron, bromine, mercury and arsenic, being also favourable. To these combinations have been given various descriptive names, such as Ferroglidine, Bromoglidine and Iodoglidine, Leusan, and Arsan. They are all practically tasteless and the tablets into which they are formed can be broken into powder easily. Of Iodoglidine it is stated that the halogen is liberated only when the tablets reach the intestine; and a good many medical men seem with the help of Glidine, to have found that bromine and iodine can safely be administered to persons susceptible to bromism and iodism. The Arsan tablets each contain 0.002 gram of arsenic, and the absorption is stated to be so gradual that arsenic is only discovered in the urine some days after treatment by these tabloids has been commenced. As for the Ferroglidine, there are obvious reasons for preferring organic to inorganic compounds of iron.

J. AND A. CHURCHILL (7, Great Marlborough Street). There were several things which contributed to make the stall of this old-standing firm of publishers of much interest. There were to be seen, for instance, a sufficient number of volumes of the *Medical Directory* to illustrate the growth of this familiar and indispensable work from its very modest beginning to its present state of maturity. The firm pays special attention to modern methods of book production, and to enable visitors to grasp some of these intelligently and rapidly, the exhibit included a series of progressive proofs, showing how works are illustrated in three colours, as well as with half-tone and line blocks. Some of these served a double purpose, as belonging to a book which will shortly appear from the pen of Dr. Sequeira, of the London Hospital, entitled a *Textbook on Diseases of the Skin*. Other demonstrations of like kind were supplied by the *Practice of Surgery* by Messrs. Spencer and Gask. It contains as many as 28 excellently reproduced full-page skiagrams, 20 elaborate plates in colour, and 707 figures in the text. There were also shown specimens of a new book by Dr. Eden entitled *A Manual of Gynaecology*, and in dummy form the four volumes of the important *System of Treatment*, edited by Dr. Latham and Mr. T. Crisp English. Other volumes of interest were a fifth edition of Mr. Anthony Bowlby's justly popular *Surgical Pathology and Morbid Anatomy*, which now contains 196 illustrations, and the equally freely illustrated *Textbook on Nervous Diseases*, by Messrs. W. A. Turner and T. G Stewart. The very useful *Atlas of Dental Extractions*, by C. E. Wallis, a ninth edition of Goodhart and Still's *Diseases of Children*, a fifth edition of Jacobson's *Operations of Surgery*, for which Mr. R P. Rowlands is responsible, and which contains nearly 800 illustrations, also require mention.

THE CELLULAR CLOTHING COMPANY (72, 73, Fore Street, London, E.C.). The tissue known as *Aertex* has now been before the public for some twenty years, and the fact that it still remains in favour and is continually being imitated are sufficient proofs of its popularity. As for the principles underlying its construction, these seem perfectly sound; the conception is that the small cells which form the meshwork of the fabric allow evaporation from the surface of the body to proceed slowly and steadily, but at the same time prevent the body heat escaping too rapidly; hence the body will be protected from chill by the layer of dry naturally warmed air formed in the interstices of the tissue. This idea is well realized, and prolonged personal experience goes to show that underclothing made of the material can be comfortably worn both in winter and in summer; that it washes well and does not shrink, and lasts considerably longer than merino or other fabric of ordinary make, and of corresponding power of protection. In short *Aertex*, may be said to combine most of the advantages of cotton and woollen underclothing respectively. The same idea has also been adapted by the firm to the making of under garments for use by those whose work exposes them to a tropical sun. With a view to their protection by the cutting off the harmful actinic rays, the web is interwoven with red yarn. Another form in which the special tissue of the Cellular Clothing Company is prepared is that of *Aertex Sheeting*, of which we have also had some experience. It is pleasant to feel, and as a covering for patients who, whether from fancy or otherwise, are not able to sleep when covered by a due amount of ordinary bedclothing, are calculated to be useful in the sick room. The attention of those who take sea voyages or live in hot climates may also well be directed to them. While blankets are often unpleasant to use in such circumstances, the sleeper runs a risk of catching a chill in the early morning if covered by nothing but an ordinary cotton or linen sheet. As a middle course, this Aertex sheeting may often be substituted with advantage.

THE BERKEFELD FILTER COMPANY, LIMITED (121, Oxford Street, W.). A number of well-constructed appliances for the filtration of water supplies in the home, the laboratory, large institutions and the hospital wards and operating theatres, were to be found on the stand of this firm. Their filtration power depends in all cases on the use of Kieselguhr earth thrown into hollow cylinders or candles. Taking them as a whole the claims made for them are that they are simple in construction and can be easily cleaned and sterilized; that they give an output of sterile filtrate from five to ten times larger than any other germ-proof filter; and that the filtrate is absolutely free from suspended matter and from germs, provided proper attention is paid to regular cleansing and sterilizing. The latter proviso is of material importance, for there is reason to believe that in time micro-organism will grow through any and every filter which has yet been produced. It would also appear to be true that the rapidity with which any given form of filter ceases to give absolutely sterile filtrates varies considerably, owing to variations in the porosity of the filtering medium, so that it is hardly possible to lay down any general law as to the frequency with which candles must be cleaned and sterilized. All the filters shown seemed to be well constructed, one specially attractive form being the *Berkefeld Aseptic Irrigator*. It is so arranged as to enable constant supplies of sterilized water of regulated temperature for use during operations to be obtained without any difficulty whatever. Another pattern, the "*H*" *Service Pressure Filter*, has long been familiar in institutions and homes, large and small, while a further variety, the *Berkefeld Hospital Filter* has the advantage of being attachable either to hot water or cold water supplies.

VON HEYDEN'S CHEMICAL WORKS (Radebeul, Dresden). At this stall were to be seen a large number of the newest synthetic remedies. Among these, mention should be made of *Xeroform*, or tribromo phenol-bismuth. Its action upon mucous membranes, wounds, and ulcers is principally a desiccating one, while suppuration is diminished and the pus deodorized. The living tissues, it is claimed, split up Xeroform into its components. The liberated tribromo-phenol has an antiseptic action, while the relief of pain, which at times occurs with great promptitude, is presumably due to the bromine. On external application it is only absorbed in traces, and no cases of poisoning have been observed. Administered internally in cases of gastric or duo-

denal ulceration, Xeroform is non-poisonous in doses many times the therapeutic dose. Its use is recommended externally in infected wounds, in burns, in eczema, in ulcers of the leg, in gonorrhoea, and in conjunctivitis Internally it is claimed that it is useful in gastro-enteritis and summer diarrhoea in children, in cholera, dysentery, and typhoid fever, and in gastric ulceration. In the treatment of urinary infections, the well-known *Collargol* has been recommended. It is claimed that its action is more prolonged than that of silver nitrate, and that its use in suitable concentration is painless and has no irritant action upon the inflamed mucous membrane of the bladder; good results are shown in cystitis after gonorrhoea with prostatitis, in cystitis due to operation or unclean catheters, in the colon infection which occurs in pregnancy, and in the cystitis secondary to retention from stricture or enlarged prostate. After the bladder has been washed with a plain or slightly astringent lotion, for example, normal saline solution or warm 3 per cent. boric acid solution, it is emptied, and 100 c.cm. of a 1 per cent. solution of Collargol at the body temperature is injected by means of a Stempel's syringe, and is allowed to remain in the bladder until the next micturition, which should be delayed as long as possible. Recently Collargol has been used to render radiography of the urinary passages possible. The shadow produced by a 1 per cent. solution of Collargol is said to equal in density that produced by a 10 per cent. suspension of bismuth. In *Gastrosan* or bismuth bisalicylate the firm supplies a remedy for the treatment of the troubles due to hyperchlorhydria, fermentation of gastric contents, gastric dilatation, atony, and excessive intestinal putrefaction and fermentation. It combines the local action of salts of bismuth on the stomach with the antiseptic and antifermentative action of salicylate.

International Plasmon, Limited (66A, Farringdon Street, London, E.C.). Of the preparation of this firm an account in some detail appeared at page 452 of the issue for February 19th, 1910. The important points brought out were that Plasmon consists of rather over 80 per cent. of pure protein, and contains a very considerable proportion of phosporus in a highly assimilable form. It was the first of the dried milk products to make an appearance, and it won favour in spite of considerable opposition and doubt as to its real value. Since then a great number of preparations of the same general nature have been put upon the market, but Plasmon still appears to hold its own and something more. It may be pointed out that the manufacturers suggest its use, not as a medicine, but as a food, but obviously, in view of its phosphorus contents, its possession of a therapeutic value cannot be denied. Its more direct utility, however, lies in the fact that it can be used to increase the proteid value of any form of food by its addition thereto, either as a powder or in suspension. This becomes a point of interest when it is remembered that many invalid foods consists mainly of carbohydrates. Its use demands no skill on the part of the nurse or housewife, but for the benefit of those who prefer a food entirely ready-made the firm supplies many new articles of diet fortified by the addition of Plasmon. These include biscuits of all varieties, Plasmon oats, custard powder, beef tea, arrowroot, blanc-mange, Plasmon chocolate, and even tea. Being curious to learn whether the addition of Plasmon altered the flavour of the two latter products, we have tried them both and found them excellent. The precise proportions of phosphorus and protein present in most of the preparations may be found on reference to the page which has been mentioned, but it may be here stated that the Plasmon oats for the preparation of porridge contain, apart from other constituents, 18.4 per cent. protein and 1.2 per cent. of phosphorus taken as P_2O_5, beef Plasmon 3.78 per cent. phosphorus, Plasmon arrowroot 10 2 per cent. protein and 0 34 per cent. phosphorus, Plasmon blanc-mange 12.1 per cent. protein and 0.4 per cent. phosphorus, and Plasmon custard powder as much as 20.7 per cent. protein and nearly 0.7 per cent. phosphorus.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

NORTH OF ENGLAND BRANCH.

The annual meeting of the North of England Branch was held at the Zetland Hotel, Saltburn, on Wednesday, July 6th. Dr. Davis, a former President of the Branch, presided in the absence of Mr. Rutherford Morison, the President. Dr. Burnett, President-elect, entertained the Chairmen and Secretaries of Divisions to lunch and dinner. There was a large attendance of members at the general meeting of the Branch.

Apologies for Non-attendance.—Letters of apology for absence from the President and many members were read.

Extra Members of Branch Council.—Drs. James Drummond (South Shields), Cromie (Blyth), and A. E. Morison (Sunderland) were elected as extra members of the Branch Council.

Re-election of Honorary Secretary and Treasurer.—Dr. Todd was unanimously re-elected Honorary Secretary and Treasurer of the Branch, and in returning thanks for the honour conferred upon him pointed out the great work which would have to be undertaken in the near future, in connexion with the organization of medical men, to meet the demands which no doubt would be made upon them in connexion with the legislation which was about to take place in regard to the Poor Law Commission; and he impressed upon the members the great necessity for union and cohesion in their ranks, because if they did not have unanimity they might at any time have presented an ultimatum which would be a great blow to the success of the general practitioner. He also pointed out the many necessary reforms that were still required in connexion with contract practice, and these could only be attained by continuous labour of such organization as the British Medical Association. He reported that the North of England Branch was in a very flourishing condition, and that great activity had been shown in the past year; several Divisions had shown renewed vigour, and were going steadily ahead. Unfortunately, disputes had arisen in connexion with some of the nursing associations and their treatment of the general practitioner, also in connexion with some contract appointments, but fortunately the Association had vindicated the conduct of those members who were successful in securing settlements on the lines laid down by the Association. Members must remember that Divisions were the units upon which the Association was built up, and if they wanted work to be carried out in a constitutional and businesslike method they must report any difficulties which might arise to the Secretary of their Division, failing him to the Honorary Secretary of the Branch, and by this means save the duplication of work and so get all the work co ordinated, with a record of same, which should be kept for future reference and guidance. As far as concerned the Honorary Secretary, he would do all he possibly could to further the aims and objects of the Association, but it was impossible to be successful unless he had the hearty co-operation and loyalty of members of the Branch.

Presidential Address.

Dr. Burnett was then elected President and took the chair, and delivered an address on local government and the medical profession. After a few introductory remarks he said:

In selecting a subject to address you upon, it seemed to me that one of interest to the general practitioner would be more suitable as coming from a general practitioner, than a paper of a more scientific or technical nature.

The present tendency of Government being so essentially socialistic (using the term in no party

sense), and all legislation of this nature having almost without exception a medical aspect, it behoves us as a profession to take stock of our position, and to see whether our own vital interests are to be in any way altered or interfered with, improved, or hindered. The modern day tendency also to a multiplicity of commissions of inquiry—whether for mere commonplace window dressing or as an anodyne for political fervour or excitement, or from the desire to acquire useful information—has produced a number of reports of more or less significance, but the one above all others which will no doubt be legislated upon by one or other of the political parties in the near future is that of the Poor Law Commission.

Notwithstanding the fact that I have been a diligent student of literature bearing on this subject, I have no doubt that many here will find what I am about to say savours of redundancy. Still, in my inquiries I find that many, especially general practitioners, have taken very little active interest in the question, and to them I would particularly direct my present remarks, in the hope that they may be stimulated to take some heed of their own interests, for there seems to me no doubt that the medical profession is not the special body in which political parties will take very active philanthropic interest, but more likely we shall be exploited as usual for the so-called benefit of others, on the ground presumably that all practical philosophy must be as universally altruistic as possible, but in reality because as a body we have not yet shown a strong united front, nor have we blared and shouted and passed active and extreme resolutions after the manner beloved of a trade union conference.

There is no doubt the question of political party again—in other words, votes—will predominate in all legislative endeavours; and as we are a negligible quantity in the eyes of the political heads, we will, unless we move very actively in the matter, have our rights ignored and our services placed at a very poor valuation. I cannot impress this upon you too much, that to take up a fatalistic attitude and to accept what is done in the truly Mohammedan fashion as the "will of God," will avail you nothing. Unfortunately, medical men, depending as they do in their practice so much on the whims and fancies and prejudices of the general public, are precluded in many cases from taking an active part in politics, and, unfortunately, also, are considered by the public themselves to be precluded, so that up to now they stand in the background of the social picture. Still, it comes to be a matter at the present time of very grave importance as to whether we should not use all our influence in an active manner to safeguard ourselves, and not, as in the past, submit to be relegated to the political shelf.

It seems to me that every Division should have its separate political committee to keep a watch on local parliamentary candidates, to pass resolutions for the guidance of members of Divisions, and also to go as deputations to candidates with a well-defined and carefully arranged programme of our position and rights. If this were done, I feel confident that we would have, not only a much larger say in politics, but would be able to dispel alike in politicians and the general electorate the illusions that we cannot combine in our own interests; that we are of no consequence; that we are a body of men who invariably differ in all our opinions; and that we are totally unable to act either as a united body or as solitary units.

We have been much too prone in the past to take a *laissez faire* attitude, to forget that whilst the man who plays the big drum may not be the leading soloist in the band, he can at any time make himself heard, and if he chooses, by his very noise, can make himself a most intolerable nuisance and have to be conciliated. We are such an eminently respectable profession, and so accustomed to endeavour to prevent the jarring of people's nerves and emotions that our very respectability hangs over us like a thick fog and keeps us out of sight. Let me point out to you very strongly indeed that whilst we should at all times be exceedingly respectable members of a great profession, there is nothing which compels us to be nonentities, or prevents us standing up for our obvious rights. I hope you will not consider that I am too pedantic in my attitude, but I personally, like so many other medical men, chafe under our past ineptitude, and certainly think that now that we have as an Association organized ourselves we should proceed to use our organization in its units in a more specialized manner, and be able to use the gloves in self-defence or otherwise.

The conclusions of the Poor Law Commission appointed by Mr. Balfour in 1905, and divided, as you know, into Majority and Minority Reports, came as a great shock to the general public. The Commission was composed of apparently most suitable people to carry out the investigations—important officials of the Local Government Board, well-known guardians, Charity Organization Society members, and others, including two representatives of the so-called manual working class. There was only one medical representative, and he was one of the medical inspectors of the Local Government Board, Dr. Downes. There was no representative of the British Medical Association, and no general medical practitioner—a very grave oversight, in my opinion, seeing that questions such as building up of provident dispensaries, their relation to voluntary hospitals, the reciprocity of each with any system of public medical relief, the public demands upon the services of the medical profession, were amongst the main questions considered, recommended, and proposed on. These questions, involving most intricate and delicate problems, would, I submit, have been more efficiently and practically considered if the medical profession, through the British Medical Association, had been more directly represented. The Commission was indeed a very representative body, taken from amongst persons engaged in Poor Law administration, charitable work, etc.—that is to say, all the interests immediately concerned, except that of the medical profession, which as usual was without adequate representation and seemed to be studiously ignored. Do not for one moment imagine that I am attempting to cast any slight on the Commission as a body, but that Commission, it seems to me, would have had its findings emphasized and its opinions enhanced and rendered more practicable had there been some medical constituent in it. This Commission has unanimously condemned the existing Poor Law administration, and advocates the entire abolition of boards of guardians. It has absolutely condemned the general mixed workhouse and practically demanded its immediate extinction. In fact, the findings of the Commission virtually constitute the death sentence of the whole department of English government dealing with poverty, distress, sickness amongst the poor, old age and destitution, and in effect nearly all the work associated with the present Poor Law authorities. They are practically unanimous in recommending that the new units of area should be the county and borough councils, who will raise the money required and administer it. Outdoor relief is still to be administered, but on a very much more generous basis, and the poorhouse being abolished, this will be the only form of relief left and will be paid even to able bodied men. Widows and children are to be boarded out on adequate allowances. The aged poor are to have pensions, only at a much earlier age than at present, and the millennium is to be brought, like Haley's comet, within seeing distance.

Naturally the two reports recommend different ways of attaining this desirable end. The Majority would still like to retain the present idea of relief on the basis of distress and destitution only. The Minority would limit the relief to incomes below a certain weekly amount and not necessarily only in cases of absolute destitution.

The tendency of all Parliaments in the latter half of the last century, if not even further back, has been to add to the list of Acts dealing with some section of

society, such as public health, education, old age pensions, feeding of school children and their medical inspection and so on, and there looms in the near future the relief of sickness and invalidity. The Poor Law Commission recommends that all these should be brought more into line and in accord with voluntary effort and all under one body, and it is the powers to be invested in this body and its subdivisions into local units which is the part of future legislation which we as a body will require to watch very closely. It will affect the great body of general practitioners very intimately, and will, I am afraid, inflict considerable hardships in many cases. As I have just said, all local charity organizations are to be brought into the scheme and be made to work with these subcommittees in the endeavour to prevent overlapping and duplication of relief. Roughly speaking, the authorities to deal with these matters are to be councils, with the addition of outsiders chosen as far as possible for their suitability to be members of what is to be called a "local assistance authority."

The two reports vary in details, but more or less agree on these lines. This Public Assistance Committee, or whatever name may be selected for it, will have to appoint a Medical Assistance Committee for the carrying out of medical work. This it is recommended should consist of members of the Public Assistance Committee and representatives of the Health Committee of the councils, and of members of the local Divisions of the British Medical Association. The committee will have power to co-opt representatives of local hospitals, nursing associations, and registered friendly societies.

The Commission's Majority Report recommends that medical assistance should be reorganized on a provident basis, and that the new authority must undertake the following functions:

1. To co ordinate, and when necessary complement, the medical institutions of the county or county borough, and to suggest methods of co-operation with the sanitary authorities and the authorities having charge of voluntary hospitals.

2. To organize a committee for provident medical service easily accessible to all parts of the county or county borough: this service to include the provision of competent midwives.

3. The development of an adequate nursing service throughout the county or county borough, preferably in connexion with voluntary nursing associations.

4. To subscribe when necessary towards these purposes.

5. To arrange for adequate supervision and report on the efficiency and adequacy of the medical institutions and medical service throughout the county and county boroughs.

The report goes on to explain the lines on which this work is to be done. It specifies that the new authority must develop a system of paying and free cottage hospitals in conjunction with voluntary and endowed charities, which is also to include the provision necessary for confinement cases. It must approach any free or provident institution, including private medical clubs already existing in the district, and invite them to fall in with the scheme; refusal not to check procedure.

The Commission think it desirable that the services of all the competent medical practitioners should be available for the members of the provident dispensaries, and that any member should be allowed to choose his own doctor. Membership of a provident dispensary will confer the right to unlimited medical service, including (on the recommendation of a doctor) admission to a Poor Law infirmary or voluntary general hospital. The Poor Law authority will give financial support to the provident dispensaries, partly by subsidies from the rates and partly by paying the fees of the pauper members; for it is provided that certain paupers (such as the aged and widows with young children) may become members on payment of the necessary fees by the Poor Law authority. These pauper members will have the right to choose their own doctors, and every doctor joining the dispensary will be required to give an undertaking that he will attend these patients. Any applicant for medical assistance who is not a member of a provident society may apply to the Poor Law doctor, who must treat such applicant at once. When the office of district medical officer is abolished, the duties, with possibly some slight modification of procedure, will devolve upon the dispensary doctors, who will include all the competent medical practitioners in the locality; and the Commission recommend that no disfranchisement shall be attached to any form of medical assistance.

The chief points, then, are:

1. The establishment of a great system of provident dispensaries subsidized by the rates and including existing Poor Law medical organizations, such as provident medical clubs, friendly societies, and so on; every inducement to be offered to the working classes below a certain wage to join the dispensaries.

2. Subscription to a dispensary to entitle members, including the private members, to the right to choose their own doctors and to institutional treatment.

3. All applicants for medical relief to be treated at once, at present by district medical officers, but ultimately by the dispensary doctors.

What the Commission recommends is, in short, a public system supported by public money of medical relief on a basis of contract practice. This practically means free medical relief, the possible limits of which it is quite impossible to foresee. It would, of course, involve an enormous increase in contract practice. Indeed, one sees that at some future time universal contract practice will be in operation, for the Commissioners, as you see, hold out every inducement to provident medical relief, and even invite the general public to adopt it. Of course, every master and mistress will place his or her servants on the list, and I am afraid the lot of many a country practitioner would not be a happy one, for there is no doubt that a large part of a country practitioner's income in many districts is derived from the staff of the "big house."

At present the Poor Law Authority seeks to restrict its medical work to a minimum in order to lessen pauperism, but a very different policy will be pursued in relation to the provident dispensaries. These are ostensibly institutions that encourage thrift and self-help, and the Commission expressly states that every inducement should be offered to the working classes below a certain wage limit to become or continue to be members of a provident dispensary. From every point of view (except the doctors') there will be advantages in a large membership. The more members' subscriptions the less public money will be required, and there will thus be a powerful motive for the Public Assistance Authority, in its capacity of guardian of the public purse, to increase the membership of the provident dispensaries. From the ratepayers' point of view there would be obvious advantages in making dispensaries self-supporting. Philanthropic endeavours will operate in the same direction. Persons engaged in philanthropic work are naturally anxious to encourage a spirit of self-help among the poor, and how could this more easily be done than by increasing the members of the provident dispensaries? Every new member will be regarded as a "brand plucked from the burning," and as an outward and visible sign of the reforming energy of some philanthropic worker. Definite successful results of one's labour are always attractive, and it will be found that the clergyman, district visitor, and amateur philanthropists of all kinds would be active agents of the particular form of medical insurance proposed by the Poor Law Commission. The local gentry would join in the movement, and would no doubt set a praiseworthy example in the way of encouraging thrift and self-help by inducing their servants to join the provident dispensaries. One knows that reforming zeal and philanthropic energy will die unless it can show figures; consequently one can easily see how the door is thrown open to a free and unlimited outburst of reforming arithmetic.

Most of what I have just said refers to what I may call the common or generally agreed conclusions of

the Poor Law Commission, and particularly the Report of the Majority, but perhaps one might just look for a few minutes at the main points of the Minority Report. As I have previously observed, the Majority and Minority members agree on the main principles. It is in the working out of details and the methods by which this is to be done that the differences arise; and also the Minority Report is an outlet for rank socialistic conclusions—an opportunity which, knowing the well-known tendencies of that class of people, they would not be likely to let go by.

Here there is to be no Poor Law Authority proper at all—that is, as a separate authority. What they specially cry out for is what is termed a "united medical service," to be under the control of the same public health authorities, under, of course, the county and borough councils. Under this arrangement would come various departments of public health. The Minority members wish to elaborate the public health departments and transfer the whole work over to them, abolish all semblance of Poor Law Authority, and have the whole system under the control of the public health authorities. There would be, first, the public local health authority, including notification, midwifery supervision and isolation, milk clinics, house-to-house inspection, domiciliary nursing, to which is to be added the power of compulsion (this latter is to be insisted on, as otherwise the scheme is inadequate), birth notification, and even schools for mothers, and, of course, vaccination, registration, and so on. Then there will be a local education authority, to include medical inspection and treatment, and feeding, clothing, etc., of school children; the local asylums committee, to deal with mentally defective persons of all ages, and the feeble-minded, and, if necessary, to provide schools and training institutions for backward and diseased, or imbecile and others who may be benefited thereby The local pensions committee is to deal with old age pensions, and adding to that assistance to sick and partially or temporarily disabled people.

The points about this report are that the sanctity of the house is no longer to exist. There is to be an indefinite multiplicity of inspectors, nurses, and voluntary workers, with the help of compulsion. A child may even be taken out of the care of the parent if the local authority deem t advisable in their wisdom, this local authority to be the council and their helpers. Altogether the very finest method of bureaucracy ever known—and rank socialism.

In both reports mention is made of a wage limit at which this universal help and assistance will stop, but I ask you at what sum are you to fix the wage limit? Is 20s. a week to be admitted and 21s. not? What a grand opening for legalized bribery! You give me your vote and the limit will be increased to 21s. 6d. per week. This part of the Commission's recommendations seems to me the most serious of all to the medical practitioner. To be at the beck and call of anybody, to be supervised by philanthropic old women (male and female), to have to furnish endless reports if required, to be liable to be reported by Mr. John Smith or John Robinson, whichever you like, for not running a whole mile to attend to his child in convulsions, and so and so on, is unspeakably preposterous.

The Majority of the Commission deprecate any investigation into the means of members of their public dispensaries, because they say in their report:

> The independent workman who joins a dispensary would be guaranteed adequate medical service at a cheaper rate than he could obtain from a private medical practitioner. He would have a choice of doctor, he would secure for himself institutional treatment if such treatment were necessary, and his self-respect would be additionally increased by dispensing in his case with all the irritating investigations into his pecuniary resources.

Indeed, everybody is to be considered except the medical man, and it seems to me that in time the only destitute persons will be ourselves, and particularly the district medical officer, who is to be exterminated as rapidly as possible. In many cases this will inflict considerable hardship—particularly where a decided slice of hitherto certain income will be cut off. It may be that the salaries paid to medical men (officers) are universally inadequate, but whatever the amount may be it is certain. It is said that about half a million pounds sterling are paid to medical officers only of whom there are 4,000.

It has been shown that the Commission's system of provident dispensaries would bring about an enormous extension of contract practice at the expense of private practice, and that it would be impossible to prevent the use of dispensaries by persons in a position to pay for private medical attendance. We have now to consider whether there is any prospect that the dispensary doctor will be adequately remunerated. Now whatever the advantages of contract practice may be, there is no doubt that it has the very important disadvantage that it is associated with underpayment of the medical practitioners engaged in it. This is admitted by the Commission, who think there is some justification for the statement that the "doctors of provident dispensaries and friendly societies are frequently underpaid," but they immediately "consider it right to point out that the very low rates of remuneration are partly due to competition amongst the doctors themselves."

This comfortable soothing of the conscience by throwing the responsibility for sweating upon the shoulders of the sweated workers, is, it may be feared, an instance of what may be expected from the persons experienced in the local administration of public assistance or similar work who will form the preponderating element of the Commission's system of medical assistance. It is true that the Commission recommend that the British Medical Association should be requested to suggest a scale of fees, and that representatives of the Association should sit on the Medical Assistance Committee, but the right to suggest a scale of fees does not, after all, carry us very far. What if the suggestions are not adopted? for the representatives of the British Medical Association will be in a hopeless minority on the Medical Assistance Committee, which will be constituted chiefly of representatives of various forms of organized philanthropy.

It must be borne in mind that the Commission's provident dispensaries are very far indeed from fulfilling the conditions laid down by the Medico-Political Committee of the British Medical Association in its report on contract practice. In this report it is stated: "(1) That the conditions upon which the medical practitioners in any district undertake contract practice should be prescribed by arrangement amongst themselves. (2) That the control and the supervision over the conditions of contract work can only be effectually exercised under the conditions of public medical service—(*a*) that the general control be in the hands of some organized local body representative of the profession, such as a Division of the British Medical Association; (*b*) that the details of administration be under the direct control of a purely local committee representing both those who do and those who do not take part in contract work."

The Poor Law Commission do not for one moment suggest that their provident dispensaries should fulfil these conditions. Unfortunately, organized philanthropy does not extend the philanthropic side of its operations to the medical profession! The profession has done and is doing in connexion with organized philanthropy a vast amount of unpaid and underpaid work for relief of persons in distress, and the proposals of the Poor Law Commission are admirably adapted to increase the volume of such work. The local practitioners might, of course, combine to secure a fair remuneration, but combination against a body representing so many influential interests as the Public Assistance Authority would in most districts be exceedingly difficult, and, even if successful, would probably inflict serious damage to the profession.

For an illustration of the conditions of provident dispensary practice, the reader of this paper would refer you to some figures from the annual report of the Manchester and Salford Provident Dispensaries

Association for 1908, which are quoted in the British Medical Journal for May 22nd, 1909, where it is stated that these figures will perhaps be of service to those places that may think of starting a provident dispensary. The association goes on to say that it has over 15,000 members, and the subscription is 1d. per week, with an entrance fee of 6d. for each person and 1s. for each family. The remuneration of medical officers consists of half of the ordinary members' fund, and is divided according to the number of patients that each medical officer has had during the year, members being at liberty to choose their own doctor. During the year over 130,000 prescriptions were dispensed, an average of 8.5 per paying member. The total sum paid to the medical officers was £1,794 15s. 3d. This is equivalent to about 2s. 4d. per member annually, or slightly over ½d. a week. The remuneration, however, varies at the different dispensaries. At Pendleton, where it is highest, it amounts to 3s. per member, and at this dispensary there were over 7,000 consultations and 7,000 home visits, so that the doctor received rather more than 8½d. per visit or consultation. At the Lower Broughton Dispensary the corresponding amount was 6½d. In certain instances for special distances out of hours the doctors are allowed to charge 1s., but in the actual fact these extras can rarely be enforced. The total income of the dispensaries was over £4,000. Out of this total £1,794 went to the medical officers. The British Medical Journal, in commenting on the report, remarks that as a pure charity something may be said for the dispensaries, but that almost completely exhausts their recommendation to medical men.

Arising from all this there is surely much ground for serious reflection. Even Mrs. Sidney Webb herself says: "In my opinion the medical profession of the United Kingdom stands at this moment in a position of great danger." What the private practitioner has to fear, to put it plainly, is practically gratuitous doctoring, by which he will lose the poorer section of his present paying patients and be reduced to the very worst form of contract practice.

Do not for a moment run away with the idea that I am condemning contract or club practice, but I would point out that the works doctor has the men of the works and their families, and as long as he does his duty they are a certainty, and besides, he is directly paid from other sources, such as clubs, and may in several cases be paid sums for the same individual three or four times over. But in a universal medical contract practice there will be no certainty. People will hop about just as they like. The whole system you may be sure will be run as cheaply as possible, and not in the special interests of the general medical practitioner.

Do not entertain the idea that the general provident arrangement will mean at any rate that you will be paid for all you do, but I would point out to you that people are not only to be treated when they themselves need medical advice, but also when members of the Public Assistance Authority may think it necessary, or the district nurse or any other of the inspectors who are to be employed to compel the community at large to be healthy. As a writer a few weeks ago said in the *Yorkshire Post*: "Income tax payers grumble at the inquisitorial nature of the Commissioners' returns, but what will be the character of this proposed Health Department in comparison therewith if all diseases are to be nipped in the bud, and every child saved from the moral and physical delinquencies and deformities of his parents? A gang of Paul Prys—the priests of the new liberty! The privacy of home life will be a thing of the past—for what? Because some ignorant, cruel, lazy people will not look after their own offspring!" And as I have said before, one must not forget the compulsory powers of the committee, and the free hand to supply whatever they think necessary.

It seems to me, then, that a time of crisis has arrived as regards our profession, and that it is necessary that some more active political attitude should be assumed as a Branch and as a Division as well as an Association. The profession has a right to claim that its legitimate interests should receive fair considera tion, and that the vitally important services the pro fession renders to the public should be properly acknowledged. The medical recommendations of the Poor Law Commission are against the interests of the profession. They involve the creation of a vast new system of contract service which will be attended by all the evils that degrade contract practice at the present time, and will bring about an unprecedented restriction of the field of private practice. The pro fession will be singularly blind to its own interests i it fails to oppose any attempt to carry the Commis sion's recommendations into effect, and I hope that this meeting to-day will be able to formulate some method of doing so, or framing some resolution for our guidance in order that we may not, as usual, be crushed out without even the relief a squeal.

Votes of Thanks.—A hearty vote of thanks was passed to the President for his address and for the great trouble he had taken in drawing up the same. Dr. Drummond (South Shields) proposed a vote of thanks to Mr. Morison, the outgoing President, and Dr. Smith (Whickham) seconded. This was carried *nemine contradicente*.

Excursions.—The members afterwards broke up into parties, some going for a motor drive to Guisborough Priory, where Dr. Stainthorpe kindly entertained them to tea; others paid a visit to the brine baths, while a body of golf enthusiasts had a most successful match on the local golf links, where Dr. and Mrs. Burnett kindly entertained them to tea after the match.

Dinner.—A dinner was held in the evening at the Zetland Hotel, Dr. Burnett in the chair. It was a most successful function. Dr. Burnett, President, proposed the health of the King and the Royal Family. Dr. Burnett had also kindly arranged for a musical party, who entertained the company with glees and solos. All the members enjoyed themselves very much, and were deeply indebted to the President and the members of the Cleveland Division for the great trouble they had taken in preparing and carrying out its entertainments.

ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.

A general meeting of the Association of Medical Officers of Health was held in the Council Chamber of the British Medical Association on July 29th with Dr. F. G. Crookshank in the chair. The Chairman outlined the position that had arisen in consequence of the recent action taken by the Representative Meeting of the British Medical Association, and it was resolved that the following resolutions should be sent to the Central Council of the British Medical Association and also to the Divisions:

> This meeting expresses its extreme regret that the Representative Meeting has not rescinded Minute 234, but welcomes its reference to the Council for reconsideration and trusts that the whole question will now be reconsidered in the light of the general interests of the medical practitioner and his varied appointments in the public service.

It was also resolved:

> That in the opinion of this meeting no evidence has yet been adduced to show that the interests of the public health suffer when, as is usually the case, a medical officer of health engages in work other than the restricted duties of his office, and no reason exists for differentiation, in respect of conditions of tenure or superannuation, between part and whole time medical officers.

A vote of thanks was unanimously passed to Drs. Langdon-Down, Fremantle, and Taylor, and also to those who had voiced the cause of the part-time medical officers of health at the various meetings of the British Medical Association. Dr. Parkinson of Wimborne urged a federation of all the various societies of part-time medical officers, such as the Poor Law, Police Surgeons, Public Vaccinators. General approval was expressed, and it was agreed to refer the matter to the Council for consideration at its next meeting in October.

Dinner.

In the evening a dinner was held at the Holborn Restaurant. Dr. CROOKSHANK was in the chair, and among those present were: Dr. Arnold Ward, M.P.; Dr. Fremantle, County Medical Officer for Herts; Dr. Foulerton, County Medical Officer for Sussex; Dr. Hogarth, County Medical Officer for Buckingham: Mr. George Elliston, Drs. Drury, Gibbs-Smith, Sells, Meredith, Sharman, King, May, Wilkinson, and others. Dr. FOULERTON, in proposing the toast of "The Association," said that he was opposed to the municipalization of medicine, which would result if part-time appointments were abolished. In some appointments whole-timers are necessary, but in small districts part-time appointments were better for the public. He had never had any complaints of unfair conduct on the part of part-time men towards the other practitioners of the district. Dr. CROOKSHANK replied, and emphasized the change in professional opinion that had taken place during the year, and the importance of the present part-time system to the public, as well as the profession. Mr. ARNOLD WARD, M.P., replied, and said he was in favour of the general principles of the association and individualistic efforts as against socialistic efforts. He advised the association to obtain the support of their profession in Parliament.

Dr. FREMANTLE proposed "The Kindred Societies," and Dr. DRURY, President of the Public Vaccination Association, replied in sympathetic and cordial terms. The HONORARY SECRETARY (Mr. D. A. Belilios) briefly responded to the toast of "The Officers."

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns 7,014 births and 3,476 deaths were registered during the week ending Saturday last, August 6th. The annual rate of mortality in these towns, which had been 11.4, 11.1, and 11.3 per 1,000 in the three preceding weeks, declined to 10.7 per 1,000 last week. The rates in the several towns ranged from 4.3 in Handsworth (Staffs), 4.7 in Leyton, 5.5 in Walthamstow, and 5.8 in Hornsey, to 15.7 in St. Helens, 15.9 in Sunderland, 16.2 in Brighton, 16.3 in Dewsbury, and 17.0 in Merthyr Tydfil. The death-rate from the principal epidemic diseases averaged 1.1 per 1,000; in London the rate was 0.9 per 1,000, while among the seventy-six other large towns it ranged upwards to 2.6 in Preston, 2.8 in Liverpool, 3.4 in Burnley, and 4.9 in Barrow-in-Furness. Measles caused a death-rate of 1.4 in Oldham and 4.9 in Barrow-in-Furness; whooping-cough of 1.0 in Manchester and in Burnley; and diarrhoea of 1.5 in Middlesbrough, 1.8 in Aston Manor, and 1.9 in Burnley. The mortality from scarlet fever, diphtheria or enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,530, 1,548 and 1,563 at the end of the three preceding weeks, declined to 1,523 at the end of the week under notice; 165 new cases were admitted during the week against 249, 173 and 179 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, August 6th, 854 births and 445 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 12.4, 12.0, and 12.7 per 1,000 in the three preceding weeks, declined to 12.3 last week, and was 1.6 per 1,000 above the mean rate during the same period in the large English towns. Among the Scottish towns, the death-rates ranged from 7.2 in Leith, and 11.0 in Aberdeen to 16.3 in Perth, and 17.5 in Dundee. The death-rate from the principal infectious diseases averaged 1.2 per 1,000, the highest rates being recorded in Paisley and in Greenock. The 204 deaths from all causes recorded in Glasgow included 2 which were referred to measles, 1 to scarlet fever, 2 to diphtheria, 1 to whooping-cough, 1 to typhus, and 17 to diarrhoea. Four deaths from diarrhoea were registered in Dundee and 2 in Edinburgh.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, July 30th, 626 births and 358 deaths were registered in the twenty-two principal urban districts of Ireland, as against 615 births and 359 deaths in the preceding period. The annual death-rate in these districts, which had been 17.0, 15.7, and 16.3 per 1,000 in the three preceding weeks, fell to 16.2 per 1,000 in the week under notice, this figure being 4.9 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 15.5 and 18.0 respectively, those in other districts ranging from 4.2 in Newry and 4.8 in Ballymena to 22.8 in Londonderry and 25.1 in Portadown, while Cork stood at 16.4, Limerick at 17.8, and Waterford at 19.5. The zymotic death-rate in the twenty-two districts averaged 1.4 per 1,000, as against 2.2 per 1,000 in the preceding week.

During the week ending Saturday, August 6th, 564 births and 337 deaths were registered in the twenty-two principal urban districts of Ireland, as against 626 births and 358 deaths in the preceding period. The annual death-rate in these districts, which had been 15.7, 16.3, and 16.2 per 1,000 in the three preceding weeks, fell to 15.3 per 1,000 in the week under notice, this figure being 4.6 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 17.2 and 15.3 respectively, those in other districts ranging from 4.5 in Lisburn and 4.9 in Kilkenny to 23.3 in Wexford and 28.6 in Newtownards, while Cork stood at 6.8, Londonderry at 19.2, Limerick at 12.3, and Waterford at 19.5. The zymotic death-rate in the twenty-two districts averaged 1.6 per 1,000, as against 1.4 per 1,000 in the preceding week.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

INSPECTOR-GENERAL J. W. FISHER has been awarded the Greenwich Hospital pension of £100 a year, vacant by the death of Deputy-Inspector-General G. Jackson on June 20th.

The following appointments have been made at the Admiralty: Fleet Surgeon J. MOWAT, M.B., to be lent to Yarmouth Hospital, August 13th; Staff Surgeon A. J. HEWITT, to the *Jupiter*, additional, for disposal, August 15th; Staff Surgeon J. MCDONALD, M.B., to the *Vivid*, additional, for disposal, August 6th.

ROYAL ARMY MEDICAL COLLEGE.

MAJOR E. M. PILCHER, D.S.O., M.B., R.A.M.C., is appointed a Professor, vice Major C. G. Spencer, M.B., whose tenure of that appointment has expired, August 1st.

INDIAN MEDICAL SERVICE.

THE promotion of Lieutenant-Colonel G. W. P. DENNYS, Bengal, to be Colonel, which has been already announced in the BRITISH MEDICAL JOURNAL, has received the approval of the King.

Colonel H. ST. C. CARRUTHERS, Madras, is confirmed as Inspector-General of Civil Hospitals, Burma.

Colonel W. A. CORKERY, Bombay, has been appointed Principal Medical Officer, 3rd (Lahore) Division, vice Colonel H. J. W. Barrow, retired.

Colonel R. W. S. LYONS, M.D., Principal Medical Officer, Kohat Brigade, has leave of absence for three months.

Lieutenant R. H. ROTT, M.B., is promoted to be Captain, September 1st, 1909. He was appointed Lieutenant, September 1st, 1906, and took part in the operations in the Zakka Khel country during the campaign on the North-West Frontier of India in 1908, receiving a medal with clasp.

The undermentioned, whose first appointment dates from February 2nd, 1907, are also promoted to be Captains, from March 7th, 1910: E. B. MUNRO, M.B., W. E. R. WILLIAMS, M.B., and F. O'D. FAWCETT.

TERRITORIAL FORCE.

INFANTRY.

Sixth Battalion the Prince of Wales's Own (West Yorkshire) Regiment.—Surgeon-Lieutenant R. BLADWORTH, M.B., to be Surgeon-Captain, July 14th.

ROYAL GARRISON ARTILLERY.

Hampshire.—Surgeon-Captain A. A. MACKEITH, M.B., to be Surgeon-Major, November 1st, 1909.

ROYAL ENGINEERS.

Wessex Divisional Engineers.—Surgeon-Captain E. G. STOCKER, from the 2nd Wessex Field Company, Wessex Divisional Engineers, Royal Engineers, to be Surgeon-Captain, July 15th.

ROYAL ARMY MEDICAL CORPS.

Second East Lancashire Field Ambulance. — Captain H. W. PRITCHARD, from the 3rd East Lancashire Field Ambulance, Royal Army Medical Corps, to be Captain, March 7th. ANDREW W. B. LOUDON, M.D., to be Lieutenant, May 10th.

First Lowland Field Ambulance.—Lieutenant E. A. BOXER, from the list of officers attached to units other than Medical Units, to be Lieutenant, May 24th.

Second Welsh Field Ambulance.—Captain E. J. R. EVATT, M.B., to be Major, June 27th.

Attached to Units other than Medical Units.—Lieutenant A. CRUICKSHANK, M.B., to be Captain, April 1st, 1908. Lieutenant J. STEWART resigns his commission, August 6th. Lieutenant N. S. CARMICHAEL, M.B., resigns his commission, August 6th.

Third London (City of London) Field Ambulance.—Quartermaster and Honorary Lieutenant JOHN WALLACE KEMP, from the Fifth Southern General Hospital, Royal Army Medical Corps, to be Quartermaster with the honorary rank of Lieutenant, dated May 28th, 1910.

First Northumbrian Field Ambulance.—Major (Honorary Lieutenant in the Army) JOHN CLAY, M.B., F.R.C.S., to be Lieutenant-Colonel, July 9th.

Second Northumbrian Field Ambulance.—Major L. J. BLANDFORD, M.D., to be Lieutenant-Colonel, July 9th.

First London (City of London) Sanitary Company. — JOSEPH GROUNDS to be Lieutenant, May 31st.

Attached to Units other than Medical Units.—Lieutenant R. H. GILBERT-BRUCE, to be Captain, August 24th; Lieutenant W. J. CAIE, to be Captain, June 15th; Lieutenant ANDREW CURRIE, M.B., resigns his commission, August 10th.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT M. W. RUTHVEN, M.B., is confirmed in his rank.

JOHN H. BELL, M.B., to be Lieutenant (on probation), June 21st.

COLONIAL MEDICAL SERVICES.

THE following changes in the Colonial Medical Services are notified by the Colonial Office:—

WEST AFRICAN MEDICAL STAFF.—*Appointments:* E. J. TYNAN, F.R.C.S., L.R.C.P.Irel., D.H.P.Dub., D.T.M.L'pool., Medical Officer, Southern Nigeria, has been seconded for service as Health Officer to the Lagos Muncipal Board of Health. *Retirement:* H. B. KENT, M.B., B.S.Lond., M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer, Southern Nigeria. *Resignation:* F. G. SHARPE, L.R.C.S., L.R.C.P.Irel., Medical Officer, Gold Coast. *Transfer:* J. J. MOORE, L.R.C.S., L.R.C.P., L.M.Irel., D.P.H.L'pool., D.T.M.L'pool., Medical Officer, has been transferred from Sierra Leone to Southern Nigeria. *Death:* A. B. S. POWELL, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glas., Medical Officer, Southern Nigeria.

OTHER COLONIES AND PROTECTORATES.—G. D. H. CARPENTER, M.B., Ch.B.Oxon., M.R.C.S.Eng., L.R.C.P.Lond., has been selected for temporary appointment as a Medical Officer in Uganda.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

ARNSTAPLE: NORTH DEVON INFIRMARY.—House Surgeon. Salary, £100 per annum.

BIRMINGHAM GENERAL HOSPITAL.—(1) House-Surgeon to the Special Departments. (2) Resident Pathologist (3) House-Surgeon. (4) Two Assistant House-Surgeons. Salary for (1), (2), and (3) at the rate of £50 per annum, and for (4) £40 per annum.

BRISTOL GENERAL INFIRMARY.—Pathologist.

BRISTOL ROYAL INFIRMARY.—(1) Resident Casualty Officer; salary at the rate of £50 per annum. (2) Honorary Medical Officer.

BRISTOL UNIVERSITY.—Demonstrator of Pathology.

CANCER HOSPITAL, Fulham Road, S.W.—(1) Director of Radio-Therapeutic Department; honorarium, £150 per annum (2) House-Surgeon; salary at the rate of £70 per annum.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer (male). Salary to commence, £140 per annum.

CAPETOWN: SOUTH AFRICAN COLLEGE.—(1) Professor of Human Anatomy. (2) Professor of Physiology. Salary, £500 per annum each.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer (male). Salary, £160 per annum, rising to £180

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £75 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum.

DURBAN CORPORATION.—Medical Officer to initiate and carry on the work of a Municipal Tuberculosis Bureau. Salary, £600 per annum.

DURHAM COUNTY HOSPITAL.—House-Surgeon. Salary, £120 per annum.

GLASGOW WESTERN INFIRMARY.—Visiting Physician and Visiting Surgeon.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

HAMMERSMITH PARISH.—Medical Officer and Public Vaccinator for No. 4 District. Salary, £12 10s. per annum.

HEREFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

ISLE OF WIGHT COUNTY ASYLUM, near Newport.—Assistant Medical Officer Salary to commence, £150 per annum.

LANCASTER: ROYAL LANCASTER INFIRMARY.—House-Surgeon. Salary, £100 per annum.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary, £100 per annum, increasing £10 on reappointment.

LEITH HOSPITAL.—Surgeon in the Outdoor Department. Salary at the rate of £100 per annum.

LINCOLN GENERAL DISPENSARY.—Resident Junior Medical Officer. Salary, £175 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Two House-Physicians. (2) Three House-Surgeons. Salary at the rate of £80 per annum each.

MACCLESFIELD GENERAL INFIRMARY.—Senior House-Surgeon. Salary, £100 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £80 per annum

MANCHESTER ROYAL INFIRMARY AND DISPENSARY.—Honorary Assistant Surgeon.

MIDDLESEX HOSPITAL, W.—Assistant Anaesthetist. Salary, £40 per annum.

NEWCASTLE-ON-TYNE EYE INFIRMARY.—House-Surgeon Salary, £100 per annum.

NORFOLK AND NORWICH HOSPITAL.—Honorary Pathologist and Bacteriologist.

OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—(1) House-Surgeon. (2) Junior House-Surgeon Salary at the rate of £80 per annum each.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum

PLYMOUTH PUBLIC DISPENSARY.—(1) Honorary Physician. (2) Two Medical Officers of the Provident Department.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150 and £5 annually in lieu of stimulants.

ROXBURGH AND SELKIRK COUNTIES.—School Medical Inspector. Salary at the rate of £300 per annum

ROYAL NAVY MEDICAL SERVICE.—Dental Surgeon for duty with the Naval Forces in the United Kingdom. Inclusive salary, £1 per diem.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at the rate of £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician. Salary, £50 per annum each.

SHEFFIELD ROYAL INFIRMARY.—Resident Medical Officer. Salary, £60 per annum.

SUNDERLAND INFIRMARY.—Male House-Surgeon. Salary, £80 per annum

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House-Surgeon. Salary, £100 per annum.

TAVISTOCK URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary, £30 per annum

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Assistant Resident Medical Officer. Salary at the rate of £100 per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—Junior House-Surgeon. Salary at the rate of £75 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

WINCHESTER: ROYAL HAMPSHIRE COUNTY HOSPITAL.—House-Surgeon (male).

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Midhurst, co. Sussex.

MEDICAL REFEREE.—The Home Secretary announces a vacancy as Medical Referee for Ophthalmic Cases arising in County Court Circuit No. 25.

APPOINTMENTS.

BOND, W. E., M.R.C.S., L.R.C.P., District Medical Officer of the Chesterfield Union.

BURNET, E., M.B., Ch.B.Edin., Medical Officer of Health of the Borough of Royal Leamington Spa.

DOCKRAY, J. S., M.D.Vict., District Medical Officer of the Bishop Stortford Union.

JOBSON, T. B., M.D Dub., District Medical Officer of the Romford Union.

MCCREA, R. A. M. L., M.B., B.Ch.R.U.I., District Medical Officer of the Chesterfield Union

OATES, Geoffrey E., M.D., B.S.Lond., M.R.C.P., D.P.H.Camb., Medical Officer to the Birmingham Education Committee.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ELLIS.—On August 2nd, at 3, Maple Road, Bournville, near Birmingham, the wife of F. W. Ellis, M.D., F.R.C.S.Eng., of a son.

GARDNER.—On August 4th, at 23, St. John's Hill, Shrewsbury, the wife of Dr. H. Willoughby Gardner, of a son.

LINDSAY.—At "Hillersdon," Nenthead, near Alston, Cumberland, the wife of John Ker Lindsay, L.R.C.P., L.R.C.S., etc., of a son.

LOCKWOOD.—On August 8th, 1910, at 19, Upper Berkeley Street, Portman Square, W., the wife of Charles Barrett Lockwood, of a son.

WROUGHTON.—On the 4th inst., at "Boroughfield," Bricket Road, St. Albans, the wife of Captain A. O. B. Wroughton, Royal Army Medical Corps, of a daughter.

MARRIAGES.

BARR—CRERAR-GILBERT.—At 21, Woodside Terrace, Glasgow, on the 3rd inst., by the Very Rev. Donald Macleod, D.D., Emeritus Minister of the Park Parish and Chaplain in Ordinary to the King, and the Rev. John Smith, D.D., Minister of Partick Parish, John Stoddart Barr, M.B., Ch.B., only son of Thomas Barr, M.D., 13, Woodside Place, Glasgow, to Norah, only daughter of D. M. Crerar Gilbert, of Yorkhill. At home, 16, Woodside Place, November 2nd, 3rd, and 4th.

HUNTER—WALLACE.—On April 30th, at the Presbyterian Church, Wollongong, N.S.W., by the Rev. D. Mackay Barnet, B.A., David Guthrie Hunter, M.A., M.B., Ch.B.Glasg., of Eastwood, Sydney, N.S.W., son of the late John Hunter, Bank Manager, Stanraer, N.B., to Phyllis Grace, daughter of the late John Wallace, Braidwood, N.S.W.

MACCORMAC—HOLLIS.—On August 4th, at Holy Trinity, Sloane Street, William L. Maccormac, M.B., F.R.C.S.E., to Maud, youngest daughter of the late John Mauclerk Hollis, of Garforth.

DEATH.

PLATT.—On the 3rd inst., John Edward Platt, M.S.Lond., F.R.C.S., of 157, High Street, Oxford Road, Manchester, aged 44 years.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Monday, 2 p.m.: Diseases of the Lungs. Tuesday, 2 p.m.: Diseases of the Kidneys Wednesday, 2 p.m.: Diseases of the Digestive System and Children's Diseases Thursday, 2 p.m.: Diseases of the Nervous System. Friday, 2 p.m., Diseases of the Heart.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics: Operations and X rays, 2 p.m. daily. Monday, Surgical Registrar, 10 a.m.; Pathological Demonstrations, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Surgical Registrar, 10 a.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. Tuesday and Friday

RECENT PUBLICATIONS.

Motor Trips from London and Paris at a Glance. London: T. M. Middleton and Co., Essex Street, Strand. (Pp 223. Price 1s. net.)

A second edition of a most useful book, containing maps and outlines of expeditions lasting from a few hours to three weeks. The distances between the places passed on each route are clearly shown both on the maps and in the letterpress, and the specially interesting feature of each town passed is duly noted. Each tour has its own map.

Printed and Published by the British Medical Association at their Office, No. 429 Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 20TH, 1910.

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Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

FIFE BRANCH.

THE eighth annual meeting of the Branch was held at the Hotel Thornton on Thursday, June 16th, at 3 p.m. Dr. W. B. DOW, LL.D., President, in the chair. There was a small attendance of members.

Letter from Honorary Secretary.—A letter was read from the Honorary Secretary regretting his absence from the meeting on account of illness, and explaining that Dr. Anderson (Denbeath) had kindly agreed to act in his stead.

Apologies for Non-attendance.—Apologies for absence were intimated from Dr. Nasmyth (Crossgates), Dr. Orr (Tayport), and Dr. Dewar, Medical Officer of Health for the County.

The late Dr. Morris, of Dunfermline.—The PRESIDENT referred in feeling terms to the death of Dr. Morris (Dunfermline), the *doyen* of the profession in the county, and this was ordered to be recorded in the minutes, the HONORARY SECRETARY reporting that he had already conveyed the sympathy of the Branch to Mrs. Morris on the loss she had sustained, and also their expression of deep regret on the death of one of their most respected members.

Confirmation of Minutes.—The minutes of the last annual meeting of June 17th and of the ordinary general meeting of March 17th were read and approved.

Election of Officers.—On the motion of Dr. DOUGLAS, Dr. W. B. Dow, LL.D., Dunfermline, was re-elected President of the Branch for the current year, and Dr. Craig was continued in the office of President-elect. Drs. Aitken and Laing were continued in their offices as Past-Presidents in view of the above re-elections. Drs. D. E. Dickson and Richardson, who have served five years as members of Branch Council, retire at this time according to the rules, and, on the motion of Dr. ANDERSON, they were heartily thanked for their services. Dr. Anderson (Denbeath) and Dr. Selkirk (Cowdenbeath) were elected in their room. Dr. Douglas (Cupar) was elected a member of the Branch Council in place of Dr. Spence, deceased. The other members of the Branch Council—Drs. Mackenzie, J. MacDonald, Caskie, and Macintosh—were re-elected. Dr. R. Balfour Graham was re-elected Honorary Secretary and Treasurer, on the motion of the PRESIDENT seconded by Dr. MACDONALD (Cupar).

Elections to Central Council.—The HONORARY SECRETARY reported that he had received a letter from Dr. T. G. Nasmyth thanking the members of the Branch for their support during his term of office as member of the Central Council, to which he no longer desired to be elected. The election of members to the Central Council by the Branches and by the Grouped Representatives was being carried out from head quarters. A letter was also read from Dr. McKenzie Johnston, thanking the members for their support during his term of office as member of Central Council.

Report of the Branch Council.—The report of the Branch Council showed that the funds as at March 31st stood at £16 10s. 4d. credit on the ordinary account, and 16s. 4d. on the special account. The Branch Council had met three times during the past year, and had elected seven new members, equalling the record of the previous year. The membership now stood at 83, with one associate member. A very successful conjoint meeting with the Fifeshire Medical Association had been held at Dunfermline last October. The members visited the Carnegie Institute, Pittencrieff grounds, etc., and afterwards were addressed by Dr. Lovell Gulland, Edinburgh, a pleasant dinner in the Royal Hotel terminating the proceedings. Contract practice matters were still being considered by the Colliery Surgeons' Committee of the Branch, and no final report could yet be made.

Medical Treatment of Defective School Children.—The HONORARY SECRETARY reported that he had received a circular letter from the Medical Secretary, addressed specially to himself, asking what arrangements were being made by the local education authorities in the county for the medical treatment of school children found on inspection to be defective. He had replied that so far as he knew there were no arrangements for this purpose, but that on a child being found to be defective in any respect by the medical inspector of children, the case was at once notified to the parents, with a view to their consulting their usual medical attendant. The members approved of the Honorary Secretary's reply.

Representative Meetings.—Dr. DOW submitted a short account of his attendance at the Representative Meetings at Belfast last year, and was thanked for the same. Dr. W. B. Dow was re-elected Representative of the Division at Representative Meetings. The business of the Representative Meetings being too voluminous to consider seriatim, it was left with the Representative to use his own discretion regarding the various subjects on the agenda.

SOUTH-WESTERN BRANCH:

TRURO DIVISION.

THE annual meeting of this Division was held at the Royal Cornwall Infirmary, Truro, on June 28th. Invitations to attend the meeting were sent to all non-members of the Association practising in the area of the Division. Eighteen members and two non-members attended (the largest number ever got together before). Dr. R. F. STEPHENS, Vice-Chairman, took the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Election of Officers.—The following officers were elected for the year 1910–11: *Chairman*, Dr. J. Symons (Penzance); *Vice-Chairman*, Dr. J. W. Haughton (Falmouth); *Representatives on Branch Council*, Drs. R. F. Stephens, W. Whitworth, and M. R. Taylor; *Honorary Secretary and Treasurer*, Dr. M. R. Taylor.

British Red Cross Society.

Colonel Vyvyan, C.B., Chairman of the Working Committee of the Council of the Cornwall Branch of the British Red Cross Society and Vice-Chairman of the County of Cornwall Territorial Force Association, accompanied by Colonel Birch, Honorary County Secretary for the Red Cross Society, and Major Laurie R.A.M.C.(T.), Knight of Grace of the Order of the Hospital of St. John of Jerusalem in England, and County Director of the Red Cross Society, attended the meeting.

Colonel BIRCH, in addressing the meeting, explained the aim and object of the Red Cross Society. He explained that the formation of classes for instruction in first aid and nursing was being carried out by the joint efforts of the Red Cross Society and the St. John Ambulance Association to enable students to obtain certificates of efficiency, by which alone they could become eligible for the voluntary aid detachments. As the rules of the Red Cross Society laid down that the subscriptions and donations recived were to be reserved for the equipment of the detachments *when formed*, after payment of necessary expenditure in administration, there were no funds available for the expenses of preliminary instruction in the classes, more especially as enlistment in the detachments was optional. The classes, therefore, must be self-supported by the students' fees of admittance, unless assisted by local contributions. Hitherto it had been the custom of county councils to pay the fees to the medical superintendent giving the lectures. But this could not be depended upon, owing to the diminution of the grant from the technical branch under the Education Act. The difficulty arose how the five guineas fee to the lecturer, in addition to the fee to the expert examiner, and his expenses, and for the hire of material for conducting the classes, could be raised without making the students' quota prohibitive. In some instances the lectures had been given gratuitously by local doctors under a patriotic spirit in furtherance of the aim of the society, and such generosity had been much appreciated, but strongly objected to by the British Medical Association. The subject in dispute appeared to be whether by enactment of the British Medical Association doctors willing to give their services were to be prohibited from giving the lectures gratuitously as being an infringement of the just claim of the medical profession or whether it should remain optional. The hard and fast prohibition seemed to place doctors on the horns of a dilemma, being forced to refuse to give the lectures gratuitously or at a reduced fee when the circumstances seemed to be injurious to the voluntary effort to render efficient aid in emergency. The justice of a claim for payment for professional service when possible would never be denied, but objection was taken by the doctors themselves to prohibition when they tendered their gratuitous help under adverse circumstances demanding it in the cause of humanity.

With the exception of Major Laurie, R.A.M.C., who held that medical men should be free to give their services gratuitously if so inclined (and that he personally had done so for twenty-five years), all those who spoke at the meeting held the opposite view, and adhered to the opinion expressed in the British Medical Association circular of February 5th that such lectures should not be given gratuitously. One of Dr. Laurie's points as regarding the position of the Red Cross Society was that there was no guarantee that the pupils after gaining their certificate would enroll in the detachments, and if their expenses were paid by the society they might be of no further use. He spoke from the point of view as County Director to the Society as well as a member of the British Medical Association.

Colonel VYVYAN, in summing up the case on behalf of the Red Cross Society, stated that he had sounded the County Council with no success as to the payment of the doctor's fee for delivering the lectures, and that any help from the Territorial Association was equally hopeless. It rested, therefore, entirely with local effort. He was perfectly in accord with the view that the lecturer should be paid—when there was any possibility of procuring the means—but otherwise they could only be grateful when the lectures were willingly given gratuitously.

The CHAIRMAN proposed, and it was finally agreed, to await the report of the resolutions of the Annual Meeting in London, which would be brought up at the next meeting of the committee for further consideration.

Fees for Insurance Examinations.—At a previous meeting it had been decided that the Honorary Secretary should ascertain the views of the profession in the Divisional area on certain points *re* fees paid by insurance companies. He reported that he had sent circulars to 129 medical men, enclosing a stamped addressed postcard, and that only 90 had answered. Of these 90, 88 were in favour of and 2 against a minimum fee of one guinea for independent examinations and reports under the Workmen's Compensation Acts. On the question of fixing a minimum fee of one guinea for life insurance examinations where the sum assured was £100 or upwards, 71 replied in the affirmative and 19 in the negative. The Honorary Secretary was instructed to take steps to ascertain the opinions of those who had not answered the previous letter.

Next Meeting.—It was decided to hold the next meeting at Penzance.

Owing to the length of the discussion there was no time for a clinical demonstration by the staff of the hospital.

Tea.—Tea was provided after the meeting.

Association Notices.

ELECTION OF CENTRAL COUNCIL 1910-11.

To those Branches or groups of Branches in the United Kingdom who failed to make nominations for election of members of the 1910–11 Council,

Notice is hereby given that nominations of candidates for election of Members of Council by Branches or groups of Branches in the United Kingdom by voting papers for the year 1910–11 must be forwarded to reach the Financial Secretary and Business Manager, at the Office of the Association, not later than September 14th, 1910, and that each nomination must be on the prescribed form, copies of which will be furnished by the Financial Secretary and Business Manager upon application.

Separate forms have been prepared for a nomination by a Division and for a nomination by any three members respectively, and those applying are requested to state for which purpose the form is desired.

Voting papers containing the names of all candidates duly nominated will be issued from the Central Office on September 21st, and will be returnable not later than September 26th.

By Order of the Council,

GUY ELLISTON,
Financial Secretary and Business Manager.

August 3rd, 1910.

METROPOLITAN COUNTIES BRANCH.

PROPORTIONAL REPRESENTATION.

FOR the fourth time the Metropolitan Counties Branch employed the single transferable vote system in the recent elections of candidates to the Central Council of the Association. The system worked smoothly and the experiment again demonstrated the feasibility and advantages of employing it. Incidentally, it may be mentioned that the election for the four additional members to the Central Council from the Representative Meeting was also conducted on this system. In the case of the Metropolitan Counties Branch elections, a short description may be of value to other Branches and Divisions, who might wish to adopt the same plan. This has been done on previous occasions (see BRITISH MEDICAL JOURNAL, July 17th, 1909). The candidates were 9 in number and there were four vacancies. In all, 690 voting papers were returned, but of these 14 were declared invalid, because the very simple directions printed on the papers had not been followed. In 11 cases crosses instead of numbers had been used. The first procedure was to count the first choices, and this was done by making parcels of the papers according to the candidate marked 1 on the paper. The voting was as follows:

Sir Victor Horsley	255	Dr. G. E. Haslip	34
Dr. A. J. Rice-Oxley ...	118	Mr. H. W. Armit	32
Dr. Lauriston Shaw ...	103	Dr. J. J. Macan.....	27
Dr. Major Greenwood	62	Mr. Hugh R. Ker	24
Dr. St. Clair B. Shadwell.....	21		

The next step was to determine the quota, or in other words, the number of votes which would ensure the election of a candidate. This is the total number of votes divided by the number of vacancies plus one and one vote added. In the present instance, there were 676 valid votes and the quota was therefore:

$$\frac{676}{4+1} + 1 = 136.$$

Sir Victor Horsley was found to have 119 votes over and above the quota, and the next step was therefore to transfer these surplus votes to the second preferences. The parcel of papers registering a first choice of Sir Victor Horsley was therefore distributed into parcels according to the names marked 2 on the papers. These parcels were then divided in the proportion of 119 (the number of papers to be transferred) : 136 (the number of the quota required for the election of Sir Victor Horsley). The result of this operation was as follows:

Candidates.	Number of Papers in Sub-parcel.	Number of Papers Transferred.	Number of Papers Retained for Horsley's Quota.
Armit	10	5	5
Greenwood	32	15	17
Haslip	13	6	7
Ker	20	9	11
Macan	9	4	5
Rice-Oxley	44	21	23
Shadwell...	10	5	5
Shaw	115	54	61
Totals	253	119	134
Number of papers showing no preference	2	—	2
Totals	255	119	136

From this transfer of votes, two more candidates passed the quota—namely, Drs. Shaw and Rice-Oxley. Dr. Shaw had 157 votes, or 21 beyond the quota, while Dr. Rice-Oxley had 139, or 3 beyond the quota. Dr. Shaw's surplus was then distributed in the same manner as Sir Victor Horsley's had been distributed. At this stage it became necessary to eliminate the lowest candidate, who had no chance of election, and to transfer his votes to the next preferences as indicated by his supporters. The votes of Dr. Shadwell, Dr. Macan, and Mr. Ker were in turn transferred in this manner, with the following result:

Sir Victor Horsley	136	(elected)
Dr. Lauriston Shaw...	136	(elected)
Dr. Rice Oxley	136	(elected)
Dr. Major Greenwood	120	
Dr. Haslip	64	
Mr. Armit	55	
Preferences exhausted ...	29	
Total	676	

No further distribution was necessary, for Dr. Greenwood's votes, which had at this stage totalled 120, exceeded the combined total of Dr. Haslip's and Mr. Armit's votes, and therefore any transferring of votes must have left Dr. Greenwood in possession of more votes than either of the remaining candidates.

ELECTION OF FOUR MEMBERS OF COUNCIL (BRITISH MEDICAL ASSOCIATION—METROPOLITAN COUNTIES BRANCH).

Result Sheet.

No. of Votes.....676 Quota $= \frac{676}{5} + 1 = 136.$

Names of Candidates.	First Count.	Distribution of Horsley's Surplus.	Result.	Distribution of Shaw's Surplus.	Result.	Distribution of Shadwell's Votes.	Result.	Distribution of Rice-Oxley's Surplus.	Result.	Distribution of Macan's Votes.	Result.	Distribution of Ker's Votes.	Result.
Armit, Mr. H. W.	32	+5	37	+5	42	+2	44	+1	45	+3	48	+7	55
Greenwood, Dr. Major ...	62	+15	77	+2	79	+13	92	+1	93	+12	105	+15	120
Haslip, Dr. G. E.	34	+6	40	+6	46	—	46	—	46	+3	49	+15	64
Horsley, Sir Victor... ...	255	−119	136	—	136	—	136	—	136	—	136	—	136
Ker, Mr. Hugh R.	24	+9	33	+4	37	+4	41	+1	42	+4	46	−46	—
Macan, Dr. J. J.	27	+4	31	+2	33	+6	39	—	39	−39	—	—	—
Rice-Oxley, Dr. A. J. ...	118	+21	139	—	139	—	139	−3	136	—	136	—	136
Shadwell, Dr. St. Clair ...	21	+5	26	+2	28	−28	—	—	—	—	—	—	—
Shaw, Dr. Lauriston, E. ...	103	+54	157	−21	136	—	136	—	136	—	136	—	136
Preferences exhausted ...	—	—	—	—	—	—	3	—	3	+17	20	+9	29
Loss of votes due to neglect of fractions	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals	676	—	676	—	676	—	676	—	676	—	676	—	676

He was therefore declared elected. Each operation is shown in detail in the result list (see Table, p. 267).

The election was of a certain amount of interest from the point of view of the system employed. While it will be noticed that the candidates elected were the first four in the list of first preferences, it is probable that had the old method of voting for four members been adopted, the "ticket" would have secured the election of Sir Victor Horsley, Dr. Shaw, Dr. Haslip, and Mr. Ker. A circular card had been sent to each member of the Branch soliciting support for these four members *en bloc*. The method of the single transferable vote broke down this "ticket" canvassing. It is further curious to notice that the most serious inroad made into the "ticket" was effected by the only other candidate who canvassed the Branch for votes, namely Dr. Rice-Oxley. The election shows that each voter retains a fair chance of having his interests safeguarded as far as they represent opinions shared by a reasonable number of the electorate.

We have to record that the officials of the Proportional Representation Society again undertook the supervision of the scrutiny. While we have to offer these officials our hearty thanks for having been of service to the Metropolitan Counties Branch, it must be pointed out that with the aid of the valuable literature issued by this society, any Branch can with ease adopt the system. A very excellent pamphlet has recently been issued by the society, in which much information will be found. This is an address by Mr. James Easton, entitled "Complete Representation." The July number of *Representation* (the journal of the Proportional Representation Society) contains a full report of the Royal Commission on Electoral Systems, in which much prominence has been given to the single transferable vote system. The honorary secretary of the Proportional Representation Society is J. H. Humphreys, Esq., and the address, 179, St. Stephen's House, Westminster.

SEVENTY-EIGHTH ANNUAL MEETING
OF THE
British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, 29th, and 30th.

EXHIBITION
OF
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[Second Notice.]

John Bell and Croyden, Limited (50, Wigmore Street, W.). This firm may be said to specialize in two directions—namely, in the manufacture of catheters and in the preparation and supply of dressings for operations. It keeps, we understand, a special staff ready, on receipt of a message, to send out, at any time of the day or night, complete outfits for operations of all kinds. An interesting feature of the exhibit was a model of the sterilizing rooms erected on the firm's premises. They are so arranged that the preparation of dressings is commenced in one room, called the impure room, and completed, without the intervention of hands, in a second room, called the pure room. The latter is dust-proof, and all air admitted is filtered through wet screens. The sterilization itself is performed by high pressure steam, the dressings being dried automatically, and the drums hermetically sealed by metal discs held in place by a soft metal band. At the operation this is torn through by the surgeon, who can easily raise the lid and remove the dressings as he requires them. They are placed in the tin before sterilization in the order in which they are esteemed likely to be used. Of the catheters of the firm, it may be said that they are notable for their combination of strength, flexibility, and high polish; a specially excellent point is the smoothness and even polish possessed by them internally. It can be seen on splitting a catheter longitudinally. One of the latest forms of these catheters was recently described in these columns by Mr. Hugh Lett. It is intended for use in a fairly common class of case—that in which, in addition to prostatic enlargement, there is also a slight stricture. The catheter has a very flexible point, extending about 1 in. up the shaft, which then gradually increases in size and becomes stiffer. It may be regarded as combining the principles of the coudée and olivary patterns. Also shown were Nauheim Bath Salts, which have been brought out to enable to be prepared at home a bath of not less activity in point of free carbonic acid than the natural water of Nauheim.

Liverpool Lint Company (Mark Street Mills, Liverpool). The stall of this firm is always popular, dressings, bandages, and the like apparently having an attraction for medical men, even though not at work. It was the first to apply hydraulic pressure to bandages and dressings, and a multiplicity of dressings, bandages, and cotton-wool so prepared were on view. Only those who remember the amount of space which used to be taken up by bandages and the like in a surgery can fully appreciate the advantage of their preparation in compressed form. Among the specialities of the firm is *Impermiette*, to which we have drawn attention on a previous occasion. It is a sort of cross between the old-fashioned jaconet and india-rubber sheeting, which keeps well in the hottest weather, can be sterilized with soap and hot water, and is not affected by chloroform or carbonic acid in 5 per cent. strength. It is made in various thicknesses and widths, is durable, and altogether may be regarded as a most excellent waterproof cover for any purpose. Its resistance to the action of acid urines, disinfectants, and heat was shown by a number of specimens which had been independently tested at various institutions. Another thoroughly practical preparation is *Vulnoplast*, a ready-made dressing, requiring neither pins, bandages, nor pads for the prompt and efficient dressing of wounds. It is, moreover, a very economical form of dressing to use, and excellent either for habitual use in the surgery or to keep for emergency use in a surgical bag or when travelling. Another useful speciality of the firm is *Splint Padding*, which can be obtained either in compressed or natural form, and in either case, when cut to the right shape and laid on a splint, makes a thick, soft pad. It is composed of a mixture of carbonized tow and absorbent cotton-wool and other fabrics, and is very easily handled. Apart from its special purpose it makes a good substitute for cotton-wool in covering in fomentations or poultices.

Schweppes, Limited (49, Pall Mall, London, S.W.). There has been some extension during the last two years of the enterprise of this firm, which, in addition to the soda, potash, lithia, and other mineral waters for which it has long been noted, now deals in non-alcoholic wines and temperance beverages of several kinds. They include Lime Juice and Proset, the latter being a fruit beverage which appears to have attained considerable popularity among athletes and in ordinary temperance circles. It is supplied in two qualities, dry and sweet. All the mineral waters can be obtained seemingly either in full-sized bottles or in "splits," and also in porcelain-lined siphons. The firm also supplies Malvern Water, the special point of which is the curiously small proportion of solids contained. It is drawn from springs some 850 ft. above sea level on the Colwall side of the Malvern hills. The firm supplies it either "natural" or highly aërated under the name of Sparkling Malvern.

Messrs. Mathieu (4, Hercules Place, N., and Boulevard St. Germaine, Paris). The first glance at the work of this firm proved that for finish and perfect workmanship little was left to be desired. With only a limited selection from their catalogue it was, nevertheless, quite possible to spend a very profitable stay at the

stall. Their self-controlling sphygmometroscope introduces a special feature in the separation of the armlet cavity into compartments, thereby enabling a closer adjustment to be made in ascertaining the maxima and minima. It is claimed that this instrument excels all others in its approximation to a true result. Their aphyso-cautery, which is worked by ether and not by benzene, appears to be perfectly safe, and at the same time to surpass the ordinary Paquelin. It is certainly more portable, and as there is no tubular attachment it is more convenient for the operator. The Monprofit steel spring tourniquet is extremely pliable and capable of very simple and rapid fixation. It is claimed that it will not deteriorate with repeated sterilization by boiling. The apparatus for applying the Mencière bone staples is a good example of sound work, and gets over one of the difficulties associated with this type of bone fixation. Doyen's simplified spring abdominal retractor must be almost the last word in lightness and reliability. The celebrated Doyen pedestal table was unfortunately not on view, but the unspillable patent accumulator of this firm, in any size, is a neat and very useful form. The small sample here on view will, no doubt, induce many visitors to make a closer and more extensive acquaintance with the firm's London show rooms.

The Maltine Manufacturing Company (24 and 25, Hart Street, Bloomsbury, W.C.). This firm shared a stall with Messrs. Carnrick and Co., of the same address, the combined exhibit being one of old and well tried friends so far as a majority of visitors are concerned. The term *Maltine* is the registered title of a special preparation belonging to a class which it is hardly necessary to discuss, since the value of extract of malt as a readily assimilated nutrient and as an aid to the digestion of carbohydrate food is very well recognized. In its attainment of this position, the class has been greatly assisted by the preparations of this firm, which at one time or another most men in active practice must have had occasion to prescribe. It is free from the musty flavour not uncommon in malt extracts, and despite its high concentration is fluid enough to be easily measured in a spoon or glass. An analysis which we made of it last year showed it to be absolutely free from sophistication, and its diastasic power to be as high as 940. This is often, we understand, turned to useful purpose in the preparation of milk for babies, the result of its addition being a milk in which heavy casein curdling, one of the principal drawbacks of ordinary milk, does not occur. Moreover the maltose contained supplies the sugar commonly added in the modification of milk for children's consumption. A simple and effective formula by which milk can be modified for the feeding of infants has been worked out by the firm and can be obtained on application. Maltine disguises the taste of cod liver oil so admirably that *Maltine c. Ol. Morrhuae* and various other like compounds are certainly to be commended. The exhibits of the second firm included *Carnrick's Liquid Peptonoids*, a preparation of beef, wheat, and milk. The proteid matter is in the form of true peptones so that it should be absorbed with great readiness. As a combined food and stimulant in conditions of exhaustion this preparation has attained considerable popularity among medical men of experience.

Knoll and Co. (8, Harp Lane, London) have placed upon the market recently a nerve sedative and hypnotic to which the name *Bromural* has been given. Bromural, or *a*-monobromiso-valerianate of urea, is said to possess both a hypnotic and a sedative action and to be devoid of harmful after-effects, to have no cumulative action, and to establish no toleration in the sense that the dose must be gradually increased in order to produce the same effect. It is therefore recommended as highly efficacious in the nervous disorders of children, in chorea minor, in rickets, and in whooping-cough. In adults it is to be used in a variety of mental disorders, in vasomotor and reflex disturbances of the heart, in neurosis of all sorts, and in neuralgia and hyperaesthesia generally. As a uterine haemostatic and sedative *Styptol* is recommended. It is said to be efficacious especially in profuse menorrhagia without recognizable lesion, in haemorrhages due to inflammatory conditions of the uterine mucous membrane, in haemorrhage due to fibroids, and in cases of inoperable cancer. Applied to bleeding surfaces it causes contraction of the small arteries, partly due to the cotarnine and partly to the phthalic acid contained in it. At the same time it has a sedative action upon the central nervous system, and there is no rise in the blood pressure. In *Iodival* (or *a* monoiod-isovalerianyl-urea) a new preparation containing 47 per cent. of iodine is shown. It is said to show a special affinity for the central nervous system, and is therefore directed against all forms of tertiary syphilis of the nervous system and the late secondary manifestations. It is also recommended in arteriosclerosis, scrofula, and asthma. It is said to pass the stomach unchanged and to dissolve in the intestinal tract in the form of a sodium salt. In this form it is absorbed and carried to the fatty and nervous tissues, where the iodine is gradually split off and removed during the next forty-eight hours. Generally speaking the dose is one tablet, 5 grains, three times a day. The tablets are to be taken in water, in which they readily disintegrate.

Messrs. Baillière, Tindall, and Cox (8, Henrietta Street, Covent Garden). As usual, there were to be found on the stall of this popular firm of medical publishers a number of revised editions of old friends and a good many entirely new publications. Among the former should be placed a ninth edition of the *Manual of Pharmacology, Materia Medica and Therapeutics* by the ex-President of the British Medical Association, Sir William Whitla, whose *Practice and Theory of Medicine* was also shown. So, too, were the latest editions of such well known books as Rose and Carless's *Surgery*, and Jellett's *Manual of Midwifery*, which has been brought into line with recent advances in this department of medicine and supplied with fresh illustrations. There was also a third edition of Starr's *Nervous Diseases*, which now covers the entire subject of practical neurology. Among the new books was an English translation of Dieulafoy's *Textbook on Medicine*, founded on the fifteenth French edition of this very successful work. Professor Dieulafoy, it may be noted, has written for it a special introduction. The *Manual of Tropical Medicine*, by Drs. Castellani and Chalmers, is notable for its wealth of illustrations and coloured plates. Another book worth noting is Steven's *Medical Supervision in Schools*, which contains a good account by the Australian Commissioner of the systems at work in various countries. Illustrated with especial care is Dr. Gray's new book on *Diseases of the Ear*, in which connexion may be mentioned also a new edition of Politzer's and Lake's works on the same subject. Other books which we noted were Calkin's *Protozoology*, Munro Kerr's *Operative Midwifery*, which is freely illustrated; the book by Stewart McKay entitled *Operations upon the Uterus, Perineum, and Round Ligaments*, containing 148 plates; new editions of Wheeler's *Operative Surgery*, and of Younger's *Insanity*, in addition to Bellamy Gardner's *Surgical Anaesthesia*, and the book on *Accidents in their Medico-Legal Aspects*, edited by Mr. Douglas Knocker, with the assistance of several medical authorities. Samples of the whole series of University Manuals, which include Stewart's *Physiology* and Munro's *Medicine*, and the periodical publications of the firm were also on view.

The Holmquist Electrical Company (52, Regent Street, London, W.). We were considerably attracted by the exhibit of this firm, which seemed to cover fairly completely the whole ground of light bath and hot-air treatment, and to do so in satisfactory fashion. One form was a light-bath apparatus, so constructed as to fold up when not required for use, but otherwise entirely in keeping with the light baths to

be found at hydropathic establishments. It could easily be taken to a patient's house and worked there comfortably from the ordinary electric supply of the house. Another form, entitled the "Universal," can be used either for light or hot-air treatment, or for both combined. There were also to be seen several convenient forms for securing separate hot-air treatment of distinct portions of the body, the leg, arm, shoulder, and back, some being equally useful for several different parts. Electric massage rollers of a practical kind were on view, in addition to an electro-thermal pad, which proved very attractive. It is a kind of cushion, having in its interior some insulated wires, the resistance of which raises the temperature of the surrounding air. It is intended to take the place of hot-water bottles and like devices, and has the advantage that any precise desired temperature can be obtained, and would remain constant so long as the current was continued.

C. OPPEL AND Co. (10 and 12, Milton Street, London, E.C.). This firm is the representative of the Friedrichshall springs, which lie in the beautiful valley of Saxe-Meiningen, Germany. Since the water has been in use in all countries as an aperient for practically a century, there ought to be little need to say anything in its favour at this date. The claims of comparatively novel aperient waters are, however, so constantly pressed forward in these days, that there is a danger of old friends of approved value being overlooked. Friedrichshall water has a specific gravity of about 1022; its principal contents being, roughly—magnesium sulphate 6.2, sodium sulphate 5.2, magnesium chloride 4.9, sodium chloride 7.9, together with a small proportion of lime and potash salts. In its action it is not drastic, and it may be taken in ordinary doses for a very long period without setting up dyspepsia. Furthermore, it appears to have the supreme advantage as an aperient of not losing its efficacy by continued use. It is entirely free from suspended matter, and extremely stable in composition. As for its taste, this is on a par with practically all natural waters which lay claim to medicinal properties of the same character. Some persons who dislike its flavour find it comparatively easy to take when milk is added. There are probably few remedies to the value of which testimony has been paid by an equally large number of distinguished clinicians. Its special characteristic was well described by Sir Henry Thompson in the following words: "One of the characteristics of this water is that the longer it is taken, the smaller is the quantity necessary to effect the purpose. It leaves the patient less constipated after discontinuing it than he was before, and may be taken habitually without lowering the system. As an occasional aperient and corrector of digestion I know of nothing at all equal to Friedrichshall."

The ANGIER CHEMICAL COMPANY, LIMITED (32, Snow Hill, London, E.C.). Of the principal product of this firm, namely, *Angier's Emulsion*, we have given an account on several previous occasions. In appearance it is a thick, creamy liquid, the odour of which could not, we think, be found objectionable by the most sensitive person, whilst its taste is by no means unpleasant. The firm states that in its preparation it uses a specially purified petroleum, to which it adds the hypophosphites of lime and soda and chemically purified glycerine. Some years ago the preparation was analysed by us, and the results confirmed the manufacturers' statements. From a pharmaceutical standpoint, it is undoubtedly a very successful preparation, for, examined under the microscope, the globules are seen to be in a state of fine subdivision, while it mixes readily with milk and other liquids. This is a strong point in its favour, since some persons might prefer to take it diluted. As for its therapeutic value, it seems clear that its passage along the intestine must exert a protective, and, therefore, sedative effect, while we have reason to believe that many medical men esteem it useful in the treatment of pulmonary and bronchial affections. The other exhibit of the firm was *Angier's Throat Pastilles*. These consist, we were informed, of purified petroleum in combination with elm bark and other common ingredients of throat lozenges, but no narcotic of any sort. The firm believes them to be specially useful to those who have much speaking to get through, and in the general treatment of irritable throats. They are certainly pleasant lozenges to take.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Surgeon H. BURNS, M.B., to the *Halcyon*, additional for the *Spanker*; Surgeon K. D. BELL, to the *Andromeda*, additional for the *Niobe*; Staff-Surgeon J. MACDONALD, M.D., to the *Espiègle*, on recommissioning, September 6th; Staff-Surgeon J. W. CRAIG and Surgeon C. D. BELL, M.B., to the *Liverpool*, on commissioning, undated.

IRISH GUARDS.

SURGEON-MAJOR P. H. WHISTON, to be Surgeon-Lieutenant-Colonel, July 29th. He was appointed Surgeon, July 29th, 1890; and Surgeon-Major, July 29th, 1902. He was appointed Medical Officer to the Irish Guards, October 15th, 1902. His war record includes—The Dongola Expedition, 1896 (mentioned in dispatches, Egyptian medal with clasp); the Nile Expedition, 1897 (4th class of the Medjidie, clasp); and the operations in 1898, including the battle of Khartoum (mentioned in dispatches, 4th class of the Osmanieh, clasp). Presumably he has also the British medal for these campaigns, but this is not so stated in the *Official Quarterly Army List*.

ARMY MEDICAL SERVICE.

COLONEL D. O'SULLIVAN is placed on retired pay, August 8th. He was appointed Surgeon, July 31st, 1880; Surgeon-Major, July 31st, 1892; Lieutenant-Colonel, July 31st, 1900; and Colonel, February 17th, 1908. He was made Principal Medical Officer, 4th (Quetta) Division, India, in February, 1909.

Colonel EDWARD NORTH retires on retired pay, August 3rd. He entered the service as Surgeon, March 6th, 1880; became Surgeon-Major, March 6th, 1892; Lieutenant-Colonel, March 6th, 1900; and Colonel, July 18th, 1906. During the South African war in 1899-1901 he had charge of a general hospital, and was present at the relief of Kimberley; in operations in the Orange Free State, including actions at Paardeberg, Poplar Grove, Dreifontein, Houtnek (Thoba Mountain), Vet River, and Zand River; in the Transvaal, including actions near Johannesburg, at Pretoria, Diamond Hill, and Elands River; in Orange River Colony, including actions at Bethlehem and Wittebergen; and in Cape Colony, including actions at Colesberg. He was mentioned in dispatches, and has received the Queen's medal with seven clasps.

Lieutenant-Colonel R. H. S. SAWYER, M.B., from the Royal Army Medical Corps, to be Colonel, vice E. North, August 3rd. Colonel Sawyer's previous commissions are thus dated: Surgeon, February 5th, 1881; Surgeon-Major, August 15th, 1893; and Lieutenant-Colonel, February 5th, 1901. He served in the Nile Expedition in 1898, and was present at the battle of Khartoum, receiving the British medal and the Khedive's medal with clasp. He was also in the South African war in 1899-1902, being present in operations in the Orange Free State, including actions at Paardeberg, Poplar Grove, and Dreifontein, and in the Transvaal, including actions at Elands River; he was mentioned in dispatches, and received the Queen's medal with four clasps and the King's medal with two clasps.

ROYAL ARMY MEDICAL CORPS.

Major H. J. PARRY, D.S.O., M.B., is placed on retired pay, July 29th. He was appointed Surgeon-Captain July 29th, 1890, and Surgeon-Major July 29th, 1902. He was in the South African war in 1899-1902, being present at the relief of Ladysmith and in the actions of Colenso, Spion Kop, Vaal Kranz, the Tugela Heights, and Pieters Hill; he was afterwards in operations in the Transvaal, Orange River Colony, and on the Zululand Frontier of Natal; he was mentioned in dispatches, nominated D.S.O., and received the Queen's medal with five clasps and the King's medal with two clasps.

Major R. W. H. JACKSON, M.B., is also placed on retired pay, July 29th. His commissions are contemporaneous with those of Major Parry. He was present in the South African war in 1901-2, was in operations in the Transvaal and Orange River Colony, and, according to the *Official Quarterly Army List*, received the Queen's medal with four clasps.

Captain G. H. RICHARD, from the Half-pay List, is restored to the establishment, with precedence next below Captain C. W. O'Brien, dated July 25th. Captain Richard was placed on half-pay on account of ill-health, January 25th, 1910.

Captain G. B. CRISP is promoted to be Major, July 27th. He was appointed Lieutenant, July 27th, 1898, and made Captain three years thereafter. He was in the South African war in 1899-1902, and took part in the advance on Kimberley, including the actions at Belmont, Enslin, Modder River, and Magersfontein, and in operations in Orange River Colony, including actions at Lindley, Bethlehem, and Wittebergen, and in Cape Colony and the Transvaal; he has received the Queen's medal with four clasps and the King's medal with two clasps.

Captain C. W. MAINPRISE is also promoted to be Major, July 27th. His commissions bear the same date as those of Major Crisp. Major Mainprise served with the Tibet Expedition in 1903-4, and was at the action of Niani, in the operations at and around Gyantse, and in the march to Lhasa, receiving a medal with clasp.

Captains A. L. SCOTT, L. E. L. PARKER, and G. H. GODDARD to be Majors, July 28th. Their previous commissions are dated: Lieutenant, January 28th, 1899; Captain, January 28th, 1902. Their war records include: Major Scott—South African war, 1899-1902, including the advance on Kimberley, actions at Paardeberg, Poplar Grove, and Dreifontein, and operations in Cape Colony (action at Colesberg) and the Transvaal (Queen's medal with four clasps, and King's medal with two clasps). Major Parker—South African war, 1899-1902, being present in operations in the Orange Free State, the Transvaal, Orange River Colony (including actions at Lindley and Rhenoster River), Cape Colony, and again in the Transvaal (Queen's medal with three clasps, and King's medal with two clasps). Major Goddard—South African war, 1899-1902, including the advance on Kimberley, and actions at Magersfontein, Paardeberg (severely wounded), Vet River, Rhenoster River, Wittebergen, and Witpoort (Queen's medal with three clasps, and King's medal with two clasps).

The following Lieutenants to be Captains, dated July 28th: W. K. BEAMAN, C. CASSIDY, A. D. FRASER, M.B., A. FORTESCUE, M.B., H. G. GIBSON, S. FIELD, F. H. M. CHAPMAN, H. M. J. PERRY, J. L. WOOD, F. T. TURNER, M. P. LEAHY, M.B., W. G. AVISS, J. E. M. BOYD, D. F. MACKENZIE, M.B., R. D. O'CONNOR, O. R. MCEWEN, M. O. WILSON, M.B., J. DU P. LANGRISHE, M.B., J. C. HART, M.B., T. H. SCOTT, M.B., G. F. RUDKIN, L. A. A. ANDREWS, J. H. GURLEY, A. C. ELLIOTT, M.B., W. B. PURDON, M.B., F. CASEMENT, M.B., E. M. MIDDLETON, V. T. CARRUTHERS, M.B., and H. W. FAREBROTHER. Their first appointment is dated January 28th, 1907.

Colonel T. J. O'DONNELL, D.S.O., who is serving in India, has been appointed Principal Medical Officer, Kurrachee Brigade, vice Colonel W. A. Corkery, I.M.S., transferred to the 3rd (Lahore) Division.

Captain W. M. MCLOUGHLIN retires, receiving a gratuity, August 13th. He was appointed Lieutenant, November 17th, 1899, and Captain, November 17th, 1902. He was in the South African war, 1899–1902, being present in operations in the Transvaal (action near Johannesburg), Cape Colony (action at Colesberg), and Orange River Colony; he has received the Queen's medal with three clasps and the King's medal with two clasps.

Lieutenants O. C. P. COOKE and C. H. DENYER are promoted to be Captains, dated March 7th. Their first appointment bears date July 30th, 1906.

The undermentioned officers, who are serving in India, are appointed Specialists in Dermatology, from April 1st: Captain G. H. STEVENSON, M.B., 3rd (Lahore) Division; Lieutenant H. P. HART, M.B., Burma Division.

Major E. M. WILLIAMS, also serving in India, 8th (Lucknow) Division is appointed Specialist in Midwifery and the Diseases of Women and Children, from May 17th.

INDIAN MEDICAL SERVICE.

LIEUTENANT J. F. JAMES, M.B., is promoted to be Captain from March 7th. His first appointment bears date September 1st, 1906.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

HARRY R. BORCHERDS, M.B., to be Lieutenant (on probation), July 25th.

Vital Statistics.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE Registrar-General has just issued his return relating to the births and deaths in the second quarter of the year, and to the marriages in the three months ending March last. The marriage rate during that period was equal to 12.6 per 1,000, or 1.4 per 1,000 more than the average rate for the corresponding quarter of the ten preceding years.

The 234,814 births registered in England and Wales during the quarter ending June last were equal to an annual rate of 26.0 per 1,000 of the population, estimated at 36,169,150 persons in the middle of the year; the birth-rate last quarter was 2.1 per 1,000 below the average for the second quarter of the ten preceding years, and was lower than the rate for the corresponding period of any year since civil registration was established. Among the several counties the birth-rates ranged from 19.3 in Carnarvonshire, 20.0 in Sussex, 21.0 in Kent, 21.1 in Devonshire, 21.6 in Northamptonshire, and 21.7 in Cornwall, to 30.0 in Nottinghamshire, 30.1 in the North Riding of Yorkshire, 32.6 in Carmarthenshire, 34.0 in Durham, 35.7 in Glamorganshire, and 37.4 in Monmouthshire. In seventy-seven of the largest towns, including London, the birth-rate averaged 26.1 per 1,000, and ranged from 14.2 in Hornsey and Hastings, 18.4 in Bournemouth, 19.1 in Halifax, and 19.5 in Handsworth (Staffs), and in Bradford, to 34.3 in Coventry, 34.4 in Tynemouth, 34.6 in Swansea, 35.9 in St. Helens, and 41.0 in Rhondda; in London the birth-rate was 24.9 per 1,000.

The births registered in England and Wales during the quarter under notice exceeded the deaths by 119,112, the excess in the corresponding period of the three preceding years having been 111,198, 122,782, and 111,998 respectively. From a return issued by the Board of Trade it appears that the passenger movement between the United Kingdom and places outside Europe resulted in a net balance outward of 42,920 English passengers, 868 Welsh, 20,854 Scottish, 11,708 Irish, and 18,202 of foreign nationality, whilst there was a net balance inward of 5,461 British Colonial passengers.

During the second quarter of the year the deaths of 115,702 persons were registered, equal to an annual rate of 12.8 per 1,000, or 2.3 per 1,000 lower than the average rate in the ten preceding second quarters; the death-rate last quarter, like the birth-rate, is the lowest ever recorded for that period of the year. Among the several counties the death-rates ranged from 9.7 in Essex, 9.8 in Middlesex, 10.6 in Leicestershire, 10.9 in Kent and in Northamptonshire, and 11.0 in Worcestershire to 15.1 in Carnarvonshire, 15.2 in Cumberland, 15.6 in Monmouthshire, 18.2 in Carmarthenshire, and 18.3 in Denbighshire. In seventy-seven of the largest towns the death-rate averaged 12.6 per 1,000; in London it was 11.6 per 1,000, while among the other towns it ranged from 7.4 in Hornsey, 7.5 in King's Norton, and 7.7 in Walthamstow and in Handsworth (Staffs) to 16.1 in Stockport, 16.2 in Manchester, 17.7 in Liverpool, 17.8 in Oldham, and 20.6 in Merthyr Tydfil.

The 115,702 deaths from all causes in England and Wales last quarter included 8,108 which were referred to the principal infectious diseases; of these, 2,798 were attributed to whooping-cough, 2,419 to measles, 1,104 to diarrhoea, 848 to diphtheria, 568 to scarlet fever, 359 to enteric fever, 1 to typhus, 3 to pyrexia of uncertain origin, and 8 to small-pox. The death-rate from these diseases in the aggregate was 0.89 per 1,000, or 0.37 per 1,000 less than the average rate in the corresponding period of the ten preceding years, the death-rate from each disease being lower than the decennial average.

The rate of infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births was equal to 91 per 1,000, or 19 per 1,000 less than the average in the ten preceding second quarters. The rates of infant mortality ranged from 55 in Oxfordshire, 57 in Wiltshire, 58 in Hertfordshire, and 59 in Middlesex and in Buckinghamshire, to 105 in Monmouthshire, 106 in Glamorganshire, 107 in Nottinghamshire, 114 in Lancashire, 126 in Carmarthenshire, and 128 in Denbighshire. In seventy-seven of the largest towns the rate of infant mortality averaged 96 per 1,000; in London the rate was 88, while among the other towns it ranged from 44 in Aston Manor, 46 in Hornsey, 56 in Halifax, and 57 in Leyton, to 131 in Burnley, 135 in Stockport, 136 in Oldham, 139 in Gateshead, 148 in Preston, and 161 in Merthyr Tydfil.

The mortality among persons aged 1 to 60 years was at the rate of 6.5 per 1,000 of the population estimated to be living at those ages, and was 1.4 per 1,000 below the average rate in the corresponding period of the ten preceding years. Among the seventy-seven towns the rates averaged 6.9 per 1,000, the lowest rates being 3.3 in Handsworth (Staffs) and in King's Norton, 3.7 in Hornsey, and 3.8 in Reading, and the highest rates 9.9 in Manchester, 10.1 in Oldham, 10.6 in Liverpool, and 12.4 in Merthyr Tydfil.

Among persons aged 60 years and upwards the death-rate in the quarter under notice was 61.5 per 1,000, or 4.3 per 1,000 less than the average in the ten preceding second quarters. In seventy-seven of the largest towns the death-rate of persons in this age-group was 62.0 per 1,000, and ranged from 49.8 in Grimsby, 50.1 in Aston Manor, 50.8 in King's Norton, and 51.1 Walthamstow, to 88.2 in Barrow-in-Furness, 88.9 in Rochdale, 94.2 in Wallasey, and 99.1 in Warrington.

The mean temperature of the air last quarter was above the average in most districts; the rainfall during the quarter was in excess both as regards frequency and quantity; and the duration of bright sunshine was below the average.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns, 8,678 births and 3,603 deaths were registered during the week ending Saturday last, August 13th. The annual rate of mortality in these towns which had been 11.1, 11.3 and 10.7 in the three preceding weeks, rose to 11.1 per 1,000 last week. The rates in the several towns ranged from 3.5 in Leyton, 5.1 in Walthamstow, 5.3 in Hornsey, 5.5 in Devonport, 5.8 in Smethwick and 6.2 in King's Norton to 16.5 in Great Yarmouth and in Wigan, 17.8 in Sunderland, 18.8 in Barrow-in-Furness, 20.3 in Tynemouth and 20.7 in Bootle. The death-rate from the principal epidemic diseases averaged 1.3 per 1,000; in London the rate did not exceed 0.9 per 1,000 while among the seventy-six other large towns, it ranged upwards to 4.4 in Bootle, 4.5 in Wigan, 4.6 in Tynemouth and 4.9 in Barrow-in-Furness. Measles caused a death-rate of 1.0 in Leeds, 1.1 in Oldham, 1.3 in Sunderland, 1.8 in Tynemouth and 4.1 in Barrow-in-Furness; scarlet fever of 1.1 in Rhondda; whooping cough of 2.8 in Tynemouth; and diarrhoea of 2.4 in Burnley and in Middlesbrough, 2.6 in Rhondda, 3.4 in Wigan, and 4.4 in Bootle. The mortality from diphtheria or from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,548, 1,463, and 1,523 at the end of the three preceding weeks, declined to 1,490 at the end of the week under notice; 163 new cases were admitted during the week, against 173, 179, and 165 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, August 13th, 836 births and 460 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 12.0, 12.7, and 12.3 per 1,000 in the three preceding weeks, rose to 12.7 last week, and was 1.6 per 1,000 above the mean rate during the same period in the large English towns. Among the Scottish towns the death-rates ranged from 7.8 in Leith and 9.5 in Paisley to 19.8 in Greenock and 21.0 in Perth. The death-rate from the principal infectious diseases averaged 1.6 per 1,000, the highest rates being recorded in Glasgow, Greenock, and Perth. The 221 deaths from all causes recorded in Glasgow included 2 which were referred to measles, 2 to scarlet fever, 2 to diphtheria, 6 to whooping-cough, 1 to enteric fever, and 21 to diarrhoea. Three deaths from diarrhoea occurred in Edinburgh, 5 in Dundee, and 3 in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, August 13th, 604 births and 346 deaths were registered in the twenty-two principal urban districts of Ireland, as against 564 births and 337 deaths in the preceding period. The annual death-rate in these districts, which had been 16.3, 16.2 and 15.3 per 1,000 in the three preceding weeks rose to 15.7 per 1,000 in the week under notice, this figure being 4.6 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 17.9 and 13.6 respectively, those in other districts ranging from 4.1 in Drogheda and 5.1 in Clonmel to 28.7 in Ballymena and 73.7 in Kilkenny, while Cork stood at 15.1, Londonderry at 14.4, Limerick at 10.9, and Waterford at 27.3. The zymotic death-rate in the twenty-two districts averaged 2.1 per 1,000 as against 1.6 per 1,000 in the preceding week.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BARNSTAPLE: NORTH DEVON INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM GENERAL HOSPITAL.—(1) House-Surgeon to the Special Departments. (2) Resident Pathologist. (3) House-Surgeon. (4) Two Assistant House-Surgeons. Salary for (1), (2), and (3) at the rate of £50 per annum, and for (4) £40 per annum.

BOOTLE: BOROUGH HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer. Salary, £120 per annum.

BOURNEMOUTH: ROYAL NATIONAL SANATORIUM.—Resident Medical Officer. Salary, £10 a month.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer. Salary at the rate of £50 per annum.

BROADMOOR: STATE CRIMINAL LUNATIC ASYLUM.—Junior Assistant Medical Officer. Salary, £200, rising to £225 per annum.

BURSLEM: HAYWOOD HOSPITAL.—Resident Medical Officer (female). Salary, £100 per annum.

BURY ST. EDMUNDS: WEST SUFFOLK GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—(1) Director of Radio-Therapeutic Department; honorarium, £150 per annum. (2) House-Surgeon; salary at the rate of £70 per annum.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer (male). Salary to commence £140 per annum.

CAPETOWN: SOUTH AFRICAN COLLEGE.—(1) Professor of Human Anatomy. (2) Professor of Physiology. Salary, £500 per annum each.

CARDIFF UNION WORKHOUSE.—Assistant Medical Officer. Salary, £130 per annum.

CARLISLE: CUMBERLAND INFIRMARY.—Resident Medical Officer (male), to act as House-Physician and House-Surgeon for six months each. Salary at the rate of £80 and £100 per annum respectively.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer (male). Salary, £160 rising to £180 per annum.

CEYLON: COLOMBO MUNICIPALITY.—Bacteriologist. Salary, Rs.6,000, rising to Rs.8,000.

CHELTENHAM GENERAL HOSPITAL.—Surgeon in Charge of the Branch Dispensary. Salary, £80 per annum, and £10 in lieu of cab hire

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer. Salary, £50 per annum.

DOVER: ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum.

DURBAN CORPORATION.—Medical Officer to initiate and carry on the work of a Municipal Tuberculosis Bureau. Salary, £600 per annum.

DURHAM COUNTY HOSPITAL.—House-Surgeon. Salary, £120 per annum.

FRENCH HOSPITAL, Shaftesbury Avenue, W.C.—Resident Medical Officer. Salary, £100 per annum.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Senior House-Surgeon (male). Salary, £120 per annum.

ISLE OF WIGHT COUNTY ASYLUM, Near Newport.—Assistant Medical Officer. Salary to commence, £150 per annum.

KING'S LYNN: WEST NORFOLK AND KING'S LYNN HOSPITAL.—House-Surgeon. Salary, £100 per annum.

LANCASTER: ROYAL LANCASTER INFIRMARY.—House-Surgeon. Salary, £100 per annum.

LEITH HOSPITAL.—Surgeon in the Outdoor Department. Salary at the rate of £100 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Two House-Physicians. (2) Three House-Surgeons. Salary at the rate of £60 per annum each.

MANCHESTER CHILDREN'S HOSPITAL.—Male Resident Medical Officer. Salary for first six months, £40, and for second six months, £50.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £80 per annum.

MANCHESTER: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Second, Third, and Fourth House-Surgeons. Honorarium at the rate of £50 per annum.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.—House-Surgeon. Salary, £75 per annum.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

NEWCASTLE-ON-TYNE EYE INFIRMARY.—House-Surgeon. Salary, £100 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum.

OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House-Surgeon. Salary at the rate of £80 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—Assistant House-Surgeon. Salary, £75 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Resident Medical Officer for Out-patient Department. Salary at the rate of £60 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150, and £5 annually in lieu of stimulants.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester Square, W.C.—Medical Officer with *x*-ray experience. Honorarium, £50 per annum.

SALISBURY: FISHERTON HOUSE ASYLUM.—Assistant Medical Officer (male). Salary, £150 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

SHREWSBURY: SALOP INFIRMARY.—House-Physician. Salary at the rate of £70 per annum.

SOUTHPORT INFIRMARY.—Resident (male) Junior House and Visiting Surgeon. Salary commencing at £70 per annum.

SUNDERLAND INFIRMARY.—Male House-Surgeon. Salary, £80 per annum.

TRURO: ROYAL CORNWALL INFIRMARY.—House-Surgeon. Salary, £100 per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—(1) Junior House-Surgeon; salary at the rate of £75 per annum. (2) Honorary Dental Surgeon.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY.—Junior House-Surgeon. Salary, £100 per annum.

WINCHESTER: ROYAL HAMPSHIRE COUNTY HOSPITAL.—House-Physician (male).

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Loughton, co. Essex.

APPOINTMENTS.

BAILEY, T. H., L.M.S.S.A., L.S.A., District Medical Officer of the Nantwich Union.

BELL, J. A., M.R.C.S., L.R.C.P., Resident Medical Officer of Camberwell Union Workhouse.

BUTT, F. J., M.B., C.M.Edin., Medical Officer of the Hoole Home of the Chester Union.

COX, G. R., M.R.C.S., L.R.C.P., District Medical Officer of the Winchcombe Union.

DOW, A. R., M.B., Ch.B.Glasg., Medical Officer of the Children's Receiving Home of the Paddington Union.

GIUSEPPI, P. L., M.R.C.S., L.R.C.P., District Medical Officer of the Woodbridge Union.

HUNTER, John, M.B., Ch.B., D.P.H., Medical Inspector of Public Schools in the County of Linlithgow.

LINDSAY, J. K., L.R.C.P., L.R.C.S., District Medical Officer of the Alston-with-Garrigill Union.

LOVETT, T., M.B., B.S.Glasg., Certifying Factory Surgeon for the Ollaberry District, co. Shetland.

MAGAREY, A. Campbell, M.B., B.S.Adel., M.R.C.S., L.R.C.P.Lond., House-Surgeon at St. Mark's Hospital for Cancer, Fistula, and other Diseases of the Rectum, City Road, E.C.

MCCULLOUGH, John W. S., M.D., Secretary to the Board of Health, and Deputy Registrar-General of the Province of Ontario, Canada.

SCRASE, F. E., F.R.C.S., L.R.C.P., D.P.H., District Medical Officer of the Hampstead Union.

SHORE, H., M.D., M.B., D.P.H., Medical Officer of Health of the County Borough of Walsall.

SMITH, H. B. W., M.R.C.S., L.R.C.P., District and Workhouse Medical Officer of the Gainsborough Union.

STALEY, J. D., L.R.C.P., L.R.C.S.Edin., Certifying Factory Surgeon for the Youlgreave District, co. Derby.

RANDOLPH, W. H., M.R.C.S., L.R.C.P., District Medical Officer of the Williton Union.

RANKINE, Roger Aiken, M.B., B.S.Lond., L.R.C.P., M.R.C.S., Assistant Physician at the Crichton Royal Institution, Dumfries.

STEPHENS, J. W., M.R.C.S., L.R.C.P., Medical Officer of Health of the Cardigan Rural District.

STEWART, W., M.D., M.Ch.R.U.I., Medical Officer of Health of the Denton Urban District.

WALKER, C. F., M.B., B.S.Lond., Resident Assistant Medical Officer of the Salford Union Infirmary.

WILKINSON, William Arthur Horsley, M.B., Ch.B.Vict., Medical Officer to the Gainsborough Post Office, including Blyton Bole, Corringham, and Morton, and Medical Officer to the Gainsborough Branch of the Great Northern Railway Sick and Funeral Allowance Fund, vice Dr. J. Farrar.

WILSON, Joseph, M.D., Divisional Surgeon to the Y Division of the Metropolitan Police.

CHELSEA HOSPITAL FOR WOMEN.—The following have been appointed Clinical Assistants: C. C. Taggart, M.D., S. H. O'Neill, M.D., N. J. Davidson, Chas. W. Lawton.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

PLANT.—On the 5th inst., at Oak House, Pensnett, Staffordshire, the wife of Henry W. Plant, M.R.C.S., L.R.C.P., of a son.

PRINGLE.—On August 15th, at 195, Croydon Road, Anerley, the wife of Ernest G. Pringle, M.D., of a daughter.

DEATH.

COË.—On the 11th inst., at 7, Pembroke Road, Clifton, Bristol, Robert William Coë, F.R.C.S.E., in his 89th year.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

EDINBURGH POST-GRADUATE COURSE IN INTERNAL MEDICINE.—The following practical classes will meet daily: 9 a.m., Examination of the Heart; 10 a.m., Examination of Sick Children; 11 a.m., Clinics on Gastric Disorders; 12 noon, Clinics on Nervous Diseases; 2.30 p.m., Clinical Bacteriology; 4 p.m., Examination of the Digestive Products; 5 p.m., Examination of the Nervous System.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Monday, 2 p.m.: Diseases of the Lungs. Tuesday, 2 p.m.: Diseases of the Kidneys Wednesday, 2 p.m.: Diseases of the Digestive System and Children's Diseases Thursday, 2 p.m.: Diseases of the Nervous System. Friday, 2 p.m., Diseases of the Heart.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Medical and Surgical Clinics, 2 p.m.; Operations and *X* Rays at 2 p.m daily. Monday, Surgical Registrar, 10 a.m.; Pathological Demonstration, 12 noon: Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.: Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Practical Medicine, 12.15 p.m.: Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Surgical Registrar, 10 a.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Medical Registrar, 10 a.m.; Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Eye, 10 a.m. Special Lectures, at 5 p.m., Tuesday and Wednesday.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. J. AND A. CHURCHILL have a new edition of vol. iii of Allen's *Commercial Organic Analysis* just ready for publication. This volume has been rewritten under the editorship of Mr. W. A. Davis, B.Sc., and Mr. S. S. Sadtler, S.B.

Printed and Published by the British Medical Association at their Office, No. 429 Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 27TH, 1910.

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Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

LANCASHIRE AND CHESHIRE BRANCH:

MANCHESTER (SOUTH) DIVISION.

A GENERAL meeting of the Division was held at Dr. Ashton's house, 2, Palatine Road, Withington, on Friday July 15th, at 3.45 p.m., Dr. A. HOPKINSON in the chair. There were eleven other members present: Drs. Ashton, Cotterill, Edlin, Grant Davie, Gregory, Hutchinson, Crichton-Hood, Mitchell, Russen Rhodes, Sawers Scott, and Stocks.

Confirmation of Minutes.—The minutes of the annual general meeting of May 27th were read and confirmed.

Special Representative Meeting and Extraordinary General Meeting.—Dr. GRANT DAVIE then gave a very concise and clear account of the Special Representative Meeting held on June 28th in London. Dr. Davie explained how the opposition brought forward by various bodies to the proposed Charter of Incorporation (chiefly on account of its ethical, benevolent, and medical defence tendencies) had acquired such strength that the Council had advised its withdrawal, and the formation of a new company. The meeting was convened to consider the draft Articles and By-laws of the new company. The meeting agreed to adopt them as the Articles and By-laws of the new Association. The Extraordinary General Meeting, held on the next day, June 29th, confirmed the work of the Representative Meeting held on the previous day by 200 votes to 5. Dr. HOPKINSON proposed, and Dr. RUSSEN RHODES seconded the proposal, that the thanks of the meeting be given to Dr. Grant Davie for his attendance in London and his interesting account of the two meetings.

Report of Joint Committee Meeting (Manchester Divisions).—Dr. COTTERILL then gave an account of the meeting of the Joint Committee held on July 14th, and the CHAIRMAN conveyed to him the thanks of the meeting.

Agenda of the Annual Representative Meeting.—The agenda of the Annual Representative Meeting was then considered, and the Representative, Dr. Grant Davie, was instructed in the opinion of the meeting concerning the various motions and riders down for discussion, other subjects not discussed being left to his discretion.

Medical Tariff.—The Honorary Secretary was instructed to write to the Honorary Secretary of the Joint Committee to inquire as to what progress the Subcommittee had made which had been appointed to confer with the Medico-Ethical Society *re* revision of the tariff of medical charges.

METROPOLITAN COUNTIES BRANCH:

WALTHAMSTOW DIVISION.

A MEETING of this Division was held at Claybury Asylum, Woodford Bridge, on Tuesday, July 5th, 1910, at 3.30 p.m., by the kind invitation of Dr. Robert Jones. Dr. ROBERT JONES presided, and twenty-five members and visitors were present.

Address by Chairman.—The meeting opened with a short address by the CHAIRMAN on What Constitutes Insanity, at the conclusion of which cases were shown illustrating the various points in the lecture.

Syphilis of Nervous System.—A lantern demonstration was then given in the pathological laboratory by Dr. F. W. MOTT, F.R.S., on Syphilis of the Nervous System. Many interesting slides were shown, the demonstration being much appreciated by those present. At the conclusion of the address, Dr. C. H. WISE, in felicitous terms, proposed a vote of thanks to the lecturer, with whose name he coupled that of the Chairman. This was seconded by Dr. ST. C. B SHADWELL, who put it to the meeting. It was carried with acclamation. The CHAIRMAN, rising, said he as chairman must veto the second portion of the vote of thanks, but he wished to thank the members for the honour they had conferred upon him by electing him chairman.

Spirillum of Syphilis.—Microscopical specimens of the spirillum of syphilis were then exhibited.

Tea.—An adjournment was now made to the house of Dr. Robert Jones, who entertained his visitors at afternoon tea.

Meeting of Executive Committee.—The Executive Committee met at the conclusion of the tea, and the meeting then terminated.

TRANSVAAL BRANCH.

A MEETING of this Branch was held on May 28th, 1910, at Johannesburg.

Election of Officers.—The following elections for the term of a year were made: *President*, Dr. J. McD Troup (Pretoria); *Vice-President*, Dr. G. Murray (Johannesburg); *Honorary Treasurer*, Dr. Maxwell (Johannesburg); *Honorary Secretary*, Dr. Gairdner (754, Church Street, Pretoria); *Members of Council*, Sir Kendal Franks, Dr. D. Macaulay, Dr. G. Turner, and Dr. G. D. Maynard.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, 29th, and 30th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[THIRD NOTICE.]

HAWKSLEY AND SONS (357, Oxford Street). This firm exhibited many of their usual and well-known physiological instruments and also some innovations worthy of special note. Amongst a variety of apparatus for recording the blood pressure was Dr. George Oliver's "Portable" mercurial haemometer. This comprises an accurately-measured "compressed air" manometer in a case, measuring only 6 in. by 2 in., and an armlet. The special virtue claimed for it is its freedom from variation in different temperatures and its portability. It is also fitted with an extending scale so as to adapt it for higher pressures. There was an improved clinical polygraph by Dr. A. G. Gibson, intended for bedside use for recording in ink the movements of various organs simultaneously. It comprises a cardiograph, radial sphygmograph, and cell for jugular vein connected with rubber tubes to three small Marey's tambours which are attached to an adjustable pillar. There is an additional feature of importance in the shape of a time marker in connexion with a tambour and a separate pillar. The specimen shown of Dr. James Mackenzie's well-known ink polygraph was fitted with a new pattern pen. Dr. Charles Singer's modification of Dr. Gibson's sphygmomanometer for obtaining a graphic record of both systolic and diastolic pressures, being more portable than the original, seemed better suited for bedside use. Amongst the apparatus for the examination of the blood was Hall's rotatory haemoglobinometer, which is an improvement on Tallqvist's haemoglobin scale. It consists of a metal disc, mounted on the circumference of which are ten standard "colour tints" representing normal blood and its dilutions. The disc is mounted between two metal plates, so that the colours show in turn at a small aperture; this adjoins another aperture through which the drop of blood on absorbent paper is passed for comparison with the scale, the percentage being read off at the back. The standard tints seem to have been carefully prepared and the whole to be serviceable. Dr. Windle's new stethoscope is an attempt to combine a binaural stethoscope with a pair of calipers and a measuring scale, marked off on one of the flexible tubes, so that by it the mensuration of the chest can be determined. Other appliances which attracted attention were Horsley's "Stative" for brain surgery and a selection of the most recent instruments for the relief of deafness. Of much interest was the "original" binaural stethoscope of Dr. Leured, being the specimen exhibited at the Great Exhibition of 1851.

NESTLÉ AND ANGLO-SWISS CONDENSED MILK COMPANY (6 and 8, Eastcheap, London, E.C.). The brand of condensed milk, *Nestlé's Swiss Milk*, which may be regarded as the principal exhibit of this firm, established its reputation at least thirty years ago, and has retained it unblemished up to the present date. We have had long experience of its use both at home and abroad, and have often found it a much more desirable substitute for human milk than the cow's milk commonly obtainable at dairies. A strong point in its favour is the absence of variation in its quality; and, despite the number of dried milks now on the market, and the somewhat increased care exercised in the milk trade as a whole, there would still seem to be a long and successful future before it. The unsweetened condensed milk sold under the name of *Ideal Milk* was put upon the market at a considerably later date, but may likewise be regarded as having attained the position of a classic among milk foods. Most people, too, are probably acquainted with *Milo Food*, at any rate by name: it is intended for the use both of infants and invalids. The other brands of milk shown included the Milkmaid brand. Several preparations of chocolate were also on view, one being prepared by the firm itself, *Nestlé's Milk Chocolate;* while what must be regarded as the parent of all chocolates of that ilk—namely, *Peter's Milk Chocolate*—was also shown. An assortment of Kohler's Bon Bons and chocolate sweetmeats were also included in the exhibit. Though we mention them as sweetmeats it should be remembered, of course, that they have a strong claim to be regarded as dietetic preparations; in dealing either with children or with adults, whether sick or well, they are eminently useful as an addition or temporary substitute for other food.

JEYES' SANITARY COMPOUNDS COMPANY (64, Cannon Street, London). The bactericide, familiar under the name of *Cyllin*, was the feature of the exhibit. It is a drug which the company, acting on a suggestion thrown out by Sir Lauder Brunton in one of his Croonian lectures, succeeded in producing some few years ago. It is believed by the manufacturers to combine a maximum of efficiency as a bactericide with a minimum of causticity and toxicity to the higher forms of life, and is, therefore, described as a non-toxic bactericide. It has been tested with various micro-organisms by a number of well-recognized authorities, such as Simpson, Klein, and Firth, who have shown that in various circumstances it has a coefficient of from 10 to 30 as compared with pure carbolic acid. In the form in which it is prepared for medical and surgical use—namely, *Cyllin Medical*—it has a coefficient of 20 when tested against pure phenol with a culture of *B. typhi*. It is also prepared for inhalation in cases of throat affection, as a throat pastille, and as an intestinal antiseptic in the form of capsules and as a syrup. It lends itself readily to the manufacture of gauzes and wools for surgical use, and these articles being impregnated with 10 per cent. cyllin are far more germ-proof than corresponding articles prepared with ordinary carbolic acid. Soaps have also been prepared, their antiseptic value being guaranteed to be equal to 50 per cent. carbolic acid soap; the *Cyllin Liquid Soap* on view was specially attractive. We have not submitted Cyllin to a scientific test ourselves, but have used it in surgical work with much satisfaction, and consider it fully entitled to the position which it has attained.

OXFORD MEDICAL PUBLICATIONS (20, Warwick Square, E.C.). This is the style and title by which the firms Henry Frowde and Hodder and Stoughton have now elected to be called; it is rather a happy decision, the title being easily remembered and already identified with books leaving nothing to be desired in respect of "get up," and commonly excellent in respect of contents. Its exhibit this year was a large one, the first publication to attract notice being the important *System of Operative Surgery*, edited by Mr. F. F. Burghard. The general subject is broken into some thirty-two sections; and each of these having been dealt with by a distinct authority and the whole work completed within a comparatively short space of time, the book is an admirable mirror of considered opinion on operative surgery in this country at the present time. The four volumes contain nearly 1,400 illustrations. Other books on surgery also of value were a *Manual of Surgery* by Thomson and Miles, both of Edinburgh, a popular textbook among students now in its third edition; and the volumes on *Emergencies in General Practice*, surgical and medical, by P. Sargent and A. E. Russell, both of St. Thomas's Hospital. We also noted a second edition of *Practical Obstetrics* by Hastings Tweedy and G. T. Wrench of the Rotunda Hospital, Dublin; a new textbook of a

practical kind dealing with *Infectious Diseases* by Dr. C. B. Ker, lecturer on the subject at the University of Edinburgh; a second edition of Mackenzie's *Diseases of the Heart*, which is perhaps the only thoroughly up-to-date special treatise on this subject; and a new book on *Male Diseases in General Practice* by Mr. Edred Corner, in the General Practice Series. There were also some specimens of the monumental work on syphilis which has been brought out under the editorship of D'Arcy Power and Keogh Murphy, with the assistance of numerous authorities on various points of syphilology. It is a remarkable work in point of comprehensiveness and of what can be done in the way of colour printing. We understand that all books published by the firm at any price upwards of 7s. 6d. can be had on approval from booksellers.

The Saccharin Corporation, Limited (10, Arthur Street West, London, E.C.). The exhibits of this firm were the well-known local and medullary anaesthetic *Novocain*, and a new preparation named *Pergenol*. The former was shown in solutions of various strengths and in tablets, each containing Novocain and chloride of sodium of such proportions that when added to 100 c.cm. of sterilized water a ½ per cent. solution of Novocain in normal saline results. Such solution can again be boiled and a few drops of suprarenin added. The greatly increased importance now attaching to spinal anaesthesia has correspondingly added to the interest attaching to Novocain. As a local anaesthetic its value is hardly open to dispute, and its claims to be regarded as the best drug for use in spinal anaesthesia have been strongly advocated. The principal competitors were reviewed at length from a pharmacological standpoint in a report to the Therapeutic Committee of the British Medical Association by Dr. C. N. Le Brocq, which was published last year. He concluded that Novocain was the most satisfactory of the seven with which he experimented, its anaesthetic action being equal to that of cocaine and its toxicity and irritating effect on the tissues much smaller. Novocain dissolves very readily even in cold water, forming a neutral solution which can be boiled without damage. It is also compatible with suprarenin and with strychnine, both points of importance in spinal anaesthesia. Dentists appear to use it largely and to employ 2 per cent. solutions to which suprarenin borate has been added. Tablets containing the right quantities of suprarenin borate and Novocain intended for dental use were among the exhibits. As for *Pergenol* this is a solid compound of hydrogen peroxide and boric acid, in the form of a white freely soluble powder. The relative proportions we understand to be 12 per cent. and 22 per cent. respectively. It has been brought out in order to permit of hydrogen peroxide being stored in an unchangeable form but ready for the rapid preparation of solutions of any desired strength whenever required. The powder is also used for the preparation of mouth pastilles and like purposes. It seems to us that Pergenol should prove decidedly useful.

Ingram and Royle (East Paul's Wharf, Upper Thames Street, E.C.). This firm, which has branches at Liverpool and Bristol, are the importers of practically all known natural mineral waters, and the official agent for a very large number of Continental and other health resorts. They had upon view samples of the majority of the better recognized and more highly esteemed natural mineral waters. They also showed in many cases the same waters concentrated into a form adaptable for transport, so that those who have become habituated to their use, or who have been advised to take them while travelling, may carry them about with them. The foreign waters included such well known waters as Hunradi, Carlsbad, Contrexéville, Evian, Vichy, and Friedrichshall. In addition to the very pleasant gaseous drinking water known as Giesshübler, less well known waters, for which the firm is also sole agent, were shown: Tansan, a mineral water from Japan, containing iron carbonate, and stated to be non-constipating, and Selters, a gaseous alkaline water prescribed in gastric hyperacidity and various other visceral disorders.

S. Maw and Sons. This firm had its exhibits on two stands, and was showing a new portable operating table, with a douching bag, and a deep draining container and detachable leg rests. An improved standard lamp suitable for eye, ear, or throat work was certainly characterized by adaptability, and had a great range of movement. A very ingenious piece of apparatus was Mr. Herring's sterilizer for elastic gum catheters; in this boiling oil is drawn up into a case containing the catheters, which are thus sterilized and lubricated at the same time; the case with its contents is then ready for transport. The Lee-Percival oxygen generator shown was a very compact and easily worked method of obtaining oxygen by the action of water on specially prepared "candles"; it is certainly very effective, and as it is cheap and can be stored by chemists, etc., in small districts, it will no doubt supersede the cumbersome method of distribution by cylinders; the purity of the oxygen is guaranteed. Each charge produces 10 litres of gas. Dr. Macnaughton-Jones's rectal infusion apparatus for the continuous administration of saline fluids is quite new, and seemed to have some excellent points. Herring's plan of taking the temperature of the urine immediately after voiding it is carried out with the aid of a special glass, shaped like a wineglass, with a hollow stem. The thermometer is inserted into the hollow stem and the urine voided into the glass. On the firm's other stand we noted a large number of surgical instruments, among them being Maw's set of minor operation instruments; they are compactly and conveniently arranged in trays in a metal case which is intended to be used as a sterilizer. The set contains a variety of instruments in sufficient number for all ordinary operations. Also shown were Drs. Berkeley and Bonney's clamp for Wertheim's operations, which should certainly facilitate the work to be done. Amongst the catheters to be seen was Mr. Herring's prostatic catheter, which allows the patient to pass his water by separating the lobes of the prostate; and a silver woven catheter, which should be useful as being especially easy to sterilize. Other things of note were Mr. Sichel's intestinal clamp; a combined light and cautery worked by an accumulator; and a new colotomy cup made of metal and fitted to an india-rubber bag and belt—it has a sliding cover over the metal cup. A neat syringe, which is used in the inoculation department at St. Mary's Hospital, was also shown; it is of glass, with a metal plunger, and, together with its case, can be sterilized at one operation.

Bovril, Limited, Food Specialists (152-166, Old Street, E.C.). Of the many concentrated and other foods of which this firm is the manufacturer, only two figured on its stall, these being those for which it is perhaps best known. At this date Bovril has obtained such general popularity that little need be said about it beyond expressing an opinion that it deserves the place it has obtained. Apart from the fact that, with a tin or pot of this speciality to hand and some hot water, nothing is easier than the preparation of a cup of a pleasant and stimulating kind of soup, Bovril has a real and, compared with ordinary beef-tea, a high dietetic value. This is made clear by an analysis in Allen's standard work on commercial products, where the percentage contents of Bovril are shown to be: insoluble proteids and meat fibre 8.4, soluble proteids and gelatine 3.8, meat bases 12, non-nitrogenous extractive matters 19.7, mineral matters 17.8. It is, in fact, a meat extract *plus* albumen and fibrin. The latter two ingredients are, we were informed, separately prepared from fresh meat and then blended with what may be called the "beef-tea" part of the final product. The *Invalid Bovril*, which was also shown, is much the same preparation, though somewhat more concentrated and free from any kind of artificial seasoning. This is an advantage in the sick room, as anything required in the way of pepper and salt can be added to suit the particular patient's

taste. This preparation is deservedly in favour at a very large number of hospitals and other public institutions.

F. Davidson and Co. (29, Great Portland Street, W.). The place of honour in this firm's exhibit was given to a new self-contained high-frequency outfit of small bulk. It comprised a special type of transformer with a spark-gap, induction coil and battery of accumulators, and it was mounted on a mahogany table running on castors. The administration of the current was possible either by auto condensation, the effluve, or the direct method. A thermo-generator (which, however, could not be shown working at the exhibition, owing to the order with regard to naked lights) figured at this stand. It was a small contrivance for generating current to illuminate surgical lamps, and to provide means for light cautery work—really an adaptation of the thermo-pile. It has been designed with a view to the needs of the practitioner abroad or away from ordinary sources of electrical supply, and to whom dry batteries are a source of trouble. The current has a capacity of four volts and three ampères, and the thermo-couples are heated either from a gas-jet or from vaporized gas generated from a spirit flame. The pocket-size "Davon" dry batteries next called for attention. It was claimed for them that they might remain unused for six or even twelve months without a greater deterioration for illuminating purposes than 6 per cent. The further claim was made that this battery was the only one manufactured by means of which light cautery work can be done in addition to illumination. The portable outfit in which the various viewing-pieces for the examination of eye, ear, nose, throat, etc., were interchangeable on the one handle had a distinct attractiveness. Many small and interesting appliances, chiefly for viewing purposes in the cavities, were included in the display, and special mention may be made of a urethroscope; its underlying idea was taken from Dr. Brüning's bronchoscope, and a pharyngoscope, which gave an upright view of the vocal cords, larynx and naso-pharynx.

Harry Brook (34, Illingworth Road, Halifax). At this stall were to be seen a large number of artificial features, being all, we understood, exact reproductions of others made by the firm for the patients of various medical men. The fashion in which each of them fitted and the deformity which it had been devised to eliminate was also shown in each case by a plaster model. Furthermore, there were photographs and other evidences of the naturalness of the facial appearance secured by these artificial features. The essential structure of the restorations is thin aluminium; hence they are light, readily kept clean, and not easily destroyed. The average weight of a nose would, we gathered, be about 2 drachms, or sufficiently light to be retained securely in place, chiefly by the accuracy with which it fits on such projections as there may be on the underlying natural surface. When otherwise complete they are enamelled by some process so as to match the skin colour of the individual for whom they are intended. They seemed very cleverly constructed, and to fulfil their purpose with an unusual degree of perfection. The moderate sized restorations would certainly enable the wearer to pass muster anywhere; in other words, the fact of one of his features being artificial might easily pass undetected at table as well as in the street. Whether the original defect would be equally unnoticeable after very large restorations, such as those occasionally needed when some accident has resulted in the destruction of a large proportion of the whole face, we are not certain. Probably the immobility of the features when an eye, cheek, nose, and chin were all included might attract attention. But even then the outcome would still seem likely to be comparatively satisfactory, and at least as good as could possibly be expected. The firm, therefore, is one to be borne in mind.

H. and T. Kirby, Limited (14, Newman Street, Oxford Street, London, W.). This firm is probably identified in many people's minds with coated pills, since it was about the first manufacturing house to make a reputation in connexion with this particular branch of pharmacy. This year such pills were shown in various styles—pearl, gelatine, and sugar-coated, the series being especially strong in pills containing phosphorus preparations. There were also shown some aperitive tablets named Purgen; they are of three strengths, for children, adults, and specially obstinate cases respectively. The word we understand to be a synonym for phenolphthalein, which appears to be a fairly certain laxative, and to be regarded by some authorities as specially suited for children, pregnant women, and nursing mothers. Another preparation of the firm of long-established popularity with many medical practitioners, are the glycerine lozenges known as Glycecols; they contain various combinations of drugs. The firm's medicated pessaries and its glycerine suppositories are decidedly good examples of pharmaceutical work. The latter are made in two shapes and four sizes, and are thoroughly well finished off; they contain, we understand, 70 per cent. of glycerine. We also noted Colalin, which is stated to be the amorphous active principle of bile, and to be valuable both in promoting its secretion and in aiding its outflow. It is supplied in powder, tablets, and in various combinations. Another preparation which may be mentioned is Sal Mineralis, put forward as a useful kind of alkaline aperient, and as being composed of the sulphates of soda, magnesia, and potash. Also shown was the firm's Ideal Valve Feeder. It is a well-designed boat-shaped feeding bottle, with an efficient, easily regulated valve and a non-collapsible rubber. We have drawn attention to its good points on several occasions.

Weston and Westall (16, Eastcheap, E.C.). The crystals resulting from evaporation of Droitwich Baths were the exhibit of this firm. They are a compound showing on analysis 96·8 per cent. sodium chloride, 1.4 per cent. sodium sulphate, 1.2 per cent. calcium sulphate, 0.46 per cent. magnesium choride, 0.07 per cent. aluminium sulphate, and traces of iodides. The crystals are packed in bags of two sizes, the one containing 14 lb. of "salt," and the other 28 lb. They thus offer a ready means of preparing a brine bath at home in cases in which Droitwich treatment would seem to be indicated but a visit to Droitwich itself is impossible.

G. Van Abbott and Son (Baden Place, Crosby Row, S.E.). This well-known firm devotes itself to the preparation of foods for diabetics and persons of obese habit, and is, we believe, the only manufacturer in the United Kingdom of gluten and almond flour, products which play so large a part in the two connexions indicated. Their exhibit included, as usual, both gluten and almond bread, almond biscuits and flour, and a number of preparations such as soups, jellies and glycerine jujubes, all approximately free from either starch or sugar. The bread of the firm is soft and will, therefore, like ordinary bread, only keep good for three or four days; but the biscuits retain their quality and flavour for any length of time if kept in a moderately dry place. Also included were what are known as Midolia biscuits, which apart from sugar and starch free in composition are unusually cheap and thus well suited for use in hospitals. Other biscuits we noted were those termed Kalor; they are intended for obese persons. There were also shown some biscuits containing hyphosphites of lime and intended for the use of delicate children and adults suffering from nervous depression. Many of the preparations of this firm are decidedly palatable, and all enjoy a deservedly good reputation among dietetic specialists.

R. H. Woodland (38A, Commercial Road, Eastbourne). Several specimens of the Eastbourne Improved Invalid Chair were shown at this stall. Its construction is very simple. The two uprights, which form what would naturally be regarded as the back legs, are

extended upwards just sufficiently to make convenient handles, and at their lower extremity curve forwards under the front legs so as to form the base on which the chair stands when not being used as a carrying chair. When in use for the latter purpose, the weight is carried on two wheels of such diameter that they pass easily over the treads of the stairway, and thus enable the invalid to be moved from floor to floor at the expense of little exertion on the part of attendants, and without jolting or causes of nervousness to the patient. Various patterns of the chair can be obtained, but in all of them the principle is the same. It is a chair decidedly worth inspection by those who have invalids to deal with.

L. Hannemann and Son (Park Parade, Harlesden). A medicated biscuit was the exhibit of this firm, a crisp, not unpalatable, specimen of the cheese biscuit or milk biscuit class. They have been brought out with a double object, as a digestive, in view of their alkalinity in the case of heart-burn after meals, and as a mild laxative when eaten in sufficient quantity by children, old people and ordinary adults, either at bedtime or the early morning. They appear to have been used with satisfaction by various persons directly and indirectly connected with the profession of medicine, including Sir John Moore, of Dublin; but of their composition, or rather their medicinal contents, we know nothing.

Virol, Limited (152-166, Old Street, London, E.C.). The preparation from which this firm derives its name had the good fortune to gain approval among medical men very soon after its first introduction. As time goes on, the favour with which it is regarded shows no evidence of diminishing, and from testimonials which we have seen, it would appear to be used with satisfaction in a very large number of hospitals and sanatoriums. Presumably, therefore, it must be relatively cheap. Direct scientific testimony to its value is to be found in Hutchison's book on *Food and the Principles of Dietetics*, wherein it is described as an agreeable preparation of very considerable nutritive value. It is, we understand, a compound of bone marrow, malt extract, eggs, and lime juice, and in appearance and consistency closely resembles honey. In flavour it may not inaccurately be compared with toffee. To infants it can be given in milk, but if employed as a temporary substitute for all food in summer diarrhoea, it is best diluted with water. Older children and adults can take it spread on toast or bread. It has been praised by the *Lancet* for its richness in nitrogenous and bone-forming materials, and all available evidence goes to show that it is a food of marked value in a great variety of conditions in which adequate nutrition is not easy to secure by ordinary food. It would also seem as if it might well be substituted for cod-liver oil in many cases, and with much advantage.

William Martindale (10, New Cavendish Street). There was a wide range of pharmaceutical aids to therapeutics on the stall of this firm, and also some copies of the fourteenth edition of the *Extra-Pharmacopoeia*. The book, it is safe to say, was one of the newest features in the entire exhibition, as it emerged from the press only just in time to be shown. Of the previous edition we remarked that it maintained the reputation of its predecessors for accuracy and completeness, and, though we had not sufficient time to examine the contents of this fourteenth edition, we have very little doubt that the same expressions would be fully justified in respect of it. We noted that the chapter on patent medicines had been materially extended, and that a large number of new chemical and pharmaceutical preparations also received notice. Nevertheless, the book remains as handy as ever, for the new matter has been introduced without adding to the thickness of the book, the space required being obtained by using a somewhat broader page. We have always found it a mine of useful information on pharmacology and on various points which arise in the course of practice regarding vaccines, organotherapeutic preparations, and formulae for use in bacteriology and in clinical examinations of excreta. As a kind of appendix to this volume, there is obtainable an Organic Analyses Chart, which gives details of analyses of over 300 organic chemicals used in medicines. It should prove very useful to those engaged in analytical investigations. Among the other exhibits we noted *Phenoloid*, a disinfectant produced by the firm, and three different preparations of lecithin, an effervescent salt, and an elixir and an emulsion. There was a full series of the preparations termed by the firm Glycetracta, which are actual glycerine extracts, and not aqueous extracts mixed with glycerine. They offer the advantage of mixing readily, keeping well and being economic in usage. Also shown were a variety of vaccines prepared at the Wimpole Institute. *Trilactine*, in tablet and liquid forms, for the treatment of intestinal fermentation, and some specimens of milk treated with Trilactine, such as the firm prepares in its own laboratories daily and sends out to customers in London. We were rather attracted, too, by what the firm terms Vescettes; they represented various compressed and effervescent salts, such as Carlsbad, lecithin, sodio-magnesia, and caffeine.

Cerebos, Limited (3, Maiden Lane, E.C.). Probably many medical men were glad to have an opportunity of making with this firm's product an acquaintance of a different order to that acquired at meal times. Every one knows that Cerebos is a kind of salt—a good kind, one that is never lumpy, and is usually contained in bottles which keep it clean and free from damp, but allow it to be sprinkled over the food or poured on the edge of the plate in a fine stream. But for most visitors, perhaps, the true inwardness of the name had hitherto remained a mystery. Apparently, it is indicative of the fact that this table salt contains 4 per cent. of phosphates, the idea being to atone by their addition for the loss of the phosphates usually present in cereals and other food constituents, but destroyed in the process of milling or cooking. The head quarters of the company are in the county of Durham, close to the coast, the brine from which the sodium chloride constituent of cerebos salt is derived being drawn from borings 1,000 ft. deep. The whole process of evaporation, crystallization, crushing, addition of phosphates, weighing and packing, is, we were informed, conducted by machinery which ensures that the salt is never touched by hand or otherwise exposed to contamination. Actuality was given to the exhibit by a specimen of the rock strata reached by the company's boring tubes, and of the salt in different stages of manufacture.

The Open-air Shelter Company (140, North End Road, Croydon). Exhibited at this stall were some models of the "Stanley Bates" open-air shelter, which will be found described in detail in a book by Mr. Stanley Bates, entitled *Open Air at Home*, with the subtitle, Practical Experience of the Continuation of Sanatorium Treatment. They are of match-boarding, with a tarred felt roof, though durolin, a semi-transparent wire-woven material, can, if desired, be used for the roof and front shutters at a small extra cost. The walls and doors of this shelter appear to be adjustable with ease from the inside, so that the advantages of revolving shelters would seem to be obtained without their inconveniences. The shelter is well raised from the ground, and by no means unsightly in appearance. Those intended for one patient only are of two sizes, but built on one model; but shelters sufficiently large to contain two beds are also obtainable. The company is building the shelters in very careful compliance with the detailed plans supplied by their designer, and as those plans were worked out by him from extended personal experience there is a prima facie probability of the results proving satisfactory. Having been examined and met with the high approval of many good judges, they should be borne in mind by those who have open-air treatment in view. The prices are very reasonable.

W. Gaymer and Sons (Attleborough, Norfolk). This is a firm of cider manufacturers to whose products we have drawn attention on several previous occasions. It has behind it an experience of 200 years in cider making, for the firm has been established for that period in the Eastern Counties. Until a few years ago it was content with the market which it found in its own area, but since then it has become an active competitor to firms in the Western Counties proverbially associated with cider making and cider drinking. In past times cider was a somewhat troublesome beverage to prescribe, since there was a tendency for its constitution to vary greatly, not only from year to year, but between different brews. This firm, however, appears to be able to secure year by year ciders of closely corresponding characteristics, and vends them both in bottles and in barrels. Of bottled brands there are some half-dozen. They differ in flavour, as do champagnes, from extra dry to sweet, while their alcoholic contents vary according to the brand from what in temperance circles are commonly classed as non-alcoholic drinks up to 7 or 8 per cent. All of them are pleasant, and whether one brand or the other be chosen is, from an ordinary standpoint, a mere matter of taste. Details of the leading characteristics of each of them can be obtained from the firm's lists. Apart from relative inexpensiveness, as compared with light German and French wines, good cider such as that of this firm has a claim to dietetic respect on account of the malic acid contained.

The Sanitary Wood Wool Company (14 and 16, Thavies Inn, Holborn Circus, London, E.C.). The majority of the exhibits of this firm were articles already well and favourably known to most medical men. Many of them depend upon the use in one form or another of Hartmann's Patent Wood Wool Wadding, a valuable assistant in many branches of practice. Enclosed between two pieces of sublimate gauze it supplies a ready-made dressing useful for wounds of any kind, and especially those accompanied by profuse suppuration, since it is thoroughly absorbent, comfortable, and desirably cleanly. In this form it can be made into rolls, off which pads of any shape or size desired can be promptly cut. It is also popular in the form known as Wood Wool Sheets, made in three sizes, and intended for use in confinements, and also for the preparation of sanitary towels. There are many surgeons who habitually use swabs of wood wool enclosed in gauze in place of sponges. The firm also specializes in the preparation of catgut ligatures, which were shown in a great variety of thicknesses and forms. Their sterilization is effected in many different ways, some of those shown being iodized and preserved in spirit. We were particularly attracted by one form of glass tube: externally it is of ordinary appearance, but inside there is a second glass tube with a small central aperture. This is reached by breaking off the head of the exterior tube. The catgut contained in the inner tube is rolled in some fashion which prevents kinking, and permits of any desired length being drawn out and cut off as required.

B. Kuhn and Co. (16, Rood Lane, London, E.C.). The exhibits of this firm consisted mainly of certain products which are already familiar, but included one new one, Collo-Iode (Dubois). It is claimed that as the albuminous molecule of this iodine compound is not fully destroyed until it comes under the action of the intestinal erepsine, absorption of the iodine is secured without irritation, and its subsequent elimination is slower and more regular than usual. The chief preparation of the firm is *Chinosol*, one brought out a good many years ago as a non-poisonous antiseptic and haemostatic and deodorant, and which appears to have maintained its place. In appearance it is a yellow, finely crystalline powder, readily soluble in water, and not affected by albumen. Chemically, it is a potassium salt of a compound of oxychinoline and sulphuric acid. It appears to depend for its antiseptic power on the oxidizing action of the oxychinoline when set free from its acid companion by contact with alkaline secretions. It can be obtained in a variety of forms suitable for all purposes—as a powder for ordinary sanitary purposes; in tablets for the preparation of solutions of various strengths, from 1 in 150 to 1 in 2,400; as a powder for cleansing the teeth; as a mouth-wash, and as chinosol gauze, lint, and wool for ordinary surgical use. Since it was first brought out the preparation has had its bactericidal strength raised some 25 per cent. by a slight modification in the process of manufacture. There seems reason to believe that chinosol is particularly well suited for use in connexion with dental operations, while in all circumstances the fact that it does not coagulate albumen is a point in its favour. Another drug shown was *Ethyl Chloride*, to the production of which the firm has long paid special attention. It is issued in a variety of convenient metal cylinders and sealed glass bulbs. Salvator Grape Juice, also on view, is stated to be prepared in the Bordeaux and Burgundy districts, and to be entirely free from alcohol or added preservatives. The fourth exhibit was Papain (Finkler). It is a natural digestive derived from the juice of the *Carica papaya* tree, and can be used for various purposes. Thus, its solvent action on fibrin has been turned to advantage in the removal of diphtheritic membranes, and it has been injected into new growths with the idea of removing them. Its use for these purposes has been commended by correspondents in our own colums and those of the *Lancet*. As a remedy in cases of dyspepsia it would appear to be most active in those accompanied by hyperacidity.

Association Notices.

NOTICE OF TRANSFER FROM ONE DIVISION TO ANOTHER.

That Farnham Royal be transferred from the area of the Maidenhead Division of the Oxford and Reading Branch to the area of the Buckinghamshire Division of the South Midland Branch.

ELECTION OF CENTRAL COUNCIL 1910-11.

To those Branches or groups of Branches in the United Kingdom who failed to make nominations for election of members of the 1910–11 Council,

Notice is hereby given that nominations of candidates for election of Members of Council by Branches or groups of Branches in the United Kingdom by voting papers for the year 1910–11 must be forwarded to reach the Financial Secretary and Business Manager, at the Office of the Association, not later than September 14th, 1910, and that each nomination must be on the prescribed form, copies of which will be furnished by the Financial Secretary and Business Manager upon application.

Separate forms have been prepared for a nomination by a Division and for a nomination by any three members respectively, and those applying are requested to state for which purpose the form is desired.

Voting papers containing the names of all candidates duly nominated will be issued from the Central Office on September 21st, and will be returnable not later than September 26th.

By Order of the Council,

Guy Elliston,

Financial Secretary and Business Manager.

August 3rd, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

North of England Branch: North Northumberland Division.—The Annual Social Meeting will be held at Bamburgh, on Thursday, September 8th. The Secretary and his wife invite members and their wives or friends to luncheon at 10, Armstrong Cottages, at 1.30 p.m., after which Bamburgh Castle will be visited under the guidance of Dr. Macaskie. Through the courtesy of the Bamburgh Golf Club, members bringing their clubs may indulge in a round of golf. Members intending to be present are requested to communicate with the Secretary (giving the number of invited guests) not later than Monday, August 29th.—C. Clark Burman, Honorary Secretary.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON R. F. BATE has been placed on the retired list at his own request, August 22nd. His commissions are dated: Surgeon, July 28th, 1890; Staff Surgeon, July 28th, 1898; Fleet Surgeon, July 28th, 1906.

The following appointments have been made at the Admiralty: Staff Surgeon C. C. MACMILLAN, D.S.O., M.D., to the *Naiad*, on commissioning, August 23rd; Staff Surgeon S. CRONEEN to the *Talbot*, temporarily, August 17th; Fleet Surgeon J. MOWAT, M.B., lent to the *President*, September 2nd; Staff Surgeon H. C. WHITESIDE to the *Perseus*, August 20th.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN R. K. WHITE, from the Indian Medical Service, to be Captain, vice A. A. MCNEIGHT, M.B., who exchanges, July 11th.

To be Lieutenants on probation, dated July 29th: J. D. BOWIE, M.B., C. H. H. HAROLD, M.D., J. K. GAUNT, M.B., G. O. CHAMBERS, H. G. MONTEITH, E. L. FYFFE, M.B., R. F. BRIDGES, M.B., C. H. STRINGER, L. F. K. WAY, T. J. HALLINAN, M.B.

Lieutenant (on probation) H. G. MONTEITH is seconded, under provisions of Article 300, Royal Warrant for Pay and Promotion, 1909.

Captain W. RIACH, M.B., has been appointed Specialist in Ophthalmology to the Queen Alexandra Military Hospital, Millbank.

INDIAN MEDICAL SERVICE.

THE promotion to be Colonel of Lieutenant-Colonel C. J. BAMBER, which has been already announced in the BRITISH MEDICAL JOURNAL, has been approved by the King.

The retirement from the service of Colonel T. E. L. BATE, C.I.E., which also has been already noted in the BRITISH MEDICAL JOURNAL, has likewise received the Royal sanction.

Lieutenant-Colonel R. H. CAMA, Madras, has retired from the service, from July 13th. He was appointed Assistant-Surgeon, March 31st, 1880, and became Lieutenant-Colonel, March 31st, 1900. He was in the Burmese campaign in 1885 (medal with clasp), and with the Chin-Lushai expedition in 1889–90 (medal).

Captains T. S. NOVIS and H. J. R. TWIGG, M.B., are promoted to be Majors, from July 27th. Their previous commissions are dated: Lieutenant, July 27th, 1898; Captain, July 27th, 1901.

Lieutenants to be Captains, July 27th: H. W. ACTON, V.C., B. GREEN-ARMYTAGE, A. N. DICKSON, M.B., A. G. COULLIE, M.B., A. J. H. RUSSELL, M.B., R. E. WRIGHT, M.B., W. H. RIDDELL, M.B., F. A. BARKER, M.B., A. W. HOWLETT, M.B., A. W. THOMAS, M.B., F. S. SMITH. Their first appointment bears date July 27th, 1907.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

THE following Lieutenants are confirmed in that rank: A. C. MCKILLOP, M.B., J. INKSTER, M.B., G. R. WARD, A. R. DALE, M. ANTHONY, R. MACKINNON, M.B., S. GORDON, G. E. SHAND, M.B., S. J. STEWART, M.D., G. B. MCCAUL, M.D., G. F. RANDALL, E. T. HOLLAND.

No. 15 Field Ambulance.—The name of Lieutenant WILSON H. P. HEY is as now described, and not as stated in the *Gazette* of July 8th, 1910.

TERRITORIAL FORCE.

YEOMANRY.

Buckinghamshire (Royal Bucks Hussars).—Surgeon-Captain L. A. BIDWELL to be Surgeon-Major, September 20th, 1909.

INFANTRY.

4th (Denbighshire) Battalion the Royal Welsh Fusiliers.—Surgeon-Captain RICHARD DRINKWATER resigns his commission, August 17th.

ROYAL ARMY MEDICAL CORPS.

North Midland Mounted Brigade Field Ambulance.—Major THOMAS THOMPSON, to be Lieutenant-Colonel, April 1st.

2nd South Midland Mounted Brigade Field Ambulance.—Captain C. J. DEYNS, to be Major, February 23rd.

5th Northern General Hospital.—Captain L. E. ELLIS, M.D., resigns his commission, August 17th.

2nd London Sanitary Company.—Captain W. F. CORFIELD resigns his commission, August 24th.

Attached to Units other than Medical Units.—Lieutenant-Colonel P. P. WHITCOMBE, M.B., resigns his commission, retaining his rank and uniform, August 17th. Lieutenant HOWARD HENRY, M.D., to be Captain, July 21st. Captain JAMES WILSON, M.B., to be Major, August 3rd.

For attachment to Units other than Medical Units.—HUGH S. GASKELL, M.B., to be Lieutenant, July 12th. PERCIVAL T. RUTHERFORD to be Lieutenant, July 19th.

VOLUNTEERS.

1st Cadet Battalion the King's Royal Rifle Corps.—Surgeon-Captain ST. JOHN F. BLAKE-CAMPBELL, to be Surgeon-Major, January 3rd, 1910.

CHANGES OF STATIONS.

THE following changes of stations amongst the officers of the Army Medical Service have been officially reported to have taken place during July, 1910:

		FROM	TO
Colonel	M. W. O'Keeffe, M.D.	Rawal Pindi	London.
Lieut.-Col.	F. J. Lambkin	Rochester Row	Bloemfontein.
,,	R. S. F. Henderson, M.B.	Calcutta	Simla.
,,	T. Daly	Ferozepore	Dalhousie.
Major	O. L. Robinson	Meerut	Kailana.
,,	C. J. Healy, M.B.	Queenstown	Tipperary.
,,	E. M. Pilcher, D.S.O., M.B., F.R.C.S.	Straits Settlements	R.A.M. Coll.
,,	C. G. Spencer, M.B., F.R.C.S.	R.A.M. Coll.	London.
Captain	L. F. F. Winslow	Bradford	Lichfield.
,,	F. W. Cotton	—	Barrow-in-Furness
,,	J. P. J. Murphy, M.B.	Woolwich	R.A.M. Coll.
Captain	B. B. Burke	Devonport	W. Africa.
,,	J. T. McEntire, M.B.	York	Chilwell Park Camp.
,,	P. J. Hanafin	Reading	Parkhurst.
,,	F. J. Turner	Glasgow	Buddon Camp.
,,	J. Fairbairn, M.B.	Buddon Camp	Glasgow.
,,	A. L. Otway, M.B.	Dublin	Killough C'mp.
,,	A. S. Arthur, M.B.	Nasirabad	Stobs Camp.
,,	E. T. Potts, M.D	Harrismith	Pretoria.
,,	W. McConaghy, M.B.	Pretoria	Wedgnock Camp.
,,	C. J. Wyatt, M.B.	Edinburgh	Lanark Camp.
,,	A. C. Vidal	Bloemfontein	Pretoria.
Lieutenant	J. L. Wood	Bareilly	Naini Tal.
,,	G. F. Dawson, M.B.	Meerut	Chakrata.
,,	R. G. S. Gregg, M.B.	Calcutta	Lucknow.
,,	B. A. Odlum	Bulford Camp	Tidworth.
,,	J. F. Grant, M.B.	Dehra Dun	Benares.
,,	F. H. Bradley	Lucknow	Calcutta.
,,	T. B. Nicholls, M.B.	Parkhouse Camp	Tidworth.
,,	F. W. M. Cunningham, M.B.	Curragh	Donard Camp.
,,	J. J. D. Roche, M.B.	Dublin	Oranmore Camp.
,,	R. H. Nolan	Aldershot	Ewshott.
,,	H. V. Stanley, M.B.	Cork	Kinsale.
,,	P. C. Field	Aldershot	Woking.

Lieutenant E. T. Gaunt, M.B., appointed on probation January 10th, has been stationed at Shorncliffe.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns, 8,346 births and 3,724 deaths were registered during the week ending Saturday last, August 20th. The annual rate of mortality in these towns, which had been 11.3, 10.7, and 11.1 in the three preceding weeks, rose to 11.5 per 1,000 last week. The rates in the several towns ranged from 2.1 in Hornsey, 4.0 in Rochdale, 5.7 in Willesden, 5.9 in Walthamstow, and 6.3 in East Ham and in Bournemouth, to 18.0 in Burnley and in Middlesbrough, 18.1 in Hull, 19.2 in Bootle, 19.7 in Sunderland, and 20.1 in Preston. The death-rate from the principal epidemic diseases averaged 1.5 per 1,000; in London the rate did not exceed 0.9 per 1,000, while among the seventy-six other large towns it ranged upwards to 5.1 in Wigan, 5.5 in Tynemouth, 5.7 in Preston, 6.1 in Dewsbury, 7.3 in Burnley, and 7.4 in Bootle. Measles caused a death-rate of 1.2 in Brighton, 1.8 in Tynemouth, and 4.1 in Barrow-in-Furness; scarlet fever of 1.8 in Bury; diphtheria of 1.1 in Stoke-on-Trent and in Swansea; whooping-cough of 1.1 in Northampton, 1.2 in Gateshead, and 1.4 in Wallasey; and diarrhoea of 4.1 in Hull, 4.3 in St. Helens, 4.8 in Preston, 5.8 in Burnley, and 7.4 in Bootle. The mortality from enteric fever showed no marked excess in any of the large towns. One death from small-pox was registered in Hornsey, but none in any other of the seventy-seven towns. The number of scarlet-fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,563, 1,523, and 1,490 at the end of the three preceding weeks, again declined to 1,423 at the end of the week under notice; 143 new cases were admitted during the week, against 179, 165, and 163 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, August 20th, 826 births and 481 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 12.7, 12.3, and 12.7 per 1,000 in the three preceding weeks, rose to 13.3 last week, and was 1.8 per 1,000 above the mean rate during the same period in the large English towns. Among the Scottish towns the death-rates ranged from 6.0 in Leith and 10.1 in Aberdeen, to 14.9 in Edinburgh and 16.3 in Greenock. The death-rate from the principal epidemic diseases averaged 2.0 per 1,000, the highest rates being recorded in Greenock and Paisley. The 230 deaths from all causes recorded in Glasgow included 2 which were referred to scarlet fever, 3 to diphtheria, 4 to whooping-cough, and 32 to diarrhoea. Three deaths from scarlet fever were recorded in Edinburgh, 2 from whooping-cough in Greenock, and 4 in Dundee and 6 in Paisley from diarrhoea.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, August 20th, 601 births and 361 deaths were registered in the twenty-two principal urban districts of Ireland, as against 604 births and 346 deaths in the preceding period. The annual death-rate in these districts, which had been 16.2, 15.3, and 15.7 per 1,000 in the three preceding weeks, rose to 16.3 per 1,000 in the week under notice, this figure being 4.8 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 15.8 and 16.5 respectively, those in other districts ranging from 7.8 in Galway and 9.6 in Ballymena, to 34.4 in Armagh and 35.9 in Clonmel, while Cork stood at 15.1, Londonderry at 14.4, Limerick at 9.6, and Waterford at 17.5. The zymotic death-rate in the twenty-two districts averaged 2.4, as against 2.1 per 1,000 in the preceding week.

Hospitals and Asylums.

DOWN DISTRICT ASYLUM.

THE *Down Recorder*, Downpatrick, of May 28th contains an account of the monthly meeting of the Committee of Management of the Down District Asylum, at which Dr. Nolan, the Medical Superintendent, presented his annual report for the year 1909. From this we see that the physical condition of the 147 cases admitted during the year was unsatisfactory in almost every instance, and that the great majority of the other 752 cases in residence during the year called for special treatment. Nevertheless, 81 were discharged as recovered, giving

a recovery-rate calculated on the direct admissions of no less than 55.1 per cent. Also the average cost of each patient for the year showed a saving on the previous year amounting to 12s. 2d. per head per annum. The chairman mentioned that Dr. Nolan was not a candidate for the office of inspector of lunatics, about to be vacated by Sir George O'Farrell, and he and the other members individually expressed their gratification at this intimation in complimentary terms.

THE MILLER HOSPITAL FOR S.E. LONDON

AT a dinner in aid of the Miller General Hospital on April 13th, the Lord Mayor, who was in the chair, said that, judged by the proportion of beds to inhabitants in thirteen large towns, the district of south-east London was over eight hundred beds short. The Miller Hospital only possessed twenty-five beds, although there were between seventy and eighty thousand attendances annually in its out-patient department. Extension of its accommodation was proposed and was imperatively demanded. What was wanted was revenue for upkeep.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—(1) Resident Medical Officer. (2) Resident Surgical Officer. Salary, £80 each per annum.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary, £90 per annum.

BROADMOOR: STATE CRIMINAL LUNATIC ASYLUM.—Junior Assistant Medical Officer. Salary, £200 per annum, rising to £225 per annum.

BURSLEM: HAYWOOD HOSPITAL.—Resident Medical Officer (female). Salary, £100 per annum.

BURY ST. EDMUNDS: WEST SUFFOLK GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CAMBRIDGESHIRE, ETC., ASYLUM, Fulbourn.—Second Assistant Medical Officer. Salary, £120 per annum, rising to £150 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—(1) Director of Radio-Therapeutic Department; honorarium, £150 per annum. (2) House-Surgeon; salary at the rate of £70 per annum.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer (male). Salary, to commence, £140 per annum.

CAPETOWN: SOUTH AFRICAN COLLEGE.—(1) Professor of Human Anatomy. (2) Professor of Physiology. Salary, £500 per annum each.

CARDIFF UNION WORKHOUSE.—Assistant Medical Officer. Salary, £130 per annum.

CARLISLE: CUMBERLAND INFIRMARY.—Resident Medical Officer (male), to act as House-Physician and House-Surgeon for six months each. Salary at the rate of £80 and £100 per annum respectively.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer (male). Salary, £160 rising to £180 per annum.

CEYLON: COLOMBO MUNICIPALITY.—Bacteriologist and Analytical Chemist. Salary, Rs.6,000, rising to Rs.8,000.

CHELTENHAM GENERAL HOSPITAL.—(1) Surgeon in Charge of the Branch Dispensary: salary, £80 per annum, and £10 in lieu of cab hire. (2) House-Surgeon; salary, £75 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—(1) Resident Medical Officer. Salary, £150 per annum. (2) Pathologist. Salary, £105 per annum. (3) House-Physician (male). Salary at the rate of £75 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer. Salary, £50 per annum.

FRENCH HOSPITAL, Shaftesbury Avenue, W.C.—Resident Medical Officer. Salary, £100 per annum.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Senior House-Surgeon (male). Salary, £120 per annum.

HASTINGS, ST. LEONARD'S AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Honorarium, £20 for six months.

LANCASTER: ROYAL LANCASTER INFIRMARY.—House-Surgeon. Salary, £100 per annum.

LEICESTER BOROUGH ASYLUM.—Junior Assistant Medical Officer. Salary, £170 per annum, rising to £200 per annum.

LIVERPOOL DISPENSARIES.—Assistant Surgeon. Salary, £100 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Two House-Physicians. (2) Three House-Surgeons. Salary at the rate of £60 per annum each.

MANCHESTER CHILDREN'S HOSPITAL.—Male Resident Medical Officer. Salary, £90 per annum.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

MILDMAY MISSION HOSPITAL, Bethnal Green, E.—House-Surgeon (male). Salary at the rate of £70 per annum for first six months, and then £80 per annum.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—Junior House-Surgeon. Salary at the rate of £80 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150, and £5 annually in lieu of stimulants.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion Square, W.C.—Clinical Assistant.

SALFORD ROYAL HOSPITAL.—(1) House-Surgeon (male). Salary at the rate of £60 per annum. (2) Junior House-Surgeon (male). Salary at the rate of £50 per annum.

SALFORD UNION INFIRMARY.—Male Resident Assistant Medical Officer. Salary, £120 per annum.

SALISBURY INFIRMARY.—Assistant House-Surgeon. Salary, £50 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

SHREWSBURY: SALOP INFIRMARY.—House-Physician. Salary at the rate of £70 per annum.

SOUTHPORT INFIRMARY.—Junior House and Visiting Surgeon (male). Commencing salary £70 per annum.

SUNDERLAND INFIRMARY.—Male House-Surgeon. Salary, £80 per annum.

TRURO: ROYAL CORNWALL INFIRMARY.—House-Surgeon. Salary, £100 per annum.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Assistant Resident Medical Officer. Salary, £100 per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—Junior House-Surgeon. Salary at the rate of £75 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

WINCHESTER: ROYAL HAMPSHIRE COUNTY HOSPITAL.—House-Physician (male).

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Market Bosworth, co. Leicester, and Woodbridge, co. Suffolk.

APPOINTMENTS.

BOVEY, T. W. W., M.R.C.S., L.R.C.P., Medical Officer of Health of the Brampton Urban District.

BURD, C. P., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Upton-upon-Severn District, co. Worcester.

DEVEREUX, W. C., M.B., B.C.Camb., Certifying Factory Surgeon for Tewkesbury District, co. Gloucester.

FLETCHER, James, M.D., D.P.H.Aberd., Lecturer in Infectious Diseases in the University of Manchester.

JONES, T. H., M.D.Edin., D.P.H., Medical Officer of Health of the County of Surrey.

JOSEPH, G. W. N., M.B., Ch.B.Liverpool, Resident Assistant Medical Officer of the West Derby Union Infirmary.

KEALY, J. W. G., L.R.C.P., M.R.C.S., D.P.H., District Medical Officer of the Alverstoke Union.

OUTRED, C. D., M.R.C.S., L.R.C.P., Medical Officer of Health of the Borough of Gravesend.

RANDOLPH, W. H., M.R.C.S., L.R.C.P., District Medical Officer of the Dulverton Union.

SHEPHERD, T. S., M.B., F.R.C.S.Edin., District Medical Officer of the Ross Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ANSTEY-CHAVE.—On August 15th, at Allandale, Pen-y-lan Road, Cardiff, the wife of T. Anstey-Chave, M.B.Lond., F.R.C.S.E., of a daughter.

LETT.—On August 18th, at 48, Queen Anne Street, W., to Mr. and Mrs. Hugh Lett, a daughter (Sheila Buckston).

SWANN.—At 75, Marlborough Avenue, Broomhill, Partick, Glasgow, on August 20th, the wife of A. J. T. Swann, M.B., Ch.M., West African Medical Staff, Northern Nigeria, a son.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

EDINBURGH POST-GRADUATE COURSE IN INTERNAL MEDICINE.—The following practical classes will meet daily: 9 a.m., Examination of the Heart: 10 a.m., Examination of Sick Children; 11 a.m., Clinics on Renal Disorders; 12 noon, Clinics on Nervous Diseases; 2.30 p.m., Clinical Bacteriology; 4 p.m., Examination of the Urine; 5 p.m., Examination of the Nervous System.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Monday, 2 p.m.: Diseases of the Lungs. Tuesday, 2 p.m.: Diseases of the Kidneys. Wednesday, 2 p.m.: Diseases of the Digestive System and Children's Diseases. Thursday, 2 p.m.: Diseases of the Nervous System. Friday 2 p.m., Diseases of the Heart.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, Operations, and X Rays at 2 p.m. daily. Monday, Surgical Registrar, 10 a.m.; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Medical Registrar, 10 a.m.; Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Surgical Registrar, 10 a.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Eye, 10 a.m. Special Lectures, at 5 p.m., on Monday, Wednesday, and Thursday.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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LUNACY LAW REFORM IN GUERNSEY.

By MARCUS H. BULTEEL, L.R.C.P., M.R.C.S.,
President of the Guernsey and Alderney Division (Southern Branch), British Medical Association.

IN the JOURNAL of June 2nd, 1906, there appeared a lengthy report from the pen of a special commissioner of the Association, who came over with the express object of investigating the lunacy laws in this island and their administration.

With the circumstances which led to that investigation we have nothing to do in this article, but the many grave defects which existed in lunacy legislation in this island, to many of which the commissioner strongly called attention, have long been known and realized by the local profession, who have been waiting for an opportunity to press for them in such manner as to bring the lunacy legislation of this Bailiwick up to date and into accordance with modern ideas.

The delay had been largely due to the expectation that at a future period, hoped to be not long distant, the administration would be materially altered by the provision of one asylum for the whole island in place of the two asylums at present in existence, and attached to and administered by the Poor Law authorities of the town and country parishes respectively.

However, for financial and other reasons the States have found themselves unable at the present time to enter upon the fresh outlay involved in such a scheme, howsoever desirable it might be, and consequently the local Division of the Association determined to take action themselves with regard to pressing for reforms of the law, and a committee of five members was appointed on March 12th, 1909, to whom the matter was referred for investigation and report.

The committee's instructions were directed expressly to the lack of any legal protection to the certifying medical practitioner from vexatious actions at law, such as in given in Clauses 330 and 331 of the English Act of 1890, but the terms of reference empowered the committee to go fully into the Guernsey laws, and report on any action which it seemed desirable to take.

The committee held several meetings, and also conferred with the Bailiff, Mr. William Carey, and His Majesty's Procureur, Mr. E. C. Ozanne, on the subject, and also received valuable advice and assistance from the late Dr. H. J. Manning, then Secretary of the Southern Branch, and the Branch Council.

The recommendations of the committee will, perhaps, be best understood if we first refer to the report as explained the views arrived at, and which formed the basis of a statement of case drawn up for and delivered to His Majesty's Procureur after a meeting of the Division had accepted it, and instructed the committee to proceed on June 28th, 1909.

After studying the provisions of the English Lunacy Acts of 1890-91, and of the lunacy laws of the island of Jersey, and comparing them with those of this island, your committee came to the conclusion that there were four points to which their attention should be drawn.

1. The persons who may or may not sign certificates, petitions, and reception orders.
2. The question of the discharge and recovery of lunatics.
3. The question of the certificates, and the forms which should be recommended, and
4. The question of the protection of medical men and other persons signing lunacy papers with reference to subsequent vexatious actions at law.

The Guernsey law, as it at present stands, makes no stipulations or recommendations with regard to the persons who are qualified to sign certificates, petitions, and reception orders, with these exceptions:

1. The certificate must be signed by a medical practitioner registered in the island.
2. The petition by a relative must state relationship.
3. The reception order must be signed by one of the Crown officers, and then the signature of the President or Vice-President of the Poor Law Board is necessary.

There are various defects in this system. There is nothing to prevent the medical practitioners certifying from being related by blood, marriage, or business with each other or the petitioner, a matter which is entirely prohibited in the English law. Your committee agree with the necessity for relationship of the petitioner to the patient being mentioned, but no reason is asked for in the event of some other person being the petitioner, and as the Crown officer's signature is rightly required as an order for reception, your committee considers that in urgent cases his signature should be sufficient, and that no further delay need be made in obtaining that of the President or Vice-President of the Poor Law Board, which could be appended later.

Your committee recognizes that while there are two asylums in the island for town and country parishes respectively, the eventual signature of the Poor Law officer is necessary to secure that the patient receives treatment at the asylum to which he belongs; but in cases of urgency this means considerable additional delay and hence the recommendation to postpone the signature in these cases until after reception.

Should there be at some future time only one asylum for the island, this signature could then be dispensed with. In England the judicial authority gives his authority direct to the medical superintendent of the asylum, and in Jersey the President or a member of the States Lunacy Committee gives the authority direct also.

With reference to the discharge and recovery of lunatics, your committee noticed that while it requires in Guernsey no less than five signatures (two medical practitioners, one petitioner, one Crown officer, and one Poor Law official) to commit a patient to the asylum, only one is required for discharge. This may act unfairly to the patient, the medical officer, or the

There should be some power of appeal on both sides, on the part of the patient whose friends consider he is being unduly detained, and on behalf of the medical officer who bona fide considers he should not be released in his own or the public interest. Some such provision has been made in both the English and the Jersey law, and your committee has suggested a clause which they believe would have a similar good result in this island.

On the question of certificates we find a vast difference in those of Guernsey as compared with those of England or Jersey. In this comparison the Guernsey forms are of the most meagre and insufficient description. They are lacking in detail, and accompanied by no statement of particulars; the whole form, embracing medical certificate, reception order, urgency order, and petition occupies only one side of a sheet of foolscap, and there are no safeguards. Your committee suggest that forms be recommended such as are used in England, that the urgency order contain medical reasons for urgency, that a statement of particulars be inserted, and that in general terms; the certificates and forms at present in use be withdrawn, and others substituted for them more in accordance with modern ideas.

To medical practitioners the all-important question is that which relates to the necessary protection from vexatious civil actions in consequence of the bona-fide certificates they have given. Your committee have very carefully considered this point, and recommend most strongly that clauses be asked for, based upon Clauses 330 and 331 of the English Act of 1890.

It only remains to be added that your committee have not touched upon the question of administration, for which the time is not ripe, and recommend the Division to leave over this matter until such time as the States decide upon building an island asylum separately administered as such.

Your committee therefore recommend that instructions be placed in the hands of H.M.'s Procureur with a view to obtain the following modifications of the law:

1. That the persons who are responsible for signing lunacy papers shall not be related in terms forbidden by the English law.
2. That safeguards be adopted with reference to the discharge of lunatics on recovery.
3. That certificate forms be adopted similar to those in use in England.
4. That proper protection against vexatious legal actions against medical men and others, for bona-fide action, be provided for.
5. That the counter signature of the President of the Poor Law Board be abandoned in cases of urgency.

This report was unanimously adopted by the Division, and the necessary instructions for action were handed in forthwith.

It will be noticed that the findings and recommendations of the committee differed but slightly from those of the Association's special commissioner referred to above. The differences are as follows: (1) No mention has been made with reference to the qualifications and registration of medical men in Guernsey, a reform which by the action of the Division has been since carried out, as described in a report by the author which was published in the Supplement to the Journal on November 9th, 1907, and (2) the clauses with reference to the discharge and recovery of lunatics, and (3) the recommendation as to the counter-signature of the Poor Law officials have been added.

In consultation, His Majesty's Procureur considered it best to recodify the whole existing law and bring it and the proposed amendments into a new law, which should be sent to the Privy Council and become a permanent enactment by Royal Assent.

During the latter part of 1909 and commencement of the present year, it accordingly was piloted through its various stages. Opposition which seemed likely on some points was met by conference with the Poor Law authorities, and the difficulties not being insuperable, the whole matter was settled in an amicable manner, so much so that it was proposed to extend the provisions to Alderney and Sark. Objections were raised, however, by both islands, the former, however, had the intention of passing a law of their own. The objection of the latter was overruled, and the law finally received the Royal Assent on June 11th last, and was registered in the Guernsey Archives on July 9th.

The points which have been gained will be seen to include practically all that was asked for.

With regard to the signing of certificates, the same provisions prohibiting persons allied by blood, marriage, or business from being associated together, as well as persons having a direct or indirect interest in the payments of the patient, which exist in the English law, are incorporated.

The question of discharge on recovery or reputed recovery has been a difficulty in doubtful cases, but a clause has been inserted allowing of a special consultation in these cases which will, we hope, go far to remove that difficulty; in case of necessary discharge in uncured cases, as for transfer, the matter has to come into court.

Power is given to amend certificates where needful.

Medical men have received special protection clauses with the same object as Clauses 330 and 331 of the English Act of 1890, but adapted to local circumstances, and which it is to be trusted will be quite satisfactory. No action can lie except in case of *mala fides* or want of reasonable care of which it is incumbent on the plaintiff to produce evidence before an action can be entered.

A clause has been inserted which makes false declarations a misdemeanour.

The delay in urgent cases in obtaining admission pending the counter-signature of the President of the Poor Law Board will no longer take place.

The new certificates are practically similar to those in use in England, and contain reasons for urgency, statement of particulars, and generally more detail than before.

The original article of June, 1906, having pointed out so much that was defective in the law, it seems only fair that it should now be made equally public that a great reform has taken place owing to the action of the Guernsey Division of the Association, and also that acknowledgement should be made of the services of His Majesty's Procureur, as well as those of the Bailiff, Royal Court, and States of Guernsey to this end.

Meetings of Branches & Divisions.

BOMBAY BRANCH.

A meeting of the members of this Branch was held in the University Library on Thursday, August 4th, at 5.30 p.m., when Lieutenant-Colonel H. P. Dimmock, I.M.S., the Vice-President, was in the chair. The following members were also present: Dr. Sorab Nariman, Major E. F. Gordon Tucker, I.M.S., Drs. (Miss) Jalibai Engineer, H. J. Dadysett, B. P. Karani, N. Vazifdar, N. F. Surveyor, F. N. Kapadia, K. N. Karanjia, Assistant Surgeon Khandwalla, Dr. Datar, and the Honorary Secretary, Dr. D. R. Bardi. Half an hour was spent in social intercourse, when the members were entertained to tea.

Confirmation of Minutes.—The minutes of the last meeting were read, confirmed, and signed by the Chairman.

Relation of Chorea to Rheumatism.—Miss Jalibai Engineer then read a paper on the relation of chorea to rheumatism, with notes of two cases. In the discussion which followed, Dr. F. N. Kapadia and Major Gordon Tucker, I.M.S., took part. The Chairman (Lieutenant-Colonel Dimmock, I.M.S.) referred to the cases he had seen, and said that the worst cases he had met with were during or after pregnancy. He then proposed a hearty vote of thanks to Miss Engineer for her interesting paper, which was carried unanimously.

Here Lieutenant-Colonel Dimmock had to go away, and Dr. Nariman took the chair.

Irregular Intermittent Fever.—Major Gordon Tucker, I.M.S., then read notes of a case of irregular intermittent chronic fever, with progressive emaciation and obscure bone and joint pains of a fleeting character. Calmette's ophthalmo-reaction gave negative results, and his serum did not react with the Malta fever bacillus. The author stated that Dr. Surveyor was now preparing a vaccine from the staphylococcus obtained from a culture of the patient's blood. Salicylates, mercury, and iodides did not do any good. Aspirin once checked the fever and pains for five days.

Locomotor Ataxy and Recklinghausen's Disease.—Major Gordon Tucker also showed a case of locomotor ataxy, combined with Recklinghausen's disease, and drew attention to a misleading statement in Ewen's

book, *Insanity in India*, where he states that general paralysis of the insane and tabes dorsalis are not known in natives of India. That might be true for the agricultural population of the Punjab, but was certainly not true for this side of India.

After a vote of thanks to the Chair the meeting was dissolved.

LANCASHIRE AND CHESHIRE BRANCH:

MANCHESTER (CENTRAL) DIVISION.

AN ordinary meeting of members was held at 14, St. John Street on July 11th, Dr. WALLS in the chair. There were present Drs. G. Booth, Henshaw, Melland, and Rayner.

Confirmation of Minutes.—The minutes of the last ordinary meeting were read and confirmed.

Ethics of Medical Consultation.—The rules relating to the ethics of medical consultation, as approved and submitted to the local Divisions for consideration by the Conjoint Committee of the Manchester and Salford Divisions, were discussed. The rules, which were drawn up by the Central Ethical Committee, and printed in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of May 9th, 1908 (p. 242), were approved of by the meeting. In regard to the additional rules which had been adopted by the Special Committee of general practitioners and consultants from the Manchester and Salford Divisions, the following alterations were unanimously approved of:

Extra Rules Adopted by the Special Committee of General Practitioners and Consultants from the Manchester and Salford Divisions, and Approved by the Joint Committee of Manchester and Salford Divisions.

When a patient who has not previously been seen in consultation calls on a consultant at his rooms without introduction by a general practitioner, inquiry should be made in every case as to whether the patient is, or has been, during that illness under the care of any practitioner.

If it is ascertained that the patient is not at the time under the care of another practitioner, there is nothing ethically wrong in the consultant undertaking the treatment of the case.

But it is generally inadvisable for any practitioner who wishes recognition as a consultant to attend any patient at the patient's own home except in co-operation with a general practitioner.

It is the duty of the consultant to use every endeavour to persuade the patient to allow him to communicate with any attending practitioner.

Contract Medical Practice.—A letter from the Secretaries of the Conjoint Committee of Manchester and Salford Divisions respecting the terms and conditions of contract practice was read. It was decided to await suggestions from the other Divisions.

Association Notices.

ELECTION OF CENTRAL COUNCIL 1910-11.

To those Branches or groups of Branches in the United Kingdom who failed to make nominations for election of members of the 1910–11 Council,

Notice is hereby given that nominations of candidates for election of Members of Council by Branches or groups of Branches in the United Kingdom by voting papers for the year 1910–11 must be forwarded to reach the Financial Secretary and Business Manager, at the Office of the Association, not later than September 14th, 1910, and that each nomination must be on the prescribed form, copies of which will be furnished by the Financial Secretary and Business Manager upon application.

Separate forms have been prepared for a nomination by a Division and for a nomination by any three members respectively, and those applying are requested to state for which purpose the form is desired.

Voting papers containing the names of all candidates duly nominated will be issued from the Central Office on September 21st, and will be returnable not later than September 26th.

By Order of the Council,

GUY ELLISTON,
Financial Secretary and Business Manager.

August 3rd, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST ANGLIAN BRANCH.—The autumn meeting of this Branch will be held at Hunstanton on Thursday, September 15th. Members wishing to read papers or to show cases or specimens should communicate at once with Mr. Hamilton A. Ballance, M.S., Norwich.—B. H. NICHOLSON, Colchester, General Secretary of the Branch.

NORTH OF ENGLAND BRANCH: NORTH NORTHUMBERLAND DIVISION.—The Annual Social Meeting will be held at Bamburgh, on Thursday, September 8th. The Secretary and his wife invite members and their wives or friends to luncheon at 10, Armstrong Cottages, at 1.30 p.m., after which Bamburgh Castle will be visited under the guidance of Dr. Macaskie. Through the courtesy of the Bamburgh Golf Club, members bringing their clubs may indulge in a round of golf.—C. CLARK BURMAN, Honorary Secretary.

SOUTH-EASTERN OF IRELAND BRANCH.—A meeting of this Branch, also a meeting of the Branch Council and Local Division, will be held at the Adelphi Hotel, Waterford, on Wednesday, September 7th, at 3.30 pm. Agenda: (1) Minutes. (2) Letters of apology. (3) Correspondence. (4) To consider Dr. Laffan's application. (5) Any other business. (6) Lunch at 2 p.m.—J. QUIRKE, Piltown, co. Kilkenny, Honorary Secretary.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, 29th, and 30th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[FOURTH NOTICE.]

W. WATSON AND SONS, LIMITED (313, High Holborn, London, W.C.). A feature of this interesting stand was the "Sunic" intensifying screen for *x* ray work, which has been so much talked of on the Continent and in this country, and which was the recipient of many compliments in the course of a recent discussion at the Société de Radiologie Médicale of Paris. It was claimed that the grain—a word which leaps to the lips of the sceptic in the matter of intensifying screens—was practically absent in this case, and, this requirement being fulfilled, the substantial reduction in the necessary exposure was a valuable consideration. Another small appliance at this stand was a new stereoscope for examining *x*-ray negatives. It was a simple little contrivance, with the apparent unsymmetry of only one prism, but the stereoscopic result was perfect. Judging from some remarks he made when demonstrating the apparatus before the Roentgen Society the other day, we believe that Dr. A. Howard Pirie, its designer, possesses the natural gift—a most valuable one for a radiographer—of seeing a radiograph stereoscopically by an effort of the will, but he has found it very difficult to educate the wills of other people up to stereoscopic pitch; hence his instrument. A larger space was covered by the "Middlesex" orthodiagraph and tube holder, a combination, not only for orthodiagraphy, but for general exploration with the tube below the couch, radiography above and below the couch, and various methods of examination. The apparatus was made to the design of Dr. C. R. C. Lyster, of the Middlesex Hospital. With the Sunic screen was the Sunic tube-stand, in which all the movements were controlled from one point, flexible cables transmitting the motions. Another exhibit was the firm's well-known intensified induction coil and moto-magnetic interruptor for very large currents. The noteworthy feature of the coil was its subdivided primary, while the interruptor boasted that, instead of alcohol or

petroleum, ordinary coal gas or hydrogen could be used as a di-electric to cover the point of contact. Miscellaneous conveniences included tube boxes, various electrodes, protective appliances, and the incidentals that make smooth the path of the electro-therapeutist.

The Anglo-American Pharmaceutical Company (Chichester Rents, Chancery Lane, London, W.C.). This firm had on view the products known under the name of the Huxley Pharmaceutical Products and those of the Pasteur Vaccine Company of Paris. The latter included some dragees, each containing 0.25 cg. of antidiphtheric serum, which are intended for use as a local prophylactic when dealing with cases of diphtheria, and Fermenlactyl tablets prepared from cultures of the *S. lebenis*. In this form they are stated to retain their activity for six months. They are intended either to be swallowed with a view to producing lactic-acid antisepsis or for the production of sour milk. The Huxley products included Plasma Dusting Powder, consisting of zinc, boracic acid, and infusorial earths. As a well-made fragrant powder, with some antiseptic properties, it should be useful for the various purposes to which powders are commonly applied. A cream containing menthol and wintergreen in neat tubes was also shown as a local application and counter-irritant. There was also a series of glycero-phosphate remedies, both in tablet and in liquid form. The former included Glycero-phosphate triturates, these being tablets in which the salts are present in a desiccated form. As the salts do not act on one another until swallowed, the freshness of the compound salts, which is no doubt often of importance, is fully assured. Into other of the glycero-phosphate preparations entered formic acid, pepsin, haemoglobin, and red marrow extract.

Medical Supply Association (228–230, Gray's Inn Road, London, W.C.). The feature which had the greatest attraction for the general public at this stand was undoubtedly the demonstration with a new trephine having an ingenious appliance to prevent the borer from doing a fraction more than its appointed task. Even when an inflated toy balloon was placed under the half-skull with which the demonstrations were done, the bone was easily and cleanly perforated without the airtight envelope underneath receiving a puncture. The more massive exhibits included an outfit to accomplish every kind of *x* ray work, from treatment up to the most intense radiography. The turn of a switch made it available for either the diagnostician or the therapeutist. The three graces of the new installation for rapid radiography and therapy were the Gaiffe Rochefort coil, unlike some others in being free from wax insulation; the Greville-Gaiffe mercury jet-break for intensive and for ordinary radiography, and a new *x*-ray tube, capable of rapid work. A universal *x*-ray tube stand which permitted the projection of the rays upon any desired portion of the body by shifting a couch, mounted for the purpose on rubber-tired wheel castors, over or under the *x*-ray tube, was another feature of interest; and the rear, so to speak, was brought up with some of the latest types of *x*-ray tubes and faradic batteries, an intensifying screen called the "Simplicito," safety rheophores, and the apparatus for skin treatment by solid carbonic acid, which has attracted considerable attention since it was demonstrated before a Section of the Royal Society of Medicine a few months ago. At this stand also another example of the universal apparatus sent its far-flung battle line across the greater part of the field of electro-therapeutics.

Mrs. S. Marsh (Overshot Mill, Colne Engaine, Essex). Most of the manufacturers of sour milk pride themselves on having learnt what is the most active bacillus and use it almost exclusively. This exhibitor, however, who was the first, we believe, to put Yaourte, or Bulgarian milk, on the market in this country, uses all the five organisms which, according to Rist, predominate in the sour milk used by the populace in South-eastern Europe. Supplies of these bacilli are received constantly from Paris, the milk used being that obtained from the exhibitor's own cows. These are certified to be free from tubercle, and the whole work is done under her own supervision. We tried this sour milk some time ago, and found it to bear a closer resemblance to real Bulgarian sour milk than almost any other to be obtained in this country.

Newton and Co. (3, Fleet Street, E C.). The massive Snook-Roentgen apparatus bulked largely among the exhibits at this stand. It was first described in this country, we believe, at the Sheffield Meeting of the British Medical Association two years ago, and was brought out by Messrs. Newton and Co. shortly afterwards. There is no need to describe again its principle of working nor to say anything further in praise of its extreme simplicity and efficiency for instantaneous radiography. Another instrument for promoting efficiency—which in this case means minimum of current wastage—was the Apps-Newton "Instanta" induction-coil for mercury and electrolytic break-work. This was shown working in conjunction with a new break, and with a switch-table, having a change-over switchboard on a slate base, mounted in the form of a portable trolley. A further exhibit was a universal apparatus of the kind which is now so popular among many of those who employ electro-medical methods. Working from the supply mains, it was capable of producing currents for sinusoidal-faradic and galvanic treatment, cautery, light and electrolysis. There was, in addition, a motor-shaft adapted for vibro-massage and similar mechanical purposes. Indeed, the machine gave all the currents which are usually required for electro-therapeutic purposes, including ionic medication. The clover-leaf *x*-ray tube—a tube of American pattern—accounted by itself for an interesting little display. It has been specially designed for heavy currents so as to maintain a constant vacuum, and it was stated that it obviates some of the common troubles and uncertainties accompanying *x*-ray tubes, which their users know so well. A feature of this clover-leaf tube was a hollow cathode, designed to keep it from over-heating. On this stand also a speciality was made of appliances for protecting the operator, not only by means of aprons and gloves, but also by tube-stands in which efficient protection was provided, as well as the means of facilitating easy adjustment. A prismatic stereoscope for viewing *x*-ray negatives had a corner to itself.

Buzzell Flanders Co. (Boston, U.S.A.). This American firm had upon view a good collection of the catgut ligatures to the preparation of which it devotes itself. We understand that when their preparation for the market is otherwise complete they are sterilized in their glass containers under high pressure for an hour, and a specimen of each lot is tested by an independent bacteriologist before any of the remaining tubes are sent out. The tubes have a note as to the fashion in which their contents have been prepared etched outside. One or two samples of ligature which we roughly tested seemed both supple and strong, while as a whole they bring with them an excellent reputation from America. They are now obtainable, we understand, from most surgical instrument makers in this country.

Droitwich Spa. To give visitors any real idea of the advantages which a spa has to offer is a very difficult matter at an exhibition, but the authorities of Droitwich were unusually successful, and had an attractive exhibit. The topographical position of the spa, the protection which it enjoys from cold winds, the comparatively low rainfall and other advantages, were brought out by charts, while specimens were on view of the salts which its waters contain. Pictures of the bathing establishment which we had occasion to describe in detail last year when the new buildings were opened, were also on view. Droitwich is quite a unique spa in England, and in respect of the strength of its brine has no rival even abroad, excepting possibly a small place in the Upper Tyrol, which hitherto has scarcely endeavoured to fit itself up as a modern

health resort. The constitution of the brine in solids represents between 22,000 and 23,000 grains to the gallon. The place can now claim the frankest recognition as a fully developed health resort, and should not be forgotten when dealing with patients suffering from various forms of rheumatism, neurasthenia, anaemia, and other disorders susceptible of successful balneological treatment. Full information about it will be found in the article to which reference has already been made; it appeared on June 15th, 1909. The baths are open throughout the year.

BRAND AND CO., LIMITED (11, Little Stanhope Street, Mayfair, W.). Most of the dietetic specialities produced by this firm have been so long and favourably known that any detailed description of them is superfluous. Brand's Essence, indeed, has long since obtained the position of a household term. It covers not merely a beef essence but similar preparations made from veal, chicken, and mutton. Of the same general character, and specially intended for hospital use, is the firm's *Beef Broth*; it is really a jelly, and, like the chicken jelly of this firm, can be eaten with a spoon or turned into a fluid to be drunk. Eminently useful, too, are the firm's Beef Tea Tabules, which occupy no space, and can be carried about ready to convert into beef-tea with the help of a little hot water at a moment's notice. Among the other specialities shown was *Brand's Meat Juice*, which is simply the juice of English-grown beef obtained by pressure. In our own experience a teaspoonful of this liquid in a wineglassful of cold water makes a very stimulating beverage, and if the bottle is corked with a scorched pledget of cotton-wool it keeps good for many days. A variety of invalid soups intended as a change from a chronic diet of beef-tea was likewise shown, as also an Albuminous Essence of Beef, this being a beef extract *plus* some of the albuminous and hydrocarbon elements of meat. Finally should be mentioned what the firm terms *Fever Food*, which is prepared chiefly for use in the tropics. It consists, we understand, of yolk of egg, cream, and beef essence, the combination being very palatable. The only material addition we noted this year was *Glaxo*, a milk food for infants and children, which emerged very successfully from the tests to which it was submitted a year or two ago at Sheffield in connexion with a trial on a large scale of several forms of artificial foods for children.

JOHN J. GRIFFIN AND SONS (Kemble Street, Kingsway, London, W.C.). The chloroform inhaler devised by Mr. Vernon Harcourt was the exhibit of this firm, and attracted a good deal of attention. It has some rivals as a method of administering chloroform in precise percentage, but, on the whole, would seem entitled to be regarded as superior to any other. The fact that it has been in actual use for several years has allowed of certain weak points being detected and remedied. The appliance certainly fulfils its object, inasmuch as it enables chloroform to be administered in any percentage desired, and with or without the addition of oxygen, which latter gas may also, if desired, be administered by itself. We had several occasions to use one of the earlier specimens of this inhaler, and found that in the present form the disadvantages then noted had been eliminated.

THE MIOL MANUFACTURING COMPANY, LTD. (82, Southwark Bridge Road, S.E.). An analysis of the product of this company which we made last year showed it to contain 22·4 per cent. of oil, reducing sugars calculated as maltose 41.3 per cent., and protein 2.3 per cent. Small quantities of iodine were also present in combination. Generically it may be regarded as an oleo-maltose compound. It is of palatable taste, and has been stated on good authority to be readily absorbed, to cause no gastric irritation or nausea, and to bring about a material increase in body weight in many cases of early phthisis and the like. The oil, we understand, is olive oil, cinnamon being used as a flavouring agent. It can be taken plain by the teaspoonful, just as might be a dose of cod-liver oil, or the desired quantity spread on bread-and-butter if the patients are children. Clinical reports from various sources concerning this preparation seem to indicate that in dealing with children and in cases in which cod-liver oil causes nausea or is otherwise not found suitable, Miol can be given with much advantage. Copies of them can be obtained on application to the firm. A record of a case in which Miol was given by way of improving nutrition in a successfully treated case of apparent arterial sclerosis was published at page 311 of our issue for August 6th, 1910.

THE PROTENE COMPANY (36, Welbeck Street). This firm engages in the manufacture of proteids from milk. It uses, we understand, only English milk, and has been awarded apparently a large number of gold medals for the purity of its preparations. The proteid obtained it converts into cakes, breads, and biscuits of all kinds, these being subclassed according to the amount of proteid. Some varieties have 25 per cent., others from 40 to 60 per cent. It is difficult to introduce so much proteid nutriment into biscuits and like products, and the firm believes that no other biscuits can equal its own in this respect. The firm also manufactures protene foods for diabetic patients, and issues a pamphlet containing full analyses of its products and other information.

H. W. COX AND COMPANY, LIMITED (47, Gray's Inn Road, London, W.C.). This firm had a varied assortment of apparatus, most of it small in bulk, but all of it interesting in its adaptation. The forefront was occupied by Dr. William Hampson's appliance for treatment by means of the sinusoidal current. The special point insisted on was the fact that the strength of current could be varied rhythmically. It was believed that these rhythmic variations of current strength would be of considerable value, particularly in the treatment of those tedious cases in which the electrical exercise is spread over a long period. By means of what appeared to be a modification of the tri-phase sinusoidal arrangement, the desired rhythmical variation was neatly obtained without the expense and the drawbacks which have hitherto attended the appliances for obtaining such variations. A place of honour at this stand was given to an *x*-ray couch, designed by Mr. Shenton, which was easily adjustable and as easily detachable. Features were also made of coils of different capacities, an array of portable accumulators, and shields for ringworm, fitted with an arrangement for holding Sabouraud's pastilles, and capable of being used over or under the patient as required. A mercury interrupter represented a gallant attempt to suppress the nuisance of inverse current in the coil. This was carried out by the incorporation of a new principle—a simple one, but not easy to make intelligible without the aid of diagrams. Altogether, a very effective exhibit.

THE AYLESBURY DAIRY COMPANY (31, St. Petersburg Place, Bayswater, London, W.). Three distinct classes of milk were shown by this firm—milk for household purposes, tuberculin-tested and pasteurized; milk for infants; and for grown-ups soured milk and cream cheeses. The milk for infants, or humanized milk, is ordinary cow's milk, so modified as to approximate in composition to human milk. With a view to progressive feeding, it is prepared in three strengths in respect of proteid composition. A concentrated form of the same milk was also shown under the term *Humanoid*. The sour milk preparations included *Lactor Bulgariensis*, prepared by the help of Massol. A buttermilk due to cultures of the same bacillus was also shown. The firm has paid much attention to sour-milk preparations during the last few years, and they seem to be of a satisfactory kind, while its reputation as a milk producer and vendor is both high and of long standing.

CALLARD AND COMPANY (74, Regent Street, W.). Among medical men who study dieteties, this firm has long enjoyed a high reputation for its skill in the preparation of food and food adjuncts free from starch and sugar. Of the attractive forms in which these can

now be obtained its exhibit supplied ample evidence. Biscuits practically free both from starch and sugar, and cakes, marmalade, jams, and beverages, almost if not absolutely sugarless, were all upon view, and for the most part proved pleasant to eat. The two starchless breads shown may be regarded, however, as the principal exhibits of the firm. One of these was a brown bread named *Cellulon;* when cut into thin slices and buttered, it is an excellent bread for use with fish and the like, and those eating it would be unlikely, we think, to detect that it was not ordinary brown bread. Nevertheless, the contained carbohydrates, according to the analyses supplied, are considerably less than 2 per cent., while the hydrocarbons and albuminoids are as high as 18 per cent. and 19 per cent. respectively. The *Prolacto Bread*, on the other hand, is white, and in texture and appearance has a much greater resemblance to ordinary bread than the vast majority of its congeners. Moreover, in respect of palatability, it will be a surprise to those who are only acquainted with earlier endeavours to produce a practically starchless bread. But despite its close resemblance to ordinary bread in other ways, analysis shows that the carbohydrates are well under 1 per cent., while the albuminoids are nearly 34 per cent., and the fat percentage as high as 17. Both these breads seem thoroughly worth trial in any case of diabetes, or other condition in which it is desired to lessen the carbohydrate intake. Also worth noting are the *Nurso Rusks* and *Nurso Biscuits*, both of which are highly palatable. The Rusks contain 14.45 per cent. albuminoids, 13·6 per cent. fats, and 14.7 per cent. soluble carbohydrates, and 47.2 insoluble carbohydrates *plus* some 2 per cent. of mineral matter.

The Sanitas Company (Locksley Street, Limehouse, E.C.). The characteristic of the history of this firm during the past few years has been the energy and success with which it has met the call for stronger disinfectants than that from which it derived its name. In this way came into existence two preparations to which we have called attention on several previous occasions, one being *Bactox* and the other *Sanitas Okol*. The latter, a greyish emulsion of the odour more or less common to all tar derivatives, is perhaps the best known. Both, however, figured excellently in the reports published last year by the *Lancet* in respect of disinfectants as a class. Bactox, indeed, took the first place when the claims of different disinfectants were compared on a basis of efficiency combined with cost, while Sanitas Okol took first place among emulsified preparations. Since it mixes well with salt water, it would seem specially worth consideration as a board-ship disinfectant. A new exhibit of the firm was *Sanitas Sypol*, which is intended for use in surgery. The claims made in respect of it are that it has at least four times the germicidal efficiency of pure phenol; that when diluted with soft or distilled water it gives a perfectly bright and transparent solution; that it can be diluted as high as 1 in 200, renders neither hands nor instruments slippery, and that it has no corrosive or rusting action on metal surgical instruments or on the hands of the operator. The liquid from which the firm derives its name figured in a great many different forms, these including *Sanitas* in liquid and powdered form for domestic use, and as applied to various toilet purposes. Kingzett's *Sulphur Candles* and *Drain Testers*, both of which are well known, were on view, as also the polishes for disinfecting and preserving linoleums and wood floors which the firm brought out a year or two ago. Another exhibit was Kingzett's *Preserved Peroxide of Hydrogen* in solutions of various strengths put up by a patented method claimed to preserve them against loss of strength. Also shown were two forms of apparatus for formaldehyde disinfection. To one of them, the *Sanitas Formigator*, we have directed attention previously as a thoroughly practical and conveniently small appliance; the vapour originating from the other appliance, the *Sanitas Formic Sulphurator*, contains both formaldehyde and sulphurous anhydride.

Bendle, Limited (41, Seething Lane, London, E.C.). The exhibit of this firm was a wine fortified in respect of nutritive value by the addition of nitrogenous matter. It is vended under the name of *Bendle's Meat Port*, and is stated to be prepared from the finest Alto Douro port, and to contain pure meat nourishment equivalent to 7 per cent. of fresh lean beef. It has been brought out as a stimulant which may usefully be prescribed in any case in which the exhibition of alcohol is regarded as desirable—as, for instance, in convalescence from influenza. As for its proteid contents, we found on analysis last year that these, calculated as nitrogen, were equal to about 2.5 parts per cent., and that the fixed and volatile acidity of the wine were both very low. The firm on that occasion pointed out that the beef added is not a mere extract, as might possibly be concluded, but a true albuminose, and that its addition really represents not less than 7 per cent. of fresh lean beef. This statement appears to be quite justified. To the palate the preparation presents no astringency, and, although the fact that there is some addition can be detected the flavour is pleasant.

Holden Bros. (3, Harewood Place, London, W.). This firm devotes itself to the manufacture of a form of footwear known as Natureform. These are boots and shoes for persons of both sexes and all ages made in precise correspondence with the natural formation of well-made and undistorted feet. The object in view is both preventive and curative, the feet of young people being allowed to assume the shape which Nature intended them to have, and which is doubtless the most desirable for purposes of locomotion, and those of their elders being given a chance of reassuming their original form. For the further assistance of the latter some of the boots are supplied with a patent toe-post which keeps the great toe separated from its fellows. Stockings and shoes to wear with the latter appliance are also obtainable. As a very large proportion of all foot troubles among adults, and of those which follow on inability to walk about with comfort, is due to ill-made boots, the existence of this firm is worth remembering. It, of course, builds its goods according to any instructions received from medical men, and in all details habitually varies them carefully with the precise foot deformity which it is desired to correct. So far as possible it combines a sightly appearance with a correct shape, and it does its work in every way very intelligently.

Findlater, Mackie, Todd, and Company, Limited (London Bridge, S.E.). This firm exhibited a wine and specimens of the large number of foreign mineral waters for which the firm is official agent in this country. The wine was that known as *Vin de St. Raphael*—one grown in the South of France, and described as a natural tonic. Its special point is that it contains a large percentage of tannin. It is the principal representative of a class of wine long regarded in France as the most suitable for therapeutic use, and as such has been specially mentioned by Professor Bouchardat in his well-known *Formulary*. It is also officially supplied to the Paris hospitals. It is of red Burgundy type, but possesses somewhat less body. It is of somewhat astringent flavour, not distasteful, but a little different to either claret or Burgundy. Of the mineral waters shown, all were unmodified natural waters. One of them was *Carabana*—a natural aperient water, containing a large proportion of sulphates. It is not unpleasant to take, and is stated to be free from constipating after-effects. Another was *Martigny*—one growing in favour. Its notable point is the large percentage of lithia it contains: otherwise it would seem closely allied in constituents and therapeutic qualities to the water from the well-known spring at Contrexéville. Other medicinal waters were *Ems*—an alkaline muriated water much used in Prussia in cases of catarrh of the mucous membranes—and *Schlangenbad* and *Schwalbach*. The former is considered to be indicated in cases of nervous irritability, and the latter in diseases of chlorotic type. Three drinking

waters were also included in the exhibit, these being *Taunus*, a favourite with Her late Majesty Queen Victoria; *Pouges*, a popular French digestive; and *Birresborn*, a comparatively new-comer, which is a sparkling water of fresh and pleasant taste.

CORDES, HERMANNI AND CO. (Hamburg). Otherwise known as the Ichthyol Gesellschaft, this firm devotes itself to the preparation of ichthyol in two forms, one being ammonium sulpho-ichthyolate, more commonly known as Ichthyol, and the other a sodium preparation registered under the name of Ichthyolate. Both have been in use now for some twenty years or more, and are generally regarded as of material value, either alone or in association with other drugs, in the treatment of skin diseases, and especially, perhaps, psoriasis and eczema, while Ichthyol has also been used internally as an intestinal antiseptic, and in rheumatism. Ichthyol, it may be noted, is not a definite chemical compound, but a trade name applied after treatment to a bituminous matter of fishy origin found chiefly in the Tyrol. Its odour is not pleasant, but can readily be concealed. The company supplies a formulary containing a collection of over a hundred prescriptions containing Ichthyol, drawn up and used by various dermatological and other authorities.

FELTOE AND SMITH, LIMITED (25, Augustus Street, Regent's Park, W.). The products of this firm are well known both in the sick room and in temperance and other circles. The one is called the "Specialité Lime Juice Cordial" and the other the "Specialité Lemon Squash." The former is guaranteed by the firm to be entirely free from foreign material, and, as many of us know, is an extremely refreshing beverage when mixed with water. Moreover, it is claimed by the firm to be as free from alcohol as any beverage can be. As for the lemon squash, this, we are informed, is manufactured in vessels of porcelain and in such fashion that contamination or impurity is impossible. Into its composition enter nothing but the clarified juice of lemons and loaf sugar. Clarification of the lemon juice is effected by a special process, which automatically rids it thoroughly of all pulp and all other solid organic matter. The firm, it may be mentioned, also manufactures what it calls "Lemon-squash Crystals"; these are exceedingly portable tablets, which, added to a sufficiency of water, provide a lemonade of excellent flavour at a very small cost.

LONGSTRETH'S, LIMITED (190, Queen's Road, Battersea, S.W.). A new exhibit by this firm, which is better known as the Lithanode Accumulator Company, was an automatic cut-out for battery charging. The device is that of an automatic switch, very simply worked, which cuts off the charging current as soon as a battery has received its full charge, no matter whether the battery was previously completely or only partially discharged. The operator is thus relieved of responsibility, and the great advantage claimed by the patentees is that there is no wastage of current, and no need to make a special journey to stop the inflow at a given time. Although simple, the method is somewhat difficult to describe without the assistance of diagrams, and it need only be said that in principle the contrivance depends upon the fact that a battery gives off gas when nearly charged. This gas-phenomenon is made use of ultimately to work the cut-out. The other exhibits included medical cautery sets and medical lighting sets, as well as a neat and very portable combination of both, the last-named being used for rendering a cautery point incandescent, and also for general searchlight work. In addition to these, the firm showed medical hand-lamps of various types, all fitted with unspillable batteries, and lighting and charging cells, with regard to which it was claimed that the cells could actually be short-circuited without the least buckling of their positive plates.

LIEBIG'S EXTRACT OF MEAT CO. (4, Lloyd's Avenue, London, E.C.). The preparations of this firm of manufacturers which appeal more particularly to medical men are Lemco, Oxo. The former is, under another name, the preparation on which the firm originally founded its repute, the word *Lemco* being made up of the initials of the company's name. It is a pure beef extract, entirely free from fat, and, as is well known, lends itself readily to the preparation of beef-teas. As for *Oxo*, though a somewhat younger claimant to popularity, it is now an almost equally familiar preparation to every one. It is a compound of meat extract and meat fibre with the addition of flavouring matters, and long personal experience proved that on addition to it of a sufficiency of hot water, a stimulating and exceedingly pleasant drink, with a full beef-broth flavour, results. It is also put up in a form specially intended for the sick room, called *Nursing Oxo*. This is somewhat stronger than ordinary Oxo, and its special point is that all flavouring agents are omitted in order that it may be flavoured in the sick room according to the varying tastes of invalids.

WELFORD AND SONS (Elgin Avenue, Maida Vale). This well-known dairy company had upon view a considerable number of specimens of its milk and also of the utensils used by it in the preparation and marketing of the various modified forms of milk which it prepares. They include cow milk altered so as to resemble human milk, the modification being varied according to the age of the child. Some Koumiss was also shown, as well as asses' milk, and "Sauermilch" prepared with the help of the bacillus of Massol and the *Streptococcus lacticus*. The same organisms are also present in the firm's "sauermilch whey" and its "sauermilch cheese."

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Surgeon W. L. HAWKINS to the *Vivid*, additional, for disposal, August 22nd; Staff Surgeon L. S. WHITWARN, M.B., to the *Encounter*; Staff Surgeon T. B. SHAW, M.B., to Haslar Hospital, to assist in the instruction of surgeons on entry, August 24th; Staff Surgeon M. J. SMITH, M.D., to the *Gibraltar*, for the charge on the voyage home, undated; Staff Surgeon C. E. SHEWARD, M.B., to the *Pathfinder*, September 10th; Staff Surgeon H. C. ADAMS to the *Gibraltar*, for the voyage out, September 10th, and to the *Prometheus*, on recommissioning, undated; Staff Surgeon J. STODDART, M.B., and Surgeon T. C. PATTERSON, M.B., to the *Gibraltar*, for the voyage out, September 10th, and to the *Challenger*, on recommissioning, undated; Fleet Surgeon C. S. FACEY, M.B., to the *Commonwealth*, August 25th; Fleet Surgeon W. W. PRYN to the *Victory*, additional, for temporary service at Haslar Hospital, September 8th; Surgeon C. H. DAWE to the *Victory*, additional, for disposal, September 3rd; Surgeon K. D. BELL to the *Niobe*, on recommissioning, September 6th.

Mr. J. BLEWITT, civil practitioner, has been appointed Surgeon and Agent at Belfast, July 19th.

ARMY MEDICAL SERVICE.

COLONEL M. W. KERIN, C.B., reverted to his substantive appointment as Principal Medical Officer, Bareilly, Garhwal, and Debra Dun Brigade, from July 24th.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL F. C. REEVES, Madras, is promoted to be Colonel, from May 25th. He was appointed Assistant Surgeon, October 31st, 1879, and became Lieutenant-Colonel, October 31st, 1899. He was in the Afghan war in 1880, receiving a medal.

Lieutenant C. H. SMITH, M.D., is appointed Specialist in Advanced Operative Surgery, 2nd (Rawal Pindi) Division, from July 10th.

The following Captains are promoted to be Majors, from July 28th: J. C. H. LEICESTER, M.D., H. INNES, M.D., W. S. WILLMORE, A. E. WALTER, L. T. R. HUTCHINSON, M.D., A. M. FLEMING, M.B., E. L. WARD, J. W. WALKER, V. H. ROBERTS, T. S. ROSS. Their previous commissions are dated: Lieutenant, January 28th, 1899; Captain, January 28th, 1902. Their war records are as follow: Major Leicester, China, 1900 (medal). Major Innes, North-West Frontier of India, Waziristan, 1901-2 (medal with clasp). Major Willmore, China, 1900, including the relief of Pekin, and actions at Peitsang and Yangtsun (medal with clasp). Major Walter, China, 1900 (medal with clasp). Major Walker, China war, 1900 (medal); North-West Frontier of India, 1902; operations against the Darwesh Khel Waziris.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns 8,116 births and 3,950 deaths were registered during the week ending Saturday last, August 27th. The annual rate of mortality in these towns, which had been 10.7, 11.1, and 11.5 in the three preceding weeks, further rose to 12.1 per 1,000 last week. The rates in the several towns ranged from 3.7 in Hornsey, 5.1 in Walthamstow and in Dewsbury, 5.5 in Leyton, and 6.0 in Willesden and in East Ham, to 18.6 in Coventry, 19.3 in Huddersfield, 19.4 in Liverpool, 20.5 in Middlesbrough, and 20.7 in Hull. The death-rate from the principal epidemic diseases averaged 2.2 per 1,000; in London the rate did not exceed 1.3 per 1,000, while among the seventy-six other large towns it ranged upwards to 6.0 in Birkenhead, 7.0 in

Preston, 8.6 in Hull, and 8.8 in Middlesbrough. Measles caused a death-rate of 1.1 in Oldham and in Rhondda, 1.8 in Tynemouth, and 2.5 in Barrow-in-Furness; whooping-cough of 1.1 in Huddersfield and in Sheffield, and 1.6 in Northampton; and diarrhoea of 5.8 in Burnley, 6.0 in Birkenhead, 6.6 in Preston, 8.2 in Hull, and 8.8 in Middlesbrough. The mortality from scarlet fever, from diphtheria, or from enteric fever, showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,523, 1,490, and 1,423, at the end of the three preceding weeks, rose to 1,447 at the end of the week under notice; 159 new cases were admitted during the week, against 165, 163, and 143 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, August 27th, 753 births and 492 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 12.3, 12.7, and 13.3 per 1,000 in the three preceding weeks, further rose to 13.6 last week, and was 1.5 per 1,000 above the mean rate during the same period in the large English towns. Among the Scottish towns the death-rates ranged from 9.7 in Edinburgh and 11.0 in Aberdeen to 17.5 in Dundee and 17.7 in Greenock. The death-rate from the principal infectious diseases averaged 2.3 per 1,000, the highest rates being recorded in Greenock and in Perth. The 254 deaths from all causes recorded in Glasgow included 3 which were referred to scarlet fever, 4 to diphtheria, 3 to whooping-cough, and 43 to diarrhoea. Four deaths from diarrhoea were registered in Dundee, 5 in Paisley, and 4 in Greenock; 2 deaths from whooping-cough occurred in Dundee, and 3 in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, August 27th, 530 births and 377 deaths were registered in the twenty-two principal urban districts of Ireland, as against 601 births and 361 deaths in the preceding period. The annual death-rate in these districts, which had been 15.3, 15.7, and 16.3 per 1,000 in the three preceding weeks, rose to 17.1 per 1,000 in the week under notice, this figure being 5.0 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 17.9 and 16.7 respectively, those in other districts ranging from 4.8 in Sligo and 6.6 in Queenstown to 27.2 in Galway and 28.6 in Drogheda, while Cork stood at 17.8, Londonderry at 10.8, Limerick at 20.5, and Waterford at 19.5. The zymotic death-rate in the twenty-two districts averaged 3.4 per 1,000, as against 2.4 per 1,000 in the preceding week.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary, £90 per annum.

CAMBRIDGESHIRE, ETC., ASYLUM, Fulbourn.—Second Assistant Medical Officer. Salary, £120 per annum, rising to £150 per annum.

CEYLON: COLOMBO MUNICIPALITY.—Bacteriologist and Analytical Chemist. Salary, Rs.6,000, rising to Rs 8,000.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £75 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £60 per annum.

DUDLEY: THE GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, £100 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—House-Surgeon (male). Salary at the rate of £75 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge Road, S.E.—House-Surgeon. Salary at the rate of £60 per annum.

FRENCH HOSPITAL, Shaftesbury Avenue, W.C.—Resident Medical Officer. Salary, £100 per annum.

HARROGATE INFIRMARY.—House-Surgeon. Salary, £75 per annum.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Honorarium, £20 for six months.

JERSEY INFIRMARY AND DISPENSARY.—Resident Medical Officer (male). Salary, £100 per annum.

KIRKCUDBRIGHT STEWARTRY.—School Medical Officer. Salary, £250 per annum.

LEICESTER INFIRMARY.—House-Physician. Salary at the rate of £100 per annum.

LIVERPOOL: CITY INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer.—Salary, £120 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum.

MANCHESTER CHILDREN'S HOSITAL.—Resident Medical Officer (male). Salary, £90 per annum.

MANCHESTER TOWNSHIP WORKHOUSE.—Junior Resident Assistant Medical Officer. Salary, £110 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) Resident Anaesthetist; (2) House-Physician; (3) House-Surgeon; (4) Assistant House-Physician; (5) Assistant House-Surgeon. Salary for (1) at the rate of £60 per annum; for (2) and (3) at the rate of £40 per annum; and (4) and (5) at the rate of £20 per annum.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon.—Salary, £75 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House-Surgeon. Salary, £60 per annum.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—House-Surgeon. Salary, £80 per annum.

PORTSMOUTH UNION.—(1) First Assistant Resident Medical Officer. Salary, £120 per annum, rising to £150 per annum. (2) Second Assistant Resident Medical Officer. Salary, £120, rising to £130 per annum.

PRESTON ROYAL INFIRMARY.—Resident Medical and Surgical Officer (male). Salary, £130 per annum.

PRESTWICH COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £150 per annum, increasing to £250 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150, and £5 annually in lieu of stimulants.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester Square, W.C.—Joint Morning House Anaesthetist. Honorarium of £25 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road E.C.—House-Physician. Salary at the rate of £60 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Senior House-Surgeon. Salary at the rate of £100 a year.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at the rate of £8 per annum.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion Square, W.C.—Clinical Assistant.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, W.C.—Junior House-Surgeon. Salary at the rate of £50 per annum.

SALFORD ROYAL HOSPITAL.—(1) House-Surgeon (male). Salary at the rate of £60 per annum. (2) Junior House-Surgeon (male). Salary at the rate of £50 per annum.

SALFORD UNION INFIRMARY.—Male Resident Assistant Medical Officer. Salary, £120 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

SHREWSBURY: SALOP INFIRMARY.—House-Physician. Salary at the rate of £70 per annum.

SOUTHPORT INFIRMARY.—Junior House and Visiting Surgeon (male). Salary, £70 per annum.

WEST HARTLEPOOL: CAMERON HOSPITAL.—House-Surgeon. Salary, £100 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Pembroke, co. Pembroke.

APPOINTMENTS.

BROWNLOW, H. L., F.R.C.S.Eng., L.R.C.P., District Medical Officer of the Henley Union.

CHEETHAM, D. H., M.B., Ch.B.Vict., Medical Officer of Health of the Audenshaw Urban District.

COPPOCK, Harold, M.B., Ch.B.Vict., Assistant Medical Officer to the National Sanatorium, Benenden, Kent.

HOLDEN, F. N., L.R.C.P. and S.Irel., Assistant Medical Officer of the Camberwell Parish Infirmary.

MACKINNON, R., M.B., Ch.B.Glasg., Assistant Medical Officer of the Islington Parish Infirmary.

MITCHELL, A., M.B., Ch.B., Assistant Medical Officer of the Birmingham Parish Infirmary.

PARR, T., M.D., B.Ch.Durh., Certifying Factory Surgeon for the Drogheda District, co. Louth.

WHARTON, J. M. A., M.D.Camb., Ophthalmic Surgeon to the Chorlton Union.

YEARNSHAW, H., M.B., C.M.Glasg., Medical Superintendent of the Salford Union Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

CAMPBELL.—At the Copse, Larbert, Stirlingshire, on August 24th, the wife of Robert B. Campbell, M.B., M.R.C.P., of a son.

MARRIAGE.

KEELING—ALLAN.—On August 25th, at St. Edmunds Church, Southwold, by the Rev. Maxwell F. Webb, Rector of Attleborough, George Sydney Keeling, M.D., second son of the Rev. W. H. Keeling, of Bradford, to Florence Amy, widow of the late Richard Allan, M.B., of Attleborough, Norfolk, youngest daughter of the late John Clarkson Maynard, J.P., of Erith, Kent.

DEATH.

KINGSTON.—On August 24th, at 43, Belvoir Road, St Andrew's Park, Bristol, Percy John Kingston, M.R.C.S., L.R.C.P., late of Yeovil, aged 46 years.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

EDINBURGH POST-GRADUATE VACATION COURSE.—Both the general course and the surgical course commence on Monday and will be daily in progress throughout the week.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Monday, 2 p.m.: Diseases of the Lungs. Tuesday, 2 p.m.: Diseases of the Kidneys. Wednesday, 2 p.m.: Diseases of the Digestive System and Children's Diseases. Thursday, 2 p.m.: Diseases of the Nervous System. Friday 2 p.m., Diseases of the Heart.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics. Operations, *X* Rays, at 2 p.m. daily. Monday, Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear; Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Eye, 10 a.m.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 10TH, 1910.

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SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, 29th, and 30th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[FIFTH NOTICE.]

LYXHAYR (Grove Mills, Mitcham, Surrey). A material intended as stuffing for beds, sofas, and chairs, was the exhibit of this firm. We examined it some two or three years ago, and found it to be fibre of vegetable origin, which, after sterilization, baking, and other treatment, still retained its light and springy qualities. In its naked-eye characteristics it is not unlike horse-hair, while the makers state that it cannot harbour insects of any kind. Even if this be not absolutely the case, the material offers great advantages over most of those which hitherto have been commonly used.

WIDENMANN, BROICHER AND COMPANY (33, Lime Street, London, E.C.). The preparations shown by this firm were those of Zimmer and Company, of Frankfort-on-Main, some of which, such as Euquinine and Validol, have been favourably known for several years. The former is ethyl-carbonate of quinine; being practically tasteless, it has been found particularly well suited for administration to children. Validol, on the other hand, is a compound of valerianic acid and menthol. It was introduced mainly as a nerve sedative, but is found by many people to prevent train and sea sickness. Another preparation was Allosan, a derivative of Santalol, stated to possess all the antigonorrhoeic powers of that drug. Its special advantage lies in the fact that tablets of it can be carried in the pocket, and taken whenever desired without attracting attention. A preparation decidedly good of its kind is Dymal, a salicylate powder which fulfils much the same needs as iodoform. Also shown were Eustenin, a double salt introduced as an easy fashion of combining iodine and theobrom treatment in dealing with arterio-sclerosis, and Estoral snuff, a compound of boric acid, menthol, and sugar of milk for use by persons subject to nasal catarrh.

HOSPITALS AND GENERAL CONTRACTS COMPANY, LIMITED (Mortimer Street, W.). The patent "porcelite" hospital furniture of this firm made a most attractive exhibit. It is claimed for it that it neither chips nor changes colour; it is certainly easily cleaned. A good deal of skill and knowledge of practical requirements was evident in the "witcux" sterilizing drums. They have no apertures to close when removed from the sterilizer and no shifting parts to get loose. The steam gains entrance through wire-grated, wool-stuffed orifices, which serve after sterilization as bacterial filters. The new Teske guillotine, which is not only detachable for cleaning but has a double-action knife—with rotary as well as forward motion—seemed to mark a real advance in a field which one had thought pretty well exhausted. The Teske stethonescope, too, certainly does a great deal of what is claimed for it in permitting selection of auscultatory signs. The apparatus designed by Dr. Hodgson for administration of ether by the "open" method seemed to have claims to attention as a means of giving the drug without any rebreathing, and at the same time without an undue expenditure of material. Also worth attention by anaesthetists was the Gossett sliding-mouth gag. It has a spring attachment to prevent it from falling out if the teeth are separated. The attention paid by this firm to the consideration of time- and space-saving devices was rendered evident by specially compact sets of apparatus, such as Bier's suction instruments, cases of Hegar's dilators, cautery sets, and many others.

EVANS SONS, LESCHER AND WEBB, LIMITED (60, Bartholomew Close, London, E.C.). Among the many attractive pharmaceutical preparations on the stall of this firm, we noted Membroids, a term applied to a mechanical device for securing that certain drugs shall pass through the stomach undissolved into the intestines. To this end they are enclosed in a cover of gelatinous appearance and made of material which, according to the manufacturers, is not susceptible of gastric digestion, but is easily broken up in the duodenum and small intestine. The more commonly used drugs put up in this form are Aspirin, Ipecacuanha, Male Fern, Salol, and Guaiacol. Also shown was Algiron which we understand to be an organic preparation of iron. It is stated to have not an astringent but slightly laxative effect and to bring about an increase in haemoglobin. A powder put up in the form of tablets called "Curdlettes" and prepared under the superintendence of Dr. H. E. Annett, Professor of Comparative Pathology at Liverpool, was also among the numerous preparations shown.

Fassett and Johnson (86, Clerkenwell Road, E.C.). The manufactures of several firms were on view at this stall, among them being those of Seabury and Johnson, whose plasters have long been well and favourably known. The same is true of their gauzes, which are packed in containers in such fashion that whatever quantity of gauze is required can easily be removed. The container, moreover, is made of wood wool fibre, and being air-tight it should effectually keep the dressings thoroughly fit for use for any reasonable time. Another partner in the stall was A. C. Barnes Company; it showed Argyrol, a bactericide which has attained considerable popularity, more especially in the treatment of conjunctivitis. The preparation of the Thermogene Company was also on view; this is an absorbent wool impregnated with agents which enable it to be used as a mild counter-irritant. It is a useful preparation which some rheumatic and other patients find very comforting. Its action can be varied by applying it either wet, dry, or covered with gauze. Also shown were Emol Keleet, a dusting powder familiar in connexion with the treatment of eczema and other skin irritations; and California Fig Syrup, a popular laxative in America.

W. H. Bailey and Son, Limited (38, Oxford Street, London, W.). A good many well devised appliances in the way of sterilizers, instrument tables and cabinets, were exhibited by this firm, including its registered operation table, which it appears to have supplied to a large number of hospitals in London and the provinces. As its principal exhibit, however, should perhaps be regarded its consulting room couch. In its latest form it is an excellent piece of furniture, which seems likely to meet the needs of all those who have occasion to examine patients in a lying posture in their consulting rooms, whatever the class of practice to which they devote themselves. In every detail this couch has been well thought out.

Cooper, Son, and Company (80, Gloucester Road, South Kensington). This firm of analytical and dispensing chemists had upon view a large number of its special pharmaceutical preparations. They include *Nasal Anesthol*, which is vended in collapsible tubes, and intended for nasal catarrh and hay fever. We are not aware whether its constituents are the same as those of Anesthol itself, this being intended as a local application in cases of lumbago and the like, and containing methyl salicylate and menthol. Prominent, too, was a preparation of grape yeast (*Saccharomyces*), which in France and elsewhere has been held to be highly useful in the treatment of boils and other skin diseases, and also of dyspepsia. A large series of throat pastilles, known under the term *Globina*, and *Lactesia*—a magnesium preparation—were also shown, the latter being also put up as "dental lactesia." In view of the persistency of the alkalinity of magnesia, it would seem likely to prove a valuable mouthwash for use at bedtime.

E. B. Meyrowitz and Co. (1A, Old Bond Street, W.). This firm had on view a large number of electro-surgical and medical apparatus, chiefly for use in ophthalmology, laryngology, otology, and urology. Especially noticeable was a new model of the Wyndham Powell Urethroscope, in which the lamp is substantial and the necessary focussing has been reduced to a single screw. The price is quite moderate. An urethroscope with an aëro-operating attachment was also shown. The attachment consists of a special nozzle for the urethroscope, with a collapsible air-tight joint interposed between the nozzle and tube. Special knives, probes, and curettes screw into the nozzle, and when in position the point of the knife or other instrument lies just inside the tube. By pushing the collapsible part forward it can be protruded and brought into use while the urethra is distended with air. Catheterizing and irrigating cystoscopes were shown fitted with the new telescope lately introduced by Carl Zeiss, Jena. This is said to give greatly improved results in extent and flatness of the visual field, brilliancy of illumination, definition, and magnification. It can be entirely withdrawn to permit of irrigation or washing and emptying the bladder through the full bore of the outer tube. Should the bladder become cloudy during the examination, it can either be emptied and refilled, or a double tube can be inserted and a continual flow be maintained until it is clear enough for further examination.

Clay, Paget and Co. (71, Ebury Street, Eaton Square, S.W.). A very neat apparatus, known as the "Veronelle," for the home preparation of sour milk, was shown by this firm, which also vends sour milk of its own manufacture. It is known as Uga Milk, the bacillus chiefly employed in its manufacture being, it was stated, that of Massol. Cream cheeses prepared on the same lines and containing, we understand, large quantities of the lactic acid-forming bacillus in question can also be obtained. Other work with a medical object undertaken by the firm is the modification of milk for the use of infants and the preparation of milk for the diabetic by removing its sugar contents.

The Hygienic Company (36, Southwark Bridge Road, London, S.E.) The exhibit of this firm was confined to two preparations both for use in connexion with baths. The more important of these were some cushions known as Zana containing salts which, on immersion in water, give off carbonic acid freely. The evolution is brisk, lasts about half an hour, and is in quantity sufficient to aërate thoroughly a full-size bath. The other preparation was Hygol Bath Essences for the preparation of the pine baths which, according to some German observers, are of definite value in the treatment of troubles of a neurasthenic order. Both these preparations, and more particularly the former, are of merit. Trial samples can be obtained, we understand, on application by any medical man.

Maxsol, Limited (54, Cheapside, E.C.). The address given is the city habitation of this firm of disinfectant manufacturers, which carries on its operations at Garratt Green, Tooting. Its product is a bactericide named Maxsol, which, we were informed, is non-poisonous and non-corrosive either to instruments or tissues. It is a compound apparently of hydrocarbon derivatives, but is nevertheless very readily miscible with water, this fact being demonstrated by vases containing solutions of various strengths. Wetting the finger with none of them produced any unpleasant effect. As in the case of most disinfectants, Maxsol was shown made up in various toilet articles, including a pleasant mouth-wash. If its bactericidal properties are as great as we were led to believe, this new disinfectant may prove a serious competitor to the many other disinfectants on the market.

Slack and Brownlow (Abbey Hey, Gorton, Manchester). Most medical men have been long familiar with the filters of this firm. They vary greatly in external appearance, according to the precise purpose of the filter—whether, for instance, it is one to be attached to the main supply of a house for filtration under pressure, or a drop filter for the pantry, or a glass filter for table use. The differences are still more considerable in the case of the firm's hospital filter, which has a thermometer attached, and provides hot and cold sterilized water of any temperature required for surgical purposes. In each and every case, however, the filtering medium is a candle or candles of porous porcelain; the filtrate, which passes through slowly or rapidly, according to the precise nature of the filter in use, is sterile, provided that the filtering medium itself receives proper attention, being cleansed and sterilized at intervals of a varying number of days. One very useful filter made by the firm has a chamber in which ice can be kept, and the filtered water cooled to a pleasant temperature without being brought into direct contact with the ice.

AËRATORS, LIMITED (Upper Edmonton, London, N.). The production of carbonic acid is the principal occupation of this firm, which in medical circles has already become fairly familar in connexion with the Prana carbon dioxide snow machine, as also with the Prana carbonic acid bath apparatus. The former has been devised to facilitate the carbonic acid snow treatment, now growing rapidly in favour among dermatologists. It is made in two sizes: one for use in hospitals, the other for private practice; the latter is readily portable. Both are thoroughly effective machines and very easily used. The bath apparatus is also simple and convenient, and with the aid of ordinary salts should make the preparation at home of Nauheim and other like baths quite an easy matter.

THE SANITAS ELECTRICAL COMPANY, LIMITED (61, New Cavendish Street, London, W.). This firm adopted the useful plan of splitting its exhibit into two sections located in different parts of the hall. One of these sections was devoted to diverse electrical apparatus, and the other entirely to *x*-ray outfits and appliances. A feature of the former was the earth-free "Multostat" universal machine, which we have already noticed in these columns. But universal machines of this kind lend themselves to so many new electrical applications, and show such an octopus-like capacity for development, that one almost requires a periodical bulletin regarding their newest acquirements. This particular machine provided galvanic current for electrolysis and ionic medication, sinusoidal-faradic current, galvano-sinusoidal current, and cautery and light; the motor power could be used for driving surgical drills, vibrators, pneumatic massage pumps, fans, and centrifuges; and slight additions enabled the machine also to give ordinary faradic and Leduc currents. The distinctive feature to which attention was drawn was the fact that the motor transformer was actually a motor generator. All the currents were generated by the dynamo of the machine, so that they were independent of the main current, the special advantage of this provision being the avoidance of earth-shocks. At their other stand the firm exhibited their outfit for instantaneous radiography, *x*-ray examination, and treatment, worked by a mercury interrupter. It included one of a special range of intensified spark-coils, worked in conjunction with the motor-mercury break, both pieces of apparatus being called the "Sanax," and the latter being "pitched" to a great rapidity of interruption and to a high degree of efficiency for the passage of heavy currents. The coil was of rather special interest. The iron core of its primary was made small so as to enable it to reach and to lose its maximum degree of magnetic saturation with great rapidity, corresponding to the rate of the interrupter. Around these central exhibits were grouped a large number of interesting "satellites," including the Schnée four-cell bath; a nebulizer for atomizing medicaments such as those used in the treatment of throat or ear, cystoscopes and surgical lamps, electrodes for ionic medication, vibrators, galvanic and faradic switchboards, an intensifying screen, after Geler, for radiography, and various accessories for *x*-ray application and protection. Physio-therapeutists found a special attraction in the physical exercise apparatus, hydro-therapeutic appliances, and baths of light and radiant heat and hot air, which figured in this display.

HERTZ AND CO. (9, Mincing Lane, London, E.C.). The arsenious iron water, known as Levico, Jensen's cod-liver oil, an ammonium chloride inhaler, and various toilet preparations sold under the name of Haliflor, were the principal exhibits of this firm. Levico waters, which in the last few years have become fairly well known, derive their name from a pleasant health resort lying at an elevation of about 1,700 ft. The waters arise at Vetriolo, some 3 000 ft. higher up the mountain. They are of two strengths, the stronger containing a considerable amount both of arsenic and iron, and the weaker merely a trace of arsenious acid, together with iron sulphate and iron bicarbonate. As exported the waters are still of two strengths, but the weak water has had added to it a little of the strong water, so that its arsenic contents are raised to 0 00095 per 1,000. The waters are quite suitable for administration in England, and to facilitate their use some well devised diet forms are issued. These, which are put up somewhat like cheque books, enable the physician to hand full instructions to his patient for his guidance during the weeks of "cure," while the counterfoils keep the prescriber informed of the amount of arsenic which is being taken. The chloride of ammonia inhaler vended under the term Ideal will be found fully described with much approval at page 578 of our issue for March 5th, 1910, the asthma cigarettes of the firm being favourably mentioned on the same occasion. The Haliflor soap and other toilet preparations are notable for the delicacy of their perfume.

F. R. BUTT AND CO. (11, Denmark Street, Charing Cross Road, W.C.). The most interesting novelty at this stall was a new self starting auto-magnetic interruptor, working from any voltage up to 240, and giving a high or low rate of interruption as required. The interruptor has been specially designed so that the rate of interruption can be varied within wide limits, and the claim was made for it that it possesses other distinctive practical advantages, such as the ease with which it can be taken apart and cleaned; these, although they may appear commonplace, are really of importance if this most difficult and uncontrollable item in the *x*-ray outfit is to be worked with moderate satisfaction. This new mercury interruptor really represented a combination of the auto magnetic principle of rotation, together with the faculty of starting the break by means of a switch, in a similar fashion to those breaks which supply a motor. Another feature at this stand was a heavy discharge coil, which had a hollow, laminated core. The purpose of this neat device is to get rid of any eddy current, which, if set up, was promptly sectioned off, so to speak, by the laminated arrangement. This arrangement also assists the dissipation of heat produced by the passage of heavy currents through the primary winding. Other exhibits included a new *x*-ray couch fitted with a cover made of wood, the idea being that the substitution of something rigid for the usual cover would enable more perfect compression to be obtained; and also a radiographic and compression apparatus made to a special design.

A. AND M. ZIMMERMAN (3, Lloyd's Avenue). This firm was showing Scherings Medinol, an easily soluble hypnotic for internal, rectal, or subcutaneous application. For subcutaneous injection a 10 per cent. solution is recommended (0.5 gram dissolved in 5 c.cm. water). Abscesses, it is stated, never occur. In cases in which delirium tremens threatened, chloral hydrate could be entirely, or at any rate partially, superseded by subcutaneous or rectal injections of Medinol. It is also recommended in the treatment of morphinomania, in which it combines the sedative effects with the suggestive or "blind" injections. At the same stall was a small but very effective formalin atomizer for sterilizing the air of dwelling and sick rooms by spraying with formalin solutions, sold in nickle-plated form at a very low figure.

THE DOWSING RADIANT HEAT COMPANY (24, Budge Row, Cannon Street, London, E.C.). The bed for giving radiant heat and light treatment exhibited and worked by this firm is now so familiar an object in most hydropathic establishments that any detailed description of it is superfluous. Little by little it has been steadily improved, and in its latest form may be regarded as both a safe and efficient apparatus for applying the treatment in question. A list supplied by the firm shows that there are over one hundred places in England and abroad where treatment by these baths can be obtained. All of them, we understand, are under direct medical supervision.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

ABERDEEN BRANCH.

A SPECIAL meeting of the Branch was held in the Medico-Chirurgical Society's Rooms, 29, King Street, Aberdeen, on Thursday, August 25th, at 8.30 p.m. There was a large attendance of members, and Dr. G. M. EDMOND was called to the chair.

Medical Officership of Old Mill Poorhouse. — The business before the meeting was the consideration of the appointment of a visiting medical officer to Old Mill Poorhouse. This appointment, rendered vacant by the death of Dr. J. J. Y. Dalgarno, was recently advertised at a salary of £75 per annum (including £5 per annum for lunacy cases). After full consideration of the rules and regulations under which the appointment is to be held, taking into account the distance of the hospital from the city (over three miles), and the average number of cases under treatment (over 200), the meeting unanimously resolved: (1) That the present salary offered by the parish council for a visiting medical officer to Old Mill Poorhouse is grossly inadequate. (2) That no medical practitioner should apply for the post under the present conditions. (3) That the minimum salary for the post should be £150 per annum. It was further resolved that a circular containing these resolutions should be sent to every medical practitioner in Aberdeen and neighbourhood, and that the parish council and the Local Government Board (Scotland) should be informed of the action taken by the Branch.

THE RECENT ELECTION (1910) TO THE CENTRAL COUCIL.

TO THE MEMBERS OF THE LANCASHIRE AND CHESHIRE BRANCH.

GENTLEMEN,—We feel it to be our duty to express to the members of the Branch our thanks for the honour of re-election to serve them on the Central Council, and for the very great and almost unique additional compliment in the fact that the election was uncontested.

It is greatly to be regretted that there is not some means of letting the members generally know what an enormous amount of work, for the Association and for the profession, is constantly being done by the Standing Committees. We may briefly here say that our own share is represented by from twenty to thirty special visits to London per annum by each of us.

We desire to be afforded opportunities of meeting you and discussing those points which may specially interest you, both for your information as to what is going on and for our information as to your views. We should therefore be glad to receive an invitation from you to attend one of your Division meetings. Experience has shown that it is quite sufficient for one of us to attend any given meeting, also that the visits should be spread over the winter, and not crowded into the months of May and June only.

We repeat emphatically our previous assurance that we represent you not as individuals with private views, but as loyal members of that party which desires to extend the powers of the Association, so that it may better uphold the interests of the profession.—We are, gentlemen, your grateful servants,

F. CHARLES LARKIN.
T. W. H. GARSTANG.
J. H. TAYLOR.

August, 1910.

Association Notices.

ELECTION OF CENTRAL COUNCIL 1910-11.

To those Branches or groups of Branches in the United Kingdom who failed to make nominations for election of members of the 1910–11 Council,

Notice is hereby given that nominations of candidates for election of Members of Council by Branches or groups of Branches in the United Kingdom by voting papers for the year 1910–11 must be forwarded to reach the Financial Secretary and Business Manager, at the Office of the Association, not later than September 14th, 1910, and that each nomination must be on the prescribed form, copies of which will be furnished by the Financial Secretary and Business Manager upon application.

Separate forms have been prepared for a nomination by a Division and for a nomination by any three members respectively, and those applying are requested to state for which purpose the form is desired.

Voting papers containing the names of all candidates duly nominated will be issued from the Central Office on September 21st, and will be returnable not later than September 26th.

By Order of the Council,

GUY ELLISTON,
Financial Secretary and Business Manager.

August 3rd, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST ANGLIAN BRANCH.—The autumn meeting of this Branch will be held at Hunstanton on Thursday, September 15th. Members wishing to read papers or to show cases or specimens should communicate at once with Mr. Hamilton A. Ballance, M.S., Norwich.—B. H. NICHOLSON, Colchester, General Secretary of the Branch.

NORTH OF ENGLAND BRANCH.—A meeting of the North of England Branch Council will be held in the Royal Victoria Infirmary, Newcastle-on-Tyne, on Friday, September 16th, at 3.45 p.m.—DAVID F. TODD, Honorary Secretary, Sunderland.

SOUTH-EASTERN BRANCH: BROMLEY DIVISION.—A meeting of this Division will be held at the Bell Hotel, Bromley, on Thursday, September 29th, at 8.30 p.m., to discuss the question of "School Children found Defective upon Medical Inspection." The Medical Secretary of the Association has accepted an invitation to assist in the discussion.—A. TENNYSON SMITH, Honorary Secretary, Shanklin, Orpington, Kent.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns, 7,906 births and 3,940 deaths were registered during the week ending Saturday last, September 3rd. The annual rate of mortality in these towns, which had been 11 1, 11.5, and 12.1 in the three preceding weeks, was again 12 1 per 1,000 last week. The rates in the several towns ranged from 2.6 in Hornsey, 4.3 in Smethwick, 4.7 in Leyton, 4 9 in Bournemouth, and 5.0 in Handsworth (Staffs), to 19.7 in Preston, 20.4 in Grimsby and in Sunderland, 24.7 in Birkenhead, and 25.0 in Tynemouth. The death-rate from the principal infectious diseases averaged 2 2 per 1000; in London the rate did not exceed 1.5 per 1,000, while among the seventy-six other large towns it ranged upwards to 6.6 in Preston, 6.7 in Bootle, 6.8 in Birkenhead, and 7.1 in Hull. Measles caused a death-rate of 2.9 in Oldham; whooping-cough of 1.6 in Rotherham and in Gateshead, and 2.1 in Grimsby; and diarrhoea of 5 2 in Preston, 5.3 in Burnley, 5.9 in Bootle, 6.3 in Hull, and 6 4 in Birkenhead. The mortality from scarlet fever, from diphtheria, or from enteric fever showed no marked excess in any of the towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,490, 1,423, and 1,447 at the end of the three preceding weeks rose again to 1,455 at the end of the week under notice; 183 new cases were admitted during the week, against 163, 143, and 159 in the three preceding works.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, September 3rd, 779 births and 483 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 12 7, 13 3, and 13 6 per 1,000 in the three preceding weeks, declined to 13.3 last week, and was 1 2 per 1,000 above the mean rate during the same period in the large English towns. Among the Scottish towns the death-rates ranged from 7.2 in Leith and 9 3 in Aberdeen, to 16.8 in Perth and 20.2 in Dundee. The death-rate from the principal infectious diseases averaged 2 5 per 1,000, the highest rates being recorded in Paisley and in Greenock. The 237 deaths from all causes recorded in Glasgow included 3 which were referred to scarlet fever, 3 to diphtheria, 6 to whooping-cough, 1 to enteric fever, and 41 to diarrhoea. Two deaths from diphtheria were registered in Edinburgh, and 2 from whooping-cough in Greenock; 8 deaths from diarrhoea occurred in Paisley, 7 in Dundee, 6 in Greenock, and 4 in Aberdeen.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—House-Surgeon. Salary, £120 per annum.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £60 per annum.

BIRMINGHAM GENERAL HOSPITAL.—Resident Pathologist. Salary, £50 per annum.

BOURNEMOUTH: ROYAL NATIONAL SANATORIUM.—Resident Medical Officer. Salary, £12 per month.

BURY ST. EDMUNDS: WEST SUFFOLK GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—Assistant Surgeon.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer (male). Salary to commence, £140 per annum.

CEYLON: COLOMBO MUNICIPALITY.—Bacteriologist and Analytical Chemist. Salary, Rs. 6,000, rising to Rs. 8,000.

CHELTENHAM GENERAL HOSPITAL.—(1) House-Physician; (2) Surgeon-in-Charge of the Branch Dispensary. Salary, £75 and £80 respectively.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £60 per annum.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—Resident Medical Officer Salary at the rate of £50 per annum.

COLCHESTER: ESSEX COUNTY HOSPITAL.—(1) House-Surgeon, (2) House-Physician. Salary, £80 each per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

DREADNOUGHT HOSPITAL, Greenwich, S.E.—(1) Two House-Physicians. Salary, £50 per annum. (2) Two House-Surgeons. Salary, £50 per annum. (3) Assistant Surgeon.

DUDLEY: THE GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, £100 per annum.

EXETER.—Assistant School Medical Officer of County of Devon. Salary, £250 per annum.

FRENCH HOSPITAL, Shaftesbury Avenue, W.C.—Resident Medical Officer. Salary, £100 per annum.

HALIFAX ROYAL INFIRMARY.—Third House-Surgeon (male). Salary, £80 per annum.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Honorarium, £20 for six months.

JERSEY INFIRMARY AND DISPENSARY.—Resident Medical Officer (male). Salary, £100 per annum.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

LEICESTER INFIRMARY.—House-Physician. Salary at the rate of £100 per annum.

KIRKCUDBRIGHT STEWARTRY.—School Medical Officer. Salary, £250 per annum.

LIVERPOOL: CITY INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer. Salary, £120 per annum.

LOWESTOFT HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.—House-Surgeon. Salary, £75 per annum.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Clinical Pathologist. Annual honorarium of £50.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House-Surgeon. Salary, £60 per annum.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Male Assistant House-Surgeon. Honorarium of £20 for six months.

NOTTINGHAM GENERAL HOSPITAL.—Honorary Assistant Physician.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

PRESTON ROYAL INFIRMARY.—Resident Medical and Surgical Officer (male). Salary, £130 per annum.

PRESTWICH COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £150 per annum, increasing to £250 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—House-Physician. Salary at the rate of £100 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Senior House-Surgeon. Salary at the rate of £60 per annum.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, W.C.—Junior House-Surgeon. Salary at the rate of £50 per annum.

SALISBURY: FISHERTON HOUSE ASYLUM.—Assistant Medical Officer; male. Salary, £150 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (male). Salary, £70 per annum.

VENTNOR: THE ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Assistant Resident Medical Officer.—Salary, £100 per annum.

WAKEFIELD: WEST RIDING ASYLUM.—(1) Medical Superintendent. Salary, £1,000 per annum. (2) Senior Assistant Medical Officer. Salary, £250 per annum, rising to £300 per annum

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Dromara, co. Down, and Swinton, co. York.

APPOINTMENTS.

BENSON, J. A., L.R.P., L.R.C.S.Edin., District Medical Officer of the Great Ouseburn Union.

CUNLIFFE, E. N., M.D., Ch.B.Manchester, M.B., B.S Lond., M.R.C.P. Lond., Honorary Assistant Physician to the Manchester Hospital for Consumption and Diseases of the Throat, vice J. G. McLaughton, M.D., M.R.C.P., resigned.

JELLICOE, S. C., M.R.C.S., L.R.C.P., Medical Officer of Health of the Totnes Urban District.

JOHNSON, G. P., M.D.Glasg., D.P.H., Medical Officer of Health of the County Borough of Stoke-on-Trent.

MAURICE, W. B., M.R.C.S., L.R.C.P., Medical Officer of Health of the Marlborough Urban District.

SMITH, M. B., M.B., B.Ch.Edin., Assistant Medical Officer of the King's Norton Union Infirmary.

MANCHESTER ROYAL INFIRMARY.—The following appointments have been made:—

Senior House-Surgeons: G. J. French, M.R.C.S., L.R.C.P.; G. E. E. Nicholls, M.B., Ch.B.Vict.

Junior House-Surgeons: E. L. Horsburgh, M.B., B.S.Lond.; F. H. Diggle, M.B., Ch.B.Vict., M.R.C.S., L.R.C.P.

House-Physician: A. H. Elmslie, M.B., Ch.B.Edin.

ST. THOMAS'S HOSPITAL.—The following gentlemen have been selected as house officers:

Casualty Officers and Resident Anaesthetists.—B. C. Maybury, M.R.C.S., L.R.C.P.; F. C. Pridham, M.R.C.S., L.R.C.P.; J. S. Hopwood, M.R.C.S., L.R.C.P.; T. C. R. Archer, M.R.C.S., L.R.C.P.; W. R. Parkinson, M.R.C.S., L.R.C.P.; W. Shipton, B.A.Cantab., M.R.C.S., L.R.C.P.

Casualty Assistants.—K. D. Marriner, M.R.C.S., L.R.C.P.; H. L. Mann, M.R.C.S., L.R.C.P.

Resident House-Physicians.—E. A. Seymour, M.R.C.S., L.R.C.P. D. C. Dobell, M.A., M.B., B.Ch.Oxon.; F. J. Aldridge, B.A., M.B., B.Ch.Oxon., M.R.C.S., L.R.C.P.; E. M. Lauderdale, B.A.Cantab., M.R.C.S., L.R.C.P.

Resident House-Surgeons.—A. H. Richardson, M.A.Cantab., M.R.C.P., L.R.C.P.; L. Meakin, M.A., B.C.Cantab., M.R.C.S., L.R.C.P.; W. L. Pink, M.B., B.S.Lond., M.R.C.S., L.R.C.P.; G. Hoffmann, B.A.Cantab., M.R.C.S., L.R.C.P.

House-Surgeon to Block 8.—A. F. Morcom, B.A.Cantab., M.R.C.S., L.R.C.P.

Obstetric House-Physicians.—(Senior) H. B. Wilson, B.A.Cantab., M.R.C.S., L.R.C.P.; (Junior) L. B. Perry, B.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P.

Ophthalmic House-Surgeons.—(Senior) W. Victor Corbett, M.R.C.S., L.R.C.P.; (Junior) J. P. Lupton, M.R.C.S., L.R.C.P.

Clinical Assistants.—Throat: H. V. Welch, M.R.C.S., L.R.C.P. Children's Surgical: H. V. Welch, M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

WILBERFORCE SMITH.—On September 5th, at West End Avenue, Pinner, Alsie, wife of D. Wilberforce Smith, M.B., B.S., of a son.

MARRIAGE.

BOYLE—GREEN.—On September 3rd, at St. Marylebone Church, by the Rev. W. D. Morrison, LL.D., Rector of the Parish, H. Edmund G. Boyle, M.R.C.S., L.R.C.P., Anaesthetist to St. Bartholomew's Hospital, to Mildred Ethel Green, widow of the late Leslie Green, F.R.I.B.A., and elder daughter of John W. Wildy, Esq.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Monday, 2 p.m.: Diseases of the Lungs. Tuesday, 2 p.m.: Diseases of the Kidneys. Wednesday, 2 p.m.: Diseases of the Digestive System and Children's Diseases. Thursday, 2 p.m.: Diseases of the Nervous System. Friday 2 p.m., Diseases of the Heart.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Tuesday, Medical. Wednesday, Surgical. Thursday, Medical. Friday, Ear, Nose, and Throat.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics. *X* Rays. Operations, at 2 p.m. daily. Monday, Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m. Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m. Eye, 10 a.m.; Throat, Nose, and Ear Operations, 10 p.m.

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SUPPLEMENT

TO THE

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LONDON: SATURDAY, SEPTEMBER 17TH, 1910.

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SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, 29th, and 30th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[SIXTH NOTICE.]

BURROUGHS, WELLCOME, AND CO. (Snow Hill Buildings, London, E.C.). It is, we are afraid, impossible to do justice to the exhibits of this firm in a notice of this kind. They occupied two stalls and included so many different articles that it is scarcely possible to do more than say that the enviable reputation of the firm seemed to be well sustained. Its work covers a very wide field, and it is equally notable for the amount of scientific industry engaged and the attractiveness of the fashion in which its products are, so to speak, marketed. This really means little more than excellence of finish and appreciation of the minutiae which make a thing convenient or otherwise to use. In the latter connexion tabloids, of course, spring to mind, but the quotation of Vaporoles would be equally to the point. In this form, apart from inhalants, are put up the firm's preparation of the more desirable of the active principles of ergot, which it has named Ernutin, and its preparation from the pituitary gland; the latter is of much interest in view of its recent approval by several authorities in the prophylactic treatment of shock. This and other products of organic origin, including antitoxin serums of various orders, are prepared at the Wellcome Physiological Laboratories at Dartford, which are well worth visiting for themselves. Most of the other preparations we noted were all more or less familiar, and included the popular Kepler Malt Extract and the equally popular "Enule" brand suppositories and Hazeline snow and cream; but Nizin, an antiseptic based on zinc, and the Vaporole Ammonium Chloride Inhaler were both new to us. The latter is a very clever contrivance indeed, and more satisfactory to use than almost any of its many rivals. It is compact, small, safe to carry about, and gives a full supply of perfectly neutral vapour. This is not easy to secure with appliances necessitating droppers or dipping, but secures itself, so to speak, in this inhaler, the precise quantities necessary of ammonia and acid being contained in the vaporoles. In addition, there is no chance of a disaster through the upsetting of the acid bottle. Those who desire to have by them an efficient inhaler for use in case of need should certainly examine this Vaporole brand appliance.

EDWARD ARNOLD (41-43, Maddox Street, Bond Street, W.). As one of medical book publishers this firm is a comparatively newcomer, but the standard it has reached is already high. The books standing to its credit and shown on this occasion included Dr. Robert Hutchison's *Lectures on Diseases of Children*, a book of high and deserved popularity, of which a revised and enlarged edition has now appeared. A further very useful work on *Food and the Principles of Dietetics*, by the same author, was also shown in a revised form. It contains much information difficult to find elsewhere, and all given in a concise and practical manner. Also of interest was the volume, *Contributions to Abdominal Surgery*, the author being the late Mr. Harold Leslie Barnard, whose early death was rightly regarded as putting an end to a career of the highest promise. The volume commences with a memoir of the author by Mr. H. H. Bashford. Dr. William Calwell's *Textbook of Medical Treatment* was also shown; its peculiarity is that all the subjects are alphabetically arranged, further facilities being offered by cross-references and an excellent index. Another book by a deceased author was a *System of Clinical Medicine*, by Dr. Thomas D. Savill, whose death we recorded with regret early this year. The second edition of his book had been revised by him previous to his death, his assistants in the task being Dr. F. S. Langmead and Dr. S. Savill. Also on view were an excellently illustrated second edition of Dr. Purves Stewart's book on the *Diagnosis of Nervous Diseases*; a third edition of *Practical Physiology*, edited by Dr. M S. Pembrey; and the interesting volume by Mr. E. W. Morris, entitled, *A History of the London Hospital*.

THE BAYER COMPANY, LIMITED (19, St. Dunstan's Hill). Thanks to its introduction of several notably successful preparations, anything which this firm brings forward must always command attention. Aspirin, Veronal, and Phenacetin are among those which stand to its credit, while a newcomer this year was Spirosal. It is a salicylic acid preparation in-

tended for external use, and stated to be efficient in dealing with such disorders as sciatica, lumbago, and others which are often vaguely classed as rheumatic. Before use it is best to dilute it to 1 in 3 with rectified spirits. Protargol was also shown; as an organic silver preparation it has a fairly well established position in the treatment of conjunctivitis and gonorrhoea, and there would appear to be room for its use in other mucous membrane irritations. It is a favourite preparation, too, with some observers in dealing with burns, the protargol being then made the effective component of an ointment. That powerful diuretic, Theocin Sodium Acetate, was also among the preparations shown; while we also noted Tannigen, which has been recommended in the treatment of summer diarrhoea; Helmitol, a urinary antiseptic; Citarin, a uric acid solvent; and Sophol. The latter is a new preparation of the same general order as the firm's protargol, but containing apparently a higher percentage of silver. Despite this fact, it is stated to be entirely unirritating, and is suggested for prophylactic use in possible cases of ophthalmia neonatorum.

Alfred E. Dean (82, Hatton Garden, London, E.C.). The exhibit *de luxe* at this stand was the equipment for radio-diagnosis—a replica of the fine apparatus which is in use at the London Hospital, as well as at several provincial and Continental institutions. Its principal feature was the diascope, about which much could be written. Briefly, the object of the instrument is to afford the minimum amount of discomfort to the patient and the maximum amount of protection to the operator. The essential principle in screen building, upon which most radiographers insist, is parallel movement between the tube centre and the screen. This diascope is so arranged that, whatever the movement of the tube, the *x*-ray emanation cannot fall outside the metal screen. On the front of the large shield the whole of the control is centred, and the tube moves from side to side and upwards and downwards as required. The patient, of course, is in position between tube and screen, and a revolving stool for him, operated by the foot of the radiologist and fixed at a required point, is a feature of the equipment. The apparatus has its special value in thoracic examinations and in the diagnosis of stomach conditions after a bismuth meal. A steel couch for exploration, compression, and stereoscopy; the tube stand, "Climax," for treatment, and an automatic rocker for developing plates were features of this stand; and an exhibit of special interest, which was demonstrated in the course of the week, was the "Leucodescent" therapeutic lamp; it is being used by some British workers for the application of radiant heat. The lamp is of American manufacture, and consists of a single large vessel, in a funnel-shaped projector, lined with a reflecting surface. The projector can be lowered or raised by a system of counterweights, or turned in any direction by the hand. It possesses a thick filament, requiring 12 ampères. A temperature of 400° F. is obtained, and it is claimed that as the heat is perfectly dry it can be endured with fair comfort and without damage to the skin. The value of the lamp lies in the fact that it is a source of infra-red rays, the therapeutic properties of which are becoming better understood.

The Society of Chemical Industry (8, Harp Lane, E.C.). This Basle firm had on view amongst other exhibits a substance to which they have given the name *Phytin*; it is an attempt to embody in a single substance the natural phosphorus salts found in the seeds of plants, and which constitute a considerable proportion of the phosphorus ingested with the daily food of mankind. It is recommended in all conditions in which assimilation of phosphorus with the ordinary food is defective, as in rickets and in defective cerebral activity of children and young adults; secondly, it is recommended in all conditions associated with an extensive loss of phosphorus from the body—for example, osteomalacia, pregnancy and lactation, as well as generally in all wasting diseases and anaemias and during convalescence. — The Roborat Company, at the same address, had on view a large number of their small portable and complete "Quantitest" apparatus. Noticeable among these was the "large quantitest," a complete set of various instruments by means of which a quantitative analysis of urine, gastric juice, faeces, etc., might be made with a minimal expenditure of time and trouble.—The Syphilis Diagnosticum appliance also shown contains all that is necessary for the carrying out of a Wassermann reaction, a test which is becoming more and more valuable for diagnosis and prognosis. Simple and ingenious apparatus for carrying out Calmette's ocular or von Pirquet's cutaneous test for tuberculosis, for using Professor Sahli's method of estimating the percentage of haemoglobin, or for measuring rapidly the blood pressure, were also on view. The Gastrotest and Pancreatest cabinets contain all necessary reagents for examination of the stomach contents and pancreatic juice respectively, while the Haematest should render easy the detection of occult blood in the stools or in vomit. It is claimed for all these apparatus that the work can be done rapidly and certainly without involving any great expense or making great claims upon the technical skill of the observer.

Buxton. The exhibit of this Thermal Mineral Water Station was successful in that it brought out the fact that the arrangements at the bath establishment include every form of balneotherapy in addition to high-frequency, radiant-heat, and light treatment. An endeavour was also made to bring into relief the beautiful scenery surrounding the spa, the luxurious character of its hotel accommodation, the ample provision for amusement and agreeable exercise both in summer and winter, and some of the meteorological advantages in the way of a pure and bracing atmosphere relatively free from humidity, secured for the town by its elevation of 1,000 feet and a ring of hills nearly twice that height

A. Wander, Limited (1 and 3, Leonard Street, City Road, London, E.C.). To the exhibits of this firm we have drawn attention on previous occasions. One is Ovaltine, a milk, egg, and malt powder, containing a certain proportion of free lecithin, which makes an agreeable food beverage on admixture with milk or water. It appears to be held in much favour in foreign sanatoriums where excess feeding is practised, and to be entitled to a good place among artificial foods. Another is Dry Malt Extract (Wander). It is easy to take, either dry or mixed with milk, and appears to have a normal degree of diastasic power. The third exhibit was Formitrol Pastilles, each of which is understood to contain ⅓ grain of formaldehyde. Their special point is the slowness of their solution, a decided advantage when throat medication on these lines is in question.

J. and J. Taunton, Limited (Belgrave Works, Sherbourne Road, Balsall Heath, Birmingham). This firm has specialized so long in the manufacture of beds for hospital and asylum use that its products must be fairly well known to most medical men. With one exception, they are all fitted with the Diagna mesh mattress, which is guaranteed against sagging for twenty years. The exception is a special bedstead for children's homes. This has a canvas mattress which can be tightened or loosened at will, and when need be removed altogether for cleansing purposes. The idea is good, and being well carried out this bed is likely to gain favour. Another new bed, though otherwise resembling an ordinary surgical bedstead, was found to be supplied with a device by which its mattress can be elevated at will from either end. There are many circumstances in which this possibility would prove advantageous; it would, for instance, seem to render anything in the way of blocks for raising the foot-end of a bed occupied by a "shock" patient quite superfluous. Also shown was the well-designed and thoroughly practical bedstead for maternity cases, known as the Rotunda, and a very useful contrivance for moving bedsteads about a ward or on to a verandah

without undue exertion and with a minimum of noise and shaking.

E. Merck (16, Jewry Street, London, E.C.). This highly reputed firm had an exhibit of equal interest to the prescriber, the pharmacist, and the surgeon. The series of alkaloids, glycosides, and fine chemicals was, indeed, so large that only a pure pharmacologist, perhaps, could seize all its strong points. Examples of practically all the alkaloids whose physiological action has been more or less definitely ascertained were to be seen, as well as products of animal origin, such as Afermol, a powdered blood serum for the treatment of suppurating wounds, and Subsitol, a powdered blood fibrin for use in dealing with badly granulating wounds. They both represent practical methods of applying the apparent teachings of recent work in the physiological laboratory, and are worth consideration when occasion offers. Another preparation which we saw for the first time was Perhydrol, which is stated to be an absolutely pure neutral solution of peroxide of hydrogen and to yield 100 times its volume of oxygen when disassociated on solution. Tropacocaine, which is regarded with much favour by certain advocates of spinal analgesia, was likewise among the drugs shown, as also Fibrolysin, a thiosinamine compound esteemed to bring about absorption of scar tissue; so, too, were bromopin and iodine, products representing in each case a combination of the metal indicated with sesame oil. It is claimed for both of them that the inconveniences often arising from the use of iodine and bromine respectively never occur, and for this view there would seem to be considerable support.

Charles Hearson and Co., Limited (235, Regent Street, London, W.). To many visitors this must have been far the most interesting exhibit of all, while for ourselves we can say that we have never before seen an equally large and equally admirable collection of instruments for research work. Whatever his ability, the bacteriologist must owe much of his success to his appliances, and those now at his disposal are infinitely superior to the tools of his predecessors. Mr. Hearson himself would be the first to admit this, though his incubators, shakers, and other appliances have long been familiar objects in most laboratories. Most of the incubators shown would work either with gas, electricity, or oil lamps, and one or other of them would ensure practically *ad infinitum* almost any temperature desired. The centrifuges shown all proved easy to work, and one of them developed in a very short space of time the high velocity of 8,000 revolutions a minute. Another exhibit which should appeal with much force to all those who work in laboratories common to many workers was one cupboard incubator in which each man's cultures could be removed for examination without in any wise disturbing the remainder. A very practical incubator for sour-milk users was among the appliances designed for the commoner purposes of life; its working is automatic.

Corbyn, Stacey and Co. (Brunton's Wharf, 673, Commercial Road East). The exhibit of this firm of manufacturing chemists included a large number of attractive looking pharmaceutical products, among which we noted in particular Hexiod, an elixir stated to contain six iodides. It is put forward as a general tonic and alterative. Another useful kind of preparation was "Iodized Oil," which we understand to be iodine in combination with a vegetable oil. It is intended for external application as a slight counter-irritant, or when it is hoped that iodine absorption may ensue, and is stated not to stain the skin despite the amount of iodine contained. Two pleasant mild laxatives also attracted attention, one being a non-effervescing saline, called San Cristoval Health Powder, and the other, Banana Chocolate.

Cassell and Co. (La Belle Sauvage, London, E.C.). The medical branch of this firm of publishers is responsible for a good many manuals for practitioners and students, of which several have attained marked popularity. They include Morris's *Diseases of the Skin*, of which 13,000 copies have now been issued, and Treves's *Manual of Operative Surgery*. In the later edition Mr. Jonathan Hutchinson co-operated with the original author, and the book has been brought well up to date. One of the latest additions to the firm's list is Mr. Ernest Dore's translation of the volume by Wickham and Degrais on radium therapy. It is notable for its coloured illustrations, these being particularly fine. We noted, too, a new edition of *Clinical Methods*, by Hutchison and Rainy. It is well illustrated, and the writing at once succinct and graphic. Another useful book, also in its second edition and shown on this occasion, was *Serums, Vaccines, and Toxins in Treatment and Diagnosis*. No book on the subject could possibly be entirely up to date, but that hardly detracts from the value of this volume, since it gives an excellent summary of all the more considered views and the best established methods. Also calling for mention seems the volume on *Insanity and Allied Neuroses* by Dr. George Savage, who in the preparation of the present enlarged edition of this very readable book was assisted by Dr. Edwin Goodall of Cardiff.

Messrs. Allen and Hanburys, Limited (Wigmore Street, W.). The great attraction of this stall was undoubtedly the St Margaret Invalid Lifter, used at the Johns Hopkins Hospital, Baltimore. By its means the heaviest patient can be lifted in any position and moved from room to room, from bed to couch, or to the bath. The wheel base is necessarily extensive, but can be moved so as to permit access to the bed in any position. The horizontal crane arm is fitted with travelling suspension like that in use in machine shops. The elevating mechanism is an oil pump worked by the foot similar to that used in pedestal operating tables. The operating tables shown were of very good workmanship and highly finished; they are fitted with the new adjustable back rest with to-and-fro and vertical movement to permit exact attainment of the desired position in operating on the kidney or gall bladder. Amongst the large assortment of modern instruments we noticed in particular Mayo's tripartite abdominal retractor; Watson Williams's tonsil forceps, which are devised so as to grip the deeper parts of the tonsil and permit enucleation without difficulty; Morrison's repressor for use when closing the abdominal wound (it consists of three flat plates attached to long forceps handles which close them when required and allow of withdrawal through the last stitch aperture); Bonney's spring clips, which afford a simple means of protecting the surface of the wound through the abdominal walls when removing a cancerous uterus by the suprapubic route; and Kocher's box-joint crushing forceps, these being so constructed as to prevent the lateral displacement that so often occurs under strain with the usual type of hinge. The "Macnair" water sterilizer, which the firm has brought out, has the advantage of simplicity and portability, and should receive attention from those who work in the tropics. Another instrument which certainly should not be overlooked is Edmunds's forceps and tubes for use after excision of the intestine; the blades are widely fenestrated, and are so applied to the two open ends of the gut left after resection that a lateral anastomosis results below the point of insertion of the two grooved Paul's tubes used to establish the temporary artificial anus.

Frank A. Rogers (327, Oxford Street). This firm of pharmacists specializes in the production of sprays and nebulizers, and does so with remarkable success. It has a large series of these appliances suitable for both oily and watery fluids, and fitted with spray deliverers adjusted in shape to any part of the upper nares, mouth, pharynx, and larynx. In point of size they vary considerably, some being intended for consulting-room use, others to carry about in the pocket and use whenever opportunity presents. To this end they are made to fit into neat cases about the size of a large

purse or a small opera-glass case. In addition several of them can be used instantly, that is, without previous manipulation or removal from their cases. This is a great advantage, for in many conditions in which the use of spray would prima facie be likely to be of value, delay until the patient can return home is often fatal to success. This year we noted a very valuable addition to the list, the Crystal Nebulizer. It is very small and compact, and supplies a finer vapour than any other appliance we have ever examined. Also shown was the "Attaché" case, this being a neat appliance of the suit-case order, with an interior fitted up in accordance with the needs of either specialists or general practitioners. It would certainly be a very useful possession to any medical man whose services are liable to be requisitioned at a moment's notice on behalf of some patient at a distance.

The Hoffman la Roche Chemical Works (7 and 8, Idol Lane, London, E.C.). As at Belfast last year, a clue to the speciality of this firm was at once supplied by the exhibition of two large vases each containing what may rightly be called an enormous quantity of crystalline alkaloid—in the one case strychnine, in the other caffeine. But the real interest of the stall lay in Digalen, the amorphous digitoxin isolated by Cloetta of Basle; as a perfectly soluble drug capable of being given in precise dosage it is of special interest at the present time, when renewed attempts are being made to determine the true value of digitalis. Clinically the claims made for digalen are that its effect is prompt but not cumulative, and unaccompanied by gastric disturbance. Another interesting drug was Thiocol, which, according to the laboratory researches of Tavel of Berne, would appear to exercise considerable bactericidal power over *Bacillus tuberculosis*.

Skeffington Patent Recumbent Invalid Lifters (49, Ulundi Road). The appliances of this firm are sufficiently indicated by its name. As we described them in detail so recently as last April (see vol. i, 1910, page 998), it must suffice now to say that they enable a patient to be supported in bed without any exertion on his part, and the bed clothing to be changed with a minimum of labour on the part of the attendant. The lifters lend themselves particularly well to the needs of chronic invalids, and should certainly be examined by those who have such patients on their hands and find difficulty in dealing with them.

The Holborn Surgical Instrument Company, Limited (Holborn Circus, E.C.). This firm, well known for its moderate prices, exhibited a large assortment of up-to-date surgical instruments. Many of them were well calculated to attract special attention. The new Holborn wide-bore Clover's ether inhaler seemed to meet the objections of many anaesthetists to the older pattern; and a Hewitt's stopcock is supplied to fit. Mr. Pardoe's modification of Wyndham Powell's urethroscope was an excellent model at a reasonable price, and an electric attachment for a Brunton's auriscope worked by a pocket dry battery is another little device likely to be of constant service. The "record" syringes of the firm are worth noting. They are to be had in all sizes from twenty minims upwards. As the glass barrel is fixed with an amalgam filling, they should be proof against any number of sterilizations by boiling. Other attractive appliances were a holder for Gigli's saw, adaptable for any length, and capable of exact adjustment of the tension; Miles's pile-forceps, which have the advantage of making the application of ligatures easy; and Kocher's stomach clamp, with its ingenious parallel action. Besides the instruments there was a good display of hospital furniture and accessories, among them being the Holborn high pressure sterilizers, which are portable and readily adapted either for direct steam or for use with gas or petroleum heating. The hot chambers exhibited for use in the Bier treatment of joint and other lesions were not only light and cheap, but made throughout of non-inflammable materials. There was also shown a £25 set of instruments for those commencing practice. They seemed to have been an excellent selection. It is claimed for this set that at the prices current for the separate instruments in most catalogues, from £40 to £45 would have to be expended.

John Weiss and Son, Limited (287, Oxford Street, W.). Perhaps the most striking appliance on this stand was a case for ophthalmic instruments in walnut. It is most conveniently arranged and so beautifully finished that it would be an ornament to any consulting room. Within it is a complete set of eye instruments that well sustain the high reputation of the firm. We were attracted, too, by the fracture instruments of Lambotte; the forceps have swivel ends to permit of perfect adaptation to the surface of the bone to be grasped. Mr. Robert Jones's instruments for arthrodesis seemed worth attention; the gouges and chisels are set with razor edge to allow of working with hand pressure only. The "Clar" laryngoscope shown had a parabolic mirror with twin inspection apertures. It was lit by a small electric lamp at the focus of the mirror, and any degree of magnification seemed obtainable at will. Another attractive appliance of the same general order was McNab's Retinoscope; its plane mirror can be rotated upon an axis at right angles to the handle. We noted also a compact little vaccination set arranged for sterilization by boiling, and subsequent transport in alcohol if desired. The varieties of cautery-handle shown was large; and there was an apparatus for the production of solid carbon dioxide which seemed effective and uncomplicated.

C. O. Hoefftcke, Limited (21, Woodstock Street, Oxford Street, London, W.). This is a firm holding appointment as instrument maker in its own special line to the National Orthopaedic Hospital. It supplies no appliance except under medical supervision. All those which we have examined have shown much ingenuity and excellent workmanship. Especially attractive in these respects are its instruments for joint disease, fractures, and obtaining extension in the treatment of spinal caries. In the two former the weight of the body, when the lower limb is concerned, is carried entirely by the tuber ischii, the crotch being left free, while restoration of the limb to the normal length in the one case and abolition of contact between the acetabulum and the head of the femur is secured by counter-extension, likewise having the tuber ischii as its starting-point. These two appliances are intended to enable patients to walk about during treatment, and there is ample evidence that they meet the end in view. The artificial legs made by the firm vary, of course, in their precise detail, according to the nature of the stump, but are always principally of leather, and both light and comfortable. The firm also showed Mr. Burghard's gall-bladder drainage tube, and a clever appliance for the cleanly creation of an artificial anus during colotomy.

BRITISH MEDICAL ASSOCIATION LIBRARY.

Books Needed to Complete Series.

The Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Climatological Transactions. Vols. 1, 4, 5, 6.
———— Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
———— Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.
———— Journal of Ophthalmology. Vols. 1-9.
———— Laryngological Association. Transactions. Vols. 1-6, 8-9.
———— Medical Association. Transactions, 2, 4, 6, 7, 11, 12, 14, 15, 16, 19, 20, 22, 31, after vol. 33, and the *Journal*.
———— Otological Society. Transactions. Vol. 3, part 2, 1883.
———— Public Health Association. Transactions. Any vols.
Analyst. Vols. 1-24.

Association Notices.

COUNCIL MEETING.

A MEETING of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 26th, in the Council Room at 429, Strand, London, W.C.

By Order,

GUY ELLISTON,
Financial Secretary and Business Manager.

September 15th, 1910.

ELECTION OF CENTRAL COUNCIL 1910-11.

FOR those constituencies which had not previously made any nomination for representation on the Central Council the following are declared duly elected:

Branch.	*Name of Representative.*	
Southern and Oxford and Reading Branches	Mr. Charles Robert Straton, Wilton	Unopposed.
Glasgow and West of Scotland (four County Divisions), Border Counties, and Stirling Branches	Dr. G. R. Livingston, 47, Castle Street, Dumfries	Unopposed.
Leinster Branch ..	Dr. F. W. Kidd, 17, Lower Fitzwilliam Street, Dublin	Unopposed.

BATH AND BRISTOL, GLOUCESTERSHIRE, WEST SOMERSET, SOUTH WALES AND WORCESTERSHIRE AND HEREFORDSHIRE BRANCHES.

NOTICE is hereby given that nominations of candidates for election of a Member of Council for the year 1910–11 by the group of the above-mentioned Branches, to fill the vacancy caused by the election of Dr. J. A Macdonald to the Chairmanship of the Council, must be forwarded to reach the Financial Secretary and Business Manager at the Offices of the Association not later than October 1st, 1910, and that such nomination must be on the prescribed form, copies of which will be supplied on application to the Financial Secretary and Business Manager.

Separate forms have been prepared for a nomination by a Division and for a nomination by any three members respectively, and those applying are requested to state for which purpose the form is desired.

Voting papers containing the names of candidates duly nominated will be issued from the Central Offices on October 8th, 1910, and will be returnable not later than October 15th, 1910.

BOMBAY, BURMA, SOUTH INDIAN AND MADRAS, COLOMBO CEYLON, ASSAM, MALAYA, AND HONG KONG AND CHINA BRANCHES.

NOTICE is hereby given that nominations of candidates for election of a Member of Council for the year 1910–11 by the group composed of the above-mentioned Branches must be forwarded to reach Dr M. Azizullah, No. 37, Janay Jahan Khan Road, Triplicane, Madras (Returning Officer for the said group), not later than October 25th, 1910.

By Order of the Council,

GUY ELLISTON,
Financial Secretary and Business Manager.

September 13th, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—The autumn meeting of this Branch will be held in Weymouth on Wednesday, October 19th. Members wishing to read papers, show cases, or exhibit specimens should communicate with the Honorary Secretary not later than Thursday, October 6th.—JAMES DAVISON, Honorary Secretary, "Streateplace," Bournemouth.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—On Thursday, October 6th, a general meeting of the Division will be held at the Workhouse Hospital, Knutsford, at 4.30 p.m. A dinner will be held afterwards if sufficient members will kindly send in their names. Further particulars in future notice.—H. G. COOPER, Honorary Secretary.

SOUTH-EASTERN BRANCH: BROMLEY DIVISION.—A meeting of this Division will be held at the Bell Hotel, Bromley, on Thursday, September 29th, at 8.30 p.m., to discuss the question of "School Children found Defective upon Medical Inspection." The Medical Secretary of the Association has accepted an invitation to assist in the discussion.—A. TENNYSON SMITH, Honorary Secretary, Shanklin, Orpington, Kent.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Fleet Surgeon H. C. ARATHOON to the *Formidable*, September 6th; Staff Surgeon C. K. BUSHE, M.D., to the *Vivid*, additional, for disposal, August 29th; Surgeon W. C. CARSON to the *Victory*, additional, for disposal, August 29th; Surgeon J. H. MCDOWALL, M.D., to the *Dido*, on reducing, undated. Fleet Surgeon S. H. BIRT and Surgeon R. J. G. PARNELL to the *Balmoral Castle* on commissioning, September 20th; Fleet Surgeon P. M. MAY to the *Glory*, and for special service vessels, Chatham, September 6th; Staff Surgeon J. G. WALLIS to the *Glasgow*, on commissioning, undated; Surgeon W. L. HAWKINS to the Royal Marine Division, Portsmouth, September 10th; Surgeon N. S. MEIKLEJOHN to the *Victory*, additional, September 10th; Surgeon P. D. MCI. CAMPBELL to the *Juno*, on reducing, undated; Staff Surgeon J. P. H. GREENHALGH, M.D. to the *Newcastle*, on commissioning, undated; Fleet Surgeon A. G. W. BOWEN, M.B., and Surgeon F. O. SEARLE, M.B., to the *Agamemnon*, on recommissioning, September 27th; Fleet Surgeon E. SUTTON to the *Magnificent*, on recommissioning, September 27th; Fleet Surgeon J. MOWAT to the *Swiftsure*, September 10th; Staff Surgeon C. R. RICKARD to the *Æolus*, for the voyage out, September 20th, and to the *Pandora*, on recommissioning, undated; Staff Surgeon C. K. BUSHE, M.D., to the *Ganges*, for Shotley Barracks, September 20th; Staff Surgeon J. THORNBILL, M.B., to the *Æolus*, for the voyage home, undated; Staff Surgeon W. H. O GARDE to the *President* additional, temporary, September 10th; Surgeon J. H. BURDETT to the *Racer*, additional, for the Royal Naval College, Osborne, September 10th; Surgeon A. C. RUSACK, M.B., to the *Superb*, September 10th; Surgeon F. R. FEATHERSTONE to the *Victory*, additional, for disposal, September 10th; Surgeon T. F. O'KEEFFE, M.B., to the *Pembroke*, additional, for disposal, September 10th; Surgeon W. C. CARSON to the *Blenheim*, additional, for the *Swift*, September 10th; Surgeon S. H. VICKERY, M.B., to the *Pembroke*, additional, for disposal, on the transfer of the *Vindictive* to the Fourth Division, undated.

ARMY MEDICAL SERVICE.

LIEUTENANT-COLONEL J. C. CULLING, from the Royal Army Medical Corps, to be Colonel, vice D. O'Sullivan, retired, August 8th. Colonel Culling was appointed Surgeon, July 30th 1881; Surgeon-Major, July 30th, 1893; and Lieutenant-Colonel, July 30th, 1901. He served in the South African war in 1899-1902, and was present at the relief of Ladysmith; he was mentioned in dispatches and received the Queen's medal with two clasps, and the King's medal with two clasps.

The appointment of Surgeon-General J. G. MACNEECE to be Principal Medical Officer, 8th (Lucknow) Division, has received the Royal approval.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL W. HEFFERNAN retires on retired pay, September 3rd. His commissions were dated: Surgeon, July 31st, 1880; Surgeon-Major, July 31st, 1892; and Lieutenant-Colonel, July 31st, 1900.

Captain L. BOUSFIELD, M.D., from the Seconded List, is restored to the Establishment, August 29th. He was placed on the Seconded List for service with the Egyptian army, April 30th, 1906.

INDIAN MEDICAL SERVICE.

THE following promotions, which have been already noted in the BRITISH MEDICAL JOURNAL, have received the approval of the King: Captains to be Majors—T. S. NOVIS, H. J. R. TWIGG, M.B. Lieutenants to be Captains—R. H. BOTT, E. B. MUNRO, M.B., W. E. R. WILLIAMS, M.B., S. J. BHATHENA, F. O'D. FAWCETT, J. F. JAMES, M.B., H. W. ACTON, V. B. GREEN-ARMYTAGE, A. N. DICKSON, M.B., A. G. COULLIE, M.B., A. J. H. RUSSELL, M.B., R. E. WRIGHT, M.B., D. H. RAI, M.B., W. H. RIDDELL, M.B., F. A. BARKER, M.B., A. W. HOWLETT, M.B., A. N. THOMAS, F. S. SMITH.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

THE name of Lieutenant SIDNEY J. STEWARD, M.D., is as now described, and not as stated in the *London Gazette* of August 19th.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

First London (City of London) Field Ambulance.—EARDLEY L. HOLLAND, M.D., to be Lieutenant, July 22nd.

Attached to Units other than Medical Units.—Lieutenant T. H. LIVINGSTONE, M.D., to be Captain, June 20th.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN T. M. MORTON, from the List of Officers Attached to Units other than Medical Units, to be Captain, with precedence as in the Territorial Force, September 3rd.

TERRITORIAL DECORATION.

THE King has been pleased to confer the Territorial Decoration upon the undermentioned officers of the Royal Army Medical Corps (Territorial Force), who have been duly recommended for the same: Major

H. C. LAMPORT, M.B., attached to the 2nd West Lancashire Brigade, Royal Field Artillery; Major W. A. DINGLE, M.D., attached to the 1st London Divisional Engineers, Royal Engineers; Major JOHN RITCHIE, M.B., attached to the 8th (Argyllshire) Battalion Princess Louise's (Argyll and Sutherland Highlanders).

COLONIAL MEDICAL SERVICES.

THE following changes in the Colonial Medical Services are notified by the Colonial Office:

WEST AFRICAN MEDICAL STAFF.—*Appointments:* A. E. HORN, M.D., B.Sc.Lond., M.R.C.S.Eng., L.R.C.P.Lond., D.T.M. and H.Cantab., has been selected for temporary special service in the Colonial Office. F. ROSS, M.B., Ch.B.Edin., has been selected for appointment to the staff in Southern Nigeria. *Death:* W. F. MANNERS, M.R.C.S.Eng., L.S.A.Lond., Medical Officer Southern Nigeria.

OTHER COLONIES AND PROTECTORATES.—J. W. EAKIN, M.D., M.Ch Dublin, District Medical Officer, Trinidad, has been transferred from Port of Spain South to Port of Spain East. C. L. EYLES, M.B., Ch.B.Edin., has been appointed Assistant Colonial Surgeon in British Honduras. F. A. DE VERTEUIL, M.R.C.S.Eng., District Medical Officer, Arima, Trinidad, has been appointed District Medical Officer, Port of Spain West. H. S. SUGARS, M.B., B.Ch., B.A.O.Dublin, has been selected for appointment as a Medical Officer in the Straits Settlements.

Hospitals and Asylums.

KENT COUNTY LUNATIC ASYLUMS.

Barming Heath, near Maidstone.

DR. H. WOLSELEY LEWIS, the Medical Superintendent of this asylum, prefaces the medical and statistical tables for the year 1909 by a retrospect of the last five years. In this period 2,074 patients were admitted to this asylum, and with regard to admissions, recovery, and death rates, Dr. Lewis shows (1) that whilst the male admission-rate remained fairly constant, the female-rate showed a tendency to increase; (2) that the recovery-rate approximated closely to that for the same period of county and borough asylums in England and Wales; and (3) that during this period the Barming Heath death-rate had been very high (10·3 per cent.), particularly from tuberculous diseases, heart disease, and senile decay.

In discussing the part which heredity plays in insanity, as exemplified by the Barming Heath statistics, Dr. Lewis says that he has been at some pains to obtain family histories of his patients admitted during these five years. Out of a total of 1,934 persons, he discovered evidences of insanity in the families, and often in many members of these families, in 828 instances, or 42.7 per cent. His analysis of these family histories led him to the following conclusions: First, that insanity in these cases with a family history of insanity made its appearance early in life. Thus, out of 410 male patients, 53.3 per cent. were under 35 years of age when first attacked, and out of 418 female patients 60.6 per cent. were under that age. Secondly, that if these patients should be discharged, they are prone to relapse. Out of 410 males, 93 were in asylums twice or oftener, in one case eight times; and in the case of the 418 women there were 115 relapses. The non-hereditary cases, on the other hand, showed only 31 recurrent cases out of a total of 524 males and 109 recurrent cases out of 650 female cases. Thirdly, should the hereditary cases remain and die in the asylum they generally attain to old age. Of Dr. Lewis's 828 "hereditary cases," 141 died, and of these 50 per cent. of the men and 61.5 per cent. of the women died at over 55 years of age. "Comparing," Dr. Lewis says, "this with the age-incident at death in asylums generally, as given in the Lunacy Commissioners' Report, of 41.8 per cent. for men and 50.2 per cent. for women over 55, it is difficult to avoid the conclusion that the regular routine life of an institution leads to longevity in these patients, who come here sometimes as children and live to a ripe old age." The conclusion drawn from the whole matter by Dr. Lewis is that the asylum population is constantly recruited from and maintained by persons who have inherited defective cerebral structure which renders them unfit to meet the ordinary stresses of life, and that until the State devises some means for the permanent care and control of such persons, the ranks of the insane will continue to be filled, to the burden of the taxpayer.

Leaving these reflections and turning to the statistics for the year 1909, the report shows that on January 1st, 1909, there were 1,620 patients on the asylum registers, and that on the last day of the year there were 1,614. The total cases under care during the year numbered 2,043, and the average number daily resident 1,601. During the year 423 were admitted, of whom 392 were direct admissions and 31 transfers. Of the direct admissions, the attacks were first attacks within three months in 135, and in 64 more within twelve months of admission; in 102 not-first attacks within twelve months of admission, and also in 7 whose previous history was defective; whilst in the remainder the attacks were either of more than twelve months' duration (53), or congenital cases (31) on admission. The direct admissions were classified according to the form of mental disorder into: Mania, recent 59, recurrent 24; melancholia, recent 99, chronic and recurrent 34; senile and secondary dementia, 36; delusional insanity, 23; primary dementia, 22; general paralysis, 30; insanity with epilepsy, 18; congenital and infantile defect, 35; and other less common forms, 12. As to probable causation the principal assigned etiological factors in the direct admissions were as follows: Alcohol in 72, or 18.3 per cent.; syphilis in 28; influenza in 20; tuberculosis in 5; and specific fevers in 6; critical periods in 99; nervous diseases in 48; other bodily affections in 11; child-bearing in 21; bodily trauma in 23; and mental stress in 109. An insane heredity was ascertained in 148, an alcoholic heredity in 32, a neurotic heredity in 17, and an epileptic heredity in 6. During the year 157 were discharged as recovered, giving a recovery-rate on the direct admissions of 40 per cent., or of recoveries in the direct admissions on the direct admissions of 38 per cent. Also 11 were discharged as relieved, and 27 as not improved. During the year 234 died, giving a death-rate on the average numbers resident of 16.4 per cent., the highest death-rate so far recorded at this asylum. The deaths were due in 40 to nervous diseases, including 30 deaths from general paralysis; in 45 to heart diseases, and in 8 more to vascular diseases; in 12 to respiratory diseases; in 3 to diseases of the digestive system; in 6 to Bright's disease, and in the remainder to general diseases, including 55 from pulmonary tuberculosis, and 29 from senile decay. It will be noted that pulmonary tuberculosis caused 23·5 per cent. of the total deaths. Dysentery appears also to have been prevalent for some years at this asylum, in 1909 there being 71 cases of this disease, occasioning 21 deaths.

Chartham.

The annual report for 1909 of Dr. G. C. Fitzgerald, the Medical Superintendent of this the second asylum for Kent county, shows that on January 1st, 1909, there were 1,075 patients in the asylum, and on the last day of the year 1,024, being a decrease of 51. This satisfactory fall in numbers, which was due, Dr. Fitzgerald says, to high death and recovery rates, has relieved for a time the possibility of overcrowding, which appeared to be imminent last year. The total cases under care during the year numbered 1,309, and the average number daily resident 1,048. During the year 234, which is practically the same number as in the preceding year (236). Of the total number 221 were direct admissions. Of these, in 72 the attacks were first attacks within three and in 41 more within twelve months of admission; in 54 not-first attacks within twelve months; in 41 of more than twelve months' duration; and 11 were congenital cases. As regards duration of disorder, therefore, the admissions, taken as a whole, were not of an unfavourable character. According to the several forms of mental disorder, the direct admissions were classified into: Recent mania 73, chronic mania 9, and recurrent mania 16; recent melancholia 28, chronic melancholia 7, and recurrent melancholia 6; senile and secondary dementia, 33; delusional insanity, 9; general paralysis, 13; primary dementia, 7; congenital or infantile defect, 11; less common forms of mental disorder, 9; and not insane, 2. A high proportion of cases of recent mania and melancholia and a low proportion of cases of congenital defect and general paralysis thus characterized the admissions from the clinical point of view. As to causation, alcohol was assigned in 28, or 12.2 per cent.; influenza in 11, syphilis in 7, and other toxins in 5; critical periods in 44, nervous diseases in 14, child-bearing in 11, other bodily affections in 6, bodily trauma in 18, and mental stress in 82. An insane heredity was ascertained in 56, an alcoholic heredity in 19, an epileptic heredity in 6, and a neurotic heredity in 1. During the year 105 were discharged as recovered, giving a recovery-rate on the direct admissions of 47 per cent., or of recoveries in the direct admissions on the direct admissions of 23 per cent. Also 3 were discharged as relieved and 22 as not improved.

During the year 155 died, giving a death-rate on the average numbers resident of 14 per cent. The deaths were due in 32 to nervous diseases, including 15 deaths from general paralysis; in 20 to diseases of the heart and blood vessels; in 22 to respiratory diseases, including 15 from lobar pneumonia; in 9 to diseases of the digestive and genito-urinary systems; in 1 to accident (choking); and in the remainder to general diseases, including 23 from senile decay and 38, or 24.5 per cent. of the total deaths, from tuberculous diseases.

THE WARNEFORD HOSPITAL FOR MENTAL DISEASES, OXFORD.

THE Committee of this private asylum for patients of the educated classes is able to report the continued satisfactory state of the finances of the institution. The benevolent work has, as usual, engaged the careful attention of the Committee, 51 patients having been afforded charitable aid during the year 1909, the amount of aid rendered representing something over £2,000.

Dr. James Neil, the Medical Superintendent, reports that on January 1st there were 99 certified patients in the hospital and 1 voluntary boarder, and on the last day of the year 98 certified patients and 1 voluntary boarder. The total certified cases under care during the year numbered 121 and the average number daily resident 99. During the year 22 were admitted, the number of admissions being determined by the number of vacancies, many applicants having to be refused for want of room. Of the admissions, 19 were direct and 3 transfers from county asylums where they had been treated as rate-supported patients. In 11 the attacks were first attacks within three and in 1 more within six months of admission; in 4 not first attacks within three months; in 2 the duration was unknown and 1 was a congenital case. Of the direct admissions, 7 were cases of recent mania, 4 of recent melancholia, 4 of confusional insanity, 2 of delusional insanity, 1 of senile dementia, and 1 of congenital defect. As to causation, alcohol and syphilis were assigned in

no case, specific fevers in 2, critical periods in 6, mental stress in 6, and an insane heredity in 9. During the year 8 were discharged as recovered, giving a recovery-rate of 42 1 per cent. on the direct admissions, or of 21.1 per cent. on the direct admissions by the recoveries in the direct admissions; 4 as relieved, and 5 as not improved. Also during the year 6 died, giving a percentage death-rate on the average numbers resident of 6 1 per cent. The deaths were due, in single numbers, to facial erysipelas, tuberculous spinal abscess, pulmonary tuberculosis, organic brain disease, exhaustion from mania, and senile decay. The patient who died of senile decay, a woman, had been sixty-six years in the asylum and was within a few weeks of entering her 100th year.

THE WESTMORLAND CONSUMPTION SANATORIUM.

THE Westmorland Sanatorium for Consumptives at Meathop has just been rendered more complete by the erection of a home for cases of more advanced disease about a quarter of a mile distant from the sanatorium. This home was found necessary because of the cases of consumption seeking admission to the sanatorium who were found to be in too advanced a stage of the disease to justify their classification as early cases. The new building will accommodate twenty-five patients, and is self-contained, so that whilst it is close to the sanatorium it is independent of this for administration, nursing, etc. In connexion with the opening of this home by Lady Crossley on August 4th, a commemoration pamphlet has been prepared, giving a history of the sanatorium and several views of this and of the new home. The history of the Westmorland Sanatorium records the success of persistent and untiring endeavour, with which the name of Dr. Paget-Tomlinson is prominently associated. Opened in 1900 with sixteen beds, the sanatorium at Meathop was for the first two years reserved exclusively for Westmorland patients. On account of the heavy cost of maintaining a small number of beds, it was then decided to admit patients from outside the county at a somewhat higher charge. The sanatorium has grown until it now accommodates sixty patients, irrespective of the twenty-five which are provided for by the new home. Speaking at the opening ceremony, Dr. W. R. Parker claimed that the new home had been erected at a cost of £9,000, including site, furnishing, drainage, etc, which was less than most similar institutions in the country. Towards the sum required, about £6,500 had already been promised or received, and a further list of donations reduced the amount still required to about £1,000.

Vital Statistics.

HEALTH OF ENGLISH TOWNS

IN seventy-seven of the largest English towns 7,921 births and 3,795 deaths were registered during the week ending Saturday last, September 10th. The annual rate of mortality in these towns, which had been 12 1 per 1 000 in each of the two preceding weeks, declined to 11 7 per 1,000 last week. The rates in the several towns ranged from 3 2 in Hornsey, 5 2 in Walsall, 5 5 in King's Norton, 6 3 in Walthamstow, and 6.6 in Willesden, to 18 5 in Stockton-on-Tees, 20 5 in Hull, 21 3 in Tynemouth, 21 4 in Preston, 22.5 in Grimsby, and 24 4 in Middlesbrough; in London the death-rate was 10 8 per 1,000. The death-rate from the principal infectious diseases averaged 1.9 per 1,000 in the seventy-seven towns; in London the rate was 1.5 per 1,000, while among the other towns it ranged upwards to 4.0 in Sheffield, 6.3 in Grimsby, 7.3 in Hull, 7.4 in Preston, and 8 3 in Middlesbrough. Measles caused a death-rate of 1.1 in Oldham and 1.3 in West Hartlepool; whooping-cough of 1.6 in Gateshead; and diarrhoea of 3.3 in Barrow-in-Furness and in Sheffield, 3.4 in Wigan, 5.6 in Grimsby, 6 5 in Hull, 6.8 in Middlesbrough, and 7.4 in Preston. The mortality from scarlet fever, from diphtheria, and from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,423, 1 447, and 1,455 at the end of the three preceding weeks, had further risen to 1,462 at the end of last week; 183 new cases were admitted during the week, against 143, 159, and 183 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, September 10th, 865 births and 473 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13 3, 13 6, and 13 3 per 1,000 in the three preceding weeks, declined to 13 0 per 1,000 last week, but was 1 3 per 1,000 above the mean rate during the same period in the large English towns. Among the Scottish towns the death-rates ranged from 12.0 in Leith and 12 3 in Edinburgh to 14 2 in Greenock and 15.3 in Dundee. The death-rate from the principal infectious diseases averaged 1.9 per 1,000, the highest rates being recorded in Glasgow, Dundee, and Leith. The 218 deaths from all causes recorded in Glasgow included 3 from scarlet fever, 2 from diphtheria, 6 from whooping-cough, and 29 from diarrhoea. Thirteen deaths from diarrhoea were recorded in Dundee, 3 in Edinburgh, 2 in Paisley; and 2 of diphtheria and 2 of diarrhoea in Leith.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 3rd, 655 births and 335 deaths were registered in the twenty-two principal urban districts of Ireland, as against 530 births and 377 deaths in the preceding period. The annual death-rate in these districts, which had been 15 7, 16 3, and 17.1 per 1,000 in the three preceding weeks, fell to 15 2 per 1,000 in the week under notice, this figure being 3.1 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 14.9 and 16.1 respectively, those in other districts ranging from 4 2 in Newry and 4.4 in Lurgan to 28 0 in Wexford and 35 9 in Clonmel; while Cork stood at 13 0, Londonderry at 14.4, Limerick at 17.8, and Waterford at 13.6. The zymotic death-rate in the twenty-two districts averaged 2 1 per 1,000, as against 3.4 per 1,000 in the preceding week.

During the week ending Saturday, September 10th, 633 births and 334 deaths were registered in the twenty-two principal urban districts of Ireland, as against 655 births and 335 deaths in the preceding period. The annual death-rate in these districts, which had been 16 3, 17 1, and 15.2 per 1,000 in the three preceding weeks, fell to 15 1 per 1,000 in the week under notice, this figure being 3 4 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 17.0 and 13.7 respectively, those in other districts ranging from 5.1 in Clonmel and 6.6 in Queenstown, to 23.4 in Waterford and 27.9 in Dundalk, while Cork stood at 13 0, Londonderry at 20.4, and Limerick at 17 8. The zymotic death-rate in the twenty-two districts averaged 1.9 per 1,000, as against 2 1 per 1,000 in the preceding week.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £60 per annum.

BETHNAL GREEN INFIRMARY.—Assistant Medical Officer. Salary, £100 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House-Surgeon. Salary, £80 per annum and notification fees.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN.—House-Surgeon. Salary, £80 per annum.

BURY ST. EDMUNDS: WEST SUFFOLK GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—Assistant Surgeon.

CANTERBURY: CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer (male). Salary to commence, £140 per annum.

CARLISLE: CUMBERLAND AND WESTMORLAND ASYLUM.—Junior Assistant Medical Officer (male). Salary, £130 per annum, rising to £150.

CHELTENHAM GENERAL HOSPITAL.—(1) House-Physician; (2) Surgeon-in-Charge of the Branch Dispensary. Salary, £75 and £80 respectively.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £60 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

DREADNOUGHT HOSPITAL, Greenwich, S.E.—(1) Two House-Physicians. Salary, £50 per annum. (2) Two House-Surgeons. Salary, £50 per annum. (3) Assistant Surgeon.

DUNDEE SCHOOL BOARD.—Assistant School Medical Officer. Salary, £250 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge Road, S.E.—(1) House-Surgeon; salary at the rate of £50 per annum. (2) Clinical Assistants in the Out-patient Departments.

GLASGOW MATERNITY AND WOMEN'S HOSPITAL.—(1) Two Indoor House-Surgeons; (2) two Outdoor House-Surgeons; (3) Outdoor House-Surgeon to West-end Branch. Salary for (1) at the rate of £50 per annum, and for (2) and (3), £72 per annum.

GREAT NORTHERN HOSPITAL, Holloway Road, N.—(1) Physician; (2) two House-Physicians; (3) three House-Surgeons. Salary at the rate of £40 per annum for (2) and (3).

HALIFAX ROYAL INFIRMARY.—Third House-Surgeon (male).—Salary, £80 per annum.

JERSEY INFIRMARY AND DISPENSARY.—Resident Medical Officer (male). Salary, £100 per annum.

LANCASTER: ROYAL LANCASTER INFIRMARY.—House-Surgeon. Salary, £100 per annum.

LEICESTER INFIRMARY.—House-Physician. Salary at the rate of £100 per annum.

LIVERPOOL CITY.—Assistant to the Medical Officer. Salary, £250 per annum, increasing to £300.

LIVERPOOL DISPENSARIES.—Assistant Surgeon. Salary, £100 per annum.

LIVERPOOL PARISH WORKHOUSE, Brownlow Hill.—Visiting Surgeon. Salary, £200 per annum.

LOCHGILPHEAD: ARGYLL AND BUTE ASYLUM.—Assistant Medical Officer (male). Salary, £160 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Surgical Registrar. Honorarium at the rate of 40 guineas per annum.

LOWESTOFT HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

MANCHESTER ROYAL INFIRMARY.—(1) Medical Officer for Out-patients and Accidents to the Central Branch; (2) Assistant Surgical Officer. Salary at the rate of £100 and £35 per annum respectively.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) House-Physician; (2) House-Surgeon; (3) Assistant House-Physician; (4) Assistant House-Surgeon; (5) Resident Anaesthetist. Salary for (1) and (2) at the rate of £40 per annum; for (3) and (4), £20 per annum; and (5), £60 per annum.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Clinical Pathologist. Annual honorarium of £50.

NEWCASTLE-UPON-TYNE: ROYAL VICTORIA INFIRMARY.—Medical and Surgical Registrars.

NEW HOSPITAL FOR WOMEN, Euston Road, N.W.—(1) Medical Officer to take charge of *X*-ray Department; (2) Senior Assistant to Out-patient Department; (3) Clinical Assistant for Eye Department. Must be fully qualified medical women.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician. Salary at the rate of £75 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Resident Medical Officer for Out-patient Department. Salary at the rate of £60 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Senior House-Surgeon. Salary at the rate of £60 per annum.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, W.C.—Junior House-Surgeon. Salary at the rate of £50 per annum.

SALFORD ROYAL HOSPITAL.—Junior House-Surgeon. Salary at the rate of £50 per annum.

SAMARITAN HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Clinical Assistants.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

TAUNTON UNION.—Medical Officer and Public Vaccinator of the Creech St. Michael District. Salary, £70 per annum and fees.

WAKEFIELD: WEST RIDING ASYLUM.—Locumtenent. Salary, £3 3s. per week.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith Road, W.—Clinical Assistants.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Pwllheli, co. Carnarvon; Wadebridge, co. Cornwall; Harrold, co Bedford.

MEDICAL REFEREE.—The Home Secretary announces a vacancy as Medical Referee under the Workmen's Compensation Act, for County Court Circuit No. 43.

APPOINTMENTS.

BANKS, A., F.R.C.S.Eng., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 51.

CARRE, Henry, L.R.C.P. and S.Irel., Medical Superintendent to the Glasgow District Asylum, Woodilee, Lenzie, Glasgow.

CLARIDGE, G. P. C., M.B., B.S.Lond., Honorary Pathologist and Bacteriologist to the Norfolk and Norwich Hospital, Norwich.

CLAY, J., M.D.Durh., F.R.C.S.Eng., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 1

FAWKES, Marmaduke M.B. B.S.Lond., M.R.C.S., L.R.C.P., Certifying Surgeon for the Midhurst District, co. Sussex.

HUMPHREYS, C. B., L.R.C.P. and S.Edin., District Medical Officer of the Long Ashton Union.

KENNEDY, Robert, M.D.Glasg., Visiting Surgeon to the Glasgow Western Infirmary.

WRIGLEY, P. R., F.R.C.S.Eng., Honorary Assistant Surgeon to the Manchester Royal Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

HANDLEY.—On the 10th instant, at 12, New Cavendish Street, W., to Mr. and Mrs. W. Sampson Handley, a son.

DEATH.

MOYLE.—In London on the 11th inst., after an operation, Walter Henry Moyle, of Rogate, in his 49th year.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. KEGAN PAUL, TRENCH, TRÜBNER AND CO. will publish in October a selection from the remarkable essays which Mr. Arnold White, over the pseudonym "Vanoc," has contributed for two or three years past to the front page of the *Referee*. They cover a wide field of observation and reflection, from naval armaments and the ways of the War Office to "eugenics" and education, forestry and gardening, marriage and divorce. The volume will be entitled *The Views of Vanoc: An Englishman's Outlook*, and will be issued at 5s. net.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Monday, 2 p.m.: Diseases of the Lungs. Tuesday, 2 p.m.: Diseases of the Kidneys. Wednesday, 2 p.m.: Diseases of the Digestive System and Children's Diseases. Thursday, 2 p.m.: Diseases of the Nervous System. Friday, 2 p.m., Diseases of the Heart.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Ear, Nose, and Throat.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays, and Operations, at 2 p.m. daily. Monday, Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Eye, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
SEPTEMBER.	
18 Sunday ..	
19 MONDAY ..	
20 TUESDAY ..	
21 WEDNESDAY	ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, Committee Meeting, at Dr. G. H. Smith's residence, Knutsford, 4.30 p.m.
22 THURSDAY ..	
23 FRIDAY ..	
24 SATURDAY ..	
25 Sunday ..	
26 MONDAY ..	
27 TUESDAY ..	
28 WEDNESDAY	
29 THURSDAY ..	BROMLEY DIVISION, *South-Eastern Branch*, Bell Hotel, Bromley, 8.30 p.m.
30 FRIDAY ..	LONDON: Conference between the Special Poor Law Reform Committee and the Contract Practice Subcommittee, 2 p.m.
OCTOBER.	
1 SATURDAY ..	
2 Sunday ..	
3 MONDAY ..	LONDON: Naval and Military Committee, 2.30 p.m.

Date.	Meetings to be Held.
OCTOBER *(continued).*	
4 TUESDAY ..	LONDON: Organization Committee, 10.45 a.m.
5 WEDNESDAY	LONDON: Medico-Political Committee, 2 p.m.
6 THURSDAY ..	LONDON: Hospitals Committee, 2.30 p.m. ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, General Meeting, Workhouse Hospital, Knutsford, 4.30 p.m.
7 FRIDAY ..	LONDON: Central Ethical Committee, 2 p.m.
8 SATURDAY ..	LONDON: Science Committee. LONDON: Therapeutic Committee.
9 Sunday ..	
10 MONDAY ..	LONDON: Colonial Committee, 2.45 p.m.
11 TUESDAY ..	LONDON: Public Health Committee, 3 p.m.
12 WEDNESDAY	
13 THURSDAY ..	
14 FRIDAY ..	
15 SATURDAY ..	
16 Sunday ..	
17 MONDAY ..	
18 TUESDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 24TH, 1910.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

CAPE OF GOOD HOPE—EASTERN PROVINCE BRANCH.

A MEETING was held recently at Grahamstown.

Medical Congress.—The purpose of the meeting was to appoint Representatives to attend the Annual Medical Congress in Capetown and to acquaint those Representatives with the feeling of the Branch regarding the several matters to be discussed at that congress. Drs. J. Bruce Bays and C. Mullins were unanimously appointed.

Proposed South African Medical Association.—The meeting was in favour of the formation of a South African Medical Association apart from the British Medical Association, with a South African medical journal.

Vote of Regret.—A unanimous motion of regret at the departures of Dr. C. F. Lillie for Salisbury, Rhodesia, and Dr. C. G. Purvis for Calcutta was passed. The best wishes of the Branch for success in their new spheres followed them.

EAST ANGLIAN BRANCH.

THE autumn meeting was held at the Sandringham Hotel, Hunstanton, on Thursday, September 15th.

COUNCIL MEETING.

The following were present: Dr. Pembroke Minns, President of the Branch, Dr. Barton, Mr. H. A. Ballance (Norwich), Dr. Curl (Colchester), Dr. Cardy Bluck (Southend), Dr. Thomas (Swaffham), Dr. Muir Evans (Lowestoft), Dr. Nicholson (Colchester).

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

New Members.—The following gentlemen were elected members: Chas. R. Ball M.R.C.S. (Hunstanton), F. Brickwell, M.B. (Mendlesham), W. D. Chambers, M.B., Ch.B. (Norfolk County Asylum), H. L. S. Chavers, L.R.C.P. (Kessingland), F. W. Foster, M.R.C.S. (Thorpe-le-Soken), J. B. Johnson, L.F.P.S. (Hunstanton), J. F. McQueen L.S.A. (Southend), M. Mottrum, M.R.C.S. (Sandringham), W. H. S. Williams, L.R.C.P. (Mattishall).

Ethical Committee.—The following gentlemen were elected to form the Ethical Committee: Dr. Pembroke Minns, Dr. E. G. Barnes, Dr. Beverley, Mr. H. A. Ballance, Dr. Cardy Bluck, Dr. Cleveland, Dr. George Elliston, Dr. Hinnell, Sir Alan Reeve Manby, Dr. Mayo, Dr. Thomson, and Dr. Nicholson.

Spring Meeting.—It was agreed to hold the spring meeting, 1911, at Framlingham.

Apologies for Non-attendance.—Letters were read from Dr. Slimon and Dr. Gutch regretting their absence.

Luncheon.—Luncheon was partaken of at the Sandringham Hotel.

GENERAL MEETING.

The general meeting was held at the Sandringham Hotel, Dr. PEMBROKE MINNS, President, in the chair. The following members, amongst others, were present: Dr. Pembroke Minns, Dr. Barton, Mr. H. A. Ballance, Drs. Curl, Muir Evans, Ball, Cardy Bluck, Cooper, Pattin, Roddis, Parry, Thomas, Crook, Hosegood, Coutts, Nicholson.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

The late King Edward.—Letters were read from His Majesty the King and Her Majesty Queen Alexandra, thanking the members of the Branch for their letters of condolence on the death of his beloved Majesty King Edward VII.

Papers.—Mr. D. K. COUTTS (Norwich) read a paper on carcinoma of the stomach, its early diagnosis and treatment. The paper was discussed by Mr. BALLANCE, Dr. CURL, Dr. EVANS, and Dr. CROOK; Mr. COUTTS replied. Dr. CROOK (Norwich) read a paper on *ante-partum* estimation of the weight of the fetus.

Specimens.—Mr. H. A. BALLANCE (Norwich) showed several specimens of carcinoma and myoma of the uterus removed by abdominal hysterectomy.

Exhibit.—Surgical instruments were shown by Down Brothers.

WEST NORFOLK DIVISION.

Election of Officers.—At the annual meeting of the above Division the following office-bearers were appointed for the ensuing year: *Chairman*, Dr. Roddis (Snettesham); *Vice-Chairman*, Dr. Kingdon (King's Lynn); *Honorary Secretary and Treasurer*, Dr. Forrest (Terrington St. John); *Representative on Branch Council*, Dr. Thomas (Swaffham); *Representative for Representative Meetings*, Dr. Lister (Terrington St. Clement); *Executive Committee*, Drs. Gardiner, Draper, Steele, and Wales.

SEVENTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held in London on July 22nd, 23rd, 25th, 26th, 27th, 28th, 29th, and 30th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[Concluding Notice.]

A. Wulfing and Company (12, Chenies Street, London). Two of the three preparations with which the name of this firm is associated are too well known to need much description, one being Sanatogen and the other Formamint. The former is not only popular with the public, but is freely prescribed by medical men, as being of distinct value in cases of malnutrition, and more especially in dealing with neurasthenics. Whether the fact that it contains a certain amount of glycero-phosphate accounts for this circumstance is an open question, but the fact remains. The third exhibit was Albulactin, a preparation which seems to us to merit the careful consideration of all medical men who have to deal with the upbringing of young children. It has been known for many years that the proteid of milk is composite, but comparatively little attention has been paid to this fact, and no practical use of it could easily be made until a method of isolating lactalbumin in a soluble form was devised. This was effected some two years ago in Germany, where experiments have since been in progress which seem to indicate that by the addition to cow's milk of soluble lactalbumin or albulactin, many of the difficulties of rearing children artificially may be obviated. Points of importance in this connexion are that in cow's milk the proportion of lactalbumin to casein is very small, whereas in human milk it is large, so that the more the cow's milk is diluted the more is the accentuated difference between cow's milk and human milk in this respect. The proposal made is to remedy matters by adding sufficient albulactin to make both the casein and lactalbumin contents of the diluted cow's milk the same as those of human milk. The practical fact that when cow's milk is thus treated the curd formed closely resembles that of human milk was demonstrated by solutions on the stall. The absence of dense curds is in itself an advantage, and the experiments mentioned seem to indicate that the difference in the chemical constitution of the compound is also of much value in facilitating assimilation and securing absence of intestinal disorders in artificially reared children.

C. J. Hewlett and Son, Limited (35 to 42, Charlotte Street, London, E.C.). The needs of those who conduct dispensing practices are the special care of this firm, though its work covers pretty nearly the whole field of medical and surgical appliances. Among its special preparations we noted Mist. Pepsine Co. c Bismutho. It is distinctly an elegant preparation, and being also effective and easy to handle, it has maintained the popularity which it acquired on its first production, now nearly thirty years ago. There were also several series of liquors and concentrated mixtures for dispensing purposes on view, a certain number of instruments and laboratory appliances, which included a useful urine-testing case known as the "Compactum," and a well-made hypodermic syringe called the "Perfect." We also noted a new form of perineal crutch devised by Mr. Herbert Tanner, which is simple in construction, readily portable, and seems likely to prove effective; and also an addition by the same surgeon to the number of inhalers primarily intended for ether administration, and to secure as far as possible the advantages of open ether.

John Wright and Sons (Bristol). In virtue of its array of wall and other diagrams, clinical charts, outline figures, visiting lists, and various systems of account keeping, the stall of this West of England firm of publishers had plenty to attract and retain the attention of visitors. The diagrams included a linen-mounted series of twenty-one plates for use at first aid lectures. In the same general category may be placed the very useful papiermâche casts of human anatomy prepared under the direction of Mr. C. W. Cathcart. They are of thin rigid cardboard, and introduce into the study of anatomy as much actuality as is possible in default of actual dissections or preparations. The books shown included copies of the firm's very useful *Medical Annual*, to which we drew favourable attention on the occasion of the issue for 1910, some months ago; a second edition of *A Synopsis of Surgery*, by Mr. E. W. Hey Groves; and a fifth edition of *First Aid to the Injured and Sick*, by Messrs. F. J. Warwick and A. C. Tunstall were also on view. Of the latter work, which is very inexpensive and freely illustrated, some 45,000 have now been issued. Another book shown was the volume on *Open Air at Home, or Practical Experience of the Continuation of Sanatorium Treatment*, by Mr. Stanley H. Bates; a further work of the same general order being *Consumption: Treatment at Home and Rules for Living*, by Dr. Warren Crow. It is an inexpensive book which includes a sample chart, and is now in its second edition.

Wyley's, Limited (Coventry). Two series of tinctures, the one standardized, the other non-alcoholic, were prominent features of this well known Midland firm's exhibit. In the latter class a glycerine basis is substituted for the spirits of wine ordinarily used, and the idea deserves encouragement. The tinctures produced seem in every way satisfactory from a pharmaceutical point of view, and clinically it is often advantageous to avoid the use of alcohol even in medicine. A good many Liquors were also shown, one of them being Liq. Viburni Co, a sedative for uterine cases. To the firm's Wylettes we have before drawn attention. They are neat little glass capsules packed in boxes of half a dozen, each containing 1 c.cm. of a sterilized liquid intended for hypodermic use, and containing a suitable amount of some active drug, such as hydrarg. succinimide, ferr. arseniate, or morphine. Also exceedingly useful are the firm's Ophthalmic ointment tubes; the series is a wide one, and each tube has a perforated wooden cap so shaped as to make insertion of the ointment within the eyelids easy and painless. In the same connexion may be mentioned the Antiseptic Jelly for hand preparation put up in collapsible tubes. We also noted a pleasant smelling Dusting Powder of very fine grain, and containing, we were informed, zinc, starch, and boric acid.

Price's Patent Candle Company. The name of this firm has been so long a household word that one is glad to feel that there is still a need for its activities, despite improvements in gas lighting and the encroachments of electricity. Its night-lights in particular are still almost essential in nursing otherwise than in hospital wards, and its Calorettes are invaluable for the keeping warm of "nightcaps" and other liquid food. Equally well known is Price's Glycerine, and many of its soaps are deservedly popular. The aim in their manufacture seems to be the securing of free lathering qualities, together with delicacy of perfume and freedom from uncombined alkali. The solidified Glycerine Soap in particular is stated to contain 50 per cent. of the firm's glycerine.

Hot Springs of Bath. The Corporation of the city of Bath was duly represented by a stall, and visitors were enabled to get some idea of the claims of this famous health resort to consideration. The excellent booklets supplied were of still further assistance. They brought out several foundation facts of importance: these being that Bath is the only health resort in these islands with natural hot springs, that its

waters are distinctly radio-active, and that its situation in a nest of hills offers the visitor a diversity of climates and elevations. To these points, and the arrangements of the bathing establishment itself, we hope to return at a later date.

ARMOUR AND CO. (Atlantic House, Holborn Viaduct, London, E.C.). As is well known, this firm specializes in the production of digestive enzymes and preparations for organo-therapy, and had plenty to show of both classes. Pepsin and Pancreatin were shown in some dozen forms; they included Glycerole Pepsin, a very convenient form of keeping this ferment in solution, and an Elixir of Enzymes, this being a kind of after-dinner *chasse café* charged with all enzymes known to take a share in completing gastric and intestinal digestion. The active principle of the adrenal gland—termed by the firm "suprarenalin"—was shown as a powder, a solution of 1 in 1,000, and as an ointment put up in a tube with a special nozzle to facilitate its use in cases of haemorrhoids. Two specially popular preparations of the firm—its excellent Beef Juice and Glycerine Extract of Red Bone Marrow—were also among the products we noted. So, too, were Eucapren—a compound of suprarenalin and eucaine for use as a haemostatic and analgesic—and the very palatable semi-solid beef-tea preparation known as Vigoral.

THE BRITISH LA TOJA COMPANY (44, Wallwood Road, Leytonstone). This firm has seemingly undertaken the task of attracting attention in this country to the claims of the Portuguese health resort from which it derives its name. The place, in addition to many other natural advantages, seems to have provided itself with a modern hydropathic establishment and suitable hotel. Its springs supply water varying in temperature up to 140° F., and containing very considerable quantities of the better-known salts, especially the chlorides of potassium, sodium, and calcium, together with small quantities of iodine, they are also esteemed to be radio-active. In the neighbourhood of the springs is a plentiful supply of natural mud, which is used in the treatment of swellings of a rheumatic order. Salts isolated from the water are also obtainable, and are the principal component of a soap on which La Toja prides itself. References can be obtained, we understand, to medical men personally acquainted with the claims of this new competitor for hydropathic honours.

FAIRCHILD BROTHERS AND FOSTER (64–65, Holborn Viaduct). It is in connexion with the production of digestives that this firm is best known, its Peptogenic Milk Powder being particularly popular. As the name indicates, its special purpose is the modification of milk, and the fashion in which it is vended makes it very convenient to use. Allied to these are the Zymine Peptonizing Tubes, which we have found to preserve their activity in tropical climates. The term "Pepule" also used by the firm covers a whole series of small after-dinner pills, one of which contains a mixture of pepsin, bismuth, and nux vomica. Of a somewhat different order, perhaps, is Holadin, a pancreatic derivative stated to be of marked potency in respect of amylolytic and lipolytic enzymes. It may be obtained alone or in combination with certain bile salts—namely, the taurocholate and glycocholate of soda—which are isolated by the firm from fresh ox gall. Another pancreatic preparation in a fluid form which seems to have gained popularity among medical men is Diazyme. The firm is also the manufacturer of Panopepton, a food adjuvant prepared from beef and wheat, which, in addition to its use as an ordinary invalid food, has been recommended as a temporary substitute for milk during summer diarrhoea.

MESSRS. D. APPLETON AND CO. (25, Bedford Street, Covent Garden, W.C.). Although this is an American firm, several of its books are old-established friends of most medical men in these islands. Cases in point are Osler's *Principles and Practice of Medicine*, of which the new or seventh edition was on view, and H. A. Kelly's two treatises on *Operative Gynaecology* and *Medical Gynaecology* respectively. The former is in two volumes, and both publications are notable for their wealth in illustrations. A good companion was Burrage's *Gynaecological Diagnosis*, while as also useful in the same connexion may be mentioned the elaborate and excellently-illustrated treatise on *Preparatory and After Treatment in Operative Cases*, by Professor Herman Haubold, of New York. Another well-turned-out book which attracted attention was *Practical Lessons on Ophthalmology*, by Webster Fox, of Philadelphia. It is an enlarged edition of a book which has gained considerable popularity in the United States and which keeps well in view the needs of the general practitioner. We also noted a fourth edition of the book on *Practical Dietetics*, by Gilman Thompson, of Cornell University.

OPPENHEIMER, SON, AND CO. (179, Queen Victoria Street, E.C.). For cleverness and real utility the well-known Bipalatinoids of this firm are close run by its Pulverettes. These are thin shells of chocolate and starch which, resembling pills in shape and size, break on very slight pressure and release the powdered drug contained. The bipalatinoids must be almost too well known to need description. Their aim, which they fulfil admirably, is to secure the action of various salts when in a nascent condition. They have been esteemed particularly useful in connexion with iron treatment, while in a paper recently published in our columns the use of palatinoids was advised in giving calcium permanganate. The firm also showed a few appliances, among them one for the administration and automatic generation of oxygen, and a mask used by Dr. Muthu when administering formaldehyde inhalations as an adjunct to the sanatorium treatment of tuberculosis. Another interesting exhibit was Sea-water Plasma. This is intended for the use of those who accept the statements of Dr. Simon of Paris as to the great value of subcutaneous injections of sea water in a variety of complaints arising from intestinal disorders. The water is collected 200 miles from land, rendered isotonic with blood by the addition of distilled water, and then sterilized. It is issued in Aseptules each containing 100 c.cm.

SIEMENS BROS. AND CO., LIMITED (Caxton House, Westminster). The exhibits of this firm were possibly more novel to most visitors than anything else to be seen at any of the stalls. Within the last year it has become sole agents for the Banque du Radium, of Paris, and it had upon view a complete series of all the appliances used by Wickham, Dominici, and other workers in the field of radium therapy. In addition to applicators was shown a portable electroscope for the preliminary determination of the radio-activity of various substances. Visitors also had an opportunity of handling the radiferous mud which is produced during the process of breaking up uranium ores. Its radio activity depends upon the presence of actinium, and is both permanent and much higher than that of any natural earth. Its properties have been investigated in several hospitals in Paris, with results which seem to indicate that it is a substance worth trying in cases of rheumatoid arthritis and similar conditions. On the same stall were also shown an instrument for obtaining a continuous record of the temperature of patients, and a number of dental instruments, in various stages of completion, manufactured from tantalum. The advantage of using this metal seems to be that it is exceedingly hard, and that instruments made of it retain their polish even when exposed to acids and damp.

PARKE, DAVIS AND CO. (Beak Street, Regent Street, W.). In accordance with its practice of late years this firm provided visitors with very interesting lantern demonstrations illustrative of its preparation of serums and antitoxins, and of the methods which it uses in the physiological standardization of drugs and in the manufacture of pharmaceutical products.

Samples of all were on view, as well as specimens of the vaccines prepared in the laboratory of St. Mary's Hospital, for the sale of which this firm is agent. Among the physiologically standardized drugs we noted in particular a preparation of ergot equally suitable for hypodermic or oral administration, and known as Ergot Aseptic. A tuberculous ointment and some tuberculin discs, for carrying out respectively the Moro and Calmette tests for tuberculosis, were also shown. Among the purely pharmaceutical preparations we noted the convenient little blocks known as Mercurettes, to which we have previously drawn attention as obviating a good deal of the unpleasantness of inunction treatment; and amongst the appliances a collection of well-made hypodermic sets and pocket and other cases for carrying medicines on motor car and other expeditions. The exhibit also included a series of the very effective spray producers and nebulizers, generically termed "Glaseptic."

Gas Light and Coke Company (Horseferry Road, Westminster). Various forms of utilizing gas economically for the heating of rooms and for cooking purposes were shown by this firm. The fireplaces ranged from quite small appliances suitable for securing a moderate temperature in small bedrooms, to comparatively large grates for use in large, seldom-occupied rooms. The general object kept in view in all forms seemed to be to secure the requisite amount of heat without waste, dust, or undue labour. Fashions by which gas can be used to supply hot water for bath purposes and for room heating were also demonstrated. Most of the stoves shown were fitted with a new air and gas regulator which automatically secures evenness of temperature. The manufacture of gas-heating appliances has made great progress of late years, and most, if not all, the features which at one time rendered gas fires less popular than they might have been seem to have been eliminated.

Savory and Moore (Bond Street, London, W.). It is perhaps with Pancreatic Emulsion that the name of this firm has been longest associated, though, of course, its Infant's Food and well-constructed Valveless Feeder for administration of the same are equally popular. Samples of these were on view, together with the various peptonized milk preparations, including peptonized milk-chocolate and coffee, of which the firm has of late years made a prominent feature. Also shown was Aperione, which we understand to be a synthetic compound exhibiting either aperient or purgative properties, according to the dose given. We were also glad to see once more the Gelatine Lamels which the firm originally brought out for use in eye surgery; they are thin soluble sheets marked in squares, each section containing a definite quantity of some drug with a known physiological action. The administration of the desired amount of such drug is thus rendered easy without resort to weights and measures. Moreover, the storage space required is so small that these lamels constitute one of the most convenient ways available for carrying about supplies of medicaments. A small chemist's shop, so to speak, could be kept in a case the size of a purse.

Gale and Co. (15, Bouverie Street, Fleet Street, E.C.). The exhibit of this old established firm was specially strong in drugs and pharmaceutical preparations for dispensing purposes. They included concentrated tinctures, the series of which apparently covered all the more commonly used tinctures in the *British Pharmacopoeia*; the firm's name for them is "Trixta." Two useful ointment bases were also a prominent feature, one named "Sugonum" being of an ordinary greasy kind, and the other, "Cremor," of a non-greasy variety. In addition were shown a good many compressed drugs in the form of small lozenges and tablets and some palatable elixirs intended for the administration of calcium salts, formates, and glycero-phosphates.

J. B. Lippincott and Co. (5, Henrietta Street, Covent Garden, W.C.). The medical branch of this great publishing firm was thoroughly well represented, the books shown including the second edition of the elaborate work on *Roengten Rays and Electro-Therapeutics*, by Dr. Cassabian, whose death we have recently had to record. It contains chapters on radium and photo-therapy, and is illustrated both by engravings and coloured illustrations. The progress which *x*-ray work has made was further shown by *Roengten Rays in Pediatrics*. Its author is Dr. T. M. Roche, and the book represents, as far as we know, the first example of a work dealing with skiagraphy in connexion with one special department of medicine. In the same connexion may be mentioned the *Surgery of Childhood*, by de Forrest Willard; it is very freely illustrated and includes some special chapters on orthopaedic work. A book of a different order was the elaborate volume on *Human Anatomy*, in the preparation of which Dr. Piersol was assisted by some half a dozen other authorities. The plan of the work is original and full consideration is given to the practical bearings of anatomy on both surgery and medicine. Illustrations appear on almost each of its 2,000 pages, and about one third of them are coloured. Finally should be mentioned the *Handbook on Medical Diagnosis*, by Professor Wilson. It was recently mentioned in these columns as perhaps the best publication of its kind that has appeared in the English language.

Reynolds and Branson (13, Briggate, Leeds). This well-known Yorkshire firm displayed both pharmaceutical preparations and sundry instruments and appliances for the clinical laboratory. Among the former elixirs figured largely, as also chloroform and ether for anaesthetic work. The firm pays special attention to this latter very important part of drug preparation. Also shown was a series of tinctures concentrated to double the strength of those in the *Pharmacopoeia*, and various preparations of drugs, such as digitalis, squills, and ergot, standardized physiologically. Among the laboratory appliances and general instruments we noted an apparatus for the preparation and application of carbonic acid snow, which seemed well devised and easy to use; and the two appliances known as the Chometer and the Ureameter, to which we have drawn attention on previous occasions. The former is intended to enable observers to determine quantitatively and rapidly the amount of creatinin, sugar, indican, or other normal or abnormal constituents of urine by a colour test. We examined these appliances thoroughly some years ago, and came to the conclusion that they were both of a practical order.

John Bale, Sons, and Danielsson (83–91, Great Titchfield Street, and 13, Mortimer Street, London, W.). This firm of engravers, printers, and publishers had on view a large selection of products in association with which its name has long been familiar. They consist of a variety of devices for saving clerical labour in the recording of cases and account keeping. Their diagrams and charts are excellent, while their Simple Medical Year Book has now been some years on the market, and has been found of great utility by a large number of practitioners. It has the virtue of rendering the keeping of full accounts of the outgoings and incomings of any practice a comparatively simple task. The firm has also made a special study of the card index system, and produced a practical method of applying this system to medical work in all its branches.

J. Nesbit-Evans and Company (Floodgate Street, Birmingham). This is a firm of bedstead and mattress manufacturers with which we had not previously made acquaintance. We were much attracted by its products. Its exhibit, which was comprehensive, included a variety of beds for special purposes, such as maternity cases, epileptics, and children, and several of them were fitted with well-designed contrivances for minimizing the labour of nursing and securing the

comfort and safety of the patients. The Parturition Bed seemed specially well thought out, as also was a bed-lifter shown. On the whole, however, the most attractive point of all was the nature of the mattress with which these various beds were fitted. It is known as the "Anti-Sagging" mattress and seems likely to justify its title to the full. In addition to the ordinary curved springs at foot and head it has a series of curved springs in the middle, just where support is most required.

John Timpson and Co. (104, Golden Lane, E.C.). This firm is sole agent for the United Kingdom and the Colonies to Messrs. Johnson and Johnson. The latter manufacture most forms of surgical dressing, but the principal articles shown on their behalf on this occasion were the "Zo" plasters. The term covers a complete range of medicated and surgical plasters, which are adhesive at body temperature and cleanly and convenient to use. Some cotton-wool, known as Redcross, was also shown; its special feature is that only long-fibred cotton is employed in its manufacture, resiliency and softness being thus secured. A blistering plaster, known as Cauthos, was another exhibit, as also Camphenol, a disinfectant representing, we understand, a combination of the three higher cresols with camphor. It is stated to be non-poisonous and non-corrosive, and to leave no stains on linen.

H. K. Lewis (136, Gower Street, London, W.C.). Some early copies of the new edition of Martindale and Westcott's *Extra Pharmacopoeia* marked this stall. It is a highly useful work, to the new features of which we recently drew attention in a review. A good many specimens of Lewis's Practice Series of Textbooks also attracted attention. They included a fifth edition of *Medical Electricity*, by Lewis Jones, and a fourth edition of both Buxton's *Anaesthetics* and the book on *Public Health Laboratory Work* for which many generations of D P H. candidates have had reason to be grateful to Professor Kenwood. Two smaller works shown were an early reprint of *Some Common Remedies*, by Eustace Smith, and the brochure in which Dr. Walford sets forth his interesting views on *Cerebral Congestion and Tight Neck Clothing*; to these we have several times drawn attention. We also noted *The Influence of Rain-bearing Winds on the Prevalence of Phthisis*, by Dr. Gordon of Exeter, and third editions of Allen's *Vaccine Therapy* and Shuttleworth's *Mentally Deficient Children*. The first of these two latter has been largely rewritten, and the second includes information derived from the recent Royal Commission on the subject. It now bears the name of Dr. Potts as well as that of the original author.

The Vacca Milk Company (Amsterdam). This Dutch company is the producer of the "Snip" brand of milk, a bottled milk preserved by a process which is the subject of patents in several foreign countries. It has been worked with success by a large company in Holland for some years, and a company with a similar object is about to be launched in this country. A practical trial was given to the milk at the Belgrave Hospital last year, with results which appear to show that it is of a desirable kind. The laboratory tests seem also of a satisfactory character, the report of Dr. Klein, after recording his results, stating that they show that the hitherto unsolved problem of having milk sterilized without boiling and of keeping it sterile without any preservative has been satisfactorily solved.

Rebman, Limited (129, Shaftesbury Avenue, London). Some specimens of the new series of the monthly journal now known as *Archives of the Roentgen Ray and Allied Phenomena* was a feature of this stall, which was also notable for several elaborate publications in the nature of atlases. One of them was the *Ikonographia Dermatologica*, which is being brought out under the joint editorship of Neisser and Jacobi, and of which four parts have at present appeared. Another work of the same general order was a third edition of Jacobi's *Portfolio of Dermachromes*; while an *Atlas of Clinical Surgery*, by Bockenheimer, and an *Atlas of Typical Operations of Surgery*, by the same author in conjunction with Frohse, were also on view. The stall was also strong in works on subjects which at present have received comparatively little notice by writers in this country, one of them being *Cosmetic Treatment*, by Saalsfeld; another the *Sexual Life of Woman*, by Kisch; and others the *Sexual Life of Our Time*, by Bloch, and *Health and Disease in Relation to Marriage and the Married State*, by Senator-Kaminer.

Charles Zimmerman and Co. (9 and 10, St Mary-at-Hill, London, E.C.). This stall was made conspicuous by a vase containing some beautiful specimens of *Strophanthus gratus* seeds, which closely resemble those of the water melon. Samples of the well-known antiseptic, Lysol, were prominent, as also three preparations of the Agfa brand, one of them being pure lecithin in pills and ampoules, another lecithin combined with bromine, and the third amido-azotoluol, this being a stimulant for granulating wounds. We also noted a very convenient appliance for formalin disinfection without the use of either heat or a spraying apparatus. It consists of a block of some porous material over which is poured a certain quantity of 40 per cent. formalin solution. The blocks are quite cheap, and each one is stated to generate vapour and formalin gas sufficient for 1,000 cubic feet of room capacity.

Theinhardt's Food Company (6, Catherine Court, Seething Lane, London, N.W.). The exhibits of this firm were two foods, to which we drew attention some two or three years ago when introduced from Germany, where they had been well known for some time. The one is known as *Infantina* and the other as *Hygiama*. The former is intended for infants from birth until 2 years of age, and the latter for children and adults in health or sickness. It contains, it would appear, 16.1 proteids, 5.0 fat, 53.6 soluble carbohydrates, 16.7 insoluble carbohydrates, and 3.4 salts. The composition of *Hygiama* is of corresponding character, but the proteids and fats are higher and the carbohydrates lower.

W. B. Saunders Co. (9, Henrietta Street, Covent Garden, W.C.). There was no lack of attraction on the stall of this well-known Anglo American firm of medical book publishers, entirely new works and new editions being almost equally numerous. Among the former we noted *Dislocations and Joint Fractures*, by Cotton of Boston. In its 600 pages it contains as many as 900 illustrations, most of them being from the pencil of the author himself, who appears to be a draughtsman of no mean ability. Also markedly well illustrated by photographs, *x*-ray reproductions, and coloured plates was a second edition of the book on *Pulmonary Tuberculosis*, by Bonney of Denver. A full set of the monumental work on *Surgery: Its Principles and Practice*, edited, with the assistance of some sixty or seventy authorities, by Keen of Jefferson College, Philadelphia, was also on view. Copies of another valuable new work, to which we have elsewhere recently drawn favourable attention—Tousey's *Medical Electricity and the X Rays*—were also on view. Among the new editions were a third and enlarged issue of the comprehensive *Textbook of Physiology*, by Howell; a fifth edition of Dorland's *Illustrated Medical Dictionary*, which is stated to contain as many as 2 000 new terms; and an eighth edition of Ander's *Textbook of the Practice of Medicine*; while samples were also shown of the firm's very well-known series of Hand Atlases, in which the lessons to be derived from the excellent illustrations are woven together by succinct text. Other works which attracted attention were *Exercise in Education and Medicine*, by Tait McKenzie; *Surgical After Treatment*, by L. R. G. Crandon; and *A Textbook of Veterinary Anatomy*, by Septimus Sisson.

Association Notices.

COUNCIL MEETING.

A MEETING of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 26th, in the Council Room at 429, Strand, London, W.C.

By Order,

GUY ELLISTON,
Financial Secretary and Business Manager.

September 15th, 1910.

NOTICE OF CHANGE OF BOUNDARIES OF DIVISIONS.

THE following change has been made in accordance with the Regulations of the Association, and takes effect from the date of the publication of this Notice:

That Sandlebridge be transferred from the area of the Stockport, Macclesfield, and East Cheshire Division to the area of the Altrincham Division of the Lancashire and Cheshire Branch.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—The autumn meeting of this Branch will be held in Weymouth on Wednesday, October 19th. Members wishing to read papers, show cases, or exhibit specimens should communicate with the Honorary Secretary not later than Thursday, October 6th.—JAMES DAVISON, Honorary Secretary, "Streateplace," Bournemouth.

EAST ANGLIAN BRANCH: WEST NORFOLK DIVISION.—The next meeting of this Division will be held at the West Norfolk and Lynn Hospital on Thursday, September 29th, at 3.15 p.m.—J. L. FORREST, Honorary Secretary, Wisbech.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—On Thursday, October 6th, a general meeting of the Division will be held at the Workhouse ospital, Knutsford, at 4.30 p.m. A dinner will be held afterwards if sufficient members will kindly send in their names. Further particulars in future notice.—H. G. COOPER, Honorary Secretary.

SOUTH-EASTERN BRANCH: BROMLEY DIVISION.—A meeting of this Division will be held at the Bell Hotel, Bromley, on Thursday, September 29th, at 8.30 p m., to discuss the question of "School Children found Defective upon Medical Inspection." The Medical Secretary of the Association has accepted an invitation to assist in the discussion.—A. TENNYSON SMITH, Honorary Secretary, Shanklin, Orpington, Kent.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.—The next meeting of this Division will be held at the Carlton Hotel, Broadstairs (opposite the bandstand on the Sea Front), on Friday, September 30th, at 3.45 p m., Mr. H. G. Biddle, M.R C.S., in the chair. Agenda: (1) Correspondence on the subject of Treatment of Defective School Children. (2) Dr. Gosse will report on the recent Meeting of Representatives in London. (3) Dr. T. G. Stevens (Queen Charlotte's, Soho Square, and Guy's Hospitals), will read a paper on Some Common Gynaecological Affections. Any other business. Tea will be served during the meeting. All members of the Association are invited to attend these meetings, and to introduce professional friends.—HUGH M. RAVEN, Honorary Divisional Secretary.

SOUTH-EASTERN BRANCH: MAIDSTONE DIVISION.—A meeting of this Division will be held at the West Kent General Hospital, Maidstone, on Tuesday, September 27th, at 3.30 p.m. prompt. It is hoped every member will endeavour to be present. The Executive Committee will meet at 3 p.m. Business: Minutes of last meeting. To consider recommendation from Subcommittee *re* scale of fees to be paid to medical practitioners for attendance on hop-pickers. To consider letter from Dr Starling, Branch Secretary, referring to the position of medical men practising in Kent, as regards the treatment of school children found upon inspection to be defective. — GEORGE POTTS, F.R.C.S.Edin., Honorary Secretary, Kent County Ophthalmic Hospital, Maidstone.

SOUTH MIDLAND BRANCH.—The autumnal meeting of this Branch will be held at Bletchley on Thursday, October 13th, under the presidency of Dr. Skelding, Bedford. Members are invited to read papers or show cases or specimens, and should notify the Secretary of their intention on or before Monday, October 3rd.—E. HARRIES-JONES, Honorary Secretary.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: MONMOUTHSHIRE DIVISION.—A meeting of this Division will be held in the Asylum, Abergavenny, on Friday, September 30th, at 3 p.m.—R. J. COULTER, S. HAMILTON, Honorary Secretaries, Newport.

BRITISH MEDICAL ASSOCIATION LIBRARY.

BOOKS NEEDED TO COMPLETE SERIES.

THE Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

Bentley and Trimen. Atlas of Medicinal Plants.
British Journal of Dermatology. Vol. 2, part 3.
British Laryngological and Rhinological Association, 1896-7-8-9, 1900, and since 1903.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Carmichael Essays. Rivington, 1879.
Centralblatt für Augenheilkunde. Hirschberg. All prior to 1891; Index to 1891.
Centralblatt für Bakteriologie. Bound volumes prior to 1899.
——— für medicinischen Wissenschaften. Vols. 1-19.
Congrès Français de Chirurgie. Transactions 1, 2, 3, 6, and 10, and all since 11th.
——— Internat. d'Obstétrique et de Gynécologie. 3. Amsterdam, 1899.
Congress für innere Medicin, Verhandlungen. 1-12, 14, and since 18.
Dermatological Congress. Vienna, 1892.
Dermatologischer Jahresbericht, 1906-1908.
Dublin Quarterly Journal of the Medical Sciences. Vols. 1, 10, 17, 20, 28, and 35-40.
Edinburgh Obstetrical Transactions. Vol. 5.
Glasgow Medical Journal. 1833-1868.
——— Pathological Society. Transactions 1 and 2.
Guy's Hospital Gazette. Nos. 1 and 5. 1872.
Indian Medical Gazette. 1868-1884.
International Congress of School Hygiene. Transactions of First Congress, Nuremberg.
International Congress of Hygiene. Transactions of Congresses 1-6 and 10-12.
——— Ophthalmological Congress. Transactions of Fifth; New York, 1876.
Jahresbericht Neurologie und Psychiatrie, 1, 2, 5-9, 11-13.
Journal of Laryngology. Vols. 1 to 9.
Lakeside Hospital Clinical and Pathological Papers, Series 2.
Montreal Medical Journal, prior to 1900.
New York Pathological Society. Proceedings prior to 1888, 1890, 1892-1898, 1901-1904
New York State Journal of Medicine, 1906.
Ophthalmic Review. January, 1882.
Pediatrics, prior to 1902.

Vital Statistics.

HEALTH OF ENGLISH TOWNS

IN seventy-seven of the largest English towns 7 577 births and 4,085 deaths were registered during the week ending Saturday last, September 17th. The annual rate of mortality in these towns, which had been 12.1 and 11 7 per 1 000 in the two preceding weeks, rose again to 12 6 per 1,000 last week The rates in the several towns ranged from 3 2 in Hornsey, 5.0 in Willesden and in Handsworth (Staffs), 5 9 in West Bromwich, 6 0 in Aston Manor, and 6 7 in East Ham, to 17.0 in Birkenhead, 17.1 in Preston, 17.5 in Grimsby and in Hull, 17 6 in Stoke-on-Trent, 17 7 in Bootle, 18.5 in Liverpool, 21 9 in Middlesbrough, and 23.1 in Tynemouth; in London the death rate was 12 2 per 1,000. The death-rate from the principal infectious diseases averaged 2 0 per 1,000 in the seventy-seven towns; in London the rate was 1.7 per 1,000, while among the other towns it ranged upwards to 4.1 in Barrow-in-Furness, 4.4 in Bury, in Burnley, and in South Shields, 5 9 in Bootle, 6 1 in Hull, and 7 8 in Middlesbrough Measles caused a death-rate of 2 5 in Barrow-in-Furness; whooping-cough of 1.2 in Kings Norton, 1 3 in Coventry, and 1.9 in Great Yarmouth; enteric fever of 1.1 in St Helens; and diarrhoea of 3 0 in Rhondda, 3 3 in Sheffield, 3.5 in South Shields, 3 9 in Stockton-on-Tees, 4.4 in Bury, 5.2 in Bootle, 5 6 in Hull, and 7 3 in Middlesbrough The mortality from scarlet fever and from diphtheria showed no marked excess in any of the large towns, and no fatal case of small pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1 447, 1,455, and 1,462 at the end of the three preceding weeks, had further risen to 1,509 at the end of last week; 201 new cases were admitted during the week, against 183 in each of the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, September 17th, 785 births and 473 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13 6, 13 3, and 13.0 per 1,000 in the three preceding weeks, was again 13.0 per 1,000 last week, and was 0.4 per 1,000 above the mean rate during the same period in the seventy-seven large English towns. The rates in the Scottish towns ranged from 7.8 in Leith and 11 7 in Edinburgh to 15 4 in Perth and 16.2 in Dundee. The death-rate from the principal infectious diseases averaged 2.2 per 1.000, the highest rates being recorded in Dundee and Perth. The 226 deaths registered in Glasgow included 4 from scarlet fever, 3 from diphtheria, 9 from whooping cough, 3 from enteric fever, and 25 from diarrhoea. Two fatal cases of diphtheria and 6 of diarrhoea were recorded in Edin-

burgh; 2 of diphtheria and 10 of diarrhoea in Dundee; 2 of diphtheria and 2 of diarrhoea in Aberdeen; 2 of diarrhoea in Paisley; and 2 of whooping-cough in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 17th, 713 births and 375 deaths were registered in the twenty-two principal urban districts of Ireland, as against 633 births and 334 deaths in the preceding period The annual death-rate in these districts, which had been 17 1, 15 2, and 15.1 per 1,000 in the three preceding weeks, rose to 17.0 per 1,000 in the week under notice, this figure being 4 4 per 1,000 higher than the mean annual death-rate in the seventy seven English towns for the corresponding period. The figures in Dublin and Belfast were 18 8 and 15 5 respectively, those in other districts ranging from 4.5 in Lisburn and 4.8 in Sligo to 33 0 in Queenstown and 34.4 in Armagh, while Cork stood at 14 4, Londonderry at 18.0, Limerick at 9 6, and Waterford at 19 5. The zymotic death-rate in the twenty-two districts averaged 2.8 per 1,000, as against 1 9 per 1,000 in the preceding week.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Fleet Surgeon A. G. WILDEY to the *Pembroke*, additional, for Chatham Hospital, temporarily, October 1st, and to Chatham Hospital, October 18th; Fleet Surgeons W. E HOME, M D, E. H. DE COURTMACSHERRY, M.D, and E. J. FINCH, M D., Staff Surgeons O. REES, M.D., A. K. SMITH-SHAND M B, E R. GRAZEBROOK, and J. K. RAYMOND, M.B, Surgeons J. A. THOMPSON, M.B., C H. DAWE, F. COCK, S. H. VICKERY, M.B., and N. S. MEIKLEJOHN to the *President*, additional, for hospital course, October 3rd; Staff Surgeons K. H. JONES, M B., and R. ST. G. S. BOND, M.B., to the *President*, additional, for survey of medical stores at Deptford Victualling Yard, October 1st; Staff Surgeons J. H. FERGUSON to the *Dominion*, temporary, October 1st; Staff Surgeon E. C. SAWDY to the *Latona*, September 1st; Surgeon J. H. WRIGHT, M.B., to the *Hearty*, October 1st.

ARMY MEDICAL SERVICE.

COLONEL T. J. O'DONNELL, who is serving in India, is appointed Principal Medical Officer, Kurrachee Brigade.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT W. C. RIVERS, Half-pay List, resigns his commission, August 27th. He was placed on half-pay August 27th, 1905.

Captain E. V. AYLEN, who is serving in India, is appointed Specialist in Dermatology, 1st (Peshawar) Division, from August 9th.

Captain A. CHOPPING, also serving in India, is appointed Specialist in Electrical Science, 1st (Peshawar) Division, from August 1st.

Lieutenant-Colonel J. MEEK, M.D., serving in India, has been appointed to officiate as Principal Medical Officer, 4th (Quetta) Division.

INDIAN MEDICAL SERVICE.

COLONEL W. A. CORKERY, Bombay, is gazetted Principal Medical Officer, 3rd (Lahore) Division.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

CLARENCE E. GREESON, M.B., to be Lieutenant (on probation), August 17th.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

The promotion of Major JAMES WILSON, M B., which was announced in the *London Gazette* of August 23rd, is antedated to July 10th.

Third East Anglian Field Ambulance.—ALEXANDER GRAHAM, M.B., to be Lieutenant, July 7th.

Third North Midland Field Ambulance.—MARTIN HALLAM to be Lieutenant, July 26th.

Attached to Units other than Medical Units.—Major C. J. MARSH resigns his commission, retaining his rank and uniform, September 14th; Captain P. J. LE RICHE and Lieutenant A. N. HAIG, M.B., resign their commissions, September 14th.

For Attachment to Units other than Medical Units.—HENRY E. S. RICHARDS, M.D., to be Lieutenant, June 15th; CHARLES H. CALDICOTT, M.B., to be Lieutenant, July 22nd.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BATH: ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £60 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—(1) Honorary Physician. (2) Junior Resident House-Surgeon. Salary, £80 per annum and notification fees.

BOLINGBROKE HOSPITAL, S W.—Two House-Surgeons. Salary at the rate of £75 per annum each.

BRISTOL GENERAL HOSPITAL.—(1) House-Physician. (2) House-Surgeon. (3) Casualty House-Surgeon. (4) Assistant House-Physician. Salary, £60.

CANCER HOSPITAL, Fulham Road, S.W.—Assistant Surgeon.

CANTERBURY BOROUGH ASYLUM.—Assistant (Male) Medical Officer. Salary, to commence, £140 per annum.

CARDIFF INFIRMARY.—Honorary Ophthalmic Surgeon.

CARLISLE: CUMBERLAND AND WESTMORLAND ASYLUM.—Junior Assistant Medical Officer (male). Salary, £130 per annum, rising to £150.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £60 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

DREADNOUGHT HOSPITAL, Greenwich, S.E.—(1) Two House-Physicians. Salary, £50 per annum. (2) Two House-Surgeons. Salary, £50 per annum. (3) Assistant Surgeon.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—House-Surgeon. Salary, £120 per annum.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, Grove End Road, N W.—Resident Medical Officer. Salary at the rate of £80 per annum, and gratuity of £10 at the end of six months.

HULL ROYAL INFIRMARY.—Senior House-Surgeon. Salary, £150 per annum.

JERSEY INFIRMARY AND DISPENSARY.—Resident Medical Officer (male) Salary, £100 per annum.

KENSINGTON WORKHOUSE AND INFIRMARY.—Second Assistant Resident Medical Officer. Salary, £100 per annum.

LIVERPOOL PARISH WORKHOUSE, Brownlow Hill.—Assistant Medical Officer. Salary, £100 per annum, and £20 for examining applicants for outdoor relief.

LONDON HOSPITAL, Whitechapel, E.—Two Surgical Registrars. Salary, £100 per annum each.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Surgical Registrar. Honorarium at the rate of 40 guineas per annum

LOWESTOFT HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum.

MANCHESTER ROYAL INFIRMARY. — Medical Officer for Out-patients and Accidents to the Central Branch. Salary at the rate of £100 per annum.

MORPETH: NORTHUMBERLAND COUNTY ASYLUM. — Junior Assistant Medical Officer. Commencing salary, £120 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Clinical Pathologist. Annual honorarium of £50.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth. — Junior Assistant Medical Officer (male). Salary £140 per annum, rising to £160.

PADDINGTON INFIRMARY. — Second Assistant to the Medical Superintendent to the Infirmary and Medical Officer of the Workhouse. Salary at the rate of £100 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.- House Physician. Salary at the rate of £75 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—(1) House-Physician. (2) Second House-Surgeon. Salary, £80 and £60 per annum respectively.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiner in Dental Surgery.

SALFORD ROYAL HOSPITAL.—Junior House-Surgeon. Salary at the rate of £50 per annum.

SAMARITAN HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Clinical Assistants.

SHEFFIELD ROYAL HOSPITAL. — Assistant House-Physician. Salary, £50 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (male). Commencing salary, £70 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY. — (1) Senior House-Surgeon; (2) Junior House-Surgeon. Salary, £100 and £90 per annum respectively.

SUNDERLAND UNION WORKHOUSE.—Resident Assistant Medical Officer. Salary, £120 per annum.

THROAT HOSPITAL, Golden Square, W. — Honorary Assistant Surgeon.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION. —Assistant Resident Medical Officer. Salary, £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Wimborne, co. Dorset; Kilmacthomas, co. Waterford; Thetford, co. Norfolk; Portumna, co. Galway; Kiltimagh, co. Mayo; and Brora, co. Sutherland.

MEDICAL REFEREES.—The Secretary of State announces vacancies as Medical Referees under the Workmen's Compensation Act for the Sheriffdom of Inverness, Elgin, and Nairn, and for the Sheriffdom of Stirling, Dumbarton, and Clackmannan.

APPOINTMENTS.

BIGLEY, F. W. H., M.D., District Medical Officer of the Church Stretton Union.

CARRE, Henry, L.R.C.P.I. and L.M., L.R.C.S.I. and L.M., L.M. Rot. Hosp., Dub., Medical Superintendent of the Glasgow District Asylum, Woodilee, Lenzie, Glasgow.

DYKES, C. R., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Loughton District, co. Essex.

FLOYD, S. F., M.B, B.Ch.R.U.I., Certifying Factory Surgeon for the Kilkeel District, co. Down.

LEECH, E. B., M.D., Physician to the Ancoats Hospital, Manchester.

MCPHERSON, John, M.B.Aberd., Senior House-Surgeon to the Lincoln County Hospital.

NOLAN, Joseph J., L.R.C.P.I., Medical Referee under the Workmen's Compensation Act for County Carlow, Ireland.

Smallpeice, W. D., L.R.C.P., M.R.C.S., District Medical Officer of the Dunmow Union.

Stephen, David J. S., M.B., Ch.B.Aberd., Junior House-Surgeon to the Lincoln County Hospital.

Trotter, W. O., L.R.C.P.Edin., M.R.C.S.Eng., Medical Officer to the Children's Home of the Thetford Union.

Wakeham, C. H., M.R.C.S., L.R.C.P.Lond., Medical Officer and Public Vaccinator to the North-West District of the Paddington Union.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—The following appointments have been made:—

Physician to the Out-patients: Sydney A. Owen, B.A., M.D.Cantab., M.R.C.P.

Pathologist: Philip Hamill, M.A., D.Sc.Lond., M.R.C.S., L.R.C.P.

Resident Medical Officer: Wilson Jameson, M.A., M.B., Ch.B.

House-Physician: John Inkster, M.B., Ch.B.

House-Physician: Thomas Marlin, M.B., Ch.B. (re-elected).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

Bennett-Jones.—On September 15th, at 80A, Sheil Road, Liverpool, the wife of W. J. Bennett-Jones, M.D., of a son.

Scatchard.—On September 5th, at Ivy House, Tadcaster, Yorks, the wife of James Percival Scatchard, of a son.

Wilkinson.—On September 18th, at 113, High Street, Bordesley, Birmingham, the wife of Edmund Wilkinson, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

Bernstein—Wreyford.—September 7th, at Eastwold, Toronto, Julius M. Bernstein, M.B., M.R.C.P., D.P.H., of London, to Constance W. Wreyford, of Toronto (formerly of Torquay, England).

Hopper—Brand.—On September 19th, at All Saints' Church, Great Driffield, by the Rev. Canon Sharrock, M.A., Vicar of the Parish, assisted by the Rev. W. Holt, the Rev. C. S. Davis, B.A., and the Rev. B. W. Taylor, B.A., Harold Stephenson Hopper, Kelleythorpe, Driffield, to Amelia Harriette, eldest daughter of Dr. Brand, V.D., J.P., Invery, Driffield.

Smith—Mason.—On September 14th, at St. Mary Abbott's, Kensington, John William Smith, F.R.C.S., of Manchester, to Irène Maud, only daughter of Mr. and Mrs. H. J. Mason, 88, Holland Park, London, W.

Sudlow—Shovelton.—On September 8th, 1910, at the Wesleyan Church, Eccles, by the Rev. John Baker, M.A., George Wray Sudlow, M.B., B.S.Lond., M.R.C.S., L.R.C.P.Eng., of Penton House, Stoke-on-Trent, to Marion, elder daughter of James Walter Shovelton, of Carholme, Ellesmere Park, Eccles.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

London Hospital Medical College, E.—Monday, 2 p.m.: Diseases of the Lungs. Tuesday, 2 p.m.: Diseases of the Kidneys. Wednesday, 2 p.m.: Diseases of the Digestive System and Children's Diseases. Thursday, 2 p.m.: Diseases of the Nervous System. Friday, 2 p.m., Diseases of the Heart.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Medical. Friday, Eye.

West London Post-Graduate College, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays and Operations, at 2 p.m. daily. Monday, Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

PUBLISHERS' ANNOUNCEMENTS.

Messrs. P. Blakiston's Son and Co. announce the publication of a second edition of *Embryology: a Laboratory Textbook of Embryology*, by Charles S. Minot, M.D., LL.D., Professor of Histology and Human Embryology, Harvard University Medical School. The work is copiously illustrated.

The same publishers announce a work entitled *American Red Cross Abridged Textbook on First Aid* (industrial edition), by Major Charles Lynch, Medical Corps, United States Army, and First Lieutenant M. J. Shields, Medical Reserve Corps, United States Army. The book will be copiously illustrated.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
SEPTEMBER.	
25 Sunday ..	
26 MONDAY ..	
27 TUESDAY ..	Maidstone Division, *South-Eastern Branch*, West Kent General Hospital, Maidstone, 3.30 p.m.; Executive Committee, 3 p.m.
28 WEDNESDAY	
29 THURSDAY ..	Bromley Division, *South-Eastern Branch*, Bell Hotel, Bromley, 8.30 p.m. West Norfolk Division, *East Anglian Branch*, West Norfolk and Lynn Hospital, 3.15 p.m.
30 FRIDAY ..	London: Conference between the Special Poor Law Reform Committee and the Contract Practice Subcommittee, 2 p.m. Isle of Thanet Division, *South-Eastern Branch*, Carlton Hotel, Broadstairs, 3.45 p.m. Monmouthshire Division, *South Wales and Monmouthshire Branch*, The Asylum, Abergavenny, 3 p.m.
OCTOBER.	
1 SATURDAY ..	
2 Sunday ..	
3 MONDAY ..	London: Naval and Military Committee, 2.30 p.m.

Date.	Meetings to be Held.
OCTOBER *(continued)*.	
4 TUESDAY ..	London: Organization Committee, 10.45 a.m.
5 WEDNESDAY	London: Medico-Political Committee, 2 p.m.
6 THURSDAY ..	London: Hospitals Committee, 2.30 p.m. Altrincham Division, *Lancashire and Cheshire Branch*, General Meeting, Workhouse Hospital, Knutsford, 4.30 p.m.
7 FRIDAY ..	London: Central Ethical Committee, 2 p.m.
8 SATURDAY ..	London: Therapeutic Committee, 11 a.m. London: Science Committee, 12 noon.
9 Sunday ..	
10 MONDAY ..	London: Colonial Committee, 2.45 p.m.
11 TUESDAY ..	London: Public Health Committee, 3 p.m.
12 WEDNESDAY	
13 THURSDAY ..	South Midland Branch, Autumnal Meeting, Bletchley.
14 FRIDAY ..	
15 SATURDAY ..	
16 Sunday ..	
17 MONDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 1ST, 1910.

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Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

SOUTH-EASTERN BRANCH:

ASHFORD DIVISION.

A MEETING of this Division, to which all the medical men practising within the area of the Division were invited, was held in the Old Grammar School, Ashford, on Tuesday, September 20th, at 5 p.m. Dr. KERR was in the chair. There were also present Drs. Hardwick and Wilks, and Messrs Bentley, F. Coke, W. Doughty, Tilbury Fox, R. Hardwick, H. Hick, B. Toms, C. M. Vernon, and J. Waite (Messrs. Coke and Waite being non-members).

Dr. KERR explained the object of calling the meeting, and read the letter from the Branch Secretary to the Honorary Secretary of the Division.

The method of procedure was on the lines suggested in Appendix I, Memorandum.

Medical Treatment of School Children.

Dr. WILKS proposed and Mr. HICK seconded:

That it is desirable that the local profession should arrange with the local education authority for the medical treatment of school children found upon inspection to be defective.

This was carried unanimously.

Mr. HICK proposed, and Mr. COKE seconded:

That this meeting approves the principles contained in Memorandum 25.

This was carried unanimously.

Mr. DOUGHTY proposed, and Mr. HICK seconded:

That the local profession shall make arrangements for the area of the Ashford Division of the British Medical Association.

This was carried unanimously.

Mr. HICK proposed, and Mr. HARDWICK seconded:

That the scheme adopted in the country areas should be treatment at doctors' surgeries.

This was carried unanimously.

Mr. COKE proposed, and Mr. HICK seconded:

That the procedure outlined in Section A, p. 3, of Memorandum be approved.

This was carried unanimously.

Mr. COKE proposed, and Mr. HICK seconded:

That the procedure outlined in Section B (1), pp. 3-5, be approved, but paragraphs 20 and 21 should be omitted, as it is not advisable that the doctor should be the arbiter as to whether or not his patients can afford to pay for treatment.

On this being carried, Dr. Kerr, Mr. Coke, and Mr. Hick were then appointed to represent the Division at the proposed meeting in October to formulate a definite scheme.

Coroners and Death Certification Act.—Dr. KERR reported that he had in the name of the Division, as a matter of urgency, written to Mr. Lawrence Hardy, M.P., pointing out the omission, in the proposed Coroners and Death Certification Act, of any fee for the duties imposed by the Act on medical men, and asking him to oppose any such legislation. Mr. Hardy had replied, making no promises, and merely stating that he considered the principle in question unfair. Dr. Kerr's action in the matter was approved, and the Secretary was asked to write again to Mr. Hardy asking him to promise to either propose or support an amendment, should the Bill come before Parliament, providing that an adequate fee be paid for any duties imposed on medical men.

MEDICAL MUSEUM.

ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, 1910.

Notice.

OWING to the exceptionally large number of exhibits which were sent to the Medical Museum this year, it has been found impracticable to inquire of each exhibitor individually whether the specimens they kindly lent have been received in good condition. Special care has been exercised both in the packing and transmitting. Any one who may not have had his exhibits returned, or having received them, found them in a damaged condition, is requested to communicate at once with the Honorary Secretary of the Museum Committee, Mr. H. W. Armit, Lister Institute of Preventive Medicine, Chelsea Gardens, S.W., in order that claims for compensation can be dealt with. No claim can be put forward after Friday, October 7th.

Association Notices.

COUNCIL MEETING.

A MEETING of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 26th, in the Council Room at 429, Strand, London, W.C.

By Order,

GUY ELLISTON,
Financial Secretary and Business Manager.

September 15th, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—The annual dinner of the Coventry Division will be held at the Masonic Hall on October 11th. Mr. Gilbert Barling, the President of the Birmingham Branch, has accepted the invitation of the Division to be present. Many members have already notified the Honorary Secretary of their intention to attend the dinner, so that a successful meeting is confidently anticipated.—VAUGHAN PENDRED, Honorary Secretary.

DORSET AND WEST HANTS BRANCH.—The autumn meeting of this Branch will be held in Weymouth on Wednesday, October 19th. Members wishing to read papers, show cases, or exhibit specimens should communicate with the Honorary Secretary not later than Thursday, October 6th.—JAMES DAVISON, Honorary Secretary, "Streateplace," Bournemouth.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—A general meeting of the members of this Division will be held on Thursday, October 6th, at Knutsford. Agenda: (1) Minutes of last meeting. (2) Apologies for absence. (3) Minutes of committee meeting. (4) Resolution: Question of fees for ambulance lectures. (5) Representatives' report. (6) Discussion on Memorandum No. 25 *re* treatment of school children found upon inspection to be defective. (7) Discussion on the position of general practitioners in relation to State sickness and invalidity insurance. Opened by Dr. P. R. Cooper and supported by Dr. Gough. 4.30 p.m.—Afternoon tea at Dr. G. H. Smith's, Cranford House, on the kind invitation of Dr. and Mrs. G. H. Smith. 5 p.m.—General meeting, Knutsford Workhouse. 7 p.m.—Dinner at the Angel hotel if sufficient members desire. Members wishing to dine should notify the Honorary Secretary at once. — H. G. COOPER, Honorary Secretary, Altrincham.

METROPOLITAN COUNTIES BRANCH: RICHMOND DIVISION.—The annual dinner of this Division will be held at the Trocadero Restaurant, Piccadilly Circus, W., on Wednesday, October 26th, at 7.30 for 8 o'clock p.m. Tickets 7s. 6d. each, payable at the dinner.—G. CARDNO STILL, Honorary Secretary.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—A meeting of this Branch will be held at the District Asylum, Inverness, on Saturday, October 15th, at 3 p.m. Members wishing to read papers or show cases or specimens should communicate with the Honorary Secretary not later than October 8th.—J. MUNRO MOIR, Honorary Secretary.

SOUTH MIDLAND BRANCH.—The autumnal meeting of this Branch will be held at Bletchley on Thursday, October 13th, under the presidency of Dr. Skelding, Bedford. Members are invited to read papers or show cases or specimens, and should notify the Secretary of their intention on or before Monday, October 3rd.—E. HARRIES-JONES, Honorary Secretary.

SOUTH-EASTERN OF IRELAND BRANCH.—The last meeting of session of this Branch will be held at Victoria Hotel, Kilkenny, on October 15th, at 5.30 p.m. Agenda: (1) Minutes. (2) Correspondence. (3) Apologies for non-attendance. (4) Any other business. There will also be a meeting of the local Division and of the Branch Council.—J. QUIRKE, Honorary Secretary, Piltown.

Naval and Military Appointments.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Army Medical Service have been officially reported to have taken place during August, 1910:

		FROM		TO
Colonel	T. F. MacNeece	Chatham	...	Naini Tal.
,,	T. J. R. Lucas, C.B., M.B. ...	Bangalore	...	Cherat.
,,	R. H. S. Sawyer, M.B., F.R.C.S.I.	London	...	Dublin.
Lieut.-Col.	T. W. O'H. Hamilton, C.M.G., M.B.	Aldershot	...	Warley.
,,	M. O'D. Braddell, M.B. ...	Labore ...	...	Rawal Pindi.
,,	R. H. Hall, M.D.	Mill Hill	...	Colchester.
Major	E. A. Burnside	Golden Hill	...	Tidworth Park
,,	C. J. Healy, M.B.	Tipperary	...	Fermoy.
,,	S. J. C. P. Perry, F.R.C.S.I.	Brighton	...	Dover.
Major	W. E. Hudleston	Gosport	...	Golden Hill.
,,	J. McD. McCarthy, M.B.	Chester	...	Chapel Bay Camp.
,,	G. B. Carter, M.B.	—		Dublin.
Captain	A. O. B. Wroughton	Canterbury	...	Dover.
,,	H. E. M. Douglas, V.C., D.S.O.	R.A.M. College		Woolwich.
,,	W. C. Croly	,,		Colchester.
,,	A. C. Adderley	,,		Lichfield.
,,	P. H. Henderson, M.B.	Portsmouth	...	Ibsley Camp.
,,	J. P. J. Murphy, M.B.	R.A.M. College		Dover.
,,	W. J. Waters	Crownhill	...	Tidworth Park
,,	J. F. Whelan, M.B.	R.A.M. College		Manchester.
,,	C. D. Myles, M.B.	,,		S. Command.
,,	W. L. Steele	,,		Tidworth.
,,	W. Riach, M.D....	—		London.
,,	A. R. C. Parsons	—		Scottish Comd.
,,	S. B. Smith, M.D.	Ticknock Camp	..	Dublin.
,,	E. S. Worthington	R.A.M. College		London.
,,	F. E. Rowan-Robinson, M.B.	,,	...	Colchester.
,,	J. H. R. Winder, M.D. ...	,,	...	Shorncliffe.
,,	D. L. Harding, F.R.C.S.I. ...	,,	...	Belfast.
,,	P. G. Hyde, M.B.	Kilbride	...	Dublin.
,,	A. McMunn	R.A.M. College		,,
,,	M. C. Beatty, M.B.	,,	...	Devonport.
,,	T. F. Ritchie, M.B.	,,	...	Pembroke Dk.
,,	A. W. Sampey	,,	...	Colchester.
,,	S. M. Adye-Curran	Bere Island	...	Queenstown.
,,	L. Cotterill	R.A.M. College		Aldershot.
,,	W. J. S. Harvey	,,	...	Chatham.
,,	W. F. Tyndale, C.M.G., M.B.	,,	...	Dublin.
,,	J. McKenzie, M.B.	,,	...	London.
,,	N. D. Walker, M.B.	,,	...	,,
,,	A. H. Hayes	,,	...	Dover.
,,	H. J. Crossley	,,	...	York.
,,	R. B. Ainsworth	,,	...	Cosham.
,,	C. A. J. A. Balck, M.B. ...	,,	...	Dublin.
,,	R. Storrs	,,	...	Portsmouth.
,,	F. A. H. Clarke	,,	...	Edinburgh.
,,	G. A. K. H. Reed	,,	...	Aldershot.
,,	J. M. H. Conway, F.R.C.S.I.	,,	...	Dublin.
,,	H. V. Bagshawe	,,	...	Leicester.
,,	P. G. Easton	,,	...	Aldershot.
,,	W. W. Browne	,,	...	Colchester.
,,	R. Rutherford, M.B.	,,	...	Edinburgh.
,,	W. D. C. Kelly, M.B.	,,	...	Dublin.
,,	N. E. J. Harding, M.B. ...	,,	...	Chatham.
,,	R. J. Franklin	,,	...	Cork.
,,	F. W. W. Dawson, M.B. ...	,,	...	Belfast.
,,	J. E. H. Gatt, M.D.	,,	...	Cosham.
,,	R. M. Ranking, M.B.	,,	...	Cork.
,,	T. S. Coates, M.B.	,,	...	,,
,,	D. Ahern	,,	...	,,
,,	J. H. Duguid, M.B.	,,	...	,,
,,	H. T. Stack, M.B.	Finner Camp	...	Belfast.
,,	G. A. Kempthorne	Dalhousie	...	Amritsar.
,,	P. J. Hanafin	Parkhurst	...	Gosport.
,,	T. J. Wright	Dublin ...	...	Kilbride.
,,	G. F. Rugg	R.A.M. College		Chatham.
,,	J. H. Douglass, M.D.	Maryborough Heath Camp		Dublin.
,,	A. L. Otway, M.B.	Killough Camp		,,
,,	W. Wiley, M.B.	Netley ...	...	Tidworth Park.
,,	H. Harding, M.B.	Churn Camp...		,,
,,	F. J. Garland, M.B.	Conway ...		Manchester.
,,	C. Ryley	R.A.M. College		Chatham.
,,	H. W. Russell, M.D.	,,	...	London.
,,	A. T. Frost, M.B.	,,	...	Dublin.
,,	C. R. Millar	,,	...	Cork.
,,	G. S. Wallace, M.B.	,,	...	Aldershot.
,,	R. K. White	Ind. Med. Ser.		Allahabad.
,,	P. Power, M.B.	R.A.M. College		Cork
,,	G. H. Richard	—		Magilligan Camp.
,,	C. J. Wyatt, M.B.	Lanark Camp		Edinburgh.
,,	E. M. O'Neill, M.B.	Jhansi ...	...	Nowgong.
,,	A. M. Benett	Jubbulpore	...	Indore.
,,	D. T. MacCarthy, M.B. ...	Meerut ...	...	Agra.
,,	J. du P. Langrishe, M.B. ...	Poona ...	...	Mhow.
Lieutenant	H. V. B. Batt	Khandalla	...	Poona.
,,	F. J. Stuart, M.B.	Kailana	...	Meerut.
,,	D. B. McGrigor, M.B. ...	Debra Dun	...	Quetta.
,,	J. C. L. Hingston	Hilsea ...	...	Tidworth Park.
,,	F. B. Dalgliesh	Indore ...	...	Mhow.
,,	C. M. Rigby	—		Rangoon.
,,	L. Murphy	Bangalore	...	Secunderabad.
,,	E. V. Vaughan, M.B. ...	Tipperary	...	Cork.
,,	F. H. Somers-Gardner, M.B.	Rowlands Castle		Hilsea.
,,	C. H. O'Rorke, M.B. ...	Curragh	...	Donard Camp.
,,	S. W. Kyle, M.B.	Mosney Camp		Belfast
,,	A. T. J. McCreery, M.B. ...	RollestonCamp		Tidworth.
,,	F. W. M. Cunningham, M.B.	Donard Camp		Curragh.
,,	A. D. Stirling, M.B. ...	Tintown Camp	...	Aberdeen.
,,	M. J. Williamson, M.B. ...	Larkhill Camp		Fargo Camp
,,	R. H. Nolan	Ewshott	...	Aldershot.
,,	C. M. Nicol, M.B.	Colchester	...	Northampton.
,,	T. H. Dickson, M.B. ...	Curragh	...	Dublin.
,,	H. G. Robertson, M.B. ...	Sheffield	...	Derby.
,,	H. V. Stanley, M.B. ...	Kinsale	...	Kilworth Camp.
,,	P. C. Field	Woking	...	Aldershot.
,,	R. M. Davies, M.B. ...	Landguard Fort		Chatham.
,,	R. C. G. M. Kinkead, M.B.	Cork ...	...	Ballyvonaro Camp.
,,	E. C. Stoney, M.B.	Colchester	...	Ipswich.
,,	T. W. Stallybrass, M.B. ...	Netley ...	...	Tidworth Park.
,,	V. P. Hutchinson	,, ...	...	,,

The following Lieutenants, appointed on probation on the dates specified, have been stationed as follows, namely: W. H. O'Riordan (appointed January 30th, 1909), at York; C. T. V. Benson and W. P. MacArthur, M.B. (also appointed January 30th, 1909), at Aldershot; J. Gilmour, M.B., and C. Robb, M.B. (appointed January 28th, 1910), at Devonport and Curragh respectively.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns, 7,692 births and 4,235 deaths were registered during the week ending Saturday last, September 24th. The annual rate of mortality in these towns, which had been 12 1, 11.7, and 12.6 per 1,000 in the three preceding weeks, rose again to 13.0 per 1,000 last week. The rates in the several towns ranged from 4 7 in Leyton, 6.0 in East Ham, 6.2 in King's Norton, and 6.4 in Wolverhampton and in Wallasey, to 18 5 in Bootle, 19.4 in St. Helens and in Halifax, 20.3 in Oldham, 20.4 in Dewsbury, and 22 7 in Swansea; in London the death-rate was 12 0 per 1,000. The death-rate from the principal infectious diseases averaged 1 8 per 1000 in the seventy-seven towns; in London the rate was equal to 1.4 per 1,000, while among the other towns it ranged upwards to 3.9 in Middlesbrough and in Newport (Mon.), 4 1 in Barrow-in-Furness, 4.5 in Stockport, and 4.7 in Hull. Measles caused a death-rate of 1.4 in Oldham and 2.8 in Tynemouth; scarlet fever of 1.0 in Walsall and 1 1 in Huddersfield; diphtheria of 1 2 in King's Norton; whooping-cough of 1 1 in Blackburn; and diarrhoea of 3.0 in Bootle and in Sheffield, 3.5 in Stockport and in Preston, and 3 9 in Hull and in Newport (Mon.). The mortality from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,455, 1,462, and 1,509 at the end of the three preceding weeks, had further risen to 1,560 at the end of last week; 210 new cases were admitted during the week, against 183 and 201 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, September 24th, 800 births and 494 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.3, 13 0, and 13 0 per 1,000 in the three preceding weeks, rose to 13.6 per 1,000 last week, and was 0.6 per 1,000 above the mean rate during the same period in the seventy-seven large English towns. The rates in the Scottish towns ranged from 9.5 in Paisley and 11 9 in Edinburgh to 22 4 in Perth and 23 4 in Greenock. The death-rate from the principal infectious diseases averaged 2 0 per 1,000, the highest rates being recorded in Greenock, Perth, and Dundee. The 228 deaths from all causes registered in Glasgow included 3 which were referred to scarlet fever, 3 to diphtheria, 2 to whooping-cough, 2 to enteric fever, and 22 to diarrhoea. Four fatal cases of diphtheria and 5 of diarrhoea were recorded in Edinburgh; 2 of measles and 9 of diarrhoea in Dundee; and 5 cases of diarrhoea in Aberdeen and 4 in Paisley.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, September 24th, 647 births and 387 deaths were registered in the twenty-two principal urban districts of Ireland, as against 713 births and 375 deaths in the preceding period. The annual death-rate in these districts, which had been 15 2, 15.1, and 17.0 per 1,000 in the three preceding weeks, rose to 17.5 per 1,000 in the week under notice, this figure being 4.5 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 21 4 and 16 3 respectively, those in other districts ranging from 4 0 in Dundalk and 4.9 in Kilkenny to 23.4 in Waterford and 27.5 in Armagh, while Cork stood at 16.4, Londonderry at 10.8, and Limerick at 12 3. The zymotic death-rate in the twenty-two districts averaged 2 6 per 1,000, as against 2 8 per 1 000 in the preceding week.

Hospitals and Asylums.

EARLSWOOD ASYLUM, REDHILL, SURREY.

The annual report for 1909 of Dr. Charles Caldecott, the Medical Superintendent of this Institution, shows that on January 1st, 1909, there were 440 patients in the asylum and on the last day of the year 460, showing an increase of 20 as compared with a decrease of 5 for the previous year. The total cases under care during the year numbered 491, and the average number daily resident 443. During the year 51 were admitted, of whom all but 2 were first admissions. Of the total, 19 were admitted by election, 20 by election and part payment, and 13 by payment. As to age, 33 or 64.7 per cent. were under 14 years of age, 12 or 23.5 per cent. were between the ages of 15 and 20, and 6 or 11.8 per cent. were over the age of 20 years. Thus nearly two-thirds of the admissions were under 14. Concerning this Dr. Caldecott says that it may be taken for granted that the younger the patient the better the prospect; on the other hand, the continued increase of little children adds to the necessity for "nursery" treatment and an increased probability of infirmary cases, and also involves extra expense in supervision and training. Concerning the forms of mental defect, Dr. Caldecott says that 7 were "Mongolians," and 7 males were epileptic. Reference to the table of etiological factors in the admissions shows that maternal shock, fright, worry, etc., to the mothers during pregnancy were assigned as cause in 14, and prolonged labour in 3; infantile convulsions in 7, and head trauma in 4; in 14 no cause could be assigned, and 6 were epileptic. As to hereditary influences, a heredity of imbecility was ascertained in 6, a phthisical family history in 8, in 2 parental alcoholism was assigned, and in 1 the patient was the offspring of a consanguineous marriage. With regard to "Mongolian" patients, Dr. Caldecott says that it has recently been brought under his notice by one of his staff, Dr. Rankine, that a peculiar form of cataract exists in some of these cases. A paper on this subject is in course of preparation by Drs. Rankine, Pearce, and A. W. Ormonde, the last named being responsible for the description of the eye trouble. During the year, 16 were discharged as relieved and 15 died, giving a death-rate on the average numbers daily resident of 3.38 per cent. All deaths were from natural causes, the only point worthy of remark being that in 10, or 66.6 per cent., the deaths were due to some form of tuberculosis. The general health was satisfactory throughout the year, and there was no epidemic of zymotic disease nor any serious casualty. The last point reflects great credit upon the nursing staff, for 51 epileptic patients had 4,140 fits during the year. As usual, the output of work was very considerable, and Dr. Caldecott records with satisfaction that in 1909 the aggregate number of articles made was the highest for the past six years, notwithstanding that the domestic and internal arrangements were much upset by building renovations.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BATH: ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £60 per annum.

BELFAST: QUEEN'S UNIVERSITY.—Demonstrator of Physiology. Salary, £120 per annum.

BOLINGBROKE HOSPITAL, S W.—Two House-Surgeons. Salary at the rate of £75 per annum each.

CANTERBURY: CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer (male). Salary, to commence, £140 per annum.

CARDIFF INFIRMARY.—Honorary Ophthalmic Surgeon.

CARDIFF: UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Demonstrator in Anatomy.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—(1) Registrars. (2) Clinical Assistants.

CHELTENHAM GENERAL HOSPITAL.—(1) House-Physician. (2) Surgeon in Charge of Branch Dispensary. Salary, £75 and £80 per annum respectively.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £60 per annum.

COLCHESTER: ESSEX COUNTY HOSPITAL. — House-Surgeon. Salary, £80 per annum.

DENBIGH: DENBIGHSHIRE INFIRMARY. — House-Surgeon. Salary, £100 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Second Medical Officer (male) to the Casualty Department. Salary at the rate of £40 per annum.

EAST SUSSEX COUNTY ASYLUM, Hellingly.—Assistant Medical Officer and Pathologist. Salary, £250 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—House-Surgeon. Salary, £120 per annum.

HAMPSTEAD GENERAL HOSPITAL, N.W.: (1) House-Physician. (2) House-Surgeon. Salary at the rate of £70 per annum each.

HASTINGS: HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (male). Salary at the rate of £50 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon Salary, £30 for six months and £2 10s. washing allowance. (2) Fourth Anaesthetist. Honorarium £15 15s.

HULL ROYAL INFIRMARY.—Senior House-Surgeon. Salary, £150 per annum.

JERSEY INFIRMARY AND DISPENSARY.—Resident Medical Officer (male). Salary, £100 per annum.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer.

KING EDWARD VII SANATORIUM, Midhurst, Sussex.—Junior Assistant Medical Officer. Salary, £150 per annum, rising to £200.

LEEDS HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £50 per annum.

LONDON HOSPITAL, Whitechapel, E.—Two Surgical Registrars. Salary, £100 per annum each.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum.

MANCHESTER ROYAL INFIRMARY.—Surgical Registrar. Salary, £70 per annum.

MANCHESTER WORKHOUSE INFIRMARY, Crumpsall.—Visiting Surgeon. Salary, £150 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—Assistant House-Physician Salary at the rate of £20 per annum.

MORPETH: NORTHUMBERLAND COUNTY ASYLUM. — Junior Assistant Medical Officer. Commencing salary, £120 per annum.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth. — Junior Assistant Medical Officer (male). Salary £140 per annum, rising to £160.

PADDINGTON GREEN CHILDREN'S HOSPITAL. W.—(1) Honorary Dental Surgeon. (2) House-Physician. (3) House-Surgeon. Salary at the rate af 50 guineas per annum each for (2) and (3).

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

RAINHILL: COUNTY ASYLUM.—Assistant Medical Officer. Salary, £150 per annum, rising to £250, with further increase to £350, according to promotion.

READING: ROYAL BERKSHIRE HOSPITAL.—(1) House-Physician. (2) Second House-Surgeon. Salary, £80 and £60 per annum respectively.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND, Newcastle, co. Wicklow.—Junior Resident Medical Officer. Salary, £75 per annum.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Resident House-Surgeon. Salary at the rate of £100 per annum.

ST. MARYLEBONE ANTITUBERCULOSIS DISPENSARY.—Medical Officer. Salary, £250 per annum.

ST. PANCRAS AND NORTHERN DISPENSARY, Euston Road, N.W.—Honorary Dental Surgeon.

SHEFFIELD ROYAL INFIRMARY.—Assistant House-Physician. Salary, £50 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (male). Salary, commencing, £70 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—(1) Senior House-Surgeon; (2) Junior House-Surgeon. Salary, £100 and £90 per annum respectively.

SUNDERLAND UNION WORKHOUSE.—Resident Assistant Medical Officer. Salary, £120 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Painswick, co. Gloucester; Ryde, Isle of Wight, and Tighnabruaich, co. Argyll.

APPOINTMENTS.

ANDERSON, G. W., M.B.Toronto. Clinical Assistant to the Chelsea Hospital for Women.

APPERLY, R. E., M.R.C.S., L.R.C.P., Assistant Anaesthetist to the Middlesex Hospital.

QUIRE, E. J. J., House-Surgeon to Charing Cross Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

CARLETON.—On September 21st, at Bearwood, near Birmingham, the wife of H. H. Carleton, B.A., M.B., of a son.

DOUTY.—On Thursday, September 22nd, at The Manor House, Clifford Chambers, Gloucestershire, the wife of Edward H. Douty, of a son.

WHEATLEY.—On September 22nd, at Irwell House, Paley Road, Bradford, the wife of A. J. Wheatley, M.D., of a daughter.

MARRIAGE.

WARD—MARGRAVE.—On September 21st, at All Saints' Church, Llanelly, by the Rev Wateyn Morgan, Vicar of the Parish, assisted by the Rev. J. Popkin Morgan, uncle of the bride, Ernest Ward, M.D., M.A.Camb., F.R.C.S.Eng., third son of the late Sir John Ward, of Leeds, to Nora, eldest daughter of Fred. Margrave, Esq., of the Old Vicarage, Llanelly.

DEATH.

WILSON.—On September 17th, at 133, Wigan-road, Ashton-in-Makerfield, Dr. Samuel Wilson, aged 50. Interment at St. Thomas's Church, Tuesday, September 20th, at 3 o'clock.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Lectures: Tuesday, 3.45 p.m., Methods of Examination. Friday, 3.45 p.m., Methods of Examination.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m.: Scurvy in Children.

LONDON SCHOOL OF CLINICAL MEDICINE, Seamen's Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday; Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m., Thursday.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Eye. Lectures at 5.15 p.m. each day will be given as follows:—Monday, The Teaching of Insanity in the British Isles. Tuesday, The Causation and Care of Obstinate Nasal Discharges. Wednesday, Eustachian Obstruction. Thursday, Some Practical Points in the Diagnosis and Treatment of Tuberculosis of the Larynx.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics. X Rays and Operations, at 2 p.m. daily. Monday, Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. J. AND A. CHURCHILL have just ready for publication the new (sixth) edition of *The Principles and Practice of Medical Jurisprudence*, edited by Dr. F. J. Smith, Lecturer on Forensic Medicine at the London Hospital. Considerable revision has been rendered necessary under the heading of The Workmen's Compensation Act, and that on Criminal Wounding. All the most recent cases have been referred to under Poisoning. In nearly every section there will be found a discussion on Bacteriological Questions that are continually arising in the courts. By the use of a thinner paper the two volumes have been rendered easier to handle.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
OCTOBER.	
2 Sunday ..	
3 MONDAY ..	LONDON: Naval and Military Committee, 2.30 p.m.
4 TUESDAY ..	LONDON: Organization Committee, 10.45 a.m.
5 WEDNESDAY	LONDON: Medico-Political Committee, 2 p.m. SOUTH-EASTERN OF IRELAND BRANCH, Meeting of Branch, also Branch Council and local Division, Victoria Hotel, Kilkenny, 5.30 p.m.
6 THURSDAY ..	LONDON: Hospitals Committee, 2.30 p.m. ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, General Meeting, Knutsford; Tea, Cranford House, 4.30 p.m.; General Meeting, Knutsford Workhouse, 5 p.m.; Dinner, Angel Hotel, 7 p.m.
7 FRIDAY ..	LONDON: Central Ethical Committee, 2 p.m.
8 SATURDAY ..	LONDON: Therapeutic Committee, 11 a.m. LONDON: Science Committee, 12 noon.
9 Sunday ..	
10 MONDAY ..	LONDON: Colonial Committee, 2.45 p.m.

Date.	Meetings to be Held.
OCTOBER *(continued).*	
11 TUESDAY ..	LONDON: Public Health Committee, 3 p.m. COVENTRY DIVISION, *Birmingham Branch*, Annual Dinner, Masonic Hall.
12 WEDNESDAY	
13 THURSDAY ..	SOUTH MIDLAND BRANCH, Autumnal Meeting, Bletchley.
14 FRIDAY ..	
15 SATURDAY ..	NORTHERN COUNTIES OF SCOTLAND BRANCH, District Asylum, Inverness, 3 p.m.
16 Sunday ..	
17 MONDAY ..	
18 TUESDAY ..	
19 WEDNESDAY	LONDON: Journal Committee, 2 p.m. LONDON: Finance Committee, 3 p.m. DORSET AND WEST HANTS BRANCH, Weymouth.
20 THURSDAY ..	LONDON: Metropolitan Counties Branch Council, 4.30 p.m.
21 FRIDAY ..	
22 SATURDAY ..	
23 Sunday ..	
24 MONDAY ..	
25 TUESDAY ..	

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SUPPLEMENT

TO THE

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LONDON: SATURDAY, OCTOBER 8TH, 1910.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

SOUTH WALES AND MONMOUTHSHIRE BRANCH: MONMOUTHSHIRE DIVISION.

A MEETING of this Division was held at the Asylum, Abergavenny, on Friday, September 30th. Dr. A. G. LAWRENCE (Chairman) presided, and the following were also present: Drs. J. Glendinning, W. J. Greer, J. W. Mulligan, J. McGinn, E. V. Connellan, T. Morrell Thomas, R. A. Cowie, W. F. Nelis, F. W. Drapes, E. Y. Steele, W. D. Steel, T. Donovan, J. Townley, T. E. Lloyd, N. Phillips, L. D. Gamble, A. Logie, J. Lornie, and R. J. Coulter and S. Hamilton, Honorary Secretaries.

Apologies for Non attendance.—Apologies for inability to attend were received from Drs. J. L. Thomas, O. E. B. Marsh, and C. B. Gratte.

Confirmation of Minutes.—The minutes of the previous meetings were read and confirmed.

Report of Representative.—Mr. W. J. GREER presented his report on the business transacted at the Annual Representative Meeting. Arising out of this report a discussion took place on the Death Certification Amendment Bill, and the following resolution was proposed by Dr. MULLIGAN, seconded by Dr. LLOYD, and carried unanimously:

> That the Executive Committee be instructed to take immediate steps to oppose the Death Certification Bill at present before the House of Commons.

Report re Disputes.—Mr. R. J. COULTER gave an account of the position of the disputes at Ebbw Vale and Cwmtillery, which was regarded as satisfactory.

Papers and Clinical Cases.—Dr. E. V. CONNELLAN read a paper on some cases of appendicitis, which was discussed by Drs. GREER, MORRELL THOMAS, LLOYD, and the CHAIRMAN, and Dr. CONNELLAN replied. Mr. R. J. COULTER read a paper on the ocular symptoms in locomotor ataxy, general paralysis of the insane, and disseminated sclerosis; and Dr. PHILLIPS showed cases of general paralysis of the insane. Dr. LLOYD showed a uterus removed by vaginal hysterectomy.

Tea.—At the conclusion of the meeting tea was provided by Dr. GLENDINNING.

Association Notices.

NOTICE OF CHANGE OF BOUNDARIES OF DIVISIONS.

SOUTH-WESTERN BRANCH.

THE following changes have been made in accordance with the Regulations of the Association, and take effect from the date of this notice:

The existing boundaries of the Divisions of the South-Western Branch are abolished, and the following are substituted:

BARNSTAPLE DIVISION.

The county boundary between Devon and Somerset, from the Bristol Channel to near East Anstey Station, then the boundary between the South Molton and Crediton Rural Districts and the Tiverton Rural District to just north of Poughill; from thence a line drawn just south of Morchard Bishop, Coldridge, Winkleigh, Meeth, Shebbear, and Black Torrington to the county boundary between Devon and Cornwall near Virworthy, and then following that county boundary to the sea at Marshland Mouth.

EAST CORNWALL DIVISION.

That part of Cornwall included between (*a*) a line drawn from the sea just west of St. Gennys, and passing west of Otterham, south of Laneast and Lewannick to the River Tamar near Sydenham Damerell, and thence following that river to the sea at Plymouth Sound; and (*b*) a line following the boundaries between the St. Columb Major, Bodmin, and Liskeard Rural Districts on the north and the Truro and St. Austell Rural Districts on the south.

EXETER DIVISION.

That part of Devon and Cornwall included between (*a*) a line following the boundary between Devon and Cornwall from the sea at Marshland Mouth to Virworthy, thence following a line running just south of Shebbear, Iddesleigh, Winkleigh, Coldridge, and Morchard Bishop to just north of Poughill, thence following the division between the Crediton and South Molton Rural Districts and the Tiverton Rural District to the county boundary between Devon and Somerset

near East Anstey Station, and thence following that county boundary to the sea near Lyme Regis; (*b*) a line drawn from the sea just west of St. Gennys and passing west of Otterham, south of Laneast and Lewannick to the River Tamar near Sydenham Damerell, thence following the River Tamar to the county boundary near Boyton, thence following a line drawn south of Virginstow, north of Bratton Clovelly and Sourton to the boundary of the Tavistock Rural District near Yes Tor, and following the boundary of that district to near Gidleigh, thence south of Throwleigh to Bow Station, thence west of Cheriton Bishop to the River Teign at Clifford Bridge, and thence following that river to the sea just south of Teignmouth.

PLYMOUTH DIVISION.

That portion of Devonshire enclosed by a line commencing at the sea at Plymouth Sound and following the River Tamar to near Boyton, thence running south of Virginstow, north of Bratton Clovelly and Sourton, to the boundary of the Tavistock Rural District near Yes Tor, thence following the boundary of that rural district to Dartmeet, thence passing west of Holne, Dean Prior, Harberton, east of Halwell, and west of Blackawton to the sea just north of Slapton.

TORQUAY DIVISION.

That portion of Devonshire included in a line drawn from the sea just north of Slapton, and running west of Blackawton, east of Halwell, west of Harberton, Dean Prior and Holne to the boundary of the Tavistock Rural District near Dartmeet, and following that boundary to near Gidleigh, thence south of Throwleigh to Bow Station, thence west of Cheriton Bishop to the River Teign at Clifford Bridge, and following that river to the sea just south of Teignmouth.

WEST CORNWALL DIVISION.

That part of Cornwall south of the line dividing the St. Columb Major, Bodmin and Liskeard Rural Districts on the north from the Truro and St. Austell Rural Districts on the south.

COUNCIL MEETING.

A MEETING of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 26th, in the Council Room at 429, Strand, London, W.C.

By Order,

GUY ELLISTON,

Financial Secretary and Business Manager.

September 15th, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—The annual dinner of the Coventry Division will be held at the Masonic Hall on October 11th. Mr. Gilbert Barling, the President of the Birmingham Branch, has accepted the invitation of the Division to be present. Many members have already notified the Honorary Secretary of their intention to attend the dinner, so that a successful meeting is confidently anticipated.—VAUGHAN PENDRED, Honorary Secretary.

DORSET AND WEST HANTS BRANCH.—The autumn meeting of this Branch will be held in Weymouth on Wednesday, October 19th.—JAMES DAVISON, Honorary Secretary, "Streateplace," Bournemouth.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—The autumn meeting of the Division will be held at the Asylum, Melrose, on Wednesday, October 12th, at 3.15 p.m., Dr. Oliver (St. Boswells) presiding. Business: (1) Reading of minutes. (2) Report of Representative, raising amongst other questions that of "Invalidity Insurance." (3) Dr. Luke (Peebles) will exhibit a new form of Electric Douche. (4) Arrangements for annual dinner. (5) Any other business.—JOHN JEFFREY, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—The inaugural meeting of the session will be held this day (Friday), October 7th, at the London Hospital, Whitechapel, E., by invitation of Dr. J. H. Sequeira, F.R.C.P., who will give a Clinical Demonstration on cases from the Skin Department at 4.15. Tea at 4 p.m.—A. G. SOUTHCOMBE, M.D., Honorary Secretary and Treasurer.

METROPOLITAN COUNTIES BRANCH: HAMPSTEAD DIVISION.—The first meeting of the session will take place at the Central Library, Arkwright Road, N.W., on Friday, October 14th, at 8.30 p.m.; Chairman, Dr. J. Ford Anderson. At 9 p.m. J. E. R. McDonagh, F.R.C.S., will read a paper entitled, Recent Advances in the Treatment of Syphilis, especially as it affects the "Wassermann Reaction" and Treatment by "606." The paper will be illustrated by cases and microscopical specimens. Mr. Arther Shillitoe, Dr. Grünbaum, and others interested in this important subject have been invited to be present and to take part in the discussion.—C. W. CUNNINGTON, Acting Honorary Secretary, 88, West End Lane, N.W.

METROPOLITAN COUNTIES BRANCH: RICHMOND DIVISION.—The annual dinner of this Division will be held at the Trocadero Restaurant, Piccadilly Circus, W., on Wednesday, October 26th, at 7.30 for 8 o'clock p.m. Tickets 7s. 6d. each, payable at the dinner.—G. CARDNO STILL, Honorary Secretary.

MIDLAND BRANCH: LEICESTER AND RUTLAND DIVISION.—A meeting of this Division will be held at the Leicester Infirmary on Wednesday, October 19th, at 4.15 p.m. Agenda: Minutes of the previous meeting. Discussion on Pneumonia: (1) Introductory, Dr. F. M. Pope; (2) Pathology and Bacteriology, Dr. T. A. Johnston; (3) Clinical Aspects, Dr. L. K. Harrison; (4) Medical Complications, Dr. E. L. Lilley; (5) Surgical Complications, Mr. C. Douglas; (6) Treatment, Dr. Burkitt. Election of member of Executive Committee. Any other business.—R. WALLACE HENRY, Honorary Secretary.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—A meeting of this Branch will be held at the District Asylum, Inverness, on Saturday, October 15th, at 3 p.m. Members wishing to read papers or show cases or specimens should communicate with the Honorary Secretary not later than October 8th.—J. MUNRO MOIR, Honorary Secretary.

SOUTH-EASTERN BRANCH: CROYDON DIVISION.—A meeting of this Division will be held at the Cock Hotel, Sutton, on Thursday, October 13th, at 4 p.m., Dr. G. J. H. Hooper in the chair. Agenda: (1) Minutes of previous meeting. (2) Date of next meeting, and Chairman. (3) Report of Representative. (4) Other business. Papers—Dr. Nathan Raw: Tuberculosis and its Treatment. Mr. R. A. Morrell: Some Remarks on the Prescription of Glasses. Dinner at 6 p.m; charge 5s., exclusive of wine.—E. H. WILLOCK, C. G. C. SCUDAMORE, Honorary Secretaries.

SOUTH-EASTERN BRANCH: FOLKESTONE DIVISION.—A combined meeting of the East Kent Divisions will be held at the Royal Victoria Hospital, Folkestone, on Wednesday, October 19th, at 3 p.m. Agenda: Minutes. A paper will be read by Dr. W. S. A. Griffith, Physician-Accoucheur of St. Bartholomew's Hospital, London, on The Treatment of Uterine Haemorrhage. A business meeting will be held on November 10th, of which further notice will be given. Luncheon at Hotel Wampach, at 1.30 p.m., 2s. 6d. per head. All members of the South-Eastern Branch are invited to attend and introduce professional friends.—P. VERNON DODD, M.D., Honorary Secretary, Folkestone.

SOUTH-EASTERN OF IRELAND BRANCH.—The last meeting of session of this Branch will be held at Victoria Hotel, Kilkenny, on October 15th, at 5.30 p.m. Agenda: (1) Minutes. (2) Correspondence. (3) Apologies for non-attendance. (4) Any other business. There will also be a meeting of the local Division and of the Branch Council.—J. QUIRKE, Honorary Secretary, Piltown.

SOUTH MIDLAND BRANCH.—The autumnal meeting of this Branch will be held at Bletchley on Thursday, October 13th, under the presidency of Dr. Skelding, Bedford.—E. HARRIES-JONES, Honorary Secretary.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

STAFF SURGEON S. S. H. SHANNON has been allowed to withdraw from the service with a gratuity. He was appointed Surgeon, June 9th, 1902, and became Staff Surgeon, June 9th, 1910.

The following appointments have been made at the Admiralty:—Surgeon C. D. BELL to be lent to the *Bellerophon*, temporarily, September 5th; Fleet Surgeon A. MACLEAN, M.B., and Staff Surgeons C. E. C. STANFORD, M.B., and A. J. HEWITT (additional) to the *Jupiter*, on recommissioning, October 13th; Fleet Surgeon H. S. BURNISTON, M.B., and Surgeon S. L. MACBEAN, M.B., to the *Britannia*, on recommissioning, October 18th; Staff Surgeon W. H. O. GARDE and Surgeon F. G. GORLE to the *Minerva*, on recommissioning, October 18th; Staff Surgeon A. G. EASTMENT to the *Gloucester*, on commissioning, undated; Staff Surgeon W. H. DAW to the *Isis*, on recommissioning, undated; Staff Surgeon R. ST. G. S. BOND, to the *Hermione*, on completing, September 26th; Staff Surgeon P. H. M. STAR to the *President*, additional, for survey of stores at Deptford Yard, October 1st; Surgeon D. H. C. GIVEN, M.B., to the *Victory*, additional, for disposal, September 26th, and to the *Victory*, additional, for course of physical

training, October 10th; Staff Surgeon W. G. Trythall to the *Gloucester*, on commissioning, undated; Staff Surgeon A. G. Eastment to the *Isis*, on commissioning, undated; Staff Surgeon S. H. Facey to the *Intrepid*, on commissioning, September 27th. Fleet Surgeon G. Welch to the *President*, additional, for special service at the Admiralty, October 24th; Fleet Surgeon W. W. Pryn to Haslar Hospital, for instruction of surgeons on entry, October 24th; Surgeon R. H. McGiffin, M.B., to the *Halcyon*, additional, for the *Leda*, September 30th; Surgeon L. F. Cope to Cape Hospital, October 1st; Surgeon C. V. Griffiths to Cape Hospital, and for the Marines' Prison and other outside duties, October 1st; Surgeon A. Fairley, M.B., to the *Invincible*, October 1st; Surgeon A. G. V. French to the *Prince of Wales*, October 1st.

ROYAL NAVAL VOLUNTEER RESERVE.

William A. Milne, M.B., to be Surgeon, September 22nd.

ARMY MEDICAL SERVICE.

Royal Army Medical Corps.

Lieutenant-Colonel J. J. Russell, M.B., now at Limerick, has been appointed Staff Officer to the Principal Medical Officer, Southern Command, from October 3rd.

The following time-expired officers have been detailed to embark for England during 1910–11: Per transport *Rewa*—Lieutenant-Colonels W. E. Berryman, G. Cree, and J. Meek, M.D.; Captains R. T. Brown, M.D., R. J. Cahill, M.B., R. H. L. Cordner, K. A. C. Doig, W. F. Ellis, E. J. H. Luxmoore, G. Ormrod, M.B., W. I. Thompson, M.B., L. V. Thurston, M. C. Wetherell, M.D., and H. T. Wilson. Per the *Dongola*—Lieutenant-Colonel A. E. Morris, M.D., Majors F. J. C. Heffernan, and C. A. Stone, M.D., Captains J. H. Campbell, M.B., G. B. F. Churchill, A. W. Gater, E. G. R. Lithgow, C. W. O'Brien, J. E. Powell, and A. B. Smallman, M.B. Per the *Plassy*—Lieutenant-Colonels T. B. Winter, and O. R. A. Julian, C.M.G., Captains J. E. Hoar, G. A. Kempthorne, J. P. Lynch, W. G. Maydon, W. S. Nealon, C. H. Turner, and C. F. White, M.B.

TERRITORIAL FORCE.

Royal Garrison Artillery.

Tynemouth.—Surgeon-Major H. R. Bramwell, M.B., whose resignation was announced in the *London Gazette* of July 5th, is granted permission to retain his rank and uniform, September 14th.

Royal Army Medical Corps.

3rd London (City of London) Field Ambulance.—Captain E. B. Waggett, M.B., to be Major, February 3rd.

1st South Midland Field Ambulance.—Major C. H. Howkins to be Lieutenant-Colonel, August 22nd.

For Attachment to Units other than Medical Units.—Lieutenant Charles Corfield, from 3rd South Midland Field Ambulance, R.A.M.C., to be Lieutenant, August 17th.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns 7,733 births and 4,538 deaths were registered during the week ending Saturday last, October 1st. The annual rate of mortality in these towns, which had been 11.7, 12.6, and 13.0 per 1,000 in the three preceding weeks, further rose to 13.4 per 1,000 last week. The rates in the several towns ranged from 5.3 in Hornsey, 5.5 in King's Norton, 5.8 in Handsworth (Staffs), 6.3 in Bournemouth, 7.0 in East Ham, and 7.3 in Aston Manor, to 19.2 in Warrington, 20.4 in Dewsbury, 20.5 in Wigan and in Middlesbrough, 20.7 in Rochdale, and 21.6 in Newport (Mon.); in London the death-rate was equal to 13.0 per 1,000. The death-rate from the principal infectious diseases averaged 1.6 per 1,000 in the seventy-seven towns; in London the rate was equal to 1.4 per 1,000, while among the other towns it ranged upwards to 3.7 in Tynemouth, 3.8 in St. Helens, 4.0 in Wigan, 4.4 in Bury, and 4.5 in Rhondda. Whooping-cough caused a death-rate of 1.6 in Rotherham; enteric fever of 1.1 in Wigan, 1.4 in Grimsby, and 2.0 in Dewsbury; and diarrhoea of 2.7 in St. Helens, 2.8 in Tynemouth, 2.9 in Plymouth and in Middlesbrough, 3.5 in Bury, and 3.8 in Rhondda. The mortality from measles, scarlet fever, and diphtheria showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,462, 1,503, and 1,560 at the end of the three preceding weeks, had further increased to 1,653 at the end of last week; 249 new cases were admitted during the week, against 201 and 210 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, October 1st, 763 births and 497 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.0 and 13.6 per 1,000 in the two preceding weeks further rose to 13.7 per 1,000 last week, and was 0.3 per 1,000 above the mean rate during the same period in the seventy-seven large English towns. The rates in the several Scottish towns ranged from 8.4 in Aberdeen and 12.9 in Glasgow to 19.3 in Dundee and 19.6 in Perth. The death-rate from the principal infectious diseases averaged 2.3 per 1,000, the highest rates being recorded in Leith and in Dundee. The 219 deaths from all causes registered last week in Glasgow included 2 which were referred to measles, 3 to scarlet fever, 4 to diphtheria, 3 to whooping-cough, and 21 to diarrhoea. Three fatal cases of measles and 5 of diarrhoea were recorded in Edinburgh; 5 of diphtheria and 11 of diarrhoea in Dundee; 3 of whooping-cough in Aberdeen; 5 of diarrhoea in Paisley; and 2 of diphtheria and 5 of diarrhoea in Leith.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 1st, 581 births and 393 deaths were registered in the twenty-two principal urban districts of Ireland, as against 647 births and 387 deaths in the preceding period. The annual death-rate in these districts, which had been 15.1, 17.0, and 17.5 per 1,000 in the three preceding weeks, rose to 17.8 per 1,000 in the week under notice, this figure being 4.4 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 20.2 and 14.0 respectively, those in other districts ranging from 4.9 in Kilkenny and 6.9 in Armagh, to 43.2 in Sligo and 47.9 in Dundalk, while Cork stood at 21.2, Londonderry at 21.6, Limerick at 15.0, and Waterford at 13.6. The zymotic death-rate in the twenty-two districts averaged 2.6 per 1,000, or the same as in the preceding week.

Vacancies and Appointments.

VACANCIES.

BARROW-IN-FURNESS: LONSDALE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £60 per annum.

BELFAST: QUEEN'S UNIVERSITY.—Demonstrator of Physiology. Salary, £120 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary at the rate of £70 per annum.

BOLINGBROKE HOSPITAL, S.W.—Two House-Surgeons. Salary at the rate of £75 per annum each.

BRADFORD POOR LAW UNION—Assistant Resident Medical Officer. Salary, £130 per annum.

BRISTOL ROYAL INFIRMARY.—House-Surgeon. Salary, £100 per annum.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer (male). Salary to commence, £140 per annum.

CARDIFF: UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Demonstrator in Anatomy.

CARMARTHEN INFIRMARY.—Resident Medical Officer. Salary, £100 per annum.

CHELTENHAM GENERAL HOSPITAL.—House-Physician. Salary, £75 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £60 per annum.

COLCHESTER BOROUGH.—Lady Assistant School Medical Officer. Salary, £250 per annum.

DENBIGH: DENBIGHSHIRE INFIRMARY.—House-Surgeon. Salary, £100 per annum.

GLASGOW ROYAL ASYLUM.—Junior Assistant Physician. Salary at the rate of £150 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

EAST SUSSEX COUNTY ASYLUM, Hellingly.—Assistant Medical Officer and Pathologist. Salary, £250 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—House-Surgeon. Salary, £120 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Second and Third House-Surgeons (males). Salary, £100 and £80 per annum respectively.

HALIFAX UNION POOR LAW HOSPITAL.—Resident Medical Officer. Salary, £110 per annum, and £20 for dispensing medicines.

HAMPSTEAD GENERAL HOSPITAL, N.W.—(1) House-Physician. (2) House-Surgeon. Salary at the rate of £70 per annum each.

HASTINGS: HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (male). Salary at the rate of £50 per annum.

HOPITAL FRANÇAIS, Shaftesbury Avenue, W.C.—Second Resident Medical Officer. Salary, £50 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House-Physician. Honorarium, 30 guineas for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon. Salary, £30 for six months and £2 10s. washing allowance. (2) Fourth Anaesthetist. Honorarium, £15 15s.

IPSWICH BOROUGH.—Assistant Medical Officer of Health. Salary, £250 per annum, rising to £300.

JERSEY INFIRMARY AND DISPENSARY.—Resident Medical Officer (male). Salary, £100 per annum.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer.

KING EDWARD VII SANATORIUM, Midhurst, Sussex.—Junior Assistant Medical Officer. Salary, £150 per annum, rising to £200.

LIVERPOOL: STANLEY HOSPITAL.—(1) Senior House-Surgeon; salary, £90 per annum. (2) Two Junior House-Surgeons; salary, £70 and £60 per annum respectively.

LIVERPOOL UNIVERSITY.—Research Fellowship in Gynaecological Pathology. Value, £100 a year.

MANCHESTER: ANCOATS HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth.—Junior Assistant Medical Officer (male). Salary, £140 per annum, rising to £160.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—(1) Honorary Dental Surgeon. (2) House-Physician. (3) House-Surgeon. Salary at the rate of 50 guineas per annum each for (2) and (3).

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Senior Resident Medical Officer. Salary at the rate of £100 per annum.

ST. MARYLEBONE ANTITUBERCULOSIS DISPENSARY.—Medical Officer. Salary, £250 per annum.

SALFORD ROYAL HOSPITAL.—Honorary Assistant Surgeon.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary, £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician (male). Salary, £50 per annum.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon and Dispenser. Salary, £80 per annum.

WESTMINSTER GENERAL DISPENSARY, Gerrard Street, W.—Resident Medical Officer. Salary, £120 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary, £80 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Shrewsbury, co. Salop.

MEDICAL REFEREE.—The Secretary of State announces a vacancy as Medical Referee under the Workmen's Compensation Act for County Court Circuit No. 37.

APPOINTMENTS.

Brown, G. S., M.B., Resident Assistant Medical Officer of the Birmingham Parish Infirmary.

Buck, Howard, M.B., Ch.B.Vict., F.R.C.S.Eng., Assistant Surgical Officer to the Manchester Royal Infirmary.

Cunningham, Hugh Boyd, M.B., B.S.Durh., Honorary Surgeon to the Sunderland and Durham County Eye Infirmary, vice Dr. C. A. S. Dagleish, deceased.

MacLeod, N., L.R.C.P.and S.Edin., District Medical Officer of the North Bierley Union.

Petersen, H. C., M.D.(U.S.A.), Clinical Assistant to the Chelsea Hospital for Women.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

Harries-Jones.—On Thursday, September 29th, at Abington Park Parade, Northampton, the wife of E. H. Harries-Jones, M.D.Edin., M.B.C.S.Eng., of a son.

Hood.—On September 18th, at 173, Palatine Road, West Didsbury, Manchester, the wife of Eric Crichton Hood, M.B., B.S., of a son.

MARRIAGE.

Dyke—Gray.—On September 28th, at Hillhead Baptist Church, Glasgow, by the Rev. J. T. Forbes, M.A., assisted by the Rev. R. Henry Dyke, Basutoland (father of the bridegroom), Hamilton W. Dyke, M.B.Glasg., Butha-Buthe, Basutoland, to Elizabeth Russell, elder daughter of Robert Gray, 8, Lorraine Gardens, Dowanhill, Glasgow.

DEATH.

Board.—On Wednesday, September 21st, at Ogbourne St. George, John Henry Board, B.A., M.B.Cantab., son of E. C. Board, of Caledonia Place, Clifton, Bristol, aged 29.

DIARY FOR THE WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W.—8 p.m., General Meeting. 8.30 p.m., Mr. Charters Symonds will deliver his Presidential Address on The Treatment of Chronic Abscess of Bone by Means of Metal Drains.

WEDNESDAY.

Hunterian Society, London Institution, Finsbury Circus, E.C., 8.30 p.m.—Lecture by Dr. H. D. Rolleston on Acute Arthritis of Doubtful Origin.

FRIDAY.

Royal Society of Medicine:

Clinical Section, 15, Cavendish Square, W., 8.30 p.m.—(1) Dr. George Oliver: Two New Methods (Auscultatory and Visual) of Reading Arterial Blood Pressure. (2) Cases and specimens

POST-GRADUATE COURSES AND LECTURES.

Central London Throat and Ear Hospital, Gray's Inn Road, W.C. Lectures: Tuesday, 3.45 p.m., External and Middle Ear. Friday, 3.45 p.m., External and Middle Ear.

Hospital for Diseases of Children, Great Ormond Street, W.C.—Thursday, 4 p.m.: Torticollis.

Manchester: Ancoats Hospital.—Thursday, 4.15 p.m., Appendicitis.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Medical. Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. will be given each day as follows:—Monday, Some Cases of Diabetes. Tuesday, Syphilitic Headaches. Wednesday, The Nasal and Operative Treatment of Asthma. Thursday, On Some Common Mistakes in the Diagnosis of Cancer of the Uterus.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Tuesday, 3.30 p.m.: Cerebellar Disease. Friday, 3.30 p.m.: Tabes Dorsalis.

St. John's Hospital, Leicester Square, W.C.—Thursday, 6 p.m.: Chesterfield Lecture: Essentials in the Study of Dermatology.

West London Post-Graduate College, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays and Operations, at 2 p.m. daily. Monday, Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Lectures at 5 p.m. Monday, Opening Address by Dr. Donald W. C. Hood on Specialism in Medicine. Tuesday, Clinical Lecture. Wednesday, Practical Medicine. Thursday, Practical Surgery. Friday, Clinical Lecture.

PUBLISHERS' ANNOUNCEMENTS.

Messrs. P. Blakiston's Son and Co. announce among their publications the following work: *Physical Measurements: A Laboratory Manual*, by A. Wilmer Duff, A.M., Sc.D., Professor of Physics, Worcester Polytechnic Institute, and Arthur W. Ewell, Ph.D., Professor of Physics in the same institution. Second edition. (78 illustrations.)

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
OCTOBER.	
7 FRIDAY ..	London: Central Ethical Committee, 2 p.m. City Division, *Metropolitan Counties Branch*, Inaugural Meeting of the Session, London Hospital, Whitechapel, E., 4.15 p.m.; Tea, 4 p.m.
8 SATURDAY ..	London: Therapeutic Committee, 11 a.m. London: Science Committee, 12 noon.
9 Sunday ..	
10 MONDAY ..	London: Colonial Committee, 2.45 p.m.
11 TUESDAY ..	London: Public Health Committee, 3 p.m. Coventry Division, *Birmingham Branch*, Annual Dinner, Masonic Hall.
12 WEDNESDAY	South-Eastern Counties Division, *Edinburgh Branch*, Autumn Meeting, Asylum, Melrose, 3.15 p.m.
13 THURSDAY ..	Croydon Division, *South-Eastern Branch*, Cock Hotel, Sutton, 4 p.m.; Dinner, 6 p.m. South Midland Branch, Autumnal Meeting, Bletchley.
14 FRIDAY ..	London: Arrangements Committee, 2 p.m. and 3.30 p.m. Hampstead Division, *Metropolitan Counties Branch*, Central Library, Arkwright Road, N.W., 8.30 p.m.; Discussion, 9 p.m.
15 SATURDAY ..	Northern Counties of Scotland Branch, District Asylum, Inverness, 3 p.m.
16 Sunday ..	
17 MONDAY ..	
18 TUESDAY ..	
19 WEDNESDAY	London: Journal Committee, 2 p.m. London: Finance Committee, 3 p.m. Dorset and West Hants Branch Weymouth. Folkestone Division, *South-Eastern Branch*, Combined Meeting of East Kent Divisions Royal Victoria Hospital, Folkestone, 3 p.m.; Luncheon, Hotel Wampach, 1.30 p.m. Leicester and Rutland Division, *Midland Branch*, Leicester Infirmary, 4.15 p.m.
20 THURSDAY ..	London: Metropolitan Counties Branch Council, 4.30 p.m.
21 FRIDAY ..	
22 SATURDAY ..	
23 Sunday ..	
24 MONDAY ..	
25 TUESDAY ..	
26 WEDNESDAY	London: Central Council, 2 p.m. Richmond Division, *Metropolitan Counties Branch*, Trocadero Restaurant, Piccadilly Circus, W., 7.30 p.m. for 8 p.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 15TH, 1910.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BATH AND BRISTOL BRANCH:
BRISTOL DIVISION.

State Sickness Insurance.

A MEETING was called to discuss State sickness insurance, and was held in the Medical Library of the University of Bristol on October 6th, at 8 15 p.m. Dr. T. M. CARTER was in the chair, and there were sixty-nine members present and a few visitors.

Dr. T. M. CARTER opened the discussion by giving a short account of the events which had led up to the present position in the Association with regard to State insurance against sickness. In the course of his remarks he paid a high tribute to the work of the Poor Law Reform Committee of the Council of the Association. He reminded the meeting of the previous attitude of this Division, and the views which the Divisional Representative at the Annual Representative Meeting had expressed on their behalf. The scheme brought forward by Dr. Fothergill at short notice before the Representative Meeting had given them the opportunity desired to bring before the Divisions, through the Council, an alternative principle. The Executive Committee, in whole and in part, had spent much time upon this matter, and the two resolutions put before this meeting were the basis of a scheme which the Executive Committee were considering. Should the meeting be agreed upon these principles, it was intended to continue with the scheme.

In moving the resolution,

> That any scheme of State sickness insurance should be based on the principle of payment for work done, as in private practice,

Dr. GREY said he trusted it would be no mere expression of opinion to be soon relegated to the limbo of forgotten things, but a resolution on which might be founded a plan of action to achieve a substantial improvement in the conditions of medical practice. It seemed somewhat strange to him that it was necessary to propose such a resolution: on many occasions during the last ten or fifteen years the desirability of abolishing contract work had been affirmed and reaffirmed, when there was no possibility of any action being taken to bring this about. Now, when, owing to the State's proposal to abolish poverty in so far as it related to medical attendance, by means of compulsory assurance, a magnificent opportunity—the opportunity of a lifetime or a century—had arisen for the profession to say, "We took contract work because the people could not pay our fees; the people, insured, are no longer poor in that respect; therefore the necessity for contract work is gone, and we shall have no more of it!" Now that this opportunity had arisen, the committee of the Association which had been considering this matter had apparently decided that the best thing they could do was to hug their chains and ask to be loaded with more. Was this the opinion of the Association or of those more fortunate members of the profession who were out of touch with ordinary practice and ignorant of the distressing conditions under which the general practitioner obtained his livelihood? Dr. Grey went on to compare the two systems—payment for work actually done and payment per head. The latter was a commercial transaction of a particularly bad type—in one word, a speculation, in which the doctor guaranteed unlimited attendance at the will of the patient in return for a limited payment. Dr. Grey then referred to the notorious grievances of the club doctor, references to which had never long been absent from the pages of the JOURNAL for as long as he remembered. The "battle of the clubs" had even reached the columns of the daily newspapers. Club practice was in such bad odour that in 1903 the Representative Meeting appointed a committee to investigate it (extracts of that committee's report were quoted in support of the resolution). The Representative Meeting of 1905 at Leicester, following the receipt of the Contract Practice Report, resolved in favour of introducing a system of payment for work actually done; and, finally, the Bristol Division, only three months ago, refused to consider the rules of a public medical service because it was based on a capitation system. It was true enough that the capitation system had certain advantages, and it was advisable to refer to these lest it be thought that those who advocated its abolition were not alive to them. There were two real advantages and one questionable one. The questionable one might be stated thus: A few medical men had affirmed that club practice paid them better than private practice; perhaps they meant that the sure payment of a capitation fee by poor persons brought in a larger sum than could be extracted from these poor persons by charging them fees, because

of the large number of bad debts incurred; or perhaps by overlapping, many club members subscribing to more than one doctor, the actual rate per head was greater than the nominal; also many members paid for a club doctor and employed a private practitioner; none of these sources of profit could be available under a universal State assurance. But even if these factors were not accountable, it would be bad policy for such medical men to oppose the abolition of contract work in the new circumstances that had arisen, for it was certain that no Chancellor of the Exchequer would pay a contractor more than he would pay a private practitioner, and his first and continual care would be a close revision of the capitation grant, cutting it down always to the minimum accepted by any practitioners in any district. The real advantages of contract work were the settled income and the freedom to visit without incurring suspicion of running up a bill. These were solid advantages, and there was no desire to minimize them; but they would be dearly bought at the cost of the disadvantages. There was also the patient's point of view to consider—that if the doctor was free to over-attend, he was also tempted to under-attend. Another point to remember in this connexion was that those who favoured the capitation system desired the grant to be an adequate one; how was it possible to say what would be adequate? We had statistics of the incidence of sickness in selected healthy lives, but there were no statistics or possibility of compiling statistics for women, children, and invalids of all ages. The adequacy of a grant would vary also with the facilities for getting rid of troublesome cases to hospitals, dispensaries, and other charities. Lastly, it would be a great deal easier to fight contract practice, which had already had a bad savour to the public taste, than to fight the wretched capitation grant and the wage-limit question, which the public thought quite all right. As regards the advantages of private practice, it was unnecessary to enlarge upon them; every doctor knew that private practice was the backbone of the profession; and the blind belief of the British public in individualism and the incentive of gain should prove powerful in carrying the public with us. Apart from the immediate advantages, State insurance with the re-establishment of private practice would solve many of the burning medical questions of the day, namely, hospital out-patient abuse; no patient with a doctor at his door, would endure the fatigue and discomfort of attending a hospital except for treatment he could not get outside; and the hospital staffs would be relieved of vast numbers of trifling cases that crowd their out-patient rooms. Hospital out-patient departments would indeed become what they ought to be—consulting clinics for the poor. The treatment of school children question; this again was a question of money—the poverty of the parents; but no parent or child was poor in this sense, if he was insured against sickness and thereby provided with a doctor, willing, anxious and able to give attendance. The underselling question disappeared. The Poor Law reform question and the grievance of parish doctors became an easy matter to deal with, for with a national precedent of paying the doctor for each service, the parish authority could be fought successfully. Finally, in regard to approaching the Government with a plea for the continuance of the private practitioner, Dr. Grey thought it would be quite unnecessary to insist on the rights of the profession. He believed that the welfare of the doctor and of the public were identical; he wished, indeed, that it had not been necessary, even at that meeting, to refer to the former at all; and, in dealing with the State, it could be safely left out altogether, for did not poor pay and bad conditions of service mean bad work? and the public suffered if the work was bad. The medical man must have a medical mind if he was to be a true practitioner, but he could not be so if his medical mind was deteriorated by the continual irritation kept up by financial worries; it was enough that a doctor had his patients' ailments to worry over without being constantly fretted by anxiety about his bank balance, and by the necessity of exercising petty economies in his business—yea, even to the length of saving on his drug bill; what a vivid light was shown on the subject by a query in this Journal as to how corks might be bleached for a second and third time; that this was no piece of unpleasant sarcasm was shown by the fact that in the next issue of the Journal there were two or three practical replies. Consider the condition of the medical mind of this man who was occupied with the important (to him) matter of saving on corks. Was that mind such as to ensure his patients receiving true medical service? Under-pay, over-work, and destruction of ideals; did not these explain the undeniable fact that the actual standard of medical service in vogue was far below what was possible in our present condition of knowledge? Dr. Grey thought it would be sufficient to press this point of view on the Government to ensure that our statesmen would discard their ideal of cheapness in favour of an attempt to raise the medical profession, in the interest of the nation, to a position of comfort and efficiency. It was significant that even the daily newspapers were awakening to the significance of this question. He had in his hand an issue of the *Westminster Gazette* of last month, from which he quoted this paragraph:

> Much comment has been caused in German medical professional circles by a report upon the attendance of students at German universities, which shows that there has been a rapid increase since 1903 in the numbers of medical students. It stated that the medical profession of the country is already overcrowded; and statistics are adduced to show that over one-third of the number of practising physicians fail to earn £200 per annum. That state of affairs is perhaps no worse than in this country. But it raises the interesting question, *Is the average pay of physicians sufficient to ensure the general health of the community?*

The last sentence should form their war-cry in fighting this battle for adequate pay and decent conditions of practice.

Dr. J. Michell Clarke, in seconding the resolution, said that the medical profession must be careful to avoid giving an impression, which he need hardly add would be entirely a false one, of being antagonistic to any scheme which would promote the national well-being. There must be no hurried decision. The whole subject must be gone into and considered, lest the profession advocate methods which would be against the welfare of the country and of the medical profession. In passing, he alluded to the fact that problems of this kind were not confined to the medical profession. He had been present at a meeting of members of the legal profession, and, substituting the words "law" for "medicine" and "legal" for "medical," he might almost have been listening to a meeting of medical men. What should be their principle of action? They should keep this question before them—"How can the work be best done?" They ought not to have the reputation of being a selfish profession; indeed, they were almost the only body of men whose labours were all directed to removing that which gave us the opportunity of earning our livelihood. Whilst he admitted that he knew that some medical men were in favour of contract practice, he thought one could not read the medical papers without being convinced that the general opinion was that its drawbacks considerably outweigh its advantages. He concluded by appealing for unity in order that medical men might take a common line of action; they had here the chance of uniting upon a far-reaching principle—a principle based on the best interests of the people, which, as in other instances, were identical with those of the medical profession.

Dr. D. Alexander thought that as citizens they should have nothing to do with any proposals, which they disapproved of, set forth by a Government they disapproved of. He thought medical men should have nothing at all to do with the whole question.

Dr. J. J. S. Lucas said that the condemnation of contract practice to which they had listened was much too sweeping. It undoubtedly had some advantages which should not be overlooked. He entirely agreed with the resolution, but when it came to an attempt to

bring the principle into practical politics it was here that difficulty came. He was afraid that they might find these difficulties to be insurmountable. The expense would be enormous, and he did not think that a practicable scheme could be evolved.

Dr. T. A. COLLINSON spoke in defence of contract practice. He did not agree that a doctor was unable to do good work merely because he was working under a contract. Whether the doctor was sweated or not depended upon the terms of his contract and the amount that he was paid. He considered that the attacks on contract practice were far from justified when applied to all forms and conditions of contract work. He regretted that he was unable to support the resolution, not because he did not recognize that as an ideal it was excellent, but because he regarded it as absolutely impracticable. He pointed out that there was even some advantage in a contract scheme as opposed to any scheme that could be based on the principle of the resolution, inasmuch as in the contract method, as in the Chinese contract method, they benefited by the health rather than in the sickness of the public. He thought no Government would face the enormous expense of a scheme based on the resolution.

Dr J. A. NIXON urged unity amongst themselves, and said that it was for them to lay this principle before the Government as the system upon which they were willing to work any such scheme, and leave the working out of the details to the Government.

Dr. NEWMAN NEILD pointed out a difference of importance between the contract practice scheme of the Committee of the Council and any scheme based on the resolution. The former produced and worked a scheme, and then asked the Government to take advantage of a scheme in working order, whereas it was proposed to lay our principle before the Government, and produce a scheme or schemes in answer to a question as to how such resolution could be embodied in practical politics.

Dr. H. F. DEVIS proposed:

> That it is essential that the insurance risks of such a scheme be borne by the State.

The financial risks, he said, in any scheme for providing sickness and invalidity insurance may be borne by either the public, the medical profession, or the State. The public, as represented by the friendly societies, the insurance companies, and such bodies, had been tried and found wanting, past experience proving that any financial risks would be shifted from the shoulders of the public on to those of the profession. Friendly societies paid club doctors 4s. a year for attendance on a man to include a fortnight's sickness on the club, various minor ailments, and all club certificates. They would endeavour to bring women and children into the new scheme at a greatly reduced rate. The medical profession could not trust public bodies to undertake insurance risks. The medical profession had been saddled with the financial responsibilities—the scheme appearing in the Association's name, though the Association itself had expressly repudiated liability—and it would seem that the principle of the scheme was central control, but divisional responsibility. The medical profession was not fit from either a financial or business point of view to undertake this work, and it was certainly not one of the functions proper to the doctor to run a huge insurance company. The State was the proper body to undertake the risk, for the State, through its responsible Ministers, had already half promised to do so. It was the true function of the State to look after the health of the women, children, and weaklings, and these would form the large proportion of the beneficiaries under the scheme. The State was the only body which could possibly take the risks, since the contributions of beneficiaries and employers could not meet the doctor's fees, and some one must pay the deficit. The public bodies would not, the medical profession could not, and therefore the State must. To the objection that the State had been a hard taskmaster and one of their worst sweaters in the past, the reply was that if the profession were strong enough to carry through this scheme, it would be strong enough to resist all sweating; for after the first success it would rapidly grow in strength. The only way to carry any scheme worth having was to perfect organization, and get all outside the Association to come inside. He regarded the future of the profession with grave forebodings unless it rapidly gained such strength as would enable it to fight the strongest possible combination, and win any just cause.

Dr. GEORGE PARKER, in seconding the resolution, said that, although there was still so much to say in support of the resolution, he felt that he could not detain the meeting at that late hour by making a speech. There was one point, however, to which he would like to refer. It had been suggested that they should oppose the whole idea of the Government with regard to sickness and invalidity insurance. It did not matter what their individual views might be on the right and wrong of the matter, this insurance was bound to come, and, as far as such objections were concerned, they were in the position of a fly protesting against the oncoming steam-roller. One or two members briefly spoke to the resolution.

On being put to the meeting, the first resolution was carried by 62 to 2; on an appeal, one of the latter withdrew his opposition. The second resolution was carried without opposition.

Mr. C. E. S. FLEMMING, Branch Representative, said that he had not come to speak, but to hear the views and arguments of the Division. He was, however, able to answer some of the questions which had been asked. He said that the Poor Law Reform Committee were not only willing but anxious to hear all suggestions. They had during many months already been carefully through many principles and schemes. They had heard from Dr. Fothergill that he had withdrawn his scheme in favour of one which was being prepared by a committee holding its meetings in London, and the Poor Law Reform Committee had put off their next meeting in order to receive this scheme in time to consider it, and include what they could of it in their next communications with all the Divisions of the Association. He hoped that any resolutions or scheme brought forward by the Bristol Division would be in the hands of the Poor Law Reform Committee by the 19th or 20th instant. After hearing the views of that meeting, he knew that they should be glad to hear that Dr. Keay of Greenwich, and Dr. Pearse of Trowbridge, a Division of the Bath and Bristol Branch, had been co-opted on to the Poor Law Reform Committee.

Dr. DREW and Mr. PAUL BUSH, C.M.G., and others discussed methods of procedure.

Finally, Dr. FELLS proposed, and Mr. STUART STOCK seconded, the following resolution:

> That this meeting instructs the Executive Committee to prepare a scheme of medical attendance on the basis of private practice, or to adopt any other such scheme, and report to the Division.

It was also resolved:

> That these resolutions be forwarded to the Poor Law Reform Committee of the Association Council.

METROPOLITAN COUNTIES BRANCH:

CITY DIVISION.

THE inaugural meeting of the session was held at the London Hospital on Friday, October 7th, at 4 p.m. Twenty-four members and friends were present.

Cases.—Tea having been served in the Board Room, the CHAIRMAN, with a few appropriate remarks, introduced Dr. J. H. SEQUEIRA, who showed and described the following interesting cases: (1) Ulcer of leg (Bazin's disease). (2) dermatitis herpetiformis, (3) lichen planus, (4) lupus, (5) epithelioma and (6) rodent ulcer treated by radium, (7) ichthyosis histrix, (9) syphilides under treatment by Ehrlich's "606," (10) keloid, (11) haemachromatosis in a negro, (12) multiple idiopathic pigmentary haemorrhagic sarcoma (?) Kaposi's disease, (13) rashes presenting difficulties in diagnosis. Dr. SEQUEIRA replied to queries as the cases were exhibited.

Vote of Thanks.—The CHAIRMAN moved a vote of thanks to Dr. Sequeira for his most interesting demonstration and to the Hospital Committee for their

hospitality and the arrangements for the meeting, which were much appreciated, and Dr. Carey Barlow ably seconded, and the resolution was carried by acclamation. Dr. Sequeira, in responding, expressed his pleasure in again meeting the Division, and, on behalf of the Hospital Committee, that they always welcomed an opportunity of acting in accord and unison with the profession in general practice.

SOUTH-EASTERN BRANCH:

Bromley Division.

A meeting of this Division, to which all the medical men practising within the area of the Division were invited, was held at the Bell Hotel, Bromley, on Thursday, September 29th, at 8 30 p.m. Dr Lewis was in the chair, and Mr. Smith Whitaker, the Medical Secretary, very kindly attended the meeting and gave an address on The Scheme for the Medical Treatment of School Children found upon Inspection to be Defective. There were also present Drs. Bailey, Codd, Colyer, P. Curtis, A. L. Curtis, Cogswell, Daukes, Giddings, Ilott, C. N. Ilott, Milton, Matthewson, Russell, Randall, Searle, Scott, Yollands, and Tennyson-Smith (Honorary Secretary.) Dr. Lewis explained the object of calling the meeting, and introduced Mr. Smith Whitaker, who gave a short address. A discussion was held on the subject, the method of procedure as outlined in Appendix I of Memorandum D 25 being followed, and the following resolutions were passed:

Medical Treatment of School Children.—Dr. Ilott proposed, and Dr. Yollands seconded:

> That it is desirable that the local profession should arrange with the local education authorities—namely, the London County Council and Kent County Education Committees—for the medical treatment of school children found upon inspection to be defective.

Carried *nemine contradicente.* Dr. Scott proposed, and Dr. Milton seconded:

> That this meeting approves the principles contained in Memorandum D 25.

Carried *nemine contradicente.* Dr. Tennyson-Smith proposed, and Dr. Scott seconded:

> That the local profession shall make arrangements for the area of the Bromley Division of the British Medical Association—namely, the parishes and districts of Beckenham, Bromley and Bickley, Chislehurst, Chelsfield, Downe, Eltham and New Eltham, Farnborough, Hayes, Keston, Mottingham, Orpington, St. Mary Cray, and St. Paul's Cray.

Acting on the advice given by the Medical Secretary, Dr. A. L. Curtis proposed and Dr. Codd seconded:

> That, as regards those districts which come directly under the London and the Kent County Councils, the meeting approve a scheme of treatment at doctors' surgeries; that, as regards the Beckenham and Bromley Urban District areas, a scheme of treatment at doctors' surgeries be approved in the first instance, it being recognized that at a later stage a centre or centres should be established if found economically practicable.

Carried *nemine contradicente.* Dr. Scott proposed and Dr. Yollands seconded:

> That the procedure outlined in Section A, p. 3, of Memorandum be approved.

Carried *nemine contradicente.* Dr. Tennyson-Smith proposed and Dr. Yollands seconded:

> That the procedure outlined in Section B (1), pp. 3-8, be approved, subject to the understanding that the doctor should not be the arbiter as to whether or not his patients could afford to pay for treatment, the statement of the patients to that effect being taken as correct.

Carried *nemine contradicente.*

(*Memorandum B, p. 5*) *Remuneration.*—On the motion of Dr. Yollands, seconded by Dr. Scott, an amended scale of charges was approved.

Proposed Conjoint Committee Meeting.—Drs. Lewis, Bailey, and Giddings, along with the Honorary Secretary (*ex officio*), were appointed to represent the Division at the proposed Conjoint Committee meeting to be held in October to formulate a definite scheme.

Organization Committee for Division.—It was proposed by the Chairman and seconded by the Honorary Secretary:

> That an Organization Committee for the Division, consisting of six members of the Division and three medical men not members of the Association, along with the Chairman and Honorary Secretary, be appointed.

On this proposal being carried unanimously, the following were elected: Drs. Scott, Price, and Yollands (Bromley), Drs. Stilwell, Daukes, and Giddings (Beckenham), Dr. Bailey (Orpington), Dr. Allen (Chislehurst). The election of the ninth member was left open till next meeting.

Hospitals and the Treatment of Defective School Children.—Dr. Tennyson-Smith spoke regarding the report of the Chief Medical Officer of the London Education Authority, which appeared in a recent number of the Journal, and in which it was stated that only three or four of the London hospitals had refused to treat school children found upon inspection to be defective. He thought that the governing bodies and the surgical and medical staffs of those hospitals that undertook such treatment could not be aware of the resolutions passed by the British Medical Association. He proposed and Dr. Codd seconded:

> That this matter be brought before the notice of the Representative Meeting and of the Central Council, and that the Council be asked to write to those hospitals explaining the views of the Association.

Carried *nemine contradicente.*

Votes of Thanks.—A vote of thanks was unanimously carried, thanking Mr. Smith Whitaker for so kindly attending the meeting and for so ably assisting the Division during the meeting. A vote of thanks was also passed to the Chairman.

Association Notices.

COUNCIL MEETING.

A meeting of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 26th, in the Council Room at 429, Strand, London, W.C.

By Order,

Guy Elliston,

Financial Secretary and Business Manager.

September 15th, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Birmingham Branch.—The annual meeting of the Branch will be held at the Medical Institute, Edmund Street, on Thursday, October 20th. The chair will be taken at 4 by Professor Barling, President of the Branch. Business: Members are invited to exhibit cases, new drugs, appliances, etc. Papers: Dr. Saundby, On Aphasia. Mr. Hall-Edwards, On the Therapeutic Effects of Carbonic Dioxide Snow in the Treatment of Naevi and other Skin Diseases, and will give a demonstration of the apparatus used in collecting the snow, and of methods employed in its use, together with cases treated. The annual dinner of the Branch will be held on Thursday, October 20th, at the Grand Hotel, Colmore Row. The chair will be taken by the President, Professor Barling, at 7 p.m. It is hoped that members will make a special effort this year to attend. Dinner, 6s. each, exclusive of wine.—Albert Lucas, 9, Easy Row; J. Furneaux Jordan, 9, Newhall Street, Honorary Secretaries.

Dorset and West Hants Branch.—The autumn meeting will be held in the Queen's Hall, Royal Hotel, Weymouth, on Wednesday, October 19th, at 3.30 p.m., the President, Dr. T. Fred. Gardner in the chair. Agenda: (1) The minutes of the last meeting. (2) Letters, apologies, etc. (3) The election of officers for 1911—namely, (*a*) President, (*b*) two Vice-Presidents, and (*c*) Honorary Secretary and Treasurer. (4) The place for the spring meeting of 1911. (5) Dr. Morrice, Vice-President, will introduce a discussion on "Special Uses of Old-fashioned Remedies." (6) Dr. Ramsay will communicate "A Case of Double Fracture. Skiagrams before and after operation." (7) Mr. Unwin will exhibit "A Good Specimen of a Lithopaedion," and will read a few notes on the case. (8) Dr. Gowring will read "Short Notes on an Unusual Case of Molluscum Fibrosum." There will be an official luncheon at the Royal Hotel, Weymouth, commencing at 1.45 p.m., price per head, 2s. 6d., exclusive of wines, etc. The members of the profession in Weymouth will entertain those members of the Branch and friends attending the meeting to tea at the conclusion of the Branch meeting. Members wishing to be present are requested to intimate their intention to Dr. Morrice, so that it may reach him not later than Monday, October 17th.—James Davidson, Honorary Secretary, Bournemouth.

Metropolitan Counties Branch: City Division.—The next meeting of the Division will be held, by invitation of Dr. C. F. Hadfield, at Manor Lodge, Upper Clapton, on Friday, November 11th, at 9.15 p.m., when cases will be shown by members of the Division. Visitors are invited.—A. G. Southcombe, Honorary Secretary.

Metropolitan Counties Branch: Richmond Division.—The annual dinner of this Division will be held at the Trocadero Restaurant, Piccadilly Circus, W., on Wednesday, October 26th, at 7.30 for 8 o'clock p.m. Tickets 7s. 6d. each, payable at the dinner.—G. Cardno Still, Honorary Secretary.

Metropolitan Counties Branch: St. Pancras and Islington Division.—A meeting will be held in Theatre No. 1, University College Hospital Medical School, W.C., on Thursday, October 27th, at 4 p.m. All practitioners resident in the area of the Division have been invited. The Secretaries of the Organizing Committees (Public Medical Service) will present reports. A Representative at Representative Meetings and on the Branch Council will be elected. An address will then be given by Dr. H. Batty Shaw, Physician to University College Hospital, entitled "The Treatment of the Condition of Arterial Hypertension based on the Theoretical Consideration of its Cause."—Dr. A. Brown, Honorary Secretary.

Metropolitan Counties Branch: Tottenham Division.—The first meeting of the session will take place at the Prince of Wales Hospital, Tottenham, on Friday, October 28th, at 4.30 p.m. Chairman, Dr. A. Greenwood. Business: (1) Report of Representative. (2) Division "Wards." (3) Debate on "The General Hospital in Relation to General Practice," opened by Dr. J. R. Fuller, Crouch End. (4) Any other business. Tea provided.—J. A. Percival Barnes, Honorary Secretary.

Midland Branch: Leicester and Rutland Division.—A meeting of this Division will be held at the Leicester Infirmary on Wednesday, October 19th, at 4.15 p.m. Agenda: Minutes of the previous meeting. Discussion on Pneumonia: (1) Introductory, Dr. F. M. Pope; (2) Pathology and Bacteriology, Dr. T. A. Johnston; (3) Clinical Aspects, Dr. L. K. Harrison; (4) Medical Complications, Dr. E. L. Lilley; (5) Surgical Complications, Mr. C. Douglas; (6) Treatment, Dr. Burkitt. Election of member of Executive Committee. Any other business.—R. Wallace Henry, Honorary Secretary.

South-Eastern Branch: Folkestone Division.—A combined meeting of the East Kent Divisions will be held at the Royal Victoria Hospital, Folkestone, on Wednesday, October 19th, at 3 p.m. Agenda: Minutes. A paper will be read by Dr. W. S. A. Griffith, Physician-Accoucheur of St. Bartholomew's Hospital, London, on The Treatment of Uterine Haemorrhage. A business meeting will be held on November 10th, of which further notice will be given. Luncheon at Hotel Wampach, at 1.30 p.m., 2s. 6d. per head. All members of the South-Eastern Branch are invited to attend and introduce professional friends.—P. Vernon Dodd, M.D., Honorary Secretary, Folkestone.

Yorkshire Branch.—The next meeting of the Branch will be held at the Queen's Hotel, Barnsley, on Wednesday, November 2nd, at 4.15 p.m. Members intending to read papers, show specimens or cases, or to propose new members, are requested to communicate at once with the Secretary. Members will dine together at 6.30 p.m.—Adolph Bronner, Honorary Secretary.

CENTRAL MIDWIVES BOARD.

A meeting of the Central Midwives Board was held at Caxton House, Westminster, on October 6th, with Sir Francis Champneys in the chair.

Training Schools.

A letter was considered from the Medical Staff of the Royal Derby and Derbyshire Nursing Institution as to the suspension of the institution as a training school for midwives. It was announced that the Chairman, after an interview with Dr. F. Cassidi, one of the medical staff of the Royal Derby and Derbyshire Nursing Institution, had reported that the institution had been since July 28th in a position to train pupils according to the rules of the Board. It was decided that the report of the Chairman be adopted.

Subsidizing Midwives.

Letters (addressed to the Chairman) were read from Mrs. Dugdale, of Meeson Hall, Wellington, Salop, as to the subsidizing of midwives in sparsely-populated rural districts. Mrs. Dugdale wished to ascertain whether steps were to be taken in the near future by the State to subsidize midwives in sparsely-populated districts. She gave details of the difficulties encountered in raising money for the maintenance of nurses, and stated that after twelve years' experience she found it impossible to collect the necessary funds, and she was forced to the conclusion that a State subsidy was the only means of getting over the difficulty. In her opinion the money required should not be left to individuals to provide.

The Chairman stated that he had written to Mrs. Dugdale, saying what the Central Midwives Board had done in sympathy with this movement. Mrs. Dugdale, in replying, said her object was to emphasize the necessity for helping midwives to make a living in sparsely-populated districts, otherwise the midwives must make for the towns. In the country parts known to Mrs. Dugdale the doctors had never failed when called upon for help.

The Board decided that copies of the previous resolutions on the subject be sent to Mrs. Dugdale.

Suspension of a Midwife.

A letter was received from Miss Bernard-Boyce, Inspector of Midwives for Norfolk, stating that the local supervising authority for that county had now determined that in no case should a period of suspension of a midwife exceed the term of seven days.

Examination Centres.

An application from the Norwich Maternity Charity to hold the written examination locally at Norwich was considered. The Board decided that it be not granted for the present, and that the applicants be informed that they may renew their application when there is a prospect of a larger number of candidates.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Staff Surgeon A. R. H. Skey, M.B., and Surgeon C. G. Sprague, to the *Inflexible*, on recommissioning, October 12th; Staff Surgeon M. P. Jones, to the *Hogue*, on recommissioning, October 12th; Surgeon G. A. S. Hamilton, to the *Jupiter*, additional, for Portsmouth Subdivision, Home Fleet, October 6th; Surgeon J. P. Berry, to the *Orontes*, October 7th.

ARMY MEDICAL SERVICE.

Royal Army Medical Corps.

Major J. J. C. Watson, C.I.E., M.D., retires on retired pay, October 8th. He was appointed Surgeon-Captain, July 28th, 1886, and made Major, July 28th, 1898. He took part in the China war in 1900, and was present at the relief of Tientsin and of Peking; he was mentioned in dispatches, appointed a Companion of the Indian Empire, and received a medal with clasp.

Lieutenant-Colonel John Battersby, M.B., is placed temporarily on the Half-pay List on account of ill health, October 2nd. He was appointed Surgeon, February 5th, 1881 and became Lieutenant-Colonel, February 5th, 1901. He served in the Egyptian war in 1882, and was present at the battle of Tel-el-Kebir (medal with clasp and Khedive's bronze star); with the Chitral Relief Force in 1895 (medal with clasp); and with the Nile Expedition in 1898, including the battle of Khartoum (British medal, and Khedive's medal with clasp).

Captain D. J. F. O'Donoghue retires with a gratuity, October 12th. He joined the department as a Lieutenant, June 27th, 1901, and was made Captain, June 27th, 1904.

INDIAN MEDICAL SERVICE.

The undermentioned gentlemen are admitted to the service, their commissions bearing date January 29th: F. J. Kolaporewalla, E. G. Kennedy, R. F. D. MacGregor, M.B., A. L. Sheppard, M.B., P. K. Gilroy, M.B., J. A. A. Kernahan, M.B., M. L. C. Irvine, M.B., E. W. O'G. Kirwan, M.B., J. V. Macdonald, M.B., G. L. Duncan, A. N. Palit, H. A. H. Robson, M.B., K. K. Mukerji, C. G. M.B., Howlett.

Lieutenant-Colonel F. C. Reeves, Madras, is promoted to be Colonel, from May 25th. His first appointment bears date October 31st, 1879; that of Lieutenant-Colonel, October 31st, 1899. He was in the Afghan war in 1880, receiving a medal.

Lieutenant S. C. Chuckerbutty to be Captain, from February 2nd. He was appointed Lieutenant, February 2nd, 1907.

Captain W. L. Harnett, M.B., Brigade Laboratory, Jubbulpore, is appointed Specialist in the Prevention of Disease, from August 3rd.

Lieutenant-Colonel F. C. Reeves, Madras, has been appointed Principal Medical Officer, Secunderabad Brigade.

Note.—The spelling of the surname of Lieutenant-Colonel C. A. Johnston, M.B., whose promotion was announced in the *London Gazette* of May 24th, is as now stated.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Sarsfield J. A. Hall Walshe, to be Lieutenant (on probation), August 4th, 1909.

Lieutenant P. B. Roth, M.B., is confirmed in his rank.

Lieutenant G. F. Randall is seconded for service under the Colonial Office, August 13th.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Attached to Units other than Medical Units.—Lieutenant Samuel Maclean, M.B., to be Captain, May 19th.

Infantry.

Fifth (Prince of Wales's) Battalion the Devonshire Regiment.—Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel W. H. Webb, M.D., resigns his commission, retaining his rank and uniform, October 8th.

TERRITORIAL FORCE RESERVE.

Infantry.

Surgeon-Lieutenant William Marley-Cass, from the 5th (Cumberland) Battalion the Border Regiment, to be Surgeon-Lieutenant, with precedence as from July 26th, 1905, October 5th.

Vital Statistics.

VITAL STATISTICS OF LONDON DURING THE THIRD QUARTER OF 1910.

[SPECIALLY REPORTED TO THE "BRITISH MEDICAL JOURNAL."]

In the accompanying table will be found summarized the vital statistics of the City of London and of the metropolitan boroughs, based upon the Registrar-General's returns for the third quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the various boroughs, and are obtained by distributing the deaths in institutions among the several boroughs in which the deceased persons had previously resided. The 28,404 births registered in London during the three months under notice were equal to an annual rate of 23·4 per 1,000 of the population, estimated at 4,872,702 persons in the middle of the year; in the third quarter of the three preceding years the rates were 25·2, 25·0, and 23·9 per 1,000, the average rate for the corresponding period of the ten years 1900–1909 being 27·0 per 1,000. The birth-rates last quarter ranged from 13·6 in the City of London, 13·9 in Hampstead, 14·5 in the City of Westminster, 16·1 in Kensington, 17·5 in Chelsea, and 18·1 in Stoke Newington, to 28·0 in Poplar, 28·7 in Bermondsey, 29·1 in Shoreditch, 29·6 in Bethnal Green, 30·5 in Stepney, and 35·1 in Finsbury.

During last quarter the deaths of 12,504 London residents were registered, equal to an annual rate of 10·3 per 1,000, against 11·5, 11·9, and 10·8 per 1,000 in the corresponding period of the three preceding years; in the third quarter of the ten years 1900–1909 the death-rate averaged 14·1 per 1,000. Among the several boroughs the crude death-rates last quarter ranged from 6·5 in Hampstead, 7·9 in Woolwich, 8·0 in Lewisham, 8·2 in Wandsworth, and 8·3 in the City of Westminster, in Stoke Newington, and in Greenwich, to 12·5 in Southwark, 12·9 in Deptford, 13·3 in the City of London, 13·7 in Finsbury, 13·8 in Poplar, 14·8 in Shoreditch, and 15·8 in Bermondsey.

The 12,504 deaths from all causes in London last quarter included 1,375 which were referred to the principal infectious diseases; of these, 348 resulted from measles, 50 from scarlet fever, 91 from diphtheria, 196 from whooping-cough, 50 from enteric fever, 1 from ill-defined pyrexia, and 639 from diarrhoea, but not any from small-pox or from typhus fever. These 1,375 deaths were equal to an annual rate of 1·13 per 1,000; in the corresponding period of the three preceding years the death-rates from these diseases were 1·42, 1·94 and 1·33 per 1,000 respectively, the average rate in the third quarter of the ten years 1900–9 being 2·81 per 1,000. The lowest death-rates from these infectious diseases last quarter were 0·29 in the City of Westminster, 0·42 in Hampstead and in Woolwich, 0·52 in Wandsworth, and 0·53 in Hackney; the highest rates were 1·67 in Bethnal Green, 1·77 in Deptford, 2·02 in Poplar, 2·03 in Southwark, 2·26 in Shoreditch, and 3·34 in Bermondsey. The greatest proportional mortality from measles was recorded in Chelsea, St. Pancras, Stoke Newington, Shoreditch, Southwark, and Bermondsey; from scarlet fever in Paddington, Bethnal Green, Poplar, Bermondsey, Lewisham, and Woolwich; from diphtheria in Hampstead, Finsbury, Bethnal Green, Southwark, and Lewisham; from whooping-cough in Hammersmith, Fulham, St. Pancras, Stoke Newington, Holborn, and Bermondsey; from "fever" in St Marylebone, the City of London, Shoreditch, Bethnal Green, and Poplar; and from diarrhoea in Shoreditch, Stepney, Poplar, Southwark, Bermondsey, and Deptford.

During the quarter under notice 1,121 deaths from phthisis were registered among London residents; these deaths were equal to an annual rate of 0·92 per 1,000; the rates in the third quarter of the three preceding years were 1·12, 1·10, and 1·06 per 1,000 respectively, the average rate in the corresponding period of the ten years 1900–9 being 1·29 per 1,000. The death-rates last quarter from this disease ranged from 0·54 in Lewisham, 0·56 in Kensington, 0·63 in Hampstead, 0·67 in the City of Westminster, and 0·69 in Chelsea, to 1·19 in Poplar, 1·22 in Stepney, 1·39 in Bermondsey, 1·40 in Finsbury, 1·51 in Holborn, and 1·64 in the City of London.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 91 per 1,000 last quarter, against 98, 129, and 109 per 1,000 in the corresponding quarter of the three preceding years; in the third quarter of the ten years 1900–9 the rate averaged 161 per 1,000. The lowest rates of infant mortality last quarter were recorded in Hampstead, Islington, Stoke Newington, Lewisham, and Woolwich; and the highest rates in Shoreditch, Bethnal Green, Poplar, Southwark, Bermondsey, and Deptford.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns 7,741 births and 4,163 deaths were registered during the week ending Saturday last, October 8th. The annual rate of mortality in these towns, which had been 13·0 and 13·3 per 1,000 in the two preceding weeks, declined to 12·8 per 1,000 last week. The rates in the several towns ranged from 3·7 in King's Norton, 6·5 in Handsworth (Staffs), 6·6 in West Bromwich, 7·1 in Tottenham, 7·2 in Willesden, and 7·3 in East Ham, to 17·9 in Liverpool, 18·7 in Huddersfield, 18·9 in Stoke-on-Trent, 19·0 in Rochdale, 20·7 in Sunderland, and 21·8 in Burnley; in London the death-rate was equal to 12·3 per 1,000. The death-rate from the principal infectious diseases averaged 1·5 per 1,000 in the seventy-seven towns; in London the rate was equal to 1·1 per 1,000, while among the other towns it ranged upwards to 3·6 in Stoke-on-Trent, 3·9 in Burnley and in Huddersfield, 4·2 in Grimsby, and 4·4 in Bury. Whooping-cough caused a death-rate of 2·4 in Rotherham, and diarrhoea of 2·6 in Blackburn and in Preston, 3·4 in Burnley, 3·5 in Bury, and 4·2 in Grimsby. The mortality from measles, scarlet fever, diphtheria, and enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,509, 1,560, and 1,653 at the end of the three preceding weeks, had further increased to 1,706 at the end of last week; 245 new cases were admitted during the week, against 210 and 249 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, October 8th, 845 births and 521 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13·6 and 13·7 per 1,000 in the two preceding weeks, further rose to 14·4 per 1,000 last week, and was 1·6 per 1,000 above the mean rate during the same period in the seventy-seven large English towns. The rates in the several Scottish towns ranged from 10·2 in Leith and 11·7 in Paisley to 16·9 in Dundee and 19·6 in Perth. The death-rate from the principal infectious diseases averaged 1·9 per 1,000, the highest rates being recorded in Glasgow and in Greenock. The 252 deaths from all causes registered last week in Glasgow included 3 which were referred to scarlet fever, 8 to diphtheria, 4 to whooping-cough, 1 to enteric fever, and 23 to diarrhoea. Four fatal cases of diphtheria were recorded in Edinburgh; 3 of whooping-cough in Greenock; and 4 of diarrhoea in Dundee, 3 in Aberdeen, 4 in Paisley, and 3 in Leith.

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the Third Quarter of 1910.

Boroughs.	Estimated Population middle of 1910.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Infectious Diseases.	Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-cough.	Typhus.	Enteric Fever.	Ill-defined Pyrexia.	Diarrhoea.	Phthisis.	Deaths of Children Under 1 Year of Age to 1,000 Registered Births
COUNTY OF LONDON ...	4,872,702	28,404	12,504	23.4	10.3	1.13	1,375	—	348	50	91	196	—	50	1	639	1,121	91
Paddington	153,004	702	329	18.4	8.6	0.74	28	—	5	3	1	5	—	—	—	14	30	83
Kensington	184,635	742	426	16.1	9.3	0.86	40	—	7	—	5	8	—	2	—	18	26	96
Hammersmith ...	127,413	747	305	23.5	9.6	0.81	26	—	—	—	2	9	—	—	—	15	30	83
Fulham	181,282	1,079	414	23.9	9.2	1.12	51	—	6	1	2	12	—	—	—	30	42	96
Chelsea	75,457	330	192	17.5	10.2	0.97	18	—	8	—	2	3	—	—	—	5	13	91
City of Westminster	167,233	605	344	14.5	8.3	0.29	12	—	5	—	2	2	—	—	—	3	28	74
*St. Marylebone ...	125,195	964	275	30.9	8.8	0.71	22	—	3	2	3	6	—	3	—	5	26	48
Hampstead	95,729	322	155	13.9	6.5	0.42	10	—	1	—	3	4	—	1	—	1	15	34
St. Pancras	237,792	1,338	643	22.6	11.2	1.53	91	—	51	3	4	16	—	2	—	15	58	91
Islington	353,356	1,987	883	22.6	10.0	0.88	77	—	23	1	5	13	—	5	—	30	80	69
Stoke Newington ...	54,838	247	114	18.1	8.3	0.88	12	—	6	1	—	5	—	—	—	—	10	53
*Hackney	239,979	1,348	539	22.5	9.0	0.53	31	—	4	—	1	6	—	1	—	19	56	79
*Holborn	53,142	292	163	22.0	12.3	0.69	9	—	2	—	—	5	—	1	—	1	20	58
*Finsbury	94,578	828	324	35.1	13.7	1.39	33	—	6	—	5	5	—	—	1	16	35	89
City of London ...	17,132	58	57	13.6	13.3	0.70	3	—	—	—	—	—	—	2	—	1	7	86
Shoreditch	114,387	829	422	29.1	14.8	2.26	64	—	17	—	1	6	—	3	—	37	27	171
Bethnal Green ...	131,579	972	402	29.6	12.3	1.67	55	—	13	3	5	5	—	7	—	22	32	122
*Stepney	314,379	2,393	958	30.5	12.2	1.51	119	—	26	1	4	11	—	5	—	72	96	108
Poplar	172,432	1,205	594	28.0	13.8	2.02	87	—	7	6	3	10	—	5	—	56	51	132
Southwark	211,832	1,325	660	25.1	12.5	2.03	107	—	41	1	11	8	—	1	—	45	60	114
Bermondsey	127,238	909	501	28.7	15.8	3.34	106	—	42	6	2	11	—	1	—	44	44	123
*Lambeth	327,074	1,993	854	24.4	10.5	1.12	92	—	24	6	7	6	—	1	—	48	79	84
Battersea	188,222	1,087	416	23.2	8.9	1.02	48	—	2	1	4	7	—	—	—	31	38	95
Wandsworth	305,838	1,654	624	21.7	8.2	0.52	40	—	7	3	4	9	—	3	—	14	54	71
Camberwell	286,058	1,601	675	22.5	9.5	1.00	71	—	26	4	5	9	—	2	—	25	61	70
Deptford	119,642	711	384	23.8	12.9	1.77	53	—	6	—	2	4	—	3	—	38	33	141
Greenwich	112,935	583	234	20.0	8.3	1.04	29	—	4	—	1	3	—	1	—	20	26	75
Lewisham	164,899	854	330	20.8	8.0	0.65	27	—	—	5	7	7	—	—	—	8	22	57
Woolwich	135,422	719	267	21.3	7.9	0.42	14	—	6	3	—	1	—	1	—	3	24	56

* No correction can be made for births in lying-in institutions; the boroughs principally affected are marked thus (*).

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £60 per annum.

BIRMINGHAM GENERAL HOSPITAL.—House-Surgeon to the Special Departments. Salary, £50.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House-Surgeon. Salary at the rate of £70 per annum.

BOLINGBROKE HOSPITAL, S.W.—Two House-Surgeons. Salary at the rate of £75 per annum each.

BOLTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £100 per annum.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer for Northern Branch. Salary, £160 per annum.

BRISTOL: COSSHAM MEMORIAL HOSPITAL, Kingswood.—House-Surgeon.

BRISTOL ROYAL INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BURNLEY COUNTY BOROUGH.—Assistant Medical Officer of Health. Salary, £250 per annum, rising to £300.

CANTERBURY BOROUGH ASYLUM.—(1) Assistant Medical Officer (male). Salary, £140 per annum to commence. (2) Locumtenent. Salary, 4 guineas per week.

CARDIFF INFIRMARY. House-Surgeon for Special Departments. Honorarium, £30 for six months.

CHELTENHAM GENERAL HOSPITAL.—(1) House-Physician; (2) Surgeon-in-Charge of Branch Dispensary. Salary £75 and £80 respectively.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £60 per annum.

DENBIGH: NORTH WALES COUNTIES ASYLUM.—Medical Superintendent. Salary commencing £500 per annum.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £90 per annum.

GLASGOW DISTRICT ASYLUM, Woodilee.—Assistant Medical Officer. Salary to begin, £125 per annum.

GREAT NORTHERN HOSPITAL, Holloway, N.—Surgeon to Out-patients.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

HALIFAX UNION POOR LAW HOSPITAL.—Resident Medical Officer. Salary, £110 per annum, and £20 for dispensing medicines.

HAMMERSMITH PARISH.—Assistant Medical Superintendent of Infirmary and Assistant Medical Officer of Workhouse. Combined salary, £120 per annum, rising to £150.

HASTINGS: HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (male). Salary at the rate of £50 per annum.

IPSWICH BOROUGH.—Assistant Medical Officer of Health. Salary, £250 per annum, rising to £300.

JERSEY INFIRMARY AND DISPENSARY.—Resident Medical Officer (male). Salary, £100 per annum.

KING EDWARD VII SANATORIUM, Midhurst, Sussex.—Junior Assistant Medical Officer. Salary, £150 per annum, rising to £200.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Gardens, S.W.—Research Scholarship in Bacteriology. Annual value, £50.

LIVERPOOL MEDICAL MISSION.—Assistant Medical Officer. Salary, £150

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £100 per annum.

MANCHESTER: ANCOATS HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

MANCHESTER ROYAL INFIRMARY.—Medical Officer for Out-patients and Accidents to the Central Branch. Salary at the rate of £100 per annum.

MARGATE: ROYAL SEA-BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon to act as Junior and Senior for six months respectively. Salary at the rate of £80 and £120 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Honorary Dental Surgeon.

NEW HOSPITAL FOR WOMEN, Euston Road, N.W.—Two House-Surgeons, Senior Assistant, and also Clinical Assistant for Ophthalmic Department, and also one Clinical Assistant for Tuesdays.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth.—Junior Assistant Medical Officer (male). Salary, £140 per annum, rising to £160.

NORWICH CITY ASYLUM, Hellesdon-next-Norwich.—Assistant Medical Officer. Salary, £150 per annum, rising to £180.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Male Assistant House-Surgeon. Honorarium, £20 for six months.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—Honorary Dental Surgeon.

PRESTON: ROYAL INFIRMARY.—Senior and Junior House-Surgeons. Salary at the rate of £80 and £60 per annum respectively.

PRINCE OF WALES'S HOSPITAL, Tottenham.—(1) Honorary Assistant Surgeon; (2) Junior House-Surgeon; (3) Junior House-Physician. Salary at the rate of £40 per annum attached to (2) and (3).

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) Assistant Surgeon; (2) Assistant Physician

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Resident Medical Officer. Salary at the rate of £120 per annum.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Resident House-Surgeon. Salary, £100 per annum.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—(1) House-Surgeon, salary at the rate of £50 per annum; present Assistant House-Surgeon is candidate, and if appointed there will be vacancy for Assistant House-Surgeon, salary at the rate of £40 per annum. (2) Pathologist and Curator. Honorarium, £50.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Senior Resident Medical Officer. Salary at the rate of £100 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary, £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician (male). Salary, £50 per annum.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon and Dispenser. Salary, £80 per annum.

WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL, Liscard, Cheshire.—House-Surgeon. Salary, £100 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Physician for Diseases of Women; (2) Assistant Physician for Diseases of Women; (3) Anaesthetist.

WESTMINSTER GENERAL DISPENSARY, Gerrard Street, W.—Resident Medical Officer. Salary, £120 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary, £80 per annum.

MEDICAL REFEREE.—The Secretary of State for the Home Department announces a vacancy as Medical Referee under the Workmen's Compensation Act for County Court Circuit No. 17.

APPOINTMENTS.

ALFORD, E. F. R., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Woodbridge District, co. Suffolk.

BERRY, G. A., M.B., C.M., F.R.C.S.Edin., one of the Medical Referees under the Workmen's Compensation Act, 1906, for the Sheriffdom of the Lothians and Peebles.

BUSHNELL, F. G., M.D.Lond., D.P.H., Deputy Medical Officer of Health of the Urban District and Port of Newhaven, Sussex.

CRUICKSHANK, J. B., M.B., District Medical Officer of the Hammersmith Union.

DOBSON, J. R. B., M.R.C.S., L.R.C.P.Lond., B.S.Lond., B.Sc., House-Physician at the South Devon and East Cornwall Hospital, Plymouth.

EDMOND William Square, F.R.C.S., L.R.C.P.Lond., Resident Medical Officer, London Temperance Hospital.

FLETCHER, Duncan, L.R.C.P. and S.Edin., D.P.H., Medical Inspector of Schools for the Island District of the County of Inverness.

HAGAR, F. C., M.D., C.M., Clinical Assistant to the Chelsea Hospital for Women.

HATHERLEY, S. O., M.R.C.S., L.R.C.P.Lond., Medical Officer of Health to the Urban District Council of Swinton.

HERON, G., M.D., R.U.I., Certifying Factory Surgeon for the Dromara District, co. Down.

HEWER, H. M., M.B., M.S.Edin., Certifying Factory Surgeon for the Market Bosworth District, co. Leicester.

HUNTER, Mitchell, M.D., C.M., L.S.A., Medical Referee under the Workmen's Compensation Act, 1906, for the City and County of Londonderry.

HUTCHESON, D. A., M.D.Aberd., D.P.H., District Medical Officer of the Wandsworth Union.

KEATES, C. C., M.R.C.S., L.R.C.P., Senior Assistant Medical Officer of the St. James's Infirmary of the Wandsworth Union.

KNOX, Robert, M.D.Edin., M.R.C.S.Eng., L.R.C.P.Lond., Director of the Electrical and Radio-Therapeutic Department to the Cancer Hospital.

MCBEATH, W., M.D., M.Ch., R.U.I., District Medical Officer of the Newton Abbot Union.

MACLENNAN, Alexander, M.B., C.M.Glasg., Assistant Surgeon to the Western Infirmary, Glasgow.

NIXEY, E. F. W., M.B., B.S.Edin., Senior Assistant Resident Medical Officer of the St. John's Hill Infirmary of the Wandsworth Union.

O'KANE, Michael, M.B.Lond., M.R.C.S., Medical Referee under the Workmen's Compensation Act, 1906, for the City and County of Londonderry.

SHORT, Latimer J., B.S., M.D.Lond., Clinical Assistant to Dr. Murray Leslie at the City of London Chest Hospital, City Road.

WALKER, George, M.B., B.S.Durh., Medical Registrar to the Royal Victoria Infirmary, Newcastle-upon-Tyne.

WOODWARK, A. S., M.D., M.R.C.P., Junior Curator and Demonstrator of St. Bartholomew's Hospital Museum.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

DIVINE.—On October 1st, at The Hollies, Percy Street, Huddersfield, the wife of Thomas Divine, M.D.Glasg., D.P.H.Camb., of a son.

MCCLOSKY.—At Seremban, Federated Malay States, on September 8th, the wife of A. J. McClosky, M.D., of a son.

PARSONS.—On Thursday, October 6th, at "Longfield," Harrow-on-the-Hill, the wife of Wilfred Parsons, M.R.C.S.Eng., L.R.C.P.Lond., late R.A.M.C., of a daughter.

DEATH.

SMYTH.—On Friday, October 7th, at Dervock, co. Antrim, James Camac Smyth, L.R.C.P. and S.Edin., of Eversley, Manchester Road, Altrincham, Cheshire, aged 53 years.

DIARY FOR THE WEEK.

TUESDAY.

Royal College of Physicians of London, Pall Mall East, S.W.—4 p.m., Hunterian Oration by Dr. H. B. Donkin.

Royal Society of Medicine:
Therapeutical and Pharmacological Section, 15, Cavendish Square, 4.30 p.m.—Professor A. R. Cushny, F.R.S.: Presidential Address, A Plea for the Study of Therapeutics.
Pathological Section, 15, Cavendish Square, 8.30.—Dr. F. W. Mott, F.R.S.: Presidential Address.

THURSDAY.

Ophthalmological Society of the United Kingdom, 11, Chandos Street, Cavendish Square.—At 8 p.m.: (1) Card Specimens; (2) Paper, Mr. George Coats.

Royal Society of Medicine:
Dermatological Section, 11, Chandos Street, W., 5 p.m.—Cases and Specimens.

FRIDAY.

Royal College of Surgeons, Lincoln's Inn Fields, W.C., 5 p.m.—Demonstration by Professor Keith: Specimens Illustrating Obstruction of the Bowel caused by (1) Defects of the Diaphragm, (2) Peritoneal Pockets, (3) Imperfect Attachment of the Mesentery.

Royal Society of Medicine:
Otological Section, 11, Chandos Street, W., 5 p.m.—Discussion on Syphilis in Relation to Otology, to be opened by Mr. Arthur Cheatle.
Electro-Therapeutical Section, 15, Cavendish Square, 8.30 p.m.—Paper: Dr. Franz Nagelschmidt, The Thermic Effects Produced by High-frequency Currents, and the Therapeutical Uses of Diathermic Treatment.

Society of Tropical Medicine and Hygiene, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Paper: Dr. A. G. Bagshawe, Recent Advances in our Knowledge of Sleeping Sickness.

POST-GRADUATE COURSES AND LECTURES.

Central London Throat and Ear Hospital, Gray's Inn Road, W.C.—Lectures: Tuesday, 3.45 p.m., Pharynx and Naso-pharynx. Friday, 3.45 p.m., Clinical Cases.

London School of Clinical Medicine, Seamen's Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday; Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m., Thursday. Special Lectures: Monday, 2.15 p.m., Some Surgical Conditions of the Large Intestine. Thursday, 2.30 p.m., Endocarditis.

Manchester: Ancoats Hospital.—Thursday, 4.15 p.m.: Some Conditions Associated with Enlargements of the Lymphatic Glands.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week, at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Eye. Lectures, at 5.15 p.m. each day, will be given as follow: Monday, Some Bedside Clinical Methods, with Demonstrations. Tuesday, Diagnosis and Treatment of Gastric and Duodenal Ulcer (continued). Wednesday, Certain Points in Diagnosis and Treatment arising out of 150 Operations for Duodenal Ulcer. Thursday, Respiration in Health and Disease.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Tuesday, 3.30 p.m., Myasthenia Gravis. Friday, 3.30 p.m., Myelitis.

West London Post-graduate College, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays, and Operations, 2 p.m. daily. Monday, Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Lectures, at 5 p.m.: Monday, Glaucoma. Tuesday and Wednesday, The Diagnosis of Functional and Organic Disorders of the Nervous System. Thursday, Practical Surgery. Friday, Skin Diseases.

PUBLISHERS' ANNOUNCEMENTS.

Messrs. Duckworth and Co. announce the publication of *The Golf Courses of the British Isles*, described by Bernard Darwin, illustrated by Harry Rountree, with 64 full-page illustrations, 48 in colour and 16 in sepia.

Among Messrs. Ballière, Tindall, and Cox's recent publications are the following: G. N. Stewart: *Manual of Physiology*, sixth edition, 18s. net. Lieutenant-Colonel R. Caldwell: *Military Hygiene*, second edition, 12s. 6d. net. A. E. Giles: *After-Results of Abdominal Operations*, 7s. 6d. net. L. A. Bidwell: *Intestinal Surgery*, second edition, 6s. net. S. J. Aarons: *Gynaecological Therapeutics*, 5s. net. R. H. Smythe: *Veterinary Parasitology*, 5s. net. Colonel F. J. Lambkin: *Syphilis, Its Diagnosis and Treatment*, 5s. net. A. Charpentier: *Haemoglobinuria*, 3s. 6d. net. S. Squire Sprigge: *Some Considerations of Medical Education*, 2s. 6d. net. Douglas Knocker: *Accidents in Their Medico-Legal Aspect*. E. M. Steven: *Medical Supervision in Schools*.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
OCTOBER.	
15 SATURDAY ..	Northern Counties of Scotland Branch, District Asylum, Inverness, 3 p.m.
16 Sunday ..	
17 MONDAY ..	
18 TUESDAY ..	
19 WEDNESDAY	London: Journal Committee, 2 p.m. London: Finance Committee, 3 p.m. Dorset and West Hants Branch, Queen's Hall, Royal Hotel, Weymouth, 3.30 p.m.; Luncheon, 1.45 p.m. Folkestone Division, *South-Eastern Branch*, Combined Meeting of East Kent Divisions, Royal Victoria Hospital, Folkestone, 3 p.m.; Luncheon, Hotel Wampach, 1.30 p.m. Leicester and Rutland Division, *Midland Branch*, Leicester Infirmary, 4.15 p.m.
20 THURSDAY ..	London: Metropolitan Counties Branch Council, 4.30 p.m. Birmingham Branch, Annual Meeting, Medical Institute, Edmund Street, 4 p.m.; Annual Dinner, Grand Hotel, Colmore Row, 7 p.m.
21 FRIDAY ..	
22 SATURDAY ..	
23 Sunday ..	
24 MONDAY ..	
25 TUESDAY ..	

Date.	Meetings to be Held.
OCTOBER *(continued)*.	
26 WEDNESDAY	London: Central Council, 2 p.m. Richmond Division, *Metropolitan Counties Branch*, Trocadero Restaurant, Piccadilly Circus, W., 7.30 p.m. for 8 p.m.
27 THURSDAY ..	St. Pancras and Islington Division, *Metropolitan Counties Branch*, Theatre No. 1, University College Hospital Medical School, W.C., 4 p.m.
28 FRIDAY ..	Birmingham Branch, Pathological and Clinical Section, Medical Institute, Edmund Street, 8 p.m. Tottenham Division, *Metropolitan Counties Branch*, Prince of Wales Hospital, Tottenham, 4.30 p.m.
29 SATURDAY ..	
30 Sunday ..	
31 MONDAY ..	
NOVEMBER.	
1 TUESDAY ..	
2 WEDNESDAY	Yorkshire Branch, Queen's Hotel, Barnsley, 4.15 p.m.; Dinner, 6.30 p.m.
3 THURSDAY ..	
4 FRIDAY ..	
5 SATURDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs. BY ORDER.

MATTERS REFERRED TO DIVISIONS.

ANNUAL REPRESENTATIVE MEETING, 1910.

INTERIM REPORT OF COUNCIL ON POSITION OF MEDICAL PRACTITIONERS CALLED UPON TO EXAMINE (OTHERWISE THAN BY THE REQUEST OF THE PATIENT OR PERSONS ACTING UPON HIS BEHALF) PATIENTS WHO ARE UNDER THE CARE OF OTHER PRACTITIONERS.

REFERENCE.

THE Annual Representative Meeting passed the following Resolution, which has been referred by the Council to the Central Ethical Committee, and by the Central Ethical Committee to the Standing Sub-committee, for consideration and report:

Minute 40*a*.—That the Council be instructed to prepare and submit to the Divisions a Report on the position of medical practitioners who are called upon to examine, on behalf of employers, insurance companies, and persons similarly interested, patients who are under the care of other practitioners.

MEMORANDUM.

I. *Question of* locus standi.—Any right of one person to employ a medical practitioner to make an examination and report on the health of another will usually arise under (*a*) a contract of employment, including those which fall within the purview of the Workmen's Compensation Act, or (*b*) a contract of insurance. It may suffice for the present to confine the consideration of the subject to these groups of cases.

II. The fundamental difference between the relations to one another of the medical practitioners concerned in a case of the kind under consideration and that of the practitioners in an ordinary consultation, such as was dealt with in the Report on the Ethics of Consultation, arises from the fact that in an ordinary consultation the practitioners taking part are all engaged in the interest of the patient, whereas in the cases to be dealt with in the present Memorandum they act for persons whose interests are divergent. Each medical practitioner is concerned in the interests of the person who employs him. Their rights and duties in respect of one another, apart from ordinary courtesy and the consideration which members of the profession are in every case bound to show to one another, depend upon the rights, and the obligations to one another, of those for whom they act.

III. It is necessary, therefore, to consider briefly what are the rights and duties of the persons in whose interests the medical practitioners are respectively acting.

IV. Of the cases in which the examination in question is made in connexion with a contract of employment a large number arise under the Workmen's Compensation Act. In these cases the rights of the employer and of the workman, as regards the medical examination of the latter by doctors employed by the former, are to a great extent defined by statute. The workman will forfeit his claim to compensation if he throws any unreasonable difficulty in the way of his examination by the employer's doctor in the manner prescribed. On the other hand, the employer cannot demand as part of his statutory rights that any examination should be carried out in a manner which may injure the workman's health, of which the workman's doctor is the recognized guardian.

V. Other cases in which an employer may claim to satisfy himself by an examination made by a doctor acting in his interest, as to the state of health of a workman, are those in which the question is to be determined of the workman's fitness for employment, apart from any question of compensation. In these cases, again, a workman has to consider

whether it is more to his interest to submit himself to examination by the employer's doctor or to risk losing his employment. If he decide that it is to his interest, on the whole, to be examined, it is clear that his doctor can claim no right to interpose any difficulties in the way of examination other than those which are necessary for the protection of the workman's health.

VI. In insurance cases the person or company who have incurred a liability to pay compensation in respect of disease or injury are entitled to satisfy themselves by medical examination, by a doctor employed by them, as to the extent of such disease or injury, and the patient by refusing unreasonably to submit himself to examination, risks forfeiting his right to compensation. It is reasonable that he should be protected against injury in connexion with the examination, and he may demand, if he think proper, that his own doctor should be present at the examination to watch his interest in this and any other respect.

VII. In view of the considerations above stated it may be assumed for the purpose of the present Report that in every case which requires consideration in the Report the patient is satisfied, before any question of relations of the two doctors arises, that it is to his interest to submit himself to examination, and the medical practitioner who acts on his behalf can claim no rights upon grounds of medical ethics or medical etiquette, the exercise of which would conflict with the interest of the patient.

VIII. On the other hand, any rules of which the Association may express approval should be so framed as to tend by their operation to secure that the interests of the patient shall be properly safeguarded through the agency of the doctor employed by him.

IX. For convenience, the two practitioners concerned are spoken of in the following paragraphs and Rules as the "Medical Inspector" and the "Medical Attendant" respectively.

X. It may be the duty of the Medical Inspector to make such examination and enquiries as will enable him to report upon any of the following matters:

(*a*) Present state.
(*b*) Etiology of any existing disorder.
(*c*) Prognosis.
(*d*) Treatment.

XI. It will be the duty of the Medical Attendant:

(i) To give any information which his patient may authorize him to give.
(ii) To facilitate the examination in every way consistent with the patient's welfare.

Suggested Rules.

The following Rules are suggested as complying with the principles above stated:—

(1) Except as hereinafter mentioned, the Medical Inspector should give the Medical Attendant such notice of the date, time, and purpose of his visit as will afford reasonable opportunity for the Medical Attendant to be present should he or the patient so desire.

The exceptions are—

(*a*) When circumstances justify a surprise visit.
(*b*) When circumstances necessitate a visit within a period which does not afford time for notification.

(2) The Medical Attendant must not put any unnecessary difficulties in the way of fixing a time convenient to both practitioners.

(3) If the Medical Attendant fails to appear at the time appointed, the Medical Inspector may proceed with his examination forthwith.

(4) The Medical Inspector must not, without the consent of the Medical Attendant, do anything in the course of his examination which involves active interference with the treatment of the case. Examples of improper interference would be the removal of dressings or splints.

(5) The Medical Inspector must not make any comments to the patient which are of the nature of criticisms of, or reflections upon, the treatment, nor must he express, without the concurrence of the Medical Attendant, any opinion to the patient as to the etiology, diagnosis, or prognosis of the case. His duty is strictly confined to examining into such matters as are necessary for the purpose of his report, and reporting to his employer, and to his employer only, his conclusions from such examination.

OPHTHALMIA NEONATORUM—A NOTIFIABLE DISEASE.

SUGGESTED SCHEME OF ARRANGEMENTS FOR ADOPTION BY LOCAL SANITARY AUTHORITIES, IN CONNEXION WITH THE TREATMENT OF CASES OF OPHTHALMIA NEONATORUM, ISSUED BY THE CENTRAL COUNCIL FOR THE CONSIDERATION AND GUIDANCE OF THE DIVISIONS.

Introductory.

1. The action of the Local Sanitary Authority must depend upon whether information, as to a child with appearances suggesting Ophthalmia Neonatorum, comes, in the first instance, from a midwife or a medical practitioner.

2. If the mother has been attended by a midwife, the first source of information to any public authority is usually the certificate furnished by the midwife to the Local Supervising Authority of her having advised that medical help be summoned on account of the existence of such symptoms.

3. If the mother has been attended by a medical practitioner, or if a medical practitioner has been summoned specially to attend the child, the information may be received through his notification of the case to the local Medical Officer of Health.

4. It is convenient, therefore, to trace the procedure in these two groups of cases separately.

A. Cases Attended by a Midwife.

Notification.

5. In order to secure the prompt notification of the Sanitary Authority as to the existence of a suspected case the following arrangements should be made:—

(*a*) The Local Sanitary Authority, and the Local Supervising Authority under the Midwives Act, should cause to be issued periodically to every registered midwife a circular calling her attention to the requirements under the Infectious Disease (Notification) Act, and her responsibility under the Midwives Act, and containing directions of the kind recommended in the Directions to Midwives proposed to be issued by the Central Midwives Board (see Appendix).

(*b*) If the Medical Officer of the Local Supervising Authority of midwives is not identical with the Medical Officer of the Local Sanitary Authority, arrangements should be made between these two Officers for prompt exchange of information as to such cases.

Procedure of Medical Officer of Health on Receiving Midwife's Notice.

6. When the Medical Officer of Health receives the information contained in a Midwife's certificate he should at once ascertain whether medical help has been obtained by the parents, and, if not, should urge that a medical practitioner be at once called in and draw the parents' attention to their responsibility under the Children Act, 1908.

7. The Medical Officer of Health should be in a position to inform, and should inform the parents that if they are unable to defray the cost of medical attendance or nursing, assistance will be given by the Local Sanitary Authority. The Medical Officer of Health will consider, in such cases, whether, in his judgment, the case can be effectively treated at home, and, if he is of opinion that it cannot, he will make the necessary arrangements for institutional treatment.

B. Cases under Medical Care.

8. If the case has been notified by a medical practitioner, or if the Medical Officer of Health, on investigating a case reported by a midwife, finds that a medical practitioner is in

attendance, he will ascertain from him (*a*) whether the case can be satisfactorily treated at home, and (*b*) whether any other assistance, such as nursing, bacteriological examination, &c., is required.

C. Provision for Treatment at Home.

Nursing.

9. In cases treated at home the Local Sanitary Authority must be prepared to make adequate provision for day and night nursing of the case.

D. Institutional Treatment.

10. Provision for those cases which cannot be satisfactorily treated at home should be made by the Local Sanitary Authority, which should not be relieved at the expense of the charitable and of the medical profession of duties which appropriately belong to such public authority.

APPENDIX.

(Referred to in paragraph 5(*a*) above.)

Leaflet Issued by the Central Midwives Board to the various Local Supervising Authorities and to the Training Schools and Teachers recognised by the Board.

Inflammation of the Eyes in New-born Children.
Ophthalmia Neonatorum.

1. This is a very common cause of hopeless blindness, which is one of the greatest misfortunes that can happen to a child. A very large number of children will be saved from blindness if the following directions of the Central Midwives Board are observed.

2. The disease generally arises from purulent discharges from the mother getting into the baby's eyes at birth.

3. It is therefore of the greatest importance that this should be prevented:—

(*a*) By curing such discharges if possible before Labour. This requires medical treatment (Rule E 19 (2) and (3)).

(*b*) By taking the greatest care that such discharges shall not be carried into the baby's eyes when it opens them for the first time soon after its head is born.

4. The discharges may be carried into the baby's eyes in the following ways:—

(*a*) The discharges collect round its eyes, especially the eyelashes, and easily get into its eyes.
This can be generally prevented if the midwife observes Rule E 14: "As soon as the child's head is born, and if possible before the eyes are opened, its eyelids must be carefully cleansed." They should be thoroughly wiped with clean material such as cotton-wool, lint, or rag, using separate pieces for each eye. The reason for this is that the piece used for wiping the first eye will be polluted by the discharges, and should not be used for the other eye.

(*b*) New-born babies sometimes rub their eyes with their hands. This may rub the discharges into their eyes.
When Rule E (14) has been complied with the baby's hands must be carefully cleansed.

(*c*) When the baby is bathed, the discharges with which its body is covered during Labour are washed off into the bath-water. If its face is washed in this water matter may get into the eyes.

N.B.—The above directions are to be observed in *all* cases, whether purulent discharges are known to be present or not.

The Central Midwives Board is determined, so far as lies in its power, to secure the strict observance of its Rules and Directions, and to punish any failure to comply with them, even in cases where no harm can be proved to have followed from their neglect.

F. H. Champneys, M.D., F.R.C.P.,
Chairman of the Central Midwives Board.

December, 1909.

This leaflet was drawn up and issued at the request of the Board.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

BIRMINGHAM BRANCH:

Coventry Division.

Annual Dinner.—The annual dinner of the Division was held at the Masonic Hall on Tuesday, October 11th. Thirty-seven members and their guests were present. The visitors included Mr. Gilbert Barling, President of the Birmingham Branch, and Mr. Furneaux Jordan, Secretary of the Branch. Dr. E. H. Snell presided.

President's Address.

After dinner the President delivered his address. After returning thanks for the honour done him, he proceeded to say: It is probably seldom that a whole-time medical officer of health has the chance of addressing the local practitioners in this way, and my subject, therefore, seems chosen for me. I ought to speak briefly on a few matters of common interest. These are so numerous that my only difficulty arises in curtailing my remarks.

When the medical inspection of schools was made compulsory in 1907, the question arose as to who should do it—whole-time men or part-time men. Our own Journal, wrongly or rightly, took sides. The final determination of the matter rested with the local authorities, with the approval of the Board of Education. In the main this has now been decided. Different districts vary in their requirements; some are rural, some are urban. In the main the education authorities are choosing the cheaper methods.

At the present time the question on the carpet is the matter of the treatment of school children. On superficial examination this should be done by the general practitioner, and our Association is apparently taking this superficial view. Is it to be supposed that education authorities desire to take over the general medical treatment of school children if they can avoid it? In this city there exist: (1) Private practitioners charging private fees; (2) public medical services, clubs, and dispensary; (3) the Coventry and Warwickshire Hospital, which treats everybody for nothing, irrespective of their financial position; and (4) the Poor Law agencies for the destitute. I venture to think that few education authorities will desire at their own expense to attract patients from any of these agencies.

Those who have noticed what education authorities have been doing will have seen that where they have done anything at all it has been in the direction of remedying defects of children that are not being met by existing agencies; these are eye, ear, and throat defects, ringworm, and dental defects.

These are matters in which there is a want in the treatment of the general practitioner; the general practitioner has himself to blame. What proportion of medical men in practice, for example, take the trouble to deal with refractions? The very paucity of their number is the strongest argument which the opticians can advance in favour of their claim to practise this branch of medicine.

A somewhat similar position exists in regard to ear and throat diseases. A considerable proportion of general practitioners refer their operation cases, especially club cases, to the hospital; this is one of the disadvantages of the contract system, and it reacts deleteriously on the interests of the practitioner.

About ringworm: put shortly, the contract practitioner cannot be bothered with such a trivial and obstinate complaint. The complaint is one of considerable financial interest to education authorities. In this city the rates are losing in grant some hundreds of pounds per year. If education authorities take the matter into their own hands it is because practitioners have been wanting.

Dental defects do not directly affect our profession: but I think I have said sufficient to show a prima-facie case that, so far as the treatment of school children for these defects is concerned, if education authorities undertake treatment it is because it is not generally undertaken by the general practitioner.

Passing to the consideration of the Midwives Act, he said: The intention of this Act was good; it was designed to suppress the practice of Mrs. Gamp and to improve the midwifery attendance on the poor. The first of these objects will be attained; I am not so sure about the second.

One half of the midwives practising in this city are untrained. These will die off; no more can get on the *Register*. These will be supplanted by trained midwives. A "trained" midwife has usually received a diminutive training of three or four months: her practice is supposed to be confined to uncomplicated cases.

An interesting point to remember is that this partially trained and often ignorant person is afforded a security against unqualified practice which the medical and dental professions have only thought of in their dreams.

One result of this close corporation is already apparent locally: they have formed themselves into an association (with, I believe, three dissentients), and fixed their minimum fee at 15s. For a considerable time now the recognized minimum fee for medical men in Coventry has been one guinea.

What will be the result of the midwives' action if they are successful? It will mean that the very poor are worse off now than they were before the Act was passed, and a larger number will have to seek the assistance of the Poor Law.

Little need now be said as to the attempt on the part of the Act to get medical men to place themselves at the beck and call of midwives, to bolster up these partially trained persons without assurance of fees. In many places, as here, this has now been remedied, and it will be remedied elsewhere shortly.

Some years ago I pointed out in our Division and also in the JOURNAL that this guarantee of a fee for the medical men called in amounted to a subsidy towards the practice of midwives: this is already showing its effects; some years ago the midwives here were attending one-half of the cases; to day they are attending two-thirds. When the full significance of the position is understood by the general public, when they understand that they can engage a midwife at a lower figure, and that in the event of a medical man being necessary, he will be paid for by the rates, what will be the result? It is quite certain what will happen in an artisan town such as this—the vast majority will engage midwives. The medical profession is responsible for the position: they have demanded rate guaranteed fees: they will get them, but in getting them a large amount of midwifery practice will pass into the hands of midwives.

Speaking of coroners' law and death certification he said: Incidentally I may mention that the classification of deaths according to their cause is often rendered difficult to me by medical practitioners failing to appreciate the true significance of the meaning of the words "primary" and "secondary" occurring on death certificates. It is rendered quite plain by a sample certificate at the front of each book of forms, where the primary cause of a death is given as typhoid fever and the secondary as pneumonia, the pneumonia having developed as a complication of the typhoid fever.

I could give samples of hundreds of cases where this confusion was manifest; the following few are taken from certificates of the last few months:

Primary.	*Secondary.*
Cardiac failure.	Diabetes.
Coma.	Eclampsia.
Bronchopneumonia.	Whooping-cough.
Meningitis.	Otitis media.

Two local medical men, not members of our Division, and therefore related to a notorious institution, are fond of "natural causes" as a cause of death. This appears to be accepted by the registrars without question. If the registration of deaths were in the hands of a medical man, as it should be, I venture to think that such certificates would not be accepted.

There is a private bill now before Parliament: you know its tenor. If passed in its present form it will undoubtedly greatly improve our lax methods of death certification; it will also compel medical men to certify to the fact of death as well as the cause, and that within twenty-four hours and without fee.

In my younger days I did two years' work as a locum-tenent in many and various kinds of practices. I think I became acquainted with all phases of private practice, and I appreciate what this provision will entail. I remember an immensely underpaid country practice in Shropshire, where I paid regular visits to a pauper patient ten miles distant, and over a range of hills. It was a half-day's work. Under this bill the medical man would, willy-nilly, irrespective of all his other work, and without remuneration, have to undertake that half-day's work within twenty-four hours after the death to see whether the pauper was dead or not.

Is the medical profession going to sit still and allow this Bill to pass while such an obvious injustice is going to be perpetrated? For the benefit of the State, truly, but at the expense of the medical profession. The profession was tricked in the matter of the passing of the Notification of Births Act. Will it allow itself to be tricked over this?

Referring to the Notification of Births Act, he said: This beneficent but iniquitous Act has not yet been adopted in this city. I note that the Medical Officer of Health for Croydon, in his annual report for 1909, says:

> After two years' experience of the Notification of Births Act I am strongly of opinion that it should be repealed, and early registration (say within seven days) substituted.

In this city an alternative course has been adopted, a course which I have not seen adopted anywhere else. The local authority does not, as a rule, desire information concerning the births where medical men are in attendance. These are the cases where it may be presumed that sufficient advice concerning infant rearing is available; visits from health visitors should not be required. So the local authority, as the supervising authority over midwives, has requested the midwives to notify their births within thirty-six hours, and supplies them with stamped addressed postcards. The intended effect of the Act could have been accomplished by the Central Midwives Board making a rule to this effect; how can the authority be expected to supervise the methods of midwives if they have no information of the births? This method has now been in operation here for six months, and the births are being scrupulously notified. The only compelling force behind this form of notification is the fact that the midwives have a desire to be on good terms with the supervising authority.

Speaking on the subject of State insurance against sickness, he said: This is much in the air at the present time. The Government is said to be on the point of tackling the question. Our Association is endeavouring to collect its views beforehand to meet emergencies and be ready with suggestions.

It has, I think, been too previously taken for granted at head quarters that any such scheme must be on the provident dispensary basis. This is a basis which has an evil savour in this city. Such a scheme started by the State, possibly subsidized by the State, would certainly be controlled by the State, and we know here what lay control means.

In his presidential address before our Branch in June last Mr. Gilbert Barling said:

> If . . . a provident dispensary scheme is set up, I will only express the wish that it may be carried out by the initiative, and under the control of, the medical profession itself, instead of being organized by the State, perhaps subsidized by the State, and, if so, then certainly in great measure governed by the State.

I am more inclined to think, with Major Greenwood, that the Government will not enter into this thorny arena, but will content itself with a scheme for insurance against sickness, leaving the people

insured to make their own arrangements for medical attendance. Probably this would be better.

There are many more points which, had time permitted, I should have liked to refer to, but I must not weary you on an occasion such as this; I will merely conclude with an appropriate quotation from the able presidential address of Mr. Butlin at the annual meeting of our Association this year: "While extolling the nobility and generosity of our profession as a whole, it is notorious that public and private bodies, municipalities, corporations, clubs, medical aid institutions, charities, vie with each other in their attempts to use our services without reward, or for the smallest compensation that is possible: and it is equally clear that the only chance which the rank and file of the profession—those men who perform the most and the best of its work—have to repel these attacks is the support of a great and powerful body like our Association."

Various Toasts.—Dr. J. NEAL proposed the health of "The Chairman." Mr. GILBERT BARLING proposed the "Coventry Division"; he congratulated the Division on its strength and unity. Dr. MILNER MOORE responded. The "President of the Branch" was proposed by Dr. J. ORTON. The "Visitors," in the absence of Dr. Webb Fowler, was proposed by the HONORARY SECRETARY and responded to by Mr. FURNEAUX JORDAN and Dr. EMMANUEL. Music and bridge terminated a most successful function.

GLASGOW AND WEST OF SCOTLAND BRANCH:

RENFREWSHIRE DIVISION.

A MEETING of the Division was held on October 12th in the board room at the works of Messrs. Babcock and Wilcox, Limited, manufacturers of water tube boilers, Renfrew. Dr. GIBB, Chairman of the Division, presided.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

Report of Representative.—Dr. CLOW, Representative in Representative Meetings, gave a report of the recent Representative Meeting and the Special Representative Meeting of June 28th last. He dealt specially with the proposed new Memorandum of Association, the report of Council, and the scheme for a public medical service. On the motion of the CHAIRMAN, Dr. Clow was awarded a vote of thanks for his services as Representative and for his report.

Re-election of Representative.—Dr. Clow was re-elected representative.

Visit to Works of Babcock and Wilcox.—After the meeting, by the courtesy of Messrs. Babcock and Wilcox, Limited, the members were conducted over the extensive works of the firm, and afterwards entertained to afternoon tea. On the motion of the CHAIRMAN, seconded by Dr. STEVENS, a vote of thanks was accorded to Messrs. Babcock and Wilcox, and acknowledged by Mr. McLaren, the manager.

LANCASHIRE AND CHESHIRE BRANCH:

WARRINGTON DIVISION.

A SCIENTIFIC meeting of this Division was held at the Infirmary, Warrington, on Wednesday, October 12th. Dr. EDWARDS was in the chair, and the following members and visitors were present: Drs. Bowden Langdale, Burrowes, Law, Jago, Binns, Taylor, and Murray; Drs. Manson, Robinson, and Burt (visitors).

Apology for Non-attendance.—An apology for inability to attend was received from Dr. Adams.

The late Dr. W. Dutton.—A resolution of condolence with the family of the late Dr. W. Dutton was passed.

A Medical Mayor of Warrington.—A resolution congratulating Dr. G. W. Joseph, J.P., on his being selected to fill the Mayoralty of Warrington during the coming year, was passed.

Paper.—Dr. JOHN HAY, of Liverpool, read a paper on consumption, with special reference to sanatoriums, and most of those present took part in the after-discussion.

Vote of Thanks.—A hearty vote of thanks was given to Dr. Hay for a very interesting and instructive paper.

NORTH OF ENGLAND BRANCH:

NORTH NORTHUMBERLAND DIVISION.

AN ordinary meeting was held on August 18th, at the Infirmary, Berwick-on-Tweed. Dr. DEY occupied the chair, and there were present Drs. Mackay, Maclagan, Robson, and Burman.

Apologies for Non-attendance.—Apologies for absence were received from Drs. Main and Moyse.

Confirmation of Minutes.—The minutes of last meeting were read and confirmed.

Communication from Branch Council.—A communication from the Branch Council with reference to a circular issued by Mr. Rutherford Morison was read.

Treatment of School Children.—The question of treatment of school children was discussed and the following resolution was proposed by Dr. MACKAY, seconded by Dr. ROBSON, and carried *nemine contradicente*.

> That this Division considers the education authority should make itself responsible for the payment of any fees incurred in connexion with treatment which the authority *insists* upon being carried out provided the parents are unable to do so.

The Question of a Black List.—The question of the formation of a black list was deferred pending a reply from the Central Ethical Committee. A letter from the Deputy Medical Secretary on the subject was read and considered. Communications from Dr. W. Sinclair Fraser, of the Newcastle West End Medical Society, enclosing rules of that society with reference to the formation of a list of defaulters, were read and considered; no decision, however, was arrived at.

Public Medical Service.—The subject of a public medical service was held over for a subsequent meeting.

SOCIAL MEETING.

The annual social meeting of the Division was held at Bamburgh on September 8th, when members and friends to the number of 69 accepted the invitation of the Secretary and his wife.

Visits to Places of Interest.—Luncheon was served in a marquee on the links opposite the house of the Secretary, after which the party proceeded to view the castle and grounds under the guidance of Dr. Macaskie, who very kindly undertook the duty of cicerone. By special permission the party were enabled to view the rooms of the massive Norman keep and the restored King's Hall. Subsequently the fine old church was visited, and the Vicar of the parish kindly explained the most interesting features of the building. The tomb of Grace Darling, the heroine of the Farne Islands, was then examined, after which tea was served in the marquee and concluded a pleasant day's outing.

Association Notices.

COUNCIL MEETING.

A MEETING of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 26th, in the Council Room at 429, Strand, London, W.C.

By Order,

GUY ELLISTON,
Financial Secretary and Business Manager.

September 15th, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST ANGLIAN BRANCH: SOUTH ESSEX DIVISION.—The annual meeting will be held at the Palace Hotel, Southend-on-Sea, on Tuesday, October 25th, at 7.45 p.m. Business: (1) Minutes of last annual meeting. (2) Election of office-bearers for ensuing year. The annual dinner will take place at 8 p.m.; tickets, 10s. 6d.—W. CARDY BLUCK, Honorary Secretary, Ludlow, York Road, Southend-on-Sea.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—The next meeting of the Division will be held, by invitation of Dr. C. F. Hadfield, at Manor Lodge, Upper Clapton, on Friday, November 11th, at 9.15 p.m., when cases will be shown by members of the Division. Visitors are invited.—A. G. SOUTHCOMBE, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: GREENWICH DIVISION.—The first meeting of the Greenwich Division will be held in St. Mark's Presbyterian Church Room, South Street, Greenwich, on Thursday, October 27th, at 4.30 p.m., Dr. H. C. Burton in the chair. Agenda: (1) Minutes of inaugural meeting. (2) Correspondence. (3) Election to fill vacancy on the Executive Committee. (4) Election of two representatives on the Contract Practice Committee. (5) Any other business. Discussion on the Medical Inspection and Treatment of School Children Found Defective, to be opened by Mr. J. Smith Whitaker, Medical Secretary of the British Medical Association. All other members of the Branch are invited to attend, and to introduce professional friends, but will be unable to vote on Divisional questions.—LAWRENCE F. HEMMANS, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: RICHMOND DIVISION.—The annual dinner of this Division will be held at the Trocadero Restaurant, Piccadilly Circus, W., on Wednesday, October 26th, at 7.30 for 8 o'clock p.m. Tickets 7s. 6d. each, payable at the dinner.—G. CARDNO STILL, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: ST. PANCRAS AND ISLINGTON DIVISION.—A meeting will be held in Theatre No. 1, University College Hospital Medical School, W.C., on Thursday, October 27th, at 4 p.m. All practitioners resident in the area of the Division have been invited. The Secretaries of the Organizing Committees (Public Medical Service) will present reports. A Representative at Representative Meetings and on the Branch Council will be elected. An address will then be given by Dr. H. Batty Shaw, Physician to University College Hospital, entitled "The Treatment of the Condition of Arterial Hypertension based on the Theoretical Consideration of its Cause."—Dr. A. BROWN, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: TOTTENHAM DIVISION.—The first meeting of the session will take place at the Prince of Wales Hospital, Tottenham, on Friday, October 28th, at 4.30 p.m. Chairman, Dr. A. Greenwood. Business: (1) Report of Representative. (2) Division "Wards." (3) Debate on "The General Hospital in Relation to General Practice," opened by Dr. J. R. Fuller, Crouch End. (4) Any other business. Tea provided.—J. A. PERCIVAL BARNES, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WALTHAMSTOW DIVISION.—The inaugural meeting of the 1910-1911 session will be held on Thursday, October 27th, at 4 p.m., at Livingstone College, Knotts Green, Leyton. Members are particularly requested to attend. Agenda: 1. Minutes. 2. Letters. 3. Resolution, proposed by Dr. Harford, seconded by Dr. Shadwell, supported by Dr. Wise: "That the name of this Division of the British Medical Association be changed from 'Walthamstow' to 'South-West Essex.'" 4. Lantern demonstration on "The Rashes of Some of the Acute Infectious Diseases and Rashes which Simulate Them," by E. W. Goodall, M.D., Medical Superintendent, Eastern Fever Hospital. The following is the list of slides to illustrate the demonstration:—*Scarlet fever:* (1) Usual form of rash; (2) Morbilliform variety on extremities. *Rashes mistaken for that of Scarlet Fever:* (3) Prodromal erythema of small-pox; (4) Prodromal petechio-erythematous rash of small-pox; (5) (6) (7) and (8) Rubella; (9) Rubella (details). *Desquamation:* (10) Desquamation after severe scarlet fever; (11) "Pinhole" desquamation, very common after scarlet fever; (12) Desquamation after acute dermatitis (in an infant); (13) Desquamation after recurrent scarlatiniform erythema. *Measles:* (14) Rash of measles. *Rashes mistaken for that of Measles:* (15) and (16) Eruption of small-pox (second day); (17) Eruption of small-pox (early); (18) Rubella, morbilliform variety; (19) and (20) Morbilliform septic rash, from a case of scarlet fever; (21) Morbilliform enema rash; (22) and (23) Erythema multiforme (with sore throat); (24) Erythema marginatum, in a case of scarlet fever; (25) Erythema multiforme (partly morbilliform) due to antitoxin; (26) Erythema marginatum, due to antitoxin. *Small-pox:* (27) Eruption of small-pox, very mild discrete case (modified); (28) and (29) Eruption of small-pox, mild, unmodified; (30) Eruption of small-pox, to show details; (31) and (32), Eruption of small-pox (confluent); (33) Eruption of small-pox, confluent and very severe; (34), (35), (36), (37), and (38), Varicella; (39), (40), (41), and (42), Varicella, to show details; (43) and (44), Varicella, very severe; (45) Eruption on face, due to iodide of potassium; (46) Acute pustular dermatitis; (47) A papular syphilide; (48) Impetigo; (49) Acute vesicular dermatitis, to be compared with (50) Small-pox; (51) Glanders. 5. Any other business. Visitors are invited.—A. POTTINGER ELDRED, Honorary Secretary.

SOUTH-EASTERN BRANCH: REIGATE DIVISION.—The autumn meeting of the Reigate Division will be held at the White Hart Hotel, Reigate, on Thursday, November 3rd, at 5 p.m., Dr. Rawlings in the chair. The annual dinner will be held in conjunction with the Reigate District Medical Society. Agenda: (1) The minutes of last meeting. (2) Dr. Langdon Brown, Medical Registrar, St. Bartholomew's Hospital, will read a paper on the Practical Importance of Blood Pressure Estimations. (3) The Treatment of School Children found to be Defective: (*a*) To discuss a letter from Dr. T. Henry Jones, Medical Officer of Health to the County of Surrey, suggesting that rural school children with defective vision should be treated at the Reigate Eye Clinic on the same conditions as the children in the borough. (*b*) With reference to Memorandum No. 25, from the British Medical Association, dealing with the treatment of school children found to be defective, the following resolution will be put to the meeting: "That as the education authority has not yet undertaken to provide treatment for defective school children, the procedure for this Division be left in abeyance until the Division has had experience of the working of the scheme inaugurated by the Care Association of the Borough of Reigate with regard to teeth and eyes." (4) Dr. Caldecott's report on the Annual Meeting of the Association in London. (5) Any other business. All members of the Branch are invited to attend and to introduce professional friends. Dinner, 7 p.m.; charge 7s., exclusive of wine. The Honorary Secretary will be glad if members will inform him if they will be able to attend the meeting, and whether they will stay to dinner.—JOHN G. OGLE, Honorary Secretary, Tower House, Reigate.

SOUTH MIDLAND BRANCH: BUCKINGHAMSHIRE DIVISION.—A meeting of this Division will be held on Wednesday, October 26th, at the Red Lion Hotel, High Wycombe, at 2.30 p.m. An address will be given by Dr. L. Reynolds (Chairman of the Division), on the Importance of the Examination of the Teeth in Diagnosis and Treatment. The Committee will present a report on the Medical Inspection and Treatment of School Children, and suggest how this may be carried out in the area of the Buckinghamshire Division. (As this concerns every medical man in the county, all have been invited to this meeting.) The question of fees in police cases will be discussed, also disputes with clubs, and the support of the Division will be asked for in certain cases. Members and friends will lunch together at 1 o'clock (charge 2s. 6d. each); tea will be provided after the meeting. It is hoped that members will invite medical friends both to the lunch and the meeting. Those who intend to attend are requested to notify Dr. Reynolds before October 24th if they will be present at lunch. Members are reminded that an annual subscription of 2s. 6d. each is required to meet incidental expenses, for which the ordinary funds cannot be used. This should be forwarded or given to the Secretary at the meeting.—ARTHUR E. LARKING, Honorary Secretary, Buckingham.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.—The autumn meeting of this Branch, together with the Gloucester Branch, will be held at the Imperial Hotel, Malvern, on October 27th, at 4.30 p.m. Paper by J. Furneaux Jordan, F.R.C.S.: Endometritis. Dinner at 7 p.m.; charge, 5s. exclusive of wine.—C. S. MORRISON, Honorary Secretary.

YORKSHIRE BRANCH.—The next meeting of the Branch will be held at the Queen's Hotel, Barnsley, on Wednesday, November 2nd, at 4.15 p.m. Members intending to read papers, show specimens or cases, or to propose new members, are requested to communicate at once with the Secretary. Members will dine together at 6.30 p.m.—ADOLPH BRONNER, Honorary Secretary.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

SURGEON WILLIAM BASTIAN has been promoted to be Staff Surgeon, August 2nd, 1908. He was appointed Surgeon, August 2nd, 1900.

Surgeons F. E. BOLTON and C. J. O'CONNELL are also promoted to be Staff Surgeons from June 9th, 1910, their first appointment being dated June 9th, 1902.

Surgeon C. D. BELL, M.D., has been appointed to the *Donegal* October 13th.

INDIAN MEDICAL SERVICE.

THE following Captains are promoted to be Majors, dated July 28th: J. C. H. LEICESTER, M.D., H. INNES, M.D., W. S. WILLMORE, A. E. WALTER, L. T. R. HUTCHINSON, M.D., A. M. FLEMING, M.B., E. L. WARD, J. W. WALKER, V. H. ROBERTS, T. S. ROSS. Their previous commissions are dated: Lieutenant, January 28th, 1899; Captain, January 28th, 1902. Their war records are as follows: Majors Leicester and Ross—China war, 1900 (medal); Major Innes—North-West Frontier of India, Waziristan, 1901-2 (medal with clasp); Major Willmore—China war, 1900, including the relief of Peking and actions at Peitsang and Tangtsun (medal with clasp); Major Walter—China war, 1900 (medal with clasp); Major Walker, China war, 1900 (medal). North-West Frontier of India, 1902, including operations against the Darwesh Khel Waziris.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns 7,420 births and 4,260 deaths were registered during the week ending Saturday last, October 15th. The annual rate of mortality in these towns, which had been 13.3 and 12.8 per 1,000 during the two preceding weeks, rose last week to 13.1 per 1,000. Among the several towns the death-rates ranged from 5.0 in Handsworth (Staffs), 6.7 in East Ham, 6.9 in Willesden, 7.0 in Leyton and in Walthamstow, and 7.4 in Wolverhampton, to 18.5 in Bootle, 18.7 in Liverpool, 19.4 in Burnley, 19.5 in Middlesbrough, 20.3 in Oldham, and 23.5 in Warrington. The annual rate of mortality from the principal epidemic diseases last week in the seventy-seven towns was 1.6 per 1,000; in London the rate was equal to 1.3 per 1,000, while among the seventy-six other large towns it ranged upwards to 3.9 in Burnley, 4.3 in Oldham, 4.5 in Wigan, and 5.5 in Tynemouth. The death-rate from enteric fever was equal to 1.1 per 1,000 in St. Helens and 1.2 in Tottenham; and from diarrhœa 2.2 in Hull, 2.5 in Oldham, 2.8 in Wigan, and 2.9 in Burnley. The mortality from measles, scarlet fever, diphtheria, or whooping-cough showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever patients

under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,653 and 1,706 in the two preceding weeks, further rose to 1,745 at the end of last week; 234 new cases were admitted during the week, against 249 and 245 during the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, October 15th, 878 births and 468 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.7 and 14.4 in the preceding two weeks, fell to 12.9 per 1,000 last week, and was 0 2 per 1,000 below the mean rate during the same period in the seventy-seven large English towns. The rates in the several Scottish towns ranged from 9.8 in Aberdeen and 10.6 in Paisley, to 14.9 in Greenock and 17.5 in Dundee. The death-rate from the principal infectious diseases averaged 1.7 per 1,000, being highest in Dundee and in Perth. The 224 deaths from all causes registered last week in Glasgow included 19 which were referred to diarrhoea 9 to diphtheria, 4 to whooping-cough, 2 to scarlet fever, and 1 to fever. Six fatal cases of diarrhoea and 5 of whooping-cough were recorded in Dundee, 4 of diphtheria in Perth, and 2 of measles in Edinburgh.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, October 8th, 604 births and 351 deaths were registered in the twenty-two principal urban districts of Ireland, as against 581 births and 393 deaths in the preceding period. The annual death-rate in these districts, which had been 17.0, 17.5, and 17.8 per 1,000 in the three preceding weeks, fell to 15 9 per 1,000 in the week under notice, this figure being 3.1 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 19 5 and 12 5 respectively, those in other districts ranging from 4 2 in Newry and 4 8 in Sligo to 23 9 in Dundalk and 33 3 in Kilkenny; while Cork stood at 22.6, Londonderry at 9 6, Limerick at 9.6, and Waterford at 19 5. The zymotic death-rate in the twenty-two districts averaged 1.8 per 1,000, as against 2.6 per 1,000 in the preceding week.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary, £100 per annum.

BURNLEY COUNTY BOROUGH.—Assistant Medical Officer of Health. Salary, £250 per annum, rising to £300.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—Surgeon.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Physician. Salary, £70 per annum.

CARDIFF INFIRMARY.—House Surgeon for Special Departments. Honorarium, £30 for six months.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—House-Surgeon (male). Salary, £80 per annum.

CHELTENHAM GENERAL HOSPITAL.—Surgeon in Charge of Branch Dispensary. Salary, £80 per annum and £10 in lieu of cab hire.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary, £60 per annum.

DENBIGH: NORTH WALES COUNTIES ASYLUM.—Medical Superintendent. Salary commencing £500 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £50 per annum.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £90 per annum.

ESSEX AND COLCHESTER LUNATIC ASYLUM, Brentwood.—Senior Assistant Medical Officer. Salary, £300 per annum, rising to £400.

GLASGOW UNIVERSITY.—(1) Examiner in Physiology for Degrees in Science and Medicine. (2) Examiner in Systematic and Clinical Surgery and Examiner in Systematic and Clinical Medicine for Degrees in Medicine.

GREAT NORTHERN HOSPITAL, Holloway, N.—Surgeon to Out-patients.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

HASTINGS: HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (male). Salary at the rate of £50 per annum.

HERTS COUNTY ASYLUM, Hill End, St Albans.—Junior Assistant Medical Officer. Salary, £150 per annum.

KILMINIAN AND KILMORE PARISH COUNCIL.—Medical Officer. Salary, £80 and £5 additional for vaccination.

KING'S LYNN: WEST NORFOLK AND LYNN HOSPITAL.—House-Surgeon. Salary, £100 per annum.

KING'S NORTON AND NORTHFIELD URBAN DISTRICT COUNCIL.—Medical Superintendent of Isolation Hospital. Salary, £250 per annum.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Gardens, S.W.—Research Scholarship in Bacteriology. Annual value, £50.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Pathologist and Bacteriologist. Honorarium at the rate of 50 guineas a year.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Visiting Surgeon. Honorarium, £100 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Honorary Dental Surgeon.

PRESCOT UNION.—Non-resident Assistant Medical Officer for Workhouse and Infirmary Ward. Salary, £170 per annum.

PRESTON: ROYAL INFIRMARY.—Senior and Junior House-Surgeons. Salary at the rate of £80 and £60 per annum respectively.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) Assistant Surgeon; (2) Assistant Physician.

READING: ROYAL BERKSHIRE HOSPITAL.—Second House-Surgeon. Salary, £60 per annum.

ROYAL EYE HOSPITAL, Southwark, S.E.—House Surgeon. Salary at the rate of £52 10s per annum.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—(1) House Surgeon, salary at the rate of £50 per annum; present Assistant House-Surgeon is candidate, and if appointed there will be a vacancy for Assistant House-Surgeon, salary at the rate of £40 per annum. (2) Pathologist and Curator; honorarium, £50.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon (male) Salary at the rate of £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician (male). Salary, £50 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £82 per annum.

THROAT HOSPITAL, Golden Square, W.—Honorary Assistant Surgeon.

WAKEFIELD GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum.

WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL, Liscard, Cheshire.—House-Surgeon. Salary, £100 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Physician for Diseases of Women; (2) Assistant Physician for Diseases of Women; (3) Anaesthetist.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Bantry, co. Cork, and Kington, co. Hereford.

APPOINTMENTS.

BROWN, G. S., M.B., Assistant Medical Officer of the Birmingham Union Infirmary.

ECKENSTEIN, Kenneth, M.B., B.S.Lond., M.R.C.S., L.R.C.P., Assistant Pathologist to the National Hospital for Diseases of the Heart, Soho Square, W.

ELLIS, L. Erasmus, M.D., M.R.C.S., L.R.C.P., L.S.A., Clinical Assistant to the *X*-ray Department and the Medical Electrical Department, West London Hospital.

RANDLE, A., M.D.Lond., Assistant Resident Medical Officer of the Mile End Union Infirmary.

FEILING, Anthony, M.R.C.S., L.R.C.P., Resident Medical Officer to the British Lying-in Hospital, Endell Street, London, W.C.

HAMPSON, Wm., M.A.Oxon, L.S.A., Electro-therapeutist to St. John's Hospital for Diseases of the Skin, Leicester Square, W.C.

MACCORMAC, W. L., M.B., Ch.B. Vict., Medical Officer of the St James's Infirmary of the Wandsworth Union.

MORGAN, D. L., M.D.Lond., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Pembroke District, co. Pembroke.

PEACOCK, W. E., M.D., B.S., Clinical Assistant to the Chelsea Hospital for Women.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS

GODSON.—On October 15th, at The Craig, Laxey, Isle of Man, the wife of John Edward Godson, M.B., B.Ch., of a daughter.

KIRKNESS.—On October 11th, at Chesterfield, 110, London Road, Portsmouth, to Dr. and Mrs. W. Ronald Kirkness—a son.

POWELL.—On October 16th, at Dunchurch, Rugby, the wife of Herbert E. Powell, M.R.C.S.Eng., L.S.A., of a son.

MARRIAGES.

CALLENDER—DAVIES.—At Halton Parish Church, on October 8th, by the Rev. R. W. Wiseman, M.A., Vicar of St. Andrew's, Ashton-on-Ribble, Preston, assisted by the Rev. J. H. Hastings, M.A., Rector of Halton, Lancaster, Duncan Macnab Callender, M.A., M.B., F.R.C.S.E., son of Thomas Callender, Inverard, Edinburgh, to Edith Beatrice, daughter of the late Henry Davies, Carus Lodge, near Lancaster.

JENKINS—EDWARDS.—On October 12th, at St. Margaret's, Westminster, by the Bishop of St. Asaph, uncle of the bride, and the Rev. N. Ll. Jenkins, M.A., Vicar of Upavon, brother of the bridegroom, Herbert Thomas Jenkins, M.R.C.S.Eng., L.R.C.P.Lond., Penmaenmawr, N. Wales, fifth son of the late James Jenkins, of Glansawdde, Carmarthenshire, to Margaret Wood Edwards, of Treanna, Anglesey, second daughter of the late Dean Edwards, of Bangor, North Wales.

JONES—TENNANT.—On October 18th, at the Parish Church, Llangammarch Wells, by the Rev. E. Davies, B.A., Vicar of Aberavon, assisted by the Rev. J. Evans, M.A., Rector, William Black Jones, M.D., B.S., J.P., to Gwladys Gwenllian, youngest daughter of Marmaduke Tennant, Esq., J.P., of Aberavon and Llangammarch Wells.

SMITH—MILLER.—October 17th, at St. Paul's, Prince's Park, Liverpool, by the Rev. J. O. Coop, M.A., Vicar of St. Catherine's, Abercromby Square, assisted by the Rev. S. S. Horan, M.A., Vicar of St. Paul's, Geo. Francis Rawdon Smith, M.B., Ch.B., eldest son of S. Rawdon Smith, J.P., of Ironbridge, Salop, to Ellen Mary, eldest daughter of the late Alexander Alan Miller, of 59, Peel Street, Liverpool.

DEATH.

BLOMFIELD.—On Saturday, October 15th, at Dunedin, South Island, New Zealand, Edward Eldridge Blomfield, M.D., B.S.Lond., M.R.C.S.Eng., and L.R.C.P.Lond., aged 48 years. (By cable.)

DIARY FOR THE WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Papers:—(1) Mr. J. Bland-Sutton: The Clinical Aspects of Metastatic Cancer of the Ovary. (2) Dr. Bernard Spilsbury: The Pathology of Certain Tumours of the Ovary.

Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., 5 p.m.—Museum Demonstration by Mr. Shattock: Specimens illustrating Syphilis

Royal Society of Medicine:

Odontological Section, 15, Cavendish Square, W., 8 p.m.—Paper:—Mr. F. J. Bennett: Destruction of Teeth by Milk Germs. Casual Communication:—Mr. J. F. Colyer: A Myeloid Sarcoma Associated with a Septic Oral Condition. Presidential Address by Mr. W. B. Bacon.

TUESDAY.

Medico-Legal Society, 11, Chandos Street, Cavendish Square, W., 8.15 p.m.—Presidential Address: The Influence of Social and Legal Restrictions upon the Practice of Medicine. Paper: The Law and Experiment, by Digby Cotes-Preedy, M.A., LL.M., Barrister-at-Law.

Royal Society of Medicine:

Medical Section, 15, Cavendish Square, W., 5.30 p.m.—Paper: Dr. A. M. Gossage and Mr. E. Rock Carling: Multiple Cartilaginous Exostoses.

WEDNESDAY.

Hunterian Society, London Institution, Finsbury Circus, E.C., 8.30 p.m.—Paper:—Mr. Bland-Sutton: Diseases of Elephants' Tusks in relation to Billiard Balls.

THURSDAY.

Harveian Society of London, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—Discussion on the Diagnosis and and Treatment of Cystic Tumours of the Breast; to be opened by Mr. D'Arcy Power and illustrated by Mr. E. H. Shaw.

FRIDAY.

Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., 5 p.m.—Museum Demonstration by Professor Keith: Specimens illustrating the various forms of Imperfect Differentiation of the Sexual Organs and Characters.

Royal Society of Medicine:

Section of Disease in Children, 11, Chandos Street, Cavendish Square, W., 4.30 p.m.—Cases and Specimens.

Section of Balneology and Climatology, 15, Cavendish Square, W., 5.30 p.m.—Presidential Address by Dr. T. F. Gardner Air and Water: Is there Anything New under the Sun?

Epidemiological Section, 15, Cavendish Square, W., 8.30 p.m.—Presidential Address by Dr. Theodore Thomson, C.M.G.: The Enteric Fever Carrier.

POST-GRADUATE COURSES AND LECTURES.

Central London Throat and Ear Hospital, Gray's Inn Road, W.C.—Lectures: Tuesday, 3.45 p.m., Accessory Sinuses. Friday, 3.45 p.m., Accessory Sinuses.

Hospital for Consumption, Brompton.—Wednesday, 4 p.m., Lecture-Demonstration, Bronchiectasis.

London School of Clinical Medicine, Seamen's Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday; Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m., Thursday. Special Lectures: Tuesday, 4.30 p.m., Treatment of Certain Nervous Diseases. Wednesday, 3.30 p.m., Injuries to the Eyeball. Thursday, 4.30 p.m., Some Minor Operations of General Practice. Friday, 2.15 p.m., Tuberculous Peritonitis.

Manchester: Ancoats Hospital.—Thursday, 4.15 p.m.—Post-Graduate Clinic—Intestinal Obstruction.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Medical. Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, Diagnosis of Disseminated Sclerosis. Tuesday, Tetany and Allied Affections. Wednesday, Diagnosis in Diseases of the Rectum and Anus. Thursday, Obesity and some Changes in Metabolism.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Tuesday, 3.30 p.m., Paraplegia. Friday, 3.30 p.m., Clinical Cases.

North-East London Post-Graduate College, Prince of Wales's General Hospital, Tottenham, N.—Thursday, 4.30 p.m., Opening Lecture of the Winter Session by Sir Lauder Brunton, Bart., F.R.S., The Value of Blood Pressure Observation in Medical Practice.

St. John's Hospital, Leicester Square, W.C.—Thursday, 6 p.m., Chesterfield Lecture—Eczema: Its Varieties, Symptoms, and Causes.

West London Post-Graduate College, Hammersmith Road, W.—Medical and Surgical Clinics, X-Rays, and Operations, 2 p.m. daily. Monday, Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Demonstration of Minor Operations, 11.30 a.m.; Throat, Nose, and Ear, 2 p.m.: Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. every weekday except Saturday.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
OCTOBER.	
25 TUESDAY ..	South Essex Division, *East Anglian Branch*, Annual Meeting, Palace Hotel, Southend-on-Sea, 7.45 p.m.; Annual Dinner, 8 p.m.
26 WEDNESDAY	London: Conference between Special Poor Law Committee and Contract Practice Subcommittee, 10 a.m. **London: Central Council, 2 p.m.** Buckinghamshire Division, *South Midland Branch*, Red Lion Hotel, High Wycombe, 2.30 p.m.; Lunch, 1 p.m. Richmond Division, *Metropolitan Counties Branch*, Trocadero Restaurant, Piccadilly Circus, W., 7.30 p.m. for 8 p.m.
27 THURSDAY..	Greenwich Division, *Metropolitan Counties Branch*, St. Mark's Presbyterian Church Room, South Street, Greenwich, 4.30 p.m. St. Pancras and Islington Division, *Metropolitan Counties Branch*, Theatre No. 1, University College Hospital Medical School, 4 p.m. Walthamstow Division, *Metropolitan Counties Branch*, Livingstone College, Knotts Green, Leyton, 4 p.m. Worcestershire and Herefordshire Branch, Autumn Meeting with Gloucestershire Branch, Imperial Hotel, Malvern, 4.30 p.m.; Dinner, 7 p.m.
28 FRIDAY ..	Birmingham Branch, Pathological and Clinical Section, Medical Institute, Edmund Street, 8 p.m. Tottenham Division, *Metropolitan Counties Branch*, Prince of Wales Hospital, Tottenham, 4.30 p.m.
29 SATURDAY ..	
30 Sunday ..	
31 MONDAY ..	
NOVEMBER.	
1 TUESDAY ..	
2 WEDNESDAY	London: Medico-Political Contract Practice Subcommittee, 2 p.m. London: Medico-Political Subcommittee re Advertisements of Foods and Drugs, 5 p.m. Yorkshire Branch, Queen's Hotel, Barnsley, 4.15 p.m.; Dinner, 6.30 p.m.
3 THURSDAY..	Reigate Division, *South-Eastern Branch*, Autumn Meeting, White Hart Hotel, Reigate, 5 p.m.; Annual Dinner, in conjunction with Reigate District Medical Society, 7 p.m.
4 FRIDAY ..	
5 SATURDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 29TH, 1910.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

ABERDEEN BRANCH.

THE annual meeting of the Branch was held in the Medico Chirurgical Society's Rooms, 29, King Street, Aberdeen, on October 15th, at 11.45 a.m. There was a large attendance of members, and in the absence of the President (Dr. Patrick Mitchell, Old Rayne), Dr. GEORGE WILLIAMSON, Vice-President, occupied the chair.

Confirmation of Minutes.—The minutes of the summer meeting were read, approved, and signed by the Chairman.

Report of Council.—The Council's report for the year 1909–1910 was read, and showed that five general meetings of the Branch had been held during the year, and that the council had met eight times. The membership of the Branch on September 30th, 1910, was 169.

Treasurer's Report.—The Treasurer's report, which had been circulated among the members, was held as read, and was approved.

Election of Officers.—Thereafter the following office-bearers for the year 1910–1911 were elected: *President*, Dr. John Gordon, Aberdeen; *President-elect*, Dr. C. C. Greig, Fyvie; *Vice-Presidents*, Dr. George Williamson and Dr. Patrick Mitchell; *Treasurer*, Dr. Levack; *Secretaries*, Dr. Thomas Fraser, 45, Elmbank Terrace, Aberdeen, and Dr. F. K. Smith, 207, Great Western Road, Aberdeen; *Council* (Town), Dr. Geddie, Dr. Christie, Dr. Thos. Milne; (Country), Dr. Middleton, Peterhead; Dr. Davidson, Torphins; Dr. Cockburn, Old Meldrum; (Orkney), Dr. Sinclair, Kirkwall; (Shetland), Dr. Robertson, Lerwick; *Representative at Representative Meeting*, Dr. Lawson, Nordrach-on-Dee, Banchory, was re-elected.

Annual Meeting of the Association.—The meeting then considered the question of inviting the Association to hold its annual meeting in Aberdeen in 1913. Before discussing the matter Dr. J. C. Ogilvie Will was allowed to explain his position with regard to the letter he had sent to the central council in July last inviting the Association to Aberdeen in 1913. Dr. WILL said the intention of his letter had been misunderstood and that he had had no wish to trespass on the prerogative of the Branch in regard to this matter, but merely wished to pave the way for an invitation being sent. No comment was offered by the meeting on Dr. Will's action. It was decided that an invitation should be sent to the Central Council to hold the annual meeting of the Association in Aberdeen in 1914.

Summer Meeting.—It was referred to the council to make arrangements for the summer meeting and a letter was read from Dr. Munro Moir, Inverness, inviting the Branch to join with the Northern Counties Branch in holding a summer meeting at Grantown-on-Spey.

CLINICAL MEETING.

In addition to the annual business meeting a clinical meeting was held on the same day, from 9 to 10.30 a.m. Members met in the Royal Infirmary and the following cases were shown:—Professor FINLAY: Two cases of ascites. Dr. GEORGE EDMOND: Orthostatic albuminuria; nervous case. Dr. ASHLEY MACKINTOSH: Disease of cervical spine (with skiagram); tabes dorsalis, with complete blindness; pneumothorax; intrathoracic lesion. Mr. SCOTT RIDDELL: Cases of gangrenous appendicitis with general peritonitis after operation; gangrene of forearm; hydatid cyst of liver; ureteral calculus; pyaemic arthritis and pyaemic abscesses (puerperal); patient with compound fractures of right thigh and right forearm (with implication of median and ulnar nerves) and fracture of left forearm; dislocation of shoulder with injury to median nerve; uterine tumour: patient after excision of rectum. Professor MARNOCH: Pyloric tumour; case after subperiosteal resection of tibia (with skiagram); symmetrical gangrene. Mr. H. M. W. GRAY: Gastrectomy for malignant disease (3 cases); rodent ulcer treated by radium (2 cases); sarcoma of ilium treated by Coley's fluid; Thiersch's skin grafting (3 cases); carcinoma of colon in girl of 21; malignant wart treated by radium. Dr. J. F. CHRISTIE: Scleroderma; pemphigus; xanthoma multiplex; summer prurigo; chronic eczema.

Demonstrations.—10.45 to 11.40 a.m., at Marischal College (Pathological Department).—Demonstrations were given by Professor DEAN, Drs. DUNCAN and ANDERSON, as follows:

Demonstration of the working of epidiascope; demonstration of the method for the isolation of typhoid bacillus from stools, urine, etc.; demonstration of Wassermann's method for the diagnosis of syphilis; series of brain tumours; microscopical preparations of the *Spirochaeta pallida*; gumma of the heart; rupture of the kidney; angeio-sarcoma of kidney; preparations mounted by Rowntree's method, recently added to

the pathological museum; specimens of sarcoma of the rat; microscopical and naked eye preparations from Banti's disease; carcinoma of stomach invading duodenum; demonstration of microscopical preparations.

Dr. Levack showed a series of skiagrams, Dr. Wallace Milne showed a case of Jacksonian epilepsy treated by trephining, and Dr. Peter Howie a case of vascular tumour of the head.

12.30 to 1.30 p.m., at the Royal Hospital for Sick Children, Dr. R. G. McKerron:

Leucocythaemia; tuberculous peritonitis; general septic infection; rheumatic arthritis; right hemiplegia.

Mr. H. M. W. Gray:

Plated fractures; Duchenne-Erb's paralysis; infantile paralysis; case showing deformities from injury at birth; Little's disease.

Dr. A. Mitchell, Jun.:

Fragilitas ossium (2 cases); superficial glossitis (? congenital specific).

The meetings proved very successful, and about sixty members attended at the various places.

Dinner.—On Friday, the 14th, a dinner was held in the Grand Hotel, under the presidency of Dr. George Williamson, with Dr. Russell (Edinburgh Branch), Dr. Buist (Dundee Branch), Professor Finlay, and others as guests. The attendance numbered thirty-seven, and an excellent dinner was provided. The toast list included the loyal toasts given by the Chair; "The British Medical Association," proposed by Professor Finlay, and replied to by Dr. Buist; "The Guests," proposed by Dr. John Gordon, and replied to by Dr. Russell (Edinburgh) and Dr. H. E. Smith (Aberdeen Royal Infirmary); "The Chairman," proposed by Dr. Wilson (Huntly), and received with musical honours. In the course of the evening a musical programme was carried through, contributed to by Drs. G. M. Duncan, Rorie, Smith, Fraser, Robertson, Wilson (Huntly); and stories were told by Drs. Rannie (Culter), Mitchell (Ballater), and Dr. Buist. Altogether a delightful evening was spent, and the hope was generally expressed that the gathering might be made an annual one in place of the luncheon which formerly was held in connexion with the annual meeting.

BIRMINGHAM BRANCH.

An ordinary meeting of the Branch was held on Thursday, October 20th, at the Medical Institute. Professor Barling, President, was in the chair. Fifty-three members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read, confirmed, and signed.

Birmingham Provident Dispensary.—Dr. Lydall gave notice that at the next meeting of the Branch he would draw attention to the appointment of representatives on the committee of the Birmingham Provident Dispensary and move a resolution thereon.

Exhibit.—Dr. McCardie showed the improved Vernon-Harcourt apparatus for the administration of chloroform and oxygen, and also his own inhaler for administering a mixture of chloroform and ether.

Paper.—Professor Saundby read a paper on aphasia. In the subsequent discussion Drs. Kauffmann, J. E. H. Sawyer, L. Mackey, and G. H. Melson, and the Chairman took part. Professor Saundby replied.

EDINBURGH BRANCH:

South-Eastern Counties Division.

The autumn meeting of the Division was held at St. Boswells on October 12th.

Report of Representative.—The report of the Representative dealing largely with invalidity insurance was discussed. It was unanimously carried that a small committee should be appointed with a view to bringing before members and non-members of the Association resident in the Division, in the strongest manner possible, by means of printed circulars and meetings, the value of co-operation and unity in meeting the approaching changes in medical service.

HALIFAX, NOVA SCOTIA, BRANCH.

The annual meeting of this Branch was held on September 28th.

Election of Officers.—The following officers were regularly elected for the ensuing year: *President*, Arthur Birt, M.B., 49, Hollis Street, Halifax; *Vice-President*, M. A. MacAulay, M.D., Halifax; *Honorary Secretary*, Kenneth A. MacKenzie, M.D., 263, Brunswick Street, Halifax; *Honorary Treasurer*, A. F. Buckley, 209, South Park Street, Halifax; *Branch Council*, G. M. Campbell, M.D., J. R. Corston, M.D., W. H. Hattie, M.D., A. R. Cunningham, M.D., E. D. Farrell, M.D., A. F. Buckley, M.D., D. T. C. Watson, M.D.

LANCASHIRE AND CHESHIRE BRANCH:

Bury Division.

A joint meeting of the Rochdale and Bury Divisions with the Rochdale and Bury Medical Societies was held in the Athenaeum, Bury, on October 11th, 1910. Dr. Menzies, of Rochdale, was in the chair, and about twenty-five medical men were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

Proposed Provident Contract Medical Service.—Dr. Walker proposed:

> That it is desirable to establish in Bury and Rochdale a Provident Contract Medical Service on the lines suggested by the British Medical Association.

Dr. Bateman seconded.

Dr. Brown having spoken against contract practice, Dr. Turnbull proposed as an amendment:

> That a committee be appointed to consider the various schemes for a Public Medical Service, and report.

Dr. Jeffery seconded.

The original motion was withdrawn, and the amendment carried. Two committees were then appointed, one from Rochdale and one from Bury, to confer before reporting to the joint meeting. Various suggestions were then made for the particular consideration of the committee, and the meeting closed with a vote of thanks to the Chairman.

Southport Division.

A special meeting of the Division was held on October 14th at the Temperance Institute. Dr. Sykes was in the chair, and there were present Drs. Anderson, Ashworth, Baildon, Barnes, Bentall, Mewburn Brown, Campbell, Woolmer Davies, Fenn, Hare, Harris, Lewis, Littler, Pridie, Russel, Schofield, Walker, and Wheeler. Mr. Larkin, the Secretary of the Branch, also attended to address the Division on the work of the Association.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Public Medical Service.—Several meetings of a public services subcommittee had been held with a view of deciding whether a meeting of all the members of the local profession should be called for the purpose of considering the adoption of a scheme for establishing a provident dispensary in accordance with the model rules for a public medical service issued by the Council. The following recommendation of the subcommittee was submitted to the meeting:

> That considering the improbability of being able to approach the Southport Infirmary with any practicable or acceptable suggestions for the devolution of its out patient work upon a provident dispensary, and further considering that at the recent Representative Meeting of the Association resolutions respecting a public medical service were passed, which will be submitted to the Divisions for their consideration, the Subcommittee recommends that no further action be taken until the Division receives the Reference from the Council.

This recommendation was adopted unanimously.

State Sickness and Invalidity Assurance.—A letter was read from the Altrincham Division making certain suggestions respecting medical attendance in connexion with this subject. The Secretary was instructed to reply that the points mentioned should receive due attention from the Division.

Homoeopathy.—In connexion with a letter submitted for the consideration of the Division by a homoeopathic practitioner a prolonged discussion arose on

the eligibility of homoeopaths for membership of the Association, and the propriety of members consulting with homoeopaths. In the course of the discussion the recommendations of the Council already formally approved by the Division were reaffirmed, and the opinion that it is unethical for members to consult with those whose homoeopathy brought them under the ban of the recommendations was freely expressed and very generally approved. No vote was taken on these points as the circumstances of the case did not require it.

Address by Mr. Larkin.—So much time had been absorbed in the discussion on homoeopathy that Mr. Larkin, who had, however, made a valuable contribution to the discussion, had very little time at his disposal for other subjects. He devoted what time there was to an interesting statement of the circumstances attending the attempt to obtain a Royal Charter, and the difficulties which had now to be overcome in the reorganization of the Association.

A vote of thanks to Mr. Larkin concluded the business.

METROPOLITAN COUNTIES BRANCH:

Chelsea Division.

A MEETING of the Division was held on October 18th at the Chelsea Town Hall, Dr. JAMES YOUNG in the chair. There were present: Drs. P. H. Parsons, Coltart, Halley, Badgerow, J. Hamilton, Simon, Appleton, White, Bedford, Butler, Fletcher, W. S. Lee, Campbell, Boyd, and Gallard.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Contract Practice.—Arising out of the minutes, Dr. BUTLER asked if the members of the Contract Practice Committee had any information concerning the proposed extension of contract practice in the district. They replied in the negative, Dr. BUTLER then stated that he understood the P.S.A. Sick Club were about to secure the services of two additional medical officers, one in the Wandsworth Bridge Road and another in the Fulham Palace Road district. He strongly condemned this particular form of contract practice, and suggested that the medical men in the above-mentioned districts should meet and mutually agree not to accept these appointments. Eventually he moved:

> That the Secretary be instructed to call together the medical men of Fulham to discuss the further extension of contract practice in the district.

This was seconded by Dr. FLETCHER. The CHAIRMAN gave his hearty support to the resolution, and said that whilst they could not expect medical men who already held appointments of this kind to resign them, it was time they made a united and determined effort to induce others not to accept them. The HONORARY SECRETARY said that it was not in order to move a resolution of this kind without notice Still, as he believed that he was considered to be one of the culprits in this matter, he would be pleased to support the resolution in order that the whole question of contract practice in the district might be thoroughly threshed out. Dr. SIMON said that it seemed somewhat invidious to select these particular appointments for their censure, considering that there was so much contract practice done on similar lines in the district. Dr. BEDFORD also spoke. Dr. P. H. PARSONS remarked that their secretary was correct in saying that notice should be given of a resolution of this kind, but that on previous occasions the chairman had ruled such a resolution arising out of the minutes to be in order on the ground of urgency. The CHAIRMAN therefore accepted the resolution, which was put to the meeting and carried *nemine contradicente*.

Home for Paying Patients.—Letters were read from the Secretary of the Westminster Division, containing a proposal for the foundation of a home for paying patients under medical management, with outlines of a scheme. Dr. PARSONS thought this would meet with general approval, and hoped that eventually they would have such an institution in the area of each Division. He moved and Dr. WHITE seconded:

> That delegates be appointed to attend a conference of Representatives of the Metropolitan Divisions to consider the scheme in question.

This was carried unanimously. The following gentlemen were appointed—namely, Drs. Bedford, Lee, Parsons, and White.

Paper.—A paper on chronic diarrhoea was read by Dr. ROBERT HUTCHISON, Physician to the London Hospital. He said diarrhoea might consist in an increase in the amount of stools as well as in their frequency or in their abnormal fluidity. The best example of the first of these was found in a form of diarrhoea met with in children between 1 and 3 years of age. The characteristics thereof were described, and its treatment by raw-beef juice, 6 oz. daily; malted, but no starchy food or milk; warmth; and medicinally nitrate of silver (grain $\frac{1}{8}$) with dilute nitric acid three or four times a day, and, if necessary, small doses of opium to delay peristalsis. He had never seen any symptoms of poisoning from the use of the silver salt in these cases, but had met with cases of tapeworm from the consumption of raw meat juice. Chronic diarrhoea, characterized by an increase in the number of the motions, or by their abnormal fluidity, might be due to (1) disease of the stomach, producing gastric diarrhoea; the pathology and characteristics of this form were described, and its treatment by hydrochloric acid. (2) Pancreatic disease, characterized by white stools containing fat; best treated by pankreon in the form of tablets, two per diem. (3) Disease of the small intestine—enteritis; this was frequently due to alcoholism and phthisis; its character, and treatment by lime salts, tannigen, etc., were described. (4) Disease of the colon: (*a*) chronic catarrhal colitis, best treated by irrigation of the colon with solutions of argyrol; (*b*) ulcerative colitis, for which the only reliable treatment was appendicostomy; (*c*) chronic dysentery, to be treated in a like manner to (*b*); treatment by ipecacuanha was very uncertain; (*d*) malignant disease; (*e*) sigmoiditis. (5) Nervous irritability of the intestine: (*a*) Nervous diarrhoea, for which bromides night and morning were recommended; (*b*) lienteric diarrhoea, in which opium should be given before meals. There was frequently a catarrhal basis in these forms. Dr. Hutchison emphasized the importance of examining the contents of the stomach and of sigmoidoscopy in all cases of chronic diarrhoea. A discussion took place, in which Drs. HALLEY, COLTART, WHITE, and GALLARD took part, and Dr. HUTCHISON answered several questions.

Vote of Thanks.—The CHAIRMAN moved a vote of thanks to Dr. Hutchison for his interesting paper, which was passed with acclamation.

MIDLAND BRANCH:

Leicester and Rutland Division

A MEETING of the Division was held on Wednesday, October 19th, at 4.15 o'clock, in the Board Room of the Leicester Infirmary, Dr. STAMFORD in the chair, and thirty-five members and two visitors were present.

Confirmation of Minutes.—The minutes of the previous meeting were read, confirmed, and signed.

Election to Executive Committee.—Dr. HICKS proposed and Dr. GIBBONS seconded that Dr. Hunter be elected to the vacant place on the Executive Committee. Carried unanimously.

Draft Ethical Procedure Rules.—Dr. SEVESTRE proposed and Dr. HICKS seconded that the draft rules respecting ethical procedure be adopted until further notice. This was carried unanimously.

Discussion.—A discussion on pneumonia was introduced by Dr. A. V. CLARKE, in the unavoidable absence of Dr. Pope. Dr. T. JOHNSTON dealt with its pathology and bacteriology, Dr. HARRISON with its clinical aspects, Dr. LILLEY and Mr. DOUGLAS with its medical and surgical complications, and Dr. MONTAGU WILLIAMS with treatment. Drs. PRATT, CARTER, and GIBBONS took part in the subsequent discussion.

NORTHERN COUNTIES OF SCOTLAND BRANCH.

A CLINICAL meeting was held at the District Asylum, Inverness, on Saturday, October 15th, Dr. BRODIE CRUICKSHANK in the chair. Fourteen members of the Branch were present.

Hospital Treatment of the Insane.

Dr. T. C. Mackenzie, Medical Superintendent, District Asylum, Inverness, read the following paper:

When Dr. Moir suggested to me that the next meeting of the Northern Counties Branch of the British Medical Association should be held at the asylum, and at the same time requested me to prepare a short paper for the occasion, it occurred to me that the question of the hospital treatment of the insane would be of interest to the members present. The subject is one that has received great and increasing attention from asylum physicians and others in recent years. If any proof is required of the great change and progress that have taken place during the last fifty years in this matter, it is necessary only to contrast the treatment accorded to newly admitted cases at the present day with that which was their lot two generations ago. There is, perhaps, no department of applied medical science in which greater advances have been made.

This change is the natural and inevitable consequence of the development of the conception that insanity is a form of disease and is amenable to medical treatment. The conception is in itself a great advance upon previous theories regarding the nature of insanity, and it is scarcely possible to over-estimate its importance, for we are bound to be guided and influenced in our attitude towards and our treatment of insanity by our conception of its nature and causes.

The duties and responsibilities of medical men in their relation to the problems of insanity as they affect the individual and the State present a very large subject of inquiry, and their scope is too great for me to make any attempt to deal with them. The treatment of the certified insane, however, in our public asylums is a subject with fairly well defined limits, and I should like to offer the following few remarks upon the hospital treatment of the insane as it affects (1) the patient, (2) the nurse, (3) the physician, (4) the public.

If it is asked what is meant by the hospital treatment of the insane, the answer is that the patient on admission to an asylum is put to bed in a ward staffed by trained nurses, that his physical condition is carefully examined and recorded, and also his mental state. Thus he is placed in the circumstances most favourable to the study of the particular requirements of his case, and obtains the most suitable means of treatment at the hands of skilled and careful attendants.

Clinical research and much laborious investigation in the laboratory have been far from sterile in the field of mental disease. The pathological conditions underlying disturbed states of mind are not now an entirely unknown quantity, as they almost universally were not so many years ago.

It is now known that the digestive power of the gastric juices in certain forms of mental disorder is much decreased, and that, therefore, it does no good to treat such patients by cramming them with food, as used to be the case.

Certain cases of acute agitated melancholia present symptoms of much clinical interest in the tension of the arterial walls and the amount and character of the urine, and failure to recognize the presence of these symptoms may lead to the adoption of treatment the only effect of which would be to aggravate the disease.

Much has been written as to the rôle of toxaemia in the causation of insanity, and many different views have been held thereupon, but it is admitted by all that the condition of the alimentary tract is of great importance in the acute forms of insanity, and that an overloaded and constipated bowel may be the means of toxic absorption producing many of the features of confusional insanity—hallucinations, confusion of mind, excitement, motor restlessness, incoherence of speech, etc., with a slightly febrile or irregular temperature, unhealthy skin, foul tongue, dry lips covered with sordes, scanty urine thickly loaded with urates, etc.

Treatment in bed is desirable in all such cases and is possible in most. The rest in bed is good in itself; medicines can be administered and their effects observed; suitable food can be administered and unsuitable food kept out of the way; the patient is watched by night as well as by day, and if insomnia is present it can be treated, not always and in the first instance by one of the hypnotic drugs; a drink of hot milk may sometimes be sufficient, and I have known this, combined with a hot-water bottle applied to the feet, succeed when paraldehyde and veronal had failed.

It is not, however, only the acute and recently admitted cases of mental disease that are interested in and benefited by the hospital treatment of the insane. The sick ward is intended for such, but its usefulness extends to two other quite distinct and separate classes of asylum patient. There is first the patient who is permanently enfeebled in mind but ablebodied, and who suffers from some intercurrent organic disease such as an attack of lobar pneumonia, lumbago, etc., or who sustains some injury, such as a broken leg, that requires confinement to bed, with careful nursing and supervision. Such a patient is also given his or her place in the sick ward, and there receives exactly the same treatment as would be provided in the wards of a general hospital or infirmary.

The actual carrying out of treatment in such cases is liable to be complicated and often rendered more difficult by the mental condition of the patient, but such difficulties are not allowed to frustrate or prevent the endeavour to treat the case as it deserves.

Food may be refused or it may be rejected after it has reached the stomach. A case who has been operated on for appendicitis may require physical restraint in some form to prevent the removal of bandage dressings and stitches, and a man with fracture of both bones of the leg may remove his splints and jump out of bed and give some trouble before he is caught, as I once saw happen in the case of an epileptic patient. Such difficulties, however, only call for high qualities in the asylum nurse and attendant, and are not allowed to interfere with the proper treatment of the patient.

The second class of patient who benefits is to be found among those who are subject to recurrent attacks of mental disorder associated with some change in their bodily condition. There is a patient in this asylum who periodically becomes acutely excited and dangerously impulsive. Associated with this change in conduct there is always to be found, if it is looked for, a very foul condition of the tongue and breath, and the best treatment for the case, and the best sedative for the excitement, is a large dose of castor oil. In another patient I have seen great benefit result from the daily washing out of the stomach with a weak solution of permanganate of potash. These are not cases that in our present state of knowledge can be regarded as curable or even capable of permanent improvement; but their treatment by such methods is in many cases of undoubted benefit to the patients themselves, and is certainly beneficial to the general order and peacefulness of the asylum as a whole.

There is yet another and apparently increasing class of asylum patient whose position has been improved since the introduction of hospital methods into asylum practice. I refer to the senile insane, many of whom are bedridden. If the doctor can do little for them, the nurse can do very much. I have been assistant physician in an asylum in which the aggregate age at death in twelve consecutive deaths amounted to 900 years—an average of 75 years per patient. The declining years of these patients were soothed and their sufferings diminished by the devotion and attention of nurses who were dealing with one of the most trying and exacting class of patients with which any nurse can have to do—the complaining and failing and querulous old man or woman.

There is a further aspect of the hospital treatment of the insane as it affects the patient that merits attention. It is what I may be allowed to call the reflex effect upon the patient if he or she is

sufficiently conscious to be capable of appreciating their surroundings. They realize that they are in bed; that their surroundings are those of a hospital; that they are attended by nurses, and that they have fellow-patients; that they have a medical attendant who takes an interest in them individually; and that, in short, they are treated as patients and not as prisoners.

It is a fallacy, of which the public mind is not yet altogether disabused, that there is but little difference between an asylum and a prison. The tendency of asylum development is towards the hospital and away from the prison. To what extent the prison should follow the asylum is another question, but the time is past for any such idea as that the two are much the same.

The development of the hospital idea in asylum work has produced almost equally far-reaching changes and improvements in the duties and training of the asylum nurse and attendant, and I should now like to refer briefly to some of these.

The course of training to be undergone before a candidate can enter for the examination for the nursing certificate of the Medico-Psychological Association now extends to three years, and the standard of examinations is sufficiently high to ensure that any one who passes it is well qualified as a mental nurse. The general principles of medical and surgical sick nursing are taught and required to be carried out in practice, with special attention to the peculiar requirements of insane patients, and this teaching is based upon an elementary but thorough knowledge of anatomy and physiology as well as of the diseases of the different bodily systems and of the forms of mental disease.

In any large institution such as this the methods of preventive medicine are of special importance, and these are given their due place in the training of the staff. When I tell you that about 50 per cent. of our admissions show signs of active or latent pulmonary tuberculosis—to mention only one source of danger—you will realize how constant and vigilant must be the efforts to limit and prevent infection and further spread.

The principles adopted and practised in the hospital and sick wards of the asylum, and the training received therefrom by the members of the staff, make their influence felt throughout the whole institution, and have a most important bearing upon the health of every member of the asylum community, both patients and staff. The advance of medical science in the department of mental disease now requires the successful asylum attendant to possess high qualifications in technical knowledge and training as compared with the requirements of twenty years ago, but something else, even more important, is essential, and must not be lost sight of. Nothing, I think, can ever take the place in asylum work of such qualities as good temper, cheerfulness, unwearying patience and forbearance, constant watchfulness and forethought, sagacity and kindly sympathy, etc. If these are absent, it is of no avail to know the number of red blood corpuscles per cubic centimetre, or to write learnedly on the structure of the cerebral cortex or the nature and use of antiseptics. The ideal asylum nurse or attendant requires the double qualification.

Many of the changes I have alluded to have been due in great part to the initiative and energy of medical superintendents of asylums, and these changes have not been without their direct effect upon the point of view from which asylum physicians and their work are now regarded by the public. In this relation it is instructive, I think, to note the terms in which the Committee of Management of the West Riding Asylum have lately advertised for a successor to Dr. Bevan Lewis. They stated that preference would be given to one who had had training at a hospital for nervous diseases, and who could produce evidence of his fitness for the supervision of the pathological and scientific laboratories with which the asylum is equipped.

As illustrations of the same tendency I may also refer to the establishment, a year ago, by the board of managers of the Crichton Royal Institution, of three scholarships for research in the field of mental disease, and to the fact that in some of the Scottish district asylums facilities have been provided for clinical and pathological investigation, and that in some of these an additional member of the staff has been appointed for the prosecution of such research.

Apart, however, from these more general and scientific aspects of the matter, there is certainly the fact that the development of the hospital idea has imposed upon the asylum physician the duty of careful individual attention to the bodily and mental condition and requirements of every one of the hundreds of patients committed to his care. To the man of enquiring, progressive and reflective mind there can be no rule of thumb in such work, and when the crowd is so large the constant effort not to lose sight of the individual is correspondingly great.

The relation of the public to the hospital treatment of the insane is the last aspect of the matter to which I should like, very briefly, to draw your attention. From what I have previously said, it will be evident that the underlying purpose of this idea in asylum work is the benefit of the individual patient, and it will not, I think, be seriously denied that the chief interest of the public in asylums is the due and proper treatment of those of its unhappy members upon whom the misfortune of insanity has fallen.

But the public has another, and in some respects, a more hopeful interest in asylums than this. It is good that patients admitted into asylums should benefit by the advance of medical science, and that their recovery should be promoted and secured, and their incurable disorders alleviated thereby, but it is better if through the study of mental disease in their clinical, pathological and etiological relations, the means of their prevention can be ascertained, and members of the public who otherwise would drift into cases of chronic and incurable insanity be saved from the necessity for certification and admission to an asylum.

Prevention is always better than cure, and nothing can be more desirable than the prevention of insanity so far as insanity is preventable, and in the solution of this problem of the future a large part will be played by medical men, as in the past it has been played by them, in the care and treatment of the insane and in the amelioration of their lot.

Remarks were made on the paper by Drs. Cruickshank, Forsyth, Murray, Lang, MacFadyen, and Hunter, and others present. All were agreed on one point, namely, that an observation ward should be provided in all general hospitals where incipient cases of insanity could be dealt with. In the practice of most of those present it was felt that many cases of insanity could be treated in the wards of a hospital, thus preventing the stigma attached to a residence, however short, in a lunatic asylum.

After the reading of the paper, Dr. Mackenzie showed some interesting cases of insanity at present in the asylum.

The hospital wards of the asylum were visited; these are well equipped, and hospital treatment is carried out under the most favourable conditions. Large covered verandahs have just been erected for the treatment of phthisical patients.

The visitors were entertained to tea by the Matron and Dr. Mackenzie.

SOUTH-EASTERN BRANCH:

East Kent Divisions.

A combined meeting of the East Kent Divisions was held at the Royal Victoria Hospital, Folkestone, on Wednesday, October 19th, at 3 p.m., Dr. Wainwright being in the chair. The following members were present: Drs. W. S. A. Griffith (London), Wainwright, Eastes, Tyson, Wilgress, Chambers (Folkestone), Best (Dover), Street (Westgate-on-Sea), Major Paulk (Folkestone), Drs. Hackney (Hythe), Pinhorn (Dover), Calverley (Folkestone), Bradbury (Sandgate), Davis

(Hythe), Nuttall, Routh, Evans, Lewis (Folkestone), Colonel O'Connell, Major Hooper, Drs. O'Connor, Baunt (Shorncliffe), Lidderdale, Barrett, and Dodd (Folkestone).

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Treatment of Uterine Haemorrhage.—A very interesting address was given by Dr. W. S. A. GRIFFITH, Physician Accoucheur of St. Bartholomew's Hospital, London, on "The Treatment of Uterine Haemorrhage." He said that absolute rest in bed was essential in uterine haemorrhage, and the foot of the bed raised. A little rest occasionally was worse than useless, as directly the patient got up the haemorrhage recommenced. Medical men often made the mistake of not giving enough ergot; at least 5j of the liquid extract at intervals of an hour for three hours ought to be given. Washing the uterus with hot water was useful, also a vaginal tampon of dry (not saturated, or the haemorrhage would escape round it) absorbent wool round the cervix. Curetting was sometimes necessary. In haemorrhage in young girls potassium bromide in gr. v doses should be given during the periods, and iron given between the periods. Girls stood iron very well where it would not be beneficial in adults. All school work should be knocked off, and rest out of doors if possible. Persistent haemorrhage in adults was due generally to polypus, or to the uterus containing more fibrous than muscular tissue. *Post-partum* haemorrhage, as a rule, ought not to occur, but when it does the uterus should be emptied of adherent placenta, and the hand kept on the uterus to feel if it relaxes, and it is sometimes necessary to keep the other hand on the cervix, and hot water douche should be applied if the uterus is empty. The following took part in the discussion: Drs. Street, Lewis, Chambers, and Wainwright.

Vote of Thanks.—Dr. WAINWRIGHT proposed a vote of thanks to Dr. Griffith for his excellent address. This was seconded by Dr. DODD, and carried with acclamation. The meeting then terminated.

STIRLING BRANCH.

THE autumn general meeting was held on Wednesday, October 12th, in the Crown Hotel, Falkirk, at 4 p.m. There were present: Drs. Katharine R. M. Lucas, Strachan, Highet, Moorhouse, Clarkson, Laurence, Hamilton, Ronald, Shanks, Mitchell, McKenzie, Gardner, Greig, Hunter, Brown, Wood, and Stewart.

Apologies for Non-attendance.—Letters expressing regret for inability to attend were received from Dr. Dewar (Dunblane) and Dr. Griffiths (Falkirk).

Confirmation of Minutes.—The minutes of the previous meeting, after being read and approved, were signed by the President, Dr. Strachan.

Address.—Dr. MITCHELL (Camelon) read a paper entitled, "Some Notes on a Recent Illness." He gave a graphic account of an intestinal condition which necessitated colotomy. In describing his sensations during the after-treatment of his case, he emphasized the relief afforded by hypodermics of morphine, and gave it as his opinion that the advantages of the injections largely outweighed any likely disadvantages. The paper was listened to with the greatest interest and sympathy, and it was felt that Dr. MOORHOUSE, in describing it as one of the most interesting and remarkable that had ever been read at a meeting of the Branch, was expressing aptly the opinions of those present. A discussion followed, in which Drs. STRACHAN, MOORHOUSE, Lieutenant-Colonel GREIG, Drs. HIGHET, and CLARKSON took part, and, on the motion of the PRESIDENT, the hearty thanks of the meeting were awarded to Dr. Mitchell.

Representative's Report.—The Branch Representative (Dr. GARDNER, Falkirk), presented his report, in which he reviewed the work of the Representative Meeting held in London. Dr. MOORHOUSE, in moving a vote of thanks to the Representative, congratulated the Branch on the very marked ability and interest displayed by Dr. Gardner in his work. On the kind invitation of Dr. Ronald (Larbert), it was resolved to hold a special meeting in his residence during January, 1911, to discuss some of the very important points raised in the report.

Invitation to Visit Dunblane Hospital.—A letter was read from Dr. Dewar (Dunblane), inviting the Branch to a demonstration in the hospital, Dunblane, which is reserved for the treatment of phthisis by intravenous injections. It was resolved to accept the invitation, and it was left to the Secretary and Dr. Dewar to arrange a meeting in December.

☞ *To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

ELECTION OF CENTRAL COUNCIL 1910-11.

CAPE OF GOOD HOPE (WESTERN), CAPE OF GOOD HOPE (EASTERN), CAPE OF GOOD HOPE (BORDER), GRIQUALAND WEST (INCLUDING ORANGE RIVER COLONY), TRANSVAAL, NATAL, EGYPTIAN, MALTA AND MEDITERRANEAN, AND GIBRALTAR BRANCHES.

NOTICE is hereby given that nominations of candidates for election of a Member of Council for the year 1910–11 by the group composed of the above-mentioned Branches must be forwarded to reach Dr. C. T. Anderson, Lancaster House, Green Point, Cape Colony (Returning Officer for the said group), not later than December 24th, 1910.

By Order of the Council,

GUY ELLISTON,
Financial Secretary and Business Manager.

October 26th, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: CENTRAL DIVISION.—A general meeting of the Division will be held at the Medical Institute on Wednesday, November 23rd, at 4 p.m., to elect a Representative for the Division at Representative Meetings and to transact other business. Nominations, in writing, for the above office must reach the Secretaries not later than November 2nd.—A. W. NUTHALL, W. T. LYDALL, Honorary Secretaries, Medical Institute, Edmund Street, Birmingham.

BORDER COUNTIES BRANCH: ENGLISH DIVISION.—A meeting of the Division will be held at the Victoria Cottage Hospital, Maryport, on Friday, November 4th, at 3.15 p.m. The executive meeting will be at 3 p.m. Further particulars in future notice.—JAS. R. S. ANDERSON, Honorary Secretary, Carlisle.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—The next meeting of the Division will be held, by invitation of Dr. C. F. Hadfield, at Manor Lodge, Upper Clapton, on Friday, November 11th, at 9.15 p.m., when cases will be shown by members of the Division. Visitors are invited.—A. G. SOUTHCOMBE, Honorary Secretary.

SOUTH-EASTERN BRANCH: REIGATE DIVISION.—The autumn meeting of the Reigate Division will be held at the White Hart Hotel, Reigate, on Thursday, November 3rd, at 5 p.m., Dr. Rawlings in the chair. The annual dinner will be held in conjunction with the Reigate District Medical Society. Agenda: (1) The minutes of last meeting. (2) Dr. Langdon Brown, Medical Registrar, St. Bartholomew's Hospital, will read a paper on the Practical Importance of Blood Pressure Estimations. (3) The Treatment of School Children found to be Defective: (*a*) To discuss a letter from Dr. T. Henry Jones, Medical Officer of Health to the County of Surrey, suggesting that rural school children with defective vision should be treated at the Reigate Eye Clinic on the same conditions as the children in the borough. (*b*) With reference to Memorandum No. 25, from the British Medical Association, dealing with the treatment of school children found to be defective, the following resolution will be put to the meeting: "That as the education authority has not yet undertaken to provide treatment for defective school children, the procedure for this Division be left in abeyance until the Division has had experience of the working of the scheme inaugurated by the Care Association of the Borough of Reigate with regard to teeth and eyes." (4) Dr. Caldecott's report on the Annual Meeting of the Association in London. (5) Any other business. All members of the Branch are invited to attend and to introduce professional friends. Dinner, 7 p.m.; charge 7s., exclusive of wine. The Honorary Secretary will be glad if members

will inform him if they will be able to attend the meeting, and whether they will stay to dinner.—John G. Ogle, Honorary Secretary, Tower House, Reigate.

South Midland Branch: Northamptonshire Division.—A meeting of the Division will be held in the Board Room of the Northampton General Hospital on Tuesday, November 8th, at 2.30. The meeting will be preceded by luncheon at Franklin's Restaurant, Guildhall Road, at 1.30. Any members wishing to attend should notify the Honorary Secretary at least two days beforehand. Business: Minutes of the preceding meeting. Address: The Treatment of Congenital Phimosis, by the Chairman, Mr. J. Terry. Report of the Annual Representative Meeting by Mr. S. E. Baxter. Clinical Cases. Any other business.—Peverell S. Hichens, Honorary Secretary, 47, Sheep Street, Northampton.

West Somerset Branch.—The autumnal meeting of the Branch will be held at the Taunton and Somerset Hospital on Friday, November 4th, at 4.15, when Dr. Maidlow, the President, will take the chair. Mr. W. H. Jessop, Senior Ophthalmic Surgeon to St. Bartholomew's Hospital, London, has kindly consented to be present and give an address on Ophthalmic Pitfalls.—W. B. Winckworth, Honorary Secretary, Taunton.

Yorkshire Branch.—The next meeting of the Branch will be held at the Queen's Hotel, Barnsley, on Wednesday, November 2nd, at 4.15 p.m. Agenda: (1) Memorandum from the Huddersfield Division *re* the Treatment of School Children found upon Examination to be Defective. Introduced by Mr. Frank Knaggs. (2) Memorandum from the Barnsley Division *re* the Payment of Medical Men called in by Midwives. Introduced by Dr. Knowles. (3) Papers: Mr Charles A. Adair Dighton (Scarborough): The Treatment of Suppuration of Middle Ear and Mastoid by means of Conservative Meatomastoid Operation. Dr. Little (Bradford): A Case of Cataracts following a Severe Shock of Electricity. Mr. Telling (Leeds): Myalgic Headaches: Their Diagnosis and Treatment. Mr. Michael Teale: Remarks on Two Cases of Recurrent Headache associated with Oculo-motor Paralysis (Ophthalmoplegic Migraine). Members will dine together at the Queen's Hotel at 6.30 p.m. Those who intend to be present at the dinner are requested to communicate at once with Dr. Harold F. Horne, Ivyhurst, Barnsley.—Adolph Bronner, Honorary Secretary, 33, Manor Row, Bradford.

BRITISH MEDICAL ASSOCIATION LIBRARY.

Books Needed to Complete Series.

The Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Climatological Transactions. Vols. 1, 4, 5, 6.
——— Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
——— Journal of the Medical Sciences. New series, vols. 4, 5, 1842–3; vols. 14, 15, 1847–8; vols. 18–30, 1850; vol. 33, 1857; vol. 46, 1864–5; vol. 59; or any parts of these vols.
——— Journal of Ophthalmology. Vols. 1–9.
——— Laryngological Association. Transactions. Vols. 1–6, 8–9.
——— Medical Association. Transactions, 2, 4, 6, 7, 11, 12, 14, 15, 16, 19, 20, 22, 31, after vol. 33, and the *Journal*.
——— Otological Society. Transactions. Vol. 3, part 2, 1883.
——— Public Health Association. Transactions. Any vols.
Analyst. Vols. 1–24.
Annals of Surgery. Vols. 13, 14, 26, 27.
Archiv für Dermatologie und Syphilis. 1892 and 1893.
Archives générales de Médecine. Third new series 7–8 (1839–40); 4th series, 10–17, 20–25, 1852–55, 1858–64, 1872–1897; 1846–55 inclusive; 1857–64 inclusive; 1871.
——— of Ophthalmology. Vols. 1–3, 6, 7, 14, 15, 16 and 20.
——— of Otology. Vols. 1–7, and 20–22.
——— de Parasitologie. Vols. 1–8.
——— of Pediatrics. Vols. 1–11.
Asylum Journal of Mental Science. Vol. 1, 1854.
Bentley and Trimen. Atlas of Medicinal Plants.
British Journal of Dermatology. Vol. 2, part 3.
British Laryngological and Rhinological Association, 1896–7–8–9, 1900, and since 1903.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Carmichael Essays. Rivington, 1879.
Centralblatt für Augenheilkunde. Hirschberg. All prior to 1891; Index to 1891.
Centralblatt für Bakteriologie. Bound volumes prior to 1899.
——— für medicinischen Wissenschaften. Vols. 1–19.
Congrès Français de Chirurgie. Transactions 1, 2, 3, 6, and 10, and all since 11th.
——— Internat. d'Obstétrique et de Gynécologie. 3. Amsterdam, 1899.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty:—Fleet Surgeon T. Austen to Bermuda Hospital and Dockyard, November 1st; Fleet Surgeon F. J. Burns, M.D., to the *Vernon*, November 1st; Fleet Surgeon P. Bradshaw to Chatham Dockyard, November 1st; Fleet Surgeon F. D Lumley to the *Warrior*, November 9th; Staff Surgeon E. R. L. Thomas and Surgeon W. C. B. Smith, to the *Victory*, additional, for disposal, November 1st; Surgeon G. F. Syms to Malta Hospital, November 1st; Surgeon F. R. Featherstone to the *Exmouth*, November 1st; Surgeon J. H. Wright, M.B., to the *Vivid*, November 1st; Staff Surgeon E. O. B. Carbery, M.B., to the *Calypso*, October 24th.

ARMY MEDICAL SERVICE.

Royal Army Medical Corps.

Lieutenant-Colonel J. M. Irwin, M.B., has been appointed Senior Medical Officer to the Forces in China, vice Major A. C. Fox.

The undermentioned officers, who are serving in India, are appointed Specialists in the subjects named from the dates specified:—Dermatology—Captain E. V. Aylen, 1st (Peshawar) Division, August 9th; Electrical Science—Captain A. Chopping, 1st (Peshawar) Division, August 1st; Ophthalmology—Major S. A. Archer, 3rd (Lahore) Division, August 16th.

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Surgeon-Captain S. Hillier, M.D., from the 5th Battalion the Suffolk Regiment, to be Surgeon-Captain, with precedence as in the Territorial Force, October 15th.

Surgeon-Major W. O. Evans, from the 2nd Volunteer Battalion the Royal Welsh Fusiliers, to be Major, with precedence as in the Volunteer Force, April 1st, 1908.

For Attachment to Units other than Medical Units.—William Murray, M.D., to be Lieutenant, September 15th. Leonard Colebrook, M.B., to be Lieutenant, October 3rd.

Unattached List for the Territorial Force.—The transfer from the 2nd Volunteer Battalion, the Royal Welsh Fusiliers, of Surgeon-Captain W. O. Evans, which was announced in the *London Gazette* of January 29th, 1909, is cancelled. Major J. O. Evans, from the Territorial Royal Army Medical Corps, to be Major, dated April 1st, 1908.

Yeomanry.

East Riding of Yorkshire.—Surgeon-Lieutenant R. A. Draper to be Surgeon-Captain, September 14th, 1906.

Royal Field Artillery.

First West Riding Brigade.—Surgeon-Captain John Nightingale, M.D., to be Surgeon-Major, August 15th.

Second Wessex (Howitzer) Brigade.—Surgeon-Lieutenant H. F. Bassano, M.B., to be Surgeon-Captain, April 18th, 1906.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenants William Darling, M.B., and John M. Darling, M.B., are confirmed in their rank.

David T. M. Large, M.B., to be Lieutenant (on probation), September 23rd.

John Adams, M.B., to be Lieutenant (on probation), September 19th.

Lieutenant W. M. Browne to be Captain, August 1st.

VOLUNTEERS.

Second Volunteer Battalion the Royal Welsh Fusiliers.—Surgeon-Captain W. O. Evans to be Surgeon-Major, March 31st, 1908.

TERRITORIAL DECORATION.

The King has been pleased to confer the Territorial Decoration upon the undermentioned of the Royal Army Medical Corps (Territorial Force): Transport Officer and Honorary Major Wilson Gardner, 1st West Riding Field Ambulance, Royal Army Medical Corps. Lieutenant-Colonel T. H. Openshaw, C.M.G., M.B., F.R.C.S., attached to the Lincolnshire Yeomanry. Major W. C. Beatley, M.D., attached to the 6th Battalion the Northumberland Fusiliers. Major J. T. Thompson, M.B., attached to the 5th Battalion the Welsh Regiment. Major George Williamson, M.B., attached to the 4th Battalion the Gordon Highlanders. Major Duncan McMillan, M.B. (deceased).

CHANGES OF STATION.

The following changes of station amongst the officers of the Army Medical Service have been officially reported to have taken place during September, 1910:

	FROM	TO
Surgeon-General J. G. MacNeece ...	—	Lucknow.
Colonel T. F. MacNeece	Naini Tal ...	Chatham.
Lieutenant-Colonel J. M. Irwin, M.B.	Woolwich ...	Tientsin.
" J. Maher	Potchefstroom	Wynberg.
" S. Hickson, M.B.	Wynberg ...	Potchefstroom
Major E. A. Burnside	Tidworth Park	Golden Hill.
" E. G. Browne	Dublin	India.
" W. Hallaran, M.B.	London Dist....	"
" T. B. Beach	Aldershot ...	Egypt.
" F. J. W. Porter, D S O	—	London.
" F. J. Wade-Brown	Cork	Kilworth Camp.
" B. W. Longhurst	Warley... ...	Ashton.
" F. R. Buswell	London Dist....	India.
" J. B. Anderson	London ...	Southampton.
" C. M. Fleury	Tidworth ...	Hong Kong.

		FROM	TO
Major	E. S. Clark, M.B.	Ballykinler Camp	Belfast.
,,	C. K. Morgan, M.B.	Dundalk	Aldershot.
,,	L. Addams Williams	—	Tidworth.
,,	J. McD. McCarthy, M.B.	Chapel Bay Camp	Chester.
,,	F. S. Penny, M.B.	Chatham	Hong Kong.
,,	G. B. Carter, M.B.	Dublin	Kildare.
,,	A. E. Thorpe	Bulford	Tidworth.
,,	H. B. G. Walton	Whitley Bay	India.
Captain	A. O. B. Wroughton	Dover	Canterbury.
,,	F. Ashe	Colchester	India.
,,	L. F. F. Winslow	Lichfield	Bradford.
,,	J. A. Hartigan, M.B.	Shorncliffe	Malta.
,,	C. S. Smith, M.B.	Mullingar	Donard Camp.
,,	A. F. Carlyon	—	S. Command.
,,	C. R. Evans	Lichfield	Strensall.
,,	F. W. Cotton	Barrow-in-Furness	Fleetwood.
,,	B. S. Bartlett	Colchester	India.
,,	J. M. Cuthbert, M.B.	—	Scottish Command.
,,	F. McLennan, M.B.	Fort George	Aberdeen.
,,	P. H. Henderson, M.B.	Ibsley Camp	Portsmouth.
,,	W. M. H. Spiller, M.B.	Belfast	Liverpool.
,,	C. R. L. Ronayne, M.B.	Preston	Gibraltar.
,,	W. S. Crosthwait	Cahir	Cork.
,,	W. J. Waters	Tidworth Park	Crown Hill.
,,	H. F. Shea, M.B.	London	India.
,,	A. W. Gibson	Tidworth	Gibraltar.
,,	R. F. M. Fawcett	Bulford	Gosport.
,,	H. G. Pinches	Netley	Singapore.
,,	S. B. Smith, M.D.	Dublin	Curragh.
,,	J. L. Jones	R.A.M. College	Netley.
,,	E. G. Ffrench, M.D., F.R.C.S.Edin.	Edinburgh	India.
,,	T. F. Ritchie, M.B.	Pembroke Dk.	W. Africa.
,,	S. M. Adye-Curran	Queenstown	Fermoy.
,,	W. F. Tyndale, C.M.G., M.B.	Dublin	Curragh.
,,	R. B. Ainsworth	Cosham	Tidworth.
,,	C. A. J. A. Balck, M.B.	Dublin	Curragh.
,,	F. A. H. Clarke	Edinburgh	Fort George.
,,	R. Rutherford, M.B.	,,	Singapore.
,,	N. E. J. Harding, M.B.	Chatham	W. Africa.
,,	R. J. Franklin	Cork	Queenstown.
,,	F. W. W. Dawson, M.B.	Belfast	Dundalk.
,,	J. C. G. Carmichael, M.B.	Fleetwood	Chester.
,,	F. C. Lambert	Wool Camp	Cosham.
,,	J. H. Duguid, M.B.	Cork	Ballincollig.
,,	D. P. Watson, M.B.	Chapel Bay	Pembroke Dock.
,,	H. H. J. Fawcett	Mudeford Camp	Cosham.
,,	J. T. McEntire, M.B.	Chilwell Park Camp	Newcastle.
,,	H. C. Hildreth, F.R.C.S.Edin.	Glen Imaal	Dublin.
,,	W. MacD. MacDowall	Willsworthy Camp	Devonport.
,,	F. J. Turner	Buddon Camp	Berwick-on-Tweed.
,,	G. E. Cathcart	Rhayader	Wrexham.
,,	W. Wiley, M.B.	Tidworth Park	Netley.
,,	H. Harding, M.B.	,,	Cosham.
,,	J. A. Turnbull	Edinburgh	Ayr.
,,	D. P. Johnstone	Brackenbir Moor	Liverpool.
,,	A. S. Arthur, M.B.	Stobs Camp	Edinburgh.
,,	A. T. Frost, M.B.	Dublin	Curragh.
,,	C. R. Millar	Cork	West Africa.
,,	P. Power, M.B.	,,	Limerick.
,,	G. H. Richard	Magilligan Camp	Londonderry.
,,	C. E. W. S. Fawcett, M.B.	Shwebo	Maymyo.
,,	C. F. White, M.B.	Rangoon	,,
Lieutenant	J. C. L. Hingston	Tidworth Park	India.
,,	F. Worthington, M.B.	Queenstown	Ceylon.
,,	D. S. Buist, M.B.	London Dist.	Netley.
,,	G. G. Collet, M.B.	Aldershot	India.
,,	C. Clarke, M.B., F.R.C.S.	Dover	Malta.
,,	E. V. Vaughan, M.B.	Cork	Singapore.
,,	A. R. Wright, M.B.	Bordon	Malta.
,,	T. B. Nicholls, M.B.	Tidworth	Bulford.
,,	J. B. Jones, M.B.	Londonderry	India.
,,	S. McK. Saunders	Woolwich	Egypt.
,,	T. J. Mitchell, M.B.	Aberdeen	India.
,,	F. H. Somers-Gardner, M.B.	Hilsea	Cosham.
,,	D. H. C. MacArthur, M.B.	London Dist.	India.
,,	H. Gall	Dover	,,
,,	C. H. O'Rorke, M.B.	Donard Camp	Curragh.
,,	A. W. Byrne, M.B.	Manchester	India.
,,	J. Startin, M.B.	Deepcut	,,
,,	H. H. Leeson	Woolwich	Egypt.
,,	S. W. Kyle, M.B.	Belfast	Mullingar.
,,	A. T. J. McCreery, M.B.	Tidworth	West Down North.
,,	E. M. Parsons-Smith	—	London.
,,	G. P. Taylor, M.B.	Irvine Camp	Glasgow.
,,	M. J. Williamson, M.B.	Fargo Camp	Hamilton Camp.
,,	C. L. Franklin, M.B.	Ashton	Preston.
,,	J. J. D. Roche, M.B.	Oranmore Camp	Dublin.
,,	R. H. Nolan	Aldershot	Bordon.
,,	L. C. Hayes, M.B.	—	London.
,,	A. G. Jones, M.B.	Tidworth	Parkhouse Camp.
,,	C. M. Nicol, M.B.	Northampton	Colchester.
,,	H. G. Robertson, M.B.	Derby	Sheffield.
,,	P. C. Field	Aldershot	Deepcut.
,,	R. C. G. M. Kinkead, M.B.	Ballyvonare Camp	Kilworth.
,,	E. C. Stoney, M.B.	Ipswich	Colchester.
,,	T. W. Stallybrass, M.B.	Tidworth Park	Hamilton Camp
,,	V. P. Hutchinson	,,	London.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns 7,933 births and 4,213 deaths were registered during the week ending Saturday last, October 22nd. The annual rate of mortality in these towns, which had been 12·8 and 13·1 per 1,000 during the two preceding weeks, was 13·0 per 1,000 last week. Among the several towns the death-rates ranged from 6.2 in King's Norton, 6.3 in Hornsey, 7·2 in Walsall and in Handsworth (Staffs), and 7.4 in Reading and in Devonport to 18·1 in Oldham 19.0 in Rochdale, 19.3 in Wigan, 19·7 in Merthyr Tydfil, 19.8 in Brighton, and 21.4 in Middlesbrough. The death-rate in London was equal to 12.6 per 1,000 The annual rate of mortality from the principal epidemic diseases last week in the seventy-seven towns was equal to 1.6 per 1,000; in London the mortality was equal to 1·4 per 1,000, while among the seventy-six other large towns it ranged upwards to 4.1 in Southampton, 4·2 in Grimsby, 4.9 in Burnley, 5.3 in Bury, and 7.5 in Brighton; measles caused a death-rate of 3·6 in Brighton; diphtheria of 1.2 in Southampton and in Reading; enteric fever of 1.2 in Devonport; and diarrhoea of 2.9 in Middlesbrough, 3.0 in York, 3.2 in West Hartlepool, 3·6 in Brighton, and 4·4 in Burnley. The mortality from scarlet fever and whooping-cough showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,706 and 1,745 at the end of the two preceding weeks, further rose to 1 792 at the end of the week under notice; 231 new cases were admitted during the week, against 245 and 234 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, October 22nd, 821 births and 470 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 14.4 and 12·9 per 1,000 in the two preceding weeks, rose to 13.0 per 1,000 last week, and was equal to the mean rate during the same period in the large English towns. The rates in the several Scottish towns ranged from 8.4 in Leith and 12.4 in Aberdeen to 15·6 in Dundee and 16.8 in Perth. The death-rate from the principal infectious diseases averaged 1.3 per 1,000, the highest rates being recorded in Paisley and in Perth. The 217 deaths from all causes registered in Glasgow last week included 3 which were referred to diphtheria, 2 to whooping-cough, and 10 to diarrhoea. Four fatal cases of diarrhoea were recorded in Edinburgh; 5 of diphtheria and 4 of diarrhoea in Dundee; 4 of diarrhoea in Paisley and 3 of diphtheria in Perth.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 15th, 545 births and 374 deaths were registered in the twenty-two principal urban districts of Ireland, as against 604 births and 351 deaths in the preceding period. The annual death-rate in these districts, which had been 17·5, 17.8, and 15.9 per 1,000 in the three preceding weeks, rose to 16.9 per 1,000 in the week under notice, this figure being 3·8 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 18.9 and 16·3 respectively, those in other districts ranging from 4.1 in Drogheda and 6.9 in Armagh to 31·0 in Portadown and 41·0 in Clonmel; while Cork stood at 14.4, Londonderry at 14.4, Limerick at 15.0, and Waterford at 21.4. The zymotic death-rate in the twenty-two districts averaged 1.4 per 1,000, as against 1·8 per 1,000 in the preceding week.

During the week ending Saturday, October 22nd, 619 births and 384 deaths were registered in the twenty-two principal urban districts of Ireland, as against 545 births and 374 deaths in the preceding period. The annual death-rate in these districts, which had been 17.8, 15.9, and 16.9 per 1,000 in the three preceding weeks, rose to 17·4 per 1,000 in the week under notice, this figure being 4.4 per 1,000 higher than the mean annual death rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 20.7 and 16·0 respectively, those in other districts ranging from 4.5 in Lisburn and 5·5 in Limerick, to 29.2 in Waterford and 63.4 in Tralee, while Cork stood at 15·8, and Londonderry at 8·4. The zymotic death-rate in the twenty-two districts averaged 1.8 per 1,000, as against 1.4 per 1,000 in the preceding week.

ENGLISH URBAN MORTALITY IN THE THIRD QUARTER OF 1910.

In the accompanying table will be found summarized the vital statistics for seventy-seven of the largest English towns, based upon the Registrar-General's weekly returns for the third quarter of the year. The 104,524 births registered in these towns during the quarter were equal to an annual rate of 24.7 per 1,000 of the population, estimated at 16,940,895 persons in the middle of the year; in the corresponding quarters of the three preceding years the birth-rates were 26.5, 26.9, and 25·3 per 1,000 respectively. In London the birth-rate last quarter was equal to 23·4 per 1,000, while it averaged 25.3 in the other large towns, and ranged from 13·5 in Hastings, 14.7 in Hornsey, 16.5 in Bournemouth and in Halifax, and 18.9 in Reading, to 32·0 in Swansea, 32·1 in Merthyr Tydfil, 32.3 in Newport (Mon.), 32.7 in Coventry, 39.3 in Rhondda.

The 49,115 deaths registered in these towns last quarter were equal to an annual rate of 11.6 per 1,000; in the third quarters of the three preceding years the rates were 12.2, 13.3, and 11.8 per 1.000. The death-rate in London last quarter was equal to 10.3 per 1,000, while it averaged 12.2 in the seventy-six other large towns, and ranged from 5.2 in Hornsey, 6.7 in Leyton, 7·0 in King's Norton, 7·2 in Handsworth (Staffs), and 7.3 in Walthamstow, to 15.5 in Bootle, 15.7 in Tynemouth, 15·8 in Preston, 15.9 in Swansea, 16.4 in Liverpool, and 17.4 in Middlesbrough.

The deaths in these seventy-seven towns last quarter included 6,477 which were referred to the principal infectious diseases; of these, 969 resulted from measles, 280 from scarlet fever, 371 from diphtheria, 947 from whooping-cough, 198 from enteric fever, and 3,712 from diarrhoea. These 6,477 deaths were equal to an annual rate of 1·54 per 1,000, the rates from the same diseases in the third quarters of the three preceding years being 1·47, 2.35, and 1.59 per 1·000. Among the several towns the death-rates from these diseases last quarter ranged from 0.05 in Reading, 0.10 in Bournemouth, 0.21 in Ipswich, 0·39 in Walthamstow, 0·48 in Hornsey, and 0.50 in Norwich, to 3.00 in Liverpool, 3.36 in Bootle, 3.39 in Burnley, 3·50 in Preston, 3·66 in Barrow-in-Furness, 3·83 in Hull, and 4.09 in Middlesbrough. The 969 deaths from measles were equal to an annual rate of 0·23 per 1,000; in London the death-rate from this disease was 0.29 per 1,000, while among the other towns the rate averaged only 0·21 per 1,000, but ranged upwards to

Analysis of the Vital Statistics of Seventy-seven of the Largest English Towns during the Third Quarter of 1910.

Towns.	Estimated Population middle of 1910.	Births.	Deaths.	Annual rate per 1,000 Living.			Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-cough.	Enteric Fever.	Diarrhoea.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
				Births.	Deaths.	Principal Infectious Diseases.										
77 Towns	16,940,895	104,524	49,115	24.7	11.6	1.54	6,477	—	969	280	371	947	198	3,712	112	0.8
76 Provincial Towns	12,068,193	76,120	36,611	25.3	12.2	1.70	5,103	—	621	230	280	751	148	3,073	120	1.0
London	4,872,702	28,404	12,504	23.4	10.3	1.13	1,374	—	348	50	91	196	50	639	91	0.1
Croydon	164,485	951	379	23.2	9.2	0.59	24	—	2	2	6	4	—	10	67	—
Willesden	166,088	936	328	22.6	7.9	0.58	24	—	—	—	2	7	—	15	71	0.9
Hornsey	98,561	362	128	14.7	5.2	0.48	12	—	—	1	3	3	1	4	52	—
Tottenham	132,803	961	328	29.0	9.9	0.57	19	—	2	1	2	8	2	4	62	—
West Ham	328,585	2,149	788	26.2	9.6	1.20	99	—	9	3	4	11	2	70	90	0.3
East Ham	156,208	887	301	22.8	7.7	0.64	25	—	2	—	4	5	1	13	74	0.3
Leyton	133,436	770	223	23.1	6.7	0.60	20	—	5	3	3	2	2	5	43	—
Walthamstow	141,748	797	257	22.6	7.3	0.39	14	—	3	—	3	—	1	7	79	—
Hastings	68,520	230	169	13.5	9.9	0.59	10	—	4	—	2	2	—	2	65	2.4
Brighton	131,900	657	412	20.0	12.5	1.15	38	—	10	1	—	2	3	22	105	0.2
Portsmouth	217,989	1,441	607	26.5	11.2	1.31	71	—	6	7	12	12	6	28	94	1.0
Bournemouth	73,947	304	172	16.5	9.3	0.10	2	—	—	—	—	1	—	1	46	1.2
Southampton	127,157	708	327	22.3	10.3	0.56	18	—	2	—	1	2	4	9	85	—
Reading	84,355	398	186	18.9	8.8	0.05	1	—	—	—	—	1	—	—	60	3.8
Northampton	99,113	484	241	19.6	9.8	0.74	18	—	1	—	1	8	—	8	112	1.2
Ipswich	75,936	452	190	23.9	10.0	0.21	4	—	—	—	—	—	—	4	69	1.1
Great Yarmouth	53,715	342	193	25.5	14.4	0.89	12	—	1	—	—	5	—	6	111	—
Norwich	125,446	695	363	22.2	11.6	0.50	16	—	—	1	1	2	2	10	94	2.5
Plymouth	126,266	635	343	20.2	10.9	0.89	28	—	1	—	1	—	3	23	124	—
Devonport	84,695	496	178	23.5	8.4	0.66	14	—	1	—	4	1	2	6	91	—
Bristol	382,550	2,065	908	21.7	9.5	0.69	66	—	2	2	10	14	—	38	80	—
Stoke-on-Trent	245,726	1,857	851	30.3	13.9	1.98	122	—	7	17	15	16	7	60	135	2.1
Burton-on-Trent	54,977	309	135	22.5	9.8	0.73	10	—	2	1	6	1	—	—	55	0.7
Wolverhampton	105,962	613	273	23.2	10.3	0.90	24	—	7	—	1	3	1	12	86	1.1
Walsall	101,035	663	265	26.3	10.5	1.83	46	—	3	6	2	1	1	33	127	2.3
Handsworth	72,335	354	130	19.6	7.2	0.67	12	—	—	4	—	3	1	4	54	0.8
West Bromwich	71,138	497	188	28.0	10.6	1.03	18	—	—	1	1	—	1	15	87	0.5
Birmingham	570,113	3,681	1,594	25.9	11.2	1.27	181	—	—	10	12	18	7	134	107	2.9
King's Norton	84,673	514	148	24.3	7.0	0.61	13	—	—	2	4	4	—	3	72	0.7
Smethwick	72,350	494	162	27.4	9.0	1.11	20	—	—	5	2	2	4	7	81	0.6
Aston Manor	86,269	496	201	23.1	9.3	1.68	36	—	—	5	1	1	1	28	129	0.5
Coventry	81,449	664	251	32.7	12.4	1.09	22	—	—	4	1	4	1	12	65	1.6
Leicester	248,374	1,294	626	20.9	10.1	0.98	61	—	3	2	5	3	2	46	125	0.8
Grimsby	74,283	539	249	29.1	13.4	2.70	50	—	2	—	1	16	4	27	143	0.8
Nottingham	266,471	1,656	780	24.9	11.7	1.24	81	—	11	2	7	19	3	39	118	0.4
Derby	131,256	807	310	24.7	9.5	0.72	24	—	8	2	4	4	1	5	78	—
Stockport	105,087	655	357	25.0	13.6	1.57	41	—	2	—	2	9	1	27	119	0.3
Birkenhead	122,431	999	459	32.7	15.0	2.76	84	—	2	—	6	10	1	65	157	0.4
Wallasey	73,173	457	186	25.1	10.2	1.47	27	—	1	—	1	8	1	16	101	1.6
Liverpool	767,606	5,737	3,137	30.0	16.4	3.00	574	—	98	44	19	78	4	331	149	1.8
Bootle	70,548	478	272	27.2	15.5	3.36	59	—	2	1	1	5	1	49	161	3.7
St. Helens	96,523	748	333	31.1	13.8	2.33	56	—	4	2	—	3	4	43	150	3.6
Wigan	91,732	614	326	26.8	14.3	2.67	61	—	2	2	1	2	3	51	158	0.3
Warrington	73,295	551	225	30.2	12.3	1.52	28	—	3	—	—	2	3	20	103	2.2
Bolton	190,315	1,077	607	22.7	12.8	1.51	72	—	—	10	3	11	3	45	125	0.2
Bury	59,409	324	183	21.9	12.4	1.96	29	—	3	8	1	—	—	17	157	2.7
Manchester	716,354	4,628	2,522	25.9	14.1	2.64	472	—	72	18	19	114	11	238	141	0.6
Salford	244,636	1,614	855	26.5	14.0	2.51	153	—	18	4	10	38	3	80	147	0.1
Oldham	144,111	921	513	25.6	14.3	2.40	86	—	40	1	2	24	—	19	113	0.2
Rochdale	90,497	502	279	22.2	12.4	0.79	18	—	—	3	2	4	1	8	98	1.1
Burnley	107,448	661	374	24.7	14.0	3.39	91	—	—	2	3	13	—	73	179	0.3
Blackburn	137,972	722	433	21.0	12.6	1.48	51	—	5	5	6	8	—	27	120	2.1
Preston	119,253	713	471	24.0	15.8	3.50	104	—	11	—	5	1	2	85	209	3.2
Barrow-in-Furness	63,689	384	240	24.2	15.1	3.66	58	—	37	—	2	2	1	16	76	1.7
Huddersfield	94,702	554	350	23.5	14.8	1.36	32	—	—	5	2	5	3	17	101	2.0
Halifax	112,818	463	361	16.5	12.8	0.88	25	—	8	—	4	6	4	3	97	0.8
Bradford	295,865	1,420	930	19.3	12.6	1.54	114	—	29	2	6	8	4	65	135	0.4
Leeds	490,985	2,721	1,523	22.2	12.4	2.02	248	—	45	6	11	43	3	140	141	0.1
Dewsbury	51,224	278	186	21.8	14.6	1.72	22	—	4	1	2	3	4	[illegible]	101	—
Sheffield	478,763	3,169	1,547	26.6	13.0	2.53	301	—	24	7	1	51	6	212	150	1.4
Rotherham	66,414	457	182	27.6	11.0	1.15	19	—	1	—	—	15	—	3	116	—
York	88,159	490	225	22.3	10.2	1.05	23	—	1	—	—	2	—	20	104	—
Hull	280,006	1,999	1,048	28.6	15.0	3.83	267	—	18	7	12	9	4	217	178	1.0
Middlesbrough	107,014	850	465	31.9	17.4	4.09	109	—	1	1	5	8	6	88	175	0.9
Stockton-on-Tees	53,680	350	192	26.2	14.3	1.41	19	—	1	—	1	4	1	12	117	0.5
West Hartlepool	81,814	482	203	23.6	10.0	1.04	21	—	4	—	3	1	2	11	112	—
Sunderland	161,083	1,176	617	29.3	15.4	2.01	81	—	19	1	3	4	4	50	140	1.9
South Shields	119,737	860	372	28.8	12.5	1.67	50	—	—	2	—	10	1	37	108	3.5
Gateshead	133,676	902	399	27.1	12.0	2.13	71	—	3	—	2	24	—	42	126	4.5
Newcastle-on-Tyne	285,951	1,923	947	27.0	13.3	1.83	131	—	33	1	9	20	1	67	132	0.2
Tynemouth	56,378	433	221	30.8	15.7	2.62	37	—	13	—	1	10	1	12	122	0.9
Newport (Mon.)	79,729	642	236	32.3	11.9	1.05	21	—	1	1	2	2	—	15	114	—
Cardiff	199,189	1,225	493	24.7	9.9	1.09	54	—	6	3	2	2	—	41	108	—
Rhondda	138,674	1,359	505	39.3	14.6	2.51	87	—	7	7	4	6	1	62	131	0.6
Merthyr Tydfil	79,522	636	261	32.1	13.2	1.66	33	—	8	3	2	—	1	19	116	—
Swansea	98,817	788	392	32.0	15.9	0.77	19	—	1	1	4	1	—	12	119	—

0·46 in Newcastle-on-Tyne, 0·47 in Sunderland, 0·51 in Liverpool, 1·00 in Tynemouth, 1·11 in Oldham, and 2·33 in Barrow-in-Furness. The 280 fatal cases of scarlet fever corresponded to an annual rate of 0·07 per 1,000; in London the scarlet fever death-rate did not exceed 0·04 per 1,000, while among the other towns it ranged upwards to 0·22 in Handsworth (Staffs), 0·23 in Aston Manor and in Liverpool, 0·24 in Walsall, 0·28 in Stoke-on-Trent and in Smethwick and 0·54 in Bury. The 371 deaths from diphtheria were equal to a rate of 0·09 per 1,000, which was slightly higher than the rate in London; among the other towns the death-rates from this disease ranged upwards to 0·19 in Devonport, in King's Norton and in Middlesbrough, 0·20 in Birkenhead, 0·22 in Portsmouth, 0·24 in Stoke on-Trent, and 0·44 in Burton-on-Trent. The 947 fatal cases of whooping-cough corresponded to an annual death-rate of 0·23 per 1,000; in London the death-rate from this disease was 0·16 per 1,000, while among the other towns it averaged 0·25, and ranged upwards to 0·64 in Manchester, 0·67 in Oldham, 0·71 in Tynemouth, 0·72 in Gateshead, 0·86 in Grimsby, and 1·03 in Rotherham. The 198 deaths from enteric fever were equal to an annual rate of 0·05 per 1,000; in London the rate was 0·04 per 1,000, while among the other towns it ranged upwards to 0·16 in Warrington, 0·17 in St. Helens, 0·22 in Smethwick, in Grimsby and in Middlesbrough, and 0·31 in Dewsbury. The 3,712 fatal cases of diarrhoea corresponded to an annual death-rate of 0·87 per 1,000; in London the death-rate from this cause was 0·53 per 1,000, while it averaged 1·02 in the seventy-six other large towns, and ranged upwards to 2·13 in Birkenhead, 2·23 in Wigan, 2·72 in Burnley, 2·79 in Bootle, 2·86 in Preston, 3·11 in Hull, and 3·30 in Middlesbrough.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 112 per 1,000 last quarter, against 109, 145, and 119 in the corresponding quarter of the three preceding years. In London the rate of infant mortality was 91 per 1,000, while it averaged 120 in the seventy-six other large towns, and ranged from 43 in Leyton, 46 in Bournemouth, 52 in Hornsey, 54 in Handsworth (Staffs), and 55 in Burton-on-Trent, to 157 in Birkenhead and in Bury, 158 in Wigan, 161 in Bootle, 175 in Middlesbrough, 178 in Hull, 179 in Burnley, and 209 in Preston

The causes of 390, or 0·8 per cent., of the deaths in these towns last quarter were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Croydon, Hornsey, Tottenham, Leyton, Walthamstow, Southampton, Great Yarmouth, Plymouth, Bristol, Derby, Dewsbury, Rotherham, York, West Hartlepool, Newport (Mon.), Cardiff, Merthyr Tydfil, and Swansea; among the other towns the proportion per cent. of uncertified deaths ranged upwards to 3·2 in Preston, 3·5 in South Shields, 3·6 in St. Helen's, 3·7 in Bootle, 3·8 in Reading, and 4.5 in Gateshead.

Hospitals and Asylums.

CORK STREET FEVER HOSPITAL, DUBLIN.

AT the annual meeting of the House of Recovery and Fever Hospital, Cork Street, Dublin, an urgent appeal was made for further funds. During last year the subscriptions from the public, which have never been large, have further declined, with the result that there is now a debit balance due to the bank of over £3,000. The medical officers reported that the type of pneumonia and enteric fever met with last year was unusually severe, the mortality in the case of the former disease being 11.11 per cent. The type of scarlatina was mild, and of diphtheria moderate. The cost for alcoholic stimulants was only £25 13s. 7d. as compared with £362 2s. 6d. thirty years ago, the number of patients under treatment being about the same.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRMINGHAM LYING-IN CHARITY.—Honorary District Surgeon.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—Surgeon.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Physician. Salary, £70 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—House-Surgeon (male). Salary, £80 per annum.

CHESTER GENERAL INFIRMARY.—House-Physician. Salary, £90 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £80 per annum.

GORDON HOSPITAL FOR RECTAL DISEASES, Vauxhall Bridge Road, S.W.—(1) House-Surgeon. (2) Surgeon to Out-patients.

GREAT NORTHERN HOSPITAL, Holloway, N.—Surgeon to Out-patients.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (male). Salary, £100 per annum.

HASTINGS: HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (male). Salary at the rate of £50 per annum.

KILMINIAN AND KILMORE PARISH COUNCIL.—Medical Officer. Salary, £80 and £5 additional for vaccination.

KING'S COLLEGE HOSPITAL, W.C.—Senior Surgical Registrar and Tutor.

KING'S LYNN: WEST NORFOLK AND LYNN HOSPITAL.—House-Surgeon. Salary, £100 per annum.

LEEDS GENERAL INFIRMARY.—(1) Resident Obstetric Officer. (2) Two House-Physicians. (3) House-Surgeon.

LIVERPOOL EDUCATION COMMITTEE.—School Medical Officer. Salary, £250 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Pathologist and Bacteriologist. Honorarium at the rate of 50 guineas a year.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £100 per annum and £10 allowance for locum during holidays.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £80 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Visiting Surgeon. Honorarium, £100 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Honorary Dental Surgeon.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Male Assistant House-Surgeon. Honorarium, £20 for six months.

PLAISTOW: ST. MARY'S HOSPITAL FOR CHILDREN.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

PRESCOT UNION.—Assistant Medical Officer to the Infirmary and Workhouse Wards. Salary, £170 (non-resident).

PRESTON ROYAL INFIRMARY.—Senior and Junior House-Surgeons. Salary at the rate of £80 and £60 per annum respectively.

ST. THOMAS'S HOSPITAL, S.E.—Physician to Out-patients.

SALFORD UNION.—Medical Superintendent of the Union Infirmary. Salary, £350 per annum, rising to £500.

SOUTHAMPTON FREE EYE HOSPITAL.—Honorary Physician.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon. Salary at the rate of £60 per annum.

SUNDERLAND UNION WORKHOUSE.—Resident Assistant Medical Officer. Salary, £150 per annum.

THROAT HOSPITAL, Golden Square, W.—Honorary Assistant Surgeon.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Surgeon for six months. Salary, £40.

WAKEFIELD GENERAL HOSPITAL.—(1) Senior House-Surgeon. (2) Junior House-Surgeon. Salary, £120 and £80 per annum respectively.

WELSH NATIONAL MEMORIAL.—Qualified Medical Men and Women to Lecture on Prevention and Cure of Tuberculosis. Salary not exceeding £200, plus railway expenses.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Physician for Diseases of Women. (2) Assistant Physician for Diseases of Women. (3) Anaesthetist.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Colne, co. Lancaster, and Ullapool, cos. Ross and Cromarty.

APPOINTMENTS.

BENTON, William, M.R.C.S., L.R.C.P., D.P.H., Medical Officer of Health, Medical Officer to Education Committee, and Medical Superintendent of Isolation Hospital to the Borough of East Ham.

COWAN, G., M.D., Certifying Factory Surgeon for the Thetford District, cos. Norfolk and Suffolk.

DEWAR, Allan, M.R.C.S., L.R.C.P.Lond., House-Surgeon to the Denbighshire Infirmary, Denbigh.

ELWIN, G. R., M.D.Lond., M.R.C.S., L.R.C.P., District Medical Officer, Nos. 1 and 2 Districts, Southwark Union.

EVANS, R. J., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Pwllheli District, co Carnarvon.

HAILES, Clements, M.D., F.R.C.S., Honorary Consulting Surgeon, Bristol Eye Hospital.

HATHERLEY, S. O., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Swinton District, co Yorks, West Riding.

JOHNSON, J. Pratt, M.B., B.S.Lond., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Bacteriologist to the Government Laboratories, Johannesburg, Transvaal.

JOHNSON, P., L.R.C.P. and S.Edin., L.F.P.S.Glasg., Certifying Factory Surgeon for the Hatherleigh District, co. Devon.

KNOX, Robert, M.B., C.M., M.D.Edin., M.R.C.S.Eng., L.R.C.P.Lond., Director of Electrical and Radio-therapeutic Department, Cancer Hospital, London, S.W.

LOMAS, E. K., M.B., Ch.B.Vict., Senior Assistant Medical Officer of the Crumpsall Workhouse of the Manchester Township.

MCCREA, J., M.B., B.Ch., R.U.I., District Medical Officer of the Maidenhead Union.

MCLACHLAN, William, M.D., Ch.B., B.Sc.Edin., Assistant Bacteriologist at the Belmont Laboratories of the Metropolitan Asylums Board, vice O. C. W. Prausnitz, M.D.Breslau, M.R.C.S., L.R.C.P., resigned.

MORGAN, D. L., M.D.Lond., Medical Officer of Health for the Borough of Pembroke.

OGILVY, A., M.D., B.Ch.Dub., F.R.C.S.I., Surgeon to the Bristol Eye Hospital.

POPPLE, T. M., M.B., Ch.B.Vict., Second Assistant Medical Officer of the Crumpsall Workhouse of the Manchester Township.

PRICE, A. R., M.B., Ch.B.Edin, Resident Medical Officer of the Cardiff Union Workhouse.

RATCLIFF-GAYLARD, James, M.D.Brux., L.R.C.P., L.R.C.S.Edin., Honorary Surgeon to the Birkenhead Maternity Hospital.

SHAW, G., M.B., C.M.Edin., Certifying Factory Surgeon for the Alyth District, cos. Forfar and Perth.

SIMPSON, J. B., M.D.Edin., Certifying Factory Surgeon for the Golspie District, co. Sutherland.

SINNETT, M. B. G., M.B., Ch.B.Glasg., D.P.H., R.C.P.S.Edin., etc., Medical Inspector of Schools to the Greenock School Board.

SOMERVILLE, H., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Harrold District, co. Bedford.

STRANAGHAN, C. P. A., M.B., B.S.Edin., District Medical Officer of the Cannock Union.

Thomson, C. B., F.R.C.S.Eng., Certifying Factory Surgeon for the Wimborne District, co. Dorset, and Medical Officer of Health for the Wimborne and Cranborne Rural District.

Trinder, A. P., M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer and Public Vaccinator, No. 2 District, Bodmin Union, and Certifying Factory Surgeon.

Vickery, D. H., L.R.C.P. and S.Edin., District Medical Officer of the Crediton Union.

Welsh, R. C., M.B., C.M.Edin., Medical Officer of the Biggleswade Union Workhouse.

Wilson, Harold W., M.S., M.B., F.R.C.S., Assistant Surgeon to the Cancer Hospital, London, S.W.

Wright, William, M.B., Ch.B., D.Sc., F.R.C.S., Dean of the Medical College, London Hospital, E.

Edinburgh Royal Infirmary.—The following appointments have been made:

Clinical Tutors: George D. Mathewson, M.B., B.Sc.; Charles M'Neil, M.D.; Lewis H. F. Thatcher, M.B., Ch.B.—to University medical wards, for Professor Sir T. R. Fraser; D. Halliday Croom, M.D., etc., to Dr. Gibson; A. N. Bruce, D.Sc., M.B., Ch.B., to Dr. Bruce; Ian Struthers Stewart, M.D., etc., to Dr. Philip; Denis Cotterill, M.B., Ch.B., to Mr. Cotterill; John Darling, M.B., C.M., to Mr. Cathcart; L. C. Peel Ritchie, F.R.C.S.Edin., to Mr. Wallace; James Lochhead, M.D., F.R.C.S., to Mr. Miles; B. P. Watson, M.D., to Dr. Barbour (for winter session only); J. W. Keay, M.D., to Mr. Brewis; A. W. Beveridge, F.R.C.S.Edin., to Dr. Mackay.

Instructor in Anaesthesia: J. Stuart Ross, F.R.C.S.Edin., to Mr. Wallace.

Resident Physicians: Ian D. Dickson, M.B., Ch.B., to Professor Sir T. R. Fraser; D. Murray Lyon, M.B., Ch.B., to Professor Greenfield; Alex. G. M. Grant, M.B., Ch.B., to Professor Wyllie; A. G. Hamilton, M.B., Ch.B., to Dr. Bramwell; John Henderson, M.B., Ch.B., to Dr. Gibson; R. C. Macqueen, M.B., Ch.B., to Dr. Bruce; John M. Scott, M.B., Ch.B., to Dr. Philip; Tom Welsh, M.B., Ch.B., to Dr. Russell.

Resident Surgeons: James Langwill, M.B., Ch.B., to Professor Caird; R. Russell Kerr, M.B., Ch.B., to Professor Thomson; J. M. M'Keand, M.B., Ch.B., to Mr. Cotterill; W. C. Paton, M.A., M.B., Ch.B., to Mr. Cathcart; L. Owen-Taylor, M.B., Ch.B., to Mr. Hodsdon; A. G. Ritchie, B.Sc., M.B., Ch.B., to Mr. Wallace; J. C. MacCallum, M.B., Ch.B., to Mr. Miles; Matthew R. Drennan, M.B., Ch.B., to Dr. Barbour; P. J. Olivier, M.B., Ch.B., to Mr. Brewis; Francis A. Duffield, M.B., Ch.B. to Mr. Scott Carmichael, Surgical Out-patient Department; D. R. B. Sivright, M.B., Ch.B., to Mr. Scott Carmichael, Surgical Out-patient Department; J. J. Tough, M.B., Ch.B., to Mr. Scott Carmichael, Surgical Out-patient Department.

Non-Resident House-Physician: R. Murdoch Matheson, M.D., F.R.C.S.Edin., to Dr. Lovell Gulland (Ward 3).

Non-Resident House-Surgeons: Ernest H. Cameron, M.B., Ch.B., to Dr. George Mackay; Peter Stewart, L.R.C.P. and S.Edin., to Dr. W. G. Sym; Raymond Verel, M.B., Ch.B., to Dr. Logan Turner.

Clinical Assistants: James C. Brash, M.B., Ch.B., and W. R. Logan, M.B., Ch.B., to Professor Sir T. R. Fraser; Andrew Campbell, M.B., Ch.B., to Professor Greenfield; Dirk V. V. Hoffman, M.B., Ch.B., to Professor Wyllie; W. P. Murray, M.B., Ch.B., to Dr. Bramwell; J. le Fleming C. Burrow, M.B., Ch.B., to Dr. Gibson; E. B. Gunson, M.B., Ch.B., to Dr. Bruce; H. A. Cookson, M.B., Ch.B., to Dr. Philip; A. L. Taylor, B.Sc., M.B., Ch.B., to Dr. Russell; J. H. Harvey Pirie, M.D., etc., to Dr. Graham Brown (Medical Waiting-room); Norman S. Carmichael, M.B., Ch.B., to Dr. Boyd (Medical Waiting-room); Charles M'Neil, M.D., etc., to Dr. Fleming (Medical Waiting-room); Kenneth Mackenzie, M.B., Ch.B., to Dr. Harry Rainy (Medical Waiting-room); H. S. Reid, M.D., etc., to Dr. Chalmers Watson (Medical Waiting-room); A. Pirie Watson, M.A., M.B., Ch.B., to Surgical Out-patient Department; A. A. Morison, M.B., Ch.B., to Professor Thomson; Walter W. Carlow, M.B., Ch.B., to Mr. Wallace; Alexander Hood, M.B., Ch.B., to Mr. Miles; Charles M'Donnell, L.R.C.P. and S.Edin., to Dr. Mackay; A. T. Paterson, M.D., to Dr. Sym; Alfred B. Darling, M.B., Ch.B., D.P.H., to Dr. Logan Turner; E. Burt Hamilton, M.B., Ch.B., D.P.H., to Dr. Logan Turner.

Resident Medical Officer at the Convalescent House, Murrayfield: A. Fergus Hewat, M.B., Ch.B.

University College Hospital.—The following appointments have been made:

House-Physician: G. G. Alderson, M.B., B.C., M.R.C.S., L.R.C.P.
House-Surgeon: C. E. Shattock, M.R.C.S., L.R.C.P.
House-Physician: M. D. D. Gilder, M.B., B.S., F.R.C.S.
Obstetric Assistant: P. S. Martin, M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH

Hall.—On Tuesday, June 14th, 1910, at the Women's Hospital, Montreal, Canada, the wife of George Hall, M.D., of a son (Herbert Lorne).

DEATHS.

Conway.—On the 16th inst., at Epsom College, Surrey, Guy Forsyth, second son of Basil Wiseman and Jane Conway, of Overton House, Longsight, Manchester, in his 14th year. Laid to rest in St. Paul's Churchyard, Stalybridge, Cheshire, on Thursday, October 20th, 1910.

Woodhouse.—On the 21st inst., at Willington Quay, Edward Ernest Woodhouse, M.B., B.S., aged 40, youngest son of the late Rev. John Woodhouse, Vicar of Byker.

DIARY FOR THE WEEK.

MONDAY.

Royal College of Surgeons of England, Lincoln's Inn Fields W.C., 5 p.m.—Museum Demonstration by Mr. Shattock: Specimens illustrating Rickets, Cretinism, etc.

TUESDAY.

Royal College of Physicians of London, Pall Mall East, S.W., 5 p.m.—Bradshaw Lecture by Dr. Newton Pitt: The Results of Bronchial Obstruction.

Royal Society of Medicine:

Pathological Section, London Hospital Medical College, E., 8.30 p.m.—Papers:—Dr. Leonard Hill: The Influence of the Movement of the Air on Human Beings. Dr. Martin Flack: Action of the Scrio-auricular Node. Mr. F. W. Twort: Cultivation of *Bacillus leprae* and the Bacillus of Johne's Disease. Dr. W. Bulloch and Mr. P. Fildes: A Study of Tubercle Bacilli isolated from Cases of Pulmonary Tuberculosis in Man. Dr. James McIntosh: The Influence of Dioxydiamido-arseno-benzol on Spirochaete Infections. Dr. W. Bulloch: The Pedigree of a Great Family of Haemophilics. Dr. H. M. Turnbull: Pathological Anatomical Preparations.

THURSDAY.

Medical Officers of Schools' Association, 11, Chandos Street, W., 4.30 p.m.—Paper: Mr. R. Denison Pedley: The Care of Teeth in School Children.

North-East London Clinical Society, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—(1) Motion by Dr. Barnes: "That qualified surgeon dentists be admitted to the membership of the Society." (2) Clinical Cases.

Röntgen Society, 20, Hanover Square, W., 8.15 p.m.—Presidential Address by Dr. G. H. Rodman.

Royal College of Physicians of London, Pall Mall East, S.W., 5 p.m.—FitzPatrick Lecture by Sir T. Clifford Allbutt, K.C.B.: Greek Medicine in Rome.

Royal Society of Medicine:

Neurological Section, 15, Cavendish Square, W., 8.30 p.m.—Presidential Address:—Dr. J. A. Ormerod: Two Theories of Hysteria.

Royal Society of Medicine:

Obstetrical and Gynaecological Section, 11, Chandos Street, W., 8 p.m.—(1) Specimens:—Mr. J. Barris: Intestinal Obstruction caused by a Fibromyoma Uteri. Mr. P. P. Cole: A Case of Pseudo-hermaphroditism. Dr. H. N. Lewers: Sarcoma of the Vulva. Dr. Clifford White: Sarcoma of the Vulva. Mr. Douglas Drew: (*a*) A Case of Hermaphroditism; (*b*) Sarcoma of the Uterus. (2) Paper:—Dr. Archibald Donald and Dr. Fletcher Shaw: Symptoms and Treatment of Chronic Endometritis with Special Reference to the After-results of Curettage.

FRIDAY.

Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., 5 p.m.—Museum Demonstration by Professor Keith: Specimens illustrating Acromegaly and Some Allied Conditions.

Royal Society of Medicine:

Laryngological Section, 11, Chandos Street, W., 5 p.m.—(1) Opening Remarks by the President, Dr. P. Watson Williams. (2) Cases and Specimens.

Royal Society of Medicine:

Section of Anaesthetics, 15, Cavendish Square, W., 8.30 p.m.—(1) Paper:—Mr. A. L. Flemming: Prolonged Anaesthesia maintained by Ether and Gas alternately. (2) Demonstration:—Mr. J. F. Trewby: A New Inhaler for Administering Nitrous Oxide Gas by the Nasal Method.

West London Medico-Chirurgical Society, West London Hospital, Hammersmith, W., 8 p.m.—Cases and Specimens.

POST-GRADUATE COURSES AND LECTURES.

Central London Throat and Ear Hospital, Gray's Inn Road, W.C.—Lectures: Tuesday and Friday, 3.45 p.m., Larynx.

London School of Clinical Medicine, Seamen's Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m. Thursday, and noon, Friday; Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m., Thursday. Special Lectures: Monday, 4.30 p.m., Aural Vertigo. Wednesday, 2.15 p.m., Stokes-Adams Disease. Thursday, 4.30 p.m. Spastic Paralysis in Early Life.

Manchester: Ancoats Hospital Post-Graduate Clinic.—Thursday, 4.15 p.m.—The Differential Diagnosis of Dyspepsia.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday and Thursday, Surgical. Friday, Eye. Lectures at 5.15 p.m. each day will be given as follows: Monday, Syphilitic Hemiplegia in Childhood. Tuesday, Abortion. Wednesday, Recoveries, Remissions, and Relapses in Mental Disorder. Thursday, Radiography in Medical Diagnosis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Clinical Cases; 5 p.m., Clinical Anatomy of the Nervous System. Wednesday, 5 p.m., Surgery of the Nervous System. Thursday, 5 p.m., Clinical Examination of Cases of Disease of the Nervous System. Friday, 3.30 p.m., Vertigo.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient; Nose, Throat, and Ear. Tuesday, 10 a.m., Medical Out-patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient; 4.30 p.m., Special Demonstration of Selected Skin Cases. Wednesday, 2.30 p.m., Medical Out-patient Skin and Eye Clinics; *X* Rays. Thursday, 2.30 p.m., Gynaecological Operations; Clinics: Medical Out-patient; Surgical Out-patient; 3 p.m., Medical In-patient. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Eye; 3 p.m., Medical In-patient; 4.30 p.m., Lecture Demonstration: Puerperal Infection.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays, Operations, 2 p.m. daily. Monday, Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Demonstrations of Minor Operations, 11.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose and Ear Operations, 10 a.m.; Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Lectures at 5 p.m. daily except Saturday.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. REBMAN LIMITED have arranged to publish an English translation of Dr. Stephane Leduc's recent book on the *Physico-Chemical Theory of Life and Spontaneous Generation*, referred to in a leading article which appeared in the JOURNAL of October 8th. The translation is being prepared by Dr. W. Deane Butcher, editor of the *Archives of the Roentgen Ray*.

Messrs. P. Blakiston's Son and Co. announce the publication of a work entitled *Osteology and Syndesmology*, by Howard A. Sutton, A.B., M.D., Assistant in the Department of Anatomy of the University of Pennsylvania, and Cecil K. Drinker, B.S.

Mr. London M. Douglas, F.R.S.E., has written an important treatise on the soured milk industry. It will be entitled *The Bacillus of Long Life*, and will be published by Messrs. T. C. and E. C. Jack, of London and Edinburgh. The work will contain detailed practical instruction regarding the preparation of soured milk, and will go thoroughly into the scientific aspects of its preparation. The work will be copiously illustrated.

RECENT PUBLICATIONS.

Is That Lamp Going Out? By the author of *Where's Master?* London: Hodder and Stoughton. 1910. (Pp. 48.)

A booklet dedicated to the memory of Florence Nightingale, in which a Crimean veteran gives an account of the impression Miss Nightingale made upon him when a patient in one of the Scutari hospitals.

University of Bristol Calendar, 1910–11. Published by the University. (Pp. 272.)

The first issue of the calendar of the youngest of all British universities entitled to grant degrees in medicine and surgery. It contains copies of all Acts relating to the university, of the ordinances based on them, and of the regulations adopted in the four faculties so far established—arts, science, medicine, and engineering.

The London University Guide, 1911. London: University Correspondence College. (Pp. 218.)

A useful guide to those having in mind the commencement of an undergraduate career in any faculty of the University of London. Contains full information about matriculation, suggestions as to books to read in each subject, and some information as to the earlier examinations in each faculty.

The Lake of Como: Its History, Art, and Archaeology. By Rev. T. W. Lund. London: Kegan Paul, Trench, Trübner, and Co. 1910. (Pp. 218.)

A reprint of part of a larger work published some twenty years ago. A thoroughly well-written book, turned out in such style that it should find a place in the portmanteau of any traveller bound for Northern Italy. Well illustrated by photographs.

Applied Religion. By W. Winslow Hall, M.D. Letchworth: The Alpha Union, and Headley Bros. (Pp. 94.)

A second edition of a booklet by a medical author whose *Prayer Quest* was reviewed at page 1298 of our issue for May, 1910. It deals in turn with personal, social, national, and international applied religion. In each case practical notes are attached, the section dealing with personal religion concluding with notes on diet and dress, the social section with voluntary limitation of income, the national section on international religion with the barter systems of finance and the nationalization of land.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
NOVEMBER.	
1 TUESDAY ..	
2 WEDNESDAY	LONDON: Arrangements Committee, 2 p.m. and 3.30 p.m. YORKSHIRE BRANCH, Queen's Hotel, Barnsley, 4.15 p.m.; Dinner, 6.30 p.m.
3 THURSDAY ..	REIGATE DIVISION, *South-Eastern Branch*, Autumn Meeting, White Hart Hotel, Reigate, 5 p.m.; Annual Dinner, in conjunction with Reigate District Medical Society, 7 p.m.
4 FRIDAY ..	WEST SOMERSET BRANCH, Taunton and Somerset Hospital, 4.15 p.m. ENGLISH DIVISION, *Border Counties Branch*, Victoria Cottage Hospital, Maryport, 3.15 p.m.; Executive Meeting, 3 p.m.
5 SATURDAY ..	
6 Sunday ..	
7 MONDAY ..	
8 TUESDAY ..	LONDON: Standing Ethical Subcommittee. NORTHAMPTONSHIRE DIVISION, *South Midland Branch*, Board Room, Northampton General Hospital, 2.30 p.m.; Luncheon, Franklin's Restaurant, Guildhall Road, 1.30 p.m.
9 WEDNESDAY	
10 THURSDAY ..	WALTHAMSTOW DIVISION, *Metropolitan Counties Branch*, Woodford Hospital, Woodford Green, 4 p.m.
11 FRIDAY ..	CITY DIVISION, *Metropolitan Counties Branch*, Manor Lodge, Upper Clapton, 9.15 p.m.
12 SATURDAY ..	
13 Sunday ..	
14 MONDAY ..	
15 TUESDAY ..	LONDON: Referendum Subcommittee. LONDON: Capitation Grants Subcommittee.
16 WEDNESDAY	RICHMOND DIVISION, *Metropolitan Counties Branch*, Medico-Political Meeting, Royal Hospital, Richmond, 8.30 p.m.
17 THURSDAY ..	BIRMINGHAM BRANCH, Medical Institute, Edmund Street, 3.30 p.m.
18 FRIDAY ..	
19 SATURDAY ..	
20 Sunday ..	
21 MONDAY ..	
22 TUESDAY ..	
23 WEDNESDAY	CENTRAL DIVISION, *Birmingham Branch*, Medical Institute, 4 p.m.

Printed and Published by the British Medical Association at their Office, 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 5TH, 1910.

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ROYAL COMMISSION ON DIVORCE AND MATRIMONIAL CAUSES (1910).

SUMMARY OF THE EVIDENCE GIVEN BY THE WITNESSES NOMINATED BY THE BRITISH MEDICAL ASSOCIATION.

STATEMENT OF THE MEDICAL SECRETARY.

J. SMITH WHITAKER, M.R.C.S., L.R.C.P., Medical Secretary of the British Medical Association, made the following statement:

1. The British Medical Association has considered the following request received from the Secretary of the Royal Commission on Divorce and Matrimonial Causes:—

ROYAL COMMISSION ON DIVORCE AND MATRIMONIAL CAUSES.

Winchester House,
21, St. James Square, S.W.,
3th March, 1910.

Sir,

His Majesty having been pleased to appoint a Royal Commission

"to inquire into the present state of the law and the administration "thereof in divorce and matrimonial causes and applications for "separation orders, especially with regard to the position of the "poorer classes in relation thereto, and the subject of the publica-"tion of reports of such causes and applications; and to report "whether any and what amendments should be made in such law, "or the administration thereof, or with regard to the publication of "such reports,"

I am directed by the Chairman on behalf of this Commission to communicate with you in order to ascertain whether your Association would feel disposed to take into consideration the points which form the subject of the inquiry of this Commission, and to depute a member thereof to give evidence upon them or upon such matters connected with them as, in the opinion of your Association, their experience and knowledge enables them to give useful assistance to the Commissioners by so doing. For your guidance I may mention that those upon which the Commissioners themselves apprehend that the evidence of your Association would be of interest and assistance to them are the questions affecting insanity as a ground of divorce and any other medical matters which, in the opinion of your Association or its representative, bear upon the questions being considered by the Commissioners.

I am, Sir,
Your obedient Servant,
(Signed) H. GORELL BARNES,
Secretary.

The Secretary,
The British Medical Association.

2. As Medical Secretary of the Association I have been instructed to explain the way in which the Association, as a body representative of the medical profession, can render assistance to the Royal Commission.

3. It appears to the Association that the questions stated in the reference to the Royal Commission do not involve any points upon which it would be advantageous to attempt to collect and analyse the opinions of Members of the medical profession generally, and that the most useful service which the Association can render is that of nominating medical practitioners who would be recognised by the profession as competent in respect of their experience and general qualifications to represent to the Commissioners, not their individual opinions only, but the present state of medical knowledge upon subjects within the purview of the Commission which have a medical aspect. The only subject which the Association has felt able to deal with in this way is the one specifically named by the Secretary to the Royal Commission, that is to say, the question of the recognition of insanity as a ground for divorce.

4. The Association has had pleasure in requesting the following eminent members of the medical profession to give evidence in the sense above indicated:—

I.—THOMAS SMITH CLOUSTON, M.D. Edin., F.R.C.P. Edin., LL.D.; Ex-President Royal College of Physicians, Edinburgh; Ex-President Medico-Psychological Association; formerly Medical Superintendent Cumberland and Westmorland Asylum; Physician and Superintendent Royal Asylum, Edinburgh; Lecturer on Mental Diseases, Edinburgh University; and Editor of the Journal of Mental Science, &c., &c.

II.—ROBERT JONES, M.D. Lond., F.R.C.P. Lond., F.R.C.S. Eng.; Lecturer Mental Diseases, St. Bartholomew's Hospital Medical School; Resident Physician and Superintendent London County Asylum, Claybury; Ex-President of the Medico-Psychological Association; thirty years practising as an alienist Physician; was formerly Resident Physician and Superintendent Earlswood Asylum, Surrey; also Medical Officer at Colney Hatch Asylum; has visited Asylums in Russia,

Poland, Norway, Germany, Austria, Switzerland, Italy, and France; was formerly Lecturer on Mental Diseases to the Westminster Hospital and to the Post Graduate Courses in London; is Justice of the Peace for the County of Essex, and has had experience in regard to Maintenance and Separation Orders; has given evidence before the Inter-Departmental Committee on Physical Deterioration; Author of numerous Articles in medical, psychological, and social periodicals.

III.—Theo. Bulkeley Hyslop, M.D., C.M., F.R.S.E., Senior Physician, Bethlem Royal Hospital; Lecturer on Insanity, St. Mary's Hospital and the London School of Medicine for Women; President, Section of Psychological Medicine and Neurology, British Medical Association Annual Meeting, 1910; President, Society for the Study of Inebriety. Twenty-three years Medical Officer at Bethlem Royal Hospital, during which time about 6,000 patients have passed through it; the recovery rate has been about 50 per cent.; the incurability of the remainder has been in great part due to causes such as heredity plus alcohol, syphilis, &c., and (excluding such conditions as secondary dementia and organic brain lesions from apoplexies, &c.) the incurable malady has been caused mainly by errors or faulty habits in the individuals. Has published a Textbook of Mental Physiology especially in Relationship to Mental Diseases, and made many contributions to Dictionaries and Medical Journals.

It will be understood that the evidence which these gentlemen give has not been considered by the Association, but rests upon their own responsibility as representing medical opinion in the branches of knowledge with which they are specially familiar.

Evidence of Dr. Clouston.

Dr. Clouston said:

I have had over forty-five years' experience as the physician to two mental hospitals, one being the Royal Edinburgh Asylum, which has a population of over 800 patients and receives over 400 new cases of all classes of society every year. I have had in this way under my care over 15,000 cases of mental disease of every variety, and, in addition, have seen hundreds of cases in consultation. I taught the subject of mental diseases in the Edinburgh University for thirty-five years. I have also written largely on the subject of mental disease. I am the author of "Clinical Lectures on Mental Diseases," which has passed through six editions, and also of "The Hygiene of Mind," now in its sixth impression. I have devoted some attention to the subject of the divorce of insane persons. It has been my duty not only to treat my patients but to keep myself up to the most recent advances in clinical and pathological knowledge in regard to mental disease.

I am of opinion that there are certain forms of mental disease where the law should be so altered as to redress the present hardships to husbands and wives, but especially to provide for the better care and guardianship of children, and to prevent the birth of children with an undue liability to mental disease.

I am of opinion that the question of the curability or incurability of such persons should be by far the most important test whether the question of divorce should be possible or not. Divorce should only be applicable to persons who can be proved to labour under incurable mental disease, except in certain cases to which I shall afterwards refer.

The crux of the whole matter is whether medical science is now able with reasonable certainty to pronounce whether any case is incurable, and to assign reasons for that conclusion that would be satisfactory to a suitable court of the realm. The second factor, next in importance to incurability to be taken into account, is that one of the main proofs of such a condition of incurability is the length of time during which any patient has continuously suffered from mental disease. There are very few cases indeed where I should feel justified in giving an opinion that any case is incurable within twelve months after the onset of the disease, what ever the symptoms may be. In my opinion no divorce proceedings should be allowed in most cases within from three to five years after the commencement of the mental disease, the symptoms having been continuous during that time.

The symptoms present, taken along with their duration, which would prove incurability are in a considerable number of cases so definite as proved by modern knowledge of the study of mental disease, and confirmed by recent pathological investigations into the state of the brain after death in such cases, that physicians of experience would have little difficulty in a large number of cases in giving a definite opinion.

The largest class of such cases consists of patients who suffer from what is called "Secondary" or "Terminal" Dementia. In the majority of such patients the disease has begun between the ages of fifteen and thirty, with acute symptoms at first, which have gradually passed into a state of mental enfeeblement, where all the mental faculties are affected, where the patients are "silly," have no proper interest in life, and are quite unfit to care for themselves or to manage their affairs. This condition, when fully established, is absolutely incurable, while most of those patients live for many years. It is found to result from two causes: (1) the predisposing cause of a bad mental heredity; and (2) a gradual deterioration in the cells of the brain, which are the vehicle of mind. In a marked case of Secondary Dementia it is found after death by modern microscopists, working with the most recent methods, that at least one-half of the brain cells have either disappeared altogether or have undergone processes of disease which render them quite unfit to be the vehicle of normal mental activity. It is now a proved fact that a brain cell when it has undergone a certain degree of such disease or degeneration has quite lost the power of renewing itself or becoming again fit for its purpose as a vehicle of sound mind.

Such cases of Secondary Dementia have so lost the power of normal feeling that the fact of their divorce would make no painful impression on their minds or no impression at all. I have met with large numbers of such cases who have become insane soon after marriage; some have had children, and both those children and the sane husbands or wives have suffered extreme personal, social, and family hardship thereby.

I have seen cases where the early symptoms of such dementia were threatened and the patients recovered, but I have not seen any case recover where the symptoms are well-developed after five years' duration. A new method of treatment is sometimes effectual towards recovery in those early stages but not after five or even three years' duration.

There are 150,000 registered insane persons, not including the imbecile and idiots from birth, known to exist in the United Kingdom, and no doubt several thousands must be added to this number who are under private care and not registered. It is a low estimate in my judgment—and I have looked into the question statistically so far as the information can be got from the reports of mental hospitals and the lunacy Blue books, the figures being compared with my own—that there are 50,000 patients, or one-third of the whole number of insane persons known to exist, who labour under Secondary Dementia of an incurable kind. Estimating one-half of those to be married, it produces the actual number of this class which would be possibly affected by any change in the Law of Divorce at 25,000 persons of both sexes.

The hardship is greater where married women are so affected than in the case of the husbands, on account of the care of the children coming in. I think any facilities for divorce in those cases would be likely to be taken advantage of more by husbands than wives. As a class it would not feel or suffer injury by divorce proceedings.

The next class of incurable mental disease which would come under the scope of any new Act permitting divorce in such cases would be those suffering from what are called "Gross Organic Brain Diseases." These are usually accompanied by paralysis or aphasia, and are, in the great majority of cases where mental symptoms have developed, quite incurable. The numbers of such are not easily estimated, but my own experience would point to there being in the United Kingdom 3 per cent. of the whole of the insane, or about four thousand persons, half being married. Most of those patients are past middle-life, and the question of divorce would not be likely to come up in most of them.

There is a specific brain disease with mental symptoms

called General Paralysis, different in its essential nature and causes from the other cases of gross organic brain disease to which I have referred, which has hitherto been found to be incurable. It is thought to result from a specific poison (syphilis), this probably followed by a specific microbe, but its duration from the beginning till the patient dies is only about three years, and divorce would not probably be sought in many of those cases. It is one of the forms of brain and mental disease where we are looking forward to a means of cure, in fact, several recent workers have affirmed that they have cured some cases of General Paralysis by the use of special vaccines and serums. My estimate from the reports of institutions is that about 5 per cent. of the new cases sent to mental hospitals suffer from General Paralysis, and that there are about 2,000 or 3,000 persons labouring under the disease, half being married.

The next class to whom any change in the Law of Divorce would be likely to apply are the persons who suffer from Epilepsy. In most of those there are mental symptoms present or a tendency to mental deterioration and dementia. Epileptics frequently marry, of which I absolutely disapprove on medical and eugenic grounds. It is a very hereditary disease, and epileptics almost certainly propagate insane, epileptic, and idiotic progeny. The disease appears first, in by far the largest number of cases, during the early years of life, before the age of twenty-five. In every one of those which I have called the "Developmental" forms of epilepsy marriage should not be permitted, and if it is contracted a remedy should be possible to the partner by means of divorce. There are about 100,000 epileptics in the United Kingdom, according to statistics obtained by the recent Royal Commission on the Feeble-minded, of whom 32,000 have not as yet become mentally affected. Excluding the sane epileptics and those under puberty and the manifestly imbecile and idiotic, there are perhaps from 7,000 to 10,000 epileptics to whom any change in the divorce laws might apply, the disease being practically incurable. Probably one-third of these epileptics are married.

There is a large class of persons, a few being in institutions for the insane, others in special institutions, and others under private care, who suffer from a congenital weakness of mind. Those, the Commission referred to divided into three classes, to one of which only would any change in the divorce law possibly apply. This class are the high-grade or "Congenitally Feeble-Minded" of the Commission, as distinguished from the "Imbeciles" and the "Idiots." A considerable number of such cases of mild mental enfeeblement contract marriage and a large number of the females produce illegitimate children. In my opinion divorce should be obtainable in all such cases who have married, and, though this may be irrelevant to the enquiries of this Commission, the most stringent means should be taken by legal enactments to prevent the occurrence of pregnancy in all such feeble-minded young women. They are, in my opinion, and by general experience, the source of a vast amount of insanity, epilepsy, and general imbecility, crime, pauperism, and mental inefficiency in the community. The tendency of medical and scientific opinion at the present time is strongly in this direction. The Commission referred to estimate that there are 125,000 of the weak-minded persons of the higher grade, and I think a moderate estimate is that one-third of those, amounting to thirty or forty thousand persons in this class, one-half being females, would come under the scope of any new divorce law.

There are certain forms of insanity characterised by "Fixed Delusions," "Delusional Insanity," or "Monomania" or "Paranoia," persisting in the same form from year to year during the life of the patient, and mental physicians now regard such persons as being incurable. Those are cases who would most deeply resent divorce proceedings, and their disease might be aggravated by the fact that divorce proceedings were taken in their cases. I would make the time limit from the beginning of the disease until divorce proceedings were possible to be ten years in such cases, because many of them are caused by various poisons, and a few of them do recover after long periods of mental disease.

There is a large class of the insane where the disease is brought on by the excessive use of alcohol and certain drugs, and who have become incurable thereby. Such incurable alcoholic insane are of two classes: (1) Those where the poison has so damaged the cells of the brain that they are in the condition I have described those of Secondary Dementia to be; (2) the second class are those where an uncontrollable craving for alcohol has existed for many years in despite of treatment and has become an incurable disease. In the first class, which may be called those of "Alcoholic Dementia," I would strongly recommend that divorce proceedings should be applicable, because not only are they incurable, but because another element comes in, namely, that they have brought on their disease through their own acts. I would also recommend, but not with such confidence, that the second class, which are commonly called "Dipsomaniacs," should also come under any Statute which may be passed to alter the divorce laws, but I would give them ten years in which to have a chance to recover. The actual misery that may be caused to wives or husbands, the ruin to families and the hardships and injury to children are such in all the alcoholic cases that they seem to me urgently to demand a remedy by the State. At a low estimate there are 20,000 incurable alcoholic cases to which divorce proceedings might apply, half of them being married.

There is a class of the incurable insane to which it would probably be more difficult to apply any changes in the divorce laws than to any other. This consists of those who are subject to regularly recurring attacks of mental disease persisting during the whole life, with intervals of more or less duration of what is or looks like sanity. Those are called the "Recurrent" or the "Alternating" forms, or *Folie Circulaire*. The recurrence of such mental attacks, which often come on gradually, is so extreme a hardship, and the procreation of children so frequently goes on in such cases that in my opinion a remedy in some of them should be obtainable through divorce. Looking to the proportion of those recurring cases in asylums there are about 1,000 of them, half being married.

The last class of the incurable insane existing in any great numbers, to whom by possibility in a few cases divorce proceedings might apply, are those who become insane in old age as the result of arterial or other disease. Some of such cases of the milder type are curable, but the most are incurable. Probably it would be considered contrary to a reasonable and philanthropic view of mental disease to make divorce applicable in any such case.

Summing up cases of those persons to whom in my opinion any changes in the Law of Divorce could possibly apply on account of incurable mental disease or defect, I think they may be put down as 41,000. I have no means of forming an opinion as to how many of the husbands or wives of those would be likely to apply for divorce, probably only a few.

The question, to which I have referred, of what number of the insane may be said to have brought on their disease by their own acts, conduct, and course of life, is a different one from the mere curability or incurability of the disease, and is one in regard to which it may be said that a medical man can express no more authoritative opinion than anyone else in regard to nullity of marriage or divorce. At one time I made a careful enquiry on this point, and my conclusions were that in not more than one-third of all the persons who became insane could the disease be attributed to their own acts or course of life. Excess in use of alcohol, the syphilitic poison, and dissipated courses of life I found were the three chief causes, but there is an evident fallacy in coming to any certain conclusion on this important question. It consists in this, that the mental heredity is so much stronger in some cases than in others, that there are many people in whose cases a very little alcohol or dissipation will upset their mental working, and in many of them it is certain that if such causes had not been brought into operation in their youth, they would have become insane all the same as time went on.

In regard to the tests for curability, I am in the habit of saying to my students: "Never pronounce any case incurable while morbid mental depression or morbid mental exaltation, or morbid stupor and lethargy, exist as part of the symptoms. You may sometimes have such patients getting better." Those are the cases that sometimes recover after many years of insanity. I have known many such recover, even after twenty years.

To show statistically the actual chances of recovery in mental disease after three years' duration of the illness I took the 13,172 patients who were sent to the Royal Edinburgh Asylum in the thirty-five years 1874-1908

inclusive. Of these, 4,794, or 36.4 per cent., recovered. Of the recoveries, 139, or 2.9 per cent, took place after three years' duration; 59, or 1.2 per cent., after five years; 20, or 0.2 per cent., after ten years; 10, or 0.1 per cent., after fifteen years; and only 4, or 0.08 per cent., after twenty years. The percentages in the total number of patients treated (13,172) were only 1.05, 0.48, 0.16, 0.08, and 0.03 after these periods.

Then the same time limit, as I have pointed out, is not applicable to all classes of the insane. The age of the patients comes in too. There is, in most cases, a better chance of recovery and less risk of incurability in the young.

The question of heredity also comes in. The whole class of patients who have sunk into the Secondary Dementia that I have referred to and whose disease began before thirty years of age have a strong heredity towards mental disease which comes on during the great process of brain development. There is in them a latent something wrong in their brains from the beginning. I have called that form of disease "Adolescent Insanity," and Kraepelin of Munich includes most of them under what he terms *Dementia Præcox*. They are all liable to procreate children who are imbecile or will become insane. It is the case, however, that a strong heredity to mental disease does not necessarily mean incurability, and I should be disposed, while not excluding it from the reasons which should be held as pointing to or confirming the conclusion of incurability by any medical man before the Divorce Court, not to make it a *sine qua non* or indeed to insist too much on its importance. Few families have a clean bill of health in regard to a bad mental heredity, and even with the worst heredity very brilliant men and women frequently are met with.

Should the divorce laws be so altered as to provide for nullity of marriage or divorce on account of mental disease, I think the chief evidence should be given by two medical men experienced in mental diseases, their reasons should be fully stated with a history of the mental disease in the case in question, that evidence should be given on oath, they should be subject to an examination by counsel, or agents, or relations of the persons in regard to whom the divorce proceedings are taken, and of course by the judge of the Court who would finally decide the issues.

In regard to this question, some persons advocate the remedy of divorce in cases where mental disease has existed and been recovered from. I think this difficult question should be considered by the Commission. There is a risk of the recurrence of the disease in half the cases, and the question of children being procreated should come in as the strongest consideration in regard to divorce. In most such patients I am in the habit of advising that no more children should be born.

It seems to me an important fact, and relevant to this enquiry, that in a very large number of the persons who labour under Secondary Dementia, as well as other forms of mental disease, not only is their own affection for relations perverted or dead, but it is commonly seen that the affection of their relations, especially that of husbands and wives, is gone, and they are neglected, and not visited. Perhaps I should except from this general statement the affection of mothers and maiden aunts, and a few other pathetic examples where the whole life is devoted to a mentally dead spouse or relative.

To eliminate the cases where there is mental deterioration following paralysis and ordinary senility, there might be a difference provided for between primary mental disease ("Technical Insanity") and mental deterioration which is secondary and sequential to bodily disease.

I am not prepared to state that all my professional brethren would agree with me in detail in the opinions I have given, but I think I can safely say that the general trend of medical opinion is now in the direction to which I have given expression. I and a very considerable number of the medical profession and of scientists, interested in what is now called Eugenics, regret that the scope of the enquiry of this Commission could not have included questions relating to the marriage of persons with an extremely bad mental and nervous heredity, criminality, and with positive signs of degeneration, and the prevention of fatherhood and motherhood on the part of those almost certain to produce a diseased and bad stock of citizens in the future. Many of us feel that the prevention of mental disease and of imbecility would also imply the prevention of much vice, criminality, and ineffectiveness among our citizens.

Evidence of Dr. Robert Jones.

The following is a précis of the evidence of Dr. Robert Jones:

I. Nature of marriage.
- i. Contract.
- ii. Physical infirmity.
- iii. Death.

II. Injury caused by incurable insanity.
- i. To individual.
  - *a.* Temptation to immorality.
  - *b.* Comfort, loss of.
  - *c.* Support, loss of.
  - *d.* Deprivation of livelihood.
  - *e.* Healthy family as against diseased if allowed to remarry.
- ii. To family.
  - *a.* If mother insane, home and family neglected.
    - (i.) Father has woman to look after home and immoral relations established—family degraded.
    - (ii.) Father sells up home, and children brought up and neglected by relatives or friends.
  - *b.* Father insane—mother left—refuses workhouse.
    - (i.) Leaves children to others.
    - (ii.) Drinks and consorts with others.
    - (iii.) Immorality—seeks work and children starve—die from tuberculosis or get into asylum.
- iii. To race—bad for race.

III. Burden to State.
- i. Cost of maintenance of lunacy and pauperism.
- ii. Lessened burden if families legitimised.
- iii. High proportion in asylums incurable (72 per cent.).

IV. Relief afforded.
- i. Number of families and women relieved.

V. Definition of incurable insanity.
- i. Not type but time.
- ii. Recurrent attacks, if three in number, to qualify. This would include alcoholic cases.
- iii. Results of granting divorce from education point.
- iv. Such relief exists in other countries, notably Germany.

Evidence.

1. Regarded from the biological standpoint the chief function of the individual is reproduction, and the instinct of sex is a primary one in man and as fundamental as is the instinct of self-preservation.

2. Relying upon this instinct the institution of matrimony implies the conserving of two especial principles, viz., the mutual support of two individuals and the procreation of healthy children or the State.

3. For the sake of public morality, of purity in the family life, and the care of innocent children who are dependents, the Church in Christian countries ruled that this tie, performed by the clergy, should be a solemn and religious contract to be regarded as the most binding, and not to be lightly set aside.

4. Except in Protestant countries the rite is a sacrament of the Church, but in this country the Legislature, owing to the advance in education and with the progress of civilisation, has taken away much of the power from ecclesiastical control, and has altered the cognisance of the Ecclesiastical Courts in regard to the marriage ceremony.

5. The Probate, Divorce, and Admiralty Division of the High Court of Justice now exercises the power under certain circumstances of annulling the marriage contract.

In 1836 it became possible for Dissenters to perform the ceremony of matrimony, and later the same power was given to superintending registrars of districts.

Further, the law now permits marriage with a deceased wife's sister.

6. Sympathising with this extension of liberty to the individual, in so far as this is towards the maintenance of

public morality, to the advantage of the individual, to the benefit of the family and serviceable to the interests of the State, I purpose, on grounds of public and general interest and for the immediate relief of the poor, who, in contradistinction to the rich, are severely handicapped by convention, sentiment, and restricted means, to place the following facts before the Royal Commission for their consideration, basing my arguments (1) upon the nature of marriage, (2) upon the injury (*a*) to the individual, (*b*) to the family, (*c*) to the race through incurable bodily disease, and especially through irrecoverable lunacy, (3) the burden to the State involved by the disability of mental disease, (4) the great relief afforded by recognising chronic or permanent insanity as legitimate ground for divorce, (5) the definition of incurable insanity.

(1.) *Nature of Marriage.*—It implies a contract, but in the insanity of one party to the contract, that party is unable to fulfil its obligations, and is moreover unable, owing to derangement of reason, to consent to annul the contract. The State steps in and "restrains" the sufferer against his will. It takes its own will and imposes it upon him, it disposes of his property, releases him from certain obligations, but binds him in matrimony to the detriment of his family and the State.

Under analogous conditions the State consents to the nullity of a marriage, when by physical infirmity occurring at the time of the marriage and which is incurable, one of the parties to the contract is unable to perform its required duties and functions.

Insanity is also a physical disease, but it implies mental disabilities; it is, moreover, one which deprives the sufferer of his liberty, of his civil rights, of his social, financial, political, and even of his domestic rights, and a person united in the bonds of matrimony to a chronic and incurable lunatic is for all practical as well as legal purposes one united to a dead person, for by the nature of his physical condition he is not only unable to direct the life of another, but is unable even to control his own. The marriage contract is ended by death, and should similarly and for the same reason be ended by confirmed insanity, which is social and domestic extinction.

It is against the interest of the struggling partner and of the family to be thus bound. They should have the option by law of another chance of mating with a healthy person.

(2.) *Injury to the*—(*a*) *Individual.*—Is it conducive to chastity and purity that persons whose wives or husbands are shut up in lunatic asylums, most of them suffering from incurable insanity, should be compelled by law to pass through life without the chance of mutual help and comfort from a sane and healthy partner? This is an injury to the health of the struggling partner, and if a lesson from the practice of the Church were needed, enforced celibacy among the clergy has long since been given up. From a large experience, I know numerous instances (which I could quote) where either the husband or the wife has become insane within a few weeks or months (in some instances within a few days) of marriage, and in whose case there is not the slightest prospect (humanly speaking) of ultimate recovery. It is looked upon as a personal debasement and stigma to have married one who is or was the inmate of a lunatic asylum. In some of these instances, the party outside tries to forget the one within, and lives a life of immorality with some other partner, and children are born who are illegitimate—a factor, even among the *very* poor, which is some sort of disqualification.

In other instances the wife outside seeks employment, but, in order to obtain and retain it, she dare not admit that her husband is in an asylum. She has to assume a false character and pass through life under a cloud, until and when her secret is disclosed, and she then probably loses her situation and her life is further rendered miserable and insecure. If she disclosed the facts, employers would refuse employment, and she would be compelled to resort to some other means for a livelihood.

There are no less than 70,000 married people in lunatic asylums, and is it right that men and women should be driven to immoral relations, that innocent children should be handicapped at life's start and punished for what they are unable to remedy?

Something may be said to help the individual who is insane by granting powers of divorce. It frequently happens that the wife demands the bread winner, or the husband demands his wife's release to look after the home, before convalescence is fully established, with consequent relapse, re-admission, and possibly children born in the asylum (in two years at Claybury about 30 babies were born, mostly those of married women and not a few had previously been in the asylum). If relief by divorce after a certain fixed time were legalised and recognised, there would, I think, be a greater tendency to patience and a better convalescence would be ensured, instead of, as at present, frequent relapses ending in chronic insanity.

Against the granting of divorce on the ground of insanity, it is maintained that many wives and husbands among the poorer classes would be driven to insanity by cruelty, continual annoyance, and strife, but in order to secure such separation it has not been found that the circumstances attending other causes of divorce have been used to loosen the bonds of matrimony.

It is further considered that should divorce on the grounds of chronic insanity be legalised, it would work great hardship in the case of poor married women recovering after many years, as we shall see later that some do, who would find no home after leaving the asylum and who would be tempted to immorality thereby, but I maintain if the State intervened in the private life of a married woman it would be the duty of the State so to "mother" such a person as to keep her from want and temptation thereafter. Furthermore, the interest of the individual must not be urged against that of the majority in the State.

(*b*) *Family.*—When the mother of a family becomes insane—and insane married women predominate over insane married men—the husband has, day by day, to leave the home and be out at work, and must have some one to look after his young, helpless, and motherless children. His wages do not permit of his having a proper housekeeper, and most often he cannot afford the rent of an extra room for the caretaker engaged. Two alternatives are left in consequence:—

(i) A life of immorality with the hired woman brought in to care for the children, whom she often neglects.

I once sent a woman who had been my patient for some years, with a nurse, to visit her family. The door was opened by the concubine dressed in her (the patient's) clothes! The house was filthy and her children unattended to. She received such a shock that she had a fit, which later caused her death.

To drown his grief the husband not infrequently takes to drink when the good influence of his wife is gone.

Immorality and drink contaminate and degrade the family and harden its members against all sense of decency and right thinking:—

(ii) In the alternative, the husband breaks up the home, sells his furniture and the children are brought up or rather "dragged up" by unwilling relatives or friends.

In either case the neglected children may eventually get into the workhouse—not a fit home for any child—or they may grow up with the inborn tendency to inherit insanity becoming each year more manifest through neglect, and they finally swell the list of the juvenile delinquents, the unfit or the unemployable, or as is too often the case they join their mother in the lunatic asylum. The father may also consort with loose women, take to drink, contract venereal disease and himself join the paralytic inmates of the lunatic asylum. Instances of each of these are not uncommon in the experience of those in charge of large asylums for the insane.

I have had the mother of a large family admitted into the asylum under my care at the age of 29—among the poorest early marriages and large families are the rule—and she died 35 years afterwards, being incapacitated from looking after any of her children. Surely the father of such a family should be legally allowed the chance or option of securing the discipline and support of a good and healthy woman over his children and home.

Let us take the case of the father of a family who becomes insane. The bread winner is gone, "stick by stick" the furniture goes. The mother at last gets some work for herself, but at the most she cannot earn more than ten shillings a week, even at the "least sweated" industry, and even if her whole time were given to the work. In the end (she often refuses to go the workhouse) the children are starved, or are sustained upon the proceeds of her own immorality;

as she cannot re-marry, and from the want of proper nourishment and care, coupled with the hereditary instability of her children, they become a permanent burden upon the ratepayers, and they also swell the ranks of the unfit, or they are mercifully removed through tuberculosis.

It appears to me a crime not to allow the mother to obtain a divorce and marry again. Even if successful in obtaining a lodger she is faced constantly with temptation and shame—the result is a second family—all illegitimate.

Another case is known to me. The young father of a large family is in the lunatic asylum. Mother able to get a living, but would lose her only help if the authorities knew she had an insane husband who might return to her. For the sake of the children she never mentioned the husband. After 20 years in the asylum he returns to home and family. None of the family knew he was their father, but he had to be supported, and the stigma remains a constant sore and prevents the family taking the position which would be theirs if the mother had been legally free from him many years before.

These are a few of the many instances in which poor women are driven to prostitution, and a life upon the streets might be avoided if only the law were altered.

(c) *Injury to the Race.*—If the children of families in which one parent is incurably insane were properly looked after, and a chance of divorce affords such an opportunity, their better care would be for the benefit of the race. Although I do hold that a good *heredity* is a great factor in the physical well-being of a family, I am of opinion that good surroundings, good food, cleanliness and education are also to be considered. Also, a healthy woman divorced from an incurable lunatic has a fresh chance of adding a healthy stock to the race. I have at present a patient under treatment who has been in the asylum eight times, each time with the birth of a child, and two of the children have been in asylums; one of them is married, and with what consequences may be correctly anticipated. It would have been better for her husband and her family and the race had divorce been possible after three attacks.

(3.) *Burden of Lunacy to the State.*—It is acknowledged that physical betterment is an intellectual as well as a moral thing, and when the health of the people falls below a certain standard of efficiency it entails a loss to the State. The health and strength of the individual is a greater asset to the State than material wealth. We recognise that no person need starve in this country, and it is incumbent upon us to maintain our feeble and mentally defective, but there is no reason why the burden should grow so as to be a bar to national progress. Insanity—in the only way we know of it, namely, registered insanity—has increased by 255 per cent. since 1859, whereas the general population has only increased by 83 per cent. The cost of maintaining insane persons, exclusive of State inspectors, legal officials, and a numerous staff, is three and a-half millions a year, and this apart from the cost of land, buildings and furniture.

The insane and the paupers have to be maintained at the expense of the thrifty and the industrious and it is often forgotten that the majority of the ratepayers are themselves only just above the pauper line. Pauperism, apart from lunacy, costs the country nearly twenty millions a year, and I maintain that the granting of divorce for "incurable insanity" would greatly tend to lower the number of families which are dependent on the ratepayers, as well as indirectly to lower the number of the insane.

The great bulk of the insane population consists of those who have been in asylums over three years, and the statistics of a modern asylum like Claybury give a proportion of 72 per cent. of incurable cases; the true proportion is probably higher. The following table shows the duration of insanity in 1,784 cases out of a total of 2,476 patients who have been in residence in this or some other asylum over three years:—

6	have been	between	40	and	50	years	insane.
28	„	„	30	„	40	„	„
130	„	„	20	„	30	„	„
889	„	„	10	„	20	„	„
467	„	„	5	„	10	„	„
264	„	„	3	„	5	„	„

4. *Relief afforded.*—By legalizing divorce for cases of incurable insanity we shall have an educative force as to the dangers of inherited disease and to some extent prevent the marriage of the unfit, for incurable insanity in a family will then be seriously viewed in regard to matrimony. We shall likewise control immorality on an extensive scale. The children of many families otherwise illegitimate would in the future be legitimized, and prejudice will thus be removed from many future helpless children and irregular homes. Facilities for divorce, in the cases under review, will materially impress upon people the responsibility of parentage, and will, in many cases, be a re-endowment of motherhood, because it will permit many healthy mothers to re-marry. At present, the destiny of the race rarely enters into the consideration of matrimonial alliances, but the effect of public opinion will force this to the front, and it will be the means of attaining a better ideal as to the value of health. The extent of this relief will be more appreciated if a few figures are given. There are over 130,000 insane persons to-day in the asylums of England and Wales. In the general population the proportion of married to single is roughly one to two. In insanity the proportions are reversed, for there are more widowed and married in asylums than there are single. In one year, the last we have for statistics, viz., in 1909, there were 12,000 married persons and 9,000 single admitted into the different lunatic asylums of England and Wales, and there are more married women insane than married men. If the asylums of London are taken, their insane population is nearly 20,000 (19,823), and the numbers and ages of those who have been more than three years in residence are given in the following table:—

	Under 15 years there were ...	3	
	From 15 to 19 „ „ ...	24	
	„ 20 „ 24 „ „ ...	195	
	„ 25 „ 29 „ „ ...	516	6,463
	„ 30 „ 34 „ „ ...	955	
8,091	„ 35 „ 39 „ „ ...	1,341	
	„ 40 „ 44 „ „ ...	1,645	
	„ 45 „ 49 „ „ ...	1,784	
	„ 50 „ 54 „ „ ...	1,850	
	„ 55 „ 59 „ „ ...	1,793	
	„ 60 „ 64 „ „ ...	1,442	
	„ 65 „ 69 „ „ ...	1,056	7,339
	„ 70 „ 74 „ „ ...	647	
	„ 75 „ 79 „ „ ...	366	
	„ 80 and over „ „ ...	185	

From this table is seen the magnitude of the relief which would be afforded to families in London alone, should the struggling partner care to exercise the option, and avail himself or herself of the opportunity for divorce. There are over 8,000 persons, more than one-half of whom are married, between the ages of 25 and 50, incurably insane in the County of London. The number of mothers, during the child-bearing periods, whose bread winner is permanently incapacitated, is probably over 2,000, and it is seen by the same table that chronic insanity is not limited to the later periods of life, there being only a slight numerical difference between the totals under 50 and over 50 years of age, a matter to which reference will be made when dealing with the definition of "incurable lunacy." The benefit to those women would be in the direction of prudence and morality, as well as in the deepening of parental responsibility.

5. *Definition of Incurable Insanity.*—To define such would be an impossible task. It has become an axiom in the study of prognosis as to mental disease that "anything may happen in lunacy." Except in what we call "dementia," which I use to mean terminal weak-mindedness or weak-mindedness occurring as a primary affection in young adolescents of both sexes, the most unlikely and unexpected recoveries may take place. It would be assumed that in young persons, with the vitality and recuperative powers of youth at their full, the chances of recovery would be better than among the old. The reverse is, however, often the case, and not infrequently "it is better to be sixty than sixteen" in regard to recovery from insanity.

It might also be assumed that the chances of recovery from an attack of insanity would be less in cases where there was a bad heredity, but the cases with the worst histories often make the best recoveries, although they subsequently relapse.

The course of the most fatal of all forms of insanity, viz., general paralysis (12 per cent. of all admissions among men and 2 per cent. among women), is sometimes marked by remissions; the disease may be arrested for many years

with periods of useful citizenship between the remissions. Even epilepsy associated with insanity (8 per cent. of all admissions into asylums among men and 6 per cent. among women, and as they live longer than other insane persons, 16 per cent. of all remaining in asylums) is recovered from, as the latest statistics of the County of London asylums testify. There are 40,000 sane epileptics and 20,000 insane epileptics in this country. That fascinating variety—paranoia—which takes 30 years to develop (and which amounts to 10 per cent. of all remaining in asylums), sometimes terminates in recovery; and it is safe to say that each of the varieties above named, viz., epilepsy with insanity, general paralysis with insanity and paranoia or systematised delusional insanity, may end in recovery. Insanity is so full of paradoxes as to its prognosis that the most accurate observer and recorder may be mistaken when prophesying the future. What is, then, the criterion of incurability?

In my opinion it is the duration of the disease—the longer its duration, the less curability. Indeed insanity is curable in the inverse order of its duration. In order to place a fixed time I would suggest 3 years as a valuable guide of incurability. I should like to say 2 years, because the qualifying period for divorce should not be made too long, for it would lessen the utility of changes in the law, yet there must be a reasonable limit to avoid possible abuses. There is a more urgent need now, because with care in their treatment and housing, the insane live longer than formerly. I should like to add to my list qualifying for divorce cases of recurrent insanity which have suffered from three attacks, even if the period of detention in each case were less than three years. In these recurrent cases would be included possibly all the alcoholic cases. If ordinary drunkenness resulting in three convictions in one year can be dealt with by a sentence of three years in an Inebriate Reformatory no similar supervision is possible to the lunatic who is insane through drink, for he quickly recovers in the asylum and is discharged. I think that such cases should be included for divorce. Alcoholic cases are the most relapsing kind and they are a burden upon the family. Twenty per cent. of all insanity among men and ten per cent. among women is caused through excessive drinking.

The recoveries last year in the asylums of London numbered 1,220. Of these 117 were discharged recovered after an interval of more than three years under treatment. The duration of residence was as follows:—

2	were	over	20	years	in	residence.		
2	were	between	15	and	20	years	in	residence.
14	„	„	10	„	15	„	„	„
43	„	„	5	„	10	„	„	„
56	„	„	3	„	5	„	„	„

a proportion of 9·6 per cent. (of whom more than one half are married women) of all the recoveries having been over three years, so that some hardships are bound to occur, but it would probably occur in only about 2 per cent. of all cases admitted into asylums, even if all accepted the chances of obtaining a divorce.

I believe it would be easier to detain persons suffering from various forms of mental defect in colonies if it became a part of public opinion that incurable insanity, *i.e.*, insanity of three years' duration or three separate attacks, were a bar to matrimony, and I think a divorce on the ground of insanity should of necessity be a prelude to the prohibition of marriage with one who had been insane, just as I consider the Deceased Wife's Sister Bill has been a necessary prelude to the one I now anticipate, for it recognised an evil which affected the individual, the family, and the State. I may state that in Germany there is such a time limit for incurable insanity, and I have myself given the necessary evidence for obtaining divorce before the German Consul-General in London.

Evidence of Dr. Theo. Bulkeley Hyslop.

Types of Incurable Insanity in which Divorce might be Advisable.

Chronic Melancholia.—In some cases of chronic melancholia which have lasted many years, and in which there has also been *loss of brain power*. It is difficult to define the time limit as to curability in some melancholiacs, and especially where there is no dementia. I have seen a case of chronic melancholia in which recovery took place after thirty-five years of residence in Bethlem (1844 to 1879). The patient remained well for seven years, but was readmitted (in 1886) suffering from a relapse, from which he died thirteen years later.

In another case, of a woman who had been melancholic for thirty years, recovery took place on the return from Australia of her brother, whom she had long mourned as dead. I have also seen several cases of recovery from melancholia with agitation, automatic repetition of actions and words, and even hallucinations of hearing after periods of from five to ten years.

Chronic Mania.—Chronic mania may also continue for lengthy periods, but I cannot recall having seen a case of recovery after five years.

Delusional States.—It is sometimes difficult to determine that delusional states are incurable, especially in the earlier stages when the physical health is impaired. I have seen many cases of apparently systematized delusions yield to time and treatment.

The method of onset and the features of the stages of evolution of the delusions (the physical factor being excluded) will enable one with a fair degree of certainty to prognose as to the curability. In some cases at least five years should elapse before considering the question of divorce.

Dementia.—Dementia secondary to acute attacks of mania may be merely a temporary or a protracted sequel to the acute brain disturbance. In some post-febrile states, as, for instance, after influenza or typhoid fever, the mental disturbance may be of an anergic form and last for several years, to be followed ultimately by recovery. When there has been a definite apoplexy or other focal lesion with destruction of brain tissue and mental devolution, recovery is, of course, scarcely to be looked for. In many such instances the viability appears to be but little interfered with, and they may live for many years.

Epilepsy.—The mental degeneration resulting from epilepsy is not only apt to be very deep and lasting, but it may also be a source of continual anxiety, and even danger. Of the graver forms of epilepsy much is already known, and it is fully recognized how the taint is apt to be transmitted by heredity, and even intensified in the progeny.

Another type is not so well known, and but imperfectly recognized in law—I allude to those conditions known as mental automatism, larvated epilepsy, double consciousness, alternating or multiple personality. They furnish us with the types somewhat akin to Dr. Jekyll and Mr. Hyde. Of these I have seen and recorded many examples. The condition is sometimes unrecognized even by near relations and friends. Such states are sometimes heralded in youth by the occurrence of convulsions, nocturnal delirium, night terrors or somnambulism, and are later followed during adolescence by alternating conditions of sanity and mental automatism. Sometimes these cases are taken care of in asylums, but more frequently they commit some crime and are committed for trial. During the last year I have examined two criminals of this type who had committed murder. In both instances they were acquitted on the ground of insanity, and, in my opinion, in both instances they were incurable. Such instances will always be difficult to deal with, inasmuch as the relative durations of the normal to the abnormal periods cannot be gauged with any degree of certainty.

Alcoholism.—I am President of the Society for the Study of Inebriety. Extraordinary recoveries from alcoholic mental disturbances are met with. I have seen patients extensively paralysed, demented, and even apparently moribund, yet they have quite recovered. Formerly I was inclined to believe that even deep destruction of memory might be recovered from. My later experiences, however, have led me to believe that alcoholic amnesic defects, when extensive, are very rarely recovered from. It is now known that alcohol, if given in excess, destroys the trophic or nutritive functions of the nerve cell, so that the cell dies and becomes incapable of regeneration or further functioning.

In this somewhat common type of alcoholic amnesia the viability is not much impaired, and they may lead useless vegetative existences for many years. They become quite incapable of managing themselves or their affairs, they neither know nor feel any responsibility, and as by their own act they have incapacitated themselves it

would appear advisable to grant a divorce after a period of at least three years has elapsed.

Another type of alcoholic insanity in which much hardship is encountered by the husband or wife is that in which the *will power* has been destroyed. In such instances there is defective inhibition, for which neither time nor treatment can do any good. I have seen many individuals of both sexes who have had to suffer life-long misery on this account, and divorce would appear to be advisable as a humane method of relief.

Recurrent Mania.—Recurrent mania due to alcohol occasions many difficulties. Sometimes the recurrences are numerous, and each attack appears to cause but little degeneration, but ultimately brain destruction is bound to ensue. I have seen recovery take place after the thirty-seventh attack of mania with delirium, but each recovery was productive of nothing but misery to friends and relations.

One danger in such cases is that between the attacks they may beget children, and I know of several instances in which such children have turned out to be epileptic, nervous, or defective.

As a result of my experience with alcoholics, I have come to formulate a proposition that any individual who is unable to resist a habit of taking an excess of alcohol, even though he or she may be capable of attaining to a certain degree of power in mind, body, or pocket, biologically considered so far as evolution is concerned, the world would be better had he or she never been born into it. For such an one divorce is but a part of the aid we should give to the process of eliminating the degenerate and unfit.

Morphinism, Cocaine, and Other Drug Habits.—Second to alcohol, there is in the whole history of the insane no type of degeneracy, either inherited or acquired, more painful in its social aspects or more productive of human misery than that due to morphine, cocaine, and kindred drugs. The types are too well known to need description. The lying and deception resorted to by them, and the tendency to recurrence after lengthy periods of treatment, have rendered these types not only difficult to deal with, but also sources of unutterable hardship and misery to their wives or husbands respectively. Many an instance have I seen in which, to my way of thinking, divorce might with justice be granted.

I see quite a number of degenerates who in their excesses run through the whole gamut of narcotics and other drugs. Abstention from one drug merely means indulgence in another. From such cases nothing is to be gained or even hoped, and they drag others with them down to the lowest depths of degradation. Of these, I have seen several who have ultimately succeeded in getting their marital partners to acquire the same habits of indulgence.

Moral Insanity.—Moral perverts who have tendencies to kleptomania and other impulsive states sometimes cause disastrous consequences, and I have been consulted on several occasions as to whether divorce would be possible or justifiable. I have also been frequently consulted as to how to obtain relief from habitual lying and an uncontrollable habit of slandering. It is often difficult to decide whether they are insane or merely morally defective. Usually, however, in my experience such cases are complicated by abuse of alcohol or other drugs.

Uncontrollable temper is sometimes of pathological import, and I am sometimes called upon to decide as to whether ungovernable outbursts of passion are in reality symptoms of insanity. Not infrequently such cases are adequately met by prolonged periods of separation, but in some instances of hereditary defect of control in which the recurring outbursts of passion have been precipitated by even small amounts of alcohol the condition has not only become chronic but also a source of personal danger, and, even though they may not be technically or certifiably insane, divorce might in such instances be justifiable.

Sexual Perversions.—This opens a very large and painful chapter. I have seen dozens of instances in which the insane patient has been the pervert, and not only brought about the actual attack of insanity, but has also been the cause of much misery and apprehension and fear on the part of the husband or wife, lest recovery from the insanity should bring about a return to the practice of the perverted acts. The anxieties betrayed by the relatives of such patients lest the patients themselves should be allowed to return to their homes is not unfrequently due to the existence of such perversions.

It must also be noted that some insane patients are made insane by sexual perversions of their marital partners. I know of many instances in which relapses are not only common, but there is actual dread of home relationships owing to the sexual perversions of those who are still at large and presumably sane. In such cases I am of opinion that protection is needed.

Types of Insanity in which Marriage has Taken Place.

(*a*) *As a Symptom of Insanity.*—I have given evidence in one case in which marriage took place in consequence of the exaltation and sexual excitement symptomatic of the onset of *general paralysis of the insane*. When the disease became more manifest application for annullment was not only made and granted, but ratified by the Pope.

(*b*) I have known instances in which *alcoholic* or *bibulous philanderers* have contracted marriage, with disastrous results to their wives. Sometimes these marriages have been undertaken by the wives in heroic fits, and it is therefore open to question as to whether they become entitled to any relief from what they undertook with their eyes open.

(*c*) *Senile Decay.*—Sexual excitement not infrequently heralds senile decay, and it may lead to unsuitable marriages and many financial and medico-legal complications. In such instances as I have had to do with divorce has been seldom sought.

In such cases the testamentary capacity appears to have called for the greatest amount of attention.

Marriage Prescribed as a Remedy for Neurasthenia Hysteria, Sexual Perversions, Alcoholism, or other Drug Habit.

In my experience marriage is not justifiable under such circumstances, and when one contracting party withholds from the other the existence of any such remedial intent and the marriage proves a failure, then relief appears to be justifiable. I gave evidence in one such case, and the marriage was annulled.

Marriage without knowledge of the existence of a bad family history, the occurrence of previous attacks of insanity, of alcoholism, of infection by syphilis, or of epilepsy, ought in my opinion to be sufficient to warrant relief for the party from whom the knowledge was withheld.

Types of Insanity of Somewhat Lengthy Duration, but in which Recovery may eventually Take Place.

In *melancholia* attacks may last for many years, and then be followed by recovery.

Females at the *change of life* not infrequently suffer from subacute forms of mental disturbance lasting from two to ten years, and yet recovery ultimately takes place.

In young women there may be *recurring attacks* of excitement at regular monthly intervals, and these may continue for several years. Our knowledge of these conditions and their efficacious treatment is increasing so rapidly that it is possible such conditions may ultimately be eliminated from consideration. Similarly, with regard to mental disorders due to glandular anomalies and faulty metabolic bodily process, our knowledge in the future may enable us to treat successfully many conditions which are now regarded as being incurable.

Summary.

There are some forms of mental degeneration which can with a degree of certainty be recognized as incurable, and in which much hardship might be relieved by divorce.

The factor of self-indulgence as a cause might with justice influence the decision. Suppression of facts of the existence of degeneracy in the family or in the individual might further influence the decision.

In my opinion, the question of personal relief from the incubus of being tied to a degenerate is of secondary importance to the wider question of the danger to the community and the race of the transmission by heredity of such conditions of degeneracy; and inasmuch as medical advice on such matters is but seldom asked, and if asked, hardly ever regarded, it would appear advisable to aid the right trend of evolution by facilitating the disruption of marital ties, which are not only baneful to the individuals, but a source of danger to the proper evolution of humanity. In my opinion, the whole question is in great part dependent on questions affecting the better regulation of the conditions under which marriage is contracted.

Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the Journal.*]*

LANCASHIRE AND CHESHIRE BRANCH:

Combined Liverpool and Birkenhead Divisions.

Paying Wards in the Liverpool Voluntary Hospitals.

The Liverpool and Birkenhead Combined Divisions of the British Medical Association have considered during the last year the subject of paying wards or paying beds in the Liverpool voluntary hospitals.

In the first place the following questions were sent to the Secretaries of all the voluntary hospitals in Liverpool and district in order to obtain official information, namely:

A. Are there any paying wards in your hospital, and if so, how many?
B. Do the honorary staff receive any remuneration in respect of operation performed, or attendance on the inmates of such paying wards?
C. What measures does your hospital take to prevent abuse of the paying wards?

The substance of the replies received is given here in tabulated form.

Name of Hospital.	A.	B.	C.
Bootle Borough Hospital	3 single-bed wards	No	None necessary. Case must be passed by Committee.
Victoria Central Hospital, Liscard	2 pay-wards	Allowed to make a charge when £2 2s. and upwards is paid by patient to hospital	Circumstances of patient generally well known to staff.
Hahnemann Hospital, Hope Street	4 pay-wards	Yes. Fee as per arrangement	—
St. Paul's Eye and Ear Hospital	2 pay-wards	Yes. Fee as per arrangement	Surgeons control admissions.
Cancer and Skin Hospital, Myrtle Street	5 pay-wards	Yes. Fee as per arrangement	Higher charges according to circumstances.
Royal Infirmary	5 small single pay-wards. £3 3s. and upwards to hospital	Yes. Surgeon's fee as per arrangements	Application to be made in writing to Secretary.
Royal Southern Hospital	1 female pay-ward, 9 beds; 2 male single bedrooms. Charge £2 2s. per week	No	Special form with questions as to income and circumstances to be filled and signed by patient or relative, and submitted to Hospital Committee.
Northern Hospital	9 single-bed wards. Charge from £3 3s. per week	Yes; as per private arrangement	Committee largely guided by medical staff in prevention of abuses.
The Hospital for Women, Shaw Street	No special pay-wards. Hospital accepts sums of £1 1s. to £2 2s. per week from patients able to pay for hospital accommodation, but unable to pay surgeons' fees	No	A special Finance Subcommittee deals with such matters.

The Stanley Hospital, the Borough Hospital, Birkenhead; the Children's Infirmary, the Eye and Ear Infirmary, St. George's Skin Hospital, the Samaritan Hospital have no paying wards or beds.

It was then ascertained what provision existed in Liverpool as regards the number of beds available in private nursing homes, by sending the following questions to these homes, namely:

1. What are your charges, with description of accommodation provided at such charges?
2. How many beds have you for patients?
3. In special cases of patients in reduced circumstances, are you prepared to accept such reduced charges as they are able to pay?

Replies received from 17 nursing homes gave a total of 155 beds available for private cases, at a weekly charge ranging from 1 guinea to 8 guineas. Eleven out of these seventeen nursing homes were prepared to accept reduced charges in case of patients in reduced circumstances.

The Combined Divisions then instructed their Secretary to send a circular letter embodying their views to the following, namely: The Chairman of the Committee and the Chairman of the Medical Board of the various hospitals mentioned before, the Chairman of the Hospital Saturday Fund, the Chairman of the Hospital Sunday Fund, and the Chairman of the Association of the Honorary Medical Officers of the Liverpool Medical Charities. The letter, which was sent first in September, 1909, and again in June, 1910, to those hospitals who had not sent an answer, was as follows:

70, Rodney Street,
Liverpool,
September, 1909.

Dear Sir,

I have been instructed by the Liverpool and Birkenhead Combined Divisions of the British Medical Association to forward you the following resolution with regard to the existence of paying wards in the local medical charities, namely:

> That the Combined Divisions disapprove of the existence and strongly urge the abolition of paying wards in the local medical charities.

The Divisions consider the paying wards of these charities as incompatible with the principle underlying charitable institutions, equally unfair to the medical profession and to the numerous nursing homes existing in Liverpool and district. With regard to the medical profession the private ward system has led to a flagrant abuse of the services of the medical profession by patients as able to pay for the medical attendance as for the two or three guineas per week extracted by the hospitals, while with regard to the private nursing homes a commercial competition is carried on under unfair conditions by the utilization of resources intended for and collected under the name of purely and exclusively charitable medical help.

Investigations have shown that ample accommodation exists in the private nursing homes of the Liverpool district; that more than 150 beds are available at these homes, and that the charges for board and nursing range from one guinea per week upwards; that in many of these homes excellent operating rooms exist; and that every necessary requirement, such as *x*-ray apparatus, etc., would be universally installed if the unfair competition of the hospital private wards were abolished.

The fact that the members of the staff of certain hospitals are allowed to charge fees for attendance on patients treated in such private wards or beds does not, in the opinion of the Divisions, remove the objection, as patients entering the hospital are restricted in the choice of attendance solely to those on the hospital staff.

Yours faithfully,
K. Grossmann,
Honorary Secretary.

Thirty-three letters were sent, and the answers received (25) can be summarized as follows:

Birkenhead Borough Hospital.—From the Committee and from the Medical Board:

> There is no special accommodation for paying patients; on very rare occasions, such as severe accident too bad to be removed, patients are admitted who pay for accommodation, in which cases the medical staff reserves the right to charge for attendance.

Bootle Borough Hospital.—From the Committee:
There are no paying wards or beds. The general terms of the letter of September, 1909, are in accord with the opinion of the Committee.

Bootle Borough Hospital.—From the Medical Board:
There are three private wards at their disposal for receiving private patients, but their use is not encouraged by the staff.

Hospital for Cancer and Skin Diseases.—Committee's Secretary:
The letter was duly received, and would go before the Committe in due course.

Infirmary for Children.—From Committee:
There are no paying wards. A nominal charge of 5s. per week is made for patients from districts outside Liverpool.

Infirmary for Children.—From Medical Board:
No private wards for paying patients.

Hospital for Consumption and Diseases of the Chest.—From Committee:
There are no private wards.

David Lewis Northern Hospital.—From Committee:
Acknowledge receipt of letter and have no observation to make.

David Lewis Northern Hospital.—From Medical Board:
Acknowledge with thanks the letter sent.

Eye and Ear Infirmary.—From Medical Board:
Private patients are not admitted; patients beyond a 5-mile radius pay 8s. 6d. a week.

Hahnemann Hospital.—From Committee:
Should any united action be taken by the other general hospitals then this hospital will move with them.

St. Paul's Eye Hospital.—From Committee:
They "see no reason to make any change in the system at present in vogue at this hospital."

Royal Infirmary.—From Committee:
The Secretary states that "the letter was duly received and read to the Committee. There are no instructions with reference to any reply to it."

Royal Infirmary.—From the Medical Board:
The Secretary is "directed to say the Board notes the expression of opinion" contained in the resolution of the Combined Divisions.

Royal Southern Hospital.—From Committee, who say:
The subject has had such full consideration during the past few years and been so carefully dealt with, that they consider everything possible has been done in the best interests of all concerned.

Royal Southern Hospital.—From Medical Board:
The Board do not see their way to reopen a question which has already been discussed by them a short time ago.

Stanley Hospital.—From Committee
There are no paying wards.

Victoria Central Hospital, Liscard.—From Medical Board:
A small number of paying patients are admitted at present, but the Medical Board have recently passed a resolution recommending the discontinuance of such admissions. There is, however, no nursing home suitable for major surgery in the Wallasey district.

Hospital for Women, Shaw Street.—From Committee:
The Committee of Management of this hospital have resolved to discontinue the practice of appropriating wards for paying patients in the hospital.

Hospital Saturday Fund, and likewise *Hospital Sunday Fund* acknowledge receipt of the letter.

The Association of the Honorary Medical Officers of the Liverpool Medical Charities were in favour of the abolition of paying wards by a small majority.

METROPOLITAN COUNTIES BRANCH:

Westminster Division.

A special meeting of the Westminster Division was held at 5 p.m on Thursday, October 27th, in the Council Chamber at 429, Strand, W.C. The chair was occupied by Dr. F. J. Allan, Chairman of the Division.

The Desirability of a Home Hospital.

The Chairman stated that the meeting had been convened for the purpose of considering whether there should be some co-operation among medical men in the way of providing home hospitals which would be under the supervision and control of medical men rather than of the nursing-home sort, of which a good deal had been heard in the press. Medical men had from to time considered whether hospitals could not be started somewhat on the lines of cottage hospitals, where each medical man could attend his own patients and where reasonable fees only would be charged, so that the hospitals would be relieved of cases which were not altogether cases suitable for charity. He need scarcely say anything in introducing Dr. Lauriston Shaw to the meeting, as he was so well known to the members. All those who had read Dr. Shaw's masterly address upon his appointment to the presidential chair of the Metropolitan Counties Branch would notice that he mentioned especially that the profession were slow to secure by co-ordination the potential benefits of the advances now being made—advances which should be applied to those who needed them.

Dr. Lauriston Shaw, in opening the discussion, said: It gives me great pleasure to come to the meeting of the Westminster Division to-day to take part in the discussion of what seems to me a very important step in righting what is a wrong in the profession. Before we take any steps to cure our patients we generally want to know that there really is something the matter with them, and I shall have no difficulty in showing you that there is something which wants to be put right in the relations of the profession to a large class of the public. There is a double injustice being done by lack of organization—first, to the patient who is comfortably off but not wealthy, the patient who at no time has a balance of £1 000 at his bank, and yet is quite capable of meeting all the usual difficulties which may come to him through his illness. Many such cannot possibly pay the ordinary fees which are charged by the nursing homes if illness overtakes them and demands that they should go into some institution where they can be effectively operated upon and properly nursed and watched. It is the most difficult thing for the patient to obtain this treatment without running up a bill which might amount to anywhere between 5 and 15 guineas a week. If he cannot afford such sums, there is only one alternative, that is, accepting charity. There is a large proportion of the public to whom the necessity of accepting charity is a distinct hardship, but they are compelled, if they cannot afford the large fees of the nursing homes, to accept the charity of the hospital. The second injustice is to the doctor. When such a patient is sent to a hospital his own doctor loses the case. He is thereby deprived of income, which is serious to him, and deprived of experience, and opportunities of displaying his skill in treating a difficult case, and these are very serious deprivations. I do not think there is any better way of meeting this difficulty than the proposal set forth by the Hospitals Committee of the British Medical Association, namely, by the establishment of public self-supporting nursing homes, or private hospitals. We must see, however, that our method of treatment in any case is likely to be successful. If we are going to start these nursing homes, the finance must be such as to enable us to meet the requirements of the patient. However you manage these institutions, the patient must have a free choice of doctor, and you must make it absolutely certain that there is nothing like an honorary staff of any sort. Everybody who comes into the institution must be absolutely free to take any doctor he likes, and there must be no restrictions except that the doctor must be a registered medical practitioner. You must consider whether it might not be desirable to have some limitation of the doctors who may come in, not with regard to status, but a limitation of his locality. If the nursing homes are to be useful, they will be useful because they are local institutions. The institution must be so close to the doctor who sends the patient as to enable him to visit it in the ordinary rounds of his practice. The doctors within a certain radius should have a prior claim for the introduction of patients. If you put a nursing home in Westminster and you do not put upon it restrictions that it is to be used by the Westminster men you may find it wholly managed and entirely occupied by patients of men in Harley Street. Let us be sure that the original object of such homes

is always maintained. Be warned by the following experience: A cottage hospital is started on the outskirts of London. All the doctors in the neighbourhood are allowed to send in their patients until a few doctors who send in most patients persuade the committee that it might be convenient, in order to deal with urgent cases, that a certain number of them should be designated the "staff of the hospital." After a time the limited staff becomes established, and they acquire the sole right of treating patients. After a little while longer some philanthropic people ask whether the hospital ought not to have men from Wimpole Street to look after these patients. Then the institution becomes another glorified hospital to the advantage of the consultants. That is a parable I should like you to take into consideration. One of the most important points is to ensure that any such institution shall be under public medical management. That it must be under medical management nobody doubts. It must not be under the management of those who subscribe and become owners, but the institution must be under public medical management. I suggest that the most satisfactory way of securing public medical management is in your trust deeds to have some arrangement whereby the Division of the British Medical Association shall have the right always of electing a half of the members to the governing body, who must be medical men. Try and avoid the pitfall of medical charity. We have said this institution must be self-supporting. It does not necessarily mean, I think, that every patient who comes into the institution should pay the entire cost of his maintenance. At any rate, I am quite sure in any institution you start you must have various classes of patients—some accommodation which is suitable for the patient who could pay 5 guineas a week, and some much cheaper. You will have to decide whether you will have an arrangement whereby it will be necessary for those people who desire to go "third class" to make special application and lay before the committee some statement of their financial position. I would urge that any such statement produced by the patients in order to substantiate their claim to go into the cheaper part of the hospital should be fortified by a medical man who is responsible for the treatment of the patient when he is there. You can never do anything for the betterment of some people without it being for the injury of others. You must recognize that these public nursing homes are not good things for those who are making precarious incomes out of private homes in the West End. Are there any subsidiary advantages to be derived? Yes. One of the greatest disadvantages of ordinary private practice is the way in which the doctors fail to come into contact sufficiently with each other. Doctors speak of each other as "opponents." I believe, with the development of cottage hospitals and public nursing homes, a doctor living next door will become "a colleague," not "an opponent." There would be opportunities of meeting each other and discussing interesting cases which were being mutually treated, and for the growth of professional respect and regard.

Dr. Lancelot Archer thought the lines which Dr. Shaw laid down for the government of such institutions were very much the same as those approved of in the Westminster Division. The question had been considered for four or five years, and at last they intended to attempt to make the idea a concrete fact. They had taken the advice of an architect and a lawyer, and had evolved a definite scheme and registered it as a small limited company, as would be seen by their prospectus, which they were about to issue to a number of the profession and to the public. Their idea was to build a home upon the latest hospital principles to accommodate about 40 beds at a varying scale of fees. They wanted the doctor who attended the patient in the ordinary way to also attend the patient in the nursing home, and call in, if necessary, other local men to his assistance. The cost would be approximately £12,000, and one had to consider the equipment and cost of maintenance. They wanted the medical profession to support the scheme in order to help provide the capital. One of the provisions of the scheme was that the institution should be entirely in the hands of the profession, with perhaps one or two business men on the board.

Mr. Harvey Hilliard was of an opinion that the profession suffered a great loss of income through patients going into hospitals and becoming the recipients of charity, because there was no accommodation for that class of patient elsewhere. To obviate this, the profession should combine and manage for themselves a private hospital where the patients could be accommodated according to their means, and so be of mutual advantage to the medical practitioners. The Westminster Division had to face the difficulty as to how much they were to charge the poorer patients, as if they charged too small a sum they would not be paying for the cost of their maintenance. Was the difference to be made up by charging more to the people occupying more expensive rooms? If so, it would introduce an element of charity. He did not think the patients should be admitted by a selection committee, but that it would be better to admit them upon the analogy of railways, where three classes of travelling were adopted. Patients entering a nursing home should have no letters.

Dr. M. I. Finucane considered that Dr. Shaw had laid down some good principles for guidance in the framing of schemes for nursing homes, for which there was a great public need for the class of patients who ought and would willingly go into such a home. In his opinion their absence amounted to almost a public scandal. Some of these homes were places which no public authority would license or sanction if they had public control. He would like to know where there was any nursing home in London where efficient treatment could be obtained for 2 guineas a week similar to that proposed in their prospectus?

Dr. E. M. Niall was of opinion that if by creating these homes the profession could give their patients the comfort of a single room and maintain the upkeep of the home he was sure the scheme would receive a hearty support.

The Chairman pointed out that the difficulty one felt in connexion with any such scheme was the financial aspect. Would the home be taken advantage of by the medical men in the neighbourhood so as to make it self-supporting? If you made some limit of distance you must ensure that it was in a locality where there were sufficient people who could afford to pay maximum fees, otherwise it would be quite evident they could not have a home for patients paying the minimum fees only, in which case the home would not be self-supporting.

Dr. Lauriston Shaw, in reply to the discussion, agreed that one of the most important points in the discussion was the financial question. He would like to see the home started without receiving any donations. If they could set an example of a self-supporting financial scheme it would go rapidly throughout the country. With regard to raising the money to build, he did not think it was necessary to raise it all at first, as credit could be obtained from the bankers, and when the building was finished the balance of the money required could be obtained on mortgage. With regard to the lay element of management, if it was found absolutely necessary to have this lay element of management, he would remind them of the parable in his opening speech. Possibly one means of avoiding this would be to take the analogy of what are known as proprietary clubs. At the back of these were the owners, who would be the directors, and the management could be put into the hands of a committee appointed in any way they liked, possibly with some representatives of the British Medical Association upon the committee. He did not think it would be regarded as a charitable institution if certain people were allowed to pay a little less than the actual cost of management.

The meeting terminated with a hearty vote of thanks to Dr. Lauriston Shaw for his address.

NORTH OF ENGLAND BRANCH:

GATESHEAD DIVISION.

A MEETING was held on October 27th at the Chairman's house to consider further the position of the Division in relation to the proposed basis for a public medical service. The members were unanimous in deciding that they could not in any way countenance an endeavour to make this service one which was paid by capitation. The meeting entirely endorsed the previous decision of the Division that such a principle would be disastrous to the well-being of the community, equally so to the present standing and future progress of the profession, while the financial standing of the members would inevitably suffer. The members, who entered freely into the discussion, nearly all held contract appointments, and were able to speak from actual experience as to the evils which would inevitably arise to all concerned. The following resolution was unanimously carried:

> That the Division feels so strongly that it is contrary to the interests of both the general public and the medical profession to establish a State medical service on a basis of payment by capitation, that they decided to oppose such a step by every means in their power. And further, that if it should become the policy of the Association to further advocate such a step, they will be reluctantly compelled to separate themselves from the Association.

SOUTH-EASTERN BRANCH:

EAST KENT DIVISIONS.

A COMBINED meeting of the East Kent Divisions was held at the Royal Victoria Hospital, Folkestone, on October 19th, at 3 p.m., a report of which appeared in the SUPPLEMENT of October 29th, p. 341. The following abstract of Dr. W. S. A. Griffith's address on the treatment of uterine haemorrhage reached us too late for the corrections to be made. We give it now in the form supplied by the author.

Dr. GRIFFITH first discussed the *ordinary methods of treatment* and the causes of their not infrequent failure, laying stress on the necessity for absolute rest in a horizontal position, the use of full doses of ergot given at intervals of one or two hours, the little value of a hot douche except as a temporary measure, and the great value of a tampon of dry wool packed round the cervix.

Special Methods of Treatment.—Under this heading he discussed curetting and its little value in cases of haemorrhage due to fibroids, its chief value being in cases of thickening of the walls of the uterus, including the mucous membrane. Hysterectomy is reserved for cases of carcinoma, certain cases of fibroids, and the rare cases of haemorrhage uncontrolled by any other means.

Certain Special Cases of Uterine Haemorrhage.—Under this heading he referred particularly to the cases of menorrhagia in young girls in which he had found potassium bromide administered during the flow of greater value than the ordinary styptic drugs, every care being taken to improve the patient's general health in the intervals.

He also related instances of haemorrhage so serious in a girl of 13, and in another of 16, as to have led to the question of hysterectomy being raised by their doctors, although, fortunately, this had not to be carried out.

Dr. Griffith also discussed cases of persistent intractable haemorrhage in adults, and related a case in which the removal of one ovary after the other because of chronic slowly progressive enlargement, without cystic degeneration, each ovary in turn becoming white and fibrous, failed, and had to be followed by hysterectomy to stop the severe haemorrhage which persisted.

He concluded his address by discussing the treatment of *post-partum* haemorrhage, which he said in the presence of a doctor could generally be prevented. The essential points in the treatment were the complete emptying of the uterus and the obliteration of its cavity. The use of a uterine douche at 117° F. in addition to firm kneading was of the highest value and almost invariably effective. Ergot helped to maintain the contraction thus obtained.

SOUTHERN BRANCH:

JERSEY DIVISION.

A GENERAL meeting of this Division was held on October 20th, Dr. A. N. SYMONS, Chairman, presiding.

Confirmation of Minutes.—The minutes of the last meeting were approved.

Communications.—Certain communications were considered.

Paper.—A paper was read by the HONORARY SECRETARY upon some points of interest in connexion with a recent meeting of the Council of the Branch.

Report of Representative.—Dr. J. F. CARRUTHERS, of Guernsey, Representative of the Division in meetings of the Representative Body, then read his report—an able and comprehensive statement—in regard to the principal questions which had come before the last Annual Representative Meeting; adding certain views and observations upon the general work and policy of the Association. A brief discussion followed.

Vote of Thanks.—Upon the motion of the CHAIRMAN a cordial vote of thanks was accorded to Dr. Carruthers for his report.

SOUTH MIDLAND BRANCH.

THE autumnal meeting of this Branch was held at Bletchley on Thursday, October 20th, under the presidency of Dr. SKELDING. By the kind permission of Colonel P. B. Giles the members met at his residence, Holme Chase. There were twenty-seven members present.

New Members.—The PRESIDENT announced the election by the Branch Council of the following new members, subject to their signing the usual membership forms: Drs. Perram (Bedford), E. C. Fasnacht (Bedford), A. I. Simey (Rugby), J. W. Rollings (Leagrave, Beds.), J. M. O'Meara (Luton, Beds.), O. S. Bulloch (Bedford), J. W. Cleveland (St. Albans).

Congenital Hydronephrosis.—Dr. W. H. BULL (Stony Stratford) recorded a case of congenital hydronephrosis which had baffled all attempts at diagnosis until the affection was at last discovered on abdominal section. The history of the case extended over seven years, during which time there were many severe attacks of pain with high fever, but at no time was there the characteristic discharge of a large quantity of urine after the attack. The specimen was shown, the ureter being extremely contracted and the kidney tissue almost absent.

Gall Stones.—Mr. GIFFARD NASH (Bedford) gave an exhaustive account of gall stones, their complications, and treatment. After showing a large number of specimens, and giving their histories, he pointed out that the complications in these cases were: (1) Cancer; (2) pancreatitis, acute and chronic; (3) suppuration in gall bladder. The indications for operation were: (1) Repeated attacks of biliary colic; (2) evidence of suppuration; (3) hydrops of gall bladder; (4) obstructive jaundice. He insisted that the only treatment should be surgical, namely, cholecystotomy.

Club Disputes.—On the motion of Dr. LARKING, seconded by Dr. BRADBROOK, the following resolution was carried:

> That the Secretary be asked to write to Divisional Secretaries stating that in the opinion of this meeting the question of club disputes be dealt with at once, and that a minimum of 5s. per head be demanded in all cases.

Tea, etc.—The members were entertained by Dr. Giles after the meeting.

BRITISH MEDICAL ASSOCIATION LIBRARY.

BOOKS NEEDED TO COMPLETE SERIES.

THE Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

St. George's Hospital Gazette. Vols. 1-7.
St. Mary's Hospital Gazette. Vol. 4.
Sei-i-kwai Medical Journal. Vols. 1-11.
Semaine Médicale, prior to 1884. Titles for 1884 and 1895.
South African Medical Journal. February and April, 1895, Titles, Vols. 3 and 4.
United States Department of Agriculture, Bureau of Animal Industry. Reports 1-7 10-14.

☞ *To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Birmingham Branch: Central Division.—A general meeting of the Division will be held at the Medical Institute on Wednesday, November 23rd, at 4 p.m., to elect a Representative for the Division at Representative Meetings and to transact other business.—A. W. Nuthall, W. T. Lydall, Honorary Secretaries, Medical Institute, Edmund Street, Birmingham.

Border Counties Branch.—The autumn meeting of the Border Counties Branch of the British Medical Association will be held at the Cumberland Infirmary, Carlisle, on the afternoon of Friday, November 11th. The meeting will be of a clinical character. Agenda will be issued to members of the Branch in the beginning of the week.—George R. Livingston, Secretary.

Lancashire and Cheshire Branch.—A meeting of the Branch Organization and Finance Committee will be held at the Liverpool Medical Institution at 4.30 p.m. on Wednesday, November 9th.—F. Charles Larkin, Secretary.

Metropolitan Counties Branch: City Division.—The next meeting of the Division will be held, by invitation of Dr. C. F. Hadfield, at Manor Lodge, Upper Clapton, on Friday, November 11th, at 9.15 p.m., when cases will be shown by members of the Division. Visitors are invited.—A. G. Southcombe, Honorary Secretary.

Metropolitan Counties Branch: Lambeth Division.—A meeting of this Division will be held on Thursday, November 24th, at the Evelina Hospital, when Dr. J. Charlton Briscoe will read a paper on The Pathology of Arthritis from the Clinical Standpoint.

Metropolitan Counties Branch: Marylebone Division.—A general meeting of the Division will be held at the rooms of the Medical Society of London, Chandos Street, W., on Tuesday, November 8th, at 5 p.m. Agenda: (1) Minutes. (2) Questions. (3) Letters. (4) To receive the Report of the Representative in Representative Meetings, 1910. (5) Election of the Representative in Representative Meetings, 1911. (6) Dates of future General Meetings. (7) Discussion to be introduced by Sir Victor Horsley: The Problem of the Medical Treatment of School Children in London. It is hoped that a large attendance of members will be present at the consideration of this important question. Those intending to take part in the discussion will oblige by sending their names to the Honorary Secretary as early as possible. (8) Any other business.—N. Bishop Harman, Honorary Secretary.

Metropolitan Counties Branch: Walthamstow Division.—A meeting of this Division will be held on Thursday, November 10th, at Woodford Hospital, Woodford Green, at 4 p.m. Agenda: (1) Minutes. (2) Letters. (3) Paper, "Anaesthetics," by Dudley W. Buxton, M.D., B.S., M.R.C.P., Anaesthetist to University College Hospital. (4) Any other business. Visitors are invited.—A. Pottinger Eldred, Honorary Secretary.

Perthshire Branch.—The winter meeting and dinner will be held in the Station Hotel, Perth, on Friday, November 11th, at 3.30 p.m.; Council Meeting at 3.15 p.m. Business: (1) Read Minutes. (2) Report of Council. (3) Report of Representative Member. (4) Treasurer's Report. (5) President's Address, Some Medical Aspects of the Criminal, with special reference to the works of Dr. James Bruce Thomson, first Resident Medical Officer of the Perth General Prison. (6) Ambulance Lectures for Red Cross Society. (7) Any other business. The annual dinner, as usual, will be held after the meeting, in time for county members returning home by evening trains.—Wm. A. Taylor, Alex. Trotter, Joint Honorary Secretaries.

South Midland Branch: Northamptonshire Division.—A meeting of the Division will be held in the Board Room of the Northampton General Hospital on Tuesday, November 8th, at 2.30. The meeting will be preceded by luncheon at Franklin's Restaurant, Guildhall Road, at 1.30. Any members wishing to attend should notify the Honorary Secretary at least two days beforehand. Business: Minutes of the preceding meeting. Address: The Treatment of Congenital Phimosis, by the Chairman, Mr. J. Terry. Report of the Annual Representative Meeting by Mr. S. E. Baxter. Clinical Cases. Any other business.—Peverell S. Hichens, Honorary Secretary, 47, Sheep Street, Northampton.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty:—Surgeon G. Nunn to the *Shearwater*, additional, October 24th, and on recommissioning, undated; Surgeon R. H. McGiffin, M.B., to the *Halcyon*, additional, for the *Leda*, on recommissioning, undated; Fleet Surgeon J. H. Pead, M.B., to the *Prince George*, November 10th, and on recommissioning, November 22nd; Fleet Surgeon J. H. Beattie to the *Dryad*, for the Navigating School, November 10th; Staff Surgeon E. R. L. Thomas to the *Halcyon*, additional, for the *Skipjack*, November 1st; Staff Surgeon L. A. Baiss to the *Blanche*, on commissioning, November 10th; Surgeon W. E. Ormsby, M.B., to the *Egmont*, November 1st; Fleet Surgeon J. Mowat, M.B., and Staff Surgeon J. R. Muir, M.B., reappointed to the *Swiftsure*, on recommissioning, November 22nd.

ARMY MEDICAL SERVICE.

Royal Army Medical Corps.

The undermentioned Captains to be Majors, dated October 28th: J. E. Hodgson, M. H. G. Fell, W. B. Winkfield, J. W. Leake, J. W. H. Houghton, M.B., G. M. Goldsmith, M.B., R. H. Lloyd, J. M. Sloan, D.S.O., M.B., H. D. Packer, Lawrence Humphry, A. O. B. Wroughton, Frank Ashe. Their previous commissions are dated: Lieutenant, January 28th, 1899; Captain, January 28th, 1902. Their war records are as follow: Major Hodgson—South African war, 1899-1900, including the advance on Kimberley and the actions at Belmont, Enslin, Modder River, and Magersfontein (Queen's medal with two clasps). Major Fell—South African war, 1899-1902, including the advance on Kimberley, the actions at Belmont, Enslin, Modder River, and Magersfontein, and operations in the Orange Free State, the Transvaal, and Orange River Colony, with action at Lindley (Queen's medal with four clasps, and King's medal with two clasps). Major Winkfield—South African war, 1899-1902, including the defence of Ladysmith, and operations in Natal, the Transvaal (actions at Belfast and Lydenberg), Cape Colony, and Orange River Colony (Queen's medal with four clasps, and King's medal with two clasps) Majors Leake and Houghton—South African war, 1899-1902 including the relief of Ladysmith, the actions at Colenso, Spion Kop, Vaal Kranz, the Tugela Heights, and Pieters Hill, and operations in Natal (action at Laing's Nek), the Transvaal, Cape Colony, and Orange River Colony (Queen's medal with six clasps and King's medal with two clasps). Major Goldsmith—South African war, 1900-2, including operations in the Orange Free State (actions at Paardeberg), Poplar Grove, Karee Siding, Vet River, and Zand River, and the Transvaal (actions near Johannesburg, at Pretoria, and Diamond Hill) (Queen's medal with four clasps, and King's medal with two clasps). Major Lloyd—South African war, 1899-1902, including operations in the Transvaal and Orange River Colony (Queen's medal with four clasps, and King's medal with two clasps). Major Sloan—South African war, 1899-1902, including the defence of Ladysmith, and operations in Natal, the Transvaal, and Orange River Colony (mentioned in dispatches, appointed D.S.O., Queen's medal with four clasps). Major Packer—South African war, 1899-1902, and present in operations in Orange River Colony, the Transvaal, and Cape Colony (Queen's medal with four clasps, and King's medal with two clasps). Major Humphry—South African war, 1899-1902, with operations in the Orange Free State, Cape Colony, and Orange River Colony (Queen's medal with two clasps, and King's medal with two clasps). Major Wroughton—South African war, 1899-1902, including the relief of Ladysmith, the actions at Colenso, Vaal Kranz, the Tugela Heights, and Pieters Hill, and operations in Natal (action at Laing's Nek) and the Transvaal (Queen's medal with six clasps, and King's medal with two clasps). Major Ashe—South African war, 1899-1902, and present in operations in the Orange Free State, the Transvaal, Orange River Colony (actions at Bethlehem and Wittebergen), Cape Colony (action at Colesberg), and again in the Transvaal (Queen's medal with three clasps, and King's medal with two clasps).

Lieutenant W. W. Treves, M.B., from the Seconded List, is restored to the establishment, August 27th. He was appointed on probation, January 28th, 1910.

Major C. C. Fleming, D.S.O., M.B., retires on retired pay, October 29th. His commissions are dated: Surgeon-Lieutenant, January 30th, 1892; Surgeon-Captain, January 30th, 1895; and Major, January 30th, 1904. He served with the Nile Expedition in 1898 as Senior Medical Officer in the operations on the Upper Atbara and in the action of Gedaref (mentioned in dispatches, appointed D.S.O., and granted the British medal and the Egyptian medal with clasp). He was also in the South African war in 1899-1902, and was present in the actions of Belmont and Magersfontein and at the relief of Kimberley, and in operations in the Orange Free State and Cape Colony (Queen's medal with five clasps and King's medal with two clasps).

Captain A. O. B. Wroughton, at Canterbury, has been appointed Specialist in Dermatology at the Military Hospital, Hilsea.

COLONIAL MEDICAL SERVICES.

The following changes in the Colonial Medical Services are notified by the Colonial Office:

West African Medical Staff.—*Appointments:* P. C. Conran, M.R.C.S.Eng., L.R.C.P.Lond., Northern Nigeria; C. G Grey, L.M.S.S.A.Lond., Southern Nigeria; J. P. B. Snell, L.S.A.Lond., L.M.S.S.A.Lond., Southern Nigeria *Reappointment:* J. B. H. Dayson, M.R.C.S.Eng., L.R.C.P.Lond., formerly Senior Medical Officer, Gold Coast, has been appointed Senior Medical Officer, Sierra Leone. *Promotions:* D. Alexander, L.R.C.S., L.R.C.P.Edin., L.F.P.S.Glasg., D.P.H.Dubl., D.T.M. and H. Cantab., Medical Officer, Northern Nigeria, to be Junior Sanitary Officer, Sierra Leone; H. A. Foy, L.R.C.S., L.R.C.P.Edin., L.F.P.S.Glasg., D.P.H.Lond., D.T.M. and H. Cantab., Medical Officer, Northern Nigeria, to be Junior Sanitary Officer, Northern Nigeria. *Retirement:* J. H. Paterson, M.B., C.M.Edin., Medical Officer, Northern Nigeria, retires on pension. *Resignation:* W. S. Webb, L.S.A.Lond., L.R.C.P.Edin., L.M.S.S.A.Lond., Medical Officer, Gold Coast, resigns his appointment, receiving a gratuity.

Other Colonies and Protectorates.—C. K. Attlee, M.R.C.S.Eng., L.R.C.P.Lond., has been appointed Assistant to the Colonial Surgeon, St. Helena. A. K. Cosgrave, M.B., B.Ch., B.A.O.Dubl., has been appointed a House-Surgeon, Medical Department, Straits Settlements. F. W. Greaves, M.B., Ch.B., D.P.H.Edin., has been appointed a supernumerary Medical Officer in Trinidad. H. C. M. Green B.A., M.B., B.Ch.Oxon., has been appointed a Medical Officer in the Straits Settlements. N. P. Jewell, M.B., B.Ch., B.A.O., L.M.Dubl., has been appointed an Assistant Medical Officer in Seychelles.

Vital Statistics.

EPIDEMIC MORTALITY IN LONDON.

The accompanying diagram shows the prevalence of the principal epidemic diseases during the third quarter of the year; the fluctuations of each disease and its relative fatality compared with the average in the corresponding period of recent years can thus be readily seen.

Small-pox.—No death from this disease was registered last quarter; two cases of small-pox were admitted to the Metropolitan Asylums Hospitals during the quarter, but none remained under treatment at the end of September.

Measles.—The fatal cases of measles, which had been 136, 251, and 544 in the three preceding quarters, declined again to 351 last quarter, and were 68 in excess of the corrected average number. Among the several metropolitan boroughs this disease was proportionally most fatal in Chelsea, St. Pancras, Stoke Newington, Shoreditch, Southwark, and Bermondsey.

Scarlet Fever.—The deaths from scarlet fever, which had been 86, 73 and 50 in the three preceding quarters, were again 50 last quarter, and were 70 fewer than the corrected average number in the corresponding period of the five preceding years. The greatest proportional mortality from this disease was recorded in Paddington, Bethnal Green, Poplar, Bermondsey, Lewisham, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 1,584 and 1,358 at the end of the two preceding quarters, had risen again to 1,630 at the end of the last quarter; 2,387 new cases were admitted during the quarter, against 3,705, 2,507, and 2,547 in the three preceding quarters.

Diphtheria.—The fatal cases of diphtheria, which had been 132, 129, and 76 in the three preceding quarters, rose again last quarter to 91, but showed a decline of 47 from the corrected average number. This disease was proportionally most fatal in Hampstead Finsbury, Bethnal Green, Southwark, and Lewisham. The Metropolitan Asylums Hospitals contained 746 diphtheria patients at the end of September, against 852 and 673 at the end of the two preceding quarters; 1,152 new cases were admitted during the quarter, against 1,372, 1,169, and 1,175 in the three preceding quarter.

Whooping Cough.—The deaths from whooping-cough, which had been 596 and 452 in the two preceding quarters, further declined to 200 in the quarter under notice, and were 49 below the corrected average number in the corresponding quarter of the five preceding years. The highest death rates from this disease last quarter were recorded in Hammersmith, Fulham, St. Pancras, Stoke Newington, Holborn, and Bermondsey.

"*Fever.*"—Under this heading are included deaths from typhus, from enteric fever, and from ill-defined pyrexia. The deaths referred to these different forms of "fever," which had been 39, 38 and 30 in the preceding quarters, rose again last quarter to 52, but were slightly below the corrected average number. One death was referred to ill-defined pyrexia during the quarter, but not any to typhus fever. The greatest proportional mortality from enteric fever was recorded in St. Marylebone, the City of London, Shoreditch, Bethnal Green, and Poplar. There were 141 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last quarter, against 84 and 46 at the end of the two preceding quarters; 207 new cases were admitted during the quarter, against 145 and 166 in the two preceding quarters.

Diarrhœa.—The 664 deaths from diarrhœa in London last quarter showed a decline of 1,273 from the corrected average number in the corresponding quarter of the five preceding years. This disease was proportionally most fatal in Shoreditch, Stepney, Poplar, Southwark, Bermondsey, and Deptford.

In conclusion, it may be stated that the 1,408 deaths in London referred to the principal epidemic diseases last quarter were nearly 50 per cent below the average. The lowest death-rates from these diseases in the aggregate were recorded in the City of Westminster, Hampstead, Hackney, Wandsworth, and Woolwich; and the highest rates in Shoreditch, Bethnal Green, Poplar, Southwark, Bermondsey, and Deptford.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns 8,104 births and 4,222 deaths were registered during the week ending Saturday last, October 29th. The annual rate of mortality in these towns, which had been 13.1 and 13.0 per 1,000 in the two preceding weeks, was again 13.0 per 1,000 last week. Among the several towns the death-rates ranged from 5.1 in Leyton, 5.8 in Hornsey, 7.0 in East Ham, 7.5 in Willesden, 7.6 in Burton-on-Trent, and 7.9 in Merthyr Tydfil, to 17.9 in Liverpool and in Swansea, 18.7 in Stoke-on-Trent, 19.2 in Oldham, 21.6 in Newport (Mon.), and 23.1 in Tynemouth; the death-rate in London was 12.9. The annual rate of mortality from the principal epidemic diseases last week in the seventy-seven towns was equal to 1.3 per 1,000; in London the rate was 1.2 per 1,000, while among the seventy-six other large towns it ranged upwards to 2.9 in Portsmouth, 3.0 in Stoke-on-Trent, 3.1 in Preston, 3.2 in Brighton, and 3.7 in Northampton and in Tynemouth. Measles caused a death-rate of 1.5 in Stockport, 1.6 in Brighton, and 2.8 in Tynemouth; diphtheria of 1.2 in Norwich; whooping-cough of 1.6 in Northampton; and diarrhœa of 2.0 in Merthyr Tydfil and 2.1 in Warrington. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,745 and 1,792 at the end of the two preceding weeks, further rose to 1,847 at the end of the week under notice; 221 new cases were admitted during the week, against 234 and 231 in the two preceding weeks.

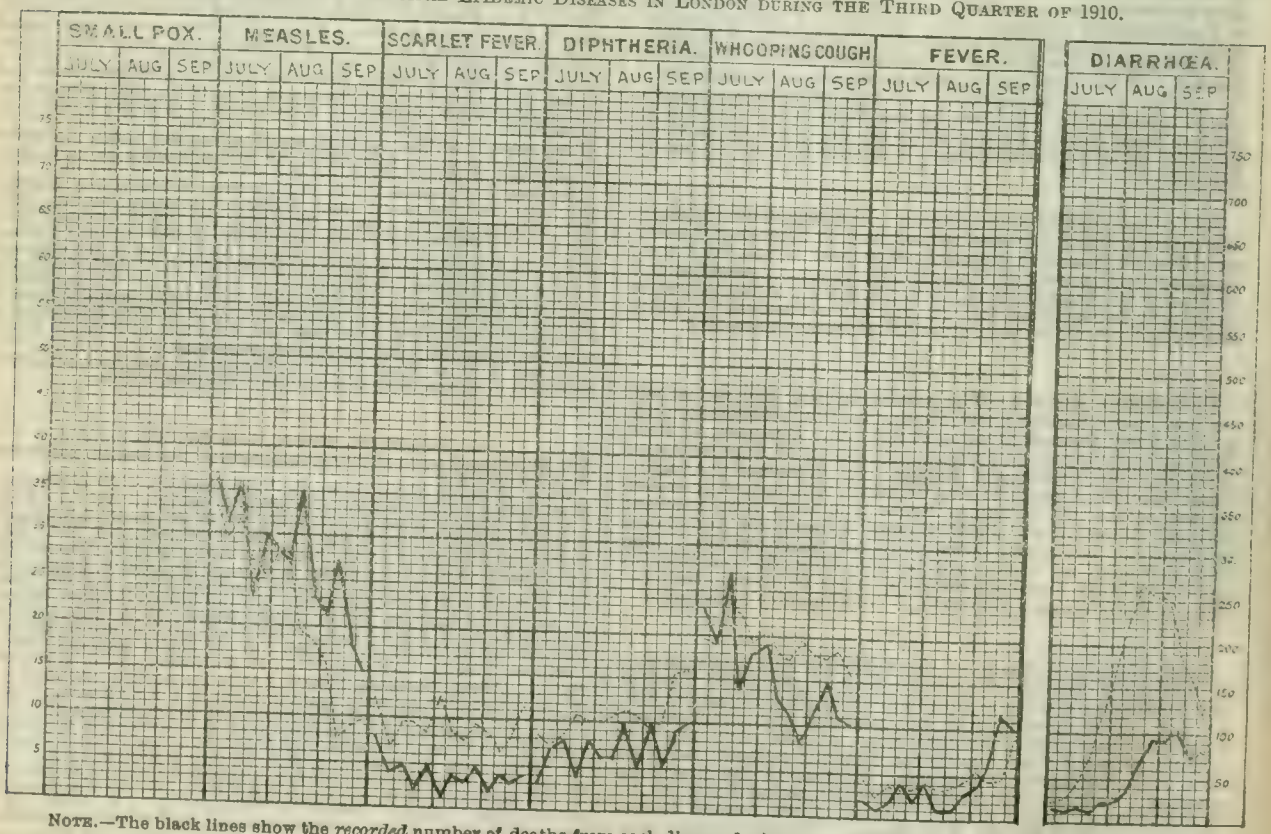
HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, October 29th, 839 births and 460 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 12.9 and 13.0 per 1,000 in the two preceding weeks, declined to 12.7 per 1,000 last week, and was 0.3 below the mean rate during the same period in the seventy-seven large English towns. The rates in the several Scottish towns ranged from 8.1 in Aberdeen and 11.1 in Paisley to 14.2 in Greenock and 15.4 in Perth. The death-rate from the principal infectious diseases averaged 1.3 per 1,000, the highest rates being recorded in Greenock and in Perth. The 220 deaths from all causes registered in Glasgow last week included 2 which were referred to scarlet fever, 3 to diphtheria, 4 to whooping-cough, 1 to enteric fever, and 11 to diarrhœa. Four deaths from diarrhœa were recorded in Edinburgh, 4 in Dundee, and 3 in Aberdeen; 2 deaths from diphtheria were recorded in Paisley, and 2 from scarlet fever in Perth.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 29th, 569 births and 372 deaths were registered in the twenty-two principal urban districts of Ireland, as against 619 births and 384 deaths in the preceding week.

Deaths from the Principal Epidemic Diseases in London during the Third Quarter of 1910.



Note.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths during the corresponding weeks of the five preceding years, 1905-9.

The annual death-rate in these districts, which had been 15.9, 16.9, and 17 4 per 1,000 in the three preceding weeks, fell to 16 8 per 1,000 in the week under notice, this figure being 3 8 per 1,000 higher than the mean annual death rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 16 6 and 15 3 respectively, those in other districts ranging from 8.2 in Drogheda and 8.9 in Lurgan to 32.7 in Wexford and 35.9 in Clonmel, while Cork stood at 17.1, Londonderry at 21 6, Limerick at 21 9, and Waterford at 13 6. The zymotic death-rate in the twenty-two districts averaged 1.5 per 1,000, as against 1 8 per 1,000 in the preceding week.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.—(1) Male House-Surgeon. Honorarium, £100. (2) Honorary Ophthalmic and Aural Surgeon.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Honorarium at the rate of 52 guineas per annum.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House-Surgeon. Salary to commence at £80 per annum, with additional £5.

BOSCOMBE: ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—Medical Officer to Out-patients.

BRISTOL ROYAL INFIRMARY.—Honorary Dental Anaesthetist.

CANCER HOSPITAL, Fulham Road, S.W.—Surgeon.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House-Physician. Salary, £70 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £80 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon (male). Salary at the rate of £50 per annum.

DUMFRIES: CRICHTON ROYAL INSTITUTION.—Two Crichton Research Fellowships of £250 a year

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon (male). Salary, £50 per annum.

GLASGOW UNIVERSITY.—(1) Examiner in Physiology for Degrees in Science and Medicine. (2) Examiner in Systematic and Clinical Surgery, and Examiner in Systematic and Clinical Medicine for Degrees in Medicine.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (male). Salary, £100 per annum.

HASTINGS: HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (male). Salary at the rate of £50 per annum.

INFANTS' HOSPITAL, Vincent Square, S.W.—Physicians' Assistant. Salary, £80 per annum.

ITALIAN HOSPITAL, Queen Square, W.C.—House-Surgeon. Salary at the rate of £60 per annum.

KING'S COLLEGE HOSPITAL, W.C.—Senior Surgical Registrar and Tutor.

LIVERPOOL EDUCATION COMMITTEE.—School Medical Officer. Salary, £250 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House-Physician. Salary, £60 per annum.

LONDON HOSPITAL, E.—Medical Officer in Charge of Electrical and Physical Treatment Department.

MAIDSTONE: KENT COUNTY OPHTHALMIC HOSPITAL.—House-Surgeon (male). Salary, £100 per annum.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £80 per annum.

MANCHESTER ROYAL INFIRMARY.—Assistant Medical Officer to the Convalescent Hospital, Cheadle. Salary at the rate of £80 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—(1) House-Physician. Salary, £75 per annum. (2) Honorary Dental Surgeon.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Second Junior Obstetric Officer for Maternity Department.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £82 per annum.

SYDNEY UNIVERSITY.—Demonstrator of Physiology. Salary, £350 per annum, rising to £500.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Surgeon for six months. Salary, £40.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Physician for Diseases of Women. (2) Assistant Physician for Diseases of Women. (3) Anaesthetist. (4) House-Physician for six months.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

WIGAN COUNTY BOROUGH.—Medical Officer of Health. Salary, £500 per annum.

WREXHAM INFIRMARY.—Resident Medical Officer. Salary, £100 per annum.

APPOINTMENTS.

BRYAN, Frank, B.A., M.B., B.C., Medical Officer and Public Vaccinator of the Selston and Annesley District of the Basford Union.

COOMBS, P. O., M.R.C.S.Eng., L.R.C.P.Lond., Senior Assistant Medical Officer of the Surrey County Asylum at Brookwood.

DAWNAY, A. H. Payan, F.R.C.S.Eng., Honorary Ophthalmic Surgeon to the Schools of the London Society for Teaching and Training the Blind.

EMSLIE, Bell, M.B., Ch.B., Third Assistant Medical Officer, Stirling District Asylum, Larbert.

GREEN, T. A., M.D., F.R.C.S.Edin., School Medical Officer to the Bristol Education Authority.

HAWKSLEY, W. L., M.B., Ch.B., D.P.H.Liverp., Assistant to the Medical Officer of Health for the City of Liverpool.

KENNEDY, M. J. C. L.R.C.P. and S.Irel., Certifying Factory Surgeon for the Portumna District, co. Galway.

LANDSBOROUGH, J., M.B., C.M.Edin., Certifying Factory Surgeon for the Tighnabruaich District, co. Argyll.

LEGG, T. P., M.B., M.S.Lond., F.R.C.S.Eng., Assistant Surgeon to King's College Hospital, W.C.

LISTER, T. E., M.B., Ch.B.Leeds, District Medical Officer of the Wakefield Union.

MACASKILL, D. C., M.B., Ch.B., Second Assistant Medical Officer, Stirling District Asylum, Larbert.

MADDEN, T. J., L.R.C.P. and S.Irel., Certifying Factory Surgeon for the Kiltamagh District, co. Mayo.

MATHEWS, P., M.D., B.S.Edin., Certifying Factory Surgeon for the Shrewsbury District, co. Salop.

O'BYRNE, J. P., M.B., M.Ch., R.U.I., Certifying Factory Surgeon for the Kilmacthomas District, co. Waterford.

RAMSBOTTOM, J., M.B., Ch.B., Resident Assistant Medical Officer of the Prestwich Union Infirmary.

SUTHERLAND, Halliday Gibson, M.D.Edin., Medical Officer to the St. Marylebone Anti-Tuberculosis Dispensary, London, N.W.

MANCHESTER ROYAL INFIRMARY.—The following appointments have been made:

Assistant Surgical Officer: Howard Buck, M.B., Ch.B.Vict., F.R.C.S.Eng.

Accident Room House-Surgeon: A. J. Brown, M.R.C.S., L.R.C.P.

Assistant Medical Officer: A. Ramsbottom, M.D.Vict. (re-appointed).

Assistant Surgical Officer: H. H. Rayner, F.R.C.S.Eng.

Resident Surgical Officer: W. H. Hey, F.R.C.S.Eng. (re-appointed).

Medical Officer at the Central Branch: Cecil Hibbert, M.B., Ch.B.Vict.

Medical Officer at the Central Branch: J. W. Bride, M.B., Ch.B.Vict., M.B., B.S.Lond.

Surgical Registrar: R. Ollerenshaw, F.R.C.S.Eng.

Surgical Tutor: W. R. Douglas, F.R.C.S.Eng. (reappointed).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

FITZWILLIAMS.—On October 9th, at Rustington, the wife of Duncan C. L. Fitzwilliams, Ch.M., F.R.C.S., of 64, Brook Street, Grosvenor Square, of a daughter.

JEANS.—On October 22nd, at 30, Rodney Street, Liverpool, the wife of Frank Jeans, M.A., M.B.Cantab., F.R.C.S.Eng., of a daughter.

STUMBLES.—At Amble House, Amble, Northumberland, on October 19th, to Dr. and Mrs. Henry Stumbles, a son.

MARRIAGES.

ELDER—STAMM.—On October 19th, at Kensington, Armin Gascoigne Vavasour Elder, M.R.C.S., L.R.C.P., to Léonie Marie Gallot Stamm.

NUNAN—LINEHAN.—On October 13th, at Whitechurch, Cork, by Rev. J. M. Coghlan, Mitchelstown (uncle to bridegroom), Joseph Nunan, M.B., eldest son of the late Thomas Nunan, Kilnockin, Kanturk, to Mary, second daughter of Thomas Linehan, Whitechurch, Cork.

DEATH.

HUNTER.—On November 1st, at the Firs, Finchampstead, Berks, William Lovell Hunter, M.D., formerly of Pudsey, Yorks.

PUBLISHERS' ANNOUNCEMENTS.

AMONG Mr. H. K. Lewis's announcements are a new work on medical diagnosis, by Dr. Mitchell Stevens, of Cardiff, containing more than 175 illustrations, several of them coloured; a new booklet by Dr. Mildred Burgess on *The Care of Infants and Young Children in Health*. The same firm has in the press a fifth edition of Sir Douglas Powell's *Diseases of the Lungs*, in the preparation of which Dr. P. Horton-Smith Hartley is collaborating. Two other standard works of which new editions are just ready, are *Hygiene and Public Health*, by Louis C. Parkes and Professor H. R. Kenwood; and *Public Health Laboratory Work*, by Professor Kenwood. Dr. W. H. Savage again contributes the section on "Bacteriology" to this edition. A second edition of Dr. Stitt's popular little book on *Practical Bacteriology, Animal Parasitology, and Blood-work*; and a fourth of the now well known *Landmarks and Surface Markings of the Human Body*, by Mr. Louis B. Rawling, F.R.C.S., are also nearly ready. Amongst recent publications may be mentioned a reprint of the second edition of Professor William Osler's *Aequanimitas, with other Essays and Addresses to Students, Nurses, and Medical Practitioners*. This volume contains the famous essay, entitled "The Fixed Period," and in the preface Dr. Osler replies briefly to the many critics of that utterance. Other recent issues include a second edition of Mr. Arthur Cooper's *Sexual Disabilities of Man and their Treatment*; the fourteenth edition of *The Extra Pharmacopoeia* of Martindale and Westcott, with an important supplement by Dr. Harrison Martindale: "Organic Analysis Chart." Issued about the

middle of August, so popular has this edition proved in its enlarged form that it has been necessary already to reprint from the standing type.

Messrs. Smith, Elder, and Co. announce a volume, entitled *The Child's Inheritance: Its Scientific and Imaginative Meaning*, by Dr. Greville Macdonald. The book is the outcome of an introductory address read at the annual conference of the Parents' Educational Union, held in Clifton in June, 1908.

DIARY FOR THE WEEK.

MONDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5 p.m.—Museum Demonstration by Mr. Shattock: Specimens illustrating Injuries and Diseases of Arteries.

TUESDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—Second Fitz Patrick Lecture by Sir T. Clifford Allbutt, K.C.B.: Greek Medicine in Rome.

ROYAL SOCIETY OF MEDICINE:
SURGICAL SECTION, 15, Cavendish Square, W., 5.30 p.m.—Debate on The Treatment of Fractures in the Neighbourhood of Joints, to be opened by Mr. Robert Jones (Liverpool).

WEDNESDAY.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor Road, S.W., 5.30 p.m.—Papers:—(1) Major C. E. Pollock: Malingering. (2) Major S. L. Cummins: Guinea-worm in Egypt.

THURSDAY.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos Street, W., 8 p.m.—Clinical Meeting.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—Horace Dobell Lecture by Dr. W. Bulloch: The Problem of Pulmonary Tuberculosis considered from the Standpoint of Infection.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
CLINICAL SECTION, 15, Cavendish Square, W., 8 p.m.—Cases and Specimens.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Lectures: Tuesday, 3.45 p.m., Nose; Friday, 3.45 p.m., Labyrinth.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Wednesday, 4 p.m., Laboratory Diagnostic Methods.

LONDON HOSPITAL MEDICAL COLLEGE, Tuesday, 1 p.m.—The Diagnostic Aspect of the Pain in Kidney Disease.

LONDON SCHOOL OF CLINICAL MEDICINE, Seamen's Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday; Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m., Thursday. Special Lectures: Tuesday, 4.30 p.m., Anaesthetics. Wednesday, 3.30 p.m., Ulceration of the Cornea. Thursday, 4.30 p.m., Infantile Scurvy.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m. The X-Ray Examination of the Stomach by Means of Bismuth Meals.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week, at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Medical; Friday, Eye. Lectures, at 5.15 p.m. each day, will be given as follow: Monday, Traumatic Neuroses; Tuesday, Cancer of the Rectum; Wednesday, Cancer of the Rectum; Thursday, Cancer of the Rectum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Specimens illustrating the Pathology of Paraplegia; 5 p.m., Clinical Anatomy of the Nervous System. Wednesday, 5 p.m., Surgery of the Nervous System. Thursday, 5 p.m., Clinical Examination of Cases of Diseases of the Nervous System. Friday, 3.30 p.m., Cervical Ribs.

NORTH EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient: Nose, Throat, and Ear. Tuesday, 10 a.m., Medical Out-patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In patient; 4.30 p.m., Lecture: Acute Abdominal Conditions. Wednesday, 2.30 p.m., Medical Out-patient Skin and Eye Clinics; X Rays. Thursday, 2.30 p.m., Gynaecological Operations; Clinics: Medical Out-patient; Surgical Out-patient; 3 p.m., Medical In-patient; 4.30 p.m., Lecture: Vicarious Menstruation. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Eye; 3 p.m., Medical In-patient.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Daily arrangements: Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. Monday, Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Demonstration of Minor Operations, 11.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. daily.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
NOVEMBER.	
6 Sunday ..	
7 MONDAY ..	
8 TUESDAY ..	LONDON: Standing Ethical Subcommittee, 2 p.m. NORTHAMPTONSHIRE DIVISION, *South Midland Branch*, Board Room, Northampton General Hospital, 2.30 p.m.; Luncheon, Franklin's Restaurant, Guildhall Road, 1.30 p.m.
9 WEDNESDAY	LONDON: Special Poor Law Drafting Subcommittee, 2 p.m. LANCASHIRE AND CHESHIRE BRANCH, Meeting of Branch Organization and Finance Committee, Liverpool Medical Institution, 4.30 p.m.
10 THURSDAY ..	WALTHAMSTOW DIVISION, *Metropolitan Counties Branch*, Woodford Hospital, Woodford Green, 4 p.m.
11 FRIDAY ..	BORDER COUNTIES BRANCH, Autumn Meeting, Cumberland Infirmary, Carlisle. CITY DIVISION, *Metropolitan Counties Branch*, Manor Lodge, Upper Clapton, 9.15 p.m.
12 SATURDAY .	
13 Sunday ..	
14 MONDAY ..	

Date.	Meetings to be Held.
NOVEMBER *(continued)*.	
15 TUESDAY ..	LONDON: Referendum Subcommittee LONDON: Capitation Grants Subcommittee.
16 WEDNESDAY	RICHMOND DIVISION, *Metropolitan Counties Branch*, Medico-Political Meeting, Royal Hospital, Richmond, 8.30 p.m.
17 THURSDAY ..	BIRMINGHAM BRANCH, Medical Institute, Edmund Street, 3.30 p.m.
18 FRIDAY ..	
19 SATURDAY ..	
20 Sunday ..	
21 MONDAY ..	
22 TUESDAY ..	
23 WEDNESDAY	LONDON: Regulations and Standing Orders Subcommittee. LONDON: Organization of Medical Students Subcommittee. CENTRAL DIVISION, *Birmingham Branch*, Medical Institute, 4 p.m.
24 THURSDAY ..	LAMBETH DIVISION, *Metropolitan Counties Branch*, Evelina Hospital. WALTHAMSTOW DIVISION, *Metropolitan Counties Branch*, Whipps Cross Infirmary, Leytonstone, 4 p.m.
25 FRIDAY ..	BIRMINGHAM BRANCH, Pathological and Clinical Section, Medical Institute, Edmund Street, 8 p.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 12TH, 1910.

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Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.]

BIRMINGHAM BRANCH.

Annual Dinner.

THE annual dinner was held on October 20th at the Grand Hotel, Birmingham. Professor GILBERT BARLING, the President of the Branch, presided, and there were seventy members and visitors present. The visitors included Mr. Neville Chamberlain, Canon Carnegie, Dr. Edwin Rayner, Dr. Macdonald, Mr. Isaac Bradley, Mr. Hiley, and Mr. Whitworth Wallis.

The toast of "The King" was proposed by the PRESIDENT, and then Mr. NEVILLE CHAMBERLAIN proposed the toast of "The British Medical Association." After paying a tribute to the work of the British Medical Association, particularly in the encouragement of research, the speaker alluded to the founding of the London School of Tropical Medicine, and the remarkable discoveries which had followed it. Their investigations had shown that the study of tropical diseases, and the methods by which they were propagated, were capable of throwing open to the white man countries which formerly it was impossible to traverse without imminent risk to life, and of playing a part in the development of these territories comparable with that of great irrigation works and railways. Unfortunately, owing to the want of imagination and initiative on the part of British Governments, it had been left to other nations to put into practice the lessons taught by British scientists. Turning to problems nearer home, the speaker remarked that the ultimate outcome of the reports of the Poor Law Commission, whatever it might be, was bound seriously to affect the medical profession. All were agreed that the problems of poverty and sickness were closely bound up together. Attractive as was the prospect of sweeping away a system full of defects and imperfections, he had found in his business experience that the process was always costly, and that the results did not always warrant the change. He was convinced that sufficient use had not hitherto been made of the stores of skill and knowledge to be found among private medical practitioners, and he desired to see them take a larger part than they had hitherto done in the medical affairs of the State. Alluding to the Provident Dispensary lately started in Birmingham, he expressed his belief that this system should be the basis of all medical relief, and that the private practitioner should be freed as much as possible from the competition of free hospitals, dispensaries, and public institutions, and allowed to carry out the work for which he was best fitted. Progress towards this ideal must necessarily be slow, for they could not expect to change all at once habits which had become engrained in the people for generations past. But he was confident that by patience and cordial co-operation between medical men and laymen, the goal would in time be reached, and that those who had worked for it would be judged to have deserved well of their fellow-citizens.

Professor BARLING, in responding to the toast, thanked Mr. Neville Chamberlain for the generous way in which he had proposed the toast, and for the interest he took in matters which closely concern the Association, especially in the prevention of hospital abuse, in the provision of a sound provident dispensary scheme, and in the treatment of children who were found by the medical officers of the Education Committee to be defective in health. He pointed out that to remedy the evils so generally complained of by the medical profession, it was little good appealing to the General Medical Council or the examining bodies, who had really no power to effect the improvements desired; these must come by the united efforts of the individual members of the profession, and no other body offered such possibilites of obtaining reforms as the British Medical Association. For this reason he begged the support and co operation of all the members of the Association, so that the power which the Association offered should be made as effective as possible. Professor Barling referred to the approaching meeting of the British Medical Association in Birmingham, and asked for the loyal co-operation not only of the Birmingham Branch but of the members of the adjacent branches, who could do so much to promote the success of the meeting. He also thanked the members of the Birmingham Branch and those from a distance, especially the latter, for their numerous attendance at a preliminary meeting recently held to initiate the committees who would carry out the details of the meeting in 1911.

Dr. EDWIN RAYNER proposed "The City of Birmingham," which was responded to by the TOWN CLERK, Mr. Hiley.

Dr. KAUFFMANN proposed "The Visitors," and it was responded to by CANON CARNEGIE.

Dr. JAMES NEAL proposed "The Chairman," and Professor BARLING responded.

BORDER COUNTIES BRANCH:

SCOTTISH DIVISION.

THE autumn meeting of this Division was held in the Maxwell Arms Hotel, Dalbeattie, on Friday, October 7th. The PRESIDENT (Dr. Anderson of Dalbeattie) was in the chair.

Confirmation of Minutes.—The minutes of the previous meetings were read and approved.

Apologies for Non-attendance.—Apologies for absence were intimated from several members.

Visit to the Dalbeattie Granite Company's Works.—The PRESIDENT intimated that he had arranged with the manager of ths Dalbeattie Granite Company to have the members of the Division shown over those works. There was a two-fold object in asking the members to make this visit: The first was for the ordinary interest and pleasure that would be received from watching the granite being shaped by powerful machinery into great blocks for the building of fortifications or the facing of breakwaters, or by delicate tools into the most beautiful carved work for monuments or for the adornment of public buildings; all these various manipulations were performed in an incredibly short time by machinery moved by compressed air. The second object of the visit was a more purely professional one. Many of the workers who handled these pneumatic tools begin to suffer after a certain lapse of time from a peculiar form of nervous breakdown. The visitors were given an opportunity of handling these tools, and they very readily realized how constant exposure to the vibrations—some of the finer punches vibrated many times per second—must make a tremendous demand on the nerve centres that control the special muscles in use, and how that nerve power was liable to become exhausted.

Bright's Disease.—On returning from the visit to the granite works, Dr. ANDERSON read a paper on "Bright's Disease," with special reference to a particular case which had come under his care. This patient—a boy aged about 12—had all the symptoms of acute Bright's disease, and the illness lasted from December, 1909, till May, 1910. No cause could be assigned. The amount of urine varied during the course of the illness, but it was always very scanty. For one continued period of three weeks it was never more than 3 oz. in the twenty-four hours, and was as low as 2 oz. The specific gravity kept about 1040, and on boiling it became literally a solid mass. There was occasionally some blood, and always a great amount of deposit. Symptoms of uraemic poisoning were marked in the later periods of the illness. Oedema was always very bad. The purpose Dr. Anderson had in bringing this case before the Division was to mention for the members' consideration the treatment which ultimately resulted in a complete cure. The usual remedies—rest, warmth, diet, diuretics—were all exhibited without any benefit resulting. The surgeon's aid was called in, and the kidneys were decapsulated. Both were found to be normal in size. After the operation there was a temporary improvement, but in less than a fortnight the condition was as bad as ever. In April the administration of pituitary gland extract was begun, and from that moment the condition improved. Until this drug was used the abdomen had to be periodically aspirated to relieve the tension caused by the oedema. A few days after this drug had been used the urine had increased from 4 oz. to 54 oz. in the twenty-four hours, and had since continued to average about 40 oz. The patient was now perfectly well. All the members present discussed this very interesting case. Dr. LIVINGSTONE, who had been in constant touch with the case during the whole course of the illness, said that the outstanding points of interest were the absence of any assignable cause, and the striking effect from the use of pituitary gland extract.

DORSET AND WEST HANTS BRANCH.

THE autumn meeting of this Branch was held in the Grand Hotel, Weymouth, on Wednesday, October 19th, at 3 30 p.m., the PRESIDENT (Dr. T. Fred. Gardner) in the chair. Among those present were: Dr. W Johnson Smyth (Vice President), Dr. G. G. Morrice (Vice-President), Mr. Charles J Marsh (immediate Past-President), Dr. James Davison (Honorary Secretary), Dr. Frank Fowler, Dr. Rorie, Dr. Marriner, Dr. Rutter, Dr. Batterbury, Dr. Miller, Dr. Manning, Dr. Gowering, Dr. Whittingdale, Dr. Howard, Dr. Eleanor Bond, Dr. MacDonald, Dr. Ramsay, Dr. Hyla Greves, Mr. De Castro, Mr. Decimus Curme, Mr. Bushman, Mr. Barclay, Mr. Penny-Snook, Mr. Whitaker, Mr. Dawson, Mr. Edwards, Mr. Belben, Mr. Hankins, Mr. Dalton, Mr. Good, Mr. Midelton, Mr. T. MacCarthy, Mr. Williamson Daniell, and Mr. H. H. Du Boulay.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Apologies for Non-attendance.—Apologies for non-attendance were read from Mr. William Burrough Cosens, Dr. J. Macpherson Lawrie, D.L., J.P.; Dr. John Moorhead, Mr. Unwin, and Mr. C. H. Watts Parkinson.

Communication from Medical Secretary.—A communication from Mr. J. Smith Whitaker in reference to an item of apparently irregular expenditure in the Branch accounts was read.

Research Defence Society.—A letter was read from Mr. Stephen Paget drawing the attention of the Branch to the Research Defence Society, and suggesting that the Branch should appoint one of its members to act as corresponding member, who would thus be in constant official communication with the London committee of that society. On the motion of Dr. DAVISON, seconded by Dr. MACDONALD, Mr. C. B. M. ALDRIDGE was appointed to that office.

New Members.—The following gentlemen were elected members of the British Medical Association: Joseph Wilkinson Warburton, M.D. Brux., M.R.C.S. Eng., L.S.A.Lond., of Satara, Chester Road, Bournemouth; Bernard Septimus Hollick, M.R.C.S.Eng., L.R.C.P.Lond., of Sturminster Newton, Dorset; Thomas Gillespie Bell, M.D., M Ch. Roy. Univ. Irel., of 38, Poole Road, Branksome, Bournemouth; Julius Benedict Simpson, M.R.C.S.Eng., L.R.C.P.Lond., of 1, Greenhill, Weymouth; William Hatch Cundell, M.R.C.S.Eng., L.S.A.Lond., of the Haven, Castlemain Road, Bournemouth.

Election of Officers.—The PRESIDENT proposed, Dr. MACDONALD seconded, and it was carried unanimously, that John Flasby Lawrence Whittingdale, B.A., M.B. Cantab., Senior Surgeon, Yeatman Hospital, Sherborne, be appointed President for 1911. Dr. Frank Fowler, of Bournemouth, and Mr. Thomas MacCarthy, of Sherborne, were appointed Vice-Presidents. Dr. James Davison, of Bournemouth, was re-elected Honorary Secretary and Treasurer.

Next Meeting.—It was decided to hold the next meeting of the Branch in Sherborne.

Discussion.—Mr. G. G. MORRICE, Vice President, introduced a discussion on special uses of old-fashioned remedies. The PRESIDENT, Dr. WHITTINGDALE, Dr. HYLA GREVES, Mr. MIDELTON, Dr. GOWERING, Mr. MARSH, and Dr. MANNING joined in the discussion that followed Dr. Morrice's valuable and instructive communication. Dr. MORRICE replied.

Communications.—Dr. RAMSAY related a case of double fracture, and showed skiagrams before and after operation. The PRESIDENT, Mr. BELBEN, Mr. DU BOULAY, and Mr. MIDELTON, spoke on Dr. Ramsay's case. Dr. RAMSAY replied. Dr. GOWERING read notes of a very interesting and most unusual case of molluscum fibrosum. The PRESIDENT at the end of his remarks thanked Dr. Gowering for bringing before the meeting that day a case so unique and instructive.

Vote of Thanks.—On the motion of the PRESIDENT a very cordial vote of thanks was awarded to the members of the medical profession in Weymouth who very kindly and most hospitably entertained the members of the Branch to tea at the termination of the meeting.

Luncheon.—Before the meeting the members of the Branch and their friends luncheoned together in the spacious dining room of the Grand Hotel.

LANCASHIRE AND CHESHIRE BRANCH:

MANCHESTER (SOUTH) DIVISION.

A GENERAL meeting of this Division was held at Dr. Hopkinson's on Wednesday, October 26th, at 3 30 p.m. Dr. HOPKINSON presided. There were also present: Drs. George Ashton, J. Wood Boyd, E. Vipont Brown, A. E. Cotterill, J. H. Grant Davie, H J. Dickey, Percy McDougall, H E. Edlin, F. A Godson, Thomas A. Goodfellow, Arnold Gregory, R. Heathcote, E. Crichton

Hood, A. M. Mitchell, T. Morton, Russen Rhodes, W. Sawers Scott. Percy Stocks, and J. Simcock.

Apologies for Non attendance.—Dr. Mumford wrote regretting his inability to be present.

Confirmation of Minutes.—The minutes of the last general meeting (July 15th) were read and confirmed.

Letter of Sympathy.—Dr. Hopkinson moved from the Chair that an expression of sympathy be sent to Dr. Conway, Longsight, in his recent bereavement caused by the loss of his son at Epsom College.

Letter from Altrincham Division.—A letter from the Secretary of the Altrincham Division was read; this contained a resolution passed by that Division on October 6th, 1910, in reference to State sickness and invalidity insurance. After some discussion Dr. Cotterill proposed, and Dr. McDougall seconded, the following resolution, which was carried *nemine contradicente*:

> That the consideration of the matters referred to in the letter of the Altrincham Division of 11th October be deferred to a later date.

The Secretary was instructed to thank the Altrincham Division for their letter, and to forward the above resolution.

Deaths after Operation.—A letter from the Medical Secretary (Mr. Smith Whitaker) was read, stating that "he was unaware of any instructions having been recently issued" to registrars by the Registrar General on the subject of deaths after operations. The further discussion of this subject was referred to the Manchester and Salford Joint Committee.

Grouping of Divisions for Representation in Meetings of Representative Body, 1911-12.—A letter from the Organization Committee was read in reference to the grouping of Divisions. No objection was raised to the grouping at present adopted.

Letter from Manchester and Salford Joint Committee.—A letter from the Manchester and Salford Joint Committee, in reference to the conditions of appointment of medical officers to clubs, was read and discussed.

Paper.—Mr. A. H. Burgess, F.R.C.S., then read a most interesting and instructive paper on Abdominal Crises in General Practice.

Vote of Thanks.—A hearty vote of thanks was awarded to Mr. Burgess, who suitably replied.

METROPOLITAN COUNTIES BRANCH:

Chelsea Division.

A meeting of the medical profession in Fulham was held at the Fulham Town Hall on November 1st, Dr. James Young in the chair.

Contract Practice in Fulham.—The object of the meeting was to discuss the proposed further extension of contract practice in Fulham (with special reference to the P.S.A. Sick Club), and the attitude the profession ought to adopt towards it. It was proposed by Dr. Butler and seconded by Dr. Millar:

> That the local Division of the British Medical Association in Fulham object to the further extension of the P.S.A. Sick Club, and hope no medical man will take an appointment under that body.

This was carried unanimously. The names of those present are appended: A. F. Millar, A. H. Frere, John Fletcher, A. M. R. Sinclair, J. C. Jackson, J. Quirke, R. T. Bedford, Morris Williams, S. W. Arundell, Guy Coltart, D. A. Simon, D. O'Sullivan, J. R. Gallard; and from Chelsea: W. S. Lee and J. Orr. Dr. Simon moved and Dr. Fletcher seconded:

> That a copy of this resolution be sent to all the medical practitioners in Chelsea and Fulham.

This was carried *nemine contradicente*. Dr. Fletcher moved and Dr. Butler seconded:

> That a Warning Notice *re* above-mentioned society be inserted in the Journal.

Carried *nemine contradicente*.

Greenwich Division.

An ordinary meeting of this Division was held in St. Mark's Presbyterian Church Room, on Thursday, October 27th, at 4.30 p.m., Dr. H. C. Burton in the chair. There were present twenty members and ten visitors. (Invitations to attend had been issued to all members of the profession within the Divisional area.)

Confirmation of Minutes.—The minutes of the inaugural meeting were read, confirmed, and signed.

Apologies for Non-attendance.—Apologies for non-attendance were read from Dr. Annis and Dr. Stokes.

Elections to Committees.—Dr. G. T. Birkett was elected to the vacancy on the Executive Committee. Drs. C. G. Gooding and F. S. Toogood were elected to represent the Division on the Contract Practice Committee.

Notice of Motion.—Dr. Keay gave notice that, at the next meeting, he would move the following resolution:

> That a committee be appointed to take into consideration the relationship of the general practitioners in the Division to the hospitals, and report.

Address by Medical Secretary.—The Medical Secretary of the Association gave a most interesting address on the work of the British Medical Association, with special reference to the arrangements for the treatment of school children found to be defective on inspection. Several members joined in the discussion which followed, and Mr. Whitaker was accorded a hearty vote of thanks.

This concluded the business of the meeting.

Lambeth Division.

A meeting of this Division was held at Guy's Hospital on Thursday, October 27th. Dr. W. H. B. Stoddart, Chairman of the Division, presided, and thirty-eight other members and visitors were present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Treatment of School Children.—The Chairman reported the progress that had been made in this matter since the last meeting.

Paper.—Mr. W. Mayhew Mollison, aural surgeon to Guy's Hospital, read a paper on "Some Common Causes of Discharge from the Ears, with the Treatment."

Cases.—Dr. Charles Cameron demonstrated some cases from the medical wards.

Votes of Thanks.—Votes of thanks were then passed to Mr. Mollison for his paper, and the authorities of the hospital for their hospitality.

St. Pancras and Islington Division.

A general meeting was held at University College Hospital Medical School on October 27th, at 4 p.m. Dr. W. Griffith, Chairman of the Division, presided, and there were present twenty members and four visitors.

Election of Representative at Representative Meetings for 1910–11.—Dr. Walter Smith was unanimously elected.

Election of Additional Representative on Branch Council.—Dr. Basil G. Morison was unanimously elected.

Public Medical Service.—Dr. R. M. Beaton, J.P., Secretary of the Saint Pancras Organizing Committee, then presented an interim report. He said that rules were being formed, that he had personally interviewed the education authority, and that application for the treatment of school children was about to be made. He was sanguine of success.

Arterial Hypertension.—Dr. H. Batty Shaw, Physician to University College Hospital, then gave an address on the "Treatment of Arterial Hypertension, Based on the Theoretical Consideration of its Cause." Dr. Shaw traced the discovery of hypertension to the Guy's School, and showed how its exact observation was due to the Italians. He critically discussed the various theories as to its causation, and selected the view of cytolysins from the kidney as being the most scientific. He then laid down indications for treatment. A hearty vote of thanks was accorded the lecturer, who responded.

Tottenham Division.

The first ordinary meeting of the Division for the session was held on October 28 h at the Prince of Wales's Hospital, Tottenham, Dr. A. Greenwood (Hornsey) in the chair. There were present twenty-three members and four visitors.

Confirmation of Minutes.— The minutes of the extraordinary meeting of June 10th were read and confirmed.

Membership.—The election of two new members and one removal into the Division were reported, making 136 members.

Wards.—The names of the Committeemen of the five "wards" of the Division were announced.

Representative's Report.—Dr. J. R. Fuller gave a *précis* of the proceedings at the Annual Meeting in July. Under the subject of the Association's balance-sheet, while expressing satisfaction at most of the figures, he commented strongly on the enormous sum spent on printing. In his opinion the duplication and reduplication of many of the statements and reports issued to Members of Council and Representative Meetings was quite unnecessary, and considerable expense might be saved by the limitation of the practice. The report was discussed and approved, Dr. Fuller being thanked for it.

Sickness and Invalidity Insurance.—A letter on this subject from the Altrincham (Cheshire) Division was read. The Secretary briefly recapitulated the points in the Poor Law Committee's Report on this subject, mentioned its promise of a further Report in December, referred to Dr. Fothergill's scheme, and recalled opinions of Divisions on the subject. A lively discussion ensued, in which Drs. Asten and Coates (Muswell Hill), Dr. Bell (Tollington Park), Dr. Distin (Enfield), Dr Fuller (Crouch End), Drs. Fawssett and Orlebar (Edmonton), Dr. Greenwood (Hornsey), Dr. A. J. Mathison (Wood Green), Dr. Redmond (Tottenham), and Dr. Goodall (Metropolitan Counties Branch) took part. Finally, Drs. Fuller and Orlebar respectively proposed and seconded

1. That this Division is of opinion that any scheme of State insurance against sickness and invalidity should be based on the principle of payment for work done, as in private practice.

That this expression of the opinion of the Division should be sent forthwith to the Poor Law Committee of the Association and to the Altrincham Division.

Thereupon an amendment was proposed by Dr. Asten, and seconded by Dr. Coates, in the following terms:

That this Division, having discussed the subject of State insurance against sickness and invalidity, and having considered the resolution of the Altrincham Division thereon, is of opinion that the further report of the Special Poor Law Committee should be awaited and considered by it before formulating its opinion on the matter.

Voting took place on the amendment; 7 voted for and 12 against. On putting the resolution 11 voted for and 6 against. The resolution was therefore declared to be carried.

Hospital Reform.—Dr. J. R. Fuller (Crouch End) read a paper on "The General Hospital and General Practice."

He said: The end towards which our efforts should, in my opinion, be directed is the provision of a co-ordinated system of medical relief satisfactory alike to the public and the medical profession, because equally advantageous to the interests of both. And further, a provision of this medical relief at a minimum cost.

Consider the present condition of inco-ordination. We have: (1) In-patient departments and out-patient departments, casualty and special departments; (2) special hospitals; (3) lunatic asylums, public and private; (4) convalescent homes and sanatoriums; (5) provident and free dispensaries; (6) all forms of contract practice; (7) a public health service; (8) various medical missions; (9) in some places now a public medical service. All other sick folk may be classed as either (10) private patients, or (11) Poor Law patients.

How wasteful of money and energy this lack of system is! How disproportionate the result to the means! I need only remark, for instance, on the waste resulting from so many different bodies of control.

Can we not enlarge our usual idea of a hospital—give the word, in fact, a new definition? Why not urge that a hospital is a place for *all* the sick, of whatever social rank, of whatever financial prosperity or inadequacy, of whatever localized or general condition of disease—in short, a place comprehending all the efforts expressed in the departments and charities just enumerated? I believe that a general hospital managed on definite lines and properly conducted can be made to fulfil the whole need of the community for medical treatment; and that it can be made, if not self-supporting, at least requiring but a fraction of the present money expenditure.

Let me deal with the financial aspect of these proposals. At present we have: (1) The private patient paying graduated fees according to his position; (2) the contract practice patient paying a fixed annual sum, often regardless of his position; (3) the hospital patient, whose payment is made for him at an extravagant rate. I omit, for the minute, the actual pauper, as we call him.

In the scheme I have visions of, and towards which the King Edward Fund is surely moving, there will be, first, an amalgamation of all such funds as the Hospital Saturday, Sunday, and King Edward's Funds, and many more charitable funds. The ridiculous system of small payments for medicine, etc., existing in the present special hospitals will be discontinued. Secondly, there will be an amalgamation of all special hospitals; and these amalgamated hospitals, with amalgamated funds at their disposal, will be free to all sections of the ailing community, rich and poor alike (excepting perhaps the pauper to be mentioned later).

Is this possible? Yes, I think so. I would allow any one who chose to go to the hospital either as an out patient or as an in-patient, always demanding, however, payment from him or her according to his or her means. Surely it is not otherwise than essentially our present system.

But, let me repeat, we must stretch our present ideas of a "hospital," and let me deal with the idea of a general hospital, now.

I would, first of all, place these general hospitals in suitable situations, situations determined by the need for them.

In each general hospital there would be an in-patient and out-patient department, the in-patient department falling as now into a surgical and medical side, but the out-patient department greatly modified from our present system. The bulk of the out-patients would be seen in a number of buildings disposed throughout the district, only owning the general hospital out-patient department in so far as they wished to draft cases thither for consultations or for clinical teaching. These outlying buildings would possess also small casualty departments, and draft all cases from amongst the out-patients or casualty patients requiring beds to the in-patient department of the general hospital except in so far as those cases were too serious to be moved, when there would be a bed ready for them adjoining the casualty hall. This ordering of the work would enable the consultant to be a true consultant, and no longer encourage him to be that hybrid person, a specialist and general practitioner in one.

Convalescent homes, sanatoriums, asylums, etc., would be in the scheme under the central authority. The public health department would be conducted from the central office in each area.

And the management? The management for each area would be under a board composed of laymen and medical men in equal numbers. The several areas would be co-ordinated by a central hospital board, with a Minister of Public Health as its president.

These hospitals then would be at the service of rich and poor alike. But payment would be demanded of every one. And every one should be able to secure the accommodation he desired to pay for. The medical

and surgical treatment would, of course, be none the less skilful, whatever the payment.

It is easy to see that in such scheme as this the rich would help to maintain the poor. This he has always done. But charity as we understand it now would be non-existent—to the relief of not a few.

And the medical man? Would he not be better off? Every doctor would be allowed to attend his own patient, calling in the consultant, as he does now, each being paid for his services. Nor should there be any difficulty in each area served by an outlying out-patient hall determining the scale of fees for its own area, and requiring payment at the agreed rate.

In this description I have intentionally omitted the Poor Law patient. It was unnecessary to confuse the outline of my scheme with details. But, may I say in brief, there is no reason why the pauper should not be included in the general scheme. The Government, of course, would make payment to the public health authority for services rendered to him.

Nor have I touched on that aspect of this scheme known as the Public Medical Service, for the reason that I am, I believe, to burden you with a paper on that subject next January.

And now, in answer to those who urge that these are "dreams—idle dreams," let me say that we in this Tottenham Division can point with reasonable pride to a hospital already working on these lines. I refer to the Hornsey Hospital. Is it too much to say that its methods and management are ideal, and it is the only hospital of which this can be said? The union of Hornsey men two years ago to accomplish this is still fresh in your minds. Mr. J. A. Ritchie, the Chairman of the House Committee of the hospital, is here to-day to speak to its methods of management, and its success. I confidently anticipate its development in the near future upon the following lines:

1. The central building with public wards at a small charge; private wards at varying charges, duly graduated; all patients to pay fees to their own doctors, except where it is agreed that the patient cannot possibly do so.
2. A consultative out-patient department.
3. In selected localities, two out-patient (with casualty) halls—each possessing three beds—on the lines of the proposed Medical Service.
4. A medical officer of health's department, concerned with an isolation hospital and a Poor Law Infirmary, each with its own doctors.
5. Two sanatoriums.
6. The county asylum.

These activities to be all under the control of the Public Health Committee, composed of lay and medical members in equal numbers.

Some dreams, gentlemen, come true. Two years ago the present Hornsey Hospital was all a dream. This other dream, I fancy, will not fail to be realized also, in its time. It is worth while directing our energies to that end.

A discussion followed the reading of the paper, in the course of which Mr. J. A. Ritchie, the Chairman of the House Committee of the Hornsey Hospital, said: The Hornsey Hospital has now been working on the lines described for the last eight months. It has been, and is, a complete success. The Council works most harmoniously, and the medical men work together without any difficulty. In the eight months we have had something like 100 patients, and 40 per cent. of the cost has been borne by them. The length of stay in the hospital of each patient has been limited to four weeks, except in such cases as demand a longer period, when the medical man is asked to report the fact to the Managing Committee.

Many questions were asked and answered.

Vote of Thanks.—A vote of thanks to Dr. Fuller for his paper, proposed by Dr. Coates and seconded by Dr. Staunton, was carried unanimously.

The proceedings then terminated.

Walthamstow Division.

The inaugural meeting of the 1910–1911 session was held, by the kind invitation of Dr. C. F. Harford, at Livingstone College, Knott's Green, Leyton, on Thursday, October 27th, at 4 p.m. Dr. Robert Jones presided. Thirty-five members and visitors were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Letters.—Letters from Mrs. Bodilly, the Altrincham Division, the Medico-Political and Organization Committees were read,

Proposed Change of Name.—A resolution, proposed by Dr. Harford, seconded by Dr. Shadwell, and supported by Dr. Wise:

> That the name of this Division of the British Medical Association be changed from "Walthamstow" to "South-West Essex."

was next considered. An amendment:

> That "West Essex" be substituted for "South-West Essex."

was proposed by Dr. Norman, and seconded by Dr. Dykes. After some discussion the amendment was put to the meeting and declared lost. The resolution was then put and carried *nemine contradicente*.

Vote of Condolence.—The following resolution was proposed by Dr. Wise and seconded by Dr. Shadwell:

> That the Secretary be instructed to convey to the family of the late Dr. Adams, of Buckhurst Hill, the condolence and sympathy of this meeting.

This was carried unanimously.

Lantern Demonstration.—Dr. E. W. Goodall gave a lantern demonstration on "The rashes of some of the acute infectious diseases and rashes which simulate them," illustrating his paper by means of fifty-two very interesting photo-slides. A discussion followed, in which Drs. Robert Jones, A. Berrill, C. H. Wise, F. Argles, C. J. Horner, Geo. Collins, C. F. Harford, and F. J. Coutts took part. A vote of thanks to the lecturer was proposed by Dr. Harford, and seconded by Dr. Brickwell. This was accorded with acclamation. Dr. Goodall thanked the meeting.

Vote of Thanks.—A vote of thanks to Mrs. and Dr. Harford for so kindly entertaining the members was proposed by Dr. Eldred, seconded by Dr. Shadwell, and unanimously carried. Dr. Harford thanked the meeting, which then ended.

Southern Branch:
Salisbury Division.

A meeting of this Division was held at the Infirmary, Salisbury, on Friday, October 21st, at 8 p.m. There were present at the meeting: Mr. L. S. Luckham (Chairman), Messrs. March, Johnstone, Bardsley, Armitage, A. W. K. Straton, C. R. Straton, Williams-Freeman, Ord, Saunders, Ensor, Kempe, Fison, Ellis, W. Gordon, J. E. Gordon (Honorary Secretary), and two visitors.

Dinner.—The meeting was preceded by dinner at the County Hotel at 7 p.m.

Apologies for Non-attendance.—Letters were read from members regretting their inability to be present at the meeting.

Confirmation of Minutes.—The minutes of the last meeting were read and approved.

Representative on Branch Council.—Dr. Ord was unanimously elected as a Representative of the Division on the Branch Council.

State Sickness and Invalidity Insurance.—A letter from the Altrincham Division was read referring to payments to medical men under the proposed State insurance scheme. It was decided to postpone consideration of the subject until a special meeting to be held for that purpose.

Grouping of Divisions.—A letter from the Organization Committee was read relating to the grouping of Divisions. The Division acquiesced to being grouped with the other Divisions of the Southern Branch.

Fees for Medical Examination in Industrial Insurance Cases.—Dr. Kempe proposed that:

> In industrial insurance cases the fee to be demanded should be in strict accordance with the work to be done—that is, a small fee for a short examination and a full fee for a full examination.

This was seconded by Mr. STRATON, and carried unanimously (sixteen voted). Mr. GORDON proposed, and Dr. KEMPE seconded, the following resolution

> That the form used should be modelled in accordance with the suggested form of the Medico-Political Committee of the British Medical Association, published in the JOURNAL on February 22nd, 1908 (short form); and that the fee for industrial cases should be 5s.

Carried unanimously (sixteen voted).

Discussion.—Dr. KEMPE opened a discussion on the clinical manifestations of mammary cancer. Several members took part in the discussion that followed.

Specimen.—Dr. KEMPE also showed a portion of large intestine containing a growth which he had removed from a patient suffering from intestinal obstruction, symptoms of obstruction being aggravated by a plum stone impacted in the growth.

Other Communications.—Mr. LUCKHAM read notes of a case of acute oedema of the lung which occurred in a young woman. The patient died after a few hours' illness. Mr. ARMITAGE read a most interesting paper, and showed photographs of a case of acromegaly.

WEST SOMERSET BRANCH.

THE autumn meeting of this Branch was held at the Taunton and Somerset Hospital on November 4th. The chair was occupied by the PRESIDENT, Dr. W. H. Maidlow. There were seventeen members and two visitors present.

Confirmation of Minutes.—The minutes of the last meeting were read and signed.

Congratulations to Dr. Macdonald.—The PRESIDENT, in a few well-chosen words, offered the congratulations of the Branch to Dr. Macdonald, on his election as Chairman of the Council of the Association, and Dr. MACDONALD made an equally suitable reply.

Address.—Mr. W. H. JESSOP, senior ophthalmic surgeon to St. Bartholomew's Hospital, gave an address on Ophthalmic Pitfalls, which was greatly appreciated by those present, as it was full of information and interest to general practitioners. After Mr. Jessop had answered many questions a hearty vote of thanks was accorded him on the proposition of Dr. MAIDLOW, seconded by Dr. MEADE-KING.

☞ *To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: CENTRAL DIVISION.—A general meeting of the Division will be held at the Medical Institute on Wednesday, November 23rd, at 4 p.m., to elect a Representative for the Division at Representative Meetings and to transact other business.—A. W. NUTHALL, W. T. LYDALL, Honorary Secretaries, Medical Institute, Edmund Street, Birmingham.

METROPOLITAN COUNTIES BRANCH: LAMBETH DIVISION.—A meeting of this Division will be held on Thursday, November 24th, at the Evelina Hospital, when Dr. J. Charlton Briscoe will read a paper on The Pathology of Arthritis from the Clinical Standpoint.

METROPOLITAN COUNTIES BRANCH: RICHMOND DIVISION.—The first general meeting will be held at the Royal Hospital, Richmond, on Wednesday, November 16th, at 8.30 p.m. Medico-political matters will be discussed, with special reference to the Annual Representative Meeting, by R. L. Langdon-Down.—G. CARDNO STILL, Honorary Secretary.

SOUTHERN BRANCH.—Notice is hereby given that a special meeting of this Branch will be held at the South-Western Hotel, Southampton, on Thursday, November 24th, at 2.45 p.m., to consider the following resolution, submitted by the Council of the Branch, namely: "That, on and after January 1st, 1911, every candidate for election by this Branch of the Association shall furnish to the Honorary Secretary of the Branch a certificate from two members of the Association that he is personally known to them, and is a fit and proper person to be elected a member." At the conclusion of the business the meeting will resolve itself into the ordinary half-yearly general meeting (clinical), when Dr. Herbert R. Spencer will give a Lantern Demonstration illustrating the Examination and Diagnosis of Tumours of the Uterus, after the discussion of which papers will be read and cases shown. A resolution *re* Sir William Collins's bill concerning death certification will be submitted to the consideration of the meeting.—J. AMES GREEN, Brandon House, Mile End, Portsmouth, Honorary Secretary.

STAFFORDSHIRE BRANCH.—The first general meeting of the session will be held at the North Stafford Hotel, Stoke-upon-Trent, on Thursday, November 24th. The President, J. A. Codd, M.D., will take the chair at 3.45 p.m. Business: (1) Minutes of the last General Meeting. (2) Correspondence. (3) Exhibition of Living Cases. (4) Paper: Infant Mortality, its Causes and Remedies, Mr. Frank Webb. (5) Paper: The Present Status of the General Practitioner, Mr. A. Hill. (6) Exhibition of Pathological Specimens, etc. Dinner, 6.30 p.m.: charge, 5s.—G. PETGRAVE JOHNSON, Stoke-on-Trent, Honorary General Secretary.

ULSTER BRANCH.—A meeting of this Branch will be held at Belfast on Thursday, November 17th, at 4 p.m.—R. J. JOHNSTONE, Honorary Secretary.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns 7,851 births and 4,250 deaths were registered during the week ending Saturday last, November 5th. The annual rate of mortality in these towns, which had been 13.0 per 1,000 in each of the two preceding weeks, was 13.1 per 1,000 last week. Among the several towns, the death-rates ranged from 5.7 in West Hartlepool, 6.3 in Willesden, 6.4 in Warrington, 6.7 in East Ham, and 7.1 in Wallasey, to 18.0 in Middlesbrough, 18.4 in St. Helens, 18.8 in Wigan, 19.4 in Tynemouth, 19.5 in Swansea, and 20.5 in West Bromwich; in London the death rate was 13.1 per 1,000. The annual rate of mortality from the principal epidemic diseases last week in the seventy-seven towns averaged 1.1 per 1,000; in London the rate was equal to 1.2 per 1,000, while among the seventy-six other towns it ranged upwards to 2.4 in Burnley and in York, 2.5 in Barrow-in-Furness, 2.9 in Stockton-on-Tees, 3.2 in St. Helens, and 3.6 in Brighton. Measles caused a death-rate of 1.6 in Brighton and in St. Helens, and 1.8 in Tynemouth; whooping-cough of 1.9 in Stockton-on-Tees; and diarrhoea of 1.4 in Oldham, 1.6 in Brighton, and 2.4 in York. The mortality from scarlet fever, diphtheria, and enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,792 and 1,847 at the end of the two preceding weeks, further rose to 1,856 at the end of the week under notice; 188 new cases were admitted during the week, against 231 and 221 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, November 5th, 796 births and 492 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.0 and 12.7 per 1,000 in the two preceding weeks, rose to 13.6 per 1,000 last week and was 0.5 per 1,000 above the mean rate during the same period in the seventy-seven large English towns. The rates in the several Scottish towns ranged from 8.4 in Perth, and 9.9 in Greenock, to 14.4 in Leith and 16.6 in Dundee. The death-rate from the principal infectious diseases averaged 1.5 per 1,000, being highest in Leith and Dundee. The 242 deaths from all causes registered in Glasgow last week included 3 which were referred to scarlet fever, 7 to diphtheria, 7 to whooping-cough, 2 to enteric fever, and 6 to diarrhoea. Two deaths from diphtheria and 5 from diarrhoea were recorded in Edinburgh, and 6 from diphtheria and 8 from diarrhoea in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, November 5th, 564 births and 334 deaths were registered in the twenty-two principal urban districts of Ireland, as against 569 births and 372 deaths in the preceding week. The annual death-rate in these districts, which had been 16.9, 17.4, and 16.8 per 1,000 in the three preceding weeks fell to 15.1 per 1,000 in the week under notice, this figure being 2.0 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 13.1 and 14.4 respectively, those in other districts ranging from 4.8 in Ballymena and 5.1 in Clonmel, to 23.3 in Wexford and 28.6 in Newtownards, while Cork stood at 11.0, Londonderry at 10.8, Limerick at 23.2, and Waterford at 7.8. The zymotic death-rate in the twenty-two districts averaged 1.3 per 1,000, as against 1.5 per 1,000 in the preceding week.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Fleet Surgeon G. A. DREAPER and Surgeon D. D TURNER to the *Hawke*, for the voyage out, November 29th, and to the *Hermes*, on recommissioning, undated; Staff Surgeon R. H. MORNAMENT, to the *Eclipse*, on recommissioning, November 29th; Surgeon O. R. M BAKER, M.B., to the *Pomona*, additional, for Dartmouth College, November 29th; Surgeon J. H. WRIGHT, M.B., to the *Antelope*, November 29th; Surgeon D. G. ADDISON-SCOTT, M.B., to the *Imogene*, additional, November 26th, and on recommissioning, undated; Surgeon W. C. H. SMITH to be lent to the Royal Marine Division, Portsmouth, temporary, November 26th.

ARMY MEDICAL SERVICE.

COLONEL T. J. R LUCAS, C.B., M.B., serving in India as Principal Medical Officer, 1st (Peshawur Division, is transferred to the Jubbulpore and Jhansi Brigades.

Colonel S. C. R. ROBINSON, serving in India, is appointed Principal Medical Officer, 1st (Peshawur) Division.

INDIAN MEDICAL SERVICE.

IN reference to a paragraph which appeared in the BRITISH MEDICAL JOURNAL of September 3rd last, at page 267, we are asked to say that Major Roberts served in the China war in 1900, and received the medal granted for those operations.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

THE following Lieutenants are confirmed in their rank: GEORGE H. STEVENSON, M.B., EBEN S. B HAMILTON, LEOPOLD T. POOLE, M.B., DUNCAN MACFADYEN, M.B., CHARLES M. PAGE, M.B.

The following to be Lieutenants (on probation): Cadet-Sergeant, CHARLES J. SIMPSON, M.B., from the Belfast University Contingent, Officers' Training Corps, September 10th; AUBREY G BROWN, September 10th; DAVID T. RICHARDSON, M.B., September 30th

WILLIAM L. WEBSTER, M.B., to be Lieutenant (on promotion), October 4th.

Lieutenant C. V. NICOLL, to be Captain, November 1st.

FREDERICK W. LUMSDEN, M.B., to be Lieutenant (on probation) October 13th.

Lieutenant J. H. BELL, M.B., is confirmed in his rank.

ARMY MEDICAL RESERVE.

LIEUTENANTS J. F. MURPHY, S. K. ADAMS, M.B., and M. R. TAYLOR, M.B., to be Captains, November 1st.

TERRITORIAL FORCE

ROYAL ARMY MEDICAL CORPS.

Welsh Border Mounted Brigade Field Ambulance.—Lieutenant D. C. L. ORTON to be Captain, September 15th.

Fourth Southern General Hospital.—The appointment of Lieutenant-Colonel C. E. R. RENDLE, F.R.C.S.Edin., and of Major H. W. WEBBER, F.R.C.S.Edin., which was announced in the *London Gazette* of November 20th, 1908, is antedated to September 29th, 1908.

First East Anglian Field Ambulance, Royal Army Medical Corps.—Lieutenant O. R. ENNION, from the list of officers attached to units other than medical units, to be Lieutenant, October 3rd

Second Lowland Field Ambulance, Royal Army Medical Corps.—Lieutenant DAVID SHANNON, M.B., to be Captain, September 15th

For Attachment to Units other than Medical Units.—FREDERICK G. HARPER, M.B., to be Lieutenant, August 12th. JACOB F. FARROW to be Lieutenant, September 6th.

Attached to Units other than Medical Units.—Lieutenant JOHN AITKEN to be Captain, September 15th. Lieutenant A. L. B. GREEN resigns his commission, October 26th. Captain W. M. H. SPILLER, M.B., Royal Army Medical Corps, to be an Adjutant of a School of Instruction, October 12th. Major R. J. M. COFFIN resigns his commission, October 29th. Lieutenant-Colonel and Honorary Surgeon-Colonel J. B. RONALDSON resigns his commission, retaining his rank and uniform, November 9th.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.—Male House-Surgeon. Honorarium, £100.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer. Salary, £200 per annum.

BIRMINGHAM GENERAL HOSPITAL.—Two House-Surgeons. Salary for first three months at the rate of £40 per annum, and for following six months £50 per annum.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House-Surgeon. Salary to commence at £80 per annum, with additional allowance of £5.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Physician. Salary, £80 per annum.

BRISTOL ROYAL INFIRMARY.—Honorary Dental Anaesthetist.

CARDIFF INFIRMARY.—Senior Resident Medical Officer. Salary, £120 per annum.

CORNWALL COUNTY COUNCIL.—County Medical Officer of Health. Salary, £500 per annum, rising to £600.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon (male). Salary at the rate of £50 per annum.

DUMFRIES: CRICHTON ROYAL INSTITUTION.—(1) Two Crichton Research Fellowships of £250 a year. (2) Junior Assistant Physician. Salary £150 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Resident Medical Officer (male). Salary, £100 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon (male). Salary, £60 per annum

HASTINGS: HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (male). Salary at the rate of £50 per annum.

INFANT'S HOSPITAL, Vincent Square, S.W.—Physician's Assistant. Salary, £80 per annum.

ITALIAN HOSPITAL, Queen Square, W.C.—House-Surgeon. Salary at the rate of £60 per annum.

LEICESTER INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum.

LONDON HOSPITAL, E.—Medical Officer in Charge of Electrical and Physical Treatment Department.

MANCHESTER ROYAL INFIRMARY.—Accident Room House-Surgeon. Salary at the rate of £100 per annum.

ROYAL HOSPITAL OF BETHLEM, Lambeth Road, S.E.—Resident Physician and Medical Superintendent. Salary, £750 per annum, rising to £1,000.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—(1) Assistant House-Surgeon. Salary, £20 for six months. (2) Clinical Assistants.

SHEFFIELD CHILDREN'S HOSPITAL.—House-Surgeon for East-End Branch. Salary, £70 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £32 per annum.

STOCKPORT INFIRMARY.—Junior House-Surgeon (male). Salary, £80 per annum.

STROUD GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

TORQUAY: TORBAY HOSPITAL.—House-Surgeon. Salary, £100 per annum, and £5 for Nurses' Lectures.

UNIVERSITY OF LONDON, S.W.—Examiners for (1) Higher Examinations for Medical Degrees; (2) First Examination and Second Examination, Part I, for Medical Degrees; (3) Second Examination, Part II, for Medical Degrees.

WESTERN DISPENSARY, Rochester Row, Westminster.—Resident Medical Officer. Salary, 100 guineas per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—House-Physician for six months.

YORK COUNTY HOSPITAL.—House-Physician. Salary, £100 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy as Certifying Factory Surgeon at Barnet, co. Herts, and Middlesex.

MEDICAL REFEREE.—The Home Secretary announces a vacancy for Medical Referee, under the Workmen's Compensation Act, for County Court Circuits Nos. 40 and 42.

APPOINTMENTS.

BAKER, John, M.D., Medical Superintendent of the State Criminal Asylum, Broadmoor, vice R. Brayn, M.R.C.S., L.R.C.P., resigned.

CLEGG, S. J., M.B., B.S.Vict., Resident Assistant Medical Officer of the Crumpsall Workhouse of the Manchester Union.

CUFF, Archibald, F.R.C.S., Lecturer on Practical Surgery in the University of Sheffield.

FOULERTON, H. P., M.R.C.S., L.R.C.P., D.P.H., Deputy Medical Superintendent of the State Criminal Asylum, Broadmoor, vice John Baker, M.D., promoted.

HUGHES, William Stanley, M.B., B.S.Lond., M.R.C.S.Eng., L.R.C.P. Lond., Medical Superintendent of the North Wales Asylum, Denbigh.

MACKENZIE, Alister T., M.A., D.P.H., F.R.S.E., Lecturer on Anatomy and Physiology in the Dunfermline College of Hygiene and Physical Training under the Carnegie Trust.

MACPHAIL, Dugald H., M.B., Ch.B.Glasg., Dispensary Physician to the Glasgow Royal Infirmary.

MATHEWS, Paul, M.D., Honorary Pathologist to the Salop Infirmary, Shrewsbury.

MATHEWSON, R., M.B., District Medical Officer of Elham Union.

RICHARDS, L. W., M.D., District Medical Officer of the Torrington Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

TAYLOR.—On November 2nd, at Kidlington, Oxon, the wife of Frederic H. A. Taylor, M.R.C.S.Eng. and L.R.C.P.Lond., of a son.

MARRIAGE.

CUMBERLEGE—SYDNEY DAVIES.—On November 3rd, at the Priory Church, Leominster, by the Rev. F. H. Hughes, Rector of Shereford with Toftrees, cousin of the bride, assisted by the Rev. E. C. Charles, Vicar, and brother-in-law of the bride, and the Rev. T. E. Popham, Curate, Gilbert Iliffe Cumberlege, M.D., B.S., fifth son of C. F. Cumberlege of Durham, to Madeleine Sydney, elder daughter of G. Sydney Davies, of Leominster.

DEATH.

IN MEMORIAM.

CLUTTON.—In memory of Henry Hugh Clutton, M.C.Cantab., F.R.C.S., of 2, Portland Place, W., who passed away November 9th, 1909, aged 59.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W., 8 p.m.—Clinical meeting.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

PATHOLOGICAL SECTION, 15, Cavendish Square, W., 8.30 p.m.—(1) Professor A. Powell: The Bentley-Taylor Method of Mounting Mosquitos. (2) Dr. B Bradley: The Biological Characteristics of *B. typhosus*, with Special Reference to the Fermentation of Dulcitol and Cyobinose. (3) Dr. C. Bolton: The Effects of Diet upon the Formation and Healing of Acute Ulcer of the Stomach. (4) Dr. Firth and Dr. Ledingham: A Typical Chloroma. (5) Dr. Petrie and Dr O'Brien: Experimental Production of the Carrier State by Feeding. (6) Dr. Firth, Dr. Bainbridge, and Dr. Ledingham: Case of Fatal Infection Associated with the *B aertrycke* (7) Mr. S. G. Shattock and Dr. L. S. Dudgeon: Dried Mouse Cancer.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION, 15, Cavendish Square, W., 4.30 p.m.—Papers:—(1) Professor Robert T. B. Wild: Pharmacology and Therapeutics of Sulphur and Some of its Compounds. (2) Dr. H. Hume Turnbull: The Therapeutic Use of the Digitalis Group.

WEDNESDAY.

ROYAL SOCIETY, Burlington House, W.—The following are among the Papers to be read: — L. S. Dudgeon, P. N. Panton, and H. A. F. Wilson: The Influence of Bacterial Endotoxins on Phagocytosis (including a New Method for the Differentiation of Bacteria). (Second Report.) Communicated by Dr. F. W. Mott, F.R.S. F. W. Twort: A Method for Isolating and Growing the Leprosy Bacillus of Man. Communicated by Dr. Leonard Hill, F.R.S. G. J. Fowler, E. Ardern, and W. T. Lockett: The Oxidation of Phenol by Certain Bacteria in Pure Culture. Communicated by Dr. A. Harden, F.R.S.

THURSDAY.

ROYAL SOCIETY OF MEDICINE:

DERMATOLOGICAL SECTION, 11, Chandos Street, W., 5 p.m.—Cases and Specimens.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

ELECTRO-THERAPEUTICAL SECTION, 15, Cavendish Square, W., 8.30 p.m.—(1) Paper:—Dr. Alfred C. Jordan: The Roentgen Ray Examination of the Oesophagus. (2) Demonstration:—Dr. Stanley Melville: A New Tube Stand.

OTOLOGICAL SECTION, 11, Chandos Street, W., 5 p.m.—Cases and Specimens.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Papers:—(1) Sir Rubert Boyce, F.R.S.: Yellow Fever in West Africa. (2) Dr. S. T. Darling: Autochthonous Oriental Sore in Panama. (3) Dr. R. Fleming Jones: Tropical Diseases in British New Guinea.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Wednesday, 4 p.m., Cardiac Arrhythmia.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Monday, 5.15 p.m., The Treatment of Artificially Fed Children. Tuesday, 5.15 p.m., Infantile Paralysis of Arm and Leg. Wednesday, 5.15 p.m., Diarrhoea. Thursday, 4 p.m., Consumptive Bowels. Friday, 5.15 p.m., Flat Foot, Hammer Toe, Hallus Valgus, and Spastic Paralysis.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Tuesday, 1 p.m., Removal of the Urinary Bladder.

LONDON SCHOOL OF CLINICAL MEDICINE, Seamen's Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday; Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m., Thursday. Special Lectures: Tuesday, 2.15 p.m., Differential Diagnosis of Early Forms of Insanity. Thursday, 4.30 p.m., Some Clinical Aspects of Intracranial Tumours. Friday, 2.15 p.m., Sciatica.

MANCHESTER: ANCOATS HOSPITAL.—Post-Graduate Clinic, Thursday, November 17th, at 4.15 p.m.: Constipation.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, Surgical Affections of the Stomach. Tuesday, Lymphadenoma and Intermittent Pyrexia. Wednesday, The Administration and Value of Tuberculin in Various Forms of Tuberculosis. Thursday, Gall Stones.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Clinical Lecture; 5 p.m., Clinical Anatomy of the Nervous System. Wednesday, 5 p.m., Surgery of the Nervous System. Thursday, 5 p.m., Clinical Examination of Cases of Disease of the Nervous System. Friday, 3.30 p.m., Syphilis and Muscular Atrophy.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear. Tuesday, 10 a.m., Medical Out-patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient; 4.30 p.m., Lecture: Treatment of Urethral Obstruction. Wednesday, 2.30 p.m., Medical Out-patient; Skin and Eye Clinics; *X* Rays. Thursday, 2.30 p.m. Gynaecological Operations; Clinics: Medical Out-patient; Surgical Out-patient; 3 p.m., Medical In-patient; 4.30 p.m., Lecture-Demonstration: Anaesthetic Technique for Operation on the Nose and Throat. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Eye; 3 p.m., Medical In-patient.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Daily arrangements: Medical and Surgical Clinics, *X* Rays, and Operations, at 2 p.m. daily. Monday, Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Demonstration of Minor Operations, 11.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose and Ear Operations, 10 a.m.; Eye, 10 a.m. Lectures at 5 p.m. daily except Saturday.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
NOVEMBER.	
13 Sunday ..	
14 MONDAY ..	
15 TUESDAY ..	LONDON: Referendum Subcommittee, 10.30 a.m. LONDON: Capitation Grants Subcommittee, 2.30 p.m.
16 WEDNESDAY	RICHMOND DIVISION, *Metropolitan Counties Branch*, Medico-Political Meeting, Royal Hospital, Richmond, 8.30 p.m.
17 THURSDAY ..	LONDON: Metropolitan Counties Branch Council, 4.30 p.m. BIRMINGHAM BRANCH, Medical Institute, Edmund Street, 3.30 p.m. ULSTER BRANCH, Belfast, 4 p.m.
18 FRIDAY ..	
19 SATURDAY ..	
20 Sunday ..	
21 MONDAY ..	
22 TUESDAY ..	
23 WEDNESDAY	LONDON: Regulations and Standing Orders Subcommittee. LONDON: Organization of Medical Students Subcommittee. CENTRAL DIVISION, *Birmingham Branch*, Medical Institute, 4 p.m.

Date.	Meetings to be Held.
NOVEMBER *(continued)*.	
24 THURSDAY ..	LAMBETH DIVISION, *Metropolitan Counties Branch*, Evelina Hospital. SOUTHERN BRANCH, Special Meeting, South-Western Hotel, Southampton, 2.45 p.m.; Ordinary Meeting (Clinical) afterwards. STAFFORDSHIRE BRANCH, North Stafford Hotel, Stoke-upon-Trent, 3.45 p.m.; Dinner, 6.30 p.m. WALTHAMSTOW DIVISION, *Metropolitan Counties Branch*, Whipps Cross Infirmary, Leytonstone, 4 p.m.
25 FRIDAY ..	BIRMINGHAM BRANCH, Pathological and Clinical Section, Medical Institute, Edmund Street, 8 p.m.
26 SATURDAY ..	
27 Sunday ..	
28 MONDAY ..	
29 TUESDAY ..	
30 WEDNESDAY	
DECEMBER.	
1 THURSDAY ..	
2 FRIDAY ..	
3 SATURDAY ..	
4 Sunday ..	
5 MONDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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Association Intelligence.

PROCEEDINGS OF COUNCIL.

A MEETING of the Council was held at 429, Strand, London, W.C., on Wednesday, October 26th, 1910, at 2 o'clock in the afternoon.

Present:

Dr. J. A. MACDONALD, Taunton, Chairman of Council, in the Chair.

Mr. HENRY T. BUTLIN, P.R.C.S., D.C.L., LL.D., London, President.

Dr. EWEN J. MACLEAN, Cardiff, Chairman of Representative Meetings.

Mr. EDMUND OWEN, F.R.C.S., London, Past Chairman of Council.

Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. J. GRANT ANDREW, Glasgow
Insp.-Gen. ROBERT BENTHAM, R.N. (ret.), Ealing (Royal Navy Medical Service)
Surg.-Gen. W. R. BROWNE, M.D., C.I.E., London (Indian Medical Service)
Dr. R. C. BUIST, Dundee
Dr. W. A. CARLINE, Lincoln
Mr. ANDREW CLARK, K.H.S., Uxbridge
Dr. M. DEWAR, Edinburgh
Mr. E. J. DOMVILLE, Exeter
Dr. J. E. EDDISON, Leeds
Dr. DAVID EWART, Chichester (New Zealand Branch)
Mr. J. H. EWART, Eastbourne
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Mr. T. W. H. GARSTANG, Altrincham
Dr. E. W. GOODALL, London
Dr. MAJOR GREENWOOD, London
Dr. J. R. HAMILTON, Hawick
Sir VICTOR HORSLEY, F.R.S., London
Mr. HERBERT JONES, Hereford
Colonel C. H. JOUBERT DE LA FERTÉ, I.M.S., Weybridge
Mr. HUGH R. KER, London
Mr. F. C. LARKIN, Liverpool
Dr. G. R. LIVINGSTON, Dumfries
Mr. ALBERT LUCAS, Birmingham
Dr. JOHN MACDONALD, South Shields
Dr. D. J. MACKINTOSH, M.V.O., Glasgow
Dr. J. MUNRO MOIR, Inverness
Dr. B. H. NICHOLSON, Colchester
Dr. FRANK M. POPE, Leicester
Dr. A. J. RICE-OXLEY, London
Dr. H. JONES ROBERTS, Penygroes
Dr. CECIL E. SHAW, Belfast
Dr. LAURISTON E. SHAW, London
Mr. C. R. STRATON, Salisbury
Dr. J. H. TAYLOR, Salford
Mr. T. JENNER VERRALL, Bath
Professor A. H. WHITE, Dublin
Mr. D. J. WILLIAMS, Llanelly

ELECTION TO CENTRAL COUNCIL.

The CHAIRMAN reported that the following had been returned to the Central Council: Mr. Charles Robert Straton (Wilton), by the Southern, and Oxford and Reading Branches; Dr. G. R. Livingston (Dumfries) by the Glasgow and West of Scotland (four County Divisions), Border Counties, and Stirling Branches; Dr. F. W. Kidd (Dublin), by the Leinster Branch; Mr. Herbert Jones (Hereford), by the Bath and Bristol, Gloucestershire, West Somerset, and Worcestershire and Herefordshire Branches; and duly welcomed Mr. Straton, Dr. Livingston, and Mr. Herbert Jones, who were present.

COMMUNICATION FROM THE KING.

The following communication from the King was read:

Marlborough House,
Pall Mall, S.W.
21st July, 1910.

Dear Sir,

I am commanded by the King to inform you that His Majesty is graciously pleased to become Patron of the British Medical Association.

Yours faithfully,
W. CARINGTON,
Keeper of His Majesty's Privy Purse.

The Secretary.

The Chairman of Council was instructed to convey to the King the thanks of the Association for His Majesty's gracious communication.

APOLOGIES.

Letters of apology for non-attendance were read from the President-elect, Dr. F. W. Kidd, and Dr. D. F. Todd.

MR. H. A. BALLANCE.

The Chairman of Council was requested to convey to Mr. H. A. Ballance, Chairman of Representative Meetings for the year 1909–10, an expression of the Council's appreciation of his valuable services as Chairman of Representative Meetings, as a Member of Council, and as a Member of Standing Committees of the Association.

DEATHS.

The CHAIRMAN having reported the deaths of Sir Constantine Holman, a Vice-President of the Association and a former Treasurer, and of Dr. J. J. Macan, a Member of the Council, the Chairman was requested to forward the Council's expressions of sympathy and regret.

LORD ILKESTON.

The acknowledgement from Lord Ilkeston to the Resolution of congratulation upon his elevation to

the peerage was read and ordered to be entered on the Minutes.

30, Grosvenor Road,
Westminster, S.W.,
27th July, 1910.

Dear Mr. Elliston,

Of the many congratulations which I have received, none gave me greater pleasure than the Resolution of the Council of the Association which you have so kindly sent me. As a Gold Medallist of the Association, I have naturally a feeling of deep respect and loyalty to the body in connexion with which I have worked since 1861. It was in the Birmingham Branch that I first learned to take part in public business, and as a Secretary of the Branch for many years I acquired those business methods which have helped me ever since. I owe very much to the Association, and as long as I am able to do any public work I shall, as in past years, give my best efforts to promote the interests and advance the work of an organization which has done so much for the profession. In the purely personal aspect it is most grateful to me to have the kind wishes and congratulations of my old and new friends in the Council. I spent many happy years as a member of the Council, and any remembrances of me by my friends there must always be pleasant, and is especially so at the present time.

Yours very truly,
ILKESTON.

Guy Elliston, Esq.

REPORTS OF COMMITTEES.

Finance Committee.

The Treasurer presented the Minutes of the Finance Committee of October 19th, 1910.

Chloroform Committee Report.

The Council decided that the Report of the Special Chloroform Committee, together with the Appendices, shall be republished in book form and offered for sale.

Quarterly Accounts.

The accounts for the quarter ending September 30th last, amounting to £16,267 10s. 4d., were approved, and the Treasurer was empowered to pay those remaining unpaid, amounting to £4,581 18s. 11d.

Organization Committee.

The Chairman (Mr. Larkin) presented the Quarterly Report of the Organization Committee of October 4th, 1910.

New Articles and By-laws.

It was resolved that the Representative Meeting be recommended, at the first opportunity, to carry out certain formal Amendments of the By-laws of the Association desired by the Board of Trade.

New Company.

The Organization Committee was authorized to take any necessary action as regards submitting to the Board of Trade the application of the Association for the licence of the Board, to dispense with the use of the word "Limited," to be granted to the proposed new Company, having an extended Memorandum of Association as approved by the Annual Representative Meeting, 1910, and Articles and By-laws corresponding in substance to those at present in force, but subject to such formal alterations as the Committee, in conference with the legal advisers of the Association, may deem necessary or advisable.

The Organization Committee was instructed to confer with the Board of Trade, if opportunity be given, as to any matters in the proposed Memorandum of Association, and to report the result of such Conference to the Council.

Conference of Secretaries.

It was decided to hold a Conference of Honorary Secretaries of Divisions and Branches in connexion with the Annual Meeting, 1911, and the Organization Committee was instructed to make the necessary arrangements.

Election of Representatives, 1911–12.

The Divisions in the United Kingdom were provisionally grouped by the Council for the election of Representatives for the year 1911–12 in the same manner as for the year 1910–11, provided that if any proposals for alteration of the grouping be received on or before November 14th, the grouping of Divisions affected by such proposals shall be postponed until the January Meeting of Council.

Each Division outside the United Kingdom which has an Honorary Secretary and the necessary organization is granted independent representation in the Representative Body for the year 1911–12.

Journal Committee.

The Chairman (Dr. Buist) presented the Report of the Journal Committee of October 19th, 1910.

Secretaryship of Committee.

The duties of Secretaryship of the Journal Committee were assigned to the Financial Secretary and Business Manager.

Advertisements.

The Financial Secretary and Business Manager was instructed in the meantime to decline to accept for insertion in the Journal certain advertisements.

Science Committee.

The Chairman (Dr. Pope) presented the Report of the Science Committee of October 8th, 1910.

Science Grant.

A special grant was made to Professor Patten to enable him to continue the research into the nature and development of the yolk-sac, especially as affecting the nutrition of the embryo.

Committee on Fractures.

Arising out of a Recommendation of the Section of Surgery, that the Council appoint a Committee to inquire into and report on the ultimate results obtained in the treatment of Simple Fractures with or without operation, it was decided that a Committee be appointed and that it be referred to the Chairman of Council, the President, the Chairman of the Science Committee, and the President of the Section of Surgery at the London Meeting to nominate the Members.

Diploma in Psychology.

A Resolution passed in the Section of Psychological Medicine and Neurology, recommending the institution of a post-graduate course and Diploma in Psychology, was referred to the Medico-Political Committee for consideration and report.

Central Ethical Committee.

The Chairman (Dr. Lauriston Shaw) presented the Report of the Central Ethical Committee of October 7th, 1910.

New Model Rules.

The Council authorized the Central Ethical Committee to circulate the new draft Rules, to govern the procedure of Divisions and Branches in dealing with ethical matters, for the consideration and comments of the Divisions and Branches, and instructed the Committee, after consideration of the replies of Divisions and Branches, to submit the draft Rules for the approval of the Council.

Annual Meeting: Press Arrangements.

The question of the press arrangements at Annual Meetings was referred to the Journal Committee for consideration and report, with a request that the result of the deliberations be communicated to the Birmingham Executive.

Medico-Political Committee.

The Chairman (Mr. T. Jenner Verrall) presented the Report of the Medico-Political Committee of October 5th, 1910.

Instruction in Ophthalmology.

It was decided to make representations to the General Medical Council and to the Universities and Licensing Bodies that it is essential that diagnosis and treatment of diseases of the eye, including the

estimation of refractive errors and retinoscopy, should be compulsory subjects in every medical curriculum, and that every student should undergo a practical examination therein.

Rules of Nursing Associations.

The Council decided that the Model Rules of Nursing Associations should be forwarded at once (i) to the Central Nursing Associations, such as the Queen Victoria's Jubilee Institute for Nurses and the Cottage Benefit Nursing Association; (ii) to all County Nursing Associations; also that copies should be forwarded to the Honorary Secretaries of the Divisions of the Association, with a request that they endeavour to get the Rules adopted by all Nursing Associations in their respective districts.

It was also decided that the attention of Division Secretaries should be drawn to the recent pronouncement by the General Medical Council concerning "covering" by medical practitioners in connexion with Nursing Associations.

Policy as to Advertisements.

The Council decided to report to the Representative Body, with reference to Minute 55 of the Representative Meeting London, that exclusion from the columns of the British Medical Journal of advertisements which it is not considered to be to the interest of the profession to publish, has been for several years the practice of the Council, approved from time to time by the Representative Body; and that as regards the future, the Council considers it more advisable to deal with individual cases upon their merits as they arise, without the adoption by the Representative Body of any general declaratory resolution or rule.

Ambulance Lectures.

It was decided to issue as soon as possible Minutes 259 and 263 of the Annual Representative Meeting, 1910, to the Divisions, with a suitable Memorandum of suggestions as proposed by the Medico-Political Committee, and to recommend the Divisions to put themselves in communication with local lay bodies concerned, after the views of the Division and of the local profession on the subject have been fully ascertained.

Coroners' Law and Death Certification Bill.

The Council expressed on behalf of the British Medical Association strong disapproval of the provision in the Coroners' Law and Death Certification (Amendment) Bill, introduced into Parliament by Sir William Collins, under which is contemplated the imposition upon medical practitioners of statutory duties in their professional capacity without remuneration, and instructed the Parliamentary Subcommittee to take all necessary action to oppose such Bill.

Royal Commission on Divorce.

The Chairman of Council reported the action taken by instruction of the Council in response to an invitation from the Royal Commission on Divorce and Matrimonial Causes to the Association to give evidence before that Commission.

Public Health Committee.

The Chairman (Mr. Domville) presented the Quarterly Report of the Public Health Committee of October 11th, 1910.

Pathological Branch of Public Health Service.

The Public Health Committee was instructed to make inquiries from any persons or bodies competent to advise as to the desirability of the institution of a Pathological Branch of the Public Health Service and to report to the Council thereon.

Hospitals Committee.

The Chairman (Mr. Hugh R. Ker) presented the Quarterly Report of the Hospitals Committee of October 6th, 1910, which was approved.

Naval and Military Committee.

The Chairman (Colonel Joubert de la Ferté) presented the Quarterly Report of the Naval and Military Committee of October 3rd, 1910, which was approved.

Colonial Committee.

Mr. Edmund Owen presented the Quarterly Report of the Colonial Committee of October 10th, 1910, which was approved.

Scottish Committee.

The Chairman (Dr. Munro Moir) presented the Quarterly Report of the Scottish Committee of September 29th, 1910, which was approved.

Irish Committee.

The Chairman (Dr. Cecil Shaw) presented the Quarterly Report of the Irish Committee of August 20th, 1910, which was approved.

Special Poor Law Reform Committee.

The Chairman of Representative Meetings presented the Quarterly Report of the Special Poor Law Reform Committee of September 30th, 1910: also a Supplementary Report of the proceedings of October 26th, which were approved.

Reappointment of the Committee.

It was resolved that a Special Poor Law Reform Committee be appointed to continue the consideration of the recommendations of the Royal Commission on the Poor Law as affecting the medical profession and report thereon to the Council, and also to complete, in conference with the Contract Practice Sub-Committee, and issue to the Divisions, the report on a Provident Medical Service, and that the Committee consist of the following, with power to add to their number:—The President, the Chairman of Representative Meetings, the Chairman of Council and Treasurer, *ex officio*: Mr. T. Jenner Verrall, Mr. C. E. S. Flemming, Dr. E. Rowland Fothergill, Mr. C. R. Straton, and Dr. J. H. Taylor, nominated by the Medico-Political Committee; Mr. E. J. Domville, Mr. Herbert Jones, and Dr. J. H. Keay, nominated by the Public Health Committee; Mr. Hugh Ker and Dr. Lauriston Shaw, nominated by the Hospitals Committee; Dr. Munro Moir and Dr. Buist, nominated by the Scottish Committee: and two Members to be appointed by the Irish Committee.

Therapeutic Committee.

Dr. Pope presented the Quarterly Report of the Therapeutic Committee of October 8th, 1910, which was approved.

Arrangements Committee.

The Chairman of Council having reported that, owing to unforeseen circumstances, it had not been possible to call the Arrangements Committee together in time to report to the October Council, the Council delegated to that Committee full powers to make all the necessary arrangements in connexion with the Birmingham Meeting, 1911.

Candidates.

The fourteen candidates submitted were elected Members of the British Medical Association.

The London Meeting, 1910.

The Chairman reported that, in accordance with the authority given by the Council in July, he had caused votes of thanks to be sent to those who rendered such valuable assistance in the organization of the London Meeting as follows:

The President of the Association and Mrs. Butlin, for their princely hospitality, and for the keen interest they displayed in all matters connected with the London meeting.

Dr. Lauriston Shaw, Dr. E. W. Goodall, and Dr. W. Griffith, Honorary Local Secretaries, for their valuable help and assistance in connexion with the Annual Meeting.

The Chairman, Honorary Secretaries, and Members of all the Local Committees, for their indefatigable labours towards the success of the London Meeting.

Dr. Dawson Williams, for his labours in the compilation of the Local Guide; and Mr. C. Louis Taylor and Dr. E. W. Goodall, for their contributions to the same.

Mr. H. Betham Robinson, for his valuable assistance as Treasurer of the Funds of the London Meeting.

The Committee of the following Clubs, for extending Honorary Membership to Members whilst in London: St. Stephen's Club, Royal Societies Club, National Liberal Club.

The following Golf Clubs, for extending hospitality to Members of the Association: Northwood, Burhill, Manor, Burnham Beeches, Bushey Hall, Edgware, Eltham Warren, Fulwell, Hanger Hill, Home Park, Mid-Surrey, Neasden, Sandy Lodge, Royal, Wimbledon, Princes, Richmond, Romford, Sunningdale, South Herts, Tooting Bec, Walton Heath, Wembley, West Essex, Wimbledon Park, Worplesdon, West Middlesex, Acton.

Mr. Percy Furnivall, Mr. George Rowell, Dr. F. J. Smith, for arranging playing facilities and golf matches in connexion with the various Clubs.

The following firms, for permitting Members and Visitors to inspect their works: Lincoln and Bennett, Limited; Slazenger and Sons; John Brinsmead and Sons, Limited; Peek, Frean and Co.; Strode and Co.; Thurston and Co.; The *Daily Telegraph*; Price's Patent Candle Co.; Doulton's Pottery Works; Clarke, Nicholls and Coombs, Limited; and Maple and Co., Limited.

The Commandant, and Lieutenant-Colonel Melville, and the Royal Army Medical College, for their demonstration on the Equipment of Foreign Armies.

The following for permission to visit and inspect their buildings: Sesame Training Home, School of Medicine for Women, Passmore Edwards Settlement, Royal Sanitary Institute, Society of Medical Officers of Health, the Master and Wardens of the Barbers' Company, Tower of London, Royal Mint, Royal Mews (Sir Henry Ewart, Master of the Horse), London Docks, and Zoological Gardens.

Various hospitals, for receiving visitors and showing them interesting cases.

Wellcome Physiological Research Laboratory, Herne Hill, for showing Members over their Laboratory.

The Governors of St. Bartholomew's Hospital, for Lunch and Garden Party.

The Governors of Bethlem Royal Hospital and Dr. Hyslop, the Medical Superintendent, for Garden Party.

The Master and the Wardens of the Society of Apothecaries, for their Dinner.

The Norwood Sanatorium, for Garden Party.

Dr. E. H. Lipscomb, for Luncheon to Members and showing them over St. Alban's Abbey.

Sir George Hastings and the Committee of Ranelagh Club, for lending the Polo Grounds for the Garden Party, and for their able assistance in connexion therewith.

Lyceum Club, for its Reception and entertainment of ladies.

President and Members of the Metropolitan Counties Branch, for Reception at Natural History Museum and Garden Party at the Ranelagh Polo Club and Grounds.

Lord Mayor, the Lady Mayoress, Sir Thomas Crosby, and the Corporation of the City of London, for Reception in the Guildhall.

The Countess of Aberdeen, for presiding over the Ladies' Dinner; and Mrs. Butlin, Mrs. Scharlieb, M.S., and Mrs. Willey, M.D., for arrangements in connexion with the same.

The Dean and Chapter of Westminster Abbey, for arranging Special Service in the Abbey and for allowing parties to inspect Westminster Abbey.

The Very Rev. W. Page-Roberts, D.D., Dean of Salisbury, for his interesting Sermon.

The Administrator of Westminster Cathedral and Archbishop of Westminster, and Dr. Finucane, for arranging High Mass for the Roman Catholic Members of the Association.

The Dean and Chapter of St. Paul's Cathedral, for allowing parties to see over the Cathedral.

His Grace the Duke of Wellington, K.G., G.C.V.O., for permitting Members to inspect Apsley House.

His Grace the Duke of Westminster, for allowing Members to visit Grosvenor House.

His Grace the Duke of Sutherland, K.G., for permitting Members to visit Stafford House.

Dr. Withers Green, for conducting parties over the Johnsonian haunts and providing tea.

Mr. and Mrs. D'Arcy Power, for taking a party of visitors over Barbers' Hall and St. Bartholomew's Priory, and providing tea.

Sir Schomberg MacDonnell, K.C.B., for permitting the use of the Chapter House at Westminster, and for his assistance in connexion with the use of the buildings at South Kensington.

Major Lugard, Mr. Gow, and Mr. Hill, for their assistance in connexion with the arrangements of the Annual Meeting at South Kensington.

Miss Scharlieb, M.D., for conducting party over the Charter House and St. Giles, Cripplegate.

Mr. Atwood Thorne, for his labours in arranging the Annual Dinner.

Mr. H. W. Armit, for his very arduous task in preparing and editing the valuable Pathological Catalogue, and his work in connexion with arranging the pathological specimens in the Museum.

The Honorary Curators, for their assistance and co-operation in the work of the Pathological Museum.

Sir Jonathan Hutchinson, for lending a valuable collection of medical drawings for exhibition in the Medical Museum.

The Authorities of the British Museum, for the use of the Natural History Museum for the Reception.

Dr. A. J. Rice-Oxley, for the exhibition of medical pictures.

Mr. Farnell, F.R.C.S. (Chairman), Dr. Muir Smith (Honorary Secretary), and Members of the Eastbourne Division; Dr. Merry and Dr. Kenneth Frazer, for their valuable help and co-operation in connexion with the Eastbourne Excursion.

Dr. Ryding Marsh and the Brighton Division, for arrangements in connexion with the excursion to Brighton.

The Mayor of Brighton.

The Mayor of Hove.

The Mayor and Corporation of Bath, for excursion to Bath; and Mr. W. M. Beaumont, Dr. Preston King, and Dr. Kennedy, for their local assistance.

The Phyllis Court Club at Henley, for receiving and supplying Members with refreshment.

Dr. Probyn Williams, for conducting party to Windsor; Mr. H. E. Luxmore (Resident Master), for conducting Members over Eton College.

Sir William P. Treloar, Bart., and co-trustees of the Lord Mayor Treloar Cripples' Home, Alton, for entertaining a large party of Members and Visitors at the Cripples' Home and College. Also Dr. Gauvain the Medical Superintendent, and Miss Robertson the Matron.

Dr. Dodd and Dr. Wilgress of Folkestone, for their arrangements in connexion with the Representatives' Excursion. Also the Folkestone Golf Club for allowing the Visitors the use of their Golf Course.

Dr. Philip of Boulogne, for making similar arrangements for the visit to Boulogne.

The Senate of the University of London (Principal Miers, F.R.S.), and

The Governors Imperial College of Science and Technology, for their assistance in connexion with the use of the buildings at South Kensington.

International Medical Congress, 1913.

The Chairman reported receipt of communication from Dr. Herringham, Honorary Secretary of the forthcoming International Medical Congress, conveying a desire on the part of the Congress to consider the question of the dates of the meetings of both the Annual Meeting of the British Medical Association and the Congress respectively, in order to avoid clashing.

The Council appointed a Committee to consider and report on the whole question of the Annual Meeting in 1913, with power to confer with the International Medical Congress. The Committee to consist of the President, Chairman of Representative Meetings, Chairman of Council, Chairman of Organization Committee, Chairman of Science Committee, and Dr. Lauriston Shaw.

The Council approved the action of the Chairman in accepting an invitation to become a member of the Executive Committee of the International Medical Congress.

BRITISH MEDICAL ASSOCIATION LIBRARY.

Books Needed to Complete Series.

The Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Climatological Transactions. Vols. 1, 4, 5, 6.
———— Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
———— Journal of the Medical Sciences. New series, vols. 4, 5, 1842–3; vols. 14, 15, 1847–8; vols. 18–30, 1850; vol. 33, 1857; vol. 46, 1864–5; vol. 59; or any parts of these vols.
New York Pathological Society. Proceedings prior to 1888, 1890, 1892–1898, 1901–1904.
New York State Journal of Medicine, 1906.
Ophthalmic Review. January, 1882.
Pediatrics, prior to 1902.

Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

GLASGOW AND WEST OF SCOTLAND BRANCH:

DUMBARTONSHIRE AND ARGYLLSHIRE DIVISION.

A GENERAL meeting of this Division was held in Dr. Hunter's House, Millig, Helensburgh, on Tuesday, November 8th, 1910. The following members were present: Drs. McEwan, Sewell, Hunter, Ingram and Young (Helensburgh), and Dr. McRitchie, (Gareloch-head).

Apologies for Non-attendance.—Apologies were received from Dr. Jane Gilmour (Duntocher), Dr. Cullen (Alexandria), Dr. Wilson (Dumbarton), and Dr. Stewart (Inverary).

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed by the chairman, Dr. Hunter.

Representatives on Branch Council.—Drs. J. Ewing Hunter and William Semple Young were reappointed Representatives on the Branch Council.

School Board Medical Certificates.—It was unanimously agreed to charge the Row Parish School Board 1s. for each of the special medical certificates required by them in the case of pupils attending the board schools.

Representative's Report.—Owing to the unavoidable absence of the Representative to the Annual Representative Meetings this report was held over to the next meeting.

Grouping of Divisions.—The present grouping of Divisions was agreed to.

State Sickness and Invalidity Insurance.—It was unanimously agreed to support the resolution submitted by the Altrincham Division.

Club Appointments.—Dr. Young proposed that no club appointment should be accepted under 3s. per member per annum, and 2s. 6d. for each entrance examination. After discussion this was unanimously agreed to.

Interim Report of Ethical Committee.—The rules suggested in the "Interim Report of the Central Ethical Committee of the British Medical Association on the position of medical practitioners called upon to examine (otherwise than by the request of the patient or persons acting on his behalf) patients who are under the care of other practitioners," were unanimously agreed to.

Representation of Local Profession in Hospitals.—The recommendation of the British Medical Association Hospitals Committee regarding the representation of the local medical profession in the general management of hospitals and other medical charities, received the unanimous support of the meeting.

GLASGOW NORTH-WESTERN DIVISION.

A MEETING of the Division was held in the Dispensary of the Western Infirmary on Tuesday, November 8th, at 8 30 o'clock, Dr. A. G. HAY presiding. There were also present Drs. Mackintosh, Morton, Primrose, Whitehouse, A. T. Campbell, W. A. Stuart, James Campbell, and Caskie.

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed.

Circulars.—The SECRETARY submitted the following circulars he had received for consideration: (1) Grouping of Divisions for representation at the Annual Representative Meeting; (2) resolution of the Altrincham Division concerning scheme of State sickness and invalidity insurance; (3) inquiry from the Scottish Committee regarding the treatment of school children under the School Board found defective; (4) reprint of Dr. Fothergill's letter in the BRITISH MEDICAL JOURNAL of September 17th, with table, showing the advantages and disadvantages of three schemes of State invalidity and sick insurance; (5) in relation to the above, letter from the Poor Law Committee; (6) question by the Hospitals Committee *re* barring of the holders of certain appointments from private practice. This question was answered in the negative.

Annual Representative Meeting.—The REPRESENTATIVE (Dr. John Morton) gave an account of the subjects which had been under consideration at the Annual Representative Meeting, referring in particular to the payment of members, the support of Members of Parliament, the formation of a new company, and to the reference of a medical service report to a special Representative Meeting.

Thanks to Representative.—Dr. Morton received a vote of thanks from the meeting for his report.

Paper.—Dr. HAY read a paper entitled "Additional Notes on the Treatment of Sciatica by means of Saline Injections." Of the twelve cases treated by this method eight were cured, one was not benefited, and three discontinued attendance.

Votes of Thanks.—A vote of thanks was accorded Dr. Hay for his paper, and the meeting closed with an expression of the members' thanks to Dr. Mackintosh for his hospitality.

LANCASHIRE AND CHESHIRE BRANCH.

OFFICERS AND COUNCIL.

The following is a list of the officers and council of the Branch for the ensuing year:

Branch Council for 1910–11.

President: James M. Ferguson, J.P., L.R.C.P. and S., D.P.H., Burnley. *President-elect:* Alfred Greenwood, M.D., B.Sc., Health Office, Blackburn. *Vice-Presidents:* J. C. M. Given, M.D., M.R.C.P., Liverpool; J. H. Taylor, M.A.Cantab., M.B., Ch.B.Vict., Salford, Manchester. *Honorary Secretary:* F. Charles Larkin, F.R.C.S.Eng., Liverpool. *Representatives of the Branch on the Council of the Association:* T. W. H. Garstang, M.A., Altrincham; F. C. Larkin, F.R.C.S.Eng., Liverpool; J. H. Taylor, M.A.Cantab., M.B., Ch.B.Vict., Salford.—Edwin Rayner, M.D., F.R.C.S.Eng., J.P., 19, Tiviot Dale, Stockport, is also a member of the Branch Council.

Representatives of Divisions.—Altrincham: P. R. Cooper, M.D., B.Sc., Bowdon, Cheshire; Charles J. Renshaw, M.D., Ashton-on-Mersey. Ashton-under-Lyne: S. Crawshaw, M.B., Ashton-under-Lyne. Birkenhead: A. C. E. Harris, F.R.C.S.Edin., Birkenhead; J. H. Fardon, M.R.C.S., L.R.C.P., Birkenhead. Blackburn: Howard Henry, M.D., Blackburn; P. Prebble, M.B., Blackburn. Blackpool: E. W. Rees Jones, M.D., D.P.H., Blackpool. Bolton: H. Jefferies, M.R.C.S., L.S.A., Bolton; Charles Macfie, M.D., Bolton. Burnley: F. E. Crossley, M.B., C.M., Burnley; J. S. Wilson, M.B., C.M.Aber., Brierfield. Bury: J. B. Kerr, M.B., C.M., Bury. Chester and Crewe: J. J. Blagden, B.A., Chester; A. G. Hamilton, M.B., Ch.B., Hoole, Chester. Glossop: Duncan John Mackenzie, M.D., Glossop. Isle of Man: No return. Leigh: F. E. Wynne, M.B., Leigh. Liverpool, Bootle: J. Dunn, F.R.C.S.Edin., Liverpool. Liverpool, Central: T. R. Bradshaw, M.D., Liverpool; F. H. Barendt, M.D., Liverpool. Liverpool, Northern: J. J. Tisdall, L.R.C.S., L.R.C.P., Liverpool. Liverpool, Southern: J. C. M. Given, M.D., Mossley Hill; Henry Harvey, M.B., Liverpool. Liverpool, Western; K. A. Grossman, M.D., Liverpool. Manchester, Central: T. A. Helme, M.D., F.R.S.E., Manchester; W. K. Walls, M.B., Manchester. Manchester, North: R. G. McGowan, M.D., Manchester; C. G. L. Skinner, M.D., Manchester. Manchester, Salford: A. C. Clarke, M.D., Ch.B.Vict., Salford; J. W. Hamill, M.D., Salford. Manchester, South: H. E. Edlin, M.R.C.S., L.R.C.P., Levenshulme; W. E. Sawers Scott, M.D., Withington. Manchester, West: F. H. Worswick, M.D., Manchester; J. Skardon Prowse, M.B., Manchester. Oldham: Alfred Murgatroyd, M.B., Ch.B.Vict., Oldham. Preston: J. A. Harris, M.D., J.P., Chorley. Rochdale: John Brown, M.D., Bacup. St. Helens: F. P. Bassett, B.A., St. Helens. Southport: Percy Ashworth, M.D., Southport; Robert Harris, M.B., Southport. Stockport, Macclesfield, and East Cheshire: E. A. C. Swainson, M.A., M.B., B.C.Cantab., Marple; John B. Hughes, B.A., M.B., B.C.Cantab., Macclesfield. Warrington: H. A. Burrowes, M.D., Lymm, Cheshire.

Wigan: M. G. McElligott, F.R.C.S. I., Wigan. Co-opted: Professor Benj. Moore, 84, Shrewsbury Road, Oxton.

Committees.

Ethical Committee.—The President and Secretary, *ex officio*; H. A. Burrowes, Robt. Harris, J. B. Hughes, Sawers Scott, J. H. Taylor, J. Tisdall.

Organization and Finance Committee.—The President and Secretary, *ex officio*; F. P. Bassett, T. W. H. Garstang, J. C. M. Given, C. Macfie, P. Prebble, J. H. Taylor, F. E. Wynne.

Science Committee.—The President and Secretary, *ex officio*; T. R. Bradshaw, P. H. Cooper, K. Grossmann, T. A. Helme.

Auditors.—Wm. Murray Cairns, M.B., C.M.Edin., 67, Catharine Street, Liverpool; F. Strong Heaney, M.A., M.D.Dub., F.R.C.S.I., 23, Russell Street, Liverpool.

METROPOLITAN COUNTIES BRANCH:

Stratford Division.

A meeting of this Division was held on Thursday, November 3rd, at the West Ham Hospital, Dr. Dayus in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and adopted.

State Sickness and Invalidity Insurance.—Two letters were read *re* State invalidity and sick insurance, one from Dr. E. Rowland Fothergill and the other from the Altrincham Division, embodying a resolution on the subject.

Medical Charity.—Dr. Lauriston E. Shaw read an admirable paper on the "Chaos of Medical Charity." A free discussion ensued.

Vote of Thanks.—A very hearty vote of thanks was awarded to the lecturer, on the motion of Dr. Percy Rose, seconded by Dr. Sanders.

Walthamstow Division.

A meeting of this Division was held at the Woodford Hospital, Woodford Green, on Thursday, November 10th, at 4 p.m. Twenty-five members and visitors were present. Dr. Robert Jones presided.

Anaesthetics.—Dr. Dudley Buxton read a paper on anaesthetics, of which the following is a synopsis:

The old criterion, anaesthesia, is no longer recognized as sufficient for complicated operative procedures. Profound narcosis, that is, a degree deeper than the third degree or stage of anaesthesia, involves greater risks: (1) circulatory; (2) respiratory; (3) interference with metabolism.

The dangers may be immediate or delayed. The anaesthetist has to foresee and counteract such risks. To do so he has to consider (1) the state of the patient as regards physique, resistive and recuperative powers, the state of his blood pressure, respiration, renal and hepatic functions; (2) the special risks of the operation: (*a*) mechanical—for example, vomitus, fluid in the air passages, (*b*) insult to tissues, (*c*) shock.

Consideration of shock caused by anaesthetic methods, by manipulation and damage to tissues, prolonged narcosis. Its physiological aspects.

Methods of Anaesthesia.—(1) Nitrous oxide in major surgery; (2) ether by open or closed methods; (3) chloroform by unstinted and dosimetry; (4) mixed methods—for example, morphine scopolamine, followed by ether or chloroform.

Local Analgesia.—(1) Subarachnoidean injection; (2) intravenous injection.

Adjuvants.—Oxygen, posture, temperature, infusion, lavage. Limitations and selection of methods and general treatment of the patient by preparation and his post-operative care.

A discussion followed in which the following took part: Drs. Robert Jones, Davis, Berrill, Norman, Horner, Ward, Shadwell, Warner, Rowland Jones, and F. J. Coutts. A vote of thanks to the lecturer was proposed by Dr. Shadwell, seconded by Dr. Warner, and carried with acclamation. Dr. Dudley Buxton thanked the meeting.

Vote of Thanks.—A vote of thanks to the hospital authorities for allowing the use of the room was proposed by Dr. Horner, seconded by Dr. Hickman, and carried. The Secretary was instructed to bring this to the notice of the Hospital Secretary.

Confirmation of Minutes.—The minutes of the previous meeting were taken as read and confirmed.

Bradford Rules and Rule Z.—The following resolution:

> That the Bradford Rules and Rule Z be adopted by this Division

was proposed by Dr. Shadwell, seconded by Dr. Panting, and carried unanimously.

Letters.—Letters from Mrs. Adams and the Medical Secretary were read.

Proposed Ward Committee.—The meeting was asked to consider the desirability of forming a Ward Committee for the county area of the Division, and decided that it was desirable. A letter from Dr. Major Greenwood, Jun., approving this course was read. The meeting then proceeded to elect the members of the Ward Committee. The following members were elected: Drs. Berrill, Norman, Hickman, Erskine, Dykes, Brickwell, Dowling, Hardenberg, Davis, Macgregor, Passmore, and Warner. The meeting then ended.

Special Meeting.

A special meeting of this Division, to which all the medical practitioners residing in Walthamstow were invited, was held on Friday, November 11th, at 4.30 p.m., in the Out-patient Department of the Walthamstow Hospital. Twenty-two practitioners were present. Dr. C. H. Wise presided in the unavoidable absence of the Chairman and Vice-Chairman.

Apologies for Non-attendance.—Apologies for non-attendance were received from Drs. Robert Jones, C. J. Horner, G. B. Price, and J. Brown.

The Chairman explained the reasons for calling the meeting, and the Secretary read the history of the negotiations which had taken place between the Walthamstow Education Authority and the Walthamstow Practitioners' Committee.

Dr. Shadwell presented the report of the deputation which appeared before the education authority on September 20th. The Chairman then declared the subject open to discussion.

Treatment of Refractions in Elementary School Children.—A discussion followed in which many took part and the following resolution was proposed by Dr. Shadwell:

> That the medical practitioners residing in Walthamstow are prepared (until a clinic can be formed) to undertake the treatment of refractions at their surgeries, at the following rate of payment, suggested by the medical officer of health, namely, honorarium £25, modified fee of 3s. per case for those unable to pay the full fee, 2s per case for those unable to pay any fee, and £10 per annum for the use of apparatus, wear and tear, etc., on the understanding that the Walthamstow Education Authority will agree to the formation of a rota of suitable practitioners as suggested by the Walthamstow Practitioners' Committee.

Dr. W. G. Noble seconded, and the resolution was carried unanimously. Dr. Bintcliffe proposed the following resolution:

> That in event of this offer being refused by the Walthamstow Education Authority, this meeting gives power and instruction to the Chairman and Secretary of the special subcommittee to take whatever steps they may deem necessary to obtain the co-operation and assistance of any person or persons (especially the proprietors of the *Lancet*) who may have it in their power to help to secure the terms demanded by the united local profession for the treatment of elementary school children found defective on medical inspection.

This was seconded by Dr. F. P. Elliott and carried unanimously. The meeting then terminated.

OXFORD AND READING BRANCH:

Oxford Division.

A general meeting of this Division was held on November 4th at the Radcliffe Infirmary, Oxford, at 3.15 p.m. Dr. Turrell took the chair, and about forty-five members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Proposed Extension of Acland Home.—The Secretary read a letter from the Chairman of the Acland Home Committee with reference to a proposed extension of the home to admit certain patients at a reduced charge of two guineas a week. It was decided to refer the matter to the Oxford Medical Society.

Grouping of Branches for Election to Central Council.—The Secretary laid before the meeting the scheme of representation on the Central Council proposed by the Secretary of the Southern Branch, and necessitated by the new grouping of Branches. The scheme provides for the election of a member of Council by the Southern Branch and Oxford and Reading Branches alternately for three years, and also for the election of a member by the grouped representatives of the South-Eastern, Southern, and Oxford and Reading Branches, each Branch to elect a member for three years, in rotation. This was agreed to, subject to the consent of the Reading Division.

Cerebro-spinal Meningitis.—Dr. Collier recorded a case of cerebro-spinal meningitis, and showed the patient. A boy aged 6 had initial symptoms of fever, headache, delirium, twitching, and a rash on the fifth day. He was admitted to hospital on the seventh day, when there were marked signs of mental apathy and retraction of the neck. Lumbar puncture was performed, 30 c.cm. of cerebro-spinal fluid were drawn off under pressure, and 10 c.cm. of antimeningitic serum injected. This was repeated five times during the next three weeks, as much as 50 c.cm. of cerebro-spinal fluid being drawn off on one occasion, and 10 to 15 c.cm. of serum being injected as a dose. Improvement followed each injection, and the boy was now convalescent. Dr. Collier raised the question as to the amount of fluid which should be drawn off, mentioning that Dr. Byrom Bramwell had advised only small quantities should be removed in cases of intracranial tumours. The meningococcus was discovered in the later specimens of fluid. Several members discussed the case, giving instances of other cases occurring lately in their practice.

Enlarged Thyroid causing Pressure.—Mr. E. C. Bevers described a case of enlarged thyroid causing pressure symptoms of a very urgent character in a woman aged 27. She was admitted cyanosed, with orthopnoea, and a history of no sleep for five nights. It was thought that rest would relieve the urgent symptoms, but, the patient's condition growing worse, operation had to be immediately resorted to. The gland was hard, and splitting the fascia would not suffice. Tracheotomy was impossible, owing to the extension of the gland beneath the sternum. Mr. Bevers attempted, under light chloroform anaesthesia, to remove the isthmus and half of the gland, but respiration failed, and the patient could not be resuscitated. The specimen, which was exhibited, showed the gland encircling the trachea, the right lateral wall of which was pushed in; it was not of the true scabbard type. A photograph of another case was shown where recurrence of the hypertrophy of the remaining left lobe had taken place after a previous removal of the right lobe and isthmus. Dr. Turrell and Mr. Symonds recorded other cases of fatal asphyxia in such cases of thyroid enlargement.

Specimens.—Dr. A. Gibson showed some pathological specimens, including a congenital syphilitic liver which showed the flint-stone appearance of certain areas and acute necrosis of other areas. Spirochaetes had been found in the liver and spleen. Microscopic specimens: (*a*) *Spirochaeta pallida:* (*b*) section of His's bundle from a case of Stokes-Adams disease.

Treatment of Scarlet Fever.—Dr. R. Milne, Medical Officer to the Barnardo Homes, opened a discussion on the treatment of scarlet fever, advocating his system of non-isolation. He insisted on the importance of (1) preventing infection, and (2) preventing complications. These last were due mainly to secondary infections of the throat, tonsils, ears, etc. By the simple method of swabbing the throat every two hours for the first twenty-four hours with 10 per cent. carbolic oil, and anointing the entire body with eucalyptus oil twice a day for four days and once a day after that till the tenth day, all complications could be prevented. Further advantages were that healthy children might occupy the same room, or even bed, without risk of infection; the family work need not be interrupted; no after-disinfection was needed; and domestic, scholastic, and business life could be carried on as usual. The economy of this method was obvious. Dr. Milne described many instances of serious operation cases being nursed in beds adjoining those occupied by scarlet fever cases, and concluded by giving statistics of outbreaks in the various children's homes, all treated on the non-isolation principle. He was adopting the same methods in the treatment of measles. Dr. Ormerod, Medical Officer of Health for the City of Oxford, criticized Dr. Milne's method, and pointed out the varying degree of infectivity in scarlet fever outbreaks. This was evidenced by the occurrence of single cases in houses where no precautions were taken. He emphasized the difficulties of hospital treatment; cases which were doubtful were admitted and only contracted the disease after leaving their beds. In schools a case might infect only one or two children, and these were often not immediate "contacts." He thought the children of the lower classes were less susceptible to infection, at any rate they seemed to be more immune to pyogenic organisms. He questioned the value of swabbing throats, from his experience in diphtheria. He agreed that fever cases should not be kept too long in fever hospitals. Dr. Collier drew attention to the views of Dr. Allan Jamieson and Dr. Curgenven, who held much the same views as Dr. Milne twenty-five years ago. He hoped the latter would be more successful in establishing his methods, but questioned its practicability in private practice. Several members took part in the discussion, chief stress being laid upon the practical difficulties of two-hourly swabbing of the throat, and the regulations enforced by sanitary authorities. A hearty vote of thanks to Dr. Milne was proposed by Dr. Collier, seconded by Dr. Ormerod, and unanimously accorded.

SOUTH-EASTERN BRANCH:

Chichester and Worthing Division.

A meeting of this Division was held on October 27th at the Hospital, Worthing. Dr. W. S. Simpson was in the chair. There were also present Drs. Hinds, Le Riche, Gostling, Cameron, Ewart, Hague, Wilshaw, Harrison, Eustace, Ware, Wiggins, Lees, M. Smith, Good, Hogdon, Brown, Bushnell, Crook, Walsh, Chaplin, Morris, Hyde, Partridge, Last, Densham, Morton Palmer.

Next Annual Meeting.—It was arranged for the next annual meeting to be held at Chichester.

State Sickness and Invalidity Assurance.—It was proposed and carried that a copy of a letter from the Altrincham Division dealing with proposals relative to State Sickness and Invalidity Insurance should be sent to each member of the Division.

Grouping of Divisions.—In answer to a letter from the Medical Secretary it was unanimously agreed that a continuance of the present grouping of the Division was desirable.

Papers.—The following communications were presented:—(1) Dr. A. F. Hertz (London): Dilated Stomach; its Causes, Diagnosis and Treatment. (2) Dr. Good (Worthing): On Shock. (3) Dr. Partridge (Barnham): A Series of Cases of Arm Injuries in Children. Dr. Hertz's paper gave rise to an animated discussion.

Dinner.—In the evening a dinner was held at the Burlington Hotel, Worthing, at which twenty-two members and friends were present.

Reigate Division.

The autumn meeting of this Division was held at 5 p.m. on Thursday, November 3rd, at the White Hart Hotel. Dr. Rawlings was in the chair, and sixteen members were present.

Confirmation of Minutes. — The minutes of the last meeting were read and confirmed.

Representative's Report.—Dr. Caldecott delivered his report on the proceedings of the Annual Representative Meeting held in London in July. He informed the meeting that the resolution of protest against the publication of such reports as that on uterine cancer, sent up by the Reigate Division, was ruled out of order by the Chairman, but that he received information which led him to believe that it was not likely to occur again. A vote of thanks to Dr. Caldecott was carried unanimously.

Blood-pressure Estimations.—Dr. Langdon Brown read a paper on the practical importance of blood-pressure estimations, which was much appreciated by the members present, many of whom joined in the subsequent discussion. A wish was expressed that he would publish the paper in the Journal.

Treatment of Rural School Children with Defective Vision.—A letter from Dr. T. Henry Jones, suggesting that rural school children with defective vision should be treated at the Reigate eye clinic on the same conditions as the children in the borough, was read and discussed. Dr. Jones explained that he referred only to the children in the adjacent villages, and not to centres such as Dorking or to villages in which a practitioner willing to undertake the work resided. The scheme approved by the Reigate District Medical Society was explained, and Dr. Ogle moved:

> That this meeting approve of the suggestions contained in the letter from Dr Henry Jones as to the treatment of rural school children with defective vision.

This was seconded by Dr. Berridge, and carried unanimously.

Treatment of Defective School Children.—(1) A letter from Dr. Starling, the Honorary Secretary of the South Eastern Branch, was read, stating that an organizing committee from all the Kent Divisions had been formed to take up the matter of treatment of defective school children, in order to have everything ready if the Kent County Council should take any steps, and asking if it would be well to organize Surrey in the same way. Dr. Henry Jones informed the members that the Surrey County Council was in favour of voluntary efforts, approved of local practitioners doing the work, and encourged local bodies to settle the question for themselves. No resolution was moved, but the feeling of the meeting seemed to be that under these circumstances it was not necessary to organize Surrey in the same way as Kent. (2) With reference to Memorandum D 25 from the British Medical Association, dealing with the treatment of school children found to be defective, the following resolution was proposed by Dr. Berridge:

> That as the Education Authority has not yet undertaken to provide treatment for defective school children, the procedure for this Division be left in abeyance until the Division has had experience of the working of the scheme inaugurated by the Care Association of the Borough of Reigate with regard to teeth and eyes.

This was seconded by Dr. Price, and carried unanimously.

Dinner.—After the meeting the Reigate Division and the Reigate District Medical Society dined together, nineteen members and their friends being present.

SOUTH MIDLAND BRANCH:

Buckinghamshire Division.

A meeting of the Division was held at the Red Lion Hotel, High Wycombe, on Wednesday, October 26th. Dr. Reynolds was in the chair, and there were present Drs. W. B. Bannerman, J. T. Bell, P. L. Benson, Draper, Fleck, Larking, Eva Meredith, A. T. Morrison, A. H. Turner, E. O. Turner, H. J. Wheeler, and G. Smith Wynne. Drs. Dickson, Stolterforth, Hogarth, Newcombe, and Hobbs attended as visitors. The total number present was eighteen.

Grouping of the Divisions for Election to Central Council.—The grouping of the Divisions for the election of the Representatives was approved.

Sickness and Invalidity Insurance.—A letter from the Altrincham Division on the sickness and invalidity insurance scheme was read, and it was decided to postpone the consideration until later.

President's Address.—Dr. Reynolds gave his address, On the Importance of the Examination of the Teeth in Diagnosis and Treatment, and a discussion followed, in which Drs. Humphrey Wheeler, Larking, and Dickson took part. The thanks of the members were given to Dr. Reynolds for his interesting paper.

Club Practice.—It was decided that the Division should actively support all members applying for increased fees from clubs.

Payment in Urgent Cases of Accident.—As complaints have been made that no provision exists in the county for the payment of medical men called in by the police to urgent cases of accident and such like, it was resolved:

> That the Standing Joint Committee of the Bucks County Council and the Watch Committee of the High Wycombe Town Council be written to on the matter, pointing out that provision should be made for payment of such fees by the police authorities, and that a fee of 3s. 6d. should be paid between 7 a.m. and 7 p.m., and 7s. 6d. between 7 p.m. and 7 a.m. Also that 1s. per mile be paid for journeys.

Several members gave instances in which they had been called by the police and had got nothing for it.

Medical Inspection of School Children.—The Report of the Committee on the Medical Inspection and Treatment of Defective School Children, on the proposition of Dr. E. O. Turner, seconded by Dr. Benson, was approved. It was as follows:

"That the Buckinghamshire Division is prepared to co-operate with the local education authorities in the county in the event of any alteration in the present method of inspection being contemplated, and they would be willing to carry out the work at the rate of £40 for one session of two hours per week per school year, and *pro rata* for two or more sessions per week; or, as an alternative method of payment, they would accept a sum of not less than 1s. 6d. per child inspected.

"In reference to treatment, the Committee begs to submit the following proposals containing a general outline of the methods proposed. They consider that the details should not be gone into at this stage, but that the Division should agree on the general plan first.

"*Scheme.*

"The only cases for which treatment be provided at the expense of the local education authority should be:

"Refractions.—At a fee of 7s. 6d. per case (spectacles not included).

"Ear, Throat, and Nose Cases.—At a fee of 10s. 6d. per case.

"Skin Diseases, including Ringworm.—Ordinary cases, 5s.; ringworm, 10s., or when *x* rays are used, 21s.

"Anaesthetics.—At a fee of 10s. per case. All drugs, dressings, etc., to be provided at the expense of the Education Authority.

"If the system of payment per case be not adopted, the Committee would suggest that a salary of £50 for the session of two hours per week per school year be accepted.

"Your Committee would advise that school centres or clinics be established in places where the number of the children would justify such a procedure, and that in sparsely populated districts the surgeries or dispensaries of local practitioners be recognized as suitable places for treatment.

"The centres or clinics to be conducted by a committee of management appointed by the Division, who shall recommend what surgeries or dispensaries shall be recognized.

"The staff of the clinic shall be elected by the committee of management from the medical men practising on their own account in the area from which the children are drawn.

"Dr. E. O. Turner submitted a scheme differing somewhat from that of the Committee. The outline of it was as follows:

"1. There should be school clinics in various centres throughout the county.

"2. Each centre should have a suitable building, furnished similar to the out-patient department of small hospitals.

"3. All medical men in the area of each clinic should be eligible for an appointment to the clinic of that area; they should send in their names to the Honorary Secretary of the Division, and selected by the members by ballot. Those chosen would be sent to the education authority for final selection.

"4. The staff of each clinic should include—one for refractions; one for skin cases; one for throat, ear, and nose cases; one for anaesthetics; one for *x*-ray cases. Each of the five should understudy one of the others.

"5. Each new case would be paid for at the rate of 10s. each. Anaesthetics and *x*-ray cases 10s. each extra.

"6. All fees should be pooled and equally divided between the staff.

"7. Dressings, drugs, instruments, and a nurse-dispenser to be supplied by the Education Authority."

It should be noted that Dr. Turner's scheme does not include the recognition of surgeries.

Dr. HOGARTH, the county M.O.H., gave a brief outline of what he proposed to suggest to the County Council, and especially with regard to the employment of nurses to follow up slight cases not requiring a doctor, such as verminous heads, non-use of pocket-handkerchiefs, etc.

Many members thought that in the case where such a nurse was employed it should be a *sine qua non* that the medical profession be represented, or the committee of the nursing association employing her.

It was resolved that the scheme be sent to the County Council with an explanatory memorandum, stating also that the Division had modified its opinion as to 2s. 6d. per case for inspection, and now suggested 1s. 6d. per case.

NORTHAMPTONSHIRE DIVISION.

A MEETING of the Division was held in the Board Room of the Northampton General Hospital on November 8th, at 2.30 p.m., after a luncheon at Franklin's Restaurant. Dr. TERRY was in the chair, and the following were present: Drs. Burt, Harries-Jones, Robson, Baxter, Jacob, Darley, Evans, Percival, Linnell, Hichens, Odgers, Godwin, Audland, Hollis, and Wagstaffe.

Confirmation of Minutes.—The minutes of the preceding meeting were read and confirmed.

Congenital Phimosis.—The CHAIRMAN then gave an interesting address on the treatment of congenital phimosis, advocating not circumcision, but merely the separation of the adhesions by a stout silver probe, and then retraction of the foreskin. He gave ten reasons for advocating this treatment: (1) No nurse; (2) no anaesthetics; (3) operation absolutely safe; (4) no bleeding whatever; (5) no preparation; (6) no cutting; (7) duration of operation only half to one minute; (8) no dressing; (9) no dread of operation; (10) the gland is left with its natural covering. The paper was discussed by Messrs. EVANS, ODGERS, and PERCIVAL, and Dr. TERRY replied.

Annual Representative Meeting.—Mr. BAXTER then gave an interesting report of the Annual Representative Meeting. Dr. LINNELL proposed and Mr. EVANS seconded a vote of thanks to Mr. Baxter for his admirable services as Representative of the Division for the past five years, which was passed with acclamation.

Demonstrations of Cases and Specimens.—After the discussion of an ethical matter, the meeting adjourned to the out-patient department of the hospital where the following clinical cases and specimens were shown: Four successful cases of gastro-jejunostomy for gastric ulcer, by Mr. ODGERS; a specimen of sarcoma of the choroid, by Mr. HARRIES-JONES; a case of prurigo and a tumour of the tegmental portion of the pons, by Dr. ROBSON; a case of polyarticular tuberculous arthritis, a case of myxoedema, a case of peculiar heart murmur, and a case of locomotor ataxy associated with partial paralysis of the third nerve, by Dr. HICHENS.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

SOUTH-WEST WALES DIVISION.

A MEETING of this Division was held on November 1st, Dr. J. EDGAR P. DAVIES presiding.

Poor Law Reform and Medical Profession: Our Opportunity.

The CHAIRMAN delivered the following address:

During the last century, and especially in recent decades, the changes in the social conditions of mankind have been rapid and even revolutionary. Clouds have lifted from the masses of the people, their lives have become healthier and freer; they taste more of pleasure and mirth, and the horizon of their mental outlook is broader and brighter.

Side by side with an improvement in the environment of the masses the conscience of the public has been aroused by philanthropists and social workers to an increased sense of responsibility towards those who are less fortunate, and to a greater readiness to assist to some extent in making happier or more endurable the lot of those who have been unfortunate in the struggle for existence.

The wealth of nations is increasing and their powers for helping the poor are greater.

The expulsion of mysticism and the enthronement of science in the realms of medicine and surgery have transformed them in the eyes of the public; who no longer view them with mistrust, but regard them as being among the essentials of the welfare of the community, and especially so to that section of it where the financial resources are meagre and to which sickness may mean penury and destitution.

With this awakening of the public conscience, this increase in the nation's wealth and the powerful weapons at hand for good, it is not a matter of surprise, therefore, that what our forefathers 300 to 400 years ago, when the Poor Law was first instituted, may have considered adequate to meet the demands of the poor classes, are to-day considered quite inadequate in spite of radical changes and improvements.

A cursory survey of the working of the Poor Law will be sufficient to show that it is not meeting adequately the demands even of destitution, of the widow, and the orphan, much less the pitfalls that lie in the path of the workers and their families, who through sickness and possibly the previous improvidence of the breadwinner can be reduced to penury at any moment.

The only means of meeting such cases are charity and the Poor Law, the former fickle and uncertain, and the latter associated in the minds of the people with its stigma of pauperism, loss of respectability and self-respect. The extent to which we *should* relieve the workers of some of their responsibilities (as parents to their children and as individuals to themselves) may be a matter of opinion.

I have taken up your time with this consideration of the Poor Law from a broad standpoint in order to show that, to offer opposition to the present movement for its reconstruction, will be not so much futile as almost inhuman.

We have to take it as a crying necessity, and since, as a profession, we have had so little to do with the bringing about of the inquiries that have lately taken place, and have done so little to egg on public opinion in the matter, it behoves us now to do our part in the bringing about of a better method of helping the poorer classes, and trust to Providence that our object in so doing will not be misunderstood.

The opportunity referred to in the title of this address, however, although embracing what may be done in the way I have indicated for the poor, was intended to refer more especially to an opportunity that most directly concerns the profession. Charity begins at home, and in contemplating the great field open to us for the betterment of the masses we must not forget that there are hardships and struggles in our own brotherhood of medical practitioners, which are due to some extent to an unsympathetic and selfish attitude to our profession by the State and the public generally.

The public is quite willing to admit that the work we do is of the highest order, that its advancement along scientific lines is of the highest importance to the State, and that ours is a hard profession; but when we come to *quid pro quo*—to the question of remuneration for our diligence and hard endeavour—we are forced to believe that moral obligation and adequate remuneration are not even related to each other.

To secure adequate remuneration you have to avail yourself of the ordinary methods of business—to come to an understanding with your fellows as to what is a reasonable price, and to make it hard upon any one who attempts to undersell you.

As substitutes for the present Poor Law, two schemes have emanated from the Poor Law Commis-

sion. They are embodied respectively in the Majority Report and the Minority Report of the Poor Law Commission.

Even were I capable of doing so, it is not my intention to attempt a detailed comparison and criticism of the two reports, and the various schemes which have been suggested.

The object of these disjointed remarks will be threefold:

1. To endeavour to call the attention of members of this Division to the fact that the mind of the country, as foreshadowed by the opinions of statesmen and philanthropists, is practically made up that a great change is to come over the relationship of the medical profession to the public, a change that is undoubtedly as radical and immediate as any change in this relationship that has ever taken place.

2. To submit that unless we show greater interest in a matter so vital to our welfare, it is probable that we will find ourselves in a worse position than we are at present.

3. To point out to this Division that we will shortly have an opportunity, which we will probably never have again, of uprooting the evils of the past, and of ensuring for the future that our work can always be done conscientiously and efficiently, and be adequately remunerated.

The Majority Report recommends that the guardian should be done away with, and replaced by a Statutory Committee of the County Council, to be called the Public Assistance Authority. This body, the Public Assistance Authority, is to appoint two committees—one the County Medical Assistance Committee, for dealing practically with general relief, and the other the Local Medical Assistance Committee, for medical relief in smaller areas. They suggest that a system of provident dispensaries should be set up, offering inducements to *all* persons below a certain wage limit to become members. In the public medical service scheme of the British Medical Association it has been laid down as essential that the management of provident dispensaries must be in the hands of the profession.

The Minority Report recommends also that boards of guardians should be done away with, and that their work be distributed, the able-bodied being dealt with by a central organization, while those who are not able-bodied should be distributed among four existing committees of county and county borough councils: the Health Committee dealing with medical relief, the Education Committee with school children, the Pensions Committee with the aged, and the Asylums Committee with the feeble-minded.

Further, Registrars of Public Assistance are to be appointed, with most important duties in co-ordinating the committees.

By this scheme, although free medical service is disavowed, it is generally felt that the tendency of the recommendations is in that direction. At any rate, the only system of payment by the poor is what the Authority can squeeze out of them after they have received their medical attention and sick pay. There is no suggestion of regular contribution by way of insurance, and from a perusal of the Minority Report there is reason to think that the system of providing insurance as suggested in the Majority Report, which would tend to the spirit of thrift and self-provision, is discouraged.

The object of the Majority Report appears to be individual responsibility, and of the Minority Report social obligations.

Putting it in another way, the object of the Majority Report was to encourage providence, with the establishment of provident dispensaries on the lines of the scheme for public medical service propounded by the British Medical Association. The object of the Minority Report was to co-ordinate the Poor Law with other State medical services and to appoint whole-time officers in each department.

The Majority Report finds that the effects of the present system of the Poor Law with its restrictions has had the following effects:

1. It has fostered independence to some extent.

2. It has, however, led to the neglect by the poorer classes to provide medical assistance for themselves and their families.

3. It has called out a vast amount of medical charity.

4. It has developed the sale of patent medicines, and has created a cheap type of medical practitioners in the form of sixpenny doctors.

Sickness is one of the chief causes of pauperism, and we are told that, "To the extent that we can eliminate or diminish sickness among the poor, we shall eliminate or diminish the existing amount of pauperism," but it seems to me that in both reports our powers of reducing sickness are overestimated, and that an elaborate system for the prevention of disease, however estimable and important in itself, will not be productive of the Utopian result that the Commissioners anticipate.

It is not to be wondered at, therefore, that having arrived at these conclusions the Commissioners should form the opinion that medical assistance should be rendered more accessible to a large section of the working classes, through the intervention of the State, but that those who contribute towards their own medical assistance should obtain it on more eligible terms.

1. *The Effect of Expansion of Poor Law Service upon General Practitioners.*—Now, the Majority Commissioners are of opinion that it would be advisable to secure the co-operation in their scheme of medical clubs, friendly societies, charitable hospitals, contract practice and other organizations. Dr. McVail, one of the Commissioners, thinks that the clerk, the artisan, the railway servant, etc., are suitable for membership. When we consider that the widening of the channels of medical assistance will allow people who are now private patients to receive public medical assistance, it does not require much imagination to perceive that under these various heads the greater bulk of the work of the general practitioner is going to be uprooted and placed upon an entirely new basis.

Further, if this work is going to be relegated to a body of whole time officers with fixed salaries, as suggested by the Minority Report, surely it is time that general practitioners should be alive to the dangers which threaten them, for if they are not prepared to become whole-time public assistance officers with miserable salaries, many of them are bound to be exterminated.

2. *Remuneration which Commissioners and Lay People may Offer.*—Three methods of remuneration are open to medical officers: (1) Payment of so much per member per week, as in club practice; (2) payment according to the work done; (3) payment by fixed salaries.

Under the Majority scheme it is proposed that contributions to the provident fund should be made by the workmen, the employer, and the State. We will suppose—and this has been suggested—that three-fifths be paid by the workman, one-fifth by the employer, and one-fifth by the State.

In Germany the employee pays two-thirds and the employer one-third of the sickness and benefit premium: a man receiving 24s. per week pays 6d. per week premium. For this he obtains half wages and free medical and hospital treatment.

With regard to the payment of so much per member per week, the great danger which we have to guard against is the possibility of the present rate of contract practice and medical clubs being taken as a basis for the determination of the new scale of remuneration for the medical officer.

The reasons for combating this basis for remuneration are:

(*a*) It has been laid down as an axiom by responsible officials of the British Medical Association that club practice must be regarded as a form of charity, and it would be iniquitous to lay down any scale of charges that would regard the State as deserving of charity.

(*b*) Because charity has entered into the contract we have submitted to rates of remuneration from club practice which are quite inadequate.

(*c*) Under a State-regulated medical service the

slapdash methods of contract practice to which we have to stoop in order to make some profit out of it would not be allowed to continue; our work would have to be more carefully done, and rightly so. More care would have to be taken in the examination of cases; proper records of the patients and of the results of our examinations, with an adequate report of the condition of the diseased organs, would have to be made.

We would, therefore, be unable to deal with as many patients as we do at present, and at present rates our remuneration would be much smaller than it is now.

This brings me to the third heading:

3. *Basis of Remuneration which we Ought to Put Forward.*—From our point of view there is much less to be feared from that system in which remuneration depends upon the amount of work done. Such a system of remuneration would mean the careful drawing up of a detailed tariff, and as it would be impossible to discuss such a tariff in a meeting like this, we can only deal with the main principle of remuneration.

It is held, even by the Commissioners, that under this system of remuneration there would be an incentive to the medical man: to gain the favour of his patients and so increase his practice; to increase his income by giving an amount of attention and treatment to his cases that was above the "minimum work compatible with efficient treatment," and also with the same objects to order extras for his patients needlessly.

We had better take this as a bonâ fide contention. When we come to the system of remuneration in which each member would subscribe so much per week as insurance that would supply medical attendance and treatment, hospital treatment and sick pay, we recognize our old friend, contract practice.

As any such scheme would be carried out more or less on the lines of contract practice, it would be well to consider the advantages and disadvantages of this system from the point of view of the workmen and the medical practitioner. Time will not permit us to regard the question in detail from the workmen's point of view, which can be summed up by saying that the advantages are largely pecuniary, and with all its failings the work is "dirt cheap at the price."

To the medical officer the *advantages* of the system are:

1. There are no bad debts.
2. Regularity of payment of remuneration.
3. Absence of fluctuation of income with fluctuation in the prevalence of sickness.
4. Relief from the bookkeeping and account sending associated with that portion of practice to which the lower scale of fees applies.

The Disadvantages.—Whatever scale of payment is made by the workman, there will always be a temptation for him to endeavour to get the best of the bargain. To take a case of ordinary illness: In private practice among this class the practitioner is generally called in only to more or less severe types of illness; his visits are as few as are consistent with efficient treatment; during convalescence they are cut down to the minimum, and if convalescence promises to end in restoration to normal health they are frequently stopped before that consummation is reached. Any detention beyond this would be attributable in the mind of the patient to a desire on the part of the practitioner to run up a bill. *They desire the minimum amount of work consistent with efficient treatment.* Now, in contract practice it costs the patient no more to have a full number of visits by the medical attendant, more frequent visits during convalescence, and a prolongation of medical attendance with medicine until normal health is fully restored, and anything less than this is called neglect. The same thing is to be seen in the case of special visits and of minor or trivial ailments; they cost them no more, and the patient and his friends would be "more satisfied," as they put it. Now, experience tells us that in contract practice it is difficult and generally impossible to get adequate remuneration even on the basis of "minimum work consistent with efficient treatment," on which basis, with reasonable remuneration, we might be able to do our work efficiently and conscientiously. But when we have to give full attention to ordinary cases, make unnecessary special visits, treat minor and trivial ailments, take on any extra care of cases such as is demanded by the Compensation Act, school inspection, school attendance authorities, etc., perhaps carry out all those major operations of surgery that we meet with, give a helping hand as assistant or anaesthetist to our fellow practitioner in such operations, allow ourselves to be called in in consultation with our fellow practitioners because the patient, his numerous relatives or friends, or some old witch "would like to feel more satisfied," and to dole out an inordinate amount of charitable work—when we are called upon to do all this extraordinary work, and even more than this, on a basis of remuneration that does not even meet the demands of the efficient minimum of ordinary work, the discrepancy in remuneration is much increased. But in the absence of loyal unity in the ranks of the profession we have had to submit to it, with the result that instead of our calling being actuated by conscientious effort and high endeavour, we are grovelling in work that is degrading and demoralizing to ourselves, and dishonest and inefficient for our patients. Small wonder is it that contract practice has been described as "an invention of the devil."

Passing now to remuneration by fixed salaries, as set out in the Minority scheme, we must remember that in the Minority Report provident insurance contributions are not mentioned, and the only payments made by the working classes are what the authority can extract from them after medical attention has been given. We must conclude that the payments directly made by the working classes will be but a small fraction of the total expenditure, and that the bulk of the expenditure will be met out of the rates and the Exchequer. The cost to the State of such a scheme would be enormous, and it would demand strict economy in its management. Fortunately, however, for the State, there is associated with the scheme, in the form of paid servants, a large body of men, who in the past have been found ready to submit to anything. Forces always pick out the path of least resistance, and in the case under consideration, the economic force will prove no exception to the rule.

From our knowledge of the remuneration meted out of these funds to the various kinds of medical officers in their service, and from opinions expressed by members of our profession who have given this matter much attention, we must be convinced that a fair proportion of the profession will be unable to expect an income of more than £200 to £300 a year and be servants of the State and an uncontrolled and inconsiderate public. It is to the vital interests of the State that men of intellect, research, industry, and high moral tone, should be induced to enter the portals of the medical profesion, and it is our duty to see that the inducements are such that men possessed of these qualities are attracted to it. I will not insult your intelligence by entering into any consideration of such remuneration. With regard to the Minority Report, however, it should be mentioned that it has received the support of several prominent statesmen and of the Labour Conference.

As far as can be gathered at the present crude state of the deliberations of the Commission, the scheme that is far and away most favoured by them is the provident insurance scheme by weekly contributions of so much per member; the one next in favour being remuneration by fixed salaries; so it behoves us to be prepared for the inevitable and to formulate in detail our views, especially as to the rate of remuneration under a provident insurance scheme of public medical assistance.

I have already mentioned that under a public medical assistance scheme on a contributory basis our work will have to be more carefully done and records of cases will have to be kept, so that there will be an increase of work per case. This should mean an increase of payment per member. Adding to this the

indisputable facts that, at present, club practice is much underpaid and is a form of charity, it follows that there should be a threefold increase in the present rate of remuneration.

Now the British Medical Association will probably be asked to formulate a detailed scheme of public medical assistance, and if in that scheme the payment per head is not three or four times the average at present, the outlook for the general practitioner will be a poor one, if only for the reason that he will be entangled in a huge system of poorly paid contract practice.

Before we can expect the State to acquiesce in these rates of remuneration it will be essential that we put our own house in order. For after such acquiescence by the State, it would be unfair for the medical profession to continue the present state of payments by medical clubs; for by so doing it would be a party to unfair competition and underselling, the very evils they had begged and prayed the State to remove.

After an imperfect perusal of the various schemes, the points in favour of one scheme over another appear small when we contemplate the possibility of disaster in the fight through the indifference, blindness to their own interests, and absence of unity shown by the profession at such an opportune moment as the present. We cannot expect Central Committees to successfully organize a firm stand for the interests of the profession in this great movement unless we show them that they have our wholehearted and individual support, and the only practical means we have of showing our interest is by the convening of meetings for the discussion of this all-important matter. The Poor Law question is one that does not concern the members of the British Medical Association alone; practitioners who are not members, for the most part have no opportunity of hearing all sides of the question discussed. They should be individually invited to these special meetings, which should be convened by the British Medical Association, as that is the only body in a position to organize such meetings.

It is essential that we use every endeavour to secure the co-operation of all members of the profession, and that we remember that any disunion or indifference in our ranks is bound to spell disaster to the future of our calling.

We have now an opportunity such as will probably never occur again of laying deep and wide the foundations of a scheme of public medical assistance which will ensure for all time that we are adequately remunerated for our work, so that it can always be performed in a clean and efficient manner. For such a scheme posterity will thank us. Let us hope that this opportune time in the affairs of the profession will not be missed.

SOUTH-WESTERN BRANCH:

Truro Division.

A QUARTERLY meeting was held at the West Cornwall Infirmary, Penzance, on Tuesday, September 13th, to which all non-members practising in the Division were invited. Seventeen members and two non-members were present. Dr. J. SYMONS was in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

British Red Cross Society.—The HONORARY SECRETARY reported what was done in the matter of the British Red Cross Society at the last meeting at Truro. After a general discussion, it was thought that no resolution was needed, but that it be recorded in the minutes that the unanimous opinion of the meeting was that the action of the British Medical Association *re* fees for lectures should be strongly backed up.

Insurance Fees: Workmen's Compensation Act.—The HONORARY SECRETARY reported that he had after considerable difficulty obtained 118 votes in favour of and 2 votes against the proposal to charge a minimum fee of £1 1s. for independent reports under the Workmen's Compensation Act. He was instructed to try to obtain the other two votes if possible, and then notify all the men in the Division. (N.B.—The two gentlemen in question have now agreed to the guinea fee.)

Life Insurance Fees.—With regard to the proposal for a minimum fee of £1 1s. for examinations for life policies where the sum insured was £100 or over, the HONORARY SECRETARY reported the voting to be 96 in favour of and 24 against the scheme. He was instructed not to let the matter drop, and report at the next meeting.

Ethical Committee.—Mr. M. R. TAYLOR then proposed and Dr. EDWARDS seconded:

> That an Ethical Committee, composed of members practising in the Divisional area, be formed:
> (1) To consider a report on the model ethical rules with a view to their adoption at the next meeting.
> (2) To consider and report on the possibility of arriving at some uniform scale of fees in contract and general practice.
> (3) To suggest any further scheme arising out of (2) for the benefit of the profession.
> (4) That for the purpose of carrying out Nos. (2) and (3) the non-members of the Divisional area be asked to nominate two of their number to serve on the committee.

Mr. Taylor explained the need of an Ethical Committee in the Division and its duties. He then outlined his ideas on the points in the resolution: that meetings of men practising in each union be held, at which questions of fees in each locality could be discussed, in order to see how far these could be adjusted or made uniform; that the result of these meetings be sent to the Honorary Secretary, who would collate them and lay them before the enlarged Ethical Committee, who should report to general meetings of all men practising in the Division, the Honorary Secretary to organize these local meetings, and furnish them with a draft agenda. With regard to No. (3) of the resolution, Mr. Taylor drew attention to the fact that fees, particularly contract fees, had been stationary or even lowered in West Cornwall during the last fifty years, during which time the wealth of all other classes had increased considerably; while medical expenses generally, education, cost of living, rent, rates, drugs, etc., had all gone up very much in amount. He estimated that the ordinary weekly household expenses had risen from 20 to 25 per cent. in the ten years he had been in Cornwall. He suggested that it would be possible to arrive at some uniform raising of fees throughout the Division. The resolution was passed unanimously, and the Honorary Secretary instructed to take steps to put the matter in train.

Election of Ethical Committee.—The following Ethical Committee was elected: Drs. Edwards (Penzance), Sharp (Truro), and Shaw (St. Austell), with the Chairman and Honorary Secretary.

Vote of Thanks.—A special vote of thanks to the Honorary Secretary for the great amount of trouble he had taken *re* insurance fees was passed.

Complaint by West Penwith Medical Society.—The HONORARY SECRETARY then replied to a complaint made by the members of the West Penwith Medical Society with regard to a paragraph in the annual report of the South-Western Branch for 1909-10, and explained the action of the Branch Council in the matter.

Tea.—Tea was provided by the staff of the hospital under the superintendence of the Matron. Those present were then shown round the building, the new operating theatre being especially admired.

British Red Cross Society.

Mr. M. R. TAYLOR, Honorary Secretary, Truro Division, attended a meeting of the officials and other ladies and gentlemen interested in the above society, held at Camborne on November 3rd, and explained the reasons why the British Medical Association urged all medical men to refuse to lecture without being paid a proper fee for so doing. He also drew the attention of those present to the fact that not a single one of the wealthy people in the county had given a subscription of £5 to the society, but still the doctors were expected to give £5 5s. worth of services for nothing.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

The autumn meeting of this Branch, together with the Gloucestershire Branch, was held at the Imperial Hotel, Malvern, on October 27th. Dr. John Steed (Hereford) was in the chair. Over thirty members were present.

Annual Meeting at Birmingham.—It was unanimously resolved that, in the event of any excursions being projected to Worcestershire and Herefordshire in connexion with the Annual Meeting at Birmingham, the Branch Secretary should be communicated with, with the view of arranging matters with the Birmingham Committee.

Glandular Endometritis.—Mr. Furneaux Jordan read a paper entitled, Glandular Endometritis, shortly describing the condition of the uterus in this disease, and recommending early examination to diagnose from myoma of uterus, carcinoma and displacements. The enlargement of the uterus in glandular endometritis was an enlargement of the whole organ—adenoma. The muscular wall was seen thickened to two or three times its normal size; there was thickening of the endometrium to two or three times its normal depth, of soft, velvety consistency and yellowish-grey colour, and raised occasionally into folds sufficiently prominent to merit the description of "polypoid." The vessels were noted to be dilated on the wall of the uterus. The clinical symptoms distinguishing this disease were a gradually increasing menorrhagia with profound anaemia and comparatively little or no loss of flesh. All the cases were noted in married women, the age average being 45. The treatment recommended in early stages was curetting; in later, subtotal hysterectomy, abdominal by preference. Specimens of uterus removed and microscopical slides were exhibited. An interesting discussion followed, in which several members took part, including Drs. Finlay, Pollard, Howell, Fowler, Scott, and Steed.

Vote of Thanks.—Mr. Furneaux Jordan having replied on the whole discussion, a cordial vote of thanks was passed, on the proposition of the President, for a most interesting and useful paper. (It is intended to publish this paper *in extenso.*)

Dinner.—Subsequently to the meeting twenty-four members dined together. A very pleasant evening was passed, and, after honouring the toast of the King's health, proposed by the President, Mr. Herbert Jones, in felicitous language, proposed the healths of the Presidents of the two Branches, both of whom shortly replied.

☞ *To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Birmingham Branch: Central Division.—A general meeting of the Division will be held at the Medical Institute on Wednesday, November 23rd, at 4 p.m., to elect a Representative for the Division at Representative Meetings and to transact other business.—A. W. Nuthall, W. T. Lydall, Honorary Secretaries, Medical Institute, Edmund Street, Birmingham.

Lancashire and Cheshire Branch.—A Branch Council meeting will be held at Onward Buildings, Deansgate, Manchester, on Wednesday, December 7th, at 4.30 p.m.—F. Charles Larkin, Honorary Secretary.

Lancashire and Cheshire Branch: Altrincham Division.—A general meeting of the Division will be held at the Board Room, Altrincham Hospital, at 4.30 p.m. on Wednesday, November 30th. Afternoon tea, 4.30 p.m.; meeting, 5 p.m.; dinner (at the Brooklands Hotel), 7 p.m. Further particulars will be given in a future notice.—H. G. Cooper, Honorary Secretary.

Lancashire and Cheshire Branch: Warrington Division.—The quarterly meeting of the Division will be held at the Infirmary, Warrington, on Tuesday, December 6th, at 8.15 p.m. Dr. J. H. Taylor, of Salford, member of the Central Council, will give an address on Public Medical Service.—T. A. Murray, Honorary Secretary.

Metropolitan Counties Branch: Lambeth Division.—A meeting of this Division will be held on Thursday, November 24th, at the Evelina Hospital, when Dr. J. Charlton Briscoe will read a paper on The Pathology of Arthritis from the Clinical Standpoint.

Metropolitan Counties Branch: Tottenham Division.—The second meeting of the session will be held, by kind invitation of Dr. Tresilian, at White Lodge, Silver Street, Enfield (close to G.E.R. Station), on Friday, December 2nd, at 9.15 p.m. Chairman, Dr. A. Greenwood. Business: (1) Report on Ward Organization. (2) Resolution proposed by Dr. Fuller: "That the name of this Division be changed from 'Tottenham' to 'North London.'" (3) Consideration of the medical treatment of school children, after paper by Dr. Fred. Tresilian (Enfield) on the subject. (4) Any other business.—J. A. Percival Barnes, Honorary Secretary.

Metropolitan Counties Branch: Walthamstow Division.—The next meeting of this Division will be held, by the kind invitation of Dr. J. C. Muir, at the Whipps Cross Infirmary, Leytonstone, on Tuesday, November 22nd, at 4 p.m. Agenda: (1) Resolution: (i) "That, having considered an advertisement by the Walthamstow Education Committee for the appointment of an ophthalmic surgeon, and having had regard to the negotiations between the Division and that Committee, and the resolutions on the subject passed by a general meeting of the profession on November 11th, 1910, this Division is of opinion that it will be prejudicial to the interests of the medical profession for any medical practitioner to accept the appointment upon the terms and conditions stated in the said advertisement." (ii) "That copies of the above resolution be forwarded immediately to the Honorary Secretaries of the Metropolitan Counties Branch, to the Honorary Secretaries of all the Divisions of the Branch, and to the Honorary Secretaries of the Bromley and Croydon Divisions of the South-Eastern Branch; that they be requested to bring the matter before the executive of those bodies with a view to all possible action being taken by them to support the Walthamstow Division in the matter." (2) Clinical demonstration by J. C. Muir, M.D., Medical Superintendent, Whipps Cross Infirmary.—A. Pottinger Eldred, Honorary Secretary.

Southern Branch.—Notice is hereby given that a special meeting of this Branch will be held at the South-Western Hotel, Southampton, on Thursday, November 24th, at 2.45 p.m., to consider the following resolution, submitted by the Council of the Branch, namely: "That, on and after January 1st, 1911, every candidate for election by this Branch of the Association shall furnish to the Honorary Secretary of the Branch a certificate from two members of the Association that he is personally known to them, and is a fit and proper person to be elected a member." At the conclusion of the business the meeting will resolve itself into the ordinary half-yearly general meeting (clinical), when Dr. Herbert R. Spencer will give a Lantern Demonstration illustrating the Examination and Diagnosis of Tumours of the Uterus, after the discussion of which papers will be read and cases shown. A resolution *re* Sir William Collins's bill concerning death certification will be submitted to the consideration of the meeting.—James Green, Brandon House, Mile End, Portsmouth, Honorary Secretary.

South-Eastern Branch: Folkestone Division.—A combined meeting of the East Kent Divisions and of the Folkestone Medical Society will be held at the Royal Victoria Hospital, Folkestone, on Saturday, December 3rd, at 3 p.m. Agenda: (1) Minutes. (2) Business. (3) A paper will be read by Dr. C. Alfred Jordan, Lecturer on Medical Radiography to Guy's hospital, on *X*-Rays Diagnosis (with lantern demonstration). The Chairman, Dr. Wainwright, invites members to luncheon at Hotel Wampach at 1.30 p.m. All members of the South-Eastern Branch are invited to attend and introduce professional friends.—P. Vernon Dodd, Honorary Secretary.

South Wales and Monmouthshire Branch: Monmouthshire Division.—A meeting of this Division will be held in the Newport and Monmouthshire Hospital on Friday, November 25th, at 3.30 p.m.—R. J. Coulter and S. Hamilton, Honorary Secretaries.

Staffordshire Branch.—The first general meeting of the session will be held at the North Stafford Hotel, Stoke-upon-Trent, on Thursday, November 24th. The President, J. A. Codd, M.D., will take the chair at 3.45 p.m. Business: (1) Minutes of the last General Meeting. (2) Correspondence. (3) Exhibition of Living Cases. (4) Paper: Infant Mortality, its Causes and Remedies, Mr. Frank Webb. (5) Paper: The Present Status of the General Practitioner, Mr. A. Hill. (6) Exhibition of Pathological Specimens, etc. Dinner, 6.30 p.m.; charge, 5s.—G. Petgrave Johnson, Stoke-on-Trent, Honorary General Secretary.

Yorkshire Branch: Bradford Division.—Under the auspices of the Division a supper followed by a smoking concert will be held at the Great Northern Victoria Hotel, Bradford, on Wednesday, November 23rd, at 8.30 p.m. Tickets, 4s. each, may be obtained from Dr. Metcalfe, Dr. Mitchell, Dr. Little, Dr. Oliver, or the two Secretaries. Members are asked to bring guests. An early application for tickets is requested.—J. Beattie Dunlop and J. Wherry Willson, Honorary Secretaries.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following Staff Surgeons are promoted to be Fleet Surgeons, dated November 14th: W. B. MACLEOD, M.B., A. H. H. VIZARD, M.D., HARRY SPICER, M.B., E. T. P. EAMES, J. A. L. CAMPBELL, and H. P. JONES. Their previous commissions, which were simultaneous, are dated Surgeon, November 14th, 1894; Staff Surgeon, November 14th, 1902.

The following appointments have been made at the Admiralty: Staff Surgeon P. H. M. STAR, to the *Leander*, additional, for torpedo-boat destroyers, November 15th; Surgeon M. F. CALDWELL, M.B., to the *Wildfire*, additional, for disposal, November 10th; Surgeon E. L. MARKHAM, M.B., additional, for disposal, November 10th.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN R. B. BLACK, M.B., from the Seconded List, is restored to the establishment, November 1st. He was placed on the Seconded List for service with the Egyptian army, August 13th, 1908.

The following Lieutenants are confirmed in their rank: FREDERICK R. LAING, M.B., JOHN T. SIMSON, M.B. The former was appointed on probation, July 31st, 1909, the latter January 28th, 1910.

INDIAN MEDICAL SERVICE.

COLONEL P. A. WEIR, M.B., Bengal, is permitted to retire from the service, from October 26th. He joined the department as Surgeon, September 30th, 1875, and became Colonel October 26th, 1905. He served in the Afghan war in 1879-80, receiving a medal.

ROYAL ARMY MEDICAL CORPS SCHOOL OF INSTRUCTION.

MAJOR C. K. MORGAN, M.B., R.A.M.C., to be an Instructor, vice Major C. C. Fleming, D.S.O., who has vacated that appointment, October 29th.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT THOMAS MCEWEN is confirmed in his rank.

TERRITORIAL FORCE

ROYAL ARMY MEDICAL CORPS.

Second South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps—JOHN R. BENSON, F.R.C.S. Eng., late Lieutenant, Army Motor Reserve, to be Lieutenant, September 16th.

Vital Statistics.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE Registrar-General has just issued his return relating to the births and deaths in the third quarter of the year, and to the marriages during the three months ending June last. The marriage-rate during that period was equal to 13.5 per 1,000, or 3.3 per 1,000 less than the average rate in the corresponding quarter of the ten preceding years.

The 227,246 births registered in England and Wales during the quarter ending September last was equal to an annual rate of 24.9 per 1,000 of the population, estimated at 36,169,150 persons in the middle of the year; the birth-rate last quarter was 2.6 per 1,000 below the mean-rate for the ten preceding third quarters, and is the lowest rate recorded in the corresponding period of any year since civil registration was established. Among the several counties the birth-rates ranged from 18.8 in Sussex, 19.8 in Northampton, 20.3 in Dorsetshire and in Devonshire, and 20.7 in Cornwall, to 30.9 in Carmarthenshire, 32.3 in Durham, 33.9 in Glamorganshire, and 36.0 in Monmouthshire. In seventy-seven of the largest towns, including London, the birth-rate averaged 24.7 per 1,000, and ranged from 13.5 in Hastings, 14.7 in Hornsey, 16.5 in Bournemouth and in Halifax, and 18.9 in Reading to 32.0 in Swansea, 32.1 in Merthyr Tydfil, 32.3 in Newport (Mon.), 32.7 in Coventry and in Birkenhead, and 39.3 in Rhondda; in London the birth-rate was 23.4 per 1,000.

The births registered in England and Wales during the quarter exceeded the deaths by 123,058, the excess in the corresponding quarters of the three preceding years having been 123,715, 123,197, and 123,878 respectively. From a return issued by the Board of Trade it appears that the passenger movement between the United Kingdom and places outside Europe resulted in a net balance outward of 46,993 English passengers, 707 Welsh, 17,411 Scottish, and 9,466 Irish passengers; whilst there was an inward balance of 716 British Colonial passengers; among foreigners there was an outward balance of 30,303 passengers.

During the third quarter of the year the deaths of 104,188 persons were registered, equal to an annual rate of 11.4 per 1,000, or 2.8 per 1,000 less than the average rate in the third quarter of the ten preceding years; the death-rate last quarter, like the birth-rate, was the lowest on record for the time of year. Among the several counties the death-rates ranged from 8.4 in Middlesex, 8.6 in Northamptonshire and in Essex, 9.2 in Bedfordshire and in Wiltshire, and 9.3 in Buckinghamshire, to 13.6 in Lancashire, 13.8 in Durham, 14.2 in the North Riding of Yorkshire, and 14.7 in Carmarthenshire. In seventy-seven of the largest towns the death-rate averaged 11.6 per 1,000; in London it was 10.3, while among the other towns it ranged from 5.2 in Hornsey, 6.7 in Leyton, 7.0 in King's Norton, 7.2 in Handsworth (Staffs), and 7.3 in Walthamstow, to 15.5 in Bootle, 15.7 in Tynemouth, 15.8 in Preston, 15.9 in Swansea, 16.4 in Liverpool, and 17.4 in Middlesbrough.

The 104,188 deaths from all causes in England and Wales last quarter included 10,534 which were referred to the principal infectious diseases; of these, 5,595 were attributed to diarrhœa, 1,765 to whooping-cough, 1,415 to measles, 830 to diphtheria, 488 to scarlet fever, 435 to enteric fever, 2 to typhus fever, 3 to pyrexia of uncertain origin, and 1 to small-pox. The death-rate from these diseases in the aggregate was 1.15 per 1,000, or 1.30 per 1,000 less than the average rate in the corresponding period of the ten preceding years.

The rate of infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 97 per 1,000; this rate is 53 per 1,000 less than the average, and is the lowest hitherto recorded in the third quarter of any year. The rates of infant mortality last quarter ranged from 48 in Hertfordshire and in Oxfordshire, 50 in Wiltshire, 54 in Buckinghamshire, and 56 in Dorsetshire, to 122 in Northumberland, 123 in Durham, 124 in the West Riding of Yorkshire, 135 in Lancashire, and 143 in the East Riding of Yorkshire. In seventy-seven of the largest towns the rate of infant mortality averaged 112 per 1,000; in London the rate was 91, while among the other towns it ranged from 43 in Leyton, 46 in Bournemouth, 52 in Hornsey, 54 in Handsworth (Staffs), and 55 in Burton-on-Trent, to 161 in Bootle, 175 in Middlesbrough, 178 in Hull, 179 in Burnley, and 209 in Preston.

The mortality among persons aged 1 to 60 years was equal to 5.8 per 1,000 last quarter, and was 1.1 per 1,000 below the mean rate in the corresponding period of the ten preceding years. Among the seventy-seven towns the rates averaged 6.2 per 1,000, and ranged from 2.2 in Hornsey, 3.6 in King's Norton, 3.8 in Handsworth (Staffs), and 3.9 in Leyton and in Walthamstow, to 9.2 in Middlesbrough, 9.3 in Liverpool, 9.4 in Tynemouth, and 9.5 in Barrow-in-Furness.

Among persons aged 60 years and upwards the death-rate during the quarter under notice was 50.9 per 1,000, the average death-rate in this age-group in the ten preceding third quarters having been 52.1 per 1,000. In the seventy-seven towns the rate averaged 52.6 per 1,000 last quarter, and ranged from 32.3 in King's Norton, 33.2 in Devonport, 35.1 in Leyton, and 39.7 in Hornsey, to 71.1 in Warrington, 74.4 in Preston, 77.6 in Bolton, and 85.5 in Barrow-in-Furness.

The mean temperature of the air last quarter was below the average, and in most districts the rainfall also was less than the average. The duration of bright sunshine during the quarter was considerably below the average.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns, 8,001 births and 4,801 deaths were registered during the week ending Saturday last, November 12th. The annual rate of mortality in these towns, which had been 13.0 and 13.1 per 1,000 in the two preceding weeks, further rose to 14.8 last week. Among the several towns the death-rates ranged from 6.5 in Newport (Mon.), 7.2 in Willesden and in Handsworth (Staffs), 7.4 in Hornsey, and 8.2 in Leyton, to 20.4 in Grimsby and in Dewsbury, 21.2 in Rotherham, 21.8 in Burnley, and 25.0 in Tynemouth; in London the death-rate was 15.8 per 1,000. The annual rate of mortality from the principal epidemic diseases last week in the seventy-seven towns averaged 1.2 per 1,000; in London the rate was equal to 1.4 per 1,000, while among the seventy-six other large towns it ranged upwards to 4.1 in Rhondda, 4.5 in West Hartlepool, 4.9 in Middlesbrough, and 6.5 in Tynemouth. Measles caused a death-rate of 1.0 in Portsmouth, in Leeds, and in Middlesbrough, 1.9 in West Hartlepool, 3.2 in Brighton, and 5.5 in Tynemouth; diphtheria of 1.2 in Norwich and 1.6 in Barrow-in-Furness; and diarrhœa of 2.3 in Rhondda, 2.5 in West Hartlepool, and 2.9 in Middlesbrough. The mortality from scarlet fever, whooping-cough and enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,847 and 1,856 at the end of the two preceding weeks, further rose to 1,882 at the end of the week under notice; 239 new cases were admitted during the week, against 221 and 188 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, November 12th, 784 births and 484 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 12.7 and 13.6 per 1,000 in the two preceding weeks, fell to 13.3 last week, and was 1.5 per 1,000 below the mean rate during the same period in the seventy-seven large English towns. The rates in the several Scottish towns ranged from 8.4 in Perth and 10.2 in Leith to 14.9 in Greenock and 15.3 in Dundee. The death-rate from the principal infectious diseases averaged 1.3 per 1,000, being highest in Glasgow and Dundee. The 234 deaths from all causes registered in Glasgow last week included 5 from scarlet fever, 6 from diphtheria, 4 from whooping-cough, 3 from enteric fever, and 6 from diarrhœa. Two deaths from scarlet fever, 3 from diphtheria, and 4 from diarrhœa were recorded in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, November 12th, 555 births and 358 deaths were registered in the twenty-two principal urban districts of Ireland, as against 564 births and 334 deaths in the preceding week. The annual death-rate in these districts, which had been 17.4, 16.8, and 15.1 per 1,000 in the three preceding weeks, rose to 16.2 per 1,000 in the week under notice, this figure being 1.4 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 17.1 and 16.3 respectively, those in other districts ranging from 6.8 in Limerick and 7.8 in Galway, to 25.6 in Clonmel and 31.7 in Tralee, while Cork stood at 15.8, Londonderry at 15.6, and Waterford at 15.6. The zymotic death-rate in the twenty-two districts averaged 1.2 per 1,000, as against 1.3 per 1,000 in the preceding week.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Physician to Out-patients. Salary, £40 per annum.

BRISTOL ROYAL INFIRMARY.—Honorary Dental Anæsthetist.

CANADA: WESTERN UNIVERSITY, LONDON.—(1) Teacher in Anatomy; (2) Teacher in Physiology; (3) Teacher in Pathology.

CARDIFF INFIRMARY.—(1) Senior Resident Medical Officer. Salary, £120 per annum. (2) House-Surgeon. Honorarium, £50 for six months.

CORNWALL COUNTY COUNCIL.—County Medical Officer of Health. Salary, £500 per annum, rising to £600.

DUBLIN: ROYAL HOSPITAL FOR INCURABLES, Donnybrook.—Resident Medical Officer (male). Salary, £120 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—(1) Resident Medical Officer (male). Salary, £100 per annum. (2) Medical Officer (male) to Casualty Department. Salary at the rate of £100 per annum.

HASTINGS: HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (male). Salary at the rate of £50 per annum.

HEREFORDSHIRE COUNTY COUNCIL.—Assistant to Medical Officer of Health. Salary, £250 per annum.

KENT EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary, £250 per annum.

LAMBETH PARISH.—Chief Medical Officer. Salary, £500 per annum.

LONDON LOCK HOSPITAL.—(1) House-Surgeon and (2) Assistant House-Surgeon to Female Hospital. Salary, £100 and £80 per annum respectively. (3) House-Surgeon to Male Hospital. Salary, £100 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant House-Surgeon; non-resident. Honorarium at the rate of £105 per annum.

PLAISTOW: MEDICAL MISSION HOSPITAL.—Assistant Doctor (female) for Dispensary.

ROYAL HOSPITAL OF BETHLEM, Lambeth Road, S.E.—Resident Physician and Medical Superintendent. Salary, £750 per annum, rising to £1,000.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Assistant House-Surgeon. Salary, £20 for six months.

ST. MARYLEBONE GENERAL DISPENSARY, Welbeck Street, W.—Honorary Anaesthetist.

SALFORD FEVER HOSPITAL.—Assistant Medical Officer at Ladywell Sanatorium. Salary, £150 per annum.

SALFORD ROYAL HOSPITAL.—Honorary Assistant Surgeon.

SEAMEN'S HOSPITAL SOCIETY, Albert Dock Hospital, E.—(1) Senior House-Surgeon. (2) House-Surgeon. Salary at the rate of £100 and £50 per annum respectively.

SHEFFIELD CHILDREN'S HOSPITAL.—House-Surgeon for East-End Branch. Salary, £70 per annum.

SHEFFIELD UNION HOSPITAL.—Resident Assistant Medical Officer. Salary, £100 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £82 per annum.

STOCKPORT INFIRMARY.—Junior House-Surgeon (male). Salary, £80 per annum.

STOCKTON AND THORNABY HOSPITAL.—House-Surgeon (male). Salary, £180 per annum.

STROUD GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

THROAT HOSPITAL, Golden Square, W.—Resident House-Surgeon. Salary, £75 per annum.

UNIVERSITY COLLEGE HOSPITAL, Gower Street, W.C.—Resident Medical Officer.

UNIVERSITY OF LONDON, S.W.—Examiners for (1) Higher Examinations for Medical Degrees; (2) First Examination and Second Examination Part I, for Medical Degrees; (3) Second Examination, Part II, for Medical Degrees.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—(1) Two Honorary Physicians. (2) Three Honorary Surgeons. (3) House-Surgeon. Salary, £100 per annum attached to (3).

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician for six months. (2) Assistant Physician. (3) Honorary Medical Registrar.

WESTMINSTER HOSPITAL, S.W.—Resident Medical Officer. Salary, £100, rising to £200 per annum.

YORK COUNTY HOSPITAL.—House-Physician. Salary, £100 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy as Certifying Factory Surgeon at Twyford, co. Bucks.

APPOINTMENTS.

ASHDOWN, G. W. W., M.D.Edin., Medical Officer of Health for the Ripley Urban District.

BROOK, Miss E. H., M.B., B.S.Edin., Resident Assistant Medical Officer of the Halifax Union Hospital.

BRUCE, M., M.B., C.M.Edin., District Medical Officer of the Morpeth Union.

BUYERS, Miss S. E., M.B., B.S.Edin., Assistant Medical Officer of the Leeds Union Infirmary.

CUNNING, Joseph, M.B., B.S.Melb., F.R.C.S.Eng., Surgeon to the Cancer Hospital.

HOPE, Charles W. M., M.D., F.R.C.S., Assistant Surgeon to Golden Square Throat Hospital, W.

PRICE, A. R., M.B., Ch.B.Edin., Resident Medical Officer of the Cardiff Union.

PRIDMORE, J. W., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Ryde District of the Isle of Wight.

RAYNER, H. H., M.B., B.Ch.Vict., F.R.C.S.Eng., Visiting Surgeon to the Manchester Children's Hospital, Pendlebury.

SIM, J. B., M.B., Ch.B.Glasg., District Medical Officer of the Nottingham Union.

THOMPSON, J. A., M.B., Resident Assistant Medical Officer of the Liverpool Union Workhouse.

TRINDER, A. P., L.R.C.P., M.R.C.S., District Medical Officer of the Bodmin Union.

WILSON, E. B., M.B., District Medical Officer of the Wortley Union.

WRIGHT, Garnett, M.B., Ch.B.Edin., F.R.C.S.Eng., Honorary Assistant Surgeon to the Salford Royal Hospital, vice Mr. P. R. Wrigley, resigned.

YOUNG, A. C., M.R.C.S., L.R.C.P., District Medical Officer of the Woodbridge Union.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—The following have been appointed Clinical Assistants: Dr. Ernest C. Dalton, Major Charles Milne, M.B., I.M.S., Dr. C. C. Nery, Dr. C. C. Taggart, Dr. H. A. Treadgold, Dr. James Whitton, Dr. M. F. Russell, Dr. R. A. Bunn, Dr. Robert Govan, Major Illington, I.M.S.

GLASGOW: WESTERN INFIRMARY.—The following appointments have been made:

Assistant Physician: R. Speirs Fullarton, M.B., Ch.B.Glasg.

Assistant Surgeon: Alexander MacLennan, M.B., C.M.Glasg.

Dispensary Physicians: George Allison Allan, M.B., Ch.B.Glasg., James R. C. Greenlees, M.B., B.C.Cantab.

Dispensary Surgeon: Robert B. Carslaw, M.B., Ch.B.Glasg.

Extra Dispensary Surgeons: W. A. Campbell, M.B., Ch.B.Glasg., A. J. Hutton.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

BRAINE-HARTNELL.—On November 12th, at Weston House, Cheltenham, the wife of Christopher Braine-Hartnell, F.R.C.S.Edin., of a son.

HARMER.—On November 16th, at 45, Weymouth Street, W., the wife of Douglas Harmer, of a son.

LAIRD.—On November 12th, at Fairstead, Macclesfield, the wife of J. N. Laird, M.D., of a daughter.

MARRIAGES.

HARRISON—O'DWYER.—On November 8th, at Christ's Church, Clifton, by the Rev. Canon Haigh, Vicar of St. Paul's, Clifton, assisted by the Rev. C. G. C. Lillingston, John Stubbs Harrison, Solicitor, Bristol, to Frances Joyce Gabrielle, only daughter of Surgeon-General T. F. O'Dwyer, late Army Medical Staff.

WATSON—FITHIAN.—On November 11th, at the Marshall Street Presbyterian Church, Portland, Oregon, U.S.A., by the Rev. Charles Hays, D.D., William Bertram Watson, M.D.Lond., of Harrogate, son of the late John Watson of Stockton-on-Tees and Mrs. Watson of Ilkley, to Pauline Chapman, only daughter of Mr. and Mrs. O. H. Fithian of Portland, Oregon, U.S.A.

DEATH.

ACKROYD-TURKHUD.—On October 18th, at Bombay, India, Violet Ackroyd-Turkhud, M.D., B.S.Lond., of enteric fever.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. BAILLIÈRE, TINDALL, AND COX have recently published a small work entitled *Some Considerations of Medical Education*, written by Dr. Squire Sprigge, editor of the *Lancet*.

Messrs. P. Blakiston's, Son, and Co. announce the publication of the following works: Dr. George M. Gould, A.M., M.D., *The Practitioner's Medical Dictionary*, second edition, revised; Wm. C. Stevens, M.S., Professor of Botany in the University of Kansas, *Plant Anatomy from the Standpoint of the Development and Functions of the Tissues*, second edition, enlarged.

Messrs. J. M. Dent and Sons, Limited, will shortly publish a work on "Mendelism," by Dr. Drinkwater. The author was awarded a gold medal at Edinburgh University for a series of observations on certain malformations on the hands of a Welsh family, which he again deals with in the present essay.

Messrs. J. and A. Churchill announce a new (fifth) edition of Professor A. Cushny's *Textbook of Pharmacology and Therapeutics; or, the Action of Drugs in Health and Disease*. It will contain sixty-one illustrations. In this textbook the action of remedies is first stated as far as it is known from observation in men and animals, and the changes following their use in patients are then brought into accord with these facts as far as is possible. In this edition the space allowed to the less important remedies has been considerably curtailed; this has allowed of a more adequate discussion of those in more general use. The whole has been carefully revised, several chapters have been rewritten and amplified, and a short description of the antitoxin serums has been added.

RECENT PUBLICATIONS.

Stocks and Shares. By Henry Withers. London: Smith, Elder, and Co. 1910. Cr. 8vo, pp. 371. Price 7s. 6d.

A book describing the different forms of securities, the points to keep in mind when examining prospectuses and balance-sheets, the points which real investors and speculative investors respectively ought to consider, and the factors that influence the movement of prices. The value of the book as a guide lies in the fact that it has not been issued, as so many of its analogues have been, in the interests of some firm more or less of the nature of a "bucket-shop." Its author is an independent writer, well known as the city correspondent of several daily papers.

E. Merck's Annual Report. Darmstadt: E. Merck. 1910. Medium 8vo. Pp. 380. Price 1s. 6d.

This is the twenty-third volume of a useful publication, which describes from an impartial standpoint recent advances in pharmaceutical chemistry and therapeutics. In connexion with all statements made, references are given either to independent publications or previous issues of the same volume—usually the former. The brochure concludes with some excellent bibliographical and other indexes. On direct application to the London agents of the firm, 16, Jewry Street, E.C., copies can be obtained gratis.

War, Police, and Watch Dogs. By Major E. H. Richardson. Edinburgh and London: William Blackwood and Sons. 1910. Cr. 8vo, pp. 132.

An account of the work which dogs may, and in some instances do, perform in assisting the police and in connexion with ambulance work. The kind of dog which should be chosen and the nature of its training is set forth. The book is excellently illustrated throughout, and the arguments in favour of using dogs for ambulance purposes in war are clearly and convincingly set forth.

DIARY FOR THE WEEK.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

MEDICAL SECTION, 15, Cavendish Square, W., 5.30 p.m.—Paper:—Dr. F. Craven Moore and Dr. L. Kilroe: The Use of Belladonna in Dyspepsia.

WEDNESDAY.

HUNTERIAN SOCIETY, London Institution, Finsbury Circus, E.C., 8.30 p.m.—Papers: Mr. J. E. R. McDonagh: Treatment of Syphilis by "606," with demonstration of illustrative cases. Mr. Richard Warren: Punctured Wounds of the Heart.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

EPIDEMIOLOGICAL SECTION, 15, Cavendish Square, W., 8.30 p.m.—Paper:—Dr. J. Edward Squire, C.B.: Some Points in Relation to Tuberculosis and its Prevention.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN, 11, Chandos Street, W., 4.30 p.m.—Cases and Specimens.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Lectures: Tuesday, 3.45 p.m., Anaesthetics. Friday, 3.45 p.m., Mouth and Teeth.

LONDON SCHOOL OF CLINICAL MEDICINE, Seamen's Hospital, Greenwich. Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday; Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m. Special Lectures: Tuesday, 3.15 p.m., Operative Treatment of Fractures; Friday, 3.15, Operative Dangers in General Practice.

MANCHESTER: ANCOATS HOSPITAL.—Post-Graduate Clinic, Thursday, 4.15 p.m., Head Injuries.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Medical; Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, The Diagnosis and Treatment of Chronic Intestinal Obstruction; Tuesday, Some Methods of Treating Skin Diseases; Wednesday, The Administration and Value of Tuberculin in Various Forms of Tuberculosis; Thursday, The Administration and Value of Tuberculin in Various Forms of Tuberculosis.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Wednesday, 4 p.m., Theory and Practice in the Treatment of Pulmonary Tuberculosis.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Monday, 5.15 p.m., Rickets. Tuesday, 5.15 p.m., Deformities Associated with Rickets, Dislocation of Patella. Wednesday, 5.15 p.m., Infantile Scurvy. Thursday, 4 p.m., Swellings in the Inguinal and Scrotal Regions. Friday, 5.15 p.m., Scoliosis, Lordosis, Kyphosis, Neurotic Spine.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Peripheral Neuritis; 5 p.m., Clinical Anatomy of the Nervous System. Wednesday, 5 p.m., Surgery of the Nervous System. Thursday, 5 p.m., Clinical Examination of Cases of Disease of the Nervous System. Friday, 3.30 p.m., Syphilitic Compression Paraplegia.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear. Tuesday, 10 a.m., Medical Out-patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient. Wednesday, 2.30 p.m., Medical Out-patient, Skin and Eye Clinics; *X* Rays; 4.30 p.m., Lecture Demonstration on the Value of *X* Rays in the Early Diagnosis of Diseases of the Chest. Thursday, 2.30 p.m., Gynaecological Operations; Clinics: Medical Out-patient; Surgical Out-patient; 3 p.m., Medical In-patient; 4.30 p.m., Demonstration: Selected Medical Cases. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Ray, and Operations at 2 p.m. daily. Monday, Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Demonstration of Minor Operations, 11.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Lectures at 5 p.m. daily except Saturday.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
NOVEMBER.	
22 TUESDAY ..	WALTHAMSTOW DIVISION, *Metropolitan Counties Branch*, Whipps Cross Infirmary, Leytonstone, 4 p.m.
23 WEDNESDAY	LONDON: Regulations and Standing Orders Subcommittee, 12.15 p.m. LONDON: Naval and Military Committee, 4 p.m. LONDON: Organization of Medical Students Subcommittee, 4.15 p.m. BRADFORD DIVISION, *Yorkshire Branch*. Supper followed by Smoking Concert, Great Northern Victoria Hotel, Bradford, 8.30 p.m. CENTRAL DIVISION, *Birmingham Branch*, Medical Institute, 4 p.m.
24 THURSDAY ..	LAMBETH DIVISION, *Metropolitan Counties Branch*, Evelina Hospital. SOUTHERN BRANCH, Special Meeting, South-Western Hotel, Southampton, 2.45 p.m.; Ordinary Meeting (Clinical) afterwards. STAFFORDSHIRE BRANCH, North Stafford Hotel, Stoke-upon-Trent, 3.45 p.m.; Dinner, 6.30 p.m.
25 FRIDAY ..	BIRMINGHAM BRANCH, Pathological and Clinical Section, Medical Institute, Edmund Street, 8 p.m. MONMOUTHSHIRE DIVISION, *South Wales and Monmouthshire Branch*, Newport and Monmouthshire Hospital, 3.30 p.m.
26 SATURDAY ..	
27 Sunday ..	
28 MONDAY ..	
29 TUESDAY ..	
30 WEDNESDAY	ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, Board Room, Altrincham Hospital, Tea, 4.30 p.m.; Meeting, 5; Dinner, Brooklands Hotel, 7 p.m.
DECEMBER.	
1 THURSDAY..	
2 FRIDAY ..	TOTTENHAM DIVISION, *Metropolitan Counties Branch*, White Lodge, Silver Street, Enfield, 9.15 p.m.
3 SATURDAY ..	FOLKESTONE DIVISION, *South-Eastern Branch*, Combined Meeting of East Kent Divisions and the Folkestone Medical Society, Royal Victoria Hospital, Folkestone, 3 p.m.; Luncheon, Hotel Wampach, 1.30 p.m.
4 Sunday ..	
5 MONDAY ..	
6 TUESDAY ..	WARRINGTON DIVISION, *Lancashire and Cheshire Branch*, Infirmary, Warrington, 8.15 p.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 26TH, 1910.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BORDER COUNTIES BRANCH.

THE autumn general meeting of this Branch was held in the Cumberland Infirmary, Carlisle, on Friday, November 11th.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved, and signed by the Chairman.

Apologies for Non-attendance.—Apologies from certain members of the Branch were read by the SECRETARY.

Cumberland Nursing Association.—It was resolved that the question of the appointment of members of the Branch on the General Council of the Cumberland Nursing Association be referred to the English Division.

Conference as to Election of a Member to Central Council.—The SECRETARY reported the steps he had taken to arrange a conference between the Secretaries of the Stirling, Glasgow and West of Scotland (County Divisions) and Border Counties Branches regarding the election of a member on the Central Council of the Association. Some conversation followed, and it was resolved to approve the Secretary's action in the matter, and he was instructed to continue his efforts to come to a mutual arrangement such as the Border Counties Branch had with the North Lancashire Branch.

Clinical Demonstrations.—The PRESIDENT (Dr. Bird) showed a patient who had received a severe injury to his wrist-joint as a result of a fall from his horse. *X*-ray photographs were shown of the injury in the region of the wrist. The advantages of massage and early passive movements were dwelt upon by Dr. Bird. Dr. Bird also showed a number of cases demonstrating von Pirquet's reaction. A discussion followed, in which Drs. BARNES, BOWSER, MAXWELL ROSS and others took part. Dr. HILL gave a demonstration in the *x*-ray department showing a patient of the President's with dilated stomach. Bismuth emulsion was given, and its progress demonstrated on the screen. Dr. Hill also showed a large number of very beautiful *x*-ray photographs showing various abnormal conditions. Dr. NORMAN MACLAREN demonstrated some cases, and showed *x*-ray photographs, also some specimens of carcinoma of the tongue, and showed some of the patients after operation. An interesting discussion followed.

Visit to Kitchen and Nurses' Home.—Through the kindness of Dr. Barnes the members were then conducted through the new kitchen and nurses' home, which have been rebuilt.

ENGLISH DIVISION.

A GENERAL meeting of this Division was held at Maryport on Friday, November 4th, at 3.30 p.m. Dr. CRERAR (Chairman) presided, and the following members and friends were present: Dr. Graham, Dr. Fisher, Dr. Fraser, Dr. Garrow, Dr. Fletcher, Dr. Hill, Dr. N. Maclaren, Dr. Middleton, Dr. Murill, Dr. Platt, and Dr. Proud, and Dr. Anderson (Honorary Secretary).

Apologies for Non-attendance.—Apologies were received from Dr. Farquharson, Dr. Maclaren, Dr. McLachlan, and Dr. Penny.

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed by the Chairman.

Grouping of Divisions.—The present grouping of Divisions was agreed to.

State Sickness and Invalidity Insurance.—It was unanimously agreed that no discussion on this subject should take place until the Committee of the Council issues its report.

Annual Representative Meeting.

The REPRESENTATIVE (Dr. Graham) gave an interesting and eloquent account of the Representative Meeting. He said:

In accordance with the announcement contained in the agenda for the meeting to-day at Maryport, and presumably as established by precedent, I have pleasure in submitting a report of the Representatives' meeting held in London on July 22nd, 23rd, 25th, and 26th of this year.

Honoured by your selection, I was present during all the proceedings, save for necessitous purposes indispensable to the individual. It is essentially a record of my impressions rather than a report that it would appear is incumbent upon one, forasmuch as a full account of the proceedings of the Representatives' meetings appeared in the SUPPLEMENT of the BRITISH

Medical Journal of July 30th, occupying some fifty pages of that organ of the Association, and doubtless all the important transactions are already within your knowledge.

I had an opportunity of being present unofficially for brief periods at the Representatives' meeting at Oxford five years ago, and I was much impressed then with the standard of the debating faculties possessed by members of our great profession.

At the meeting in London every opportunity was further afforded me to witness the nature and character of the conduct of the Representatives' annual gathering.

On the opening day, including some 30 members of Council, there were 176 present. A fine assemblage of noble manhood, exhibiting notable intellectual bearing and address; no less conspicuous in this respect were the Representatives from our Colonies.

The Common Council Chamber of the Guildhall offered a rare environment for accommodation, associated with its great traditions and municipal splendour. Modern sanitation will perchance shed its light anon, and secure better hygienic properties in this historic chamber, for the comfort and benefit of those whose lot it is to sojourn therein; nevertheless it was a distinct privilege to engage in debate in the *locus in quo* of the great City Fathers.

In Mr. H. A. Ballance, the Representatives' meetings had a great Chairman, dignified and distinguished: possessing a charming personality, he unites a genial urbanity with true discriminative virtues, and his conduct in the chair was unanimously lauded. It was a source of much regret when Mr. Ballance announced his decision to relinquish the position this year.

It would be difficult to dispute the assertion that amongst the Representatives are many most able debaters. It occurred to me that they possessed intuitive faculties in this direction, although much may have been acquired from experience and practice. Some eloquent in address, others prodigious in repartee, it is possible that many would be worthy representatives of political *pros* and *cons* in any national legislative assembly. If error there was—and little importance need attach to this—it was that those who so frequently engaged in debate, and they represented an undoubted minority of the assembly, attained a monopoly in the discussions, and at times became wearisome, but this may be said to be true of any institution where controversy is proceeding. New contributors would have been welcome, principally when intricate and complex details were involved, and these were frequently at issue, and again when oratorical strife raged as to the existence or non-existence of certain adjectives in a phrase, even to the etymological aspect of the same. Suffice it to say that the operations at the Representatives' meetings afforded a liberal education to many who had not previously attended.

My own participation in the debates was purely interrogatory in character. I had no reforms to vindicate, no subjects for redress. Referring to the actual business completed, the most important item was the adoption of the draft memorandum of association of the proposed new company.

Ethical matters occupied a usual position in the discussions, but I think it is correct to state that less rancour prevailed than on previous occasions. I well recollect the heated arguments which took place at the meeting in Carlisle fourteen years ago, occasioning the incidence of fierce imbroglios.

The reform of the Poor Law and State registration of nurses, affecting as these do the welfare of the public, and vitally concerning the future of the Association, were consistently dealt with, and it is earnestly to be hoped that the results of the deliberations of the Representatives will be properly recognized by those in authority who determine our future legislative enactments.

On occasion propositions were made by certain emotional individuals calling in question the administration of the Association, directly referring to the Finance and Journal Committees, but little support was found to substantiate the complaints, for the most part hypothetical in character, and suggested reforms by motion and amendment were generally recognized by the maintenance of the *status quo*.

Social diversions were amply provided for the Representatives, and a very successful Representatives' dinner was held at the Waldorf Hotel on Friday, July 22nd. The gathering was distinctly convivial, and many friendships formed. Again, the President-elect, Mr. Butlin, entertained the Council and Representatives at the Hotel Cecil—a very large and impressive assemblage.

In estimating the importance of the Representatives as an institution, many factors abound. That the British Medical Association is passing through a critical period in its history cannot well be disputed. I would venture to suggest that the future of the Association for the time being might be compared to the state of expectancy that prevails on the eve of a crisis of lobar pneumonia, and I hope I may be pardoned for using the simile.

That the dimensions of the great body of registered medical practitioners are very great cannot be gainsaid; its numbers at once suggest the difficulties of manipulating successfully the conclusive whole, particularly in these days of social and political dissensions. It would be better far for our mutual benefits and enterprise that more unanimity existed; but, the fates decide.

Gentlemen, if you consider this narrative unnecessarily elaborated, I can only solicit your forbearance. I have only attempted, acting in compliance with a request, to supply an account of the proceedings, and I shall be content if I have satisfied your requirements by the adoption of the classical phrase—*quod erat demonstrandum*.

St. Mary's Hospital, Rochester, Minnesota.

Dr. Crerar (Maryport) read the following notes of a visit to St. Mary's Hospital, Rochester, Minnesota. After thanking the members of the Division for electing him to the chair, he said:

During this year, while recovering from a period of ill health, I arranged to take a trip to America, and on telling my friend, Mr. Harold Stiles, of my intention, he strongly urged me to pay a visit to St. Mary's Hospital, Rochester, and to that end he gave me a letter of introduction to Dr. W. J. Mayo.

It occurred to me that you might not be averse to have a short account of the extraordinary organization and pre-eminent surgery these names imply. As Rochester is about thirteen hours' railway journey the other side of Chicago, I viewed with some concern the possibility of Dr. Mayo being away. I sent my letter of introduction on in advance, and received a cordial invitation from Dr. Mayo to visit him. On boarding the West-bound train from Chicago I found one Pullman sleeper ticketed "Rochester," and took my berth with assurance of an interesting experience.

Shall I not, then, preface what I have to say about St. Mary's Hospital, and its work, with some short account of the men who have accomplished this big thing, unique in the history of our profession, with no rival to compare with it in the world?

I have seen Dr. W. W. Mayo, now an old man of 92, the father of the brothers, William James and Charles Horace. Through him we Cumberland men can establish some sort of connexion with these famous surgeons. For old Dr. Mayo was at one time a pupil in Manchester of the physicist and chemist, John Dalton; and Dalton, you may remember, was born at Eaglesfield, near Cockermouth. The father was a country doctor, and the first medical head of St. Mary's Hospital, and I understand had a considerable reputation as a good surgeon.

His elder son, Dr. "Will," as all the staff at the hospital affectionately call him, was born forty-eight years ago, and Dr. "Charlie" three or four years later. William graduated from the University of Michigan in 1883, and Charles from the Chicago Medical College in 1888. I had not the pleasure of meeting Dr. Charles Mayo, as he was visiting the hospitals in Britain, along with other members of the American Surgeons'

Travelling Society, who visit one or other country in Europe each year to see what other men are doing.

I did have the pleasure, however, of meeting the elder brother—as, I suspect, the organizing genius of the firm. I also enjoyed the privilege of intimate association with him for the five days of my visit, as he extended to me the hospitality of his own home.

For some years he and his brother practised as country doctors, acquiring surgical experience in association with their father.

As one would imagine, there were special circumstances at Rochester which enabled William James Mayo to make of it the great surgical centre it now is. I understand that Rochester is the home city of the Sisters of St. Francis. The Sisters inaugurated a hospital known now throughout the surgical world as St. Mary's, Rochester, and appointed old Dr. Mayo as the first medical head.

I understand the hospital is managed entirely by the Sisters, and does not belong to the Mayos.

For all practical purposes, however, it is their private hospital, and they constitute and provide the medical staff, while the nursing and maintenance are in the hands of the Sisters.

The hospital was founded in 1889, and was formally opened on October 1st of that year with forty-five beds. It has been extended from time to time, and the last addition in 1908 has brought its capacity up to some 300 beds, of which over 200 are for the accommodation of patients.

My introduction to the hospital took place some fifteen minutes after my train drew in at the platform. Dr. Mayo was busy removing a large sarcomatous kidney by abdominal incision. His principal assistant was Sister Joseph, who, as Mayo told me, had been his first operating assistant for eighteen years. Of her capabilities I need not speak; it is sufficient to say she is Mayo's assistant.

Both the operator and his assistants wear sterilized gowns with short sleeves, with cap of linen or of gauze, and a piece of gauze or a small bib tied over the mouth. A sterile towel is pinned on over the chest, and separate sleeves are pinned to the gown, the wrists being caught in the rubber gloves which are worn. The gloves are boiled and then placed in 1 in 5,000 sublimate lotion, and put on wet. During the operation the gloved hands are washed in saline, or, if necessary, in iodine solution (1 part tincture of iodine to 2 parts of spirit), and then in water or saline. Swabs made of gauze are used as sponges. Normal saline is used as a lotion. No silk is used. Catgut (prepared by an iodine method) is used for ligatures and subcuticular sutures; horsehair and silkworm gut for the skin. For intestinal and gastric suturing black linen thread is employed.

The anaesthetic, which is almost invariably ether, is administered by women anaesthetists, who, I understand, are nurses, not doctors. An ordinary mask, like the familiar Schimmelbusch or Skinner, is used, covered with stockinet or gauze, and an additional layer of gauze, four or five ply thick, is placed loosely on top of the mask; the ether is dropped on to this gauze upraised, which is then laid down on the mask. A fold of gauze is placed over the eyelids of the patient and another over the chin.

It is of interest to observe that, despite the heat—for I was fortunate enough, or unfortunate enough, to have struck America in a "heat wave"—anaesthesia by ether thus administered was entirely satisfactory. During the four mornings of my visit, when I witnessed 47 major operations (out of 99 operations performed in the time), I did not see one case which gave anxiety on account of the anaesthetic.

Ether is, par excellence, the anaesthetic of choice.

In 1909, out of 6,021 general anaesthesias ether was used in 5,945, chloroform and ether in 75, and chloroform alone in 1.

There are four operating rooms on the same (the top) floor, and all were in use during my stay. They are numbered I, II, III, and IV.

Dr. Starr Judd, Dr. Charles Mayo's chief assistant, during the absence of his chief acted in his stead.

The patient is anaesthetized and prepared for operation at the same time.

Dr. William Mayo, who restricts himself chiefly to abdominal work, does not stitch up the parietes himself. His duty finishes with the stitching up of the peritoneum. The remaining steps are carried out by his assistant, Sister Joseph in the one room, and Dr. Beckman in the other.

The spectators troop out to the appointed waiting-room, and are summoned by bell to the other room when the operation is about to commence. A short history of the case is read out, and the surgeon briefly explains what he proposes to do. In the course of the operation, if any necessity arises, one of the pathologists is summoned, and a rapid microscopic examination, reported on in five or six minutes, may affect the procedure followed. Operations begin at 7.30 a.m. and continue until 12.30 or 1 p.m. By organization of this kind it has been made possible to operate on a list of twenty-five to thirty patients a day. Only thus could it have been possible for over 4,000 gall bladders to be operated on in one hospital. Only thus was it possible for Dr. Charles Mayo to operate on 38 goitres in the week before he left for Europe. Only thus was it possible for 7,177 operations to be performed in this hospital in 1909. Of these the abdominal operations numbered 3,746, and the total abdominal death-rate was 1.8 per cent., while of intraperitoneal operations for non-malignant conditions the death-rate was only 1.1 per cent. In the same year the goitre operations numbered 551, with 9 deaths. Of these deaths, 5 resulted from ligature of the thyroid vessels for exophthalmic goitre, while only 2 occurred in 100 thyroidectomies performed for the same condition.

I myself saw 11 gall-stone operations, 11 appendix operations, 4 operations for duodenal ulcer, 4 for various stomach conditions, 5 for goitre, 1 for diverticulum of the oesophagus, and so forth.

As an illustration of Dr. Mayo's clinical teaching I may be allowed to give a *précis* of some of his remarks on gall stones and on duodenal ulcer. Mayo says:

In women "stomach trouble" is more frequently due to gall stones than to ulcer. Pregnancy is one of the commonest causes of gall-stone formation. Ninety per cent. of women have children, and of those women who have gall stones 90 per cent. have been pregnant, and can usually assign the date of commencement of the illness to one or other pregnancy. The gall bladder is an organ of importance, not so much to store bile, as it holds only about 1 oz., whilst 50 oz. of bile are secreted daily, but, being elastic and very distensible, its wall possessing little muscular tissue, but a considerable amount of elastic tissue, it saves the valveless pancreas from back pressure. Pancreatitis results if much bile is forced into the pancreatic duct. Do not remove the gall bladder unless it is evidently useless or destroyed. Observe that gall stones are foreign bodies, and cannot be removed by olive oil, bilo-trypsins, or any such medicaments. How many of these cases are supposed to be cases of dyspepsia, stomach trouble, etc., so universally treated by pepsine preparations as almost to be grouped as "lacto-pepsine cases"! Well, I have not much confidence in these peptines. Probably the best form of administration of pepsine is as Beaman's pepsine chewing gum, which you see advertised on every hoarding. It is the "chew," and not the pepsine, which is good. Surgery offers the only hope of cure, and should be resorted to before the great complications of cholaemia, etc., have occurred. When operating always first examine the appendix, and if it be diseased remove it, and then examine the stomach and gall bladder.

Now as to duodenal ulcer, for the knowledge and treatment of which the world owes so much to him, Mayo spoke somewhat as follows:

Duodenal ulcers constitute about 75 per cent. of all gastro-duodenal ulcers, and are much more frequent in men. In ulceration of the duodenum the gastric juice is excessive in quantity and the hydrochloric acid is higher than normal. The symptoms are: Burning pain, with some eructation, 1½ hours to 3½ hours after food, relieved by taking food in small amounts, and hence sometimes spoken of as "hunger pain." Doubtless the food acts as a diluent. Often at night, not infrequently at a regular hour, the patient is wakened by the pain, and then there may be a mouthful of sour fluid. A little milk may relieve these symptoms.

When pain and vomiting come on immediately after food the case is usually not one of ulcer. There is not usually vomiting in large amounts, except when obstruction is present. In this event the character of the "vomit" depends on the obstruction rather than on the ulcer, and is a fermentative and terminal affair.

How many cases of so-called "cancer of the stomach," terminating in death, are really cases of duodenal ulcer causing stricture, and should have been cured by operation!

How much time is wasted on medical treatment in such cases! Osteopathy, Christian Science, and high-frequency electricity are especially valuable when there is nothing organically wrong. If anything is organically wrong the patient suffers. If nothing is organically wrong the friends suffer. Of all forms of electrical treatment surely the "electric wave" is the best, because it is usually applied to the head, which is the weak organ, and also because the very name suggests "hot air." Why, gentlemen, the physicians will not believe that duodenal ulceration is so common. I have asked many of my medical friends to come to the operating room and see the ulcers. But I fear that, even then, they would be like the countryman at the village wild beast show. He had never seen a rhinoceros in his life before, and now that he actually saw one in a cage he looked it over from all points, and declared with conviction, "I don't believe there is any such a beast."

It is all-important for doctors to be honest, and not to see or make out things which ain't so. It is astonishing how positive we can all be about diagnosis the deeper in the body the disease is, and the nearer it is to the surface the more ready we are to admit doubt, until, when it is the skin itself which is affected, we none of us expect a final and decisive opinion from any skin doctor.

Of course, when I speak of the clinical teaching at St. Mary's Hospital, you are to understand that it is not a teaching institution, but neither is it an operation factory.

The large staff, including physicians, eye, ear, throat, oesophagus, and bladder specialists, five pathologists, a Roentgenologist, etc., is kept busy investigating cases and conducting independent research work. That the clinical investigation of cases is carried through with thoroughness is evidenced by the facts that in 1909 there were 1,250 cystoscopic examinations, 850 ureteral catheterizations, and 1,928 stomach examinations, including test meals, outlining extent, etc.

The research work, also, is of a very high quality, and in particular, the work of the chief pathologist, Dr. Louis Wilson (1) in exophthalmic goitre, by which he demonstrated that the microscopic appearances of the thyroid bear a direct relationship to the clinical condition of the patient; (2) on the etiology of the so-called hypernephroma of the kidney; (3) in collaboration with Dr. McCartey on the incidence of cancer in the stomach in relation to pre-existing gastric ulcer; this work, I say, is of great significance.

One of the most brilliant members of the staff is Dr. Plummer, who is one of the physicians, and devotes special attention to the study and treatment of oesophageal conditions, such as cardiospasm, etc. In diagnosis and treatment he applies an ingenuity and fecundity of resource which are the admiration of his colleagues.

What wonder is it that this assembly of workers can present to their comrades such a mass of original work and such a review of the medical literature of the world, as to justify the staff meeting held every Wednesday evening in the Mayo Library (maintained by the Mayos for their staff)?

St. Mary's Hospital is not, academically speaking, a teaching institution, but, practically, it is a great post-graduate centre, and the medicine and surgery of America are influenced by the direct instruction, as well as by the original papers, which emanate from what might be called the "Rochester School."

The year round, there are forty or fifty doctors from all parts of the United States and Canada, I had almost said of the world, who go there to view the work of the Mayos. These medical visitors are made welcome, and while no classes are held, the Mayos put the resources of the staff at their disposal, one or other member giving an occasional lecture or demonstration of clinical or pathological method, etc., all without fee of any description. For reasons of convenience and mutual assistance these visiting doctors have established a "surgeon's club," with a permanent secretary in Rochester. All foreign visitors are elected honorary members of the club. The clubs meets daily for discussion of the operations seen in the morning and any questions arising therefrom, notes of the operations being taken by reporters appointed by the president for the time being.

Any account of the Mayos and of Rochester would be incomplete which neglected a reference to the intimate relationship which exists between the "city" and its greatest citizens, on the social side as well as on the professional. All that is of interest to Rochester is of interest to the Mayos. The Rochester baseball team has no more enthusiastic supporter than W. J. Mayo. And this man of infinite affairs creates his leisure of intention as deliberate as he created the organization which enables him to do the work of several men rolled into one.

I had the opportunity of observing how provident he is of time. I can understand that every nurse at the hospital knows almost to the minute when he is to pay a ward visit. Each morning as I motored into town with him the motor drew up at a level crossing, and almost immediately the whistle of a passenger train was heard, and in a second the train was past us, the engine driver and the conductor leaning out to wave their accustomed greeting to the ever-punctual surgeon—a daily occurrence, as the chauffeur told me.

Economy of time, economy of energy, prescient selection of assistants to whom work can be delegated, organization of method—these are some of the factors which have contributed to the success of the genius of Rochester. To Dr. Mayo, and to every member of the staff with whom I came in contact, I owe the memory of a great experience, and I hope I have not bored you in giving you some account of my doings.

Epidemic of Poliomyelitis in Maryport, Cumberland.

Dr. R. P. Garrow, M.B., Ch.B.Aberd. (Maryport), read notes of a recent epidemic of poliomyelitis in Maryport, Cumberland. He said:

Maryport and district has been visited during the months of August and September, 1910, by an epidemic of infantile paralysis. There appear to have been about 13 cases in all. The following are notes of the 7 which I attended. Two of these, which were cases of unusual interest, proved fatal; 2 have resulted in permanent paralysis of one leg; and the remaining 3 made rapid and complete recoveries.

The cases are given in the order in which they first appeared:

Case I.

M. G., a female child, aged 1 year 9 months, living at the village of Crosby—three miles out—was the only one of my cases occurring outside the urban district.

She was first seen on August 10th, when the mother gave the history that she had noticed the child unsteady on her legs for about three days—several times she had fallen into the sitting position when standing, and when walking she had fallen forward. This progressed until, when I saw her first, she was quite unable to stand without support. During this time there was practically no general disturbance, no malaise, and no feverishness. She vomited once or twice, but had not had diarrhoea.

The condition on examination was distinct paresis in both legs, more in the right than the left. There was a slight plantar reflex in the left foot, none in the right, and both knee-jerks were absent. Handling of the legs caused pain, and there was evidence of pain also in the lumbar region.

The child was seen at intervals of two or three days till September 2nd, during which time the progress of the case was steady improvement. She could stand without support on August 19th, could walk on August 26th, though unsteadily, and on September 2nd recovery was practically complete. The only thing noticed was slight difficulty in flexion at the right ankle-joint, which was especially noticeable going uphill.

There are two points of interest in connexion with this case: (1) There was no temperature and practically no general disturbance at any stage of the illness; (2) the paralysis was ingravescent, which is quite contrary to the usually sudden onset.

Case II.

M. L. S., female child, aged 1 year 6 months. This child was seen on August 18th, when the mother informed me she had gone to bed quite well on Monday, August 15th, and when she awoke next morning she had completely lost the use of both legs. She was also feverish, vomited several times, was constipated, and required constant nursing.

The condition when first seen—that is, on the third day of the illness—was: Temperature 101°, pulse 120. The legs were hanging quite limp; she appeared to have no power of movement in the left leg and very little in the right. She cried when one touched the legs. She refused to be placed in the sitting position, but preferred to lie supine, from which the mother concluded that the trouble was in her back. Both knee-jerks were absent, left plantar reflex absent, and the right plantar reflex gave a very feeble extensor response.

The febrile illness lasted till August 22nd—that is, for five days, during which time she had no appetite, was very thirsty, and had all the signs of general malaise. When this passed off the state of paralysis was unchanged, the left leg and thigh

muscles were all completely flaccid, and those of the right leg distinctly paretic. The right leg then began to gain power and the reflexes returned. The left leg showed no signs of improving, so the mother took the child to Carlisle Infirmary, where it remained a fortnight. It returned in the same condition, and has remained so ever since.

CASE III.

F. N., a male child, aged 1 year 2 months. This was the first of the two fatal cases. The first thing noticed by the mother was that the baby was lying in the cradle with his left arm turned under him in an awkward position. When she attempted to put it into a more comfortable position he screamed loudly, and appeared to have lost all power in the limb. She thought he must have had an accident and dislocated his shoulder. She asked a neighbour's advice on the matter, and as a result of their consultation the mother was assured that nothing was wrong, so she did not think it worth while consulting the doctor.

On the following day, however, he had lost the use of the other arm (right), and the condition, when seen by me, was a complete flaccid paralysis of both arms, with temperature 101°, pulse 130. There had been no vomiting or diarrhoea.

This child was not seen on the following day, but on the evening of the day after that an urgent message was sent to say that the patient had taken a turn for the worse.

When seen then the condition was: temperature 105°, pulse 140. The child was obviously very ill and the difficulty appeared to be respiratory. The respirations were 80 per minute and of a peculiar heaving character. Physical examination of the chest revealed nothing to account for the respiratory embarrassment, but it was noticed that the abdominal movements of respiration were reversed, the abdominal wall falling in during inspiration and rising during expiration—that is, there was evidence of paralysis of the diaphragm. The respiratory difficulty rapidly increased and the child died that night. The cause of death was asphyxia due to the paralysis of the diaphragm caused by extension upwards of the inflammatory process in the cord from the cervical enlargement to the third, fourth, and fifth cervical segments, from which the phrenic nerves take origin.

Diaphragmatic paralysis appears to be an extremely rare occurrence in poliomyelitis. Keating's *Cyclopaedia of the Diseases of Children* (a textbook written and published in America, where poliomyelitis is much commoner than it is in Europe) contains the following statement:

Certain of the muscles seem always to escape paralysis; paralysis of the facial muscles is rare, and the muscles of the eyeballs, ears, and larynx always escape, *as do the diaphragm and intercostal muscles. This fact explains the absence of any interference with respiration.*

Goodhart and Still record one case of paralysis of the diaphragm, but it is not stated whether the case died or recovered; and I am told a case occurred at the Sick Children's Hospital, Great Ormond Street, in September of this year, which had paralysed intercostals both sides, and which ultimately died.

CASE IV.

S. B., male child, aged 2 years, first seen on August 24th. The history in this case was that the child fell one evening while climbing on his father's back, and, though the parents did not notice anything amiss that night, they found on the following morning that he had lost the use of his left leg. They attributed this to the accident, though the more probable explanation is that the fall was due to the commencing paralysis, which had not become marked enough to attract their attention till the following morning. During that day there was sickness and diarrhoea, and the child was feverish.

The condition when seen was loss of power in the left leg with absence of reflexes and pain on manipulating the limb. The right leg was also weak, though there was some power of movement at all the joints, and the knee-jerk and plantar reflexes were active.

The febrile disturbance passed in four days, and the paralysis was the same as when first seen. It remained so till about September 10th—that is, seventeen days from the beginning of the illness and thirteen days after the temperature returned to normal. The first sign of improvement was the appearance of the plantar reflex, followed shortly after by a feeble knee-jerk. In a few days longer the patient was able to stand without support, and in another week was able to walk though unsteadily. He has continued to improve till now recovery is complete.

CASE V.

D. K., a female child, aged 1 year 10 months, first seen on August 28th.

This was the second fatal case, and I certified the death as one from *meningitis*. It was on reading the literature of this subject that I afterwards changed the diagnosis to *acute polio-encephalo-myelitis*. [See Acute Poliomyelitis and Encephalitis, *Lancet*, December 20th, 1902; Cerebral Symptoms Due to Encephalitis and the Relation of this Disease to Acute Anterior Poliomyelitis, *Transactions of the Medical Society of London*, vol. xxviii; and Recent Observations on Acute Polio-Encephalo-Myelitis, *Clinical Journal*, February 23rd, 1910—all by Dr. F. E. Batten.]

The history of Case V, given by the mother, was that on Saturday, August 27th, the patient vomited once or twice at tea-time, and had diarrhoea later in the evening. On Sunday she was drowsy and had to be nursed all day. There was no more vomiting or diarrhoea. On Monday morning she fell on trying to get out of bed, her mother finding her on the floor beside the bed. She was placed on the couch, where she lay all day, taking no notice of anything around her. When seen at eight o'clock on Monday evening she had temperature 103°, pulse 140; skin hot and dry; face flushed; tongue coated. Her pupils were so markedly contracted that I asked if she had been given any "soothing syrup" or other mixture containing morphine. The answer was that she had been given nothing except a dose of castor oil. She allowed complete examination of the chest and abdomen, back and front, without making a move. The general condition appeared to be one of profound toxaemia.

She remained like this through Monday night, and appeared a little better first thing on Tuesday morning. Her mother took her a cup of cocoa early in the morning, but she could not raise her head to drink it, although she made signs of wishing to try. Her temperature was now 102.5°, pulse 148, and respirations 30 per minute. The pupils were now medium-sized, equal, and reacted to light.

She made no sign of any voluntary movements in the limbs, although when the soles were tickled she drew up the legs slightly. Both knee-jerks were absent. There was no vomiting, no retraction of the head, no squint. The last time she spoke was at 4 p.m. that day, when she said "mamma," and asked for a drink. After that she became rapidly worse. The breathing became much accelerated, and the skin markedly pale. At 8 p.m. there was slight twitching of the mouth. At 10 p.m. she was gasping for breath, and there was complete relaxation of muscles and absence of reflexes. It was evident that she was moribund. She died at 3 a.m.

Meningitis appeared to me to be the disease which best explained this illness, but since reading Dr. Batten's articles I am convinced that it was a case of polio-encephalo-myelitis. It appears that the name "poliomyelitis anterior acuta," although it accurately describes the lesion when it is confined to the spinal cord, is not sufficiently comprehensive for this disease, which is really an acute specific infection attacking the grey matter in any part of the central nervous system—brain or spinal cord. In this case it is probable that brain and spinal cord were both involved. It is interesting to note, also, in connexion with this case, that the last case of poliomyelitis seen in Maryport, so far as I am aware, was two years ago in this same house. The patient was an older sister of the child who died. She was 2 years and 3 months old when attacked on June 16th, 1908. Hers was a typical case affecting the extensors and evertors of the left foot, and resulting in almost complete recovery in about four months.

CASE VI.

J. H. Y., male child, aged 1 year, first seen on August 30th. This case resembles Case IV in almost every detail, except that it was the right leg which was paralysed and not the left. It resulted like Case IV—in complete recovery in about three or four weeks.

CASE VII.

A. S., female child, aged 3 years, first seen on September 20th. The details of this case correspond closely with those of Case II, and resulted, like it, in permanent paralysis of the left leg.

From the discussion which followed it appears that poliomyelitis was prevalent during August and September all over Cumberland, from Carlisle to Whitehaven, although Maryport apparently bore the brunt of the attack. It is probable that such epidemics are more common than is supposed. Two or three cases occurring during the course of the summer in the practice of each doctor in a place where there are three or four men in practice would make an epidemic, yet each man, being unaware of the other cases, would simply regard his one, two, or three patients as sporadic cases of the disease. An efficient remedy for this would be to add poliomyelitis to the list of notifiable diseases.

Cases.—Dr. CRERAR showed: (*a*) A case of ununited tibia cured by screwing and wiring; (*b*) a case of cholecystotomy; (*c*) a case of reconstruction of the lower lip after almost complete removal for epithelioma.

Specimens.—Dr. NORMAN MCLAREN showed some interesting pathological specimens, and with Dr. HILL a series of remarkably fine *x*-ray photographs.

Votes of Thanks.—On the motion of Dr. GRAHAM seconded by Dr. MURIEL, the hearty thanks of the meeting were accorded to Dr. Crerar for his able and exceptionally interesting address. Votes of thanks were also accorded to Drs. Garrow, McLaren, and Hill.

BIRMINGHAM BRANCH:
Coventry Division.

A general meeting of the Division was held at the Coventry Hospital on November 8th. Dr. Snell took the chair, and there were twenty-four members present.

Coroners' Law and Death Certification.—The Chairman called attention to the injustice that would be inflicted on the medical profession by the proposed Coroners' Law and Death Certification Amendment Bill, and proposed:

> That a deputation be appointed to wait upon members of Parliament within our area to request them to support an amendment to the Act providing for a minimum fee and mileage for the services demanded.

It was further decided to notify neighbouring Divisions of the resolution, and to request them to approach the members of Parliament in their areas.

Next Meeting.—The next meeting was fixed for December 5th.

Paper.—Dr. Joseph Cates, School Medical Officer, read a paper on ringworm founded on an experience of 400 cases in the Coventry schools. He showed that the chief incidence of the disease was in the sixth and seventh years. He maintained that aërial transmission of the trichophyton frequently occurred in the dust of the schoolrooms. The speaker emphasized the value of *x* rays in treatment, but urged the necessity of the work being kept in the hands of expert medical radiographers. Several members took part in the subsequent discussion.

CAPE OF GOOD HOPE—EASTERN PROVINCE BRANCH.

An ordinary meeting of this Branch was held at Grahamstown at 8 p.m., on October 14th, at the Government Veterinary Laboratory. Dr. E. G. Dru-Drury was in the chair, and there were present: Drs. J. Bruce-Bays, R. C. Mullins, G. FitzGerald, R. H. Forster, G. J. E. Pitman (Bedford), J. H. Lea, R. T. Harrison, G. Robertson, honorary member.

Confirmation of Minutes.—The minutes of the meeting of August 10th were read and confirmed.

South African Medical Association.—Arising out of the minutes the formation of the South African Medical Association was again discussed, the meeting being much more representative than that of August 10th. The delegates (two) were left to vote as they thought best should the matter be discussed at Congress. It was also resolved that delegates be empowered to open discussions on medical defence and benevolence.

Correspondence.—The minutes of the meeting of the Colonial Medical Congress held on September 6th were laid on the table. A letter from the Secretary of the Organizing Committee was read. The minutes of the Annual Representative Meeting and of the Special Meeting were laid on the table. A letter from the Secretary of the Western Province Branch, *re* nomination of Dr. S. Greenlees to the Central Council, was read.

Meat Inspection.—Mr. J. Nicol, M.R.C.V.S., read a short paper—Historical Outline of Meat Inspection from Moses to the Present Day—giving most present day processes and regulations in Europe and other countries. The members then repaired to the slaughter-house, where Mr. Nicol gave a practical demonstration on carcasses of a cow, a sheep, and goat.

Votes of Thanks.—Votes of thanks were passed to Mr. Nicol, Mr. Robertson, M.R.C.V.S., Director of the Veterinary Laboratory, for his unfailing hospitality on this and similar occasions. Dr. Temple Smyth (Adelaide), for the presentation of an acorn-shaped gall stone of exceptional size, and to Dr. Drury for photographs and pathological specimens presented by him to the local Branch Museum.

GIBRALTAR BRANCH.

A general meeting of this Branch was held at the Royal Naval Hospital on November 10th by the kindness of the President, Dr. Lilly. Altogether twenty-six members and visitors were present.

Confirmation of Minutes.—After entertaining members and friends present to tea, the President (Deputy Inspector-General Lilly) conducted them to the day-room, where the minutes of the last meeting were read.

Visit to Wards.—The members were then shown cases in the wards by Staff Surgeon Ramsay and Surgeon Rooney. Dr. Lyons showed an interesting case of naevus on the back of a woman; duration, four to four and a half years.

Demonstration.—Dr. Parsons arranged the demonstration of a new portable *x*-ray apparatus.

Intramuscular Injections in Syphilis.—An interesting discussion on the treatment of syphilis by injection intramuscularly was opened by Fleet Surgeon A. Kidd.

Exhibits.—Surgeon Rowan Robinson showed an electrically-lighted tongue depressor of his own invention, and Surgeon Rooney showed an oil drum adapted in an ingenious manner for the hot-air treatment of inflamed joints, electricity being the heating agent. Dr. Parsons demonstrated a formalin lamp and formalin spray for disinfection, and also spoke of the working of a tuberculin dispensary visited by him recently in London, under the care of Dr. Camac Wilkinson.

Votes of Thanks.—Votes of thanks to the President for his hospitality and to all those who assisted at the meeting brought the proceedings to a close. It was owing to the presence of the Atlantic Fleet that so large a number of men were present.

GLASGOW AND WEST OF SCOTLAND BRANCH:
Ayrshire Division.

A meeting of this Division was held in Kilmarnock Infirmary on November 10th. There was a fair attendance. The Secretary intimated apologies for absence from the President, Vice-President, and others. Dr. Carruthers (Muirkirk) was called to the chair.

Appendicitis.—The chief business was a paper by Dr. Farquhar Macrae, of Glasgow, on appendicitis. He gave a most interesting and lucid address on the subject, not only from its surgical aspect, but also from the personal one, he himself having been operated on for the disease not many months ago. All the members present took part in the subsequent discussion.

Vote of Thanks.—Finally, on the motion of Dr. Prentice (Kilmarnock), a very sincere and hearty vote of thanks was awarded to Dr. Macrae.

METROPOLITAN COUNTIES BRANCH:
City Division.

A general meeting of the Division was held on Friday, November 11th, at 9.15 p.m., at Manor Lodge, Upper Clapton, by invitation of Dr. C. F. Hadfield. Twenty members were present.

Confirmation of Minutes.—The minutes of the general meetings of June 21st and October 7th were read, confirmed, and signed by the Chairman.

Apologies for Non-attendance.—Letters of regret were read from Dr. Withers-Green and Dr. Stanhope Dawson.

Formation of Ward Committees.—The Honorary Secretary announced having received from the Central Office the lists of practitioners and streets in the various ward areas. On the motion of Dr. Hunt, seconded by Dr. Goodall, it was resolved—

> That the Honorary Secretary ascertain those members who are willing to serve on the Ward Committees.

Medical Charities Committee.—The nomination of Dr. C. F. Hadfield for election by the Branch Council to this Committee, proposed by Dr. Hunt, and seconded by Dr. A. L. Marshall, was unanimously approved.

Division Fund.—The Treasurer announced the exhaustion of the Division fund remitted for the year's expenses by the Branch Council, and reported the application of the Executive for a further remittance.

Communications.—A series of reports and notes of interesting and unusual cases were read by members. Amongst others contributed was a case of brachycardia, with intermittent attacks of unconsciousness (Dr. A. L. MARSHALL). Diplegia in child, and of tabes, showing progressive ascending involvement of the spinal centres (Dr. O. MAY). A case of tabes, developing whilst in residence at a sanatorium for tuberculosis, and apparent arrest of symptoms by Christian Science treatment, probably by suggestion (Dr. E. A. LERMITTE). Paratyphoid (Dr. A. L. MARSHALL), with special reference to slowing of the pulse, discussed by Drs. HUNT and GOODALL. Fatal cerebral haemorrhage in a girl aged 13 years (Dr. LYTTON MAITLAND). Pyrexias of doubtful origin (Dr. ROSS). Cases illustrating the duration of pregnancy, survival of premature births before seventh month, and duration of interval between twin births, were mentioned and discussed by several members.

Vote of Thanks.—The meeting closed at 11 p.m. with a cordial vote of thanks to Dr. Hadfield for his hospitality.

MARYLEBONE DIVISION.

A GENERAL meeting of the Division was held at the rooms of the Medical Society of London, Chandos Street, W., on Tuesday, November 8th, at 5 p.m.

Medical Treatment of School Children.

The Chairman of the Division, Dr. G. A. HERON, then drew attention to the subject of discussion to be introduced by Sir Victor Horsley, "The Problem of the Medical Treatment of School Children in London." The importance of the question, he said, could not be gainsaid, and that it was a difficult problem few would deny. At the present moment the London Education Authority had made some attempt to deal with the question, but their view was that the attempt was both inadequate and upon wrong lines.

Sir VICTOR HORSLEY said that in quite recent weeks great strides had been made in the working out of this problem. In the Representative Meeting of the Association, 1910, the matter had been exhaustively examined, with the result that the schemes proposed by the Medico-Political Committee were approved. By the first of these children were enabled to apply direct to their chosen medical man for such treatment as was required by the education authority, vouchers were issued which would enable the medical man to receive payment for work done upon definite scales agreed upon by the local Division of the British Medical Association and by the education authority, when parents could not afford to pay themselves. The methods in London of the medical inspection by the London County Council had come under review, and it was found that the rate of pay of the medical officers was below the recognized standard adopted by the Association; and that the inspection provided for was inadequate, since it did not attempt to deal with all the children, but only a selected few. Recently the Board of Education had written to the London County Council expressing in the strongest terms its disapproval of the London methods, and requiring their speedy correction. No more striking justification of the action of their Association could be forthcoming than this expression of the Board of Education. It was clear that not only the subject of medical treatment but also that of medical inspection by the London County Council was entirely reopened. On the question of the treatment of children found defective, he first reviewed the work of the Hybrid Committee appointed by the London County Council, upon which were many hospital representatives, and of which he was vice-chairman. That committee drew up two reports—that of the chairman, favouring hospital treatment, and that of the vice-chairman, recommending the formation of school clinics. The committee adopted the latter recommendation—school clinics; but the London County Council ignored this recommendation and proceeded to negotiate with certain hospitals, offering grants for work done. Their Association made representations both to the Council, to the Board of Education, and to the hospitals concerned, though without success, except that now the Government Department had adopted, and therefore endorsed, their recommendations in almost all particulars. At this juncture it was of the highest importance and urgency that members of the profession, whether belonging to the Association or not, should unite to formulate definite schemes for undertaking this work of treatment locally—that is, in the regions where the children lived and went to school. To get the work done at a hospital was bad morally, it taught the people to look to the hospitals for everything; it was also bad economically, for the mass of the school children were far removed from the hospitals. The voucher scheme of the Association did not appear one likely to find favour with local authorities—it introduced many complexities in finance and bookkeeping. What they should do was to unite upon the idea of school clinics, and to prepare a scheme which they could present to the authority as ready for working when the opportunity was afforded by the breakdown of the hospital system which had already begun.

Sir VICTOR HORSLEY thereupon moved the following resolution:

> That this meeting requests the Executive Committee of the Division to call at an early date a meeting of the medical profession in Marylebone to frame a scheme to provide for the treatment of elementary school children found on medical inspection to be defective.

Mr. WALTER EDMUNDS seconded the resolution. He pointed out the importance of the matter in view of the fact that 96 per cent. of the children were educated in public elementary schools. The whole tendency of the London County Council was to understaffing and overwork. Teachers were too few and overworked; medical officers were too few and the work they were set to do could not be overtaken. Indeed, the Education Committee itself was overworked; for they were not concerned, like the old School Board, with education alone, but with many other absorbing interests. He felt that a Medical Treatment Committee, chosen *ad hoc*, was required. Further, he objected to the limitation of this national work to the school age, the child from its earliest years required observation. He favoured the devolution of this work upon the Borough Councils.

Dr. C. BUTTAR (Kensington) thought Sir Victor Horsley's hope of the clinics of local practitioners unduly optimistic. Divisions he knew of had formulated schemes only to be snubbed by the authorities whom they approached. He thought no advance was to be obtained on those lines, either through the County Council or the Board of Education. At th moment there were too many conflicting schemes. The matter was a national duty, and as such could be adequately dealt with only by a public medical service, somewhat similar to the Public Health department.

Dr. F. J. SMITH said that, so far as his experience of clinics for school children at the London Hospital went, their formation had not affected the total work done. Patients formerly seen in one department now appeared in the school clinics.

Dr. E. W. GOODALL (Honorary Secretary of the Metropolitan Counties Branch) urged the necessity of bringing continuous pressure upon the County Council; anything they could attempt was far more likely to be effective at the present moment than if they waited events.

Dr. C. O. HAWTHORNE agreed with the position taken up by Sir Victor Horsley, but suggested that they should invite representatives of those Divisions where clinics had been established to attend their meeting, and explain the working of these clinics.

Mr. BISHOP HARMAN did not agree that the work of the formation of these clinics should be thrown upon medical men. It should be no part of their work to hire rooms, provide equipment, engage and supervise caretakers, nurses, and the like. The financing of these clinics for so vast a school population as London required special training in organization and the expenditure of much time. Neither of these

requirements should be imposed on the doctors; all equipment and the like should be provided by the State authority, and the medical work should be in the hands of the doctors. He also urged the necessity for the careful choice of men who were duly equipped for the special work in eyes, ears, throat, and skin. To turn the clinics over to whomsoever might apply, just because he was a local practitioner, was to court failure, and a failure that would have no second chance. In his view a public medical school service was the solution of the problem.

Mr. C. A. PARKER agreed with Dr. F. J. Smith that the partial organization of school clinics at hospitals had so far not affected the total amount of work to be done. He urged that treatment to be effective should be made compulsory, for just those parents whose children were most in need refused to have anything done for them. With compulsion came the necessary corollary that treatment must be free to the child. Public school clinics with three or four associated municipal hospitals seemed to him alone adequate for the work.

Sir VICTOR HORSLEY replied. The motion was then put and carried unanimously.

MIDLAND BRANCH:

BOSTON AND SPALDING DIVISION.

AN ordinary meeting was held at the White Hart Hotel, Boston, on Friday, October 21st, at 2.45 p.m. Dr. SOUTH was in the chair, and there were present Drs. Husband, Mann, Mason, Miller, Pilcher, Kendall, Tuxford, White, Wilson, Witham, and Wrinch.

Apologies for Non-attendance.—Regrets at inability to attend were received from several members.

Confirmation of Minutes.—The minutes were first read, confirmed, and signed.

Red Cross Society Lectures.—After some discussion, Dr. TUXFORD proposed and Dr. WHITE seconded that Resolution 263 of the Annual Representative Meeting be adopted. This reads:

> That a fee be charged for ambulance lectures given to the British Red Cross Society, and that the fee be not less than one guinea for each lecture.

This was carried *nemine contradicente*. Dr. PILCHER proposed and Dr. WITHAM seconded:

> That the above resolution should apply also to St. John Ambulance lectures, and that Mr. Smith Whitaker be asked if this can apply to medical men holding honorary appointments to that Association.

This was carried *nemine contradicente*.

Prescribing by Chemists.—It was proposed and seconded that Resolution 266 be adopted. This reads:

> That the British Medical Association should take immediate steps to stop prescribing by chemists, as also the indiscriminate sale by them of abortifacients.

This was carried *nemine contradicente*.

Cases.—Two cases were shown by Dr. WILSON: (*a*) Man, aged 65 years, upon whom a posterior gastro-jejunostomy was performed fifteen months ago for duodenal ulcer by Mr. Maynard Smith, of St. Mary's Hospital. He had gained in weight and been transformed from a pale, thin man to a ruddy, healthy-looking one. During eleven years he had seventeen severe haemorrhages from the stomach. Since the operation he had had none. The usual symptoms of duodenal ulcer were not present, as the melaena did not show itself in several attacks until after the haematemesis. Localized pain was always complained of in the left hypochondrium, where there was also tenderness on pressure. (*b*) Man, boiler-maker and engineer, aged about 36 years, with a large aneurysm of the arch of the aorta. This had been much relieved by restricted intake of fluid and large doses of potassium iodide (20 grains, t.d.s.) (*c*) Dr. WITHAM gave an interesting account of a case of acute bronchopneumonia in a child aged 10 years, which had lasted six weeks without any improvement, and in which patches of dullness were well marked. Antiseptic inhalations—such as Dr. Lees of St. Mary's Hospital recommended—gave speedy fall of temperature, the patches clearing up in six weeks. Since then the child had quite recovered. (*d*) Dr. PILCHER showed a specimen of an inguinal sac with greatly thickened wall, which on being opened contained an old clot of blood. The swelling was as large as a hen's egg, had an impulse on coughing, could be slightly reduced by taxis, and was only slightly painful. The absence of signs of intestinal obstruction pointed distinctly to some cause other than bowel or omental strangulation. The hernia was reducible until a fortnight before he sought advice and a truss worn. He is a blacksmith by trade.

Grouping of Boston and Spalding Division with Lincoln Division.—Dr. MILLER proposed and Dr. PILCHER seconded:

> That they be grouped together for election of Representative in Representative Meetings of the Association.

Medical Treatment of School Children.—It was considered that there was no need to alter the resolution passed on April 15th.

State Sickness and Invalidity Insurance.—This subject was referred to the Executive Committee for consideration.

Tea.—The members had tea in the hotel afterwards.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH:

FURNESS DIVISION.

A MEETING of the Division was held in the Masonic Buildings, Barrow, on Friday, November 11th, at 3 p.m. Dr. RUTHERFORD, Chairman, presided. Out of a membership of forty-one, eight attended, and there were two visitors.

Election of Representative.—Dr. Daniel was re-elected Representative to Representative Meetings for Furness and Kendal Divisions.

Tuberculosis Exhibition.—Dr. Cross and the Secretary were elected to represent the Division on the subcommittee of the forthcoming Tuberculosis Exhibition.

Sale of Practice and Clubs.—The Secretary was instructed to notify all the members of the Division that the following resolution was passed at the last annual meeting:

> In all cases in which a practitioner, after introduction or otherwise, sells his practice to a successor, all clubs shall be taken over by the successor at 4s. 4d. per head per annum; and all members of this Division agree not to take any such club within twelve months of transference, if so decided at a general meeting of the Division called to discuss any particular case.

Our Hospitals.—Dr. RUTHERFORD delivered an introductory address on this subject. He said that our hospitals were ceasing to be charitable institutions, and that the co-operation of the workmen had taken the place of the benefaction of the wealthy owners. He held that compulsory levies from a workshop were not charitable donations and should receive only their market value, and that such contributors should have their separate staff, and, where possible, should provide their own buildings. He also asked the members to consider the possibility of establishing a "home hospital" under their own management. It was decided to postpone the discussion of this subject.

Paper.—The SECRETARY read a note by Dr. Sinclair on a case of ptyalism following the administration of six (one-grain) doses of calomel.

Use and Abuse of Midwifery Forceps.—Dr. HARPER shortly discussed the commoner indications for use of forceps. He commented on the prevalence of persistent occipito-posteriors in Barrow, the proportion in his own practice being 10 per cent. He treated these cases by manual rotation, and then applied forceps. He did not advise rotation by means of twisting the handles of the forceps, believing such treatment to be likely to cause lacerations both to the maternal soft parts and to the fetal head. He suggested a time limit for confinements—two hours for multiparae and three hours for primiparae after the completion of full dilatation. This, of course, was only a very rough limit. He thought that though in safe hands the forceps often did little harm, they were used very much too often. He knew of instances of midwives conducting a large

and successful practice with less than 5 per cent. of cases in which medical help had to be summoned. This percentage compared favourably with the forceps percentage of most town practitioners. He referred to cases of permanent pelvic trouble dating from instrumental labours. An interesting discussion followed.

Insufflation of the Newly-born.—Dr. DANIEL read notes on the insufflation of the newly-born. For fifteen years he had practised the method he now used. A towel was placed over the infant's mouth and he blew quickly through the towel into the infant's mouth—fifteen expirations to the minute. The result was that the stomach was inflated. He found the effect quite as good as blowing directly into the trachea. In a case in which he failed he found *post mortem* the pleural cavities filled with effusion. In one case Dr. Daniel kept the heart beating with this method for four hours. Subsequently the infant started breathing, but died twenty-four hours later.

Malignant Growth of Thyroid.—Dr. HARPER showed a man, aged 60, with a hard tumour of the right lobe of the thyroid gland, extending half-way up the neck and going underneath the right clavicle. There was only a history of one month's duration. The right pupil was contracted, the trachea displaced to the left, and the patient's voice was very husky. Dr. Harper considered the growth to be malignant.

Double Hydrosalpinx.—Dr. RUTHERFORD showed a specimen and read notes of a case of double hydrosalpinx and inflamed ovary.

SOUTHERN BRANCH:
PORTSMOUTH DIVISION.

A CLINICAL meeting was held at Southsea on Tuesday, November 8th. Dr. SHEAHAN was in the chair, and twenty members were present.

Clinical Cases.—Dr. BLACKMAN read notes of a case of Hodgkin's disease in a child 1 year 11 months old, and of a case of hypertrophy of the right labium minus (with specimen). Mr. CHILDE read notes of a case of Richter's hernia with perforation and suppurative peritonitis due to streptococcus infection. The hernia was excised, lateral anastomosis performed, and the abdomen drained, with recovery (specimen shown); also a case of complete excision of the parotid gland for malignant endothelioma after ligature of the external carotid, with recovery (specimen and slide shown).

Communications.—Dr. BANKART read a communication on the biological (Gosio's) test for arsenic and its clinical application in cases under treatment by dioxy-diamido-arsenio-benzol (Ehrlich-Hata "606" preparation). He also exhibited various cultures of the *Penicillium brevicaule*, and demonstrated the delicacy of the test.

Pathological Specimens.—Dr. L. MAYBURY exhibited a specimen of calcareous petrifaction and adherence of the aortic valves with incompetency and considerable hypertrophy of the left ventricle; also a specimen of punctured wound of the heart.

SOUTH MIDLAND BRANCH:
BEDFORD AND HERTS DIVISION.

A MEETING of this Division was held at the Bedford County Hospital on November 10th. Dr. ROSS, President, was in the chair, and there were present Drs. Bone, Dixon, Bower, Nash, Butters, Stacey, Bennett, Chillingworth, Sharpin, and Goldsmith.

Confirmation of Minutes.—The minutes of the preceding meeting were read and confirmed.

The Work of the Association.—Dr. ROSS read a paper on the work of the British Medical Association.

Placenta Praevia.—Dr. BUTTERS read notes of a case of placenta praevia, Drs. ROSS, NASH, DIXON, and SHARPIN making remarks in the subsequent discussion.

State Sickness and Invalidity Assurance.—The SECRETARY read a letter from the Altrincham Division on State sickness and invalidity insurance. It was proposed by Dr. BONE, seconded by Dr. CHILLINGWORTH, and carried:

> That the matter be discussed at the next meeting of the Division, and that the letter be circulated with the notices.

Club Disputes.—The SECRETARY read a letter from Dr. Harries-Jones, Secretary of the South Midland Branch, *re* club disputes, and Dr. ROSS proposed the formation of a committee to consider the matter. Drs. DIXON, BONE, and NASH also joined in the discussion. The resolution was carried.

Relation of Local Medical Societies to Divisions.—A letter was read from Mr. Smith Whitaker about the formation of sections and the question of local medical societies and their relations to the Divisions. The feeling of the meeting was that the subject of dissolution of the local medical society or its amalgamation with the Division was one that could only be properly discussed by the society itself.

Contract Practice.—The following motion was put from the chair, and carried unanimously:

> That the attention of the governors of the dispensary be drawn to the fact that the Branch passed a resolution that a charge of at least 5s. per head be made in contract practice.

STAFFORDSHIRE BRANCH:
SOUTH STAFFORDSHIRE DIVISION.

A MEETING of this Division was held in the Bell Library, General Hospital, Wolverhampton, on Thursday, November 10th, at 4.30 p.m. Dr. MALET was in the chair, and there were present Drs. Badger, Bailey, Clendinnen, Mactier, and Somerset.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Medical Officership to Seisdon No. 1 District.—The SECRETARY reported that Dr. Cooke had been reinstated as medical officer to the Seisdon No. 1 District at a salary of £50, the amount fixed by the Division, and that a letter had been received from Dr. Cooke thanking the Division for their action in the matter.

Representative Meetings.—Dr. MACTIER, as Representative, reported on the Special and the Annual Representative Meetings, speaking at some length on the new draft memorandum of association. He also drew attention to the resolutions with regard to lectures on first aid and public health, etc., being paid for at the rate of one guinea per lecture.

Re-election of Representative.—Dr. H. C. Mactier was unanimously re-elected Representative for 1911–12.

Model Ethical Rules.—The SECRETARY reported on the Secretaries' meeting, and the Division then discussed the proposed new Model Rules relating to Ethical matters. Dr. MALET proposed, and Dr. BAILEY seconded, and it was resolved—

> That this Division is not convinced of the necessity of Rule 3, but if it should be considered essential the majority should be one of three-fourths of those present and voting, and not a simple majority.

The meeting fully recognized the necessity for general uniformity in ethical matters, but did not adopt the new rules pending an explanation of Rule 3.

Ophthalmia Neonatorum.—The SECRETARY brought before the meeting the report of the Medico-Political Committee on ophthalmia neonatorum, but since this matter was fully discussed, and a resolution passed unanimously at a Conference in the Town Hall on Friday, November 4th—

> That this meeting is of the opinion that the disease known as ophthalmia neonatorum should be added to the list of notifiable diseases under the Infectious Disease (Notification) Act, 1889, and that the provision should be made by the public health authorities for ensuring that every case receives proper medical help and nursing under Section 133 of the Public Health Act, 1875. Also that it is desirable that the Notification of Births Act, 1907, should be adopted—

the meeting did not discuss the question.

YORKSHIRE BRANCH.

THE autumn meeting was held at the Queen's Hotel, Barnsley, on Wednesday, November 2nd, under the presidency of Mr. PYE-SMITH. There were about thirty members present.

New Members.—The PRESIDENT announced the election, by the Branch Council, of the following new

members: Ambrose Harold Bateman, M.B., Water Lodge, Rodley, Leeds; Savile Bentley, L.S.A., 39, Lumley Street, Castleford; Thomas Henry Barton, M.B., 48, Holgate Road, York; Walter Stephens Brown, M.R.C.S., Union Hospital, Bradford; Catherine L. Corbett, M.B., 35, Williams Street, Sheffield; William Henry Hooton, M.R.C.S., 68, Bentley Lane, Leeds; J. Leighton Houlton, M.R.C.S., Highfield, Barnsley; Kate Knowles, M.B., Underwood, Rawdon; James R. Lawther, L.R.C.P. and S., 2, Scarcroft Road, York; Neil McLeod, L.R.C.P., Whitehall, Drighlington; James M. McMillan, M.B., Hillside, Clayton West, near Huddersfield; George H. Menzies, M.B., Parkgate, Rotherham; Adolphus Harold Radcliffe, M.B., South Milford; Hilda M. Robson, M.B., Mount Villas, York; Thomas Chas. A. Sweetnam, M.D., Hemsworth, near Wakefield; N. Stuart Twist, M.B., Elmhurst, Castleford; H. Gordon Webb, M.R.C.S., 40, Marlbro' Road, Bradford; John P. Wightman, L.R.C.P., 1, East Mount Road, York; Sophia M. V. Witts, M.B., 381, Glossop Road, Sheffield; Arthur Gurney Yates, M.D., Royal Infirmary, Sheffield.

Treatment of Defective School Children.—Mr. F. Knaggs introduced the question of the treatment of defective school children. After some discussion, the following resolution was adopted:

> That a committee be appointed to consider the question of the treatment of school children found upon examination to be defective, and that each Division be requested to elect one member to this committee, the committee to report to this Branch.

Payment of Doctors Called in by Midwives.—Dr. Knowles introduced a memorandum from the Barnsley Division *re* the payment of medical men called in by midwives.

Meato Mastoid Operation in Middle-Ear Suppuration.—Mr. Chas. Adair Dighton (Scarborough) read a paper on treatment of suppuration of middle ear and mastoid by means of the conservative meato-mastoid operation. After noting the unsatisfactory results obtainable by non-operative treatment of chronic middle-ear disease, and the fact that the disease owed its chronicity to disease of the mastoid antrum, he advocated treatment by means of the conservative mastoid operation, and associated it with the name of Mr. Heath. He then shortly explained the facts on which the operation was based, and described the operation, showing diagrams illustrating the chief steps. Cases of disease cured by this method were then read, amongst them being a case of extra-dural abscess complicating mastoid and middle-ear disease, in which the hearing was improved from watch on contact to watch at ten inches, and from inability to hear except on shouting to ordinary conversation. Mr. Dighton briefly referred to the operation of ossiculectomy, and considered that, owing to the stapedius being left unopposed, though the hearing was temporarily improved, it must certainly sooner or later be followed by deafness and paracusis Willisii, an accident which was impossible in Heath's operation. He then wound up by strongly advocating operation in every case of this disease which had extended over three months, and had been unaffected by removal of tonsils and adenoid, by means of this conservative meato-mastoid operation. Dr. Bronner discussed the operation as to selected cases, scope, etc., and Mr. Dighton briefly replied.

Electric Cataract.—Dr. Little read notes of a case of cataract in a patient who received a shock from a strong current of industrial electricity. The patient was a stoker on the railway, and while his engine was passing over an electrified railway he brought his head in proximity with the live wire, when a spark flew across and hit him on the left parietal region of the head. The current had a voltage of 6,200. He was rendered unconscious for four hours. The side of the face and head were burned. There was a burn on the parietal region the size of a five-shilling piece, which destroyed the tissues above, including the outer table of the bone. The burn on the head healed after a few months, and, except for the inconveniences of those burns, he soon after the accident felt quite restored to health. After three months his vision, which was normal in both eyes before the accident, began to fail him, and when the eyes were first examined three months after the accident, there was found anterior capsular cataract of a peculiar, but apparently characteristic, kind. There was an irregular circular and branching opacity confined to the anterior capsule of each eye. The rest of the lenses were milky, and in a few months became quite opaque. They were removed by needling and suction. The resulting vision was, with glasses, $\frac{6}{6}$ and J 1. The etiology of the cataracts was discussed, and it was considered that the cause of the cataract was interference with the anterior capsule of the lenses with resulting impairment of the nutrition of the lens substance. Drs. Churton, Edison, Trevelyan, Bronner, and Michael Teale spoke, and Dr. Little replied.

"Myalgic" Headache.—Dr. Maxwell Telling read a paper on "myalgic" headache. He pointed out that certain cases of chronic and recurrent headache were due to chronic rheumatic conditions of the muscles at the back of the neck. This chronic rheumatism led not infrequently to nodules and areas of infiltration in the muscle sheaths and tendons and adjacent fibrous structures. Headaches of this kind were accompanied or preceded by pain and stiffness in the retrocolic muscles. On exploring these by palpation with the finger definite areas of tenderness, with infiltrations, could be made out. Massage was the only treatment which effectually cleared up these nodules. All but the most chronic and fibrous yielded to such treatment. He quoted illustrative cases of severe headache of many years' standing which had disappeared under skilled rubbing. He also drew attention to the importance of constitutional treatment with a view to preventing recurrence.

Dinner.—After the meeting twenty-one members dined together at the Queen's Hotel.

BRITISH MEDICAL ASSOCIATION LIBRARY.

Books Needed to Complete Series.

The Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Climatological Transactions. Vols. 1, 4, 5, 6.
———— Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
———— Journal of the Medical Sciences. New series, vols. 4, 5, 1842–3; vols. 14, 15, 1847–8; vols. 18–30, 1850; vol. 33, 1857; vol. 46, 1864–5; vol. 59; or any parts of these vols.
———— Journal of Ophthalmology. Vols. 1–9.
———— Laryngological Association. Transactions. Vols. 1–6, 8–9.
———— Medical Association. Transactions, 2, 4, 6, 7, 11, 12, 14, 15, 16, 19, 20, 22, 31, after vol. 33, and the *Journal*.
———— Otological Society. Transactions. Vol. 3, part 2, 1883.
———— Public Health Association. Transactions. Any vols.
Analyst. Vols. 1–24.
Annals of Surgery. Vols. 13, 14, 26, 27.
Archiv für Dermatologie und Syphilis. 1892 and 1893.
International Congress of School Hygiene. Transactions of First Congress, Nuremberg.
International Congress of Hygiene. Transactions of Congresses 1–6 and 10–12.
———— Ophthalmological Congress. Transactions of Fifth; New York, 1876.
Jahresbericht Neurologie und Psychiatrie, 1, 2, 5–9, 11–13.
Journal of Laryngology. Vols. 1 to 9.
Lakeside Hospital Clinical and Pathological Papers, Series 2.
Montreal Medical Journal, prior to 1900.
New York Pathological Society. Proceedings prior to 1888, 1890, 1892–1898, 1901–1904.
New York State Journal of Medicine, 1906.
Ophthalmic Review. January, 1882.
Pediatrics, prior to 1902.
Provincial Medical and Surgical Journal. March to September, 1841, and May 11th, 1852.
Recueil d'ophtalmologie, prior to 1893.
Revue générale d'ophtalmologie, prior to 1893.
St. Bartholomew's Hospital Gazette. Vols. 1–6.
St. George's Hospital Gazette. Vols. 1–7.
St. Mary's Hospital Gazette. Vol. 4.
Sei-i-kwai Medical Journal. Vols. 1–11.
Semaine Médicale, prior to 1884. Titles for 1884 and 1895.
South African Medical Journal. February and April, 1895, Titles, Vols. 3 and 4.
United States Department of Agriculture, Bureau of Animal Industry. Reports 1–7 10–14.

☞ To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Bath and Bristol Branch.—The second ordinary meeting of the session will be held at the Museum, Bath, on Wednesday, November 30th, at 8 o'clock, Dr. J. M. Rattray, President, in the chair. The following communications are expected: Mary E. H. Morris, M.B.: A case of Abdominal Swelling (patient to be shown). J. M. Rattray, M.D.: Amputations at the Knee-joint. Mr. H. P. Costobadie: Hysteria. S. H.-H. Almond, M.D.: Migraine. J. A. Nixon, M.B.: The Non-venereal Syphilitic Contagion occurring in Families.—W. M. Beaumont, Newman Neild, Honorary Secretaries.

Lancashire and Cheshire Branch.—A Branch Council meeting will be held at Onward Buildings, Deansgate, Manchester, on Wednesday, December 7th, at 4.30 p.m.—F. Charles Larkin, Honorary Secretary.

Lancashire and Cheshire Branch: Altrincham Division.—A general meeting of this Division will be held on Wednesday, November 30th, at 4.30 p.m. at the Board Room of the Altrincham Hospital. 4.30 p.m., afternoon tea; 5 p.m., general meeting; 7 p.m., dinner at the Brooklands Hotel. Will members intending to be present at the dinner kindly reply to the Honorary Secretary at once, in order to help him with the arrangements at the hotel? Agenda: (1) Adoption of minutes of last general meeting and last two committee meetings. These minutes have been printed and circulated to each member. (2) Apologies for absence. (3) Documents sent down from the Council for consideration by the Divisions: (*a*) D. 25, Treatment of School Children found upon inspection to be Defective (these have been circulated to each member); (*b*) R. 11 (Supplement, October 22nd, 1910), Interim Report on the Position of Medical Practitioners called upon to Examine Patients who are under the care of other Practitioners; (*c*) D. 27, Treatment of Cases of Ophthalmia Neonatorum (Supplement, October 22nd, 1910); (*d*) D. 26, Representatives of Local Medical Profession on Boards of Hospitals. (4) Other Correspondence. (5) Reports of Representatives on the Branch Council. Drs. Taylor and Larkin, the Representatives of the Branch on the Central Council, have both promised to attend the meeting.—H. G. Cooper, Altrincham, Honorary Secretary.

Lancashire and Cheshire Branch: Warrington Division.—The quarterly meeting of the Division will be held at the Infirmary, Warrington, on Tuesday, December 6th, at 8.15 p.m. Dr. J. H. Taylor, of Salford, member of the Central Council, will give an address on Public Medical Service.—T. A. Murray, Honorary Secretary.

Metropolitan Counties Branch: City Division.—The next meeting of the City Division will be held at the Town Hall, Mare Street, Hackney, on Tuesday, December 13th, at 4 p.m., when Dr. F. J. Horder, F.R.C.P., will read a paper on The Problem of Rheumatic Fever. Visitors are invited. Tea 4 p.m.—A. G. Southcombe, M.D., 83, Sidney Road, Homerton, N.E., Honorary Secretary.

Metropolitan Counties Branch: Tottenham Division.—The second meeting of the session will be held, by kind invitation of Dr. Tresilian, at White Lodge, Silver Street, Enfield (close to G.E.R. Station), on Friday, December 2nd, at 9.15 p.m. Chairman, Dr. A. Greenwood. Business: (1) Report on Ward Organization. (2) Resolution proposed by Dr. Fuller: "That the name of this Division be changed from 'Tottenham' to 'North London.'" (3) Consideration of the medical treatment of school children, after paper by Dr. Fred. Tresilian (Enfield) on the subject. (4) Any other business.—J. A. Percival Barnes, Honorary Secretary.

South-Eastern Branch: Folkestone Division.—A combined meeting of the East Kent Divisions and of the Folkestone Medical Society will be held at the Royal Victoria Hospital, Folkestone, on Saturday, December 3rd, at 3 p.m. Agenda: (1) Minutes. (2) Business. (3) A paper will be read by Dr. C. Alfred Jordan, Lecturer on Medical Radiography to Guy's hospital, on X-Rays Diagnosis (with lantern demonstration). The Chairman, Dr. Wainwright, invites members to luncheon at Hotel Wampach at 1.30 p.m. All members of the South-Eastern Branch are invited to attend and introduce professional friends.—P. Vernon Dodd, Honorary Secretary.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Fleet Surgeon R. T. Gilmour and Surgeon J. M. Hayes to the *Venus* on recommissioning, December 6th; Surgeons W. H. King, H. E. R. Stephens, M.B., F. C. Alton, D. Horgan, M.B., and D. A. Mitchell to the *Victory*, additional, for disposal, December 10th; Surgeons J. S. Ward, D. Loughlin, and C. F. O. Sankey to the *Vivid*, additional, for disposal, December 10th; Surgeons E. MacEwen, A. H. Joy, M.B., and A. S. Paterson to the *Pembroke*, additional, for disposal, December 10th; Staff Surgeon K. H. Jones, M.B., to the *President*, additional, temporary, to be lent to Greenwich Hospital School at the Royal Naval College, November 16th; Staff Surgeon F. F. Mahon to the *Topaz*, December 6th; Surgeon R. M. Riggall to the *Vernon*, November 22nd.

ARMY MEDICAL SERVICE.

Surgeon-General J. C. Dorman, C.M.G., M.B., Honorary Physician to the King, Principal Medical Officer, Eastern Command, has been instructed to attend a Board of Surgeon-Generals assembling at the War Office on December 6th for the selection of officers for the Army Medical Service for promotion.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel J. W. Rodgers has been appointed to officiate as Principal Medical Officer, Sirhind and Jullundur Brigades, vice Colonel A. M. Crofts, C.I.E., on leave.

Lieutenant-Colonel J. A. Cunningham, M.D., is appointed Inspector-General of Civil Hospitals, Central Provinces, from October 26th.

TERRITORIAL FORCE

Royal Army Medical Corps.

North Midland Mounted Brigade Field Ambulance.—Lieutenant W. M. Hewetson, M.B., is seconded under the conditions of paragraph 114 of the Territorial Force Regulations, September 25th.

Third Highland Field Ambulance.—William L. Robertson, M.B., F.R.C.S.Edin., to be Lieutenant, October 19th.

Second Home Counties Field Ambulance.—Edwin A. Houchin to be Lieutenant. (To be supernumerary.) October 12th.

Attached to Units other than Medical Units.—Lieutenant William Duncan, M.B., to be Captain, September 26th. Lieutenant William M. Fergusson to be Captain, October 15th.

For Attachment to Units other than Medical Units.—Major Thomas Holt, M.B., from the 2nd East Lancashire Field Ambulance, Royal Army Medical Corps, to be Major, November 19th. Allan F. Rutherford, M.B. (late Captain, 4th Battalion King's Own (Royal Lancaster) Regiment), to be Captain, November 12th.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns 7,700 births and 5,040 deaths were registered during the week ending Saturday last, November 19th. The annual rate of mortality in these towns, which had been 13.1 and 14.8 per 1,000 in the two preceding weeks, further rose to 15.5 per 1,000 last week. Among the several towns the death-rates ranged from 6.2 in Reading and in King's Norton, 6.3 in Hornsey, 7.4 in Walthamstow, and 7.7 in East Ham, to 20.3 in Stockport, 20.6 in Aston Manor, 21.8 in Grimsby, 21.9 in Middlesbrough, and 22.3 in Burnley; in London the death-rate was equal to 16.4 per 1,000. The annual rate of mortality last week in the seventy-seven towns from the principal epidemic diseases averaged 1.2 per 1,000; in London the rate was equal to 1.5 per 1,000, while among the seventy-six other large towns it ranged upwards to 2.6 in Coventry, 2.8 in Brighton and in Burton-on-Trent, 3.1 in Rotherham, and 5.0 in Plymouth. Measles caused a death-rate of 1.4 in Portsmouth and in Grimsby, 1.6 in Rotherham, 1.8 in Tynemouth, 2.4 in Brighton, and 4.1 in Plymouth; scarlet fever of 2.2 in Smethwick; and diphtheria of 1.1 in Bolton, 1.6 in Barrow-in-Furness, and 2.8 in Burton-on-Trent. The mortality from whooping-cough, enteric fever, and diarrhoea showed no marked excess in any of the towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,856 and 1,882 at the end of the two preceding weeks, declined to 1,843 at the end of the week under notice; 180 new cases were admitted during the week, against 188 and 239 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, November 19th, 779 births and 588 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.6 and 13.3 per 1,000 in the two preceding weeks, rose to 16.2 last week, and was 0.7 per 1,000 above the mean rate during the same period in the seventy-seven large English towns. The rates in the several Scottish towns ranged from 9.8 in Perth and 12.6 in Leith to 19.5 in Paisley and 21.3 in Greenock. The death-rate from the principal infectious diseases averaged 1.7 per 1,000, being highest in Glasgow and Greenock. The 273 deaths from all causes registered in Glasgow last week included 3 from scarlet fever, 6 from diphtheria, 12 from whooping-cough, 4 from enteric fever, and 10 from diarrhoea. Four deaths from measles, 2 from scarlet fever, 2 from enteric fever, and 5 from diarrhoea were recorded in Edinburgh.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, November 19th, 541 births and 396 deaths were registered in the twenty-two principal urban districts of Ireland, as against 555 births and 358 deaths in the preceding period. The annual death-rate in these districts, which had been 16.8, 15.1, and 16.2 per 1,000 in the three preceding weeks, rose to 17.9 per 1,000 in the week under notice, this figure being 2.4 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 20.3 and 17.6 respectively, those in other districts ranging from 4.8 in Sligo and 5.5 in Limerick to 28.6 in Newtownards and 30.8 in Clonmel, while Cork stood at 14.4, Londonderry at 18.0, and Waterford at 25.3. The zymotic death-rate in the twenty-two districts averaged 0.8 per 1,000, as against 1.2 per 1,000 in the preceding week.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1910.

Tuesday, November 22nd, 1910.

SIR DONALD MACALISTER, K.C.B., President, in the Chair.

THE ninety-second session of the General Council of Medical Education and Registration began at the offices of the Council, 299, Oxford Street, on Tuesday, November 22nd, at 2 p.m.

NEW MEMBER.

The Council received official notification of the appointment of Sir Isambard Owen, M.D., D.C.L., M.A., F.R.C.P., as Representative of the University of Bristol for a period of five years from July 8th, 1910. Sir Isambard Owen was introduced by Dr. NORMAN MOORE.

THE LATE KING EDWARD VII.

The Council then received the following communication from the Secretary of State for the Home Department in regard to the Address of Condolence presented by the Council on the occasion of the death of His late Majesty King Edward VII:

"193001/2437. "Home Office,
"Whitehall,
"June 20th, 1910.

"Sir,—I am commanded by the King to convey to you hereby the thanks of His Majesty and of the Queen for the loyal and dutiful address of the President and Members of the General Council of Medical Education and Registration of the United Kingdom, expressing their sympathy with His Majesty on the occasion of the lamented death of His late Majesty King Edward the Seventh, and congratulation on His Majesty's accession to the throne.

"I am, Sir,
"Your obedient servant,
"WINSTON S. CHURCHILL.

"Sir Donald MacAlister, K.C.B., M.D.,
"299, Oxford Street, W."

Moved from the CHAIR and resolved:

That the communication be received and entered on the minutes.

PRESIDENT'S ADDRESS.

The PRESIDENT then delivered his Presidential Address.

New Member.

GENTLEMEN,—The latest addition to the academic family in England, the University of Bristol, has followed the good example of certain of its elder sisters by choosing a member of our profession to be its Vice-Chancellor. It has given further evidence of its wisdom by sending him to take his place here as a member of the Council. In Sir Isambard Owen we welcome an experienced administrator, who has already done much for professional education in Cambridge, London, Newcastle, and Wales. We may safely count on deriving great advantage from his co-operation with us in the educational tasks that lie before us.

New Medical Peer.

His Majesty the King has been graciously pleased to confer the honour of a peerage on our former colleague, the Right Honourable Sir Walter Foster, who from 1887 to 1897 was one of the three members returned by the direct election of the registered practitioners of England and Wales. Lord Ilkeston has assured me that he will continue to interest himself in all that concerns the welfare of our profession.

Honour to Member.

His Majesty has also bestowed the distinction of knighthood on one of our oldest and most assiduous members, Sir David C. McVail. According to the date of his first appointment he is the senior of us all, for no one of those who sat with him in 1886 is now a member of the Council. In the name of his present colleagues I have conveyed to him an expression of their good wishes, and their congratulations on the honourable recognition accorded his long and strenuous service as Crown representative for Scotland.

University of Wales.

In my presidential address last May I mentioned that we might expect soon to receive a new member from the University of Wales. It now appears that the university, though empowered by charter to confer medical degrees and diplomas, has not yet procured from Parliament the legislative sanction which is necessary before these degrees and diplomas can be included in the list of registrable qualifications. The like authority is also required before the university can appoint a member of this Council. In my capacity as your representative on the University Medical Board, I have suggested that steps should be taken to obtain the powers in question, by the promotion of a Bill drafted on the lines of the Acts already passed in relation to the new Universities of Sheffield and Bristol.

Death of Former Members.

During the summer death has removed, with merciful suddenness, Dr. Lombe Atthill from the dwindling roll of ex-members of the Council. He had held office among us for fourteen years, and after his retirement in 1903 he continued to make useful suggestions to our committees, especially with reference to the branch of practice in which he was so eminent a proficient. Only a few days ago it was announced that Dr. F. J. Payne had also passed away. For five years he worked with us as representative of the University of Oxford, and those who knew him best will most regret the loss of one who did so much to maintain the scholarly traditions of the profession of medicine.

Irish Branch Council.

The wish expressed by the Irish Branch Council that an effort should be made for the extension of the Midwives Act to Ireland was duly communicated by me to the Government. I have reason to believe that in the bill now under the consideration of Parliament the Lord President of the Privy Council has approved the introduction of provisions which will at least have the effect of removing the disabilities of midwives trained in Ireland. It has not been possible to obtain assurances that an amendment will be accepted providing for the prohibition of the practice of midwifery by unqualified men.

Public Health and Unqualified Medical Practice.

I have also official authority to state that the parliamentary paper, setting forth the results of the Local Government Board's inquiries concerning the prevalence and the effects on public health of unqualified medical practice, is ready for publication. It will probably be issued before the end of this week. Copies will be placed in the hands of members of the Council at the earliest possible date. It is desirable that the conditions disclosed by these inquiries should be subjected to the fullest public discussion, so that the Council at its next meeting may be in a position to consider judicially what steps should be taken for their amelioration. Some progress has also to be reported with regard to the question of restricting the administration of anaesthetics by unqualified persons. The draft of a memorandum and bill, submitted for the consideration of the Lord President, has been transmitted by his Lordship to the Council for its observations. The Executive Committee has referred the documents to the special committee appointed by the Council, with the request that they will report to you on the subject during the present session.

Reciprocity with Italy.

It will be remembered that in 1901, at the instance of the Privy Council, Part II of the Medical Act, 1886, was applied to Italy, with the result that Italian

qualifications became registrable in the Foreign List of the *Medical Register*. Under the then existing Italian law British practitioners were accorded the right of practising among foreign residents in that country, but not among Italians. The relations thereby established were thus not fully reciprocal, though they conferred privileges of practice which at the time were regarded as valuable, and in the circumstances satisfactory. Since then I have more than once, as occasion offered, pointed out to the Italian authorities that the concessions made from the British side were more liberal than those granted by the Italian law; and that it was desirable in the interest of the movement for reciprocity that the concessions in question should be equalized. It is gratifying to learn, from a dispatch of His Majesty's Ambassador in Rome, which has been laid before the Executive Committee, that the Italian Legislature has now passed an Act, of which the effect is to concede unrestricted freedom of practice in Italy to medical men duly qualified by registration in this country. As matters stand, the concession applies only to British practitioners, inasmuch as Britain alone has granted reciprocity to Italy. The Council may well be satisfied with the results of the liberal international policy adopted nine years ago.

Royal Faculty of Physicians and Surgeons of Glasgow.

His late Majesty King Edward was graciously pleased to grant to the Faculty of Physicians and Surgeons of Glasgow permission to prefix the term "Royal" to the name of the corporation. The proper steps having been taken to give effect to the Royal grant, I was requested to ascertain from the law officers of the Crown whether the Registrars of the Council required any further authority for employing the Royal prefix in registering the names and qualifications of Fellows and Licentiates of the Faculty. A definite decision has now been given that no further authority is necessary, and the Registrar has informed the Branch Registrars accordingly. Any practitioner already registered in virtue of a qualification granted by the Faculty may, on application, have the description of his diploma altered, so as to correspond with the style by which this ancient corporation is in future to be officially designated. In view of my own association with Glasgow, I may be permitted to offer from the chair my congratulations to the Royal Faculty, and to its President, Dr. Knox, on the mark of Royal favour bestowed upon it by the Crown.

International Committee on Post-graduate Education.

With the approval of the Lord President I accepted an invitation, transmitted by the Privy Council, to attend in October a meeting at Berlin of the International Committee for the promotion of Post-graduate Medical Education. The committee has been formed at the instance of the German Government for the purpose of co ordinating and extending the facilities for special or advanced study and research offered in various Continental countries to qualified practitioners, native and foreign. The committee possesses an international bureau, from which information concerning post-graduate courses, admission to clinical hospitals and laboratories, and other similar particulars of interest to practitioners, may be obtained. The members of the committee are nominated by the several Government authorities, but no permanent members have yet been added to represent the British Government, though provision is made in the constitution for such an addition should this country decide to take part in the organization. As the result of my visit, I reported to the Privy Council that in the interest of British practitioners, and in particular of officers of the medical services who might desire to visit the Continent for purposes of study, and also in the interest of British institutions to which foreign practitioners might resort with the like object, it seemed desirable that our Government should avail itself of the opportunity to secure British representation on the International Committee. I now understand that the authorities concerned will be prepared to give favourable consideration to any invitation in this sense which may reach them through the usual diplomatic channels.

Tropical Medicine and Hygiene.

An important memorial will be laid before you, which is signed by a large number of influential persons concerned with the advancement of tropical medicine and hygiene, and supported by a communication from the Colonial Office. The subject has assumed a high significance of late years, both at home and abroad, in relation to the protection of health and life in many parts of the Empire. Instruction in the several branches of the subject has been provided at various centres in this country, and examinations for certificates of proficiency have been instituted by some of the licensing bodies. Value is attached to these certificates by the authorities who make appointments in the Navy, Army, Indian, and Colonial medical services, but at present no official machinery exists for ascertaining that the standard of proficiency which the certificates represent is maintained at a satisfactory level, or for registering those that are found to be deserving of recognition. The position resembles that occupied by diplomas in sanitary science, State medicine, and public health before the Medical Act, 1886, was passed. That Act gave power to the Council to determine what diplomas deserve the recognition of registration. In the exercise of that power the Council has laid down rules for courses of instruction and examination which have proved of great service in guiding the teaching and examining bodies, and in satisfying public authorities that their diplomas are acceptable as certificates of high proficiency in the theory and practice of civil hygiene. The prayer of the memorialists is that steps may be taken to bring about a like result with reference to tropical hygiene, and it is pointed out that a slight amendment of section 21 of the Act would effect this purpose. I have accertained from the Privy Council Office, of which Lord Crewe, now Secretary of State for India, was lately the head, that should the Council favour the suggestion, a proposal to make the desired amendment could be laid before Parliament at an early date.

Pharmacopoeia Committee.

At the suggestion of the Local Government Board, the Pharmacopoeia Committee appointed its Secretary, Dr. Tirard, to attend an International Conference, held in Paris during the summer. The members of the conference included delegates from a large number of Governments, and its purpose was to arrive, if possible, at a common understanding regarding methods and standards on questions relating to the analysis of food and drugs. Dr. Tirard has presented a full report of the proceedings, which will be communicated to the Council by the Pharmacopoeia Committee.

Education Committee.

The Education Committee has in hand a report on the teaching of the subjects of chemistry, physics, and biology at institutions other than medical schools, and the relation of such teaching to the medical curriculum. The question of taking further steps towards raising the standard of preliminary examinations in general education has also been occupying the attention of the committee. From a number of licensing bodies communications have been received bearing on the separation of the subjects of medicine, surgery, and midwifery in the final examination. When the Registrar has received all the replies to the circular issued in pursuance of the Council's resolution of May 28th, 1910, they will be remitted to the committee for report.

Executive Committee.

The Executive Committee, as instructed, is making the necessary arrangements for the inspection in 1911 of the final examinations for qualifications in dental surgery. The Committee proposes to appoint an inspector for this purpose, and to direct that the

inspection shall be conducted under the regulations set forth in Standing Order XXIII, so far as these are applicable to the case.

Vote of Thanks.

Dr. Little moved, Dr. Norman Moore seconded, and it was resolved:

That the address be received and entered on the minutes, and that the thanks of the Council be accorded to the President for the same.

Indian Medical Service.

A table showing the results of a competition held in July, 1910, for commissions in the Indian Medical Service was received, entered on the minutes, and a vote of thanks to the Under Secretary of State for India adopted. It appeared that there were twenty-nine candidates, and that fifteen received commissions, eleven others were found qualified but unsuccessful, three only were rejected, and of them one failed in pathology and bacteriology only, and another failed in this subject, but, like the third, did not obtain the total minimum number of marks.

Regulations for the D.P.H.

Dr. Norman Walker moved:

That it be remitted to the Public Health Committee to consider and report whether any, and if so what, changes are called for in the Regulations for the Diploma in Public Health.

He wished to draw the attention of the Council to the fact that circumstances had so much altered, that Regulations for the Diploma of Public Health which had been good enough fifteen or sixteen years ago might with advantage be brought up to date; and also that some members thought that some of the Regulations which the Council had approved might be made a little more precise than they were.

Dr. Norman Moore seconded the motion, and it was agreed to.

Registration of Diplomas in Tropical Medicine.

The Council received a report from the Executive Committee with reference to a memorial in regard to the registration of diplomas in tropical medicine, and a letter from the Earl of Crewe stating that, in view of the great importance of this branch of medicine to His Majesty's possessions in the tropics, his lordship desired to associate himself with the representations of the memorialists, and to express the hope that their request would be complied with. Lord Crewe also transmitted a copy of the following resolution in favour of the recognition of the diploma in tropical medicine as a registrable qualification passed by the Committee of the Tropical Diseases Research Fund at its meeting on May 27th last:

It was agreed that the Advisory Committee should strongly approve the proposal of the recognition of the diploma, and that their approval should be communicated to the Medical Council by the Secretary of State for the Colonies.

The memorial, which was signed by, among others, the Regius Professor of Medicine in the University of Oxford, the Regius Professor of Physic in the University of Cambridge, Sir Rubert Boyce, Sir David Bruce, Sir Lauder Brunton, Professor Wyndham Dunstan, Professor W. J. Greenfield, Major Horrocks, Sir Alfred Keogh, Sir John Kirk, Sir Ray Lankester, Sir W. B. Leishman, Sir William MacGregor, Sir Patrick Manson, Major Ronald Ross, Sir Frederick Treves, Professor Woodhead, and several Governors and ex-Governors of Tropical Colonies, was as follows:

The Humble Memorial, Etc., of the Undersigned Sheweth

1. That in the year 1897 the then Secretary of State for the Colonies, the Right Hon. Joseph Chamberlain, instituted an inquiry into the character and extent of the education in tropical medicine then obtained by medical officers destined for Colonial service. As a result of these inquiries he pointed out to the universities and the other medical educational institutions in Great Britain and Ireland the necessity for greater attention being given to the subject, and, moreover, himself took an active part in the foundation of special schools for the teaching and study of this branch of medicine. Moreover, several of the already existing schools of medicine instituted special courses of lectures or courses of laboratory teaching in tropical medicine, thereby recognizing the necessity of supplementing their previous curricula in this respect.

2. That the wisdom of this movement has been proved (1) by the increasing support extended by the authorities of most of the tropical colonies to the special schools referred to; (2) by the number of students attending these schools annually—since its opening in 1898, 1,046 students have passed through the London School of Tropical Medicine, 317 through the Liverpool School of Tropical Medicine, and about 23 annually through the Edinburgh School; (3) by the fact that these students belong not to the Colonial Medical Services only, but to the Naval and Military and Indian Medical Services, to missionary societies, and to planting, railway and trading corporations, whilst a considerable proportion are private medical practitioners; (4) by the subsequent establishment of similar schools in France, Germany, and America; (5) by the number and importance of the recent additions to our knowledge of tropical medicine—additions in not a few instances attributable either to the students of these schools or to the stimulus given by these schools to the study of this particular branch of medicine; (6) by the new light these advances in tropical medicine have thrown on many points in general medicine; (7) by the more general diffusion of a correct knowledge of the methods of diagnosis and treatment of tropical disease; (8) by the improved health of natives and Europeans in tropical countries.

3. It appears, therefore, to your petitioners that the time has come when this teaching should be encouraged by official recognition, that it should be regulated, and that the proficiency of the student should be officially certified.

4. That it is essential for this purpose that the General Medical Council should be empowered to regulate the courses of study and examinations prescribed for certificates in tropical medicine and to register such certificates as it finds deserving of recognition, as additional qualifications.

5. That although certain bodies hold special examinations in tropical medicine, in only one instance—that for the M.D. Examination, Section 7 of the University of London, open only to graduates of that university—is the special diploma registrable. The Universities of Cambridge, Edinburgh, and Liverpool grant diplomas in tropical medicine, and the Royal College of Physicians and Surgeons of England endorse certificates of proficiency in tropical medicine in the instance of their own diplomates; but none of these diplomas or certificates are registrable as a special qualification. Moreover, there is no uniformity either in the standard of the examinations or in the range of subjects included. Even in the examinations for the various public health diplomas many important subjects in public health as relating to the tropics are ignored, notably the agencies peculiar to the tropics which transmit and spread certain diseases, subjects which hardly admit of being efficiently added to the present curriculum of the general medical student.

6. That the great and growing importance of the subject, the large number of medical men practising in the tropics, the number of qualified practitioners taking out special courses in tropical medicine, the interest in the subject taken by the Government authorities in the tropics, the absence of special recognition of tropical medicine in ordinary medical examinations, and the special training necessary for efficient practice, justify your petitioners in requesting that a diploma in tropical medicine should be recognized as an additional registrable qualification in the same manner as are the various diplomas in public health and sanitary science.

7. Your petitioners are further of opinion that the recognition and regulation of the various examinations in tropical medicine are essential for the securing of uniformity in the scope of such examinations and for the maintenance of such a standard of proficiency as would ensure that a proper value be attached to the diploma.

8. Your petitioners therefore pray that the General Medical Council may be pleased to take steps to procure the amendment of the Medical Act (1886) by inserting in Section 21 thereof, after the words "State medicine," the words "or in tropical medicine and hygiene."

The Council resolved:

(1) That the Lord President be informed that the Council is prepared to undertake the duty therein proposed, should Parliament think fit to amend the Medical Act in the sense indicated; and (2) that in the meantime copies of the memorial be forwarded to the licensing bodies concerned for their information, with the request that any observations they may have to offer may be communicated to the Executive Committee before its meeting in February next.

Restorations to the Registers.

The Council then went into camera to consider private business and strangers were directed to withdraw. On readmission the President announced that the names of William Shaw, Percival Humble Watson, and Christopher Richard Kempster had been restored to the *Medical Register*; and the name of Arthur Ogeesby to the *Dentists Register*.

Apothecaries' Hall (Ireland).

Dr. Adye-Curran said it would be within the memory of the Council that an application was made

by the Apothecaries' Hall last session, through him, to have its preliminary examination rescheduled. The reasons he adduced in support of the application were three. First, that the preliminary examination was not optional but compulsory by the charter; secondly, that a precisely similar examination was held by the Colleges of Physicians and Surgeons, and was continued to be held by them to the detriment of the Apothecaries' Hall; and, thirdly, that the Preliminary Examination of the Apothecaries' Hall alone of all these examining bodies was excluded. At the time he considered these very cogent reasons in support of the application, but the Council refused it. The Apothecaries' Hall also applied to the Privy Council to have its Preliminary Examination rescheduled as a matter of right under its charter, but that body replied that it could not accede to the request, as all matters appertaining to the registration of students was dealt with by the General Medical Council under the Medical Act, and therefore the subject did not fall within the purview of the Privy Council. He (Dr. Adye-Curran) maintained that by the Act of 1858, Secs. 42 and 43, the moneys received by the Council could only be applied to the maintenance of a *Medical Register* and the expenses of examinations held under the Act, and that a Students' Register was not authorized by it, and therefore the expenses incurred in connexion therewith were illegal, and should be struck out of the financial report.

In reply to the PRESIDENT as to the precise motion he desired to make, Dr. ADYE-CURRAN said he only desired to call the attention of the Council to the fact, and it could then do what it liked in the matter. He took it that the whole of the expenditure in connexion with the Students' Register was illegal.

The PRESIDENT said it was perfectly legal, and the observations with regard to the Privy Council were irrelevant. The answer of the Privy Council to the petition of the Apothecaries' Hall was that the keeping of a Students' Register was not one of the things it could compel the Council to do, and said nothing as to the legality of the General Medical Council's keeping it if it thought fit, and it had been advised time after time by its legal advisers that in doing it it was acting within its powers. The *Register* was merely a piece of machinery by which the Council carried out a duty imposed upon it by the Act, but nobody could compel it to adopt that particular piece of machinery rather than any other.

Dr. ADYE-CURRAN still maintained that the expenditure was illegal, but, in deference to the observations of the President, did not desire to press the matter further.

The Council then adjourned.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BENENDEN SANATORIUM.—Medical Superintendent. Salary, £250 per annum.

BETHLEM HOSPITAL.—Resident House-Physician. Honorarium at the rate of £25 per quarter.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary, £100 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Honorary Registrar to the Special Departments; (2) Honorary Dental Anaesthetist.

CANADA: WESTERN UNIVERSITY, LONDON.—(1) Teacher in Anatomy; (2) Teacher in Physiology; (3) Teacher in Pathology.

CARDIFF INFIRMARY.—House-Surgeon. Honorarium, £30 for six months.

CORNWALL COUNTY COUNCIL.—County Medical Officer of Health. Salary, £500 per annum, rising to £600.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

DENBIGH COUNTY COUNCIL.—Medical Officer of Health. Salary, £600 per annum and £50 per annum for clerical assistance.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—(1) Resident Medical Officer (male). Salary, £100 per annum. (2) Medical Officer (male) to Casualty Department. Salary at the rate of £100 per annum.

GALWAY: UNIVERSITY COLLEGE.—Assistant to the Professor of Biology and Geology. Salary, £100 per annum.

GILLINGHAM EDUCATION COMMITTEE.—School Medical Officer. Salary, £250 per annum, increasing to £300.

GLOUCESTER: BARNWOOD HOUSE HOSPITAL FOR MENTAL DISEASES.—Second Assistant Medical Officer. Salary to commence £150 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Two Assistant House-Surgeons. Salary, £75 per annum.

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.—Resident Medical Officer. Salary at the rate of £50 per annum.

LEEDS GENERAL INFIRMARY.—(1) Resident Obstetric Officer; (2) Two House-Physicians; (3) House-Surgeon.

LEICESTER CORPORATION.—Resident Medical Officer at the Isolation Hospital and Assistant Medical Officer of Health. Salary, £150 per annum.

MANCHESTER: ANCOATS HOSPITAL.—Honorary Surgeon.

MANCHESTER: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Honorarium, £50 per annum.

PLAISTOW: MEDICAL MISSION HOSPITAL.—Assistant Doctor (female) for Dispensary.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Assistant Physician.

ROYAL SOCIETY.—Government Grants for Scientific Investigations.

ST. MARYLEBONE GENERAL DISPENSARY, Welbeck Street, W.—Honorary Anaesthetist.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion Square, W.C.—Clinical Assistant.

SALFORD FEVER HOSPITAL.—Assistant Medical Officer at Ladywell Sanatorium. Salary, £150 per annum.

SEAMEN'S HOSPITAL SOCIETY, Albert Dock Hospital, E.—(1) Senior House-Surgeon. (2) House-Surgeon. Salary at the rate of £100 and £50 per annum respectively.

SHEFFIELD UNION HOSPITAL.—Resident Assistant Medical Officer. Salary, £100 per annum.

STAFFORD; STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £82 per annum.

STOCKTON AND THORNABY HOSPITAL.—House-Surgeon (male). Salary, £180 per annum.

THROAT HOSPITAL, Golden Square, W.—Resident House-Surgeon. Salary, £75 per annum.

UNIVERSITY OF LONDON, S.W.—Examiners for (1) Higher Examinations for Medical Degrees; (2) First Examination and Second Examination, Part I, for Medical Degrees; (3) Second Examination, Part II, for Medical Degrees.

WAKEFIELD: WEST RIDING ASYLUM.—Assistant Medical Officer. Salary, £140, rising to £160, and upon promotion to £300 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician for six months. (2) Assistant Physician. (3) Honorary Medical Registrar.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary, £80 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Hornsea, co. Yorks (East Riding); Leven, co. Fife; and Timoleague, co. Cork.

APPOINTMENTS.

CARGILL, L. Vernon, F.R.C.S., Senior Ophthalmic Surgeon to King's College Hospital, in succession to Professor Malcolm McHardy, resigned.

CREAN, Francis S., L.R.C.P.I., L.R.C.S.I., House-Physician to the Hampstead General Hospital.

HACKER, H. P., M.B., B.S., B.Sc., Junior House-Physician of King's College Hospital.

HARWOOD, T. E., B.A.Oxon., M.B., Ch.B.Edin., House-Surgeon to the Hampstead General Hospital.

JAMIESON, H. C., M.B., M.R.C.S., Clinical Assistant to the Chelsea Hospital for Women.

SWORN, A. B., M.B., B.S.Lond., Junior House-Surgeon at the Blackburn and East Lancashire Infirmary.

VINING, C. Wilfred, M.D., B.S.Lond., Casualty Physician to St. Mary's Hospital, W.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS

DANIEL.—On November 14th, 1910, at 1A, Upper Wimpole Street, W., the wife of Peter Daniel, F.R.C.S., of a son.

THOMPSON.—On the 14th inst., at Comberton House, Halesowen, to Dr. and Mrs. J. A. Douglas Thompson, a daughter.

MARRIAGE

CARNARVON BROWN—KNIGHT.—On the 16th November, at St. Mary's, Petworth, by the Rev. A. J. Rendle (cousin of the bridegroom) and the Rev. J. T. Penrose, Rector, and the Rev. E. Frost, Arthur Carnarvon Brown, M.R.C.S.Lond., younger son of the late Charles Brown, of Carnarvon, Bournemouth, and Queensland, and Mrs. Charles Brown, of Bournemouth, to Kathleen Sherwin, only child of A. A. Knight, Esq., of Petworth, Sussex.

DEATH.

BROWN.—November 17th, at Tredegar, very suddenly, of heart failure, George Arthur Brown, J.P., M.R.C.S., L.S.A., aged 67 years.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Discussion on Dilatation of the Heart and Heart Strain, to be introduced by Dr. Goodhart, followed by Sir Douglas Powell, Sir Lauder Brunton, and Drs. Samuel West, William Collier (Oxford), Davy (Exeter), and others.

ROYAL SOCIETY OF MEDICINE:
ODONTOLOGICAL SECTION, 15, Cavendish Square, W., 8 p.m.—(1) Paper:—Mr. Frederick Sleep: Successful Surgical and Prosthetic Treatment of Excessive Hypertrophy of the Alveolar Processes of the Jaws. (2) Casual Communications:—Mr. H. A. T. Fairbank: (*a*) Endothelioma of the Jaw in a Child; (*b*) Cyst of Jaw (? Dentigerous).

TUESDAY.

MEDICO-LEGAL SOCIETY, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Notes on the Workmen's Compensation Act, 1906, by R. J. Collie, M.D., G. C. Gardiner, W. Douglas Knocker, Arthur S. Morley, F.R.C.S., F. J. Smith, M.D., and others.

ROYAL SOCIETY OF MEDICINE:
SURGICAL SECTION, 15, Cavendish Square, W., 5 p.m.—Adjourned debate on the Treatment of Fractures in the Neighbourhood of Joints.

THURSDAY.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, 4 15 p.m.—Cases and Specimens.

ROENTGEN SOCIETY, 20, Hanover Square, W., 8.15 p.m.—Paper:—Dr. Deane Butcher: Osmotic Growths.

ROYAL SOCIETY OF MEDICINE:
OBSTETRICAL AND GYNAECOLOGICAL SECTION, 11, Chandos Street, W., 8 p.m.—(1) Cases and Specimens. (2) Papers:—Dr. Archibald Leitch: The Pathological Bases of Operations on the Uterus. Mr. Charles P. Childe: Twenty-three cases of Wertheim's Abdominal Panhysterectomy.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF ANAESTHETICS, 15, Cavendish Square, W., 8.30 p.m.—Dr. Edwin Ash: Hypnotism in Relation to Surgical Anaesthesia.
LARYNGOLOGICAL SECTION, 11, Chandos Street, W., 5 p.m.—Cases and Specimens.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, 8.30 p.m.—Paper:—Mr. J. E. R. McDonagh: Practical Experience with Ehrlich's New Specific for Syphilis.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C. — Lectures: Tuesday, 3.45 p.m., Methods of Examination. Friday, 3.45 p.m., Methods of Examination.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Wednesday, 4 p.m., Pneumothorax.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Monday, 5.15 p.m., Congenital Pyloric Stenosis. Wednesday, 5.15 p.m., Tuberculosis in Infancy and its Causes; Treatment of Milk intended for Infant Feeding. Thursday, 4 p.m., Pathological Demonstration.

LONDON SCHOOL OF CLINICAL MEDICINE, Seamen's Hospital, Greenwich. Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday. Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m. Special Lectures: Tuesday, 2.15 p.m., Antitryptic Power of the Blood and its Variation in Disease; Wednesday, 2.15 p.m., Anaemia.

MANCHESTER: ANCOATS HOSPITAL.—Post-Graduate Clinic, Thursday, 4.15 p.m., Epilepsy.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Ear, Nose, and Throat. Lectures at 5 15 p.m. each day will be given as follows: Monday, Drug Eruptions: their Nature and Varieties; Tuesday, Haemoptysis; Wednesday, The Early Diagnosis of Pulmonary Tuberculosis; Thursday, On Arterio-sclerotic Degeneration of the Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Subacute Combined Degeneration of the Spinal Cord. Tuesday, 5 p.m., Clinical Anatomy of the Nervous System. Wednesday, 5 p.m., Surgery of the Nervous System. Thursday, 5 p.m., Clinical Examination of Cases of Disease of the Nervous System. Friday, 3.30 p.m., Indications for Operative Treatment in Intracranial Disease.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics, 10 a.m., Surgical Out-patient; 2 30 p.m., Medical Out-patient, Nose, Throat, and Ear. Tuesday, 10 a.m., Medical Out-patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient; 4.30 p.m., Cinematograph demonstration of Phagocytosis and Living Organisms in the Blood. Wednesday, 2 30 p.m., Medical Out-patient, Skin and Eye Clinics; *X* Rays. Thursday, 2.30 p.m., Gynaecological Operations; Clinics: Medical Out-patient; Surgical Out-patient; 3 p.m., Medical In-patient. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays, and Operations, 2 p.m. daily. Monday, Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Demonstration of Minor Operations, 11 30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Lecture, Practical Medicine, 12 15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Medical Registrar, 10 a.m.; Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Lectures at 5 p.m. daily except Saturday.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
NOVEMBER.	
27 Sunday ..	
28 MONDAY ..	
29 TUESDAY ..	
30 WEDNESDAY	ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, Board Room, Altrincham Hospital, Tea, 4.30 p.m.; Meeting, 5 p.m.; Dinner, Brooklands Hotel, 7 p.m. BATH AND BRISTOL BRANCH, Ordinary Meeting, Museum, Bath, 8 p.m.
DECEMBER.	
1 THURSDAY..	
2 FRIDAY ..	TOTTENHAM DIVISION, *Metropolitan Counties Branch*, White Lodge, Silver Street, Enfield, 9.15 p.m.
3 SATURDAY ..	FOLKESTONE DIVISION, *South-Eastern Branch*, Combined Meeting of East Kent Divisions and the Folkestone Medical Society, Royal Victoria Hospital, Folkestone, 3 p.m.; Luncheon, Hotel Wampach, 1.30 p.m.
4 Sunday ..	
5 MONDAY ..	
6 TUESDAY ..	WARRINGTON DIVISION, *Lancashire and Cheshire Branch*, Infirmary, Warrington, 8.15 p.m.

Date.	Meetings to be Held.
DECEMBER *(continued)*.	
7 WEDNESDAY	LANCASHIRE AND CHESHIRE BRANCH, Branch Council Meeting, Onward Buildings, Deansgate, Manchester, 4.30 p.m.
8 THURSDAY..	WALTHAMSTOW DIVISION, *Metropolitan Counties Branch*, Walthamstow Hospital, Orford Road, Walthamstow, 4 p.m.
9 FRIDAY ..	
10 SATURDAY ..	
11 Sunday ..	
12 MONDAY ..	
13 TUESDAY ..	LONDON: Standing Ethical Subcommittee, 2 p.m. CITY DIVISION, *Metropolitan Counties Branch*, Town Hall, Mare Street, Hackney, 4 p.m.; Tea, 4 p.m.
14 WEDNESDAY	RICHMOND DIVISION, *Metropolitan Counties Branch*, Clinical Meeting, Royal Hospital, Richmond, 8.30 p.m.
15 THURSDAY..	LONDON: Metropolitan Counties Branch Council, 4.30 p.m. BIRMINGHAM BRANCH, Medical Institute, Edmund Street, 3.30 p.m.
16 FRIDAY ..	
17 SATURDAY ..	
18 Sunday ..	
19 MONDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 3RD, 1910.

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Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

BIRMINGHAM BRANCH:
CENTRAL DIVISION.

A GENERAL MEETING of the Division was held at the Medical Institute on Wednesday, November 23rd, at 4 p.m. Mr. MARSH was in the chair, and twenty-six other members were present.

Apologies for Non attendance.—Apologies were received from Drs. Hallwright and Kirby.

Confirmation of Minutes.—The minutes of the previous meeting were read, confirmed and signed.

Letters.—The HONORARY SECRETARY read letters from Mr. Taylor and Mrs. Milward thanking the Division for their expression of sympathy.

Annual Representative Meeting.—The Representative (Dr. JAMES NEAL) presented his report, which was discussed by Mr. Lucas and Dr. Lydall. It was proposed by Mr. MARSH, seconded by Dr. OAKES, and carried unanimously, that the report be adopted and the best thanks of the Division accorded to Dr. Neal for his services as Representative.

Election of Representative.—As Dr. Neal's nomination was the only one received, the CHAIRMAN pronounced him duly elected.

Certification of Children Unfit to Attend School.—The HONORARY SECRETARY informed the Division of the trouble this matter had caused, and the steps that had been taken by the executive to secure that medical certificates should be accepted by the Education Committee. He detailed the procedure which it was proposed should be adopted, and showed a copy of the suggested certificate. The following resolution was passed:

> That the proposed procedure and certificate be approved on the distinct understanding that such certificates proceed direct to the medical superintendent.

Medical Aid Club.—A letter from the Deputy Medical Secretary referring to a medical aid club was read.

Central Ethical Committee's Interim Report.—This was considered, and the following resolution agreed to unanimously:

> That this Division is of opinion that it is undesirable at the present time to formulate any special set of rules for the guidance of medical practitioners called upon to examine patients who are under the care of other practitioners, but considers that their conduct should be governed by the ordinary recognized ethical rules of procedure.

Ophthalmia Neonatorum.—The Medico-Political Committee's ophthalmia neonatorum report and scheme was discussed at considerable length, the following members speaking: Drs. NEAL, BOSTOCK-HILL, EALES, BEATSON HIRD, POOLER, LYDALL, WHITE, and OAKES; Messrs. MARSH, NUTHALL, J. F. JORDAN, and LUCAS. It was finally resolved, on the proposal of Mr. NUTHALL, seconded by Dr. NEAL, to refer the report back to the Executive Committee for further consideration.

Treatment of School Children.—In regard to the memorandum and draft model scheme on the treatment of school children found upon inspection to be defective, it was decided, in view of the fact that no curative measures are at present contemplated locally, that the memorandum be preserved for reference.

LANCASHIRE AND CHESHIRE BRANCH:
ALTRINCHAM DIVISION.

General Meeting.

THE forty-eighth general meeting of this Division was held on October 6th at Knutsford. Tea was provided at 4.30 p.m., at Cranford House, on the kind invitation of Dr. and Mrs. G. H. Smith. The meeting was held at 5 p.m., at the Committee Room of the Workhouse Hospital, by kind permission of the Bucklow Board of Guardians; Dr. GARSTANG took the chair. There were present: Drs. Surridge, Savatard, Cross, P. R. Cooper, C. J. Renshaw, Lyon, Turner, Gough, G. H. Smith, Theo. Ll. Fennell, Luckman, and H. G. Cooper.

Apologies for Non-attendance.—Apologies were received from Drs. Clarke, Smythe, C. A. K. Renshaw, O'Neil, Owen-Jones, Hutton, and Hassell.

Confirmation of Minutes.—The HONORARY SECRETARY read the minutes of the last two meetings (the forty-sixth and forty-seventh). The minutes were agreed to by the meeting and signed as correct. Arising out of the minutes, Dr. GARSTANG reported:

1. That the Medico-Political Committee of the Central Council had communicated direct to the head quarters of the British Red Cross Society of the St. John Ambulance Association concerning the policy of the British Medical Association as to the question of fees for teaching ambulance work—namely, one guinea per lecture, five guineas for the course of five lectures.
2. The Bucklow Rural District Council had refused payment of fees for notification of infectious diseases on the notification certificate alone, and that members must send in a statement of their cases as before.
3. The area of Sandle-Bridge had been transferred to the Altrincham Division.
4. That at the new Infectious Diseases Hospital for Altrincham all the cases sent in would, in future, be medically treated by the medical officer of health for Altrincham.

The HONORARY SECRETARY next read the minutes of the last committee meeting held in Knutsford on September 21st.

Compulsory State Insurance against Sickness and Invalidity.

Dr. P. R. COOPER opened a discussion on the position of the general practitioner in relation to State sickness and invalidity insurance. He said that the question of how medical attendance was to be provided for the workers of this country under State sickness and invalidity insurance was probably the most vital question before the medical profession at the present time. The report of the Royal Commission on the Poor Laws had shown conclusively that present methods of treating the sick poor were both wasteful and inadequate; treatment was only too often delayed until too late, and was apt to be perfunctory and inefficient; whilst, on the other hand, the medical profession was but scantily remunerated for much arduous work done under most unfavourable conditions. Certain recommendations were made in the Majority and Minority Reports for remedying these evils, and there could be little doubt that some action would be taken; indeed, the Government had declared the intention of shortly introducing a scheme of sickness invalidity insurance to embrace some 15 millions of the workers and their families, somewhat on the lines of the German system, and, as medical attendance would in all probability be one of the "benefits" included, it was obvious the matter very closely concerned the medical men of this country who would be called upon to do the work. As medical men they could not but have sympathy with the sick workers when they so often saw what a terrible handicap sickness was to them, and they would welcome a wise and equitable provision for enabling them to face its risks and to obtain efficient medical succour in their time of need. On the other hand, they must be on their guard lest in its haste to do a supposed public good the Government attempted to exploit the medical profession, as had been done in Germany, by imposing upon it wholesale the iniquitous contract system, where, for a paltry shilling or two per head a year, a medical man had to be always at the beck and call of his would be patient, a veritable drudge and slave, a victim of one of the worst forms of sweating and oppression. Under such conditions it was impossible a doctor can give of his best, and experience had shown the system was bad both for patient and medical man. When it was realized that the bulk of the 15 millions whom the Government proposed to insure were at present the private patients of general practitioners, and formed indeed the backbone of most of their practices, it was evident that the handing over of these bodily to State dispensaries (Majority Report recommendation), or to whole-time salaried medical officers (Minority Report recommendation), was to strike a death-blow at general medical practice. Were they, the practitioners, to sit quietly and have their private practices calmly filched from them, with the possible alternative of having the bulk of their clients converted into dispensary patients (whether the dispensary were managed by medical committee or not), whom they had contracted and were therefore bound to attend, to an unlimited extent, for a limited fee per head per annum? Was it fair that they should be asked in this way to undertake the risks of insurance as well as to do the work of medical attendance? Because medical men had in the past been generous and foolish enough to do this work for charitable or friendly societies at a ridiculously low fee—as had been remarked, at about half the price of a dog license—was this a valid reason why the Government should extend this pernicious system—which had been condemned even by the Poor Law Commissioners themselves—to a vast number of their present patients, who were able and willing to employ them on the terms now in vogue in private practice? They had no wish to be exacting or unreasonable, but they had a right to ask a "fair day's wage for a fair day's work," and not to have their independence destroyed or unduly curtailed. They recognized that if the Government became to a certain extent the paymaster it should have its say in the management and control of funds, etc., and that it should insist upon efficiency in the discharge of services due, but with this there should be no unwarranted interference with the strictly professional work of the medical attendant. Referees or committees would almost certainly be required for the settling of complaints and disputes, and on these medical men should have fair representation, but it should always be in the medical man's power to refuse to attend, just as it was in the patient's power to change his medical attendant if not satisfied. A wage limit was certainly necessary; otherwise there was nothing to prevent well-to-do patients availing themselves of the minimum rates of insurance—that is, paying minimum fees. The rate should be commensurate with the benefits secured, and bear a certain relation to the income and station of the insured. Coming to the question of payment of medical men under a sickness insurance scheme, undoubtedly the most satisfactory plan was *payment according to work done*—that is, per visit according to an agreed tariff, vouchers being given for each attendance. This preserved the right relation between doctor and patient, and secured practically all the advantages of private practice, whilst obviating some of its disadvantages—namely, bills and bad debts and slackness. The objection that the method was liable to abuse was by no means insuperable, as with the exercise of a little common sense it was not difficult to devise effective safeguards, whilst suitable medical supervisors could also be appointed. That method had already been tried and proved to be a practical success by the National Deposit Friendly Society and some others, nor had it proved unduly costly in these instances. In comparing the provision for sick attendance under the friendly societies with what would be required under State sickness insurance, it must be remembered, however, that in the former only picked adults were, as a rule, included, whereas in wholesale State insurance all risks of sickness, and even chronic actual invalids, would have to be provided for. That this would be a costly business was certain, *but if the work had to be done it must be paid for somehow*, and the State, and not the medical profession, should bear the burden. If at first the cost was unduly heavy, the *proper course should be not to cut down the meagre wage of the overworked doctor, but to reduce the amount of work to be done by adopting appropriate preventive measures*—that is, hygienic and educative—*to limit the amount of sickness and suffering which now existed.*

Dr. GOUGH next spoke in support of Dr. Cooper's views.

Drs. SAVATARD, CHARLES RENSHAW, GARSTANG, H. G. COOPER, G. H. SMITH, CROSS, and TURNER, all contributed to the discussion, and several questions were asked.

Dr. P. R. COOPER replied to the questions.

Finally, on the proposal of Dr. GOUGH, seconded by Dr. LUCKMAN, it was unanimously resolved (13 out of 13) that the following proposals of Dr. P. R. Cooper, seconded by Dr. Gough, should be printed and brought before the Council of the Association, and sent out at once to all honorary secretaries of the Divisions of the British Medical Association, asking the honorary secretaries to draw the attention of their Divisions to this urgent question of practical medico-politics:

British Medical Association, Altrincham Division,
Foye,
Manchester Road,
Altrincham,
October 11th, 1910.

Dear Sir,

At a general meeting of the Altrincham Division, held at Knutsford on October 6th, 1910, the following resolution was unanimously passed by the meeting:

In the opinion of this Division any scheme of State sickness and invalidity insurance which includes medical attendance should embrace two main principles:

1. Free choice of medical attendant by the insured in all cases when the payments are contributory.
2. Payment of medical attendants according to work done, and not by a fixed capitation fee.

It was further resolved that the resolutions should be forwarded to the Central Council, and also to every Honorary Divisional Secretary in the country.

As this is an urgent question I have been requested to ask you to bring the resolution before your Division at your next general meeting.

I am, yours truly,
H. G. COOPER,
Hon. Secretary.

so that united action might be taken to secure the adoption of these principles before the Government scheme was definitely formulated.

Treatment of School Children.

A copy of the memorandum on the treatment of school children found upon inspection to be "defective" had been circulated to every member of the Division.

Dr. GARSTANG pointed out that the Altrincham Division was in touch with eight different education authorities, and also that in certain areas combined meetings with other Divisions of the British Medical Association would have to be arranged. After some discussion, Dr. FENNELL proposed and Dr. G. H. SMITH seconded the following resolution:

That the meetings should be arranged at our convenience in each area, and that members of the profession who were non-members of the British Medical Association should also be invited to attend.

This was agreed to.

Fees for Ambulance and Nursing Lectures.

Dr. LUCKMAN proposed that the question of fees for ambulance first-aid and nursing lectures should be circulated to every member of the Division, and also to all professional men who are non-members. Dr. FENNELL seconded, and the motion was carried unanimously. The arrangements to be left in the hands of the Honorary Secretary.

Report of Members of Branch Council.

Drs. P. R. COOPER and GARSTANG reported on the work done by the Branch Council.

Votes of Thanks.—Dr. GARSTANG proposed, and Dr. H. G. COOPER seconded, a vote of thanks to Dr. and Mrs. G. H. Smith for their kind hospitality. They also moved a vote of thanks to the guardians of the Bucklow Union for the use of the committee room of the workhouse hospital. The Honorary Secretary to write a letter conveying the vote of thanks to the club of the guardians.

The meeting then adjourned.

Dinner.—A dinner was afterwards held at the Angel Hotel, eight members being present.

COMMITTEE MEETINGS.

The sixty-fifth committee meeting was held at Dr. P. R. Cooper's on Tuesday, October 18th, at 4.45 p.m. Tea was kindly provided by Dr. P. R. Cooper. There were present: Drs. Gough, Garstang, Luckman, Turner, and H. G. Cooper. The HONORARY SECRETARY proposed that Dr. Gough be elected as Chairman of Committee for the afternoon. This was seconded by Dr. GARSTANG and carried.

Apologies for Absence.—An apology was received from Dr. P. R. Cooper.

Vote of Condolence with Mrs. Smythe.—On the proposition of the CHAIRMAN, seconded by Dr. LUCKMAN, a vote of sympathy and condolence for Mrs. Smythe was moved and carried unanimously.

Election of Chairman of Committee.—The vacancy owing to the death of Dr. Smythe was before the meeting. Dr. LUCKMAN proposed and Dr. GOUGH seconded a motion that Dr. C. A. K. Renshaw be appointed as Chairman for the ensuing year. This was agreed to.

Confirmation of Minutes.—The HONORARY SECRETARY read the minutes of the last Committee meeting, and the Chairman, at the desire of the meeting, signed them as correct. Arising out of the minutes the HONORARY SECRETARY informed the committee—

1. That circulars had been forwarded to all the members (and non-members) in the Division *re* fees for ambulance lectures.

2. Printed circulars had been sent out to all the honorary secretaries of Divisions of the British Medical Association (175) *re* State insurance against sickness and invalidity. The Honorary Secretary read out replies received from the Honorary Secretary of the Walthamstow, South Wales, Monmouth, Buckingham, Kent County, Worcester, and Southport Divisions. Also a reply from Mr. Smith Whitaker reporting that the circular would be laid before the Committee of the Central Council.

Reform of Poor Law.—The HONORARY SECRETARY reported that a circular had been received from Dr. Rowland Fothergill, who advised the Division to circulate it to each member. After consideration the committee resolved to wait till after the Central Committee had sent down the scheme or schemes recommended from head quarters for the discussion and approval by the Divisions. The Honorary Secretary next read out some of the details from the memorandum of the alternative scheme and recommendations to that of the Poor Law Committee of the British Medical Association on proposed State medical attendance. On the whole the committee considered several of the points very good and were decidedly in favour of the scheme.

Northenden District Nursing Association.—On an inquiry from Dr. WILLIAMSON *re* the Northenden district nurse, the committee decided to take some further action. The Honorary Secretary was instructed to write to Miss Tatton, the Honorary Secretary of the Northenden District Nursing Association, as follows:

As we heard the present district nurse was leaving, we thought it was an opportune moment to approach the Northenden District Nursing Association again with the suggestion that it would be well for the committee to adopt the nursing rules which are approved by the County Nursing Association.

Treatment of Defective School Children.—The next question for consideration was D. 25. On further examination of the fact that eight different education authorities were in touch with the area of the Division, Dr. GOUGH proposed and Dr. LUCKMAN seconded a resolution that the committee advised the Division to bring before the Branch Council the schemes issued by the Central Council, and then the Branch Council to lay the schemes before the two County Education Committees of Lancashire and Cheshire.

Next General Meeting.—The HONORARY SECRETARY reported that Drs. Taylor and Larkin had both accepted the invitation to be present at the next general meeting.

Medical Sickness, Annuity, and Life Assurance Friendly Society.—The Medical Sickness, Annuity, and Life Assurance Friendly Society had written asking the Honorary Secretary to lay their papers before the

members of the Division. The committee advised that no action be taken.

Grouping of Divisions.—On the question of the grouping of the Divisions for Representation in Meetings of the Representative Body, 1911-12, sent down from the Council to the Divisions, the committee agreed that the Division had no objection to the continuance for the current year of the grouping last adopted.

The sixty-sixth committee meeting was held at Dr. H. G. Cooper's on Thursday, November 3rd, at 4.45 p m. Tea was provided at 4 30 p m. There were present: Drs. C. A. K. Renshaw, Garstang, Fennell, G. H. Smith, Melland, Clarke, Gough, Charles Renshaw, and H. G. Cooper. Dr. C. A. K. RENSHAW took the chair at 4.45.

Apologies for Absence.—Apologies for absence were received from Drs. P. R. Cooper and Turner.

Confirmation of Minutes.—The minutes of the last committee meeting were read by the HONORARY SECRETARY, and with the approval of the meeting the Chairman signed them as correct.

Correspondence.—Arising out of the minutes, Dr. GARSTANG read a letter from Dr. Larkin, the Honorary Secretary of the Branch. A letter from Miss Tatton was also read *re* the Northenden district nurse, and a letter to the Honorary Secretary, from Mr. Smith Whitaker, *re* State insurance against sickness and invalidity.

Report of Member of Council.—Dr. GARSTANG then read a short extract on some of the work discussed on the Poor Law Committee of the Central Council on the question of State insurance against sickness and invalidity.

Honorary Secretary's Correspondence.—The HONORARY SECRETARY then read the replies from the Honorary Secretaries of several Divisions—the Tottenham Division, Manchester (South) Division, Halifax, Darlington, and from Dr. J. H. Taylor, to the circular sent out by the Altrincham Division *re* State sickness and invalidity insurance.

General Meeting.—The date was next fixed for the general meeting, to be held in Altrincham, on Wednesday, November 30th. No scientific paper to be read.

Present of Books.—The HONORARY SECRETARY reported that books had been received for the Division library from Drs. Garstang and G. H. Smith. These gentlemen were both present and received the thanks of the Committee.

Circulation of Minutes.—Dr. G. H. SMITH proposed, and Dr. GOUGH seconded, that the minutes of the general and committee meeting should be printed and circulated to the members with the notices calling the general meetings. To this the Committee unanimously agreed.

Documents from Central Council.—The HONORARY SECRETARY then read a document (R 11), sent down from the Central Ethical Committee, *re* "The Interim Report on the position of medical practitioners called upon to examine (otherwise than by request of the patient or persons acting upon his behalf) patients who are under the care of other practitioners." (SUPPLEMENT, October 22nd, 1910). Dr. GARSTANG proposed that the Committee advise the Division to approve the report. This was seconded by Dr. COOPER, and carried.

Documents D 27 and D 28. Medico Political Committee.

(D 28). Copy of report of the British Medical Association on ophthalmia neonatorum. (SUPPLEMENT, May 8th, 1909.)

(D 27). Suggested scheme of arrangements for adoption by local sanitary authorities in connexion with the treatment of cases of ophthalmia neonatorum. (SUPPLEMENT, October 22nd, 1910)

The Committee suggested that no action be taken at present. (Proposed Dr. GARSTANG, seconded by Dr. RENSHAW, and agreed.)

(D 26). Hospitals Committee. Scheme for the assistance of Divisions in considering the nomination and election of Representatives of the local medical profession on boards of hospitals and similar boards.

The Committee suggest that "no action be taken."

(D 2). Series of questions as to local custom *re* barring of the holders of certain appointments from private practice.

Several questions are asked for the Honorary Secretary to fill up. The Committee points out that the questions do not apply to this Division and the replies were left to the Honorary Secretary.

The meeting then adjourned.

WARRINGTON DIVISION.

A CLINICAL meeting of the Division was held at the Infirmary, Warrington, on Tuesday, November 16th. There were present: Drs. Langdale, Anderson, A. Hutt, Law, Binns, Taylor, Burrowes, and Murray, together with Drs. Fox, Manson, Robinson, Burt, and Tinsley, members of the Warrington Medico Ethical Society. In the absence of the chairman and vice-chairman, Dr. LANGDALE was unanimously voted to the chair.

Cases.—The following cases were shown:—Dr. FOX: Traumatic cataract of eye; rodent ulcer treated by zinc ionization, dislocation and fracture of head of humerus in a boy, with radiograms, showing result after some years; gunshot wound of arm and radiogram. Dr. LAW: Twin girls who at 11 years of age developed talipes, spina bifida, injury to abdominal wall. Dr. ROBINSON: Hydrocephalus and radiograms in a girl 14 years of age. Dr. MANSON: Tuberculous exfoliative dermatitis. Dr. HODGKINSON (by Dr. TAYLOR): Perforated appendix in an inguinal hernia in a 7 months' child 2 months old. Dr. MANSON: Notes on a case of carcinoma of the sigmoid complicated by double ovarian new growth. Dr. HODGKINSON: Specimens of aspergillosis of kidney; notes of a case of miliary tuberculosis of peritoneum and specimen. Dr. FOX: Radiograms.

METROPOLITAN COUNTIES BRANCH:

LAMBETH DIVISION.

A MEETING of this Division was held at the Evelina Hospital on Thursday, November 24th, Dr. W. H. B. STODDART in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Letter from Walthamstow Division.—The HONORARY SECRETARY read a letter from the Walthamstow Division about the advertisement for an ophthalmic surgeon by the local Education Committee. Dr. CAPES proposed and Dr. W. A. ATKINSON seconded:

> That this Division approves of the action taken by the Walthamstow Division as outlined in the Secretary's letter of the 16th inst., and that the Division take steps to help the Walthamstow Division in so far as it may be able.

The motion was carried *nemine contradicente*.

Paper.—Dr. J. CHARLTON BRISCOE read a most interesting paper on the pathology of arthritis from a clinical standpoint. Mr. F. D. SAUER, house-physician to the hospital, afterwards showed some interesting cases from the wards.

Votes of Thanks.—The proceedings terminated with votes of thanks to the reader of the paper and to the hospital authorities for their hospitality.

MARYLEBONE DIVISION.

A GENERAL meeting of the Division was held at the rooms of the Medical Society of London, Chandos Street, W., on Tuesday, November 8th, at 5 p.m.

Confirmation of Minutes.—The minutes of the last general meeting and special general meeting were read, and, subject to a correction by Dr. C. O. HAWTHORNE, confirmed.

Annual Representative Meeting.—The report of the Representative Meeting, 1910, was presented by Mr. DONALD ARMOUR, and adopted. Mr. Armour was thanked for his work.

Election of Representative.—Mr. N. Bishop Harman as elected Representative for the ensuing year, 1911.

Future Meetings.—Dates for future meetings were xed for the second Tuesdays in December, February, arch, and May.

NORWOOD DIVISION.

GENERAL meeting of this Division was held on ovember 24th, at 4 p.m., at the Stanley Halls. Dr. A. UMMINGS AIR was in the chair, and twenty-three embers and three visitors were present.

Confirmation of Minutes.—The minutes of the last neral meeting (October 27th) were read and nfirmed.

Central Ethical Committee's Interim Report.—The terim Report of Central the Ethical Committee (R 2), On the position of medical practitioners called upon examine (otherwise than by request of the patient persons acting upon his behalf) patients who are der the care of other practitioners," was discussed, d it was resolved, upon the motion of Dr. J. A. OWARD, seconded by Dr. H. A. ECCLES:

That the suggested rules be approved by the Division, and that the Medical Secretary be notified of the same.

Date and Place of Next Meeting.—It was resolved at the next meeting of the Division should be held Thursday, January 26th, 1911, at the British Home d Hospital for Incurables, Streatham.

Papers.—Dr. J. EYRE read a paper on the diagnosis tuberculous infection by recent methods, giving in tail the various laboratory and clinical methods at esent in use. Mr. MCADAM ECCLES read a paper on consecutive cases of perforated duodenal ulcer, and lessons to be learnt from them. The following is a ort abstract of the paper: The 5 cases were all in les between 20 and 40 years of age. In 4 out of 5 the perforation was acute and into the general itoneal cavity, and accompanied by all the signs l symptoms of a perforative lesion, intense pain, id abdomen, thoracic respiration, rapid small pulse, l great general distress—a condition which should arly indicate the gravity of the lesion. All the es were submitted to immediate operation and all ecovered. Some interesting statistics of cases at Bartholomew's Hospital were given. In the twenty rs 1890 to 1909 inclusive there were 35 cases—males and 3 females. Of these, 13 recovered after ration and 22 died, 2 without operation. With ard to treatment Mr. Eccles stated that every case ere a diagnosis was definite should be submitted to ration immediately, and even in those cases where gnosis was uncertain it was far safer to operate n to wait for developments. The incision should made through the upper part of the right rectus, should be sufficiently free to enable the manipulaus to be rapidly and easily made. The aperture in ulcerated area should be folded in and closed with ny Lembert's sutures. A counter-opening should ays be made in the right flank, and both wounds uld be drained. The earlier the operation and the e thorough the drainage the better were the ults.

PERTH BRANCH.

annual meeting of this Branch was held in the ion Hotel, Perth, on Friday, November 11th.

COUNCIL MEETING.

council meeting was held at 3.15 p.m., Dr. LYELL, sident, in the chair. Drs. Kennedy, Haig, J. Hume, ards, and Taylor were present.

ew Member.—Dr. McNaughton, Perth Infirmary, admitted a member of the Association and Branch.

he late Dr. Stirling.—The PRESIDENT then referred he death of Dr. D. H. Stirling, and the council, on alf of the Perthshire Branch, resolved to enter on r minutes an expression of the deep sense of loss by the members of the Branch in the death of Dr. id Halkel Stirling, who was an active and leading ber of the profession among them for so many rs. They recalled that he acted as their President n nearly 80 years of age, and fulfilled the duties with satisfaction to all. They also remembered all that he had done not only for the community at large but especially for the benefit of Perth in the Hillside Home and Sanatorium. They desired to express their respectful sympathy with Dr. Robert and Miss Stirling, and instructed the Secretaries to send a copy of the minute to them both.

ANNUAL MEETING.

The annual meeting was held at 3.30 p.m., Dr. LYELL, President, in the chair, and there were present Drs. Kennedy, Haig, Edwards, J. Hume, Bruce, Urquhart, Revie, Sturrock, Menzies, Burnett, Stirling, Trotter, and Taylor.

Apology for Non-attendance.—An apology was intimated from Lieutenant-Colonel Moffet.

Confirmation of Minutes.—The minutes of previous meetings were read, approved, and signed by the President.

Report of Council.—Dr. TAYLOR reported that during the year two meetings of council, two special meetings, and three ordinary meetings had been held, including the present one, and the average attendance had been ten at the ordinary meetings and four at the council meetings.

Report of Representative.—Dr. HAIG referred to all the important matters under consideration at the Representative Meeting in London, and on the importance of the work, and very specially directed attention to a possible national provident sickness and invalidity scheme and the need for all the members of the British Medical Association to bestir themselves to compel the Government to accept the profession's terms if such a scheme should be carried out. Dr. URQUHART, in moving a hearty vote of thanks to Dr. Haig for his report, appealed to the doctors of the country in regard to the latest Government scheme, and not go to sleep and wake up to find the stable door open and the horse stolen. A hearty vote of thanks was accorded.

Treasurer's Report.—Dr. J. HUME presented the following financial report:

	£	s.	d.
To balance from 1909	28	7	10
Received from London	1	8	3
Interest in bank	0	10	5
	30	16	6
Expenditure	6	8	8
Balance in hand	£24	7	10

In his remarks he stated that the usual return from London had been very small indeed, and that he still hoped a substantial sum would be forwarded at an early date. Dr. URQUHART, in moving a vote of thanks to Dr. Hume, also moved that the Secretary be instructed to make inquiries in regard to the arrears outstanding in London. This was agreed to.

President's Address.

Dr. JOHN LYELL delivered his presidential address, entitled, Some Medical Aspects of the Criminal, with Special Reference to the Works of Dr. James Bruce Thomson, First Resident Medical Officer of Perth Prison. He said:

That the criminal question has an important medical side will, I think, be denied by no one at the present day. It is only within comparatively recent years, however, that this has been fully realized. The rise of what is known as the school of criminal anthropology marks an important change of opinion regarding many problems which had long been the subject of burning controversy. This school, rendered for ever famous by the epoch-making work of Lombroso, had for its object the study of the criminal in his organic, biological, and psychological aspects. The chief service it has rendered has been to draw attention to the view that criminality is not merely another name for human wrongdoing, but that it is a symptom of a deep-seated morbid process, having its origin far back in the history of the race, and demanding study, not from the metaphysical but from the pathological point of view.

The subject has an important local interest for us.

In the year 1858 Dr. James Bruce Thomson was appointed the first resident medical officer of the large penitentiary which about that date had been completed in Perth. Being the chief general prison for Scotland, and containing accommodation for over 800 prisoners undergoing long sentences, it afforded the amplest scope for the observation of criminality in all its sinister manifestations, and Dr. Thomson did not fail to make use of his opportunities. He held his appointment until his resignation in 1872, and during that period of fourteen years he contributed a series of papers to the *Edinburgh Medical Journal* and the *Journal of Mental Science* which have rendered his name famous as one of the founders and pioneers of the science of criminal anthropology.

Thomson's doctrine of the criminal is summarized in the following five propositions:

1. That there is a *criminal class*, distinct from other civilized and *criminal men*.
2. That this criminal class is marked by peculiar physical and mental characteristics.
3. That the hereditary nature of crime is shown by the family histories of criminals.
4. That the transformation of other nervous disorders with crime in the criminal class also proves the alliance of hereditary crime with other disorders of the mind, such as epilepsy, dipsomania, insanity, etc.
5. That the incurable nature of crime in the criminal class goes to prove its hereditary nature.

It may be said that in these remarkable conclusions of Thomson we have the foundations of the modern science of criminal anthropology, the work of Lombroso and the great Italian and French schools being little more than an elaboration of doctrines almost precisely the same, brought into line with more recent biological theories, and treated according to the more exact ideas of present day scientific investigation. Lombroso himself repeatedly refers to Thomson's observations, and acknowledges him as one of the masters and pioneers of criminology.[1]

The central doctrine in Lombroso's teaching is, in a word, the existence of what he calls the "born or instinctive criminal"—a person who represents a distinct type of humanity, being atavistic, or reversionary to the savage and to primitive man in his biological relations, and exhibiting certain specific bodily and mental characters which distinguish him from his normal fellows and from other criminals. As regards physical characters, they are in the direction of deficiency or degeneration, such as are best seen in irregular development of the bones of the head and face. These being among the most highly evolved and distinctively human parts of the frame, suffer, as it were, a reduction to a more primitive level, and this is accompanied by a degradation of the higher instincts acquired by long centuries of civilization, and an emergence of the brute passions of bygone stages of savagery.

It cannot be maintained that all of Lombroso's teaching has held its own, but taking up the main doctrine of what we may in a general sense call the Thomson-Lombroso school—namely, that of the existence of the *specific criminal type*—it may be interesting to inquire how far we are justified in accepting it as a rule of belief and practice. It is clearly a question of great importance whether we are to conceive that a certain number of men and women are so constituted by the inexorable laws of heredity as to possess an innate disposition to crime and depravity, for to say so would, of course, imply that the moral disease of such criminals is incurable, and that all efforts to deal with them by the ordinary methods of punishment and reformatory treatment are futile.

It has been an easy matter, in the first place, to criticize the doctrine of criminal stigmata. We now recognize that when these abnormalities exist they merely the well-known signs of physical degeneration; and it has been proved over and over again that they are also to be found in many people who exhibit neither marked weakness of mind nor vicious te dencies, and, on the other hand, that some of t most depraved and incorrigible criminals, far fro betraying bodily abnormality, are distinguished their fine physique and prepossessing countenances.

While this is true, it is an indisputable fa that many crimina's show marked evidences both congenital and acquired degeneracy, using t term in the more simple sense of departure fr the high standard of bodily and mental endowme which is characteristic of the active and usef citizen. A large number of the true criminal class, we meet with them in prison, are weakly and d formed and diseased, with constitutions undermin by debauchery and privation. Having had to make brief physical examination of every prisoner who h entered the Perth Penitentiary during the last s years—over 15,000 men and women—I have be struck more especially with the poor condition many of the criminals transferred to us from Edi burgh and Glasgow. The governors of these priso are in the habit of sending to Perth all the inmat they find troublesome and wish to get rid of, and th the accumulation of "riff-raff" in our cells duri the busy months of the year frequently amounts to high figure. Deformities of all descriptions, t result of accident and disease: tuberculous glands a sores, venereal disease in all its disgusting varieti weaknesses of the heart and lungs, impaired digestio different forms of malnutrition, such as anaemia a alcoholic cachexia; tumours, hernias of the mo aggravated degree, disfiguring skin diseases, and on, mark out this motley crowd as the dregs and was products of humanity, and prove the close allian between gross physical disability and crime.

The truth is, however, that at present "the doma of anthropology, so far as regards the study of t bodily conformation of the malefactor, is shrinkin while that of criminal psychology is expanding (De Fleury). The attempt of Lombroso and h school to erect the instinctive criminal into an anthr pological type has failed. The specific crimin stigmata, which they make so much of, cannot be sa to have scientific value. On the other hand, the co ception of the instinctive criminal as a purely psych logical type is gaining ground. By freeing it fro presupposed theories and factitious accretions v acquire a most useful and comprehensive categor into which we can bring that large class of men a women, familiar to every prison official, whose nati bias to vice and crime is unmistakable.

Viewing the instinctive criminal, therefore, as being whose moral nature is imperfectly develope whose intelligence is often defective, and whose bodi frame is more or less debased—as a degenerate, short, in the sense that he falls far below his norm fellows in the necessary equipment for filling h place honestly and worthily in the social sphere—w may stop short in our definition. Modern crimin anthropology has, in fact, overstepped its mark striving after too accurate scientific methods, and is safest to keep to generalities on such an elusi subject as the criminal. The same may be said wh we turn to the consideration of Thomson's third pr position, which deals with the interesting question the heredity of crime.

This may be dismissed in a very few words. In th first place it is absurd to imagine that any accurat study of family pedigrees can be made amongst th criminal classes. If "it takes a wise man to know h own father," we need not expect to get reliabl information from the besotted inmates of a commo gaol. A further difficulty arises from the fact that th development of the criminal instinct depends upo the social environment and upbringing of th individual. Bad surroundings naturally foster th propensity, while we cannot doubt that many potentia criminals are saved from themselves by a comfortabl home and a sufficient income. Another point mu also be borne in mind—namely, that owing to th irregular sexual relationships of criminals, and th long periods which they spend in prison, they cannc perpetuate themselves to any great extent. Th

[1] Lombroso, *L'homme criminel*, vol. i, pp. 20, 422, 447; vol. ii, pp. 57, 66, 89, 232, 265, 568.

loctrine of hereditary crime is, in fact, a convenient ssumption without sufficient proof. Dr. Sutherland's autious dictum may, therefore, be accepted as nearer he truth, that from the data we are yet in possession f "it would be rash to conclude that heredity in rime is proved."

On the other hand, with regard to Thomson's fourth roposition, concerning the transformation of nervous isorders in heredity—that is to say, the alternation f insanity, epilepsy, dipsomania, and such like conitions with criminality in degenerate families—the henomenon has been so often observed as to be now eyond dispute. The association of criminality with his transformation of deep seated disorders of the ervous system is a blessing in disguise, for it leads s to assume that criminals in many cases share in ie relative sterility of all degenerate stocks, and ence their existence tends to remain, so far, a ationary element in the community, if not a creasing quantity.

The incurability of crime in the criminal classes, hich is the subject of Thomson's last proposition, rms the natural corollary to the whole study. His nclusion "that crime (in the general) is a moral sease of a chronic and congenital nature, and inactable in the extreme," has been confirmed over d over again by experienced observers. It will sufficient to quote the remark of Dr. Quinton in s work on *Crime and Criminals*, published only is year, "that a person who deliberately adopts ime as his profession, and earns his living by it, to all intents and purposes a moral incurable whom s criminal law cannot either reform or deter from me."

With regard to the treatment of the criminal, omson's suggestions are that measures must be ken to break up the caste and community of the minal classes, long sentences of habituals being cessary in order to lessen the number of offenders, ile juveniles must be brought under very early ining if we hope to reclaim them. It is interesting note that the Prevention of Crimes Act and the obation of Offenders Act, both passed only two years o, to a large extent embody these very principles, some time must elapse before their beneficial ects can be determined. The further lesson, how-r, which Thomson taught us—that crime is nearly ed to insanity—has not been lost; and more and re we are coming to see that, by making criminality sychological study, we are more likely to arrive at isfactory conclusions than by merely looking at ne as the work of the devil, and pinning our hope alvation upon the rigours of the penal code.

n conclusion, let me say that the value of Thom-'s work lies in the fact that he wrote from intimate sonal knowledge of his subject; and I think I have n able to show that he grasped in a remarkable many of the fundamental problems of scientific inology, and threw an interesting light upon ques-is which are still far from a satisfactory answer.

fter discussion, in which Drs. KENNEDY, URQUHART, STURROCK took part, Dr. LYELL replied, and it agreed to minute the special work Dr. James ce Thomson had done as follows:

. Lyell having given his presidential address on "Some ical Aspects of the Criminal, with Special Reference to the ks of Dr. James Bruce Thomson, first Resident Medical er of the Perth General Prison," the Branch resolved to on their minutes their appreciation of that address, and mmemorative note of their admiration for the work done Dr. James Bruce Thomson as a pioneer of criminology g his service in Her Majesty's General Prison (Perth) 1858 until 1872. His name and his labours have not met that recognition to which his investigations and opinions led him; but after the lapse of half a century Dr. Lyell's inating discourse recalled the man and his studies in inal anthropology so vividly that it seemed a fitting rtunity to render this tardy yet sincere tribute to his ory.

d Cross Work.—This subject was brought up in ion to medical men and the work of the Red s First Aid Detachments. After discussion, a l committee, consisting of Dr. Urquhart, Dr. R. ing, and the Secretaries, was appointed to go into the whole matter and report to an early meeting of the Branch.

Reference Library.—The nucleus of a reference library having been formed, the question of management and the best place suitable to members for it was considered, but, owing to pressure of time, the decision of the Branch was postponed to their next meeting.

This was all the business, and thereafter the members dined in the hotel.

Association Notices.

ELECTION OF CENTRAL COUNCIL 1910-11.

SOUTH AUSTRALIAN, WESTERN AUSTRALIAN, AND MELBOURNE AND VICTORIA BRANCHES.

NOTICE is hereby given that nominations of candidates for election of a Member of Council for the year 1910–11 by the group composed of the above-mentioned Branches must be forwarded to reach Dr. Henry Laurie, 49, Brighton Road, St. Kilda, Melbourne (Returning Officer for the said group), not later than January 21st, 1911.

By Order of the Council,

GUY ELLISTON,
Financial Secretary and Business Manager.

429, Strand, London,
November 30th, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

LANCASHIRE AND CHESHIRE BRANCH.—A Branch Council meeting will be held at Onward Buildings, Deansgate, Manchester, on Wednesday, December 7th, at 4.30 p.m.—F. CHARLES LARKIN, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: WARRINGTON DIVISION.—The quarterly meeting of the Division will be held at the Infirmary, Warrington, on Tuesday, December 6th, at 8.15 p.m. Dr. J. H. Taylor, of Salford, member of the Central Council, will give an address on Public Medical Service.—T. A. MURRAY, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—The next meeting of the City Division will be held at the Town Hall, Mare Street, Hackney, on Tuesday, December 13th, at 4 p.m., when Dr. F. J. Horder, F.R.C.P., will read a paper on The Problem of Rheumatic Fever. Visitors are invited. Tea 4 p.m.—A. G. SOUTHCOMBE, M.D., 83, Sidney Road, Homerton, N.E., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: KENSINGTON DIVISION.—A meeting of the Division will be held at the Kensington Town Hall on Friday, December 9th, 1910, at 4.30 p.m. An address will be given by the Medical Secretary of the British Medical Association on the National Organization of Medical Attendance on the Wage-earning Classes. All members of the medical profession, whether members of the Association or not, are cordially invited to attend.

METROPOLITAN COUNTIES BRANCH: WALTHAMSTOW DIVISION.—The next meeting of this Division will be held at the hospital, Orford Road, Walthamstow, on Thursday, December 8th, at 4 p.m. Agenda: (1) Minutes. (2) Letters. (3) Resolution, proposed by Dr. Woolf: "That the meetings of our Division be held at 3.30 p.m. prompt instead of 4 p.m." (4) Paper: Hints on Diseases of the Nose, Throat, and Ear in General Practice, by Dundas Grant, M.D., F.R.C.S., Surgeon, Central London Throat and Ear Hospital. (5) Any other business.—A. POTTINGER ELDRED, Honorary Secretary.

SOUTH-EASTERN BRANCH: BROMLEY DIVISION.—A meeting of this Division will be held on Thursday, December 8th, at 8.30 p.m., Dr. Lewis, Chairman of the Division, in the chair, to receive the report of the Kent Organization Committee, and to discuss the scheme drawn up by that Committee regarding the medical treatment of school children found defective. All medical practitioners resident and practising within the area of the Division are urgently requested to attend this important meeting.—A. TENNYSON SMITH, M.D., Honorary Secretary.

SOUTH MIDLAND BRANCH: NORTHAMPTONSHIRE DIVISION.—A meeting of this Division will be held in the Board Room of the Northampton General Hospital on Tuesday, December 13th, at 2.30 p.m. There will be a luncheon at Franklin's Restaurant at 1.30, and those wishing to attend it should send in their names to the Honorary Secretary two days beforehand. Business: Minutes of the preceding meeting; club fees; any other business.—P. S. HICHENS, Honorary Secretary.

MEMBERS ELECTED DURING THE OCTOBER QUARTER.

UNDER BY-LAWS 2 AND 3.

BY THE COUNCIL.

Blackett, Lilias Margaret, M.B., B.S.Lond., C.M.S. Women's Hospital, Mullan Cantonments, Punjab
Boyd, Thomas Crawford, Lieutenant I.M.S., L.R.C.P., L.R.C.S., L.M.
Brock, George Selby, M.B., Ch.B.Edin., 6, Corso d'Italia, Rome
Browne, Robley Henry John, Fleet Surgeon R.N., M.R.C.S., L.R.C.P.
Cope, Lidbrooke Frank, Surgeon R.N., L.S.A.
Ferrière, Joseph Anthony, M.B., B.S.Lond. M.R.C.S., Curepipe, Mauritius
French, Arthur Gordon Valpy, Surgeon R.N., M.R.C.S.Eng., L.R.C.P.Lond.
Kirwan, Ernest William O'Gorman, Lieutenant I.M.S., M.B.
Martin, John Harding Baynes, Surgeon R.N., M.B., B.C.
Massey, Thomas Hunter, L.R.C.P. and S.I
Saint Vincent, B.W. Indies
Miller, William Birkmyre, Lieutenant-Col
R.A.M.C., M.D.Edin., M.B., C.M.
Rivers, Arthur Tunna, Surgeon R.N., M.R.
Eng., L.R.C.P.Lond.
Spicer, Harry, Staff Surgeon R.N., M
M.R.C.S., L.R.C.P.
Sprague, Cecil Gordon, Surgeon R.N., M.R.
L.R.C.P.

BY BRANCH COUNCILS.

Aberdeen Branch.

Neil, J. J. A., M.B., 2, Chanonry, Old Aberdeen

Bath and Bristol Branch.

Blackley, F. J., M.D., 2, Knowle Road, Bristol
Dixon, Thomas B., Esq., 30, Brecknock Road, Knowle, Bristol
Hay, L. H., M.B., 8, Russell Terrace, Bedminster, Bristol
Johns, H. F., M.D., 2, Knowle Road, Bristol

Birmingham Branch.

Aldridge, A. W., M.B., King's Norton, near Birmingham
George, T. J., Esq., 145, Birchfield Road, Birmingham
Greenwood, F. R., M.D., 558, Stratford Road, Sparkhill, Birmingham
Knott, E. M., Esq., 1, Coleshill Street, Sutton Coldfield
Kurz, Lina, M.B., University House, Edgbaston Park Road, Birmingham
Maitland, V. G., Esq., 45, Riversley Road, Nuneaton
Murray, D. S., M.D., 6, Church Street, Stratford-on-Avon
Rowbotham, H. B., Esq., 254, Moseley Road, Birmingham
Rowland, F., Esq., 324, Dudley Road, Birmingham
Thwaite, H., Esq., 40, Westfield Road, Edgbaston
Whitby, E. Vernon, M.B., 93, Bristol Road, Birmingham
White, H. E., M.B., Silverbirch, Wylde Green, near Birmingham
Wyman, H. B., M.D., Bedworth

Bombay Branch.

Cama, A. P., Esq., Dhun House, Apollo Bunder, Bombay
Castellino, L., Esq., Camp, Karachi
Rahman, M. A., Lieut., I.M.S., c.o. Messrs. Grindlay, Groom, and Co., Bombay
Shand, J. G. B., M.B., Lieut., I.M.S., c.o. Messrs. Cox and Co., Fort, Bombay
Thakar, C. S., Esq., Ridge Road, Malabar Hill, Bombay

Border Counties Branch.

Clark, A. E., M.B., 17, Albert Street, Newton Stewart
Park, R. S., M.B., Acredale, Abbey Town, Carlisle

Brisbane and Queensland Branch.

Greenshields, Hilda, Lady Bowen Hospital, Brisbane
Innes, Flora, Mission Hospital, Sholinghur
South, A. E., Esq., Peak Downs Hospital, Clermont
Thelander, Dr., King Street, East Brisbane

British Guiana Branch.

Browne, A. J., Esq., Brickdam, Georgetown
Duncan, W., Esq., Public Hospital, Georgetown
Johnson, R. I. F. H., Esq., Wellington Street, Georgetown
Minett, E. P., M.D., Georgetown

Burma Branch.

Brayne, W. F., M.B., Capt., I.M.S., c.o. Sanitary Commissioner, Rangoon

Cape of Good Hope—Eastern Province Branch.

Visser, A. G., M.B., Steytlerville

Cape of Good Hope—Western Province Branch.

Casalis, G. A., Esq., Rondebosch, Cape Colony
Welch, L., Esq., Observatory, Cape Colony
Wright, E. Lister, Esq., Simonstown, Cape Colony

Dorset and West Hants Branch.

Bell, T. G., M.D., 38, Poole Road, Branksome, Bournemouth
Cundell, W. H., Esq., The Haven, Castlemain Road, West Southbourne, Bournemouth
Hollick, B. S., Esq., Sturminster Newton
Simpson, J. B., Esq., 1, Greenhill, Weym
Warburton, J. W., Esq., Satara, Chester R
Bournemouth

East Anglian Branch.

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stanton
Brickwell, F., M.B., Mendlesham, S
market
Chambers, W. D., M.B., Norfolk Co
Asylum, Thorpe
Chevers, H. L. G., Esq., Kessingland
Foster, F. W., Esq., The Abbey, Thorp
Soken
Griffith-Williams, W. H., Esq., Mattishall
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stanton
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Mottram, M., Esq., Sandringham

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burgh
Kerr, F. K., M.B., 168, Newhaven Road, Le
Watson, W. S., M.B., Craig House, Morn
side Drive, Edinburgh

Fife Branch.

Anderson, G. Norman, Esq., Dunfermline
Gordon, John, M.D., Culross
Macdonald, D. M., M.D., Waveney, Leven
Primmer, J. B., M.B., Cowdenbeath
Reid, E. L., Esq., Seaview House, Leven
Thomson, C., M.B., Major, I.M.S., Hollyba
W. Newport

Glasgow and West of Scotland Branch.

Kiep, Walter H., M.B., Lismore Hou
Kelvinside North
Macdonald, A. T. Inglis, M.B., Glasg
Maternity Hospital, Rottenrow
Morton, Hugh, M.B., Bethanbank, Ayt
Road, Pollokshields
Pinder, Dr., 18, Queen's Square, Strathbun
Robertson, Jane Isabel, M.B., Royal Asylu
Gartnavel
Turner, W. Y., M.B., Livingstonia, Nya
land

Gloucestershire Branch.

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Miles, T. G., Esq., Melvill House, Ruardean

Halifax, Nova Scotia, Branch.

Keegan, L. E., M.D., St. John's General Hospital, Newfoundland
Knight, J. S., Esq., St. Johns, Newfoundland
Lawlor, F. E., Esq., Nova Scotia Hospital, Dartmouth

Jamaica Branch.

Fenalater, B., Esq., Kingston
Murray, E. E., Esq., Kingston

Lancashire and Cheshire Branch.

Averay-Jones, H. H., Esq., 14, Marmion Road, Sefton Park, Liverpool
Blake, P., Esq., Red House, Upton
Brown, John, Esq., Roslyn, Irlam Road, Flixton
Buchanan, Robert, M.B., 69, Church Street, St. Helens
Campbell, T., Esq. Platt House, Platt Bridge, near Wigan
Chisholm, Catherine, M.B., 339, Oxford Road, Manchester
Craig, James, M.B., 36, Blackburn Road, Church, near Accrington
Cran, Alexander, M.B., Deveron House, Great Harwood
Cropper, J. W., M.B., 6, Alverston Road, Seacombe
Dawson, Walter, M.B., 56, Vauxhall Street, Liverpool
Donald, Pollok, M.B., Dudley Lodge, Prestwich
Edis, J. B., Esq., 163, Islington, Liverpool
Elliott, B. G., Esq., Kilbride House, Witton, Blackburn
Fletcher, Joseph, M.B., 627, Oldham Road, Failsworth
Harries, E. H. R., M.D., City Hospital, Fazakerley, Liverpool
Hey, W. H., F.R.C.S., Royal Infirmary, Manchester
Huntly, H. E., M.B., Cranbrook, Penwortham, Preston
Jones, C. O., M.D., Norlands, Mount Road, New Brighton
Jones, J. A., M.B., 20, St. John Street, Manchester
Leeper, R. J., Esq., Withy House, Bamber Bridge
Levy, S., M.B., 116, Great Ducie Street, Manchester
Lonsdale, T. W., M.B., 32, Park Green, Macclesfield
McFall, J. E. W., M.D., Tue Brook, Liverpool
Macfie, R. B., M.B., The Infirmary, Blackburn
Moir, J. L., M.B., Overton House, Congleton
Mowat, George, M.B., 24, Higher Bridge Street, Bolton
Pollard, G. W., M.D., 49, Devonshire Road, Birkenhead
Robertson, J. R., M.B., 22, Accrington Road, Burnley
Sharples, Sydney, Esq., Northern Hospital, Liverpool
Shaw, R. A., M.B., 68, Preston New Road, Blackburn
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——— Internat. d'Obstétrique et de Gynécologie. 3. Amsterdam, 1899.
Congress für innere Medicin, Verhandlungen. 1-12, and 14, since 18.
Dermatological Congress. Vienna. 1892.
Dermatologischer Jahresbericht, 1906-1908.
Dublin Quarterly Journal of the Medical Sciences. Vols. 1, 10, 17, 20, 28, and 35-40.
Edinburgh Obstetrical Transactions. Vol. 5.
Glasgow Medical Journal. 1853-1868.
——— Pathological Society. Transactions 1 and 2.
Guy's Hospital Gazette. Nos. 1 and 5. 1872.
Indian Medical Gazette. 1868-1884.
International Congress of School Hygiene. Transactions of First Congress, Nuremberg.
International Congress of Hygiene. Transactions of Congresses 1-6 and 10-12.
——— Ophthalmological Congress. Transactions of Fifth; New York, 1876.
Jahresbericht Neurologie und Psychiatrie, 1, 2, 5-9, 11-13.
Journal of Laryngology. Vols. 1 to 9.
Lakeside Hospital Clinical and Pathological Papers, Series 2
Montreal Medical Journal, prior to 1900.
New York Pathological Society. Proceedings prior to 1888 1890, 1892-1898, 1901-1904
New York State Journal of Medicine, 1906.
Ophthalmic Review. January, 1882.
Pediatrics, prior to 1902.
Provincial Medical and Surgical Journal. March to September, 1841, and May 11th, 1852.
Recueil d'ophtalmologie, prior to 1893.
Revue générale d'ophtalmologie, prior to 1895.
St. Bartholomew's Hospital Gazette. Vols. 1-6.
St. George's Hospital Gazette. Vols. 1-7.
St. Mary's Hospital Gazette. Vol. 4.
Sei-i-kwai Medical Journal. Vols. 1-11.
Semaine Médicale, prior to 1884. Titles for 1884 and 1895.
South African Medical Journal. February and April, 1895. Titles, Vols. 3 and 4.
United States Department of Agriculture, Bureau of Animal Industry. Reports 1-7 10-14.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1910.

MEDICAL DISCIPLINARY CASES.

SIR DONALD MACALISTER, K.C.B., President, in the Chair.

THE CASE OF SYDNEY CLARK.

ON Wednesday, November 23rd, the Council considered the case of Sydney Clark, registered as of Tonopah, Nevada, U.S.A., M.R.C.S.Eng., 1896, L.R.C.P. Lond., 1896, who had been summoned to appear before the Council on the following charge, as formulated by the Council's Solicitor:

That you abused your position as a medical man by committing adultery and eloping with a Mrs. Bentley, whom you had been attending professionally, of which adultery you were found guilty by the decree of the Probate, Divorce, and Admiralty Division (Divorce) of the High Court of Justice, dated January 24th, 1910, in the case of Clark *v.* Clark, in which you were the respondent.

And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. Bodkin appeared as Legal Assessor; Mr. Winterbotham appeared as Solicitor to the Council. Mr. Sydney Clark did not appear and was not represented.

The SOLICITOR having read the charge, stated that the ordinary notice had been sent to the accused practitioner. The judgement of the court found him guilty of adultery, and the evidence in support of the complaint dealt conclusively with the question of professional relationship. Mr. Clark had forwarded a letter in which he said he was seriously ill and unable to attend, enclosing several testimonials, and expressing the hope that the case would be heard *in camerâ*, so that it might not appear in the medical and lay press. The Solicitor added that there was no denial of the professional relationship.

Strangers were directed to withdraw. On readmission, the PRESIDENT announced the decision of the Council as follows:

I have to announce that the facts alleged in the notice of inquiry against Sydney Clark have not been proved to the satisfaction of the Council.

THE CASE OF JAMES DALZIEL.

On Wednesday, November 23rd, the Council considered the case of James Dalziel, registered as of Auckland, New Zealand, L.R.C.P.Edin., 1867, L.R.F.P.S. Glasg., 1867, who had been summoned to appear before the Council on the following charge, as formulated by the Council's Solicitor:

That you unlawfully used an instrument or other means with intent thereby to procure the miscarriage of one Jennie Arraclough, of which offence you were on August 14th, 1907, convicted at Auckland, New Zealand, and sentenced to four years' imprisonment.

And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. Dalziel did not attend in answer to his notice, nor was he represented by counsel or solicitor; neither did he send in any answer in writing.

In the absence of a complainant the Council's Solicitor read the notice, and proved that it had been duly served. He also read the certificate of conviction.

Strangers were directed to withdraw. On readmission, the PRESIDENT announced the decision of the Council as follows:

I have to announce that the Council have adjudged James Dalziel to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase from the *Medical Register* the name of James Dalziel.

THE CASE OF GEORGE GREY WILSON.

On Wednesday, November 23rd, the Council also considered the case of George Grey Wilson, registered of 23, Duncan Terrace, Islington, N., L.R.C.P.Edin., 1898, L.R.C.S.Edin., 1898, L.F.P.S.Glasg., 1898, who had been summoned to appear before the Council on the following charge, as formulated by the Council's Solicitor:

That you abused your position as a medical man by committing adultery with a Mrs. Moore, with whom you stood in professional relationship, of which adultery you were found guilty by the decree of the Probate, Divorce, and Admiralty Division (Divorce) of the High Court of Justice, dated March 15th, 1910, in the case of Moore *v.* Moore and Wilson, in which you were the co-respondent.

And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. Wilson attended in answer to his notice, accompanied by Mr. E. W. Fordham, his counsel, instructed by Messrs. Salter and Lees, solicitors.

The Council's SOLICITOR read the notice, and in the absence of a complainant proceeded to lay the case before the Council. He read a declaration by Mr. Moore, a series of questions arising out of the declaration submitted to Mr. Moore by the solicitors to the accused practitioner, and Mr. Moore's answers thereto.

Dr. T. H. A. CHAPLIN, Medical Inspector of the P. and O. S. N. Co.'s Services, was called and spoke to certain incidents connected with the voyage. Mr. TAIT, an officer of the ship, and Mr. TAYLOR, a local manager of the Dunlop Tyre Company, were also called and spoke to the relations and behaviour of Mrs. Moore and Mr. Wilson during the voyage.

Mr. WILSON was called, and in answer to Mr. FORDHAM denied ever being told Mrs. Moore was ill. He had never treated her for any complaint whatever, or prescribed for her on the voyage in question or at any time as a medical man. At no time had any professional relationship existed between him and Mrs. Moore.

Cross-examined by Mr. WINTERBOTHAM, the Solicitor: The statement by Mr. Moore that he (the respondent) had attended Mrs. Moore in a professional respect was untrue.

By the LEGAL ASSESSOR: His statement contained in the letter of November 18th to Mr. Moore—"When I met Mrs. Moore on the boat she was taken very ill"—was not true; he intended to convey that she was in great distress.

Re-examined by Mr. FORDHAM: It was absolutely untrue that there were any immoral relationship on the boat with the lady in question.

Mr. FORDHAM, before calling further evidence, submitted it was outside the scope of the inquiry for the Council to allow any question to be put to the witnesses, whatever their answers might be, which tended to show that misconduct occurred in other circumstances.

The LEGAL ASSESSOR thought this was putting too wide a construction upon the words of the charge.

The PRESIDENT ruled that the inquiry could not be limited in the manner desired.

Mrs. MOORE, examined by Mr. FORDHAM, said she had had no professional relation whatever with Mr. Wilson. She had never suffered from or been treated for constipation by Mr. Wilson. The circumstances which caused her to leave her husband had nothing whatever to do with Mr. Wilson.

By the LEGAL ASSESSOR: It was true that she felt ill when at Aden, but she did not consequently consult the respondent.

Mr. FORDHAM, for the respondent, submitted that the Council had to consider, first, could it be said that this lady was a patient on board the ship merely because she was there and Mr. Wilson was the ship's doctor? Of course, if the Council could find that, it would be useless his arguing the question whether or not the professional relationship existed, because in that case he assumed the Council would come to a decision adverse to his client. But, apart from that, was there the actual relationship of doctor and patient? If the Council were to hold that every passenger on board a ship was a patient, in the sense in which he had used that word, it would be setting a very dangerous precedent. The reason for the strictness of the rule as between doctor and patient was a very clear and obvious one, namely, the intimate relationship which was brought about

by the close personal contact with those whom the doctor treated. If the Council extended the sphere of doctor and patient it would be defeating the very *raison d'être* of the rule, because the rule would have very little validity indeed if the Council said the relationship subsisted as between a ship's doctor sitting in his cabin, for instance, and a stoker stoking down in the hold. He would submit with confidence that it had not been made out that the relationship of doctor and patient existed in this case. He admitted it was largely a matter which side the Council believed, and contended that the absence of entries in the medical register confirmed the evidence of the witnesses whom he had called. The evidence of Mr. Tait and Mr. Taylor came to nothing; indeed, so far as it was evidence at all, it went to show conclusively that the position of doctor and patient never existed in fact. If the Council came to the conclusion, as it might, that a professional relationship had subsisted between the doctor and Mrs. Moore, he said it was an exceptional case, and he asked the Council to deal with it in an exceptional manner.

Strangers and parties were directed to withdraw. On readmission, the PRESIDENT announced that the further consideration of the case was adjourned till the next day.

The Council resumed, on Thursday, November 24th, the consideration *in camerâ* of the case of George Grey Wilson, adjourned from Wednesday. Strangers and the parties were directed to withdraw. On readmission, the PRESIDENT announced the judgement of the Council as follows:

Mr. Wilson, the charge against you was that you abused your position as a medical man by committing adultery with a Mrs. Moore, with whom you stood in professional relationship, of which adultery you were found guilty by the decree of the High Court of Justice in the case in which you were the co-respondent.

I have to inform you that the Council have judged you to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase from the *Medical Register* the name of George Grey Wilson.

THE CASE OF JAMES FORREST.

On Thursday, November 24th, the Council resumed the consideration, adjourned from May 27th, 1910, of the case of James Forrest, registered as of 60, Gordon Mansions, Gower Street, London, W.C., M.B., Bac. Surg. 1897, Univ. Edin., who had been summoned to appear before the Council on the following charge, as formulated by the Council's Solicitor:*

That you have associated yourself, as a member of its committee and also as one of its surgeons, with an institution called the "Eye and Ear Clinique," and also the "National Eye Hospital," and the "National Eye, Ear, Nose and Throat Hospital," of 123, Oxford Street, London, W., which advertises by pamphlets and in the public press for paying patients.

And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The case was adjourned in order to enable Mr. Forrest to bring further evidence in answer to the charge.

Dr. Alfred Cox (Deputy Medical Secretary, British Medical Association), with Mr. Hempson, solicitor of the Association, appeared on behalf of the complainants, the British Medical Association.

Mr. Forrest did not appear and was unrepresented.

The PRESIDENT requested the Legal Assessor to inform the Council of the position in which the case stood.

The LEGAL ASSESSOR said on May 26th last the case was opened by Mr. Smith Whitaker, and Mr. Cooper and Mr. Tyrrell were called to verify their statutory declarations, and each of them was cross-examined by Mr. Washington, solicitor, for Mr. Forrest. Then Mr. Forrest was called, and he was cross-examined, re-examined, and answered questions put by the Council. In the course of those questions it was thought desirable that the books, and especially the minute books, of the "Clinique" should be produced, none of them being present during the hearing. Then Mr. Washington agreed the best thing would be to have an adjournment in order that he might bring some members of the committee of the "Clinique" before the Council and its books might be open to inspection in order that it might be better able to form an opinion as to whether what Mr. Forrest had said was genuine. Accordingly an adjournment was granted till the next day. Before that time arrived Mr. Washington had ceased to act for Mr. Forrest and gave notice to that effect, and at the adjourned hearing neither Mr. Forrest nor any one on his behalf appeared, and after discussion it was decided that the case should stand adjourned until the present session of the Council.

The PRESIDENT took it that the accused practitioner was entitled to bring forward any evidence on the points in question either by personal testimony or by his representative or by letter. The first two he had not chosen to adopt, but had written a letter, which the President called on the Solicitor to read.

The SOLICITOR said the letter was addressed to the General Medical Council, dated November 15th, and signed by Mr. Forrest.

I enclose documentary testimony in proof of my statement made before you, at your last meeting, with regard to the administration of the Eye and Ear Clinique. As the case was concluded at the last meeting, and judgement was postponed solely for the production of the above documents, I do not propose attending personally, but I beg leave to controvert certain statements made by the prosecution.

Their solicitor stated that no inquiries were made with regard to the financial position of the patients attending the Clinique. This is true: but we contend that such inquiries do not prevent abuse, and so offer no protection, for a patient who has determined to prostitute his sense of truthfulness to gain some slight monetary advantages will not be deterred by the inquisitorial methods adopted by many hospital authorities.

The plan in vogue at the Clinique was only resorted to after much deliberation, and consists in an exposition—by the nurse—to each patient of the objects of the institution, and particularly of the class to which it appeals.

With reference to T. W. Tyrrell's account of his visit to the Clinique, I wish you to note that his description of the conversation he had with the nurse is both contradictory and incongruous. His statement that a copy of the *Lancet* was lying on the table is a lie. It is unnecessary to refute in detail his narration of my conversation with him, as most of it is irrelevant to the case; but his departure from the truth is perhaps largely attributable to a desire to present a good case for his employer, who, I note, is the solicitor for the prosecution.

With regard to our advertisements to which exception has been taken, we only followed the precedents set by other institutions. I enclose an incomplete list of those which advertise either overtly or covertly for paying patients, and a perusal of their reports (which I also submit) shows that the money derived from the payments of patients is from 60 to 100 per cent. of the total income of the institution. As such notices have appeared regularly for years, the inference that the underlying principles were approved by the medical authorities appeared to us the only logical one, especially as the advertisements appear in those papers which appeal chiefly to the working classes. We inserted a public notice in the press once only, and then I am charged with infamous conduct in a professional sense; yet these other institutions are advertising regularly every week with impunity. These gross anomalies which are allowed to prevail with regard to public notices in the press have been largely created by the inactivity or tacit approval of the prosecuting body, who affect to protect the interests of the medical practitioner; and so strongly do I feel in relation to these irregularities that their continuance will compel me, from conscientious motives, to have my name voluntarily erased from the *Register*.

In conclusion, I reiterate that if my conduct be infamous then many other men on the staff of various London institutions ought to be arraigned before you on the same charge.

JAS. FORREST.

The statutory declaration was as follows:

IN THE MATTER OF THE COMPLAINT AGAINST JAMES FORREST, M.B., F.R.C.S.E., OF THE EYE AND EAR CLINIQUE, LONDON.

Statutory Declaration by Alfred Ernest Yates, dated November 15th, 1910.

I, ALFRED ERNEST YATES, of 3 Brown Street, Manchester, do solemnly and sincerely declare as follows:

I provided funds (without interest) for the foundation of the above Institution, and furthermore guaranteed it against loss for a period of five years.

The administration of the Clinique and the management

* For report of previous hearing of this case see SUPPLEMENT, June 4th, 1910, pp. 349-51.

finances are under the control of an honorary committee, whose addresses are as follows:

A. E. Yates (Engineer), 30, Brown Street, Manchester.
Ellen Mitchell (Independent), South Shore, Blackpool.
F. Westcott (Shipper), Thorners Chambers, London.
P. Phillips (Tobacco Manufacturer), Metherall Gardens, W.
James Forrest (Surgeon), 1, Duke Street, Manchester Square, London.
W. Harrison (Stockbroker), Gresham House, E.C.

The late Dr. Rammage was also a member.

Amongst the many resolutions passed by the Committee, the following two are germane to this case:

1. That any excess of income over expenditure shall be devoted in the first place to the provision and full equipment of an in-patient department, and afterwards to the repayment of the donor.

2. That no salary be given to the surgeons for their services until the donor be reimbursed, and that such salary shall not exceed one hundred pounds per annum.

This small honorarium was not intended to represent an adequate remuneration for the surgeons' services, but given with the view of excluding purely honorary service.

Dr. ALFRED COX, in reply to the PRESIDENT, said that if the Council was going to take Mr. Forrest's letter into consideration, he should feel obliged to make some remarks upon it.

The PRESIDENT was advised that it was to be regarded as a continuation of what Mr. Forrest had said in his speech on the case, and had not acquired the character of evidence.

Dr. ALFRED COX took it that that meant he was not entitled to comment on it.

The LEGAL ASSESSOR observed that the President had not ruled that, but, having regard to the nature of the letter, that it was supplemental to the evidence which Mr. Forrest himself gave on the last occasion, the Council would not think it necessary to call upon Dr. Cox for any comments upon it.

Dr. ALFRED COX, under those circumstances, was quite content to leave the matter entirely in the hands of the Council. He did not wish to comment on Mr. Yates's declaration; but the Council would observe that the complainants had put in a letter received by Mr. Abbott, a clerk in the employ of their solicitor, which had been put in as showing a continuity of the practice. He was prepared to call Mr. Abbott if it was thought necessary.

The PRESIDENT observed that that was in the nature of fresh evidence.

Dr. ALFRED COX believed the complainants were asked to produce it.

Strangers and the parties were directed to withdraw. On readmission, the PRESIDENT announced the decision of the Council as follows:

I have to announce that the Council have judged James Forrest to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase from the *Medical Register* the name of James Forrest.

THE CASE OF HERBERT LLEWELLYN PORTEOUS.

On Thursday, November 24th, the Council considered the case of Herbert Llewellyn Porteous, registered as of Wickham Grange, Chalford, Gloucestershire, M.R.C.S.Eng., 1898, L.R.C.P.Lond., 1898, who had been summoned to appear before the Council on the following charge, as formulated by the Council's solicitor:

That you were on your plea of guilty convicted on June 21st, 1910, at the Gloucestershire Assizes before the Honourable Mr. Justice Lawrence, of certain misdemeanours and were ordered to enter into your own recognizances in the sum of £10 to appear to receive judgement upon your said conviction if and when called upon so to do, such misdemeanours being contraventions of the provisions of the Lunacy Act, 1890: (*a*) in that you in December, 1909, and in January, 1910, whilst you were the medical attendant of two lunatic single patients named Evelyn Mary Whish and Irene Henrietta Anne Linthwaite, residing in the house of one Sarah Fisher, did contrary to orders dated April 10th, 1907, made by the Lunacy Commissioners in respect to such patients under the Lunacy Act, 1890, and the rules made thereunder to the effect that such patients should be visited by you as such medical attendant once in every six weeks, and that you should make in the medical journals respectively relating to such patients entries relative to their condition at such visits, did make default in complying with such orders; and (*b*) further in that you being the medical attendant of the said Evelyn Mary Whish and subject to the requirements of the said order did unlawfully and knowingly on December 24th, 1909, make in the medical journal relating to her a false entry implying that you had then visited her and had made the said entry as the result of your personal examination of her, contrary to Section 318 of the Lunacy Act, 1890; and (*c*) further, in that you being the medical attendant of the said Evelyn Mary Whish and Irene Henrietta Anne Linthwaite and subject to the requirements of the said orders, did unlawfully and knowingly on February 3rd, 1910, make certain false entries and certain wilful misstatements of material facts in the medical statements relating respectively to the said patients, such false entries and misstatements implying that you had on the said February 3rd, 1910, seen and examined the said patients whereas you had not then seen and examined the said patients, contrary to Sections 317 and 318 of the Lunacy Act, 1890; and (*d*) further, in that you failed on January 10th, 1910, to make a report as to the state of bodily and mental health of each of such patients to the said Commissioners.

And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. Porteous attended in answer to his notice, accompanied by Mr. Hempson, his solicitor.

Mr. WINTERBOTHAM read the charge. In elaborating the circumstances of the case against the accused practitioner he said that its gravity arose from the fact that if there were to be abuses of the system of detaining lunatics it would not be found in the large asylums controlled by well-known medical men but it would in small asylums which were in the charge of single medical men and containing but one or two patients.

Mr. HEMPSON, for Mr. Porteous, wished to call the attention of the Council to the certificate of conviction. Mr. Porteous had certainly been indicted for a variety of counts which were set out in the charge before the Council. That charge said, "That you were on your plea of guilty convicted on June 21st, 1910," of the various offences set out in subparagraphs (*a*) to (*d*). Mr. Hempson suggested that Mr. Porteous was not so convicted of the various offences. In the certificate of conviction it was set out that Mr. Porteous was convicted of offences with regard to E. M. Whish. There was nothing to indicate that Mr. Porteous had been convicted of any offence with regard to Anne Linthwaite.

The ASSESSOR said that in consequence of Mr. Hempson having raised this same objection in correspondence, he had obtained a further certificate amplifying the charges to which Mr. Porteous had pleaded guilty. This further certificate stated that Mr. Porteous had pleaded guilty to all the charges in the indictment.

Mr. HEMPSON said he would not press his objection further, but he thought it was monstrous that there should be a variety of certificates of conviction floating about directed to one indictment.

Mr. WINTERBOTHAM then called Dr. Coupland to speak as to the attitude of the Lunacy Commissioners in the matter.

Dr. COUPLAND said that although Mr. Porteous had pleaded guilty to the counts in the indictment, the circumstances under which the offences were committed showed that they were not wilfully done, but on the instigation of another. On the ground, therefore, that Mr. Porteous had not acted wilfully, but at the instigation of another, and that, although he had not realized his responsibility, he had hardly acted criminally, the Commissioners in Lunacy felt that the justice of the case was met by the judge's decision, and that it would have been vindictive if the Lunacy Commissioners had taken the step of bringing the case before the General Medical Council.

The LEGAL ASSESSOR suggested that Mr. Hempson should put Mr. Porteous in the box to verify his statement which was before the Council.

A number of testimonials were put in with regard to Mr. Porteous's character, professional and otherwise.

Mr. PORTEOUS (examined by Mr. Hempson) said the facts and circumstances in his statement laid before the Council were true. He repeated the assurance contained therein that for the future no further cause which it was in his power to prevent should ever arise which would give cause for complaint being urged against him on any professional ground.

Mr. HEMPSON, in addressing the Council, said Mr. Porteous had gained nothing by what he had done.

There had been an unfair suggestion in the press that he had made money out of the errors he had committed, but it had been denied on oath that such was the case. It was admitted by everybody connected with the case that no harm was done to the lady by these errors, but that was no excuse for what he had done. Mr. Porteous had explained honestly and truthfully the circumstances under which he was led into committing them. His character up to this time had been absolutely without blemish, and he came before the Council wishing to withhold nothing, and had given it his assurance as an honourable member of an honourable profession that never again in any way he could prevent would it have cause to complain of his conduct professionally or otherwise. Mr. Justice Lawrence at the assizes had the same circumstances before him, but without the same testimony of the regard in which Mr. Porteous was held, and he considered that the case, viewed in all its aspects, showed errors of judgement rather than acts of design; and the judge discharged him with kindly words of admonition, informing him that if for the future he did not stray from the path of virtue Mr. Porteous would hear nothing more of the case. In the same way he (Mr. Hempson) asked the Council to let Mr. Porteous go from this chamber without a spot or blemish on his character.

Strangers and the parties were directed to withdraw. On readmission, the PRESIDENT announced the decision of the Council as follows:

Mr. Porteous, the Council has found the conviction alleged against you in the notice proved, but it has decided not to pronounce judgement on the conviction at this meeting, but you will be called upon to appear before it at the May session on a day of which notice will be given you, when you will be required to produce evidence as to your conduct in the interval.

THE CASE OF DR. PEART-THOMAS.

On Friday, November 25th, the Council proceeded to the consideration of the case of William Peart-Thomas, registered as of 21, Portman Street, London, W., M.B., M.S., 1891, M.D., 1898, Univ. Edin., who had been summoned to appear before the Council on the following charge, as formulated by the Council's Solicitor:

That you have by your presence, countenance, advice, assistance, or co-operation, knowingly enabled an unqualified and unregistered person, namely, one Andrew Miller, to attend and treat patients as if he were duly qualified and registered.

And that you have by your presence and co-operation with the said Andrew Miller, whom you knew to be an unqualified and unregistered person, during the course of his treatment of certain patients, enabled the said Andrew Miller to attend and treat such patients under such circumstances, and with the intention that in the event of the death of any of such patients, you should be in a position to give certificates of death in respect of them as if you were the medical practitioner who had been really in responsible attendance upon them.

And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Dr. Hugh Woods appeared for the complainants, the London and Counties Medical Protection Society.

Mr. Turner, instructed by Messrs. Donnisthorpe and Dixon, appeared for Dr. Peart-Thomas.

The SOLICITOR having read the charge,

Dr. HUGH WOODS, in opening the case, said that in 1909 the Duke of Manchester became interested in a mode of treatment by one Andrew Miller, a man without medical qualification, who professed to cure patients of phthisis. In September of that year Mr. Miller came to this country to demonstrate the results of his treatment under the auspices of the Duke of Manchester. To this end the latter approached a Miss Dempster, a hospital nurse with a nursing home at No. 6, Upper Montague Street, with a view to her allowing some patients to undergo treatment by Mr. Miller there. She refused to allow this unless a properly qualified medical man was in charge, and she mentioned the name of Dr. Peart-Thomas as a person eminently suited for the position. The Duke of Manchester communicated with Dr. Peart-Thomas, and as a result of the correspondence the latter called on Miss Dempster, who explained the circumstances to him and inquired if he would take charge of the patients, which he ultimately agreed to do. He was made acquainted with the mode of treatment proposed to be demonstrated, and he visited the patients daily and occasionally examined them. From thenceforward till July, 1910, Dr. Peart-Thomas attended the patients who were being treated and prescribed for solely and entirely by Miller. Dr. Peart-Thomas's function was to stop the treatment if dangerous symptoms supervened, and, in the event of the death of any of the patients, to give a certificate. During the whole of the time the patients were under his charge Dr. Peart Thomas considered himself responsible for them, but left the treatment of them entirely to this unqualified man, Miller, contenting himself with merely watching to see that Miller's treatment did not produce dangerous results. He did not know if Miller had a stethoscope, or knew how to use one, and allowed the latter to prescribe poisons and decide as to the doses to be given, Dr. Peart-Thomas having no authority to change the mode of treatment. The Duke of Manchester was sued in the county court by Dr. Peart-Thomas for a sum of £85 in respect of fees, and obtained judgement for £63, which fact, Dr. Hugh Woods submitted, was proof of covering of an unqualified practitioner by Dr. Peart-Thomas in the clearest possible manner. Dr. Hugh Woods then read a transcript of the shorthand notes of the proceedings in the county court, supplemented by a letter from Sir Watson Cheyne pointing out inaccuracies therein, and then called the Duke of Manchester.

Sir CHARLES BOXALL, solicitor to His Grace, said the Duke was quite prepared to assist the Council in the inquiry, but he was no party to the attack on Dr. Peart-Thomas. Sir Charles Boxall wished that to be distinctly understood by the Council.

The DUKE OF MANCHESTER, examined by Dr. HUGH WOODS, said when he first made the arrangement with Dr. Peart-Thomas there were several things which governed his considerations at that time. In the first place he considered that everything was sufficiently safeguarded with regard to medical supervision from the fact that there was a committee of medical men of very high standing in the profession who took a scientific interest in the treatment. His object in getting Miller over here was in order that it might be thoroughly tested by scientists to see whether the thing was any good or not. Miss Dempster said Dr. Peart-Thomas would be in and out of the home during the time these patients were there, and could give an eye to them. Consequently he wrote to him and received a reply from Dr. Peart-Thomas that he would be very glad to do it. He told him he (the Duke) would naturally be responsible for his fees. The only difference between Dr. Peart-Thomas and himself was the number of visits necessary to preserve the patients from harm. From his knowledge of the treatment in other places he anticipated no cause for alarm of any sort or description, and the idea of Dr. Peart-Thomas giving a certificate was very remote, and one he (the Duke) should never have contemplated.

By the LEGAL ASSESSOR: He could not say the words "death certificate" were ever mentioned between them.

By Dr. HUGH WOODS: Dr. Peart-Thomas agreed to see that nothing dangerous took place, or to stop the experiment if there was anything likely to cause death. He knew if anybody died a doctor would have to give a certificate. Dr. Peart-Thomas never interfered with Miller's treatment of the patients, and the latter knew of the arrangements with the former. Nurse Dempster had told him she had been told she would get into trouble if this treatment were going on unless it were under the direct supervision of a qualified medical man.

Cross-examined by Mr. TURNER: He had heard of this treatment in Paris, where Miller had been brought to see somebody. He was interested in the question of tuberculosis, as some of his family had suffered from it. The treatment consisted of the injection of the drug scopolamine, which was known to the committee of medical men, but not the exact quantities. He was willing to find the money for some people to

be treated by it, and they as a matter of scientific interest and in the interest of the profession, were to report whether it was beneficial. He did not engage Dr. Peart-Thomas on the idea of covering Miller; it was simply that he should be there in case of emergency, and as an additional check against dangerous treatment.

Re-examined by Dr. HUGH WOODS: He originally asked Dr. Latham what would be the best way to test a supposed cure of consumption, and was told the proper way was to take certain cases to have them thoroughly tested in every possible way, and see from time to time what the result would be of that treatment, and he proposed this committee of medical men, whom he, the Duke, understood would do it in the interests of science. It was never suggested that they should be paid a fee.

Dr. A. LATHAM called by Mr. TURNER, said he was consulted by the Duke of Manchester as to a means of testing the efficacy of the treatment of Mr. Miller. The name of Miss Dempster's home was given to the Duke as a suitable home for testing the treatment. The Duke approved of the choice, and himself selected the patients to be treated. Dr. Latham examined the patients before and after treatment, and furnished a report as to improvement or otherwise.

Cross-examined by Dr. HUGH WOODS: He understood that Dr. Peart-Thomas had absolute control of the cases.

Dr. F. F. BURGHARD, called by Mr. TURNER, gave evidence as to the good character of Dr. Peart-Thomas.

Dr. PEART THOMAS, called by Mr. TURNER, corroborated the evidence of the Duke of Manchester.

Cross-examined by Dr. HUGH WOODS, he took exception to questions and answers in the report of the proceedings in the Marylebone County Court. As to the treatment suggested by Mr. Miller, after his experience of it he thought it neither detrimental nor beneficial. He (Dr. Peart-Thomas) said emphatically that he had power to stop the treatment if he thought necessary.

In answer to the LEGAL ASSESSOR, he said that he had always understood that Mr. Miller was unqualified. He Dr. Peart-Thomas) regarded himself as the responsible medical man in attendance. It would not be correct to say that he was merely employed for the purpose of visiting occasionally in order to be qualified to give a death certificate if one became necessary.

Miss DEMPSTER, Matron of the Nursing Home in question, corroborated the evidence of Dr. Peart-Thomas. She took her orders from Dr. Peart-Thomas only, and not from Mr. Miller.

Cross-examined by Dr. HUGH WOODS, she would have no patient in her home unless attended by a qualified medical man. Dr. Peart-Thomas was regarded as the medical practitioner in charge of these cases. The Duke of Manchester, however, engaged the rooms for the patients in her home.

Mr. TURNER hardly thought it necessary for him to address the Council on the case. The facts were as clear as daylight, and there was not a shred of evidence of covering in any shape or form. The story told by the Duke of Manchester and the witnesses called by the respondent was consistent with the story told by Dr. Peart-Thomas, which was that all that was done in this case was what was done by every medical man under such circumstances, namely, to give the cure a chance. There was not a word to be said against Dr. Peart-Thomas's professional conduct, and he confidently asked the Council to say there was no foundation whatever for the charge which had been made.

Strangers and the parties were directed to withdraw. On readmission, the PRESIDENT announced the decision of the Council as follows:

Dr. William Peart-Thomas, I have to inform you that the decision of the Council is as follows: That the facts alleged against William Peart-Thomas have not been proved to the satisfaction of the Council.

The Council then adjourned till 11.30 a.m. on the following day.

DENTAL DISCIPLINARY CASES.

The Case of Edward Joseph Regan.

The Dental Committee, on Thursday, November 24th, presented a further report upon this case, which had been considered by the Council of May 27th, 1910 (see SUPPLEMENT to BRITISH MEDICAL JOURNAL, June 4th, 1910, p. 354), when the Council reserved judgement and informed the respondent that he would be required to produce evidence at the November session as to his conduct in the interval, with special reference to his having ceased all relations with unqualified practitioners and advertising.

Mr. REGAN appeared in person, and in answer to the PRESIDENT said he did not wish to add anything to what he had already said before the Dental Committee.

The British Dental Association, the complainants, were represented by Mr. R. W. Turner, counsel, instructed by Messrs. Bowman and Curtis Hayward, solicitors.

Strangers and parties were directed to withdraw. On readmission, the PRESIDENT announced the decision of the Council as follows:

Edward Joseph Regan, I have to announce that on the facts found in the reports of the Dental Committee you have been judged to have been guilty of infamous and disgraceful conduct in a professional respect, and that the Registrar has been directed to erase from the *Dentists' Register* the name of Edward Joseph Regan.

The Case of Alexander Peel Patterson.

On Thursday, November 24th, the Dental Committee reported as follows:

The said Alexander Peel Patterson was registered in the *Dentists Register* on October 14th, 1878, as "In practice before July 22nd, 1878." His address in the *Register* for the current year is 63, Bradshawgate, Bolton.

The said A. P. Patterson admitted that the four persons mentioned in the notice of inquiry are in his employ and are all unqualified, but stated that he has given all of them notice, and in future intends to employ no unqualified persons. He further stated that the circular complained of was issued by him and had been in use for about fourteen years, that with this exception he has never advertised, that he had discontinued the circular, and he undertook not to advertise again.

The said A. P. Patterson has employed collectors who have distributed the said circular at their discretion, and if any practice resulted it would be of advantage to the collectors.

The said A. P. Patterson stated the particulars in which he considered his system of dentistry to be superior to others.

The said A. P. Patterson never saw Mrs. Clarke. None of his unqualified assistants know the constituents of the eucaine used in the practice. Their instructions are to use it carefully, not to waste it, and not to exceed two syringefuls. They have no instructions as to examining the heart, and they are not capable of doing it.

Mr. Barrington Ward appeared for Mr. Patterson; Mr. R. W. Turner appeared for the British Dental Association.

Mr. BARRINGTON WARD made an earnest appeal on behalf of Mr. Patterson for mercy. His experience was that a reasonable appeal for mercy on proper grounds was always given careful consideration. He thought it would not be to the interest of the dental profession to remove a man from the *Register* if the Council was satisfied that he by remaining on the *Register* was going to conform to the usages of the profession to which he belonged. He assured the Council that Mr. Patterson for the future would observe those usages not only in the letter but in the spirit, and he would see that in the future in no way did he infringe those laws and customs which were the essence of every professional career.

Mr. TURNER observed that the case was put forward by the British Dental Association as a very bad instance of covering indeed. It had gone on for years, and only culminated in these proceedings.

Strangers then withdrew. On readmission, the PRESIDENT announced the decision of the Council as follows:

I have to announce that on the facts found in the report of the Dental Committee, it has been proved that Alexander Peel Patterson has been guilty of infamous and disgraceful conduct in a professional respect, and the Registrar has been directed to erase from the *Dentists Register* the name of Alexander Peel Patterson.

The Council then adjourned.

Thursday, November 24th, 1910.

In addition to the investigation of disciplinary cases, the Council transacted the following business:

The report of the Examination Committee on the returns as to examinations held for the Indian Medical Service was received and entered on the minutes.

The reports of the Examination Committee on the final examinations of the Apothecaries' Hall, Dublin, held in July and October, 1910, were received and entered on the minutes. The Examination Committee reported that both examinations were sufficient and complied with the recommendations of the General Medical Council.

The temporary appointment of Mr. F. Warren Low, F.R.C.S., as assistant examiner to the Society of Apothecaries of London during the illness of Mr. Collier was extended to such time as Mr. Collier would be able to resume his duties.

On the recommendation of the English Branch Council, an application by Mr. Lewis Fabien, M.R.C.S.Eng. 1876, a medical practitioner entitled to be registered under the Medical Act (1858), but who neglected to effect such registration until after the "appointed day" (June 30th, 1887) under the Medical Act (1886), was acceded to, and the name of Mr. Fabien directed to be registered.

Saturday, November 26th, 1910.

THE PHARMACOPOEIA COMMITTEE.

THE report of the Pharmacopoeia Committee, dated November 24th, was received and entered on the minutes. The report stated that the annual sale of the *British Pharmacopoeia*, 1898, continued to be steady, 1,094 copies having been disposed of during the year. The stock in hand having been reduced to 570 copies, the President was authorized to give orders for a fresh impression so soon as the present stock was approaching exhaustion. The Committee further reported that it had received a report from Dr. Tirard, its Secretary, who had been appointed to take part along with delegates sent by the British Government in an international conference held in Paris in June last. The purpose of the conference was to discuss proposals for an international understanding on the subject of methods and standards of analysis in relation to food and drugs. The committee proposed to give due consideration to the resolutions adopted by the conference in the revision of the analytical portions of the *Pharmacopoeia*.

STUDENTS' REGISTRATION COMMITTEE.

The report of the Students' Registration Committee was received and entered on the minutes. The report recorded the action of the Committee with regard to applications for registration of exceptional cases of students and for antedating the date of the commencement of professional study. The report also recommended that the following be added to the list of recognized institutions approved by the Council: The Municipal College, Grimsby (day classes); the Technical School, Southend-on-Sea (day classes); and the Municipal School, Banbury (day classes).

PUBLIC HEALTH COMMITTEE.

The report having been received and entered on the minutes, it was resolved, on the motion of SIR JOHN MOORE (chairman), seconded by Dr. NORMAN WALKER:

That the legal bearings of a proposed amendment of the rules for the Diplomas in Public Health requiring registration, as well as the possession of a registrable qualification as a condition of admission to the examinations for these diplomas be referred to the legal advisers of the Council for consideration and report.

It was further resolved:

That the diplomas in Public Health of the University of Bristol, the National University of Ireland, and the Queen's University, Belfast, be recognized for registration as additional diplomas.

Sir JOHN MOORE informed the Council that the regulations of the University of Wales for the diploma in Public Health were correct, but that the university had not yet obtained Parliamentary powers to register its degrees in Medicine, Surgery, and Midwifery, and consequently did not come under Section 21 of the Medical Act with regard to diplomas in Public Health.

The PRESIDENT observed that no doubt those powers would be obtained in the near future.

ANAESTHETICS COMMITTEE.

Sir HENRY MORRIS moved, Dr. KNOX seconded:

That the report of the Anaesthetics Committee already entered on the minutes be adopted.

The Committee stated that it had carefully considered the following memorandum and bill transmitted by the Lord President of the Privy Council:

Memorandum.

1. Anaesthetics are rapidly acting and powerful drugs, liable, except when administered on scientific principles and by competent persons, to cause dangerous or even fatal symptoms. This is true not only of general anaesthetics—those which destroy consciousness—but also of local anaesthetics—those which secure insensibility to pain without unconsciouness. Owing to the phenomenal advances which recently have taken place in surgical science, anaesthetics, both general and local, are now employed upon a vast and increasing scale.

2. There is no known general anaesthetic which can be administered to the proper and necessary degree without affecting, more or less profoundly, those nervous, respiratory, and circulatory functions upon which human life depends; whilst practically all the local anaesthetics now in use are liable, in certain subjects, to produce alarming symptoms requiring the application of appropriate medical treatment. In order, therefore, that the public may on the one hand avail themselves to the full of the advantages of anaesthetics, and may on the other incur a minimum degree of risk to life, it is essential that anaesthetics should be administered by scientifically trained and competent persons.

3. As the law now stands, any person whatsoever may administer any kind of anaesthetic for any surgical, medical, obstetrical, or dental operation. Numerous fatal cases under anaesthetics have come before coroners' juries, in which quack dentists, or so called herbalists, devoid of all medical knowledge and training, have administered the most toxic general anaesthetics, such as chloroform, without any of those precautions upon which safety is now known to depend.

4. This absence of legislative control prejudiciously affects the public—first, by attaching to anaesthetics an additional and unnecessarily high risk to life; secondly, by encouraging thousands of irregular practitioners throughout the country to continue to use anaesthetics only to an imperfect or make-believe degree; and, thirdly, by permitting the survival of the highly dangerous view that no medical knowledge or skill is necessary in the use of anaesthetics.

5. It is not surprising that under present conditions deaths from anaesthetics should occur with alarming frequency. It is unfortunate, however, that, owing to imperfections in our systems of notification and registration, practically all statistics as to such deaths, particularly in private practice, are absolutely unreliable. Whilst it would be illogical to argue that legislation would at once and markedly reduce the aggregate mortality from anaesthetics, it is submitted that it would not only permanently prevent the occurrence of those deaths which arise from the use of these drugs by wholly untrained persons, but it would strengthen the hands of any educational authorities desirous of improving the conditions under which anaesthetics are administered by qualified persons.

6. The extremely valuable reports recently issued by the Home Office Coroners Committee and by the General Medical Council respectively, concerning the use of anaesthetics and the question of legislation thereon, agree in the following essential particulars:

(1) That legislation is urgently called for in the public interest;

(2) That general anaesthetics should be administered only by qualified persons;

(3) That the more potent general anaesthetics (for example, chloroform, ether, etc.) should be administered only by registered medical practitioners;

(4) That certain specified general anaesthetics (for example, nitrous oxide gas) may be administered by registered dentists for dental operations; and

(5) That it is undesirable that the same person should administer a general anaesthetic and perform an operation.

7. Whilst the Departmental Committee did not see their way to recommend legislation concerning the use of local anaesthetics (except in the case of intraspinal injection, which, they urge, should be practised only by registered medical practitioners) the General Medical Council is of opinion that some such legislative control is called for. It must be borne in mind in this connexion that although the injection, for dental operations, of such powerful drugs as cocaine has not, in the past, caused a large number of fatalities (probably by reason of the fact that there is generally time to summon medical aid), a very large number of cases have been recorded in which serious and

often long-continued ill health has directly or indirectly resulted from such injections.

8. The two main questions at issue—(*a*) the desirability of legislation, and (*b*) the lines upon which that legislation should take place—have not only been exhaustively considered by the two important committees above mentioned, but they have been discussed—often in special sections or in committees—by the Council of the Royal College of Surgeons of England, the British Association for the Advancement of Science, the British Medical Association, the Royal Society of Medicine (Section of Anaesthetics), the Medico-Legal Society, the British Dental Association, and the Medical Society of London.

9. Upon the first of these main questions practically all these bodies agree.

10. As to the precise lines upon which legislation should take effect there are necessarily slight differences of opinion. It is believed, however, by those who have specially interested themselves in this matter that an Act upon the lines indicated in the subjoined rough draft of a bill, would not only sufficiently protect the public, but would interfere as little as possible with those already existing interests which deserve to be safeguarded.

11. Under recent resolutions of the General Medical Council the medical and dental licensing bodies require that all candidates for medical and dental qualifications must have received practical and theoretical instruction in the use of the anaesthetics to be employed by them in their respective practices. This obviously constitutes a fitting preliminary to any legislation.

In addition, however, the General Medical Council, as the statutory pharmacopoeial authority, would be prepared to advise the Privy Council as to the anaesthetics which, in their opinion, might from time to time be included in a schedule (as in the Poisons Act) as anaesthetics suitable for the use of registered dentists. Furthermore it may be assumed that, in accordance with the recommendations of the Departmental Committee, the General Medical Council would, after legislation had been secured, issue recommendations dealing with single-handed anaesthetizing and operating.

12 The foregoing considerations would seem to indicate the need for legislation upon lines such as those suggested in the subjoined rough draft of an Anaesthetics Act:

ANAESTHETICS ACT.

Be it enacted by the King's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal and Commons in the present Parliament assembled, and by the authority of the same, as follows:

1. Any person other than a legally qualified medical practi tioner registered under the Medical Acts, who shall administer or cause to be administered to any other person by inhalation or otherwise any drug or substance, whether solid, liquid, vaporous, or gaseous, and whether pure or mixed with any other drug or substance, with the object of producing a state of unconsciousness during any surgical, medical, obstetrical, or dental operation, examination, act, or procedure, or during childbirth, shall be liable on conviction before a court of summary jurisdiction for such offence to a penalty not exceeding £10, and in the case of a second or subsequent conviction to a penalty not exceeding £20; provided always that a person shall not be liable to a penalty under this section if in conducting such administration he was acting under the immediate direction and supervision of a legally qualified medical practitioner, or if, having been registered under the Dentists Act, 1878, he conducted such administration for a dental operation, act, or procedure, with one or more of the drugs or substances specified in the schedule hereto affixed, or if the circumstances attending the administration were such that he had reasonable grounds for believing, and did believe, that the delay which would have arisen in obtaining the services of a legally qualified medical practitioner would have endangered life.

2. Any person other than a legally qualified medical practitioner registered under the Medical Acts who shall inject, insert, or otherwise introduce, or shall cause to be injected, inserted, or otherwise introduced into any part, cavity, organ, or tissue of any other person through any puncture, incision, or other breach of cutaneous, mucous, or other surface for that purpose made or produced, any drug, medicament, or substance, whether solid, liquid, vaporous, or gaseous, and whether pure or mixed with any other drug, medicament, or substance, with the object of producing a state of insensibility to pain without unconsciousness, during any surgical, medical, obstetrical or dental operation, examination, act, or procedure, or during childbirth, shall be liable on conviction before a Court of Summary Jurisdiction for such offence to a penalty not exceeding £10, and in the case of a second or subsequent conviction to a penalty not exceeding £20, provided always that a person shall not be liable to a penalty under this Section if in attempting to produce or in producing such insensibility to pain without unconsciousness he was acting under the immediate direction and supervision of a legally qualified medical practitioner, or if, having been registered under the Dentists Act, 1878, he attempted to produce or did produce such insensibility to pain without unconsciousness for the performance of a dental operation, examination, act, or procedure, or if, acting under the immediate direction and supervision of a person registered under the Dentists Act, 1878, he attempted to produce or did produce such insensibility to pain without unconsciousness for the performance of a dental operation, examination, act, or procedure.

3. The expression "Court of Summary Jurisdiction" in this Act shall have the same meaning as in Sub-section 11 of Section 13 of the Interpretation Act, 1889. In Scotland it shall mean any Justice of the Peace and also the Sheriff. The expression "the Medical Acts" shall mean the Medical Act, 1858, and any Acts amending the same passed before the passing of this Act.

4. This Act may be cited as the "Anaesthetics Act."

(Here follows the Schedule.)

The Committee recommended that the Council should communicate to the Lord President the following observations on the draft bill:

1. That, without committing itself to an opinion on mere points of drafting, the Council recognizes that the bill as submitted gives practical effect to the Council's conclusions on the subject, which have already been communicated to the Lord President.

2. That in Clause 1 it is desirable that a provision should be introduced making it clear that a person registered under the Dentists Act, 1878, is not prohibited from administering for a legally qualified medical practitioner one or more of the scheduled anaesthetics in connexion with an operation, act, or procedure other than dental, conducted by such medical practitioner.

3. That in Clause 2 it is desirable that provision should be made for prohibiting the application or administration by unqualified persons of dangerous anaesthetic drugs to unbroken surfaces, in connexion with dental or other operations, acts, or procedures; and that with this object the limiting words, "through any puncture, incision, or other breach of cutaneous, mucous, or other surface for that purpose made or produced," might with advantage be omitted.

4. That in Clauses 1 and 3 it may be desirable to provide explicitly for an appeal to a court of quarter sessions or other corresponding court against a conviction made under the Act by a court of summary jurisdiction.

5. That, in the opinion of the Council, it is of importance that, for the protection of the public against the dangers disclosed in the report of the Departmental Committee appointed by the Secretary of State, legislation on the lines of the bill submitted should speedily receive the sanction of Parliament.

6. That, in case it is decided to bring such a bill before Parliament, the Council would be prepared to suggest the terms of the necessary schedule, including therein in the first instance nitrous oxide gas.

Sir THOMAS FRASER pointed out that under the proposed Act a nurse would have the right or power, without incurring a penalty, of making an injection if prescribed by a medical man in his absence. He expressed no opinion as to the desirability or otherwise of a nurse being liable, but knowing what the custom was in a great many parts of the country, and knowing also it was regarded as very convenient for a nurse sometimes to do it, he wished to know if steps had been taken to prevent that being done.

The PRESIDENT referred Sir Thomas to the first paragraph of the Committee's report. It was merely a point of drafting to be dealt with by the draughtsman, and there was no assurance that the exact facts now before the Council would ever come before Parliament. When the bill was redrafted the Privy Council had assured them that it would come before this Council, and they had better therefore reserve any comments until they saw the bill. This was merely a preliminary step to have it in legal form, and all the Council could ask was that, on the right lines, the question Sir Thomas had raised should be considered in drafting. He suggested the addition to the resolution of the words "and transmitted to the Lord President for his opinion."

This was agreed to, and the motion as amended adopted.

INSTRUCTION IN ETHICS.

Dr. LATIMER moved:

That the Council should recommend to the several licensing bodies the addition to the latter part of the curriculum of some instruction in professional ethics, and that this recommendation should also apply to the dental curriculum.

In doing so, he drew the attention of the Council to the fact that, owing to the cessation of the old method of entrance through the portals of apprenticeship as a pupil, the kindly instruction and guidance of an elderly practitioner was lost. Having himself experienced that instruction, he was of opinion that nothing was better for the young practitioner than that he should at an impressionable age come under the guidance of one who had battled with life and who knew the circum-

stances and drawbacks of that life. It would be a great advantage to the medical student if at some period of his career he could have some instruction in the ethics of his profession. The many cases which arose in one's own area which did not come before the Council, convinced him that many men fell into the pitfall of digression from the code of medical ethics because they were uninstructed and knew nothing about them. The greatest advantage would accrue to young men at that particular period of life if before leaving their college they received some instruction with regard to the various pitfalls that beset them. It was not an addition to the curriculum which he advocated, and his motion ought not to be so regarded; it meant simply that a few lectures should be given to the students on the subject. The Council had had before it the question of the relationship between principal and assistant, and he personally had known cases where the assistant had depreciated, not only the merits and abilities of his principal, but the drugs which he had been prescribing to his patients. Further, the Council insisted on a very strict code of morals with regard to intercourse between a medical man and his patient. With regard to advertising, although it was necessary that it should be done publicly, yet there were many methods of advertising which were inimical to their position as medical men, and which, he was sure, if they were pointed out to young men just entering the profession, would make them pause before committing themselves. Also certification brought more disgrace on the profession than almost anything else; and, speaking as a magistrate, he might say certificates were given which had no value whatever. With regard to the time when the instruction should be given, he thought the post graduate period would be the most convenient.

Dr. Langley Browne seconded. He thought it would be extremely useful that, before the student went into practice, he should be told what the pitfalls were, and the amenities and courtesies which should be observed by him towards his fellow practitioners.

Dr. Norman Moore sympathized with Dr. Latimer's desire that all students should be guided by a true code of morals, but differed from him as to the importance of having the course in the medical schools. Looking at medical etiquette and the conduct of practitioners from one end to the other, was there anything more in it than that a man should behave in accordance with the ordinary precepts of morals as a gentleman? It was in the highest degree desirable that all teachers should by their example do all they could to encourage in the students rectitude of conduct; but, in his opinion, it would not be desirable to have such lectures as had been suggested.

Sir Clifford Allbutt strongly agreed with Dr. Norman Moore that the word "etiquette" had given rise to a great deal of confusion, as though etiquette in medicine meant something different from what it did in other professions.

Dr. Saundby had long held the opinions expressed by Dr. Latimer, but the subject should be made compulsory, otherwise the student would think the course was not one he was bound to take, and the teaching body would become discouraged, and cease to give the lectures. Some years ago he obtained permission to deliver such a course of lectures, but they were not very well attended, and after three or four years were discontinued.

The President pointed out that the motion as it stood meant the compulsory addition of another course of instruction to the curriculum.

Dr. Latimer said it was not his intention to make it compulsory, but that it should go forth to the teaching bodies that the Council thought it was desirable that students should have instruction on the subject

Dr. Norman Walker had not found the student so careless in the matter of ethics at Edinburgh as they appeared to be in Birmingham; on the contrary, they were rather interested in them. He suggested that it should be part of the course of medical jurisprudence, and did not see why the teacher of the subject should not add one or two lectures on ethics. If the motion were framed as an expression of opinion by the Council that it would be wise to do that, he should be very glad to support it.

Sir Isambard Owen had as a teacher already found his work overlap, and if he had two or three lectures on general ethics imposed upon him the course would suffer. If the teacher were applied to for advice in circumstances of difficulty he would be only too glad to give it. He was constantly in receipt of letters from students asking what they should do in particular circumstances, and was always ready to answer.

Sir Thomas Myles said that there were two sides to this question, as to every other, but he thought it might be left to every medical man to see that he did his duty to his neighbour.

Dr. Latimer, in reply, said he was very glad that his motion had raised so much discussion. Some speakers, however, seemed to take it that he advocated a course of lectures. He did not advocate anything of the sort. One or two lectures would suffice to meet the requirements that he had spoken of. In conclusion, although gratified by the full discussion which his motion had raised, he still hoped the Council would adopt it.

Sir David McVail asked whether Dr. Latimer, having obtained so thorough an expression of opinion on the subject, would not withdraw the motion. In bringing it forward he had done a great service, but the present time was not opportune for taking a division on the matter.

Dr. Latimer, having so thoroughly obtained the views of members of the Council on the subject, with the consent of his seconder and the Council, withdrew the motion.

Unqualified Practice Committee.

Dr. Langley Browne moved:

That the report of the Unqualified Practice Committee be received and entered on the minutes.

There was nothing in the report requiring the approval of the Council, but he would remind the Council that the object of the inquiry as to the medical laws of other countries was that a Royal Commission might be appointed to inquire into the working of unqualified practice. The suggestion was that the Committee should consider the matter further and draw up a full report.

Dr. Latimer seconded the motion, and it was agreed to.

Report of Education Committee.

On the motion of Dr. Mackay, Chairman, the report of the Education Committee on the curriculum and upon the preliminary examination in general education, was received and entered on the minutes. The report was prepared in accordance with a resolution adopted by the Council on November 26th, 1909, instructing the committee to consider further the place in the student's career which the preliminary sciences should occupy, and frame a pattern scheme of medical education whereby the required minimum of the several subjects could be adequately studied and the requisite examinations passed within the prescribed period.

The report consisted of three parts, dealing respectively with the preliminary sciences, a pattern curriculum, and the preliminary examination in general education.

The Preliminary Sciences.

Chemistry, physics, and biology are universally accorded the earliest place in the curriculum, and in many of the medical schools the whole of the first year of study is allotted to them; in others, however, including the Universities of Durham, Manchester, Liverpool, Leeds, Birmingham, and the Scottish Universities, the work in anatomy may be commenced in the first year, an arrangement which has the advantage of permitting the completion of the second examination at the close of the second or early in the third year, thus leaving a full half of the time allotted to the whole curriculum free for the study of the final subjects.

Certain of the licensing bodies, and in particular the Conjoint Boards in England and Scotland, have been in the habit of recent years of recognizing study in the preliminary sciences carried out in various institutions other than medical schools or

universities at a period prior to the commencement of the curriculum proper, and are prepared to examine their students in these subjects at any time after registration.

In the instances referred to, however, the licensing bodies demand that adequate courses of instruction of specified length shall have been attended by the student, and no certificate is accepted unless it comes from an institution specially recognized after inspection as qualified to give the necessary training. Among the institutions so recognized a number of secondary schools are included. This fact has been regarded as giving some support to a proposal which has frequently been placed before the Council, namely, that the subjects of chemistry, physics, and biology should be transferred from the professional curriculum, over which the Council and the several licensing bodies exercise careful supervision, and become part of the course of school education within which they would necessarily be removed from any effective control on the part of the medical authorities. Were it found that the ordinary schools of the country as a whole were well qualified to give the needed instruction in the preliminary medical sciences, the question involved in the proposal would demand on its merits the careful consideration of the Council. But, on the other hand, should the schools be unable to maintain the teaching in these sciences on its present level, the policy embodied in the proposal, if it were generally adopted by the licensing bodies, would undoubtedly result in reducing the standard of the first professional examination. In proof the Council's experience with regard to the preliminary examination in general education may be quoted. Since the year 1898 the Council has been practically pledged to make every effort to raise the level of the entrance examination from the junior to the senior plane (*Minutes*, vol. xxxv, p. 185), but it has not been able to take the definite step of refusing to recognize the junior examinations, owing to the certainty that such an action would either most seriously diminish the number of entrants or bring down the level of the higher grade to that of the lower grade examinations (*Minutes*, vol. xxxvi, p. 165). Under satisfactory educational conditions, the senior level should be attained by youths leaving school between 17 and 18 years of age, that of the junior at 16; but the Committee have been led, by the analysis of the statistics which have passed through their hands, to the conclusion that the energies of the great majority of the schools of the country ought for some time to be entirely, and will certainly be most profitably, absorbed in raising the standard of the general education of their pupils to the position which it ought to occupy.

By the courtesy of the authorities of the Conjoint Board of England and of Mr. Hallett, the secretary of the Board, the Committee have been enabled to furnish the Council with statistics as to the number of the candidates who have sat the first professional examination of the Board on the strength of a school curriculum alone. The secondary schools which the Board recognizes number 49 in all, and, as they have been specially inspected with a view to ascertaining that they are adequately equipped for the work, they may be regarded as specimens of the best of their class. The Conjoint Board has recognized instruction in the preliminary sciences in institutions other than universities and medical schools for a period of sixteen or seventeen years; the statistics which are embraced in Table I refer, however, only to the last two years, those of Table II to the last five years.

TABLE I.—Showing the number of Candidates for the First Professional Examination of the Conjoint Board in England during the years 1908 and 1909 who received their instruction in all or any of the subjects entirely at Secondary Schools, and the proportion of that number to the total number of Candidates examined.

Total Number of Candidates Examined.	Total Number of Candidates from Secondary Schools.	Number of School Candidates who Entered for all Three Subjects.	Number of School Candidates who Entered for Physics and Chemistry alone.	Number of School Candidates who Entered for Biology alone.
442	7 = 1.6 %	3	2	2

It will be understood that in all probability a large number of the candidates had received instruction in schools in the subjects of the examination, doubtless with much benefit to their future work; the vast majority of them, however, take out the usual courses of instruction in medical schools or universities before presenting themselves for examination.

It is worthy of note also, that in only three instances in the years 1907 and 1908, the Board has taken cognizance of instruction given before the completion of the preliminary examination in general knowledge.

The Conjoint Board recognizes the first professional examination of all universities in the United Kingdom; the total figure given in the table represents only the candidates who were examined by the Board, and is equivalent to about half the number of those who entered themselves during the years mentioned as seeking to qualify for the diplomas of the Royal Colleges.

As regards the relative qualifications of the entrants from different sources, the following table, which deals with the figures of a period of five years, from 1905 to 1909, is instructive.

TABLE II.—Conjoint Board of England First Professional Examination, showing the sources from which the entrants were derived and the proportions of rejections among each of the groups for a period of five years from 1905 to 1909.

Candidates from	Chemistry.			Physics.			Biology.		
	No. of Entrants.	No. Referred.	Percentage Referred.	No. of Entrants.	No. Referred	Percentage Referred.	No. of Entrants.	No. Referred.	Percentage Referred.
Medical schools	1,101	411	40	1,088	425	39	1,104	419	37.1
*Science schools	113	44	38.9	114	39	34.2	107	35	32.7
Secondary schools	21	5	23.8	21	6	28.5	19	5	26.3

*The term "science schools" includes university colleges and technical and scientific teaching institutions.

The figures which have been tabulated show that only a very few, and these apparently of exceptional ability, coming from the best schools in the country, are prepared to undertake the first professional examination upon a course of school study; and they confirm the view of the Committee that the schools of the country generally are not at the present time in a position to take up the work. The Committee are of opinion that the question contained in the proposal to delegate indiscriminately to the school curriculum the subjects of the first profesional examination is one which is not ripe for the consideration of the Council.

A Pattern Curriculum.

The Committee cannot undertake to draw up a curriculum under which the required minimum of the several subjects to be included can be adequately studied, and the required examinations thereon passed by the average student within the period prescribed by the curriculum. The period of five years is to be regarded as the minimum of time to be allotted to the course of study, and it is not unnatural that only the best or the most favourably situated of the candidates find it sufficient.

In 1908 the Committee laid before the Council a series of statistics showing the length of the curriculum as actually pursued under the several licensing bodies by all the students who completed medical education within seven years or less (*Minutes*, vol. xlv, App. xii). The figures refer to the licentiates of 1906. In every case the number of the candidates who succeeded in qualifying in the minimum period is definitely stated (loc. cit., p. 398), and the percentage of these candidates to the total of the seven years' group is given. The proportion to the actual total of the licentiates for the year can be easily calculated, if it be thought desirable to do so, from the data supplied in the subsidiary tables (p. 396).

It may be said that the figures show in a general way that the students in the smaller schools pass more rapidly through the curriculum than those in the larger centres of medical education; but it would be probably unwise to make too much of this conclusion, as in a single set of statistics in cases where the numbers are few the element of chance may exert a disturbing influence upon the figures.

A minutely detailed comparison of the curricula of the several licensing authorities cannot be made, for the reason that, while in every case all the necessary subjects are included, in many instances the regulations of the bodies simply demand courses of study, and do not define the length of time and the number of attendances to be given. A general comparison dealing with the relative value of the time spent under each licensing body upon the early or later periods respectively of the course has already been drawn up by the Education Committee (*Minutes*, vol. xlv, pp. 380-397); the earlier period as defined in the table includes the preliminary sciences and anatomy and physiology, the later period embraces all the other subjects of the curriculum. As regards the relative time values of the earlier and later periods of the course the licensing bodies may be divided into three groups, as follows—namely: (*a*) A group in which the regulations grant 18 months of study to the subjects of the earlier period and 39 months to those of the later period; (*b*) in which the two periods stand to one another as 21 and 36; and (*c*) in which the relative figures are 27 and 30 months respectively. In calculating the proportions allowance has been made for those months of work in which certain of the subjects of the two periods are studied together. The delay which the average student experiences in passing through the curriculum is also given in the table. The following association of the figures is interesting. Under the Scottish Conjoint Board, which belongs to group (*a*), the average student was retarded to the extent of 8.7 months; under the Irish Board, which belongs to group (*b*), the average period of delay was nine months; and the University of Aberdeen, which belongs to group (*c*), the corresponding figure was 8.3 months. The facts would seem to show that the length of the period of delay which the average student suffers in passing through the course in any particular school of medicine is not dependent on, or even to be closely associated with, the arrangements of the curriculum prescribed by the licensing body.

Statistics given by the Committee in its report for 1908 were repeated, and it was pointed out that in only four cases the period of delay exceeded nine months.

Of the four, two may be regarded as unimportant from a statistical point of view, the numbers dealt with being small. In the other two instances the greater part of the delay has occurred in connexion with the examinations of the earlier period of the course, and in the case of the University of London the high standard demanded is probably the chief factor to be taken into account. In the case of the Conjoint Board of England, in addition to the nature of the standard demanded of the licentiate in which doubtless a contributory cause of the delay is to be found, there is another element to be considered which complicates to some extent the whole of the statistics referring to this body. A number of the candidates devote a portion of the earlier part of the course to preparation in anatomy for the examination for the Fellowship of the Royal College of Surgeons—an examination which demands relatively a high level of attainment—and it is the custom among the students not to enter the hospital until the work of the dissecting room has been completed. This is a factor the effect of which cannot be precisely calculated in figures, but it has undoubtedly added to the average length of the course.

Apart altogether from the question of drawing up a curriculum which will obviate the delay experienced by the average student, the Committee do not think that any pattern course which they might find themselves able to agree upon would be likely to prove acceptable to all or even to a majority of the licensing bodies, and it would probably be as undesirable as it would be hopeless to make the attempt to stereotype the curriculum. Conditions vary at different centres to such an extent as regards numbers of students, supply of material, accessibility of hospitals, and in so many different ways as to make it exceedingly unlikely that any single set of conditions could be made applicable to all. There are differences of opinion as to the relative importance of different subjects and the length of time to be devoted to each, and the balance to be maintained between practical and theoretical instruction. Subjects overlap to a certain extent, and where there is common ground appertaining to two departments there is room for difference of opinion as to the apportionment of work between them. There is a tendency to specialism in teaching among some bodies, in others most of the subsidiary subjects are grouped in the syllabus under the general headings.

In all the older teaching institutions the curriculum has a history of its own; it has been founded primarily to express some ideal in medical education, and, while it has developed to meet the increasing needs of the times, it has maintained its essential and specific features. The newer institutions have followed the lines of one or another of the older types. The Committee believe that the diversity of detail among the curricula cannot be avoided and is not to be deprecated.

Preliminary Examination in General Education.

The Committee presented a series of statistical tables analysing the statistics of the examinations

GENERAL TABLE SHOWING THE NUMBER OF STUDENTS REGISTERED IN 1908 and 1909 (exclusive of Indian, Colonial, and Foreign Students), the AGES in half-yearly stages at which registration was effected, and the GRADE OF THE QUALIFYING EXAMINATIONS.

ENGLAND, 1908.—TOTAL NUMBER, 577. SCOTLAND, 1908.—TOTAL NUMBER, 379. IRELAND, 1908.—TOTAL NUMBER, 218. TOTAL NUMBER IN ENGLAND, SCOTLAND, AND IRELAND, 1,174. (69 Students of the University of Dublin are omitted from the Table.)

Age at Registration.	Number of Entrants.		Grade of Qualifying Examinations. Junior.		Intermediate and Senior.	
	Actual Number.	Percentage of Total Number.	Number.	Percentage of Total.	Number.	Percentage of Total.
16 -16½	18	1 533	9	0.766	9	0.766
16½-17	41	3.492	18	1.538	23	1.959
	59	5.025	27	2 3	32	2.725
17 -17½	89	7.58	21	1.788	68	5.792
	148	12 605	48	4.088	100	8 517
17½-18	156	13.287	36	3.066	120	10.211
	304	25.892	84	7.154	220	18.73
18 -18½	157	13.373	32	2.725	125	10.647
	461	39 267	116	9 880	345	29.377
18½-19	158	13.458	30	2.555	128	10.9
	619	52.725	146	12.435	473	40.277
19 -19½	154	13.117	30	2.555	124	10.562
	773	65.842	176	14.99	597	50.85
19½-20	98	8.347	20	1.702	78	6.644
	871	74.189	196	16.692	675	57.494
20 -20½	63	5.366	23	1 959	40	3.404
	934	79.555	219	18.651	715	60 898
20½-21	43	3.662	16	1.362	27	2.3
	977	83.217	235	20.013	742	63.198
21 -21½	35	2.981	13	1.107	22	1.873
	1,012	86.2	248	21.120	764	65.071
21½-22	22	1.873	8	0 681	14	1.192
	1,034	88.073	256	21.801	778	66.263
22 -22½	22	1.873	8	0.681	14	1.192
	1,056	89 946	264	22 482	792	67.455
22½-23	12	1.022	4	0 341	8	0 681
	1,068	90 971	268	22.823	800	68 136
23 -23½	11	0 936	6	0 511	5	0.425
	1,079	91.907	274	23 334	805	68.561
23½-24	10	0.851	4	0.341	6	0 511
	1,089	92.758	278	23 675	811	69.072
24 -24½	10	0.851	4	0.341	6	0.511
	1,099	93.609	282	24.016	817	69 583
24½-25	10	0.851	3	0.255	7	0 596
	1,109	94.464	285	24.271	824	70.19
Over 25	65	5.536	25	2.129	40	3.405
Totals ...	1,174	100.	310	26.4	864	73 6
Average ages ...			19½		19½	

ENGLAND, 1909.—TOTAL NUMBER, 639. SCOTLAND, 1909.—TOTAL NUMBER, 431. IRELAND, 1909.—TOTAL NUMBER, 239. TOTAL NUMBER IN ENGLAND, SCOTLAND, AND IRELAND, 1,309. (64 Students of the University of Dublin are omitted from the Table.)

Age at Registration.	Number of Entrants.		Grade of Qualifying Examinations. Junior.		Intermediate and Senior.	
	Actual Number.	Percentage of Total Number.	Number.	Percentage of Total.	Number.	Percentage of Total.
16 -16½	27	2 062	12	0.916	15	1.145
16½-17	41	3.132	11	0 84	30	2.291
	68	5.194	23	1.756	45	3.436
17 -17½	99	7.563	26	1.986	73	5.576
	167	12.757	49	3.742	118	9 012
17½-18	151	11.535	31	2.368	120	9.167
	318	24.293	80	6.11	238	18 181
18 -18½	187	14.285	34	2.597	153	11 688
	505	38.578	114	8.707	391	29 869
18½-19	160	12.223	36	2.75	124	9.472
	665	50.801	150	11.457	515	39.341
19 -19½	170	12.987	34	2.597	136	10.389
	835	63.789	184	14.056	651	49.732
19½-20	89	6.799	23	1.756	66	5.042
	924	70.588	207	15 812	717	54.774
20 -20½	81	6.188	18	1.74	63	4.812
	1,005	76.776	225	17.186	780	59 586
20½-21	61	4.66	19	1.451	42	3 208
	1,066	81.436	244	18 64	822	62.796
21 -21½	37	2 826	10	0.763	27	2.062
	1,103	84.262	254	19.403	849	64 858
21½-22	30	2,292	10	0.763	20	1.527
	1,133	86 554	264	20.166	869	66 385
22 -22½	23	1.756	9	0.687	14	1.069
	1,156	88.312	273	20 855	883	67 456
22½-23	18	1.374	8	0.611	10	0.763
	1,174	89.686	281	21.466	893	68 219
23 -23½	14	1.069	7	0.534	7	0.534
	1,188	90.755	288	22	900	68 753
23½-24	16	1.222	3	0.229	13	0.993
	1,204	91.977	291	22.229	913	69 746
24 -24½	10	0.763	3	0.229	7	0.534
	1,214	92.74	294	22 458	920	70.28
24½-25	8	0.611	5	0.382	3	0.229
	1,222	93.352	299	22 84	923	70 509
Over 25	87	6.648	42	3 208	45	3 43
Totals ...	1,309	100	341	26.05	968	73.95
Average Ages ...			20½		19	

for the last two years, in which an attempt was made to show the relative number of entrants who gained admission to the *Students' Register* on the strength of the junior examination, though it was not found possible to grade accurately as junior, intermediate, and senior all the recognized examinations; but a fairly satisfactory line could be drawn between those of a distinctly lower level and the others by observing the number of sittings at which the Council permitted the examination to be passed. All those in respect of which the Council required all the subjects to be passed at one time were classified under the head of junior.

The report continues as follows:

Since 1903 the Council has devoted its energies chiefly to the effort of maintaining the standard of the junior examination, and has not attempted to make any sensible advance upon it; indeed, it seems probable that the examination could not be heightened to any considerable extent without detraction from its suitableness for the purposes for which it is intended. In view of this, the English figures would seem to show that since 1903 there has been a steady improvement in educational conditions throughout the country, inasmuch as at each of the ages below 21 a larger proportion of entrants than formerly have succeeded in passing the examination. The figures for Scotland are more difficult to interpret at first sight. But when it is remembered that the Carnegie Trustees for the Scottish Universities for some years have been paying the class fees of those students of Medicine only who pass the higher grade Arts or Science preliminary, it will be seen that there has been a strong inducement for many to devote a longer time than would otherwise have been required in preparation for the entrance examination.

It seems probable, therefore, that in Scotland there has been of late years, as in England, a general advancement in school education, not so marked, however, as far as the statistics show, on account of the simultaneous advance in the standard of the examination which special circumstances have brought about. In Ireland the whole series of figures reveals comparatively little change from 1903. The diminished percentages under the age of 17 suggest an increasing severity of examination, while the remaining figures point to the probability that the added demands of the examination have been accurately proportioned to the general educational progress.

It is important to notice that, taking the figures for the whole country, there entered by way of the junior examination in 1908 only 26.4 per cent., and in 1909 26.05 per cent. of the successful candidates.

Since 1891 the question of the standard of the Preliminary Examination has been constantly before the Council. The aim of the Council in this respect is very clearly stated in a resolution unanimously adopted in 1898 (vol. xxxv, p. 185) to the following effect, namely: "That the Education Committee be requested to consider and report to the Council during the next session as to the earliest date at which in their opinion it will be practicable to raise the minimum requirements of the Council as regards Preliminary Examinations to the standard of the Senior and Higher Grade Examinations at present recognized." To aid them in answering the important question thus presented to them the Committee sought the advice of three educational experts, one representing each division of the kingdom. The unanimous report of the advisers of the Committee was as follows (vol. xxxvi, p. 165), namely: "We have considered the question whether the Senior and Higher Grade Examinations should be substituted for Junior. Taking into account the present state of secondary education in the country, we see no possibility of enforcing such a requirement in the near future. A demand of this kind would certainly result in defeating the end which the General Medical Council have in view. Either it would diminish to an indefinitely large extent the number of candidates entering the profession, or it would compel the examiners to a laxity in marking and a depreciation of the standard of questioning, which would merely have the effect of lowering the Senior Papers to the level of the Junior Papers. The standard of the Medical Preliminary Examination must depend on the general standard of the secondary education of each country in which the examination is held, and a standard too high for one might be found too low for another. We think, however, that the immediate object of the General Medical Council would be gained by the gradual raising of the standard of the lower 'junior' examinations to the level of those 'junior' examinations which in our opinion rank highest." This opinion has been quoted in full on account of its intrinsic importance, and on account of the fact that the educational policy which it advises was adopted and strenuously carried out by the Council. The conclusion of the Education Committee at the time was expressed in the following words: "The Committee are therefore constrained to maintain their view that a number of the junior examinations must still, for a considerable time, continue to be recognized for the purpose of medical and dental registration of students."

In 1907, in commenting upon the comparison of the two series of figures then presented, the earliest group and those of 1903, the Education Committee reported as follows, namely: "The maintenance of the policy of exerting steady pressure with the object of gradually improving the scope and standard of the Preliminary Examination as the educational level of the country rises, which the Council has carried on for some time, is all that appears to be possible at present."

The figures of 1908 and 1909 throw new light on the situation. It is quite clear now that the elimination of those examinations which are most distinctly "junior" in type would not have the effect of diminishing to any considerable extent the number of the candidates entering the profession, or of compelling examiners to a laxity in marking which would tend to lower the level of the higher examinations. On the other hand, the evidence seems to point to the conclusion that the removal of these examinations from the preliminary list, if sufficient time be given to allow the change to be accomplished gradually, would be fully met by the improvement in the educational conditions of the country which is now taking place and is sure to extend. The change would certainly be welcomed by the schools as an educational advantage, as it would tend to prevent the premature withdrawal of the bright youth from his school career at an age when the crowning part of the work remains to be done.

If the change be decided on it will be advisable, for the sake of maintaining the regular flow of candidates for the profession, that reasonable notice should be given; and, further, although a number of the examining bodies concerned have higher examinations which could at once be substituted, it would be well to afford an opportunity to those who carry on but a single examination, and that of a lower standard, which in all probability will have to be maintained for purposes other than entrance to the medical profession, to institute new examinations suited to the higher level demanded. Some hardship might be experienced by the older men, those who seek to enter the profession above the age of 21 years, and who have been removed from school influences for some considerable time. These cases might with advantage be dealt with on their merits by the Students' Registration Committee of the Council.

The Committee are of opinion that the time has come to take a first definite step towards the gradual accomplishment of the object expressed by the Council in 1898 and embodied in the resolution already quoted. The examinations which will remain, if the step be taken, are those which are classified as "Intermediate" and "Senior"; there is considerable diversity among them. The Committee do not propose at present to suggest to the Council the elimination from the list of any University Matriculation Examination, but they would express the hope that the several universities of the country will agree upon a standard of entrance which is of a reasonable and a uniform level. Such a course would greatly facilitate the labours of the Committee in their efforts to carry out the aims of the Council to their full extent with due regard to the educational considerations of the time; it would also be much appreciated by the schools, as it would clearly define the sphere of their work, and permit of the establishment of a leaving certificate throughout the whole country. The school leaving certificate should be the natural entrance examination to medical study.

Dr. MACKAY said that the first part of the report raised the question as to the possibility of remitting the instruction in the preliminary sciences to the secondary schools. The point the Education Committee wished to impress upon the Council was that it was quite certain that, if it was found that the schools were not in a position to teach those subjects at the standard at which they were taught in the medical schools, the standard of examination in those subjects would fall off. Statistics showed that a very small proportion indeed of the pupils in schools had come forward on the strength of their school curriculum alone to the first examination of the Conjoint Board. Under those circumstances the Committee had been forced to the conclusion that such a small proportion came forward from the best schools of the country that it would be impossible to expect the ordinary secondary schools to take up the work at present. With regard to the second part of the report, to establish a pattern curriculum was a very hard task. The motion of Sir Henry Morris of November 26th, 1909, sought for a curriculum which could be carried through in five years successfully. A good proportion of students did pass through the curriculum with success in the minimum period of five years, and the majority certainly passed within six years. The Committee had come to the conclusion that any attempt to fix a standard minimum curriculum would fail. In America an attempt had been made to do so at great expense, but the proposal was there found to be impracticable. As to the third part, the Preliminary Examination in general education, the Committee proposed to eliminate some of the more junior examinations in order that they might be replaced by examinations of an intermediate type. The Committee advised the Council to do what it could to raise the level of the examinations

already in existence. The Committee also felt that so long as the lower door of junior examinations was kept open there would always be a certain percentage of boys who would leave school to enter the medical schools when their time would be better employed in school. The Committee was fully aware that difficulties would arise which would make it impossible for its policy to be carried out in Ireland at the present moment, but hoped that in Ireland some change would be made to bring all examinations as far as possible into line.

The Committee's recommendations were as follows:

That on and after the close of the year 1913 the following examinations be removed from the list of the Preliminary Examinations recognized by the Council as qualifying for entrance on the curriculum in Medicine:

The Junior Local Examination of the University of Oxford.
The Junior Local Examination of the University of Cambridge.
The College of Preceptors Preliminary Examination for Medical Students.
The Educational Institute of Scotland Preliminary Examination.
The Royal College of Physicians and Surgeons of Ireland Preliminary Examination.
The Intermediate Education Board of Ireland Middle Grade Examination.

Adoption of the report having been proposed, Dr. Caton moved:

That the debate on the Report of the Education Committee be adjourned to the May meeting, 1911.

Sir David McVail seconded.

Sir Henry Morris hoped the Council would not consent to the adjournment, but that an opportunity should be given for discussing the report to some extent.

The Chairman put the amendment to the meeting and it was lost.

Sir Henry Morris, speaking on the report, said that in regard to the preliminary sciences and the pattern curriculum the report left things as they were. The reply of the Committee was that it could not do as it was asked, and the only reason given for its inability to do so was the very remarkable one that only exceptional candidates could accomplish within the presented time the study of the full number and amount of the subjects contained within the presented curriculum. It was with the object that the Committee should consider and report to the Council how this very condition of over congestion of the curriculum might be obviated that the resolution of November 26th, 1909, was referred to it. There were two ways in which the congested curriculum could be relieved—namely, (1) either by lightening the curriculum, or (2) by extending the period. The report did not deal with either alternative. It left things exactly as they were. It had made no attempt whatever to adapt the quantity of the contents to the containing space, and for the reason that the contents were greater than the space could contain. The Committee was not asked to draw up a pattern curriculum which would prove acceptable to the majority of the licensing bodies and which would remove the diversity of detail among the curriculums. It was not asked even to draw up a pattern curriculum. What it was asked to do was to draw up a pattern curriculum whereby the required minimum of the subjects included could be adequately and successfully studied within the period presented by the curriculum. The members of the Council knew how improbable it was that any pattern scheme would be accepted by all the licensing bodies or that diversity of detail among the curriculums could be prevented. Diversity of detail in a possible curriculum would be no bad thing. What was the mischief was, that the present curriculum was impossible to the average student. That was the darkness into which the Council asked the Committee to throw the light. But the result of its report was that the students and their parents were left uninformed by the Council of the fact that a nominal five years' curriculum must in reality be a six and a half or seven years' curriculum, and the parent who launched his son as a medical student and expected to see him through on the expenditure of from £800 to £1,000, had, by bitter experience, to realize that it was only after an additional year and a half or two years of time, and an additional £200 or £400 in cash that the qualification which he and his son had in view could be attained. The first part of the resolution of November 26th, 1909, was "that it be referred to the Education Committee to consider the place in the student's career which the preliminary sciences should occupy." The reference was not as to the place in the curriculum, but as to the period of his career, which the preliminary sciences should occupy—that was as to whether they should be studied within the period of the curriculum, or previously. The answer of the Committee must have been simple and direct, to the effect that the precise period should remain, as in fact it was now, optional; but that if previous to the curriculum, but after passing an examination in general education, the curriculum should be correspondingly shortened by six or twelve months; or its reply might have been that the period should be before the commencement of the curriculum, and that the curriculum, unburdened of the preliminary sciences, should remain at five years. The reply of the Committee implied an untruth—of course, quite unintentionally, but still an untruth. The wish was father to the thought, and the thought to the implication that the preliminary sciences must be studied in the five years and in medical schools or in scientific institutions. The reasons given for this reply are two: (1) That to transfer the subjects from the curriculum, and make them part of the course of school education, would be to remove them from any effective control on the part of the medical authorities; and (2) that the indiscriminate delegation of these subjects to the school curriculum was a matter which was not ripe for the consideration of the Council. The answer to the first was, that if the preliminary science subjects were made part of the school course, the examination in them would be under the same kind and extent of influence as the subjects and standard of the examination in general education. The answer to the second had been given by Huxley in 1889 to the teachers and the writers of an important document twenty years ago. Now these subjects, as long as they were retained in the new curriculum, either ought to be exclusively studied in a medical school and taught by teachers in touch with the whole course of medical education, or their study elsewhere than at a medical school under specified conditions ought to be recognized. The question might be set aside of their being taught by men in general touch with the medical curriculum as a whole, because whether taught in a medical school or not they were taught by teachers who regarded the study of these subjects as the first steps in a science education, and who very little considered the special bearing of these subjects on other parts of the medical curriculum; whereas the study of organic chemistry in its bearing on physiology and pathology was provided for within the limits of the professional curriculum. But if the study of these subjects was not to be of necessity within a medical school, then on what code of justice was the study of these subjects in a highly equipped secondary school to be prohibited? Why were the schools like Epsom, Dulwich, Bedford, St. Paul's, University College School, Frognal, Hampstead, to be prohibited, whilst polytechnic institutions and municipal technical schools, and several others mentioned on p. 13 of the Students' Regulations, were to be recognized? The report gave two tables, and stated that these tables showed that only a very few boys, and those apparently of exceptional ability, were prepared to undertake the first professional examination upon a school study. This was an incorrect and a misleading assumption for three reasons. In the first place, boys who passed the preliminary scientific (first professional examination) of the University of London as external students included a considerable number from secondary schools; many of them came at later stages for examination

in the advanced subjects by the Conjoint Board, and thus were not returned in the tables as coming from secondary schools, though it had been as from secondary schools that they presented themselves for examination in the same subjects at the University of London. In the second place, at least half of the Conjoint Board candidates were university graduates or undergraduates. In the third place, there were many students who had done part of their preliminary science studies at schools. But the number of candidates from schools which had highly equipped modern sides, with excellent laboratories and highly qualified teachers, were fewer than might be. One cause was the misleading and inaccurate "so-called" regulation No. 12 on p. 14 of the Council's publication on the registration of medical students, which the report left without reference, untouched and uncorrected. This regulation was not only misleading and inaccurate—it was directly contrary to the facts. By that clause the Council was made to appear as usurping a power which belonged to the licensing bodies alone, and sometimes the Council was put into a very ridiculous position thereby. The General Medical Council could not refuse to place a student on the Register if he had passed his examination in general education and in preliminary science from school. Then he registered as a student, and four years after registration duly passed his final examination. As long as Regulation 12 remained amongst the regulations of the Council an injustice was done to the boys, to the parents, and to the secondary schools. In conclusion, he said that he was prepared to move the following motion:

> That as the Education Committee in their report of November 22nd, 1910, express views in favour of retaining the preliminary sciences (chemistry, physics, and biology) as subjects of the medical curriculum, it be referred to the Committee to consider and report to the Council as to the best way of amending the regulations of the General Medical Council in regard to the registration of medical students with the objects (1) of making those regulations consistent with the report and with the powers of the Council; (2) of making clear the distinction between regulations which must be observed and recommendations made for the students' guidance; and (3) of the advisability of altering or deleting Regulation 12 on page 14 of the regulations printed under date June 1st, 1910.

Dr. LANGLEY BROWNE seconded.

The PRESIDENT said the amendment must be deferred until the third part of the report was considered.

Professor THOMSON thought it would be unwise to adopt the recommendation of the Education Committee; 26 per cent. of the men who entered the profession entered it through these junior examinations, and he hoped the Council would further consider the matter before agreeing to the recommendation.

Sir CHARLES BALL moved as an addition to the motion of Dr. Mackay:

> That the Education Committee be authorized on behalf of the Council to communicate with the Commissioners of Intermediate Examination in Ireland as to the possibility of establishing a satisfactory examination in the preliminary education under the control of the Commissioners suitable for students intending to commence the study of medicine.

He moved this addition to the report for the purpose of further discussion.

Sir CHRISTOPHER NIXON seconded.

Sir THOMAS MYLES hoped that the Committee when considering the question would bear in mind that the standard of examination must depend on the standard of secondary education in the country.

Dr. ADYE-CURRAN cordially approved of the amendment of Sir Charles Ball.

Dr. MACKAY accepted the amendment.

By leave of the Council the suggested addition was made.

The CHAIRMAN then put the recommendation of the Education Committee, as amended by the addition, and it was agreed to.

Sir HENRY MORRIS'S motion was then put before the Council, seconded by Dr. LANGLEY BROWNE, when

Sir CHRISTOPHER NIXON, as the matter was such an important one, moved the adjournment of further discussion on the subject until the May Session.

Dr. NORMAN WALKER seconded, and it was carried.

The following reports by the Education Committee were received and entered on the minutes:

Preliminary Sciences.

On May 28th, 1910, the Council received a memorial relating to the position of the purely scientific subjects of chemistry, physics, botany, and zoology in the medical curriculum, which, on the motion of Dr. Saundby, was referred to the Education Committee for its consideration.

The subject to which the memorial refers having been dealt with specially in the Report of the Committee, further comment appears to be unnecessary at the present time. The Committee would thank the memorialists for the expression of their views.

Ophthalmology.

On May 28th, 1910, the following resolution by the Examination Committee was referred to the Education Committee for its consideration:

> In the curriculum of all the licensing bodies, with three exceptions, special courses on ophthalmology form an essential part. The Committee are of opinion that every student of medicine should receive some special instruction in the subject. The Committee do not think it necessary to insist that every student should be examined in ophthalmology, but they are of opinion that all students should be liable to be examined in some branch of the subject.
>
> While the Committee would commend the practice of giving specialized instruction in otology and diseases of the throat, they do not think it necessary to insist, in the present crowded condition of the curriculum, that special courses and examinations should be made obligatory, provided the subject be included under the general headings of Medicine and Surgery.

VOTE OF THANKS.

A vote of thanks was accorded the President for his conduct in the chair, and the proceedings terminated.

MIDWIVES (NO. 2) BILL.

DEPUTATION FROM THE BRITISH MEDICAL ASSOCIATION TO THE PRESIDENT OF THE LOCAL GOVERNMENT BOARD.

ON November 8th, 1910, the Right Honourable John Burns, M.P., President of the Local Government Board, and Mr. Herbert Lewis, M.P., Parliamentary Secretary, received at the offices of the Local Government Board, Whitehall, a deputation from the British Medical Association on the subject of the Midwives (No. 2) Bill now before Parliament.

The PRESIDENT OF THE ASSOCIATION (Mr. H. T. Butlin, P.R.C.S.) introduced the deputation, which consisted of Mr. T. J. Verrall (Bath), Chairman of the Medico-Political Committee; Mr. C. R. Straton, F.R.C.S. (Salisbury), Mr. D. F. Todd (Sunderland), Dr. Michael Dewar (Edinburgh), Dr. Arthur Drury (Halifax), Dr. E. R. Fothergill (Wandsworth), Mr. J. Smith Whitaker (Medical Secretary of the Association), and Dr. Alfred Cox (Deputy Medical Secretary of the Association).

Mr. BUTLIN, in introducing the deputation, said he was there to show by his presence that the British Medical Association as a whole, as well as the Royal College of Surgeons, were interested in this matter. Many members of the deputation had travelled long distances to attend, and this fact would show the widespread interest which was taken in the subject.

Mr. T. JENNER VERRALL said the part of the bill in which they were most interested was Clause 17, and the two points they especially wished to discuss were: (1) The authority by whom the fees to medical men called in on the advice of a midwife should be paid; and (2) what scale of fees should be adopted, and how the scale should be settled. The Departmental Committee on the Midwives Act who discussed this matter in 1909 were on the whole in favour of leaving the payment of these fees to boards of guardians, since they regarded it as cognate to relief on loan. The British Medical Association, on the other hand, take the contrary view, and consider that these payments should not necessarily be regarded as a matter of relief, whether on loan or

otherwise. Clause 17 (5) of the Midwives (No. 2) Bill seemed to be aimed at taking away any stigma attaching to relief, but he submitted that there was a distinct fear that this matter would not be so viewed by the women concerned. They considered that if the payments were entrusted to boards of guardians it would be found impossible to dissociate the idea of relief from these payments, and the women would be deterred from availing themselves of the help offered. Again, the Departmental Committee took the view that to entrust the duty of paying these fees to the local supervising authority would be to throw the responsibility upon a body who had not the best machinery for the purpose. With regard to that, they would like to draw attention to what had been done in the city of Manchester, where a plan had been adopted of paying these fees through the local supervising authority. The arrangement worked very satisfactorily, and was considered to be a better method than payment through boards of guardians. He admitted that under the Manchester scheme rather minute inquiries were made as to capacity to pay, both through the District Provident Association and the Charity Organization Society. It might be necessary to have different schemes for different parts of the country, as in some cases, no doubt, the County Council would be too large a body properly to investigate or deal with the matter. Clause 17 (3) of the Bill made it necessary that the guardians should report to the local supervising authority cases in which fees had been paid by them, and they submitted, therefore, that it would be best that the supervising authority should act throughout. While the Association recognized that persons able to pay the fees should not escape liability, they suggested that Clause 17 (2) of the Bill might be amended so as to allow a person who could not pay the whole of the fee to pay such part as he or she could afford. With regard to the scale of fees, they hoped the Local Government Board would be the body to settle those fees, so that the same system should obtain the whole country over. They did not want medical men, either collectively or individually, to be engaged in contests with local bodies with regard to their fees. They also felt strongly that in no case should the risk of getting or not getting the fees be thrown upon the medical profession, and that some public authority should pay those fees and recover them. The risk should not fall on the medical man. They would be glad if, before the matter was finally settled, Mr. Burns would give an opportunity to some one representing their Association to discuss this question with a representative of the Local Government Board.

In reply to the deputation, Mr. Burns said that he recognized that the British Medical Association were entitled to bring before him their views on the questions at issue, and he was glad to find that generally the bill met with their approval. With regard to Clause 17, their criticisms had reference mainly to two points connected with the proper performance of this public duty. He would deal with the second point—namely, the question of fees—first. It seemed to him there ought not to be a great deal of division between the Local Government Board and the deputation on the question of the amount of those fees and the method of their payment. He would be only too pleased that a small deputation of the British Medical Association should see his medical officers and those officially concerned with the administration of this bill, and discuss the question of fees from a broad and general point of view. He sincerely trusted that the medical profession would not in their own interests press for a sliding scale of payment. It seemed to him, with his great friendly society and trade union experience, that a fixed payment was infinitely better than a sliding scale. Inquisitorial investigation would probably follow the adoption of a sliding scale. Then there was the question as to which authority should make these payments. On that point he would only say that the authority proposed in the bill was not regarded by the British Medical Association with so much favour as the one they suggested. That was a matter of policy upon which doctors themselves appeared to differ, and when doctors differed who could decide? He believed that the apprehensions which had been expressed as to Clause 17 of the bill had been greatly exaggerated. There had been much misgiving as to what would happen under this bill, but the medical profession might rely upon it that the line of least resistance would be taken so far as the enforcement of the medical duty was concerned. He was convinced that subsequent experience would in no way justify the fears and apprehensions entertained, after all, by only a portion of the medical profession. He had listened with interest and sympathy to the views which they had advanced on behalf of their profession, and he assured them that all the suggestions which had been made would receive the consideration due to them.

In conclusion Mr. Butlin thanked Mr. Burns for the courtesy and attention with which he had received the deputation.

CENTRAL MIDWIVES BOARD.

A meeting of the Central Midwives Board was held at Caxton House, Westminster, on November 24th, with Sir Francis Champneys in the chair.

Statistics as to Midwives.

A letter from the Clerk of the Privy Council requesting the Board to furnish the Lord President with statistics as to the number and distribution of certified midwives in the country, for the use of the Austro-Hungarian Ministry of the Interior, was considered and directions were given for the information to be supplied.

Temperature Taking.

A letter was considered from Dr. Niven, Medical Officer of Health for Manchester, forwarding a copy of a resolution passed by the local supervising authority for that city as to the taking and recording of temperature. The Board decided that Dr. Niven be informed that the matter will be considered on the revision of the rules which is about to take place.

"Emergency" Women Practising as Midwives.

A letter was considered from the Birkenhead Medical Society, suggesting an amendment of Section 1 (2) of the Midwives Act, 1902, so as to prevent uncertified women holding themselves out as "emergency" women, and practising as midwives with impunity. The Board decided that the Birkenhead Medical Society be informed that the suggestion will be borne in mind should an opportunity arise for dealing with it.

Badge for Midwives.

A letter was considered from a certified midwife suggesting that the Board should issue a badge as the distinguishing mark of a certified midwife. It was decided that the question be referred to the Standing Committee for consideration and report.

Employment of Uncertified Substitutes.

A letter was read from the Clerk of the Cheshire County Council reporting a certified midwife for an infringement of Section 1 (4) of the Midwives Act, 1902, and calling the attention of the Board to the fact that the Act prescribes no penalty for a breach of this subsection. The Board directed that the local supervising authority be thanked for their communication. Section 1 (4) reads as follows: "No woman certified under this Act shall employ an uncertified person as her substitute."

Payment for Information.

Letters were considered from Dr. A. F. Whitwell, of Shrewsbury, claiming a fee of one guinea for information given in the case of a certain midwife. The Board decided that a fee of one guinea be paid to Dr. Whitwell without prejudice to the action of the Board in any similar case arising hereafter.

LUNACY IN ENGLAND AND WALES.

THE Sixty-fourth Report of the Commissioners in Lunacy for England and Wales[1] for the year 1909 shows that the total number of certified insane persons in England and Wales on January 1st, 1910, was 130,553, of whom 10,616 were private patients, 118,901 pauper patients, and 1,036 criminal lunatics. These were distributed as follows: 97,580, or 74.8 per cent., were in county and borough asylums; 4,440, or 3.4 per cent., were in registered hospitals; 3,012, or 2.3 per cent, were in metropolitan and provincial licensed houses; 163, or 0.1 per cent, were in naval and military hospitals; 858, or 0.6 per cent., were in criminal lunatic asylums; 18,268, or 14 per cent., were in ordinary workhouses and metropolitan district asylums; 593, or 0.5 per cent., were single patients; and 5,639, or 4.3 per cent, were outdoor pauper patients. Compared with the proportional distribution of the certified insane on January 1st, 1909, the most important features were: (1) The continued increase in the proportion maintained in county and borough asylums (from 69.4 per cent. to 74.8 per cent) at the expense of those maintained in workhouses and metropolitan district asylums (from 16.4 per cent. to 14.0 per cent); (2) a slight increase in the proportion of single cases (from 0.4 per cent. to 0.5 per cent.); and (3) decreases in all the other categories, with the exception of those in criminal lunatic asylums, whose proportion remained unchanged.

The Growth of Insanity.

The first important matter, however, is the question of the increase of insanity. On January 1st, 1909, the total certified insane numbered 128,787, being 1,766 less than the number on January 1st, 1910. This increase for the year 1909 may be compared with that of 2,703 for the year 1908, of 2,096 for 1907, of 2,009 for 1906, or 2,145 for the five years 1905–9. The increase for 1909, in fact, was lower than that for any year since 1901. Taking the separate classes, the private patients increased during the year by 223, as compared with the increase in this class in 1908 of 281, or of 253 for 1907; the pauper patients increased by 1,524, whereas in 1908 they increased by 2,388 and in 1907 by 1,880; and the criminal insane increased by 19 as compared with an increase of 34 for the previous year. As the pauper class comprise the great bulk of the insane, forming in 1909 no less than 91.1 per cent. of the total certified insane, it is of interest to note that the average yearly increase of this class during the last decade amounted to 2,187, so that the figures for January 1st, 1910, are as much as 663 below that mean.

Before considering the growth of insanity in proportion to the growth of the population at large, a few points in connexion with the pauper insane in counties and boroughs may be noted. During the five years 1905–09 the average annual rate of increase for the counties was 1.5 per cent., and for the county boroughs 2.4 per cent., both lower than the rates recorded in the Commissioners' last report. The highest rates of increase were recorded by Middlesex (6.5), Herts (3.8), Notts (3.8), Chester (3.7), East Sussex (3.5), and Durham (3.1), and the highest rates in county boroughs were Bournemouth (7.5), Canterbury (6.1), Hastings (5.8), Walsall (5.8), Huddersfield (5.2), Plymouth (5.1), Reading (5.0), and Southampton (5.0). The county of London gave an increase of 1.4, which is slightly below the mean, and an improvement on the 1.9 for the five years ended January 1st, 1909.

Turning to the comparative statistics of the insane and the general population, between January 1st, 1859, and January 1st, 1910, the general population increased by 83.7 per cent, whilst the certified insane increased by 255.1 per cent. The Commissioners show, however, that, whilst the increase in the general population has been fairly regular, that of the insane has been variable, and that there has been within recent years a tendency of the rate of the latter increase to approximate to that of the general population. Thus, for the decade 1859–1869 the increase amounted to 44.6 per cent.; that for 1869–79, 31.4 per cent.; for 1879–89, 20.7 per cent.; for 1889–99, 24.6 per cent.; and for 1899–1909, 22.5 per cent. This is shown also in the yearly increases from 1900–01 to 1909–10, during which period the increase rose from 1.2 in 1900–1 to 2.9 in 1902–3, and fell to 1.4 in 1909–10. The Commissioners say:

> It is worthy of note that, although the estimated population in 1910 is 12.2 per cent. above that in 1900, and that of the number of insane 22.4 per cent., yet in the rate of increase during 1909 there is a marked approximation between the two series, that of the general population being reckoned to be 1.16 per cent., and that of the insane 1.37 per cent. If, therefore, the rate of increase of the insane should continue to fall, it may shortly come down to the same level as that of the general community.

On January 1st, 1910, the certified insane stood to the estimated population as 1 to 277 or 36.1 per 10,000 as compared with 1 to 278 or 36.02 per 10,000 on January 1st, 1909. This gives an increase of the ratio of January 1st, 1910, on that of January 1st, 1909, of 0.22 per cent., whilst the numerical increase was 1.37 per cent.; whereas the increase in the ratio 1901 on that of the preceding year was 0.53 per cent. and the numerical increase 1.7 per cent. Both numerically and relatively to general population the statistics show a very gratifying steady diminution in the rate of increase of insanity. As to the ratios of the different classes of the insane to population, on January 1st, 1909, these were: Private, 2.90; pauper, 32.8, and criminal lunatics, 0.29; whilst on January 1st, 1910, they were: Private, 2.93; pauper, 32.87, and criminal insane 0.29 as before. Of more significance than the foregoing are the figures contained in Table III, Appendix A, of the report relating to the admissions as compared with the population. These show that the proportion of admissions to 10,000 of population, fell from 6.29 in 1908 to 6.09 in 1909, and the ratio of first admissions from 5.19 to 5.0 in the same period. Taken altogether, although the above statistics refer necessarily only to the insane of whom the Commissioners have official cognizance, they show that both numerically and relatively to population the certified insane are increasing less rapidly, and that the rate of occurring insanity to population as gauged by admission rates has undergone an actual diminution.

Admissions.

The number of patients under detention on January 1st, 1909, in all institutions (exclusive of idiot establishments), and in private single care was 102,908, and on the last day of the year there remained under detention 104,607. The average number daily resident during the year 1909 was 103,671, as compared with 101,678 during 1908, and the total number under treatment 128,447, as compared with 126,204 for the previous year.

During the year 1909 there were admitted into all asylums, excluding idiot establisments, 10,437 males and 11,327 females, or 21,764, as compared with 22,244 in 1908, giving an actual decrease on that year of 480. Including the 228 admitted to idiot establishments, the admissions give a grand total of 21,992, as compared with 22,447 for 1908. Of the total 21,764 admissions, 17,862, or 82.0 per cent, were first admissions. As regards classification, 2,439 were private, 19,097 pauper, and 228 criminal admissions, giving decreases on the private, pauper, and criminal admissions of the year previous of 91, of 369, and of 20 respectively. As regards distribution, 19,848 were admitted to county and borough asylums, 760 to registered hospitals, 506 to metropolitan licensed houses, 337 to provincial licensed houses, 114 to naval and military hospitals, 75 to criminal lunatic asylums, and 194 to private single care. As to sex, the Commissioners show that there is not much variation from year to year in the proportions of the sexes amongst the certified insane. On January 1st, 1910, for every 1,000 persons there were 463.6 males and 536.4 females; a year previously there were 463 males to 537 females. The proportion per 1,000 in the general population is: Males 482.8, females 517.2, corresponding fairly with the proportions annually admitted to care, the mean for the past ten yerrs being: Males 486.7, females 513.3. Curiously enough, the mean for those admitted for the first time works out in precisely equal proportions—namely, 500 each per 1,000. As to age distribution the Commissioners print, without comment, a small table showing the relative proportions obtaining in the general population, in the whole insane and in the annual admissions for 1907–8, according to the age periods: (1) under 35, (2) 35 to 64, and (3) 65 and upwards. As was to be expected, the proportion per 1,000 of those under 35 years

[1] Sixty-fourth Report of the Commissioners in Lunacy. London. 1910. Eyre and Spottiswoode. (Price 2s. 11d.)

in the general population (68·2) is very much greater than that of the whole insane (235·5) or in the admissions (363·5), but the preponderance of the proportion of those of over 65 years of age in the insane (131·5) and in the admissions (103·5) over those of this age period in the general population (45·5) is interesting. The Commissioners further show that the direct admissions during 1907 and 1908 gave the following ratios per 10,000, according to age periods: 0·3 were under 15 years; 3·0 between 15 and 19; 6·1 between 20 and 24; 9·0 between 25 and 34; 12·0 between 35 and 44; 14·2 between 45 and 54; 14·1 between 55 and 64; and 14·9 of 65 years and upwards Last year the proportion of those of 65 and upwards was 14·7, so that though the tendency to admit aged people to asylums, which has been increasingly marked for many years, is still in evidence, the proportion is below that of the quinquennium 1902–6, which was 15·3. The same table (Table XXIII, Appendix A) shows that at marriageable ages and in proportion to the general population, considerably more single than married or widowed persons were admitted during 1907 and 1908. As usual, the Commissioners furnish a table showing the proportion of first attack cases in the total admissions. This is a point of vital importance in any calculation as to the rate of occurrence of insanity. The proportions given are: For private patients, first attacks, 69·2 per cent., and not-first attacks, 30·8 per cent; and for pauper patients, first attacks, 73·9 per cent., and not-first attacks, 26·1 per cent; or for both classes together, first attacks, 73·3 per cent, and not first attacks, 26·7. per cent. But, as the Commissioners point out, of the total received during these two years, on the average 82·6 were received for the first time, leaving 17·4 per cent. who had previously suffered from mental disorder without recourse to institutional treatment; and as there were 26·7 per cent. of not-first attack cases, the difference between these two figures means that 9·3 per cent. of the admissions had had previous attacks of which there is no official information. Hence, as the Commissioners say, it is evident that they do not at present possess sufficient information to give an accurate estimate of prevailing insanity.

Forms of Insanity.

Table XIX, Appendix A, sets forth by a yearly average the forms of insanity in the direct admissions during 1907–8, Tables XIXA and XIXB show the same with regard to private and pauper patients respectively, and on Table XX are shown the same, distinguishing between first and not first attack cases. Considering here only the first of these tables, the total yearly average number of admissions for these two years was 21,813, and these were classified into: Recent mania 5,135, chronic mania 569, and recurrent mania 1,102—that is, in all 6,806, or 31·2 per cent. of the total; recent melancholia 4,934, chronic melancholia 463, and recurrent melancholia 771—that is, in all 6,168, or 28·2 per cent.; senile and secondary dementia 1,708, or 7·8 per cent.; delusional insanity 1,551; general paralysis of the insane 1,536, or 7·0 per cent. (male private patients 13·4 per cent., female private patients 1·0 per cent, total 6·7 per cent.; male pauper patients 12·3 per cent., female pauper patients 2·2 per cent, total 7·1 per cent.); insanity with epilepsy 993, confusional insanity 647; primary dementia 423, stupor 181, insanity with gross brain lesions, 239, acute delirium 82, volitional insanity 62, alternating insanity 53, moral insanity 33, and cases of congenital or infantile mental deficiency 1,338, the latter being composed of 443 cases of intellectual defect with epilepsy, 854 without epilepsy, and 41 cases of congenital moral deficiency. Altogether among the admissions there were 1,596 epileptics, of whom 15 belonged to the pauper class and 57 to the private class, giving proportions in their respective classes of pauper 8·0 per cent., and private 2·2 per cent. It will be noticed that the general paralytics are 0·1 per cent. greater than last year, which, again, was 0·1 per cent. greater than the year before that.

This year the Commissioners give some interesting facts concerning the relative frequency of the several forms of insanity in rural and urban districts. For the details we would refer readers to the Report (pages 14, 15, and 16); but it may be said here that there is proportionately more dementia—both senile and primary—and mania in the rural, and more melancholia, delusional insanity, and general paralysis in the urban counties. Further, contrasting (*a*) factory and town workers, (*b*) miners, and (*c*) agricultural labourers, they show that the factory and town workers give smaller proportions of general paralysis, dementia, delusional insanity, and mania than miners, and that the agricultural class yield a far smaller proportion of general paralysis and delusional insanity than the other two taken together. As regards congenital deficiency, as was to be expected, the agricultural class yield a higher proportion than the other classes, the proportions being: Urban districts, 5·0; mining districts, 6·0; and rural districts, 7·2.

Probable Causes of Insanity.

In the report this year four tables are devoted to the assigned causes and associated factors of insanity, Table XV dealing with these etiological factors in the whole number of direct admissions, and Table XVI with these assigned causes, but distinguishing between private and pauper patients; whilst Tables XVII and XVIII are limited to the first-attack cases of the direct admissions, the former dealing with the males and the latter with the females. Taking into consideration here only the first two of these tables, and mentioning only the more important etiological factors:

Alcohol was assigned, either as principal or contributory cause, in 3,374, or 15·7 per cent. of the whole; or in 22·6 per cent. of the male and 8·9 per cent. of the female direct admissions; or in 16·5 per cent of the male private and 6·9 per cent. of the female private admissions; and in 23·4 per cent. of the male pauper and 9·1 per cent. of the female pauper admissions. As compared with last year, the male alcoholic cases, both private and pauper, show slight decreases. The female proportions remain unchanged.

Acquired syphilis was assigned in 976, or in 4·2 per cent. of the whole; or in 8 per cent. of the male and 1·2 per cent. of the female admissions; or in 11·3 per cent. of the male private and 0·6 per cent. of the female private admissions; and in 7·6 per cent. of the male pauper and 1·3 per cent. of the female pauper admissions. As in former years, the male private admissions give the highest and the female private admissions the lowest proportions under this head. As would be expected, congenital syphilis is divided equally among the sexes, and was assigned in 0·2 per cent. of both male and female admissions, or in 0·1 per cent. of both male and female private admissions and in 0·3 per cent. of both male and female pauper admissions.

Influenza was assigned, among other toxic agents, in 617, or 2·8 per cent. of the whole, and appeared to have an equal influence on all classes.

Privation and starvation was returned as cause in 449, or in 0·2 per cent. of the whole, but naturally bore more hardly on the pauper classes, giving 2·3 per cent. of such cases in the male and 2·2 per cent. in the female pauper admissions, as compared with 1·0 per cent. of the male and 0·5 per cent. of the female private cases.

Mental stress on the other hand, affected, as usual, the private more than the pauper classes, being assigned in 28·4 per cent. of the male private, and 31·3 per cent. of the female private admissions, as contrasted with 17·5 per cent. in the case of the male pauper and 22·5 per cent. in that of the female pauper admissions. The total number of admissions in which this factor was assigned was 4,641, or 21·1 per cent of the whole direct admissions.

Critical periods—puberty, change of life, and old age—were assigned in 3,482, or 15·7 of the whole; or in 10·9 of the males, and 20·6 of the females; or in 8·5 per cent. of the male private, and 19·9 of the female private admissions, and in 11·2 per cent of the male pauper, and 20·8 per cent of the female pauper admissions.

Child bearing was assigned in 5·3 per cent. of the female private and in 7·5 per cent. of the female pauper admissions.

Diseases of the nervous system, of which epilepsy furnished 1,255 instances out of a total number of 1,997 in which nervous diseases were returned as causal factors, were assigned in 10·1 per cent. of the male and in 8·3 per cent. of the female admissions. Epilepsy being the most important affection in this relation it need merely be mentioned that this disease was returned as cause in only 1·9 per cent. of the male private and in 1·4 of female private

admissions; whereas it was assigned in 7·2 per cent. of the male pauper and in 5·4 per cent. of the female pauper admissions.

Bodily trauma was returned in 586, or 5.6 per cent., of the males and in 207, or 1.9 per cent., of the females.

Hereditary Influences.—An insane heredity was ascertained in 5,010 or 23·9 per cent; or in 20·6 per cent. of the males and 25·2 per cent. of the females; or in 18·5 per cent. of the male private and 26·1 per cent. of the female private admissions, and in 20·9 per cent. of the male pauper and 25 per cent of the female pauper admissions. Also an epileptic heredity was ascertained in 0·4 per cent. of the male private and in 1 per cent. of the female private admissions and in 1·5 per cent. of the male pauper and in 2 per cent. of the female pauper admissions. Of the remaining hereditary neuropathic tendencies, the only important difference to be noted is that a family history of alcoholism was elicited in only 2·4 per cent of the male private and 2 per cent. of the female private admissions, as compared with 5·4 per cent. in the case of the male pauper and 6 per cent. in that of the female pauper admissions. The total assigned neuropathic hereditary influences amounted to 28·5 per cent. in the male and 34·7 per cent. in the female, or in 31.6 per cent. of the whole direct admissions.

Discharges.

During the year 1909 there were discharged as recovered 7,831, as compared 7,871 in 1908 and 8,020 in 1907. The diminishing rate of discharge as recovered which has marked the last few years is thus still in process. The recovery-rate, calculated on the total admissions (excluding idiot establishments), was 35·93, which, though 0·6 higher than the rate for 1908, is still 0.92 lower than the average for the ten years 1900-09. The recovery-rate for males was 32·13 and for females 39·53. The recovery-rate for county and borough asylums was, males 32.03, females 39·35; for registered hospitals, males 39·20, females 49·46; for metropolitan licensed houses, males 24·87, females 30·60; for provincial licensed houses, males 37.01, females 42·38; naval and military hospitals, 41.23; criminal lunatic asylums, males 10.45, females 112·50; and private single patients, males 30.43 and females 25·92. During the year there were also discharged as not recovered 2,096, or almost 10 per cent. calculated on the total admissions.

Deaths.

During the year 10,138 died, exceeding the number for 1908 by 446. The death-rate, calculated on the average number daily resident, was 9.78 per cent., being 0·20 greater than that of 1908, but 0.18 below the average for the last ten years. The rates for males was 10·97, and for females 8.75. The death-rates for the separate classes of institution were as follow:

County and borough asylums: Males, 11·08; females, 9·01.
Registered hospitals: Males, 8·65; females, 4.57.
Metropolitan licensed houses: Males, 15.00; females, 6·25.
Provincial licensed houses: Males, 10·92; females, 6.72.
Naval and military hospitals, 14.47.
Criminal lunatic asylums: Males, 3·49; females 0·91.
Private single patients: Males, 9.63; females, 5·41.
Idiot establishments: Males, 1·96; females, 3.63.

The principal causes of death, as set forth in Table XXVIII, Appendix A. were as follows: From general diseases, including 1,563 deaths from tuberculous diseases, 888 from pneumonia, 224 from dysentery, 235 from sarcoma, 89 from influenza, and 22 from enteric fever, there were 3,291 deaths. From diseases of the nervous system, including 1,681 deaths from general paralysis and 390 from epilepsy, there were 2,852 deaths. There were 1,177 from heart disease and 511 from diseases of the blood vessels, including 266 from cerebral apoplexy. There were also 474 from respiratory diseases; 192 from diseases of the digestive system; 19 from diseases of the ductless glands; 580 from diseases of the urinary system, made up mainly by 503 deaths from chronic Bright's disease; 976 from unspecified conditions, including 947 from senile decay; 49 from accident or violence, and the remaining 29 from diseases of the skin, locomotor system, generative system, and organs of special sense. The deaths from tuberculous disease formed 15.4 per cent. of the total deaths, as compared with 15.71 in 1908. The Commissioners again comment on the high death-rate of the insane as compared with that of the general population. During 1908 the ratio of deaths in all institutions for the insane, exclusive of idiot establishments, per 1,000 living was for males 105·2 and for females 84·9, as compared with the 15.7 for males and 13·7 for females in the general population; that is, the death-rate in institutions for the insane was six times that among the general population. This contrast is more marked at the earlier age-periods than in the later, and ranges from fifty to twenty times the normal rate at the early age periods to twice or thrice the normal rate in those of 65 years of age and upwards.

Average Weekly Cost.

The average weekly cost of maintaining the patients in the county and borough asylums for the year ended March 31st, 1909, excluding cost of repairs, additions, and alterations, was as follows:

	s.	d.
In county asylums	10	6⅝
In borough asylums	11	2⅜
In both taken together	10	4

The average cost in county asylums was ¼d., and in borough asylums 2⅜d. more than in the previous year.

Hospitals and Asylums.

SURREY COUNTY LUNATIC ASYLUMS.

Brookwood.

THE annual report of Dr. J. C. Barton, the Medical Superintendent of Brookwood Asylum, for the year 1909 shows that on January 1st, 1909, there were in this asylum 1,389 patients, and on the last day of the year 1,032, giving a decrease for the year of 357, due to the transfer of many patients to the newly-opened Surrey County Asylum at Netherne. The total cases under care during the year numbered 1,780, and the average number daily resident 1,149. During the year 391 were admitted, of whom 257 were first admissions, 41 not-first admissions, and 93 retransfers. Of the total admissions, in 132 the attacks were first attacks within three and in 58 more within twelve months of admission; in 53 not-first attacks within twelve months of admission; in 118 of more than twelve months of admission; in 27 more the illness was of congenital origin; in 2 the duration of the illness was unknown; and 1 was not insane on admission. The admissions were classified according to the forms of mental disorder into: Mania of all kinds, 121; melancholia of all kinds, 77; senile and terminal dementia, 59; delusional insanity, 45; general paralysis, 19; acquired epilepsy, 15; primary dementia, 16; and congenital or infantile defect, 27; the small remainder being distributed over the various other less common forms of mental disorder. As to causation among the total admissions, alcohol was assigned in 44, or 11·2. per cent.; syphilis in 9, influenza in 11, and tubercle in 2, critical periods in 37, brain lesions in 4, and epilepsy in 17, childbirth in 16, mental stress in 53, and in 120 no cause could be assigned. An heredity of insanity was ascertained in 92, or 23.5 per cent. During the year 95 were discharged as recovered, giving a recovery-rate on the admissions of 35.09 per cent.; 50 as relieved, and 485 (all but 10 to Netherne) were discharged as not improved. During the year 118 died, giving a death-rate on the average numbers resident of 10.27 per cent. The deaths were due in 36 to cerebro-spinal diseases, including 17 deaths from general paralysis; in 9 to diseases of the heart and blood vessels; in 7 to diseases of the respiratory organs; in 19 to abdominal diseases, including 8 deaths from dysentery; in 2 to accident, and in the remainder to general and local diseases, including 20 deaths, or 16·9 per cent., of the total deaths, from tuberculosis. Although influenza was prevalent, Dr. Barton says, and dysentery and diarrhoea continued to occur, the general health was good throughout the year, and casualties of a serious nature were few in number. The most important event during the year was the opening of the new asylum at Netherne, which relieved the overcrowding from which the Brookwood Asylum has suffered for many years. During the year 475 patients, belonging to Croydon, Dorking, Epsom, Godstone, and Reigate—the unions allocated to Netherne—were removed to the new asylum.

Netherne.

This asylum was opened for the reception of patients on April 1st, 1909. It consists of the main building, two villas for the accommodation of male and female patients, an acute hospital, an isolation hospital, and an idiot block, the whole buildings, His Majesty's Commissioners say, providing somewhat lavish accommodation for 960 patients. The administrative buildings, however, are capable of meeting the requirements, either by an extension of the wards or increasing the number of villas, of 1,360 patients. In addition to the administrative and general buildings, there is a detached church, a recreation hall, laundry, and workshop.

In the first report for this asylum its first medical superintendent, Dr. F. C. Gayton, formerly Senior Assistant Medical Officer at Brookwood, gives a brief account of the provision for the insane of Surrey. Prior to 1840 all lunatics in the county were sent to Bethlem Hospital, or to some

private asylum. In 1840 Wandsworth Asylum was built to accommodate 300 patients for Surrey, which then extended to the south side of the Thames, and included Lambeth, Southwark, and Rotherhithe. In 1841 additional accommodation was provided at Wandsworth, but in 1867 a second county asylum was opened at Brookwood, and now accommodates 1,400 patients. In 1883 Cane Hill Asylum was opened, but in 1889 this was handed over to the County of London, the formation of this county reducing the area of the County of Surrey. Wandsworth Asylum was then also acquired by the County of London, consequent upon the passing of the Local Government Act of 1888, though later this asylum was transferred to the County of Middlesex. As time went on, however, Brookwood was found insufficient for the demands of the County of Surrey and Netherne was built.

Dr. Gayton, in his report, includes the usual medical and statistical tables, but it has to be remembered that these cover only nine months of the year 1909, and that, naturally, the most of the patients, being transfers from Brookwood and other asylums, were the subjects of chronic insanity. In all 687 were received at the asylum up to the end of 1909, and 2 were readmitted, giving a total of 689 admissions. At the end of the year there were 626 patients in the asylum. Of the admissions, the attacks were first attacks within three months in 50, and in 39 more within twelve months of admission; in 39 not-first attacks within twelve months; in 459 the attacks were of more than twelve months' duration on admission; in 15 the illness was of unknown duration, and in 86 of congenital origin. As to the forms of insanity, there were 39 cases of recent, 100 of chronic, and 16 of recurrent mania; 23 of recent, 29 of chronic, and 15 of recurrent melancholia; 78 cases of delusional insanity, and 179 cases of secondary and senile dementia. There were also 56 cases of primary dementia, 54 of insanity with epilepsy, 13 general paralytics, 82 cases of congenital or infantile defect, and 5 of less common forms of mental disorder. Concerning the probable causation, alcohol was assigned in 62, syphilis in 16, and other toxic factors in 25 more; critical periods in 58; the puerperium in 21; epilepsy in 59, and hysteria in 4; bodily trauma in 17, and mental stress in 110. An insane heredity was ascertained in 189, congenital mental defect not amounting to imbecility in 12, and in 206 no cause could be assigned.

During the year 19 were discharged as recovered, 12 as relieved, 8 as improved, and 24 died. For obvious reasons we refrain from quoting the percentage recovery and death rates. The deaths were due in 11 to nervous diseases; in 4 to heart disease; in 3 to general tuberculosis; in 2 to senile decay; and the remainder, in single numbers, to dysentery, septicæmia, acute gastritis, and Bright's disease.

No serious accident occurred, and the general health appears to have been satisfactory.

WORCESTERSHIRE ASYLUMS.

County and City of Worcester Lunatic Asylum.

THE annual report of Dr. Braine-Hartnell, the Medical Superintendent of this asylum, shows that on January 1st, 1909, there were 954 patients in the asylum, and on the last day of the year 933. The total number of cases under care during the year was 1,063, and the average number daily resident 935. All these figures show considerable decreases on those of the previous year. During the year 109 were admitted, as compared with 83 for the previous year, and 258 for each of the two years before that. Of the admissions for 1909, 94 were direct and 15 indirect admissions; in 30 of the direct admissions the attacks were first attacks within three, and in 12 more within twelve months of admission; in 22 the attacks were either not first attacks or it was unknown whether first attacks or not, but within twelve months, and in the remainder the attacks were either of more than twelve months' duration on admission (23) or of congenital origin (7). The direct admissions were classified according to the forms of mental disorder into: Mania of all kinds, 51; melancholia of all kinds, 24; secondary and senile dementia, 6; delusional insanity, 1; general paralysis, 3; insanity with epilepsy, 2; and congenital defect, 7. As to causation, alcohol was assigned in 10, influenza in 3, syphilis in 4, critical periods in 6, nervous diseases in 3, various bodily diseases in 4, and mental stress in 24. An insane heredity was only ascertained in 8, an alcoholic heredity in 3, and a family history of eccentricity in 1. During the year 34 were discharged as recovered, giving a recovery-rate on the direct admissions of 35.1 per cent., or of the recoveries in the direct admissions on the direct admissions of 33.0 per cent.; also 4 as relieved and 15 as not improved. During the year 77 died, giving a death-rate on the average numbers resident of 8.2 per cent. The deaths were due in 11 to nervous diseases, including 8 deaths from general paralysis; in 18 to diseases of the heart and blood vessels; in 5 to respiratory diseases; in 5 to chronic Bright's disease; and in 1 to asphyxia by suffocation; and in the remainder to general diseases, including 13 from senile decay and 11 to tuberculous diseases. During the year there were 4 cases of diphtheria, 3 of erysipelas, and 1 each of scarlet fever and typhoid. There were 10 serious accidents, all non-fatal, and 3 escapes, all, however, being recaptured shortly afterwards.

County Asylum, Barnsley Hall.

The annual report for 1909 of Dr. Percy T. Hughes, the Medical Superintendent of this asylum, shows that on January 1st, 1909, there were 406 patients on the asylum registers and 505 on the last day of the year. The total cases under care during the year numbered 628, and the average number daily resident 467. During the year 222 were admitted, of whom 173 were direct admissions, 48 transfers, and 1 a statutory readmission. The attacks in 65 were first attacks within three, and in 27 more within twelve months of admission; in 20 not-first attacks within twelve months of admission; in 3 it was unknown whether first attacks or not, and in the remainder the attacks were either of more than twelve months' duration (31), of unknown duration (6), or congenital cases (21). The 173 direct admissions were classified according to the forms of mental disorder into: Recent mania, 25; recent melancholia, 35; secondary and senile dementia, 46; delusional insanity, 5; primary dementia, 22; general paralysis, 7; insanity with epilepsy, 9; other less common forms, 3; and mental defect, 21. As to probable causation, alcohol was assigned in 34, or just under 20 per cent., influenza in 9, tuberculosis in 5, acquired syphilis in 11 and other toxins in 4, critical periods in 64, physiological defects or errors in 26, nervous diseases in 43, other bodily affections in 107, of which diseases of the blood vessels and heart formed the great majority, bodily trauma in 7, and mental stress in 42. An insane heredity was ascertained in 54, an epileptic heredity in 7, a neurotic heredity in 13, an heredity of eccentricity in 2, and of alcoholism in 43, giving a total combination of inherited neuropathic factors of 119. In commenting on the great frequency of a defective heredity in his admissions for the year, Dr. Hughes mentions a patient who died recently in his asylum at the age of 75. She had had ten children, and, either during each pregnancy or immediately after each confinement, broke down mentally, was certified as insane, and sent to an asylum. During the year 28 patients were discharged as recovered, giving a recovery-rate on the direct admissions of 16.0 per cent., or of recoveries in the direct admissions on the direct admissions of 13.2 per cent.; also 15 as relieved and 9 as not improved. During the year 71 died, giving the high death-rate on the average numbers resident of 15.2 per cent. The deaths were due in 17 to diseases of the nervous system, including 9 deaths from general paralysis; in 27 to diseases of the heart and blood vessels; in 8 to abdominal diseases; and in the remainder to general diseases, including 7 from lobar pneumonia, 2 from epidemic pneumonia, and 6 from tuberculosis. The general health was very good throughout the year, and on the male side there was no case of serious casualty, and on the female side only three. The Lunacy Commissioners in their report commented very favourably on the state of the asylum and the general efficiency of the staff.

DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

THE twenty-sixth annual report concerning Dalrymple House, a licensed retreat for inebriate patients, private or certified under the Act, though brief, contains much interesting matter. The Medical Superintendent, Dr. F. S. D. Hogg, includes in his report for the year 1909–10 a general review of the statistics concerning the 935 patients who have been discharged from this institution since its opening. Of the total number, 414 were received under the Act and 521 were private patients, 145 entered for twelve months, 23 for between twelve and six months, 119 for six months, 7 for five or four months, and 114 for three months; whereas of the private patients 333 entered for three months or less, 16 for four months, 100 for six months, and only 72 for longer periods than six months. The longer the duration of treatment the greater the chances of success; and, as Dr. Branthwaite pointed out in his recent report, no thorough treatment of inebriety is possible until compulsory measures have been adopted in dealing with the great class of non-criminal inebriates. Even as matters stand, however, the statistics furnished by Dr. Hogg are of more hopeful augury than might have been expected. They show that 333 of the discharged are doing well and 112 improved, whilst 215 are not improved, 36 insane or mentally reduced, and 97 dead. In 102 no information has been obtainable. Of 417 persons discharged who had been under the treatment of Dr. Hogg about 64 per cent. are reported as doing well. The most common age-period of admission appears to be between 30 and 40 years; the next most common between 40 and 50, and the next between 20 and 30. As to state of life, 462 were married, 425 single, and 54 widowed. As might be expected, the greater number, 546, drank spirits alone, 160 both beer and spirits and 71 wine and spirits, 37 being wine and only 20 beer drinkers. As to habits, 661 were regular and 253 periodic drinkers, the most frequent being monthly and bi-monthly outbreaks. In 80, or 8.0 per cent., there was a family history of insanity; in 197 the father or mother, or both, were drinkers, in 119 the grandparents, in 100 the brothers or sisters, and in 188 the uncles or aunts, in only 334, or 35.7 per cent., there being no family history of insanity or alcoholism. Of complicating diseases from which the patients suffered, and excluding habitual constipation, alcoholic neuritis headed the list with 53 cases, only 9 having cirrhosis of the liver. Turning to the report for the year on January 31st, 1909, there were 10 in the institution under treatment; 51 were admitted, of whom only 19 were entered under the Act, and 43 were discharged, leaving 19 under treatment on January 31st, 1910. During the year the general health was excellent, only 2 suffering from serious ailments. With regard to delirium tremens, Dr. Hogg says that during the last nineteen years only 2 such cases arose after admission. Further, although Dr. Hogg says that he has had no experience of the treatment of those threatened with delirium tremens following an accident or some specific disorder, he has arrived at the conclusion that in uncomplicated cases of inebriety those recover most rapidly whose alcohol is

cut off suddenly. Under this method, he says, it is rare for a man not to be up and about during the day following admission; it is unusual when he does not eat his breakfast on the second morning, although he had been unable to touch this meal for weeks or months previously; in fact, "the desire for food and the enjoyment of meals is a fair test of recovery from alcoholic excess."

FIFE AND KINROSS DISTRICT ASYLUM.

THE annual report for the year ended July 31st, 1910, of Dr. A. R. Turnbull, the Medical Superintendent of this asylum, shows that on July 31st, 1908, there were 607 patients on the asylum register, and that on the corresponding day of 1909 there were 635 on the register. The total number under care during the year amounted to 766, and the average number daily resident 612 6. During the year 159 were admitted, being the highest number recorded for one year in the history of this asylum. Of the total admissions, 122 of whom were first and 37 not-first admissions, the attacks in 71 were first attacks within three, and in 38 more within twelve months of admission; in 38 not-first attacks within twelve months; and in the remainder, including 1 of unknown duration and 7 congenital cases, of more than twelve months' duration on admission. They were classified according to the forms of mental disorder on admission into: Mania of all kinds, 87; melancholia of all kinds, 39; senile, secondary, and organic dementia, 11; general paralysis, 6; acquired epilepsy, 9; and congenital defect, 7. As to causation, alcohol was assigned in 22, nervous diseases in 20; critical periods in 27; childbirth in 10; various bodily diseases in 9; bodily trauma in 3, and mental stress in 21. During the year 54 were discharged as recovered, giving a recovery-rate on the admissions of 28 10 per cent.; 38 as relieved, 1 as not improved, and 38 died. The deaths, which give a death-rate on the average numbers daily resident of 5.63 per cent., were due in 19 to cerebro-spinal diseases, with only 5 from general paralysis; in 11 to chest diseases, including 4 from pulmonary consumption; in 6 to abdominal diseases, and 2 to general or local diseases. Altogether 6, or 15.7 per cent. of the total, died from tuberculous diseases. Dr. Turnbull appends an interesting table showing the weights on admission and discharge of those who recovered during the year. These show that, of the 44 males so discharged, 29 gained weight, 11 lost, and 4 remained stationary; whilst of the 49 females, 24 gained, 13 lost, and 12 remained stationary. In the male class the greatest gain recorded was 34 lb., and the greatest loss 9 lb.; in the female class the greatest gain was 27 lb., and the greatest loss 18 lb. A further interesting fact brought out by these tables is that, speaking broadly, those who had either gained or lost greatly had been in residence in the asylum for a short period, whereas those whose weight had remained stationary had been in residence for very long periods.

SUNDERLAND BOROUGH ASYLUM.

THE annual report for 1909 of Dr. James Middlemass, the Medical Superintendent of this asylum, shows that on January 1st, 1909, there were 387 patients in the asylum, and on the last day of the year 392. The total cases under care during the year numbered 490, and the average number daily resident 386. During the year 103 were admitted, of whom 84 were first admissions.

A study of the monthly fluctuations of the admission-rate has shown Dr. Middlemass that the season of the year has little influence on the incidence of an attack of insanity, and that the condition of trade in the district is probably an important determining factor. Another matter to which he draws attention in the report is the number of suicidal cases admitted. Out of 103, there were 32 suicidal cases, 13 of whom had made actual attempts on their lives. A summary of the coroner's work in Sunderland for the year showed that among the inquests were 20 cases of suicide. In practically every case a verdict of suicide whilst of unsound mind was returned, and Dr. Middlemass concludes that much might have been done to prevent these if the relatives had realized the danger of suicide in states of mental depression. In Dr. Middlemass's experience the two great classes in which suicide occurs are melancholia and chronic alcoholism. Dr. Middlemass therefore advocates earlier entrance to an asylum, and is confident that thereby the suicides will be considerably less in number.

Of the admissions during 1909, in 34 the attacks were first attacks within three, and in 16 more within twelve, months of admission; in 26 not-first attacks within twelve months; in 23, whether first attacks or not, of more than twelve months' duration on admission; and 4 were congenital cases. Of the total admissions, only 1 was in good, and 17 in average, bodily health and condition on admission. The admissions were classified according to the forms of mental disorder into: Recent mania, 21; chronic and recurrent mania, 4; recent melancholia, 24; chronic melancholia, 3; senile and secondary dementia, 6; delusional insanity, 23; insanity with epilepsy, 7; general paralysis, 6; congenital defect, 4; and less common forms of mental disorder, 5. As to causation, alcohol was assigned in 26, or 25.2 per cent., and syphilis in 4; critical periods in 31; diseases of the nervous system in 16; other bodily affections in 7; bodily trauma in 4; mental stress in 18; and child-bearing in 6. An insane heredity was ascertained in 25, and epileptic heredity in 3, of marked eccentricity in 1, and of alcoholism in 19, making a total neuropathic heredity (including the inebriate parentage) in 48 out of the 103. During the year 37 were discharged as recovered, giving a recovery-rate on the direct admissions of 39.3 per cent., which is a low rate for this asylum; 15 as relieved, and 10 as not improved. During the year, also, 38 died, giving a death-rate on the average numbers resident of 9.3 per cent. The deaths were due in 11 to nervous diseases, including 5 from general paralysis; in 12 to chest diseases, with 5 from pulmonary consumption; in 8 to abdominal diseases; and in 5 to general diseases, including 2 from old age. The general health appears to have been good throughout the year, and serious casualties few in number.

GLASGOW DENTAL HOSPITAL.

THE report presented to the annual meeting of the subscribers showed that the number of cases treated during the year was the highest on record, being 14,362, an increase of 1,003 over the number of the previous twelve months. The report stated that it was an extraordinary fact that, with the enormous record of charitable and philanthropic work being done by the hospital during the twenty-five years of its existence, the annual subscriptions by the public were more than £30 less than they were during the first full year of the hospital's history.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns 7,347 births and 5,617 deaths were registered during the week ending Saturday last, November 26th. The annual rate of mortality in these towns, which had been 13.1, 14.8, and 15.5 per 1,000 in the three preceding weeks, further rose to 17.3 per 1,000 last week. Among the several towns the death-rates ranged from 7.8 in Wallasey, 9.0 in Hornsey, 9.2 in King's Norton, 9.6 in West Hartlepool and 10.1 in Handsworth (Staffs), to 23.8 in Stoke-on-Trent, 24.8 in Huddersfield, 26.3 in Middlesbrough, and 26.8 in Tynemouth; in London the death-rate was equal to 19.4 per 1,000. The annual rate of mortality from the principal epidemic diseases in the seventy-seven towns averaged 1 3 per 1,000 last week; in London the rate was equal to 1.5 per 1,000, while among the seventy-six other large towns it ranged upwards to 3 9 in Rotherham, 4.7 in Tottenham, 5 4 in Plymouth, and 5.5 in Tynemouth. Measles caused a death-rate of 1.6 in Rotherham, 2 8 in Brighton, 3.5 in Tottenham, 4 6 in Tynemouth, and 5.4 in Plymouth; scarlet fever of 2.6 in Bury; diphtheria of 1 6 in Swansea; whooping-cough of 1.2 in Norwich and 1 6 in Rotherham; and diarrhoea of 1.5 in Walsall. The mortality from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,882 and 1,843 at the end of the two preceding weeks, declined to 1,769 at the end of the week under notice; 153 new cases were admitted during the week, against 239 and 180 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, November 26th, 834 births and 600 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13 3 and 16.2 per 1,000 in the two preceding weeks, further rose to 16.5 per 1,000 last week, and was 0.8 per 1,000 above the mean rate during the same period in the seventy-seven large English towns. The rates in the several Scottish towns ranged from 10.8 in Leith and 12.4 in Aberdeen to 22.9 in Paisley and 22.6 in Perth. The death-rate from the principal infectious diseases averaged 1.5 per 1,000, being the highest in Dundee, Greenock, and Perth. The 285 deaths from all causes registered in Glasgow last week included 1 from measles, 6 from scarlet fever, 5 from diphtheria, 8 from whooping-cough, 2 from enteric fever, and 9 from diarrhoea. Three deaths from diphtheria were recorded in Edinburgh, 4 from scarlet fever in Dundee, and 2 from diphtheria in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, November 26th, 529 births and 423 deaths were registered in the twenty-two principal urban districts of Ireland, as against 541 births and 396 deaths in the preceding period. The annual death-rate in these districts, which had been 15.1, 16.2, and 17.9 per 1,000 in the three preceding weeks, rose to 19.1 per 1,000 in the week under notice, this figure being 1 8 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 21.0 and 17.9 respectively, those in other districts ranging from 5.1 in Clonmel and 5.3 in Tralee, to 59 0 in Kilkenny and 59.1 in Lisburn, while Cork stood at 17.1, Londonderry at 16.8, Limerick at 5.5, and Waterford at 11.7. The zymotic death-rate in the twenty-two districts averaged 1.3 per 1,000, as against 0.8 per 1,000 in the preceding week.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON H. X. BROWNE is placed on the retired list, November 24th. He was the senior Fleet Surgeon in the Royal Navy, and entered as Surgeon, June 4th, 1878, becoming Staff Surgeon, June 4th, 1890; and Fleet Surgeon, August 11th, 1894. He was Surgeon of the *Condor* during the operations in the Eastern Soudan in 1894-5 (medal with clasp and Khedive's bronze star). Whilst Staff Surgeon of the flagship *Raleigh* he served with the Naval Brigade on shore against the chief Nauna of Bohemie, resulting in the capture of his stronghold (mentioned in dispatches, medal with clasp).

The following appointments have been made at the Admiralty: Surgeon H. B. GERMAN, to the *Victory*, additional, for disposal, November 25th; Surgeon P. D. M. CAMPBELL, to the *Juno*, on recommissioning, November 29th; Staff Surgeon W. R. TRYTHHALL, to the *President*, additional, to be lent to Yarmouth Hospital for sixty-three days, December 1st; Staff Surgeon E. S. MILLER, M.B., to the *Andromeda*, November 24th.

ARMY MEDICAL SERVICE.

Colonel S. C. B. Robinson, who is serving in India, is appointed Principal Medical Officer, 1st (Peshawar) Division.

Colonel T. J. R. Lucas, C.B., M.B., who also is serving in India, is appointed Principal Medical Officer, Jubbulpore and Jhansi Brigades.

ROYAL ARMY MEDICAL CORPS.

Captain H. C. R. Hime, M.B., Brigade Laboratory, Madras, is appointed Specialist in the Prevention of Disease, from October 1st.

FIRST LIFE GUARDS.

Surgeon-Captain A. C. Lupton, M.B., is placed temporarily on the Half-pay List on account of ill health, November 22nd. He was appointed to the 1st Life Guards, May 5th, 1906. He was in the South African war in 1899–1901, being present in operations in Orange Free State (defence of Wepener), the Transvaal (action at Reit Vlei, Rhenoster Kop, and Zilikat's Nek), the Orange River Colony (action at Wittebergen), Cape Colony, and again in the Transvaal and Orange River Colony. He has received the Queen's medal with four clasps.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel J. A. Cunningham, M.D., is promoted to be Colonel, from October 26th. His first appointment bears date April 2nd, 1881; that of Lieutenant-Colonel, April 2nd, 1901.

Captain J. F. Boyd, Brigade Laboratory, Bannu, is appointed Specialist in the Prevention of Disease, from October 10th.

TERRITORIAL FORCE

Royal Army Medical Corps.

First Home Counties Field Ambulance.—Lieutenant B. C. A. Leeper resigns his commission, November 26th.

Attached to Units other than Medical Units.—Lieutenant W. E. F. Tinley, M.D., to be Captain, October 1st. Major A. P. Arnold and Lieutenant F. M. Bingham resign their commissions, November 26th.

For Attachment to Units other than Medical Units.—Arthur H. Falkner, late Lieutenant, 5th Battalion the King's Own (Royal Lancashire Regiment), to be Lieutenant, November 26th.

CHANGES OF STATION.

The following changes of station amongst the officers of the Army Medical Service have been officially reported to have taken place during October, 1910:

		FROM		TO
Surgeon-General	J. G. MacNeece	Lucknow	...	Naini Tal.
Colonel	M. W. Kerin, C.B.	Naini Tal	...	Mussoorie.
,,	T. J. R. Lucas, C.B., M.B.	Cherat	...	Peshawar.
,,	J. C. Culling	Bermuda	...	Chester.
Lieut.-Col.	W. G. Birrell, M.B.	Mauritius	...	Woolwich.
,,	W. L. Reade	Dublin	...	Mauritius.
,,	A. E. Tate	Ambala	...	Kasauli.
,,	G. F. Gubbin	Colaba	...	Irish Comd.
,,	C. Birt	London	...	Dublin.
,,	J. R. Forrest	Bullevant	...	Cork.
,,	G. G. Adams	Hyderabad	...	Colaba.
,,	S. C. Philson	Delhi	...	Bareilly.
,,	P. C. H. Gordon	Bulford	...	Pembroke Dock.
,,	L. T. M. Nash	Ranikhet	...	Hyderabad.
,,	G. H. Barefoot	Bareilly	...	Ranikhet.
,,	J. J. Russell, M.B.	Limerick	...	S. Command.
Major	J. W. Jennings, D.S.O.	Trawsfynydd Camp		Chester.
,,	C. W. H. Whitestone, M.B.	Cherat	...	Peshawar.
,,	G. B. Sainistreet, M.B.	Salisbury	...	London.
,,	F. Wade-Brown	Kilworth Camp		Cork.
,,	R. F. E. Austin	Jutogh	...	Kasauli.
,,	A. F. Tyrrell	Kilworth Camp		Fermoy.
,,	H. V. Prynne	Gibraltar	...	E. Command.
,,	J. E. Carter, M.B.	Landguard Fort		Chatham.
,,	H. A. L. Howell	Gibraltar	...	R.A.C. Factory, Pimlico.
,,	A. H. Waring	Secunderabad		S. Command.
,,	G. B. Riddick	Maymyo	...	Rangoon.
,,	W. E. Hudleston	Golden Hill	...	Portsmouth.
,,	A. W. N. Bowen	Poona	...	Kirkee
,,	W. P. Gwynn	Quetta	...	Karachi.
,,	F. J. C. Heffernan, F.R.C.S.I.	Lucknow	...	Fyzabad.
,,	A. E. Thorp	Tidworth	...	South Africa.
Captain	T. C. Lauder, M.B.	—		Cork District.
,,	F. J. Brackenridge	Dover	...	R.A.M. Coll.
,,	A. O. B. Wroughton	Canterbury	...	Hilsea.
,,	V. J. Crawford	Portsmouth	...	Mauritius.
,,	C. S. Smith, M.B.	Donard Camp		Mullingar.
,,	A. F. Carlyon	—		Devonport.
,,	E. G. Ford, M.B.	Rawal Pindi	...	Campbellpore.
,,	J. M. Cuthbert, M.B.	—		Edinburgh.
,,	W. S. Crosthwait	Cork	...	Fermoy.
,,	R. B. Black, M.B.	Egypt n. Army		R.A.M. Coll.
,,	J. H. Brunskill, M.B.	Aldershot		,,
,,	C. D. Myles, M.B.	R.A.M. Coll.	...	Cosham.
,,	A. R. C. Parsons	—		Edinburgh.
,,	S. B. Smith, M.D.	Curragh	...	Dublin.
,,	A. J. Hull	Dover	...	R.A.M. Coll.
,,	M. C. Beatty, M.B.	Devonpor	...	Tregantle.
,,	E. V. Aylen	Kirkee	...	Nowshera.
,,	P. Davidson, D.S.O., M.B.	Netley	...	R.A.M. Coll.
,,	R. L. V. Foster, M.B.	Fethard	...	,,
,,	J. M. H. Conway, F.R.C.S.I.	Dublin	...	Kilbride.
,,	S. M. W. Meadows	Chatham	...	R.A.M. Coll.
,,	H. V. Bagshawe	Leicester	...	Lichfield
,,	D. S. Skelton	Tregantle	...	R.A.M. Coll.
,,	J. G. Bell, M.B.	Liverpool	...	,,
,,	T. S. Coates, M.B.	Cahir	...	Queenstown.
,,	A. E. B. Wood, M.B.	Shorncliffe	...	R.A.M. Coll.
,,	J. C. G. Carmichael, M.B.	Chester	...	,,
,,	R. H. Bridges	Aldershot	...	,,
,,	J. A. W. Webster	Shoeburyness		,,
,,	F. C. Lambert	Cosham	...	,,
,,	J. B. Meldon, M.B.	Curragh	...	,,
,,	R. C. Wilmot	Dublin	...	,,
,,	H. B. Kelly, M.B.	Curragh	...	,,
Captain	E. M. Pennefather	Fermoy	...	R.A.M. Coll.
,,	B. H. V. Dunbar, M.D.	Richmond (Yorks)		,,
,,	D. Ahern	Cork	...	Limerick.
,,	D. G. Carmichael, M.B.	Newport (Mon.)		R.A.M. Coll.
,,	J. M. M. Crawford, F.R.C.S.I.	Woolwich	...	,,
,,	C. Bramhall	Lichfield	...	,,
,,	J. H. Duguid, M.B.	Ballincollig	...	Youghal.
,,	H. T. Stack, M.B.	Belfast	...	R.A.M. Coll.
,,	B. G. Patch	Enniskillen	...	,,
,,	A. C. H. Gray, M.B.	Aldershot	...	,,
,,	T. S. Dudding	Bury	...	,,
,,	R. H. MacNicol, M.B.	Edinburgh	...	,,
,,	H. H. J. Fawcett	Cosham	...	,,
,,	S. L. Pallant	Chatham	...	,,
,,	C. R. Sylvester-Bradley	Warley	...	,,
,,	S. E. Lewis, M.B.	Norwich	...	,,
,,	G. A. Kempthorne	Amritsar	...	Dalhousie.
,,	P. J. Hanafin	Gosport	...	R.A.M. Coll.
,,	J. D. Richmond, M.B.	Kilkenny	...	,,
,,	E. M. Glanvill, M.B.	Okehampton	...	,,
,,	W. Mac D. MacDowall	Devonport	...	,,
,,	T. J. Wright	Kilbride	...	,,
,,	F. J. Turner	Berwick-on-Tweed	...	,,
,,	E. C. Whitehead, M.B.	Youghal	...	,,
,,	R. B. Hole, M.B.	Queenstown	...	,,
,,	G. E. Cathcart	Wrexham	...	Lancaster.
,,	W. Wiley, M.B.	Netley	...	R.A.M. Coll.
,,	H. Harding, M.B.	Cosham	...	,,
,,	M. F. Grant	Netley	...	,,
,,	E. H. M. Moore	Ross Camp	...	Newport.
,,	M. D. Ahern	Queenstown	...	R.A.M. Coll.
,,	F. J. Garland, M.B.	Manchester	...	Bury.
,,	F. Dwyer, M.B.	Aden	...	Aldershot
,,	P. C. T. Davy, M.B.	Nowgong	...	Jutogh.
,,	R. C. Hallowes, M.B.	Cairo	...	Irish Comd.
,,	G. A. D. Harvey	Khartoum	...	Eastern Comd.
,,	H. C. Winckworth	Limerick	...	R.A.M. Coll.
,,	H St. M. Carter, M.D.	Malta	...	Aldershot.
,,	P. A. Lloyd Jones, M.B.	,,	...	Irish Com.
,,	J. St. A. Maughan	,,	...	S. Command.
,,	R. J. B. Buchanan	Cosham	...	R.A.M. Coll.
,,	R. K. White	Allahabad	...	Cawnpore.
,,	P. Power, M.B.	Limerick	...	Kilkenny.
,,	J. S. Pascoe	Cairo	...	Irish Com.
,,	H. H. A. Emerson, M.B.	Canterbury	...	R.A.M. Coll.
,,	A. M. Rose, M.B.	Aldershot	...	,,
,,	E. L. Moss	Bareilly	...	Ranikhet
,,	P. Farrant	Birmingham	...	R.A.M. Coll.
,,	W. McConaghy, M.B.	Wedgnock Camp		Tidworth.
,,	C. J. Wyatt, M.B.	Edinburgh	...	R.A.M. Coll.
,,	H. E. Gotelee	Ceylon	...	Irish Comd.
,,	A. S. Williams	Dinapore	...	Dum Dum.
,,	C. T. Edmunds	Peshawar	...	Khanspur.
,,	V. G. Johnson	Nowshera	...	Peshawar.
,,	M. G. Dill, M.D.	Maidstone	...	R.A.M. Coll.
,,	D. Coutts, M.B.	Allahabad	...	Cawnpore.
,,	A. M. Benett	Indore	...	Jubbulpore.
,,	J. A. Bennett, M.B.	Mhow	...	Indore.
,,	C. W. Bowle	Ferozepore	...	Dalhousie.
,,	W. G. Aviss	Karachi	...	Quetta.
,,	J. du P. Langrishe, M.B.	Mhow	...	Poona.
,,	J. H. Gurley	Alexandria	...	Woolwich.
Lieutenant	B. A. Odlum	Tidworth	...	South Africa.
,,	A. Hendry	Mhow	...	Indore.
,,	A. N. R. McNeill, M.B.	Ayr	...	Mauritius.
,,	T. B. Nicholls, M.B.	Bulford	...	Tidworth.
,,	F. H. Somers-Gardner, M.B.	Cosham	...	Hilsea.
,,	G. S. Parkinson	Dunree Camp		Enniskillen.
,,	C. H. O'Rorke, M.B.	Curragh	...	Newbridge.
,,	A. T. J. McCreery, M.B.	West Down North		Birmingham.
,,	S. S. Dykes, M.B.	Barry Camp	...	Edinburgh.
,,	E. C. Lambkin, M.B.	London	...	Windsor.
,,	M. J. Williamson, M.B.	Hamilton Camp		Tidworth.
,,	J. R. Hill, M.B.	Monmouth	...	Pembroke Dock.
,,	A. S. M. Winder, M.B.	Curragh	...	Donard Camp.
,,	J. R. Yourell, M.B.	Athlone	...	Omagh.
,,	A. G. Jones, M.B.	Parkhouse Camp		Tidworth.
,,	H. G. Robertson, M.B.	Sheffield	...	Richmond.
,,	H. V. Stanley, M.B.	Kilworth Camp		Dublin.
,,	E. C. G. M. Kinkead, M.B.	Kilworth	...	Buttevant.
,,	E. C. Stoney, M.B.	Colchester	...	Ipswich.
,,	T. W. Stallybrass, M.B.	Hamilton Camp		Netley.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BARNSLEY: BECKETT HOSPITAL.—Second House-Surgeon. Salary, £80 per annum.

BENENDEN SANATORIUM.—Medical Superintendent. Salary, £250 per annum.

BERMONDSEY PARISH INFIRMARY.—Second Assistant Medical Officer. Salary, £120 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Physician. Salary, £70 per annum.

CORNWALL COUNTY COUNCIL.—County Medical Officer of Health. Salary, £500 per annum, increasing to £600.

GLOUCESTER: BARNWOOD HOUSE HOSPITAL FOR MENTAL DISEASES.—Second Assistant Medical Officer. Salary to commence £150 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Two Assistant House-Surgeons. Salary, £75 per annum.

KING'S COLLEGE HOSPITAL, W.C.—Assistant Ophthalmic Surgeon.

LEICESTER CORPORATION.—Resident Medical Officer at the Isolation Hospital and Assistant Medical Officer of Health. Salary, £150 per annum.

LEICESTER INFIRMARY.—(1) Second House-Surgeon. Salary at the rate of £100 per annum, increasing to £120 per annum on promotion as Senior. (2) Honorary Pathologist.

LINCOLN GENERAL DISPENSARY.—Resident Junior Medical Officer. Salary, £175 per annum.

MANCHESTER: ANCOATS HOSPITAL.—Honorary Surgeon.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Clinical Assistants at the Hospital at Hampstead, and in the Out-patients' Department, Fitzroy Square.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—(1) Honorary Surgical Registrar. (2) Pathologist. Honorarium, £50 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Assistant Physician.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £82 per annum.

TRURO: ROYAL CORNWALL INFIRMARY.—House-Surgeon (male). Salary, £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—Senior Resident Medical Officer. Salary, £120 per annum.

WAKEFIELD: WEST RIDING ASYLUM.—Assistant Medical Officer. Salary, £140, rising to £160, and upon promotion to £300 per annum.

WEST HAM AND EAST LONDON HOSPITAL.—(1) Junior House-Surgeon. (2) House Physician. Salary, £75 and £100 per annum respectively.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Assistant Physician. (2) Honorary Medical Registrar.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary, £80 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Poole, co. Dorset; Stourport, co. Worcester; and Mid-Calder, co. Edinburgh.

APPOINTMENTS.

BAILEY, C. H. F., M.R.C.S., L.R.C.P., District Medical Officer of the Newport Pagnell Union.

BUCHANAN, John D., M.B., B.Ch.R.U.I., D.P.H.Vict., Resident Medical Officer at the Fever Hospital, and Assistant to the Medical Officer of Health for Blackburn.

EDMONDSON, W., M.R.C.S., L.R.C.P., Medical Officer of Health of the Lancaster Rural District.

EVANS, A. J., F.R.C.S.Edin., Visiting Surgeon to the Brownlow Hill Workhouse of the Liverpool Union.

FISON, A. H., D.Sc.Lond., Lecturer on Physics at the London Hospital Medical College.

FLOYD, S. G., M.D.Lond., District Medical Officer of the Orsett Union.

FRANCIS, L. A., M.R.C.S., L.R.C.P., District Medical Officer of the Eton Union.

HIRD, R. Beatson, M.D.Birm., F.R.C.S.Edin., M.R.C.S., L.R.C.P., Honorary Ophthalmic Surgeon, Birmingham Lying-in Charity Maternity Hospital.

HUGHES, D. A., M.R.C.S., L.R.C.P., D.P.H., Medical Officer of Health of the County of Carmarthen.

JONES, Howel Buckland, M.B., Surgeon to the Metropolitan Ear, Nose, and Throat Hospital.

KENNEDY, D., M.A., LL.D., M.B., B.S., M.R.C.S., L.R.C.P., House-Physician to University College Hospital.

MOUAT, Thos. B., M.B., Ch.B., House Surgeon to the Chelsea Hospital for Women.

O'MAHONY, J. J., M.B., B.Ch.R.U.I., Certifying Factory Surgeon for the Bantry District, co. Cork.

POTTS, George, F.R.C.S.Edin., Registrar, Central London Ear, Nose, and Throat Hospital, Gray's Inn Road, W.C.

RANDLE, A., M.D., Assistant Medical Officer of the Mile End Old Town Union Infirmary.

REES, W. T., M.R.C.S.E., L.S.A., Medical Officer of Health of the Llanwrtyd Wells Urban District.

WALKER, C. F., M.B., B.S.Lond., B.A., M.R.C.S.Eng. L.R.C.P.Lond., Resident Medical Officer of the Eccles and Patricroft Hospital, Manchester.

WEBBER, L. M., M.R.C.S., L.R.C.P., Second Assistant Medical Officer to the Surrey County Asylum at Netherne, vice Dr. P. C. Coombes, promoted to the post of Senior Assistant Medical Officer at the Surrey County Asylum, Brookwood.

WILLIAMS, S. R., M.B.Lond., Medical Officer of Health of the Buckfastleigh Urban District.

MANCHESTER ROYAL INFIRMARY.—The following appointments have been made:

Senior House-Surgeons.—R. A. Jackson, M.B., B.Ch.B.Vict.; G. M. Benton, M.B., Ch.B.Vict.

Junior House-Surgeons.—A. E. Woodall, M.Sc., M.B., Ch.B.Vict.; T. T. Higgins, M.B., Ch.B.Vict., M.R.C.S., L.R.C.P.

House-Surgeon to Special Departments.—Alex. Porter, M.B., Ch.B.Vict.

House-Physicians.—R. C. Hutchinson, M.B., Ch.B.Vict.; James Cowan, M.R.C.S., L.R.C.P.; C. Y. Laing, M.R.C.S., L.R.C.P.

Assistant Medical Officer at Barnes Convalescent Home.—Ulick J. Bourke, L.R.C.P., L.R.C.S.Edin.

Accident Room House-Surgeon.—G. B. Warburton, M.B.Ch.B. Vict.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

ALCOCK.—On November 26th, at 22, Devonshire Street, W., the wife of N. H. Alcock, M.D., D.Sc., of a daughter.

SHANKS.—On November 24th, at 59, Abbott's Road, Southall, the wife of H. Priest Shanks, L.S.A., of a son.

WHYTE.—On November 28th, at Swatow, China, to Dr. and Mrs. G. Duncan Whyte, a daughter.

MARRIAGE.

STEWART—FRANKS.—On November 26th, at St. Marylebone Parish Church, by the Rev. W. D. Morrison, LL.D, Rector of the parish, Purves Stewart, M.D., F.R.C.P., of 94, Harley Street, London, W., to Elizabeth Phipps Franks, daughter of the late William Franks, Esq., of Liverpool.

DEATH.

FORRESTER.—Charles Carmichael Forrester, M.B., C.M., D.P.H. (late of the Ministry of the Interior, Egypt), fourth son of the late William Forrester of Arngibbon, Perthshire, on October 25th, at Bournemouth.

DIARY FOR THE WEEK.

WEDNESDAY.

HUNTERIAN SOCIETY, London Institution, Finsbury Circus, E.C., 8.30 p.m.—Clinical and Pathological Evening.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5 p.m.—Bradshaw Lecture by Sir Alfred Pearce Gould, K.C.V.O., F.R.C.S., on Cancer.

THURSDAY.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—Papers:—Mr. Ernest Lane: The Treatment of Syphilis. Dr. W. D'Este Emery: Modern Ideas on the Pathology of Syphilis.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

CLINICAL SECTION, 15, Cavendish Square, W., 8 p.m.—Cases and Specimens.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Lectures: Tuesday, 3.45 p.m., External and Middle Ear.; Friday, 3.45 p.m., Clinical Cases.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Wednesday, 4 p.m., The Weak Heart.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., The Signs and Treatment of Dental Caries.

LONDON SCHOOL OF CLINICAL MEDICINE, Seamen's Hospital, Greenwich. Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday. Eye, 11 a.m., Wednesday and Saturday: Radiography, 4 p.m. Special Lecture: Thursday, 4.30 p.m., Applied Anatomy of the Abdomen.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m., Appendicitis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Medical; Friday, Eye. Lectures at 5.15 p.m. each day will be given as follows: Monday, The Significance of Pain as a Symptom of Disease of the Pelvic Organs; Tuesday, The Treatment of Bronchitis in the Aged and Feeble; Wednesday, Infective Arthritis; Thursday, The Results of Nasal Obstruction.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Optic Neuritis. Tuesday, 5 p.m., Clinical Anatomy of the Nervous System. Wednesday, 5 p.m., Surgery of the Nervous System. Thursday, 5 p.m., Clinical Examination of Cases of Diseases of the Nervous System. Friday, 3.30 p.m., Cerebral Tumour.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear. Tuesday, 10 a.m., Medical Out-patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient; 4.30 p.m., Demonstration of Selected Medical Cases. Wednesday, 2.30 p.m., Medical Out-patient, Skin and Eye Clinics; X Rays. Thursday, 2.30 p.m., Gynaecological Operations: Clinics: Medical Out-patient; Surgical Out-patient; 3 p.m., Medical In-patient; 4.30 p.m., Lecture: The Diaphragm in Health and Disease. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday, Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Demonstration of Minor Operations, 11.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Lecture, Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Lectures at 5 p.m. daily, except Saturday

RECENT PUBLICATIONS.

Calendar of the Royal College of Surgeons of England. London: Taylor and Francis. 1910. (Medium 8vo, pp. 385.)

This volume differs little from its predecessors, except that it has been brought thoroughly up to date. The Register of Fellows contains 1,487 names, that of Members 17,030, that of Diplomates in Public Health 674. The Licentiates in Dental Surgery number 2,263, and those who possess the now extinct Licence in Midwifery 323. Details are given as to the number of passed and rejected candidates at all examinations.

The Amateur Gardener's Diary and Dictionary. (Pp. 227.)

This conveniently sized booklet, published at the office of *Garden Life*, serves to remind amateur gardeners of the dates at which different gardening processes should be put in hand, and to enable them to keep records of what is actually done and accounts of the expenditure involved by the upkeep of the garden. The dictionary part covers about 100 pages.

Heredity in the Light of Recent Research. By L. Doncaster, M.A. Cambridge: University Press. 1910. (Royal 16mo, pp. 140. Price 1s.)

This is one of the Cambridge Manuals of Science and Literature, and gives a clear description of present views on heredity, together with an historical summary of theories which have been maintained on the subject. It is a successful attempt to present in comparatively simple form the most important points of a very complicated question. Clear distinctions are drawn between points proved and those which are still speculative.

Pears' Cyclopaedia. General Editor, James Burnley. London: A. and F. Pears, Limited. 1910. (Cr. 8vo, pp. 1022. 1s.)

A new and enlarged edition of a popular encyclopaedia, containing what, at the price, is a remarkable amount of information on some eighteen different classes of subjects, each having an alphabetically arranged section to itself.

Houses, Villas, Cottages, and Bungalows. By George Gordon Samson. London: Crosby Lockwood and Sons. 1910. (Demy 8vo, pp. 142. 3s. 6d.)

A freely illustrated account of fashions in which houses may be built for use in all climates, including rough rules for calculating cost and discussions of the modifications which the precise purposes of houses and their locality entail. Written by an architect for the information of amateurs, it should prove a most useful book to any one who has in view the building either of a mansion or of a week-end cottage.

PUBLISHERS' ANNOUNCEMENTS.

Messrs. P. Blakiston, Son, and Co. announce the publication of a work entitled *American Red Cross Abridged Textbook on First Aid* (General Edition), by Major Charles Lynch, Medical Corps, United States Army.

"More than one-seventh of all the people who die are carried off prematurely by consumption or tuberculosis," says Dr. T. Mitchell Prudden in his little book, *The Story of the Bacteria, and their Relation to Health and Disease*, of which Messrs. Putnam have just published a second edition, revised, enlarged, and illustrated.

Queen Alexandra has accepted a copy of *The Science of Poetry and the Philosophy of Language*, written by Mr. Hudson Maxim, and published by the Funk and Wagnalls Company. Another of Messrs. Funk and Wagnalls's new books is *The Care and Training of Children*, by Le Grand Kerr, M.D. *The Marvels Beyond Science* is an attempt by Professor Joseph Grasset of Montpelier to reduce occult phenomena to a scientific basis. The same author has also recently issued through the Funk and Wagnalls Company a book entitled *The Semi-Insane and the Semi-Responsible*, which has a bearing upon recent discussions on insanity as dealt with by the Royal Divorce Commission now sitting.

Messrs. J. and A. Churchill announce the publication of a book entitled, *The Dawn of the Health Age*, by Benjamin Moore, M.A., D.Sc., M.R.C.S., L.R.C.P. It deals with the organization of a great campaign against disease, and the effect of such a warfare upon the virility and fitness of the resulting race. The book is written for the lay public, to awaken general interest in the social evils which cause so much suffering and destitution.

Mr. H. K. Lewis will shortly publish a new work by the authors of the *Extra-Pharmacopoeia*, Mr. W. H. Martindale and Dr. Wynn Westcott, dealing with the new organic arsenic compound "diamino-dioxy-arsenobenzol," more generally known as "606." It is intended to provide in a handy and condensed form information not readily accessible elsewhere. A review of recent English and foreign literature on the subject is given. The same firm has also just ready a monograph entitled, *Meningitis, Sinus Thrombosis, and Abscess of the Brain*, by Dr. John Wyllie, author of *Tumours of the Cerebellum*. The work contains appendices on Lumbar Puncture and Diseases of the Nasal Accessory Sinuses.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
DECEMBER.	
6 TUESDAY ..	Warrington Division, *Lancashire and Cheshire Branch*, Infirmary, Warrington, 8.15 p.m.
7 WEDNESDAY	Lancashire and Cheshire Branch, Branch Council Meeting, Onward Buildings, Deansgate, Manchester, 4.30 p.m.
8 THURSDAY ..	Bromley Division, *South-Eastern Branch*, 8.30 p.m. Walthamstow Division, *Metropolitan Counties Branch*, Walthamstow Hospital, Orford Road, Walthamstow, 4 p.m.
9 FRIDAY ..	Kensington Division, *Metropolitan Counties Branch*, Kensington Town Hall, 4.30 p.m.
10 SATURDAY ..	
11 Sunday ..	
12 MONDAY ..	
13 TUESDAY ..	London: Standing Ethical Subcommittee, 2 p.m. City Division, *Metropolitan Counties Branch*, Town Hall, Mare Street, Hackney, 4 p.m.; Tea, 4 p.m. Northamptonshire Division, *South Midland Branch*, Board Room, Northampton General Hospital, 2.30 p.m.; Luncheon, Franklins's Restaurant, 1.30 p.m.

Date.	Meetings to be Held.
DECEMBER *(continued).*	
14 WEDNESDAY	London: South-Eastern Branch Council. Richmond Division, *Metropolitan Counties Branch*, Clinical Meeting, Royal Hospital, Richmond, 8.30 p.m.
15 THURSDAY ..	London: Metropolitan Counties Branch Council, 4.30 p.m. Birmingham Branch, Medical Institute, Edmund Street, 3.30 p.m.
16 FRIDAY ..	
17 SATURDAY ..	
18 Sunday ..	
19 MONDAY ..	
20 TUESDAY ..	
21 WEDNESDAY	London: Journal Committee, 2.30 p.m.
22 THURSDAY ..	
23 FRIDAY ..	
24 SATURDAY ..	
25 Sunday ..	*Christmas Day.*
26 MONDAY ..	*Bank Holiday.*
27 TUESDAY ..	*Bank Holiday.*
28 WEDNESDAY	
29 THURSDAY ..	
30 FRIDAY ..	
31 SATURDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 10TH, 1910.

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An Address

ON THE

PRESENT CRISIS IN THE AFFAIRS OF THE MEDICAL PROFESSION,

Delivered before the South Wales and Monmouthshire Branch of the British Medical Association on November 19th, 1910,

BY THE

MEDICAL SECRETARY

OF THE

BRITISH MEDICAL ASSOCIATION.

A SPECIAL MEETING of the South Wales and Monmouthshire Branch of the British Medical Association was held on Saturday, November 19th, at the Old College, Newport Road, Cardiff, Dr. J. Glendinning, of Abergavenny, President of the Branch, presiding. There were over one hundred members present.

The CHAIRMAN briefly introduced the Medical Secretary, who said: Mr. President and Gentlemen, I feel highly honoured by the invitation which I have received from the Council of your Branch to address you on the important subject which is set out on the notice convening this meeting. In approaching that subject I should like to make, if you will permit me, some general remarks on the sense in which the word "crisis" is used in the present connexion. It is a familiar truth that in the history of all human societies, as in the progress of the life of the individual, change is unceasing. The forces that make for development in this direction or that cannot remain in more than momentary equilibrium. Motion, not rest, is the normal state of life. But we recognize also that the spirit of change varies greatly from time to time in the degree in which it manifests itself to our imperfect powers of observation. Over long periods day after day passes without perceptible difference, and it is only by comparing the condition of to-day with the condition of a year ago, or ten or fifty years ago, that the transformations, which in the meantime have proceeded in diverse ways beyond our ken, become apparent. At other times the operations of the great forces by which human destiny is moulded emerge for a brief space from their obscurity, and become apparent to our dull vision. The progress of events becomes more rapid, the changes more conspicuous. The possibilities of divergence—upward, downward, to right or to left—and the consequences of such divergence, impress themselves upon the perception of the most shortsighted, the most inattentive, the most trivially-minded observers.

It is to such notable stages in progress that the term "crisis" is applied, and it is such a stage in the development of the relation of the medical profession of this country to the community that you are invited to consider to-day.

If I have risked wearying you at the outset by these commonplace observations it is because I am deeply impressed by the importance of maintaining a proper perspective in the consideration of matters such as we have met here to discuss. You have all, doubtless, heard or read comments on the present "crisis" in the affairs of the profession, which indicated that in the opinions of the speakers or writers it was due to the wickedness or folly of the present Government in proposing invalidity insurance, or of both political parties, or of politicians in general, in encouraging such an idea; or, that the Majority of the Royal Commission on the Poor Law, or the Minority of that Commission, were to blame for putting forward certain proposals contained in their Reports; or that it was the fault of the British Medical Association in doing too little or their fault in doing too much. I have even seen a letter addressed to the Association in which the whole trouble, as it was considered, was traced to the political opinions ascribed to certain prominent members of the Association. We are told that "great events from trivial causes spring," but as men of science we know that this is only a superficial view. Great events have great causes. The so called trivial cause merely precipitates the event. And in studying the grave problems of to-day we shall do wisely to have regard not merely to the transient phenomena of the moment, but also to the secular forces that have been at work.

Prospective Readjustment of Conditions of Medical Practice.

What, then, is the present crisis? What must we regard as its causes, whether immediate or more remote, and what is to be the attitude of the profession towards the whole matter? Stated shortly, the crisis which we have in mind is that connected with the almost immediate prospect of a systematic readjustment by public authorities of the conditions of medical practice among a very large section of the community. One does not, of course, mean by the use of the word "crisis" that the prospect before us is either favourable or unfavourable. It may be one or the other. All that the word "crisis" means is that we have come to a turning, to a time of definite judgement, to a time of decision. The important point is that it is a time when possibly by an opportune and well-calculated intervention we may exercise a greater influence upon the future history of the profession than could be effected by the same expenditure of energy at any other time.

State Sickness and Invalidity Insurance.

Of the definite events which have marked the onset of this crisis, which have brought it prominently under our notice, the most recent and the most important are the promises given by the present Government that if they remain in power they will introduce an extensive scheme of State sickness and invalidity insurance. Having regard to the uncertainty of political prospects, we have also to take into consideration the fact that the national convention of the great political party upon which any alternative Government must depend has declared itself in favour of a scheme of invalidity insurance, guarded by certain qualifications which do not differ very greatly from those which Mr. Lloyd George has declared must accompany his scheme. So that, practically, whatever the political future of the country may have in store, we may expect the early introduction by some Government of an extensive scheme of State sickness and invalidity insurance. Now, primarily, the object of such a scheme must be the provision of sick pay, of money that will keep the workman, or any other person insured, and his family from starvation, providing them at least with some of the requirements of life during a period of sickness or during the period of invalidity. It is not absolutely necessary that such a scheme should include any specific arrangements for the provision of medical attendance; but if we look at the matter practically, we see reasons that must compel any Government introducing a national scheme of sickness insurance to take into consideration how the persons insured are to be medically attended during the time of their illness.

In the first place they must consider the insurance fund as affected by the question of the period of sickness. If they allow the workmen—or all those insured—simply to go as they please as regards medical attendance, it is obvious that the period of sickness may be greatly and unnecessarily prolonged, with consequent increase of the burden on the insurance fund. We have also to bear in mind that the Government in introducing such a scheme must have regard to the maintenance of the health of the individual in the interests of national efficiency, and the provision of efficient medical attendance must be an important means to this end. Thus we see broadly how the institution of a Government sickness and invalidity insurance scheme must be recognized as opening up a prospect of wide readjustments of the system of medical attendance of those insured, who, we are informed, will be a very considerable proportion of the community.

Poor Law Reform.

But prior to, and, doubtless, directly leading up to, these insurance proposals, you had the Report of the Royal Commission on the Poor Law, in which the causes that lead to pauperism, the causes of distress and destitution among the poor, were very thoroughly analysed. Although there were differences among the Commissioners as to the lines of the reforms necessary to meet those difficulties, they agreed at least to this extent, that an important part of the evils which they found was due to the defective character of the existing arrangements for the provision of medical attendance for a large section of the community. The Commissioners analysed not only the existing public provision of medical relief, but also the provision through medical charities, and the provision through various kinds of provident organizations, clubs and the like, and both sets of Commissioners came to the conclusion that all these were defective. Both of them made proposals as to the better organization of medical attendance. The Majority of the Commissioners proposed that provident or insurance organizations should be adapted. They proposed that throughout the country the local public assistance authorities should have imposed on them the duty of organizing a great extension of the present provident dispensaries, which should be under semi-public control—that is to say, under a committee in each district partly nominated by the local authority. Incidentally we may note that they proposed that the local Division of the British Medical Association should appoint members of this committee of management, and should be consulted as to wage limits, and as to the rates of remuneration of the medical officers.

Recommendation of Minority Commission.

The Minority of the Commissioners proposed as an alternative that the local health authority should appoint, throughout the country, salaried medical officers—selected salaried officers—who should attend any persons who applied to them for treatment, and that the local authority should subsequently recover, from those who were possessed of sufficient means, the cost of such treatment.

More General Causes: Recognition of Importance of Individual Health.

These are, roughly stated, the proposals of the Government on the one hand, and of the two sets of Poor Law Commissioners on the other, and these are the immediate events which have precipitated, or made more apparent to our eyes, the prospective changes which now require our earnest consideration. I have already indicated, however, that in my judgement, if we are to face this problem scientifically, we must go behind the proposals of the Government, the proposals of the Majority of the Royal Commission, and of the Minority. We must look to the deeper causes which have led their authors to make such proposals. The first that I would trace is the growing national consciousness of the importance of the physical efficiency of the individual as a national asset, as the foundation on which our national well-being rests. We can trace this, in a variety of ways, in much recent legislation; but, of course, we can see it growing all through the nineteenth century in what we know as sanitary legislation. It is not insignificant that one of our greatest sanitary reformers, Chadwick, brought his proposals before the country immediately after or simultaneously with the great Poor Law Commission of the early thirties, so that the analysis of pauperism and the method for dealing with it, and the analysis of the question of physical inefficiency and the means for dealing with that, were before the nation simultaneously at that period, as they are again to-day.

Greater Disposition towards State Intervention.

Another undoubted cause of such proposals as we have reviewed is the growing disposition in this country at the present time towards direct deliberate public intervention in matters which were formerly left to individual or voluntary action. Now, you may deplore that or you may approve of it. What I want to put before you is that it is a fact—a fact beyond our control. When reference has been made to this fact on previous occasions, the cry at once has been raised "Socialism." Of course, as a profession, we advocate nothing on these matters, but it is our duty, as members of a calling who should above all others be scientific in our political activity, as in every other department of our work, to recognize the data of the problems we have to deal with. The fact is that, whether for good or for evil, this country is at present passing through a period of reaction from the doctrines of what used to be called the Manchester school, or *laissez-faire* school, who upheld the idea of leaving people to look after themselves, of the State interfering as little as possible, of trusting to the forces of individual action to solve social problems. That attitude has for the time being passed away. We may

come back to it possibly. These tendencies move in cycles, but the disposition at the present time throughout the whole country is towards more deliberate and systematic organization in matters of this kind. There are those who still think that it is better to leave the individual to work out his own salvation as far as possible. There are, at the other extreme, those who have adopted a definite theory of complete social organization, and who look forward to a time when every kind of social activity is going to be systematically regulated by the community. There are those, again, who think that it is a mistake to attach too much importance to theories, individualistic or socialistic; that at present, at all events, the data for any truly philosophic theory of social operations are not available, and that it is not necessary to have regard to such theories in order to deal efficiently with the problems before us. They hold that there is no more reason why you should have some complete social or political doctrine in order that you may be able to deal with current political problems than there is need to comprehend the internal structure of the atom in order to decide what you are going to have for breakfast.

Attitude of the Medical Profession.

No doubt you all have your own views on these matters to which you give effect as citizens in your ordinary political capacity. But when you come to deal as members of the medical profession with those questions in which you have to act as a body in relation with the community, I venture to suggest that, unless you think that the medical profession as a whole is prepared to undertake a proselytizing propaganda on behalf of some special political doctrine, you must, as scientific and practical men, be content to take public opinion as you find it. You will, of course, appreciate that, in saying this, I refer only to such general political, rather than strictly professional, questions as that of the proper limits of State interference in the protection or promotion of personal health. When it comes to a consideration of concrete proposals directly affecting medical work—when, for example, you have to consider the relative expediency of the employment of whole-time salaried medical officials to carry out treatment, or of individual doctor and individual patient being left to arrange matters between themselves, your judgement will doubtless be affected by your general individualist or collectivist bias. But even here I would venture to suggest that you should, as far as possible, keep your minds concentrated upon the practical problem before you, and consider, not what effect a given solution of that special problem would have upon general political arrangements, but what solution, under the assigned conditions, seems most likely to provide an efficient medical service, and to put the medical practitioner in a position in which he can best do justice to his patient and to himself.

Development of Medical Union.

Having thus put before you the immediate events and the more enduring social causes which have led, as it seems to me, to the present prospect of an extensive readjustment of the conditions of medical practice, and before proceeding to discuss details, I must allude to one other general tendency which must be taken into account in approaching this important subject. That is the development of union in the medical profession in recent years. Another sign of the times is the rapid growth in the last twenty years of "class consciousness" in the medical profession. Medical men to-day have undoubtedly a more acute perception than in the past of the economic difficulties from which they suffer as a class. They are more disposed than heretofore to look on their personal difficulties, not merely as affecting themselves, but as examples of trouble affecting the whole profession. There is also a greater disposition than before to sink their differences among themselves and to take united action for the common good of the profession. The reorganization of the British Medical Association in the year 1902 was a symptom of this change in professional feeling, and another symptom noticed within the last two or three years is the greatly increased activity of the Divisions and Branches of the Association in grappling with various medico-political problems. Whatever you may think of correspondence that has recently appeared in the BRITISH MEDICAL JOURNAL, whatever you may think of the action taken by various Divisions on the subject of invalidity insurance, whether you agree with them or not, you must at any rate agree that a far larger number of members of the medical profession than at any previous time have taken an active interest in the problems now before us, and have begun to apply their minds to finding some kind of solution. We notice a disappearance of apathy, a greater desire for reform, a greater hope of reform, a greater perception that in combined action is the only true prospect of reform, and a greater disposition than heretofore to sink our minor differences in order to co operate in such action.

The Definite Problems Requiring Attention.

We have now considered the nature and causes of the present crisis in the affairs of the medical profession, and we have looked at the equipment of the profession for meeting it. We have next to consider what is to be our attitude towards the concrete problems that may shortly be brought before us. One might answer that question almost in a word. One might simply say "union," and leave it there. The beginning and end of the whole matter is that the profession should study the subject as a united body and take action unitedly and not as a mere congeries of individuals. But you will expect me to put before you some practical suggestions bearing on different practical considerations that you may have to deal with before long. Of course it would be entirely beyond my province, or my duty, to suggest to you what the policy of the Association should be. That is a matter for you to decide. You will shortly have placed before you a Report by a Committee of the Council of the Association in which the whole of these matters will be carefully analysed, and definite questions will be submitted to the Divisions for their consideration. But in the meantime I may perhaps foreshadow the general lines of that analysis. The practical problems that you have to consider fall really under four heads. These are, first, the questions that may arise in connexion with any Government insurance scheme. Secondly, there are the questions that we might have to deal with if the proposals of the Majority of the Royal Commission on the Poor Law were given effect to by legislation and by Government action. Thirdly, you have to consider what should be your attitude in respect of the proposals of the Minority of that Commission. Lastly, you have to consider what, apart from any such Governmental action, the profession can and should do to remove present difficulties. Even if the Government bring forward no scheme of sickness insurance, even if there be no legislation to give effect to the proposals of the Poor Law Commission Reports, there still remain, I would suggest to you, the problems with which the British Medical Association has been grappling for the last eight years, and of which we have been steadily moving nearer to a solution.

Medical Service in Connexion with State Sickness Insurance.

Each of these schemes of reform requires consideration, although time does not permit of discussing all in detail. I take first State sickness insurance, as probably that which will first demand our practical attention. I have already pointed out that in any scheme of State sickness insurance the provision of sick pay would be the primary object. But we must, I think, realize that in one way or another the institution of such a scheme must greatly affect existing arrangements as regards medical attendance.

General Provisions: Contributories and Contributions.

Before proceeding to consider the special question of medical attendance, let us look shortly at what we may expect to be the general provision as regards insurance. We have the example of Germany to go upon; and, although we understand that the Government hope to improve greatly (as we should always hope to do in this country) on the example of Germany, nevertheless we have some grounds for taking that as an illustration of what we may expect. In the first place, of course, the scheme is to be contributory. That is to say, there will be a payment by the person for whose benefit the insurance is instituted. The contributions of the insured will probably form a large proportion of t

insurance fund. Then there will be contributions from employers of labour, and we may anticipate that the existing machinery of the Truck Act, with which you are so familiar in South Wales, will be followed—that is to say, that the payments of the workman will be obtained through a direct deduction from his wages made by his employer; that the employer will pay that to the Government or to the managers of the insurance fund, and will add to it a fixed proportion from his own funds. Then there must be a contribution from the State. The whole idea of the scheme is that, at all events at the existing rates of wages, you cannot expect all the wage earners of this country to make effective provision to meet their requirements during sickness and invalidity—that their means do not permit them as a class to do so. That is the only ground upon which such a scheme could be brought forward—that the State recognizes that there is need for protecting the health of these people and preventing them from sinking into pauperism, that in the interests of the community the State must undertake the organization of such a fund, and that there must be a State contribution to the fund. Now on what basis that State contribution will be calculated we do not know. In Germany the State contribution to invalidity insurance bears a fixed relation to the contribution of the workman. Putting the same statement in another form, which has become familiar in the correspondence columns of the Journal, the contribution of the State, if it followed the German precedent, would be in effect a capitation payment, a payment to the fund of so much per head of those insured. But there are those, at all events in the medical profession, who hold strongly the view that the State ought not in that way to limit in advance the amount of its contributions; that the State should act as a guarantor of the fund; that while it should calculate as closely as it can, of course, what the liabilities of the fund as regards sick pay and as regards provision of the cost of medical attendance are likely to be, it should not attempt to set aside a definite sum out of the national Treasury to meet that liability; that it should be prepared from year to year to make up the difference between the receipts of the fund from the workmen and from the employers on the one hand, and the expenditure of the fund in sick pay, cost of medical attendance, and administrative expenses on the other. That view of the case is particularly put forward by those who desire that the payment of the doctors should be on the basis of what is called "payment for work done," or, better perhaps, payment per attendance; and they think, some of them at least—I do not want to do any injustice—that it is almost necessary for the institution of that system that we should satisfy the Government that it is its duty to accept what may be described as an unlimited liability in respect of the amount of the national contribution to the insurance fund. That point will be important when you come to discuss the relative merits of capitation payment on the one hand or payment per attendance on the other. I say nothing at present as to the likelihood of the Government accepting that view, but it is only right to mention the reasons which it is suggested that the medical profession should urge on the Government in order to induce them to take that view. If, it is suggested, the Government accepts the responsibility for the national health, the Government should neither limit in its estimate the amount of medical attendance that a patient is to receive, nor yet limit the payment to the doctor to an amount based on the attendance that the patient is expected to require, leaving the doctor to bear the burden if the attendance actually required is greater than that anticipated.

General Arrangements for Medical Attendance.

(i) *Non intervention of Government.*

Coming more closely to the question of medical attendance, it is conceivable that the Government may deal with that in any of several ways. In the first place they may simply, as it were, ignore it—that is to say, they may simply provide that during sickness or invalidity the workman shall receive, or his family shall receive, a certain amount per week, and may leave him absolutely to make his own arrangements as regards medical attendance. Let him provide, it may be said, for his medical attendance as he likes. Let him pay for his doctor out of his sick pay; give him sick pay on a sufficient scale to enable him to pay for his doctor, and let him either pay for his doctor week by week as long as he requires attendance, or let him, if he likes, subscribe to some provident dispensary or some friendly society or some other organization that will arrange that he shall have a doctor when he requires one.

(ii) *Arrangement with Existing Bodies where Possible.*

The second conceivable way is that the Government may leave it as far as possible to existing organizations under definite arrangements, and make special provision for those outside those organizations. We have the statement of the Chancellor of the Exchequer that he proposes to arrange with the friendly societies as far as possible—that he is not going to interfere with their operations in any way that he can avoid. In his interview with the Grand Master of the Manchester Unity, he pointed out that outside the friendly societies there were 10,000,000 people to be provided for, and therefore that the problem could not be dealt with as one affecting only the friendly societies. But that very statement may be read as implying that, in so far as members of friendly societies were concerned, it should be left to their organizations to deal with the whole matter. In that case the provision of medical attendance for members of friendly societies and their families would continue to be made, subject to the consent of the medical profession, on the existing footing of the employment of friendly society doctors. But there would still remain the 10,000,000 outside the friendly societies for whom some provision must be made, and for whom there are few existing organizations. It might be possible for the medical profession to organize the provision of medical attendance for those 10,000,000 by an organization similar to that of the Public Medical Services, schemes for which have been circulated to the Divisions. That is to say, you may form a committee in every district who should represent the local profession in the negotiations with the insurance fund. The doctors of each district would undertake to provide the attendance, the arrangements being made by their committee for them. If any medical committees such as I have suggested were formed they would probably not be contracting parties, contracting on the one side with the Government and on the other side with the individual doctor. The actual legal arrangement with the Government would be entered into by each individual doctor on his own behalf, he agreeing to give attendance under the conditions laid down by the scheme to those patients who might desire to avail themselves of his services, the choice of doctor being left to the patient. The doctor, agreeing with those who wished for his services, would undertake to attend on the terms laid down in the scheme, but the terms and the scheme would be arranged on his behalf by a committee appointed by himself and his professional colleagues in his district.

(iii) *Arrangement with Medical Committees.*

A third possibility is that the medical profession might undertake the organization of the provision of medical attendance for all the insured, on the lines I have last suggested—that is to say, that the profession throughout the country should organize in every district a medical committee who would act on behalf of all the individual doctors in that district who wanted to enter into the arrangement, and would undertake, on their behalf, that attendance should be given by them, on the terms agreed, to all the insured in the district.

(iv) *Direct Government Employment of Doctors: State Medical Service.*

The last possibility for consideration is that the Government might decide to organize medical attendance either for the whole of the insured or for those outside the friendly societies through an official staff of their own. That might be done in one of several ways. Those who advocate the system of payment per attendance have suggested that the Government might have a paymaster in every district—he might be, say, a postmaster or Inland Revenue official, or existing official of that kind—who would be authorized to issue vouchers to the patients—to the

insured. When the insured person required attendance, he would obtain a voucher and would send it as an order to the doctor of his choice. The doctor would give the requisite attendance and, in due course, would send in an account on the form to the paymaster, who would pay the bill. If, on the other hand, the capitation system of payment were adopted, each person insured would enter periodically on a list which the local paymaster would keep the name of the doctor whom he desired to employ in case of illness. He would be given a ticket to be presented to that doctor when his services were required, and it would be the duty of the paymaster to pay each doctor periodically at the rate of so much per head for all those persons who, for the time being, had placed themselves on that doctor's list. The Government might conceivably, but I do not say that they would, arrange the matter in either of those ways. Another very possible solution, one which you must always have present to your minds in consideration of this subject, is that those who have advocated, as in the Minority Report of the Poor Law Commission, the employment of whole-time salaried medical officers by each local authority, are not unlikely to press the same principle on the notice of the Government in this matter of State sickness and invalidity insurance. An influential section of the general community are in favour of applying the principle of the Civil Service to medical practice; they want to convert the medical profession as far as possible into a State service. The Government, if adopting these views, would appoint one or a small number of doctors in every district at fixed salaries who should give all the attendance that was required for that district for all the persons insured. We must recognize that that proposal is of a kind which will have, at any rate, a superficial attractiveness for public men. It has the advantage of an apparent simplicity. It has also the advantage of giving an apparent greater direct control over the persons who are actually giving the medical attendance. In any proposals that the British Medical Association are thinking of putting before the Government I am sure they must have present to their minds whether first of all they do or do not like the idea of the conversion of the profession into a State service on the lines I have mentioned. You will understand, of course, I do not advocate any such system. I advocate nothing. I am simply putting before you as candidly as I can the various possibilities of the position. It will be for you when the time comes to weigh them all up calmly and judiciously one against the other and consider, as practical men have to do, not what is the ideal you would aim at if the settlement of the whole matter rested entirely in your hands, but what you would desire others, who may have to negotiate on your behalf with the Government, to accept subject to what the Government could be induced to give. So much for the general organization of attendance in the various forms which it might take.

Selection of Doctors.

Next there are certain practical points of great importance in the organization of any such service, which we must examine in some detail. First is the question how the doctors are to be selected. You will see that I have already suggested two conceivable methods of selection of doctors under such a scheme. The first is that a relatively small number of doctors throughout the country should be employed to do the whole work, these doctors being chosen by the Government, or chosen by the friendly societies, or chosen by local committees appointed by the Government to deal with the matter, but not being chosen by the patients themselves. The other alternative is that the patient should be allowed to choose his own doctor, and that it should be open to every doctor to attend patients under the scheme. These are the two alternatives on that matter which the profession will have to consider. So far as I have been able to judge, the preference in the country generally is for leaving the patient the choice of doctor. That, I believe, to be the principle generally approved by the majority throughout the Association.

Basis of Medical Remuneration.

The decision of the question of choice of doctor may greatly affect the consideration of the next question—that is, the basis of remuneration. There are three ways, of course, in which the doctor could be paid. He might be paid a fixed salary per annum irrespective of the number of people he would be called upon to attend and irrespective of the amount of attendance that he would have to give, though, of course, his salary would be adjusted from time to time in regard to the amount of his work, as all such salaries are. Secondly, he might be paid at the rate of so much per head for the persons for the time being on his list, a fixed rate per annum proportionate to the number of people on his list. Thirdly, he might be paid according to the number of attendances which he had actually given. Now, you will observe that these are gradations. The extreme insurance risk is borne by the doctor on the fixed salary system. There his remuneration is not directly proportionate to the number of his patients or to the number of his attendances. The next in degree is the capitation system, where his salary is proportionate to the number of his patients, but not to the number of attendances required. In the last the remuneration would bear a direct proportion to the number of attendances. I will not go into the question of the advisability of fixed salary, because it seems to me that it depends entirely on your opinion as regards the advisability of the employment of whole-time doctors or of leaving the patient to chose his own doctor. If you have a system of whole-time doctors, of course fixed salaries are almost inevitable, though it is conceivable that there might be payment on the capitation basis, but in the case of choice of doctor by patient a fixed salary system can hardly be applied. As to the relative merits of capitation payment and payment per attendance there are, as you are aware, strong divergences of opinion manifested at the present time in the Association. A number of members of the profession have written to the JOURNAL, and a number of Divisions have passed resolutions, strongly supporting the principle of payment by fee per attendance, and others are equally strongly of opinion that, on the whole, the profession would come off best, would get the most remuneration, and be in the most satisfactory condition, if they obtained the basis of capitation payment. The difficulties surrounding the consideration of that question will be placed fully before you by the Committee, and you will have to consider the relative merits of the two systems and express your opinion upon them. I do not think it is desirable that I should in that matter anticipate in any way the considerations to be placed before you in the Report.

Uniformity or Local Option.

An important point in regard to all these matters is whether you are going to press for a uniform policy to apply to every district alike, or whether you are in favour of retaining some degree of local option, and, if so, to what matters that local option should apply. Of course, if the Government adopted some kinds of administrative arrangements, it is probable they would prefer to have a uniform system throughout the whole country, and there are those in the medical profession who believe that in this and other matters a uniform policy is the more advisable. The adoption of a uniform policy, if successful, does not throw such a great onus on the profession in each district as regards struggling for the improvement of their local condition. If you can be sufficiently united in the profession in favour of a uniform policy, and if you can, through direct advocacy, induce the Government to give you what you want, that, obviously, makes it much easier for you afterwards. That is clear; but in estimating your chance of success on those lines you must have regard to practical considerations, and perhaps you will forgive me, seeing that my life is spent in medical organization, if I put to you some of the practical difficulties which occur to me as a medical organizer. In the first place, to succeed on lines of uniformity means, to my mind, that you must have a profession almost unanimous as to what they want, and past experience has shown that it is very difficult to get that degree of accord in the medical profession. I suppose we are one of the most individually-minded of all professions. Medical practitioners, in the nature of their work, have to be self-reliant. In their daily work they are comparatively isolated. They are also men usually of high intelligence who think things out for themselves, and it is peculiarly difficult to get them to come to common conclusions. I speak from experience. But if you permit local option, you can have union without unanimity on detail. Each district can go its own way.

The second point is this: If you attempt to secure the adoption of a uniform policy applying throughout the country in a matter of this kind, you must secure the consent of the Government. Supposing the Government are not at first disposed to agree with you, what kind of pressure are you going to bring to bear on them? There is the pressure of reason, and I have no doubt that any scheme we put before them would be so well thought out that any reasonable Government would accept it without question. But all Governments are not reasonable. Other forces besides those of reason are known to impinge upon their minds, and if such forces came into play, what pressure can we, 35 000 or 40 000 of the 45 000,000 of this country, even if we are fairly united, bring to bear on the central Government? You are staking your all on one throw of the dice, and if you lose you lose all. There is one other consideration. A uniform policy tends to what I would call a minimum policy. The tendency of a uniform policy is that the terms you get are the lowest that the least favourably situated section of the profession could get in any part of the country for themselves. That is my general impression. On the other hand, if you leave these matters to local option, you have at least this in your favour: Those districts in which men are strongly united and local conditions favourable can get better terms for themselves. Those districts that are least favourably situated have that standard to work up to. Certainly as a matter of organization, if you have to set to work to improve the conditions of the profession, I do not say in every problem, but in a good many, you would find it easier to improve those conditions by steady, persistent local action than by an attempt to carry your point by a single stroke.

All Sections of the Profession Concerned.

I have already indicated that such proposals as we are discussing affect practically the whole profession, and I do not think it is sufficiently realized to what extent they do affect the profession. Some think, apparently, that it is a matter which will merely affect the club doctor. I do not think so at all. One object is to provide more efficient attendance for a large section of the community than they are at present obtaining. In my earlier remarks I pointed out that in the Reports of the Poor Law Commissioners the Poor Law system of medical attendance, the medical charity system of medical attendance, the club system of medical attendance, had all been examined and found wanting from the public point of view. But they have all been found wanting from our point of view. Under each of these systems, not according to the statements of the medical profession, but according to the Reports of the Poor Law Commissioners, the medical profession are either being inadequately remunerated or not remunerated at all. So that there is room for improvement on both sides. Now, as regards the Poor Law, the object of any system of national insurance must be to enable persons, who hitherto have either been driven to the Poor Law for medical relief or have not been able to get such relief, to obtain it for themselves by a system of insurance to which they would contribute. That must be one object—to enable people, who, under our existing most defective system, have to get medical relief entirely at the public expense, to provide it for themselves on provident lines, by insurance. That means a diminishing amount of medical attendance under the Poor Law, and I think I may say a concomitant improvement in the conditions of practice of private practitioners. As regards the Poor Law medical officers, who would still be required to attend those who, even under this scheme, could not provide for themselves, if we can succeed in securing satisfactory conditions of medical employment under the State sickness scheme, they must benefit by the general raising of the standard. As regards medical charities, I find it difficult to conceive how our present system of medical charities—supported by the voluntary contributions of the benevolent, and the gratuitous services of the medical profession—can be continued on the present basis concurrently with any national system of sickness insurance. Any system of sickness insurance must surely provide for all requirements during sickness, including the cost of medical attendance; I cannot see how it can be said to insure against the cost of sickness if some of the patients are referred for treatment to a system that is so variable in different parts of the country as our existing system of medical charities. If you had hospitals of identically the same character all through the country, if there were everywhere within reach an institution of the same general character, I can understand the insurance fund availing itself of such institutions; but even then I doubt whether the benevolent would continue contributions that would usually be merely in relief of the taxation that would otherwise fall on their fellow citizens. Charity will be given to those things for which the public fund does not provide at all, or does not provide in the way in which the charitable desire to see provision made; but the contributions of the benevolent will not persistently flow to those objects which are at the same time being provided for in the same way out of the public fund. In other words, Why should the individual taxpayer contribute, not for the relief of the necessitous, but for the relief of the taxes? Then the club system would probably be modified under such an arrangement. The nature and extent of such modification would depend largely on your action. At present no satisfactory system of medical attendance is organized for dealing with the ten millions who are outside the friendly societies. The medical profession have the opportunity of organizing the provision for these or largely determining how it shall be organized. Assuming that the Government left the arrangements as regards the friendly society members to the friendly societies themselves, sooner or later the friendly societies would be compelled to bring their services up to the standard of the outside service established by, or in accordance with the views of, the medical profession. Lastly, as regards private practice, we know the conditions of such practice to-day among the section of the public for whom such a scheme would provide. We know that in a large number of cases, even if the doctor enters in his books certain fees which he expects to be paid, the proportion of them actually paid is regrettably low. At the same time you must realize that if the Government instituted a system of sickness insurance which provided for a large section of the community, and if they undertook in any way the organization of the medical service of those who are insured, it may interfere very greatly with private practice among that section of the community. Among them medical practice, apart from the service of the insurance fund, must to a great extent disappear. Then even as regards the consulting branches of the profession, we must expect that the institution of a medical service of this kind, with the changes which it would inevitably bring about in the organization of medical charities and the changes it would bring about as regards the necessity for obtaining efficient medical attendance, must alter their position. The specialist or consultant must be called upon from time to time to advise the medical officer of the insurance fund, and for such service he must be paid from the insurance fund, and his position therefore must be changed by the introduction of such a system.

Poor Law Reform Proposals: Majority Report.

That completes what I have to say of the possibilities of State sickness insurance. I do not need to go at the same length into the alternative possibilities suggested by the recommendation of the Majority or Minority Poor Law Reports. Adoption of the Majority Report would mean the extension of the provident dispensary system throughout the country, the extension, in other words, of a medical insurance system. It is very unfortunate that the words "provident medical service" appear to have such an unhappy association in the minds of many members of the profession. I heard a statement made the other day by a practitioner who had given great attention to the subject. He said that he did not like the word "provident" medical service, because it savoured of charity. Could there be a greater paradox than to say that a provident service savoured of charity? If it be a true reflection on the existing so-called "provident" organizations, it shows how improvident they are. The very essence of providence or insurance is that the insurer provides for his needs, and if he does not, it ceases to be a provident service. If a doctor is asked to give his service for less than his market value, to that extent the doctor is giving his charity to the patients

who get attendance from that service, and to that extent it is not a provident service. One is amused sometimes at the arguments put forward by leaders of friendly societies in this matter. At a conference twelve months ago we heard the boast made once again by leaders of friendly societies that they wanted to pay for what they had. Their idea was to pay for the service they got, and yet, on the other hand, one of those same gentlemen, in the annual report of the order he represents, says that the attitude of the medical profession in asking for higher remuneration is not a "generous" attitude. You cannot mix business and charity in that way. Either friendly societies are paying their doctors less than they should, and are receiving to that extent charity, or they are paying the full amount and have no need to complain of our want of generosity. The difference between the scheme of provident service foreshadowed by the Majority of the Poor Law Commissioners and the scheme organized under State insurance would be this: In the first place, of course, the provident institutions proposed by the Commissioners being purely medical organizations would not provide sick pay. Secondly, these dispensaries would not be directly under the State. They would be organized by the local authorities with possibly some assistance from the medical profession through the British Medical Association; at any rate, we should have some say in the matter. Thirdly, so far as we can foresee, the source of income, the funds out of which the doctors would be paid, might consist solely of what the patients could afford to contribute. The local authority might, however, contribute to the fund in the same way that the State proposes to contribute to the State sickness insurance fund under that system. It is proposed it should be open to every doctor in the district to take part in the work, and that the patient should have a reasonable choice of doctor. It is proposed that the medical profession should be directly consulted as to the arrangements, and that there should be a bargain with them as to the rate of fees and the wage limit of patients. There, again, you must realize that if Parliament should reorganize the Poor Law and create public assistance authorities on such lines as the Commissioners propose, and if it were made part of the duties of these authorities to organize throughout the country provident medical services on the lines foreshadowed, that must greatly affect all branches of medical practice.

Poor Law Reform: Minority Scheme.

The next proposals for consideration might affect the profession even more—those, namely, which are contained in the Report of the Minority of the Poor Law Commissioners. They propose, as I have already mentioned, that the local sanitary authorities shall employ throughout the country medical officers, not as at present simply for administrative duties, of inspection and so forth, but for actual treatment, and that it shall be open to anybody, or possibly to anybody below a certain wage limit, to obtain treatment from any of these doctors. These doctors are to be paid fixed salaries, not so much per head or per attendance; and, as I have said, the local authority are to recover the cost from those people who can afford to pay.

Reform at the Instance of the Medical Profession.

Then, lastly, among the possibilities of reform requiring consideration you have the question of possible action by the medical profession on its own initiative, independently of any State action. As to that, one can only say that, up to the present, the Council of the Association, under the direction of the Representative Meeting, has formulated certain schemes which any Division which likes can take up with the object of organizing a medical service under the direct control of the profession, in which it would be open to every reputable member of the local profession to take part, and in which, although up to the present the capitation system of payment has been suggested, it would be equally open to the local profession, if they thought proper, to institute a system of payment per attendance. That scheme is before the Divisions, and is receiving the consideration of many. The fundamental idea of it is that the medical profession should attempt to deal with the existing abuses of medical practice, not only by frontal attacks on the friendly societies and other bodies, as in the past, but also by flank movements, by organizing a service of our own, which can, it is believed, be made at the same time more attractive to the patients and also more satisfactory to the medical officer than any form of existing service. Following the institution of any sickness insurance fund or the adoption of the proposals of either of the Commissioners, it would be still open to you to consider any proposals of that kind.

The Need of the Profession: Deliberation: Organization.

In conclusion, may I say very shortly what seems to be the paramount duty of the profession in face of these difficulties? No doubt it is obvious that the first thing must be carefully to consider the whole problem in all its aspects, not allowing the mind to be swayed too much by preconceived ideas in favour of one method or another. You will have not only, I suggest, to consider what you would like, but that you are in the position of those who have to make a bargain, and usually in a bargain it is not open to either party absolutely to dictate terms. If you find that you are in the position to dictate terms, all the better, but if you do not think you are in that position you will doubtless realize that what you are going to obtain must doubtless be a compromise between what you want and what those who represent the public want. We are, I am certain, in the position to get better terms if we enter into negotiations than we should get without negotiations. The next and most important point is that your power to get what you want must depend very largely on your organization. What those with whom you will deal will look at, as practical men, is the chance of the profession supporting you in what you put forward, and that chance depends on the degree of agreement arrived at amongst yourselves—the disposition to sink minor differences and agree on the main lines, the disposition you may show to stand together to put forward the proposals you have carefully thought out, not putting forward more than you are prepared to stand to, and not laying the profession open to be accused, as they have been in the past, of never knowing their mind, as a body, from one day to another. The cardinal feature of successful action must be organization. One is glad to recognize that the organization of the British Medical Association is at an increasing rate taking the place that the builders of the organization looked forward to it taking. The time has come when the majority of the profession of this country, outside as well as inside the Association, are prepared to look to the Association to give a lead and to voice their opinions, and are prepared to support the Association manfully in what it puts forward on their behalf. The difference between the member and the non-member to-day is not usually in respect of opinion on questions of policy. The reasons for which medical practitioners remain outside the Association are very various and largely personal; not, as a rule, on differences of policy. The man who remains outside because he disagrees with the Association is in a very small minority indeed. The only general difference between those who are in and those who are out is that the members of the British Medical Association compose that section of the profession which is for the time being effectively organized; those outside are the unorganized. That, I submit, is the position as we have it to-day, and if the Divisions of the Association during the next three months carefully consider, collectively and individually, the Report that will be placed before them, and are determined to stand to what is the ultimate decision of the Association, I am convinced you can greatly influence the termination of the present crisis to the great advantage of the medical profession.

The CHAIRMAN said they had listened to a very interesting, instructive, well-considered, and exhaustive address, the importance of which no one could deny. It was also a very complicated subject, and the various points put forward required very serious consideration before they came to any decision.

Dr. D. R. PATERSON, of Cardiff, said that perhaps Mr. Whitaker would give some information as to the position of the question in Germany at the present time. He thought they had some years ago in Germany the difficulties they now found themselves in.

Dr. J. J. E. BIGGS, of Cardiff, asked if it was advisable to bring the matter before any of the parliamentary

candidates at the elections, and, if so, in what form the question should be put.

Dr. Edwards, of Barry, said, with regard to the public medical service, of course it was quite clear that the subscribers had the choice of doctor at the beginning of the year. He wished to ask whether the alternative was also true that the doctor had the chance of rejecting any particular patient.

Mr. Whitaker, replying to the questions, said: The German doctors have only to a certain extent the same difficulties as ours. Their scheme of sickness has been in operation for a very fair number of years now, and before it was instituted the friendly societies did not occupy anything like the same position of prominence in Germany that they occupy in this country to day. Then as to whether the present difficulties were faced there as face us. I cannot say that I am quite sure what difficulties the speaker had in mind. They certainly have had to consider some of the problems I have put before you to-day. One of the greatest difficulties, against which they have had to fight tenaciously, is the constant tendency of insurance companies and workmen's organizations and their officials to introduce the system of salaried medical officers. The German profession are united in the opinion that the choice of doctor is the best system for the profession as well as for the patient, and, on the other hand, the officials prefer the system of the employment of one or two doctors in each district. They think they keep the doctors better under their official control in that way. The choice between payment per attendance and capitation payment has not, I believe, caused a serious crisis in Germany, because they allow it to be decided by local option. In some towns the doctors prefer payment per attendance, and in others the capitation system. The two are being tried side by side, and the profession in Germany are not as yet satisfied, apparently, by experience which works out the best in the long run for the profession. Then I am asked whether it is advisable to bring this before parliamentary candidates at the present time. Upon that I have to suggest that if you go to a parliamentary candidate with any policy in the name of the profession it should be a policy on which the profession are united, and I do not see how any one at the present time could go to a candidate, put this matter before him, and be prepared to answer the question which the candidate, if interested, would certainly put—namely, what the profession wants. I should find great difficulty in saying what the profession wants on this matter at the present time, and that seems to me to cause a great difficulty in making it a subject of question for parliamentary candidates. Another difficulty which I know the Parliamentary Committee of the Association has considered is this—that at an election, like the one before us, when the very greatest national issues are felt to be at stake, it is doubtful whether we stand in quite such a favourable position in pressing our special professional points upon candidates as we might on other occasions. In reply to the question whether a doctor has any voice in the choice of patient under the Public Medical Service scheme, that is proposed, and I think must be proposed in any scheme of the kind. In the first place, if a doctor wanted to develop his practice in other directions, he must be free to limit the number of patients he would be willing to attend in the Service. It has also been proposed that the doctor should be free to decline to attend an individual patient, but any such arrangement must be subject to this proviso, that the responsibility must rest on the local profession in some way to secure that every person shall receive requisite attendance. It is conceivable that all the doctors in a district might refuse to attend one individual case, and there must be some safeguard against that contingency. There must be some means of deciding who shall attend the person whom no one wants to attend.

Dr. Mulligan (Pontypool) proposed a vote of thanks to Mr. Whitaker for his address, and Dr. W. B. Crawford Treasure (Cardiff) seconded, the latter saying the address was one the educative value of which ought to be apparent to each one of them. Mr. Whitaker struck the keynote, and that was union as members—a united profession and organization. It stood to reason they would be better able to bargain with the Government than as isolated units. The chief means by which that ultimate union was to be achieved was to induce those who remained outside to join their organization and become members of the British Medical Association.

The motion of thanks was carried with acclamation.

Meetings of Branches & Divisions.

BATH AND BRISTOL BRANCH.

The second ordinary meeting of the session was held at Bath on November 30th. Dr. J. M. Rattray, President, was in the chair, and thirty members were present.

Case.—Dr. Mary Morris showed a case and read the notes of a boy of 13 suffering from a tumour of the kidney, and it was discussed by Mr. Lace.

Papers.—Dr. J. M. Rattray read a paper on amputations about the knee-joint. Mr. H. P. Costobadie discussed the subject of hysteria. Dr. G. H. H. Almond read a paper on migraine, which was discussed by the President, Dr. Herbert Tayler, Dr. Munro, Dr. Neild, Dr. Kenneth Wills, and Mr. Beaumont. Dr. J. Nixon read a communication entitled, The Non-venereal Syphilitic Contagion Occurring in Families, and in the discussion which ensued Dr. Kennedy and Dr. Kenneth Wills joined.

METROPOLITAN COUNTIES BRANCH:

Stratford Division.

A meeting of this Division was held at the West Ham Hospital on Thursday, December 1st, Dr. Dayus in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

Correspondence.—Some correspondence was submitted.

Syphilis in Consulting Practice.—Mr. Edred M. Corner gave a very interesting and practical address on syphilis in consulting practice, in which he dealt fully with some of the more recent methods of treatment. A discussion ensued, and Mr. Corner, having replied to questions, was accorded a very hearty vote of thanks.

Appointment of Ophthalmic Surgeon for Examination of School Children.—Thereafter a communication from the Walthamstow Division *re* the appointment of an ophthalmic surgeon for examining school children was considered, and the following resolution was passed:

> That this Division will use its influence to dissuade any applicant from accepting the post under the terms laid down by the Walthamstow Urban Council.

Tottenham Division.

The second ordinary meeting of the Division for the session was held on December 2nd. By kind invitation of Dr. Fred. Tresilian, it was held at White Lodge, Enfield. In the absence of Dr. Greenwood, Dr. Tresilian occupied the chair. Twenty-one members were present.

Confirmation of Minutes.—The minutes of the last meeting (October 28th) were read and confirmed.

Wards.—The progress of ward organization was reported.

The Parliamentary Election.—It was reported that questions had been submitted to the eight candidates for parliamentary election within the Division, and their replies were awaited.

Medical Treatment of School Children in Walthamstow.—Communications of dates, November 16th and 28th, from the Walthamstow Division were considered. Dr. Fuller (Crouch End) proposed and Dr. Grant (New Southgate) seconded:

> That this Division cordially supports the Walthamstow Division in its opposition to the action of the local education authority in seeking to appoint an ophthalmic surgeon. It is prepared to use its influence with any member of its own Division who may proceed to apply for the post.

This was carried unanimously.

Name of the Division.—Dr. FULLER then moved and Dr. BRYCE (Stroud Green) seconded:

That the name of this Division be changed from "Tottenham" to "North London."

The HONORARY SECRETARY reported that, of sixty-nine members who had taken the opportunity of expressing their opinion on the postcards provided, only five desired the retention of the name "Tottenham." Dr. BRACKENBURY (Stroud Green) moved, as amendment, and Dr. GRANT (New Southgate) seconded:

That the name of the Division be changed from "Tottenham" to "North Middlesex."

After discussion, the mover and seconder of the resolution begged leave to withdraw it. The amendment being put as a resolution, Dr. BARNES (Tottenham) moved and Dr. MILLS HALL (Bush Hill Park) seconded:

That the name of the Division be changed from "Tottenham" to "North-East Middlesex."

Only four voting for the amendment, the resolution was then put and carried *nemine contradicente*.

Medical Treatment of School Children.

Dr. FRED. TRESILIAN (Enfield) then read the following paper: That medical practice has changed considerably within the last twenty years, and especially within the last few years, is evident to us all. And the tendency is ever more and more to exterminate private practice as such, by the multiplication of medical officials who do work that previously fell to the lot of the general practitioner. The result is that the latter gets fewer confinements, hardly any vaccinations, and never sees his fever cases more than once, when he notifies them and thereby dismisses them from under his care. Sanitary authorities of all kinds are every day invading the provinces in all directions, purifying all things, and slaughtering any stray germ that may possibly be a source of income to them. Benefit societies and slate and other clubs are engulfing many of those who were originally private patients. This and more is common knowledge to us all. Medical men have endured and taken their share of all this for the good of the community and of the nation of which they are but units. But beyond this there is an evident tendency on the part of the State and all public bodies to exploit our profession for their own purposes, and at our cost. This is the worst and most growing evil which we have arising around us on all sides, and which we must endeavour to face and grapple with if we do not intend to sit quietly down and go under. The medical family practitioner is being gradually squeezed out of existence, as the general physician is decaying, and there is no doubt that another generation will see but two types of medical men—that is, State-paid officials and consulting specialists.

The latest exploits of the State are in the direction of the care and treatment of those children in the board schools that are found to be defective. If the State would begin at the right end, as it does in some other countries, and control marriages of the unfit, of those who are likely to procreate children who will become defective, one would heartily welcome such efforts. But that would be an unwarrantable interference with the liberty of the subject, especially with that of the working classes, who are now greatly encouraged to bring into the world any number of children, sane or insane, sound or diseased. Why not? Have they not the knowledge that their responsibility ends there, and that the State will provide for the future care of these children? That if they turn out to be full of bodily defects, the State will undertake the cure thereof. That if they have either no minds at all, or diseased ones, the State will provide for them and for any offspring that they may bring forth in the next generation.

Let us return, however, to this matter of the medical inspection and treatment of defective school children. It is actually at work amongst us. As far as all of us in general practice are concerned, the work of school *inspection* can be disregarded on this occasion. When we know that Dr. Gaffikin and other similar school medical officers have to work daily from 9 or 10 a.m. to 5 p.m., and in addition to that to fill in daily returns and make notes of all cases examined, it is plain that none of us could undertake such work and continue that which we are doing at the same time. But there is much more behind and beyond this inspection. In many districts the education authorities are inviting their inspecting officers to undertake also the treatment of the children, devoting mornings to examination and afternoons to treatment.

There are various diseased conditions, of course, to be found amongst such children, but we here need only to concern ourselves with three or four—those which the London County Council have specially noted in their consideration of medical treatment in their area. The following are those which the school medical officers would find it most difficult to deal with, but which are also the most common amongst children: Refractive errors, adenoids and tonsils, and various ear diseases, and some diseases of the skin, notably ringworm. Dental work need not concern us. The question is, How is this work which the State has made necessary to be done? Is it to be done by the medical practitioners in each district, or by whom?

There are various ways in which the State can have its work carried out. It can—

1. Utilize the present Poor Law medical officers.
2. The simplest way—send these children on to the hospitals. It will get it done there free, and will thereby relieve itself from all further responsibility.
3. Send them on to the hospitals and have special hospital officers for attending them. These would be paid by the State through the education authorities. They would be either members of the staff, specially appointed clinical assistants, or outside practitioners attending at the hospital as needed.
4. Establish what are known as "school clinics" in each district. Hither the children could be sent for treatment carried out by (*a*) outside men appointed as a variety of minor specialists in these subjects; (*b*) the practitioners residing in the district.

There is no doubt whatever that, owing to the various conditions prevailing in various cities, towns, and country districts, no one system can prevail all round, and that each city, town, or rural district will have to do its work in the way it best can. We already find that different plans are even now at work.

The *Poor Law system* is almost beside this question, but no doubt in remote country districts it may have to be utilized. The London County Council has already made arrangements by which so many children from their schools are being sent to various *hospitals* for the necessary treatment, and the hospitals are being paid for doing so at the rate of so much per 100 children. The point is, to whom does that money go that the education authorities are paying to the hospitals? If it simply goes to the hospital funds, then the medical staff of the hospital are being exploited and their services are being used gratis by the public. Then there is the question of the appointment of salaried medical officers connected with the various hospitals to give so much time per week to the work. This has the virtue that some medical men are paid something, and it is not so bad if the hospital keeps the control and appointments, etc., entirely in its own hands. In some places also the hospital out-patient rooms are being used for the work, which is done by selected practitioners in the district. The British Medical Association has advocated the establishment in each district, where possible, of *school clinics*, and these are now on their trial in several places. But here the question is, Who is to run them medically and do the work? Many difficulties arise. The treatment of tonsils and adenoids, and the giving of anaesthetics is quite easy to all men. But what of the treatment of refractive errors, the *x*-ray treatment of ringworm, and the vaccine treatment of ear diseases. The educational authorities are alive to the quickness of the *x* rays in the cure of ringworm, and are desirous of seeing it universally used as far as that is possible. The vaccine treatment of ear discharges could, of course, be done in any large centre. But the treatment of refractive errors, invariably the largest class of defects, and the pre-

scribing of the necessary glasses, will all undertake that? There is no doubt that in all great towns and most suburbs there are a certain number of men capable of doing this work, and as long as it, like the other work, is done by men residing in the district, we ought none of us to object to it, especially if it is taken in turn, any more than we object now to the work of the public vaccinator or medical officer of health. But when it comes to educational authorities endeavouring to carry this work away from us and give it to outsiders, then we must use every effort to prevent this being done. We ought at least to have the work handed over to us in our own districts in which we are ratepayers, when we are capable and willing to do it. We must bring pressure to bear upon the authorities to prevent the appointment of outside men, and we must, if any such outside man be appointed, endeavour to dissuade him from injuring the bulk of his fellow practitioners.

An animated discussion ensued, in which Drs. Brackenbury and Fuller (Hornsey), Drs. Grant and Winston (New Southgate), Drs. Gaffikin and Tresilian (Enfield), Dr. Hall (Bush Hill Park), Drs. Barnes, Chappel, and Seekings (Tottenham), and Drs. Laurence and Orlebar (Edmonton) took part. Finally, to ensure adequate consideration of the subject, it was decided to adjourn until January 5th, 1911, and resume discussion on that date.

Coroners' Law and Death Certification (Amendment) Bill.—Dr. Tresilian reported that, largely owing to the initiative and energy of Drs. Distin and Cook, a petition against the unjust imposition of unremunerated duties upon medical men, contemplated in this bill, had been drawn up and circulated. Over eighty medical men in the neighbourhood of Enfield had signed the petition. He hoped their example would be followed.

Vote of Thanks.—A hearty vote of thanks to Dr. Tresilian for his paper, and for the hospitality of his reception of the members, proposed by Dr. Brackenbury, was carried with acclamation. The proceedings then terminated.

Walthamstow Division.

A meeting of this Division was held, by the kind invitation of Dr. J. C. Muir, at Whipp's Cross Infirmary on Tuesday, November 22nd, at 4 p.m. Eighteen members and visitors were present. Dr. Horner presided, in the absence of Dr. Robert Jones.

Walthamstow Education Authority and Advertisement for Ophthalmic Surgeon.—The two following resolutions were passed unanimously. Proposed by Dr. Shadwell, seconded by Dr. Panting:

(1) That having considered an advertisement by the Walthamstow Education Authority for the appointment of an ophthalmic surgeon, and having had regard to the negotiations between the Division and that Committee, and the resolutions on the subject passed by a general meeting of the profession on November 11th, this Division is of opinion that it will be prejudicial to the interests of the medical profession for any medical practitioner to accept the appointment upon the terms and conditions stated in the said advertisement.

Proposed by Dr. Shadwell, seconded by Dr. Coutts:

(2) That copies of the above resolution be forwarded immediately to the Honorary Secretaries of the Metropolitan Counties Branch, to the Honorary Secretaries of all the Divisions of the Branch, and to the Honorary Secretaries of the Bromley and Croydon Divisions of the South-Eastern Branch; that they be requested to bring the matter before the executive of those bodies with a view to all possible action being taken by them to support the Walthamstow Division in the matter.

Clinical Demonstration.—A clinical demonstration was then given by Dr. J. C. Muir, and amongst the cases shown were the following: (1) Large abdominal tumour on right side in a female (diagnosis doubtful.) (2) Peripheral neuritis, with paralysis of diaphragm (i). (3) Bulbar paralysis in female aged 32 (4) Anterior poliomyelitis affecting one arm in an infant 19 months old. (5) Aortic aneurysm. (6) Mediastinal tumour, specific (?). (7) Anterior poliomyelitis. (8) Peripheral neuritis, with paralysis of diaphragm (ii). (9) Enlargement of abdomen in a boy aged 16 years; tubercle (?) specific (?). (10) Tuberculous adenitis. (11) Pneumothorax. (12) Multiple tuberculous arthritis.

Vote of Thanks.—A vote of thanks to Dr. Muir for entertaining the Division was proposed by Dr. Berrill, seconded by Dr. Coutts, and carried unanimously.

Dr. Muir thanked the meeting, which then terminated.

Southern Branch.

Special Meeting.

A special meeting of this Branch was held at Southampton on November 24th, in compliance with a notice issued to each member, and published in the Journal, requiring every candidate for election to furnish a certificate from two members of the Association that he is personally known to them, and is a fit and proper person to be elected.

A resolution to this effect was moved by Mr. Joseph Ogdin March, seconded by Mr. Charles Robert Straton, and carried *nemine contradicente*.

General Meeting.

A meeting was held on November 24th, at the South-Western Hotel, Southampton. Dr. L. S. Luckham (President) was in the chair, and there were present Drs. C. R. Straton (Representative on Central Council), R. Lewis Willcox, J. Ogdin March, and J. E. Gordon, of the Salisbury Division; J. F. Bullar, W. P. Purvis, G. H. Cowen, E. S. Hall, A. A. Mackeith, A. W. Power, and A. Harris, of the Southampton Division; C. C. Claremont, C. P. Childe, W. P. McEldowney, L. Cole-Baker, Lysander Maybury, L. K. H. Hackman, D. A. Sheahan, A. Bosworth Wright, G. F. Morley, W. Carling, J. W. W. Adamson, and James Green, of the Portsmouth Division; G. Fuller England, H. J. Godwin, A. E. Boddington, J. F. Briscoe, W. M. Harman, E. D. Ritchie, R. A. Lyster, W. L. P. Bevan, and R. W. Prentice, of the Winchester Division; Dr. R. Robertson and Lieutenant-Colonel C. R. Kilkelly, of the Isle of Wight Division; and Mr. C. H. Watts Parkinson, an Associated Member of the Branch.

Apologies for Non-attendance.—Messages and letters of apology were received from Mr. Hy. Rundle, a colleague at the Royal Portsmouth Hospital, whose letter was read at length by the President; Drs. Mumby, Blackman, Colt, Fleet Surgeon Biden, and T. Charters White, of the Portsmouth Division; Drs. Ord and Monnington, of the Salisbury Division; Drs. Livingstone and Royds, of the Winchester Division; Dr. Aldridge, of the Southampton Division; and Dr. Major, of the Jersey Division.

Testimonial to Dr. Ward Cousins.

A testimonial consisting of a solid silver tray and a tea and coffee service, with an illuminated album containing the names of the subscribers, 120 in number, was presented to Dr. Cousins. In making the presentation the President said: A very pleasant duty falls to my lot to-day, and will mark my year of office. Every branch, gentlemen, starts as a bud, and Dr. Ward Cousins was that bud; this bud, after two or three years' preliminary work by him, burst in 1874, and has now grown into the sturdy and flourishing Branch of to-day. During that long period Dr. Ward Cousins has always worked his hardest in its interests, and, as you all know, has held practically every post of honour that could be held, including that of President of the Association—a post which he held with honour to himself, with honour to the Branch, and with honour to the Association. But besides the more serious work you will all agree with me that Dr. Ward Cousins has always added very largely to the social side of our meetings. His great keenness and interest in all that was to be seen and his genial presence always made any meeting a success at which he was present. I well remember, on that rapid (?) journey across the Island from Ventnor some years ago, how he and the late Dr. Coghill entertained us with the most amusing stories and made the journey seem quite short. I will now read an appreciation of him from his colleague at the hospital.

The President here read the following letter from Mr. Rundle, dated November 23rd:

I very much regret that I shall not be able to be present to-morrow at the presentation to my friend Ward Cousins.

He is a man remarkable alike in his character and his abilities. Of the former, the most noticeable trait is his intense and consistently maintained energy.

The Royal Portsmouth Hospital owes him an immeasurable debt, not merely for his most able services as Surgeon for many years, where he has done so much in adding to the store of surgical knowledge, but also for his strenuous inspiration of the movement which led to the rebuilding of the institution, and for numerous activities in the promotion of its welfare and efficiency. The other side of his personal character is his warmth of heart, his unselfishness, and the love which he bears to his fellow-men. He has earned the gratitude of countless patients, and won the affection of troops of friends.

As a friend and colleague of upwards of thirty years, I deem it one of the privileges and greatest pleasures of my life to have known him.

I am sure, gentlemen, you will agree with every word of this letter.

I have now, Dr. Ward Cousins, the pleasure of presenting to you this silver tea and coffee service and an album with the names of the subscribers, and in doing so to express our wishes that you will enjoy the use of them for many years, and that Mrs. Ward Cousins will dispense hospitality from them at her well-known "at homes" to many of your old friends.

In acknowledging the presentation, Dr. WARD COUSINS said:

I trust you, Mr. President, and my kind friends will accept my warmest thanks. These handsome gifts fall upon me as an unexpected delight, and I shall ever regard them as an expression of your kind sentiments towards myself, and a very generous recognition of my past efforts to promote the development and progress of our Branch of the Association.

Many of us can with pleasure cast a glance backwards, and reflect with gratification upon our past progress and prosperity. To-day there are not more than twenty-five of our old friends still with us who were present at the original meetings in 1874. I am glad to be reminded to-day that I was present at the birth of the Branch, and I feel able to state the interesting fact that the presentation and delivery were quite normal. I am bound to say, however, that at the time there were many estimable men who foretold an early collapse of its vitality, and who afterwards turned out to be some of our most earnest members. Now this little offshoot was actually only two years old when it began to stretch out its arms and to make many friends over the fair county of Hampshire, and soon after that it crossed over to the Isle of Wight, and then over the genial downs of Dorset to the white hills of South Wiltshire. Of course this was considered a very dangerous period in its development, and many anticipated that it would go off in a fit of convulsions; but this did not happen, for, on the contrary, it grew in strength, and many friends gathered around its little tender frame.

From 1874 to 1910 we have indeed enjoyed great prosperity, and allow me to tell you a little secret, that this was the result of the harmony which has always existed at our gatherings and also to the mutual confidence and good temper of all our members. I had the honour of being appointed the first Secretary of the Branch and the first Representative on the Council of the Association, and also on the Committee of Council, which was then the vital centre of the organization. After a period of twenty-two years, the late Dr. Trend, of Southampton, accepted the position and discharged the duties with great ability and zeal for several years, and he was succeeded by our dear friend, Mr Manning of Salisbury, so well known and so greatly esteemed by us all. Now, to-day, we have the pleasure of greeting our new Secretary, Mr. James Green, of Portsmouth, and I feel sure he will give a fresh impulse to our prosperity, and that by his wise and punctual and genial management of our affairs he will soon win the golden opinion of all his colleagues and prove a tower of strength to the Southern Branch.

One word about my own experience, and it is simply this: that many of the most pleasant and refreshing hours of my long professional life I owe to my intimate association with you and all my old friends. Again I thank you with all my heart for your kindness to-day, and it will indeed be at all times a great comfort for me to feel that I have received so many marks of your friendship and esteem; and rest assured that as long as kind Providence spares me I shall often look upon your beautiful gifts, for they will remind me of your generous confidence in my sincere and humble efforts.

Lantern Demonstration.—Dr. HERBERT SPENCER then gave a lecture, with a lantern demonstration on Examination and Diagnosis of Tumours of the Uterus as complicating Pregnancy, etc. Mr. C. P. CHILDE followed with a paper on the Modern Operative Treatment of Cancer of the Uterus; and Dr. W. P. PURVIS gave the history of two acute abdominal cases. Discussion ensued on each of these subjects.

Death Certification and Coroners Bill.—The provisions of the parliamentary bill introduced by Sir William Collins were next brought before the meeting which endorsed the action already taken by the Council.

Other business, connected with the finances of the Branch, was then transacted.

CHANNEL ISLANDS DIVISIONS.

A JOINT meeting of the Channel Islands constituency was held in the Lukis House, Guernsey, on December 1st, 1910. There were present: Dr. H. C. Major (Jersey), Drs. Bulteel, Bisson, Bishop, Bostock, Bréhaut, C. Carey, Collings, Corbin, de Jersey, Robinson, Major Myles, Wallace, Wild, Ross Taylor, and Carruthers.

Apologies for Non-attendance.—Apologies were received from Drs. Aikman and Colonel Robinson.

Chairman.—Dr. H. C. Major was unanimously invited to take the chair.

Representative at Representative Meetings.—Dr. J. F. Carruthers was unanimously re-elected as Representative, and given power to appoint a deputy in the event of his not being able to attend next year's Representative Meeting in Birmingham.

Vote of Thanks.—A unanimous vote of thanks was accorded to Dr. Carruthers for his services as Representative during the past year.

Time of Meeting.—The CHAIRMAN expressed the feeling of the Jersey Division that November was a bad time to hold the joint meeting on account of short days, bad weather, and generally tempestuous seas. The Guernsey members present agreeing with him, the Honorary Secretary was directed to find out from the Medical Secretary if there would be any constitutional objection to the constituency reverting to the old time in May.

GUERNSEY AND ALDERNEY DIVISION.

A MEETING of the above Division was held in the Lukis House, Guernsey, on December 1st, 1910. Sixteen members were present; the PRESIDENT (Dr. M. H. Bulteel) was in the chair.

Case.—Dr. E. F. L. DE JERSEY showed a case of infantile paralysis, drawing attention to the unusually rapid improvement manifesting itself in the paralysis. The case attracted much interest.

Library.—The PRESIDENT congratulated the Division on the completion of the additions to the library, consequent on the receipt of the long-expected volumes from London. The Library Committee brought forward a set of by-laws for the library, which was approved by the meeting, and a list was made of reference books not to be taken out.

Vote of Thanks.—A vote of thanks to the Librarian, Dr. Bulteel, was carried by acclamation.

Confirmation of Minutes.—The minutes of last meeting were read and confirmed.

ULSTER BRANCH.

The autumn meeting of the Branch was held on November 17th in the Medical Institute, Belfast, Dr. Wm. Calwell, President, in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Apologies for Non attendance.—Dr. J. C. Rankin, in the absence of the Honorary Secretary of the Branch through illness, read letters of apology from Dr. Moorhead (Cootehill), the ex-President, and from Dr. Elliott (Rostrevor).

Report of Council.—The report showed that the Council had met twice since the last Branch meeting and had elected the following as members of the Branch: William Dickey, M.B., B.Ch., Royal Victoria Hospital, Belfast; J. Leeper Dunlop, M.B., B.Ch., Keady; Chas. H. Falvey, L.M.R.C.P. and S.I., Ardara, co. Donegal; James Gordon, L.R.C.P. and F.R.C.S.I., Ballyshannon; K. R. Collis Hallowes, M.B., B.Ch., L.M., Crossdoney, co. Cavan; John C. Houston, M.B., B.Ch., Royal Victoria Hospital, Belfast; George Kelby, M.B., Belleek, co. Fermanagh; Robert Love, J.P., L.R.C.P. and S., Ahoghill; James M'Ilroy, M.B., L.R.C.S., Ballycastle; Edward R. Porter, L.R.C.P. and S., Bangor; James M. Reynolds, L. and M.R.C.P. and S.I., Gowna, co. Cavan; Charles J. Simpson, B.A., M.B., Belfast; John Knox Thompson, M.B., B.Ch., Belfast.

President's Address.—The President (Dr. Calwell) delivered an address on The Prevention of Heart Disease, and showed lantern slides of the muscular dystrophies from the collection of plates in the Type Museum.

Demonstrations.—The President also showed the thoracic organs from a case of aneurysmal phthisis, and two cases illustrating the results in rodent ulcer of cauterization with carbon dioxide snow and of zinc chloride ionization. Dr. Rankin gave a demonstration of the method of preparing and using carbon dioxide snow for cauterization.

Volvulus of the Pelvic Colon treated by Excision.—Mr. Fullerton read notes of a case:

A woman, aged 37, was brought to the Royal Victoria Hospital on October 17th, 1910, with the following history and symptoms: She said she was always troubled with constipation and weakness of the bladder. On the day of her admission she went to her work as a finisher, feeling in her usual health. At one o'clock she had a sudden severe pain in her abdomen. This passed off sufficiently to allow of her resuming her work after the dinner hour. Immediately on resuming the pain recurred with such violence that she was immediately brought to hospital. Her bowels had acted at 1.30, that is, shortly after the first attack of pain. She vomited several times before and after her admission. Mr. Fullerton saw her at 8 p.m. the same evening. She was then in great agony with pain referred to the umbilical region. Her pulse was 108 and her temperature subnormal. The abdomen was moderately distended and rigid, the distension being more marked to the right of the middle line in the upper half of the abdomen. Liver dullness was diminished but not lost. The abdomen was tympanitic. An incision was made to the right of the middle line above the umbilicus, and the peritoneal cavity was opened. A considerable quantity of blood stained fluid was found and removed with sponges. After some difficulty Mr. Fullerton found a large mass, dark, almost black, in colour, extending up so as to lie to the inner side of the spleen and just under the left lobe of the liver. On further examination this was found to be smooth, and composed of two halves lying parallel and closely applied to each other. Mr. Fullerton at first thought that it was a huge cyst, but more careful examination showed the bands of muscular tissue characteristic of the colon. In fact, the mass proved to be a volvulus of the sigmoid flexure enormously distended and displaced upwards so as to reach the liver and spleen on the left side. The transverse colon on the proximal side of the volvulus was distended, thus accounting for the appearance as seen before operation. He determined to remove this gangrenous piece of intestine, but decided to do so by the method of Paul, as the operation of immediate resection with suture of the ends was attended with such a high mortality that in cases of intestinal obstruction it is hardly a justifiable procedure. In cases of cancer Mummery found that the mortality was about 37 per cent., whereas in cases treated by Paul's method—that is, excising the portion of colon in the neighbourhood of the growth, bringing out the ends and tying a Paul's tube into each end—the mortality was 17 per cent. Moynihan gave similar figures. To do this, Mr. Fullerton had to make an incision from the lower end of the former incision to the left side so as to reach the twist. On manipulating the mass, it became untwisted, and he was unable to say in what direction the bowel was twisted upon itself. The patient was very ill for several days and vomited almost incessantly, but, after washing out the stomach, she improved, and has up to the present made a good recovery. He had still to destroy the spur and restore the continuity of the colon.

The points in this case were: First, the sudden onset of symptoms, whereas on operating several hours later the bowel was gangrenous, suggesting that the condition must have been present for many hours previous without giving rise to symptoms. Secondly, the enormous size of the mass and the position of its upper end packed up under the liver and spleen. Mr. Fullerton had some difficulty in recognizing the nature of the swelling until close scrutiny showed the muscular bands very much spread out. The subsequent vomiting was due, in his opinion, to toxic poisoning.

Injury to the Ureter.—Mr. Fullerton read notes of a case of injury to the left ureter.

The patient, a man, aged 35, was engaged in mining work in South Africa. He was sent by Dr. Parke of Newtownards. History: He fell down a mine shaft in the early part of September, 1909. He was found to have sustained a fracture of the ascending ramus of the left pubic bone. A fortnight later a swelling about the size of a bantam's egg was found over the origin of the left rectus from the pubic bone. He was admitted to a hospital in South Africa. The urine, which was passed without difficulty, was normal. He had, however, some lumbar pain. The swelling over the left rectus was thought to be a haematoma, but incision showed that it contained straw-coloured urine. The examining finger of the surgeon operating passed into a large cavity at first thought to be bladder, but a catheter in the bladder could only be felt through the wall of the latter. No rent in the bladder wall could be discovered. Subsequent chromocystoscopy is said to have shown the patency of both ureters. The cavity was drained and soon healed up. But he developed much pain in the left kidney and his surgeon did left nephrotomy and found the kidney distended. The patient's condition had all along been critical. A few weeks later the right kidney became painful, tender, and swollen, and there was pus in the urine, with a high temperature. Right nephrotomy revealed pyonephrosis and some phosphatic material was removed from a calyx. He ultimately recovered with a bilateral urinary fistula. His condition precluded any attempt at further operative treatment. He was sent out of hospital in March, 1910, able to get about fairly well. Mr. Fullerton saw the patient for the first time in June of this year. He was then greatly wasted and he had a sinus in the loin on the left side and one in the left suprapubic region. There was a recently healed sinus in the right loin. This kept healing up and breaking down, and had been healed for a fortnight when Mr. Fullerton saw him. He said that the sinus in the suprapubic region discharged some urine when the other two sinuses healed up, which they did for a few days during the voyage home. He also had frequency of micturition day and night. He was truly in a pitiable state. Urine flowed freely from the left loin and pus from the suprapubic sinus.

Cystoscopy.—Cystitis present. Both ureters lay in somewhat oedematous bladder wall. Left dry. A catheter was introduced for about 15 in. into the right ureter, and a good flow of rather turbid urine was obtained. Into the left Mr. Fullerton was only able to introduce a catheter for about 2½ in. No urine could be obtained from this ureter, but fluid injected into the ureteral catheter came out through the sinus in the suprapubic region. This proved at once what was the origin of the tumour which contained urine. It was due to an injury to the left ureter near its junction with the bladder. In addition a small oval white freely movable stone was found lying on the trigone. The urine from the right ureter as obtained by the ureteral catheter had a specific gravity of 1010 and contained pus. The sinus in the right loin broke down about ten weeks after Mr. Fullerton saw the man for the first time and so far as he knew had remained so since.

On October 6th a further examination was made. Though the sinuses were still unhealed there was fluid coming from both ureters into the bladder, and little plugs of pus could be seen being projected into the bladder from the left side.

Sulphindigodate of soda injected into the buttock did not appear on either side within the 50 minutes he was kept under observation. It was inferred from this that his kidneys were insufficient, and Mr. Fullerton was not inclined to recommend operative procedures on the sinuses. He believed a vaccine would be beneficial. The calculus in the bladder should of course be removed.

Pubiotomy with Delivery of Living Child.—Dr. J. Singleton Darling read notes of a case and showed the patient.

A woman, aged 22, dwarf, 4 ft. 7½ in. in height, was admitted to Lurgan Infirmary, advanced in pregnancy. The pelvis was not deformed, and it was believed that a small child could possibly be born through it. So the question of Caesarean section was negatived. Pains began in the forenoon of August 31st; at 11.30 p.m. the os was dilated, the head presenting in first position at the brim, but not engaged. As pains had been failing, Dr. Darling gave hyoscine, gr. $\frac{1}{150}$, and morphine, gr. ¼. She had a comfortable night, and next morning the pains came on fairly strongly. At 12.30 they had again ceased, and the head was quite movable above the brim. The resident medical officer, Dr. Williamson, gave chloroform. Dr. Darling made a small incision through the left rectus muscle, ½ in. from the middle line; he separated the bladder from the pubes, passed the long, blunt needle behind the pubes, making it project below it; drew the labium inwards, making a puncture through the skin, well external to it, and drew a Gigli saw behind the pubes. He then passed the needle in front of the bone, making it emerge at same opening, and drew up the lower end of the saw. He now had the bone embraced in a loop of saw, and without difficulty cut it through. So closely had the needle been kept to the bone that no gaping occurred when it was divided, and only when Dr. Darling passed his finger along the line of incision did the ligamentous fibres below give way, and suddenly a gap wide enough for his forefinger to lie in formed, and some venous haemorrhage occurred for which he packed with gauze from above, putting a stitch in the lower puncture. He now put the patient back to bed. At 6 p.m. the head was on the perineum, and he thought it wiser to deliver, which was done without any difficulty, a male child 6¾ lb. in weight being born alive. It was now found that the mucous membrane stretched over the gap in the pubes had given way, and he stitched the rent. Her convalescence was slow. It was impossible to prevent contamination of the wound from below, and it was about eight weeks before it was entirely healed.

The patient was now in good health and quite active. The condition of her pelvis was interesting; the gap could still be felt in the bone, and on measurement from the left antero-superior iliac spine to the middle line it was manifest that that side of the pelvis was rather more than ½ in. wider than the right, and on vaginal examination the difference was also apparent. Dr. Darling thought this enlargement was permanent, contrasting this case with the two of Caesarean section he had had, the difference in the length of time taken to recover, and the amount of illness of the patient would make him unwilling to perform this operation under circumstances permitting of asepsis; but where this could not be ensured he would, in the small class of cases in which alone it ought to be done, prefer it to Caesarean section.

Prostatectomy during Acute Retention. — Mr. MITCHELL read notes of a case in which this operation had been performed.

Perforative and Gangrenous Appendicitis. — Mr. ROBERT CAMPBELL read a short paper on this subject.

Tuberculous Tumour of Iris.—Dr. W. M. KILLEN showed a case of tuberculous tumour of the iris filling about two fifths of the anterior chamber. It had appeared after a prolonged attack of influenza. Dr. Sinton confirmed the diagnosis by taking the opsonic index and excluding syphilis. An almost exactly similar tuberculoma of the iris of about the same size shown some time ago at the Society had completely disappeared after a few months of tonic treatment only.

Consulting-room Couch.—Dr. FRAZER showed a form of couch made to his own design, and giving special facilities for gynaecological treatment.

☞ *To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—The next meeting of the City Division will be held at the Town Hall, Mare Street, Hackney, on Tuesday, December 13th, at 4 p.m., when Dr. F. J. Horder, F.R.C.P., will read a paper on The Problem of Rheumatic Fever. Visitors are invited. Tea 4 p.m.—A. G. SOUTHCOMBE, M.D., 83, Sidney Road, Homerton, N.E., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: HAMPSTEAD DIVISION.—This Division will meet at the Central Library, Arkwright Road, this day, Friday, December 9th, at 8.30 p.m., for ordinary business, and at 9 p.m. Dr. J. C. Briscoe will read a paper entitled "The Practical Value of Vaccine Therapy." Dr. Whitfield, Mr. Kenneth Goadby, and others have been invited to be present. Members have the privilege of introducing professional friends.—C. W. CUNNINGTON, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: MARYLEBONE DIVISION.—In consequence of the adoption of temporary notification of ophthalmia neonatorum by the London County Council, the meeting arranged by this Division for December 13th for the consideration of this subject will not be held.—N. BISHOP HARMAN, Honorary Secretary.

SOUTH MIDLAND BRANCH: NORTHAMPTONSHIRE DIVISION.—A meeting of this Division will be held in the Board Room of the Northampton General Hospital on Tuesday, December 13th, at 2.30 p.m. There will be a luncheon at Franklin's Restaurant at 1.30, and those wishing to attend it should send in their names to the Honorary Secretary two days beforehand. Business: Minutes of the preceding meeting; club fees; any other business.—P. S. HICHENS, Honorary Secretary.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Fleet Surgeon W. G. K. BARNES, M.D., to the *President*, December 8th; Staff Surgeon R. W. STAINSTREET, to the *Euryalus*, December 17th; Surgeon H. B. GERMAN, lent to the *Euryalus*, temporary, November 29th; Fleet Surgeon A. H. H. VIZARD, M.D., and Surgeon S. BRADBURY, M.B., to the *Queen*, on recommissioning, December 15th; Fleet Surgeon E. B. PICKTHORN and Surgeon A. G. V. FRENCH, to the *Prince of Wales*, on recommissioning, December 15th; Fleet Surgeon G. H. FOOTT, M.D., to the *Albemarle*, on recommissioning, December 15th; Staff Surgeon K. H. JONES, M.B., to the *Highflyer*, on recommissioning, December 13th; Staff Surgeon H. P. TURNBULL, to the *Hannibal*, on recommissioning, December 15th; Surgeon L. C. E. MURPHY, to the *Vivid*, additional, for disposal, on the *Commonwealth* reducing; Surgeon R. N. W. W. BIDDULPH, to the *Victory*, additional, for disposal, December 19th.

Acting Surgeon R. N. W. W. BIDDULPH has been confirmed in the rank of Surgeon in His Majesty's Fleet, May 6th, 1910.

Fleet Surgeon G. A. S BELL has been placed on the retired list, at his own request, November 29th. His commissions were dated: Surgeon, February 21st, 1890; Staff Surgeon, February 21st, 1898; Fleet Surgeon, February 21st, 1906.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN W. M. B. SPARKES and Lieutenant H. T. TREVES, from the Seconded List, are restored to the establishment, November 18th. Both these officers seconded for service under the Colonial Office, November 27th, 1908.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL J. SHEARER, C.B., D.S.O., M.B., Principal Medical Officer Derajat and Bannu Brigades, is promoted to be Brevet-Colonel, from November 11th. He joined the department October 2nd, 1880, and became Lieutenant-Colonel, October 2nd, 1900. His war record includes—the Egyptian war, 1882 (medal and Khedive's star); the Burmese campaign, 1887-8 (medal with two clasps); the Hazara Expedition, 1891 (clasp); the second Miranzai Expedition, 1891 (clasp); the Waziristan Expedition, 1894-5 (mentioned in dispatches, clasp); and the Tirah Expedition, 1897-8 (mentioned in dispatches, appointed D.S.O. and medal with two clasps).

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

JOHN P. CHARNOCK, M.B., to be Lieutenant (on probation), October 28th.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Second Highland Field Ambulance.—Lieutenant L. H. CRUICKSHANK, M.B., to be Captain, November 7th.

For Attachment to Units other than Medical Units.—Lieutenant D. E. DICKSON, M.B., F.R.C.S Edin., from the 7th (Fife) Battalion Black Watch (Royal Highlanders), to be Captain, April 1st, 1908.

ROYAL FIELD ARTILLERY.

Fourth Welsh Brigade, Royal Field Artillery.—Surgeon-Lieutenant JOHN O'KEEFE resigns his commission, December 7th.

CHANNEL ISLANDS MILITIA.

THE ROYAL MILITIA OF THE ISLAND OF JERSEY.

Medical Corps.—Surgeon-Lieutenant H. J. SHONE to be Surgeon-Captain, November 25th.

COLONIAL MEDICAL SERVICES.

THE following changes in the Colonial Medical Services are notified by the Colonial Office:

WEST AFRICAN MEDICAL STAFF.—*Appointment:* H. C. Jeffreys, B.A Oxon., M.R.C.S.Eng., L.R.C.P.Lond., formerly a Medical Officer in British Honduras, has been selected for appointment to the staff, and posted temporarily to Sierra Leone. *Promotions:* W. H. G. H. Best, L.R.C.S., L.R.C.P.Irel., Senior Medical Officer, Southern Nigeria, to be Provincial Medical Officer, Southern Nigeria; C. R. Chichester,

M.B.Dubl., L.R.C.S., L.R.C.P.Irel.,D.P.H.Dub., Senior Medical Officer, Southern Nigeria, to be Provincial Medical Officer, Southern Nigeria. *Retirement:* W. S. Snell, L.R.C.S., L.R.C.P.Edin., L.F.P.S.Glasg., Medical Officer, Southern Nigeria. *Resignation:* F. M. Simmonds, L.S.A.Lond., M.B.Edin., Medical Officer, Gold Coast, resigns his appointment, receiving a gratuity. *Deaths:* E. Fraser Toovey, F.R.C.S., L.R.C.P.Edin., L.F.P.S.Glasg., L.M.Irel., Medical Officer, Southern Nigeria; F. C. Hepburn, M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer, Southern Nigeria.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns, 7,242 births and 5,856 deaths were registered during the week ending Saturday last, December 3rd. The annual rate of mortality in these towns, which had been 14.8, 15.5, and 17.3 per 1,000 in the three preceding weeks, further rose to 18.1 per 1,000 last week. Among the several towns the death-rates ranged from 7.2 in Handsworth (Staffs), 8.5 in Walthamstow, 11.0 in Willesden, 21.3 in East Ham, and 11.4 in Burton-on-Trent, to 22.2 in Portsmouth, 22.4 in Dewsbury, 22.7 in Swansea, 24.8 in Huddersfield, and 26.2 in Great Yarmouth; in London the death-rate was equal to 21.1 per 1,000. The annual rate of mortality from the principal epidemic diseases in the seventy-seven towns last week averaged 1.3 per 1,000; in London the rate amounted to 1.6 per 1,000, while among the seventy-six other large towns it ranged upwards to 3.1 in Portsmouth, 3.9 in Rotherham, 4.2 in Grimsby, 4.3 in Brighton, and 6.5 in Tynemouth. Measles caused a death-rate of 2.8 in Grimsby, 3.1 in Rotherham, 3.6 in Brighton, and 3.7 in Tynemouth; whooping-cough of 1.5 in Wolverhampton and in Middlesbrough; and enteric fever of 1.7 in Wigan. The mortality from scarlet fever, diphtheria, and diarrhoea showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,843 and 1,769 at the end of the two preceding weeks, further declined to 1,746 at the end of the week under notice; 170 new cases were admitted during the week, against 180 and 153 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, December 3rd, 780 births and 633 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.3, 16.2, and 16.5 per 1,000 in the three preceding weeks, further rose to 17.5 per 1,000 last week, and was 0.6 per 1,000 below the mean rate during the same period in the seventy-seven large English towns. The rates in the several Scottish towns ranged from 11.2 in Aberdeen and 16.9 in Edinburgh, to 21.0 in Perth and 22.2 in Leith. The death-rate from the principal infectious diseases averaged 1.3 per 1,000, being highest in Leith and Perth. The 294 deaths from all causes registered in Glasgow last week included 2 from scarlet fever, 5 from diphtheria, 7 from whooping-cough, 1 from enteric fever, and 5 from diarrhoea. Two deaths from diphtheria were recorded in Dundee and 2 in Perth; 3 from whooping-cough in Leith, and 3 from diarrhoea in Edinburgh and 4 in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, December 3rd, 554 births and 400 deaths were registered in the twenty-two principal urban districts of Ireland, as against 529 births and 423 deaths in the preceding period. The annual death-rate in these districts, which had been 16.2, 17.9, and 19.1 per 1,000 in the three preceding weeks, fell to 18.1 per 1,000 in the week under notice, this figure being the same as the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 21.9 and 14.5 respectively, those in other districts ranging from 4.8 in Sligo and 9.8 in Kilkenny, to 41.2 in Armagh and 44.3 in Lurgan, while Cork stood at 13.7, Londonderry at 15.6, Limerick at 23.2, and Waterford at 19.5. The zymotic death-rate in the twenty-two districts averaged 1.6 per 1,000, as against 1.3 per 1,000 in the preceding week.

Hospitals and Asylums.

WEST RIDING PAUPER LUNATIC ASYLUM, WAKEFIELD.

THE annual report for the year 1909 of Dr. W. Bevan Lewis, Medical Superintendent and Director of this large and important county asylum, shows that there were 1,970 patients in the asylum on January 1st, 1909, and 1,992 on the last day of the year. The total cases under care during the year numbered 2,496, and the average number daily resident 1,984, these latter figures being larger than any hitherto recorded. During the year 526 were admitted, as compared with 561 for the previous year. Of the total admissions, 433 were first and 93 not-first admissions, and 425 were direct and 101 indirect admissions. Considering only the direct admissions, in 149 the attacks were first attacks within three and in 45 more within twelve months of admission; in 101 not-first attacks within twelve months; in 7 it was unknown whether the attacks were first attacks or not; in 33 the duration was unknown, and in the remainder, including 31 congenital cases, the attacks were of more than twelve months' duration on admission. In 249 of the total direct admissions the attacks were within three months of admission. These same admissions were classified according to the several forms of mental disorder into: Recent mania, 82, and recurrent or chronic mania, 6; recent melancholia, 65; and recurrent or chronic melancholia, 5; senile and secondary dementia, 48; delusional insanity, 45; general paralysis of the insane, 53, or almost 12.5 per cent. of the direct admissions; insanity with epilepsy, 26; congenital defect, 31; stupor, 17; primary dementia, 13; confusional insanity, 11; and less common forms, 22. Turning to causation, alcohol was assigned in 58, or 13.6 per cent. of the direct admissions, and acquired syphilis in 43, or 10 per cent.; critical periods in 99; nervous diseases in 32; various bodily diseases in 59; bodily trauma in 17, and mental stress in 82. An insane heredity was ascertained in 104, and epileptic heredity in 10, a neurotic heredity in 6, of eccentricity in 1, and of alcoholism in 53, giving a total neuropathic heredity in 174, or over 40 per cent. The outstanding features of the above figures are the considerable proportion of cases of recent insanity, the large number of general paralytics admitted, and the increasing rôle played by syphilis in the causation of insanity in the West Riding. During the year 208 were discharged as recovered, giving the high recovery-rate in the direct admissions of 48.94, or of recoveries in the direct admissions on the direct admissions of 46.35. Also 101 were discharged as relieved or not improved, and 195 died. The deaths, giving a death-rate on the average numbers resident of 9.82 per cent., as compared with the average of 12.4 per cent. for this institution, were due in 73 to diseases of the nervous system, including 48 from general paralysis; in 34 to diseases of the heart and blood vessels; in 2 to bronchitis; in 10 to chronic nephritis; in 3 to diseases of the digestive system; and in the remainder with two exceptions (suicide) to general diseases, including 33 from phthisis, 6 from general tuberculosis, 3 from tuberculous enteritis, and 2 from other forms of tuberculous disease, the deaths from tuberculous diseases thus amounting to 22.5 per cent. of the total deaths.

Stanley Hall Home for Imbeciles.

At this home, where some seventy lads are segregated, Dr. Bevan Lewis is able to report a notable improvement in the general order and appearance of the school, this following on the removal of the incorrigible elements to rooms set apart for the unteachable. Dr. Lewis says that the discipline enforced, the beneficial results of manual drill, together with efforts towards improving the powers of observation and judgement, were very evident at this the ninth year of the school's history. An experiment was tried during the year with the imbecile girls on the lines adopted at Stanley Hall for boys. The experiment, however, was not a success, owing largely to the fact that the strongest pressure, Dr. Lewis says, was brought to bear to receive into this home the degraded, vicious, and wholly unsuitable class of girls for purposes of teaching.

Pathological Department.

A married and non-resident pathologist has been appointed over this department with the most satisfactory results. In addition to the ordinary pathological work, special researches are being made, among others, into the etiology of general paralysis and the chemistry, immuno-chemistry, and bacteriology of the cerebro-spinal fluid. The subject of asylum dysentery was also investigated, but owing to the clean bill of health in this respect presented by the West Riding Asylum the pathologist, Dr. G. S. Williamson, had to go elsewhere for his material. An interesting case of supposed "colitis" was examined, and proved indisputably to be a "carrier" of typhoid germs. The patient, Dr. Lewis says, is periodically prostrate, and during these periods her excreta swarm with typhoid germs capable of setting up the disease in animals.

Colitis or Asylum Dysentery.

Dr. Lewis furnishes his usual tabulated returns, showing the practical disappearance of colitis from this asylum since the institution of his prophylactic treatment by the general use of saline purgatives. In 1908 there was not one case recorded, and in 1909 only one, this unfortunately with a fatal termination.

Electro-therapeutic Department.

At this department 37 cases were treated by the sinusoidal current or the static baths,, with 19 recoveries. The results of 345 cases treated during the past five years in this way are summarized by Dr. Lewis, who gives the following results: 191, or 55 per cent., recovered; 68, or 19.7 per cent., were relieved; and 86, or 24.9 per cent., were not improved.

ROYAL EDINBURGH ASYLUM, MORNINGSIDE.

THE annual report for the year 1909 of Dr. G. M. Robertson, the Physician-Superintendent of this important institution, shows that on January 1st, 1909, there were 741 patients in the asylum and 11 out on probation, and that on the last day of the year there were 738 in the asylum and 14 absent on probation. The total number of cases under treatment during the year was 961, and the average number daily resident 736.3. During the year 209 were admitted, being 30 less than the number in 1908. The number of admissions has been falling for the last five years, owing to the opening and development of Bangour Village for the reception of Edinburgh patients, all of whom used formerly to be sent to the West House at Morningside. It is believed that the admission-rate will show in the future a tendency to rise, as the transitional period has now passed, and the new conditions have adjusted themselves. In connexion with this it should be remembered that the Royal Edinburgh Asylum is composed of two establishments, separate both in situation and administration—Craig House and the West House—the former being designed for patients for whom a liberal rate of board is paid, and the latter for intermediate and rate-paid patients. The fall in the number of admissions occurred entirely at the West House. As to duration of disorder on admission, in 87 the attacks were first attacks within three, and in 23 more within twelve, months of admission; in 29 not-first

attacks within twelve months: in 67 the attacks, whether first or not, were of more than twelve months' duration, and 3 were congenital cases. The total admissions were classified, according to the forms of mental disorder, into: Mania of all kinds, 24; melancholia of all kinds, 55; dementia, 24; delirious insanity, 35; systematized delusional insanity, 31; dementia praecox, 22; general paralysis, 14; and congenital or infantile mental deficiency, 4. As to probable causation, alcohol was assigned in 30, or 14.3 per cent., syphilis in 8, influenza in 5, and abuse of drugs in 2; critical periods in 36; childbirth in 7; gross brain disease in 7, epilepsy in 9, and cerebro-spinal meningitis in 1; bodily trauma in 4, and mental stress in 20. An insane heredity was ascertained in 60, or 27.8 per cent., and congenital defect was returned as cause in 2. During the year 67 were discharged as recovered, giving a recovery-rate on the admissions of 32.1 per cent. as compared with the average for this institution of 38.3 per cent., 54 as relieved, and 26 as not improved. During the year 62 died, giving a death-rate on the average numbers resident of 6.5 per cent., as compared with the average for this institution of 7.1. The deaths were due in 23 to cerebro-spinal diseases, including 15 deaths from general paralysis; in 25 to thoracic diseases, including 7 from pulmonary consumption and 11 from heart disease; and 14 from general diseases, including 3 from carcinoma and 6 from senile decay. Since the removal of the Edinburgh patients to Bangour Village the general health of the patients at the West House, Dr. Robertson says, has improved greatly, owing to the relief from the overcrowding which existed for some years. Also Dr. Robertson attaches considerable importance to the extension of the open-air treatment of the insane and the development of the bed treatment of acute cases. Another feature, which has been attended with the most gratifying results, has been the extension of the care and supervision of male patients by female nurses and matrons. The exclusion of women from the male side of modern mental hospitals, Dr. Robertson says, can no longer be justified. Among other improvements and alterations the research laboratory has been enlarged and thoroughly equipped, and considerable scientific work is now in progress.

GLASGOW OPHTHALMIC INSTITUTION.

THE annual report for the past year states that the total attendances at the out-patient department was 38,483, or a daily average of 125.3 for the days on which it was open. The number attending for the first time was 11,522, of whom 1,087 were treated in the wards. Of these latter, 874 were dismissed well, 184 improved, and 29 were incurable. During the year, 648 operations were performed, in addition to the large number of minor operations at the out-patient department. In the electrical department thirty patients were treated by *x* rays.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BARNSLEY: BECKETT HOSPITAL.—Second House-Surgeon. Salary, £80 per annum.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £80 per annum.

BIRMINGHAM GENERAL HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

BOURNEMOUTH ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRADFORD UNION.—Assistant Resident Medical Officer at the Eastby Sanatorium. Salary, £130 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Surgeon. Salary, £60 per annum.

CAIRO: SCHOOL OF MEDICINE.—Medical Tutor and Registrar. Pay, L.E. 600 payable monthly.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—House-Physician. Salary, £70 per annum.

CARDIFF INFIRMARY.—Two House-Surgeons. Honorarium, £30 for six months each.

DERBYSHIRE ROYAL INFIRMARY.—(1) House-Physician; (2) Second House-Surgeon; (3) Assistant House-Surgeon. Salary for (1) and (2), £100 per annum, and for (3) £60 per annum.

HASTINGS: ST. LEONARDS AND EAST SUSSEX HOSPITAL. Senior House-Surgeon (male). Salary, £100 per annum.

HITHER GREEN: PARK HOSPITAL FOR CHILDREN.—(1) Senior Assistant Medical Officer. Salary, £250 per annum. (2) Assistant Medical Officer. Salary, £150 per annum, increasing to £180.

KILBURN DISPENSARY.—Honorary Medical Officer.

LEEDS GENERAL INFIRMARY.—Ophthalmic House-Surgeon. Salary at the rate of £50 per annum.

LEICESTER INFIRMARY.—(1) Second House-Surgeon. Salary at the rate of £100 per annum, increasing to £120 per annum on promotion as Senior. (2) Honorary Pathologist.

LINCOLN GENERAL DISPENSARY.—Resident Junior Medical Officer. Salary, £175 per annum.

LIVERPOOL: HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Medical Officer and Pathologist. Salary, £200 per annum (non-resident).

MANCHESTER DENTAL HOSPITAL.—Honorary Anaesthetist.

MIDDLESEX HOSPITAL, W.—Second Assistant to the Director of the Bacteriological and Clinical Laboratories. Salary, £100 per annum.

NATIONAL DENTAL HOSPITAL AND COLLEGE, Great Portland Street, W.—Anaesthetist.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) House-Surgeon. (2) House-Physician. Salary at the rate of £80 per annum each.

ROTHERHAM HOSPITAL.—Senior House-Surgeon (male).—Salary, £110 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Assistant Physician.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.—Tutor in Public Health.

ST. LUKE'S HOSPITAL FOR MENTAL DISEASES, Old Street, E.C.—Second Assistant Medical Officer. Salary, £130 per annum, rising to £150.

ST. MARK'S HOSPITAL FOR CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, E.C.—House-Surgeon. Salary, £80 per annum.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion Square, W.C.—Clinical Assistant.

ST. THOMAS'S HOSPITAL.—Dental Surgeon.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician.—Salary, £50 per annum.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House-Physician. Salary, £100 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £82 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Physician. Appointment for six months. Salary, £40.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Assistant Physician. (2) Honorary Medical Registrar.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

APPOINTMENTS.

BUZZARD, E. Farquhar, M.D.Oxon., F.R.C.P.Lond., Physician to Out-patients at St. Thomas's Hospital.

CHOYCE, Charles Coley, M.D.Edin., B.Sc., F.R.C.S.Eng., Surgeon to Out-patients at the Great Northern Central Hospital, Holloway Road.

COLES, C., M.D.Lond., Medical Officer of Health for the County of Oxford.

DARLING, H., M.B., B.S., House-Surgeon to University College, Hospital.

ELAM, W. H., F.R.C.S.Eng., Certifying Factory Surgeon for the Barnet District, co. Hertford.

ELWIN, G. R., M.D.Lond., District Medical Officer of the Southwark Union.

LOWE, A. H., M.B., C.M.Edin., Medical Officer of Health of the County of Kesteven.

MCALLUM, D. C. A., M.B., C.M., Instructor in Anaesthesia to the Students attending Professor Caird's wards in the Royal Infirmary, Edinburgh.

SINCLAIR, N. F., M.R.C.S., L.R.C.P., Resident Assistant Medical Officer of the Bethnal Green Union Infirmary.

WOOD, W. W., M.R.C.S., L.R.C.P., Assistant Medical Officer of the Mile End Old Town Union Infirmary.

WRIGHT, A. F., M.B., District Medical Officer of the Bideford Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

STACK.—On November 25th, at Arvalee, Clifton, Bristol, the wife of Dr. Hugh Stack, of a son.

MARRIAGE.

DREW—MARSHALL.—On November 18th, at Bolton, Lancs, John Harmer Drew, M.D., B.S.Lond., M.R.C.S., L.R.C.P., of Plymouth, son of the late G. F. A. Drew, D.I.G., R.N., to Ada Georgiana, fourth daughter of the late Cornelius Marshall and of Mrs. Marshall, of High Bank, Bolton.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. P. BLAKISTON'S SON AND CO. announce the publication of a fourth edition of a book entitled *Lessons on the Eye; for Undergraduate Students*, by Dr. Frank L. Henderson.

RECENT PUBLICATIONS.

Within Hospital Walls. By Lady Lindsay. London: Kegan Paul, Trench, Trübner, and Co. 1910. (1s.)

A small vest-pocket booklet, neatly bound in leather, containing thoughts in prose and verse for occupants of hospital wards and those who work therein.

Year-Book of Pharmacy. London: J. and A. Churchill. 1910. (Demy 8vo, pp. 536. Price 10s. net.)

A volume in two parts, the first of which comprises abstracts of all papers relating to pharmacy, materia medica, and chemistry, which appeared in British and foreign journals during the year ending June 30th, 1910. The editor of this part of the work is Mr. J. O. Braithwaite. The second part represents the Transactions of the British Pharmaceutical Conference at Cambridge in July this year. The abstracts are admirably prepared, and many of the papers read at the conference are of general interest. The volume has a very good index.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Papers:—Dr. David Ferrier, F.R.S.: Acromegaly. Professor Arthur Keith: Acromegaly from an Anatomist's Point of View.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

SURGICAL SECTION, 15, Cavendish Square, W., 5 30 p.m.—Papers:—Mr. W. G. Spencer: Septicaemia Haemorrhagica; Severe Capillary and Parenchymatous Haemorrhage of Septic Origin. Mr. J. Hutchinson: Gastric and Intestinal Haemorrhages (probably of Septic Origin) following Abdominal Operations. Mr. A. E. Johnson: Fractures of the Patella without Separation of the Fragments.

WEDNESDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF BALNEOLOGY AND CLIMATOLOGY, 15, Cavendish Square, W., 5 30 p.m.—Paper:—Dr. Neville Wood: English Health Resorts for Foreign Invalids.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor Road, S.W., 5 p.m.—Papers:—Lieutenant-Colonel M. W. Russell, R.A.M.C.: Divisional Collecting Stations for Wounded. Major W. E. Miles, R.A.M.C.(T.): Pruritus Ani.

THURSDAY.

ROYAL SOCIETY OF MEDICINE;

DERMATOLOGICAL SECTION, 11, Chandos Street, W., 5 p.m.—Cases and Specimens.

NEUROLOGICAL SECTION, 11, Chandos Street, W., 8 p.m.—Clinical meeting.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

ELECTRO-THERAPEUTICAL SECTION, 15, Cavendish Square, W., 8.30 p.m.—Paper:—Dr. Horace Manders: The Use and Value of Electricity in the Treatment of some Abdominal Diseases. Cases and Specimens.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—(1) Adjourned discussion on Sir Rubert Boyce's paper on Yellow Fever in West Africa. (2) Dr. S. T. Darling (Chief of the Laboratory, Ancon): Autochthonous Oriental Sore in Panama. (3) Dr. R. Fleming Jones (Samurai): Tropical Diseases in British New Guinea.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C. Lectures: Tuesday, 3.45 p.m., Accessory Sinuses; Friday, 3.45 p.m., Larynx.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Wednesday, 4 p.m., Ultrachronic Pulmonary Tuberculosis.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Tetany.

LONDON SCHOOL OF CLINICAL MEDICINE, Seamen's Hospital, Greenwich. Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3 15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday. Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m. Special Lectures: Monday, 3.15 p.m., Varieties of Albuminuria. Tuesday, 2.15 p.m., Differential Diagnosis of Early Forms of Insanity. Thursday, 3.15 p.m., Surgical Aspects of Abdominal Flatulence.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15, Uraemia.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, The Therapeutics of Bleeding; Tuesday, Some Forms of Peripheral Neuritis; Wednesday, The Use of the Douche; Thursday, Anaesthetics in Cases of Cardiac and Pulmonary Diseases.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Surgery of the Nervous System. Friday, 3 30 p.m., Aphasia.

NORTH-EAST LONDON POST GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics, 10 a.m., Surgical Out-patient; 2 30 p.m., Medical Out-patient, Nose, Throat, and Ear. Tuesday, 10 a.m., Medical Out-patient Clinic; 2.30 p.m., Operations. Clinics: Surgical, Gynaecological; 3 30 p.m., Medical In-patient. Wednesday, 2 30 p.m., Medical Out-patient, Skin and Eye Clinics; *X* Rays; 9.30 p.m., Lecture on Glaucoma. Thursday, 2.30 p.m., Gynaecological Operations. Clinics: Medical and Surgical Out-patient; 3 p.m., Medical In-patient; 4 30 p.m., Demonstration of Selected Cases of Children's Disease. Friday, 2.30 p.m., Operations; Clinics: Medical Out patient, Surgical, Eye; 3 p.m., Medical In-patient.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays and Operations, 2 p.m. daily. Monday, Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Demonstration of Minor Operations, 11 30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Lectures at 5 p.m. daily, except Saturday.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
DECEMBER.	
9 FRIDAY ..	HAMPSTEAD DIVISION, *Metropolitan Counties Branch*, Central Library, Arkwright Road, Ordinary Business, 8.30 p.m.; Paper, 9 p.m. KENSINGTON DIVISION, *Metropolitan Counties Branch*, Kensington Town Hall, 4 30 p.m.
10 SATURDAY ..	
11 Sunday ..	
12 MONDAY ..	
13 TUESDAY ..	LONDON: Standing Ethical Subcommittee, 2 p.m. CITY DIVISION, *Metropolitan Counties Branch*, Town Hall, Mare Street, Hackney, 4 p.m.; Tea, 4 p.m. NORTHAMPTONSHIRE DIVISION, *South Midland Branch*, Board Room, Northampton General Hospital, 2.30 p.m.; Luncheon, Franklin's Restaurant, 1.30 p.m.
14 WEDNESDAY	LONDON: South-Eastern Branch Council. LONDON: Contract Practice Subcommittee, 2.30 p.m. RICHMOND DIVISION, *Metropolitan Counties Branch*, Clinical Meeting, Royal Hospital, Richmond, 8.30 p.m.
15 THURSDAY ..	LONDON: Metropolitan Counties Branch Council, 4.30 p.m. BIRMINGHAM BRANCH, Medical Institute, Edmund Street, 3.30 p.m.

Date.	Meetings to be Held.
DECEMBER *(continued)*.	
16 FRIDAY ..	
17 SATURDAY ..	
18 Sunday ..	
19 MONDAY ..	LONDON: Referendum Subcommittee, 10.30 a.m. LONDON: Regulations and Standing Orders Subcommittee, 2 p.m.
20 TUESDAY ..	
21 WEDNESDAY	LONDON: Joint Subcommittee *re* Advertisements of Foods and Drugs, 10 a.m. LONDON: Journal Committee. 11.30 a.m. LONDON: Poor Law Drafting Subcommittee, 2.30 p.m.
22 THURSDAY ..	
23 FRIDAY ..	
24 SATURDAY ..	
25 Sunday ..	*Christmas Day.*
26 MONDAY ..	*Bank Holiday.*
27 TUESDAY ..	*Bank Holiday.*
28 WEDNESDAY	
29 THURSDAY ..	
30 FRIDAY ..	
31 SATURDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

CAMBRIDGE AND HUNTINGDON BRANCH.

A MEETING of the Branch was held at the Medical Schools, Downing Street, Cambridge, on Friday, December 2nd, at 2 30 p.m. In the absence of the President, Mr. F. E. APTHORPE WEBB took the chair. There were fifteen members present.

Confirmation of Minutes.—The minutes of the March meeting were read and confirmed.

The Doctor and his Help.

Dr. JOSEPH GRIFFITHS opened a discussion on the doctor and his help. He said:

I feel it is my duty to offer to you a humble apology for bringing to your notice within so short an interval another paper upon what may be called the general topics of the profession. Progress, reform, change at any rate, is in the air, and it infects us, perhaps, because we are in a condition professionally known as the "susceptible state." That may be, but there is in addition a growl which indicates more than a mere grumble, which is at present just discernible to one interested in the advance of his fellow practitioners—an advance that should be commensurate with that in the professions of like standing in the community. Ups and downs occur in everything, and just now there is a tendency to think—and not without reason, so it seems to me—that we are on the whole rather down than up. We can fancy we discern a glimpse of what is before us, and how some of our fellow beings would like to treat us. If our foresight be fairly accurate, we shall know how to behave when the necessity arises, and thus, instead of being struck dumb, as it were, by the stupendous suggestions of those who are ignorant of our work, our trials, and our difficulties, we shall be in a position of calm and just independence, ready to take our place and to maintain it. That is the only excuse I can offer and I trust you will find it sufficient.

By an Act of Parliament in the year 1858 the General Medical Council was created, and one of the duties thrown upon the Council was to make and to keep a register of all doctors in the country, and from time to time to determine the education and the qualifications necessary in order to entitle men to registration, and so to enjoy all the privileges a profession obtains from the protection of the State.

Up to this time the work in the medical profession was carried on just as it is to-day in the legal profession by those qualified and holding diplomas and degrees granted by the corporations and universities, and by those who were endeavouring to obtain diplomas or those who had failed in the attempt, either from want of aptitude for examination work or from lack of pecuniary means. After this year—1858—things went on as before, the only difference being that there existed from that time an official or State register of men qualified to practise medicine. The unqualified men—who acted not independently but as loyal assistants and under the personal direction of the doctor—were not disturbed in any way. However, gradually changes arose especially in consequence of the interference of the Council in medical education, which made it more and more difficult for the assistant to obtain a qualification. With the increase in stringency of regulations would-be doctors in greater and greater numbers entered direct to the medical schools throughout the country, and thus became qualified without any training in the business side of professional work. While these two movements were going on, side by side as it were, an abuse of a serious nature originated. It was this. In order to extend a practice—a legitimate desire on the part of any doctor—an assistant, unqualified and not enrolled on the State register, was placed in a distant out-station, where the assistant became, as a matter of fact, the principal for days at a time, for the real principal

only made an occasional visit to see that everything went well, and to cover in case death of a patient occurred under the care of the assistant. This practice grew fast in certain districts, for it was lucrative to both assistant and principal, and it attained such a degree that there was a danger lest the public would interfere before the medical profession itself took steps to remedy matters.

In consequence, I think, of the inability of the assistant to become qualified at a moderate sacrifice, of the great increase in qualified and registered men, and of the serious abuse then known as "covering," a climax was reached in the year 1897, and the result of the deliberations of the General Medical Council upon the then condition of things in the medical profession was to order the abolition of the unqualified assistant.

The General Medical Council had no power whatever over the unqualified assistants, who, if they chose, could set up anywhere as men prepared to treat patients, as indeed anybody can to this day; for there is no law to prevent any one practising physic and no power in any body to regulate or suppress quacks of any kind or description. But the Council has power over all those who are on its *Register*—a State register—and it proclaimed in 1897 that any one on the *Register* would be considered guilty of "infamous conduct in a professional respect" if he employed an unqualified assistant. The registered doctor could, however, use a bona fide student (pupil) or a surgery attendant to help him do something but not delegate to the pupil or attendant any of his own work.

After this date (1897) what was formerly done by registered doctors and unqualified assistants could only be done by the registered, and *covering* became impossible.

The evils of *covering* thus came to an end, and the doctors, as well as the public, were glad, though a feeling of injustice remained in the minds of many a registered doctor as well as in those of the unfortunate men who could do nothing but be assistants. Since then a generation has almost passed away, and there are not many who were so interested in the matter as to keep fresh in their memory the excitement then produced in the medical world.

With the disappearance of the unqualified assistant an evil, it is true, was remedied, but the cure destroyed not only what was evil but also all that was good. It was, of course, thought that the great additions which then took place in the ranks of the registered would fill the place of the old assistant. Time has brought with it disappointment, and the thought that an extremely useful, if subordinate, member of the medical profession, as one is in duty bound to call him, was annihilated for the sins of a few of the registered doctors. His place has not been filled, and it cannot be until the general practitioner calls for registered aid in some form or other.

The doctor voluntarily, and with his eyes open, took upon himself thirteen years ago the duty of doing not only what he had done before, but also all that which his unqualified assistant did for him. The doctor thereby undertook all the surgery work and all the hundred and one little things that must be done for people, all of which had been remarkably well performed by the unqualified assistant for many years; and, moreover, he undertook all this, little thinking that he could have no relief, as he himself gained valuable experience, from those trifles which are apt to become troublesome and from the performance of which his education and his constant endeavours to gain knowledge I think entitled him.

Therefore, the work of the profession of medicine from 1897 up to this day has been conducted, as far as the powers that be can control it, by men who are enrolled on the State *Register*, and by them only.

The result of such a sudden and profound change in the mechanism of the work of the profession, which had been carried on in much the same way for centuries, was to throw all the work, great and small, important and trifling, responsible and insignificant, solely upon the registered doctor. Now it will be generally admitted that work is usually paid for according to whether it is responsible or not, important or trifling, necessitating knowledge or not, and so on.

So it is with the doctor's work. The doctor who has to spend his time in trivialities must not expect payment as if he were occupied with responsible work, and unless he can get someone to help him with the small matters, he will have no time for the large ones, and his income will proportionately suffer, and, indeed, his position in the community will deteriorate rather than improve. The situation at the end of thirteen years' experience is this: The doctor, who has to spend a great deal of time and much money to get on the State *Register*, finds himself compelled by the regulations of the General Medical Council to do all the work in the surgery—every little dressing, every adjustment of a splint—to prescribe for every little ailment, even the result of an error in diet or drink the previous evening. All he can get to assist him is a dispenser, who must, at the least, be qualified under the Apothecaries' Society as assistant apothecary, and this person's sphere of action is limited to putting together medicines ordered by his chief.

Since the year 1897 many developments have taken place which must of necessity profoundly affect the work of the medical man. The nurse has been better educated and better trained, and to-day she is nothing unless certificated; the midwife has been revolutionized, and she is not only certificated, but registered, and the compounder of drugs has found a place in the bosom of the Apothecaries' Society. To-day the doctor who can afford it employs an assistant apothecary—the compounder; he may also use a nurse, and delegate to her important work; and besides, as there is no restriction in law, he may employ a midwife to attend all the simple cases of midwifery, and to bring to him information as to the subsequent progress of a difficult case where his services were required. All these functions, so far as I can discover, may to-day be combined in one person—a woman. The man with this potentiality has not yet appeared. Accordingly most, if not all, of the duties performed by the old unqualified assistant may now be done by a woman who combines a certificate in dispensing with one in nursing and in midwifery. It would seem that the economic situation so violently disturbed in 1897 is just upon being readjusted, and it may be that the representative of the unqualified and unregistered man will come to his own again. If a man appears, there will be a difference in the circumstances, for he will not enter upon his work with the intention of mounting higher into the ranks of the registered doctor, but to remain in a lower status. His position will be new and distinctive, and, if properly guided and controlled, will doubtless prove an enviable and an honourable one.

It appears to me very remarkable that when the unqualified assistant was abolished in civil practice, similar, though not identical, help was further organized and rendered more effective in our naval and military services. And to-day naval and military doctors have at their command a staff of men who can, and do, do a great part of the work the unqualified assistant did in former times. The civil doctor can, however, under present conditions have no such help; he wants it, but knows not how to get it, for he dare not employ an unqualified assistant. Yet it is quite clear he can employ a nurse, a female dispenser, and a midwife. If all doctors were of the female sex, this system would serve admirably, and the old system would for all practical purposes be re-established in its entirety. The sex problem, with all its difficulties, would not then arise. Most doctors, however, are men who are married, and who, for various and sufficient reasons, cannot employ a woman who is a nurse, dispenser, and midwife in one as his confidential assistant. It is out of the question under present conditions in which we find human nature.

The unqualified assistant has, then, in reality reappeared in these three distinct forms—as a dispenser who cannot act independently of a doctor, as a nurse who is free to do what she pleases, and as a midwife who is neither doctor nor nurse and who is under

stringent rules and regulations which threaten in some places to starve her out of existence. The nurse is wanted, educated and trained as she is to-day; the midwife with the knowledge of the course of simple labour and the training of a nurse has her place to fill and a most important function to perform.

Now what is it that the general practitioner wants so that he may be able to do his work better, easier, and obtain, we hope, greater remuneration? From experience gained through constant contact with general practitioners, I have no hesitation in saying that they want exactly what their brethren in the Royal Army Medical Corps have to assist them. To put it concisely, they want an assistant who is qualified to dispense, to attend to minor casualties, to regulate the work in the surgery, to perform massage, etc., and to keep accounts. For an unqualified assistant to serve the purpose of visiting patients, diagnosing their diseases, and treating them independently of the doctor, or to undertake midwifery practice, there is no room, and, so far as I know, no one wants such a person. He has disappeared, and all devoutly hope it is for ever.

If that be what the general practitioner wants, it is not what he is threatened with. The nurse wants her sphere extended and her importance increased; the registered midwife desires a position not even thought of by the old unqualified assistant—that is, she wants to have the status of a doctor in midwifery and to act quite independently of a doctor in medicine. If we may credit report, she would act thus to-day were it not for the stringent regulations based on the Midwives Act, 1902. The nurse, then, still remains free from responsibility in a professional sense and in the eyes of the law, but the midwife is compelled to obtain a certificate of having passed certain examinations and to obey certain rules and regulations, and to be registered, otherwise penalties may be inflicted. If ever the nurse becomes entitled to State registration, she would be strengthened in a professional sense and would become responsible to the State for the work undertaken, just as the midwife and doctor are. Medical men, so it seems to me, cannot have any objection in principle to the registration of nurses and the consequent acquisition of a professional status with all its accompanying responsibilities, but what they may rightly object to is registration under some scheme that will leave it doubtful as to the limit of the sphere of work of a nurse. The work of a nurse, just as that of a midwife, must be defined, not primarily, as might be supposed, in the interests of the doctors and secondarily of the nurses and the public, but primarily for the good of the public. To have nurses who know not the limits of their own spheres of action would, it seems to me, soon lead to trouble of a serious nature.

If we take a general survey of the present situation, it will not be difficult to gather that the tendency is to isolation and independence. There is a danger lest midwives, nurses, masseurs, etc., be encouraged in their independence and neglect the relation that naturally exists between them and the medical man if good is to follow their footsteps. Each class should have its sphere defined and its relation to the doctor clearly and without dubiety set forth. The various branches of the healing art should therefore be co-ordinated, and this, I venture to think, would lead to the advantage of each individual branch, as well as that of the community at large.

The midwife and the nurse will soon find their own sphere, but the general practitioner still remains in an unsatisfactory position, which is, I think, in the main due to the abolition of the unqualified assistant. His position can only, so it appears to me, be improved by re-creating the office of assistant who shall after due training and education be registered to dispense, to attend to minor casualties, etc., as I have already stated. An organization for training such assistants exists in the Royal Army Medical Corps, and probably with a little extension of the training men could be got at short notice to fill such appointments. Such men, I feel convinced, could render incalculable service to the general practitioner, and, from their reliability, could prove themselves of great advantage to the public.

The Royal Army Medical Corps exists for the service of the army, and cannot therefore be asked to train men as assistants for civil doctors. Soon, however, if such were deemed advisable, some educational organization, based upon the work now done in the Royal Army Medical Corps, could be set up and young men of the right class could be trained, examined, and registered.

In conclusion, may I commend these suggestions to the general practitioner, and if he thinks one or more, or all of them, would promote collectively or individually the interests of all parties, I wish him to understand that it rests with him to say so; and if he does make up and express his mind in their favour, I fear not that the General Medical Council will put any obstacles in the way of reform which would lead to the greater welfare of the public as well as that of the doctors themselves.

Without some change to ameliorate the condition of the general practitioner, I feel convinced that within a measurable distance of time men will cease to enter the profession in adequate numbers to meet the needs of the public, and as soon as the demand for doctors to serve in the Crown Colonies and elsewhere and in the civil State medical services is satisfied, there will assuredly be a plethora of medical men, and following this a slump in the medical schools. A long and expensive education without prospect of adequate remuneration and reasonable leisure is not likely to attract young men. Nothing perhaps less than a dearth of doctors will bring an effective remedy.

Major FREEMAN described the method of training men as orderlies in the Royal Army Medical Corps.

The following gentlemen joined in the discussion: Mr. DEIGHTON, Dr. BANSALL, Dr. JAY, Dr. RODERICK, and Mr. APTHORPE WEBB.

Dr. GRIFFITHS replied to several questions.

LANCASHIRE AND CHESHIRE BRANCH:

MANCHESTER (SOUTH) DIVISION.

A GENERAL meeting of this Division was held at Dr. Simcock's, 16, Heaton Moor Road, Heaton Chapel, on Tuesday, November 29th, at 3.45 p.m. Dr. HOPKINSON presided. There were present: Drs. Booth, E. Vipont Brown, Grant Davie, Edlin, Godson, Gregory, Holt, Crichton Hood, Sawers Scott, Simcock, Stocks, and Whitworth. Dr. Taggart was present by invitation.

Confirmation of Minutes.—The minutes of the last meeting, October 26th, were read and confirmed.

Apology for Absence.—Dr. Hutchinson wrote regretting his inability to be present.

Use of Police Ambulance.—A circular letter sent out by the Watch Committee of the Manchester City Council, referring to the use of the police ambulance, was read, and, after the discussion, the following resolution was passed *nemine contradicente*:

> That the Chairman and Secretary should be empowered to act as a subcommittee with regard to the services of the horse ambulance.

Joint Committee of Manchester and Salford Area.—As Dr. Cotterill was unable to attend, the report of the meeting of the Joint Committee of the Manchester and Salford area was postponed to the next general meeting.

Definition of the Term "Consultant."—Dr. GRANT DAVIE presented the report of the subcommittee appointed to consider this definition in relation to the rules on the ethics of consultation. He pointed out the unsatisfactory nature of the existing definition formulated by the Central Ethical Committee, as it permitted the consultant to see the patient already under the attending practitioner's care without the latter's knowledge or consent; and, after relating the circumstances which led to the reopening of the subject, gave the subcommittee's recommendation as follows: "In these rules the term 'consultant' is to be understood as meaning any practitioner who is called upon by the patient or by any person acting on behalf of the

patient *to consider jointly* with the attending practitioner with regard to that patient." This definition admitted of a personal meeting, or a communication by letter or otherwise. This was accepted *nemine contradicente*. It was proposed and carried that this suggestion should be conveyed to the Central Ethical Committee.

Annual Representative Meeting.—The Representative of the South Manchester Division, Dr. GRANT DAVIE, gave a very clear and interesting account of the meetings he had attended in London. The CHAIRMAN expressed to him the thanks of the meeting for the trouble he had taken.

Ophthalmia Neonatorum.—The report on, and the scheme for prevention of, ophthalmia neonatorum were read and discussed; after the discussion on the various sections the following three resolutions were passed, *nemine contradicente*: (1) Moved by Dr. SIMCOCK, seconded by Dr. E. VIPONT BROWN:

> That, having fully discussed the question of ophthalmia neonatorum, the members of the South Manchester Division of the British Medical Association strongly recommend the Heaton Norris Urban District Council to adopt the compulsory notification of cases of ophthalmia neonatorum.

(2) Moved by Dr. GREGORY, seconded by Dr. GODSON:

> That this meeting of the South Manchester Division of the British Medical Association urges the Manchester Sanitary Authority to provide facilities for the bacteriological examination of discharges from the eyes of all suspected cases of ophthalmia neonatorum.

(3) Moved by Dr. E. VIPONT BROWN, seconded by Dr. GREGORY:

> That this meeting of the South Manchester Division of the British Medical Association strongly recommends to the Manchester Sanitary Authority that competent nursing should be provided free of charge to all cases of ophthalmia neonatorum needing such care, as recommended by the Council of the British Medical Association in their report on ophthalmia neonatorum. The members feel that this is desirable on both humanitarian and economic grounds.

The Secretary was instructed to forward these three resolutions to the Secretary of the Joint Committee of the Manchester and Salford area, so that the other Divisions in this area might be notified of the action of the South Manchester Division in relation to the subject of ophthalmia neonatorum; and also to forward them to Dr. Byers, Wilmslow, with the request that he should urge the sanitary authority in his district to adopt the compulsory notification of ophthalmia neonatorum.

SOUTH-EASTERN BRANCH:

EASTBOURNE DIVISION.

A MEETING of this Division was held in the Technical Institute, Eastbourne, on Monday, November 14th, at 8.30 p.m., under the presidency of the Chairman, Mr. H. D. FARNELL. There were present Drs. J. Adams, J. H. Ewart, H. S. Gabbett, F. C. Goodwin, A. Harper, F. J. Nicholls, A. C. Roberts, and the Honorary Secretary. Dr. F. R. P. Taylor apologized for absence.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Thanks of Council.—The CHAIRMAN read a letter from the Business Manager conveying the thanks of the Council to the members for their kind hospitality to the excursion of visiting members on July 30th.

Reference D 3.—The Honorary Secretary was instructed to apply for copies of the pamphlet accompanying Reference D 3 for the discreet use of members.

Interim Report of Council.—The interim report of the Council was fully discussed in all its bearings, and it was unanimously resolved to give a general approval to the suggested rules, except that under certain conceivable conditions it would be impossible to carry out or strictly comply with the terms of (4), *Ophthalmia Neonatorum*, a notifiable disease. After a prolonged discussion on the suggested scheme it was unanimously resolved:

> In view of the corporation becoming the authority for supervising the Midwives Act on and after April 1st, 1911, the further consideration of this matter be postponed until next meeting.

Representation of Local Profession on Hospitals.—The scheme of the Hospitals Committee providing for the representation of members of the local medical profession on boards of hospitals, etc., was shortly considered. As the principle embodied therein has been in operation here for some years it was felt unnecessary to adopt the suggested procedure.

Annual Representative Meeting.—Mr. J. H. EWART gave a short account of the proceedings of the Annual Representative Meeting and was thanked for his services.

FOLKESTONE DIVISION.

A COMBINED meeting of the East Kent Divisions and of the Folkestone Medical Society was held at the Royal Victoria Hospital, Folkestone, at 3 p.m., on Saturday, December 3rd; Dr. WAINWRIGHT, the President, was in the chair. Twenty-seven members were present, among them being: Drs. A. C. Jordan (London), Wainwright (Folkestone), Major Palk (Folkestone), Colonel Hensman (Folkestone), Sidney Wacher (Canterbury), Evans (Folkestone), Routh (Folkestone), Whitehead Reid (Canterbury), Davis (Hythe), Major Hooper (Shorncliffe), Calverley (Folkestone), Bradbury (Sandgate), J. Hackney (Hythe), Robinson (Dover), Eastes (Folkestone), Packman (Folkestone), Gilbert (Folkestone), Lidderdale (Folkestone), Barrett (Folkestone), Colonel O'Connor (Shorncliffe), Winder (Shorncliffe), Wilgress (Folkestone), Dodd (Folkestone).

Luncheon.—The meeting was preceded by a luncheon at the invitation of the President, at which fifteen sat down.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Medical Sickness Society.—A letter was read from the Medical Sickness Annuity and Life Assurance Society.

Letter from Altrincham Division.—A letter was also read from the Altrincham Division.

Medical Treatment of School Children.—The report of the Kent Organization Committee on the Medical Treatment of School Children, of which every member had previously received a copy, was approved.

Roentgen-ray Diagnosis.—A very interesting paper was read by Dr. ALFRED JORDAN, Medical Radiographer of Guy's Hospital, on Roentgen-ray diagnosis, with lantern demonstration. In the limited time at his disposal he confined his remarks to diagnosis in medical cases, referring briefly in the first place to conditions which occur both in medical and surgical practice. A wrist showing a typical Colles's fracture was contrasted with a wrist in which a similar condition was suspected, but acute rheumatoid arthritis was revealed. The rarefied condition of the bones of the forearm, wrist, and hand was very obvious. The subdivision into rheumatoid arthritis commencing in middle life, and osteo-arthritis commencing much later in life, was insisted upon, as these conditions differ fundamentally. Calculi were briefly dealt with, special attention being given to the more transparent urate calculi. The chief points which led to success in demonstrating urate calculi were the thorough evacuation of the bowels (for the shadows thrown by faecal masses were frequently quite as opaque as those due to urate calculi), and the examination by the fluorescent screen to observe whether any shadow seen in the kidney area accompanied the respiratory movements of the kidney. To obtain a clear photograph it was often necessary to cause the patient to hold his breath during the exposure. In the case of a faintly visible shadow, the opening through which the *X* rays emerged should be reduced to a small size, as the definition was greatly improved in this way. The shadows due to urate calculi and faecal masses were illustrated. Calculi in the different parts of the ureter were shown. In some of these cases the

calculus had been thought to be in the kidney, sometimes the opposite kidney, so that an examination of the entire urinary tract was necessary in every case. In dealing with the heart, diagrams were shown to illustrate the typical shape of the normal heart and of the heart of various valvular diseases. The characteristic form in mitral stenosis was shown, and the form in aortic regurgitation, particularly the form associated with atheroma of the aorta. Aneurysm and phthisis were merely mentioned in passing, and the reader of the paper referred the members to his recent publications on these subjects in the BRITISH MEDICAL JOURNAL of November 19th, 1910, and August 27th, 1910, respectively. The characteristic appearances in pericardial effusion, pleural effusion, hydropneumothorax, and pneumonia were illustrated and explained. Coming to the alimentary tract, the method of giving bismuth meals was described. The normal stomach was shown, and its position in various postures was explained. The changes of form and activity associated with malignant and other diseases of the stomach were illustrated, as were also the appearances in hour-glass stomach, and after gastro-jejunostomy. Various abnormal conditions in the small and large intestines were next dealt with, the effect of obstruction due to fibrous tissue and to new growth being illustrated. The oesophagus was not described owing to lack of time, but the lecturer referred his audience to the next coming issue of the *Transactions of the Royal Society of Medicine* for an account of the paper which he read a fortnight earlier in the Radiology Section of that society. For a description of the apparatus and equipment for carrying out the examinations, the members were referred to the *Archives of the Roentgen Ray* for August, 1909.

Discussion.—The following took part in the discussion: Drs. WAINWRIGHT, EASTES, Major PALK, Colonel HENSMAN, and DODD.

Vote of Thanks.—A hearty vote of thanks was accorded to Dr. Jordan for his admirable paper.

Tea.—After the meeting tea was supplied by the Chairman.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

CARDIFF DIVISION.

A MEETING of this Division was held at the Cardiff Infirmary on Wednesday, December 7th, at 3 p.m., Dr. CRAWFORD TREASURE in the chair.

Confirmation of Minutes.—The minutes of the last meeting and special meeting were read and confirmed.

Apology for Non attendance.—A message was conveyed to the meeting from Dr. MacLean, apologizing for his absence from the meeting owing to urgent and important business.

Appointment of Deputy Representative for Representative Meetings.—The SECRETARY pointed out that as the Representative of the Cardiff Division had been appointed Chairman of the Representative Meeting, the Division was entitled to appoint a Deputy Representative to support its interests at the annual meeting. It was unanimously decided that Dr. Crawford Treasure be appointed to that office.

Election of Complimentary Member.—It was unanimously decided that Mr. Mackenzie Wallis, B.Sc.Cantab., Lecturer on Physiological Chemistry at University College, Cardiff, be elected a complimentary member of the Division.

A Disclaimer.—A letter was read from a member, expressing his regret that his name had been mentioned in an article in the lay press in connexion with a case of skin grafting. He assured the Division that he had no knowledge of it till he had been told that it had appeared in the paper. The Division expressed its sympathy with the member, and decided that it be placed on record that he was in no way to blame in the matter.

The Urine in Malignant Disease.—Mr. MACKENZIE WALLIS read a paper on the urine in malignant disease, dealing more particularly with the excretion of creatin and creatinin.

Unusual Conditions of Genito-urinary System.—Mr. WILLIAM SHEEN read notes on some unusual conditions of the genito-urinary system. He described four cases: (1) Penile body. A fibrous plaque on the dorsal surface of the base of the penis in a man aged 54. Duration three months. Painful, and interfered with coitus. It was removed, its intimate connexion with the corpora cavernosa producing free bleeding. Microscopically fibroma. Mr. Sheen discussed the etiology of these growths, referring to venereal disease, trauma, and gout. A gouty diathesis appeared to be the most usual etiological factor, and the condition was sometimes associated with Dupuytren's contraction. Growths were single or multiple, and of various shapes and sizes, sometimes annular. Removal was only indicated when definite trouble was caused. (2) Gonorrhoea of the para-urethral canals in a man aged 26. Cure was only effected when the canals were slit up and cauterized. The varieties of these canals and the treatment of infection in them was referred to. (3) Acute gonorrhoeal pyonephrosis. The patient, a man aged 30, one month after contracting gonorrhoea, developed a large lumbar swelling, which proved on operation to be a large pyonephrosis, the pus from which gave a pure culture of the gonococcus. There was an acute ascending infection from the urethra to the kidney—a rare condition. After incision and drainage the man recovered. In a similar case from the literature nephrectomy was eventually performed. (4) Large bilocular hydrocele of the cord. This was removed from a man aged 36. The scrotal part was small. The abdominal part formed a large tumour, centrally situated, extending from the symphysis to the umbilicus, and resembling a distended bladder. The tumour was removed by evacuating the contents and shelling out wall. The patient made a good recovery.

Skiagrams of the Thorax.—Dr. OWEN L. RHYS showed some admirable skiagrams of the thorax, including cases of aneurysm of the aorta and the innominate artery, pneumothorax, pyopneumothorax, and empyema.

☞ *To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

ELECTION OF CENTRAL COUNCIL 1910-11.

FOR this constituency, which had not previously made any nomination for representation on the Central Council the following is declared duly elected:

Grouped Branches.	*Name of Representative.*
Bombay, Burma, South Indian and Madras, Colombo Ceylon, Assam, Malaya, and Hong Kong and China Branches	Surgeon-General P. H. Benson, M.B., I.M.S., Madras.

By Order,

GUY ELLISTON,

Financial Secretary and Business Manager.

December 15th, 1910.

BRANCH AND DIVISION MEETINGS TO BE HELD.

GLOUCESTERSHIRE BRANCH.—A Special Meeting of the Branch will be held at the Royal Infirmary, Gloucester, on Thursday, December 22nd, 1910, at 4.45 p.m. Agenda: (1) Modern rules for District Nursing Association (see SUPPLEMENT, BRITISH MEDICAL JOURNAL, July 9th, 1910); (2) fees for certificates of illness of children unable to attend school; (3) discussion on time and order of meetings of the Branch.—D. E. FINLAY, Honorary Secretary.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

DEPUTY INSPECTOR-GENERAL JOSEPH CROWLEY, M.D., has been placed on the retired list at his own request, with the rank of Inspector-General, December 7th. His commissions are thus dated: Surgeon, October 1st, 1879; Staff Surgeon, October 1st, 1891; Fleet Surgeon, October 1st, 1895; Deputy Inspector-General, March 17th, 1907. Fleet Surgeon E. J. MORLEY has been placed on the retired list, with the rank of Deputy Inspector-General, December 8th. He was appointed Surgeon, November 10th, 1895, and made Staff Surgeon, November 10th 1894.

The following appointments have been made at the Admiralty:—Staff Surgeon L. E. DARTNELL, to the *Victorious*, temporarily, December 8th; Fleet Surgeon H. SPICER, M.B., to the *Bristol*, on commissioning, undated; Staff Surgeon J. C. ROWAN, M.B., to the *Albemarle*, on recommissioning, December 15th; Staff Surgeon S. CRONEEN to the *Mars*, December 15th; Surgeon C. H. L. PETCH, to the *Victory*, additional, for disposal, December 6th; Surgeon D. H. C. GIVEN, M.B., to the *Warrior*, December 10th.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN EDWARD GIBBON, M.B., is seconded for service with the Egyptian Army, November 13th.

Captain D. DE C. O'GRADY, who is serving in India, has been appointed a Specialist in Dermatology, 2nd (Rawal Pindi) Division, with effect from November 12th.

INDIAN MEDICAL SERVICE.

ON return from leave out of India, Captain V. B. GREEN-ARMYTAGE is reappointed Specialist in Midwifery and Diseases of Women and Children from October 9th.

Captain S. R. GODKIN, 6th (Poona) Division, and Lieutenant T. J. C. EVANS, 8th (Lucknow) Division, are appointed Specialists in Advanced Operative Surgery from October 26th.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANTS WILLIAM DARLING, M.B., and JOHN M. DARLING, M.B., are seconded for service with the medical units of the Edinburgh University Contingent, Officers' Training Corps, October 1st.

Cadet Corporal W. R. GARDNER, from the Edinburgh University Contingent, Officers' Training Corps, to be Lieutenant (on probation), November 18th.

Lieutenant H. R. BORCHERDS, M.B., is confirmed in his rank.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Third East Anglian Field Ambulance.—WALTER R. S. ROBERTS, M.B., to be Lieutenant (to be supernumerary), November 1st.

Third Northumbrian Field Ambulance.—Lieutenant ABRAM C. BARKER, M.B., resigns his commission, December 10th.

Attached to Units other than Medical Units.—Captain J. W. T. WALKER, M.B., F.R.C.S., resigns his commission, December 10th.

For Attachment to Units other than Medical Units.—GEORGE C. JEAFFRESON to be Lieutenant, November 7th.

Second Home Counties Field Ambulance.—Captain D. L. HAMILTON, F.R.C.S.Edin., to be Major, December 14th.

Fourth Southern General Hospital.—Captain A. E. CARVER, M.D., resigns his commission, December 14th.

Fifth Southern General Hospital.—Captain JOHN KYFFIN, from the List of Officers attached to Units other than Medical Units, to be Major, September 28th.

Attached to Units other than Medical Units.—Lieutenant F. W. SQUAIR, M.B., to be Captain, November 17th.

OFFICERS' TRAINING CORPS.

Edinburgh University Contingent, Senior Division, Officers' Training Corps.—Lieutenant WILLIAM DARLING, M.B., F.R.C.S.Edin. (serving with the medical unit), to be granted the local rank of Captain, with the pay and allowances of that rank, October 1st.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-seven of the largest English towns 7,869 births and 5,445 deaths were registered during the week ending Saturday last, December 10th. The annual rate of mortality in these towns, which had been 15·5, 17·3 and 18·1 per 1,000 in the three preceding weeks, declined to 16·8 per 1,000 last week. Among the several towns the death-rates ranged from 6·4 in Wallasey, 7·4 in Barrow-in-Furness, 8·6 in King's Norton, 9·4 in Leyton, and 10·0 in Willesden and in East Ham to 20·7 in Rochdale, 21·7 in Brighton, 22·7 in Wigan, 24·0 in Tynemouth, and 24·5 in Preston; in London the death-rate was equal to 18·2 per 1,000. The annual rate of mortality from the principal epidemic diseases in the seventy-seven towns last week averaged 1·0 per 1,000; in London the rate was equal to 1·1 per 1,000; while among the seventy-six other large towns it ranged upwards to 3·3 in Portsmouth, 3·5 in Grimsby, 3·7 in Tynemouth, 3·9 in Rotherham, and 4·0 in Brighton. Measles caused a death-rate of 1·9 in Portsmouth, 2·1 in Grimsby, 2·4 in Brighton, and 3·1 in Rotherham; whooping-cough of 1·9 in Reading; and enteric fever of 2·3 in Wigan. A fatal case of small-pox was registered in St. Helens, but none in any other of the seventy-seven towns. The mortality from scarlet fever, diphtheria, and diarrhoea showed no marked excess in any of the large towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,769 and 1,746 at the end of the two preceding weeks, further declined to 1,719 at the end of the week under notice; 169 new cases were admitted during the week, against 153 and 170 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, December 10th, 838 births and 622 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 16·5 and 17·5 per 1,000 in the two preceding weeks, declined to 17.2 per 1,000 last week, and was 0·4 per 1,000 above the mean rate during the same period in the large English towns. The rates in the several Scottish towns ranged from 14·0 in Aberdeen and 16·0 in Glasgow, to 19·0 in Paisley and 23·0 in Dundee. The death-rate from the principal epidemic diseases averaged 1·1 per 1,000, and was highest in Dundee and Leith. The 271 deaths from all causes last week in Glasgow included 1 which was referred to measles, 1 to scarlet fever, 7 to diphtheria, 3 to whooping-cough, 1 to enteric fever, and 2 to diarrhoea. Three deaths from diphtheria were recorded in Edinburgh; 2 from scarlet fever and 3 from diphtheria in Dundee; and 5 from whooping-cough in Leith.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, December 10th, 533 births and 432 deaths were registered in the twenty-two principal urban districts of Ireland, as against 554 births and 400 deaths in the preceding period. The annual death-rate in these districts, which had been 17·9, 19·1, and 18·1 per 1,000 in the three preceding weeks, rose to 19.6 per 1,000 in the week under notice, this figure being 2·4 per 1,000 higher than the mean annual death-rate in the seventy-seven English towns for the corresponding period. The figures in Dublin and Belfast were 23.2 and 20·1 respectively, those in other districts ranging from 6·6 in Queenstown and 7·8 both in Waterford and Galway, to 34·3 in Kilkenny and 37·0 in Tralee, while Cork stood at 13.7, Londonderry at 15·6, and Limerick at 13.7. The zymotic death-rate in the twenty-two districts averaged 1.5 per 1,000, as against 1·6 per 1,000 in the previous week.

Hospitals and Asylums.

LEBANON HOSPITAL FOR THE INSANE, ASFÛRIYEH, BEYROUT.

THE annual report for the year ended March 31st, 1910, of Dr. H. Watson Smith, the Medical Superintendent of this interesting and beneficent institution, shows that on April 1st, 1909, there were 75 patients on the registers, and on March 31st, 1910, there were 78. The total number of cases under treatment during the year was 176. During the year 101 were admitted, 58 men and 43 women, of whom 4 men and 2 women were cases of readmission during the year. Of the total number 34 belonged to the Greek Orthodox Church, 32 were Maronites, 9 were Protestants, 8 Moslems, 7 Jews, and the remainder were either Roman or Greek Catholics or Druses. A table giving the residences of the admissions shows that they were drawn from widely-separated parts of Syria, and also from Sardinia, Cyprus, and Egypt. "If it be added," Dr. Watson Smith says, "that 876 patients distributed over this wide area have received treatment in this small hospital since its commencement, and that it is the only asylum in which modern humane methods of treatment are practised between Constantinople and Cairo, it requires no demonstration to show the great necessity for such an institution." The admissions were classified according to the forms of mental disorder as follows: Recent mania 22, chronic and recurrent 3, recent melancholia 18, chronic 2, dementia praecox 20, general paralysis 10, alternating insanity 6, secondary dementia 7, delusional insanity 4, less common forms 7, congenital mental deficiency 1, and not insane 1. It will be noted that the general paralytics, despite the frequent and hasty conclusion that general paralysis is rare among Eastern peoples, amounted to 10 per cent. of the admissions. The high proportion of precocious dements is also noteworthy. As to probable causation, Dr. Watson Smith says that although nothing unusual was to be remarked, the increasing number of patients in whom alcohol was proved to be the direct exciting cause of the attack, and the increasing number of young emigrants who break down under the strain of western life and return to their own country insane, were the two most outstanding and regrettable factors. We see that alcohol was assigned in 18, or 18 per cent.; syphilis in 6 and other toxic causes in 4; critical periods in 9; pregnancy, lactation, and the puerperal state in 7, and mental stress in 14. An insane heredity was ascertained in 7, and congenital defect in 1. During the year 24 were discharged as recovered, giving a recovery-rate on the total admissions of 26.3 per cent.; also 26 as relieved and 34 as not improved. Concerning these discharges Dr. Watson Smith says that the considerable number who were discharged within two months of their admission (39) is to be accounted for in two ways: First, a few were cases of rapid recovery; but the larger number were those whose relatives lost patience and removed the patients from the hospital because the improvement manifested did not fulfil their expectations. This matter accounts for the large number who left the hospital unimproved, many of whom would have benefited if adequate time had been allowed for their proper treatment. During the year 16 died, the deaths being due in 6 to general paralysis, in 3 to pulmonary consumption, in 3 to congestion of the lungs, in 2 to dysentery, and in 1 each to exhaustion from mania and ulceration of the stomach. It will be noted that the deaths from general paralysis amounted to 37·5 per cent. of the total deaths. The general health, apart from a few cases of malaria in summer, was exceedingly good in spite of severe epidemics of dengue and typhoid in the neighbourhood, and no accident of any serious nature occurred during the year.

CITY OF GLASGOW FEVER HOSPITAL, RUCHILL.

AN interesting statistical report of the work done during the three years 1906-09 has recently been published. It illustrates very well the curious fluctuations which take place in the mortality and admission rates of the various diseases treated at Ruchill. During the three years the total admissions were 10,200. In the period 1908-09, the number of admissions was 3,764. The general mortality-rate varied considerably, being for 1906-07, 15.1 per cent.; for 1907-08, 11 1 per cent.; for 1908-09, 8.5 per cent. The two former are the highest rates of mortality since the opening of the hospital in 1900, and the last is one of the lowest. Apparently this was due entirely to the fact that in the two former years cerebro-spinal fever was prevalent. If the cerebro-spinal cases are deducted the mortality-rate comes down to 10 per cent. for 1906-07, and 9 per cent. for 1907-08. There still remains a very large proportion of the patients who are admitted in a moribund condition, and die within the first forty-eight hours. The three years in question are rather above the average in this respect, with an average of 20.8 per cent. of moribund admissions against an average of 17.9 per cent. for the previous six years. As regards the individual diseases, the mortality-rate in scarlet fever and diphtheria is declining, but that for measles and whooping-cough is slightly up. The general mortality-rate for scarlet fever is 2.8 per cent., that for diphtheria is 9.7. The most unfavourable result is shown in the case of cerebro-spinal meningitis; of 293 cases admitted 220 died, a mortality of 75 per cent. As in former years, a systematic investigation was carried out to ascertain the condition as to vaccination among all patients admitted to the hospital. Excluding "doubtful" cases the figures are as follows: For 1906-07, 3.7 of the patients under 10 years of age were unvaccinated; for 1907-08, 2 9 per cent., and for 1908-09, 4.1 per cent.

NOTTINGHAM CITY ASYLUM, MAPPERLEY HILL.

THE annual report for 1909 of Dr. Evan Powell, his thirtieth report as Medical Superintendent of this asylum, shows that on January 1st there were 817 patients in the asylum, and on the last day of the year, 828. The provided accommodation is for 771 patients, so that there has been a certain amount of overcrowding during 1909, as in the preceding three or four years. The Commissioners say that active steps are now being taken to relieve this. The total cases under treatment during the year numbered 786, and the average number daily resident 815. During the year 169 were admitted, of whom 152 were direct admissions. Of these, in 93 the attacks were first attacks within three, and in 8 more within twelve, months of admission; in 36 not-first attacks within twelve months of admission; in 10 of more than twelve months' duration, and 4 were congenital cases. The direct admissions were classified according to the forms of mental disorder into: Recent and recurrent mania, 30; recent and recurrent melancholia, 35; senile and secondary dementia, 5; delusional insanity, 15; primary dementia, 22; general paralysis, 22; insanity with epilepsy, 10; less common forms, 8; and congenital defect, 4. As to probable causation, alcohol was assigned in 36 and syphilis in 9, critical periods in 16, nervous diseases in 25, other bodily affections in 23, bodily trauma in 3, and mental stress in 23. An insane heredity was ascertained in 29, and an epileptic heredity in 1. During the year 67 were discharged as recovered, giving a recovery-rate on the direct admissions of 44.08 per cent., or of recoveries in the direct admissions on the direct admissions of 43 42 per cent.; also 6 as relieved, 7 as not improved, and 1 as not insane. During the year 77 died, giving a death-rate on the average numbers resident of 9.44 per cent. The deaths were due in 36 to nervous diseases, including 21 from general paralysis; in 8 to diseases of heart and blood vessels; in 4 to respiratory diseases; in 5 to genito-urinary diseases; and in the remainder to general diseases, including 4 from senile decay and 12 from pulmonary tuberculosis.

AYR DISTRICT ASYLUM.

THE annual report of Dr. G. Douglas M'Rae, the Medical Superintendent of this asylum, for the year 1909 shows that on December 31st, 1908, there were 537 patients on the asylum register and 532 on the last day of 1909. The number belonging to Ayrshire (493) remained the same as at the beginning of the year. The total numbers under care during the year were 693, and the average number daily resident 536. During the year 156 were admitted, of whom 135 were first admissions. In 41 the attacks were first attacks within three and in 18 more within twelve months of admission; in 25 not-first attacks within twelve months, and in 61 the attacks were of more than twelve months' duration on admission, not county or congenital cases. As regards the forms of mental disorder, 52 were cases of mania, 49 of melancholia, 28 of dementia, 13 of general paralysis, 3 of acquired epilepsy, and 11 of congenital defect. More than half of the cases admitted, Dr. M'Rae says, might be considered as hopeless as regards recovery. The table of probable causes of insanity shows that an insane heredity was ascertained in 64, or 41 per cent., and alcoholism in 54, or 35 per cent.; critical periods were assigned in 43, syphilis in 14, epilepsy in 8, gross brain disease in 7, and mental stress in 6; previous attacks had occurred in 27; in 73 no cause could be assigned, and in the remainder various bodily illnesses were recorded as probable etiological factors. During the year 51 were discharged as recovered, giving a recovery-rate on the admissions of 32.6 per cent., 26 as relieved, and 2 as not improved. Also 82 died, giving a death-rate on the average numbers daily resident of 18.68 per cent., which figure has not been approached since 1893, when it stood at 17.01 per cent. Nearly half of the deaths occurred among patients who had been resident less than twelve months, 30 per cent. of the male deaths having occurred within three months of admission. The deaths were due in 39 to nervous diseases, including 9 from general paralysis; in 25 to chest diseases, including 9 from pulmonary consumption; in 4 to abdominal diseases; in 3 to general tuberculosis; in 3 to cancer; and in 8 to senile decay. All deaths were from natural causes, and the general health was good throughout the year, the institution having been free from epidemic disease of any kind.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BARNSTAPLE: NORTH DEVON INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £80 per annum.

BRISTOL ROYAL INFIRMARY.—Dental House-Surgeon. Salary £100 per annum.

CARDIFF INFIRMARY.—Two House-Surgeons. Honorarium, £30 for six months each.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—Clinical Assistant.

DERBYSHIRE ROYAL INFIRMARY. — (1) House-Physician; (2) Second House-Surgeon; (3) Assistant House-Surgeon. Salary for (1) and (2), £100 per annum, and for (3) £60 per annum.

EGYPTIAN GOVERNMENT. - Medical Tutor at the School of Medicine and Registrar to Kasr-el-Ainy Hospital. Pay, £E600 a year.

HASTINGS: ST. LEONARDS AND EAST SUSSEX HOSPITAL. Senior House-Surgeon (male). Salary, £100 per annum.

LEEDS GENERAL INFIRMARY.—Ophthalmic House-Surgeon. Salary at the rate of £50 per annum.

LEEDS PUBLIC DISPENSARY. Junior Resident Medical Officer. Salary, £100 per annum, increasing by £10 on reappointment.

LIVERPOOL: HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST. Assistant Medical Officer and Pathologist. Salary, £200 per annum (non-resident).

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, Hunter Street, W.C.—Demonstrator in Anatomy and Curator of the School Museum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—(1) Honorary Ophthalmic Surgeon. (2) Anaesthetist. Honorarium, £15 per annum.

MANCHESTER ROYAL INFIRMARY.—(1) Medical Registrar. (2) Resident Medical Officer. (3) Resident Medical Officer at the Convalescent Hospital, Cheadle. Salary for (2) and (3) £150 per annum.

MANCHESTER VICTORIA MEMORIAL JEWISH HOSPITAL, Cheetham.—Resident Medical Officer (lady). Salary at the rate of £80 per annum.

MARGARET STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, W.—Honorary Physician.

NEWCASTLE-UPON-TYNE CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary, £125 per annum.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Male Assistant House-Surgeon. Honorarium, £20 for six months.

PADDINGTON AND KENSINGTON DISPENSARY FOR THE PREVENTION OF CONSUMPTION.—Assistant Medical Officer. Salary, £100 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, E.—(1) Assistant House-Surgeon. Salary at the rate of £80 per annum. (2) Radiographer. Stipend, £50 per annum.

QUEEN CHARLOTTE LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer, to act as Junior and then as Senior for four months each. Salary at the rate of £50 and £60 per annum respectively.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—Clinical Assistants in Out patient Department.

ROTHERHAM HOSPITAL.—Senior House-Surgeon (male).—Salary, £110 per annum.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Member of the Court of Examiners.

ST. MARYLEBONE GENERAL DISPENSARY, Welbeck Street, W. —(1) Honorary Dental Surgeon. (2) Honorary Anaesthetist.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

SOUTHAMPTON: FREE EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY. — Assistant House-Surgeon. Salary, £82 per annum.

SUDAN UNITED MISSION.—Officer to take Medical Charge of the Freed Slaves' Home of Northern Nigeria.

SUNDERLAND INFIRMARY.—Male House-Physician. Salary, £80 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—(1) House-Physician. (2) House-Surgeon. Salary, £75 per annum each and £12 12s. for holiday locum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Physician. Appointment for six months. Salary, £40.

WANDSWORTH UNION INFIRMARY, St. John's Hill, S.W.—Male Junior Assistant Medical Officer. Salary, £120 per annum.

WEST SUSSEX COUNTY COUNCIL.—County Medical Officer of Health. Salary, £500 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces vacancies at: Ammanford, co. Carmarthen; Creetown, co. Kirkcudbright; and at Ebchester, co. Durham.

APPOINTMENTS.

BOOTH-JONES, Dr. Charles, Third Assistant Medical Officer to the Warwick County Lunatic Asylum, Hatton.

DIXSON, C. F. Lyne, M.D., M.R.C.S., Medical Officer to the Goldsmiths' Company's Almshouses, East Acton, W.

FLIGG, William, M.B., C.M.Edin., M.R.C.S.Eng., D.P.H.Cantab., Visiting Medical Officer, Royal West of England Sanatorium, Weston-Super-Mare, vice Dr. Martin Ashley, resigned.

HUTCHINSON, James Bandal, M.B., Ch.B., D.P.H., Medical Officer of Health to the County Borough of Wigan.

LEECH, Henry Brougham, M.D.Dub., First Assistant to the Warwick County Lunatic Asylum, Hatton.

O'DRISCOLL, P. L., M.B., B.Ch., R.U.I., Certifying Factory Surgeon for the Timoleague District, co. Cork.

OLLERENSHAW, Robert, M.D., Ch.B.Vict., F.R.C.S.Eng., L.R.C.P.Lond., Honorary Assistant Surgeon to the Salford Royal Hospital.

PEYTON, T. Henry, M.D., B.A., D.P.H.T.C.D., School Medical Officer, Kent County Council, North-West Kent.

ROBINSON, W. E., M.D., B.Ch.Oxon., Honorary Assistant Anaesthetist to the West London Hospital, Hammersmith.

SCOTT, Alexander R. P., M.R.C.S.Eng., L.R.C.P.Lond., Second House-Surgeon to the Beckett Hospital, Barnsley.

SINCLAIR, N. F., M.R.C.S., L.R.C.P., Assistant Medical Officer of the Bethnal Green Parish Infirmary.

SWINDELLS, R. H., M.B., B.Ch.Vict., Resident Assistant Medical Officer of the Fulham Parish Infirmary.

TODD, D. B., M.B., B.Ch., District Medical Officer of the Kingsbridge Union.

WEST, Henry O., M.B., B.S.Lond., Resident Medical Officer at the Royal Hospital for Diseases of the Chest, City Road, E.C.

WOODMAN, E. M., M.B., B.S., Senior Resident Assistant Medical Officer of the St. Pancras Union Infirmary.

PUBLISHERS' ANNOUNCEMENTS

MESSRS. MERSER AND SONS, Kennington Road, will shortly publish an English translation of the late Professor Mosso's book *La Paura*. It deals with the etiology, physiology, and pathology of fear. The translation has been made by Dr. Arthur Harrison, late of the Indian Medical Service.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

BIRD.—On December 5th, at Old Croft, Godalming, the wife of Gerald F. Bird, M.B., of a son.

MARRIAGES

BRANDER—STUART.—At Murrayfield Established Church, Edinburgh, on December 12th, by the Rev. Robert Johnstone, B.D., assisted by the Rev. James Clark, M.A., Balgonie, William Brander, M.D., Sheffield, to Effie Gordon Stuart, M.B., Ch.B., eldest daughter of Joseph Gordon Stuart, W.S., Edinburgh.

MORISON—DOVE.—At St. Paul's Church, Carlisle, on December 7th, by the Rev. W. E. Strickland, assisted by Canon Bower, Fred Hughes Morison, M.D., Carlisle, to Jane Margaret (Daisy), only daughter of Mr. J. C. Dove, of St. Ann's, Stanwix, Carlisle.

POWELL—ARNOTT.—On December 7th, at St. Mark's, Brighton, Hugh Powell, M.D., of Cheltenham, to Ethel Mary Arnott.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

LONDON SCHOOL OF CLINICAL MEDICINE, Seamen's Hospital, Greenwich. Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m., Monday, and noon, Thursday; Skin, at noon and 4 p.m., Thursday, and noon, Friday. Eye, 11 a.m., Wednesday and Saturday; Radiography, 4 p.m.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays and Operations, 2 p.m. daily. Monday, Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
DECEMBER.	
19 MONDAY	LONDON: Referendum Subcommittee, 10.30 a.m. LONDON: Committee *re* the Annual Meeting 1913, 12.30 p.m. LONDON: Regulations and Standing Orders Subcommittee, 2 p.m.
20 TUESDAY	
21 WEDNESDAY	LONDON: Joint Subcommittee *re* Advertisements of Foods and Drugs, 10 a.m. LONDON: Journal Committee, 11.30 a.m. LONDON: Poor Law Drafting Subcommittee, 2.30 p.m.
22 THURSDAY	GLOUCESTERSHIRE BRANCH, Special Meeting, Royal Infirmary, Gloucester, 4.45 p.m.
23 FRIDAY	
24 SATURDAY	
25 Sunday	*Christmas Day.*
26 MONDAY	*Bank Holiday.*
27 TUESDAY	*Bank Holiday.*
28 WEDNESDAY	
29 THURSDAY	
30 FRIDAY	
31 SATURDAY	

Date.	Meetings to be Held.
JANUARY, 1911	
1 Sunday	
2 MONDAY	SUBSCRIPTIONS to the British Medical Association for 1911 become due.
3 TUESDAY	LONDON: Organization Committee, 11 a.m.
4 WEDNESDAY	LONDON: Medico-Political Committee, 2 p.m.
5 THURSDAY	LONDON: Hospitals Committee, 11.30 a.m.
6 FRIDAY	LONDON: Central Ethical Committee, 2 p.m. CITY DIVISION, *Metropolitan Counties Branch*, Business Meeting, 4 p.m.
7 SATURDAY	
8 Sunday	
9 MONDAY	LONDON: Naval and Military Committee. LONDON: Colonial Committee.
10 TUESDAY	LONDON: Public Health Committee, 3 p.m.
11 WEDNESDAY	
12 THURSDAY	
13 FRIDAY	
14 SATURDAY	
15 Sunday	
16 MONDAY	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 24TH, 1910.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs. BY ORDER.

MATTERS REFERRED TO DIVISIONS.

MODEL RULES FOR INCLUSION IN RULES OF NURSING ASSOCIATIONS.

(Approved by the Annual Representative Meeting, 1910.)

1. The nurse shall in every case carry out the directions of the Registered Medical Practitioner in attendance.

2. The nurse, when requested in an emergency, may visit and render first aid to any person without awaiting instructions from a medical practitioner.

3. If, in the nurse's opinion, the attendance of a medical practitioner is necessary, she must insist that he be sent for; and if for any reason his services are not immediately available, she must, if the case be still one of urgency, remain with the patient and do her best until he arrive, or until the emergency is over.

Should the advice to call in a medical practitioner be not acted upon, the nurse must at once leave and report the case to her Secretary, and must not attend again except in case of fresh emergency.

4. Should any further attendance be requested by the patient after the emergency is over, the nurse must explain that the medical practitioner will decide whether or not this is necessary.

5. No attendance after a first visit shall be given by a nurse unless she has informed a medical practitioner and received his instructions with regard to the case, if any.

6. Apart from her duties as a certified midwife, a nurse must on no account prescribe or administer on her own responsibility such drugs for her patients as should only be prescribed by a medical practitioner.

7. No midwife in the employment of a Nursing Association should accept an engagement without first asking the patient to state, and herself registering, the name of the medical practitioner to be called in should any emergency arise.

8. A nurse shall in no case attempt to influence a patient in the choice of a medical practitioner or of an institution.

9. No person shall be employed by the.....Association as a midwife, or received for training as a midwife, without having first signed an agreement not to practise as a midwife within a radius of.....miles from.....within a period of.....after leaving the service of the Association, without the consent in writing of the Association.

NOTE.—It is desirable to obtain the co-operation of all the medical practitioners in the district, and to secure, if possible, their assistance on the Committees of the Nursing Associations. (Attention is drawn to the fact that the machinery of the local Divisions of the British Medical Association is available for this purpose.)

MEMORANDUM ON QUESTION OF ALLEGED "COVERING" IN CONNEXION WITH A DISTRICT NURSING ASSOCIATION.

A MEMBER of the Association brought to the notice of the Council in August, 1909, the difficulties of the local profession with a local Nursing Association.

One of the points of objection was that the nurse was allowed to attend not only maternity but other cases, without calling in a doctor. To her attendance on the maternity cases there could be no objection, she being a registered midwife.

In the course of the proceedings which ensued, the Member reported the following correspondence between himself and the Registrar of the General Medical Council:—

September 2nd, 1909.

DEAR SIR,

Could a qualified medical practitioner be by any chance held guilty of "covering" under the following circumstances:

1. As a Member of a Committee supervising a district nurse when the nurse habitually attends patients in general illness independently of a doctor—the nurse being paid a regular salary but receiving patients' fees, and handing them over to the Committee?

2. If (not being a Member of such a Committee) he continually goes to the assistance of the nurse, knowing that she is in the

habit of attending cases of general illness independently of a doctor?

I should be greatly obliged and assisted by the favour of your reply to these two questions.

I am,
Yours faithfully,
(Signed) A.———— B.————

H. E. Allen, Esq.,
Registrar of the General Medical Council,
299, Oxford Street.

General Council of Medical Education and Registration of the United Kingdom.
299, Oxford Street, W.

Dear Sir,

I have received your letter of yesterday, and I cannot do better than send you the enclosed copy of the Council's resolution dealing with "covering." If you look at the second paragraph you will see that the terms of the Resolution are very wide, and in the event of a properly formulated complaint being made it might become the duty of the Council to take action.

Nursing Associations may virtually employ unqualified persons to attend and treat patients, other than midwifery patients, as if they were qualified, and they may adopt methods of touting or canvassing to procure patients for these unqualified persons. Of such proceedings the Council must most strongly disapprove, but the Associations are beyond its jurisdiction, and it could only protect the public, which is the first duty laid down by the Medical Act, 1858, by exercising its disciplinary functions in regard to the practitioners who lent themselves to covering such organisations by associating with those so acting.

In the case of a midwifery nurse, who under cover of her certificate is undertaking medical and surgical treatment, her conduct might with advantage be brought to the notice of the body who granted her certificate, or of the Central Midwives Board.

Yours faithfully,
(Signed) NORMAN C. KING,
Assistant Secretary.

"Copy of Notice above referred to.

Employment of Unqualified Persons as Assistants or otherwise.

Whereas it has from time to time been made to appear to the General Medical Council, that some Registered Medical Practitioners have been in the habit of employing as Assistants in connection with their professional practice, persons who are not duly qualified or registered under the Medical Acts, and have knowingly allowed such unqualified persons to attend or treat patients in respect of matters requiring professional discretion or skill: and whereas in the opinion of the Council such a substitution of the services of an unqualified person for those of a Registered Medical Practitioner is in its nature fraudulent and dangerous to the public health: The Council hereby gives notice that any Registered Medical Practitioner, who is proved to have so employed an Unqualified Assistant, is liable to be judged as guilty of "infamous conduct in a professional respect," and to have his name erased from the Medical Register under the 29th Section of The Medical Act, 1858.

Further, in regard to the practice commonly known as "covering," the Council gives notice that any Registered Medical Practitioner, who by his presence, countenance, advice, assistance or co-operation, knowingly enables an unqualified or unregistered person (whether described as an assistant or otherwise) to attend or treat any patient, to procure or issue any medical certificate or certificates of death, or otherwise to engage in medical practice as if the said person were duly qualified and registered, is liable to be judged as guilty of "infamous conduct in a professional respect," and to have his name erased from the Medical Register under the said enactment.

But the foregoing notices do not apply so as to restrict the proper training and instruction of *bonâ fide* medical students as pupils, or the legitimate employment of dressers, midwives, dispensers, and surgery attendants under the immediate personal supervision of Registered Medical Practitioners.

Medical Department.
429, Strand, London, W.C.,
December, 21st, 1910.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

METROPOLITAN COUNTIES BRANCH:

Greenwich Division.

The third meeting of the Division was held at the South-Eastern Hospital, New Cross, on Thursday, December 1st. Dr. F. M. Turner occupied the chair. There were present twenty-one members and six visitors.

Confirmation of Minutes.—The minutes of the last meeting were read, confirmed, and signed.

Communication re Appointment of Ophthalmic Surgeon.—A communication from the Walthamstow Division *re* the appointment of an ophthalmic surgeon for treating school children was considered, and the following resolution was passed:

> That the Greenwich Division heartily supports the action of the Walthamstow Division with reference to the appointment of an ophthalmic surgeon to the local education authority, and is of opinion that the acceptance of the post by any medical practitioner on the conditions offered by the education authority would be detrimental to the interests of the medical profession.

Dr. Keay proposed and Dr. Gooding seconded the following resolution:

> That a committee be appointed to take into consideration the relationship of the general practitioners in the Division to the hospitals, and report.

This was carried, and the following were elected to form the committee: Drs. Gooding, Hogarth, Jackson, Keay, and Round.

State Insurance Scheme.—Dr. Keay (Representative of the Division at Representative Meetings) reported that the Association were considering the question of a State insurance scheme, and a report would shortly be sent to the Divisions for their consideration.

Treatment of School Children.—The following were elected to form a committee for the purpose of drawing up a scheme for the treatment of school children resident in the Division found on medical inspection to be defective: Drs. Birkett, Brewer, Cox, Hogarth, Toogood, and Parke, together with the Chairman (Dr. Burton) and the Honorary Secretary (*ex officio*).

SOUTH-EASTERN BRANCH:

Bromley Division.

A meeting of this Division, to which all medical men resident and practising within the area of the Division were invited, was held at the Bell Hotel, Bromley, Kent, on Thursday, December 8th, at 8.30 p.m., Dr. Lewis, the Chairman of the Division, in the chair.

Confirmation of Minutes.—The minutes of the September meeting were read and confirmed.

Medical Treatment of School Children.

The purpose of the meeting was to receive the report and scheme of the Kent Organization Committee regarding the treatment of school children found on medical inspection to be defective, and to discuss the scheme. Mr. Smith Whitaker, the Medical Secretary of the Association, again very kindly attended, and, on the invitation of the Chairman, gave a short account of the work done by the Medico-Political Committee of the Association and the reasons for bringing this subject before Divisions for discussion.

Dr. Tennyson Smith, the Honorary Secretary of the Kent Organization Committee (Medical Treatment of School Children), when presenting the report and scheme, criticized methods of treatment which had been suggested to some of the educational authorities—methods which he thought would not be acceptable to the profession in Kent. He pointed out that the different educational authorities were relying on the charitable institutions for the treatment of children

certified defective—a procedure unfair to those institutions, to the children, and to the local medical profession. He showed that the work entailed was absolutely new work, which the local medical practitioners were perfectly competent to undertake. He submitted that the scheme drawn up by his committee was a fair one, both for the local profession and for the educational authorities.

A full discussion followed, in which the following took part: Drs. and Messrs. LEWIS (Chairman), SMITH WHITAKER, RANDELL (Beckenham), GRANT-WILSON, SCOTT, ILOTT, MCARTHUR, WOLSELEY, and TENNYSON SMITH.

Mr. COLYER proposed, and Dr. RANDELL (Beckenham) seconded, the following resolution:

That dental treatment be included in the scheme.

This was carried unanimously. Dr. GRANT-WILSON proposed, and Dr. YOLLANDS seconded:

That the scheme be approved subject to the addition of Mr. Colyer's amendment.

This was carried unanimously. Dr. TENNYSON SMITH proposed, and Dr. CODD seconded:

That the Bromley Division send a letter to the Central Council of the Association requesting the Council to take what immediate steps it can to prevent the treatment being carried out at London hospitals of school children "found upon medical inspection to be defective," and sent to those charitable institutions for treatment from the county of Kent.

This was carried with one dissentient. Dr. TENNYSON SMITH proposed, and Dr. GRANT-WILSON seconded:

That the Bromley Division approve of the suggested action of the Kent Organization Committee (Medical Treatment of School Children) in sending at their discretion letters to the committees and to the medical staff of all hospitals in Kent, requesting them not to carry out at their charitable institutions the treatment of school children found upon medical inspection to be defective, as the local medical profession is prepared to undertake the treatment of such cases.

Carried *nemine contradicente*. Dr. TENNYSON SMITH proposed and Dr. SCOTT seconded:

That the Bromley Division trusts that members of the medical profession practising within the area of the Division will act collectively and not individually as regards the treatment of school children found upon medical inspection to be defective, and that any medical practitioner who may receive any communication from the County Council with regard to his willingness to act in any capacity, will refer the County Council to the Honorary Secretary of the Kent Organization Committee appointed to deal with the matter on behalf of the medical practitioners of the county.

Carried unanimously. Dr. TENNYSON SMITH proposed, and Dr. CODD seconded:

That a copy of this resolution be sent to all medical men practising and resident within the area of the Division.

Carried unanimously. Dr. TENNYSON SMITH proposed and Dr. SCOTT seconded:

That the Honorary Secretary of the Bromley Division be instructed to furnish the Honorary Secretary of the Kent Organization Committee with a list of the hospitals in the Division, together with the names and addresses of the secretary and of the medical staff of each.

Carried unanimously. The CHAIRMAN proposed:

That a hearty vote of thanks be passed to Mr. Smith Whitaker who had again most kindly attended, and who had so ably addressed the meeting and given invaluable advice and assistance.

Carried unanimously with acclamation.

A vote of thanks to the Chairman terminated the meeting.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH: TOTTENHAM DIVISION.—The discussion on the Medical Treatment of School Children, adjourned from December 2nd, will be continued at a meeting of the Division to be held on Thursday, January 5th, 1911, at 9.15 p.m. By kind invitation of Dr. Fred. Tresilian, it will again take place at White Lodge, Silver Street, Enfield (close to G.E.R. Station).—J. A. PERCIVAL BARNES, Honorary Secretary.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE Governors and General Council of King Edward's Hospital Fund for London made their awards for the present year to hospitals, convalescent homes, and consumption sanatoriums at a meeting at St. James's Palace last week.

H.S.H. THE DUKE OF TECK, who was in the chair, said that this was the first distribution meeting held since the irreparable loss the Fund had sustained through the death of its Founder and Patron. His present Majesty, who for many years, when Prince of Wales, presided not only over the meetings of the Council, but over the work of the Fund in all its details, and had now been graciously pleased to become its Patron, had appointed the speaker, Lord Iveagh, and the Speaker of the House of Commons to be Governors of the Fund, on the recommendation of the Lord Chancellor, of the Prime Minister, and of the Governor of the Bank of England, in accordance with the Act of Parliament relating to the Fund.

Lord REVELSTOKE reported, on behalf of the Treasurer, that the amount received by the Fund up to December 10th, less expenses, was £146,584 10s. The Fund had also been made residuary legatee under the will of the late Mr. Matyear, and had thus inherited some market garden property in Fulham, which was about to be sold.

THE DISTRIBUTION COMMITTEE.

The report of the Distribution Committee, which was then read by its chairman, Sir WILLIAM CHURCH, showed that it had had placed in its hands £150,000, as against £147,000 last year. The number of hospitals applying for grants was 106, or two more than in the year 1909. Continuance of the policy of setting aside grants towards the amalgamation of the nose, throat and ear hospitals in place of making separate awards to any of them was recommended; £2,000 being devoted to this purpose. As no general scheme of amalgamation had been submitted, the committee would have recommended that the contingent grant of £3,000 made in 1908 towards the amalgamation scheme should be allowed to lapse, but it was informed that the possibility of a practical arrangement between certain of the hospitals was under consideration and therefore recommended that this grant should be renewed. The annual awards held in reserve would, therefore, be £7,500 in addition to the capital grant, amounting in certain conditions to at least £10,000, which had also been promised by the Fund. Five awards for special purposes to certain hospitals still remain unapplied, but their renewal was recommended, except in respect of the £1,000 granted to the West End Hospital for Diseases of the Nervous System towards a rebuilding scheme. The hospital had abandoned the site it had acquired in Bulstrode Street, and as no alternative scheme had since been submitted, the grant should, therefore, lapse.

Outlying Districts.

The needs of the poorer districts in outlying parts of London had received consideration, allowance being made for the difficulty of maintaining adequate hospital accommodation in these parts. In some cases capital grants, in addition to maintenance grants, had been recommended in connexion with sanctioned schemes of improvement. Among such grants were £1,000 towards the rebuilding of St. Mary's Hospital for Women and Children, Plaistow, and £5,000 for the extension of West Ham Hospital. The failure of the negotiations for the substitution of a single scheme for the rebuilding proposals of the hospitals at North Wimbledon and South Wimbledon was regretted, but building grants to each of them were recommended. The grant recommended towards the removal of King's College Hospital to South London brought up the total contributed by the Fund to this object to £37,000.

Hospitals and Medical Schools.

In the case of St. George's Hospital, the committee had had under special consideration the appearance

in the general accounts of the hospital for 1909 of certain payments to the school stated to be for work done for the hospital and formerly paid out of a discretionary fund. The inquiries made by the committee as to the legitimacy of this change confirmed the statement in the annual report of the hospital that the payments in question were made on account of definite work done, chiefly pathological and bacteriological examinations, in connexion with the actual treatment of patients. That is, the payments were for the kind of work described in the report of Sir Edward Fry's committee as work which would have to be paid for in any case, and which would have to be taken into account in assessing the payments and receipts on either side.* Such work, moreover, differed entirely from the general benefits, described in the report as being conferred by medical schools on hospitals, and as being fairly set off against the benefits conferred by the hospitals on the schools. The opinion of the Fund that, on the principles laid down by Sir Edward Fry's committee, specific payments for such definite work done in respect of the treatment of patients, whether made to the school or to any other agency, could be charged to the general funds of the hospital, while no other payments to the school could be so charged, was notified to St. George's, in reply to a question from the hospital, by the Executive Committee in March, 1909. But on looking into the method by which the amount fairly chargeable to the hospital on account of this work had been arrived at, the Distribution Committee had come to the conclusion that the apportionment of the expenses of the laboratories as between the treatment of patients and medical education required investigation. Hence it had invited the hospital to submit further details, in order that the committee might be satisfied that the payment made to the school bore a proper proportion to such definite work for the hospital. Meantime the grant to the hospital this year should be retained until the Fund was satisfied that the financial relations between hospital and school were in accordance with the principles intimated by the Fund in March, 1909, and that the general account of the hospital in respect of 1909, as well as 1910, was clear from any payment in support of medical education.

AWARDS.

The awards recommended by the Distribution Committee and the Convalescent Homes Committee amounted together to £155,000—namely, ordinary grants to hospitals, £148 000; special grants set aside for the amalgamation of hospitals, £2,000; and grants to sanatoriums and convalescent homes, £5,000. The Distribution Committee prefaced its report by a statement that the absence of a grant did not necessarily imply dissatisfaction with the institution concerned. The following excerpts from the list cover the principal hospitals, large and small, and show the ground on which, when stated, awards were made or withheld.

Alexandra Hospital for Children.—£400.

Beckenham Cottage Hospital.—£50, of which £25 to renewal of floors.

Belgrave Hospital.—£1,000, to reduce building debt.

Blackheath and Charlton Cottage Hospital.—£100.

Bolingbroke Hospital.—£1,500.

British Lying-in Hospital.—£400.

Central London Ophthalmic Hospital.—£1,000, to rebuilding in accordance with scheme submitted to the Fund.

Charing Cross Hospital.—£3,000.

Chelsea Hospital for Women.—£750.

Cheyne Hospital.—*Nil.*

City of London Hospital for Diseases of the Chest, Victoria Park.—£4,000.

City of London Lying-in Hospital.—£500.

Clapham Maternity Hospital.—£200.

Dreadnought Hospital.—£4,000, of which £1,000 to reduce debt.

Ealing Cottage Hospital.—£500, to rebuilding in accordance with scheme submitted to the Fund.

East End Mothers' Lying-in Home.—£500, of which £250 to reduce debt.

East London Hospital for Children.—£2,000, of which £250 to improvements.

Eltham and Mottingham Cottage Hospital.—£100.

Evelina Hospital.—£150.

French Hospital.—£200.

Friedenheim Hospital.—£50.

General Lying-in Hospital.—£250.

German Hospital.—£200.

Gordon Hospital for Fistula, etc.—£25.

Great Northern Central Hospital.—£4,000, of which £1,000 to reduce debt.

Grosvenor Hospital for Women.—£350.

Guy's Hospital.—£7,500, of which £1,500 to building improvements in accordance with scheme submitted to the Fund.

Hampstead General Hospital.—£3,150, of which £1,500 to reduce debt and £1,650 on account of maintenance and rent, as agreed upon amalgamation with North-West London Hospital.

Home and Infirmary for Sick Children.—£250, of which £50 to outside staircase.

Home for Mothers and Babies, Woolwich.—£100.

Hospital and Home for Incurable Children, Hampstead.—£100, of which £75 to improvements.

Hospital for Consumption, Brompton (including Sanatorium at Frimley).—£3,000.

Hospital for Epilepsy and Paralysis, £750.

Hospital of St. John and St. Elizabeth.—£350.

Infants Hospital.—£25.

Italian Hospital.—£500.

Kensington and Fulham General Hospital (late Queen's Jubilee Hospital).—*Nil.*

Kensington Dispensary and Children's Hospital.—£25.

Hospital for Invalid Gentlewomen.—£200.

Hospital for Sick Children.—£4,000, of which £1,500 to recent improvements in accordance with scheme submitted to the Fund.

Hospital for Women, Soho Square.—£1,000.

King's College Hospital.—£7,000, of which £5,000 to removal fund.

Leyton, Walthamstow, and Wanstead Children's and General Hospital.—£250.

London Fever Hospital.—£250.

London Homœopathic Hospital.—£500, to rebuilding of nursing home in accordance with scheme submitted to the Fund.

London Hospital.—£12,000.

London Lock Hospital.—£1,500 to the Harrow Road Hospital, of which £1,000 to reduce debt.

Maternity Charity and District Nurses' Home, Plaistow.—£100.

Medical Mission Hospital, Balaam Street, Plaistow.—£35.

Memorial Hospital, Mildmay Park.—£50.

Metropolitan Hospital.—£3,500, of which £1,000 to reduce debt on structural improvements carried out in accordance with scheme submitted to the Fund.

Middlesex Hospital.—£4,000.

Middlesex Hospital Cancer Charity.—*Nil.* The Committee are glad to see that no assistance from the Fund is required this year.

Mildmay Mission Hospital.—£400.

Miller General Hospital for South-East London.—£1,500, of which £750 to extension, subject to scheme being approved.

Mount Vernon Hospital for Consumption (including Sanatorium at Northwood).—£1,500.

National Anti-Vivisection Hospital.—Nil.

National Dental Hospital.—£400, of which £150 to improvements in accordance with scheme submitted to the Fund.

National Hospital for Diseases of the Heart.—Nil.

National Hospital for the Paralysed and Epileptic.—£1,000.

New Hospital for Women.—£1,500, of which £750 to building improvements in accordance with scheme submitted to the Fund.

Norwood Cottage Hospital.—£100.

Paddington Green Children's Hospital.—£1,750, of which £1,000 to reconstruction of out-patient department, subject to approval of scheme.

Passmore Edwards Acton Cottage Hospital.—£75.

Passmore Edwards East Ham Hospital.—£50.

Passmore Edwards Hospital for Willesden.—£25.

Passmore Edwards Cottage Hospital, Wood Green.—£25.

Poplar Hospital.—£400.

Prince of Wales's General Hospital.—£4,000, of which £2,000 to reduce debt.

Queen Charlotte's Lying in Hospital.—£1,500, of which £500 to improvements.

Queen's Hospital for Children.—£3,000, of which £1,250 to reduce building debt.

Royal Dental Hospital of London.—£1,250, of which £250 to recent improvements.

Royal Eye Hospital.—£1,000, of which £250 to reduce debt.

Royal Free Hospital.—£4,000.

Royal Hospital for Diseases of the Chest, City Road.—£1,250, of which £250 to reduce debt.

Royal Hospital, Richmond.—£200, of which £50 to fire-escape balconies.

Royal London Ophthalmic Hospital.—£2 500.

Royal National Orthopædic Hospital.—£7,000, of which £250 as agreed upon amalgamation.

* The following is the passage to which reference is made: "It must be remembered that, apart from these (that is, the general services rendered by the schools to the hospitals), which are separately dealt with in the report, paragraph 21, the schools, in most cases, undertake many specific laboratory examinations solely for the purpose of helping the physicians and surgeons to form correct diagnoses in the exclusive interests of the patients, and that these would have to be paid for by the hospitals in any case. Where such examinations are made in a laboratory entirely maintained by a school, it is obvious that, in any exact assessment of the payments and receipts, on either they would have to be taken into account."

Royal Waterloo Hospital for Children and Women.—£1,500.

St. George's Hospital.—£2,000, to be retained until the Fund is satisfied that the relations between Hospital and Medical School are in accordance with the principles intimated by the Fund in March, 1909.

St. John's Hospital for Diseases of the Skin.—£600, of which £500 to reduce building debt.

St. John's Hospital, Lewisham.—£300.

St. Luke's House.—£500.

St. Mark's Hospital.—£400, of which £300 to improvements in nursing accommodation, in accordance with scheme submitted to the Fund.

St. Mary's Hospital.—£6,500, of which £2,500 to reduce debt.

St. Mary's Hospital for Women and Children, Plaistow.—£1,500, of which £1,000 to enable the new building to be furnished and opened free of debt.

St. Monica's Hospital.—£100.

St. Peter's Hospital for Stone.—£150.

St. Saviour's Hospital, Osnaburgh Street.—£200.

Samaritan Free Hospital.—£1,000.

Santa Claus Home.—£25.

South Wimbledon, Merton, and District Cottage Hospital.—£1,000 to the rebuilding of the hospital under the name of the Wimbledon and Merton Hospital, in accordance with scheme submitted to the Fund.

University College Hospital.—£5,500, of which £1,500 to reduce debt.

Victoria Hospital for Children.—£1,000.

West End Hospital for Diseases of the Nervous System.—£250.

Western Ophthalmic Hospital.—£275, to reduction of debt on rebuilding of out-patient department.

West Ham and East London Hospital.—£5,500, of which £5,000 to building fund, to enable the new building to be opened free of debt.

West London Hospital.—£5,000, of which £2,000 to reduce debt, on the understanding that special efforts are made to obtain increased support from the public.

Westminster Hospital.—£3,000.

Wimbledon Cottage Hospital.—£550, of which £500 to rebuilding, in accordance with scheme submitted to the Fund.

SANATORIUMS AND CONVALESCENT HOMES.

The Convalescent Homes Committee reported that the applications eligible for consideration numbered 45 from convalescent homes and 8 from consumption sanatoriums, as against 37 and 4 respectively last year. The increase in the number of sanatoriums applying for grants was gratifying, but an examination of the applications showed that what was most urgently needed was not maintenance grants to supplement the income of existing institutions, but an increase in the accommodation available, without delay, for hospital cases requiring sanatorium treatment in the country. The committee had been able to make arrangements for beds to be placed at the disposal of London hospitals during the year 1911 in return for grants made, two beds having been secured at Kelling Sanatorium, Norfolk; six at the Northampton Sanatorium, Creaton; and ten at the Devon and Cornwall Sanatorium, South Brent. Eight of these beds would be allocated to the City of London Hospital for Diseases of the Chest; four to the Royal Hospital for Diseases of the Chest (neither of these institutions having country branches); and the remaining six divided between the London Hospital and Guy's Hospital. The list of awards included £1,825 distributed among four consumption sanatoriums, and £3,175 among thirty-seven convalescent homes, the highest grant being £250, and the smallest £25.

FUTURE ARRANGEMENTS.

In moving the adoption of the reports the DUKE OF TECK pointed out that the Fund had now surpassed by £5,000 the goal which it originally set before itself, this being the distribution of £150,000 per annum. But less than half this income was as yet provided from invested capital. The largest donation received during the year was an anonymous gift of £10,000. The fact that so many special grants were recommended after examination of the schemes to which they related showed that the hospitals were not in the habit of proposing unreasonable schemes for locking up money in bricks and mortar. As regards hospitals and medical schools, it was, and always had been, the intention of the Fund to carry out the recommendation of Sir Edward Fry's committee, both in the letter and in the spirit. If the scheme of making grants for the retention of beds at sanatoriums, adopted this year on a small scale, proved successful, it might be enlarged and capital grants be made for the purpose of providing extended accommodation. The Executive Committee had considered this year the question of hospitals entering into joint contracts, and thus securing the advantages of purchasing on a larger scale than they could as separate buyers. Such a scheme had actually been started in New York in 1909, and the Executive Committee had appointed a subcommittee to inquire into the subject. This subcommittee had now completed its report, and had prepared a schedule of specimen forms of tender for hospital contracts; he hoped that the careful statements made as to the possible advantages and difficulties of co-operative purchase would be of considerable assistance to such hospitals as were already trying to experiment, or which might be thinking of doing so.

After the adoption of the reports a further resolution was passed, by which the custom of members of the Distribution Committee absenting themselves from the committee during the time that any institution with which they were identified was under discussion was converted into a rule of the Fund.

OUT-PATIENT DEPARTMENTS.

The DUKE OF TECK stated that the Governors intended to reappoint the whole of the members of the General Council, of the Executive Committee, and of the Finance Committee. To the Distribution and Convalescent Homes Committees it was intended to reappoint the present committee, with the addition of Sir William Bennett to the second of these committees, and Mr. Leonard Cohen to the first. Early in 1911 a committee of inquiry into the out-patient question would begin work. Its members were Lord Mersey (Chairman), Lord Northcote, and the Bishop of Stepney. Subsequently the appointment of this committee was approved, its terms of reference being as follows:

> To consider and report generally as to the circumstances and conditions under which patients are admitted to the casualty and out-patient departments of the London voluntary hospitals, and especially as to what precautions are taken to prevent the admission of persons who are unsuitable, and as to whether adequate provision is made for the admission of such persons as are suitable; and to make such recommendations as may seem to them desirable.

Sundry formal resolutions, including a vote of thanks to the Duke of Teck for presiding, which was proposed by Sir VEZEY STRONG and seconded by Professor OSLER, were then passed, and the proceedings terminated.

MEDICAL OFFICERS OF HEALTH AND INSPECTORS OF NUISANCES; REGULATIONS.

GENERAL ORDER.

A GENERAL ORDER, dated December 13th, 1910, entitled, "The Sanitary Officers (outside London) Order, 1910," has been addressed to sanitary authorities of urban and rural districts. The Order rescinds the two Orders of March 23rd, 1891, and will come into operation on January 1st, 1911, except in respect of Article X., relating to tenure of office, which will take effect on April 1st, 1911.

Article IV provides that the appointment of an officer shall be subject to the consent of the Local Government Board, and continues: "The appointment may be made without limit of time or for a specified term, and in cases in which the appointment is for a term the Council shall specify in the resolution making the appointment or in a subsequent resolution the term for which the appointment is made."

A circular letter accompanying the Order points out that Article III requires that, in future, rural as well as urban district councils shall give notice of appointment by advertisement only. The Board have, however, reserved to themselves the power to dispense with this requirement in special cases. It will no longer be necessary that the advertisement should

state the date on which the appointment will be made.

Article VII, which takes the place of Articles 7 and 8 of the former Orders, enables the council to make a new appointment immediately notice has been given to determine an existing appointment.

Articles X and XI prescribe new conditions as to tenure of office. Under Article X an officer appointed for a specified term will continue to hold office from year to year, after the expiration of that term, and no further approval by the Board will be required unless the terms of the appointment are altered. If the council wish to dispense with the services of an officer at the end of any year they must give him three months' notice of their intention and at the same time send a copy of the notice to the Board. Under Article XI the council, with the Board's consent, may, at any time during the period of a limited appointment, change the appointment into one without limit of time.

Article XIX alters in some respects the duties of a medical officer of health.

The most important change is that an additional duty is imposed on the medical officer of health by subclause (13) of sending to the Board weekly a list of cases of infectious disease notified in his district, and a duplicate of the list to the medical officer of health for the county.

The Order provides also that the medical officer of health must, in future, report to the Board forthwith any cases of plague, cholera, or small-pox brought to his knowledge, but will no longer be required to report the cases in which he advises the closure of any school in his district.

The duties of an inspector of nuisances are laid down under Article XX, and its wording has been altered so as to emphasize the fact that the inspector of nuisances should, as a rule, act under the supervision of the medical officer of health, who must be regarded as the head of the Public Health Department of the Council.

MEMORANDUM.

A memorandum dated December, 1910, has also been issued with regard to the appointment of medical officers of health and inspectors of nuisances. It contains the following paragraphs:

"1. *Appointment of Medical Officers of Health.*

"The Board fully recognize the excellent work which has been done by many medical officers of health who have also been engaged in private practice. Their experience has shown them, however, that it is desirable, wherever practicable, that the person holding the office of medical officer of health should not be so engaged. The private interests of a general practitioner are apt to conflict with the public duties to be performed by a medical officer of health, and it is unnecessary to specify instances in which such conflict may arise. Moreover, an officer whose whole time is given to public appointments is more likely than a general practitioner to possess the special qualifications in public health which the duties increasingly thrown upon medical officers of health render desirable, and he has greater opportunities of making himself familiar with the law and practice of public health. Parliament has recognized the necessity of special qualification in public health by making it incumbent on county councils and on the councils of districts with a population of over 50,000 to appoint as medical officer of health a medical man who, in addition to the ordinary qualifications, possesses a diploma in public health or sanitary science. The medical officer of health to a county council is debarred by Section 68 (7) of the Housing and Town Planning, etc., Act, 1909, from engaging in private practice, and may not hold other public appointments without the Board's consent.

"The councils of nearly all the county boroughs and of many other large districts have, with great benefit to the population whose public health they protect, appointed as medical officers of health men with special qualification and experience in public health matters, and have made it a condition that they shall not engage in private practice.

"2. *Combination of Districts for the Appointment of a Medical Officer of Health.*

"In the case of smaller districts the advantage of obtaining the services of a man who is not engaged in private practice may frequently be secured, either by combination with neighbouring districts for the appointment of a joint medical officer of health, or by the combination of other public appointments with that of medical officer of health. The Board trust that on the occurrence of a vacancy, councils who are not so served will consider whether they can by some such means secure the services of a medical officer of health who is not in private practice.

"Under Section 191 of the Public Health Act, 1875, two or more councils may agree to appoint the same medical officer of health, and under Section 286 of the same Act it is open to any council to represent to the Board that the combination of two or more districts for the appointment of a medical officer of health would diminish expense or otherwise be to the advantage of the districts, and the Board may make an order giving effect to such a representation. Under these provisions several combinations have been made with advantage to the districts concerned.

"The Board's experience of these combinations is that they have secured for the districts included in them a more skilled and a more unfettered supervision in public health matters than can be obtained by the smaller districts who have not entered into such combinations, and generally at no increase of cost; in fact, the contribution to a joint salary may sometimes be less than the amount which should be paid to a separate medical officer of health. This experience has led the Board to urge such combinations in other cases. They have found, however, that local authorities frequently raise two objections to combinations—the first that they would thereby lose full control over their officer, and the second that they would not be able to command his services in case of emergency as he might live at some distance from their district, or might be engaged in urgent work in another district. The first objection is not one which can, in the Board's opinion, be supported. Although the same person acts for several districts, he is also medical officer of health for each, and is subject to the provisions in the Board's General Order prescribing the duties of medical officers of health as applied by the special order relating to the joint district. The second objection may occasionally, though exceptionally, have some weight, but it should be remembered that a private practitioner is more likely to have other urgent calls on his time than a medical officer of health who gives his whole time to his work. And the disadvantages of non-residence are, in the Board's view, outweighed by the gain of impartiality and freedom from private ties and interests.

"The Board recognize that some of the combined districts which have been formed in earlier years are somewhat too extensive for the increased duties now required of a medical officer of health, and, as opportunity has occurred, the Board have favoured the splitting up of such districts into more compact areas. This policy is assisted by the adoption of the second method referred to above for securing the services of whole-time medical officers of health—that of allowing them to accept other public offices.

"3. *Offices which may be Combined with that of Medical Officer of Health.*

"The office of assistant school medical officer in counties, or school medical officer in small autonomous education areas under the Education Committee, may, with advantage, be combined with the office of medical officer of health in a county district. Both the Board and the Board of Education have pointed out the desirability of co ordinating these two services by the appointment of the same officer in both capacities. In the majority of cases where the education authority is the council appointing the medical

officer of health this has been done, and the Board trust that the authorities which have not yet adopted this course will, when opportunity presents itself, follow this example. In some other cases county councils have with advantage appointed as assistant school medical officers the medical officers of health appointed by district councils.

"It is in the Board's opinion very desirable that the office of superintendent of the isolation hospital should, whenever practicable, be held by the medical officer of health. The medical officer of health receives notifications of all infectious diseases, and he should be in a position, on receipt of a notification, to decide whether the case should be removed to the hospital, and if in his opinion it should, to have it removed without the necessity of a consultation.

"The Home Secretary appoints to the office of certifying factory surgeon, and both he and the Board favour its combination with the office of medical officer of health.

"Other public offices which the medical officer of health may be allowed to hold are those of police surgeon, public vaccinator, district medical officer, and medical officer of the workhouse.

"He may also be allowed, where qualified, to make analyses and bacteriological examination of water, and bacteriological examinations for the diagnosis of disease.

"4. *Salary of Medical Officer of Health.*

"The salary offered to a medical officer of health who devotes his whole time to public health work should, in the Board's view, be sufficient to attract men with good qualifications, and to retain their services. The medical officer of health should not be placed in a position of inferiority in this respect to other medical men in the district. Where the several offices to be held by the medical officer of health do not afford sufficient remuneration to justify an authority in requiring that the officer should give his whole time to his public work, it may still be possible to impose the condition that he shall not engage in general practice, if he is allowed to supplement his official income by acting as consultant in cases of infectious diseases, by instructing pupils in sanitary science, and by undertaking any other private work not involving the ordinary work of a general medical practitioner.

"The salary to be paid to a medical officer of health who devotes only part of his time to the office and engages in private practice, will naturally depend upon the varying circumstances of each district. It is clearly desirable that the amount of salary should be fixed with a view to the increasingly onerous and important duties which a medical officer of health is called upon to perform. It is not sufficient merely that a medical man is found who is prepared to accept the salary offered; it is more important that the salary should be such that it will be worth the while of a capable man to accept it, and to give a sufficient amount of his time to the duties.

"5. *Duties of Medical Officer of Health.*

"The Board have not infrequently been asked to define the scope of the duties of medical officers of health in connexion with the analysis of water, the visiting of cases of infectious diseases, and other matters.

"With regard to the analysis of water, the Board consider that it is the duty of a medical officer of health to inform himself of the character of the water supply of his district, and for this purpose to use, when necessary, such minor test of the water as may suffice to indicate whether further and quantitative analysis or examination is required. It forms, however, no part of his duties, as prescribed by the Board's General Order, to make a quantitative analysis of water. When such an analysis is necessary, the Board are of opinion that the council should employ any competent analyst to make it, and pay him a reasonable fee for doing so. If the medical officer of health possesses the necessary qualifications, and if the time required would not interfere with the efficient discharge of his duties, the Board see no reason why the council should not make a special arrangement with him to undertake this analytical work. But the officer's remuneration for such special services should not be included in his salary as medical officer of health, as no part of such special remuneration would be repayable out of the county funds.

"With regard to the visitation of cases of infectious diseases, the general order does not prescribe, and the Board do not consider it necessary, that a medical officer of health should visit every such case. Infectious diseases such as scarlet fever, enteric fever, and diphtheria, however, can be kept under control only by active supervision of all notified cases and by endeavours to discover all cases connected with them, whether carriers or sick persons, which may be able to spread infection. To this end a medical officer of health should make each notified case the starting point for systematic and thorough investigation into possible sources of infection. In conducting such investigations a medical officer of health will bear in mind that the examination of patients in their own homes can be made only with the consent of the patient or of those in charge of the patient. If a medical practitioner is in attendance, his co-operation should always be sought."

Inspectors of Nuisances.

Paragraphs 6, 7, 8, and 9 refer to inspectors of nuisances. Paragraph 6 states that the Board considers that local authorities should endeavour to obtain the services as inspector of nuisances of a man qualified by special training or by experience, and regards the possession of the certificate of the Royal Sanitary Institute or other similar body as a qualification for an inspector of nuisances in the provinces. Article 7 states that in districts containing a population of over 10,000 it is generally desirable that an inspector of nuisances should be a whole-time officer, but where this is not necessary the office may be combined with certain others but not with that of surveyor of highways. In the case of small districts the Board advises combination as an arrangement preferable to appointing a part-time officer.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BARNES URBAN DISTRICT COUNCIL.—Medical Officer of Health and Superintendent of Isolation Hospital. Salary combined, £275 per annum.

BIRMINGHAM GENERAL HOSPITAL.—Massage Teacher. Salary, £100 per annum.

BRISTOL DISPENSARY.—Medical Officer.

BRISTOL ROYAL INFIRMARY.—Dental House-Surgeon. Salary, £100 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—(1) House-Surgeon; (2) Surgical Registrar. Salary at the rate of £70 and £50 per annum respectively.

DUBLIN: RICHMOND, WHITWORTH, AND HARDWICKE HOSPITAL.—Lady Superintendent. Salary, £120 per annum.

EGYPTIAN GOVERNMENT.—Medical Tutor at the School of Medicine and Registrar to Kasr-el-Ainy Hospital. Pay, £E600 a year.

HASTINGS: ST. LEONARDS AND EAST SUSSEX HOSPITAL.—Senior House-Surgeon (male). Salary, £100 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon; (2) Assistant Casualty Medical Officer and House-Physician. Salary in each case, £30 for six months and £2 10s. washing allowance.

INVERNESS DISTRICT ASYLUM.—Junior Assistant Physician. Salary, £120 per annum.

LIVERPOOL EYE AND EAR INFIRMARY.—Honorary Assistant Surgeon.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—(1) Honorary Ophthalmic Surgeon. (2) Anaesthetist. Honorarium, £15 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Honorary Anaesthetist.

NEWCASTLE-UPON-TYNE CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary, £125 per annum.

NEWCASTLE-UPON-TYNE EDUCATION COMMITTEE.—Second Whole-time Assistant Medical Officer. Salary, £250 per annum, increasing to £330.

NEWCASTLE-ON-TYNE HOSPITAL FOR SICK CHILDREN.—Honorary Assistant Physician.

PADDINGTON AND KENSINGTON DISPENSARY FOR THE PREVENTION OF CONSUMPTION.—Assistant Medical Officer. Salary, £100 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Surgeon.

POPLAR HOSPITAL FOR ACCIDENTS, E.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150.

ROTHERHAM HOSPITAL.—Senior House-Surgeon (male).—Salary, £110 per annum.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Member of the Court of Examiners.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Clinical Assistants.

ST. MARYLEBONE GENERAL DISPENSARY, Welbeck Street, W.—(1) Honorary Dental Surgeon. (2) Honorary Anaesthetist.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

SOUTHAMPTON: FREE EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £82 per annum.

SUDAN UNITED MISSION.—Officer to take Medical Charge of the Freed Slaves' Home of Northern Nigeria.

SUNDERLAND INFIRMARY.—Male House-Physician. Salary, £80 per annum.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith Road, W.—(1) Clinical Assistants; (2) Three Non-resident Assistant House-Surgeons.

APPOINTMENTS.

BROWN, H. G., M.R.C.S., L.R.C.P., Medical Officer of Health of the Tredegar Urban District.

DORRELL, E. Arthur, F.R.C.S.Eng., Honorary Assistant Surgeon to the Royal Eye Hospital, London.

DUNSTAN, B. M., L.R.C.P. and S.Edin., L.F.P.S.Glasg., District Medical Officer of the Nantwich Union.

DURRANT, Charles E., L.R.C.P.Lond., M.R.C.S., Medical Officer to the Oriental and British Malay Rubber Companies, Negri Tembilan, Federated Malay States.

FURBER, L. G. H., L.M.S.S.A., Certifying Factory Surgeon for the Twyford District, co. Berks.

HEATON, George, M.A., M.B.Oxon., F.R.C.S., Examiner in Surgery in the University of Oxford.

JOLL, Cecil A., M.B., B.S.Lond., B.Sc.Lond., F.R.C.S.Eng., L.R.C.P., L.D.S.Eng., Senior House-Surgeon, Leicester Infirmary.

KAYTON, Maurice E., L.R.C.P., L.R.C.S.Edin., L.R.F.P.S.Glasg., Resident Medical Officer to the Kettering and District General Hospital.

LYLE, H. Willoughby, M.D., B.S.Lond., F.R.C.S.Eng., Assistant Ophthalmic Surgeon to King's College Hospital.

MEACHEN, G. Norman, M.D., B.S., M.R.C.P., Honorary Dermatologist to the Foundling Hospital, London.

ROBINSON, W. E., M.D., Physician's Assistant to the Infants' Hospital, Vincent Square, Westminster.

SHANNON, David, M.B., etc., Visiting Surgeon to the Royal Samaritan Hospital for Women, Glasgow.

WOODWARD, A. C. T., M.B., F.R.C.S.Edin., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 21.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

ODELL.—On December 14th, at Ferndale, Torquay, the wife of William Odell, M.D., F.R.C.S., of a son.

MARRIAGES.

OUSTON—TAYLOR.—On December 16th, at St. Andrew's Church, Bath, by the Rev. Prebendary Stone, Thomas George Ouston, F.R.C.S., of Newcastle-upon-Tyne, to Mary Taylor, second daughter of Edward Taylor, of Ayrton, Yorkshire.

ELLIOT—LOVEDAY.—On December 17th, at St. Mary's Church, Bryanston Square, by the Rev. C. V. Childe, M.A., LL.D., and the Rev. L. J. Percival, M.A., Andrew Elliot, M.D., M.R.C.P., of 110, Gloucester Place, Portman Square, W., to Mary Louisa, younger daughter of William Loveday, Esq., of the Poplars, Irthlingborough, Northamptonshire.

FENWICK—STOCKDALE.—On December 17th, at St. Martin's-in-the-Fields, Trafalgar Square, W.C., by the Rev. H. Rose, M.A., William Stephen Fenwick, M.S., F.R.C.S., 81, Harley Street, W., only son of Thomas Fenwick of Southampton, to Enid Stockdale, third daughter of Thomas Stockdale, Spring Lea, Leeds.

DEATHS.

BRUSHFIELD.—November 28th, at his residence at Budleigh Salterton, Thomas Nadauld Brushfield, M.D., F.S.A., etc., aged 81 years, formerly Superintendent at Chester and Brookwood Asylums.

KEATING.—On December 4th, at Reading, after a long illness, William Forbes Keating, L.R.C.P.Edin., L.F.P.S.Glasg., M.D.Belle Vue, N.Y., aged 71 years.

POLLOCK.—On December 18th, at 37, Collingham Place, S.W., James Edward Pollock, M.D., F.R.C.P., in his 93rd year. Funeral at Highgate Parish Church, Thursday, 22nd, at 2 o'clock, and burial in Highgate Cemetery.

ROBERTS.—December 14th, at his residence, Talarfor, Criccieth, North Wales, John Roberts, M.D., aged 78 years.

RODERICK.—At Vauxhall, Llanelly, on Monday, December 12th, Sidney James Roderick, M.B., B.Ch.Edin., aged 46 years.

STAVELEY.—On Thursday, December 15th, at 24, Sloane Gardens, in his 48th year, William Henry Charles Staveley, F.R.C.S., son of the late T. G. Staveley, Esq., of the Foreign Office.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday, Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
DECEMBER.	
25 Sunday ..	*Christmas Day.*
26 MONDAY ..	*Bank Holiday.*
27 TUESDAY ..	*Bank Holiday.*
28 WEDNESDAY	
29 THURSDAY ..	
30 FRIDAY ..	
31 SATURDAY ..	
JANUARY, 1911.	
1 Sunday ..	
2 MONDAY ..	SUBSCRIPTIONS to the British Medical Association for 1911 become due.
3 TUESDAY ..	LONDON: Organization Committee, 11 a.m.
4 WEDNESDAY	LONDON: Medico-Political Committee, 2 p.m.

Date.	Meetings to be Held.
JANUARY *(continued).*	
5 THURSDAY ..	TOTTENHAM DIVISION. *Metropolitan Counties Branch*, White Lodge, Silver Street, Enfield, 9.15 p.m.
6 FRIDAY ..	LONDON: Central Ethical Committee, 2 p.m. CITY DIVISION, *Metropolitan Counties Branch*, Business Meeting, 4 p.m.
7 SATURDAY ..	
8 Sunday ..	
9 MONDAY ..	
10 TUESDAY ..	LONDON: Public Health Committee, 3 p.m.
11 WEDNESDAY	
12 THURSDAY ..	
13 FRIDAY ..	
14 SATURDAY ..	
15 Sunday ..	
16 MONDAY ..	
17 TUESDAY ..	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 31st, 1910.

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Meetings of Branches & Divisions.

LANCASHIRE AND CHESHIRE BRANCH:

LIVERPOOL AND BIRKENHEAD COMBINED DIVISIONS.

A MEETING of the combined Divisions was held by kind permission of the Council at the Liverpool Medical Institution on December 20th at 4.30 p.m. Dr. A. C. E. HARRIS was in the chair, and there were forty-seven members present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Warning against a Proposed Insurance Company.—Mr. LARKIN informed the members that certain persons were going round canvassing medical men in connexion with an insurance company which they proposed to form to insure the public against doctors' bills. The promoters had informed him and others that the scheme had the support of the British Medical Association. This was absolutely untrue; and he advised members to scrutinize thoroughly the matter if it should come under their notice.

Scheme for Treatment of School Children Found on Inspection to be Defective.—The joint committee of the combined Divisions reported that the above subject had been under their consideration throughout the year, but action had been suspended as the matter had been brought before a general meeting of the profession by the Association of Honorary Medical Officers of the Liverpool Medical Charities in a form of which the joint committee entirely approved, and it was thought unwise that the matter should be dealt with at the same time by two bodies. It was, however, necessary that the combined Divisions should now place themselves in order by formally adopting the scheme. It was understood that the scheme had already been laid before the Liverpool Education Committee, but nothing but a formal acknowledgement had been received in reply. The scheme was discussed and compared with the model scheme of the British Medical Association, and it was unanimously decided that it was more suitable to local conditions, and was adopted as follows:

SCHEME FOR SCHOOL CHILDREN FOUND ON MEDICAL INSPECTION TO BE DEFECTIVE.

Preliminary Propositions.

(*a*) That the voluntary hospitals and other medical charities should not be used under any circumstances for the treatment of school children referred for treatment by the Local Education Authority.

(*b*) That such treatment should be carried out by the local medical practitioners, recognized for the purpose by the Local Education Authority. The names of such practitioners to be entered on a list kept by the Local Education Authority.

Clauses of Scheme.

1. On any school child being found defective, or the subject of disease, on school medical inspection, the parent or guardian should be served with a printed notice by the Local Education Authority requiring such parent or guardian to have the condition treated forthwith.

2. On such printed notice there should be an intimation to the effect that if the parent or guardian be unable to defray the cost of the necessary treatment, the parent or guardian must immediately give notice of such inability to the Local Education Authority.

3. Following on receipt of the plea of inability to pay, the Local Education Authority, after verifying the justice of the plea, on principles to be agreed upon between the medical profession and the Local Education Authority, will give to the parent or guardian a voucher to be delivered to the practitioner chosen by the parent from the list of practitioners who undertake to treat such a condition as the child may suffer from.

4. That the Local Education Authority should recognize all local medical practitioners willing to undertake the treatment of school children.

5. Practitioners so appointed should understand that their treatment is subject to the supervision of the Local Education Authority's medical officer.

6. Treatment may be carried out, either at the practitioner's own residence or surgery, at the child's home, or at any other convenient and approved centre.

7. That payment be made by the Local Education Authority according to a scale of fees, and that the fee payable for any particular service be printed on the voucher issued by the Education Authority.

8. Scale of fees:

(*a*) Examination and medicine per visit ...	2s. 6d.
(*b*) Testing eyesight and prescription for spectacles	5s. 0d.
(*c*) Operation for adenoids or tonsils	7s. 6d.
(*d*) Minor surgical operations	7s. 6d.
(*e*) Fee for anaesthesia	7s. 6d.

Commentaries.

1. Ringworm of the scalp—owing to the expensive plant required, might be treated to the best advantage by operators paid by salary.

2. Tubercular and mental cases should be segregated into special schools or sanatoriums provided with whole or part-time medical officers.

3. That in the estimation of inability to pay for treatment, a wage limit should be taken as the main guide. It is suggested that 30s. per week plus an allowance of 1s. per week for each child should be taken as the maximum weekly income from all sources entitling parents to gratuitous treatment for their children of school age.

It was further resolved that the scheme should be forwarded, in the name of the local Divisions of the British Medical Association, to the Chairman and members of the Education Committees of Liverpool and Birkenhead, and that the medical members of both municipal councils should be specially asked to give it their support. It was also decided to forward it to the hospital boards, and to ask them to take all possible action to support the profession in carrying it out.

Report on Action Taken re Abuse of Out-patient Departments of Liverpool Hospitals.—The report which was submitted to the combined Divisions on May 2nd had been forwarded to the various bodies as instructed, and the Council of Voluntary Aid had been

asked to confer with the Joint Committee on the subject. They, however, had asked for time to consider the matter, and instituted an independent inquiry into the working of the out-patient departments in Liverpool. As a result a very valuable report had been drawn up showing *inter alia* that 26 per cent. of all out-patients of the Liverpool hospitals were in receipt of 30s. and over per week, the income of some reaching as high as £5 10s. On October 26th the Council of Voluntary Aid intimated its readiness to receive the deputation, and on November 8th the interview took place. The deputation was favourably received, and the Joint Committee believed that good had already resulted therefrom.

Paying Wards in the Liverpool Voluntary Hospitals.—The Joint Committee reported on action taken since last meeting, and it was resolved to send the following letter to all medical practitioners of the area, namely:

The local Divisions of the British Medical Association have had their attention directed to the subject of an alleged abuse of the Liverpool medical charities arising out of the paying ward system which obtains in several of these institutions. The whole matter has been the subject of careful investigation and discussion, and the views of the local Divisions of the Association have been formally communicated to the governing bodies and medical boards of the hospitals, the Hospital Sunday and Saturday Funds Committee, and the Association of Honorary Hospital Physicians and Surgeons. It is desired now to bring the subject under the notice of the individual medical practitioners of the district, in order that they may realize how undesirable are the arrangements of which complaint is made. The local Divisions of the British Medical Association, who have investigated the subject, are convinced that the paying-ward system introduces a very objectionable commercial element into the management of a charitable institution, for if, on the one hand, the result is a financial success, the institution becomes a profit-earning business venture; if, on the other hand, the wards do not pay for themselves, the money subscribed for charitable purposes is being misapplied. Again, these paying wards are competing most unfairly with the numerous excellent private nursing homes in the city, which feel the competition very keenly. The prestige of a large hospital naturally attracts patients in a way that the less known private nursing homes cannot do, although the latter are in a position to offer all necessary medical and surgical accommodation. Careful inquiries have been made at all the best known private nursing homes in the district, and it is certain that ample accommodation is to be had. About 170 beds are available, excellent operating theatres exist, and the fees accepted range from as low, in some instances, as a guinea per week. Lastly, it is hardly necessary to point out that the general practitioner is prevented from attending his patient while the latter is in hospital, and so he loses the emoluments which he would otherwise have had the opportunity of earning. It is believed that if the medical profession generally can be brought to realize the objections above urged, the paying-ward system will soon die a natural death. Two points may be specially emphasized:

1. That a serious loss in emoluments to the general practitioner is involved in the continuance of the hospital pay ward system.
2. That a most unfair competition with private nursing enterprise results therefrom.

Hence, the local Divisions of the British Medical Association earnestly hope that the medical practitioners of this city and neighbourhood will, on all occasions, use their influence to prevent the continuance of this unfair use of our medical charities.

Matters Referred to Divisions.—(*a*) Position of medical practitioners called upon to examine patients who are under the care of other practitioners. The suggested rules were approved.

(*b*) Suggested scheme of arrangements for adoption by local authorities in connexion with ophthalmia neonatorum. The scheme was approved.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Metropolitan Counties Branch: City Division.—The January business meeting of the Division will be held at the Hackney Town Hall on Friday, January 6th, 1911, at 4 p.m.—A. G. Southcombe, M.D., Honorary Secretary.

Metropolitan Counties Branch: Marylebone Division.—A general meeting will be held at the rooms of the Medical Society of London, Chandos Street, Cavendish Square, W., on Monday, January 9th, at 4.30 p.m. Agenda: Minutes; Questions; Letters; any other Business. At 5 p.m. there will be a special meeting of all registered practitioners of Marylebone on Treatment of school children. The aim of the discussion will be the formulation and for recommendation of some scheme for the treatment of those children who are at present untouched by private practice. It is proposed that the following questions should be considered in the order given; other suggestions will be welcomed, but they should reach the Honorary Secretary three clear days before the date of the meeting: (1) Is it desirable that school clinics should be established within hospital premises? (2) Should independent school clinics be established in centres convenient to the school districts by the London County Council; and staffed by registered practitioners, selected, appointed, and adequately paid by the London County Council? (3) Should independent school clinics be established in centres convenient to the school districts by local registered medical practitioners, and staffed by practitioners selected from amongst themselves; the cost of such clinics including equipment, maintenance, and medical service, to be borne by the London County Council? Further, to appoint a committee to carry out the recommendations of the meeting.—N. Bishop Harman, Honorary Secretary.

CENTRAL MIDWIVES BOARD.

A special meeting of the Central Midwives Board was held on December 13th, at Caxton House, Westminster, with Sir Francis H. Champneys in the chair.

Midwives Struck Off the Roll.

The Board considered the following charges, amongst others, against the midwives whose names are given below, and ordered them to be struck off the Roll

Margaret Aldred, that being in attendance as a midwife at a confinement, the child having been born prematurely, and being asphyxiated and feeble, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 19 (5).

Hannah Arrowsmith, that being in attendance as a midwife at a confinement, the patient suffering from headache and sickness, and from high temperature, she did not until some days later explain that the case was one in which the attendance of a registered medical practitioner was required; nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner.

Ellen Culshaw, that being in attendance as a midwife at a confinement, the patient being ill, suffering from abdominal pains and high temperature, with diarrhoea and vomiting, she did not explain that the case was one in which the attendance of a registered medical practitioner was required; nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner.

Edith May Dalchow, that at the Aylesbury Petty Sessions she pleaded guilty to a felony, and was sentenced to one month's imprisonment.

Sarah Susannah Emptage, that being in attendance as a midwife at a confinement she failed to adopt the antiseptic precautions required by Rules E 3 and 7; she washed the baby's eyes with the water it had been bathed in; she washed the patient with the same water and rag that she had used for the baby; and she did not take the patient's temperature at any time.

Sarah Flitton, that being in attendance as a midwife at a confinement she did not take any antiseptic precautions whatever; she was uncleanly in her person, house, and clothing; she never employed antiseptics, being ignorant of how to use them, and she never took the temperature of her patients, not understanding the use of a clinical thermometer.

Elizabeth Jane Haines, that she persistently neglected to make herself acquainted with the obligations of the rules of the Board.

Adelaide Harker, that being in attendance as a midwife at a confinement, the child suffering from inflammation of the eyes on May 16th, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative

or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner.

Martha Holland, that she was convicted at the Oxford City Police Court of having been found drunk and incapable on a public highway.

Kate Martin, that being in attendance as a midwife at a confinement, the patient suffering from a serious rupture of the perineum, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner.

Julie Mitchell, that she was irregular in her attendance on her patients during the lying-in period, and that she persistently failed to conform to the directions of the local supervising authority.

Amelia Williams and *Mercy Ann Wilson*, that, notwithstanding repeated warnings, they neglected and refused to comply with the rules of the Board and the directions of the local supervising authority.

Midwives Censured.

Jane Carroll and Sarah Dean were censured after charges against them had been considered.

Midwife Cautioned.

The following midwife was cautioned after charges against her had been considered: Sarah Linton.

Another special meeting of the Board was held on December 15th, with Sir FRANCIS H. CHAMPNEYS in the chair.

Midwives Struck Off the Roll.

The Board considered the following charges, amongst others, against the midwives whose names are given below, and ordered them to be struck off the Roll:

Sarah Chapman, that being in attendance as a midwife at a confinement, rigor occurring with persistently offensive lochia and a high temperature, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner.

Catherine Charlton, that being in attendance as a midwife at a confinement, she entered in her register that two children were full time and of good health, well knowing that these statements were false, and that one child had died two days before the date of the entry.

Mary Hannah Davies, that being in attendance as a midwife at a confinement, the child being ill, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner.

Mary Jane Dickenson, that, the patient suffering from bronchitis, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner.

Esther Green, that being in attendance as a midwife at a confinement, she took the patient's temperature once only, and failed to attend to the cleanliness and comfort of the patient as required by Rule E 11.

Beatrix Inscoe, that she persistently refused to submit to the reasonable supervision and inspection of the local supervising authority, or to conform to the rules of the Board, and with intent to evade such supervision and inspection she frequently changed her address without notifying the local supervising authority as required by Rule E 20.

Emily Jones, that being in regular attendance as a nurse upon a patient suffering from uterine cancer, she nevertheless carried on her practice as a midwife, contrary to the provisions of Rule E 16, and without having undergone disinfection to the satisfaction of the local supervising authority, as required by Rule E 5.

Marian Phillis McCormac, that being in attendance at a confinement, she was under the influence of alcohol when she delivered the patient; after the delivery of the placenta she failed to remove it from the room, as required by Rule E 10, but left it under the bed until next day, and she was again under the influence of alcohol, and unable to speak clearly, when she visited the patient on the seventh day after the confinement.

Mary Ann Miles, that being in attendance as a midwife at a confinement, the child suffering from inflammation of the eyes, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner.

Elizabeth Murray, that being in attendance as a midwife at a confinement, she falsely entered in her register of cases that the condition of the mother on the date of her last visit was "moderate," whereas she was dead.

Midwives Censured.

Sarah Bath, Sarah Elizabeth Brown, Ellen Gentle, Martha Howard, Alice Waters, and Barbara Young were censured after charges alleged against them had been considered.

Midwife Cautioned.

The following midwife was cautioned after charges against her had been considered: Emma Gleeson.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-seven of the largest English towns 7,619 births and 4,946 deaths were registered during the week ending Saturday, December 17th. The annual rate of mortality in these towns, which had been 18.1 and 16.8 per 1,000 in the two preceding weeks, declined to 15 2 per 1,000 in the week under notice. Among the several towns the death-rates ranged from 5.7 in East Ham, 6.5 in Handsworth (Staffs), 7.2 in Smethwick, 7.4 in Hornsey, and 7.9 in Derby, to 21.1 in Swansea, 21.2 in Newcastle-on-Tyne, 21 3 in Warrington, 22 2 in Tynemouth, and 23 3 in Burnley; in London the death-rate was equal to 15 5 per 1,000. The annual rate of mortality from the principal epidemic diseases in the seventy-seven towns in the week under notice averaged 1.2 per 1,000; in London the rate was equal to 1 5 per 1,000, while among the seventy-six other large towns it ranged upwards to 2.4 in York, 3.7 in Devonport and in Tynemouth, 3.9 in Rotherham, and 4.2 in Grimsby. Measles caused a death-rate of 1.6 in Rotherham, 1.8 in Oldham, 2 1 in Grimsby, and 2 8 in Tynemouth; and whooping-cough of 1 2 in Norwich, 1.3 in West Hartlepool, and 2.4 in Rotherham. The mortality from scarlet fever, diphtheria, enteric fever, and diarrhoea showed no marked excess in any of the large towns, and no fatal case of small-pox was recorded during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 1,746 and 1,719 at the end of the two preceding weeks, further declined to 1,680 at the end of the week under notice; 156 new cases were admitted during the week, against 170 and 169 in the two preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday, December 17th, 850 births and 528 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 17 5 and 17.2 per 1,000 in the two preceding weeks, further declined to 16 5 per 1,000 in the week under notice, and was 1 3 per 1,000 above the mean rate during the same period in the large English towns. The rates in the several Scottish towns ranged from 11.3 in Greenock and 14 0 in Perth to 17 8 in Dundee and in Paisley. The death-rate from the principal epidemic diseases averaged 1.4 per 1,000, and was highest in Leith and Perth. The 291 deaths from all causes in the week under notice in Glasgow included 2 from scarlet fever, 4 from diphtheria, 7 from whooping-cough, and 3 from diarrhoea. Two deaths from scarlet fever and 8 from diphtheria were recorded in Edinburgh; 3 from whooping-cough in Dundee; 2 from scarlet fever in Paisley; 2 from diphtheria and 2 from whooping-cough in Leith; and 2 from diphtheria in Perth.

Vacancies and Appointments.

VACANCIES.

BARBADOS GENERAL HOSPITAL.—Senior Resident Surgeon. Salary, £300 per annum.

BEDFORD COUNTY HOSPITAL.—House-Physician. Salary, £80 per annum.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham Road, S.W.—(1) House-Surgeon; honorarium, £20 for six months. (2) Assistant Physician.

BOURNEMOUTH: ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House-Surgeon (male). Salary at the rate of £80 per annum.

BOURNEMOUTH: ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Honorary Dental Anaesthetist; (2) Honorary Medical Registrar; (3) two House-Physicians; (4) House-Surgeon; (5) Dental House-Surgeon; (6) Obstetric and Ophthalmic House-Surgeon; (7) Throat, Nose, and Ear House-Surgeon; (8) Casualty Officer. Salary for (3), (4) and (5), £100 per annum; for (6) and (7), £75 per annum; and for (8), £50 per annum.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—(1) House-Surgeon; (2) Second House-Surgeon.

CANCER HOSPITAL, Fulham Road, S.W.—(1) House-Surgeon; (2) Surgical Registrar. Salary at the rate of £70 and £50 per annum respectively.

DUBLIN; RICHMOND, WHITWORTH, AND HARDWICKE HOSPITAL.—Lady Superintendent. Salary, £120 per annum.

GLASGOW MATERNITY AND WOMEN'S HOSPITAL.—(1) Two Outdoor House-Surgeons to Obstetrical Department; (2) Outdoor House-Surgeon to West End Branch of Obstetric Department; (3) two Visiting Gynaecologists; (4) two Assistant Gynaecologists; (5) two Supernumerary Assistant Gynaecologists; (6) House-Surgeon to Gynaecological Department.

GLOUCESTER: BARNWOOD HOUSE HOSPITAL FOR MENTAL DISEASES. Second Assistant Medical Officer (male). Salary, £160 per annum.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House-Surgeon. Remuneration at the rate of £80 per annum.

HAMPSTEAD GENERAL HOSPITAL, Haverstock Hill, N.W.—House-Surgeon. Salary at the rate of £70 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon; (2) Assistant Casualty Medical Officer and House-Physician. Salary in each case, £30 for six months and £2 10s. washing allowance.

HULL: VICTORIA CHILDREN'S HOSPITAL.—Lady Assistant House-Surgeon. Salary, £40 per annum.

LIVERPOOL EYE AND EAR INFIRMARY.—Honorary Assistant Surgeon.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Medical Registrar. Honorarium at the rate of 40 guineas per annum.

MANCHESTER CHILDREN'S HOSPITAL.—Assistant Medical Officer (non-resident). Salary, £100 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Honorary Anaesthetist.

NEWCASTLE-UPON-TYNE CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary, £125 per annum.

NEWCASTLE-UPON-TYNE EDUCATION COMMITTEE.—Second Whole-time Assistant Medical Officer. Salary, £250 per annum, increasing to £330.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Surgeon.

POPLAR HOSPITAL FOR ACCIDENTS, E.—Dental Surgeon. Salary, £50 per annum in respect of each half-day's service per week, total salary not to exceed £250 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150.

ROTHERHAM HOSPITAL.—Senior House-Surgeon (male).—Salary, £110 per annum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Assistant Physician to have care of Out-patients.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Road, S.E.—Surgeon to Out-patients.

RYDE: ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House-Surgeon (male). Salary, £125 per annum.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston Road, N.W.—Resident Medical Officer. Salary, £105 per annum.

SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Officer. Salary, £60 per annum.

SOUTHAMPTON: FREE EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £82 per annum.

STOCKPORT UNION.—Resident Assistant Medical Officer to the Stepping Hill Hospital. Salary, £130 per annum, rising to £150.

SUDAN UNITED MISSION.—Officer to take Medical Charge of the Freed Slaves' Home of Northern Nigeria.

SUNDERLAND INFIRMARY.—Male House-Physician. Salary, £80 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Nuneaton, co. Warwick; Wednesbury, co. Stafford; and at Dunoon, co. Argyll.

APPOINTMENTS.

DODDS, T. G. B., M.D.Edin., District Medical Officer of the Cirencester Union.

MACKENZIE, James, M.D.Edin., Hon. LL.D.Aberd., Lecturer on Cardiac Research at the London Hospital Medical College.

PARSONS, Leonard, M.D Lond., M.R C.P., Physician for Out-patients at Birmingham and Midland Free Hospital for Sick Children.

WACHER, S., F.R.C.S.Eng., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 49.

WALLACE, D., M.B., Certifying Factory Surgeon for the Ullapool District, co. Ross and Cromarty.

WOODMAN, E. W., M.B., B.S.Lond., F.R.C.S., Senior Assistant Medical Superintendent of the St. Pancras Union Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS

MAY.—On December 19th, at the White House, Sonning-on-Thames, to Dr. and Mrs. Norman May, a daughter.

RUSHTON-HARRISON.—On December 26th, at Hill Cottage, Exmouth, the wife of G. H. Rushton-Harrison, M.B., C.M., of a daughter.

ST. JOHN.—On December 13th, the wife of Winstan St. A. St. John, M.R.C.S., L.R.C.P., Derwent House, Derby, of a son.

DEATH.

COLLENS.—On December 18th, in Vienna, of bronchopneumonia, Edward Howard Collens, M.B., B.S.Lond., of Pen-y-Bryn, Hafod Road, Hereford, in his 37th year.

DIARY FOR THE WEEK.

THURSDAY.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.15 p.m. Annual General Meeting and Conversazione. President's Address on Science and Practice.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Paper:—Dr. E. W. Goodall: The Rashes of Some of the Acute Infectious Diseases and the Rashes which Simulate them.

ROENTGEN SOCIETY, 20, Hanover Square, 8.15 p.m.—Paper:—Professor Rutherford: The Radio-activity of Thorium.

ROYAL SOCIETY OF MEDICINE: OBSTETRICAL AND GYNAECOLOGICAL SECTION, Chandos Street, W., 8 p.m.—(1) Exhibition of Specimens. (2) Paper:—Mr. Alban Doran: Subtotal Hysterectomy for Fibro-myoma Uteri; Forty Additional Histories.

FRIDAY.

ROYAL SOCIETY OF MEDICINE: LARYNGOLOGICAL SECTION, 11, Chandos Street, W., 5 p.m.—Cases and Specimens.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, 8 p.m.—Cases and Specimens will be shown.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays, and Operations, 2 p.m daily. Monday, Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
JANUARY, 1911.	
2 MONDAY ..	SUBSCRIPTIONS to the British Medical Association for 1911 become due.
3 TUESDAY ..	LONDON: Organization Committee, 11 a.m.
4 WEDNESDAY	LONDON: Parliamentary Subcommittee, 11 a.m. LONDON: Medico-Political Committee, 2 p.m.
5 THURSDAY ..	TOTTENHAM DIVISION, *Metropolitan Counties Branch*, White Lodge, Silver Street, Enfield, 9.15 p.m.
6 FRIDAY ..	LONDON: Central Ethical Committee, 2 p.m. CITY DIVISION, *Metropolitan Counties Branch*, Business Meeting, Hackney Town Hall, 4 p.m.
7 SATURDAY ..	
8 Sunday ..	
9 MONDAY ..	MARYLEBONE DIVISION, *Metropolitan Counties Branch*, Rooms of the Medical Society of London, Chandos Street, W.; General Meeting, 4.30 p.m.; Special Meeting, 5 p.m.
10 TUESDAY ..	LONDON: Public Health Committee, 3 p.m.
11 WEDNESDAY	
12 THURSDAY ..	
13 FRIDAY ..	
14 SATURDAY ..	
15 Sunday ..	
16 MONDAY ..	
17 TUESDAY ..	
18 WEDNESDAY	LONDON: Finance Committee, 2.30 p.m. RICHMOND DIVISION, *Metropolitan Counties Branch*, Clinical Meeting, Royal Hospital, Richmond, 8.30 p.m.
19 THURSDAY ..	BIRMINGHAM BRANCH, Medical Institute, Edmund Street, 3.30 p.m. LONDON: Metropolitan Counties Branch Council, 4.30 p.m.
20 FRIDAY ..	
SATURDAY :	

JANUARY *(continued).*

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AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

1. Epidemic Cerebro-Spinal Meningitis.

CH. E. MACÉ DE LEPINAY (*La Clinique*, March 4th, 1910) gives a full description of epidemic cerebro-spinal meningitis. A series of facts go to prove the contagiousness of the disease, but the contagiousness is feeble and it is not known how it occurs. Simple contact does not seem to be enough for transmission, indirect contact with objects soiled by the buccal or nasal discharges is probably more dangerous. The meningococcus has been isolated from the pharyngeal and nasal mucous membranes, not only of the patients themselves, but also of those in contact with them, and it appears to be established that these carriers of the micro-organisms may pass on the contagion when they have no symptom of the disease or after recovery from an attack; the micrococcus rarely, however, persists in the naso-pharynx for more than three weeks after an attack. In the section on bacteriology the methods of differentiation of Weichselbaum's meningococcus are discussed. A recent proceeding is that of Vincent and Bellot, who based a diagnosis on the elective precipitant action which a precipitant antimeningococcic serum exercises on the cerebro-spinal fluid in cases of epidemic meningitis. Netter and Debré have shown that the serum of a patient suffering from cerebro-spinal meningitis agglutinates the meningococcus in liquid culture. One of the less well-known symptoms of the disease which is mentioned is the *signe de la nuque*, corresponding to Kernig's sign. To obtain this reflex the neck is bent forward, and it is found that the lower limbs at the same time become flexed at the knees, and on the abdomen. This sign is present in 97 per cent. of cases of meningitis. Another sign less frequently met with, but still of importance, is described by Budjinski—passive flexion or extension of one lower limb provokes a similar movement on the opposite side in about 60 per cent. of cases of meningitis. The diagnosis is fully considered. Lumbar puncture in almost the whole number of cases enables a diagnosis to be made not only of meningitis but of the particular form of it present. The cerebro-spinal fluid withdrawn is turbid, though occasionally it may be clear for the first twenty-four hours of the illness. Sometimes it is yellowish or greenish yellow in colour. Cytological examination of the fluid is of much importance; on centrifugalization, and sometimes even merely on standing, large numbers of polynuclear leucocytes with neutrophile granulations are deposited. Some of the leucocytes are altered, and the protoplasm stains badly. This alteration is considered by Widal to be of unfavourable prognosis. In addition to the polynuclear cells, but in smaller numbers, there are mononuclear leucocytes, lymphocytes, red blood corpuscles, and some endothelial cells. There is a predominant lymphocytosis often in subacute and chronic forms. The presence of the meningococcus can, as a rule, be demonstrated—often in association with the pneumococcus—with Koch's bacillus or with a pseudo-meningococcus. As the disease progresses towards recovery the polynuclears give place to lymphocytes, and the meningococci disappear. Other laboratory methods of clinching a diagnosis are the serum methods mentioned above. The prophylactic measures recommended include compulsory notification, isolation of the patient and of the children of a family in which a case occurs, disinfection of the room, etc., and of the excretions, especially the naso-pharyngeal secretions, and isolation of carriers of the micro-organism. As a curative measure lumbar puncture has a certain effect in reducing pressure and so relieving symptoms. Good effects have been obtained by intraspinal injections of collargol and electragol. Use of the colloidal metals by friction, subcutaneous and intravenous injections have, according to Netter, reduced the mortality from 53 to 43 per cent. The real treatment, however, is by intraspinal injections of antimeningococcus serum obtained by immunization of the horse. The amount of serum injected varies with the age—15 c.cm. for a very young child, 20 to 30 c.cm. above 2 years, and 30 to 40 c.cm. for an adult. The dose is repeated on each of three or four successive days, though some workers wait for a return of symptoms before making a second injection. Patients experience a wonderful relief after an injection; headache and contracture diminish, sleep returns, and sometimes the doctor may almost be said to assist at a "veritable resurrection." The meningococci disappear very rapidly from the cerebro-spinal fluid. The side-effects of the serum treatment are, as a rule, of little importance. As a result of the treatment the mortality sinks to 25 per cent. and even to 10.32 per cent., as compared with a mortality of 50 per cent. and even 73 per cent., in the same epidemic, in cases in which the serum is not given. The results are so good that they would seem to justify an injection of serum in any case in which the cerebro-spinal fluid is turbid, without waiting for the results of the laboratory examination.

2. Specific Diagnosis of Tuberculosis in Childhood.

ENGEL (*Wien. med. Klin.*, Nos. 10 and 11, 1910) discusses the (specific) diagnosis and treatment of tuberculosis in childhood. The characteristic point about tuberculosis in children is that there is always a stage in which the disease is confined to the lymph glands, and at this stage it is often impossible to recognize it clinically; such cases are the very frequent cases of "occult tuberculosis" in childhood. Occult tuberculosis is, however, usually only in a very limited sense latent. The younger the child the greater the probability that the disease will sooner or later—often as a result of irritation due to traumatism or an infectious disease—spread beyond the lymphatic system. In the first year of life the protective power of the lymph glands is especially small. In making a diagnosis it has to be decided, first, whether any tuberculous area exists in the body; next to locate the tuberculous area and decide as to its extent and progressivity; and, finally, to differentiate between tuberculous and non-tuberculous affections. V. Pirquet's cutaneous tuberculin test is the most convenient method of deciding whether or not a tuberculous focus is present. The ophthalmo-reaction is not free from danger in children, and the frequent observations of the temperature needed after injection of tuberculin make the method by injections inconvenient in practice. The cutaneous reaction is, however, a disadvantage, in that it gives no indication as to whether the tuberculosis is quiescent or progressive, limited or widespread; and, since occult tuberculosis is very common, and may in any case be the cause of the positive reaction, it is not safe to say that any particular symptom is due to tubercle simply because a positive reaction has been obtained. This objection hardly applies to infants, in whom tuberculosis is almost identical with progressive tuberculosis. With regard to the site, the extent, and the progressive nature of a tuberculous lesion, observations on the results of injections of tuberculin will give considerable information. The points to be especially noted are: (1) The amount of the initial dose, large enough to give rise to fever; (2) the speed with which the reaction disappears if the dose is repeated with daily intervals; (3) the speed with which tolerance for larger doses of tuberculin can be acquired. The first point is the one of least importance; many children—especially scrofulous children—react very strongly to an initial dose, but quickly become tolerant of it. The reaction to excessive doses is of chief value. If the tuberculous affection be well localized, especially if it be of the glands or bones, the reaction will cease after the second or third injection, when a high initial dose (not under 0.001 gram) is given. In more widespread processes, which are, however, either fairly well localized or only slowly advancing, reaction becomes more gradually less, and does not disappear until after the fourth, fifth, or sixth injection, with an initial dose of between 0.0005 and 0.001 gram. In more extensive and progressive forms and almost always in tuberculosis of the lungs, even with a minimal initial dose, reaction continues to occur after each injection. The acquired tolerance to increasing doses varies similarly according to the nature of the case. In cases in the first group a dose of 1 gram may be tolerated even after four or five weeks, in cases of the second six or ten weeks is needed, and in those of the third tolerance is often acquired very slowly, and often the initial dose can never be much increased. The necessary observations can obviously only be made for patients inside the hospital. The verification of the nature of doubtful processes—as, for instance, a glandular swelling, an abscess, a lung area, etc.—is often possible, even though the mere presence of a positive reaction does not necessarily clear up the diagnosis.

If the lesion is accessible, the presence or absence of a local reaction is decisive. If the organ affected is inaccessible, the process is more complicated, but a comparison of the sensitiveness to tuberculin as compared with the sensitiveness to be expected if the lesion in question were tuberculous, will often give the required information. Thus, in thin, weak, pale children examination will often show impaired resonance over the right apex, with harsh, prolonged expiration, and a suspicion of incipient phthisis is aroused; v. Pirquet's cutaneous reaction is positive, showing that a tuberculous area exists, but if the sensitiveness to tuberculin injections is low instead of very marked, as in lung tuberculosis, the conclusion would be that the lung was unaffected, but that a small area of occult tuberculosis was the cause of the cutaneous reaction. The use of tuberculin is not always to be recommended. In cases of extensive phthisis the reaction is so strong that it should be, as a rule, avoided, and a search for the bacilli in the sputum should be made; sputum can be obtained, if necessary, by emptying the stomach to obtain a specimen of sputum which has been swallowed. Tuberculin injection are contraindicated in meningitis in which, however, tubercle bacilli can usually be demonstrated in the cerebro-spinal fluid on lumbar puncture. Other methods available in making a diagnosis are Uhlenhuth's antiformin method, cytological examination of the serum, etc. With regard to treatment specific cures are especially easy to carry out in childhood, because in the typical localized form the sensitiveness to tuberculin is low. Only the slowly advancing cases of phthisis are suitable for specific treatment, and in acute phthisis it is contra-indicated.

3. Fatal Factors in Pneumonia.

G. WERLEY (*Med. Record*, April 16th, 1910) finds the causes of death in pneumonia to be a failure to recognize the importance of a few underlying principles. The patient will recover if placed under the most favourable conditions for nature to cure him. The great needs of the body in pneumonia are plenty of air, water, food, and proper rest. The first factor in unfavourable surroundings is a close room, not supplied with a plenty of cool, fresh air. The second is a failure to aid the kidneys in carrying off the toxins of the disease by giving plenty of fresh water. Overfeeding and wrong feeding are responsible for a loss of energy used up in an attempt to digest, assimilate, and excrete unsuitable foods. Meat broths are not useful because they make no energy and tax the kidneys. Sugar is a valuable energy producing food, and leaves nothing but water and carbon dioxide to be eliminated. Eggs and milk are appropriate. Fright and worry are responsible for loss of nervous energy. Failure to keep the patient in a horizontal position so as to aid the heart in carrying on the circulation is responsible for many cases of death. Drugs are only necessary to aid the heart and obtain perfect rest. There is no serious infectious disease against which the body has better natural means of defence than pneumonia. If given a good fighting chance a complete cure in five to ten days is the rule.

SURGERY.

4. Beck's Bismuth-Vaseline Paste Injections in Chronic Tuberculous Sinuses.

SHOBER (*Ann. of Surg.*, May, 1910) reports 5 cases treated by him by this method, introduced by Beck of Chicago in 1908. In order to diagnose the extent of chronic tuberculous sinuses Beck injected a number of cases with a paste composed of 1 part bismuth and 2 parts vaseline, and then had radiographs made. The first case so treated led to the important discovery that the bismuth paste injection has a marked curative effect, apart from its diagnostic value. In his paper read before the International Congress on Tuberculosis, Beck reported 192 cases treated by this method; of these, 64 per cent. were healed, 28.5 per cent. improved, 6 per cent. unchanged, while 1.5 per cent. died during the treatment or after. The method was employed in cases of osteomyelitis of long bones with sinuses, empyema, and tuberculous lung abscesses, suppurative sinuses of the head, sinuses following tuberculous glands, rectal fistulae, and tuberculosis of the kidney with sinuses. Shober employed this method in June, 1908, in the case of a woman of 35 suffering from a psoas abscess sinus which had persisted since 1902. He had removed a tuberculous kidney from this patient in October, 1907, and the pelvic organs in December, 1907. Treatment commenced in June, 1908. Between June 25th and October 24th she had twelve injections. From the first injection the discharge changed from a characteristic irritating pus to a mild, thin, muco-purulent discharge, which rapidly grew less in quantity. At first he was able to inject about 3 drachms of the paste, finally only 30 to 40 minims; on September 24th the sinus closed completely, and has remained so to date. A similar case of psoas abscess sinus of three years' standing closed after the fifth injection. He has also treated two cases of tuberculous hip and a large sacral abscess with similarly good results. The technique is very simple. The paste consists of bismuth subnitrate 33 per cent., and vaseline 67 per cent. The bismuth should be slowly stirred into the vaseline while hot, but not boiling. When cool, this forms a thick, soft paste, which before using should be heated and thoroughly stirred until thin enough to be drawn into a suitable syringe. Care should be taken that no water enters the sinus, the orifice of which should be washed with 95 per cent. alcohol. The nozzle of the syringe should be placed firmly against the opening; the paste is forced in under moderate pressure until the patient begins to complain. A pledget of gauze is then placed against the opening, and an icebag applied for a short time. No anaesthetic is required, as the injections are usually painless. Beck believes that the action of bismuth subnitrate is bactericidal, chemotactic, and astringent. A systematic examination of the discharges from suppurating sinuses under treatment invariably shows a continuous decrease in the number of organisms, and in many cases their final disappearance. He also believes that the mechanical action of the paste is a prominent factor in the healing process; the diseased walls are separated and brought into contact with a substance in itself bactericidal and stimulating. This method is obviously not applicable to biliary or pancreatic fistulae or sinuses communicating with the cranial cavity or hollow viscera. There are cases in which the bismuth plug may produce unpleasant symptoms by pressure on vital organs, and, in cases where the disease has affected large veins in the neighbourhood of the sinus, the entry of the bismuth into the circulation might cause serious consequences. In a few instances toxic symptoms have been observed, but up to 100 grams of the 33 per cent. paste may be injected without fear. Beck states that the formation of sinuses and fistulae may be prevented by opening cold abscesses, evacuating the contents, and at once injecting not more than 300 grams of 10 per cent. bismuth paste. The opening should not be sealed. This method is applicable to suppurative accessory sinuses of the head, while of value in all suppurating sinuses and cavities the injections are particularly effective in tuberculous cases.

5. Pseudo-Appendicitis in Pneumonia.

EUZIÈRE (*Rev. Fran. de méd. et de chir.*, December 10th, 1909) endeavours to explain the reason of the presence of appendicitic symptoms in the very early stages of pneumonia, such having been observed and chronicled even before the days when the name "appendicitis" came into general use. At the present time, when the attention of medical practitioners is more especially directed towards affections of the appendix, the tendency is to make such observations too frequently, and sometimes even to resort to a needless operation, rendered more dangerous by the pulmonary conditions. Euzière cites a number of communications by different writers, pointing out the connexion between pneumonia and appendicular symptoms, and adds two of his own, one of a young man, an asylum attendant, who was seized with classical symptoms of appendicitis, after having nursed 3 cases of pneumonia among his asylum charges. The fact of an epidemic of pneumonia having taken place caused delay in attempting to operate, and on the following day definite symptoms of pneumonia appeared. Convalescence was protracted, and was complicated by a transient attack of jaundice. The second case, also an asylum ward tender, was 60 years of age, with the arteries and the general appearance of 70; an old dyspeptic patient, suffering constantly from abdominal pains and attacks resembling appendicitis. In his case, also, pneumonic symptoms soon became more prominent than those in the iliac region, and he recovered, although slowly. Euzière explains the pathology of this association by the hypothesis that the pain complained of in pneumonia is an intercostal neuralgia set up by the irritation of the disease in the subjacent parts; that neurons of association exist between the different levels of the spinal cord; and that, therefore, the pain may be transmitted from the fifth intercostal, for example, and show itself at the level of the ninth, tenth, eleventh, or

twelfth, appearing at McBurney's point. It seems necessary, also, to have some old affection of the appendix, or, at least, of the digestive tract in some part of its course, in order to determine the transference of the pain in this manner, although such symptoms may not have manifested themselves previously.

OBSTETRICS.

6. The Hymen after Labour.

JAYLE (*Rev. de gynéc. et de chir. abdom.*, November-December, 1909) has prepared a carefully written communication on this subject which, for several reasons, is of considerable importance. Amongst those reasons is the misconception of the precise evidence of a past pregnancy, as far as can be indicated from the appearance of the hymen in any particular case. Jayle's conclusions are as follows: The hymen undergoes distinct lesions at and after the first confinement, lesions which are constant when delivery occurs at term, as the hymen cannot be stretched far enough to correspond to a segment of a circle of 33 cm. (nearly 10 in.) without rupture. Jayle insists that published cases of intact hymen after labour are either imperfectly reported or are faulty because the parts were not examined till some time after convalescence. The membraniform hymen may, as all know, resist the passage of the fetal head; it must then be incised, and in that case it will, after healing, present appearances corresponding to the surgical wounds, and not to what develops after spontaneous rupture. When this type of hymen has already been ruptured during coitus, it undergoes great loss of substance after labour until its relics become indistinguishable from those of the hymen of the usual type. That type, with its well marked free edge, the hymen *en collerette*, is but seldom found ruptured at one point only after labour; as a rule, several lacerations are found, and more or less loss of substance as well. Bands running across between different points on the hymen itself are ruptured in labour or not, according to their position, but hymeno-vaginal bands are tougher and more liable to obstruct the fetal head, so that the knife must be used if the head does not break them down. Necessarily, many variations in the secondary changes of the tissues of the ruptured hymen are met with, dependent on their elasticity, on the size of the fetus, the time occupied in delivery; the aids, manual or instrumental, which the midwife or doctor may employ, and, above all, on local infection, which greatly increases destructive inflammatory changes in the bruised tissues. Although lesions of the hymen tend to increase with every labour, Jayle admits that the hymen is to be found all but intact in some big primiparae. Total or all but complete disappearance of the hymen after labour usually implies secondary sclerosis. Jayle considers that the expression "*carunculae myrtiformes*" should be rejected, as it is applied to different pathological conditions. He prefers the expression "hymeneal fragments" or "hymeneal caruncles," according to their nature.

GYNAECOLOGY.

7. Conservative Operations for Prolapse.

LAPOINTE (*La Clinique*, October, 1909) considers that therapeutic treatment is of no value in cases of prolapse of the genitalia, operative interference being the only effective method. He discusses the conservative operations, which have for their object the retention of the prolapsed organs in the pelvis without mutilation. These include amputation of the cervix, colporrhaphy with perinaeorrhaphy and hysteropexy. One of the most thorough is the colpo-perinaeorrhaphy, by which the size of the vagina and vulva is reduced and a firm perineal body is formed. In early cases a simple resection of the vaginal wall is sufficient, but where the prolapse is complete it is well to make an extensive resection of the vaginal tissues reaching as high as the cervix and using deep sutures which will give attachment to the fascia and cellular tissues, as well as to the levator ani muscle. This operation is the fundamental one, to which the others are only supplementary. A colpo-perinaeorrhaphy which has been well done gives a sufficient support to the bladder and anterior wall of the vagina, but it is unwise not to include an anterior colporrhaphy when the prolapse is total. Hysteropexy and ligamentopexy are suitable for retrodeviation when the perineum is not relaxed, but do not cure prolapse, though they are useful when combined with colpo-perinaeorrhaphy, as they take the weight off the perineum. The operation which he prefers in women inclined to be stout is the intraparietal fixation of the round ligaments, easily done through a short transverse suprapubic incision. The results are good, failure being attributed to the colpo-perinaeorrhaphy not being made extensive enough. There is another method—that of Richelet—for curing a vesico-vaginal fistula by the interposition of the uterus. The uterus is drawn into the vagina, its posterior wall is brought into contact with the anterior wall of the vagina and sutured; the body of the uterus forms a firm base, which resists the descent of the vagina and bladder. This plastic operation is open to various objections, most surgeons preferring to adhere to the more classical methods.

THERAPEUTICS.

8. The Treatment of Multiple Neuritis.

PERRIN (*Province médicale*, April 9th, 1910), in discussing this condition, describes the symptomatology in the first place of cases which progressively and spontaneously improve. In the second place he refers to those graver cases in which the patient is exposed to the risk of invasion of the cardiac and respiratory nerves, as also those of deglutition. The most serious risk is neuritis of the pneumogastric nerve, to which the patient succumbs by syncope, asphyxia, or acute pneumonia. He points out that multiple neuritis, although ordinarily amenable to cure, is not to be neglected, and that it is important to treat it early in order to shorten its duration and prevent complications. Following Professor Raymond he classes the indications for treatment under four heads—prophylactic, causal, symptomatic, curative. (*a*) *Prophylactic.*—In the case of those hereditarily predisposed to nervous affections we must emphasize the necessity of a physical and mental regimen; discourage habits likely to result in auto-intoxication, overwork, the abuse of alcohol, and discountenance occupations which may lead to any of the metallic poisonings. This is especially necessary in the case of a person who has already suffered from multiple neuritis. The rational treatment of all infectious disorders by diminishing the risk of complications also plays an important part among prophylactic measures. In every case no effort must be spared to eliminate toxins, and in this connexion a milk diet is of special assistance. Weakly convalescents ought to be specially guarded against fatigue, excitement, or mental depression. (*b*) *Causal Treatment.*—It is here that certain drugs, such as mercury, quinine, and the use of serumtherapy, can serve a specific purpose. But it is of the first importance to make an exact diagnosis of the cause of the condition. Mercury, for example, is the specific treatment for syphilitic multiple neuritis, but it would be dangerous if the neuritis was really due to previous excessive use of the drug, and not to the syphilis. You may, of course, have a variety of etiological factors in the same individual—for example, syphilis, mercurialism, or alcoholism. In such cases it is desirable to make use of such therapeutic measures as are suitable to all cases of multiple neuritis. Such are to be found in the use of a milk diet to assist elimination of the poisons, hot baths, free use of drinks, aided perhaps by injections of serum or administration of intestinal antiseptics. (*c*) *Symptomatic Treatment.*—Pains are relieved by rest in bed, and morphine is here of great service, except in cases of pneumogastric neuritis. Antipyrin, and the various preparations of salicylic acid, methylene blue, are also of value. For sleeplessness, codeine, trional, or veronal may be given. As a rule, however, it is desirable to give as few drugs as possible. In certain cases where the suffering of the patient is exaggerated by an hysterical element, verbal suggestion is often of benefit. It reduces to their proper value symptoms which are exaggerated by the nervous state of the patient. It can render assistance also as an analgesic or soporific. To avoid the use of internal medicines, hydrotherapeutics in a form of lukewarm or hot baths are also of use. For the alarming symptoms of cardiac or respiratory failure he advises ether, caffeine, strychnine, and inhalations of oxygen. Raymond also recommends faradization of the vagus nerve, placing the electrodes on the neck. The use of electricity as a means of general treatment is only to be recommended after the acute stage is passed. If mental symptoms complicate the condition, isolation in quiet, though familiar, surroundings is an essential aid to treatment. (*d*) *Curative Treatment.*—This ought not to be adopted until all inflammatory

symptoms have subsided. The object of this treatment is to assist reparation of the damaged nerves and muscles anatomically and physiologically. Phosphorus in the form of glycero-phosphates, lecithin, cod-liver oil are best. The dietary also should be based on these lines. Locally gentle massage, methodically applied, frictions, and cold or hot douches are at this stage beneficial; electricity, again, is of great service, always using the minimum current to produce muscular reaction. If contractility to faradism is lost, the galvanic current may be used, and in the use of the interrupted current there must be sufficient time between the shocks to allow of the muscle completely relaxing after each shock. Contractures of the limbs, if they occur, may have to be remedied by orthopaedic or surgical means. Finally, the patient's régime must be so planned out as to avoid the risk from any cause of a fresh attack.

9. Auto-Serumtherapy in Pleural Effusion.

Dodal (*Wien. med. Woch.*) has treated 17 cases in a Vienna military hospital by the method introduced in 1907 by Gilbert of Geneva and Fede of Naples. One c.cm. of a pleural effusion is withdrawn by a hypodermic syringe and immediately injected under the skin of the back. This procedure is repeated as often as required, though a single injection may suffice. It is usually followed by diuresis and rapid absorption of the fluid, whether serous or haemorrhagic. The method has been tried extensively in Senator's wards in Berlin. The cases treated included examples of sero-fibrinous, haemorrhagic, and incipient purulent pleural effusions, acites, hydrothorax, ascites with hydrothorax, and hydrothorax with both ascites and pericarditis. The conclusions arrived at were that the treatment was usually useless in ascites and hydrothorax, only 2 cases of which improved. But in all but 1 of 15 cases of serofibrinous and haemorrhagic pleural effusion the results were excellent. Not only was absorption accelerated, but the tendency to the formation of adhesions was diminished. Pyrexia was found not to be a contraindication. Zimmermann, of Dorpat, likewise obtained satisfactory results. Dodal employed the following technique: After thorough disinfection of the patient's skin and the practitioner's hands, the boiled needle of an exploring syringe is inserted in an intercostal space. After 4 c.cm. or 5 c.cm. of fluid have been withdrawn the needle is moved until the point is in the subcutaneous cellular tissue. It is then pushed forwards under the skin, and 2 c.cm. of the pleural fluid are injected. The needle is then withdrawn and the puncture closed with gauze and strapping. The remaining fluid in the syringe is used for microscopical investigation. As the majority of the Vienna cases were tuberculous, a complete cure was obtained in only 4, but the writer regards the results as entirely satisfactory and occasionally excellent. No unpleasant complications were observed, with the exception of an acute eruption in 1 case after a second injection was given. This was possibly due to anaphylaxis. Auto-serotherapy is more valuable in acute than in chronic pleurisy. In tuberculous cases a rise of temperature follows the injections. The mode of action is uncertain, but the injection of pleural fluid probably stimulates the formation of specific antibodies.

PATHOLOGY.

10. Antitryptic Ferment in Syphilis.

G. Stumpke (*Wien. med. Klin.*, February 6th, 1910) has examined the blood serum of 160 cases of syphilis—either cases in which the signs of syphilis were unmistakable, even though a positive serum reaction was not obtained, or cases with an undoubted positive reaction—in order to ascertain if there is in syphilis and in post-syphilitic affections any characteristic variation in the antitryptic index. In 64 cases with a positive serum reaction the antitryptic index was above normal in 16 per cent., was normal in 14 per cent. (1 to 4), and was below normal in 70 per cent. In 3 cases with negative reaction, but undoubted signs of syphilis, the antitryptic index was above normal in 1 case, below normal in 2. This gives a result very similar to that of Fürstenberg and Trebing, who found the index below normal in two-thirds of the cases; they did not, however, so frequently find an increase. Stumpke ascribes this increase, in some of the cases at any rate, to the presence of other diseases as well as syphilis, more especially tuberculosis and pregnancy, because has found that the ferment conditions of the serum are frequently altered in a combination of some other disease with syphilis. In 1 case, however, of phthisis and another of abortion, combined with syphilis, the index was not raised. Fürstenberg and Trebing found that in tabes the antitryptic contents were below normal, in general paralysis above. The author's investigations confirm this result in the case of tabes, for which they give a series of 6 cases, with a lowered index in all. In 3 cases of progressive paralysis also the antitryptic index was diminished, and in 4 cases in which the only serum which was available was that obtained by lumbar puncture, the antitryptic contents were much diminished. With regard to differences in different stages, it appeared that the index was reduced in a much larger proportion of the cases in the later stages than in the early ones; the figures were 95 per cent. in late syphilis and metasyphilis as compared with 67 per cent. in early syphilis. It was also found that in an individual case the antitryptic contents might vary within a short time; for example, in one patient the index was 1 to 7 in one month, 1 to 4 in the next; in this case the explanation of the change is not known, but the possibility is suggested that it was a result of a great improvement in the general condition, which had been very poor in the earlier months. From the facts given it appears to follow that syphilis belongs to the diseases in which there is only a small ferment development—a condition of things contrary to that found in tubercle and carcinoma.

11. The Much-Holzmann Reaction in Insanity.

In 1909 Much and Holzmann stated that the blood of patients with maniaco-depressive psychosis or dementia praecox, as defined by Kraepelin, gave a specific serum reaction, the "psycho-reaction." Certain epileptics and also some sane persons with a family history of maniaco-depressive insanity also gave this reaction. The technique is simple, but must be carried out with scrupulous accuracy: 0.35 c.cm. of the patient's serum is mixed with 0.25 c.m. of a 1 in 5,000 solution of cobra venom in normal saline and 0.5 c.cm. of a 10 per cent. suspension of washed human red blood corpuscles. The mixture is kept at 37° C. for two hours, then placed on ice for twenty-two hours. If at the end of this time total or partial haemolysis has occurred the reaction is negative; if the haemolysis is *nil* or practically so the reaction is positive. F. Bonfiglio (*Riv. sper. di Freniatria*, Rome, 1909, xxxv, p. 486) reviews the position and value of this "psycho-reaction," which he believes was based on inadequate and unsatisfactory statistics. Much and Holzmann investigated 151 cases, only 9 of whom had dementia praecox and 18 maniaco-depressive insanity; later, Much reported that he had examined the blood of 300 more patients for this reaction, and that his later confirmed the earlier results. Hirschl and Pötzl obtained positive reactions in Basedow's disease, tetany, juvenile general paralysis, and various other conditions, as well as in the diseases mentioned by Much and Holzmann. Bauer obtained positive reactions with blood from the umbilical cords of 14 out of 17 newly-born children. Raubitschek reported that his results were irregularly variable, but that the samples of blood coming from a certain asylum always gave positive reactions. Hübner and Selter obtained a positive reaction in half the cases of dementia praecox and maniaco-depressive insanity examined, and positive reactions also in a number of other varieties of insanity. Fraenkel, Kathe, and Bierotte got positive reactions in 19 out of 32 cases of dementia praecox, 5 out of 11 cases of maniaco-depressive psychosis, 1 out of 6 epileptic patients, 11 out of 35 cases of other disorders, and in none of 8 normal patients. Beyer and Wittneben examined the blood of 345 cases, Eisner and Kronfeld of 65, Schulz of 151, Geissler of over 500, and Plaut of 60; all these authors conclude that there is nothing specific about the Much-Holzmann reaction, and that its practical value is small. Bonfiglio has himself looked for the reaction in 67 patients, and his results, like those of almost all the authors quoted above, show that the reaction is not specific. He discusses the question how it is produced, and why certain serums should thus inhibit haemolysis by cobra venom. The venom alone may not produce haemolysis, but may do so only after it has been activated by bodies such as lecithin, which it finds in normal serum (Kyes). This compound ("cobra lecithide") can be inhibited by cholesterin, which also occurs in serum, and possibly by other substances as well. No doubt the Much-Holzmann reaction depends on the relative quantities in which these activating and inhibiting substances exist in the serum; the reaction is positive if the inhibiting bodies preponderate, negative if they do not. Zaloziecki, for example, finds that lactic acid inhibits such haemolysis, and Bang finds that CO_2 acts similarly as a strong inhibiting agent. The literature is fully quoted.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

12. Obesity in Children.

HUTINEL (*La Clinique*, April, 1910) regards obesity as a disturbance of nutrition, associated with diabetes and gout. It is not uncommon among children; it is observed in newly-born infants, and appears to be almost normal among babies superabundantly fed on mother's milk; in such cases it diminishes after weaning. In most children the condition or tendency appears to be inherited; nearly all of them are the offspring of parents with the diabetic or arthritic diathesis. The writer divides obesity into two kinds—one due to superalimentation, the other due to nutritional disturbance which has a glandular or trophic origin. Obesity from overfeeding occurs readily in the rich and inactive who have the arthritic diathesis, which in itself indicates a tendency to morbid nutrition, which may be either inherited or acquired. Among the causes of obesity are included imperfect nutrition due to insufficient oxidization, the cause of which is generally digestive or nervous. The vascular glands appear to regulate nutrition and to direct the nervous, circulatory and trophic reactions. The influence of the genital glands upon nutrition is apparent in animals, capons and oxen fattening readily after castration. Also women who have undergone ovariotomy are subject to adiposity. In obese children the testicles are generally very small and puberty is delayed, the obesity becoming less as the genital glands develop. Another gland which has much influence is the thyroid, while lesions of the pituitary body are followed by an increase of adipose tissue, which diminishes if the glandular tumour is removed, or under treatment with the glandular extract. Alterations in the pituitary body, and in the region of the "sella turcica" can be demonstrated by radiography. These lesions may appear singly or in combination, and are accompanied by disturbances of the pancreatic secretion, and of the liver, which influence the condition. Toxic infections are a cause of obesity; after reducing diseases like enteritis and colitis; children sometimes develop an excess of adipose tissue as the result of the nutritional disturbance. Carnot has reported the case of a rabbit which became enormously fat after frequent injections of diphtheritic toxin. The same effect is obtained by the use of poisons like strychnine, phosphorus, or lead, and the effect of alcohol in causing obesity is familiar. The writer recognizes the obese diathesis, associating it with arthritism. The children of the gouty and obese are often obese, while out of ten such children seven proved to have diabetic parents. The errors of nutrition which characterize the diabetic resemble and are associated with glandular lesions. Nervous disease is often accompanied by obesity; in many of these cases cerebral and cerebellar changes have been observed. It is probable that in all cases disturbed nutrition is due to changes, either organic or functional, in the vascular glands. The difficulty in diagnosis lies in determining which gland is affected, the pituitary body, thyroid, or testicle. Each one exercises control over the general nutrition of the body, but they complete and supplement each other's action. The success attending treatment by glandular extracts has been uncertain. The insufficiency of more than one gland at a time suggests that the use of a combination of these extracts would be more useful, especially when employed in conjunction with a careful and hygienic diet.

13. Cammidge's Pancreatic Reaction.

SORRENTINO (*Rif. Med.*, April 25th, 1910) has examined the urine in 30 healthy individuals free from any recognizable trace of albumen or sugar, with a view to determining the value of Cammidge's crystal reaction as a test of pancreatic disease. The test used was the latest modification described by Cammidge in 1909. The author concludes that the test is valueless as an indication of pancreatic disease, for in all these cases of presumably healthy individuals the urine (provided the mixture was boiled for half an hour and not for ten minutes only, when the results were uncertain) gave a positive result, crystals being present. These crystals were small, slender, needle-like, yellowish, and grouped in rosettes, and with a very slight irrefrangibility to prolonged light; they were soluble in a 3 per cent. solution of sulphuric acid. Fermentation destroys this substance, whatever it is, which causes the formation of the crystals; since it is not likely to be a saccharose or a pentose, it is probably a glucose. When the crystals occur in urine after fermentation, possibly it is because the fermentation has been incomplete, or because some minimal portion of glucose has failed to be eliminated. In any case, as a sign of pancreatic disease the presence of these crystals after Cammidge's test cannot be of an real value. A brief summary of previous experiments on the subject is given.

14. Muscular Rigidity and "Light-touch Palpation" in the Diagnosis of Pulmonary Disease.

POTTENGER (*Deut. med. Woch.*, April 21st, 1910) discusses muscular rigidity and "light-touch" palpation in the diagnosis of pulmonary disease. The former method of examination depends on the recognition of various kinds of muscular rigidity corresponding to various kinds of changes of the tissues lying beneath the rigid muscle. In acute pulmonary affections the muscles lying superficial to the affected tissue are stated to be in a state of acute spasm; in chronic disease the muscles become rigid from chronic essential changes. The two processes may be combined, and the result is that the muscles take on a slight acute spasm in addition to the chronic alteration in their consistence. Pottenger further distinguishes a very slight degree of chronic stiffening resulting from localized slight degrees of pathological changes. The significance of this muscular rigidity is said to be that active pulmonary disease can be distinguished from inactive disease, and that initial affections signalized by haemorrhage can be localized forthwith. The palpation method is still more delicate. Pottenger believes that by means of very light palpation the limits of solid organs can be mapped out against the cavity organs. He finds no difficulty in determining the limits of the heart, liver, and spleen, and even maps out areas of affected lung from the surrounding healthy lung. This is done by merely feeling the skin lightly with the tip of the finger. A. Wolff-Eisner (*Deut. med. Woch.*, April 21st, 1910) confirms the statements of Pottenger. He, too, is able to localize the heart, liver, and tuberculous area in the lung by touch, and can distinguish between acute processes and chronic, and even latent disease from the type of rigidity of the superficially situated muscles.

SURGERY.

15. Removal of Breast.

RECLUS (*Journ. des prat.*, May 7th) discusses at some length Halsted's method of removal of cancer of the breast. He points out that the method rests upon the old principle that for removal of cancer the operation ought to be adequate to the disease—that is, the tissues must be removed freely beyond the actual area of disease. He quotes Heidenhain to show that whenever a malignant nucleus exists at any one point in the mammary gland the whole organ must be sacrificed. To ensure that nothing suspicious is left behind, he gives in such cases the area of removal as from the upper border of the second rib in the vertical diameter, and from the axillary line to the border of the sternum in the horizontal diameter. In most cases, also, the great pectoral must be taken away, but the small pectoral muscle may be preserved, although the American method insists on its complete removal, and this in any case renders the cleansing of the axillary space easier. The skin is early affected by the disease, and a free removal of this is essential. Before the introduction of the American method some consideration was given in this connexion to the convenience of suturing the skin wound, but now, owing to the more general use of plastic methods, this point is of no importance. It is necessary also to remove the lymphatics and the glands, with the fatty tissue enveloping them, and this in Halsted's method embraces not only the axillary glands but also the subclavicular and supraclavicular glands. But this is not all, for researches by Grossman, Poirer and others have shown a remarkable complexity in the arrangement of the lymphatics of the chest. They are proved to be connected with the supraclavicular as well as the intrathoracic glands. In addition to this fact, the crossing and commingling of the lymphatic network is such that an infection of the axillary glands on the side

opposite to the affected mammary gland can be brought about. These anatomical facts have led certain American operators to only consider as sufficient an operation in which the clavicle is sawn through and the mediastinum opened to follow, if necessary, the cancerous development into the thoracic cavity. The author believes in avoiding this wholesale destruction of tissue, for the excellent reason that he does not think any interference of avail when the malignant invasion is so extensive. French surgeons generally, he adds, have reverted to the older and more conservative method. He believes that there is no advantage to be gained by these extensive operations, and that although the actual mortality may not be greater in skilled hands than the more restricted interference, there are nevertheless serious enough consequences, notably oedema of the arm and prolonged helplessness of the upper extremity, and he quotes instances of the kind which have come under his notice. The impotence of the arm varies, but is undoubtedly increased by the oedema present, as well as by the extirpation of the pectorals and the section of various nerves in the course of this procedure. The author admits, however, that all cases do not end so unhappily. With the object of lessening these unfortunate sequelae, French surgeons have closely followed the progress of American methods, to see whether the whole procedure as advised is or is not indispensable. With regard to the skin, all are agreed that its free removal is essential, as recurrence here is most frequent. The wound may be closed by various plastic operations, grafting, etc., if suturing is impossible. There is common consent, too, with regard to the removal of the axillary and subclavicular glands. The author believes, however, that when the disease has attacked the clavicle it is beyond the legitimate resources of the surgeon's art. This is not all, for French surgeons have recognized that nothing is more unusual than recurrence in the muscles, and the question arises whether extirpation of both pectorals is desirable. The author does not admit the necessity, more especially of removal of the lesser pectoral, when the operation is done early and the cancerous tissue has not invaded the aponeurosis. To remove all the soft parts, to absolutely denude the chest wall, he considers a poor defence against recurrence, and a grave cause of oedema and loss of power of the arm of the affected side. After a brief summary of his modified technique, he goes on to say that since he has so restricted himself he has not had a single case of oedema, and in no instance that prolonged state of impotence of the upper extremity which is so frequent when the whole of the tissues of the affected side are systematically removed as in the Halsted method. There is no evidence, he thinks, that the mitigated operation gives any worse results so far as recurrence goes. The author concludes by criticizing American statistics, which he affirms include cases not proved to be malignant in character, and states again emphatically that when the supraclavicular tissues are involved it is wiser to refrain from interference at all.

16. Operations for Gall Stones.

Ludwig Adam (*Pest. med.-chirurg. Presse*, Nos. 13 and 14, 1910) makes a review of 112 cases of operation on the gall bladder or ducts performed at St. Stefan's Hospital. The methods and the results varied according as the operation was undertaken in uncomplicated cases of cholelithiasis or undertaken to meet some complication. In the former case cystectomy was the operation performed; the principles of treatment were to operate in a quiescent interval and always to drain the abdominal cavity with a gauze drain. The results were excellent; 70 cystectomies were performed without any death. In all cases recovery was obtained between fourteen and twenty-eight days; there were no relapses. It has been objected that this procedure makes any further operation on the parts more complicated, and Kocher on this account recommends cystostomy as the ideal operation; the author, however, considers cystostomy to be only permissible in cases in which the cystic wall is normal, the catarrh long healed, and therefore the fear of relapse small; it was only performed in one case. In cases in the second class in which a complication is present and obstruction to the passage of bile, the indication is to avert the immediate danger. In 11 cases without fever and with non-infected bile choledochotomy was performed to remove the stone, and the gall bladder was removed later; 1 patient died on the day following the operation from haemorrhage; in 12 cases, with 3 deaths, cholecystostomy was done at the same time as the choledochotomy. The total mortality of the choledochotomies was, therefore, 12.1 per cent. Cholecystotomy was performed as a palliative measure in 11 cases in which the patients could not have stood a larger operation; 5 out of 11 died. In all cases in which there was obstruction the removal of the gall bladder was left as the final measure. Some cases are mentioned as being of special interest. In 1 cystectomy was performed for primary carcinoma of the gall bladder, and the patient recovered and has remained well. In another case gastro enterostomy was necessitated because of the high grade of peripyloritis and narrowing of the pylorus to which the pericholecystitis had given rise. In a case which followed an attack of typhoid cultures of the typhoid bacillus were obtained from the gall bladder. In another case supravaginal amputation of the uterus was done in combination with a cystectomy and through the same abdominal incision. The results of the whole series correspond to the best results tabulated at the present time.

17. Surgery of Ileo-Caecal and Appendicular Tuberculosis.

Alglave (*Revue de gynéc. et de chirurg. abdom.*, May, 1910) has collected and analysed a long series of cases of tuberculous disease of the vermiform appendix and adjacent parts of the small and large intestine. The series are arranged in nine tables, as follows: (1) Ileo-caecal resection, 221 cases, with 21 deaths post-operative or shortly after operation, 19 subsequent fistulae, and 181 recoveries; (2) partial resection of the caecum, 10 cases, with 1 fistula and 9 recoveries; (3) resection of the appendix, 78 cases, with 4 deaths, 22 fistulae, and 52 recoveries; (4) removal of tuberculous ileo-caecal glands with or without resection of the appendix, 12 cases, all recovered—in 3 the appendix was not removed; (5) "simple laparotomy" or exploratory operation, 27 cases, with 6 deaths, 7 fistulae, and 14 "survivals"; (6) entero-anastomosis, 36 cases, with 5 deaths, 4 fistulae, and 27 recoveries; (7) unilateral exclusion of the ileo-caecal segment, 25 cases, with 2 deaths, 5 fistulae, and 18 recoveries; (8) bilateral exclusion, 21 cases, with 2 deaths, 3 fistulae, and 16 complete recoveries; lastly (9), repeated operations, 39, with 8 deaths—1 followed the fourth attempt (Vautrin), 3 fistulae, and 28 recoveries—3 after the fourth operation. Table 9 is necessarily unreliable, as in several there was but one operation after the first, in several there were three, and in 4 there were four (Berger, Garré, Gayet, and Vautrin). Among the recoveries is Körte's case, where six operations were performed, but at the first obstruction had occurred and an incision was made into the bowel; in the second resection seemed impracticable and an artificial anus was made; the third surgical procedure was closure of the artificial anus; the fourth was resection of over 8 in. of the colon and transverse ileo-colic resection; the fifth was closure of the fistula which had developed after the fourth; and the final operation included anastomosis of the ileum with the sigmoid colon. In fact, the cases in Table 9 are not homologous. The frequency of fistula, considering what tuberculous disease implies, is not surprising. Alglave concludes that the immediate results of operations for the cure of ileo-caecal and appendicular tubercolosis are, all things considering, satisfactory. He is, on the other hand, sceptical as to after-histories, especially as the limitations of tuberculosis and the resisting power of the subject vary greatly. Those cases where the tuberculous change is confined to the ileo-caecal region, is slow in progress, and is associated with good health and favourable surrounding conditions, will always be those most favourable for surgical treatment.

OBSTETRICS.

18. The Treatment of Placenta Praevia.

Mouchotte (*Ann. de gynéc. et d'obstét.*, April, 1910) discusses the question whether it be right to practise Caesarean section for haemorrhages due to faulty insertion of the placenta. He analyses 183 cases where, in the years 1895 to 1898, women were admitted into the Clinique Baudelocque for flooding from placent praevia. In these years 38,015 women were delivered in the clinic, so that the proportion of unavoidable haemorrhage cases was 0.48 per cent.; 4 out of the 183 mothers died, or 2.18 per cent. Of the 183 children, 101 left the clinic living when their mothers were discharged; 82 died, age, size, and viability not being distinguished; 3 died of haemorrhage before labour, 56 during labour, and 23 died shortly after delivery. The first of the cases where the mother was lost was septic when admitted; in the second she was utterly exhausted from haemorrhages when admitted; in the two remaining cases the application of the dilating bags was

unsatisfactory; all 4 are reported in full. Mouchotte then reviews the 82 cases where the fetus was lost. He insists that in only 5 were there distinct indications for operating through the abdomen, in order, let it be remembered, to save well-developed children clinically in good condition. This shows how rarely in practice would it be necessary to prefer Caesarean section to dilatation as advocated and practised by Pinard. Mouchotte allows that where there is another complication, such as contracted pelvis, an abdominal operation is needed. In one such instance in the series Pinard performed a Porro-Caesarean section, and the mother and child were saved, but in uncomplicated placenta praevia obstetrical operations through the vaginal route are preferable.

19. Operations upon the Pregnant Uterus.

RUDAUX (*La Clin.*, April 22nd, 1910) writes that during the early months of pregnancy it is sometimes necessary to open the abdomen in order to relieve retroversion of the uterus, complicated by bladder troubles or pressure upon the large vessels or rectum. A hydatidiform mole also calls for laparotomy followed by hysterectomy, and the same treatment is required when there is a perforation of the uterine tissues either after a digital examination or after curettage. Surgical interference is indicated in rupture of the uterus during pregnancy, whether due to trauma or to attempted abortion, or to spontaneous rupture, an event which is rare, but which does occur in some cases of fetal malposition. A frequent complication of pregnancy is torsion of the pedicle of a subserous fibroid; in these cases after the removal of the tumour pregnancy may continue till term. Haemorrhage due to the abnormal insertion of the placenta may be so serious as to demand immediate intervention. When operations upon pregnant cases are undertaken the writer recommends the free use of subcutaneous injections of morphine before the operation and for some days after it, while any indication of uterine contractions should be met with injections of 20 to 25 minims of laudanum in a sufficient quantity of boiled water.

GYNAECOLOGY.

20. Radium-therapy in Gynaecology.

MADAME S. FABRE (*Arch. gén. de méd.*, February, 1910) reports a series of cases under Broca, Cuneo, and Pozzi where radium-therapy was employed, and like Fraenkel (EPITOME, vol. i, 1908, No. 223), maintains that the results are satisfactory. In 25 cases of metritis the pain only recurred in 4, and then was cured by a single fresh application. Thirty-one patients with chronic inflammation of the uterine appendages were treated, but Fabre admits that the treatment must be prolonged, as although the pain disappeared in every instance after the first application, it returned within a fortnight unless a fresh application was practised. Still Fabre declares that under active radium treatment the inflammatory deposit became absorbed within two months, for not only did pain pass away, but the uterus became movable, the fornices became free, and the resistant masses representing the swollen tube and ovary disappeared more or less completely. Six cases of uterine fibroid disease were included in the series. Fabre could not in any instance make sure that the fibromyoma itself diminished in size, but in all the concomitant metritis, metrorrhagia and leucorrhoea diminished. The uterus became more movable. Sclerosis of the uterus proved distinctly amenable to treatment, the pain disappeared at the first application, 3 out of the 6 patients returned, according to request, six months after the conclusion of treatment. They assured Fabre that they were in a most satisfactory condition, and no sign of relapse could be defined on physical examination. Four cases of chronic leucoplasia were, it appears, completely cured, and in 5 subjects with exudation or recurrence following removal of the cancerous cervix the pain and sanio-purulent discharge rapidly ceased after treatment. Fabre points out that in not a single patient in the entire series were the morbid symptoms made worse nor any dangerous complication set up, nor was a premature menopause induced. Above all, the patient under radium treatment can lead a normal life, continue in her vocation, and is thus spared the evils of enforced rest, the basis of other purely medical forms of treatment in gynaecology.

21. Bile Cyst of Liver and Ovarian Tumour.

QUEISNER (*Monatsschr. f. Geb. u. Gyn.*, May, 1910) recently exhibited before a medical society a patient aged 23, twice pregnant, on whom he had operated. Three months previously she fell ill, and perityphlitis was diagnosed. A fluctuating tumour, of the size of a man's head, developed in the right hypochondrium. It had no connexion with the pelvic organs. There was a distinct area of resonance between the liver and the tumour. By means of the cystoscope it was found that both ureters were normal, hence hydronephrosis was excluded. On the left side a completely separate tumour was detected; it was evidently ovarian. Queisner operated, removing a tumour of the left ovary about as big as a fist. The larger tumour projected from a wide area on the under surface of the liver; it was a true retention cyst. Its edges were fixed to the abdominal wound, and the patient made a good recovery.

22. Fatal Intraperitoneal Haemorrhage from Uterine Fibroid.

JASCHKE (*Zentralbl. f. Gynäk.*, No. 19, 1910) refers to cases already reported by Stein, Lavers, Herbert Spencer, and Bruce Clarke. A laundress, aged 43, was seized with acute pain when lifting a heavy tub. She seems to have struck her abdomen against the edge. Collapse followed, but admission into hospital was delayed, and when admitted the patient showed all the signs of severe intraperitoneal haemorrhage. There was no bleeding from the vagina, and there was distinct dullness in the flanks. A uterine fibroid could easily be defined. The patient was in a very bad condition when placed on the operating table. On opening the abdomen the uterus was found to be of the size of a child's head through uniform enlargement due to a fibromyoma. A small subserous varix close to the insertion of one Fallopian tube had ruptured, blood issuing slowly and steadily from a point no bigger than a pin's head. Supravaginal hysterectomy was practised, and during that operation a litre of saline solution with 10 minims of adrenalin (1 in 1,000) was injected into the right median basilic vein and other remedies for acute anaemia applied, but the patient died three hours later. A litre of blood was removed from the peritoneal cavity during the operation, which took only fifteen minutes, and a litre and a half was found after death.

THERAPEUTICS.

23. Indications for a Fruit Cure.

TAILLENS (*Journ. des prat.*, May 7th, 1910) states his belief that in the dietary which the human economy gets in comparison with what it really needs, rich and exciting foodstuffs form too large a part. And if this dietary is indulged in day by day, more particularly during the period of growth, pathological states, especially those associated with what is known as arthritism, will inevitably follow. These results may be noted in the case of families who, having lived simply in the country, modify their manner of life when they better themselves socially. The first generation does not suffer in most cases from arthritism, but it is very noticeable in the second generation, even in infancy, in the form of anginas, urticarias, and chronic enteritis; while in adult life the arthritic diathesis will manifest itself in obesity, migraine, eczemas, and haemorrhoids. If the same dietetic errors are perpetuated to the third generation, the graver forms of arthritism will appear—for example, diabetes, neurasthenia, gout, and renal calculus. The author, while believing in the potent influence of heredity, expresses the view that alimentary hygiene exercises just as great an influence. To counteract the effects of this pernicious dietetic heritage, the author advocates foods poor in proteids and those things which increase the alkalinity of the blood. Among the latter he places the fruit cure, a form of treatment available for all classes. This treatment is valuable in the case of gross livers who clog the system with a plethora of food and drink, and is useful also for those semi-invalids who awake each morning with headache, with a disagreeable taste in the mouth, and similar symptoms, and who are indeed dyspeptics without being aware of it. The effect of the fruit cure is diuretic and laxative, diminishing the acidity of the urine, lessening intestinal fermentation, and stimulating the action of the liver. The author recommends this treatment also in acute nephritis, when fruit can supplement the dietetic poverty of milk in carbohydrates. The fruits may be raisins, oranges, pears, etc. Under the mixed treatment of milk and fruits the albuminuria lessens, diuresis is encouraged, and oedema disappears. If it is wished to improve the weight of the patient, an average quantity of raisins with a dietary rich in fats and albumens is given.

If, on the contrary, it is desired to reduce weight, a large quantity of raisins or raisin juice is to be taken, with a corresponding reduction in proteids and fats. Other fruits as well as vegetables will, of course, be given. The author concludes by saying that his results show that the incorrect use of a good remedy is more often responsible for bad results than the remedy itself.

24. Karell's Milk Cure in Obesity.

H. Strauss (*Wien. medizin. Klinik*, March 27th, 1910) has employed the Karell milk cure in more than a dozen cases of obesity of moderate and severe grades. The patients received at two-and-a-half-hourly intervals, four or five times a day, a tumblerful of milk, and during the last days of the cure one orange or apple a day was also taken. The cure lasted from five to eight days. The patients were in bed during the whole time, and, as a rule, were massaged. The cure was extraordinarily well borne by almost all the patients, scarcely any of whom complained either of hunger or thirst. The loss of weight was greatest in the first three days, being on an average from 2 to 3 kg. (4.4 to 6.6 lb.), while in 1 case, that of a woman weighing 318 lb., the initial loss was 5.5 kg. (12.1 lb.). By the seventh day the total amount lost in most cases was from 4 to 5 kg. (8.8 to 11 lb.), and in the case mentioned above was fully 10 kg. (22 lb.). The quantity of urine passed usually diminished on the third or fourth day to from 400 to 500 c.cm. (14 to 17.6 oz.). The sodium chloride diminished on the third and fourth days to a few grams, and afterwards varied between 1 and 2 grams per day. During the "after-cure" the patients took, as a rule, less milk and, in addition, small quantities of sausage, bread, lean meat, and vegetables, prepared without fat; in a few cases a change was made to a mixed diet of low caloric value free from milk. During the after-cure most of the patients continued to lose weight, though to a much less extent than during the actual cure. A consideration of these results shows that the loss of weight during the first few days must be to a large extent the result of loss of fluid from the system. The author ascribes the loss of fluid partly to the small amount of fluid taken and partly to the small intake of sodium chloride, which leads to the loss of any superfluous sodium chloride from the system, and with it to a corresponding quantity of fluid, because for every 6 grams (92.5 grains) of sodium chloride excreted the loss of water is about 1 litre (35 oz.). In spite of the favourable results obtained, the author does not consider the Karell cure indicated in ordinary uncomplicated cases of obesity of moderate grade which can be dealt with by treatment on individual lines. He would reserve it for special cases, as, for instance, many cases complicated by heart lesions, by nephritis, gout, or glycosuria, and for obstinate cases. Of late, in cases of medium grade with cardiac lesions and in some uncomplicated severe cases, Strauss has tried a miniature Karell cure of from three to four days' duration, and he repeats the cure at intervals of weeks or months if the weight increases. Single "milk days" once, or in exceptional cases twice, a week have also given good results. The author strongly recommends these "miniature" cures as compared with a long-drawn-out treatment on Karell's principles. While on the milk diet the patients should be in bed and under the supervision of a doctor. Since the loss of weight depends especially on loss of water from the tissues due to the small total quantity of fluid and of sodium chloride ingested, the effect during the first few days will be the greater, the greater are the reserves of fluid and sodium chloride in the system. Belli's experience is that in certain cases after the conclusion of the cure there is a reparative retention of sodium chloride—a fact which would explain why some patients put on weight when at the end of the cure they are put on to a mixed diet, even one of very low caloric value.

25. Intraneural Injections for Neuralgia.

The history of treating neuralgia by means of injection starts in the middle of last century, when Rynd advised the injection of morphine and creosote in the neighbourhood of the painful nerve. Wood carried out morphine injections some ten years later. Later the morphine was replaced by heroin and dionine. These injections had the object of diminishing the irritability of the nerve. Another set of injections was introduced for the purpose of stimulating the nerve, and thus producing a definite inflammatory reaction. Concentrated solutions of sodium chloride and silver nitrate were used for this purpose. Ether, chloroform, and alcohol were also employed in these injections. The action of alcohol on the nerve in producing Waller's degeneration was minutely studied, and some authors claim to have obtained good results with it. Osmic acid and methylene blue have also found supporters. O. Wiener (*Berl. klin. Woch.*, March 7th, 1910) has for the past year taken up the question of injections for the treatment of neuralgia, and has had special consideration for the suggestion of Lange of injecting the fluids, not into the perineural tissue, but directly into the nerve trunk. Lange used physiological saline solution in large quantities to which β-eucaine has been added in the proportion of 1 to 1,000. The author has found that the eucaine can be dispensed with, and he employs physiological saline solution cooled down before use. He carries out the injections as follows: In sciatica, he flexes the leg and thigh slightly, and then seeks for a painful point between the trochanter and tuber ischii. If no such point can be found in this situation, he seeks further afield. Having found the painful spot, he anaesthetizes the skin and inserts the injection needle provided with a mandarin or trocar at this situation. The needle must be about 8 cm. in length. The needle is aimed at the nerve, and he is not satisfied that the nerve is reached until the patient feels a sudden pain radiating right down to the toes. The author states that this "control" pain is absolutely necessary for success, and that it is quite useless carrying out the injection unless the nerve is actually pierced. As soon as the nerve has been reached, the needles must be fixed in position and the style or mandarin withdrawn. The syringe is then applied to the needle, and 100 c.cm. of saline fluid injected under constant pressure. The injection is painful, but as soon as the needle is withdrawn all pain immediately disappears, and the patient finds himself freed from all traces of his sciatica. The author proceeds to deal with a febrile reaction which follows the injection of isotonic salt solution. After discussing the conditions under which the fever is met with, and dealing with the literature on the subject, he shows that the reaction is due to the Na ions, and that it can be partially prevented by neutralizing the effect of these ions by the addition of ions which paralyse instead of stimulating, such as calcium. He used NaCl 6 grams, CaCl 0.75 gram in 1,000 grams of water, and did not experience any marked fever reaction. In all he has injected 75 cases of sciatica, but only 60 of these received the fluid into the nerve. Of these, one was not improved by the injections, 8 were considerably improved but not cured, and 51 were cured. He states that no ill effect either locally or generally was experienced in any of the cases. He further obtained good results in the lightning pains of tabes, in facial neuralgia, and in some cases of cephalalgia. In conclusion, he states that although the reaction has been markedly diminished, he does not consider that this matter is finally settled, either in respect to the precautions to be taken to prevent the reaction or in respect to the actual explanation of the fever.

PATHOLOGY.

26. The Infective Theory of Rickets.

Silvestri (*Rif. Med.*, April 18th, 1910), whilst recognizing there is a good deal to be said in favour of the infective theory of rickets, is unable to accept it as the last word on the subject. The frequency of rickets in certain streets, its geographical distribution, the analogy between the yearly curve of rickets and that of certain infective diseases, the apparent sudden commencement of some cases, the tendency common to other infantile disorders to attack the bones, its prevalence in insanitary surroundings, etc.—all these things suggest infection but do not necessarily prove it. The experiments on white rats with inoculations of the *Diplococcus osteomalaciae* carried out by Artom and Agnese, where symptoms like rickets followed, do not carry conviction to the author's mind. And if the organism causing osteomalacia is similar to that causing rickets, how can the great difference in frequency between the two diseases be explained? Again, the conditions of life amongst the peasants would lead one to wonder why every child was not rickety if the infective theory contained all the truth in the matter. But to the author the chief objection to the infective theory lies in the fact (now generally admitted) of congenital rickets, for if the existence of congenital rickets is accepted, there ought to be some evidence of late rickets or of osteomalacia in the mothers, and such evidence, as far as the case records go, is lacking. Seeing the frequency with which rickets is cured or gets better spontaneously, not very much importance can be attached to Artom and Agnese's results in the vaccine treatment of rickets.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

27. An Acute Infectious Disease of Unknown Origin.

BRILL (*Amer. Journ. of Med. Sci.*, April, 1910) describes an acute infectious disease of unknown origin and pathology from a clinical study based upon 221 cases occurring in the Mount Sinai Hospital, New York, during the past sixteen years. Characterized by a short incubation period of four to five days; a period of continuous fever with intense headache, apathy, and prostration; an extensive erythematous maculo papular eruption which does not disappear on pressure; lasting about a fortnight and ending by crisis or by lysis within three days; without tendency to relapse; and always negative to the Widal test, the disease appears to have a distinct clinical entity entirely separate from typhoid, typhus, or any other known disease. During the incubation period the patient suffers from malaise, anorexia, nausea, and slight headache, the disease commencing abruptly with a chill, vomiting, general aching, and sometimes epistaxis, the headache becoming intense, and apathy and prostration rapidly supervening. The temperature reaches its height in from two to three days, and averages 103.6° to 104.2° during the rest of the disease. The evening temperature is usually the highest, but the remissions between morning and evening rarely exceed 1° F. The patient lies very quietly, sometimes moaning, and with a facial expression of frontal pain. The eyes are dull and suffused, the conjunctivae congested, and the face flushed, while the patient is drowsy, with dulled sensorium, and presenting disturbance. About the sixth day a dull, slightly-raised erythematous maculo-papular eruption commences on the abdomen and back, and rapidly spreads over the whole body with the exception of the face. There is usually obstinate constipation with a coated tongue, and the pulse is of low tension and not nearly so rapid as might be expected from the pyrexia. All these symptoms remain fully developed until about the twelfth day, when the crisis occurs, followed by a rapid convalescence. Rigidity of the neck and Kernig's sign were present in a few instances. The disease is most common between the twentieth and fortieth years of life, males being affected about twice as frequently as females, the largest number of cases occurring in the summer. One of the most prominent features is the persistent headache, which is general and not partial to any locality. No positive reaction to the Widal test was ever obtained, although daily examinations were made. Though there is no evidence of the disease being directly communicable, the definite periods of incubation, onset, and decline warrant its being regarded as an infectious disease, and it has been considered wise to take the usual precautionary measures when attending such cases. Treatment for the present is entirely symptomatic.

28. Death from Exposure.

ROQUE AND GARIN (*Prov. méd.*, February 12th, 1910) make a valuable contribution to the observations on the result of prolonged exposure to cold. Hitherto most of the knowledge which we possess has been obtained from ancient sources, such as Xenophon's Retreat of the Ten Thousand; or, if more recently, from the accounts of Polar expeditions, where the exposure has been of perfectly healthy, well-nourished individuals, and the symptoms temporary, never, or hardly ever, resulting in death. Such records as we possess, moreover, have been compiled from a literary rather than a clinical point of view; have never been completed by *post-mortem* examination, and, above all, have not contained any notice of the results of subsequent warmth. The case described was that of a man, aged 51, found in a suburban street at 8 a.m. on November 29th, having lain there all the previous night, the minimum temperature of which had been −2° C. (28° F.). The patient was fairly stout and well-coloured, but the skin over every part of the body felt as cold as marble, and the thermometer, after five minutes in the rectum, did not rise above 94° F., the lowest point marked on the instrument, so that there was no certainty that it was not really lower. The pulse was not to be felt in either wrist, and the cardiac pulsations, as heard through the stethoscope, were very irregular and unequal, at intervals of two or three, sometimes of fifteen to twenty seconds. The respirations were very peculiar, stopping sometimes in demi-expiration, then finishing and beginning inspiration, with very irregular intervals, resembling the Cheyne-Stokes type. Auscultation revealed no râles nor any other abnormal sounds. No paralysis was present, arms and legs both moving spontaneously; the pupils were dilated at first, but contracted half an hour after admission to hospital, and they reacted to both light and accommodation. Corneal sensibility was abolished and cutaneous sensibility much diminished, but the patellar reflex was present. Except for the coldness of the surface and the peculiarities of circulation, the condition resembled that of a patient still under the influence of an anaesthetic. The urine, withdrawn by catheter, was clear, dark in colour, containing a quantity of sugar, but no albumen or acetone. Friction with alcohol was employed, and also warmth by means of woollen coverings and hot bricks. At the evening visit the skin still felt cold to the hand, the temperature was still too low to be registered by the thermometer, and the pulse was perceptible, but feeble and irregular, only 48 to the minute. The patient opened his eyes in response to his name and pronounced some words. The sugar in the urine, less that evening, had disappeared by the next day, and a little albumen was present; the patient was in a profound sleep, the skin warm and moist, the temperature 103° F., and the pulse 100. The condition varied little, coma being more or less constant until death in the evening of the day following (December 1st), when the temperature was 106°, the pulse 128, and the respirations 40. *Post-mortem* examination showed little that was abnormal in any part of the body; the cerebro-spinal fluid contained traces of urea and of sugar, and all the organs were normal, with the exception of slight renal sclerosis; the brain alone showed patches of oedema, gelatiniform in appearance, the meninges being perfectly healthy. It is interesting to determine whether all these symptoms were due to cold, remembering the existence of diabetic coma, which, however, is not usual in the class to which the patient belonged. Glycosuria as the result of cold has been observed by experimenters, and Claude Bernard considered that it was the method by which the organism protected itself, by the formation and burning up of sugar. The views on the method of death from cold are very diverse. Pouchet regards it as toxic, saying that the blood refrigerated in the peripherae acts on the organism like a poison; Guérard attributes death to paralytic arrest of the heart's action, not applicable to cases like the present, where it took place during pyrexia; Claude Bernard puts it down to asphyxia—a view incompatible with that of Quinquaud, that the blood in such cases is poorer in CO_2 than normal. The obscure nature of the mode of death is finally emphasized by citing the opinion of Athanasiu and Carvallo, that it occurs in consequence of a disturbance of balance between the different organs in respect of their resistance to cold. Among such a confusion of theories, the following clinical facts must be kept in mind: (1) Under the influence of inanition, prolonged exposure to temperatures, not even extremely low, causes chill. (2) This chilling being accompanied by glycosuria, the condition may be confounded with diabetic coma. (3) The recovery of warmth may be very slow. (4) Death may occur during pyrexia.

SURGERY.

29. Surgical Intervention in Enlarged Thymus.

OELSNITZ, PRAT, AND BOISSEAU (*Bull. de la Soc. de Pédiatrie de Paris*, No. 3, 1910) publish a case in which a male subject aged 4 years, suffering from a very severe attack of dyspnoea, was temporarily relieved by partial excision of an enlarged thymus, combined with tracheotomy, and, after an interval of two days, by resection of the manubrium sterni. The last operation was followed by progressive diminution of the tracheal obstruction, but the child died seven days later, the fatal result being attributed by the authors to the results of infection of the anterior mediastinum by the discharge from the opening in the trachea. At the autopsy the remaining portion of the thymus was found to be sclerosed and adherent to the

trachea and other neighbouring structures. In the clinical comments on this case it is stated that the respiratory trouble was undoubtedly due to hypertrophy of the thymus, and that the abnormal evolution of the symptoms, which gave rise to some difficulty in diagnosis, could be explained by the peculiar anatomical conditions of sclerosis and adherence of the gland. While the right, the upper part of which had been resected at the first operation, was recognizable and for the most part free from adhesions, the left lobe was so much altered in structure and so firmly adherent that it was overlooked in both operations, and the tracheotomy wound was made through this segment of the gland. The speedy cessation of the relief afforded by the first operation performed in this case was probably due, it is thought, to the fact that the adherent and indurated left lobe was not removed. The resection of the upper part of the sternum, which was certainly followed by much relief in this instance, is regarded by the authors as a formidable operation and one to be reserved for very exceptional cases. The cellular space behind the bone at the root of the neck is freely opened, and the pleural sacs, and the large vessels of this region are exposed to the danger of wounding. Tracheotomy should also be rejected, if possible, as a preliminary procedure in thymectomy, as it is clear, the authors state, that the prognosis in their case was rendered very unfavourable by the mediastinal infection set up by the wound in the trachea. The patient, they think, would have recovered had not serious respiratory trouble, caused by pulmonary congestion and pneumothorax resulting from secondary affection, led to a fatal end. This clinical record shows, it is stated, that by the side of the many simple cases of enlarged thymus in which thymectomy affords a rapid and positive relief, there are other more complex and more serious cases in which the surgeon should not hesitate to practise a very extensive operation.

30. Removal of Plaster of Paris Splints.

The difficulty of removing plaster splints which have to be divided longitudinally is well known. Special scissors have been devised which fix themselves to the apparatus at one end of the incision until the incision terminates at the other end. But these cannot be used without a considerable amount of exertion to the surgeon and apprehension on the part of the patient, especially in the case of children, whilst the inevitable jerking causes jarring of the limb, and the pressure of the lower blade of the scissors is painful on the site of a recent callus. Moistening with water is very tedious, and as the surface of the plaster is generally more or less greasy the fluid cannot penetrate the layers of bandage. Max Stransky (*Semaine médicale*, February 9th, 1910) recommends, to overcome this difficulty, a procedure which he has followed successfully for twenty years. He moistens the line of the projected incision with a tampon of wool dipped in vinegar, which softens the plaster in less than a minute and enables it to be removed by a penknife or an ordinary pair of scissors—this proceeding being at once easy for the surgeon and painless for the patient. A bandage consisting of eighty folds, sufficient for a fracture of the thigh, has been easily removed by this method in one minute and a half.

31. Bursitis Subacromialis.

Codman (*Massachusetts General Hospital Publications*, October, 1909), for purposes of diagnosis and treatment, describes three types of inflammation of the subacromial bursa, namely: (1) Acute or spasmodic, (2) subacute or adherent, (3) chronic or non-adherent. In the acute form there is localized tenderness immediately below the acromion process, and to the outer side of the bicipital groove, disappearing beneath the acromion in a few cases when the arm is abducted (the Dawbarn sign). In abduction or external rotation the scapula becomes locked and moves with the humerus after about ten degrees of motion have been obtained. In certain mild cases voluntary abduction is possible, but cannot be performed without pain. Effusion may be present with puffiness to the touch, and pain, worse at night, may be complained of either on the shoulder or outer side of the arm, or at the insertion of the deltoid. In the subacute form localized tenderness varies with the degree of inflammation, and the Dawbarn sign is absent, since the tuberosity cannot pass under the acromion. The scapula accompanies the humerus in all its motions beyond an arc of about ten degrees. In the chronic form localized tenderness may be absent, but if present the Dawbarn sign is also present, because the tender point can pass beneath the acromion. Although abduction and external rotation are only slightly limited, acute tenderness occurs at one point during abduction, disappearing as soon as the tuberosity is beneath the acromion. Many cases diagnosed as contusion, neuritis, periarthritis, circumflex paralysis, or muscular rheumatism are in reality cases of lesion of the subacromial bursa. Treatment in acute cases consists of physiological rest with the arm in the abducted position, and massage to adjacent muscles and subcutaneous tissue, but avoiding the region of the bursa. In subacute cases with firm adhesions treatment consists either of gradual stretching by exercises, manipulations, etc., rupture under an anaesthetic, or division or excision of the adhesions.

OBSTETRICS.

32. Modern Midwifery.

Kurt Riedel (*Wien. medizin. Klinik*, December 9th, 1909) discusses modern methods in midwifery. In the treatment of puerperal fever he looks upon care of the general condition as being of most importance. Internally a preparation of ergot is always given, and treatment by alcohol is to be regarded as a thing of the past. Streptococcus serums he finds disappointing, as being not free from danger and as being only bacteriolytic in their action. Collargol, on the other hand, is never harmful, and though its method of action is uncertain, its administration in toxaemia often brings about rapid improvement in general condition and fall of temperature. The value of injections of salt solution made subcutaneously or per rectum, especially by prolonged instillation into the rectum, is well understood. With regard to local treatment of puerperal fever, the principle of almost complete inaction is on all sides in Germany being recommended as the best; this principle extends to such proceedings as douching of the vagina and uterus, disinfection and cauterization of the uterus, atmokausis, removal of retained portions of the ovum and placenta, and disinfectant treatment of the genital canal. The fear is that the more active measures will injure the tissues, upon which recovery depends, without completely removing the infective material. With regard to the larger operative measures, these are certainly demanded in cases of purulent peritonitis. In chronic pyaemia, when vaginal examination shows the presence of an isolated venous area as the site of the mischief, operation is recommended by Trendelenburg and Bumm, but it is undecided whether excision of the area or ligature is the safest method. The anatomical diagnosis is difficult, and the question of treatment is further complicated by the uncertainty of the prognosis. In characteristic puerperal sepsis in which total extirpation of the uterus suggests itself as the most effectual method, the prognosis is so uncertain that early operation often means unnecessary operation, while late operation is always too late. Advance in treatment is to be expected on bacteriological lines, from better knowledge as to streptococci and as to the factors upon which early certainty in prognosis can be based. Distinct progress has been made in the introduction of aids to delivery. Metreurysis is a method simple in use, almost free from danger, and approaching more nearly than any other method of dilatation to physiological processes; it is the safest and most satisfactory method for use in placenta praevia with a viable child. Bossi's dilator is valuable, but its use is only indicated in comparatively few conditions—cases of placenta praevia are not suitable, and Bossi's own instrument should be employed. Of more importance are the operations for widening the pelvis. The dangers of the operation are of injury to the bladder, tears of the vagina communicating with the bone wound, and of haemorrhage; the last danger is one which especially improvements in technique have failed to remove. The morbidity of the operation is too high to be undertaken in a private house, but hebeostomy will certainly not disappear from midwifery practice. The outstanding fact in the treatment of eclampsia is that speedy evacuation of the uterus will reduce the mortality from 25 per cent. to 6 to 10 per cent. The effect of decapsulation of the kidney on the mortality is not yet decided, nor the best time of undertaking it. A new method of treatment of atonic *post-partum* haemorrhage is that of compression of the uterus to the point of disappearance of the femoral pulse by the pressure of an india-rubber tube dilated with gas; enthusiastic reports come from Bumm's and Pfannenstiel's clinic as to the success of this measure in primarily stopping the bleeding, and secondarily in

causing permanent contraction of the uterus; a report from Stöckel's clinic is less favourable. The author regards the morphine-scopolamine narcosis unfavourably, on the ground that it lessens the frequency and severity of the pains, with the result that forceps are more frequently employed; that it gives rise to atony of various degrees of severity; that the child is often born in a condition of apnoea not always easily overcome; and, lastly, that it does not always induce a satisfactory and quiet sleep in the patient. It appears that the application of cocaine to the so-called genital spots of the nose often results in lessening or removing pains, and in many cases, according to the reports of Freund, Fliesz, Koblank, and others, this is not the result merely of suggestion. Stöckel has obtained satisfactory results in 141 cases by the intradural injection into the hiatus canalis sacralis of physiological salt solution, novocain, and a little suprarenine.

33. Intractable Vomiting of Pregnancy.

GUIBAL (*Prov. Méd.*, November, 1909), dealing with the causation of the vomiting of pregnancy, refers to the three usual theories—that it is due to a pre-existing neuropathic condition aggravated by the pregnancy, or to reflex nervous disturbance arising in the reproductive system, or to the auto-intoxication of pregnancy. Cases of the first kind may be influenced by emotion, shock, or treatment; the more intractable are probably those due to toxaemia and hepatic toxaemia. There are cases in which the liver, kidneys, and digestive system cannot be held responsible for the trouble, and which can only be classed as nervous. Cures have followed replacement treatment of ulcers on the cervix, simple dilatation, or the application of cocaine or glycerinated ichthyol. The writer considers that the cases which he reports are explained by a reflex action having its origin in the uterus. In four of these cases he was obliged to produce abortion, all other methods of treatment having failed; in every case the vomiting ceased at once, and the patient recovered without further delay. He argues that the cause could not have been toxaemia, since in intoxication the effect would have lasted after the removal of the cause; some time must have elapsed before the accumulated poisons could be eliminated. Also, the toxins produced by an anatomical lesion would require time to disappear, and during this delay the symptoms would still have been evident. In the cases given there was no delay, the vomiting ceasing practically instantaneously. Only a nervous influence will explain such a result. In the first case the vomiting had lasted for two months, and was occurring every ten minutes; as soon as the abortion was completed there was no more nausea, and the patient was able to take fluids freely. In the second case, as soon as a sound had been introduced into the uterus and had produced some colic and haemorrhage, all gastric symptoms disappeared. After a few hours the sound was expressed into the vagina, and the abortion did not progress; at once vomiting recommenced, to be again entirely stopped when the abortion was completed. In such a case there was no indication of any intoxication, since the presence of the sound could prevent the symptoms. In the third case vomiting was stopped by the introduction of a tent into the cervix, but after some hours it recurred and abortion had to be procured. Here also, if intoxication had been the cause, the use of the tent could not have had the effect, and although the placenta was retained for some hours no trouble was experienced. In the fourth and last case some icterus was present, suggesting hepatic intoxication. All vomiting ceased after abortion, but recurred when the patient was given milk; a change of diet, however, relieved this. The jaundice was attributed to the dehydration of the body by the constant sickness, the blood becoming more concentrated, with an increase in the percentage of haemoglobin. Good results were obtained by injections of serum, which lessened the concentration of the blood and bile. He concludes that in these cases vomiting was primary, having its origin in a uterine reflex.

GYNAECOLOGY.

34. Complete Pseudohermaphroditismus Masculinus.

HEYN (*Zeit. f. Geb. u. Gyn.*, vol. lxv, Part 3, 1910) reports an instance of very marked hermaphroditism where the subject was a married "woman," aged 46, with feminine instincts, whilst the genital glands were undoubtedly testicles. As so often is the case, the patient, who had no idea of her malformation, consulted her doctor about a double inguinal hernia which caused great pain and inconvenience. On examining the ruptures Heyr detected a body like a testis and epididymis on each side. The pubes bore very little hair; the external organs, including the clitoris, were quite normal, and the meatus urinarius opened at its natural site. The vagina was a blind sac ¾ in. deep, but it had functioned for coitus, and no malformation had been suspected by the husband. There was not the least trace of a cervix. At the operation two bodies, fairly symmetrical, were removed from the hernial sacs. The testis on each side was well formed, with epididymis and vas deferens, and was associated with a fairly developed, though solid, uterine cornu and a fimbriated Fallopian tube. No evidence of spermatogenesis could be detected. The patient had been married twenty-one years, and had been a widow for six years. Her six sisters and four brothers were all married, and all were parents of children. No malformation had been recognized in any of them. The patient gave a not very clear account of an irregular catamenial show, which had ceased for twelve years. She declared that her instincts were feminine, that coitus was practicable, painless, and associated with desire on her part. She had never experienced desire for any female. She was 5 ft. 5½ in. in height, quite a woman in appearance, the breasts were large and pendulous, the respiration abdominal in type, the pomum Adami not prominent, the pelvis broad, and the feet and hands long and narrow. The patient has shown no change of mental disposition, no menopause-like symptoms, or any other complication since the operation in the autumn of 1908.

THERAPEUTICS.

35. Air Baths in Phthisis.

ZICKGRAF (*Zeit. für physik. und diät. Therap.*, February, 1910) strongly advocates the use of air baths at sanatoriums for phthisical cases, and describes the practice and the results at the institution with which he is connected. Air baths, as taken under his direction, are mixed movement, air, and light baths. Two of the six rest hours are taken for the air baths, as a rule, one from 10.30 to 11.30 in the morning, and one from 5 to 6 in the evening. The bath is screened from observation by earth walls, sown with grass and planted with small fir trees, the height of the wall being 1.8 m. (5.9 ft.). A small group of trees in the middle of the bath helps to give the necessary shade. Half the floor of the bath is turfed over and half covered with sand. The floor should be of loose consistency to allow of the free passage of air and water, and that the sand should be constantly worked through in order to give the right warmth and to enable it better to absorb from the atmosphere; the patients, as a rule, are very willing to rake the sand during the bath. Simple exercises are done for the first quarter of an hour of the bath, under the direction of an attendant in charge, whose duty it is also to see that the patients do not over-exert themselves in the remaining time, in which they choose any form of amusement they prefer, so long as it entails exercise. The patients are wonderfully active in the bath, even those of them who, as a rule, dislike exercise. The cases chosen for the baths are, as a rule, the early and doubtful cases, who begin the baths as soon as the first test injection of tuberculin has been made. The author finds that they recover much more quickly from the reaction under air bath treatment. Patients with much expectoration, especially when bacilli are present in the sputum, are not suitable for the baths because of the danger of expectoration into the bath. Observations as to weight were made on each of the 34 patients before and after every bath, and on each of 100 more patients at the beginning and end of the course of baths. Most patients lost a small amount of weight during each bath, the amount at the beginning of the course being from 100–300 grams (3.5–10.5 oz.). Later on there was less loss of weight, and in some cases the weight remained constant. No doubt during the first baths there was a loss of superfluous water ballast as a result of the free transpiratio sensibilis and insensibilis. Several stout patients were treated, but these increased in weight during the course of baths. In all but 2 cases of the series of 100 the weight rose during the treatment, the mean rise being 233 grams (8.1 oz.) per day as compared with a mean rise of 194 grams (6.8 oz.) per day in a series of patients at about the same stage and under the same treatment except for the baths. The increase in weight of the air-bath patients was more in reality than it

seems, because these patients had the losses in the baths and the two hours' extra exercise to bring down their weight. If patients with six hours' walking a day and the air baths put on weight, it is clear that any loss of weight when they begin ordinary work again is due not to the exercise, but more probably to insufficient food at home. Except for the fairly frequent occurrence of slight erythema, especially in patients accustomed to an excess of clothing, unpleasant symptoms only occurred in 6 cases. One patient had an attack of bronchitis, and one suffered from absolute sleeplessness. In 4 cases the erythema mentioned above was more severe, and pustules developed, while in one of them there was fever for a day; in only two of them, however, had the baths to be discontinued because of the irritation of the skin, and in one of these the baths were afterwards resumed without giving rise to any further difficulty.

36. The X Rays in Acne.

LASSUEUR (*Arch. d'elec. méd.*, May 10th, 1910) points out that in cases of acne the *x* rays, thanks to their elective action on the glandular cell elements, permit one to act against the seborrhoea, which lies at the root of the acne. Although the rays themselves have only a slight bactericidal action, they lessen the favourableness of the field for bacterial germination. The patients he has treated by radiotherapy have not been submitted to any local treatment, but ordinary measures have been taken to relieve the bad digestion, constipation, anaemia, and ova-uterine troubles which frequently accompany the skin condition. In acne with comedones and pustular acne he gives a dose of 5 H. (rather more than less) at one time. The result cannot be estimated until three or four weeks afterwards, when the skin is generally found to be drier, the infundibuliform orifices less wide open, the comedones detached, and the abscesses cicatrized. A second irradiation of 5 H. (rather less than more) is then given, and this is followed by no eruptive reaction. In congested pustular acne it is necessary to institute a more energetic treatment. The dose absorbed is 5 to 6 H., rays No. 5, and this is given twice, with fifteen days' interval, or, as an alternative, 5 H., at two sittings, with eight days' interval. During the period of the radio-dermatitis occlusive dressings with hot compresses in 5 per cent. solution of acetate of alumine are employed. This relieves the pruritus, the pain, and the sensation of tightness and dryness of the skin, and also makes the cutaneous exfoliation less evident. The great advantage of radiotherapy in acne is the supersession of a slow and uncertain polypharmacy by a rapid and simple treatment. Its only disadvantage is the production of radio-dermatitis. In congested pustular acne, however, this inconvenience is negligible, seeing that the skin is already discoloured before the treatment. A certain number of the cases treated have had relapses, these occurring much more frequently in patients between the ages of 16 and 25 years than in those between the ages of 25 and 35.

37. Hydropathy in Phlebitis.

LANGENHAGEN (*Journ. des prat.*, March 5th, 1910), in summing up the signs of convalescence in cases of phlebitis, points out that towards the fifth or sixth week, when all danger of embolism is over, and the clot is adherent to the parietes of the vein, treatment by means of baths begins to be of value. Seeing that the chief desideratum is to avoid stagnation of the blood, and that varicose veins in the limbs often begin by stasis, first in the pelvis and then in the ano-rectal circulation, bathing, especially in running waters, such as Luxeuil, exercises a sedative action on the nerves as well as stimulation to the general system, and acts, indeed, as a sort of massage to the fibres of the small blood vessels. The movements of swimming, etc., also help to restore contractility to the muscles and suppleness to the joints, and they favour the absorption of oedema and all kinds of exudation.

38. Electrical Treatment for Comedones.

BLANC (*Sem. méd.*, November 17th, 1909) gives a graphic account of his methods for the evacuating and disinfecting of sebaceous glands by means of the continuous current. He explains that when the negative pole of a continuous battery is placed on the skin the compounds of soda which congregate around that pole dissolve the fatty contents of the sebaceous follicles, and thus get rid of the comedones. The efficacy of this treatment was discovered accidentally during a course of electricity directed against insomnia in a young lady, when it was found that twelve or fifteen large comedones, situated between the eyebrows, disappeared after five or six sittings. The electrode most suitable for use on the forehead should be rectangular, about 9 in. long by 2½ broad, and should be covered with seven or eight layers of absorbent lint. For the nose a pointed mask like a snout is required, and it must be pressed against the skin by the fingers. Salicylate of soda in a 1 per cent. solution is the best medicament with which to moisten the electrode, in order to ensure that disinfection shall begin at the earliest possible moment. The other electrode being placed on any convenient part of the body, a very weak current is first passed, gradually increasing, but not attaining its maximum in less than two minutes, and not exceeding 4 milliampères in strength, the sitting lasting for five minutes, unless pain is complained of sooner. Some reddening of the skin may take place, but it should not last longer than twenty minutes after the application. The treatment should be repeated every two days, or the forehead and nose may be treated on alternate days, ten or twelve sittings being generally sufficient to effect a cure. Some improvement is quickly observed, and so the patient is encouraged to persevere. In two or three cases some of the larger comedones have been found on the surface of the skin in the morning, having been forced out during the night by the contraction of the involuntary muscles stimulated by the current; and the smaller collections of sebaceous matter are soon dissolved, leaving the whole skin smooth and healthy. Vibratory massage should be employed for a little while after each sitting, and when the course is ended, an application of the current every eight or ten days for a few months will prevent relapse.

PATHOLOGY.

39. Action of Microbes upon Tuberculin.

VAUDREMER (*Ann. de l'Inst. Pasteur*, March, 1910) has studied the action of various micro-organisms upon tuberculin, with a view to throwing some light on the chemical composition of this substance. He used the crude tuberculin of the Pasteur Institute, which was provided for him by Dr. Charpentier. This tuberculin, when injected under the skin of an animal infected with tuberculosis five weeks previously by subcutaneous inoculation, produces a thermal reaction in a dose of 0.02 c.cm., and causes death in about six hours in a dose of 0.25 c.cm. The micro-organisms which he tested were *B. megatherium*, *B. coli*, *B. typhosus*, *B. enteritidis* (Gaertner), *B. pyocyaneus*, *Aspergillus fumigatus*, *Aspergillus niger*, and *Penicilium glaucum*. They were cultivated in a liquid medium, 2 per cent. calcium carbonate being added in the case of the moulds in order to neutralize the acid produced. After twenty-four or forty-eight hours' cultivation, tuberculin was introduced into the medium in proportions varying from 1 to 4 per cent. The cultures of bacilli containing 1 or 2 per cent. of tuberculin were incubated for three days, those containing 3 per cent. for eight days, and those containing 4 per cent. for fifteen days; the mould cultures, owing to their slower growth, were allowed to develop at room temperature for periods ranging between eight and twenty-one days, according to the amount of tuberculin added. It was found that the addition of tuberculin did not interfere with the growth of the micro-organisms. When the period of growth was completed the culture was passed through a bacteriological filter. The filtrates were then tested upon tuberculous guinea-pigs, due care being taken to make control experiments for the purposes (1) of showing that 0.25 c.cm. of tuberculin was a fatal dose, and that 0.02 c.cm. gave a rise of temperature, and (2) of establishing the effects of the filtrates of cultures to which no tuberculin had been added. The results obtained showed striking differences in the action of the various micro-organisms upon tuberculin. *B. enteritidis*, *B. coli*, and *B. megatherium* did not impair the activity of the normal fatal dose of tuberculin; *B. typhosus* impaired its activity slightly; but *B. pyocyaneus* and all the moulds destroyed it completely. It is noteworthy that *B. pyocyaneus*, the only bacillus which behaved in the same way as the moulds, is strongly proteolytic. The general conclusion which the author draws from his experiments is that the destruction of the toxin of tuberculin by microbes, when such occurs, is due to their possessing proteolytic capacities, and that the organisms which are only capable of breaking up peptone leave the active principle of tuberculin intact. Hence he infers that in all probability the active principle of tuberculin is a toxalbumin, which exists as one of the elements constituting the bacterial protoplasm of the tubercle bacillus.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

40. Late Rickets.

VON BÓKAY (*Arch. de méd. des enfants*, June, 1910) points out that severe cases of this disease are rare, although in its slighter forms it is not so uncommon. He records a case which he has watched for more than twenty years, and seen the disease develop. The patient was perfectly well until his fifth year, and showed no signs of rickets. He first stood at nine months, and was able to walk at one year. When 4 years old he had a severe attack of measles, followed by pneumonia. Convalescence was prolonged, and he was scarcely able to stand for two years, walking being being resumed when 7. At 8 years of age he had a severe attack of enteritis, accompanied by marked wasting, and abdominal tubercle was diagnosed. A few months later he suffered from severe bony pains in the limbs, and then for the first time some deformity of the thighs was noticed; this was followed shortly after by deformities of the clavicles and forearms. When 10 years old thoracic and spinal deformities were marked, and the child was unable to stand. The first milk teeth did not fall out until he was 9. At 12 he still had nine milk and no permanent teeth. His mental condition was excellent, and there were scarcely any bony pains. He was able to support himself in a sitting position by means of his arms. Kyphosis and scoliosis were present. Both legs and arms showed marked curvatures. The lower epiphyses of the bones of the forearms were markedly thickened, as were also the extremities of the ribs. The costal border was everted, and Harrison's groove was present. Neither liver nor spleen was palpable. The urine did not show any albumen. In his 22nd year he had a marked caput quadratum. The clavicles were much bent, and the ribs were very soft and deformed, but the costal cartilages were not thickened. There was marked kyphosis and scoliosis. The pronounced curvatures of the legs and arms were still present. The pelvis was slightly flattened. At this age thickening of the epiphyses was not noticeable, and walking had been possible for a few months. The condition when 28 years old showed very little change. His gait was slow but steady, and he had been able to work for his living for twelve months. The diagnosis from infantile osteomalacia is discussed. The violent bony pains were in favour of that disease, but the enlargement of the epiphyses and the ends of the ribs excludes any possibility of that disease. Characteristic of late rickets is the late appearance of the permanent teeth. The author draws especial attention to the intensity of the deformities in this case, and also to the long duration of the disease. Treatment by phosphorus was of no value.

41. Hereditary Ataxia.

GRANNAN (*Pediatrics*, April, 1910) reports three cases of Friedreich's ataxic paraplegia, which occurred in three sisters. He is unable to assign any cause for the disease, no immediate hereditary causes can be traced. Yet the three cases are sisters, which points strongly to heredity. There is no history of chorea or neurosis in the parents or the children before the appearance of the disease, no history of alcoholism or of children born dead. The first child was 8 years old when the disease appeared, and was an apparently healthy child. She had had marasmus as a baby, followed by pneumonia, scarlet fever, measles, pertussis, and chicken-pox. The first symptoms were gradual impairment of co-ordination, first in the legs and then in the arms. Tremor was present, the patient reeled about, walked with the legs wide apart, fell easily, her head oscillated, her speech was impaired, and there was nystagmus present. Muscular power was weak, deep reflexes absent, and there was mental impairment and emaciation. In the second child the disease developed at the age of 4. She had had no infectious disease of childhood, but she had had twenty small abscesses about the head and neck. The onset resembled that of the previous case; the mental condition was impaired and the gait reeling. At the age of 8 the disease was still slowly progressing, and she was unable to walk at all. The third sister exhibited the first symptoms at the age of 18 months by irregular movements of the head, nystagmus, impairment of speech, inability to stand or walk, and absence of knee-jerks. She died at the age of three years. The boy of the family is alive and healthy. Treatment has had little or no effect upon the course of the disease.

42. Movable Kidney.

GRIFFITH (*Johns Hopkins Hosp. Bull.*, March, 1910) discusses the etiology of movable kidney from deductions based upon a routine examination of 103 white women, 50 coloured women, and 25 white men. The general appearance, age, occupation, weight, history of lacing or injury, and condition of the abdominal wall and pelvic structures were noted in each case, together with the following measurements: the distance from the suprasternal notch to the top of the symphysis pubis; the circumferences of the chest at the level of the seventh costal cartilage, of the abdomen at the umbilicus, and about the crest of the ilium; the size of the subcostal angle; and the distance from the crest of the ilium to the last rib. These measurements were taken with the patient lying supine without any pillow, the circumferences being taken at the end of normal expiration. The cases were always examined both lying down and standing, the latter being the best for detection of a movable kidney, especially if the patient leans slightly to the side under examination with the foot of that side resting on a footstool about 6 in. high. No kidney was considered abnormally mobile unless at least half of it could be felt. In the great majority of cases there existed a definite relation between the shape of the chest and abdomen and movable kidney, the type of chest associated with this condition being long, narrow, and contracted below. In order to adopt some definite method of comparing the various forms of chests and abdomens three of the above measurements are taken—namely, the vertical from the suprasternal notch to the symphysis pubis: the circumference at the seventh costal cartilage—that is, at a plane immediately above the upper poles of the kidneys; and the circumference at the umbilicus—that is, at a plane immediately below the lower poles of the kidneys. By dividing the upper circular measurement into the vertical measurement, and multiplying by 100 to avoid fractions, a quotient is obtained giving an index of the amount of contraction of the chest at the level of the upper poles of the kidneys (Index I), and by dividing the lower circular measurement into the vertical measurement an index is obtained of the amount of contraction just below the lower poles of the kidneys (Index II). By dividing the lower circular measurement into the upper an index is obtained of the amount of contraction taking place between the seventh costal cartilage and the umbilicus—that is, the region in which the kidneys lie (Index III). An examination of a large number of white women gives an average Index I of 72.5. If the lower part of the chest is contracted the index will be high, and a broad chest will give a low index. The average Index I of the woman without movable kidneys was found to be 71.6, but in cases of nephroptosis the index is high, there being a relative contraction of the lower part of the chest, the average of 50 cases of movable kidney being 77.9. In men movable kidney is rare, their chests being broad at the lower part, with an average index of 67.5. There is an ascending scale of average indices—namely, for men, 67.5; for women without nephroptosis, 71.6; for normal women, 72.5; and for women with nephroptosis, 77.9. The condition occurs less frequently in coloured than in white women, since they approach the type found in men, but the index is smaller. Indices II and III, considered together, confirm the findings of Index I. While pregnancies, constipation, injury, and gynaecological conditions may account for some cases of movable kidney, in the majority they are merely accessory to the true underlying cause of typical body shape, as determined by the three cardinal measurements.

SURGERY.

43. Spina Ventosa of the Fibula.

A. BINET AND H. VAIVRAND (*Prov. méd.*, March 5th, 1910) describe a case of spina ventosa of the lower third of the fibula. The patient was a boy, aged 14 years, with a tuberculous family history, who had had tuberculous glands removed from the axilla two years before. When

first seen in the present illness there was a swelling of the lower third of the external side of the fibula, which had gradually increased since it was first observed four months ago. There was no pain on pressure nor impairment of the movements of the leg, and the skin was normal. Radiography confirmed the diagnosis of spina ventosa, and showed an enormous intumescence of the diaphysis of the bone in its lower third; the medullary cavity was increased and transformed into a hollow, partly filled by a sequestrum. There was hyperostosis of the compact layer. Two injections of iodoform glycerine were made, and the limb was put up in a plaster for a month, but without improvement. The condition was then treated surgically, the sequestrum removed, the cavity curetted, cauterized, and packed in the iodoform gauze. Recovery was rapid, and was apparently absolutely complete six weeks after the operation. The case is of interest because of the rarity of the localization of spina ventosa in the long bones. It also illustrates the comparative innocence of tuberculous lesions of the diaphysis as compared with those of the epiphysis or joint; the hyperostosis of the outer layer of the diaphysis limits extension for a considerable time. The presence of the sequestrum might have suggested a doubt as to the tuberculous nature of the lesion, but the other points in the case were conclusive. The authors recommend early curettage of the interior of the bone without waiting to try such measures as injections of iodoform, etc.

44. Sterilization of the Skin before Operation.

Zatei (*Gazz. degli Osped.*, April 19th, 1910) has discarded iodine in the pre-operative sterilization of the skin, owing to its occasional irritating properties. In its place he has tried ordinary petrol and benzine, and after an experience of over 700 operations he is convinced that the use of these common substances is satisfactory as a skin sterilizer. The parts are shaved the night before if necessary, and no other special treatment given until immediately before operation, when a good sized piece of wool is dipped in ordinary petrol and the part lightly rubbed for about a minute; the swab is thrown into the fire and another swab dipped in commercial benzine, and also rubbed over the part. The skin is not irritated, and is left slightly oily, which prevents blood staining, and renders it easier to cleanse the patient after operation. At first the author tried his method in minor operations, but finding it successful he has used it in all operations, including, for example, 193 radical cures for hernia, 54 laparotomies, etc. He says it is quite as effectual as the older and more drastic methods, and possesses this additional merit—namely, that the petrol and benzine are cheap and nearly always at hand.

45. Pleurotomy in Empyema in Children.

Ferraris (*La Pediatria*, February, 1910) pleads strongly in favour of pleurotomy in the empyemata of children, instead of rib resection. He gives brief details of 66 cases. The mortality in the pleurotomy cases (61) was 13.33 per cent., whilst in the rib-resection cases (5) it was 40 per cent. He says he has not found any difficulty in drainage after simple pleurotomy, and uses two stout tubes of an average diameter of 7 mm. The relation between pneumonia and empyema is well shown in the fact that of these 66 cases no less than 51 were preceded by pneumonia. The ages varied from a few months to 8 years, the maximum frequency being between 1 and 5 years. As regards physical signs, the most certain and most constant was percussion dullness; the auscultatory signs are often very fallacious in young children. After simple pleurotomy cure took place on an average in about thirty days. Local anaesthesia is all that is necessary, thus obviating the special dangers of a general anaesthetic in these cases.

46. Diagnosis of Surgical Lesions of the Kidney.

Alexander B. Johnson (*Med. Record*, April 9th, 1910) endeavours to point out how errors of diagnosis in surgical diseases of the kidneys may be avoided. He takes up the diagnosis in injuries of the kidneys, movable kidney, hydronephrosis, suppurative lesions of the kidneys, and stone in the kidney, and gives many useful and helpful points in diagnosis, with illustrative cases. Haematuria, pain, and tenderness are important points to be observed. A subcutaneous rupture of the kidney may be attended with few symptoms at first, and haematuria may be intermittent. A large or rough stone in the kidney may cause laceration on slight force applied in injury. Dilatation of the pelvis of the kidney may be produced by obstruction of the ureters at any point, resulting in hydronephrosis. This may be mistaken for a large ovarian tumour. Suppurative lesions of the kidney show changes in the urine, in the bladder on cystoscopy, and pain. There may be secondary stone formation. The *x* ray is not a positive index of the presence or absence of calculus, since uric acid calculi can hardly be seen in *x*-ray pictures. Kidney colic is an important point. Anuria shows absolute obstruction. Changes in the urine are of value in diagnosis here. The cystoscope and ureteral catheter are diagnostic aids of value.

OBSTETRICS.

47. Dystocia.

Lafourcade and Rudaux (*La Clinique*, December, 1909) report two interesting cases of dystocia. Lafourcade was called upon to attend a woman who had been in labour for thirty-six hours; she was a healthy primipara aged 28 years. After twenty-four hours of labour her doctor had diagnosed a flattened pelvis, with the sacral promontory preventing the head from engaging. The sacropubic diameter measured 6 cm., the other diameters being normal; the fetus was lying in the transverse position, with the head on the left side. With the greatest difficulty, after three hours' work, the doctor in charge succeeded in performing version upon a fetus which was already dead; he delivered the limbs and trunk, but found it impossible to extract the head, he therefore sent for Lafourcade, asking him to perform craniotomy. An examination under chloroform showed the vulva to be oedematous, the perineum torn, and the neck of the fetus so stretched as the result of traction that it was easily divided by a pair of scissors. The fetal head could then be felt in the left abdominal region, but the hand could only be inserted with difficulty, and even when the head was fixed it could hardly be reached. The patient's condition permitting it, she was removed to hospital for a laparotomy and hysterectomy. Craniotomy would have proved difficult owing to the reduction of the pelvic diameter and the mobility of the head; the risk of perforating the uterus was considerable, and after so much manipulation infection appeared probable. Intervention would free the patient of a probable source of infection and would prevent subsequent pregnancies, which was important, as she could not hope to produce a living child except by the Caesarean method. The operation of hysterectomy occupied twenty minutes, and was followed by a complete and uneventful recovery. Rudaux reports that he was called to a case in which he found the patient so stout as to make palpation useless; she had not been seen by any physician during her pregnancy, and resented examination. A vaginal examination made under difficulties showed a pronounced pelvic deformity; the fetal presentation was very high and almost inaccessible, while dilatation was not greater than the size of a florin. Since it was obvious that delivery could not take place in the natural manner, an immediate Caesarean operation was suggested, but refused by the patient. Ten hours later, labour having continued, the dilatation was complete, but the child was dead; an attempt was then made to perform craniotomy, but owing to the high situation of the head and the narrow dimensions of the pelvis, the instrument could not seize the head firmly enough to draw it down, and after many efforts the attempt had to be abandoned, and the patient removed to hospital for laparotomy. It was then found that the uterus was ruptured on one side; the fetus and its appendages were removed and a total hysterectomy was performed; a drain was inserted through the abdominal wound as well as through the vagina. Recovery was excellent, the patient returning home in three weeks.

48. Haemorrhage in Ruptured Ectopic Pregnancy.

Hunter Robb (*Cleveland Medical Journal*, 1909) has conducted experiments and made clinical observations which have led him to modify his opinions—that is to say, those current amongst gynaecologists at the present date—about the dangers of haemorrhage and the necessity for immediate operation. He believes that in a woman suffering from a ruptured ectopic gestation the haemorrhage is rarely, if ever, the sole cause of death, as it is caused mainly by shock, which may be markedly increased by a major operation. Experimental work goes to show that the haemorrhage ceases within twenty minutes. The fact that the haemoglobin remains stationary shows the onset of coagulation; this fact is of value in clinical work. In dogs the subcutaneous injection of salt solution improves the pulse and respiration, and does not start the

haemorrhage again. The use of bandages or proper weights by which the anterior and posterior abdominal walls are approximated is likely to improve the condition of these patients. When the diagnosis of ectopic pregnancy is certain operative measures are indicated in the near future, but in most cases the danger is not sufficiently imminent to warrant immediate interference unless the condition of the patient is otherwise satisfactory. Not more than 5 per cent. of the victims of ectopic pregnancy die at the time of rupture, whereas after the immediate operation in cases of ectopic gestation in 1,176 cases in twenty-five clinics, the mortality was 8 per cent. When a patient is seen in a state of collapse, as the result of a ruptured ectopic sac, she should not be submitted to operation until the condition of shock has been tided over. In support of the view that patients die from shock and not from loss of blood there are certain clinical observations of good authorities, and also the result of experiments on animals, the first showing that patients whose abdomens were filled with bloody fluid have survived, and the second proving that dogs when exposed to dangers from haemorrhage not sufficiently severe to more than equalize the factors of resistance do not succumb. In most of these cases, when we operate to ligate a bleeding vessel, no bleeding vessel is found, and in some cases the bleeding is undoubtedly started again by the manipulations of the operator. Hunter Robb, further, disbelieves in the theory that it is the haemorrhage that is the chief danger in cases of rupture of the sac or tubal abortion, on clinical and physiological grounds. He states that "our best operators" give a percentage of 40 or 50 as their death-rate after immediate operations during shock, and that the results obtained by not a few good operators who have waited and carried out the deferred operation are certainly worthy of consideration. Their favourable statistics certainly cannot be attributed simply to blind luck. Such are Hunter Robb's conclusions, at variance with those of many living authorities, but still worthy of consideration.

GYNAECOLOGY.

49. Menstruation Compared in Europeans, Eurasians, and East Indians.

LEICESTER (*Journal of Obstetrics and Gynaecology of the British Empire*, May, 1910) gives the results of observations upon menstruation made during three years in Calcutta. The 500 or 600 cases observed is too small to permit of reliable general conclusions being drawn, but it is evident that the onset of menstruation occurs later in the case of Europeans in India than in mixed races, and the more the dark element predominates the earlier is the age of onset. The onset appears to be rather earlier among Europeans born and bred in India than in those coming to the country at a later age. The average periodicity of the flow is probably more regular in Europeans than in those races of mixed extraction. The average duration of the flow is practically the same in all these races. The commonest type of menstrual pain among all classes seems to be that occurring during the period only, and the least common that occurring only before the onset of the flow. The effect of the Indian climate on the periods of Europeans coming out to the country for the first time after the establishment of menstruation is *nil* in nearly two-thirds of the cases, and in less than one-third is there any increase in the amount of the loss. The effect of climate has probably been over-estimated. Race would seem to have far greater influence on onset than climate.

50. The Surgical Treatment of Atresia of Vagina and Uterus.

SKUTSCH (*Zentralbl. f. Gynäk.*, No. 2, 1910) at a recent meeting of the Leipzig Obstetrical Society strongly advocated simultaneous operation from the vulval and the abdominal side in cases of gynatresia. It is never possible to make sure about the precise degree of arrested development in the upper part of the genital tract in any given case of imperforate vulva, therefore an abdominal incision is needed to guide the operator in his management of the obstructing tissues. Down till recent times the perils of a free opening of the vagina were often experienced, and yet more recently it was considered dangerous to operate through the abdomen and vulva at one sitting. Now that thorough asepsis, cleansing of the external parts, and the use of gloves are practised and understood, the surgeon need not hesitate to do so. Skutsch describes a typical case where a girl aged sixteen had periodical abdominal pains associated with the development of an abdominal swelling mostly to the left of the middle line. A tense elastic swelling presented at the vulva. Haematocolpos and haematometra in a uterus unicornis sinistra seemed to be the malformation in this case, but Skutsch felt uncertain about treatment, and therefore opened the abdomen. The fundus of a uterus unicornis greatly distended was discovered, and the left appendages were attached to it: at this stage the right appendages could not be felt. Handling the tense cornu, clearly full of blood, was seen to be dangerous, Skutsch therefore proceeded to open the obstruction at the vulva, which was tough, like leather, and 3 mm. in thickness. A small incision was made, and the characteristic tar-like blood came away; at the same time the cornu and the vagina steadily descended. When they had completely collapsed their relations could be easily defined by careful manipulation without fear of rupture and escape of blood into the peritoneal cavity. A rudimentary right cornu was discovered; its Fallopian tube was excised to prevent any risk of future gestation in the cornu. The left tube was thick and inflamed; it was removed. The ovaries and left cornu were not removed; the whole septum at the vulva was trimmed away. Nine weeks later the patient was well and free from pain; there was a definable cervix at the upper end of the vagina, and the left cornu felt like a normal uterus.

THERAPEUTICS.

51. A Regimen for Diabetics.

CARA (*Journ. des prat.*, April 23rd, 1910) gives detailed consideration to the question of the most suitable diet for diabetic patients. There are so many dietaries, compiled by so many authorities, that it is difficult to select from them the one most appropriate for the case under consideration. All are unanimous in excluding hydrocarbons as much as possible, and some have tried to substitute albumen and fats, as in the flesh and fat diet of Cantani. But experience has unfortunately shown that even the most scientific theoretical ideas are worthless if they are contradicted by practical experience; and the patient, urged by hunger, is apt to eat too much meat, with the result that the intoxication thereby produced causes death by coma. The best plan is found to be a mixed diet, carefully regulated to the requirements of each individual case, for it is impossible to formulate a dietary which will be suitable for all alike. Bouchardat pointed out that each patient has a personal equation for the utilization of sugar, and it has been found that even the same patient will excrete more sugar at one period of the twenty-four hours than at another. A diet rich in fat tends, even more than albumen, to the formation of acetone, and it cannot therefore be relied upon. The same may be said of a milk diet, and even a chloride-free régime has given bad results. Potatoes, oatmeal, rice, levulose, dextrose, saccharose, even glucose, have all been tested, and the result of the trials has been to prove the variable and individual tolerance for hydrocarbons. The best dietary for one case proves bad for another. Some fruits are found to be less sugar-forming than some vegetables, as they contain less hydrocarbon; melon, for example, having only 6.58 per cent. and rice and macaroni 70 to 80 per cent. Dry wines may be allowed, especially in advanced cases, since alcohol not only has a large caloric coefficient, but also limits the formation of acetone, assists the assimilation of sugar, and favours the digestion of fats and the metabolism of albumen. A little bread may be allowed, fresh rather than stale, crumb rather than crust, and brown bread rather than white. Raw fruits are useful because of their relative bulk as compared with nutriment, in allaying the sensation of hunger, and because they help to quench thirst. The final summing up is to the effect that each patient must be carefully tested as to his excretion of sugar. At first an ordinary dietary, suitable for a healthy individual of the same body weight, is prescribed, the amount of sugar contained therein being accurately measured; then the amount excreted by the urine is ascertained, and the difference between the two indicates the limit of tolerance for hydrocarbons. Careful analysis will also show the least harmful source of sugar, and the period during the twenty-four hours at which sugar-containing foods may most safely be given; and from all these data a dietary suitable to the individual case may be compiled. It is advisable not to make the restrictions too absolute, as that leads generally to disobedience and evasion, which will be more harmful than a little extra licence.

52. Allosan in Gonorrhoea.

ANTON REGENSPURGER (*Wien. med. Klin.*, February 20th, 1910) has made use of allosan in the treatment of 100 cases of blenorrhoea urethrae. The cases were carefully chosen as being suitable for balsamic remedies; they included: (1) Cases of acute and subacute blenorrhoea urethrae

anterior and urethritis catarrhalis; (2) acute exacerbations of chronic blenorrhoeic processes; (3) extension of the acute process of the posterior part of the urethra and the bladder; (4) further acute complications, such as the onset of prostatitis, epididymitis, and lymphangoitis dorsalis. The two last classes of case call for a specially energetic use of balsamic remedies, because in them local treatment has often to be abandoned and the so-called urinary antiseptics, such as salol and the salicylates, are useless if not injurious. Allosan is a white crystalline powder, with a weak balsamic odour, tasteless, and without any irritant action upon the mucous membrane of the digestive or the urinary tracts. The formula is $NH_2.CO.NH.CO.OC_{15}.H_{32}$. Allosan contains 72 per cent. of the active principle of sandalwood oil: it does not break up until it reaches the intestine. The drug can be obtained in tablets which contain 0.5 gram (7.7 grains) of allosan and 0.2 gram (3 grains) of starch. The single dose is ½ to 1 gram (7.7 to 15.4 grains); the daily dose is 2 to 4 grams (30.8 to 61.6 grains), but as much as 6 grams (92.5 grains) can be given for a time daily without injury. In all the 100 cases allosan treatment was combined with local treatment by injections of novargan (Heyden), an organic silver preparation which is unirritating, of an effective bactericide, and also with astringent injections. The only contraindications against treatment by balsamics recognized by the author are severe affections of the gastro-intestinal tract, and nephritis in any stage. All the 100 cases recovered, and in 39 out of 60 cases of uncomplicated blenorrhoea urethrae anterior treated on the so-called abortive method recommended elsewhere by the author, complete recovery was obtained in from one to three weeks. In these successful short cases the injections of novargan were continued until the disappearance of the gonococci, and the allosan treatment, in which the dose varied from 0.5 to 1 gram (7.7 to 15.4 grains) four times a day, was continued until the complete disappearance of the catarrhal symptoms, the astringent injections being continued in combination with the allosan. The only complications were in four cases in which lymphangoitis dorsalis developed, but quickly disappeared with treatment and the cessation of the injections: the dose of allosan was increased during the time in which injections could not be made. In chronic cases with acute exacerbations it was possible to relieve the acute symptoms, but permanent recovery could only be obtained by systematic local treatment. In one case in which chronic blenorrhoea, anterior and posterior, had been present five years, recovery was obtained in about three months. In summing up, the author states that allosan can always be taken by the patients, even those who have an idiosyncrasy against the balsamic remedies: it can be taken also in larger doses; it is the only balsamic remedy which can be dispensed both in powder and tablet form, and it does not give a balsamic odour to the breath. These advantages, combined with its good therapeutic action, recommend it for cases such as those considered.

53. Physical Exercise in Varicose Conditions.

Poutain (*Journ. des prat.*, May 7th, 1910), in discussing the treatment of varices, believes the older method of prolonged rest in all cases to be a mistake. In considering the causes which determine the return of blood to the heart, both in normal and in local pathological states, he attaches the utmost importance to the contractions of the muscles of the lower extremities. This is really the basis of his theory. From the point of view of pathological anatomy the different varicose conditions can be divided into two well defined categories, according to the presence or absence of changes in the vessel walls. In simple uncomplicated varices the lesions vary with the exciting cause. Sometimes, as in pregnancy, the varicose condition develops slowly, and is due to pressure on the great venous trunks by the gravid uterus. At other times it develops suddenly, as in phlebitis of infectious origin. In such cases the local circulatory trouble disappears with the cause of it. To that group in which changes occur in the vessel walls may be added the true varices, often hereditary, and characterized from the beginning by a sclerosis of the vessel wall. Mention may also be made of the type of phlebitis and periphlebitis which occurs in connexion with trophic disturbance. A secondary but important cause is the state of tension of the vessel wall. Hypertension, in fact, brings about dilatation of the vein, and causes infiltration of the tissues by serous fluid. This, coupled with the venous congestion, causes frequently neuralgic pains in the legs. As the hypertension is usually the result of stagnation of venous blood in the lower extremity, any means calculated to assist the return of the blood to the heart will help to relieve it. Under normal conditions the tendency to venous stasis in the lower extremities is counteracted by the anatomical conditions, such as the valves with which the veins are provided and the various anastomoses, but especially by the muscular contractions of the foot and leg. The author then goes on to express his view that, when the foot rests on the ground, supporting the weight of the body, the contraction of the plantar muscles brings about compression of the deep veins, and each step taken in walking is in itself a powerful acceleration of the blood in the saphenous veins. So it is with the other muscles of the leg, all in turn facilitating the flow of venous blood towards the great veins of the body. The author points out in this connexion that those whose occupations compel them to walk a great deal rarely suffer from varicose veins. In pursuance of this theory he suggests that, in the case of those unable to walk sufficiently to obtain benefit from the exercise, appropriate Swedish exercises, massage, electrization, etc., be administered. These methods are, of course, contraindicated in the gouty and in the case of inflamed veins. In the latter all that can be permitted is a very gentle effleurage from below up. Indeed, each case must be treated on its merits as to the type of exercise or massage used. To improve the tone of the muscles exercises are recommended when possible, instead of massage. These must be carefully graduated to the strength of the patient's circulation. Walking exercise, the author suggests, is the best of these for all round usefulness. It should be taken first on the level, and gradually on more irregular ground, at the rate of 100 steps per minute for a period of time lasting at least two hours, but divided up into small sections of distance. Bicycling can be of use also, although care must be taken that the saddle is high enough to permit of full movements of flexion and extension of the foot and leg, and the pedal large enough for the full spread of the plantar surface. Horse exercise sometimes encourages varicosities, as is seen in riding schools. It can, however, be of real service. Trotting is especially useful, but galloping not so good. Swimming ought to be particularly good, but unfortunately these patients are frequently unable to bear the cold water. Fencing is especially condemned by the author, and alpine climbing cannot be recommended. Lawn tennis, football, billiards, and dancing are also proscribed, or if indulged in at all, with extreme moderation and intervals of rest.

PATHOLOGY.

54. The Organism of Bovine Pleuropneumonia.

Bordet (*Ann. de l'Inst. Pasteur*, March, 1910) describes the morphology of the microbe which causes pleuropneumonia in cattle. It was shown by Nocard and Roux that this minute organism could be cultivated in collodion sacs introduced into the peritoneal cavity of rabbits; but hitherto, Bordet points out, microscopic preparations of the virus have revealed nothing more than minute granules without any very definite characteristics. He finds, however, that the microbe assumes quite a different aspect when grown on media rich in rabbit's blood. He has employed for his cultures blood agar, containing potato extract and glycerine, which he prepared according to the formula recommended by himself and Gengou for the culture of the microbe of whooping-cough. The surface of this medium was inoculated with a culture grown in bovine bouillon-serum, which he received from M. Dujardin-Beaumetz. After one or two days' incubation a darkish streak appeared along the line of inoculation, but no definite layer of bacteria was visible. Films were prepared, fixed in absolute alcohol, and stained by Giemsa's method. On microscopic examination the microbe was found as a fine filament presenting sometimes a single curve and sometimes undulations, S forms, and even spirals. There also occurred rounded, granular forms, the centre of which generally were faintly stained. Discussing the question whether the organism should be regarded as a vibrio or a spirochaete, the author remarks that as contrasted with spirochaetes, such as the syphilitic spirochaete, the organism is not of uniform thickness, is not regular in shape, and has not a very sharply defined outline. Swellings are frequently observed in some part of the filament, and the extremities are often very slender and thread-like. The staining is not uniform, and there is much variety in size and shape, the average length being much less than that of the syphilitic spirochaete. He has also obtained filamentous forms by subculture in bouillon-serum. As the cultures become older there is a transformation into granular forms, a change which is very similar to what takes place with cholera cultures.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

55. Diagnosis and Treatment of Tuberculosis and Syphilis.

PRIVAT (*Journ. des prat.*, April 16th, 1910) refers to several important points which aid in distinguishing syphilitic and tuberculous disease of bones and joints. With regard to situation, he points out that when two symmetrical articulations are simultaneously involved, or even when one is involved soon after the first, or if two bones of the same name are affected, one should think of a syphilitic origin, as symmetry points to syphilis as the cause. If a patient presents several foci of disease in different parts, and if these show themselves at the same time, one should suspect a syphilitic origin, as multiplicity of situation points to syphilis. In the same way the presence of dactylitis, especially if there be another bone affection, or if there be glandular enlargement, is strongly suggestive of syphilis. The author points out that tuberculous disease may be markedly influenced by the existence of either acquired or hereditary syphilis, and this explains how it is so much improvement can sometimes be obtained in cases of Pott's disease by antisyphilitic treatment. If in a case of chronic joint disease there occurs neither limitation nor a tendency to a vicious attitude, and especially if after prolonged immobilization movements at the joint do not appear to be much interfered with, one should suspect syphilis. Absence of pain on movement of an affected joint, absence of pain during the day with violent nocturnal pains not relieved by fixation of the joint and relieved only by movement of the joint, certainly point to the probability of syphilitic disease. Palpation of an affected joint may help considerably in the differential diagnosis of tubercle and syphilis: if one finds that not only does the bone appear enlarged, but the neighbouring muscles as well, or if one finds hard masses surrounded by softer areas one should suspect the latter origin, as syphilis constructs whilst tuberculous destroys. Radiography also may be of service: in syphilitic joint disease the articular ends of the bones preserve their outline, but the bones themselves are less permeable to x rays. Hydrarthrosis, as is well known, is often syphilitic, but what is probably less recognized is that syphilis may cause purulent effusions into joint cavities. This pus is thinner than that of tuberculous origin, is ropy and sticky. A tuberculous abscess opened aseptically and sufficiently early rarely ends in a fistula, whilst this is a frequent result in abscesses of syphilitic origin. A tuberculous fistula has a rugged orifice, the pus is yellowish, thick and grumous, and the fistula continues an indefinite time. The orifice of a syphilitic fistula is flat and punched out, and the borders are pigmented; the pus is whitish, liquid and ropy, and the fistula heals readily. With regard to treatment, the author advises that, in those cases in which there is some doubt as to the diagnosis, both antisyphilitic treatment and treatment for tuberculous disease should be carried out simultaneously and thoroughly.

56. Visceral Angioneuroses.

COHEN (reprinted from *New York Med. Journ.*, February 19th, 26th, and March 5th, 1910) uses the term "visceral angioneuroses" to indicate those manifestations of disordered function which arise from circulatory disturbances rather than from primary tissue change in the affected organs, and suggests their relationship to angioneuroses of the skin. These visceral crises of vasomotor ataxia are manifestly phenomena of inco ordination, the local circulation having become unbalanced, the peripheral and central circulatory mechanism being no longer in equilibrium. While asthma is the best known angioneurosis in the respiratory tract, the occurrence of similar phenomena of angioneurotic oedema in the larynx and pharynx, and in other parts of the body, giving rise to gastro-enteric, hepatic, renal, and other visceral crises, must be borne in mind. Haemorrhages are frequent, and may occur anywhere, and the haemorrhagic tendency is shown by the occurrence of purpuric or ecchymotic spots. Venous congestion may be sometimes sufficient to produce intermittent or permanent local varices and even haematomata. The manifestations of vasomotor ataxia may be general, regional, or multiregional, and in either of these the mechanism may be constrictive, dilative, or mixed—the latter, in which dilatation and constriction of vessels are found simultaneously in the same patient, being the most common form. Any of these varieties may be paroxysmal or non-paroxysmal, of brief or protracted duration, and of frequent or infrequent recurrence, either periodical or irregular in time. In the diagnosis of visceral angioneurosis primary infections or structural lesions must be excluded, and the patient must present certain physical characteristics and reactions to environmental change, as well as a personal or family history pointing to such pathogenic tendencies. The physical characteristics and reactions to environment may not all be present in every case, but a sufficient number will be found at one time or another for purposes of diagnosis. The characteristic signs consist in vascular changes in the skin—for example, mottling, blanching, pigmentations, urticaria, purpura, eczema, or oedema, and either profuse or scanty perspiration, with abnormal response to emotion, heat, cold, or pressure. Changes in the vascularity and colour of the nail beds, showing a deep red terminal line and a white central area, are characteristic; white in the eyes, widening of the commissure, dilatation of the pupils, and tremulousness of the lids upon light closure, with occasionally ptosis, pain, and distension of the retinal vessels, are among the pathognomonic signs. The thyroid gland is generally enlarged and soft and the cardiac rhythm easily disturbed, but it is rarely irregular, unless there is an actual lesion. The family history is almost invariably rich in metabolic, nervous, or angioneurotic disorders, and tuberculosis, rheumatism, gout, and diabetes are often found. Underlying all these various manifestations there would appear to be a fundamental imperfection, which may originate in a disturbance of the normal alterations in the calibre of the interstitial lymph spaces, resulting in pressure changes, and it is to such inco-ordinate changes in tissue tension, as well as to alterations in the calibre of blood vessels, that these protean manifestations of the common disorder may be attributed. Throughout the text notes of 46 cases are given, exemplifying the particular form under consideration.

57. Influenzal Meningitis.

AGER AND AVERY (*Archives of Ped.*, April, 1910) discuss the case of a healthy child of six months brought to hospital on account of a convulsion followed by slight fever. He had had a cough for several days; he was breast-fed, and weighed 21 lb. The abdomen was tender everywhere, there was slight rigidity and definite tenderness in the back of the neck, and the temperature was 100°. Four days later the condition pointed definitely to meningitis; there was head retraction and opisthotonos. Some cerebro-spinal fluid was drawn off for examination; the child gradually became worse and died five weeks after the onset of the disease. A *post-mortem* examination showed an intensely congested dura, very friable brain tissue, and the ventricles so distended that the serum immediately broke through. There were two small areas of thick yellow exudate over the upper part of the motor area, some exudate about the base, and patches of it in the sinuses, while the frontal lobes were covered with a thick coating of it. The bacteriological examination discovered an organism the characteristics of which were similar to those distinctive of the bacillus of influenza. Considering the pandemic nature of influenza, the number of cases of influenzal meningitis reported is very small. It is possible that the condition is more common than is supposed, as it can only be differentiated from meningococcic infection by cultures.

58. Houston's Valves a Cause of Constipation.

AMONG the numerous agencies which cause constipation, Matignon (*Gaz. hebd. des sci. méd. de Bordeaux*, February 13th, 1910) cites the valves of Houston, those two, three, or occasionally four, folds of mucous membrane which are found at intervals, both horizontally and longitudinally, in the lower 3 in. of the rectum. These folds enclose circular but not longitudinal muscular fibres, and they can be easily seen on examination by means of a rectoscope. Their hypertrophy causes either fragmentary or ribbon-shaped stools, and purgatives, effective at first, soon lose their power, the patient feeling no relief from an evacuation, but suffering from the sensation of constant pressure.

with distension, burning, and tenderness on palpation. The only curative treatment is the removal of the hypertrophied mucous folds, either by the knife, the cautery, or clamping.

SURGERY.

59. Arterio-Venous Anastomosis.

Monod and Vanverts (*Archiv. gén. de chir.*, Nos. 4 and 5, 1910) publish the results of a study, based on clinical and experimental data, of the value of arterio-venous anastomosis as a means of assuring the transmission of red blood to the capillaries through veins, and applicable in practical surgery to cases of arterial obstruction with ischaemia of the peripheral parts. In the course of this paper the authors consider at length the following questions: (1) Is this anastomosis practicable? (2) Is it possible, after the communication has been established, for the blood to take a retrograde course in the veins? (3) What results have hitherto been obtained from experimental and clinical work? (4) Is such intervention attended by any danger? The conclusions to which the authors have been led by their full and laborious research cannot be regarded as very favourable to this method of dealing with the results of arterial obstruction. The best they can say for it is that though the enthusiasm of some advocates of arterio-venous anastomosis is evidently exaggerated, recent experiments and clinical results present promising presumptions which forbid an *a priori* rejection of this operation, particularly in cases in which gangrene, though imminent, has not yet occurred. The operation, it is held, is justifiable only under certain favourable conditions. The patient must not be very old, must not be cachectic, and the general condition must be capable of resisting operative shock resulting not only from the anastomosis but from an amputation that may be necessary after a short interval. Moreover, the arterial degeneration must not be too far advanced, the general circulation of the limb should be relatively satisfactory, and the devitalized parts evidently free from infection. This combination of favourable conditions is very rarely found in aged, atheromatous subjects, that is to say, in cases in which the operation is usually indicated. In such cases the authors hold that the surgeon should practise amputation either at once or after inspection of the vessels at the seat of a proposed anastomosis has shown that, in regard to the latter operation, there is a very slight chance of success. Reference is made to two cases, one reported by Imbert, the other by Torrance, which indicate, in the opinion of the authors of this paper, that arterio-venous anastomosis may be practised with good prospects of success in certain cases of serious injury of a limb in which one or more important arteries are involved. If it be impossible to effect an end-to-end reunion of the divided artery, the circulation in the injured limb might be maintained by attaching to the central end a vein of sufficient calibre. Another mode of application of arterio-venous anastomosis in surgical practice has been carried out by Tuffier, who, he believes, prevented gangrene of a suspect stump by anastomosing at the time of the amputation the open ends of the main artery and vein.

60. Anaesthesia for Removal of Enlarged Tonsils and Adenoids.

Ernest Jutte (*Med. Record*, May 7th, 1910) advocates a method of continuous anaesthesia which does not interfere with the surgeon's work. A wide-mouthed bottle with a double perforated rubber stopper, which holds two tubes, is used. One tube reaches the bottom of the bottle, the other just passing through the stopper. The long tube is connected with a double bulb, the short one with a metal mouthpiece such as is used by dentists. Narcosis is induced by the drop method, until the patient is well under. The metal mouthpiece is hooked around the mouth gag and ether vapour forced into the mouth of the patient by the rubber bulb. Narcosis can be kept up for a long time.

61. Traumatic Rupture of the Spleen.

Potherat (*Bull. et mém. de la Soc. de Chir. de Paris*, No. 18, 1910), in a report on a case communicated by M. Viart, of recovery, under very unfavourable conditions, after removal of a ruptured spleen, discusses at length the indications and prognosis of splenectomy in the treatment of this injury. The diagnosis of rupture of the spleen in cases of abdominal contusion is usually very difficult, and in most of the recorded instances the lesion was not revealed before the abdomen had been opened and search made for some doubtful source of internal haemorrhage. Although this symptom, especially when intense and rapidly developed, would by itself indicate immediate laparotomy, it would be advisable, Potherat states, to localize the lesion if possible, as the surgeon by attacking the injured spleen directly and by a convenient external incision, might save much precious time in a very grave operation. It is suggested that in some cases of splenic rupture a precise diagnosis might be made by a careful investigation of the conditions of the accident, by evident localization of the injury, and by the undoubted signs of internal haemorrhage with an absence of blood in the urine. The exact seat of the impact of the violence causing splenic rupture seems to be regarded by Potherat as a point of minor importance, as he believes that this injury is due in cases of contusion of the abdomen to indirect and not to direct force. It would be very difficult, he points out, for the injuring agent to act directly on the spleen through the abdominal wall so as to produce a rupture of this organ, which is not only well protected by the thoracic wall but also, except in rare instances of old and extensive adhesions, is very mobile. The force applied to the surface of the abdomen excites, he holds, an active and sudden contraction of the whole of the abdominal enclosure, comprising both the diaphragm and the floor of the pelvis. The blood, under the influence of this pressure, accumulates in the larger vessels and also in the spleen. The sudden and forcible compression of this vascular organ causes rupture of its friable tissue and laceration of its weak capsule. Reference is made to several recorded cases of traumatic rupture of the spleen in which, notwithstanding the extent of the injury to this organ, the symptoms were not menacing, and the patient remained in a good and promising condition for some days after the receipt of injury. Such records, however, should not, Potherat holds, lead the surgeon to delay intervention in any case in which he has good reason for suspecting rupture of the spleen. In discussing the technique of splenectomy Potherat recommends in the male a vertical lateral incision, and in the female, in whom the base of the thorax is much less divergent than in the male, a median incision of the abdominal wall, with a short transverse cut to the left from its lower extremity. As the main object of surgical intervention in cases of ruptured spleen is to arrest haemorrhage, no attempt should be made, except the lesion be a slight one, to preserve the wounded organ. Splenectomy, which, as has been shown by recent statistics, has saved many lives and been attended of late by a progressive diminution of mortality, ought, it is strongly urged, to be regarded as the operation of choice.

OBSTETRICS.

62. The Eclampsia of Labour.

Rudaux (*La Clinique*, April, 1910) refers to his previous work on this subject, in which he advanced the view that the eclampsia met with during labour is of a special type, that it differs from the eclampsia of pregnancy in its pathology and in its clinical manifestations, and that it is not a disease but a symptom produced by absolutely different causes. He reports the case of a young primipara with strong neuropathic tendencies and inheritance. During her pregnancy frequent examination showed the urine to be free from albumen, and the daily amount passed did not fall below one and a half pints. Labour occurred at term, and was perfectly normal, lasting about twelve hours, the patient being kept more or less under chloroform during one hour. Twenty minutes after delivery, without any warning, she had a convulsive seizure of the clonic type, which lasted for two minutes. She gradually recovered consciousness, but half an hour later a second attack occurred, leaving her in a somnolent condition. Eight similar attacks occurred during the day, the patient becoming profoundly comatose. Catheterization of the bladder produced a very small quantity of urine, which was dark in colour and contained albumen. The treatment included absolute quiet, irrigation of the intestine, chloroform during the crises, an injection of 3 grams of chloral (repeated thrice in twenty-four hours), and only water to drink. As the blood pressure was not much increased venesection was not attempted, but the loss from the womb was more than usually abundant. The next day the crises had ceased and her condition had improved, although the blood pressure was still above normal and there was general drowsiness. She was able to drink freely of milk and Evian water. A pint of urine drawn off with the catheter showed a very

small trace of albumen, which disappeared on the third day, when micturition became normal. On the sixth day she had an attack of pyelonephritis of the right kidney, which cleared up under urotropine, her subsequent recovery being satisfactory. In this case there were no prodromal symptoms: the attack came on suddenly, the bladder being practically empty and the albuminuria disappearing in a few days. Evidently this kind of eclampsia has a mechanical origin. The retention of urine may be due to pressure on the ureters and oedema of the kidneys. It is also probable that the blood contains large quantities of toxins generated during the effort of labour. Eclampsia of this type must be regarded as one of the accidents of labour which can be neither foreseen nor prevented.

63. Pendulous Abdomen: Rupture of Parietes during Pregnancy.

WALTHARD (*Monats. f. Geb. u. Gyn.*, May, 1910) reported before a medical society last winter an instance of pendulous abdomen of extreme type. A slough of the size of a small plate developed in its most prominent part. As there was a wide gap between the recti at that part the affected parietes consisted of a thin sheet of integument, fascia, and peritoneum. The patient was pregnant, and the uterus pressed against the sloughy tissues, which yielded. The skin became acutely inflamed all over the pendulous parietes, and as the consequent discharge, which teemed with echinococci, touched the peritoneum it set up plastic inflammation. Deposits of lymph developed around the protruding uterus. Total hysterectomy with resection of the pendulous sac was performed, and the patient recovered.

GYNAECOLOGY.

64. Grape-like Sarcoma of Cervix.

PROUST AND BENDER (*Ann. de gynéc. et d'obstét.*, March, 1910) report a typical case of sarcoma botryoides or sarcoma papillare hydropicum of the cervix, on which Pfannenstiel, Pick, and Curtis have written. Their patient was 44 years old, the periods were regular from puberty to the age of 42, when haemorrhages set in, at first almost regularly once a week but ultimately they became constant. For a month before the patient came under observation a reddish fetid serum flowed away with the blood. The patient was in good general health and quite free from pain. On examination a lobulated mass, strikingly similar to a bunch of black grapes, was seen projecting from the vulva. It filled the vagina, and was traceable upwards to a pedicle which entered the cervical canal. Its substance was much softer than that of a uterine fibromyoma but not friable or diffluent. On bimanual palpation the uterus did not appear enlarged and the fornices were free. The accessible lobules were cut away with scissors and the curette used freely. Then, as an extemporary microscopic examination gave rise to a suspicion that the mass was sarcomatous, or certainly not myomatous, Pozzi removed the uterus by total abdominal hysterectomy, and the patient recovered. The characteristic pathological elements were discovered on microscopic research. There were many cystic spaces lined with cylindrical epithelium: they represented uterine glands involved in the growth. There were likewise islets of cartilage tissue. The free surface was invested with stratified pavement epithelium, and the essential part of the tumour was made up of typical oval and fusiform embryonic connective-tissue cells.

65. Vicarious Epistaxis in the Menopause.

MACHT (*Amer. Journ. Obstet.*, April 1st, 1910), refers to Puech, who collected 200 cases of vicarious menstruation, out of which ten were instances of epistaxis; others found that bleeding from the nose was proportionally far more frequent. Macht believes that vicarious menstruation is by no means common, and not all reported cases can bear close scrutiny. He publishes what he considers to be an authentic example of vicarious epistaxis, not, however, in the young and vigorous, nor in a subject where the catamenia were suddenly suppressed, but in a patient aged 40. She was a Russian Jewess who had borne nine children, the youngest being 7 years old; she had miscarried once. The catamenia were established at the age of fourteen, and were always regular excepting during pregnancy. At about the age of 37 they became scantier, and at 39 ceased altogether. Simultaneously with the cessation of normal menstruation the patient began to suffer from periodic haemorrhages from the nose, occurring regularly at the time of the expected period, and accompanied by frontal headaches and severe flushes of the face. These haemorrhages varied in severity, but usually lasted no longer than a day. The septum nasi was slightly curved, and the vessels of its mucosa on the left side bled when examined. No other morbid conditions were detected in the nasal cavities, or in the throat, eyes, and ears. Trichloracetic acid was applied to the bleeding vessels, and gave relief, the "vicarious" period being afterwards reduced to slight though regular oozing. The hot flushings were relieved by sumbul. There was no evidence of visceral disease, thoracic or abdominal, the mobility of the uterus was impaired and the cervix lacerated.

THERAPEUTICS.

66. The Tuberculin Treatment of Tuberculosis.

As is well known, the late Professor Robert Koch continued to work right up to the time of his death with the products of the tubercle bacillus in order to improve the tuberculin preparations and to obtain a method of treatment which would satisfy all requirements. A considerable number of preparations were produced from Koch's laboratory, and, with this material at his disposal, Jochmann has attempted to form a comprehensive idea of the relative value of these variations of tuberculin. He now publishes his results (*Deut. med. Woch.*, May 26th, 1910). The tuberculins may be divided into two groups—(1) those which represent the soluble products of the bacilli when grown on fluid media, and (2) those which represent the products of the bacilli when removed from the medium in which they are grown and finely ground up. A.T. (old tuberculin) is gained by growing tubercle bacilli on glycerine broth, concentrating the fluid to one-tenth of its original volume and filtering the fluid from the bacilli. Jochmann begins by injecting 1 mg. of A.T. and increasing the dose gradually without producing a marked febrile reaction until 1 gram is reached. No rule can be laid down as to the rate of increase or the intervals between the injections, since each case has to be treated on its own merits. He does not find Saathoff's suggestion, that the reaction might be estimated by the local reaction at the site of injection, of value. He watches the temperature carefully, and is also guided in his subsequent procedure by such symptoms as headache, stomach-ache, nausea, and malaise. Next he tried a preparation made from a culture of tubercle bacilli on a fluid medium which did not contain any albumen. He found it easier to complete the course without a reaction with this form of A.T., and noted that very susceptible persons tolerated it well. Good results were also obtained with an A.T. which had been concentrated to one-quarter of its original volume instead of one-tenth. The second group includes the bacillary emulsions. B.E. is a glycerine-sodium chloride emulsion, while T.R. is an emulsion in distilled water. He gives 0.001 mg. of B.E. to begin with, and increases the dose gradually to 10 mg. At times this preparation produced infiltrations and abscesses, but in each case the pus was found to be sterile. Sundry other modifications of B.E. did not yield good results. The suggestion to mix A.T. and B.E. is not, in his opinion, sound, since some patients are extremely susceptible to the one or the other, and better results can be obtained by giving both separately, so that the dose of each can be varied at will. T.R. is given in the same doses as B.E. He has not obtained satisfactory results by giving tuberculin in capsules or other preparation by mouth. In tuberculosis of the lymphatic glands in children he obtained excellent results with A.T., and at times also with T.R. Tuberculosis of bone and joints yielded less favourable results to tuberculin. A few cases improved greatly under the treatment, but on the whole he is inclined to recommend tuberculin especially for those cases which do not do sufficiently well with local surgical treatment. Pulmonary tuberculosis in children was much improved by tuberculin, but that of infants was not influenced. While he realizes that it is difficult to judge the effect of treatment in pulmonary tuberculosis of adults, he has come to the conclusion that satisfactory results are obtainable in the early stages and in the second stage. Improvement was always achieved in the third stage, but in mixed infection tuberculin is not to be recommended. He has obtained good results in lupus, and recommends tuberculin as an adjuvant to local measures such as pyrogallic acid, Finsen light treatment, *x*-ray treatment, etc. He mentions that bovine tuberculin answers extremely well in those cases of lupus which are caused by the bovine type of bacillus. In judging the results of the treatment he again disagrees with Saathoff, who believes that the increase of weight may be taken as an indicator of the

beneficial effect of the treatment. After discussing the appearance of antibodies in the serum, he concludes that it is at present impossible to interpret the significance of these bodies or to identify them with substances which are concerned in the cure of the disease. Finally, he states that it is, in his opinion, advisable to begin with A.T., and to use B.E. at a later date. While he expresses himself cautiously as to the length of time during which the treatment should be continued, he suggests that the physician should aim at removing all clinical symptoms. The patient should be tested by von Pirquet's method after three or four months, and if the result be positive a second course of tuberculin should be undertaken.

67. X Rays in the Treatment of Angiomata.

ELECTROLYSIS and radium-therapy are the methods more usually favoured in the treatment of angiomata, but Barjon of Lyons (*Arch. d'élec. méd.*, April 25th, 1910) exalts the *x* rays as an agent of equal value, painless in application (unlike electrolysis), and giving results as perfect therapeutically and as aesthetic as those obtained with the rare and costly radium. He records 22 observations of cases in which radio-therapeutic treatment has been practised. In 18 of this number the treatment has been concluded for eighteen months or longer, so that a fair basis is afforded for judgement, and the results can be regarded as definite. The angiomata treated ranged from small superficial growths—birthmarks, strawberry- and raspberry-like stains—to subcutaneous tumours of blue and violet colour, and even to deep and diffuse swellings. Most of the patients were infants, and the rays were applied usually while the children were sleeping or receiving nourishment; rarely was it necessary to immobilize them by means of linen bands and sandbags. The part to be irradiated was surrounded by thin sheets of lead, and in some cases the whole of the applications were made without filtration; in others, after a few sittings in which the full naked dose was given, filtration was resorted to with the object of causing a more useful dose to be absorbed in the deeper tissues. The rays employed corresponded in quality to Nos. 5 and 6 Benoist, and in quantity the dose administered each time was from 5 to 8 H. Sometimes this was given in one sitting, at others in separate sittings with very short intervals between them. At the end of three weeks a fresh dose was started, and the duration of treatment extended over several months—the average being from two to five months—while the total dose ranged from 20 H. to as much as 100 H. in exceptional cases. When the treatment was interrupted for two or three months on obtaining a first amelioration, there were signs of the recrudescence of the tumours, which, however, quickly disappeared upon resumption of the treatment. In superficial angiomata the author was uniformly successful, but with angiomata which were diffuse and deep, extending into the cavities of the face, the results were more doubtful. Five of the cases belonged to this order. In two, both infants, he obtained as good results as in the superficial variety. In the three others—patients aged 10, 20, and 21 years—he was unsuccessful, and ceased treatment. The comparatively full age of the patients probably militated against the success of the method. In each of the three cases the resisting angioma was of congenital origin.

68. Aristochin.

DESIDERIUS LEVAI (*Pest. med.-chir. Presse*, No. 9, 1910) strongly recommends aristochin as a substitute for quinine in a children's practice. Aristochin is a white powder free from taste and smell, insoluble in water. It contains 90 per cent. of quinine, a larger percentage than any other known preparation. The absence of taste makes it possible to give the drug in water, milk, cocoa, etc., and the almost insuperable difficulty of inducing children to take the ordinary quinine preparations is altogether done away with. At the beginning Levai only gave aristochin in cases of malaria and intermittent fever, later in pertussis, and for the last four years in typhoid fever. The results in typhoid fever are exceedingly good. Levai has given it in 300 cases and has never seen any unpleasant side-effect. It has an effect in lessening the apathy and somnolence, and other nervous symptoms; it makes the whole course of the disease more bearable to the patient, and when combined with hydrotherapeutic measures has a real effect upon the so-called typhoid condition. The dosage of aristochin is similar to that of quinine, but much larger doses can be given because of the absence of unfavourable side-effects. As a result of his own experience the author affirms that aristochin is the best available preparation of quinine for children.

PATHOLOGY.

69. Wassermann's Reaction.

F. GLASER AND G. WOLFSOHN (*Wien. med. Klin.*, 1909, Nos. 46, 47, and 48) have tested the practical value of Wassermann's reaction in a large number of surgical and medical cases, many of which they were afterwards able to examine *post mortem*, and thus to "control" their results. The reaction was positive in 19 out of 106 surgical cases investigated by Wolfsohn. Some of the most interesting results were obtained in joint and muscular rheumatism; 5 out of 22 showed a positive reaction, and an antisyphilitic cure was quickly followed by recovery. Out of 14 cases of tumour, one showed a positive reaction; the case was one of carcinoma of the portio uteri in a woman with a history of syphilis. The diagnosis of carcinoma was confirmed by examination, and the great lesson of the case is that a suspicious tumour should not be treated as syphilitic in origin because of a positive Wassermann reaction, lest valuable time be lost. In 1 out of 4 cases of disease of the nervous system, and in 1 out of 5 of abdominal disease, the reaction was positive; in each class of case a positive reaction may be decisive as to the method of treatment. Glaser has 500 medical cases, in 130 of which the reaction was positive; 75 of the 130 were, however, cases of syphilis, secondary, tertiary, or congenital, and if these be separated from the others, the result was 55 positive cases out of 425; 73 cases, 21 positive and 52 negative, were examined *post mortem*. The cases giving a positive reaction fall into different groups according as there was or was not a history of syphilis, any sign or symptom of syphilis before death, or any sign of recent or old syphilis discovered at the autopsy in cases which ended fatally. In a series of 5 cases in which there was no history nor any clinical symptoms the anatomical examination after death confirmed the positive reaction by disclosing the presence in one case of an isolated gumma of a muscle, in a second of syphilitic intestinal ulcer, in a third of mesaortitis luetica, in a fourth of scars on the kidney substance, and in a fifth of pachymeningitis haemorrhagica interna. In another series of 5 cases of phthisis the only sign of syphilis was a positive Wassermann reaction discovered after death; at the necropsy the condition of the lung was suggestive of old syphilis. These cases are of interest as seeming to support the view that syphilis affecting the lung predisposes to phthisis. In 3 cases with a positive reaction the history was negative; there were no symptoms of syphilis, and no syphilitic condition was discovered at autopsy. Various explanations of these cases are suggested. It is, for example, possible that some syphilitic area in the body was overlooked in spite of careful investigation. It is suggested that spirochaetes might be present at some spot without giving rise to discoverable anatomical changes, or that, in spite of the negative history, infection might have occurred and have left no certain sign of syphilis behind. In support of the last hypothesis is the fact that in 10 of the cases advanced arterio-sclerosis suggestive of a syphilitic origin was found at the autopsy, while in the third—a case of cancer of the lung—the cancer may possibly have originated on the site of an old syphilitic scar. The authors' conclusions are that: (1) The results of *post-mortem* examination show that Wassermann's reaction supplied a correct diagnosis in cases in which there was no history or sign of syphilis discoverable during life. (2) The three cases which gave *post-mortem* negative results, but in which a positive reaction was obtained during life, are not incompatible with an old syphilitic infection. (3) As a rule, if the Wassermann reaction is positive a syphilitic area will be found *post mortem*. (4) In these cases of latent syphilis with positive reaction the only syphilitic lesion discovered may be an old scar, and therefore it cannot be taken as proved on anatomical grounds that an active virus is present, necessitating active antisyphilitic treatment. On the other hand, the possibility of the presence of an active virus with a consequent need of treatment cannot be excluded. (5) From a positive reaction conclusions as to prognosis are to be drawn only with the greatest care, while a negative reaction can supply only probabilities. (6) In a few cases of scarlet fever (in the author's series cases with uraemia), a fixation of complement may occur. In order to make a differential diagnosis between nephritis after scarlet fever and syphilitic nephritis, different antigens are, according to Bruck, to be made use of and observations made as to whether the complement-binding materials disappear out of the blood. (7) Obviously Wassermann's reaction is a help to diagnosis in medicine, both with respect to the main disease and to side conditions.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

70. Pupil Reaction in Phthisis.

The unequal reaction of the pupils to light in many cases of one-sided lung tuberculosis has been known for a long time, but it is not emphasized in most textbooks because it is seldom observed, and has not been considered reliable for diagnostic purposes. Geza Fodor (*Wien. med. Woch.*, No. 11, 1910), after examining cases during several years at the sanatorium at Abbazia, has come to the conclusion that this unequal reaction can be shown to be present in the great majority of cases if it is looked for under right conditions. The light must not be too strong—a half light is most satisfactory—the eyes must be kept covered somewhat longer than usual in testing the pupil reaction, and the exposure to light afterwards must not be too prolonged. Even with these precautions the difference may be scarcely noticeable, and several observations may be needed to make sure of the result, but as a rule the difference is obvious, and it will be found that on the side of the affected lung the pupil reacts more slowly than on the other side. If the light be too strong or the exposure too long the difference will not necessarily appear. The difference of reaction does not appear to depend on the severity or extent of the disease and is often present before any changes can be detected in the lung on physical examination. The author suggests that the cause of the phenomenon is an irritation of the thoracic portion of the sympathetic, giving rise to a spastic mydriasis, but that the irritation may not be strong enough in intense light to overcome the hypertonus of the sphincter pupillae. A similar difference in pupil reaction can be caused by any other thoracic affection involving one side only, as for instance by tumour, aneurysm, pleurisy, etc. The author looks upon the pupil reaction as a valuable and easily available method of early recognition of phthisis.

71. Cervical Rib.

Osler (*Amer. Journ. of Med. Sci.*, April, 1910) records certain vasomotor, sensory, and muscular phenomena associated with cervical ribs, illustrated by brief notes of 3 cases. In the first, that of a woman aged 31, arterial pulsation above both clavicles, most marked on the left side, had been noticed for about twelve years, giving rise to a diagnosis of aneurysm. Latterly when using the left arm for a short time a sensation of numbness and of pins and needles resulted, and, if continuing to work, the skin became red and the arm swollen and hot, followed by complete inability to use it. At rest the arm felt natural and she could do ordinary work with her fingers, the above symptoms only arising when she used the limb. The supraclavicular pulsation was most marked on the left side, and after exertion or in the erect posture the supraclavicular space appeared to be fuller than the right, and a marked pulsation occupied the whole of the lower triangle. The swelling was slightly tender, and on deep pressure a resistance suggestive of a cervical rib was noticed. A systolic murmur was present over the vessel on the left side, but none on the right, and the radial pulses were equal. *X* rays showed a well marked cervical rib on both sides, the right being the larger. In the second case, that of a healthy man, aged 48, there was inability to work with the right arm for more than a few minutes, the whole limb becoming congested, dusky, and swollen, with numbness and tenderness, and the veins standing out prominently. When at rest it felt quite normal, and the radial pulses were equal; but after exertion the right radial became small and almost imperceptible. The congestion and swelling rapidly disappeared if the arm was held up over the head. In the third case, that of a woman aged 38, redness, pain, swelling, and stiffness of the right arm were complained of on exertion, but at rest the arm appeared perfectly normal and caused her no inconvenience. The symptoms had persisted at intervals for several years, and had prevented any continuous work for any length of time. The last two cases were not *x*-rayed, but as their symptoms were identical with those of the first case it is probable that these were due to the presence of cervical ribs. Resembling closely the condition known as intermittent claudication, with the symptoms only coming on after exertion, in many cases the subclavian artery has been compressed in the angle between the rib and the scalenus anticus. When at rest, or on merely slight exertion, the circulation is maintained; but the demand for more blood on exertion is not met, and vascular changes follow, with stiffness and numbness.

72. Chronic Paroxysmal Facial Neuralgia.

Boutin (*Gaz. hebd. des sci. méd. de Bordeaux*, May 15th, 1910) reports two cases of facial neuralgia resembling Trousseau's "tic douloureux," in which the pain was so severe and the condition so miserable that life was not worth living and suicide was contemplated. The first was a Paris tradesman, who suffered horrible pain from a spasmodic neuralgia of the face, beginning at the level of the right inferior dental nerve, the slightest movement of the face in speaking or eating setting up a paroxysm, caused also by the most gentle touch upon the lips. This had lasted for a year, and had been treated as the beginning of some central lesion: but all remedies were in vain, and a voyage round the Mediterranean left him still suffering as much as ever, and so emaciated that his friends hardly recognized him. Seeing that there was a history of caries complicated by periostitis three years previously, Boutin thought the neuralgia might be peripheral in origin, and tried local injections of a 2 per cent. solution of cocaine, which caused instant amelioration of the pain and restricted its extent. Two further injections of alcohol resulted in a complete cure, and the patient returned to his work, feeling that a miracle had been performed. The second patient, aged 66, with an arthritic history, had lost all his teeth without caries or pain, and he was suddenly seized while walking in the street with a violent pain in the left side of the face so severe that he could hardly make his way home again. In his case, also, alcohol injections resulted in a complete cure after many other remedies had been tried in vain.

73. Differential Diagnosis between Gastric Ulcer and Cancer.

E. Fabian (*Deut. med. Woch.*, March 24th, 1910) has repeated the experiments of Grafe and Röhmer with the ethereal extracts of the gastric contents. According to the two observers, the gastric contents after a trial breakfast contain a substance which acts haemolytically in cases of carcinoma. The authors found that in 23 out of 28 cases of cancer of the stomach haemolysis was obtainable. In the other 5 cases, all of which were advanced cases of carcinoma, he failed to obtain haemolysis, but could find no explanation for this behaviour. Lymphosarcoma yielded positive haemolysis. In 5 out of 7 cases of gastric ulcer no haemolysis was obtained, nor did he get haemolysis in other benign affections. In all he tested 28 cases.

74. Infantile Obesity.

Hutinel (*Journ. des prat.*, March 26th, 1910), observing that the chapter on obesity has been entirely rewritten within the last few years, points out that infantile obesity is now always recognized to be pathological, and is to be looked for among the descendants of the gouty, the diabetic, and those subject to gravel. Alterations in the blood glands form one very fertile cause of obesity, castration, or the diminution or removal of the thyroid resulting in considerable increase of bulk; whilst affections of the pituitary gland and enlargement of the sella turcica have caused real obesity as well as myxoedema. Out of ten obese infants, eight had parents with sugar in the urine, and children so affected often themselves show intermittent glycosuria. The treatment is chiefly dietetic, but extracts of the thyroid or pituitary gland may also be employed, although always with caution.

SURGERY.

75. Duodenal Obstruction in Cases of Hernia.

Delagenière (*Arch. prov. de chir.*, No. 3, 1910) states that it has often happened in his own practice, and doubtless in that of other surgeons, when operating on a large inguinal hernia presenting in a marked degree the

symptoms of strangulation, to find, after opening the sac, the intestine in a perfectly healthy condition, and quite free at the usual seats of hernial constriction. In such cases the bad symptoms usually disappear at once after the operation, and recovery results, just as after an ordinary intervention for actual strangulation. The author is of opinion that in cases of this kind the symptoms are due not directly to the large hernia, but to occlusion of the duodenum. He gives the details of an instance in support of this view. A man aged 67 years, who was the subject of a very large irreducible hernia, came under treatment with symptoms of sudden and severe obstruction. Although these symptoms indicated an internal lesion near the stomach, and the external hernia was soft and free from pain, kelotomy was performed, and the contents of the sac, which did not present the slightest signs of congestion, were freed of their adhesions and reduced. The chief point in this operation, which was followed by rapid recovery, was the presence within the sac of a wide band of mesentery, which was tightly stretched by the weight of the voluminous contents of the hernia. In the comment on this case reference is made to an anatomical experiment by Albrecht, who found that occlusion of the duodenum could be effected by traction on the mesentery in the vertical axis of the body. The author concludes with a brief summary of his views on this complication of high intestinal obstruction with external hernia. Very large inguinal herniae may, he states, be complicated by duodenal occlusion caused by certain changes in the contents of the sac, such as congestion, inflammation, descent of another intestinal loop, or, in fact, any altered condition that might lead to forcible traction on the mesentery, and thus realize the results of Albrecht's experiment. If the complication be recognized the surgeon should operate at once on the inguinal hernia, although it may not present any local signs of strangulation, as it is only by reducing its contents that he can hope to relax the mesenteric tension, and thus relieve the symptoms of duodenal occlusion.

76. Bismuth Poisoning in Surgical Practice.

BECK (*Zentralb. f. Chir.*, No. 17, 1910) directs attention to the fact that in the course of the last twelve months many instances have been recorded of serious and, occasionally, of fatal results from the use of bismuth paste in the local treatment of suppurating cavities and fistulae. Reich of Tübingen has collected 16 cases with 7 deaths, and of 3 cases recently put on record by Matsuoka 2 were fatal. The earliest symptom of the chronic form of poisoning caused by the slow and prolonged absorption of bismuth by a suppurating surface is a pale livid tint of the skin. This is followed by an eruption of small, bluish ulcers on the gums. The further progress of the poisoning is marked by nausea, headache, vomiting, and albuminuria. In advanced cases the ulceration of the gums increases, and the patient becomes emaciated, and gradually succumbs. The author, who in his own practice observed cases of the kind, states that the bad results of the slow absorption of bismuth may be prevented by constantly looking out for the appearance of the early signs of the poisoning, and if any of these be manifested, by injecting into the cavity still occupied by the bismuth paste some warm and sterilized olive oil, which is allowed to remain from twelve to twenty-four hours, and until it has formed an emulsion which can be removed by aspiration. The use of bismuth paste is contraindicated in cases of acute suppuration, particularly empyema, as absorption so readily occurs at the fresh inner surface of the suppuration. On the other hand, in old abscess cavities with thick and fibrous walls with much diminished capacity for absorption, the paste may be applied with but slight risk. The maximum strength of the paste used by the author is 33 per cent. When the secretion becomes sterile, the paste containing this proportion of bismuth is withdrawn and replaced either by a 10 per cent. paste or by sterilized vaseline.

77. Treatment of Acute Otitic Meningitis.

DENCH (*Amer. Journ. of Med. Sci.*, February, 1910), from a study of the literature and from personal experience, discusses the various operative procedures in the treatment of acute otitic meningitis. Prophylactically in acute middle-ear inflammation prompt drainage should be obtained by early and free incision of the drum, thus lessening the possibility of extension inwards to the cranial cavity. Should such extension have occurred, with symptoms of meningitis, the primary focus of infection must be eradicated either by the complete mastoid or the complete radical operation, according as the case is secondary to an acute or chronic otitis media. Since the inflammatory process usually extends to the meninges through the labyrinth any fistulous tract in the external labyrinthine wall should be sought for, enlarged, and thoroughly drained. Fistulae are most common in the horizontal semicircular canal, but infection may occur through the superior or posterior canals, or through the oval window; and in the latter case drainage of the vestibule should be obtained by enlarging this opening. At the same time, if there are marked meningeal symptoms indicating an increased intracranial pressure, lumbar puncture should be performed for its relief, and repeated if necessary. In a certain number of cases where the foramen of Munro has become blocked, lumbar puncture fails to relieve, and in such cases, where the meningeal symptoms are urgent, a decompression operation should be performed at the time of the primary operation. This is best done by an incision extending upwards, forwards, and downwards from the upper extremity of that for exposing the mastoid to a point just behind the external angular process of the frontal bone exposing the temporo-sphenoidal lobe over an area of 3 in. longitudinally and 2 in. vertically, its base being exposed by extension of the opening downwards and backwards. The dura should be opened by two crossed incisions 1½ in. in length, allowing free drainage of the subdural space, and expansion outwards of the brain substance in the event of distension of the lateral ventricles. It may be necessary, in addition, to perform a similar decompression operation over the cerebellum by a horizontal incision from the upper extremity of the mastoid incision backwards to the median line. Should drainage of the lateral ventricles or of the fourth ventricle be necessary two thin-bladed retractors should be passed into the ventricle through the incision in the brain substance and the fluid gradually evacuated by separating them slightly. A folded rubber tissue drain can then be inserted between the retractors and left *in situ* after their removal, and this secures slow and regular drainage, and is preferable to either gauze or tube drainage. Unless the symptoms are extremely urgent the opening of the ventricles should be delayed for twelve or twenty-four hours after the decompression operation in the hope that the incision into the dura may relieve tension and that the effused fluid may be absorbed.

OBSTETRICS.

78. Post-partum Haemorrhage.

F. WEBER, writing from Döderlein's Clinic in Munich, deals with the treatment of sudden profuse haemorrhage during the birth of the child, be it in the third stage of labour or after the completion of the delivery of the placenta (*Muench. med. Woch.*, May 17th, 1910). Mild forms of bleeding may be controlled by massage of the uterus and utero-vaginal irrigation with hot 1 per cent. solutions of lysol; but when the uterus refuses to contract in spite of these measures, a large number of manipulations may be carried out. In the author's opinion, tamponage with iodoform gauze is the most certain and most expedient of these. He briefly mentions a number of other measures, only to pass them over as insufficient or uncertain. Plugging the uterus and vagina with gauze must be carried out with care and skill to ensure success. He describes the technique briefly. A flat speculum is inserted into the vagina, the os is seized with a pair of Winter's forceps and drawn down. The gauze is then plugged firmly into the cavity of the uterus, care being exercised that the angles at the opening of the tubes, and, indeed, every corner, is filled. After this has been completed, the vagina is also plugged. The tampon is allowed to lie undisturbed for six hours. At the end of this time the uterus is nearly always firmly contracted and the haemorrhage finally arrested. The tampon acts, first, as a foreign body, by stimulating the uterus to contract, and secondly by coming in contact with the bleeding surface, and thus inducing the formation of a thrombus. When undertaken with sterile instruments and satisfactory assistance, he is convinced that the method is free from danger. During the course of nine years 82 cases have been dealt with in this way. Of these 8 have died of the haemorrhage, the plugging arresting further bleeding, but too late; 3 died of intercurrent affections, and 1 of puerperal infection. The last case is the only one in which the method might have caused the fatal termination; but inasmuch as the patient had already lost 2,200 grams of blood before the plugging, it is necessary to consider the effect of such a loss in reducing the resistance against infection. Next he deals with Momburg's

method of compressing the aorta by means of a rubber tube applied tightly around the abdomen. This measure has proved to be free from danger, and yields good results. In a few cases, although the femoral pulse could be obliterated, the bleeding persisted. He suggests that this may have been due to a loading of the intestine. In any case, the ease and rapidity with which the tube can be applied induces him to recommend this method, and, if it should fail, tamponage can be resorted to as a last resort.

79. Treatment of Puerperal Mastitis.

SCHWARTZ (*Prog. méd.*, February 26th, 1910) indicates the modern treatment, prophylactic and curative, for mammary abscess during lactation. If the patient should be seen in the stage of simple distension and congestion, with a moderate degree of lymphangitis of the skin, attempts should be made to prevent the glandular infection which is the next stage in the infective process. The first thing is to establish a routine procedure of scrupulous cleanliness, carefully washing out all the crevices in the nipple before and after each time of suckling. Should fissures be present, a nipple shield should be used to facilitate their healing, but the feeding of the child by the breast should not be discontinued. If, however, this should be found necessary, or if the breast should be distended and painful, the whole gland must be carefully supported and compressed by means of a firm bandage, applied over a thick layer of cotton-wool, and the infected milk pressed out by gentle, patient manipulation from the base towards the nipple twice a day. If pus forms it must be evacuated, but instead of the long incisions formerly employed, it is quite sufficient to make one or, preferably, two small openings, just large enough to admit of drainage, and all done under local anaesthesia. Aspiration of the pus must then be practised twice daily by means of a specially adapted bell glass, fitted with any suitable means of exhausting the air within it: and in a few days cure takes place without the risk of general anaesthesia, and without mutilating the breast by the long incisions formerly required.

GYNAECOLOGY.

80. Rupture of Uterine Myoma: Intraperitoneal Haemorrhage.

MEREDITH LITTLER (*Journ. Obstet. and Gynaec. of the Brit. Emp.*, May, 1910) says that it is very rare to find actual laceration or rupture of a myoma from external violence, such as a blow or a fall, with extravasation of large quantities of blood into the peritoneal cavity. He reports such a case. A shop assistant aged 43, anaemic and neurotic, had for four or five years before the accident noticed a gradual increase in the size of the abdomen, with some dragging pain, for which she had worn a belt; there was no increase in the menstrual flow, and no abnormality in the bladder function. One evening she tripped and fell heavily on the asphalt walk; she experienced severe abdominal pain, but was able to walk with assistance to the house where she lived, and was put to bed. She suffered intense pain all night, with vomiting and a great desire to go to stool; she was relieved by morphine, and sent to hospital the next morning. The abdomen was distended, tender, and rather hard; she was blanched, with a pulse of 112. Laparotomy was performed. The peritoneal cavity contained at least a pint of blood, and a tumour consisting of a large subserous fibroid was delivered. It was found to have a vertical laceration on its anterior surface about three inches long; there were no adhesions, it was floating freely in the abdominal cavity, attached by a broad flat pedicle, with large vessels coursing in it. On removal it weighed over six pounds. The tumour was mainly firm in consistence, but there was a softened area on its upper surface. In this situation was noticed the laceration, involving one of the large veins which coursed superficially over the tumour, and communicating with a necrotic cavity in the upper part of it.

81. Transplantation of the Ovaries.

HIGUCHI (*Archiv f. Gynäk.*, vol. xci, part 1, 1910), as the result of original research and of consideration of the work of others, concludes: (1) That in autoplastic transplantation the ovaries may maintain their functions in spite of several changes, more especially great diminution in size. The mucosa and glands of the uterus become hypoplastic, but the muscular coat degenerates externally. The mucosa of the Fallopian tube and also of the vagina likewise undergo hypertrophy, but never to the extent detected in the uterine horns. (2) That in transplantation of the ovaries to another female of the same species (Higuchi exchanged ovaries in more than one pair of female rabbits) the condition is different. Examining them and comparing them with the autoplastic series, after the same space of time succeeding the transplantation, he found the heteroplastic ovary either greatly changed, with atrophic conditions manifest in their elements, or else completely shrunken. The uterine mucosa and glands were also atrophied, and the degeneration was manifest in the muscularis. The process of atrophy extended to the surrounding connective tissue and to the Fallopian tube. The cervix and vagina underwent atrophy more slowly. (3) That ovaries transplanted to males become completely atrophied.

THERAPEUTICS.

82. Vaccine Therapy in Colon Bacillus Infection of the Urinary Tract.

BILLINGS (*Amer. Journ. of Med. Sci.*, May, 1910), from a study of bacteriuria during the last five years, urges the value of colon vaccine therapy in those cases due to the colon bacillus, comprising as they do more than 50 per cent. of all cases of bacteriuria. Colon bacilluria may be unattended by symptoms or may give rise to dysuria, and, when associated with morbid changes in the urinary tract, may be either causative or closely related to the accompanying disease process. Since the disappearance of the bacteria from the urine is coincident with the relief of all symptoms of bladder irritation, the colon infection must be regarded as the chief cause. While the bacilli may gain entrance to the urinary tract per urethram, the gastro-intestinal tract is the most usual source, obstinate constipation or diarrhoea, with some lesion of the intestinal mucosa, rendering the intestinal wall pervious to the organism. In the treatment of this condition with autogenous vaccines, the agglutination, opsonic index, bacteriolysis, and leucocyte blood reaction were studied in each patient when possible. In two patients, where the colon bacillus infection was associated with tuberculosis of the urinary tract, the dysuria and fever were almost entirely relieved by the disappearance of the colon infection after autogenous vaccination. Improvement may occur under treatment in all cases; but if there is stagnation anywhere in the urinary tract a complete recovery can hardly be looked for unless this can be cured by surgical interference or otherwise. Since the bacilli from different cases of bacilluria differ in size, luxuriance of growth, etc., autogenous vaccines are desirable, and cultures can be easily made from the urine, even after it has been sent considerable distances to a laboratory for that purpose. The vaccine may be made by heating the culture to 60° C. for thirty minutes, thereby killing the bacilli; and fresh suspensions should be used, as those more than a fortnight old may not give the same results. The first vaccination is usually made with 200 million bacilli, subsequent dosage being increased until a decided local or general reaction occurs. The maximum dose was 1,000 millions, and with some patients it was found that smaller doses (5 to 100 millions) produced sufficient reaction for curative purposes without risking too great a reaction. Absolute rest, milk diet, and plenty of fluid accompanied the treatment, thereby reducing the risk of chill and making recovery more certain. The local reaction consists of redness, tenderness, and swelling over an area 2 in. square at the site of injection, commencing two hours after injection, reaching a maximum in twelve to eighteen hours, and gradually disappearing in forty-eight to seventy-two hours. The general reaction of malaise—aching, headache, and fever—usually occurs in from two to twelve hours, and is accompanied by an increase in the opsonic index. While the colon bacillus infection of the urinary tract is thus frequently a cause of local and systemic disease, its relation thereto should be proved by agglutinative, phagocytic, bacteriolytic, and other tests, and the exclusion of other possible sources of infection before treatment is commenced.

83. The X Rays in Tuberculous Enlargements of the Lymphatic Glands.

KIENBÖCK, of Vienna (*Arch. d'élec. méd.*, April 10th, 1910) gives particulars of his technique in treating enlargements of the lymphatic glands (tuberculous) with the *x* rays. A simple tuberculous non-suppurating lymphoma diminishes in size rapidly after an energetic exposure, and this is also the case with generalized enlargements,

or pseudo-leukaemia, of a tuberculous nature. After an intensive irradiation the ganglionic masses in the cervical, axillary, and inguinal regions diminish in size and become softer, a notable reduction being obtained often within a week or two, while intra-thoracic and intra-abdominal lymphomata (mesenteric and retroperitoneal) yield more tardily, owing to the difficulty of ensuring a proper dosage in the deeper regions. Even before the lessening of the tumours becomes noticeable there is an improvement in the associated conditions of obstructive dyspnoea, coughing, and trouble in deglutition. Fatigue, lack of appetite, and fever also abate rapidly. A series of energetic irradiations produces, generally speaking, an effect which continues for several weeks. If a period of from three to seven weeks has elapsed since the first irradiations, and the decrease in size is insufficient, a second series may be attempted. Relapses, however, are fairly frequent, and although in a proportion of relapsing cases—one-fourth to one-eighth—radiotherapy may still save the situation, yet in the course of time the agent loses its virtue, and the lymphoma continues its progressive evolution. In such cases while the rays do not prevent, they may postpone, a fatal termination. As to technique in general, Kienböck advocates rays numbered 6 on the Benoist radiochromometer, and elects 20 cm. or 30 cm. as the focal distance for the tube. He employs filters of aluminium, glass, or leather. The region involved is irradiated as far as possible on its several sides, and as a general rule the maximum superficial dose (otherwise called normal dose, or erythema or epilation dose) is given. It is desirable that the full dose should be administered at a single sitting, but on occasion particular regions may be exposed on consecutive days. The normal dose is measured by the radiometer of Sabouraud and Noire, but the precipitation radiometer of Schwarz is also recommended for this purpose. Not only the manifest lymphomata but also the suspected regions are irradiated. Regard must be had, however, to the radio-sensibility of the tumours, which varies very considerably. Kienböck thinks that the rays act directly by producing an arrest of the cellular activity of the lymphoid tissue.

84. Tetanus Antitoxin.

J. CHATTOL (*Prov. méd.*, February 19th, 1910) discusses the value of antitetanus serum—first, when used as a preventive, and, second, as a curative measure. Fifty-one cases are on record in which the preventive use of the serum appeared to fail. From these have to be subtracted 14 cases in which an error of diagnosis was made, and a pseudo-tetanus due to the serum was mistaken for true tetanus; pseudo-tetanus may be very deceptive, because in it tempero-maxillary arthritis may cause trismus, vertebral arthritis may cause rigidity of the neck and vertebral column, and arthralgia may cause muscular phenomena mistaken for tetanic contractures. In another set of observations the data supplied were so inadequate as to deprive the cases of value in evidence. In other cases the dry serum was incorporated with the dressing applied to the wounds—a method which is ineffectual. Finally, passive immunity cannot be counted upon for longer than eight days after an injection, and therefore cases which have arisen after a longer interval cannot be considered as failures. This leaves unaccounted for 12 cases in all, and it has, therefore, to be admitted that the serum given as a preventive may sometimes fail. Some of the unsuccessful cases may depend upon the variable length of incubation period, the serum having been given too late in those in which the incubation period happened to be short. Or, again, it may be that a second injection, as in suppuration at the seat of a fracture, in phlegmon or gangrene, etc., may induce a condition which is unfavourable to the preventive action of the serum. Some of the most striking figures in favour of the preventive use of the serum come from America, where, in connexion with the festivities of July 4th, a certain number of accidents invariably occur, with, formerly, a considerable mortality due almost altogether to tetanus. Wells reports that in 1903, before the introduction of preventive serum treatment, there were 406 such cases of death from tetanus, but that in the succeeding four years tetanus did not develop in any cases in which the serum was used. Scherk, of St. Louis, gives figures from his own practice which are equally conclusive. Other cases which show the value of the serum are laboratory cases of accidental infection which have been successfully treated with antitoxin. The practical conclusion is that in all cases in which there is reason to fear the onset of tetanus the preventive treatment should be begun as soon as possible, large doses of the serum being given at first, and the treatment being continued until the wound has completely healed. Vallas recommends three injections of 10 c.cm., to be made respectively on the first, third, and tenth day, and subsequently an injection every eighth day. The injection should be made either subcutaneously or, better, should be made directly into a vein, a method which, according to the author, avoids the danger of accidents due to the serum. As is well known, the serum treatment begun when the disease has well developed does not give nearly such good results; but taking all the different methods of administration together, with the exception of the intracranial method, in which the mortality is very high, the mean mortality is less when serum is used than otherwise. Only three methods of introduction are to be recommended—namely, the subcutaneous, the intravenous, and the method by lumbar puncture. The author, in conjunction with Cl. Gautier, has injected the serum into the carotid arteries of rabbits and has had promising results.

85. Treatment of Measles.

SERVOSS (*Pediatrics*, April, 1910) considers that the true etiological factor of measles has not been fully determined as yet. Uncomplicated measles is not a disease to be dreaded, though in unhygienic surroundings or among patients with the strumous diathesis or disposed to tuberculosis serious results may be anticipated. In caring for these cases particular stress is to be laid upon good hygiene. A warm, well-ventilated darkened room is required. The air should be kept moist by the liberation of steam which has a tendency to relieve the cough. The bowels should be thoroughly cleared out at the outset by the administration of calomel and podophyllin, followed by an effervescent saline carrying 60 per cent. of pure magnesium sulphate. After clearing the bowels they should be kept clean by the use of sulpho-carbolates. To control the fever a combination of aconitine gr. $\frac{1}{134}$, digitalin gr. $\frac{1}{67}$, and strychnine arsenate gr. $\frac{1}{134}$ should be given to effect. In using this combination Shaller's rule of administration to children should be followed: One granule of the above, or any other active principle for each year of the child's age, and one additional granule dissolved in 3 oz. of water, the dose being a teaspoonful of the solution at such intervals as may be indicated to obtain the desired effect. For the cough emetine gr. $\frac{1}{67}$ should be exhibited at hourly intervals or oftener, bearing in mind not to produce nausea but to bring the action almost to that point. Codeine gr. $\frac{1}{67}$ will relieve the irritation and overcome the tendency to cough. Owing to the absence of leucocytosis, nuclein is indicated from the beginning, the dosage being 10 drops or more per day, divided. Where there are pulmonary complications veratrine is especially valuable. To bring forth a tardy eruption a cold pack and powerful stimulation of the vitality is necessary. In this connexion a combination of glonoin, atropine, and strychnine valerianate, each gr. $\frac{1}{250}$, and capsicin gr. $\frac{1}{67}$ every ten minutes will be followed by prompt reaction. This treatment is also useful in haemorrhagic cases where the vitality is low. As in all infectious cases, calcium chloride is indicated, and should be given to full saturation, it having been found that where it is pushed to full effect there is a tendency to abortion of the pronounced symptoms. This agent should be given until its action is apparent by the sulphurous odours emanating from the mucosa, skin and secretions. The action of the calcium chloride is to overcome infection, and it does so if pushed to its full effect. Complications should be met and treated symptomatically as they occur.

PATHOLOGY.

86. Bactericidal Action of Ultra-Violet Rays.

BORDIER AND HORAND (*Arch. d'élec. méd.*, April 25th, 1910) have studied the respective actions of ultra-violet rays and x rays upon bacteria seen under the ultra-microscope. Experiments have been made upon the various micro-organisms found in the serous fluid of certain ulcerating cancers, one preparation being submitted to the Kromayer lamp and a similar one to the x-ray tube. It was found that the movements of the bacteria irradiated by the ultra-violet rays were arrested, whereas with the x rays, even with large doses, the movement was unimpeded after irradiation. The micro-organisms included *Bacillus coli*, streptococci, and staphylococci. The bactericidal action of the ultra-violet rays was obtained with 10 units of the Bordier chromo-actinometer. The quantity of x rays was as great as 14 H., with rays 8–9 Benoist.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

87. Mitral and Aortic Endocarditis during Scarlatina.

Nobécourt (*Journ. des prat.*, May 7th, 1910) relates the case of a little girl of 6, admitted to hospital on December 15th last suffering from scarlatina of several days' duration. Soon after her admission a double otitis manifested itself, and about a month later aortic insufficiency. Pericardial friction was also noticed very clearly for some days, but rapidly disappeared. On January 22nd the child was attacked by varicella. On examination at this time there was to be noted a systolic murmur at the apex, propagated towards the axilla, and at the base of the heart a diastolic murmur propagated along the right border of the sternum. Such lesions are not frequent accompaniments of scarlatina. The heart is often enough affected in the graver forms of scarlatina, but more especially in respect of the myocardium rather than the endocardium. Lesions of the latter or of the pericardium are much more rare. It is not sufficient to prove the presence of endocarditis in a child attacked by scarlet fever—the lesion must be due to the disease. An endocarditis already clearly marked in the early days of the illness is nearly always attributable to a prior infection. In the present case the heart was perfectly free for quite a month after the commencement of the illness, and the evolution of the lesions of the cardiac valves have thus been followed step by step. The more frequent pathological cause of the endocarditis is the streptococcus, and the rapid evolution of the lesions is one of their most interesting features—a marked contrast to the slower development of similar lesions in rheumatism. The pathological anatomy makes these differences clear. In rheumatism the endocarditis is plastic, while that occurring in the course of scarlatina is ulcerative, and soon causes definite loss of substance. The pericarditis present is of serious moment, for in the case of scarlatina it nearly always becomes purulent. The prognosis is grave, for the double cardiac lesion in this case will never clear up.

88. Primary Multilocular Echinococcus of the Brain.

Emanuel v. Hibler (*Wien. klin. Woch.*, No. 8, 1910) describes a case of the above condition which is of great interest because of its rarity. The patient was a labourer, 35 years of age, who came from Taxenbach in Salzburg, a neighbourhood from which Posselt had previously reported some cases. The patient died in the Innsbruck Hospital, to which he had been admitted about two months before his death. The whole duration of the illness was about 1¾ years. The first sign of the disease was the sudden onset of an apoplectiform attack, followed by twitching and later by loss of power in the right arm and leg and side of the face, by severe pain in the head, over the left ear, and by vomiting. The patient completely recovered from this attack, and also from a second which occurred some months later, the treatment in both attacks being inunction with grey ointment, but in a third attack treatment was less successful, and in a fourth had hardly any effect. The condition as observed in the hospital is described in connexion with the lesions found at the *post-mortem* examination. The final diagnosis was based upon the autopsy, and was of an extensive alveolar echinococcus growth in the left hemisphere of the cerebellum in the left parietal lobe and the right occipital lobe of the cerebrum, and in addition a similar growth in the middle lobe of the right lung. Almost all of the left hemisphere of the cerebellum was taken in by a tumour consisting for the most part of very small cysts, some of the size of a hempseed only, with other bigger ones up to the size of a cherry. In the growths in the cerebrum there were projections about the size of a two-Kröne piece, which appeared to have been formed from an amalgamation of neighbouring small cysts. A full description of the echinococcus growths is given. Among the signs and symptoms observed at the hospital and referable to the growth in the parietal lobe of the cerebrum are the following: Great tenderness of the region above the left ear extending forwards, paralysis of the right side of the face, and a varying amount of hypaesthesia extending from the eyelids downwards. The joint movements were free, but the strength of flexion of the lower limbs was diminished. On bending the head backwards there was pain in the muscles of the neck; the right masseter was badly contracted. Later on the patient had an attack of great pain in the limbs of the right side and in the muscles of the neck, and a prominence of the neck muscles on the right side developed, together with great tenderness on pressure; pain on movement of the head persisted. The hypaesthesia on the right side of the face spread later over the forehead, and the corneal reflex on that side was lost. In walking the patient made uneven steps. Some loss of sense of smell was observed on the right side, but it is very doubtful whether it could be connected with the cerebral growth. The chief symptom referable to the growth in the occipital lobe of the cerebrum was the sensation of dazzling of the eyes. The symptoms referable to the growth in the cerebellum included great giddiness and ataxia; the position in lying was also a forced one, the patient always lying on the right side, rather on his face, and with the head supported by the left hand. It seems probable that all the four embryos had been ingested at the same time, and that the three had reached the brain by way of the circulation.

89. The Cutl-Reaction in Typhoid Fever.

Ciuffini (*Gazz. degli Osped.*, No. 20, February, 1910) has tried the above reaction in 5 typical cases of typhoid (all giving a positive Widal reaction) and failed to get it in a single case. In case the toxin used and prepared by Ciuffini might not have produced a skin reaction on account of some deficiency in the method of production, some was injected into the conjunctiva of certain typhoids and found to produce a typical reaction. The author's method of preparing his toxin was not that recommended by Chantemesse. Ciuffini prepared his toxin as follows: The twenty-four hours growth of an active culture of Eberth's bacillus was emulsified in distilled water, placed in an ordinary centrifugal machine for twenty-four hours and then filtered across a Berkefeld filter.

SURGERY.

90. Artificial Pneumothorax for the Cure of Phthisis.

Fortanini (*Rif. Med.*, May 16th, 1910) gives his further experience in the treatment of phthisis by means of the artificial production of pneumothorax and the introduction of nitrogen. He first discusses two chief risks of the operation—(1) pleural eclampsia; (2) air embolism. The second is a bugbear which need hardly be feared. As to the first, it is quite true unpleasant, and even fatal, accidents have followed thoracentesis, and they are probably of a reflex nature, the pleura being exceptionally sensitive in this respect. However, serious accidents are rare—for example, during last year 1,454 thoracenteses were performed, with only four complications, and of these four only one was of any consequence. As to the production of pneumothorax as a cure for phthisis, the author has treated 89 cases in this manner. When the pleura is completely adherent all over, no good results are to be expected; with partial adhesion (the commonest class) good results may be expected; in a third group of cases where no actual adhesion can be made out, but where the mobility of the pulmonary margin is absent, the results are doubtful. Some details as to the operation are given (the nitrogen should be admitted at a low pressure, 10 to 12 c.cm. of water), and a sketch of the apparatus used. Laryngeal phthisis is no bar to the treatment, and the author quotes some cases where the suppression of the function of the lung and the freedom from cough, and hence the absence of reinfection from expectoration, definitely cured the laryngeal trouble. Experience shows that the lung in most cases eventually re-expands. Apparently disease on both sides is not a contraindication, and the author quotes a case where a double pneumothorax was induced in successive years for bilateral disease. No statement is made as to how many of these 89 cases (86 really) were cured, but the whole tone of the lecture suggests that the results were eminently satisfactory.

91. Chronic Invagination of the Large Intestine in a Child.

Acute intestinal invagination is by far the most frequent type of the occurrence in early childhood, but Jouon (*Rev. Française de med. et de chir.*, December 10th, 1909)

relates a case of chronic invagination in a little girl of 6. The symptoms resembled at first those of muco-membranous enteritis—profuse diarrhoea, with twenty-five to thirty stools a day, abdomen rather flat, tender along the course of the large intestine, no rise of temperature, and acute attacks of colic. A copious repast of gooseberries and uncooked sorrel was reported as the starting point of the illness. These symptoms continued much the same, with alternate ameliorations and exacerbations, for about a month, towards the end of which time a solid mass, the size of a Tangerine orange, could be felt towards the left, above the umbilicus. In a couple of days this had disappeared, and for a fortnight all seemed to be cured. Then, following upon the ingestion of a large quantity of bread, the symptoms came back again, the colic worse than before, and the attacks more frequent, but without vomiting or rise of temperature. The tumour felt before was more distinct and more elongated, but the spontaneous reduction of the former attack led to the hope that this one would also pass off without interference. Without any rise of temperature or vomiting, a prolapse of the rectum suddenly took place, and an operation became urgent. The opening of the abdomen revealed a complete invagination of the whole of the large intestine, which, when reduced, showed a diseased appendix at the core of the intussusception. This was removed, and the abdominal wound closed in three layers. The case progressed satisfactorily, a rise of temperature on the sixth day being ascribed to the absorption of septic matter from the intestine; and three months afterwards the patient was a different child, rosy and robust as she had not been before. The diseased appendix, which presented all the appearances of chronic appendicitis, was evidently the cause of the intussusception, and its removal, in such cases, obviates any necessity for further interference with the intestine. The low mortality in chronic cases contrasts forcibly with the extreme gravity of acute invagination in childhood.

92. Repair of Osseous Defects by Muscular Grafts.

NÉLATON (*Revue d'orthopédie*, No. 3, 1910) reports a case in which a large cavity, left after removal of a sequestrum from the lower third of the tibia, was filled up by the insertion of a muscular graft. In the first stage of the operation the cutaneous margin of the external fistulous opening was dissected away, and the granulations on the inner surface of the cavity were removed by gentle curetting. A flap, 15 cm. in length and 4 cm. in width, comprising skin, cellular tissue, and a layer of muscle 2 cm. in thickness, was then taken from the postero-internal surface of the other leg. This flap, still attached to the sound limb by a pedicle, was applied to the defect in the diseased leg, the muscular portion being inserted into the cavity in the bone, and the cutaneous portion stitched to the raw margin of skin. The pedicle was cut through on the fifteenth day. The results of this operation were very successful, and when the patient, a man of 26 years, was last seen by the author there was no longer any cavity in the tibia and the appearance of the leg was normal. The method of treating osseous defects by transplantation of bone and periosteum is not, it is held, satisfactory, as its practice is difficult and failure in asepsis will endanger the vitality of the grafts. The difficulty in maintaining perfect asepsis is also an objection to the method of "stopping" the cavity by some inorganic substance. The use of muscular grafts as described in this paper has, the author holds, the advantages of being far more easy than other methods and more likely to succeed in the face of imperfect aseptic conditions.

OBSTETRICS.

93. Sacral Anaesthesia in Labour.

K. MAYER (*Wien. med. Klin.*, March 20th, 1910) has made a trial of Stoeckel's sacral anaesthesia in combination with the application of cocaine to the nasal mucous membrane in 50 midwifery cases. The cases were not in any way selected, except that if a threatening complication—as, for instance, placenta praevia—were present, the injection was not made. Among the 50 cases were 48 head presentations, 39 of which ran a normal course, and 2 pelvic presentations. Forceps were used in 5 cases; perforation was needed in 3 cases—2 of macerated children, 1 of an after-coming head in a narrow pelvis. The injections were made in 15 cases in the first stage of labour, and in 35 in the second stage, the cause of the difference being the different stage of labour at which the patients presented themselves at the clinic. The fluid used for injection was 0.15 gram novocain, 0.000325 suprarenin dissolved in 30 c.cm. of physiological salt solution. The site of injection was through the opening of the sacral canal between the coccyx and pelvis. The procedure differs essentially from lumbar anaesthesia in that the injected fluid does not pass within the dura, but distributes itself between the periosteum of the sacral canal and dura. For the nasal treatment 5 drops of 20 per cent. cocaine were employed. In 40 out of the 50 cases there was a considerable diminution of pain, as judged either by the statement of the patient or objectively by the sudden restfulness observed after the injection, even in some cases in which the patient continued to complain of pain. In about 15 cases the head passed through the vulva without any complaint of pain from the mother, in 10 there was slight pain, and in 5 considerable pain; in the remaining 20 cases the pain seemed unaffected. Stitches were put in seven times without any other narcosis, and in 4 cases the operation was painless. In about half the cases an increase in the intervals between the pains of the second stage was recognizable. Such an impairment of the abdominal press is unavoidable with any of the anaesthetics used for labour cases, and is the result of the diminished pain reflex. In one case very painful cramp-like pains were complained of before the injection, but after it the pains altogether ceased, and to the end of labour only normal pains were experienced. In no case was any harmful effect on mother or child observed. Stoeckel states that the loss of blood is less than normal when this method of anaesthesia is employed, and the fact that there was no case of atony in the series seems to some extent to corroborate his view; in no case either was a catheter needed during the labour. The effect of an injection became evident in from five to ten minutes, and the mean duration of anaesthesia was three hours. The disadvantages which have led the author to abandon this method of anaesthetizing for the present are that the effect is not seen in every case, and that the duration of anaesthesia is limited. In addition to this, a certain lengthening of the duration of the labour is to be expected in a number of the cases.

94. Obstetrical Prophylaxis and Blindness.

RUDAUX (*La Clin.*, March, 1910) points out that much of the blindness in infants is preventable if care is bestowed upon the mother during pregnancy, and upon the child at birth. Ocular troubles which may result in blindness are due to hereditary syphilis, to vaginitis which causes a purulent conjunctivitis. The vaginal discharge is greenish in colour and can be pressed out of the urethral meatus, it has a purulent appearance and is microbic, usually gonorrhoeal in origin. In some cases the condition is not acute, but is an old one which has been lighted up again by the pregnancy. Vigorous therapeutic action is needed. An abundant douche of a solution of permanganate of potash should be given daily for a week, at the end of which time it is wise to examine the cervix with the speculum. It is not uncommon during pregnancy to find the cervix swollen, bright red, and granular. It is often the last place from which it is necessary to dislodge the gonococcus. For this purpose a tampon saturated with a 1 in 20 solution of silver nitrate is introduced gently against the vaginal part of the uterus, so as to fill up the cul-de-sac of the vagina. These applications must be made carefully so that they do not cause uterine contractions. If any such symptoms appear, it is necessary to give an injection of laudanum, 20 or 25 minims in 5 oz. of warm water; it must be gently administered with a syringe. If the uterus is irritable, the application to the cervix may be preceded by a subcutaneous injection of morphine. This treatment should continue during the pregnancy as long as there is any vaginal discharge. During labour the injection of permanganate of potash 1 in 4,000 is given every three hours, or oftener if there has been premature rupture of the membranes. This strict antisepsis of the genital canal infected by the gonococcus not only prevents ophthalmia in the newly born, but protects the mother against *post-partum* infection. The gonococcus in an organism which is responsible for so called puerperal sepsis. In all cases the eyes of the newly-born child should be treated equally thoroughly, whether there has been vaginal discharge or not. After birth, the child having begun to breathe, the eyelids and lashes and surrounding parts should be well cleansed with soap and water, then rinsed and sponged with boiled water; the hands are then disinfected, and the eye opened so that a few drops of fresh lemon juice, or of a solution of nitrate of silver, or of aniodol may be put in. When the child is bathed the face should not be washed in the water in which the baby has been sponged, but should be cleansed with boiled water

and a fresh tampon of cotton-wool. Among cases of hereditary syphilis many affections of the eye capable of producing permanent loss of sight are found, such as iritis, retinitis, irido-choroiditis, and congenital malformations, microphthalmia and congenital cataract, and lesions of the optic nerve. The prophylaxis of these ocular troubles depends upon the use of an antisyphilitic treatment. This treatment should be given to one or both parents as required. In obstetrical practice the disease is probably only recognized after repeated abortions, or the frequent death of the fetus or premature labours. The necessary inquiries should be made so as not to attract attention, and should include the husband, who, when found to be the cause, should undergo six months' treatment before further procreation. The same period of treatment is advised for the mother. When syphilis is recognized in a woman already pregnant, treatment should be begun at once and continued during the whole period of gestation and lactation. A suitable preparation consists of calcium glycerophosphates grams xx, iodide of mercury centigr. x, iodide of potash grams x, and syrup of lemon q.s. This should be taken twice a day for twenty days. A pill of the bichlorate of mercury with extract of thebain is also useful, and subcutaneous injections of the benzoate of mercury give good results. It is recommended to alternate the subcutaneous injections with this pill. Thus the injections of the benzoate can be given for a month, the pills are then taken for two to three weeks, after which ten to fourteen days' rest is advised. An important prophylactic measure is to refuse to authorize the marriage of syphilitic persons until five years after the appearance of the disease and then only after five years of vigorous treatment. Manifestations in the child call for immediate and prolonged treatment.

GYNAECOLOGY.

95. Leucorrhoea.

Walché (*Journ. des prat.*, May 7th, 1910), after referring to the definitions of the complaint of various authors, adopts from the clinical point of view those of Courby and de Pozzi—that it is an exaggeration of, and morbid change in, the normal physiological secretions of the uterus and vagina. The symptoms can be so slight that some women suffer without knowing it. This is sometimes a source of error in diagnosis, because on examining the urine of a patient of this kind one frequently finds albumen, which on further examination is found to be due to the leucorrhoea and not to the state of the kidneys. The discharge varies in amount. It may be a simple oozing, or it may be free enough to cause considerable inconvenience. It is increased by walking, dancing, certain kinds of food, and mental depression. Vaginal leucorrhoea, although not admitted by all, the author believes does exist. The discharge is fluid, whitish and milky, and stiffens linen. It results from desquamation of vaginal walls, and is acid in reaction. Uterine leucorrhoea is much more important, and results from the hypersecretion of the cervical glands, in which the discharge is like white of egg, transparent and gelatinous, and from the body of the uterus in which it is yellowish-white, and more viscous in character. It also stiffens linen. In pathological conditions the secretion usually becomes greenish-yellow, and purulent, with an alkaline reaction. In spite of its commonplaceness leucorrhoea sets up numerous complications, the variety and seriousness of which, however, the older writers have rather embellished. But the irritation of neighbouring parts in particular is not merely the fruit of imagination. The patient complains of swelling of the labia and the perineum, with a sensation of heaviness about the anus. The skin in the vicinity becomes pigmented, especially in brunettes—which may be an indication of some value in medico-legal cases—while in blondes a sort of intertrigo exists. Pruritus vulvae with secondary vaginismus may also be present. The urinary condition raises a point of some importance. Can a woman suffering from simple leucorrhoea infect her own urinary passages? Or can she infect a man who may happen to have connexion with her? The point is not absolutely settled, although the author has seen a woman suffering from leucorrhoea, although absolutely free from a suspicion of gonorrhoea, suffering at the same time from cystitis and scalding urine. This condition is not to be confounded with somewhat similar occurrences at the time of the menopause. The local symptoms referred to are necessarily more severe if the patient is suffering from obesity, albuminuria, or diabetes. These cases may have more grave results, as the sufferers are apt to become weak and neurasthenic, and locally may develop a metritis which may quite possibly be followed by malignant disease of the cervix. But as a rule there is no reason to believe that the long list of evils enumerated by older writers are directly due to leucorrhoea, although some of these women suffer very much from functional disorders of the nervous system. In certain cases, called by Stolz physiological leucorrhoea, the discharge entirely replaces the ordinary sanguineous flow. This occurs especially in convalescents, in badly nourished and chlorotic women. Among the general causes of leucorrhoea the author enumerates are insufficient food, too much indoor confinement, over-fatigue, prolonged nursing, excitation of the genitals, the abuse of emmenagogues, the use of hot injections, especially those containing sublimate of mercury, and the use of pessaries. Associated with leucorrhoea very frequently are arterial hypertonus, venous congestions, and neuro-arthritism. Many of these patients have rheumatic pains, neuralgias, bronchial catarrhs, and these various conditions appear to alternate with the leucorrhoeal discharge. After referring to the interdependence of the various glandular secretions of the body, the author points out that amenorrhoea is the rule in acromegaly, while on the other hand profuse leucorrhoea is usually present in myxoedema. He concludes by saying that many cases are purely functional and accompanied by no anatomical changes, but that the simplest case requires treatment because of the possible after-development of the graver troubles already referred to.

THERAPEUTICS.

96. X-Ray Treatment in Diseases of the Spinal Cord.

Up to the present it has been almost impossible to generalize as to the manner and extent in which radiotherapy may be of service in diseases of the spinal cord. But the authors of two papers which were read before the recent International Congress of Physiotherapy (*Arch. d'élec. méd.*, March 25th, 1910) have made an effort to bring together the scattered cases to be found in literature, as well as those which have come within their own observation, and to formulate certain definite conclusions on the subject. Beaujard, the author of the first paper, is sanguine, and even enthusiastic, as to the efficacy of *x*-ray treatment in syringomyelia. He has treated eight cases, all of which have been ameliorated in different degrees, the degree of amelioration depending upon the length of time which the disease has had to gain a footing before the institution of treatment. He finds the motor troubles and disorders of sensibility begin to disappear, as a rule, after the third or fourth weekly sitting. The results, also, are permanent. In multiple sclerosis (*sclérose en plaques*) two of the author's cases showed a noteworthy amelioration, but, according to the general experience of this condition, as well as that of spasmodic spinal paraplegia, the results with *x* rays are inconstant, and little can be said as to their durability. Radiotherapy may render important service in the sequelae of the acute processes of meningo-myelitis, but ameliorations in tabes are rare, unfortunately, although the gastric pain in this condition yields frequently to an application *loco dolenti*. In medullary compressions the results are irregular, but sometimes excellent and definite. Beaujard employs very penetrating rays (at least No. 6 Benoist), a filter of 1 mm. of aluminium, a dose of 3 H. on the skin, and the tube at a distance of 23 cm. He gives from four to six weekly sittings, with a three weeks' interval as the reaction period. The region to be treated is, of course, determined by the localization of the medullary lesion, but in many cases it is advisable that the whole extent of the spinal marrow, subdivided for the purpose into two or three regions, should receive irradiation. The author of the second paper is Marinesco, of Bucharest, who also testifies to the good results of radiotherapy in syringomyelia. He explains the amelioration of the motor and sensory troubles by the action which the *x* rays exercise on the nuclein of the neuroglic cells and the cells of the ependyma. A cell degeneration more or less extensive is produced, and the compression on the nerve elements of the grey substance diminishes, with the result that the motor troubles and troubles of sensibility are ameliorated. The same author, after irradiating the cervical and lumbar regions in three cases of multiple sclerosis, reports success in two and a negative result in the third. Without doubt, he says, suggestion has played some part in these ameliorations. Treatment by means of the *x* rays is always calculated to impress the imagination of patients. But he does not regard suggestion as offering

an adequate explanation for the disappearance of the sphincter troubles and of the spasmodic twitches and tremor which he has noted in his cases. A knowledge of the physiological and biological action of the *x* rays is necessary if we are to decide whether this treatment is or is not indicated in a given medullary affection. The rays act particularly well on all recent inflammatory lesions and arrest the development of new-forming cells. This fact explains the good results of the treatment in commencing gliosis of the marrow, in compressions caused by centres of inflammation, and in multiple sclerosis. Nevertheless, the influence of the rays in medullary affections is small if an extensive degeneration has been established. In affections which have got into full working order, so to speak, the *x* rays are of little avail. Marinesco thinks that the determining factor in cell-sensibility to the *x* rays is the quantity as well as the quality of the nuclein. Cells which are richest in nuclein are acted upon most profoundly.

97. Salicylic Ionization in Acute Articular Rheumatism.

SOME remarkable cases of extremely rapid cure of acute rheumatism of the joints after treatment with intra-articular injections of salicylate of soda by the electrical method are recorded by Wullyamoz, of Lausanne (*Arch. d'élec. méd.*, May 25th, 1910). If the results are confirmed in a large number of cases, we have here what Wullyamoz calls a "treatment of assault" for this condition. The first observation relates to a patient who had suffered severely on three previous occasions from acute rheumatism, and had been treated by the routine drug method with salicylates. At each attack the treatment lasted from six weeks to three months. In his latest illness the salicylate treatment produced no amelioration to speak of, and at the end of a month the patient could scarcely move, and showed an icteric tint and signs of dyspnoea. A cataphoretic course of treatment was then determined on. The whole surface of the body was first washed so as to relieve the pores of any grease that might oppose a resistance to the ions and the electrical current, and on the following day the first sitting was given. Large electrodes of 1 m. in length and 20 cm. in width were employed, and over the whole extent of the one which served as the cathode was spread, not a solution of salicylate of soda, but, for the sake of simplifying the procedure, the powdered form of that substance. This was rubbed over the surface with the hand in such a fashion as, with the humidity of the electrode, to form a paste. The cathode was then applied to the leg, the base of the electrode resting upon the swollen instep, and the upper part covering the hip region, while the anode was placed on the posterior side of the leg. The upper extremity was dealt with in the same manner. Half an hour's sitting was given for each of the affected limbs in turn. Two days afterwards the swelling had left the knee and the right hand, but the left foot was somewhat painful. Another sitting was given, and after a further forty-eight hours the patient was able to walk without assistance and to obtain a good sleep, which had been denied him for fifteen days previously. The cure was absolutely complete ten days after the commencement of cataphoretic treatment, and after five sittings. In the second case the rheumatism had invaded both wrists and both feet. Friction and the envelopment of the joints with salicylic ointment were at first prescribed, but with little effect, and at the time that it was decided to apply the cataphoretic method the patient was in severe pain (*douleurs atroces*) and had a high temperature. Each member was treated for thirty minutes, as in the preceding case, making a total sitting of two hours. On the following day the pain had greatly lessened and the temperature had fallen. Two days later the patient was able to walk and use his hands, from which the swelling had disappeared. Cure was practically accomplished within five days from the commencement of the treatment, and with four sittings. The third patient had also been a previous sufferer from acute rheumatism, and in the present instance the attack had lasted for eight days, during which the usual drug treatment had been without avail. The pain was violent in the joints and back, and there was also some pleural effusion. Cataphoresis was practised (half an hour for each member, 160 milliampères), and on succeeding days 200 milliampères were passed without pain. The final disappearance of all pain and dyspnoea took place within seven days of the commencement of treatment, and with seven sittings. The fact upon which the author lays particular stress is the rapid and definite fall of the fever in these cases. In the second of them the temperature fell from 39.6° C. to 37.1° in less than twenty-four hours; and in the third, from 38.6° to 37° in less than three hours. As to the manner in which this medicamental electrolysis effects its results, the author makes the suggestion diffidently that in the tissues the electrical current, partly through the agency of the tissues themselves and partly through that of the introduced ions, forms a series of groupings which he calls *x*, and which, provided with a certain charge, discharge by their contact groupings of morbid elements or microbes of equal charge but of contrary sign, these phenomena being multiplied very rapidly in a unit of time. But microphysics has still a great deal more light to cast upon these unexplained biological and therapeutical effects.

98. Decompression in Meningitis.

HULTGEN (*Amer. Journ. of Med. Sciences*, March, 1910) regards lumbar puncture as an exceedingly useful and much neglected therapeutic agent in the treatment of meningitis. Theoretically, a simple meningitis should be curable by the early removal of excessive intracranial pressure, and in tuberculous meningitis in particular he attributes the enormous mortality largely to the fact that intracranial pressure is not relieved until the lesions it has produced are irreparable. Four cases are recorded in which recovery followed lumbar puncture, which was undertaken with a view to decompression by the removal of intracranial hyperpressure. In three of the cases, in which amounts varying respectively from 45 c.cm. to 70 c.cm. were removed, recovery followed after one lumbar puncture, which besides producing decompression, also served to confirm the clinical diagnosis. In the fourth case, tuberculous meningitis, a second puncture became necessary on account of a recurrence of headaches and vomiting, 100 c.cm. being removed at the first puncture and 60 c.cm at the second. Decompression by means of lumbar puncture is generally feasible because, early in the disease at any rate, the aqueduct of Sylvius is seldom occluded. The author considers that this mechanical element in the clinical picture is often neglected, because the toxic factor tends to receive undue attention, and he regards the early diagnosis of meningitis as largely dependent upon the recognition of intracranial hyperpressure, whose removal is the foremost therapeutic indication. He further considers that tuberculous meningitis owes its danger mainly to the mechanical effects of hyperpressure upon the medullary centres rather than to its infectious character, the injury to the brain from undue pressure causing a degenerative encephalitis which, together with other coexisting factors, helps to brin about the high mortality from this form of meningitis.

PATHOLOGY.

99. Subcutaneous Emphysema.

HERMANN KALMÁR (*Pest. med.-chir. Presse*, No. 8, 1910) discusses the conditions which give rise to subcutaneous emphysema, and describes 3 cases under his own care. The first was that of a child 8 years of age, with a severe attack of whooping-cough. A right-sided catarrhal pneumonia supervened. The next day Kalmár was sent for, and found that subcutaneous emphysema had developed: the child's eye and face were swollen and almost unrecognizable, the right side of the neck was swollen out level with the face, the right mamma was bulged out, and the whole chest was "blown out." The patient died the same night. The next case was of a child 9 years of age with croupous pneumonia. The child was treated with serum, and subcutaneous emphysema developed when the other symptoms were all improving; the emphysema disappeared after eight days, and the patient made a complete recovery. The third case was that of a man 37 years of age suffering from an attack of acute pneumonia. On the night on which the crisis was suspected, subcutaneous emphysema developed, and also right-sided hemiplegia: the temperature was found to have become subnormal, and there was no return of fever. The cutaneous emphysema disappeared after four days. The patient had been well and strong before the attack, and had not previously suffered either from emphysema or heart disease. Pulmonary gangrene and abscess could both be excluded by the absence of characteristic fever and in the case of gangrene by absence of characteristic sputum. The most probable explanation, both of the subcutaneous emphysema and the hemiplegia, is, in the author's opinion, that they were the result of haemorrhagic infarcts, which in the lung led to necrosis and allowed air to pass through the bronchi.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

100. Tuberculous Articular Rheumatism.

A joint affection which resembles rheumatic polyarthritis in many respects was first described by Poncet, of Lyons, under the name of "tuberculous arthritic rheumatism." This condition is, according to E. Melchior, much more common than is usually believed, and is important from a practical point of view on account of the fact that it is nearly always confused with true rheumatism (*Berl. klin. Woch.*, March 14th, 1910). The course is, however, less acute than the ordinary rheumatic polyarthritis; the fever is less marked, the pains are not so acute, and there is no accompanying sweating. The affection does not respond to salicylates. In a few cases perfect *restitutio ad integrum* occurs, but as a rule the joints affected remain permanently stiffened. There are two forms of this tuberculous affection—a subacute and a fulminating form. The latter form offers a very bad prognosis as to life. In these cases it would appear that a rapid miliary tuberculosis runs its course with prominent joint symptoms, and the fatal termination takes place so rapidly that the older observers regarded the disease as an acute miliary tuberculosis complicating acute rheumatism. The author, however, shows that there is no real rheumatic joint affection. He cites a number of cases in which the supposed rheumatic nature could be disproved. In turning to the subacute form, he shows that an affection which was regarded as rheumatic can be shown to be tuberculous. The patient showed all the signs of a rheumatic affection of the knee, and in the course of time an effusion was all that was left. The fluid injected into guinea-pigs, however, produced tuberculosis. In other cases, however, the fluid from the joints failed to produce tuberculosis in guinea-pigs. The author finds it difficult to explain why some cases yield fluid which is infective and others fluid which does not produce tuberculosis. Elbe reported a case of a young girl who was suffering from this affection. Several joints were affected. A small piece of the mucosa of the knee was excised, and this revealed numerous tubercles and giant cells. The fluid, however, did not produce tuberculosis in guinea-pigs. It is possible that the synovial membrane was no longer harbouring tubercle bacilli, but that a simple inflammation was all that remained from the primary tuberculous affection. Connected with the affection is the occurrence of acute miliary tuberculosis after operative procedures are undertaken on tuberculous joints. The author deals with a case of a young woman who had suffered from a tuberculosis of the lower jaw, and who had undergone the operation of the removal of the bone. After the operation the temperature rose on various days, and the joints swelled and became painful. In this case he was able to decide that the joint affection was tuberculous by means of a blood examination. Treating the blood with antiformin, he was able to demonstrate the presence of tubercle bacilli. This method of examining such cases may prove to be of value in future.

101. Constipation.

Bensaude, dealing with this condition in the *Journal des praticiens*, June 25th, 1910, points out that as it is a symptom of such diverse origin, treatment must not be undertaken without a most careful examination of the patient. He remarks that the diagnosis is not always so easy as it may appear. Among the symptoms one may usually note headache, insomnia, a sense of fullness of the abdomen, coated tongue, and foul breath. There is frequently great mental irritability. Many of these patients are ignorant of the fact that they are constipated; they go to stool regularly but insufficiently. Others, again, appear to have diarrhoea, while some are haunted by the fear of being constipated, and in this connexion the author remarks upon the influence of the nervous system upon the progress of the faecal mass in the intestinal canal. Perfect tranquillity of mind is needed for some successfully to achieve the act of defaecation. Among the commoner causes of constipation may be noted pregnancy, abdominal tumours, affections of the nervous system, such as tabes. It is very obstinate also in cases of morphinomania and in saturnism. Another frequent cause of the malady is an attempt on the part of the patient to overcome it by a reduction of the dietary. This instead generally aggravates it. Faults in the gastric chemistry, whether hypochlorhydria or hyperchlorhydria, may also account for it, while the abuse of laxatives is also responsible for a certain proportion of cases. While the author does not admit that the classical division of constipation into (*a*) atonic and (*b*) spasmodic types accounts for all the cases met with in practice, the treatment in a great many cases can be based upon these lines. In the former various exercises, gymnastics, or massage, and faradic electricity are of use, with a dietary in which are incorporated figs, prunes, honey, grapes, curdled milk, or kefir. Large injections of water very slowly given, with the addition of 20 grams of salt to a litre, are also of use. In the spasmodic form simple rest, more especially after meals, is helpful, while lavements of oil, by means of a small syringe, may be given at bedtime. No massage is permitted. A soft dietary, including pastries, fresh butter, cream, and vegetables in purée, is indicated. At the same time it is essential that the dietary should be substantial and nourishing. The author advocates also the use of the continuous current, especially in nervous women, while Trousseau's old remedy, belladonna in pills or as a suppository, is of value. For hydrotherapeutic treatment Chatel Guyon may be tried in atonic cases, while the treatment at Plombières is of service in those of the spasmodic type.

102. The Blood in Splenic Infantile Anaemia.

Cannata (*Pediatria*, May, 1910) reports 7 cases of splenic infantile anaemia due to Leishman's parasite, with especial reference to the state of the blood. As a general result, he finds that the blood formula varies very much not only in different cases but in the same case at different periods. This variety is so great that the author thinks the blood formula is of little value in the differential diagnosis, the only really valuable sign being the presence of the Leishman parasite. The haemoglobin index was always lowered, varying from a maximum of 75 per cent. to a minimum of 45 per cent.; the diminution varied directly with the progress of the disease. The red corpuscles were diminished in number, but otherwise unchanged except for a slight polychromatophilia. The number of white corpuscles varied from child to child. In no case were the figures high—from 20,000 to 7,200, and they oscillated much in individual cases. The mononucleated cells predominated over the polynucleated, mostly the small mononucleated type. Some myelocytes were present; eosinophiles and basophiles were rare.

SURGERY.

103. The Place of Radium in Cancer Treatment.

The "other side" of the radium story is put forward by the Paris surgeon, Chevrier (*Arch. d'élec. méd.*, July 10th, 1910), who evidently thinks it the prerogative of a surgeon to restrain the apostles of radium-therapy from an excessive enthusiasm. In simple cutaneous epitheliomas without ganglionic invasion, he agrees that radium, which cures without cicatrix, is the treatment of choice. The infiltrated cutaneous variety, which affects the ganglions to a considerable degree, presents a more grave state of affairs, and he questions the prudence, in spite of its apparent efficacy, of simple radium-therapy as the only mode of treatment even here. But in mucous and glandular epitheliomas he is altogether sceptical. He admits that nothing has been left undone to secure a thorough result by the user of radium. An attack has been made from the surface with very powerful penetrating apparatus; from the rear, by introducing the tubes of radium into the deep limits of the neoplasm; from the centre, by plunging the apparatus into the tumour itself. And there have been ameliorations. But has there been, asks Chevrier, any definite and durable cure? Is it not true that the tumour, arrested in its evolution for a time, afterwards increases in depth and diffusion? He cites two examples. One is the case of a woman having an epithelioma in the neck of the uterus, an ulceration on the left side, and a perceptible mass in the left lateral cul-de-sac. After several applications of radium, an examination five months later revealed a great superficial

improvement. So far as the uterine neck was concerned this patient was undoubtedly cured of her cancer; but in reality a deeper propagation continued to be made, and the patient died some months afterwards from a diffusion of the tumour. In the case of another patient, a diffuse epithelioma of the parotid seemed to disappear completely after an application of radium; but at the end of six months it reappeared in the higher parts of the gland, and at the same time encephalic troubles were noted, directing attention to an intracerebral metastasis, from which the patient succumbed before long. The capital objection to radium applied in this way, in his opinion, is the very large number of living cells, extraordinarily active and proliferating, which it is expected to destroy. He pleads for the surgical removal of the tumour, and for the use of radium only as an agent to destroy the microscopical residues which always escape the bistoury and later give rise to relapses. In the operation wound corresponding to the tumour and to the ganglionic groups extirpated he would place radiferous tubes for a varying length of time, according to their intensity. In the case of a cancer of the breast he would leave two very active radiferous tubes—one in the central part of the wound, corresponding to the extirpated tumour, and the other at the summit of the axilla, corresponding to the ganglions. Further, he would give applications from ultra-penetrating apparatus on the supraclavicular and subclavicular regions on the following days. He repeats, finally, that the employment of radium as the only therapy against a mucous and glandular epitheliomatous tumour must be renounced once for all, and that the alliance of radium with the bistoury—the former to prevent relapses after surgical extirpation—assures for radium perhaps a more modest rôle, but one of certain efficacy.

104. Temporary Resection of the Hard Palate.

Hofman (*Zentralb. für Chir.*, No. 24, 1910), in a paper headed exposure of the base of the skull by temporary resection of the hard palate, describes a modification of the palatine method of attacking naso-palatine fibromata which he has successfully applied in his own practice, and which he thinks will enable the surgeon to dispense in many cases with any of the disfiguring and more serious operations on the bones of the nose and face. The simple palatine method as hitherto practised has been found far less efficient than osteoplastic resection of the maxilla, as median incision of the soft palate often fails to expose but a small portion of the polypoid growth, and median section of the hard palate is useless. The following are the steps of the operation devised by the author: A transverse incision is first made through the mucous membrane of the palate from the right to the left premolar. From the end of this incision, corresponding to the side on which the nasal growth is situated, another incision is carried directly backward to the anterior pillar of the fauces, and made to involve the whole thickness of the soft palate. The hard palate exposed in the two limits of this angular incision is cut through by a straight chisel, and the large flap of bone and mucous membrane is then raised by an elevator, the nasal septum being broken through or also divided by chiselling. After removal of the growth which has thus been freely exposed, the flap is replaced and fixed in its normal relations by sutures. There was very little bleeding in the author's case, as preliminary ligature of the external carotid had been practised, but it is thought this procedure will be found unnecessary in future, and the risk of sloughing of the mucous membrane of the palate be thus prevented. This modification of the palatine method of attacking naso-pharangeal growths will, it is stated, suffice for the complete removal of any pedunculated polypus, and for a polypus that has a wide and deep attachment will be found a useful adjunct to Kocher's operation for temporary resection of the maxilla and hard palate.

105. Removal of Vesical Growths by the Urethra.

Marion (*Bull. et mém. de la Soc. de Chir. de Paris*, No. 14, 1910) holds that in the operative treatment of some forms of tumour of the bladder, removal by the urethra is preferable to cystotomy. A description is given of a modification, devised by the author, of Nitze's operating cystoscope, in which the platinum loop is replaced by two movable forcep blades working laterally and each provided with an electric cautery. Reference is made to five cases of vesical tumour—three of epithelioma and two of papilloma—in which extraction, with the aid of the cystoscope, was effected without difficulty and with ultimate success. By this method, Marion asserts, the surgeon is enabled in certain cases of tumour of the bladder to remove the whole of the growth and to destroy widely and deeply its seat of implantation. It is, moreover, a very mild method, and does not necessitate complete rest of the patient for a longer maximum period than forty-eight hours. In this respect it is, in suitable cases, superior to cystotomy, which is a more serious operation causing greater injury of the bladder and demanding at least three weeks for the after-treatment. The superiority of the cystoscopic method advocated by the author is, he points out, still more marked in cases of recurring tumour requiring repeated intervention. It is held to be the method of choice for the removal of all vesical growths, whether pedunculated or sessile, provided the size of the tumour be such as to allow every part of it to be simultaneously brought into the field of the cystoscope placed in the centre of the vesical cavity. Larger growths might perhaps be destroyed at repeated sittings, but at the present time the author would attack these by cystotomy. It is acknowledged that any attempt to remove an infiltrating vesical growth by the urethra would be unjustifiable. It is advised that every patient who has been relieved of a vesical tumour by one or other operative method should, even if free from any urinary trouble, be frequently submitted to cystoscopic examination, in order that in any case of recurrence, the fresh growth may be discovered whilst it is small and capable of being removed by the urethra.

OBSTETRICS.

106. Twin Pregnancies: Diagnosis and Management.

Rudaux (*La Clin.*, September, 1909) finds that it is only during the last three months of pregnancy that it is possible to diagnose the presence of twins, although it may be suggested earlier either by the abnormal development of the womb, or by a personal or hereditary history of twin pregnancies. The patient may complain of different symptoms from those of former pregnancies, notably of difficulty in walking, breathing, and of fetal movements which appear to her unusual. Palpation carefully carried out gives important indications. The consistency of the uterine body is not equal in all parts; it may be normal on one side, and more resistant or of greater tension on the other. This tension, which indicates an excess of amniotic fluid, is characteristic of twin pregnancies, as one ovum is often the source of hydramnios. The presence of this quantity of liquid tends to make it more difficult to ascertain the exact contents of the uterus. To be sure of the two fetuses it is necessary to feel at least three fetal poles. It is not uncommon to find the four poles occupying the two lateral halves of the uterus, at other times only one dorsal surface can be felt, or a vaginal examination is required, as one of the head presentations may be engaged in the brim. Auscultation is not reliable unless carried out by two persons at once, each of whom is able to count the heart sounds at opposite places. It is also misleading, since one fetus may be dead or its heart sounds obscured by an excess of liquid. Twin pregnancies are a cause of premature delivery, and in the case of primiparae of complications. During pregnancy it is advisable for the patient to wear a belt, to adopt a more than usually careful diet, to make a frequent examination of the urine, and to regulate the bowels. During the last two months she should do no work, but should rest on a couch, if possible, for some hours daily. Any threatening of premature labour or oedema of the limbs should be met by rest in bed. The conduct of labour is similar to that of an ordinary confinement until the expulsion of the first child, when owing to the possibility of the children having a single circulatory system, the free end of the cord must be secured by a forceps or a ligature. It is then desirable to ascertain the position of the second child, and to see that there is no prolapse of the cord. If the presentation is longitudinal, no harm is done by waiting before rupturing the membranes; on the other hand, where it is a transverse or oblique presentation, an attempt must be made by external manipulation to convert it into a longitudinal one; this failing, internal version and extraction of the child must be performed. When no previous diagnosis has been made, the presence of the second child may only be discovered by the size and consistency of the uterus after the expulsion of the first. Where the abdominal wall is very thick, or the second fetus is dead or macerated, it may appear at the vulva instead of the expected after-birth. In these cases delivery should not be hurried, it is longer than usual, and the delivery of the placenta is often delayed owing to its size and the fatigue of the uterine muscle. Haemorrhages are frequent; if they do not yield

to intrauterine douching no time should be lost in delivering the placenta artificially and administering a hot intrauterine irrigation. With massage and injection of ergotine haemorrhage may be checked. Cases of dystocia due to twins are reported. Both fetuses may attempt to engage at the same time; if one cannot be pushed back it may be possible to deliver the one which is most advanced, either by manual efforts or forceps, failing this it is better to sacrifice the first child so as to make way for the second one.

GYNAECOLOGY.

107. Kraurosis and Leucoplakic Vulvitis.

JAYLE AND BENDER (*Rev. de gynéc et de chir. abdom.*, June, 1910) entirely disagree with C. Berkeley and Bonney, who stated quite recently (*Proc. Roy. Soc. Med.*, December, 1909, Obstet. Sec., p. 38) that "white kraurosis is undoubtedly a misnomer for leucoplakic vulvitis." They maintain that there are cases where kraurosis and leucoplakia coexist. The former may prevail over the latter, or vice versa, whilst the two diseases may be equally developed. Jayle and Bender report 2 cases where the disease coexisted; histological examination of the affected tissues proved this coexistence. The first patient was not quite 40 years of age; there was marked sclerosis of the introitus, which never had time to advance till it assumed the characteristic appearances of uncomplicated kraurosis vulvae, because there was a distinct patch of leucoplakia of the vulva which rapidly underwent cancerous degeneration with recurrence after operation. The second patient was 48 years of age, subject to leucoplakic vulvitis for seven years; there was distinct kraurosis, but no distinct line of demarcation between the two morbid areas. Leucoplakic changes were certainly most accentuated on the surface of the labia majora and minora, whilst the sclerotic changes due to kraurosis extended up the vaginal mucosa as far as the cervix, but they blended near the introitus. The clinical symptoms of the two diseases were also coexistent. In short, this was a genuine example of leucoplakic kraurosis. Jayle and Bender, turning to older experiences, show that kraurosis vulvae may appear after double oöphorectomy, and later on the labia may become the seat of leucoplakia. The latter complication predisposes the patient to cancer; kraurosis, on the other hand, never appears to undergo malignant degeneration. Neither seem related to syphilis.

108. High-frequency Currents in certain Gynaecological Conditions.

OUDIN of Paris (*Arch. d'élec. méd.*, June 10th, 1910) reports favourably upon the therapeutic value of local high-frequency applications in certain gynaecological conditions. He has found the currents of particular service in the case of women who show, as a result of gonorrhoeal infection, an enlarged and frequently ulcerated cervix uteri, with the intracervical mucosa projecting and turgescent, and a glairy muco-pus discharge. His patients, about 50 in all, were principally women who had previously been inmates of St. Lazare, and had undergone various forms of treatment for the same old affection. With such treatment as cauterization and glycerine dressings, the average duration of their sojourn at the infirmary was two months. High frequency has reduced this period by one-half. Three sittings per week are given. The patient having been connected to earth by a metallic *poignée*, a condenser electrode attached to the upper turn of the resonator is introduced into the cervix. The current is passed for about six minutes, and the sitting is terminated with a projection of sparks upon the ulcerated surfaces, by the aid of a small metallic exciter having a spherical extremity, and isolated in all its length in a tube of thick glass. The result of this treatment has always been the same. After the first or second sitting the cervix has decreased in size, and has become less open and congested. On continuing the treatment the amelioration has been progressive, the discharge becoming less abundant and less viscous, and after an average of ten sittings—twelve in the more rebellious cases—the uterus has assumed its normal condition. Unfortunately, the women have been of such a class as to make the duration of the cure a doubtful matter, in the absence of all curative and hygienic precautions afterwards, and many have returned to the hospital a few weeks later, having relapsed into their original condition. But the author has also been able to treat similar lesions in women of his own *clientèle*, and in these cases, in which he has not been compelled to interrupt the treatment so suddenly, but has left it off gradually, until at the end but one sitting per month may be given, he has always achieved a definite cure. His active electrode for introduction into the vagina consists of a cylinder of nickeled copper, rounded at one end, 14 cm. in length, and 2½ cm. in diameter. The sittings are never painful. If the introduction of the electrode causes pain in some cases of extreme hyperaesthesia of the cervix or cul-de-sac, the pain ceases when the current is passed. Nor has Oudin ever found the treatment provoke metrorrhagia, although it may accelerate by several hours the menstrual period. The reaction upon the general state of the patient is very variable. Most frequently it is *nil*. Sometimes a patient complains at the end of the day of great lassitude and need of sleep, whereas another patient may suffer from insomnia. He is not able to explain this difference in the reactions. Almost always the patients give evidence of an over-activity of the abdominal functions. They have polyuria, their appetite is stimulated; frequently the constipated manifest a better function of the intestines. Oudin finds the high-frequency treatment give good results in vaginismus, as well as in acute blenorrhagic vaginitis (where it should be combined with the usual glycerine dressings and injections of permanganate), and in a class of cases to which he gives the name of "genital hyperaesthesia." He does not believe that the action of high frequency is directly microbicidal, but he thinks the results are due to a very powerful modification of the local capillary circulation and to an active vascular drainage, which gives what he calls a "lash" to the phagocytosis.

THERAPEUTICS.

109. Effect of Air Baths on the Blood.

WILH. DAN. LENKEI (*Pest. med.-chir. Presse*, November 20th, 1910) gives the result of investigations as to the effect of air baths on the number of blood corpuscles, the haemoglobin contents, and the viscosity of the blood. The change in the number of blood cells was noted in 20 cases, including cases of chlorosis, anaemia, neurasthenia, and vitium cordis, the observations being made before, at the end of, and half an hour after, the end of air baths of half to an hour's duration at a temperature of 16 to 20° C. Three cases of chlorosis and anaemia respectively were kept under observation in order to find what permanent effect the air baths had upon the haemoglobin contents when no other treatment was given. The viscosity of the blood was tested by means of Hess's viscosimeter in 22 cases similar to those detailed above, but including also cases of arterio-sclerosis and cardiac neurosis. The baths were given at a temperature of 9° to 25° C., and lasted for from half an hour to two hours in the different cases. The following were among the results obtained: (1) In each of 12 cases in which lukewarm baths, and in 6 out of 8 cases in which cool baths, were given, the number of corpuscles increased, the mean increase being about 7.4 per cent.; in half of them the number diminished more or less during the half hour after the end of the bath, but in half it continued slightly to increase, and in 95 per cent. of them at the end of the time the number was from 25,000 to 399,000 more than at the beginning, the mean increase being 3.9 per cent. (2) The increase in the number of corpuscles was greatest in those cases in which the number of erythrocytes was at the beginning much below normal, and in which the surface body temperature only fell from 1° to 2° during the bath. (3) The increase at the end of the bath was greater when lukewarm than when cool baths were given, but the decrease in the next half hour was also greater, so that half an hour after the end of the lukewarm bath the mean increase was 4.1 per cent., as compared with 3.6 per cent. after the cool bath. (4) In 2 cases in which no other treatment was adopted the number of corpuscles several days after the last bath still showed an increase of 300,000 and 370,000 respectively. (5) In the 3 cases kept under observation, and only treated by air baths, the haemoglobin contents were increased from 13 to 20 per cent. (6) The number of leucocytes increased in the majority of the cases, the mean increase being 9.8 per cent. (7) In the majority of the cases the viscosity of the blood was slightly increased (6.7 per cent. on any average) at the end of the baths, but there was no considerable change except in isolated cases; in 2 cases the viscosity remained unchanged, and in 2 slightly diminished. (8) The increase in viscosity was greater after cold baths than after cool or lukewarm ones. Definite conclusions cannot be based upon so small a number of cases, but it seems clear that

(9) air baths lead to an increase in the number of erythrocytes and in the haemoglobin contents in cases of anaemia and chlorosis. (10) Air baths are suited for the exercise and regulation of the affected functions in cases of circulatory distubance. (11) Cold air baths and cool ones at from 14° to 16° C., by increasing the viscosity of the blood should theoretically encumber the circulatory organs, and are therefore not indicated in cases in which an increase of work leads to failure of compensation.

110. Abortive Treatment of Syphilis.

Fouquet (*Gaz. méd. Belge*, June 23rd, 1910), in discussing this question, points out that there are two distinct stages in the invasion of the organism by the virus of syphilis. The first of these consists of the local invasion of the perichancrous tissues, and the local lymphatics up to the point of the arrestment of the poison by the neighbouring glands. At this stage everything goes to prove that there is only a local lesion with a local reaction. The serum reaction of Wassermann is still negative. It is only later when the virus has invaded the system in circulation that the constitutional effects are in evidence. A general reaction is now obtained. The author then emphasizes the fact that any abortive treatment to be of use must be administered before the passage of the virus into the general circulation. Any such treatment directed to the chancre only, whether by cauterization or excision, is useless. The author's method follows that of Hallopeau, and consists in the injection in the immediate neighbourhood of the chancre and in the course of the local lymph channels, of a solution of hectine —20 cg. to 1 c.cm.—daily for thirty days. The chancre itself is at the same time dressed with an ointment of hectine, 5 parts in 100. At the same time, as general treatment, a daily injection of 2 cg. of mercury benzoate is likewise administered for a period of thirty days. After an interval of fifteen days the patients undergo treatment by rubbing, and then a new series of injections is begun. As the intrachancrous injections of hectine of the strength suggested are rather painful the author frequently administers it in a solution of 10 cg. per 1 c.cm. every two days for fifteen days. He also gives the mercury benzoate for a period of fifteen days only, followed by the interval before mentioned. This treatment he continues for six months. He does not administer potassium iodide during the course of treatment.

111. Morphine in the Treatment of Membranous Croup.

Ponticaccia (*Pediatria*, February, 1910) gives details of 24 cases of membranous croup treated by him with morphine injections and serums. During the last three months of 1909, 37 cases of croup were admitted; 11 were operated upon at once, 2 were so slight no operation was required, and the rest (24) were treated as above, and of these 6 required operation (5 intubations, 1 tracheotomy). There were 3 deaths, but in each case a good long time after all laryngeal symptoms had disappeared, and in each case the cause of death was acute nephritis and pulmonary trouble. The epidemic of which these cases formed a part was not a mild one, so that some of the good results cannot be fairly attributed to the mildness of the epidemic. The morphine was always given hypodermically and in the following doses of a 1 per cent. solution of the hydrochlorate, namely, during the first year ½ c.cm., in the second year ¾ c.cm., in the third year ⅘ c.cm., and over three years 1 c.cm. The utmost ever given in one dose was 3 mg., and there was never less than two hours' interval between the doses. The minimum quantity given in any one case was 2 mg. and the maximum 13 mg. (in several doses). No ill-effects were observed, whilst the sedative influence on the laryngeal spasm was most marked. Most of the children were under 2 years of age and the oldest 8 years. The chief good result of the morphine treatment seemed to be not so much in directly alleviating the spasm as in holding in check and preventing it getting worse, during the morphine sleep, so that on waking the child had less spasm, and in not a few cases when it seemed as if operation would be required, the gain in time caused by the morphine sleep gave time for the serum to act and so avoided the necessity of operation.

PATHOLOGY.

112. Transplantation of the Parathyroid Bodies.

Wilhelm Danielson and Felix Landois (*Wien. med. Klinik*, Nos. 19 and 20, 1910) deal with transplantation of landular organs in general, and in particular with transplantation of the parathyroid bodies. Glands are divided into those with an external secretion only, those with both an external and an internal secretion, and those with an internal secretion only. Among those in the first group attempts at transplantation have been made upon the liver, kidneys, and salivary glands; attempts which dealt with small pieces of the glandular tissue only invariably failed. Later it has been shown that resected portions of arteries can be successfully carried over to other arteries, and with the help of this measure many experimental attempts have been made to transplant an entire organ—for example, the kidney. Heterotransplantation of the kidney has proved altogether unsuccessful; homoiotransplantation has been successful in one case only; autotransplantation has been more successful, and after it animals have lived up to 409 days; for men, therefore, autotransplantation alone is worthy of consideration. Attempts have also been made with glandular organs of the second class, such as the pancreas, mamma, and testicles, but the results have been still less encouraging, there being on record only 3 successful cases of autotransplantation. By far the best results have been obtained with the glandular organs of the third class. Most attempts have been made with portions of the thyroid gland, and the results in man have been encouraging though not decisive. No proof of the possibility of heteroplastic transplantation has been obtained, while homoiotransplantation is very uncertain, if not impossible. The results of transplantation of the ovary are extraordinarily good. Either autoplastic or homoioplastic transplantation may result in ovaries whose functions are permanently and completely performed. Examples are given in which such transplantation has resulted in pregnancy and full time delivery. Many attempts have been made to transplant the adrenal bodies, but the authors are of opinion that these organs are altogether unsuited for transplantation. The results of transplantation of the parathyroid bodies have been almost as remarkable as of the ovaries. Experimental research has led to the conclusion that while extirpation of the thyroid leads to general symptoms of a chronic nature (myxoedema), the complete removal of the parathyroid bodies causes tetanic symptoms which as a rule have a rapidly fatal termination. Tetanic symptoms are still occasionally seen after removal of the thyroid; this v. Eiselsberg has observed in 16 cases among 356 cases of thyroid operation, while Kocher some years ago reported that he had seen 5 such cases in his last 1,000 cases. The best treatment is the prophylactic treatment, and in the vast majority of cases intentionally or unintentionally this is carried out. The anatomy of the parts is fully considered in the present article, and it is shown that the most dangerous part of the operation, as far as the parathyroid bodies are concerned, is that in which the operator ligatures the A. thyroidea inf. in the neighbourhood of the recurrent nerves. Since the glands may at this stage be either mechanically injured or destroyed through ligature of the nutrient vessel. Mikulicz's method of ligature of the inferior thyroid artery close at the epithyreoideum gives the best results with regard to the preservation of the parathyroid bodies. It would appear that one or two of the parathyroid bodies can be removed without the occurrence of tetany, and in the occasional cases in which the bodies are irregularly placed, three on one side, some on the other, there is obviously especial danger. Where a parathyroid is accidentally removed it must be again implanted at the time of the operation, and therefore it is advisable to examine the tissue removed in order to determine whether such an accident has occurred. With regard to treatment of a fully developed tetany, the administration of parathyroid body per os has given equivocal results. On the other hand, an instance is given in which in a severe case of the fully developed tetany implantation of two parathyroid bodies from another patient appeared to bring about recovery. In this case a fatal termination was predicted with absolute certainty by all the surgeons and neurologists who saw it. They based their opinion (1) on the severity of the symptoms; (2) on the fact that the symptoms did not develop until the sixth day after the operation, which according to the literature makes the prognosis almost hopeless, and still more (3) on the presence of paralysis of increasing severity of the respiratory muscles. After the transplantation the condition materially improved, the cramps ceased, the spasms disappeared, and ultimately full recovery was obtained. The authors conclude that the more highly organized a tissue the less well is transplantation borne, and therefore the histologically simple epithelial bodies like the mammae, the ovaries, the thyroid and parathyroid bodies are most easily transplanted.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

113. Modern Tests of Kidney Efficiency.

Victor Blum (*Wien. klin. Woch.*, May 12th, 1910) deals with the old and new methods of examination of the kidney function. A review of the older methods shows that they are often indecisive as to the sufficiency or insufficiency of the kidney action. The first modern method described in the article is that of Bouchard, who takes the toxicity of the urine, "the urotoxic coefficient," as a measure of the efficiency of the kidney; the urine is tested by injection into some test animal. The method, though theoretically promising, is open to several objections, and its technical difficulties would in any case prevent its successful introduction into practice. Cryoscopy, or the determination of the freezing points of the blood and urine respectively, and from this the determination of their molecular concentration, is of far greater importance. The greater the molecular concentration of a fluid the lower is its freezing point, and therefore, if there be two specimens of urine of like specific gravity but with different freezing points, the urine with the lower freezing point is the one from the more efficient kidney. The method of cryoscopy of most practical value consists in a combination of (1) the estimation of the freezing points of the blood and urine and (2) of the freezing point of the urine in experimental polyuria. The freezing point of urine from a normal kidney varies within fairly wide limits; but the freezing point of the blood—the kidneys being normal—is so constant that it may be taken as an index of the efficiency of the kidneys, though a normal molecular concentration of the blood may be obtained from anatomically imperfect kidneys in which a condition of compensation has been arrived at. From the estimation of the molecular concentration of the urine a further method has developed—namely, Albarran's experimental polyuria test, which is itself a development of the Hungarian authors' Kovesi and Roth-Schulz test of the power of filtration (*Verdünnungs*), and later of reabsorption, possessed by the kidney; with sound kidneys it is possible, by giving large quantities of fluid to obtain a urine of lower molecular concentration than that of the blood. Albarran's method has shown that a diseased kidney has much more constant action than a sound one—presumably because it has not the same latent reserve strength to draw upon in case of need—and that if one kidney only is affected or is more diseased than the other, its function value changes less than the other in response to increased demand. This method is the first to be of help in the estimation of the reserve strength of the kidney. Another test of kidney function is the estimation of the time which elapses before colouring matters introduced into the body appears in the urine, the length of time during which they are present, and the intensity of the colour. This is best carried out with indigo carmine, which is absolutely harmless and is excreted only by the kidneys, and which acts like another sodium salt, so that its excretion is analogous to that of the other urinary salts. The indigo carmine test has its greatest significance in a comparison of the output of indigo carmine from the two kidneys. The author does not consider the phloridzin test of practical value. The newer methods of testing kidney function are of practical value both in surgery and medicine. Thus, in surgical cases in which one kidney needs to be removed and the other shows degenerative changes, it is possible by the newer methods separately to test the different kidney functions—the osmo-regulatory activity of the kidney by means of cryoscopy, the water-separating activity through the *Verdünnung* test, the salt-secretory activity through the indigo carmine test—and so estimate the efficiency of the second kidney. Again, in medicine it enables a differentiation to be made between cases of diffuse kidney disease, which are compensated and of sound kidney condition. Koranyi's researches have shown that in a case like the former the insufficiency of the kidney function is shown by the constant output of urine of lowered molecular concentration and a relative inability to accommodate itself to changed demands. In cases of albuminuria also the carrying out of the different tests of the separate parts of the kidney function distinguishes between a so-called harmless albuminuria from one dependent on organic kidney disease. Different forms of kidney disease can also to some extent be differentiated from one another, and a point of interest is that the characterictic distinction between parenchymatous and compensated interstitial nephritis is in the differing amount of variability of the freezing point of the urine when tested on different occasions.

114. Tabetic Arthropathies.

Cedrangolo (*Rif. Med.*, May 9th, 1910) records 5 cases of tabetic arthropathy, and offers some general remarks on the subject. In the author's cases the left knee was affected three times, the right only in one case, and both knees in one case. Four were male and one female. Probably a double affection of symmetrical joints is more common than is usually recognized, for a joint which clinically may appear healthy is found anatomically to be affected. Tabetic joints may come on very rapidly (in a few hours) or be more chronic in type. Effusion of serous fluid is common, but may be absent; scrunching noises and painlessness are some features; a considerable amount of oedema in the surrounding parts is not uncommon. The lesions are not confined to the articulation, but extend to the bone. In the author's statistics syphilis appears as the cause of the tabes in 60 to 65 per cent. of the cases. In the differential diagnosis mention is made of syphilitic arthritis, tuberculous arthritis, syringomyelia, etc. The question of the administration of mercury in tabetic joints is discussed, and the likelihood that it may do more harm than good is fully realized. It seems to do good when the tabes is associated with active syphilis, when mercury has not previously been tried, or only half tried; it does harm when optic atrophy has started, or when it has previously been adequately given without result, or when it is badly tolerated. In a syphilitic arthritis as distinguished from a tabetic arthritis, mercury does good. As to the exciting cause of tabetic joints, various agencies are suggested—for example, traumatism, nerve lesions (either peripheral or of the spinal grey matter) and reflex neurotrophic influences.

115. Caisson Disease.

In discussing the means of preventing and treating diseases due to the effects of increased atmospheric pressure, J. Plesch states that an indifferent gas, like nitrogen, under considerably raised pressure, does not produce any pathological changes to the body as long as the pressure is maintained, although oxygen at a partial pressure of 5 atmospheres acts fatally. (*Berl. klin. Woch.*, April 18th, 1910.) The symptoms of caisson disease are due to sudden liberation of the excessive quantity of air which has been forced into solution in the tissues under pressure, and for this reason he considers that these conditions should be termed "decompression" diseases. He therefore analyses the conditions under which the gases are absorbed and liberated. The quantity of gas absorbed stands in direct proportion to the pressure of the gas. Under normal atmospheric pressure, the blood takes up that quantity of air to saturate itself at this pressure, and gives the gas off to the tissues until an equilibrium of tension between the gases in the blood and in the tissues is present. The rate of this process depends on a number of variable factors, and although several attempts have been made to calculate this rate, the author does not believe that it can be done. He supports this contention by a theoretical argument. Starting on the basis that the blood saturates itself in correspondence with the pressure under which the air is placed, and in correspondence with its coefficient of absorption, and that the blood gives off the gases in the lungs under precisely similar conditions as it takes them up, he attempts to follow out the quantitative relations of gases to tissues. He has calculated a mean rate per minute of the absorption of air in a healthy person weighing 70 kilograms, and from this he arrives at the oxygen absorption coefficient as $70 : 4.3 = 16.6$. In other words, the body will absorb the greater part of that quantity of oxygen which the blood takes up under a given pressure in about sixteen minutes. In this he regards the body as a fluid taking up the gas at a uniform rate. Haldane has shown that fats and lipoids—that is, the nervous system—take up much more gas than do other tissues, but bone and cartilage take up much less; and he therefore feels justified in striking an absorption average equal to that of muscle, connective tissue, glands, and blood. In his calculations he accepted the determina-

tion that the blood represents 5 per cent. of the body weight, and that a single circulation occupies fifty-five seconds. The regulations for divers and caisson workers who are subjected to a pressure of more than 3 atmospheres, as obtaining in Germany, require that at least one minute should be spent in decompression per 0.1 atmosphere. In Holland the pressure may only be reduced by 0.1 atmosphere in each three minutes until 1½ atmospheres is reached, when the three minutes is shortened to two, and as the normal pressure is being approached to one and a half minutes. In criticizing this regulation he points out that, according to his calculations, a normal man would absorb 600 c.cm. of nitrogen at ordinary pressure, 1,200 c.cm. at 2 atmospheres, and 1,800 c.cm. at 3 atmospheres. The volume of gas in his blood per minute would be about 4,300 c.cm., so that under the German regulations he would give off about 4 c.cm. in the first minute of decompression. In the second minute it would amount to 8 c.cm., and so on, so that in ten minutes, with a reduction of 1 atmosphere, he would give off 220 c.cm. He regards this rate as an optimum, and therefore describes the principle on which the Dutch regulation is based as false. He then describes Haldane, Boycott, and Damant's methods of decompression. While he recognizes the theoretical and practical advantages of halving the pressure at each stage rapidly, he considers that certain further precautions are required before this method can protect the diver completely. These precautions all aim at retaining normal conditions of circulation. He finds that fat persons, persons with cardiac or vasomotor defects or with arterio-sclerosis, persons suffering from diseases of the central nervous system, with oedema or renal affections without oedema, and persons affected with disease of the ears, should be excluded from all work under raised pressure. (It must be pointed out that similar regulations were drawn up by the British Admiralty, at Haldane, Boycott, and Damant's advice.) In turning to the question of treatment, he calls attention to the necessity of recompressing a diver at once when symptoms pointing to decompression become manifest. For this purpose he considers that wherever a caisson is constructed a pressure apparatus should be built for the purpose of dealing with accidental occurrences of symptoms in the workmen.

SURGERY.

116. Peritoneal Echinococcus.

Lambret (*L'Echo méd. du Nord*, June 19th, 1910) reports a case of echinococcus of the peritoneum. The patient was a man of 57, who up to twenty-four years ago was in perfect health. About that time he began to suffer from violent abdominal pains—distension of the abdomen, vomiting, diarrhoea, and fever. Up to two years ago these crises occurred only two or three times a year, but for the past year or two they have become more frequent, and have been accompanied by a general purpuric rash of a blotchy-red character. Last July the patient was suddenly seized with pain in the right hypochondrium of a more violent kind than usual. He became blanched; his extremities became cold. The abdominal distension was rapid, and the other symptoms already referred to all more severe. For some hours, indeed, his condition seemed very serious. He was again examined, and the presence of a mass in the neighbourhood of the umbilicus was discovered. It was about the size of the fetal head at term—round, mobile from side to side, obviously cystic, but having no thrill. With the exception of an area the size of the palm the percussion note was normal. The patient's general condition was now good. There was no wasting, and he ate and slept well. The diagnosis was a cyst of the mesentery, either hydatid or serous. On opening the abdomen a large cyst was immediately come upon surrounded on every side by smaller cysts the size of a walnut to an orange. A second cyst, equally large, was found more deeply situated. It was found impossible to extirpate this in its entirety. It was therefore emptied and filled with formalin solution, in the hope of killing the parasite. A quantity of clear fluid now suddenly welled up into the wound, and this, the author thinks, must have got into the peritoneal cavity from the rupture of the primary hydatid cyst. This he supposes must have taken place when the patient was seized with the severe peritoneal symptoms already recorded. The operation gave no indications as to the situation of the primitive cyst, and the liver appeared unaffected. The abdomen was drained, and there was a satisfactory recovery. The author then discusses the pathology of echinococcus of the peritoneum, and gives his adherence to the results of Dévé's (1901) experiments, which go to show that the injection of hydatid fluid containing scolices can be followed by perfect echinococcal cysts. This explains in a rational manner the appearance of multiple cysts in the peritoneum following rupture of the primitive cyst. He maintains that even the intraperitoneal position of the cysts in this case is not incompatible with the theory of graft—it can still be made to accord with their peritoneal origin. For experiments by Marshand upon guinea-pigs and rabbits have shown that foreign bodies falling into a healthy peritoneal cavity, bring about fibrinous exudation, and consequent adhesions, and so become shut off from the peritoneal cavity. It is difficult to explain how some of the cysts are withered up, and others tense and full, except on the ground than in the case of the former, the parasite may have been killed, and this raises the question of the formation of antibodies in the human organisms sufficiently abundant and active to destroy the parasite, and with it the possibility of antiechinococcal serum-therapy. When formalin is used at the time of operation to kill the parasite, recurrence is rare.

117. Fracture of the Penis.

Fioravanti (*Rif. Med.*, May 23rd, 1910) records a case of "fracture" of the penis in a young man, aged 22. During sexual intercourse in the erect position, the woman made an unexpected movement dislodging the penis from the vagina, and at the next ictus the man struck his penis against the bone of the woman's thigh. The force was so great that the penis "broke" and from a state of erection speedily became flaccid; there was not much pain at first, but as swelling from effused blood came on, pain became severe and the penis—two hours later—assumed the shape of a pear with the apex at the pubes and the base at the glans—the whole organ being a little more than twice its normal size and the skin very tense and bluish. The man had passed urine. On deep palpation, at 5 cm. from the glans one could feel a distinct solution of continuity in the right corpus cavernosum, in which one could easily put the tip of the index finger. There was no blood in the urine. A soft catheter was inserted as a precaution and kept in for a few days. To relieve the spreading haematoma several punctures were made with a sterilized needle. After six days the patient said he felt well and wished to leave the hospital. He came back in a few days suffering from acute prostatitis followed by abscess, which was opened and drained and soon healed. The patient left the hospital well. The penis retained its normal shape in erection and no inconvenience followed subsequent sexual intercourse. The accident is a rare one and apparently not often followed by complete recovery as was the case here.

118. Operative Remodelling of the Tarsus in Club-foot.

Bartow (*Amer. Journ. of Orth. Surg.*, May, 1910) writes in favour of Ogston's method of correcting severe forms of congenital club-foot, which purposes, by the immediate reshaping of the deformed tarsus, to place the foot quickly in a position for improved weight bearing. The chief feature of this operative treatment is the removal by means of a Volkmann's spoon of a sufficient amount of the cancellous tissue of the astragalus, cuboid and os calcis, and, if necessary, the other tarsal bones, to convert them in whole or part into plastic shells. Changes are thus effected in the form and position of the malformed bones, allowing the foot to be easily placed in the desired posture. From an experience of twelve cases the author has been led to suggest some additions to the technique which could, he believes, extend the scope and value of this operation. Ogston, it is held, attached too little importance to conditions in cases of club-foot of contracture of the soft tissues, the division of the Achilles tendon being, in this surgeon's opinion, the only necessary measure of that character to be considered in connexion with the operation on the bones. It is pointed out that unless there has been a preliminary elongation of all shortened muscles, fasciae, and ligaments by one or other of the usual methods of unfolding the foot, the tarsal operation will fail to overcome the undue shortening of the extremity. Ogston's operation, therefore, should be preceded by, in addition to section of the Achilles tendon, forcible stretching, open or subcutaneous fasciotomy, or tenotomy, or even Phelps's operation. This combination possesses advantages over astragalectomy and cuneiform excision for the higher degrees of deformity, as it diminishes interference with the tarsus as a whole, and conserves both tissue and articular relations. In applying this combined method in the treatment of congenital talipes, the surgeon can

dispense with the prolonged use of splints and braces, and thus further the subsequent development of the foot. This plan of treatment has also been applied by the author to ten instances of equino-varus of the paralytic type. In most of these cases the degree of muscular impairment contraindicated tendon transposition. Tarsal remodelling suggested itself not only for rectifying the deformed and rigid tarsus, but also for lowering the height of the tarsal arch by excavating the astragalus and causing it to collapse. As a substitute for arthrodesis the author's modification of Ogston's method has, it is stated, the advantage of preserving a greater degree of elasticity in the foot, and, consequently of keeping under control the increased tendency to deflection.

OBSTETRICS.

119. Incarceration of the Pregnant Uterus.

Lobenstine (*Bulletin, Lying-in Hospital, City of New York*, September, 1909) says that in this condition the gravid retroverted or retroflexed uterus, as it enlarges, fails to rise out of pelvis and above the promontory. The incarceration may involve the entire body of the organ or only a portion of the posterior wall. Chrobak, of Vienna, records 21 cases of incarceration among 54,391 cases of pregnancy. Kubini has found 5 cases of it, while the writer's experience comprises 23 cases of posterior displacement of the gravid uterus. In 9 of these there were marked symptoms of incarceration, 5 of them aborted after ineffectual attempts at reposition; 3 of these were afterwards found to have been held in the posterior position by firm adhesions. In 2 cases the reposition was accomplished under anaesthesia. In 1 there was great retention of urine and marked haemorrhage from the bladder. Discussing the etiology, the writer points out that pregnancy may start in a retrodisplaced uterus, or the latter may become so during the first three and a half months of pregnancy. Retroflexion or retroversion after the onset of pregnancy may be due to a fall, heavy lifting, coitus, implantation of the ovum upon the posterior wall of the fundus, overfilling of the bladder, salpingitis, fibro-myomata, or a relaxed pelvic floor. The uterus will fail to rise above the promontory if it is held down by any inflammatory condition, old or new, if it is weighed down from above by any growth of the uterus or ovary, if the promontory is conspicuous, if there is hypertrophy of the bladder, or if the normal muscular tone of the uterus and ligaments is lacking. Spontaneous reposition tends to occur in a large number of the cases, owing either to the intermittent contracting power of the uterus or to the bulging and sacculation which occurs when the ovum is imbedded in the anterior uterine wall. When adhesions and tumours are not present, reposition will take place before incarceration has occurred in the great percentage of cases, providing the obstacles to be overcome are not too great. Reposition is less apt to occur in cases of bad posterior displacement with prolapse of the uterus. The usual symptoms of incarceration are headache, pain in the back of the neck, pelvis, and groins, or along the sciatic nerve, constipation, vomiting, and, when the growing uterus, through its inability, is unable to rise out of the pelvis, there is severe pressure upon the bladder and ureters, the rectum, blood vessels, and pelvic ganglia. These symptoms, unless relieved by abortion, become exaggerated; they are mainly referable to the bladder, not to the uterus. In retroflexion of the gravid uterus urinary difficulties appear as early as the twelfth week, and spontaneous reposition is probable; in retroversion of the gravid uterus the early symptom is that of pressure on the rectum, the urinary symptoms coming on between the twelfth and sixteenth weeks. In first and second degree retroversion, spontaneous reposition can take place, and manual reposition is possible. In third degree retroversion, spontaneous reposition never occurs, and manual reposition is most difficult. Cases of pregnancy should be examined as early as possible to ascertain the position and mobility of the uterus, and the condition of the pelvic viscera; in the uncomplicated cases, to avert abortion if possible, the safest course to pursue is the early use of a pessary. Adhesions and pelvic complications require appropriate treatment by tampons, colpeurynter, posterior vaginal section or laparotomy. After the symptoms of incarceration have developed, the patient should be catheterized, then anaesthetized, and an attempt be made to replace the uterus. A large ring should be introduced and the patient kept in bed on one side for a week. When reposition fails a posterior vaginal section, with replacement, or a laparotomy may be resorted to. It is advisable to supply a pessary and to introduce tampons and use opiates in full doses for some days after the operation. Emptying the uterus after the symptoms have supervened is a dangerous proceeding not recommended. The condition should not be considered lightly, nor should it be treated with too great conservatism.

GYNAECOLOGY.

120. Recent Operations for Prolapse of the Vagina.

Klein (*Muench. med. Woch.*, 1910, No. 27, S. 1473), at the Munich Medical Society after reviewing the inefficiency of the ordinary plastic operations for prolapse, described four methods more recently introduced. (1) A plastic operation on the muscular tissue of the perineum by exposure and stitching together of the preserved fibres of the levator ani and suture of the torn ends of the sphincter. (2) Interpositio uteri vesico-vaginalis, as practised by Freund, Schauta, and Wertheim, which aims at leaving the uterus, like a bolster, between the anterior wall of the vagina and the bladder, so as to prevent the usual recurrence of the cystocele; the bladder rests upon the posterior surface of the uterus. This procedure has proved very efficacious when the condition of the uterus has been normal. Klein has used it in about 60 cases and never, when the uterus has been normal, seen a recurrence. But when the uterus is enlarged, or very much atrophied as is usual after the climacteric, recurrence of the cystocele is common; in the latter case especially, the uterus is not large enough to reinforce the whole of the anterior vaginal wall and the cystocele finds room to develop. Before the climacteric, interposition must be supplemented by sterilization, for afterwards the possibility of a normal delivery is by no means certain. The patient and her husband must consent to the sterilization, and Klein demands such consent in writing. In most cases, however, the patients are multiparae and wish to be spared the possibility of further conception. All operators report favourable results, but there have been some deaths, some from haemorrhage, some in cases where wedge-shaped resections of large uteri had been made previously. The operation is only suited for selected cases. (3) Transplantation of muscular tissue from the gluteus has been proposed by Tandler and Halban, and tried on the cadaver. The suggestion is worth consideration, as dribbling incontinence of urine, from deficient constriction of the sphincter of the urinary bladder, has been successfully relieved by transplantation of tissue from the abdominal muscles. (4) Rieck, of Altona, has quite recently devised an original method which he calls "a plastic vaginal operation, doubling the vaginal wall." One might describe it curtly as "an overcoat method." The anterior and posterior vaginal walls are divided longitudinally, flaps dissected on both sides, and after resection of the excess the flaps are united, not as heretofore by stitching the edges of the wound together, but one flap is drawn over the other, just as when one buttons an overcoat. The lower flap is previously scraped with the knife, so as to remove the superficial epithelium, but not the entire layer. The buried epithelium does not form cysts; in more than 50 cases Rieck has seen nothing of the kind. Rieck supplements this operation by amputation of the portio, but this is not necessary unless the portio be enlarged. Interposition after sterilization can be done at the same time. Indeed, as Rieck says, with some humour, a modern operation for prolapse consists in amputation of the portio, vaginal tubal sterilization, anterior and posterior doubling of the vaginal wall, and plastic operation on the perineum. Before the climax the uterus should be curetted to ensure that a suspected or really malign organ might not be used for interposition.

THERAPEUTICS.

121. Serum Treatment of Diphtheria.

Sigmund v. Gerloczy (*Pest. med.-chir. Press*, Nos. 20, 21, and 22, 1910) deals with the results obtained in 1908 from the serum treatment of diphtheria at the St.-Ladislaus Hospital of Budapest; 509 diphtheria patients were admitted into the hospital in 1908, as compared with 390 in the preceding year. The smallest number admitted was in the month of June, and in that month the mortality was lowest (1 per cent.) The greatest mortality was in February (22.6 per cent.). In both 1907 and in 1908 68.2 per cent. of the whole number of patients were free

from laryngeal complication, while the mortality in the two years only differed by 0.1 per cent. These figures go to show that in hospitals the mortality — other things being equal—depends on the number of cases with laryngeal diphtheria. In 1908 the larynx alone was affected in 70 cases (13.7 per cent.), while in 92 cases (18.1 per cent.) nasal or pharyngeal diphtheria was also present; 89.6 per cent. of the whole number of patients recovered. Of the 53 deaths 16 occurred within forty-eight hours of admission, and 9 (17 per cent.) within twenty-four hours; 19 (27.2 per cent.) of the cases of pure laryngeal diphtheria died and 17 (18.1 per cent.) of the diphtheria-croup cases. Intubation was required in 29 (that is, 41.4 per cent.) of the cases of laryngeal croup, and in 41 (that is, 44.5 per cent.) of the diphtheria-croup cases; the proportion of deaths was 41.3 per cent. of the former class and 58.7 per cent. of the latter. The average duration of intubation in the different cases was fifty hours, but in 2 cases which recovered the duration was 350 and 241 hours respectively. In 1 case the tube was left in two minutes only; the patient then coughed up pseudo-membrane, and the breathing was relieved. Tracheotomy was performed secondarily to intubation in 4 cases, but all four patients died of pneumonia. The figures here given confirm the well-known fact as to the necessity for early injection of serum; 100 per cent. of those injected on the first day recovered, as compared with 38.5 per cent. after the eighth day. In 103 cases some form of rash followed the injection, and in a somewhat large proportion general symptoms accompanied the development of the rash. In some of the severe cases in which large doses, such as 4,000, 5,000, 10,000, and in one case 14,000 units, were injected there was no rash. The author suggests that the symptoms may have depended on the quality of the horse serum employed, that is, of the particular horse from which the serum was taken. Among the sequelae were pharyngeal or laryngeal paralysis, which occurred in 22 cases (4.3 per cent.), of which 3 died; facial paralysis occurred in 1 case. Cases of mixed infection occurred.

122. Amylic Alcohol in Inoperable Cancer.

Hosand (*Journ. des prat.*, May 7th, 1910) advocates the use of amylic alcohol locally, after many interesting and encouraging results, in various types of ulcer, including those of syphilitic origin and ulcers of a malignant type. Three to ten drops scattered over the surface of a cancerous wound appears to produce an abundant secretion which by the ultramicroscope is found to contain a variety of dead organisms. The nauseating odour of the ulcer disappears and the surface gradually narrows and retracts. The wound, in fact, seems to dry up. The patient begins to sleep again, recovers his appetite and courage. The treatment is administered twice daily. The author quotes a case of cancer of the breast, treated unsuccessfully by radiotherapy, which yielded to local treatment by amylic alcohol. Unfortunately the disease was too widespread for complete cure. He also mentions a case of cancer of the penis which it was possible to operate in only after prolonged local treatment by amylic alcohol.

123. Antityphoid Vaccination.

Russell (*Johns Hopkins Hosp. Bulletin*, March, 1910), after briefly reviewing the history of antityphoid vaccination, records his personal observations upon the immediate results of the administration of 3,600 doses among officers and men of the United States army since February, 1909, the completed records of the vaccination of 1,400 individuals. While it is not necessary to use a virulent or freshly isolated culture in the preparation of the vaccine, the culture must be one having good binding powers, and capable of producing large quantities of antibodies. The method of preparation is fully described, the resulting product containing 1,000 million bacteria per cubic centimetre. Prior to use on human beings its freedom from contamination is proved by control inoculations on two animals, and aërobic and anaërobic tests for sterility are made. The vaccine has been found to retain its effectiveness unimpaired for several months. Each dose is followed at the site of inoculation by a local reaction, commencing in six or eight hours as a red and tender area about as large as the palm of the hand, and though this may extend in some more severe instances, no permanent ill effects result. The general reaction varies in degree very considerably, and may be absent. In the milder forms there is a general feeling of lassitude and headache, lasting a few hours, and in the moderate reactions there is a rise of temperature from 101° to 103° F., while in the severe forms the temperature is higher. The conditions which determine the moderate and severe reactions are not yet known. Of the total 3,640 reactions, 0.9 per cent. were severe, 5.7 per cent. moderate, 25.3 per cent. mild, while in 68 per cent. they were absent. There appears to be no basis in fact for the hypothesis that a negative phase, or period of increased susceptibility, may follow inoculation, as experience proves that vaccination can be carried out immediately on the appearance of an epidemic, or at any time during its course, without predisposing to infection, whereas if performed during the incubation period it actually mitigates the disease, while when undertaken as a therapeutic measure during the disease there is no evidence of a negative phase. The procedure is easily carried out, and severe reactions are exceptional, no untoward results occurring in the whole series of 3,640 vaccinations. These investigations justify the conclusion that such vaccination against typhoid is undoubtedly protective to a very great extent, and is an indispensable adjunct to other means of prophylaxis.

124. The Treatment of Tuberculosis in Children.

Ramacci (*Pediatria*, April 1910) has had gratifying results in the treatment of tuberculosis in children by a new preparation of guaiacol. Most of the guaiacol preparations are badly borne by children, but this was not the case with the one used by the author, namely, guaiacolin. Guaiacolin (prepared by Franchi of Florence) is a special solution of guaiacol in water and sugar, in which the guaiacol, whilst being quite free, has lost all its irritating properties. It is a clear, reddish-yellow syrupy fluid of agreeable taste, and contains guaiacol 4 per cent. by weight and 5 per cent. by volume. It is much less toxic than a simple solution of guaiacol in water. The dose for children was 2 teaspoonfuls per diem. Under this treatment the patients gained weight, lost their fever, improved their digestion, and were generally better. Brief notes of a selection of 5 cases (out of many others) are given. The chief advantages claimed for the new preparation are its palatability, its non-irritating qualities, and its efficacy.

PATHOLOGY.

125. Tubercle Bacilli in the Placenta of the Tuberculous Mother.

J. Novak and F. Ranzel (*Wien. klin. Woch.*, No. 18, 1910) have made use of Uhlenhuth's antiformin method of treatment of the tissues, and by this means have been able to demonstrate in 4 out of 6 cases of tuberculous women the presence of tubercle bacilli in the placenta. The placenta in each case was first examined for macroscopic tuberculous changes, but the result was uniformly negative. Parts of the placenta were next examined histologically. The remainder of the placenta was finely divided and the mass washed until it appeared free from blood. Part was now treated with 20 per cent. antiformin, while another part was fixed in alcohol for twenty-four hours, dried, ground in a mortar to a fine powder, and then treated with antiformin. The effect of treatment by antiformin is that tissues and bacteria, other than acid-fast bacteria, pass into solution. A part only, however, of the placental tissue treated at once by antiformin was dissolved. The second method gave better results, the greater part of the tissue being dissolved in from four to five hours. Alcohol in the proportion of 3 to 2 was added in order to reduce the specific gravity and facilitate sedimentation. Sedimentation was then carried out, the sediment washed with distilled water, and stained for tubercle bacilli. The first case which gave a positive result was that of a woman who had suffered during pregnancy from advanced tuberculosis of the lungs and peritoneum; during life the sputum had been examined for tubercle bacilli with negative results. The patient was delivered during the ninth month of an apparently sound child. Her condition changed appreciably for the worse during the puerperium. In the second positive case there was a slight right-sided tuberculosis of the right apex, without sputum; the child was a full-time healthy child, and the puerperium ran an afebrile course. The third placenta was from a woman in whom labour was induced at the fourth month; the patient suffered from tuberculosis of the lungs of a severe grade, caries of the left clavicle, and suppurating tuberculous glands in the neck. The fourth case was that of a woman with widespread miliary tuberculosis, who died shortly after the birth of an apparently sound child. The two negative cases were an old case of phthisis affecting both apices, without sputum, and a case of phthisis affecting one apex, which had been apparently cured for a period of ten years. In either case a positive result could hardly have been expected. The method appears to be a very promising one for future investigations as to the presence of tubercle bacilli in the placentas of the tuberculous mother.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

126. Cardiac Neuroses.

MAX HERZ (*Wien. klin. Woch.*, May 26th, 1910) saw in one day 2 cases of cardiac neurosis simulating severe organic disease, and in each case there was a low pulse-rate accompanied by low blood pressure. He then examined the records of the last 1,000 patients with cardiac symptoms whom he had seen, in order to discover how often the condition of hypotonia and bradycardia were present either singly or in combination, and with what conditions they were associated. Cases in which bradycardia was a part of an infection or intoxication or was the result of increased brain pressure, an anatomical vagus lesion, etc., were omitted. The patients were almost altogether "ambulant," so that uncompensated cardiac lesions were not represented. A pulse-rate of below 68 per minute was considered to be slow. The number of cases was 73 of hypotonia, 55 of bradycardia, 29 of combined hypotonia and bradycardia. Of the 73 cases of hypotonia alone 48, or 65 per cent., were diagnosed as cardiac neuroses, while 17, or 23.2 per cent., were of arterial affections. Therefore in doubtful cases, with symptoms which point to cardiac disease, a low blood pressure is suggestive of a cardiac neurosis. In the cases of bradycardia alone 49 per cent. belonged to the group of arterial affections, 41.8 per cent. to that of the neuroses. With a combination of the slow pulse and low pressure 69.6 per cent. were of cardiac neurosis and only 27.5 per cent. of arterial affections. These figures lead to the conclusion that in the presence of cardiac symptoms, if insufficiency of the cardiac muscle be excluded, a low blood pressure is on the side of a diagnosis of cardiac neurosis. The other conclusions at which the author arrives are: (1) Extra systoles with a low blood pressure are seen almost without exception only in cases of neurosis. (2) A non-arterial systolic murmur probably does not depend on mitral insufficiency if the blood pressure be low. (3) Phrenocardia is most frequently seen in women, while hypotonia or bradycardia most frequently in men. (4) The dominating symptoms are in nervous hypotonia, painful sensations in the cardiac region, in nervous bradycardia palpitetras and in bradycardia hypotonica, general weakness. (5) In bradycardia hypotonica there is a condition of true nervous heart weakness, sometimes with albuminuria and oedema.

127. The Psycho-neuroses.

JOSEPH COLLINS (*Med. Rec.*, July 16th, 1910) defines a neurosis as a functional nervous disease attended with conspicuous mental and emotional symptoms. The chief functional diseases are epilepsy, migraine, tic, hysteria, and neurasthenia. The author confines himself to hysteria and neurasthenia. Hysteria, psychasthenia, and neurasthenia are states of mental unrest under the dominion of obsessions of fear, and states of anxiety and panic, and are to be classified as psycho-neuroses. Hysteria he confines to cases which are capable of being produced by suggestion. The stigmata of hysteria have been given a fictitious value, and many symptoms of major hysteria exist in the imagination of the person who has described them. Freud considers hysteria to belong to a group of neuroses that are due to cerebral insufficiency, and is characterized mainly by moral symptoms. There is weakening of the psychological synthesis, causing a disintegration or doubling of personality, initiated by sexual trauma. The psychic traumata are painful emotions, and if not reacted to adequately, there remains an affect-neurosis in the mind. This memory may cause a single or a series of attacks of hysteria. Adequate reaction may be prevented by the experience being one that has no possibility of reaction, such as death of a friend, or any experience that is voluntarily excluded from the mind, or may be prevented by the attending circumstances. Freud's attitude toward consciousness is that of a working machine. He is not systematic, and he omits a description of the mechanism of the normal mind, and believes that a situation is caused which is neither understandable nor removable, and is an obstructive element. Scrutiny of the details of his work show its limitations, and it deserves severe scrutiny. He makes his own set of terms. When applied to specific situations the method fails. To cure the patient we must go slowly over the occasion and pick up the threads of the story. Probably a state of isolation would be demanded to prevent false experiences. The economic importance of the process must be investigated in each case. Objections to Freud's method are that it is too arbitrary, that psychoanalysis becomes a source of autosuggestion, and that it gives too conspicuous a place to the sexual factor. Neurasthenia is a manifestation of atavism that has not been corrected by education. The name has been much abused and applied to all sorts of nervous states. The mind in perverse action dominates the clinical picture. General treatment repairs the damage, but the disease remains and again causes a return of the symptoms. The average individual exposed to the same causes does not become a neurasthenic. Neurasthenia is a psycho-neurosis characterized by lack of initiative and executive capacity; fundamentally the symptoms that are variable are the mental and emotional ones. It appears only in those who have a neuropathic heritage, as a result of overwork, disease, and dissipation.

128. Roentgen Examination of the Stomach.

THE radiological examination of the normal and pathological stomach is at present receiving a good deal of attention. Groedel (*Arch. Roentgen Ray*, July, 1910) describes his results with the bismuth meal. He has employed bismuth carbonate, a salt which, unlike some other bismuth salts, is perfectly harmless. Only one case of slight indisposition after its use, and no case of poisoning, has thus far been recorded. Groedel regards the question of the normal form of the stomach as decided. What he describes as the "siphon" form is now, he says, almost universally acknowledged to be the most frequent form observed. With regard to pathological conditions, he is of opinion that there is no such thing as gastroptosis. There is merely a pyloroptosis, which is chiefly characterized by the mobility of the pylorus. The primary cause is decreased concentric pressure, and the secondary cause is diminished fixation of the pylorus. It is usually the result of dilatation from overloading, and may be recognized by an increase in length and a decrease in cross-section of the body of the stomach, and by the smallness of the *Magenblase*. The bioroentgenography of the stomach is also treated in a paper by Kaestle, Rieder, and Rosenthal in the same journal (*Arch.*, June, 1910). Bioroentgenography is really kinematographic representation of the stomach movements by means of a series of skiagrams taken during a single cycle. The instrument these workers use is capable of exposing four plates per second. The principal difference from former observations which is brought out by the bioroentgenographical examination relates to the movements of the regio pylorica. The examination shows that a strongly differentiated antrum pylori, in the old acceptation of the term, does not exist. If the notion of an antrum pylori be adhered to, it is necessary to speak of two such antra existing side by side and at the same moment. We must speak of an old and a new antrum—as the old antrum disappears a new antrum is developed from the wall of the body of the stomach, passing pyloruswards, and ultimately exactly taking the place of the old antrum, whilst another new antrum begins to form. But in the opinion of the authors there is no true antrum pylori; what we see in the regio pylorica is an increase in the energy of the gastric peristalsis, and an increase in the height and depth of the wave summits and depressions. They prefer to call the antrum the prepyloric region, and they show that this prepyloric region at each contraction returns the greater part of its contents backwards into the stomach sac.

SURGERY.

129 Indications for Exclusion of the Pylorus.

JIANU of Bucharest (*Arch. prov. de Chir.*, No. 5, 1910) writes that he has been convinced by both experimental and clinical observations of the superiority of exclusion of the pylorus over gastro-enterostomy pure and simple, in the surgical treatment of gastric ulcer situated in the pyloric region. By the term "pyloric exclusion" the author means an operation in which the stomach is divided transversely at some distance from the pyloric lesion, the two orifices being completely closed by sutures, and the continuity of the digestive canal finally restored

by gastro-enterostomy. Full details are given of two cases of pyloric ulceration with stenosis in which this operation was performed in order that the patients might be submitted to a really radical, and not, as is so often the case, it is asserted, with simple gastro-enterostomy, to a merely palliative method of surgical treatment. The author presents much clinical evidence in support of his opinion in regard to the insufficiency of gastro-enterostomy in cases of this kind. The operation often fails to modify the chemical and mechanical conditions that favour the evolution of the old disease, and, it may be, the development of a fresh ulcer. Hence the recurrence sooner or later of gastric pains, aqueous and bilious vomiting, haemorrhages, digestive troubles, and general disturbance and debility. Peptic ulcer of the jejunum, which has been frequently observed after gastro-enterostomy for non-malignant disease of the stomach, is also regarded as an indication of failure, as such lesion is probably due to gastric hyperacidity that has persisted in spite of the operation. The results of experiments in the laboratory and of clinical experience have, the author states, proved beyond doubt that the failure of gastro-enterostomy, when practised in cases of pyloric ulcer, is due to the fact that the pylorus in such cases, though contracted, is still more or less permeable. In any case of complete stenosis a good result from the operation might be expected, but such favourable condition, it is pointed out, is very rare, as the subject of the gastric ulcer usually perishes from inanition before the occlusion has attained this stage. The only methods of surgical intervention, therefore, which can ensure the success of a gastro-enterostomy in the treatment of stenosing pyloric ulcer are: Pylorectomy, and if this operation be impossible or be not indicated, exclusion of the pylorus, which presents almost equal advantages. In his concluding comments on the two cases reported in this article, Jianu states the pain, haemorrhages, and vomiting caused by a gastric ulcer in course of evolution are indications of pylorectomy. Should, however, this operation be rendered a very difficult and dangerous one by the severity and extent of the gastric lesions and the enfeebled condition of the patient, the surgeon, it is held, ought not to trust to gastro-enterostomy alone, but should also at the same time exclude the ulcerated pyloric portion from the rest of the stomach. Pylorospasm caused by progressive ulceration, and complicated by extensive adhesions, is also an indication of pyloric exclusion. This operation may also be found useful in cases of hour-glass stomach with very extensive adhesions, as the patient will thus be relieved of the symptoms of stenosis and of the pain caused by traction on the neighbouring organs during gastric contraction. It is further indicated, in the author's opinion, in cases of pyloric ulceration, provided pylorectomy be prevented by adhesions, with the object of guarding the patient against haemorrhages and perforation that might possibly be caused by irritation of the ulcerated part and digestion of the same due to the gastric hyperacidity, over which, it is held, gastro-enterostomy has no influence. Finally, duodenal ulcer is regarded as a lesion in which, as in the majority of instances resection is absolutely impossible, exclusion is always indicated. The author does not discuss the operative risks or the remote results of pyloric exclusion for gastric ulcer. In the two cases here recorded the patients recovered from the operation, but the dates are too recent to permit of any definite conclusion on real utility of this method of surgical treatment.

130. Resection of the Pancreas.

INNEY (*Ann. of Surg.*, June, 1910) reports a case in which he successfully removed an adenomatous growth of the pancreas. This operation involved the resection of the middle portion of the gland, leaving only a small piece of the head and the tail respectively, and necessitating a reunion of these segments by sutures. The patient, a female aged 43, made after prolonged convalescence a complete recovery, and, when last seen by the author after an interval of about sixteen months from the date of the operation, was enjoying excellent health. In the course of the after-treatment a fistula developed at the seat of operation, from which during about three months there was a copious discharge of pancreatic fluid. A brief summary is given of 16 other cases of pancreatic resection for primary solid tumours, which have been collected by the author. Such growths are rarely met with in the pancreas, and their diagnosis more difficult even than that of other lesions of this organ, and usually has to be made by exclusion. The common idea that pancreatic growths are invariably fixed is shown to be erroneous, and functional tests, though much improved of late by perfected methods, are still not always to be relied upon, especially in the early stages in which a correct diagnosis is so useful. Of the two avenues of approach in exposing the tumour, the retroperitoneal one has a very limited field of application. The direct and trans-peritoneal route to the seat of the growth, other things being equal, is the best. The surgeon in following this route may attack the tumour above the stomach through the gastro-hepatic ligament; below the stomach through the gastro-colic omentum, or through the mesocolon, the choice of route and the nature of the operation being determined by the nature of the case. In the 17 cases tabulated by the author there were 9 recoveries and 8 deaths, the fatal results having all occurred after the removal of growths that were malignant and confined by extensive adhesions. In 3 cases, including that here recorded by the author, the gland was completely divided, and the remaining portions were brought together and united by sutures. The operation in all of these cases was followed by recovery. By his study of this subject Finney has been led to the conclusion that in properly selected cases, when the field of the operation has been carefully protected by peritoneum, and provision has been made for the escape of the pancreatic secretion by free drainage, resection and suture of the pancreas have hitherto given surprisingly good results.

131. Wounds of Hand and Tincture of Iodine.

RECLUS (*Bull. de l'acad. de méd.*, No. 17, 1910) holds that in the treatment of wounds of the hand and fingers, particularly of those engaged in manual labour, the method hitherto almost universally followed, in which the application of an antiseptic or aseptic dressing is preceded by vigorous disinfection of the wounded parts, does harm rather than good. In the frequent conditions of such injuries, when the hand of the workman is hard and cracked and, it may be, covered by a layer of black dirt, made up of epidermic débris, fatty matter, and dust, the abundant microbes resisting the action of the cleansing disinfectants, and, carried by hot water into the deep parts of the wound, set up inflammation in spite of the protective dressings. For such painful and very uncertain plan of treatment the author would substitute the application, as soon as possible after the receipt of the injury, of tincture of iodine over and around the wound. After the thick layer of the tincture, applied over the seat of injury by a small sterilized brush, has been exposed to the air for a few minutes to permit evaporation of its alcohol, the dry and brown surface is covered by a copious antiseptic dressing. This should be renewed at the end of the day or on the following morning, and afterwards at gradually increased intervals until it is undisturbed for four days. The application of the tincture of iodine should, it is held, be the primary and essential act in this treatment, and not be preceded by any attempt to cleanse and disinfect the wounded hand. It is, the author points out, a very simple and ready method, but its special advantages claimed for it as a first-aid treatment in factories and in military surgery are rather lowered by the importance attached to the rule of using only tincture that is quite fresh. It is laid down as an essential condition that at the end of the eighth day it should be condemned as being not only useless but dangerous. Reclus reports very favourably of the results of this treatment, and asserts that with the use of tincture of iodine in wounds of the hands both acute infective mischief and chronic inflammatory oedema have been very seldom observed.

OBSTETRICS.

132. The Dilating Bag in Breech Presentations.

SAUVAGE (*Ann. de gyn. et d'obstét.*, May, 1910) in an article entitled "Prefetal Dilatation in Breech Presentations," strongly advocates artificial widening of the vaginal canal. It is not quite constant in its effects, but as a rule it accelerates labour. It has a constant influence on the duration of the stage of expulsion, which, when the expelling forces are normal, is remarkably short. It allows of spontaneous delivery, neutralizing indications for extraction, and when extraction is clearly required, the dilatation facilitates the obstetric operation. Sauvage declares that the use of the dilating bag, as he ventures to prove by several series of cases entails a diminution to the extent of one-quarter of the infantile mortality during and immediately after labour. It also ensured a higher vitality of the child saved from injuries received when the soft parts are narrow. Dilatation of the vagina, as Pinard practises it, should be resorted to in all primiparae where the fetus is viable, and is advantageous in multiparae

where the fetus is bulky. In shoulder presentations which cannot be rectified, dilatation is required in primiparae, and also in multiparae when the child is of unusual size. Lastly, as far as our present experience can guide us, the best dilator is Champetier de Ribes's incompressible bag. It should be made to dilate the vagina to a width between that of a five-franc piece and that of the palm of the hand, and should be left to be expelled spontaneously.

133. Avulsion of the Pregnant Uterus following Inversion.

HARRAR (*Bull. Lying-in Hospital, City of New York*, September, 1909) reports a case sent into hospital by her physician who had been sent for, to find her five months pregnant with severe pains and bleeding. The physician dilated the cervix with a Goodell's dilator to about three fingers, and with a placental forceps drew down a hand, finally delivered and forcibly extracted the placenta. During the process he inverted the uterus, and, not recognizing the condition, thought he had a large polyp to deal with, and grasping it firmly, twisted it off without using any cutting instrument. The patient bled profusely, and went into a collapse, in which condition she was admitted to hospital. Haemorrhage had ceased on admission owing to the retraction of the ends of the arteries; she was therefore freely stimulated and placed under an anaesthetic. The bladder was intact; vaginal examination showed absence of the cervix, with a rent in the vault of the vagina from which hung several long pieces of vaginal tissue, and one ovary still attached to the broad ligament depending into the vagina. There was no injury to the exposed loops of intestine. The tags of tissue were cut away, the ovary replaced in the pelvis, and the entire pelvis and vagina were loosely packed with iodoform gauze wrung out of salt solution. There was no advantage in an abdominal section, and as there was no continued haemorrhage there was no need to search for the torn ends of the vessels. The uterus was intact, with portions of the round ligaments still attached. As no cutting instruments had been used, the bladder and intestines had escaped injury, which is a frequent accident in cases of mistaken diagnosis. The patient made an excellent recovery, returning home in fifteen days. Two months later she was perfectly well. She had had no menstrual molimina since the loss of her uterus; there was a small mass of granulations in the vaginal vault surrounding a short sinus; the ovaries were palpable on either side of the pelvis and freely movable. Three months after the accident she reported that she had bled slightly for three days. The sinus in the vault is evidently a fistula connecting with one of the tubes, and may necessitate further operative procedure to avoid the contingency of ectopic gestation.

134. Vaginal Cyst Complicating Labour.

EVERSMANN (*Zentralbl. f. Gynäk.*, No. 21, 1910) removed a vaginal cyst of the size of a goose's egg by incision through the mucosa and enucleation. It had impeded labour, yet did not burst when the fetal head was delivered. The patient was 22, and as she suckled the child and objected to an operation during lactation the cyst was tapped and clear fluid was removed. At the end of a year the cyst was as big as before. It lay on the right under the mucous membrane, and was movable. Eversmann considered that it was of Wolffian origin. Grube, in discussing the case, could not feel sure about the pathogenesis. Inflammatory changes caused glands associated with the vaginal mucosa to dilate and form cysts of considerable size.

GYNAECOLOGY.

135. Acute Inflammatory Affections of the Adnexa.

ROBERT DUPONT (*La Clin.*, February 25th 1910) discusses the medical treatment of acute inflammatory affections of the adnexa. The patient should be absolutely at rest in bed, in the horizontal position, lying on the back. The first indication is to relieve the pain. Icebags should be applied over the lower part of the abdomen, with two or three layers of flannel between the ice and the skin. The thickness of the flannel is so regulated that the hand placed on the abdomen beneath the flannel feels a sensation of cold, while at the same time the cold should not be so extreme as to cause intense reddening of the skin: if the skin should become reddened, the ice should be removed, and the region lightly rubbed until a normal colour returns. In exceptional cases ice cannot be borne, and in these recourse must be had to compresses or poultices. Both compresses and poultices will give more relief if 5 to 15 drops of laudanum are sprinkled upon them. Alcohol compresses are often useful. Cupping and putting on of leeches or of tincture of iodine are measures not to be despised. If the pain is severe, the use of rectal douches or of suppositories should also be tried. A useful injection, which should not, however, be used until the rectum has been emptied by means of an ordinary enema douche, is made up of 15 minims of laudanum, 1 gram (15.4 grains) of antipyrin, the yolk of an egg, and 150 grams (5.28 oz.) of water. A good suppository is 0.05 cg. (0.007 grain) of extract of belladonna, 0.25 cg. (0.038 grain) of cocaine, 5 grams (77 grains) of coca butter. The special local treatment is a vaginal injection made twice a day of at least 2 litres (about 70 oz.) of boiled water, under low pressure, and at a temperature not above 35° to 40° C. (95° to 104° F.); very hot injections do harm. Among general measures are those to prevent constipation. For this purpose a rectal douche should be given twice a week, with the help of Nélaton's long rectal sound. In grave cases, in which the general condition is profoundly disturbed, a daily subcutaneous injection of 300 grams (10.5 oz.) of warm saline solution should be given, and also alcohol combined; if the pulse is feeble and compressible, with strychnine and spartein, the two latter either being added to the salt solution or given as a separate hypodermic injection. The administration of electrargol or of collargol either by friction or into the veins is useful here, as in all infections. A milk diet is not to be pushed even in the milder cases, because of its tendency to cause constipation, and the milk should never be undiluted; in the severe cases no milk should be given, and, indeed, no food at all—Alet, Evian, or Vichy water and whisky or champagne with water, together with the saline injections, will be sufficient until the condition improves. The length of treatment is variable. Some cases, especially those in which treatment is begun early, will yield in a few days to treatment by rest and application of ice; others will persist for weeks. In order to avoid relapses, it is well to continue the ice applications and the vaginal injections for several days after the cessation of symptoms, and to continue the vaginal injections after giving up the ice. The patient should not get up until about eight days after the ice applications have been discontinued, nor while there is pain on pressure.

136. Primary Cancer of Fallopian Tube.

BENTHIN (*Archiv. f. Gynäk.*, vol. lxxxvii, 1909) demonstrates the necessity for thoroughness in dealing with a tumour which proves to be a tubal cancer. A woman aged 40 applied to a hospital for relief from a rather free brown discharge which for a year had appeared before and after every period; the catamenia had always been normal, but the menstrual blood smelt fetid for the past two or three years. She suffered during the past six months from pains in the umbilical region running downwards to the right iliac fossa. The uterus was pushed to the left and forwards by a tense, fairly movable tumour; the ovary could be felt beneath it. Parovarian cyst was diagnosed; the curette was applied to the uterus and the tumour removed by anterior colpotomy. It was examined and proved to be a primary cancer of the right Fallopian tube of the size of a fist; it bore cancerous papillomatous growths on the mucosa near the ampulla. A secondary papillomatous nodule sprang from the surface of the ovary. On account of the nature of the tumour abdominal section was performed on the fourteenth day after the first operation, and the uterus removed above the cervix with the left ovary and tube. Five years later the patient was examined; no trace of recurrence could be discovered. The stump of the cervix was small and perfectly movable. The patient was in very good health.

THERAPEUTICS.

137. Diet in Biliary Lithiasis.

E. BINET (*Trib. Méd.*, No. 10, 1910) discusses the value of fats in the diet of patients suffering from biliary lithiasis. Fats are often forbidden on the grounds that they overtax the liver cells, that they exercise no favourable action on the secretion of bile, and that they are generally badly tolerated by the patients. It seems, however, that, except in the case of jaundice and of very insufficient biliary secretion, the greater part of the fat ingested is absorbed by the chylous vessels, and does not traverse the liver. And, further, a distinction should be made between those cases in which the biliary secretion only is at fault, and in

which it seems legitimate to permit of a certain quantity of fats in the diet, and those cases in which there is no doubt that the liver is overtaxed, the cellular function being manifestly insufficient; in these latter cases fats should be absolutely forbidden. No agreement has been arrived at as to the effect of the ingestion of fats on the biliary secretion; some workers deny that it increases the secretion at all, while others, as, for instance, Rosenberg and Bruno, find that it has a real effect. The tolerance of fats varies in the individual case and according to the particular fat employed. That fat is most easily digested which has a low fusion point and easily forms an emulsion; these two properties are not always combined, and, for instance, vegetable fats are fusible at a low temperature, but with difficulty form emulsions. Fresh cream and butter which has no taint of being rancid are two of the most digestible forms of fat. The patient's inclinations and the objective examination of the gastric sensibility give most guidance as to the administration of fat. In many cases there are positive reasons for recommending fat as a part of the diet. Clinically the author has found that in apparently similar cases under similar treatment, except that in one set of cases fats are given and in the other withheld, improvement seems to set in earlier and be more rapid and better maintained in three-quarters of the cases to which fats are given. A reason for this is that when they are well tolerated fats act favourably upon the condition of hyperchlorhydria so often present and upon the pains due to pyloric spasm. The laxative effect of fats is of value, but it is pointed out that olive oil in large quantities is not a certain laxative, and that it is often not so well tolerated as are butter and cream. There is danger in reducing the food of patients with gall stones, lest the quantity of bile secreted, which depends upon gastric evacuation, should be diminished, and the nutritive value of fat is of importance: patients who can tolerate fat are found to put on weight when it is added to the diet. The possibility of administering fats is, however, not one to be considered, except in the chronic stage, when every trace of local or general infection after an acute attack has disappeared. In suitable cases the author prescribes from 60 to 100 grams (2.1 to 3.5 oz.) of butter, a third of which may be taken towards the end of each of the three meals, or the amount may be divided into two parts, one of which is taken with *petit déjeuner*, the other some time after the evening meal. The latter method has the advantage of ensuring a better flow of bile during the night. The same applies to the cream, which is given in amounts of 200 to 300 grams (7 to 10.5 oz.) in twenty-four hours.

138. Treatment of Tuberculosis.

F. Maragliano (*Prov. Med.*, February 26th, 1910) describes his method of specific treatment of tuberculosis by means of "bacteriolysin," a serum prepared by himself, and which has a bacteriolytic action as well as merely an antitoxic action, such as is possessed by his earlier "antitubercular" serum. He also employs a preventive antituberculous vaccine. Bacteriolysin is the serum of an animal—most commonly a goat—previously treated with a certain number of progressive injections of fluid obtained from a very virulent bouillon culture of human tubercle bacilli; the fluid for injection contains endobacillary and exobacillary toxins, but does not contain living bacilli. The serum of the animal treated is ready for use when it contains a sufficient quantity of precipitins and of specific immune bodies; it has a high agglutinating power, an opsonic power of 2, and 1,000 antitoxic units per cubic centimetre. It is thus seen that bacteriolysin possesses aggressive properties against the bacilli and defensive properties against the bacillary poisons. Experimentally the author finds that very virulent human bacilli placed in bacteriolysin for some time lose wholly or in considerable part their pathogenicity, and he has been able to show that bacteriolysin has a protective action against infection by human tubercle bacilli in the case of animals—as, for instance, the rabbit and the monkey—and has a curative action in the case of the monkey. In man an injection of 1 c.cm. is usually followed by a slight reaction, which is only occasionally painful; several cubic centimetres produce a strong local and general reaction, but this can be avoided, apparently without diminishing the curative value of the injection, by heating the bacteriolysin to 55° for one hour; 5 c.cm. can then be injected without any reaction. From his experiments on animals the author finds that the serum is most effective when injected at the site of the tuberculous lesion. This holds good also clinically both in tuberculosis of the serous membranes and also in phthisis; in the latter condition Maragliano for the last four years has been in the habit of injecting the serum directly into the lung. Hypodermic injection is reserved for cases in which the direct method is impracticable. Bacteriolysis, like all other specific treatments, has an action only on the bacilli and their products, and has none on secondary complications. The duration of the treatment depends on the effect on the individual case. When treatment is continued over several months it must be interrupted every eight or ten days to give rest to the organism, since the immunization produced is active and not passive. In successful cases the author concludes his treatment with a course of tuberculin injections, in order to lead to the production within the system of a large number of defensive substances. Maragliano's own experiences and those of his colleagues testify to the success of his method. Maragliano has made use of his antituberculous vaccine since 1900. It is a suspension in glycerine of pounded-up dead tubercle bacilli. The vaccine, properly used, is absolutely harmless. The method is similar to that in vaccination against small-pox, and a pustule develops on the third day after vaccination; the pustule should heal in eight or ten days, but in the case of infants belonging to tuberculous stocks an ulcer may persist for as long as six weeks. The blood of those who are vaccinated is found to contain specific immunizing substances, and the after-history of cases vaccinated by the author years ago confirm the value of the treatment.

PATHOLOGY.

139. The Origin of Leprosy.

John Atcherley (*Med. Record*, August 6th, 1910) propounds a new theory as to the origin of leprosy. Briefly stated, it is that leprosy is a chronic, diathetic disease, with a gradual onset and irregular course, characterized by an inflammatory fibroid degeneration of the nerve tissue generally, which precedes the deposit of the lepra bacillus. This nerve degeneration is the result of defective food pabulum supplied by the blood, from the ingestion of improper food. This theory is based on the fact that the pathological changes in leprosy bear a striking analogy to those of scurvy. The position of the lepra bacillus is explained by that of the micrococcus of scurvy, which is found along the track of the degenerated arteries. There are several diseases that have their origin in improper foods: these are pellagra, podagra, leprosy, scurvy, and urticaria. Were leprosy contagious ports of entry should be full of lepers. No cases are definitely known to have been caused by direct contact, but many are known to have occurred without it. Infants never have leprosy or develop it before 5 years of age, and many remain entirely immune from it although born of leprous mothers. Segregation is of little value, because many cases having the lesions concealed remain at large. The improper food is such as is found far removed from centres of industry, in inaccessible, barren places, such as a seashore, where shellfish are eaten raw with spoiled vegetable food. The scurvy theory explains cases of spontaneous cure of leprosy; it explains why the same remedy will succeed in one case and fail in another, how cases may be found at great distances from the sea, and why a leper improves when removed from his home to another climate.

140. Adrenalin and Strychnine.

W. Falta and L. Jvcovie (*Berl. klin. Woch.*, October 25th, 1909) found that if an exposed frog's heart were poisoned by dropping 3 or 4 drops of a 2 per cent. solution of nitrate of strychnine on the surface, after twenty to thirty seconds, the frog shows general tetanus on being stirred. The heart contracts with difficulty, and finally stops in diastole. If 2 or 3 drops of a 1 per cent. solution of adrenalin is then applied to the heart, it begins to beat again until the rate exceeds that of the normal frog's heart. Exner believed that the action of adrenalin toward strychnine and other poisons depended on the contraction of the vessels and the subsequent slowing down of the absorption of the poison. That this was unlikely was shown by the fact that adrenalin did not postpone the fatal issue of some poisons, while it does so markedly in the case of strychnine. The authors have experimented with guinea-pigs. The injections of strychnine and adrenalin were given subcutaneously into the abdominal wall. In many cases the two substances were mixed. These experiments showed that 1.6 mg. of strychnine alone killed within thirty-seven minutes, while 3.2 mg. killed in ten minutes; 4 mg. of strychnine mixed with 0.6 mg. of adrenalin did not produce symptoms, but larger doses of strychnine, or smaller doses of adrenalin, were followed by death. They regard adrenalin as a powerful antidote to strychnine.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

141. Prognosis of Tuberculous Cavities at the Bases of the Lungs.

THE presence of one or more cavities in the lungs usually indicates a severe form of phthisis. But occasionally the disease may become stationary, or, after complete evacuation of the caseous material, the cavity may become surrounded by a zone of chronic inflammation, and eventually by organized fibrous tissue ("quiescent excavation" of Powell). Burnand and Tecon (*Rev. méd. de la Suisse rom.*, June 20th, 1910), in their practice at Leysin, have been struck with the fact that though healing may occur with extensive cavity formation, the prognosis is largely influenced by the site of the disease. Thus cavities at the base seldom, probably never, heal, provided that they are of sufficient size to give the characteristic physical signs. Small cavities in the midst of a fibro-caseous infiltration of the lower lobe frequently heal, and are not further referred to by the writers. Large basal cavities usually develop in the course of tuberculous pleurisy, or as the result of tuberculous pneumonic consolidation, which becomes necrotic. Sometimes the process begins at the apex and travels downwards. A severe attack of haemoptysis may favour infection of the base and be followed by large areas of softening. Such basal cavities are to be distinguished from those due to the breaking down of a gumma, gangrene of the lung, post-pneumonic abscesses, pulmonary infarcts, encysted pleurisy of the base, and, rarely, hydatid cysts. It is not true that cavities situated elsewhere than the apex, and especially in the middle lobe, are usually syphilitic. Jaccoud claims that tuberculous cavities of the base are always post-pleuritic or of occupational origin (inhalation of dust), and are most frequent at the left base. The writers state that they occur on either side with equal frequency, and that occupation is not of great etiological importance. As to frequency, of 100 patients in the Mont Blanc Sanatorium, 4 have typical cavities at the base. At other sanatoriums in Leysin the proportion of basal cavities varies from season to season from 2 to 3.3 per cent. The unsatisfactory prognosis of basal cavities is due to their being badly situated (1) for drainage, and (2) for retraction and obliteration. A patient with apical cavities usually coughs on waking, and has no great difficulty in emptying the cavities; one with basal cavities has attacks of coughing all day, only expectorating when the cavities become distended. Healing of an apical cavity is greatly aided by the retraction of the parietes which occurs. To heal a superficial empyema at the base extensive resection of ribs is almost invariably necessary, and this applies with greater force to a large cavity situated deeply in the inferior lobe. Possibly, also, the continual movements of the diaphragm act deleteriously. Though a basal tuberculous cavity probably never heals, its presence is not necessarily fatal. It may become encysted by sclerosis of the surrounding lung, in which state it may for years remain quiescent. It is, however, a form of chronic suppuration, and usually eventually leads to amyloid disease and cachexia. There is always a danger, moreover, of fulminant haemoptysis. Thus the prognosis of basal cavities is always grave. As to treatment, the evacuation of basal cavities may be aided by placing the patient every morning in a prone position, with the head of the bed or couch lower than the foot. The writers have no experience of surgical intervention, but in certain cases of basal cavities the production of artificial pneumothorax, resection of ribs, or even, providing the cavity is solitary, encysted, and accessible, and the disease is quiescent, direct incision and drainage might prove beneficial.

142. Retention of Fluid Simulating Obesity.

EUGEN BERNOULLI (*Corr.-Bl. f. schweizer Aerzte*, March 20th, 1910) states that in certain individuals with a marked tendency to obesity an increase of weight may essentially be due to retention of fluid in the body and only partially to the development of adipose tissue. A girl, aged 21, with a family history of nervous diseases, as a child was anaemic, and suffered from nocturnal enuresis. At 16 she was undersized and excitable. Thyroid gland effected no improvement. At 17, while at the seaside, she suddenly began to increase in weight, 11 kg. being gained in six weeks. The hands and feet were frequently cyanosed, and depression alternated with periods of excitement, delusions of persecution, and a suicidal tendency. She was treated for obesity during nine months by a vegetarian diet and hard exercise without losing flesh. During a slight indisposition she was put to bed and placed on an ordinary mixed diet. She then rapidly lost 15 kg., and the attacks of excitement ceased. Afterwards there were frequent returns of the obesity—sometimes quite suddenly after excitement. Thus, on one occasion a ball dress which fitted in the morning could not be worn in the evening. At 21 it was noticed that occasionally the amount of urine was scanty, and during two days there was complete anuria; there was tenderness over the whole body. In April, 1908, when 21, she weighed 71 kg., her height being 151 cm. (4 ft. 11 in.). The breasts were unusually developed. On the limbs, especially the arms and thighs, the skin appeared tense and was tender. There was no pitting, and no oedema in the usual form. The organs, including the kidneys, were apparently healthy. The amount of urine in twenty-four hours was 400 c.cm. (14 oz.); its specific gravity was 1029 to 1030, and it contained no albumen. The thyroid gland was not palpable. It was found that the periods of increase and decrease in weight corresponded to variations in the amount of fluid retained in the body or excreted by the kidneys. Thus between July 4th and 7th, when there was an increase of 2.1 kg., the daily amount of urine was 592 c.cm. Between July 16th and 25th there was a decrease of 5.8 kg., and the daily amount of urine was 1,219 c.cm. In health absorbed fluid is rapidly excreted, and rapid loss—for instance, by the sweat—is quickly replaced. Analysis showed that in this case with the retention of fluid there was also retention of chlorides. She was under treatment during some weeks, and her weight was reduced to 61.5 kg. After her return home she had an attack of excitement, and then gained 20 kg. in seven weeks. The face, cheeks, and thighs appeared tense, and the skin was universally tender. She was advised to put herself on an exclusively milk diet for one week every month, as with milk weight was invariably lost and diuresis occurred. In this way a further increase of weight was prevented. An increase of weight was almost always preceded by excitement, fatigue, or menstruation. Moritz has treated obesity with an exclusively milk diet, and finds that during the first few days several kilograms in weight are lost owing to the excretion of water. On return to a mixed diet which contains a large amount of chlorides, the weight is regained. Possibly nervous influences affect the salt and fluid metabolism. Diethelm has recorded (under the name acute angio-neurotic universal oedema) the case of a man who, after excitement, sexual or otherwise, had attacks of universal oedema which resembled obesity. He sometimes gained 10 kg. in a few hours. The quantity of urine during an attack was diminished, and the subsidence of oedema was accompanied by diuresis. In the writer's case also nervous influences evidently played an important part. To what extent the thyroid gland was involved it is impossible to say, though the administration of thyroid usually increased the diuresis and caused loss of weight.

143. Haemophilia Neonatorum.

WELCH (*Amer. Journ. of Med. Sciences*, June, 1910) reports a series of nine cases of haemophilia neonatorum treated successfully with injections of normal human blood serum, and altogether he has used it in twelve cases, all of which have been cured. Administered in repeated small and large doses, and also in single small and large doses, it has never given rise to serum sickness or caused anaphylaxis, while it affords a perfect method of feeding in many cases where bleeding from the gastro-intestinal tract renders nourishment by this means impossible. In cases of moderate bleeding it is advisable to begin with 10 c.cm. and repeat three times a day, but in severe cases larger quantities every two hours may be necessary. Treatment should be commenced at the very earliest indication of bleeding, however insignificant, as even slight bleeding of the cord may be accompanied by fatal internal haemorrhage if not promptly stopped. A simple apparatus for collecting the serum consists in a flask with a rubber cork having two perforations, through one of which is fitted a U-shaped tube, having a short aspirating needle attached to its outer end by a piece of rubber tubing. The needle

is cotton-plugged into a small test tube, in which it is sterilized. Through the other perforation is inserted a fusiform glass tube (containing cotton to prevent contamination) fitted with a suction tube for drawing the blood into the flask. By inserting the needle into a vein at the elbow, the necessary amount of blood is obtained and allowed to coagulate in a slanting position in the flask, and the serum is withdrawn as it separates, and is then ready for use. Subcutaneous injections of normal human blood serum gave good results in a case of streptococcaemia and in tuberculosis, and there is evidence to show its probable value in other conditions. According to Wright, normal human blood serum contains more opsonin than that of a tuberculous person, and it is probably through this property causing more complete phagocytosis that the benefit is derived. Normal human blood serum proves to be an agent that successfully controls haemorrhage in the new-born, whether this haemorrhage be due to true haemophilia or to some infection, its bactericidal action rendering it in the latter event an effective therapeutic agent.

SURGERY.

144. Rachianaesthesia Applied to all Parts of the Body.

JONNESCO (*Deut. med. Woch.*, December 9th, 1909) now employs spinal anaesthesia exclusively for all operations, including those on the head and neck. The anaesthetic employed is a mixture of stovaine and strychnine. (1) For operations on the upper part of the body the needle of a lumbar-puncture syringe is inserted parallel to the spinous process of the second dorsal vertebra. The patient sits with the head well bent forwards, and the needle is pushed onwards until it enters the arachnoid space between the first and second dorsal vertebrae. Complete anaesthesia of the head, neck, entire thorax, and upper limbs results. (2) For operations below the thorax the needle is inserted parallel to the spinous process of the first lumbar vertebra, and enters the arachnoid space between the twelfth dorsal and first lumbar vertebrae. The anaesthesia of the abdomen and lower limbs produced is much deeper than with the usual method of inserting the needle between the third and fourth lumbar vertebrae. With the lower puncture the cerebro-spinal fluid usually gushes out in a stream as the arachnoid space is entered. With the upper puncture it usually escapes a drop at a time or not at all. In the latter event the patient should be made to cough, or aspiration should be made with the syringe to make sure of the needle having entered the arachnoid space. The needle is then closed with the index finger until the syringe with the anaesthetic solution is fitted. Injection should be made slowly. The position of the patient after the injection is important. After upper dorsal puncture he should lie on the back (*a*) with the head horizontal if the operation is to be on the head, or (*b*) with the head slightly raised if the operation is on the neck. If anaesthesia is not complete within four or five minutes the head should be placed somewhat lower than the body. If the operation is to be on the thorax or upper limbs the patient remains sitting two or three minutes after the injection and then lies on the back. After a dorso-lumbar injection the patient remains sitting for two or three minutes. If anaesthesia of the abdominal organs is not complete within five or six minutes he should be placed for three or four minutes in Trendelenburg's posture. For anaesthesia of the pelvic organs, perineum, external genitals, etc., the patient should sit with head and shoulders bent forwards for five or six minutes before lying down, and, if necessary, may be placed for five or six minutes in Trendelenburg's posture. *Dosage—(a) Strychnine:* For children between 1 and 5 years the dose for an upper dorsal injection is 1 c.cm. of a 0.035 per cent. watery solution of neutral strychnine sulphate (= ⅓ mg. strychnine). For older patients the dose of strychnine sulphate is 1 c.cm. of a 0.05 per cent. solution (= ½ mg. strychnine). For a dorso-lumbar injection the dose of strychnine for children between 1 and 10 years is ½ mg., and for older patients 1 mg. (1 c.cm. of a 0.10 per cent. watery solution). (*b*) *Stovaine:* The sterilized stovaine as obtained from the makers in sealed glass tubes is dissolved in the strychnine solution immediately before injection. For children between 1 and 5 (in the case of an upper dorsal injection) the dose is 0.01 gram; between 5 and 15 years 0.02 gram; and for adults 0.03 gram. In the case of dorso-lumbar puncture the doses are larger: for children, 0.03 gram, 0.04 gram, 0.06 gram, and 0.08 gram, according to age; and for adults, 0.10 gram. With smaller doses than 0.1 gram, though there is analgesia, the tactile sense is retained, so that traction on the limbs, intestines, or edges of the wound is perceived. With cachectic or anaemic patients, or those suffering from surgical shock, the doses are less—0.05 gram or 0.06 gram. With an upper dorsal injection anaesthesia is complete within two or three minutes. If it is not the writer does not attribute it to idiosyncrasy, but to more or less complete failure of the injection to enter the arachnoid space. A slight movement suffices to jerk the needle out so that the injection enters between the dura mater and the bony canal. In such a case a second injection should be given. With a dorso-lumbar injection the development of anaesthesia requires a longer period—ten minutes. As the patient is fully conscious, the field of operation should be screened off. Complete immobilization of the anaesthetic parts results probably owing to paresis, and with a dorso-lumbar injection the intestines are completely paralysed. This is of great advantage to the surgeon, and alone renders the method superior to chloroform anaesthesia. Complications such as pallor of the face, nausea, sweating, vomiting, which are common after spinal injections of stovaine alone, and of tropacocaine, rarely occur with the stovaine-strychnine mixture. Thus nausea occurred in only 2½ per cent. of the writer's cases, vomiting in only 1½ per cent., and profuse sweating in 2 per cent. In cachectic and feeble persons incontinence of faeces frequently occurs. The pulse is usually normal, but may become somewhat frequent (80 to 90). Strychnine neutralizes the paralysing action of stovaine on the spinal cord. The duration of anaesthesia is from 1½ to 2 hours, but if the operation should last longer, a second injection, with the patient lying on his right side, may safely be given. The dose of this second injection may be the same as that of the first, or smaller, according to the probable duration of the operation. The injections were followed by slight and transient headache in 6¼ per cent., and by transient retention of urine (chiefly after operations on the anus, uterus, or for hernia) in 4½ per cent. of the writer's cases. Paralysis has not yet occurred. Professor Jonnesco has employed his method in 412 cases, and his colleagues have used it in 211 cases without a death and without any serious complication. In addition, he states that it is in daily use by many other surgeons in Bucharest. It is said to have no contraindications, and to be safer and in every way more satisfactory than chloroform anaesthesia.

145. Radium Treatment of Cancer.

IN concluding a long discussion of a paper submitted by Wickham to the Société de Chirurgie of Paris (*Bull. et mém.*, No. 21, 1910), Monod gave a summary of the views held by many leading French surgeons in regard to the value of radium-therapy in cancer. In his communication, which was based on long and careful research, Wickham made a protest against some exaggerations on this subject that have been produced in France and some other countries. Radium, he holds, does not in the majority of cases effect more than an amelioration, and it cannot be said that it cures cancer. This conclusion was accepted by many speakers, including Delbet, Tuffier, and Lucas-Championnière. Other surgeons, and especially Morestin, take a less favourable view of the radium treatment, and, while acknowledging the possibility of relief, point out that several instances have been recorded in which, after apparent improvement, the disease has rapidly increased in growth, and presented more intense malignancy. Such facts would lead Monod to assume that radium, if it does not destroy the whole of the growth, may in some cases of cancer do more harm than good. Moreover, it is held, they favour the conclusion that the surgeon ought not to waste time over radium-therapy when complete removal of the disease by the knife is possible. There seem to be very good grounds for believing that the radium rays exert an elective influence on cancer cells, and that they act, as Delbet expresses it, as a histological caustic having over other caustics the special advantage that it kills the neoplasic cells without injuring the surrounding connective tissue. After a brief discussion of the technique of the radium treatment of new growths with special reference to the filtering of the rays, with the object of increasing their degree of penetration whilst preventing their irritating action, Monod gives in the following conclusions his impressions of the drift of the discussion: Radium exerts no more than a local action on cancer, and certainly cannot prevent spreading of the disease, recurrence, or metastasis. Its rôle, however, when it is properly applied, is very useful, and may prove of great importance, if it enables the surgeon to effect complete destruction of the disease. These conclusions should, it is stated, suffice to urge

surgeons and radium-therapeutists to work together in perfecting the methods of application, and in thus obtaining the best possible results from this treatment.

OBSTETRICS.

146. Haematoma of Broad Ligament during Natural Labour.

TELLER (*Zentralbl. f. Gynäk.*, No. 6, 1910) refers to a fatal case under Leopold, where a child was delivered by turning, the patient, aged 34, a 4-para, having a flat rachitic pelvis. Symptoms of internal haemorrhage set in two hours later, no rupture of the uterus could be detected, and as a big soft swelling was definable in the pelvis on the right of the uterus, haematoma of the right broad ligament was suspected. The patient died within a few hours. The uterus showed no laceration, but a rent was detected in the posterior layer of the right broad ligament. It led into a cavity full of clots, which lay entirely in the broad ligament. Teller relates an important case in his own experience. A woman, aged 41, who had borne eight children, was admitted into a hospital under his care, in labour at term. The labour was spontaneous and not lingering; the child was born alive; it weighed a little under 8 lb. and was nearly 20 in. in length. There was but little loss of blood. Shortly after the expulsion of the placenta the patient felt faint. A tender swelling of the size of a fist was detected on the right of the uterus, which was pushed against the left side of the pelvis, but was well contracted. Next day signs of internal haemorrhage became evident, and a little over twenty-four hours after delivery abdominal section was performed. The fundus uteri lay at the umbilical level, pushed to the left by a livid purple tumour, occupying and distending the right broad ligament. A rent, 2 in. long, was found in its posterior layer, and the peritoneal cavity contained a quantity of fluid and of recently clotted blood. The haemorrhage had heaved up the peritoneum posteriorly, so that the haematoma extended to the level of the division of the common iliac arteries. The patient died during the operation. No trace of a rupture of the uterine walls could be discovered. The great vessels in the neighbourhood were carefully dissected upwards, and also downwards to the thigh, but no evidence of degeneration, thrombi, embola, aneurysms, or varices were detected. It would therefore appear that a varix had burst in the folds of the right broad ligament. Teller also quotes Schambacher's case of rupture of a varix of the broad ligament traced to coitus. The patient, aged 33, was a multipara. Much fluid blood was found free in the peritoneum, and the haemorrhage was traced to a small rent in the broad ligament involving a varicose vessel. The accident in question is uncommon, notwithstanding the numerous influences which may cause congestion of the veins of the broad ligament.

147. Pruritus of the Vulva in Pregnancy.

RUDAUX (*La Clinique*, May 20th, 1910) finds that pruritus is a common trouble among pregnant women, and that it is often so aggravated as to entail loss of rest and sleep, and to induce pronounced nervous irritability. In some cases the cause is without doubt the presence of more or less well marked discharge, but he has found sugar in the urine of all the pregnant women who have complained of discomfort and irritation of this part. He permits no ingestion of sugar or sweets, and prescribes for them Vichy water as a drink. A local application of hot water, with 10 grams of chloral, is made four times a day, the parts being afterwards treated with an ointment of ichthyol 10 grams, and benzoin. A few days later a powder made up of zinc oxide, bismuth, and talc will be found useful. If there is any leucorrhoea a morning and evening douche containing 20 grams of sodium borate is prescribed.

GYNAECOLOGY.

148. Salies de Bearn and Utero-Ovarian Affections.

DAVID (*La Clinique*, February 18th, 1910) calls attention to the value of treatment at the baths of Salies de Béarn for utero-ovarian affections. The water contains sodium chloride, bromides, and iodides, and the spring has received the name of "uterine spring." The treatment adopted varies with the nature of the case. In order to effect a cure in cases of fibromata and certain forms of metrorrhagia, an intense, prolonged, and repeated treatment is necessary; the result is that complete relief is often not obtained because patients are unwilling to put up with two courses of intense treatment. On the other hand, in inflammatory and cicatricial affections, intense treatment is undesirable, and a prolonged mild course is indicated, the duty of the consultant doctor being to regulate the dose. The sedative effect of the Salies treatment, due to the bromides contained in the water, is so marked that quietness and sleep are assured from the beginning, and a nervous condition does not contraindicate the treatment. Cases are given to illustrate the effect of the waters. In one case of menorrhagia without organic lesion, which had persisted for three years in spite of treatment by tampons, haemostatics and curettage, and had led to a condition of anaemia and nervousness, the loss of blood diminished from the time of the first bath, and ceased on the fourth day, while the general condition improved rapidly. Since that time, now two and a half years ago, metrorrhagia has not reappeared, except once after dilatation of the cervix undertaken in order to facilitate pregnancy, and then a further course of the baths again effected a cure. Another successful case without obvious organic lesion was that of a girl 16 years of age, with a haemophilic family history. Several examples are given of successful treatment of inflammatory affections. One patient had suffered from metritis, salpingitis and perimetritis following a confinement, and needed care in treatment because she had had pulmonary tuberculosis with haemoptysis. At the examination the abdomen was found to be hyperaesthetic and painful; there were adhesions round the uterus, especially on the right side, where the adnexa could not be isolated; the uterus was enlarged, and there was much leucorrhoea. The patient suffered pain on walking, and at her monthly periods, which were irregular; she had also pains in the left iliac fossa and thigh. The cure was long, but improvement was continuous. After the first course of treatment she suffered less pain; after the second she was able to walk, and to travel without fatigue or pain. By degrees also the affected region became more supple, the periadnexites disappeared until after the third course the patient became pregnant, and was delivered at full term. Two cases illustrative of the effect of the waters on uterine fibroids are given. In one the patient was 47 years of age, and came for treatment because of a large, soft haemorrhagic fibroid reaching to the umbilicus; her general condition was one of profound anaemia. After the first course of treatment metrorrhagia disappeared, and the fibroid diminished to two-thirds of its volume. The tumour continued to retrogress during three years, and when the patient was last heard of she had entered upon the menopause. In the majority of cases of fibroid, even if the cure is cut short and complete regression is not obtained, there is a noticeable softening of adhesions, diminution of pelvic congestion and of pressure on neighbouring organs, and disappearance of haemorrhagic symptoms. The Salies cure has a selective action on all utero-ovarian affections, and should, in the author's opinion, be given a trial before having recourse to surgery.

THERAPEUTICS.

149. Tuberculin Treatment in Children.

R. ESCHERICH (*Wien. klin. Woch.*, May 19th, 1910) believes that changes in the methods of administration of tuberculin have been the cause of the great changes in public opinion as to the value of the treatment; and also he is of opinion that only recent investigations as to the anaphylactic reaction and the presence of antibodies in the serum have made possible the construction of a rational method of administration. In anaphylaxis there is a change in the blood (the production of an anaphylactic reactionary body or of anaphylaxin) which gives rise to a sensibilization of the cells. The combination of anaphylaxin with the toxin of the bacilli brings about changes in the outer zone of tuberculous areas, such as hyperaemia, attraction of leucocytes, limitation and absorption of tuberculous tissue, and also to general symptoms; in the presence of large quantities of anaphylaxins encapsulation and finally calcification of the tuberculous areas may occur. Tuberculin is not poisonous for the normal person, but requires for its action the presence of the anaphylactic bodies; the action of tuberculin on the sensibilized organism is analogous to that of toxins from tuberculous areas, and excites the production of anaphylactic bodies, as may be seen in cases in

which a first cutaneous tuberculin test is negative and a second positive. The final disappearance of cutaneous reaction on increasing the dose of the injection is to be looked upon, according to Hamburger, not as a sign of an acquired immunity, but to saturation of the anaphylactic bodies resulting in lack of power of reaction, which, however, returns shortly after the discontinuation of the injections. The author has tried in his children's practice the different methods of tuberculin treatment. He finds that in the case of children the so-called immunizing method—that is, the giving of an initial minimal dose, gradually increased so as to avoid the development of feverish reaction, until immunity to large doses is obtained—does not give, on the whole, nearly as favourable results as in the case of adults, for whom in early and fairly favourable cases it is, perhaps, the most satisfactory method. The explanation of this may lie in the different forms of tuberculosis met with in adults and in children. The chief value of the immunization method in adults is in the formation of antibodies which protect the cells from the bacillary toxins—the disease is cured by way of the blood stream. But in children, apart from infants at the breast, the disease is met with usually in the form of circumscribed infectious areas, poor in vessels, usually within the glands, and the important consideration is the local reaction rather than the formation of antibodies: there is, moreover, a great readiness to the formation of anaphylaxins, as is shown by the severity of the cutaneous reactions, and the presence of anaphylaxins in large amounts may explain the frequency of spontaneous cure. But since large increasing doses of tuberculin tend to lessen the action of anaphylaxin, the local reaction is probably weakened, and the immunizing method may in the case of children do harm. A quite different effect is arrived at by the method of giving minimal doses at longer intervals. This may be described as the anaphylacticizing method, and has for its object the increase of the anaphylactic bodies, and with them of the local reaction at tuberculous areas. The author tried this method, even before the scientific explanation was clear to him, in the case of children, usually girls between 5 and 12 years of age, suffering from general debility and loss of weight, and in the more severe cases from enlargement of the cervical and bronchial glands. The cases are those of latent localized tuberculosis as shown by a positive cutaneous reaction. In the case of such children who could not be immediately sent to the country, the method of tuberculin administration described above was followed by a surprisingly rapid improvement, both subjective and objective; the children felt better and ate better, the temperature became normal, night sweats ceased, the local signs disappeared. Pirquet's reaction was still present throughout the treatment. Koch's new tuberculin (T.R.) was used for the injection in doses of from 0.0005 to 0.002 mg. once to twice a week. Other workers, as, for instance, Petruschky and Raudnitz, have obtained similar results. The anaphylacticizing method is particularly suitable for chronic cases in the earlier stages, or for latent cases recognizable by general toxic symptoms and a positive cutaneous test, in which the organism by minimal doses can be raised to a more vigorous reaction. It is especially indicated for children. It has not only a curative but probably also a prophylactic value as a protection against the occurrence of relapses later on. For success there must be an absence of severe anatomical changes and a relatively good general condition. The anaphylactic tuberculin treatment should, like other tuberculin methods, be combined with such measures as fresh air, rest, etc.

150. Fluoroform in Whooping-cough.

Biehler (*Arch. de méd. des enfants*, July, 1910) reports 232 cases of whooping-cough successfully treated with this drug; it was administered to children of 1 year and upwards as well as to adults; 185 cases came under treatment at the beginning of the attacks of coughing, the remaining 117 only during the second or third week; 38 cases who received early treatment were cured in ten or fifteen days, while 186 were cured in three or four weeks; 8 cases who began the treatment in the second or third week did not recover till the seventh or eighth week. The attacks of coughing were lessened in all cases as soon as the patient began to take the drug. Nineteen cases developed complications; of these, 11 came under treatment later than the first week of the disease. Two cases died of pneumonia and meningitis; they began the treatment in the fourth and fifth week; and 2 died of measles and bronchitis. No sublingual ulcers, vomiting, or haemorrhages were observed. Whooping-cough patients make a slow recovery, the cough often persisting for six months. Under fluoroform recovery was complete in three or four weeks, and was most rapid in the older children. The results were naturally most brilliant when associated with good hygienic conditions. The following dosage was employed: During the first year, 10 to 15 minims thrice daily, and 5 to 10 minims after each attack of coughing, up to 200 or 250 minims in twenty-four hours; children of 2 or 3 years were given 20 to 25 minims thrice daily, and after each attack as many minims as the child numbered years. Fluoroform water is not poisonous in large doses, and is well tolerated by infants of a few weeks old. It should be noted that large doses are not dangerous, and that if the desired result is not obtained, the dose should be increased at once.

151. Acidified Milk for Infants.

Brady (*Arch. of Ped.*, June, 1910) has used acidified milk for over two years and for 400 infants with valuable results. In preparing the acidified milk the fresh milk is inoculated with the lactic acid bacillus and then allowed to ripen for twenty-four hours by standing in a warm room. It is diluted with barley water to the desired strength, and in order to raise the caloric value to the needs of the infant a tablespoonful of cane sugar is added to a quart of the mixture. For young infants one part of acidified milk with two parts of barley water was ordered. Older infants received a half and two-thirds of the milk with barley water. Malt sugar has also been used in the place of cane sugar, when the gain in weight was not satisfactory. Where there was an intolerance of fat, skim milk was used. A failure to gain in weight with good digestion was met by the use of top milk. From the first the results were striking, infants of a few days old thriving on it; the number of infants with green stools became very few, while cases of mucous stools cleared up rapidly. Acidified milk being a predigested food, the stomach and bowel are required to do little work in its disposal. It seems an advisable treatment during hot weather; the children are, however, not kept on it indefinitely. No trouble has been experienced in putting them back upon ordinary milk. The good results seem to be due to the low fat percentage, the presence of lactic acid, and the chemical change of proteid, while the presence of the lactic acid bacillus plays a very definite rôle.

PATHOLOGY.

152. Diphtheria Toxin and X Rays.

Diphtheria antitoxin is capable of neutralizing diphtheria toxin which is circulating in the blood and body fluids, but cannot reach the toxin when this has been absorbed into the tissues. For this reason, when several hours elapse between the injection of toxin and that of the antitoxin, the animals can no longer be saved. H. Gehartz has experimented with other agencies for the purpose of attaching toxin after it had been claimed by the tissues (*Berl. klin. Woch.*, October 4th, 1909). Among these agencies, x rays were found to exercise a definite action on the toxin. The toxin was kept in the dark under toluol, and only exposed to daylight for a few minutes, for the purpose of diluting it with physiological saline fluid. As soon as this was done the tubes were wrapped in non-translucent paper, and taken to the Roentgen laboratory to be exposed to x rays. After exposure, the toxin was injected into rabbits, and a control rabbit received unexposed toxin. Twenty-one rabbits were used for this purpose. The author considers that the results obtained can only be explained on the assumption that the exposure to x rays weakened the toxicity of the diphtheria poison both *in vitro* and in the animal body. The experiments showed that an animal which was injected with a double lethal dose of exposed toxin died in 4½ days, while the control died in 3½ days. The rabbit which received the exposed toxin died later than the rabbit which received ordinary toxin in all the cases. The dose given was 6 times, 8.2 times, 10 times, and 12 times the lethal dose. In a further series the rabbits received the unaltered toxin, and were treated with x rays after injection. The so treated animals died from one hour to twenty-two hours later than the control. In these cases, also, the doses given were multiples of the simple lethal dose. The author considers that it is necessary to experiment further to find out whether other toxins are also influenced by the rays.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

153. Cardiac Symptoms of Adolescence.

MAX HERZ (*Wien. med. Woch.*, May 28th, 1910) discusses the cardiac symptoms of adolescence. The patients under consideration varied in age from 14 to 21 years. The symptoms depend on (1) the so-called vegetative changes at puberty—that is, the changes in, and growth of, the different organs; and (2) the psychical changes. The rapid growth of the thoracic skeleton which results in the form of chest characteristic of puberty—the long, but neither deep nor broad, chest—together, perhaps, with the slow growth of the heart itself, may give rise to a condition in which the area of cardiac dullness uncovered by lung is long and small, and in which Roentgen rays show a long pyriform heart. That a slow development of the heart in comparison with the changes in the bony thorax may be a factor in the condition seems the more probable, because in some cases the heart becomes of normal shape before the thorax altogether loses its adolescent form. Possibly a slow development of the blood vessels at the time of puberty, as compared with the development of other tissues, may give rise to symptoms, and the internal secretions of the body may be in some way connected with the condition. Among the general symptoms complained of by the patient, the dominating one is a sense of weakness and a readiness to become quickly tired both physically and mentally; this tendency to fatigue is so marked that, as a rule, it leads to the breaking off of education. Especially in young girls, exacerbations frequently occur, with fainting fits. The patients are very liable to uneasiness about the heart, and to disturbed rest at night, with nightmares followed by excited heart action, and subjectively by palpitations. These symptoms are very dependent on change of position, and lying on the left side is found to be impossible—a fact which inclines the patient the more to the belief that the heart is affected. A loss of appetite and occasional vomiting is also easily put down to circulatory disturbance. Breathlessness on slight exertion, especially on going upstairs, is also considered by the patient to be due to a heart affection, but is probably a result rather of muscular weakness. Among heart symptoms in a narrower sense are especially phrenocardia, palpitation, and pain under the left heart, and also a characteristic catching of the breath (*Atemsperre*). The heart's action is excitable. The heart beat can be felt with especial distinctness, because the finger can be pressed with ease into the intercostal spaces, since the muscles are thin and flabby and the skin thin. The apex beat may from the same cause seem to be broadened, but it is always of low resistance. The pulse rate is extraordinarily variable, both during complete rest and especially on any change in position. The connexion between the innervations of the heart and the psychic condition is always traceable, the pulse-rate is quickened on any question being put to the patient, especially if it concerns sexual conditions. Auscultation shows the peculiar vibrating quality of the first sound, which is often mistaken for a murmur. There is often also a systolic murmur, sometimes at the apex, sometimes also at the base, especially over the pulmonary area. It has been suggested that the pulmonary murmur may be due to a relative pulmonary stenosis caused by delayed growth of the vessels. The second sound over the pulmonary area may be accentuated, and the diagnosis from mitral stenosis may be difficult. The prognosis is good unless a general neurosis determines a permanent nervous heart. The cases react well to treatment directed to the general condition. Dietetic and hygienic measures to calm and strengthen the organism, suggestive treatment, physical agencies, and, amongst drugs, valerian and the bromides, are especially indicated.

154. Megacolon and Infantile Paralysis.

BAUMEL (*Journ. des prat.*, June 25th, 1910) relates the case of an infant suffering from poliomyelitis anterior, which was accompanied by a condition to which he gives the name of "megacolon." The child had been in perfect health, and as is so frequently the case was suddenly attacked by a severe form of infantile paralysis, which followed a normal course up to a point. During the progress of the illness a large soft swelling was observed occupying the right side of the abdomen, which increased in size whenever the infant cried. This was found on careful examination to consist of the ascending colon. The author, while not altogether rejecting the view of Hirschsprung that the condition is due to some congenital fault, states that this is insufficient in itself to explain the large increase in size of the colon. He points out that, by analogy, dilatation of the heart and other hollow viscera does not occur unless in the presence of some obstacle to their ordinary physiological functions. In place of Hirschsprung's hypothesis, therefore, the author suggests the presence of a stricture, or compression of some part of the large intestine. On further examination, such an obstacle was found in this case, impeding the course of the contents of the large intestine, and materially assisting in the dilatation of the colon referred to. He then points out that beyond this circumstance in the particular case under notice, there is a definite relationship between the condition of megacolon and infantile paralysis. He advances the hypothesis that the stasis of faecal matter in a largely-dilated colon may quite well bring about the absorption of toxins having a specific action upon the nervous system. On the other hand, he sees no reason to doubt that if paralysis of the abdominal muscles occurs in infantile paralysis, a similar condition may take place in the case of the intestinal muscles, the extreme dilatation of the colon which he calls megacolon being the result. As to treatment, electricity must be used for the paralysed muscles, supplemented by an elastic belt. Massage of the abdominal wall in the course of the colon, and antiseptic lavements of the large intestine are further aids to the treatment.

155. Organized Pleural Adhesions and their Relation to Tuberculosis.

LANDRY AND ADAMI (*Montreal Med. Journ.*, vol. xxxviii., p. 261) report the results of investigations of 1,374 consecutive autopsies, with a view to determine the relationship of organized pleural adhesions to tuberculosis. Interlobar adhesions were not included, and the diagnosis of tuberculosis was based upon naked-eye examination. As to the frequency of old pleural adhesions, it may be safely inferred that seven out of ten adults in the north-east of North America show signs of a previous pleurisy, 40·6 per cent. affording definite macroscopic evidence of tuberculosis in the thoracic cavity, and, if taken in conjunction with evidences of tuberculosis in glands, liver, spleen, or bones, bringing the percentage to 45.5. All the cases of thoracic tuberculosis, however, were not accompanied by pleural adhesions, 26.8 per cent. showing none, and while 5 out of every 6 cases of visible tuberculosis are accompanied by adhesions, only 1 out of every 2 cases of adhesions exhibits obvious coincident tuberculosis. Thus, it may be concluded that there are two fairly equal groups of cases presenting pleural adhesions—one with associated tuberculosis, and another without any macroscopic signs of the disease—for while acute serous pleurisy is most often tuberculous in origin and gives rise to adhesions, it is clear that adhesions may also follow acute inflammation set up by other infection than tubercle, so that pleural adhesions are of more than one origin and may be grouped under two heads—namely, the tuberculous and the non-tuberculous.

SURGERY.

156. Radio-Diagnosis of Biliary and Urinary Calculi.

BÉCLÈRE (*Bull. de l'Acad. de Méd.*, June 28th, 1910) points out that the number of cases published in which biliary calculi have been diagnosed by means of the *x* rays is very small indeed, only five having been published in France. In *x*-raying for suspected biliary calculi, the author advises that the stomach be distended with gas; the patient should lie on the back; the plate must be placed over the right hypochondrium; a rapid exposure should be given whilst the breath is held; and the tube should be beneath the patient. In *x*-raying urinary calculi success is the rule, but in the case of biliary calculi success is the exception, and the principal reason of this difference is the different composition of urinary and biliary calculi. As Benoist has shown, the power of absorption of *x* rays by a body depends solely on the number and weight of the atoms of which that body is composed, and for this reason the skeleton-

containing as it does phosphorus and calcium. the atomic weights of which elements are considerably higher than those of hydrogen, carbon, nitrogen, and oxygen, the chief elements of the soft tissues—is much less permeable to the rays than the soft tissues. Phosphatic calculi and those containing calcium are, therefore, impermeable to the rays, whilst uric acid are not. In the case of biliary calculi, however, some are composed of cholesterin, some of bile pigments precipitated as calcium compounds, and others are poor in calcium. Exceptionally, some biliary calculi become surrounded by a casing of calcium phosphate or calcium carbonate as a result of inflammation of the mucosa lining the bladder, and it is these biliary calculi which are almost the only ones which can be detected by means of the *x* rays. The author quotes the following case in which a renal calculus was suspected, but in which an unsuspected biliary calculus was also found by the *x* rays. A lady of 50 came under observation on account of lumbar pain and haematuria; the clinical diagnosis was renal calculus. As the patient was very stout, radiation was limited to a circumscribed area in each lumbar region, a diaphragm being employed, together with a compressor and an accelerating screen. An exposure of five seconds was given to the right lumbar region, and the plate on development showed a large calculus to the right of the vertebral column and below the last rib. The appearances of this calculus were, however, against its being of renal origin, and for the following reasons: It was very regularly oval in shape, with the exception of one end, which was not visible, and it was of very large size; further, its shadow was limited at the periphery by a very dark linear border, signifying that the calculus was composed of two substances very unequally permeable to the *x* rays, a very transparent large nucleus and a very opaque shell. For these reasons the calculus was considered to be biliary and not renal. A second photograph of the same region was taken, but in the latter case the plate was placed on the right hypochondrium and the tube beneath the patient—reversing the positions of tube and plate in the first photograph, the distance of plate from tube remaining the same in each case. The second photograph resembled the first in a way, but the size of the calculus now appeared to be much less, a certain proof that the calculus was much nearer to the anterior than to the posterior wall of the abdomen, and therefore without doubt it was a biliary and not a renal calculus. In this patient the lumbar pains and haematuria were the result of a renal calculus on the left side, as shown by the *x* rays. In the same patient, therefore, were shown both renal calculi, which were suspected, and an unsuspected biliary calculus. In all cases of doubt as to whether a patient is suffering from renal or biliary calculus the author advises that the methods which he adopted in the case he quotes should be carried out.

157. Operation for Cerebellar Tumour.

AT a recent meeting of the Freie Vereinigung der Chirurgen held in Berlin, Schmieden (*Zentralbl. für Chir.*, No. 29, 1910) presented a young woman, aged 24, from whom twelve months before he had removed with very good results a cerebellar cyst of the size of a hen's egg. For some few months before this operation the patient had complained of headache, visual disturbance, and paralyses. The diagnosis and localization of a tumour in the cerebellum were based on nystagmus, ocular paresis, choked disc, lowered patellar reflexes, and especially of absence of signs of cerebellar co-ordination. The collection of symptoms indicated the presence of a tumour imbedded in the substance of the left hemisphere and pressing on the middle portion of the cerebellum. By an osteoplastic operation both hemispheres were exposed, and on exploratory puncture of the swollen and much distended cerebellum a large cyst was found on the left side. After the discharge of the fluid a portion of the wall of the cyst was cut away, and the cavity was drained. The patient, who was at once completely relieved of her troublesome symptoms, made a speedy recovery from the operation. She has, it is reported, since remained in good health, and when last seen was able to do light work. In this case, the author holds, the active progress of a very grave condition had evidently been effectually arrested by prompt intervention.

158. Little's Disease.

DELBET (*Rev. d'orthopéd.*, No. 4, 1910) publishes a case of osteotomy of both thigh bones, practised with the object of remedying a faulty position of the lower limbs, due to the spastic paralysis of young subjects, known as Little's disease. Myotomy had been tried on several occasions, but with imperfect results, and when the patient—a young woman aged 21—first came under the author's notice, her efforts to walk were rendered very difficult and painful by contracture of the adductor and internal rotator muscles, and consequent distortion of the affected extremities. Subtrochanteric osteotomy on both sides was, after a long and tedious after-treatment, followed by results that are regarded as satisfactory, the patient having been able to walk naturally and with ease. In discussing the pathogeny of Little's disease the author rejects the view that this affection is a result of premature delivery. While recognizing the fact that in certain instances of difficult parturition the infant might be subjected to actual cerebral or bulbo-medullary traumatisms capable of explaining the occurrence of the symptoms of Little's disease, he cannot imagine how a premature delivery could have this effect. A positive reaction on the application of Wassermann's serum test in 13 cases of this infantile disease has convinced the author that it is often a manifestation of hereditary syphilis. In a concluding paragraph on treatment it is stated that osteotomy of the femur will enable the surgeon to correct certain faulty positions of the lower limb that are caused by Little's disease. Although in the case here recorded infratrochanteric section has given good results, supracondyloid osteotomy might, it is thought, be found preferable.

159. Haemorrhagic Appendicitis.

M. L. BASSAL (*Prov. Méd.*, March 19th, 1910) describes a case of appendicitis with haemorrhages. Letulle in 1898 described a haemorrhagic form of appendicitis characterized by intense hyperaemia and a deposit of blood in the neighbourhood of the lymphoid tissue. Later the same author stated that these appendicular haemorrhages were only observed in cases treated surgically, and considered them to be of purely mechanical origin. In Bassal's case examination of the appendix after removal showed that haemorrhages of two different types had occurred. In one type a diffuse infiltration of red corpuscles appeared to have invaded the follicular tissue without destroying its cohesion or general aspect; the corpuscles were distinct and stained well with eosin, and it is more than probable that these haemorrhages were contemporaneous with the operation, and were of mechanical origin, as explained by Letulle. In the other type of haemorrhage present the blood patches had dissociated and dislocated the follicles, and were found in the midst of the lymphoid tissue, and sometimes were placed deeply near to the muscular layer. Moreover, the red corpuscles in this type stained badly, had lost their distinctness of outline, were agglutinated in an almost homogeneous mass, and were invaded by bacteria; in fact, they presented all the signs of being of an origin anterior to the operation. The case, therefore, falls into the category of cases of true haemorrhagic appendicitis.

OBSTETRICS.

160. Ovarian Tumour and Pregnancy.

G. BALFOUR MARSHALL (*Journ. of Obstet. and Gyn. of the British Empire*, February, 1910) deals with the subject of ovarian tumours complicating pregnancy, labour, and the puerperium. McKerron in 1903 published notes of 1,290 cases collected from the literature. The author has studied the literature for cases since 1903, and has himself treated 8 cases during the last eighteen months. Two of these cases occurred with pregnancy. There appears to be no evidence that pregnancy influences the rate of growth of an ovarian cyst. Almost all operators are agreed that an ovarian tumour discovered during pregnancy should be removed at once; Spence, however, makes exception of cases of bilateral tumours without symptoms, and of primary adherent malignant cysts and secondary malignant cysts, while a few operators, including Bumm, Martin, Fehling, and Spencer, if the tumour is small, recommend expectant treatment until full time if the tumour is not discovered until the late months of pregnancy. The death-rate from ovariotomy performed during pregnancy is very low; in 137 cases published since 1903 there was only one maternal death and an abortion-rate of 15.1 per cent. Apart from operation, the risk of complications occurring during pregnancy is considerable; according to McKerron they occur in one-third of the cases; dermoids are more dangerous than simple cysts. The author prefers the abdominal to the vaginal route, on the grounds that: (1) The abdominal operation is as safe as posterior colpotomy; (2) it is applicable to any size of tumour; (3) many of the tumours are adherent, and can only be adequately dealt with from above; (4) the blood vessels can be secured

by under-suturing, and the raw surface covered in by peritoneum in a way impossible with the vaginal route; (5) the tendency to post-operative abortion is less by the abdominal route because the disturbance to the pregnant uterus is minimized. There is no danger to the abdominal scar from the growing uterus if the abdomen is opened over the left rectus, the muscle being turned outwards, and the wound closed in four overlapping layers. Tumours impacted in the pelvis during the late months of pregnancy are to be removed by the abdomen as in full time labour. Caesarean section is only rarely necessary, as, for instance, where the tumour is densely adherent. Ovarian tumour and labour is next considered. The author has collected notes of 26 recent cases which show the following results: reposition was tried in 6 cases but failed in 4. Forceps were used twice; in one case the tumour burst, but no untoward result followed; in the other case there was traumatic ovariotomy with death of the mother. Version was done four times; three children were lost, and one mother died. Operation was performed in 18 cases; abdominal ovariotomy 7, vaginal ovariotomy 4, Caesarean section 7; one mother upon whom repeated attempts to deliver with forceps had been made before she was sent to hospital, died after Caesarean section; all the children lived except one, which was born dead, strangled by the funis. The treatment varies according to whether the tumour is abdominal or pelvic. If the tumour is abdominal, the present view is that ovariotomy should not be performed during labour unless the growth prevents the passage of the child; if any manipulation is called for, great care should be exercised in order to avoid injury to or rupture of the cyst. A pelvic ovarian tumour is a most formidable complication of labour, especially in the case of dermoid tumours. McKerron gave a mortality of 24.5 per cent., among the causes of which were spontaneous rupture of the tumour, and rupture or injury following too forcible attempts at reposition, delivery by forceps, version, or craniotomy. The treatment to be first tried is reposition, unless it is contraindicated, as when the tumour is large and firmly impacted, or when, through prolonged labour, the liquor amnii has drained away, and the lower uterine segment is unduly thinned. When reposition fails, and a skilled surgeon is not available, puncture or incision may be employed as a temporary expedient, to be followed by ovariotomy not later than the second day of the puerperium. Ovariotomy per vaginam is not recommended to the general practitioner, and ovariotomy per abdomen is, as shown above, to be preferred. Caesarean section is to be considered as the last resort, that is, when other methods are contraindicated, but there should be no delay in arriving at a decision as to the correct line of treatment. Marshall has examined the histories in 19 cases of ovarian tumour during the puerperium, and has himself operated on 5 cases during the last seventeen months. He finds that the puerperium is especially favourable to the production of serious complications. In 11 out of 19 cases there were complications. All were operated on, and all recovered. On the other hand, Patten published in 1906 records of 95 cases treated expectantly, of which half showed serious complications, and of those not operated on 21 died. Still greater emphasis may to-day be placed on McKerron's words regarding the whole subject: "All the available evidence points to the advisability of early operation."

161. Icterus and Pregnancy.

KÜHN (*Der Frauenarzt*, 1909, Part 10) reports the case of a pregnant woman, 31 years of age, suffering from jaundice during her second pregnancy. She had borne two children, the last being born nearly two years before she came under observation; she had also been subject to attacks of gall-stone colic for several years, there was jaundice which never disappeared completely. By the sixth month of her third pregnancy the patient had become strongly jaundiced and very cachectic. Attacks of biliary colic occurred weekly. The faeces were white, the urine bile-stained but free from albumen. Malignant disease of the ducts was feared, but the repeated acute attacks seemed to indicate calculus. Rissmann, of Osnabrück, operated, opening the duodenum and removing from the duodenal end of the common duct an impacted calculus of the size and form of an acorn; it bore no facets. By the eighth month the patient was free from all symptoms of jaundice, and she was delivered spontaneously at term of a healthy child, weighing 8½ lb., which she was able to suckle. It was not jaundiced, nor was any bile pigment detected in the liquor amnii, yet the membranes were slightly icteric. The puerperium was normal. Kühn notes that the induction of labour does not favourably influence jaundice coexistent with pregnancy, whilst an operation which can remove the source of biliary obstruction may be just as well performed during pregnancy as on a non-gravid subject; in short, when jaundice of a kind not to be cured by medical and therapeutical means complicates pregnancy, an operation on the gall ducts is requisite and the induction of labour is not justifiable. Potocki, Kühn adds, has demonstrated the close association of jaundice with pregnancy. It may develop during gestation, whilst if already present before conception it tends to grow worse afterwards. On the other hand, the pregnancy is much less prejudiced by the jaundice; Kühn quotes Cocking's case of persistent jaundice of fifty years' standing who became pregnant for the first time at the age of 40, and was gravid twice afterwards.

GYNAECOLOGY.

162. Lacerations of the Cervix.

GUSHEE (*Bull. of the Lying-in Hosp., New York*, December, 1909), from a study of 1,000 primiparae, considers that the cervix is injured during labour far more and often than is generally believed, and that the most frequent tear is a lateral one, which, if of sufficient depth, is a source of great danger from severe haemorrhage, owing to the close relation of the uterine artery and vein to the cervix giving an abundant supply of blood to the sides of the uterus and cervix. Among the ordinary causes of cervical injury the fetal head, especially in its malpositions, is the most common, others being early rupture of the membranes before the cervix has become fully dilated and softened, artificial dilatation, intrauterine manipulation as in podalic version, and delivery of the after-coming head, and rapid spontaneous delivery. Haemorrhage, slight or profuse, is the main symptom, but this may not always become evident at once, since the presenting part may stop the flow. Since delay is dangerous, it is important to determine by inspection and palpation whether the haemorrhage is uterine or cervical in cases where there is any doubt as to the source of the bleeding. If the extent of the laceration is unknown, or further haemorrhage is feared, the cervix must be brought into view, so that the upper angle of the tear can be seen. This is best accomplished with the patient in the lithotomy position on a table with the weighted speculum in the vagina, or, failing this, the first two fingers of the left hand. The anterior and posterior lips of the cervix should be grasped with sponge forceps, as these are less liable to tear out than volsellum forceps. It is most important to expose the upper angle of the laceration, as this is where the haemorrhage comes from, and is the position for the first stitch. As a rule, not more than two or three stitches are required, and these should be of chromic catgut, as non-absorbable sutures require subsequent removal, and in placing the sutures care must be taken not to encroach too much on the cervical canal, as this must be left sufficiently patulous to provide free drainage from the uterus during involution. Of the 1,000 cases observed, 807 (80.7 per cent.) presented cervical laceration of some kind, while in the same series the perineum was lacerated in only 411 instances (41.1 per cent.), and in 333 both cervix and perineum were lacerated.

163. Histology of Vaginal Cysts.

GRACE PECKHAM MURRAY (*Amer. Journ. Obstet.*, June, 1910) has collected valuable evidence concerning vaginal cysts. They offer little of interest, except from the standpoint of their origin, and are not important from a surgical point of view, as they are easily extirpated, and the wound in the mucosa heals readily. When the tumour is situated on the anterior wall care has to be taken not to injure the ureters or the bladder, and, although such an occurrence is of great rarity, tumours originating from the ureter may also be taken for vaginal growths. Vaginal cysts may be mistaken for vaginal hernia, and the reverse error is possible. The vaginal cyst seems almost as frequent on the posterior as on the anterior wall of the vagina; on the lateral wall it is not unknown, though much less frequent. It is of very slow growth. The histology and pathology of the vaginal cyst is of importance, but remains unsettled. Von Preuschen and Cristalli, contrary to most living authorities, maintain that there are true vaginal glands. Peckham Murray reports an instance of vaginal cyst under her own observation, removed from the posterior wall of the vagina midway between the cervix and the vulva. The patient was a woman aged 30; she had borne two children, the youngest being two years of age. Sections were made through the cyst-wall. Its inner surface was covered with stratified epithelium of the squamous type and bore crypt-like depressions, gland-like follicles in fact. Murray, after

studying other reports, finds that the presence of the crypts is so universal that it seems more probable that vaginal cysts develop from the well-known crypts of the mucous membrane of the vagina than from vaginal glands, the existence of which is much disputed, whilst those who believe in them (Luschka, Zweifel, Kleinwächter, Lebedeff) admit that they are sparingly distributed. Lastly, it is quite uncertain how far the crypts may be derived from Wolffian or Müllerian elements, and whether stratified epithelium can become columnar when a crypt is occluded.

THERAPEUTICS.

164. Sugar as a Food.

DELMAS (*La Clinique*, July 1st, 1910) discusses the feeding properties of sugar, and points out that in order to be utilized by the body it must undergo a change in the digestive tract, that it is not a substitute for the albuminous substances which are essential to the maintenance of the organism. Hydrocarbons produce energy, and sugar is the one which is most easily and most quickly assimilated. It is converted into fat or into reserve materials, and is capable of saving the albumens. Sugar is of value for the hyperalimentation of debilitated cases who are losing weight, such as the tuberculous or those suffering from fevers. In the latter its action is to lessen the destruction of albuminous substances, and up to a certain point to prevent autointoxication. Patients convalescent from long and depressing illness profit by the introduction of large quantities of sugar into their diet. When, owing to gastric disturbance, the diet is restricted to milk only, sugar is of great value; added to the milk it is well tolerated and improves the nutrition rapidly. A liberal dose of sugar added to the ordinary diet of the tuberculous gives excellent results, which are more marked if the patient has any gastric trouble. Before ordering a surplus of sugar the urine must be carefully tested for glucose, as this treatment would be counter-indicated for diabetics. The amount which can be taken is variable, 150 to 200 grams is an average daily dose; sometimes it can be increased to 300 grams. It may be given as jam or in chocolate, as honey, dried fruits or flavoured creams, or as infusions perfumed and sweetened. The following dietary is suggested: At 8 a.m., milk, bread-and-butter, and 24 grams of sugar; at 10 a.m., a drink sweetened with 16 grams; at lunch, jam 40 grams, and an infusion containing 24 grams of sugar; at dinner, soup, meat, vegetables, a pudding with 24 grams of sugar, a drink with 250 c.cm., and an infusion with 16 grams; at 10 in the evening, another infusion with 24 grams. This treatment can be continued for months, varying the amount as the weight increases. The test for glycosuria should be made every few days; any trace of it necessitates suspension of the treatment till the urine is free of it.

165. Management of Nervous Children.

PRITCHARD (*Archives of Ped.*, July, 1910) divides nervous children into normal and abnormal. All children are normally nervous, and the non-nervous or unduly phlegmatic child is much more rationally an object of solicitude than the opposite type. The hyperactivity of function, peculiar to childhood, is physiologically normal; it is an educational and developmental asset of the highest value. It is the nervous type in child and man who does things. It should be remembered that nerves are prone to form habits, and that these habits are good or bad according to the goodness or badness of the habitual stimulus. Children are subject to many organic diseases of the nervous system, epilepsy and chorea being almost peculiar to childhood. The greater sensitiveness to damage of partly developed and still growing things in all nature explains the fact that malnutrition from poor food and bad air, depraved blood states from infection or toxic agents, reflected irritation of the central nervous system, or irritation of the periphery, are all harmful agencies. Unless measures to relieve and cure are promptly applied, habit neuroses, such as tics and habit spasms, are developed. Other causes inducing nervousness in children may be described as chiefly affecting the morale. They are largely environmental, such as example. Sometimes the best treatment for a nervous child has been advice or a prescription for the mother. The family atmosphere may be injurious or irritating. Collateral in importance to parental or family contagion is the ill effect and nervous irritation of nagging. Nagging means repression, and harm is very easily worked by undue repression. Normal children are active, restless, noisy, with a constant surplus of energy, an outlet for which, within liberal reason, should not be denied them. False social customs, irritating conventionalities, unnatural companionship, mental starvation, or mentally indigestible gorgings are all inimical to normal nervous poise. The writer regards as useless any arbitrary or routine systems, since it is absolutely necessary to adapt the method to the personal equation of the child, which is always variable.

PATHOLOGY.

166. Infantile Tuberculosis and Immunity.

THE view first enunciated by von Behring that tuberculosis is essentially an infective disease of childhood or infancy, and that the later manifestations of the disease owe their peculiar characteristics to a partial immunity, has gained support from the hands of other observers. Ritter and Vehling (*Berl. klin. Woch.*, October 25th, 1909) believe that a minute study of the etiology of individual cases would be capable of throwing light on this subject. They have been unable to collect exact clinical histories from the reports of cases, but in order to gain a general impression they made careful inquiries with regard to past histories in two hundred cases without selection. The inquiries were made with every precaution, in order that the replies to questions would yield useful results, since they realized that the ordinary person, when asked about his past history, is fain to give brief replies, because he is anxious that the physician should direct his whole attention to his present condition. The results obtained in the *post-mortem* room, and the fact of von Pirquet's tuberculin reaction in children, go far to support the contention. The authors divide their cases into four groups. First, there are the cases in which an infection in childhood could be recognized, and in which the patients, as children, were known to live with tuberculous parents, or brothers and sisters. This class includes 54 males and 41 females. The second class is that in which the patients were infected in childhood, but whose parents and brothers and sisters were not affected with tuberculosis at that time. This group includes 33 males and 37 females. The third group consists of patients whose parents and brothers and sisters were tuberculous, but who had not been ascertainably infected in childhood. They include 6 males and 8 females. The fourth group deals with patients who were not ascertainably infected with the disease and whose relatives were also free from tuberculosis. Of these there were 7 males and 14 females. It thus appears that of the 200 patients 165 had ascertainably been infected in childhood. If the theory is correct, it would follow that the persons who had carried tubercle bacilli in their bodies for a number of years would show a less dangerous type of infection than those whose infection was more recent. They would be more easily improved in sanatoriums. They show that of the first group 42 per cent. were in Stage I, 36 per cent. in Stage II, and only 22 per cent. in Stage III. Those in Group 2 were 43 per cent. in Stage I, 38.5 per cent. in Stage II, and 18.5 per cent. in Stage III. On the other hand, in the third and fourth groups respectively, 28 and 28.5 per cent. were in Stage I, 36 and 28.5 per cent. were in Stage II, and 36 and 43 per cent. were in Stage III. The results were considerably better in the first two groups than in the second two groups. The type of the illness is different. In Turkey, where there are districts in which tuberculosis is almost unknown, cases of tuberculosis occurring in adults often take on an acute miliary type which is so common in children in most countries, while the chronic pulmonary form is rarely seen in these districts. The authors adduce some evidence which tends to prove the existence of a more or less complete immunity against tuberculosis in healthy adults. In dealing with the two types of tuberculosis met with in children in the majority of countries, they point out that the ordinary infection is a comparatively mild one, tuberculosis of joints and glands usually terminating in cure or latency. On the other hand, when a massive infection takes place, an acute form develops which ends fatally. Drawing conclusions from these considerations, they are of opinion that the phthisical subject and persons who are capable of strewing bacilli about in large quantities should not be allowed to live with healthy members of families, and especially with children; that careful and continuous treatment of scrofulous or tuberculous children should be undertaken in each case: and, thirdly, that when any signs are present that the acquired immunity is beginning to decrease, the persons should be subjected to one or more courses of treatment in a sanatorium.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

167. Compressed-Air Illness.

McWhorter (*Amer. Journ. of Med. Sci.*, March, 1910) investigated the gaseous contents of subaqueous tunnels, and the occurrence of compressed-air illness among workers, with a view to discovering the precise etiology of the disease. Careful observations were made during two and a half years' experience in the construction of the Pennsylvania Railroad East River Tunnel, the results on air analysis being obtained from daily records in the four tunnels. With regard to the presence of CO_2 in the tunnels, it was found that its main source was from human respiration, rather than as a result of decomposition of organic matter or of blasting. The amount rarely exceeded 0.1 per cent., and bore no relation to the number of cases of illness, and consequently had no etiological relation to the disease. Of the three possible sources of CO—namely, the proximity of a large gas tank, fine gas, and blasting—the latter was found to be responsible for any CO that was present in the tunnels. This never exceeded 0.045 per cent., and was only present for a few minutes immediately following the firing of a blast, and consequently had no material influence upon the number of cases, which were the same whether blasting had been going on or not. Furthermore, there was a complete absence of any of the clinical signs of CO poisoning. Negative results followed the investigations upon the presence of CH_4, H_2S, and NO. The ventilation in the tunnels may be regarded as perfect, since the average amount of fresh air was about 7,699 cubic feet per man per hour. A sample of air from the right heart of a fatal case gave the following analysis: N, 80 per cent.; CO_2, 20 per cent.; O, immeasurable, as against N, 1 to 2 per cent.; CO_2, 46 per cent.; O, 8 to 12 per cent. from normal venous blood. When a man dies shortly after coming out of pressure, the right heart is almost invariably greatly distended with gas, and the whole venous system contains bubbles; while if a man has been recompressed several times, and does not die for twelve hours, air is seldom present in great quantity. It was found that the disease varied with the pressure, the men being more susceptible to the disease the higher the pressure, especially as regards new workers, comparatively few being affected up to 27 lb. pressure, while at 30 lb. and over a large percentage were attacked. The direct cause, therefore, of compressed-air illness is the presence in the circulation of air bubbles containing an excess of N, since this gas is the chief constituent of the atmosphere, and does not combine with the body tissues.

168. Typhoid Spermatocystitis and Prostatitis.

Marchildow (*Amer. Journ. of Med. Sci.*, July, 1910) calls attention to the relation of typhoid spermatocystitis and prostatitis to chronic typhoid bacilluria. Especially in patients in whom the micro-organisms disappear under treatment only to reappear again later, and in chronic bacilli carriers, the clinical importance of investigating the condition of the prostate and seminal vesicles is shown, since lesions of these organs afford a source for the distribution of the bacilli. Notes of two such cases of genuine typhoid infection are given, in the first of which living virulent typhoid bacilli were present in the seminal vesicles, while the prostate gland was free and showed no changes. In the second case the bacilli were present in the prostate gland, while the seminal vesicles were normal. In both cases the bacilli were in the lumina of the glands outside the secreting cells. From the location of the bacilli, and because of the fact that some infections of the prostate gland and seminal vesicles tend to become chronic, there is ground for believing that, in subjects recovering from typhoid fever, these organs may sometimes harbour the bacilli for a considerable period. It may be assumed that the bacilli reach the bladder by passing into the urethra with the semen, as in the first case, and with the prostatic secretion, as in the second, thus producing a bacilluria; and the recurrence of such a bacilluria upon the suspension of treatment with urotropine, etc., is thereby easily explained in cases presenting lesions of these organs.

169. Circulatory Failure in Children.

Howland (*Archives of Ped.*, May, 1910) discusses the effect of infectious disease upon the circulatory system, and the view which has long been held that disturbance and symptoms of heart failure were due to cardiac weakness. After describing a variety of recent experiments dealing with the blood pressure, he concludes that death from cardiac failure is due to paralysis of the centres in the medulla; that this is confined primarily to the vasomotor centre, and secondarily to the respiratory centre; that circulatory symptoms occur first, but that respiration ceases first; paralysis of the vasomotor centre is the cause of the circulatory symptoms, and that the heart is comparatively unaffected. The comparison between the animal experiments and human patients has been made with adults. The similarity is as great with children. In them circulatory failure comes on slowly; there is a rapid, soft pulse, with a heart whose sounds are usually clear, endeavouring by its over-activity to compensate for the emptiness of the arterial system. Cyanosis, venous engorgement, and stasis with dilatation of the right ventricle are seldom met with in children; they are not the rule in fatal infections. A variety of drugs are used as agents in resisting circulatory failure, and all are used with thorough reliance upon their virtues. When alcohol is given in large enough doses to produce an effect upon the heart, it causes a lessened efficiency and a weakness of the contractions; it also causes an inhibitory effect, and finally a paralysis of the vasomotor centre, which is exactly what we would avoid. In small doses it has no effect, and in large ones it increases the danger. In a condition accompanied by a rapid fall of blood pressure, such as occurs at the height of acute infections, ether is absolutely contraindicated. The same may be said of the other drugs that dilate the blood vessels and lower blood pressure; nitroglycerine and the nitrites in quantities large enough to produce any results can only do harm. Strychnine causes a rise in blood pressure by stimulation of the vasomotor centre, but in circulatory collapse the effect is slight. Digitalis does not manifest its effect for hours when given by the mouth, and we have no reliable preparation for hypodermic use. Caffeine is a good vasomotor stimulant; it has a prolonged and constant effect in constricting the vessels by central action, and it is readily soluble. Adrenalin has a very useful influence upon the heart and peripheral vessels. It is valuable in collapse from chloroform, surgical shock, and in infections where the heart is entirely sound; but with diseased hearts its use is attended with danger. The writer, associated with Dr. Hoobler, made a series of observations upon children on the effects of drugs on the blood pressure in pneumonia. Blood-pressure readings do not give complete information as to the condition of the circulation, but it is the only method clinically available. He used camphor, caffeine and adrenalin intramuscularly. All three raised the pressure, adrenalin more promptly than the others, but its effect was evanescent, was over in less than half an hour, and in a few instances the subsequent fall was to a point lower than before its use. With a good caffeine preparation the best results were obtained. The increase in pressure began in five or ten minutes, reached its maximum in half an hour, and was manifest for two hours or longer. That which raised the blood pressure more certainly, constantly and satisfactorily than any drug was cold air. Patients brought in from a balcony, where they had been kept constantly, day and night, underwent a decrease in blood pressure, which lasted until they were taken out again. The difference between the pressure indoors and out-of-doors was 10 or 15 mm. of mercury, and the change always occurred. It was more marked the lower the pressure indoors, and the more sickly children responded best. This cannot be the effect of oxygen; it must be the reflex stimulation of the centre due to the cold on the skin of the face and nasal mucous membrane, and this view is further strengthened by the observation that cases of pneumonia treated in the open air do better in the cold months. The importance of cold air as a tonic to the vasomotor apparatus cannot be over-emphasized.

SURGERY.

170. Operative Treatment of Callous Ulcer of the Stomach.

In a communication to the Deutscher Gesellschaft für Chirurgie at its thirty-ninth congress, Küttner (*Zentralbl. für Chir.*, No. 31, 1910) stated that he had been led by his

own experience of the surgical treatment of callous ulcer of the stomach to reject gastro-enterostomy and to regard resection as the method of choice. In support of this conclusion he argues that: (1) Neither the clinical history, nor laparotomy, nor, again, macroscopical observation of the disease will enable the surgeon to distinguish the callous ulcer from carcinoma, as such differential diagnosis cannot be established except by microscopical examination. (2) While the mortality of resection is not really higher than that of gastro-enterostomy, the remote results of the former operation are far better. In attempting to prove the first of these conclusions the author deals with a material of thirty gastric growths treated by resection which after removal were submitted to careful histological examination by expert pathologists. A comparative study of the details of the clinical histories in these cases, and of the results of post-operative research, shows the uncertainty of the differential diagnosis. In 8 cases presenting typical symptoms of benign callous ulcer the growth after removal proved to be a carcinoma. On the other hand, six patients, all of a cancerous age, who had suffered from very severe symptoms of rapidly developing gastric disease, owed, as was subsequently found, these troubles to simple ulceration, and not to malignant growth. It is shown also by the author's analysis of these combined clinical and pathological records that no positive reliance can be placed in the hydrochloric and lactic acid tests, and in the indications afforded by the presence or absence of blood in the contents of the stomach and in the stools. On exposure of the affected stomach by laparotomy, it is often found very difficult, when the disease is quite recent and suitable for operation, to distinguish, by external signs, a gastric ulcer from carcinoma. The latter, in most cases, presents a very distinct hard tumour, which is movable and free from inflammatory adhesions, while the benign ulcer usually presents a smaller and less indurated swelling, which is very often associated with extensive adhesive bands of delicate structure on the surface of the stomach. In some of the author's cases, however, the specimens which under the microscope gave undoubted evidence of malignancy, had before removal been diagnosed from external signs as well as clinical indications, as simple ulcers. Swelling of abdominal lymph glands, it is asserted, is not a sure sign of malignancy, as a cancerous lymphangitis may be simulated by cord-like fibrous thickenings of the serosa. In 43 per cent of the author's cases, in which before or during the operation for resection the disease had been diagnosed as simple ulcer, the growth was found after removal to be distinctly cancerous. Of the author's collection of 60 specimens, each, he states, was either a distinct ulcer or a distinct carcinoma—not a single instance of transitional growth was observed. In discussing the relative risks of the two operations the author states that, according to Payr's statistics the immediate mortality of resection is not higher than that of gastro-enterostomy. Küttner's own statistics show a mortality in regard to resection of 13.3 per cent. That this operation is much more serious in cancer than in simple ulcer of the stomach is shown by his statement that he has in thirteen instances practised resection for the latter affection without a single death. He has been led, however, by his experience to reject this operation in cases of duodenal ulcer on account of the great risk of pulmonary gangrene. In comparing the late results of 19 resections and 12 gastro-enterostomies, the author gives good reason for his belief that callous ulcer of the stomach should be treated by the former operation. The chief points brought out by the analysis of these cases are: the good prospects of long survival—in four patients over fifteen years—after resection of cancer; the failure of gastro-enterostomy to afford effectual and durable relief in more than 16 per cent. of the cases of callous ulcer; and the fact that of 12 patients who had been treated for simple ulcer by gastro-enterostomy no less than 5 have since succumbed to cancer of the stomach. This proportion—41 per cent.—agrees, the author points out, in a remarkable way, with the proportion of 43.3 per cent., already mentioned, of cancers in gastric growths diagnosed and treated as simple ulcers.

171. Isolated Muscular Atrophy and Osseous Tuberculosis.

Niehans (*Zentralbl. f. Chirurg.*, No. 25, 1910) directs attention to the frequent association of isolated muscular atrophy with osseous tuberculosis, and points out its importance as a diagnostic help in the localization of the tuberculous deposits in the affected bone. The author's observations have led him to the conclusion that such deposits are usually complicated with well-marked atrophy of a single muscle or group of muscles, having origin or insertion at the diseased portion of the bone. He gives as instances: Atrophy of the biceps femoris muscle in a case of tuberculosis of the head of the fibula; atrophy of the gastrocnemius with tuberculous deposits in the calcaneum; and atrophy of the triceps humeri with like deposit in the shaft of the ulna. The muscular wasting observed in cases of this kind cannot always be explained, as is generally done, by disuse. It may occur, notwithstanding full and active exercise of the affected limb, and, moreover, the muscular tissue usually retains, the author asserts, its deep brown colour. This form of isolated muscular atrophy will, it is anticipated, enable the surgeon to make an early diagnosis in cases of subcortical tuberculosis of bone, and by early intervention to remove the infective focus and to prevent spreading of the disease to an adjacent joint. Deposit of tubercle in osseous tissue when in an early stage and before it has developed into an opaque mass of caseous infiltration cannot, it is pointed out, be distinctly revealed by the Roentgen rays.

172. External Urethrotomy.

C. L. Gibson (*Med. Record*, August 6th, 1910) advocates external urethrotomy done with a guide as easier of performance than the search for the posterior end of the urethra, which must often be abandoned. He describes his technique: An exaggerated lithotomy position is maintained under general anaesthesia. The index finger of the left hand passed into the rectum acts as a guide to the membranous urethra. An incision is made in the middle line, the knife being held perpendicularly through the tissues until it enters something, which is the well-dilated membranous urethra. A suitable probe is passed along the knife, which is still held perpendicular, the finger having been removed from the rectum. Along this probe or director the stricture is divided. A small urethrotome or bougie is passed towards and through the anterior urethra, and a filiform bougie is entered. The knife is fitted into the staff and pushed home through the stricture, after which an Otis urethrotome is passed and the operation completed by cutting the stricture through. Bladder drainage is instituted. With great ease an instrument of suitable pattern may be passed from the meatus with the aid of the finger in the opening, so that the instrument may gently worm through the stricture without making a false passage.

OBSTETRICS.

173. The Management of Breech Presentations.

Rudaux (*La Clinique*, June 10th, 1910) attributes the high fetal mortality in breech presentations in rural districts to a reluctance on the part of the practitioner to perform external version and to a tendency to interfere with the natural process of delivery. When such a presentation is diagnosed during the last two months of pregnancy, it should be converted into a head presentation as often as possible; when there is only one fetus there are no counter-indications, and version should always be attempted. This variety of presentation and delivery is to be preferred in slight pelvic contractions, especially in the case of a multipara whose previous confinements have been difficult, or in placenta praevia. External version is difficult in primiparae whose abdominal and uterine muscles are firm; in advanced pregnancy, and when the fetal dimensions are very large, the attempt should be repeated, if necessary, under chloroform. Before undertaking the operation, the bladder and bowel must be thoroughly emptied, and the fetus should be auscultated carefully, a precaution which is repeated afterwards. When it has been successfully carried out, two large tampons of linen or cotton-wool are placed on either side of the uterus and held in place by a firm band of flannel. The band must be carefully adjusted so as to retain the fetal head in the lower portion of the uterus, but without compressing the skin and tissues too much. When labour has begun, if the membranes are intact, it is still possible to perform version if the uterine contractions are not too strongly excited by manipulation. Labour is conducted as in head presentations; after spontaneous rupture of the membranes the amniotic fluid may be greenish, or meconium may be evident. In primiparae good results are obtained by dilating the vagina before delivery by means of a Champetier de Ribes's bag. When the membranes are intact and dilatation is complete, they should be ruptured. Frequent auscultation is recommended, and there should be no intervention unless a rapid termination of the confinement is indicated. No traction is made on the limbs, whether flexed or not, until

the umbilicus appears at the vulva: the cord is protected, and only after the spontaneous expulsion of the thorax and arms does one intervene to deliver the head which is retained in the vagina. One hand is passed into the vagina, and two fingers are placed in the mouth of the fetus, the index and middle fingers of the other hand grasp the back of the neck, and traction is made to bring the head on to the perineal floor. The under hand flexes the head and guides the chin backwards. The occiput is then behind the symphysis, and further flexion will complete delivery. Once the mouth is free of the vulva the after-movements can be completed slowly, so as to save the perineum. The fetus generally requires vigorous measures to be taken for its resuscitation. The necessary tube for insufflation, the hot bath, mustard, spirits, and warm blankets should be prepared in advance.

174. Unilateral Twin Tubal Gestation.

EUGENE POOL (*Amer. Journ. Obstet.*, April, 1910) publishes a case under his own observation, and adds abstract reports of 26 "positive cases of twin pregnancy in one tube," and references to more doubtful records. Pool's patient was 27 years of age, and was admitted into a New York hospital complaining of acute crampy pains in the left iliac region, intermittent pains which had set in a week before admission, beginning with a sensation as though the bowels were going to move. The last period began at the regular time a month previous to the first onset of pain and show, and continued until that date. No periods had been missed before. The patient had been married seven years; five months after marriage she had miscarried at about the third month, but had never been pregnant since. On examination the uterus was found to be slightly enlarged, and a tender, smooth, fixed mass lay to its left and behind. It seemed to diminish during examination on the operating table, so that rupture of a tubal sac was suspected. The abdomen was opened, and a moderate amount of fresh blood was found in the abdominal cavity, and blood clots lay in the pelvis. The mass on the left of the pelvis was readily freed from recent adhesions and drawn up. It proved to be the left tube which had ruptured and was bleeding freely. The patient recovered. The tube bore a fetal sac; two cords, each an inch long, passed from the placenta each to a fetus 1¼ in. in vertex-coccygeal measurement. At the placental attachment the cords were ¾ in. apart.

GYNAECOLOGY.

175. Uterus Unicorporeus Bicollis.

PIQUAND AND BITTE (*Bull. et mém. dé la Soc. Anat. de Paris*, April, 1910) report an instance where a double cervical canal, in a woman aged 34, was associated with leucorrhoea and abdomino-pelvic pains, present for several months. The catamenia were regular, and there had been three pregnancies, but abortion occurred in all before the end of the fifth month. A thick septum running antero-posteriorly and somewhat from left to right, divided the upper part of the vagina into two compartments, and the middle part of the septum touched the cervix without adhering to it. There was, on the other hand, a distinct groove on the surface of the portio vaginalis of the cervix corresponding to the upper border of the septum. An os externum, very narrow, lay on each side of the groove, the right os lying on a plane somewhat anterior to the left. When a sound was passed into each os the two instruments touched each other in the uterine cavity which was clearly single. The two cervical canals met at the os internum, being separated from each other by a wedge-shaped septum nearly 1 in. in vertical measurement and under ½ in. at its base, which represented the tissue between the right and left os externum. This cervical septum was excised without any appreciable haemorrhage. The endometrium proved to be quite healthy, and there was no trace of a uterine septum.

176. Uterine Fibromyomata.

WALLACE (*Journ. Obstet. and Gynaec.*, July, 1910) reports 10 cases of fibromyomata, of which 9 were chronic: 5 of the patients were single and nulliparous, 1 a barren widow, 1 had had an abortion prior to the appearance of the tumour, 1 had had one child, and 2 had had several children. In one case the main tumour was an interstitial one, but there were two small growths which were either subperitoneal or covered by a thin muscular layer; in 5 cases the interstitial form was gradually replaced by the subserous, 2 were throughout multiple interstitial with subperitoneal growths, and 2 were of doubtful variety. The cases were kept under observation for from five to twenty-eight years. In 1 case the growth of the tumour was so rapid as to warrant the term "acute," in 3 the increase was slow or "chronic," in the others the growths attained their maximum size before the first examination. Incomplete shrinking of the tumour occurred in 8 out of the 10 cases, and took place with great rapidity in 3 of them. The decrease may have been due to genuine absorption of the component elements of the tumour, but there was also the possibility of the lessening in bulk by reason of reduction of oedema. Two of these cases were taking 30 grains of calcium chloride daily, a salt reputed to aid in the abatement of oedema. In the "acute" case disappearance occurred before the menopause had taken place, but was undoubtedly influenced by it, since menstruation had become profuse and irregular. Of the 9 chronic cases, in 3 the tumour began to shrink before the menopause, in 3 the shrinking coincided with the onset of the menopause, and in 3 the diminution began after (but not longer than one year after) its onset. Valvular disease existed in 3 cases, and dilatation and hypertrophy of the left heart in one, so that the tumour can hardly be said to have a causative influence in the production of heart disease. High pulse tension was noted in 2 cases; in both it was associated with cardiac disease. Two of the patients had had fairly good health up to the time of the menopause, two moderately good; the other six poor or indifferent. After the menopause the health was good in 4, but of these one had lost her tumour; another who had lost her tumour also enjoys good health, but has not yet attained the menopause; of the other 5, 1 died after long ill health and suffering, 1 has abdominal pain, 2 lead a life of invalidism. Thus 9 cases illustrate the trials and discomforts endured by the lifelong possessors of these tumours. The author concludes that palliative treatment appears inapplicable to cases in which fibroids cause symptoms and the condition of the patients' general health justifies operation.

177. Ossifying Fibroid Associated with Cancer of Uterine Body.

BRYDEN GLENDINING (*Archives of Middlesex Hospital*, vol. xix, 1910) reports a case where the uterus was removed by panhysterectomy for a hard tumour. It was enlarged to about three times the normal size but was not much altered in shape. The walls showed regular hypertrophy. Within the whole posterior and lateral surface, from the fundus close down to the cervix, bore a rough, soft, lacerable, white papillomatous growth—a columnar-celled carcinoma. A pedunculated fibroid polypus of about the size of a pigeon's egg was attached by a short thick pedicle to the fundus. No other fibromyoma was detected excepting one small hard growth in the stump of the right round ligament. On section, the polypus was found to include a spongy calcareous tissue, and under the microscope this tissue proved to be true bone. The cancerous growth had invaded the cancellous tissue. Clinically, the fibroid seemed to have masked the malignant growth.

THERAPEUTICS.

178. Galegol.

FRANZ SCHERER (*Wien. med. Woch.*, No. 18, 1910) has made a somewhat extensive trial of a galactagogue called "galegol," prepared by Fragner from the plant *Galega officinalis*, a plant which is much sought after in Italy and France by country people to give to milking cows. Galegol is in the form of small, brown granules, easily soluble in water, milk, coffee, and tea, and possessing a pleasant taste. It is obtained from the plant by extraction *in vacuo* at a low temperature and sugar of milk is added. The dose recommended is 2 to 8 teaspoonfuls of the powder a day, corresponding to 1 to 4 grams of the extract (15.4 to 61.7 grains). Scherer has given galegol to 80 nursing women at the Foundling Hospital in Prague. The women varied in age between 17 and 30 years. They could be divided into three groups: the first consisted of those who were not secreting milk, but from whose breasts a fluid resembling colostrum could be obtained; the second, of those in whom the amount secreted was very small; and the third of those who secreted a normal quantity of milk but the child who was nursed put on weight slowly. In 26 out of the 80 cases no effect on the milk secretion could be traced; 11 of these women left on the second or third day because of agalactia; and another sickened with scarlet fever on the second day. In 54 of the cases there was a clear and often very striking favourable effect. The women were examined each day and the strength of the secretion and the weight of the child noted. In cases in which before the administration of galegol little milk had been secreted, after a few days the children

began to increase steadily in weight, sometimes as much as 70–100 grams (2.4–3.5 oz.) in twenty-four hours. Seven of the women afterwards became foster nurses in private families, and continued to take galegol. In a series of cases the preparation was suddenly discontinued for several days, but in none of them did a striking diminution in the quantity of milk follow. The author recommends that the powder should be given, especially in the case of weakly women, during the whole period of lactation. The daily increase in weight was especially striking in some of the backward atrophic children. One such child put on 630 grams (1.38 lb.) in eleven days. It is to be observed that the milk or tea in which galegol is given should not be heated above 37° C. (98.6° F.): a higher temperature appears to change the preparation and lessen its efficacy.

179. Aerotherapy.

Brucker and Richez (*La Clinique*, June 17th, 1910) define aërotherapeutics as the use of the atmospheric air modified either in its composition or its density. The atmosphere may be surcharged with oxygen, or may have carbonic acid added to it, or it may be saturated with medicated vapours, cold or heat, and dry or humid. Rarefied air is seldom used therapeutically, but compressed air is a frequent remedy, its value lies in its power to increase the amount of oxygen absorbed by the blood: the pulmonary interchange is more efficient, while the respiratory movements are also longer and deeper and ensure a more perfect ventilation of the organs. The compressed-air bath consists of a metal-lined room, furnished and heated, in which the patient can lie and read, or work, or sleep, but in which he is kept under observation. The air is passed into the chamber after having been sterilized, charged with the desired proportion of oxygen, and saturated with vapours or powders if necessary. It accumulates in the bell or chamber, it gradually becomes compressed, to escape by a valve as soon as the tension reaches a certain point. Compression is only slowly effected, so that the patient experiences no unpleasant sensations. Complete rest and quiet is maintained during the hour or two occupied by the treatment, for the air is gradually altered slowly until the pressure within the chamber equals the barometric pressure outside. This cure is of most value to persons suffering from respiratory insufficiency: its action is sedative, and it reduces congestion, and prevents spasmodic cough and dyspnoea. The mechanical effect is to increase the osmotic exchange, and to reduce pleural adhesions. Rhino-pharyngeal obstruction is benefited by it as well as adenitis and anaemias. It is contraindicated in cases of haemoptysis and non-compensated cardiac lesions. When prudently used, the treatment is absolutely harmless and of great clinical importance.

180. Technique of Radio-therapy in General Paralysis.

In 1908 Marinesco, of Bucharest, brought forward the idea of irradiating the brain and nerve centres in the first period of general paralysis, basing it upon the fact that from the anatomo-pathological point of view there existed at that period a neoformation of vessels and plasmatic cells, which obstructed the capillaries of the cerebral surface and impeded the normal circulation. His colleague Severeanu (*Arch. d'élec. méd.*, June 25th, 1910) follows up this work, and reproduces a number of photographs representing the handwriting of patients before and after treatment. One of the patients whose handwriting had shown all the characteristics of general paralysis passed an examination as a teacher of caligraphy eight months after commencing treatment, having received eighty-seven sittings. Up to a certain point Severeanu is able to state that the efficacy of the treatment is proportional to the force and quantity with which the *x* rays have been directed upon the nerve centre most attacked. For example, in patients having troubles of speech the rays have been brought to bear upon the speech centre. But he cannot yet speak with precision on this matter, which awaits further investigation. Faulty technique, he thinks, explains the greater number of failures in the radio-therapy of the deeper tissues. The quality of ray, which depends principally upon the vacuum of the tube and the intensity of the secondary current, plays a very important part in the radio-therapy of the nervous system. The idea that the soft rays, which act superficially, have a more pronounced biological action than the hard rays he describes as false. The notion has arisen, he says, because too small a quantity of hard rays has been employed in test cases. His results confirm the efficacy of filtration. In order to save the scalp of the patients the rays have been filtered through aluminium plates 15 mm. in thickness, and, having evaded by this means the reaction on the superficial tissues, he has been able to give rays numbered 7 on the Benoist scale. The patients have had from twenty to seventy sittings of radio-therapy without suffering epilation or any scalp lesion. He favours the milliampèremeter as a register of the quantity of the rays, which is necessarily very large in these cases. In estimating quantity various factors must be taken into account. The quantity is in direct proportion to the electrical intensity, the duration of irradiation, the kind of tube, the quality and thickness of glass, and the distance of the anticathode. In one of his patients, the teacher of caligraphy, whose case represents the greatest degree of success hitherto obtained, 115 sittings were given, one every other day, with a free interval of one month after each series of forty sittings. Each sitting lasted from ten to fifteen minutes; the intensity was ½ milliampère: the distance from the tube 15 cm. The tubes of Gundelach, Monopol, and Bauer were employed. The diameter of tube was 18 to 20 cm., and it was worked by a coil giving a 60 cm. spark. The number of patients ameliorated is not yet sufficient for a definite statement to be made; but if those who are still undergoing treatment in Bucharest confirm the first results radio-therapy has made a great conquest. The efficacy of the treatment has been observed, not only in a return to the normal psychical state of the patient, but in a modification of the cytological reaction.

181. Human Blood Serum in Haemophilia Neonatorum.

Welch (*Bull. Lying-in Hosp., City of New York*, March, 1910) regards normal human blood serum as a curative agent in haemophilia neonatorum, and makes suggestions for its use in other conditions. The cases reported include a number of babies in whom the cause of haemorrhage was unknown. Bleeding appears, as a rule, during the first week of life, and may be from the skin or any mucous surface. The principal bleeding may be either in the brain or spinal cord, or from the gastro-intestinal tract. The therapeutic remedies commonly used are calcium salts, adrenalin, and gelatine solutions; in 18 cases in which these agents were used there were 17 deaths, which demonstrate the futility of the measures. Twelve cases which have been injected with normal human blood serum have been cured. The serum successfully controls haemorrhage in the newly born. When placed under the skin it is readily absorbed, 2 oz. have been seen to disappear in five minutes by gently massaging the skin over the site of the injection while administering the dose. The dose of serum depends upon the urgency of the case; it is advisable to begin with at least 10 c.cm., and repeat three times a day if the bleeding is moderate. In severe cases it should be given every two hours, and in larger quantities if necessary. It is important to begin the treatment at the first indication of bleeding. Slight bleeding from the cord may be accompanied by fatal internal haemorrhage if not immediately stopped. The writer has also used subcutaneous injections of normal human serum in a case of streptococcaemia with apparent good effect. He considers that when administered hypodermically to tuberculous persons it gives excellent results. It has probably a wide field of future usefulness.

PATHOLOGY.

182. Lesions of the Pancreas.

Fiorovanti (*Rif. Med.*, May 23rd, 1910) has carried out a series of experiments on dogs with a view to watching the effect of lesions of continuity in the pancreas. He finds that such lesions of the pancreas as, for example, may be made in splenectomy or other abdominal operations, are not without effect, but may cause alterations in the fat or vessels. The fat lesions take the form of necrosis, and are steatolytic in type and due to the action of steapsin, a pancreatic ferment having an elective action on fats. These fat changes may be confined to the peripancreatic fat, or may extend, more rarely, into the abdominal fat. Fatty acid crystals may be observed in the affected patches. The adjoining vessels of the fat may suffer severe changes of a necrotic type, the lumen becoming dilated, and rupture with haemorrhage may occur. The comparatively small lesions of the pancreas which are sometimes unavoidable in performing a splenectomy give rise to similar changes to those above described, but to a smaller degree, so that, whilst it is advisable to try and avoid injuring the pancreas as far as possible, the ill effects likely to follow—at least, as far as the operation of splenectomy is concerned—need not be seriously feared as far as the pancreas is concerned.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

183. Intestinal Cancer.

Mathieu (*Journ. des prat.*, September 3rd, 1910) draws attention to several distinctive features of this disease. It affects chiefly the large intestine, being epitheliomatous in origin. While the scirrhous annular cancer, finally resulting in stenosis and slowly progressive, is not uncommon, the general tendency is to ulcerate. It is during the latent period when the disease is frequently marked by trifling extraneous symptoms—where, indeed, there is not only no evidence of tumour, but no signs of occlusion, not even dyspepsia nor anaemia—that it is apt to be overlooked. Among the more characteristic signs are constipation alternating with diarrhoea, colic increasing in severity, with frequently a point of maximum pain on pressure. These patients often feel a sense of permanent contraction and general uneasiness in the abdomen, and a sensation as of liquid filtering drop by drop through a narrow neck. At times dyspeptic symptoms suggesting cancer of the stomach are the first indications. Again, anaemia and cachexia may predominate—latent cancer often causing a form of pernicious anaemia. Occlusion of the bowel, occurring in a patient over 45 years of age, may quite well be the first indication of cancer of the intestine. On inquiry it is found that the patient has not been so exempt from premonitory troubles as might be supposed on merely casual examination. His general health has diminished; he is thinner, anaemic, and may have had a faecal odour in the mouth. The ulceration of the neoplasm may result in the formation of an abscess—this being often the first indication of the disease. It appears suddenly with peritoneal phenomena and fever. Disseminated cancer of the peritoneum, with ascites, is also a common occurrence in the course of the disease. The ascites is never so marked, however, as that which occurs in tuberculosis of the peritoneum. To summarize: there may be (*a*) slow development with intestinal colic, diarrhoea, and constipation, with a progressive tendency to obstruction, the crises of occlusion becoming more and more frequent; (*b*) the condition may remain latent for a long time, and result in the production of abscess and fistula; (*c*) occlusion of the bowel may be the first indication: (*d*) there may be a prolonged prodromal period with no other physical signs than anaemia and cachexia; (*e*) the first indications may be disseminated cancer of the peritoneum with ascites. In conclusion, the author recommends exploratory operation as the only means of making a diagnosis in suspicious cases with the above indications, and early operation the best practice.

184. Bronchial Asthma.

Ludwig Hofbauer (*Wien. med. Klin.*, No. 23, 1910) investigates the different physical methods of treatment of bronchial asthma. To the first group belong the exhibition of Roentgen rays and the high-frequency intermittent electric current. The use of Roentgen rays has appeared both to cut short asthmatic attacks and also to have a permanent effect. These results are, however, even in the opinion of the operators themselves, due to suggestion, and Levy Dorn showed that the same result might follow if only a pretence at applying the rays was made. The result of the high-frequency current is limited to shortening the attack; but in this case also the efficacy of the treatment depends on suggestion. Different hydriatic procedures have also been employed, as, for instance, hot compresses to the chest, alternating hot and cool foot and hand baths, cold rubbings down, hot full baths followed by cold abdominal and neck douches, etc. All these measures are effective only as a means of cutting short an attack by diminishing the congestion and swelling of the bronchial mucous membrane: their action is comparable to that of atropine. Luminous radiant heat baths, which have been recommended by von Strumpell, probably act in two different ways: first, they cause a strong hyperaemia of the skin, and so reduce the congestion of the bronchial mucous membrane: and secondly and more important, they modify breathing and tend to produce a protracted regular expiration—that is, for practical purposes they act like a kind of breathing exercise in which the patient is forced to lengthen expiration, while at the same time the auxiliary muscular strength is not brought into play. Breathing exercises form the last method of treatment to be considered. In an asthmatic attack there is a condition of expiratory insufficiency, which, in the author's opinion, is increased rather than lessened by the action of the auxiliary muscles of respiration, both because the sudden pressure due to the contraction of the auxiliary muscles, instead of driving the air out of the alveolus, closes the valvular opening between the alveolus and the bronchiolus, and also tends to irritate the mucous membrane by the sudden moving and tearing away of the adherent secretion; these two factors cause irritation of the nerve endings, such as is induced by hasty in-and-out breathing. In breathing exercises the patient is instructed to lengthen expiration in order to give more time for the air to pass through the narrowed bronchioli, and, on the other hand, the auxiliary muscles are not brought into play. The effect of this treatment is not only to shorten attacks, but also to prevent further attacks, and a permanent recovery may be obtained, even in cases which have lasted for years, and in which all other methods, including intranasal operations, have been tried without effect. Symptoms of secondary dilatation of the lungs also diminish materially under the treatment, and the patients become once more fully equal to work. Encouraging as the results have been, the author gives a warning against promising at the outset complete recovery to any patient, while at the same time he warmly recommends the method for trial.

185. The Stools of the Newborn and their Significance.

Shuttleworth (*Archives of Pediatrics*, March, 1910) has made investigations into the character of the stools of fifty infants successfully fed on the breast, and his results are as follows: The earliest stools of the infant consist of meconium, and are of a brownish colour. These last for three or four days, and are followed by bile-tinged mucoid intestinal secretion, which may be dark brown or yellow, but much more commonly dark green, depending upon whether the bile pigment is in the form of bilirubin or biliverdin. About the sixth day a certain proportion may take on the classical yellow colour, but the majority are greenish yellow, more or less fluid, gaining gradually in consistency, and only at a later period, which varies considerably, becoming yellow. The early scanty milk residue appears in the stools in small flakes, which in the fluid or semi-fluid stools are scarcely recognizable, but in the semi-solid stools they are at first more or less separated by the viscid mucoid secretion of the intestine. As the milk residue increases, the intestinal secretion as a rule decreases, allowing aggregation of the flakes into fairly homogeneous masses. Frequent dark green stools occur when the intake of milk is so scanty that practically no milk residue reaches the rectum: these stools consist almost exclusively of the mucoid secretion of the intestine. If they continue too long after birth, or if they follow upon stools which have previously contained milk residue, they are valuable indications that the infant is receiving or securing a very limited or insufficient amount of food. Their appearance does not by any means necessarily indicate some disturbance of the infant's digestion, as is commonly assumed. On the other hand, stools of a lighter green colour, in which the food residue rather than the mucoid intestinal secretion bears the green colour, may or may not be of significance. A light greenish-yellow tinge is a very common transition stage in the stools of the newly-born before they finally take on the classical yellow colour, and such stools have no connexion with the green stools of summer diarrhoea, with which they are frequently confounded. With regard to the diagnostic value of the newly-born infant's stools, the author states that if these be found on smoothing out to be of a yellow colour, it is quite certain that there is no serious disturbance of digestion, whatever the surface colour of the stool may be like.

186. Statistics of Cerebro-Spinal Meningitis.

Merle (*Bull. Soc. de la Péd.*, June, 1910) has treated 9 cases of cerebro-spinal meningitis occurring in one year, without any epidemic being present, and apparently not influenced by the seasons. The cases were typical: 1 showed a new symptom in the form of a red eruption, resembling typhoid spots, and scattered over the abdomen. The rash appeared on the seventh day and had disappeared

three days later. All the cases, except one in which cerebral hemiplegia occurred, were cured and left no sequelae. Antimeningococcic serum was used. Flexner's serum or Dopter's were found to be the most reliable. The spinal injections were given regularly in 20 c.cm. doses for the first three days; further injections were not given unless the symptoms continued or the temperature rose. The writer considers that the subcutaneous method of injection should not be entirely abandoned, as it may be a useful adjuvant where the meningococcic infection is generalized or serious, as it allows a quantity of the serum to be introduced at once into the body.

SURGERY.

187. Operation for Ectopia Vesicae.

MAKKAS (*Zentralbl. für Chir.*, No. 33, 1910) holds that Maydl's operation, though much superior to older and now obsolete methods of dealing with extroversion of the bladder, does not prevent the trouble of incontinence and the risk of ascending infection of the ureters and kidneys. He describes a new operation originally devised by himself, which he has recently performed with encouraging results in a case of congenital ectopia in a girl aged 15 years. The object of this procedure was to convert the caecum, after its exclusion from the intestinal canal, into a new urinary reservoir and, at the same time, to utilize the appendix as an artificial urethra. In the first stage of this operation the caecum was "excluded" and its open ends securely closed by sutures; the continuity of the intestinal tract was re-established by lateral anastomosis, and, finally, the appendix which measured about 3 in. in length was cut through near its apex and attached at its open end to the lower part of the laparotomy wound. In the second stage, which followed after an interval of six weeks, the extroverted bladder was set free by dissection and the mobilized vesical flap to which the ureters remained attached was implanted into an opening made at the posterior portion of the lower pole of the new bladder formed by the caecum. The patient made a good recovery from the effects of this operative treatment, but the interval since the date of the second intervention is still too brief to permit any definite conclusions on the value of the author's method. Four weeks after the second operation the patient was in good health and quite free from fever; the reservoir formed by the caecum was capable of holding from 300 to 325 c.cm. of urine, but owing, it is thought, to some valvular obstruction in the appendix, could not be relieved without the use of the catheter, which was retained during the day and removed at night. The urine, the daily quantity of which amounted to over 1,000 c.cm., was free from albumen, was clouded by the presence of mucus found on close examination to be mixed with leucocytes and vesical epithelium.

188. Hereditary Syphilis in the Newly-born.

RUDAUX (*La Clin.*, July 8th, 1910) says that it is not uncommon to find evidences of hereditary syphilis present at birth, or appearing a few days afterwards without any warning. The early recognition of these lesions is important, to allow of immediate treatment and to prevent serious consequences. Such infants cannot be given over to a wet nurse; the practitioner is responsible for her infection through syphilitic infants. It is often necessary in suspicious cases to search carefully for manifestations. The more easily recognized are an enlarged liver or spleen, ascites, hydrocephalus, development of the superficial veins, especially about the back of the head, hypertrophy of the testicles, which are hard and sclerotic, and often accompanied by hydrocele. In some cases it is the child's general condition which awakens suspicion; it is below the average weight, thin, with a wrinkled or discoloured skin, the head is more or less misshapen, the brow bossy, and the nose depressed. The most common skin manifestation is pemphigus, which occurs about the feet and hands and buttocks; spirochaetes have been demonstrated in the liquid contained in the bullae. Other syphilitics show gummata or a papular rash, or ulcerations about the mouth and tongue, or mucous patches round the genital organs, disguising fissures. The nasal discharge when present impedes breathing, and makes suction difficult. Umbilical haemorrhage, gastro-intestinal troubles, marasmus, and sudden death must be included in syphilitic manifestations. Treatment consists in medication and in finding the best means of nourishing the child. Since the child may not be given a wet nurse, it is desirable that the mother should nurse it herself if possible; a weakly child may not suck well, and recourse must be had to additional feeding, either by the bottle or by feeding with the breast every hour or hour and a half. Premature infants have done well on asses' milk, but the general food is cow's milk, sterilized and diluted with boiled water. The child's mouth must be cleansed several times a day with boiled water or Vichy water, or a solution of borax. The nose must be kept scrupulously clean, and the same precautions are necessary for the whole body. Premature children are wrapped in cotton-wool and surrounded by hot bottles, in a room whose temperature is kept warm and equal. The buttocks must be washed with oxygenized water, and dusted with a powder of oxide of zinc, bismuth, and talc, or smeared with an ointment containing bismuth subnitrate 4 grams, and oxide of zinc 5 grams, in vaseline and lanolin. Other useful ointments are calomel 1 grain in vaseline 30 grains, or yellow oxide of mercury 50 cg. in vaseline 20 grains. When the skin lesions spread they may be touched with a 1 in 20 or 1 in 40 solution of silver nitrate. Coryza is treated with a solution of borax, and several times a day 5 drops of oxygenized water diluted 4 times with sterilized water are run into each nostril, while each night some calomel ointment is inserted. The writer recommends the "liqueur de van Swieten" thrice daily for mercurial ingestion. The dose begins at 2 drops and rises until 30 are being taken during the day. Mercurial ointment may also be rubbed into the skin, the area being frequently changed. In serious cases, where other methods are badly tolerated, subcutaneous injections are used. The iodide or benzoate of mercury are the most soluble; the injection is given in the buttock daily for ten days, followed by ten days' rest.

189. Foreign Body in the Heart.

VISCONTINI (*Gazz. degli Osped.*, June 2nd, 1910) reports the case of a man, aged 30, who, in a quarrel with a gendarme, received a severe injury in the neck. He fell to the ground at once, but did not lose consciousness. The accident happened on August 18th, and as it was followed by paralysis of the lower limbs, the man was taken to hospital on August 19th. There was a bullet wound on the left side of the neck, near the third dorsal vertebra. No exit hole could be detected. There was complete motor paralysis of the lower limbs and abdominal muscles. No signs of disease in the thorax. On August 30th it was proposed to take a radiogram, but on being raised the patient suddenly collapsed, became very cyanosed, and pulse went up to 120. The attack passed off slowly, and no further attempt was made. Death occurred on March 10th from septic absorption, owing to the formation of bed sores, cystitis, &c. At the *post-mortem* examination the track of the bullet could be traced through the left lamina of the third dorsal vertebra, across the cord, through the corresponding vertebral body, and on to the right pulmonary artery, where apparently it stopped without actually perforating. Probably perforation occurred during the act of preparation for radiography on August 30th. As on further examination the bullet—about 7mm. diameter—was found free and unattached amongst the muscular papillae of the posterior wall of the right ventricle. There was a long, whitish thrombus on the right ventricle, going up for a little distance into the pulmonary artery. No lesion could be detected either within or without the heart, so that it seems clear the track of the bullet into the ventricle was as described above. Death was due to the secondary results of a paraplegia, and in no way caused by the presence of the bullet, which apparently gave rise to no symptoms.

OBSTETRICS.

190 Acute Torsion of Normal Appendages in Pregnancy.

AULHORN (*Zentralbl. f. Gynäk.*, No. 16, 1910) writes that whilst axial rotation of ovarian and broad ligament cysts is frequent, normal appendages rarely become twisted under any circumstances. A girl, aged 19, was admitted into hospital, under his care, on account of an attack of severe recurrent pains which had continued for two days. The period had ceased precisely three months earlier, the patient had previously been regular and pregnancy had never occurred. For a few weeks she was troubled with slight pain in the right iliac region which subsided; the present attack began quite suddenly and caused her to groan and shriek. She lay in bed with her knees drawn up, the parietes were rigid. There was no fever, this seemed to contraindicate appendicitis. A swelling as big as a fist could be defined in the pelvis, reaching upwards to the right iliac region. Normal uterine pregnancy with pyosalpinx seemed to be the most probable diagnosis. The

pains, after the patient had passed one night under observation, grew unbearable. Abdominal section was therefore performed. The uterus was gravid. An oval mass, three and a half inches in long diameter, bluish-black in colour, was attached to the right side of the uterus. It consisted of the right uterine appendages twisted on their long axis over 180 degrees. The Fallopian tube was much stretched and distended, its walls were infiltrated with blood and its canal stuffed with coagulum. The ovary was swollen, owing to interstitial haemorrhages, but its tissues were otherwise normal. The patient was doing well and had reached the eighth month of pregnancy when her case was reported.

191. Bradycardia in the Normal Puerperium.

Lewisohn (*Monats. f. Geb. u. Gynäk.*, April, 1910) has carefully studied the pulse in the normal as contrasted with the complicated puerperium. Bradycardia in pregnancy was accurately described by ancient Chinese writers. Blot read an essay on the subject before the Académie de Médecine in 1863, but more recently both Aichel and Heil, after independent researches, concluded that there was nothing special about slow pulses in lying-in women. Lewisohn is not of their opinion; he finds that there is a special type of bradycardia associated with the puerperium. It may be latent, owing to many factors, and may be more than neutralized by complications, such as lingering labour, the use of obstetric instruments, haemorrhages, and, above all, laceration of the perineum, whilst miscarriage and premature labour have a similar influence. Putting aside all complicated childbeds, Lewisohn is able to distinguish a "physiological" bradycardia, where an extremely slow pulse is present without any previous trouble in parturition, the patient otherwise passing through a normal puerperium. The entire puerperium must be studied, as the pulse is apt to remain slow for some time after the patient gets up, or may even grow slower. Altogether bradycardia is not in itself a grave symptom. It is due to the diminished flow of blood to the heart after delivery, and in consequence of slower metabolism the cardiac muscle is subjected to a lower stimulation than before. Lewisohn publishes the statistics of over a score of observers.

GYNAECOLOGY.

192. Painful Defaecation from Adherent Sigmoid in Salpingitis.

Hubert Royster (*Amer. Journ. Obstet.*, February, 1910) raised an instructive discussion at a recent meeting of an American society. He had observed and noted 9 cases of inflamed Fallopian tube in which adhesion to the sigmoid flexure of the colon was apparently the sole source of one symptom—left-sided pelvic pain. He reports one case where he separated the adherent sigmoid from the fimbriated end of the tube and the upper surface of the broad ligament. The raw areas were closed with fine catgut sutures. Royster lay great stress on the covering of all denuded surfaces with peritoneum. In one instance at least where he had omitted to do so pain, particularly during defaecation, recurred. The method of separation which he practised allowed the sigmoid to drop low down in the pelvis, and the pain being mainly due to the dragging upwards of the bowel, it was easy to understand how the operation ensured relief. It was especially during defaecation that this pain was marked. Byford admitted that pain during defaecation referred to the iliac region indicated adhesions to the sigmoid flexure, but the pain was also observed in women subject to constipation with distension of the colon, and then laxatives and strychnine were indicated rather than surgical measures. Robert T. Morris agreed as to the symptom and its cause, but believed that the closing of the peritoneum over the raw surface took up an unnecessary space of time. He often sprinkled aristol over the raw surface which acted as an obstacle to further adhesion, engaging itself in the lymph coagulum. The use of sterilized animal membrane also prevented the formation of adhesions. Thomas S. Cullen reported a case of severe constant pain in the left side of the pelvis where the tubes, ovaries, and ureters showed no alteration, but the sigmoid colon was adherent to the entire left broad ligament, extending as far forward as the round ligament. After freeing the adhesion, he closed the raw surface on the broad ligament with a continuous suture, but employed interrupted sutures for the corresponding surface on the bowel in order to avoid tearing of the tissues. Stone (Washington) observed that pelvic pain did not necessarily mean adhesion, and reported a case where one solitary adhesion was discovered and separated, yet the pain continued. On the other hand, he greatly believed in the beneficial results following the liberation of the sigmoid colon when adherent and also when that portion of the large intestine had been sutured so as to keep high up out of the pelvis. It was easy to understand how defaecation became painful when the bowel was displaced in that manner. Carr (Washington) noted how the narrowest adhesions caused the most pain, and were fertile sources of obstruction. Adhesions involving the whole of a long segment of bowel did not usually cause pain or difficulty in defaecation. Stone had made a similar observation as to tuberculous peritonitis and allied conditions where pain on defaecation was totally absent though the lower part of the large intestine was involved. Royster, as well as Byford, pointed out that in these cases of salpingitis where mucus appeared in the stools an intestinal lesion, and not the pelvic disease, was most probably the cause of adhesion. When the adhesion was due to intestinal stasis the discharge of mucus was a prominent symptom, but where it was secondary to pelvic disease this discharge was not a prominent symptom.

THERAPEUTICS.

193. Cardiac Disorders and Hydrotherapy.

Huchard (*Journ. des prat.*, September 3rd, 1910), in dealing with this subject, divides it into three headings: (*a*) Functional cardiopathy: (*b*) valvular cardiopathy; and (*c*) arterial cardiopathy. Under the first are classed the numerous palpitations due to faulty innervation, such as occur at puberty; those of reflex origin, whether toxic, nervous, or due to anaemia; palpitation associated with and due to an intercostal neuralgia; the pseudo-hypertrophic heart of adolescence and of pregnancy. He does not believe mineral-water treatment is of any benefit to these and similar cases as directed to the heart. But the waters of Vichy are of use in relieving the gastro-intestinal troubles often present in such cases, while the ferruginous waters of Spa benefit the anaemia of other cases. The author believes the palpitation of puberty is not due to any supposed hypertrophy of the heart, but rather to defective development of the thoracic wall in youth, and that the proper treatment is suitable gymnastics directed to this deficiency. In dealing with the second class—organic lesions of the heart—the author criticizes the all too common practice of sending such cases to a particular spa, irrespective of the origin of the disease. Each case must be dealt with on its own merits and according to its own needs. Valvular lesions arising from rheumatism, for example, must be treated at a spa where climate, altitude, and soil are beneficial to this condition. The water, too, must be possessed of considerable radio-activity, and only feebly mineralized, and the social life of the place must allow of absolute repose of body and mind. Bourbon-Lancy, the author believes, is a good type of the kind of spa. Here, too, tachycardias and Graves's disease will be benefited. The contraindications are acute endocarditis, pericarditis, asystole, dilatation of the heart, recent pulmonary infarct, and angina. Bagnols, Aix-les-Bains, and Luxeuil, although differing in mineral constituents from the above, are also suitable. In the third class—arterial cardiopathies—those arising from the intoxications are best treated at Evian and Vittel, the latter being of especial use in the early stage of arterio-sclerosis of the gouty. In these cases it is the stimulation of the eliminative function of the kidney that brings about the benefit. The same may be said of Martigny, Contrexéville, and some other places. When the indications are for an action upon the heart acting through the peripheral vessels, waters charged with CO_2 gas are of value. Such are to be had at Royat in particular. The waters of Brides are of benefit to persons suffering from portal congestion at the same time. While admitting the richness in CO_2 of the waters of Nauheim, the author points out that caution is required in their employment in certain cases, owing to the large percentage of chlorides. He enters a strong protest, too, against the irrational and indiscriminate advertisement of this spa as the Mecca of all ailing hearts, and characterizes it as an abuse of the confidence of the public. In conclusion, he emphasizes the necessity for absolute mental and physical repose during the cure.

194. Treatment of Enuresis by Re-education.

Herrman (*Arch. of Péd.*, August, 1910) writes that the vast majority of the cases of enuresis represent a purely functional neurosis, for they seldom show any marked changes

in the urine or genito-urinary tract. The patient with involuntary micturition has perfect organs, but lacks the proper control of the mechanism, and, like all patients with tics, he lacks especially the power of inhibition. The re-educational treatment of tics consists in having the patient perform voluntarily a number of times the muscular action which he performs involuntarily and unnecessarily. Voluntary imitation of the act trains the mind to doing the same act consciously. In the treatment of involuntary micturition the patient is taught to urinate at regular stated times, but every time he does so he is directed to void a little, say 2 drachms, and then to stop; then void 2 drachms more and stop, and so on until the bladder is emptied. In this way he exercises the mechanism which controls urination and educates himself in the voluntary execution of the act.

185. Treatment of Cellulitis.

After commenting on the views of various observers of this condition, Gendron (*Gaz. hebd.*, August 28th, 1910) appears to adopt that of Welterwald as to pathology and treatment. He maintains it is the foundation of many of the painful symptoms classed under the heading of arthritism. There are two pathognomonic signs, oedema and pain. To reveal the condition a fold of skin must be taken up and rolled between the fingers, when it gives the impression of being padded. To the touch it feels like grasping a piece of cold bacon. The least pressure causes intense pain. There is very little histological information on the point, the evidence going to show that cellulitis commences as an oedema, develops as an adiposis, and terminates in a condition of sclerosis of the subcutaneous tissue (Dercum). This would seem to indicate, according to the author, that sclerosis of the thyroid gland and the pituitary body when it exists is a probable consequence of an original cellulitis. According to Welterwald, cellulitis is really responsible for a great variety of symptoms of a painful character. The conditions known as intercostal neuralgia, pleurodynia, sciatica, muscular rheumatism, pseudo-anginas, and many abdomino-pelvic neuralgias coming into the province of gynaecology, are all attributable to it. In support of this theory the author quotes a number of cases of the type mentioned, including one of pseudo-appendicitis, which after ineffectual treatment by stereotyped methods, yielded in nearly all cases after three or four weeks to the system of gentle pétrissage over the painful areas he recommends. This method is a natural vibratory massage applied by the hand alone. The séance is at first very short, as the pain is considerable, but can be prolonged as the sensitiveness of the part subsides, as it soon does. The author quotes Bouscart of Geneva as never operating for appendicitis without first giving a trial to this method.

186. Argosol Injections in Varicose Gangrene.

Dubar and Verhaeghe (*Echo méd. du Nord*, August 7th, 1910) relate the case of a woman aged 40, a laundress, who had long suffered from varicose veins and had had an attack of phlebitis ten years previously. About January 12th she noticed a small wound on the right leg, which soon began to extend and to take on an unfavourable aspect, the whole limb becoming oedematous and very painful. She was admitted to hospital on January 28th with a deeply excavated ulcer on the right leg, laying bare the muscles, and evidences of extension of the phlegmonous action, the temperature being over 101° F., and continuing to rise, in spite of antiseptic dressings. On February 1st she had a severe rigor, followed by such unfavourable general conditions that amputation was performed the same afternoon, an abscess being found in the course of the incision. Active antiseptic measures were taken, and the greater part of the wound left open, to ensure efficient drainage. Injections of argosol, camphorated oil, and artificial serum were also made, and the case proceeded with alternations of remission and relapse, the stump suppurating and having to be completely opened up. For a few days the local condition became somewhat better, but a bedsore appeared on the sacrum. Nevertheless, the stump appeared to be granulating, when on February 15th a fresh attack of general infection ensued, the left leg became implicated, and the whole aspect of the patient changed for the worse. Argosol injections were given from February 18th, 15 c.cm. being injected daily, at first into the veins, and afterwards subcutaneously. The local conditions improved, even the bedsore beginning to granulate, but the general aspect of the patient continued unsatisfactory; on March 4th the temperature suddenly rose to 104° F. and death occurred the same day. The argosol injections had retarded the development of the septicaemia without averting the fatal issue.

PATHOLOGY.

197. The State of the Blood in Affections of the Thyroid.

Morone (*Rif. Med.*, July 25th, 1910) has examined the blood in 30 cases of thyroid tumour (25 various forms of simple goître, 4 malignant tumour, and 1 tuberculous). His conclusions are as follows: Whilst there is no blood condition which can be said to be characteristic, there is a tendency to assume the following type—diminution of the haemoglobin index and of the number of red corpuscles; reduction in the number of leucocytes in simple goître, whilst in malignant goitre the number of leucocytes is high, without, however, surpassing the physiological limits: diminution in the polynuclear neutrophiles, slight eosinophilia, and increase in the mononuclear cells. These blood changes are neither serious nor permanent, and tend to disappear after thyroidectomy. After thyroidectomy only slight changes occur, there is never any true polynucleosis, the eosinophiles and mononucleated cells diminish. With regard to the state of the blood in Graves's disease and in simple goitre, certain characters (diminution of haemoglobin index, numeral reduction of leucocytes, deficiency of polynuclear neutrophiles, increase of mononuclears) are common to each. On the other hand, in Graves's disease, the red corpuscles are usually above the average in number, whilst polynuclear eosinophiles are usually below, the contrary being the case in simple thyroid tumours.

188. Fatal Apnoea and the Shock Problem.

Henderson (*Bull. Johns Hopkins Hosp.*, August, 1910), in considering the causation of fatal apnoea, points out that breathing ceases, not through lack of oxygen, but rather because there is insufficient CO_2 in the blood to excite the respiratory centre to activity, and to this condition of diminished CO_2 content in the blood the name "acapnia" has been given. Although death from traumatic shock after intense pain, but without serious haemorrhage, is generally attributed to a dangerous lowering in the arterial pressure, it is found that acapnia produces failure of respiration some time before such a state of lowered blood pressure is reached. The failure of the circulation would appear to be altogether secondary and due to diminution in the volume of the blood by transudation of its fluid into the tissues. Thus, when death follows intense physical suffering uncomplicated by haemorrhage, the excessive breathing diminishes the CO_2 content of the blood, and fatal apnoea may result if pain is greatly reduced and the respiratory centre remains unstimulated; but if, on the other hand, the pain continues sufficiently to keep up stimulation of the respiratory centre, apnoea is prevented and acapnia becomes more accentuated until the circulation fails. Both fatal apnoea, and the more slowly developing circulatory failure, are due primarily to acapnia induced by the excessive breathing (hyperpnoea) always excited by insupportable pain. In experiments with voluntary forced breathing, after the oxygen supply of the blood, lungs, and tissues has been exhausted, the asphyxia of the tissues results in the appearance in the blood of products of incomplete tissue combustion, a form of acidosis which adds its stimulating influence to that of the remaining CO_2 to excite the respiratory centre. Thus, after a short period of forced breathing, apnoea lasts until the CO_2 content has regained the normal amount, but, after more prolonged forced breathing, with apnoea lasting until acidosis results, respiration returns while the CO_2 content is below normal, because it has the acidosis bodies to assist in stimulating the respiratory centre. Herein lies an explanation of Cheyne-Stokes breathing. Acapnial failure of respiration under anaesthesia might be treated by supplying a gentle stream of oxygen through a catheter into the bronchi, thereby preventing acidosis by supplying the needs of the tissues, while at the same time allowing the patient to recover from acapnia. Another successfully-tried method of restoring respiration consists in administering oxygen containing 5 or 6 per cent. CO_2, and starting breathing by one or two artificial respirations. The CO_2 must never be given in greater concentration than 5 or 6 per cent., and the author has devised a simple gas meter for measuring small quantities of CO_2 to be added to oxygen as a respiratory stimulant. By using oxygen instead of air in this combination the acidosis is prevented, while the CO_2 overcomes the acapnia, and it is suggested that manufacturers might well supply cylinders containing oxygen and CO_2 in this proportion for use in preventing fatal apnoea.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

199. Diabetes Mellitus.

Eugene du Bois and Borden Veeder (*Arch. Int. Med.*, vol. v, January 15th, 1910) have undertaken a series of three observations with the Pettenkofer-Voit chamber with the object of ascertaining whether or not cases of diabetes mellitus show a variation from the normal in the total energy requirement and the twenty-four hours' carbon dioxide output, the more modern methods of chemical analysis of food, faeces, and urine being carried out. The first observation was made on a normal person weighing 70.1 kilos as a control; the second on a patient weighing 70.4 kilos, with severe diabetes, acidosis, and large sugar excretion; the third on a patient weighing 68 kilos, with mild diabetes. As all were of nearly the same weight and stature, the questions of variation due to body surface and weight were minimized. The following were the methods adopted. The Pettenkofer-Voit chamber was tested by several normal candle burnings. Then, before each subject was put into the chamber, his nitrogen excretion was determined for several days in order to be able to give sufficient protein food to bring about an approximate nitrogen balance. Enough fat and carbohydrate were added to cover the probable caloric needs and water was allowed *ad lib.* In each case the diet was practically the same as that which the subject had been having for the previous week. On the morning of the observation, after several hours of fasting, a meal was given and also a 0.3 gram carmine powder. The subject was then put into the chamber for twenty-two hours, all reckonings being corrected for a twenty-four-hour basis. Two more meals were given while the subject was in the chamber, the last being at least five hours before the end of the observation. During practically the whole time the patient was in bed, doing no kind of work except the movements of eating, reading, and turning in bed. Three hours after leaving the chamber a meal was given, together with a second carmine powder. The food given was made up in double quantities, one being given to the subject and the other analysed. The faeces were collected from the appearance of and including the first carmine powder up to the appearance of the second. The urine was collected in the usual way. Food and faeces were dried over a water bath for six days and then for a short time in a drying oven at 60°. The amount of nitrogen was obtained by Kjeldahl's method and protein calculated by multiplying by 6.25 and carbon proteid by multiplying by 3.28. A weighed portion of each food and faeces was extracted with ether and the amount of fat estimated. Carbohydrate estimations were in most cases made by boiling with 2 per cent. HCl and alcohol and titrating the sugar, in some cases by subtracting the protein carbon and fat carbon from total carbon. The carbon of the fat was obtained by elementary analysis and a portion of the food from which the fat had been extracted was burned, thus obtaining the total carbon present. Ash was obtained by Kjeldahl's method and the amount of carbon by elementary analysis. Sugar was determined by Kumagama's modification of Pavy's method and acetone by Huppert-Messinger's. Control analyses were made in all cases. As a result of their investigations of the 3 cases (1 normal and 2 diabetic) on these lines the authors conclude that the total energy requirement of cases of diabetes does not vary from the normal, in neither the severe nor the mild case was there sufficient variation from the normal to warrant any statement of a decreased or energy requirement. They think, however, that in addition to the 31 to 35 calories required for the normal individual at rest, the diabetic should be given enough extra calories to cover the loss of sugar in the urine. If this be not done there is a breaking down of the body protein and fat.

200. Open Questions in Tuberculosis.

T. E. Satterthwaite (*Med. Rec.*, September 3rd, 1910) shows that a knowledge of tuberculosis was possessed in the time of Hippocrates, who gave very sensible directions for its treatment by fresh air, outdoor exercise, and rest. What Koch gave to us was the actual knowledge of the bacillary cause, which enabled us to begin the direct fight against tuberculosis. To cure tuberculosis there are two important things to be done—treat the case efficiently while it is a closed case, without ulceration, and isolate the open, advanced cases so that they will not infect others. If the laity are to help us they must better comprehend the problem of sensible treatment of these cases. While tuberculosis is communicated by contact it is not contagious in the same degree as the exanthemata, syphilis, and gonorrhoea. It is only communicable under favourable circumstances. Fully 50 per cent. of the adults contract the disease at some time during life and are cured. It is contracted in various ways; to determine the ratio of the different methods of infection is very important. Many of the problems of tuberculosis are complex. There is a humanitarian side to the question; measures of prevention must not entail unnecessary hardship on the sick man, lest the success of the movement be retarded. The author says: "We have reached a point where it is of importance for the National Government to create a board of health for the handling of this important work all over the country with uniformity of effort. It has become an inter-State matter, and can only be dealt with as a national matter."

201. Hepatoptosis.

Cernezzi (*Rif. Med.*, August 8th, 1910) reports 3 cases where he performed hepatopexis for the relief of symptoms due to dropping of the liver. In one of the cases the right kidney was movable, and this was fixed at the same time as the liver. In all 3 cases the result was excellent, both immediately and afterwards. Where the dropping of the liver is part of a general enteroptosis operation is not indicated, but the author thinks it is not sufficiently recognized that hepatoptosis may exist as a single phenomenon, just as mobile kidney may, and in such cases operative fixation may be of great benefit. In certain cases of traumatism affecting the right loin, the liver may be suddenly displaced, causing definite symptoms and calling for hepatopexis. In other cases the symptoms and signs, and the absence of definite disease, suggest the advisability of operation. Before operating it is well to try the effect of suitable supports, bandages, belts, etc. When the liver drops, it does not usually fall *in toto*, but turns down on a transverse axis, and the point of the operation is to raise and fix the anterior margin to the ribs. The author uses twist catgut sutures passed through the whole thickness of the liver. The operation is not a serious one, and has no greater danger than that of any other laparotomy. Out of 22 cases collected by Cordero, 19 were said to be cured.

202. A New Sign in the Rheumatism of Childhood.

Clemens (*Arch. of Pediat.*, May, 1910) has previously reported a series of cases of rheumatism in young children of both sexes in which he had found the thyroid gland to be enlarged. Since then he has frequently noticed this enlargement in the rheumatism of childhood, and considers it should be placed as a sign in the rheumatic series. In some cases enlargement of the thyroid preceded all manifest signs of rheumatism; in others it appeared as the fourth or fifth symptom, or has been found to persist in association with established chronic endocarditis after other rheumatic signs have disappeared. The degree of enlargement is distinct, though not excessive. In a child with enlargement of the thyroid gland a careful past history should be taken, with special reference to growing pains, torticollis, stiff ham strings, and recurrent attacks of tonsillitis. The family history as regards rheumatism should be inquired into. The heart should be examined and chorea sought for. Various cases have been reported of Graves's disease associated with morbus cordis and rheumatism; such references have a possible significance as establishing a relationship between ordinary goitre and rheumatism.

SURGERY.

203. Operations upon the Hypophysis.

Von Eiselsberg, of Vienna (*Ann. of Surg.*, July, 1910), in a paper on the operative surgery of the hypophysis, deals in the first place with the indications for a surgical attack on this gland. The experimental and clinical investigations of recent times have, he points out, demonstrated the truth of the opinion expressed by Wenzel one hundred years ago, that "the appendix of the human brain plays a more important rôle in the human body than one would be

inclined to believe." The results of laboratory work have shown that the anterior half of the gland has some relation to the growth of the body, to the deposit of fat, and to the development of the genital organs. In regard to the hypophysis under conditions of disease, clinical experience seems to have proved that a pathological increase of the function of the anterior portion of the gland produces symptoms of giantism in infants and of acromegaly in adults: while a diminished function produces a rapid deposit of fat in the subcutaneous tissue, a persistence of a juvenile type in younger subjects, and a decrease or loss of the genital functions in adults. The condition characterized by the first group of symptoms is known as hyperpituitarism, and that characterized by the second group as hypopituitarism. It does not seem clear that a constant or even frequent correspondence has been demonstrated between either of these groups of symptoms and some distinct pathological lesion of the gland. It has been shown by Froehlich that there might be a great change of the hypophysis without acromegaly, and *post-mortem* examination of subjects of acromegaly has shown also the absence of macroscopic changes of the gland. In the latter cases, however, the existence of a tumour was revealed by the microscope. The author has operated on the hypophysis in 6 cases: in 3, all cured, for typical hypopituitarism; in 2, both fatal, for acromegaly; and with considerable improvement in one case in which the two groups were combined. In the first of these 6 cases an epithelial carcinoma was exposed and removed; in the second case an angio-sarcoma, and in the third a small cyst containing chocolate-brown fluid. Each of the two fatal cases in which operative treatment was indicated by acromegaly presented a malignant growth. In one case the disease was so extensive that it involved the frontal lobe. A study of the six cases fully recorded in this paper renders it difficult in some instances to reconcile the clinical facts and the operative results with the revealed pathological conditions. In one of the cases just mentioned, notwithstanding the positive presence in each of a malignant tumour evidently of rapid growth, the symptoms of acromegaly had, it is stated, dated back for years. The author finds also a remarkable discrepancy in the comparison of the post-operative course and the microscopic findings. We do not operate radically, he writes, even do not intend to do more than to diminish the size of the tumour, or to remove the contents of a cyst, and nevertheless we notice such an amount of improvement that we are not accustomed to see in incomplete operations on other parts of the body. In one of his cases, reported to be one of "infiltrating growth of a truly epithelial character," and regarded by Stoerck as an incipient epithelial carcinoma, the patient, who was operated on nearly three years ago, has shown a permanent improvement. In his concluding remarks on the technique of operations on the hypophysis, the author states that the gland can be exposed by the intracranial route or through the nasal or buccal cavities. The former method is by far the more difficult, and the nasal method, which is easier and now almost always used by surgeons, is the more dangerous: in the latter the operator has to work in a region saturated with microbes, and chronic catarrh of the nose may, it is pointed out, be regarded as a constant companion of acromegaly. A description of the author's method, which is one of several modifications of the method originally devised by Schloffer, gives a good idea of the difficulties of the operation. A skin incision made along the left side of the nose, and through the left ala as far as the septum, is carried upwards to meet an incision carried across the root of the nose and the lower part of the forehead on both sides. After division of the left nasal bone, the nose is reflected to the right side. Then follow section of the vomer as far back as possible, temporary resection of the frontal sinus, total removal of the contents of the nasal cavity, exposure of the anterior wall of the sphenoidal sinus, and opening of the same exactly in the middle line, the prominence of the hypophysis being thus laid bare. Selbermark (*Wien. klin. Woch.*, No. 13, 1910), who regards the nasal method of attacking the diseased hypophysis as a dangerous and unjustifiable procedure, describes an intracranial operation, which he states will enable the surgeon to obtain a good view of every part of the gland. This original operation, which he has practised on fifty dogs without a single death from septic meningitis, and also on the human cadaver, is held to be cleaner, simpler, and more effectual than any method of reaching a tumour of the hypophysis from the face and nose. The details of this experimental procedure, which necessitates free osseous resection on both sides of the cranium and also much disturbance of the brain, indicate that it would be found a very formidable undertaking in human surgery.

204. The Isolysin Test for Malignant Tumours.

Agazzi (*Rif. Med.*, May 30th, 1910) gives a brief retrospect of work on his subject and then records his own experiments made with a view to testing the value of the reaction. The presence of isolysins in the blood serum capable of destroying the red corpuscles has been said to be of diagnostic value in cancer. The author has practised the method advised in 49 pathological cases (31 malignant, 9 tubercle, and 9 various), and in 68 normal cases. Of the 31 malignant cases, isolysins were present and gave a positive result in 12 cases. Of the 68 normal cases, a positive reaction was obtained in 6. From these experiments the author concludes that isolysins are not confined to cases of cancer or tuberculosis but may occur in other pathological cases and even in cases where no disease is present at all, no difference in the degree of isolysis could be observed between that produced by a pathological serum and that obtained from a healthy serum. Hence as a diagnostic test the reaction is of little value.

205. Arterial Ulceration.

For a long time the possibility of purulent erosion of the arterial walls was denied, but Tédenat (*Province médicale*, February 5th, 1910) relates a few cases in which perforation of arteries resulted from suppuration. All were sequelae of general septicaemia following comparatively slight injuries, and most had a fatal termination. He found that the final fatal loss of blood was nearly always preceded by smaller "warning" haemorrhages, designated as such by Pirogoff. The treatment consists of ligature of the artery above and below the seat of puncture with iodized catgut, which has proved very satisfactory so far as the arrest of haemorrhage is concerned.

206. Gymnastic Treatment of Knee-joint.

Martin (*L'Echo méd. du Nord*, March 13th, 1910) describes three varieties of treatment by movement now carried out in cases of knee-joint injury. At the present day, instead of keeping such cases immobile for weeks until the effusion disappears, it is becoming usual to exercise the joint almost from the very first by passive movements, active exercise, or movements against resistance. The result is that the muscles concerned do not atrophy, and that the cure is effected in days instead of weeks as heretofore. If there is much effusion, it should be evacuted by puncture, even if still on the increase; the residue is speedily absorbed. The very next day movements should be begun, and they should be made against a gradually increasing resistance. The limb is made to raise and to push away a graduated weight, first lying down and then seated, until it can deal with half what it would have to lift in raising the body upright. Another method dispenses with the preliminary puncture, and leaves the fluid to be absorbed by natural means, exercising the quadriceps only, the leg being kept extended. As long as the knee feels hot to the hand, the patient must remain in bed; but when the heat has disappeared, some of the movements may be carried out in an upright position, walking like a rope dancer. The third form of treatment consists in evacuating the fluid by puncture, and immediately allowing the patient to walk. All these forms of treatment have been attended with good results, and the choice of method must be determined by each individual case.

OBSTETRICS.

207. Acute Bedsore: Puerperal and After Curetting.

Fieux (*Comptes rendus de la Soc. d'Obstet. de Gynéc. et de Pédiatr. de Paris*, etc., January, 1910) relates in full two cases of acute decubitus. The first patient was a young woman, aged 28, who had undergone removal of a little tumour on the nape three times; she had also borne two children, which she was not able to suckle. About a year after the last labour and two after the third operation on the growth which was described as a sarcoma, menorrhagia or an atypical haemorrhage set in, with rigors. The curette was used, and three little villous masses were removed. A rigor followed two hours later, and on the second day a bedsore developed on the left buttock near the posterior inferior iliac spine. The slough came away six days later, and the wound cicatrized well. The second patient was tuberculous. She bore a healthy child to term when 22 years old. Next year she was delivered at term of a live child, the breech presenting. It appeared that there had been no albuminuria,

but the patient suffered from bad headache for two days before delivery, which was followed by persistence of the symptom, great prostration, and a violent attack of eclampsia eight hours later. Then over a dozen fits took place within two hours; 250 grams of blood were withdrawn and the same quantity of artificial serum injected hypodermically. The patient was then placed under Fieux's charge, in a state of coma, with scanty highly albuminous urine; she recovered within a few days after washing out of the intestine and further appropriate treatment. On the fifth day a bedsore developed nearly in the same position as in the first patient. Free suppuration occurred, but the sore healed in about three weeks. Fieux believes in the simplest explanation of these bedsores—namely, pressure on the integuments and the prominent posterior inferior spine of the ilium in two thin and debilitated subjects. There had been no chronic pelvic inflammation, no pressure of the fetal head, nor any cutting operation involving bruising or division of nerves. Faure, in discussion, dwelt on the rarity of these acute or even chronic bedsores after abdominal and pelvic operations. He related one case in which a bedsore followed Schauta's vaginal operation for cervical cancer, as he had considered abdominal section too serious. Couvelaire had experience of acute decubitus after Cesarean section in a patient with Naegele's pelvis; it formed just where the pelvis was most abnormally prominent under the skin. Pozzi spoke of a case following Kraske's operation. Doléris noted that the patients above reported were sickly, and the blood-vessels were probably degenerate, as the ulcers were very clean cut, as though punched out by an instrument. This signified that only the area of tissues supplied by a sclerosed vessel suffered.

208. The Care of the Breasts During the Puerperium.

LINDEMAN (*Bulletin of the Lying-in Hospital, New York*, December, 1909), from observations upon a series of 100 cases, reports upon Dr. Williams's method of treating the puerperal breast. No binders were employed upon patients with small or medium sized breasts, and only a loose supporting binder was used in those with large and flabby breasts. No particular attention was paid either to the bowels or diet, neither were fluids restricted nor were the patients purged, one daily movement of the bowels being regarded as satisfactory. If the breast became painful half a grain dose of codeine was given and repeated every four hours if necessary. The large majority of the women nursed their babies, but in a small proportion it was necessary to dry up the secretion at the beginning, and both classes of cases were found to do equally well under this method. No abscess developed in the whole series, but in a few, in whom abscess formation seemed imminent, the symptoms abated in a few days without any alteration being made in the treatment. Caked breasts, if they developed at all, only lasted on an average from one to three days, even in those patients who were not nursing, and the pain or discomfort hardly required more than three or four doses of codeine. The results in all cases were excellent, both as regards simplicity as compared with former methods, and also from the point of view of being less disagreeable to patients as well as minimizing the time and anxiety of those in attendance.

GYNAECOLOGY.

209. The Strength of the Uterine Scar after Caesarean Section.

MASON AND WILLIAMS (*Report of Research Work in the Medical School of Harvard University*, April, 1910) have been led by the results of experimental work by a study of pathological and clinical records to form the following conclusions regarding the uterine scar after Caesarean section: (1) A carefully sutured and well united scar will stand any strain which can be endured by the uterine muscle. (2) Rupture of a Caesarean scar is always secondary to unusual weakness of the cicatricial tissue, due to imperfect consolidation. (3) The most frequent cause of this imperfect consolidation is faulty suturing, the stitches being placed too far apart, or not including the whole thickness of the uterine muscle. (4) It is probable that the strength of the scar is not influenced by the situation of the incision. (5) Infection, in certain instances, plays a very important part in causing weakness of the cicatrix. (6) Catgut as a suture material is open to the objection that there is at least a possibility of the stitches becoming loose, and that certainly more cases of rupture have occurred after its use than after the use of silk. The authors hold that, as a corollary to these conclusions, it seems evident that, given a uterus which has been sutured with care to include the whole thickness of the muscular portion of the wall in each stitch, and to place the stitches close together throughout the entire length of the incision, silk or linen being used, and where there has been no evidence of sepsis during the period of convalescence, such a uterus may be subjected with safety to distension by a full-term pregnancy, or even in the absence of mechanical indications for Caesarean section, to the strain of labour itself.

THERAPEUTICS.

210. Nascent Iodine in Tuberculosis.

S. A. PFANNENSTILL (*Transactions of the Malmö Medical Society*, February 10th and April 14th, also *Hygeia*, Nos. 5 and 6, 1910) publishes the results obtained by treating ulcerative tuberculous conditions of the upper respiratory tract with iodine in the nascent state. His starting point was the knowledge that in the nascent state antiseptics have a much increased bactericidal action. To obtain nascent iodine in the tissues he proposed giving sodium iodide by the mouth and ozone by inhalation, in order that the former should be carried by the blood to meet the latter in the lungs when the following reaction should occur: $2NaI + O_3 + H_2O = 2\,NaOH + O_2 + 2\,I$. The experiments date from November, 1908. Sodium iodide was given in doses of 0.5 to 4 grams per diem, and no more than 2 grams were given at one time. It was given immediately before the inhalation of ozone, which was obtained by electricity, and allowed to escape freely into the room or through a tube placed at a short distance from the patient's mouth. The treatment lasted one to three hours twice a day. The first patient was a woman of 26 with ulceration and almost total destruction of the tonsils, pharyngeal pillars, soft palate, and uvula. There were also large ulcers on the epiglottis and plicae aryepiglotticae. Tubercle bacilli were found in a portion of excised tissue. Both apices of the lungs were involved, and the patient was febrile. The treatment was followed by improvement in a few days' time, and after one month most of the ulcers had healed, with the formation of much scar tissue and the almost total occlusion of the posterior nares. Owing to faults in the electrical apparatus, the treatment was temporarily discontinued, and the ulcers again gained ground. At this stage Wassermann's reaction was found to be positive. Sodium iodide was therefore given alone, but the ulcers grew worse, and continued to increase, even after mercury was given. When the iodide and ozone treatment was again employed, the ulcers healed in a month. Another patient with obstinate syphilitic ulceration of the throat failed to react to the treatment, but a 14 year old girl with a positive Wassermann and lupus of the nose was cured after one month's treatment, after local treatment and potassium iodide by itself had failed. Another patient, 40 years old, had typical pulmonary and laryngeal tuberculosis with a negative Wassermann. His larynx was first curetted, so as freely to expose the diseased tissue to the ozone. The laryngeal condition was cured in a month. In yet another case a three weeks' course of the treatment healed lupus of the nose in a girl aged 13. The treatment is not unpleasant; it is painless, and but little of the diseased tissue is lost in the process of healing. The writer holds that foci covered with healthy mucous membrane are not affected by the treatment until exposed to the ozone by operative means. He has also successfully treated a case of superficial lupus by substituting hydrogen peroxide in a compress for the ozone, free iodine being again liberated.

211. Electrical Treatment of Infantile Paralysis.

AN exhaustive report upon the whole question of electricity in the treatment of infantile paralysis has been prepared by Zimmern and Bordet (*Arch. d'élec. méd.*, February 10th, 1910). The treatment, they state, is based upon precise physio-pathological indications—it is a rational therapeutic. Its principal purpose is to reduce to a minimum the infirmities caused by the medullary lesions, and to restore as far as possible the voluntary contractility of the muscles. Of all the physical agents, electricity is the only one which is capable of provoking a muscular contraction analogous to the voluntary contraction. Massage does not produce the physiological contraction of the muscle, and the misleading appearance of suppleness to which this method gives rise when it is

used by itself renders it inadvisable. As an adjuvant to electrotherapy, the authors are of opinion that the rôle of massage is an insignificant one. The choice of a current depends upon the results of the electro-diagnostic exploration. If the muscles have conserved faradic excitability, recourse may be had to the currents of the induction coil. Galvanic interrupted currents are employed when the degenerate muscles respond to that form of excitation. Great care must be taken to avoid fatigue, and the authors proscribe the automatic electrization of groups of muscles. Electrical intervention should be made very cautiously at the beginning of the treatment. There should be no attempt to make a complete electro-diagnosis at the first *séance*. When the treatment is fully established the *séances* may last for an hour, providing always that there is no fatigue. The repetition of the *séances* should be very frequent—taking place every day during the active period of treatment, and, if possible, twice a day. The duration of the whole treatment, unfortunately, must be counted by years. It is rarely that one year suffices, more frequently it requires three. The treatment may be suspended with advantage during the summer months, and the patient sent to the seaside or the mountains. This change of air, without acting directly upon the paralysis, is of value to those children whose general state has suffered from their inactivity. During the second year of treatment the authors counsel the use of light orthopaedic appliances, and during the third year these, together with kinesiotherapy, may be increasingly employed, while the degenerate muscles are still electrized with persistence. The cessation of treatment is indicated when, for many months, the amelioration has shown no progress, either from the point of view of the voluntary movableness or from that of the electrical reactions. Summarizing the whole subject, the authors state that if the treatment is started sufficiently early and continued with method and persistence, it produces, as a rule, in the course of time a reduction of the impotence and a return, more or less remarkable, to functional power.

212. Long-continued X-ray Treatment in Myeloid Leukaemia.

A CASE of myeloid leukaemia which has been treated for two years past by radio-therapy was reported by Haret and Béclère at a recent meeting of the Société de Radiologie Médicale de Paris (*Bull. et mém.*, No. 16, 1910). The case is interesting, not only because a great amelioration, if not a cure, was accomplished, but also because it emphasizes the importance—indeed, the absolute necessity—of continuing radio-therapeutic treatment over a long period in leukaemic cases, in spite of an early apparent disappearance of the symptoms. In this case the patient appeared outwardly to be completely rid of the disease, and had returned to his occupation as a gardener within one month from the commencement of the treatment. Nevertheless, after two years, careful palpation still showed that the spleen had not returned to its normal size, while the haematological examination clearly proved a hyperleucocytosis, and also the presence of myelocytes characteristic of the affection. The patient, aged 30 years, was attacked in the early part of 1908 with violent pains in the left hypochondrium. He rapidly became emaciated, losing 24 kg. (53 pounds) within five months. Frequently after a meal he suffered from vomiting, and digestion was always slow and painful. When radio-therapeutic treatment began, on July 10th, 1908, his feebleness was extreme. The abdominal region was much enlarged, and his dyspnoea was very marked. The spleen measured approximately 31 cm. in height and 39 cm. in breadth. This mass was divided into four segments for the purposes of irradiation. Each of these parts was treated successively, the others being covered with a sheet of protective tissue opaque to the *x* rays, after the technique recommended by Kienboch for deep irradiations. Each part received three H. on the surface of the skin, at 20 cm. from the anticathode. One sitting per week was given. By January, 1909, the spleen had considerably reduced in size, and from this time the irradiations were only made in three directions, namely, from the front of the abdomen, from the left lateral region, and from the back. From September, 1909, but two sittings per month were given, one irradiation from the front and the other from behind. The patient never showed the slightest cutaneous reaction, nor even pigmentation. Under the influence of the treatment his general state improved rapidly. The dyspnoea quickly disappeared, and he regained his original weight and his usual colour. But the spleen still remains large—11 cm. in height and 19 cm. in breadth. Fifty blood findings have been made. The first, at the time *x*-ray treatment was started, showed 2,300,000 red corpuscles and 194,000 white corpuscles per cubic millimetre. There were about 30 per cent. of neutrophile myelocytes. Under the influence of radio-therapy the hyperleucocytosis rapidly diminished, and by February 11th, 1909, there were no more than 15,000 leucocytes per cubic millimetre. Parallel with this diminution went an augmentation of the red corpuscles, which reached a normal figure. But if the quantitative examination was satisfactory, the qualitative was less so. The myelocytes, although diminished in number, still persisted. Therefore the indication seemed to be to continue the *x*-ray treatment. Just as mercury, while not curing syphilis, may restrain it from becoming active, so infrequent *x*-ray sittings, the authors think, may be the guarantee of at least the appearance of cure in myeloid leukaemia. The patient now (June 8th, 1910) has per cubic millimetre 4,460,000 red corpuscles and 30,000 white corpuscles, of which about 5 per cent. are myelocytes. Fortnightly sittings are being continued.

PATHOLOGY.

213. The Pituitary Gland.

A. MÜNZER (*Berl. klin. Woch.*, Nos. 8 and 9, 1910) reviews the knowledge possessed at present with regard to the pituitary gland. He divides his subject into three parts: (1) The development and structure of the gland, (2) the functions of the gland, and (3) its pathology. After reviewing the literature in some detail, he concludes as follows: The pituitary gland consists of an anterior or glandular lobe and a posterior or nervous lobe. The glandular lobe or epithelial portion is composed of loose connective tissue in which a series of epithelial strands are imbedded. The gland cells may be divided into chromophile and chromophobe cells. The existence of a third class of cell is not yet certain. The posterior lobe, the infundibular portion, consists of a mixture of connective tissue and neuroglia elements, in which a network of extremely fine nerve fibres is interposed. The connecting portion between the lobes possesses a structure similar to that of the thyroid gland. . . . The structure of the pituitary gland undergoes important changes in physiological conditions, especially in old age and in pregnancy. Remains of embryonal development of the hypophysis can be demonstrated on the palate, at various parts of the extensor surface of the original "hypophysis ascensus," and at the site of the fetal insertion of the pituitary passage. With regard to function, he finds that although this is not yet proved for certain, it is highly probable that the pituitary gland is a vital organ. The mechanism of the gland has not yet been made out. It is possible that the colloid is the product of the gland, or at least an important secretion. The toxicity of the gland is slight, and appears to be limited to the posterior portion. The condition of a cachexia hypophysipriva is frequently produced by removal of the gland; this condition has unmistakable similarities to cachexia strumipriva. The pituitary glands exercises an influence on the circulatory apparatus, chiefly through its posterior lobe. The gland participates in the regulation of the metabolism. Extracts of the gland act on unstriped muscle. They dilate the pupil. The pituitary gland stands in correlation to the other ductless glands. The physiology of the pituitary gland is incapable at present of throwing light on the genesis of acromegaly. The pathology of the gland is discussed, and the following points are arrived at. The processes affecting this gland are either atrophic, hypertrophic-hyperplastic, or tumour processes. In the case of tumours, it is necessary to distinguish clinically between the disturbances which are due to mechanical effects and those which depend on the changes of function of the pituitary. Disturbances of vision are the most important of the mechanical effects. He finds further the acromegaly should not be regarded as the expression and result of a primary change in the pituitary gland. Tumours of this gland are frequently associated with what is termed "adipose genital dystrophy"; the etiology of this condition is, however, not yet understood. Diseases of the other glands of internal secretion (diabetes, myxoedema) are often found in connexion with changes of the hypophysis. Tumours of the pituitary gland are operable, but the indications for operation should be limited to urgent cerebral symptoms. The "blood glands" or ductless glands form the integral parts of a continuous system. Direct and indirect functions of some of these glands may be distinguished. Acromegaly may be regarded as the type of a polyglandular disease.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

214. Digestive Albuminuria.

Castaigne (*Journ. de Méd.*, August 10th, 1910) divides cases of digestive albuminuria into three categories: (1) Dyspeptic albuminuria—perhaps the most frequent; (2) albuminuria of a digestive type in the course of a chronic nephritis; (3) essential digestive albuminuria in healthy subjects. These three classes present differing clinical symptoms. Indeed, all individuals suffering from gastric affections show some degree of digestive albuminuria. Especially is this the case in gastric dilatation, or in gastric atony; while on the contrary it is rare to find albumen in cases of gastric ulcer, cancer, or dilatation from stenosis. In the first of these classes one generally finds an enlarged liver, two or three fingerbreaths below the ribs. In divided samples of urine the albumen is found to undergo no increase on exercise, and varies greatly in amount up to as much as 3 to 4 grams. It is generally serum or globulin albumen, with peptones often superadded. There is, further, an excess of urates and phosphates in such urine. There is no evidence of nephritis or any damage to the renal epithelium. The progress of the trouble is in accord with the treatment administered. In these patients if one gives an abundance of uncooked milk, the state of gastric atony, and the amount of albumen, increases considerably. If, on the other hand, the gastric function is stimulated by appropriate food, the albumen disappears. It is important to note that if the albumen has lasted too long, while there may be gastric improvement, the condition slowly evolves to a chronic nephritis. In the second class one places digestive albuminurias in the case of patients already suffering from interstitial nephritis. There are many cases of the latter disease without albumen in the urine, which give indications of digestive albuminuria, following an error in diet. The prognosis here is not so good, as in addition there is the high tension pulse, hypertrophied heart, and evidence of damaged renal epithelium. The third class of albuminuria referred to is much less serious, and occurs in people of excellent health, who may have idiosyncrasies with regard to certain nitrogenous foods, or in young men who otherwise have no pathological symptoms whatever. The author thinks that it is only by such classification of albuminuria, after careful investigation of each case, that an exact prognosis can be attained. These facts raise physiological and pathological points of great interest. Whenever a heterogeneous albumen is introduced into the body the blood gets rid of it immediately by means of the kidneys. This enables us to understand the albuminuria of dyspeptics. For whereas in a normal stomach the heterogeneous albumens are transformed and assimilated, in a disordered digestion they are neither digested nor so transformed, but are absorbed and eliminated as heterogeneous albumen. The albuminuria of healthy persons is more difficult to explain. It occurs always in growing subjects at a period when there are disturbances of internal secretions, such as the thyroid and ovarian functions. It is possible in such cases that albumen is badly assimilated. It may remain heterogeneous in character, and be eliminated as such. The treatment should be directed to a reduction of the intake of albuminous substances, and in particular the dyspepsia should be attended to. A milk diet ought not to be taken in excess, but in conjunction with a vegetarian dietary. All slightly cooked meats and raw eggs should be avoided. The author believes there are many more cases of this benign form of albuminuria than are supposed, and states that want of their due recognition may have serious consequences.

215. Estimation of Nutrition of Adults.

G. Oeder (*Wien. med. Klin.*, No. 17, 1910) emphasizes the importance of obtaining some method of registering the state of nutrition of a patient which shall be more definite and more available for future reference than is the present method of simply stating "nutrition good, fair," etc. Such a method he claims to have found, based upon careful measurements of the thickness of the fat of the abdominal wall. A little practice is needed in making the measurements. The fold of the abdominal wall is pinched up between the thumb and middle finger, as a rule in a vertical direction, the upper limit being close to the umbilicus or at the umbilicus itself, and the lower as near to it as possible; in some cases of very fat people the fold has to be picked up in the transverse direction. The measurements are made with callipers. The author has notes of 1,920 such measurements made on 1,284 persons. Of these, on inspection, he would describe 936 as in a poor state of nutrition or thin, 607 as normal, 377 as fat. The average thickness of the abdominal wall in those whom he would describe as of poor nutrition was found to be 1.1 cm. (0.43 in.), in those of normal nutrition 2.75 cm. (1.08 in.), in those who were fat 4.41 cm. (1.73 in.). Observation of the individual measurements in the first and third groups shows that 911, or 97.3 per cent., of the measurements in the "thin" group are under 2.75 cm. (1.08 in.), and 363, or 96.3 per cent., of the "fat" group are above 2.75 cm., while in the "normal" group the measurements fall very evenly above and below this average figure. The lowest measurement among the normal group was 1 cm. (0.39 in.) the highest was 5 cm. (1.95 in.). The author, however, is of opinion that 2–3 cm. (0.78–1.17 in.), which he decribed in an earlier article as limits of the normal group, are for practical purposes satisfactory; 66 per cent. of the "normal" group fall within the 2–3 cm. limit, and only 18.6 per cent. of the "thin" group are above 2 cm., only 11.4 per cent. of the "fat" group below 3 c.cm. It follows from these figures that in any adult where the measurement is below 1 cm. (0.39 in.), the state of nutrition is poor, and above 5 cm. (1.95 in.) there is obesity. Between these limits further grouping is necessary. As a result of inspection the cases are to be divided into three groups: (1) Thin; (2) normal; (3) fat; and the following nomenclature can then be adopted:—(I) Poor nutrition: 0.0–0.75 cm. (0.0–0.29 in.) no fat; 1–1.75 cm. (0.39–0.68 in.) relative absence of fat; 2–3.5 cm. (0.78–1.3 in.) transitional cases. (II) Normal: 2–3 cm. (0.78–1.17 in.) absolutely normal; (1–1.75 cm. 0.39–0.68 in.) and 3.25–5 cm. (1.36–1.95 in.) transitional. (III) Fat: 2.25–3 cm. (0.87–1.17 in.) transitional; 3.25–5 cm. (1.26–1.95 in.) relative obesity; 5.25–9.5 (2.04–3.7 in.) absolute obesity. The results are summed up in the statement that the condition of nutrition in adults can be very sufficiently judged by the amount of fat in the abdominal wall. Differences in age, height, and sex, apart from special circumstances, as, for example, the increase in the abdominal fat in women at the climacteric, have a small but inconsiderable effect upon the results. A system of nomenclature can be based upon the measurements, and an "index" as to general nutrition obtained by the method described above.

216. Paracoli Bacillus Infection.

Albert Schutze (*Wien. med. Klin.*, June 12th, 1910) describes a case of infection by the paracoli bacillus. The patient was a boy 16½ years of age, who was taken ill after eating some tough, raw, bad-tasting ham. The initial symptoms were of vomiting, diarrhoea, and fever, and the case developed clinically into a general septic infection; for more than a week the temperature was between 40.2° C. and 40.8° C. (104.3° F. and 105.4° F.), and there were four or five rigors daily. In examining the case search was made for the typhoid and paratyphoid bacilli by plating out the faeces on Conradi-Drigalski and Loeffler's malachite green agar, but the results were negative. Later the blood was examined and coli-like bacilli found. These bacilli were differentiated from *B. coli* by the fact that they gave acid but no gas when grown in milk sugar and grape sugar. They were next tested with paracoli agglutinizing serum obtained from a previously treated guinea-pig, with the result that full agglutinization occurred within ten minutes with a dilution of 1 in 800, while coli bacilli were feebly agglutinated only in a dilution of 1 in 30. Further, it was found that the serum in a dilution of 1 in 700 caused agglutination of the organism obtained from the patient's blood in thirty minutes, and in a dilution of 1 in 1,000 in sixty minutes. Gaertner's bacillus was agglutinated only with 1 in 40 serum; paratyphoid with 1 in 30. Guinea-pigs and mice were inoculated, and an organism with the same characteristics as the original organism was obtained after death from the blood of the animal inoculated. A fortnight later in the illness pain on passing water developed; the urine was examined and organisms similar to those described above were isolated; the organisms disappeared from the urine under the administration of urotropin in doses of 2 grams (30 grains) a day. The paracoli bacilli could not be cultivated from the faeces

in spite of repeated attempts. During convalescence the bacilli could no longer be found in the blood, which, however, now contained specific agglutinins. The case was clearly one of pure paracoli bacillus infection. The author shows also how the complement fixation test can be successfully applied to differentiate between the coli and paracoli bacilli, as Leuchars used it some years ago for the differentiation of the typhoid from the paratyphoid bacillus. The property of complement fixation seems to appear earlier in the course of immunization of an animal than that of agglutination.

SURGERY.

217. Sciatic Scoliosis.

J. PAL (*Wien. med. Woch.*, No. 25, 1910) describes 4 cases of "sciatic" scoliosis in patients suffering from flat-foot. Three of the patients were women aged 31, 24, and 38 years respectively; the fourth patient was a man 45 years of age. All the patients began to complain of sciatic pains after prolonged standing, and all showed scoliosis which was very marked in the lumbar region; two of the patients also complained of paraesthesias in the outer side of the thigh, but the complaints centred upon the sciatic pains, and there was often no mention of the feet. In all the cases the symptoms completely disappeared as soon as the condition of flat-foot was corrected by means of strips of plaster, and the prompt action of the correction of the flat-foot showed that the sciatic nerve was not inflamed, but indicated a slight mechanical injury or irritation of the nerve root or of one of its branches through tension of the muscles or fasciae. In the cases of melalgia the author ascribes the symptoms to some mechanical injury of the nerve as it emerges from the fascia, and this view is strengthened by the fact that in many cases of melalgia the symptoms are limited to a small area supplied by a twig of the nervus cutaneus femoris lateralis. Another sign that an inflammatory condition is not present is the cessation of the symptoms on lying down. It must be allowed that there are conditions in which abnormal position of the leg leads to pains in the branches and even the main stem of the sciatic nerve. In many cases the pains may be caused by unaccustomed muscular or fascial tension, but in some the view that disease of the sciatic nerve has set in cannot be controverted. The fact that scoliosis disappears on correction of the flat-foot signifies that sciatic scoliosis is operative in relieving pain. In the author's cases it is probable that the scoliosis was connected with the sciatic pain, and was therefore a form of sciatic scoliosis. The author has had one case in which scoliosis was similarly dependent upon "lumbago," and in which both pain and curvature disappeared with correction of the flat-foot. The correction of the condition by means of adhesive plaster is a method of diagnosis, and is not enough in itself permanently to relieve flat-foot. Also in cases of long standing, the symptoms only disappear gradually on the adoption of careful treatment.

218. Suture of Blood Vessels with Human Hair.

F. V. GUTHRIE AND C. C. GUTHRIE, in a reprint from the *Journ. of the Amer. Med. Assoc.*, January 29th, 1910, vol. liv, p. 349, report the results of their investigations upon the suitability of human hair as a suture for blood vessels. Light-brown hairs of medium fineness, about 8 in. long, were found to possess a greater tensile strength than the silk usually employed. A number of hairs threaded into sterile needles (No. 14 cambrics) were placed in 10 per cent. aqueous formalin, and the left common carotid and internal jugular vein in an anaesthetized dog were divided, and, after ligation of the peripheral end of the artery and the central end of the vein, the remaining free ends were united by a continuous encircling hair suture, all the coats of the vessels being penetrated and included in each stitch. No difficulty was experienced, and the wound healed by first intention. Five and a half months later the vessels were exposed under chloroform, and the walls appeared to be continuous and the circulation active. On removing the specimen and slitting it open longitudinally the line of suture could hardly be seen, as the intimal surface was perfectly smooth and glistening.

219. Treatment of Acute Gonorrhoeal Epididymitis.

C. BRUCK (*Wien. med. Klin.*, May 22nd, 1910) deals with the subject of gonorrhoeal epididymitis and its treatment. There is no longer any doubt that epididymitis setting in during the course of a urethral gonorrhoea is due to the action of the gonococcus itself, and not, as was formerly held, to the effect of toxins, nor to a mixed infection. The difficulty as to how, in certain cases, the gonococcus reaches the epididymis is met by Low's, Oppenheim's, and Schindler's explanation that antiperistaltic movements of the vas deferens may be set up if either the vas or the caput gallinaginis is mechanically or electrically irritated. Three measures which have come into prominence of late in the treatment of epididymitis are puncture, congestion treatment, and vaccine treatment. The treatment by puncture was first tried by Velpeau, was brought into notice again by Baermann, and has been used on a larger scale by Schindler, whose technique differs somewhat from that of Baermann. The author has had good results from puncture in cases of quite recent, feverish, or painful epididymitis, and even where repeated puncture was employed has seen it give rise to no complications, but always to a very speedy improvement, as shown by subsidence of pain, fall of fever, reduction by half of length of treatment, results also described by Schindler. It has been objected that puncture may lead to adhesive inflammation and atresia of the duct, but the author believes that the danger is more than counterbalanced by the shortening of the period of inflammation, but in deference to this suggestion he now reserves puncture for cases in which palpable abscesses are present, and in all other cases employs the method of "debridement"—that is, slitting the tunica for the length of 1 cm. without injury to the epididymis, a process which is followed with equally good results. The method, like that of puncture, is only applicable to recent acute cases. The author has tried the congestion treatment as applied by Schindler and Konig but is not persuaded of its usefulness. He has, however, seen no bad results from it, even where the treatment was continued for twenty-four hours at a time, and he still makes use of Frick's adhesive bandage in some cases. Vaccine treatment is especially useful in gonorrhoeal arthritis and in epididymitis. The author has employed it in 50 cases of epididymitis with extremely satisfactory results, both with respect to pain (except for an increase of pain often seen after the first injection) and with respect to absorption of inflammatory products, and speedy lessening of size of the organ. Above all, it is noticeable that nodules are not formed, or only formed to a small degree, nor has a relapse or a spread of the affection to the sound side been observed in any of the author's cases. The vaccine treatment is contraindicated in cases with fever until the temperature comes down to normal, usually in from one to two days. The initial dose is 0.5 c.cm. of vaccine, and a rise of temperature of at least 1° C. should follow the injection. The author has seldom made more than five to six injections at intervals of three to four days, the maximum dose employed being 2 c.cm. The rate at which the dose can be increased depends on the amount of reaction, and the author attaches no value to the opsonic index as a means of regulating the dose. A routine treatment for a recent acute case would be an initial "debridement" followed by the application of a wet compress, as, for instance, one with 50 per cent. spirit and 2 per cent. resorcin, together with suspension of the part and vaccine treatment as soon as the temperature became normal. If palpable nodules persist absorption may be helped by application of heat, and, if this fails, by Frick's method. In chronic cases with old fibrous processes injections of thiosinamin or fibrolysin (1 c.cm of a 10 per cent. solution each day or 2 c.cm. every other day) may bring about striking improvement. In the case of intelligent patients the vaccine treatment may be successfully carried out for out-patients. Epididymitis does not contraindicate any treatment of the anterior and posterior urethra. Massage treatment of prostatitis is avoided in acute epididymitis because of the danger of causing a spread to the sound side. Prophylactic treatment is of importance, and includes the use of a suspensory bandage and giving atropine internally in all cases of acute posterior urethritis in order to avoid the acute peristaltic contractions described above.

OBSTETRICS.

220. Multiple Abscesses in Puerperal Uterus.

BEYER (*Monats. f. Geb. u. Gyn.*, April, 1910) reports an aggravated case of this condition which developed late, and was treated successfully by hysterectomy. A woman aged 33 had passed through six pregnancies and puerperia without complication. Then she gave birth to twins at the seventh month; there was fever at the time of delivery,

which disappeared in the puerperium. Four weeks after parturition she was admitted into hospital for abdominal pains which were increasing in severity. The patient's general condition and family history were satisfactory. The temperature was over 100° F., the pulse strong and not rapid, and there were no thoracic complications. There was resistance on the right, reaching as high as the umbilicus, firm and tender. The uterus lay behind it, and a soft body as big as a pigeon's egg was defined on the left of the uterus. The temperature rose, and an exploratory operation was undertaken a week after admission. The incision through the abdominal wall was made in the middle line close under the umbilicus, lest the knife should enter an abscess cavity. A big collection of pus was, however, opened up; its anterior wall was formed by the omentum, the posterior by coils of small intestine, the right by the caecum and pelvic wall, and the left by the uterus and small intestine. It was, in fact, a big perimetritic abscess, not in Douglas's pouch, but on the right side of the abdomen anteriorly. The uterus was extirpated, not without considerable difficulty, on account of the friability of the parts and the infiltration of the parametrium; yet the appendages were hardly involved. The vagina was opened and sutured to the peritoneum of the bladder anteriorly; the uterus then being set free, the posterior vaginal wall was lastly united to the peritoneum of the rectum. There was some suppuration of the abdominal wound. Three months after the operation the patient was in good health. The uterus measured 6 in. in length. The cervical canal was closed; the cavity narrow. The abscess cavity opened during the operation included the wall of the uterus on the right, and there was no clear demarcation between the tissue of the uterus and that of external structures. An abscess cavity big enough to lodge a hazel nut was detected in the uterine wall on the left, as well as others of less capacity. Under the microscope numerous minute abscess cavities were discovered in the muscular wall. They were most abundant near the orifice of the right Fallopian tube. Infection must have entered through the blood and lymphatic vessels; haemolytic, non-virulent streptococci were detected. Suppuration of the uterus was the immediate result of the infection, and it is instructive to note that the process spread to neighbouring structures in a very different manner to that which is so often seen after labour and the puerperium.

231. Erythema Multiforme Gestationis.

Gottheil (*Amer. Journ. Obstet.*, April, 1910) believes that dermal manifestations due to the toxaemia of pregnancy are not of very rare occurrence. He reports the case of a woman, aged 33, who had married at the age of 25, and had been pregnant four times since. Within a few weeks after the beginning of each pregnancy a severe attack of erythema multiforme occurred. The lesions in the early part of the outbreaks were papular and erythematous, later they became of the iris form and vesicular, and ultimately were bullous. The eruption continued through the entire pregnancy, and persisted for from four to eight weeks after delivery. In three out of the four attacks the patient was under Gottheil's care. Treatment, save in so far as it alleviated the pruritus and protected the denuded surfaces, has not been of much effect. On the other hand, termination of the pregnancy and of the *post-partum* metabolic processes appears in each case to have stopped the outbreak. Gottheil ranks the eruption under the heading "erythema multiforme" in preference to "dermatitis herpetiformis."

GYNAECOLOGY.

222. Hysterectomy.

Chaput (*Revue de gynéc. et de chir. abdom.*, August, 1910) dwells on the undoubted special advantages of the two varieties of hysterectomy now in vogue. The subtotal method is easy and allows of haemostasis without danger of ligaturing adjacent structures, but it is not easily combined with vaginal drainage, and the uterine stump may slough or undergo malignant degeneration. Panhysterectomy is much more difficult. Haemorrhage is harder to control, especially in bleeders, but it admits of effective drainage, and cannot be followed by the two complications liable to affect the stump. In order to neutralize these dangers, Chaput modifies both methods. In subtotal hysterectomy he detaches the bladder from its posterior connexions down to the level of the vagina and amputates the body of the uterus. Then the anterior vaginal fornix is laid open, the cervix opened up by a vertical incision in the middle line anteriorly down to its canal. The mucous membrane of the canal is dissected away and the mucosa of the vaginal portion of the cervix similarly treated. If the stump be bulky some of the deeper tissues should be trimmed away. Haemostasis is assured, and the stump, now much diminished in size, is rotated forwards into the vagina and fixed there. Chaput performs panhysterectomy in two stages. He amputates the cervix first through the vagina, the patient taking calcium chloride and hypodermic of horse serum for two days before the operation. Pressure forceps are left on the proximal side of the divided tissues, and removed on the second day. If bleeding has ceased the uterus is removed; if not, the vagina is plugged with gauze soaked in calcium chloride, and the operation undertaken a day later. Removal of the uterus through an abdominal incision is very easy, and there is no difficulty about haemostasis; the peritoneum, for the most part detached at the first operation, is closed over the gap left by the removal of the parts concerned, and a drain can be passed either into the vagina or abdominal wound as circumstances indicate. This method of performing panhysterectomy is especially indicated when a fibroma has to be removed from a corpulent patient or when the appendages are removed with the uterus for suppuration of the tubes under similar circumstances. The danger of haemorrhage is thereby much lessened.

THERAPEUTICS.

223. Intratracheal Insufflation.

Meltzer and Auer described in the *Journal of Experimental Medicine* (No. 4, 1909) a method of maintaining respiration by means of continuous intracheal insufflation of air. This method has been subjected to further investigation by the introducers, and Meltzer (*Berl. klin. Woch.*, No. 13, 1910) deals with his results in the laboratory. The method depends on the continuous blowing in of air through a tube which is inserted into the trachea, and the end of which lies a few centimetres above the bifurcation. In curarized animals life can be prolonged by this insufflation for hours in spite of the total cessation of respiratory movements. The air is pumped through the tube under a positive pressure of some 10 to 20 millimetres of mercury, so that the respired air—that is, the CO_2—is blown out, while the oxygen is forced into the alveoli in such a manner that respiration takes place through diffusion. In normal animals it was found that a tendency to cyanosis occurred after a time, but this was completely removed by an occasional interruption of the current of air. The author states that ether anaesthesia can be induced by this insufflation with absolute safety. He found it impossible to kill dogs with ether if applied by his intratracheal method. An animal to which ether had been applied in excess could be restored to life after the heart had stopped beating by the intratracheal insufflation. This was still successful after twenty-one minutes. He was further able to show that the air forced in under pressure did not do any harm, and that there is no danger of aspiration of vomit or other matter in the mouth of the animal, although when introduced in the air fine carbon particles could be blown into the alveoli. Alexis Carrel (*Berl. klin. Woch.*, No. 13, 1910) has carried out a number of experiments on dogs with this method. In these experiments he had some success in applying sutures after removal of portions of the aorta and in undertaking some intracardiac operations. In all these experiments he was able to depend on the method for smooth anaesthesia and satisfactory inflation of the lungs even after the chest wall was laid open. Elsberg (*Berl. klin. Woch.*, No. 21, 1910) has applied the method to man. He describes a suitable apparatus by means of which the continuous current of air, loaded at will with ether, can be pumped into the trachea through a catheter-like tube under a varying pressure. In this apparatus the air can be sterilized and rendered warm and moist. In the first case, he and Lilienthal attempted to restore a woman in a condition of myasthenia gravis to life. She was pulseless, cyanosed, and respiration had ceased. For five hours her colour was restored and the pulse returned, but no respiratory movement was induced and consciousness remained absent. The attempt was given up after this time. The second case was an obscure one simulating pulmonary abscess, and a prolonged intrapulmonary operation was performed successfully with intratracheal insufflation. Finally, E. Unger and M. Bettmann (*Berl. klin. Woch.*, No. 21, 1910) have controlled the experiments reported in animals,

and report very favourably on the method. They do not add much to what Meltzer had reported. In the *Berl. klin. Woch.* of September 19th, 1910, Kuhn writes complaining that Meltzer stated that his method differed in principle from Kuhn's. The points which are dealt with appear to turn on the question whether Kuhn passed his tube down to the lower part of the trachea, and whether the employment of positive pressure was material. Meltzer replies in the same number, setting forth clearly the differences between his and Kuhn's methods; and while he recognized the importance of Kuhn's work on peroral intubation, he claimed that his method is applicable both in cases in which the patient is still breathing and after breathing has stopped. He reports that the method has been applied to human beings a dozen times, of which three were for abscess of the lung, with good results.

224. Treatment of Infantile Diabetes.

Maurel (*Ann. méd. et chir. infant.*, September, 1910) points out that diabetes is a rare affection in young children, and that it is important that it should be recognized and come under treatment early. The onset and development differ from that of the adult. There is polyuria with incontinence, and the urine is often alkaline, while thirst is a prominent symptom. Sugar is present in a much higher proportion in children than in adults. 30 to 80 grams being found in each litre. A large quantity of urea, 20 to 25 grams, is also passed in the twenty four hours, albuminuria is more rare than in adults, and acetonaemia is sometimes absent. The onset is often confused with digestive or dentition disturbance, attention being first aroused by loss of weight, thirst, and polyuria. The disease runs a rapid course; in infants it is an acute disease, terminating in a few days; in older children it lasts for some months, and in adults for two or three years. The treatment consists in reducing the ingestion of foods which yield glucose and in promoting the assimilation of the glucose formed in the body. With breast-fed children, nursing is continued, and with each feed a small teaspoonful of Vichy water is given. With artificially-fed infants, the milk is sweetened with mannite, or glycerine, or saccharine, and Vichy water is added. No starchy foods are given, but when older beef tea and eggs are permitted. When the child is weaned it is nourished on milk or cream diluted with water, sweetened with glycerine, a little gluten flour, eggs, minced meat, and green vegetables are advisable. The urine should be tested and the patient weighed every three or four days, and, should he not improve, recourse must be had to milk diet. As a precaution against coma, the flesh diet should not be rigid or too quickly introduced, and fatigue of all kinds should be prevented. When coma occurs one prescribes purgatives, stimulants, and heavy doses of sodium bicarbonate. Drugs must be used with great moderation; for the diabetes of children one gives quinine, iron, cod-liver oil, the alkalis, arsenic, and bromide. Where specific disease is the cause, mercurial treatment has proved very successful. The alkaline waters are highly beneficial, but where a stimulating effect is desired one should use waters containing iron and chlorides. Arsenical waters affect the hepatic glycogenesis. In infants the course of the disease is very rapid and the waters containing chlorides and arsenic are the most valuable. The results obtained from treatment are usually satisfactory.

225. The Action of Tincture of Iodine in Disinfection.

K. H. Kutscher deals with some experiments which he has conducted with the view of determining what disinfecting power the tincture of iodine possesses (*Berl. klin. Woch.*, February 28th, 1910). A number of surgeons have painted tincture of iodine on to the skin after careful washing with soap and water. Grossich recommends a simpler procedure. He gives his patients a bath the day before the operation, and shortly before the operation the skin is shaved dry and then painted with a 10 to 12 per cent. tincture of iodine. The clinical results obtained by this method are stated to be good. Grossich, and also Walther and Touraine, claim that the skin can be really sterilized in this way. The author shaved a rabbit's skin dry, and then rubbed the bare place with a suspension of anthrax spores in 1 per cent. salt solution. Twenty-four hours later the skin was painted twice with 10 per cent. tincture of iodine. The iodine was then removed by sodium thiosulphate, and parts were introduced into a skin pocket in mice, while scrapings were used in inoculating agar-agar plates. Similar experiments were conducted with vegetative bacteria. In all cases bacterial infection or growth resulted. Next he immersed dried silk threads infected with various bacteria in tincture of iodine, and, after removing the iodine as before, sowed the bacteria in weak alkaline broth. Even after sixty minutes in iodine growth took place. Slightly better results were obtained with *pyocyaneus*. In discussing his results he comes to the conclusion that the good results obtained in surgical practice are due to the hardening and fixing action of the alcohol, since it can be shown that far less reliable results are obtained when soap and water are first used before the painting with iodine. In this case the skin is macerated, and the fixing of the bacteria is prevented. He was able to prove that the iodine does not take part in this fixing action. He therefore recommends thorough cleaning with concentrated alcohol, or, still better, alcohol and acetone, and no tincture of iodine. If it is desired to obtain the action of the iodine in producing hyperaemia, which is supposed to lead to the formation of a smooth scar, he considers that the mechanical cleansing should precede this painting.

226. Formol Applications for Aphthae.

Dessirier (*Nord. méd.*, January 15th, 1910), remarking on the number of palliatives which have been tried for the little ulcers of the mouth occurring in aphthae, and recognizing that none of them really cure, but merely ease the pain for a time, recommends the local application of formol as being superior to any other remedy hitherto employed. He uses the ordinary 40 per cent. formol solution, and applies it by means of a probe covered with cotton-wool, taking care to make a thorough cleansing of the depths of the little cavity. The application causes considerable smarting, but this only lasts for a few seconds and does not return, whilst the remedy acts as a speedy anaesthetic, at the same time cutting short the course of the ulcer and favouring cicatrization. In conjunction with the ordinary toilette of the mouth and teeth, formol seems to be the simplest and the most efficacious remedy for aphthae which we possess at present.

PATHOLOGY.

227. Tubercle Bacilli in the Blood.

F. Jessen and Lydia Rabinowitsch (*Deut. med. Woch.*, June 16th, 1910) have investigated 12 cases of phthisis in the first stage, 12 cases in the second stage, and 12 cases in the third stage, to determine whether the find recorded by Rosenberger and by Liebermeister of tubercle bacilli in the circulating blood could be confirmed in sanatorium patients, and further whether this occurrence could be shown to be of diagnostic or prognostic importance. They bled the patients to the extent of 5 to 10 c.cm. by venesection and rendered the blood fluid by the addition of citric acid solution. The sediment was gained by centrifugalization, the corpuscles were dissolved in distilled water, and antiformin was employed to get rid of any other micro-organisms. The centrifugalization was very thoroughly carried out. The smears made from the sediment were stained by Ziehl-Neelsen's and by various modifications of Gram's methods. In the 12 first stage cases tubercle bacilli and granules were found twice; in the 12 second stage cases only granules were found in 2 cases; while in the 12 third stage cases tubercle bacilli were found in 5 and granules only in 1. In 2 cases there was suspicion of tuberculosis—history of past symptoms, slight fever and night sweats, but no tubercle bacilli in the sputum. The diagnosis was therefore confirmed by the blood examination here. Although it would have been expected that the cases showing bacilli in the blood would be of bad prognosis, this did not prove to be the case. Bacilli were found in very mild cases which ran a benign course. The authors, however, believe that great caution must be exercised in attempting to utilize this find for prognostic purposes. In 3 severe cases, a pneumothorax was artificially induced. In the first the bacilli disappeared after the treatment was instituted, and the patient did well. In the second there were bacilli in the blood before, but only granules after the pneumothorax had been effected. This case also did well. In the third case, the condition was complicated by large cavities and extensive adhesions. The pneumothorax did not prevent death from taking place. The bacilli and granules persisted in this case. Although it is usually necessary to obtain a fairly large amount of blood for the examination, they succeeded in finding bacilli from a few drops of blood in the fatal case referred to above.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

228. Spontaneous Pararenal Haemorrhage.

Paul Pick (*Wien. med. Klinik*, No. 25, 1910) describes a case of spontaneous haemorrhage in the kidney region. The condition is a rare one, only 8 cases apparently having been previously reported; 6 out of the 8 cases were operated upon, with 4 deaths, and the 2 cases not operated upon ended fatally, thus giving a mortality of 75 per cent. The author's case was of a woman, 53 years of age, who eight years before had had an attack of cholelithiasis, as evidenced by pain, jaundice, and characteristic stools and urine, and who was now suddenly seized with severe pain in the right side of the abdomen. The diagnosis on this occasion also was of cholelithiasis. The patient was slightly jaundiced, the right upper abdominal region was distended and tender on pressure; on palpation a resistance could be made out under the edge of the ribs on the right side; the fact that there was a retroperitoneal pararenal haemorrhage was only discovered at the operation. The symptoms were similar to those in the previously published cases, some of which, however, were chronic in character. In the author's case the cramp-like pain was so severe as to cause collapse. The jaundice was haematogenous in nature, as opposed to the jaundice of hepathogenic origin present in the attack of cholelithiasis, a differentiation which is insisted upon in order to bring into prominence the fact that the patient was operated upon in her first acute attack of pararenal haemorrhage. The treatment, which resulted in complete recovery, consisted of incision, clearing out the haematoma, and subsequent plugging and drainage of the blood sac. On reviewing the cases it is seen that spontaneous haemorrhage occurs in two forms, and results in the formation of a blood sac lying in the fatty tissue of the kidney, or between the kidney and the fatty capsule, or the blood infiltrates the tissue spaces of the fatty capsule and forms a tumour, in which the kidney lies embedded. Further, the blood may infiltrate the mesocolon, or even, after perforation of the mesocolon, pass into the general abdominal cavity, and may finally appear as a haematoma of one side of the scrotum or of the labium. The symptoms in the author's case could be readily traced to the conditions found at the operation—the severe pain to pressure upon the kidney capsule, which is richly supplied with nerves; the later pain to the later distribution of the extravasated blood, the pallor of the patient to the haemorrhage, the fever which came on in a few days to absorption of blood products, later developing into septic fever; in almost all the cases the abdomen was distended as a result of meteorism; the meteorism, according to Quervain, is the result of infiltration of the perirenal tissue causing injury to the circulation in the flexura coli, and with it to disturbance of function of that part of the intestine, but according to Lenk the meteorism results from a reflex intestinal paralysis caused by irritation of the splanchnic nerve. The diagnosis is not easy, and rests upon the presence of sudden pain in one side of the abdomen radiating from the kidney towards the iliac crest or the back, with a more or less clearly palpable sense of resistance, considerable meteorism, combined with either a striking amount of anaemia or the presence of suffusion in the kidney region. The etiology of the condition is still not altogether clear; it is a striking fact that in almost all the published cases (including that described by the author) chronic nephritis was present. The prognosis is hopeless unless timely operative treatment is undertaken; in the absence of operation sepsis is the ruling factor in the later stages. If the condition is diagnosed before operation the functional condition of the kidney should be tested. If a large blood sac is found at the operation this is to be treated by incision, turning out of the haematoma, etc., as described above: if the source of the haemorrhage can be located in the kidney the haemorrhage must be stopped, even if to do so necessitates removal of the kidney; if the kidney is embedded in a mass made up of alternate layers of fat and coagulum extirpation is necessary, in order to prevent purulent degeneration of the blood. The number of cases is too small to give a clear view of the condition, but it is evident that the diagnosis is very difficult and the prognosis very unfavourable apart from surgical treatment.

229. Trichinosis.

The *Amer. Journ. of Med. Sci.*, August, 1910, contains two articles on trichinosis, in the first of which Gilman Thompson records a clinical study of 52 sporadic cases. The disease is acute in onset, with sudden chills or muscular pains, severe frontal headache, prostration, fever and vomiting accompanied by abdominal cramps and contractures of the leg muscles, with great muscular weakness, sometimes deceptively causing apparent immobility. Puffiness of the eyelids and face, dyspnoea and diaphragmatic breathing without cyanosis occurred in one-fourth of the cases, and localized severe orbital pain independent of the headache was complained of. In three cases bilateral circumscribed corneal haemorrhages occurred suddenly, while in one case oedema of the retina, optic neuritis, and small haemorrhages in the macular region were present. The sudden occurrence of symmetrical circumscribed corneal haemorrhages in a patient whose blood vessels are not degenerated should give rise to a suspicion of trichinosis. A high grade of eosinophilia, usually above 30 per cent., and even above 80 per cent., was invariably present, and the temperature generally reached 104° or 105° and lasted, in lessening degree, for from two to six weeks. In the second article Dr. Henry Albert reports an epidemic of 14 cases due to eating boiled ham, and he calls special attention to the occurrence of eosinophilia and its value in diagnosis. Although in hams exposed to a temperature of 170° to 200° F. from one to six hours, according to size, the trichinae are destroyed in the vast majority of cases, further investigations are needed to determine more exactly just what temperature and what length of time are necessary to ensure killing the trichinae, and all pork consumed in any form other than boiled ham should have all parts raised to the boiling point. In isolated cases of the disease an examination of the blood will frequently assist in determining the diagnosis, as there is no other condition at present known in which so high a percentage of eosinophiles is reached. The percentage varies ordinarily from 10 per cent. to 60 per cent., but 86 per cent. has been recorded, and although a few cases have occurred in which there was no eosinophilia, these were either cases of very severe infection or the examination was made too long after the acute symptoms to be of value, so that eosinophilia may be said to occur in practically all cases. It makes its appearance with the commencement of the acute muscular symptoms—that is, about the seventh to the twelfth day after infection; and it is at its highest at the height of these symptoms—that is, during the second or third week after infection, after which time it gradually diminishes, so that by the end of the second or third month no increase in the number of cells is present.

230. Fatigue the Cause of Enuresis.

Nicoletoponlos (*Arch. méd. des enfants*, September, 1910) writes that one of the causes of nocturnal incontinence in children is fatigue. He relates the history of a boy who suffered in this way until he began to attend school. He was a very active child, and all treatment failed to cure the complaint. It was observed that when he began to attend school the incontinence at night diminished, but during the holidays returned, and was even worse. Finally, it was observed that it was on Saturday nights that the child had an involuntary evacuation, and that he retained his urine well on other nights. He had the habit of amusing himself out of doors till late on Saturday nights, and returning home fatigued. When this was prevented and he was made to rest, the trouble entirely disappeared. A second case, that of a girl, held her urine badly during the day, and was often found to be wet at night, her mother remarking that she was worse in summer and on holidays, when she played with much spirit and energy. She improved under atropine, but finally was cured when prevented from tiring herself. Another child of 7, who spent the day actively running about and playing, suffered both night and day; when kept in bed for four days as an experiment, was perfectly free, but the trouble returned as soon as he got up again. The writer attributes nocturnal enuresis in many cases to the deep sleep which follows physical fatigue. It is suggested that involuntary micturition is due to hyperacidity of the urine; it is possible that fatigue is the cause of this hyperacidity. Lagrange has demonstrated the increase of acid in the urine of fatigued persons, and Marcus has

shown that in soldiers who had undergone exercise the urine exhibited a quantity of lactic acid which had not been present before. Alkalinity is not always associated with incontinence, and adenoids, phimosis, etc., may exist in a child, who is completely cured by giving rest.

SURGERY.

231. Treatment of Tumours of the Spinal Cord.

Hunt and Woolsey (*Ann. of Surg.*, September, 1910), in a lengthy contribution, point out the advance that has been made during the past twenty years in the diagnosis and operative treatment of tumours of the spinal cord. The first of these authors has collected from the practice of some of his colleagues 13 cases submitted to surgical intervention since the beginning of the year 1901. In 6 cases of extramedullary growth included in this list, one patient died from the operation, one survived for nearly a year, the growth eventually recurring, and the four remaining made, it is stated, fair recovery from their paralysis, and after a considerable lapse of time showed no indications of return of the disease. Five of the remaining cases show the necessity of greater precision in diagnosis, as it was found in each, after exploratory laminectomy, that the nature or localization of the growth precluded removal. In some remarks on the symptomatology of new growths of the cord, Hunt lays it down as a general rule that any group of symptoms indicating a progressive focal lesion of the cord should suggest the possibility of neoplasm. While in the series of cases recorded in this paper the general diagnosis of tumour and the localization in the long axis of the cord presented no serious obstacles, there was found to be great difficulty in deciding whether the growth was an extramedullary or an intramedullary one. In many cases, indeed, the differential diagnosis is impossible, and then exploratory laminectomy is indicated, and should be undertaken before the disease has progressed too far. Much importance is attached to the presence or absence of root pains. An extramedullary tumour, the author states, when situated beneath the dura mater, is usually first manifested by unilateral root pains which, after a persistence often for many years without other symptoms, are associated with paralytic evidences of compression of the cord. In cases of central or intramedullary growth the root pains are either absent or comparatively insignificant. It is pointed out, however, that exceptions have been occasionally noted. In cases of intramedullary tumour there is usually a tendency to extension of the symptoms in an upward direction. In cases of extramedullary tumours, on the other hand, the symptoms suggest that the growth is increasing in width rather than in length. The author emphasizes a symptom which he has repeatedly observed in cases of extramedullary growth in the cervical region. This consists of a distinct girdle sensation, or constriction, situated at the umbilical level or an inferior thoracic zone. Very little value, however, can be attributed to this as a differential sign, as the author has also observed an abdominal girdle sensation in a case of central tumour of the upper cervical region. In the localization of the tumour in the long axis of the cord a study of the initial root pains is of the first importance. In this respect attention is directed to the law of Bruns, which refers a root pain from tumour compression to the segment from which the root arises, and not to the root in its intraspinal course. Hyperaesthesia may, however, be caused by irritation of the root which arises from the segment just above the growth. It is often difficult or impossible to determine the lower pole of the tumour, as the compression of the cord above usually masks the root symptoms at a lower level. In the section dealing with the surgical aspects of tumours of the cord and the operative technique of their removal, Woolsey strongly advocates simple in preference to osteoplastic laminectomy. The former, he holds, is the easier and safer method. In the preparation of the patient great care, it is urged, should be taken to disinfect any bedsore that may exist, and shortly before the operation urotropin, which, as has been shown by Crowe, is excreted by the cerebro-spinal fluid, should be administered in a dose of 15 grains. The author advises that, if possible, the operation should be completed in one stage. An operation in two stages, though often indicated in cases of brain tumour, is, in the removal of a tumour from the cord, to be regarded not as a routine measure, but as an occasional resort in difficult cases, or when it is rendered necessary by a very critical condition of the patient. It is stated that the shock in operations on the cord is, as a rule, not serious, and less than in operations on the brain. Krause's recent statistics of 96 cases of surgical removal of intraspinal tumour show that the operative mortality has been reduced from 43.7 to 25 per cent. In a series of 7 cases in the author's practice the operative mortality was 14.3 per cent. The author states that the ultimate results of the operation have, so far as his experience goes, been favourable. No very definite information, however, is given on this point, except that, of 5 patients who survived the operation, none died from the effects of the tumour. In a concluding paragraph it is asserted that the prognosis of operative intervention on the cord in cases of tuberculosis is very unfavourable.

232. Pure Carbolic Acid in the Treatment of Osteomyelitis.

Mencière (*Arch. prov. de chir.*, No. 6, 1910), in a paper on phenolization in the treatment of osteomyelitis of the long bones and of the sacrum, publishes the results of seven cases thus treated by himself which favour his opinion that this method, first proposed by Phelps in 1900, has a very high curative value in cases of osseous and articular tuberculoses, and has saved many limbs from amputation and from the shortening caused by resection. This treatment, which is applicable to cases of necrosis and chronic suppuration, consists, after exposure and enlargement of the cavity in the diseased bone and free curetting, in inundating the focus of the osseous lesion by pure carbolic acid. After an interval of one minute, the acid is removed and replaced by pure acohol. Care should be taken in the course of the operation to prevent cauterization of the surfaces of the cutaneous flaps. The good results obtained by the author from this treatment are attributed to the double action of the strong carbolic acid. It acts, in the first place, as a powerful antiseptic and an energetic destroyer of infective agents, and, in the second place, as an energetic stimulant of processes of repair. Phenolization is, it is stated, free from any serious risk. Carbolic acid, when applied to raw surface in weak solutions, is certainly absorbable and capable of acting as a general poison, but, on the other hand, when used in the pure form and neutralized by alcohol, its action is restricted to intense cauterization of the tissues to which it is directly applied, and it is not absorbed into the general system.

233. The Bladder and Inguinal Hernia.

Eugen v. Zilahy (*Pest. med.-chir. Presse*, No. 29, 1910) describes a case of strangulated inguinal hernia, in which the bladder was incarcerated in the hernial sac. At the operation, after the contents of the sac had been returned into the abdominal cavity and the process of isolation of the hernial sac was begun, the operator was struck by the fact that the sac was thicker than ordinary. The utmost care was taken in the isolation of the sac, and when the process was complete examination of the remaining mass showed that it contained the incarcerated bladder. After the resection of the hernial sac it was easy to return the bladder into position and the patient made an uninterrupted recovery not complicated by bladder symptoms. The diagnosis could only have been made at the operation. Afterwards the patient stated that for the last ten years, during which the hernia had given rise to no special symptoms, he had suffered from pressure and pain on urination and that in order to urinate he removed his truss and exerted pressure on the hernial region with his hand.

OBSTETRICS.

234. Pregnancy: Uterus Duplex Separatus.

Rüder (*Monats. f. Geb. u. Gyn.*, August, 1910) reports the case of a young woman who sought medical advice on account of an abdominal swelling and escape of blood from the vagina when the abdomen was pressed. Vagina duplex was detected and an operation performed. The patient married; three months later the periods were very free, lasting eight days, and then they ceased. The first tumour was coincident with the establishment of menstruation; a tumour again developed after marriage, when the periods ceased abruptly. Rüder found traces of the vaginal septum, and could define a double portio vaginalis of the cervix, one half so much contracted by cicatrization that its canal could not be traced. The lower part of the abdomen was occupied by an enlarged uterus, and by its side a tumour of the bulk of a normal gravid uterus at the fourth month. Diagnosis was uncertain, and the cicatrization of the vagina appeared unfavourable for delivery through the natural channel. Rüder therefore amputated the tumour above the vagina. He discovered a pair of

completely separate uteri. The appendages were quite normal on the side of the non-gravid uterus, which bore no decidua and had not discharged anything like a product of conception. The gravid uterus bore a Fallopian tube only, without an ovary; after convalescence, Rüder is careful to add, the periods appeared regularly every four weeks. They were not accompanied by pain. No other malformation could be found in the pelvis, abdominal viscera, or elsewhere.

235. Bacillus Coli Infection of the Urinary Tract Complicating Pregnancy.

Burnett (*Journ. Obst. and Gyn. of the Brit. Empire*, July, 1910) writes that infection of the urinary tract by *coli* during pregnancy is often overlooked, and is a complication fraught with grave issues for the mother and child. Cases of this affection under the writer's observation have been diagnosed as acute appendicitis, acute intestinal obstruction, renal stone, pleurisy, pneumonia, enuresis. The urinary examination should not be restricted to a chemical estimation only, as is often the case, since bladder symptoms are few or absent altogether. The disease may first manifest itself in the fourth month of pregnancy, but it has been recognized at all the subsequent months of pregnancy, the most frequent being the fifth and six months. The writer has found it to be more frequent in primiparae, but it may complicate the first or any subsequent pregnancy. Acute cases are divided into those with bladder symptoms and those showing renal disturbance with few or any bladder symptoms. The latter group is the larger. The patient suddenly develops a rigor, fever, abdominal pain, which becomes restricted to the right renal region, with possibly nausea, vomiting, constipation, and furred tongue. The urine is scanty and high coloured, or there may be frequency of micturition and dysuria. Under palpation the patient will locate the pain over McBurney's point. In a number of cases where the bladder symptoms are pronounced the tenderness is most marked over that organ, but it is characteristic to find extreme hyperaesthesia over a wide area in the right kidney region. Examination per vaginam may discover a tender spot at the site where the right ureter enters the bladder; the ureter may be so thickened and dilated as to be palpable from the vagina. The fever is sometimes accompanied by repeated rigors; at first it rises and falls; after a few days it remains persistently high, usually indicating either involvement of the renal tissue or that the bacillus has attacked some other organ. The patient assumes a poisoned look, and delirium may be present. The urine is passed without pain, it has no odour, it contains pus cells, active leucocytes, and the *Bacillus coli* either in clumps or in isolated distribution. The red blood cells usually show the changes characteristic of a secondary anaemia. It is rare to find the *Bacillus coli* in the blood itself. Acute cases untreated run a course of several weeks, with deepening toxaemia and repeated rigors. Should the patient not abort, the renal parenchyma becomes involved, and septicaemia follows. In the chronic type the onset is more insidious, bladder symptoms may be absent, and the irregular temperature is the first thing to attract attention. In several non-pregnant women whose cases have been diagnosed as neurasthenia or chronic hysteria, the writer has found pus and a large number of *Bacillus coli* in the urine, although no urinary symptoms have been present.

GYNAECOLOGY.

236. Ectopion Vesicae: Total Absence of Symphysis in Adult.

Mohr (*Monats. f. Geb. u. Gyn.*, 1910) reports an extreme case of ectopion in a single woman aged 34. Although undersized and weak, she had never had any serious illness, and she had menstruated regularly since puberty. Unable on account of incontinence of urine to be admitted to her village school, she was illiterate, yet she was able to perform hard work on a farm. Above all, until quite recently this unfortunate person was able to walk with little difficulty or fatigue. Recently she felt fatigue after hard work, and for that reason she sought medical advice. The pubic bones lay a handbreadth apart. The ectopion was of the well-known extreme type. A half clitoris was detected at the anterior end of each labium minus, the anterior wall of the vagina was prolapsed, the portio and os externum were ill-developed, and the body of the uterus was retroflexed, its cavity measuring under two inches. On rectal palpation the uterus was found to be slightly bicornuate. The perineum was well formed. The mucous membrane of the bladder lay completely open, the orifices of the ureters were far apart. Urine could be made to flow from them on pressure against the anterior wall of the rectum. The ureters were distinctly dilated just above their termination. The urine, which could be pressed out of the right ureter, was quite clear and free from albumen, but that which issued from the left was turbid and highly albuminous; its sediment contained epithelial cells in clusters, but no casts. The integuments of the inner side of the thighs and of the buttocks were not so excoriated as might have been expected, yet the patient when in bed lay in a pool of urine. Mohr would not undertake any operation, but he applied an apparatus which protected the exposed bladder as well as serving as a urinal; he found it difficult to keep clean. Küstner, in a discussion on this case, admitted that Trendelenburg's plastic operation, though it protected the bladder, was of questionable value; he had tried it in two adult female patients.

THERAPEUTICS.

237. "606" in Syphilis.

M. S. Kakels, New York (*Med. Record*, September 24th, 1910) presents a preliminary report on the first 2 cases of syphilis treated in America by the Ehrlich-Hata preparation, "606." The first case was in the person of a man 24 years old, who had an extensive gummatous infiltration of the liver; he had had the initial one three years before, and gave a positive Wassermann reaction. An injection of 3 decigrams of "606" was soon followed by signs of betterment, and within two days the large tumour had very markedly decreased in size. The second case was that of a man, 36 years old, who had suffered from syphilis for three years; the disease was markedly obstinate, responding hardly at all to the usual specific remedies. He was finally practically given up by his physicians, and death was regarded as certain within a short time. Within two days after an injection of 3 decigrams of "606" a marked improvement was noted, and within one week the ulceration and pustules had almost disappeared; a broken-down gumma on the nose was filled up with healthy granulations; a large and deep ulcer on the malleolus was also filled with healthy granulations, and epidermis was beginning to grow over it; and other subcutaneous gummata were rapidly diminishing in size. John A. Fordyce (*Med. Record*, October 1st, 1910) summarizes the results of the Ehrlich-Hata preparation in 16 cases of syphilis, among them 1 of scaling syphilis of the palms, 1 of early malignant syphilis with ulcerative, rupial and fungating lesions of the face, chest and arm, 1 of multiple chancers of the lips, 1 of optic neuritis, and 1 of central syphilis. He also reports 4 cases treated in the past months, the histories of which were not included in the article summarized. In all these cases the improvement was most marked, in only 1 were there any serious symptoms, and in 1 only a relapse occurred. The author describes the method of preparing and administering the remedy after the latest modified Wechselmann method. The dose recommended by Ehrlich was 0.3 gram, but the author advises larger doses, in some cases as high as 0.6 or 0.7 gram.

238. Saline Infusions.

After defining this method of treatment as having for its purpose the replacement of a certain quantity of blood, or to promote a lavage of the blood, Lemoine (*Nord méd.*, September 15th, 1910) relates the history of the practice of saline injections and the indications for their use. He suggests that Hayem's solution—which consists of sulphate of soda, 10 grams; chloride of sodium, 5 grams, to 1,000 grams of distilled water—is the one to be more generally employed. He refers also to the serum of Quinton, which is obtained by the sterilization of sea water. The most suitable places for the injection are the flanks, the dorso-lumbar region, and the buttock, and the amount of saline to be used varies between 200 c.cm. to 1,000 c.cm. After injection a little light massage facilitates absorption. The rate of absorption varies with the blood tension. In cases of haemorrhage, with a state of hypotension, the fluid is absorbed rapidly, while the reverse is the case in hypertension. An injection of less than 500 grams produces little effect other than a tendency to somnolence, increased perspiration, and frequency of micturition. When an injection of 900 grams or over is given, the reaction is more pronounced. The pulse is augmented in volume, and becomes more regular; the patient has an urgent desire for micturition; there is some diarrhoea, and a little later there may be chills, followed by sweating. On the nervous

system the general effect is one of stimulation and excitation. When the saline is given intravenously, the effect is more immediate and marked. According to some authorities, toxic effects have followed the intravenous method experimentally, but the author believes that danger can only arise when renal insufficiency exists. If elimination cannot take place by this channel, in such a case there is a risk of hydrothorax or oedema of the lung. In all other respects the intravenous method results beneficially. The therapeutic indications are much the same in both cases, and the choice of method depends upon the state of the patient and the severity of the case. The method finds a place in severe haemorrhages; in chlorosis, where small doses are given repeated at intervals of six days; in uraemia; in eclampsia; and diabetic coma, in which large doses given intravenously have the best results. In the various intoxications — especially in saturnism, in the adynamic form of typhoid, and in pneumonia with low blood tension and profound nervous symptoms—saline injections are of great value. It may be used also in acute infective conditions such as malignant endocarditis and puerperal fever. The author then discusses the contraindications. Any evident weakness of the myocardium is undesirable. This, however, he proposes to combat by incorporating caffeine with the saline solution at the moment of employment. Any pronounced oedema or valvular affections of the heart with a condition of asystole are likewise contraindications. Briefly, the employment of the method is contingent upon the state of the heart organically and that of the renal function.

239. Resistance of Malaria Parasites to Quinine.

Nocht and H. Werner (*Deut. med. Woch.*, August 25th, 1910) report a series of unusual cases of malaria in persons who were infected in Brazil. A degree of resistance to quinine on the part of malaria parasites has already been described by Couto, but the authors declare that, even remembering this report, they were quite unprepared for so marked a resistance. The cases hailed from the upper course of the Madeira-Mamore River. Of 90 cases, 56 were tertian, 15 were tropical fever, and 19 were mixed infections. There were no quartan cases. Quinine proved incapable of preventing relapses in these cases, even when the doses were increased from 1 gram to 2 grams or more. Methylene blue also failed to do good, and was probably even less active than quinine. A distinct and highly prompt antiparasitic action was obtained with Ehrlich-Hata's dioxy-diamido-arseno-benzol, given intramuscularly in doses of 0.3 gram. In only one of the cases in which it was tried, however, did it succeed in clearing the parasites out permanently. The authors are, however, still experimenting in this direction. They add that the cases were distinctive in several characteristics, and complications affecting the intestines, lungs, and nervous system were frequent and severe.

240. Sajodin

Armin Weiss (*Pest. med.-chir. Presse*, No. 12, 1910) describes a case of obstinate joint affection successfully treated with sajodin. The patient (the author's wife) was 54 years of age, and had suffered at intervals for years from rheumatic symptoms. In the illness here described there was a history of injury to the hand and a painful, tender, reddened area developed over the knuckle of the little finger. The pain increased and extended to the shoulder, necessitating the use of a splint for the finger and a sling for the arm. Antiphlogistic treatment was tried without effect; at the end of three days the finger was much swollen, bluish red in colour, and extremely tender, but there was no sign of pus, and a diagnosis of gout was made. In spite of treatment the condition remained unchanged for from five to six weeks. The patient was then admitted to hospital and examined with Roentgen rays, when periostitis with caries of the bone was found, and an opinion was expressed that amputation of the finger or enucleation would become necessary. The disease was thought to be due to staying in a damp house. As soon as the patient returned home Weiss began to give sajodin in doses of 0.5 gram (7.7162 grains) three times a day, with the result that after eight days the size of the finger was already diminished, while at the end of three weeks, in spite of an intermission of treatment for a few days because of the appearance of a rash, the finger, though still stiff, was scarcely noticeably thickened and was no longer painful. The case is a clear example of the iodine action of sajodin. The author finds that sajodin causes no disturbance of digestion or appetite, is tasteless and without odour, and is readily taken. In specially sensitive patients slight symptoms of iodism may appear, but even in such patients toleration of the drug is soon acquired and symptoms of iodism quickly disappear if the use of sajodin is discontinued for a few days. The ordinary dose is one 0.5 gram tablet (7.7162 grains) three times a day, but in many cases one or two tablets a day are sufficient.

241. Causes of the Retention of Bromine.

E. Frey (*Deut. med. Woch.*, August 18th, 1910) has investigated the conditions which lead to a retention of bromine in the organism after prolonged medication with bromides and the displacement of chlorine by bromine in the blood. It is well known that when a diet containing only small quantities of chlorides is given together with bromides, the excretion of the latter takes place slowly and incompletely. Having determined that the diuretic action of the two classes of salt is apparently of equal strength, and that there is no difference in the rate of diffusion of bromides and chlorides in the tissue fluids, he proceeded to carry out certain experiments on rabbits, which showed that when the animal is rendered poor in common salt, a single dose of bromides will produce a greater rise in the chlorides than if a dose of sodium chloride had been given. An animal which is rendered poor in salts, but which received both chlorides and bromides, economizes equally with both. The variations which take place with regard to the altered retention of excretion of the two classes of salt affect both without preference. Lastly, he found that the relative proportion of the two in the urine indicated the proportion of the two in the blood. The facit of these results is that the kidney does not distinguish between bromine and chlorine, and the practical experience that, when little sodium chloride is given in the food, bromides work more energetically, is explained.

PATHOLOGY.

242. Anaphylaxis.

Anderson and Frost (*U.S.A. Hygienic Laboratory Bulletin*, No. 64, June, 1910) have investigated the antibodies concerned in anaphylaxis, and consider that the essential agent in the passive transference of anaphylaxis is "allergin," a term which designates an antibody characteristic of anaphylaxis, and specific for its antigen. They have found that 3 c.cm. of serum from a guinea-pig sensitized by a single small injection of horse serum regularly contain sufficient allergin to sensitize normal guinea-pigs to an injection of horse serum twenty-four hours later; 0.01 c.cm. of horse serum was always found sufficient to neutralize the allergin in 3 c.cm. of sensitive guinea-pig serum, and in many cases a much smaller quantity was enough. When guinea-pigs were given 0.01 c.cm. of horse serum, followed at various intervals by the injection of 3 c.cm. of sensitive guinea-pig serum, passive sensitization was prevented when the interval was not greater than twelve hours; when it was longer—fifteen to eighteen hours—passive hypersusceptibility was modified but not constantly prevented. When normal guinea-pigs were given 3 c.cm. of sensitive guinea-pig serum and, at various intervals up to twenty-four hours, 0.01 c.cm. of normal horse serum, passive anaphylaxis was prevented in those animals which received the horse serum within six hours after receiving the sensitive guinea-pig serum. In the remainder of the series passive anaphylaxis was either prevented or modified. This would seem to indicate that within six hours the allergin had become "bound" in some way, so that it could no longer be neutralized by the injection of horse serum in the amount used. Mixtures of 3 c.cm. of sensitive guinea-pig serum, with varying amounts of the specific antigen, sensitized normal guinea-pigs when tested nineteen days later. Attempts to absorb the anaphylactic antibody from sensitive guinea-pig serum by contact for four hours with various organs of normal or sensitive guinea-pigs were not successful. The amount of allergin was apparently not diminished by this procedure. The authors found that the degree of hypersusceptibility conferred by equal amounts of sensitive serum was greater after fifteen days than after 1 day; even after fifteen days, however, their guinea-pigs were not sensitized by less than 1 c.cm. of sensitive serum. They also found that immediate anaphylactic symptoms could be produced in normal animals by the injection of suitable mixtures of antigen and anaphylactic antibody. Temperatures of 56° to 58° C. for one hour did not destroy the anaphylactic antibody in sensitive guinea-pig serum, but these temperatures appeared in some cases to impair its activity.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

243. Autochthonous Amoebic Dysentery.

Gavin (*Sem. méd.*, August 24th, 1910) details one of the rare cases of amoebic dysentery of temperate climates. The patient was a woman of 40, and neither she nor any of her family had ever been abroad. There was nothing of note in her family history, although she had suffered from enteric fever a good many years ago. She entered hospital suffering from abdominal pains and diarrhoea. This state of affairs had lasted for about nine years, the motions being bloodstained and glairy—more frequent at night or after food. The motion was urgent, and accompanied as a rule by sacral pain and violent abdominal pain. The abdomen was distended. She suffered from headache, slept badly, had cold feet, and was losing weight. On examination, the caecum and ascending colon were found to be tender on palpation. Her breath was fetid, and the tongue was coated. The other organs were normal. Microscopic examination of the fresh faeces showed numerous amoebae in a very active state. Lavements containing 2 grams of ipecacuanha were administered for some days, but without any appreciable effect on the condition, and finally 2 grams of quinine sulphate were given daily with a lavement containing tannin, and this had a marked effect in diminishing the number of stools to two or three per diem, although amoebae were still found in the fresh faeces. The author then describes the characteristics of the amoebae found in his patient. He believes it has not been noted before, and that it is totally distinct from *Amoeba histolytica* and *Amoeba tetragena*. He goes on to say that inoculation of a young cat with the faeces of the patient per rectum resulted in all the symptoms of acute dysentery in about nine days. Further inoculations of other cats with the excreta of each had the same result, death in each case resulting in about twenty-four days. The *post-mortem* evidence was not very distinctive, and consisted of a sanguineous, adherent exudate, and a series of small ulcers varying in size up to a lentil, chiefly in the large intestine. The author concludes by saying that it is a chronic form of dysentery, but unlike the dysentery of hot countries, and produces no complications such as abscess of the liver.

244. Remissions in General Paralysis.

Paul Lucas-Championnière (*Journ. de méd.*, August 10th, 1910) reports several cases of general paralysis under the care of Professor Ballet in the Asylum St. Anne, in which there was complete remission of the disease for periods varying from two to five years. In each case the patients presented the well-known symptom complex at the commencement—the grandiose ideas; a general state of mental exaltation; tabetic phenomena; loss of reflexes, lightning pains and the Argyll Robertson pupil. During the intermissions most of the typical features of the disease were in abeyance, so much so as to lead the ordinary observer to suppose the patient was in a normal condition. Memory as a rule was good, and in some cases the patients could do good work. This was particularly to be remarked in the case of one girl, who in addition to the ordinary symptoms of the disease had had several apoplectiform attacks with fever—a type of the disease which as a rule results in rapid enfeeblement. The sole evidences of disease in these cases was the Argyll Robertson pupil, which persisted, and a certain unnaturally beatific expression of countenance. There was also a slight degree of leucocytosis. There can be no doubt that general paralysis is not always totally progressive, and does sometimes undergo spontaneous arrest. A difficulty in such cases in asylum practice is the fact that the patient's friends, seeing him apparently in normal health, frequently insist on his release, with the too frequent result that a relapse occurs.

245. Acquired Haemolytic Ictero-anaemia.

Barton (*Amer. Journ. of Med. Sci.*, August, 1910), from a study of the literature and one personally observed case, discusses the condition of acquired haemolytic ictero-anaemia (Widal's syndrome), a disease of adult life which is characterized by the development of icterus and anaemia with splenic enlargement, urobilinuria, and a haemolysis associated with an abnormal fragility of the red blood corpuscles. The condition is more common in females than in males, and commences insidiously with indefinite symptoms of malaise, headache, and palpitation. Acholuric jaundice of varying intensity soon occurs, but is unaccompanied by itching, bradycardia, or emaciation, and the stools are normal in colour, and the urine, though dark, contains urobilin but no bile pigment. Simultaneously with the icterus marked anaemia and enlargement of the spleen occur. The disease when once established tends to chronicity, with peculiar alternate exacerbations and improvement in all the symptoms. The fundamental cause of the condition is a haemolysis due to an increased fragility of the red blood corpuscles, and the absence of biliary acids in the blood and urine and of any signs of taurocholic intoxication would seem to show that the pigment is formed within the blood rather than in the liver. A careful blood examination in any doubtful case will clear up the diagnosis, but an acquired icterus associated with anaemia, splenic enlargement, normal-coloured stools, and absence of any signs of taurocholaemia should arouse suspicion as to the case being one of acquired haemolytic ictero-anaemia.

246. Infantile Scurvy.

Pehu (*Prov. méd.*, August, 1910) discusses 3 cases of infantile scurvy, and points out that this complaint is not so rare as has been stated. The first case had been weaned, and had lived for seven months on sterilized milk only. He then began to have tenderness and pain in his legs, and to cry loudly when touched. He had six teeth, and a small ecchymosis and swelling of the gums was present. He rapidly improved on lemon juice, potato flour, and citrate of soda. The second child had been breast-fed for nine months, then for two months he had sterilized milk, and, finally, for six months a patent food only. He was not rachitic, but had digestive disturbance; there were present ecchymoses on the conjunctivae, insides of the hips, and round the gums. After twelve days of treatment these haemorrhagic signs had disappeared. The third child had been breast fed for thirteen months, and afterwards lived upon boiled milk and patent foods. He suffered from pain in his legs, and from attacks of dyspnoea and laryngitis. There was some bleeding from the gums, and purpuric spots on the thighs. Antiscorbutic treatment gave a favourable result. All 3 cases were typical of Barlow's disease, and recovered when fresh food was given. In very young children the diagnosis is obscure; the pain and tenderness in the legs may be attributed to syphilis, osteomyelitis, or poliomyelitis, or even tetanus. When such pain is present, it should lead to a careful examination of the gums; the alterations in the mucous membrane may be slight, or may show much swelling, a readiness to bleed, and even ulceration.

247. Albumen Test in Tuberculous Expectoration.

According to Roger the expectoration in tubercle contains albumen, whilst in ordinary acute or chronic bronchitis (cardiopaths and nephritics being excluded) there is no albumen. Trona (*Gazz. degli Osped.*, No. 81, July, 1910), after some experience, declares that Roger's results are in the main reliable—for example, out of 19 cases of supposed non-tuberculous bronchitis, 18 gave a negative result. The technique is simple, about 5 c.cm. of the sputa are diluted with 15 to 20 c.cm. of physiological solution, well shaken, and to this is added 5 m acetic acid to precipitate the mucin, shake and filter and examine the filtrate for albumen either by the heat test, or, as Trona prefers, by the trichloracetic test. By this test all the known tuberculous cases examined gave a positive result. Where there is cardiac or renal mischief the test is not reliable.

SURGERY.

248. Combined Surgical and X-Ray Treatment in Cutaneous Epithelioma.

A mixed method, consisting of surgical scraping and subsequent *x*-ray treatment, is advocated by Belot and Chaperon (*Arch. d'élec. méd.*, September 10th, 1910) for the greater number of cutaneous epitheliomata. By scraping the diseased part with the curette, the authors abrase the vegetating and ulcerating surfaces, and make a

preparatory cleansing of the region, so as to ensure the most favourable conditions for irradiation. They do not make a thorough excision or attempt a purely surgical cure, but prefer to husband the tissues in order to make their reparation more easy and rapid. If the curette has overlooked epithelial cancer cells, the *x* rays, thanks to their selective action, will destroy them. This destruction becomes an easier matter after the preliminary scraping, because the thickness of the tissues which the rays have to traverse has been notably reduced. This mixed method finds its principal indications in vegetating epithelioma, with projecting tumours. The intervention of the curette is of great assistance when crusts and horny obstructions prevent the rays from striking directly upon the diseased surface. A form of epithelioma in which the mixed method is absolutely necessary is the pearly variety. It is only in exceptional cases that the *x* rays by themselves can bring about the disappearance of the epithelial pearls. Generally they remain embedded in the skin, and always are dangerous relics. A slight application of the curette is sufficient to remove them, and an *x*-ray sitting completes the cure. In flat, cicatricial epithelioma, where fibrous tissue is an obstacle to the radiation, the curette is desirable, and it is of special value in rodent ulcer, where there is central ulceration and a hard swelling, in which latter is concentrated the proliferating activity of the lesion. When the attack is left to the *x* rays alone it becomes necessary to irradiate the projecting border with greater intensity than the ulcerated centre. This is always a delicate application, and the procedure becomes greatly simplified by previous abrasion of the swelling, thus smoothing the lesion and cleaning the ulcer. The authors are careful to state that the curettage must not be considered as a cloak for some supposed inefficacy on the part of the *x* rays. The rays can only act where they are absorbed, and their absorption in a given region diminishes very rapidly the greater the depth of tissue through which it is necessary for them to reach. Therefore the preliminary removal of scales and similar impedimenta is greatly to be desired. General anaesthesia is rarely necessary for the curettage; a local anaesthetic, such as cocaine hydrochlorate, is almost always sufficient. The *x*-ray dose absorbed by the operation wound varies from 7 to 15 H., the rays being numbered 6 or 7 on the Benoist scale. An epithelioma which has never previously been treated may receive a higher dose than a neoplasm which has already been under operation. A previous radiotherapeutic treatment should render the operator very prudent, and the dose in that case should be reduced to 5 or 7 H. From fifteen to twenty days later, at a fresh sitting, a smaller dose than the first may be given (5 to 6 H.), and a still smaller dose after a similar or more lengthy interval. The treatment should be continued after a cure appears to have been obtained, because total destruction of the neoplastic elements does not always coincide with the apparent amelioration. After cicatrization the authors have recourse to aluminium filters. Generally speaking, within three weeks after curettage and the first irradiation, the lesion is clearly modified, and complete cicatrization is obtained in six or eight weeks. The cicatrix is smooth and supple, and without adherences to the subjacent tissue. The scraping is well accepted by the patients, and the sittings are neither too long nor too frequently repeated.

240. Intussusception.

CH. VIARMAY (*Prov. méd.*, April 9th, 1910) reports two cases of this accident in young children, on which he has recently had to operate under differing conditions and with unequal success. The results go to show that this grave condition can be cured by early operation. He thinks that if the case can be seen before adhesions grow between the serous surfaces of the entrant and containing portions of the bowel there is every chance of reducing the invaginated portion by a simple and harmless operation. If operation is delayed it is necessary to resect the mass—a much more serious undertaking. The cases which he quotes bear this out. The first was the case of an infant of 6 months. It had the usual symptoms of intussusception—severe abdominal pain, vomiting, and frequent bloody stools. It had been ill for four days when first seen. There was found on examination a large sausage-shaped mass extending from the right iliac fossa to the border of the false ribs. No other diagnosis being possible, immediate intervention was thought necessary. Under chloroform an incision was made along the border of the right rectus. As was anticipated, a large invaginated mass of bowel was found. This was brought out through the abdominal wound and efforts made to reduce it by manipulation, but without success. An incision was then made into the anterior wall of the ascending colon and the invaginated portion of bowel removed through this opening, the head of the tumour being found to be gangrenous. The only course to follow then was to resect the invaginated portion of the gut. This was done, and the cut end of the ileum joined to the ascending colon by anastomosis. The abdomen was closed without drainage. The child bore the operation well, but finally died of shock during the following night. The second case was that of a boy of 3 years, and the symptoms were similar to those just related. On examination the abdomen was found to be distended, and palpation indicated in its upper part—corresponding to the transverse colon—a sausage-shaped mass. The caecum and right iliac fossa showed nothing abnormal. In this instance the operation was undertaken about eight hours after the onset of the symptoms. A transverse incision was made above the umbilicus, and on opening the peritoneum the transverse colon was found to be distended, slightly bluish in colour, and containing a soft mass which was obviously an intussusception. There was no trace of exudation or adhesion anywhere. By careful traction and manipulation the invaginated portion of bowel was disengaged, and found to be markedly oedematous. The caecum and lower end of the ileum were found to have a very free range of movement, due evidently to an inadequate mesocolon. This state of things being a frequent source of intussusception, the last few centimetres of the ileum were fixed and the abdominal wound closed without drainage. The whole operation lasted fifteen minutes. On the third day, as there had been no spontaneous movement of the bowels, a dose of castor oil was given, which brought about several evacuations without pain. Recovery was rapid.

250. Fracture of the Pubic Bone.

TRUMAN ABBE (*Med. Record*, October 15th, 1910) gives the history of a case in which a fracture of the pubic bone on the left side was caused by a fall on the hip. The diagnosis was confirmed by the *x*-ray examination. The symptoms were inability to turn over in bed, or to move the left leg fully from the hip, with tenderness over the ramus of the pubes on the left. Pressing together the great trochanters or the iliac crests caused pain in the pubes. Strapping the pelvis with an encircling band gave comfort and enabled the patient to turn in bed and move the leg better. The case resulted in recovery with a good gait.

OBSTETRICS.

251. Dystocia from Pelvic Tumour.

COUVELAIRE (*Ann. de gynéc. et d'obstét.*, September, 1910) recently read, before the Obstetrical Society of Paris, a case which gave rise to much discussion. A primipara, aged 34, was sent into the Baudelocque clinic in labour at term. The labour had lasted for fifty hours and the forceps was applied several times by two doctors. The fetal head lay at the inlet, not engaged, and the pelvic cavity was blocked by a hard tumour bulging downwards towards the vulva. Anteriorly to it a sero-sanguineous swelling, like a caput succedaneum, could be felt at the uppermost part of the elongated vagina, projecting from a fully-dilated cervix. The fetal heart sounds were clear, but fluid, tinged with meconium, came away. Couvelaire could not determine with precision the connexions of the tumour which prevented delivery. He made an abdominal incision and delivered the body of the uterus, at once laying it open by a median incision above the inferior segment, through the area of placental insertion. An asphyxiated child was extracted, and restored to animation; it weighed 7¾ lb., and its head and face bore the marks of the forceps, and were badly bruised. Death from meningeal haemorrhage occurred on the second day. The empty uterus was found to be connected by a very long pedicle twisted two turns with the tumour, which was perfectly non-adherent. It weighed ¾ lb., and although its surface was smooth it was made up of nodules of fibro-myomatous tissue. It was implanted on the tubo-ovarian fimbria of the left Fallopian tube. The uterus was removed with the tumour by supravaginal hysterectomy, and the patient recovered. Funck-Brentano and Bouffe de Saint Blaise believed that had the tumour been reduced and removed, spontaneous delivery might have been possible. Lepage thought that basiotripsy was practicable in a case of this kind. Couvelaire maintained that forty-eight hours earlier conservative

Caesarean section could have been practised, and he had to treat the case, when no doubt the blades of the basiotribe might have been introduced, as the forceps had already been passed into the uterine cavity. But it was impossible to define the relations of the tumour, and therefore dangerous to ply the basiotribe in the dark, and, on the other hand, the child was still living. As for the sacrifice of the uterus in this case, it facilitated the removal of a big, solid tumour, which filled the pelvis. Had the new growth been an ovarian cyst of small size, it might have been drawn up and removed, labour being thus made practicable through the natural channel. The difficulty in determining the nature of the tumour induced him to follow the course which had been so strongly criticized in the discussion.

252. Five Caesarean Sections on One Patient.

DAVIS (*Bull. Lying-in Hosp. City New York*, March, 1910) reports a case which illustrates the possibility of repeatedly emptying the full-term uterus successfully for the mother and child by the Caesarean method. The first child was only delivered by craniotomy, the second, third, and fourth by the Caesarean method. The patient then had an abortion when six weeks pregnant, and arrived at the hospital two years later having been in labour for some hours. During the operation it was found necessary to make an opening rather larger than usual because the cicatricial tissue did not stretch as readily as in former deliveries. There were also rather extensive mesh-like adhesions in the omentum and about the intestines above the fundus. The anterior uterine wall had irregular thin places in it, and the cicatrix of the last operation was plainly visible. After delivery there was profuse haemorrhage from the sinuses in the uterine wall and from the placental site, the uterus being in a state of atony, although ergot had been given before beginning the anaesthetic. From the condition of the uterine wall and the nature of the adhesions in the omentum it was considered unsafe for this woman to bear any more children. A section was taken out of the left tube and the peritoneum sutured over the uterine end. The right tube could not be found without breaking up adhesions and endangering the recent uterine wound. Recovery was excellent, the patient leaving the hospital on the sixteenth day.

GYNAECOLOGY.

253. The X-Ray Treatment of Fibroma of the Uterus.

IN a paper summarized in the EPITOME of February 12th, 1910 (No. 91), H. Bordier stated that the suppression of the menses following upon a certain *x*-ray dose received by the ovaries was the effectual factor in procuring the regression of an interstitial fibroma of the uterus. Since that time he has had the opportunity of making a number of fresh observations, and writes (*Arch. d'élec. méd.*, June 10th, 1910) that he has modified his former opinion. He finds now that the direct action of the *x* rays upon the fibromatous cells is indisputable, and he cites cases in which, before there was any artificial menopause, a very considerable diminution of the fibroma was obtained. Nevertheless, the progressive atrophy of the tumour, which begun soon after the commencement of *x*-ray treatment and before the disappearance of the menses, was greatly accelerated when, owing to the continuous *x* ray action upon the ovaries, the menopause was achieved. The time that elapses from the commencement of radio-therapeutic treatment to the cessation of the menses depends upon the thickness of the fibrous mass in front of the ovaries, and also upon the age of the patient. In a woman of 40 years, having a fibroma the size of two fists, the menses may be expected to fail at the fourth month from the commencement of treatment if Bordier's technique is followed. The patient is extended on the couch, and the tube in the first place is directed towards the right ovarian region. A platino-cyanide pastille is placed on the skin at the same region, and a filter of 1 mm. thickness of aluminium applied on the abdomen. His tube—a Müller, with cooled anticathode—is set with its wall at a distance of 5 to 8 c.cm. from the skin, the tube having a diameter of 16 c.cm. The irradiation is arrested when the dose under the filter measures 2 units I (about 4 Holzknecht units is equal to 2 Bordier). The quality of the rays employed is 10–20 Benoist, the tube being very hard. On the same day the left ovarian region is subjected to the same irradiation. A free day is allowed to elapse before the middle part of the fibroma is irradiated, and in this case the filter employed is 3½ mm. in thickness. After another day's interval new irradiations are made to left and right, and, after still another free day, an irradiation in the middle line. Finally, a third irradiation is made in each of the three directions, but the filter for the right and left irradiations is now 1½ mm. in thickness, that for the middle line remaining at 3½ mm. The patient is then left to rest for three weeks, when the same treatment is repeated, and again repeated until the clinical cure is obtained. Bordier has not observed any reaction other than erythema and desquamation. The duration of treatment varies from three to eight months.

254. Congenital Sacral Dermoid.

MOUCHET (*Annales de gynéc. et d'obstét.*, August, 1910 recently operated on a female infant, her mother's fourth child, born presenting at the vertex. There was no history of any tumour or malformation in the family. The child weighed 8½ lb. at birth. Delivery was easy, although a huge, soft, fluctuating tumour sprang from the sacro-coccygeal region, considerably lobulated. Its greatest circumference was 13¼ in , the circumference of its attachment 10 in. Its vertical was greater than its horizontal diameter. On palpation its consistence varied greatly at different points; a bony mass was detected lying rather superficially. It lay over the sacrum, extending to the buttocks and pushing the anus considerably forwards. It could not be reduced in the least degree by pressure, nor did it swell when the infant cried. The skin was healthy, but close to its base there was a dimple bearing a thick tuft of short hair. One big lobe was quite transparent. As there was some threatening of sloughing of the the integument Mouchet operated. He met with less difficulties than might have been expected. He made two curved incisions from the upper part of the sacrum to the anus, meeting at both their extremities. Enucleation proved easy, the deep dissection was performed slowly and carefully lest the vertebral canal and its contents might be involved. There was very little loss of blood. The flaps were closed with silkworm-gut and a strip of sterilized gauze introduced into the big cavity unavoidably left by the enucleation. Chloroform was the anaesthetic employed, and there was no distinct post-operative shock. A little suppuration followed, but the wound healed well and the sutures were removed on the eighth day. The tumour, exhibited at a meeting of the Société Anatomique de Paris, weighed 4 lb. It was a multilocular dermoid cyst bearing five molar teeth, one incisor, with brain substance, erectile tissue, fat, skin, and hair. The sacrum and coccyx were not directly connected with the tumour.

THERAPEUTICS.

255. "606."

ABRAHAM L. WOLBARST, of New York, states (*Med. Record*, October 15th, 1910) that it is too early to make any positive statement on the value of this preparation in syphilis and parasyphilitic conditions. It seems to offer the possibility of an earlier removal of the initial lesion than by any means hitherto known, except incision. Secondary lesions usually disappear within from several days to two weeks. Gummata that have resisted mercury and iodides for years have disappeared in from three to six weeks. The results are not so brilliant in the parasyphilitic conditions and nerve lesions of syphilis. In the majority of cases the Wassermann reaction changes from positive to negative after six to eight weeks. A gain in weight is a constant effect in some cases. After reporting seven striking cases that he has observed, the author concludes that "606" is apparently the most potent and effective remedy that science has yet produced for the treatment of these diseases.

256. The Kromayer Lamp in Skin Affections.

NOGIER (*Arch. d'élec. méd.*, March, 1910) discusses the indications for the employment of the actinic rays in therapeutics. The author was one of the first to recognize the value of the Cooper-Hewitt mercury-vapour lamp for general applications in the form of light baths, and up to the time of writing he has obtained none but favourable results with this agent. The light baths are indicated in obesity and gout; he has seen them succeed in anaemia and chlorosis, and good results have been obtained in the relief of pain attending old salpingitis. After prolonged applications of the light the patients experience a super-

ficial "baking," and the skin becomes tanned as in sunburn. For local light applications Nogier highly praises the quartz lamp of Kromayer. When it is used together with a screen of deep-blue uviol glass (uviol is an abbreviation of ultra-violet, and is applied to a filter which allows ultra-violet radiations much shorter than the glass to pass) against the quartz window, he does not hesitate to describe it as the first of the actinic sources. Its U-shaped form and its lack of heat permit the concentration of an intense radiation upon a small surface. With this agent, in cases of lupus tuberculosus, one compresses the tissues with the uviol filter, and gives a sitting of from fifteen to twenty minutes. At intervals of about fifteen days, from five to seven applications are made on the part. In lupus erythematosus the results are not so good. Applications should be made without the filter, with the lamp in contact. Vascular naevi require more energetic radiation, the lamp, with filter, being held in contact with the part for twenty or thirty minutes. The cure is obtained usually after four to six applications. All inflammatory reaction should be allowed to subside before a second sitting is given. In seborrhoeic eczemas he counsels the use almost exclusively of the lamp of Kromayer. In these cases the applications are made at a distance of from 3 to 8 cm., the duration varying from twenty to thirty minutes. The results are remarkably successful, frequently after a single sitting. In acneiform affections considerable success has been obtained with the Kromayer lamp without the uviol filter. In acne rosacea, with both lamp and filter, cure, or at least a very marked amelioration, has been obtained after three or four applications of fifteen minutes each, with fifteen days' interval between them. The Kromayer lamp in contact has been successful in herpes circinatus. In this instance the uviol filter appears to be useless. In alopecia areata the irradiations from the lamp are made at a distance, and with short repeated sittings the successes are estimated at 40 per cent. The author prophesies a brilliant future for phototherapy, despite its temporary eclipse by the *x*-ray method.

257 Disinfection of the Skin by Tincture of Iodine.

NOFERI (*Rif. Med.*, October 7th, 1910), after a considerable experience of Grössich's method of disinfecting the skin by tincture of iodine, strongly recommends it in surgical work. The method is of the simplest, and is not only effectual from the disinfectant point of view, but saves time and some of the inconveniences of the common method of disinfection by soap and alcohol. The author believes that by the latter method some of the germs lying deeper in the skin are unnecessarily disturbed, but patients are apt to be chilled by the prolonged ablution, and dermatitis set up by the scrubbing. In cases where no urgency of operation is indicated, the Grössich method is as follows: The day before operation the patient is shaved and has an ordinary bath; no preliminary disinfection by ordinary methods or with iodine is used, and no sterilized dressings or bandages applied. Ten minutes before operation, and whilst the surgeon is finishing the disinfection of his hands, the assistant paints the operation area with two coats of tr. iodi on a swab of aseptic gauze. When the operation is finished, another coat of iodine is given along the line of sutures, and finally a third painting on the eighth or ninth day, when the sutures are removed. The author speaks very favourably of his method, and as in his clinic there are over 2,000 major and minor operations in the year, the experience is sufficiently ample to judge of the value of any given method. A slight advantage gained by his method is this, namely, that the brown coloration enables the surgeon to see exactly how far the disinfection has been carried out.

258. The Effects of Vegetarian Diet in Epilepsy.

RODIET AND LALLEMANT (*Arch. gén. de méd.*, March, 1910) have experimented with a strict vegetarian diet containing no food of animal origin except butter, in the female epileptic wards of the Saint-Yon Asylum. They found great difficulty in persuading many of the patients to continue the diet, so that the experiment included only 11 cases and was continued for four months. The diet included vegetables, vegetable soups, fresh and preserved fruits, a generous allowance of fresh butter, a litre of cider daily, and only a small quantity of salt. The 11 patients were chosen entirely on the ground of intelligence without regard to their physical condition. The diet was well supported in 9 of the cases, and in 7 of these the results were excellent as regarded weight and general condition. In 4 cases attacks of migraine, which had previously been frequent, practically disappeared. The results were less happy in 4 cases. One patient who was tuberculous gained weight rapidly at first, but afterwards began to waste as a result of abdominal tuberculosis and of bromide intoxication due to increased susceptibility caused by the vegetarian diet and the small amount of salt allowed. Another patient, after gaining for a month, suffered from dysentery and lost flesh rapidly for a week; she regained her original weight by the end of the four months. The two other patients showed no improvement, but lost flesh from the time of the change of diet. Indeed it was necessary to change the diet in one case at the end of the month, in the other at the end of two months. In the first case there was anaemia, and in the second mitral disease. In both cases the weight lost was regained by a diet consisting of milk, sugar, butter, cheese, macaroni, and four eggs daily. The authors believe that the malnutrition and depression in epileptics are most frequently the result of gastric and intestinal indigestion, and that therefore the diet, which they used with the addition of milk if necessary, is likely to be of service.

259. Dangers of Antimeningococcic Serum.

NETTER, COURTOIS-SUFFIT, AND DUBOSC (*Rev. intern. de méd. et de chir.*, January 25th, 1910) caution practitioners against the dangers of too large or too prolonged injections of serum. In one case, apparently hypersensitive to the action of the treatment, symptoms of meningitis returned after a brief period of amelioration; and were found, later, to depend upon an attack of urticaria, which readily yielded to the administration of calcium chloride. When, however, injections of serum have been repeated for the purpose of treating this apparently fresh attack, really due to the serum itself, disastrous consequences, and even loss of life, have been the result. In all cases a careful investigation of the cerebro-spinal fluid and the recognized presence of polynuclear and meningococcic cells must be made out before resorting to further injections of serum.

260. Carbonic Snow as a Local Anaesthetic.

MALAN (*Gazz. degli Osped.*, September 10th) has tried frozen CO_2 as a local anaesthetic in 30 cases of localized inflammation (boils, anthrax, abscess, cellulitis, and bubo). In anaesthesia it is not necessary to prolong the application for more than five to eight seconds. On the whole it acts quicker and more deeply than ethyl chloride, and has a favourable influence on the inflammation. It, however, tends to harden the tissues, and the necessary apparatus is more cumbersome than that of ethyl chloride. The anaesthesia only lasts a short time. It is, however, easier to localize than ethyl chloride.

PATHOLOGY.

261. Wassermann's Reaction in Leprosy.

AFTER quoting the results of other authors who have found a positive Wassermann reaction in various proportions of the cases of leprosy in which they have looked for it, A. Serra (*Il Policlin.*, sez. med., Rome, 1909, xvi, p. 545) gives his own methods and results. He followed Wassermann's technique as closely as possible; each experiment was conducted in triplicate, and further, each patient's serum was tested six times over, using antigen from six different sources—leprous nodules, syphilitic nodules, normal liver and spleen from the guinea-pig, 0·3 per cent. lecithin solution, syphilitic liver, and normal guinea-pig's heart. Serra examined the serum of 17 patients with leprosy, using the leproma antigen, 13 gave a positive, 2 a partially positive, 2 a negative reaction. Using the lecithin antigen, only 1 gave a positive reaction, 10 a partially positive, and 6 a negative reaction. The other antigens gave intermediate results; with syphilitic antigen 7 were positive, with syphilitic liver 8, with normal organs 4, with guinea-pig's heart 5. Two patients with smooth or nerve-leprosy of 26 and 30 years' standing gave uniformly negative results with the six varieties of antigen; one with nodular leprosy gave uniformly positive reactions. Eight of the patients had mixed smooth and nodular leprosy, and 7 of these gave a positive, 1 a partially positive reaction, with leprous antigen; 6 had nodular leprosy, and all gave positive reactions with leprous antigen; 3 had smooth or anaesthetic leprosy, and 1 of them gave a partial Wassermann reaction, 2 a negative result. The more florid and recent the infection is the greater is the probability that the patient will give a positive reaction.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

262. Chronic Spasm of the Colon.

R. Schültz discusses a case of severe chronic spasms of the colon in a hysterical girl, and supplements the history with observations made in other cases (*Berl. klin. Woch.*, September 12th, 1910). The case he claims goes to prove that Boas's recently expressed doubt whether such a thing as spastic constipation really exists is unfounded. The patient had suffered at the age of 14½ years from an acute gastric catarrh. This illness left certain symptoms behind. She was attacked from time to time with severe colic and with marked tenderness of the upper part of the descending colon. Constipation developed and necessitated the use of purgatives and enemata. After some nine months she used water enemata of from 8 to 10 litres, and began to pass membranous mucus. The condition got worse, and an operation was planned but not carried out. On examination two and a half years after the gastric catarrh a localized tender area about 6 to 8 cm. long over the upper part of the descending colon was found, but the resistance of the abdominal muscles rendered minute examination impossible. She was then radiographed. It was then discovered that the whole transverse colon, descending colon, and sigmoid flexure was in a contracted condition. This excluded an organic stricture. In one radiograph the upper part of the descending colon was distended with gases, while in a second the right flexure was more distended with faecal matter, and it appeared as if the intestine in this situation was attempting to pass its contents on into the constricted gut. The diagnosis of spasm of the colon received support from a symptom of the bladder, which at this time was found also to be in a condition of spasm. The girl was found to have a diminished sensibility to touch, pain, and heat in the skin of the back. The application of *x* rays had produced a considerable impression on her, and Schültz followed this up by ordering a full mixed diet and regulin instead of the purgatives. He prescribed atropin and made the patient get up. The result was highly satisfactory. The constipation disappeared in a few days, the pain became less and disappeared, the mucus was no longer passed, and the bladder symptoms were also removed. She put on 14 lb. in weight in a short time. The author discusses the differential diagnosis, and points out on the basis of his own experience that some of the cases with a similar clinical appearance depend on disease of the appendix, and at times these cases cannot be distinguished from the nervous spasms. He cites a case in which laparotomy was performed in a pure nervous spasm of the colon without doing any good at all. Other cases have been apparently cured by operation, but he does not think that if the diagnosis is correctly made that surgical treatment need be considered. He also adds a few words on the secondary cases, in which the spasm of the colon is due to some organic lesion.

263. Radioscopy in Gastric Ulcer.

Cerné and Delaforge discuss the value of this proceeding in gastric ulcer, especially in those cases not presenting the usual symptom-complex of pain, haematemesis, and vomiting (*Arch. des mal. de l'app. digest.* of August 10th, 1910). Haematemesis, they state, occurs only in about 40 per cent. of cases, and, according to American authors, it is even rarer. The authors believe that gastric ulcer *per se* is never painful, but only when complications have arisen. The condition, indeed, may be completely masked by a number of irrelevant symptoms in certain patients, and it is essential in such cases that the radioscopist be, in the first place, a good clinician. The authors' technique differs somewhat from that commonly in use in Germany and elsewhere, as, instead of observing the stomach filled with the necessary test meal, they make their observations when the stomach is in process of filling. For this they use bismuth suspended in cream. This, they believe, provokes a better physiological excitation of the stomach than the mucilaginous suspension of bismuth. By a series of diagrams indicating the radioscopic shadow the authors are able to show the value of the method, not only in simple ulcer without complications, but in latent ulcer, in the various forms of gastric stenosis, and in gastric ulcer with adhesions to surrounding organs, in which the position of the stomach as to height and direction is often greatly altered from the normal. The existence of spasm in particular is well shown by this method, although its differentiation from true stenosis is not always easy at the time of examination. This may be done, however, by noting the dilated condition of the stomach at the level of the obstruction when due to stenosis. The retention of the gastric contents at this point may be observed some time after the original radioscopic examination.

264. Epidemic Poliomyelitis.

Holt (*Arch. of Ped.*, September, 1910) writes that, as a consequence of the greater interest taken in this subject, cases of poliomyelitis are now recognized which formerly might have been overlooked. It is evident that a wave of infection, starting apparently from Scandinavia, is gradually spreading over other countries. Already 31 outbreaks, with 4,940 cases, have been recorded in the past five years, which is an enormous increase upon past records. There is no essential difference between the sporadic and epidemic forms of the disease, except possibly in communicability and severity. It is probable that there is a difference in the virulence of the infection in the two forms. It would appear from published statistics that the virulence of the infective agent of poliomyelitis is greater when the disease is epidemic; therefore the mortality is higher and the communicability greater. The disease varies much in severity in different epidemics. A similar variation has been noted in the virulence of cerebro-spinal meningitis. The death-rate ranges from 6 to 29 per cent. and is much lower in sporadic cases. The existence of cases in which complete recovery takes place, even after paralysis develops, has been well recognized during recent years; abortive cases are also recognized, although the symptoms are not sufficiently characteristic to enable these cases to be diagnosed when seen by themselves. Occurring sporadically, such cases would not be diagnosed; they would be hardly suspected. In epidemics they would be recognized only by their association with paralytic cases. The disease is, under certain conditions, highly contagious and demands the strictest quarantine. The writer considers that the disease might be better named "epidemic myelitis" or "epidemic myeloencephalitis," instead of "acute anterior poliomyelitis" or "acute poliomyelitis," as at present.

265. Acute Petrol Poisoning.

In view of the large use of petrol and the comparative rarity of cases of poisoning by this substance, Possini (*Gazz. degli Osped.*, August 25th, 1910) reports the following example. A sailor, aged 24, with suicidal intent, swallowed the contents of a litre bottle full of petrol. Almost at once he was seized with nausea and retching, and about five minutes later vomited the greater part of the petrol he had swallowed. He was taken to the hospital and arrived in a state of collapse. Stimulants (caffein) were injected and his stomach washed out. Next day his lips were swollen, tongue coated, but was able to swallow without difficulty. The abdomen was tender, the liver a little enlarged, and there was slight jaundice. The stools were loose and fetid and contained mucus, but no blood. There was troublesome cough, but no expectoration. The pulse was quickened, but otherwise no cardiac abnormality. The urine showed small traces of albumen and some hyaline casts. In a few days the patient completely recovered. Probably the absence of severe effects from swallowing so large a dose was due to the fact that the greater part of the petrol was almost immediately ejected. The various kinds of petrol differ considerably in chemical constitution, but it seems that the toxicity depends largely on the amount of easily volatile hydrocarbons present.

SURGERY.

266. Acute Torsion of Great Omentum.

Picquet (*Bull. et mém. de la Soc. Anat. de Paris*, July, 1910) publishes a summary of the literature of intra-abdominal torsion of the great omentum. According to

the last collective work on the subject (Cernezzi, *Clinica Chirurgica*, March 31st, 1909), 77 cases have been reported. In nearly all the rotation occurred between two fixed points—the colic attachment of the omentum and a pathological adhesion, and that adhesion was in the majority of instances situated in the neighbourhood of a hernial sac. Picquet of Sens reports in full an instance of very acute torsion where he failed to find a hernia, although the patient believed that he had one. A man 64 years of age, but robust and previously in good health, was seized with a sharp pain in the left side of the abdomen. He had been troubled with a dragging sensation in that region for a few months; it subsided on rest, and he ascribed it to an old inguinal hernia for which he had worn a support for over thirty years, although it had, he declared, never come down during that space of time. The acute pain was greater than he had ever experienced before; in a few days he, a small farmer, had to lie up. There was constipation, never complete, without vomiting or rise of temperature, and flatus passed naturally. A mass of the size of the fist, dull on percussion, and apparently fixed, was definable in the left iliac fossa. Its limits varied day by day. There was but little tympanites. On the sixth day Picquet operated, making an oblique lateral incision over the swelling. The peritoneum was much thickened; when opened a quantity of dark fluid escaped from a space with irregular boundaries. The incision was prolonged, and the tumour, tuberous and ecchymosed, exposed. It was easily detached below where it adhered to the bowel: the adhesion was soft, and formed a thin twisted band. Above the tumour was connected with the remainder of the omentum by another twisted pedicle, as thick as a man's forefinger. The lower pedicle was divided first, then the upper was cut through with scissors, the tumour being thus set free. The remainder of the omentum was drawn out of the wound and secured by a chain suture. Picquet failed to find the orifice of a hernial sac. A drain was inserted, and the patient recovered; he was able to work on his farm six weeks after the operation.

267. Tuberculous Laryngitis.

Fritz Hetter (*Wien. klin. Rundschau*, Nos. 27, 28, 29, and 30, 1909) describes the conditions commonly present in tuberculous laryngitis and their connexion with the prognosis, and more especially deals with the active surgical treatment of the disease, the introduction of which dates from the time when Heryng, Krause, and Schmidt brought anatomical evidence of the curability of laryngeal tuberculosis. For slight cases, which give rise to no special symptoms and in which there is in addition serious disease of the lungs, a conservative and symptomatic treatment is doubtless the best. Local treatment, for which there is no imperative indication, is to be omitted in cases in which there is a tendency to haemoptysis. Surgical measures seek to destroy the diseased tissue, either by the "cold" method, as by means of the curette, or by heat, as with the galvanic cautery. Both methods have their advocates, and both have their defects. The curette can deal better than the cautery with a tumour-like growth projecting into the lumen of the larynx, while the cautery can more readily destroy flat infiltrations and ulcers. On the other hand, with the curette there is a danger of haemorrhage, and in isolated instances fatal haemorrhage has occurred, while with the cautery a strong reaction in the form of oedema is to be feared. In practised hands each method gives excellent results, and the author believes that a combination of the two methods is best of all. It is clear that radical elimination of the tuberculous tissue is only possible in initial or limited processes, but surgical treatment of more extensive laryngeal disease aims at limiting the process, and, by means of scar production, at bringing it to a temporary or permanent standstill. A third set of cases is that in which in hopeless cases surgical measures aim especially at giving symptomatic relief; thus, for example, in cases in which, as a result of tuberculous infiltration the epiglottis is transformed into a stiff roll and gives rise to almost unbearable pain on swallowing, the author would recommend resection of the epiglottis for the relief of the pain, even if no permanent limitation of the disease can be hoped for, unless, of course, the patient should be in the final stages of disease. The author has had two cases in which resection of the epiglottis was carried out and gave relief greater than could have been expected from any medical local treatment or from narcotics. Surgical treatment has to be narrowly individualized. Infiltrations and ulcerations of the posterior wall—lesions which are often initial ones—are especially favourable for surgical treatment, and the author has seen several healed, or almost healed, cases of this kind. In general, the prognosis with respect to surgical treatment becomes less favourable in proportion as the aditus laryngis is attacked or as the process has advanced towards the pharynx. Energetic treatment of affections of the vocal cords is of very uncertain prognosis as far as function is concerned, and expectant treatment is indicated for as long as possible in such cases. In deciding upon the treatment to adopt, the general condition and that of the lungs has to be taken into account. The tendency is to avoid operative treatment in cases of advanced disease of the lungs, both from a fear lest any rapid spread of the laryngeal affection should follow, and lest an operation should be injurious to the general condition. The author's experience is that even when the local condition is not improved, it is practically never made worse, and that although a rise of temperature may follow the operation, and be more persistent in cases in which fever was already present, yet it has no effect on the general course of the illness, and on the other hand, fever present for months before the operation may completely disappear after it. The rule, therefore, should be that although severe, febrile and progressive lung disease demands special care and limitation of surgical measures, yet such disease does not necessarily contraindicate operations which will probably relieve or remove distressing symptoms. The author's results are influenced unfavourably by the fact that the patients belonged to the working classes and were out-patients, yet they are an illustration of the value especially of the galvano-cautery as a palliative treatment in laryngeal tuberculosis. Cases are considered to be apparently cured when for at least several months no tuberculous symptoms have been apparent, and when as shown by physical examination or the reports of the patients the disease of the lungs has come to a standstill. Of 57 patients, 27 are not included because they came under treatment at a too advanced stage of the disease or remained only a short time under treatment. Of the remaining 30, 9 were apparently cured, the cure having lasted for periods varying from three months to two and a-half years in the different cases when last seen. In 7 of the 30 cases there was a marked objective and subjective improvement after periods of time varying from two months to one and a-half years; in 3 cases there was no lasting permanent effect; in 11 cases death occurred at times varying from one to seven months after treatment, in 6 of them as a result of advance of the lung disease, in 2 with advance of the affection both of the lungs and the larynx, and in 1 from myodegeneration and intestinal tuberculosis. Even in 7 of the cases which ended in death there was improvement which lasted for months in the laryngeal condition and in one in which the cause of death was unknown; five months before death the patient was free from symptoms and had resumed work. In 2 out of 4 cases in which the author has employed tuberculin, favourable results have been obtained.

268. Primary Osseous Suture in Fractures of Both Bones of the Forearm.

Abadie and Pelissier (*Rev. d'orthop.*, No. 5, 1910) point out the difficulties that are occasionally met with in treating simple simultaneous fractures of the shafts of the radius and ulna, owing on the one hand to the special mobility of these bones, and on the other hand to the distinctive anatomical and pathological characters of the osseous lesions in such cases. Five instances are recorded in which the double fracture was treated by incision of the seat of injury, and by bringing the fragments of the bone into correct apposition by sutures of silver wire. The results of this treatment in all the reported cases were, the authors state, much better than they could have expected from ordinary methods. It is held, however, that recourse to a cutting operation should not be taken except in cases in which reduction by simple manipulation and a fair trial of the usual treatment by splints and bandaging have failed.

OBSTETRICS.

269. Dysmenorrhoeal Membrane and Decidua of Normal and Ectopic Pregnancy.

Fieux (*Comptes rendus de la Soc. d'Obstét. de Gynéc. et de Pédiat. de Paris*, May, 1910) reports an instructive instance where diagnosis depended on a piece of membrane expelled from the uterus. A country doctor brought it to Fieux stating that the patient, aged 24, had been subject to dysmenorrhoea ever since the establishment of the catamenia at the age of 14. Membranous shreds were almost always expelled at the periods. But the patient, previously quite regular, had missed two periods and about

a week before the third would have been due several violent attacks of colicky pains occurred, associated with a slight discharge of blood, then both symptoms subsided. One month later, a yet more severe attack came on and a red mass was expelled at the end of forty-eight hours; it was preserved for Fieux. An operation for ectopic gestation had been proposed, but the patient's friends urged a consultation. Fieux saw at once that the expelled membrane was without doubt a perfect decidua; but it was nearly 6 in. long, much larger than a membrane of the decidual type developed in a uterus enlarged in association with an ectopic sac. On careful examination it was found to bear an amniotic cavity which bore an embryo about 9 mm. in length, and in process of disintegration. Thus the true diagnosis was neither membranous dysmenorrhoea nor tubal gestation, but normal pregnancy ending in early abortion. The ovum was probably retained for some time after its death.

270. Sepsis after Abortion.

SELIGMAN (*Amer. Journ. Obstet.*, September, 1910) writes of a patient admitted into a hospital after abortion had been practised on her. The uterus was cleared and the temperature fell, but septic symptoms developed within a few days. A distinct doughy mass was definable in the region of the right broad ligament. The house-surgeon diagnosed thrombosis of the corresponding uterine plexus. The abdomen was opened and the diagnosis was found to be correct. The thrombosis extended beyond the external iliac into the common iliac vein. The uterus and the infected vessels were extirpated, without much difficulty, and the patient made a good recovery. Seligman, who exhibited the parts removed, insisted that every localized affection of this kind should be attacked surgically.

GYNAECOLOGY.

271. Puberty in the Female.

DALCHÉ (*Journ. des prat.*, September 17th, 1910) reviews the various disturbances of health which are associated with its onset. The condition is not to be regarded as merely the commencement of the menstrual period, but in the light of a transformation of the whole organism. The onset may be quite sudden, but generally there are premonitory symptoms. There may have been a leucorrhoea, a serous or mucous discharge stained a little with blood at times. There will have been some headache, pains in the thighs and lower part of the abdomen, and general nervous unrest. Added to these symptoms there is some development of the breasts and hips. The condition is not established suddenly as a rule, but by degrees, and up to the age of 16 or even 18 there may be some irregularity. For this the author does not advocate the use of the various emmenagogues. If compelled to prescribe, a tonic such as calcium glycero-phosphate is best. If the flow is not established by the age of 17 or 18, and evidences of ovarian irritation continue, an examination ought to be made. Very frequently ovarian activity may be stimulated by a change of residence from the town to country—indeed, a metrorrhagia may be so set up. Among other troubles accompanying the establishment of the menses is cystalgia; herpetic eruptions of the mouth or vulva; erythemata, or flushings, as at the menopause; pigmentation, or oedema of the eyelids; and epistaxis. There are chills with acceleration of the pulse, but no fever. Scoliosis commonly begins at this time, and the author, after reviewing the various theories of its causation, explains it as an ovarian dystrophy. Sometimes there are acute pains simulating articular rheumatism. There may be hydrarthosis and a likeness to "white swelling," or Pott's disease. The author states that he has observed a case of paroxysmal haemoglobinuria arising out of the condition, and concludes by admitting that the interpretation of these various phenomena is still very obscure.

272. Vaginal Papilloma in Childhood.

HALLAUER (*Zentralbl. f. Gynäk.*, No. 40, 1910) reports a case where a new growth developed in the vagina of a child, yet, contrary to rule, proved to be non-malignant. His patient was 4 years old. Numerous masses of a papillomatous growth sprang from the vulva and entrance to the vagina. They resembled condylomata, but there was no evidence of gonorrhoeal infection. The patient's mother stated that they began to develop a few months before she sought medical advice, after a local injury. He removed the masses with the finger and sharp spoon and found that they varied in size from a pea to a walnut. Altogether the appearance of the masses after removal suggested hydatidiform mole, malignant growths in the infantile vagina often assuming that appearance. Under the microscope, however, the new growth showed no evidence whatever of malignancy. It was made up of papillae invested with squamous-celled epithelium in several layers and supported by connective tissue bearing young granulation tissue.

THERAPEUTICS.

273. Zinc-Mercury Cataphoresis in Cancer.

BETTON MASSEY, of Philadelphia, is the pioneer in the study and application of zinc-mercury cataphoresis. In his method a zinc pointed electrode is amalgamated freely with mercury and immediately passed into the periphery of a cancerous growth, with its point directed towards the centre. The current is then turned on, and when about 150 milliampères have been attained another electrode is inserted near the first, and this procedure is followed with every raising of the current until four or five electrodes, all connected with the positive pole, are acting simultaneously with a current having a total strength of 600 or 800 milliampères. At the recent Congress of Physiotherapy in Paris, Massey made a communication upon his method (*Arch. d'élec. méd.*, August 25th, 1910). He stated that the operation could be either monopolar or bipolar. In the former the patient lay on a couch of kaolin, with beneath him a thin plate of metal attached to the negative pole of the apparatus. The maximum currents to be used in a monopolar operation were:

	Milliampères.
For head, mouth, and neck ...	... 300 – 400
Left breast	(feeble application)
Right breast and thorax generally	... 400 – 800
Below waist	... 800 –1,800

The ions of the two metals—zinc and mercury—are pushed into the tumour, and unite with the albumen and other constituents of the cells and intercellular substances to form a whitish-grey zone of destruction. In the bipolar operation the procedure is similar to the monopolar, except that the kaolin couch is not employed, and that the negative pole is placed in the centre of the tumour. This pole is a metal instrument of special form, bearing a small tampon of absorbent taffeta soaked in a dilute solution of sulphuric acid. The bipolar operation should be employed in preference to the monopolar whenever possible, because with the former much more current can be employed without harmfully affecting the patient, thus lessening the time of operation and producing a much more complete destruction of the tumour and its surrounding colonies. Massey claims for his method certain advantages as compared with excision by the knife, the chief being that the cells or cancerous elements are immediately destroyed *in situ*. There is no loss of blood, save in the rare cases of secondary haemorrhage, when important vessels are comprised within the zone destroyed, and the method permits of a strictly localized destruction of the tumours. Compared with radiotherapy, if immediate ionic destruction is possible, the employment of x rays is foolish, but if the surface of the wound is large and its depth slight the x rays are preferable. Otherwise, an alternating method of ionic-therapy and radio-therapy may be useful.

274. "606" in Leprosy.

EHLERS (*Ugeskrift for Laeger*, p. 1198, October 6th, 1910) has published Dr. Bjarnhjedinsson's report on the effect of "606" on 7 cases of leprosy at the Langarnaes Leprosy Hospital in Iceland. Six of the patients had lepra tuberosa et mixta, and one had pure lepra anaesthetica. The dosage of an injection varied from 0.4 to 0.6 gram. All the patients tolerated the injection well, and had little pain after the first night, the discomfort being far less than with mercurial or collargol injections. There was some tenderness and oedema over the site of the injections, but no abscess formed. There was a slight rise of temperature, the maximum in 1 case being 38.4. The treatment began late in August, 1910, and when the report was made three weeks later, there was little clinical evidence of improvement; but though the bacilli were still very numerous at this date, many of them had become granular, commonly with coccothrix-like distribution. Other granules lay scattered about the field. In one patient who was injected twice, no such granules were found before treatment, whereas after the second injection they appeared in greater quantities than Dr. Bjarnhjedinsson had

even seen before. Dr. Lie in Bergen is expected to report shortly on the results of his treatment with "606" at the Norwegian Leper Hospital.

275. Treatment of Vomiting.

Le Gendre (*Journ. des prat.* of September 10th, 1910) reviews the etiology and treatment of vomiting as a symptom of many varying conditions. In the case of infants it is caused generally by errors or excess in diet, and in such cases the restriction of the diet for a few hours to Vals or Evian water will suffice. It can also be caused by hypo-alimentation, the milk taken by the infant being too dilute; so that, in spite of the large quantity absorbed, the child is ill nourished. Exceptionally, vomiting in the infant may indicate appendicitis, but more generally sudden vomiting in a child a few months old is a sign of intussusception. In older children the infectious fevers, more especially scarlatina, are ushered in by sudden vomiting. The vomiting which accompanies whooping cough is mechanical in character, and occurs, as a rule, soon after a meal. It is advisable in these cases to give some food soon after vomiting has ceased. It is to be noted that in whooping-cough the vomiting is frequently aggravated by a gastritis set up by the various drugs given for its relief. Cyclical vomiting occurs every few months in an otherwise healthy child. The condition lasts about a week, as a rule. In such cases the breath has often the odour of acetone, and there may be aceto-nuria. In the adult sudden vomiting occurs in strangulated hernia. For this condition the author suggests that reduction may be brought about by dropping ether upon a piece of cotton-wool spread over the affected area. After referring to the vomiting which accompanies appendicitis, the author dwells upon the vomiting of pregnancy, and emphasizes the distinction between the physiological vomiting which occurs during the first three months and which as a rule disappears spontaneously and that continued vomiting which results in such rapid enfeeblement of the patient. If such means as intestinal lavage, saline purgatives, and a skimmed-milk diet are of no avail, the pregnancy must be terminated. Vomiting in the adult frequently accompanies tuberculosis, and is associated with the premonitory dyspepsia of this condition. Later, it is caused by the cough, acting through the pneumogastric. The various preparations of opium are of use in these cases. Sometimes small doses of tincture of iodine, given at the end of a meal, are of value. The digestive power of these patients is often low, and may need supplementing by the administration of pepsin and dilute hydrochloric acid. The vomiting which occurs in the various neuropathies must be treated by isolation and other psycho-therapeutic measures.

276. Carcinoma of Colon Treated with Neoformans Vaccine.

Charles D. Aaron (*Med. Record*, October 1st, 1910) gives the history of a case of carcinoma of the splenic flexure of the colon in which exploratory incision showed a growth as large as an orange, with emaciation, digestive disturbances, and constipation. Pain caused the use of large doses of morphine to obtain sleep at night. He was given injections of neoformans vaccine for over a month. The pain disappeared and the tumour could no longer be felt. He had a good appetite and gained in flesh, and his improved general condition was maintained up to time of the report. The neoformans vaccine, according to Karwacki, may cause involution of tumours, and act upon epithelial growths, but not upon sarcoma: in presence of metastases, marked degeneration of glands, and cachexia it should not be used: prognosis should be reserved; the vaccine may be used alone or in combination with surgical measures.

277. Hygiene of the Mouth.

Bonnes (*Gaz. hebdomad.*, September 11th, 1910) calls attention to this important matter, and comments on the too general neglect of the teeth. He points out the close relationship the hygiene of the mouth bears to a great variety of pathological processes. Affections of the mouth, indeed, are important factors in nearly all respiratory and digestive ailments, owing to microbal infection from the inspired air and the fermentation of particles of food in the buccal cavity. Buccal sepsis predisposes to anginas, oedema glottidis, leucoplakia, adenitis; while various observers have noted the close connexion of dental troubles with those of the visual apparatus. Septic gastro-enteritis of buccal origin is by no means uncommon. The practice of cleansing the teeth ought to be begun in early childhood, and as much during the first dentition as during the second. The author recommends cleansing the teeth after every meal with a red rubber brush. He believes this does not injure the gums, and their vitality is not lowered by bleeding. The elasticity of the brush, too, allows of more energetic friction without damaging the enamel. The brush can be sterilized by boiling. After reviewing the various forms of dentifrice on the market—several of which, especially the carbolated dentifrice and those of oxygenated water, be condemns as being injurious to the buccal mucosa—the author gives his adherence to the paste form of dentifrice. This, he says, is the best and most practical. It ought to contain an inert and insoluble powder; an antiseptic, miscible and in definite quantity; and a more or less fluid excipient, capable of maintaining the contact of the other constituents.

278. Roentgen Azoospermatism.

Wullyamoz (*Arch. d'élec. méd.*, January 25th, 1910) relates the case of a medical radiologist who for three years had had complete azoöspermatism. This condition, together with more recent pain in the testicles, he attributed to the *x* rays. In January, 1909, he began to wear a special leaden *x*-ray proof apron whenever he was working with the *x* rays. The testicular pain disappeared within fifteen days. An examination in July still showed an absence of spermatozoids, but a later examination in October proved them to be present again in abundance.

PATHOLOGY.

279. The Variability of Micro-organisms.

Bordet and Sleeswyk (*Ann. de l'Inst. Pasteur*, June, 1910) discuss the evidence supplied by serum diagnosis of modifications in bacteria produced by the influence of culture media. In connexion with this subject they have paid particular attention to the microbe of whooping-cough. This is usually cultivated on a medium rich in defibrinated blood, but it can be made to grow on ordinary agar. Agar cultures may be easily obtained by sowing the organism successfully on agar tubes containing gradually diminishing quantities of blood. Or the same result may be arrived at, without these transitional stages, by transferring a very large quantity of a growth from a medium rich in blood on to ordinary agar containing neither blood nor serum. When this latter method is adopted, growth on the agar is delayed for a week or more: thereafter a delicate pale layer makes its appearance and gradually thickens. The authors have found that there are interesting differences in type between the cultures from pure agar and those raised on a blood medium. When injected into animals they give rise to immune serums which are not identical. The culture from ordinary agar does not respond to or combine with the agglutinin, which is specifically active towards the microbe cultivated on a blood medium, and which is obtained by immunization with a culture grown on blood. On the other hand, animals treated with ordinary agar cultures yield a serum which exercises no agglutinating influence on the cultures grown on blood. But these differences do not appear to be fundamental differences in the conditions determining the vitality of the bacteria. The modified type produced by cultivation on plain agar rapidly returns to the original when subcultured again on a blood medium. An important factor in the conservation of the newly acquired characters is the length of time during which the modifying influence is in operation.

280. The Trypanosome in the Latent Period in Experimental Infection.

Fusco (*Rif. Med.*, May 16th, 1910) has tried to solve the above problem by certain researches: (1) *In vitro* by direct contact of certain remedies (arsenical) with the trypanosomes. (2) *In vivo*, to see how the protozoa behaves itself after the administration of trypanosomicides. (3) By watching the effect of inoculating healthy animals with the tissues and organs of infected animals. He finds that during the latent period the trypanosomes take refuge in the spleen and lymphatic glands. This is demonstrable only by inoculating these tissues, and not by microscopic preparations. Probably the parasites in this state assume an unrecognizable form. *In vitro*, on contact with certain arsenical preparations, the parasites may adapt themselves to their surroundings, may preserve their motility but lose their virulence. Similarly *in vivo* they may preserve their motility but lose their virulence after the administration of arsenic; probably something similar occurs in syphilis and malaria after quinine or mercury have been given. The organs of infected animals treated with atoxyl become toxic.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

281. Cardiac Neuroses.

MAX HERZ (*Wien. med. Woch.*, No. 37, 1910) suggests as a useful method of dealing with the subject of cardiac neuroses the investigation of groups of symptoms which singly are not characteristic of the condition, but become so by their typical grouping. In every case it is necessary to look for other factors suggestive of neurosis and of a psychical cause. For example, the most frequent nervous cardiac symptom is palpitation, but this symptom is not as a rule evoked by bodily exertion as in organic disease, but more commonly by some movements which demand for their performance very exact innervation, such as dressing the hair, playing the piano, etc.; or if the palpitation is connected with slight physical exertion; it is not combined with shortness of breath, as in organic insufficiency. Again, cardiac pain of nervous origin does not radiate as does the pain of angina pectoris, but is felt under the left breast, when it may be one of the characteristic symptoms of phrenocardia, or to the left, outside the area of absolute heart dullness, being then the typical neurasthenic cardiac pain. A form of breathlessness also, which consists not in rapid breathing but in difficult expiration, combined with pain, which seems to impede respiration, is met with in neurasthenics as a result of hypertonus of the diaphragm; the neurotic patient "sighs," and this nervous form of apparent dyspnoea is called by the author "catching of the breath." An inability to sleep when lying on the left side or on the back, with undisturbed sleep when lying on the right side, is often due to a nervous condition, while inability to sleep on the right side may be an important symptom of a dilated or hypertrophied heart. Sudden waking in the night with a cry and dyspnoea is a characteristic sign of sclerosis of the coronary arteries, and needs to be carefully differentiated from the sudden crying out in the night due to cardiac extrasystole, which may or may not be the sign of a cardiac neurosis. One group of cardiac symptoms which together are characteristic of a cardiac neurosis is the group of three symptoms—palpitation, cardiac pain, and the above-described "caught breath"—which constitute the condition of phrenocardia. Phrenocardia is, in the author's opinion, a sexual cardiac neurosis; the cause of it can usually be elucidated by tactful interrogation of the patient. The author also brings forward certain cardiac symptoms complained of by patients, each of which, when combined with a certain objective condition, denotes a cardiac neurosis. Thus a complaint of palpitation, combined with a condition of bradycardia, or of unpleasant sensations in the cardiac region, with low blood pressure, or of extra-systoles with low blood pressure, are all very characteristic of cardiac neurosis rather than organic disease. Nearly all cases of cardiac neurosis are very amenable to treatment by suggestion, persuasion, or the pyscho-analytical method of Freud. In making use of suggestions, improvement should be promised in a definite time—say a week or a fortnight. The method of persuasion, in which the cause of the condition is made clear to the patient, and his intelligence and strength of will brought to bear upon it, is a higher method, but is a lengthy one. The only cases of cardiac neurosis in which the prognosis with respect to recovery or improvement is bad even with treatment, are cases of heart hypochondria. The starting-point of these cases is often a visit to a doctor for the purpose of insurance.

282. Nervous Anorexia.

COMBY (*Arch. med. des enfants*, December, 1909) reports the case of a child of 11 years who was brought to him after taking nothing for three weeks except sugared water. For some time she had had repeated vomiting, and had also been treated for prolapse of the urethral mucous membrane. On admission to hospital she weighed 16 kilogs, was organically healthy, but the reflexes were a little abnormal and constipation very pronounced. The moral influence of the hospital and rest in bed effected a cure; she began to eat again, and her weight rose to 26 kilogs. There is no necessity for the isolation of these cases of mental anorexia, though it is essential to remove them from the family and its surroundings. In this case the child was visited twice a week by its relatives, and it was noted that after these visits she was more nervous and had slight vomiting, although the effects were not sufficient to retard her final recovery. Mental anorexia is met with in very young children, even in babies. Delmas cured a child of 2 years by the use of the oesophageal sound. "Gavage" may be employed where persuasion fails; many children owe their lives to it. The writer mentions a boy of 2 years with a nervous inheritance who would hold his food in his mouth, and when urged to swallow would vomit. He was a very nervous child, and hygienic measures were instituted for his cure. Removal from the parents and hydrotherapy seldom fail to promote a cure.

283. Chronic Chorea.

RAYMOND (*Journ. des prat.*, August 20th, 1910) had under his care at the Salpêtrière a woman aged 48, the wife of a tailor, taking part in his business. For two years she had found that she could not work, because, whenever she tried to sew she dropped the needle owing to involuntary movements of her fingers. Her general health was as good as it had previously been, but changes in her character had been noticed by those around her. Also, in walking, the head and shoulders jerked forwards or to the side, and a foot sometimes turned round as it took a step. The fingers and wrists were flexed and extended alternately, and the facial muscles moved even in repose, although emotion caused exaggeration of the movements. The twitchings took place even in sleep, which is not usual in chorea. There was no history of chorea in the family for three generations, nor had the patient herself suffered from it in childhood. The prognosis was pronounced to be grave, because such cases generally indicate cortical lesion; but treatment with the *x* rays or with radium was to be tried, in the hope that it might be successful.

SURGERY.

284. Tincture of Iodine in Wounds of the Hand.

RECLUS (*Journ. des prat.*, August 27th, 1910), commenting on wounds of the hand as being among the most important accidents affecting workmen, shows how the employment of iodine has revolutionized their treatment. In pre-antiseptic days, all crushed and severely wounded parts were removed at once, in order to give the patient the best chance of avoiding suppuration, lymphangitis, erysipelas, and the like. The dawn of the antiseptic era brought a greater saving of tissue, as the dressings then employed gave a certain amount of security against those complications, and most surgeons acted on that principle. But for some time there has been a growing feeling of dissatisfaction with this extreme conservation of injured tissues, as it has been found that septic germs increase and multiply under the thick ridges of a workman's hand, probably covered with dirt at the time of wounding. Consequently, although hospital gangrene has disappeared, suppuration of the sheath of tendons has become more common, and the hand may emerge from the treatment with the fingers deformed and rigid, incapable of performing their natural functions. This difficulty may be overcome by the systematic employment of tincture of iodine, proposed sixty years ago by Boinet, but not fully accepted till after the Russo Japanese war. Instead of spending hours in a futile attempt at cleansing in a work-soiled hand, the modern treatment is to paint, with freshly prepared iodine tincture, the wound and all the tissues round it, thoroughly and completely, until the tincture has penetrated into all the inequalities of the part. There is no fear of causing destruction of cells, or even of inducing too much pain in the application, even the most timid and sensitive complaining only of a little smarting or burning, but never objecting to the remedy. The tincture is allowed to evaporate before dressing with aseptic gauze and absorbent wool, and the application is repeated daily for the first three days, afterwards every three or four days, any dead skin being removed as required. It is true that the iodine may interfere with the activity of the young cells engaged in the repair of the wound, and, as a matter of fact, cicatrization seems sometimes to be a little slow; but, on

the other hand, the absolute security from inflammation or subsequent rigidity of the joints is an ample compensation for the delay. The value of the treatment appears to lie in its power of penetration into the depths of the tissues, pus germs being unable to live in the dehydrated skin. It is wise to remove beforehand all comminuted bones and very much mangled soft parts in the case of workmen, where rapid healing is of importance, although among the leisured classes it may be better to wait and see if healing will take place without amputation. In the case of the thumb, however, the parts must be carefully cherished and preserved, as even the smallest stump of phalanx will be of service in the future usefulness of the hand.

285. Local Anaesthesia in Major Operations.

MAINOLI (*Rif. Med.*, September 12th, 1910), as the result of five years' experience in the clinic of Professor Cernazzi, pleads strongly for a wider use of local anaesthesia in major operations. During these five years a large number of major operations were successfully performed under local anaesthesia by means of stovaine and novocain ½ per cent. solution. The list of operations is too long to give *in toto*, but amongst others it includes 38 laparotomies, 80 hernias, 32 rib resections, 5 mastoid operations, etc., and in addition some 360 minor operations. Local anaesthesia is particularly indicated in operations of urgency, especially in abdominal cases, where the added dangers of general anaesthesia would suffice to turn the scale against the patient. After local anaesthesia one should avoid the risk of chloroform poisoning, escape secondary vomiting, shock, and enable the patient to take nourishment by the mouth much sooner than after a general anaesthetic. There is no harm in mixing the two types of anaesthesia if necessary, and in that case a much smaller amount of the general anaesthetic is required. One slight disadvantage of local anaesthesia is that in operating upon different planes it is sometimes impossible to anaesthetize the whole area, but this difficulty is not common. The author has had no local difficulties—for example, skin sloughing—but he seldom uses a stronger solution than 1 per cent. given in a 10 c.cm. syringe. (It is well to remember that if the syringe is sterilized in an alkaline solution, the stovaine becomes chemically altered and is physiologically inert.) Lately the author has discarded the addition of adrenalin, as it gives no real advantage. The presence of the novocain lessens the smarting which stovaine sometimes causes.

286. Tonsillectomy.

L. RETHI (*Wien. med. Woch.*, No. 28, 1910) deals with the indications for tonsillectomy as compared with the more common operation of tonsillotomy. In cases in which two or three years after tonsillotomy attacks of inflammation of the remaining parts of the tonsils recur, and in which either a second tonsillotomy is performed without permanent benefit, or a general illness follows the angina, the author holds that enucleation of the tonsils rather than tonsillotomy is strictly indicated. In spite of some isolated instances of more profuse haemorrhage after complete extirpation of the tonsils, he does not consider the danger of severe haemorrhage to be as a rule very considerably greater after tonsillectomy than after tonsillotomy. At the same time the indiscriminate carrying out of tonsillectomy as opposed to tonsillotomy is not recommended, and a special warning is given against complete removal of the tonsils in singers; ten cases are described of singers in whom the singing voice was permanently impaired as a result of tonsillectomy, and it appears likely that one of the patients will have to give up her profession.

287. Fractures of Skull Treated by Lumbar Puncture.

GENTY (*La Clinique*, September 16th, 1910) reports a case of fracture of the skull admitted to hospital with slight epistaxis and ecchymosis of the right eyelid. There was no motor or sensory disturbance. Lumbar puncture withdrew 30 cm. of haemorrhagic fluid, and the delirium and restlessness of the patient abated. The treatment was repeated the next day, and he recovered consciousness. A few days later he complained of intense headache, and relief followed the withdrawal of 20 cm. of fluid. Four days later the headache was accompanied by retraction of the head and back and Kernig's sign. Lumbar puncture was performed under ethyl-chloride anaesthesia and 25 cm. of fluid slightly blood-stained were drawn off. In two days all the meningitic symptoms had disappeared, and he made an uninterrupted recovery. Lumbar puncture has a diagnostic value in cases of traumatism to the head, and is of therapeutic use in fractures. Tuffier advises that the maximum amount of fluid taken shall be 50 cm., while Quenu reports 7 cases of fractured cranium which were all cured under this treatment, one of them requiring to be punctured eight times. In these cases, as the intracranial pressure rises, cerebral anaemia is increased; this pressure excites the vasomotor centres, and the arterial pressure rises, while the respiratory centre is paralysed and respiration disturbed or arrested. It is necessary to prevent the intracranial pressure, and so to keep the centres free and able to functionate. Puncture cannot cure all cases, but it should be adopted because of the relief which it gives the patient. It is an assistance in the diagnosis, and improves the prognosis.

OBSTETRICS.

288. Double Hydrocephalus in Twin Pregnancy.

RIVIÈRE AND DROUIN (*Gaz. heb. des. sci. médicales de Bordeaux*, July 17th, 1910), remarking on the rarity of hydrocephalus in general, report a case of hydrocephalous twins occurring in their practice. The mother was 39 years of age, and had previously borne two normal children by a different father—one at 25 and the other at 31. In this case the father was a painter, aged 32, in good health, and reported to have no suspicion of lead poisoning. The pregnancy had been normal, with the exception of a slight degree of ptyalism at its commencement, and it went on till within a couple of days of full term, the membranes rupturing spontaneously two days previously. After complete dilatation of the os, the presenting head was found to be hydrocephalous, and all attempts at extraction by forceps proving futile, craniotomy was resorted to, and the first twin extracted. The second presentation was transverse, and, after internal podalic version, the trunk was easily delivered, but the head presented considerable difficulty, although it was finally released without injury to the child, which lived for twelve days. The mother was obviously quite healthy, no trace of syphilitic or alcoholic poison being discovered, and, as she had previously borne two healthy children, it is probable that the heredity came from the father, in whose case the possibility of a syphilitic taint was not definitely negatived. In the discussion which followed the recital of this case several members of the society recommended lumbar puncture as an attempt to reduce the size of the hydrocephalus and relieve the pressure on the brain, but the cerebral condition found at the *post-mortem* examination of the second twin showed that it would not have been of much avail.

289. Acute Yellow Atrophy in Parturition.

PASTIKA (*Monats. f. Geb. u. Gyn.*, August, 1910) recently reported before the Obstetrical Society of St. Petersburg two characteristic cases of this complication. The first patient died thirty-two hours after delivery in the ninth month, the symptoms having been first noticed when labour pains set in. No necropsy was allowed. The second patient was delivered in the seventh month. Twelve hours later acute yellow atrophy developed, which in twelve hours more ended in death. The liver shows fatty degeneration and disintegration of liver cells, also local haemorrhages, whilst there were likewise evidences of regeneration of connective tissue and bile ducts. The cardiac muscle was breaking down, especially in the wall of the right auricle. The tissue of the pancreas showed albuminous degeneration, with necrosis of the epithelium of the glandular tissue. The epithelium of the tubuli uriniferi presented fatty and albuminous changes. There were cystic bodies in the thyroid body. No morbid appearances could be detected in the suprarenal bodies, uterus, or ovaries.

290. Manual Stretching of the Pelvis.

OTTO KING (*Wien. klin. Rundschau*, No. 24, 1910) has made use of manual stretching of the pelvis in a case of protracted labour, and by this means brought about speedy delivery. The patient was a multipara. When the patient was first seen by King the fetal head had been fixed in the brim for six hours, and in spite of strong and frequent pains labour had not progressed. Later examination showed that the conjugate diagonalis cr. measured 11 cm. (4⅜ in.), the biparietal posterior diameter of the fetal head 10 cm. (4 in.), the fronto-occipital circumference 37 cm. (14⅝ in.). Expectant treatment was adopted for an hour; then Walcher's position with energetic external pressure; finally forceps were put on—but all without success. In this difficulty manual extension was tried. The patient was put in the cross-

bed position with the legs hanging slightly down. The three fingers of the right hand were introduced into the vagina, so that the ring finger lay against the right ligam. tubr. sacrum, the middle finger touched the edge of the foram. obturat., and the index finger the ramus asc. of the right tub. isch. The left hand was similarly introduced. The two hands lay, therefore, partly crossed. Pressure was now made with the fingers during the height of the pains in the direction of the transverse diameter, and at the same time the whole pelvis slightly raised. As a result of this manipulation the pains became much less painful, and after about six pains the head entered the pelvis; the child was then speedily delivered by natural means.

GYNAECOLOGY.

291. Retrodeviation and its Treatment.

PLATON (*La Clinique*, September 30th, 1910), in discussing the normal position of the uterus, points out that it is one of slight anteflexion, and that this deviation forwards is modified and increased by the empty or distended state of the bladder and rectum. It is influenced by the contractibility of the round ligaments and the flexibility of the isthmus of the uterus itself. Deviation is present when this forward position is not maintained. When the uterus lies backwards it is retroverted, and if it is doubled on itself it is retroflexed. Congenital retrodeviation occurs when the anterior vaginal wall is short, and is associated with an unusually long cervix uteri. This condition has no symptoms. In most cases the fundus is found to be painful and to be lying in Douglas's pouch; a further examination shows some disease of the appendages or tumour in the uterus. The size and weight of such tumours is a cause of retrodeviation, and it is useless to attempt to correct the position until treatment for the tumour or cyst or salpinx has been undertaken. It is dangerous to use the sound or to attempt Lefour's method of reposition, as it may have disastrous results if pregnancy or extrauterine pregnancy should coexist. The writer holds that, if it is possible for a fall or a blow to cause malposition, the normal uterus will return spontaneously to its usual position, but that metritis and parametritis, by increasing the weight of the uterus and by the inflammatory state of the tissues, cause the rapid formation of adhesions, so that when retrodeviation occurs in these cases the uterus should be replaced without delay. When the surrounding inflammation has been reduced, a spontaneous reduction may be obtained by prolonged use of the genu-pectoral or prone positions, followed in unsuccessful cases by an attempt to replace by Schultze's or Brandt's methods. Backward displacement is often caused by non-involution of the uterus, by lacerations and citatrization. It is therefore prevented by obstetrical asepsis and antisepsis, and by measures which promote the tonicity of the uterus. The writer advises patients to get up as soon as possible after childbirth—that is, as soon as the uterus has returned to its normal size and position, and he hastens this condition by massage and exercises so that it is usually complete on the tenth day. Every care must be taken to avoid perineal lacerations with their subsequent rectoceles and cystoceles leading to retroversion. When a tear occurs it should be at once repaired, and not left to cicatrize unaided. When cicatrization is the cause of retrodeviation recourse must be had to operative measures, and it is advisable to shorten the round ligaments as well as to remake the perineum. Before manual reposition can be attempted all chronic inflammation and parametritis must subside. When the condition is due to microbic infection it requires rest, douches and glycerine tampons, or perhaps dilatation and intrauterine lavage. Stapfer's method of gynaecological massage is successful unless the condition is complicated by adhesions or suppurating tumours of the appendages. Many cases keep up a permanent pelvic congestion and stasis of the blood in the uterine tissues; when massage is successful in replacing the organ, the circulation is re-established and the painful symptoms disappear. A pessary can be tried, but is seldom able to cure the retrodeviation, whereas another pregnancy will often do so. General constitutional disturbance and weakness will promote defective positions, and must be attacked by constitutional measures—rest, salt baths, and good feeding. When the pregnant uterus retroverts, and becomes impacted, if manual reposition fails, it will be necessary to do a laparotomy and reduce the condition directly, after which the round ligaments may be shortened or fixed to the aponeuroses of the recti muscles. Many of the operations practised for retroversion are superfluous, since a correction may be procured by minor surgical measures.

THERAPEUTICS.

292. The Organotropic Action of Arsenobenzol.

IN founding modern chemotherapy, Ehrlich set himself the task of discovering substances which would act directly on the causal parasite of the disease without damaging the cells of the organism—that is, which are *parasitropic* but not *organotropic*. Naturally he intended to call a chemical substance parasitropic and non-organotropic when it killed the parasites in the body and did not harm the body itself in therapeutic doses. No substance which could attack a low organism could be quite harmless to a high organism if given in excessive doses. The interest in chemotherapy is now centred around Ehrlich-Hata's dioxy-diamido arsenobenzol or "606." Ehrlich claimed that this substance was non-organotropic. Fritz Lesser (*Berl. klin. Woch.*, October 24th, 1910) raises the question whether this is a fact, and discusses the problem from a practical point of view. In coming to the conclusion that "606" is really organotropic as well as parasitropic, he adduces the following facts as evidence: Arsenic exerts a very marked action on the tissues and raises the strength of weakly persons, favours the conditions of nutrition, and increases the resistance. Fat is deposited more freely under the influence of arsenic medication, bone grows well in young individuals and the quality of blood improves, especially in regard to the haemoglobin content. All this is due to the organotropic action of arsenic. "606" is so constructed that an injection of 0.5 gram, which is tolerated without signs of poisoning, represents 50 times the maximum dose of arsenious acid. Next arsenic exercises an elective action on pathological tissue. He cites many instances of this; "606" effects the same changes in non-syphilitics as the other arsenic preparations. It must therefore be regarded as not indifferent to the tissues of the body. Turning to the action in syphilis, he first speaks of the effect on the general health, which is always markedly improved. This is seen in tabes dorsalis, as well as in the primary stage of the infection, and Lesser believes that it must be due to the intrinsic effect on the tissue cells and not on the parasites. He then inquires whether the extremely rapid healing effect of the drug on tertiary ulcerative processes can possibly be explained as a parasitropic action. He doubts it. The clearing up of a gumma can be effected by iodide of potassium, which does not kill spirochaetes at all. Indeed he goes so far as to believe that the healing of the gumma can only be explained on a purely organotropic action. He attacks the suggestion that the spirochaete can be influenced by the medicament in what is known as precocious tertiary syphilis. The infections arising from these cases may be mild or severe, which does not tally with the assumption of a peculiar virulence of the parasites, while in those cases in which mercury loses all power on the infection, it gains it again in cases infected from these cases. He adds other arguments in favour of this view, and deduces therefrom that it is doubtful whether the *therapia sterilisans magna* is to be obtained directly by the action on the parasites, and if this is so, then it is necessary for the optimum effect of the drug that a dose be found which influences the tissues best to throw off the invading parasites and to absorb the syphilitic products. This dose will naturally be individual, and cannot be determined once and for all by experiment and translation according to the weight of the patient. Each person will have his or her individual susceptibility toward this drug, and the physician will have to take this susceptibility into account in treating the patient. He discusses the evidence of cure by the injections, and while he finds that it has still to be proved whether "606" actually cures or merely causes the symptoms to disappear, he concludes by stating that Ehrlich's preparation is by far the most active antisyphilitic which we have yet had in our hands.

293. Chronic Urethritis Cured by the X Rays

DU BOIS, of Geneva, has brought before the Société de Radiologie Médicale of Paris (*Bull. et mém.*, February, 1910) three cases of chronic urethritis which have been cured by *x*-ray treatment. It was as a last resource that he used the rays in the first of these cases, but the result was so remarkable that he has since made the application

systematically. A man, 35 years of age, consulted him for a blenorrhagic infection dating back for six years. During the acute period he had been treated with injections and balsams, and after two months of treatment, the more evident symptoms having disappeared, he was regarded as cured. Two years later some urethral secretion appeared each morning at the meatus, and this condition persisted for a long time without interrupting the genital activity of the patient, until the advent of pain and haemorrhage on erection. The examination of the urethra showed a yellowish-grey discharge containing some colonies of the gonococcus. The urine contained filaments of muco-purulent deposit. The diagnosis of chronic gonococcal urethritis affecting the anterior urethra was made, and it was confirmed by the fact that upon palpation there was a stickiness of the canal in the centre of the spongy region, extending for a length of 2 cm. Palpation brought to the meatus some secretion tinged with blood. The urethroscope showed a red mucous membrane, swollen, papillomatous, and bleeding easily. Local cauterization did nothing but irritate the region, augmenting the discharge and the haemorrhage. After four months of profitless essays, Du Bois applied the *x* rays upon this region (3 H.; 5–6 Benoist). The abdomen was carefully protected by a sheet of lead. Ten days after this application the discharge had disappeared; there was no more haemorrhage with the nocturnal erections, and the infiltration had almost vanished. Encouraged by this result, he again applied a dose of 5 H. from the same tube at 15 cm. from the skin. The result was immediate, and for three and a half months, or up to the time of Du Bois's communication to the society, the urethra had remained supple, and there had been no more discharge or haemorrhage. Du Bois has since applied the same treatment to two patients attacked by chronic urethral folliculitis, with the same result, obtained more rapidly, because in these cases the inflammation was less severe and less chronic, and also because the dose of 5 H. was applied in the first instance. Lenglet, following Du Bois, states that he has had occasion to experiment three times during the last four years upon the action of the *x* rays upon chronic urethritis. In two of these cases he obtained successes, and in the other there was no appreciable modification. In each of these cases he irradiated, at the same sitting, the anterior and posterior urethra. The dose given was 3-4 H., with rays of 6–7 B. Great care was taken to protect the surrounding parts. In the two successful cases the first phenomenon after this treatment was the stoppage, on the first or second day, of the special sensation at the fossa navicularis. Accentuated chronic prostatitis was the reason for non-success in the third case.

294. The Value of Formol.

Lafay (*La Clinique*, September 23rd, 1910) mentions two cases of epithelioma on the face which were treated and cured with formol by Drs. Hallopeau and Fumonze. A 40 per cent. aqueous solution of formic aldehyde was applied to the part after an application of cocaine, which lessened the pain. The treatment was repeated in four days and when the scab came off the clean surface below cicatrized rapidly. These cicatrises remained soft and elastic. The treatment produces no local reaction, but is only suitable for small epitheliomata not larger than a florin. The writer has found a dilute solution of 2 per cent. formic aldehyde valuable in extensive and inoperable cases. It causes necrosis and the elimination of neoplastic bodies without irritating the healthy surrounding tissues, and without exciting pain. A dressing saturated with the 2 per cent. solution is applied to the diseased surface, and renewed every six hours. After several applications the fetid discharge ceases, and at the end of five to seven days the tumour becomes dry and black, is friable and inodorous, and the dead tissues begin to detach themselves from the surface. A wet dressing of boracic acid solution or sterilized water is then made use of. This application is not painful, but, before applying the compress the part may be treated with a 1 per cent. solution of novocain to which 1 or 2 minims of 1 in a 1,000 adrenalin solution has been added. The treatment is palliative and suitable for inoperable cases, whereas Dr. Hallopeau claims to cure by his method. Formol is valuable in treating hydatids, carcinoma, erysipelas, ozaena, dental caries, and other cutaneous tumours. In addition, it is useful for aphthous ulcerations of the buccal mucous membrane. The lesion is touched with a small tampon of cotton wool saturated with a 40 per cent. solution of formol. The pain is acute but does not last long, and may be relieved by previously applying cocaine, novocain, or stovaine to the ulcer. The subsequent applications are painless, and since formol has an anaesthetic effect mastication and speaking also cease to cause pain. The smell and taste may be disguised by the addition of amylo-acetic ether. The official preparation of formol or formalin, or formaldehyde as it is often called, contains 35 per cent. of formic aldehyde with a little methylated alcohol in a trace of formic acid. Formol should be used with care, and the applications should be made only by skilled and responsible persons.

295. Adrenalin in Cancer.

K. Reicher (*Deut. med. Woch.*, No. 20, 1910) has experimented with adrenalin in experimental cancer in mice and rats, and publishes his results. First he gives a brief survey of the various therapeutic attempts which have been made to influence cancer in the small lower animals and in man. He reports that by injecting around the tumours from five to thirteen times (he used takamine) in doses of 0.1 to 0.15 c.cm. of the original solution for rats, and 0.01 to 0.05 c.cm. for mice, the tumour diminishes in size very markedly. The injections are carried out every second or third day. Tumours of the size of a walnut became reduced to the size of a small bean in four weeks. The tumour on being removed was found to be completely necrosed, and no structure could be detected. This was repeatedly observed both in spindle-cell sarcoma of rats and in adeno-carcinoma of mice. The disappearance of the tumour was not followed by either subsequent growth or recurrence. In two cases only out of hundreds did a recurrence take place. He tested the inoculability of the treated tumours, and found that a tumour treated with adrenalin yielded only 56 per cent. of positive inoculations, while a tumour of the same strain untreated yielded 91 per cent. He then proceeds to discuss the possibility of applying this treatment to human beings. Having satisfied himself that the rat and mouse tumours are essentially identical with human cancers, he notes a difference between the tumours of mice and rats and those of man in that the former not only develop more rapidly than the latter but are much more easily influenced therapeutically. It does not follow, he states, that because the experimental animal tumour can be removed that the same means need produce the same effect in man. Nevertheless he has considered it advisable to experiment with the utmost caution on human cases. It is necessary to bear in mind the local and general effect of such a potent drug as adrenalin in applying it to the subjects of cancer. So far he states that he has noted a partial regression in the human tumours, but the time is too short to justify any conclusions at all. He considers that his experiments justify him in continuing them, and in appealing to the surgeon to hand over early cases for a few weeks for internal treatment, before applying radical measures.

PATHOLOGY.

296. Morbid Anatomy in Typhus Fever.

Max Goldziehher (*Pest. med.-chir. Presse*, No. 25, 1910) describes the *post-mortem* appearances in fatal cases of typhus fever in the epidemic at Budapest in 1908. In this epidemic, out of a total of 203 cases, there were 53 deaths—that is, a mortality of 26.3 per cent. The cases in which *post-mortem* examinations were made included all stages of the disease. The general condition was similar to that found in any other septic disease, so that a differential diagnosis on the *post-mortem* findings would be in some cases impossible to make. Certain constant peculiarities did, however, present themselves. Thus the haemorrhages into the serous and mucous membranes, the lungs, etc., were especially numerous and widespread; in the older cases the fact of haemorrhages having occurred could be made out both microscopically and macroscopically. The spleen was enlarged as in septic conditions, but there was an altogether unusual softening of the splenic pulp. The changes in the bone marrow were certainly present, and are of special importance as an aid to diagnosis. In some cases brownish-red spots were present in the yellow marrow; in others the whole marrow was stained brownish-red, chocolate brown, or in later stages mud-coloured. Microscopically there was marked hyperaemia and signs of haemorrhages, with, in a few recent cases, much pigmentation, and with a considerable hyperplastic regeneratory increase of the blood primary cellular elements. These changes all correspond to the theory of a protozoal infection as the cause of the disease.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

297. Ectopia Cordis with Sternal Malformation.

FOY (*Arch. des mal. du coeur, des vaisseaux, et du sang*, July, 1910) quotes the following case: The patient, a man of 37, was admitted to hospital on May 19th, 1909, with symptoms of cardiac insufficiency. He was short in stature, but well formed and muscular. Situated over the lower sternum was a mass the size of an orange, which was firm to the touch and exhibited very marked pulsations. On careful palpation, between the edges of the mass and the costal cartilages on each side one found this mass to extend to right and left behind the anterior thoracic wall. Situated immediately below this mass was a second tumour which projected very much when the patient coughed and almost disappeared when he lay on his back. This second tumour was soft, and during an attack of coughing would increase in size, so that it became as large as the head of a newborn child. The skin covering the lower mass was of a brownish colour, divided into two by a whitish vertical line, and on palpation one could easily diagnose this second mass as a hernial protrusion at the umbilicus and epigastrium containing intestine and omentum. Both tumours were of congenital origin, and neither had caused the patient any trouble until a year previously, when the upper one had begun to increase in size and to become painful. Dullness extended upwards on the left side as far as the second intercostal space, and outwards to the fifth space below and to the outer side of the nipple. On the right dullness extended several fingerbreadths to the right of the right sternal border. *X* rays showed a large heart projecting plainly to the right of the sternum. On auscultation a systolic murmur was heard plainest at the left side of the tumour. The heart was very irregular, and its pulsations numbered 120 to the minute. The arterial pressure was 120-130 millimetres of mercury. The tracings taken by Marey's polygraph showed that the pulsations observed in the upper mass were ventricular in character. The sternum was very imperfect and measured only 9 cm. in height; the manubrium, however, was apparently of normal length. The costal cartilages at the lower part of the tumour mass were much displaced from the median line, and were fused into a very hard mass on each side of the tumour. The ribs and cartilages on the left side of the sternum were inserted normally, but on the right side the second costal cartilage joined the manubrium at a point midway between its upper and lower extremities. The upper ends of the recti abdominis were inserted into the ribs and cartilages on each side of the two tumours, leaving a considerable space between which was occupied by a much stretched linea alba. The patient died about six weeks after admission from cardiac failure, and at the *post-mortem* examination the following conditions were found. Below the level of the navel the muscular wall of the abdomen was absolutely normal. Immediately below the aponeurosis was closely attached to the overlying skin whilst immediately above this part it formed a lozenge-shaped area, the lower sides being formed by the two recti muscles, and both tumours were covered by this aponeurosis, the part between the tumours being much thicker than the other parts. The sternum ceased abruptly at the level of the fourth rib on the left and the fifth on the right side. The sternum proper was bifurcate, the two vertical sides being joined by ligamentous tissue. The lower of the two tumours contained part of the transverse colon and omentum. The posterior fibres of the diaphragm were attached in a normal way, but at the inner surfaces of the costal cartilages the muscle fibres passed down to be inserted along the inner border of the sheath of the recti; these fibres were wanting in the median line and through the opening thus left was protruded a part of the omentum. The two layers of the pericardium were firmly united by adhesions and there was marked inequality in the length of the cartilages, especially of those on the right side. The heart was greatly enlarged and occupied exactly a median position, the apex of the left ventricle forming the ectopic part and the whole heart appearing as if twisted on its long axis. The right auricle was greatly dilated as was also the opening of the inferior vena cava. The left auricle was much less dilated and communicated with the right auricle by an orifice measuring 3 cm. in diameter. The right ventricle was dilated and hypertrophied. The aorta was relatively small, whilst the pulmonary artery was of enormous size. The superior vena cava was double, each vein entering the right auricle by separate openings and each receiving an azygos vein. Calcareous plates were found in the walls of each auricle.

298. Visceral Syphilitic Fever.

HERMANN (*Wien. med. Klin.*, No. 26, 1910) describes a case of severe visceral syphilitic fever which is of interest in view of the difficulty which may arise in distinguishing syphilitic fever in the tertiary stage from malaria and tuberculosis. The patient was a man 28 years of age, who gave no history of syphilis, but in whom signs of old syphilis were present. The liver extended two fingerbreadths below the costal margin in the mammary line. Percussion showed enlargement of the spleen; there were indolent small hard swellings of the inguinal glands on both sides of the cervical and supraclavicular glands. The patient appeared to be hypochondriacal, and the diagnosis was of old syphilis, and of possibly hysterical mental disturbance. The patient was under observation for four months before his death. During the early part of this time syphilitic caries of a finger-bone developed, and after a few days' irregular fever a widespread syphilide and ulceration of the mucous membranes of the throat and mouth; all these symptoms disappeared under treatment. Two months before death there was a return of fever, which remained high up to the time of death, and upon which neither quinine nor potassium iodide had any effect; the liver and spleen both became more enlarged, the jaundice deepened, ascites developed about a month before death, and finally acute anaemia and internal haemorrhage. The patient died suddenly from heart failure, the cause of death being visceral syphilis and intestinal haemorrhage. Anatomically the diagnosis was of anaemia, pachymeningitis interna, leptomeningitis chronica, hydrocephalus externus and internus, adhesive pleuritis, hydrothorax, ascites, and anasarca; also of syphilitic hypertrophic splenitis with miliary gummata, diffuse gummatous infiltration of the liver with parenchymatous degeneration of the organ, sparsely disseminated gummata in the mesenteric glands, lungs, and intestinal submucosa. Although the expression "liver fever" is used as almost synonymous with syphilitic fever, in this case severe change in the spleen and mesenteric glands were more particularly prominent, especially macroscopically. It is not impossible that specific syphilitic disease of the blood-forming and lymphoid organs is intimately connected with the genesis of fever. The case supports the view that it is especially a diffuse gummatous infiltration of the viscera which underlies the cases of fever in tertiary syphilis.

299 Rickets and Spasmophilia.

OLIARI (*La Pediatria*, August, 1910) reviews various theories advanced to explain the connexion between rickets and the convulsive states often associated with that disease. He has examined the history of 11,000 children seen in the hospital at Parma; 1,766 of these were cases of rickets. Out of the 1,766, 1,144 had no convulsive symptoms—eclampsia, tetany, laryngismus, etc.—80 had no details as regards this, and 542 presented spasmophilic symptoms. Dividing the 1,766 into two main groups, there was one section of 1,500 brought to the hospital for rickets, whilst the other 266 were brought for various degrees of spasmophilia in association with rickets. Analysing the 1,500 children brought for rickets as the chief symptom, 1,144 of these had no spasms, 80 were doubtful, and of the 276 with spasms 167 had eclampsia, 96 tetany or laryngismus, 13 spasmus mutans or gyrospasm—27 were breast-fed. Out of 337 children brought for convulsive attacks 266 were rickety. The rarity of breast feeding was most evident in all these cases in whatever way they were grouped. Whilst the percentage of convulsions in the 1,500 children brought for rickets was 18.4 per cent., in 337 children brought for convulsions the percentage of rickets was 78 9 per cent. So that it almost seems that where the rickets are the predominant symptoms convulsions are not so marked, the more evident the deformities of rickets [illegible]

prevalent the spasms. Probably both sets of symptoms are in some way connected with calcium and magnesium metabolism and with alteration in the function of the parathyroids and haemolymphatic organs.

SURGERY.

300. Tuberculous Diseases of the Eye.

C. HESS (*Wien. med. Klin.*, No. 33, 1910) discusses the tuberculous affections of the eye. The more important forms of iritis are first considered. In one group of cases of tuberculous iritis, nodules, usually small, are found scattered or in groups in the iris. The differential diagnosis is between syphilis and tuberculosis. As a rule the size of the nodules is smaller in tuberculosis and the inflammatory signs both on the iris, as a whole, and round the nodules are less marked than in syphilis, but these differences are not absolutely constant. In a second group of cases there is diffuse inflammation without obvious nodules, and here the local condition is not characteristic of tuberculosis. As a help to diagnosis the tuberculin test must first be considered. The author has abandoned Calmette's test and Pirquet's cutaneous test, while it may show the presence of tuberculosis in the organism, does not absolutely decide the nature of the eye affection. The subcutaneous tuberculin injection is of more value as a test, because when small doses are given it may give rise to a local reaction in an eye affected with tuberculosis without causing any general reaction. The local reaction is not obtained very frequently: it was obtained in 3 cases out of 26, 15 of which were clinically suggestive of tuberculous eye affections, and 13 of which gave a general reaction. The course of cases of tuberculous iritis and irido-cyclitis which do not receive specific treatment differs widely in the different cases: some recover after a few days or weeks, and others persist for months or years, with repeated attacks and permanent injury, or even destruction of the eye. It is difficult, under these circumstances, to estimate the value of specific treatment. The majority of oculists are agreed that specific treatment has a favourable effect, and it is almost universally allowed that tuberculin treatment does not at any rate do harm. To avoid injury to the eye through a strong reaction at the affected area small doses must be employed. The use of atropine and long-continued hot compresses is often followed by considerable improvement or recovery. Among the tuberculous diseases of the cornea tuberculous keratitis parenchymatosa is of most interest. Clinically the appearance alone does not as a rule suffice for a diagnosis from syphilitic keratitis parenchymatosa. The question as to whether or not the so-called conjunctivitis phlyctaenulosa or scrofulosa is a tuberculous affection is to-day practically decided in the affirmative on the grounds that the majority of the children are scrofulous, that after injections of tuberculin phlyctenular ulcers have been repeatedly seen to react, and that the experimental injection into animals of dead bacilli has led to the formation of phlyctenules. Fifty-one out of fifty-eight cases tested by Wecker reacted positively to von Pirquet's test. Surprisingly good results are reported by v. Herrenschwand in the treatment of severe scrofulous corneal affections with bacillary emulsion. Tuberculous affections of the conjunctiva are comparatively rare, and all forms are characterized by a very chronic course. Specific treatment is beginning to displace the earlier more recommended surgical treatment. In one case of severe tuberculous affection in the upper lid, which had resisted treatment for years, treatment by Roentgen rays led to marked improvement.

301. Large Varicos of the Leg.

DELBET (*Journ. des praticiens*, September 17th, 1910) relates the case of a man, aged 40, who suffered from an extreme varicose condition especially affecting the internal saphenous vein. In the course of his remarks he refers to the various forms of venous dilatation to be met with, and points out how they differ in etiology and clinical characteristics. The term "varices," he states, is not equally applicable to all. The varices of pregnancy, for example, belong to a particular type. They avoid the domain of the internal saphenous. So too the small venous dilatations which occur subcutaneously, and are often visible under the skin as small rosy-red or bluish lines. These are known as varicosities, and do not resemble in the least the great varices properly so called. Then the varices following the infectious fevers, for example, variola, are in a separate class. They begin with inflammatory phenomena as a phlebitis, the venous dilatation being secondary. The patient whose case is under consideration belongs to none of these groups. The varicose condition is limited to the territory of the internal saphenous, and has begun insidiously—with no inflammatory phenomena—an important point pathologically and therapeutically. The author has shown that the condition arises from a valvular insufficiency of the internal saphenous in the first place, and increases by the direct transmission of the venous pressure of the thoracic and abdominal veins to the venous system of the lower limb. Manometric readings showed that on any effort the mercury rose to double that obtained over the radial artery. Had the valves been intact there would have been no such result. Under this formidable pressure changes are produced in the calibre of the veins and the structure of their walls. Hypertrophy follows, but in spite of this the vein further dilates. This case, the author points out, presents the unusual feature that the veins of the thigh enlarged first; generally the condition begins below and advances upwards. When the patient is asked to cough one can see and feel the wall of the vein distending. The author reviews the various methods of surgical interference, and points out that each of the usual methods has its drawbacks, either with oedema of the foot, or the risk of phlebitis. His own practice has been to establish an anastomosis between the saphenous and femoral veins, and so utilize the intact valves of the femoral vein to supply the deficiency in the saphenous. He has performed this operation many times without the slightest accident or failure.

OBSTETRICS.

302. General Narcosis and Intra-partum and Post-partum Haemorrhages.

SIGMUND STASSNY (*Wien. klin. Rundsch.*, May 8th and 15th, 1910) discusses narcosis in relation to haemorrhage. The interaction of the narcosis and haemorrhage upon the patient depend on a large number of factors, amongst others, upon the stage of narcosis. In the stage of excitement the blood pressure rises, haemorrhage is increased, and with it the danger of death from shock due to loss of blood. At a later stage the blood pressure falls, but on the other hand, in long narcosis the coagulability of the blood is diminished, especially when pure chloroform, or a mixture containing much chloroform, is employed. Both chloroform and ether show a cumulative action, together with loss of blood. Scopolamine lessens uterine contraction, and is to be avoided in placenta praevia, and still more in secondary uterine inertia. In order to avoid the danger of the initial rise of pressure in cases complicated by haemorrhage, the narcotic chosen should be such as to shorten as much as possible the stage of excitement, or should be as little as possible exciting in its action. Schleich's mixture, anaesthol, best fulfils the second condition: ethyl chloride, gas, etc., when they are available, fulfil the first. Pure chloroform, or mixtures with a large percentage of chloroform, are to be avoided. In any case, as little as possible of the anaesthetic is to be administered throughout the operation. A mixture of oxygen is especially valuable in cases of haemorrhage. Intravenous etherization, or mixed narcosis, checks the fall of blood pressure through the quantitative increase in the contents of the vessel system, but is not without danger of itself causing a stronger haemorrhage. The secondary late effects of the anaesthetic are to be combated by means of infusion of salt solution and intravenous lecithin injections; lecithin prevents any further parenchymatous injury and causes a rise of blood pressure. The artificial lessening of the circulation by means of bandaging, etc., has also to be considered. The blood pressure can be raised and the circulation lessened by systematic bandaging with elastic bandages of the extremities, but all the blood is injured by the narcotic, and since the amount of anaesthetic used is scarcely diminished, the length of time before the system can rid itself of the anaesthetic is not shortened; moreover, if severe haemorrhage should occur during the anaesthetic the method of autoinfusion is no longer available. Klapp's method of cutting off the blood in the lower limbs by means of bandages is more effective. By this means a large quantity of blood is free from the anaesthetic, and can be set free as soon as the operation is over, or in an emergency, if, for instance, during the operation the patient receives an overdose; when this method is adopted less of the anaesthetic is required, the patient comes round more quickly, usually as soon as the constricting bandages are removed. The treatment is not

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free from disadvantages; the bandaging may tend to thrombosis, and also the blood stored up is loaded with CO_2, and may be injurious, rather than stimulating, to the already injured respiratory centre. Momberg has advanced a further step and would cut off the circulation of the whole of the lower half of the body, while the present author claims to be the first to suggest a combination of Klapp's and Momberg's methods. In these methods it is essential that the bandages should be applied before the beginning of the administration of the anaesthetic, and this fact for practical purposes lessens their usefulness, because in comparatively few cases does so energetic a procedure seem necessary at the outset. The special indication for the artificial lessening of the circulation is high grade anaemia, where much loss of blood is to be expected. Conditions such as disease of the myocardium or advanced arterio-sclerosis absolutely contraindicate the use of the method, in spite of the fact that in such cases it is desirable to limit as far as possible the amount of anaesthetic given.

303. Haematurias of Pregnancy.

GROSSE (*Journ. des prat.*, July 16th, 1910) enumerates the different characteristics of haematuria occurring during pregnancy. There are cases where it results from causes unconnected with pregnancy, merely aggravated by the congestion induced by that condition; but in other instances it can be demonstrated that it has supervened during pregnancy in a patient previously in perfect health, and that it has ceased after delivery. It is liable to appear at any period, but most frequently from the fourth to the sixth month, and it may be either constant or intermittent. Cystoscopic examination reveals enlarged vesical veins ruptured or ulcerated, and such a varicose condition is fairly common during pregnancy; but haematuria of renal origin is less easily explained, Guyon attributing it to passive congestion of the kidney from compression of the large abdominal veins by the gravid uterus, whilst Chiaventone considers hepatic toxaemia to be the principal cause. The prognosis is generally favourable, although the extent of the haemorrhage may induce serious anaemia and cause premature delivery. The treatment varies according to the source of the haemorrhage. If it be renal, rest, suitable diet, and cupping in the lumbar region may suffice: but, if those measures should fail, Grosse prefers decapsulation of the kidney to the alternative of relieving pressure by interrupting the gestation. In vesical haematuria, rest in bed may be sufficient, supplemented, if necessary, by vesical douches of hot water, adrenalin, or nitrate of silver. Should these not succeed, the example of Proust may be followed, and an incision made to discover and tie the offending vessel.

GYNAECOLOGY.

304. Vulvo-vaginal Haematoma.

J. REICH (*Wien. klin. Woch.*, No. 29, 1910) describes 2 cases of vulvo-vaginal haematoma which have occurred among 6,200 births at the Innsbruck clinics, one during the puerperium, the other during pregnancy, and also describes one case seen in private practice of puerperal vaginal haematoma, the result of traumatism during labour. A vulvo-vaginal haematoma results from haemorrhage into the cellular tissue of the true pelvis, either under or above the pelvic fascia. The infrafascial haematoma is by far the more common form, though the suprafascial may be more common than is estimated because of its liability to escape detection. Parametrial haematomata may pass along the side of the pelvis and extend subperitoneally, and may prove fatal. In the first case described, three days after a spontaneous birth, a haematoma of the vulva was discovered; the haematoma included the right labium, but did not extend to the vagina. There was no increase in size, and after two days' treatment by cold compresses, etc., the swelling began to diminish, and the patient was able to leave the clinic on the twelfth day after deliver. The second case described was seen in consultation, and was a vaginal haematoma due to injury from the use of forceps by an inexperienced doctor; the author saw the patient on the fifth day of the puerperium, and it was proposed to open the haematoma on the following day, but in the meantime the swelling burst spontaneously and blood clot and pus were evacuated. The patient recovered. The third case occurred just at the end of pregnancy as a result of the patient having overstrained herself in lifting a heavy weight: the haematoma in this case also was of the right labium major. Predisposing causes were the late stage of the pregnancy and a varicose condition of the veins of the lower half of the body. It is thus seen that indirect as well as direct traumatism may give rise to a vulval haematoma. The patient was kept at rest in bed, and cold compresses applied every half hour, but the haematoma burst spontaneously on the second day through an opening into the introitus vaginae. Predisposing causes of vulval haematoma during pregnancy and the puerperium —as, for instance, nephritis, increased inclination of the pelvis, etc.—are discussed in the article, and also the causes of vulval haematoma which are not connected with childbirth. The diagnosis of vulval haematoma is easy enough, that of vaginal haematoma is somewhat more difficult, and of the suprafascial, and still more of the intraligamentous and subperitoneal haematomata, which sometimes form after energetic massage of the uterus, may be impossible. With respect to treatment, the question of active or conservative treatment is still undecided. Walther describes a case in which death from sepsis occurred under altogether conservative treatment of a haematoma, and believes that under more active treatment life would have been saved. The author would decide the treatment of each case on its merits, and where no unfavourable symptoms declared themselves would adopt conservative rather than active treatment. On the other hand, increase of size of the haematoma, with danger of bursting, excessive pain, fever through spread of infection, purulent infection, or such a position as would form a hindrance to delivery in puerperal cases, are indications for active treatment.

THERAPEUTICS.

305. "606."

WALTHER PICK (*Wien. klin. Woch.*, No. 33) has made use of the Ehrlich-Hata preparation in 130 cases of syphilis chosen at random. In 20 of the cases the injections were made before the disappearance of the primary induration, and in 10 of them before the appearance of any secondary symptoms. The effect was well marked. The primary induration became softer, and the surrounding tissues became soft and swollen; as the local reaction passed off the area of induration became smaller, but these remained stationary for a considerable time. Enlarged glands similarly became smaller without returning quickly to the normal. Primary ulcers healed rapidly, and in some cases spirochaetes promptly disappeared. Six out of 10 cases in the early primary stage had been under observation (at the time of writing the article) after their discharge from hospital for periods which varied from four to twelve weeks, and in none of them had secondary symptoms appeared; the injections would therefore appear to have, at any rate, delayed the onset of secondary symptoms, even if the time was too short to prove that such symptoms could be prevented. The suitability of the preparation as a preventive treatment would also seem to be proved. Sixty-four cases in the secondary stage were treated. The effect was very marked, and was most striking upon affections of the mucous membranes, which in some cases disappeared after the first day and never lasted longer than the fourth day after the injection, even in obstinate cases which had previously had long periods of treatment with mercury and potassium iodide. Glandular affections were least amenable to treatment, and in many cases enlarged glands persisted after all other signs had disappeared, Wassermann's reaction remaining positive for the same length of time. In 8 cases of malignant syphilis, some of which had been under treatment for a long time, the result of the injections was excellent, and began to be apparent almost immediately. In 10 tertiary cases also the treatment was unexpectedly successful. The most obstinate were the cases with tubero-serpiginous syphilides, in a few of which traces of infiltration remained for several weeks. In the one case of congenital syphilis recorded—that of a child 4 months old—all symptoms had disappeared by the twelfth day after injection. The treatment failed in 26 cases of late syphilitic nerve affections, most of them cases of advanced tabes or progressive paralysis. Two instances of relapse occurred, but in both of them the immediate response to treatment had been well marked, and it seems probable that a larger dose would have postponed the relapse, if it would not have prevented it. Ehrlich's opinion is that relapses are due to groups of spirochaetes being shut off from the action of the preparation. The author does not

consider a second injection to be indicated in cases of relapse, because so large a dose would be required when a first dose had accustomed the organism to the preparation. Wassermann's reaction in the early primary cases remained negative throughout, in other cases changed from positive to negative after an interval which varied in the different cases from twelve days to seven weeks, but was as a rule about four weeks; a change back to positive was never observed, even in the two cases in which there was a recrudescence of symptoms. No threatening side-effects were observed. The temperature in one case rose to 39.8° C. (103.6° F.). The occurrence of erythema spreading from the site of injection was frequent, as was also a diminution in the amount of urine passed during the first four to six days after injection. The author concludes that the specific action of the preparation is unequalled by any previous remedy, and considers its use to be especially indicated for malignant syphilis, for obstinate affections of mucous membranes, and as a preventive.—Ernst Eitner (*Wien. klin. Woch.*, No. 34) reports on 20 cases treated with the Ehrlich preparation "606." The number is small, but the cases are of interest, because for the most part they were either early cases treated before the onset of secondary symptoms, or were obstinate or malignant cases. The dose in the earlier cases was, as a rule, 0.4 gram (6¼ grains), later 0.5 gram (7¾ grains). The injections were made into the gluteal muscles. At the beginning an acid solution was used, but later an alkaline solution, which, though it had the disadvantage of more easily blocking the syringe, yet gave less pain at the site of injection. Intoxication symptoms such as have been described by other workers did not arise, and in no case did a rash follow the injection; in nearly all cases there was a moderate rise of temperature, and the pain at the site of injection was, as a rule, sufficiently severe to confine the patients to bed by the second or third day; in the later cases the author advised the patients to stay in bed for from five to eight days. Notes of all the 20 cases are given in the article. A review of them shows that the dose of 0.4 gram was too small, and the author only recommends it for weakly and depressed patients, for whom it may be used in order to decide how the preparation is borne before going on to a second and larger dose. In one instance there was no reaction at all to a dose of 0.4 gram. In the case described the ulcer lost its induration and spirochaetes disappeared as a result of the injection, but a secondary injection of the ulcer had occurred, and local antiseptic treatment was needed to bring about healing. In another, a slight secondary rash developed, apparently as the result of too small a dose. One patient, an especially strongly built man, a dose of 0.7 gram (10⅘ grains) was used, but the local reaction was very severe, and the patient vomited repeatedly on the night after the injection; the impression left on the author's mind was such as to make him cautious about increasing the dose. The cases, as a whole, showed the prompt relief of symptoms which has been reported by other workers. Second injections were well borne, and the possibility of its being advisable to give large divided doses is suggested. Although the author was not able to test the Wassermann reaction with the frequency necessary for a definite and decided opinion, it yet appeared in many cases that the reaction remained positive even after the symptoms had completely disappeared.—Maximilian v. Zeissl (*Wien. med. Woch.*, September 17th, 1910) reports on 100 cases of syphilis treated by the Ehrlich-Hata preparation. The dose ordinarily used was 0.5 gram of the powder for adult men and 0.45 for women; 0.05 gram was used for a 10-year old, and 0.03 gram for an 18-months-old child. The intramuscular method of injection was employed; 10 patients in the early primary stage received injections, the last one on July 27th, and none of them had developed secondary symptoms when the article was written. In secondary stage cases the signs of the disease disappeared with extraordinary rapidity. In large papular syphilides efflorescences of the size of peas had become level with the skin by the fifth day; the small papular syphilides are the slowest to disappear. Pigmentation may remain after a syphilide has otherwise disappeared; and this fact helps to decide the author that in all probability relapses will occur after the treatment. Ehrlich is not very hopeful of the result of the injections in metasyphilitic cases and cases of tabes, and in advanced cases with involvement of the central nervous system he considers the injection dangerous, in hemiplegia very doubtful. The present author supports this view, and especially recommends caution in cases of hemiplegia, for which a dose of 0.45 to 0.5 gram should never be exceeded, and a divided dose would probably be preferable. In cases of early primary lesions Ehrlich's preparation appeared (unlike mercury salts used preventively) to do nothing but good; no general symptoms developed, and the patients all increased in weight. The author considers it an unpardonable mistake at once to use Ehrlich's preparation in primary cases with or without general symptoms. The treatment is, of course, contraindicated in cases of disease of the optic nerve. To avoid side-effects, asepsis in making the injection, and confining the patient to bed for at least eight days after it, are the two measures required.

306. Fistula of the Cheek Treated by Zinc Ionization.

Marques and Pappon (*Arch. d'élec. med.*, No. 289, 1910) state that by the electrolytic introduction of the zinc ion they have obtained very rapid cicatrization of fistulae following upon osteoperiostitis of the lower jaw. They first injected into the fistulous tract a 2 per cent. solution of chloride of zinc, and then introduced carefully a twist of absorbent cotton impregnated with the same solution. This twist was turned down upon the cutaneous surface surrounding the fistula, and brought into contact with a thick layer of absorbent cotton, also impregnated with chloride of zinc, covering a zinc electrode connected with the positive pole. The indifferent electrode was applied to the hand, the intensity being 20 ma., and the duration of application 60 minutes. In one of the authors' cases, after other measures had been tried unavailingly, cure was complete in six weekly sittings; in another, perfect cicatrization took place after four sittings, given at intervals of three or four days. In a third case the cicatrization was followed by a relapse, and the patient lost to view.

PATHOLOGY.

307. Tuberculous Infection of Young Guinea-pigs.

Julius Bartel (*Wien. klin. Woch.*, July 14th, 1910) has investigated the result upon the litter of *post-partum* infection of female guinea-pigs with tuberculosis; 10 adult guinea-pigs, with amongst them 32 young ones, were employed for the experiments. In some of the sucklings infection from the mother occurred. The milk gland of the mother often showed a tuberculous affection, so that the milk obviously formed a method of infection. Moreover, tuberculosis was occasionally found in the intestine of the mother, so that infection might occur through the stools of the mother. The kidneys were always unaffected, but it was not decided with certainty whether bacilli could be secreted in the urine. Infection by the digestive tract was clearly the most common method, though the possibility of infection by the respiratory tract could not be excluded. A manifest tuberculous infection of the young, with disease of the lymphatic glands, seldom occurred. Occasionally tubercle bacilli could be demonstrated in lymph glands which had not undergone manifest tuberculous change. More frequently there were signs of general disturbance of a not specifically tuberculous character, as, for example, marasmus, degeneration of internal organs, swelling of lymphatic tissue, and blood changes, together with a greater sensitiveness to non-tuberculous infective processes. These changes might be due to slight infection with tubercle bacilli or to the action of toxins. The majority of the sucklings developed normally. The significance of such infections, so far as they did not give rise to manifest tuberculous changes, is difficult to estimate from these experiments alone; but comparison with the changes which may occur in the lymphatic tissues and blood of animals during immunization against tuberculous infection leads the author to the conclusion that infection under conditions of the kind here described, if they do not give rise to manifest tuberculosis, may yet result in a changed condition of the organism in the sense of an immunization process not without significance for later infections. Andvord as a result of clinical study arrives at a similar proposition when he gives as one of the three main forms of tuberculosis, "An infection of the glands, as a rule benign, which usually begins in infancy, and by which the majority have already been attacked during the first ten years of life." This infection would correspond, according to Andvord, to a slight milk infection. At the same time, infection may occur by different routes in the case of infants living in rooms inhabited by consumptives, and the author, in conjunction with Spieler, obtained results through "*schmier* infection" of guinea-pigs similar to those here found in sucklings.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

308. Nasal Reflex Neuroses.

OTTO PIFFL (*Wien. med. Klin.*, No. 35) discusses the reflex neuroses of nasal origin. The classification suggested by Jurasz is adopted, in which the neuroses are divided into: (1) Those in which the initial point of the reflex circuit is within the nose, but the end point is in some other part of the body. (2) Those in which initial and end points of the circuit are within the nose. (3) Those in which the initial point is elsewhere, but the end point within the nose. To the first group belong cases of asthma, reflex cough, spasm of the glottis, pharyngeal spasm, etc. A case is described of severe spasm of the glottis, of several hours' duration, which occurred in a predisposed woman as the result of an insignificant intranasal operation. A less well known neurosis belonging to the first group is the unilateral sweating which is seen as the result of nasal obstruction on the corresponding side. Three such cases are described, two of them cases of congenital unilateral nasal obstruction, and one of obstruction due to fracture of the nasal septum. In another case an uncontrollable desire for sleep at all hours of the day resulted from bilateral nasal obstruction, and was considered to be a reflex neurosis, although it admitted of other explanations—as, for example, that the symptom was due to insufficient aëration of the blood, the result of nasal obstruction. Another reflex nasal neurosis is Ménière's group of symptoms—giddiness, vomiting, and defective hearing—in combination with hyperplasia of the nasal mucous membrane and of the inferior turbinal. Three instances of this have come under the author's care during the last two years, and all have been much benefited by removal of obstructing tissue at the posterior end of the turbinal bones. To the second group of cases belong hay fever and nervous coryza. Among the many forms of irritation which may cause an attack of nervous coryza are inspiration of dust, certain odours, optic irritation, as by bright sunlight and change of temperature, especially lowering of temperature. In these cases special reflex points in the nose are seldom found, but the mucous membrane is usually pale, swollen, and almost oedematous. The diagnosis is, as a rule, easy, and when doubtful is at once cleared up if the application of cocaine cuts short the attack. The author gives a warning against the use of adrenalin preparations, which, he finds, may give rise to some of the most severe attacks. The treatment of nervous coryza and allied conditions is above all local. Any abnormalities such as polypi, deviations of the septum, etc., must be dealt with. For the diffuse or local swellings of the nasal mucosa the author recommends painting with 30 to 50 per cent. solutions of argyrol, and in severe cases 5 to 10 per cent. solutions may be employed, or trichloracetic acid. If the inferior turbinal is at fault, cauterization will often diminish the swelling of the mucous membrane and relieve the reflex symptoms. Hydrotherapeutic measures may be usefully combined with the above-described local treatment. With regard to the third group of cases, in which irritation in other organs leads to reflex nasal symptoms, the most important illustration is the occurrence of intranasal changes as a result of abnormalities of the genital organs, the so called genital spots of Fliess. Fliess's results have not gone uncontradicted, but the author's observations with a few exceptions support Fliess's view as to the possibility of influencing dysmenorrhoea through treatment applied to the intranasal genital spots. A case has also come under his notice in which during sleep a full bladder gave rise to reflex nasal obstruction.

309. Aneurysm of the Aorta.

ESHNER (*Amer. Journ. of Med. Sciences*, October, 1910) records his personal observations in two cases of aneurysm of the aorta treated by the introduction of wire and the passage of a galvanic current. Under aseptic precautions a hollow needle of gold, silver, or platinum, insulated except at the tip, is introduced a considerable distance into the most prominent portion of the sac, care being taken to avoid puncturing the opposite side of the vessel wall. Ten or twelve feet of gold or silver wire are then introduced through the needle, and, if necessary, more than one needle may be inserted at the same sitting. With the end of the wire connected to the positive pole of a galvanic battery, and the negative pole placed upon the back, a current, gradually increasing to 60 or 100 milliampères, is passed, and as gradually decreased, the whole sitting lasting from an hour to an hour and a half. The introduction of the needle is usually followed by a spurt of blood, which soon ceases, and pulsation may begin to subside during the introduction of the wire; but this is generally not noticed until the passage of the current, when the patient frequently experiences relief from any pain or dyspnoea. This method is only applicable to sacculated and not to fusiform aneurysms. Improvement in physical signs was noted in both the cases recorded, death taking place four weeks afterwards in one case from exhaustion without a return of other symptoms, and in the other after seven and a quarter months' interval. In both instances the sac was almost entirely filled with organized clot, but in the second case death had resulted from haemorrhage into the pericardium from a point a short distance above the aortic valve, where the vessel wall had become softened and eroded. Wiring with electrolysis has now been carried out in a fair number of cases with satisfactory results in the majority, and it is a simple and safe procedure.

310. Nicotine Poisoning due to Tobacco Chewing.

A. TANDBERG (*Norsk Magazin for Laegevidenskaben*, June, 1910) describes a case of nicotine poisoning of interest on account of the severity and variety of the symptoms, as well as for the fact that tobacco chewing and not smoking was the cause of the trouble. The patient, who was a middle-aged business man, complained of swelling of the feet. This condition, combined with albuminuria, had led to the diagnosis of renal disease, for which he had been treated by various doctors off and on for several years. The writer, however, found no albumen in the urine, which, except for the large amount excreted, was normal in every respect. Other conditions present were: Nausea with loss of appetite, occasional attacks of diarrhoea, pulse 90 and irregular, considerable oedema of his lower limbs and scrotum, weakness of his lower limbs and inability to walk upstairs or to get up from a chair without using his hands, inability to raise himself on his toes, diminished sense of touch, and of pin pricks, together with pain on pressure over certain areas of the lower limbs, patellar reflexes absent, left cremaster reflex also absent, slight oedema of the fingers with diminished sense of touch over the finger tips, weakness of the extensors of the thumb, pupil reflexes, and temperature normal. Multiple neuritis was clearly present, but its origin was doubtful. A history of syphilis was denied. The patient, who was a moderate smoker and beer drinker, was deprived of beer and cigars, and was fed on a light diet, but the condition grew worse. It was then discovered that the patient was in the habit of chewing about 40 grams of tobacco every day. Examination of the eye showed defective perception of red on the nasal side of both visual fields. The patient was at once deprived of his tobacco, and in four days' time the nausea, thirst, and anorexia disappeared, the pulse fell from 92 to 60, and the daily excretion of urine also fell. Except for a brief attack of pain in the heart, simulating angina, two days after the tobacco was cut off, the patient suffered no ill effects from his compulsory abstinence. The oedema disappeared in a week, and beer with a full diet were resumed. In three months' time all the symptoms were gone, only to return again when the patient, in spite of warnings, resumed his tobacco chewing. This relapse was immediately checked when the supply of tobacco was stopped. Although tobacco chewing is a common habit among the working classes in Norway the cases of nicotine poisoning which have been recorded have mostly been attributed to smoking, but it is probable that the dangers of tobacco chewing have been underrated owing to the assumption that smoking is almost the exclusive cause of nicotine poisoning. In the preparation of tobacco for the purpose of chewing, some of the nicotine is lost, and this may account for the apparent immunity of the tobacco chewer. In Sweden, where snuff is frequently chewed, symptoms of a psychic character are frequent, and include hallucinations, insomnia, and depression of body and mind. Both Auld and Jacoby have found

intermittent albuminuria in cases of nicotine poisoning. No doubt the albuminuria is due to irritation of the kidneys by the excreted nicotine; it is never severe, and it quickly disappears when the tobacco supply is stopped or merely reduced.

SURGERY.

311. Graft of Vena Cava on Aorta.

CARREL (*Annals of Surg.*, October, 1910) publishes a report on the results of laboratory experiments on transplantation between the cut ends of the abdominal aorta of a segment of the vena cava. Eight years ago when a successful arterial transplantation of a vein was believed to be impossible, the author proved that with the carotid and jugular vessels arterio-venous anastomoses made with a proper technique remain normal, and that a vein implanted on an artery is rendered capable by thickening of its wall of reacting against the increased blood pressure. By the remote results of these early experiments it was shown conclusively that implanted veins follow the law of adaptation of organ to function and can effectually play the rôle of arteries. The success of this branch of experimental work depends mainly on the care taken in arranging and practising the operative details. To the author is due the merit of having realized at an early stage of his observations that the thrombosis observed by previous experimenters was due not to a biological but merely to a surgical cause, and that, with a proper technique, proper results could be easily obtained. In 1905 the author advocated the surgical application of venous grafting to the treatment of aneurysms and of certain traumatic lesions of arteries in the human subject, but hitherto the information given by his experiments have been tried only twice in surgical practice. In 1906 Goyanes performed with good results incomplete transplantation of the popliteal vein on the popliteal artery after extirpation of an aneurysm; and a case has been subsequently recorded in which Lexer performed under bad conditions and fatal ending, a graft of a segment of saphenous vein after removal of an axillary aneurysm. The author's views on this question, though they have received but little support, are still urged in this paper. On human beings, it is stated, the technique of arterio venous anastomosis is easier than on dogs, and should be successful if carried out properly and with care, and when it is allowed by the anatomical conditions of the artery. At the end of a very full report on the recent experiments on the grafting of the vena cava on the aorta, it is stated that the three animals—two cats and one dog—which underwent this operation were in a normal condition a few hours afterwards, and recovered without any complication. On *post-mortem* examination of the transplanted venous segment after intervals in the three cases of three, ten, and fourteen months, the union between the ends of the aorta and the ends of the intervening portion of vena cava was found to be very intimate. In these, as in other observations on carotid and jugular anastomosis, the venous wall was thickened and sclerosed, and showed no tendency to any development of elastic fibres. In his concluding review the author holds that it is shown by these later experiments that transplantation of the vena cava on the aorta is not a dangerous operation. The reaction of the venous graft against the increased blood pressure causes thickening of its wall. The condition of the venous wall, as is shown in the instance in which an examination was made fourteen months after the operation, shows that for a long time a segment of the vena cava can act in the same way as a part of the abdominal aorta. It is possible, he thinks, that in the treatment of aneurysm, rupture of a large artery, embolism, and localized arteritis, the transplantation of venous segments can be practised with safety, but failing a proper technique the results of the operation would be disastrous.

312. Gunshot Wounds of the Spleen.

AUVRAY (*Bull. et mém. de la Soc. de Chir. de Paris*, No. 30, 1910), in an elaborate report of 3 cases of gunshot wound of the spleen, communicated by Guibé, points out, in the first place, that in civil practice this form of injury is much less frequently met with than contusion and traumatic rupture. Of 126 cases of splenic injury collected by Berger in 1902, 90 dealt with rupture, 18 with gunshot wounds, and 18 with wounds by other agents. In a more recent estimate made by Planson it is stated that contusion and traumatic subcutaneous rupture of the spleen occur in a proportion of from 70 to 85 cases in 100 cases of splenic lesions from all traumatic causes. There is, it is pointed out, a marked distinction in regard to the severity of the lesion and the extent and results of the surgical treatment, between simple rupture and gunshot and other penetrating wounds of the spleen, as the latter lesions are very often complicated by wounds of other abdominal viscera, and also of the diaphragm and the contents of the thoracic cavity. In such cases, when submitted to surgical treatment, the prognosis is often seriously influenced by the unfavourable conditions of a prolonged and extensive operation, and a patient in a state of collapse. In order to follow the course of the projectile, and to explore thoroughly the injured region, it may be found necessary not only to make a free external incision, but also, as the surgeon proceeds, to extend this in different directions. Of Guibé's 3 cases 2 were fatal, one patient dying within twenty-four hours, the other on the fourth day. The statistics of 93 cases of gunshot wound of the spleen treated by surgical intervention show a mortality of 57.8 per cent. Auvray points out that in dealing with a case of supposed gunshot wound of the spleen the surgeon is very often prevented from adhering to any preconceived plan of operation. In cases of rupture, and of wound from stabbing, he can act directly and exclusively on the wounded spleen, but in cases of gunshot injury his course of action will be influenced by the necessity of dealing with injuries of other organs, and of thoroughly exploring both the abdomen and the chest. Whereas in a penetrating wound by a sharp instrument the splenic injury may often be exposed and dealt with by thoracotomy alone, in gunshot wounds, on the other hand, it will be necessary to practise both costal resection and a free laparotomy. In cases of wound of the spleen and also of traumatic rupture, it is, in the opinion of many French surgeons, advisable to save the organ, if possible, and to close the wounds by sutures. It is shown, however, that in cases of gunshot injury, such treatment is seldom practicable, and that splenectomy is usually indicated by the extent and the situation of the lesion. In each of his three cases Guibé removed the spleen. In discussing the several points of interest presented by this report, Auvray alludes to the occurrence of pneumothorax during one of the operations. He is disposed to attach but little importance to this accident, as in his own experience he has observed on several occasions the penetration of air into the pleural cavity during different operations, and failed to meet with any alarming result. Much depends, however, on the condition and functional capacity of the opposite lung. In concluding his report Auvray insists on the necessity, in surgical intervention in gunshot wound of the spleen, of suturing any complicating wound of the diaphragm. The free exposure of the diaphragmatic wound and the technique of closing it, may be found very difficult, but the surgeon should bear in mind that neglect of this procedure will certainly result in hernia.

313. Osteoperiostitis of Cranial Bones.

TRIBOULET (*Arch. méd. des enfants*, October, 1910), commenting upon the difficulty that is experienced in diagnosing tuberculous affections in infants, reports two cases where periostitis developed as symmetrical nodules on the bones of the skull. Both the babies were cachectic with an atrophic appearance, and having hard nodular lesions about the frontal bones. The first child was emaciated and suffered from diarrhoea; it had in addition facial paralysis, ulceration about the ears, and an enlarged liver and spleen. The case suggested syphilis, but an examination of the pus from the head lesions showed well-marked tuberculous infection, while the autopsy revealed a general infection of the viscera. The case was thus one of acute tuberculosis, of which the outward expression was the osteoperiostitis of the cranium. When such bony lesions are present, they are generally found in the frontal or parietal bones, and they are often symmetrical, and tend to develop at the points of ossification. They are sometimes very numerous; a child of 4 years presented no less than twenty-nine nodules disseminated over the frontal and occipital bones. The perforating variety is more common than the infiltrating form; the lesions become persistent sinuses, which may cure spontaneously or be fatal when they are associated with visceral tuberculosis. Cases of the acute type show little granules in the interior of the bones and lying in the red marrow, and are liable to suffer much pain. The author regards this as a special form of tuberculosis of the bones; it is characterized by the appearance of the tender bony nodules, which tend to perforate or to form exostoses. In infants tubercle is usually acute or generalizes so rapidly that the granulations and tubercles become confluent. The diagnosis is apt to be confused with that of syphilis, which much resembles it in its outward manifestations.

OBSTETRICS.

314. Decapsulation of Kidney in Puerperal Eclampsia.

GOBIET (*Zentralbl. f. Gynäk.*, No. 36, 1910), as surgeon to a miners' infirmary, writes on the benefits of Edebohl's operation. He claims it as also suitable for cases of uraemic convulsions independent of pregnancy; indeed, he relates the case of a man, aged 24, with oedema, ascites, hydrothorax, and dyspnoea, due to chronic nephritis. The urine was scanty and highly albuminous. As the patient's condition did not improve after several months' medical treatment, Gobiet anticipated worse complications by practising complete decapsulation of both kidneys. Two months later the patient was discharged in good health. The immediate increase in the secretion of urine was very marked in this case. Gobiet reports in full two 2 cases of puerperal eclampsia treated in the same manner, and dwells on the fact that in one the operation failed entirely. The patient was a 4-para. Vaginal Caesarean section was performed, but the convulsions and partial suppression of urine continued. Decapsulation was practised on both kidneys. Acute haemorrhagic nephritis was detected. Nephrotomy was performed on the right side, and numerous haemorrhagic foci and patches of necrotic tissue were seen on the cut surface of the cortex and pyramids. The kidney thus laid open was drained. The operation was a complete failure; the patient died twenty-six hours after the operation, never rallying from coma, which was already deep before the capsules were stripped off the kidneys; eight convulsions occurred: the secretion of urine was appreciably increased, but the temperature rose to over 105° F., and acute oedema of the lungs developed. The kidneys were examined by Professor Sternberg, of Brünn, who found that the glomeruli and tubuli were throughout badly damaged by acute haemorrhagic inflammation. Albuminuria had been detected during this patient's first pregnancy. In the second case the patient, a miner's wife, was a primipara. At the end of the ninth month, when she seemed to be in apparently perfect health, acute eclampsia and coma set in. Twenty fits occurred within six hours, and the urine drawn off from the bladder contained 10 per cent. of albumen. Vaginal Caesarean section was performed; the child was dead, the placenta abnormally bulky. A fit immediately followed, all symptoms grew worse, so that fifteen hours after delivery bilateral decapsulation was undertaken; a drainage tube and a strip of gauze were passed into each wound. No more fits occurred, and all the bad symptoms rapidly subsided, free excretion of urine following within six hours. On the second day the wounds were dressed; the bandages were soaked with secretion smelling of urine. At the end of three weeks the patient was quite well. Gobiet observes that Edebohls's operation is absolutely needed in these cases of eclampsia with suppression of urine; its benefits are usually immediate, but, as his experience showed, the kidneys may be too far damaged to function even when freed from the pressure of their capsules, and as this high degree of damage cannot always be defined, decapsulation does not always save life.

GYNAECOLOGY.

315. Post-Operative Treatment for Carcinoma of the Uterus.

A PRELIMINARY report upon the value of Roentgen irradiation following the radical operation for carcinoma of the uterus is published by Dachtler (*American Quarterly of Roentgenology*, December, 1909). At the operation the vaginal vault is left wide open for subsequent *x*-ray treatment, and Dachtler's purpose has been to perfect a technique which would allow as nearly direct treatment of the gland-bearing areas as possible. The first essential is the use of standard tubes that can be carefully tested as to the amount of radiation given off under normal conditions of current supply and resistance of tube. He uses a speculum of as great a diameter as possible, and of short length, and, in addition, a tube of small diameter placed close to the speculum helps materially to enlarge the cone of the rays. A couch is used for the patient, who is placed in the knee-chest position, the chest being lowered as much as possible. This position, at first difficult to maintain, soon becomes endurable. The tube is placed behind the thighs of the patient, and a Ferguson speculum, 1½ in. diameter and 3 in. long, is passed through a hole in the centre of a sheet of protecting material, 18 in. square, which is fastened by tapes passed round the patient's body. The tube is then placed in contact with the bell mouth of the speculum, and the difficulty of adjusting the speculum at angles to reach as much of the parametrium as possible is overcome by using a special tube-shield to which a speculum can be attached so firmly as to be adjustable to an angle from the normal direction of the vagina. This shield is so arranged that a leather filter can be inserted between tube and speculum. If treatment is begun soon after operation, the patient is best placed on her back with the knees elevated and supported by a rest. By observing proper antiseptic measures, treatment can be begun in this position on the second day and continued daily while the patient is in hospital. In early treatment it is advisable to use specula of different lengths, and to give both deep and superficial irradiations. This is especially indicated in advanced cases of carcinoma of the cervix, and may help to prevent recurrence in the vesical and rectal walls. Dachtler's experience is that the mucous membrane will stand about twice as large doses of the ray as are ordinarily given to the skin of the face. As recurrence after radical operation is slow, much time must elapse before conclusions can be drawn. One case, however, is cited in which, after vigorous *x*-ray treatment following a severe operation, the state of the patient two years later is most satisfactory. The vaginal vault is closed perfectly, and there are no indurations or infiltrations palpable in the pelvis.

THERAPEUTICS.

316. Radium Treatment of Malignant Growths.

NAHMMACHER (*Wien. med. Klin.*, No. 32, 1910) gives a most favourable account of the radium treatment of malignant new growths. He does not look upon it as in any sense a substitute for radical operations in operable cases, but uses it both after operation in order to prevent recurrence and in inoperable cases; he believes its prophylactic use after operation to be of great value. In the treatment the direct "raying" with radium is combined with radium emanation by means of the injection of radio-active substances in the form of watery solutions or emulsions; the author now always uses radium barium solutions. Intense raying and large doses of the radio-active substances are required for new growths. The treatment is convenient, simple, and by means of the radio-active substances is widely applicable. In spite of the penetrative action of radium its use is not painful, and seldom leaves large scars. Its elective action is most striking, and in one case of carcinoma of the rectum the author has been able to leave 10 to 20 mg. of radium bromide every day for ten to twenty hours a day for as long as five to ten weeks in the rectum without injury to the normal tissues. The author reviews 100 cases which have come under his own observation, excluding other cases which from the beginning were practically hopeless, and others which were too early removed from treatment. Some of the results are very striking; 22 out of 24 cases of cancroid growth and epithelioma were cured, recurrences being in several cases again completely removed; the two cases of failure were too early removed from treatment. Three lapses of mammary carcinoma occurring in the skin were completely removed by intense raying at the first appearance of the nodules. Six scar relapses after removal of carcinomatous uteri were treated with good result, and in 4 of them, in which the growth completely disappeared, no recurrence has again occurred, though in one the treatment was undertaken more than three years ago. Out of 16 patients to whom a four weeks' course of radium treatment has been administered after operation for mammary cancer during the last four years, only one has had a recurrence. A carcinoma of the tongue healed up smoothly, but secondary growths occurred. Not one of 22 cases of inoperable carcinoma of the uterus was definitely cured, although in many of them the growth was brought to a standstill for a long time, and in particular relief was obtained from haemorrhage and discharge. In one case described of inoperable carcinoma of the portio uteri treated for five weeks with radium bromide, the patient died one and a half years later from recurrence on the left ovary, but in the meantime the bleeding and discharge had been completely removed, and the whole uterus at the autopsy was found to be free from the growth, with a smooth scar on the portio uteri. One of the most successful cases is recorded in a note at the end of the article. The case was one of a recurrent growth in the posterior wall of the vagina after a radical operation for carcinoma of the

uterus. The growth was treated locally for two years, and a perforation into the rectum formed. The case was not a hopeful one for radium treatment, but after nine weeks' treatment by radium bromide the perforation had diminished to hairlike fineness, and three weeks later was completely healed; the patient's general condition had also become extraordinarily good. Of 12 cases of rectal carcinoma 6 showed improvement of long duration, others a temporary improvement only, and others no improvement. In one inoperable case the improvement was very striking and the patient was free from symptoms at the time when the article was written, although metastatic growths in the glands had not completely disappeared and treatment was still being continued prophylactically at increasing intervals; the radium treatment was begun in this case in December, 1907. Some of the results were not so good; 6 cases of sarcoma showed a temporary check in growth, 3 were uninfluenced. Only 1 out of 3 cases of carcinoma of the oesophagus were favourably influenced; 2 kidney carcinomata were not influenced. No case of carcinoma of the stomach showed more than temporary improvement.

317. Medical Uses of Rectal Infusions.

SEWALL (*Amer. Journ. of Med. Sciences*, October, 1910) urges the value of proctoclysis in therapeutics, the distinctive features of rectal infusion being that (1) they cause less disturbance than other methods of administering fluid; (2) they have a diuretic effect which is often immediate and intense; (3) the dilution of the circulating toxins and their removal by diuresis protects the kidneys and tends to safeguard sound tissues from intoxication; (4) they appear to ameliorate pains and limit infection in such cases as gonorrhoeal infections; (5) they assist in the maintenance of normal arterial blood pressure; and (6) they may be useful in the administration of some medicines. Murphy's method was adopted, ordinary tap water or normal saline solution being used, of which one or two pints were placed in the bag of a "fountain syringe" so held that the surface of the fluid was about 6 or 8 inches above the anus, and being raised or lowered to regulate the flow at the rate of 2 pints in an hour. The essence of Murphy's method lies in the free communication between the rectum and the reservoir with the hydrostatic balance so slightly in favour of the latter that, while the flow is towards the bowel, a slight excess of rectal pressure is relieved by a reversal of the current into the reservoir. The pressure should be so low as neither to excite peristalsis nor cause perceptible reaction of the sphincter. Instead of continuous proctoclysis, as employed surgically, the absorption of a quart of fluid twice daily usually suffices in medical practice, and striking results followed the use of this method as a means of raising arterial blood pressure, of depleting an effusion by stimulating diuresis, and in reducing toxaemias in the treatment of typhoid, scarlet fever, lobar pneumonia, and delirium tremens. In functional disorders associated with acetonuria, gastric irritability, and depression of renal activity, proctoclysis and the rectal administration of bicarbonate and salicylate of soda have proved valuable.

318. Treatment of Naso-pharyngeal Catarrh.

IGNATZ MOSKOVITZ (*Pest. medizin.-chirurg. Presse*, No. 32, 1910) points out the great importance of effective treatment of naso pharyngeal catarrh. In about two years he has treated the condition by spraying the nose from the throat with a 5 per cent. menthol-paraffin solution in a "Record" spray. The spray is passed behind the soft palate, first on one side, then on the other, and emptied, the patient meanwhile holding his head in the upright position. The head is then bent so that the fluid passes into the nasal cavity of the corresponding side, and flows out from the nostril in a stream or in drops according to the amount of swelling in the naso-pharynx and the resistance in the nostril. By this means the oily solution comes in contact with the whole of the mucous membrane of the nose and throat more completely than when it is injected up one nostril and passes down the other, and, in addition, the danger of its being pressed into the Eustachian tube or the accessory nasal cavities is altogether avoided. The patients experience great relief from the treatment. When the mucous membrane is greatly congested blood may appear in the sputum, which is only expelled with much hawking. The bleeding cannot be the result of mechanical injury by the spray, whose cannula ends in a rounded glass knob, but, in the author's opinion, is caused by the action of the menthol, which increases the hyperaemia to the point of affluxion, and this opinion is supported by the fact that blood no longer appears after the third injection. When the bloody sputum has been expelled the patient feels as if he had got rid of a heavy load, and more striking still is the effect upon the hearing, which becomes more acute, while distressing noises in the ears cease.

PATHOLOGY.

319. The Thyroid Body.

JOUCHTCHENKO (*Arch. des Sciences Biol.*, St. Petersburg, vol. xv, No. 3, 1910) finds that the difference between the relatively mild effect of thyroidectomy on herbivora and the severe consequences of the operation on carnivora cannot be explained entirely by the presence in herbivora of an external pair of parathyroids which remain behind after the operation. When the removal of all the parathyroids is included in the operation, the author still finds that the effects on the rabbit are not always so severe as on the dog. On the other hand, it is an undeniable fact that change of diet (the substitution for a flesh diet of a vegetarian, or, still better, of a milk diet) diminishes the gravity of the symptoms in carnivora. Hence he concludes that the difference between herbivora and carnivora is not due exclusively to the parathyroids, but is associated with radical differences in digestive and nutritive conditions. The functions of the thyroid body are of a highly complex nature, and it is thought that the output of nuclein compounds in the excreta may have a certain dependence on this organ. The administration by the mouth of thyroid preparations can never replace completely the defective functions of the gland; and in administering these preparations it cannot be doubted that there are introduced into the economy toxic substances, such as thyroidin, which exercise a destructive influence on the tissues. Hence it is necessary to be circumspect in administering thyroid preparations even in known disease of the thyroid, and the dangerous consequences of surgical removal in cases of thyroid hypertrophy must also be borne in mind.

320. Pathogenesis of Pellagra.

HUGO RAUBITSCHEK (*Wien. klin. Woch.*, June 30th, 1910) has subjected to a through bacteriological examination specimens of maize flour from different provinces, some of it normal and some unsound, his object being to test the correctness of the different theories—the bacterial, the autotoxic, and the toxic—of the causation of pellagra. All his experiments gave a completely negative result. No micro-organism—as, for example, *Bacillus coli*—acting upon maize flour or corn, appeared, judging from animal experiments, to give rise to toxic products; nor had any extracts of maize flour, whether sound or unsound, any perceptible effect upon ordinary laboratory animals. Cultural examinations of the diarrhoea-like pellagra stools, bacteriological examination of the organs of patients after death, serum precipitation, and complement fixation tests, etc., were all negative. It would thus seem that none of the customary theories of causation meet the facts. For some time a condition called "jagopyrismus" has been recognized to occur amongst white, or partially white, animals fed on buckwheat and at the same time exposed to sunlight; the animals become emaciated, or suffer from paralysis, and die in a short time. The similarity to pellagra becomes more striking when it is remembered that pellagra is especially frequent in summer; that the cutaneous affections occur practically exclusively on parts of the body exposed to the sun, that the active body in buckwheat is soluble in alcohol, and that maize is the richest in fat of all the cereals. The author therefore carried out a series of experiments on white and coloured rabbits, guinea pigs, and mice. The animals were confined in cages, some of them in the dark, others in sunlight, and were differently fed, on mixed diet, on raw or cooked maize, both sound and unsound, and on cooked rice. It was found that the light-coloured animals fed only on maize or rice, and kept in the light, began to lose weight and suffer from paralyses, and died in from eight to twenty-one days. The dark-coloured animals, however, escaped, and the others, if the cage were moved into the dark after the symptoms had begun to show themselves, recovered even without change of diet. The author's theory is that on a preponderatingly maize diet, under the influence of sunlight, a poison is formed from the lipoids (soluble in alcohol) of the maize on the parts of the skin exposed to the sunlight, and this poison acts not only locally on the skin, but also on the organism as a whole. The experiments are of the more interest because of the possible etiological connexion between beri-beri and rice.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

321. Intestinal Glycosuria.

RICHARTZ (*Zentralbl. f. inn. Med.*, March 26th, 1910) publishes a case in which intestinal catarrh appeared to produce glycosuria. Textbooks usually enumerate, in order of importance, the pancreas, liver, circulatory system, nervous system, suprarenal glands, thyroid gland, and kidneys, as concerned in the production of glycosuria. The intestine, though in intimate relation to the pancreas and liver, is not mentioned. Cases have been published in which diabetes and intestinal disease coexisted, but the latter was regarded as a complication or secondary to the diabetic diet. A merchant, aged 60, whose father and brother had died of diabetes, was in 1901 found to have glycosuria. This soon disappeared. Six weeks before Richartz saw him there had been diarrhoea with epigastric pain and 1.2 per cent. of sugar in the urine. His weight, which had previously been constant, was reduced by 5 kilos. The writer found the whole abdomen and especially the epigastric region, tender to deep palpation. There was slight hyperacidity, but the motile functions of the stomach were normal. The gastric contents, when siphoned off, contained mucus. In twenty-four hours 72 oz. of urine were excreted. The urine contained 1.4 per cent. of sugar, but no albumen, acetone, diacetic acid, bilirubin, or urobilin. During the same twenty-four hours eight small, liquid, bright yellow stools, with an acid odour and reaction, occurred. They underwent fermentation on standing, and contained no blood but a quantity of undigested muscular fragments, crystals of fatty acids, and mucus. The man had been treated with opium, and but little attention had been paid to diet. He was now given castor oil and placed on a milk diet, with peptone twice daily. He was also given tannalbin and Elizabeth water. The stools were rapidly reduced in number and lost their penetrating odour. As meat was badly digested a somewhat large amount of starchy food was added to the diet (barley water, sago, mashed potatoes, and German "Zwieback"). The sugar was reduced from 1.7 per cent. on the seventh day of treatment to 0.9 per cent. on the fourteenth. On the latter date half a roast fowl was eaten without the appearance of muscular fibres or fat in the faeces. On the eighteenth day of treatment the urine contained no sugar, although of 1,900 calories represented by the food more than half was provided by carbohydrates. The patient could digest almost any quantity of starch without glycosuria resulting, but after 30 grams of cane sugar eaten fasting a reaction occurred in the urine. This limit of tolerance for sugar remained practically constant. The general condition improved, the stools became formed, and the abdominal pain disappeared. The simultaneous appearance and disappearance of the intestinal trouble and the glycosuria rendered a chance concurrence of the two improbable. There was also a history that the glycosuria present in 1901 was accompanied by diarrhoea. He was at that time treated at Carlsbad, and the sugar disappeared. The urine had subsequently been tested every three months, with negative results. In pancreatic disease glycosuria, diarrhoea, deficient digestion of muscle and fat, and epigastric pain occur. But in this case there were no grounds for suspecting acute haemorrhagic or purulent pancreatitis, chronic indurative processes, or pancreatic lithiasis. In the last-named fatty stools, deficient digestion of meat, and occasionally diarrhoea usually occur only as terminal symptoms, though diabetes is common in the earlier stages. As regards functional neuroses of the pancreas, though fatty stools and undigested muscular tissue are met with, diarrhoea is not a symptom. Thus, pancreatic disease could be excluded. Severe diabetes is not uncommonly accompanied by intestinal symptoms, but the slight and temporary glycosuria present in this case could not have produced such intense intestinal disturbances. The intestinal trouble must have been the primary disease. The large and small intestines were undoubtedly catarrhal, and the process probably extended upwards to the duodenum. Experimental physiology has recently indicated a probable connexion between the small intestine, and especially the duodenum, and the metabolism of sugar. If the duodenum of frogs or dogs is excised glycosuria usually results. Two cases have been reported by Katz, which show the important rôle of the duodenum in man in the production of glycosuria. Two patients drank corrosive fluids—the one concentrated solution of potash, the other nitric acid. The former excreted on the first day 3.6 per cent. of sugar, and continued to excrete traces until death occurred on the tenth day. The second excreted 0.5 per cent. of sugar until his death, thirty-six hours later. In both the pancreas was intact, but the duodenum was extensively cauterized. If caustic potash is injected into the duodenum of dogs or the duodenal mucosa is injured with Paquelin's cautery or nitrate of silver, glycosuria of two or three days' duration results. Pflüger claims that the glycosuria is due to the nervous impulses which reach the pancreas from the duodenal wall along the sympathetic nerves accompanying the blood vessels. This view is confirmed by Herlitzka's experiments. A strong solution of nicotine, which paralyses the sympathetic ganglion cells, was injected into the duodenum. Glycosuria resulted. Possibly the absence of the normal duodenal secretion, which appears to act as a stimulus to pancreatic secretion, is concerned in the production of glycosuria. Moreover, it has recently been asserted that the conversion of sugar into glycogen occurs in the duodenal mucosa. If this is the case pathological processes in the duodenal wall might result in the flooding of the circulation with sugar. Though a relation between the intestine and carbohydrate metabolism is proved, the fact that dogs do not invariably become glycosuric after duodenectomy shows that the relationship is less absolute than in the case of the pancreas. It is of interest that in the writer's case, after disappearance of intestinal symptoms and of spontaneous glycosuria, the limit of tolerance for pure sugar remained permanently subnormal. It seems that the part played by the duodenum is normally capable of performance by other organs, and only if the functions of the latter are defective does glycosuria result.

322. Infantile Scurvy.

COMBY (*Arch. méd. des enfants*, October, 1910) has treated 15 cases of scurvy in infants; only one of these had been breast-fed, and he became scorbutic at the age of 3½ years, after being fed for a long period on cereals and boiled milk. Sterilized milk was responsible for the greater number of the cases, the worst form of such milk being "humanized milk," which alone caused 6 cases. The disease is not met with in children fed partly on the breast and partly on milk. Scurvy is prevented, even when no other milk is used, by giving fruit juice, purées, and crusts. Out of the 15 cases, 11 were boys and 4 girls; the author considers this purely coincidence. The ages ranged from 7 months to 3½ years, but 11 cases were under 1 year. Several of the cases had large haematomata, some were cachectic, and others had purpura, anaemia, and oedema. Recovery took place rapidly in a week for the slight cases, in two weeks when the child was more seriously affected.

323. Ocular Gout.

E. KRUCKMANN (*Wien. med. Klin.*, No. 38, 1910) discusses the more important forms of ocular gout, and describes a series of cases which go to show that all the clinical signs which characterize typical attacks of gout elsewhere may be present in ocular gout, and that an ocular attack may be the first sign of gout. In the first case described the patient was a strong man, aged 40 years, who had been suddenly attacked in the night by severe pain in the right eye. When seen next day the pain was decidedly better, but the eyelid was greatly swollen, and there was much photophobia and running of the eye. The iris showed moderate hyperaemia and swelling. The eyelids and the eyeball were intensely sensitive to pressure. On the fifth day, when the patient reappeared, he gave a history of a fresh recurrence of pain each night, which always improved during the day. The condition of the eye was already improved, and after another week all the symptoms had disappeared. No history of gout was at that time obtainable, but three months later the patient had a typical attack of gout in the great toe, accompanied by eye symptoms similar to those of the earlier attack, and the diagnosis of ocular gout was therefore fully established. In one of the six cases described the output of uric acid and its salts was not typical of gout, but the clinical picture was characteristic, and the author is inclined to class it with "chalk gout." In all the six cases there was

the sudden onset of the pain in the night with remissions during the day; great swelling of the conjunctiva, which might go on to chemosis; marked hyperaemia of the deeper vessels of the eye, and extreme tenderness of the lids. In some of them there was a marked disproportion between insignificant intraocular changes and severe external symptoms. In all, in spite of severity of attack and threatening appearance, there was complete recovery, and permanent functional injury is seldom seen. In three out of the six cases described the ocular attack was the first sign of gout. The diagnosis is of importance because of the connexion of glaucoma with gout, but in none of the author's cases was any sign of glaucoma left by the attack, in spite of some temporary increase of tension within the eye, which was, however, difficult to demonstrate because of the extreme tenderness.

SURGERY.

324. Resection of Colon for Hirschsprung's Disease.

SCHOU (*Ugeskrift for Laeger*, No. 15, 1910) describes a case of this disease, also known as "idiopathic dilatation of the colon." The patient, a boy of 14, had suffered from constipation since infancy, and had been under treatment on and off from the age of 4 months. He always had to use both laxatives and enemas, but in spite of these he has had difficulty in getting faeces and flatus to pass, and has had to assume all kinds of different positions, even to standing on his head, on purpose to accomplish the passing of flatus. During the four days previous to admission to hospital neither faeces nor flatus had passed, and as the water of the enemas had not returned and he had begun to vomit, the friends did not dare to repeat them. The patient was in a very emaciated condition, and numerous enlarged glands were found in axillae and groins. The greatest abdominal circumference was 106 cm., and the abdomen was so tense that nothing could be felt through it. As the patient was much collapsed, strong stimulants had to be used while enemas were given, and an evacuation was only effected after the rectal tube had been passed about 20 cm. into the bowel. As it was evident that some kind of valve arrangement prevented the contents of the bowel from passing, laparotomy was done eight weeks after admission, when the patient's condition had improved sufficiently. An enormously dilated colon was found, and, on following the sigmoid downwards into the pelvis, a sharp bend was seen at the junction of the S.-romanum and the rectum, the dilated flexure being pressed down to the right of the rectum, thus causing a valve to form between the dilated and the normal part of the bowel. The operator decided to perform a colopexy—fixation of the sigmoid to the wall of the abdomen—in the first instance, and the lower part of the flexure was pulled up tightly so as to obliterate the bend between it and the rectum, and afterwards fixed with silk suture, passing through the peritoneum and the transverse fascia. By this operation the patient was able for a time to dispense with the rectal tube, although he had to continue the use of aperients, and occasionally enemas. After four months he had to be readmitted as the previous symptoms had returned, believed to be caused by some new valve formation near the previous one, as by passing the rectal tube it was easy to evacuate the bowel. Two months later a second laparotomy was done. The dilated bowel was pulled out and found to be enormous, being of the thickness of a powerful man's thigh. It was now seen that the dilatation involved not only the sigmoid, but also the whole of the descending colon and part of the transverse. After consecutive ligaturing of the mesentery, a piece of bowel 90 cm in length was brought forward and the oral and anal part sewn together in preparation for a later application of the clamp. The united piece was replaced, and the abdominal cavity closed by suturing the periphery of the exposed piece of bowel to the parietal peritoneum; two days later the whole exposed part was cut off. As is usual after such operations—due to the diminished surface for absorption—the patient wasted very much, and he was therefore left alone to regain strength, and not until three months after the preliminary operation was Mikulicz's clamp put on the spur. As the latter repeatedly reformed, the clamp had to be replaced four times before a satisfactory communication between the oral and anal part was established. Four months later the artificial anus was closed, and the wound healed by first intention. The patient was at first given laxatives on purpose to make the faeces liquid when they passed the sutured place in the bowel, but gradually these were omitted, and he has since—for about a month later—had a daily spontaneous evacuation, and feels well. The author discusses the various operations performed for this condition, and mentions that Schmidt, in *Beiträge zur klinische Chirurgie*, Bd. 61, has collected 72 cases treated by operation. Among these were 18 entero-anastomoses, with the following results: Cured, 6; improved, 3; no change, 2; died, 7. The results of the resections were: Cured, 13; no change, 1; died, 7.

325. Chloroform Narcosis in Children.

BRUN (*Gazz. degli Osped.*, October 2nd, 1910) gives the results of his experience in various kinds of chloroform anaesthesia in children. The types discussed are (1) simple chloroform, (2) ethyl chloride followed by chloroform, (3) atropin and morphine+chloroform, (4) atropin, morphine, ethyl chloride, and chloroform. Of the four methods he is strongly in favour of the last. By giving injections of atropin and morphine, administering ethyl chloride, and then chloroform, anaesthesia is more quietly and more quickly induced, and the amount of chloroform required is much less, and therefore the risk of chloroform poisoning lessened. In fourteen patients, varying from 4 to 14 years old, the amount of chloroform needed by this last method worked out at six minims for every minute of anaesthesia. Moreover, the mixture of anaesthetics, so far from adding a fresh set of dangers, diminishes the chief danger. The dose of the atropin-morphine solution varied from ½ to 1 c.cm., according to age, and the solution consisted of 1 mg. neutral sulphate of atropin, 1 cg. morph. hydrochlor. in 1 gram distilled water. The injection was given fifteen to twenty minutes before operation. A series of examinations of the blood after simple chloroform anaesthesia and after the mixed anaesthesia showed that the changes were much greater in the former than in the latter case. As a preventive of post-chloroform thirst the author strongly recommends enemata of 10 per cent. sodium bicarbonate solution. A good preparation of chloroform is strongly advisable. The author gives on an open mask, in slowly regulated drops, and with free admixture of air.

326. Bismuth Paste in General and Nasal Surgery.

ARANOW (*Amer. Journ. of Surg.*, October, 1910) states that he has obtained excellent results from the use of bismuth paste in the treatment of chronic sinuses. This easy and safe method, he points out, is not intended to do away with operative treatment, but will almost always ensure, especially in cases of articular and osseous tuberculosis, a cure after a thorough surgical operation. In the surgical use of bismuth, advocated by the author, sinuses and suppurating cavities are injected with a substance which becomes solid at the temperature of the body, and during its slow process of absorption provides a sort of trellis-work into which healthy granulations can burrow. Bismuth, as has been proved by both laboratory and clinical observations, has a marked bactericidal action, and, moreover, stimulates exudation of polynuclear leucocytes into the tissues to which it is applied. The simplest and most frequently used form of paste is a combination of 33 parts of bismuth with 67 parts of white vaseline. As bismuth, when injected in large quantities, might cause nitrite poisoning, some care should be taken to avoid any undue excess, especially with children or old people, and also in injections about the anus and rectum, which, it has been found, are more dangerous in this region than in other parts of the body. As a rule, 100 grains of bismuth may be used in one injection with safety. The use of bismuth injections for the cure of persistent fistulae is indicated, the author holds, in all cases in which the original cause has been removed and the natural process of healing has been retarded. This treatment is not applicable to biliary or pancreatic fistulae, or to cavities near the brain or other vital organs. Sequestra will usually prevent healing. No benefit is to be expected from this remedy in the treatment of acute processes. This article is preceded by one in which Beck of Chicago, who has had much experience of the use of bismuth paste in general surgery, recommends it strongly in cases of chronic suppuration in the accessory nasal sinuses. Full details are given of the technique of injecting the paste into the antrum of Highmore, the ethmoidal cells, and the frontal sinus, with the object in each case of obliterating the diseased cavity. By virtue of its semisolid consistency the paste acts as a supporting framework, so that granulations may more easily pervade and occupy the whole cavity. Any stiff-walled channel or cavity of moderate dimensions will, it is held, become obliterated by the large and healthy granulations which are produced by the local action of bismuth.

OBSTETRICS.

327. Deaths in Childbirth.

FREDERICK S. CRUM (*Med. Record*, September 17th, 1910) gives statistics of the number of deaths per 1,000 of mothers in childbirth which vary much in percentage. Those of the Lying-in Hospital of New York indicate a ratio of 4.4 per 1,000. In Boston the ratio is 16.9 per 1,000. This difference is supposed to be due to the number of complicated cases received in the Boston hospital. The most reliable statistics come from Australia, where they have been compiled for a period of thirteen years, 1893-1905. According to these tables, the risk for the mother after the first confinement, where it is the greatest, lessens for each confinement up to the eighth. Another factor of importance is the age of the mother; deaths increase with advancing age, being 4.4 for mothers of 20 years, and 13.2 for those from 40 to 45 years. From five to ten confinements out of 1,000 is probably the average of fatalities the world over.

328. Intestine drawn through Perforation in Uterus after Abortion.

EVERKE (*Monats. f. Geb. u. Gynäk.*, July, 1910) exhibited, at a meeting of a medical society, a segment of intestine which had been dragged down into the vagina by an apparently qualified obstetrician when engaged in emptying the uterus after an abortion. The patient was sent to Everke at once, and he performed an abdominal section, as peritonitis had set in. A perforation was discovered in the posterior wall of the uterus through which the loop of bowel (large intestine) had been drawn down to the extent of nearly 8 in. The serous coat was uninjured in the middle of the loop, but had been stripped off at the sides. About 4 in. of the prolapsed bowel were resected, the ends of the divided intestine closed, and entero-anastomosis practised. This proved very difficult owing to the position and fixation of the lower part of the large intestine and the length of the segment incised. A tampon was inserted into the uterus, the laceration closed, and a Mikulicz drain applied. The patient died of peritonitis on the second day. Everke believed that it would have been better had he made an artificial anus. Schnell, of Elberfeld, in discussion, observed that this terrible accident would never occur if the obstetrician relied on his finger, which can be worked intelligently for emptying the uterus after abortion. Practitioners, he declared, were far too ready to have recourse to the curette and ovum forceps.

GYNAECOLOGY.

329. Perforation of Uterus with a Sound.

J. BASTIAN (*Rev. méd. de la Suisse rom.*, September 20th, 1910) was consulted by a woman, aged 32, with the following history: She was confined in September, 1907, and nursed her baby. About the end of November she felt ill. There were vague abdominal pains, with a feeling of weight and amenorrhoea. She consulted a midwife, who examined her with a speculum and other instruments, one of which caused intense pain. These manipulations were followed by the discharge of a few drops of blood. In January, 1908, the writer was called in consultation. The patient had been in bed a fortnight, and had become emaciated. The temperature was 101.8° F., and there was violent pain in the left iliac fossa, with occasional vomiting. There was slight tympanites, and the left iliac fossa was tender. Per vaginam there was extreme tenderness of the anterior and left lateral cul-de-sac, but no fluctuation was felt. There was evidently pelvic peritonitis, which was assumed to be secondary to trouble in the left uterine appendages. Fifteen days later there was a copious discharge of pus per anum. The temperature at once became normal. The writer believed that complete recovery had occurred, but in February, 1910, he learnt that the pain had recurred with nausea and occasional vomiting. On February 20th, 1910, he saw her. There was constant pain on the left side, and also to a less extent on the right. There was no abdominal rigidity. Bimanually the uterus and right appendages appeared normal, but on the left side, near the inguinal canal, a mass was felt adherent to the intestines. Kinking of the intestine by adhesion to a tumour of the appendages was diagnosed. On February 22nd laparotomy was performed by Pfannenstiel's transverse incision. The skin and subcutaneous cellular tissue were normal, but the aponeurosis and muscular layers were streaked with whitish lines and adherent, evidently as the result of former inflammation. On incision of the peritoneum a loop of intestine was seen to be adherent near the left external inguinal ring, where it was bent so sharply as to resemble a hernia. After separation of the adhesions a circular perforation of the size of a sixpenny piece was found. The coil was isolated with sterile compresses. Both the uterus and appendages were normal, but at the external third of the round ligament, close to its exit from the inguinal canal and exactly at the spot to which the intestine had been adherent, was a black cylindrical body. On investigation it was found to extend from one round ligament to the other between the anterior surface of the uterus and the bladder and beneath the peritoneum. The body was seized with forceps and extracted. It proved to be a No. 8 (French) rigid rubber sound, 25 cm. (10 in.) in length and of a blackish colour. It was of a fetid odour and exuded pus on pressure. Before removal its left end entered the intestine through the perforation already described. After resection of 6 cm. (2⅜ in.) of the damaged gut, the track of the sound was disinfected with oxygenated water, the peritoneum was sutured over it with catgut, and the abdominal wound was closed. Recovery followed. The writer believes that the rigid sound became obstructed by the internal os and, on pressure, perforated the left wall of the uterus subperitoneally. By the movements of the body the sound gradually escaped further and further until it gained the position in which it was found. On the left side the pointed end irritated the peritoneum of the broad ligament and set up reactive inflammation with adhesions to the intestine, which it finally perforated.

THERAPEUTICS.

330. Dialysed Milk.

H. LEHNDORFF AND E. ZAK (*Wien. med. Woch.*, No. 33, 1910) have invented a method of abstracting sugar from milk by dialysis through a parchment membrane. The part played by carbohydrates, and especially by milk sugar, in furthering fermentable processes in the intestinal canal of infants gives practical value to any method such as this one which claims to abstract sugar and salts without otherwise injuring the nutritive value of the milk. The method employed is to run some of the milk into a parchment bag and suspend it in water, as much as 10 litres of water being used for ½ litre of milk. The water is changed every hour in order to hasten dialysis. For the same purpose, and also because such a temperature is the one best suited for Budde's method of sterilization of milk, the temperature of the water is kept at 50° to 55° C. (112° to 131° F.). Perhydrol is added to the milk in quantities of 0.1 c.cm. of perhydrol to 500 c.cm. of milk, in order to prevent decomposition, and the process may be repeated at the end of two hours. Dialysis is continued for from four to five hours, by which time the amount of sugar has been reduced to about one-half, a reduction great enough, as a rule, for dietetic purposes. If it is wished to obtain an absolutely sugar-free milk suitable for diabetic patients, the remainder of the sugar may be fermented by kefir or yoghurt. The dialysed milk, as produced by the authors, has very little of the odour of milk, and in taste is more like distilled water than milk. The volume of milk is increased by about one-sixth to one-fifth of the original amount. The milk coagulates on heating to 80° C. (176° F.), but the addition of a minimum quantity of sodium carbonate does away with this peculiarity. Dialysis reduces the quantity of salts in the milk, and therefore salts must be added. One saccharine tablet to 100 c.cm. of milk is needed for sweetening. The proteid and fat of the milk are unchanged by dialysis. The time is too short to enable a final opinion as to the value of the dialysed milk to be given. Its use is indicated for dyspepsia of infants and abnormal fermentative processes, for the exudative diathesis in older children, and in many forms of nephritis with oedema, etc. One of the author's cases, a baby aged 1½ months, suffering from dyspeptic symptoms, improved in general condition and in weight under the adminstration of dialysed milk, symptoms of intestinal fermentation disappeared, the stools became less frequent, firmer, and more soapy in appearance. In another case, in which for purposes of experiment 4 per cent. of milk sugar were added to the dialysed milk, the weight of the baby ceased to increase, the stools became fluid and frothy,

and vomiting set in; all these unfavourable signs disappeared when the milk sugar was withdrawn.

331. Instrumental Artificial Respiration.

As a result of previous experiments with resuscitation methods in animals, Läwen and Sievers (*Muench. med. Woch.*, No. 43, 1910) found an opportunity for employing a respiration apparatus in a human case, and analyse the results obtained. The case was one of a chronic parenchymatous nephritis and acromegaly, depending on hydrocephalus. A cerebral apoplexy occurred. The patient when the attack began ceased to breathe. Artificial breathing was resorted to at 8 a.m. and at 9 inferior tracheotomy was performed, the colour having remained good. At 9.11 Trendelenburg's tampon cannula was introduced, and instrumental artificial respiration was started. Some cyanosis had developed when the patient was brought into the operation theatre, consciousness was completely obliterated, and the pupils were dilated *ad maximum*. The colour improved at once. Measurements of blood pressure, a pulse tracing, and pulse counts were taken, as well as a respiratory curve. Spontaneous respiration did not return, although the heart kept on beating for upwards of nine hours. The cessation of respiration had followed from an excessive increase of intracranial pressure. At 9.50 a bone flap in the temporal region was prepared, and at 10.11 the flap was reflected. The cerebral fluid escaped under a pressure of 40 cm. From time to time, after some fluid had been run off, the pressure was again measured. Pulsation was seen at 11.53. The pulse varied in beat during the afternoon, but at 3.30 it was good (120) and regular. Death ensued at 6.22. It thus appears that in spite of the fact that the brain was nourished for nine hours, and the artificial respiration kept the heart going for this period, no influence was exercised by the brain on the heart for the whole of this time. This supplies a confirmation of Bock and Hering's experiments on animals and teaches that it is true both for animals and for man that a heart can be kept going independently of the brain centres. The case further gives some valuable evidence of the effect of oxygen and certain drugs on the circulation, when freed from central influence. Oxygen undoubtedly increased the blood pressure. That the action was purely local on the cardiac nerves or muscles was shown that toward the end, when the brain was certainly dead, the pressure rose from 40 to 95, on changing air to oxygen in the apparatus. An injection of 0.5 mg. of adrenalin in a concentration of 1 in 1,000 also increased the blood pressure very markedly. Pulsations of peripheral vessels were seen and the edges of the operation wound began to bleed. Here, again, there is no doubt that the action was a direct one on the heart. Digalen also raised the blood pressure five and a half hours after the beginning of the artificial respiration. The authors describe the apparatus in some detail and explain its uses. They consider that it will be found to be of greatest use in Trendelenburg's operation for pulmonary embolus. In claiming that artificial respiration should still have a place in the surgery of the lung they point out that their case proves that no damage results to the circulation. In an operation it will not be required for nine hours, as in their case, but even during the whole of this time they had been able to maintain the blood pressure at a good height, partly by oxygen and partly by other medicamentous means.

332. The Pharmacology of Ergot

WOOD AND HOFER (*Arch. of Int. Med.*, October 15th, 1910), when investigating the quality of ergot on the market, found that retail preparations are almost invariably below the standard, and that those which contain no alcohol or inorganic solvent cannot thoroughly represent the drug. Provided that an active specimen of crude drug is used a freshly made fluid extract will be potent, but both the crude drug and the fluid extract deteriorate rapidly, especially when exposed to the air, and therefore it is advisable that all preparations should bear the date of manufacture, or at least the date beyond which they will not be reliable, and they should be preserved in small bottles hermetically sealed. Even under the most favourable conditions of protection from contact with the air a fluid extract of ergot deteriorates approximately 10 per cent. per month. The drug stimulates all involuntary muscle, and the increased uterine contractions and vasomotor effects are part of this general action, which in the blood vessels occurs after the vasomotor centre has been destroyed, thus pointing to a direct action on some portion of the peripheral vasomotor mechanism. The degree of elevation of blood pressure is an accurate criterion of the activity of ergot and is the most reliable method for its biological assay. The active principle (sphacelotoxin) is an alkaloidal substance (hydro-ergotinin) chemically united with a resinous body. The percentage of sphacelotoxin in a fluid extract may be ascertained by precipitating with water and extracting with benzol, and this percentage varies accurately with the physiological activity of different specimens. Of four preparations of ergot obtained from reputable retailers the most active gave an average sustained rise of only 18 mm., while the other three gave respectively 10, 11, and 5 mm., so that it is obvious that the fluid extract as ordinarily dispensed is nearly inert. This lack of activity of commercial samples may be due to original inertness, changes in the crude drug, improper methods of extraction, or changes after manufacture. Spanish ergot was found to be more active than German, and the best method of keeping crude ergot is to dry it at low temperatures, and then protect it hermetically from atmospheric influences. The fluid extract proved to be fully as unstable as the crude drug, the loss of potency in one case being as high as 5.5 per cent. per week, and in every instance the preparation had invariably lost 50 per cent. of its active principle in five months, while in those hermetically sealed the diminution in sphacelotoxin content ranged from 0.2 per cent. to 1.1 per cent. per week, amounting to nearly 50 per cent. per yearly average.

PATHOLOGY.

333. Oriental Boil.

NICOLLE AND MANCEAUX (*Ann. de l'Inst. Pasteur*, September, 1910) have studied this disease at the Pasteur Institute in Tunis. The particular variety of boil (clou de Gafsa) which they investigated presented no differences from oriental boil as it occurs in other localities (Delhi boil, etc.), neither as regards the lesions produced nor as regards the pathogenic agent, *Leishmania tropica*. In their laboratory the authors obtained cultures of this protozoon with the greatest ease, using the same medium as the one employed for cultivating the protozoon of kala-azar. The cultures grow rapidly at 22° C., and live at this temperature for two months, but not for longer. Subculture is easy, and may be continued indefinitely; it is best made from the tenth to the fifteenth day. When examined in culture, *L. tropica* appears identical with *L. infantum* of the infantile variety of kala-azar, except that the former grows more quickly and appears more vigorous. They find that the human virus of oriental boil is pathogenic for monkeys or for the dog, and that it can be kept up by animal passage. With primary cultures of human origin they have obtained similar results (typical boils) on man and on the monkey, and they find that cultures of canine origin are infective for dogs. They also arrive at the more general conclusion that in these three species of animals both the original virus and the culture, from whatever source they may be derived, produce identical results. After an incubation period, which varies from 16 to 166 days, but is generally long and is always void of symptoms, the characteristic lesions make their appearance. In experimenting with the virus it is necessary, in order to obtain uniformly successful results, to withdraw material from boils in a very early stage of development. The virus is inactive towards the goat, the cat, the sheep, the white rat, the horse, and the ass. In susceptible animals the site of inoculation is important. Intraperitoneal inoculations are devoid of virulence. With the monkey and the dog the nose is the best place to inoculate, and in the monkey the eyelid is also a good site. When healing is completely established after a successful primary inoculation, immunity is produced; but if a second inoculation is made before this period the animal is found to be hypersensitive, and the period of incubation is shortened. Intraperitoneal inoculation, on the other hand, even with very large doses, confers no immunity. With regard to the relationship between kala-azar and oriental boil, the authors state that in the dog infection with kala-azar, whether healed or at its height, vaccinates against oriental boil. In the monkey a primary infection with oriental boil confers some degree of resistance, but not complete immunity, against kala-azar. Before definite conclusions can be drawn as to the relationship of the two diseases further investigations need to be made into their resemblances and differences, and the sources from which the infection is spread.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

334. Latent Leukaemia.

NAEGELI (*Corr.-Bl. f. schweizer Aerzte*, January 20th, 1910) reports a case illustrating the occasional difficulty of diagnosis in acute leukaemia without palpable enlargement of the spleen or lymphatic glands. A man, aged 40, had daily rises of temperature, to 102° F. or more, followed by profuse sweating. The diazo-reaction was present in the urine and there were progressive cachexia and emaciation. As pronounced neutrophile leucocytosis—about 20,000—was found an infection or suppuration was suspected, but nothing was found to account for the symptoms. Six months after the onset of fever a physician diagnosed hepatic abscess. Laparotomy was performed. The liver was normal but the retroperitoneal glands were extensively enlarged. This in conjunction with the general symptoms caused malignant granuloma of the lymphatic glands (Virchow's lymphosarcoma) to be diagnosed. After the operation the cachexia progressed and death appeared imminent. Though the specific organism is unknown, malignant granuloma is undoubtedly an infective disease. Ehrlich's arsacetin (acetyl-atoxyl) has proved useful in various parasitic diseases. The writer therefore gave it in doses of 0.05 gram (about ¾ grain) four times daily. The result was remarkable. In two days the temperature became definitely normal, and recovery rapidly followed. The leucocytosis disappeared, and 30 lb. were gained in two and a half months. Four and a half months after his temperature became normal the man had gained another 6 lb. and felt better than he had ever done. In one class of latent leukaemia the symptoms may be those of the haemorrhagic diathesis. Such cases are usually accompanied by high pyrexia, and are easily mistaken for purpura haemorrhagica, purpura fulminans, or scurvy. The difficulties of diagnosis are increased by the frequent absence of splenic and lymphatic enlargement, and by the slight increase in the leucocytes. A diagnosis is possible only after a differential blood count. The majority of the leucocytes are pathological; the large lymphocytes predominate, or the small lymphocytes may form as many as 90 per cent. or more of the total number. In the acute myeloid form numerous myelocytes and myeloblasts are present. In cases of chronic lymphatic leukaemia with 20,000 to 30,000 leucocytes, 75 to 80 per cent. of which may be lymphocytes, there may be no splenic or lymphatic enlargement. It is important to know that in these cases an early symptom may be local haemorrhage, for example, from the kidneys owing to lymphatic infiltration of the renal pelvis. In a second class of latent leukaemia the most prominent symptom is gangrenous ulceration of the buccal cavity with or without haemorrhage into the skin or elsewhere. In the absence of a blood count, gangrenous stomatitis or tonsillar ulceration, with or without patches of gangrene or diphtheritic membrane, is almost certainly attributed to necrotic angina or other septic condition, including septic diphtheria. The cervical lymphatic glands are only slightly swollen and there may be no or only inconsiderable enlargement of the spleen and lymphatic glands in other parts. The leucocytes are frequently not greatly increased in numbers, but the varieties are abnormal, so that a diagnosis is possible from a differential blood count. In a third class of latent leukaemia the most prominent symptom is anaemia with progressive cachexia. Haemorrhage occurs, if at all, only a short time before a fatal termination. Moderate splenic enlargement is common. The blood count is usually typical of the lymphatic form of leukaemia but may occasionally be characteristic of the myeloid variety. In the latter case abnormal forms of every variety of myelocytes, myeloblasts, numerous nucleated red blood corpuscles, and pathological mitoses of erythroblasts indicate a profound disturbance both of leucopoiesis and erythropoiesis. In a fourth class localized enlargement of the lymphatic glands, such as the cervical or mediastinal, or splenic, without lymphatic enlargement, occurs. In some of these cases the blood count in the early stages is normal, but later becomes typical of leukaemia. At first there may even be leucopenia, and a diagnosis is then impossible. The writer regards these cases as examples of the transition of pseudo-leukaemia into true leukaemia. It is important to remember that the only sign of leukaemia may be enlargement of the tonsils. Tonsillotomy may then prove fatal from haemorrhage. In the pyrexial stage of acute leukaemia typhoid fever or septicaemia have repeatedly been diagnosed. In two cases which came under the writer's observation with splenic enlargement the patients had been treated for gastric carcinoma, and in many others the presence of cachexia had suggested tuberculosis. In two cases infarction of the spleen was mistaken for acute peritonitis.

335. Insufficientia Pylori.

MARK I. KNAPP (*New York Med. Record*, November 12th, 1910) says that the distinct layers of the coats of the stomach have distinct functions, and the chemical function is performed solely by the mucous layer, while the mechanical or dynamic functions are carried on by the muscular layer. It is the muscular layer that closes the pylorus, and that grinds up the food into fluid chyme. A finely divided chyme means a stronger muscular action than a coarse one. The quantity remaining within the stomach one hour after a test breakfast depends on the motility of the stomach. A small quantity of chyme depends on an increased peristalsis and vice versa. When repeated spastic contractions have weakened the pylorus we get relaxation and insufficiency. All stages may be seen between spastic contraction and relaxation, and the transition may last for years. A spongy, coarse chyme means beginning insufficiency. The author discards the idea of achylia gastrica as incompatible with insufficiency of the pylorus. Insufficiency is the natural sequence of a previous pyloritis, and this is one of the causes of many indefinite conditions of indigestion that are seen. The dignosis of insufficientia pylori is easily made when one hour after a test meal aspiration removes no contents or a few centimetres of coarse food remnants. We must now find out the degree of relaxation and whether there is any glandular activity left. Test meals are given on successive days fifteen minutes earlier, until it is ascertained whether food remains in the stomach at all, or at once gravitates into the intestine. The patient is placed on his left side after the meal, and it is ascertained whether food will then be aspirated from the stomach. If food is then found insufficiency is great. By inflation of the stomach with gas in insufficiency, the stomach will not be distended by the gas, because it escapes into the intestine. The causes of pyloritis and insufficiency are organacidia gastrica, chronic alcoholism, and deficiency of teeth. Symptoms are caused by chemical or physical phenomena, by irritation of produced gases, or pressure, and stretching. They include pain, overproduction of gases, fullness, stretching, faintness, pain in the heart, diarrhoea, etc. Diarrhoea is due to the formation of organic acids in the bowels, which also cause tenesmus and pain in the sacral region. The prognosis is favourable. Treatment consists of alkalis soon after meals in severe cases, facilitating intestinal digestion when stomach digestion cannot be obtained. When we have gas distension atropine should be pushed to its physiological effect. When there is insufficiency and no gas strychnine in large doses is valuable. All foods that cause irritation by harshness, fermentation, or acidity must be forbidden.

336. Pyloric Spasm in Infants.

DUFOUR (*Bull. Soc. de la Péd.*, April, 1910) reports the case of a breast-fed infant, which vomited a few minutes after each feed and had wasted rapidly. The child had begun to vomit in the second month, it was constipated, the bowels only acting every third day, but the passage of charcoal with the stools showed that the pylorus was permeable. Five minutes after the meal typical peristaltic waves appeared; this sign, which some observers regard as consistent with stenosis only, is not really diagnostic, since it is present where spasm exists. Gastro-spasm is better nomenclature for this condition: soon after ingestion of milk the stomach itself contracts violently in an effort to empty the cavity, the pylorus remaining firmly closed. The treatment must aim at reducing the gastric spasm by lessening the reflex excitability, and at assisting the gastric digestion by modifying or preparing the nourishment supplied. In this case bromide was administered: the child was given feeds at an hour's interval, when it was made to take much less than usual—a small dose of pepsin was given at the time of the feeds. The result was

excellent. Comby reports a case in which, all other measures failing, a change of wet nurse was tried, the sickness ceased at once, and the child began to gain.

SURGERY.

337. Gall Stone Surgery.

HANS KEHR writes a brief account of the experience which he has collected during the past twenty years in the surgical treatment of gall stones (*Muench. med. Woch.*, September 20th, 1910). During the course of some years he has applied himself exclusively to abdominal surgery, and claims that on this account his methods and results have improved. His first operation case dates back to 1890. In this case he performed an operation which he would not recommend to-day, in spite of the excellent results which followed. He opened the gall bladder, incised the pylorus, dilated it by Loreta's method, and sutured it by the method described by Heinecke-Mikulicz. Since then he realized that mere opening of the gall bladder does not reveal to the surgeon the exact condition of the mucus lining of the organ. Stones may be left behind, folded up in the neck of the bladder, or the inflamed mucous membrane does not recover, and fresh stones, or even carcinoma, may develop. Since 1894, therefore, he performed cystectomy as the normal operation, and soon found that many advantages attended this procedure. He then learnt that many patients had stones in the common bile duct without ever having had an attack of jaundice. It is necessary to examine with minute care the whole biliary system, including the common and hepatic ducts, pancreas, and surrounding area, and for this he found that a comparatively large incision is essential. Starting at the xiphoid cartilage, he runs his incision downwards in the middle line, and then takes it obliquely downwards across the right rectus abdominis. In this way plenty of space is obtained, and some of the difficulties of gall bladder operations are removed. In the next place he has learnt that it is wiser to give up suturing the ducts. Drainage with a T-shaped tube yields excellent results. Turning to his results, he gives three tables. In the first he analyses his 1,600 cases; 307 conservative operations gave a mortality of 2.2 per cent., 384 cystectomies yielded 3.3 per cent. of mortality, 389 choledochotomies, or draining of the hepatic duct, gave 3.3 per cent. of mortality. Of his 288 cases which were attended with benign complications, 41 died, while of those (232) which were attended with malignant complications, 191 died. His total mortality was 15·5 per cent., and his mortality of uncomplicated cases was 2.1 per cent. The second table is limited to the operations of the last year. Here the total mortality was 8.3 per cent., and the mortality of uncomplicated cases was 1.4 per cent. The other mortality rates were in correspondence with these figures. The third table showed the results of the recovered cases. These also were limited to the last year. Of 114 patients, 100 were discharged cured, 2 were discharged improved, and 2 unimproved, while 10 died in the clinic. The causes of death included the results of cancer, cirrhosis, echinococcus, and diffuse cholangitis in 7 cases; one death occurred in an uncomplicated case, of a woman affected with advanced heart disease, and the two remaining deaths were cases of complications affecting the gastro-intestinal system of a non-malignant nature. He states that he has not experienced pneumonia in his recent cases since he has paid attention to the causes of infection. He appeals to the general practitioner to send patients into the clinic for observation for a few days before the decision is come to whether the operation should be performed or whether a course of treatment at Carlsbad should be tried. He operates when there is a vital indication in chronic occlusion of the common duct, in acute or chronic empyema of the gall bladder, in perforation, and in carcinoma; and when there is a relative indication—that is, when the symptoms are so severe that the patient is no longer capable of working or of enjoying his life. He claims that the risk of the operation itself (1.4 per cent.) can be regarded as almost non-existent.

338. Operative Treatment of Paralysis of the Shoulder in Children.

BRADFORD (*Amer. Journ. Orthop. Surg.*, August, 1910), in discussing the surgical treatment of deltoid paralysis due to anterior poliomyelitis, raises objections to each of the different methods that have hitherto been applied to this affection. Arthrodesis, it is held, though it will somewhat improve the function of the limb, if properly done, is manifestly not so satisfactory an operation as one from which articular motion can be obtained. It cannot be said that at present the procedure of transplantation of the brachial nerves offers great promise, as it is difficult to determine at an early stage the exact location of a permanent paralysis, and the operation is almost invariably practised when it is too late. Muscle-to-muscle suturing of the trapezius to the deltoid has the disadvantage that in course of time the sutured muscle is gradually stretched through dragging of the arm, the author believing that muscular transference can be made under proper conditions to improve the usefulness of the limb. This method he has practised in 7 cases, but the results cannot be regarded as very satisfactory. In all but one of these cases the arm, it is stated, was benefited by the treatment, but in no instance did the degree of improvement meet the author's expectations. The operation performed in the 7 cases was a periosteal insertion of a portion of the trapezius into the point of humeral insertion of the deltoid. The insertion was made by a silk strand quilted into the belly of the freed portion of the trapezius and stitched into the periosteum at the humeral attachment of the deltoid, the arm being elevated in order to place the transferred muscle in a state of tension. The double object of the quilted shank of silk suture is to reinforce the transferred portion of the trapezius and to form an artificial ligament. It is intended to form a strong band which, while not interfering unduly with the contracting power of the muscle, will prevent the gradual stretching of its fibres.

OBSTETRICS.

339. The Vomiting of Pregnancy.

PINARD (*Gaz. heb. des sci. méd. de Bordeaux*, May 1st, 1910) lays stress upon the importance of the pulse in determining the treatment to be followed in the vomiting of pregnancy. Vomiting occurred in 42 per cent. of all pregnancies coming under his notice, and various therapeutical methods have been employed to arrest it. He considers the acceleration of the cardiac pulsations to be the first manifestation of the toxaemia which causes the vomiting, due probably to a poison secreted by the ovary or by the ovum. In all cases of vomiting attention should be directed to the pulse, and when, in spite of rest, milk diet, and oxygen inhalations, the pulse reaches 100 and remains there or above it, even without any rise of temperature, the pregnancy should be terminated by the induction of abortion.

340. Combined External and Vaginal Version.

STOWE (*Amer. Journ. Obstet.*, October, 1910) holds that the combined external and vaginal version is not dependent on the size of the cervix nor the degree of its effacement. The less the cervix is dilated, the easier is the operation in most cases, provided the membranes are intact. Owing to certain conditions of the abdominal wall and uterus, it is often impossible to correct a malpresentation during the later weeks of pregnancy by external methods alone. A preliminary dilatation of the perineum in primiparae, and the version itself does not tend to terminate the pregnancy. Only little difficulty is experienced in maintaining the fetus in its new position. In no known case, Stowe informs us, was a repetition of the manœuvre necessary. Danger of premature separation of the placenta during pregnancy is very slight; in no recorded instance was there perceptible change in the heart tones before and after the operation. The proper presentation of the fetus should be obtained before labour begins. The question as to whether the head or breech is to present depends upon the conditions present. The operation is much easier if performed before the membranes have ruptured. If the liquor amnii escapes during the first stage the version should be done immediately, as otherwise the uterine walls may so retract about the fetal body in a short time that internal version is impossible, and the child is lost. The danger of premature separation of the placenta depends upon the degree of uterine retraction and the amount of liquor amnii in the uterus. As the hand does not enter the uterus, the danger of septic infection is reduced to a minimum. In certain cases of placenta praevia the foot can be brought down to the inlet before the membranes are ruptured. It is easier to secure a foot than in the classical Braxton Hicks version. Stowe reports 5 cases of combined external and vaginal version during pregnancy, 6 of that manœuvre during the first stage of labour, 1 of conversion of face into occipital presentation, and 1 of version in the second stage of labour.

GYNAECOLOGY.

341. The Inflammatory "Pelvic Mass."

C. LIPMAN (*Journ. Obst. and Gynaec. Brit. Emp.*, August, 1910) deals with local inflammatory disease of the female genital organs, that is to say, with inflammations of the uterus and adnexa, and the pelvic cellular tissue, for it is any or all of these structures when involved in an inflammatory process which come to constitute the inflammatory "pelvic mass." In particular terms the mass is a metritis, salpingo-ovaritis or a cellulitis, single or combined, unilateral or bilateral, together with intraperitoneal adhesions and exudate. All degrees of the process occur, from the unilateral small deposit to the complete "choked pelvis," where the viscera are no longer discrete, and the pelvis is occupied by a single firm undifferentiated mass. Out of 832 cases treated in hospital, one-fifth have been instances of inflammatory disease of the uterus and its adnexa. In the extension of the disease the viscera become involved. The "mass" is either within or without the peritoneum, the site depending largely upon the nature of the infection. Within the mass itself any stage of the inflammatory process may be discovered, from lymph exudate and oedema to necrobiosis and tissue necrosis and pus, either as a pyosalpinx or ovarian abscess. The organisms that are chiefly pathogenic in the female genital tract are the gonococcus, streptococcus, and tubercle bacillus. The two first invade the genitalia from below, the last attacks from above, its primary pelvic focus being the Fallopian tube. These three infections occasion the "inflammatory mass," but are clinically distinct, and can be distinguished one from the other. The gonorrhoeal variety of the "inflammatory mass" has a history of purulent leucorrhoea and urinary disturbance, with pus in the urethra and Bartholinian ducts, or perhaps a granular vaginitis or catarrhal. Such evidences may persist for years untreated, and the resulting mass will be a salpingo-ovaritis and may be of any size. It is frequently pelvic and not large, or bilateral with the uterus recognizable between; often it occupies the pouch of Douglas and the uterus is not greatly displaced. The streptococcal variety has a history of childbirth or abortion; if acute the fever is high, there is pain, and usually a unilateral mass in the pelvis fixed to the pelvic wall. The mass is of any size and the uterus is often greatly displaced. The tuberculous variety is associated with failing health and some menstrual depravity. The mass is bilateral, elastic, and rounded, little nodosities may be found in the isthmian portion of the tube, the uterus is not much displaced. Where tuberculosis is suspected the von Pirquet reaction is often valuable. In 164 operative cases, 113 were gonorrhoeal, 19 tuberculous, 17 streptococcal, and 15 of mixed infection. More than half of the cases escaped operation and did well with rest and palliative measures. The writer operated upon 164 cases of inflammatory "pelvic mass"; he considers that where the infection is streptococcal operation is contraindicated, though drainage may be established or abscesses evacuated. In gonorrhoeal cases operation cannot be undertaken during the acute stages. Later posterior colpotomy with complete tunnelling of the "pelvic mass" is a wise, curative, and conservative measure. Extirpation of the diseased organs should only be made as a last resource. In tuberculous lesions the process is progressive and should be dealt with as soon as possible. Extirpation is the only cure.

342. Calcified Uterine Fibroid.

LESNÉ AND LAGANE (*Bull. et Mém. de la Soc. Anat. de Paris*, July, 1910) made a *post-mortem* examination on the body of a woman, aged 59, who died almost immediately on admission into a hospital. On opening the abdomen diffuse purulent peritonitis was discovered. About a litre of thick greenish pus lay in the peritoneal cavity. The uterus was bulky and perforated near the fundus. It measured 5¾ in. long, 4⅛ in. broad, and 3¾ in. anteroposteriorly. It was filled and distended by a cluster of calcified fibroids, which protruded under the perforation. This tumour occupied the uterine cavity exclusively; the uterine walls were extremely thin owing to the distension; around the perforation they were no thicker than a piece of pasteboard, and seemed reduced to the serous coat. The perforation ran obliquely along the fundus, and was over 1 in. in length. The tumour was made up of fibrous tissue with very little muscular fibre. Calcification was extensive, and there were advanced inflammatory changes. The kidneys showed signs of chronic nephritis, and the liver was fatty and hypertrophied.

THERAPEUTICS.

343. X-ray Filtration.

THE efforts of French investigators after precision in *x*-ray filtration continue to place the radio-therapeutic world under a debt of gratitude. Dr. J. Belot, chief of the electrical department of the St. Louis Hospital, comes forward with a long report on the subject (*Arch. d'électr. méd.*, August 10th, 1910), of which we can only attempt an inadequate summary. He points out that the purpose of interposing a filter in the path of the heterogenous rays emitted from a tube is to reduce the discrepancy between the superficial and the profound irradiation and to sift the sheaf of rays so that it becomes approximately monochromatic—that is to say, reduced to a single kind of ray. The selective absorption of the bodies used as filters varies considerably. Belot finds that leather is practically useless as a filter. With a sample 5 mm. in thickness, and with incident rays numbered 7 on the radiochromometer scale, or scale of penetrative property, the quality of the emergent ray was only augmented to 7.5, the quantity absorbed by the filter being 38 per cent. of the incident radiation. Silver is, for the same reason, inadvisable as a filter, and the filtering capacity of cotton-wool is almost worthless. Glass is a better medium, but its fragility and other circumstances are against adoption. Aluminium remains the best of all filters:

Thickness of Aluminium in Millimetres.	Transmission of Incident Sheaf per Cent.	Absorption of Incident Sheaf per Cent.	Radiochromometric Degree, or Degree of Hardness.
0	100	0	7
0.5	70	30	7 5–8
1	50	50	8–8.5
2	29	71	
4	14	86	
5	12	88	10–11

The author determined to arrive at the fraction of incident radiation absorbed by various depths of water having a density approximate to that of the tissues, and to compare it with the absorption after the radiation had been transmitted through aluminium.

Depth of Water Traversed.	Radiation No. 7. Fractions *transmitted* per 100.			
	Without Filter.	With Al Filter 0 3 mm.	With Al Filter 1 mm.	With Al Filter 5 mm.
1 cm.	49	65	75	83
2 cm.	30	44	55	70
4 cm.	14	20	29	45
6 cm.	7	10	15	26
8 cm.	5	7	11	20

Therefore, the greater the thickness of the filter the more striking is the reduction in the difference between the quantity absorbed by the superficial layers and that arrested by the layers that are deeply situated. Filtration is specially indicated in leukaemia, deep-seated neoplasms, fibromata, cerebral tumours, and osseous lesions. It is justified in all subcutaneous affections—keloids, non-ulcerated epitheliomata, affections of the sebaceous and sudoriparous glands. In the treatment of the greater number of dermatoses filtration is not an advantage. The author irradiates directly in such cases as mycosis fungoides and eczema, while in some acnes he commences treatment with a non-filtered radiation, and continues it with a lightly filtered one. He epilates a trichophytic scalp without interposing a filter, and does the same when acting upon a hypertrichosis for the first epilation, using a filter afterwards. A filter of 10 mm. aluminium is ideal for deep lesions, because the emergent rays are monochromatic, but it is impossible in practice because of the inordinate length of exposure. A filter of half that thickness is practicable, although in this case it may take an hour to obtain a dose of 5 H. on the skin. He finds a filter of 1 mm. useful for subcutaneous lesions, and one of one-tenth of a millimetre for treatment of the face and

neck in order to absorb the very soft rays which may be the cause of a fleeting erythema. No filter should be placed upon the skin. In the author's practice the aluminium is placed at the opening in his localizer through which the rays emerge.

344. "606" in Leprosy.

Ehlers (*Muench. med. Woch.*, No. 41, 1910) states that Ehrlich supplied Bjarulyédinsson, of Reykjavik (Iceland), with some tubes of dioxy-diamido-arsenobenzol for trial in leprosy cases in the hospital of the Odd Fellows. The report sent in on September 16th states that 7 patients were treated, 3 three weeks and 4 six days previously. The doses given varied between 0.4 and 0.6 gram: 6 of the patients were affected with tuberculous leprosy and 1 with pure anaesthetic leprosy. All the patients were in good health at the time of reporting. They did not complain so much of the pain of the injection as they did of the pain which followed injections of corrosive sublimate. Tenderness and infiltrations were noticed in the site of injection, but no abscesses. The observer stated that he failed to notice any appreciable effect on the disease. Under the microscope, the bacilli proved to be plentiful. He noted, however, that very many of the bacilli showed granular degeneration, and that they were arranged in "coccothrix." Single granules were met with, and in other situations the bacteria were clumped together in what appeared to be masses of granules. He points out that in the old grey-white nodules this form of degeneration is at times met with, but he has never seen it so extensive as in these cases, and he states that the degeneration was not present in the cases under discussion before the injection. He concludes by saying that he was unable to decide whether the bacilli were alive or not.

345. The Treatment of Bronchial Asthma.

August Goldschmidt, starting with the admission that it is impossible at present to effect a permanent cure of bronchial asthma by medicines, records the results which can be obtained by a few drugs in this affection (*Muench. med. Woch.*, No. 43, 1910). He leaves alone the question of the physical treatment of asthma, since this requires institutional treatment. In the first place, he believes that 1 per cent. solution of morphine with 1 per 1,000 solution of atropine sulphate gives the best results during an acute attack. He advises not less than 1 c.cm. of the solution injected subcutaneously. He is doubtful whether it is advisable to use adrenalin for this purpose. If the attack can be dealt with very early, von den Velden's theobromine preparations do good service. He prefers the following prescription: R Caffeine valerianic. 0.25 gram; theobromin. sodio-salicyl. 0.5 gram. M. Ft. pulv. Sig.: One or two powders to be taken during the attack. If the attack has been set going by an attack of bronchitis, iodides appear to answer well by removing the secretion. He prefers the sodium salt. He does not like pyrenol as well as the ordinary iodine, but when the patient does not take the latter well sajodin may be used. The treatment of asthma apart from the acute attack consists chiefly in giving atropine or some substitute. He is, however, of opinion that both when given by the mouth or subcutaneously, the well-known intoxication symptoms occur frequently. Fickler has recently reported a case of atropine mania in an asthmatic. A less dangerous method of application consists in applying it by means of a nasal inhaler. His prescription is as follows: R Alypin. nitr. 0.3 gram, eumydrin. nitr. 0.15 gram, glycerini 7 grams, aq. dest. 25 grams, ol. pini pumil. 1 drop. M.D.S. To be inhaled from the spray apparatus (Tucker's). Since alypin produces some hyperaemia, it is advisable to add 8 to 10 drops of a 1 in 1,000 solution of adrenalin or suprarenin to each 10 c.cm. of the solution. As the adrenalin does not keep well, it is not wise to mix it with the spray solution, but to add it fresh each time. The prescription given above can be made up for 1s. 8d. (according to the German scale of charges). It has answered well in six out of seven cases.

PATHOLOGY.

346. Skin Reaction in Carcinoma.

Elsberg, Neuhof, and Geist (*Amer. Journ. of Med. Sci.*, February, 1910), from the evidence of haemolysis in malignant disease, found that injections of washed human red cells from normal individuals under the skin of persons suffering from malignant disease produced a definite local reaction in a large percentage, while no reaction followed similar injections in healthy individuals or in those suffering from diseases other than malignant. The person from whom the normal blood is obtained must be free from tuberculosis, syphilis, and any evidence of disease, and must not have been recently ill nor have received any injury, nor recently have had the slightest operation, nor an anaesthetic. The blood obtained from small children is most satisfactory, a 20 per cent. suspension giving the best results, prepared as follows: 5 to 10 c.cm. of blood is aspirated aseptically from the median basilic vein by an aspirating syringe containing a small glass bead, and after the needle has been removed and the nozzle covered with sterile gauze the blood is defibrinated by shaking for ten minutes; 1 c.cm. is then expressed into each of a number of test tubes half filled with sterile normal salt solution and centrifuged. The clear supernatant fluid is then poured off, fresh salt solution added, and the tubes are shaken and again centrifuged for ten minutes, and the process is repeated a third time, after which, when the supernatant fluid has been poured off, four times as much salt solution as there are cells by volume is added, thus giving approximately a 20 per cent. suspension of washed red blood cells. The tubes, after being kept in the ice-chest for from twenty-four to forty-eight hours, are then ready for use, any in which there is any laking being discarded. The skin on the anterior surface of the forearm having been cleansed with alcohol, 5 m of the suspension is injected at a spot where there are no visible veins, care being taken that the injection is under and not into the skin. The reaction appears in about five to eight hours as an irregular oval area with full defined margin, measuring from 1 × 2 to 3 × 5 cm. Often surrounded by a whitish areola, the lesion varies in colour from brownish-red to maroon, and it is slightly raised and boggy. It may appear slowly or rapidly and fade quickly or gradually, leaving a flat, greenish-yellow discoloration resembling an ecchymosis. Since the typical colour and elevation is best seen in daylight, the injection should be made in the morning between 9 and 10, so that the observations may be completed at 6 in the evening; 89.9 per cent. of the patients in whom the reaction was observed were suffering from carcinoma, while 94.3 per cent. giving no reaction were free from carcinoma.

347. Agglutination Tests in Water Examination.

W. H. Frost (*U.S.A. Hygienic Laboratory Bulletin* No. 66, June, 1910) has found a bacillus, resembling the *proteus* group and provisionally classed as a new species, *Pseudomonas protea*, which shows quite constantly the characteristic of being agglutinated by specific typhoid immune serum. This bacillus was found in the filtered Potomac River water supplied to Washington. It occurred quite frequently during August, 1909, less frequently during September and October, and not at all during November and December. Negative results were obtained in the attempts to discover this bacillus in Potomac River water before filtration, in the water of certain springs and wells, and in the stools and urine of a large number of persons. Nine strains of *Ps. protea*, isolated at different times, were constantly and in approximately the same degree agglutinated by specific typhoid immune-serum from typhoid fever patients and from lower animals immunized against *B. typhosus*. With serum from early stages of typhoid fever *Ps. protea* is agglutinated in a larger percentage of cases than *B. typhosus*, and, in general, typhoid fever serum often agglutinates the former organism in higher dilution than the latter. A limited number of observations have shown that specific typhoid immune serum from lower animals, in the early stages of immunization, agglutinates *Ps. protea* in approximately the same dilution as *B. typhosus*, but later, as the agglutinating strength for *B. typhosus* increases, the titre for *Ps. protea* fails to increase proportionately. The normal serums of man, the horse, and the rabbit agglutinate *Ps. protea* only in low dilutions, and apparently the serums of persons with malaria, pneumonia, tuberculosis, or slight febrile disturbances possess no increase in the agglutinins for this organism. The results of absorption experiments indicate that the agglutination of *Ps. protea* by specific typhoid agglutinating serum is effected by combination with a portion of the specific typhoid agglutinin, and that this is therefore a "group" agglutinin. Animals injected with cultures of *Ps. protea* develop agglutinins for this organism, but do not develop agglutinins for *B. typhosus* or other organisms of the colon-typhoid group.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

348. Complement Fixation in Hydatid Disease.

G. BRAUNSTEIN (*Wien. klin. Woch.*, No. 31, 1910) reports on his experience of the complement fixation test as a method of diagnosis of hydatid disease. The fluid contents of an echinococcus cyst, either from an animal or man, provide a satisfactory antigen which, if ½ per cent. carbolic acid be added, can be kept for six months without losing its properties; 0.4 c.cm. of antigen is used for the test. The blood serum in hydatid disease was found to have a general complement deviation action, and therefore a regulated amount of the serums both of the patient and of the control normal persons should be used; the author used constantly smaller amounts, down to 0.01 c.cm. The cases tested can be divided into three groups. To the first belong three in which the examination was made during the patient's lifetime, and the correctness of the diagnosis based upon the reaction was confirmed at the subsequent operation. The most interesting case of this group was that of a woman 41 years of age who had complained for six years of pains in the stomach region. There was slight gastroptosis, and the liver, which was low down, was palpable to the right of the middle line and became somewhat more prominent on deep inspiration. Repeated examination, combined with the use of Roentgen rays, failed to give confirmatory evidence of the presence of echinococcus disease. The reaction was positive with 0.06 c.cm. of serum, but Wassermann's reaction was also positive. The diagnosis was therefore doubtful between syphilis and hydatid disease, and the patient was advised either to undergo a long course of iodide treatment or to have an operation. The operation was chosen and disclosed the presence of an hydatid cyst at the edge of the liver of the size of a child's fist. To the second group belong 2 cases in which the reaction was tested with blood obtained after death when the autopsy had shown the presence of hydatids. One case gave a positive reaction with 0.2 c.cm. of serum, the other negative even with 0.4 c.cm. of serum; the negative reaction may, perhaps, be due to the fact that the cyst was surrounded by a hard, calcified capsule. In the 3 cases of the third group the reaction was tested at longer or shorter intervals after operation for hydatids. One case gave a positive reaction with 0.01 c.cm. of serum ten days after the operation. A second, tested a year after operation, was not definitely positive with 0.4 c.cm., but the case demonstrated the possibility of the presence, though in small quantities, of specific antibodies, even after so long an interval. In a third case a positive reaction was obtained two years after operation, but a fistula from an empyema which had developed three months after the operation was still discharging, and it is possible that the empyema was a result of an echinococcus injection, and the persistence of the fistula showed that the hydatid disease was not yet cured. The author holds that in cases of active echinococcus disease in man the complement fixation test is an extremely valuable help to diagnosis.

349. Hyperchlorhydria.

RUMMO (*Rif. Med.*, October 24th, 1910) continues his lectures on various gastropathies, and in this paper deals with hyperchlorhydria. The aim of treatment in these cases is to regulate the diet, neutralize the excess of acid, and diminish the over-secretion. Incidentally he mentions Fletcherism, and points out that something like this was taught by Epimenides the Cretan in antiquity. Authorities have differed widely as to the relative value of a mainly albuminoid diet and of one mainly consisting of hydrocarbons; much can be said on theoretical grounds for each system. In the practical treatment one ought to differentiate between temporary and more or less acute cases and chronic conditions where there is more or less permanent gastrorrhoea and impaired motility. Food should be given at short intervals, and should be well masticated, and of a non-irritating character, and at least an hour's rest should be taken after a meal. Spices, aromatics, and excess of salt are to be excluded. Drinks should be insipid, and not changed frequently, so as to avoid psychic stimulation of the stomach. As regards an albuminoid *versus* a hydrocarbon diet no general law can be laid down, each patient must be taken as an individual, and the particular article of diet, whether albuminoid or vegetable, estimated with reference to the particular case. Meat extracts, soups, raw meat, alcohol, coffee, and tea, are all powerful stimulants of HCl. On the other hand, milk, white flesh, eggs, bread, and rice have much less stimulating effect on the production of HCl. On the other hand, in acute and painful hyperchloridria a diet mainly albuminoid is usually well tolerated; at the same time, such a diet ought to be considered as one of urgency only, and not to be continued. Fatty substances are to be avoided during acute attacks, and their use deferred to periods of quiescence.

350. Diagnosis of Rickets.

BARBARIN (*La Clinique*, September 30th, 1910) discusses the typical signs and symptoms of rickets. He considers that diagnosis may be difficult when the clinical picture is incomplete and only one or two symptoms are manifested. A single symptom may be so exaggerated as to suggest some other disease. Hydrocephalus may be mistaken for rickets in its early days; it is found that when the large fontanelle is auscultated there is a "souffle" in the rachitic case which is not heard in the hydrocephalic. The hydrocephalic head develops as a whole, whereas in rickets the enlargement is confined to frontal and occipital regions with depressions between the bones. The syphilitic cranium is natiform and does not resemble the bossy head of rickets; but the writer has seen a typical natiform head with all the physical signs of rickets in a case which improved upon antirachitic treatment. It is rare to find several of the intercostal nodules joining together to form a mass resembling a tuberculous osteitis of the costal region. Occasionally the deformity of the thorax will suggest Pott's disease in the upper dorsal vertebrae. The absence of curvature of the spine differentiates the condition, but rickety kyphosis has often been mistaken for Pott's disease, and is most readily distinguished by examining for rigidity; the rachitic spine is flexible. Curvature of the neck of the femur will suggest coxa vara. When unilateral it may cause a slight limp and some compensatory scoliosis; when bilateral it may simulate double congenital luxation of the hip. The diagnosis can only be arrived at by the aid of radiography. The head of the bone cannot be felt, and the gait is characteristic of luxation, etc. Rachitic hypertrophy of the condyles of the lower end of the femur or of the wrist may resemble tuberculous osteitis, unless the perfect mobility and absence of pain and muscular atrophy are remarked. Flat-foot is very commonly associated with curved tibiae. All the conditions mentioned are purely rachitic, and may be corrected by medical treatment.

SURGERY.

351. Extirpation of the Parotid Gland.

VAN DER LINDEN (*Annales de la Soc. Belge de Chirurgie*, Nos. 6–7, 1910) publishes two cases to support his view that under certain conditions removal of the whole of the parotid is practicable and justifiable in cirrhous carcinoma of this gland. He is opposed to the general conclusion of surgeons that the great risk inherent in this operation and the trouble resulting from section of the facial nerve are not counterbalanced by the possible attainment of any good results in regard to prolongation of life and freedom from recurrence. That the undoubted difficulties of total removal of the parotid are not insurmountable has been proved to the author by operations on the cadaver. In spite of the inevitable and serious complication of facial paralysis, the operation need not be feared more than any of the numerous interventions that are now being constantly practised on internal cancers less favourably situated and not so readily accessible. It is possible to remedy in some degree the evil caused by resection of the nerve by establishing an anastomosis between its peripheral end and the spinal accessory, or the hypoglossal. It is acknowledged, however, that the benefit derived from such anastomosis is often doubtful, and that the physiological result fails to correspond with the anatomical result. On the other hand, instances have been recorded of spontaneous regeneration of the facial nerve, with

restoration of the muscular movements of the face, after an interval of some months from the time of section. The speedy recovery from the operation and the good ulterior results in the author's cases have led him to regard total removal of the cancerous parotid as quite justifiable in the absence of such contraindications as malignant involvement of the mucous membrane of the pharynx and enlargement of the cervical glands. The technique of the operation performed in these cases consists, after exposure of the gland, in methodical section of its different pedicles, the carotid portion being first dealt with in order to diminish haemorrhage, and thus to facilitate the further steps of the procedure.

352. Anaesthesia with Artificially Limited Circulation.

P. FRANKE (*Deut. med. Woch.*, No. 21, 1910) thinks that the dangers of chloroform anaesthesia arise directly by fatal poisoning and paralysis of vital nerve centres, and indirectly by the action of the vapour on the pulmonary epithelium and on the vascular cells in the liver, kidney, heart, and brain, leading to a fatty metamorphosis, disintegration of cells, and fatty infiltration in the vascular walls. He therefore regards Klapp's method of inducing anaesthesia with chloroform with a restriction of the circulation as a marked advance. He has applied the method in his operation cases with good results. He used Esmarch's bandages, frequently only bandaging one leg. The limb should only swell slightly and become faintly bluish red. If much swelling takes place, the bandage should be removed and reapplied a little tighter. He found that the patients became anaesthetized quietly, and excitability during the whole course of the anaesthesia was rare. They did not become cyanotic, nor was there any salivation. The respiration was always regular, but at times a little superficial and slowed. In no case was this alarming. The pulse usually became slightly more rapid and of higher tension. Vomiting did not occur once. In some cases he used ether and in some chloroform, but in both instances the quantity of the anaesthetic used was considerably lessened from the usual quantity. On loosening the bandages and thus setting free the blood charged with carbonic acid the respiratory centre became stimulated, which resulted in a few deep inspirations. In no case did the patient complain later of pain resulting from the bandaging. He discusses the method in some detail, and concludes by advising others to try it in a large number of cases.

353. Arterio-venous Anastomosis in Senile Gangrene.

MAUCLAIRE (*Arch. gén. de chir.*, No. 8, 1910) publishes four cases of senile gangrene in which he made trial of arterio-venous anastomosis. The results of this operative treatment in the instances here recorded were very unsatisfactory, but the records are regarded as instructive in showing the technical difficulties of this method, and its failure in affording any functional benefit. This experience, taken together with that of other French surgeons, has convinced the author that arterio-venous anastomosis is applicable only in a very restricted degree to cases of senile gangrene. It seems, he states, that the pathological changes in the artery are often too marked to allow of any expectation that a clot will not be formed in the vessel. Venous transplantation at the seat of the most advanced arterial disease might, it is suggested, be found a more promising operation than arterio-venous anastomosis. The latter method, though logical in theory, in cases of senile gangrene, is from a practical point of view only applicable to cases in which the conditions are much more favourable than those met with in cases in which the operation has hitherto been practised. To obtain a good result it would be necessary to operate at an early stage of the atheromatous disease, and when the blood pressure is still sufficient to force the venous valves, and to permit of capillary circulation. The frequent failure of this treatment of senile gangrene is to be attributed, the author states, to diminished blood pressure, and to the degenerated condition of the inner wall of the artery.

OBSTETRICS.

354. Facial Paralysis after Spontaneous Birth.

ANDÉRODIAS (*Gaz. heb. des sci. méd. de Bordeaux*, May 8th, 1910) communicates a case where facial paralysis occurred after natural delivery. It was the third pregnancy of the mother, and no family history of nervous trouble could be made out. The whole length of the labour, which took place in hospital, was eight and a half hours, and there was no instrumental assistance. The child cried immediately on expulsion, and the facial paralysis was noticed at once. In repose the left eye was incompletely closed and the right labial commissure a little drawn up. In crying these defects were more marked, but the infant took the breast well and developed normally. The paralysis diminished gradually, and when mother and child left the hospital at the end of twelve days hardly any trace of it remained. The greater proportion of congenital facial paralyses result from purely obstetric causes, and this probably belonged to that category; but as forceps were not used the nature of the traumatism causing it is difficult to determine.

355. Pyometra after Abortion in Cornu of a Double Uterus.

MÉRIEL (*Ann. de gynéc. et d'obstét.*, August, 1910) attended a woman, aged 25, believed to be suffering from inflammation of the right appendages traced to a miscarriage seven months previously. There were pains with leucorrhoea and a tender, resisting mass had developed in the right vaginal fornix. This mass seemed to be distinct from the body of the uterus. Mériel hardly doubted the diagnosis and operated. The pelvic cavity was very narrow owing to ill-development of its bony walls, and when the internal organs were drawn up it was seen that the uterus was completely double. The right cornu was the larger and had fallen backwards into Douglas's pouch. The Fallopian tubes and ovaries were free from disease or malformation. The left round ligament was very thick and fleshy. Supravaginal hysterectomy was performed; the cervix was found to be double; no septum could be defined in the vagina, which had been examined before the operation. Mériel endeavoured to remove as much of the supravaginal part of the cervix as possible; he cut away the tissues of the left cervix with ease, but directly the scissors were applied to the right of the middle line pus rose up, and then it was found that the right uterine cornu was dilated by about 4 drachms of pus. Thus the right cornu had evidently been the seat of the recent pregnancy and became infected after abortion. Care was taken to avoid infection as the pus was very fetid. The stump was touched with the thermo-cautery and the peritoneum sewn over it. Dr. Baudet, the resident surgeon, injected 20 c.cm. of electrargol into the peritoneal cavity through two drains, when the parts were first dressed for "leucoprophylaxis," and repeated the injections for three days. They provoked a hyperleucocytosis and the patient recovered without any febrile reaction. Mériel had tried electrargol in a case where a pus tube had burst during extraction, the pus containing streptococcus. The effect was quite satisfactory and Professor Cestan had equally good results in other cases where there was pelvic infection.

GYNAECOLOGY.

356. Parametritis Actinomycotica.

BONDY (*Zentralbl. f. Gynäk.*, No. 38, 1910) reports in full a characteristic case of actinomycosis of the female genital tract, where, as is so frequent, diagnosis was made very late, or, strictly speaking, was not made until the parasite was detected in the parts removed. The operation, as was to be expected, rather aggravated the malady. The patient was a factory hand aged 28, subject for about a year to abdominal pain most marked in the right groin. Chronic catarrh seemed to have obscured the case, but no tubercle bacilli were found in the sputum. All the characteristic features of parametritis could be defined on palpation; the right side of the pelvis was most affected, where a markedly firm mass rose into the iliac fossa; the parietes were stretched, and their integuments red. The uterus was absolutely fixed. An incision was made into the mass in the right iliac region, pus with sloughy tissue came away, but no tubercle or giant cells could be detected in the tissue. The patient grew worse, and at the end of three months Sellheim of Tübingen opened the abdomen. The uterus and appendages were removed with great difficulty; the latter were converted into a pair of small tumours. The uterus was free from any parasite or neoplasm, but the normal tissues of the Fallopian tube and ovary were completely destroyed, and the tumour was made up of tough inflammatory tissue with spaces filled

with yellow pus containing granules of actinomyces. After the operation a Mikulicz dressing was applied; when removed on the seventh day a mass of pultaceous faeces escaped into the abdominal cavity, and urine and motion passed henceforward through the vagina and abdominal incision. The irritated integuments, hard to keep clean, became covered with unhealthy granulations. The patient died at the end of three months; iodopin was administered for a while with questionable benefit. There was amyloid degeneration of the spleen, liver, and kidneys, but the lungs were remarkably free from disease of any kind. Actinomycosis was limited to the liver, where numerous abscesses were detected, and to the pelvic connective tissue which was infested with actinomycotic abscesses bounded by dense scar-like material. It was specially noted that the periproctal tissue was in the most advanced stage of disease, whilst the faecal fistula had been the immediate cause of death. The vermiform appendix was not involved. Bondy believes that chronic, widespread parametritis, with extreme hardness of the exudation, without any association with the usual causes of parametric inflammation, yet with breaking down of the induration through the parietes, should always be suspected as actinomycotic; the discharge should therefore be carefully examined. Early removal of the tumour tissue, and the internal organs if practicable, and free scraping of parametritic abscesses in tissue which cannot be dissected away, followed by drainage and the administration of potassium iodide, may effect a permanent cure. Up to the present operative measures have proved most unsatisfactory; the opening up of the tissues infected by the parasite, leading to infection by pyogenic germs and the *Bacillus coli*, and, as in the reported case, to incurable intestinal and vesical fistulae.

357. Pelvic Oedema.

PLATON (*La Clinique*, July 1st, 1910), dealing with the causation of these infiltrations of the pelvic cellular tissues, attributes their frequency to microbic infection, to congestion and circulatory disturbance, and to malpositions of the uterus. The loose cellular tissue round the uterus is readily distended by fluids. It contains a quantity of vessels and lymphatics, and is therefore very liable to become the seat of oedema. The condition is associated with constitutional disturbance, languor, anorexia, a feeling of weight, dyspepsia, and constipation. The kidney region is tender, and the urine loaded with urates. There is sometimes palpitation, and a tendency to be hysterical. Locally, the abdomen is resistent, and leucorrhoea is present, while menstruation is irregular and often painful. A vaginal examination shows a diffuse or localized oedema. When diffuse, there is a spreading soft mass, which tends to fix the uterus more or less, and which is chiefly located in the broad ligament and round the ovaries and tubes. A localized oedema may resemble a solid tumour. It is found to disappear readily under gynaecological massage. The pain is variable, its severity does not necessarily correspond to the size of the swelling. When situated round the tubes and ovaries it is most severe, and it often extends to the lumbar and inguinal regions. Serous infiltrations are generally associated with deviations of the uterus, or with the presence of a fibroma. They may disappear spontaneously, or may persist for many years, and originate a number of nervous symptoms. They are distinguished from a fibroma by their consistency, which varies and shows softer portions. An infiltration behind the uterus may simulate a retroflexion or a cyst. Prolapsed adnexa are diagnosed by their tenderness to the touch. These oedemata cause much trouble, and are not always easily diagnosed, but treatment with rest, hot douching, and care reduces them very rapidly.

THERAPEUTICS.

358. Simple Method of Injection of the Ehrlich-Hata Preparation.

RICHARD VOLK (*Wien. med. Klin.*, No. 35, 1910) points out that injection of Ehrlich's preparation into a vein is often followed by a considerable rise of temperature, and intragluteal injection by very severe pain which disturbs sleep and causes the patient to be confined to bed, but that subcutaneous injection of the preparation is well borne. Different methods of preparing a fine emulsion have been recommended, and the author at first often followed those suggested by Michaelis and Wechselmann, but he has now succeeded in simplifying the procedure, using as a vehicle insoluble salts of mercury. The powder is ground in a sterile mortar until it is fully dry, and a little sterile paraffinum liquidum or oleum olivarum is added and rubbed in under slight pressure; 5 c.cm. to 8 c.cm. of paraffin oil is then added to make an emulsion, which is injected under the skin of the back in one or two places. Allowance must be made for a little of the emulsion being lost, and in order to make the loss as small as possible rather more paraffin than is necessary for emulsification must be used. The needle for the injection must be of rather wide calibre. The preparation of the emulsion takes only from three to four minutes, and solution, neutralization, etc., is dispensed with. The painfulness of the injection varies in individual cases, but is not greater than when the emulsion is prepared by Wechselmann's method; the patients are usually not confined to bed, nor is their sleep disturbed. The author in a whole series of cases has proved the efficiency of the preparation when thus administered. The possibility that the preparation may be dispensed in the form of a paraffin oil emulsion is suggested, but investigation is needed as to the stability of the emulsion.—Karl Bohac and Paul Sobotka (*Wien. klin. Woch.*, No. 30, 1910) describe the untoward symptoms which occurred in 3 out of 14 cases treated with the Ehrlich-Hata preparation, "606." In addition to rise of temperature and local pains, there were other very similar symptoms in the three cases. The first of these was retention of urine, which lasted in the different cases for from half a day to as long as nine days, and left behind it a considerable amount of difficulty in urination. In the cases which had received the smallest amounts of the preparation the symptom did not show itself at once. In two cases slight albuminuria developed. Secondly, the patellar reflex was found in all cases to be absent after the injection, as well as a whole series of other reflexes, which, however, had not been tested before the injection. Finally, in two cases marked tenesmus developed, which was, perhaps, predisposed to in one case by an already present proctitis. In all three cases there was constipation, which may, however, have been the result of lying in bed. The combination of symptoms referred to the nervous, the urinary, and the intestinal tracts may be considered as typical of the action of the drug. The failure of the reflexes points to paralysis or blockage of nervous elements, and the presence of sensibility and motility suggest the spinal cord as the seat of the lesion. The rectal tenesmus was suggestive of a condition of nerve irritation and the retention of urine of paralysis of the detrusor urinae muscle, while in two cases certainly there seemed to be also an effect upon the kidneys. The kidney function was tested by Schur and Zak's method, and appeared to be irregular in two cases and defective in one of them, but the condition may have been present before the injection was made. The author does not ascribe the side-effects to the particular preparation used or to excessive dosage. In 1 of the 3 cases the solution employed was from the same phial as was used for another case which remained quite free from unpleasant symptoms; in 2 of the 3 cases the solution was a mixture from two phials, but the contents of each phial were injected in other cases without injury. Small doses only were given, and in one of the cases the minimal dose recommended by Ehrlich was the one employed. The side-effects described undoubtedly deserve the most serious consideration. On the other hand, the preparation was effective in the removal of syphilitic symptoms, and though the author would not at present feel justified in employing it in ordinary cases which react well to ordinary syphilitic treatment, he would employ it, after first warning the patients of its uncertainty and dangers, in cases in which ordinary treatment failed to remove urgent symptoms—as, for example, unbearable pain—or in which the condition was dangerous, as in unfavourably located malignant syphilis.—Ehrlich (*Wien. klin. Woch.*, No. 31, 1910) telegraphs a reply to the above article. He states that one hundred and thirty-two similar tubes had been sent to Fauser, Hauck, Linser, Rille, and Spiethoff, and that all these on inquiry telegraph that no symptoms such as are described by Bohac and Sobotka have been observed by them. Doerr of Vienna from an experience of 68 cases, Finger of Vienna from 40 cases, Neisser from 110 cases, Michaelis from 68 cases, all report in the same sense. Alt reports on more than 200 cases treated without any sign of the side-effects described in the article, and suggests that the cause of the symptoms is perhaps due to mixture with methyl alcohol. Ehrlich concludes that the side-effects reported are due either to the method of solution adopted by Bohac and Sobotka or to the method of application.

359. Fruit Cures.

AT the Congress of Physiotherapeutics, Linossier (*Journ. des prat.*, August 6th, 1910) advocated the use of various fruits as a valuable form of treatment, recommending their employment even at the patient's own home, and not necessarily, as at present, at the different foreign resorts. There is no evidence that the grape loses its efficacy by transmission, or that any change takes place in its therapeutic activity until it comes to be cooked; so that any doctor, in any country, may prescribe this simple and agreeable remedy. Not only the grape but all the sweet fruits may be used—strawberry, lemon, orange, apple, pear, raspberry, etc.—so that no season need be without its appropriate remedy. As to the way in which they act, the mechanism is complex. In the first place fruits, even when acid in themselves, render the blood alkaline, because the tartrate, citrate, or malate of potassium constituting their acidity decomposes in the body and forms an alkaline carbonate of potash. It differs from alkalinization caused by the ingestion of sodium carbonate, first, because the mechanism of its action is different. Carbonate of soda excites the secretion of hydrochloric acid in the stomach, by means of the decomposition of chloride of sodium in the blood, so that the resulting alkalinization is that of subtraction. In the case of the fruits their salts penetrate to the blood, and, being there changed into carbonate, cause alkalinization by addition, the alkali being possibly more active by reason of its nascent condition. Another difference is that the salt is one of potassium instead of sodium, and as potassium is found specially in the cells of the body and sodium in the fluids, it is probable that fruits act upon the cells and mineral waters upon the secretions. The alkaline action of fruits is greater than is often supposed, 1 kilogram (2 lb.) of strawberries producing as much alkalinity as 9 grams (138 grains) of sodium carbonate. Besides this fruits are diuretic, probably because of their sugars and their potash salts, laxative by means of their alkaline salts and cellulose, and are also efficient agents for the remineralization of the organism, their ash containing the same constituents as that of the body, with the sole exception of sodium carbonate. Iron and manganese are especially abundant, and potassium is, according to Traube, an excellent cardiac tonic. These all being in a colloid state, act differently from ordinary mineral substances. The treatment can be varied so as to influence nutrition in different ways. If nothing else is taken, there is a reduction of alimentation generally, and especially of nitrogenous substances, suitable for the various forms of arthritis; whilst, added to the usual diet, fruit causes an increase of hydrocarbon with a reserve of nitrogen, which is probably the action of the grape cure in commencing tuberculosis.

360. Exercise in Infancy.

GRINNAN (*Pediatrics*, September, 1910) discusses the means of obtaining good development in early infancy. When an infant is able to walk and is in its second year exercise becomes an important factor and a valuable aid to digestion. At eighteen months old it is specially valuable, and an infant of this age allowed to play on the grass in the open air will eat and digest what it could not eat or digest when heavily clothed and wheeled about in a perambulator on the pavements of a town. Children will do much better if reared in the suburbs or country, where a grass lawn affords a place for exercise in the pure air. All babies may exercise upon a quilt laid on the floor, and should spend the best part of the day in the park. Children need green grass and trees and pure air and pure milk. Country air or a playground of ample size is essential to the development of child life. When the children from the orthopaedic hospitals in New York City were removed to the sea shore for the summer they improved more in the hot weather than in double the time in hospital in cold weather, because they were able to exercise in the open air.

361. Conservation of Diphtheria Antitoxin.

JOHN F. ANDERSON (*U.S.A. Hygienic Laboratory Bulletin* No. 66, June, 1910) has investigated the influence of age and temperature on the potency of diphtheria antitoxin. He finds that the average yearly loss in potency at room temperature is about 20 per cent.; at 15° C. it is about per cent.; and at 5° C. about 6 per cent., although in e instances these percentages may be increased. He but little difference in the keeping properties of ry serums and serums concentrated by a special . When diphtheria antitoxin is to be placed on the market and there to remain under unknown conditions as regards temperature, it should not be labelled with a return date longer than two years, and it should contain an excess of at least 33 per cent. to allow for decrease in potency: in addition, when the serum is sold in syringes with an absorbable piston, an excess should be added for loss from this cause. Dried diphtheria antitoxin kept in the dark at 5° C. retains its potency practically unimpaired for at least five and half years. The author found that there can be no question as to the protective value of the serum being in direct relation to its unit value; in over 200 determinations which he made of the antitoxic potency of serums, similar results were obtained in each instance. For example, $\frac{1}{1500}$ c.cm. of a particular serum was found of the same protective value as $\frac{1}{150}$ c.cm. of another serum; the former contained 1,500 units per cubic centimetre, and the latter only 150. It was noticed that all serums, of the same age and kept under the same conditions, did not deteriorate in the same ratio; the reason is obscure, but probably depends on some inherent property of the serum. The addition of preservatives, such as chloroform and tricresol, apparently did not exert any influence upon the deterioration of the antitoxin, as there was no appreciable difference in the behaviour of the serums prepared with these two substances.

PATHOLOGY.

362. The Pathogenesis of Rickets.

VAGLIO (*La Pediatria*, September, 1910) accepts the toxinfective theory of rickets, the starting point of the infection being in the majority of cases the intestinal tract. He follows Marfan in teaching that the bone changes are in keeping with what one might expect from some chronic irritative process. A considerable part of the paper is devoted to showing the probable connexion between impaired function of the thyroid gland and rickets. In congenital rickets (whose real existence is acknowledged) it is pointed out that a condition of hypofunction of the thyroid may be seen in the mother. And the reason why rickets is more common in artificially fed infants is because when milk is boiled the enzyme which it contains, and which is ultimately derived from the thyroid, is destroyed by the boiling. Again, the influence of the thyroid in the elimination of calcium is pointed out, and the effect of thyroid administration in the consolidation of fractures. It is also pointed out that the good effect of phosphorus in rickets may be due to the fact that this drug has a stimulating effect on the thyroid. The author has carried out some experiments on thyroidectomized rabbits, and finds the bone changes resulting sufficient to produce that predisposing condition which Marfan requires in conjunction with some chronic autointoxication to cause rickets—in other words, the bone changes after thyroidectomy correspond to Marfan's first stage of rickets. The next step is to show that a condition of thyroid insufficiency pre-exists in rickety children, and this the author attempts to prove. Photomicrographs of the bone changes are given, and a bibliography of nearly one hundred references.

363. Melo-stagminic Reaction in Malignant Growths.

STABILINI (*Rif. Med.*, August 21st, 1910) has tested the above reaction in 32 cases of malignant disease, and found the result positive in 30 out of the 32. The controls were always negative. Adding these 32 cases to 12 others recorded by Este, the positive results were 42 out of 44, and 49 negative in 49 cases of disease other than malignant. As regards the technique of the reaction, the author supports those who lay stress on the care necessary in securing a proper antigen and in the preparation of the alcoholic and ether extract of the growths. It is important to see that the pipettes which are used to remove the antigen are perfectly dry, as a drop of water may interfere with the result. Most failures are due to inexpertness in technique rather than to weakness of the antigen. On the contrary, the author finds the antigen relatively stabile, although singularly sensitive to shaking. In the author's experiments the serums were used in a 1 in 19 dilution, and the antigens procured from breast cancers. On the whole, the author thinks the reaction is valuable as a test of malignancy, but whether it is absolutely pathognomonic he is not at present inclined to pronounce; of his 27 control cases (all undoubtedly non-malignant), none gave a positive result.

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